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VOL. 121

MARCH - APRIL

1906

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME CXXI.

MARCH 6 TO APRIL 24, INCLUSIVE.

1906.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1907.

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ERRATA.

814,054, page 24, in heading, assignment, name of assignee, for "The Waterbury Farrel Foundry and Machinery Company" read *The Waterbury Farrel Foundry and Machine Company.*

814,585, page 253, in heading, title of invention, for "Process of Supporting Forms Used in the Construction of Concrete and other Masonry" read *Apparatus for Supporting Materials for Arches, Tunnels, &c.*

815,014, page 497, in heading, title of invention, for "Pulling-Machine for Steamboats, &c.," read *Boat-Propelling Attachment.*

815,859, page 936, in heading, title of invention, for "Retinascope" read *Retinoscope.*

815,902, page 954, in heading, residence of patentees, for "Gothemburg" read *Gothenburg.*

816,534, page 1286, third claim, lines 8–9, for the compound word "holder-lever" read *holding-lever.*

816,815, page 1473, in heading, assignment, for "one-fourth to Ella L. Ongley" read *one-half to Ella L. Ongley.*

817,022, page 1570, in heading, assignment, for "one-half to John W. Vale" read *one-fourth to John W. Vale.*

817,095, page 1596, in heading, assignment, name of second-mentioned assignee, for "Francis Sarbay" read *Francis Sarlay.*

817,176, page 1694–1696, strike out all after number—heading, drawing, and claims—and insert WITHDRAWN.

817,349, page 1767, strike out all after number—heading, drawing, and claims—and insert CANCELED.

817,936, page 2079, in heading, residence of patentee, for "Hartford, Conn.," read *New Britian, Conn.*

818,336, page 2248, in heading, title of invention, for "Blue Dye and Process of Making Same" read *Anthracene Dye and Process of Making Same.*

818,619, page 2429, first to eighth claim, line 1 each claim, for "air-presser-driven" read *air-pressor-driven.*

818,651, page 2443, in heading, assignment, name of first-mentioned assignee, for "Asakel G. Wedge" read *Asahel G. Wedge.*

818,814, page 2517, in heading, assignment, name of assignee, for "Edward J. Brownell" read *Edward I. Brownell.*

819,010, page 2594, first claim, line 1, for "longitudinal " read *body.*

12,694, (Label,) page 336, title, for "Malt Juice." (For Malt-Juice.) read *Malt Juice.* (*For Malt Liquors.*)

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OF THE

UNITED STATES PATENT OFFICE.

MARCH—APRIL, 1906.

Patents Nos. 814,007 to 814,658.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 1. TUESDAY, MARCH 6, 1906. PRICE—$5 per year.

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Total issue	945	

TO CITIZENS OF THE UNITED STATES.

States	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	1	Nevada	1	.....
Alaska, District of	.....	.....	New Hampshire	2	2
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Louisiana	5	1	Virginia	1	5
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Minnesota	11	3	U. S. Army	1	.....
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Missouri	19	10	Total to citizens of the United States	590	267
Montana	2	.....			
Nebraska	7	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
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Mexico	.....	.....			

Notice.

Hereafter coupons unless properly filled out will not be accepted in payment for copies of publications.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 1, 1906.

John H. Thompson & Company, their assigns and legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION

Condition at Close of Business February 27, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 20	Jan. 13	272
306	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Feb. 15	Jan. 5	368
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 15	Oct. 11	613
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Feb. 14	Dec. 11	233
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 13	Jan. 19	238
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 13	Jan. 1	545
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 13	Dec. 9	322
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 12	Jan. 31	209
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 12	Jan. 17	318
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 12	Sept. 9	335
	Under one month.			
332	X. Carriages and Wagons	Feb. 8	Oct. 12	899
197	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Feb. 8	Aug. 1	713
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 7	Jan. 10	374
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 7	Oct. 27	508
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 7	June 5	670
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 5	Oct. 14	562
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Feb. 5	Oct. 7	641
170	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 5	July 10	356
123	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Feb. 2	Aug. 28	631
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 1	Dec. 1	420
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 1	Aug. 21	701
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Jan. 29	Dec. 11	445

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Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
327	XVIII. Steam-Engineering, etc	Jan. 27	Nov. 4	405
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal wear Making, Sheet-Metal ware Making, Tools, Wire-Working	Jan. 27	Oct. 16	347
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Jan. 72	Aug. 18	577
	Between one and two months.			
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Jan. 26	Jan. 29	318
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Jan. 23	Sept. 5	713
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 22	Dec. 9	426
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Jan. 22	Oct. 31	360
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 20	Oct. 21	292
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Jan 15	July 6	1138
109	XVI. Telegraphy and Telephony	Jan. 10	Dec. 12	322
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 6	Nov. 8	466
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 6	June 7	1028
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375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Jan. 3	Sept. 8	726
	Between two and three months.			
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Dec. 14	Sept. 12	604
	Between three and four months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 6	Sept. 23	538

Total number of applications awaiting action 18,860

Room No.	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
159	*Between one and two months.*			
	Trade-Marks	Jan. 23	Jan. 9	3037
	Under one month.			
	Designs	Feb. 7	Jan. 2	49
	Under fifteen days.			
	Labels and Prints	Feb. 23	Feb. 16	19

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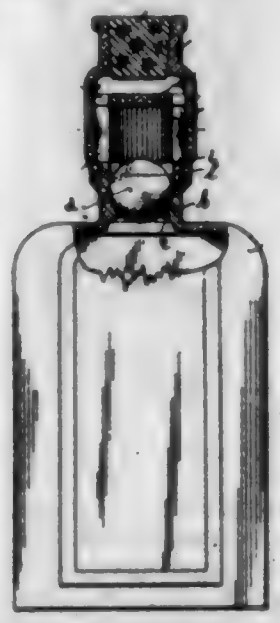
PATENTS

GRANTED MARCH 6, 1906.

814,007. **MOLD COMPOUND.** MAX AMS, Mount Vernon, N. Y. Filed Nov. 28, 1905. Serial No. 289,420.

Claim.—A mold compound composed of powdered mineral wool, plaster-of-paris, an agar-agar, substantially as specified.

814,008. **NON-REFILLABLE BOTTLE.** MATHIAS ANTES, New York, N. Y., assignor to Margaretha Antes, New York, N. Y. Filed Oct. 10, 1905. Serial No. 282,090.



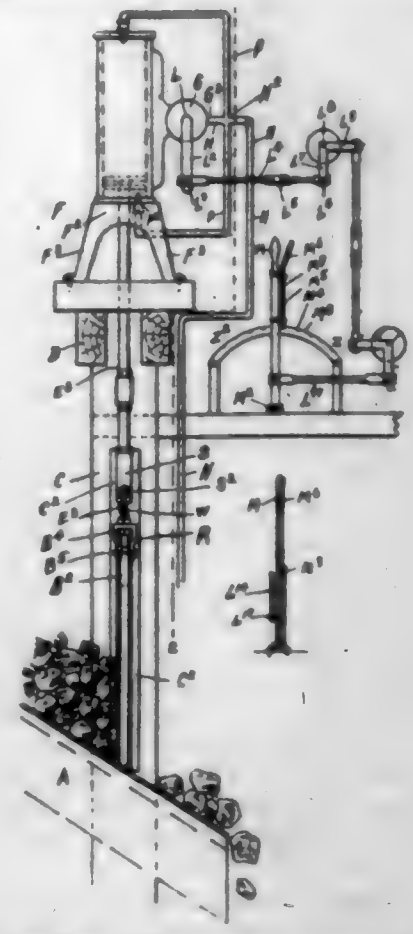
Claim.—1. A non-refillable bottle having a neck provided with a spherically-shaped seat for a ball-valve, a case fixed to said neck, the inner surface of said case being provided with ribs extending vertically upward, and forming between their inner edges a free cylindrical space the diameter of which is equal to that of the glass ball, to allow the latter to enter said space and to fit closely therein, a circular disk closing up the top of said free space and having openings all around its circumference, said openings registering with the spaces between the individual ribs, and a neck at the upper end of the case to receive a stopper, substantially and for the purpose as specified.

2. A non-refillable bottle having a neck provided with a spherically-shaped seat for a ball-valve, a case fixed to the said neck, the inner surface of the said case being provided with ribs extending vertically upward and forming between their inner edges a free cylindrical space the diameter of which is equal to that of the ball-valve, a circular disk closing up the top of said free space and having openings registering with the spaces between the individual ribs, a neck at the upper end of the case to receive a stopper, the opening in the neck of the case being at its bottom smaller in diameter than the central part of the disk covering the cylindrical space of the case between the inner edges of the ribs, substantially and for the purpose as specified.

814,009. **MEANS FOR OPERATING THE GATES OF COAL-TIPPLES.** LUTHER B. ARMENTROUT, Coaldale, W. Va. Filed Aug. 4, 1902. Serial No. 118,402.

Claim.—1. The combination of a chute, a gate, means for lifting and depressing the gate, a sliding and elastic connection between the gate and such means, said means being further provided with means for cushioning the stroke (movement) of the gate at each end of its stroke, substantially as and for the purposes specified.

2. The combination of a chute, a gate, means for lifting and depressing the gate, means for moving the gate through its stroke, a sliding elastic connection between the gate and such means, said means being provided with apparatus adapted to utilize a fluid for cushioning the gate at each end of its stroke, substantially as and for the purposes specified.



3. The combination of a chute, a gate, means for lifting and depressing the gate, means for moving the gate through its stroke, a sliding elastic connection between the gate and such means, said means being an engine adapted to be operated by a fluid and provided with apparatus adapted to utilize a fluid for cushioning the gate at each end of its stroke, substantially as and for the purposes specified.

814,010. **MECHANICAL MOVEMENT.** DANIEL ASHWORTH, Wappingers Falls, N. Y. Filed June 27, 1905. Serial No. 267,193.

Claim.—1. A mechanical movement comprising a rock-lever, a vertically-sliding rack carried thereby, a pinion meshing with the rack, a laterally-sliding rack, a wheel, a clutch device, a connection between the clutch device and vertically-sliding rack and a cam for controlling the movement of the laterally-sliding rack.

2. A mechanical movement comprising a rock-lever, a wheel, a brake, a clutch device, a connection between the rock-lever and clutch device, a cam for controlling the movement of the clutch device and a cam for operating the brake.

3. A mechanical movement comprising a rock-lever, a wheel, a brake, a reversible clutch device, a connection between the rock-lever and clutch device, a cam for reversing the clutch device and a cam for operating the brake.

4. A mechanical movement comprising a rock-lever, a wheel, a brake, a reversible clutch device, a connection between the rock-lever and clutch device, a cam for controlling the movement of the clutch device, a cam for reversing the clutch device and a cam for operating the brake.

5. A mechanical movement comprising a rock-lever, a wheel, a

brake, a reversible clutch device, a connection between the rock-lever and clutch device and a common cam-drum arranged to control the movement of the clutch device to reverse the clutch device and to operate the brake.



6. In a mechanical movement, a shaft, a wheel mounted thereon, a clutch device comprising an arm loosely mounted on the shaft, oppositely-arranged pawls carried thereby oppositely-arranged cams on the adjacent faces of the pawls, a spring tending to force the pawls into engagement with the periphery of the wheel and means engaging the cams for forcing the one or the other of the pawls out of engagement with the wheel.

7. In a mechanical movement, a shaft, a wheel mounted thereon, a clutch device comprising an arm loosely mounted on the shaft, oppositely-arranged pawls carried thereby, oppositely-arranged cams on the adjacent faces of the pawls, a spring tending to force the pawls into engagement with the periphery of the wheel and means engaging the cams for forcing the one or the other of the pawls out of engagement with the wheel comprising a transversely-sliding bar, a rock-lever carried by the arm, a sleeve loosely mounted on the shaft, a second rock-lever and a cam engaging said second-named rock-lever.

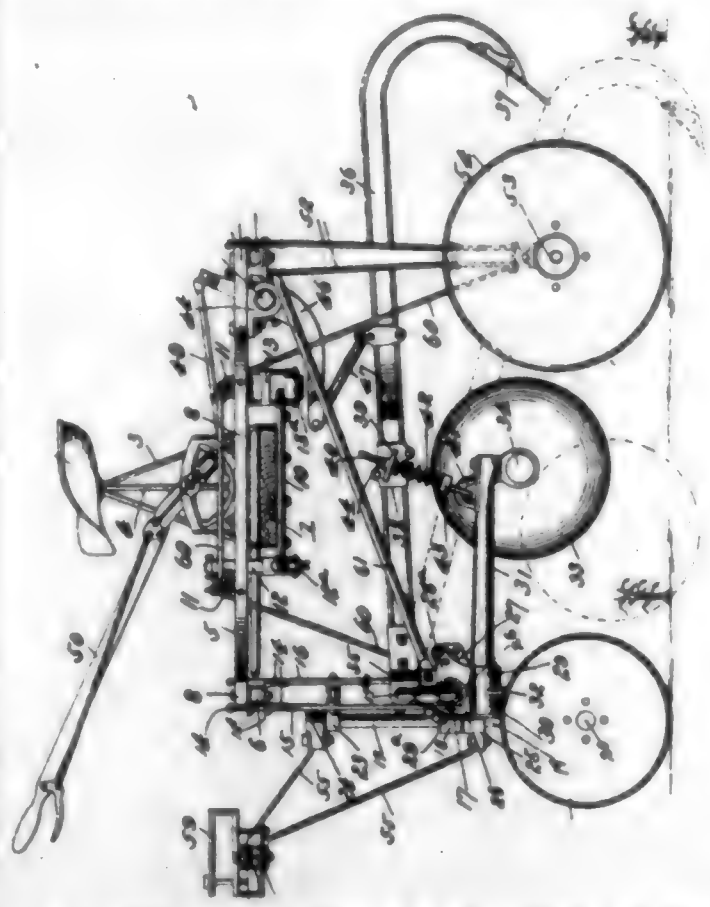
8. A mechanical movement comprising a rock-lever, a shaft, a wheel mounted thereon, a clutch device comprising oppositely-arranged arms loosely mounted on the shaft, pawls carried by the said arms for engaging the said wheel, connecting-bars extending between the arms and the rock-lever and a cam for controlling the position of the connecting-bar on the rock-lever.

9. A mechanical movement comprising a rock-lever, a vertically-sliding rack carried thereby, a wheel, a clutch device comprising oppositely-arranged arms, rods connecting the arms at a common point on the rack, pawls on the said arms arranged to engage the said wheel, a pinion engaging the rack, a transversely-sliding rack engaging said pinion and a cam for controlling the movement of the transversely-sliding rack.

814,011. CULTIVATOR. Nathaniel S. Barnes, St. Joseph, Mo. Filed July 12, 1905. Serial No. 269,375.

Claim.—1. A cultivator comprising a coupler-bar extending transversely of the cultivator and provided near each of its ends with side bars parallel with the front and rear edges of said coupler-bar, a frame loosely engaging each pair of side bars and supporting the coupler-bar, whereby the coupler-bar and said frames will be in loose sliding engagement with each other, said connecting means being located at the longitudinal center of each frame, forward furrow-wheels carried by said frame on each side of the longitudinal center thereof, rear transporting-wheels carried by said frames, cultivator-disks carried by said frames between the forward and rear transporting-wheels, cultivator-beams secured to said frames and carrying cultivator-shovels at their rear ends in the rear of the transporting-wheels, and means for simultaneously vertically adjusting the cultivator-disks and the cultivator-beams.

2. A cultivator comprising a transverse coupler-bar, a plurality of cultivator-sections, means for slidingly supporting said coupler-bar on said sections whereby said bar and said sections may have a lateral movement independently of each other, transporting-wheels carried by each of said sections, disk-carrying bars and cultivator-beams carried by each section, means connecting said beams and disk-carrying bars together whereby they may be simultaneously vertically adjusted, and yieldable devices between the cultivator-beams and the disk-carrying bars whereby the said bars may have a vertical movement independent of the cultivator-beams.



3. A frame for a cultivator of the class described, comprising front and rear bars, side bars and intermediate bars, the side bars being bent inward and the intermediate bars being bent outward, these bars being brought together to form double longitudinal bars, transporting-wheels, and cultivating means carried by said frame.

4. A cultivator comprising a coupler-bar, a plurality of cultivator-frames, means for slidingly connecting the coupler-bar to said frames, said connecting means being at the longitudinal center of said frames, each of said frames consisting of the forward and rear bars, side bars, and intermediate bars, said side bars being bent inward, and said intermediate bars being bent outward, adjoining side bars and intermediate bars being brought together to form the double longitudinal bar, transporting-wheels, cultivating means carried by each of said frames, and draft devices connected to the forward end of each frame.

5. A cultivator comprising a coupler-bar a plurality of frames slidingly connected thereto, said frames supporting said coupler-bar, each of said frames carrying front and rear bars, a pair of wheel-standards adjustably connected to each of said bars, transporting-wheels mounted in said standards, a horizontal outward-extending arm secured to each of the forward-wheel standards, a disk-carrying bar mounted on said horizontal arm, a cultivator-disk carried by each of said bars, an outward-extending beam-carrying arm connected to each of the forward-wheel standards, a cultivator-beam mounted upon each of said beam-carrying arms, and means for vertically adjusting the cultivator-beams and disk-carrying bars.

6. A cultivator comprising a transverse coupler-bar, a plurality of coupler-frames, means for forming a loose sliding connection between said frames and said coupler-bar, transporting-wheels carried by said frames, a pair of horizontal arms carried by each frame, said arms extending in opposite direction and being angular in cross-section, a pair of laterally-movable collars on each of said arms, said collars being held against rotation, a stirrup carried by each, of said arms and rotatably mounted on the collars thereof, a disk-bar carried by said stirrup, cultivator-disk carried by each of said disk-carrying bars, a pair of horizontal beam-carrying arms carried by each of said frames above and parallel with the angular arms, a cultivator-beam pivotally and slidably mounted on each of said beam-carrying arms, means for yieldably connecting adjoining cultivator-beams and disk-

carrying bars, and means for vertically adjusting the cultivator-beams.

7. A cultivator comprising a coupler-bar, a plurality of cultivator-frames slidably connected thereto, said frames supporting said coupler-bar, a pair of wheel-standards connected to the forward portion of each of said frames, a horizontal laterally-extending arm carried by each of said wheel-standards, said arms being angular in cross-section and extending in opposite directions, a pair of collars mounted on each of said angular arms, a stirrup rotatable on each of said pairs of collars, a disk-carrying bar secured in each stirrup between the collars, a horizontal beam-carrying arm connected to each forward-wheel standard above the angular bar and parallel therewith, a cultivator-beam pivotally mounted on each of said beam-carrying arms, means for yieldably connecting adjoining cultivator-beams and disk-carrying bars, and means for vertically adjusting the cultivator-beams.

8. A cultivator comprising a pair of supporting-frames, a transverse coupler-bar supported by and loosely connecting said frames whereby said frames may have a limited lateral movement independently of each other, a pair of forward furrow-wheels carried by each frame, vertical pivotal supports for said wheels between each pair of wheels, laterally-adjustable supports carried by said frames and in which the pivotal supports of said wheels are mounted, cultivator means carried by said supports, forward-extending guide-rods connected to the pivotal supports of the furrow-wheels, a transverse draft-beam connected to the forward ends of each pair of guide-rods, means for connecting the draft to said draft-beam midway between each pair of guide-rods, rear supporting-wheels

9. A cultivator comprising a pair of supporting-frames, a transverse coupler-bar, means for loosely connecting the coupler-bar to the frame whereby the frames may have a lateral movement independently of each other, a pair of wheel-supports secured to the front of each frame, a pair of forward furrow-wheels carried by said supports, a pair of horizontal outward-extending bars carried by each of said wheel-supports, a laterally-adjustable disk-carrying arm carried by one of the bars of each pair, a laterally-adjustable cultivator-beam carried by the other bar of each pair, and rear supporting-wheels carried by each frame.

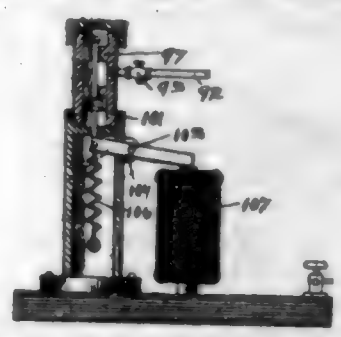
10. A cultivator comprising a supporting-frame, a pair of forward-wheel supports mounted in said frame, a pair of forward furrow-wheels mounted in said supports, an outward-extending rectangular arm carried by each of said supports, a pair of laterally-adjustable collars carried by each of said arms, a disk-carrying arm pivotally mounted on each pair of collars, means for vertically adjusting said disk-carrying arm, and rear supporting-wheels carried by said frame.

11. A cultivator comprising a supporting-frame, a pair of forward-wheel supports mounted in said frame, a pair of forward furrow-wheels mounted in said supports, an outward-extending rectangular arm carried by each of said supports, a pair of laterally-adjustable collars carried by each of said arms, a disk-carrying arm pivotally mounted on each pair of collars, means for vertically adjusting said disk-carrying arm, an outward-extending horizontal cylindrical bar carried by each wheel-support above the rectangular bar, a laterally-adjustable cultivator-beam mounted on each of said cylindrical bars, means for vertically adjusting said cultivator-beams, and rear supporting-wheels carried by said frame.

12. A cultivator comprising a supporting-frame, a pair of wheel-supports at the forward end of said frame, flanged plates secured to the upper ends of said supports and adapted to embrace the forward bar of said frame, said flange-plates engaging the upper and lower surfaces of said bar, clamping means securing said plates to the wheel-supports and adjustably clamping said plates to said bar, a pair of forward furrow-wheels, a vertical pivot for each of said wheels carried by each wheel-support on the inner side thereof, the lower ends of said pivots extending outwardly to receive the wheels, an outward-extending substantially horizontal bar carried by each of said wheel-supports, cultivator means carried by each of said bars, forward-extending guide-rods connected to the pivotal supports of the wheel, said guide-rods lying parallel with the vertical plane of the furrow-wheels, a transverse draft-bar connected to the forward ends of said guide-rods, and means for connecting the draft to this draft-bar midway between the guiding-rods whereby the draft will be attached wholly to the draft-bar and the strain of the draft will hold the furrow-wheels parallel with the line of draft.

13. A cultivator comprising a supporting-frame, a pair of wheel-supports at the forward end of said frame, a pair of forward furrow-wheels, a vertical pivot for each of said wheels carried by each wheel-support on the inner side thereof, the lower ends of said pivots extending outwardly to receive the wheels, an outward-extending substantially horizontal bar carried by each of said wheel-supports, cultivator means carried by each of said bars, forward-extending guide-rods connected to the pivotal supports of the wheel, said guide-rods lying parallel with the vertical plane of the furrow-wheels, a transverse draft-bar connected to the forward ends of said guide-rods, and means for connecting the draft to this draft-bar midway between the guiding-rods whereby the draft will be attached wholly to the draft-bar and the strain of the draft will hold the furrow-wheels parallel with the line of draft.

814,012. **AUTOMATIC RAILWAY SAFETY-GATE.** HENRY B. BARTLETT, Chicago, Ill. Filed Apr. 4, 1905. Serial No. 253,770.



Claim.—1. In an automatic railway safety-gate, an actuating mechanism for the gate adapted to be operated by fluid-pressure, a valve controlling the flow of fluid-pressure to the actuating device, an electromagnet adapted to actuate the valve, a line-circuit adapted to be closed by the passage of a train over the track, a circuit-closer adapted to be actuated by the closing of the line-circuit, a valve-circuit leading from the circuit-closer to the valve-actuating electromagnet, and means for maintaining a closed circuit through the closer for a predetermined period of time, substantially as described.

2. In an automatic railway safety-gate, the combination of an actuating mechanism for the gate, adapted to be operated by fluid-pressure, a valve controlling the flow of fluid-pressure to the actuating device, and an electromagnet adapted to actuate the valve, a line-circuit adapted to be closed by the passage of a train over the track, a circuit-closer adapted to be actuated by the closing of the line-circuit, a valve-circuit leading from the circuit-closer to the valve-operating electromagnet and means for maintaining a closed circuit through the circuit-closer for a predetermined period of time after the primary closer has been broken, substantially as described.

3. In an automatic railway safety-gate, the combination of an actuating mechanism for the gate, adapted to be operated by fluid-pressure, a valve controlling the flow of fluid-pressure to the actuating device, and an electromagnet adapted to actuate the valve, a line-circuit adapted to be closed by the passage of a train over the track, a circuit-closer adapted to be actuated by the closing of the line-circuit, a valve-circuit leading from the circuit-closer to the valve-operating electromagnet and means for maintaining a closed circuit through the circuit-closer for a predetermined period of time after the primary closer has been broken, and a circuit-breaker in the valve-circuit adapted to be actuated by the passage of a train past the gate for breaking the valve-circuit and allowing the gate to immediately rise, substantially as described.

4. In an automatic railway safety-gate, the combination of an actuating mechanism for the gate, adapted to be operated by fluid-pressure, a valve controlling the flow of fluid-pressure to the actuating device, and an electromagnet adapted to actuate the valve, a line-circuit adapted to be closed by the passage of a train over the track, a circuit-closer adapted to be actuated by the closing of the line-circuit, a valve-circuit leading from the circuit-closer to the valve-operating electromagnet and means for maintaining a closed circuit through a circuit-closer for a predetermined period of time after the primary circuit has been broken, a local circuit adapted to be closed by the passage of a train past the gate, a local-circuit closer adapted to be actuated for a predetermined period of time by the closing of the local circuit, and a circuit-breaker in the valve-circuit adapted to be actuated by the circuit-closer for breaking the valve-circuit for a predetermined period of time, substantially as described.

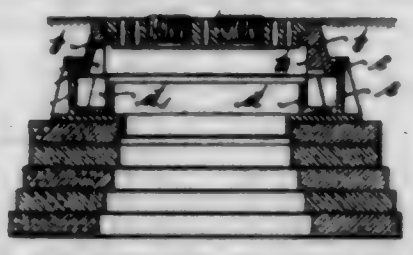
5. In an automatic railway safety-gate, the combination of a gate-closing mechanism adapted to be operated by fluid-pressure, a valve controlling the admission of fluid-pressure, an electromagnet adapted to actuate the valve, a line-circuit extending in opposite directions from the gate and adapted to be closed by the passage of a train toward the gate from either direction, a line-circuit closer

adapted to be actuated by the closing of the line-circuit from either direction, circuit-breakers in the line-circuit on opposite sides of the line-circuit closer, a valve-circuit for actuating the valve-operating electromagnet and adapted to be closed by the line-circuit closer, a circuit-breaker in the valve-circuit and a local circuit adapted to be closed by the passage of a train past the gate for simultaneously breaking the line-circuit and the valve-circuit, substantially as described.

6. In an automatic railway safety-gate, the combination of a gate-closing mechanism adapted to be operated by fluid-pressure, a valve controlling the admission of fluid-pressure, an electromagnet adapted to actuate the valve, a line-circuit extending in opposite directions from the gate and adapted to be closed by the passage of a train toward the gate from either direction, a line-circuit closer adapted to be actuated by the closing of the line-circuit from either direction, circuit-breakers in the line-circuit on opposite sides of the line-circuit closer, a valve-circuit for actuating the valve-operating electromagnet and adapted to be closed by the line-circuit closer, a circuit-breaker in the valve-circuit, a local circuit adapted to be closed by the passage of a train past the gate, a local-circuit closer adapted to be actuated for a predetermined period of time by the closing of the local circuit, and a breaker-circuit leading to the three circuit-breakers and adapted to be closed for a predetermined period of time by the local-circuit closer, substantially as described.

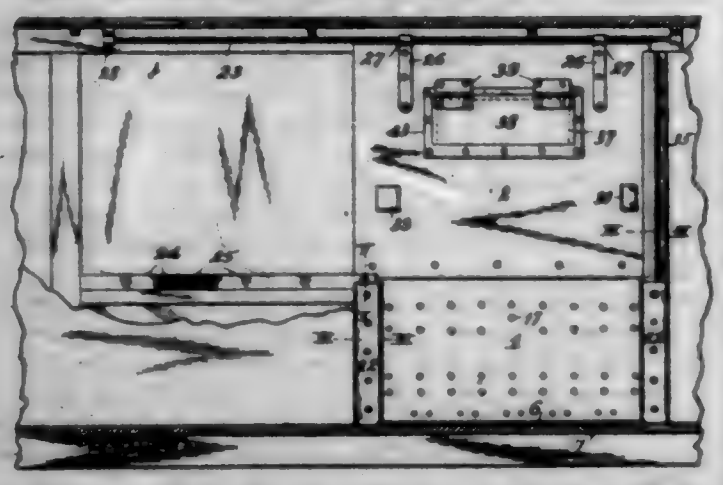
7. In an automatic railway safety-gate, the combination of a gate-shaft, a piston for rotating the gate-shaft, a cylinder within which the piston is located, a pressure-supply tank, a pipe leading therefrom to the cylinder, a valve located in said pipe and consisting of a valve-casing having therein a movable valve-stem, a lever pivoted to the valve-stem for operating the same, a spring for normally holding the valve-stem seated, and an electromagnet adapted to draw down the free end of the lever against the tension of the spring to open the valve, substantially as described.

814,013. COVER FOR ROAD-MANHOLES. FRITZ BAUMANN, Kaiserslautern, Germany. Filed July 1, 1904. Serial No. 215,010.



Claim.—A manhole-cover, comprising a lid, a frame carrying the same and provided with steps on its inner wall, a guide-frame receiving the first-said frame, and a ring located within the guide-frame and presenting supports upon which the said stepped frame rests, substantially as described.

814,014. COMBINED GRAIN-DOOR AND LOADING AND UNLOADING PLATFORM FOR BOX-CARS. JACOB S. BENDER, Kansas City, Mo., assignor to Bender Car Door Company, a Corporation of Arizona. Filed June 12, 1905. Serial No. 264,805.

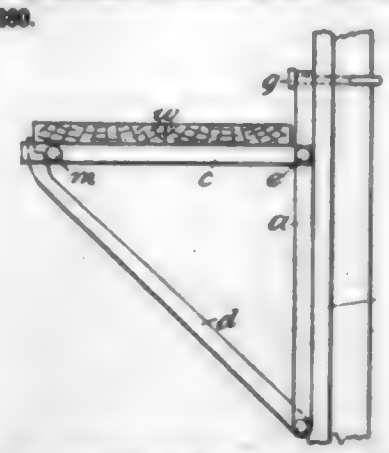


Claim.—1. The combination with a box-car and the door-jambs thereof, of a grain-door, a section forming the lower portion of said door and hinged at the threshold of the door-opening, a sliding section forming the upper portion of the door and lapping the upper portion of the lower section, and an angle-plate secured to one of the door-jambs to form a pocket for the reception of the forward edge of the upper section, substantially as described.

2. The combination with a box-car, of a grain-door, a section forming the lower portion of said door and hinged at the threshold of the door-opening, a sliding section forming the upper portion of the door and lapping the upper portion of the lower section, arms 26 secured to the upper portion of said upper section, looped terminals 27 on the upper ends of said arms, brackets secured to the upper inner portion of the car, a rod extending through loops 27 and carried by the brackets, and means for guiding the lower portion of the upper section, substantially as described.

3. The combination with a box-car, of a grain-door, a section forming the lower portion of said door and hinged at the threshold of the door-opening, a sliding section forming the upper portion of the door and lapping the upper inner portion of the lower section, means for supporting and guiding the upper portion of said upper section, antifriction-rollers upon which said upper section is arranged to travel, and a channel-bar 24 in which said rollers are mounted, substantially as described.

814,015. FOLDING SCAFFOLD-BRACKET. MICHAEL BLITSCH and THOMAS F. MCDONNELL, Waterloo, Iowa. Filed Feb. 25, 1905. Serial No. 247,280.



Claim.—1. In a folding scaffold-bracket, a looped body portion having its upper part slightly bent forward to provide two points of contact on its rear surface, a bracket pivoted to said body portion, and a pivoted brace for said bracket.

2. In a folding scaffold-bracket, a looped body portion whose loop is contracted at the top to form a seat for a clutch-pin, a clutch-pin, a bracket pivoted to said body portion, and a pivoted brace for said bracket.

3. In a folding scaffold-bracket, a looped body portion whose loop is broadened in its upper part and bent forward there to provide two points of contact on its rear surface, said loop then being contracted at the top to form a seat for a clutch-pin, a clutch-pin, a bracket pivoted to said body portion, and a pivoted brace for said bracket.

4. In a folding scaffold-bracket, a looped body portion whose loop is contracted at the top to receive and hold the head of a clutch-pin, a headed clutch-pin having a hooked outer end adapted to clutch a studding, a looped bracket pivoted to said body portion, and a brace pivoted to the said body portion having detents at its free end adapted to hook into and clutch the outer end of said looped bracket.

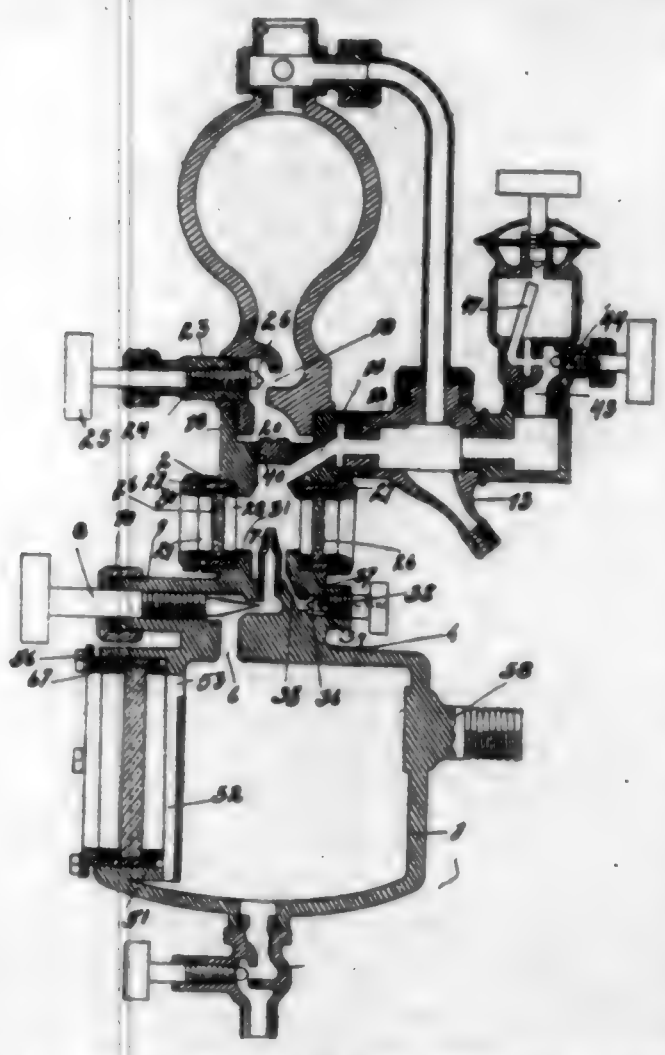
5. In a folding scaffold-bracket, a looped body portion whose upper part is broadened and bent forward slightly to provide two points of contact on its rear surface, said loop then being contracted at the top to receive and hold the head of a clutch-pin, a headed clutch-pin having a hooked outer end adapted to clutch a studding, a bearing-bolt connecting and spacing apart the lower ends of the loop of said body portion, a looped bracket pivoted to the broadest part of the loop of said body portion, and having a closed loop at its free end, and a brace pivoted on said bearing-bolt, and having its free end furnished with detents arranged to separably engage and clutch the closed loop on the free end of said bracket.

814,016. LUBRICATOR. WILLIAM H. BRYANT, GEORGE M. WOLCOTT, and ROBERT DAVIDSON, Detroit, Mich., assignors to Michigan Lubricator Company, Detroit, Mich., a Corporation. Filed Apr. 22, 1904. Serial No. 204,560.

Claim.—1. A condensation-displacement lubricator, comprising a condensing-chamber, an oil-reservoir, a plurality of independent sight-feed features arranged in a row on the top of the reservoir and communicating directly with the interior of the reservoir through said top, and an independent equalizing-tube for each sight-feed feature.

2. A condensation-displacement lubricator, comprising a con-

denser, a cylindrical oil-reservoir, a plurality of sight-feed features arranged in a row across the top of said reservoir, each sight-feed feature communicating directly and independently with the interior of the reservoir, and an independent equalizing-tube for each sight-feed feature.



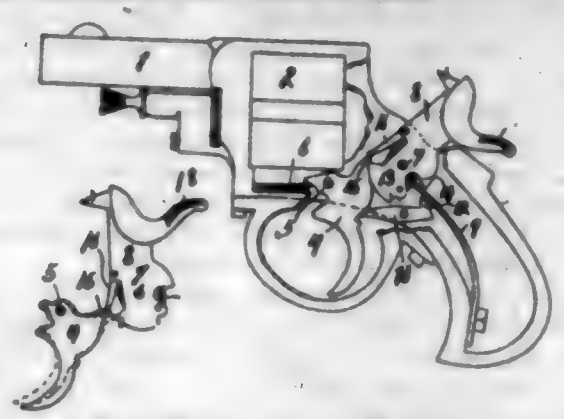
3. In a lubricator, the combination of the reservoir, an oblong sight-feed member mounted upon the top of the reservoir and communicating directly therewith, observation-glasses in the opposite ends of said sight-feed member, a discharge-arm communicating with the sight-feed member at a point above said glasses, a condenser communicating with the bottom of the reservoir, and an exterior equalizing-tube connecting the condenser with the oil-discharge arm.

4. In a lubricator, the combination of the reservoir, a hollow sight-feed member formed integral with and located upon the top of said reservoir and communicating directly therewith, an observation-glass in each end of said hollow sight-feed member, an oil-discharge arm communicating with said hollow member at a point above said glasses, a condenser communicating with the bottom of the reservoir, and an equalizing-tube communicating with the oil-discharge arm independently of the sight-feed member.

5. In a lubricator, the combination of a cylindrical reservoir, a plurality of sight-feed members formed integral with and mounted upon the top of said reservoir, each sight-feed member communicating directly therewith, said sight-feed members forming oblong sight-feed chambers whose major axes extend in horizontal planes, an observation-glass in each end of each of said sight-feed members, a condenser mounted upon one of the sight-feed members, there being in the wall of said member a passage-way connecting the condenser with the bottom of the reservoir, an oil-discharge arm communicating with each of said sight-feed members, and an equalizing-tube connected with each of said discharge-arms.

6. In a lubricator, the combination with the cylindrical reservoir, of a plurality of sight-feed members mounted upon the top of said reservoir, said sight-feed members forming oblong sight-feed chambers, there being a valve-controlled passage-way for each of said chambers formed through the top of the reservoir, establishing direct communication between said reservoir and chambers, an observation-glass at each end of each of said sight-feed chambers, a condenser mounted upon the middle of said sight-feed members, and communicating with the bottom of the reservoir, an oil-discharge arm communicating with each of said sight-feed chambers, and an equalizing-tube connected with each of said discharge-arms.

814,017. **REVOLVER-LOCK.** DUNCAN J. BUCHANAN, Detroit, Mich. Filed July 11, 1904. Serial No. 215,978.



Claim.—1. In a safety firing mechanism for hammer-revolvers, the combination with the parts comprising the pivoted trigger and hammer, of connecting members between said parts whereby either part may be moved by a movement of the other of said parts, said connecting members automatically locking the hammer when down against being raised by the application of pressure to its thumb-piece, but allowing the hammer to be raised through a movement of the trigger.

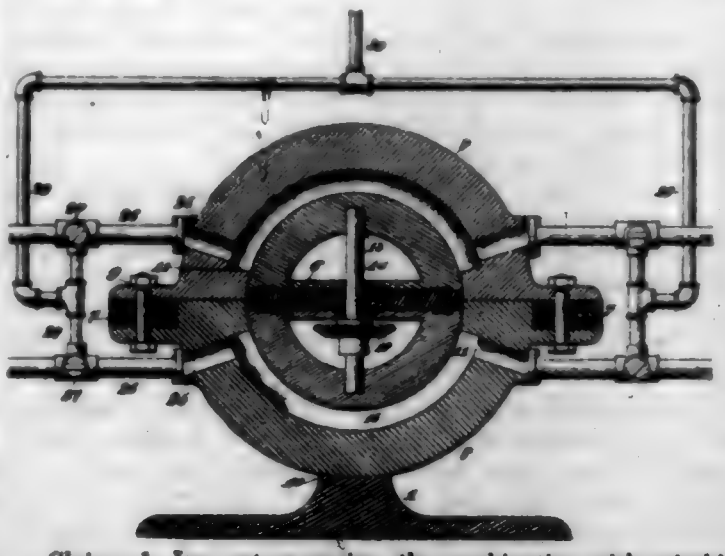
2. In a safety firing mechanism for hammer-revolvers, the combination of the parts comprising the pivoted trigger and hammer, each being provided with a projecting engageable member, through the medium of which each of said parts may be moved by a movement of the other part, said projecting members normally engaging each other to lock the hammer against being directly raised.

3. In a safety-hammer revolver, the combination of the parts comprising the pivoted trigger and hammer, having thereon engaging members which normally lock the hammer against being raised by a direct application of pressure, said locking members being adapted to be unlocked to release the hammer by a movement of the trigger.

4. In a safety-hammer revolver, the combination of the parts consisting of a pivoted hammer having thereon a projecting member, a pivoted trigger also having a projecting member adapted to normally abut against the projecting member of the hammer to lock the hammer against movement upon its pivot by the application of pressure to the head thereof.

5. In a safety-hammer revolver, the combination of the pivoted hammer having an engaging projection, of the pivoted trigger carrying an engaging projection normally extending into the path of, and abutting against said projection on the hammer to lock the hammer against movement by the application of pressure to the head thereof, said locking projection on the trigger being adapted to be moved from the path of the projection on the hammer by a movement of the trigger upon its pivot, and connecting means between the trigger and hammer for raising the hammer by a movement of the trigger.

814,018. **ROTARY ENGINE.** ELZA J. CHRISTIE, Marion, Iowa, assignor to Sarah J. Christie, Marion, Iowa. Filed Oct. 7, 1904. Serial No. 227,616.



Claim.—1. In a rotary engine, the combination with suitable bearings, of a steam-chest ring forming the equatorial section of a hollow sphere, a driver fitted to revolve therein, and provided with a circumferential steam-recess adjacent to the steam-chest ring, and with an externally-accessible steam-disk or valve seat to take a con-

trally-mounted valve or steam-disk in an expanded part of the driver transverse to the ring, a valve or steam-disk mounted to turn in said seat, and means for revolving the same.

2. In a rotary engine, the combination with a suitable base and bearings, of a rotary driver provided with a circumferential steam-recess, a steam-chest ring in contact therewith, and provided with oppositely-disposed abutments fitting said recess, a disk having oppositely-disposed gaps to pass said abutments carried by the driver and adapted to intercept the steam in said recess at points intermediate of the abutments, and means for giving positive rotation to the disk in a plane transverse to that of the driver.

3. In a rotary engine, the combination with a suitable base and bearings, of a rotary driver having a central ring with a circumferential steam-recess, and a transversely-expanded portion forming a seat for a steam-disk, a steam-chest ring in contact with said driver-ring, and provided with abutments fitting said recess, a steam-disk carried by the driver, and adapted to cut across said recess, with peripheral gaps to permit it to pass the abutments, and means for revolving it in a plane transverse to that of the driver.

4. In a rotary engine, the combination with a suitable base and bearings, of a rotary driver having a cylindrical middle portion with circumferential steam-recess therein, a steam-chest ring fitted thereto, and having abutments fitting said recess, a disk carried by the driver, having peripheral gaps to permit it to pass the abutments, and adapted to cut across and close said recess, a fixed gear concentric with the axis of the driver, and gearing connecting the same and the disk, whereby it is positively revolved in a plane transverse to that of the driver.

5. In a rotary engine, the combination with a rotary driver, of a steam-chest ring forming the equatorial section of a hollow sphere, in continuous contact with said driver, and a disk carried by the driver, the disk being the corresponding section of a solid sphere, and means for revolving the disk on an axis central to the ring and parallel with its sides.

6. In a rotary engine, the combination of a rotating driver having a cylindrical central portion with a circumferential steam-recess therein, a ring inclosing the same, abutments on said ring fitting said recess, steam-ports adjacent to the abutments, a disk mounted in the driver in a plane transverse to the ring and having peripheral gaps for the passing of the abutments, the said disk being adapted to cut across the recess and contact with the ring between the abutments, means for imparting rotary motion to the disk as the driver revolves, an auxiliary cut-off valve, and means for operating the same to open after the gaps in the disk have passed the abutments.

814,019. GOLD-DREDGE. Horace J. Clark, Boise, Idaho, assignor to The Clark Dredging Company, Chicago, Ill., a Corporation of Nevada. Filed Mar. 20, 1905. Serial No. 251,170.

Claim.—1. In a dredge, a segmental scoop provided with a conducting-space therein, and a reticulated receiving-face thereto, and a hollow hub communicating with said space.

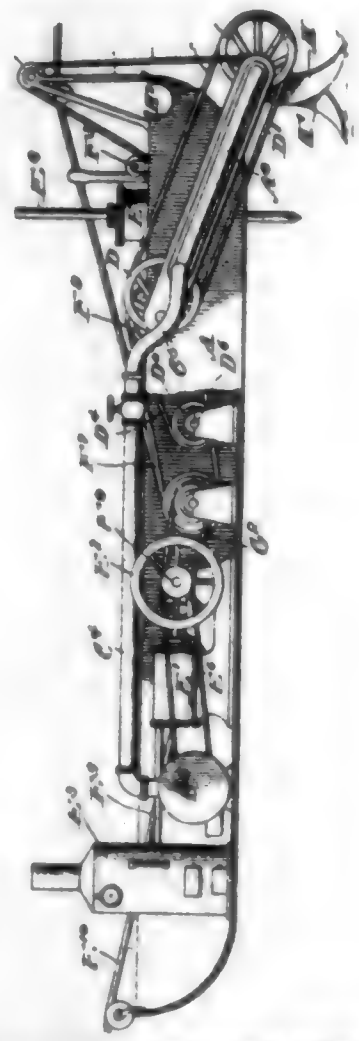
2. In a dredge, a segmental scoop provided with a conducting-space therein and a reticulated receiving-face thereto, a hollow hub communicating with said space, means for creating a suction within said hub, and means for oscillating said scoop.

3. In a dredge, a scoop provided with a conducting-space therein, and a reticulated receiving-face thereto, a hollow hub communicating with said space, means for creating a suction within said hub, means for adjusting the openings in the reticulated face of said scoop, swinging arms upon which said hub is mounted, and means for raising and lowering said arms.

4. In a dredge, a scoop provided with a conducting-space therein and a reticulated face thereto, a hollow hub communicating with said space, means for creating a suction within said hub, means for oscillating said scoop, swinging arms upon which said hub is mounted, means for raising and lowering said arms, and curved plates secured to the outer faces of the arms to form conducting-passages upon said arms communicating with said hub.

5. In a dredge, a scoop provided with a conducting-space therein and a reticulated receiving-face thereto, a hollow hub communicating with said space, means for adjusting the openings in the reticulated face of said scoop, swinging arms upon which said hub is mounted, means for raising and lowering said arms, conducting-passages upon said arms communicating with said hub, and means for exerting a pressure within one of said arms and a suction within the opposite arm.

6. In a dredge, a scoop provided with a conducting-space therein and a reticulated face thereto, a hollow hub communicating with said space, a nozzle for creating a suction within said hub, means for oscillating said scoop, swinging arms upon which said hub is rotatably mounted, means for raising and lowering said arms, conducting-passages upon said arms communicating with said hub, means for exerting a pressure within one of said arms and a suction within the opposite arm, a pressure-nozzle within said hub at one end, and bolting-flanges provided upon said hub for connecting a plurality thereof together.



7. In a dredge, a scoop provided with a hollow hub, a solid segmental rear wall, an apertured front wall spaced therefrom to form a passage communicating with said hub, and an apertured adjusting-plate mounted upon the front wall of said scoop.

8. In a dredge, a scoop provided with a hollow hub, a solid segmental rear wall, an apertured front wall spaced therefrom to form a passage communicating with said hub, an apertured adjusting-plate mounted upon the front wall of said scoop, a flange disposed at one end of said hub, and a side wall disposed in contact with said flange.

9. In a dredge, a suction-pipe comprising a plurality of hollow hubs secured together and each provided with a radially-disposed scoop having a passage therein communicating with the hub and an apertured wall.

10. In a dredge, a suction-pipe comprising a plurality of hollow hubs secured together and each provided with a radially-disposed scoop having a passage therein communicating with the hub, and an apertured wall, supporting-arms for said hubs provided with nozzle portions threaded into the opposite ends of the hubs, conducting means carried by said arms to communicate with said nozzles, and means for rotating said hubs.

11. In a dredge, a suction-pipe comprising a plurality of hollow hubs secured together and each provided with a radially-disposed scoop having a passage therein communicating with the hub, and an apertured wall, supporting-arms for said hubs provided with nozzle portions threaded into the opposite ends of the hubs, conducting means carried by said arms to communicate with said nozzles, and wheels for rotating said hubs and disposed eccentrically to the axis of the hubs.

12. In a dredge, a suction-pipe comprising a plurality of hollow hubs secured together and each provided with a radially-disposed scoop having a passage therein communicating with the hub, and an apertured wall, supporting-arms for said hubs provided with nozzle portions threaded into the opposite ends of the hubs, conducting means carried by said arms to communicate with said nozzles, wheels for rotating said hubs and disposed eccentrically to the axis of the hubs, driving-shafts for said hubs provided with eccentrically-disposed wheels thereon, and a gearing extended between said wheels.

13. In a dredge, a suction-pipe comprising a plurality of hollow

hubs secured together and each provided with a radially-disposed scoop having a passage therein communicating with the hub, and an apertured wall, supporting-arms for said hubs provided with nozzle portions threaded into the opposite ends of the hubs, conducting means carried by said arms to communicate with said nozzles, wheels for rotating said hubs and disposed eccentrically to the axis of the hubs, driving-shafts for said hubs provided with eccentrically-disposed wheels thereon, a gearing extended between said wheels, a pressure device communicating with the conducting means upon one of said arms, and a suction device communicating with the conducting means upon the opposite arm.

14. In a dredge, a boat structure, pivotally-mounted arms supported at one end thereof, a suction-hub supported in said arms and communicating with said boat, a scoop carried by said hub, and eccentrically-disposed means upon said hub for oscillating said scoop.

15. In a dredge, a boat structure, pivotally-mounted arms supported at one end thereof, a suction-hub supported in said arms and communicating with said boat, a scoop carried by said hub, means for oscillating said scoop, supporting-standards upon one end of the boat, and means carried by said boat and passing over said standards for elevating said arms and the scoop carried thereby.

16. In a dredge, a suction-scoop, pivotally-mounted arms for supporting the same, a casing carried by one face of said arms and communicating with the hub of said scoop, a pressure device communicating with said casing and with a nozzle at one end of said hub, and a suction device communicating with the opposite casing and the opposite end of said hub.

17. In a dredge, a suction-scoop, pivotally-mounted arms for supporting the same, passages carried by said arms and communicating with the hub of said scoop, a pressure device provided with a nozzle at one end of said hub, a suction device communicating with the opposite end of said hub, means mounted upon said hub for oscillating the same upon said arms, and driving connections for operating said oscillating means.

18. In a dredge, a suction-scoop, pivotally-mounted arms for supporting the same, passages carried by said arms and communicating with the hub of said scoop, a pressure device provided with a nozzle at one end of said hub, a suction device communicating with the opposite end of said hub, means mounted upon said hub for oscillating the same upon said arms, driving connections for operating said oscillating means, an elevating-cable connected to the free end of said arms, a bearing-standard for said cable, and a winding-drum for said elevating-cable.

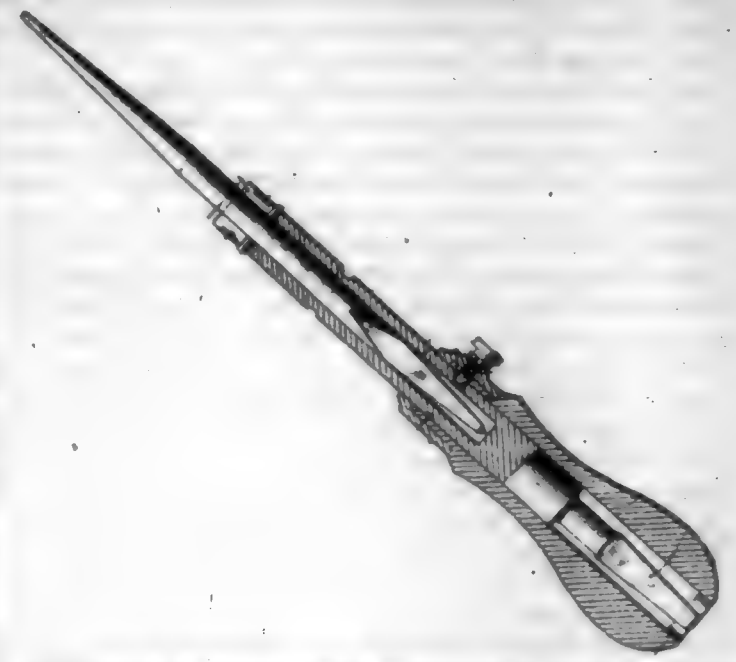
19. In a dredge, a scoop comprising a hollow hub, a segmental portion extending from said hub and provided with a perforated face and a chamber communicating with said hub, an adjustable perforated plate mounted upon said perforated face to vary the capacity of the apertures thereof, flanges at the opposite ends of said hub, and side walls for said scoop disposed between the flanges of adjacent hubs.

20. In a dredge, a scoop comprising a hollow hub, a segmental portion extending from said hub and provided with a perforated face and a chamber communicating with said hub, an adjustable perforated plate mounted upon said perforated face to vary the capacity of the apertures thereof, flanges at the opposite ends of said hub, side walls for said scoop disposed between the flanges of adjacent hubs, a supporting-arm for said hub, and a casing upon the outer face of said arm to provide a channel communicating with said hub.

814,020. **HAND-CONTROLLED TOOL.** HARLOW A. CLIFFORD, Millers Falls, Mass. Filed May 19, 1905. Serial No. 261,210.

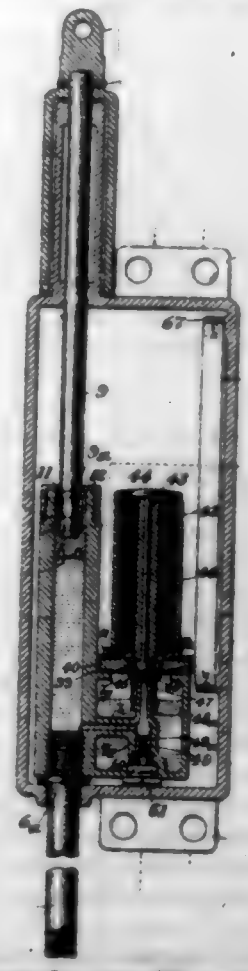
Claim.—1. A tool comprising a handle having an open-ended longitudinal bore, a stock slidable and rotatable within the handle and exceeding the length thereof, said stock being provided with a forward annular channel and a rear lateral socket, and a spring-pressed locking-pin carried by the handle and capable of engaging the socket to interlock the handle and the stock for simultaneous rotation with the rear end of the stock within the handle, said handle capable of being slid forwardly upon the stock to engage the locking-pin with the annular channel and permit rotation of the stock within the handle with the rear end of the stock projected beyond the handle for engagement with a brace.

2. A tool comprising a stock having its rear end formed for connection with a brace, a tubular open-ended handle slidably embracing the stock with the latter rotatable in the handle, and means for interlocking the handle and stock for simultaneous rotation when the handle is at the rear end of the stock and for permitting rotation of the stock and preventing endwise movement thereof through the handle when the latter is shifted to an intermediate portion of the stock with the rear end of the latter exposed for engagement with a brace.



3. A tool comprising a stock provided with a forward annular groove and a rear lateral socket, the rear end of the stock being formed for engagement with a brace, a tubular open-ended handle slidably embracing the stock with the latter rotatable therein, and a locking device carried by the handle for engagement with the socket of the stock to interlock the handle and stock for simultaneous rotation when the handle is at the rear end of the stock with said rear end covered thereby, said locking device capable of engaging the annular groove when the handle is shifted forwardly upon the stock to expose the rear end of the stock for engagement with a brace and thereby permit rotation of the stock within the handle and prevent endwise movement of the stock through the handle.

814,021. **RAILWAY-TRAFFIC-CONTROLLING APPARATUS.** CLARENCE W. COLEMAN, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed Apr. 13, 1905. Serial No. 255,301.



Claim.—1. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means therefor, and a chamber arranged to be varied in volume by relative movement of the movable actuative means and the traffic-controlling means proper and arranged to transmit actuative or controlling motion or

force from the movable actuative means to the traffic-controlling means proper by fluid-pressure developed by tendency to such relative movement and variation in chamber volume, a fluid-vent connected to the chamber, and means for controlling the vent to relieve the fluid-pressure and permit relative movement of the actuative means and traffic-controlling means proper.

2. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means therefor, a fluid arranged to be compressed by relative movement or tendency toward relative movement of the movable actuative means and the traffic-controlling means proper and arranged to transmit actuative or controlling movement or force from the movable actuative means to the traffic-controlling means proper by fluid-pressure of the compression due to the said relative motion or tendency thereto, and means for relieving the fluid compression to permit said relative movement.

3. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means therefor, a compression-chamber variable in containing volume by relative movement of the movable actuative means and the traffic-controlling means proper, a liquid contained in the compression-chamber and arranged to oppose by compressive resistance relative movement of the actuative means and traffic-controlling means proper and thus to transmit actuative or controlling force from the actuative means to the traffic-controlling means proper, a fluid-vent connected with the compression-chamber, and means for controlling the vent to relieve the fluid-pressure of compression in the compression-chamber and thereby permit relative movement of the actuative means and the traffic-controlling means proper.

4. Railway-traffic-controlling apparatus comprising traffic-controlling means proper located in proximity to a railway-track, movable actuative means for the traffic-controlling means proper, a chamber arranged to be varied in volume by relative movement of the movable actuative means and the traffic-controlling means proper and arranged to transmit actuative or controlling force from the actuative means to the traffic-controlling means proper by change in fluid-pressure developed by tendency toward the variation in chamber volume caused by tendency to the said relative movement of the actuative means and traffic-controlling means proper, a fluid-vent connected with the chamber, and automatic vent-controlling means responsive to movement of a railway-vehicle along the railway-track and arranged to control the fluid-vent to relieve the change in fluid-pressure so as to permit relative movement of the actuative means and traffic-controlling means proper.

5. Railway-traffic-controlling apparatus comprising traffic-controlling means proper located in proximity to a railway-track, movable actuative means arranged to operate the traffic-controlling means proper, a fluid-compression chamber arranged to have its fluid-containing volume reduced by relative movement of the movable actuative means and the traffic-controlling means proper and containing a fluid subject to compression by tendency to such reduction in chamber volume, so as to transmit by such compression actuative or controlling force from the actuative means to the traffic-controlling means proper, a fluid-vent connected with the compression-chamber, and vent-controlling means automatically responsive to movement of a railway-vehicle along the railway-track and arranged to control the fluid-vent and thus oppose or permit relative movement of the actuative means and the traffic-controlling means proper.

6. Railway-traffic-controlling apparatus comprising traffic-controlling means proper located in proximity to a railway-line, movable actuative means in actuative coöperation with the traffic-controlling means proper, a chamber arranged to be varied in volume by relative movement of the traffic-controlling means and the movable actuative means and arranged to oppose such relative movement by a change in fluid-pressure developed in such chamber by tendency to such variation of its volume whereby to transmit actuative or controlling force from the actuative means to the traffic-controlling means proper, a fluid-vent connected with the chamber, electrical vent-controlling means in control of the fluid-vent to relieve the change in fluid-pressure and permit relative movement of the actuative means and the traffic-controlling means proper, and a controlling electric circuit in control of the electrical vent-controlling means and controllable in turn by movement of a railway-vehicle along the railway-track.

7 Railway-traffic-controlling apparatus comprising traffic-controlling means proper located in proximity to a railway-track, movable actuative means in actuative coöperation with the traffic-controlling means proper, a fluid-compression chamber containing a fluid and arranged to be varied in its fluid-containing volume by relative movement of the movable actuative means and the traffic-controlling means proper and arranged to oppose such relative movement by compression of its contained fluid effected by tendency to such relative movement, a relief-vent communicating with the compression-chamber, an electrically-controllable vent-controlling valve in control of the relief-vent so as to relieve the fluid-pressure therein and permit relative movement of the actuative means and the traffic-controlling means proper, and a controlling electric circuit in control of the electrically-controllable vent-controlling valve, such circuit being in turn controllable by movement of a railway-vehicle along the railway-track.

8. Railway-traffic-controlling apparatus comprising traffic-controlling means proper located in proximity to a railway-track, manually-operatable controller-actuating means in actuative coöperation with the traffic-controlling means proper, a fluid-compression chamber arranged to compress its contained fluid by relative movement of the manual actuative means and the traffic-controlling means proper and containing a fluid adapted to oppose the said relative movement by fluid-pressure resistance, a fluid relief-vent communicating with the compression-chamber, a valve in control of the fluid relief-vent to open the same and relieve the fluid-pressure in the compression-chamber and thus permit relative movement of the manual actuative means and the traffic controlling means proper, an electromagnet in control of the vent-controlling valve, and an electric circuit in control of the electromagnet and controllable in turn by movement of a railway-vehicle along the railway-track.

9. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuating means arranged in actuative relation to the traffic-controlling means proper, a fluid-compression chamber operatable by relative movement of the movable actuative means and the traffic-controlling means proper and containing a fluid arranged to oppose by compressive resistance such relative movement and thereby to transmit actuative or controlling movement or force from the actuative means to the traffic-controlling means proper, a second fluid-chamber, a fluid-vent connecting the compression-chamber and the second fluid-chamber, and vent-controlling means arranged to control flow of fluid between the chambers.

10. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means arranged to actuate the traffic-controlling means proper, a fluid-containing chamber reducible in fluid-containing volume by relative movement of the movable actuative means and the traffic-controlling means proper and containing a fluid arranged to oppose by compressive resistance the said relative movement and thus to transmit actuative or controlling movement or force from the actuative means to the traffic-controlling means proper, a second fluid-containing chamber variable in fluid-containing volume to contain a varying quantity of fluid, a fluid-vent connecting the first and second fluid-containing chambers, and vent-controlling means arranged to control flow of fluid between the two fluid-containing chambers so as to retain fluid in the first-mentioned fluid-containing chamber and transmit actuative or controlling movement or force to the traffic-controlling means proper or so as to relieve fluid-pressure in the first fluid-containing chamber and permit relative movement of the movable actuative means and the traffic-controlling means proper.

11. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuating means arranged to actuate the traffic-controlling means proper, a fluid-containing chamber reducible in fluid-containing volume by relative movement of the controller-actuating means and the traffic-controlling means proper and containing a fluid arranged to oppose such relative movement by compressive resistance and thus transmit actuative or controlling movement or force from the movable controller-actuating means to the traffic-controlling means proper, a second fluid-containing chamber communicating with the first fluid-containing chamber and including a flexible wall arranged to move and vary the fluid-containing volume of the second chamber, and means for controlling communication between the two fluid-containing chambers so as to retain or vent fluid-pressure in the first fluid-containing chamber whereby to transmit actuative or controlling movement or force from the controller-actuating means to the traffic-controlling means proper or to permit relative movement of such controller-actuating means and such traffic-controlling means proper.

12. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuating means arranged to operate the traffic-controlling means proper, a fluid-containing chamber variable in fluid-containing volume by relative movement of the controller-actuating means and the traffic-controlling means proper and containing a fluid arranged to oppose such relative movement by resistance to compression whereby to transmit

controlling force from the controller-actuating means to the traffic-controlling means proper, a check-valve permitting influx of fluid into the fluid-containing chamber but arranged to arrest efflux of fluid therefrom, an efflux-controlling valve arranged to control efflux of fluid from the fluid-containing chamber, and electrical valve-controlling means arranged in control of the efflux-controlling valve.

13. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuating means arranged to operate the traffic-controlling means proper, a fluid-containing chamber variable in fluid-containing volume by relative movement of the controller-actuating means and the traffic-controlling means proper and containing a fluid arranged to oppose such relative movement by resistance to compression whereby to transmit controlling force from the controller-actuating means and the traffic-controlling means proper, a second fluid-containing chamber communicating with the first-mentioned fluid-containing chamber, a check-valve permitting flow of fluid from the second to the first fluid-containing chamber but arranged to arrest reverse flow of fluid, and electrically-controllable valve mechanism adapted to arrest or permit reverse flow of fluid from the first fluid-containing chamber to the second fluid-containing chamber.

14. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuating means arranged to operate the traffic-controlling means proper, a fluid-containing chamber variable in fluid-containing volume by relative movement of the controller-actuating means and the traffic-controlling means proper and containing a fluid arranged to oppose such relative movement by resistance to compression whereby to transmit controlling force from the controller-actuating means and the traffic-controlling means proper, a second fluid-containing chamber variable in fluid-containing volume and communicating with the first-mentioned fluid-containing chamber, a check-valve permitting flow of fluid from the second to the first fluid-containing chamber but arranged to arrest reverse flow of fluid, and electrically-controllable valve mechanism adapted to arrest or permit reverse flow of fluid from the first fluid-containing chamber to the second fluid-containing chamber.

15. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means arranged to operate the traffic-controlling means proper, a cylinder and a piston arranged in coöperation with each other and one of such members being connected with the movable actuative means and the other of such members being connected with the traffic-controlling means proper and such members being movable relative to each other by relative movement of the actuative means and the traffic-controlling means proper and such cylinder containing a fluid subject to compression by such relative movement and arranged to oppose such relative movement by compressive resistance whereby to transmit controlling force from the actuative means to the traffic-controlling means proper, a relief-vent communicating with the cylinder, and means for controlling the relief-vent whereby to retain fluid-pressure in the cylinder for transmitting controlling force to the traffic-controlling means proper and whereby to relieve such fluid-pressure to permit relative movement of the traffic-controlling means proper and the actuative means.

16. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable controller-actuative means arranged to operate the traffic-controlling means proper, a cylinder connected with the movable controller-actuative means, a piston cooperative with the cylinder and connected with the traffic-controlling means proper, a fluid contained in the cylinder and arranged to oppose by compressive resistance a relative movement of the cylinder and piston so as to transmit controlling force from the controller-actuative means to the traffic-controlling means proper, a relief-vent communicating with the cylinder, and means for controlling the relief-vent whereby to retain fluid-pressure in the cylinder for transmitting controlling force to the traffic-controlling means proper and whereby to relieve such fluid-pressure to permit relative movement of the traffic-controlling means proper and the actuative means.

17. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means arranged to operate the traffic-controlling means proper, a cylinder and a piston arranged in coöperation with each other and one of such members being connected with the movable actuative means and the other of such members being connected with the traffic-controlling means proper and such members being movable relative to each other by relative movement of the actuative means and the traffic-controlling means proper and such cylinder containing a fluid subject to compression by such relative movement and arranged to oppose such relative movement by compressive resistance whereby to transmit controlling force from the actuative means to the traffic-controlling means proper, a relief-vent communicating with the cylinder, a valve in control of the relief-vent whereby to retain fluid-pressure in the cylinder and transmit controlling force from the movable actuative means to the traffic-controlling means proper and whereby to relieve such fluid-pressure and permit relative movement of such actuative means and traffic-controlling means proper, and an electromagnet movable with the cylinder and arranged to control the vent-controlling valve.

18. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means arranged to operate the traffic-controlling means proper, a cylinder and a piston arranged in coöperation with each other and one of such members being connected with the movable actuative means and the other of such members being connected with the traffic-controlling means proper and such members being movable relative to each other by relative movement of the actuative means and the traffic-controlling means proper and such cylinder containing a fluid subject to compression by such relative movement and arranged to oppose such relative movement by compressive resistance whereby to transmit controlling force from the actuative means to the traffic-controlling means proper, a relief-vent communicating with the cylinder, a valve in control of the relief-vent whereby to retain fluid-pressure in the cylinder and transmit controlling force from the movable actuative means to the traffic-controlling means proper and whereby to relieve such fluid-pressure and permit the relative movement of such actuative means and traffic-controlling means proper, an electromagnet movable with the cylinder and arranged to control the vent-controlling valve, and a flexible conductor connected with the electromagnet to maintain electrical communication therewith while permitting movement of the magnet.

19. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, controller-actuating means arranged to actuate the traffic-controlling means proper, a fluid-containing chamber variable in fluid-containing volume by relative movement of the controller-actuating means and the traffic-controlling means proper and containing a fluid adapted to oppose such relative movement by compressive resistance so as to transmit controlling force from the controller-actuating means to the traffic-controlling means proper, a sealed second fluid-containing chamber communicating with the first-mentioned fluid-containing chamber and comprising a collapsible bag adapted to vary the total fluid-containing volume of such second chamber whereby to give and take fluid from the first-mentioned fluid-containing chamber, and means for controlling communication between the two fluid-containing chambers whereby to retain fluid-pressure in the first-mentioned fluid-containing chamber so as to transmit controlling force to the traffic-controlling means proper and whereby also to relieve such fluid-pressure in the first-mentioned fluid-containing chamber so as to permit relative movement of the controller-actuating means and the traffic-controlling means proper.

20. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, movable actuative means arranged to actuate the traffic-controlling means proper, two coöperating fluid-compressive members connected one with the controller-actuating means and the other with the traffic-controlling means proper and arranged to contain a fluid and to compress the same by tendency to one direction of relative movement of the controller-actuating means and the traffic-controlling means proper whereby to transmit controlling force in one direction from the controller-actuating means to the traffic-controlling means proper, a fluid-vent communicating with the fluid-containing space formed by the two fluid-compressive members, means for controlling the vent to maintain fluid-pressure in such fluid-containing space and thereby transmit controlling force in one direction to the traffic-controlling means proper and for controlling such vent also to relieve the fluid-pressure in such space and thereby permit relative movement of the controller-actuating means and the traffic-controlling means proper, and positive connecting means arranged to effect positive mechanical connection between the controller-actuating means and the traffic-controlling means proper whereby to positively transmit actuative or controlling movement or force to the traffic-controlling means proper in the direction opposite to the aforementioned force transmitted from the controller-actuating means by fluid-pressure.

21. Railway-traffic-controlling apparatus comprising traffic-controlling means proper, controller-actuating means arranged to actuate the traffic-controlling means proper, a fluid-containing cyl-

inder and a piston coöperative therewith, such cylinder and piston being connected one with the controller-actuating means and the other with the traffic-controlling means proper and such cylinder containing a fluid arranged to transmit controlling force in one direction from the controller-actuating means to the traffic-controlling means proper, a fluid-vent communicating with the cylinder, means for controlling passage of fluid through the fluid-vent, and a device connected with the cylinder and arranged to engage the piston and positively transmit mechanical force thereto in a direction opposite to the direction of the aforementioned force transmitted by the fluid.

22. Railway signaling apparatus comprising signal-indicating means having a normal bent to a given signal indication, signal-actuative means arranged to actuate the signal-indicating means, and signal-governing means coöperative with the signal-indicating means and with the signal-actuative means to govern transmission of actuative or controlling force from the signal-actuative means to the signal-indicating means and such signal-governing means including members movable relative to each other by relative movement of the signal-actuative and signal-indicating means so as to develop fluid-pressure effective to transmit actuative or controlling force to the signal-indicating means in opposition to its normal bent; and such signal-governing means also including fluid-pressure-relief means arranged to relieve the aforementioned fluid-pressure and permit actuation of the signal-indicating means by its normal bent.

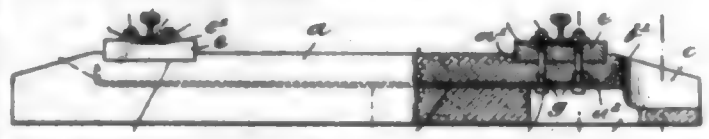
23. Railway signaling apparatus comprising signal-indicating means having a normal bent to a given signal indication, signal-actuative means arranged to actuate the signal-indicating means, a positive connection between the signal-actuative means and the signal-indicating means arranged to positively transmit actuative or controlling force to the signal-indicating means in the direction of its normal bent, and signal-governing means coöperative with the signal-indicating means and with the signal-actuative means to govern transmission of actuative or controlling force from the signal-actuative means to the signal-indicating means and such signal-governing means including members movable relative to each other by relative movement of the signal-actuative and signal-indicating means so as to develop fluid-pressure effective to transmit actuative or controlling force to the signal-indicating means in opposition to its normal bent, and such signal-governing means also including fluid-pressure-relief means arranged to relieve the aforementioned fluid-pressure and permit actuation of the signal-indicating means by its normal bent.

24. Railway signaling apparatus comprising a signal proper, two vertical movable thrust-rods disposed in substantial alinement and arranged to transmit actuative or controlling thrust to the signal proper, a cylinder disposed in alinement with the thrust-rods and connected to one of such rods, a piston coöperative with the cylinder and also disposed in alinement with the thrust-rods and connected to the other of such rods, a fluid-containing chamber movable with the cylinder, a fluid-vent affording communication between the cylinder and fluid-containing chamber, a check-valve permitting influx of fluid into the cylinder from the fluid-containing chamber upon the influx-stroke of the piston but arresting efflux of fluid from the cylinder, an efflux-controlling valve arranged to permit and to control efflux of fluid from the cylinder to the fluid-containing chamber, an electromagnet movable with the cylinder and fluid-containing chamber and arranged in control of the efflux-controlling valve, circuit connections for the electromagnet, and means for limiting the influx-stroke of the piston relative to the cylinder.

25. Railway signaling apparatus comprising a railway-signal proper, movable signal-actuative means arranged to actuate the signal proper, a fluid-containing chamber variable in fluid-containing volume by relative movement of the signal-actuative means and the signal proper and arranged to oppose such relative movement by fluid-pressure resistance whereby to transmit controlling force from the signal-actuative means to the signal proper, a vent communicating with the fluid-containing chamber, means for controlling the vent to relieve the fluid-pressure resistance and permit relative movement of the signal-actuative means and the signal proper, and a casing inclosing the fluid-containing chamber.

26. Railway signaling apparatus comprising a railway-signal proper, movable signal-actuative means, signal-controlling means arranged to transmit actuative force from the signal-actuative means to the signal proper and including a fluid-containing chamber variable in volume by relative movement of the signal-actuative means and the signal proper and arranged to oppose such relative movement by fluid-pressure resistance whereby to transmit actuative force to the signal proper and such signal-controlling means including also a second fluid-containing chamber, a vent affording fluid communication between the two fluid-containing chambers, means for controlling the vent, and a casing inclosing the foregoing portions of the signal-controlling means.

814,022. RAILROAD-TIE. Walter A. Collins, Penns Manor, Pa. Filed Dec. 13, 1905. Serial No. 291,515.



Claim.—1. A railroad-tie, comprising a body of cement or similar material, a strip of metal embedded therein, blocks arranged at each end thereof and adapted to support rails, and means adapted to connect the rails and blocks to said body and metallic strip embedded therein.

2. A railroad-tie, comprising a body of concrete or similar material, a strip of metal embedded therein, a recess arranged at each end of said body adapted to receive blocks and to hold the same in position thereon, said blocks adapted to support rails and depressions arranged at each end of said body adapted to permit of the introduction of means through said strip, body and blocks to connect the same with each other and to hold the rails in position on said blocks.

3. A railroad-tie, comprising a body of concrete or similar material, a strip of metal embedded therein, a recess arranged at each end of said body adapted to receive blocks and to hold the same in position thereon, said blocks adapted to support rails, a depression arranged at each end of said body adjacent to said recesses, a depression extending beneath said blocks and communicating with said end depressions, said depressions adapted to permit of the introduction of means through said strip, body and blocks to connect the same with each other and to hold the rails in position on said blocks.

4. A railroad-tie, comprising a body of concrete or similar material, a strip of metal having bent ends embedded therein, a recess arranged at each end of said body, blocks fitting into said recesses and adapted to be held by the same in position on said body, rails supported by said blocks, a depression arranged at each end of said body adjacent to said recesses, a depression extending beneath said blocks and communicating with said end depressions, said depressions adapted to permit of the introduction of bolts through said strip, body and blocks to connect the same with each other and to hold the rails in position on said blocks.

5. A railroad-tie, comprising a body of concrete or similar material, a strip of metal having bent ends embedded therein, a recess arranged at each end of said body, blocks fitting into said recesses and adapted to be held by the same in position on said body, rails supported by said blocks, a depression arranged at each end of said body adjacent to said recesses and extending downward into the same, a depression extending beneath said blocks and communicating with said end depressions and terminating at the base of said body, said depressions adapted to permit of the introduction of bolts through said strip, body and blocks to connect the same with each other and to hold the rails in position on said blocks.

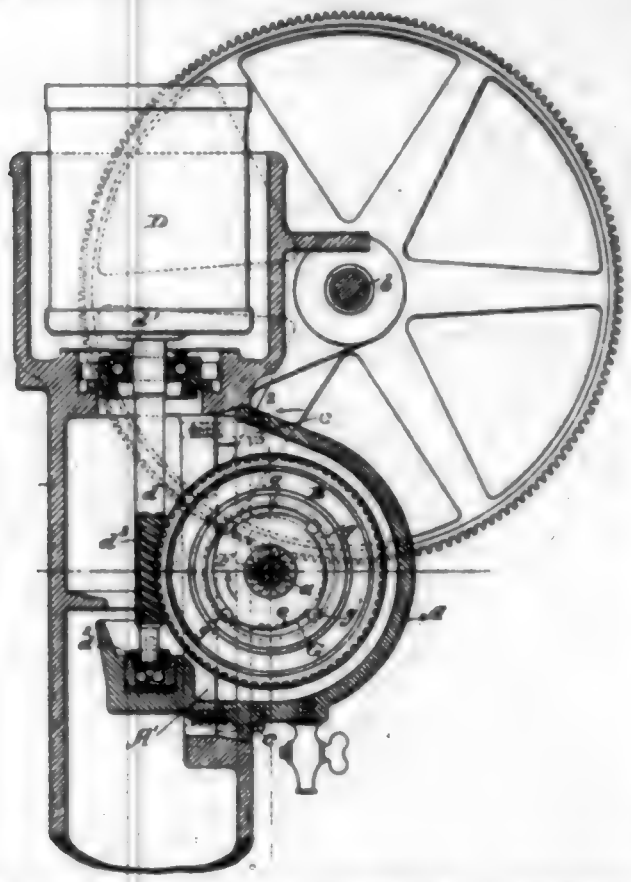
6. A railroad-tie, comprising a body of concrete or similar material, a strip of metal having bent ends embedded therein, a recess arranged at each end and in the upper face of said body adapted to receive blocks of yielding material and to hold the same in position on said body, rails supported by said blocks, a depression arranged at each end of said body adjacent to said recesses and extending downward into the same, a depression extending beneath said blocks and communicating with said end depressions and terminating at the base of said body, said end depressions adapted to free certain portions of said metal strip, and both depressions adapted to permit of the introduction of bolts through said strip, body and yielding blocks to connect the same with each other and with said rails, and to drain off water entering the same.

814,023. DRIVING MECHANISM. John C. Cromwell, Cleveland, Ohio. Filed Apr. 18, 1904. Serial No. 203,684.

Claim.—1. In driving mechanism, the combination of a worm-wheel; a worm; a vertical shaft driven by said worm-wheel and worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying only one bearing.

2. In driving mechanism, the combination of a worm-wheel; a worm; a vertical shaft driven by said worm-wheel and worm; a frame comprising two separable parts; and suitable bearings car-

ried in said frame, one of said frame parts carrying only one of the bearings of the vertical shaft.



3. In driving mechanism, the combination of a worm-wheel; a worm; a vertical shaft driven by said worm-wheel and worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying only one bearing, the parts of said frame jointly forming an inclosing casing.

4. In driving mechanism, the combination of a worm-wheel; a worm; a vertical shaft driven by said worm-wheel and worm; a frame comprising two separable parts; and suitable bearings carried in said frame, a portion of one part of said frame adapted to form an oil-reservoir.

5. In driving mechanism, the combination of a worm-wheel; a worm; a vertical shaft driven by said worm-wheel and worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying only one bearing, and the other frame part adapted to form a shield for said worm-wheel.

6. In driving mechanism, a train of spur-gearing; a worm-wheel and a worm; means connecting said spur-gearing and said worm-wheel; a vertical shaft driven by said worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying one bearing of the vertical shaft and two bearings of said connecting means.

7. In driving mechanism, a train of spur-gearing; a worm-wheel and a worm; means connecting said spur-gearing and said worm-wheel; a vertical shaft driven by said worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying only one bearing, the parts of said frame jointly forming an inclosing casing.

8. In driving mechanism, a train of spur-gearing; a worm-wheel and a worm; means connecting said spur-gearing and said worm-wheel; a vertical shaft driven by said worm; a frame comprising two separable parts; and suitable bearings carried in said frame, a portion of one part of said frame adapted to form an oil-reservoir.

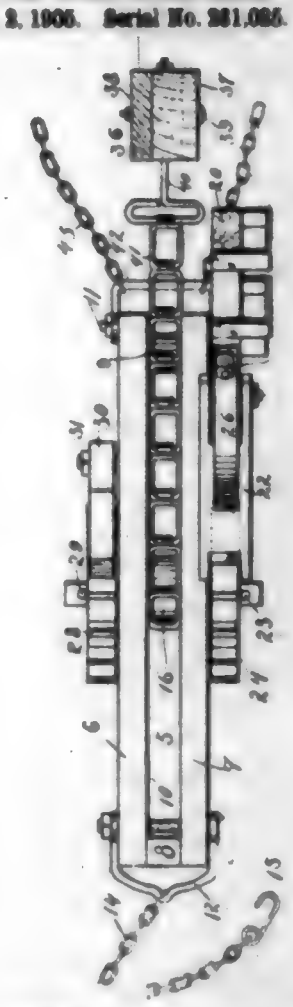
9. In driving mechanism, a train of spur-gearing; a worm-wheel and a worm; means connecting said spur-gearing and said worm-wheel; a vertical shaft driven by said worm; a frame comprising two separable parts; and suitable bearings carried in said frame, one of said frame parts carrying only one bearing, and the other frame part adapted to form a shield for said worm-wheel.

10. In driving mechanism, a driving-gear; a vertical shaft; gearing connecting said driving-gear and vertical shaft and including a train of spur-gearing, a worm-wheel and a worm; and a single frame part carrying all of said connecting-gearing.

11. In driving mechanism, a driving-gear; a vertical shaft; gearing connecting said driving-gear and vertical shaft and including a train of spur-gearing; a worm-wheel and a worm; and a frame comprising two separable parts and forming an inclosing casing, one part of said frame carrying all of said connecting-gearing.

12. In driving mechanism, a driving-gear; a vertical shaft; means connecting said driving-gear and vertical shaft and including a train of spur-gearing, a worm-wheel, a worm, and a clutch connecting said train of spur-gearing and said worm-wheel; and a frame comprising a plurality of parts, one of said parts carrying all of said connecting means and separable, together with said connecting means, from the remainder of said frame.

814,024. **WOVEN-WIRE STRETCHER.** WILLIAM CUB. PARTER, S. D. Filed Oct. 2, 1905. Serial No. 281,085.



Claim.—1. A wire-stretcher, comprising a frame, a clamp, means for drawing said clamp toward said frame, a traveler-yoke secured to one end of said frame and flexible members secured to said traveler-yoke and adapted to engage said clamp.

2. A wire-stretcher, comprising a frame, a wire-engaging clamp, means for drawing said clamp toward said frame, a traveler-yoke secured to one end of said frame, flexible members secured to said traveler-yoke and hooks carried by the wire-engaging clamp adapted to engage with said flexible members.

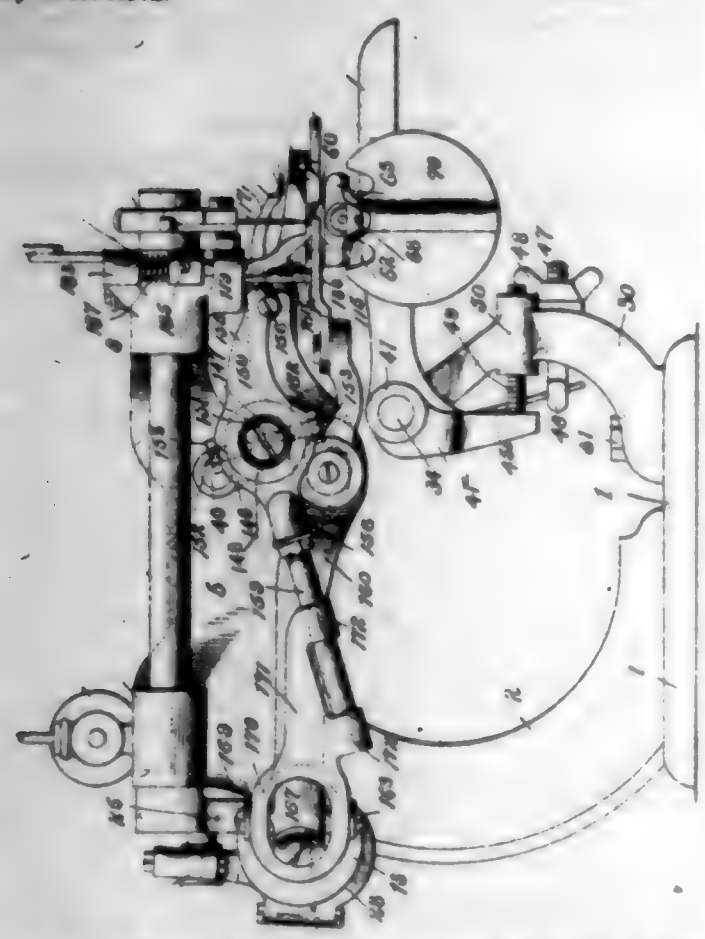
3. A wire-stretcher, comprising a frame, a wire-engaging clamp adapted to engage a woven-wire fabric across its width, hooks carried by said clamp, means for drawing said clamp toward said frame, a traveler-yoke secured to one end of the frame and flexible members secured to said traveler-yoke and adapted to engage the hooks of the wire-engaging clamp, said hooks being located one upon each side of the center line of said clamp.

814,025. **SEWING-MACHINE.** CHARLES A. DEARBORN, New York, N. Y. Filed July 21, 1904. Serial No. 217,474.

Claim.—1. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and a pair of independently-yielding work-supporting plates mounted upon said frame beneath the presser-foot, the effective work engaging portions of said plates being presented upon opposite sides of and parallel with the line of stitching.

2. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a feeding device, a work-supporting frame, and two independently-yielding work-supporting plates mounted upon said frame beneath the presser-foot and extending oppositely from the line of stitching and inclining downwardly from the plane of feed, each plate being formed with a horizontal work-engaging rib adjacent to and parallel with the line of stitching.

3. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and two approximately horizontal independently-yielding work-supporting ribs mounted upon said frame and presented thereby beneath the presser-foot one upon each side of the line of stitching, substantially as set forth.



4. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and two yielding work-supporting ribs mounted independently upon said frame and presented thereby in horizontal position beneath the presser-foot one upon each side of the line of stitching and both parallel with the line of stitching, each of said ribs being capable of moving bodily away from the presser-foot and rocking longitudinally of the machine under the action of the material passing through the machine, substantially as set forth.

5. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a slotted presser-foot, a work-supporting frame, a freely-journaled ridge-forming disk mounted upon said frame and presented thereby beneath the presser-foot in position to force a ridge of material through the slot of the presser-foot, and yielding devices mounted upon the work-supporting frame independent of the ridge-forming disk and of each other, said devices supporting the material upon opposite sides of said disk, substantially as set forth.

6. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, a freely-journaled ridge-forming disk mounted upon said frame, and a pair of yielding work-supporting plates mounted upon said frame upon opposite sides of said disk and independently of the disk and of each other, said frame presenting said disk and said plates beneath the presser-foot, substantially as set forth.

7. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, a ridge-forming disk freely journaled upon said frame, and two yielding normally horizontal work-supporting ribs mounted independently upon said frame one upon each side of said ridge-forming disk in parallel vertical planes, each of said ribs being capable of yielding bodily away from the presser-foot and rocking longitudinally of the machine under the action of the passing material, substantially as set forth.

8. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and two spring-sustained work-supporting plates mounted independently upon said frame upon opposite sides of the line of stitching, each of said plates extending laterally from the line of stitching and being capable of yielding bodily away from the presser-foot and rocking upon its longitudinal axis under the action of the material passing through the machine, substantially as set forth.

9. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and two work-supporting plates mounted upon said frame upon opposite sides of the line of stitching, each of said plates extending laterally from the line of stitching and being formed with a horizontally-presented raised rib which is capable of moving bodily away from the presser-foot and rocking upon the longitudinal axis of the plate, substantially as and for the purpose set forth.

10. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, and two work-supporting plates mounted upon said frame upon opposite sides of the line of stitching in planes inclined to the horizontal, the highest parts of said plates being formed into horizontal ribs arranged adjacent to and parallel with the line of stitching and capable of moving bodily away from the presser-foot and rocking longitudinal of the machine, substantially as and for the purpose set forth.

11. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, yieldingly-mounted work-supporting plates arranged upon said frame upon opposite sides of the line of stitching, a screw passing through each of said plates into the supporting-frame and formed with a spheroidal head, and an expansion-spring upon each of said screws between the plate and the supporting-frame, substantially as set forth.

12. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame, two yieldingly-mounted inclined work-supporting plates arranged upon said frame upon opposite sides of the line of stitching, each of said plates being formed with a horizontally-presented work-supporting rib adjacent to the line of stitching, screws or pins one of which passes loosely through each of said plates and is secured in the supporting-frame spheroidal engaging surfaces formed on the heads of said screws or pins and in said plates, and an expansion-spring upon each of said screws between the plate and the supporting-frame, substantially as set forth.

13. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-suppoting frame presented beneath the presser-foot, a yieldingwork-supporting plate mounted upon said frame, a universal bearing connecting one end of said plate with said frame, a screw passing through said plate into the frame and formed with a spheroidal head, and an expansion-spring confined upon said screw between the plate and said frame, substantially as set forth.

14. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame presented beneath the presser-foot, a yielding work-supporting plate mounted upon said frame and formed with a rib at the inner end adjacent to and parallel with the line of stitching, a universal bearing connecting the outer end of said plate with said frame, a screw passing through said plate into the frame and formed with a spheroidal head, a spheroidal socket in the plate in which said head is seated, and an expansion-spring confined upon said screw between the plate and said frame, substantially as set forth.

15. In a blindstitch sewing-machine, the combination of suitable stitch-forming mechanism, a presser-foot, a work-supporting frame presented beneath the presser-foot and formed with a laterally-extending slot, a yielding work-supporting plate mounted upon said frame and projecting through said slot, a horizontal rib formed on the inner end of said plate and extending horizontally parallel with the line of stitching, a universal bearing connecting the outer end of said plate beneath said frame, a screw passing through said plate into the frame and formed with a spheroidal head engaging a corresponding socket in the plate, and an expansion-spring confined upon said screw between the plate and said frame, substantially as set forth.

16. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, a presser-foot, a spring-sustained work-supporting frame formed with a laterally-projecting horn, a ridge-forming disk freely journaled upon a lug of said horn, yielding supporting-plates mounted upon said frame upon opposite sides of said ridge-forming disk, and springs confined between said work-supporting plates, and frame, substantially as set forth.

17. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, a presser-foot, a spring-sustained work-supporting frame formed with a laterally-projecting horn, a ridge-forming disk freely journaled upon a lug of said horn, yielding supporting-plates mounted upon said frame and extending laterally upon opposite sides of said ridge-forming disk, ribs upon said plates arranged adjacent to said disk parallel with the line of stitching, and springs confined between said work-supporting plates and frame, substantially a set forth

18. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, a work-supporting frame carrying suitable work-engaging ribs, a presser-foot pivotally mounted upon the machine-frame, a spring arranged to move the presser-foot away from the work-supporting ribs, and a cam arranged to force the presser-foot down into engagement with the material supported upon said ribs, substantially as set forth.

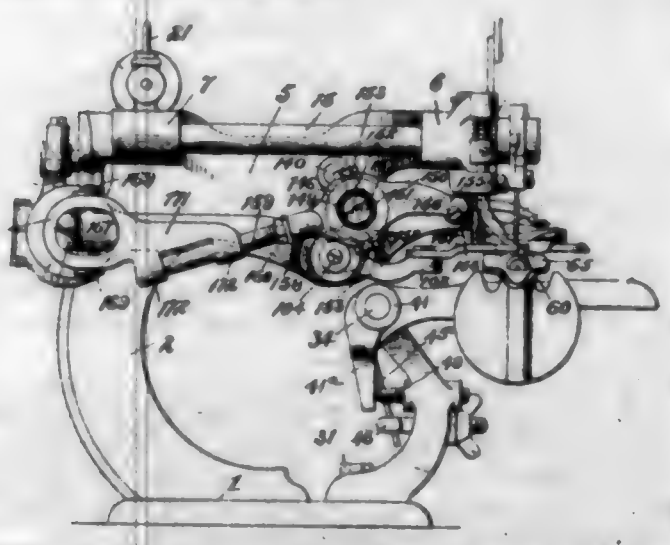
19. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, a work-supporting frame, a presser-foot pivotally mounted upon the machine-frame, a spring engaging the presser-foot and adapted to move it away from the work-supporting frame, a yoke projecting from the presser-foot, means operating upon the yoke adapted to force the presser-foot down into engagement with the material above said frame and time the movement of the presser-foot away from the frame, substantially as set forth.

20. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, a work-supporting frame, a presser-foot pivotally mounted upon the machine-frame, a spring arranged to move the presser-foot away from the work-supporting frame, a yoke or projection extending from the presser-foot, a rock-arm carrying a stud which engages said yoke, an antifriction-roller journaled upon said rock-arm, and an oscillatory cam engaging said antifriction-roller and adapted to force the presser-foot down into engagement with the material above said frame and time the movement of the presser-foot away from the frame, substantially as set forth.

21. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism and a presser-foot, of a work-supporting frame, an approximately horizontal yielding work-engaging rib mounted upon said frame beneath the presser-foot and capable of moving bodily away from the presser-foot and of rocking longitudinally of the machine under the action of the passing material, and a reciprocating feed-dog engaging the work above said rib, substantially as set forth.

22. In a blindstitch sewing-machine, the combination with suitable stitch-forming mechanism, and a presser-foot, of a work-supporting frame, two horizontally-presented yielding independent work-engaging ribs mounted upon said frame upon opposite sides of the line of stitching, and a reciprocating feed-dog having two rows of serrations or teeth engaging the work above said yielding ribs, substantially as set forth.

814,026. **FEED MECHANISM FOR SEWING-MACHINES.** CHARLES A. DEARBORN, New York, N. Y. Original application filed July 21, 1904. Serial No. 217,474. Divided and this application filed Sept. 29, 1904. Serial No. 226,547.



Claim.—1. In a sewing-machine, the combination of the machine-frame, suitable stitch-forming mechanism, a work-support, a longitudinally-reciprocating rocking arm or bar carrying a feed-dog which operates above the work-support, a pin-and-slot connection between said arm or bar and the machine-frame, and operating means for said arm or bar adapted to cause said feed-dog to make a feeding stroke in an approximately straight line in the plane of feed, and a return stroke in an arc above the plane of feed, substantially as set forth.

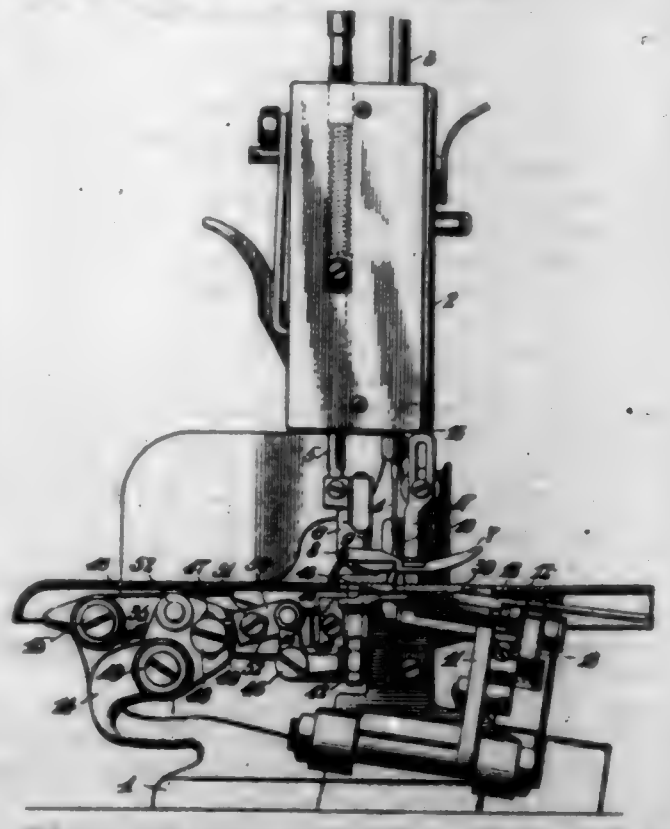
2. In a sewing-machine, the combination of the machine-frame, suitable stitch-forming mechanism, a work-support, a longitudinally-reciprocating rocking arm or bar formed with a longitudinal slot between its ends, a pivot upon the machine-frame engaging in the slot of said arm or bar, a feed-dog mounted upon one end of said arm or bar and presented downwardly therefrom above the work-support, and an eccentric operating device adapted to cause said feed-dog to make a feeding stroke in an approximately straight line in the plane of feed and a return stroke in an arc above the plane of feed, substantially as set forth.

3. In a sewing-machine, the combination with suitable stitch-forming mechanism, means for supporting the work which is to be operated upon, a longitudinally-reciprocating rocking arm or bar formed with a slot, inclined with reference to the longitudinal axis of the arm or bar, a pivot projecting from the machine-frame and engaging said inclined slot for supporting said arm or bar, an eccentric engaging said arm or bar for actuating it, and a feed-dog mounted upon said arm or bar and presented downwardly therefrom above the work-support, substantially as set forth.

4. In a sewing-machine, the combination with suitable stitch-forming mechanism, means for supporting the work which is to be operated upon, a longitudinally-reciprocating rocking arm or bar formed with a slot between its ends, the said slot being inclined with reference to the longitudinal axis of the arm or bar, a stud projecting from the machine-arm, an antifriction-roller journaled upon said stud and engaging said inclined slot and supporting the feed arm or bar in approximately horizontal position, a feed-dog mounted upon and projecting beneath the forward end of said arm or bar, and an eccentric engaging the rear end of said arm or bar for actuating it, substantially as set forth.

5. In a sewing-machine, the combination with suitable stitch-forming mechanism, means for supporting the work which is to be operated upon, an approximately horizontal longitudinally-movable slotted rocking arm or bar, the upper wall of the slot in said arm or bar being formed with a central projection and curved surfaces extending therefrom to the ends of the slot, a feed-dog mounted upon and projecting beneath the forward end of said arm or bar, a stud projecting from the machine-arm, an antifriction-roller journaled upon said stud and engaging the upper wall of said slot and supporting the feed arm or bar, and an eccentric operating upon the rear end of said arm or bar, substantially as set forth.

814,027. **FEEDING MECHANISM FOR SEWING-MACHINES.** PHILIP DIEHL and ALFRED GRIEB, Elizabeth, N. J., assignors to The Singer Manufacturing Company, Elizabeth, N. J., a Corporation of New Jersey. Filed Mar. 11, 1905. Serial No. 249,594.



Claim.—1. In a sewing-machine, the combination with a feed-bar, a primary feed-dog carried thereby, and means connected with said feed-bar for communicating to said primary feed-dog feeding and lifting movements, of an auxiliary feed-dog operatively connected with said feed-bar to receive feeding movements therefrom, said auxiliary feed-dog having its feeding-surface presented to and adapted to act upon the same side of the work as that of the primary feed-dog, and means for communicating to said secondary feed-dog differentially-timed lifting movements in respect of those of the primary feed-dog.

2. In a sewing-machine, the combination with a feed-bar, a primary feed-dog fixed upon said feed-bar, and an auxiliary feed-dog operatively connected with said feed-bar to receive feeding movements therefrom and movable thereon crosswise of the direction of feed, of actuating means for communicating to said feed-bar its feeding movements, means for communicating to said feed-bar its lifting movements, and a connection between said actuating means and the auxiliary feed-dog for communicating lifting movements thereto.

3. In a sewing-machine, the combination with a feed-bar having a slideway disposed transversely of the direction of feed, of a primary feed-dog carried by and an auxiliary feed-dog mounted within the slideway of said feed-bar, means for communicating to said feed-bar feeding and lifting movements, and means connected with said auxiliary feed-dog for communicating thereto lifting movements independent of those of the feed-bar.

4. In a sewing-machine, the combination with a feed-bar, a primary feed-dog carried thereby, a feed-rocker to which said feed-bar is connected, and means for communicating lifting movements to said feed-bar, of an auxiliary feed-dog movably connected with and deriving feeding movements from said feed-bar, and an independent connection between said auxiliary feed-dog and the feed-rocker whereby the feeding movements of said feed-rocker serve to impart the lifting movements to said auxiliary feed-dog.

5. In a sewing-machine, the combination with a feed-bar, means for communicating feeding movements thereto, and two relatively movable feed-dogs disposed the one in advance of the other with their feeding-surfaces presented to and adapted to act upon the same side of the work and operatively connected with said feed-bar to receive equal feeding movements therefrom, of independent means for lifting said feed-dogs.

6. In a sewing-machine, the combination with a feed-rocker pivotally mounted in fixed bearings, means for actuating it, a feed-bar, and a feed-dog movably mounted upon the latter and adapted to be moved therewith in the direction of feed, of independent connections from said feed-rocker to said feed-bar and feed-dog for imparting thereto respectively feeding and lifting movements.

7. In a sewing-machine, the combination with a feed-rocker mounted to oscillate in fixed bearings, a feed-bar pivotally connected with and supported at one end by said feed-rocker, and means for actuating said feed-rocker, of a feed-dog movably connected with said feed-bar to receive feeding movements therefrom, and an adjustable positive connection between said rocker and feed-dog for communicating to the latter lifting movements in respect of said feed-bar.

8. In a sewing-machine, the combination with a feed-bar, a feed-rocker mounted to oscillate in fixed bearings and connected with said feed-bar for which it affords a support, and means for actuating said feed-rocker, of a feed-dog movably connected with and deriving feeding movements from said feed-bar, and a two-armed lever fulcrumed upon said feed-bar and having one arm connected with said feed-dog and the other arm connected with said feed-rocker, whereby lifting movements are communicated to said feed-dog.

9. In a sewing-machine, the combination with feeding mechanism comprising two independently-movable feed-dogs, and means for communicating thereto feeding movements and differential rising and falling movements, of a two-part presser-foot having relatively yielding members operating each in conjunction with one of said feed-dogs and adapted to rise and fall with the same under the action of said feeding mechanism.

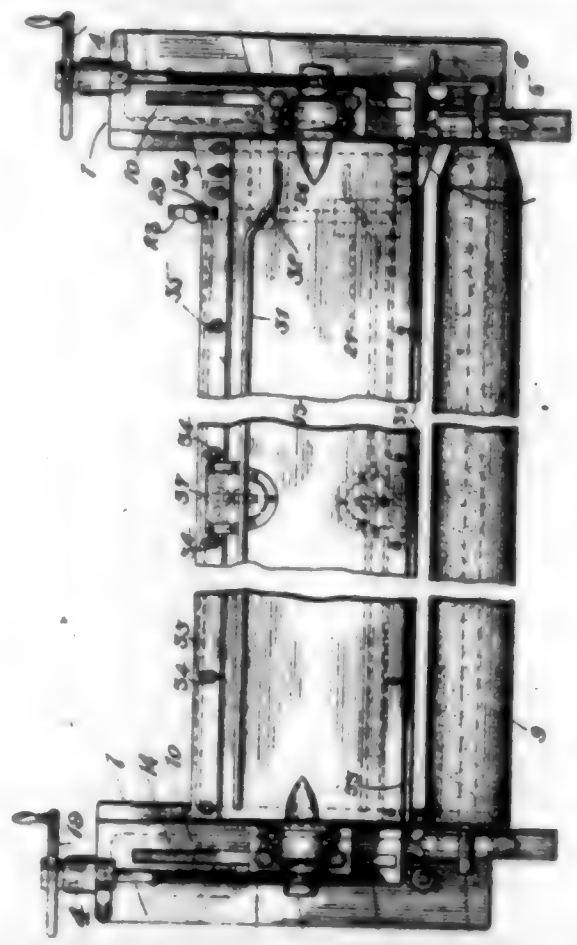
814,028. MACHINE FOR FORMING PIPE-CORES. FREDERICK D. DERRICK and ALBERT M. FORD, Birmingham, Ala. Filed Aug. 2, 1904. Serial No. 219,189.

Claim.—1. In an apparatus for forming pipe-cores, the combination of a core-carrier and a reversible core-board pivoted adjacent said core-carrier so that each longitudinal edge thereof will form a guide in the turning or forming of said core.

2. In an apparatus for forming pipe-cores, the combination of a core-carrier and a reversible core-board pivoted on an axis parallel to said carrier and adapted to hold the material to be applied to said core, and also to form a templet in the turning or forming of said core.

3. In an apparatus for forming pipe-cores, the combination of means for supporting a rotary core-carrier, a reversible table or core-board pivoted on an axis parallel to said carrier, said core-board having opposite edges, which are of different distances from said axis, so that the surface of the layers of the core material may be formed on the core at different diameters.

4. In an apparatus for forming pipe-cores, the combination of means for supporting a core-carrier, a reversible core-board pivoted adjacent said core-carrier, said core-board having edges at different diameters from the axis of said carrier when the core-board is reversed, and means for holding said board in horizontal position with either of its sides uppermost.



5. In an apparatus for forming pipe-cores, the combination of two transverse supports having core-axle bearings, a core-barrel supported by said bearings, a reversible table or core-board also having bearings in said support, and a weighted, notched arm pivoted in relation to said supports, and adapted to engage said table or core-board to hold the same in position with either side uppermost.

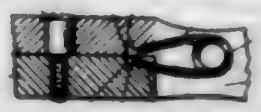
6. In an apparatus for forming pipe-cores, the combination of a core-carrier, transverse supports having bearings therein for the carrier-axle, transversely-adjustable bearings also carried by said supports, a reversible table or core-board pivoted to last-mentioned bearings, and means for moving said bearings transversely toward and from said core-axle bearings.

7. In an apparatus for forming pipe-cores, the combination of a core-barrel, a table or core-board supported adjacent the same with an edge substantially parallel thereto, said edge comprising an adjustable strip, and means intermediate the ends of said strip for bending the same inward or outward.

8. In an apparatus for forming pipe-cores, the combination of a core-barrel, a table or core-board supported adjacent the same with an edge substantially parallel thereto, said edge comprising an adjustable strip, and means at the central portion of said strip for bending the same inward or outward.

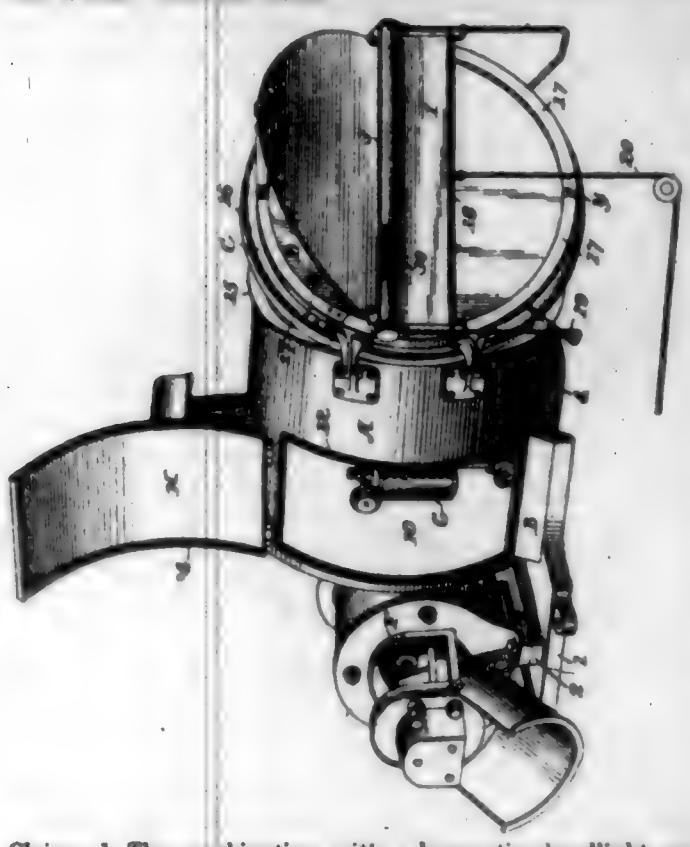
9. In an apparatus for forming pipe-cores, the combination of a core-carrier, a reversible table or core-board supported adjacent the same with its edges substantially parallel thereto, said edges comprising adjustable strips, and adjusting-screws connecting said table or core-board and said strips and located at the central portions of the latter, for bending the same inward or outward.

814,029. SHEARS. ALBERT N. EASTMAN, Chicago, Ill. Filed Aug. 13, 1904. Serial No. 220,690.



Claim.—A pair of scissors or shears in combination with a pear-shaped spring, said spring having an outward tension, said spring having its arms fitted to and coinciding with grooves formed on the inside face of the shears and connected thereto back of the pivot-screw and so located as to increase its leverage for the purpose set forth substantially as described.

14,080. LOCOMOTIVE-HEADLIGHT CASING. EDGAR A. EDWARDS, Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee, a Corporation of Illinois. Filed Jan. 7, 1903. Serial No. 88,750.



Claim.—1. The combination with a locomotive-headlight and goggle-glass thereof, and a supplemental reflector arranged for reflecting a portion of the light upward, of a translucent shade, and means for moving the shade across the outer face of the goggle below the reflector, substantially as described.

2. The combination with a locomotive-headlight and goggle-glass thereof, and a supplemental reflector arranged to reflect a portion of the light upward, of a waterproof shade, and means for moving the shade across the outer face of the goggle below the reflector, substantially as described.

3. The combination with a locomotive-headlight and goggle-glass thereof, and a supplemental reflector arranged to reflect a portion of the light upward, of a translucent shade, a roller supporting the shade arranged below the supplemental reflector, and means for moving the shade across the outer face of the goggle below the reflector substantially as described.

814,031. PROCESS OF MAKING ZINC FORMALDEHYDE HYDROSULFITE. (S.) EMILE A. FOURNEAUX, New York, N. Y., assignor to Herman A. Metz, New York, N. Y. Filed May 1, 1905. Serial No. 259,469.

Claim.—The process which consists in reacting on an alkali formaldehyde bisulfite with zinc and supplying a suitable acid at such rate that the presence of free acid is substantially avoided, thereby producing basic zinc formaldehyde hydrosulfite (S), substantially as described.

814,032. PROCESS OF MAKING BASIC ZINC FORMALDEHYDE HYDROSULFITE. (S.) EMILE A. FOURNEAUX, New York, N. Y., assignor to Herman A. Metz, New York, N. Y. Filed July 14, 1905. Serial No. 269,721.

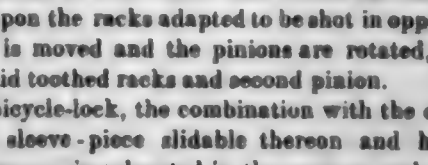
Claim.—1. The process of making basic zinc formaldehyde hydrosulfite (S) which consists in reacting with zinc on sulfurous acid and formaldehyde in solution; substantially as described.

2. The process of making basic zinc formaldehyde hydrosulfite (S) which consists in reacting with two molecular proportions of sulfurous acid on one molecular proportion of zinc, adding two molecular proportions of formaldehyde, and reducing the resulting solution with one molecular proportion of zinc; substantially as described.

814,033. LOOM-SHUTTLE. ROBERT D. FRASER, Lewiston, Me. Filed Feb. 11, 1905. Serial No. 245,184.

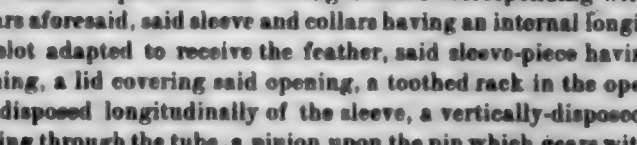
Claim.—1. In a loom-shuttle having a delivery-eye, the combination with the shuttle-body of a frictional piece inlaid in its outer surface adjacent to the delivery-eye, substantially as set forth.

2. In a loom-shuttle having a delivery-eye, the combination with the shuttle-body of an inlaid frictional piece which forms the outer edge of the delivery-eye, as and for the purpose set forth.



3. In a loom-shuttle, the combination with means of producing a drag on the yarn while it is in the shuttle, of a friction-surface on the outside of the shuttle over which the yarn passes after leaving the delivery-eye; substantially as and for the purpose set forth.

814,034. BICYCLE-LOCK. GEORGE H. FRY, Ashburton, New Zealand. Filed Nov. 30, 1904. Serial No. 234,380.



Claim.—1. In a bicycle-lock, the combination with the down-tube of a bicycle, of a feather upon said tube which has notches at intervals, a sleeve slidable on the tube, a combination device composed of rings numbered circumferentially and loose upon the sleeve and engaging the notches in said feather, means permitting a sliding movement of the sleeve when the rings are brought into predetermined relation with the feather, and locking mechanism operated when the sleeve is given a longitudinal movement adapted to engage the steering-head and crank-spindle.

2. In a bicycle-lock, the combination with the down-tube of a bicycle, of a sleeve-piece slidable thereon having annular grooves, rings or collars each numbered circumferentially and loosely located in the annular grooves, a feather upon the tube having notches at intervals corresponding with the collars, said sleeve and collars having an internal longitudinal slot or keyway, said sleeve-piece having an opening and carrying a toothed rack therein, a vertical pin passing into the down-tube, a pinion upon the pin gearing with the rack, a second pinion on the lower end of the pin in the tube, other toothed racks set opposite to each other with which the second pinion engages, bolts upon the racks adapted to be shot in opposite directions as the sleeve is moved and the pinions are rotated, and means for supporting said toothed racks and second pinion.

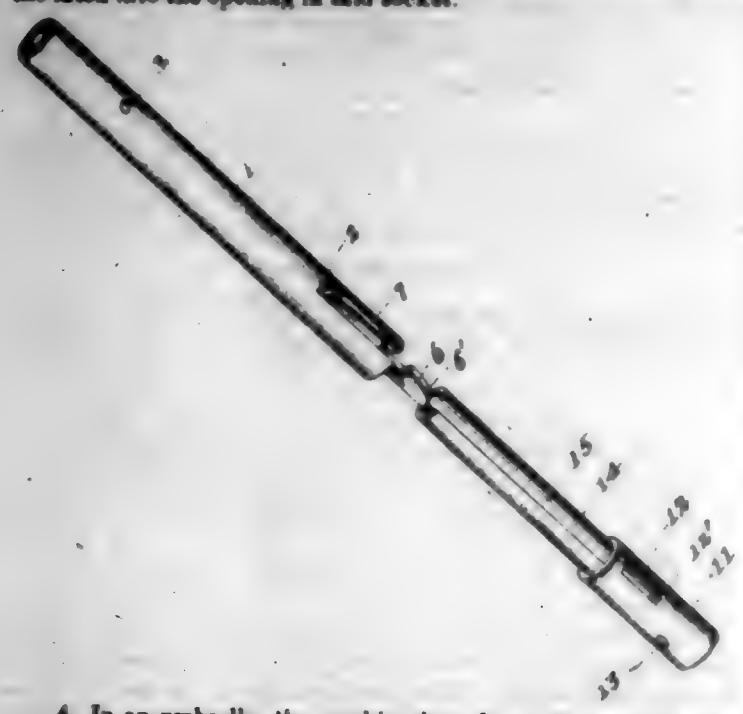
3. In a bicycle-lock, the combination with the down-tube of a bicycle, of a sleeve-piece slidable thereon and having annular grooves, collars or rings located in the grooves and adapted to revolve therein and provided with circumferentially-arranged numerals, a feather upon the tube having notches corresponding with the collars aforesaid, said sleeve and collars having an internal longitudinal slot adapted to receive the feather, said sleeve-piece having an opening, a lid covering said opening, a toothed rack in the opening and disposed longitudinally of the sleeve, a vertically-disposed pin passing through the tube, a pinion upon the pin which gears with the rack aforesaid, a second pinion on the inner end of the pin, toothed racks set opposite to each other and engaging the second pinion, bolts upon the racks which are adapted to be shot in opposite directions as the sleeve is moved and the pinions rotated, a crank-spindle having projections, a steering-tube having a slot, said bolts adapted to engage the projections on the crank-spindle and the slot in the steering-tube, and means for supporting the racks and bolts.

814,035. UMBRELLA. GEORGE K. GARRETT, Philadelphia, Pa., assignor to National Umbrella Frame Company, a Corporation of Pennsylvania. Filed July 29, 1905. Serial No. 271,726.

Claim.—1. In an umbrella, the combination of a staff provided at one end with a latch, with a handle provided with a socket, a slotted stem secured to said socket extending beyond said handle, the slot in said stem operating to accurately guide the latch into the socket.

2. In an umbrella, the combination of a staff provided with a latch; of a handle; a socket provided with an opening; and an extension secured to the inside of said socket, said extension being provided with means for guiding the latch into the opening in said socket.

3. In an umbrella, the combination of a staff provided with a latch; of a handle; a socket provided with an opening, arranged entirely within said handle, and an extension secured to the inside of said socket, said extension being provided with means for guiding the latch into the opening in said socket.



4. In an umbrella, the combination of a staff provided with a slot at one end, and a locking-spring, provided with a latch and thumb-piece, the thumb-piece being located within the said slot; of a handle; a socket provided with an opening near the end thereof; a slotted stem extending beyond said socket, the slot in the said stem registering with the opening in the socket and serving to guide the latch into said opening.

5. In an umbrella, the combination of a staff provided with a slot at one end, and a locking-spring, provided with a latch and thumb-piece, the thumb-piece being located within the said slot; of a handle; a socket arranged wholly within said handle and provided with an opening near the end thereof; a slotted stem extending beyond said socket, the slot in the said stem registering with the opening in the socket and serving to guide the latch into said opening.

6. In an umbrella, the combination with a staff, provided with a slotted end; and a latch, secured within said staff, provided with a thumb-piece, said thumb-piece extending through said slot; of a handle; a socket provided with an opening near its end; and a slotted stem secured within, but extending beyond said socket, the slot of said stem being in alinement with said opening in said socket.

7. In an umbrella, the combination with a staff, provided with a slotted end, and a latch, secured within said staff, provided with a thumb-piece, said thumb-piece extending through said slot; of a handle; a socket provided with an opening near its end, secured wholly within said handle; and a slotted stem secured within, but extending beyond said socket, the slot of said stem being in alinement with said opening in said socket.

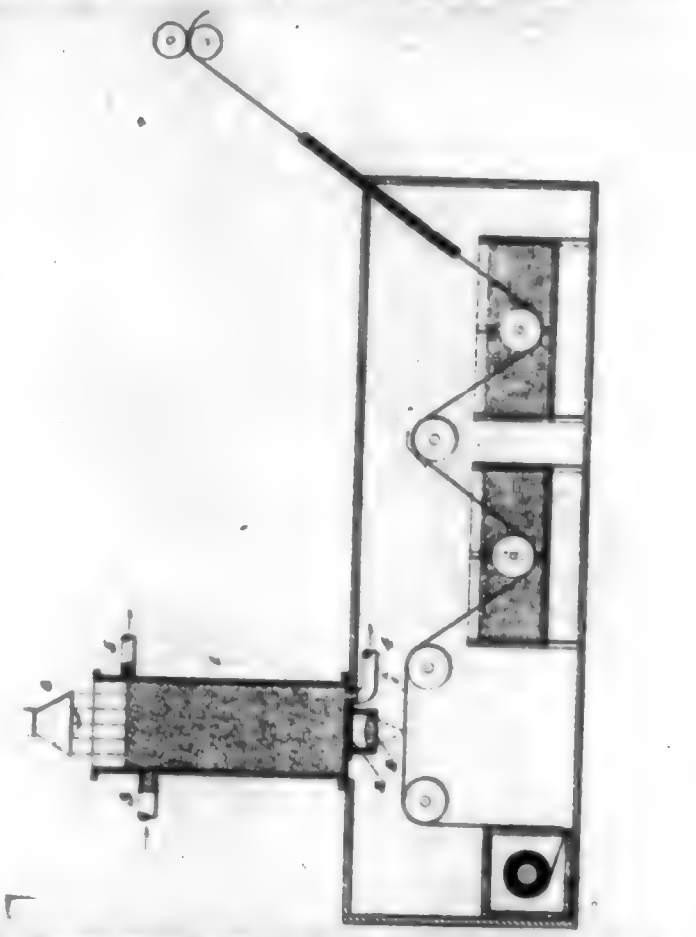
8. In an umbrella, the combination with a staff provided with a slotted end; and a latch, secured within said staff, and provided with a thumb-piece, the thumb-piece extending through said slot; of a handle; a socket provided with an opening near its end; and a slotted stem secured within said socket and extending beyond the same, the slot of said stem being in alinement with said opening, and within the handle registering with said opening in said socket.

9. In an umbrella the combination of the ribs, the staff, a locking-spring, and a thumb-piece adapted to operate said locking-spring, said thumb-piece being situated at the end of the staff and adapted to lie between the outer ends of said ribs, with a separable handle adapted to be secured to said staff by said locking-spring.

10. In an umbrella, the combination with the staff 1, provided with a slot 2; and a locking-spring 4, provided with a thumb-piece 7 and latch 6; of a handle 10; a socket 11, provided with an opening 12; and a slotted stem 14, the slot in the said stem registering with said opening in the socket and serving to guide said latch into engagement with said opening.

814,086. PROCESS AND APPARATUS FOR TESTING WATER FOR DECOLORATION. LÉON GERARD, Brussels, Belgium, assignor to Percy Thompson, East Orange, N. J. Filed June 14, 1905. Serial No. 265,261.

Claim.—1. The process of testing water for decoloration consisting in passing light through a column or layer of the water upon a photographic sensitive surface, substantially as set forth.



2. The process of testing water for decoloration consisting in causing the water to flow continuously through a layer or column of constant depth, and passing light through said layer or column of water upon a photographic sensitive surface, substantially as set forth.

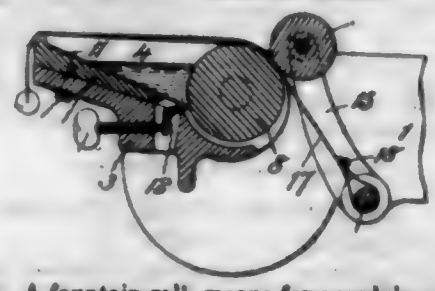
3. The process of testing water for decoloration consisting in causing the water to flow continuously through a layer or column of constant depth, passing light through said layer or column of water upon a photographic sensitive surface, and changing the sensitive surface with a constant rate of progression, substantially as set forth.

4. An apparatus for testing water for decoloration having in combination a column or layer of water, a source of light located so that rays therefrom will pass through the water, and a photographic sensitive surface upon which such rays are received, substantially as set forth.

5. An apparatus for testing water for decoloration having in combination a layer or column of water, means for causing the water to continuously flow through said layer or column while maintaining a constant depth, a source of light located so as to pass rays therefrom through said layer or column of water, and a photographic sensitive surface upon which such rays are received, substantially as set forth.

6. An apparatus for testing water for decoloration having in combination a layer or column of water, means for causing the water to continuously flow through said layer or column while maintaining a constant depth, a source of light located so as to pass rays therefrom through said layer or column of water, and a traveling photographic sensitive surface upon which such rays are received, substantially as set forth.

814,087. ATTACHMENT FOR INK-FOUNTAINS OF PRINTING-PRESSES. RICHARD J. GREENWAY, Jr., Westerly, R. I., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 28, 1904. Serial No. 238,562.



Claim.—1. A fountain-roll, means for supplying ink thereto, a ductor-roll, a strip of suitable material interposed between the two rolls to prevent transferring ink from the fountain-roll to the ductor-

roll at a predetermined point, a suitable support upon one side of the rolls, means for securing one end of the strip to the support and means engaging the free end of the strip upon the other side of the rolls for holding it under tension.

2. A fountain-roll, means for supplying ink thereto, a ductor-roll, a strip of suitable material interposed between the two rolls to prevent transferring ink from the fountain-roll to the ductor-roll at a predetermined point, a suitable support upon one side of the rolls, means for removably securing one end of the strip to the said support and means engaging the free end of the strip upon the other side of the rolls for holding it under tension.

3. A fountain-roll, means for supplying ink thereto, a ductor-roll, a strip of suitable material interposed between the two rolls to prevent transferring ink from the fountain-roll to the ductor-roll at a predetermined point, a suitable support upon one side of the rolls, means for securing one end of the strip to the said support and a weight carried by the free end of the strip upon the other side of the rolls for holding the strip under tension.

4. A fountain-roll, means for supplying ink thereto, a ductor-roll, a strip of suitable material interposed between the two rolls, a suitable support upon one side of the rolls, means for securing one end of the strip to the said support and means engaging the free end of the strip upon the other side of the rolls for holding it under tension, the said strip being capable of adjustment along the rolls to prevent transferring ink from the fountain-roll to the ductor-roll at any desired point thereon.

5. A fountain-roll, means for supplying ink thereto, a ductor-roll, its shaft and a strip of suitable material attached to the shaft and interposed between the two rolls to prevent transferring ink from the fountain-roll to the ductor-roll at a predetermined point and means for holding the strip under tension.

814,038. **MEDICAL APPLICATOR.** HANS H. GROTH, Cincinnati, Ohio. Filed Dec. 31, 1904. Serial No. 239,223.



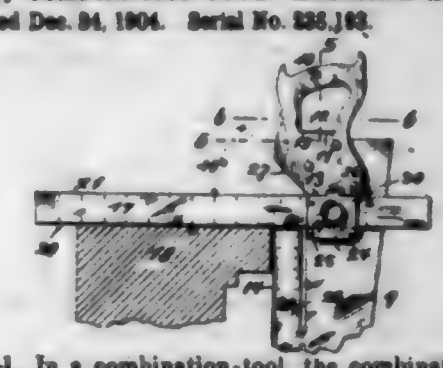
Claim.—1. The combination of a medical applicator having a stem provided with a head at its extreme outer end, said head having a groove at its extreme outer end for receiving a medicated strand, the outer end of said head and the walls of said groove being rounded for permitting direct contact with the walls of an afflicted passage without injury to said walls, said medicated strand stationarily positioned upon said head and stem and extending in advance of and lengthwise of said headed stem and directly contacting the walls of the passage to be treated throughout the length of the insertion thereof during said insertion, said head connecting with said stem by means of a sloping neck for permitting withdrawal of said headed stem from said strand by the backward movement of said headed stem, substantially as described.

2. An improved medical applicator having a flexible stem provided with a head at the extreme outer end thereof, said head having a groove at its extreme outer end for receiving a strand and having a sloping neck connecting it with said stem for permitting withdrawal of said head from said strand by the backward movement of said head, said head having walls formed thereon by said grooves, the outer ends and edges of said walls being rounded, the outer sides of said collective strands, head and stem directly contacting the wall of the passage being treated, said strands extending in advance of said headed stem, and means at the other end of said stem for stretching said strand exposedly in fixed position against longitudinal movement along said stem during application of said strand to the affected part, substantially as described.

3. An improved medical applicator having a flexible stem provided with a head at the extreme outer end thereof, said head having a plurality of grooves at its extreme outer end for receiving a plurality of strands and having sloping neck connecting it with said stem for permitting withdrawal of said head from said strands by the backward movement of said head, the outer end of said head being rounded, said strands being looped in the said grooves and extending in advance of and longitudinally of said headed stem and being exposed at their outer sides throughout their length, a plate at the other end of said stem, and clips on said plate for temporarily holding said strands in fixed position against longitudinal movement along said stem during application of said strand to the affected part, said collective stem, head and strands directly contacting the wall of the passage being treated, all substantially as and for the purpose specified.

4. In combination, in a medical applicator, of a stem A provided with an enlarged head B at one of its extreme outer ends, said head having crossing grooves *b b'* across its extreme outer end and along its sides, the said head and the walls of said grooves being rounded at all their outer portions, a tapering neck D being located between said head and stem for permitting withdrawal of said head and stem from strands in said grooves, a handle C of plate form at the other end of said stem, a dished clip G at each side of said handle, a washer *g'* between each of said clips and said handle, and a rivet *g²* taking through said clips, washers and handle for securing the same together and forming clamping means for said strands, substantially as described.

814,039. **COMBINATION-TOOL.** HARRISON A. HAMILTON, Myers Ky. Filed Dec. 24, 1904. Serial No. 237,163.



Claim.—1. In a combination-tool, the combination of a saw-blade, a handle for it, and a shank whereby the two are connected to each other, there being a triangular notch provided in the saw-blade adjacent to the shank of the handle and extending from the back edge of the saw-blade inwardly, one of the edges of this notch being arranged at right angles to the back edge of the saw-blade, the other edge of the notch forming an angle of forty-five degrees therewith, the edge of the handle-shank being shaped accordingly.

2. In a combination-tool, the combination of a saw-blade, a handle for it, a shank whereby both are connected, the inner edge 13 of said shank being arranged to be at right angles to the back of the saw-blade, a guideway formed on the side of the saw-blade and of which guideway, edge 13 forms one of the sides, an arm fitted to this guideway and means to hold it adjustably to its position therein.

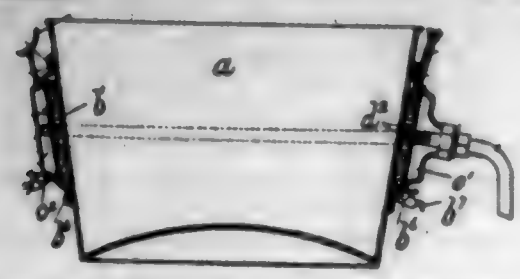
3. In a combination-tool, the combination of a saw-blade, a handle for it, a shank whereby the two are connected and the inner edge 13 of which is arranged at right angles to the back edge of the saw-blade, a socket provided on the flat side of the saw and of which parts of this latter and edge 13 form parts, an arm fitted to this socket in a manner to be at right angles to the saw-blade, means to hold it detachably and removably in this socket and an angular notch provided in the saw-blade extending from the back edge inwardly, its two sides being arranged to form an angle of forty-five degrees and one of which sides being coincident and alined with one of the edges of the arm mentioned when the same occupies its socket.

4. In a combination-tool, the combination of a saw-blade, a handle for it, a shank whereby the two are connected and the inner edge 13 of which is arranged at right angles to the back edge of the saw-blade, a socket provided on the flat side of this latter and next to edge 13, an arm fitted to this socket which latter is open to permit insertion of this arm in two directions, the arrangement being such that when inserted from one direction, the arm is at right angles to the saw-blade, while when inserted from the other direction, said arm is held within the area of the saw-blade and means to hold this arm detachably and adjustably in this socket.

5. In a combination-tool, the combination of a saw-blade, a handle for it, a shank whereby the two are connected and the inner edge 13 of which is arranged at right angles to the back edge of the saw-blade, a socket provided on the flat side of this latter and next to edge 13 an arm fitted to this socket so as to be at right angles to the back of the saw-blade, means to hold this arm detachably in its socket and registering notches 29 and 30, one provided in the edge of the saw-blade and the other in one of the edges of the arm mentioned and serving for the purpose described.

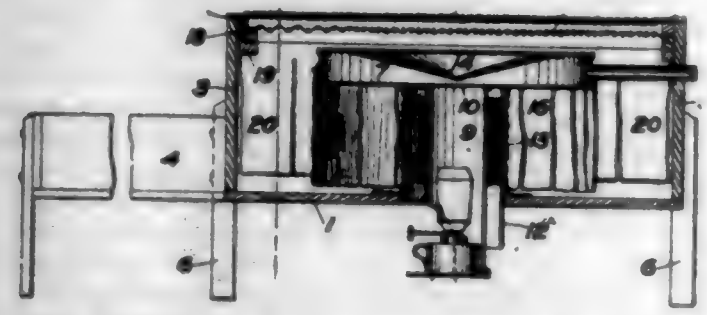
6. In a combination-tool, the combination of a saw-blade, a handle for it, a shank whereby the two are connected and the inner edge 13 of which is arranged at right angles to the back edge of the saw-blade, a socket provided on the flat side of this latter and next to edge 13 an arm fitted to this socket in the manner to be arranged at right angles to the back of the saw-blade, to form therewith a right-angle square presenting for use an inner and an outer angle, the lines of said angles being provided by the edges of the arm mentioned and by edge 14 of the back of the saw-blade and notches 28 provided in this latter to provide the additional edge for the outer angle.

814,040. APPARATUS FOR MAKING CHEESE. JAMES HARDING, Maiden Bradley, near Bath, England. Filed Aug. 8, 1904. Serial No. 219,909.



Claim.—In cheese-making apparatus of the kind described, the combination with a meal tub or vessel; of an annular water jacket or chamber surrounding said tub having inlet and outlet openings; an annular steam jacket or chamber surrounding said water-jacket which is interposed between the walls of the said tub and said steam-jacket; and a steam-supply pipe communicating with said steam-jacket and circulating around the interior of same, said pipe being perforated in that part which is inclosed by said steam-jacket, substantially as specified.

814,041. BROODER. FRANKLIN C. HARR, Buffalo, N. Y., assignor to Cyphers Incubator Company, Buffalo, N. Y., a Corporation of New York. Filed Feb. 6, 1905. Serial No. 244,335.



Claim.—1. In a brooder, a brooder-box having air-outlet, a brooder-chamber within said brooder-box having a porous ceiling, and a heater in said brooder-chamber having means for delivering warmed fresh air into said chamber.

2. In a brooder, a brooder-box having air-outlet, a brooder-chamber within said brooder-box having a porous ceiling and a heater in said brooder-chamber having a curtain constituting a hover and having means for delivering warmed fresh air within said curtain and thence into said chamber.

3. In a brooder, a brooder-box having a porous top, a brooder-chamber within said brooder-box having a porous ceiling, and a heater in said brooder-chamber having means for delivering warmed fresh air into said chamber.

4. In a brooder, a brooder-box having a porous top, a brooder-chamber within said brooder-box having a porous ceiling, and a heater in said brooder-chamber having a curtain constituting a hover and having means for delivering warmed fresh air within said curtain and thence into said chamber.

5. In a brooder, a brooder-box having a porous top, a brooder-chamber within said brooder-box having a porous ceiling and a curtain constituting one side thereof, and a heater in said brooder-chamber having means for delivering warmed fresh air into said chamber.

6. In a brooder, a brooder-box having a porous top, a brooder-chamber within said brooder-box having a porous ceiling and a curtain constituting one side thereof, and a heater in said brooder-chamber having a curtain constituting a hover and having means for delivering warmed fresh air within said curtain and thence into said chamber.

814,042. SHIRT-STUD. OTTO L. HEINRICH, Newark, N. J. Filed June 23, 1905. Serial No. 266,556.



Claim.—1. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, substantially as and for the purposes set forth.

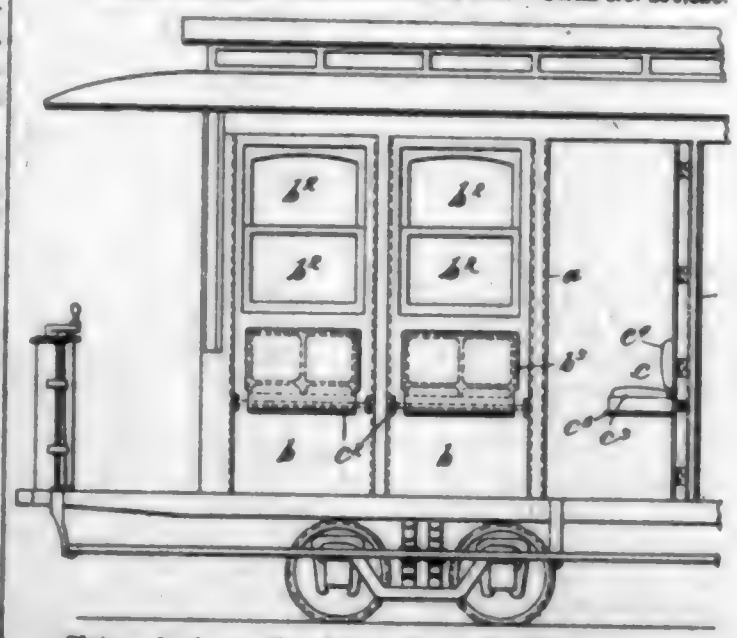
2. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, and a stop on said body to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth.

3. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, a pair of projections or lugs on said body formed with a guide between them in which said arm or finger is slidably arranged, substantially as and for the purposes set forth.

4. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, and a rearwardly-extending spring arm or finger connected with said shank or bar, said arm or finger having a portion in slidable engagement with an outer portion of said body, a pair of projections or lugs on said body formed with a guide between them in which said arm or finger is slidably arranged, and means on said spring arm or finger adapted to be brought in holding engagement with said lugs or projections to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth.

5. A shirt-stud, comprising a tubular body, a shank or bar slidably arranged in said body, a rearwardly-extending spring arm or finger connected with said shank or bar, and a projection on said spring arm or finger, said projection being in slidable engagement with an outer portion of said body and being adapted to be brought in holding engagement with an end portion of said tubular body, a pair of projections or lugs at the opposite end portion of said body formed with a guide between them in which said spring arm or finger is slidably arranged and with which said projection on said spring arm or finger is also adapted to be brought in engagement to limit the sliding movement of said shank and finger and prevent the withdrawal of said shank from within said body, substantially as and for the purposes set forth.

814,043. STREET-CAR. WILLIAM J. HERBERT, New York, N. Y. Filed Jan. 19, 1904. Renewed Jan. 19, 1906. Serial No. 296,226.



Claim.—1. A car, the side portions of which are composed of vertically-arranged hinged doors, said doors being provided with an opening, and a seat hinged in said opening and composed of a plurality of parts one of which forms a seat in any position of the door, and the other or others of which close the opening in the door in any position thereof, substantially as shown and described.

2. A car, the sides of which are provided with vertical stanchions arranged at regular intervals, the alternate stanchions being provided with doors which are hinged thereto, said doors being also provided with openings, and seats hinged in said openings, said seats being composed of a plurality of parts, substantially as shown and described.

3. A car, the sides of which are composed of doors hinged so as to swing vertically and inwardly, said doors being provided with openings in which are hinged seats composed of two or more parts, one part of said seats being always in position for use as a seat or seats and the other part or parts closing said openings in any position of the doors, substantially as shown and described.

814,044. ROTARY ENGINE. RAY B. HEMELY, Laverne, Minn. Filed Apr. 10, 1905. Serial No. 254,821.



Claim.—A rotary engine comprising a revoluble piston having a peripheral head, a rotary valve to bear against one side of the piston and having radial pockets to successively clear the piston-head, said rotary valve having a central longitudinal bore and passages radiating therefrom and communicating respectively with the several pockets, a casing incasing the piston and valve and having ports communicating with the two pockets which are next adjacent to the piston, and a hollow revolubly-movable shaft in the bore of and forming the journal for the revoluble valve and having a port to be turned into communication with either of the passages in the valve.

814,045. TOBACCO-PIPE. FRANK M. HOLME, Ridgway, Pa. Filed Nov. 21, 1905. Serial No. 288,439.



Claim.—1. In a tobacco-pipe, a bowl provided at one side with a stem-section having a collecting-chamber therein and a smoke-passage extending from the upper portion of said chamber to the base of the bowl, a stem connected to said section and having a depending tube extended below the upper portion of said smoke-passage, and a series of checks disposed upon the inner wall of the passage through said stem.

2. In a tobacco-pipe, a stem having a passage therethrough provided with a series of checks circumferentially disposed in said passage to prevent the passage of liquid therethrough in one direction.

3. In a tobacco-pipe, a stem having a passage therethrough provided with a series of checks circumferentially disposed within the wall of said passage to prevent the passage of liquid therethrough in one direction, a threaded connection at one end of said stem, and a tubular extension beyond said connection.

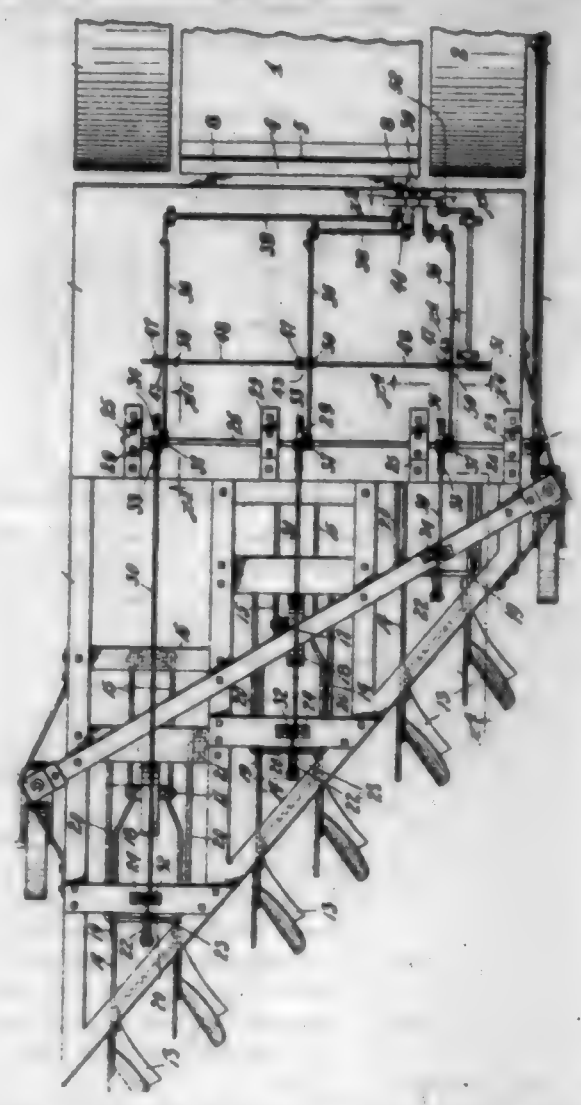
814,046. GANG-PLOW. PHILIP S. HOUGHTON and RICHARD H. DETARMOND, Grand Forks, N. D. Filed Oct. 2, 1905. Serial No. 280,868.

Claim.—1. In a gang-plow, the combination with a power-driven shaft, of a plurality of independent plow-lifting devices arranged to be connected to said shaft at will, substantially as described.

2. In a gang-plow, the combination with a power-driven shaft provided with several ratchet-wheels, of plow-lifting levers having independent connections to the plows and provided with pawls for coupling them to the respective ratchet-wheels, at will, substantially as described.

3. The combination with a traction-driven gang-plow, of a shaft driven from one of the traction-wheels, a plurality of plow-lifting devices, and independent means for coupling said plow-lifting devices to said shaft at will, to effect the lifting of the plows, substantially as described.

4. In a gang-plow, the combination with a shaft and means for rotating the same, under the forward movement of the machine, of a plurality of independent plow-lifting devices, and means for coupling said plow-lifting devices to said shaft and for disconnecting the same therefrom, substantially as described.



5. In a gang-plow, the combination with a shaft and power-actuated means for rotating the same, of independent plow-lifting devices, means for coupling said plow-lifting devices to said shaft at will, latches operative on said plow-lifting devices to hold the plows in raised positions, and means for automatically disconnecting said plow-lifting devices from said shaft, after they have been secured by said latches, substantially as described.

6. In a power-driven gang-plow, a plow-lifting device, and means whereby said lifting device may be operated at will, either by hand or by the power device of said gang-plow, substantially as described.

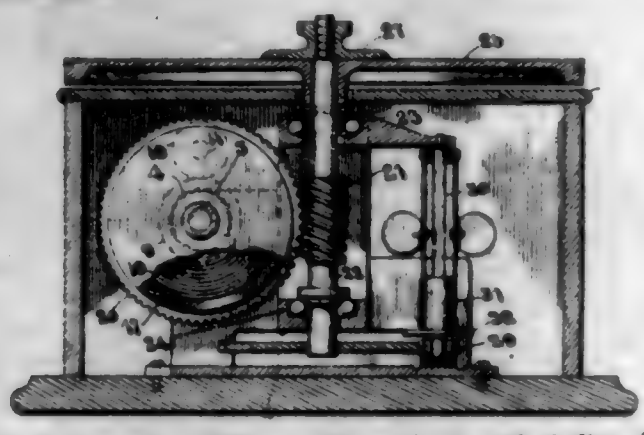
7. In a gang-plow, the combination with a power-driven counter-shaft having a plurality of ratchet-wheels, of lifting-levers pivoted on said shaft and connected to the plows, pawls carried by said levers and normally held out of engagement with the teeth of the respective ratchet-wheels, independent connections for throwing said pawls into action on their respective ratchet-wheels at will, latches operative on said levers to hold the plows in raised positions, and independent trips for positively forcing said pawls out of engagement with said ratchet-wheels, after said levers have been secured by said latches, substantially as described.

8. In a gang-plow, the combination with a power-driven shaft, of a plurality of independent plow-lifting devices, means for coupling said plow-lifting devices to said shaft, at will, involving a common controller arranged to couple the several lifting devices in succession, substantially as described.

9. In a gang-plow, the combination with a power-driven shaft, a plurality of independent plow-lifting devices, means for coupling said plow-lifting devices to said shaft, latches operative on said plow-lifting devices to hold the plows in raised positions, and a latch-trip arranged to trip the several latches in succession, substantially as described.

814,047. MOTOR FOR TALKING-MACHINES. ELDRIDGE R. JOHNSON, Philadelphia, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Original application filed June 21, 1898. Serial No. 684,053. Divided and this application filed Sept. 14, 1903. Serial No. 173,060.

Claim.—1. In a motor for talking-machines, the combination of a vertical driving-spindle, a worm carried by said spindle, a driven member mounted on said spindle, a drum having a worm-gear on its outer surface and meshing with said worm, a horizontal winding-shaft upon which said drum is mounted, a spring connecting said shaft and drum and a centrifugal governor for controlling the speed of said spindle.



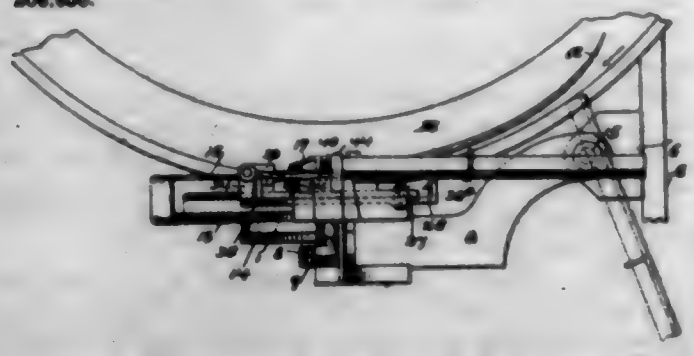
2. In a motor for talking-machines, a horizontal winding-shaft, a drum revolubly mounted thereon, a coiled spring connecting said drum and shaft, said drum having gear-teeth located upon its cylindrical surface and forming a screw-gear, a vertical turn-table spindle, and a screw-gear mounted on said spindle and adapted to mesh with the teeth upon said drum.

3. In a motor for talking-machines, a horizontal winding-shaft, a drum revolubly mounted thereon, a coiled spring connected with said drum and shaft, said drum having gear-teeth located centrally upon its cylindrical surface and forming a screw-gear, a vertical turn-table spindle and a screw-gear upon said spindle adapted to mesh with the teeth upon said drum.

4. In a motor for talking-machines, a horizontal winding-shaft, a drum revolubly mounted thereon, a coiled spring connecting said drum and shaft, said drum having gear-teeth located upon its cylindrical surface and forming a screw-gear, a vertical turn-table spindle, a screw-gear mounted on said spindle and adapted to mesh with the teeth upon the drum, and a centrifugal governor driven directly from said vertical spindle.

5. In a motor for talking-machines, a horizontal winding-shaft, a drum mounted thereon, a coiled spring connected with said drum and shaft, said drum having gear-teeth located centrally upon its surface and forming a screw-gear, a vertical turn-table spindle, anti-friction-bearings for said spindle, a screw-gear upon said spindle adapted to mesh with the teeth upon said drum, a gear also carried by said spindle and a centrifugal governor operated by the last-named gear.

814,048. TYPE-PACKING MECHANISM. Frank A. Johnson, New York, N. Y., assignor to The Unitype Company, Manchester, Conn., a Corporation of New Jersey. Filed May 6, 1904. Serial No. 206,630.



Claim.—1. The combination with type-feeding means, of a gripper having gripping-fingers normally pressed into gripping position, means for separating said fingers and releasing them to receive and seize a type, and a striker for forcing the type from the grippers.

2. The combination with type-feeding means, of a gripper having gripping-fingers normally pressed into gripping position, a feeler engaging a type when in position to be seized, means for separating the fingers, and means controlled by the feeler for releasing the fingers to seize a type.

3. The combination with type-feeding means, of a gripper having gripping-fingers normally pressed into gripping position, a tripper for separating the fingers as the gripper approaches the type-path, and means for withdrawing the tripper to release the grippers when a type is in position to be seized by the fingers, and means for delivering the type from the grippers.

4. The combination with type-feeding means, of an oscillating gripper having gripping-fingers normally pressed into gripping position, a tripper for separating the fingers as the gripper approaches the type-path, a feeler mounted to move across the type-path, and devices controlled by said feeler to withdraw the tripper and release the fingers when a type is engaged by the feeler.

5. The combination with type-feeding means, of an oscillating gripper having gripping-fingers normally pressed into gripping position, a tripper for separating the fingers as the gripper approaches the type-path, a feeler mounted to move across the type-path, devices controlled by said feeler to withdraw the tripper and release the fingers when a type is engaged by the feeler, and a reciprocating striker for forcing the type from the grippers.

6. The combination with type-feeding means, of an inclined stop-piece for the type, a feeler moving toward and from said stop-piece, a gripper having gripping-fingers normally pressed into gripping position, a tripper for separating the fingers to receive a type when in position between the stop-piece and feeler, and devices controlled by the feeler for withdrawing the tripper to release the fingers for gripping the type.

7. The combination with type-feeding means, of an inclined stop-piece for the type, a feeler moving toward and from said stop-piece, an oscillating gripper having gripping-fingers normally pressed into gripping position, a tripper for separating the fingers to receive a type when in position between the stop-piece and feeler, devices controlled by the feeler for withdrawing the tripper to release the fingers for gripping the type, and a striker for forcing the type from the grippers.

8. The combination with means for feeding type horizontally on their sides, of a gripper for picking up the type, means for oscillating said gripper to bring the type to a substantially vertical position, and means for delivering the type from the grippers.

9. The combination with means for feeding type horizontally on their sides, of a gripper for picking up the type, means for oscillating said gripper to bring the type to a substantially vertical position, and a striker for delivering the type from the gripper.

10. The combination with means for feeding type horizontally on their sides, of a gripper having gripping-fingers normally pressed into gripping position, means for oscillating said gripper from a substantially horizontal to a substantially vertical position, means for separating the fingers and releasing them to pick up the type when the gripper is in a horizontal position, and a reciprocating striker for forcing the type from the gripper when the latter is in a vertical position.

11. The combination with a type-carrier, of a gripper moving toward and from the carrier and having gripping-fingers normally held in gripping position, means for holding the fingers out of gripping position during a portion of the gripper movement toward the carrier and releasing the fingers to grip the type, and a striker for forcing the type from the fingers.

12. The combination with a type-carrier, of a gripper moving toward and from the carrier, gripping-fingers normally held in gripping position, a wedge-piece acting on one member of the gripper to hold the fingers out of gripping position during a portion of their movement toward the type-carrier, and means for withdrawing the wedge-piece to release the fingers to grip the type.

13. The combination with a type-carrier, of a gripper moving toward and from the carrier, gripping-fingers normally held in gripping position, a wedge-piece acting on one member of the gripper to hold the fingers out of gripping position during a portion of their movement toward the type-carrier, a feeler engaged by the type when in position for the gripper, and means controlled by the feeler for withdrawing the wedge-piece to release the fingers to grip the type.

14. The combination with oscillating spring-pressed gripper-arms 17, 19, and means for opening and releasing said arms to receive and grip a type, of reciprocating striker 16 for forcing the type out of said gripper, substantially as described.

15. The combination with oscillating spring-pressed gripper-arms 17, 19, and means for opening and releasing said arms to receive and grip a type, of reciprocating striker 16 for forcing the type out of said gripper, a stick into which the type is forced by the striker, and spring-stops for holding the type in the stick, substantially as described.

16. In mechanism for handling type, a type-gripper having the single finger 22 on one side and the pivoted finger 23 having gripping-surfaces on opposite sides of the finger 22, substantially as described.

17. The combination with type-feeding means, of the inclined

stop-piece 37 and feeler 36, spring-pressed gripper-arms 17, 19, gripper-finger 22 on one of said arms and pivoted gripper-finger 23 on the other arm having gripping-surfaces on opposite sides of the finger 22, substantially as described.

18. The combination with the spring-pressed gripper-arms 17, 19, of stop-piece 37, wedge-piece 25 acting on one of said arms during its movement toward the type to open the gripper to receive a type, and means for withdrawing the wedge-piece for releasing the grippers to seize the type.

19. The combination with the spring-pressed gripper-arms 17, 19, of stop-piece 37, wedge-piece 25 acting on one of said arms during its movement toward the type to open the gripper to receive a type, pivoted spring-pressed feeler 36 opposite stop 37, and means controlled by the feeler for withdrawing the wedge-piece when a type is between the stop and feeler, substantially as described.

20. The combination of the oscillating spring-pressed gripper-arms 17, 19, slide 26 carrying wedge-piece 25 for separating the arms, feeler 36 pivoted on the slide, connecting-rod 32 having a spring connection with slide 26, lever 27 connecting-rod 32 and slide 26, and oscillating lever 28 engaging lever 27 to move the slide when a type is in position for the gripper and acting to return the rod and slide to normal position, substantially as described.

814,049. METHOD OF TREATING MATTE. WOOLSEY M. JOHNSON, Hartford, Conn. Filed May 27, 1903. Serial No. 159,936.

Claim.—1. The herein-described method which consists in subjecting copper-nickel matte to the action of sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid; roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper; and returning the spent electrolyte to the leaching-vats, as set forth.

2. The herein-described method which consists in subjecting copper-nickel matte to the action of hot dilute sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid; roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper; and returning the spent electrolyte to the leaching-vats, as set forth.

3. The herein-described method which consists in subjecting copper-nickel matte to the action of sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid; recovering the nickel from the solution; roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper; and returning the spent electrolyte to the leaching-vats, as set forth.

4. The herein-described method which consists in subjecting copper-nickel matte to the action of hot dilute sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid; recovering the nickel from the solution; converting said hydrogen sulfid to sulfuric acid; roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper, and returning the remaining solution to the leaching-vats, as set forth.

5. The herein-described method which consists in subjecting copper-nickel matte to the action of sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid, roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper; returning the solution to the roasted residue and repeating the electrolysis, and finally returning the spent electrolyte to the leaching-vats for the matte, as set forth.

6. The herein-described method which consists in subjecting copper-nickel matte to the action of sulfuric acid, thereby dissolving nickel and liberating hydrogen sulfid, and leaving a residue consisting in part of copper sulfid; roasting said residue to oxid and leaching same with sulfuric acid, thereby forming a solution containing copper sulfate; electrolyzing said solution to separate a portion of the copper; returning the solution to the roasted residue and repeating the electrolysis until the presence of nickel interferes with the deposition of the copper; depositing further quantities of copper upon rotary cathodes, and finally returning the spent electrolyte to the leaching-vats for the matte, as set forth.

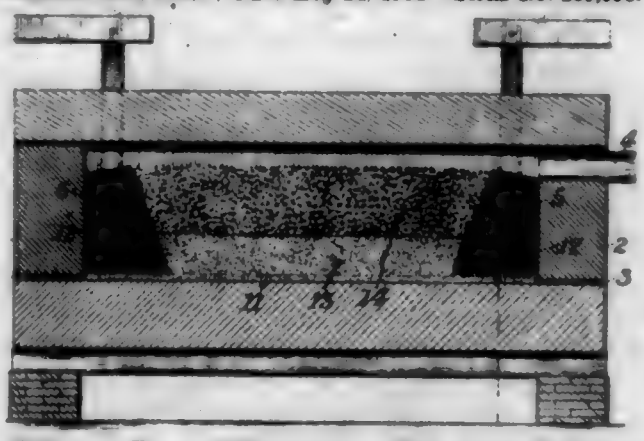
7. The herein-described method of electrolyzing nickel solutions, which consists in maintaining the bath in a state of substantial neutrality by the solution therein of nickel hydroxid, as set forth.

8. The herein-described method of electrolyzing nickel solutions which consists in adding to the bath nickel hydroxid in quantity proportionate to the metal separated at the cathode, whereby the substantial neutrality of the bath is maintained, as set forth.

9. The herein-described method of treating material containing nickel and copper as sulfids, which consists in roasting the same, dissolving the roasted residue in sulfuric acid, electrolyzing the solution with insoluble anodes while passing into the electrolyte the gases derived from the roasting operation, and returning the acid electrolyte to the roasted material, as set forth.

10. The herein-described method of treating material containing nickel and copper as sulfids, which consists in roasting the same, dissolving the roasted residue in sulfuric acid, electrolyzing the solution with anodes of lead while passing into the electrolyte the gases derived from the roasting operation, and returning the acid electrolyte to the roasted material, as set forth.

814,050. ELECTRICAL SMELTING PROCESS. WOOLSEY M. JOHNSON, Iola, Kans. Filed May 24, 1904. Serial No. 209,996.



Claim.—1. The smelting process, which consists in interposing between a charge containing low-grade ore, and a furnace-wall, a charge containing high-grade ore, thereby protecting said wall from the action of said low-grade ore, substantially as described.

2. The smelting process, which consists in interposing between a charge containing low-grade ore, and a furnace-wall, a charge containing high-grade ore and a layer of inert material, thereby protecting said wall from the action of said low-grade ore, substantially as described.

3. The electrical smelting process, which consists in interposing between a low-resistance charge containing low-grade ore, and a furnace-wall, a high-resistance charge containing high-grade ore, thereby protecting said wall from the action of said low-grade ore, and transmitting an electric current through said charge, substantially as described.

4. The electrical smelting process, which consists in interposing between a low-resistance charge containing low-grade ore, and a furnace-wall, a high-resistance charge containing high-grade ore and a layer of inert material, thereby protecting said wall from the action of said low-grade ore, and transmitting an electric current through said charge, substantially as described.

5. The electrical smelting process, which consists in arranging on a suitable hearth a body or charge of relatively high electrical resistance, arranging upon said body or charge a charge of lower electrical resistance, and transmitting an electric current through said charges, substantially as described.

6. The electrical smelting process, which consists in arranging on a suitable hearth a body or charge of relatively high electrical resistance, arranging upon said body or charge a charge of lower electrical resistance, transmitting an electric current through said charges, said charges being so arranged as to secure a substantially even temperature within the furnace, substantially as described.

7. The electrical smelting process, which consists in arranging on a suitable hearth a layer of inert material, arranging on said layer a body or charge of relatively high electrical resistance, arranging upon said body or charge a charge of lower electrical resistance, and transmitting an electric current through said charges, substantially as described.

8. The electrical smelting process, which consists in interposing between bodies of divided carbon constituting the electrodes a suitable conductive charge, and passing an electric current through said charge, substantially as described.

9. The process of recovering volatile metals, which consists in interposing between bodies of divided carbon a suitable conductive charge containing a volatile metal, and passing an electric current through said charge, substantially as described.

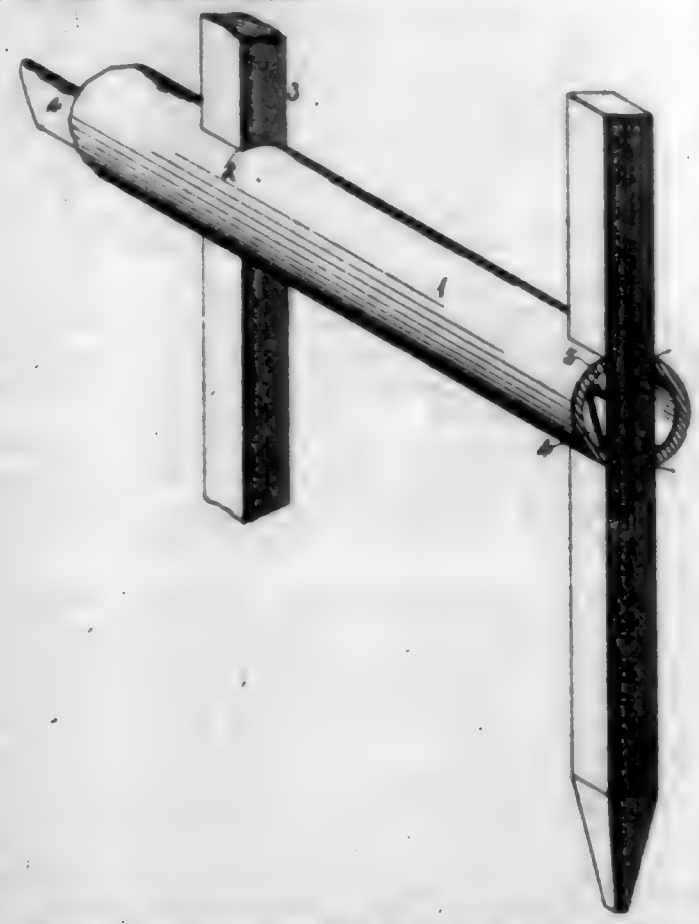
10. The process of recovering zinc, which consists in interposing between bodies of divided carbon constituting the electrodes a suitable conductive charge containing zinc, and passing an electric current through said charge, substantially as described.

11. The electrical smelting process, which consists in interposing between bodies of divided carbon a conductive charge comprising a lower layer of high-grade ore and an upper layer of relatively low-grade ore, and passing an electric current through said charge, substantially as described.

12. The electrical smelting process, which consists in interposing between bodies of divided carbon a charge comprising a lower layer of high-grade ore mixed with high-resistance carbon and an upper layer of low-grade ore mixed with low-resistance carbon, and passing an electric current through said charge, substantially as described.

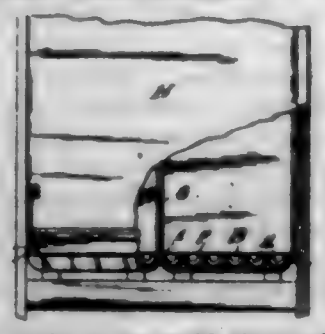
13. The process of smelting zinc ores, which consists in interposing between a charge containing low-grade zinc ore and a furnace-wall, a charge containing high-grade zinc ore, thereby protecting said wall from the action of said low-grade ore, substantially as described.

814,051. HARROW. Judson R. Jones, Rockton, Ill. Filed Apr. 27, 1905. Serial No. 257,769.



Claim.—The combination of a tubular support, teeth passing through the support, and a spring-bar located within the support and having its upper edge in hook form, and impinging against the teeth.

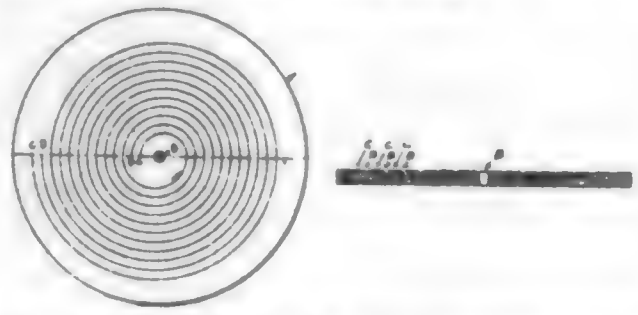
814,052. ICE-CREAM MOLD. John D. Kiefer, Indianapolis, Ind. Filed Mar. 20, 1905. Serial No. 251,169.



Claim.—1. In an ice-cream mold, the combination with a partitioned hopper having an opening in its lower end, of a sectional mold, adapted to slide in and out of the opening in the hopper, the joint between sections coming beneath a partition in the hopper whereby each section of the mold is filled with a different flavored or colored cream, whereby when the mold is withdrawn, a completed block of cream is formed by folding the sections of the mold together.

2. A portable ice-cream mold comprising a partitioned or divided hopper having an opening at the lower end in one side thereof, and a sectional mold fitted to the opening, said sections counterparts of each other and capable of being superimposed when removed from the hopper to complete the blocks of material molded therein.

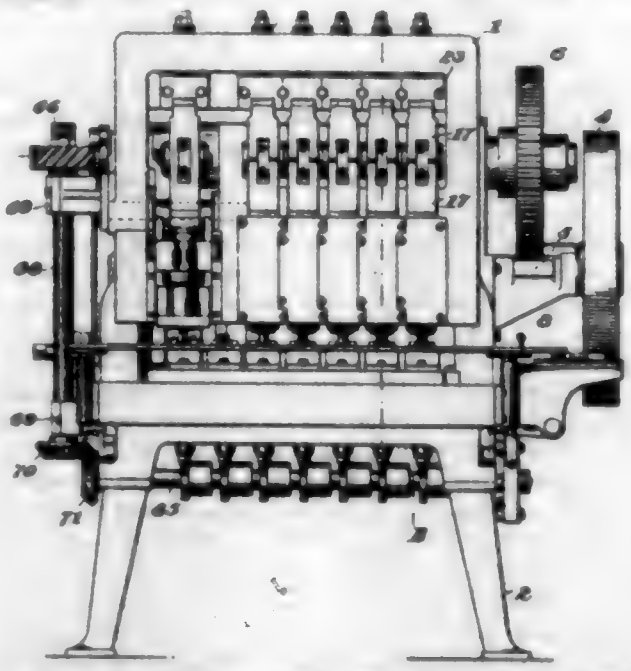
814,053. DISK-TALKING-MACHINE BLANK. Rudolph Klein, New York, N. Y., assignor of one-fifth to Byron G. Harlan, Orange, N. J. Filed Mar. 19, 1904. Serial No. 198,909.



Claim.—1. In a disk-blank for talking-machines, a rigid disk with multiple parallel volute spirals thereon, one of which spirals shall have therein a wax-like record composition or material.

2. In a disk-blank for talking-machines, a rigid disk with multiple parallel volute spirals thereon, all but one of said volute spirals having therein a wax-like composition or record material.

814,054. PRESS. George B. Lane, Waterbury, Conn., assignor to The Waterbury Farrel Foundry and Machinery Company, Waterbury, Conn., a Corporation of Connecticut. Filed June 7, 1905. Serial No. 264,197.



Claim.—1. In a press; coaxial blanking and drawing punches; a driving-shaft rotatable in a plane different from that of the axes of the aforesaid punches; a cam for positively actuating one of said punches in one direction; and a separate cam for moving the same in the opposite direction.

2. In a press, the combination with coaxial blanking and drawing punches; of a crank-shaft rotatable upon one side of said punches; cams upon said shaft; means for actuating one of said punches from the crank upon said shaft; means connected with one of said cams for moving the other of said punches in one direction; and means connected with the other of said cams for moving said last-mentioned punch in the opposite direction.

3. In a press, the combination with a blanking-punch; of a coaxial drawing-plunger; a rotary crank-shaft; cams fixed thereon; toggles having connection with said drawing-plunger; a pitman having connection with the crank upon said shaft; and a rock-arm, connected with said blanking-punch, having engagement with each of said cams and oscillated in one direction by one of said cams and in the opposite direction by the other of said cams.

4. In a press, the combination with companion gates adjustably connected with each other; of a crank-shaft; cams upon said shaft; a rock-arm actuated by said cams; links connecting one of said gates with said rock-arm; a plunger operative coaxially with

said gates; toggles connected with said plunger; and a pitman connected with said shaft and said toggles for actuating said plunger.

5. In a press, the combination with the frame; of a plurality of plungers operative therein; plunger-caps having a recess in one side thereof and a laterally-projecting wing upon the other side.

6. In a press, the combination with the frame; of a plurality of plungers movably mounted therein; means for actuating said plungers; and caps for holding said plungers, said caps having a recess in one side thereof and a laterally-projecting wing upon the other side, said wing being designed to enter the recess in the cap next adjoining.

7. In a press, the combination with the frame; of a plurality of plungers 9 operative therein; caps 11 holding said plungers in position and having recesses 13 in one side thereof and a laterally-projecting wing 14 upon the other side.

8. In a press, the combination with the knockout-rods 76; of the lugs 73 connected with a part upon the frame of the press; knockout-levers 74 having the studs 75 connected therewith and pivotally and separably mounted in said lugs; cams 80; and rolls 79 connected with said knockout-levers between their pivot-mountings and said knockout-rods and engaging said cams.

9. In a press, the combination with the knockout-rods 76; of the removably-secured slotted lugs 73; companion parallel knockout-levers 74 having the rolls 79 therebetween and connected at one end by the studs 75 which are adapted to be pivotally mounted in said lugs 73; and cams 80 having engagement with the rolls 79.

10. In carrying mechanism for a press, the combination with parallel bars; of carrying-fingers connected therewith; crank-plates; means for connecting said crank-plates with said bars; cam mechanism for imparting a partial rotation to said crank-plates, whereby movement is imparted to said bars toward and away from each other; a slide; means for movably securing said bars to said slide; and cam mechanism for imparting movement to said slide and to said bars in the direction of their length.

11. In carrying mechanism, the combination with bars; of carrying-fingers connected therewith; a crank-plate for each of said bars; means for connecting said crank-plates with said bars; means for imparting a partial rotation to said crank-plates, said means comprising a rotary cam, a bell-crank actuated by said cam, a slide actuated by said bell-crank, and a spindle connected with one of said crank-plates and with said slide so that the movement of said slide imparts a partial rotation to said spindle.

12. In carrying mechanism, the combination with the parallel bars 86; of the crank-plates 87 having teeth thereon which intermesh with each other; means for securing said bars to said crank-plates; cam 96 fixed to a rotary part; bell-crank 97 actuated from said cam; a slide 100 actuated by said bell-crank; and a spindle 92 having engagement with one of said crank-plates, whereby movement is imparted to said bars toward and away from each other.

13. In carrying mechanism, the combination with parallel bars 86; of the slide 116; means for movably securing said bars to said slide; a cam 106 connected with a rotary part; and means for imparting movement to said slide from said cam

14. In carrying mechanism, the combination with the parallel bars; of carrier-fingers connected therewith, said carrier-fingers comprising a saddle connected with said bars, a slide mounted within said saddle, finger-tips connected with said slide, and means for limiting the movement of said slide in one direction.

15. In carrying mechanism, the combination with a bar; of carrying-fingers, comprising a saddle adjustably secured to said bar and having a slide transversely movable therein, spring means for normally moving said slide in one direction, means for limiting the movement of said slide, and finger-tips connected with said slide.

16. In carrying mechanism, the combination with the bars 86; of the saddle 124 adjustably secured thereto; the slide 127 mounted within said saddle; means, as the roll 131, for limiting the movement of said slide in one direction; and finger-tips 130 fixed to said slide.

17. In carrying mechanism, the combination with the bars 86; of carrier-fingers connected therewith, said carrier-fingers comprising a saddle adjustably secured to said bars, a slide 127 movable within said saddle; spring means for normally moving said slide in one direction; finger-tips connected with said slide; and means, as an eccentric roll, adjustably connected with said slide and abutting against said saddle for limiting the movement of said slide in one direction.

18. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; cam-actuated means for intermittently rotating said rolls; and means for adjusting said rotating means, whereby the length of feed of said rolls may be varied.

19. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; means for intermittently rotating said rolls, said means comprising a cam upon said shaft; a pivotally-mounted part actuated from said cam; and a connection between said part and said rolls.

20. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; means for intermittently rotating said rolls, said means comprising a cam upon said shaft; a pivotally-mounted part actuated from said cam, and a connection between said part and said rolls; and means for adjustably securing said connection to said pivotally-mounted part, whereby the length of feed of said rolls may be varied.

21. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; a cam upon said driving-shaft; a yoke actuated by said cams; and means for connecting said yoke with said feed-rolls, whereby an intermittent rotary movement is imparted to said feed-rolls.

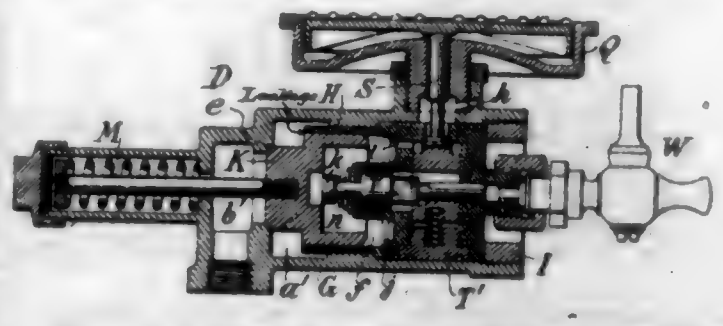
22. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; a cam upon said driving-shaft; a yoke actuated by said cam; means for connecting said yoke with said feed-roll, whereby an intermittent rotary movement is imparted to said feed-rolls; and means for adjustably securing said connecting means to said yoke, whereby the length of feed of said rolls may be varied.

23. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; a ratchet-and-pawl mechanism connected therewith; a cam upon said driving-shaft; a pivotally-mounted part actuated from said cam; and a connection between said pivotally-mounted part and said ratchet mechanism.

24. In feed mechanism for a press, the combination with the driving-shaft; of feed-rolls; a ratchet-and-pawl mechanism connected therewith; a cam upon said driving-shaft; a pivotally-mounted part actuated from said cam; a connection between said pivotally-mounted part and said ratchet mechanism; and means for adjustably securing said connection to said pivotally-mounted part, whereby the length of feed of said rolls may be varied.

814,055. STARTING-VALVE FOR AUTOMOBILE TORPEDOES.

FRANK M. LEAVITT, New York, N. Y., assignor to E. W. Bliss Company, Brooklyn, N. Y., a Corporation of West Virginia. Filed May 3, 1904. Serial No. 206,249.



Claim.—1. A starting-valve for admitting fluid-pressure to an engine, comprising a valve member and a movable part, the latter exposed to be operated by fluid-pressure and adapted when displaced thereby to operate the valve member to open the valve and start the engine.

2. A starting-valve for an automobile torpedo, comprising a valve member and a diaphragm connected to operate it and exposed to be operated by external fluid-pressure, whereby such pressure during the launching of the torpedo acts through the diaphragm to open the starting-valve and start the engine.

3. A starting-valve for admitting fluid-pressure to an engine, comprising a main valve, an auxiliary valve controlling it, and a diaphragm connected to operate the auxiliary valve and exposed to be operated by fluid-pressure, whereby such pressure acting through the diaphragm and auxiliary valve opens the main valve to start the engine.

4. A starting-valve for an automobile torpedo comprising a main valve, an auxiliary valve controlling it, and a diaphragm connected to operate the auxiliary valve and exposed to be operated by external fluid-pressure, whereby such pressure during the launching of the torpedo acts through the diaphragm and auxiliary valve to open the main valve and start the engine.

5. A starting-valve comprising a shell forming a chamber, a main valve movable therein, an auxiliary valve controlling a vent-passage from said chamber, and a diaphragm for operating said auxiliary valve.

6. A starting-valve comprising a shell having an inlet and outlet chamber, and an interposed seat, a main valve movable therein against said seat, a chamber behind said valve communicating through a restricted passage with a source of pressure, an auxiliary valve controlling a vent-passage from said latter chamber, and means for operating said auxiliary valve.

7. A starting-valve comprising a shell, having a seat and inlet and outlet chambers, a main valve moving in the inlet-chamber against said seat, having means for slowly admitting fluid to the chamber behind said valve to seat said valve, a vent-passage from said latter chamber to the exterior, and an auxiliary valve for controlling said vent.

8. A starting-valve for an automobile torpedo, comprising a valve member, a diaphragm connected to operate it and exposed to be operated by external fluid-pressure, whereby such pressure during the launching of the torpedo acts through the diaphragm to open the valve, and means for holding the valve open during the run of the torpedo.

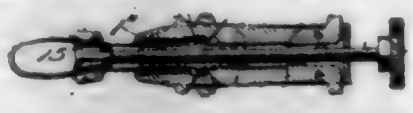
9. A starting-valve for an automobile torpedo, comprising a main valve, an auxiliary valve controlling it, a diaphragm connected to operate the auxiliary valve and exposed to be operated by external fluid-pressure, and means for holding the auxiliary valve open during the run of the torpedo to prevent premature closing of the main valve.

10. A starting-valve comprising a shell, a main valve movable therein, having means for slowly admitting fluid behind said valve to close it, a vent for escaping said pressure to open the valve, an auxiliary valve controlling said vent, and means for holding said auxiliary valve open while the main valve remains open to prevent premature closing thereof.

11. A starting-valve comprising a shell, with inlet and outlet chambers, a seat between them, and a back seat, a main valve movable against either seat, and an auxiliary valve controlling the movements of the main valve.

12. A starting-valve comprising a shell, a main valve K, an auxiliary valve T, a diaphragm for opening said auxiliary valve, and a tappet V adapted to be displaced by the opening of the main valve and to engage and hold the auxiliary valve.

814,056. DENTAL-MATRIX RETAINER. Clodson M. Leffingwell, Little Falls, Minn. Filed Feb. 21, 1905. Serial No. 246,796.



Claim.—1. A dental-matrix retainer having pivoted clamping members formed on their outer edges with projections, and a ring surrounding said clamping members between said projections.

2. A dental-matrix retainer having an adjustable slotted head adapted to abut against a tooth and having a channel in its forward end.

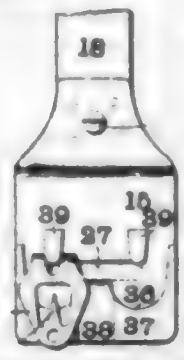
3. A dental-matrix retainer comprising a block, means for securing a matrix-retaining band to said block, a screw-shaft extending through said shaft, and a head swiveled on said screw-shaft and formed with slots, said head being adapted to abut against a tooth and having a channel in its forward end.

4. A dental-matrix retainer comprising a block, clamping members pivotally connected with said block and having projections on their outer edges, a ring surrounding said block and clamping members between said projections, a screw-shaft extending through said block, and a head swiveled on the forward end of said screw-shaft, said head being formed with a channel and having open-ended slots on opposite sides of said channel.

814,057. WORK-HOLDING DEVICE FOR SEWING-MACHINES. John G. Lewis and Charles W. Bagley, St. Louis, Mo., assignors, by direct and mesne assignments, to Lewis Blind Stitch Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Mar. 19, 1904. Serial No. 198,968.

Claim.—1. In a sewing-machine, the combination with stitch-forming mechanism and work-holding mechanism, one of said parts being movable relative to the other to produce a tacking or barring stitch, of a presser-foot coöperating with said work-holding mechanism, and means on said work-holding mechanism for engaging and holding the tongue of a hook in one position and then in another and different lateral position.

2. In a sewing-machine, the combination with a stitch-forming mechanism, of work-holding mechanism, one of said parts being movable relative to the other to form a tacking or barring stitch, said work-holding mechanism being provided with a plurality of recesses for engaging the tongue of a hook and a presser-foot coöperating with said work-holding mechanism.



3. In a sewing-machine, the combination with stitch-forming mechanism, of work-holding mechanism, one of said parts being movable relative to the other to produce a tacking or barring stitch, and said work-holding mechanism being provided with a pair of recesses for engaging the tongue of a hook, said recesses being separated by a reduced dividing-strip, and a presser-foot coöperating with said work-holding mechanism.

4. In a sewing-machine, the combination with stitch-forming mechanism and work-holding mechanism, one of said parts being movable relative to the other to produce a tacking or barring stitch, and said work-holding mechanism being provided with a pair of recesses, of a presser for coöperating with said work-holding mechanism, said presser being composed of two parts capable of independent movement.

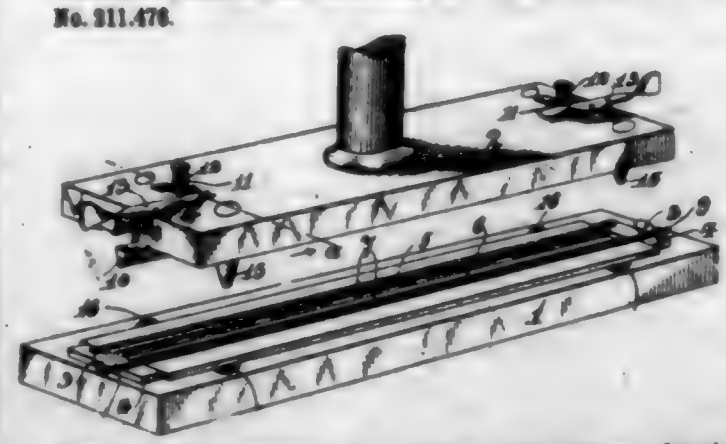
5. In a sewing-machine, the combination with stitch-forming mechanism and work-holding mechanism, one of said parts being movable relative to the other to produce a tacking or barring stitch, and the parts of said work-holding mechanism between a pair of recesses being reduced, of a presser-foot coöperating with said work-holding mechanism, said presser-foot being composed of two parts capable of independent movement.

6. In a sewing-machine, the combination with stitch-forming mechanism and work-holding mechanism, one of said parts being movable relative to the other to produce a tacking or barring stitch and said work-holding mechanism being provided with a pair of recesses, the part of said work-holding mechanism between said recesses being reduced, of a two-part presser-foot coöperating with said work-holding mechanism.

7. A work-holding plate for tacking or barring sewing-machines, provided with a recess for engaging the inner end of the tongue of the hook, and a detent or detents for engaging the outer end of the hook, and a presser-foot coöperating with said work-holding plate.

8. A work-holding plate for tacking or barring sewing-machines, provided with a plurality of recesses for engaging the inner end of the tongue of the hook, and detents for engaging the outer end of the hook, and a presser-foot coöperating with said work-holding plate.

814,058. APPARATUS FOR MAKING WIRE-CORE HAIR-PINS. Charles J. Leyers, East Rutherford, N. J. Filed June 7, 1904. Serial No. 211,476.



Claim.—1. In apparatus for making hair-pins, a forming mechanism comprising a frame having a flexible side member uniting two end pieces, a die movable between said end pieces and fastened to said resilient member in combination with a corresponding die and means for moving said dies relatively toward and from each other.

2. In apparatus for making hair-pins, a die-frame composed of two end pieces united by spring-straps and a forming-die fastened

to each strap between said end pieces, said dies being disposed for relative movement with respect to themselves and said end pieces.

3. In apparatus for making hair-pins, a frame for supporting forming-dies comprising a pair of end pieces and flexible metal straps uniting said end pieces and permanently secured thereto at their opposite ends, said straps being provided with means of attachment to the forming-dies at substantially their mid-points.

4. In apparatus for making hair-pins, a folding and forming mechanism comprising a pair of relatively movable dies, end pieces between which said dies are confined and a pair of parallel flexible straps respectively joining the end pieces and connected to a die, said straps being normally disposed at a predetermined distance apart and serving as gages for the work.

5. In apparatus for making hair-pins, a die-frame composed of end pieces and straps secured to and joining them, relatively movable dies between said end pieces, one of said straps being extended beyond the end pieces and forming stops, in combination with a platen supporting said frame and projections on said platen for engagement by the stops.

6. In apparatus for making hair-pins, a platen and a pair of relatively movable forming-dies thereon, normally held in separated position, in combination with a creaser-bar adapted to enter between said dies to force the work therebetween and means for moving the dies into engagement to compress said work.

7. In apparatus for making hair-pins, a platen and a pair of relatively movable forming-dies thereon, a pair of spring members normally at a predetermined distance apart, fastened to said dies and holding them normally in open position, in combination with a creaser-bar adapted to enter between said dies and force the work therebetween and mechanism carrying said creaser-bar for forcing the dies together to compress said work.

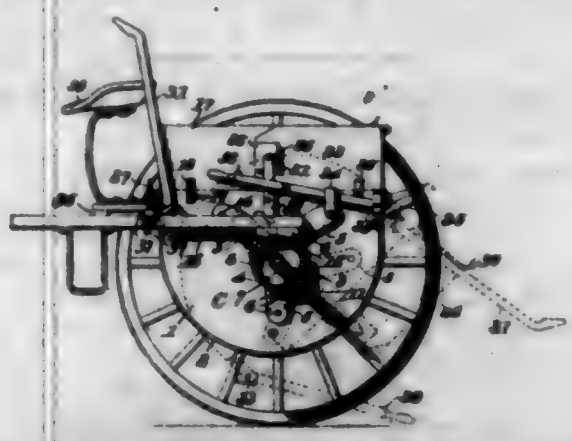
8. In apparatus for making hair-pins, a platen, relatively movable dies thereon in normally open position, a block having movement toward said platen and cam mechanism carried thereby for closing said dies, in combination with a creaser-bar normally housed within said block and mechanism for holding said bar projecting from its recess.

9. Apparatus for making wire-core hair-pins, comprising a pair of relatively movable forming-dies, adapted to support a strip of sheet material over the gap between them when in open position, in combination with a creaser-bar and means for moving the same into said gap to bend the strip into V shape to receive the core, and means for closing said forming-dies upon the bent strip.

10. Apparatus for making wire-core hair-pins comprising a pair of relatively movable forming-dies and gages for holding a strip of covering material over the gap between them, in combination with a creaser-bar adapted to coöperate with said dies to crease the strip longitudinally, and means for closing said forming-dies upon said creased strip.

11. Apparatus for making wire-core hair-pins comprising a platen and a block having movement toward the same, a pair of forming-dies in said platen and means for holding a strip of covering material over the gap between them, in combination with means carried by said movable block for pushing said strip into the gap to thereby crease the same longitudinally, and means operated by said block to close the said dies together upon the creased strip.

814,059. **DUMPING-CART.** Herbert S. Long, Marion, Ohio. Filed May 29, 1905. Serial No. 262,263.



Claim.—1. A tilting cart-body, spindle-bearing plates upon the ends of the same and having annular flanges, and draft-rings supported for rotation by said flanges.

2. A tilting cart-body, spindle-bearing plates upon the ends of the same and having annular grooved flanges, and draft-rings supported for rotation by said grooved flanges.

3. A tilting cart-body, spindle-bearing plates upon the ends of the same said plates being provided with reinforcing-arms connected with the cart-body and with grooved flanges concentric with the spindles, and draft-rings supported for rotation by said flanges.

4. A tiltable cart-body having spindles and grooved flanges surrounding the same, in combination with draft-rings supported for rotation by said grooved flanges, and draft members connected with said rings.

5. A tiltable cart-body having spindles and grooved flanges surrounding the same, draft-rings engaging said grooved flanges and having flanged supporting-brackets, and draft members supported upon and connected with said brackets.

6. A tiltable cart-body having spindles and grooved flanges surrounding the same, draft-rings engaging said grooved flanges, said rings comprising hingedly-connected members, and draft members connected with the free ends of said draft-rings and thereby securing the latter in position upon the grooved flanges.

7. A tiltable cart-body having concentric spindles and flanges, rings engaging said flanges for rotation said rings comprising hingedly-connected members having reinforcements combining to form flanged shoulders, and draft members supported upon and connected with said flanged shoulders and thereby connecting the free ends of the hinge members constituting the rings.

8. A sheet-metal cart-body of approximately semicylindrical shape, spindle-bearing plates having divergent arms secured upon the ends of said body, draft-rings connected for rotation with said plates, and draft members connected with said rings.

9. A tiltable cart-body, a forward extension member supported permanently upon the front side and the forward portions of the ends of said body, and a rear extension member normally supported upon the rear side and the rear portions of the ends of said body and connected pivotally with the side members of the front extension member.

10. In a tiltable cart-body, a permanently-supported front extension member having sides connected with the ends of the cart-body, a rear extension member connected pivotally with the front extension member and foldable over the latter, and means for supporting said rear extension member when thus folded.

11. A tiltable cart-body having a permanently-supported front extension, side brackets, and a rear extension member pivotally connected with said brackets and with the front extension member and foldable over the latter.

12. A tiltable cart-body, a front extension member supported permanently upon the same, upward-extending brackets connected with the ends of the cart-body, a rear extension member connected pivotally with said brackets and with the front extension member and foldable over the latter, means for retaining said rear extension member against displacement when in normal position upon the rear part of the cart-body, and means for supporting said rear extension member in a forwardly-folded position.

13. A tiltable cart-body, a front extension member supported permanently upon the same, a rear extension member connected pivotally with and foldable over the front extension member, means for supporting the rear extension member in its forwardly-folded position, and means for temporarily securing said member in said position.

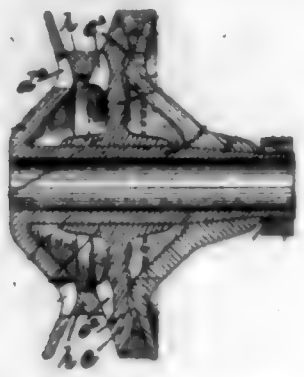
14. A tiltable cart-body, a rear extension member connected pivotally therewith, means for tilting said cart-body, and means for retaining it in a tilted position while being loaded.

15. A tiltable cart-body, a front extension member permanently supported upon the same, a rear extension member connected pivotally with and foldable over the front extension member, means for supporting the rear extension member in its forwardly-folded position, means for temporarily securing said member in said position, lever means for tilting the cart-body, draft means connected with the latter, and means for securing the cart-body in tilted position at various adjustments with relation to the draft means.

814,060. **VARIABLE-SPEED GEAR.** Charles F. G. Low, Chorlton, England. Filed Aug. 29, 1905. Serial No. 273,241.

Claim.—In a variable-speed gear, the combination of a disk formed integral with one end of a barrel revolubly mounted upon a spindle carried by a movable bracket, said disk having a belt-face; the barrel; the spindle; a second disk in rigid connection with the opposite end of said barrel and having a belt-face; a third disk having two belt-faces and held to slide upon the said revolving barrel be-

tween the two said fixed end disks, the three disks forming two belt-paths, around one of which passes the belt from the motor and around the other passes the belt to the driven wheel; with a movable bracket carrying the spindle on which is mounted the said revoluble barrel, whereby the position of the axis of the pulley is altered in relation to the position of the motor; and the means for altering the position of the movable bracket; and the means for retaining same in any position within the limits of its movement, substantially as specified.



814,061. SOLE AND SOLE-PLACER. JEREMIAH MAHONEY, Cincinnati, Ohio. Filed Apr. 17, 1905. Serial No. 256,046.



Claim.—1. A metal sole-placer having lugs formed thereon projecting toward the toe, in combination with a flexible sole to be placed upon the sole-placer and having means for engaging the lugs whereby the sole may be placed against the bottom of the foot of a person and left smoothly between the stocking and the foot upon the withdrawal of the placer.

2. A metal sole-placer having forwardly-projecting lugs near its toe and clips near its heel for engaging the heel of a person, in combination with a flexible sole having loops near its toe for engaging the lugs.

3. A sole-placer of polished metal having forwardly-projecting lugs near its toe in combination with a chamois sole having loops near its toe for engaging the lugs upon the sole-placer.

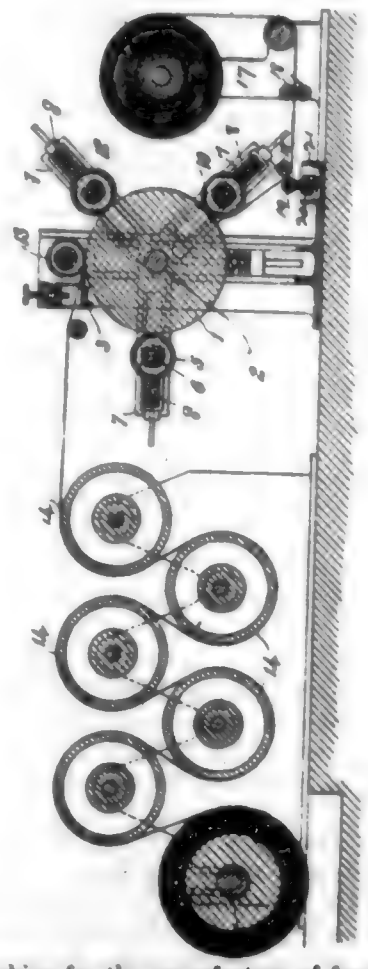
814,062. PROCESS AND APPARATUS FOR PREPARING AND CUTTING VENEERS. GEORGE S. MATHEW, London, England, assignor to George William Mellor, London, England. Filed July 11, 1905. Serial No. 269,174.

Claim.—1. In a machine for the manufacture of faced veneers in continuous sheets, the combination with means for supporting a revolving log, of a rotating heated roller adapted to dry the face of the log, means for applying an adhesive to a continuous sheet or web of lining material, as paper or the like, means for pressing the continuous sheet of cemented paper or the like on the dried face of the log as the latter rotates, means for pressing and drying the cemented sheet of paper or the like upon the face of the log, and means for shaving off a paper-faced veneer from the log.

2. In a machine for the manufacture of faced veneers in continuous sheets, the combination with means for supporting a revolving log, of a rotating heated roller adapted to dry the face of the log, means for applying an adhesive to a continuous sheet or web of lining material, as paper or the like, a facing-roller adapted to press the continuous sheet of cemented paper or the like on the dried face of the log as the latter rotates, means for pressing and drying the cemented sheet of paper or the like upon the face of the log, and means for shaving off a paper-faced veneer from the log.

3. In a machine for the manufacture of faced veneers in continuous sheets, the combination with means for supporting a revolving log, of a rotating heated roller adapted to dry the face of the log, means for applying an adhesive to a continuous sheet or web of lining material, as paper or the like, a facing-roller adapted to press a continuous sheet of cemented paper or the like on the dried face of the log as the latter rotates, heated rollers adapted to press and dry the cemented sheet of paper or the like upon the face of the log, and means for shaving off a paper-faced veneer from the log.

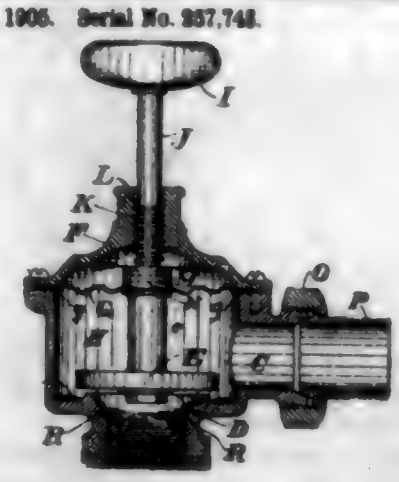
4. In a machine for the manufacture of faced veneers in continuous sheets, the combination with means for supporting a revolving log, means for applying an adhesive to a web or continuous sheet of lining or facing material, as paper or the like, of a rotating heated roller adapted to dry the face of the log, a facing-roller adapted to press the continuous sheet of cemented paper or the like on the dried face of the log as the latter rotates, heated rollers adapted to press and dry the cemented sheet of paper or the like upon the face of the log, and an adjustable knife adapted to shave off a paper-faced veneer from the log.



5. In a machine for the manufacture of faced veneers in continuous sheets, the combination with means for supporting a revolving log, of a rotating automatically-adjustable heated roller adapted to dry the face of the log, means for applying an adhesive to a continuous sheet or web of paper or the like, an automatically-adjustable facing-roller adapted to press the continuous sheet of cemented paper or the like on the dried face of the log as the latter rotates, automatically-adjustable heated rollers adapted to press and dry the cemented sheet of paper or the like upon the face of the log, an adjustable knife adapted to shave off a paper-faced veneer from the log, and a series of drying-rollers adapted to extract the remainder of moisture from the veneer as it passes over them from the log to the reel.

6. A process of manufacturing veneers faced with paper or the like cut in a continuous sheet from a rotating boiled, steamed or green log, consisting in first drying the face of the log as it rotates, then lining said dried face with a continuous sheet of tough paper or the like, then again drying the faced surface, and finally shaving off the dried, faced surface in the form of a thin continuous strip or veneer, substantially as described.

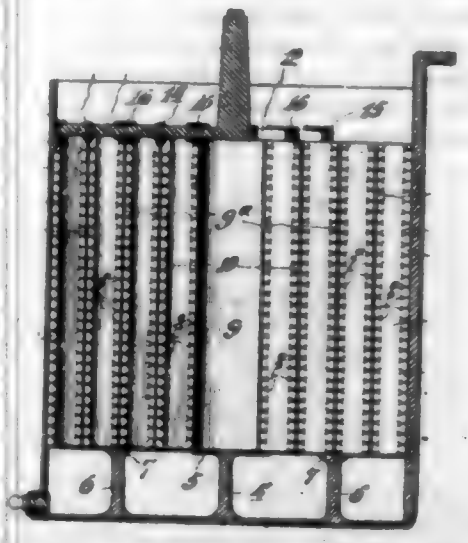
814,083. DIAPHRAGM-VALVE. DOCTOR F. MORGAN, Chicago, Ill. Filed Apr. 27, 1905. Serial No. 257,748.



Claim.—1. In a valve, the combination of a casing provided with an inlet and an outlet, the wall of such inlet raised above the floor of the chamber into which the inlet discharges, and such inlet provided with a flaring upper end and with a valve-seat thereto of larger diameter than is such inlet, a diaphragm secured in the casing to obtain a closed chamber, a valve coacting with the valve-seat, such valve provided with a stem and such stem secured to the diaphragm, and means to move the stem longitudinally; substantially as described.

2. In a valve, the combination of a casing provided with a valve-chamber therein and such chamber provided with an inlet and an outlet, such inlet provided with a flaring upper end and with a valve-seat thereto of larger diameter than is such inlet, and the chamber in which the valve is placed provided with a substantially horizontal floor with the valve-seat raised above the floor, a diaphragm secured in the casing to close the chamber in which the valve is placed, a valve to coact with the valve-seat, and means to move the valve longitudinally.

814,064. **STORAGE BATTERY.** Francois Mouterde, Lyon, France. Filed July 24, 1905. Serial No. 270,946.



Claim.—1. A storage battery comprising a lead vessel having columns integral with its bottom and provided with flanges, a plurality of open-ended electrodes supported by the flanges, a plurality of other electrodes disposed in the vessel, and a spider supporting said electrodes and terminating in a central pole, and said electrodes and said vessel being provided with Y-shaped projections adapted to receive lead fibers deposited therein.

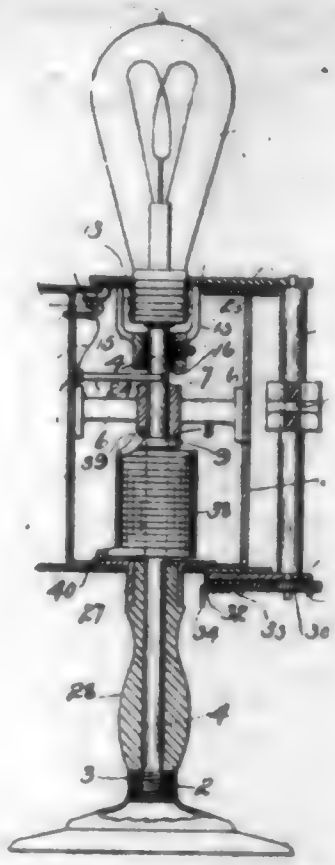
2. A storage battery comprising a cylindrical lead vessel having lugs on its inner surface and having integral supporting members projecting upward from its bottom, a plurality of concentric open-ended electrodes disposed on said supporting members, a spider supported by said lugs and terminating in a central pole, a plurality of concentric open-ended electrodes supported by the spider, said latter electrodes being removable, and said vessel and said electrodes being provided with Y-shaped projections adapted to form pockets, and a body of lead fiber disposed in said pockets.

3. A storage battery comprising a cylindrical vessel adapted to form one pole of the battery, a plurality of concentric open-ended electrodes provided on both sides with Y-shaped pockets, disposed in said vessel, a plurality of other concentric open-ended elctrodes provided with Y-shaped pockets on both sides removably disposed in said vessel, a spider provided with a central pole supported by the walls of said vessel, rivets connecting said latter electrodes with the spider, Y-shaped projections on the walls of said vessel, and a body of lead fiber carried by said pockets and between said projections.

814,065. **PORTABLE ELECTRIC LAMP.** Joseph L. Mulry, Pawtucket, R. I., assignor of one-half to William K. Toole, Pawtucket, R. I. Filed Apr. 4, 1905. Serial No. 253,744.

Claim.—1. In a portable electric lamp, including the lamp, a base and upright standard for supporting the lamp, a handle on said standard by which said lamp may be carried, a rotatable spring-actuated reel or drum on which the surplus conductor-wire is wound, said drum being arranged to rotate about the axis of said standard, and means supported from said standard for automatically gripping or binding said wire to control the amount to be wound on said drum.

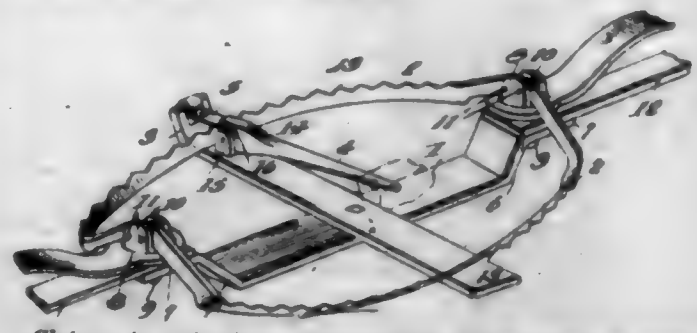
2. In a device of the character described, a lamp, a fixed upright spindle supporting said lamp, a barrel supported from and adapted to rotate about the axis of said spindle, a coil-spring acting on said barrel to rotate it, means attached to said barrel and adapted to rotate with it for transmitting current from the conductor-cord to said lamp, and means supported from said standard for automatically gripping or binding the wire to control the amount to be wound on said drum.



3. In a device of the character described, a lamp supported from a spindle, a spring-actuated rotatable barrel arranged to rotate about the axis of said spindle, a grip-guide mounted to slide on eccentric bars, and means for operating said bars to open and close the grip-guide to engage or release the conductor-wire as it is being led to or from said drum.

4. In a device of the character described, a lamp, a spindle for supporting said lamp, a base on said spindle on which the device may stand, a spring-actuated rotatable barrel supported from said spindle, a grip-guide mounted to slide parallel with the axis of the barrel on two parallel eccentric bars, gears mounted on said bars, a sliding rack engaging said gears, the movement of which rack acting through said gears and eccentric bars serves to open and close the grip-guide to engage or release the conductor-wire, substantially as described.

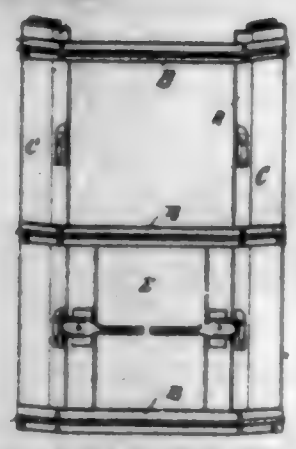
814,066. **ANIMAL-TRAP.** George M. Myers, Midland, Tex. Filed June 3, 1905. Serial No. 263,670.



Claim.—An animal-trap substantially as described, embodying the base-plate having its end portions extended upwardly and provided with lateral extensions, the lateral extensions being vertically apertured, pivot members received in the vertical apertures of the lateral extensions of the base-plate, said pivot members having their upper extremities bifurcated to form spaced lugs, coacting jaws having the end portions thereof pivoted between the spaced lugs of the respective pivot members, curved springs coacting with said jaws and having the lower portions thereof bearing upon the upper sides of the lateral extensions of the base-plate and apertured to receive the pivot members, the upper portion of the springs being also apertured to coact with the jaws in forcing the same closed, a transverse trigger-bar extending from the base-plate, the outermost end of said bar being inclined upwardly and apertured, a catch pivoted to the apertured end of the upwardly-inclined portion of the

trigger-bar, a pivot member carried by the trigger-bar adjacent the catch, and a trigger pivoted to the pivot member of the trigger-bar and provided with a notch to receive an end of the catch when the latter is engaged with the adjacent jaw of the trap.

814,067. SILO. Charles W. McClure, Saginaw, Mich. Filed Apr. 27, 1905. Serial No. 257,945.

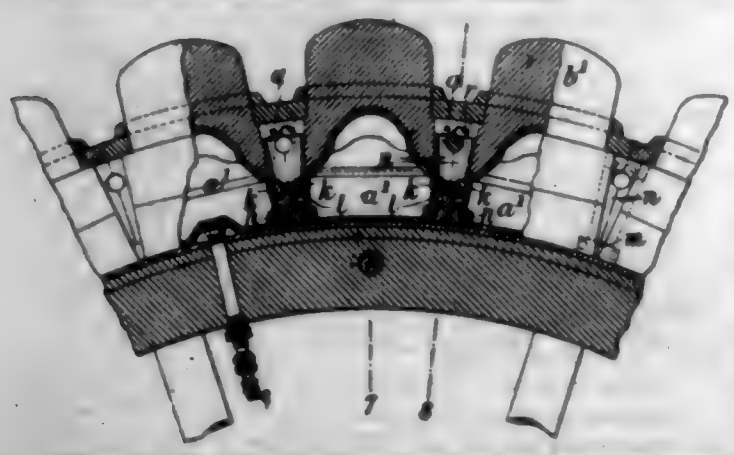


Claim.—1. A frame for silo-openings, comprising in combination a pair of upright bars of L-section, each bar being arranged with one of its members flush with the face of the adjacent silo-staves; a plurality of transverse bars spanning the silo-opening and rigidly secured to said upright bars, the ends of said transverse bars projecting beyond said upright bars; together with hoops encircling the silo and overlying the ends of said bars to hold them in contact with the silo-staves, substantially as described.

2. The combination with the staves of a silo, of a metallic door-frame therefor relative to which frame the staves are erected, said frame comprising a pair of continuous angle-irons, one flange of each of which abuts the end staves of the silo, the remaining flange of which projects over the opening in the silo, to form seats or guides for the doors, and braces extending between the angle-irons and superposed upon the outer faces thereof, the ends of the braces overlying the end staves of the silo and separate means for securing the braces to the outer faces of the angle-irons and to the end staves.

3. In a silo provided with a continuous opening, the combination of a door-frame comprising a pair of vertical angle-irons lining the walls of the opening from end to end, one flange of each of the angle-irons abutting the wall and the remaining flange overlapping the opening to form seats for the doors, braces connecting the angle-irons, the braces applied to the outer faces of the angle-irons and overlapping that portion of the silo adjacent the frame, and separate means for securing the braces to the angle-irons and to the silo respectively.

814,068. Pneumatic Tire. Frederick G. McKim, London, England. Filed Mar. 14, 1905. Serial No. 250,047.



Claim.—1. In a tire of the kind described, the combination with a series of air-chambers, of distance-pieces located between the same, a covering for said air-chambers and said distance-pieces and thread portions on said air-chambers constructed to project through said covering, substantially as described.

2. In a tire of the kind described, the combination with a series of air-chambers, of means for affording communication between said air-chambers to form a complete tube, distance-pieces between said air-chambers, a covering for said chambers and distance-pieces and a tread portion on each of said chambers and projecting through said covering, substantially as described.

3. The combination with a series of chambers of a rim provided with upwardly-extending flanges constructed to receive said air-chambers, distance-pieces between said air-chambers, a covering for said air-chambers and distance-pieces, provided with portions adapted to engage with said flanges of said rim, bolts passing through said flanges adapted to lock said covering in said rim and a tread portion on each of said chambers projecting through said covering substantially as described.

4. The combination with a wheel-rim provided with upwardly-extending flanges, of bolts passing through said flanges and adapted to secure said flanges to the rim, a series of air-chambers adapted to fit between said flanges, distance-pieces between said air-chambers, a covering for said air-chambers and distance-pieces and having portions for engaging said flanges, bolts passing through said flanges and distance-pieces and adapted to retain said covering in position and a tread portion on each of said chambers projecting through said covering, substantially as described.

5. In a tire of the kind described, the combination with a series of air-chambers, of distance-pieces between said air-chambers, a covering for said air-chambers and distance-pieces and independent tread portions for said chambers adapted to protrude through said covering, substantially as described.

6. In a tire of the kind described, the combination with a series of air-chambers provided with convex portions, of distance-pieces between said chambers, a covering for said chambers and distance-pieces and independent tread portions provided with concave faces adapted to engage with the convex portions of said air-chambers, said tread portions being adapted to protrude through said covering, substantially as described.

7. In a tire of the kind described, the combination with a series of air-chambers, the adjacent chambers being provided with nipples, of means for forming air-tight connections between said nipples, distance-pieces between said chambers, a covering for said air-chambers and distance-pieces and a tread portion on each of said air-chambers adapted to protrude through said covering, substantially as described.

8. In a tire of the kind described, the combination with a series of air-chambers, the adjacent chambers being provided with nipples, of connecting-pieces between said nipples, clips provided with portions for engaging said nipples and forming air-tight connections with said connecting-pieces, distance-pieces between said air-chambers, a covering for said air-chambers and distance-pieces, and a tread portion on each of said air-chambers adapted to project through said covering, substantially as described.

9. In a tire of the kind described, the combination with a series of air-chambers, the adjacent chambers being provided with nipples, of connecting-pieces between said nipples, clips provided with portions for engaging said nipples and forming air-tight connections with said connecting-pieces, laterally-extending wings on said clips adapted to form distance-pieces between said air-chambers, a covering for said chambers and clips and a tread portion on each of said air-chambers adapted to project through said covering, substantially as described.

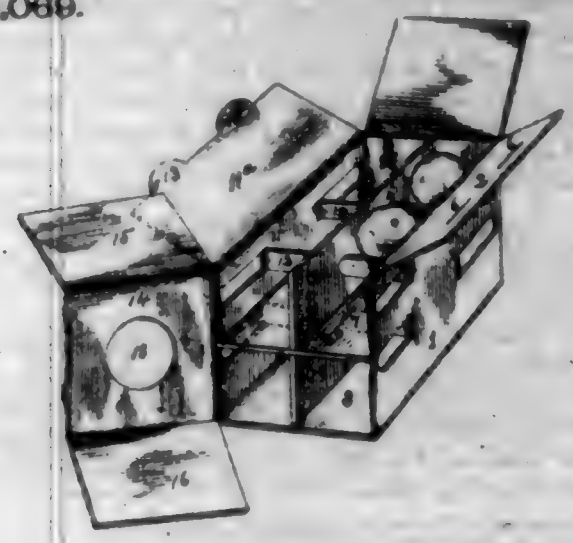
10. The combination with a wheel-rim, of a series of air-chambers each of which has a flexible nipple at either end and a projecting tread-piece separate from, or integral with, it, of clips for connecting together the contiguous nipples of adjacent air-chambers, each of the said clips comprising two parts adapted to be hinged and locked together and having a lateral wing, substantially as hereinbefore described.

11. A clip for connecting together the independent air-chambers of pneumatic tires comprising the two parts having holes to receive the nipples of the air-chambers to be connected, a link for hinging the two parts together at their lower ends, a catch for locking the two parts together, a plug or nipple for insertion in the nipples between the two clip parts, and lateral wings integral with each of the said parts, substantially as hereinbefore described.

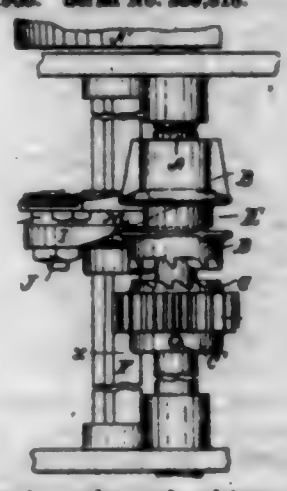
814,069. Packing-Box or Carrier for Oranges. Isaac Naylor, Los Angeles, Cal. Filed July 22, 1905. Serial No. 271,572.

Claim.—A packing-box for oranges of the character described, comprising a box-blank adapted to be folded into a rectangular form, and provided with narrow tongues cut from the sides thereof and adapted to be turned on their bases to stand transversely half-way across the box, a detachable vertical partition extending longitudinally the length of the box and positioned between the free ends of the lower tongues and reaching one-half the height thereof, a detachable horizontal partition supported by said vertical partition and a longitudinal vertical partition disposed on the said horizontal partition and positioned between the free ends of the upper turned-in tongues.

814,069.



814,070. COMBINED GRAIN-SEEDER AND CULTIVATOR. NICHOLAS R. NELSON, Beaver Dam, Wis., assignor to Beaver Dam Manufacturing Company, Beaver Dam, Wis., a Corporation of Wisconsin. Filed Jan. 3, 1905. Serial No. 239,818.

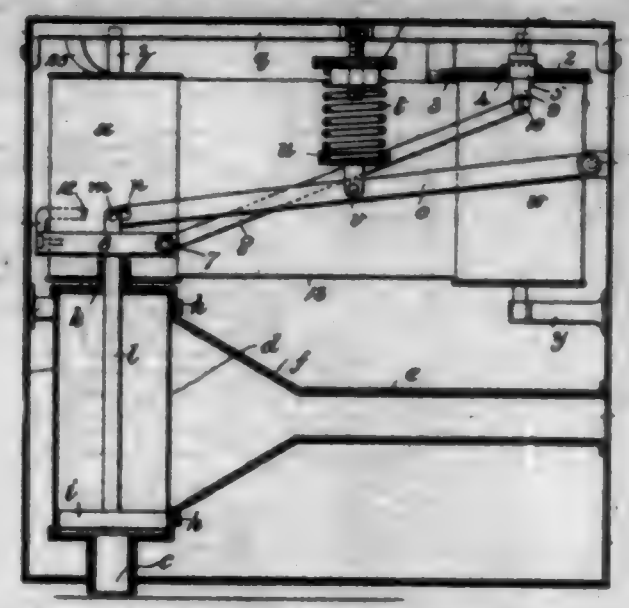


Claim.—1. In a grain-seeder and cultivator, the combination with the driving-shaft, of a clutch mechanism comprising two separable members provided with interlocking teeth, one of said members being keyed to and adapted to revolve with said shaft and to be moved longitudinally thereon, into and out of engagement with the other member, such other member being secured to and adapted to revolve with said shaft; an operating-lever pivotally supported at one end from the frame of the machine; means for communicating a longitudinal movement from said operating-lever to the slidable member of said clutch mechanism, comprising a cam I adapted to bear against the sides of the groove E whereby the coöperating parts of said clutch mechanism are thrown into and out of engagement with each other and means for communicating motion from the clutch mechanism to the driving mechanism of the seeder.

2. In a grain-seeder and cultivator, the combination with the driving-shaft, of a clutch mechanism comprising two separable members provided with interlocking teeth, one of said members being keyed to and adapted to revolve with said shaft and to be moved longitudinally thereon, into and out of engagement with the other member, said member being provided with an annular groove for the reception of an actuating-cam such other member being secured to and adapted to revolve with said shaft; an operating-lever pivotally supported at one end from the frame of the machine; a cam adjustably secured to said lever; and adapted to bear against the walls of the annular groove of said adjustable member for communicating a longitudinal movement from said cam to the slidable member of said clutch mechanism and means for communicating motion from said clutch mechanism to the driving mechanism of the seeder, all substantially as, and for the purpose specified.

814,071. SPEED-INDICATING APPARATUS. LOUIS NIEMIN, Southend-on-Sea, England. Filed Nov. 7, 1904. Serial No. 231,765.

Claim.—1. In speed-indicating apparatus, the combination of a cylinder having a narrow slit in its wall, a piston adapted to work in said cylinder and to expose more or less of said slit according to the position of the piston in the cylinder, a piston-rod and means for guiding the same, a device including a spring and means for adjusting the tension of the same external to the cylinder aforesaid, means operatively connecting said spring device to the piston-rod of said cylinder, an indicating device, means connected to the piston-rod beyond the end of the cylinder for operating said device, an air-compressing apparatus in connection with the cylinder, and means for operating the air-compressing apparatus from a moving part of the vehicle whose speed is to be measured.



2. A speed-indicator comprising an apparatus for supplying air under pressure adapted to be driven from a moving part of the vehicle whose speed is to be measured, a receiving-chamber for said air under pressure said chamber having an outlet, means applied to said cylinder adapted to open or close the air-outlet more or less according to the amount of the air supplied, a dial, a hand adapted to move over said dial, means adapted to move said hand as the air-outlet is opened more or less, a second hand, means adapted to move said second hand in one direction only during the time that the air-outlet is being opened or its opening increased, means tending to move the second hand in the other direction, a catch adapted normally to prevent the return of said second hand and a trip device adapted to release said catch after the first indicating-hand has returned to a zero position and has begun to move forward again.

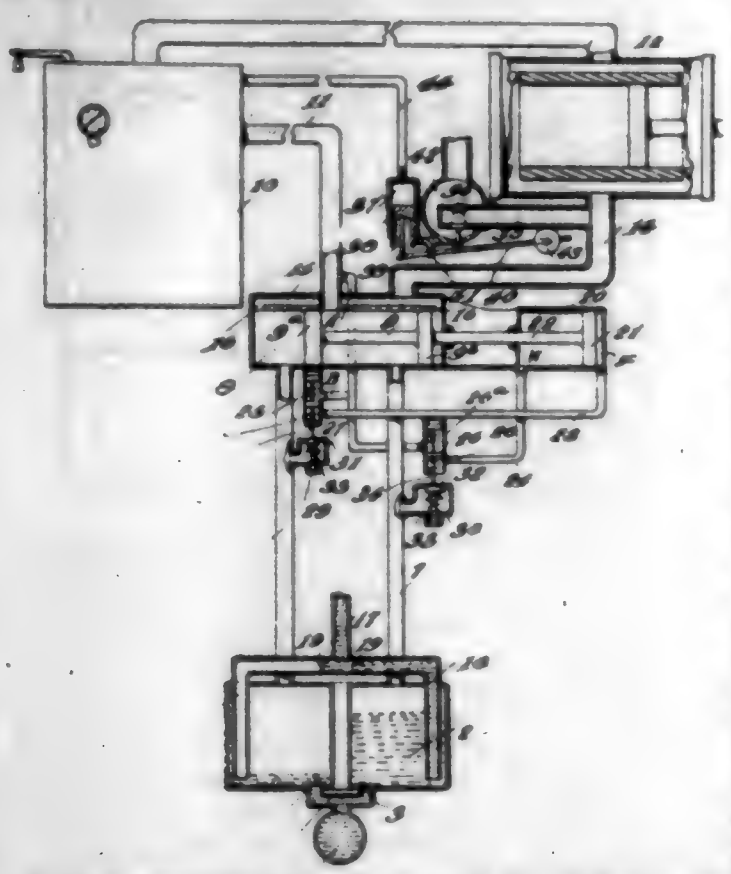
3. In speed-indicating apparatus the combination of a cylinder having a narrow slit in its wall, a piston adapted to work in said cylinder and to expose more or less of said slit according to its position in the cylinder, means tending to return the piston to the base of the cylinder, a dial, a hand adapted to move over said dial, means connected to the piston adapted to move said hand as the piston moves, a second hand, means adapted to move said second hand in one direction only when the piston moves in one direction, a catch adapted normally to prevent the return of said second hand, a trip device adapted to release said catch after the first indicating-hand has returned to a zero position and has begun to move forward again, means tending to return said second hand to the zero position, an air-compressing apparatus in connection with said cylinder, and means for operating said air-compressing apparatus from a moving part of the vehicle whose speed is to be measured.

4. A speed-indicator comprising an apparatus for supplying air under pressure adapted to be driven from a moving part of the vehicle whose speed is to be measured, a receiving-chamber for said air under pressure said chamber having an air-outlet, a piston in said cylinder adapted to move outward or inward and to open the air-outlet more or less according as the amount of air supplied to the cylinder increases or decreases, a dial, two hands adapted to move over said dial, two pinions each connected to one of said hands, a rack engaging with one pinion and connected to the piston, a second rack engaging with the second pinion, means for guiding the same, means for moving said second rack only when the piston is making a movement in the outward direction, means tending to return the second rack to its starting position, a catch adapted normally to prevent the return of said second rack, and a trip device adapted to release said catch after the piston has returned to its starting position and has begun to move outward again.

814,072. APPARATUS FOR ELEVATING LIQUIDS. HARRY C. O'BLENESS and ERWIN C. MERWIN, Athens, Ohio. Filed May 17, 1905. Serial No. 260,796.

Claim.—1. In an apparatus of the type described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, air-pipes connecting the valve-chamber and water-reservoirs, a main valve operating in said valve-chamber and gov-

oraing the supply of air to the air-pipes aforesaid, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and valve-chamber, a pressure-actuated device connected with the main valve, independent valved connections with the compressed-air reservoir arranged to supply pressure at opposite sides of the pressure-actuated device, the valves of the mentioned connections being operable by suction of the compressor.



2. In an apparatus of the type described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, air-pipes connecting the valve-chamber and water-reservoirs, a main valve operating in said valve-chamber and governing the supply of air to the air-pipes aforesaid, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and valve-chamber, a pressure-actuated device connected with the main valve, independent valved connections with the compressed-air reservoir arranged to supply pressure at opposite sides of the pressure-actuated device the valves in the length of the last-mentioned connections being operated by suction of the compressor created in the length of the air-pipes.

3. In an apparatus of the class described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, a main valve operating in said chamber, air-pipes connecting the valve-chamber and the water-reservoirs, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and the valve-chamber, whereby air forced into the water-reservoirs to discharge water therefrom, may be returned to the compressor, means for actuating the main valve aforesaid, air-inlets in the length of the air-pipes aforesaid between the points of connection of the same with the water-reservoirs and the valve-chamber, and valves for said inlets operable by suction of the compressor.

4. In an apparatus of the class described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, a main valve operating in said chamber, air-pipes connecting the valve-chamber and the water-reservoirs, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and the valve-chamber, whereby air forced into the water-reservoirs to discharge water therefrom, may be returned to the compressor, means for actuating the main valve aforesaid, air-inlets for supplying air to the compressor, valves for said air-inlets operable by action of the compressor, and a pressure-operated device for actuating the main valve and controlled by the valves of the air-inlets aforesaid.

5. In an apparatus of the class described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, a main valve operating in said chamber, air-pipes connecting the valve-chamber and the water-reservoirs, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and the valve-chamber, whereby air forced into the water-reservoirs to discharge water therefrom, may be returned to the compressor, means for actuating the main valve aforesaid, air-inlets in the length of the air-pipes between the points of connection thereof with the water-reservoirs and the valve-chamber, puppet-valves for said air-inlets operable by suction of the compressor, a pressure-chamber, a piston arranged in said chamber and connected with the main valve, pipes connecting the compressed-air reservoir with the pressure-chamber to supply pressure at opposite sides of the piston, and auxiliary valves connected with the puppet-valves and governing the supply of the compressed air from the compressed-air reservoir to the pressure-chamber through the connecting-pipes.

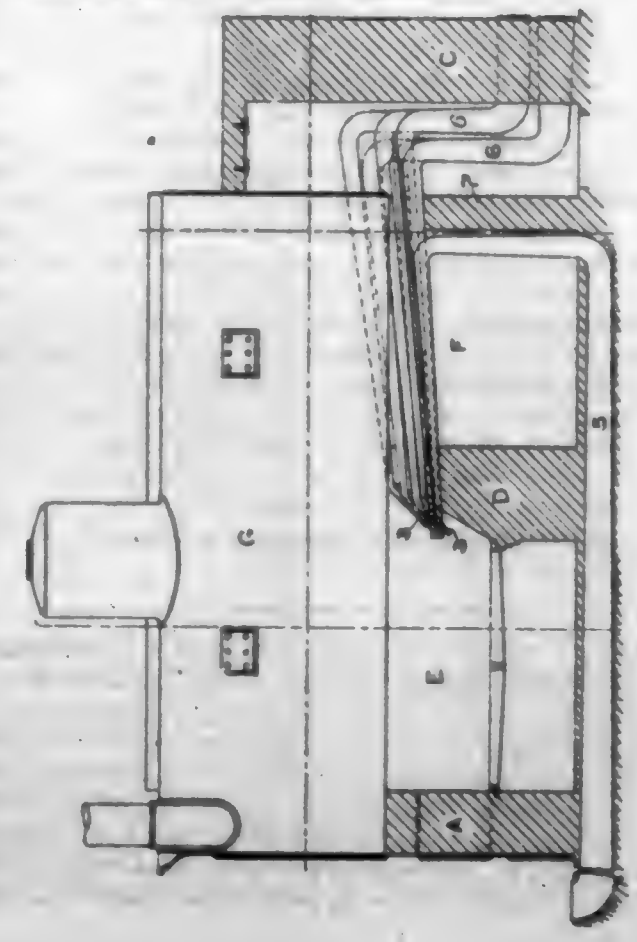
6. In an apparatus of the class described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, a main valve operating in said chamber, air-pipes connecting the valve-chamber and the water-reservoirs, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and the valve-chamber, whereby air forced into the water-reservoirs to discharge water therefrom may be returned to the compressor, means for actuating the main valve aforesaid, and an air-inlet for the compressor controlled by the pressure in the compressed-air reservoir.

7. In an apparatus of the class described, the combination of a pair of water-reservoirs, a discharge for said reservoirs, a valve-chamber, a main valve operating in said chamber, air-pipes connecting the valve-chamber and the water-reservoirs, a compressed-air reservoir connected with the valve-chamber, a compressor, a suction-pipe connecting the compressor and the valve-chamber, whereby air forced into the water-reservoirs to discharge water therefrom may be returned to the compressor, means for actuating the main valve aforesaid, an air-inlet for the compressor, and a valve governing said air-inlet of the compressor and controlled by variation in pressure in the compressed-air reservoir.

8. In an apparatus of the class described, the combination of a pair of water-reservoirs, a compressed-air reservoir arranged to supply air to the water-reservoirs, valve means governing the supply of air from the compressed-air reservoir to the water-reservoirs, a compressor, and an air-inlet for the compressor controlled by variation of pressure in the compressed-air reservoir.

9. In an apparatus of the class described, the combination of a pair of water-reservoirs, a compressed-air reservoir arranged to supply air to the water-reservoirs, valve means governing the supply of air from the compressed-air reservoir to the water-reservoirs, a compressor, an inlet for supplying air directly to the compressor, a valve governing said inlet, and a pressure-controller connected with the compressed-air reservoir and the valve of the air-inlet aforesaid.

814,073. **BOILER-FURNACE.** Simeon F. Pierce, St. Paul, Minn. Filed Nov. 15, 1904. Serial No. 232,773.



Claim.—1. In a furnace of the class described, the combination with the fire-box, bridge-wall, combustion-chamber and boiler, of a plurality of pipes leading from the outside air through the combustion-chamber near the bottom of the boiler to the fire-box, the pipes slanting downwardly from the rear portion of the boiler to the bridge-wall, and the discharge ends of the pipes being supported by the bridge-wall and discharging downwardly into the fire-box at the front side of the bridge-wall.

2. In a furnace of the class described, the combination with the fire-box, bridge-wall, combustion-chamber and boiler, of a plurality of air-pipes leading from the outside air through the combustion-chamber near the bottom of the boiler to the fire-box, the pipes being arranged to follow the periphery of the boiler from side to side so that all the pipes shall stand substantially the same distance from the boiler, the inlet ends of the pipes being positioned near the bottom of the furnace, and the outlet ends being supported by the bridge-wall and discharging into the fire-box upon the front side of said bridge-wall.

3. In a furnace of the class described, the combination, with the fire-box, bridge-wall, combustion-chamber and boiler, of a plurality of pipes leading through the combustion-chamber near the bottom of the boiler to the fire-box, said pipes being larger in diameter at the inlet end than at the outlet end, and being progressively reduced in diameter toward the outlet end.

4. In a furnace of the class described, the combination, with the fire-box, bridge-wall, combustion-chamber and boiler, of a plurality of air-pipes leading from the outside air through the combustion-chamber near the bottom of the boiler to the fire-box, the forward ends of the pipes being supported by the bridge-wall and being inclined downwardly into the fire-box.

5. In a furnace of the class described, the combination, with the fire-box, bridge-wall, combustion-chamber and boiler, of a plurality of air-pipes leading from the outside air through the combustion-chamber to the fire-box, the inlet ends of the pipes being positioned near the bottom of the furnace, and the outlet ends being supported by the bridge-wall and discharging into the fire-box at the front side of the bridge-wall.

814,074. **BOILER-FLUE.** SIMEON F. PIERCE, St. Paul, Minn. Filed Apr. 21, 1905. Serial No. 256,763.



Claim.—A boiler-flue comprising an outer tube and an inner tube of less diameter than the outer tube, the inner tube being formed with isolated radially-projecting bosses arranged at intervals along its length, whereby the inner tube is supported centrally in the outer tube.

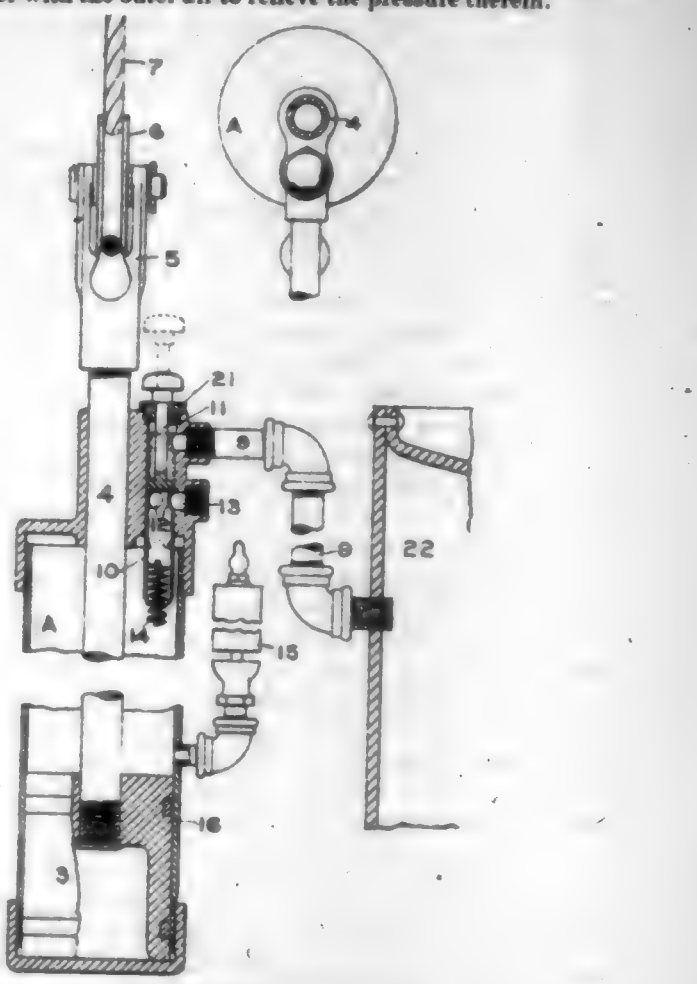
814,075. **TROLLEY-CATCHER.** SIMEON F. PIERCE, St. Paul, Minn. Filed June 5, 1905. Serial No. 263,750.

Claim.—1. In combination with a trolley-rope, a cylinder, a piston within said cylinder, a piston-rod connecting said piston and rope, an inlet-pipe, valve mechanism interposed between said inlet-pipe and cylinder in position to be actuated by the travel of the piston in one direction to connect said inlet-pipe with said cylinder, and means allowing said valve to be manually operated to connect said cylinder with the outer air to release the contained pressure.

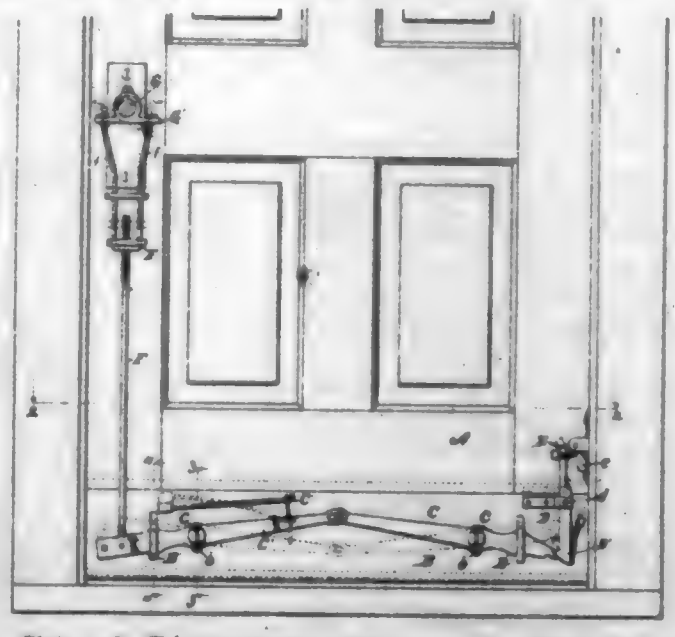
2. In combination with a trolley-rope, a cylinder, a piston within said cylinder, a piston-rod connecting said piston and rope, an inlet-pipe, valve mechanism interposed between said inlet-pipe and cylinder in position to be actuated by the travel of the piston in one direction to connect said inlet-pipe with said cylinder, and to be actuated by hand to connect said cylinder with the outer air for the purposes set forth.

3. In combination with a trolley-rope, a cylinder, a piston within said cylinder, a piston-rod connecting said piston and rope, an inlet-pipe, a slidable valve interposed between said inlet-pipe and cylinder and between said cylinder and the outer air, said valve being so constructed and arranged as to be actuated by the travel of the piston in one direction to connect the inlet-pipe with the cylinder, and to be actuated by hand to connect the cylinder with the outer air, for the purpose set forth.

4. In combination with a trolley-rope, a cylinder, a piston within said cylinder, a piston-rod connecting said piston and rope, an inlet-pipe, a slidable valve interposed between said inlet-pipe and cylinder, an actuating-handle carried by said valve outside of said cylinder, an impact-spring carried by the inner end of said valve whereby said valve will be actuated by the movement of the piston in one direction to connect the cylinder with said inlet-port to allow air to be forced into said cylinder and may be actuated by hand to connect said cylinder with the outer air to relieve the pressure therein.



814,076. **WEATHER-STRIP.** CHARLES A. PIKE, Paw Paw, Mich. Filed Mar. 6, 1905. Serial No. 248,585.



Claim.—1. The combination with a door, of a plate having vertical slots therein; screws arranged through said slots for securing said plate to said door; a pair of levers, having a pin-and-slot connection at their inner ends, pivoted on said screws; loops on said plate through which the outer ends of said levers are arranged; a spring carried by said plate connected to the inner ends of said levers; a locking-dog carried by said plate adapted to engage the rear lever; a trip for said locking-dog mounted on the door of the casing; and connections from said levers to the latch of the door, for the purpose specified.

2. The combination with a door, of a plate having vertical slots therein; screws arranged through said slots for securing said plate to said door; a pair of levers, having a pin-and-slot connection at their inner ends, pivoted on said screws; loops on said plate through

which the outer ends of said levers are arranged; a spring carried by said plate connected to the inner ends of said levers; and connections from said levers to the latch of the door, for the purpose specified.

3. The combination with a door, of a plate having vertical slots therein; screws arranged through said slots for securing said plate to said door; a pair of levers, connected to each other and to said plate, pivoted on said screws; a spring carried by said plate for applying tension to said levers; a locking-dog carried by said plate adapted to engage the rear lever; a trip for said locking-dog mounted on the door-casing; a cross-piece secured to the spindle of the door-knob; a yoke having its arms arranged through said cross-piece; and a link adjustably secured to said yoke and to the front lever, for the purpose specified.

4. The combination with a door, of a plate having vertical slots therein; screws arranged through said slots for securing said plate to said door; a pair of levers, connected to each other and to said plate, pivoted on said screws; a spring carried by said plate for applying tension to said levers; a locking-dog carried by said plate adapted to engage the rear lever; a trip for said locking-dog mounted on the door-casing; and connections from said levers to the latch of the door, for the purpose specified.

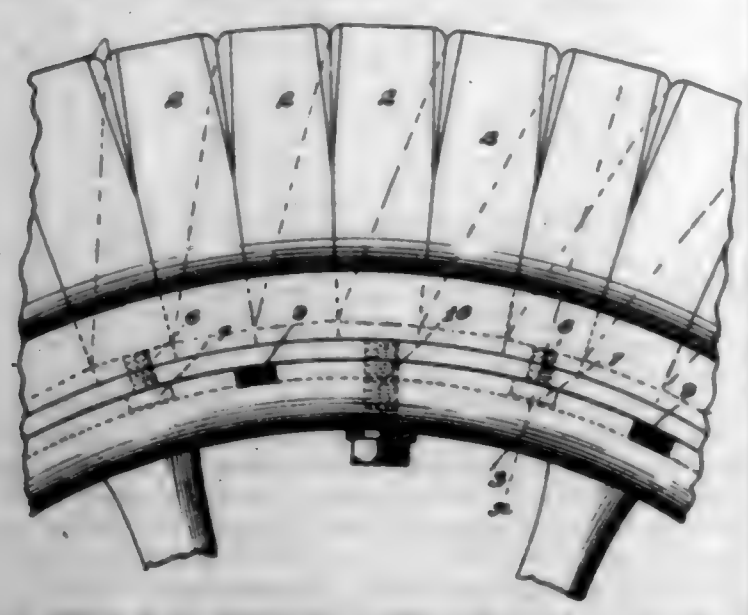
5. The combination with a door, of a plate adjustably mounted thereon; a pair of pivotally-mounted levers connected to each other and to said plate; a spring for applying tension to said levers; a locking-dog adapted to engage the rear lever; a trip for said locking-dog pivotally mounted on the door-casing; a cross-piece secured to the spindle of the door-knob; a yoke having its arms arranged through said cross-piece; and a link connected to said yoke and to said lever, for the purpose specified.

6. The combination with a door of a plate adjustably mounted thereon; a pair of pivotally-mounted levers connected to each other and to said plate; a locking-dog adapted to engage the rear lever; a trip for said locking-dog pivotally mounted on the door-casing; a cross-piece secured to the spindle of the door-knob; a yoke having its arms arranged through said cross-piece; and a link connected to said yoke and to said levers, for the purpose specified.

7. The combination with a door, of a plate adjustably mounted thereon; a pair of pivotally-mounted levers connected to each other and to said plate; a spring carried by said plate for applying tension to said levers; a locking-dog adapted to engage the rear lever; a trip for said locking-dog pivotally mounted on the door-casing; and connections from said levers to the latch of the door, for the purpose specified.

8. The combination with a door, of a plate adjustably mounted thereon; a pair of pivotally-mounted levers connected to each other and to said plate; a locking-dog adapted to engage the rear lever; a trip for said locking-dog pivotally mounted on the door-casing; and connections from said levers to the latch of the door, for the purpose specified.

814,077. **WHEEL CONSTRUCTION.** Frank P. Prendergast, Dagus Mines, Pa. Filed July 31, 1905. Serial No. 272,069.



Claim.—1. In combination, a felly, a channel-iron, a tire, and fastenings securing the tire to the channel-iron and adapted to interlock the channel-iron with the felly by a lateral and circumferential movement of the channel-iron on the felly.

2. In combination, a felly, a channel-iron, a tire, and fastenings securing the tire to the channel-iron and provided with heads projecting from the inner side of the channel-iron, the felly being provided with a circumferential groove to receive the fastenings of the tire to interlock the channel-iron with the felly.

3. In combination a felly provided with a circumferential groove, and lateral grooves leading thereto, a channel-iron, a tire on the channel-iron, fastenings securing the tire to the channel-iron and having the heads thereof projecting from one side of the channel-iron, the fastenings of the tire being situated at intervals equal to the intervals between the lateral slots on the felly, whereby the heads of the said fastenings may be passed into the lateral slots on the felly, and by circumferential movement of the channel-iron caused to interlock in the circumferential groove thereof, and means for preventing circumferential movement of the channel-iron after the same has been interlocked with the felly.

4. In combination, a felly, a channel-iron thereon, a tire on the channel-iron, means carried by the channel-iron adapted to interlock the same with the felly, by lateral and circumferential movement of the channel-iron on the felly, and means for preventing circumferential movement of the channel-iron after the same has been interlocked with the felly.

5. In combination, a felly, a channel-iron, a tire composed of a metallic strip coiled upon itself to form a plurality of spring-coils, and fastenings securing the coils of the tire at intervals to the channel-iron, said fastenings being adapted to be interlocked with the felly by lateral and circumferential movement of the channel-iron thereon.

814,078. **PNEUMATIC GUN.** Joshua Pusey, Media, Pa. Filed Feb. 20, 1905. Serial No. 246,441.



Claim.—1. In a gun of the character recited, the combination of the barrel member, the tubular clamping member connected, and axially movable with relation, to said barrel member; adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movement of said clamping member, together with means for compressing air within said barrel member, substantially as and for the purpose set forth.

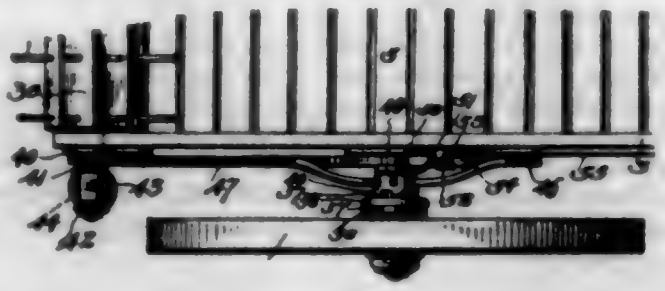
2. In a gun of the character recited, the combination of the barrel member, the tubular clamping member connected with, and axially movable with relation to, said barrel member; adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movement of said clamping member, the reciprocatory piston within said barrel member, and means for limiting the movement of said piston, substantially as and for the purpose set forth.

3. In a gun of the character recited, the combination of the barrel member, the tubular clamping member secured to and axially movable upon said barrel member, adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movements of said clamping member, one of said members having a segmental slot, and means for compressing air within said barrel member, substantially as and for the purpose set forth.

4. In a gun of the character recited, the combination of the barrel, the cap adapted to rotate and at the same time move axially thereon, adjacent ends of said barrel and cap being in registry with each other, said cap and barrel having the cam connection, and the piston adapted to reciprocate in said barrel, substantially as and for the purpose set forth.

5. In a gun of the character recited, the combination of the barrel, the cap mounted and axially movable thereon, and having the end or shoulder in registry with the end of said barrel, and having the segmental slot immediately back of said shoulder, said cap and barrel having a cam connection, and the piston adapted to reciprocate in the said barrel, substantially as and for the purpose set forth.

814,079. **FERTILIZER-DISTRIBUTER.** Oren C. Rawley, Cortland, N. Y. Filed Sept. 26, 1904. Serial No. 226,997.



Claim.—1. In a fertilizer-distributer, the combination with the rear supporting-wheels, of a wagon-bed supported by said wheels, a movable endless bottom arranged on said wagon-bed, mechanism whereby said endless bottom is driven directly from one of said rear supporting-wheels, means whereby the speed of said driving mechanism may be changed, a beater rotatably mounted at the rear end of said machine, a combined sprocket and beveled gear loosely mounted on said beater-shaft, a beveled gear fixedly mounted on the end of said shaft and spaced from said combined sprocket and beveled gear, an idle beveled gear connecting said fixed and loose gears, a sprocket-wheel loosely mounted on the rear supporting-wheel, a chain connecting said sprocket-wheel with the sprocket-teeth of the combined sprocket and beveled gear on said beater-shaft and means whereby said sprocket-wheel is thrown into and out of engagement with the adjacent rear supporting-wheel, substantially as described.

2. In a fertilizer-distributer, the combination with the rear supporting-wheels, of a wagon-bed supported by said wheel, a movable endless bottom arranged on said wagon-bed, mechanism whereby said endless bottom is driven directly from one of said rear supporting-wheels, means whereby the speed of said driving mechanism may be changed, a beater rotatably mounted at the rear end of said machine, a combined sprocket and beveled gear loosely mounted on said beater-shaft, a beveled gear fixedly mounted on the end of said shaft, and spated from said combined sprocket and beveled gear, an idle beveled gear connecting said fixed and loose gears, a sprocket-wheel loosely mounted on the rear supporting-wheel, a chain connecting said sprocket-wheel with the sprocket-teeth of the combined sprocket and beveled gear on said beater-shaft, a clutch member mounted on said rear axle, clutch-teeth arranged on said clutch member, clutch-teeth formed on the hub of said sprocket-wheel, a shifting arm mounted on said hub, a cam-shifting element mounted on the wagon-bed with which the end of said shifting arm is engaged an operating-lever connected to said cam element, an operating-rod connected to said lever whereby the same may be turned to throw said sprocket-wheel into engagement with said clutch member and means whereby said clutch member is driven in a forward direction by the adjacent, rear supporting-wheel, substantially as described.

814,080. RIPPER. FERDINAND E. REED, Joliet, Ill. Filed Dec. 18, 1903. Serial No. 185,411.



Claim.—A device for ripping stitches comprising a tube having open ends and provided with upwardly-projecting spaced apart flanges formed by a continuation of the body of the tube, a knife-blade having its shank portion secured between said flanges, said blade being arranged to extend laterally from the front opening of said tube, and said front end of the said tube having a downwardly angularly inclined edge portion which serves to permit of the blade being operated by the finger in either an upward or downward direction, substantially as described.

814,081. GUARD-RAIL FOR CARS. MICHAEL W. ROGERS, Lexington, Ky. Filed July 14, 1905. Serial No. 269,682.

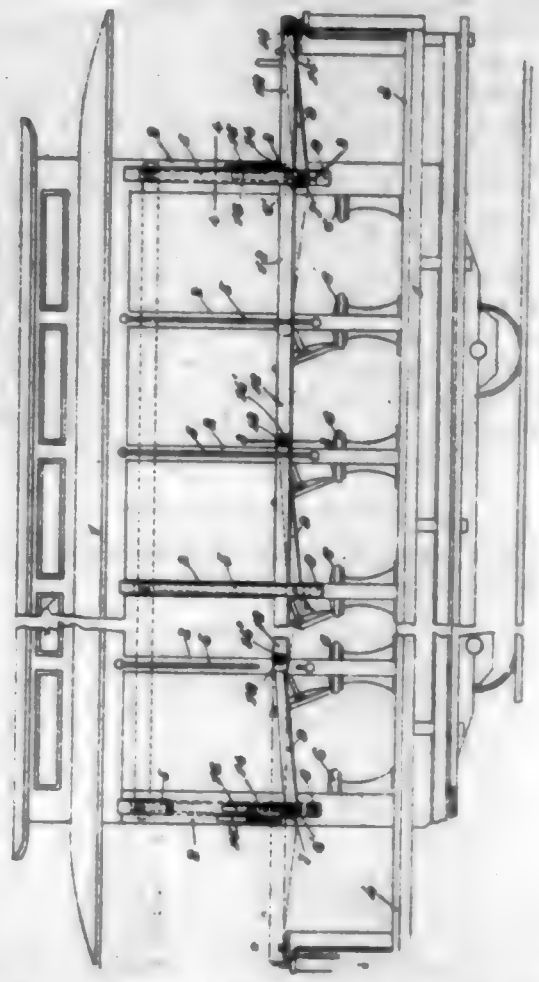
Claim.—1. An open car provided with a guard-rail equal in length to the length of the car-body, and swinging arms pivotally supported upon the car-body and pivotally supporting the guard-rail, the arms capable of swinging in opposite directions from an upright position to shift the guard-rail from one end of the car to the other to alternately close the platform-passages.

2. An open car provided with a guard-rail equal in length to the length of the car-body, said guard-rail capable of being shifted endwise to alternately close the platform-passages.

3. An open car provided with a guard-rail equal in length to the length of the car-body, said rail capable of being shifted endwise to alternately close the platform-passages and also capable of being elevated to an overhead position, and means to support the rail in its elevated position.

4. An open car provided with a guard-rail equal in length to the length of the car-body, arms pivotally supported upon the car-body and pivotally supporting the rail, and means to hold the arms in upright positions to support the rail in an overhead position, the arms capable of swinging in opposite directions from the vertical to shift the rail endwise from one end of the car to the other for alternately closing the platform-passages.

5. An open car provided with a guard member pivotally mounted upon the side of the car at one end thereof and capable of swinging in opposite directions from the vertical to alternately close the adjacent platform and seat passages.



6. An open car provided with a swinging guard member pivoted to the side of the car at one end thereof and capable of swinging in opposite directions from the vertical to alternately close the adjacent seat and platform passages, and means upon the car to engage the guard member and support the latter in an upright inoperative position.

7. A lever pivoted to a side post and a bifurcated spring secured to the post with one arm arranged to hold the lever from contact with the post and the other to prevent an angular displacement of the lever.

8. A lever pivoted to a side post of a car, a bar pivoted to the lever and a bifurcated spring secured to the post with one arm arranged to hold the lever from contact with post and the other to prevent an angular displacement of the lever.

9. A lever pivoted to a side post of a car, a bar pivoted to and extending longitudinally of the car, and a bifurcated spring secured to the post and with one arm arranged to hold the lever and bar from contact with the post and the other to permit an angular movement of the lever.

10. A car having side posts forming seat-passages, levers pivotally secured to the posts intermediate their ends and proportioned to extend upwardly adjacent the top of the seat-passages, a bar pivotally mounted upon the upper end of the levers and extending longitudinally of the car and capable of a movement in either direction to rest upon the lever-pivots, and a bifurcated spring secured to the post with one arm arranged to hold the lever and bar from contact with the posts and the other to prevent an angular movement of the lever.

11. In a guard-rail for cars the combination with the side posts of the car, brackets secured to and outstanding from the side posts, vertical hand-rods secured to the extremities of the brackets, pivot-pins disposed transversely between the side posts and the hand-rods, levers mounted upon the pivot-pins and movable in vertical planes, sleeves rigidly secured to opposite sides of the lever upon the pivot-pins and spacing the levers from the hand-rods and the end posts, a guard-rail extending between the side posts and the hand-rod and longitudinally of the car and resting upon the sleeves, pivot-pins secured to the ends of the levers and to the rail, catches arranged to retain the levers removably in a vertical position and the rail at the top of the side posts and arranged to release the arms in either direction and permit the rail to swing downwardly upon the sleeves.

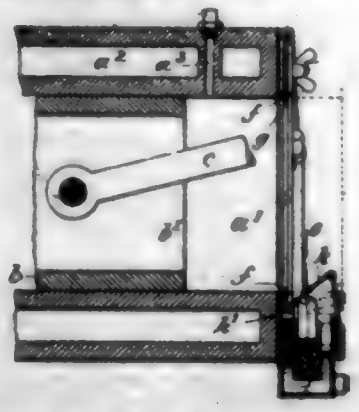
12. An open car provided with an arm pivoted to the side of the

car-body at one end thereof to swing in opposite directions from the vertical for alternately closing the adjacent seat and platform passages, said arm being provided with an extension projecting beyond the pivotal support thereof and adapted to close the platform-passage when the arm is closing the seat-passage.

13. An open car provided at opposite ends with swinging arms pivotally supported upon one side thereof and capable of swinging in opposite directions from the vertical to alternately close the adjacent platform and seat passages, a guard-rail pivotally carried by the arms, and an extension projecting beyond the pivotal support of each of the arms and adapted to close the adjacent platform-passage when the arm is closing the adjacent seat-passage.

14. An open car provided at opposite ends with swinging arms pivotally supported at their lower ends upon the side of the car and capable of swinging in opposite directions from the vertical to alternately close adjacent seat and platform passages, each arm being provided with an extension projecting beyond the pivotal support thereof for closing the adjacent platform-passage when the arm is closing the adjacent seat-passage, a guard-rail pivotally carried by the arms, and means upon the car to hold the arms in their upright positions.

814,082. LUBRICATOR. Charles Ruth, New York, N. Y. Filed Dec. 12, 1905. Serial No. 291,407.



Claim.—1. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, and a lifter for returning the lubricant from the pan to the absorbent, substantially as specified.

2. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, a communicating pump, and a pipe leading from the pump to the upper part of the absorbent, substantially as specified

3. A lubricator for gas-engine cylinders, comprising an annular plate, an absorbent projecting inwardly beyond the same, a drip-pan, a communicating pump, and a pipe leading from the pump to the upper part of the absorbent, substantially as specified.

4. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, and means actuated by the piston of the engine for returning the lubricant from the drip-pan to the upper part of the absorbent, substantially as specified.

5. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, and means actuated by the piston-rod of the engine for conveying the lubricant from the drip-pan to the upper part of the absorbent, substantially as specified.

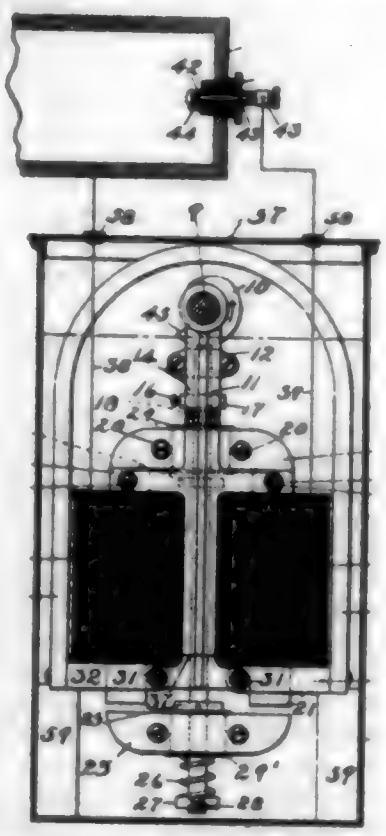
6. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, a communicating lifter, and a hinged lid for actuating the lifter, substantially as specified.

7. A lubricator for gas-engine cylinders, comprising an absorbent adapted to be secured to the cylinder-head, a drip-pan, a communicating lifter, a hinged lid for actuating the lifter, and an adjustable keeper controlling the lid, substantially as specified.

8. A lubricator for gas-engine cylinders, comprising a flanged annular plate, an absorbent secured thereto, a drip-pan, a communicating lifter, a pipe leading from the lifter to the upper part of the absorbent, a hinged lid for actuating the lifter, and an adjustable keeper controlling the lid, substantially as specified.

814,088. GENERATOR OF INTERMITTENT ELECTRIC CURRENTS. Malcolm P. Ryder, White Plains, N. Y. Filed Aug. 12, 1904. Serial No. 220,467.

Claim.—1. A generator of electric currents comprising in combination an electric conductor, a source of magnetic flux by whose variations currents are produced or generated in said conductor, an armature and core, means for detaching the armature from the core to suddenly interrupt the magnetic flux and means for simultaneously shunting the magnetic flux of the source around the conductor, as and for the purpose described.



2. In a generator of intermittent electric currents, the combination of a generating coil or conductor, a reciprocatory armature, means for reciprocating the same to and from position where it will close the magnetic circuit of a magnetic flux in whose field the coil or conductor lies, and means for simultaneously opening or closing a magnetic shunt for the source of magnetic flux external to said coil or conductor.

3. The combination substantially as described of a coil, a core and an armature, a sliding rod passing loosely through the armature and provided with a collar, a rotary cam acting on the rod, a hammer carried by the rod and a spring compressed between the armature and a collar on the rod.

4. In an electric-spark generator, the combination with the generator-coil and core therefor, of a means for producing a magnetic flux through said core, an armature adapted to reciprocate to and from position for closing the magnetic circuit through said core and a coöperating armature reciprocating synchronously to and from position for shunting the magnetism from the core.

5. In a generator of intermittent or pulsatory currents, the combination of a pair of cores and generator-coils wound thereon, a permanent magnet or other continuous source of magnetic flux having its opposite poles connected respectively to one end of said cores, a reciprocatory armature adapted to interrupt and close the magnetic circuit across the opposite ends of said cores and a coöperating reciprocatory armature adapted to close and open the magnetic circuit directly across the poles of the source of magnetic flux.

6. In a generator of intermittent or pulsatory electric currents, the combination of a reciprocating armature adapted to close the magnetic flux through a generating-coil, a reciprocating hammer for displacing the armature, a source of magnetic flux and a coöperating armature acting synchronously with said hammer and affording at each interruption of the magnetic circuit a shunt for the magnetic lines of force emanating from said source.

7. In a generator of intermittent or pulsatory electric currents, the combination of a permanent magnet, a pair of coil-wound cores connected respectively to the opposite poles of said permanent magnet, a reciprocating armature adapted to close the magnetic circuit of said cores to establish the magnetic flux through the same, a hammer acting on said armature to violently disengage it, an armature adapted to bridge the poles of the permanent magnet and means connected with the hammer for moving the latter armature into and out of bridging position.

8. The combination with an electric generating-coil of an armature for the magnetic flux through said coil, a power-actuated hammer adapted to engage the armature to cause it to interrupt the magnetic circuit and a cam for alternately releasing the hammer and restoring it to position for a new blow.

9. In an electric generator of intermittent currents, the combination of a coil, a core, a generator of magnetic flux connected to one end of the core; a reciprocating armature applied to the other end of the core, a rod bearing a hammer adapted to act on said armature, a cam and spring for reciprocating said rod, an armature at the opposite end of the core adapted to shunt the magnetic flux of the source away from the core and means interposed between said rod and said armature for reciprocating the same.

10. In a generator of intermittent electric currents, the combination of a coil, a core, a magnetic circuit-breaking armature for said core, a reciprocating rod passing loosely through said armature, means for reciprocating the armature from the rod, in the one direction by a hammer action, and in the other by a spring, a second armature applied to the opposite end of said core for shunting magnetism therefrom and mounted loosely on said rod and means for operating said armature by the rod through a spring or cushioning connection, as and for the purpose described.

11. A generator of electric currents, comprising in combination an electric conductor, a source of magnetic flux by whose variations currents are generated in said conductor, an armature adapted to abruptly open the circuit of the magnetic flux through the field of the conductor, an independent armature adapted to shunt the magnetic flux from said field, and means for actuating said armatures to cause them to coöperate in producing a change in the magnetic flux through the field of the conductor, the one by interrupting said flux and the other by providing a shunt-path for the flux from the source.

12. A generator of electric currents comprising in combination an electric conductor, a source of magnetic flux by whose variations currents are generated in said conductor, an armature adapted to abruptly open the circuit of the magnetic flux through the field of the conductor, an independent armature adapted to shunt the magnetic flux from said field and means for simultaneously operating said armatures to cause the latter to effectively shunt the flux at the instant when but not before, the former interrupts the flux.

13. In an electric-spark generator, the combination of an armature and actuating-cam positively driven from an operating-shaft and a ratchet-and-pawl connection between said shaft and cam.

14. The combination with the reciprocating armature of a reciprocating hammer and an actuating-cam for the latter connected with its operating-shaft by a pawl or slip connection.

15. The combination in a generator of pulsatory or intermittent electric currents, of two coils and soft-iron cores therefor, a permanent magnet, a rod adapted to reciprocate in a line parallel to the axis of said core, a spring and cam acting on said rod in opposite directions, an armature at one end of said cores, a hammer connected to the rod and adapted to act on said armature, an armature at the opposite end of said core and a sprihg and collar on the rod for actuating the latter armature.

16. In a generator of pulsatory or intermittent electric currents, the combination with a pair of coils and cores therefor of means connected to one end of said cores for furnishing continuously a source of magnetic flux, an armature adapted to bridge said cores at their opposite ends, a reciprocating rod having two collars one of which engages the armature positively, a spring interposed between the armature and the other collar, an armature at the opposite end of said core, a collar on the rod adapted to withdraw said armature and a spring interposed between the armature and a collar by which said armature is caused to engage the cores.

17. In an apparatus for generating electric currents, the combination of a coil a core, an armature adapted to be moved into and out of contact with the core, a hammer for detaching the armature from the core and means connected with said hammer for shunting the magnetism from the core at or about the time that the hammer operates to detach the armature.

18. In an apparatus for generating electric currents, the combination of an armature adapted to close the magnetic circuit by direct contact, means for detaching the armature to suddenly interrupt the magnetic circuit and means for simultaneously shunting the magnetism, as and for the purpose described.

19. The combination of a coil, a core, an armature forming a path for a magnetic flux through the core, a hammer for actuating said armature and a second armature coöperating with the first to vary the flux through the core by shunting the magnetism therefrom, as and for the purpose described.

20. In an electric generator of intermittent currents, a reciprocating armature, a rod bearing a hammer adapted to act on said armature, a cam and spring for reciprocating said rod, a second armature coöperating with the first to vary a magnetic flux and means interposed between said rod and said armature for reciprocating the same.

21. In a generator of intermittent electric currents, the combination of an armature, a reciprocating rod passing loosely through said armature, means for reciprocating the armature from the rod, in the one direction by a hammer action, and in the other by a spring action, a second armature coöperating with the first to vary a magnetic flux and mounted loosely on said rod, and a spring or cushioning connection between the armature and the rod.

22. As a means for securing the coöperating action of two armatures in disturbing the magnetic flux through a coil, a reciprocating rod, an actuating-cam for moving the same in one direction and a spring acting on the rod in the opposite direction and released by the cam, two armatures, means carried by said rod for operating on one of said armatures by a hammer action and means connecting the rod with the other armature to cause the latter to move into coöperative or effective position when the first-named armature is operated by a hammer action.

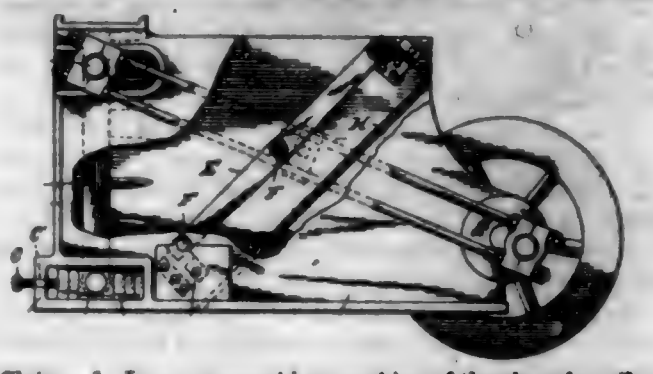
814,084. PIN-GUARD. MAURICE C. RYTHERL, New York, N. Y. Filed Mar. 20, 1905. Serial No. 250,188.



Claim.—1. A pin or stud guard comprising spring members normally out of parallelism and pressed toward each other, said members having openings therein which are out of alinement when in normal position, and means whereby said members may be moved to bring them into substantial parallelism to permit the insertion of a pin or stud though said openings and to resume their normal position after the pin or stud has been inserted.

2. A pin or stud guard made from a single piece of metal having a body portion bent back upon itself to constitute spring-arms, said arms being normally out of parallelism and pressed toward each other and having openings therein which are out of alinement when in normal position, and means whereby said arms may be moved to bring them into substantial parallelism to permit the insertion of a pin or stud through said openings and to resume their normal position after the pin or stud has been inserted.

814,085. ORE AND COAL CRUSHING MACHINE. JOHN F. SAUERMAN, Russellville, Ark. Filed July 3, 1905. Serial No. 268,274.



Claim.—1. In an ore-crushing machine of the class described, a suitable frame, a reciprocating crusher-head mounted in said frame, means for reciprocating said crusher-head, and a back plate, said back plate consisting of a plurality of separate bars spacing-rods on which said bars are strung, means for adjusting the said bars toward and from each other on said rods, and supporting cross-beams independent of said rods for sustaining the ends of the bars against the crushing strain.

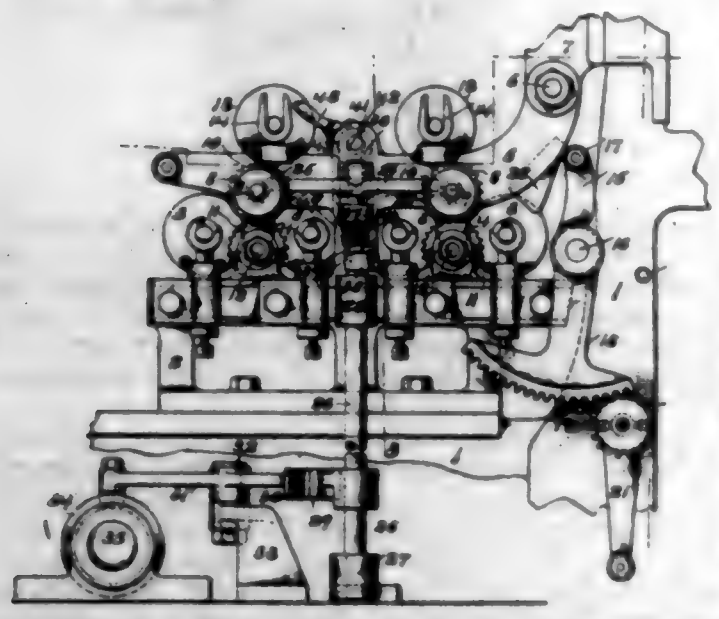
2. In an ore-crushing machine of the class described, the combination of a frame, a crusher-head pivotally mounted therein, means for reciprocating said crusher-head, a back plate comprising a plurality of bars, independent washers for holding said bars spaced apart, rods on which said bars and washers are strung, supporting-beams independent of the said rods for sustaining the ends of the bars against the crushing strain, and an inclined plate secured to the

frame and extending beneath the said bars to form a chute for carrying away the material as it is crushed to the proper size and passes between the bars.

3. In a machine of the class described, the combination of a suitable frame, a crusher-head pivotally mounted to swing in said frame and provided with a series of pins, a series of separated inclined bars toward and from which the crusher-head is adapted to swing, means for swinging said crusher-head, spacing-rods extending transversely of the frame and on which the said inclined bars are strung, a supporting-beam extending transversely of the frame adjacent the upper ends of the inclined bars upon which the ends of said bars rest to withstand the crushing strain.

4. In a machine of the class described, the combination of a frame, a crusher-head pivotally mounted therein, means for swinging said crusher-head, a series of separated bars forming a back plate with which the crusher-head coacts, and means for adjusting the pivotal connection between the crusher-head and frame, said means comprising an elongated bearing, a movable pivot-block in said bearing, and a series of interchangeable washers, each having a recess in one side and a projection on the other side, whereby they serve to reciprocally lock each other in place.

814,086. INKING MECHANISM. George F. Scull, New York, N. Y., assignor to Robert Hoe, New York, N. Y. Filed Feb. 1, 1904. Serial No. 191,439.



Claim.—1. In an inking mechanism, the combination with a pivoted frame carrying distributers, of a self-locking lifting-lever located beneath the frame, and means for operating the lever, substantially as described.

2. In an inking mechanism, the combination with a pivoted frame carrying distributers, of a self-locking lifting-lever located beneath the frame, a bearing-block, mounted on the frame against which the lever bears, and means for operating the lever, substantially as described.

3. In an inking mechanism, the combination with a pivoted frame carrying distributers, of a lifting-lever located beneath the frame and bearing thereagainst near the pivot thereof, and means including a segment for operating the lever, substantially as described.

4. In an inking mechanism, the combination with a pivoted frame carrying distributers, of a lifting-lever located beneath the frame, a bearing-block for the lever mounted on the frame, and means including a segment and a gear for operating the lever, substantially as described.

5. In an inking mechanism, the combination with a pivoted frame carrying distributers, of a lifting-lever located beneath the frame, a bearing-block for the lever mounted on the frame, and means including a segment and a hand-operated gear engaging with said segment for operating the lever, substantially as described.

6. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, means for operating the lever, and a disconnectible connection between the lever and its operating means, substantially as described.

7. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, suitable means including a shaft for operating the lever, and a disconnectible connection between the lever and its operating means, substantially as described.

8. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, and a tension-controlled operating connection between the shaft and the lever, substantially as described.

9. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, a spring-controlled operating connection between the shaft and the lever, and means for positively locking the connection to the shaft, substantially as described.

10. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, a vertical operating-shaft, a power-transmitting section between the shaft and the lever, coöperating engaging devices on the shaft and section, and means for insuring the engagement of these devices, substantially as described.

11. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, a vertical operating-shaft, a power-transmitting section between the shaft and the lever, coöperating engaging devices on the shaft and section, and a spring for insuring the engagement of these devices, substantially as described.

12. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, an operating-shaft having a recessed locking-block thereon, a transmitting-shaft between the lever and the operating-shaft, said shaft having an engaging block thereon coöperating with the recessed locking-block, and means for insuring the engagement of the two blocks, substantially as described.

13. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, an operating-shaft having a recessed locking-block thereon, a transmitting-shaft between the lever and the operating-shaft, said shaft having an engaging block thereon coöperating with the recessed locking-block, and a spring for insuring the engagement of the two blocks, substantially as described.

14. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, means for locking the frame in operative position, a lever for vibrating the distributers, means for operating the lever, and a disconnectible connection between the lever and its operating means, substantially as described.

15. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, a tension-controlled operating connection between the shaft and the lever, and means for locking the frame in its operative position, substantially as described.

16. In an inking mechanism, the combination with a movable frame, of distributers mounted thereon, a lever for vibrating the distributers, a vertical operating-shaft, a power-transmitting section between the shaft and the lever, coöperating engaging devices on the shaft and section, means for insuring the engagement of these devices, and means for locking the frame in its operative position, substantially as described.

17. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, an operating-shaft having a recessed locking-block thereon, a transmitting-shaft between the lever and the operating-shaft, said shaft having an engaging block thereon coöperating with the recessed locking-block, means for insuring the engagement of the two blocks, and means for locking the frame in its operative position, substantially as described.

18. In an inking mechanism, the combination with a movable frame, of distributers mounted therein, a lever for vibrating the distributers, an operating-shaft having a recessed locking-block thereon, a transmitting-shaft between the lever and the operating-shaft, said shaft having an engaging block thereon coöperating with the recessed locking-block, a spring for insuring the engagement of the two blocks, and means for locking the frame in its operative position, substantially as described.

19. In an inking mechanism, the combination with a pivoted frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, a tension-controlled disconnectible connection between the vibrating lever and its operating means, means for locking the frame in its operative position, and means for lifting the frame, substantially as described.

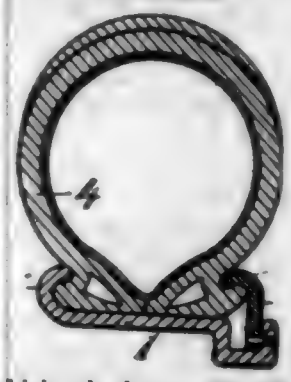
20. In an inking mechanism, the combination with a pivoted frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, a tension-controlled disconnectible connection between the vibrating lever and its operating means, means for locking the frame in its operative position, a lifting-lever

pivoted beneath the frame, and means for operating the lever, substantially as described.

21. In an inking mechanism, the combination with a pivoted frame, of distributers mounted thereon, a lever for vibrating the distributers, an operating-shaft, a tension-controlled disconnectible connection between the vibrating lever and its operating means, means for locking the frame in its operative position, a lifting-lever pivoted beneath the frame, and a gear and segment for operating the lever, substantially as described.

22. In an inking mechanism, the combination with a pivoted frame, of distributers mounted thereon, a lever for vibrating the distributers, a shaft, a spring-controlled power-transmitting section between the shaft and the lever, coöperating locking devices on the section and shaft, means for locking the frame in its operative position, a lifting-lever pivoted beneath the frame and means including a segment and a hand-operated gear for operating the lever, substantially as described.

814,087. VEHICLE-WHEEL. FRANK A. SEIBERLING, Akron, Ohio. Filed Mar. 2, 1906. Serial No. 303,126.



Claim.—1. A vehicle-wheel comprising the combination with a rim and a tire mounted thereon, said rim having an offset along one side, a spring-tire-holding element mounted in said offset and capable of lateral movement therein, and means to lock said tire-holding element against circumferential motion when in one position in said offset, said tire-holding element being free from engagement with said locking means when in a different position in said offset.

2. A vehicle-wheel comprising the combination with a rim and a tire mounted thereon, said rim having an offset along one side, a reversible spring-tire-holding element mounted in said offset and capable of lateral movement therein, and means to lock said tire-holding element against circumferential motion when in one position in said offset, said tire-holding element being free from engagement with said locking means when in a different position in said offset.

814,088. VEHICLE-WHEEL. FRANK A. SEIBERLING, AKRON, Ohio. Filed July 20, 1905. Serial No. 271,237.



Claim.—1. A vehicle-wheel comprising a rim having a seat for a tire and an offset along one of its edges forming a seat, a split ring mounted in said seat and having the severed ends thereof overlapping so as to prevent the said ends from displacement when pressure is applied to the ring, and means carried by the ring and adapted to interlock with the said offset thereby preventing the ring from circumferential motion.

2. A vehicle-wheel comprising a rim having a seat for a tire and an offset along one of its sides forming a seat, a split annular member arranged in said seat, the oppositely-disposed ends of said annular member being arranged to overlap to prevent the displacement thereof when pressure is applied to the ring, means on said annular member arranged to pass through said offset and lock said annular member against circumferential motion therein.

3. A vehicle-wheel comprising a rim to receive a tire and having an offset constituting a seat, said offset provided with an opening, a split annular member arranged in said seat, and having the ends thereof overlapping to prevent displacement of said ends when pressure is applied to the ring, a locking element projecting from said annular member arranged to enter the opening in said offset and prevent the circumferential motion of said annular member.

4. A vehicle-wheel comprising a rim having a seat for a tire and an offset along one of its sides forming a seat, said offset being provided with an opening, a split annular member arranged in said seat and having overlapping ends associating with each other to prevent displacement thereof when pressure is applied to the ring, and a projecting hook-shaped element on said annular member adjacent its severed portion arranged to enter and lock in the opening in said offset.

5. A vehicle-wheel comprising a rim having a seat for a tire and an offset along one of its sides forming a seat, said offset being provided with an opening, a split annular member arranged in said seat and having the ends thereof overlapping, the ends of said split annular member being formed to associate with each other and present when associating with each other an uninterrupted exterior, and a hook-shaped element projecting from said annular member arranged to engage the opening in said offset, whereby said annular member is locked against circumferential motion.

814,089. HEADWEAR. ORA D. SHAW, Boston, Mass. Filed Jan. 10, 1905. Serial No. 240,490.

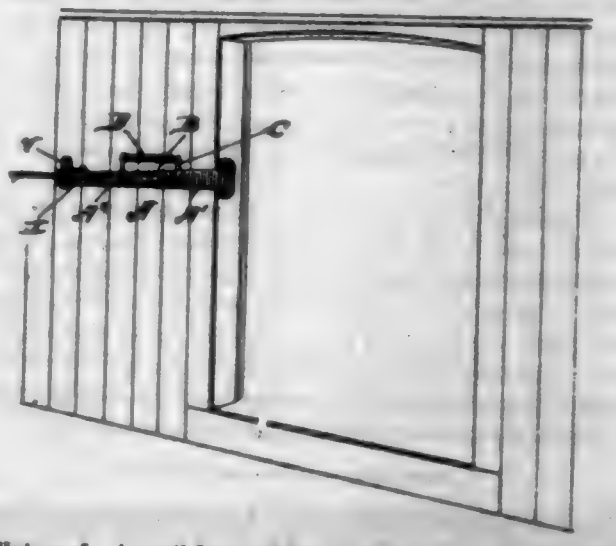


Claim.—1. A cap including a foundation, an outer covering therefor, the latter extending inwardly and upwardly around the lower edge of the foundation for a portion of its length and secured thereto, a vizor secured to the free portion of said foundation exteriorly of the same, and a finishing-band on said vizor inserted between the foundation and the unattached portion of the outer covering.

2. A cap including a foundation and covering therefor, said covering being extended inwardly and upwardly for a portion of its length around the lower edge of the foundation and secured thereto, and a vizor having a finishing-band secured to the free exterior portion of the foundation, said finishing-band lying between the foundation and covering.

3. A cap composed of a body, a crown and a vizor, said body having exteriorly at the front thereof two beads extending from the bottom thereof and diverging toward the crown, to prevent puckering of the front.

814,090. MAIL-BAG CATCHER. FRANK D. SMILEY, Ithaca, N. Y. Filed May 16, 1905. Serial No. 260,656.



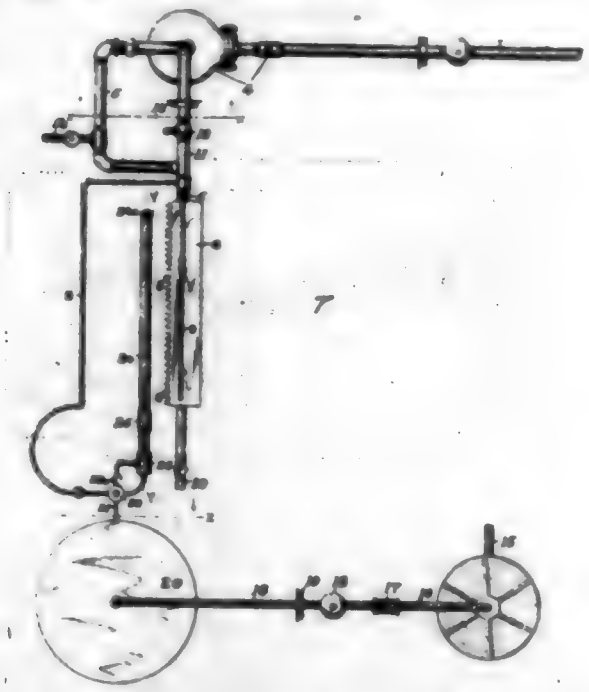
Claim.—1. A mail-bag catcher comprising a sectional, hinged bar having a pair of spring-actuated gripping arms mounted upon the outer end of one section, means for holding the said arms in an

opened position together with means for closing and releasing said arms as set forth.

2. A mail-bag catcher comprising a bar having a pair of gripping-arms pivotally connected to the outer end thereof, a spring for normally throwing said arms into closed position, a keeper adapted to be engaged by one of said arms, the other arm provided with a finger adapted to operate upon the other arm and release the same from the keeper, as set forth.

3. A mail-bag catcher comprising a bar made in two sections hinged together, the coil-spring attached to the said sectional bar upon the side opposite the hinge, the gripping-arms pivotally connected to the outer end of the outer section, the outer arm having an upwardly-projecting finger adjacent its pivotal end a spring-keeper carried by the outer section of the arm and adapted to be engaged by the inner gripping-arm, and a helical spring adapted to bear upon one end of the inner arm, as and for the purpose set forth.

814,091. OIL-BURNING SYSTEM. Ira R. Smith, Sacramento, Cal. Filed May 3, 1905. Serial No. 258,708.



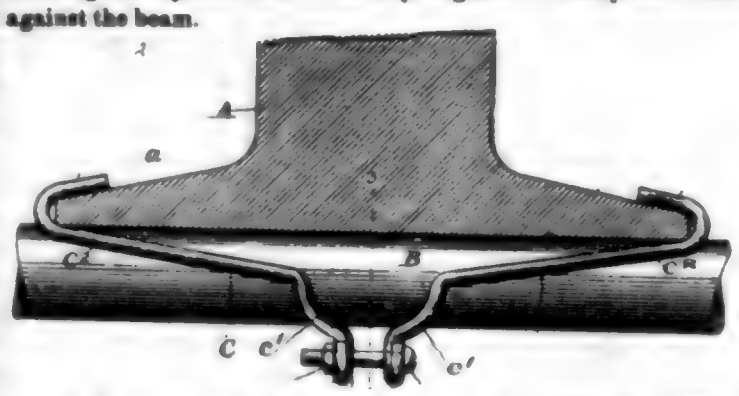
Claim.—1. In a device of the kind described the combination of a burner proper, means for supplying steam to said burner, an oil-supply for said burner comprising a supply-tank, an automatic water-pressure air-pump, a pipe connecting said pump to the top of said supply-tank, an air-pressure regulator located in said pipe, a check-valve located between said regulator and said pump, a pipe connecting said tank with said burner, a suitable stop-cock in said pipe, and an automatic shut-off valve connected in said last-named pipe, and regulated by the said steam-supply, as set forth herein.

2. In an oil-burning system, for cook-stoves, the combination of a burner proper located in the stove, means for supplying oil to said burner, a steam-supply consisting of a water-pressure pipe connected to a steam-boiler arranged in the stove, a water-pressure regulator located in said pipe, a float-valve mechanism connected to said pipe and located between the regulator and the boiler, said float-valve mechanism comprising a float-valve chamber and a float-valve, a pipe leading from said float-valve chamber to said boiler, a pipe leading from said boiler to said float-valve chamber, and a pipe leading from the top of said boiler to said burner, and oil-supply-regulating means mounted on the oil-supply pipe and operable by the steam as set forth.

3. In a device of the kind described the combination of a burner consisting of two pipes one within the other the outer one being closed at both ends and the inner one being open at its inner end and connected with an ejector at the other, a burner-pipe leading from said outer pipe and provided with a slit at its lower end, an oil-pipe connected with said ejector, a steam-pipe connected with said ejector, and an automatic shut-off valve located in the oil-pipe and operated by the steam passing through the steam-pipe, as set forth.

814,092. CLAMP FOR CONDUITS. Joseph Staples, Chicago, Ill. Filed Mar. 23, 1905. Serial No. 252,713.

Claim.—1. In a device of the class described, the combination with a conduit, of clips having hooks at their ends arranged to engage the flanges of an architectural iron beam, the opposite ends of the clips being adapted to extend under the conduit, and means for drawing the adjacent ends of the clips together to clamp the conduit against the beam.



2. In a device of the class described, the combination with an architectural iron beam and a conduit, of bifurcated clips adapted to straddle the conduit, said clips having hooks adapted to engage the flanges of the beam, and means for drawing the adjacent ends of said clips together to clamp the conduit against the beam.

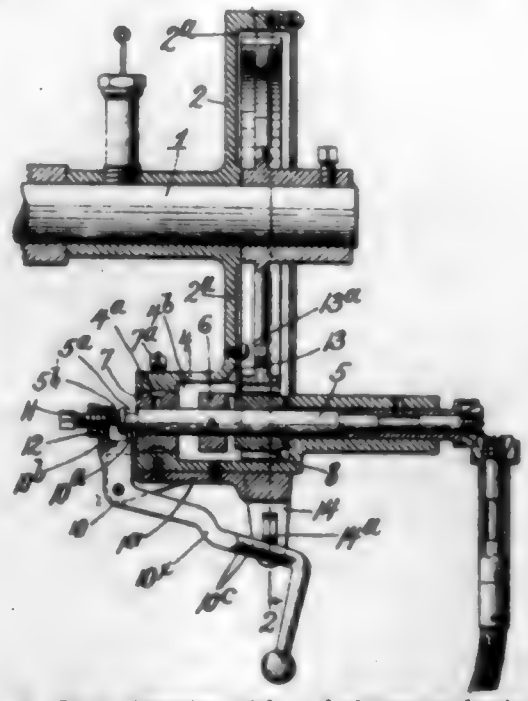
3. In a device of the class described, the combination with an architectural iron beam, of bifurcated clips having hooks at their ends adapted to engage the beam, said clips having portions adjacent to their inner ends, adapted to fit the contour of a conduit placed either parallel with the beam or at right angles thereto, and means for drawing the adjacent ends of the clips together.

4. In a device of the class described, the combination with an architectural iron beam having flanges, of two wire clips consisting of center portions formed into eyes, portions extending diagonally upward and outward from said eyes, and portions extending from said diagonally-disposed portions to the flanges of the beam and terminating in hooks which engage said flanges, and a bolt extending through the eyes in said clips.

5. In a device of the class described, the combination with an architectural iron beam having flanges, of two clips consisting of center portions formed into eyes, portions extending diagonally upward and outward from said eyes, and portions extending from said diagonally-disposed portions to the flanges of the beam, and terminating in hooks which engage said flanges, dish-shaped washers fitting said eyes and operating to prevent their spread, and a bolt extending through the eyes in said clips.

6. In a device of the class described, the combination with an architectural iron beam having flanges, of two clips consisting of center portions formed into eyes, portions extending diagonally upward and outward from said eyes, and portions extending from said diagonally-disposed portions to the flanges of the beam and terminating in hooks which engage said flanges, a bolt extending through the eyes in said clips, the aforesaid diagonally-disposed portions being curved to the contour of a pipe lying parallel to or at right angles to the beam.

814,093. DRIVING-CLUTCH FOR POWER TRANSMISSION. John K. Stewart, Chicago, Ill. Filed Apr. 10, 1905. Serial No. 254,751.



Claim.—1. In combination with a shaft-hanger having a shaft journaled therein; a pinion loose on the shaft and stopped independ-

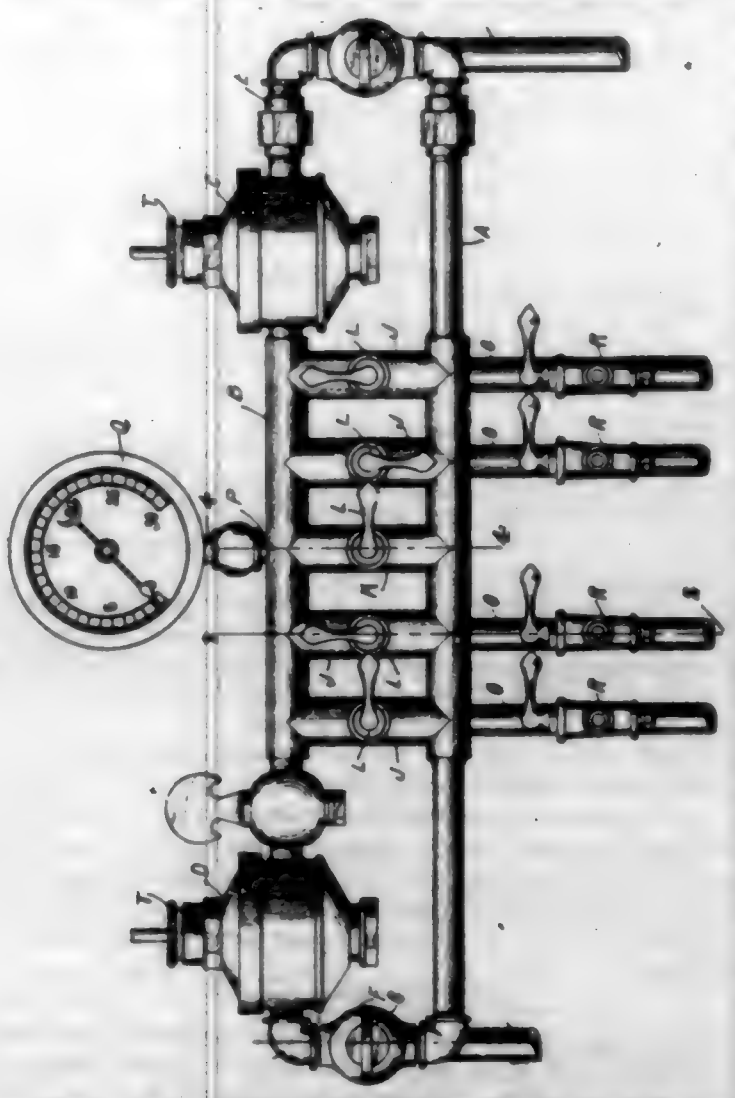
ently of the latter against endwise movement in either direction; a clutch member on the pinion and a companion clutch member fast on the shaft, said clutch members having corresponding sloping shoulders for engagement with each other, the shaft being longitudinally movable in its bearings; a lever mounted on the bearing and connected with the shaft for receiving and transmitting such longitudinal movement, and means on the bearing for holding the lever at the position to which it is moved by the longitudinal movement of the shaft.

2. In combination with a hanger, a shaft journaled therein; a pinion loose on the shaft and means independent of the shaft for stopping it against endwise movement; coöperating clutch members on the pinion and shaft respectively having sloping shoulders for driving engagement with each other, the shaft being movable longitudinally in the bearings, and means for holding it yieldingly at the position to which it is thus moved.

3. In combination with a hanger, a shaft journaled therein; a pinion loose on the shaft and stopped independently of the shaft against endwise movement; coöperating clutch members on the pinion and shaft respectively having sloping shoulders for driving engagement with each other, the shaft being movable longitudinally in the bearings; a lever fulcrumed on the bearing and engaging the shaft for giving it longitudinal movement, and a spring-plate along which the lever moves, said plate having an angular upraise protruding toward the lever, the lever having the side toward the plate formed with an angle for encountering said angular upraise.

4. In combination with a hanger, a shaft journaled therein; a pinion loose on the shaft and stopped independently of the shaft against endwise movement; coöperating clutch members on the pinion and shaft, the shaft being movable longitudinally in its bearings and having an annular groove near the end; a lever fulcrumed on the bearing having a finger which takes into the annular groove of the shaft, and having a second finger which projects past the end of the shaft, and a taper-pointed screw set through the last-mentioned finger for bearing against the end of the shaft in the movement of the shaft which brings the clutch members into engagement.

814,094. APPARATUS FOR DRAWING BEER, &c. Frederick Stickel, Chicago, Ill. Filed Mar. 20, 1905. Serial No. 251,064.



Claim.—1. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of substantially parallel pipes connected with said source of supply, one of said pipes having a pressure-reducing valve interposed therein and forming a low-pressure pipe, a single valve interposed in the connections of said pipes with said source of supply and adapted to connect both of said pipes therewith, a valve-casing, connections between said high and low pressure pipes and said valve-casing, means for connecting said valve-casing with a barrel or keg and a valve in said casing controlling said connections to place either of said pipes in communication with said barrel or keg.

2. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of substantially parallel pipes connected with said source of supply, one of said pipes having a pressure-reducing valve interposed therein and forming a low-pressure pipe, a single valve interposed in the connections of said pipes with said source of supply and adapted to connect both of said pipes therewith, a valve-casing, connections between said high and low pressure pipes and said valve-casing, means for connecting said valve-casing with a barrel or keg, and a valve in said casing controlling said connections to place either of said pipes in communication with said barrel or keg, and a check-valve interposed in the connection between said pipes and said barrel or keg.

3. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of substantially parallel pipes connected with said source of supply, one of said pipes having a pressure-reducing valve interposed therein and forming a low-pressure pipe, a single valve interposed in the connections of said pipes with said source of supply and adapted to connect both of said pipes therewith, a valve-casing, connections between said high and low pressure pipes and said valve-casing, means for connecting said valve-casing with a barrel or keg, and a valve in said casing controlling said connections to place either of said pipes in communication with said barrel or keg, and a check-valve interposed in the connection between said pipes and said barrel or keg, a second valve-casing similarly connected with said high and low pressure pipes, a pressure-gage connected with said valve-casing, and a valve controlling said connections to place either of said pipes in communication with said gage to ascertain the high or low pressure.

4. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of two pipes having connection therewith, a single valve controlling the connection of both pipes therewith, a pressure-reducing valve in one of said pipes, means for connecting the low-pressure end of said last-named pipe and the other pipe with a barrel or keg, a valve controlling said connections to shut off one pipe when the other is connected, a valve-casing connected with both of said pipes, a single pressure-gage connected with said valve-casing, and a valve in the latter adapted to connect said pipes alternately with said pressure-gage to indicate either the high or low pressure on the latter.

5. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of two pipes having connection therewith, a single valve controlling the connection of both pipes therewith, a pressure-reducing valve disposed in one of said pipes, cross-pipes connecting the low-pressure end of said last-named pipe with the other pipe, a valve disposed in each end of said cross-pipes having an L-shaped passage, a casing for each of said valves and a pipe connecting the casing of each of said valves with the point of delivery for said fluid under pressure and adapted to be connected with one of said pipes through said L-shaped passage in said valve.

6. In a device of the kind specified, the combination with a source of supply of fluid under pressure, of two pipes having connection therewith, a single valve controlling the connection of both pipes therewith, a pressure-reducing valve disposed in one of said pipes, cross-pipes connecting the low-pressure end of said last-named pipe with the other pipe, a valve disposed in each of said cross-pipes having an L-shaped passage, a casing for each of said valves and a pipe connecting the casing of each of said valves with the point of delivery for said fluid under pressure and adapted to be connected with one of said pipes through said L-shaped passage in said valve, and a check-valve mounted upon the delivery end of each of said cross-pipe valves.

814,095. BELT CLAMP-PLATE. John Stoll, Lancaster, Pa., assignor to Abraham M. Dellinger, Lancaster, Pa. Filed Mar. 18, 1905. Serial No. 250,777.

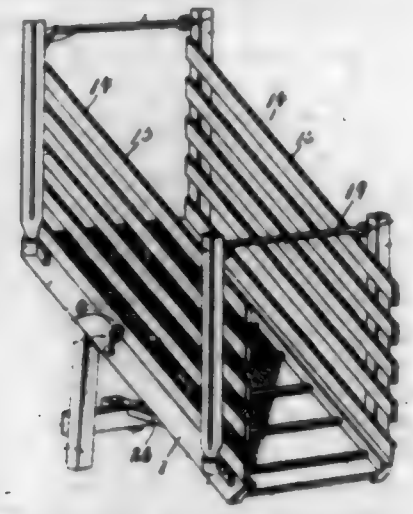


Claim.—1. In combination with a belt, a clamping-plate provided with internally-cylindrical tubular projections of less length

than the thickness of said belt and embedded therein and inclosing an integral core C′ of the material of the belt, and fastening means passing through the said projections and the belt substantially as set forth.

2. In combination with a belt, a clamping-plate provided with internally-cylindrical tubular projections of less length than the thickness of the belt and embedded therein and inclosing an integral core C′ of the material of the belt, and rivets having blades passing through longitudinal slits in the integral cores C′ of belt material inclosed by the said projections, the said rivets being clenched under the belt substantially as set forth.

814,096. HOG-LOADER. Charles C. Swan, New London, Iowa. Filed Nov. 22, 1905. Serial No. 288,607.



Claim.—1. A gangway, comprising a bottom, removable sides carried thereby, pivoted legs carried by one end of said bottom, and means for holding said legs in adjusted position.

2. A gangway, comprising a bottom, removable sides carried thereby, pivoted legs carried by one end of said bottom, and a bar hinged to the opposite end of the bottom and adjustably secured to the legs.

3. A gangway, comprising a bottom, removable sides carried thereby, pivoted legs carried by one end of said bottom and having a transverse bar connecting the lower end of said legs, said bar having a transverse recess in its upper face, and a bar hinged to the opposite end of the bottom and resting in the recess in the transverse bar carried by the legs, and a pin or bolt adapted to be passed through the hinged bar at different points and entering the transverse bar carried by the legs.

4. A gangway, comprising a frame having planking thereon forming a bottom, loops carried by the sides of the frame, sides resting upon said frame and having standards entering the loops, an elongated hook carried by the standards of one side at their upper ends and engaging the standards of the opposite sides, pivoted legs carried by one end of said frame, and a bar hinged to the opposite end of the frame and adapted to hold the legs in their adjusted position.

5. A gangway, comprising a rectangular frame, a flooring covering the same, removable sides carried by the frame, hooks carried by the frame and engaging the sides, pivoted legs carried by the under side of the frame, and means for holding the legs in adjusted position.

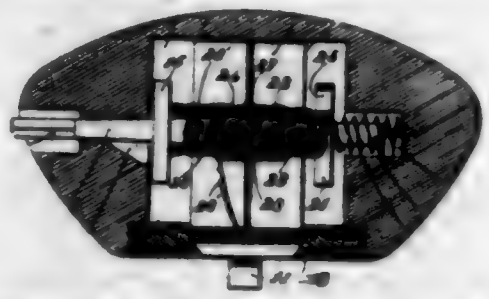
6. A gangway, comprising a rectangular frame composed of side and end bars bolted together by transverse bolts, inwardly-extending bolts carried by the inner face of the side bars adjacent one end, legs pivotally mounted on said bolts, a brace connecting the outer free ends of said legs, a bar hinged to the opposite end of the frame, means for adjustably securing said bar to the bar connecting the legs, a flooring secured to the upper face of the frame, and removable sides carried by the frame.

814,097. ANCHOR FOR DECOYS. Henry H. Tartsch, McCook, Nebr. Filed June 7, 1905. Serial No. 264,195.

Claim.—1. A decoy provided with an opening, an anchor proportioned to serve as a closure for the opening, a cord secured to the anchor and means within the opening for winding the cord.

2. A decoy provided with an opening, a winding-reel disposed within the opening, a cord wound upon the reel and an anchor secured upon the cord and proportioned to close the opening.

3. A decoy provided with an opening, a winding-reel disposed within the opening, a cord wound upon the reel, an anchor secured upon the cord, means for operating the reel, and means for securing the anchor within the opening.



4. A decoy provided with a cavity opening externally upon the under side, an anchor proportioned to form a closure for the cavity, a cord secured to the anchor and means for winding the cord within the cavity.

5. A decoy provided with an aperture within the under side, an anchor proportioned to form a closure for the aperture and to conform substantially to the surface of the decoy, a winding-reel disposed within the aperture, a cord wound upon said reel and secured to the anchor and a tension device engaging the reel.

6. A decoy provided with a cavity, an anchor, a weight proportioned to be placed within the cavity, means for securing the weight upon the anchor, a cord securing the anchor to the decoy and means for varying the length of the cord.

7. A decoy provided with a cavity, an anchor proportioned to form a closure for the cavity, a cord securing the anchor to the decoy, a weight proportioned to be placed within the cavity and means for securing the weight to the anchor.

8. A decoy provided with a cavity, an anchor proportioned to form a closure for the cavity, a winding-reel rotatably and horizontally mounted within the cavity and transversely of the decoy-body, a cord secured at its opposite ends to the anchor and the reel, means externally of the decoy-body for winding the cord upon the reel and a tension device engaging the reel arranged to hold the reel at a desired rotary adjustment.

9. An integral decoy-body provided with an externally-opening anchor-receiving cavity and a removable anchor-cord reel mounted within the cavity.

10. An integral decoy-body provided with a cavity opening externally in the under side and a removable anchor-cord reel rotatably mounted within the cavity.

11. An integral decoy-body provided with a cavity opening externally in the under side and a removable anchor-cord reel rotatably mounted within the cavity and transversely of the decoy-body.

12. A decoy-body provided with a cavity, an anchor-cord-winding reel rotatably mounted within said cavity, said reel having its central shaft formed in separable sections and held in operative relation by an encircling sleeve.

13. In a decoy, an anchor-cord-winding reel mounted to rotate upon an axial shaft the said shaft being divided longitudinally into separable sections and a retaining-sleeve encircling the shaft-sections.

14. A decoy provided with a cavity, an anchor-cord-winding reel rotatably mounted within said cavity upon an axial shaft extending transversely of the decoy-body, the said shaft being divided longitudinally into separable sections and a retaining-sleeve slidably encircling the shaft-sections.

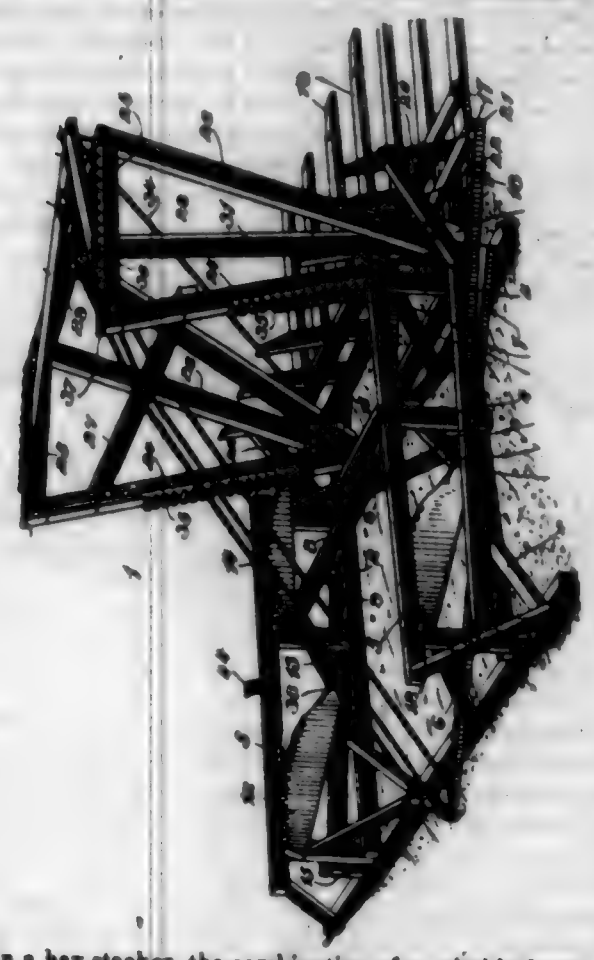
15. A decoy provided with an externally-opening cavity, an anchor proportioned to form a closure for the opening, a removable reel mounted within the cavity, a cord having its ends secured to the reel and the anchor, means for rotating the reel and means for retaining the reel at a desired rotary adjustment.

16. A decoy provided with an externally-opening cavity, an anchor proportioned to form a closure for the opening, a removable reel mounted within the cavity, a cord having its ends secured to the reel and the anchor, means externally of the decoy for rotating the reel, a tension device engaging the reel and arranged to hold the reel at a predetermined rotary adjustment, a weight proportioned to be disposed within the cavity and means for securing the weight to the anchor.

814,098. HAY-STACKER. Hiram M. Thompson, Logan, Mont.; Mattie B. Thompson administratrix of said Hiram M. Thompson, deceased. Filed Nov. 20, 1904. Serial No. 233,003.

Claim.—1. In a hay-stacker, the combination of a suitable frame, rack-plates carried on said frame, movable arms pivoted to said frame, hay-carrying means secured to said arms, a triangular

operating-frame connected to said arms, racks on said triangular operating-frame to engage said rack-plates, and means for operating said triangular operating-frame, substantially as described.



2. In a hay-stacker, the combination of a suitable frame, hay-carrying means associated therewith, rack-plates carried on said frame, a revoluble element connected to said hay-carrying means and adapted to revolve on said rack-plates, substantially as described.

3. In a hay-stacker, the combination with a suitable frame of movable arms associated therewith, hay-carrying means supported by said movable arms, a non-pivoted moving element constructed to operate on said frame and to engage said movable arms to raise the same, substantially as described.

4. In a hay-stacker, the combination of a suitable frame, hay-carrying means associated therewith, means for supporting said hay-carrying means on said frame, a non-pivoted revoluble element associated with said hay-carrying means, and means for revolving said revoluble element to raise said hay-carrying means, substantially as described.

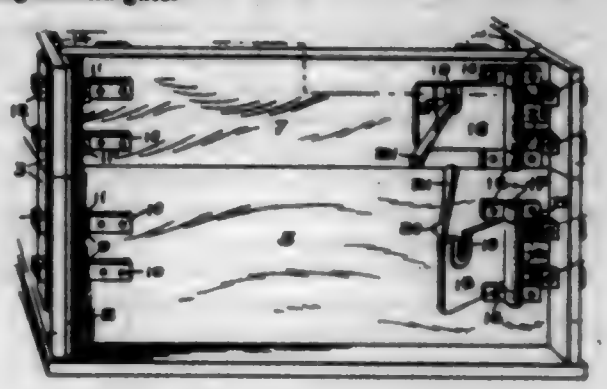
5. In a hay-stacker, the combination with a frame, of hay-carrying means associated therewith, a non-pivoted traveling element connected to said hay-carrying means, and means for operating said traveling element to raise said hay-carrying means, substantially as described.

6. In a hay-stacker, the combination with a frame, of hay-carrying means associated therewith, a non-pivoted revoluble and traveling element connected to said hay-carrying means and means for operating said revoluble and traveling element to raise said hay-carrying means, substantially as described.

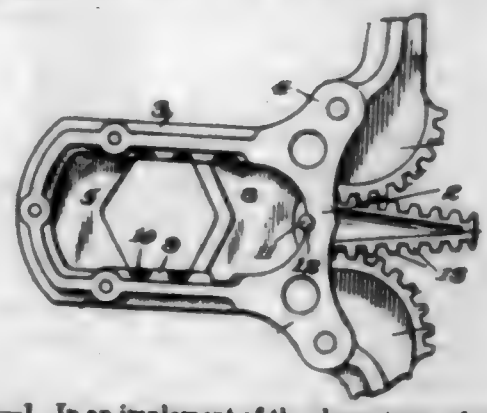
7. In a hay-stacker, the combination of a frame, hay-carrying means associated therewith, lying normally in a horizontal position, a non-pivoted traveling element connected to said hay-carrying means, said element resting normally at the rear of said frame, and means for operating said traveling element to cause the same to move to the front end of the frame and to raise said hay-carrying means, substantially as described.

814,099. END-GATE FOR WAGONS. William F. Wagner, Peru, Ind., assignor of four-fifths to Martin R. Daly and William Hart, Peru, Ind., and James H. Casey and Harry F. Guin, Noblesville, Ind. Filed Dec. 30, 1904. Serial No. 238,013.

Claim.—The combination with a wagon-bed, lugs mounted in the side of said bed that stand at right angle of said bed and parallel with the end-gate and provided with right-angle apertures, an end-gate provided with slots at one end and lugs on the other end that stand at right angle to said gate and adapted to engage the apertures in the lugs mounted on the adjacent side of the wagon-bed, a locking-plate pivotally mounted near the center of the end-gate, so that when the key is operated a portion thereof will swing into the wagon-bed, and lugs carried by the locking-plate that stand at right angle thereto and are adapted to be brought into alinement with and engage the apertures in the adjacently-mounted lugs in the side of the wagon-bed when the locking-plate is seated, and adapted to form a lock for retaining the end-gate.



814,100. DEHORNER. George Webster, Christiana, Pa., assignor to Morris T. Phillips, Pomeroy, Pa. Filed Nov. 2, 1905. Serial No. 285,648.

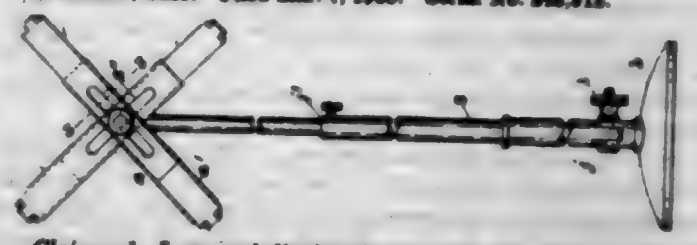


Claim.—1. In an implement of the character set forth, the combination of a frame provided with a fixed blade, a movable blade mounted upon the frame for coöperation with the fixed blade and having a tapered shank extended therefrom and toothed upon opposite edges, and operating-levers pivoted to said frame and having toothed cam portions adapted to coöperate with the toothed portions of the said shank.

2. In an implement of the character specified, the combination of a frame provided with a fixed blade, a movable blade, a shank having a portion overlapping the movable blade, a fastening connecting said shank to the blade and having a portion extended to provide a stop to limit the outward movement of the blade, and actuating means for operating the movable blade.

3. The herein-described dehorning implement, the same comprising an oblong frame having an end portion reduced to form a seat and having laterally-extended lugs and having the opposite end portion composed of transversely-spaced parts, and provided with lugs at the inner lower corners and having lugs upon the inner edges of the side bars to form guideways, the lugs upon one side alternating with the lugs upon the opposite side, a blade secured upon the aforementioned seat, a movable blade operating in said guideways, a tapered shank projected from the movable blade and having its inclined edges toothed, and operating-levers pivoted to the aforesaid lugs and having cam portions at their pivotal ends toothed to match with the teeth of said shank, the shank and toothed cams operating in the space formed between the separate parts at one end of the frame.

814,101. CARD HOLDING OR DISPLAY DEVICE. Ira B. Weed, Cleveland, Ohio. Filed Mar. 7, 1905. Serial No. 248,913.



Claim.—1. In a card-display device, the combination with the base portion, of an adjustable standard carried thereby, a card-holder mounted upon the said standard, comprising two arms angularly adjustable with respect to each other and terminating in receiving-clips, each arm being longitudinally adjustable and conforming

to cards of varying shapes and sizes, and means for securing said arms in their various positions of angular adjustment, substantially as set forth.

2. In a device of the class described, the combination with the two angularly-disposed card-holding arms, each comprising a channeled and slotted section, and a second slotted section longitudinally adjustable therein, a securing-bolt, and a mounting-standard and base carrying the said card-holder, substantially as described.

3. In a device of the class described, a card-holding structure, comprising a plurality of channeled members and their coacting slotted members longitudinally adjustable therein to conform to articles of various shapes and sizes, a carrying-standard and a supporting member or base therefor, substantially as set forth.

4. In a card-holder or display-rack, the combination with a base portion, of an adjustable or telescopic standard thereon, and a card-holding portion or device comprising two slotted and channeled members and their coacting slotted parts longitudinally adjustable therein, and a binding screw bolt and nut adapted to secure the parts in various positions of adjustment, substantially as set forth.

814,102. KEY-OPENING CAN. William H. Wells, Chicago, Ill., assignor to American Can Company, Jersey City, N. J., a Corporation of New Jersey. Filed Apr. 15, 1903. Serial No. 152,641.



Claim.—1. A key-opening can comprising a seamless body provided with a tearing-strip formed by parallel scores or weakened lines, and having a transverse weakened portion or line extending between such parallel scores or weakened lines, and a depressed weakened portion parallel and adjacent to one of the scores or weakened lines of the tearing-strip, substantially as specified.

2. A key-opening can comprising a can-body provided with a tearing-strip having a transversely-extending weakened portion or line, and a depression parallel and adjacent to one of the scores or weakened lines of the tearing-strip near the point of intersection therewith of said transversely-extending weakened portion or line, substantially as specified.

3. A key-opening can comprising a can-body furnished with a tearing-strip extending around the same and formed by parallel weakened lines, and furnished with a transversely-extending weakened line, and a depressed weakened portion parallel and adjacent to one of the parallel weakened lines of the tearing-strip near the point of intersection therewith of said transversely-extending weakened line, substantially as specified.

4. A key-opening can comprising a body provided with a tearing-strip formed by parallel weakened lines, and having a transverse weakened line or portion extending between the parallel weakened lines, and a depression adjacent to one of said parallel weakened lines for initial insertion of a key, substantially as specified.

5. As a new article of manufacture, a key-opening can having a tearing-strip bounded by two generally parallel weakened lines and a weakened line extending from one of said generally parallel lines to the other, and provided contiguous to said line extending from one parallel line to the other with a weakened puncture-spot adapted to be punched through.

6. As a new article of manufacture, a key-opening can having a tearing-strip bounded by weakened lines and comprising an integral tongue or starting portion outlined by said weakened lines and located wholly within the margins of the can-blank, and a weakened puncture-spot located contiguous to, and outside of said tongue, as and for the purpose set forth.

7. As a new article of manufacture, a key-opening can having a tearing-strip bounded by two weakened lines, a weakened line extending transversely from one marginal line to the other thereof and outlining a tongue and a weakened puncture-spot consisting of a countersunk and partially-separated spot of limited area arranged alongside of said tongue portion, substantially as described.

8. As a new article of manufacture, a key-opening can provided with a tearing-strip bounded by weakened lines and a weakened puncture-spot formed adjacent to one of the said lines, said puncture-spot having the form of a countersink of relatively small area, substantially as described.

9. As a new article of manufacture, a key-opening can, provided with a tearing-strip bound by two weakened lines, a curved weakened line extending from at or near one of said other weakened lines in a diagonal direction to said other weakened line, and a weakened puncture-spot adjacent one of said weakened lines near the juncture of the same and the transverse weakened line.

10. A can having a tearing-strip part formed by separated weakened lines and a pointed tongue part forming a part of the body and a continuation of the tearing-strip part, the said tongue part being formed by a weakened line shaped to bring the apex of the tongue nearer to one weakened tearing-strip line than to the opposite line.

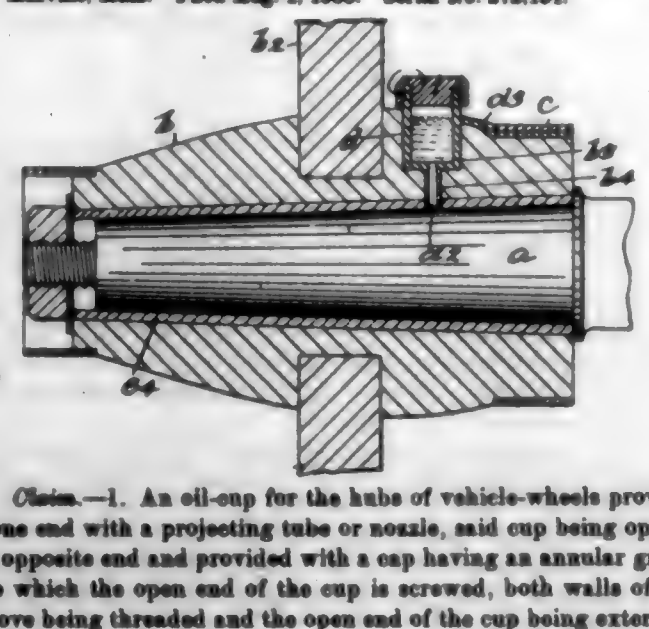
11. A can having a tearing-strip part formed by separated weakened lines and a tongue part forming a continuation of the tearing-strip and a part of the can-body, said tongue being formed by a curved weakened line which line extends from one tearing-strip line diagonally forward to a point in close proximity to the other weakened line and terminating in said other weakened line.

814,103. GATE. Rudolf C. Wheeler, Cotati, Cal. Filed Feb. 28, 1905. Serial No. 247,719.



Claim.—In combination, an automatic gravity opening and closing gate, gate and latch posts, means pivotally connecting the lower end of the gate to its supporting-post, a substantially U-shaped bracket attached to opposite sides of the gate-post and having the outer ends of its side members inclined in the same direction away from the plane of the gate when closed, an actuating-bar pivoted between its ends to the bar joining the outer ends of the members of the said bracket and having a bearing near its inner end, a bearing projected from the gate through the space inclosed by the said bracket and mounted in the bearing provided in the said actuating-bar, operating-levers at opposite sides of the gate, means connecting each operating-lever at opposite sides of its pivot with opposite ends of the actuating-bar to swing it in opposite directions, and latch means for holding the gate either open or closed and released when the gate is tilted prior to opening or closing.

814,104. OILER FOR VEHICLE-WHEELS. Albert E. Wilcox, Millville, Mass. Filed Aug. 1, 1905. Serial No. 272,154.

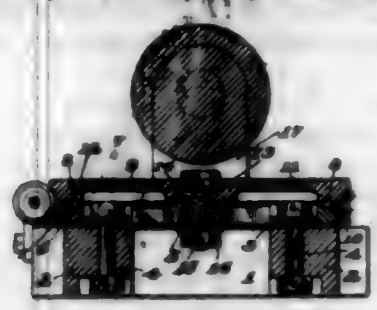


Claim.—1. An oil-cup for the hubs of vehicle-wheels provided at one end with a projecting tube or nozzle, said cup being open at the opposite end and provided with a cap having an annular groove into which the open end of the cup is screwed, both walls of said groove being threaded and the open end of the cup being externally threaded, and said cup being also provided at one side with a projecting arm, substantially as shown and described.

2. A wheel-hub provided on the inner sides of the spokes of the wheel with an oil-cup which is set thereinto radially thereof, said cup being open at its outer end and provided with a closure-cap, said cup being also provided at its inner end with a tube or nozzle which communicates with the spindle-space, and being also provided at one side with a radial arm, and said wheel-hub being provided at its inner end with a band which is passed on over said arm, substantially as shown and described.

814,105. TIMBER-JACK. John M. Williams, Shaler township, Allegheny county, Pa. Filed Oct. 25, 1905. Serial No. 284,299.

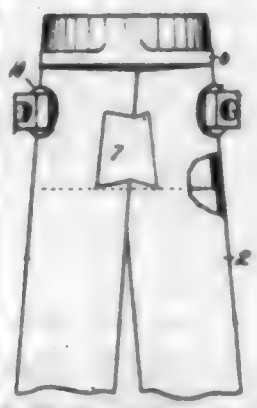
Claim.—1. In timber-jacks, a base, an annular plate attached to said base having a peripheral flange integral with said plate, a roller, a second annular plate supporting said roller, a lip integral with said second plate and adapted to encircle said flange, raceways in said flange and said second plate, antifriction members adapted to occupy said raceways and means for pivoting said second plate to said first-mentioned plate, substantially as described.



2. In timber-jacks, a base, an annular plate attached to said base and having a raceway adjacent to the edge thereof, a second annular plate pivoted to said first plate and having a downwardly-depending flange adapted to encircle the edge of said first plate, a raceway in said second plate adjacent to the edge thereof, antifriction members adapted to occupy said raceways, a roller, roller-standards attached to said second plate substantially in a vertical line with said raceways and means for rotating said second plate.

3. In timber-jacks, a base, an annular flanged plate attached to said base, a roller, a plate supporting said roller and having an annular lip adapted to encircle said flange, pivotal connection between said plates, teeth on the exterior of said lip and a worm member carried by said base and adapted to engage said teeth, as and for the purpose described.

814,106. TOWER-CAP. FRANK T. ZIMMERMAN, Auburn, Ind. Filed July 17, 1905. Serial No. 269,981.



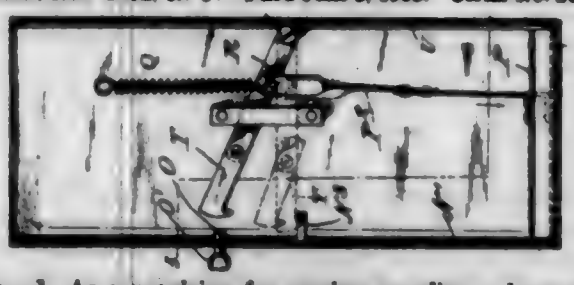
Claim.—1. A windmill tower-cap consisting of a hollow cap-body having a circular track upon its upper face for the windmill mechanism, and provided upon its sides with dovetailed lugs, as and for the purpose described.

2. A tower-cap, consisting of a hollow metallic body having a circular track upon its top, and a peripheral flange near its upper end, and provided with a plurality of dovetailed lugs upon its sides, substantially as described.

3. A cap for skeleton towers, consisting of a hollow metallic body provided upon its sides with lateral dovetailed lugs as and for the purpose described.

4. A tower-cap, consisting of a hollow metallic body, and a plurality of dovetailed plates fixed to the sides thereof, for the purpose described.

814,107. DELIVERY-BOX. LOUIS J. ZIMMERMANN and PETER ZIMMERMANN, New York, N. Y. Filed June 5, 1905. Serial No. 263,749.



Claim.—1. As a provision for serving supplies, a box with a horizontally-opening door, a yielding bottom, a lever R rising and sinking with such bottom and an automatic catch T pivoted thereto controlling such door, adapted to serve therewith substantially as herein specified.

2. As a provision for serving supplies a box with a horizontally-swinging door, a yielding bottom, an automatic catch actuated by changes of position of the bottom, arranged to control such outside door and a series of compartments in the box accessible from the front, in combination with a building and with an inside door and a fastening therefor controlled from the interior of the building all arranged to serve substantially as herein specified.

3. As a provision for serving milk and like material in combination with a building, a box having a horizontally-swinging door accessible from the exterior of the building, a catch controlling such door, a yielding bottom within the box controlling such catch, and provisions by a spring in the upper portion of the box for yieldingly raising such bottom, all arranged to serve substantially as herein specified.

814,108. PROCESS OF PRODUCING MULTICOLOR PRINTS. JOHN BACHMANN, Jersey City, N. J. Filed Nov. 14, 1904. Serial No. 233,974.

Claim.—1. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters, preparing first the photographs from the copy, then a tracing of same on a thin gelatin film, exposing the negative for three-quarters of the time necessary for extracting the color, placing the tracing over the negative and exposing the last quarter of time, preparing then sensitive chrome-gelatin plates, exposing same under the negatives, producing thereby positives on the sensitive plates, developing the positives, making several negatives of various shades of each positive, preparing then the type-color plates from these negatives, placing said plates into the type-printing press and printing therefrom.

2. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates by first coating a ground and well-cleaned glass plate with a clear solution of porter containing some caustic soda and silicate of sodium, drying the plate, removing therefrom the glucose of the porter by hot water and applying then the sensitive chrome-gelatin coating, exposing the sensitive plates thus obtained under the negatives, producing thereby positives thereon, developing the positives with printing-inks, making several negatives of various shades of each positive, preparing the type-color plates from these negatives, placing said plates into the type-printing press and printing therefrom

3. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates by first coating a ground and well-cleaned glass plate with a clear solution of porter containing some caustic soda and silicate of sodium, drying the plates, removing therefrom the glucose of the porter by hot water and applying then a sensitive chrome-gelatin emulsion prepared from five hundred parts of water, fifty parts of white gelatin, fifteen parts of bichromate of sodium, and one-tenth part of chrome-alum, exposing the sensitive chrome-gelatin plates thus obtained under the negatives, producing thereby positives thereon, developing the positives with printing-inks, making several negatives of various shades of each positive, preparing the type-color plates from these negatives, placing said plates into the type-printing press and printing therefrom.

4. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates, subjecting said plates to a hot moist atmosphere at 100° Fahrenheit, exposing then the moist and warm sensitive plates under the negatives to develop the texture into a printing possibility and producing thereby positives thereon, taking then the plate into the dark room and washing out the chromate, drying then the plate in the open, dampening the plate with a solution containing ammonia, rolling the plate with a leather roller charged with stiff black ink, taking a print therefrom which represents the darkest value in black, dampening the plate with a solution containing less ammonia, rolling on for a longer time with less-stiff ink, taking a print therefrom which represents the medium shade of black, dampening the plate again with a solution free from ammonia, rolling on longer yet with soft ink, taking a print which represents the light shade of black, washing the plate now with turpentine, rolling it up with a roller charged with blue ink whereby the entire image appears in blue, printing this over the one in black, stippling the plate, taking a negative of this, printing now on the same print from the chromatic plate the values of the medium shade, stippling then the

extended portions of the medium shades, taking a negative of this, printing now on the same print from the chromatic plate the values of the pale shade, stippling again, and taking a negative of this, preparing then the typo-color plates from these negatives, placing said plates in the type-printing press, and printing therefrom.

5. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates by first coating a ground and well-cleaned glass plate with a clear solution of porter containing some caustic and silicate of sodium, drying the plates, removing therefrom the glucose of the porter by hot water, and applying then a sensitive emulsion prepared from five hundred parts of water, fifty parts of white gelatin, fifteen parts of bichromate of potassium, and one-tenth of one part of chrome-alum, drying then the plate at about 120° Fahrenheit, subjecting it now to a hot moist atmosphere at about 100° Fahrenheit, exposing the moist and warm plate under a negative, producing thereby positives thereon, developing the positive with black and colored printing-inks, making several negatives of various shades of each positive, preparing the typo-color plates of copper from these negatives, placing the typo-color plates in the type-printing press, and printing therefrom.

6. The process of producing multicolor prints from the type-printing press consisting in making negatives from the copy to be reproduced by means of color-filters by preparing first photographs from the copy, then a tracing of same on a thin gelatin film, exposing the negative under the color-filter for three-quarters of the time necessary for extracting the color, placing the tracing over the negative and exposing the last quarter of time, preparing then the sensitive plates by first coating a glass plate with a clear solution of porter containing some caustic and silicate of sodium, drying the plates, removing therefrom the glucose of the porter by hot water, and applying then a sensitive emulsion prepared from five hundred parts of water, fifty parts of white gelatin, fifteen parts of bichromate of potassium, and one-tenth of one part of chrome-alum, and drying the plates at about 120° Fahrenheit, subjecting the dry plates to a hot and moist atmosphere at about 100° Fahrenheit, exposing the moist and warm plates under the negatives, producing thereby positives thereon, developing the positives with black and blue printing-ink, making several negatives of various shades of each positive, preparing the typo-color plates of copper from these negatives, placing said plates into the type-printing press and printing therefrom.

7. The process of producing multicolor prints from the type-printing press consisting in making first negatives of the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates, subjecting same to a hot and moist atmosphere at about 100° Fahrenheit, exposing the moist and warm sensitive plates under the negatives, removing therefrom the chromate in the dark room by running water, and drying the plate in the open, dampening now the plate with a solution of water, glycerin, ammonia, and common salt, rolling the plate with a leather roller charged with stiff black ink, taking a print therefrom which represents the darkest shade of black, dampening the plate with a solution containing less ammonia, rolling on less-stiff ink for a longer time, taking a print therefrom which represents the medium shade of black, dampening the plate again with a solution free from ammonia, rolling on soft ink for a longer time yet, and taking a print which represents the light shade of black, washing now the plate with turpentine, rolling it up with a roller charged with blue ink, whereby the entire image appears in blue, printing this over the one in black, stippling the plate, taking a negative of this, printing now on the same print from the chromatic plate the values of the medium shade, stippling then the extended portions of the medium shade, taking a negative of this, printing now on the same print from the chromatic plate the values of the pale shade, stippling again, and taking a negative of this, preparing then the type-color plates from these negatives, placing the type-color plates into the type-printing press, and printing therefrom.

8. The process of producing multicolor prints from the type-printing press consisting in making first negatives of the copy to be reproduced by means of color-filters, preparing then the sensitive chrome-gelatin plates, exposing same under the negatives, producing thus positives thereon, developing the positives, making several negatives of various shades of each positive, preparing then the type-color plates from these negatives by coating first highly-polished copper plates with a composition consisting of water, albumen, liquid glue, bichromate of ammonium, and chromic acid, heating then the plates gently while turning, and placing same then under the negatives in the dark room, making then prints by light, treating the plate in the dark room with a thin emulsion of asphaltum in turpentine, removing the excess of asphaltum under spraying water obtaining thereby an unprotected surface for the action of the etching acid, producing then a relief by the first etching with a solution composed of chlorid of iron and gum-arabic, trimming and routing the plate, placing it in the press and printing therefrom.

814,109. ATTACHMENT FOR ICE-CREAM FREEZERS. JAMES B. BIRNEY, Leslie, Mich. Filed Aug. 24, 1904. Serial No. 222,226.



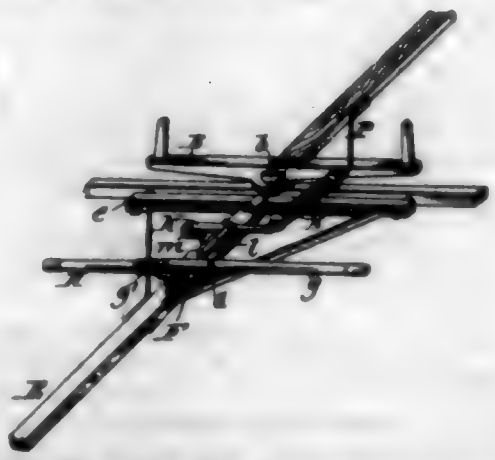
Claim.—1. The combination with the tub and can, of a contractible collar adapted to embrace the top of the can, having laterally-projecting end portions, the wall of the tub being apertured to receive said end portions and means for locking said end portions to hold the collar in engagement with the can.

2. The combination with the tub and can, of a two-part clamping-collar adapted to embrace the top of the can, the parts of said collar having spring end portions anchored in the wall of the tub and having straight end portions projecting from their opposite terminals, affording means for contracting the parts of the collar about the can, the top of the can having projections between which the parts of the collar engage when contracted.

3. The combination with the tub and can, of an engaging member at the top of the can, the two-part clamping-collar supported centrally within the tub, and having ends, the wall of the tub being apertured to receive said projecting ends, means for locking said ends together to clamp the can, and means for holding said locked ends against lateral movement.

4. The combination with the tub and can, of a contractible collar adapted to embrace the can, comprising semicylindrical parts, having spring end portions anchored in the wall of the tub, the parts of said collar having straight end portions projecting from their opposite terminals, there being in the wall of the tub a slot through which said straight end portions of the collar project, means for holding said straight end portions of the collar together to clamp it upon the can, and means for locking said straight end portions from lateral movement in said slot.

814,110. DRAFT-EQUALIZER. HOMER C. ROSS, Levy, N. Y. Filed July 26, 1905. Serial No. 271,373.



Claim.—1. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts, and a pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a spring operatively connected at one end with said rear part on one side of said pivot and at its opposite end with said pole, substantially as set forth.

2. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts, and a pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a draft-slide mounted on said pole, and a spring operatively connected at opposite ends with said slide and with said rear part on one side of said pivot, substantially as set forth.

3. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts and a

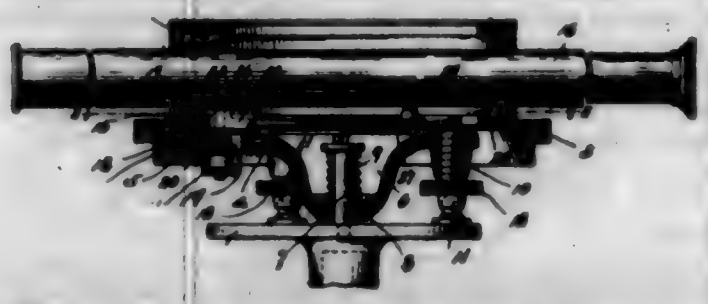
pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a draft-slide mounted on said pole, an intermediate lever pivoted on said pole, a link connecting said lever and slide, and a spring operatively connected with said lever and with said rear part on one side of said pivot, substantially as set forth.

4. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts and a pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a draft-slide mounted on said pole, an intermediate lever pivoted on said pole, a link connecting said lever and slide, a spring connected at one end with said rear part on one side of its pivot, and a flexible member connecting the opposite end of said spring with said intermediate lever, substantially as set forth.

5. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts and a pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a draft-slide movable lengthwise on said pole, an evener connecting with said slide and provided on one side of the pole with two swingletrees and on the opposite side of the pole with one swingletree, an intermediate lever pivoted transversely on said pole, a longitudinal link connecting said slide with said intermediate lever, and a spring operatively connecting with said lever and with said rear part on one side of its pivotal connection with said front part and operating to yieldingly resist lateral movement of said front part and the pole toward that side of the latter on which the two swingletrees are arranged, substantially as set forth.

6. The combination with a running-gear having a front part, a rear part, a vertical pivot or king-bolt connecting said parts and a pole connected with said front part, of means for equalizing side draft on the pole and running-gear comprising a draft-slide movable lengthwise on said pole, an evener connected with said slide and provided on one side of the pole with two swingletrees and on the opposite side of the pole with one swingletree, an intermediate lever pivoted transversely on said pole, a longitudinal link connecting said slide with said intermediate lever, and means operating to yieldingly resist side draft on the front part of the running-gear and the pole comprising a spring, heads bearing against opposite ends of said spring, and rods connecting with said heads and passing through said spring one of said rods being connected with said intermediate lever and the other rod being connected with said rear part of the running-gear on that side of the king-bolt and pole on which the two swingletrees are arranged, substantially as set forth.

814,111. **LEVELING INSTRUMENT.** Ernst A. Bostrom, Atlanta, Ga., assignor to Bostrom-Brady Manufacturing Company, a Corporation of Georgia. Filed July 13, 1905. Serial No. 269,284.



Claim.—1. In a device of the class described, a platen, a rotable turret removably supported thereon, a plurality of turret-engaging clamps carried by the platen, and means for simultaneously actuating all of the clamps by manipulation of one of said clamps.

2. In a device of the class described, a platen, a rotatable turret seated upon the platen, a plurality of turret-engaging clamps carried by the platen, and means connecting one of the clamps with the other clamps for simultaneously actuating said other clamps by the actuation of the first-mentioned clamp.

3. In a device of the class described, a platen, a turret rotatably supported upon the platen and provided with an annular ring, a plurality of turret-engaging clamps carried by the platen and having frictional engagements with the ring of the turret, and means for simultaneously manipulating the clamps.

4. In a device of the class described, a platen, a turret seated thereon, a slidable turret-engaging clamp carried by the platen, pivotal turret-engaging clamps carried by the platen, and means connecting the slidable clamp with the pivotal clamps for simultaneously actuating the pivotal clamps by actuation of the slidable clamp.

5. In a device of the class described, a platen, a turret seated thereon, a plurality of turret-engaging clamps carried by the platen, one of the clamps being slidable upon the platen, means to fix the slidable clamp at opposite limits of its slidable movement, and means connecting the slidable clamp with the other clamps for simultaneously actuating said clamps by the actuation of the slidable clamp.

6. In a device of the class described, a platen, a turret seated thereon, a plurality of turret-engaging clamps carried by the platen, one of the clamps being slidable, means to fix the slidable clamp at opposite limits of its movement, and spring-rods connecting the slidable clamp with the other clamps for releasing said other clamps by the releasing of the slidable clamp, said spring-rods constituting means to automatically return all of the clamps into engagement with the turret when the slidable clamp is released at its inner limit.

7. In a device of the class described, a platen, a turret seated thereon, turret-engaging clamps carried by the platen and movable into and out of engagement with respect to the platen, means for fixing one of the clamps in its engaged and disengaged positions, and tensioned devices connecting said clamp with the other clamps to release said other clamps by the releasing of the first-mentioned clamp, said tensioned devices constituting means for automatically returning all the clamps into engagement with the turret when the first-mentioned clamp is released from its disengaged position.

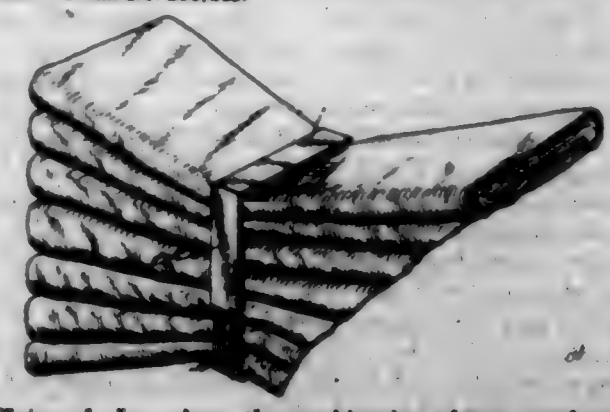
8. In a device of the class described, a turret seated thereon, turret-engaging clamps carried by the platen, certain of the clamps being pivoted intermediate of their ends upon the platen and having lips to overhang a portion of the turret, and means connecting said pivotal clamps with another clamp for controlling the pivotal clamps by actuation of said other clamp.

9. In a device of the class described, a platen, a turret seated thereon, a pair of intermediately-pivoted clamps mounted upon the platen and provided with lips to overhang a portion of the turret, a slidable clamp carried by the platen and provided with a lip to overhang a portion of the turret, and spring-rods connecting the slidable clamp with the pivotal clamps to control the latter by the actuation of the slidable clamp.

10. In a device of the class described, a platen, a turret seated thereon, a pair of pivotal clamps carried by the platen and having lips to overhang a portion of the turret, a slidable clamp carried by the platen and having a lip to overhang a portion of the turret, means to fix the slidable clamp at the opposite limits of its movement, and spring-rods connecting the slidable clamp and the pivotal clamps for controlling the latter by the movements of the slidable clamp, said spring-rods constituting means to automatically return all of the clamps into engagement with the turret when the slidable clamp is released from its unclamped position.

11. In a device of the class described, a platen having a seat and a substantially radial slot, a turret fitted in the seat and provided with an internal annular flange, a pin projecting through the slot and movable longitudinally thereof, a clamp-block carried by the inner end of the pin and provided with a lip to overhang the internal flange of the turret, a clamping-nut carried by the outer end of the pin to detachably hold the latter at opposite ends of the slot, a pair of intermediately-pivoted clamps mounted upon the platen and provided with lips to overhang the internal flange of the turret, and spring-rods connecting the clamp-block with the pivotal clamps for controlling the latter by the slidable movements of the block, said spring-rods constituting means to automatically return all of the clamps into engagement with the flange of the turret when the clamping-screw is released at the inner limit of the clamping-block.

814,112. **CLASP.** Adolf B. Bundesen, Chicago, Ill. Filed Oct. 20, 1904. Serial No. 229,445.

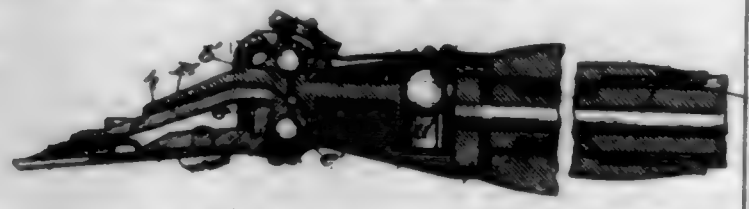


Claim.—1. In a clasp, the combination of two metal members whereof one has its end portions adapted for locking engagement

with any two of a plurality of transverse slots with which the side portions of the other member are provided, each member consisting of a single integral flat strip of flexible and springy sheet metal bent into the desired shape, and the side portions of the sheet-metal member which has its ends turned in to provide hooks being adapted, when the two members are locked together, to lie flatwise upon or against the outer side surfaces of the two slotted sheet-metal side portions of the other member, said hooks being adapted to pass readily over and outside of the two longitudinal rows of transverse slots in the other member, without catching in said slots, when the two members are moved toward each other, but adapted to be firmly engaged in said slots by slight relative movement of the two members away from each other, and to thereby prevent separation of the two members, substantially as set forth.

2. In a clasp, the combination of two members having their side portions adapted for locking engagement with each other, the springy or resilient side portions of one member being tensioned to spring outwardly and away from the side portions of the other member, when the two interlocked members are pressed toward each other to release one from the other, and the said springy or resilient side portions of the sheet-metal member which has its ends turned in to provide hooks being adapted, when the two members are locked together, to lie flatwise upon or against the outer side surfaces of the two slotted sheet-metal side portions of the other member, said hooks being adapted to pass readily over and outside of the two longitudinal rows of transverse slots in the other member, without catching in said slots, when the two members are moved toward each other, but adapted to be firmly engaged in said slots by slight relative movement of the two members away from each other, and to thereby prevent separation of the two members, substantially as set forth.

814,113. ANIMAL-SHEARS. HARRY S. BURLEY, Chicago, Ill., assignor to General Machinery & Supply Company, a Corporation of Illinois. Filed Feb. 23, 1904. Serial No. 194,947.



Claim.—1. Sheep-shears comprising a vibrator, a tongue, cutters carried by the forward ends thereof, a handle the forward part or casing of which incloses the pivot of said vibrator and tongue and the rear arm of the former, and is provided with a dust-proof port-hole in its forward end wall in front of the said pivot out through which the forward arm of said vibrator and said tongue extend, a cover for the forward part of said casing above said pivot the forward edge of which bridges said port-hole and has a drop edge restricting the vertical dimensions of the same, and a comb secured to and projecting from said casing and engaged by said cutters.

2. Sheep-shears comprising a vibrator, a tongue, cutters carried by the forward ends thereof, a handle the forward part or casing of which incloses the pivot of said vibrator and tongue and the rear arm of the former, and is provided with a dust-proof port-hole in its forward end walls in front of the said pivot out through which the forward arm of said vibrator extends, which latter has an enlargement closing said port-hole, the curvature of the engaging edges of said enlargement and the inner surface of the end walls of said casing being struck from the center of said pivot, out through which port-hole said tongue extends, and a comb secured to and projecting from said casing and engaged by said cutters.

3. Sheep-shears comprising a vibrator, a tongue, cutters carried by the forward ends thereof, a handle the forward part or casing of which incloses the pivot of said vibrator and tongue together with the rear arm of the former and is provided with a dust-proof port-hole in its forward end walls in front of the said pivot out through which the forward arm of said vibrator extends, which latter has an enlargement closing said port-hole, the curvature of the engaging surface of said enlargement and the inner surface of the end walls of said casing being struck from the center of said pivot, and out through which port-hole said tongue extends, a cover for the forward part of said casing above said pivot, the forward edge of which bridging said port-hole has a drop edge restricting the vertical dimensions of the same, and a comb secured to and projecting from said casing and engaged by said cutters.

4. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of all of said ball-bearings being in alinement, cutters carried on the forward ends of said vibrator and tongue, and a comb engaged thereby.

5. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of all of said ball-bearings being in alinement, means for simultaneously tilting said pivot forward, cutters carried on the forward ends of said vibrator and tongue, and a comb engaged thereby.

6. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator and below said tongue respectively, the axes of which aline, cutters carried by said vibrator and tongue, a dust-proof casing in which said pivots are housed, and out through the forward end of which said vibrator and tongue extend, and a comb secured to and projecting from said casing, and engaged by said cutters.

7. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, the bearings of the upper pivot alining with those of the lower pivot and adjustable in a vertical inclined plane intersecting the center thereof and a point in front of the center of the lower pivot, and an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of all of said ball-bearings being in alinement.

8. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, the bearings of the lower pivot alining with those of the upper pivot and said bearings adjustable in a vertically-inclined plane intersecting the center thereof and a point to the rear of the upper pivot.

9. Sheep-shears comprising a vibrator, a tongue engaged thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, the bearings of the upper pivot alining with those of the lower pivot, and are both adjustable, the former in a plane intersecting the center of the upper pivot and a point in front of the center of the lower pivot, and the latter in a plane parallel to the plane of adjustment of the upper bearings.

10. Sheep-shears comprising a vibrator, a tongue actuated thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, a screw having a concave bearing in its end for the upper ball-bearing, and adjustable in a vertical plane intersecting said bearing, and a point in front of the lower ball-bearing, and an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of all of said ball-bearings being in alinement.

11. Sheep-shears comprising a vibrator, a tongue actuated thereby, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, screws above the upper pivot and below the lower pivot respectively having concave seats in their ends for the bearing-balls, and adjustable longitudinally, the upper in a plane intersecting the center of the upper bearing-ball and a point in front of the lower bearing-ball, and the lower screw in a plane parallel to the upper screw.

12. Sheep-shears comprising a vibrator, a tongue actuated thereby, a ball-bearing separating the pivotal bosses thereof, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, screws above the upper pivot and below the lower pivot respectively having concave seats in their ends for the bearing-balls, and adjustable longitudinally, the upper in a plane intersecting the center of the upper bearing-ball and a point in front of the lower bearing-ball, and the lower screw in a plane parallel to the upper screw.

13. Sheep-shears comprising a bifurcated vibrator the under surface of the forwardly-extending arm of which is channeled longitudinally, a tongue the thickness of the shaft of which is less than the depth of said channel through which it extends and beyond which it projects to an extent corresponding to that of the bifurcations of said vibrator, a ball-bearing pivot above said vibrator, a ball-bearing pivot below said tongue, and an antifriction-ball inserted between and separating the bearing-bosses of said vibrator and tongue.

14. Sheep-shears comprising a vibrator; a tongue engaged thereby, a pivot above said vibrator; a pivot below said tongue; the bearings of the upper pivot alining with those of the lower pivot and adjustable in a vertical inclined plane intersecting the center thereof and a point in front of the center of the lower pivot; and an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of said pivots and said antifriction-ball being in alinement.

15. Sheep-shears comprising a vibrator; a tongue engaged thereby; a pivot above said vibrator; a pivot below said tongue, the bearings of the upper pivot aliaing with those of the lower pivot and are both adjustable, the former in a plane intersecting the center of the upper pivot and a point in front of the center of the lower pivot, and the latter in a plane parallel to the plane of adjustment of the upper bearings.

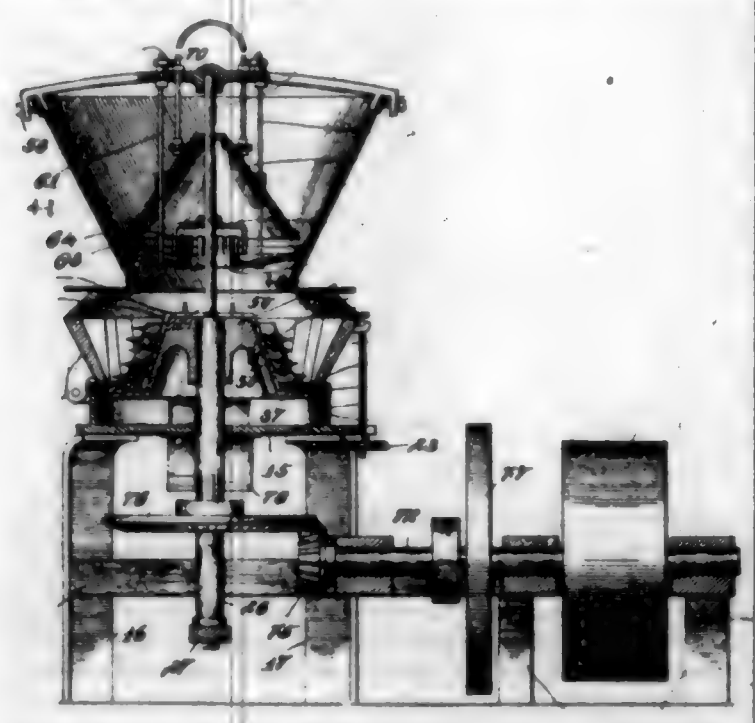
16. Sheep-shears comprising a vibrator; a tongue actuated thereby; a pivot above said vibrator, a pivot below said tongue, a screw having a concave bearing in its end for the upper pivot and adjustable in a vertical plane intersecting said pivot, and a point in front of the lower pivot; and an antifriction-ball interposed between the engaging bosses of said vibrator and tongue, the axes of said pivots and said antifriction-ball being in alinement.

17. Sheep-shears comprising a vibrator; a tongue actuated thereby, a pivot above said vibrator, a pivot below said tongue, screws above the upper pivot and below the lower pivot respectively, the upper in a plane intersecting the center of the upper pivot and a point in front of the lower pivot and the lower screw in a plane parallel to the upper screw.

18. Sheep-shears comprising a vibrator; a tongue actuated thereby, a ball-bearing supporting the pivotal bosses thereof, a pivot above said vibrator, a pivot below said tongue; screws above the upper pivot and below the lower pivot respectively having concave seats in their ends for the pivots and adjustable longitudinally, the upper in a plane intersecting the center of the upper pivot and a point in front of the lower pivot; a lower screw in a plane parallel to the upper screw.

19. Sheep-shears comprising a bifurcated vibrator, the under surface of the forwardly-extending arm of which is channeled longitudinally; a tongue the thickness of the shaft of which is less than the depth of said channel through which it extends and beyond which it projects to an extent corresponding to that of the bifurcations of said vibrator; a pivot above said vibrator; a pivot below said tongue; and an antifriction-ball inserted between and supporting the bearing-bosses of said vibrator and tongue.

814,114. **FEED-MILL.** Nelson Burr, Batavia, Ill. Filed Feb. 4, 1904. Serial No. 191,990.



Claim.—1. In a feed-mill, in combination, a rotatable head having lance-pointed radial teeth, and a shell having instanding ribs the rearward faces of which are inclined in the direction of rotation of the head from the wall of the shell to the apex of the rib.

2. In a feed-mill, in combination, a rotatable head having radiating lance-pointed teeth, and a shell having instanding ribs transverse to the direction of rotation of the head.

3. In a feed-mill, in combination, a rotatable head, a plurality of rings seated upon the head and having lance-pointed teeth, and a shell having ribs with faces inclined in the direction of rotation of the head from the wall of the shell to the apex of the rib.

4. In a feed-mill, in combination, a rotatable tapering head having vertical grooves, a plurality of rings seated upon the head and having instanding lugs engaging the grooves, lance-pointed teeth radiating from the rings, and a shell having ribs with faces inclined in the direction of rotation of the head from the wall of the shell to the apex of the rib.

5. In a feed-mill, in combination, a rotatable head having vertical grooves and a circumferential cam-groove, a plurality of rings seated upon the head and having instanding lugs engaging the grooves, pointed teeth radiating from the rings, and a shell having ribs with faces inclined in the direction of rotation of the head.

6. In a feed-mill, in combination, a rotatable head having lance-pointed teeth, and a shell having instanding ribs inclined in the direction of rotation of the head.

7. In a feed-mill, in combination, a fixed casing having an annular seat; a rotatable grinding-ring within the casing and having its peripheral face toothed; a stationary grinding-ring concentric with the rotatable ring and having its inner face toothed, such last-named ring being seated within the fixed casing; and an upper grinding-casing hinged to the fixed casing and opening thereto.

8. In a feed-mill, in combination, a fixed casing having an annular seat; a rotatable shaft projecting upwardly through the casing; a grinding-head on the upper end of the shaft; a grinding-ring fixed to the shaft within the casing and having its periphery toothed; a stationary grinding-ring concentric with the rotatable ring and having its inner face toothed, such last-named ring being seated within the fixed casing; and an upper grinding-casing hinged to the fixed casing and opening thereto.

9. In a feed-mill, in combination, a shell, a rotatable head therein, a feed-hopper, a diaphragm crossing the hopper and having a central aperture and an upstanding flange surrounding the aperture, and a hood adjustably carried above the aperture.

10. In a feed-mill, in combination, a shell, a rotatable head therein, a feed-hopper, a diaphragm crossing the hopper and having a central aperture and an upstanding flange surrounding the aperture, and a rotatable beater above the flange.

11. In a feed-mill, in combination, a shell, a rotatable head therein, a feed-hopper, a diaphragm crossing the hopper and having a central aperture and an upstanding flange surrounding the aperture, and a rotatable beater above the flange having its end turned down to overlap the same.

12. In a feed-mill, in combination, a pair of concentric grinding-rings having transverse teeth on their opposed faces, the inner ring being rotatable and extending above the outer ring, and having teeth of unequal height extending upwardly from the lower margin of its its rim face, the backward inclination of such face being increased above the lower teeth.

13. In a feed-mill, in combination, a rotatable grinding-ring having its rim face increasingly inclined from the horizontal backwardly from its lower edge, and having teeth crossing the face of its rim, and intermediate teeth of less height extending upwardly from the lower margin thereof; and an outer grinding-ring, concentric with and of less height than the first-mentioned ring and having teeth transverse to the direction of rotation thereof.

14. In a feed-mill, in combination, an outer grinding-ring having backwardly-directed teeth, pointed at their upper ends, and an inner grinding-ring concentric with and extending above the outer ring and having forwardly-directed teeth, the floor of the interspaces between the teeth of the inner ring being increasingly inclined from the vertical from below upwardly.

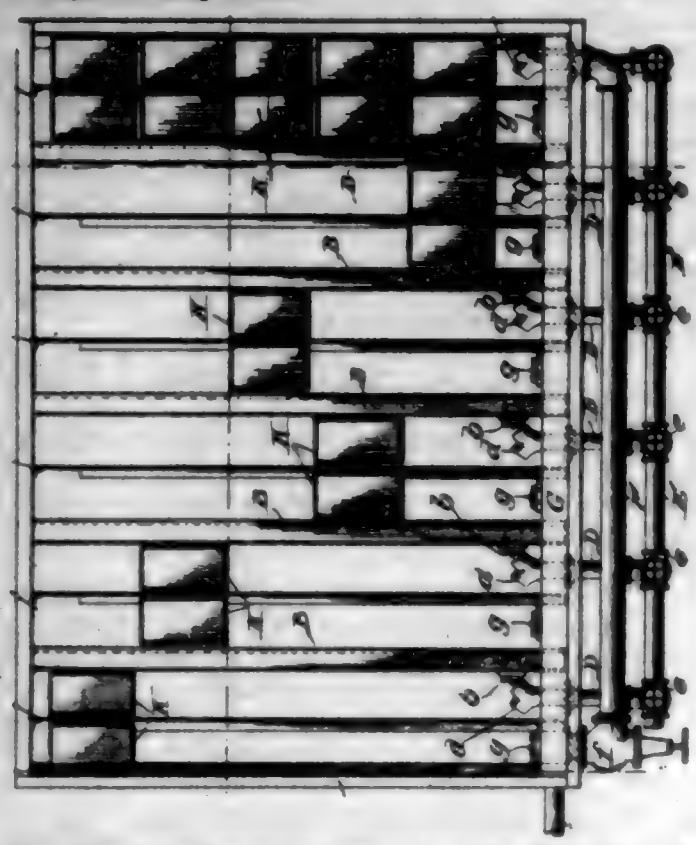
15. In a feed-mill, in combination, a pair of concentric grinding-rings having opposed circumferential grinding-faces, the teeth of one of said rings having upstanding pointed ends, and the other ring having radial feed-channels in its upper face leading to such pointed teeth.

16. In a feed-mill, in combination, a pair of concentric grinding-rings having opposed circumferential faces; the outer ring being stationary and its teeth having upstanding pointed ends; the inner ring being rotatable and having teeth extending above the teeth of the outer ring, and having radial feed-channels in its upper face leading to the spaces between its teeth.

814,115. **ICE-MAKING APPARATUS.** Allan Campbell, Chicago, Ill. Filed Mar. 2, 1905. Serial No. 248,122.

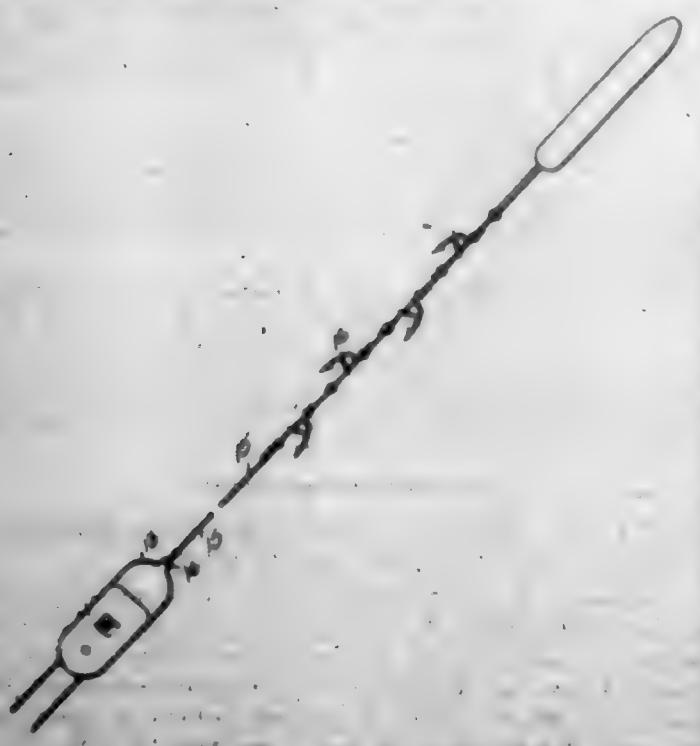
Claim.—1. In an ice-making apparatus a suitable tank, a plurality of wooden bulkheads B, dividing said tank into a series of compartments; valve-controlled openings in said bulkheads at one end thereof; a sheet-metal partition C in each compartment mediate their longer sides, which partition is cut away at the end opposite said openings and below the water-level in said tank to enable the two sections to communicate below their upper edges; valve-controlled means for directing the initial intake of the refrigerant into any

given compartment after the first without interrupting the flow thereof, a by-pass for conveying the refrigerant from the last to the said first compartment, and a valve-controlled trough communicating with each compartment for returning the spent refrigerant back to the original cooling devices.



2. An ice-making apparatus comprising a suitable tank; a plurality of transverse wooden bulkheads dividing said tank into a series of parallel compartments; valve-controlled openings in said bulkheads at one end thereof; a sheet-metal partition C in each compartment mediate their longer sides, which partition is cut away at the end opposite said openings and below the water-level in said tank to enable the two sections to communicate below their upper edges; valve-controlled means for directing the initial intake of the refrigerant into any given compartment after the first without interrupting the flow thereof nozzles *d* extending from said valve-controlled means into alternate sections of said tank; and a valve-controlled trough G disposed in the upper portion of said tank along one side wall thereof for returning the spent refrigerant to the cooling devices or generator, said trough communicating with the sections not fed by said nozzles.

814,116. LIFE-SAVING DEVICE. JOHN W. DALTON, Sandwich, Mass. Filed June 27, 1905. Serial No. 267,226.



Claim.—1. A life-saving device comprising a shot adapted to carry a life-line, a block connected to said shot, said block being provided with a sheave, a light line adapted to be carried by the shot in its flight and to carry a heavier line also over the said sheave, substantially as described.

2. A life-saving device comprising a shot adapted to carry a life-line, a block connected to said shot, said block being provided with a sheave, a light line adapted to be carried by the shot in its flight and to carry a heavier line also over the said sheave, said block being attached to the shot by flexible connection, substantially as described.

3. A life-saving device comprising a shot adapted to carry a life-line, a block connected to said shot, said block being provided with a sheave, a light line adapted to be carried by the shot in its flight and to carry a heavier line also over the said sheave, said block being attached to the shot by flexible connection having hooks thereon, substantially as described.

4. A life-saving device, consisting of a shot and a block connected therewith, said block being provided with a light, and a sheave and with a line running over said sheave, substantially as described.

5. An attachment for a life-saving device, consisting of hooks secured to the device thrown, set in different planes, and projecting backward, said hooks being provided with interior spring-pawls, arranged to bear on the studs on the interior of the hooks, substantially as described.

814,117. PIANO-ACTION BRACKET. JOHN DAVENPORT, Stamford, Conn. Filed Jan. 6, 1905. Serial No. 239,847.



Claim.—1. A piano-action bracket formed of two like sheet-metal side plates secured together and having an arm with ends deflected in opposite directions to form a hammer-rail rest, and bolt-sockets in the ends of the bracket.

2. A piano-action bracket formed of two like sheet-metal side plates secured together and having an arm with ends deflected in opposite directions to form a hammer-rail rest, bolt-sockets in the ends of the bracket, and screw-holes for the attachment of said bracket to action-rails.

3. A piano-action bracket formed of two like plates of sheet metal, each containing an arm with deflected ears, to form a hammer-rail rest, additional extensions bent to form attaching-flanges, and bolt-sockets in the ends of the brackets.

4. A piano-action bracket comprising two sheet-metal side members bearing an arm to form a hammer-rail rest, metal pieces secured intermediate of said side members to broaden and strengthen the bracket, and screw-holes and sockets for the attachment of the bracket to action-rails.

5. A piano-action bracket comprising two sheet-metal members secured together each containing an arm with ears deflected at a right angle to form a hammer-rail rest, and additional similarly-deflected flanges with screw-holes therein for the attachment of the bracket.

6. A piano-action bracket formed of sheet metal and compris-

ing two side plates each having an arm containing ears deflected to form a hammer-rail rest, filling-pieces intermediate of said plates, and bolt-sockets formed in the end of said bracket.

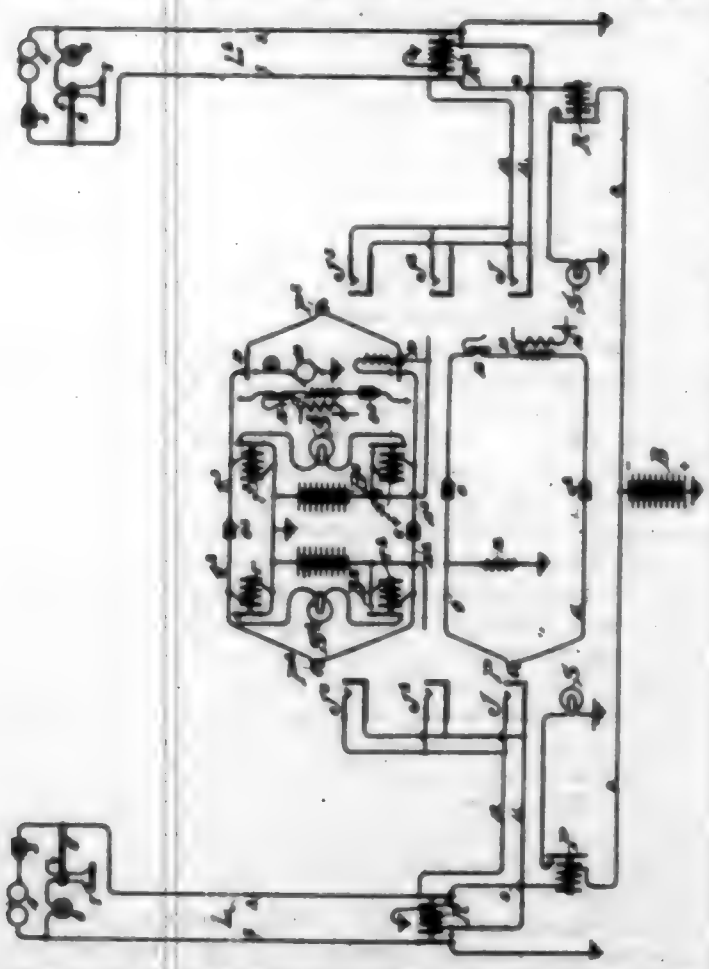
7. A piano-action bracket comprising two sheet-metal members secured together containing integral flanges deflected therefrom for the attachment of the bracket, and pieces secured intermediate of said flanged portions of the bracket, and bolt-sockets in the ends of said bracket.

8. A piano-action bracket formed of two like pieces of sheet metal secured together, each containing integral arms bearing ears bent to form a hammer-rail rest and additional ears to form flanges for attachment to action-rails, pieces intermediate of said plates, and bolt-sockets formed in the ends of the bracket.

9. A piano-action bracket formed of two like plates of sheet metal including an arm, integral ears on the plates of the bracket bent to form a hammer-rail rest and attaching-flanges, pieces intermediate of said arms and ears of the plates and bolt-sockets in the ends of the bracket.

10. A piano-action bracket comprising two sheet-metal side members, pieces intermediate of said sides, bolt-sockets in the upper and lower ends of said brackets and additional screw-holes through portions of the bracket for attachment to action-rails.

814,118. **TELEPHONE SYSTEM.** WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard & Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 15, 1903. Serial No. 161,533.



Claim.—1. In a telephone system, the combination with a telephone-line, of a line-signal-controlling magnet therefor having its actuating-winding included in one of the line conductors, a connection-terminal having a line-contact connected permanently with the said line conductor, a plug adapted to be inserted in the connection-terminal and having a contact coöperating with the contact of said terminal that is connected with said line conductor, and a source of current included between said line conductor and said plug-contact whereby upon the insertion of the plug a path for current is completed through the line signaling-magnet and its working condition thereby determined, substantially as described.

2. In a telephone system, the combination with a telephone-line, of a line-signal-controlling magnet included in one of the line conductors, a connection-terminal having one contact normally connected with said line conductor, a connecting-plug having a contact adapted to engage the corresponding contact of the connection-terminal, a common source of current having one pole connected to said line conductor, and a third conductor connected between the other pole of said source and the said plug-contact, whereby upon the insertion of the said plug a local path for current is completed through the said line signaling-magnet whereby its condition may be determined, substantially as described.

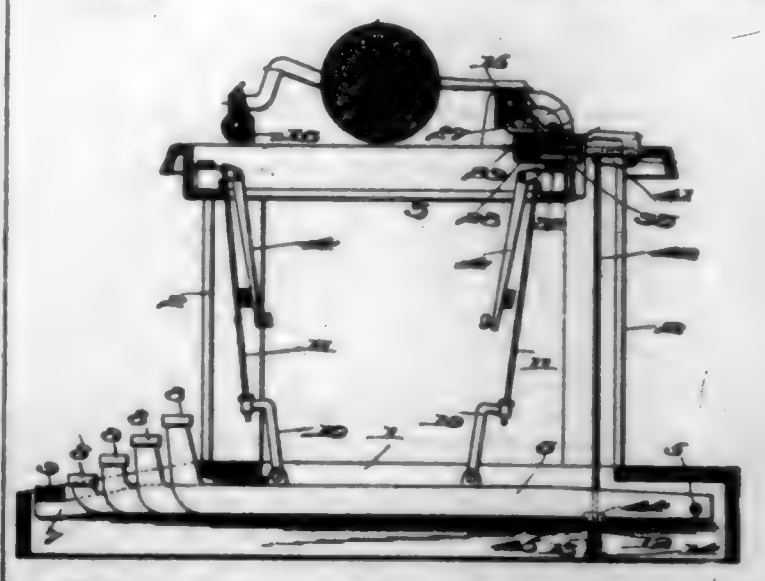
3. In a telephone system, the combination with a telephone-line, of a line signaling device included in one line conductor, a connection-terminal having one of its contacts permanently connected with the said conductor and its other contact disconnected from the other line conductor, a common source of current connected with said line at the central office and adapted to furnish current over the telephone-line for the operation of said signaling device when the subscriber is calling the central office an operator's connecting-plug, and means for closing a local circuit from said source through said device, when said plug is connected with said first-mentioned contact, substantially as described.

4. In a telephone system, the combination with a telephone-line, of a line signaling device in the normal connection of one line conductor, a connection-terminal permanently connected with said line conductor, an operator's connecting plug and cord, said plug having a contact adapted to engage the contact of said line that is connected with the said line conductor when inserted therein, and means associated with said cord for including a source of current in the local circuit of said signaling device whereby the condition of the latter may be determined, substantially as described.

5. In a telephone system, the combination with a telephone-line, of a line-signal-controlling magnet and a source of current connected to one of the line conductors, the opposite pole of said source of current being connected to a suitable common return, a connection-terminal for the line having a contact corresponding to each line conductor, a connecting-plug of the usual type adapted to be inserted in said connection-terminal, said plug having a contact adapted to engage the contact of the connection-terminal that is connected with the same line conductor as the said magnet, and a flexible connection from said plug-contact to the said common return of the battery, whereby upon the insertion of said plug a local path for current is completed through the said line-signal-controlling magnet to determine its working condition, substantially as described.

6. In a telephone system, the combination with a telephone-line, of a line signaling device therefor, a testing-plug, suitable connections from said plug and a suitable source of current to test the condition of the line signaling device when desired, and an operator's outfit connected with said plug whereby the said plug may be used for conversational purposes when desired, substantially as described.

814,119. **TYPE-WRITER.** JOHN DEY, Syracuse, N. Y., and ALEXANDER DEY, Glasgow, Scotland. Filed Oct. 20, 1903. Serial No. 177,737.



Claim.—1. In a type-writer, in combination, a platen mounted for traveling movement upon suitable ways, a series of type elements, a series of keys connected to control said type elements, means for putting said platen under tension tending to feed it past the printing-point, a member connected to be rotated upon movement of said platen, a series of rotatably-mounted stops adapted to be interposed in the path of rotation of said member to restrain the rotation thereof and movement of the platen, means for releasing said restrained member from the control of said stops upon the actuation of the keys, and means dependent upon the particular key which is actuated for determining the distance through which said member will rotate before its rotation is again restrained by one of said stops.

2. In a type-writer, in combination, a platen, a series of type elements, a series of keys connected to control said type elements,

means for putting said platen under tension tending to feed it past the printing-point, a rotary element connected to be rotated as said platen is fed forward, rotatably-mounted means for preventing the rotation of said element, means common to the keys for releasing said element to allow rotation thereof, and means dependent upon the particular key which is actuated for determining the arc through which said rotary element shall move upon any given actuation.

3. In a type-writer, in combination, a platen, a series of type elements, a series of keys controlling said type elements, means for feeding said platen past the printing-point, a rack carried with said platen, a pinion meshing with said rack, a toothed wheel mounted for rotation with said pinion, a member having a series of stops fixed thereon adapted to be successively interposed in the path of the teeth on said wheel, and a selective device controlled by the keys for determining which of said stops is so interposed.

4. In a type-writer, in combination, a platen, a series of type elements, a series of keys controlling said type elements, means for feeding said platen past the printing-point, a rack carried by said platen, a pinion meshing with said rack, a toothed wheel connected to said pinion to rotate therewith, a shaft carrying a series of rows of stops adapted to be interposed in the path of the teeth on said wheel, the stops on successive rows being staggered with relation to those on adjacent rows, a ratchet carried by said shaft, an actuating-pawl for said ratchet, a universal bar connected to actuate said pawl, and means whereby said universal bar may be given movements of different extent as different keys are struck.

5. In a type-writer, in combination, a platen, a series of type elements, a series of keys controlling said type elements, means for feeding said platen past the printing-point, a rack carried by said platen, a pinion meshing with said rack, a toothed wheel connected to said pinion to rotate therewith in one direction, a shaft carrying a series of rows of stops adapted to be interposed in the path of the teeth on said wheel, the stops on successive rows being staggered with relation to those on adjacent rows, a ratchet carried by said shaft, an actuating-pawl for said ratchet, a universal bar connected to actuate said pawl, and means whereby said universal bar may be given movements of different extent as different keys are struck.

6. In a type-writer, in combination, a platen, a series of type elements, a series of keys controlling said type elements, means for feeding said platen past the printing-point, a rack carried by said platen, a pinion meshing with said rack, a toothed wheel connected to said pinion to rotate therewith, a shaft carrying a series of rows of stops adapted to be interposed in the path of the teeth on said wheel, the stops on successive rows being staggered with relation to those on adjacent rows, an actuating-pawl for said ratchet, a stop for limiting the movement of said pawl, a universal bar connected to actuate said pawl, and means whereby said universal bar may be given movements of different extent as different keys are struck.

7. In a type-writer, in combination, a series of type elements, a series of keys controlling said type elements, a platen, means for feeding said platen past the printing-point, a rack carried by said platen, a pinion meshing with said rack, a toothed wheel connected to said pinion to rotate therewith, a shaft carrying a series of rows of stops adapted to be interposed in the path of the teeth on said wheel, the stops on successive rows being staggered with relation to those on adjacent rows, a ratchet carried by said shaft, an actuating-pawl for said ratchet, and a universal bar connected to actuate said pawl, said universal bar being actuated by the key-bars, the meeting faces of said universal bar and key-bars being differently shaped to give different movements of said universal bar upon actuation of different keys.

8. In a type-writer, in combination, type-keys, a universal bar with which said keys are adapted to engage, a rock-shaft, a lever fixed to said shaft, connections between said universal bar and said lever, a second lever fixed upon said rock-shaft, a platen, means whereby said platen is given a movement corresponding to the angle through which said second-mentioned lever is turned, and means whereby said universal bar is given a movement varying in extent with the shape of the particular key forced into engagement therewith.

9. In a type-writer, in combination, a platen, a carriage upon which said platen is mounted, a rack upon said carriage, a pinion engaging said rack, a toothed wheel in fixed relation to said pinion, a series of rotatably-mounted stops operatively positioned with respect to said toothed wheel, type-keys, means whereby said stops are actuated upon the depression of said type-keys, and means whereby the extent of movement of said stops is determined by the particular type-key depressed.

10. In a type-writer, in combination, a platen, a carriage upon which said platen is mounted, a rack upon said carriage, a pinion coacting with said rack, a toothed wheel fixed upon the shaft of said pinion, a series of movable stops in operative relation with said toothed wheel, a ratchet-wheel whereby said stops are moved, type-keys, a universal bar, and means whereby said ratchet-wheel is actuated upon the depression of one of said type-keys the range of movement of said ratchet-wheel and the stop brought into operative relation with said toothed wheel depending upon the particular key depressed.

11. In a type-writer, in combination, a platen, a carriage upon which said platen is mounted, a rack upon said carriage, a pinion coacting with said rack, a toothed wheel fixed upon the shaft of said pinion, a series of movable stops in operative relation with said toothed wheel, a ratchet-wheel whereby said stops are moved, type-keys, a universal bar, and means whereby said ratchet-wheel is actuated upon the depression of one of said type-keys the range of movement of said ratchet-wheel and the stop brought into operative relation with said toothed wheel depending upon the shape of the particular key depressed.

12. In a type-writer, in combination, a platen, a carriage upon which said platen is mounted, means for putting said carriage under tension tending to feed it past the printing-point, means adapted to be rotated by the movement of said carriage, a series of rotatably-mounted, independent, relatively fixed stops adapted to be interposed in the path of said means to restrain the rotation thereof and movement of the carriage, a series of keys, and means under control of said keys adapted by an operation upon said series of relatively fixed stops to determine the rotation of said second-mentioned means.

13. In a type-writer, in combination, a platen, a carriage upon which said platen is mounted, means for putting said carriage under tension to feed it past the printing-point, means adapted to be rotated by a movement of said carriage, a series of rotatably-mounted, independent, relatively fixed stops adapted to be interposed in the path of said means and restrain the rotation thereof and movement of the carriage, a series of keys, and means dependent upon the shape of the particular key depressed adapted by an operation upon said series of relatively fixed stops to determine the amount of rotation of said second-mentioned means.

14. In a type-writer, in combination, a carriage, means for putting said carriage under tension to feed it past the printing-point, a series of type elements, a series of keys connected to control said type elements, means adapted to be rotated by a movement of the carriage, a member comprising a series of independent stops adapted to restrain a rotation of said rotatable means, and means controlled by said keys adapted to actuate said restraining member to determine the amount of rotation of said aforementioned rotatable means, and means controlled by said keys adapted to actuate said restraining member to determine the amount of rotation of said aforementioned rotatable means.

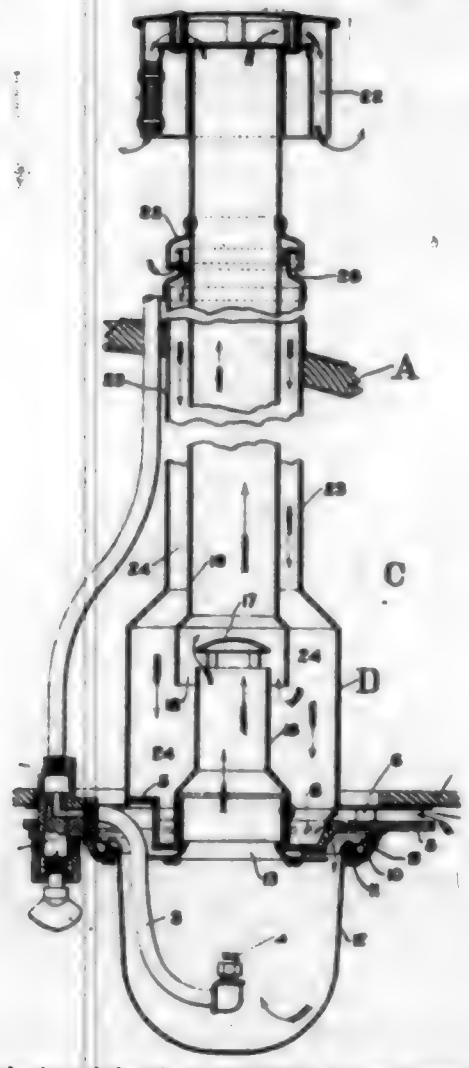
15. In a type-writer, in combination, a carriage, means for putting the same under tension tending to feed it past the printing-point, means adapted to be rotated by a movement of the carriage, a series of type elements, a series of keys connected therewith, a rotatable member, a series of relatively fixed, independent stops positioned upon said rotatable member, each of said stops being adapted to restrain a movement of said second-mentioned means when engaged therewith, and means for rotating said member to disengage one of said stops from said second-mentioned means and allow a rotation thereof, the extent of said rotation being determined by the engagement thereof with another of said stops.

16. In a type-writing machine, in combination, a carriage, means for putting the same under tension tending to feed it past the printing-point, means adapted to be rotated by a movement of the carriage, a series of type elements, a series of keys connected therewith, a rotatable member, a series of relatively fixed, independent stops positioned upon said member, each of said stops being adapted to restrain a movement of said second-mentioned means when engaged therewith, and means controlled by said keys for rotating said member to disengage one of said stops from said second-mentioned means to allow a rotation thereof and movement of the carriage, the extent of said rotation being determined by the shape of the particular key depressed.

814,120. GAS-LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Apr. 15, 1905. Serial No. 255,848.

Claim.—1. In a railway-car or similar structure, in combination, a burner, a conducting-tube arranged above the burner and adapted to conduct therefrom the heated gases produced by the

burner, a deflector mounted upon said conducting-tube, a chimney adapted to receive said heated gases from the conducting-tube and to lead the same to the atmosphere, and an air-conducting conduit surrounding the conducting-tube and the chimney and adapted to supply air from the exterior of the car or similar structure to the burner and also to the chimney to compensate for an abnormal draft through the conducting-tube and thereby maintain an even flame at the burner.



2. In a device of the class described, in combination, a burner, a conduit also adapted to supply air to the burner, a conducting-tube adapted to lead heated gases therefrom, a deflector mounted upon said conducting-tube, a chimney for carrying said heated gases from said conducting-tube and also adapted to receive air from said air-conducting conduit to prevent an abnormal back draft through the conducting-tube and thereby maintain a constant atmospheric pressure at the burner.

3. In a device of the class described, in combination, a burner, a translucent bowl surrounding said burner, an air-conducting conduit also leading therein and adapted to supply air thereto, a tube leading from said bowl and adapted to conduct therefrom heated gases produced by the burner, a deflector mounted upon said tube, a chimney of larger diameter than that of said conducting-tube encircling the end thereof and leading from a position in proximity to said end to form an aperture therebetween, the said chimney being adapted to lead the heated gases received from said conducting-tube into the atmosphere.

4. In a railway-car or similar structure, in combination, a burner, a translucent bowl surrounding said burner, an air-conducting conduit also leading therein and adapted to supply air from the exterior of the car or similar structure thereto, a tube leading from said bowl and adapted to conduct therefrom heated gases produced by the burner, a deflector positioned upon said tube, a chimney of larger diameter than that of said conducting-tube encircling the end thereof and leading from a position in proximity to said end to form an aperture therebetween, the said chimney being adapted to lead the heated gases received from said conducting-tube into the atmosphere, and means mounted upon the conducting-tube to prevent back drafts from entering the conducting-tube.

5. In a device of the class described, in combination, a burner, a translucent bowl surrounding said burner, an air-conducting conduit also leading therein and adapted to supply air thereto, a tube leading from said bowl and adapted to conduct therefrom heated gases produced by the burner, a dome-like deflector mounted upon said tube, a chimney of larger diameter than that of said conducting-tube encircling the end thereof and leading from a position in proximity to said end to form an aperture therebetween, the said chimney being adapted to lead the heated gases received from said conducting-tube into the atmosphere, and a dome-shaped deflector mounted upon the conducting-tube to prevent back drafts from entering the conducting-tube.

6. In a railway-car or similar structure, in combination, a burner, a conducting-tube adapted for leading heated gases therefrom, a chimney arranged above said conducting-tube andencircling the upper end thereof and providing an aperture therebetween, said chimney being adapted to conduct heated gases from said conducting-tube to the atmosphere, a deflector mounted upon said conducting-tube above the lower end of said chimney, and an air-conducting conduit encircling the chimney and conducting-tube and adapted to convey air from the outside of the car or similar structure to the burner and also adapted to furnish a supply of air to the chimney to compensate for varying atmospheric pressures therein.

7. In a device of the class described, in combination a burner, a conducting-tube adapted to lead heated gases therefrom, a chimney arranged above said conducting-tube and encircling the upper end thereof and providing an aperture therebetween, said chimney being adapted to conduct heated gases from said conducting-tube to the atmosphere, a dome-like deflector mounted upon the upper end of said conducting-tube above the lower end of said chimney, an air-conducting conduit encircling the chimney and conducting-tube and adapted to convey air to the burner and also adapted to furnish a supply of air to the chimney to compensate for varying atmospheric pressures therein, and a shield mounted upon the chimney and extending over the end of the air-conducting conduit.

8. In a railway-car or similar structure, in combination, an inclosed burner, a conducting-tube adapted to lead heated gases therefrom, a deflector mounted upon said conducting-tube, a chimney arranged above said conducting-tube and encircling the upper end thereof and adapted to receive heated gases from said conducting-tube, said chimney being provided at its upper end with a hood having downwardly-extending passages adapted to conduct heated gases from the chimney to the outer air, an air-conduit encircling said conducting-tube and said chimney and adapted to conduct air from the exterior of the railway-car or similar structure to the burner, and means adapted to supply air to said burner from the interior of the aforementioned railway-car or similar structure.

9. In a railway-car or similar structure, in combination, an inclosed burner, an apertured plate arranged above said burner, a conducting-tube mounted upon said apertured plate and adapted to conduct heated gases from the burner, a deflector mounted upon said conducting-tube, a chimney encircling the upper end of said conducting-tube and providing downwardly-extending passage-ways therebetween, a hood positioned upon the chimney and having spaced walls to provide downwardly-extending exit passage-ways therebetween, said passage-ways being adapted to lead the heated gases produced by combustion from the chimney to the atmosphere, a hollow shell encircling said conducting-tube and said chimney, the upper end of said shell being of larger diameter than that of said chimney, thereby providing an annular air-inlet opening therebetween exterior to the railway-car or similar structure, said shell being adapted to conduct air to the burner and also to the chimney to compensate for abnormal drafts through said conducting-tube, and means in the interior of said railway-car or similar structure adapted also to supply air to the burner.

10. In a railway-car or similar structure, in combination, an inclosed burner, an apertured plate arranged above said burner, a conducting-tube positioned upon said plate and adapted to conduct heated gases from said burner, an upwardly-extending chimney arranged about the upper end of said conducting-tube and leading to the outer air, a hood having spaced walls providing downwardly-extending exit passage-ways, said passage-ways being adapted to conduct the heated gases through said chimney to the outer air, an air-inlet conduit encircling the conducting-tube and said chimney and adapted to receive air from the exterior of the railway-car or similar structure and conduct the same to the burner and also adapted to admit air to the chimney to compensate for an abnormal draft through said conducting-tube thereby maintaining an even flame at the burner, and means interior to said railway-car or similar structure adapted to furnish an air-supply to the burner.

11. In a railway-car or similar structure, in combination, a burner, a translucent, depending bowl inclosing said burner; an apertured plate arranged above said burner, a conducting-tube adapted to conduct heated gases from said burner positioned upon said apertured plate, a chimney of larger diameter than that of said

conducting-tube encircling the upper end thereof and extending to the exterior of the structure, a hood having downwardly-extending exit passage-ways positioned upon the upper end of the chimney, an air-inlet conduit encircling said conducting-tube and said chimney extending without the structure and providing an air-inlet opening between the same and said chimney, a shield positioned upon the chimney and extending downwardly to encircle the upper end of said air-inlet conduit providing an upwardly-extending opening therebetween, said air-inlet conduit being adapted to furnish an air-supply from the exterior of the railway-car or similar structure through the last-mentioned opening to the burner and also adapted to admit air to the chimney to compensate for an abnormal draft through the conducting-tube, thereby maintaining an even flame at the burner, and means interior to the railway-car or similar structure adapted to supply air to the burner.

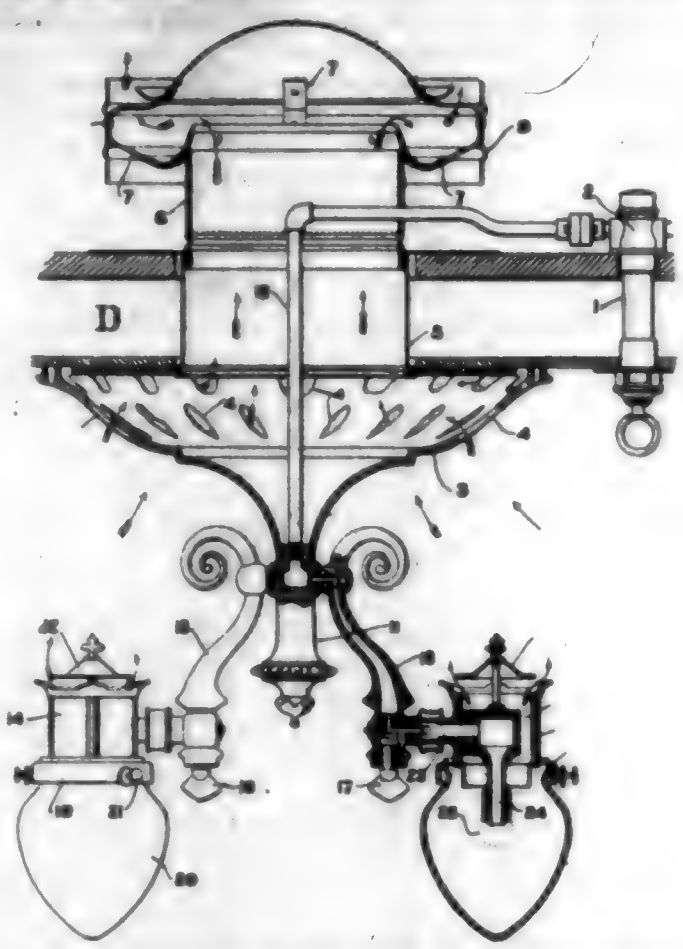
12. In a railway-car or similar structure, in combination, an inclosed burner, an apertured plate arranged above said burner, a conducting-tube positioned upon said apertured plate and adapted to conduct heated gases from the burner, a deflector positioned upon said conducting-tube, an upwardly-extending chimney encircling the upper end of said conducting-tube, a hood mounted upon said chimney having spaced walls to provide downwardly-extending exit-openings, said openings being adapted to deliver heated gases passing through said chimney to the atmosphere, an air-inlet conduit encircling said conducting-tube and said chimney and providing an opening at the upper end thereof between said air-inlet conduit and said chimney, a shield positioned upon the chimney and encircling the upper end of said air-inlet conduit to form an upwardly-extending air-inlet opening said air-inlet conduit being adapted to receive air from the last-mentioned opening and conduct the same to the burner and also admit air to the chimney to compensate for unequal atmospheric pressures in said conducting-tube, and means interior to the railway-car or similar structure adapted to furnish an air-supply to the burner.

13. In a railway-car or similar structure, in combination, an inclosed burner, an apertured plate arranged above said burner, a conducting-tube positioned upon said apertured plate and adapted to conduct heated gases from the burner, a dome-like deflector surmounting said conducting-tube, a chimney extending upwardly from a position in proximity to the upper end of said conducting-tube and encircling the end thereof, to form an opening thereabout, said chimney extending through the roof of the structure, a hood positioned upon said chimney and having spaced walls to form air-exit apertures adapted to lead heated gases of combustion from said chimney to the outer air, an air-conducting conduit encircling said conducting-tube and said chimney and extending through the roof of the structure to form an air-inlet aperture, a shield secured to said chimney and extending about the upper end of said air-inlet conduit to form an upwardly-extending opening thereabout, said air-inlet conduit being adapted to conduct air from the exterior of the railway-car or similar structure to the burner, and means interior to the railway-car or similar structure adapted to furnish an air-supply to the burner.

14. In a railway-car or similar structure, in combination, a burner, a depending bowl inclosing said burner, an apertured plate arranged above said burner, a conducting-tube positioned upon said apertured plate and adapted to conduct heated gases from the burner, a deflector positioned upon said conducting-tube, a chimney arranged above said conducting-tube and extending upwardly through the roof of the structure from a position in proximity to the end of said conducting-tube, a hood mounted upon the chimney having spaced walls to form downwardly-extending exit-apertures adapted to deliver heated gases of combustion from the chimney to the outer air, an air-inlet conduit extending through the roof of the structure from said apertured plate and encircling said conducting-tube and said chimney and providing an air-inlet opening about said chimney, a downwardly-extending shield mounted upon said chimney and extending over the upper end of said air-inlet conduit to form an upwardly-extending air-inlet aperture, said air-inlet conduit being adapted to lead air from the exterior of the structure through the apertured plate to the burner, and means interior to the railway-car or similar structure adapted to furnish an air-supply to the burner through said apertured plate.

814,121. GAS-LAMP. Robert M. Dixon, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Apr. 15, 1905. Serial No. 255,947.

Claim.—1. In a device of the class described, in combination, means for producing an inverted-funnel-shaped current of air, means for delivering to the same products of combustion, and means for conducting said products from said first-mentioned means to the exterior of said device.



2. In a railway-car or similar structure, in combination, means for producing an inverted-funnel-shaped current of air, means for conducting said current of air to the exterior of said railway-car or similar structure, a plurality of means producing products of combustion and adapted to deliver said products of combustion into the inverted-funnel-shaped current of air through which said products pass into said first-mentioned means, and a single conducting-tube for conveying said products to the exterior of the railway-car or other structure.

3. In a railway-car or similar structure, in combination, one or more lamps each producing products of combustion, and means for producing an inverted-funnel-shaped current of air, said lamp or lamps being adapted to deliver their products of combustion into said funnel-shaped current of air through which said products pass into said first-mentioned means, and a single conducting-tube for delivering said products of combustion to the exterior of the railway-car or other structure.

4. In a railway-car or similar structure, in combination, one or more lamps each producing products of combustion, and means for producing an inverted-funnel-shaped current of air, said lamp or lamps being adapted to deliver the products of combustion into said funnel-shaped current of air, and means for conducting said products to the exterior of the car or similar structure.

5. In a railway-car or similar structure, in combination, one or more lamps each producing products of combustion, hollow apertured means for producing an inverted-funnel-shaped current of air, said lamp or lamps being adapted to deliver their products of combustion into said funnel-shaped current of air, and means for conducting said products of combustion to the exterior of the car or similar structure.

6. In a railway-car or similar structure, in combination, a plurality of independent separately-regulatable lamps each producing products of combustion, and means for producing an inverted-funnel-shaped current of air, said lamp or lamps being adapted to deliver their products of combustion into said funnel-shaped current of air.

7. In a device of the class described, in combination, a plurality of means producing products of combustion, and an apertured substantially cone-shaped ceiling-plate adapted to collect products of combustion from the plurality of means producing products of combustion.

8. In a device of the class described, in combination, a plurality of lamps, and an inverted substantially cone-shaped ceiling-plate adapted to collect the products of combustion from the lamps, and means adapted to conduct said products to the exterior of the device.

9. In a device of the class described, in combination, one or

more lamps, an inverted substantially cone-shaped ceiling-plate provided with a plurality of apertures adapted to collect the products of combustion from said lamps, and means leading from the base of said cone-shaped ceiling-plate adapted to conduct the products of combustion from a lamp or lamps to the atmosphere.

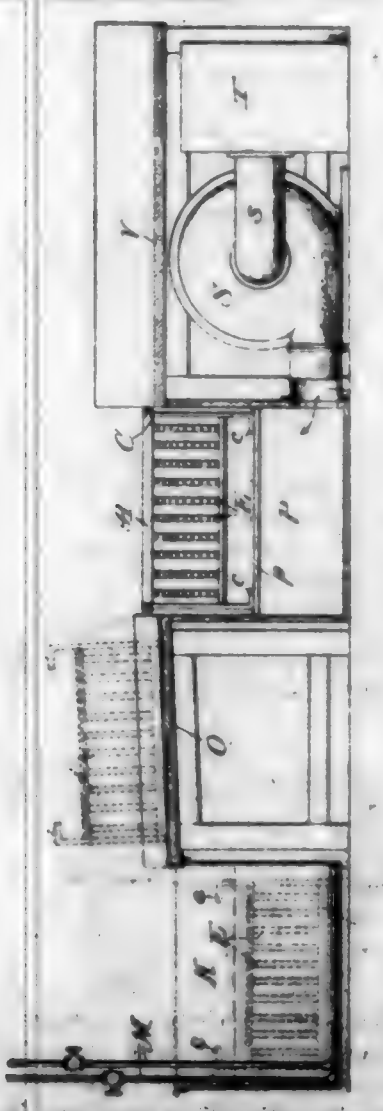
10. In a device of the class described, in combination, a ceiling-plate provided with a plurality of apertures, a plurality of lamps mounted on said ceiling-plate and adapted to discharge their products of combustion through an open space into said ceiling-plate, and means adapted to carry said products therefrom and thence to the atmosphere.

11. In a railway-car or similar structure, an inverted substantially cone-shaped ceiling-plate mounted therein and provided with a plurality of apertures, a plurality of lamps carried by said ceiling-plate and adapted to discharge their products of combustion through an open space to said ceiling-plate, and a chimney adapted to conduct the products of combustion to the exterior of said railway-car or similar structure.

12. In a railway-car or similar structure, in combination, an inverted, substantially cone-shaped ceiling-plate provided with a plurality of apertures along its conical wall adjacent the base thereof and having a closed lower portion, a plurality of lamps suspended from said ceiling-plate, said ceiling-plate and said lamps being separated by an open space, said ceiling-plate being adapted to collect the products of combustion in said lamps through the apertures therein, and a chimney for conveying said products from said ceiling-plate and leading the same without the structure.

13. In a railway-car or similar structure, in combination, a ceiling-plate provided with a series of angularly-arranged openings and having a depending closed portion, a plurality of lamps suspended from said ceiling-plate, said ceiling-plate and said lamps being separated by an open space, said ceiling-plate being adapted to collect the products of combustion from said lamps through the apertures therein, and a chimney for conducting said products from said ceiling-plate and leading the same without the structure.

814,122. APPARATUS FOR THE MANUFACTURE OF MOISTURE-PROOF CARTONS. HENRY G. ROSSMAN, Chicago, Ill. Filed June 25, 1904. Serial No. 214,099.



Claim.—1. An apparatus for forming moisture-proof cartons comprising a bath for containing the paraffin or like material wherein the cartons will be immersed, a cage for holding said cartons, a support for said cage and means for directing a blast of air through said cage and through the cartons contained therein.

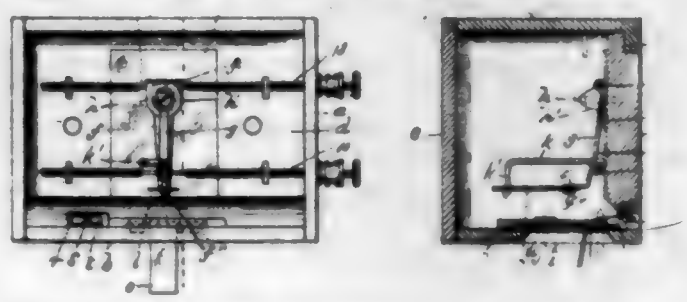
2. An apparatus for the manufacture of moisture-proof cartons comprising a bath for the paraffin or like material into which the cartons will be dipped, a cage for holding said cartons, a draining-table adjacent said bath for sustaining said cage with the cartons therein, a support provided with means for holding said cage in reverted position and an air-blast pipe extending beneath said support and adapted to direct a blast of air through said support and the cartons contained therein.

3. An apparatus for forming moisture-proof cartons comprising a bath for the paraffin or like material into which the cartons will be dipped, said bath being provided with means for heating the paraffin, a cage for holding the cartons, a draining-table for sustaining said cage after it has been lifted from the bath, a support for holding said cage and an air-blast pipe leading to a point beneath the cage when upon said support and adapted to deliver a blast of air through said cage and the cartons contained therein.

4. An apparatus for forming moisture-proof cartons comprising a cage having an open-work bottom and top and provided upon its interior with a plurality of individual supports for holding the cartons separated within the cage.

5. An apparatus for forming moisture-proof cartons comprising a cage having an open-work bottom and top and provided upon its interior with means for holding the cartons in separate position, the top of said cage being provided with offsets adapted to hold the top of the cage above a support when the cage has been reversed.

814,123. AUTOMATIC FIRE-ALARM. NAPOLEON H. FERLAND, Manchester, N. H., assignor of one-third to Joseph A. Choquette, Manchester, N. H. Filed June 3, 1905. Serial No. 263,526.



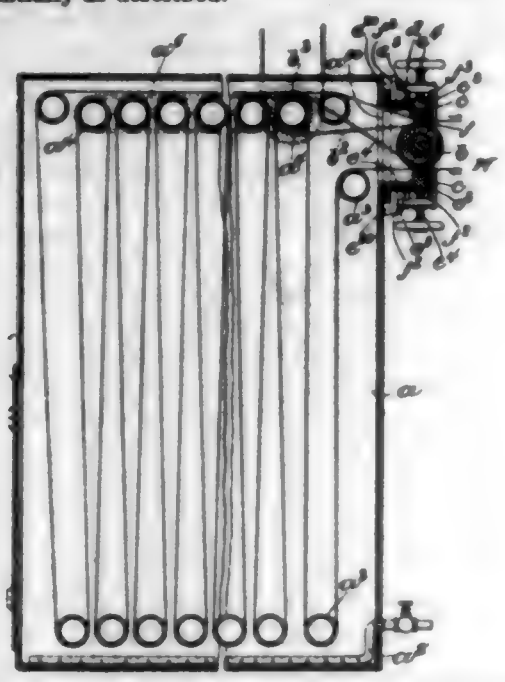
Claim.—1. In an automatic fire-alarm of the character described, a closed box, wires entering said box adapted to constitute an electric circuit, a metallic arm in electrical contact with one of the wires and extending over the other wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end of the strip whereby the free end of said arm is held normally out of contact with the wire, and a window in said box near said strip comprising a sheet of inflammable material provided with a tongue which extends out therefrom into the apartment in which the box is placed, for the purpose set forth.

2. In an automatic fire-alarm of the character described, a closed box, wires entering said box adapted to constitute an electrical circuit, a metallic arm in electrical contact with one of the wires and extending over the other wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end of the strip whereby the free end of said arm is held normally out of contact with the wire, an opening in said box near said strip, a sheet of inflammable material in and closing said opening, and a second sheet of inflammable material in said opening provided with a tongue which extends out therefrom into the apartment in which the box is placed, for the purpose set forth.

3. In an automatic fire-alarm of the character described, a closed box, wires entering said box adapted to constitute an electrical circuit, a metallic arm in electrical contact with one of the wires and extending over the other wire, a strip of inflammable material one end of which is secured to the metallic arm, means connected with the opposite end of the strip whereby the free end of said arm is held normally out of contact with the wire, a window in said box closed by a sheet of inflammable material, one of the walls of said box being notched at one of its edges, a pin extending from said wall into the notch, and a spring extending from one of the other walls of the box into engagement with said pin, said spring being adapted to be reached by breaking the said window, for the purpose set forth.

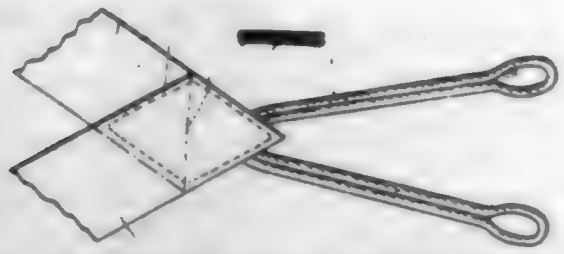
814,124. APPARATUS FOR STEAMING FABRICS. CHARLES H. PIKE, Dover, N. H. Filed May 15, 1897. Serial No. 636,659.

Claim.—1. The combination with the chamber provided with an opening in a wall thereof, of the plate *e* secured to the casing and having an opening corresponding to that in the wall of the casing, the wall e^6, the bearing *f* also secured to the casing, the rolls, the packing-blades *d* adapted to engage the rolls, and the packing-plate e^5 adjustably secured to the plate *e* and movable toward the ends of the rolls, substantially as described.



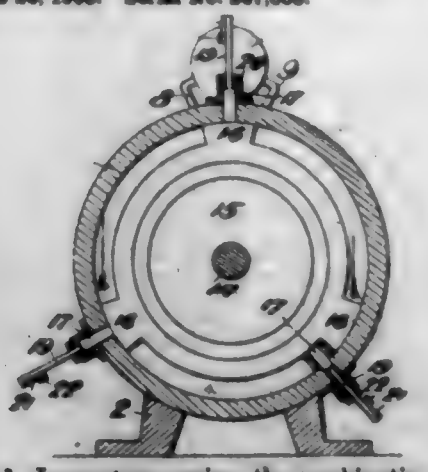
2. The combination with the chamber adapted to contain steam under pressure, of feed-rolls mounted adjacent to a wall thereof said feed-rolls being in contact with each other at the ends thereof, a covering of resilient material on one of said rolls extending from a point near one end thereof to a point near the other end, said covering being of slightly-greater external diameter than that of the roll at the ends thereof, and means for packing said rolls to prevent the escape of steam, substantially as described.

814,125. SUSPENDERS. William D. Flynn, Spray, N. C. Filed May 26, 1905. Serial No. 262,518.



Claim.—A suspender comprising a pair of shoulder-straps and a triangular-shaped combined reinforcement and support interposed between the back ends of said straps, said combined reinforcement and support provided with an opening to receive garment-attaching straps, and means for securing the shoulder-straps, the garment-attaching straps and the combined reinforcement and support together.

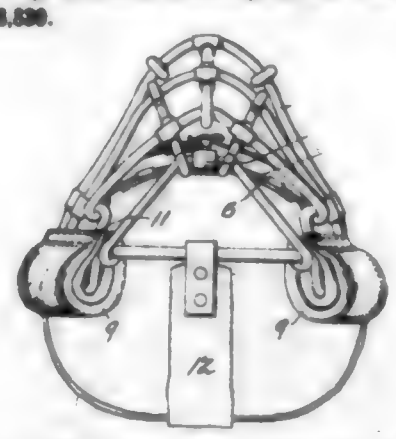
814,126. ROTARY ENGINE. John Fowler, Jacksonville, Fla. Filed June 26, 1905. Serial No. 267,068.



Claim.—1. In a rotary engine, the combination with the cylinder having inlet and exhaust passages and inlet and exhaust ports formed in one head of the cylinder, of a concentrically-disposed revolubly-mounted piston arranged in said cylinder, radially-disposed wings formed on said piston, radially-disposed, reciprocating abutment-gates arranged in said cylinder to slide between said inlet and exhaust ports, casings arranged on said cylinder to receive said gates when in their retracted position, and means to retract and project said gates, substantially as described.

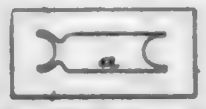
2. In a rotary engine, the combination with the cylinder having inlet and exhaust passages and inlet and exhaust ports formed in one head of the cylinder, of a concentrically-disposed drive-shaft revolubly mounted in said cylinder, a concentrically-disposed piston fixedly mounted on said shaft, spring-projected packing-rings arranged in the ends of said piston, radially-projecting wings formed on said piston to engage the side walls of said cylinder, abutment-gates slidably mounted in the sides of said cylinder to project between said inlet and exhaust ports in the head of the cylinder, a disk fixedly mounted on said drive-shaft, said disk having formed in one side a cam-groove, pivoted levers connected to said abutment-gates, jointed operating-rods connected to said levers, guide-sockets to receive the inner ends of said rods, a right-angularly-projecting arm formed on each of said rods and means whereby said arms are adapted to have an antifrictional engagement with the cam-groove in said disk to actuate said rods and levers, and thereby reciprocate said abutment-gate at the proper time, substantially as described.

814,127. CATCHER'S MASK. John Gamble, Philadelphia, Pa., assignor to George A. Roach, Philadelphia, Pa. Filed June 24, 1905. Serial No. 266,530.



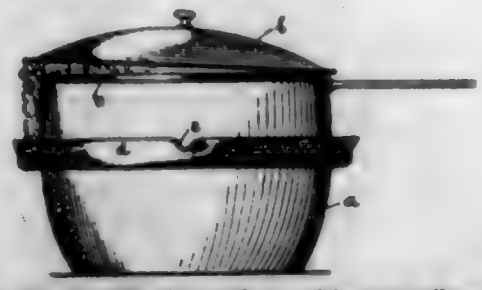
Claim.—In a catcher's mask, the combination with the metallic frame, of a plurality of U-shaped pads for contact with the cheeks and temples of the catcher, each of said pads being of U shape with the edge of the mask resting in the space between the inner faces of the side of the pad, and means for holding the pad in place, substantially as described.

814,128. POCKET FOR DRAW-BARS. Walter Gatwood, Manchester, England. Filed Jan. 12, 1905. Serial No. 240,841.



Claim.—The herein-described method of making pocket-frames for draw-bars consisting in first punching a hole in the plate then forming a central longitudinal depression in one end thereof, then forming a flange around the hole and finally placing two plates around a draw-bar and securing them together.

814,129. COOKING UTENSIL. Anton Gupler, New York, N. Y. Filed Mar. 24, 1905. Serial No. 251,755.

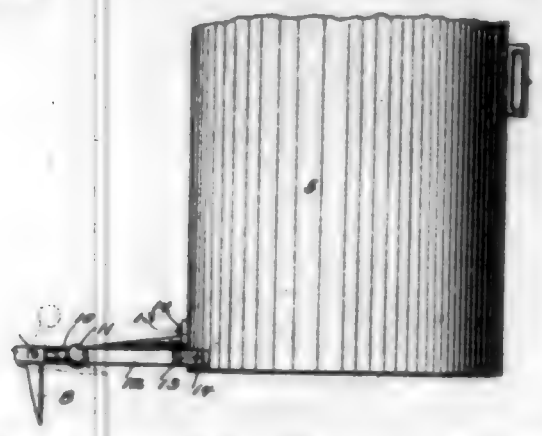


Claim.—1. The combination with a cooking utensil or a kitchen-pot of a flange arranged below its upper rim, said flange extending all around the pot and being bent upward to form a drip-channel, a spout or hole below the upper edge of said flange to prevent the liquid accumulating therein from overflowing, and a support suitably attached to the lower part of the pot, a receptacle adapted to rest upon said support below the above-stated spout and to receive the liquid

dropping down the latter, substantially and for the purpose as specified.

2. The combination with a cooking utensil or a kitchen-pot, of a flange below the upper edge of the pot forming an overflow-channel, a hole or spout below the upper edge of the flange, a support having spring-arms adapted to fit around the lower part of the pot, and means attached to the free ends of the spring-arms to allow of the spring-arms to be tightened upon the pot and a receptacle adapted to rest upon said support below the above-stated spout or hole of the overflow-channel, substantially and for the purpose as specified.

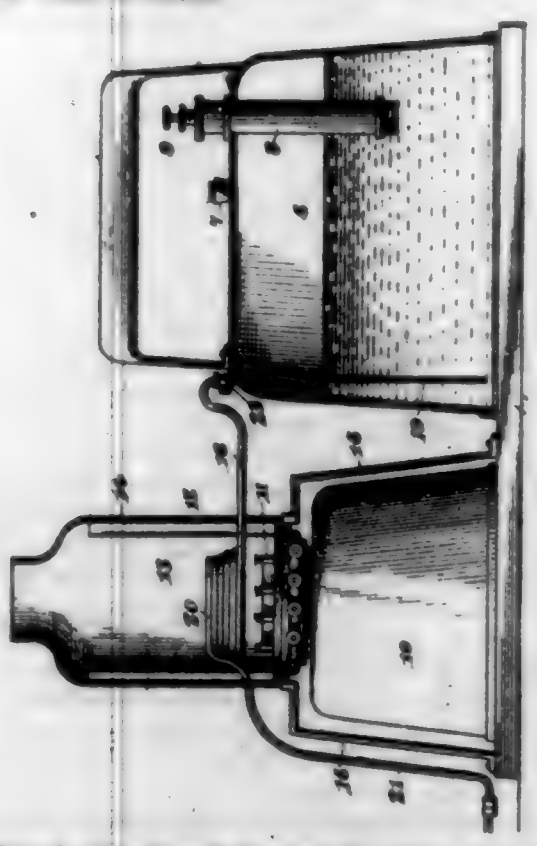
814,180. ATTACHMENT FOR PNEUMATIC CONVEYERS. CALIWAY J. HARRIS, Mangham, La. Filed July 17, 1905. Serial No. 269,961.



Claim.—1. The combination with a pneumatic conveyer-tube, of a rake carried thereby adjacent the inlet-mouth, said rake having pivoted teeth adapted to swing into inoperative position on the back stroke.

2. The combination with a pneumatic conveyer-tube, of a rake carried thereby adjacent the inlet-mouth, said rake having swinging teeth provided with weights tending to swing the teeth down to engage the same in the material.

814,181. EXTERMINATOR. JAMES D. HARRIS, Atlanta, Ga., assignor of one-half to William E. Wimpy, Atlanta, Ga. Filed Sept. 10, 1904. Serial No. 224,005.



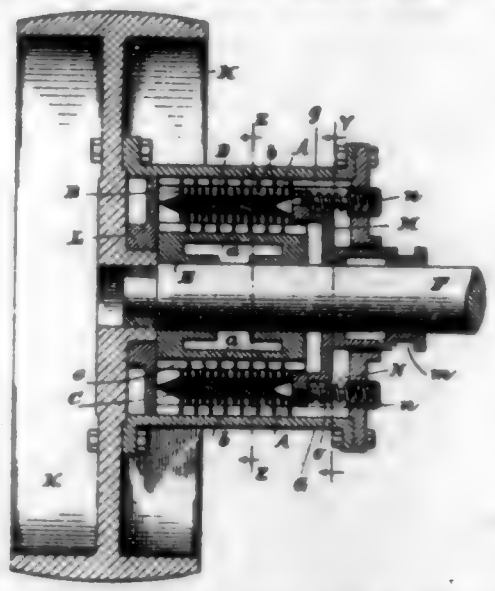
Claim.—1. An exterminator of the class described, comprising a base-board, a liquid-reservoir, heater, and air-pump carried upon and movable with the base-board, said pump having communication with the reservoir, a liquid-conducting pipe extending from the lower portion of the reservoir and having a steam-generator in the heater, and a nozzle located at one end of the base-board and projecting longitudinally therefrom, said nozzle being connected to the steam-generator.

2. In an exterminator of the class described, the combination with a base, of a fluid-reservoir, an oil-reservoir mounted on the base, a burner carried by the oil-reservoir, a chimney located over he reservoir and surrounding the burner, means for supporting the chimney from the base, a door forming a part of the chimney and when opened permitting the removal of the burner, and a pipe connected to the fluid-reservoir and passing through the chimney over the burner.

3. In an exterminator of the class described, the combination with a base, of a liquid-reservoir secured to the base, an air-pump arranged in the reservoir, a heater mounted on the base and comprising an oil-reservoir, a burner, a chimney located thereover, a pipe leading from the lower portion of the liquid-reservoir and having a steam-generating coil located within the chimney, said pipe having a discharge-nozzle extending from one end of the base, and a valve located in the pipe between the reservoir and the coil.

4. In an exterminator of the class described, the combination with a base-board, of a liquid-reservoir, an air-pump carried by and located in the reservoir, a heater having a chimney located thereon, a pipe extending from the lower portion of the reservoir and having a steam-generating coil located in the chimney, and a nozzle connected to the generating-coil and located exteriorly of the chimney, all the said parts being carried upon and movable with the base-board.

814,182. CLUTCH MECHANISM. HENRY S. HELE-SHAW, Liverpool, England. Filed Dec. 16, 1903. Serial No. 185,444.



Claim.—1. A friction-clutch comprising thin annular plates, each having a single offset portion extending circumferentially at the central part and of identical formation with the single offset of the adjacent plate, said plates having peripheral fin portions and means for holding the said plates in frictional relation, the said fin portions reaching from the extreme edge of the plate to the point where the wall of the single offset begins to project laterally from the general plane of the plate, said fin portions and single offset portions occupying the whole extent of the plate, substantially as described.

2. A friction-clutch comprising thin annular plates, having identical offset portions extending circumferentially at their central portions and having peripheral fin portions, the section of the offset being of V configuration the sides of the V being inclined at different angles to the plane of the plate, and means for holding the said plates in frictional relation, substantially as described.

3. A friction-clutch comprising thin annular plates, each having a single offset portion extending circumferentially at the central part and of identical formation with the single offset of the adjacent plate, said plates having peripheral fin portions and means for holding the said plates in frictional relation, the said fin portions reaching from the extreme edge of the plate to the point where the wall of the single offset begins to project laterally from the general plane of the plate, said fin portions and single offset portions occupying the whole extent of the plate, said plates being flexible whereby distortion friction is obtained, substantially as described.

4. A friction-clutch comprising thin annular plates, having identical offset portions extending circumferentially at their central portions and having peripheral fin portions, the section of the offset being of V configuration the sides of the V being inclined at different angles to the plane of the plate, the alternate plates being provided with springs tending to separate them, and means for holding the said plates in frictional relation, substantially as described.

5. A friction-clutch comprising thin annular plates each having a single offset portion extending circumferentially at the central por-

tion thereof and of identical formation with the single offset of the adjacent plate, and having peripheral fin portions, said fin portions being toothed on their edges with a plain portion or belt between the said teeth and the offset portion of the plate, and means for holding the plates in frictional relation, the said toothed portion, the plain belt and the single offset occupying the whole extent of the plate, substantially as described.

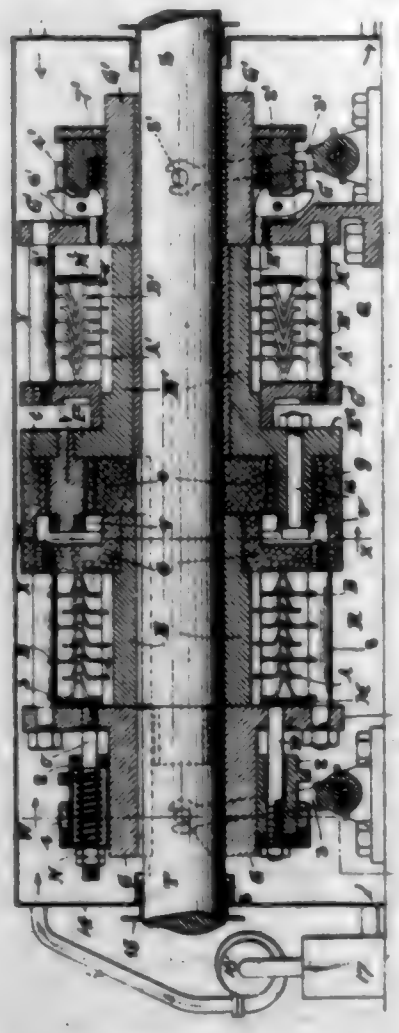
6. A friction-clutch comprising thin annular plates having identical offset portions extending circumferentially at their central portions and having peripheral fin portions extending in planes perpendicular to the axis of rotation and means for holding the plates in frictional relation, substantially as described.

7. In combination, the clutch members, the friction-plates, and the means for controlling the pressure between the said plates consisting of a sliding sleeve, a forked lever and ring to operate the sleeve, presser-pins, springs adapted to transmit through the presser-pins pressure to the plates, and triggers tripped by the forked lever and ring and adapted to relieve the plates of the said spring-pressure, substantially as described.

8. A friction-clutch comprising thin annular plates having offsets extending circumferentially at their central portions and having peripheral fin portions, a portion of the annulus being cut away to form a gap, and means for holding the said plates in frictional relation, substantially as described.

9. A clutch comprising thin annular plates having offsets at their central portions and having peripheral fin portions extending at an angle to the axial line of the plates of a different degree from that existing between the walls of the offset and the axis of the plates said peripheral fin portions being separated from each other, substantially as described.

814,133. STARTING, STOPPING, SPEED-CONTROLLING, AND REVERSING GEAR. Henry S. Hele-Shaw, Liverpool, England. Filed Dec. 16, 1903. Renewed Jan. 9, 1906. Serial No. 295,331.



Claim.—1. In a reversing-gear, the combination of two shafts in axial alinement, a direct clutch between the two shafts at adjacent ends thereof, an externally-toothed wheel fixed to the one shaft, an internally-toothed wheel fixed to the other shaft, planetary pinions gearing with the said wheels and a second clutch the one part of which carries the said planetary pinions and the other part of which is fixed.

2. In combination the two shafts in axial alinement, a direct clutch between the two shafts, an internal gear associated with part of said clutch, a gear on the shaft to be driven, pinions between the said gear and the internal gear, a sleeve to which the pinions are connected, and a clutch associated with the said sleeve, substantially as described.

3. In combination, a fixed frame the two shafts in axial alinement, a direct clutch between the two shafts comprising a series of corrugated plates, an internal gear carried by a part of the said clutch, a gear fixed on the shaft to be driven, pinions between the said gear and the internal gear, a sleeve surrounding the shaft to be driven and loose thereon, and carrying the said pinions and a clutch associated with the said sleeve, said clutch comprising one set of plates carried by the sleeve and a second set of plates held against rotation in the fixed frame and means for operating the clutches, substantially as described.

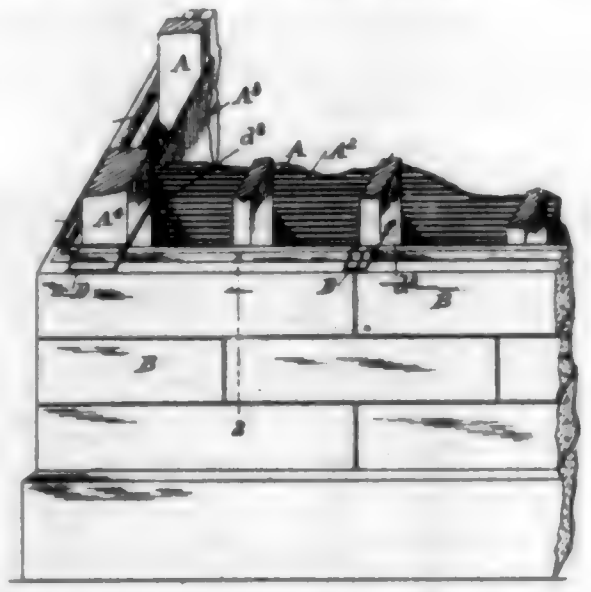
4. In combination, the two shafts in axial alinement, a direct clutch between them, the internal gear, the external gear, the pinions, a clutch carrying the pinions, and interlocked means for operating the clutches, substantially as described.

5. In combination with the shafts the clutches and the internal and external gear, a ring carried by the clutch-boss the pinions journaled at one end to the clutch-boss and at the other end to the ring, substantially as described.

6. In combination with the shafts the clutches and the gears, a fixed casing inclosing the adjacent ends of the shafts and closing the clutches and gears and adapted to contain lubricant, substantially as described.

7. In combination, the shafts, the clutches, the gears, the fixed casing inclosing these elements, the interlocked levers, and means passing fluid-tight through the casing connecting said levers to the clutch-operating devices, substantially as described.

814,134. COMPOSITE STRUCTURE. James H. Hood, Springfield, Ill. Filed Feb. 17, 1905. Serial No. 246,150.

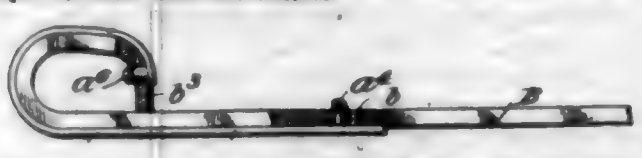


Claim.—1. A structure comprising stationary vertical studding, blocks contacting with said studding and having ribs and complemental channels and dimensions to form end joints between said blocks along said studding alternately, anchors having side pieces fitting over the ribs of said blocks said side pieces being connected by an intermediate integral member lying lengthwise of said ribs, and means for connecting both ends of said anchors with said studding to secure to a single studding the abutting ends of two adjacent blocks.

2. A structure comprising stationary studding, blocks contacting with said studding and having ribs and complemental channels and dimensioned to form end joints between said blocks along said studding alternately, anchors having side pieces extending across the ribs of said blocks, the side pieces of each anchor being connected by an intermediate member lying lengthwise of said block, and means for connecting said anchors with said studding to secure to a single studding the abutting ends of two adjacent blocks; the pull of said anchors being transverse to said studding.

3. A structure comprising stationary studding, blocks contacting with said studding and having ribs and complemental channels and dimensioned to form end joints between said blocks along said studding alternately, anchors having side members extending across the ribs of said blocks also having intermediate members connecting the side members of said anchors and lying lengthwise of the ribs of said blocks and means for connecting both side members of said anchors to pull transversely on said studding.

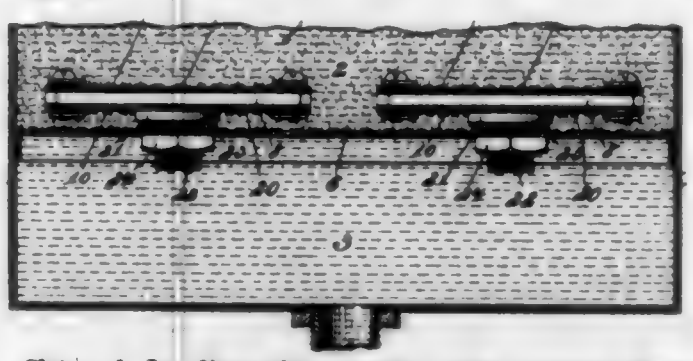
814,135. SNAP-HOOK. GEORGE A. HUFF, Chicago, Ill. Filed Apr. 17, 1905. Serial No. 256,115.



Claim.—1. In a snap-hook, the combination of a flat spring-metal band bent upon itself to form a hook having a long and a short member, each of its members being provided with a projecting strap-engaging lug; with a strap buttoned to the said lugs and extending around the hook, the extremity of the strap projecting inwardly forming a closure for the hook, substantially as described.

2. In a snap-hook, the combination of a piece of resilient flat strap metal bent into a hook having a short and a long member, the long member being provided with a button-lug adapted to engage a strap, and the short member of said hook also having a strap-engaging device; with a strap buttoned to said lug and extending along said hook and lining the inner face thereof, and having its ends fastened to the device on the shorter member of the hook and projecting beyond the device so as to form a closure for the hook, substantially as described.

814,136. FILTER-VALVE. CHURCHILL HUNGERFORD, Philadelphia, Pa., assignor to The Hungerford Filter Corporation, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 14, 1905. Serial No. 291,673.



Claim.—1. In a filter-valve, a casing, a plate arranged adjacent to the casing to provide a port between the wall of the casing and the plate and means to engage said plate at two separate points to prevent movement of the plate away from the casing at said points and yet permit the engaged portions of the plate to move toward and from each other, whereby that portion of the plate between the engaged portions thereof is permitted to move toward and from the casing to increase and decrease the area of said port, substantially as set forth.

2. In a filter-valve, a casing, an angular plate arranged adjacent to the casing to provide a port between the wall of the casing and the plate and means to engage said plate adjacent to the corners thereof to prevent movement of said corners away from the casing and yet permit them to move toward and from each other, whereby portions of the plate between the corners thereof are permitted to move toward and from the casing to increase and decrease the area of said port, substantially as set forth.

3. In a filter-valve, a casing, a plate arranged adjacent to the casing to provide a port between the wall of the casing and the plate, means to prevent movement of the plate away from the casing at two separate points, and rollers interposed between said casing and plate and said plate and said means at said points, whereby the roller-engaged portions of the plate may move toward and from each other and the intermediate portion of the plate may move toward and away from the casing to increase and decrease the area of said port, substantially as set forth.

4. In a filter-valve, a casing, an angular plate arranged adjacent to the casing to provide a port between the wall of the casing and the plate, means adjacent to the corners of the plate to prevent movement of said corners away from the casing, and rollers interposed between said casing and plate and said plate and said means, whereby the roller-engaged portions of the plate may move toward and from each other and the intermediate portion of the plate may move toward and from the casing to increase and decrease and area of said port, substantially as set forth.

814,137. ANTHRAQUINON COMPOUND AND PROCESS OF MAKING SAME. MAX H. ISLER, Mannheim, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 31, 1905. Serial No. 285,319.

Claim.—1. The process for the production of dianthraquinonylamin compounds by heating an amido-anthraquinon body with a halogen-anthraquinon body in the presence of a condensing agent.

2. The process for the production of dianthraquinonylamin by heating 1-amido-anthraquinon with 2-chlor-anthraquinon in the presence of a condensing agent.

3. The process for the production of dianthraquinonylamin by heating 1-amido-anthraquinon with 2-chlor-anthraquinon in the presence of copper chlorid and sodium acetate.

4. As new articles of manufacture dianthraquinonylamin compounds which are crystalline and difficultly soluble in most of the ordinary solvents, fairly soluble in anilin and nitrobenzene and soluble in concentrated sulfuric acid and which on being sulfonated yield coloring-matters which dye wool from an acid-bath.

5. As a new article of manufacture dianthraquinonylamin which can be obtained from 1-amido-anthraquinon and 2-chlor-anthraquinon, which new compound is crystalline with a metallic luster and difficultly soluble in most of the ordinary solvents, fairly soluble in anilin and nitrobenzene and soluble in concentrated sulfuric acid yielding a greenish-blue solution and which on being sulfonated yields a coloring-matter which dyes wool from an acid-bath brownish-red shades.

814,138. FENCE-POST. MOSES E. JOHNSON, Pittsburg, Pa. Filed Nov. 7, 1905. Serial No. 286,967.



Claim.—1. The combination of a metal fence-post T-shaped in cross-section, and a metal anchor embodying diverging sheet-metal wings disposed edgewise vertically and a body part connecting the wings and fastened flatwise to the flange of the post.

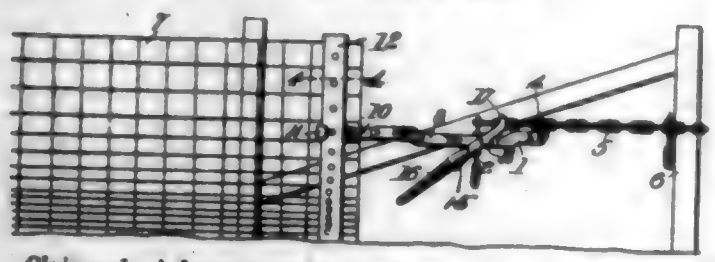
2. The combination of a metal fence-post T-shaped in cross-section, and a sheet-metal anchor embodying two sections each having diverging wings disposed edgewise vertically and a body part connecting said wings, the body parts of the anchor-sections being fastened to the flange of the post at opposite sides by the same fastenings.

3. The combination of a metal fence-post T-shaped in cross-section, and a sheet-metal anchor embodying diverging wings disposed edgewise vertically and a body part connecting the wings and fastened to the flange of the post and having a shouldered engagement with the body of the post.

4. The combination of a metal fence-post T-shaped in cross-section, and a sheet-metal anchor embodying diverging wings disposed edgewise vertically and a body part connecting the wings and fastened to the flange of the post said body part being angular and secured in the angle between the body and flange of the post.

5. The combination of a metal fence-post T-shaped in cross-section, and a sheet-metal anchor embodying a body part fastened to the flange of the post and wings disposed edgewise vertically and extending outward from the body and standing oblique with respect to the body and flange of the post.

814,139. WIRE-FENCE STRETCHER. MOSES B. JOHNSON, Pittsburg, Pa. Filed Dec. 11, 1905. Serial No. 291,310.

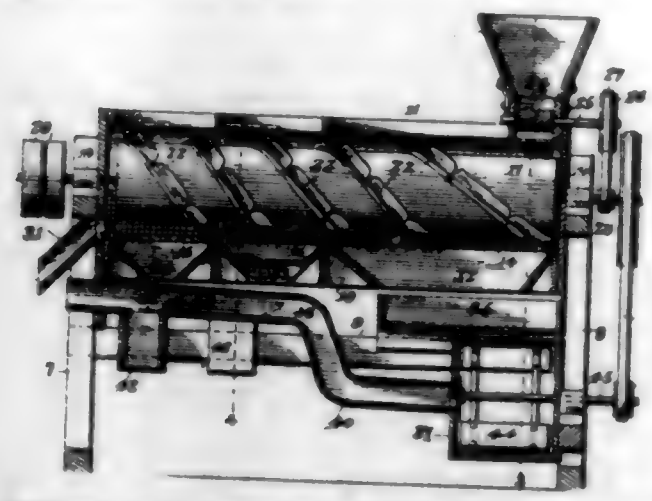


Claim.—1. A fence-stretching tool comprising a main holding-bar provided at one end with a laterally-offset bifurcated catch-claw, and a stretching-lever arranged in crossing relation to the holding-bar and pivoted thereto at an intermediate point, said lever being provided at one end with a bifurcated fulcrum-claw projecting beyond the same side of the holding-bar as the claw of the latter.

2. A fence-stretching tool comprising a main holding-bar having an intermediate offset portion, and at one end provided with a laterally-offset catch-claw, and a stretching-lever having a slotted portion embracing the intermediate offset portion of the holding-bar and pivoted thereto, said lever being provided at one end with a fulcrum-claw projecting beyond the same side of the holding-bar as the claw of the latter.

3. A wire-fence stretcher comprising a chain, a main holding-bar carrying at one end a member for engaging with a support and at its other end with a laterally-offset catch-claw for engagement with the chain, a stretching-lever arranged in crossing relation to the holding-bar and provided at one end with a fulcrum-claw for engagement with the chain, and means for holding the lever in a partly-swung position.

814,140. CHOP-GRADER. JULIUS S. JORDAN, Sidney, S. C. Filed Oct. 11, 1904. Serial No. 228,073.



Claim.—1. In a chop-grader, the combination with a concave bed comprising screens having meshes of different sizes, of a rotatable body located thereover, a combined brush and conveyer-worm carried by the body and coacting with the different screens, said worm comprising a core formed of cordage secured spirally upon the body, and a spiral flexible flap secured and disposed alongside the core, said flap covering the core, and having its free margins brushing the screens during the rotation of the body.

2. In a chop-grader, the combination with a screen-bed, of a rotatable body located thereover, and a worm carried by the body and coacting with the bed, said worm including a flap extending continuously a plurality of times about the body and comprising flexible sections disposed substantially end to end and extending in a continuous spiral about the body from end to end thereof, said sections being each secured along one longitudinal margin to the body and having independent free longitudinal margins that brush against the screen-bed during the rotation of the body.

3. In a chop-grader, the combination with a concave bed comprising screens having meshes of different sizes, of a rotatable body located thereover, and a combined brush and conveyer-worm carried by the body and coacting with the different screens, said worm comprising a flexible core secured spirally upon the body, and a flap comprising flexible sections disposed substantially end to end and extending in a continuous spiral about the body, said sections covering the core and having independent free margins that brush against the screens during the rotation of the body.

4. In a chop-grader, the combination with a concave bed comprising screens having meshes of different sizes, of a rotatable body located over the bed, and a worm secured to the body and comprising a core formed of cordage that is wrapped spirally upon the body and a spiral flap comprising sections of flexible material, each section being secured at one edge to the body and having their opposite free edges in engagement with the screens.

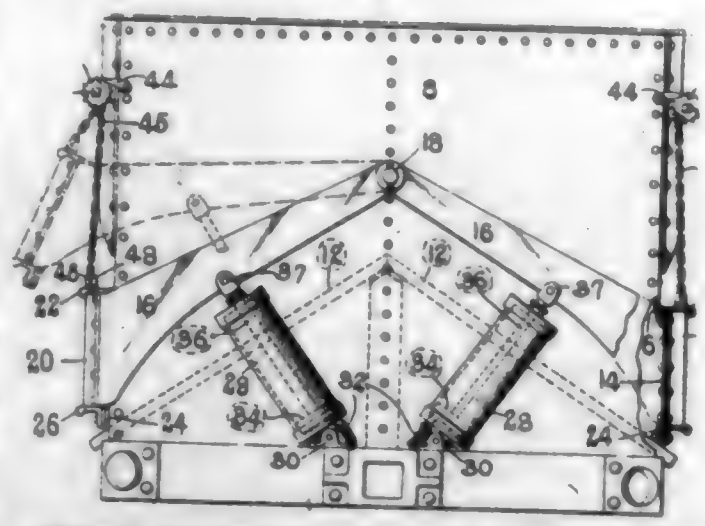
5. In a chop-grader, the combination with a screen having alined portions provided with meshes of different sizes, of means for effecting the passage of material thereover and therethrough, a plurality of separate air-conduits extending beneath the screen and separate therefrom, said conduits having top and bottom walls beneath the screen, said walls being provided with openings, means for directing material that passes through certain of the screen portions respectively to the different top openings and thereby across the conduits, and means for creating air-currents longitudinally through the conduits and transversely of the streams of material dropping through the openings.

6. In a chop-grader, the combination with a screen having portions provided with meshes of different sizes, of means for effecting the passage of material thereover and therethrough, a plurality of separate air-conduits extending longitudinally beneath the screen and in spaced relation thereto, hoppers arranged beneath certain of the screen portions and delivering the material that passes therethrough transversely of the conduits, and means for creating air-currents longitudinally through said conduits and transversely of the streams of material delivered by the hoppers.

7. In a chop-grader, the combination with a screen-bed having portions provided with meshes of different sizes, of means for passing material over said bed, a fan located beneath the bed, separate conduits joined to the fan and extending longitudinally beneath the bed, said conduits having openings in their top and bottom walls, and hoppers disposed beneath certain portions of the bed and having discharge ends located over the upper openings of the conduits, said hoppers being interposed between said conduits and the screen-bed.

8. In a chop-grader, the combination with a body, of a screen-bed located therein and having portions provided with meshes of different sizes, hoppers located beneath said portions, a fan disposed beneath the bed in spaced relation thereto, conduits extending longitudinally beneath the bed and having inlet-openings communicating with the discharge ends of certain of the hoppers, oppositely-extending discharge-spouts for the fan, a device for closing either of said spouts, and a reversible chute detachably supported on the body above the fan and arranged beneath one of the hoppers that does not coact with the conduits.

814,141. DUMP-CAR. GEORGE I. KING, Middletown, Pa. Filed Nov. 24, 1905. Serial No. 288,944.



Claim.—1. A car comprising sides, ends, openings in the sides of the car adjacent to the floor and extending the full length of the car, a continuous door covering each opening, movable arms carrying said doors, and means for actuating said arms to open the doors; substantially as described.

2. A car having ends, sides, continuous doors extending the full length of the car and covering openings in the sides of the car adjacent to the floor, pivotally-mounted arms carrying said doors, and air-controlled apparatus for actuating said arms to open the doors; substantially as described.

3. A car having sides, ends, continuous doors extending the full length of the car and covering openings in the sides of the car adjacent to the floor, pivotally-mounted arms carrying said doors, rotatable shafts carried by the sides of the car, and connections between said shafts and doors; substantially as described.

4. A car having sides, ends, continuous doors extending the full length of the car and covering openings in the sides of the car adjacent to the floor, arms secured to the opposite ends of each door and pivotally connected to the ends of the car, a compressed-air-operated piston connected to each arm, longitudinally-extending shafts rotatably mounted in bearings on the sides of the car, and connections between said shafts and said doors; substantially as described.

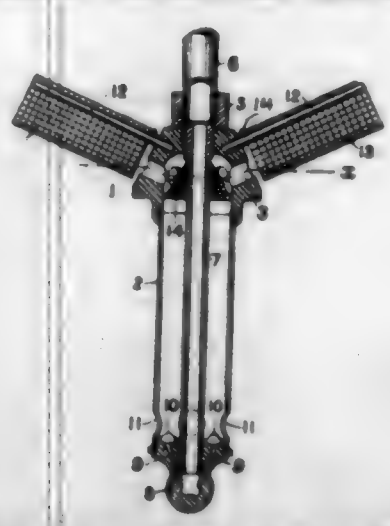
5. A car having sides, ends, continuous doors extending the full length of the car to cover openings in the sides of the car adjacent to the floor, the weight of said doors retaining them in their closed positions, a rotating shaft for each door, a chain connected to said shaft and to the door whereby rotary movement of the shaft winds the chain thereon and opens the door; substantially as described.

6. A car comprising side sills, end sills, plate sides and ends connected to said sills, a ridged floor, continuous doors extending the full length of the car to cover openings in the sides of the car adjacent to the floor, pivotally-mounted arms carrying said doors, cylinders pivotally connected to the end sills, air-supply pipes for said cylinders, and pistons in said cylinders provided with piston-rods that are pivotally connected to the door-carrying arms; substantially as described.

7. A car having ends, sides formed of metal plates and a door extending the full length of the car to cover an opening in the side of the car adjacent to the floor, said door comprising a plate, a continuous bulb-angle having its vertical leg interposed between the side plate of the car and the door-plate and being riveted to said door-plate, a continuous wear-strip secured to the lower inner edge portion of the door-plate, and a continuous bulb-angle connected to the lower outer edge portion of the door-plate; substantially as described.

8. A car having sides, ends, continuous doors of plate-girder construction extending the full length of the car to cover openings in the sides of the car, and arms pivotally connected to the outside ends of the car and carrying said doors; substantially as described.

814,142. INCANDESCENT GAS-LAMP. JOHN G. A. KITCHEN, Lancaster, England. Filed Dec. 6, 1904. Serial No. 235,751.



Claim.—1. In an incandescent gas-lamp the combination of a gas-supply pipe, a gas-chamber having several outlet-nozzles in communication with said pipe, a mixing-chamber above said outlets provided at the bottom end with air-inlet openings and near the upper end with several burner-nozzles inclined upward and radiating from the center line of said mixing-chamber, a carrier-rod above each of said burner-nozzles supported so as to be parallel to their center lines, and incandescent mantles on said rods.

2. In an incandescent gas-lamp several radiating incandescent mantles each supported over its entire length by a rod of refractory material passing longitudinally through the mantle.

3. In an incandescent gas-lamp the combination of carrier-rods inclined to and radiating from the center line of said lamp, incandescent mantles supported on their inner side by said rods, a mixing-chamber and burner-nozzles issuing from the same adapted to direct the flame through said mantles.

4. In an incandescent gas-lamp the combination of a gas-supply pipe, a gas-chamber having several outlet-nozzles in communication with said pipe, a mixing-chamber above said outlets, air-inlet openings in said mixing-chamber near the bottom thereof, burner-nozzles radiating from the center line of said mixing-chamber, a carrier-rod above each of said burner-nozzles, and an incandescent mantle supported on its inner side by each of said carriers.

5. In an incandescent gas-lamp the combination of a descending gas-supply pipe, a pipe-socket screwed thereto having a downward tubular extension, a mixing-chamber screwed upon said socket, said mixing-chamber being provided with several burner-nozzles radiating in an upwardly-inclined direction from the center line thereof and with air-inlets near the bottom, a cap screwed upon the end of said tubular extension adapted to close the bottom of the mixing-chamber, perforations extending from the top of said cap inside the mixing-chamber to below said tubular extension, gas-nozzles fitted to the top of said perforations, radiating carrier-rods above said burner-nozzles, small intermediate gas-outlets between said burner-nozzles, and incandescent mantles supported on said rods.

814,143. TIRE-SHOE. EDWARD KRESS, Albany, N. Y. Filed Sept. 12, 1906. Serial No. 278,077.

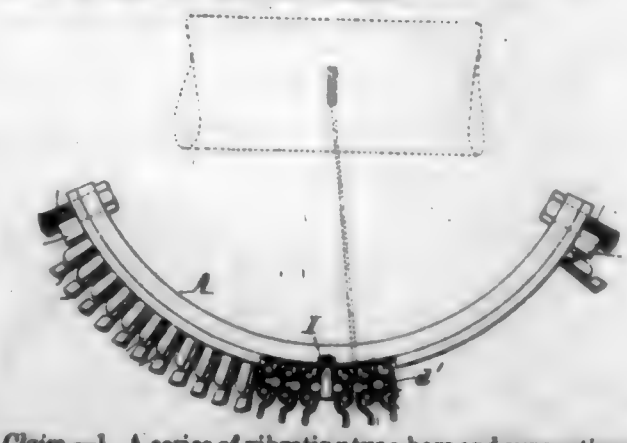


Claim.—1. A protecting-shoe for inflatable tires consisting of alternating layers of non-puncturable and elastic material wound upon each other forming a ring, said ring being arranged to encircle the tire, the wound strips being fastened together substantially as described.

2. A protecting-shoe for inflatable tires consisting of a metallic strip and an elastic strip superimposed by winding and fastened together forming a ring, said ring being arranged to encircle the tire and be held in place thereon substantially as described.

3. A protecting-shoe for the outer or tread surface of wheels consisting of alternating layers of non-puncturable and elastic material formed into strips wider at one end than at the other and formed into a ring by winding them and fastened together at intervals said ring being arranged to encircle the tire and be held in place thereon substantially as described.

814,144. TYPE-WRITING MACHINE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Harvey A. Moyer, Syracuse, N. Y. Filed Sept. 6, 1902. Serial No. 122,352.



Claim.—1. A series of vibrating type-bars and supporting-hangers therefor arranged in pairs, a row of balls inclosed between the type-bar and hanger of each pair, and a lateral connection in the axial line about which the type-bar swings between the type-bar supported by one hanger and the hanger that supports its neighboring type-bar, substantially as set forth.

2. A series of vibrating type-bars, and intermediate supporting-hangers, an interposed circular row of balls acting to pivotally connect each bar and one hanger, and a pointed lateral extension arranged in the exact axial line and having an end bearing between the type-bar supported on one hanger, and the hanger for the next adjoining type-bar of the series, substantially as set forth.

3. A sheet-metal type-bar having a printing character at one end, a circular seat or race for bearing-balls on one side of the other end, and a seat for a single ball opposite the center of the ball-race, substantially as set forth.

4. A sheet-metal type-bar hanger formed of a single strip of sheet metal having a central reverse curve forming an offset loop for a retaining-screw, substantially as set forth.

5. The combination of a support, type-bar hangers laterally adjustable on said support, a vibrating type-bar, a row of bearing-balls interposed between said type-bar and one hanger, and an independent center bearing on the axial line by which the lateral movement of one hanger is limited by the adjoining hanger, substantially as set forth.

6. The combination of a support, type-bar hangers laterally adjustable on said support, a vibrating type-bar, a row of bearing-balls interposed between said type-bar and one hanger, an independent center bearing on the axial line by which the lateral movement of one hanger is limited by the adjoining hanger, and means acting on the axial line of said hangers for adjusting the same laterally, substantially as set forth.

7. A type-bar, and hanger therefor, consisting of two parts of sheet metal, each of uniform thickness provided with depressed cups forming opposable bearing-surfaces for an interposed circular row of balls, substantially as set forth.

8. The combination of a series of vibrating type-bars, and hangers therefor arranged side by side and having opposable ball-bearing faces, a row of balls interposed between the bearing-faces of each type-bar and its hanger and working thereon, a supporting-segment for the hangers arranged wholly outside of the circular ball-seats, and a rocking contact-point between each type-bar and the hanger that supports the adjacent type-bar, substantially as set forth.

9. A group of type-bars and hangers having circular parts and arranged with a type-bar beside each hanger, and a circular row of balls between each type-bar and its hanger, each type-bar having a rocking connection with the adjacent hanger inside of the row of balls on the axial line, substantially as set forth.

10. The combination of a support, a series of vibrating type-bars, and laterally-movable hangers arranged side by side, opposable bearing-surfaces for a circular row of balls between each bar and one hanger, balls between said bearing-surfaces, and independent means for transmitting the lateral movement of one hanger along the axial line to the bar supported by the next hanger, substantially as set forth.

11. The combination of a support, a series of vibrating type-bars, a series of hangers laterally movable on said support and arranged side by side, a circular row of balls arranged in a plane between each type-bar and its hanger, and a contact-bearing between each bar and the next adjoining hanger, the said contact-bearing being on the axial line of the circular row of balls, and at the exact center thereof, substantially as set forth.

12. The combination of a support, a series of laterally-movable hangers, vibrating type-bars supported thereby, a series of center connections and contact-points limiting the lateral movement of the hangers, and attaching devices for said hangers whereby either of the hangers may be detached without disturbing the other hangers, substantially as set forth.

13. The combination with a segment, and group of laterally-movable type-bar hangers thereon, of a fixed stop arranged on the segment between the hangers to limit their movement, substantially as set forth.

14. The combination with a segment, and group of laterally-adjustable type-bars and hangers therefor, of a fixed stop arranged between the hangers on the segment, and an adjusting-screw acting to force the hangers toward the stop, substantially as set forth.

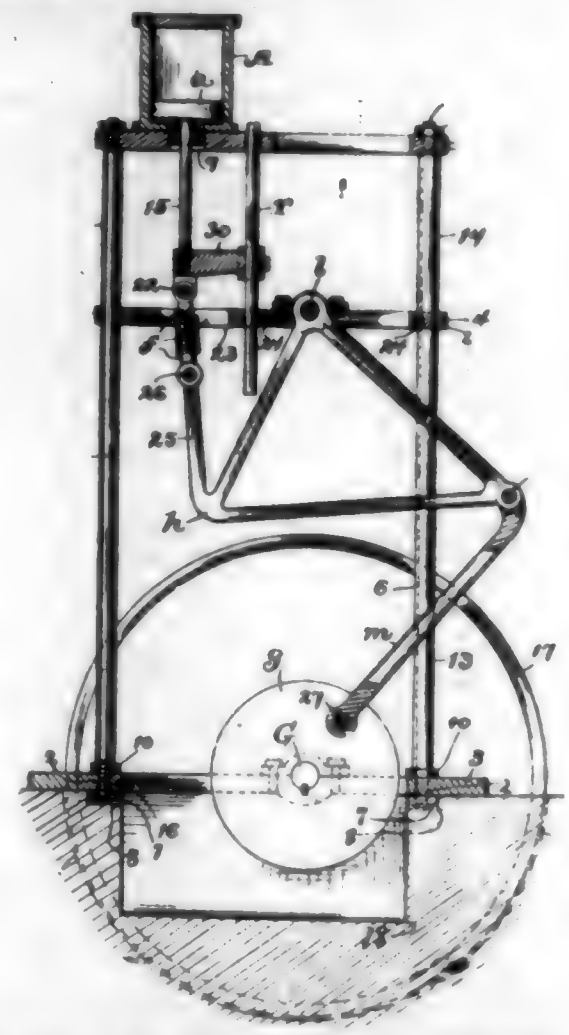
15. The combination with a segment, a series of type-bar hangers supported thereby, and vibrating type-bars, of contact-points arranged exactly on the axial line of the type-bars between the several hangers and adjacent bars, and means for forcing the several bars and hangers into contact, substantially as set forth.

16. The combination of a segment, a series of laterally-movable type-bar hangers supported thereby, a vibrating type-bar supported by each hanger and an interposed row of balls, and a central retaining-ball between each hanger and the bar supported by the next hanger of the series, substantially as set forth.

17. In a type-writing machine, the combination of a pivoted type-bar, and a dust-shield convexed transversely whereby the shield partially incloses and prevents the admission of dust to the pivot-bearing for the type-bar, said type-bar being formed to receive the dust-shield when the bar is in the printing position so that the dust-shield does not interfere with the swinging movement of the bar, substantially as set forth.

18. In a type-writing machine, the combination of a type-bar segment, and a series of type-bars having circular bearing ends projecting from the bars and pivoted on the under side of said segment, said segment having an integral flange which projects directly over and is curved downwardly and partially incloses said circular ends of the type-bars, substantially as set forth.

814,145. **ENGINE.** Isador Lieber, Cleveland, Ohio. Filed Oct. 10, 1904. Serial No. 227,848.



Claim.—1. In an engine of the character indicated, a horizontally-arranged base-plate; a horizontally-arranged top plate located a suitable distance vertically above the base-plate; an intermediate horizontally-arranged plate between and separate from the top plate and base-plate; vertically-arranged posts extending through the said plates and above and below the top plate and base-plate respectively and secured to the base-plate; tubes embracing the posts between the base-plate and the intermediate plate, which tubes rest upon the base-plate and bear the intermediate plate; tubes embracing the posts between the intermediate plate and the top plate and resting upon the intermediate plate and bearing the top plate; means for holding the top plate down upon the last-mentioned tubes; an engine-shaft supported from the base-plate; an upright engine-cylinder mounted on the top plate; the piston in the cylinder, which piston has its rod or stem depending through the lower head of the cylinder, and an upright pitman pivoted at its upper end horizontally and parallel with the shaft to the piston-rod and operatively connected at its lower end with the shaft, and the top plate being slotted to accommodate the location and operation of the piston-rod, the intermediate plate being slotted to accommodate the location and operation of the operative connection between the pitman and the shaft, and the base-plate being slotted to accommodate the location and operation of the crank.

2. In an engine of the character indicated, a horizontally-arranged base-plate; a horizontally-arranged top plate located a suitable distance vertically above the base-plate; an intermediate horizontally-arranged plate between and separate from the top plate and base-plate; vertically-arranged posts extending through the said plates and above and below the top plate and base-plate respectively and secured to the base-plate; tubes embracing the posts between the base-plate and the intermediate plate, which tubes rest upon the base-plate and bear the intermediate plate; tubes embracing the posts between the intermediate plate and the top plate and resting upon the intermediate plate and bearing the top plate; means for holding the top plate down upon the last-mentioned tubes; an engine-shaft supported from the base-plate and provided with a crank; an upright engine-cylinder mounted on the top plate; the piston in the cylinder, which piston has its rod or stem depending through the lower head of the cylinder; an upright pitman pivoted at its upper end horizontally and parallel with the shaft to the piston-rod; a lever supported from the intermediate plate and arranged with its axis parallel with the shaft, which lever is pivoted to the lower end of the pitman horizontally and parallel with and at one side of the axis of the lever, and

a rod or link pivoted to the lever horizontally and parallel with and at the opposite side of the axis of the lever and operatively connected with the crank of the shaft, and the top plate being slotted to accommodate the location and operation of the piston-rod, the intermediate plate being slotted to accommodate the location and operation of the pitman and the lever, and the base-plate being slotted to accommodate the location and operation of the crank.

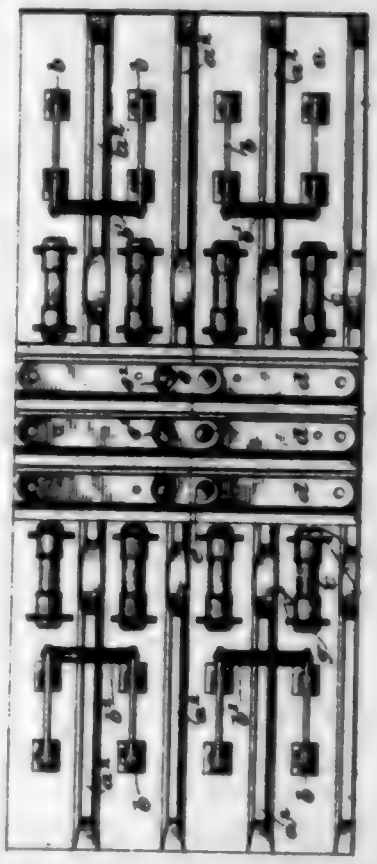
3. In an engine of the character indicated, a horizontally-arranged base-plate; a horizontally-arranged top plate located a suitable distance vertically above the base-plate; an intermediate horizontally-arranged plate between and separate from the top plate and base-plate; vertically-arranged posts extending through the said plates and above and below the top plate and base-plate respectively and secured to the base-plate; tubes embracing the posts between the base-plate and the intermediate plate, which tubes rest upon the base-plate and bear the intermediate plate; tubes embracing the posts between the intermediate plate and the top plate and resting upon the intermediate plate and bearing the top plate; means for holding the top plate down upon the last-mentioned tubes; an engine-shaft supported from the base-plate and provided with a crank; an upright engine-cylinder mounted on the top plate; the piston in the cylinder, which piston has its rod or stem depending through the lower head of the cylinder; an upright pitman pivoted at its upper end horizontally and parallel with the shaft to the piston-rod; an axle located at one side of the travel of the pitman and supported from the intermediate plate, which axle is arranged horizontally and parallel with the shaft; a lever journaled on and depending from the said axle, which lever is pivoted to the lower end of the pitman horizontally and parallel with and at one side of the axis of the lever, and a rod or link pivoted to the lever horizontally and parallel with and at the opposite side of the axis of the lever and operatively connected with the crank of the shaft, and the top plate being slotted to accommodate the location and operation of the piston-rod, the intermediate plate being slotted to accommodate the location and operation of the pitman and the lever, and the base-plate being slotted to accommodate the location and operation of the crank.

4. In an engine of the character indicated, a horizontally-arranged base-plate; a horizontally-arranged top plate located a suitable distance vertically above the base-plate; an intermediate horizontally-arranged plate between and separate from the top plate and base-plate; vertically-arranged posts formed by rods having screw-threaded ends and extending through the said plates and above and below the top plate and base-plate respectively; nuts on the said rods at the upper side and lower side of the base-plate; tubes embracing the rods between the base-plate and the intermediate plate, which tubes rest upon the base-plate and bear the intermediate plate; tubes embracing the rods between the intermediate plate and the top plate and resting upon the intermediate plate and bearing the top plate; nuts on the rods at the upper side of the top plate; an engine-shaft supported from the base-plate and provided with a crank; an upright engine-cylinder mounted on the top plate; the piston in the cylinder, which piston has its rod or stem depending through the lower head of the cylinder, and an upright pitman pivoted at its upper end horizontally and parallel with the shaft to the piston-rod and operatively connected at the lower end with the shaft, and the top plate being slotted to accommodate the location and operation of the piston-rod, the intermediate plate being slotted to accommodate the location and operation of the operative connection between the pitman and the shaft, and the base-plate being slotted to accommodate the location and operation of the crank.

5. In an engine of the character indicated, the stationary framework; the engine-shaft provided with a crank; an engine-cylinder supported from the stationary framework a suitable distance from the shaft; the piston in the cylinder having its rod or stem extending toward the shaft; a pitman pivoted to the piston-rod and extending from the piston-rod toward the shaft; a lever supported from the stationary framework and arranged between the pitman and the shaft with the axis of the lever parallel with the shaft, which lever has an arm projecting toward and pivoted to the pitman horizontally and at one side of and parallel with the axis of the lever; a rod or link pivoted to the lever horizontally at the opposite side of and parallel with the axis of the lever and operatively connected with the crank of the shaft, and a guide-rod arranged at one side of and parallel and operatively connected with the piston-rod, and the stationary framework affording bearing to the said guide-rod.

814,146. **PANEL-BOARD.** ERNEST R. LA MARQUAIS, New York, N. Y. Filed June 8, 1904. Serial No. 211,880.

Claim.—1. A sectional panel-board comprising a plurality of sections, independent bus-bar sections mounted respectively on the panel-board sections and lying contiguous when the sections are assembled, and bridge-pieces extended between and attached to the contiguous ends of the bus-bar sections whereby to effect mechanical connections between the panel-board sections and electrical connections between the bus-bar sections.



2. A sectional panel-board comprising a plurality of sections, independent bus-bar sections mounted respectively on the panel-board sections and lying contiguous when the sections are assembled, and bridge-pieces extended between and attached to the contiguous ends of the bus-bar sections whereby to effect mechanical connections between the panel-board sections and electrical connections between the bus-bar sections, the said panel-board sections having insulating-ribs extending transversely of the sections between and at the sides of the bus-bar sections, and the ribs of one section registering with the ribs of the other section or sections to form continuous protecting-ribs on the panel-board, and the said bridge-pieces being located between the said protecting-ribs.

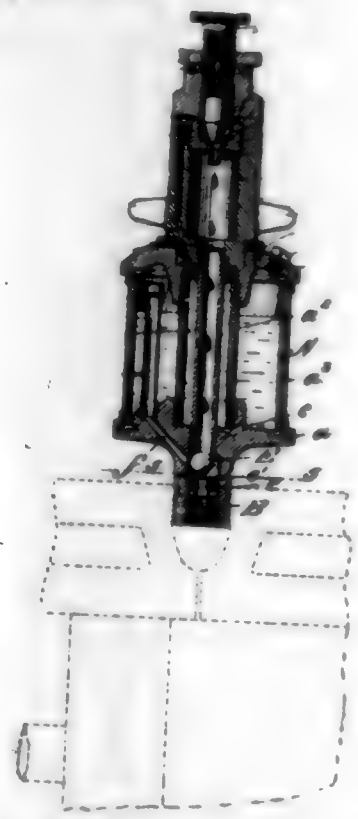
3. A panel-board provided with two oppositely-arranged fuse-holders intended respectively to carry the ends of the fuse, each fuse-holder comprising forks in which the ends of the fuse are received, and contact-springs lying outward from the forks and adapted to engage the ends of the fuse-holders, the forks and springs having tailpieces extending laterally therefrom and lying one over the other, and combined fastening and conducting device engaging said tailpieces and passing into the panel-board.

4. A sectional panel-board comprising a plurality of sections, independent bus-bar sections mounted respectively on the panel-board sections and lying contiguous when the sections are assembled, bridge-pieces extending between and attached to the contiguous ends of the bus-bar sections whereby to effect mechanical connections between the panel-board sections, and electrical connections between the bus-bar sections, fuse-holders and switches attached to the panel-boards at each side of the bus-bars and insulating-ribs a part of which extend transversely of the panel-board sections between and at the sides of the bus-bar sections, and others of which extend longitudinally of the panel-board sections between and at the sides of the said fuse-holders and switches.

814,147. **LUBRICATOR.** FRANK C. LE MESURIER, Buffalo, N. Y., assignor to Sherwood Manufacturing Company, Buffalo, N. Y. Filed June 3, 1905. Serial No. 263,553.

Claim.—1. The combination of a reservoir, a passage for supplying gas-pressure to the reservoir, a sight-tube arranged above the reservoir, an ascending passage for conveying the oil to a point above the sight-tube, a feed-tube for the oil extending from the lower end of said sight-tube down through the reservoir, and an automatic valve controlling said feed-tube, substantially as set forth.

2. The combination of a reservoir, a passage for supplying gas-pressure to the reservoir, a sight-tube arranged above the reservoir, an ascending passage for conveying the oil to a point above the sight-tube, a feed-tube for the oil extending from the lower end of said sight-tube down through the reservoir, an automatic valve controlling said feed-tube, and a regulating-valve for controlling the feed of the oil, substantially as set forth.



3. The combination of a reservoir, a passage for supplying gas-pressure to the reservoir above the oil therein, a sight-tube arranged above the reservoir, a feed-nozzle directed into the upper end of said sight-tube, a regulating-valve controlling said nozzle, an ascending passage for conveying the oil to said feed-nozzle, a feed-tube arranged in line with said sight-tube and extending down through said reservoir, and an automatic valve controlling the lower end of said feed-tube, substantially as set forth.

4. The combination of a reservoir provided at its bottom with a nipple having a discharge-passage for the oil, a passage leading from said discharge-passage for supplying gas-pressure in the reservoir, a hollow column in said reservoir connecting with the latter at its lower end, a sight-tube mounted on said reservoir, a valve-controlled feed-nozzle at the upper end of said sight-tube, an ascending oil-passage leading from said hollow column to said feed-nozzle, a feed-tube connecting the lower end of said sight-tube with said discharge-passage and passing through said hollow column, and an automatic valve controlling said feed-tube, substantially as set forth.

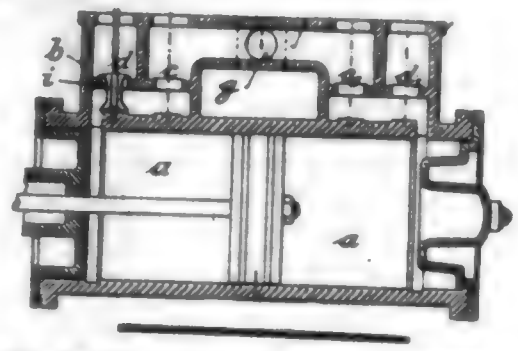
5. The combination of an oil-cup, a passage for supplying gas-pressure to the same, a sight-tube removably mounted on top of said oil-cup, an ascending oil-passage leading from the oil-cup to a point above said sight-tube, a feed-tube leading from the lower end of said sight-tube down through the oil-cup, an automatic valve controlling said feed-tube, said sight-tube when removed uncovering said ascending oil-passage and an air-vent hole in the oil-cup to permit filling of the latter, substantially as set forth.

6. The combination of a reservoir, a passage for supplying pressure to the reservoir, a check-valve for said passage, a sight-tube arranged above the reservoir, an ascending passage for conveying the oil to a point above the sight-tube, a feed-tube for the oil extending from the lower end of said sight-tube down through the reservoir, and an automatic valve controlling said feed-tube, substantially as set forth.

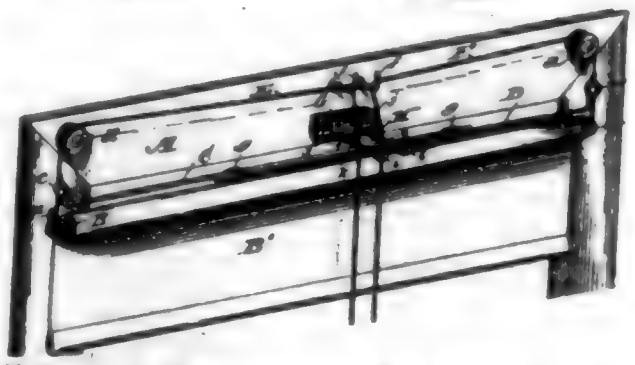
814,148. CYLINDER FOR STEAM-LOCOMOTIVES. HUGO LENTZ, Berlin, Germany. Filed Apr. 13, 1905. Serial No. 255,493.

Claim.—1. A steam-cylinder for hot-steam locomotives, comprising a body, a valve-box cast thereon and provided at each end with an inlet and an outlet valve casing, partitions for separating the casings, puppet-valves in the casing movable in the direction of the axis of the same, the two inlet-valve casings being connected by the live-steam port, and all the valve-casings lying in a line parallel with the longitudinal axis of the cylinder, substantially as described.

2. A steam-cylinder comprising a body and a valve-box provided with closed partitions, and inlets between the partitions, an outlet or exhaust between each partition and the end of the box, inlet puppet-valves between the partitions, and outlet puppet-valves outside said partitions.

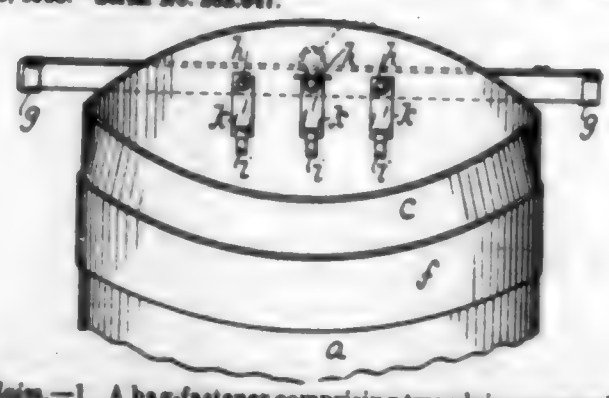


814,149. SHADE-HANGER. OLIVER LINEBARGER, Council Bluffs, Iowa. Filed June 19, 1905. Serial No. 266,022.



Claim.—In combination with a suitable hanger for supporting a shade-roller and operating-cords therefor, of a spring-wire clamping device comprising outwardly-projecting horizontal arms and an inwardly-extending clamping-yoke for holding the operating-cords between the arms and yoke, and loops at the outer extremities of the arms and yoke to receive the cords when released from the clamping-yoke, substantially as and for the purpose set forth.

814,150. BAG. THOMAS MANAHAN, New York, N. Y. Filed Oct. 13, 1905. Serial No. 282,647.



Claim.—1. A bag-fastener comprising two plain or smooth slats or bars and clamps immovably fixed to one of the bars and adapted to releasably support the other bar, combined with a bag secured to one of the bars and left free from or unattached to the other bar.

2. A bag having clamping bars or slats of plain or smooth form placed against the outside of the mouth portion of the bag, one of the slats being permanently fixed to the bag and provided with upwardly-opening clamps fixed in slits in the slats, and the other slat being adapted to be slipped into and removably held by the clamp.

3. A bag having closing or locking bars or slats placed against the outside of the mouth portion of the bag, one of the slats being removably supported or connected to the other slat, and one side of the mouth portion of the bag being secured at its inner or central portion to one of the slats so as to leave the edges or ends clear for the bag-mouth to gape or open a suitable extent, said last-named slat having fixed upwardly-opening clamps secured thereto for engaging the removable slat.

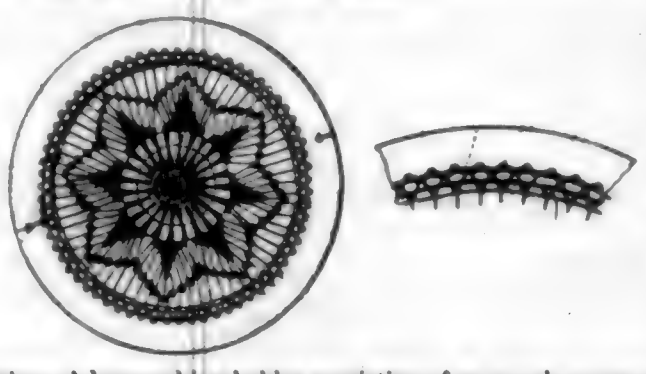
4. A bag-fastener comprising two plain or smooth slats or bars and clamps immovably fixed to one of the bars and adapted to releasably support the other bar, combined with a bag secured to one of the bars and left free from or unattached to the other bar, hooks suspended from the upper insids of the bag at the back part thereof, and a bar preferably of metal having nail-like teeth penetrating through the hook-suspenders or hooks and the bag and into the rigid permanent back bar to hold the hooks and stiffen and strengthen the upper back part of the bag.

5. A bag having separate mouth-flaps, a strengthening-band below the flaps, a slat or bar secured to the band and bag at one side

of the latter, clamps permanently fixed to and carried by the slat, and a second bar or slat carried by the clamps, said bag having the flaps folded outside the band and confined between the slats.

6. A rigid slat, a bag having its upper part for a portion of its length only permanently fastened to such rigid slat, clamps with upwardly-opening mouths permanently secured at the respective ends of the slat, and a second slat adapted to enter the clamps to cause the bag-mouth to be inclosed between the slats.

814,151. LACE-MAKING HOLDER. CATHERINE MANTE, Peoria, Ill. Filed Mar. 7, 1905. Serial No. 248,926.



Claim.—A lace-making holder consisting of an annular or open frame provided with a continuous series of stringing-holes arranged in proximal relation to the inner edge of the frame, said frame being further provided with supplemental fastening perforations located outside of the plane of the stringing-holes, and a series of work-holding loops fastened in the stringing-holes and affording points on which the lacework is fastened and worked.

814,152. WOVEN FABRIC FOR LUBRICATING-PADS. BARNEY MOONEY, York, England, assignor of one-half to The Armstrong Oiler Company, Limited, York, England. Filed May 22, 1905. Serial No. 261,653.

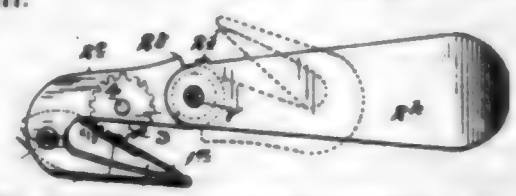


Claim.—1. In a woven fabric for lubricating-pads for the journals of railway and other axles and shafts; the combination with a woven groundwork of weft and warp textile threads, and pile-threads upon the top surface to be placed in contact with the journal; of feeder-threads extending in the direction of the warp-threads, and passing loosely over the top of both the warp and weft threads, so as to lie unconstricted at the roots of the pile, and then extending downward through said groundwork between the weft-threads, and forming beneath the same pendant-feeders of the requisite length, substantially as set forth.

2. In a woven fabric for lubricating-pads for the journals of railway and other axles and shafts; the combination with a woven groundwork of weft and warp textile threads and pile-threads upon the top surface to be placed in contact with the journal; of feeder-threads extending in the direction of the warp-threads and passing loosely over the top of both the warp and weft threads, so as to lie unconstricted at the roots of the pile, then extending downward through said groundwork between the weft-threads, and forming beneath the same pendant-feeders of the requisite length, then passing upward between the weft-threads, extending loosely over the top of the groundwork of the fabric for a distance, then passing downward again to form other pendant-feeders, and so on, substantially as set forth.

3. In a woven fabric for lubricating-pads for the journals of railway and other axles and shafts; the combination with a groundwork of weft and warp threads, and cut pile-threads upon the top surface which is to be placed in contact with the journal, the pile-threads being discontinued for a space across the fabric parallel with the axis of the journal to which the pad is to be applied, of feeder-threads extending in the direction of the warp-threads, said feeder-threads passing over the top of the fabric at the roots of the pile, then extending downward through the ground fabric, and forming beneath the same pendant-feeders, then passing upward through said ground fabric, again extending over the top of the same at the roots of the pile, then downward again through the ground fabric at the point where the pile-threads are discontinued, passing beneath and in contact with the under surface of the fabric at this point, again upward through the same on the other side of said space where the pile-threads are discontinued, then over the top of the ground fabric and again downward through the same, to form other depending feeders, then upward again through the ground fabric, and so on, substantially as described.

814,153. TWINE AND THREAD CUTTER. HARRY MYER and MARTIN KORNICKS, New York, N. Y. Filed Mar. 1, 1905. Serial No. 247,877.



Claim.—1. A cutting implement comprising a handle provided with a blade and a toothed roller opposed to the cutting edge of the blade, substantially as described.

2. A cutting implement comprising a handle provided with a blade and a toothed roller provided with a peripheral groove opposed to the cutting edge of the blade, substantially as described.

3. A cutting implement comprising a handle provided with a back member extending from one end of the handle toward the opposite end thereof at a distance from the main part of the handle providing a space open at the inner end to receive twine, and a blade carried by said back member having its cutting edge facing the handle portion to receive twine passed into said space, substantially as described.

4. A cutting implement comprising a handle provided with a back member extending from one end of the handle toward the opposite end thereof at a distance from the main part of the handle providing a space to receive twine, a blade carried by said back member having its cutting edge facing the handle portion, and a roller opposed to the blade, substantially as described.

5. A cutting implement comprising a handle provided with a back member extending from one end of the handle toward the opposite end thereof at a distance from the main part of the handle providing a space to receive twine, a blade having its back bearing against said back member and its cutting edge at an angle to said back facing the main handle portion, and means for adjusting the blade along the back member, substantially as described.

6. A cutting implement comprising a handle provided with a back member extending from one end of the handle toward the rear portion thereof at a distance from the main part of the handle providing a space to receive twine, a blade having its back bearing against said back member and its cutting edge at an angle to said back facing the main handle portion, and means for adjusting said blade along said back, substantially as described.

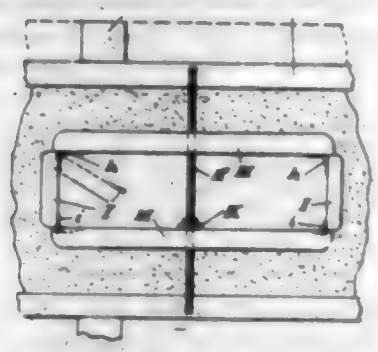
7. A cutting implement comprising a handle provided with a back member extending from one end of the handle toward the rear portion thereof at a distance from the main part of the handle providing a space to receive twine, a blade having its back bearing against said back member and its cutting edge at an angle to said back facing the main handle portion, and a roller opposed to the cutting edge of the blade, substantially as described.

8. A cutting implement comprising a piece of metal folded to from two opposed sides of a handle having a space between them, a blade secured between said sides, and a roller pivoted between said sides opposite the cutting edge of the blade, substantially as described.

9. A cutting implement comprising a hand part having two sides provided with a space between them, a cutter part pivotally connected with the hand part to fold between its sides, a blade carried by the cutter part, and a roller carried by the cutter part opposed to the cutting edge of said blade, substantially as described.

10. A cutting implement comprising a hand part having two sides provided with a space between them, a cutter part having two sides forming a space between them and pivotally connected with the hand part to fold between its sides, a blade secured between the sides of the cutter part, and a roller pivotally carried between the sides of the cutter part and opposed to the blade, substantially as described.

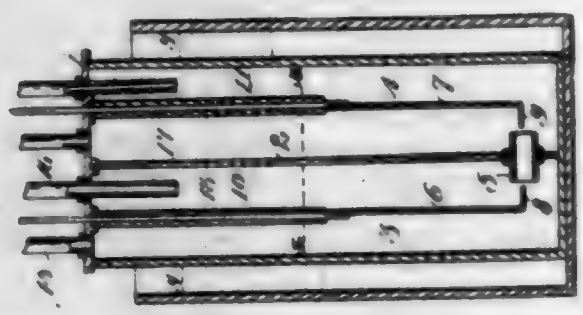
814,154. MOLD FOR CEMENT BUILDING-WALLS. ALEXANDER MCCARON, St. Joseph, Mo. Filed Mar. 17, 1905. Serial No. 250,680.



Claim.—1. The combination with a molding-flask, of the sides of a plurality of cement building core-boxes provided with holes, the ends within the edges of said sides, the hinges and hooks on said ends, a bar pivoted centrally on a side of each box, and the rods engaging with the holes in the sides of said boxes the projecting ends of said rods serving as supports for the core-boxes through engagement with said flask, substantially as set forth and shown.

2. The combination in a cement building core-box, of sides provided with holes, the ends set within the edges of said sides, the extensions on top the end pieces, the hinges and hooks on said ends, the bar pivotally attached centrally to one of said sides adapted to form lock connection with the ends of the box to prevent cement pressing said ends inward, the rod passing through the holes in the sides its ends projecting to engage with supports, substantially as set forth and shown.

814,155. APPARATUS FOR DECOMPOSING WATER BY ELECTROLYSIS. WILLIAM F. M. MCCARTY, Rocky Ridge, Md., assignor to Thomas A. Darby, trustee, New York, N. Y. Filed Nov. 8, 1904. Renewed Aug. 14, 1905. Serial No. 274,240.



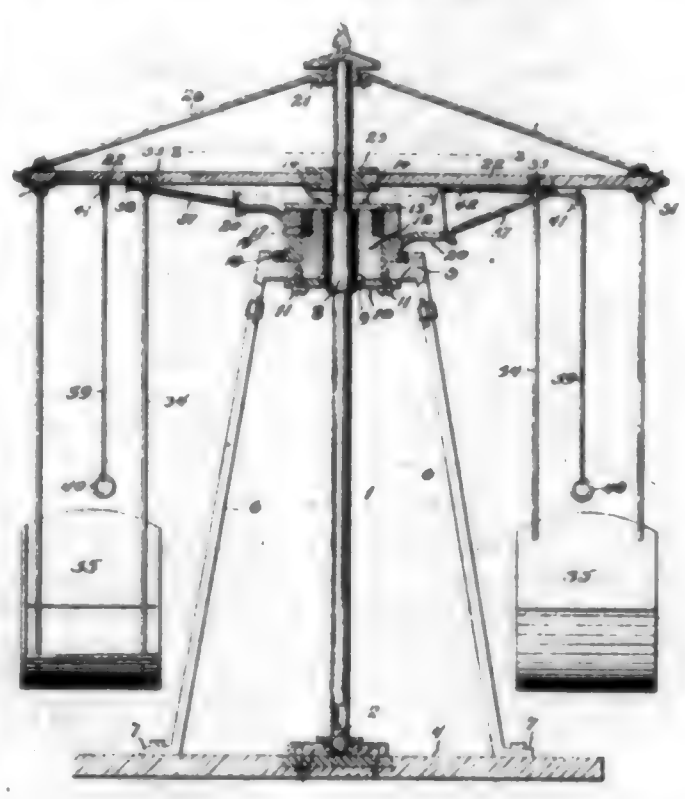
Claim.—1. In an apparatus of the class described, in combination with a tank, a partition mounted therein and dividing the tank into two chambers, said partition being provided with a line of apertures, and an electrode mounted in each compartment and connected with a suitable source of current-supply and having a terminal discharge portion extending at right angles to the body of the electrode located opposite and in line with all of the apertures in said partition.

2. In an apparatus of the class described, in combination with a tank, a partition extending from top to bottom thereof and dividing the tank into two chambers, said partition being provided near its lower end with a line of apertures, and an electrode suspended in each chamber and connected with a suitable source of current-supply and having a terminal discharge portion extending at right angles to the body of the electrode located opposite and in line with all of the apertures in said partition.

3. In an apparatus of the class described, in combination with a tank, a partition extending from top to bottom thereof and dividing the tank into two chambers, said partition being provided near its lower end with a series of apertures, a glass tube mounted in each aperture and extending into the respective chambers, and an electrode mounted in each chamber and connected with a suitable source of current-supply and having a terminal discharge portion located directly opposite and in close proximity to the ends of said tubes.

4. In an apparatus of the class described, in combination with a tank, a partition extending from top to bottom thereof and dividing the tank into two chambers, said partition being provided near its lower end with a series of apertures, a tube mounted in each aperture and projecting into the respective chambers, and an electrode suspended in each chamber and connected with a suitable source of current-supply, each electrode comprising a plate of suitable material extending approximately from side to side of the tank to present a large superficial area and having its lower end portion bent inward at right angles and located in close proximity to and directly opposite the ends of the tubes.

814,156. ROTARY SWING. WILLIAM R. MCKNIGHT, Columbus, Ohio. Filed Sept. 6, 1904. Serial No. 223,315.



Claim.—1. A rotary swing having a plurality of carriages mounted thereon and means for rotating the swing from any of the several carriages, said means comprising a ring-plate, a rotatable shaft passing therethrough, a clutch-collar supported on the ring-plate about the shaft and rings disposed about the collar adapted to be independently or simultaneously operated.

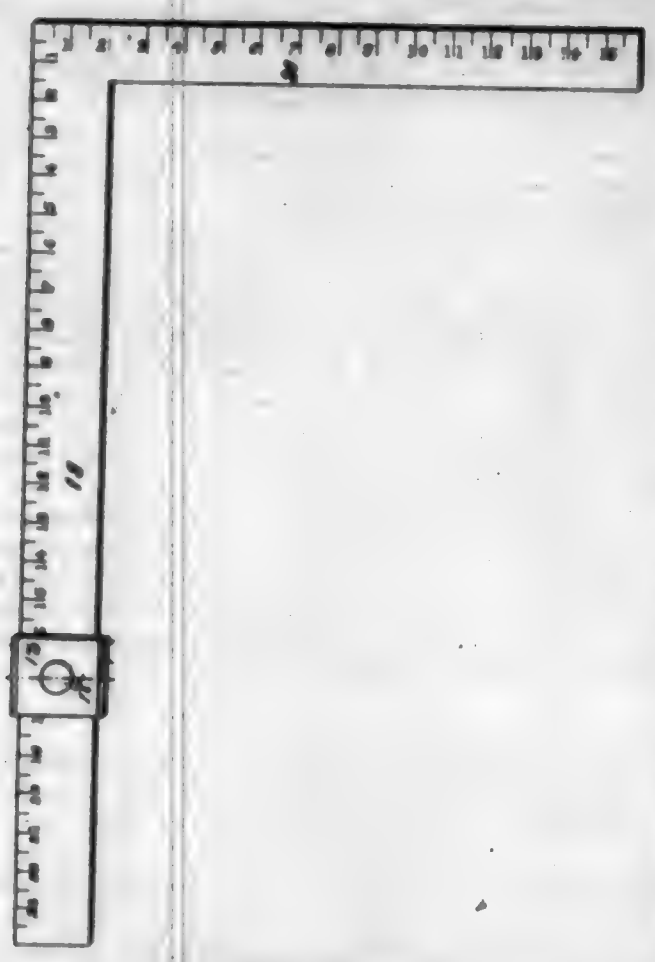
2. A rotary swing having a plurality of carriages mounted thereon, and means for rotating the swing independently or simultaneously from the several carriages, said means comprising a fixed ring-plate, a clutch-collar having alternately-disposed recesses, roller-bearings disposed in the recesses, rings disposed about the collar and adapted to independently engage with the roller-bearings of the alternate set of recesses, arms projecting from the rings, means for normally holding the rings in position connected with the arms and means connected with the arms for throwing the rings into clutch engagement with the collar.

3. A rotary swing having a plurality of arms with carriages mounted thereon, a fixed clutch-collar having formed about its periphery a plurality of series of recesses, the recesses of alternate series being alternately disposed, rollers disposed in the recesses, a plurality of rotatable rings disposed about the collar and each adjacent to a series of recesses, arms projecting from the rings and means connected with the said arms for throwing the rings into clutching engagement with the collar from each of the several carriages independently of any other.

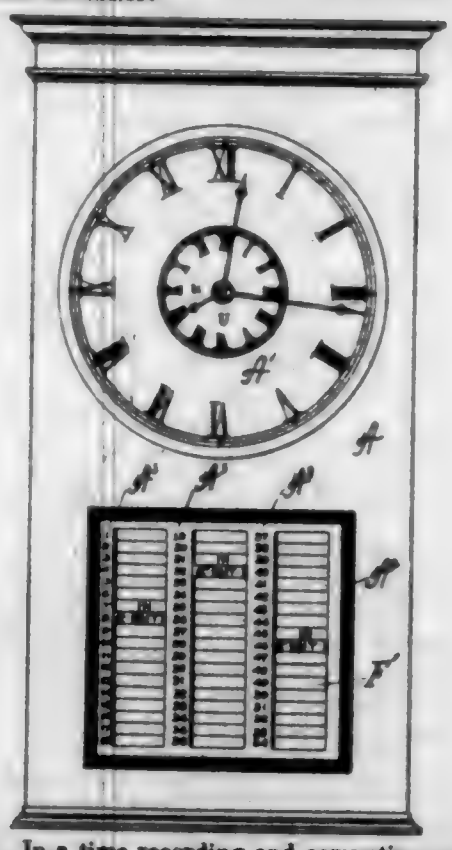
814,157. ATTACHMENT FOR STEEL SQUARES. THOMAS F. NORFOLK, Ottumwa, Iowa. Filed Mar. 6, 1905. Serial No. 248,527.

Claim.—In combination with a steel square, an attachment therefor consisting in its entirety of a rectangular base-plate having each of its ends extending beyond the sides of the square for an equal distance and being formed with transverse slots at points alining with the sides of the square, a cap having each of its ends turned downwardly and projecting in and secured to said base in said slots thereof, and a set-screw extending through the cap-plate, the upper face of the base-plate thereby being in the same horizontal plane as

the under face of the square, said ends of the cap-plate forming right-angular corners in conjunction with said upper face of the base-plate.



814,158. **RECORDING AND COMPUTING MECHANISM.** JOHN W. HUNAMAKER, Chicago, Ill., assignor to Hunamaker Manufacturing Company, Chicago, Ill., a Corporation of South Dakota. Filed Aug. 25, 1904. Serial No. 222,117.



Claim.—1. In a time recording and computing mechanism, a plurality of recording and computing wheels, synchronous mechanism operating said wheels, means for automatically connecting one with the other at predetermined periods and means for automatically disconnecting them at other predetermined periods, substantially as described.

2. In a time recording and computing mechanism, the combination of the computing-wheels raised figures positioned vertically across the peripheral face of said computing-wheels, means for actuating said wheels to predetermined rotation, and means for automatically computing the time, substantially as described.

3. In a time recording and computing mechanism, a plurality of sets of time recording and computing wheels, raised figures positioned vertically across the peripheral face of the recording and computing wheels each set of wheels mounted in longitudinal alinement, means for actuating said wheels at predetermined intervals, and means for automatically recording and computing the time upon said wheels during the said intervals, substantially as described.

4. In a time-recorder, a supporting-frame for the time recording and computing mechanism, a plurality of sets of recording-wheels mounted in columns in said frame, raised figures disposed vertically across the peripheral face of said wheels, and adapted to be read from left to right in the column, substantially as described.

5. In a machine of the class described, a supporting-frame for the recording and computing mechanism, a plurality of sets of recording and computing wheels mounted in said frame, each set of said wheels mounted in longitudinal alinement, raised figures positioned vertically at regular intervals across the peripheral face of said wheels and adapted to be read from right to left from one wheel to the next, substantially as described.

6. In a machine of the class described, a sectional supporting-frame for the recording and computing mechanism, vertical number-columns upon the front of said frame, longitudinal frame-pieces *b* between each set of recording and computing wheels adapted to support the arbors upon which said wheels are mounted, and to form partitions between the different sets of mechanisms, substantially as described.

7. In a machine of the class described, a sectional supporting-frame for the recording and computing mechanism, a plurality of sets of recording-wheels mounted in columns in said frame, an arbor connected through a train of gears with the striking-train of a clock-movement, said arbor adapted to transmit motion through another train of gears to each set of the recording and computing wheels, substantially as described.

8. In a time-recorder, a sectional supporting-frame for the time-recording mechanism, a plurality of sets of recording and computing wheels mounted in columns in said frame, synchronous mechanism for automatically operating said recording and computing wheels, and lever mechanism adapted to connect and disconnect the computing-wheels and the operating mechanism, substantially as described.

9. In a time-recorder, a sectional supporting-frame for the time-recording mechanism, a plurality of sets of recording and computing wheels mounted in columns in said frame, synchronous mechanism for automatically operating said recording and computing wheels, and mechanism for disconnecting any individual set of wheels from the operating mechanism at regular periods, substantially as described.

10. In a time recording and computing mechanism, a plurality of recording and computing wheels, said wheels mounted in longitudinal alinement and adapted to be read from right to left in combination with a clock mechanism operating in conjunction therewith, a cam-wheel mounted upon a clock-actuated shaft, the periphery of said wheel adapted at predetermined times to be in contact with the operative mechanism of the clock-movement, whereby the recording and computing mechanisms are automatically started or stopped, substantially as described.

11. In a recording and computing mechanism, a set of recording and computing wheels for each employee registering in combination with a clock mechanism adapted to operate in conjunction therewith, a toothed wheel mounted upon the minute-wheel spindle of said clock, the teeth upon said wheel representing predetermined fractional parts of an hour, said wheel adapted to be moved the space of one tooth at every fractional part of an hour represented thereby and to transmit said movement to the computing mechanism, substantially as described.

12. In a recording and computing mechanism, the combination of the recording and computing wheels with a clock-movement for operating the same, means for locking said wheels when they have reached the limit of their recording and computing capacity, an arbor connected through a train of gears with each set of recording and computing wheels, said arbor also having connection with the striking-train of the clock mechanism, whereby through the winding of said spring of the striking-train the recording and computing wheels are reversed in their movement and reset to zero position, substantially as described.

13. In a recording and computing mechanism, a plurality of sets of recording and computing mechanisms, a clock mechanism adapted to transmit movement to said recording and computing mechanism, means for automatically starting and stopping said mechanisms, and means for locking said mechanism when it has reached the limit of its computing capacity, and means connected

with the striking-train of the clock mechanism for resetting the recording and computing mechanisms to zero position, substantially as described.

14. In a device of the class described, a plurality of sets of recording and computing mechanisms, a clock mechanism adapted to transmit movement to said recording and computing mechanisms, means for automatically starting and stopping said mechanisms, means for locking the computing-wheels in position when they have registered the limit of their capacity, and means connected with the striking-train of the clock mechanism adapted to reverse the movement of any one or all of said sets of recording and computing mechanisms to zero position, substantially as described.

15. In a device of the class described, a case containing the recording and computing mechanism, and clock mechanism for operating the same, said case having in front an opening through which are exposed columns of numbers and name-plates representing each employee registering thereon, lever-arms corresponding with each number in said columns, each lever adapted when moved away from or toward its corresponding number to start or stop the recording and computing wheels operating in conjunction therewith, substantially as described.

16. In a device of the class described, a case containing the recording and computing mechanism and clock mechanism for operating the same, an opening through the front of said case through which are exposed columns of figures representing the number of each employee registering thereon, and lever-arms corresponding with each number in said columns, said levers adapted to actuate a bell-rod and sound an alarm each time it is operated to connect or disconnect the registering mechanism with the operating mechanism, substantially as described.

17. In a device of the class described, the combination with the time recording and computing wheels and the clock mechanism adapted to operate the same, cam-wheels mounted upon the hour-wheel shaft which automatically regulates the time for starting and stopping said recording and computing wheels at predetermined intervals during each day, substantially as described.

18. In a device of the class described a supporting-frame for the recording and computing mechanism, number-columns in proximity to each set of computing mechanisms, said columns having raised figures thereon corresponding to each set of recording and computing mechanisms and indicating the number by which each employee is registered, and recording and computing wheels having raised figures thereon so mounted in the frame that the numbers presented in impression position upon the wheels are on a plane with the numbers upon the number-columns, substantially as described.

19. In a device of the class described, a supporting-frame for the recording and computing mechanism having number-columns with the numbers in raised and vertical position thereon, the figures presented in impression position by the wheels of the recording and computing mechanism being on a plane with those upon the number-columns, a paper-holding device mounted upon the top of the said supporting-frame and adapted to hold a sheet or sheets of paper upon which an impression of the numbers is taken, substantially as described.

20. In a computing mechanism the combination of a plurality of sets of recording and computing wheels mounted in columns in a supporting-frame, each set of said wheels operating in longitudinal alinement, substantially as described.

21. A computing mechanism, comprising in combination, sets of recording and computing wheels for each individual registering, said wheels mounted in a supporting-frame, means for operating the units-wheels predetermined distances of rotation, and means for transmitting the record made upon the units-wheels to the computing-wheels, substantially as described.

22. In a computing mechanism, the combination of a supporting-frame having disposed therein the separate set of recording and computing wheels for each individual registering, means for actuating the units-wheels a predetermined number of times, and means for transmitting to the computing-wheels the number of times the units-wheel has been actuated.

23. A computing mechanism comprising the combination of a supporting-frame having disposed therein the recording and computing wheels, means for actuating the units-wheel a predetermined number of times, means for transmitting to the computing-wheels the number of times the units-wheel has been actuated, and means for reversing the movement of said wheels when they have reached the limit of their recording capacity whereby they are set to zero position, substantially as described.

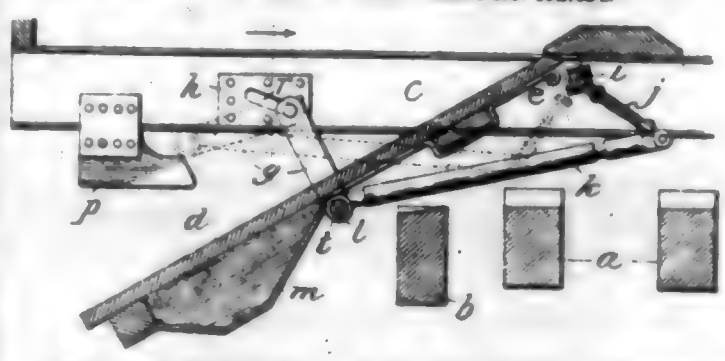
24. In a computing mechanism, the combination of the recording and computing wheels with an arbor having a plurality of gear-wheels frictionally mounted thereon, means for actuating said arbor whereby movement is transmitted to said computing-wheels, substantially as described.

25. In a computing mechanism, a plurality of sets of recording and computing wheels mounted in columns in a supporting-frame, an arbor vertically disposed in each column of said frame and means for actuating the same, a plurality of gear-wheels frictionally mounted upon said arbor, one of said gear-wheels adapted through a train of gears to transmit motion to each set of the recording and computing wheels, substantially as described.

26. In a computing mechanism, a plurality of sets of recording and computing wheels arranged in columns in a supporting-frame, a power-transmitting arbor having a plurality of gears frictionally mounted thereon disposed in each of said columns, means for actuating said arbor, whereby through a train of gears the recording and computing wheels are operated, means for locking said wheels when they have reached the limit of their recording capacity, and means for reversing the movement of said wheels to reset them to zero position, substantially as described.

27. In a computing mechanism, the combination of the computing-wheels with a friction-arbor having circumferential recesses therein, gear-wheels mounted upon said arbor, said gear-wheels having split sleeves, one edge of which fits into said recesses, and means for actuating said arbor whereby movement is transmitted to said computing-wheels, substantially as described.

814,159. DUMP-CAR. SPENCER OTIS, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D., a Corporation of South Dakota. Filed Feb. 8, 1904. Serial No. 192,624.



Claim.—1. In a dump-car of the class described, the combination of a supporting-frame portion, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner ends to the frame of the car at each side of the longitudinal center, vibratable door-supporting mechanism provided with a movable pivot by which it is secured to the frame of the car adapted to contact the lower surface of said swinging sections and close and hold them locked in closed position, means for vibrating said door-supporting mechanism, and a fixed latch for holding said door-supporting mechanism in locked position, substantially as described.

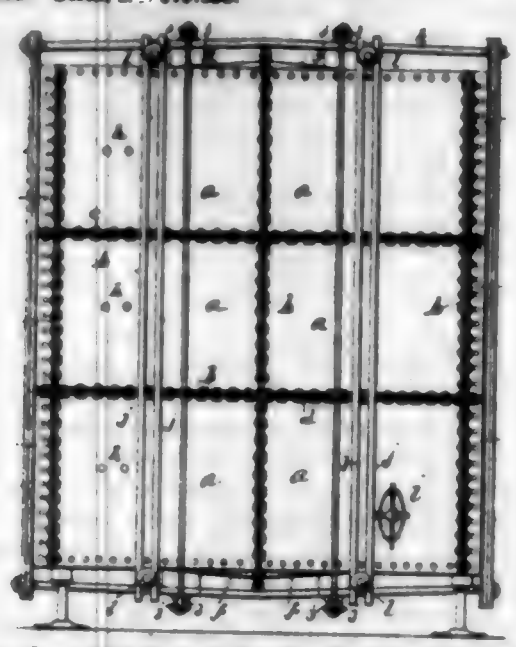
2. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center, a plurality of vibratable door-supporting mechanisms mounted on movable pivots in the framework of the car for closing and supporting said swinging sections, rod mechanism securing a plurality of said vibratable mechanisms together so as to hold them against lateral displacement, a rock-shaft, and a connecting-rod pivotally secured to said rock-shaft and said vibratable door-supporting mechanisms, substantially as described.

3. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center, a plurality of vibratable door-supporting mechanisms pivotally secured in slotted plates on the framework of the car for operating said swinging sections, rod mechanism for securing a plurality of said vibratable mechanisms together and holding them against lateral displacement, a rock-shaft, and a connecting-rod pivotally secured to said vibratable mechanisms and rock-shaft, substantially as described.

4. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor composed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center, a plurality of vibratable door-supporting mechanisms pivotally secured in slotted plates on the framework of the car for closing and

opening said swinging sections, rod mechanism for securing a plurality of said vibratable mechanisms together and holding them against lateral displacement, a rock-shaft, a connecting-rod pivotally secured to said vibratable mechanisms and rock-shaft, and a plurality of fixed latches secured to the framework of the car for holding said vibratable mechanisms in their closed position, substantially as described.

814,160. TANK. DAVID C. PAGE, Detroit, Mich., assignor to The Pfaudler Co., Rochester, N. Y., a Corporation of New York. Filed Oct. 30, 1902. Serial ... 179,150.



Claim.—1. A tank formed of a plurality of metallic plates forming the sides and the top and bottom of the tank, said plates provided with attaching-flanges, the plates forming the top and bottom of the tank arranged to slope downward in opposite directions.

2. A tank formed of a plurality of metallic plates forming the sides and top and bottom of the tank, said plates provided with attaching-flanges, and the plates forming the top and bottom of the tank arranged to slope downward to form at the top of the tank a gas-chamber, wherefrom the gas may be emitted from the top of the tank, and to form a liquid-pocket at the bottom of the tank to facilitate the drainage of the tank.

3. A tank of angular form in cross-section constructed of a series of metallic plates provided with attaching-flanges, stays at the top and bottom of the tank, and means to unite the extremities of the corresponding top and bottom stays to stay the tank against interior pressure.

4. A tank constructed of a series of coated or enameled metallic plates, vertical exterior stays on opposite sides of the tank, horizontal tie-rods at the top and bottom of the tank to unite the stays on opposite sides of the tank, horizontal stays at the top and bottom of the tank, and vertical tie-rods to unite the horizontal stays.

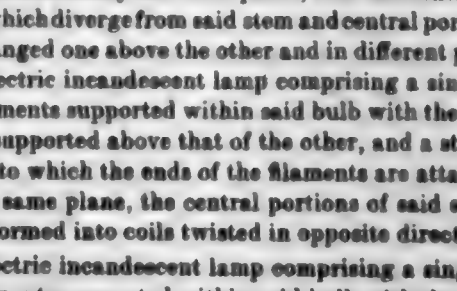
5. A tank of exterior angular form in cross-section constructed of metallic plates having marginal attaching-flanges and means to unite adjacent flanges, the top and bottom plates of the tank being reversible and interchangeable to form either the top or bottom of the tank as may be desired, the top plates sloping upward and from the sides thereof toward the center, the bottom plates sloping downward and from the sides thereof toward the center.

6. A tank of angular form in cross-section having the top and bottom thereof respectively sloping from one side toward the other and from the other sides thereof toward the center to form at the top of the tank a gas-chamber to afford exit for the gas at the top of the tank and to form a liquid-pocket at the bottom of the tank to facilitate the drainage of the tank.

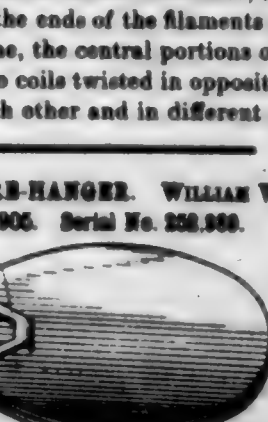
7. A tank of exterior angular form in cross-section constructed of metallic plates having attaching-flanges, the plates forming the top and bottom of the tank sloping from one side toward the other to form at the top of the tank a gas-chamber and at the bottom of the tank to form a liquid-pocket, the top and bottom plates toward one side of the tank shaped at an obtuse angle from the sloping body of the plate to the adjacent attaching-flange.

814,161. ELASTIC METALLIC TIRE. ALBERT PEUSY, Hanover, Germany. Filed Feb. 20, 1905. Serial No. 246,482.

Claim.—In a metal tire for vehicles for ordinary roads, the combination of an under layer *a* steel wires *b* attached obliquely to said under layer and resilient peripheral walls *d* laterally of said under layer and extending outwardly beyond the same to a distance intermediate between the under layer and the outer ends of the wires for the purpose set forth.



814,162. ELECTRIC INCANDESCENT LAMP. WILLIAM J. PHELPS, Detroit, Mich. Filed Dec. 22, 1900. Serial No. 139,160.



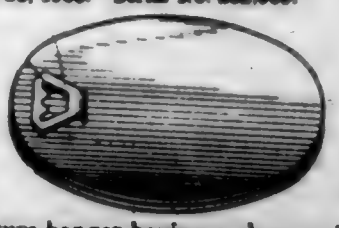
Claim.—1. An electric incandescent lamp comprising a single vacuum-bulb, a stem projecting within said bulb and having a flattened end and two incandescent filaments, the ends of which are attached to said stem in substantially the same plane, said filaments comprising leg portions which diverge from said stem and central portions arranged one above the other and at an angle to each other in different planes.

2. An electric incandescent lamp comprising a single vacuum-bulb, a stem projecting within said bulb and having a flattened end and two incandescent filaments, the ends of which are attached to said stem in substantially the same plane, said filaments comprising leg portions which diverge from said stem and central portions formed into coils arranged one above the other and in different planes.

3. An electric incandescent lamp comprising a single vacuum-bulb, two filaments supported within said bulb with the central portions of one supported above that of the other, and a stem having a flattened end to which the ends of the filaments are attached in substantially the same plane, the central portions of said separate filaments being formed into coils twisted in opposite directions.

4. An electric incandescent lamp comprising a single vacuum-bulb, two filaments supported within said bulb with the central portions of one supported above that of the other, and a stem having a flattened end to which the ends of the filaments are attached in substantially the same plane, the central portions of said separate filaments being formed into coils twisted in opposite directions and arranged at angles to each other and in different planes.

814,163. PICTURE-HANGER. WILLIAM W. PURSELL, Pittston, Pa. Filed Mar. 30, 1905. Serial No. 253,389.

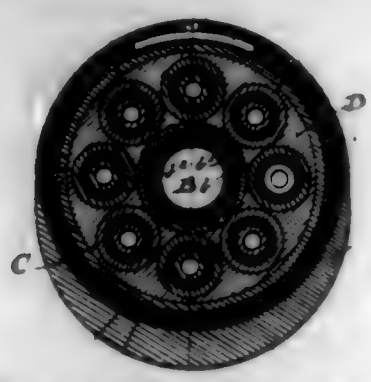


Claim.—A picture-hanger having a sharp point constructed to enter a picture or picture-frame and a top or body portion constructed to receive a suspending means, said top or body portion being provided with a series of notches substantially as described and for the purposes set forth.

814,164. RESILIENT VEHICLE-TIRE. JOHN F. RAU, Chicago, Ill., assignor of one-half to John F. Cordes, Chicago, Ill. Filed Sept. 19, 1904. Serial No. 224,963.

Claim.—1. A vehicle-tire comprising an outer casing, a core integrally united therein comprising a central tube and a plurality of

tubes extending around the same, each of said tubes being composed of a plurality of flexible layers.



2. In a rubber tire for vehicle-wheels, a core vulcanized therein and filling the same, and comprising an inner and an outer central tube, a plurality of layers of canvas intermediate said tubes and a plurality of tubes about said outer tube.

3. A tire comprising an outer and an inner tubular casing, layers of fabric therebetween, a core within the casing comprising a plurality of tubes running longitudinally of the tire, each having a central layer of fabric, said tubes being vulcanized together.

4. A tire comprising a core having a plurality of tubes extending therethrough longitudinally, one of the same lying at the center, the others thereof arranged around the center an outer wall on each of said tubes, a plurality of layers of fabric intermediate the outer walls and tubes and a casing inclosing said core and to which the same is vulcanized.

5. In a resilient tire, a core comprising a mass of rubber or other suitable material, a central longitudinal tube extending therethrough, a plurality of layers of fabric in the walls of said tube, a tube coiled around said central tube and a tubular casing inclosing the core thus formed and vulcanized thereto, said casing comprising an outer and an inner layer of rubber and an intermediate layer of fabric.

6. In a vehicle-tire the combination with a tubular casing, comprising an inner and an outer layer of rubber and a layer of fabric intermediate the same of a core fitted in and vulcanized to the casing and comprising material such as rubber, an inner tube extending longitudinally of and at the axis of said material and comprising an outer and inner layer of rubber and an intermediate layer of canvas, said core thus formed having passages between the same and the casing and extending longitudinally thereof and an air-valve opening from its central tube through the outer casing.

7. A vehicle-tire, having a central core vulcanized therein and comprising in combination a mass of low-grade rubber having a plurality of channels in one side thereof, a plurality of independent tubes extending longitudinally of said mass and vulcanized therein and an air-valve opening into the center of the core thus formed.

8. In a vehicle-tire a core comprising a central tube a plurality of layers of canvas reinforcing the same an inner and an outer tube coiled to inclose the central tube, a plurality of layers of canvas between the same, and rubber filling the spaces between said coiled and central tubes and acting after vulcanization to bind the same together.

9. A vehicle-tire comprising an outer casing, a central reinforced tube therein, a smaller tube coiled to inclose said central tube, a mass of rubber molded on said tubes and vulcanized to the casing and provided with a plurality of channels in its outer periphery.

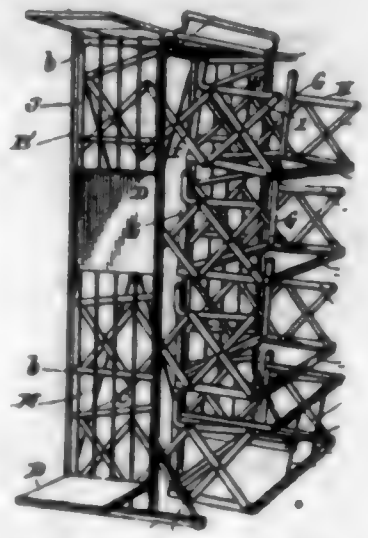
10. A vehicle-tire comprising an outer casing having a plurality of layers of canvas inclosed by rubber, a central reinforced tube, smaller tubes arranged about the same and a mass of rubber molded about said tubes and supporting the same centrally of the casing.

11. A vehicle-tire having an outer casing and interior tubes one arranged at the center of the tire, the others inclosed between the same and said casing, a plurality of layers of reinforcing fabric in the walls of each tube and a mass of rubber vulcanized to and about said interior tubes.

814,165. CAKE AND CRACKER BOX AND PACKAGE STAND. CLAUDE REA and JOHN W. PATTERSON, Savannah, Mo. Filed Jan. 3, 1906. Serial No. 294,544.

Claim.—1. In a device of the character described, an upright frame, shelves, uprights on said shelves, and lazy-tongs having one end secured to said upright frame and the other ends to said shelves and the uprights thereon, substantially as shown and described.

2. In a device of the character described, an upright frame, shelves, uprights at the rear end of said shelves, and lazy-tongs having one end secured to said upright frame and the other ends to the front of said shelves and connected with said uprights, substantially as shown and described.

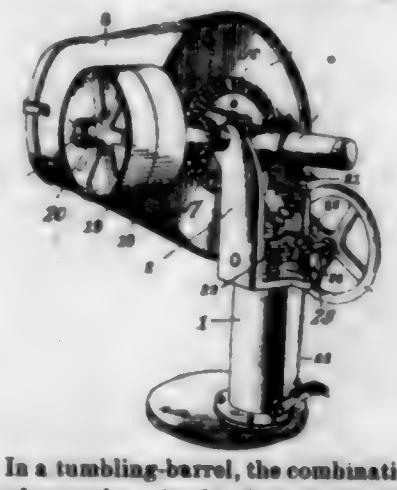


3. In a device of the character described, an upright frame, rods pivotally secured thereto, lazy-tongs having one end pivotally secured to said frame and said rods, shelves having uprights thereon, L-shaped levers pivotally secured to said uprights, and the free ends of said lazy-tongs secured to said shelves and the free ends of said levers, substantially as shown and described.

4. In a device of the character described, base-pieces, inverted-U-shaped uprights secured to said base-pieces, horizontal rods secured to said U-shaped uprights rods pivotally secured to one of said uprights, lazy-tongs secured to the other upright and to said rods, shelves, vertical rods secured to said shelves, and L-shaped levers pivotally secured to said vertical rods, the free ends of said lazy-tongs being pivotally secured to said shelves and L-shaped levers, substantially as shown and described.

5. In a device of the character described, base-pieces; inverted-U-shaped uprights, secured to said base-pieces, horizontal rods secured to said U-shaped uprights, rods pivotally secured to one of said uprights, lazy-tongs secured to the other upright and to said pivoted rods, shelves made of angle-iron, vertical rods secured to said shelves, L-shaped levers pivotally secured to said vertical rods, the free ends of said lazy-tongs being pivotally secured to said shelves and L-shaped levers and shelves pivotally secured on the outside of said U-shaped uprights, substantially as shown and described.

814,166. TUMBLING-BARREL. ALBERT F. SCHNEIDER, Cleveland, Ohio. Filed Apr. 20, 1905. Serial No. 256,083.

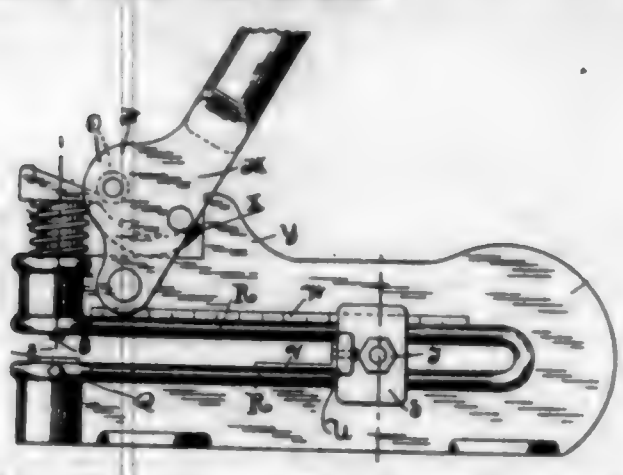


Claim.—1. In a tumbling-barrel, the combination with a bifurcated supporting-frame of a pair of stub-shafts fixed in said frame, a member pivoted for tilting movement on said stub-shafts, a barrel having a stub-shaft which has its bearing in said tilting member, a segmental rack carried by the tilting member, a pinion which meshes with said rack, means for rotating said pinion, means for locking said pinion against movement, a sleeve rotatably mounted upon one of the stub-shafts and having a pinion formed thereon and an annular rack carried by the barrel with which said pinion meshes.

2. In a tumbling-barrel the combination of a supporting-frame, a member having diametrically-disposed recesses therein, a driving-shaft forming a pivot in one of said recesses and a second pivot for said member; a segmental rack integral with the pivoted member, a pinion meshing with said rack to tilt the pivoted member, a ratchet to revolve said pinion, a locking-pawl engaging said ratchet, a treadle to release said pawl, a barrel provided with a stub-shaft jour-

sailed in the pivoted member, and means for revolving said pivoted member.

814,167. PUNCH-PRESS. FRITZ SCHULZ, Chicago, Ill., assignor to The Good Manufacturing Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 10, 1905. Serial No. 254,727.



Claim.—1. A punch-press comprising a U-shaped frame having flanges bordering the recess therein and provided at its free ends with devices for retaining and operating dies, and reinforcing members comprising blocks having flanges adapted to engage the flanges of the frame between the ends of the recess.

2. A punch-press comprising a U-shaped frame having flanges bordering the recess therein and provided at its free ends with devices for retaining and operating dies, and reinforcing members comprising blocks having flanges adapted to engage the flanges of the frame between the ends of the recess, and means carried by said blocks for securing gages thereto by means of which the position of the blank to be punched is adjusted.

3. A punch-press comprising a U-shaped frame having flanges bordering the recess therein, clamping members adapted to engage said flanges between the ends of said recess and hold the arms against springing, means carried by said clamping members for securing gages thereto, a socket for a die in the free end of one arm, a plunger adapted to carry the punch in the free end of the other arm, and a lever pivotally secured to the last-named arm and adapted to engage and actuate said plunger.

4. A punch-press comprising a U-shaped frame having flanges bordering the recess therein, clamping members adapted to engage said flanges between the ends of said recess and hold the arms against springing, means carried by said clamping members for securing gages thereto, a socket for a die in the free end of one arm, a plunger adapted to carry the punch in the free end of the other arm, a head on said plunger having an inclined upper face, a lever pivotally mounted on said last-named arm and carrying a member adapted to ride over said inclined face and actuate said plunger in one direction, a member disposed in the path of said head and moved thereby in one direction and engaged by said lever to be moved in the opposite direction to return said plunger to the upper limit of its movement.

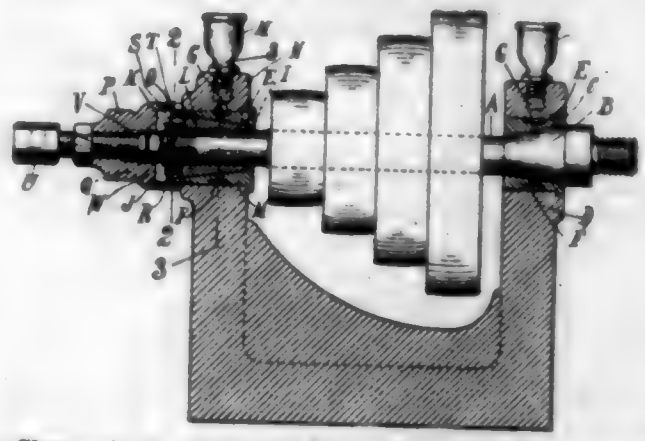
5. In a punch-press, the combination with a plunger and means for actuating same, of devices for removably retaining a punch therein comprising an opening in said plunger to receive the shank of the punch, an annular groove in the latter, a lateral recess in said plunger communicating with the opening therein, and a U-shaped plate adapted to enter said recess and project into said opening therein and into the annular groove in the shank of said punch to hold the latter against longitudinal movement relatively to said plunger.

6. In a punch-press, a removable plunger having a central recess adapted to receive the shank of the punch and provided between the ends with a lateral recess communicating with said central recess between the ends of the latter, a punch having a shank adapted to enter said central recess and abut at one end against the bottom of the latter, said shank of said punch being provided with an annular groove between its ends adapted to register with said lateral recess in said plunger and project into said annular groove in the contained shank of the punch to hold the latter against longitudinal movement relatively to said plunger.

7. A punch-press comprising a U-shaped frame provided in the free end of one of its arms with a longitudinally-movable plunger provided with an enlarged head having an upper inclined face, a lever having a bifurcated lower end pivotally secured to said arm carrying said plunger adjacent the free end thereof, projections on said bifurcated end, and an antifriction-roller revolubly mounted between said projections and adapted to engage said inclined upper face of said head to depress said plunger when said lever is swung.

8. A punch-press comprising a horizontally-disposed U-shaped frame provided in the free end of its upper arm with a vertically-movable plunger having an enlarged head, the latter having an inclined upper face, an upwardly-extending lever pivotally secured to said upper arm adjacent the free end thereof and adapted to be swung forward and back, an antifriction-roller carried by said lever and adapted to ride over said inclined upper face of the head of said plunger to depress the latter, said roller traveling in an arc beginning at substantially the upper limit of its movement and intersecting the plane of said inclined upper face of said plunger.

814,168. SPINDLE-BEARING. FRITZ SCHULZ, Chicago, Ill., assignor to The Good Manufacturing Co., Chicago, Ill., a Corporation of Illinois. Filed May 1, 1905. Serial No. 258,365.



Claim.—1. In a device of the kind specified, the combination with standards, of bushings mounted therein having oppositely-disposed tapered longitudinal openings and substantially radial openings to admit a lubricant, a shaft provided at one end with a rigid annular conical enlargement adapted to fit the tapered opening of one of said bushings, a cone on the other end of said shaft longitudinally movable thereon but incapable of relative rotation, said other end of said shaft being threaded, a laterally-split collar on said threaded end bearing against said cone and having a set-screw spanning the split portion of same to bind said collar on said threaded end of said shaft, said collar having a peripheral recess adapted to receive means for holding same against rotation relatively to the frame of the machine whereby by turning said shaft relatively thereto the bearings may be adjusted to run more snugly or freely.

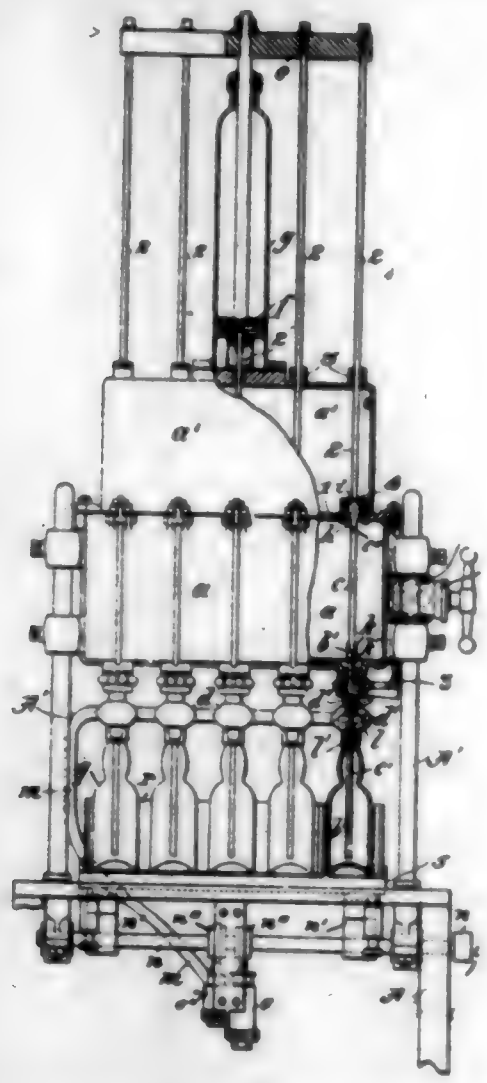
2. In a device of the kind specified, the combination with standards having openings, bushings having oppositely-disposed tapered openings mounted in said standards and having annular grooves communicating with said tapered openings to feed a lubricant, one of said bushings being externally threaded at one end and projecting at said end beyond one of the said standards, of a shaft having oppositely-disposed cones mounted thereon, one of said cones being rigid and the other thereof longitudinally movable on said shaft but incapable of rotation relatively thereto, said last-named cone being adapted to fit said threaded bushing and said end of said shaft carrying same being threaded, an elastic collar mounted on said threaded end of said spindle and adapted to be adjusted to bind thereon and a cap engaging the threaded end of said bushing, said collar being provided with a peripheral recess and said bushing and cap having a radial opening through which a pin may be inserted to engage said recess to hold said collar rigid with said standards.

814,169. APPARATUS FOR DECANTING LIQUIDS. CARL SELLENSCHEIDT, Berlin, Germany, assignor to Filter & Brautechnische Maschinen-Fabrik Act. Ges., Berlin, Germany. Filed Mar. 18, 1904. Serial No. 198,369.

Claim.—1. In a decanting apparatus, a vessel for containing liquid and a gas under pressure and a filling-tube mounted to move therein, provided with a conduit opening within said vessel and leading to the exterior thereof, the said conduit being adapted to discharge liquid into the receptacle to be filled or to equalize the pressure in the receptacle and vessel according to the position of its said opening above or below the liquid-level in said vessel.

2. In a decanting apparatus, a vessel for containing liquid or a gas under pressure and a filling-tube mounted to move therein provided with a discharge-conduit leading to the exterior of the vessel

with its upper opening within the vessel and adapted to be disposed above or below the liquid-level therein, means for coupling the receptacle to be filled with said conduit, in combination with means for moving said upper opening through the gas to the liquid to produce an equal pressure in the receptacle before filling the same, and means in said filling-tube for venting the gas in the receptacle into said vessel.



3. In a decanting apparatus, a vessel for containing liquid and a gas-space therein, a filling-tube mounted to reciprocate within said vessel and to protrude within the receptacle to be filled, said tube being provided with an aperture located therein at a point which is alternately in the air-space and the liquid, in combination with means for joining the said receptacle with the said filling-tube.

4. In a decanting apparatus, a vessel for containing liquid and gas under pressure and a filling-tube adapted to be reciprocated within the vessel and to protrude within the receptacle to be filled, in combination with a conduit in said tube leading to the exterior of said vessel and having a port opening within the same, said port being so located on the reciprocating tube as to be alternately above and below the liquid-level, and a valve-seat contained within the gas-space for closing said port.

5. In a decanting apparatus, a vessel for containing liquid and a gas under pressure, a filling-tube mounted to reciprocate therein and provided with a liquid-discharge conduit having its upper opening within the vessel and adapted to pass alternately into said gas and liquid, and a valve-seat for closing said opening within the gas-space, in combination with means for reciprocating said tubes to cause the said upper opening to pass from engagement with said seat through the gas-space and into the liquid, and an escape-conduit in said tube having its upper orifice disposed at a point in said tube at all times within the said gas-space.

6. In a decanting apparatus, a vessel for containing liquid and gas under pressure, a filling-tube sliding therein and adapted to be protruded into the receptacle to be filled, a conduit in said tube leading to the exterior of the vessel and having its upper orifice located at a point in the tube which may pass above and below the liquid-level in said vessel, in combination with an inflatable coupling-nozzle for connecting the receptacle with said filling-tube adapted to increase the gas-pressure within said receptacle.

7. In a decanting apparatus, a vessel for containing liquid and gas under pressure, a filling-tube reciprocating therein provided with a conduit adapted to be protruded into the receptacle to be filled and having its upper opening within the vessel at a point on the said tube alternately above and below the liquid-level, in combination with a filling-nozzle for coupling the receptacle with the said conduit and a controlled communication between said nozzle and the gas in the vessel to establish a counter-pressure in said receptacle.

8. In a decanting apparatus, a vessel for containing liquid and gas under pressure and a filling-tube mounted to be reciprocated within said vessel and to protrude within the receptacle to be filled, in combination with a conduit in said tube leading to the exterior of the vessel and having an upper opening adapted to pass alternately into said gas-space and the liquid and an escape-conduit in said tube for venting the said receptacle.

9. In decanting apparatus, a vessel for containing liquid, and gas under pressure, a reciprocating filling-tube within said vessel having discharge and escape conduits therein, the said discharge-conduit leading to the exterior of the vessel and having an orifice within the vessel adapted to pass above and below the level of the liquid therein and the said escape-conduit adapted to extend to the exterior of the said vessel but having an orifice within the same located at a point on said tube which remains above the liquid-level, in combination with means for connecting the receptacle to be filled with said filling-tube.

10. In a decanting apparatus, a closed vessel for containing liquid and gas under pressure, a reciprocating filling-tube passing through said vessel having its lower end adapted to be protruded into the receptacle to be filled, in combination with a motor supported by said apparatus and connected with the other end of said tube exterior of the vessel to reciprocate the same.

11. In a decanting apparatus, a vessel for containing liquid and a gas under pressure, a reciprocating filling-tube therein provided with a discharge-conduit and an escape-conduit having upper openings respectively within the vessel and lower openings adapted to be inserted into the receptacle to be filled, in combination with operating means exterior of the vessel for reciprocating said upper discharge-conduit opening alternately into the gas-space and into the liquid.

12. In a decanting apparatus, a vessel for containing liquid and a gas, a filling-tube mounted to reciprocate therein and to debouch into the receptacle to be filled, in combination with upper extensions from said tubes passing to the exterior of the vessel and means for reciprocating said extensions comprising a cylinder superposed upon said vessel and having a piston connected with said extensions.

13. In a decanting apparatus, a vessel containing the liquid to be decanted and a plurality of filling-tubes mounted to slide therein and to extend to the exterior thereof into the receptacles to be filled, extensions of said tubes to the exterior of the vessel, the said tubes and their extensions being divided into two sets, in combination with means for alternately reciprocating said sets comprising two cylinders intercommunicating through a confined passage at their outer ends, a piston in each cylinder connected respectively with the tube or tubes of said sets, and means for admitting fluid-pressure to the inner end of either cylinder.

14. In a decanting apparatus, a hollow filling-head having a tubular nozzle portion adapted to be inserted into the mouth of the receptacle to be filled, and means for admitting fluid-pressure into said head to expand the same against the mouth of the receptacle.

15. In a decanting apparatus, a hollow elastic filling-head constituting a cushion and a tubular elastic-nozzle projection thereon adapted to be received within the mouth of the receptacle to be filled and means for admitting fluid-pressure into said cushion and nozzle to expand the same against the receptacle.

16. In a decanting apparatus, a hollow elastic filling-head constituting a cushion having a tubular elastic nozzle thereon adapted to be received within the mouth of its receptacle to be filled, means for moving said receptacle-mouth over the projection and pressing the same relatively against said cushion, and a source of fluid-pressure for inflating said cushion.

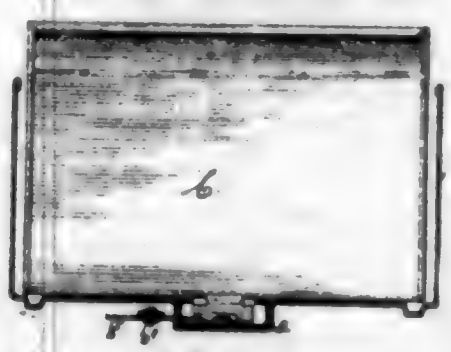
17. In a decanting apparatus, a hollow elastic filling-head constituting a cushion and having an aperture adapted to communicate with the interior of the receptacle to be filled, in combination with means for moving said receptacle relatively into contact with said cushion and means for admitting fluid-pressure thereto to expand the same against the receptacle.

18. In a decanting apparatus, a bottle-supporting platen, and a filling-nozzle, in combination with means for producing movement of said platen relatively toward said nozzle and a pipe provided with a valve mechanism adapted to be operated by such movement to admit gas under pressure through said pipe into the interior of said nozzle.

19. In a decanting apparatus, a bottle-supporting platen and a filling mechanism adapted to be coupled with the bottle on said platen,

in combination with means for moving said platen relatively toward the filling mechanism to effect coupling of the bottle, and valve mechanism actuated by said means for admitting gas under pressure to said bottle.

814,170. FILING-CARD AND LOCK THEREFOR. GEORGE A. SHOEMAKER, Chicago, Ill., assignor to Metal Sectional Furniture Company, Portland, Me., a Corporation. Filed June 10, 1904. Serial No. 211,939.

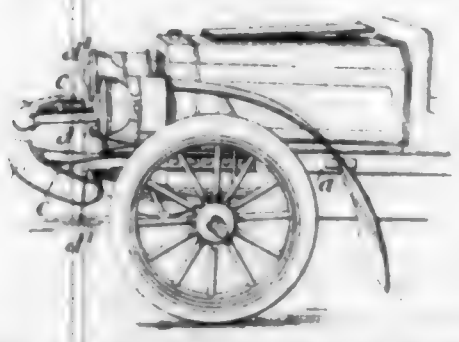


Claim.—1. The combination in a card-cabinet of a drawer and cards fitted with flanged projections, with angle-irons, and means for moving said angle-irons toward and from each other consisting of a lever pivoted respectively to said angle-irons and to said drawer.

2. The combination in a card-cabinet of a drawer and cards fitted with flanged projections with a card-lock consisting of double-flanged angle-irons, lying parallel with each other and T-shaped levers pivoted to said angle-irons and to said drawer and a rod connecting said levers whereby the said levers may be made to coact.

3. In a card-cabinet having a channeled drawer, the combination of cards having double-flanged projections, with a lock consisting of parallel angle-irons, T-shaped levers pivoted to each of said angle-irons and to said channeled drawer, and means for causing a coaction between said levers, substantially as described.

814,171. BUFFER FOR USE ON MOTOR-VEHICLES. FREDERICK R. SIMMS, London, England. Filed Sept. 26, 1905. Serial No. 280,200.

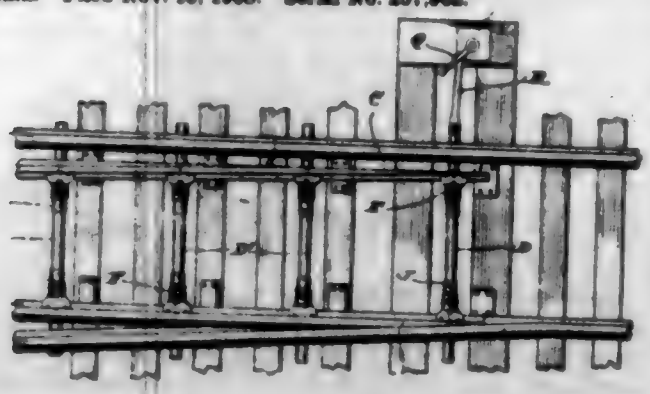


Claim.—1. A device of the class described, comprising a yielding pad and a yielding support for same adapted to be secured on the vehicle, the pad and support being in substantially the same horizontal plane, substantially as described.

2. A buffer for motor-vehicles made in two sections each of said sections comprising a yielding pad and a yielding support for same adapted to be secured to the vehicle, substantially as described.

3. A buffer for motor-vehicles made in twose ctions, each of said sections comprising a yielding pad, a support for the same and a yielding connection between one end of said support and the vehicle, substantially as described.

814,172. RAILROAD-SWITCH. JOHN M. SMITH, Waite Park, Minn. Filed Nov. 18, 1905. Serial No. 287,962.



Claim.—1. In combination with a railroad-switch, tubular rods, one of said rods connected with a switch-operating device, clamps slidably mounted on said rods and secured to the switch-points, and springs secured to said rods and the clamps, substantially as shown and described.

2. In combination with a railroad-switch, slotted tubular rods, one of said rods connected with a switch-operating device, clamps slidably mounted on said rods and secured through the slots therein, said clamps being secured to the switch-points, and springs secured in said tubular rods and to said clamps, substantially as shown and described.

3. In combination with a railroad-switch, slotted tubular rods, one of said rods being connected with a switch-operating means, clamps secured to the switch-point and having tubular portions fitting on said tubular rods, bolts securing said tubular portions through the slots in the rods, and springs secured to said bolts and inside of said tubular rods, substantially as shown and described.

4. In combination with a railroad-switch, slotted tubular rods, one of said rods being connected with the switch-operating device, clamps secured to the switch-point and having tubular portions fitting on said tubular rods, bolts secured to said tubular portions and through the slots in the rod, a rod slidably mounted in each tubular rod and having one end secured to the bolt secured to one of the clamps, a spring secured to the same bolt and inside of the tubular rod, and a spring secured to the other end of said rod and inside of the tubular rod, the bolt secured to the other clamp being secured to the last-named spring intermediate of its length, substantially as shown and described.

814,173. DYE-VAT. FRANCIS I. STONE, Atlanta, Ga., assignor of one-fourth to H. W. Lightfoot, Atlanta, Ga. Filed Nov. 3, 1905. Serial No. 286,410.



Claim.—1. The within-described dyer's vat consisting of an outer casing closed at the bottom and with a ring at the top having an inward-inclined flange, a smaller casing within the outer casing open at both ends and provided with a support for the contents, detachable to permit the contents to pass bodily out of the bottom of the casing, means for supporting the inner casing with its bottom above that of the outer casing, and a perforated steam-pipe arranged to discharge steam upward between the two casings, substantially as set forth.

2. The combination in the receiving vessel of a dyeing apparatus, of a loose bottom within said vessel, and laterally-detachable supports for said bottom, substantially as set forth.

3. The combination in the receiving vessel of a dyeing apparatus, of a loose bottom within said vessel, and detachable cross-bars supporting said bottom and extending through the vessel so as to be withdrawn therefrom to release the bottom, substantially as set forth.

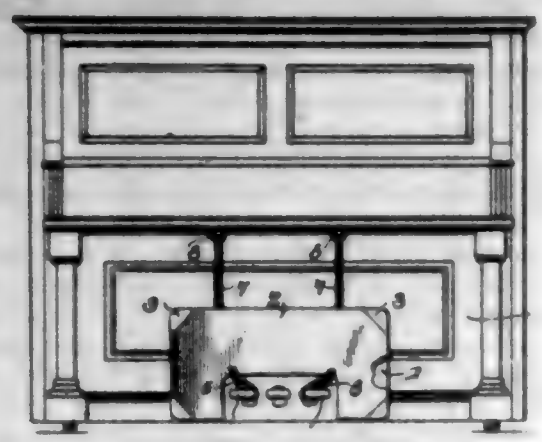
814,174. PIANO-SHIELD. MARGARET TUGGLE, Atlanta, Ga. Filed Oct. 14, 1905. Serial No. 282,840.

Claim.—1. A protecting-shield for pianos consisting of an approximately rectangular sheet having a recess at its lower edge and provided with elastic pedal-engaging loops near the inner corners of said recess.

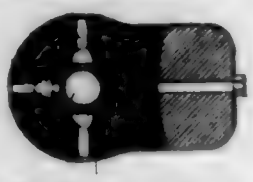
2. A protecting-shield for pianos consisting of an approximately rectangular sheet having a recess at its lower edge, pedal-engaging loops near the inner corners of said recess, and elastic straps connected with the upper edge of the sheet and provided at their free ends with panel-engaging hooks.

3. A piano-shield of approximately rectangular shape having a

recess at its lower edge and provided at its upper edge with straps having panel-engaging hooks, in combination with elastic pedal-engaging loops attached near the inner corners of the recess.



814,175. SECTIONAL TIRE. Fred G. Ulfer, Portland, Oreg. Filed Aug. 22, 1905. Serial No. 275,301.



Claim.—1. In combination, a tire formed of a plurality of sections having scarfed ends arranged to overlap on lines parallel with the peripheral line of the wheel-felly, means for securing each section independently to the wheel, and means for connecting the scarfed portions of the sections to each other.

2. A wheel-tire formed of a plurality of tubular sections having scarfed ends arranged to overlap, means for securing the sections to the felly of a wheel, and means for securing the scarfed ends of the sections to each other.

3. A wheel-tire formed of a plurality of tubular sections, the ends of said sections being scarfed on lines parallel with the inner and tread faces of the tire and arranged to overlap, means for securing the independent sections in place, and means for securing the scarfed ends of the sections to each other.

4. A wheel-tire formed of a plurality of tubular sections, nuts embedded in the inner faces of said sections and arranged for the reception of securing-bolts, the opposite ends of each section being scarfed on lines parallel with the inner and tread surfaces of the tire, and means for securing said scarfed sections to each other.

5. A wheel-tire formed of a plurality of sections having scarfed overlapping ends, nuts embedded in the inner scarfed portion, and bolts extending through the outer scarfed portion and into said nuts.

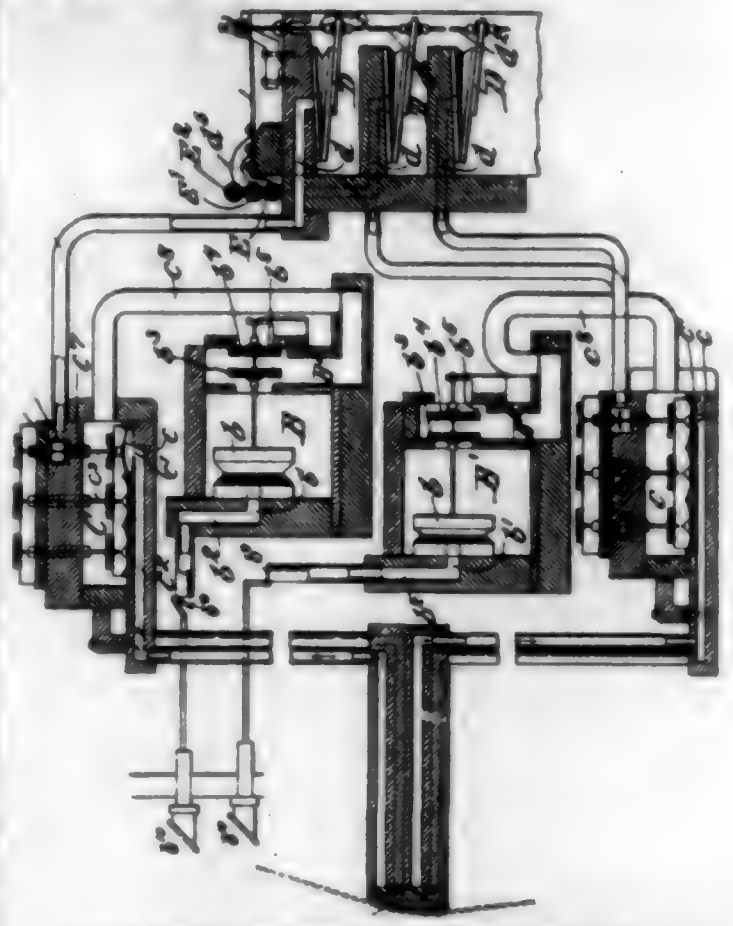
814,176. PNEUMATICALLY-ACTUATED MUSICAL INSTRUMENT. Edwin S. Votey, Summit, N. J., assignor to The Aeolian Co., New York, N. Y., a Corporation of Connecticut. Filed June 24, 1901. Serial No. 65,733.

Claim.—1. The combination of the tracker-board having two sets of tracker-holes, two or more sets of sound-producing devices, and connections for playing them from either of said sets of tracker-holes, one of the said sets of tracker-holes having solo and accompaniment sections and connections for connecting either section at will to either or both said sets of sound-producing devices, for substantially the purposes set forth.

2. In a musical instrument, a plurality of independent sets of sound-producing devices having different characters, a tracker having two sets of ducts, each set disposed in a separate longitudinal line, one of said sets of tracker-ducts being greater in number than the other and divided into two sections for controlling two sets of said sound-producing devices, and means for connecting said sets of ducts with said sets of sound-producing devices.

3. In a musical instrument, a plurality of independent sets of sound-producing devices having different characters, a tracker having two sets of ducts, each set disposed in a separate longitudinal line, one of said sets of tracker-ducts being greater in number than the other and divided into two sections for controlling two sets of said sound-producing devices, means for connecting either of said sets of ducts with said sets of sound-producing devices, and means for rendering the other set of ducts inoperative.

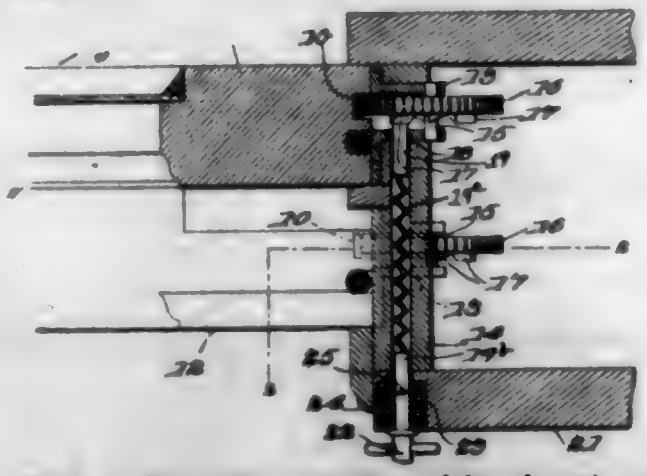
4. In a musical instrument, a plurality of sound-producing devices, two sets of tracker-ducts, one of which is greater in number than the other and is divided into two sections each comprising a plurality of ducts, means for rendering the set of ducts of lesser number inoperative, and means for alternatively connecting either of the separate sections of the other set of ducts to either of two sets of sound-producing devices.



5. In a musical instrument, a plurality of independent sets of sound-producing devices, a tracker having two sets of ducts, each set disposed in a separate longitudinal line, one of said sets of tracker-ducts being greater in number than the sound-producing devices in one set thereof and divided into two sections, each comprising a plurality of ducts connected with one of said sets of sound-producing devices, and means for alternatively connecting either of said independent sets of tracker-ducts with said sound-producing devices.

6. In a musical instrument, a plurality of independent sets of sound-producing devices having different characters, a tracker having two sets of ducts, each set disposed in a separate longitudinal line, one of said sets of tracker-ducts being equal in number to the sound-producing devices in one of said sets thereof and the second set of tracker-ducts being greater in number than the first-named set and divided into two sections each comprising a plurality of ducts, means for rendering said first-named set of ducts inoperative, and means for connecting one section of the tracker-ducts in said last-named set with the upper portion of one set of sound-producing devices and the other section of said tracker-ducts with the lower portion of another set of sound-producing devices.

814,177. WINDOW-SASH FASTENER. Charles B. Warren and David B. Myers, Lordsburg, Cal. Filed Aug. 10, 1905. Serial No. 273,577.



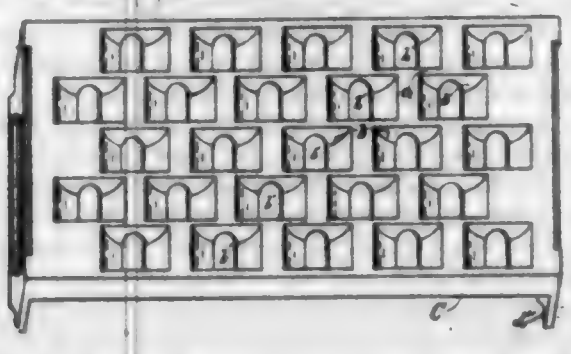
Claim.—1. The combination with a rack-bar of a pinion mounted for rotation and in constant engagement with the rack-bar and provided with spaced ratchet-teeth, a pawl adapted to engage the ratchet-teeth, a lock-bar mounted for movement toward and away from

said pinion, an extensible connection between the pawl and lock-bar and a spring operating upon said bar to hold the pawl in yieldable engagement with one of said teeth.

2. The combination with a sash having a rack-bar disposed in one of its side members, a housing connected to the window-frame and provided with a transverse guide-aperture, a pinion having spaced ratchet-teeth in one side face and rotatively mounted in said housing for constant engagement with said rack-bar, a pawl slidably mounted in the guide-apertures for engagement with the ratchet-teeth, a spring-actuated lock-bar, and an extensible connection between the pawl and lock-bar.

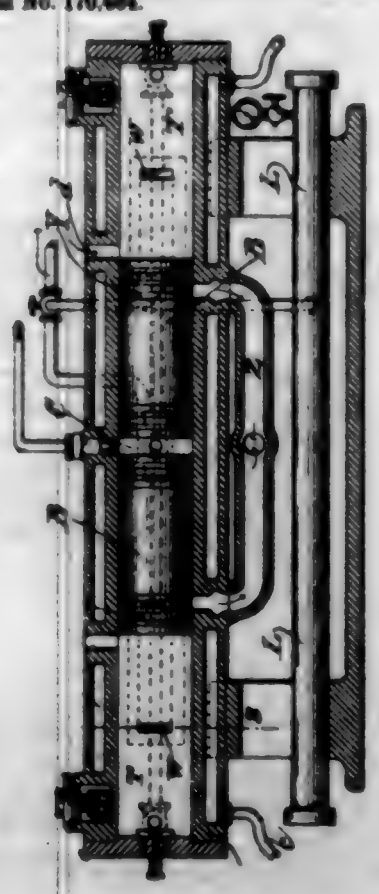
3. The combination with a sash having a rack-bar disposed in one of its side members, a housing connected to the window-frame and provided with a transverse guide-aperture, a pinion having spaced ratchet-teeth in one side face and rotatively mounted in said housing for constant engagement with said rack-bar, a pawl mounted for sliding movement in the guiding-aperture for engagement with the ratchet-teeth, a lock-bar extending through the window-casing, an extensible spiral rod connecting the pawl and lock-bar, a socket embedded in said casing and surrounding said bar, and a spring within said socket and operating to maintain said pawl in yieldable engagement with said ratchet-teeth.

814,178. COIN-TRAY. DUDLEY B. WATERS, Grand Rapids, Mich. Filed July 3, 1905. Serial No. 268,948.



Claim.—A coin-tray formed of sheet metal having parallel slots cut in pairs and the metal between each pair of slots cut in two at the longitudinal center and bent down and curved to form coin-pockets with openings at the bottoms, with a continuous, unbroken line of division between each two rows of pockets, the four edges of the sheet metal bent down forming depending sides and the lower edges of two opposite sides bent in to form feet on a plane with the edges of the two adjacent sides, and means for interlocking the tops of the trays to said feet for holding the trays in vertical tiers.

814,179. PUMP. LOUIS T. WEISS, Brooklyn, N. Y. Filed Aug. 22, 1903. Serial No. 170,464.

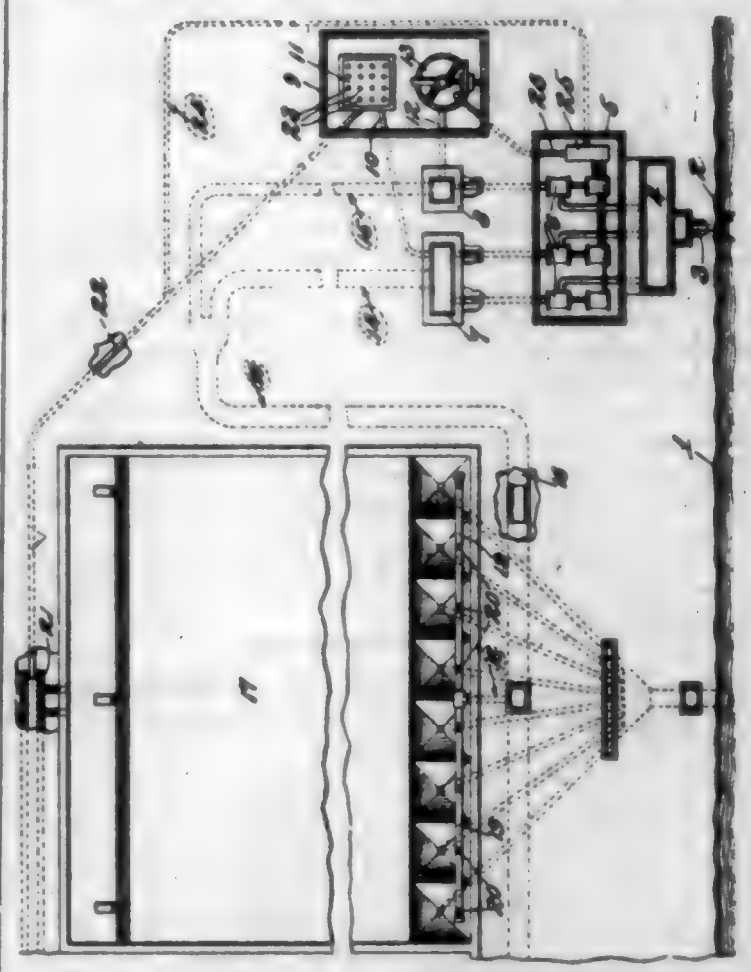


Claim.—1. The combination with a casing, of a working plunger therein, gas actuated in one working direction to compress air in the casing, and actuated in the other direction on the return stroke by a portion of said air compressed, provision being afforded for admitting a portion of the compressed air in front of the plunger on the return stroke to wash out the explosion-chamber, for substantially the purposes set forth.

2. The combination with a casing, of a plurality of working plungers therein, gas actuated outwardly in one working direction to compress an expansible fluid in the casing, and actuated inwardly in the other direction on the return stroke by the fluid compressed in the casing, for substantially the purposes set forth.

3. The combination with a casing, of a plurality of working plungers therein, gas actuated away from each other to compress an expansible fluid in the casing, and actuated toward each other on the return stroke by the fluid compressed in the casing, for substantially the purposes set forth.

814,180. SYSTEM OF WATER PURIFICATION. JOHN F. WILFORD, St. Louis, Mo. Filed Nov. 18, 1905. Serial No. 287,946.



Claim.—1. A system of water purification comprising conduits leading from a source of water-supply, means to introduce reagents into said conduits, a settling-basin, and a conduit emptying into said basin and into which both said conduits empty.

2. A system of water purification comprising a settling-basin, a conduit emptying into said basin, conduits connected with a source of water-supply and said first-mentioned conduit and means to introduce reagents into said last-mentioned conduits at such points that the reagents will take several minutes to reach said first-mentioned conduit.

3. A system of water purification comprising a settling-basin, a conduit emptying into said basin, conduits connected with a source of water-supply and connected to said first-mentioned conduit at a point distant from the point at which it empties into said basin far enough for the reagents to take several minutes to reach said basin.

4. A system of water purification comprising conduits connected with a source of water-supply one of said conduits carrying a smaller stream than the other, means to introduce hydrate of lime into the conduit carrying the smaller stream and means to introduce a coagulant into the conduit carrying the larger stream, a settling-basin and a conduit connecting said conduits and said basin.

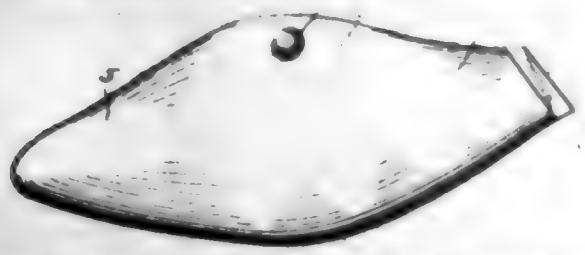
5. A system of water purification comprising conduits connected with a source of water-supply, means to introduce hydrate of lime into one of said conduits, said conduit carrying a stream of water of substantially the volume necessary to dissolve the hydrate of lime introduced, means to introduce a coagulant into the other of said con-

duits, a settling-basin and a conduit connecting said conduits and said basin.

6. A system of water purification comprising conduits connected with a source of water-supply, means to introduce hydrate of lime into one of said conduits, means to introduce a coagulant into the other of said conduits, a settling-basin and a conduit connecting said conduits with said basin, said last-mentioned conduit being long enough to permit the reactions to be substantially completed before the water reaches the said basin.

7. A system of water purification comprising delivery-wells, conduits connected with a source of water-supply and emptying into said delivery-wells above the normal level of the water therein, means to introduce reagents into said delivery-wells, a conduit leading from each of said delivery-wells, a settling-basin and a conduit connecting said settling-basin and said conduits from said delivery-wells.

814,181. ARTIFICIAL BREAST. Laura J. Wolfe, Columbus, Ohio. Filed Nov. 4, 1904. Serial No. 231,462.



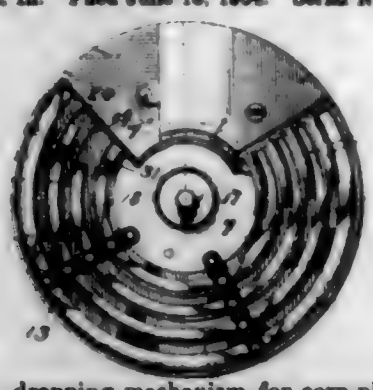
Claim.—1. An artificial breast comprising a distended hermetically-sealed casing of substantially impervious material containing a filling of soft down-like material.

2. An artificial breast comprising a substantially hermetically-sealed casing of impervious material containing air and a soft down-like elastic material.

3. An artificial breast comprising a substantially hermetically-sealed casing of elastic material which is impervious to air, containing air and a soft elastic and readily-compressible solid material, said casing having an enlarged central portion and a flattened and elongated side portion extending therefrom.

4. An artificial breast comprising a substantially hermetically-sealed casing of rubber containing air and readily-compressible elastic solid material.

814,182. CORN-PLANTER. William J. Anderson and James W. Horney, Leda, Ill. Filed June 18, 1904. Serial No. 213,147.



Claim.—1. A dropping mechanism for corn-planters comprising concentrically-arranged seed-plates formed with seed-cells in their adjacent edges, and means for rotating said plates.

2. The combination with a movable disk having seed-cells and slots adjacent to said cells, of seed-tilting means disposed below said disk.

3. The combination with a movable disk having seed-cells and slots adjacent to said cells, of spring-actuated seed-tilting means disposed below said disk.

4. In an edge-drop seed-planter, a rotary seed-disk, a concentric rib upon said disk, a seed-cell formed in said rib and extending through the disk, and a slot formed in the disk adjacent to and extending rearwardly from the seed-cell adjacent to the rib in which the latter is formed.

5. In a seed-planter, a rotary seed-disk having concentric ribs on its upper face, seed-cells formed in the exterior faces of said ribs and extending through the disk, slots in the latter, adjacent to and extending rearwardly from the seed-cells, and means for engaging said slots to tilt the seeds edgewise into the seed-cells.

6. In a seed-planter of the class described, a bottom plate, a seed-disk mounted for rotation on said plate, seed-cells in said disk, slots in the latter, extending adjacent to and rearwardly from the seed-cups, and spring-actuated pawls in the bottom plate adapted to engage said recesses to tilt seeds edgewise into the cup or cells.

7. In a seed-planter of the class described, a bottom plate, a seed-disk mounted for rotation upon said bottom plate and having a plurality of concentric ribs, seed-cells formed in the outer edges of said ribs and extending through the disk, slots in said disk adjacent to and extending rearwardly from the seed-cups, and spring-actuated pawls mounted in the base-plate in registry with the slotted interspaces between the ribs upon the seed-disk.

8. In a seed-planter of the class described, a seed-disk mounted for rotation and provided with concentric ribs having seed-cells formed therein and a top plate composed of annular members supported adjacent to the ribs of the seed-disk and having sides sloping in the direction of the seed-cells.

9. In a planter of the class described, a seed-disk mounted for rotation and having a plurality of ribs, seed-cells formed in said ribs and disk, slots in said disk adjacent to and extending rearwardly from the seed-cups, means, below the seed-disk, for engaging the slots and tilting the seeds at the point where the cells are fed and a top plate including a plurality of annular members supported above the seed-disk, said annular members fitting in the interspaces between the ribs and having concave sides sloping in the direction of the seed-cells.

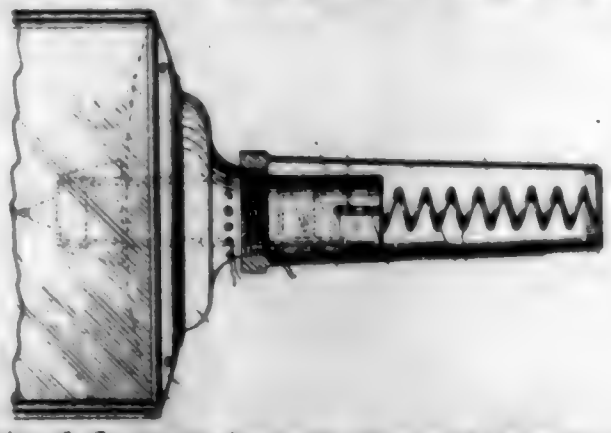
10. In a seed-planter of the class described, a bottom plate having a slide, a seed-disk mounted for rotation upon said bottom plate and having concentrically-disposed ribs, recesses constituting seed-cells formed in said ribs, a disk and slots in the latter adjacent to and extending rearwardly from the seed-cells, a top plate comprising a plurality of annular members having concave inner sides sloping in the direction of the seed-cells and provided at their front ends with inclined planes, and pawls mounted in the bottom plate in registry with the slots in the seed-disk adjacent to the seed-cells.

11. In a seed-planter of the class described, a bottom plate having a seed-opening and a slide regulating said opening, a seed-disk mounted for rotation upon said bottom plate and having ribs, seed-cells formed in said ribs and disk, and slots adjacent to and extending rearwardly from said seed-cells, a top plate including a plurality of annular members engaging the interspaces between the ribs of the seed-disk and supported above the latter, said annular members having inclined planes at their front and rear ends and intermediate concave sides sloping in the direction of the seed-cups, spring-actuated cut-off fingers disposed adjacent to the inclined planes at the rear ends of the inner members of the top plate, and spring-actuated ejectors supported above the seed-opening in the bottom disk.

12. In an edge-drop seed-planter, a seed-receptacle, a seed-disk mounted for rotation and having seed-cells and slots adjacent to said cells, an annular member having a concave side sloping in the direction of the seed-cups, an inclined plane at the receiving end of the annular member, a spring-actuated pawl disposed to guide the seeds to said inclined plane, and an inclined plane at the terminal end of the annular member, serving to guide seeds not contained in the seed-cups past the cut-off fingers near the discharge.

13. In a seed-planter, the combination with a base-plate, of a seed-disk mounted for rotation upon said base-plate, the latter being provided with a plurality of perforations out of alinement with the seed-cells in the seed-disk.

814,183. LAMP. John C. Aschenbach and Joseph W. Aschenbach, Philadelphia, Pa. Filed July 13, 1905. Serial No. 269,596.



Claim.—1. In an interchangeable oil or candle lamp, the combination of telescoping tubes, an air-passage around the same, means for supporting an illuminating element upon one of said tubes, and means whereby one of said tubes may be adjusted upon the other to open or close said air-passage.

2. In an interchangeable oil or candle lamp, the combination of

two telescopic tubes, air-passages for feeding air around said tubes, and means whereby said tubes may be relatively adjusted and held to close said air-passages.

3. In an interchangeable oil or candle lamp, the combination of a base, a guide-tube therein, a hood in said base and spaced from said tube to provide an air-passage, a second tube telescopically mounted within said guide-tube, means for supporting an illuminating element in said second tube, and means whereby said second tube may be adjusted and held within said guide-tube to open or close the air-passage through said hood.

4. In an interchangeable oil or candle lamp, the combination of a base, a guide-tube therein, a hood in said base and spaced from said tube to provide an air-passage, an inner tube telescopically mounted in said guide-tube and adapted to receive either a candle or an oil lamp, and a projection upon said inner tube adapted to coact with the bottom of said guide-tube and with a slot formed in the latter, substantially as described.

5. In an interchangeable oil or candle lamp, the combination of a base, a guide-tube therein and formed with a slot, a cone-hood surrounding the upper portion of said tube and formed with openings at its top and bottom, and a slot in its side, a perforated collar closing the lower end of said hood, an apertured partition between said tube and said hood, a spreader within said hood, an inner tube slidably mounted within said guide-tube, means for mounting an illuminating element in said inner tube, a projection upon said inner tube to coact with the slot in said outer tube, and a closure for the lower end of said guide-tube.

6. In an interchangeable oil or candle lamp, the combination of a base, a guide-tube therein and formed with a slot, a cone-hood surrounding the upper portion of said tube and formed with openings at its top and bottom, and a slot in its side, a perforated collar closing the lower end of said hood, an apertured partition between said tube and said hood, a spreader within said hood, an inner tube slidably mounted within said guide-tube, an apertured cap upon the upper end of said inner tube, an oil-reservoir disposed within said inner tube, a burner for said reservoir, means for connecting said burner and reservoir to clamp the same upon said apertured cap, and a projection upon said inner tube adapted to slide in the slot in said guide-tube and to engage the bottom of the latter, substantially as described.

7. In a lamp, the combination of a base, a guide-tube therein, a hood in said base around said tube and having openings at its top and bottom, a partition of foraminous material between said tube and hood adjacent to their upper end, a spreader between said tube and hood beneath said partition, an inner tube slidably mounted in said guide-tube and adapted to be adjusted to open and close the opening in the top of said hood, and an illuminating element mounted in said inner tube.

8. In a lamp, the combination of a base, an apertured collar thereon, a guide-tube projecting through said collar, a hood spaced from the upper portion of said tube, a foraminous partition between said tube and hood, an air-spreader beneath said partition, an inner tube slidable in said guide-tube, an annular shoulder around the upper end of said inner tube, an oil-reservoir disposed in said inner tube, and an oil-burner projecting through the upper end of said inner tube and screwed into said reservoir to clamp the same upon said annular shoulder, substantially as described.

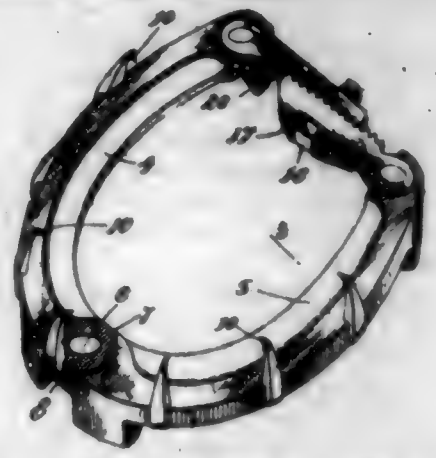
9. The combination with a lamp-base, of the cone-hood 4 having an opening in its top and the slot 21 in its side, the apertured collar 3 closing the lower end of said cone-hood, the guide-tube 5 disposed within said cone-hood and collar, the apertured partition 24 connecting said tube and cone-hood, the spreader 23, and the sliding inner tube 8, substantially as described.

10. The combination with a lamp-base, of the cone-hood 4 having an opening in its top and the slot 21 in its side, the apertured collar 3 closing the lower end of said cone-hood, the guide-tube 5 disposed within said cone-hood and collar, the apertured partition 24 connecting said tube and cone-hood, the spreader 23, the sliding inner tube 8 within said guide-tube, and means whereby said inner tube may be adjustably held within said guide-tube to open and close the top of said cone-hood, substantially as described

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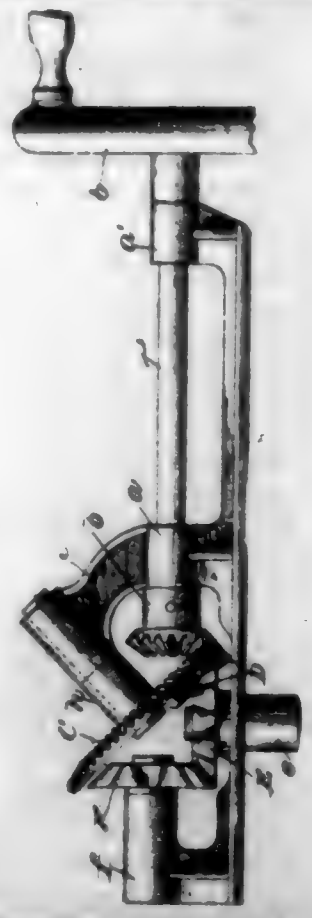
814,184. **HAILLESS HORSESHOE.** LOUIS F. BEAUCHEMIN, Montreal, Canada, assignor of one-half to O. Herbert Simpson, Montreal, Canada. Filed June 1, 1905. Serial No. 263,271.

Claim.—1. In a device of the character described, a pair of plates, a pivot securing one end of the plates together, a bar pivoted to the free end of one of the plates and provided with serrations on one side and provided with an opening therethrough, a bar pivoted to the free end of the other plate and provided with serrations on one side, provided with a recess on its opposite side and provided with an opening therethrough, a bolt disposed through said openings with its head in said recess, and a nut on the bolt, said recess being adapted to lock said bolt against rotation.



2. In a device of the character described, a pair of plates provided with straight spurs adapted to be turned inward, a pivot securing one end of the plates together, a bar pivoted to the free end of one of the plates and provided with serrations on one side and provided with an opening therethrough, a bar pivoted to the free end of the other plate and provided with serrations on one side, provided with a recess on its opposite side and provided with an opening therethrough, a bolt disposed through said openings with its head in said recess, and a nut on the bolt, said recess being adapted to lock said bolt against rotation.

814,185. **MECHANICAL MOVEMENT.** HENRY BRAHNER, St. Louis, Mo. Filed Aug. 3, 1905. Serial No. 272,595.



Claim.—1. A mechanical movement comprising a continuously-revolving drive-shaft; a continuously-revolving gear actuated thereby, the axis of which is inclined at an angle to said drive-shaft; a rotary reciprocating shaft at right angles to said drive-shaft; rotary reciprocating meshing pinions, the axes of which are at an angle to each other and one of which is fast on said rotary reciprocating shaft; and a segmental gear carried by said continuously-revolving gear that alternately engages one and then the other of said pinions.

2. A mechanical movement comprising a continuously-revolving segmental rack, two intermeshing mitered gears, alternately engaged by said rack at points diametrically opposite their points of engagement with each other, and a shaft to which one of said beveled gears is secured.

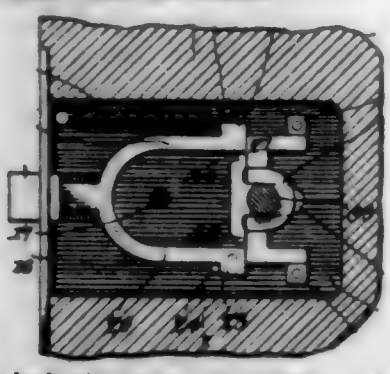
3. A mechanical movement comprising a continuously-revolving shaft, a pinion thereon, a gear actuated thereby the axis of which

is inclined to that of said shaft and which has an endless series of teeth engaged by said pinion and also a segmental rack connected thereto, two intermeshing mitered gears alternately engaged by said rack at points diametrically opposite their points of engagement with each other, and a shaft to which one of said beveled gears is secured.

4. A mechanical movement comprising a continuously-revolving shaft, a pinion thereon, a gear actuated thereby the axis of which is inclined to that of said shaft and has an endless series of teeth on one side engaged by said pinion and a segmental rack on the opposite side thereof, two intermeshing mitered gears alternately engaged by said rack at points diametrically opposite their point of engagement with each other, and a shaft to which one of said beveled gears is secured.

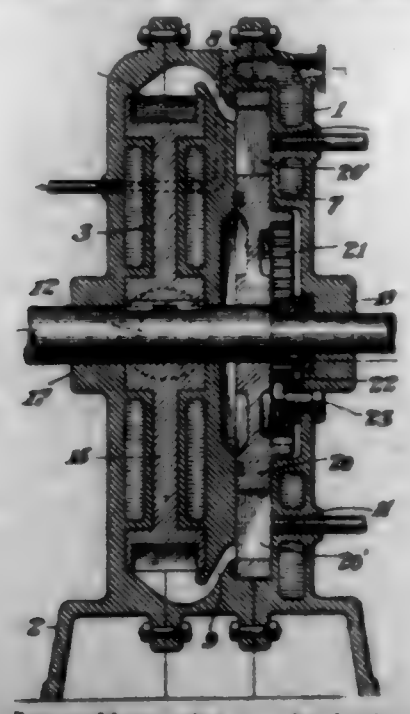
5. A mechanical movement comprising a continuously-revolving shaft, a pinion thereon, a gear actuated thereby the axis of which is inclined to that of said shaft and has an endless series of teeth on one side engaged by said pinion, and a segmental rack having substantially semicircular cogs on the opposite side thereof, two intermeshing mitered gears which correspond to the cogs of and are alternately engaged by said rack at points diametrically opposite their point of engagement with each other, and a shaft to which one of said beveled gears is secured.

814,186. KNOB-LATCH. Jesse Christensen, Clarinda, Iowa. Filed Jan. 11, 1904. Serial No. 188,568.



Claim.—In a lock, the combination with a casing, of a slidable bolt having a beveled head and provided with lateral stop-shoulders at opposite sides thereof, each stop-shoulder being provided with a threaded opening, a screw removably carried in the threaded opening of one of the shoulders and capable of engagement with either of the threaded openings, guides carried by the casing at opposite sides of the bolt and in the paths of the shoulders to limit endwise play of the bolt, and a spring connected to the casing and detachably engaged with the screw to yieldably maintain the bolt at its forward limit.

814,187. GAS TURBINE-ENGINE. Wilmont B. Clark, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,599.



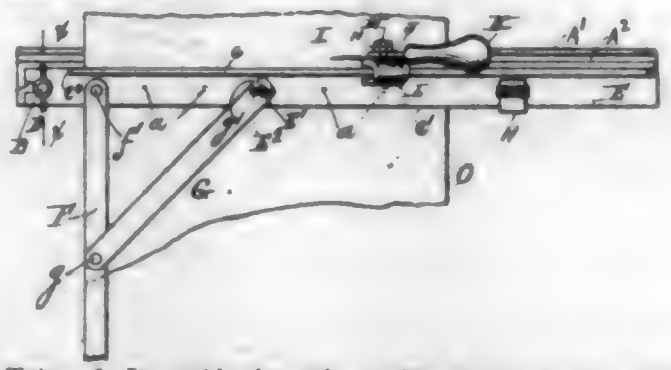
Claim.—1. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned chamber and having charging-inlets, a disk in said last-mentioned chamber rotatably mounted on the turbine-shaft and having explosion-chambers, means for turning said disk on said shaft simultaneously with the turbine and sparking plugs projecting into holes in the casing leading to said last-mentioned chamber, substantially as described.

2. In a turbine-engine, a casing having turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned chamber and having charging-inlets, a disk in said last-mentioned chamber rotatably mounted on the turbine-shaft and having explosion-chambers, sparking plugs projecting into holes in the casing leading to said last-mentioned chamber, a rack on said disk, a pinion on the turbine-shaft, and an intermediate pinion meshing with said rack and first-mentioned pinion, substantially as described.

3. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a shaft on which said turbine is secured, a chamber connected by ports with the first-mentioned chamber and having charging-inlets, explosion-chambers in said last-mentioned chamber rotatably mounted on the turbine-shaft adapted to register with the first-mentioned inlets, means for turning said chambers on said shaft simultaneously with the turbine, and means for exploding the mixture in said explosion-chambers, substantially as described.

4. In a turbine-engine, a casing having a turbine-chamber, a turbine therein, a chamber connected by ports with the first-mentioned chamber and having charging-ports, a rotatable disk mounted in said last-mentioned chamber parallel with said turbine and having explosion-chambers, means for turning said disk simultaneously with said turbine and means for exploding the mixture in said explosion-chambers, substantially as described.

814,188. GUIDE-CLAMP. Robert von Cleff, Jr., Jersey City, N. J., and Charles F. Benedict, Brooklyn, N. Y. Filed May 31, 1905. Serial No. 263,174.



Claim.—1. In a guide-clamp the combination of a base, a guide-rail, means to adjustably secure the latter to the base to hold the material to be operated upon in place, and an adjustable guide-bar pivoted on said guide-rail.

2. In a guide-clamp the combination of a base having a groove in its upper face near an edge thereof, a guide-rail adjustably secured to the top face of the base and parallel to the said groove, and an adjustable guide-bar coacting with said guide-rail.

3. In a guide-clamp the combination of a base, a support on one of its sides secured over a notch thereon, a guide-rail adjustably secured on top face of the base, and an adjustable guide-bar pivoted on said guide-rail.

4. In a guide-clamp the combination of a base having a groove on one of its edges, a post extending from the top face of the base, a guide-rail over the base arranged to be held in position on said post, an adjustable guide-bar coacting with said guide-rail, and means to secure the guide-rail and base together.

5. In a guide-clamp the combination of a base, having a groove on one of its edges, a threaded post extending from the top face of the base, and a nut for the post, a guide-rail over the base arranged to be held in position on said post, an adjustable guide-bar pivoted on said guide-rail, a guide-brace pivoted to the guide-bar, means to connect the free end of the guide-brace and the said guide-rail and a clamp to secure the guide-rail and base together.

6. In a guide-clamp the combination of a base, having a groove at one of its top edges, gripping-pins extending from its top face, a support on one of its sides secured over a notch thereon, a threaded post extending from the top face of the base, an angular guide-rail with a horizontal and vertical member over the base, and having an opening in its horizontal member fitting over the said post, a nut on the post to clamp the said guide-rail in place, a guide-bar pivoted to the horizontal member of the guide-rail, a guide-brace pivoted to the guide-bar and having a slot in its free end, a threaded pin extending from the horizontal member of the guide-rail, to engage the slot of the guide-brace, a nut on the latter pin, a stop-pin extending from

the base to engage a notch of the guide-rail, and a clamp to engage the said guide-rail and base.

7. In a guide-clamp the combination of a base, gripping-pins extending from its top face, to grip the material to be cut, a support on one of its sides secured over a notch thereon, a threaded post extending from the top face of the base, an angular guide-rail with a horizontal and vertical member over the base, and having an opening in its horizontal member fitting over the said post, a nut on the post to clamp the said guide-rail in place, a guide-bar pivoted to the horizontal member of the guide-rail, a guide-brace adjustably connecting the guide-bar and guide-rail, and a clamp to engage the guide-rail and base.

8. In a guide-clamp the combination of a base, gripping-pins extending from its top face, a support on one of its sides over a notch thereon, bolts connecting the support and base, a threaded post extending from the top face of the base, an angular guide-rail with a horizontal and vertical member, the vertical member arranged to support a flange of a cutting-tool and guide the same, and the said horizontal member having a slot to engage the said post, an adjustable guide-bar pivoted to the said horizontal member, a guide-brace pivoted to the guide-bar, and means at its free end to be thereby clamped to the guide-rail, a clamp to engage the said guide-rail and base with a piece of belting between their accompanying faces.

814,189. SPINNING OR TWISTING RING. JOHN P. CRANE, Millbury, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Oct. 19, 1905. Serial No. 283,454.



Claim.—1. As a new article of manufacture, a spinning or twisting ring having a flanged head provided with a narrow, oblique notch in the outer rim thereof, to permit the passage therethrough of the outer end of the traveler when applying the same to the ring.

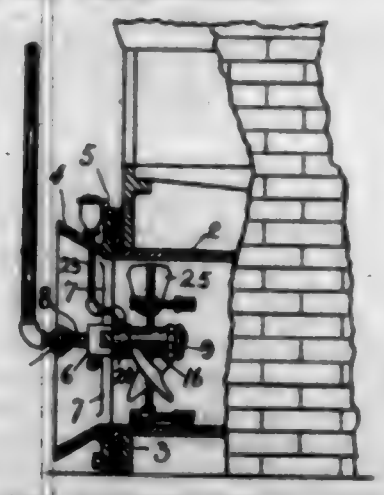
2. As a new article of manufacture, a spinning or twisting ring having a flanged head provided with a narrow, oblique notch in the outer rim thereof, said notch being inclined in the direction of revolution of the traveler and permitting the application of the traveler without bending or springing it.

3. As a new article of manufacture, a spinning or twisting ring having a cylindrical web provided with a traveler-raceway consisting of inner and outer annular flanges at its upper end, the outer flange having an inwardly-extended notch therein, the width of the raceway being reduced thereat to permit the application of a traveler to the ring without bending or distorting.

4. As a new article of manufacture, a spinning or twisting ring having a flanged head provided with a narrow notch in the rim thereof, to permit the application of the traveler without bending or springing the same.

5. As a new article of manufacture, a spinning or twisting ring having a flanged head provided with a narrow notch in the outer rim thereof, to permit the application of the traveler without bending or springing the same.

814,190. ROTARY BLOWER. CLARENCE C. DAVIS, Providence, R. I., assignor of one-half to William Halkyard, North Kingston, R. I. Filed May 2, 1905. Serial No. 258,473.



Claim.—1. A rotary blower comprising a rotatable hub, means for supplying said hub with steam, a plurality of blades supported from said hub, and a plurality of steam-conductors supported by said hub the outer end of each of said conductors being provided with an extension projecting laterally beyond the plane of the edges of said blades, whereby the steam is discharged at a point clear of the fan-blades.

2. A rotary blower comprising a rotatable hub, means for supplying steam thereto, a plurality of fan-blades supported from said hub, and a plurality of steam-conductors alternating with and independent of the fan-blades and also supported by said hub, each of said conductors being provided with a discharge end projecting laterally beyond the plane of the edges of said blades, whereby the steam is discharged at a point clear of the fan-blades.

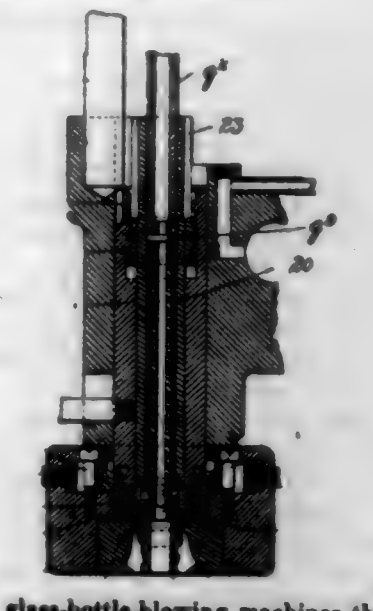
3. A rotary blower comprising a rotatable hub, means for supplying steam thereto, a plurality of fan-blades supported from said hub, and a plurality of radially-arranged steam-conductors connected to said hub and alternating with said fan-blades, said conductors being each provided with a right-angular discharge end projecting laterally beyond the plane of the edges of said blades, whereby the steam is discharged at a point clear of the fan-blades.

4. A rotary blower comprising a rotatable hub, means for supplying steam thereto, a plurality of fan-blades supported from said hub, and a plurality of steam-conductors alternating with said fan-blades, said conductors being of approximately the same length as said blades and each provided with an extension projecting laterally beyond the plane of the edges of said blades, whereby the steam is discharged at a point clear of the fan-blades.

5. A rotary blower comprising a rotatable hub, means for supplying steam thereto, a plurality of fan-blades supported from said hub, and a plurality of steam-conductors extending outwardly from said hub, the outer free ends of said conductors being weighted and provided with extensions projecting laterally beyond the plane of the edges of said blades.

6. A rotary blower comprising a rotatable hub, means for supplying steam thereto, a plurality of fan-blades supported from said hub, a plurality of steam-conductors also carried by said hub and alternating with said fan-blades, the outer free ends of said conductors being each provided with a lateral extension, and an adjustable cap secured to the free end of each extension and provided with holes or perforations.

814,191. MACHINE FOR THE MANUFACTURE OF GLASS BOTTLES AND THE LIKE. WILLIAM J. DENNING, Horley, England. Filed Apr. 23, 1904. Serial No. 204,565.



Claim.—1. In glass-bottle-blowing machines the combination with the neck-mold parts, of the annular molding-ring axially movable toward and from said neck-mold parts and the neck-mold nipple axially movable through said molding-ring so as to project within or be withdrawn from the neck-mold parts; substantially as described.

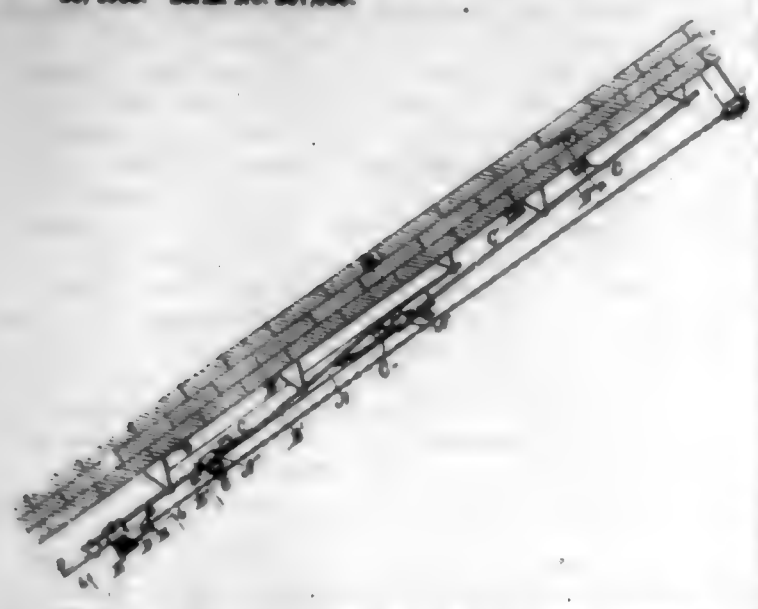
2. In glass-bottle-blowing machines, the combination with the neck-mold parts movable toward and from each other, the annular molding-ring and coöperating inclines for seating the molding-ring by the closing of the neck-mold parts, of the neck-mold nipple movable through the molding-ring into and out of the neck-mold parts; substantially as described.

3. In glass-bottle-blowing machines, the combination with the neck-mold parts and the annular molding-ring detachably mounted on an axially-movable support between the neck-mold parts, of the neck-mold nipple detachably mounted on a movable support to project through the molding-ring and between the neck-mold parts; substantially as described.

4. In glass-bottle-blowing machines, the combination with the axially-movable annular detachable molding-ring for forming the

inner edge of the bottle-mouth, of the neck-mold nipple detachably mounted on a movable support independently of the molding-ring so as to move through the same in plunging the parison; substantially as described.

814,192. DOOR. FRANK DEITLER, Vicksburg, Mich. Filed Apr. 26, 1905. Serial No. 257,268.



Claim.—1. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; a front hanger for said door; a rear hanger for said door having an offset therein opposite said track; a hook-like bracket arranged above the door-opening, having an inwardly-deflected engaging portion; a hook-like member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said bracket; and a trip-cord for said lever, for the purpose specified.

2. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly; hangers for said door; a hook-like bracket arranged above the door-opening, having an inwardly-deflected engaging portion; a hook-like member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said support; and a trip-cord for said lever, for the purpose specified.

3. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front sections overlapping said rear sections; a front hanger for said door; a rear hanger for said door; having an offset therein opposite said track; grooved carrying-rollers for said hangers; retaining-rollers carried by said hangers arranged beneath said track; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said bracket; and a trip-cord for said lever, for the purpose specified.

4. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; a front hanger for said door; a rear hanger for said door having an offset therein opposite said track; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said bracket; and a trip-cord for said lever, for the purpose specified.

5. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly; hangers for said door; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said bracket; and a trip-cord for said lever, for the purpose specified.

6. The combination of a door; a track; a hanger for said door; a hook-like bracket arranged above the door-opening, having an inwardly-deflected engaging portion; a hook-like member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch on said cable adapted to engage said loop when the cable is released; a support for said catch; a pivotally-supported lever adapted to engage said catch to retain it upon said bracket; and a trip-cord for said lever, for the purpose specified.

7. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly; hangers for said door; a bracket arranged above the door-opening; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch device on said cable, said cable being adapted to engage said loop when released; and a trip-cord for said catch device, for the purpose specified.

8. The combination of a door; a track; hangers for said door; a bracket arranged above the door-opening; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch device on said cable, said cable being adapted to engage said loop when released; and a trip-cord for said catch device, for the purpose specified.

9. The combination of a door; a track consisting of front and rear sections having their forward ends deflected inwardly; hangers for said door; a weight; a supporting-cable therefor arranged parallel with said track; a loop on said door through which said cable is arranged; a catch device on said cable, said cable being adapted to engage said loop when released; and a trip-cord for said catch device, for the purpose specified.

10. The combination of a door; a track therefor consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; a front hanger for said door; a rear hanger for said door having an offset therein opposite said track; a bracket arranged above said door-opening, having an inwardly-deflected engaging portion; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged to engage said door when released; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

11. The combination of a door; a track therefor consisting of front and rear sections having their forward ends deflected inwardly, hangers for said door; a bracket arranged above said door-opening, having an inwardly-deflected engaging portion; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged to engage said door when released; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

12. The combination of a door; a track therefor consisting of front and rear sections having their forward ends deflected inwardly, said front section overlapping said rear section; a front hanger for said door; a rear hanger for said door, having an offset therein opposite said track; a weight; a supporting-cable therefor arranged to engage said door when released; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

13. The combination of a door; a track therefor consisting of front and rear sections having their forward ends deflected inwardly; hangers for said door; a weight; a supporting-cable therefor arranged to engage said door when released; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

14. The combination of a door; a bracket arranged above said door-opening, having an inwardly-deflected engaging portion; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged to engage said door when released; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

15. The combination of a door; a bracket arranged above said door-opening; a member carried by said door adapted to engage said bracket when the door is in its closed position; a weight; a supporting-cable therefor arranged to engage said door when re-

leased; a catch device for said cable; and a trip or releasing cord for said catch device, for the purpose specified.

16. The combination of a door; a track; suitable hangers for said door; a hook-like bracket arranged above said door-opening, having an inwardly-deflected engaging portion; and a hook-like member carried by said door adapted to engage said bracket as said door is closed, whereby the same is drawn inwardly against the door-casing; for the purpose specified.

17. The combination of a door; a track; suitable hangers for said doors; a bracket arranged above said door-opening; and a member carried by said door adapted to engage said bracket as said door is closed, for the purpose specified.

18. The combination of a number of doors; tracks therefor, consisting of front and rear sections having their front ends deflected inwardly, said front sections overlapping said rear sections; front hangers for said doors; rear hangers for said doors having offsets therein opposite said tracks; brackets arranged above the door-openings; members carried by said doors adapted to engage said brackets when the doors are in their closed positions; weights; supporting-cables therefor, arranged to engage said doors when released; catch devices for said cables; and a common trip or releasing cord for said catch devices, all coacting for the purpose specified.

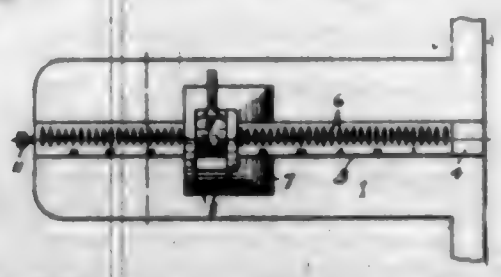
19. The combination of a number of doors; tracks therefor, consisting of front and rear sections having their front ends deflected inwardly; hangers for said doors; brackets arranged above the door-openings; members carried by said doors adapted to engage said brackets when the doors are in their closed positions; weights; supporting-cables therefor, arranged to engage said doors when released; catch devices for said cables; and a common trip or releasing cord for said catch devices; all coacting for the purpose specified.

20. The combination of a number of doors; tracks therefor, consisting of front and rear sections having their front ends deflected inwardly, said front sections overlapping said rear sections; front hangers for said doors; rear hangers for said doors having offsets therein opposite said tracks; weights; supporting-cables therefor, arranged to engage said doors when released; catch devices for said cables; and a common trip or releasing cord for said catch devices, all coacting for the purpose specified.

21. The combination of a number of doors; tracks therefor, consisting of front and rear sections having their front ends deflected inwardly; hangers for said doors; weights; supporting-cables therefor, arranged to engage said doors when released; catch devices for said cables; and a common trip or release cord for said catch devices; all coacting for the purpose specified.

22. The combination of a number of doors; brackets arranged above the door-openings; members carried by said doors adapted to engage said brackets when the doors are in their closed positions; weights; supporting-cables therefor, arranged to engage said doors when released; catch devices for said cables; and a common trip or releasing cord for said catch devices; all coacting for the purpose specified.

814,193. **GAGE ATTACHMENT FOR LEAD-CUTTERS, &c.** George M. Durell, Toledo, Ohio. Filed Mar. 1, 1905. Serial No. 247,888.



Claim.—1. In an apparatus of the class described, the combination with the bed thereof having a slot provided therein, and a cutting element mounted at one end of the bed, of a guide-strip adjustable toward and away from the cutting element and having graduations thereon, means projecting within the slot in the bed for locking it in adjusted position, a gage-block mounted to be moved longitudinally of said guide-strip, means for locking the gage-block in adjusted position, and means for adjusting the gage-block to points intermediate the graduations on the guide-strip.

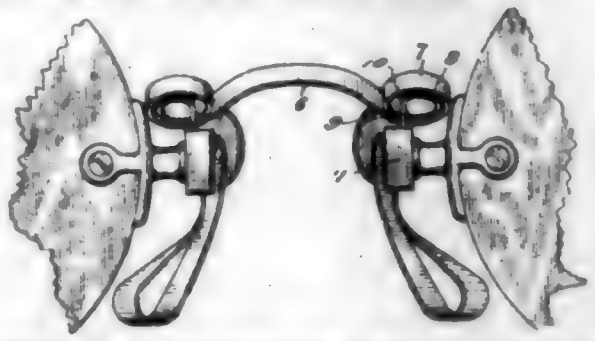
2. In a machine of the class described, the combination with the bed thereof, of a graduated guide-strip mounted on the bed to be moved longitudinally thereof, a gage-block longitudinally movable on said strip, and means for locking said block in adjusted position.

3. In a machine of the class described, the combination with the bed thereof, of a longitudinally-adjustable guide-strip mounted on said bed and having its surface graduated, a gage-block movable on said guide-strip, means for locking the block to said guide-strip, in adjusted position, and means for adjusting the gage-block to points intermediate of the graduations on the guide-strip.

4. In a machine of the class described, the combination with the bed thereof having elongated slots provided therein, of a longitudinally-adjustable guide-strip having lugs formed on its under surface and projecting within said slots, means for locking the guide-strip in adjusted position, a gage-block adjustably mounted on said guide-strip, and a cam-lever on said block for locking it to said strip in adjusted position.

5. In a machine of the class described, the combination with the bed thereof having slots provided therein, of a longitudinally-adjustable guide-strip having its upper surface graduated and projecting within said slots, means for locking the guide-strip in adjusted position, a gage-block mounted to be moved longitudinally of said guide-strip, a cam-lever on said block for locking it in adjusted position, and means for adjusting the gage-block to points intermediate the graduations on the guide-strip.

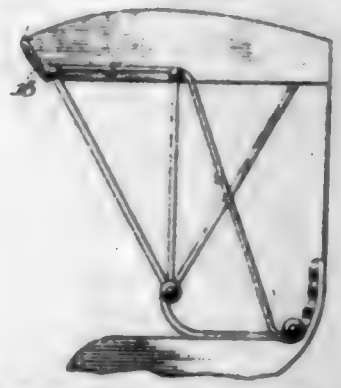
814,194. **EYEGLASS-BRIDGE.** William H. Ely, Middletown, Conn. Filed Dec. 23, 1904. Serial No. 238,085.



Claim.—1. An eyeglass-bridge formed of a flattened strip of thin spring metal having an intermediate connecting portion, an outer coil at each end, an inner coil within each outer coil, said coils lying in the same plane, and the attaching ends torsionally bent and extending downwardly from the inner ends of the inner coils and with their wider faces extending in planes transversely of the planes of the coils.

2. An eyeglass-bridge formed of a flattened strip of thin, spring metal having an arch, an outer coil at each end of the arch, an inner coil within each outer coil, and a torsionally-twisted stud end extending downwardly from each inner coil, substantially as specified.

814,195. **VALANCE FOR BUGGIES.** Charles W. Fisher, Columbia City, Ind. Filed Mar. 24, 1905. Serial No. 251,916.

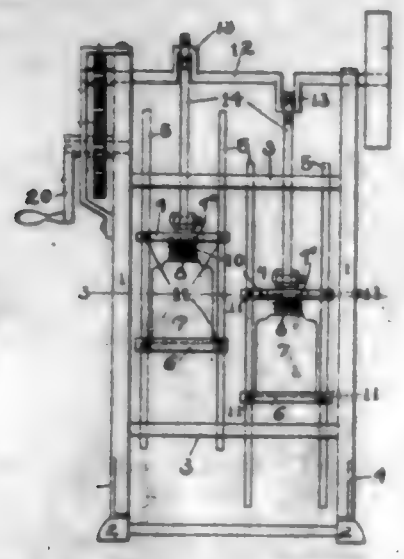


Claim.—1. In a carriage-valance, the front bow having a plurality of studs having enlarged heads and inserted therein at uniform distances apart, a metal strip having spaced apertures for receiving the heads of said studs and with contracted extensions for receiving the shanks of the same when the strip is moved longitudinally of the bow, and a fabric covering for said strip, the insertion of the headed studs being completed after the metal strip having the covering fabric has been moved into position with the aperture extensions engaging the shanks of the headed studs.

2. In a carriage-valance, an inner metal strip having a plurality of spaced apertures and with one edge offset, a plurality of studs having enlarged heads and inserted partially into the front bow through said apertures, an outer metal strip having spaced apertures for receiving the enlarged heads of said studs and with contracted extensions for receiving the shanks of the same, a fabric covering for said inner metal strip, and a fabric covering for said outer metal strip, the insertion of the headed studs being completed after the

outer metal strip having the fabric covering thereon has been moved into position.

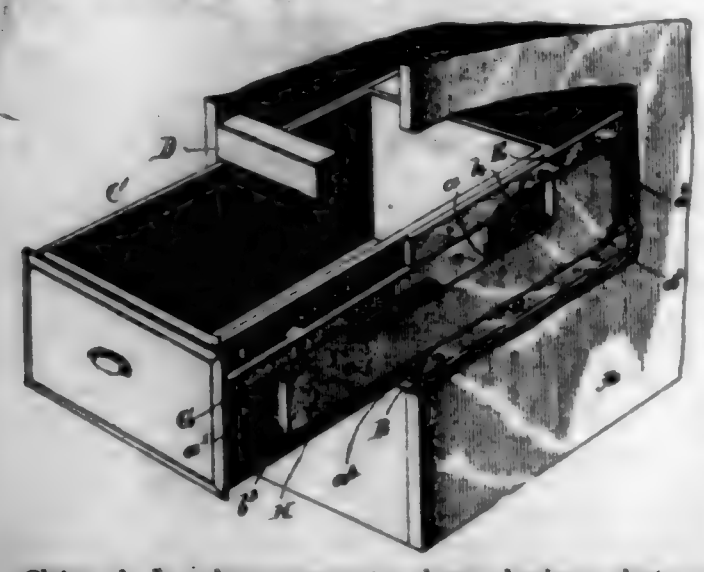
814,196. CHURN. JAMES D. FORSYTH, Springfield, Ill., assignor of one-half to Carl J. Koenig, Springfield, Ill. Filed Oct. 28, 1905. Serial No. 284,351.



Claim.—1. A churn comprising sills, vertical uprights secured on said sills, braces secured to said sills, a bracket on one of said uprights, a shaft turning in said bracket and the adjacent upright, a cog-wheel and a crank secured on said shaft, a double crank-shaft turning in bearings on the uprights, a fly-wheel on the crank-shaft, a pinion on the crank-shaft meshing with said cog-wheel, cross-pieces connecting said uprights, parallel rods sliding in holes in said cross-pieces, platforms secured to said rods, plates detachably connected with said rods above said jars, springs acting to hold said jars in position on said platforms and connecting-rods connecting said cranks with said plates, as set forth.

2. In a churn the combination of reciprocating parallel rods, a platform secured on said rods, a centrally-recessed plate detachably connected with said rods, a spring fitting in the recess of said plate and a jar supported on said platform and having a cap fitting in said spring.

814,197. DRAWER-SUPPORT. JOHN R. FREEMAN, Providence, R. I. Filed May 17, 1904. Serial No. 208,331.



Claim.—1. In a drawer-support, a drawer having a cleat provided with a roller at the lower corner of its inner end, and a casing having parallel tracks, and a slide interposed between the cleats and the tracks provided at its corners with studs on which are mounted rollers that move with the slide and roll over the track.

2. In a drawer-support, a drawer having a cleat provided with a roller, a casing having parallel tracks, and a slide interposed between cleat and the tracks and provided with rollers, one of said tracks having a roller at its outer end to contact with the under side of the slide.

3. In a drawer-support, a casing having tracks, a drawer having a cleat, and a slide interposed between said cleat and the tracks and having at its opposite ends rollers, the rollers of said slide contacting with said cleat and tracks.

4. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the inner lower corner thereof and rolling over the slide.

5. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the lower corner thereof, and rollers at both ends of said slide, said rollers coacting respectively with said tracks and with said cleat.

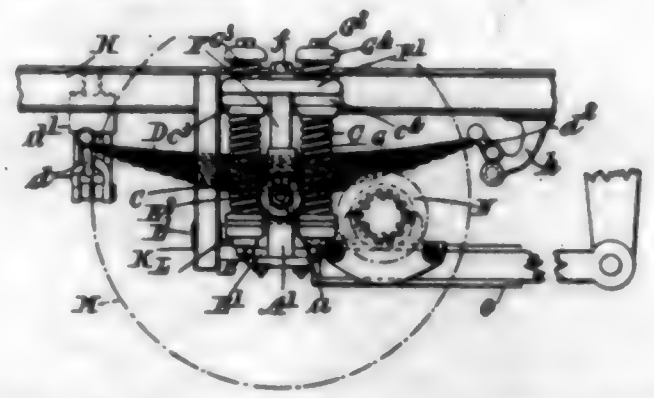
6. In a drawer-support, a casing having parallel tracks, a drawer having a cleat, a slide interposed between said cleat and tracks and having between its ends at its upper edge a track-surface, combined with a roller connected with said cleat at the inner lower corner thereof, rollers mounted at both ends of said slide, said rollers coacting respectively with said tracks and with said cleat, and a roller located at the outer end of the lower track and sustaining the under edge of the slide.

7. In a drawer-support, a drawer having cleats, a drawer-casing having tracks, and intermediate slides, the cleats, tracks and slides being rabbeted, and rollers carried by said slides and rolling over said tracks, said rabbets aiding in guiding and maintaining the slides securely in position while the drawer is being moved out or in.

8. In a drawer-support, a casing having parallel tracks, a drawer having cleats, and intermediate slides provided at their two upper corners and at their rear lower corners with rollers.

9. In a drawer-support, a casing having parallel tracks, a drawer having cleats, and intermediate slides provided at their two upper corners and at their rear lower corners with rollers, each of said tracks also having a roller at its outer corner over which the under side of the corresponding slide travels.

814,198. MOUNTING OR SUSPENSION FOR VEHICLE-WHEELS. CHARLES W. FULTON, Paisley, Scotland. Filed June 16, 1905. Serial No. 265,555.



Claim.—1. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second cross-axle, resilient bodies between the two axles, and resilient bodies between the second axle and the vehicle.

2. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second cross-axle located between the wheel-carrying axle and the vehicle, resilient bodies between the two axles and resilient bodies between the second axle and the vehicle, for the purpose set forth.

3. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second cross-axle, springs between the two axles, and springs between the second axle and the vehicle.

4. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second axle located between the wheel-carrying axle and the vehicle, springs between the two axles, and springs between the second axle and the vehicle and so constructed that they do not synchronize in their movements with the springs between the two axles, for the purpose set forth.

5. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a cross-axle supporting the wheels, a second cross-axle, springs between the two axles, and springs connecting the second axle and the vehicle.

6. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a cross-axle supporting the wheels, a second cross-axle, springs between the two axles, and springs connecting the second axle and the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

7. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a cross-axle supporting the wheels, a second cross-axle located between the wheel-carrying axle and the

vehicle, springs between the two axles, brackets on the lower axle supporting the lower ends of the springs, brackets on the upper axle receiving the upper ends of the springs, and springs between the upper axle and the vehicle.

8. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a cross-axle supporting the wheels, a second cross-axle located between the wheel-carrying axle and the vehicle, springs between the two axles, brackets on the lower axle supporting the lower ends of the springs, brackets on the upper axle receiving the upper ends of the springs, and springs between the upper axle and the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

9. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-supporting axle, of coil-springs located between the two axles near their ends, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle receiving the upper ends of the springs, and elliptic springs connecting the upper axle with the vehicle.

10. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-supporting axle, of coil-springs located between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle receiving the upper ends of the springs, and elliptic springs connecting the upper axle with the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

11. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-carrying axle, of coil-springs disposed between the two axles, brackets on the lower axle for supporting the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, elliptic springs between the upper axle and the vehicle, links connecting one end of the elliptic springs to the vehicle, a cross-spring at the other end of the elliptic springs, links connecting the ends of the cross-spring to the elliptic springs, and means connecting the cross-spring to the vehicle.

12. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-carrying axle, of coil-springs disposed between the two axles, brackets on the lower axle for supporting the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, elliptic springs between the upper axle and the vehicle, and so constructed as to be non-synchronous in their movements with the springs between the two axles, links connecting one end of the elliptic springs to the vehicle, a cross-spring at the other end of the elliptic springs, links connecting the ends of the cross-spring to the elliptic springs, and means connecting the cross-spring to the vehicle.

13. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-carrying axle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle receiving the upper ends of the coil-springs, guide-rods connecting the two brackets, and elliptic springs connecting the upper axle with the vehicle.

14. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located above the wheel-carrying axle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle receiving the upper ends of the coil-springs, guide-rods connecting the two brackets, and elliptic springs connecting the upper axle with the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

15. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located between the wheel-supporting axle and the vehicle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle for receiving the upper ends of the springs, guide-rods passing through the brackets on the axles, elliptic springs arranged longitudinally of the vehicle and connecting the upper axle to the vehicle, and guides for taking the side strain of the suspension.

16. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located between the wheel-supporting axle and the vehicle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle for receiving the upper ends of the springs, guide-rods passing through the brackets on the upper and lower axles, elliptic springs arranged longitudinally of the vehicle and connecting the upper axle to the vehicle, said springs being so constructed as to be non-synchronous in their movements with the springs between the two axles, and guides for taking the side strain of the suspension.

17. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located between the wheel-supporting axle and the vehicle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle for receiving the upper ends of the springs, guide-rods passing through the brackets on the axles, elliptic springs arranged longitudinally of the vehicle and connecting the upper axle to the vehicle, guides for taking the side strain of the suspension, and rods for taking the end strain of the suspension.

18. In a mounting or suspension for vehicle-wheels, the combination with a cross-axle for supporting the road-wheels, and a second cross-axle located between the wheel-supporting axle and the vehicle, of coil-springs between the two axles, brackets on the lower axle supporting the lower ends of the coil-springs, brackets on the upper axle for receiving the upper ends of the springs, guide-rods passing through the brackets on the upper and lower axles, elliptic springs arranged longitudinally of the vehicle and connecting the upper axle to the vehicle, said springs being so constructed as to be non-synchronous in their movements with the springs between the two axles, guides for taking the side strain of the suspension, and rods for taking the end strain of the suspension.

19. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, and a second cross-axle, of springs disposed between the two axles, brackets on the lower axle for receiving the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, springs connecting the upper axle to the vehicle, and rods for taking the end strain of the suspension.

20. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle and a second cross-axle, of springs disposed between the two axles, brackets on the lower axle for receiving the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, springs connecting the upper axle to the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, and rods for taking the end strain of the suspension.

21. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle and a second cross-axle located above the wheel-supporting axle, of upwardly-bent portions on the wheel-supporting axle, bearings for the wheels at the upper ends of the bent portions, coil-springs between the two axles, brackets on the lower axle for supporting the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, and springs between the upper axle and the vehicle.

22. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle and a second cross-axle located above the wheel-supporting axle, of upwardly-bent portions on the wheel-supporting axle, bearings for the wheels at the upper ends of the bent portions, coil-springs between the two axles, brackets on the wheel-supporting cross-axle for supporting the lower ends of the springs, brackets on the upper axle for receiving the upper ends of the springs, and springs between the upper axle and the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

23. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second cross-axle located above the wheel-supporting axle, upwardly-bent portions on the wheel-supporting axle, bearings for the wheels at the upper ends of the upwardly-bent portions, coil-springs between the two axles, brackets on the lower axle, arms on the brackets, sockets carried by the arms to receive the lower ends of the coil-springs, brackets on the upper axle, arms on the brackets, sockets on the arms to receive the upper ends of the coil-springs, and elliptic springs connecting the upper axle with the vehicle.

24. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, of a second cross-axle located above the wheel-supporting axle, upwardly-bent portions on the wheel-supporting axle, bearings for the wheels at the upper ends of the upwardly-bent portions, coil-springs between the two axles,

brackets on the lower axle, arms on the brackets, sockets carried by the arms to receive the lower ends of the coil-springs, brackets on the upper axle, arms on the brackets, sockets on the arms to receive the upper ends of the coil-springs, and elliptic springs connecting the upper axle with the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles.

25. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located above the wheel-supporting axle, springs between the two axles, brackets on the lower axle, sockets on the brackets to receive the lower ends of the coil-springs, brackets on the upper axle, sockets on the brackets to receive the upper ends of the coil-springs, guide-rods passing through the brackets on the upper and lower axles, upwardly-bent portions on the ends of the lower axle, and bearings for the road-wheels at the upper ends of the upwardly-bent portions, of cushioning-springs located between the brackets on the upper axle and heads on the guide-rods passing through the brackets.

26. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located above the wheel-supporting axle, springs between the two axles, brackets on the lower axle, sockets on the brackets to receive the lower ends of the coil-springs, springs connecting the upper axle to the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, brackets on the upper axle, sockets on the brackets to receive the upper ends of the coil-springs, guide-rods passing through the brackets on the upper and lower axles, upwardly-bent portions on the ends of the lower axle, and bearings for the road-wheels at the upper ends of the upwardly-bent portions, of cushioning-springs located between the brackets on the upper axle and heads on the guide-rods passing through the brackets.

27. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle, of horn-plates connected to the vehicle and adapted to take the side strain of the suspension, and arms connected to the suspension and bearing against the horn-plates.

28. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, of horn-plates connected to the vehicle and adapted to take the side strain of the suspension, and arms connected to the suspension and bearing against the horn-plates.

29. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle, of horn-plates connected to the vehicle and adapted to take the side strain of the suspension, arms connected to the suspension and bearing against the horn-plates, and tie-rods attached to the horn-plates and to the vehicle.

30. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, of horn-plates connected to the vehicle and adapted to take the side strain of the suspension, arms connected to the suspension and bearing against the horn-plates, and tie-rods attached to the horn-plates and to the vehicle.

31. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle, of radius-rods for taking the end strain on the suspenison.

32. In a mounting or suspension for vehicle-wheels, the combination with a wheel-supporting cross-axle, a second cross-axle located between the wheel-supporting axle and the vehicle, a pair of coil-springs between the ends of the two axles, and springs connecting the upper axle to the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, of radius-rods for taking the end strain on the suspension.

33. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a wheel-supporting cross-axle, upwardly-bent portions at each end of the cross-axle, bearings for the wheels at the upper ends of the upwardly-bent portions, a second cross-axle located between the wheel-supporting axle and the vehicle, brackets at each end of the lower axle, brackets on each end of the upper axle, a pair of springs disposed between the two axles one on each side of the upper axle, guide-rods passing through the brackets on the upper and lower axles, resilient cushions between the upper ends of the springs and the brackets on the upper axle, shoulders on the guide-rods, cushioning-springs disposed between the heads on the guide-rods and the brackets on the upper axle, elliptic springs located at each side of the vehicle, means connecting the elliptic springs to the upper axle, links connecting one end of the elliptic springs to the vehicle, a cross-spring, means for connecting the other ends of the elliptic springs to the cross-spring, means connecting the center of the cross-spring to the vehicle, means for taking the side strain on the suspension, radius-rods connected to the suspension and to the vehicle and adapted to take the end strain, a counter-shaft, gear-wheels on the counter-shaft for rotating the road-wheels, and bearings on the radius-rods for supporting the counter-shaft substantially as set forth.

34. In a mounting or suspension for vehicle-wheels, the combination with the road-wheels, of a wheel-supporting cross-axle, upwardly-bent portions at each end of the cross-axle, bearings for the wheels at the upper ends of the upwardly-bent portions, a second cross-axle located between the wheel-supporting axle and the vehicle, brackets at each end of the lower axle, brackets on each end of the upper axle, a pair of springs disposed between the two axles, one on each side of the upper axle, guide-rods passing through the brackets on the axles, resilient cushions between the upper ends of the springs and the brackets on the upper axle, shoulders on the guide-rods, cushioning-springs disposed between the shoulders on the guide-rods and the brackets on the upper axle, elliptic springs located at each side of the vehicle and so constructed as to be non-synchronous in their movements with the springs between the two axles, means connecting the elliptic springs to the upper axle, links connecting one end of the elliptic springs to the vehicle, a cross-spring and means for connecting the other ends of the elliptic springs to the cross-spring, means connecting the center of the cross-spring to the vehicle, means for taking the side strain on the suspension, radius-rods connected to the suspension and to the vehicle and adapted to take the end strain, a counter-shaft, gear-wheels on the counter-shaft for rotating the road-wheels, and bearings on the radius-rods for supporting the counter-shaft, substantially as set forth.

814,199. SELF-LOCKING NUT. Lawrence M. Gallimer, Lexington, Miss., assignor of one-half to J. S. Carroll, Hays county, Tex. Filed Apr. 7, 1905. Serial No. 254,283.



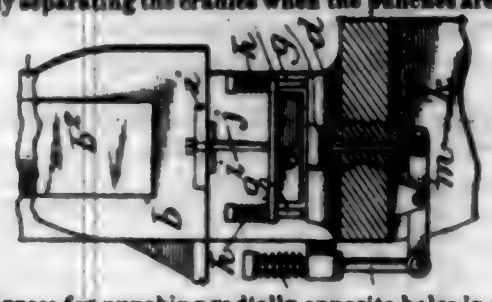
Claim.—A nut-lock comprising a nut with a central threaded bore extending substantially half the thickness of the nut, the threads of said bore terminating in a chambered or recessed portion with inclined walls, with a channel leading through one corner of the nut from said recessed portion, a resilient key which is circular outlined and provided with an inclined outer circumference conforming to the inclined wall of the chambered portion of the nut, one end of said key being bent at right angles and designed to engage the channel formed in the nut, the inner circumference of said key provided with serrations, the end serration of the series extending slightly in advance of the others and adapted to bite into the threads of a bolt as the key is contracted by the inclined walls of said recessed portion of the nut, as set forth.

814,200. PRESS FOR PUNCHING TUBING. James Gibson, Westboro, Mass. Filed Jan. 25, 1905. Serial No. 242,633.

Claim.—1. In a press for punching radially opposite holes in tubing, the combination of opposite half-round cradles exteriorly embracing and clamping the tubing and oppositely-acting punches for cutting diametrically opposite apertures in the sides of the tubing.

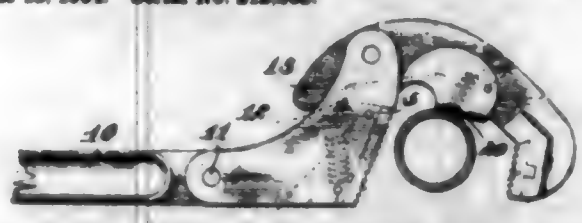
2. In a press for cutting apertures in opposite sides of tubing, the combination of opposite half-round apertured cradles exteriorly embracing the tubing and oppositely-acting punches for cutting apertures in opposite sides of the tubing.

3. In a press for punching radially opposite holes in tubing, the combination of a cradle having a half-round seat for the tubing, an opposite cradle having a corresponding half-round seat, a plunger, a punch actuated thereby, a diametrically opposite punch, means whereby as the plunger descends the two punches are advanced toward each other, means for automatically closing the cradles in advance of engagement of the punches with the tubing and means for automatically separating the cradles when the punches are retracted.



4. In a press for punching radially opposite holes in tubing, the combination of a cradle having a half-round seat for the tubing, an opposite cradle having a corresponding half-round seat, springs normally tending to close the cradles and clamp the tubing therein, oppositely-acting punches, means whereby the springs are permitted to close the cradles in advance of the action of the punches upon the tubing, and means for separating the cradles against the tension of their closing-springs when the punches are retracted.

814,201. WRENCH. MARIUS B. GRISWOLD, Chicago, Ill. Filed June 13, 1904. Serial No. 212,965.



Claim.—1. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close, by the wrench action, the jaws into operative engagement with the object to be turned; and a spring pressing the inner arm of the lever-handle and the jaw to which it is fulcrumed apart to press the jaws toward each other.

2. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close, by the wrench action, the jaws into operative engagement with the object to be turned; and a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end the other jaw when the jaws are open to lock them in open position, and a spring to press the lever-arm into locking engagement.

3. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close, by the wrench action, the jaws into operative engagement with the object to be turned; a spring to press the jaws toward each other; and a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end the other jaw when the jaws are open to lock them in open position, and a spring to press the lever-arm into locking engagement.

4. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close, by the wrench action, the jaws into operative engagement with the object to be turned; a spring pressing the inner arm of the lever-handle and the jaw to which it is fulcrumed apart to press the jaws toward each other; and a locking device comprising a lever-arm pivoted to one of the jaws and adapted to engage at its free end the other jaw when the jaws are open to lock them in open position, and a spring to press the lever-arm into locking engagement.

5. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close, by the wrench action, the jaws into operative engagement with the object to be turned; a spring pressing the inner arm of the lever-handle and the jaw to which it is fulcrumed apart to press the jaws toward each other; and a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end with the other jaw when the jaws are open to lock the jaws in open position, said lever-arm having a striker portion for striking the object to be turned and thus unlock the open jaws, and a spring to press the lever-arm into locking engagement.

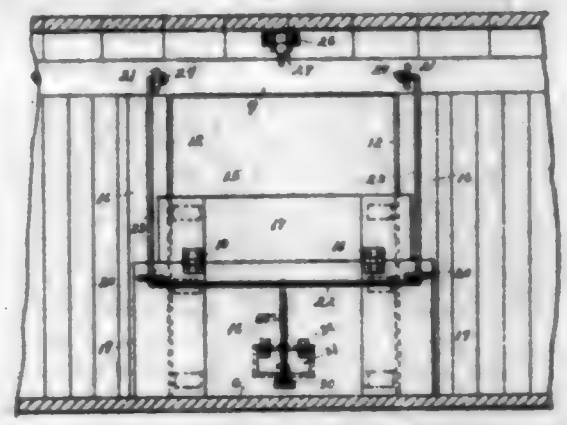
6. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close by the wrench action the jaws into operative engagement with the object to be turned; and a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end with the other jaw when the jaws are open to lock them in open position.

7. In a wrench, the combination of two coöperating wrench-jaws; a lever-handle fulcrumed to one and engaging with the other to close by the wrench action the jaws into operative engagement with the object to be turned; a spring to press the jaws toward each other; and a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end with the other jaw when the jaws are open to lock them in open position.

8. In a wrench, an automatic locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end with the other jaw when the jaws are open to lock the jaws in open position, said lever-arm having a striker portion for striking the object to be turned when the same is between the jaws and thus unlock the open jaws, and a spring to press the lever-arm into locking engagement.

9. In a wrench, a locking device comprising a lever-arm pivoted to one jaw and adapted to engage at its free end with the other jaw when the jaws are open to lock the jaws in open position, said lever-arm having a striker portion for striking the object to be turned when the same is between the jaws and thus unlock the open jaws.

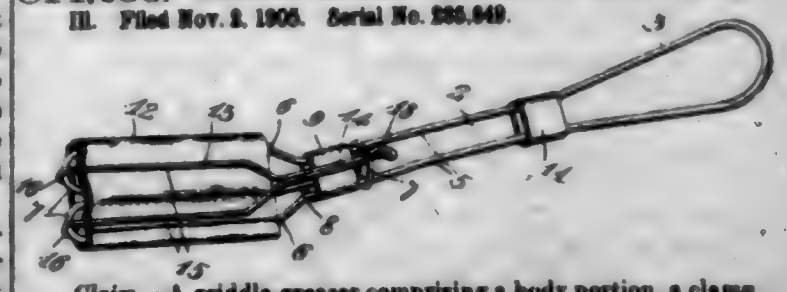
814,202. DOOR FOR GRAIN-CARS. JOHN J. HAHN, Kansas City, Mo. Filed May 3, 1905. Serial No. 258,655.



Claim.—1. The combination with a slidable door and vertical suspension-rods therefor and guiding devices upon the door adapted to receive telescopically said rods of a spring connected at one end with the lower ends of said rods and at the other end with the lower portion of the said door.

2. In a car having a door-opening in the walls, the combination with the wall-plate of suspension-rods pivotally connected therewith at their upper ends, a slidable door to said opening, a lug upon the inner surface and near the lower edge of said door, guiding devices on the inner surface of the door within which the said rods are telescopically extended and transverse portions of said rods connecting their lower ends with each other, a self-acting catch within the car adapted to engage with the lower portion of said door and a coiled spring one end of which is connected with the transverse portion of said rods and the other end with the lug near the lower edge of said door.

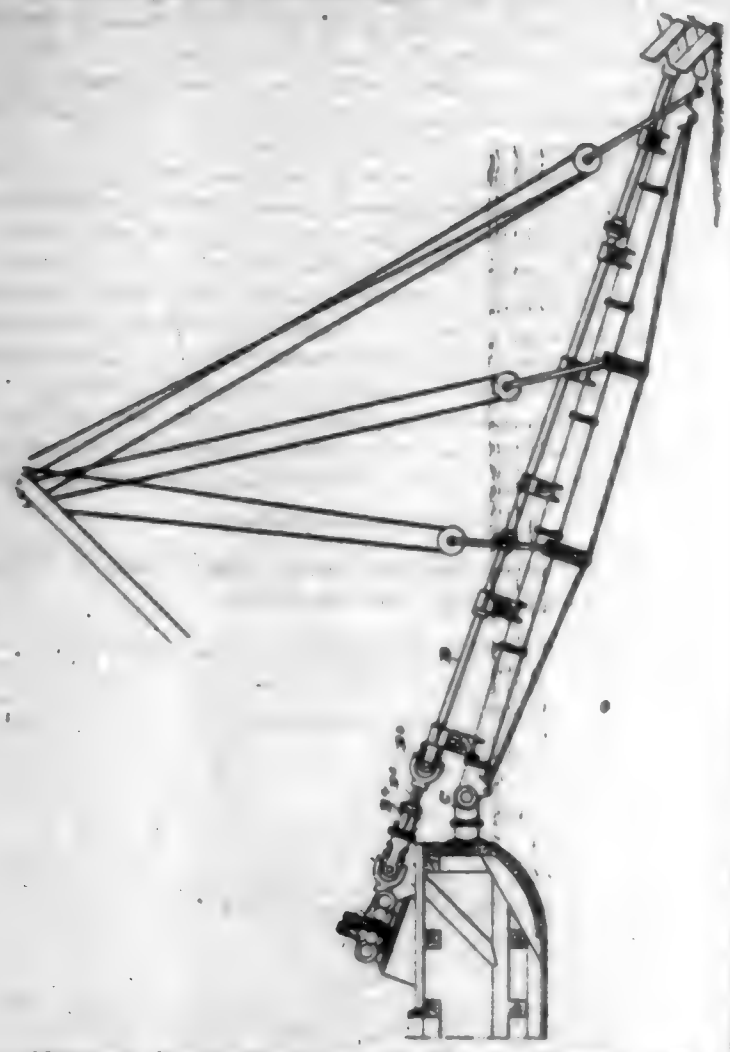
814,203. GRIDDLE-GREASER. CHARLOTTE H. HAJEBT, Cowgo, Ill. Filed Nov. 2, 1905. Serial No. 285,849.



Claim.—A griddle-greaser comprising a body portion, a clamp, and a locking-loop, said body portion being formed from a single piece of wire, doubled to form a handle having parallel side bars 5, and a head or fork having laterally-extended side bars 6, incurved portions 7 and longitudinally-extending center bars 8, the ends of which are disposed between the bars 5; said clamp being formed from a single piece of wire, doubled to provide the handle portion 14 having the angularly-bent keeper 18 at one end and the laterally-extended bars 15 at the opposite end, said bars 15 being provided at their outer ends with eyes 16 pivotally connecting the clamp to the incurved portions 7 of the body portion, and the said locking-loop

being slidably disposed on the bars 5, to engage and disengage the keeper 18, substantially as described.

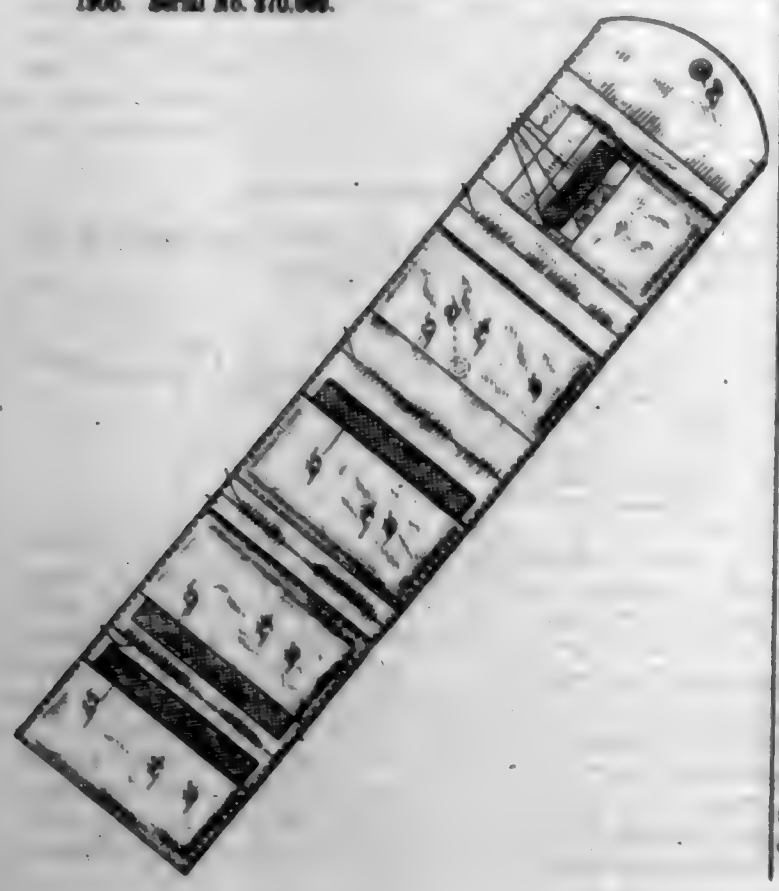
814,204. DREDGER. NICHOLAS R. HARRIS, San Francisco, Cal. Filed Oct. 26, 1905. Serial No. 284,589.



Claim.—1. In a dredger a cutter-shaft mounted upon a swinging ladder, a driving means upon said dredger, universal and slip joints interposed between said cutter-shaft, and the driving means near the pivot of said ladder.

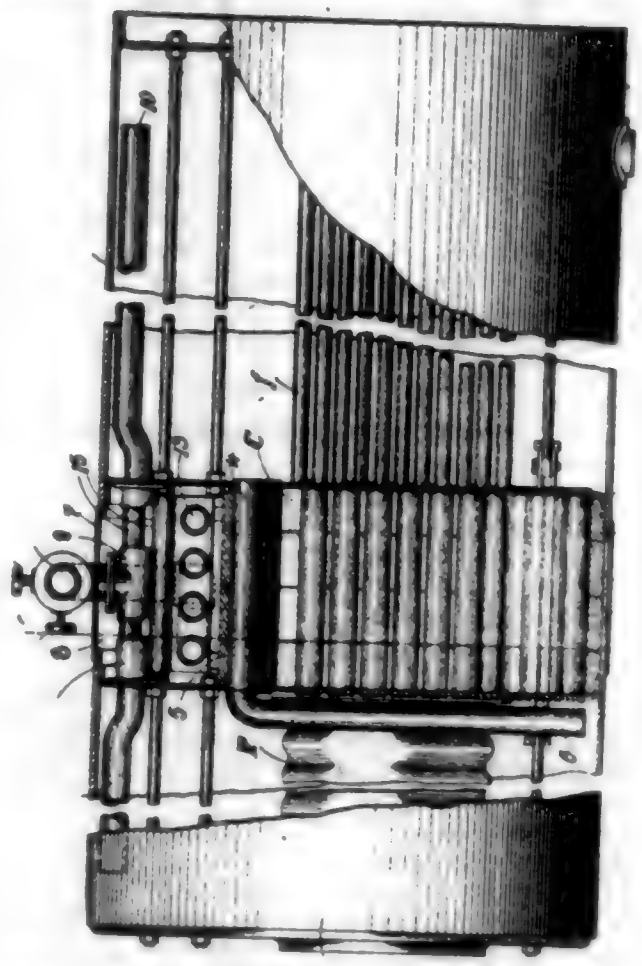
2. In a dredger a cutter-shaft having universal and sliding jointed connection with its driving mechanism.

814,205. POCKET-CASE FOR MILEAGE-BOOKS, BAGGAGE-CHECKS, &c. CHARLES A. HAWES, Cambridge, Mass. Filed July 21, 1906. Serial No. 270,669.



Claim.—A pocket-case comprising a backing-strip of pliable material adapted to fold on itself in sections, the outer end of said strip being shaped to constitute a flap, the inner face of the section adjacent the flap having a plurality of overlapping transversely-extending receiving-pockets, having open mouths, and each of the other sections having on its inner face a mileage-book-receiving pocket provided with an open mouth and which extends entirely across the backing-strip, the mileage-book-receiving pocket on adjacent sections opening in opposite directions.

814,206. STEAM-BOILER. CHARLES W. HAWKES, Chicago, Ill. Filed Sept. 11, 1905. Serial No. 277,884.



Claim.—1. In a boiler, a shell having an inner furnace, a combustion-chamber at the rear thereof having front and rear vertical walls, a water-space adjacent to said walls, crown water-tubes for the combustion-chamber connecting said water-spaces, a complement of refractory material for said crown-tubes, and a chamber having inclosing walls superposed over the combustion-chamber, substantially as set forth.

2. A boiler comprising a shell having an inner furnace, a combustion-chamber leading from the rear of the furnace, fire-flues communicating with the combustion-chamber, and a chamber having inclosing walls, superposed above the combustion-chamber and adapted to be brought into communication therewith through the wall separating the two chambers, substantially as set forth.

3. A boiler comprising a shell having an inner furnace and combustion-chamber therefor, and having a water-space to the front and rear of said combustion-chamber, a superheating compartment or chamber located contiguous to the combustion-chamber, crown-tubes disposed along the wall separating the combustion-chamber from the superheating-compartment and establishing communication between the front and rear water-spaces aforesaid, and crown-tile or equivalent material forming with said crown-tubes the complement of the division-wall aforesaid, and being removable to any degree to expose the contents of the superheating-chamber to direct contact with the products of combustion, substantially as set forth.

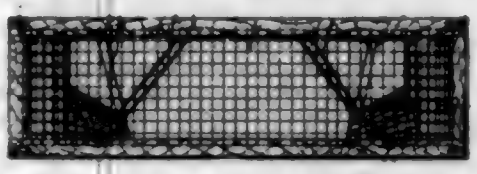
4. A boiler comprising a shell, a furnace and combustion-chamber therefor, a superheating-chamber above the combustion-chamber, the wall dividing the two chambers having removable sections to allow for the admission of the combustion products into the superheating-chamber, crown water-tubes forming the complements of the removable sections of said dividing-wall, a dry pipe for the boiler, and suitable connections establishing communication between the dry pipe and superheater, substantially as set forth.

5. A boiler comprising a shell, an inner furnace and combus-

tion-chamber for the same, fire-flues leading from the combustion-chamber, a superheating-chamber formed above the combustion-chamber, said combustion and superheating chambers having respectively water and steam spaces to the front and rear thereof, equalizing steam-tubes disposed between the front and rear walls of the superheating-chamber, and water and crown tubes disposed between the front and rear walls of the combustion-chamber, respectively establishing communication between the opposite sections of the steam and water spaces, and a header confined within the superheating-chamber for conducting the steam out of the boiler, a superheater within the superheating-chamber having communication with the header from outside the boiler-shell, and a dry pipe for supplying steam to the header, substantially as set forth.

6. In a marine boiler, a sectional shell, a furnace and combustion-chamber therefor, the sides and top of the combustion-chamber being encompassed by series of water-tubes and crown-tubes respectively, an outer lining of tile for the several water-tubes, a sheet of heat-non-conducting material enveloping the water-tubes, a central shell-section enveloping the sheet of heat-non-conducting material, and front and rear shell-sections having their adjacent ends encompassed by the central shell-section, substantially as set forth.

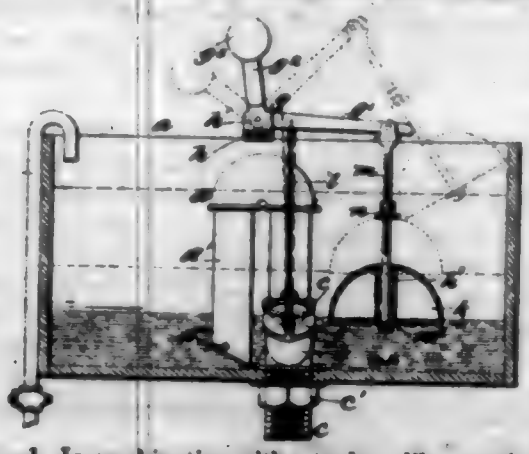
814,207. QUAIL-TRAP. GEORGE R. HAWKINS, HORACE M. STEVENS, and CHARLES P. STEVENS, Welborn, Fla. Filed Dec. 4, 1905. Serial No. 290,125.



Claim.—1. In a trap of the character described, the combination with a cage having indented end walls, of tunnels leading from said end walls to the interior of the cage and wires pivoted for swinging movement, the free ends of said wires overlying the mouths of said tunnels.

2. In a trap of the character described, the combination with a cage, of tunnels which converge toward their inner ends, wires connected to the top of said cage, the free ends of which overlie the mouths of said tunnels, guide-bars in which the free ends of said wires are disposed to travel, and a door through which access may be had to the interior of the trap.

814,208. FLUSH-TANK. MATTHEW HOGAN, Hartford, Conn., assignor to The Hogan Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 22, 1896. Serial No. 568,456.



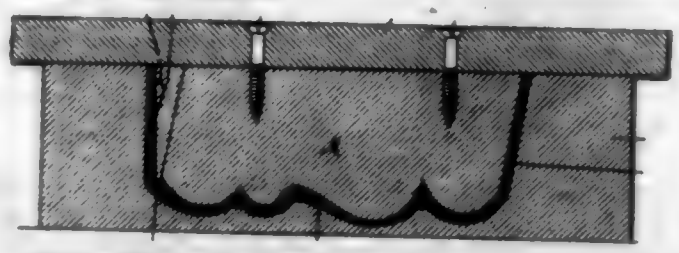
Claim.—1. In combination with a tank or like vessel for holding fluid, a supply-pipe for introducing fluid to the tank, a discharge-pipe, a discharge-valve appurtenant to the discharge-pipe, a rocking trip-lever of angular form having a weight on one arm, a flexible connection intermediate said lever and the discharge-valve, a pivoted support arranged at or near the end of the lever opposite the weight, and a freely-movable float arranged upon said support whereby it is inactive with respect to the support and lever during a predetermined rise of the fluid in the tank, and means appurtenant to the pivoted support and lever for carrying the float outward and beyond the pivot of the support for the purposes specified.

2. In combination with a tank or like vessel for holding a fluid, a supply-pipe for providing fluid in the tank, a discharge-pipe, a discharge-valve appurtenant to the discharge-pipe, a rocking lever operatively arranged with relation to the tank and valve and provided with a weight, a flexible connection between said lever and the valve, a float, a support for said float pivoted to the lever, and means for maintaining a fixed angular position between the float, float-support and lever, with the float carried outward and beyond the pivot of the support when the latter is pulled upward by the weight.

3. In combination with a tank or like vessel for holding fluid, a supply-pipe for introducing fluid to the tank, a discharge-pipe, a discharge-valve appurtenant to said pipe a rocking trip-lever having a weighted arm and a float-supporting arm, a flexible connection intermediate the float-supporting arm and discharge-valve, a pivoted float-support, a float having limited independent movement on said float-support, and means for maintaining a fixed angular relation between the float-support arm of the lever, its weight, and pivoted float-support during the movement of the parts, whereby the float reacts as a counterbalance in opposition to the weight.

4. In combination with a tank, a fluid-supply pipe, a discharge-pipe and a valve appurtenant to said discharge-pipe, a weighted lever adapted to open said discharge-valve upon a predetermined rise of level of the fluid within the tank, a float having a movement independent of said lever and arranged to tilt the latter at predetermined points, said float connected to the lever by connections arranged to maintain the float in fixed angular position with reference to the lever, whereby when the parts are tilted by the weight the float assumes a position at a greater distance from the fulcrum and in the normal position of the parts.

814,209. METHOD OF MAKING PATTERNS FOR METAL CASTINGS. ADOLPH M. HOLSTEIN, Syracuse, N. Y. Filed Apr. 18, 1905. Serial No. 256,170.



Claim.—The herein-described method of manufacturing cast-metal negative dies for casket ornaments consisting, first, in making a positive wood ornament of the desired form; second, chambering a wood block so that the chamber is of greater dimensions than the positive wood ornament; third, applying a composite plastic material to the bottom and sides of the chamber; fourth, pressing the wood ornament into the plastic material in said chamber, leaving a negative impression of said positive ornament in the plastic material; fifth, shaping the wood block to form a comparatively smooth exterior, thereby producing a pattern, then making a sand mold from the pattern, and finally casting a metal die in the sand mold.

814,210. MATCH-MAKING MACHINE. WALTER R. HOPE and GEORGE A. ROBINSON, Wilmington, Del., assignors of one-third to Charles Fehrenbach, Wilmington, Del. Filed Aug. 4, 1900. Serial No. 25,925.

Claim.—1. In a match-machine, the combination with feeding instrumentalities, of a forming device, and transversely-movable separating devices for the formed splints, movable in the plane in which the splints lie, substantially as described.

2. In a match-machine, the combination with feeding instrumentalities, of forming instrumentalities and means movable transversely and longitudinally in the plane in which the splints lie, for separating the formed material and carrying the same to a point of deposit, substantially as described.

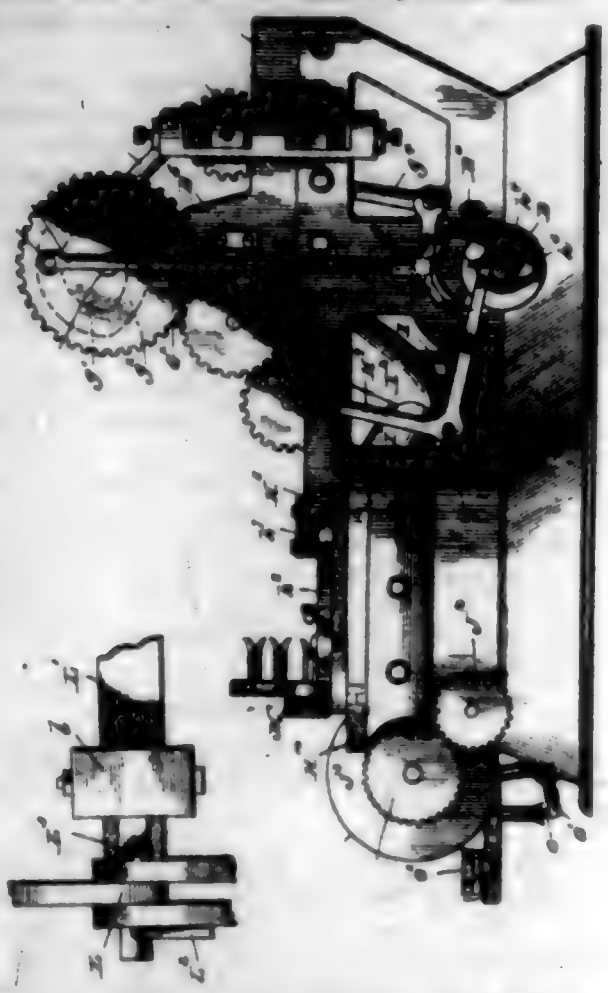
3. In a match-machine, the combination with feeding instrumentalities, of a forming instrumentality, a separator for the formed device, and means for progressively actuating the separator transversely in the plane in which the splints lie and for moving the same longitudinally, substantially as described.

4. In a match-machine, the combination with means for forming the match-splints and arranging them longitudinally of the machine, of separating means and means for actuating the separating means transversely in the plane of the machine in which the splints lie, substantially as described.

5. In a match-machine, the combination with splint-forming instrumentalities and separating means movable transversely in the plane in which the splints lie and located in rear of the forming instrumentalities, substantially as described.

6. In a match-machine, the combination with forming instrumentalities, of movable separating means for the splints arranged

to move the splints sidewise and transversely of the machine in the plane in which the splints lie, substantially as described.



7. In a match-machine, the combination with forming instrumentalities, of means for moving the splints sidewise and transversely of the machine in the plane in which the splints lie, substantially as described.

8. In a match-machine, the combination with cutting and forming rolls, of a separator on which the splints are placed longitudinally, means for actuating the separator to simultaneously move the splints sidewise and transversely of the machine in the plane in which the splints lie, to increase the distance between the splints and means for removing the splints from the separator, substantially as described.

9. In a match-machine, the combination with forming instrumentalities, of a separator for the formed splints comprising a series of separate holders and means for moving the holders transversely to separate said holders in the plane in which they receive the splints from the forming instrumentalities, substantially as described.

10. In a match-machine, the combination with forming instrumentalities, of separating means comprising a series of independent carriers, a loose connection between the carriers and means for moving the carriers toward and from each other, substantially as described.

11. In a match-forming machine, the combination with forming instrumentalities, of separating means comprising a series of independently-movable plates or carrying portions and means for progressively moving the plates toward and from each other, substantially as described.

12. In a match-forming machine, the combination with forming instrumentalities, of a separator consisting of a series of plates linked together, means for moving the plates transversely toward and from each other, and mechanism for advancing the plates, substantially as described.

13. In a match-machine, the combination with forming instrumentalities, of separating instrumentalities, movable transversely in the plane in which the splints lie means for actuating the separating instrumentalities, means for holding the formed splints on the said separating instrumentalities, and an endless carrier for the separated splints, substantially as described.

14. In a match-machine, the combination with forming-rolls, of a grooved receiving-table, means above the table for guiding and retaining the formed splints in the grooves and movable separating devices for individually separating the splints movable longitudinally of the splints, substantially as described.

15. In a match-machine, the combination with forming-rolls, of a grooved receiving-table and a separator consisting of a series of movable members and means for moving the members to move the splints sidewise and transversely of the machine in the plane in which the splints lie, substantially as described.

16. In a match-machine, the combination with forming-rolls, of a grooved separating-table, means for retaining the formed splints in the grooves, a separator for individually separating the splints, a carrier, and means for moving the separator to and from the table, substantially as described.

17. In a match-machine, the combination with forming instrumentalities, an individual splint-separator for increasing the distance between adjacent splints in the plane in which they receive the splints from the cutting mechanism, and means for reciprocating the separator, substantially as described.

18. In a match-machine, the combination with forming instrumentalities, of individual splint-separating means for increasing the distance between adjacent splints, and means advancing the separating means toward a carrier, and said carrier, substantially as described.

19. In a match-forming machine, the combination with forming instrumentalities, of a separator comprising a series of movable members, mechanism for moving the members transversely in the plane in which the splints lie and means for reciprocating the separator toward and from the carrier, and said carrier, substantially as described.

20. In a match-machine, the combination with forming instrumentalities, a separator consisting of a series of movable members, a support therefor and mechanism for moving the members transversely in the plane in which the splints lie and advancing the support toward a carrier, and said carrier, substantially as described.

21. In a match-forming machine, the combination with forming-rolls, of a separator consisting of a series of plates having means for carrying splints, staggered lugs on the adjacent plates, a loose connection between the lugs of one plate and the lugs of the other plate, a support for the plates and levers for moving the plates, substantially as described.

22. In combination with forming intrumentalities, of a separator consisting of a series of plates having openings therein, a loose connection between the plates, seats on the upper edges of the plates and lever mechanism connecting with the outer plates for moving the plates toward and from each other, substantially as described.

23. In a match-machine, the combination with a driving-shaft having an eccentric thereon, of a master-gear, a connection between the eccentric and master-gear for actuating the latter, a shaft carrying the master-gear, a feeding mechanism, a connection between the shaft and said feeding mechanism for actuating the same, a cam on said shaft, a pusher mechanism, a link connection between said cam and said pusher mechanism, and a knife actuated by said master-gear shaft, substantially as described.

24. In a match-machine, the combination with splint-forming instrumentalities, of splint-separating means, reciprocating slides, means for reciprocating the same, means carried by the slides for actuating the separating means, and stationary means for actuating the said actuating means for the separating means, substantially as described.

25. In a match-machine, the combination with a frame, of slides thereon, transversely-movable separating means carried by the slides, levers pivoted on the slides, connections between the levers and separating means, cams engaging the levers, and splint-forming instrumentalities, substantially as described.

26. In a match-machine, the combination with a frame, of a driving-shaft, a cam on the shaft, slides on the frame, a separating means carried by the slides, a lever engaging the cam and actuating the slides, means for moving the separating means upon the movement of the slides and splint-forming mechanism in advance of the separator, substantially as described.

27. In a match-forming machine, the combination with the forming instrumentalities, of a carrier, splint receiving and clamping mechanism on the carrier comprising spring-arms and connecting-strips on the outer ends of the arms and mechanism for opening said clamping mechanism to receive the splints, substantially as described.

28. In a match-machine, the combination with the forming instrumentalities, of a carrier, comprising movable clamping-bars, spring-arms carrying the bars, reciprocating mechanism for moving the arms to separate the bars so that they may receive the splints, substantially as described.

29. In a match-machine, the combination with forming instrumentalities, of a carrier consisting of endless belts, of bar connections between the belts, spring-arms secured to the bars, having inclined outer ends, clamping-bars secured to the outer ends of the spring-arms and mechanism for engaging the inclined ends for separating the arms at intervals, substantially as described.

30. A carrier for a match-machine comprising endless belts, bars connecting the belts, spring clamping members carried by the bars, and means locking two bars together for preventing the rotation of the bars on the belts, substantially as described.

31. A carrier for match-machines consisting of endless belts, bars connecting the belts, spring-arms on the bars, clamping-bars carried by the arms and means for preventing independent rotation of the arms on the belts comprising rod connections between adjacent bars, substantially as described.

32. In a match-machine, the combination with a carrier, comprising endless belts and spring-actuated clamping-arms, of clamping-bars carried by the arms and auxiliary springs engaging the bars between their ends, substantially as described.

33. In a match-machine, the combination with carrier-chains, of bars connected to the same, spring-arms carried by the bars, clamping-bars carried by the outer ends of the arms and auxiliary springs secured to the connecting-bars and having their outer ends secured to the clamping-bars, substantially as described.

34. In a match-machine, the combination with a carrier comprising an endless belt, means for maintaining the carrier in a regular course during its movement, a paraffin-pan located below the carrier, means for applying heat to the pan, and mechanism independent of the carrier for elevating and lowering the paraffin-pan into and out of the path of the splints carried by the carrier during the stationary and moving periods of the carrier and for retaining the same in its elevated and lowered positions, substantially as described.

35. In a match-machine, the combination with an endless carrier for the formed splints, of a paraffin-pan, and independently-actuated means for raising and lowering the pan into and out of the path of the splints carried by the carrier, substantially as described.

36. In a match-machine, the combination of a carrier, of a dipping-pan, a heater therefor, levers supporting the dipping-pan and means for actuating the levers to raise and lower the dipping-pan during the movement of the carrier and retaining it in its different positions, substantially as described.

37. In a match-machine, the combination of a carrier, of a dipping-pan, a heater therefor, levers, a link connection between the levers and the pan, bell-cranks, means for actuating the bell-cranks and connections between the bell-cranks and the levers, substantially as described.

38. In a match-machine, the combination with a recessed heater, of standards thereon, a dipping-pan located in the recess, levers mounted on the standards, connections between the levers and the pan to take it out of the course of the splints and retain it in its adjusted position, a mechanism acting simultaneously to actuate the levers and change the position of the tank, substantially as described.

39. In a match-machine, the combination with a splint-forming mechanism and a carrier, of a dipping-pan, mechanism for moving the dipping-pan out of the course of the splints and retain it in its adjusted positions and means extending back to the former for actuating said moving means, substantially as described.

40. The combination with a carrier, of a vertically-movable dipping-pan, a heater therefor, levers for moving the dipping-pan, bell-cranks for moving the levers and a reciprocating rod engaging the bell-cranks for moving the same, substantially as described.

41. In a match-machine, the combination with a movable endless carrier, and means for deflecting the same at one point of a paraffining-tank below the deflected portion, and normally in the path of the splints, carried by the carrier, and means for lowering the paraffining-tank out of the path of the splints and retaining it in its lowered position, whereby the tank can be removed when the carrier is stopped.

42. In a match-machine, the combination with the forming mechanism, a carrier for the formed splints, a composition-tank having its dipping-roll arranged in the path of the splints, a paraffining-tank and means for changing the course of the splints in relation to the roll and simultaneously the relative position between the path of the splints and the dipping-tank, substantially as described.

43. In a match-machine, a composition-tank consisting of a hollow shell having a composition receptacle or pocket formed therein and a feed-duct discharging through the bottom of the receptacle or pocket, and a surrounding heating-chamber for the duct and pocket, substantially as described.

44. In a match-machine, a composition-tank, means for heating the tank, comprising a chamber and means for conveying the heating medium to the chamber, and a composition pocket or chamber in the tank, a feeding duct or passage extending from the top of the tank downward into the same and discharging into the bottom of the composition-chamber, substantially as described.

45. In a match-machine, the combination with a composition-chest and means for heating the same, of a receiving-chamber, agitators in the chamber, and a composition-feed for the chamber, extending to the outside of the tank in contact with the heating means and entering the chamber below the upper end thereof, substantially as described.

46. In a match-machine, a composition-tank comprising a heating-chamber and a composition-chamber, and a feed for the composition-chamber passing through the heating-chamber in proximity to and into the composition-chamber at a point below the top thereof, substantially as described.

47. In a match-machine, a composition-tank comprising a heating-chamber, a composition-chamber, a feed duct or channel entering from the top of the tank and extending downward through the heating-chamber and entering the base of the composition-chamber, substantially as described.

48. In a match-machine, a composition-tank consisting of a hollow tank having a composition-chamber therein, means for conducting a heating medium to the tank, a dipping-roll, agitators in the bottom of the chamber and means arranged to be heated by the heating medium and extending downward into the hollow tank and into the composition-chamber at the base thereof for supplying composition to the chamber at a point between the agitators and below the same, substantially as described.

49. In a match-machine, a composition-tank having provisions for heating the same and formed with a composition-chamber, of a dipping-roll and a removable section of lining located in the upper portion only of the chamber, substantially as described.

50. In a match-machine, the combination with a composition-tank, of a dipping-roll and a removable section of lining in the upper portion only of the composition-chamber of the tank, and a feed for the chamber entering the same below the lining, substantially as described.

51. In a match-machine, a composition-tank having a composition-chamber therein and means for heating the same, of a removable section of lining in the upper portion of the chamber, substantially as described.

52. In a match-machine, the combination with a composition-tank having a composition-chamber therein and means for heating the same, of a supplemental section of lining for the interior of the chamber at or near the upper edge thereof adjacent to the opening therein, substantially as described.

53. In a match-machine, a composition-tank provided with a composition-chamber and heating means therefor, of a removable collecting-wall surface located in the chamber near the open upper end thereof for the purposes specified.

54. In a match-machine, a composition-tank and means for heating the same, of an independently-removable protector for the upper portion of the tank on which the condensed material collects, the same being located adjacent to the upper open end of the tank, substantially as described.

55. In a match-machine, the combination with a composition-chest containing a dipping-roll, means for driving the roll, a separable coupling between the driving means and the roll, and a flexible and extensible folding heat-conductor leading to the chest, substantially as described.

56. In a match-machine, the combination with a carrier, of the movable composition-tank and a removable collecting-surface within the upper portion of the tank independent of the inner wall of the chamber of the tank adjacent the opening therein, substantially as described.

57. In a match-machine, the combination with a carrier, of a composition-tank provided with suitable supports and rollers on the supports whereby the tank may be moved and means for supplying heat to the tank constantly in its various adjusted positions, comprising a flexible folding conductor, substantially as described.

58. In a match-machine, the combination with a carrier, of a bell-crank, a roll carried by one arm of the bell-crank, idlers carried by the other arm and means connected with a projection on the bell-crank for rocking the bell-crank to elevate the roll and to depress the idlers, substantially as described.

59. In a match-machine, the combination with a carrier, of a lever, a roll carried by the lever and around which the carrier passes, an arm connected with the lever, an idler carried by the arm, and against which the carrier engages, and means connected with a projection at an angle to the arm and lever for tilting the lever and the arm simultaneously, substantially as described.

60. In a match-machine, the combination with forming mech-

anism, of a driving-shaft, means for driving the shaft, a sectional longitudinal shaft, a gear connection between the same and the driving-shaft, a carrier and a dipping-roll actuated by the sectional shaft, and a clutch mechanism between the driving-shaft and the forming mechanism whereby the driving-shaft may drive the carrier and the said roll independent of the forming mechanism, substantially as described.

61. In a match-machine, a composition-chest having provisions for heating the same and a composition-chamber, of a feed-conduit leading into the chamber from below, and a removable lining for the upper end of the conduit, substantially as described.

62. In a match-machine, the combination with a composition-chest having provisions for heating the same, of a composition-chamber, a feed-conduit leading from the upper end of the chest downward and entering the bottom of the chamber and a removable wall at the upper end of the conduit.

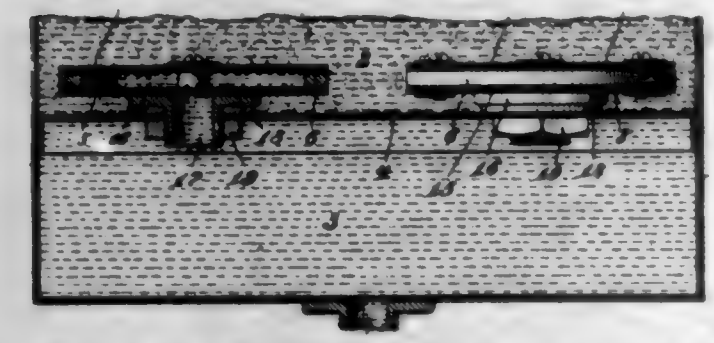
63. In a match-machine, a composition-chest having provisions for heating the same, and a composition-chamber, of a feed-conduit leading into the chamber below the top thereof and removable linings for the upper portions of the chamber and the conduit.

64. In a match-machine the combination with forming instrumentalities, of reciprocatory means movable in the plane in which the splints lie for feeding the splints forward and separating them during the forward-moving interval.

65. In a match-machine the combination with forming instrumentalities, of reciprocatory mechanism for progressively moving the splints longitudinally and laterally.

66. In match machinery, the combination with cutting mechanism of a plurality of separable splint-receivers and means for separating said receivers in the plane in which they receive the splints from the cutting mechanism.

814,211. **FILTER-VALVE.** CHURCHILL HUNGERFORD, Philadelphia, Pa., assignor to The Hungerford Filter Corporation, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 16, 1905. Serial No. 291,972.



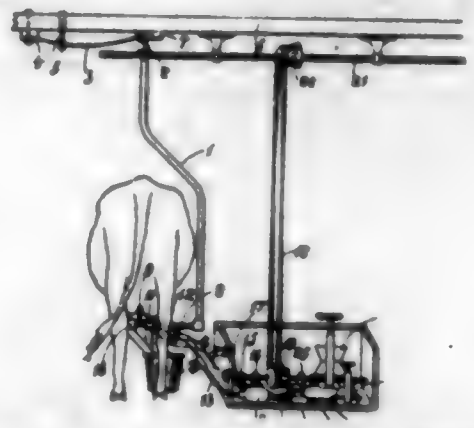
Claim.—1. In a filter-valve, a casing, a plate provided with slots between the edges of which are formed wings arranged adjacent to the casing to provide ports between the casing and wings, and means to engage the edges of said wings adjacent to said slots to prevent movement of the engaged portions of the wings away from the casing, whereby that portion of each wing between the engaged portions thereof is permitted to move toward and from the casing to increase and decrease the area of said ports, substantially as set forth.

2. In a filter-valve, a casing, a plate provided with slots between the edges of which are formed wings arranged adjacent to the casing to provide ports between the casing and wings, and plates having a fixed relation to the casing and extending over the outer edges of the wings to engage and prevent movement of said edges away from the casing, whereby the central body portion of each wing may move toward and from the casing to increase and decrease the area of said ports, substantially as set forth.

3. In a filter-valve, a casing, a plate divided into wings and intermediate portions by slots, said plate being arranged adjacent to the casing to provide ports between the casing and wings, plates extending over the intermediate portions and the adjacent edges of the wings, and means to secure said intermediate portions and plates to the casing, whereby the central body portion of each wing may move toward and from the casing to increase and decrease the area of said ports, substantially as set forth.

814,212. **MILKING-MACHINE.** GEORGE HUTCHINSON, Seacow, New Zealand. Filed Dec. 7, 1903. Serial No. 184,216.

Claim.—1. Apparatus for the purpose indicated comprising in combination a teat-press designed to receive the teat of an animal, having an inflexible outer wall and superposed pouches secured horizontally to the inner side of said outer wall, and means for supplying fluid under pulsative pressure to said pouches independently, said means comprising a flexible pulsation-bag for each pouch, independent tubes conducting the fluid from each pulsation-bag to its corresponding pouch, a lever for each pulsation-bag, cams operating the levers, a shaft upon which the cams are fixed, and means for revolving said shaft.



2. In apparatus for the purpose indicated a teat-press comprising an inflexible outer wall in two parts hinged together at one end, a releasable connection for the walls at their ends opposite to the hinge, flexible pouches forming inner flexible walls within and supported by said inflexible walls, and means for supplying fluid under pulsative pressure to said pouches independently.

3. In apparatus for the purpose indicated means for producing pulsative pressure in a teat-press, comprising in combination, a flexible bag adapted to contain fluid under pressure, a tube connecting said bag with a teat-press, a lever pivoted at one end extending across the bag, a cam operating said lever, and means for rotating the cam.

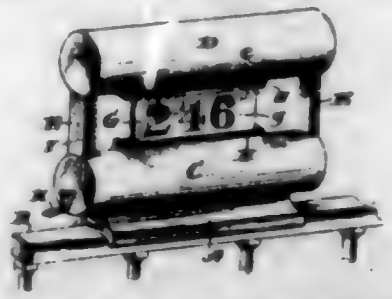
4. In apparatus for the purpose indicated means for regulating the pulsative pressure of fluid employed in a teat-press, comprising in combination, a pressure-chamber, an expansible relief-bag within the pressure-chamber, a tube through the wall of the pressure-chamber giving communication between the relief-bag and a bag employed for producing pulsative pressure in a teat-press as air-pump for forcing air into the pressure-chamber, and a gage for indicating the pressure therein.

5. The combination in apparatus for the purpose indicated of a bracket, an arm projecting laterally from the lower end thereof, a cradle carried upon the outer end of said arm and a spring from which the bracket is suspended.

6. In apparatus for the purpose indicated, a cradle comprising in combination, a frame, flexible webbing adjustable upon said frame, collars adjustable upon said webbing, and means for supporting teat-presses from the collars.

7. In apparatus for the purpose indicated the combination with a plurality of teat-presses of a U-shaped chute surrounding said presses for the purpose of conducting milk therefrom to a receptacle, and means for maintaining said chute in position.

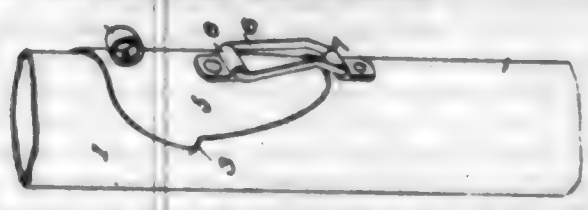
814,213. **HYMN-INDICATOR.** SAMUEL W. HYDE, Boise, Okla. Filed Aug. 20, 1904. Serial No. 221,577.



Claim.—In a device of the character described, a supporting-base adapted to be secured to the roll of a choir-loft or like support, a pair of superposed horizontally-disposed cylindrical casings supported on said base in the same vertical plane to leave an unobstructed space therebetween, the adjacent portions of said casings being provided with angularly-disposed funnel-shaped guideways of integral formation of less length than the casings and leading therefrom, shafts journaled within said casings, drums carried by said shafts, a vertical traveling web bearing characters on its opposite sides passing through the guideways extending from the casings and having its ends secured to the drums journaled therein, the open ends of said

funnel-shaped guideways being located in a plane parallel to and to one side of the line of center of the drums and being wide enough to permit lateral movements of the web incident to its winding and unwinding on the drums without contacting with the guideways, sprocket-wheels secured to the shafts within the casings, a chain connecting said sprocket-wheels, a gear-wheel secured to one of said shafts within one of the casings, a gear-wheel journaled on the end of said casing and meshing with said first-named gear-wheel and provided with an operating-crank projecting without the end of the casing.

814,214. RAIN-SPOUT CUT-OFF. DON C. JOHNSON, Frederick, Okla. Filed June 3, 1905. Serial No. 263,620.

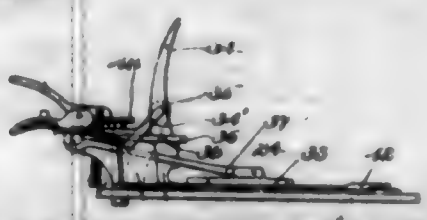


Claim.—In a device of the character described, the combination with a pipe having a lateral opening of a ring 4 secured within the pipe at the upper edge of said opening and constituting a separate element from the pipe, the lower edge of said ring being contracted, a rearwardly-bent or angular link 6 pivoted at one end of the outer wall of the pipe below the lower edge of said opening and a cut-off 5 pivotally secured to the other end of said link, the length of said link and its point of pivotal attachment to the cut-off being such that the combined length of the link and that portion of the cut-off between the point of attachment of the link and its lower edge will be greater than the distance between the other end of the link and the contracted ends of the ring 4 whereby when the cut-off is drawn down to deflect the water, the edge thereof will engage behind the ring 4 so as to serve as a fulcrum, so that the link may spring past the center and automatically lock the cut-off in position to deflect the water through said opening.

814,215. TRICHROMATIC PHOTOGRAPHY. BENJAMIN JUMEAUX and WILLIAM H. L. DAVIDSON, Brighton, England. Filed Feb. 15, 1904. Serial No. 193,673.

Claim.—A process for the production of photographs in the natural colors of the objects, and consisting in providing negatives taken through red, green, and blue screens, and printing images therewith onto bichromated gelatin films, which are then supersaturated with solutions of dyes of the complementary colors of the respective screens through which the negatives were taken so that the light-acted-on parts will be the last to take up and the last to part with the dyes when the films are soaked in water, to provide direct positives from the negatives, which positives are then superposed to produce the finished positive in colors, all substantially as hereinbefore described.

814,216. BUTTONHOLE-SEWING-MACHINE CLAMP. JOHN KERWICK, Hyde Park, Mass., assignor, by mesne assignments, to Wheeler Manufacturing Company, a Corporation of Maine. Filed Apr. 27, 1905. Serial No. 257,683.



Claim.—1. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a pair of V-springs pivoted at their apices to said base-plate, a presser-foot located upon each side of said slot, each of said presser-feet mounted upon one end, respectively, of said V-springs, and a lever adapted to press against the other ends of said V-springs, whereby said springs are rocked upon their pivots and said presser-feet are moved toward said base-plate.

2. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a pair of V-springs pivoted at their apices to said base-plate, a presser-foot located upon each side of said slot, each of said presser-feet mounted upon one end, respectively, of said V-springs, a lever adapted to press against the other ends of said V-springs whereby said springs are rocked upon their pivots and said presser-feet are moved toward said base-plate, and a spring to rock said V-springs in the opposite direction.

3. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a pair of V-springs pivoted at their apices to said base-plate, a presser-foot located upon each side of said slot, each of said presser-feet mounted upon one end, respectively, of said V-springs, a lever adapted to press against the other ends of said V-springs, whereby said springs are rocked upon their pivots and said presser-feet are moved toward said base-plate, and means to move said presser-feet laterally away from each other.

4. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a pair of V-springs pivoted at their apices to said base-plate, a presser-foot located upon each side of said slot, each of said presser-feet mounted upon one end, respectively, of said V-springs, a lever adapted to press against the other ends of said V-springs, whereby said springs are rocked upon their pivots and said presser-feet are moved toward said base-plate, a spring to rock said V-springs in the opposite direction, means to move said presser-feet laterally away from each other, and a U-spring, the free ends thereof engaging said V-springs, whereby said V-springs are rocked vertically and horizontally upon their pivots.

5. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a fabric-support in two parts pivoted to rock horizontally on said base-plate, a cam pivoted to said base-plate between the free ends of said parts, a spring engaging said parts and holding them in engagement with said cam, and another lever pivoted to said base-plate and adapted to engage said cam-lever and rock the same upon its pivot.

6. A clamp for buttonhole-sewing machines comprising in its construction a base-plate provided with a slot extending therethrough, a presser-foot in two parts pivoted to rock vertically on said base-plate, means to move said presser-foot parts laterally toward and away from each other, said parts located on opposite sides, respectively, of said slot, a fabric-support in two parts pivoted to rock horizontally on said base-plate, a cam pivoted to said base-plate between the free ends of said fabric-support parts, a spring engaging said fabric-support parts and holding them in engagement with said cam, and another lever pivoted to said base-plate and adapted to engage said cam-lever and rock the same upon its pivot.

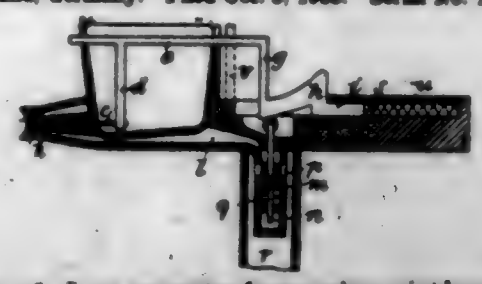
814,217. CONDUIT OR CASING FOR ELECTRICAL CONDUCTORS. RICHARD H. W. KNIGHT and LUDWIG HAGEL, London, England. Filed Mar. 1, 1904. Serial No. 196,985.



Claim.—1. A tube consisting of two parts of elastic material of channel form of more than semicircular cross-section, one part fitting in the other.

2. A tube having portions at angle to each other, said portions being made up of two parts of elastic material of channel form of more than semicircular cross-section, one part fitting in the other, substantially as described.

814,218. SPRAYING APPARATUS. ALBERT KRAUTERBERGER, Friedland, Germany. Filed Oct. 3, 1903. Serial No. 176,642.



Claim.—1. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle open at the top and otherwise closed all around except for a single paint-outlet, a slide device suspended inside the receptacle for regulating said outlet, and means for supplying compressed air to said device, substantially as described.

2. In apparatus for spraying paint by means of compressed air, a cup-like receptacle open at the top and otherwise closed all around except for a single paint-outlet, a slide device suspended inside the receptacle for regulating said outlet, a compressed-air outlet sur-

rounding the paint-outlet, means for simultaneously controlling the passage of compressed air and paint, substantially as described.

3. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet-nozzle in the bottom of the same, a nozzle surrounding said first nozzle, connections from said second nozzle to a compressed-air supply, a valve in said connections controlling the supply, a slide device in said receptacle controlling the paint-outlet and means for controlling said device and valve simultaneously, substantially as described.

4. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet in the bottom thereof, a slide device suspended in the receptacle controlling said nozzle, a slide connected to said device, a second nozzle surrounding said first-named nozzle, means for supplying compressed air thereto, a valve controlling the supply of air, said valve being operated by the slide, substantially as described.

5. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, a nozzle therein, a slide device controlling said nozzle, a second nozzle surrounding the first nozzle, means for supplying compressed air thereto, a valve controlling the supply of compressed air, means for simultaneously operating said sliding device and valve to allow paint and air to flow, and means for operating said parts to shut off the flow of paint and air, substantially as described.

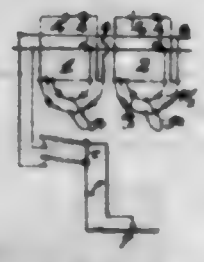
6. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom and compressed-air connections thereto, said connections forming the handle of the device, substantially as described.

7. In an apparatus for spraying paint, a cup-like receptacle for the paint open at the top and closed all around and outlet therefrom, and means for supplying compressed air to said device, said receptacle having an inclined bottom sloping toward the outlet, substantially as described.

8. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom, a device controlling said outlet, a support *v* for said device and means for supplying compressed air to the apparatus, substantially as described.

9. In an apparatus for spraying paint by means of compressed air, a cup-like receptacle for the paint open at the top and closed all around, an outlet therefrom, a device controlling said outlet, a slide A, connections from said slide to said device, a nozzle surrounding the outlet-nozzle, means for supplying compressed air to said second nozzle, a valve controlling the supply of air, a rod connected to said valve, said rod being operated on the backward movement of slide A, whereby the outlet-nozzle and the valve will be opened simultaneously and a spring for closing said valve whereby the rod will operate said slide A to close the outlet-nozzle, substantially as described.

814,219. AUTOMATIC TELEPHONIC INSTALLATION. BERNHARD KUGELMANN, Bad Kissingen, Germany. Filed Sept. 15, 1903. Serial No. 173,885.



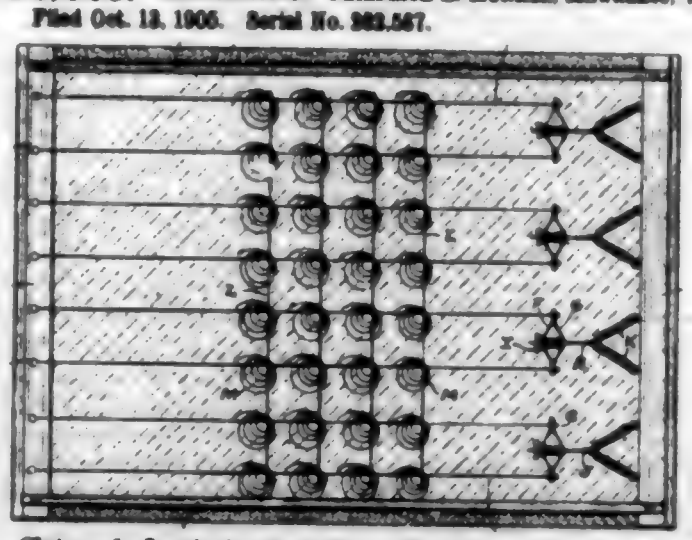
Claim.—1. In an automatic telephone system, the combination with the lines of the subscribers, of a number of switch apparatuses, each including one common speaking-way and a series of relay devices, one of such devices in each series being attached to each subscriber's line for control by the subscriber, each relay device adapted to join the corresponding line of the subscriber to the said common speaking-way, and each apparatus when occupied bringing the next unoccupied switch apparatus into the sphere of control of the subscribers.

2. In an automatic telephone-exchange system the combination with the lines of the subscribers, of a number of switch apparatuses, each including a series of relay devices, auxiliary circuits, a common selecting device at the central station, comprising a plurality of Thomson bridges divided into columns of a certain number of bridges, the several columns representing respectively units and tens of the numbers of subscribers, the auxiliary circuit of a subscriber being closed by the relays of those bridges, which correspond to the call-number of this subscriber.

3. In an automatic telephone-exchange system the combination with the lines of the subscribers, of a number of switch apparatuses, each including a series of relay devices, of a selecting device, relay arrangements at the central station, a relay arrangement 24 at the substation for each subscriber, contact devices 29 on the central station, contact devices 41 on the central station a circuit for each subscriber over all said contact devices, 41, being adapted to close the said contact device 29 of the subscriber, a circuit for each subscriber over a number of the said contact devices 41 and over the contact device 29 of the subscriber, being adapted by energizing the said relay arrangements to connect simultaneously calling subscribers successively with the said selecting device.

4. In an automatic telephone-exchange system the combination with the lines of the subscribers, of a number of switch apparatuses, each including a series of relay devices, auxiliary circuits, a selecting device, a common lead 49, a current source 46, an electromagnet 51 for each switch apparatus an armature of this electromagnet 51, a contact 52 for each switch apparatus, over which the said current source 46 and the said switch apparatus are in connection during the position of rest of the said armature 71, a contact 72 for each switch apparatus over which the said current source 46 is in connection with the next unoccupied switch apparatus during the actuation of the said armature 71, contacts 77 and 78 for each switch apparatus over which the said current source 46 is in connection with the energized relays of the said switch apparatus during the actuation of the said armature 71, relays 58, 58′ for each of the said auxiliary circuits adapted to separate its auxiliary circuit from the said selecting device on actuation.

814,220. BED-SPRING. FREDERICK L. KUNKEL, Milwaukee, Wis. Filed Oct. 13, 1905. Serial No. 282,567.



Claim.—1. In a bed-spring, the combination with a frame, and a sheet of flexible material stretched between the frame-bars, of stay-wires connected with one frame-bar and arranged in sets; yoke-bars arranged in pairs, diverging in their central portions, and having their ends connected with the respective stay-wires of a corresponding set; a rod for each pair of yoke-bars extending through the central portions of the bars; an adjustable nut on the inner projecting end of each rod; and a resilient connection between the outer projecting end of each such rod and one of the frame-bars.

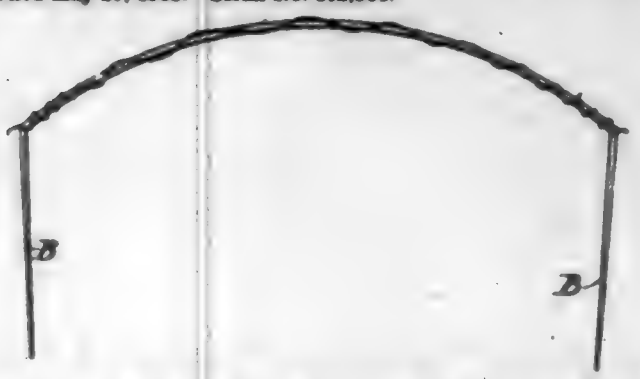
2. In a bed-spring, the combination with a frame, and a sheet of flexible material stretched between the frame-bars, of stay-wires connected with one frame-bar and arranged in sets; yoke-bars arranged in pairs, diverging in their central portions, and having their ends connected with the respective stay-wires of a corresponding set; a rod for each pair of yoke-bars extending through the central portions of the bars; an adjustable nut on the inner projecting end of each rod; and a resilient connection between the outer projecting end of each rod and one of the frame-bars; said resilient connection comprising a set of coiled springs extending divergently from the rod to the frame-bars.

3. The combination with a bed-spring, of a series of stay-wires, each having one end connected with the frame of said spring, and said wires being arranged in sets; a curved resilient yoke for each set connecting the wires thereof; hook-rods each adjustably connected with one of said yokes; and coiled springs extending divergently from and connecting the hook-rods with the frame.

4. The combination with a bed-spring, of a series of stay-wires, each having one end connected with the frame of said spring and said wires being arranged in sets; a pair of oppositely-curved resilient yokes for each set of stay-wires connecting the wires of such set;

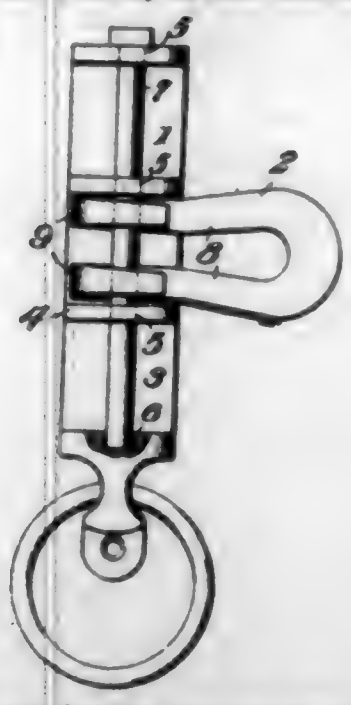
a hook-rod for each pair of yokes, adjustably connected with the central portions thereof; and a resilient connection between the hook-rod and the frame of the bed-spring.

814,221. VEIL-HOLDER. MARY W. LEE, Eastbourne, England. Filed May 20, 1905. Serial No. 261,201.



Claim.—A veil-holder formed of a single piece of wire, having a slightly-curved central body portion upon which the veil is threaded, and end portions bent at substantially right angles to the body portion, said end portions being pointed, whereby they may be readily thrust into the hat and the holder secured in place.

814,222. HAME AND TRACE CONNECTOR. GEORGE F. LINDSAY, Sherman, Tex. Filed July 24, 1905. Serial No. 270,977.

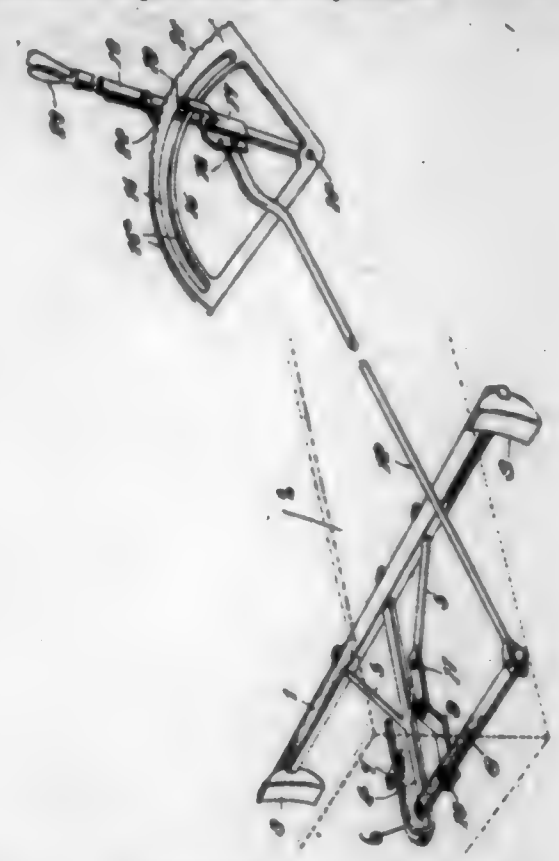


Claim.—The herein-described hame and trace fastener consisting of a trace-hook 2 having the parallel hooks 8, 9, a keeper-plate or hook 10 having an opening therein and provided with oppositely-disposed lugs 12, 14, adapted to be closed by the bill of the trace-hook and held in locked position when in operative position, in combination with a hame-plate 1 having a series of lugs 5 projecting therefrom and a vertical pin or bolt 7 passing through holes in said lug, said pin being located at such distance from the plate 1 as to hold the keeper-plate in locked condition when the lugs 12, 14, are outward, essentially as described.

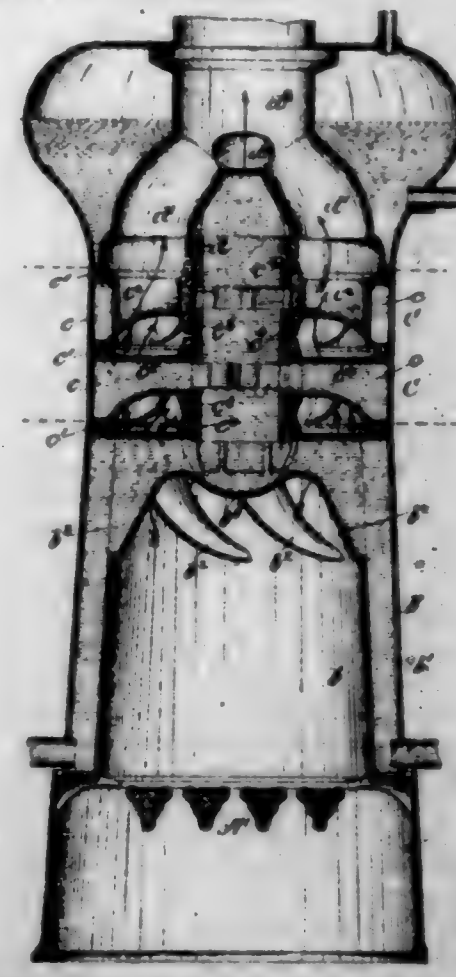
814,223. BRAKE. HUGH L. LYNN, Glenville, Ky. Filed Aug. 29, 1905. Serial No. 276,206.

Claim.—1. In a brake, the combination of an operating-lever, a block slidable longitudinally of said lever, brake mechanism, a rod connected with said brake mechanism and adapted for adjustable connection with the block on the lever, a plate arranged adjacent the lever and provided with a curved guide-slot generated on an arc eccentric of the pivot of the lever, an arm projecting upwardly from the block, a roller carried by said arm and moving in the guide-slot of the plate aforesaid, said plate being notched, and a latch-pawl connected with the lever to hold the same in an adjusted position.

2. In a brake, the combination of brake mechanism including a brake-beam, the guide 7, the arm 4 projecting from the brake-beam, the guide member 6 formed with the arm aforesaid and moving in the guide 7, the floating support comprising the member 9, the brake-lever 8 pivoted to the member 9 and connected at one end with the arm 4, a rod connected with the opposite end of the brake-lever, a plate provided with an arc-shaped guide-slot, an operating-lever pivoted to said plate, and movable about a center eccentric of that from which the arc-shaped guide-slot is generated, a block slidable longitudinally of the operating-lever and provided with openings admitting of adjustable connection with the brake-rod, the plate aforesaid being toothed, an extension projecting upwardly from the block, a roller carried by said extension and operating in the guide-slot, and a latch-pawl carried by the operating-lever to hold the same at a predetermined adjustment.



814,224. HEATER. JOHN MAGEE, Malden, Mass., assignor to Magee Furnace Company, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 7, 1905. Serial No. 240,009.



Claim.—1. A heater having over its combustion-chamber a series of pipes radially disposed, each of which pipes in form is turned obliquely to the vertical providing long, obliquely-extending flues or passages between the pipes.

2. A heater having over its combustion-chamber a series of pipes radially disposed, said pipes in form being turned obliquely to the vertical sufficiently to lap by one another and forming long, obliquely-extending flue-passages between them.

3. A heater having over its combustion-chamber a series of pipes radially disposed, each of said pipes in form being relatively deep, narrow and turned obliquely to the vertical, substantially as described.

4. A heater having a hollow side shell or wall in the body thereof encompassing the combustion-chamber, and a series of narrow pipes turned obliquely to the vertical extending inwardly therefrom, which pipes where they join said shell or wall in the body of the heater are formed relatively deep, gradually becoming of lesser depth, whereby they may be made to arch in over the combustion-chamber.

5. A heater having over its combustion-chamber a series of pipes radially disposed, said pipes in form being narrow, turned obliquely to the vertical and of a gradually-lessening depth, whereby they may be made to arch in over the combustion-chamber.

6. A heater having a series of pipes radially disposed, the body of each of which in form is turned obliquely to the vertical, substantially as and for the purposes set forth.

7. A heater having a body and in combination therewith a water-section consisting of an outer, hollow rim, adapted to rest upon said body of the heater and to make closed jointure therewith, a series of pipes radiating inwardly from said rim and connecting with a hollow hub, and a central hollow bowl forming a portion of said body of the heater, with the upper edge of which bowl said hub of the water-section is adapted to make closed connection.

8. A heater having a body provided with an outer, hollow wall surrounding the combustion-chamber, a central bowl arranged over the combustion-chamber, and a series of pipes b^3 turned obliquely to the vertical connecting said hollow wall and bowl.

9. A heater having a water-section consisting of a hollow, outer rim, a series of radial pipes connecting therewith, each of which pipes in form is turned obliquely to the vertical, whereby long, obliquely-extending passages or flues are formed between any two adjacent pipes.

10. A heater having a water-section consisting of a hollow, outer rim, a hollow, internal hub, and a series of pipes radiating from said hub to connect with said rim, said pipes in form being obliquely turned to the vertical and sufficiently to lap by one another, whereby long, oblique passages or flues are formed between them.

11. A heater having a series of pipes turned obliquely to the vertical and radially disposed over the combustion-chamber, and above said pipes another set or series of pipes likewise radially disposed, but turned obliquely to the vertical in a reverse direction to the turning of the first-mentioned pipes, whereby the heat passages or flues between said pipes will proceed in relatively different directions.

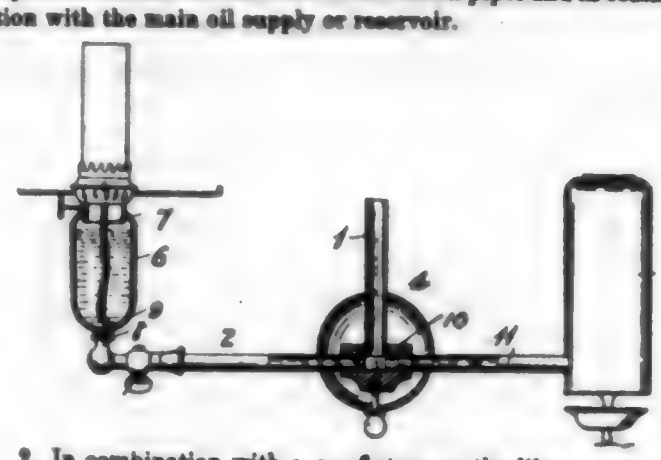
12. A heater having a water-section consisting of a hollow, outer rim, a hollow, internal hub, and a series of radial pipes c^3 connecting said hub and hollow rim, each of said pipes in form being turned obliquely to the vertical.

13. A heater having pipes radially disposed over its combustion-chamber and arranged in vertical series, each of said pipes in form being deep, narrow, and turned obliquely to the vertical.

14. A heater having a system of water distribution comprising a hollow, side shell or wall formed in the body of said heater, encompassing the combustion-chamber, pipes radiating inwardly therefrom over the combustion-chamber and forming heat or flue passages between them, a central bowl with which said radial pipes are adapted to connect in common, a water-section having an outer, hollow rim adapted to rest upon said body of the heater and make closed jointure therewith, a series of pipes radiating inwardly from said hollow rim and forming heat or flue passages between them, an inside hub or pipe with which said radial pipes of the water-section connect in common, means for connecting said hub or pipe with said bowl of the heater-body, a flat-bottom, water-holding dome above said section making closed jointure therewith, means connecting the interior of said dome with said hub or pipe, and heat flues or passages extending through the water-holding interior of said dome and in communication through the bottom thereof with the heat flues or passages formed between said radial pipes, as aforesaid.

814,225. LAMP. WILLIAM T. MANEY, New York, N. Y. Filed Apr. 3, 1905. Serial No. 254,426.

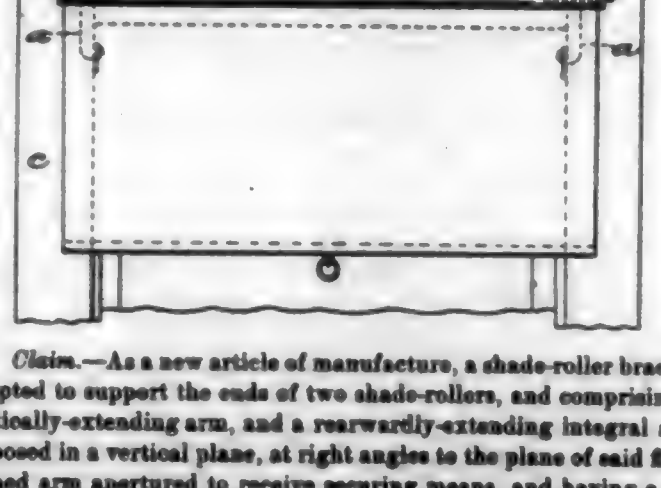
Claim.—1. A convertible oil and gas chandelier, consisting of a main gas arm or pipe, a branch gas pipe or pipes connected to said arm, an oil-reservoir connected or attached to a branch pipe, and oil-lamp fonts attached to the ends of the branch pipes and in communication with the main oil supply or reservoir.



2. In combination with a gas-fixture or the like, a base-piece for the same adapted to receive the gas-arms and supplemental oil-pipes, oil-reservoirs, oil-pipes leading from the oil-reservoirs to the base-pieces, and a receiver or font to supply the lamp.

3. In a lamp attachment for gas-fixtures or the like, the combination with a base-piece having sockets for the arms and supplemental sockets for oil-pipes, of reservoirs for the oil, oil receivers or fonts adapted to be screwed on the arms, and burners for the receivers or fonts.

814,226. ADJUSTABLE SHADE-ROLLER BRACKET. HENRY L. MEADOWCROFT, Pawtucket, R. I., assignor of two-fifths to Leon Lapierre, Lynn, Mass. Filed Apr. 28, 1905. Serial No. 257,873.



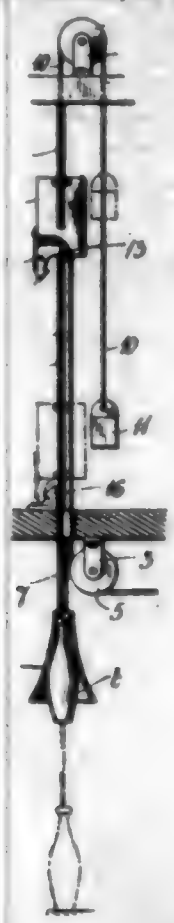
Claim.—As a new article of manufacture, a shade-roller bracket adapted to support the ends of two shade-rollers, and comprising a vertically-extending arm, and a rearwardly-extending integral arm disposed in a vertical plane, at right angles to the plane of said first-named arm apertured to receive securing means, and having a depending portion disposed in a plane with said rearwardly-extending arm and provided with an opening to receive a shade-roller pintle, the upwardly-extending arm being provided adjacent its upper end, in its outer face, with a recess, a bar slidable in said recesses and having an outwardly-extending arm at its outer end provided with means to receive a shade-roller pintle, and means mounted in the upper end of said upwardly-extending arm to impinge said bar and hold the same in adjusted position, substantially as described.

814,227. PIN-SETTING APPARATUS. WILLIAM S. MORGAN and SAMUEL W. PELLOWS, Russell, Minn. Filed Apr. 3, 1905. Serial No. 253,625.

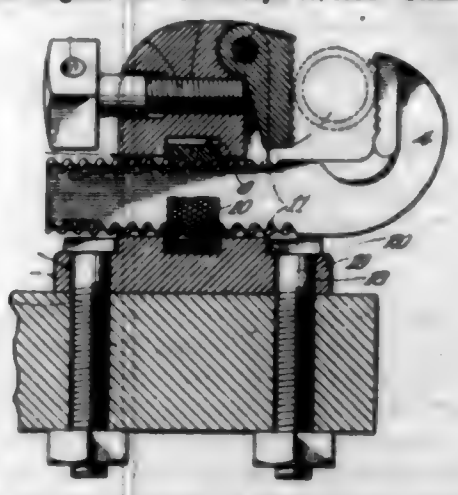
Claim.—1. A pin-setting apparatus of the class described comprising a vertically-movable block, guides therefor, a pulley above the guides, a counterweight, a cord attached to the counterweight, passed over said pulley and attached to the block, a spring-pressed hook pivoted to and depending from the block and having an inwardly-extending arm, a pin, a cord attached to the pin and to the arm of the hook, a cord attached to the block to lower the same and the pin, a fixed detent-hook engaged by the spring-pressed hook of the block when the latter is lowered, to secure the block in lowered position.

2. A pin-setting apparatus of the class described comprising a vertically-movable block, guides therefor, a pulley above the guides, a counterweight, a cord attached to the counterweight, passed over said pulley and attached to the block, a spring-pressed hook pivoted to and depending from the block and having an inwardly-extended arm, a pin, a cord attached to the pin and to the arm of the hook, a cord attached to the block to lower the same and the pin, a fixed

guide-belt in an elevated position above the pin and through which the cord attached to the pin extends, for the purpose set forth.



814,228. PIPE-VISE. ALEXANDER W. MCGAHAN and OTTO K. ARCHER, Los Angeles, Cal. Filed Sept. 17, 1904. Serial No. 224,855.



Claim.—1. In a vise, a body, an abutment-jaw slidable therein, means for holding the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, and means on the vise-body engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

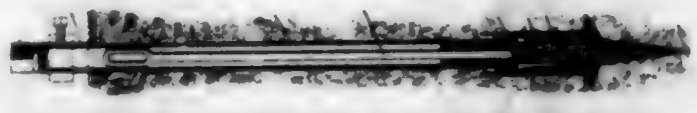
2. In a vise, a body having a passage therethrough, an abutment-jaw having a shank slidable in said passage, means for holding the abutment-jaw in set position, a clamping-jaw pivoted opposite the abutment-jaw and extending between its pivotal point and the abutment-jaw, the said pivotal point being located outwardly from the bearing portion of the clamping-jaw, and means engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

3. In a vise, a body, an abutment-jaw slidable therein, means for holding the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel, and a screw working in the body of the vise, engaging the clamping-jaw to force same toward the abutment-jaw.

4. In a vise, a body having a passage therethrough, an abutment-jaw having a shank slidable in said passage, and provided with a screw-threaded portion, a nut engaging said screw-threaded portion and also engaging the vise-body to hold it from endwise movement and cause movement of the abutment-jaw on rotation of the nut, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, and means on the vise-body engaging the clamping-jaw to force same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

5. A vise-body having a passage therethrough and a slot transverse to said passage, an abutment-jaw having a shank slidable in said passage, and having means engaging in said slot and with an abutment-jaw to hold the abutment-jaw in set position, a clamping-jaw pivoted to the vise-body opposite the abutment-jaw, the pivot of the clamping-jaw being near its outer end, and means on the vise-body engaging the clamping-jaw to force the same toward the abutment-jaw, both of the said jaws being serrated and the clamping-jaw having its working face projecting beyond the body of the vise when the working faces of the jaws are parallel.

814,229. ANCHOR OR STAY FOR POLES, DERRICKS, &c. ANGUS MCGILLIVARY and EDWARD FRYE, Quincy, Mass. Filed Dec. 28, 1905. Serial No. 293,563.



Claim.—1. In apparatus of the class described, a head having a point provided with a series of cutters, and a series of grabs pivoted on said head above said cutters.

2. In apparatus of the class described, a head having a threaded portion, a series of grabs, and a tube engaging said threaded portion and having a projection to act on and turn said grabs outwardly as the tube is rotated on said threaded portion.

3. In apparatus of the class described, a head having a series of pivoted grabs and provided with a threaded projection, a plate to rest on the ground, a tube having a collar sustained by said plate, said tube engaging said threaded projection, the rotation of said tube lifting the head and causing the grabs to be turned outwardly into the soil.

4. In apparatus of the class described, a head having at its upper side a projection threaded internally and externally, a shank engaging said internally-threaded portion, and a tube engaging the externally-threaded portion, a series of grabs pivoted on said head, the rotation of the tube on the threaded portion of the head forcing the grabs outwardly, substantially as described.

814,230. SMOKE-CONSUMING APPARATUS FOR FURNACES. JAMES P. MCMAHON, Renovo, Pa., assignor of one-third to J. W. Russell and one-third to C. H. Potts, Renovo, Pa. Filed Apr. 10, 1905. Serial No. 254,848.

Claim.—1. In combination with a locomotive fire-box adapted to burn solid fuel and flues, of means located close to the communicating openings of the flues with the fire-box for establishing a combustible barrier at the front of the fire-box which wholly consumes the product of combustion in its own combustion, the said means being located in such close proximity to the flue-openings as to obstruct the escape of any of the products of combustion between the said means and the communicating flue-openings.

2. In combination with a locomotive fire-box adapted to burn solid fuel and flues, of means located close to the communicating openings of the flues with the fire-box for directing a hydrocarbon mixture across the path of the products of combustion, the said means being located in such close proximity to the flue-openings as to obstruct the escape of any of the products of combustion between the said means and the communicating flue-openings.

3. In combination with a locomotive fire-box and flues, of means located directly at the point of communication of the flues with the fire-box for directing a hydrocarbon mixture across the path of the products of combustion, the hydrocarbon mixture being gradually heated before entering the fire-box.

4. In combination with a locomotive fire-box adapted to burn solid fuel, of flues, steam and oil supply pipes extending through the flues, and nozzles common to said pipes and disposed close to the points of communication of the flues with the fire-box to discharge

a mixture of oil and steam in the path of the products of combustion, a portion of the nozzles being projected from the flues.



5. In combination with a locomotive fire-box adapted to burn solid fuel, of flues, steam and oil supply pipes extending through the flues, the flues having unobstructed communication with the fire-box, nozzles common to said pipes and arranged to discharge a mixture of oil and steam in the path of the products of combustion, and auxiliary means penetrating the side sheets for supplying a like mixture at an angle to the mixture discharged by the nozzles, the said nozzles and auxiliary means being located at the front of the fire-box.

6. In combination with a locomotive fire-box adapted to burn solid fuel and flues, of steam and oil supply pipes located in front of the fire-box and provided with injecting means operating to force the steam and oil into the fire-box in the form of hollow cones or columns, close to the communicating openings of the flues with the front of the fire-box.

7. In combination with a locomotive fire-box adapted to burn solid fuel and flues, of steam and oil supply pipes having communication with the fire-box and provided with injecting-terminals which project the mixture of steam and oil into the fire-box in the form of hollow cones or columns, close to the communicating openings of the flues with the front of the fire-box.

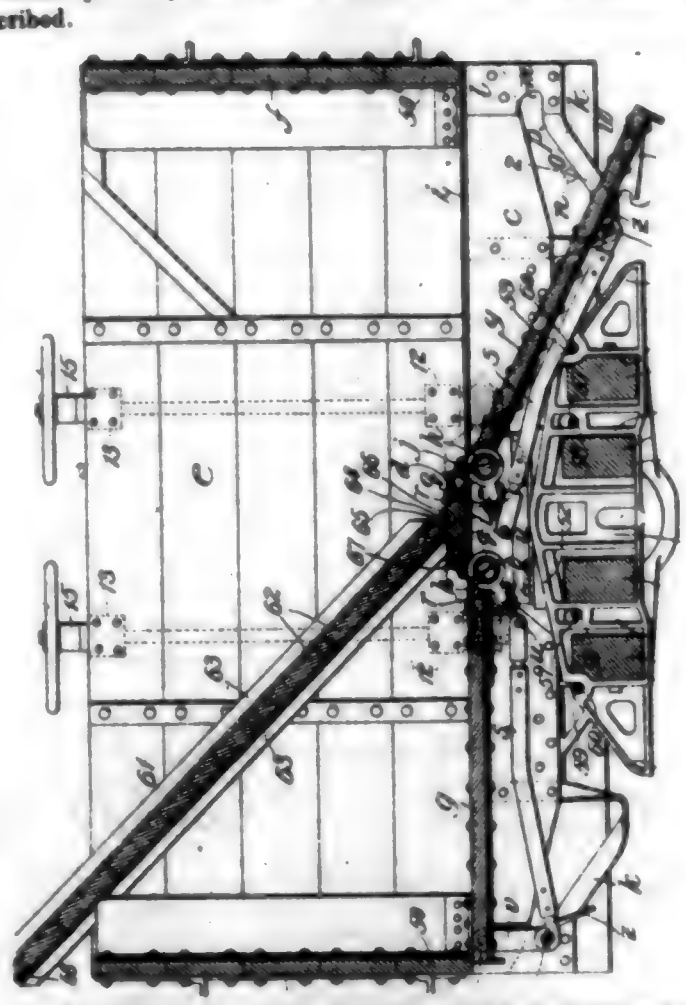
8. In combination with a locomotive fire-box adapted to burn solid fuel and flues, steam and oil supply pipes extending through the flues, nozzles common to said pipes arranged to discharge a mixture of oil and steam in the path of products of combustion at the front of the fire-box close to the flue-openings, said nozzles being located at the front of the fire-box, and controlling means for the said pipes.

9. In combination with a locomotive fire-box adapted to burn solid fuel and flues, steam and oil supply pipes extending through the flues, nozzles common to said pipes and arranged to discharge a heated mixture of oil and steam in the path of the products of combustion, said nozzles being located adjacent to the point of communication of the flues with the fire-box, and means responding to the opening and closing of the door of the fire-box for controlling the steam and oil supply.

814,231. DUMP-CAR. Spencer Otis, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D., a Corporation of South Dakota. Filed Oct. 1, 1904. Serial No. 226,330.

Claim.—1. In a dump-car, the combination of a supporting-framework provided with side and end frames, a partition member extending upward and outward at an incline from the central portion of the car and floor-level toward the side thereof, and a floor portion comprising dumping-doors pivotally mounted in the framework and extending from the bottom of such inclined partition to the side frames, substantially as described.

2. In a dump-car, the combination of a supporting-framework provided with side and end frames, a partition member extending upward and outward at an incline from the center of the car to one of the side frames, dumping-doors pivotally mounted in the car-frame extending outward laterally on opposite sides of the longitudinal center of the car from points adjacent to the bottom of the inclined partition to the side frames when in closed position and movable upon their pivotal points to inclined open position, substantially as described.



3. In a dump-car, a supporting-framework having side and end frames, a fixed bottom portion, a dumping-door on each side of the fixed bottom portion, and a partition hinged to the fixed bottom portion to swing to either side of the car as desired.

4. In a dump-car, a supporting-framework having side and end frames, a central bottom portion, a dumping-door on each side of the central bottom portion, and a partition pivotally mounted centrally of the car and movable into inclined position on either side of the car.

5. In a dump-car, the combination of a supporting-framework provided with side and end frames, a fixed bottom portion, dumping-doors pivotally mounted in the frame of the car and movable transversely of the car on each side of the fixed bottom portion upon their pivotal points, and a partition pivotally mounted centrally and extending longitudinally of the car and movable to inclined position on either side of the center of the car, substantially as described.

6. In a dump-car, the combination of a supporting-framework provided with side and end frames, dumping-doors pivotally mounted on opposite sides of the longitudinal center of the car and movable transversely thereof upon their pivotal points, and a partition pivotally mounted intermediate the pivotal points of such dumping-doors extending longitudinally of the car and movable to inclined position on either side of the longitudinal center of the car, substantially as described.

7. In a dump-car, the combination of a supporting-framework provided with side and end frames, dumping-doors pivotally mounted on opposite sides of the longitudinal center of the car and movable transversely thereof upon their pivotal points, and a partition pivotally secured to the car-frame intermediate and above the pivotal points of such dumping-doors extending longitudinally of the car and movable to an inclined position on either side of the longitudinal center of the car, substantially as described.

8. In a dump-car, the combination of a supporting-framework provided with side and end frames, and a fixed bottom portion, dumping-doors pivotally mounted in the car-frame extending longitudinally of the car throughout its entire length and laterally thereof from their pivotal points, and a partition pivotally mounted centrally of the car extending longitudinally thereof throughout its entire length and movable to inclined position on either side of the lon-

gitudinal center of the car, and means for operating the dumping-doors, substantially as described.

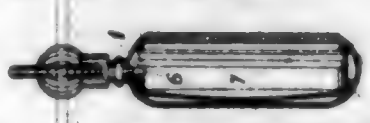
9. In a dump-car, the combination of a supporting-framework provided with side and end frames, dumping-doors pivotally mounted in the car-frame and movable transversely of the car upon their pivotal points, and a partition pivotally mounted centrally of the car movable to inclined position on either side of the longitudinal center of the car and extending above the level of the side frames in either of such inclined positions, substantially as described.

10. In a dump-car, the combination of a supporting-framework provided with longitudinal sills and a central floor portion, side frames mounted entirely above the level of the bottom of the central floor portion, dumping-doors pivotally mounted in the car-frame extending longitudinally of the car and swinging transversely thereof movable to both open and closed position below the level of the bottom of the side frames, and a partition mounted centrally of the car movable to inclined position on either side of the longitudinal center of the car, substantially as described.

11. In a dump-car, the combination of a supporting-framework provided with longitudinal sills and end frames, dumping-doors pivotally mounted in such supporting-framework extending longitudinally of the car and swinging transversely thereof, side frames mounted entirely above the level of the pivotal point of such dumping-doors, and a partition pivotally mounted above the level of the dumping-doors and extending upward and outward at an incline from the center of the car to the side thereof, substantially as described.

12. In a dump-car, the combination of a supporting-framework provided with longitudinal sills and end frames, dumping-doors pivotally mounted in such supporting-framework extending longitudinally of the car and swinging transversely thereof, side frames mounted entirely above the level of the pivotal point of such dumping-doors, a partition pivotally mounted centrally of the car extending longitudinally thereof and movable to inclined position on either side of the longitudinal center of the car, and mechanism arranged entirely beneath the dumping-doors for operating them, substantially as described.

814,232. WATCHCASE. James T. Pendlebury, Manchester, England. Filed May 1, 1905. Serial No. 258,222.



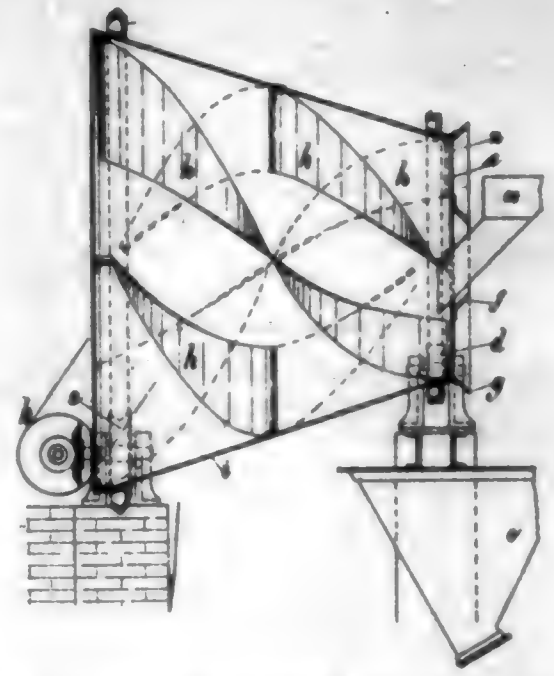
Claim.—1. In a keyless watch in which the case center and bezel are formed in one piece and the movement inserted therein from the back, the combination with the case-center and the movement having a projecting annular ledge of a split hoop adapted to fit in the side of and between the case-center and the movement and having a slot for the winding-stem to pass through and spring-catches pressed out of the hoop adapted and arranged to press upon the projecting annular ledge of the movement and thereby clip the movement in position.

2. In a keyless watch in which the case center and bezel are formed in one piece and the movement inserted therein from the back, the combination with the case-center and the movement having a projecting annular ledge of a split hoop adapted to fit in the side of and between the case-center and the movement and having a slot for the winding-stem to pass through and spring-catches pressed out of the hoop adapted and arranged to press upon the projecting annular ledge of the movement and thereby clip the movement in position, a cylindrical dust-cap having deep sides adapted to fit annularly the inside of the said hoop round the movement, and a back cover fitting the case-center and covering the said cap.

814,233. MIXING APPARATUS FOR DRY MATERIALS. Georg Raps, Stolberg, Germany. Filed Aug. 19, 1905. Serial No. 274,893.

Claim.—1. The combination of a horizontally-arranged tapering drum having its larger end entirely closed and provided with feed and discharge openings at its smaller end, of rotatable means arranged within the drum to feed the material from the feed-opening toward the closed end to mix the material and from the closed end toward the discharge.

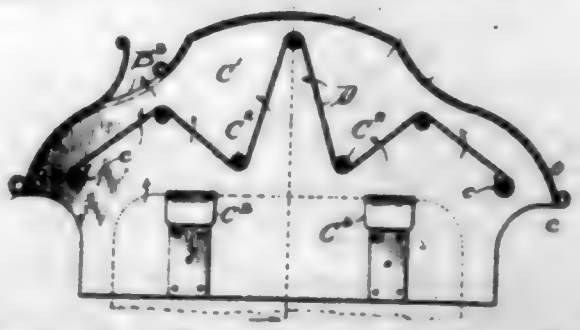
2. The combination of a horizontally-arranged tapering drum rotating on an approximately horizontal axis, having its larger end entirely closed and provided with feed and discharge openings at its smaller end, of means arranged within the drum to feed the material from the feed-opening toward the closed end to mix the material and from the closed end toward the discharge.



3. The combination of a tapering drum, rotatable about an axis approximately horizontal, entirely closed at its larger end and provided with an inlet and a discharge at its smaller end, spiral mixing-blades arranged within and connected to the drum and means for rotating the drum.

4. The combination of a tapering drum entirely closed at its larger end, and rotatable about an axis approximately horizontal, means for mixing the material therein placed, an outwardly-turned flange on the other or open end of the drum, a ring fitted in the open end and spaced from the walls of the drum to provide inlet and discharge openings for the drum, means for supporting the ring and means for rotating the drum.

814,234. DUST-COLLECTING SHIELD FOR RADIATORS. William J. Reynolds, Chicago, Ill. Filed Apr. 22, 1905. Serial No. 256,282.



Claim.—1. A shield for a radiator comprising a screen-support adapted to rest upon a radiator, a dust-collecting screen secured to said support and a hood removably mounted upon said support and serving as a cover for said screen.

2. A shield for a radiator comprising a screen-support adapted to rest upon a radiator, a dust-collecting screen secured to said support, and a hood removably mounted upon said support and serving as a cover for said screen, said hood having its front and rear edges extending below said screen and having an opening above the latter for the passage of air therethrough.

3. In combination with a radiator, a shield comprising a screen-support having end plates, longitudinally-extending rods connected to said end plates, a dust-collecting screen mounted on said rods, and a removable hood adapted to cover the screen and its supports.

4. A shield adapted to rest upon a radiator, a dust-collecting screen located therein above the radiator, an elongated opening in the front face of the shield above the screen, and an upturned flange along the front margin of the opening.

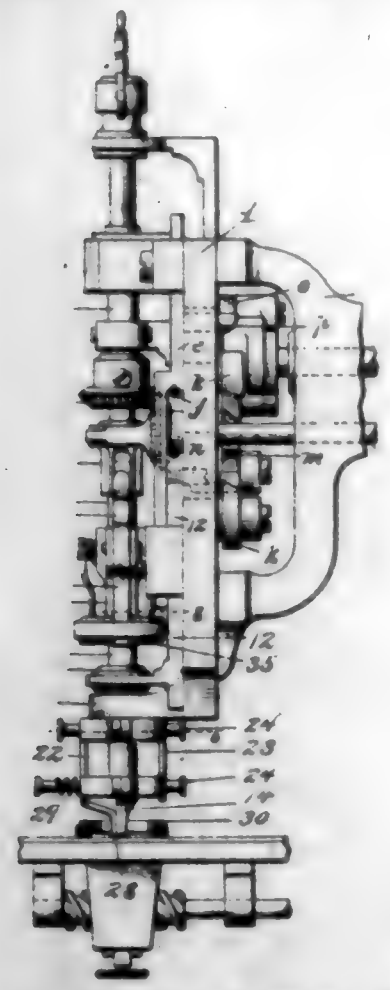
5. A shield comprising means whereby it may be supported upon or above a radiator, supports for the screen located alternately in different horizontal planes, and an angularly-arranged dust-collecting screen thereon.

814,235. TOOTH-BRUSH. Moses Rosenstein, Medford, Mass. Filed Apr. 26, 1905. Serial No. 257,031.

Claim.—A tooth-brush having a tubular duct 4 provided with lateral ducts, 5 and 6, extending to the sides of the brush and arranged in suitable bores in the back of said brush in combination with a rubber bulb 10 provided with a tube 11 adapted to have one end fit it the duct 4 of said brush as described, all substantially as set forth and for the purpose described.



814,236. FESTOON-STITCH AND SIMILAR MACHINE. Rudolf Schöchli, Zurich, Switzerland, assignor to Patchogue Manufacturing Co., Patchogue, N. Y., a Firm. Filed Sept. 26, 1904. Serial No. 226,079.



Claim.—1. In a machine such as described a reciprocable split-ended knife-tube, a knife having a cylindrical shank clamped therein, a coöperating knife movable to and from the aforesaid knife whereby the edges of said knives may be adjusted toward each other.

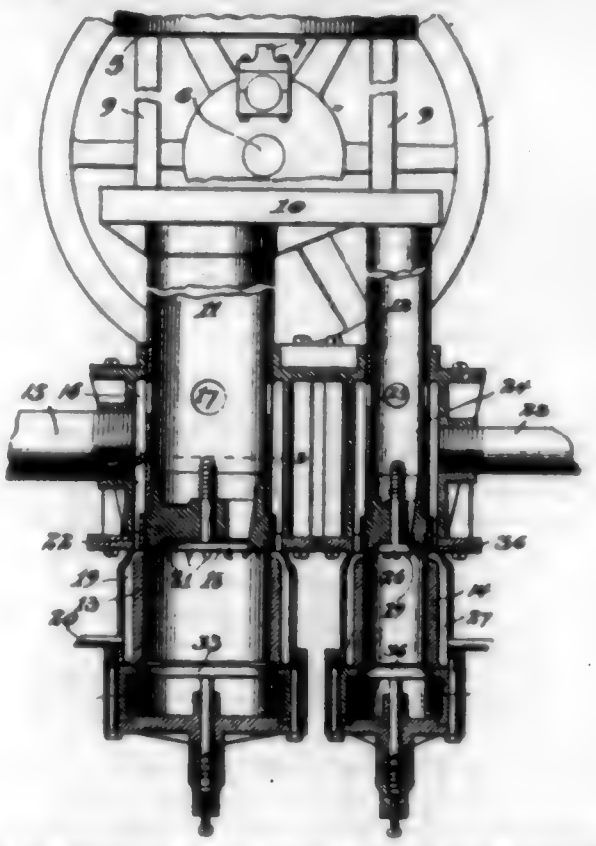
2. In a machine such as described, a fixed boss, a collar held and capable of being turned and clamped in any position thereon, a hollow reciprocating split-ended knife-tube passing through the boss, a knife clamped in the tube, a coöperating knife mounted on said collar and means to set it to and from the first knife.

3. In a machine such as described, the combination with a fixed boss, and a clamp mounted on the boss; of a reciprocable split-ended tube, a clamp thereon, a knife mounted in the end of the tube and having a V-shaped notch in its end, one side of the knife and notch forming a cutting edge, and a second knife secured to the clamp on the boss and guided on the clamp on the tube, and means on said second clamp to urge the second knife against the first knife, substantially as described.

4. In a machine such as described, two knives, one of which is reciprocable with respect to the other, means to independently adjust the knives vertically, means to permit each knife to be turned horizontally about its vertical axis and independently with respect to the other and means to move one of the knives laterally.

814,237. System of Power Generation. Lee O. Sloven, Wausau, Minn. Filed Mar. 8, 1902. Serial No. 96,941.

Claim.—1. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors connected therewith, and means in association with said compressors for conserving the heat of compression generated therein by a heat-absorbing fluid and transferring the vapor created thereby to the combustion-chamber along with the components of the combustible charge, substantially as described.



2. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures connected therewith, water-jackets applied to said compressors to absorb the heat of compression and maintain the compressors at operative temperatures, and means for transferring the jacket-water in the form of steam-vapor to the combustion-chamber, substantially as described.

3. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures connected therewith, and water-jackets surrounding the cylinders of said compressors and communicating with the interiors thereof, whereby the jacket-water may be entrained through the cylinders, absorbing the heat of compression therefrom and passing in the form of steam-vapor with the compressed air and fuel into the combustion-chamber, substantially as described.

4. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures connected therewith, water-jackets surrounding the cylinders of said compressors, means for supplying water to one end of said jackets, means for entraining the jacket-water from the opposite end of the jackets through the cylinders, an engine, and means for supplying the latter with motive fluid from the combustion-chamber, substantially as described.

5. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures connected therewith, water-jackets surrounding the cylinders of said compressors, means for supplying water to one end of said jackets, means for entraining the jacket-water from the opposite end of the jackets through the cylinders, means for initially firing the compressed charge in the combustion-chamber, an engine, and a supply-pipe leading thereto from the combustion-chamber, substantially as described.

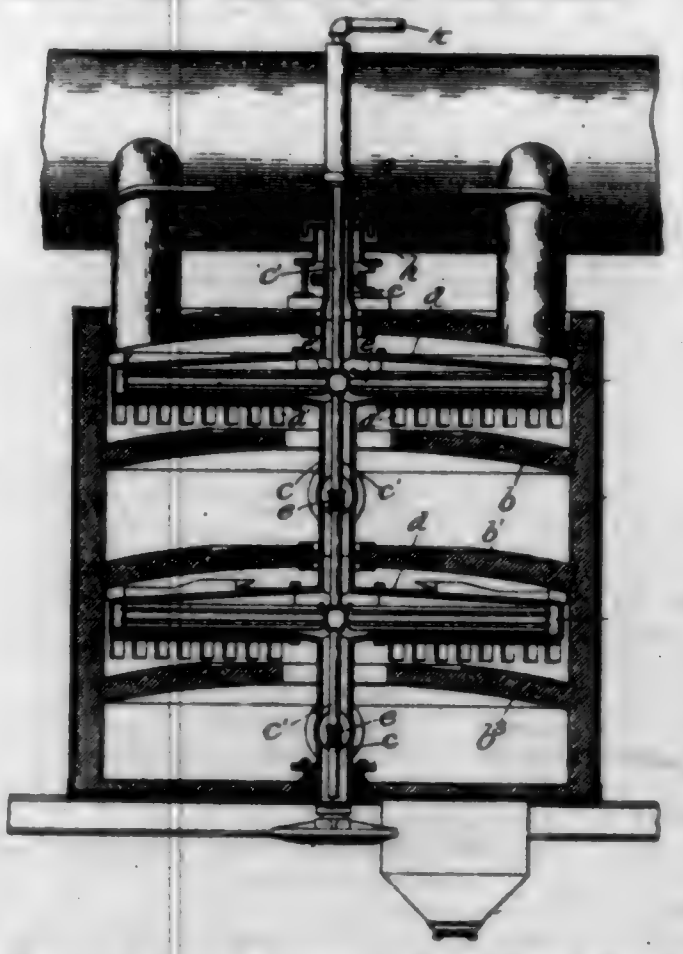
6. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures discharging thereinto, water-jackets surrounding the cylinders of said compressors, means for supplying water to said jackets and for entraining the jacket-water therefrom through the cylinders wherein it is converted into steam-vapor by the heat of compression, an engine, a supply connection from the combustion-cylinder to said engine, and operating connections from the plungers of the compressors to a moving part of the engine, substantially as described.

7. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compres-

ors adapted to operate at high pressures discharging thereinto, water-jackets surrounding the cylinders of said compressors, means for supplying water to said jackets and for entraining the jacket-water therefrom through the cylinders wherein it is converted into steam-vapor by the heat of compression, an engine longitudinally alined with said compressors, a scotch cross-head to which the plungers of the compressors are attached, and connecting-rods intermediate said scotch cross-head and the piston of the engine-cylinder, substantially as described.

8. In an apparatus for generating motive power, the combination with a combustion-chamber, of separate air and fuel compressors adapted to operate at high pressures discharging thereinto, water-jackets surrounding the cylinders of said compressors, means for supplying water to said jackets and for entraining the jacket-water therefrom through the cylinders wherein it is converted into steam-vapor by the heat of compression, an engine longitudinally alined with said compressors, a scotch cross-head to which the plungers of the compressors are attached, connecting-rods intermediate said scotch cross-head and the piston of the engine-cylinder, and a crank and fly-wheel also connected to and driven by the piston of the engine-cylinder, substantially as described.

814,238. ROASTING-FURNACE. THOMAS F. SHERIDAN, Chicago, Ill., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Nov. 20, 1905. Serial No. 288,231.



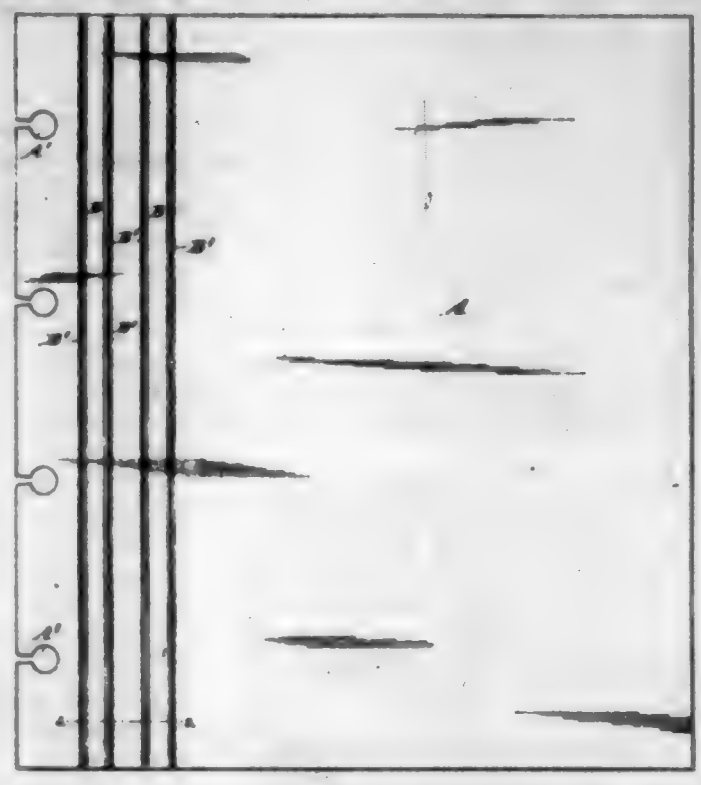
Claim.—1. In a roasting-furnace, a hollow upright shaft, hollow horizontally-arranged rake-arms connected thereto and communicating with the interior of the shaft, and means for filling the shaft and arms with water and for circulating a cooling medium through the arms out of contact with the water therein.

2. In a roasting-furnace, a hollow upright shaft, horizontally-arranged hollow rake-arms attached thereto and communicating with the interior thereof, a supply-pipe in the shaft, branch pipes in the hollow arms communicating with the supply-pipe, said branch pipes having terminal openings within the hollow shaft.

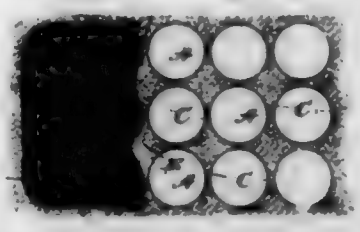
3. In a roasting-furnace, a hollow shaft, hollow rake-arms connected thereto and communicating therewith, a supply-pipe in such shaft, pipes connected with the supply-pipe extending to the outer end of the hollow rake-arms and provided with return branches having terminal openings within the hollow shaft.

814,239. LEAF FOR LEDGERS. LESTER B. SHIPMAN, New York, N. Y., assignor to Am. L. Shipman's Sons, New York, N. Y., a Firm. Filed Jan. 20, 1905. Serial No. 241,224.

Claim.—A leaf of the character set forth, comprising a sheet having a groove extending across the sheet near and parallel with the binding edge, said groove being formed by removing a portion of the material of the sheet, said groove having a plane bottom line curved gradually upward therefrom and joined to the main surface of the sheet by reverse curves, the depressed surface of said groove being hardened and polished



814,240. METHOD OF FORMING FOUNDATIONS. ELMER C. SMITH, Columbus, Nebr. Filed Mar. 20, 1905. Serial No. 251,036.

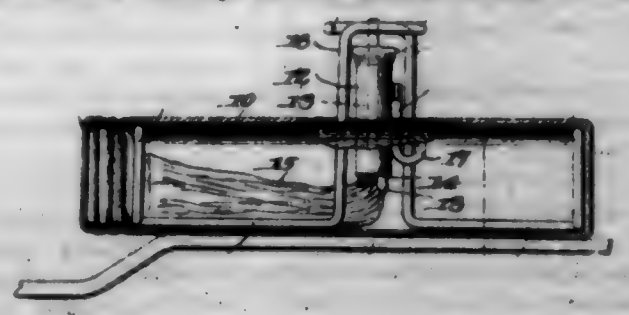


Claim.—1. The method of forming foundations, consisting in forming a series of vertical molds in the location where the foundation is to be by removing the material therefrom, filling the molds thus formed with concrete, the walls of the molds consisting of the natural walls formed by excavating, removing the material from between the columns thus formed, and filling the spaces formed by said latter removal with concrete.

2. The method of forming foundations consisting in forming a series of vertical molds by excavating in the earth of the location where the foundation is to be, the walls of said molds being formed by the natural material from which the excavation is made, filling said molds with plastic material capable of hardening, removing the natural material between the columns thus formed, and filling the spaces so formed with plastic material.

3. The method of forming foundations, which consists in forming a series of holes adjacent to each other in the location where the foundation is to be, lining the said holes with clay or other strengthening material, filling the said holes with concrete, removing the natural material from between the columns so formed, and filling the spaces thus formed with concrete.

814,241. MINER'S LAMP. FRANK A. SMITH, Victor, Colo., assignor of one-third to George W. Thomas and one-third to Henry Buckley, Victor, Colo. Filed Apr. 20, 1905. Serial No. 256,522.



Claim.—1. A miner's lamp comprising a body having a wick-tube extending through one of its walls, and an air-tube extending through the wall of the body adjacent to and parallel with said wick-tube and with the inner portion coiled into a plurality of whirls disposed with the terminal of the last coil in close proximity to the upper side of the body and to the wick-tube.

2. A miner's lamp comprising a cylindrical body provided with a spur for attachment to a support, a wick-tube extending through one side of the body intermediate the ends, a heating member disposed centrally within and rigidly attached to the tube, an air-tube extending through the wall of the body adjacent to the tube and with the inner portion coiled into a plurality of whirls and with the terminal in close proximity to the tube and the top of the body, heat-conductors adjacent the tube and surrounding the wick and extending into and across the body in opposite directions and terminating in coils adjacent the ends of the body.

814,242. **AUTOMATIC GAS-OPERATED FIREARM.** MORRIS F. SMITH, Philadelphia, Pa., assignor of three-fourths to William D. Condit, Des Moines, Iowa. Filed Nov. 25, 1903. Serial No. 183,683.



Claim.—1. In a gas-operated gun, the combination with the fixed barrel, a breech-bolt movable to and from firing position, and means locking the breech-bolt in its firing position, of a gas-operated drive-rod moved independently of the barrel by gases received from the barrel, connections between the breech-bolt and the drive-rod permitting the rod to unlock and lock the breech-bolt, and move it in both directions, and an elongated dash-pot imposing a gradually-increasing resistance upon the drive-rod, at a point in advance of the connection between the drive-rod and the breech-block, and during a considerable portion of and to the end of the rearward movement of the parts, finally arresting and assisting to return the parts by the air trapped in the dash-pot.

2. In a gas-operated gun, the combination with the fixed barrel, a sliding breech-bolt movable to and from firing position, a gas-operated piston moved independently of the barrel by gases received from the barrel, lost-motion connections between the breech-bolt and the piston, an air-cushion cylinder carried by the piston in advance of its connection with the breech-bolt, and a piston for movement in the cushion-cylinder located near the end of the movement of the gas-piston.

3. In a gas-operated gun, the combination with the fixed barrel, a sliding breech-bolt movable to and from firing position, a gas-operated piston moved independently of the barrel by gases received from the barrel, lost-motion connections between the breech-bolt and the piston, an air-cushion cylinder carried by the piston in advance of its connection with the breech-bolt, a piston for movement in the cushion-cylinder located near the end of the movement of the gas-piston, and independent cushioning means for the breech-bolt.

4. In an automatic firearm, the combination of the drive-rod, the breech-bolt, the locking-dog for said breech-bolt, and the spring driven hammer reciprocating on the locking-dog, engaged by the breech-bolt in the rearward movement of said bolt, and cushioning the breech-bolt at the end of its movement.

5. In an automatic firearm, the combination of the drive-rod, the dash-pot directly cushioning said drive-rod, the breech-bolt, the locking-dog for said breech-bolt, and the spring-driven hammer reciprocating on the locking-dog, engaged by the breech-bolt in the rearward movement of said bolt, and cushioning the breech-bolt at the end of its movement.

6. In a gun, the combination with the rearwardly-movable breech-bolt, a locking-dog movable to and from the path of the breech-bolt, a sliding spring-pressed hammer carried by the dog, and a sear and trigger for the hammer.

7. In a gun, the combination with the rearwardly-movable breech-bolt, a locking-dog movable to and from the path of the same, a sliding spring-pressed hammer carried by the locking-dog, a sear for the hammer carried by the locking-dog, and a trigger for operating the sear.

8. In an automatic firearm, the combination of the reciprocating breech-bolt, a locking-dog movable into the path of the breech-bolt, a hammer carried by the locking-dog, a sear-and-trigger mechanism for controlling the hammer, and means on the locking-dog arresting the sear-and-trigger mechanism when the dog is in unlocked position.

9. In a gun, the combination with the drive-rod, the breech-bolt, the locking-dog, the hammer, the sear and the trigger connection; of the swinging catch carried by the locking-dog engaging the trigger connection and holding it inactive when the locking-dog is out of engagement with the bolt.

10. In a gun, the combination with the drive-rod, the breech-bolt, the locking-dog, the hammer, the sear and the trigger connection; of the swinging catch carried by the locking-dog engaging the trigger connection and holding it inactive when the locking-dog is out of engagement with the bolt and connections between the drive-rod and the swinging catch through which the drive-rod displaces the locking-dog.

11. In a firearm, the combination of the rearwardly-movable breech-bolt, the hammer moved rearwardly by the breech-bolt, the sear for retaining the hammer in cocked position, a trigger, a draw-rod connecting the sear and the trigger, and a pivoted lifting-arm engaged by the hammer when the latter moves to fired position to cause the draw-rod to be moved to break the connection between the trigger and the sear.

12. In a gun, the combination with the drive-rod, the breech-bolt, and the pivoted locking-dog, of a swinging catch carried by the locking-dog, and connections between the drive-rod and the swinging catch through which the drive-rod displaces the locking-dog from its locking position.

13. In a gun, the combination with the drive-rod, the breech-bolt, and the pivoted locking-dog, of a swinging catch on the pivoted locking-dog, lugs on the pivoted catch and members on the drive-rod for engagement with the lugs on the pivoted catch to move the pivoted locking-dog.

14. In a gun, the combination with the breech-bolt, the pivoted locking-dog, the firing-hammer, and the trigger connection, of means moved with the locking-dog when said dog is moved to its unlocking position, to hold the trigger connection inoperative, and moved with the said locking-dog when said dog is moved to firing position to make the trigger connection operable

15. In a gun, the combination with the sliding breech-bolt, and a pivoted locking-dog for the same, of a reciprocating spring-pressed firing-hammer carried by the pivoted locking-dog and a sear and a trigger for the hammer.

16. In a gun, the combination with the sliding breech-bolt, and a pivoted locking-dog for the same, of a reciprocating spring-pressed firing-hammer carried by the pivoted locking-dog, and connections between the breech-bolt and the firing-hammer for moving the firing-hammer rearwardly with the breech-bolt and a sear and a trigger for the hammer.

17. In a gun, the combination with the sliding breech-bolt, and a pivoted locking-dog, of a reciprocating spring-pressed firing-hammer carried by the pivoted locking-dog, connections between the breech-bolt and the reciprocating firing-hammer to cause the hammer to move rearwardly with the breech-bolt, a sear carried by the

pivoted locking-dog holding the firing-hammer against movement, and means for operating the sear.

18. In a gun, the combination with the sliding breech-bolt, and a pivoted locking-dog, of a reciprocating spring-pressed firing-hammer carried by the pivoted locking-dog, connections between the breech-bolt and the reciprocating firing-hammer to cause the hammer to move rearwardly with the breech-bolt, a sear carried by the pivoted locking-dog holding the firing-hammer against movement, means for operating the sear, and a swinging catch carried by the locking-dog and preventing the operation of the sear.

19. In a gun, the combination with a sliding breech-bolt, and a pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the pivoted locking-dog, and a pivoted sear for holding the firing-hammer in cocked position, carried by the locking-dog and a trigger for operating the sear

20. In a gun, the combination with a sliding breech-bolt, and a pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the pivoted locking-dog, a pivoted sear for holding the firing-hammer in cocked position, carried by the locking-dog, a sear-lever pivoted to the locking-dog, and means for operating the sear-lever.

21. In a gun, the combination with a sliding breech-bolt, and a pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the pivoted locking-dog, a pivoted sear for holding the firing-hammer in cocked position, carried by the locking-dog, a sear-lever pivoted to the locking-dog, means for operating the sear-lever, and a swinging catch carried by the locking-dog for preventing the movement of the sear-lever when the locking-dog is out of its locking position.

22. In a gun, the combination with a sliding breech-bolt, and a pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the pivoted locking-dog, a pivoted sear for holding the firing-hammer in cocked position, carried by the locking-dog, a sear-lever pivoted to the locking-dog, means for operating the sear-lever, a swinging catch carried by the locking-dog for preventing the movement of the sear-lever when the locking-dog is out of its locking position, and a drive-rod having connection with the swinging catch for moving the locking-dog out of its locked position.

23. The combination with the sliding breech-bolt, and a pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the locking-dog, a trigger connection for the firing-hammer, and means for breaking the connection between the trigger and the firing-hammer when said firing-hammer is in its fired position.

24. The combination with the sliding breech-bolt, and a pivoted locking-dog, of a firing-hammer carried by the locking-dog, a sear and trigger connection for the firing-hammer, means for breaking the connection between the trigger and the sear when the firing-hammer is in its fired position and connections between the sliding breech-bolt and the firing-hammer for cocking the said hammer on the movement of said bolt.

25. The combination with the sliding breech-bolt, and a pivoted locking-dog, of a firing-hammer, a sear for holding the firing-hammer in cocked position, a trigger, a draw-rod in the connection between the sear and the trigger, and a lifting-arm pivoted to the locking-dog connected to the draw-rod and moved by the firing-hammer when moving to firing position so that the sear cannot be held out of engaging position with the firing-hammer by the trigger after firing.

26. The combination with the sliding breech-bolt and the pivoted locking-dog, of a firing-hammer carried by the locking-dog, connections between the sliding breech-bolt and the firing-hammer for cocking the said hammer on the rearward movement of said bolt, a sear carried by the locking-dog and engaging with the firing-hammer, a sear-lever pivoted to the locking-dog and operating the sear, a swinging catch carried by the locking-dog and holding the sear-lever against movement when the locking-dog is in its unlocking position, and a drive-rod engaging with the swinging catch to move the locking-dog from its locked position.

27. The combination with the sliding breech-bolt, and the pivoted locking-dog, of a spring-pressed reciprocating firing-hammer carried by the locking-dog, connections between the sliding breech-bolt and the firing-hammer for cocking the said hammer on the rearward movement of said bolt, a sear carried by the locking-dog and engaging with the firing-hammer, a sear-lever pivoted to the locking-dog and operating the sear, a swinging catch carried by the locking-dog and holding the sear-lever against movement when the locking-dog is in its unlocking position, a drive-rod engaging with the swinging catch to move the locking-dog from its locked position, a draw-rod for engagement with the sear-lever for moving the same and a lifting-bar carried by the locking-dog and moved by the firing-hammer on firing to move the draw-rod from engagement with the sear-lever.

28. In a gun, the combination with the sliding breech-bolt, and the pivoted locking-dog, of a firing-hammer, a sear for the firing-hammer, a trigger for operating the sear, of means breaking the connection between the trigger and the sear as long as the firing-hammer is in the fired position and means preventing the operation of the sear as long as the locking-dog is in an unlocking position.

29. In a gun the combination with the sliding breech-bolt and the pivoted locking-dog, of the reciprocating spring-pressed firing-hammer carried by the locking-dog and moved to cocked position by the sliding breech-bolt, a sear carried by the pivoted locking-dog, a trigger for operating the sear, means for breaking the connection between the trigger and the sear so long as the firing-hammer is in the fired position, and means preventing the operation of the sear as long as the locking-dog is in an unlocking position.

30. In a gun, the combination with the breech-bolt, of a gas-operated drive-rod, lost-motion connection between the drive-rod and the breech-bolt, a cushion acting on the drive-rod in advance of the lost-motion connection near the end of the rearward movement of the drive-rod, and a cushion for the breech-bolt on the other side of the lost-motion connection.

31. In a gun, the combination of a breech-bolt provided with grooves on opposite sides, a lock for the same, of a bifurcated drive-rod, each member of which carries a lug moving in one of the grooves in the breech-bolt and controlling the lock during such movement.

32. In a gun, the combination of a breech-bolt provided with grooves on opposite sides, a firing-pin carried by the breech-bolt, and a bifurcated drive-rod, each member of which carries a lug moving in one of the grooves in the breech-bolt and controlling the firing-pin during such movement.

33. In a gun, the combination with the rearwardly-moving breech-bolt, of a gas-operated drive-rod for the breech-bolt, a lost-motion connection between the drive-rod and the breech-bolt, means for cushioning the drive-rod in advance of the lost motion, a spring-pressed sliding hammer moved rearwardly by the breech-bolt and cushioning the bolt, and a trigger and sear for the hammer.

34. In a gun, the combination with the firing-hammer, of a sear for holding the hammer against movement, a trigger, a connection between the sear and the trigger, and a lifting-lever pivoted intermediate its ends engaging at one end the connection and moved at its other end by the firing-hammer, when fired, to break the connection between the trigger and the sear.

35. In an automatic gun, the combination with the breech-bolt carrying a spring-retracted firing-pin, of a bifurcated gas-operated drive-rod, a lost-motion connection between the members of the drive-rod and the opposite sides of the breech-bolt, and means operated by the drive-rod moving the firing-pin rearwardly in the bolt on the rearward movement of the drive-rod.

36. In a gun, the combination with the rearwardly-moving breech-bolt, of a locking-dog movable into and out of the path of the breech-bolt, and a bifurcated drive-rod, the two members of the drive-rod engaging the locking-dog on opposite sides.

37. In a gas-operated gun, the combination with the barrel provided with a port near its forward end, of a guiding-lug provided with a perforation and a seat, and depending from the barrel, an expansion-chamber depending from the forward end of the barrel, communicating with the bore through the port, and provided with a seat, a tube fitted in th seat of the guiding-lug and the seat of the expansion-chamber, a piston-rod working through the guiding-lug and the tube and provided with a piston, and a spiral spring surrounding the piston-rod and bearing against the guiding-lug and the piston.

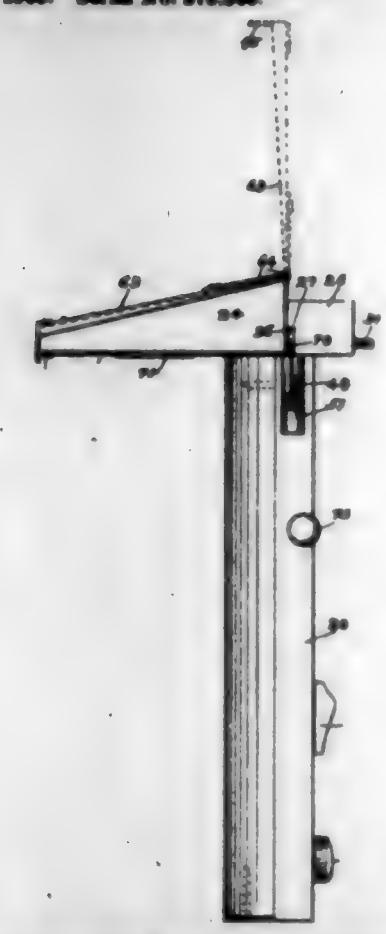
38. In a gas-operated gun, the combination with the barrel, provided with a port near its forward end, of a guiding-lug provided with a perforation and depending from the barrel, an expansion-chamber depending from the barrel near the forward end and communicating with the bore through the port, a tube seated at its forward end in the expansion-chamber and at its rear end in the guiding-lug, a piston-rod working through the guiding-lug and the tube and provided with a piston at its forward end, and a spring seated at one end against the guiding-lug and at its other end against the piston.

39. In a gun, the combination with the magazine, the breech-bolt movable to permit a feed from the magazine, and a gas-operated drive-rod, of a spring for moving the drive-rod in one direction, hand-operated means normally out of engagement and adapted to be thrown into connection therewith, and a lock for holding the breech-bolt in open position.

40. The combination with the breech-bolt, the locking-dog, the

trigger and the sear, of means controlled by the locking-dog and preventing the movement of the sear when the locking-dog is in unlocking position.

814,243. PHOTOGRAPHIC FLASH-LIGHT APPARATUS. THOMAS C. SMITH and WASHINGTON A. MARTIN, Chicago, Ill. Filed Sept. 15, 1905. Serial No. 278,568.



Claim.—1. In a photographic flash-light apparatus, the combination with the supporting-handle, of a firing mechanism mounted thereon, a powder-pan supported on the handle, a cocking-pin for said mechanism, a holder and projector for the match, means to project the same, and means to release said cocked mechanism.

2. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and provided in its front and rear walls with an opening for a percussion-match, a powder-pan connected to the casing and adapted to communicate therewith, a firing mechanism in said casing provided with a cocking-pin projecting therefrom, a match holder and projector located in the casing and coacting with the firing mechanism to hold and project the match, means to raise said holder, and means to release the cocked mechanism.

3. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and provided in its front and rear walls with an opening to receive a percussion-match, a powder-pan connected to the casing, a firing mechanism in said casing, a cocking-pin secured to a part of said firing mechanism and projecting through the casing, a holder and projector located in the casing and coacting with the firing mechanism to hold and project the match, means to project the match-holder, and a firing-trigger located on the handle and projecting into the casing to release the cocked mechanism.

4. In a photographic flash-light apparatus, the combination with the suporting-handle, of a casing mounted one one end thereof and provided in its front and rear walls with an opening, a powder-pan connected to the casing and adapted to communicate therewith, a firing mechanism in said casing, a cocking-pin secured to a part of said firing mechanism and projecting through the casing, a firing-trigger on the handle and projecting into the casing, a holder and projector located in the casing and coacting with the firing mechanism to hold and project the match, means to project said holder, and a safety-lever on the handle adapted to engage the firing-trigger.

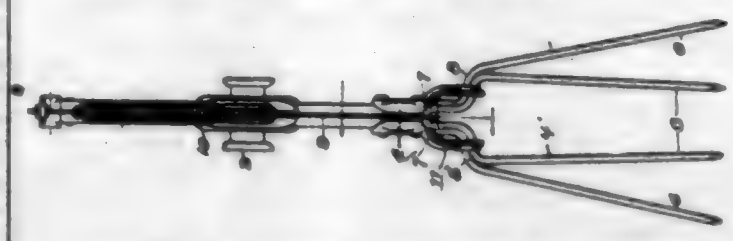
5. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and provided in its front and rear walls with an opening, a powder-pan connected to the casing and adapted to communicate therewith, a spring-actuated cover for said pan, means to hold the cover in its lowered position, a firing mechanism in the casing, a cocking-pin secured to a part of said mechanism and projecting through the casing, a holder and projector located in the casing and coacting with the firing mechanism to hold and project the match, means to raise and project said holder, and means to release the cocked mechanism and the cover of the pan.

6. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and provided in its front and rear walls with an opening, a powder-pan connected to the casing and adapted to have communication therewith, a spring-actuated cover for said pan, means to hold the cover in its lowered position, a firing mechanism in the casing, a cocking-pin connected to a part of said mechanism and extending through the casing, a holder and projector located in the casing and coacting with the firing mechanism, means to hold and project the match, a firing-trigger on the handle projecting into the casing, a safety-lever on the handle and adapted to engage said trigger, a rod longitudinally mounted on the handle and extending into the casing to engage the holder or projector, and means to raise said rod and throw the safety-lever into engagement with the firing-trigger.

7. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and having in its front and rear walls an opening, of a spring-actuated firing-slide movably mounted on one of said walls and having a recess in its lower edge and an inwardly-deflected arm provided with teeth, a cocking-pin secured to said slide and projecting through the casing, a holder and projector located in the casing and coacting with the firing-slide, means to hold and project the match, a firing-trigger located on the handle and projecting into the casing so as to engage the firing-slide, a rod longitudinally mounted on the handle and extending into the casing to engage the holder or projector, and means on the handle to raise said rod.

8. In a photographic flash-light apparatus, the combination with the supporting-handle, of a casing mounted on one end thereof and provided in its front and rear walls with an opening, a powder-pan connected to the casing and adapted to have communication therewith, a spring-actuated firing-slide movably mounted on one of said walls and having a recess in its lower edge, the said slide having on its inner surface an inward projection and an inwardly-deflected arm, a bar secured horizontally and longitudinally in the casing and provided near its secured end with a laterally-extending arm to engage one end of the firing-slide, said bar having its front edge curved outwardly and adapted to engage said inward projection on the firing-slide, a channeled and toothed piece secured across the lower surface of the bar near its free end, a cocking-pin secured to the firing-slide and projecting through the casing, a firing-trigger located on the handle and projecting into the casing, a safety-lever on the handle and adapted to engage said trigger, a rod longitudinally mounted on the handle and extending into the casing to engage the said bar, and means to raise said rod and throw the safety-lever into engagement with the firing-trigger.

814,244. HAY-TEDDER. HERBERT B. SPERRY, Springfield, Ohio, assignor to International Harvester Company, a Corporation of New Jersey. Filed Sept. 20, 1905. Serial No. 279,208.



Claim.—1. A tedder-fork comprising, in combination, two pairs of tines having shank portions and laterally-curved arm portions connecting the tines with said shank portions, a body portion, said arm portions being pivotally connected with said body and having one shank overlapping the other, and a yielding connection between the body and the overlapping shank.

2. A tedder-fork comprising, in combination, two pairs of tines having shank portions and laterally-curved arm portions connecting the tines with said shank portions, a body portion, clips secured upon opposite sides and projecting beyond the end thereof, said clips having lateral openings adapted to receive the oppositely-disposed arm portions of each pair of tines, the shank portion of one pair overlapping the other, and a yielding connection between the opposite end of said body and the overlapping shank.

3. A tedder-fork comprising, in combination, two pairs of tines having shank portions and laterally-curved arm portions connecting the tines with said shank portions, the arm portions of one pair of tines partially embracing the arm portion of the other pair and one

shank portion overlapping the other, a fork-body, clips secured upon opposite sides and projecting beyond the end thereof, said clips having lateral openings adapted to receive the oppositely-disposed arm portions of each pair of tines, and a yielding connection between the opposite end of said body and the overlapping shank.

4. A tedder-fork comprising, in combination, two pairs of tines having shank portions and laterally-curved arm portions connecting the tines with said shank portions, the arm portions of one pair of tines partially embracing the arm portions of the other pair and one shank portion overlapping the other, a fork-body, clips secured upon opposite sides and projecting beyond the end thereof, said clips having lateral openings that are elongated longitudinally relative to the fork-body and adapted to receive the oppositely-disposed arm portions of each pair of tines, and a yielding connection between the opposite end of said body and the overlapping shank.

5. A tedder-fork comprising, in combination, two pairs of tines having shank portions and laterally-curved arm portions connecting the tines with said shank portions, the arm portions of one pair of tines partially embracing the arm portions of the other pair and one shank portion overlapping the other, a fork-body, clips secured upon opposite sides and projecting beyond the end thereof, said clips having lateral openings adapted to receive the oppositely-disposed arm portions of each pair of tines, and a bridge-piece between said clips with which the overlapped shank is adapted to contact in a manner to limit its movement in one direction, and a yielding connection between the opposite end of said body and the overlapping shank.

6. A tedder-fork comprising, in combination, two pairs of tines having substantially U-shaped shank portions and laterally-curved arm portions connecting the tines with said shank portions, the U-shaped shank of the middle pair of tines being partially embraced by the side members of the other shank and having its head overlapping the head of the same, a fork-body, clips secured upon opposite sides and projecting beyond the end thereof, said clips having lateral openings adapted to receive the oppositely-disposed arm portions of each pair of tines, and a yielding connection between the fork-body and said overlapping shank.

314,245. RAILWAY AND RAILWAY-CAR. PHILIP K. STEAD, New York, N. Y. Filed Apr. 8, 1905. Serial No. 254,442.



Claim.—1. In a railway transportation system, a track having a double gage, a car adapted to be transported along said track, an over-turnout track carried by the car, and switches carried by the said over-turnout track, substantially as shown and described.

2. In a railway transportation system, a double-gage track having a relatively broad-gage railway and a relatively narrower-gage railway, cars to be transported on the said broad-gage railway, over-turnout tracks carried by said cars, switches carried by the said over-turnout tracks and said narrower-gage railway, substantially as shown and described.

3. In a railway transportation system, a railway, and a plurality of cars movable in the same or in opposite directions thereon, said cars being provided with superimposed over-turnout tracks comprising a central arch portion, and end portions connected therewith so as to swing in a vertical plane, said end portions being provided at their outer ends with trucks and frogs, substantially as shown and described.

4. In a railway transportation system, a railway, and a plurality of cars movable in the same or in opposite directions thereon, said cars being provided with superimposed over-turnout tracks comprising a central arch portion, and end portions connected therewith so as to swing in a vertical plane, said end portions being provided at their outer ends with trucks and frogs and one of said end portions being also provided with a pivoted switch, substantially as shown and described.

5. In a railway transportation system, a car provided with a superimposed over-turnout track, comprising a central portion over the top of the car, and end portions connected therewith so as to swing in a vertical plane and also capable of slight lateral movement, the outer ends of said end portions being provided with trucks and frogs, and one of said end portions being also provided at its outer end with a pivoted switch device, substantially as shown and described.

6. In a railway transportation system, a car provided with a superimposed over-turnout track having end portions adapted to swing in a vertical plane, said car being also provided with side body portions adapted to contain passengers, substantially as shown and described.

7. In a railway transportation system, a car provided with a superimposed over-turnout track having end portions adapted to swing in a vertical plane, said car being also provided with side body portions adapted to contain passengers, and having side doors and means for opening and closing the same, substantially as shown and described.

8. In a railway transportation system, a railway composed of two supplemental tracks, and cars the axles of which are provided with two sets of wheels one of which is adapted to travel on one of said tracks, said cars being also provided with a superimposed over-turnout track comprising a central portion, and end portions connected therewith so as to swing in a vertical plane and provided at their outer ends with trucks and frogs one of which is provided with a switch device, one set of the wheels on the axles of the cars being also adapted to travel on the superimposed over-turnout track, substantially as shown and described.

9. In a railway transportation system, a main railway composed of two supplemental tracks of different gages one of which is placed below the other, and cars provided with superimposed over-turnout tracks having end portions connected therewith so as to swing in a vertical plane, said end portions being provided at their outer ends with trucks having wheels adapted to travel on one of said tracks and the axles of said cars being also provided with two wheels at each end, one set of which is adapted to travel on the said superimposed over-turnout tracks, substantially as shown and described.

10. In a railway transportation system, a main railway composed of two supplemental tracks one of which is of narrower gage than the other and placed below the other, and cars adapted to travel on said main railway, the axles of said cars being provided with two sets of wheels one of which is adapted to travel on the broader-gage track, said cars being also provided with superimposed over-turnout tracks having pivoted end members adapted to swing in a vertical plane and provided with end trucks, the wheels of which are adapted to travel on the narrower-gage track, the wheels of said trucks being also adapted to travel on the superimposed over-turnout tracks, substantially as shown and described.

11. In a railway transportation system, a main railway composed of two supplemental tracks, one of which is narrower than the other and placed within and below the other, and cars adapted to travel on said main railway, the axles of said cars being provided with two sets of wheels one of which travels on one of said tracks, said cars being also provided with superimposed over-turnout tracks, comprising a central portion and a pivoted pilot at one end and a pivoted skid at the other end thereof, said pilot and said skid being provided with trucks having wheels adapted to travel on the narrower-gage track and said wheels being also adapted to travel on the superimposed over-turnout tracks of the separate cars, substantially as shown and described.

12. In a railway transportation system, a main railway composed of two supplemental tracks, one of which is narrower than the other and placed within and below the other, and cars adapted to travel on said main railway, the axis of said cars being provided with two sets of wheels one of which travels on one of said tracks, said cars being also provided with superimposed over-turnout tracks,

comprising a central portion and a pivoted pilot at one end and a pivoted skid at the other end thereof, said pilot and said skid being provided with trucks having wheels adapted to travel on the narrower-gage track and said wheels being also adapted to travel on the superimposed over-turnout tracks of the separate cars, and the outer ends of said pilot and said skid being provided with frogs, and the outer end of the pilot being also provided with pivoted switch devices, substantially as shown and described.

13. In a railway transportation system, a car provided with a superimposed over-turnout track, comprising a central top portion having a pilot pivoted at one end thereof and a skid pivoted at the other end thereof, said pilot and said skid being adapted to swing in a vertical plane, and being provided at their outer ends with trucks, each of which is provided with frogs, substantially as shown and described.

14. In a railway transportation system, a car provided with a superimposed over-turnout track, comprising a central top portion having a pilot pivoted at one end thereof and a skid pivoted a the other end thereof, said pilot and said skid being adapted to swing in a vertical plane, and being provided at their outer ends with trucks, each of which is provided with frogs, and the outer end of the pilot being also provided with pivoted switch devices, substantially as shown and described.

15. In a railway transportation system, a main railway composed of two tracks one of which is of narrower gage than and placed within and below the other, and cars adapted to travel on said main railway, the axles of the cars being provided with two sets of wheels one of which is adapted to travel on the wider-gage track, said cars being also provided with superimposed over-turnout tracks having a pivoted pilot at one end and a pivoted skid at the other, the said pilot and said skid being provided at their outer ends with wheels adapted to travel on the narrower-gage track and also adapted to travel on the superimposed over-turnout tracks, substantially as shown and described.

16. In a railway transportation system, a main railway composed of two tracks one of which is of narrower gage than and placed within and below the other, and cars adapted to travel on said main railway, the axles of the cars being provided with two sets of wheels one of which is adapted to travel on the wider-gage track, said cars being also provided with superimposed over-turnout tracks having a pivoted pilot at one end and a pivoted skid at the other, the said pilot and said skid being provided at their outer ends with wheels adapted to travel on the narrower-gage track and also adapted to travel on the superimposed over-turnout tracks, and said pilot and said skid being also provided at their outer ends with frogs and the pilot with pivoted switch devices, substantially as shown and described.

17. In a railway system, a main track provided with cars adapted to be transported therealong, over-turnout tracks and switches carried by the cars and looped about said cars in the manner of a bridge, said cars being provided with trucks having a double tread, one of said treads being adapted to run on the main gage and the other of said treads being adapted to run on the over-turnout track, substantially as shown and described.

18. In a railway system, a main track provided with cars adapted to be transported therealong, over-turnout tracks and switches therefor carried by the cars and looped about said cars in the manner of a bridge substantially forming an undulation in the main track, said cars being provided with trucks having a double tread, one of said treads being adapted to run on the main gage and the other said tread being adapted to run on the over-turnout track, substantially as shown and described.

19. In a railway system, a system of over-switching embracing a main track and gage, running-switches, the switches being provided with trucks of different treads, one of said treads being adapted to track on the main gage and the other tread thereof being adapted to track on the switches, said switches being adapted to be carried from the main track upon their trucks over another switch in the main line by changing from one of the said treads of said truck to the other tread of said truck, substantially as shown and described.

20. In a railway system, a system of over-switching, comprising a main track and gage, running-switches, said switches being provided with trucks of different treads, one of said treads being adapted to track on the main gage and the other tread thereof being adapted to track on the switches, said switches being adapted to be carried from the main track upon their trucks over another switch and descending thereafter to the main track by the changing from one of said treads of said truck to the other tread of said truck, substantially as shown and described.

21. In a railway transportation system, a main track provided with a system of cars adapted to be transported therealong and to be switched one over another, over-turn outs and switches carried by the cars for switching said cars and having their switches engaging the treads of the car-trucks prior to the passing of said cars one over another, and means for supporting said switches from the road-bed at a position substantially vertically under the tread of the over-switching trucks at the initial point of the switching operation aforesaid, substantially as shown and described.

22. In the herein-described system of over-switching cars while in transit, skids carried by the cars adapted to gage with the track, and a system of frogs carried by the terminal of said skids adapted to establish a register with the track, substantially as shown and described.

23. In a system of over-switching cars operating along a line of railway, a system of superimposed tracks carried by the cars having frogs and switches coacting with the main track, means carried by the cars for engaging the said switches and frogs and a jointed connection between the said superimposed tracks and the said switches and frogs permitting freedom of motion, substantially as shown and described.

24. In a railway system, a main track, cars and mobile over-turnout switches therein, plural-treaded trucks, carrying the cars and said switches, and having respectively a main tread and a switch-tread, said trucks being adapted to carry and convey the cars and said switches along the main track, upon said main tread and over respective, over-turnout switches upon said switch-tread, substantially as shown and described.

814,246. **BAIL-SUPPORTING DEVICE.** Maurice Stransky, New York, N. Y. Filed Dec. 6, 1904. Serial No. 235,715.



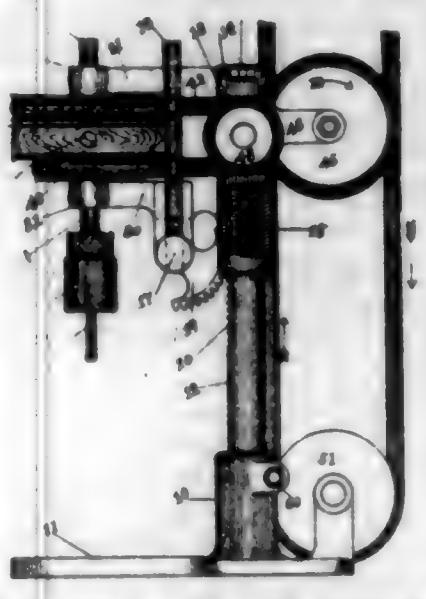
Claim.—1. In a vessel or utensil of the class described, the combination of a pair of lugs each having an aperture therein and at least one of which is provided with a vertically-arranged groove terminating in said aperture, and a bail having its ends looped and each loop comprising a horizontal pivotal portion, a straight portion at right angles thereto and an inclined portion therebetween, the ends of said bail being outwardly spring-pressed, whereby when said vertical portion is in said groove said pivotal portion is projected through said aperture to completely unseat the same.

2. In a vessel or utensil of the class described, the combination of a pair of lugs each having an aperture therein and at least one of which is provided with a vertically-arranged groove, and an outwardly spring-pressed bail pivoted in said apertures, the aperture in the grooved lug being relatively larger than the cross-sectional area of said bail and the corresponding end of said bail being provided with a horizontal pivotal portion, a straight portion at right angles thereto and an intermediate inclined portion, whereby, when said bail is in an erect position and said straight portion spring-pressed into said groove, said pivotal portion is forced completely out of its seat.

814,247. **TAPPING AND DRILLING MACHINE.** Arthur J. Strong, Dayton, Ohio, assignor of one-half to Jonathan B. Hayward, Dayton, Ohio. Filed Apr. 3, 1903. Serial No. 150,918.

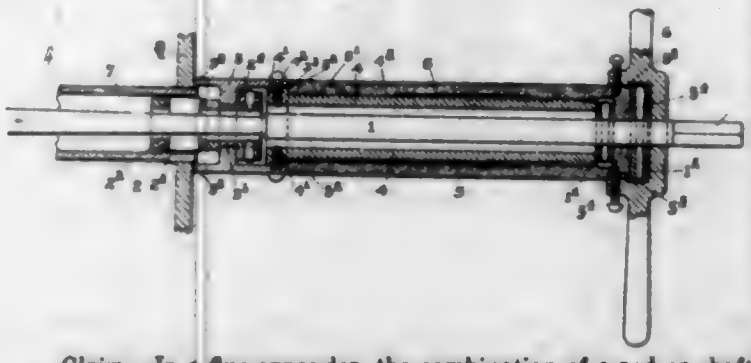
Claim.—1. In a machine of the character described, the combination with a reciprocatory frame and a support therefor, of a driven disk having flat contact-surfaces and mounted upon a tool-carrying shaft journaled in said frame; two friction driving-disks situated on opposite sides of said driven disk and having flat contact-surfaces for engaging said driven disk and rotating the same by frictional contact therewith; an auxiliary driving-belt carried upon said frame and arranged to rotate said two driving-disks reversely; a main driving-belt; a rotary member common to said main and said auxiliary belts,

said main belt being so connected with said rotary member as to permit the reciprocation of said frame without affecting the tension of said main belt; a hand-manipulative lever for reciprocating the frame toward and from the work; and a spring for forcing said frame away from the work.



2. In a machine of the character described, the combination with a reciprocatory frame and a support therefor, of a driven disk having flat contact-surfaces and mounted upon a tool-carrying shaft journaled in said frame; two friction driving-disks situated on opposite sides of said disk driven and having flat contact-surfaces for engaging said driven disk and rotating the same by frictional contact therewith; an auxiliary driving-belt carried upon said frame and arranged to rotate said two driving-disks reversely; a main driving-belt; a work-supporting base-plate carrying a pulley; a pulley common to said main and said auxiliary belts, said main belt being led once around said common pulley and then under said base-plate pulley whereby to permit the reciprocation of said frame without affecting the tension of said main belt; a hand-manipulative lever for reciprocating the frame toward and from the work; a spring for forcing said frame away from the work; and means for adjusting the said frame-carrying support toward and from said base-plate, whereby to position the tool-carrying frame independently of said manipulative lever.

814,248. **FLUE-EXPANDER.** OLOF SWANSON, Chicago, Ill. Filed Apr. 7, 1904. Serial No. 202,060.

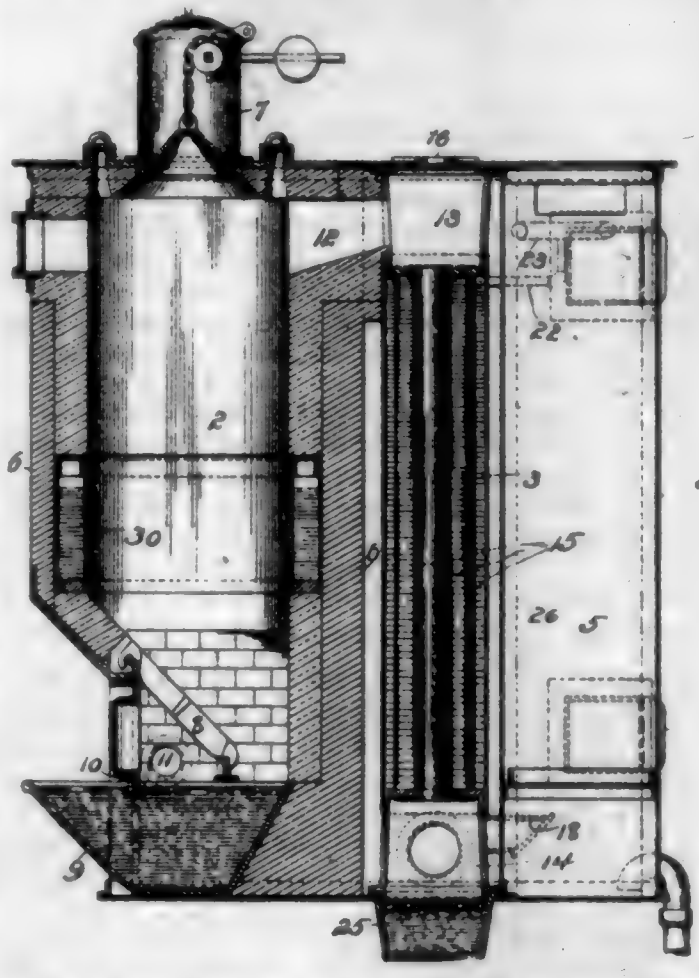


Claim.—In a flue-expander, the combination of a rod or shaft tapered inwardly from one of its ends and adapted at its other end to engage means for imparting rotary motion thereto, with a pair of collars spaced apart and fixed on said shaft near its power-engaging end, an internally-screw-threaded outer sleeve having at its outer end a collar interposed between said pair of collars and loosely surrounding said shaft, an externally-screw-threaded inner sleeve surrounding said shaft and located in the outer sleeve and having on its end adjacent to the taper of the shaft an annular enlargement, an auxiliary sleeve fixed on said enlargement and extending therefrom toward the tapered portion of the shaft, a roller-nest secured within the auxiliary sleeve and having a series of openings extending beyond the outer end of the said sleeve, and a roller loosely mounted in each of said openings, substantially as described.

814,249. **GAS-PRODUCER.** JAMES H SWINDELL, Pittsburg, Pa. Filed Dec. 13, 1904. Serial No. 236,650.

Claim.—1. In a gas-producer, the combination of a casing, a combustion-chamber, a cooler, a scrubber, and a purifier-chamber all in said casing, and means connecting the same.

2. In a gas-producer, the combination of a casing, a combustion-chamber in one end thereof, a cooler adjacent to the combustion-chamber and in said casing, and scrubber and purifier chambers in the other end of said casing separated by a vertical partition, means for connecting the combustion-chamber with the cooler, means for connecting the scrubber and purifier with each other and means for connecting the cooler and scrubber.



3. In a gas-producer, the combination with a casing, of a combustion-chamber in said casing, a cooler in said casing communicating with the combustion-chamber, a water-seal ash-pit for said combustion-chamber, and a water-seal tar-receiving pan at the bottom of said cooler extending out beyond the casing to permit the removal of tar without disturbing the operation of the apparatus.

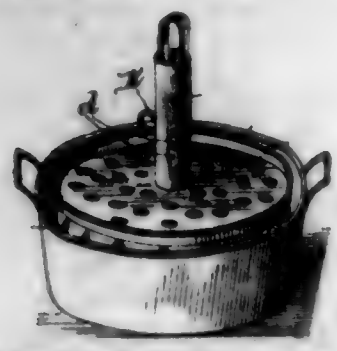
4. In a gas-producer, the combination with a combustion-chamber, a gas-cooler, and a purifier, of a water-tank or boiler in the combustion-chamber, a draft-pipe communicating with the bottom of said combustion-chamber, an air-damper for said pipe, a pipe for directing steam from the boiler or tank into the draft-pipe, a valve in the steam-pipe, and means controlled by the suction of gas from the purifier and connected with the damper of the draft-pipe and the valve of the steam-pipe for regulating the proportions of air and steam supplied to said draft-pipe.

5. The combination with a gas-producer, a grate in the combustion-chamber thereof, and a water tank or boiler in said combustion-chamber, of a draft-pipe communicating with the space beneath the grate, an air-damper at one end thereof, a pipe conveying steam from the boiler or tank to said draft-pipe, a valve in said steam-pipe, and automatic means controlled by the pressure of the gas issuing from the apparatus, for governing the operation of said valve and damper, to regulate the proportion of air and steam admitted to said draft-pipe.

6. The combination with a gas-producer, a grate in the combustion-chamber thereof, and a water tank or boiler around said combustion-chamber, of a draft-pipe communicating with the space beneath the grate, an air-damper at one end of said draft-pipe, a pipe conveying steam from the tank or boiler to the draft-pipe, a valve in said steam-pipe, and automatic means controlling the operation of the damper and valve.

7. The combination with a gas-producer, and a water tank or boiler in its combustion-chamber, a draft-pipe communicating with the space beneath the combustion-chamber, an air-damper at one end thereof, a pipe conveying steam from the tank or boiler to said draft-pipe, a valve in said steam-pipe, a diaphragm whose movement is controlled by the suction of gas from the apparatus, a walking-beam connected with the valve and damper, and a rod connecting said walking-beam with the diaphragm.

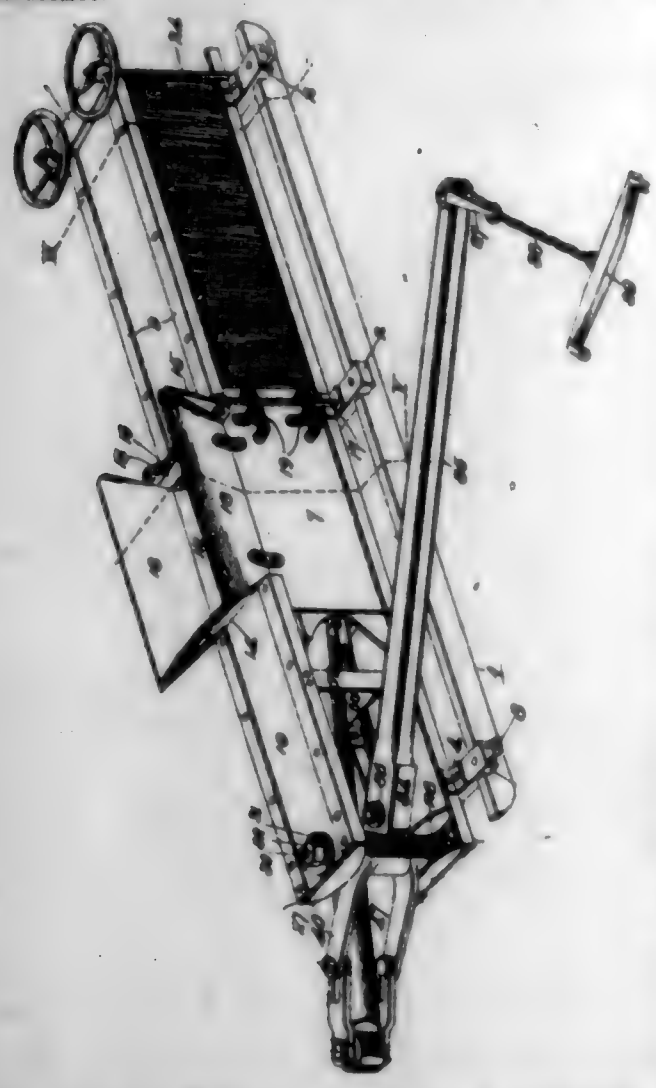
814,250. FRUIT-CANNER. Henry W. Toler, Longview, Tex. Filed Aug. 18, 1905. Serial No. 274,782.



Claim.—1. A fruit-canning apparatus comprising a receptacle, a post rising therefrom and secured to said receptacle, a tray having a hollow circular member adapted to telescope over said post, means for holding said tray at different heights within the receptacle, a perforated disk having a central aperture to receive said member and adapted to rest upon the flange of said tray, and a loop carried by said member, as set forth.

2. An apparatus for canning fruit comprising a receptacle, a post, radial arms fixed to the bottom of said post and fastened to said receptacle, a flanged perforated tray, a hollow tubular member fastened in an aperture in the bottom of said tray and adapted to telescope over said post, means for holding the tray at different heights, and a perforated disk telescoping over said member and adapted to rest upon the flange of said tray, as set forth.

814,251. BALING-PRESS. Josiah S. Tuttle and Charles L. Cookson, Kansas City, Mo., assignors to Panama Hay Press Co., Kansas City, Mo., a Corporation of Missouri. Filed Mar. 15, 1905. Serial No. 250,261.



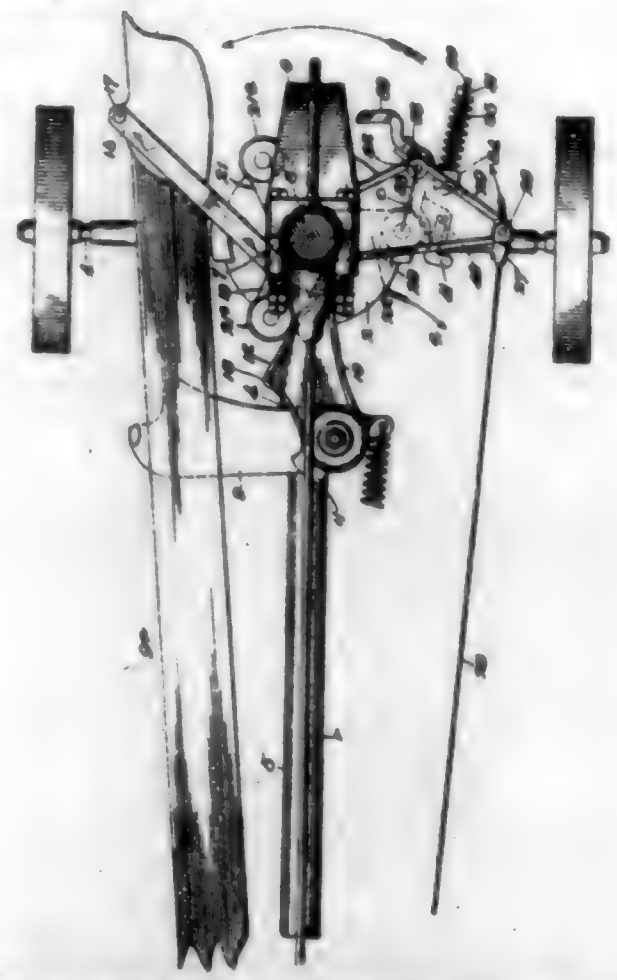
Claim.—1. In a baling-press, a power-shaft having superposed trip-arms, a plunger-beam capable of passing between the arms, and a pair of links capable of swinging through the space between said arms and pivotally connected to the latter and the beam.

2. In a baling-press, a power-shaft having superposed trip-arms, a plunger-beam capable of passing between the arms, and a pair of links capable of swinging through the space between said arms and pivotally connected to the latter and the beam, and longitudinally slidable on the arms.

3. In a baling-press, a power-shaft having superposed trip-arms, a plunger-beam capable of passing between the arms, and a pair of links capable of swinging through the space between said arms and pivotally connected to the latter and the beam, and having longitudinal slots engaging the pivots connecting them with the arms.

4. In a baling-press, a power-shaft having superposed trip-arms, a plunger-beam capable of passing between the arms, a pair of links capable of swinging through the space between said arms and pivotally connected to the latter and the beam, and having longitudinal slots engaging the pivots connecting them with the arms, and an antifriction-roller on the pivot connecting the links and beam, to roll against the shaft.

814,252. BALING-PRESS. Josiah S. Tuttle and Charles L. Cookson, Kansas City, Mo., assignors to Admiral Hay Press Co., Kansas City, Mo., a Corporation of Missouri. Filed July 25, 1905. Serial No. 271,142.



Claim.—1. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, rounded means movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, and a pivoted device carried by the swing-frame and provided with an arm held yieldingly in the path of said means, but disposed wholly outward of the vertical plane of the axis of said pivoted device and of the axis of the rounded means when the latter is in engagement with said arm.

2. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, rounded means movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, a pivoted device carried by the swing-frame and provided with an arm having a rounded socket at its inner side, and yielding means for holding said device with the socket in the path of the first-named means; said socket when engaged by said first-named means lying wholly outward of the vertical plane of the axis of said pivoted device and of the axis of the rounded end of said first-named means.

3. The combination with a baling-press having a suitable framework, a power-shaft journaled thereon, a roller movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, and a pivoted device carried by the swing-frame and provided with an arm held yieldingly in the path of said roller but dis-

posed wholly outward of the vertical plane of the axis of said pivoted device and of the axis of the roller when the latter is in engagement with said arm.

4. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, a roller movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, a pivoted device carried by the swing-frame and provided with an arm having a rounded socket at its inner side, and yielding means for holding said device with the socket in the path of the said socket being disposed outward of the vertical plane intersecting the axes of the pivoted device and roller when the latter is in engagement with the socket.

5. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, means movable with and concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, and a pivoted device carried by the swing-frame and provided with an arm held yieldingly in the path of said means, and another part in the path of an obstruction rigid with the frame and adapted to be pushed inward by the latter to trip said arm out of the path of the said means.

6. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, means movable with and concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to impart movement from the former to the latter, a pivoted device carried by the swing-frame and provided with an arm held yieldingly in the path of said means, another part in the path of an obstruction rigid with the frame and adapted to be pushed inward by the latter to trip said arm out of the path of the said means, and means to cushion the return or recoil movement imparted to swing-frame by the retraction of the feeder when released.

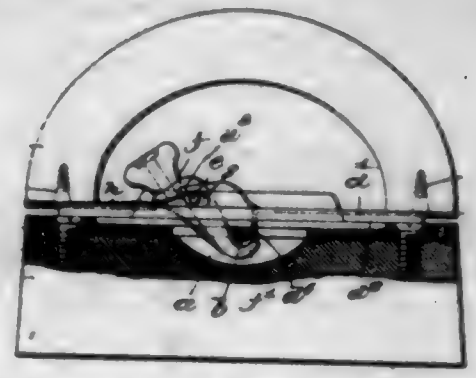
7. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, rounded means movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to transmit movement from the former to the latter, a device pivoted to said frame and provided with a forwardly-projecting arm terminating at its front end in a segmental socket having its concave face disposed toward the power-shaft, and with an outwardly-projecting arm limited as to forward movement by a part of said swing-frame, a rod carried by said swing-frame and extending through said outwardly-projecting arm, an adjustable device on said rod, and a spring on said rod bearing at its opposite ends against said adjustable device and said outwardly-projecting arm.

8. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, rounded means movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to transmit movement from the former to the latter, a device pivoted to said frame and provided with a forwardly-projecting arm terminating at its front end in a segmental socket having its concave face disposed toward the power-shaft, and an arm projecting from said device to engage a fixed point on the framework and be caused thereby to swing said socket outwardly.

9. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, rounded means movable with and adapted to travel concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to transmit movement from the former to the latter, a device pivoted to said frame and provided with a forwardly-projecting arm terminating at its front end in a segmental socket having its concave face disposed toward the power-shaft, an arm projecting from said device to engage a fixed point on the framework and be caused thereby to swing said socket outwardly, and means for yieldingly resisting outward movement of said socket.

10. The combination with a baling-press having a suitable framework, a power-shaft journaled therein, means movable with and concentrically around the power-shaft, and a yieldingly-retracted feeder, of a swing-frame, a connection between the swing-frame and the feeder to transmit movement from the former to the latter, a pivoted device carried by the swing-frame and provided with an arm held yieldingly in the path of said means, and means to cushion the return or recoil movement imparted to the swing-frame by the retraction of the feeder when released.

814,253. **HOLDER FOR SAD-IRONS.** GEORGE ULETT, Waltham, Mass., assignor of one-half to Jasper H. Yetten, Waltham, Mass. Filed Apr. 18, 1905. Serial No. 255,642.

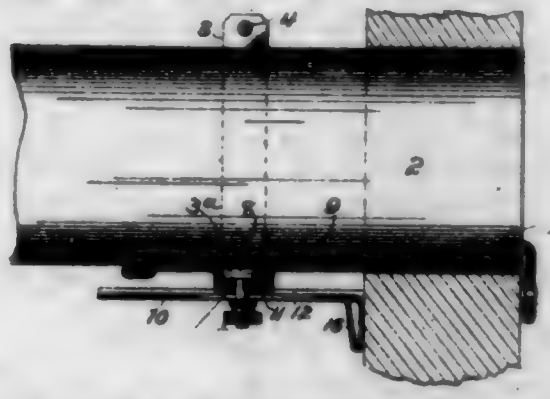


Claim.—1. In a device of the character described, a handle, a catch-plate attached thereto, slotted retaining-ears thereon, an opening through said catch-plate between said retaining-ears, a catch pivotally mounted in the slots of said ears and adapted to swing within said opening and a spring, one end of said spring being attached to the upper side of the aforesaid catch-plate while the opposite end passes through the opening therein beneath the plate and presses against the hooked portion of the aforesaid catch, thereby acting both to retain the pivot ends of the catch within their retaining-slots and to hold the hooked portion of the catch in its normal or operative position.

2. In a device of the character described, a handpiece, a connected handle-plate having slotted ears, combined with a catch and a pivot-pin, said pivot-pin entering the slots of said ears.

3. In a device of the character described, a handle, a catch-plate attached thereto, a catch pivotally mounted therein and a spring, said spring being attached at one end to the upper side of said catch-plate while the other end of said spring passes through an opening in said catch-plate and bears against the under side of the hooked portion of the aforesaid catch, thereby holding it in its normal or operative position.

814,254. **STOVEPIPE-HOLDER.** LESLIE WETHERBEE, Adrian, Mich. Filed May 19, 1905. Serial No. 261,184.



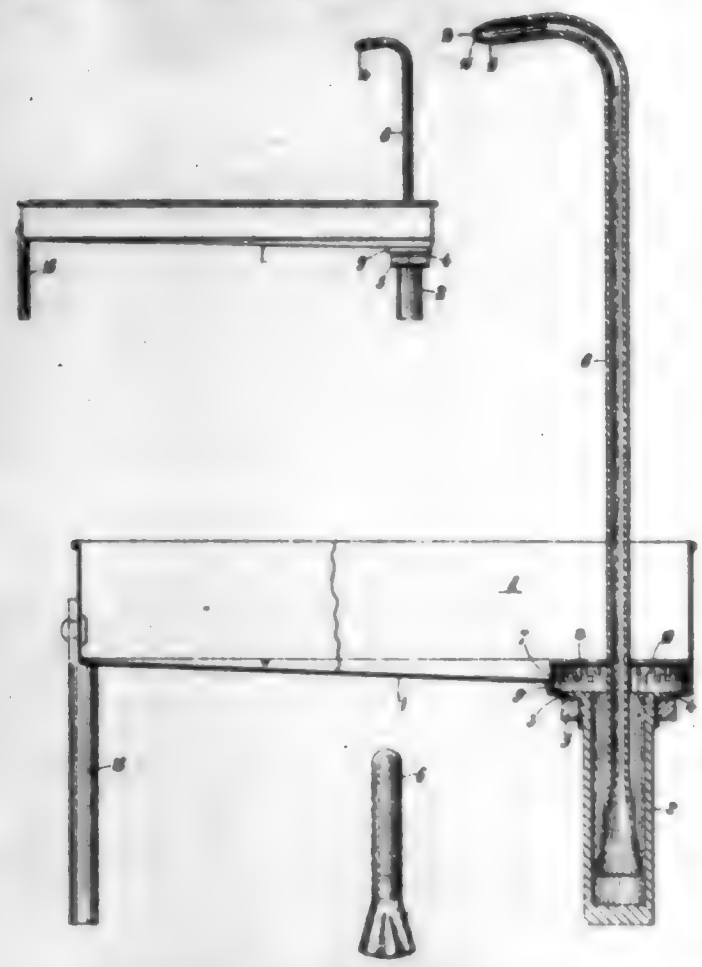
Claim.—1. In a device of the character described, the combination of adjustable clamping members adapted to engage a chimney-wall, each having a jaw at one end, a split band for securing the same to a pipe means for securing the clamping members at different adjustment, the forward end of each clamping member provided with a brace, the brace on one clamping member engaging the latter in rear of the bearing-face of the jaw thereon and the brace on the other clamping member adapted to engage the inside of the pipe.

2. In a stovepipe-holder, the combination of a collar comprising two members adjustable relatively to each other and having a plurality of offset portions adapted to intermesh, whereby said members can be held in different adjustments relatively to each other, means for clamping said members on a stovepipe and means attached to said collar for securing the pipe to a chimney-opening.

3. In a stovepipe-holder, the combination of a collar comprising two members adjustable relatively to each other and each having a plurality of offset portions the offset portions of one member being adapted to intermesh with those of the other whereby said members can be held in different adjustments relatively to each other, means for securing said members to a pipe and a clamp attached to an offset portion of each member for securing the pipe in a chimney-opening.

814,255. **BASTING APPARATUS.** ARTHUR G. R. WILLIAMS, Cambridge, Waikato, New Zealand. Filed Jan. 30, 1905. Serial No. 243,296.

Claim.—Apparatus for the purpose indicated, comprising in combination, a baking-dish, a tubular well closed at its lower end and having a flange upon its upper end, said flange fitting a recess in the bottom of the baking-dish, a back-nut screwing upon the well, a tube having a conical lower end, a nozzle upon the upper end of said tube, a ring surrounding the tube and arms connecting the tube with the ring, said ring being perforated and adapted to fit a recess in said dish and being so arranged in relation to the tube that the tube is supported with its lower end above the bottom of the well, substantially as specified herein and illustrated.



814,256. TRACK-SANDING APPARATUS. Brutus D. Willits, Des Moines, Iowa. Filed May 25, 1905. Serial No. 262,515.



Claim.—1. The combination with a car-body and a swiveled truck, of a sand-box, a funnel to receive discharge from the sand-box and having a universal movement with relation to the sand-box, a hose connected with the funnel, a hose-guide fixed to the truck, said hose entering the guide and having a sliding connection therewith.

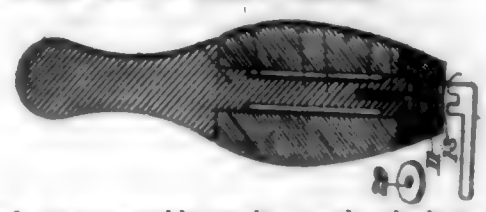
2. The combination with a car-body and a swiveled truck, of a sand-box, a cup-shaped device upon the sand-box and communicating therewith and having an opening at its lower end, a funnel having a cup-shaped top supported in said cup-shaped device and having a universal movement therein, a hose connected with the funnel and a discharge-spout connected with the car-truck and communicating with the hose.

3. The combination with a car-body and a swiveled truck, of a sand-box mounted on the car-body and a device secured beneath the sand-box and having a cup-shaped partition near its top provided with a central opening and a cup-shaped partition near its bottom provided with a central opening, a funnel with a cup-shaped top fitted on the top of the lower partition and projected through the opening therein, a hose connected with the funnel, and a spout supported on the car-truck and communicating with the said hose.

4. The combination with a car-body and a swiveled truck, of a sand-box supported on the car-body, a hose pivotally connected with the car-body and communicating with the sand-box, a cylinder supported on the car-truck and formed with a spout at its lower end, said cylinder slidingly and pivotally connected with the hose.

5. The combination with a car-body and swiveled truck, of a sand-box supported on the car-body, a device supported below the sand-box and formed with a cup-shaped partition at its top having a central opening and a cup-shaped partition at its bottom having an opening, a funnel having a cup-shaped top fitted on top of the lower cup-shaped partition and projecting through the opening therein, a hose secured to the funnel, a cylinder, and a bracket fixed to the cylinder and to the car-truck, said cylinder having an open top the margins of which are curved inwardly, said cylinder also formed with a spout at its lower end and an inverted-cup-shaped device on the lower end of the hose slidingly mounted in the cylinder and normally engaging the sides of the cylinder.

814,257. DIVIDED TENPIN. Stephen G. Wilson, Philadelphia, Pa. Filed Sept. 16, 1904. Serial No. 224,746.



Claim.—1. In a separable tenpin, a neck, a body and a base, all of the same material but transversely divided from one another and a removable connection between the parts.

2. In a divisible tenpin, a plurality of sections of uniform material transversely divided, a projection upon one of said sections registering with an opening in another of said sections and means connected with a third section for removably retaining the projection in said opening.

3. In a tenpin, a base, a top, a part movable relatively to the base, and a removable washer spacing the base and top to permit such movement.

4. In a tenpin, a base, a top, and a rotatable body portion.

5. In a tenpin, a base, a top, a spindle uniting the base and top and an intermediate section loosely mounted upon said spindle.

6. In a tenpin, a base, a top, a spindle between the two, a washer about the spindle and a body portion rotatable upon said spindle.

814,258. WHEEL-CULTIVATOR. James K. Young, Camden county, Ga. Filed May 24, 1905. Serial No. 262,063.

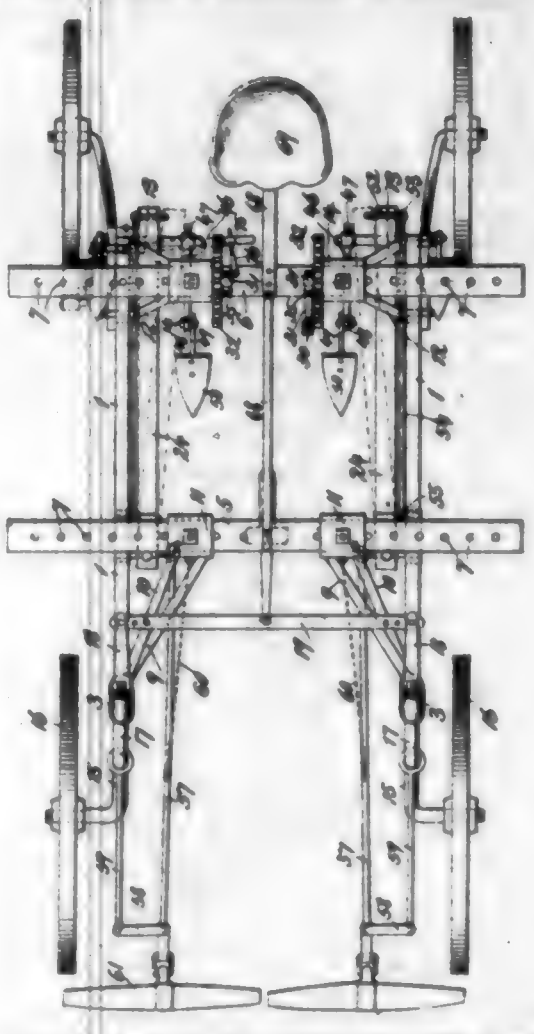
Claim.—1. In a wheel-cultivator, the cultivator-frame composed of the two sides frames each consisting of a longitudinally-extending bar and a truss-bar, cross-bars adjustably connecting the longitudinal bar of one side frame to the corresponding bar of the other side frame, and brace-rods extending from each side frame and adjustably connected to the cross-bars which connect the two side frames, substantially as described.

2. In a wheel-cultivator, the cultivator-frame composed of two side frames each consisting of a longitudinally-extending bar and a truss-bar, the rear of the longitudinal bars having depending brackets and the front provided with vertically-disposed sleeves, standards extending through said sleeves and having wheels connected thereto, and standards extending from the brackets at the rear of the longitudinal bars and having wheels connected thereto, substantially as described.

3. In a wheel-cultivator, the combination of side frames, pintles extending inwardly from the lower portion of the side frames, boxes supported by said pintles so as to turn thereon, and beams pivotally mounted on said boxes so as to swing thereon, substantially as described.

4. In a wheel-cultivator, the combination of side frames, pintles extending inwardly from the lower portion of the side frames, boxes connected to said pintles so as to turn thereon, beams having their forward ends pivotally mounted on said boxes so as to swing laterally, foot-levers connected to the rear of the beams, and links connecting said levers with the lower portion of the side frames, for depressing the beams and swinging them laterally, and means for lifting the beams, substantially as described.

5. In a wheel-cultivator, the combination with a cultivator-beam, of a boxing attached thereto, an arm supported across the beam by said boxing and rotatably and longitudinally adjustable therein, the clip clamping the boxing to the beam and holding the cross-arm to its rotatable and longitudinal adjustment and a plow-point shank carried by the arm, substantially as described.



6. In a wheel-cultivator, the combination with a cultivator-beam, of a transversely-extending arm supported from the beam, a plow-point shank connected to said arm to one side of the beam, a forwardly-extending arm adjustably connected to the transversely-extending arm on the opposite side of the beam, and a plow-point shank connected to the forwardly-extending arm, substantially as described.

7. In a wheel-cultivator, the combination with side frames connected together by cross-bars, wheels and front and rear standards for the wheels, of beams, upright standards connected with the lower portions of the frames and with the cross-bars connecting the frames, and draft-rods connected one to the upright standard and the other to the front-wheel standard and to each other, substantially as described.

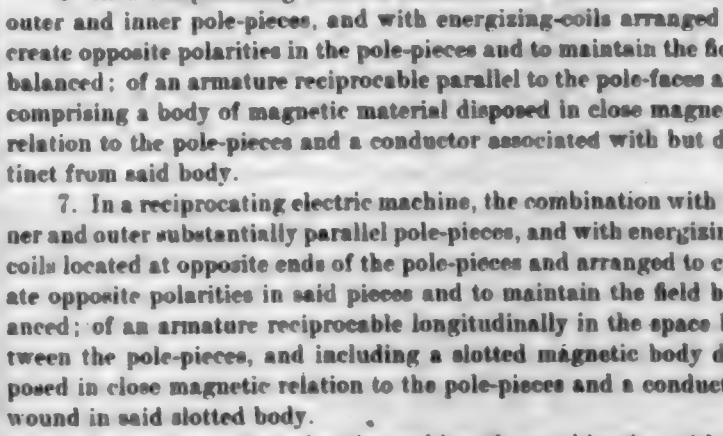
8. In a wheel-cultivator, the combination of a frame, front and rear wheels supporting the frame, standards for the front wheels swiveled to the front portion of the frame, cranks connected to the upper ends of said standards, a bar connecting said cranks together, a rod extending rearwardly from said connecting-bar, and a slotted member fixed to a suitable support and connected with said rearwardly-extending rod by a bolt passing through said slot and said rod, substantially as and for the purposes described.

9. In a wheel-cultivator, the combination of a frame, front and rear wheels supporting the frame, standards for the front wheels swiveled to the front portion of the frame, cranks connected to the upper ends of said standards, a bar connecting said cranks together, and means pivotally connecting said bar with a part of the cultivator to the rear of said bar for limiting the movement of said bar and front wheels, substantially as described.

814,259. **RECIPROCATING ELECTRIC MACHINE.** TRUMAN H. ALDRICH, Birmingham, Ala. Filed Apr. 5, 1905. Serial No. 253,959.

Claim.—1. In a reciprocating electric machine, the combination with the field having outer and inner pole-pieces of opposite polarity disposed parallel to each other; of an armature reciprocable longitudinally in the space between the pole-pieces and comprising a body of magnetic material and a coil of conductor distinct from but associated with said body.

2. In a reciprocating electric machine, the combination with the field-magnet having inner and outer pole-pieces of opposite polarity disposed parallel to each other; of an armature reciprocable longitudinally in the space between the pole-pieces and comprising a body of magnetic material disposed in close magnetic relation to said pole-pieces and a conductor distinct from but associated with said body.



3. In a reciprocating electric machine, the combination with the field-magnet having inner and outer pole-pieces of opposite polarity disposed parallel to each other; of an armature reciprocable longitudinally in the space between the pole-pieces and comprising a body of magnetic material disposed in close magnetic relation to said pole-pieces and a conductor distinct from but associated with said body, and of a spacing member of non-magnetic material inserted between said body and one of the pole-pieces.

4. In a reciprocating electric machine, the combination with a field-magnet having outer and inner pole-pieces of opposite polarity arranged parallel to each other; of an armature reciprocable longitudinally in the space between said pole-pieces and consisting of a slotted core of magnetic material disposed in close magnetic relation to the pole-pieces and a conductor wound in said slotted body.

5. In a reciprocating electric motor, the combination with a field-magnet having outer and inner pole-pieces of opposite polarity arranged parallel to each other; of an armature reciprocable longitudinally in the space between said pole-pieces and consisting of a body of magnetic material disposed in close magnetic relation to the pole-pieces and a conductor distinct from but associated with said body, and of means for automatically reversing the current in the conductor periodically during the cycle of movement.

6. In a reciprocating electric machine, the combination with outer and inner pole-pieces, and with energizing-coils arranged to create opposite polarities in the pole-pieces and to maintain the field balanced; of an armature reciprocable parallel to the pole-faces and comprising a body of magnetic material disposed in close magnetic relation to the pole-pieces and a conductor associated with but distinct from said body.

7. In a reciprocating electric machine, the combination with inner and outer substantially parallel pole-pieces, and with energizing-coils located at opposite ends of the pole-pieces and arranged to create opposite polarities in said pieces and to maintain the field balanced; of an armature reciprocable longitudinally in the space between the pole-pieces, and including a slotted magnetic body disposed in close magnetic relation to the pole-pieces and a conductor wound in said slotted body.

8. In a reciprocating electric machine, the combination with an outer pole-piece, and an inner pole-piece of opposite polarity reciprocable longitudinally in the outer pole-piece; of an armature secured to said inner pole-piece to move therewith and consisting of a body of magnetic material arranged contiguous the face of the outer pole-piece and a conductor associated with but distinct from said body.

9. In a reciprocating electric machine, the combination with an outer pole-piece, and an inner pole-piece of opposite polarity reciprocable longitudinally in bearings in the ends of the outer pole-piece, and with spacing members of non-magnetic material inserted between the pole-pieces at such bearings; of an armature secured to the inner pole-piece and including a suitable conductor.

10. In a reciprocating motor, the combination with an outer pole-piece and an inner pole-piece of opposite polarity reciprocable longitudinally with reference to said outer pole-piece; of an armature secured to the inner pole-piece and including a body of magnetic material and a conductor, and of means for automatically reversing the current in the armature-conductor periodically during the cycle of movement.

11. In a reciprocating motor, the combination with an outer inclosed pole-piece and an inner pole-piece of opposite polarity; of an

armature reciprocable longitudinally with reference to the pole-pieces and consisting of a body of magnetic material and a conductor, and of means for automatically reversing the armature-current periodically during the cycle of movement, an air-cushion being provided at each end of the outer pole-piece.

12. In a reciprocating electric machine, the combination with an outer and an inner pole-piece of opposite polarities arranged substantially parallel to each other, and with energizing-coils located at the ends of the pole-pieces, and with an armature reciprocable in the space between the pole-pieces; of an insert of non-magnetic material at each end of one of the pole-faces in advance of the adjacent energizing-coil.

13. In a reciprocating electric machine, the combination with outer and inner pole-pieces of opposite polarities and arranged substantially parallel to each other, and with energizing-coils located at the ends of the field, and with an armature longitudinally movable in the space between the pole-pieces; of an insert of non-magnetic material at each end of one of the pole-faces in advance of the adjacent energizing-coil and increasing in thickness toward said coil.

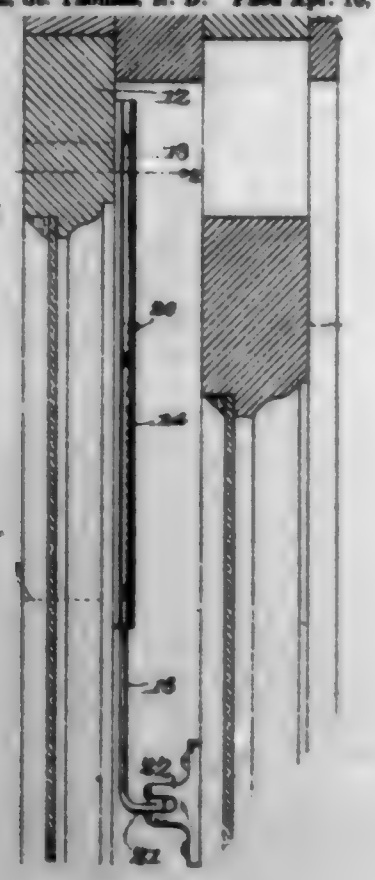
14. In a reciprocating motor, the combination with pole-pieces of opposite polarity arranged substantially parallel to each other, said pole-pieces constituting a primary member having suitable energizing-coils, and with an armature reciprocable longitudinally within the influence of said primary member, said armature constituting a secondary member provided with a suitable conductor; of independent means for reversing the current in the conductor of one of said members periodically during the cycle of movement.

15. In a reciprocating motor, the combination with pole-pieces of opposite polarity arranged substantially parallel to each other, and with an armature reciprocable longitudinally within the influence of said pole-pieces and provided with a suitable conducter; of means independent of the movement of the armature for automatically reversing the current in the armature thereof periodically during the cycle of movement.

16. In a reciprocating electric machine, the combination with the field having inner and outer pole-pieces of opposite polarity disposed parallel to each other; of an armature reciprocable longitudinally in the space between the pole-pieces and comprising a body of magnetic material and a coil of conductor of non-magnetic material associated with said body.

17. In a reciprocating electric machine, the combination with inner and outer substantially parallel pole-pieces, and with an energizing-conductor arranged to create opposite polarities in said pieces, and with an armature reciprocable longitudinally in the space between the pole-pieces and comprising a body of magnetic material and a conductor of non-magnetic material associated with said body; of means for automatically reversing the current in one of said conductors periodically during the cycle of movement.

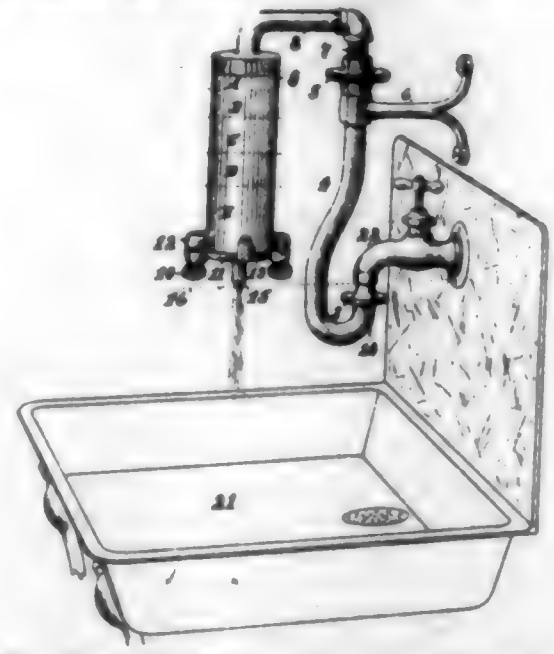
814,260. STORM-SASH VENTILATOR. WILLIAM R. A. BALL and JAMES G. BALL, St. Thomas, N. D. Filed Apr. 10, 1905. Serial No. 254,894.



Claim.—1. In a device of the class described, the combination of a window-frame, a sash slidably disposed in said window-frame, a storm-sash attached to said frame and having a ventilating-aperture through one of its side rails, spaced guide members adjacent to said aperture, a closure to said aperture slidable in said guide members and having a foot forming a lateral projection, and a clip upon the sliding sash for engaging said projection, whereby the opening and closing of the sliding sash will correspondingly open and close the ventilating-aperture.

2. In a device of the class described, the combination of a window-frame, a sash slidably disposed in said window-frame, a storm-sash attached to said frame and having a ventilating-aperture through one of its side rails, a frame for said ventilating-aperture formed from a single piece of sheet metal having a transverse aperture corresponding to said ventilating-aperture and provided at one end with a tongue bent at right angles to the plate, said plate having its sides folded longitudinally to form spaced guideways, a closure-plate slidably engaging said guideways and having at one end a stop-tongue bent into the plate-aperture and provided at the other end with a foot extended exteriorly of the frame, and a clip upon the sliding sash having a transverse slot for engaging said foot.

814,261. WATER-FILTER. ROBERT C. BARRIE, Philadelphia, Pa. Filed Oct. 21, 1903. Serial No. 177,936.



Claim.—In a water-filter a vertical tube held by a projecting arm and sleeve, being adjustable therein by threaded circular thumb-screw, and carrying a receiving-cylinder attached to the upper end thereof, and provided at its lower extremity with a cone-shaped flexible nipple connection in combination with an inclosed exchangeable sack of detersive material and a supply-spigot substantially as and for the purposes set forth.

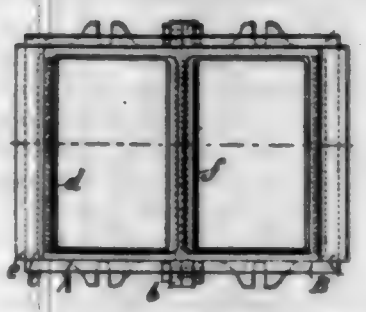
814,262. TEA OR COFFEE POT. WALTER L. BOSMAN, Maywood, Ill. Filed Mar. 22, 1905. Serial No. 251,406.



Claim.—A tea or coffee pot comprising a pot having an opening therein, a cup-shaped lid for said opening and provided with an

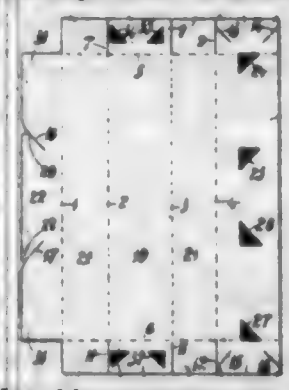
opening in its bottom, and a rubber bulb adapted to be held in the hollow of said lid and provided with an opening to register with the opening in the lid.

814,263. PROCESS OF MANUFACTURING PATTERN-PLATES. PHILIBERT BONVILLAIN, Paris, France. Filed July 20, 1904. Serial No. 217,626.



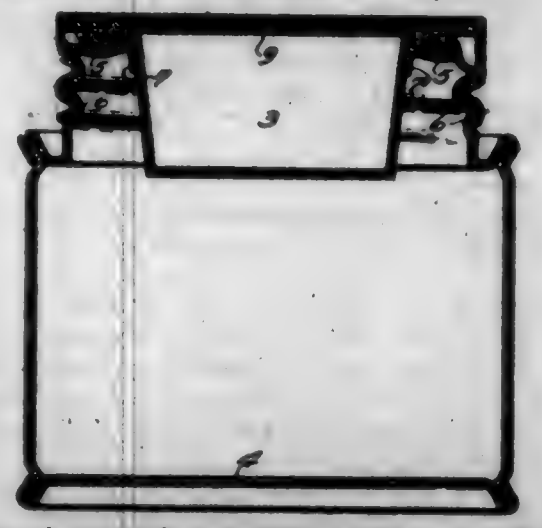
Claim.—A process of making pattern-plates with symmetrical impression for use in foundries consisting in making a mold of the object in two superposed frame parts or flasks, in placing said flasks side by side upon two faces adjusted so that the upper and lower impressions of the mold shall be disposed symmetrically with the line of junction of the flasks, in taking a molding of the symmetrical impressions in a flask superposed upon the first-mentioned flasks, and finally in interposing between the upper and under flasks a frame of thickness corresponding to that of the plate to be obtained in order to insure the space between the impressions necessary for pouring the fused metal and pouring molten metal into said space, substantially as described and for the purpose specified.

814,264. CARDBOARD BOX. FRANCIS W. BOYNTON, Auckland, New Zealand. Filed May 2, 1904. Serial No. 205,991.



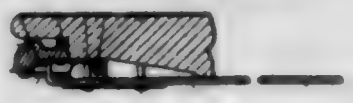
Claim.—A cardboard box comprising in combination a back, sides attached to the back, end flaps attached to the sides, a top having diagonal slots some of which are angled reversely to the others and having embossed pockets, cover-pieces attached to the top having reversed diagonal slots extending inwardly from the edges, wings attached to the back and having diagonal slots, embossed pockets in the wings to which the diagonal slots form openings, the cover-pieces entering the pockets of the wings and the points of the wings passing beneath the cover-pieces when the ends are closed, substantially as set forth.

814,265. RECEPTACLE. ROBERT Y. BRADSHAW, Chicago, Ill. Filed Feb. 6, 1905. Serial No. 244,402.



Claim.—A receptacle comprising a body open at the top and having a threaded part at its upper end, said threaded part having an inwardly-extending flange with its inner edge bent downwardly to form a wedging-surface, a cup fitting within said wedging-surface and being outwardly flanged at its upper edge, a threaded cover fitting the threaded part of the body and bearing upon the flange of said cup to form a closure for the cup and hold the cup firmly within said wedging-surface.

814,266. CLOTHES-LINE PROP. WILLIAM F. BRIGGS, Bristol, R. I. Filed May 27, 1903. Serial No. 159,033.



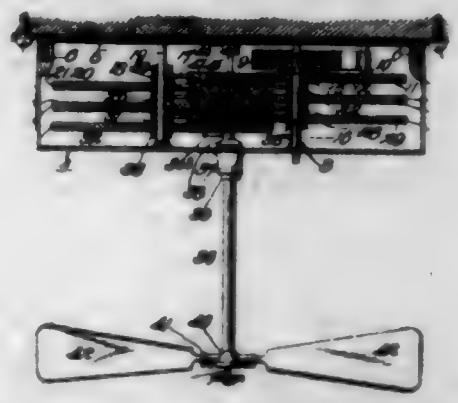
Claim.—1. In a clothes-line prop the combination of the wooden member, and the pivoted jaw provided with the inwardly-extending flange, with the operating-rod provided with an engaging arm, and adapted for turning movement to engagement with the back of the jaw to close the same upon the line, and with the flange, to open the jaw and release the line, substantially as described.

2. In a clothes-line prop the combination of the wooden member, and the pivoted jaw provided with the recess, with the operating-rod provided with an engaging arm and adapted for both turning and endwise movement, whereby the engaging arm may be either caused to engage with the back of the jaw, or with the bottom of the recess, substantially as described.

3. In a clothes-line prop the combination of the wooden member, and the pivoted jaw provided with the recess and the inwardly-extending flange, with the operating-rod provided with the engaging arm, and adapted for both turning and endwise movement, and for engagement with the bottom of the recess to close the jaw, and with the flange, to open the jaw, substantially as described.

4. In a clothes-line prop the combination of the wooden member, and the pivoted jaw provided with the inwardly-turned flange, and with the pivot-engaging hook, with the pivot-carrying strap, secured to the wooden member, the operating-rod provided with the engaging arm adapted for engagement with the back of the jaw, and with the inwardly-extending flange, and the spurs at the bottom of the prop, substantially as described.

814,267. FAN-MOTOR. CLARENCE R. BROCK, Perry, Kans., assignor of one-half to Charles M. Stark, Perry, Kans. Filed Mar. 15, 1905. Serial No. 250,287.



Claim.—1. A fan-motor, comprising a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a yieldingly-driven shaft geared to the fan-carrying shaft to operate the latter, a rod extending through the fan-carrying shaft and provided with a handle, and a resilient arm supported from and movable with said rod and provided with a brake-shoe for engagement with a movable part of the gearing to arrest the same.

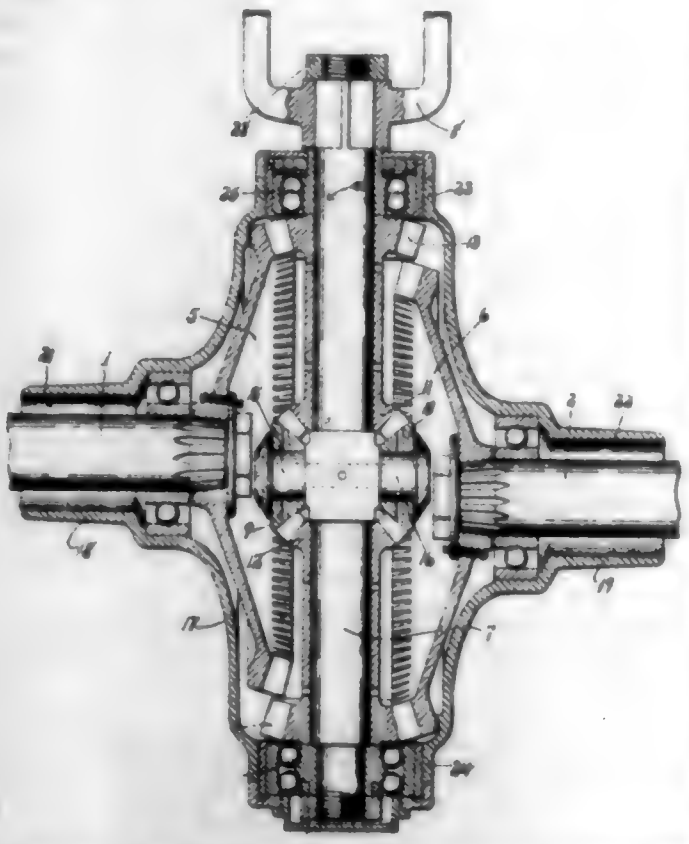
2. A fan-motor, comprising a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a yieldingly-driven shaft geared to the fan-carrying shaft to operate the latter, a rod extending through the fan-carrying shaft and provided with a handle, a resilient arm supported from and movable with said rod and provided with a brake-shoe for engagement with a movable part of the gearing to arrest the same, and means for locking the brake-shoe in or out of engagement with said movable part of the gearing.

3. The combination of a suitable casing, a fan-carrying shaft projecting into the casing and suitably journaled, a boss therein having an inverted-U-shaped slot and a longitudinal passage opening into said slot, a driven wheel suitably journaled within the casing, a rod projecting into the casing and the passage of the boss, and having longitudinal and rotary movement, a radial pin secured to the rod and engaging said U-shaped slot, a resilient arm or spring sup-

ported from and movable with the rod, and a brake-shoe secured to the outer end of said resilient arm or spring.

4. The combination of a suitable casing, a winding-shaft therein, a spring upon and secured at its inner end to the shaft and at its outer end to a point fixed with relation to the casing, a ratchet-wheel rigid on said shaft, a train of gearing suitably journaled in the casing and one member thereof provided with a spring-actuated pawl engaging said ratchet-wheel, a shaft suitably journaled and provided with a fan and with a wheel geared to a member of the train of gearing, a rod extending up through said shaft and having rotary and longitudinal movement therein, a resilient arm supported from and movable with said rod and provided with a brake-shoe to engage the periphery of one member of the train of gearing, and means to lock said shaft at either extreme of its rotary movement.

814,268. POWER-TRANSMITTING MECHANISM. ALEXANDER T. BROWN, Syracuse, N. Y., assignor to The Brown-Lipe Gear Company, Syracuse, N. Y., a Copartnership. Filed Dec. 7, 1905. Serial No. 290,686.



Claim.—1. In a vehicle, revoluble driven gears of substantially equal diameter arranged substantially end to end, with the axis of one in advance of, and substantially parallel to, the axis of the other, and transmitting-gears arranged on opposite sides of the axes of the driven gears, one of the transmitting-gears being in mesh with one of the driven gears and out of mesh with the other driven gear, and the other transmitting-gear being in mesh with said other driven gear and out of mesh with the opposing driven gear, substantially as and for the purpose described.

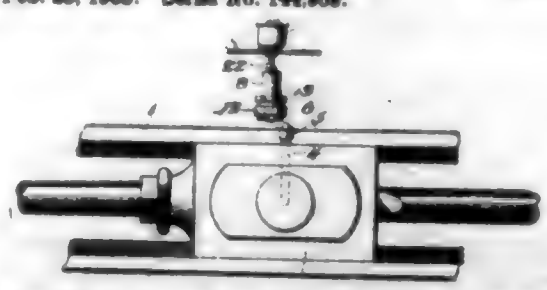
2. In a vehicle, revoluble driven gears of substantially equal diameter arranged substantially end to end, with the axis of one in advance of, and substantially parallel to, the axis of the other, transmitting-gears arranged on opposite sides of the axes of the driven gears, one of the transmitting-gears being in mesh with one of the driven gears and out of mesh with the other driven gear, and the other transmitting-gear being in mesh with said other driven gear and out of mesh with the opposing driven gear, and equalizing-gears connecting the transmitting-gears, one of the equalizing-gears being arranged with its axis revoluble in a plane substantially parallel to, and midway between, the axes of the driven gears, substantially as and for the purpose specified.

3. In a vehicle, an axle comprising a pair of revoluble shafts arranged substantially end to end, with the axis of one in advance of, and substantially parallel to, the axis of the other, ground-wheels carried by the outer ends of the shafts, gears of substantially equal diameter provided on the inner ends of the shafts, a driving member arranged with its axis at an angle to said shafts, a gear revoluble with the driving member and being in mesh with the gear on one of the shafts, and out of mesh with the gear on the other shaft, a second gear revoluble with the driving member and being in mesh with the gear on said other shaft and out of mesh with the gear meshing with the first-mentioned gear revoluble with the driving member, and equalizing-gears carried by the driving member and connected to said gears revoluble with the driving member, substantially as and for the purpose set forth.

4. In a vehicle, a casing provided with opposing openings, one being arranged with its axis in advance of, and substantially parallel to, the axis of the other, a third opening arranged substantially midway between the opposing openings at an angle thereto, driven members journaled in the opposing openings, and arranged with the axis of one in advance of, and substantially parallel to, the axis of the other, a driving member journaled in the third opening and arranged with its axis at an angle to the axes of the driven members, and power-transmitting means within the casing connecting the driven and driving members, substantially as and for the purpose described.

5. In a vehicle, a casing provided with opposing openings, one being arranged with its axis in advance of, and substantially parallel to, the axis of the other, a third opening arranged substantially midway between the opposing openings at an angle thereto, an axle comprising a pair of shafts journaled in the opposing openings, and arranged with the axis of one in advance of, and substantially parallel to, the axis of the other, ground-wheels carried by the outer ends of the shafts, gears of substantially equal diameter provided within the casing on the inner ends of the shafts, a driving member journaled in the third opening and arranged with its axis at an angle to the axes of the driven members, a gear within the casing revoluble with the driving member and being in mesh with the gear on one of the shafts, and out of mesh with the gear on the other shaft, a second gear within the casing revoluble with the driving member and being in mesh with the gear on said other shaft and out of mesh with the gear meshing with the first-mentioned gear revoluble with the driving member, and equalizing-gears within the casing carried by the driving member and connected to said gears revoluble with the driving members, one of the equalizing-gears being arranged with its axis revoluble in a plane substantially parallel to, and midway between, the axes of the driven gears, substantially as and for the purpose specified.

814,269. LUBRICATOR. HOMER J. BROWN, Washington, D. C. Filed Feb. 25, 1903. Serial No. 144,930.



Claim.—1. In a lubricator the combination with a feed-well and a valve-seat in the bottom thereof, of a valve provided with a hollow stem therein projecting through the valve-seat, and an aperture in the stem communicating with the bore thereof.

2. In a lubricator the combination with a feed-well and a valve-seat therein, of a valve having a hollow stem provided with an aperture communicating with the bore thereof, and means of protecting said aperture from inflow from above.

3. In a lubricator the combination with a feed-well, valve-seat, and valve therein adapted to be automatically actuated, of emergency means of oil-supply from the feed-well, adapted to operate upon failure of the valve to perform its function.

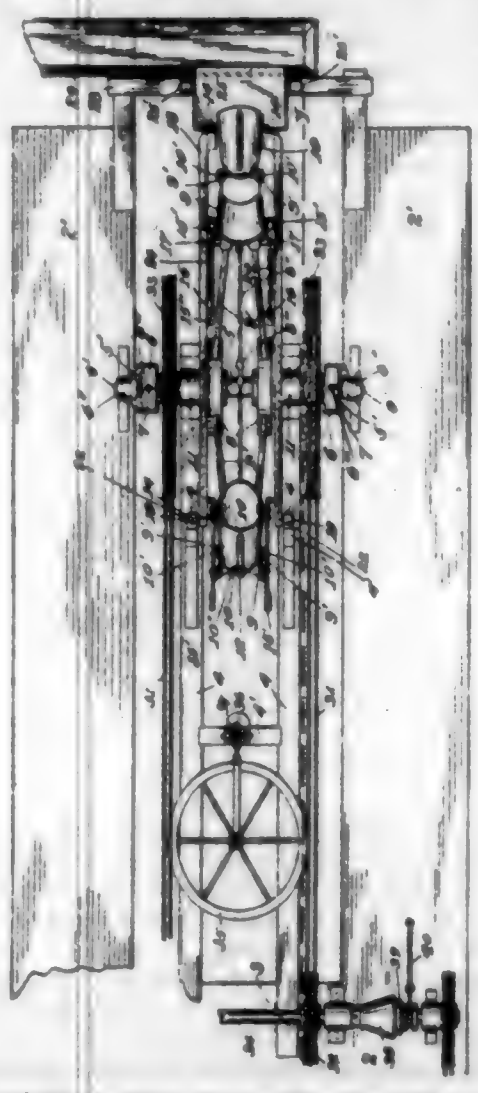
4. In an automatic lubricator the combination with a feed-well and cap, valve-seat, and valve projecting through the valve-seat, and an upwardly-directed valve-stem, of a wiper and means for relatively adjusting the valve and wiper.

814,270. DREDGING-MACHINE. CHARLES E. S. BURCH, Seattle, Wash. Filed July 12, 1904. Serial No. 216,201.

Claim.—1. In a dredging-machine, the combination with a suitable float and power devices, of a wheel rotatably mounted on a swinging frame carried by said float, power-transmission devices connecting said wheel to said power devices, and means carried peripherally of the wheel and movable outwardly from the periphery of the wheel for digging and hoisting the material being excavated.

2. In a dredging-machine, the combination with a swinging frame, devices for raising and lowering said frame, and power-transmission devices, of a wheel mounted rotatably upon said frame and carrying peripherally thereof a plurality of tilting excavating-buckets arranged to tilt outwardly from the periphery of the wheel, means

for detachably retaining said buckets in operative digging positions and means for overturning said buckets.



3. In a dredging-machine, the combination with a wheel, and means for imparting a rotary motion thereto, of a plurality of tiltable excavating-buckets carried peripherally of and with the wheel and adapted to tilt outwardly from the periphery of the wheel, means to detachably retain said buckets in operative cutting positions, means for disengaging said retaining means, and means for overturning the buckets.

4. In a dredging-machine, the combination with a wheel and means to rotate the same, of tiltable buckets disposed peripherally of the wheel, hook devices for engaging and locking said buckets in their operative cutting positions, and means comprising a swinging arm or arms for disengaging said hook devices from and also for overturning the buckets.

5. In a dredging-machine, the combination with a suitable float and power devices, of a wheel rotatably mounted on the float and carrying on its periphery a plurality of tiltable excavating-buckets, mounted so as to tilt outwardly from the periphery of the wheel, means to raise and lower said wheel relatively of the float and means to tilt said buckets.

6. In a dredging-machine, an excavating-wheel, comprising in combination, of a shaft, disks mounted on said shaft, spokes carried by said disks, bolsters secured to the spokes, a bucket hinged to each of said bolsters and adapted to tilt outwardly and beyond the periphery of the wheel, and means for detachably retaining said buckets in their respective bolster-seats.

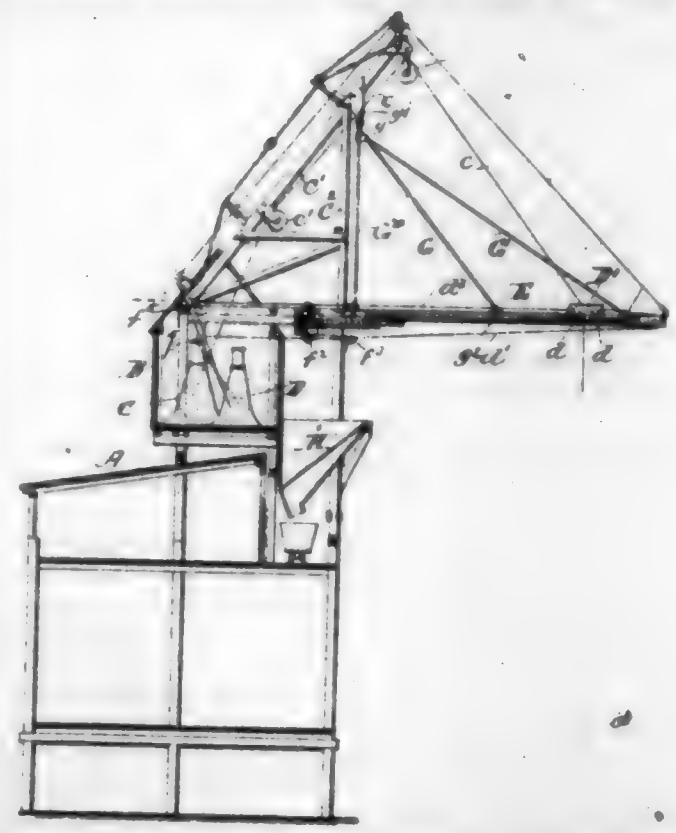
7. In a dredging-machine, the combination with a wheel carrying a plurality of tiltable excavating-buckets, constructed and arranged to tilt outwardly from the periphery of the wheel and locking devices for securing said buckets in their normal digging and filling positions, of means for disengaging said locking devices from the buckets.

8. In a dredging-machine, the combination with the swinging frame, the wheel rotatably mounted thereon and carrying peripherally thereof tiltable excavating-buckets, spring-actuated lock devices for detachably engaging studs projecting laterally of the buckets, of a swinging arm adapted to disengage said lock devices from said studs and also acting as an abutment whereby the said buckets are overturned.

9. In a dredging-machine, the combination with the float, a wheel rotatably mounted upon said float and carrying outwardly-tiltable excavating-buckets, means to secure said buckets in operative cutting position and means to overturn said buckets as they revolubly ascend, of a movable platform projecting within the path of the buckets for receiving the excavated material from the same when they are overturned.

10. In a dredging-machine, the combination with an excavating-bucket, of an air-conduit extending approximately its entire length and making communicative connection between the atmosphere adjacent of the open leading end of the bucket and with the interior of the bucket immediately inside of its closed end.

814,271. APPARATUS FOR HANDLING COAL, &c. JEREMIAH CAMPBELL, Providence, R. I. Filed Jan. 14, 1905. Serial No. 241,062.



Claim.—1. In a coal-handling apparatus, in combination with a trolley, a hoisting mechanism and a trolley a track for the same operating mechanism, a boom, and means for supporting said boom whereby it may be turned about a vertical axis, said trolley-track being extended across the axis of the boom, as set forth.

2. In a coal-handling apparatus, a boom, means for supporting it at one end thereof whereby it may be turned on a vertical axis, said boom being provided with a longitudinal slot and said supporting means being provided with a slot registering with the slot in said boom, as described.

3. In a coal-handling apparatus, a boom, means for supporting it whereby it may be turned on a vertical axis, said boom being provided with a longitudinal slot and said supporting means being provided with a slot registering with the slot in the boom, in combination with a trolley adapted to run on said boom, and hoisting mechanism adapted to run through said trolley and said slot in said boom, as described.

4. In a coal-handling apparatus having a trolley, and a hoisting-rope adapted to reeve therethrough, a slotted boom adapted to support said trolley, means for supporting said boom whereby it may be turned in a horizontal plane, said means comprising a slotted wheel, the slot whereof registers with the slot in said boom, as described.

5. In a coal-handling mechanism, a boom, a trackway, a wheel located in said trackway, said boom being attached to said wheel, a swivel-support and guys, the lower ends of said guys being attached to said boom and the upper ends being hung from said swivel-support, as set forth.

6. In a coal-handling apparatus, a boom, means for supporting it, a trolley adapted to run on said boom, means for moving said trolley comprising an engine, ropes running from said trolley to said engine, and pulleys located to guide said ropes, two pulleys being located in rear of the boom and adapted to receive the ropes from said trolley, and two pulleys being located in front of said first-named pulleys and on each side of said boom, as and for the purposes set forth.

7. In a coal-handling machine, a boom, a pivotal support therefor intermediate of its length, a trolley-way on said boom extending on both sides of the axis of movement of the boom on its pivot, a

trolley to move in said way and a suspender therefrom to carry the load.

8. In a coal-handling machine, a boom, a pivotal support therefor intermediate of its length, a trolley-way on said boom extending on both sides of the axis of movement of the boom on its pivot, a trolley to move in said way and a suspender therefrom to carry the load, said boom being slotted below, and for the length of, the track to permit of the movement of the suspender therein.

9. In a coal-handling machine, a boom, a support therefor intermediate of its length, upon which the boom is pivoted to have movement in a vertical plane, a trolley-way on said boom extending on both sides of the axis of movement of the boom on its pivot, a trolley to move in said way and a suspender therefrom to carry the load.

10. In a coal-handling machine, a boom, a support therefor intermediate of its length, upon which the boom is pivoted to have movement in a horizontal plane, a trolley-way on said boom extending on both sides of the axis of movement of the boom on its pivot, a trolley to move in said way and a suspender therefrom to carry the load.

11. In a coal-handling machine, a boom, a support therefor intermediate of its length, upon which the boom is pivoted to have movement in horizontal and vertical planes, a trolley-way on said boom extending on both sides of the axis of movement of the boom on its pivot, a trolley to move in said way and a suspender therefrom to carry the load.

12. In a coal-handling machine, a boom, a support therefor intermediate of its length, upon which the boom is pivoted to have movement in horizontal and vertical planes, a trolley-way on said boom extending on both sides of the horizontal axis of movement of the boom on its pivot, a trolley to move in said way and a suspender therefrom to carry the load.

13. In a coal-handling machine, a boom, a pivotal support therefor intermediate its length, said support comprising a circular way or bearing, blocks on the one hand engaging said way on either side thereof and on the other hand engaging said boom on either side thereof, a trolley-way on said boom extending on either side of the axis of said pivotal bearing, a trolley to move in said way, and a suspender therefrom to carry a load.

14. In a coal-handling machine, a boom, a pivotal support therefor intermediate its length, said support comprising a circular way or bearing, blocks on the one hand engaging said way on either side thereof, and on the other hand engaging said boom on either side thereof, a trolley-way on said boom extending on either side of the axis of said pivotal bearing, a trolley to move in said way, and a suspender therefrom to carry a load, said boom and circular bearing being slotted below the trolley-way to permit of the movement of the suspender therethrough.

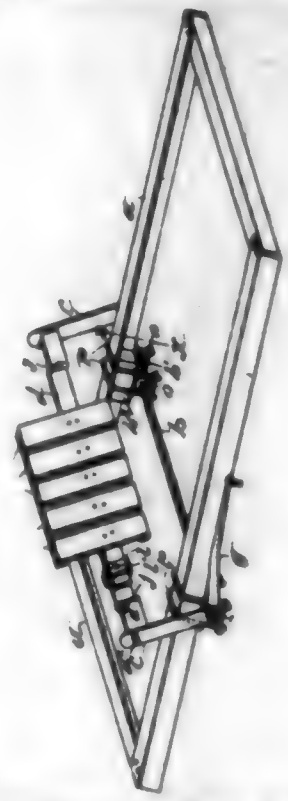
15. In a coal-handling machine, a boom, a pivotal support therefor intermediate its length, said support comprising a circular way or bearing, blocks engaging said way on either side thereof, journals on either side of said boom, and bearings on said blocks engaging said journals, a trolley-way on said boom, extending on either side of the axis of said pivotal bearing, a trolley to move in said way and a suspender therefrom to carry a load.

16. In a coal-handling machine, a boom, a pivotal support therefor intermediate its length, said support comprising a circular way or bearing, blocks engaging said way on either side thereof, journals on either side of said boom, and bearings on said blocks engaging said journals, a trolley-way on said boom, extending on either side of the axis of said pivotal bearing, a trolley to move in said way and a suspender therefrom to carry a load, said boom and circular bearing being slotted below the trolley-way to permit of the movement of the suspender therethrough.

17. In a coal-handling apparatus, a boom, means for supporting it to turn about a vertical axis, a trolley on said boom, means for moving said trolley comprising an engine, ropes running from said trolley to said engine, and pulleys located to guide said ropes, two pulleys being located on said boom-supporting means in rear of its vertical axis and adapted to receive the ropes from said trolley and two pulleys being located in front of said first-named pulleys and on each side of said boom as described.

18. In a coal-handling apparatus, a boom, means for supporting it to turn about a vertical axis, a trolley on said boom, means for moving said trolley comprising an engine, ropes running from said trolley to said engine, and pulleys to guide said ropes, two pulleys being located in rear of the vertical axis of said boom to move with said boom and two pulleys being located in a fixed position in front of said axis, said ropes leading from the trolley around said rear pulleys and to the engine whereby said ropes will always lead to the engine from the same angle irrespective of the position of the boom as described.

814,272. ADJUSTABLE HEAD AND BACK REST. William H. Carr, Meridian, N. Y. Filed June 30, 1905. Serial No. 267,624.

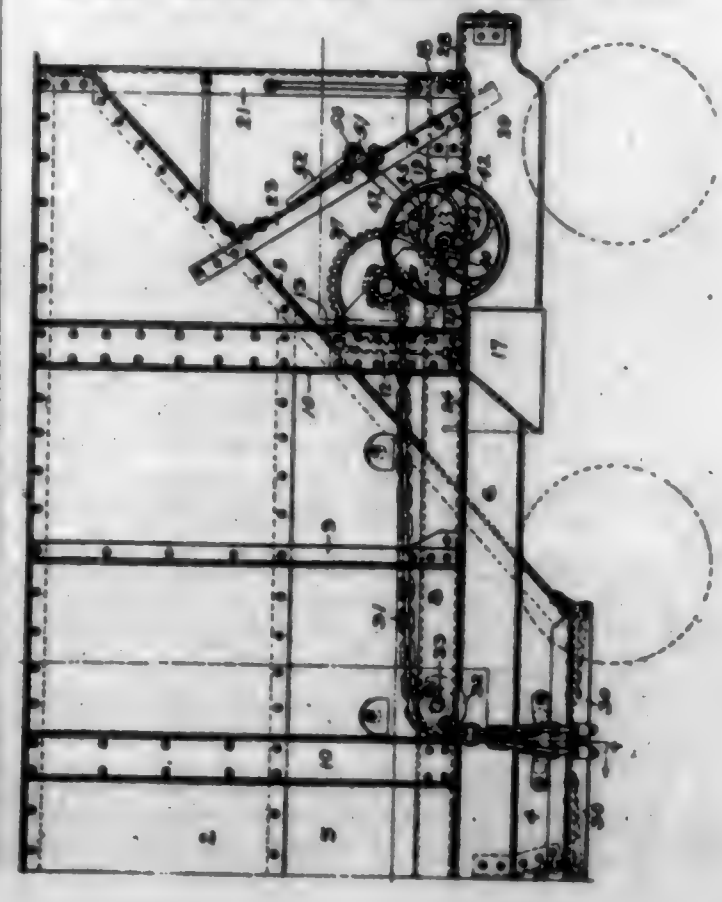


Claim.—1. The combination, with the bed-frame, of a transverse shaft pivoted to the side rails of said frame, arms secured to said shaft to move therewith, a transverse bar connected to the free ends of said arms, slats mounted on said bar, and a lever connected to the end of the shaft, as set forth.

2. The combination, with the bed-frame, of a transverse shaft pivoted to the side rails of said frame, arms secured to the ends of said shaft to move therewith and apertured at their free ends, a transverse bar clamped adjustably on the arms, slats mounted on said bar, a lever connected to the shaft, and means for locking the lever adjustably in position, as set forth.

3. The combination, with the bed-frame, of a transverse shaft pivotally supported on the side rails of said frame, arms attached to the ends of said shaft a transversely-disposed flat bar, adjustable in length, and clamped adjustably on the arms, slats mounted on the flat side of said bar, a lever connected to the aforesaid shaft, and means for adjustably locking said lever in position, as set forth.

814,273. ORE-CAR. Andrew Christianson, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 22, 1900. Serial No. 283,962.



Claim.—1. In a railway-car, the combination of the longitudinal sills, a body-bolster having a vertical web, an end sill connected at its ends to the car sides, draft-sills connecting the body-bolster and end sill, and a gusset-plate having a wide end secured to the web of the body-bolster and having its outer end secured to the end sill.

2. In a railway-car, the combination of the longitudinal sills, a body-bolster having a vertical web projecting above the sills, an end sill connected at its ends to the car sides, draft-beams connecting the end sill and body-bolster, and a gusset-plate resting on said draft-beams and secured thereto and being provided at its ends with flanges secured to the web of the body-bolster and to the end sill, said gusset-plate being substantially triangular and having its wider end toward the body-bolster.

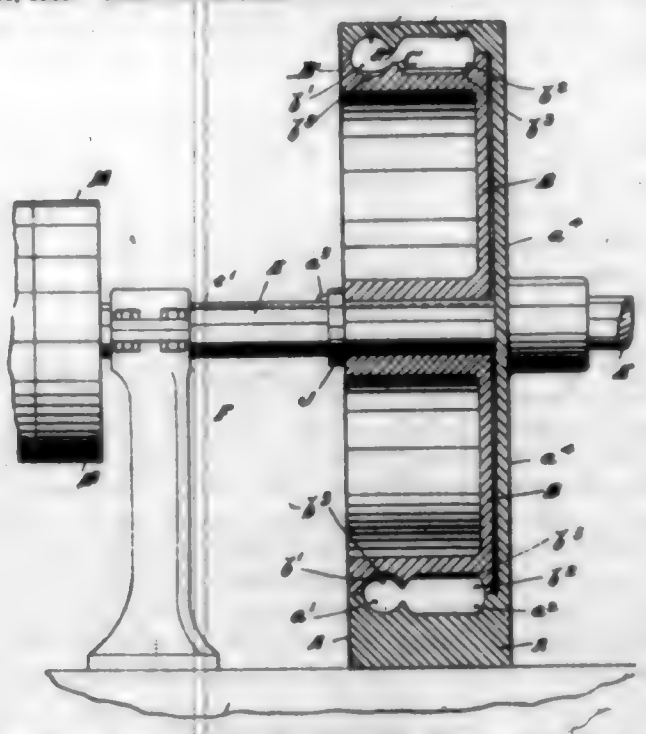
3. In a railway-car, the combination of a body provided with doors in its bottom, longitudinal sills, a horizontal transverse shaft supported by said sills, a cone-sheave on said shaft, a chain connected to the doors and passing over said sheave, and chain-winding mechism at the end of the car.

4. Door-operating mechanism for railway-cars, comprising an operating-shaft and winding-shaft, intermeshing gears carried by said shafts, and a winding-chain having its ends secured directly to the gear on the winding-shaft.

5. Door-operating mechanism for railway-cars, comprising a winding-shaft, a ratchet-wheel thereon, a pivoted pawl engaging said ratchet-wheel, a link having one end hinged to said pawl and having its opposite end provided with a slot, a stationary stop-face, and an actuating-shaft provided with a crank engaging the slot in the link and adapted to carry the end of the link into engagement with the stop-face.

6. Door-operating mechanism for railway-cars comprising a winding-shaft, a ratchet-wheel thereon, a pawl engaging said ratchet-wheel, a link having one end hinged to said pawl and provided with a slot in its opposite end, a stationary cam-shaped stop-face, and an actuating-shaft provided with a crank engaging said slot and adapted to carry the end of the link into engagement with said stop-face.

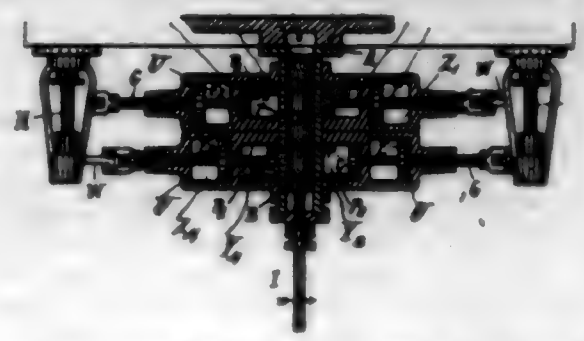
814,274. MACHINE FOR MOLDING DOUGH OR OTHER PLASTIC MATERIAL. GEORGE F. CHUTTER, Penarth, England. Filed May 16, 1903. Serial No. 157,207.



Claim.—A machine for molding dough and other plastic material comprising a revoluble member having an annular rim, a stationary member having an annular rim concentric with that of the revoluble member, two annular grooves in the adjacent face of each rim disposed in parallel planes and separated by a projecting annular rib, transverse grooves in the rim of the revoluble member crossing the annular grooves therein at an angle thereto and means for causing the rotation of the revoluble member.

814,275. VALVE-GEAR FOR STEAM AND OTHER FLUID-PRESSURE ENGINES. WILLIAM H. COLLIER, Jackson, Tenn. Filed Mar. 7, 1905. Serial No. 248,798.

Claim.—1. In a valve-gear, the combination with an engine-cylinder, and fluid-pressure-actuated valve-operating means therefor, of a controlling-valve for said valve-operating means, provided with a port adapted normally to register with a port of said valve-operating means in one position only of the valve, but provided with an extension adapted to register with said port of said valve-operating means in other positions of the valve when said valve is shifted



2. In a valve-gear, the combination with an engine-cylinder, and fluid-pressure-actuated valve-operating means therefor, of a rotary controlling-valve for said valve-operating means, provided with a port extending longitudinally of the valve and adapted to register with a port of said valve-operating means in one position of the valve, said valve-port having a circumferential extension, normally out of registry with said other port, but adapted to be brought into registry therewith by shifting the valve.

3. In a valve-gear, the combination with an engine-cylinder, and valve means therefor comprising separate admission and exhaust valves, of fluid-pressure-actuated means for operating said admission-valve, a rotary controlling-valve therefor comprising a substantially longitudinal port adapted to register with a port of said valve-operating means and a spiral cut-off port likewise adapted to register with a port of said valve-operating means, and means for shifting said valve to vary the point of cut-off, said longitudinal port having a circumferential extension whereby by shifting said valve such port may be caused to register with the corresponding port of said valve-operating means in positions of the valve other than that in which such ports normally register.

4. In a valve-gear, the combination with an engine-cylinder, and valve means therefor comprising separate admission and exhaust valves, of fluid-pressure-actuated means for operating said admission-valve, a controlling-valve therefor comprising a port adapted to register with a port of said valve-operating means but longer than said latter port in a direction opposite the direction of normal movement of said valve, and comprising also an oblique cut-off port likewise adapted to register with a port of said valve-operating means, and means for moving said valve normally in one direction and for shifting said valve in another direction to vary the point of cut-off.

5. In a valve-gear, the combination with an engine-cylinder, and valve means therefor comprising separate admission and exhaust valves, of fluid-pressure-operated means for operating said exhaust-valve, a controlling-valve therefor comprising a port adapted to register with a port of said valve-operating means but longer than said latter port in a direction opposite the direction of normal movement of said valve, and comprising also an oblique compression-port likewise adapted to register with a port of said valve-operating means, and means for moving said valve normally in one direction and for shifting said valve in another direction to vary the point of exhaust-closure.

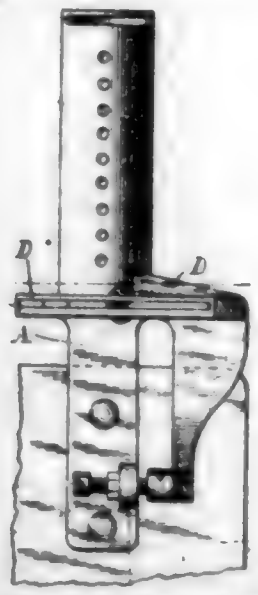
6. In a valve-gear, the combination with an engine-cylinder, and separate admission and exhaust valves therefor, of fluid-pressure-actuated means for operating said admission and exhaust valves, a controlling-valve therefor comprising ports controlling admission and release adapted to register with ports of said valve-operating means but longer than said latter ports in a direction opposite the direction of normal movement of the valve, and comprising also oblique cut-off and compression ports likewise adapted to register with ports of said valve-operating means, and means for moving said valve normally in one direction and for shifting said valve in another direction to vary the points of cut-off and exhaust-closure.

7. In a valve-gear, the combination with an engine-cylinder, and fluid-pressure-actuated valve-operating means therefor comprising a cylinder and piston, said cylinder having ports for admitting fluid under pressure to opposite sides of said piston, of a rotary controlling-valve having oblique cut-off ports, one for each of said cylinder-ports, one of said oblique ports connected to supply and the other to exhaust, and other ports in said valve arranged in pairs, the two ports of each pair arranged on opposite sides of a corresponding oblique port, but both connected to supply if that oblique port is connected to exhaust, and vice versa, and means for shifting said con-

trolling-valve axially to vary the point of cut-off and to change the direction of motion.

8. In a valve-gear, the combination with an engine-cylinder, and fluid-pressure-actuated valve-operating means therefor comprising a cylinder and piston, said cylinder having ports for admitting fluid under pressure to opposite sides of said piston, of a rotary controlling-valve having oblique cut-off ports, one for each of said cylinder-ports, one of said oblique ports connected to supply and the other to exhaust, and other ports in said valve arranged in pairs, the two ports of each pair arranged on opposite sides of a corresponding oblique port and each comprising a substantial longitudinal portion and a circumferential extension, such circumferential extensions of the ports of each pair being in opposite directions, both ports of each such pair connected to supply if the oblique port between them is connected to exhaust, and vice versa, and means for shifting the controlling-valve axially to vary the point of cut-off and to reverse the engine.

814,276. **ATTACHMENT FOR TELEPHONE TOLL-BOXES.** Rooms M. Coura, Chicago, Ill. Filed Dec. 12, 1904. Serial No. 236,606.



Claim.—1. The combination with a telephone toll-box, of a chute communicating at one end with the coin-slot thereof, a vertically-disposed tube for coins, and a revoluble ejector adapted to engage the lowermost coin and feed same into said chute.

2. The combination with a telephone toll-box, of a chute communicating at one end with the coin-slot thereof, said chute being enlarged at its upper end, a horizontally-disposed passage communicating at one end with the upper end of said chute, a vertically-disposed tube for coins communicating with said passage between the ends of the latter, and a revoluble ejector disposed in said passage.

3. The combination with a telephone toll-box, of a vertically-disposed chute registering at its delivery end with the coin-slot thereof, a horizontally-disposed passage communicating at one end with the upper end of said chute, a coin-ejector disposed in said passage, and a vertically-disposed tube for coins communicating with said passage between the ends thereof and adapted to feed coins consecutively into the path of said ejector.

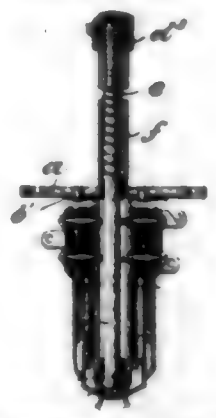
4. The combination with a telephone toll-box, of a vertically-disposed chute registering at its delivery end with the coin-slot thereof, a horizontally-disposed passage communicating at one end with the upper end of said chute, a coin-ejector disposed in said passage, a vertically-disposed tube for coins communicating with said passage between the ends thereof and adapted to feed coins consecutively into the path of said ejector, and a stop disposed in said passage in the path of the lowermost coin and adapted to prevent ejection thereof in an opposite direction.

5. The combination with a telephone toll-box, of a vertically-disposed chute registering at its delivery end with the coin-slot thereof, a horizontally-disposed passage communicating at one end with the upper end of said chute, a coin-ejector disposed in said passage, and consisting of a revoluble spider having a plurality of arms each adapted to engage and eject a coin consecutively, said arms being relatively so spaced as to permit the passage of a coin between each two adjacent arms, and a vertically-disposed tube for coins communicating with said passage between the ends thereof and adapted to feed coins consecutively into the path of said ejector.

6. The combination with a telephone toll-box, of a vertically-disposed tube for coins communicating at one end with a horizontally-disposed passage, a revoluble ejector disposed in said passage, a vertically-disposed chute communicating at its upper end with said passage and registering at its delivery end with the coin-slot of the toll-box, and a stop disposed in said passage in the path of the lowermost coin adapted to prevent reverse movement of said ejector and said lowermost coin.

7. A device of the kind specified, comprising a vertically-disposed tube for coins communicating at one end with a horizontally-disposed passage, a revoluble ejector disposed in said passage, a vertically-disposed chute communicating at its upper end with said passage and registering at its delivery end with the coin-slot of the toll-box, and a stop disposed in said passage in the path of the lowermost coin adapted to prevent reverse movement of said ejector and said lowermost coin, and means engaging said chute adjacent its delivery end for adjusting the position of the same relatively to the coin-slot of the toll-box.

814,277. **SWITCH-KEY.** Edward B. Craft, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 7, 1904. Serial No. 235,851.

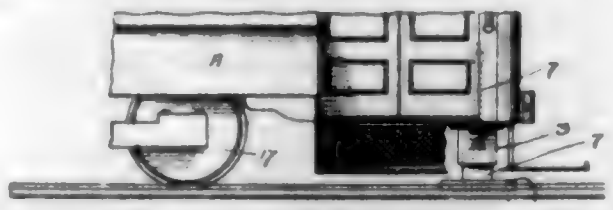


Claim.—1. In a switch-key, the combination with a flat upper metal frame-plate, of a U-shaped metal strap forming arms and having horizontally-projecting lugs formed at the upper ends thereof and secured to the bottom of the upper frame-plate, the ends of the plate projecting beyond the ends of the arms of the strap, switch-springs and insulating-strips therefor mounted upon the two arms of said strap, and a plunger for operating said springs mounted to reciprocate in bearings formed in the said upper frame-plate and the base of said strap.

2. In a switch-key, the combination with a metal upper frame-plate, of a U-shaped metal strap forming arms secured at their upper ends to the bottom of said upper frame-plate, the ends of said plate projecting beyond the ends of the arms of said strap, switch-springs and their insulating-strips mounted upon the arms of said strap, all of said parts being formed of punchings, and a plunger for operating said springs mounted to reciprocate in bearings formed in said upper frame-plate and the base of said strap.

3. In a switch-key, the combination with the upper frame-plate, of a U-shaped supporting-plate having horizontally-projecting lugs formed at the upper ends thereof and fastened to the bottom of the upper frame-plate, the ends of said frame-plate projecting beyond the ends of said U-shaped supporting-plate, a switch-spring and its associated contacts supported by each arm of said U-shaped plate upon the outer surface thereof, the free ends of said springs extending below the base of said plate and being turned inwardly, a shaft passing between the arms of said U-shaped plate and adapted to reciprocate in bearings in the upper frame and the base of said U-shaped plate, and a wedge carried at the lower end of said shaft adapted when the shaft is actuated to engage said springs and move them.

814,278. **SWITCH-OPERATING DEVICE.** Oliver J. Du Vernay, Leominster, Mass. Filed Mar. 20, 1905. Serial No. 250,866.



Claim.—1. A car device comprising a suitably-supported standard, a flat plate carried thereby, and a single rib carried on the lower otherwise unobstructed surface of the plate, the rib being set at an incline to the rails.

2. A car device comprising a suitably-supported standard, and

a plate carried thereby, the plate being substantially triangular with its wider end forward, and a single rib extending along one inclined side of the otherwise unobstructed lower surface of the plate, the rib extending at an angle to the rails and depending from the plate.

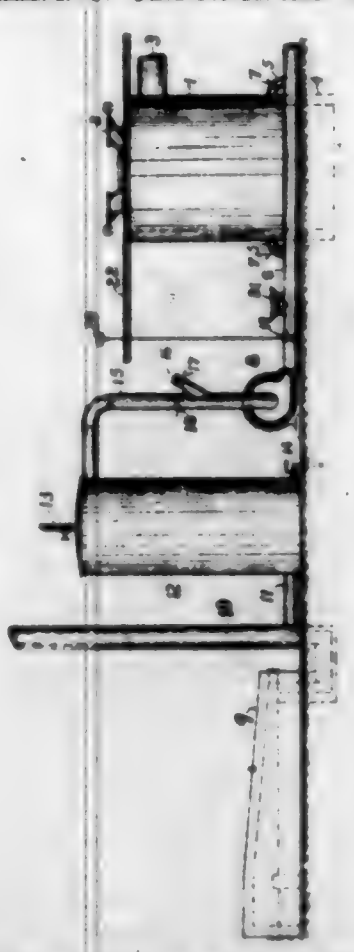
3. The combination with track-rails and a switch-rail, of a car device comprising a suitably-supported standard, a plate carried by the standard, and a rib on the lower otherwise plane surface of the plate, the rib set at an incline to the track-rails and adapted to engage the side of the switch-rail.

4. The combination with track-rails and a switch-point, of a car device, comprising a suitably-supported standard, a plate carried by the standard, the lower surface of the plate adapted to rest and ride upon a track-rail, and a rib depending from the otherwise unobstructed lower surface of the plate, the rib adapted to extend beneath the upper surface of the track-rail and engage the side of the switch-point.

5. The combination with track-rails and a switch-point, of a car device comprising a suitably-supported standard, a plate carried by the standard, a rib depending from the otherwise unobstructed lower surface of the plate, the forward end of the rib being laterally beveled to engage the side of the switch-point, the rib being inclined relative to the track-rail and the plate adapted to rest upon the track-rail.

6. A car device comprising a casing having a chamber formed therein and a passage of less diameter than the chamber communicating wth the latter, the chamber being open at that end opposite the passage, a standard passing through the casing, the standard being formed on two diameters, the larger of which is received in and conforms in shape to the shape of the passage, means lying in the chamber and engaging the collar to retain the standard normally at one limit of its movement and a switching-plate secured to the lower end of the standard.

814,279. **APPARATUS FOR PRODUCING GAS.** CARLETON ELLIS, White Plains, N. Y. Filed Oct. 21, 1905. Serial No. 283,632.



Claim.—1. A gas-producing plant comprising a gas-producer, a source of products of combustion, and means for washing said products and introducing the same into the producer.

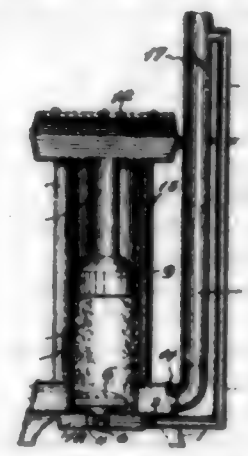
2. A gas-producing plant comprising a gas-producer and means for introducing thereinto washed products of combustion and air in regulated proportions.

3. A gas-producing plant comprising a gas-producer, a source of hot products of combustion, a washing-tower and means for conveying said products through the washing-tower and into the producer.

4. A gas-producing plant comprising a gas-producer, a source of hot products of combustion, a washing-tower, means for conveying said products through the washing-tower and into the producer, and means for admixing regulated proportions of air with said products prior to entry into the producer.

5. A gas-producing plant comprising a fuel-burning furnace, provided with a chimney-stack, a gas-washer, a gas-producer and pipe connections provided with a draft-fan for causing a flow of waste gases from the stack through the washer into the producer, said pipe connections being also provided with means for admixing regulated proportions of air with the gases therein.

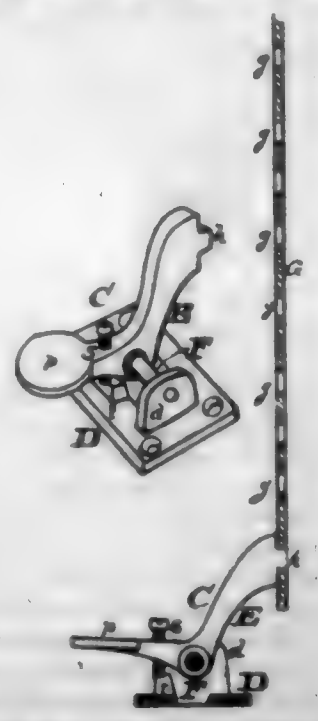
814,280. **GAS HEATING-STOVE.** LEROY B. FRENCH and TOM SHEETS, Columbus, Ohio. Filed Mar. 20, 1905. Serial No. 251,128.



Claim.—1. In a heater of the character described, the combination with a central flue and a burner associated therewith, of means arranged in the flue for collecting and directing upward the products of combustion from the burner, a drum communicating with the said means, side flues for carrying the products downward from the drum, a compartment provided wth an outlet and communicating with the lower ends of the side flues, and means for leading off the back pressure or retarded fumes which pass below the burner.

2. In a heater of the character described, the combination with a central flue and a burner, of a collecting device arranged in the central flue above the burner, a drum having communication with the said device, vertical side flues extending downwardly from the drum on each side of the central flue, a compartment communicating with and connected to the lower ends of the side flues, a fume-pipe leading from said compartment, means arranged in the fume-pipe for retarding the draft and the passage of the fumes, and means for conveying the back-pressure fumes from about the burner and delivering them into the fume-pipe above the said retarding means.

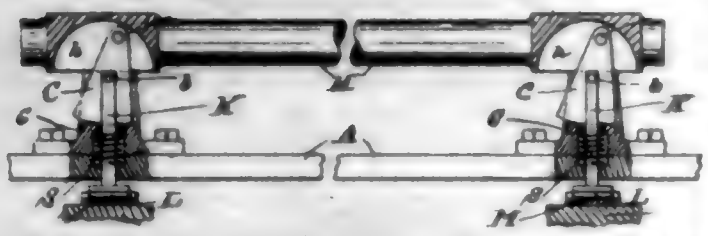
814,281. **WINDOW-SASH LOCK.** JOSEPH C. FEITON, Cleveland, Ohio, assignor of twenty one-hundredths to Frank Stovering and twenty-five one-hundredths to Burton S. Blossom, both of Cleveland, Ohio. Filed Mar. 22, 1905. Serial No. 251,359.



Claim.—A window-sash lock consisting of a plate having lugs thereon, a pintle fixed in said lugs, a thumb-lever fulcrumed and slidable on said pintle and having a tenon-point on the outer end of

an arm thereof, a set-screw adjustable in said lever and a shoulder on said plate adapted to be engaged by said screw; and a bar having slots therein, each of said slots being of such length as to permit said lever to be moved longitudinally on said pintle so that set-screw is removed from contact with said shoulder, substantially as described.

814,282. IMPRESSION THROW-OFF FOR BED-AND-PLATEN PRESSES. Merritt Gally, Brooklyn, N. Y. Filed Oct. 25, 1905. Serial No. 284,338.



Claim.—1. In a bed-and-platen press; in combination with the eccentric means of the impression throw-off; a throw-off bar, a handle-bar parallel to the throw-off bar, a latch, and a cam pivoted to the latch and to the handle-bar, the handle-bar having a longitudinal movement in line with the throw-off bar for operating the cam and relieving the latch.

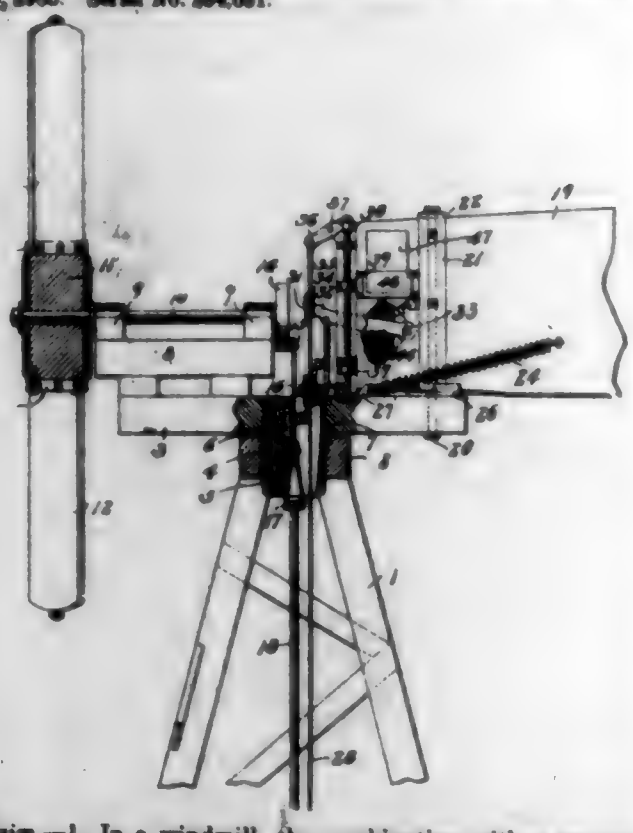
2. The combination with the eccentric means of the impression throw-off of a bed-and-platen press; of the throw-off bar and a holding-latch, and a coacting handle-bar parallel with the throw-off bar and having a longitudinal movement for operating the latch.

3. The combination with the eccentric means of the impression throw-off of a bed-and-platen press; of a holding-latch, and a handle-bar parallel with the axis of the bridge and having a longitudinal movement for operating the latch.

4. The combination with the eccentric means of the impression throw-off of a bed-and-platen press; of two holding-latches and a handle-bar connected with both said latches and operably movable longitudinally of its axis and parallel with the axis of the platen-bridge.

5. The combination with the eccentric means of the impression throw-off of a bed-and-platen press; of two holding-latches and a connecting means coacting with both said latches and operably movable longitudinally of its axis and parallel to the axis of the bridge.

814,283. WINDMILL. Albert Geoffroy, Erath, La. Filed Oct. 23, 1905. Serial No. 284,031.



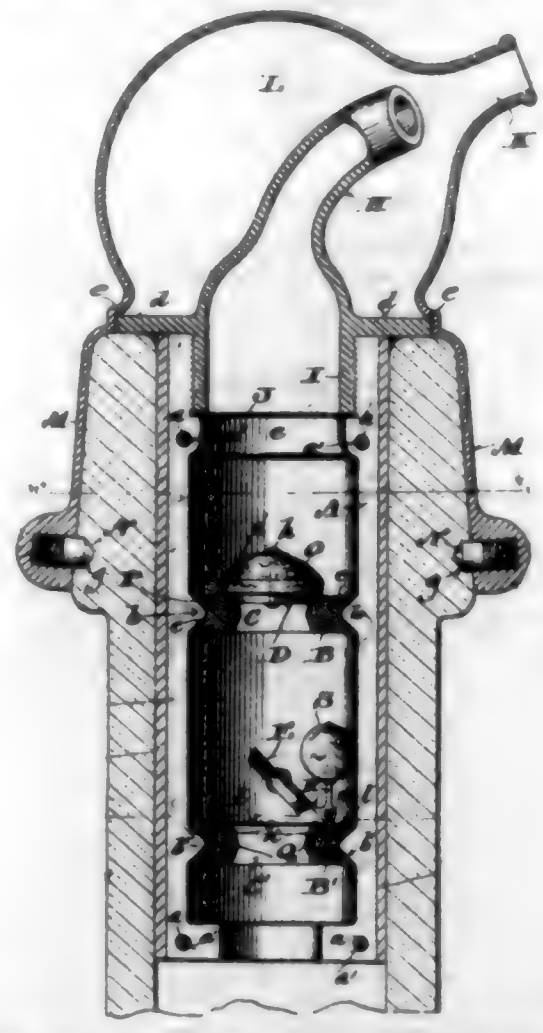
Claim.—1. In a windmill, the combination with a turn-table having a hollow post upon which it rotates, and a vane pivoted upon the turn-table in rear of the post, a vertically-movable locking-bolt carried by the vane and having a series of engagements with the turn-table, a lever fulcrumed upon the vane and connected to the bolt, a guide carried by the turn-table and overhanging the top of the post, and a bolt-operating cable connected to the lever and passing downwardly through the post in engagement with the guide.

2. In a windmill, the combination with a turn-table, a wind-wheel thereon, and a vane pivotally mounted on the turn-table, of means tending to yieldably maintain the vane out of alinement with the wheel, a keeper upon the turn-table, a latch carried by the vane for engagement with the keeper to hold the vane in alinement with the wheel, tension means tending to disengage the latch from the keeper, and means controlled from the ground for holding the latch in engagement with the keeper.

3. In a windmill, the combination with a turn-table, of a vane pivotally mounted thereon, a locking-bolt carried by the vane for engagement with the turn-table, a keeper upon the turn-table, a latch upon the vane for engagement with the keeper, and means operable from the ground and common to the bolt and the latch for controlling the same.

4. In a windmill, the combination with a turn-table, of a vane pivoted thereon, a locking-bolt carried by the vane for engagement with the turn-table, a lever fulcrumed upon the vane and connected to the bolt, a keeper upon the turn-table, a pivotal latch upon the vane for engagement with the keeper, tension means tending to normally hold the latch out of engagement with the keeper, said latch being provided with a cable-guide, an operating-cable running through the guide, and a link connected to the lever and the cable and bearing upon the top of the latch.

814,284. NON-REFILLABLE BOTTLE. Albert F. Gibson, Milwaukee, Wis. Filed Oct. 5, 1905. Serial No. 281,913.



Claim.—1. In a non-refillable bottle, a valve-casing having a valve-seat adjacent to the discharge end thereof, a flap-valve for the same having a float secured thereto, a secured valve-seat in the casing below the first-named seat, a bell-crank fulcrumed in concentric rotary relation to said valve-seat, a valve secured to one arm of the bell-crank and a float mounted upon the other arm thereof.

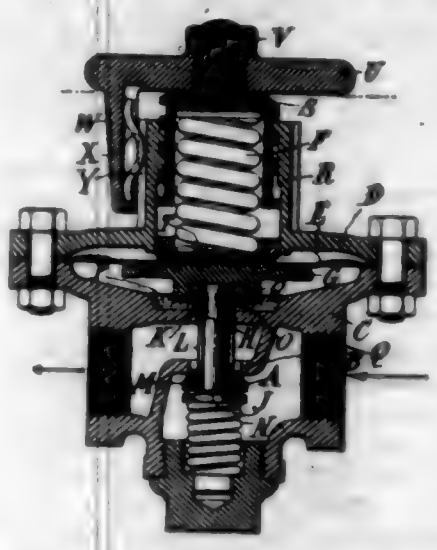
2. In a non-refillable bottle, a valve-casing composed of semicircular members in dowel connection with each other, a valve mounted in the casing, a tubular shell fitted over said valve-casing and a nozzle in threaded engagement with the mouth thereof.

3. In a non-refillable bottle, a valve-casing fitted in the bottle-neck, a valve mounted therein, a nozzle secured to the mouth of the valve-casing, a cap surmounting the nozzle having its discharge-opening at an angle to said nozzle, and means for permanently locking the cap to the outer walls of said bottle-neck.

4. In a non-refillable bottle, a valve-casing secured within the bottle-neck, a valve-seat in the casing, a bell-crank fulcrumed in concentric rotary relation to the valve-seat, a valve secured to one arm of the bell-crank and a float mounted upon the other arm thereof.

5. In a non-refillable bottle, a valve-casing secured within the bottle-neck, a disk secured in the valve-casing provided with a central opening, a revoluble ring secured to the disk concentric with the opening therein, a bell-crank pivoted to the ring, a valve secured to one arm of the bell-crank, arranged to close said disk-opening, and a float secured to the other arm of said bell-crank.

814,285. **PRESSURE-REGULATOR.** EDWARD E. GOLD, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,771.



Claim.—1. A pressure-regulator including in combination a main valve, an auxiliary valve arranged to admit pressure from the admission side of the main valve directly to the eduction side, and a pressure-operated member detached from said valves and arranged to engage first said auxiliary valve and subsequently said main valve as the pressure on the eduction side falls.

2. A pressure-regulator including in combination a main valve A having a passage therethrough, an auxiliary valve J arranged to admit pressure from the admission side of the main valve directly to the eduction side for closing said passage, and a pressure-operated member for engaging the stems of said valves, the stem of the auxiliary valve being extended beyond that of the main valve to be first engaged by said member as the pressure on the eduction side falls.

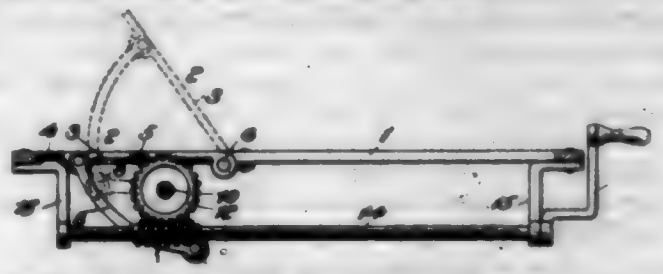
3. A pressure-regulator including in combination a main valve A having a passage therethrough, an auxiliary valve J arranged to admit pressure from the admission side of the main valve directly to the eduction side for closing said passage, a pressure-operated member arranged to engage first said auxiliary valve and subsequently said main valve as the pressure on the eduction side falls, and a spring N holding the valve J and through it the valve A to positions adjacent to their seats.

4. A pressure-regulator including in combination a main valve A having a passage therethrough, an auxiliary valve J closing said passage and arranged to admit pressure from the admission side of the main valve directly to the eduction side, a pressure-operated member comprising a disk G arranged to engage the stems of said valves and having a convex upper face, a disk T having a convex lower face pressing down upon said disk G and a diaphragm E between said disks, the stem of the auxiliary valve J being extended beyond that of the main valve to be first engaged by said member G as the pressure on the eduction side falls.

5. A pressure-regulator including in combination a main valve A having a passage therethrough, an auxiliary valve J closing said passage and arranged to admit pressure from the admission side of the main valve directly to the eduction side, a pressure-operated member for engaging the stems of said valves, the stem of the auxiliary valve being extended beyond that of the main valve to be first engaged by said member as the pressure on the eduction side falls, a spring F bearing on said member, and a screw-threaded spindle S for adjusting the pressure on said spring, said spindle being hollow and embracing said spring.

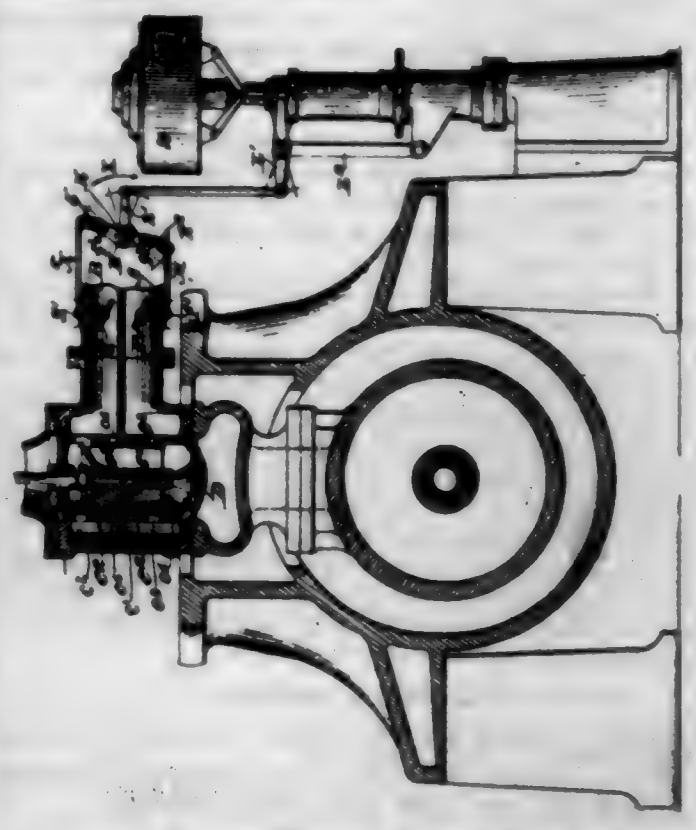
6. A pressure-regulator including in combination a main valve, an auxiliary valve arranged to admit pressure from the admission side of the main valve directly to the eduction side, a pressure-operated member arranged to engage first said auxiliary valve and subsequently said main valve as the pressure on the eduction side falls, and a spindle for adjusting the pressure upon said member and adapted to effect the entire range of adjustment within a single rotation, whereby the angular position of the spindle indicates the degree of adjustment.

814,286. **HOSPITAL OR INVALID'S BED.** WILLIAM J. HARRIS, Knowlton, N. Y., assignor of one-half to James H. Glass, Knowlton, N. Y. Filed May 11, 1905. Serial No. 259,967.



Claim.—In a device of the character described, the combination of a main frame, an elevating-frame pivotally mounted upon the main frame, said elevating-frame being substantially of bail form and comprising side pieces connected at their outer ends and intermediately by cross-bars, said side pieces being journaled at their inner ends upon the main frame to adapt the said elevating-frame to swing from a horizontal position between and substantially flush with the sides of the main frame to a substantially vertical position, and vice versa, bearing-brackets depending from the sides of the main frame, a transverse shaft journaled in said bearings, a gear on said shaft, crank-arms attached to the shaft, arcuate links connecting said crank-arms with the side pieces of the elevating-frame, brackets fixed to the ends of the main frame and depending therefrom, one of said brackets having a portion arranged to form a support for the outer cross-bar of the elevating-frame when the latter is lowered, a longitudinal shaft journaled in said brackets, a worm carried by said shaft and meshing with the gear on the transverse shaft, and an operating device applied to said longitudinal shaft, substantially as described.

814,287. **EXPLOSION-ENGINE.** RUDOLF HARTWIG, Rüttenscheid, near Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp, Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Feb. 25, 1904. Serial No. 195,266.



Claim.—1. The combination with an air-conduit, a gas-conduit, a pair of valves one for each conduit, and a governor, of means connecting the valves and the governor to transmit motion simultaneously to said valves adjustable to vary the ratio of transmission from the governor as between the valves and maintaining such ratio in every position of the governor.

2. The combination with an air-conduit, a gas-conduit, a pair of valves one for each conduit, and a governor, of a three-armed bell-crank lever one arm of which is connected to the governor and the other two each have connection with one of the valves, and means for varying the effective length of one of said latter arms.

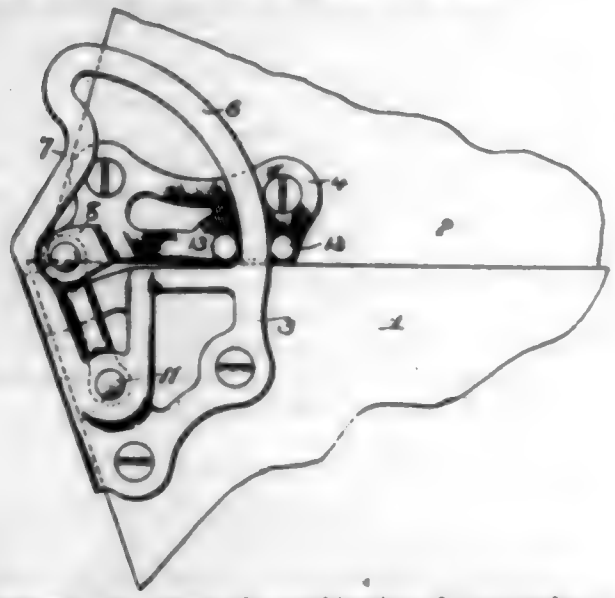
3. The combination with an air-conduit, a gas-conduit, a pair of valves one for each conduit, and a governor, of a three-armed bell-crank lever, one arm of which is connected to the governor, and the other two are provided with curved slots and connections between

the valves and the two latter arms of the bell-crank, adjustable in said slots.

4. The combination with an air-conduit, a gas-conduit, a pair of valves one for each conduit, and a governor, of a three-armed bell-crank lever one arm of which is connected to the governor and the other two have connections each with one of the valves, and means for varying the effective length of both of said latter arms.

5. The combination of two valves, one of the valves controlling the admission of air and the other of gas or vapor, a part moved by the governor, links connecting the valves to such part, and means for altering the point of connection of one of the links.

814,288. HINGE. JOSEPH B. HAUSFELD, Cincinnati, Ohio, and VICTOR B. TARRER, Dayton, Ky., assignors to Ernst H. Hausefeld, Cincinnati, Ohio. Filed Mar. 24, 1905. Serial No. 251,120.



Claim.—1. In a hinge, the combination of one member, a link pivoted at one end to said member, means for limiting the swinging movement of the link, a second hinge member pivoted to the link, and means independent of the link for limiting the pivotal movement of said second member.

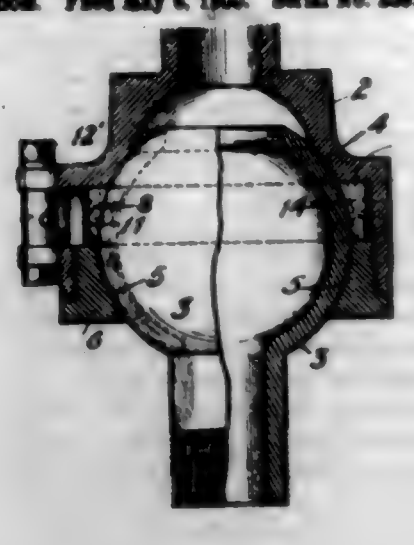
2. In a hinge, the combination of a lower member having a recess therein, a link located in said recess and pivoted at one end to the lower member, an upper member, a lug thereon pivoted to the upper end of the link, and means for limiting the pivotal movement of said upper member.

3. In a hinge, the combination of a lower and an upper member, a guide on the lower member, a link pivotally connecting the members, and means on the upper member engaging the guide to control the movement of the members and the swinging of the link.

4. In a hinge, the combination of a lower and an upper member, a curved guide on the lower member, a link pivoted at its lower end to the lower member and at its upper end to the upper member, and means on the upper member engaging the curved guide to control the movement of the upper member in opening and closing.

5. In a hinge, the combination with an upper and a lower member, of a curved guide-bar on the lower member, a link pivotally connecting said members, and studs on the upper member at opposite sides of the curved bar.

814,289. FLEXIBLE FLUID-JOINT. CHARLES G. HAWLEY, Chicago, Ill., assignor to The Holland Company, Chicago, Ill., a Corporation of Illinois. Filed May 6, 1905. Serial No. 259,198.



Claim.—1. In a flexible joint or coupling of the class described, a socket member having an internal peripheral groove to contain packing, in combination with a band arranged in said groove and means upon said socket member for tightening said band, substantially as described.

2. In a flexible joint of the class described, a ball member in combination with a socket member provided with an internal peripheral groove to contain packing, and a self-tightening band arranged in said groove to press the packing therein against said ball member, substantially as described.

3. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having metallic surfaces to hold said ball member and provided with an internal peripheral groove, a packing-band arranged in said groove, and a band-tightening device upon said socket member, substantially as described.

4. In a joint of the class described, two joint members, one being a socket member to contain the other and provided with an internal peripheral groove to contain packing, a packing band or strap arranged in said groove and having an end extending through the wall of said groove, and band-tightening means upon the exterior of said socket member, substantially as described.

5. In a ball-and-socket joint of the class described, a ball member in combination with a socket member and socket-plug, said member and plug having surfaces fitting said ball, said socket member having a peripheral groove for packing, a packing band or strap arranged in said groove and having its end extending through the side of said socket member, and means upon said socket member for exerting tension upon said band, substantially as described.

6. In a ball-and-socket joint of the class described, a ball member in combination with a socket member provided with an internal packing-groove, a packing-band arranged in said groove, said socket member having a tangential opening in its side through which the end of said band passes, and band-tightening means upon said socket member, substantially as described.

7. In a ball-and-socket joint of the class described, a ball member in combination with a socket member, having an internal groove to receive packing and provided with an opening in its side, a band having one end hooked in said opening and having its other end extending through said opening, and means upon said socket member for tightening said band to close the packing upon said ball member, substantially as described.

8. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having an internal peripheral groove and provided with an opening in its side, a packing-band arranged in said groove with its end extending through said opening, said band having a hooked end which closes said opening, and means upon said socket member for tightening said band, substantially as described.

9. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having an internal packing-groove and provided with a packing-band opening in its side, a packing-band attached to the socket member and having its end extending through the said opening therein, and means arranged upon the side of said socket member and attached to the free end of said band for contracting the band around the packing within said groove, substantially as described.

10. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having suitable ball-surfaces and provided with an internal packing-groove, in combination with a packing-band arranged within said groove and having one of its ends fastened upon the wall of said groove, the other end of said band extending through the side of said socket member, a tension-spring arranged upon said socket member for contracting said band around the packing within said groove, substantially as described.

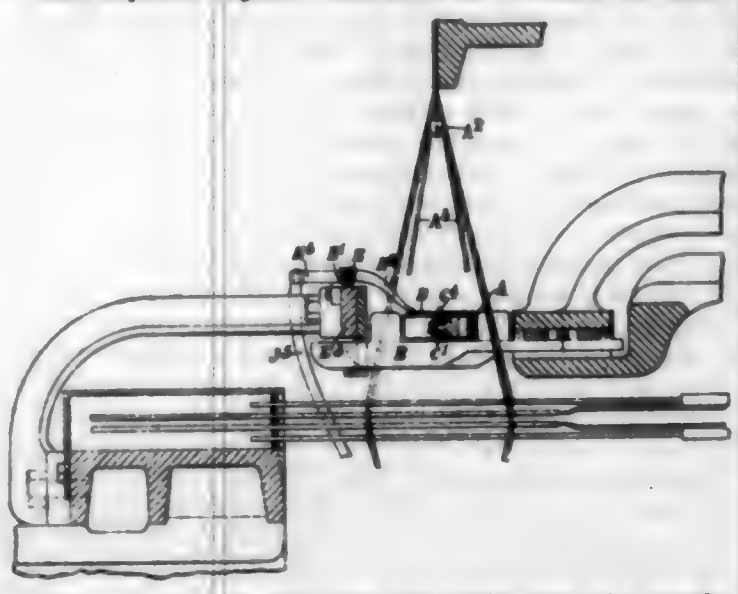
11. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having an internal packing-groove, a corrugated spring-metal packing-band arranged within said groove and having its end extending through the side of said socket member, and means upon said socket member for exerting tension upon said band, substantially as described.

12. In a ball-and-socket joint of the class described, a ball member in combination with a socket member having an internal packing-groove and provided with an opening in its side, said socket member also having an external groove, a packing-band arranged within the internal groove of said socket member to compress the packing therein, and a spring attached to the free end of said band and occupying the external groove of said socket member, substantially as described.

13. In a ball-and-socket joint of the class described, a ball member in combination with a socket member, a socket-plug arranged in the outer end of said socket member, said socket member and said plug being provided with ball-surfaces, 4 5, and together forming a packing-groove within the socket member, a packing band or strap arranged within said groove, packing in said groove between said ball member and said strap, and means for securing the strap and for exerting tension thereon, substantially as described.

14. In a joint of the class described, a socket member having an integral peripheral groove for packing material and provided with an opening in its side, in combination with a packing-band arranged in said groove, a spring arranged upon the exterior of said socket member and attached to said band to draw the latter around the packing in said groove, and a second joint member journaled within said socket member, substantially as described.

814,290. STOP-MOTION FOR CIRCULAR LOOMS. CHARLES G. HILL, Daybrook, England. Filed Oct. 3, 1904. Serial No. 227,942.



Claim.—1. In a circular loom, the combination of a shuttle, means for propelling the same, a yielding obstruction-detector projection in front of and carried by the shuttle, loom-stop mechanism and means for connecting the said detector and loom-stop mechanism; substantially as described.

2. In a circular loom, the combination of a shuttle, means for propelling the same, an obstruction-detector in connection with the shuttle, a spring-actuated plate in the shuttle which is normally held by the detector but is released when an obstruction is met, loom-stop mechanism, and means for setting up a connection between said plate and loom-stop mechanism, substantially as described.

3. In a circular loom, the combination of a shuttle, means for propelling the same, an obstruction-detector in connection with the shuttle, a spring-actuated plate in the shuttle which is normally held by the detector but is released when an obstruction is met, a series of fingers arranged round the shuttle-race for the plate to engage with, loom-stop mechanism, and means for carrying and connecting said fingers to the loom-stop mechanism, substantially as described.

4. In a circular loom, the combination of a shuttle, means for propelling the same, obstruction-detector mechanism in connection with the shuttle, a series of fingers arranged round the shuttle-race to set up a connection with the detector mechanism of the shuttle, loom-stop mechanism, and a connection between the latter and the said fingers, substantially as described.

5. In a circular loom, the combination of a shuttle, means for propelling the same, obstruction-detector mechanism in connection with the shuttle, a series of fingers arranged round the shuttle-race to set up a connection with the detector mechanism of the shuttle, a segmental finger-ring, loom-stop mechanism, and connections between the latter and the segments of the finger-ring substantially as described.

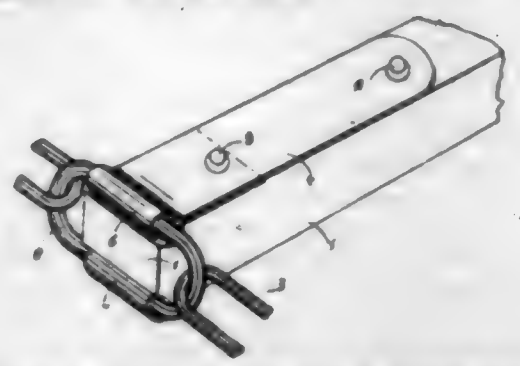
6. In a circular loom, the combination of a shuttle, means for propelling the same, obstruction-detector mechanism comprised of a sliding bar carrying a blade in front of the shuttle, a spring-actuated plate in the shuttle, a catch on the sliding bar to hold said plate, a series of fingers arranged round the shuttle-race to set up a connection with said plate, a segmental ring to carry the fingers, loom-stop mechanism, and connections between the latter and the segments of the finger-ring, substantially as described.

7. In a circular loom, the combination of a shuttle, means for propelling the same, obstruction-detector mechanism in connection with the shuttle, a series of fingers arranged round the shuttle-race to set up a connection with the detector mechanism in the shuttle, a segmental ring to carry the fingers, a running member, bolts in said member, retaining-latches for said bolts, a segmental toothed ring to engage said latches, a connection between the toothed segments and the segments of the finger-ring, a toothed member which is engaged by a fallen bolt, and means for releasing the starting-lever operated by the latter, substantially as described.

8. In a circular loom, the combination of a shuttle, means for propelling the same, obstruction-detector mechanism in connection with the shuttle, a series of fingers arranged round the shuttle-race to set up a connection with the detector mechanism in the shuttle, a segmental ring to carry the fingers, a running member, bolts in said member, retaining-latches for said bolts, a segmental toothed ring to engage said latches, a connection between the toothed segments and the segments of the finger-ring, a toothed member which is engaged by a fallen bolt provided with a cam part, a cam-lever operated by said cam part, a starting-lever catch, and a connection between the cam-lever and starting-lever catch, substantially as described.

9. In a circular loom, the combination of a shuttle, means for propelling the same, an obstruction-detector in the shuttle, a spring-actuated plate which is normally held by the detector, a series of fingers arranged round the shuttle-race to set up a connection with the plate in the shuttle, a segmental ring to carry the fingers, a positively-rotated member, bolts in said member, retaining-latches for said bolts, a segmental toothed ring to engage said latches, a connection between the toothed segments and the segments of the finger-ring, a toothed member which is engaged by a fallen bolt provided with a cam part, a cam-lever operated by said cam part, a starting-lever catch, and a connection between the cam-lever and starting-lever catch, substantially as described.

814,291. END FOR THE SPREADERS OF DRAFT-CHAINS AND THE LIKE. JAMES HOLMS, Jr., Waimahaka, New Zealand. Filed Jan. 9, 1905. Serial No. 240,576.



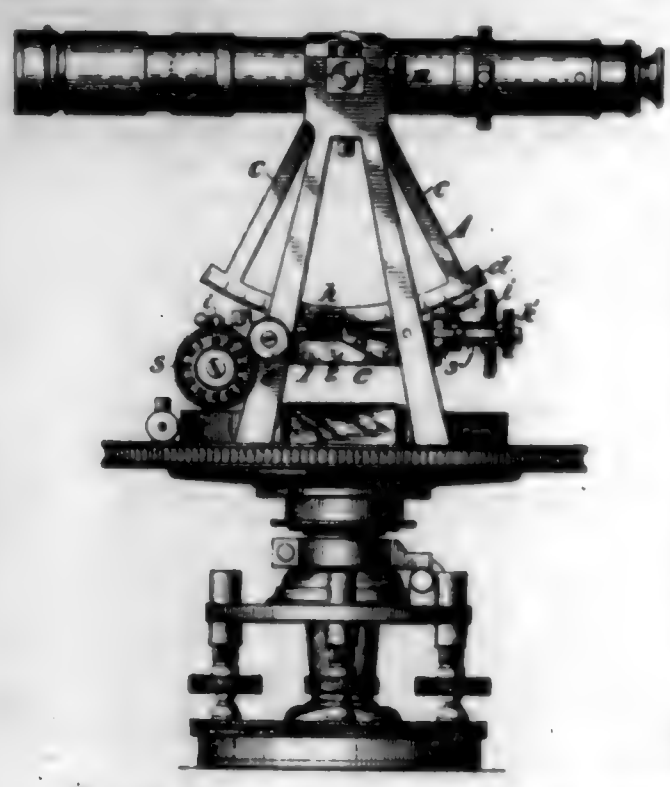
Claim.—For the purpose indicated in combination with a spreader-bar, a pair of metal plates each having an eye formed integrally by bending and doubling the plate upon itself, the eye of one plate being adapted to receive one side of a link in a chain and the eye of the other plate being adapted to receive the opposing side of the link, the said eye normally tending to spring open, a bolt passing through the doubled metal plates upon each side of the spreader-bar and through the spreader-bar, and another bolt passing through the single metal plates and the spreader-bar, as specified.

814,292. INSTRUMENT FOR MEASURING ANGLES. FRANCIS E. HUTCHINS, Warren, Ohio. Filed Feb. 25, 1905. Serial No. 247,300.

Claim.—1. In a surveying instrument, the combination with a rotatable member thereof, of means for determining the amount of angular movement of said member comprising a degree-sector movable with the rotatable member and about the same axis and having degree-notches on its peripheral edge, a screw-threaded sector carried by the degree-sector, locking means mounted adjacent the degree-sector and coöperating with the notches thereof, and means mounted adjacent the screw-threaded sector and comprising a member adapted to coöperate therewith to determine the micrometric movements thereof, said micrometer means being movable into coöperative relation to the screw-threaded member.

2. In a surveying instrument, the combination with the telescope, its supporting shaft and standards carrying bearings therefor, of a vertical degree-plate mounted on the shaft and having degree-notches thereon, a screw-threaded sector carried by the degree-plate, means mounted below the degree-plate and movable into coöperative relation to the degree-notches to lock the degree-plate at whole-degree angles, micrometer means, comprising a screw, mounted below

the degree-plate and movable into coöperative relation to the screw-threaded sector for determining and indicating in fractions of degrees the movements of the sector beyond whole degrees, and means for moving the last-named means into and out of coöperative relation to the screw-threaded sector.



3. In a surveying instrument, the combination with a telescope its supporting shaft and standards carrying bearings therefor, of a vertical degree-plate provided with degree-notches and having a hub journaled on the telescope-shaft, means for fixing the hub to the shaft, a pivoted pointer positioned to indicate in degrees the angular movement of the degree-plate, the said pointer having a portion adapted to engage the degree-notches of the degree-plate to secure it in a position at zero or in any position after an angular movement of whole degrees, a screw-threaded sector on the degree-plate, a minutes-screw, means for moving the minutes-screw into and out of engagement with the screw-threaded sector, detachable means on the minutes-screw for indicating in minutes the movement of the degree-plate beyond whole degrees, and means detachably connected with the minutes-screw for indicating in seconds the movement of the degree-plate beyond whole minutes, substantially as described.

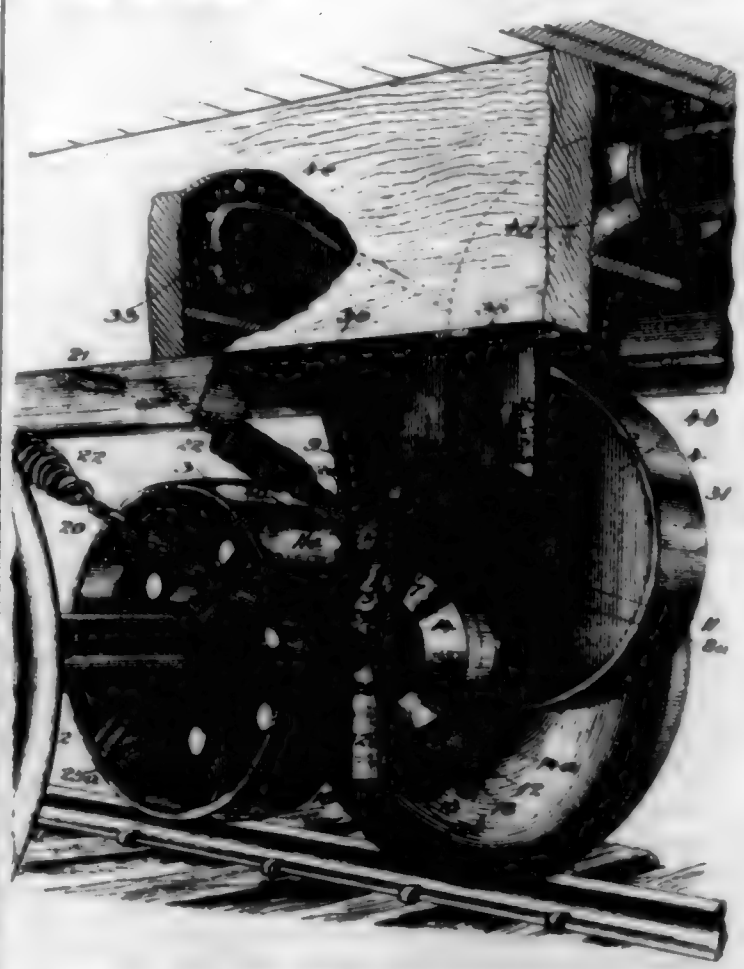
4. In a surveying instrument, the combination with a telescope, its supporting shaft and standards carrying bearings therefor, of a vertical degree-plate provided with degree-notches and degree-indications therefor and rotatably mounted upon the telescope-shaft, means coöperating with the shaft for clamping the degree-plate in two predetermined positions with reference to the optical axis of the telescope, said positions being one hundred and eighty degrees apart and so located that the optical axis of the telescope is horizontal when the zero graduation of the connected degree-plate lies in the vertical line through the axis of the telescope-shaft, means coöperating with the notches of the degree-plate for locking the plate and connected telescope at different whole-degree angles of inclination, said means carrying an indicating-pointer, means, compriaing a screw-threaded sector carried by the degree-plate and a coöperating screw, for moving said plate through determinable whole-minute angles, means for locking the moving means at such whole-minute angles, and means for moving the screw into and out of engagement with the screw-threaded sector.

5. In a surveying instrument, the combination with a telescope, its supporting shaft and standards carrying bearings therefor, of a graduated vertical degree-plate mounted upon the shaft and provided with means for clamping it rigidly thereto, and micrometer means for effecting said indicating the micrometric movements of the telescope, comprising a screw-threaded sector carried by the degree-plate, a frame pivoted to one of the telescope-standards and a screw carried thereby, means to move the frame to cause the screw to engage with or be disengaged from the screw-threaded sector, the pitch of the screw-threads corresponding to a movement of one degree of the degree-plate, means for locking the screw in fractional parts of its revolution, said means being provided with minute-graduations and an indicating-pointer, and means also mounted upon the pivoted frame and connectible to the screw for effecting rotation thereof corresponding to seconds of rotative movement of the vertical degree-plate.

6. In a surveying instrument, the combination with a telescope, its supporting shaft and standards carrying bearings therefor, of a vertical degree-plate provided with degree-notches and mounted upon the telescope-shaft, means coöperating with the shaft for clamping the degree-plate in certain predetermined positions with reference to the optical axis of the telescope, means coöperating with the notches of the degree-plate for locking the plate and connected telescope at different whole-degree angles of inclination, said means carrying an indicating-pointer, means for moving said plate through determinable whole-minute angles and means for locking the moving means at such whole-minute angles, additional means for determining whole-second angles of inclination and means for connecting said seconds means to said minutes means whereby the movement of the seconds means may be transmitted to the vertical plate, and means for locking the seconds means at whole-second angles.

7. In a surveying instrument, the combination with a telescope, its supporting shaft and standards carrying bearings therefor, of a vertical graduated, sector-shaped degree-plate having a hub rotatably mounted on said shaft, means mounted adjacent the peripheral edge of the degree-plate and having an indicator for the graduations and a portion coöperating with the degree-plate for positioning and fixing said plate with said indicator on any degree-line of said plate, a lateral screw-threaded member carried by and parallel with said degree-plate, a minutes-screw tangent to said member and engaging the threads thereof, said threads being of degree pitch, means for supporting said screw in such position, means for indicating in minutes the fractional parts of the rotation of the minutes-screw beyond whole degrees and for fixing the screw at such whole-minute angles, means for indicating in seconds the fractional parts of the rotation of said minutes-screw beyond whole minutes and for fixing the screw at such whole-second angles, said recited means operating in succession to determine finally the vertical position of the telescope in degrees, minutes and seconds, said seconds means being disconnectible from said minutes means to permit the independent operation of the latter, and said minutes means being disconnectible from the degree-indicating means to permit the independent operation of said degree means, and means coöperating with the telescope-shaft for fixing the hub of the degree-plate thereto so that the inclination of the optical axis of the telescope may be determined directly from the degree plate and indicator.

814,293. **MECHANISM FOR TRANSMITTING POWER FROM CAR-AXLES.** Delbert B. Johnson, Chicago, Ill. Filed July 7, 1905. Serial No. 268,614.



Claim.—1. In a device for the purpose indicated, in combination with a car-body and a car-axle having a power-wheel, a shaft-bearing element mounted on the car; a shaft therein protruding there-

from; a hanger pivoted on the shaft-bearing element about the shaft; power-transmitting means on the hanger for driving said shaft, the pivotal connection of the hanger to the shaft-bearing element being made by a sleeve on one of said parts and a hollow stud on the other part, the stud having at one end a radial projection, and the sleeve having an interior longitudinal channel adapted to be traversed by the projection in bringing the parts into pivotal connection, such channel and projection being out of line at the operative position of the hanger.

2. In a device for the purpose indicated, a bearing for a part to be rotated mounted rigidly with respect to the car-body; a shaft journaled in such rigidly-mounted element; a hanger pivotally mounted on said element about the axis of said shaft, and power-transmitting means on the hanger, such pivotal connection being made by means of a pivot-stud on the rigidly-mounted element and a pivot-sleeve on the hanger, the sleeve having a longitudinal groove or channel, and the stud having a radially-projecting lug at the outer end adapted to pass through the channel of the sleeve, said channel and lug being circumferentially out of line at the normal position of the hanger.

3. In a device for the purpose indicated, in combination with a car-body axle and a power-transmitting wheel on the axle, a shaft-bearing element mounted on the car-body; a shaft therein protruding therefrom, and a power-transmitting wheel on its protruding portions; a hanger pivoted on the shaft-bearing element about the shaft; power-transmitting means on the hanger for coöperation with the power-wheel on the axle for driving said wheel on the shaft, the pivotal connection of the hanger to the shaft-bearing element being made by a sleeve on the hanger and a hollow stud on the shaft-bearing element, the interior diameter of the sleeve being such as to permit the wheel on the shaft to pass through it, and means for retaining the sleeve.

4. In a device for the purpose indicated, in combination with a car-body and a car-axle, a power-communicating wheel on the axle; a shaft-bearing element mounted on the car; a shaft therein protruding therefrom; a power-communicating wheel on the protruding portion of such shaft, a hanger pivoted on the shaft-bearing element about the shaft; power-transmitting means on the hanger coöperating with the power-wheel on the axle for driving the wheel on the shaft, the pivotal connection of the hanger to the shaft-bearing element being made by a sleeve on the hanger and a hollow pivot-stud on the shaft-bearing element through which the shaft protrudes, the stud having at the end a radial projection, and the sleeve having an interior longitudinal channel adapted to be traversed by the projection when the sleeve and stud are brought into pivotal relation, such channel and projection being out of line at the operative position of the hanger, and the diameter of the sleeve, exclusive of its longitudinal channel, being such as to permit the wheel on the shaft to pass through it.

5. In a device for the purpose indicated, in combination with a car-body and car-axle, a fan-case mounted on the car-body; a fan-shaft journaled in the case and protruding therefrom at the inner side, the fan-case having a pivot-stud projecting at that side concentric about the protruding shaft; a power-communicating wheel on the car-axle; a hanger having a sleeve by which it is pivotally suspended from the stud; a pulley journaled in the hanger, adapted to be frictionally engaged by the power-wheel on the axle; a wheel on the shaft at the end of the stud, which derives power from the pulley on the hanger, the hanger having a bearing for the shaft at the opposite side of the shaft-wheel from the stud, and an arch connecting said bearing with the hanger pivot-sleeve.

6. In a device for the purpose indicated, in combination with the fan-case mounted rigidly on the car-body and having a laterally-projecting pivot-stud, a hanger pivotally suspended on the stud; a wheel on the shaft and a wheel in the hanger which are operatively engaged when the hanger is thus suspended, the shaft-wheel being of less diameter than the stud at the pivot-bearing of the hanger thereon, whereby said hanger pivot-bearing is adapted to pass over the wheel on the shaft for reaching its journal on the stud, said pivot-bearing being longitudinally grooved, and the stud having a projection adapted to pass through the groove, said groove and projection being out of line at normal position of the hanger.

7. In a device for the purpose indicated, in combination with the fan-case rigidly mounted on the car-body and having a shaft journaled in it, a rotating element within the fan-case detachably keyed to the shaft; power-transmitting means and a hanger in which they are journaled pivotally mounted on the outside of the case about the axis of the shaft and removable bodily therefrom, the shaft being adapted for endwise withdrawal in the same direction, the fan-case having a peripheral aperture through which the rotatable element may be withdrawn when detached from the shaft, and a removable cover for such aperture.

8. In a device for the purpose stated, a fan-case having integrally a chamber for the rotating element; induct-passages leading from the center outside such chamber and merging in a single passage beyond the circumference of such chamber, said chamber being extended tapering and symmetrical about a plane radial to the axis of the rotating element, and terminating in a pipe connection, and having a peripheral aperture for the admission and removal of the rotating element, and a detachable cover for such aperture.

814,294. PROCESS FOR THE RECOVERY OF PRECIOUS METALS FROM ORES, &c. John A. Just, Pulaski, N. Y., assignor to The Just Mining & Extraction Co., Syracuse, N. Y., a Corporation of New York. Filed Mar. 25, 1905. Serial No. 251,962.

Claim.—1. The process of recovering precious metals from ores or materials containing said metals which consists in subjecting the ores or materials to the action of nascent oxygen and an acid capable of forming compounds with the oxids of the precious metals formed and dissolving said compounds.

2. The process of recovering precious metals from ores or materials containing said metals, which consists in subjecting the ores or materials to the action of nascent oxygen and an excess of an acid capable of forming compounds with the oxids of the precious metals formed whereby said compounds are dissolved by the acid.

3. The process of recovering precious metals from ores or materials containing said metals which consists in treating the ores or materials with an oxygen-yielding substance, and a suitable agent capable of liberating oxygen from its compound and also capable of dissolving the oxids of the precious metals formed by the nascent oxygen liberated.

4. The process of recovering precious metals from ores or materials containing said metals which consists in treating the ores or materials with nascent oxygen generated in an acid solution capable of forming soluble compounds with the precious metals.

5. The process of recovering precious metals from ores or materials containing said metals which consists in treating the ores or materials with nascent oxygen generated in an excess of an acid solution capable of forming soluble compounds with the precious metals, whereby said compounds are dissolved in said excess acid solution.

6. The process of recovering precious metals from ores or materials containing said metals, which consists in pulverizing or granulating said ores or materials, suspending said granulated material in a solution containing an oxygen-yielding substance and sulfuric acid, gradually heating the solution until it is concentrated to about one-half or less of its original volume, diluting the solution to nearly its original volume, separating the acid solution from the sands and gangue, and separating the silver and gold from the acid solution.

7. The process of recovering precious metals from ores or materials containing said metals, which consists in pulverizing or granulating said ores or materials, suspending said granulated material in a solution containing an oxygen salt and sulfuric acid, gradually heating the solution until it is concentrated to about one-half or less of its original volume, diluting the solution to nearly its original volume, separating the solution from the sands and gangue, separating the silver and gold from the acid solution, and recovering the acid solution for reuse.

8. The process of recovering precious metals from ores or materials containing said metals, which consists in treating the ores or materials simultaneously with nascent oxygen and excess of an acid of suitable concentration to form compounds with the oxygen salt of the precious metals formed, whereby the excess of acid dissolves said salts.

9. The process of treating silver, and silver-sulfid ores, or materials containing said metal and metallic compound, which consists in the economic step of treating ores containing silver and silver sulfid, or materials containing them, with nascent oxygen generated in the presence of sulfuric acid from a suitable oxygen-yielding substance thereby completing the conversion of the silver into its sulfate with only one molecule of sulfuric acid.

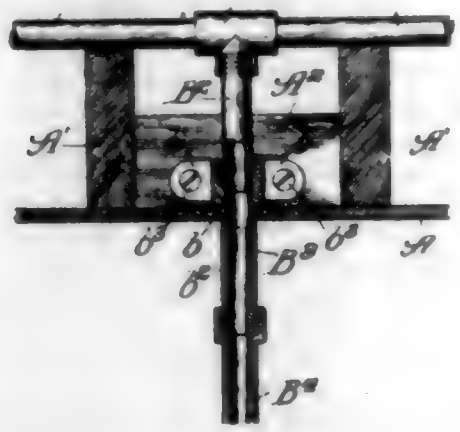
10. The process of recovering precious metals from ores or materials containing said metals which consists in treating the ores or materials with an oxygen-yielding substance, and a substance which will react with said oxygen-yielding substance to produce nascent oxygen, and which is also a solvent for the oxids of the precious metals formed, and passing a current of air through said material.

11. The process of recovering precious metals from ores or materials containing said metals which consists in first grinding the ore to a suitable fineness, adding sulfuric acid to decompose the baser sulfids passing a current of air through the mass, heating the mass and adding niter thereto, continuing the heating until the mass is suitably concentrated, diluting the mass with acid or acidulated water to substantially its original volume, separating the solution from the sands, washing the sands free from adhering metallic salts, precipitating the metals from the acid solution, recovering the metals from said precipitate, and recovering the acid solution for reuse.

12. The process of recovering precious metals from raw sulfid ores or materials containing said metals which consists in first grinding the ore to a suitable fineness, adding sulfuric acid and a suitable oxygen salt thereto, heating until the metals are in solution, separating the solution from the sands, precipitating the metals from said solution, separating the precipitate from the solution and recovering the acid for reuse.

13. The process of recovering silver from raw sulfid ores or materials containing said metal, which consists in first grinding the ore to a suitable fineness, adding sulfuric acid and a suitable oxygen salt thereto, heating until the silver is in solution, separating the solution from the sands, precipitating the silver from said solution, separating the precipitate from the solution and recovering the acid for reuse.

814,295. PIPE-FITTING. James W. Kelly, Chicago, Ill. Filed Nov. 28, 1906. Serial No. 344,690.



Claim.—1. The combination of a horizontal pipe, a pipe-section depending therefrom, and a pipe-fitting comprising, in integral formation, a tubular head and shank, said head having an internal thread receiving the lower end of said pipe-section and equipped with ears for connection with the frame member of a building, the shank of said fitting adapted to project through a ceiling and provided with a thread for the reception of a chandelier-pipe.

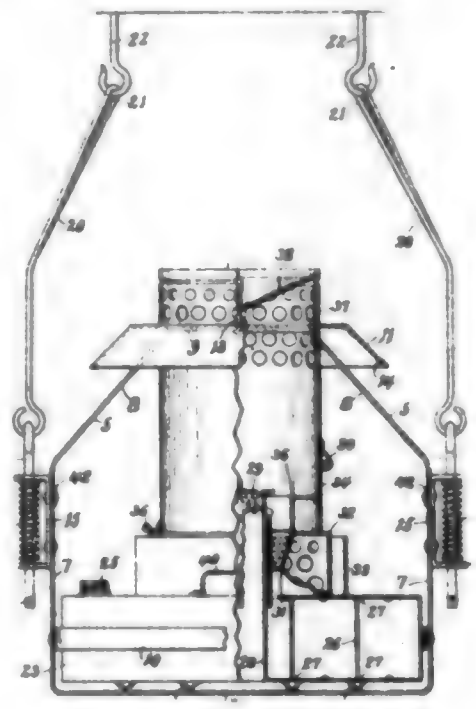
2. The combination of frame members and a ceiling beneath said frame members, of a horizontal pipe supported on a frame member and equipped with a T-fitting, a depending pipe-section having screw connection therewith, a pipe-fitting comprising, in integral formation, a tubular head equipped with perforate ears and a tubular shank projecting through the ceiling, said tubular head having an internal screw-thread connected with the lower end of said pipe-section and the lower end of said tubular shank being externally threaded to receive a chandelier-pipe, and studs connecting said ears securely to a frame member, thereby to prevent rotation of said second-named fitting, for the purpose set forth.

814,296. HEATER FOR THERMAL CARS. Edward Klausman, Milwaukee, Wis. Filed Jan. 12, 1905. Serial No. 240,726.

Claim.—1. In a car-heater, an open heater-supporting frame, hangers in sets at the front and rear hinged at their lower ends to the frame and adapted to be hinged at their upper ends in the front and rear line and at a distance apart similar to their lower ends severally to supports whereby the heater-frame will maintain its horizontal position when swung to front and rear.

2. In a car-heater, an open heater-supporting frame, winged brackets on the frame, eyebolts movable vertically in the wings of the brackets, springs supporting the brackets and frame yieldingly on the bolts, and hangers supporting the eyebolts and the frame thereon.

3. In a car-heater, a frame consisting of a plurality of bottom upright side and top straps, and a continuous horizontally-disposed surrounding side strap secured rigidly at a little distance from the bottom to the upright straps, and means on and connected to the frame for supporting it yieldingly vertically and oscillatingly laterally.



4. In a car-heater, a liquid-fuel burner, a cylindrical chimney on the burner provided with a plurality of annularly-arranged series of apertures in its wall near the top, a cone-shaped outwardly and upwardly flaring closure in the chimney above the series of apertures, and an annular downwardly-flaring deflector about the chimney exteriorly below some of the apertures and above others of the apertures.

5. In a car-heater, a frame, a liquid-fuel tank on the frame, a burner on the tank, a chimney about and above the burner the chimney being closed at the top and having several horizontal annular series of apertures one above another in its sides near the top, and a deflector on the frame about the chimney above some and below others of the series of apertures in its sides.

6. In a car-heater, a frame including a plurality of strap members extending upwardly and across at the sides of a chimney and above a tank, a fuel-tank on the frame, a burner on the tank, a tubular metal chimney hinged on the burner, the chimney being closed at the top and having holes in its sides near the top, and a deflector resting detachably on the straps above the burner and about the chimney above some holes in its sides.

7. In a car-heater, a liquid-fuel tank, a tubular burner in and projecting above the tank, a pedestal on the tank about the medial portion of the burner, a tubular chimney on the pedestal about the upper portion of the burner, and an annular guard in the chimney adjacent to the pedestal and at a uniform distance from the wall of the chimney around inside the chimney, and a flange securing the guard at its top to the chimney.

8. In a car-heater, a supporting-frame, winged brackets on the frame, rods with eyes in their upper ends movable vertically through the wings in the brackets, pins through the rods above the lower wings, stop-pins through the rods below the lower wings, springs coiled about the rods above and bearing against the upper pins and below and bearing against the upper wings, and hangers attached to and supporting the rods.

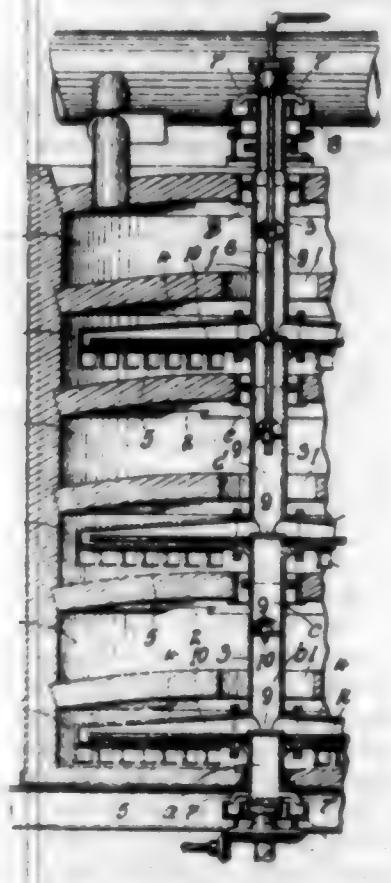
814,297. ROASTING-FURNACE. Frank Klepetko, New York, N. Y. Filed Nov. 6, 1905. Serial No. 286,041.

Claim.—1. In a rabble apparatus, a hollow shaft, hollow arms radiating therefrom and communicating therewith, and means for introducing a cooling medium initially into the shaft at a point intermediate the length thereof, and allowing the same to circulate into the arms, substantially as set forth.

2. In a rabble apparatus, a hollow shaft, means for introducing a cooling medium into the shaft at a point intermediate the length thereof, and outlet means for the cooling medium at opposite ends of the shaft, substantially as set forth.

3. In a furnace, a hollow rabble-shaft, hollow rabble-arms disposed along and radiating outwardly from the shaft and in communication with the interior thereof, means for circulation through the shaft and arms vertically in parallel and in series, and radially in multiple, and inlet means and outlet means for the circulating medium, substantially as set forth.

4. In a furnace, a hollow rabble-shaft, hollow rabble-arms disposed along and radiating outwardly from the shaft and in communication with the interior thereof, means for circulation through the shaft and arms vertically in parallel and in series, and radially in multiple, and inlet means and outlet means for the circulating medium, the point of discharge of the circulating medium into the shaft being removed substantially a half-shaft length from the outlet for said medium, substantially as set forth.



5. In a furnace, a hollow shaft, hollow rabble-arms on the shaft, means for circulation through the shaft and arms vertically in parallel and in series, and radially in multiple, means for discharging the circulating medium into the shaft near the center thereof, and means for conducting the circulating medium out of the shaft at opposite ends thereof, substantially as set forth.

6. In a rabble apparatus, a hollow shaft, means for introducing a cooling medium into the shaft at an intermediate point of its length, and means for conducting the circulating medium out of the shaft on either side of the point at which said medium enters the shaft, substantially as set forth.

7. In a furnace having a plurality of hearths, a rotatable hollow shaft passing through the hearths, a series of hollow arms radiating from said shaft and extending into the several hearths, a series of chambers distributed throughout the shaft and communicating with the hollow arms, and a water-feed pipe extending through a portion of the chambers and discharging its water at substantially the middle of the shaft, substantially as set forth.

8. In a rabble apparatus, a hollow shaft, hollow arms radiating therefrom and communicating therewith, means for introducing a cooling medium initially into the shaft at a point intermediate the length thereof, and allowing the same to circulate into the arms, and outlet means for said circulating medium at opposite ends of the shaft, substantially as set forth.

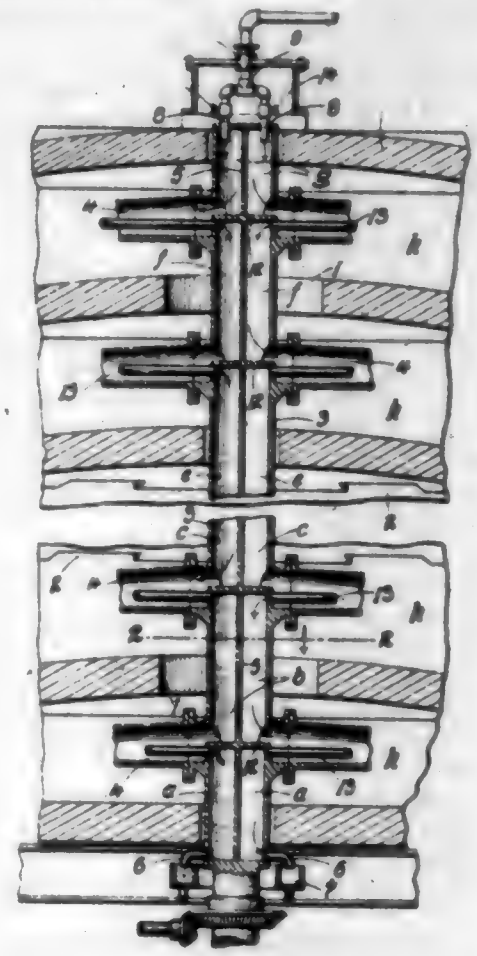
814,298. ROASTING-FURNACE. FRANK KLEPETKO, New York, N. Y. Filed Nov. 6, 1905. Serial No. 286,042.

Claim.—1. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of conduits, and means for independently supplying each conduit with a suitable cooling medium substantially as set forth.

2. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous non-communicating conduits, substantially as set forth.

3. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, and means for circulating a cooling medium through said conduits, substantially as set forth.

4. In a rabble apparatus, a hollow rotatable rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, and means for circulating a cooling medium through said conduits, substantially as set forth.



5. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, and means for circulating independent cooling media through the several conduits, substantially as set forth.

6. In a rabble apparatus, a hollow rotatable rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, and means for circulating independent cooling media through the several conduits, substantially as set forth.

7. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, means for circulating a cooling medium through the several conduits, and means for cutting off the flow of the circulating medium to any conduit, substantially as set forth.

8. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, and means for circulating cooling media through the several conduits simultaneously in different directions, substantially as set forth.

9. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, hollow rabble-arms communicating with said conduits, and means for circulation through the shaft and arms vertically in series, and through the arms radially in series, substantially as set forth.

10. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous independent conduits, hollow rabble-arms communicating with said conduits, means for circulation through the shaft and arms vertically in series, and through the arms radially in series, means for introducing the cooling medium into any conduit at one end, and abstracting it from the same conduit at the opposite end, substantially as set forth.

11. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous independent conduits, hollow rabble-arms communicating with said conduits, and means for circulation through each conduit and arms thereof vertically and radially in series, substantially as set forth.

12. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous independent conduits, hollow rabble-arms leading from said conduits, means for circulation through each conduit and arms thereof vertically and radially in series and through the arms radially in series, substantially as set forth.

13. In a rabble apparatus, a hollow rabble-shaft having its passage-way divided into a series of contiguous, independent conduits, hollow arms leading from said conduits, means for circulation through the shaft and arms vertically in series, and through the arms radially in series, means for discharging the circulating medium into any of

the conduits at one end thereof, and means for conducting the circulating medium out of the said conduits from the opposite end, substantially as set forth.

14. In a furnace having a plurality of hearths, a rotatable hollow shaft passing through the hearths and having its passage-way divided into a series of individual conduits, a series of hollow arms leading from said conduits into the several hearths, a series of chambers distributed throughout each conduit and communicating with the hollow arms, and means for feeding a cooling medium into the several conduits of the shaft and circulating the same through the shaft and arms, substantially as set forth.

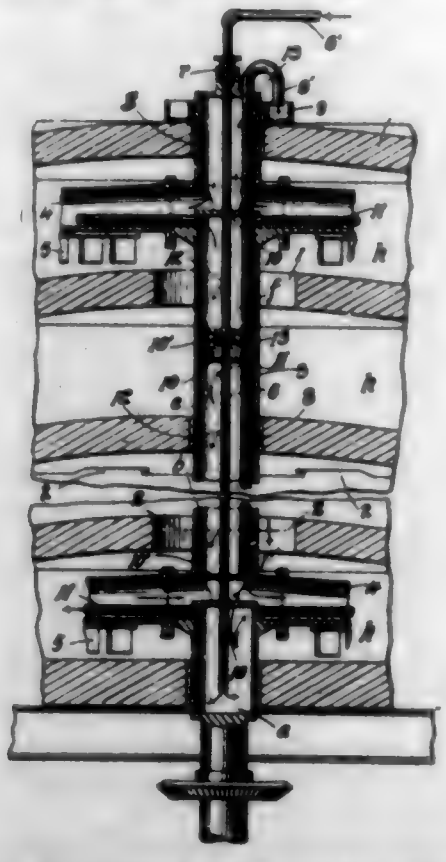
15. In a furnace having a plurality of hearths, a rotatable hollow shaft passing through the hearths and having its passage-way divided into a series of individual conduits, a series of hollow arms leading from the conduits into the several hearths, a series of chambers distributed throughout each conduit and communicating with the hollow arms, and means for introducing a cooling medium into one end of any conduit and circulating the same through the several chambers of said conduit and the hollow arms leading therefrom, substantially as set forth.

16. In a furnace having a plurality of hearths, a rotatable hollow shaft passing through the hearths and having its passage-way divided into a series of individual conduits, a series of hollow arms radiating from said conduits and extending into the several hearths, a series of chambers separated by transverse partitions distributed throughout each conduit, distributing-pipes leading from the respective chambers and opening into the adjacent arms, and a feed-pipe adapted to discharge a cooling medium into a chamber of each conduit, substantially as set forth.

17. In a rabble apparatus, a hollow shaft having a series of longitudinal conduits, and transverse partitions dividing the conduits into contiguous chambers or compartments, substantially as set forth.

18. In a rabble apparatus, a hollow shaft having a series of longitudinal conduits, transverse partitions dividing the conduits into contiguous chambers, and means for circulating a cooling medium through the chambers in either direction, substantially as set forth.

814,299. ROASTING-FURNACE. Frank Klepetko, New York, N. Y. Filed Nov. 6, 1905. Serial No. 286,044.



Claim.—1. In a rabble apparatus, a hollow shaft divided into a series of compartments, hollow arms communicating therewith, and means for circulation through the shaft and arms vertically and radially in multiple, substantially as set forth.

2. In a rabble apparatus, a rotatable hollow shaft divided into a series of compartments, hollow arms communicating therewith, means for circulation through the shaft and arms vertically and radially in multiple, and inlet means and outlet means for the circulating medium, substantially as set forth.

3. In a rabble apparatus, a hollow shaft divided into a series of compartments, hollow arms communicating therewith, means for circulation through the shaft and arms vertically and radially in multiple, and an inlet into and an outlet from each compartment for the circulating medium, substantially as set forth.

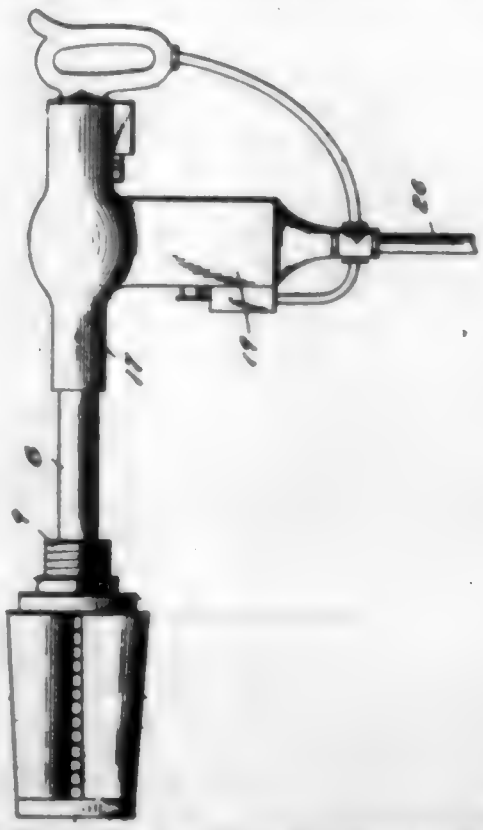
4. In a rabble apparatus, a hollow shaft divided into a series of compartments, hollow arms communicating therewith, means disposed within the shaft for introducing a circulating medium into the several compartments, and outlet means for the circulating medium from each compartment, substantially as set forth.

5. In a rabble apparatus, a hollow shaft, and hollow arms therefor, a series of compartments closed at bottom and top distributed throughout the shaft and communicating with the hollow arms, means for feeding a circulating medium simultaneously into the respective compartments, and independent outlets or exhausts leading from the arms communicating with the respective compartments, substantially as set forth.

6. In a rabble apparatus, a hollow shaft and hollow arms therefor, a series of chambers or compartments closed at top and bottom by transverse partitions, distributed throughout the shaft, said compartments freely communicating with the hollow arms, a feeder passing through the several partitions of the several compartments and provided with means for discharging a cooling medium into each compartment, and an exhaust-pipe disposed adjacent to the feeder, and provided with intake-openings in the spaces between contiguous compartments for conducting away the circulating medium out of the shaft, substantially as set forth.

7. In a furnace having a plurality of hearths, a hollow rabble-shaft passing through the hearths, a series of hollow arms radiating from said shaft and extending into the several hearths, a series of chambers closed at top and bottom distributed throughout the shaft and communicating with the adjacent arms of the series, a water-feed pipe passing through the several chambers of the shaft and discharging thereinto through openings leading into the respective chambers, an exhaust-pipe disposed adjacent to the feed-pipe and provided with openings between the consecutive chambers, and with an opening communicating with the upper terminal chamber of the series, and having an outlet or discharge nozzle beyond the shaft, the parts operating substantially as and for the purpose set forth.

814,300. PIPE-EXPANDER. Frank H. Knee, New Castle, Pa., assignor of one-half to Agnes L. Long, New Castle, Pa. Filed Oct. 27, 1905. Serial No. 284,682.

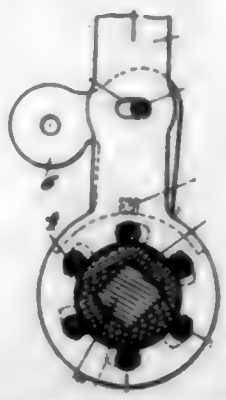


Claim.—1. A pipe-expander comprising a stock having a socket therein, a motor connected with the stock and including a revoluble gear, said gear having an angular passage registering with the socket of the stock, a mandrel having a squared portion engaged in the socket and in the opening of the gear for rotation with the gear and in the socket, a hammer in the stock disposed in operative relation to the rearward end of the mandrel for the application of force thereto, means for conducting an actuating agent to the hammer and to the motor, a head carried by the forward end of the mandrel, said

mandrel having an enlargement lying in spaced relation to the head and having exterior threads, an annular plate engaged with the threaded enlargement, said plate and the head having aligning recesses therein, rollers having trunnions engaged with recesses and surrounding the forward portion of the mandrel, friction-reducing devices disposed between the rollers and the mandrel, and a jam-nut upon the enlargement in operative relation to the annular plate.

2. A pipe-expander comprising a mandrel, means for rotating the mandrel, means for driving the mandrel into a pipe, a disk-shaped head carried by the forward end of the mandrel, said mandrel having an enlargement spaced from the head, an annular plate having interior threads mounted upon the enlargement said enlargement having threads meshing with those of the annular plate, said plate and the head having aligning bearing-recesses therein, rollers having trunnions revolubly engaged in the bearing-recesses, said rollers being closer together at their forward ends than at their rearward ends, friction-reducing devices located between the rollers and the adjacent portion of the mandrel, and a jam-nut upon the enlargement in operative relation to the annular plate.

814,301. **HAND-LEVER WITH LOCKING DEVICE.** Jean Kuhn, Cronberg in the Taunus, Germany. Filed Apr. 4, 1905. Serial No. 253,909.



Claim.—1. A hand-lever for actuating brakes or other mechanism, said lever being provided with a hub, a cheek located adjacent to the lever-hub, means for allowing a limited rocking movement of the lever relatively to the cheek, and a rolling clutch member extending through the lever-hub and through the cheek, one of said parts through which the roller extends having double-acting clutch-surfaces coöperating with said clutch member.

2. The combination of the lever, the cheek adjacent thereto, means for allowing a limited rocking movement of the lever relatively to the cheek, and a rolling clutch member connected with one of said relatively movable parts to preserve a constant position with respect to said part, the other of said parts having double-acting clutch-surfaces adapted for engagement by said rolling clutch member.

3. The combination of a central member having a circular cross-section and forming a clutch-surface, a lever mounted to swing about the axis of said central member, a cheek located adjacent the lever and mounted to swing about the same axis, means for allowing a limited rocking movement of the lever relatively to the cheek, and a rolling clutch member engaging said clutch-surface and connected with one of said swinging parts to preserve a constant position with respect to said part, the other of said parts having double-acting clutch-surfaces adapted for engagement by said rolling clutch member.

4. The combination of a central member having a circular cross-section and forming a clutch-surface, a lever mounted to swing about the axis of said central member, a cheek located adjacent to the lever and mounted to swing about the same axis, and a rolling clutch member engaging said clutch-surface and carried by one of said swinging parts to preserve a constant position with respect to said part, the other of said parts having double-acting clutch-surfaces adapted for engagement by said rolling clutch member.

5. The combination of the lever and the cheek located adjacent to each other and capable of independent rocking movement about the same axis, and a rolling clutch member connected with one of said rocking parts to preserve a constant position with respect thereto, the other of said parts having double-acting clutch-surfaces adapted for engagement by said rolling clutch member.

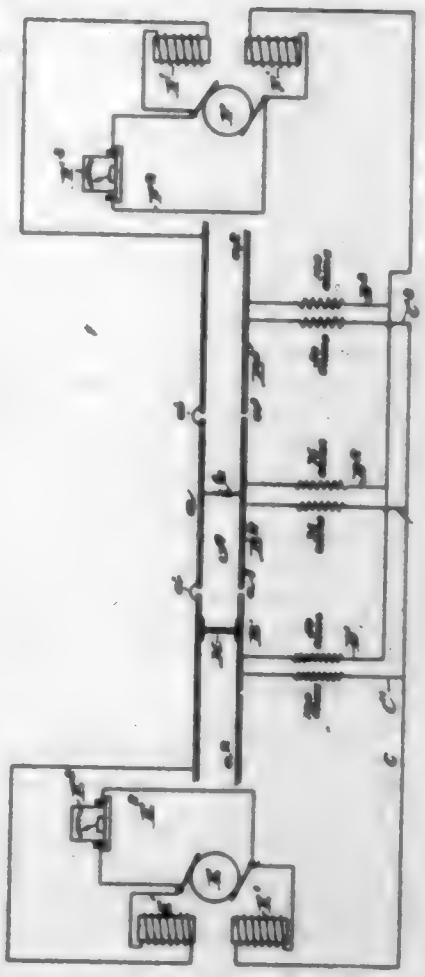
6. The combination of the hand-lever having a recessed hub, side cheeks located adjacent to the lever-hub and having recesses with oppositely-inclined wedged surfaces, rollers arranged in the recesses of the lever-hub and side cheeks, and a central member on which the said lever and cheeks are loosely mounted, and having a bearing-surface for said rollers.

7. The combination of a lever having recesses, a central member on which said lever is loosely mounted, side cheeks likewise loosely mounted on said central member and capable of moving relatively thereto, said side cheeks being also provided with recesses, the recesses in one of said loosely-mounted parts being provided with wedge-surfaces, a connection from said lever to operate suitable mechanism, and rollers arranged in the recesses of the lever and side cheeks and in engagement with said central member.

8. The combination of a central member having a conical surface, a lever and a side cheek loosely mounted on said central member, and also capable of motion relatively to each other, each of said loosely-mounted parts having recesses which in one of said parts are provided with oppositely-inclined wedge-surfaces, rollers mounted in the recesses of said parts and in engagement with the central member, and means for adjusting the rollers longitudinally to compensate for wear.

9. The combination with a central member having a conical surface, of a lever and a side cheek loosely mounted on said central member and also capable of motion relatively to each other, rollers connected with one of said loosely-mounted parts to preserve a constant position with respect to said part, the other of said parts having wedge-surfaces engaged by said rollers, which are also in engagement with the conical surface of the central member, and means for adjusting the rollers lengthwise to compensate for wear.

814,302. **ELECTRICAL SIGNAL SYSTEM.** Fred Lacroix, San Antonio, Tex., assignor of one-half to Otto Koehler, San Antonio, Tex. Filed Aug. 28, 1904. Renewed July 31, 1905. Serial No. 271,966.



Claim.—1. In an electrical signal system, a railway-track, a source of electricity, a circuit connected with said source of electricity and extending along said track, bridging-coils interposed at intervals in said circuit to divide the same into blocks of different electrical resistances, means movable along said track and operating to close said circuit through said blocks, and resistance-indicating mechanism operated by a current passing through said circuit.

2. In an electrical signal system, a railway-track, a source of electricity at each end of said track, a circut common to both sources of electricity and extending along said track, bridging-coils interposed at intervals in said circuit to divide the same into blocks of different electric resistances, means movable along said track and operating to close said circuit through said blocks, and a resistance-indicating mechanism at each end of said track and operated by a current passing through said circuit.

3. In an electrical signal system, a railway-track wth one of its rails electrically continuous and the other one divided by insulating-breaks into blocks, a source of electricity connected with said continuous rail, a conductor extending along said track and connected with said source of electricity, bridging-coils connecting said conductor with the blocks of the divided rail to form blocks of different electrical resistances, means movable along said track and operating to complete the circuit between said rails, and a resistance-indicating mechanism operated by the current passing through the completed circuit.

4. In an electrical signal system, a railway-track with one of its rails electrically continuous and the other one divided by insulating-breaks into sections, a source of electricity at each end of said track and connected with said continuous rail, separate conductors extending along said track and respectively connected with each source of electricity, bridging-coils connecting the sections of said divided rail with said conductors to form blocks of different electrical resistances, means movable along said track and operating to electrically connect said rails to complete the circuits through said conductors, and a resistance-indicating mechanism operated by the current passing through each of the completed circuits.

5. In an electrical signal system, a railway-track, a dynamo, a circuit connected with said dynamo and extending along said track, bridging-coils interposed at intervals in said circuit to divide the same into blocks of different electrical resistances, means movable along said track and operating to close said circuit through said blocks, and a resistance-indicating mechanism connected with said dynamo.

6. In an electrical signal system, a railway-track with one of its rails electrically continuous and the other one divided by insulating-breaks into sections, a dynamo with its field-coil connected with said continuous rail, a conductor extending along said track and connected with the field-coil of said dynamo, bridging-coils connecting said conductor with said divided rail to form blocks of different resistances, means movable on said track and operating to complete the circuit, and a resistance-indicating mechanism connected with the main circuit of said dynamo.

7. In an electrical signal system, a railway-track with one of its rails electrically continuous and the other one divided by insulating-breaks into sections, a dynamo at each end of said track with its field-coil connected with said electrically-continuous rail, separate conductors respectively connected with the field-coil of each dynamo and extending along said track, bridging-coils connecting each of the sections of said divided rail with both conductors to form blocks of different electrical resistances, means movable along said track and operating to complete both circuits, and resistance-indicating mechanisms respectively connected with the main circuit of each dynamo.

8. In an electrical signal system, a railway-track, dynamos at opposite ends of said track and having a circuit common to both, bridging-coils interposed in said circuit to form blocks of different resistances, means movable on said track and operating to close said circuit through said blocks, and a resistance-indicating mechanism connected with each of said dynamos.

9. In an electrical signal system, a railway-track, shunt-wound dynamos at opposite ends of said track and having their shunt-coils connected in series and extending across the entire circuit, bridging-coils interposed in the circuit formed by the connection between the shunt-coils of the dynamos and forming blocks of different resistances, means movable on said track and operating to close said shunt-circuit through said blocks, and a resistance-indicating mechanism operated by the current passing through the main circuit of each dynamo.

10. In an electrical signal system, a railway-track, a source of electricity, a circuit connected with said source of electrictiy and extending along said track, means for dividing said circuit into blocks of different electrical resistances, means movable along said track and operating to close said circuit through said blocks, and resistance-indicating mechanism operated by a current passing through said circuit.

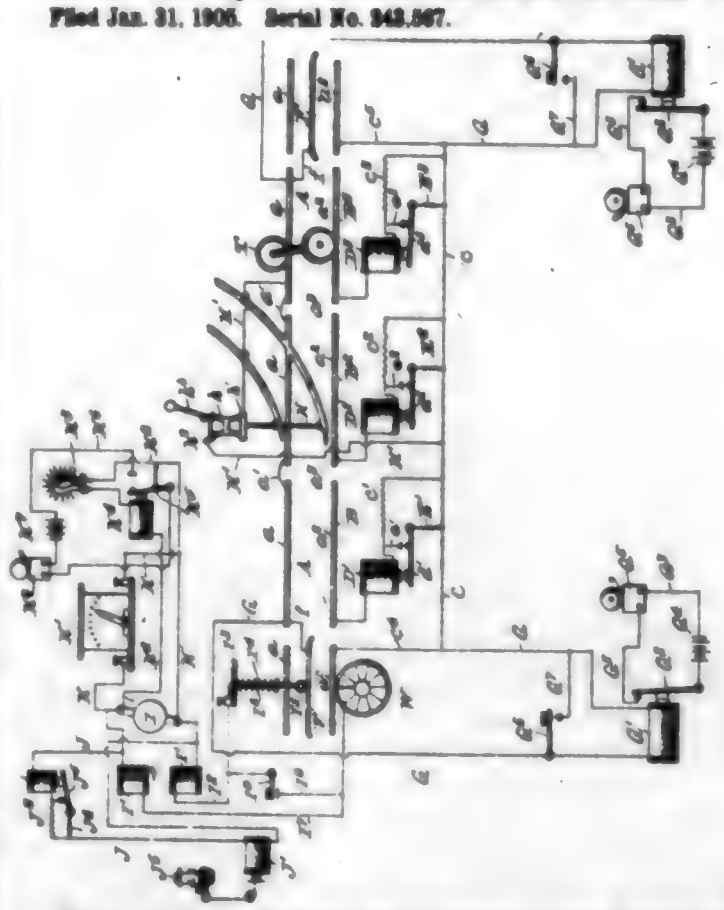
11. In an electrical signal system, a railway-track, a shunt-wound dynamo, a circuit connected with the shunt-coil of said dynamo and extending along said track, means for dividing said circuit into blocks of different electrical resistances, means movable on said track and operating to close said circuit through said blocks, and resistance-indicating mechanism operated by the current passing through the main circuit of said dynamo.

12. In an electrical signal system, a railway-track, a shunt-wound dynamo, a circuit connected with the shunt-coil of said dynamo and extending along said track, means movable on said track and operating to short-circuit said circuit, and resistance-indicating mechanism operated by the current passing through the main circuit of said dynamo.

13. In an electrical signal system, a railway-track, a source of electricity, a circuit connected with said source of electricity extending along said track and adapted to be short-circuited by an obstruction on said track, means for dividing said circuit into blocks of different electrical resistances, and resistance-indicating mechanism operated by a current passing through said circuit.

14. In an electrical signal system, a railway-track, a shunt-wound dynamo, a circuit extending along said track and adapted to be short-circuited by an obstruction on said track and connected with the shunt-coil of said dynamo, and resistance-indicating mechanism operated by the current passing through the main circuit of said dynamo.

814,808. **ELECTRICAL SIGNAL SYSTEM.** Fred Lachott, San Antonio, Tex., assignor of one-half to Otto Koehler, San Antonio, Tex. Filed Jan. 31, 1905. Serial No. 243,567.



Claim.—1. In an electrical signal system, a main electrical circuit, means for connecting said circuit with a source of electricity, bridging-coils of comparatively low resistance with the circuit through the same normally broken interposed at intervals in said main circuit to form multiple connections in the same, coils of comparatively high resistance with the circuit through the same complete forming connections in said main circuit parallel with said low-resistance coils, means operated by the current passing through a high-resistance coil for completing the circuit through the adjacent low-resistance coil, and indicating mechanism operated by the current passing through said main circuit.

2. In an electrical signal system, a main electrical circuit, means for connecting said circuit with a source of electricity, bridging-coils of comparatively low resistance with the circuit through the same normally broken interposed at intervals in said main circuit to form multiple connections across said main circuit and forming blocks of different electrical resistances therein, coils of comparatively high resistance with the circuit through the same complete forming connections in said main circuit parallel with said low-resistance coils, means operated by the current passing through the high-resistance coil in a block for completing the circuit through the parallel low-resistance coil in the same block, and indicating mechanism operated by the current passing through the main circuit.

3. In an electrical signal system, a railway-track with one of its rails electrically continuous and the other one divided by insulating-breaks into blocks, an electrical conductor extending along said track, comparatively low resistance coils with their circuits interrupted respectively connecting the insulated rail-sections with said conductor, comparatively high resistance coils forming parallel connections with said low-resistance coils between the insulated rail-sections and the conductor, means operated by the current passing

through the high-resistance coil in a block for closing the circuit through the parallel low-resistance coil in the same block, means for connecting said conductor and said electrically-continuous rail with a source of electricity, and indicating mechanism operated by the current passing through said conductor and said electrically-continuous rail.

4. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, means for dividing said circuit into blocks of different electrical resistances, a carrier movable on said track, a normally incomplete circuit on said carrier, means for connecting said circuits to form a complete circuit, a source of electricity interposed in the completed circuit, and resistance-indicating mechanism operated by a current passing through the completed circuit.

5. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, means for dividing said circuit into blocks of different electrical resistances, a carrier movable on said track, a normally incomplete circuit on said carrier, means for connecting said circuits to form a complete circuit, a source of electricity on said carrier and connected with the incomplete circuit on said carrier, and resistance-indicating mechanism on said carrier and operated by a current passing through the completed circuit.

6. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, bridging-coils interposed at intervals in said circuit to divide the same into blocks of different electrical resistances, a carrier movable on said track, a normally incomplete circuit on said carrier, means for connecting said circuits to form a complete circuit, a source of electricity interposed in the completed circuit, and resistance-indicating mechanism operated by a current passing through the completed circuit.

7. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, bridging-coils interposed at intervals in said circuit to divide the same into blocks of different electrical resistances, a carrier movable on said track, a normally incomplete circuit on said carrier, means for connecting said circuits to form a complete circuit, a source of electricity on said carrier and connected with the incomplete circuit on said carrier, and resistance-indicating mechanism on said carrier and operated by a current passing through the completed circuit.

8. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, means for varying the resistance of said circuit, a carrier movable on said track, a normally incomplete circuit on said carrier, indicating mechanism operated by a current passing through said circuit on the carrier, means for connecting said circuits to form a complete circuit, and a source of electricity interposed in the completed circuit.

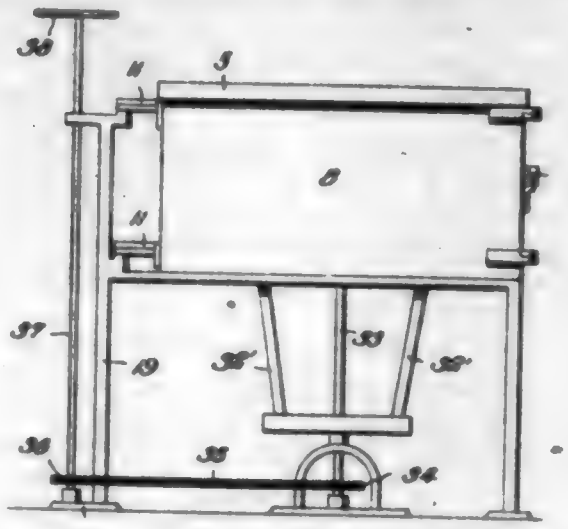
9. In an electrical signal system, a railway track, a normally incomplete circuit extending along said track, means for varying the resistance of said circuit, a carrier movable on said track, a shunt-wound dynamo on said carrier having its shunt-circuit normally incomplete, indicating mechanism operated by the current passing through the main circuit of said dynamo, and means for completing the circuit through the shunt-circuit of the dynamo and the normally incomplete circuit extending along the track.

10. In an electrical signal system, a railway-track, a normally incomplete circuit extending along said track, a branch circuit in multiple connection across said normally incomplete circuit, signal mechanism operated by a current passing through said branch circuit, a switch controlling said branch circuit, a carrier movable on said track, a normally incomplete circuit on said carrier, signal mechanism on said carrier and operated by a current passing through said incomplete circuit on the carrier, a switch controlling the incomplete circuit on the carrier, and means for connecting said incomplete circuits to form a complete circuit.

814,304. MOLD. Louis Landmann, Nevada, Mo. Filed May 3, 1906. Serial No. 315,673.

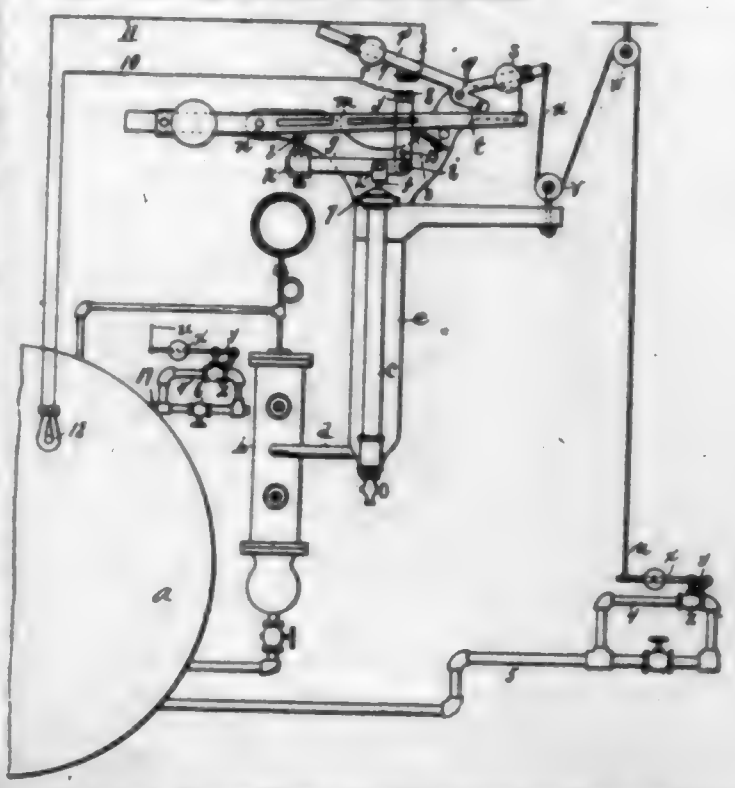
Claim.—1. An expansible core for molds comprising separable sections having a passage therewithin, an expanding member disposed within the passage, spring-arms fixed at their lower ends and connected at their upper ends with the sections to hold said sections yieldably against separation and an expanding member located within the passage and operable to move the section against the action of the spring-arms.

2. In an apparatus of the class described the combination with a frame, of a core located within the frame, said core comprising separable sections having a passage therewithin, a revoluble expanding member located within the passage and arranged for rotation to move the sections away from each other, spring-arms connected at their upper ends with the sections, a revoluble shaft connected with the expanding member, a disk mounted upon the shaft for rotation of the latter therewithin, said arms being connected with the disk and being arranged to hold the sections yieldably against separation and means for revolving the shaft to separate the sections.



3. The combination with a molding apparatus including a frame and an expansible core located within the frame, of a compressible filling-piece disposed between the core and the frame.

814,305. BOILER-FEEDER. Frederick Leadbeater, Detroit, Mich. Filed Apr. 24, 1905. Serial No. 257,090.



Claim.—1. The combination with a boiler of a valve, an expansible tube communicating with the boiler, a lever actuated by the expansion of said tube, and a counterbalanced rocking device contacting with said lever and connected with said valve to relieve the pressure upon said lever.

2. The combination with a boiler provided with a water-column and with a feed-pipe, of a valve in the feed-pipe, an expansible tube communicating with the water-column, a primary lever actuated by the expansion of said tube, an additional lever actuated by the movement of the first-named lever, a counterbalance device actuated by the movement of the said additional lever, and means to connect said device with said valve.

3. The combination with a boiler provided with a water-column and with a feed-pipe, of a valve to control the feed-pipe, an expansible tube communicating with the water-column, a support for said tube, contact-levers fulcrumed on said support actuated by the expansion of said tube, said levers comprising a counterbalance-lever, and means to connect said counterbalance-lever with said valve.

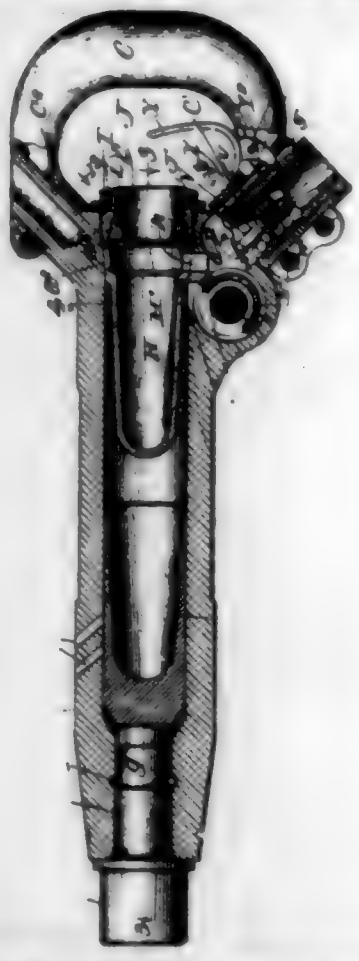
4. The combination with a boiler provided with a feed-pipe, a valve in the feed-pipe, an expansible tube communicating with the boiler, a system of levers actuated by the expansion of said tube, said

system of levers comprising a counterbalance device connected with said valve, and an electrical circuit provided with a signal device, said circuit provided with contacts, whereby the circuit will be closed and opened by the operation of the counterbalance device.

5. The combination with a boiler provided with a water-column and with a feed-pipe, of a valve in the feed-pipe, an expansible tube communicating with the water-column, a primary lever actuated by the expansion of said tube, an additional lever actuated by the movement of the first-named lever, a counterbalance device actuated by the movement of the said additional lever, and means to connect said device with said valve, the primary lever provided with an adjustable contact-slide.

6. The combination with a boiler provided with a feed-pipe, of a valve in the feed-pipe, an expansible tube communicating with the boiler, and a system of levers actuated by the expansion of said tube, said system of levers comprising a counterbalance device consisting of a two-armed rocking lever provided with weights adjustable upon said arms and with a contact-point.

814,306. PNEUMATIC HAMMER. Axel Lyndahl, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed Aug. 27, 1904. Serial No. 222,455.



Claim.—1. The combination with a barrel, of a plunger therein, an air-supply pipe, a throttle-valve, and a controlling-valve acting to control the supply of air to both ends of the barrel, said barrel being provided with an air-chamber in communication by a branch passage with the air-supply passage between the throttle-valve and the controlling-valve, said air-chamber being adapted to contain a reserve quantity of air under pressure in volume sufficient to compensate for any momentary deficiency in the air-supply.

2. The combination with a barrel, of a plunger therein, and a controlling-valve, said plunger having a cavity or recess in its inner end and the barrel having at its inner end an air-displacing projection, said projection being hollow and forming an air-chamber which is in communication with the air-supply passage outside of the controlling-valve and is adapted to contain a reserve supply of air under pressure sufficient in quantity to compensate for momentary deficiency in the air-supply.

3. The combination with a barrel, of a plunger therein, provided with a recess or cavity in its inner end, a controlling-valve, the barrel being provided at its inner end with an inwardly-projecting shell which closes said inner end of the barrel and forms an air-displacing projection, said shell also constituting part of an air-chamber which is in communication with the air-supply passage outside of the controlling-valve and is adapted to contain a reserve quantity of air under pressure sufficient in volume to compensate for momentary deficiency in the air-supply from the air-supply passage.

4. The combination with a barrel, of a plunger therein provided with a recess or cavity at its inner end, and a controlling-valve, said barrel being provided at its inner end with an inwardly-projecting shell, the base of which is located and secured within the inner end of the barrel, a disk or plate closing the inner end of said shell and means for securing said shell and said disk or plate in place within the barrel, said shell and disk forming an air-chamber which is in communication with the air-supply passage outside of the controlling-valve and which is adapted to contain a reserve quantity of air under pressure designed to compensate for any momentary deficiency in the supply of air to the controlling-valve.

5. The combination with a barrel, of a plunger therein provided with a recess or cavity in its inner end, a shell which closes the inner end of the bore of the barrel and fits at its base in the bore of the same, and means for securing the said shell in the barrel comprising a split thimble having screw-threaded engagement with the bore of the barrel, a sleeve having an exterior conical surface engaging an interior conical surface on the thimble, and a nut having screw-threaded engagement with the sleeve and provided with a conical surface engaging an interior conical surface on the said thimble.

6. The combination with a barrel, of a plunger therein provided with a recess or cavity in its inner end, a shell which closes the said inner end of the barrel and projects into said cavity when the plunger is at the inward limit of its movement, the base of said shell being located and secured within the bore of the barrel, a disk or plate located within the bore of the barrel in contact with said inner end of said shell and means for clamping said shell and said disk in place within the barrel, embracing a split thimble having screw-threaded engagement with the barrel and provided with an interior conical surface, a sleeve having a conical surface at its inner end, and a nut engaging the outer end of the sleeve.

7. The combination with a barrel, of a plunger therein provided with a recess or cavity in its inner end, said barrel having a bore which extends through the inner end of the barrel and has a tapered annular surface, a shell which closes the inner end of the barrel and is adapted to project into said cavity when the plunger is at the inward limit of its movement, said shell being provided at its base with a conical surface adapted to engage the conical surface in the bore, a disk inserted in the end of the barrel in contact with the inner margin of said shell, a split thimble having screw-threaded engagement with the inner end of the barrel and bearing on said plate, a sleeve having a conical surface engaging the conical surface of the thimble, and a nut having screw-threaded engagement with said sleeve.

8. The combination with a barrel, of a plunger therein provided with a recess or cavity in its inner end, a hollow shell which closes the inner end of the barrel and is adapted to form an air-displacing projection, said shell being provided at its base with an inwardly-tapered conical surface adapted to engage a corresponding conical surface in the bore of the barrel, and a disk inserted in the end of the barrel in contact with the inner margin of said shell and forming with the shell an air-chamber, said air-chamber being connected with the air-supply passage of the tool by means of a port extending through the base portion of said shell and through the adjacent part of the wall of the barrel.

9. The combination with a barrel, of a plunger therein provided with a recess or cavity in its inner end, a shell for closing the inner end of the barrel and which is adapted to project into the barrel to form an air-displacing projection, said shell being provided at its base with an inwardly-tapered conical surface adapted to engage a corresponding conical surface in the bore of the barrel, a disk inserted in the bore of the barrel in contact with the inner margin of said hollow shell and a thimble having screw-threaded engagement with the inner end of the barrel and bearing on said plate, said barrel being provided with a controlling-valve chamber, a controlling-valve therein, and an air-supply passage communicating with said controlling-valve chamber, the base of said shell and the adjacent part of the barrel being provided with an air-port which communicates with said air-supply passage.

10. The combination with a barrel, and a plunger therein provided with a recess or cavity in its inner end, said barrel having at its inner end an air-displacing projection adapted to project into said cavity in the plunger when the latter is at the inward limit of its stroke, and a controlling-valve comprising a valve-chamber provided with an air-supply passage, and with two admission-ports communicating with the inner end of the barrel, and two valve-pistons in said valve-chamber, both of which control the admission of air to the inner end of the barrel through said admission-ports.

11. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber, two endwise-sliding valve-pistons located in said valve-chamber, and means for giving

endwise movement to said valve-pistons, comprising passages connected with the ends of said valve-chamber and opening into the interior of the barrel by ports which are uncovered when the plunger is at the outward limit of its movement, an exhaust-passage for the inner end of the barrel which opens into the barrel through a port located in position to be covered by the piston before the same reaches the inward limit of its stroke, and an admission-port opening into the inner end of the barrel and connected with the valve-chamber between the inner ends of the said pistons.

12. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with an air-supply passage, and with admission and exhaust ports, including two admission-ports which are connected with the barrel by an admission-passage which opens into the inner end of the barrel, and an exhaust-port for the inner end of the barrel which communicates with the barrel by a passage opening into the barrel through a port located at a greater distance from the inner end of the barrel than the admission-passage, two endwise-sliding valve-pistons the inner ends of which control the said two admission-ports and are subject to pressure of compressed air within the barrel in the back stroke of the plunger, and means for connecting the outer ends of said valve-chamber exterior to the said valve-piston alternately with said air-supply passage and with the outer air.

13. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber with an air-supply passage, and with admission and exhaust ports connected with the inner and outer ends of the barrel, the exhaust-port for the inner end of the barrel being located at a greater distance from the inner end of the barrel than the admission-port at such inner end of the barrel, two endwise-sliding valve-pistons located in said valve-chamber, the inner ends of said pistons being subject to pressure of air in the inner end of the barrel, and means for alternately connecting the outer ends of said valve-chamber with the air-supply passage and with the outer air comprising a passage leading from each end of said valve-chamber and opening into the barrel through two ports, one of which is uncovered by the piston in the outward limit of its movement and the other uncovered by the piston when at the inward limit of its movement, and ports leading through the wall of the barrel to the outer air which are uncovered by the piston when at the inward limit of its movement.

14. The combination with a barrel, and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central air-admission passage communicating with an admission-port which opens into the inner end of the barrel, with two ports located at opposite sides of said air-admission passage and connected with an air-supply passage, with an exhaust-port communicating with the inner end of the barrel, and with an admission and exhaust port communicating with the outer end of the barrel, and two endwise-sliding piston-valves in said chamber, the inner or adjacent ends of which control the passage of air from said air-supply passage through said admission-ports to the admission-port leading to the inner end of the barrel, one of which controls the passage of air through the exhaust-passage leading from the inner end of the barrel and the other of which controls the passage of air from said air-supply passage to the outer end of the barrel and also controls the exhaust from the outer end of the barrel.

15. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central admission-passage communicating with the inner end of the barrel, with two annular admission-recesses located at either side of the said central admission-passage, and communicating with an air-supply passage, said valve-chamber also having between one of said annular admission-recesses and one end of the valve-chamber two annular exhaust-recesses, one of which communicates with the inner end of the barrel by an exhaust-port, and the other of which communicates with the outer air and two endwise-sliding valve-pistons in said chamber the inner ends of which control the passage of air from the said air-supply passage to said central admission-passage, one of said valve-pistons having a flange by which communication between said exhaust-recesses for the inner end of the barrel is alternately opened and closed.

16. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central admission-passage communicating with the inner end of the barrel, with two annular recesses located at opposite sides of said admission-passage and communicating with an air-supply passage, with an annular recess communicating with the inner end of the barrel by an exhaust-port located at a distance from the inner end wall of the same and with an annular recess communicating by an admission and exhaust-port with the outer end of the barrel and with an annular recess communicating with the outer air, and two endwise-sliding piston-valves, the adjacent parts of which control the passage of air from said air-supply passage to said central admission-passage, one of which controls the exhaust-passage leading from the inner end of the barrel, and the other of which controls the passage of air from said air-supply passage to the outer end of the barrel and also controls the exhaust from the outer end of the barrel, and means for connecting the outer ends of said valve-chamber alternately with the air-supply passage and with the outer air.

17. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central admission-passage communicating with the inner end of the barrel, with two annular recesses located at opposite sides of said admission-passage, and communicating with an air-supply passage, with an annular recess communicating by an exhaust-port with the inner end of the barrel, and with an annular admission and exhaust passage communicating with the outer end of the barrel and two endwise-sliding piston-valves the inner or adjacent parts of which control the passage of air from the air-supply passage to said admission-ports leading to the inner end of the barrel, one of which controls the exhaust-passage leading from the inner end of the barrel, and the other of which controls the passage of air from said air-supply passage to the outer end of the barrel and also controls the exhaust from the outer end of the barrel.

18. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central admission-passage communicating with the inner end of the barrel, with two annular recesses located at opposite sides of said admission-passage and communicating with an air-supply passage; said valve-chamber also having between one of said annular recesses and the end of the barrel two annular exhaust-recesses, one of which communicates by an exhaust-port with the inner end of the barrel and the other with the outer air, said valve-chamber also having between the other of said air-admission recesses and the opposite end of the barrel an annular admission and exhaust recess communicating by a passage with the outer end of the barrel, and an adjacent annular exhaust-recess communicating with the outer air, and two valve-pistons in said chamber, the inner ends of which control the passage of air from said air-supply passage to said admission-ports leading to the inner end of the barrel, one of said valve-pistons having a flange by which communication between said exhaust-recesses for the inner end of the barrel are alternately brought into and cut off from communication with each other, and the other one of said pistons having an annular flange adapted to open and close communication between said admission and exhaust recess for the outer end of the barrel and the said exhaust-recess adjacent thereto.

19. The combination with a barrel and a plunger therein, of a controlling-valve comprising a valve-chamber provided with a central admission-passage communicating with the inner end of the barrel, with two annular admission-recesses located at opposite sides of said admission-passage and communicating with an air-supply passage, said valve-chamber also having an annular exhaust-recess communicating by an exhaust-port with the inner end of the barrel and adjacent thereto an exhaust-recess connected with the outer air, an annular admission and exhaust recess communicating with the outer end of the barrel, and an annular exhaust-recess adjacent to said admission and exhaust recess communicating with the outer air, and two valve-pistons in said chamber, the inner ends of which control the passage of air from said air-supply passage to the central admission-passage leading to the inner end of the barrel, and the outer ends of which are adapted to slide in cylindric seats in the outer ends of the valve-chamber, one of said valve-pistons being provided with an annular flange which controls the exhaust-passages communicating with the inner end of the barrel, and the other of said valve-pistons being provided with a flange controlling the admission of air from the said supply-passage to the outer end of the barrel, and means for bringing the outer ends of the valve-chamber exterior to the outer ends of the valve-pistons alternately in communication with said air-supply passage and with the outer air, said exhaust-port at the inner end of the barrel being located at a greater distance from the inner end of the barrel than the admission-port.

20. The combination with a barrel and a plunger therein, of a valve-casing on the barrel provided with a cylindric bore and a valve-bushing located in said chamber and provided with an interior valve-chamber, said valve-bushing having on its outer surface circumferential and longitudinal ribs forming with the wall of the valve-casing a plurality of exterior spaces or chambers communicating with the inner and outer ends of the barrel, with an air-supply passage and with

the outer air, said bushing being also provided with a plurality of admission and exhaust ports communicating with said exterior chambers.

21. The combination with a barrel and a plunger therein, of a valve-casing on the barrel provided with a cylindric bore and a valve-bushing located in said chamber and provided with an interior valve-chamber, said valve-bushing having on its outer surface circumferential and longitudinal ribs forming with the wall of the valve-casing a plurality of exterior spaces or chambers communicating with the air-supply passage, with the interior of the barrel, and with the outer air, said bushing being also provided with a plurality of admission and exhaust ports communicating with said exterior chambers, and with interior annular grooves or recesses communicating with said admission and exhaust ports.

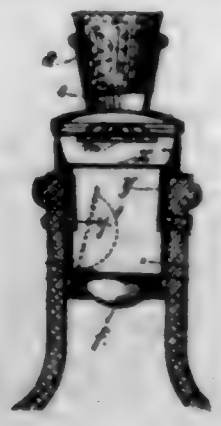
22. The combination with a barrel and a plunger therein, of a valve-casing attached to said barrel, a valve-bushing located within said casing, said valve-bushing being provided with a valve-chamber and on its outer face with circumferential and longitudinal ribs forming with the surrounding wall of the valve-casing, a plurality of exterior chambers, including a central chamber which is in communication with the inner end of the barrel by an admission-port, a central chamber which is in communication with the air-supply passage, two external chambers one communicating with the inner end of the barrel by an exhaust-passage, and the other with the outer end of the barrel by an exhaust and admission passage and with two chambers which communicate with the outer air through exhaust-ports in the valve-casing, said bushing also having a central admission-passage, two annular admission-grooves located at either side of said central admission-passage, two annular exhaust-recesses located adjacent to each other for the exhaust from the inner end of the barrel, an annular admission and exhaust recess for the outer end of the barrel and an annular exhaust-recess adjacent thereto for the outer end of the barrel, and two valve-pistons in said valve-chamber, the inner ends of which are adapted to control the passage of air from said annular admission-passages to the central admission-passage and which are provided with annular flanges controlling the exhaust from the inner end of the barrel, and the admission and exhaust from the outer end of the barrel.

23. The combination with a barrel, of a plunger therein, a valve-casing attached to the barrel and provided with a cylindric bore, a valve-bushing located in said casing, cap-plates closing the ends of said valve-bushing, the said valve-casing being provided at its opposite ends with screw-threaded thimbles inserted in the open ends thereof and bearing against the said cap-plates, and means for holding each of said thimbles from turning in the end of the casing, including a sleeve having a conical inner end engaging a conical inner surface on the said thimbles, and a nut having screw-threaded engagement with the outer end of said sleeve and having a conical inner end adapted to engage a conical inner surface on the said thimble, said thimble being split to permit expansion of the same.

24. The combination with a barrel, and a plunger therein, said barrel being provided at its base or inner end with two divergent integral arms each extending outward from the barrel at an angle to the central axis thereof, and a handle having at its ends divergent tubular sockets in line with and adapted to receive said divergent arms.

25. The combination with a barrel, and a plunger therein, said barrel being provided at its base or inner end with two integral arms each extending at an angle to the central axis of the barrel, and a handle having at its ends sockets adapted for detachable engagement with said arms, one of said sockets having a detachably-secured separable section.

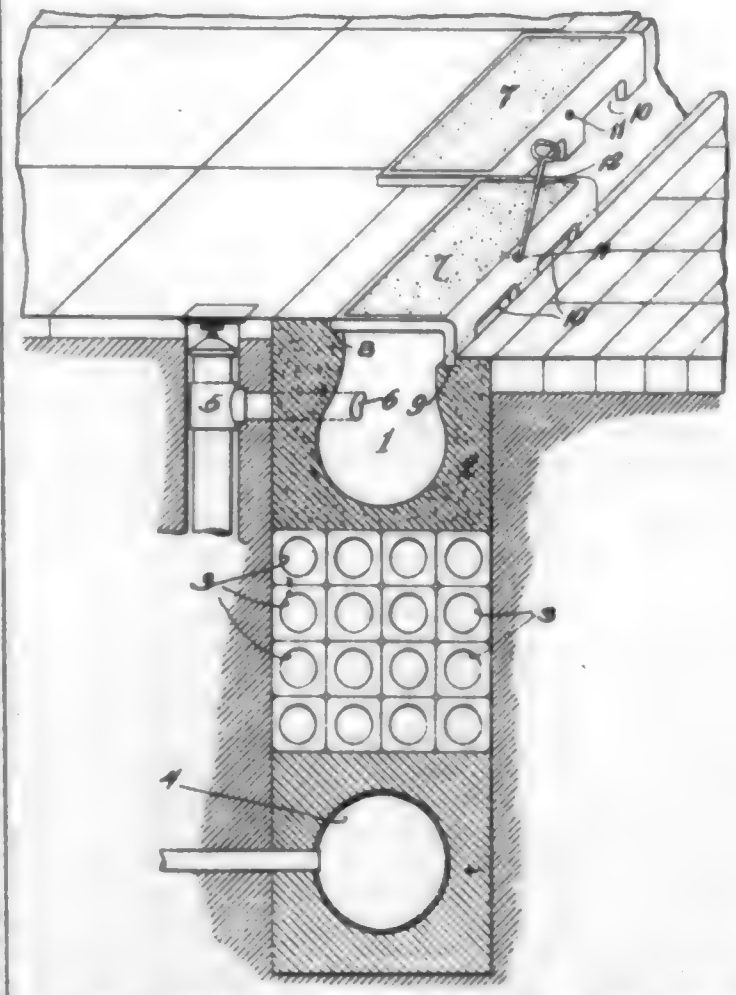
814,807. **DEVICE TO PREVENT REFILLING OF BOTTLES.** EDWARD MAHONNEY, San Francisco, Cal. Filed May 15, 1905. Serial No. 260,366.



Claim.—1. In a device for preventing refilling of a bottle, a shell having a cylindrical body portion to fit into the neck of the bottle and a head of greater diameter than the mouth of the bottle to rest on and cover it and provided with an opening in the bottom of the body portion, a valve-seat around said opening, a hinged upwardly-opening valve having a cup-shaped body and a flange to fit the valve-seat, the top of the shell being provided with an outlet-opening, and means for fixing the shell in the neck of the bottle.

2. The combination with a bottle, of a shell fixed in the neck thereof having an enlarged top adapted to seat on the rim and close the mouth of the bottle and a body portion extending into the passage through the neck and provided with an opening in the lower end, a valve-seat around said opening, a hinged valve seated thereon and opening upwardly therefrom, the shell having an opening in the top and a standing rim around said opening, and a guard fixed within the shell between the said opening and the valve.

814,308. **CURB-CONDUIT.** JAMES C. MARRIOTT, New Dorp, N. Y. Filed May 3, 1905. Serial No. 258,314.



Claim.—1. The combination of a curb-conduit and a curb-plate cover therefor, said conduit having support for the free ends of said cover and having a clear space in rear of the front of said cover to permit rearward movement thereof, said cover having a top portion and a front or curb surface, both resting on the said supports of the conduit, the sides of said cover being free.

2. The combination of a curb-conduit and a curb-plate cover therefor, said conduit having supports for the free ends of said cover and having a clear space in rear of the front of said cover to permit rearward movement thereof, said cover having a top portion and a front or curb surface, both resting on the supports of the conduit, said front portion having an opening for the entrance of surface-water, the sides of said cover being free.

3. The combination of a curb-conduit and a curb-plate cover therefor, said conduit having supports for the free ends of said cover and having a clear space in rear of the front of said cover to permit rearward movement thereof, said cover having a top portion and a front or curb surface, both resting on the supports of said conduits, and having also means for engagement by a manipulating tool, the sides of said cover being free.

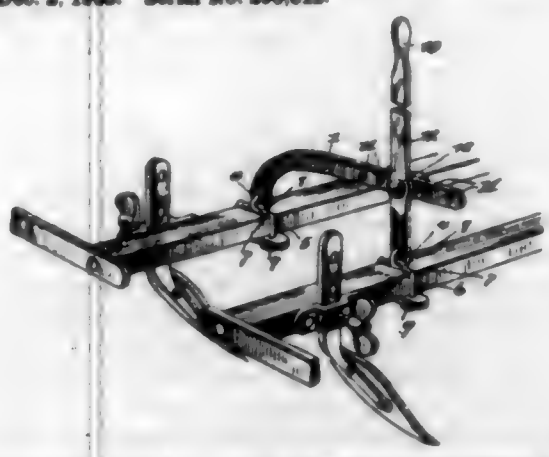
4. The combination of a curb-conduit and a curb-plate cover therefor, said conduit formed in proximity to the curb of a street, its front being approximately at the street-level and its rear being approximately at the sidewalk-level, said rear and front portions having depressed shoulders upon which the top and front portions of said cover rest, said cover having a top portion forming substantially

a portion of the sidewalk and a front portion forming a curb front, the sides of said cover being free, and the portion of the conduit in rear of said front portion of the cover being clear to permit rearward movement of said cover.

5. The combination of a curb-conduit and a series of curb-plate covers therefor, said conduit having supports for the free ends of said covers and having a clear space in rear of the fronts of said covers to permit rearward movement thereof, said covers having each a top portion and a front portion forming a curb front, both resting on the said supports of the conduit, the adjacent edges of the several covers being disengaged as regards rearward movement of one of said covers with respect to the others and the conduit.

6. The combination of a curb-conduit and a series of curb-plate covers therefor, said conduit having supports for the free ends of said covers and said covers having each a top portion and a front portion forming a curb front, both resting on the said supports of the conduit, certain of said covers locked to the conduit as regards longitudinal motion with respect thereto, and certain of said covers being rearwardly movable with respect to the other covers and the conduit, the sides of such rearwardly-movable covers being disengaged from the other covers and the portions of the conduit in rear of such rearwardly-movable covers being clear, to permit such rearward movement.

814,309. **CULTIVATOR.** WILLIAM A. MARTIN, Waxahachie, TEX. Filed Dec. 2, 1905. Serial No. 290,012.



Claim.—1. An attachment for cultivators comprising in its entirety an arm having its major portion disposed in a horizontal plane and having one end curved downwardly and secured to one of the cultivator-beams, a lever secured to the other beam of the cultivator and engaging said horizontal portion of the arm, and means for securing said lever and arm together.

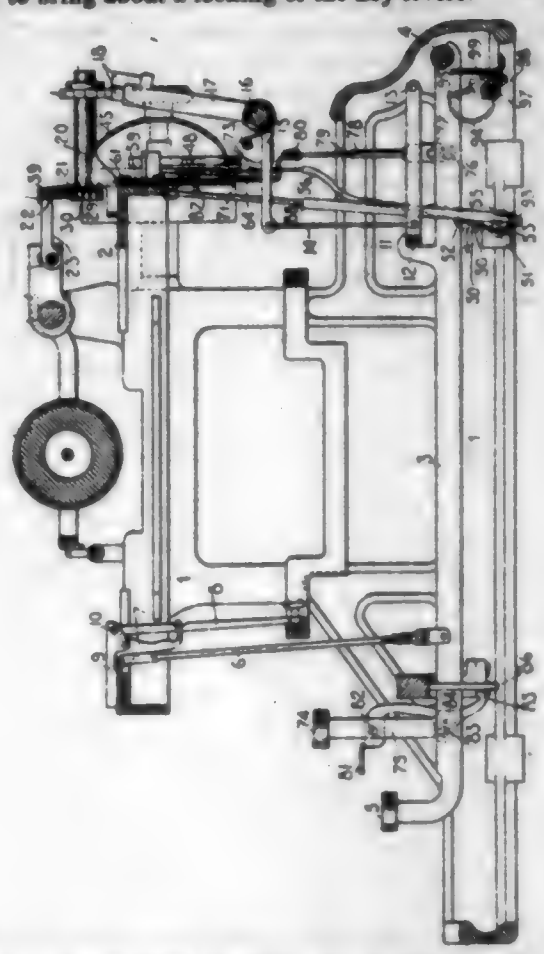
2. An attachment for cultivators, comprising an arm having its major portion extending in a horizontal plane and having one end secured to one of the cultivator-beams, and a lever lying in the same plane throughout having one end secured to the other cultivator-beam and having an intermediate portion adjustably secured to said horizontal portion of the arm.

814,310. **TYPE-WRITING MACHINE.** HENRY W. MERRITT, Springfield, Mass., and WALTER J. BARRON, Brooklyn, N. Y., assignors to Densmore Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Nov. 9, 1901. Serial No. 81,734.

Claim.—1. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, means for automatically locking the key-levers against movement, adjustable means for determining at what point in the travel of the carriage said key-levers shall be locked and a second set of locking means which operate independently of the adjustable means to automatically lock the key-levers against movement at the end of a line.

2. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar, means for automatically moving said locking-bar to lock the key-levers against movement, adjustable means for determining at what point in the travel of the carriage said key-levers shall be locked, and independent means which coöperate with the locking-bar and which operate independently of the adjustable means and after the operation of the adjustable means has taken place to automatically lock the key-levers against movement at the end of a line.

3. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar which extends beneath said key-levers and is adapted to lock them against movement, means for automatically moving said locking-bar to directly lock the key-levers against movement, adjustable means which are operable to bring about the locking of the key-levers at any point in the travel of the carriage as determined by the adjustment of said adjustable means, and separate means which coöperate with said locking-bar and which are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers.



4. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a swinging locking-bar which extends beneath said key-levers and is adapted to lock them against movement, means for automatically swinging said locking-bar to lock the key-levers against movement, adjustable means which are operable to bring about the locking of the key-levers at any point in the travel of the carriage as determined by the adjustment of said adjustable means, hand-operated means for swinging said locking-bar to release the key-levers, after they have been automatically locked by the adjustable means, and a second set of independent means which coöperate with the locking-bar and are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers.

5. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar which extends beneath the key-levers for automatically locking them against movement, adjustable means which are operable to bring about the locking movement of the locking-bar at any point in the travel of the carriage as determined by the adjustment of said adjustable means, separate independently-operable permanent means which coöperate with the locking-bar and which are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers, and hand-operated means for temporarily releasing the key-levers after they have been automatically locked by the adjustable means, a single movement of said hand-operated means being sufficient to effect the release of the type-carrier-actuating mechanism and the maintenance thereof released during the further movement of the carriage or until it is locked by the permanent means.

6. In a type-writing machine, the combination of a carriage, type-carriers, adjustable means for automatically locking the type-carriers against movement at any point in the travel of the carriage as determined by the adjustment of said means, means for permanently throwing said locking means out of operation and a key at the keyboard of the machine for temporarily releasing said locking means from engagement after they have been locked.

7. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a locking movement of the locking means, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

8. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a locking movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

9. In a type-writng machine, the combination of a carriage, a carriage-release key, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a locking movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, operative connections between said carriage-release key and the locking means for releasing the locking means when the carriage-release key is operated, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

10. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a lockout movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, a carriage-release key, operative connections between said carriage-release key and the locking means for releasing the locking means when the carriage-release-key is operated, permanent means which are likewise operable to effect a locking movement of the locking means, mechanism for rendering said adjustable device ineffective to lock the carriers and means controlled by the carriage-release key for releasing the locking means when the same are operated by the adjustable device, said carriage-release key and hand-operated releasing means being ineffective to release the locking means when they are locked by the permanent means.

11. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said levers to lock them against movement, an adjustable device for effecting a locking movement of said bar at any point in the travel of the carriage as determined by the adjustment of said adjustable device, permanent releasing means for permanently rendering said adjustable device ineffective to operate the locking-bar, and independent means for moving the locking-bar to the locking position when the carriage has reached the end of a line.

12. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said levers to lock them against movement, an adjustable device for effecting a locking movement of said bar at any point in the travel of the carriage as determined by the adjustment of said adjustable device, hand-operated temporary releasing means for moving the locking-bar to the unlocking position, permanent releasing means for permanently rendering said adjustable device ineffective to operate the locking-bar, and independent means for moving the locking-bar to the locking position when the carriage has reached the end of a line.

13. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means coöperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, and means coöperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line.

14. In a type-writing machine, the combination of carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means coöperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means coöperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and mechanism for disconnecting the adjustable trip from its coöperating means, to effect a movement of the locking-bar to the unlocking position.

15. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means coöperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means coöperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and mechanism for permanently rendering the adjustable trip ineffective to coöperate with its coöperating means so that the locking-bar cannot be moved to the locking position by said adjustable trip.

16. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means coöperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means coöperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, hand-operated mechanism for temporarily disconnecting the adjustable trip from its coöperating means, to effect a movement of the locking-bar to the unlocking position, and mechanism for permanently rendering the adjustable trip ineffective to coöperate with its coöperating means, so that the locking-bar cannot be moved to the locking position by said adjustable trip.

17. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, a carriage-release key, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means coöperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means coöperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and means controlled by the carriage-release key for disconnecting the adjustable trip and its coöperating means so that said means are disconnected or rendered ineffective to be engaged by the adjustable trip when the carriage-release key is operated.

18. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said trip, and means that extend to the keyboard of the machine for permanently maintaining the hook out of the path of the trip.

19. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said trip, a key-lever at the keyboard of the machine for moving the hook to one side to disconnect it from the trip, and means for permanently maintaining the key-lever depressed and the hook out of the path of the trip.

20. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, a permanent trip carried by said drum and means controlled by the permanent trip for moving the locking-bar to the locking position.

21. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage release key is operated.

22. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, a temporary release-key, intermediate connections between said temporary release-key and hook for moving the hook out of the path of the adjustable trip, a permanent

trip carried by said drum, and means controlled by the permanent trip for moving the locking-bar to the locking position.

23. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage-release key is operated, a permanent trip carried by said drum, means controlled by the permanent trip for moving the locking-bar to the locking position, a temporary release-key, intermediate connections between said temporary release-key and the hook for moving the hook out of the path of the adjustable trip, and means for automatically locking the release-key against its return movement to permanently prevent the hook from being engaged by the adjustable trip.

24. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to coöperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage-release key is operated, a temporary release-key, intermediate connections between said temporary release-key and hook for moving the hook out of the path of the adjustable trip, a permanent trip carried by said drum, means controlled by the permanent trip for moving the locking-bar to the locking position and means for automatically locking the temporary release-key against its return movement to permanently prevent the hook from being engaged by the adjustable trip.

25. In a type-writing machine, the combination of line-locking mechanism a line-lock release finger-key and key-lever for releasing said line-lock mechanism, a finger-key carried by said release-key lever and having a movement independent thereof, and means coöperating with the independently-movable key to lock the release-key against return movement, so that the line-lock mechanism will be retained out of action.

26. In a type-writing machine, the combination of line-lock mechanism, a temporary release-key and key-lever, intermediate connections between said key-lever and the line-lock mechanism for releasing the latter, a permanent release-key pivoted to said temporary-release-key lever and having a movement independently thereof, a hook carried by the permanent key, and means coöperating with the said hook to lock the temporary release-key against return movement, so that the line-lock mechanism will be retained out of action.

27. In a type-writing machine, the combination of line-lock mechanism, a temporary release-key and key-lever, intermediate connections between said key-lever and line-lock mechanism for releasing the latter, a permanent release-key which is pivoted to said temporary-release-key lever, a hook carried by the permanent release-key, and a fixed engaging device with which said hook coöperates when the permanent release-key is depressed to operate the temporary-release-key lever and from which the hook is automatically released or disengaged when the temporary release-key is depressed, whereby a depression of the temporary release-key will temporarily release the line-lock mechanism, whereas a depression of the permanent release-key will throw and permanently maintain the line-lock mechanism out of operation until the temporary release-key is again depressed.

28. In a type-writing machine, and in a line-locking mechanism, the combination with the key-levers and type-bars of a locking-bar, two separate devices connected thereto for independently operating said bar, a trip for actuating one of said separate devices, and an independent trip for actuating the other of said separate devices.

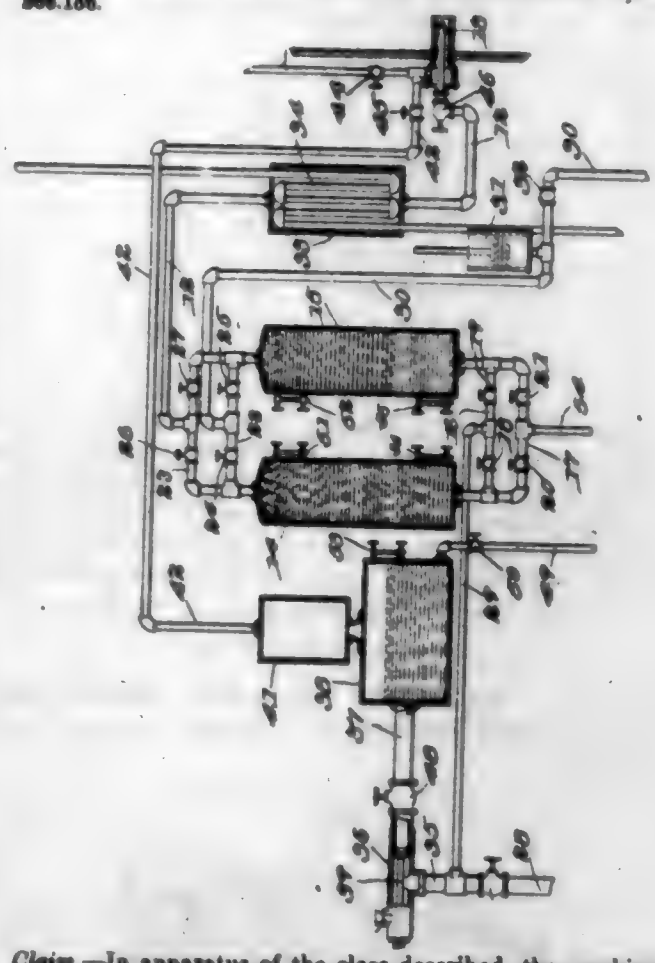
29 In a type-writing machine and in a line-locking mechanism, the combination with the key-levers and type-carriers, of a locking-bar, a hooked rod connected thereto, a spring-drum carrying an adjustable trip coacting with said hooked rod to move the locking-bar into coöperative relation with the key-levers, a second rod having a projection and also connected with said locking-bar, and a second trip on said spring-drum for actuating said second rod and again moving the locking-bar into coöperative relation with the key-levers.

30. In a type-writing machine and in a line-locking mechanism, the combination with the key-levers and type-carriers, of a locking-bar, a hooked rod connected thereto, a spring-drum carrying a trip for actuating said hooked rod, a lever connected with said hooked rod and a key connected with said lever for holding said hooked rod out of the path of rotation of the trip on the spring-drum.

31. In a type-writing machine, the combination of a carriage, a feed-rack thereon, a release-key connected to said feed-rack, a series of key-levers, a series of type-bars, a locking-bar, a hooked rod connected with said locking-bar, a carriage spring-drum carrying a trip adapted normally to engage the said hooked rod, a lever connected to said hooked rod, and a connection between said lever and said feed-rack whereby when the carriage-release key is operated the said hooked rod is moved out of the path of rotation of the trip on the spring-drum.

32. In a type-writing machine, the combination of a key-lever, a C-spring operatively connected at one end to the key-lever to normally maintain it in the elevated position and provided at its other end with a loop, and a headed screw the stem of which passes through said loop and is screwed into a fixed portion of the machine, whereby a single screw may be employed to connect the spring to a fixed portion of the machine and to regulate the tension of the spring.

814,811. HYDROCARBON-FUEL-FEEDING APPARATUS. REUBEN C. NELSON, Healdsburg, Cal. Filed June 20, 1906. Serial No. 322,186.

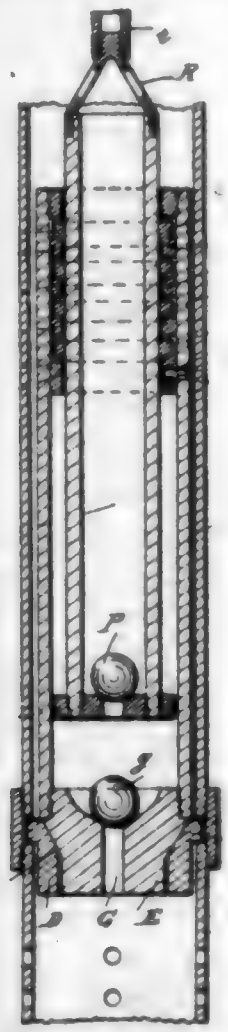


Claim.—In apparatus of the class described, the combination with a pair of oil-tanks, of an oil-supply pipe having valved connections with both tanks, a water-discharge pipe having valved connections with the lower ends of both tanks, a water-pressure-supply pipe having valved connections with the lower ends of the tanks, a service-pipe having valved connections with the upper ends of both tanks, and through which the oil in said tanks is forced, a burner with which said pipe communicates, a heating device connected in the service-pipe, a water-actuated air-injector, a separating-tank into which said injector discharges, a compressed-air tank or reservoir above the separating-tank, and serving to receive the air therefrom, an air-supply pipe leading from the tank or reservoir to the burner and having a governing-valve, a discharge-pipe leading from the air and water separating tank, and a steam-pipe, also, having a valved connection with the burner.

814,812. PUMP. ERVIN M. NEVINS, Beaumont, Tex., assignor to Acme Manufacturing and Supply Company, Beaumont, Tex. Filed Jan. 4, 1905. Renewed Dec. 21, 1905. Serial No. 292,738.

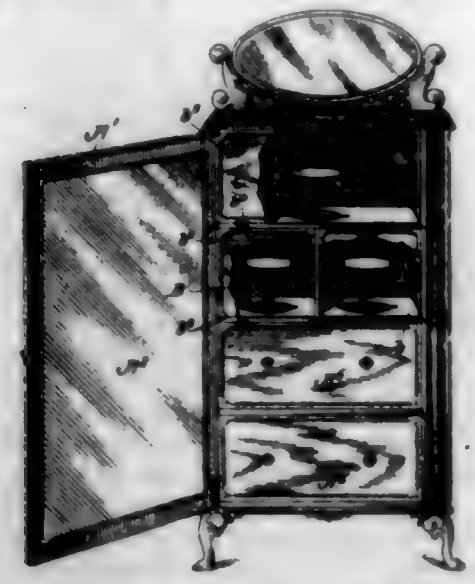
Claim.—1. In a pump, the combination, with a pump-barrel provided with an air-outlet passage in its side wall, of a ring secured inside the upper part of the said barrel and provided with a valve-chamber which communicates with the said outlet-passage, said ring

having also a valve-seat and an air-passage, an air-relief valve normally resting on the said seat, and a pump-plunger slidable in the said barrel.



2. In a pump, the combination, with a pump-barrel provided with a suction-valve at its lower part and a series of annular chambers and rings at its upper part, of a slidable pump-plunger provided with a delivery-valve, and packing-rings arranged in the said chambers and fitting around the said plunger and provided with seats at their lower edges which rest on the said rings, said packing-rings being free to rise when the pressure in the pump-barrel is excessive.

814,313. HAT-HOLDER FOR LADIES' DRESSING-CASES. Sallie I. Norton, Washington, D. C. Filed Sept. 22, 1905. Serial No. 279,095.



Claim.—1. A dressing-case provided with a hat-compartment, the bottom of said compartment being provided with a countersunk recess, a hat-support rising from such countersunk recess and means for holding the hat-support within such recess substantially flush with the bottom of the compartment.

2. A dressing-case provided with a hat-compartment, a hat-support rising from the bottom of such compartment and comprising a hat-supporting plate, a spring, and means for locking the hat-supporting plate in inoperative position substantially flush with the upper surface of the bottom of the hat-compartment.

3. A dressing-case provided with a hat-compartment, the bottom of which is provided with a countersunk recess, a spring secured at one end within such recess, a hat-supporting plate secured to the other end of said spring and means for locking the spring and plate in such countersunk recess with the surface of the plate substantially flush with the top surface of the bottom of the compartment, whereby the compartment may be used either as a hat-compartment or as an ordinary drawer.

4. A dressing-case provided with a hat-compartment adapted to slide in and out of such case, the bottom of such compartment being provided with a recess, a hat-support rising from such recess and a locking device for locking the hat-support in inoperative position with its top portion substantially flush with the upper surface of the bottom compartment, whereby the compartment may be used either as a hat-compartment or an ordinary drawer.

5. A dressing-case provided with a hat-compartment, the bottom of which has a countersunk recess, a conical spring secured at one end end in such recess, a hat-supporting plate carried by the other end of the spring and means for locking the plate and spring within the recess with the surface of the plate substantially flush with the surface of the bottom of the compartment.

6. A dressing-case comprising a hat-compartment, the bottom of which is provided with a recess, a conical spring secured at one end in such recess, a hat-supporting plate, rotatably supported upon the other end of such spring and provided with peripheral notches, locking-clips secured to the bottom of the compartment and adapted to register with the peripheral recesses in the hat-supporting plate when the same is compressed within said recess.

7. A dressing-case provided with a hat-compartment, a conical spring secured to the bottom of such compartment, a hat-supporting plate rotatably mounted upon such spring and means for locking such plate and spring in their inoperative position on the bottom of said compartment.

8. A dressing-case provided with a hat-compartment, the bottom of which is provided with a countersunk recess, a conical spring secured to the bottom of said recess, a hat-supporting plate rotatably mounted on said spring and provided with peripheral recesses, locking-clips secured to the bottom of said compartment and projecting over said recess and stops for limiting the rotative movement of the hat-supporting plate when pushed into said recess and turned.

814,314. WINDOW-STOP AND BURGLAR-ALARM. George H. Parker, New York, N. Y., assignor to Charles Hemingway Platt, New Haven, Conn. Filed Apr. 23, 1904. Serial No. 204,538.



Claim.—1. In combination, a plurality of sashes, a member positioned upon one of said sashes adapted to permit free relative movement thereof, a stop adapted to be detachably mounted upon said member, and a plurality of means extending from said stop and engaging said member positively so as to interlock therewith.

2. In combination, a plurality of sashes, a member positioned upon one of said sashes adapted to permit free relative movement thereof, a stop having a post adapted to be detachably mounted upon said member, and means upon said stop engaging said member positively to maintain said post in engagement with said member.

3. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, and a member positively secured to one of said sashes adapted to detachably engage and interlock with said post.

4. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, a member adapted to engage said post detachably and be secured to one of said sashes, and retaining means upon said stop adapted to engage said member.

5. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, a member adapted to engage

said post and be secured to one of said sashes, and a screw upon said stop adapted to engage said member.

6. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes, and a screw passing through said stop adapted to engage the upper surface of said member and retain said member in engagement with said post.

7. In combination, a plurality of sashes, a stop adapted to limit the relative movement of said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes, a lug upon said stop, and means within said lug adapted to engage said member.

8. In combination, a plurality of sashes, a stop adapted to limit the relative movement of said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes and means upon said stop adapted to retain said member in such engagement.

9. In combination, a plurality of sashes, a stop adapted to limit the relative movement of said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes, a lug upon said stop, and a screw within said lug adapted to engage said member and retain the same in engagement with said post.

10. In combination, a sash, a member mounted adjacent the path of movement of said sash, a stop adapted to be secured detachably to said member and to project within the path of movement of said sash and means upon said stop adapted positively to retain the same in engagement with said member.

11. In combination, a sash, a frame, contact-strips upon said frame, means carried by said sash adapted to coact with said strips and complete an electrical circuit through the same and limit the movement of said sash upon a definite sliding movement of said sash taking place, and means whereby said first-mentioned means may be placed in operative condition.

12. In combination, a plurality of sashes, a member secured to one of said sashes in such manner as to permit free relative movement thereof, a stop adapted to be secured detachably to said member and adapted to limit the relative movement of said sashes, and a member secured to said sashes and adapted to be forced into contact with said first-mentioned member by said stop upon the engagement thereof by one of said sashes.

13. In combination, a plurality of sashes, a stop adapted to limit the movement of said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes, a lug upon said stop, means within said lug adapted to engage said member, and means adapted to complete an electric circuit upon said limit being reached.

14. In combination, a plurality of sashes, a stop adapted to limit the relative movement of said sashes, a post upon said stop, a member adapted to engage said post and to be secured to one of said sashes, a lug upon said stop, a screw within said lug adapted to engage said member and retain the same in engagement with said post, and a member adapted to be interposed between said first-mentioned member and said stop and adapted to complete an electric circuit upon said limit being reached.

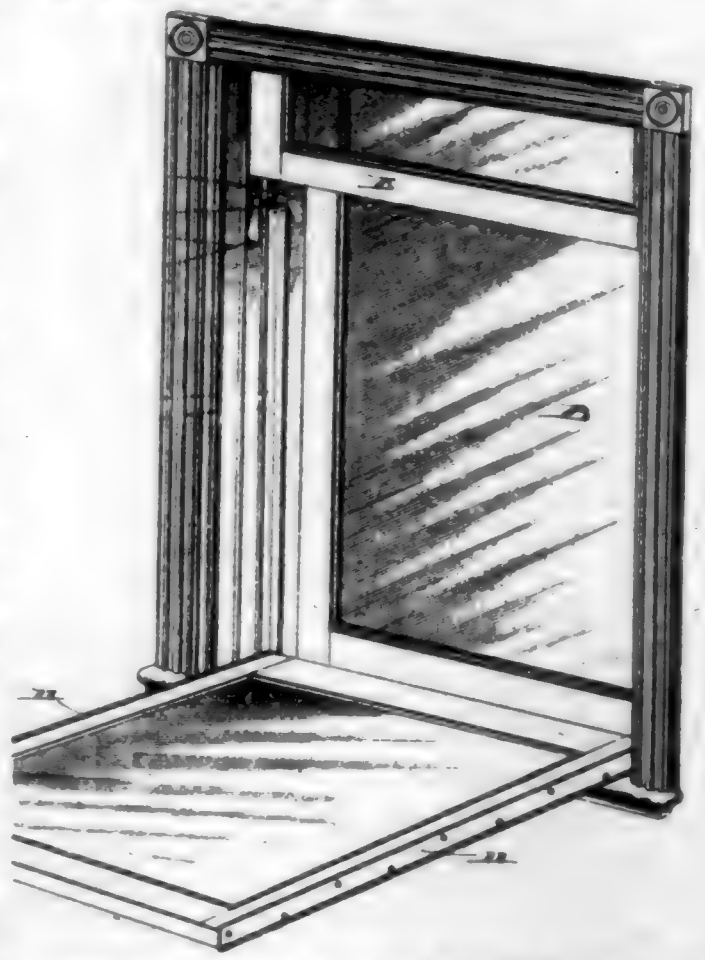
15. In combination, a plurality of sashes, a stop adapted to limit the relative movement of said sashes, a post upon said stop, a member adapted to engage said post and be secured to one of said sashes, a lug upon said stop, means within said lug adapted to engage said member and retain the same in engagement with said post, and a member adapted to be interposed between said first-mentioned member and said stop and adapted to complete an electric circuit upon said limit being reached.

16. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, a member adapted to engage said post detachably and be secured to one of said sashes, retaining means upon said stop adapted positively to engage said member, terminals upon one of said sashes, one of said terminals being interposed between said member and said stop, said stop by a movement relative to said member being adapted to force said last-mentioned terminal into contact with the other of said terminals to complete an electric circuit.

17. In combination, a plurality of sashes, a stop adapted to coact with said sashes, a post upon said stop, said stop being provided with a projection upon which said post is mounted, a member adapted to engage said post detachably and be secured to one of said sashes, retaining means upon said stop adapted positively to engage said member, terminals upon one of said sashes, one of said terminals being interposed between said member, and a projection upon said stop, said stop by a movement relative to said member being adapted to force said last-mentioned terminal into contact with the other of said terminals to complete an electric circuit.

18. In combination, a plurality of sashes, a contact device, a member secured to one of said sashes, a stop adapted to limit the range of relative movement of said sashes and actuate said contact device upon said limit being reached, said stop being provided with a post which engages said member, means extending from said stop adapted positively to engage said member to maintain said post in engagement therewith, conductors mounted within the frame within which one of said sashes moves, and means adapted to complete an electric circuit from said contact device to each of said conductors.

814,315. SWINGING WINDOW. GEORGE H. PARKER, New York N. Y., assignor to Charles Hemingway Platt, New Haven, Conn. Filed May 13, 1904. Serial No. 207,774.



Claim.—1. In a device of the class described, in combination, a plurality of relatively movable members, a strip upon each of said members adapted to rest in contact, the edge of one of said strips being bent so as to embrace the adjacent edge of the other and the remaining edge of said second-mentioned strip being turned so as to embrace the adjacent edge of said first-mentioned strip, and the central portion of the surface of one of said strips being out of contact with the adjacent strip.

2. In a device of the class described, in combination, a sash member, auxiliary sash members, said sash member and said auxiliary sash members being relatively movable with respect to each other, a plurality of strips upon one of said members, said strips being so joined as to form a longitudinal recess therebetween, and stripping upon the other of said members, the stripping upon each of said members being adapted to lie in contact with the stripping upon the other of said members.

3. In combination, a window-frame, a member adapted to reciprocate therein, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and guiding members between which said first-mentioned member is adapted to reciprocate, said flanges being locked in position by said guiding members.

4. In combination, a window-frame, a member adapted to reciprocate therein, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and adapted to engage said frame and guiding members between which said first-mentioned member is adapted to reciprocate, said flanges being locked in position by said guiding members.

5. In combination, a window-frame, and a member adapted to reciprocate therein, said member comprising two channel-shaped

parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and adapted to engage said frame and the remaining two flanges adapted to extend in a parallel plane, said flanges projecting outwardly in opposite directions and being positively held in contact with said window-frame by the parts beyond which they project.

6. In combination, a window-frame, a sash, and a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact, two of their flanges extending in substantially the same plane and engaging said frame and the remaining two flanges extending in a parallel plane and engaged by said sash.

7. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame and the remaining two flanges extending in a parallel plane, and a strip upon said sash engaging one of said flanges and engaged by the other thereof.

8. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame, and the remaining two flanges extending in a parallel plane, and a strip upon said sash engaging one of said flanges and engaged by the other thereof, the parts being so related as to form a well between said frame and said member.

9. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame and the remaining two flanges extending in a parallel plane, and a strip upon said sash engaging one of said flanges and engaged by the other thereof, the parts being so shaped and related as to form a well between said member and said sash.

10. In combination, a window-frame, an auxiliary sash member adapted to reciprocate therein, a sash, a cap upon said auxiliary member, and a bolt within said cap adapted to occupy two alternative positions in one of which it locks said auxiliary member to said frame and in the other of which it locks said sash to said auxiliary sash member.

11. In combination, a window-frame, an auxiliary sash member adapted to reciprocate therein, a sash, a cap upon said auxiliary member, a bolt within said cap adapted to occupy two alternative positions in one of which it locks said auxiliary member to said frame, and in the other of which it locks said sash to said auxiliary sash member, and a head projecting through a slot in said cap whereby said bolt may be moved.

12. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame and the remaining two flanges extending in a parallel plane, a strip upon said sash engaging one of said flanges and engaged by the other thereof, and a pivotal connection between said sash and said auxiliary sash member.

13. In combination, a window-frame, an auxiliary sash member adapted to reciprocate therein, a sash pivotally connected to said auxiliary sash member, means adapted to occupy two alternative positions in one of which it locks said auxiliary member to said frame and in the other of which it locks said sash to said auxiliary sash member and mutually-embracing strips interposed between said sash member and said sash said means being adapted to project through said mutually-embracing strips.

14. In a device of the class described, in combination, a plurality of relatively movable members, a strip upon each of said members, the edge of one of said strips being bent so as to embrace the adjacent edge of another of said strips and the remaining edge on said second-mentioned strip being bent about the remaining edge of said first-mentioned strip and a pivotal connection between said members, said strips being free from contact one with another at their central portions.

15. A sash member comprising two channel-shaped members lying with their connecting-webs in contact and each having fixed therein a separate filler-block.

16. In combination, a sash member comprising two channel-shaped members lying with their connecting-webs in contact, guiding members and filler-blocks within said channel-shaped members resting in contact with said guiding members.

17. In combination, a frame, a sash member comprising two channel-shaped members lying with their connecting-webs parallel and their adjacent flanges engaging said frame, guiding members and filler-blocks interposed within said channel-shaped members adapted to rest against said guiding members.

18. In combination, a frame, sash members comprising two channel-shaped members lying with their connecting-webs parallel and their flanges resting against said frame and a sash pivotally mounted between the said sash members and adapted to engage the remaining flanges thereof.

19. In combination, a frame, sash members comprising two channel-shaped members lying with their connecting-webs parallel and their adjacent flanges resting against said frame, a sash pivotally mounted between the remaining flanges of said sash members strips upon said sash and a curved edge upon one of the flanges of each of said sash members adapted to engage the projecting edge of the corresponding strip.

20. In combination, a frame, two sash members each comprising two channel-shaped members lying with their connecting-webs parallel and each having adjacent flanges engaging said frame, a sash pivotally mounted between the remaining flanges of said sash members, and strips upon said sash one edge of each of which is embraced by the adjacent edge of the corresponding sash member and the other edge of each of which embraces the adjacent flanged sash member corresponding thereto.

21. In combination, a frame, sash members within said frame each comprising two channel-shaped members lying with their connecting-webs parallel and having adjacent flanges resting against said frame, a sash pivotally mounted between the remaining flanges of said channel-shaped members, and strips upon said sash interposed between said flanges and said sash, said flanges and said sash being so related as to form openings substantially parallel to said sash members

22. In combination, a frame, two sash members within said frame comprising two channel-shaped members lying with their connecting-webs substantially parallel and their adjacent flanges resting against said frame, filler-blocks within said channel-shaped members, guiding-strips on said frame engaging said filler-blocks, and a sash pivotally mounted between the remaining flanges of said channel-shaped members said channel-shaped members being so shaped as to provide an opening between their inner surfaces and said sash which is subtantially parallel to said sash members.

23. In combination, a frame, sash members mounted within said frame each comprising two channel-shaped members lying with their connecting-webs in contact, guiding-strips on said frame, filler-blocks within said channel-shaped members resting against said guiding-strips, a sash member pivotally mounted between the remaining flanges of said channel-shaped members and strips upon the outer surface of said sash one edge of each of said strips being embraced by the adjacent flange of the corresponding channel-shaped member and the other edge of each of said strips embracing the adjacent flange of the corresponding channel-shaped member and said strips and flanges being so related as to provide openings substantially parallel to said sash members.

24. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane, and a pivot straddling said connecting-webs and engaging a socket in said sash.

25. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and the remaining two flanges extending in a parallel plane, a strip upon said sash engaging one of said flanges and engaged by another thereof, the parts being so shaped and related as to form a well between said frame and said member, and a pivot straddling said connecting-webs and engaging a socket in said sash.

26. In combination, a window-frame, a sash, a member adapted to reciprocate in said sash, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame, and locking means carried by said auxiliary member alternatively engaging said frame and said sash.

27. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane, and a pivot straddling said connecting-webs and engaging a socket in said sash.

said sash being adapted to rotate with respect to said auxiliary sash member about said pivot.

28. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane and engaging said frame and the two remaining flanges extending in a parallel plane, a strip upon said sash engaging one of said flanges and engaged by the other thereof, a pivotal connection between said sash and said auxiliary sash members, and locking means carried by said auxiliary members engaging said sash.

30. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane, a pivot straddling said connecting-webs and engaging a socket in said sash, and locking means carried by said auxiliary member adapted alternatively to engage said frame and said sash.

30. In combination, a window-frame, a sash, a member adapted to reciprocate in said frame, said member comprising two channel-shaped parts lying with their connecting-webs in contact and two of their flanges extending in substantially the same plane, a pivot straddling said connecting-webs and engaging a socket in said sash and permitting the same to be swung about a horizontal axis, and locking means carried by said auxiliary member adapted alternatively to engage said frame and said sash

31. In window construction, in combination, a plurality of relatively movable members and stripping upon each of said members, the edge of the stripping upon one thereof embracing the edge of that upon the other, the stripping upon said members being free from contact at the central portions thereof.

32. In combination, a window-frame, a member adapted to reciprocate in said frame, a member pivotally connected therewith, a cap upon said first-mentioned member, a bolt within said cap adapted to occupy two alternative positions in one of which it locks said first-mentioned member to said frame, and in the other of which it locks said first and second members and means projecting through said cap, whereby said bolt may be actuated.

33. In combination, a window-frame, and members slidably mounted within said frame, a sash positioned between said members and pivotally connected with each of the same, caps upon said members at the upper ends thereof, bolts within said caps, each adapted to occupy two alternative positions in one of which it engages said sash, and in the other of which it engages said window-frame, and means projecting through the said caps whereby said bolts may be actuated.

34. In combination, a window-frame, and members slidably mounted within said frame, a sash positioned between said members and pivotally connected with each of the same, caps upon said members at the upper end thereof, bolts within said caps, each adapted to occupy two alternative positions in one of which it engages said sash, and in the other of which it engages said window-frame, and means projecting through the said caps whereby said bolts may be actuated, said sash and said members being provided with interlocking weather-stripping through which said bolts are adapted to pass.

814,316. SWINGING WINDOW. George H. Parker, New York, N. Y., assignor to Charles Hemingway Platt, New Haven, Conn. Filed May 13, 1904. Serial No. 207,775.

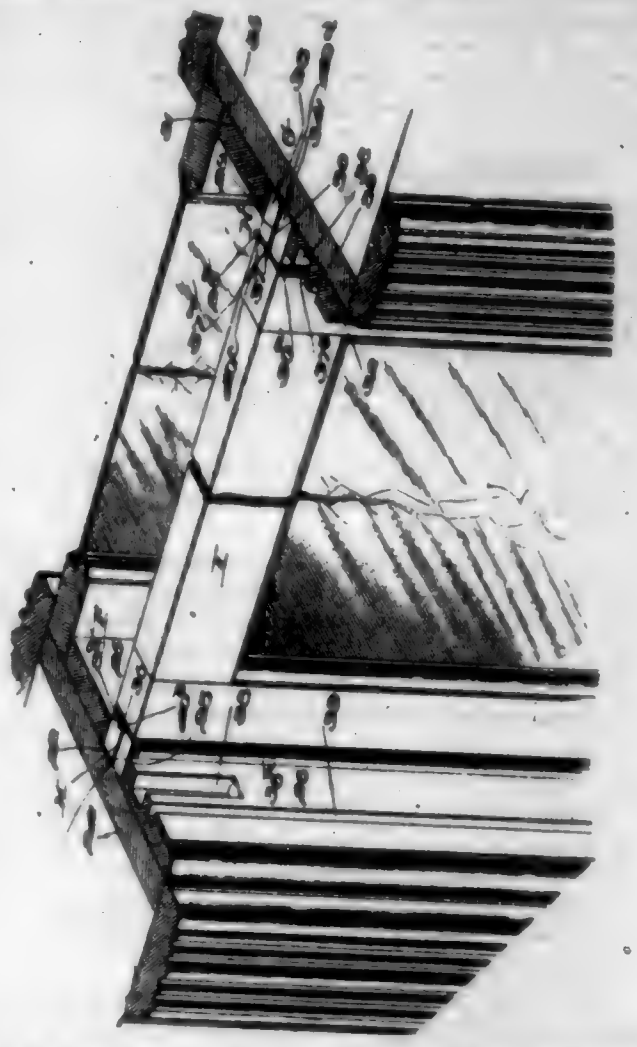
Claim.—1. In combination, a sash, an auxiliary sash member and weather-strips lying between the same, said weather-strips being shaped so as to form a hinge between said sash and said auxiliary sash member.

2. In combination, a sash, an auxiliary sash member, and weather-strips lying between the same, said weather-strips having a hinged connection.

3. In combination, a sash, an auxiliary sash member, and weather-strips lying between the same, said weather-strips having a hinged connection integral therewith.

4. In combination, a sash, an auxiliary sash member, and weather-strips upon each of the same, one of the edges of each of said strips having a hinged connection one with another and the remaining portions of said strips resting in contact between said sash and said sash member.

5. In combination, a sash, an auxiliary sash member, and weather-strips upon the same, the edges of said weather-strips being shaped so as to form a hinge between said sash and said auxiliary sash member and the remaining portions of said strips resting in contact between said sash and said sash member.



6. In combination, a sash, an auxiliary sash member, and weather-strips upon each of the same, the edge of one of said weather-strips being curved so as to embrace the corresponding edge of the other of said weather-strips and form a hinged connection therewith and the remaining portions of said strips resting in contact between said sash and said sash member.

7. In combination, a sash, an auxiliary sash member, and weather-strips upon each of the same, the edge of one of said weather-strips being curved so as to embrace the corresponding edge of the other weather-strip and form a hinged connection therewith, said corresponding edge being curved in a similar manner and said weather-strip normally resting in contact throughout substantially the entire thickness of said sash.

8. In combination, a plurality of relatively slidable members, one of said members comprising a sash member and the other of said members comprising an auxiliary member, and weather-stripping upon each of said members, the weather-stripping upon one of said members being adapted normally to lie in contact with the stripping upon the other of said members, the projecting edge of the stripping upon one of said members being curved so as to embrace the corresponding edge of the the stripping upon the other of said members to form a hinged connection therebetween, the weather-stripping upon one of said members being provided with a projection upon its contacting surface adapted to enter a recess in the contacting surface of the weather-stripping of the other of said members.

9. In combination, a sash, a frame, auxiliary sash members adapted to reciprocate in said frame, said sash and one of said auxiliary sash members being adapted to swing with relation one to another in a plane transverse of said members, and weather-stripping upon said sash and upon one of said auxiliary sash members, the stripping upon said sash being adapted normally to lie in contact with the stripping upon said auxiliary sash member, the projecting edges of the stripping upon said sash and said auxiliary sash member being curved so that one of the curved portions embraces the curved portion upon the other to form a hinged connection between said sash and said auxiliary sash member.

10. In combination, a plurality of slidable members, one of said members comprising a sash and an auxiliary sash member, weather-stripping upon each of the same, said weather-stripping being so formed as to adapt said sash to be rotated about said auxiliary sash member, and projections upon said sash adapted to fit into corresponding depressions in said auxiliary sash member.

11. In combination, a sash, a frame, auxiliary sash members adapted to reciprocate in said frame, said sash and one of said members being adapted to swing with relation one to another in a plane transverse of said members and the other of said members being adapted to be locked to said sash, and projections upon said sash adapted to fit into corresponding depressions in said auxiliary sash member.

12. In combination, a sash, an auxiliary sash member and weather-stripping upon each of the same, said weather-stripping being so formed as to adapt said sash to be rotated about said auxiliary sash, and the stripping upon one of said members being provided with projections adapted to fit into corresponding recesses in that upon the other of said members.

13. In combination, a sash member, an auxiliary sash member, and weather-stripping upon each of the same, said weather-stripping being so formed as to adapt said sash to be rotated about said auxiliary sash, and the stripping upon one of said members being provided with projections adapted to fit into corresponding recesses in that upon the other of said members and being shaped so as to form a hinged connection with the same.

14. In combination, a sash, an auxiliary sash, and weather-stripping upon each of the same, the edges of said weather-stripping being so curved as to interlock and form a hinged connection between said members, and the stripping upon one of said members being provided with projections adapted to fit into corresponding recesses in that upon the other of said members.

15. In combination, a plurality of slidable members, one of said members comprising a sash and an auxiliary sash member, and weather-stripping upon each of the same, said weather-stripping being so formed as to adapt said sash to be rotated about said auxiliary sash member, and the stripping upon one of said members being shaped so as to form a hinged connection with that upon another thereof and being provided with projections adapted to fit into corresponding recesses in the same.

16. In combination, a sash, a frame, auxiliary sash members adapted to reciprocate in said frame, said sash and one of said members being adapted to swing with relation one to another in a plane transverse of said member, and weather-stripping upon said sash and one of said members, the edges of said weather-stripping being so curved as to interlock and form a hinged connection between the same, and the stripping upon one of said members being provided with projections adapted to fit into corresponding recesses in that upon another of said members.

17. In combination, two channel-shaped members lying with their connecting-webs substantially parallel, a sash, and a weather-strip upon said sash, one edge of said weather-strip being curved so as to form a hinged connection with one of the flanges of one of said channel-shaped members.

18. In combination, two channel-shaped members lying with their connecting-webs substantially parallel and two adjacent flanges thereof extending in the same plane, a sash, and a strip upon said sash, one of the edges of said strip being curved so as to form a hinged connection with the remaining flange of one of said channel-shaped members.

19. In combination, two channel-shaped members lying with their connecting-webs substantially parallel and two adjacent flanges thereof extending in the same plane, a sash, and a strip upon said sash, one of the edges of said strip being curved so as to form a hinged connection with the remaining flange of one of said channel-shaped members, said strip being provided with a projection adapted to be embraced by the remaining flange of the remaining channel-shaped member, said strip being provided with a projection adapted to be embraced by the remaining flange of the remaining channel-shaped member.

20. In combination, a frame, two channel-shaped members lying with their connecting-webs substantially parallel and having two adjacent flanges resting against said frame, a sash, and a weather-strip upon said sash, one edge of said weather-strip forming a hinged connection with the remaining flange of one of said channel-shaped members, said strip being provided with a projection embraced by the remaining flange of the remaining channel-shaped member.

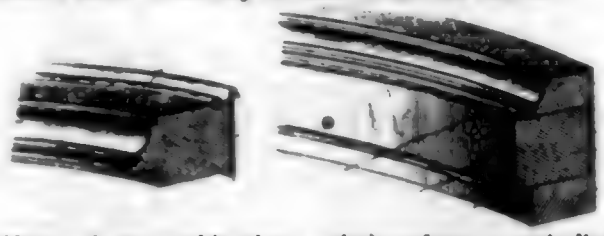
21. In combination, a frame, two channel-shaped members lying with their connecting-webs substantially parallel and having two adjacent flanges resting against said frame, a sash, a weather-strip upon said sash, one edge of said weather-strip forming a hinged connection with the remaining flange of one of said channel-shaped members, said strip being provided with a projection embraced by the remaining flange of the remaining channel-shaped member, filler-blocks within said channel-shaped members, and guiding members upon said frame resting in contact with said filler-blocks.

22. In combination, a sash, a member adjacent thereto, and weather-stripping secured to said sash and said member, the weather-stripping upon said sash being adapted normally to rest in contact with that upon said sash member between said sash and member, and the end of said weather-stripping upon said sash being rolled about that upon said member.

23. In combination, a frame, two channel-shaped members lying with their connecting-webs substantially parallel and having two adjacent flanges resting against said frame, a sash and weather-stripping upon said sash, the inner edge of said weather-stripping being rolled about the remaining flange of one of said channel-shaped members and forming a hinged connection therewith, said weather-stripping being provided with a projection fitting a recess in the remaining flange of the remaining channel-shaped member, filler-blocks within said channel-shaped members, and guiding members upon said frame resting in contact with said filler-blocks.

24. In combination, a frame, two channel-shaped members lying with their connecting-webs substantially parallel and having two adjacent flanges resting against said frame, a sash and weather-stripping upon said sash, the inner edge of said weather-stripping being rolled about the remaining flange of one of said channel-shaped members and forming a hinged connection therewith, said weather-stripping being provided with a projection fitting a recess in the remaining flange of the remaining channel-shaped member, filler-blocks within said channel-shaped members, and guiding members upon said frame resting in contact with said filler-blocks and holding said first-mentioned adjacent flanges of said channel-shaped members against said frame.

814,317. WINDOW-RETAINING APPARATUS. GEORGE H. PARKER, New York, N. Y., assignor to Charles Hemingway Platt, New Haven, Conn. Filed May 13, 1904. Serial No. 207,776.



Claim.—1. In combination, a window-frame, a strip lining said frame, a window adapted to be placed within said frame, a strip about said window, one of the edges of one of said strips being turned so as to embrace the adjacent edge of the other, said strips being adapted normally to lie in contact with each other, said strips being provided with registering depressions, and a bolt located in one of said depressions adapted to be thrust into the other of said depressions to retain said window in said frame.

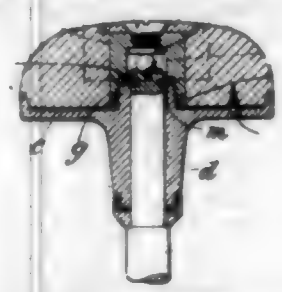
2. In a device of the class described, in combination, a window-frame, a strip about said frame, a window adapted to be placed within said frame, a strip about said window, said strips being adapted normally to lie in contact with each other, one of the edges of one of said strips being turned so as to embrace the adjacent edge of the other, a depression in one of said strips, a depression in the other of said strips, said depressions being adapted normally to be in registry with each other, a bolt in one of said depressions, and an eccentric adapted to actuate said bolt, said eccentric being so constructed as to retain the bolt in two alternative positions of rest.

3. In a device of the class described, in combination, a window-frame, a strip lining said frame, a window adapted to be placed within said frame, a strip about said window, the stripping upon said frame and that upon said window being adapted normally to lie in contact, one of the edges of one of said strips being turned so as to embrace the adjacent edge of the other, depressions in each of said strips, said depressions being normally in registry, a plurality of bolts, one of which is located in each of the depressions of one of said strips, said bolts being adapted to be projected radially therefrom, and means adapted to actuate each of said bolts to positively retain the same in each of two alternative positions of rest.

4. In a device of the class described, in combination, a window-frame, a strip lining said frame, a window adapted to be placed within said frame, a strip about said window, the stripping upon said frame and that upon said window being adapted normally to lie in contact, one of the edges of one of said strips being turned so as to embrace the adjacent edge of the other, recesses in each of said strips, said recesses being normally in registry, a plurality of bolts, one of which is located in each of the recesses of one of said strips, said bolts being adapted to be projected radially therefrom, an eccentric adapted to actuate each of said bolts, said eccentrics being adapted also to retain the bolts in each of their two alternative positions of rest, and means adapted to actuate said eccentrics.

5. In a device of the class described, in combination, a window-frame, a strip lining said frame, a window having a curved periphery adapted to be placed within said frame, a strip about said window, the stripping upon said frame and that upon said window being adapted normally to lie in contact, one of the edges of one of said strips being turned to embrace the adjacent edge of the other, the other of said strips having one of its edges turned to embrace the adjacent edge of the first-named strip, recesses in each of said strips, said recesses being normally in registry, a plurality of bolts, one of which is located in each of the recesses of one of said strips, said bolts being adapted to be projected radially therefrom, an eccentric adapted to actuate each of said bolts, said eccentrics being adapted also positively to retain the bolts in each of their two alternative positions of rest, and means adapted to actuate said eccentrics.

814,318. **HEAD FOR BIT-STOCKS.** WILLIAM A. PECK, Jersey City, N. J. Filed Feb. 25, 1905. Serial No. 247,377.

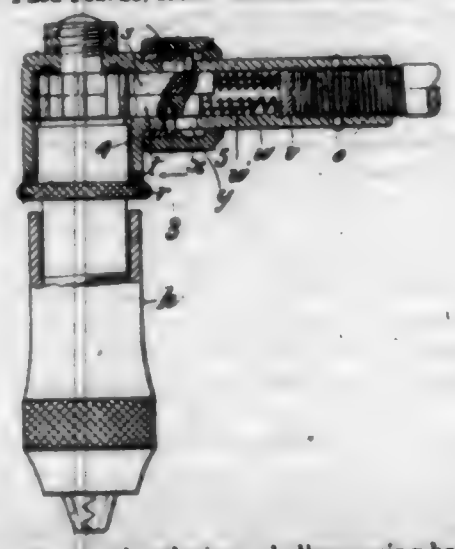


Claim.—1. The combination with the arm of a bit-brace or the like, of a hub member fitting the arm and having a threaded end, a knob-body, a chambered nut arranged in the knob-body and adjustably engaging the threaded end of the hub member, a split washer received within the nut and held thereby loosely interlocked with the arm of the brace, and a centering-bearing projection arranged at the end of the arm in the nut and receiving the thrust from the head or base of the nut.

2. The combination with the arm of a bit-brace or the like, of a hub member fitting the arm, a knob-body provided on its outer side with a central hole, a centrally-chambered nut arranged in the knob-body and detachably engaging the hub member, said nut having a threaded opening in its head or base, a retaining device received within the nut and held thereby loosely interlocked with the arm of the brace, a bearing projection at the end of the arm within the nut, and a screw arranged through the hole in the knob and engaging the threaded opening in the head or base of the nut.

3. The combination with the crank-arm of a bit-brace or the like, of a rotatable center grip mounted on the arm comprising a sleeve of suitable material, metal caps for each end of the sleeve having hubs thereon to screw into the latter, and peripheral flanges to embrace the ends of the sleeve, bolsters located upon the arm contiguous to said caps, and a bearing-ring interposed between the caps and the bolsters.

814,319. **RATCHET-MOVEMENT.** WILLIAM A. PECK, Jersey City, N. J. Filed Feb. 25, 1905. Serial No. 247,378.



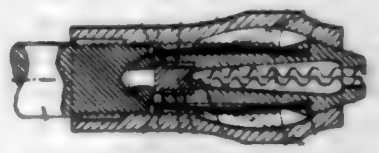
Claim.—1. In a ratchet device, a hollow casing having a tubular extension, semicylindrical pawls arranged in matching relation within said extension and slidable one upon the other, pressure-springs for said pawls, an adjusting device for the springs carried by said extension, a camming device for moving the pawls in opposite directions, and a ratchet rotatably supported in the casing.

2. In a ratchet device a hollow casing having one closed end and a tubular extension, the latter and said casing being internally cylindrical with rectangularly-disposed axes, the outer end of said extension being screw-threaded; pawls located in said extension, slidable one relative to the other; an adjustable member in said extension and a spring for the pawls between the latter and said member, means to move the pawls in opposite directions, and a ratchet rotatably supported in the hollow casing with which said pawls engage; means to close the open end of the casing and the open end of the tubular extension.

3. In a ratchet device, a hollow casing having a tubular extension provided with a cylindrical bore, and oppositely-disposed guiding-slots, spring-pressed semicylindrical pawls arranged in matching relation within said cylindrical bore with their flat faces abutting and slidable one upon the other, said pawls having their rounded surfaces abutting and sliding on the cylindrical wall of the bore, and provided with steady-pins working in said slots, an adjusting device for moving the pawls in opposite directions, and a ratchet detachably supported in the casing and engaged by the teeth of the said pawls.

4. In a ratchet device, a casing having a tubular extension provided with a cylindrical bore, semicylindrical pawls arranged in matching relation within the bore and having their flat faces abutting and sliding one upon the other, the round surface of the pawls abutting and sliding on the cylindrical wall of the bore, pressure-spring arranged to move the pawls in one direction, a camming-sleeve fitting on the exterior of the tubular extension and operatively connected with both pawls, and a cover-sleeve fitting to said camming-sleeve and covering the connections between the same and the pawls.

814,320. **JAW OF BIT-STOCKS.** WILLIAM A. PECK, Jersey City, N. J. Filed Feb. 25, 1905. Serial No. 247,379.



Claim.—1. In a chuck, a pair of opposed jaws, an abutment-block carried by the jaws and extending transversely across the interval between the inner ends thereof, the projection of said abutment being past the gripping portions of the jaws contiguous to the block, whereby such jaw portions overlap the block and maintain an axially-centered relation thereto, means for yieldingly pressing the jaws apart and for yieldingly connecting the inner ends thereof, and means for closing the jaws upon a tool.

2. In a chuck, a pair of opposed jaws, a loose abutment-block arranged between the inner ends of the jaws and overlapped by the contiguous portions of the gripping-faces, pivot-pins holding the jaws and block in loosely-engaged relation, a spring held in position to the point of support for the jaws and block and arranged to press the jaws apart, and means for closing the jaws.

3. In a chuck, a pair of opposed jaws having recessed inner ends, an abutment-block arranged between the inner ends of the jaws and within the recesses thereof, pin members for holding the jaws and block in loosely-connected relation, a spring arranged to normally support the jaws at both their inner and outer ends, and means for closing the jaws.

814,321. **FISHPOLE.** JOHN PEPPER, Jr., Utica, N. Y. Filed Apr. 17, 1905. Serial No. 255,925.

Claim.—1. A fishpole having a plurality of handle-sections, the same being reversibly mounted, in combination with line-sections and means for mounting the same interchangeably on the handle-sections, the said line-sections being provided with line-guides adapted to permit removal of a pole-section without unstringing the line, substantially as described.

2. A fishpole having a plurality of grips adapted to be mounted in reversed position to locate a reel mounted thereon above or below both grips or between the same, substantially as described.

3. In a fishpole, a handle member and a plurality of line-sections adapted to be mounted in series thereon, the combination of a screw-threaded ring and reducing-ferrules each adapted to be secured on the handle member by the screw-threaded ring but constructed of different sizes to receive different line-sections, substantially as described.

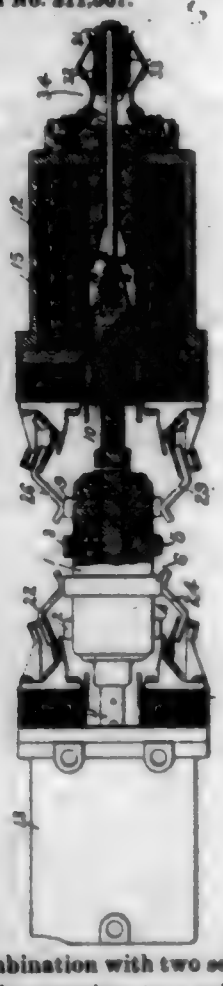
4. In a fishpole, a plurality of handle members, one of the same

being constructed to permit the mounting of the other at its either end, each end of the said former member and one end of the latter member being recessed to receive a pole-section, and means for interchangeably mounting on any of said recessed ends the line-supporting sections of a pole, substantially as described.



5. In a fishpole, a plurality of handle members, each adapted to support a line-carrying section, the said handle members being constructed to permit alternative assembling of the same to dispose the grip portions of the hand members in juxtaposition above or below the reel or one on each side of the reel.

814,322. **REVERSING-SWITCH FOR ELECTRICAL CIRCUITS.** Thomas S. Perkins, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 6, 1904. Serial No. 211,367.



Claim.—1. The combination with two sets of stationary contact-terminals each of which comprises two pairs, of a longitudinally-movable block having two sets of contact-strips that engage the corresponding stationary contact-terminals to connect them in different relations, and means for actuating said block.

2. The combination with two sets of contact-fingers each of which comprises two pairs, of a longitudinally-movable block having two sets of contact-strips corresponding to the sets of contact-fingers, one pair of each set of strips serving to connect fingers of the same pair together and the other pair of strips serving to connect fingers of different pairs together, and means for actuating the block in either direction.

3. A switch comprising two sets of contact-fingers, each of which comprises two pairs, two sets of conducting-strips, a support therefor and means for moving said support longitudinally in either direction so that one pair of strips in each set serves to connect fingers of the same pair together and the other pair of strips serves to connect fingers of different pairs together.

4. A switch comprising two sets of pairs of contact-fingers, two sets of pairs of conducting-strips, a support therefor and means for moving said support longitudinally to cause the strips to respectively engage and electrically connect contact-fingers of the respective sets in one combination for one position of the switch and in another combination for the other position of the switch.

5. A switch comprising a longitudinally-movable block of non-conducting material and two sets of pairs of conducting-strips mounted thereon and two sets of pairs of contact-fingers disposed at opposite sides of said block and arranged to so engage said strips as to connect fingers of the same pair together or fingers of different pairs together according to the position of the block.

6. A switch comprising a block of non-conducting material, two sets of pairs of conducting-strips mounted thereon and two sets of pairs of contact-fingers disposed at opposite sides of said block and arranged to so engage said strips as to either connect fingers of the same pair or fingers of different pairs together, and means for effecting longitudinal movement of said block.

7. A switch comprising two sets of pairs of contact-fingers, a longitudinally-movable block of non-conducting material and two sets of pairs of conducting-strips mounted thereon, the strips of one set being arranged to electrically connect the contact-fingers of one pair or of different pairs of one set together and the strips of the other set to electrically connect the fingers of one pair or of different pairs of the other set together, according to the position of the block.

8. A switch comprising contact-fingers, a longitudinally-movable block of non-conducting material and sets of conducting-strips mounted thereon, one set of strips having engaging surfaces for said fingers on one side only of said block and the other set having engaging surfaces on two or more sides thereof.

9. A switch comprising contact-fingers, a longitudinally-movable block of non-conducting material and sets of conducting-strips mounted thereon, one set of strips extending laterally across one side of said block and the other set partially across two sides thereof

10. A switch comprising two sets of pairs of contact-fingers, two sets of pairs of laterally-movable conducting-strips arranged to engage respectively therewith and electromagnets which are respectively energized to effect the movement of said strips in the one direction or the other to connect contact-fingers of one pair or of different pairs together.

11. A switch comprising two sets of pairs of contact-fingers, two sets of pairs of laterally-movable conducting-strips arranged to engage respectively therewith, magnet-windings and armatures therefor which carry said conducting-strips.

12. A switch comprising two sets of pairs of contact-fingers, a longitudinally-movable block of insulating material, two sets of pairs of conducting-strips mounted thereon and electromagnets having their armatures attached to said block.

13. A switch comprising two sets of pairs of contact-fingers, a longitudinally-movable block of insulating material, two sets of pairs of conducting-strips mounted thereon, magnet-windings and armatures therefor which support said block.

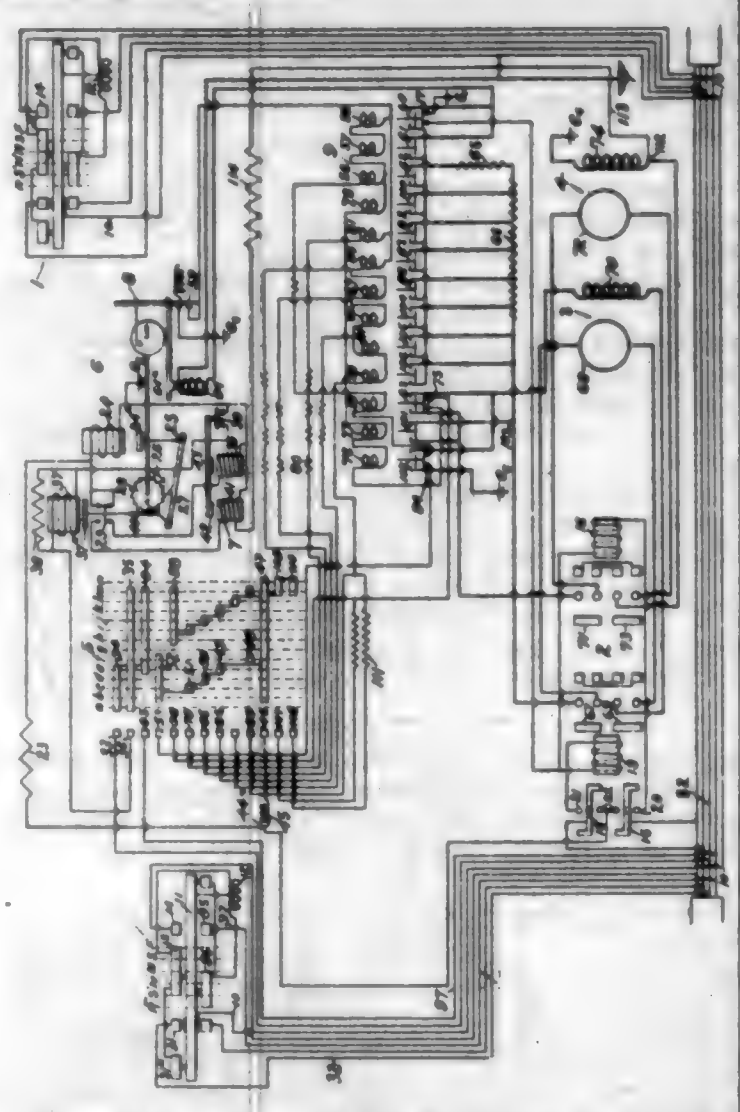
14. A switch comprising contact-fingers, sets of laterally-movable contact-strips arranged to engage respectively therewith, magnet-windings, armatures therefor which carry said conducting-strips and controlling means for said magnet-windings operated by the movement of the switch.

15. A switch comprising contact-fingers, sets of laterally-movable conducting-strips arranged to engage respectively therewith, operating magnet-windings, armatures therefor which carry said conducting-strips and means actuated by the movement of the switch for making and breaking the circuits of the operating magnet-windings.

814,323. **SYSTEM OF REMOTE CONTROL FOR ELECTRIC MOTORS.** Thomas S. Perkins and Ray P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 6, 1904. Serial No. 211,368.

Claim.—1. Means for operating and controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors, a set of unit-switches for varying the relations of said motors and the resistance of their circuits and a controller for

said unit-switches, in combination with a master-controller for said switch controller or controllers.



2. Means for operating and controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors, a set of electromagnetically-operated unit-switches for varying the relations of said motors and the resistance of their circuits and an electromagnetically-operated controller for said unit-switches, in combination with a master-controller for said switch controller or controllers.

3. The combination with a plurality of electric motors having armature and field-magnet windings, of a reversing-switch for adjusting the connections thereof, a set of unit-switches for varying the relations of said motors and the resistance of their circuits, a controller for said unit-switches and a master-controller for said reversing-switch and said unit-switch controller.

4. The combination with a plurality of electric motors having armature and field-magnet windings, of a reversing-switch for adjusting the connections thereof, a set of unit-switches for varying the relations of said motors and the resistance of their circuits, a controller for said unit-switches, means for automatically actuating said switch-controller, and a master-controller for said actuating means and said reversing-switch.

5. Means for operating or controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors and a set of unit-switches for varying the relations of the motors and the resistance of their circuits, a controller for said unit-switches and means for automatically actuating said controller, in combination with a master-controller for said actuating means.

6. Means for operating and controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors, a set of unit-switches for varying the relations of the motors and the resistance of their circuits, a controller for said unit-switches and means for automatically actuating said controller.

7. The combination with electric motors and unit-switches in the circuits thereof, of controllers for said unit-switches and means for automatically actuating said switch-controllers comprising an actuating-magnet, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet winding, and a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings.

8. The combination with electric motors and unit-switches in the circuits thereof, of controllers for said unit-switches, means for automatically actuating said switch-controllers comprising an actuating-magnet, a discharge resistance in shunt thereto, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet winding, and a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings, and a master-switch for said actuating means.

9. The combination with electric motors and unit-switches in the circuits thereof, of controllers for said unit-switches and means for automatically actuating said switch-controllers comprising an actuating-magnet, a discharge resistance in shunt thereto, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet winding and a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings.

10. The combination with electric motors having armature and field-magnet windings, of reversing-switches for adjusting the connections thereof, unit-switches in the circuits of said motors, controllers for said unit-switches, means for automatically actuating said switch-controllers comprising an actuating-magnet, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet winding and a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings.

11. The combination with electric motors having armature and field-magnet windings, of reversing-switches for adjusting the connections thereof, unit-switches in the circuits of said motors, controllers for said unit-switches, means for automatically actuating the said switch-controllers comprising an actuating-magnet, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet windings, a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings and master-switches for said actuating means and reversing-switches.

12. The combination with electric motors having armature and field-magnet windings, unit-switches in the circuits thereof, controllers for said unit-switches, means for actuating said controllers, and time controller-magnets for said actuating means, of a connection between the motor-circuits and one of the time-controller-magnet windings whereby said winding is energized while an excessive amount of current is supplied to the motor-circuits.

13. The combination with electric motors having armature and field-magnet windings, unit-switches in the circuits thereof, controllers for said unit-switches and means for actuating said controllers comprising an actuating-magnet, a retaining-magnet, time controller-magnets for alternately opening and closing the circuit of the actuating-magnet winding and a switch operated by the actuating-magnet for alternately opening and closing the circuits of the time-controller-magnet windings, of a cross connection between the motor-circuits and one of the time-controller-magnet windings whereby said winding is energized and the circuit of the actuating-magnet winding is maintained open while an excessive amount of current is supplied to the motor-circuits.

14. The combination with electric motors having armature and field-magnet windings, unit-switches in the circuits thereof, controllers for said unit-switches, means for actuating said controllers, and time controller-magnets for said actuating means, of a cross connection between the motor-circuits and one of the time-controller-magnet windings whereby said winding is energized and further operation of the unit-switches is prevented while an excessive amount of current is supplied to the motor-circuits.

15. The combination with electric motors, unit-switches for governing the circuits thereof, a controller for said unit-switches, actuating means therefor and a master-switch for said actuating means, of means for effecting the opening of said unit-switches when more than a predetermined amount of current is supplied to the motor-circuits and for preventing further operation of said actuating means until the master-switch has been returned to its initial position.

16. In a system of control for a plurality of units operated by electric motors each having armature and field-magnet windings, said motors being adapted to be connected in series or in parallel, reversing-switches for adjusting the said field and armature connections, unit-switches for governing said motor-circuits, a controller for said unit-switches, actuating means therefor, a master-switch for said actuating means and reversing-switches and conductors connecting the units, one corresponding to each of the forward and re-

verse positions of the reversing-switches and to the series and the parallel connections of the motors.

17. In a system of control for a plurality of units operated by electric motors each having armature and field-magnet windings, said motors being adapted to be connected in series or in parallel, reversing-switches for adjusting the said field and armature connections, unit-switches for governing said motor-circuits, a controller for said unit-switches, actuating means therefor, a master-switch for said actuating means and reversing-switches and conductors connecting the units, one corresponding to each of the forward and reverse positions of the reversing-switches, to the series and the parallel connections of the motors and to each of the other predetermined positions of the master-switch.

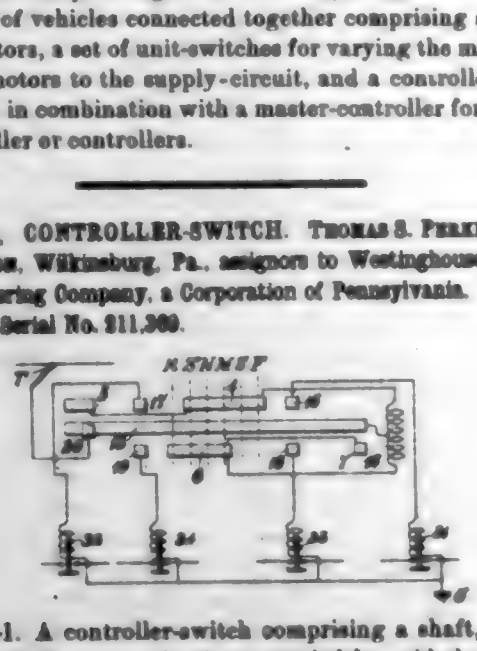
18. In a system of control for a plurality of units operated by electric motors each having armature and field-magnet windings, said motors being adapted to be connected in series or in parallel, reversing-switches for adjusting the said field and armature connections, unit-switches for governing said motor-circuits, a controller for said unit-switches, actuating means therefor, a master-switch for said actuating means and reversing-switches and conductors connecting the units, one corresponding to each of the forward and reverse positions of the reversing-switches and to the series and the parallel connections of the motors and one for conducting power between their units.

19. Means for operating and controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors having armature and field-magnet windings, a set of independently-actuated unit-switches for varying the mutual relation of said motors to the supply-circuit, means for actuating said switches and a controller for said actuating means, in combination with a master-switch for governing the said controller or controllers.

20. Means for operating and controlling a single vehicle or each of a plurality of connected vehicles comprising a plurality of electric motors having armature and field-magnet windings, a set of unit-switches and a reversing-switch for adjusting the mutual relation of said armature and field-magnet windings to the supply-circuit, means for actuating said unit-switches, and a controller for said actuating means, in combination with a master-switch for governing the operation of said reversing switch or switches and said controller or controllers.

21. Means for operating and controlling a single vehicle or each of a plurality of vehicles connected together comprising a plurality of electric motors, a set of unit-switches for varying the mutual relation of said motors to the supply-circuit, and a controller for said unit-switches, in combination with a master-controller for said unit-switch controller or controllers.

814,324. CONTROLLER-SWITCH. Thomas S. Perkins and Ray P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 6, 1904. Serial No. 211,369.



Claim.—1. A controller-switch comprising a shaft, drum-segments mounted thereon, pole-pieces carried by said shaft, a blow-out coil and stationary pole-pieces that coöperate with said shaft and its pole-pieces to provide a magnetic circuit for the coil.

2. A controller-switch comprising a shaft, drum-segments mounted thereon, pole-pieces carried by said shaft, a blow-out coil concentric with the shaft, and stationary pole-pieces that coöperate with the shaft and its pole-pieces to provide a magnetic circuit for the blow-out coil.

3. A controller-switch comprising a shaft, drum-segments mounted thereon, stationary pole-pieces at one end of said shaft and corresponding pole-pieces at the other end of and carried by said shaft, said pole-pieces and shaft forming parts of the same magnetic circuit.

4. A controller-switch comprising a shaft, drum-segments mounted thereon, stationary pole-pieces at one end of said shaft, corresponding pole-pieces at the other end of and carried by said shaft and a blow-out coil concentric with the shaft, said pole-pieces and shaft forming parts of the same magnetic circuit.

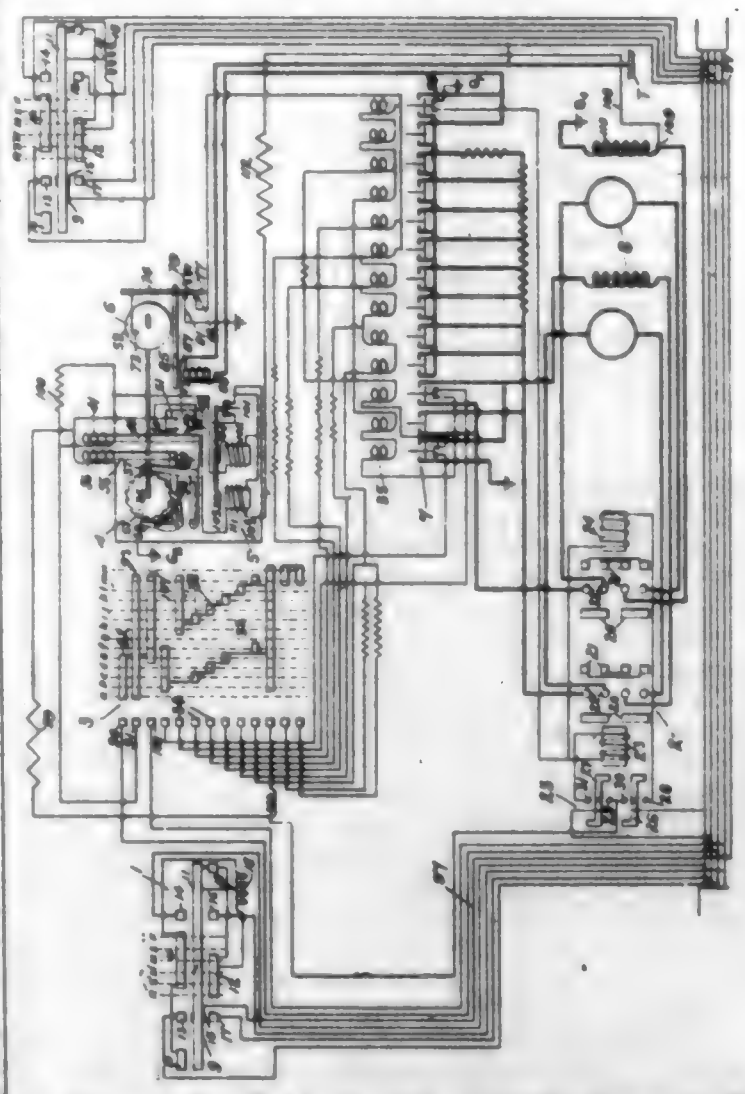
5. A controller-switch comprising a shaft, drum-segments mounted thereon, contact-fingers which engage respectively therewith and a blow-out coil concentric with said shaft the terminals and middle point of which are so connected to the drum-rings as to cause an outward blow of the arc due to the disengagement of said fingers from said segments, regardless of the direction of rotation of the latter.

6. A controller switch comprising a shaft, drum-segments mounted thereon, contact-fingers which engage respectively with said segments and a blow-out coil having its terminals and middle point respectively connected to said segments.

7. A controller-switch comprising a shaft, drum-segments mounted thereon, contact-fingers which engage respectively with said segments and a two-part blow-out coil mounted upon said shaft and connected to said segments, the one or the other part of said coil being energized to produce a magnetic flux in said shaft respectively in the one or the other direction according to the direction of rotation thereof.

8. A controller-switch comprising a shaft, drum-segments mounted thereon, stationary pole-pieces at one end of said shaft, corresponding pole-pieces at the other end of and carried by said shaft and a two-part blow-out winding concentric with said shaft, the one or the other part thereof being energized to produce a magnetic flux between the said stationary and rotatable pole-pieces in the one or the other direction according to the direction of rotation of the shaft.

814,325. CONTROLLER-OPERATING MEANS. Thomas S. Perkins and Ray P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 6, 1904. Serial No. 211,370.



Claim.—1. The combination with a controller-drum and resilient means for opposing forward motion thereof, of a ratchet-wheel, a pawl engaging said ratchet-wheel, a magnet for alternately actuating and releasing said pawl and a resistance in shunt to the winding of said magnet whereby the rate of operation of said pawl may be adjusted.

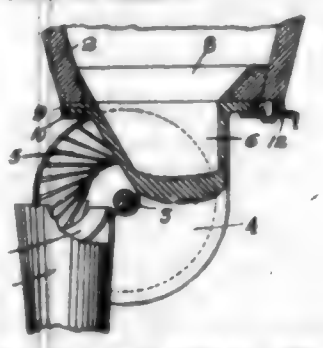
2. The combination with a controller-drum and resilient means for opposing forward motion thereof, of a ratchet-wheel, a pawl engaging said ratchet-wheel, a magnet-winding which is alternately inactive and energized, an armature therefor which operates said pawl and a resistance in shunt to the said magnet-winding whereby the rate of operation of said pawl may be regulated.

3. The combination with a controller-drum and resilient means for opposing forward rotation thereof, of a ratchet-wheel, a pawl engaging therewith, a magnet for alternately actuating and releasing said pawl, a second pawl, a magnet for causing said second pawl to engage said ratchet-wheel when the controller-drum is being operated in the forward direction and means operated by said last-named magnet for securing the controller-drum in its initial position when not in operation.

4. The combination with a drum, of a magnet for imparting rotative impulses thereto and two other magnets which are alternately energized through the operation of said first-named magnet and which thereby alternately make and break the circuit through the winding of said first-named magnet.

5. The combination with a controller-drum and resilient means for opposing forward rotation thereof, of a ratchet-wheel, a pawl engaging therewith, an operating-magnet winding and an armature therefor which actuates said pawl, a switch which is alternately opened and closed by said armature, time controller-magnets which are alternately energized by the operation of said switch and a second switch actuated by said controller-magnets for alternately making and breaking the circuit of said operating-magnet winding.

814,326. DRILL-CUP. Albert W. Perry, Northville, S. D. Filed Apr. 11, 1905. Serial No. 255,038.



Claim.—1. The combination, with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a pocket in its lower end, a feed-wheel operating in said pocket and having a concave face provided with a series of tangential grooves and said cup having a grain-passage which allows the unobstructed descent of the grain from said hopper into said pocket and grooves.

2. The combination, with a drill-hopper having a discharge-opening, of a feed-cup detachably supported beneath said opening and having a pocket in its lower end and a grain-passage leading from said opening to said pocket, a concavo-convex feed-wheel arranged to revolve in said pocket and having its concave face provided with a series of tangential grooves, and said feed-cup being removable from said hopper without disturbing said feed-wheel, substantially as described.

3. The combination, with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a semicylindrical pocket at its lower end with a discharge-opening on one side, a concavo-convex feed-wheel having its concave face provided with a series of tangential grooves and arranged to revolve in a vertical plane in said pocket, and said cup having an unobstructed grain-passage leading from said hopper to the bottom of said pocket and into said grooves, substantially as described.

4. The combination, with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and provided with a pocket in its lower end, and a grain-passage leading thereto from said discharge-opening, said pocket having a grain-discharge opening on one side, a concavo-convex disk having its lower portion arranged to project through an opening in the wall of said pocket on the other side and revolve in said cup and pocket, the convex face of said disk contacting with one wall of said pocket and the concave face of said disk being spaced from the opposite wall of said pocket and provided with a series of tangential grooves, the space between said concave face and the pocket-wall forming the terminal of said grain-passage, substantially as described.

5. The combination, with a drill-hopper having discharge-openings, of a series of feed-cups supported beneath said openings and provided with pockets in their lower ends, the walls of said pockets on one side being recessed to form discharge-openings, a series of concavo-convex feed-wheels arranged to revolve in said pockets and recesses, the convex faces of said wheels contacting with the walls of said pockets on one side and the concave faces of said wheels being spaced from the opposite walls of said pockets and provided with a series of tangential grooves, and the spaces between said wheels and pocket-walls forming continuations of said grain-passages, substantially as described.

6. The combination, with a drill-hopper having a discharge-opening, of a feed-cup having a lug on one side to fit into a socket provided on the bottom of said hopper, a button provided on said hopper upon the opposite side of said cup and adapted to engage the same and support it beneath said opening, and a concavo-convex feed-wheel arranged to revolve in a pocket provided in the lower end of said cup, and said cup being removable from said hopper without disturbing said wheel.

7. The combination, with a drill-hopper having a series of discharge-openings, of a series of feed-cups supported beneath said openings and having pockets in their lower ends, the walls of said cups being recessed on one side to allow the discharge of grain from said pockets, a series of feed-wheels operating in said pockets and having concave faces provided with a series of tangentially-arranged grooves, and said cups and wheels being oppositely arranged on each side of the center of said hopper whereby all said discharge-openings will be visible from a point near the middle of the drill.

8. The combination with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a grain-passage, a concavo-convex feed-wheel arranged to revolve in said cup and having its concave face provided with a series of tangential grooves, and said feed-cup being removable from said hopper without disturbing said feed-wheel, substantially as described.

9. The combination with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a grain-passage, and a grain-discharge opening in one of its side walls, a concavo-convex disk having its lower portion arranged to project through an opening in the wall of said cup on the opposite side from said grain-discharge opening, the convex face of said disk contacting with one wall of said cup and the concave face of said disk being spaced from the opposite wall of said cup and provided with a series of tangential grooves, the space between said concave face and the cup-wall forming the terminal of said grain-passage, substantially as described.

10. The combination with a drill-hopper having a series of discharge-openings, of a series of feed-cups supported beneath said opening, the walls of said cups being recessed on one side to allow the discharge of grain therefrom, a series of feed-wheels operating in said cups and having concave faces provided with a series of tangentially-arranged grooves, and said cups and wheels being oppositely arranged on each side of the center of said hopper whereby all said discharge-openings will be visible from a point near the middle of the drill, substantially as described.

11. The combination, with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a grain-passage, a feed-wheel arranged to revolve in said cup, and said feed-cup being removable from said hopper without disturbing said feed-wheel, substantially as described.

12. The combination with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a grain-passage and a pocket substantially V-shaped in cross-section communicating therewith, said pocket having a discharge-opening in its side wall, and a feed-wheel operating in said pocket and having means for lifting the grain to said discharge-opening, substantially as described.

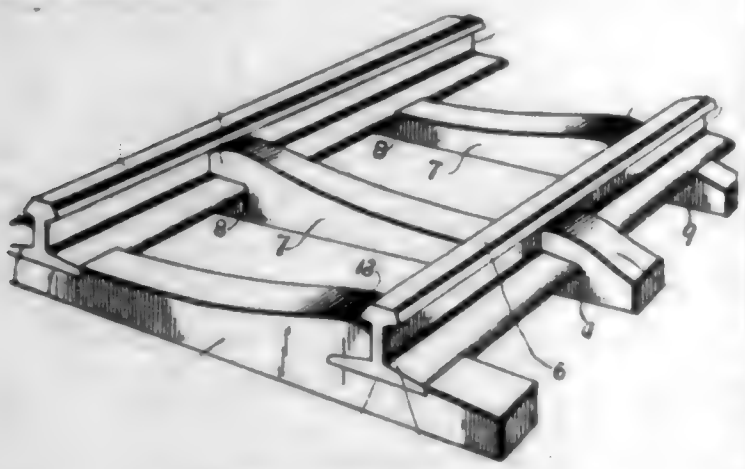
13. The combination with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a pocket provided with a discharge-opening in its side wall, a feed-wheel operating in said pocket and having a series of tangential grooves arranged to receive and lift the grain to said discharge-opening, substantially as described.

14. The combination with a drill-hopper having a discharge-opening, of a feed-cup supported beneath said opening and having a pocket provided with a discharge-opening in its side wall, and an unobstructed grain-passage leading from said hopper to said pocket, and a feed-wheel operating in said pocket and having means for engaging and lifting the grain to said discharge-opening.

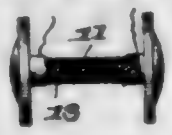
814,327. RAILWAY-TIE. William A. Rollins, Caddo, Ind. Ter., assignor of one-half to Samuel J. Long, Stephenville, Tex. Filed June 10, 1904. Serial No. 212,013.

Claim.—In a railway, the combination with rails having flanged faces, of ties, the upper face of one end of each tie being sloped upward and terminating abruptly to form a vertical rail-engaging face, the portion of the tie underlying the sloped portion being cut away to

conform to one side of the base-flange of a rail, the other side of said flange having its edge abutting the opposite side wall of said cut-away portion to hold the base-flange of the rail tightly in the said cut-away portion, the said side wall being of greater height than the thickness of said flange, the portion of each tie intermediate said rails being sloped upwardly and terminating abruptly to form a rail-engaging face, the portion of the tie underlying the sloped portion being cut away to conform to one side of the base-flange of a rail, the other side of the said flange abutting the opposite side wall of said cut-away portion to hold the base-flange of the rail tightly in said cut-away portion, the said tie being placed in a series with their sloped portions extending alternately in opposite directions, the entire surface of the walls forming the recesses of each tie being in close contact with the rail-flange.

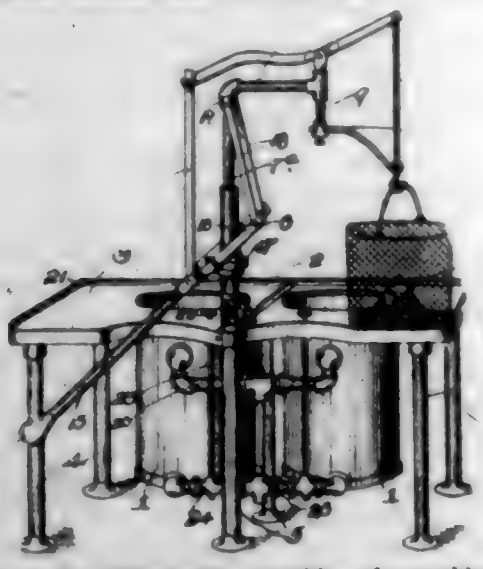


814,328. SLEEVE-FASTENER. Gilbert H. Russell, Laurinburg, N. C. Filed Sept. 26, 1905. Serial No. 280,206.



Claim.—A sleeve-fastener comprising a pair of buttons, sockets provided with spurs or prongs arranged on the inner sides of the buttons, and an elastic shank having its terminals seated within the sockets and held therein by the prongs.

814,329. DISH-WASHING MACHINE. George F. Sigler and Alonzo Dow, Wooster, Ohio. Filed Dec. 22, 1904. Serial No. 237,949.



Claim.—1. In a dish-washing machine, the combination with a reservoir, of a table having an upwardly-extending post provided with a cavity in its end, of a standard mounted loosely in said cavity, a hand-lever pivoted to said post, a second lever pivoted to said standard and having means to support a dish-receptacle, said hand-lever connected on opposite sides of its pivot to said standard and the end of said second lever whereby the actuation of said hand-lever raises or lowers the standard and actuates the second lever to raise or lower said dish-receptacle.

2. In a dish-washing machine, the combination with a reservoir, of a table having an upwardly-extending post provided with a cavity in its end, a standard mounted loosely in said cavity, a hand-lever pivoted to said post, a second lever pivoted to said standard and having means to support a dish-receptacle, said hand-lever connected on opposite sides of its pivot to said standard and the end of said second lever whereby the actuation of said hand-lever raises or lowers the standard and actuates the second lever to raise or lower said dish-receptacle, said standard carrying means to guide the supporting means for the dish-receptacle.

3. In a dish-washing machine, the combination with a plurality of reservoirs, of a longitudinally-movable and rotary standard connected to said table and having means to support a dish-carrier, and a hand-lever attached to said standard whereby it may be operated to raise and lower a dish-carrier in either of said reservoirs.

4. In a dish-washing machine, the combination with a plurality of reservoirs, of a longitudinally-movable and rotary standard, a pivoted lever carried by said standard and having means to support a dish-receptacle, and a pivoted hand-lever having means of connection, on opposite sides of its pivot, with the first-mentioned lever and said standard, whereby the actuation of said hand-lever raises or lowers the standard to actuate the first-mentioned lever to raise or lower a dish-receptacle, in either of said reservoirs.

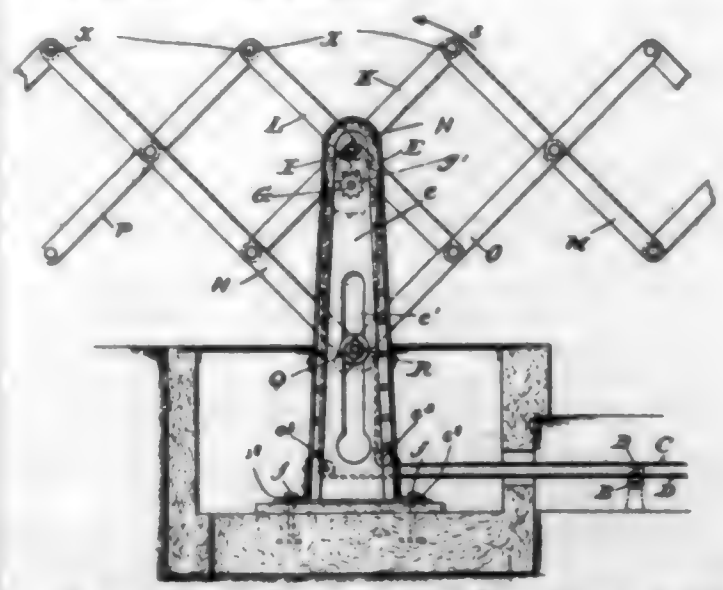
5. In a dish-washing machine, the combination with a plurality of reservoirs, of a longitudinally-movable and rotary standard connected to said table and having adjustable means to support a dish-carrier, and a hand-lever attached to said standard whereby it may be operated to raise and lower a dish-carrier in either of said reservoirs.

6. In a dish-washing machine, the combination with a reservoir having an upward projection on its bottom, of a dish-carrying receptacle having a similarly-shaped upward projection on its bottom adapted to fit over the projection on the bottom of said reservoir for the purpose specified.

7. In a dish-washing machine, the combination with a reservoir having a cone-shaped upward projection on its bottom, of a dish-carrying receptacle having a similarly-shaped upward projection on its bottom adapted to fit over the projection on the bottom of said reservoir for the purpose specified.

8. In a dish-washing machine, the combination with a reservoir having a central cone-shaped upward projection on its bottom, of a dish-carrying receptacle having a similarly-shaped central upward projection on its bottom adapted to fit over the projection on the bottom of said reservoir for the purpose specified.

814,330. RAILWAY-GATE. Albert Spies, Louisville, Ky. Filed Oct. 21, 1905. Serial No. 283,764.



Claim.—1. In a railway-gate, extensible sections comprising crossed levers, pivotally connected one to the other, and means whereby the rotation of one of the pivots of each section projects the section.

2. In a railway-gate, extensible sections comprising crossed levers, pivotally connected one to the other, and means whereby the rotation of one of the pivots of each section projects and retracts the section.

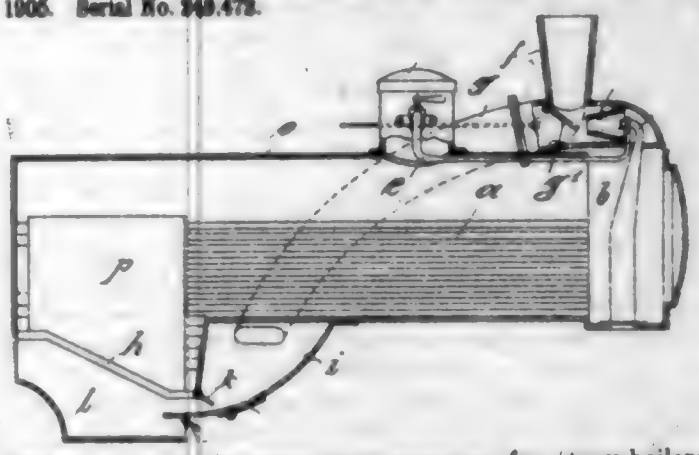
3. In a railway-gate, a suitable post, a shaft rotatable thereon, means for rotating the shaft, a gate comprising a series of crossed levers pivoted one to the other, one of the levers being mounted on the shaft to rotate therewith.

4. In a railway-gate a post, a shaft mounted thereon, gearing for rotating the shaft, a gate comprising a series of crossed levers pivoted one to the other, two of the levers at their intersection being mounted on the shaft, one of said levers rotating with the shaft, guiding-wheels traveling longitudinally of the post, and means for connecting certain levers of the gate to the wheels.

5. In a railway-gate, a post, a shaft mounted thereon, gearing for rotating the shaft, a gate comprising a series of crossed levers pivoted one to the other, two of said levers at their intersection being mounted on the shaft one of said levers rotating with the shaft.

6. In a railway-gate, a suitable post, guiding-wheels traveling longitudinally of the post, shaft connecting the guide-wheels, gate-bars having their ends connected to the shaft, an operating-shaft mounted on the post, gearing for communicating motion to this shaft, flexible connections for operating the gearing, idle rollers over which the flexible connections operate, gate-bars mounted on the shaft, one of which rotates with the shaft, and communicates motion to the remaining bars.

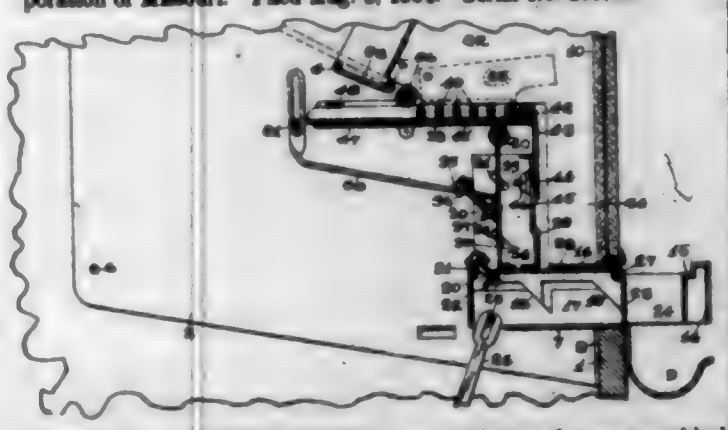
814,331. SMOKE-CONSUMING APPARATUS FOR STEAM-BOILERS. RUDOLPH SPOHD, Königsberg, Germany. Filed Mar. 10, 1905. Serial No. 249,472.



Claim.—1. A smoke-consuming apparatus for steam-boilers comprising in combination a nozzle-chamber situated directly below the funnel of the boiler, a flap arranged within said nozzle-chamber for regulating the action of the smoke-consuming apparatus, a connecting-nozzle serving for the purpose of connecting the smoke-chamber with said nozzle-chamber, a steam-jet nozzle discharging into said connecting-nozzle, a connecting-tube starting from the nozzle-chamber, a collecting-chamber in communication with said connecting-tube and being in connection with the ash-pan of the fire-box, substantially as described and for the purpose set forth.

2. A smoke-consuming apparatus for steam-boilers comprising in combination a nozzle-chamber situated directly below the funnel of the boiler, a connecting-nozzle serving for the purpose of connecting the smoke-chamber with said nozzle-chamber, a steam-jet nozzle discharging into said connecting-nozzle, a ring-shaped steam-nozzle for carrying steam into said nozzle-chamber, a connecting-tube starting from the nozzle-chamber, a collecting-chamber in communication with the ash-pan and said connecting-tube, a flap for regulating the passage from the collecting-chamber to said ash-pan, substantially as described and for the purpose set forth.

814,332. VENDING-MACHINE. LEE C. SPOONER, St. Louis, Mo., assignor to The Peter Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 6, 1904. Serial No. 219,734.



Claim.—1. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member, a chute leading from said chamber to said ejecting-member, and an oscillatory bottom for said chamber, one end of which moves substantially in the plane of one wall of said chute, an apron substantially confined to the wall of said chute and connected to said end of said bottom to move therewith, said ejecting member and said bottom being operatively connected, whereby the articles in said chamber will be agitated and certain of them will be alined with said chute whenever an article is delivered.

2. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member provided with a recess to contain an article to be delivered, means to adjust the width of said recess in said ejecting member, a chute leading from said chamber to said recess, means to adjust the width of said chute, an oscillatory bottom for said chamber, and means connecting said ejecting member and said oscillatory bottom to actuate the latter when the former is actuated.

3. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member provided with a recess to contain an article to be delivered, means to adjust the cross-sectional area of said recess, a chute connecting said chamber and said recess, and means to adjust the size of said chute.

4. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, a chute leading from said chamber to said member, an oscillatory bottom for said chamber, one end of which moves substantially in the plane of one wall of said chute, and a reciprocatory feed member mounted on said bottom.

5. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, a chute leading from said chamber to said member, an oscillatory bottom for said chamber having one end substantially in the plane of one wall of said chute, and an apron connected with said bottom to move with the end thereof but substantially confined to the plane of the wall of said chute.

6. A vending-machine comprising a frame provided with a chamber to contain the articles to be vended, an ejecting member, an oscillatory bottom for said chamber, a feed-slide arranged to reciprocate with respect to said bottom, and means for simultaneously oscillating said bottom and reciprocating said feed-slide upon actuation of the ejecting member.

7. In a vending-machine, an ejecting member having a recess to contain an article to be delivered, one of the sides of said recess being simultaneously adjustable horizontally and vertically and a screw arranged to adjust said side and hold it in its position of adjustment whereby said recess may be adjusted in cross-section and its dimensions may be temporarily fixed.

8. A vending-machine comprising a frame provided with a chamber to contain the articles to be delivered, an ejecting member provided with a recess to receive an article to be delivered, means to adjust one wall of said recess downwardly and inwardly, a chute leading from said chamber to said recess and having a wall in subetantial alinement with said wall of said recess and means to adjust said wall of said chute downwardly and inwardly, whereby said chute and said means may be adjusted to substantially the same width.

9. In a vending-machine, an ejecting member having a recess to contain an article to be delivered, and means to equally vary the vertical and horizontal dimensions of the cross-sectional area of said recess.

10. In a vending-machine, an ejecting member provided with a recess to contain an article to be delivered and comprising relatively movable frames, said frames having coöperating inclined bearing-surfaces and means to adjust one frame with respect to the other whereby the vertical and horizontal dimensions of the cross-sectional area of said recess may be simultaneously varied.

814,333. BOX-MACHINE. HENRY W. SUMNER, East Rochester, Ohio. Filed May 3, 1897. Serial No. 634,935.

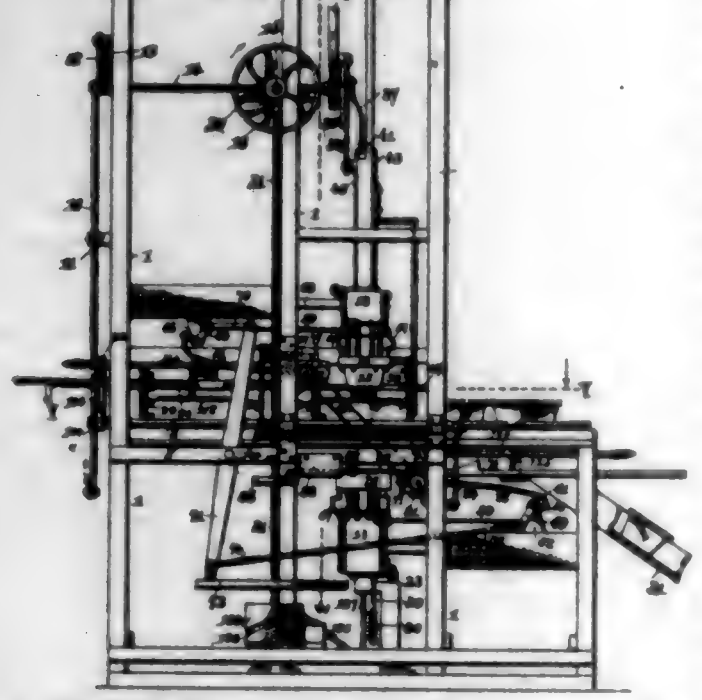
Claim.—1. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for conveying and delivering the bottom and sides forming blanks thereto, said mechanism comprising means for causing the blanks to cross with their ends projecting beyond opposite sides of each other.

2. In a basket-making machine, the combination with bending mechanism, of mechanism for conveying and delivering the bottom and sides and forming blanks thereto, said mechanism comprising means for crossing the blanks flatwise with their ends projecting beyond opposite sides of each other to be operated upon in such condition by said bending mechanism.

3. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for conveying and delivering the bottom and sides forming blanks thereto, said mechanism comprising means for changing the angular relation of the blanks and thus crossing the blanks flatwise to be operated upon in such condition by said bending mechanism.

4. In a machine of the class described, the combination with bending mechanism, of a feed mechanism for carrying the blanks into

the zone of action of the bending mechanism, and also causing the blanks to cross with their ends projecting beyond opposite sides of each other, said feed mechanism comprising a pair of independent feeders for respectively carrying the separate blanks.



5. The combination of blank-bending devices, a conveyer moving in the arc of a circle to convey a blank to the blank-bending devices, and another conveyer to feed another blank, the two conveyers so arranged as to place one blank crosswise of the other.

6. In a basket-making machine, the combination with a pair of shaping-dies, and means for opening and closing them, of a blank feeding and crossing mechanism consisting of means for feeding one blank forward in a straight line, and a conveyer, traveling in the arc of a circle, for feeding a second blank forward, so that the two will lie crosswise of each other.

7. In a basket-making machine, the combination of bending-dies, conveying means for one blank, a conveyer having a horizontally-arranged seat or holder for another blank, and means for moving said conveyer horizontally in the arc of a circle to place the blank carried thereby crosswise of the first-mentioned blank.

8. In a basket-making machine, the combination with bending mechanism, of mechanism for conveying and delivering the bottom and sides forming blanks thereto, said latter mechanism comprising means for crossing the blanks flatwise and for subsequently delivering the crossed blanks to be operated upon in such condition by said bending mechanism and means for holding the blanks while being operated upon.

9. In a basket-making machine, the combination with bending mechanism, of a feed mechanism comprising a pair of independent feeders for respectively carrying the separate blanks and arranged to provide for the crossing of the latter, one of said feeders being also arranged to hold the crossed blanks while being operated upon by the bending mechanism.

10. In a machine of the class described, the combination with bending mechanism, of a feed mechanism for crossing the blanks and carrying them into the zone of action of the bending mechanism, one of the elements of said feed mechanism serving as a carrier for the formed basket.

11. In a basket-making machine, the combination of blank-bending devices, a conveyer moving in the arc of a circle to convey a blank to the blank-bending devices, and another conveyer to feed another blank, the two conveyers being so arranged as to place one blank crosswise of the other, and one of said conveyers serving as a carrier for removing the formed basket from the zone of the blank-bending devices.

12. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for conveying and delivering the bottom and sides forming blanks thereto, said latter mechanism comprising means for changing the angular relation of the blanks, and also comprising means for holding the blanks in crossed relation while operated upon by the bending mechanism, and for removing the formed basket from the zone of the latter.

13. In a basket-making machine, the combination with a pair of shaping-dies, of a table adapted to receive uncut sheets of veneering, cutting means adapted to cut blanks of the required size from the stock, and a plurality of conveying devices for conveying a pair of blanks from the table to the shaping-dies, said conveying devices being arranged to place the blanks crosswise of each other prior to their presentation to the shaping-dies.

14. In a basket-making machine, the combination with a pair of shaping-dies, of a table adapted to receive uncut sheets of veneering, cutting means adapted to cut blanks of the required size from the stock, a conveyer adapted to receive a cut blank and carry it in an arc of a circle into a position substantially at right angles to the position it occupied on the said table and means for placing a second blank in crossing relation with the blank carried by said conveyer.

15. In a basket-making machine, the combination of a pair of shaping-dies, means for opening and closing them, means for feeding sheets of veneering toward the dies, means for cutting out of said sheets blanks for the body portion of the basket, and means for conveying the blanks to and placing them crosswise between the shaping-dies to project beyond each other on two sides.

16. In a basket-making machine, the combination with the blank-bending mechanism, and the movable table, of means for delivering separate blanks to the table, said movable table and the means for delivering the blanks thereto being so arranged as to cause the blanks to cross each other.

17. In a basket-making machine, the combination with the blank-bending mechanism, of a feed mechanism for carrying the blanks into the zone of action of the bending mechanism, and also causing the blanks to cross each other, said feed mechanism comprising a table having openings therein, and a pair of separate blank-carrying devices associated with the table.

18. In a basket-making machine, the combination with the blank-bending mechanism, of a feed mechanism, including a table having openings, for carrying the separate blanks into the zone of action of the bending mechanism, said feeding mechanism causing the said blanks to cross each other over the openings of the table.

19. In a basket-making machine, the combination with the blank-bending mechanism, of a feed mechanism, including a movable table having openings, for carrying the separate blanks into the zone of action of the bending mechanism said feeding mechanism causing the said blanks to cross each other over the openings of the movable table.

20. In a basket-making machine, the combination with the blank-bending mechanism, of a feed mechanism, including a rotary table having openings, for carrying the separate blanks into the zone of action of the bending mechanism said feeding mechanism causing said blanks to cross each other over the openings of the rotary table.

21. In a basket-making machine, the combination with the blank-bending mechanism, of a table having rectangular openings and provided with recesses in its upper side at the edges of the openings to receive the end portions of crossed blanks and retain them in place.

22. In a basket-making machine, the combination with the blank-bending mechanism, of a rotary table having openings to receive the blanks and carry the same to the bending mechanism, a device for supplying a blank to an opening in the table, and a second device for placing another blank over said opening in crossing relation with the blank first supplied.

23. In a basket-making machine, the combination with the blank-bending mechanism, of a rotary table provided with a series of openings, and separate devices for placing blanks over the openings at different positions of the table, whereby the said blanks cross each other.

24. In a basket-making machine, the combination with the blank-bending mechanism, of a rotary table having a series of openings, a pair of feed-chains radially disposed for supplying blanks to the openings, and a second pair of feed-chains disposed tangentially for advancing the blanks to the openings and at right angles to the blanks previously placed in position.

25. In a basket-making machine, the combination with the blank-bending mechanism, of a rotary table provided with openings, a radial and a tangential set of feed-chains for advancing the blanks to the openings of the table in the manner set forth, and plungers co-operating with each set of feed-chains to dislodge the blanks and properly position them with respect to the openings of the table.

26. In a basket-making machine, the combination with the blank-bending mechanism, of a table provided with openings, a set of feed-chains having spurs or points to make positive engagement with the blanks, said feed-chains and the table being so operated and arranged as to cause the blanks to cross each other, and plungers for dislodging the blanks from the chains.

27. In a basket-making machine, the combination with the

blank-bending mechanism, of a rotary table provided with openings, a radial and a tangential set of feed-chains provided with lateral extensions having spurs or points to make positive engagement with the blanks and carry them forward, and plungers for dislodging the blanks from the spurs of the feed-chains.

28. In a basket-making machine, the combination with the form, of a feed-table provided with openings adapted to be brought opposite the form, and an ejector adapted to eject the baskets off the form into the openings.

29. In a basket-making machine, a form, in combination with a rotary feed-table provided with openings, means for bringing the openings opposite the form, and an ejector adapted to eject the baskets off the form into the openings.

30. In a basket-making machine, the combination with the form, of a blank feeding and crossing mechanism, including a feed-table provided with openings, for carrying the crossed blanks into the plane of the form, and an ejector adapted to eject the baskets off the form.

31. In a basket-making machine, the combination of blank-bending mechanism comprising a form and die, means for separating these two members and for subsequently restoring their coöperative relation, means for automatically feeding blanks to the die while so separated from the form and for crossing said blanks, with their ends projecting beyond opposite sides of each other and means for applying a band to the form.

32. In a basket-making machine, the combination with blank-bending mechanism comprising a form and die, of means for effecting the separation and approach of said members, means for feeding crossed blanks to the die and means for feeding a previously-formed band to the form while the die and form are separated.

33. In a basket-making machine, the combination with blank-bending mechanism comprising a form and die, of means for automatically crossing a pair of blanks and for subsequently feeding the crossed blanks to the die, means for applying a band to the form while said form is separated from the die, means for operating the bending mechanism to bend the blanks around the form, and means for uniting the blanks and band while on the form.

34. In a basket-making machine, the combination with a die, and a form movable toward and away from the die, of means for so moving the form, means for applying a band to the form during its movement, and means for feeding body-forming blanks opposite the die.

35. In a basket-making machine, the combination with a die, and a form movable toward and away from the die, of means for applying a band to the form during its movement toward the die, and means for feeding body-forming blanks opposite the die.

36. In a basket-making machine, the combination with a die, and a form movable toward and away from the die, of means for so moving the form, means for applying a band to the form during its movement, and means for automatically feeding body-forming blanks in crossed relation opposite the die.

37. In a basket-making machine, the combination with a die, and a form movable toward and away from the die, of means for so moving the form, means for feeding body-forming blanks opposite the die, means for applying an inner band to the form during its movement, and means for placing an outer band around the die and for moving said outer band to its proper position on the basket as the form comes to rest.

38. In a basket-making machine, the combination with blank-bending mechanism comprising a form and die, of feeding mechanism for applying an inner band about the form while said form is separated from the die, means for crossing body-forming blanks and for depositing the crossed blanks opposite the die, means for operating the bending mechanism to fold the blanks about the form, band-applying means for applying an outer band to the blanks, and stapling mechanism for uniting the bands and blanks on the form.

39. The combination with a feed-table provided with an opening over which the blanks are placed, of blank-bending mechanism comprising a form and die, one of said elements being adapted to pass through the opening, means for supplying a band to the form, and united mechanism for uniting the blanks and band.

40. The combination with a form and die, of means for holding a band-blank, means for folding said blank to form a band, and means for subsequently transferring the formed band to the form.

41. The combination with a form, of means for retaining a band-blank in vertical position, means for moving said blank sidewise in a horizontal direction to present it adjacent to the form, and for folding the blank to form a band and means for subsequently moving the band edgewise to its position on the form.

42. In a basket-making machine, the combination with a form, of means for holding a sheet of band-blank material in a horizontal position, means for turning one edge of the sheet to a vertical position, means for cutting a band-blank from the turned edge of the sheet, and means for moving said blank sidewise in a horizontal direction to present it adjacent to the form.

43. In a basket-making machine, the combination with the blank-bending mechanism for the basket-body, of mean for cutting the individual bands from sheet material and a band-folder arranged to carry the bands away from the sheet to a proper position upon the basket-body.

44. In a basket-making machine, the combination with a blank-bending mechanism of a band-folder, a feeding mechanism for advancing the strip of sheet material to the folder, and a cutting mechanism intermediate of the folder and feeding mechanism.

45. In a basket-making machine, the combination with a band-folder, of mechanism for feeding a sheet of band-blank material to cause the engagement of its edge by the folder, and cutting mechanism located immediately adjacent to the band-folder to cut a band-blank from the sheet.

46. In a basket-making machine, the combination with the blank-bending mechanism, of a device for folding the band to the form of the basket to be made, and means for cutting the bands from sheet material subsequent to the engagement of the edge of such material by the folding device.

47. In a basket-making machine, the combination with the blank-bending mechanism, of a device for folding the bands to the form of the basket, a feeding mechanism for delivering sheet material to said device, and means for cutting the band from the sheet material while engaged with said folding device.

48. In a basket-making machine, the combination with body-blank-bending mechanism, of band-feeding mechanism for feeding a band into the zone of the blank-bending mechanism, said band-feeding mechanism comprising means for folding the band.

49. In a basket-making machine, the combination with body-blank-bending mechanism, of band-feeding mechanism for feeding a band into the zone of the blank-bending mechanism, said feeding mechanism comprising means for completely folding the band prior to its delivery to the basket.

50. In a basket-making machine, the combination with body-blank-bending mechanism, of mechanism located out of the zone of the bending mechanism for supplying band-blanks for the machine, and band-feeding mechanism for feeding the blanks into the zone of the bending mechanism, said feeding mechanism comprising a band-folder, and means for ejecting the band from the folder.

51. In a basket-making machine, the combination with a form and die for shaping a basket, of a device for folding a band to the form of the basket to be made, and means for carrying the band in its folded condition to its proper position with relation to the die and basket.

52. In a basket-making machine, the combination with blank-bending mechanism, and means for feeding bottom and sides forming blanks thereto, of means for folding a band to the form of the basket, and means for delivering the folded band to its proper position on the basket.

53. In a basket-making machine, the combination with the blank-bending mechanism, of a device for folding the band to the form of the basket to be made, and a movable support for said folding device to carry the same bodily toward and away from the plane of the bending mechanism.

54. In a basket-making machine, the combination with the blank-bending mechanism, of a folder for bending the band to the form of the basket, a movable support for bodily transporting the folder, and means for moving the support to carry the folder and band toward and the folder away from the plane of the bending mechanism.

55. In a basket-making machine, the combination with the blank-bending mechanism, of a folder for bending the band to the form of the basket to be made, and for supporting the band, a slide carrying said folder, and means for shifting the slide to move the folder bodily toward and away from the plane of the bending mechanism.

56. In a basket-making machine, the combination with the body-blank-bending mechanism, of a device for folding a band to the form of the basket to be made, said folding device also serving as a holder for the band during the folding operation, and a movable support to carry the band-folder bodily toward and away from the plane of the body-blank-bending mechanism, in addition to its function as a band-folder.

57. In a basket-making machine, the combination with blank-bending mechanism, of a band-folder, and a driver for removing the band from the folder to its proper position with relation to the bending mechanism.

58. In a basket-making machine, the combination with the blank-bending mechanism, of folders for the inner and outer bands, and means for moving said bands from the folders to their proper positions with respect to the bending mechanism.

59. In a basket-making machine, the combination with the blank-bending mechanism, of separate band-folding devices arranged in opposite relation, inner and outer band-feeding mechanisms associated respectively with the separate folding devices, and means for causing the synchronous operation of the said mechanisms.

60. In a basket-making machine, the combination with the blank-bending mechanism comprising a form and die, of a band-folder, and means for moving the band from the band-folder to its proper position on the form.

61. In a basket-making machine, the combination of a die, a band-folder, and a driver for dislodging the band from the folder and placing it in position with respect to the die.

62. In a basket-making machine, the combination with body-blank-bending mechanism for bending the body-blanks of a basket, of band-folding mechanism for simultaneously folding a pair of bands.

63. In a basket-making machine, the combination with the body-blank-bending mechanism for bending the body-blanks to the form of a basket, of means for simultaneously folding separate inner and outer bands and for applying said bands to a basket.

64. In a basket-making machine, the combination with the body-blank-bending mechanism for bending body-blanks to the form of a basket, of means for applying previously-folded inner and outer bands to the basket.

65. In a basket-making machine, the combination with body-blank-bending mechanism for bending body-blanks to the form of a basket, of means for folding separate inner and outer bands, and means for feeding the previously-formed bands in different directions to effect their presentation to the body-blanks.

66. In a basket-making machine, the combination of a die externally grooved, a band-folder provided with holders spaced apart, and a driver for dislodging the band from the folder, and comprising a series of strips or fingers adapted to move into the grooves of the die and having portions operating in the spaces formed between the aforesaid holders.

67. In a basket-making machine, the combination of a die externally grooved, a band-folder provided with holders spaced apart, and a driver, the latter comprising a series of fingers or strips having their end portions bent to project across the path of the band and operate in the grooves of the die and in the spaces formed between the said holders.

68. In a basket-making machine, the combination of a die, a band-retainer and guide surrounding the die, a band-folder, and a driver for dislodging the band from the folder and moving it into the space formed between the die and band-retainer.

69. In a basket-making machine, the combination of a die externally grooved, a band-retainer and guide surrounding the die and having spaces opposite the grooves of the die, and a driver for moving the band from the folder into the space formed between the die and band-retainer.

70. In a basket-making machine, the combination with a form, and a band-retainer encircling the form and provided with a series of tapering extensions, of a band-folder, and a driver for removing the band from the folder and forcing it into the space between the form and the surrounding extensions.

71. In a basket-making machine, the combination with the blank-bending mechanism, of a band-folder comprising a plurality of articulated members, and means for causing the members to be brought to a substantially alined position, and also swung upon their connection to fold the band into shape, and separate means for displacing and carrying the band in its shaped condition from said folder to the basket-body.

72. In a basket-making machine, the combination with the blank-bending mechanism, of a band-folder comprising a plurality of articulated members, and means for causing the said members to move to positions substantially at right angles to each other, and separate means for displacing and carrying the band in its shaped condition from said folder to the basket-body.

73. In a basket-making machine, the combination with the blank-bending mechanism, of a band-folder comprising back, side and front articulated members, means for causing the said members to move to positions substantially at right angles to each other, and separate means for displacing and carrying the band in its shaped condition from said folder to the basket-body.

74. In a basket-making machine, the combination with the blank-bending mechanism, of a band-folder consisting of a plurality of articulated members carrying holders for engaging the band, and means for displacing the band from said holders and carrying the same in its shaped condition to the basket-body.

75. In a basket-making machine, a band-folder comprising back, side and front articulated members, and connections between the front and back members, whereby the movement imparted to the side members will be transmitted to the front members.

76. In a basket-making machine, a band-folder comprising back, side and front plates hinged together, the front plates being about half the width of the back plate, and link connections between the front and back plates, whereby movement imparted to the side plates will be transmitted to the front plates.

77. A band-folder for basket-making machines, comprising back, side and front plates hinged together, extensions projecting from the back plate, projecting parts applied to the front plates, and links connecting the said extensions with the projecting parts of the front plates, whereby movement imparted to the side plates is transmitted to the front plates.

78. In a band-folder for basket-making machines, the combination of a series of plates hinged together and adapted when brought together to inclose a space, and a series of holders applied to the plates and having their extremities cleft to receive the band.

79. In a band-folder for basket-making machines, the combination of back, side and front plates hinged together and arranged to inclose a space, and holders applied to the said plates, and having their ends cleft to receive the band, the holders applied to the front plates being out of line to cause the ends of the band to overlap.

80. In a basket-making machine, the combination with a driver comprising a connected series of fingers having their free ends bent outwardly, of a series of plates hinged together and adapted when folded to inclose said driver, and holders applied to the plates and consisting of fingers having their free ends bent and cleft, the holders applied to the plates having angular motion, being offset between their ends.

81. In a basket-making machine, the combination of a slide bearing a band-folder, a rock-shaft journaled in bearings provided on the slide and having oppositely-extending arms, rods connecting the arms of the rock-shaft with elements of the band-folder to effect an opening and closing thereof, and links connecting other arms of the rock-shaft with a fixed part of the frame.

82. In a basket-making machine, the combination of a slide, a band-folder comprising a series of plates hinged together and having connection with the slide, a rock-shaft journaled in bearings provided on the slide and having a series of arms extending in opposite directions, rods connecting the side plates of the band-folder with some of the arms of the rock-shaft, links connecting other arms of the rock-shaft with a fixed part of the frame, and connections between the front plates of the band-folder and the rear plate.

83. In a basket-making machine, the combination of a form, a band-folder, a driver for driving the band from the folder to the form, a cam secured to a power-driven shaft, a pitman connecting the cam with the form and provided with guides and a slot, and a second pitman having connection with the driver and provided with a pin operating in the slot of the first-mentioned pitman and working in a groove of the cam and supported by a slide operating in the guides aforesaid.

84. In a basket-making machine, the combination of upper and lower band-feeding mechanisms, a sprocket-chain connecting corresponding elements of the two sets of feeding mechanisms for transmitting motion from one to the other, means for imparting movement to one of the feeding mechanisms and simultaneously operating band-folders coöperating with said feeding mechanisms.

85. In a basket-making machine, the combination of upper and lower band-feeders, band-folders for receiving the bands, upper and lower knives operating intermediate of the feeders and folders, links connecting the knives with a fixed part of the frame, a rock-shaft having oppositely-extending arms in connection with the said knives, and means for imparting a longitudinal movement to one of the knives.

86. In a basket-making machine, the combination of a cutter constructed to inclose a space, a head carrying the cutter, a bar pivoted to one end of a fixed support, a link connecting the pivoted bar at a point between its ends with the head carrying the cutter, and a clearer operating in the space inclosed by the cutter and having con-

nection with the outer end of the pivoted bar and receiving a variable movement with respect to the cutter.

87. In a basket-making machine, the combination of two sets of feed-chains, a cross-head, plungers having connection with the cross-head, cutters attached to the said cross-head and inclosing a space, bars pivoted at their inner ends to a fixed part of the frame, links connecting the pivoted bars at a point between their ends with the aforesaid cross-head, and clearers operating in the spaces of the cutters and having connection with the outer ends of the pivoted bars.

88. In a basket-making machine, the combination of a reciprocating cutter for separating the stock into blanks, a bar pivoted to a fixed support, a link connecting the cutter with the pivoted bar at a point between its ends, a clearer, and means connecting the clearer with the outer end of the aforesaid pivoted bar at a point beyond the pivotal connection therewith of the aforesaid link.

89. In a basket-making machine, the combination with a die, and a surrounding band-retainer and guide, of springs extending across the space formed between the die and retainer.

90. In a basket-making machine, the combination of a female die, a band-retainer and guide surrounding the said die and projecting beyond one end thereof, and springs secured to the die and projecting across the space formed between the die and band-retainer to hold the band in place.

91. In a basket-making machine, the combination of a female die, a band-retainer and guide encircling the die and projecting beyond one end thereof, and springs located at the corners of the die and secured thereto and projecting across the space formed between the die and the band-retainer.

92. In a basket-making machine, the combination with a knife for trimming the sheet material, of a crimper coöperating therewith for spreading or disturbing the normal condition of the edges of abutting strips.

93. In a basket-making machine, the combination with a trimming-knife, of a crimper coöperating therewith, consisting of complementary parts provided with corresponding notches and projections.

94. A basket-making machine comprising a rotary table having a series of openings disposed in a circle, radial and tangential feeders for advancing the blanks, whereby the latter are received in the openings of the table in crossing relation, a cutting mechanism for dividing the strips of veneering into blanks of the required size, complementary dies for shaping the blanks into the required form, band-folders, drivers coöperating with the folders, and upper and lower band cutting and feeding mechanism.

95. In a basket-making machine, the combination with the blank-bending mechanism, a horizontal bed having an opening in vertical alinement with the bending mechanism, a chute communicating with the bed at one side of the said opening therein, and a rotary table of annular form supported upon the bed and provided with a series of openings to receive and carry the blanks to the bending mechanism and the completed baskets to the chute, of radially and tangentially disposed feeders for supplying the blanks to the openings of the table, means for feeding, folding and applying the bands to the blanks when shaped, means for expelling the completed baskets, and actuating mechanism for the working parts.

96. In a basket-making machine, the combination with bending mechanism comprising a form and die, of means for feeding blanks to the bending mechanism, and band-feeding mechanism for feeding one band to the form and another to the die.

97. In a basket-making machine, the combination with bending mechanism, comprising a stationary die and a movable form, of blank-bending mechanism for feeding blanks to the bending mechanism, and band-feeding mechanism for feeding a band to the form and another to the die.

98. In a basket-making machine, the combination of blank-bending mechanism comprising a form and die one of which is movable, means for feeding bottom and sides forming blanks in crossed relation over or opposite the die while the latter is separated from the form, means for actuating said bending mechanism to bend the blanks and to separate the form and die, and means for automatically applying a band about the movable element of the bending mechanism during the movement thereof.

99. In a basket-making machine, the combination with a bending mechanism comprising a form and die, means for feeding the body-forming blanks in properly-crossed relation over or opposite the die, means for reciprocating the form to and from the die, means for folding an inner band about the form in its excursion from and to the die, means for folding an outer band and means for driving the folded band to its proper position as the form comes to rest in the die.

100. In a basket-making machine, the combination with basket-forming mechanism, of band-folding mechanism, and means for presenting the folded band to the basket-forming mechanism.

101. In a basket-making machine, the combination with basket-forming mechanism, of means for preparing properly-crossed blanks and folded bands for a succeeding basket during the formation of a basket by the basket-forming mechanism.

102. In a basket-making machine, the combination with the blank-bending mechanism, of blank-feeding mechanism for feeding blanks to the bending mechanism, means for folding inner and outer bands, and means for presenting the previously-folded bands to the basket.

103. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for conveying and delivering the blanks thereto, said mechanism comprising means for causing said blanks while in transit to the bending mechanism to cross with their ends projecting beyond opposite sides of each other.

104. In a basket-making machine, the combination with a form and die, of blank-feeding mechanism for presenting blanks opposite the die, means for moving a folded inner band to its proper position as the form is moved, and means for moving a folded outer band to its position on the bent blanks.

105. In a basket-making machine, the combination with a folder having a passage therethrough, of a form and die normally located at opposite sides of the folder, said form being movable through the folder to initially bend the blanks and to present the partially-folded blanks to the die for the completion of the folding.

106. In a basket-making machine, the combination with a movable form, of a die, and an apertured plate arranged to coöperate with the form to fold the blanks prior to the delivery of said blanks to the die to complete the shaping of the basket.

107. In a basket-making machine, the combination with a movable form, of means for holding blanks in the path of the form, a folder, such as the edges of a hole formed in a plate, for folding the blanks toward the sides of the form as the form passes through said opening, and a die to receive the blanks carried forward by the form cause said blanks to complete the shaping of the basket.

108. In a basket-making machine, the combination with a movable form, of a die, an apertured plate disposed intermediate of the form and die to constitute a folder for folding blanks toward the form as said blanks are carried toward the die, means for applying a band to the blanks, and means for uniting the band and blanks.

109. In a basket-making machine, the combination with a movable form, of a die, an apertured plate disposed intermediate of the form and die to constitute a folder for folding blanks toward the form as said blanks are carried toward the die, means for applying inner and outer bands to the blanks, and means for uniting the bands and blanks.

110. In a basket-making machine, the combination with a reciprocatory form, of means for holding blanks in the path of the form, a folder, such as the edges of a hole formed in a plate of the blank-holding means, for folding the blanks toward the sides of the form as the form passes through said opening, a die to receive the blanks carried forward by the form to cause said blanks to complete the shaping of the basket, means for applying a band to the blanks, and means for uniting the band and blanks.

111. In a basket-making machine, the combination with a reciprocatory form, of means for holding blanks in the path of the form, a folder, such as the edges of a hole formed in a plate of the blank-holding means, for folding the blanks toward the sides of the form as the form passes through said opening, a die to receive the blanks carried forward by the form to cause said blanks to complete the shaping of the basket, means for applying inner and outer bands to the blanks, and means for uniting the bands and blanks.

112. In a basket-making machine, the combination with a form and die, of means for crossing two blanks with their ends projecting beyond the opposite sides of each other, said means including an apertured plate arranged to hold the blanks in position to be operated upon.

113. In a basket-making machine, the combination with a form, of means for crossing two blanks with their ends projecting beyond the opposite sides of each other, and means for folding said blanks about the form.

114. In a basket-making machine, the combination with a form and die, of means for crossing two blanks centrally of each other with their ends projecting and for holding them in a plane between the form and die.

115. In a basket-making machine, the combination with a form, of means for crossing a pair of blanks to cause them to project be-

yond two sides of each other, means for folding such blanks about the form, and means for applying a band to the blanks.

116. In a basket-making machine, the combination with a form, of means for crossing a pair of blanks to cause them to project beyond two sides of each other, means for folding such blanks about the form, and means for applying inner and outer bands to the blanks.

117. In a basket-making machine, the combination with a form and die having relative movement, of means for crossing a pair of blanks and for presenting the previously-crossed blanks between the form and die.

118. In a basket-making machine, the combination with a form and die having relative movement; of means for crossing a pair of blanks to project beyond each other on two sides and for simultaneously presenting the crossed blanks between the form and die to permit the bending of the blanks into the form of a basket, and means for applying a band around the edges of the blank.

119. In a basket-making machine, the combination with a form and die having relative movement; of means for crossing a pair of blanks to project beyond each other on two sides and for presenting said blanks in crossed relation between the form and die to permit the bending of the blanks into the form of a basket, means for applying inner and outer bands around the edges of the blanks, and means for uniting the bands and blanks.

120. In a basket-making machine, the combination with a form, and die, of an intermediate apertured plate, and means for causing a pair of blanks to assume an angular relation opposite said aperture, whereby the edges of said aperture constitute a folder for folding the blanks toward the form as the latter passes through the opening in the plate.

121. In a basket-making machine, the combination with a form, and die, of an intermediate apertured plate, means for causing a pair of blanks to assume an angular relation opposite said aperture, whereby the edges of said aperture constitute a folder for folding the blanks toward the form as the latter passes through the opening in the plate, means for applying a band to the folded blanks, and means for uniting the band and blanks.

122. In a basket-making machine, the combination with a band-folder for bending a band into a shape corresponding to the shape of the basket to be formed, and a driver arranged to discharge the band from the folder.

123. In a basket-making machine, the combination with a band-folder for bending a band into a shape corresponding to the shape of the basket to be formed, means for feeding a band to the folder, and a driver arranged to take the band from the folder.

124. In a basket-making machine, the combination with a band-folder, of a movable form, means for transferring a previously-folded band from the band-folder to the form, and means for thereafter applying body-blanks to the form.

125. In a basket-making machine, the combination with a band-folder, of a form, means for transferring a previously-folded band from the folder to the form, means for applying body-blanks to the form, and means for uniting the band and blanks.

126. In a basket-making machine, the combination with a band-folder, of a form, means for transferring a previously-folded band from the folder to the form, means for applying body-blanks to the form, means for applying a second band to the blanks, and means for uniting the bands and blanks.

127. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for advancing two blanks, and means for causing one blank to cross the other and for holding the crossed blanks until said blanks are engaged by the bending mechanism.

128. In a basket-making machine, the combination with a form and die having relative movement, of mechanism for advancing two blanks at a time, means for causing said blanks to cross each other, said means also serving to hold the crossed blanks during the relative movement of the form and die.

814,334. PROCESS OF RECOVERING TIN OR TIN AND LEAD.

John C. Tallapferro, Baltimore, Md., assignor to Continental Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,343.

Claim.—1. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture and mechanically removing the alloy.

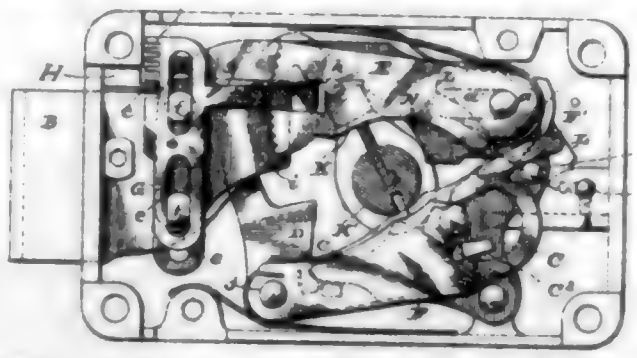
2. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture and skimming off the iron or steel.



3. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture, skimming off the iron or steel and separating the tin and lead from the iron or steel in said skimmings by melting the same on charcoal.

814,335. CHANGEABLE COMBINATION KEY-LOCK.

Warren H. Taylor, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed July 1, 1905. Serial No. 267,835.



Claim.—1. In a changeable key-lock wherein the combination is changed by the insertion and turning of a key when the bolt is retracted, the combination with a bolt and tumblers, of a safety locking device for preventing the main key from being turned to a position where the main key can be removed when the bolt is retracted, and a key for actuating the safety locking device.

2. In a changeable key-lock, the combination with a bolt and tumblers, of a safety locking device which must be operated by a key before the main tumblers of the lock can be reset to conform to the bittings of a different form of change-key.

3. In a changeable key-lock, the combination with a bolt and a series of tumblers carried thereby, of a main key-hub for actuating the bolt, and a safety locking device for said main key-hub, which must be operated by its key before the main tumblers of the lock can be reset.

4. In a changeable key-lock, the combination with a bolt, a tumbler carried thereby and a key-hub having a cam for moving the bolt, of a safety locking device for limiting the throw of the cam and a key for actuating the safety locking device, whereby the main key-hub may be turned to a position where the main key can be removed while the bolt is in its retracted position, and a new change-key inserted.

5. In a changeable key-lock the combination with a bolt, tumblers thereon and a main key-hub having a key-slot opening at the front of the lock and having a cam for moving the bolt, of a safety locking device having its key-opening in the rear face of the lock-casing and adapted to limit the turning movement of the main key-hub, and a key for actuating the safety locking device.

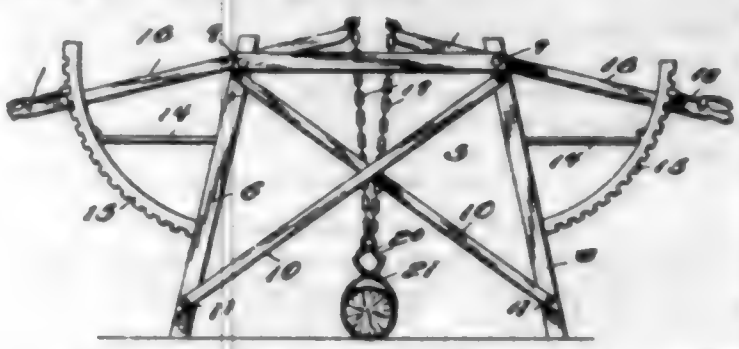
6. In a changeable key-lock the combination with a lock-casing, a bolt therein, tumblers carried by said bolt and a main key-hub having its key-slot opening in the front face of the casing, of a safety locking device for limiting the movement of the key-hub and having its key-opening in the rear face of said casing and a key for said safety locking device.

814,336. SAWBUCK.

Ashley D. Thomas, Belleville, Wis. Filed June 10, 1905. Serial No. 264,841.

Claim.—1. In a sawbuck the combination with a frame including crossed braces, of levers pivoted in the frame, log-engaging devices carried by the levers said levers being movable to hold a log en-

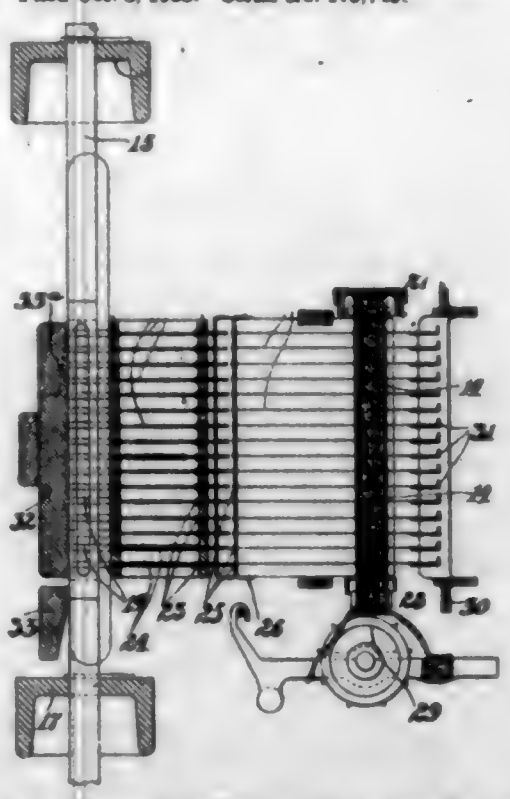
gaged by the devices in an angle of the crossed braces and means for holding the levers with a log in such a position.



2. A sawbuck comprising a frame including legs and crossed braces, of levers pivoted between the legs, log-engaging devices connected with the levers said levers being movable to permit of the engagement of the devices with a log and to bring a log thus engaged into an angle of the crossed braces and means for holding the levers at different points of their movement.

3. In a sawbuck the combination with a collapsible frame including spaced pairs of legs and crossed braces pivotally connected with the legs at one end and removably connected therewith at their opposite ends, of a lever pivoted between the legs of each pair, log-engaging tongs connected with the levers at one end, said levers being movable to bring the tongs into position for engagement with a log disposed between the pairs of legs and to raise a log thus engaged to bring it into an angle of the crossed braces, rack-bars connected with the pairs of legs and retaining devices carried by the lever and adapted for engagement of the rack-bars to hold the levers at different points of their movement.

814,337. **JACQUARD MECHANISM.** Carl Vorwerk, Barmen, Germany. Filed Oct. 5, 1903. Serial No. 175,749.



Claim.—1. In a jacquard mechanism, the combination with peg-stripe provided with movable pegs, of corresponding straight parallel spring-needles, corresponding straight parallel springless needles, and vertical needles each operating in conjunction with one of the horizontal springless needles and corresponding to one hole in the card-cylinder, for substantially the purposes set forth.

2. In a jacquard mechanism, the combination with peg-stripe and movable pegs a set of horizontal needles and a set of vertical needles connected to operate in conjunction therewith and being controlled by the pattern-cards, of a second set of horizontal needles opposite the pegs of the peg-stripe, for substantially the purposes set forth.

3. In a jacquard mechanism, the combination of peg-stripe provided with movable pegs, and means for preventing these pegs from shaking back and forth under vibration, for substantially the purposes set forth.

4. In a jacquard mechanism, the combination with the spring-needles, of a guide-plate provided with apertures for removing the spring-needles out of the needles-case, for substantially the purposes set forth.

814,338. **DEVICE FOR REMOVING RINGS FROM WELLS.** William J. Wagner, East Bradford, Pa. Filed June 22, 1905. Serial No. 266,411.



Claim.—A device of the character described comprising oppositely-disposed members secured together, each member having an opening in its lower end, the said openings being disposed opposite to each other, a dog pivotally mounted in each member and provided with a hooked end for operation through the corresponding openings of the said members, and springs arranged contacting with each member to hold the hooked end thereof normally outwardly through the corresponding opening aforesaid.

814,339. **SUPPORTING STRUCTURE FOR TROLLEY-CONDUCTORS.** George Westinghouse, Pittsburg, Pa. Filed Jan. 23, 1906. Serial No. 297,321.



Claim.—1. A supporting structure comprising two railroad-rails which are disposed in a substantially vertical plane and the lower ends of which diverge from each other, and a third rail that is rigidly clamped between the others and diverges from the plane thereof both above and below its junction therewith.

2. A supporting structure comprising three railroad-rails which are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

3. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

4. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them, and an approximately horizontal bar bolted to the upper ends thereof.

5. A supporting structure comprising three railroad-rails which are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with

yond two sides of each other, means for folding such blanks about the form, and means for applying a band to the blanks.

116. In a basket-making machine, the combination with a form, of means for crossing a pair of blanks to cause them to project beyond two sides of each other, means for folding such blanks about the form, and means for applying inner and outer bands to the blanks.

117. In a basket-making machine, the combination with a form and die having relative movement, of means for crossing a pair of blanks and for presenting the previously-crossed blanks between the form and die.

118. In a basket-making machine, the combination with a form and die having relative movement; of means for crossing a pair of blanks to project beyond each other on two sides and for simultaneously presenting the crossed blanks between the form and die to permit the bending of the blanks into the form of a basket, and means for applying a band around the edges of the blank.

119. In a basket-making machine, the combination with a form and die having relative movement; of means for crossing a pair of blanks to project beyond each other on two sides and for presenting said blanks in crossed relation between the form and die to permit the bending of the blanks into the form of a basket, means for applying inner and outer bands around the edges of the blanks, and means for uniting the bands and blanks.

120. In a basket-making machine, the combination with a form, and die, of an intermediate apertured plate, and means for causing a pair of blanks to assume an angular relation opposite said aperture, whereby the edges of said aperture constitute a folder for folding the blanks toward the form as the latter passes through the opening in the plate.

121. In a basket-making machine, the combination with a form, and die, of an intermediate apertured plate, means for causing a pair of blanks to assume an angular relation opposite said aperture, whereby the edges of said aperture constitute a folder for folding the blanks toward the form as the latter passes through the opening in the plate, means for applying a band to the folded blanks, and means for uniting the band and blanks.

122. In a basket-making machine, the combination with a band-folder for bending a band into a shape corresponding to the shape of the basket to be formed, and a driver arranged to discharge the band from the folder.

123. In a basket-making machine, the combination with a band-folder for bending a band into a shape corresponding to the shape of the basket to be formed, means for feeding a band to the folder, and a driver arranged to take the band from the folder.

124. In a basket-making machine, the combination with a band-folder, of a movable form, means for transferring a previously-folded band from the band-folder to the form, and means for thereafter applying body-blanks to the form.

125. In a basket-making machine, the combination with a band-folder, of a form, means for transferring a previously-folded band from the folder to the form, means for applying body-blanks to the form, and means for uniting the band and blanks.

126. In a basket-making machine, the combination with a band-folder, of a form, means for transferring a previously-folded band from the folder to the form, means for applying body-blanks to the form, means for applying a second band to the blanks, and means for uniting the bands and blanks.

127. In a basket-making machine, the combination with blank-bending mechanism, of mechanism for advancing two blanks, and means for causing one blank to cross the other and for holding the crossed blanks until said blanks are engaged by the bending mechanism.

128. In a basket-making machine, the combination with a form and die having relative movement, of mechanism for advancing two blanks at a time, means for causing said blanks to cross each other, said means also serving to hold the crossed blanks during the relative movement of the form and die.

814,334. PROCESS OF RECOVERING TIN OR TIN AND LEAD. John C. Tallapsbro, Baltimore, Md., assignor to Continental Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 27, 1905. Serial No. 252,343.

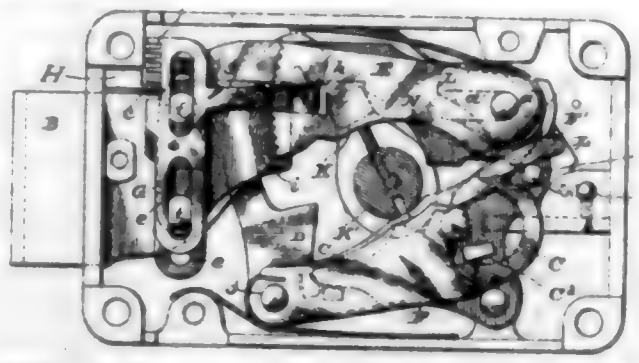
Claim.—1. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture and mechanically removing the alloy.

2. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture and skimming off the iron or steel.



3. The process of separating tin or tin and lead from iron or steel which consists in fusing the tin or tin and lead, adding sufficient lead to float the iron or steel to the top of the mixture, skimming off the iron or steel and separating the tin and lead from the iron or steel in said skimmings by melting the same on charcoal.

814,335. CHANGEABLE COMBINATION KEY-LOCK. Warren H. Taylor, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed July 1, 1905. Serial No. 267,835.



Claim.—1. In a changeable key-lock wherein the combination is changed by the insertion and turning of a key when the bolt is retracted, the combination with a bolt and tumblers, of a safety locking device for preventing the main key from being turned to a position where the main key can be removed when the bolt is retracted, and a key for actuating the safety locking device.

2. In a changeable key-lock, the combination with a bolt and tumblers, of a safety locking device which must be operated by a key before the main tumblers of the lock can be reset to conform to the bittings of a different form of change-key.

3. In a changeable key-lock, the combination with a bolt and a series of tumblers carried thereby, of a main key-hub for actuating the bolt, and a safety locking device for said main key-hub, which must be operated by its key before the main tumblers of the lock can be reset.

4. In a changeable key-lock, the combination with a bolt, a tumbler carried thereby and a key-hub having a cam for moving the bolt, of a safety locking device for limiting the throw of the cam and a key for actuating the safety locking device, whereby the main key-hub may be turned to a position where the main key can be removed while the bolt is in its retracted position, and a new change-key inserted.

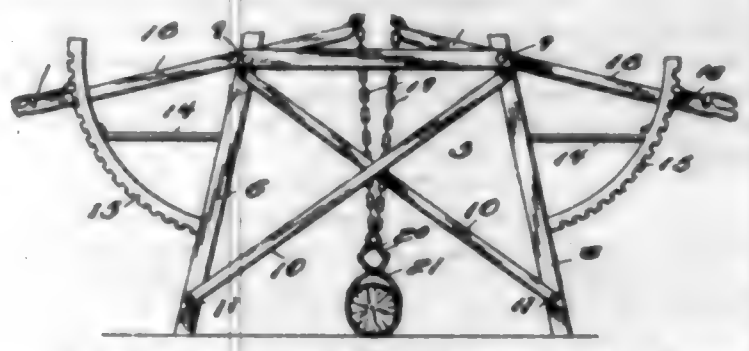
5. In a changeable key-lock the combination with a bolt, tumblers thereon and a main key-hub having a key-slot opening at the front of the lock and having a cam for moving the bolt, of a safety locking device having its key-opening in the rear face of the lock-casing and adapted to limit the turning movement of the main key-hub, and a key for actuating the safety locking device.

6. In a changeable key-lock the combination with a lock-casing, a bolt therein, tumblers carried by said bolt and a main key-hub having its key-slot opening in the front face of the casing, of a safety locking device for limiting the movement of the key-hub and having its key-opening in the rear face of said casing and a key for said safety locking device.

814,336. SAWBUCK. Ashley D. Thomas, Belleville, Wis. Filed June 10, 1905. Serial No. 264,641.

Claim.—1. In a sawbuck the combination with a frame including crossed braces, of levers pivoted in the frame, log-engaging devices carried by the levers said levers being movable to hold a log en-

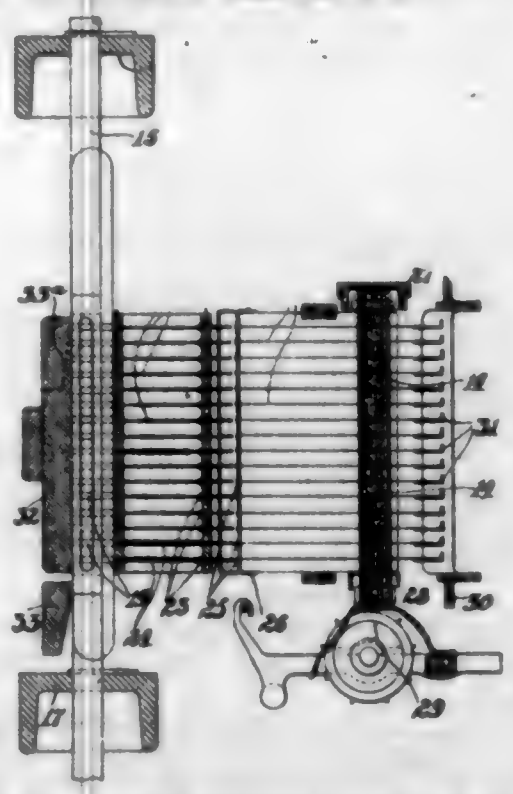
gaged by the devices in an angle of the crossed braces and means for holding the levers with a log in such a position.



2. A sawbuck comprising a frame including legs and crossed braces, of levers pivoted between the legs, log-engaging devices connected with the levers said levers being movable to permit of the engagement of the devices with a log and to bring a log thus engaged into an angle of the crossed braces and means for holding the levers at different points of their movement.

3. In a sawbuck the combination with a collapsible frame including spaced pairs of legs and crossed braces pivotally connected with the legs at one end and removably connected therewith at their opposite ends, of a lever pivoted between the legs of each pair, log-engaging tongs connected with the levers at one end, said levers being movable to bring the tongs into position for engagement with a log disposed between the pairs of legs and to raise a log thus engaged to bring it into an angle of the crossed braces, rack-bars connected with the pairs of legs and retaining devices carried by the lever and adapted for engagement of the rack-bars to hold the levers at different points of their movement.

814,337. **JACQUARD MECHANISM.** Carl Vorwerk, Barmen, Germany. Filed Oct. 5, 1903. Serial No. 175,749.



Claim.—1. In a jacquard mechanism, the combination with peg-strips provided with movable pegs, of corresponding straight parallel spring-needles, corresponding straight parallel springless needles, and vertical needles each operating in conjunction with one of the horizontal springless needles and corresponding to one hole in the card-cylinder, for substantially the purposes set forth.

2. In a jacquard mechanism, the combination with peg-strips and movable pegs a set of horizontal needles and a set of vertical needles connected to operate in conjunction therewith and being controlled by the pattern-cards, of a second set of horizontal needles opposite the pegs of the peg-strips, for substantially the purposes set forth.

3. In a jacquard mechanism, the combination of peg-strips provided with movable pegs, and means for preventing these pegs from shaking back and forth under vibration, for substantially the purposes set forth.

4. In a jacquard mechanism, the combination with the spring-needles, of a guide-plate provided with apertures for removing the spring-needles out of the needles-case, for substantially the purposes set forth.

814,338. **DEVICE FOR REMOVING RINGS FROM WELLS.** William J. Wagner, East Bradford, Pa. Filed June 22, 1905. Serial No. 266,411.

Claim.—A device of the character described comprising oppositely-disposed members secured together, each member having an opening in its lower end, the said openings being disposed opposite to each other, a dog pivotally mounted in each member and provided with a hooked end for operation through the corresponding openings of the said members, and springs arranged contacting with each member to hold the hooked end thereof normally outwardly through the corresponding opening aforesaid.

814,339. **SUPPORTING STRUCTURE FOR TROLLEY-CONDUCTORS.** George Westinghouse, Pittsburg, Pa. Filed Jan. 23, 1905. Serial No. 242,231.



Claim.—1. A supporting structure comprising two railroad-rails which are disposed in a substantially vertical plane and the lower ends of which diverge from each other, and a third rail that is rigidly clamped between the others and diverges from the plane thereof both above and below its junction therewith.

2. A supporting structure comprising three railroad-rails when are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

3. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

4. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them, and an approximately horizontal bar bolted to the upper ends thereof.

5. A supporting structure comprising three railroad-rails which are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with

them, means for securely anchoring the lower ends of said rails, and an approximately horizontal bar bolted to the upper ends thereof.

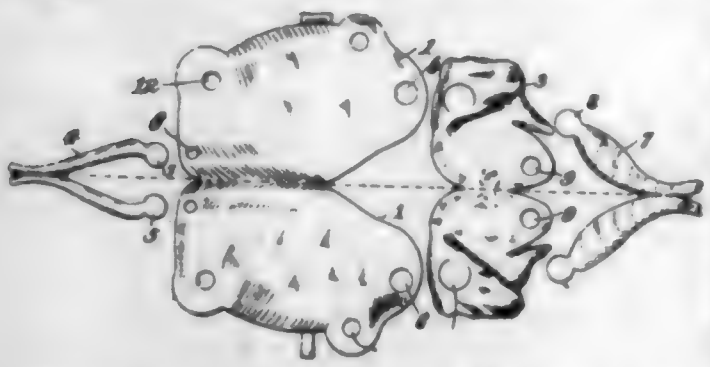
6. A conductor-support comprising two railroad-rails the bottom flanges of which are arranged face to face, a third rail disposed and bent to angular position with reference to the first-named rails and located between them, spacing-blocks between said rails, and bolts for clamping them together.

7. A conductor-support comprising three railroad-rails which are bent and bolted together at a point or points intermediate their ends to form a tripod structure and one of which diverges from the others both above and below its junction with them, means for anchoring the lower ends of the rails, and means projecting laterally from the upper ends of the rails for supporting a trolley-conductor.

8. A conductor-support comprising three railroad-rails two of which are disposed in substantially the same plane with their base-flanges fastened to each other, and the third of which is located between the other two and is provided with spacing-blocks, means for clamping said rails together, and means for securely anchoring their lower ends.

9. A conductor-support comprising three railroad-rails two of which are in one plane and the third in a plane at right angles thereto, and all of which are so assembled and bent as to form a tripod structure, means for clamping the three rails together, and a substantially horizontal arm projecting from the upper ends thereof.

814,340. **JOINTED CUT-OUT FIGURE.** THADDEUS B. WOOD, New York, N. Y., assignor to American Colortype Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 23, 1905. Serial No. 251,547.



Claim.—1. A device of the class described, comprising sections of sheet material having representations of figure members thereon respectively, adapted to be folded over upon themselves to form an articulated double-sided figure, one or more of said sections being provided with joint members formed thereon on opposite sides of the folding-line thereof and adapted to interlock respectively with complementary joint members on the opposite folds of another section, and another of said sections formed with superposed joint members symmetrically located on opposite sides of the folding-line thereof both adapted to interlock with a complementary joint member on one of the folds of said sections.

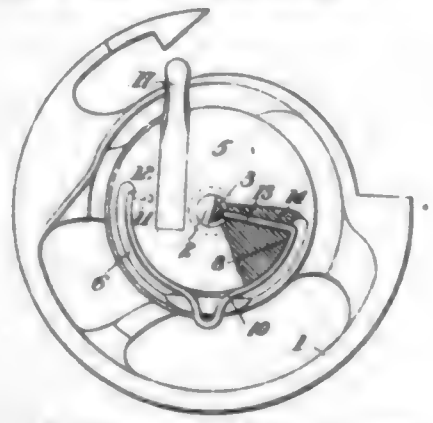
2. A device of the class described, comprising a section of sheet material representing two opposite sides of a figure-body, adapted to be folded over on itself to constitute a double-sided figure-body, a section representing the opposite sides of a figure-head for said body, likewise adapted to be folded over to form a double-sided figure member and joint members formed on each of the sides thereof adapted to interlock with complementary joint members respectively on the opposite sides of the body-section, and another section representing the opposite sides of a figure-limb adapted to be folded over to form a double-sided figure member having superposed registering joint members formed thereon and both adapted to interlock with a complementary joint member on one of the sides of the figure-body.

3. A device of the class described, comprising sections of sheet material having representations of figure members thereon each adapted to be folded over upon itself to form a part of a double-sided figure, in combination with joint members formed on some of said sections on opposite sides of the folding-lines thereof and adapted to interlock respectively with the complementary joint members on the opposite folds of another section.

4. A device of the class described, comprising sections of sheet material having representations of figure members thereon adapted to be respectively folded over upon themselves to form a double-sided figure, in combination with superposed registering joint members formed on one of said sections and both adapted to interlock with a complementary joint member formed on one side of another section.

5. A device of the class described comprising a section of sheet material having representations of the two sides of a figure-body thereon and adapted to be folded over upon itself, another section representing a figure member folded upon itself and united to the opposite sides of said body-section to hold the same together, in combination with further sections representing figure-limbs folded on themselves to constitute double-sided figure members and adapted to be jointed respectively to the opposite sides of said folded body-section.

814,341. **BOBBIN-CASE FOR SEWING-MACHINES.** WILLIAM R. ABERCROMBIE, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed May 10, 1905. Serial No. 259,689.



Claim.—1. A bobbin-case having a hub adapted to engage a circumferentially-grooved pin, having a spring-bail pivoted to it, one of the pivot ends of the said bail extending through the bobbin-case into its hub and adapted to engage with the groove in the pin to lock the bobbin-case on said pin.

2. A bobbin-case, having a hub, and a recess in its top terminating in grooves, the said case provided with transverse holes to receive the ends of the bail, and one of said holes extending from center to circumference, and a spring-bail provided with pivot ends, one of which extends through the longer hole into the hub.

3. A bobbin-case, having a hub, and a recess in its top terminating in grooves, the said case provided with transverse holes to receive the ends of the bail, and one of said holes extending from center to circumference, and a spring-bail provided with pivot ends, one of which extends through the longer hole into the hub, the metal of the case forming a flange overhanging the groove next to the longer end of the bail.

4. A bobbin-case, having a hub, and a recess in its top terminating in grooves, the said case provided with transverse holes to receive the ends of the bail, and one of said holes extending from center to circumference, and a spring-bail provided with pivot ends, one of which extends through the longer hole into the hub, the metal of the case forming a flange overhanging the groove next to the longer end of the bail, the said flange serving to hold the bail in locked position and also serving as a cam to withdraw the locking end of the bail when the bail is elevated.

814,342. **METHOD OF MAKING COMPOSITE GEARS.** HERBERT B. ATHA, East Orange, N. J. Filed Nov. 23, 1904. Serial No. 234,036.



Claim.—1. The art which consists in casting an annular member and integral teeth therewith, holding the member in a circular form, grinding the surface of the member opposite that upon which the teeth are cast, and forcing the same and a member to which it is to be connected into operative position with relation to each other.

2. The art which consists in casting an annular member having integral gear-teeth upon the outer surface thereof, grinding the inner surface of said member concentric with the pitch-circle of said gear-teeth, and forcing a center within the same.

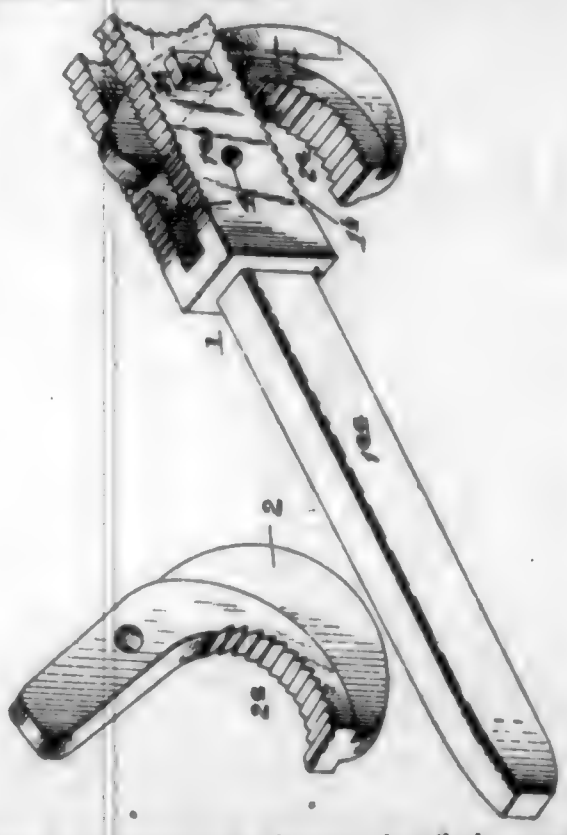
3. The art which consists in casting an annular member having integral gear-teeth upon the outer surface thereof, holding the outer surface of said member in a circular form, grinding the inner surface of said member concentric with the pitch-circle of said gear-teeth, and forcing a center within the same.

4. The art which consists in casting an annular band having integral gear-teeth upon the outer surface thereof, pressing the outer surface of said band into a circular form, grinding the inner surface of said band concentric with the pitch-circle of said gear-teeth, and

forcing a center within the same, said pressure upon the outer surface of said band being maintained during said grinding.

5. The art which consists in casting a band having integral gear-teeth upon the outer surface thereof, pressing the outer surface of said band into a circular form, grinding the inner surface of said band concentric with the pitch-circle of said gear-teeth, and forcing a center within the same, said pressure upon the outer surface of said band being maintained during said grinding and during the forcing of said center within said band.

814,343. **WRENCH.** GEORGE W. AUSTIN, Hollister, Cal. Filed May 12, 1905. Serial No. 260,132.



Claim.—1. A device of the character described, comprising a handled jaw member, a claw-like jaw member and a pivotal connection therebetween, the claw-like jaw member having its curved gripping-surface adapted to face downward, at a point above and forward of the opposed gripping-surface of the handled jaw member, and the latter adapted to stand in a rearward and upward angle of inclination, for effectiveness.

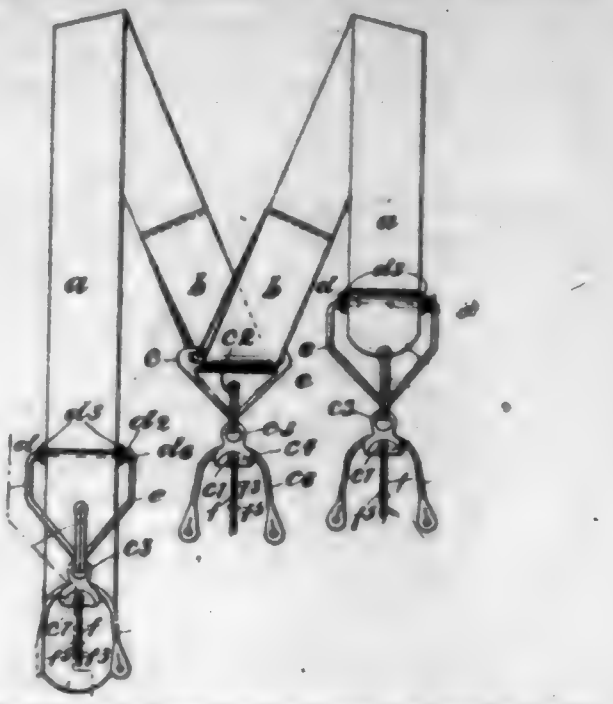
2. A device of the character described, comprising a handled bifurcated jaw member, a claw-like jaw member, and a pivotal connection therebetween, the prongs or branches of the handled jaw member having serrated gripping edges and arranged to stand in a rearward and upward inclination, and the curved gripping edge of the claw-like jaw member adapted to face downward, at a point above and in front of the aforesaid gripping edge of the handled jaw member.

3. A wrench comprising a handled bifurcated jaw member having its branches or prongs provided upon their right-lined edges with oppositely-pointing series of gripping teeth or serrations, said branches also having concaved serrated forward-end gripping edges, a claw-like jaw member having a serrated concaved gripping edge, and a pivot-bolt connection between the handled jaw member and the claw-like jaw member, the handled jaw member adapted to permit the shank of the claw-like jaw member to move between its branches or prongs and beyond the forward ends thereof for effecting the various adjustments of the claw-like jaw member.

814,844. **SUSPENDERS.** BENJAMIN J. BACON, Sydney, New South Wales, Australia. Filed Nov. 8, 1904. Serial No. 231,850.

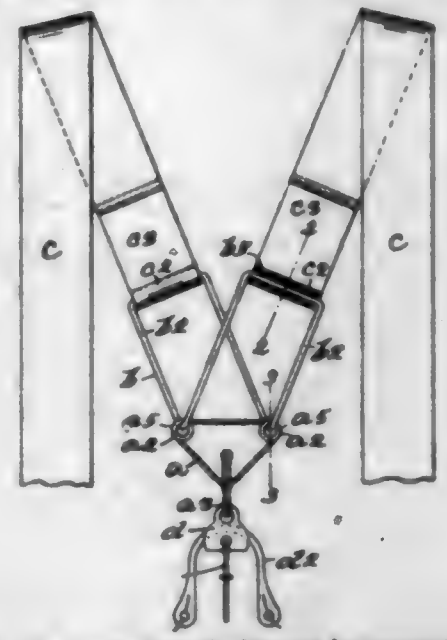
Claim.—1. A roller-strap attachment for suspenders, comprising a tubular casing having collars or flanges near its opposite ends, a longitudinal strip extending between said collars or flanges, one end of said casing being spiral in form and provided with a notch or recess and a link device suspended from said casing and the sides of which are provided with spring-fingers adapted to enter the ends of said casing, substantially as shown and described.

2. A roller-strap attachment for suspenders, comprising a tubular casing having a longitudinal strip at one side thereof and one end of which is provided with a notch or recess, and a link member provided with spring-fingers adapted to enter the end of said casing, substantially as shown and described.



3. A roller-strap attachment for suspenders, comprising a tubular casing having a longitudinal strip at one side thereof and one end of which is spiral in form and provided with a notch or recess, and a link member provided with spring-fingers adapted to enter the ends of said casing, said link member being provided with a hook, substantially as shown and described.

814,345. **TROUSERS-SUSPENDERS.** BENJAMIN J. BACON, Sydney, New South Wales, Australia. Filed July 18, 1905. Serial No. 270,188.



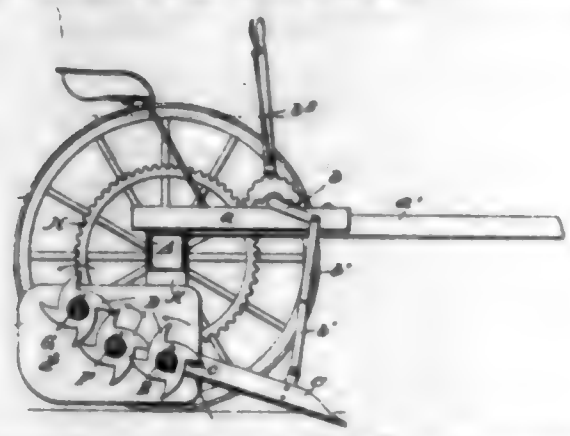
Claim.—1. The herein-described means for connecting the back end portions of a pair of trousers-suspender straps with the waistband of a pair of trousers, said means comprising a hook-link having eyes or rings in its opposite sides and one end of which is provided with a depending hook member which opens upwardly, an endless cord passed through said eyes or rings and formed into loops with which the back end portions of the suspender-straps are connected, and a tab-attaching device detachably connected with said hook member, substantially as shown and described.

2. The herein-described means for connecting the back end portions of a pair of trousers-suspenders with the waistband of a pair of trousers, said means comprising a hook-link provided at its opposite sides with eyes or rings and one end of which is formed into a depending hook member which opens upwardly, an endless cord passed through said eyes or rings and formed into loops, sleeves mounted on said loops and around which the back end portions of the suspender-straps are secured, and a tab-attaching device detachably suspended from said hook member, substantially as shown and described.

3. The herein-described means for connecting the back end portions of a pair of trousers-suspenders with the waistband of a pair of trousers, said means comprising a hook-link provided at its opposite

sides with eyes or rings and one end of which is formed into a depending hook member which opens upwardly, an endless cord passed through said eyes or rings and formed into loops, sleeves mounted on said loops and around which the back end portions of the suspender-straps are secured, a tab-attaching device detachably suspended from said hook member and a clamp suspended from the tab-attaching device, substantially as shown and described.

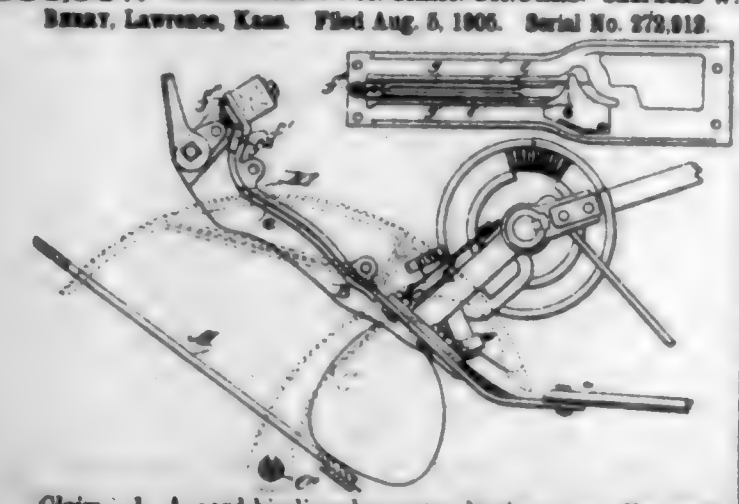
814,346. POTATO-DIGGER. FREDERICK W. BENJAMIN, Jefferson, Ohio. Filed Dec. 18, 1905. Serial No. 292,482.



Claim.—1. In a machine of the class described, the combination of a frame mounted on transporting-wheels, a gear carried by one of the wheels, a series of transverse shafts carrying resilient overlapping agitating-teeth, guard-plates, a plow-scoop in front of said series of agitating-teeth, and means for raising and lowering the plow-scoop.

2. In combination with a frame mounted on wheels, guard boards or plates, a series of transverse shafts extending across the space between said guard-boards and each being provided with a series of wheels having radial teeth whose rear faces are convexed, means whereby these wheels have a limited rotary motion forwardly on their respective shafts, gearing for rotating said shafts backwardly, and a vertically-adjustable scoop arranged in front of said shafts, substantially as set forth.

814,347. ATTACHMENT FOR GRAIN-BINDERS. SHEPHERD W. BERRY, Lawrence, Kans. Filed Aug. 5, 1905. Serial No. 272,913.

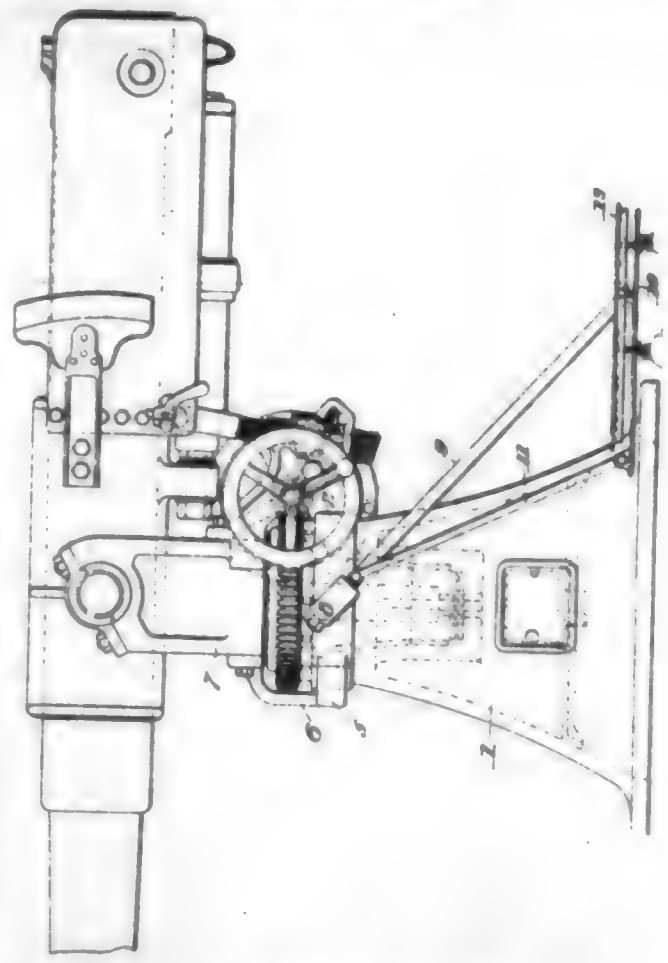


Claim.—1. A cord-binding harvester having a needle and a slotted breastplate that is provided on its under side adjacent to the longitudinal edges of the slot with depending flanges and beyond the end of the slot with an aperture for the passage of a bolt, in combination with a needle-clearing spring that is mounted to partially overlie the slot through the breastplate, the spring having similarly-shaped side members and at one end an eye through which is passed a bolt that holds the spring between the depending flanges of the breastplate, substantially as shown.

2. The combination in a cord-binding harvester, of a needle and a longitudinally-slotted breastplate through which the needle passes, a bifurcated spring attached to the breastplate so that its arms will underlie the slot through the breastplate, the spring adjacent to its return-bend being encircled by a band, substantially as shown.

814,348. MOUNT FOR ORDNANCE. WILLIAM H. BEVANS, Bridgeport, Conn. Filed Apr. 15, 1904. Serial No. 203,296.

Claim.—1. In a mount for ordnance, a ring-like supporting member movable about the fixed portion of the mount in a plane at right angles to the vertical axis of the mount and provided with spaced lugs, a frame hung from said supporting member, two platforms carried by said frame disposed one at each side of the gun, means for independently adjusting said platforms vertically, and a projection carried by the movable part of the mount extending between the spaced lugs of the ring-like support.



2. In a mount for ordnance, a supporting member movable about the fixed portion of the mount in a plane at right angles to the vertical axis of the mount, a platform swung from said supporting member, means for adjusting said platform vertically, and a connection between said supporting member and the movable portion of the mount, whereby they move in unison.

814,349. LOOM-SHUTTLE. JOSEF BIM, Vienna, Austria-Hungary. Filed Dec. 30, 1904. Serial No. 238,953.



Claim.—1. A thread-guide, comprising a hollow box having openings in its walls at substantially right angles to each other, a layer of felt inclosed within the box, and a pin for directing the thread through the openings aforesaid and causing it to drag over the layer of felt.

2. A thread-guide, comprising a hollow box having openings in its walls at substantially right angles to each other, a thread-receiving slot across the box and communicating with both openings, and a tension device inclosed within the box.

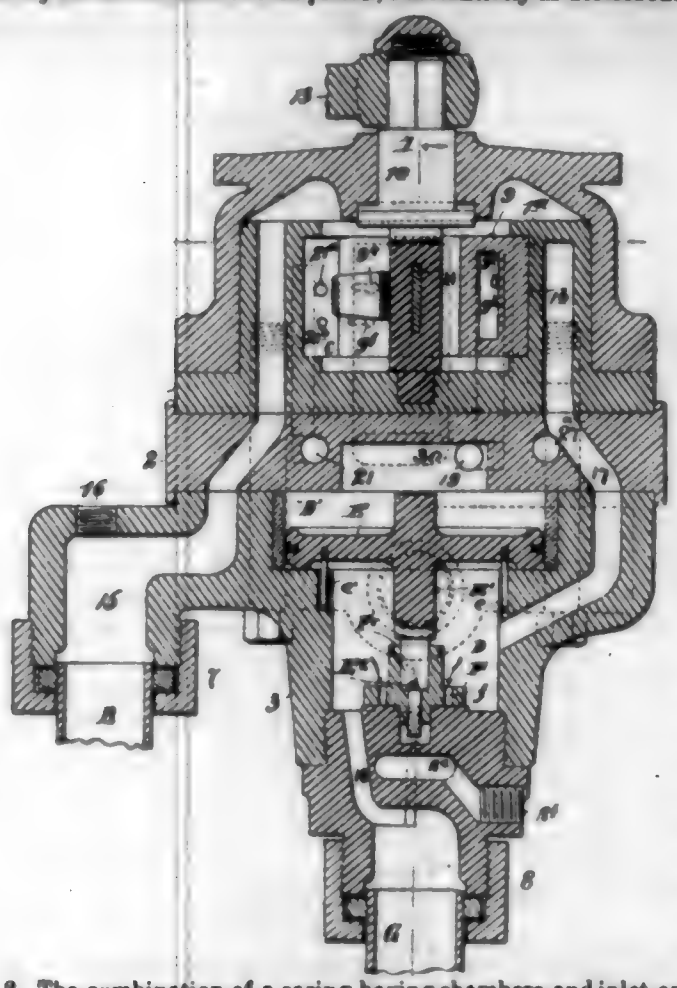
3. A thread-guide, comprising a hollow box having openings in its walls, a thread-receiving slot across the box and communicating with both openings, a layer of felt inclosed with said box, and a pin passing through the layer of felt within the box for directing thread through the openings aforesaid and causing it to drag over the layer of felt.

4. A thread-guide, comprising a substantially cylindrical box having a diametrical thread-receiving slot in its top and with openings in its walls spaced about ninety degrees apart and communicating with said slot, a central pin and a circular layer of fibrous material concentric with said pin.

814,350. VALVE FOR AIR-BRAKE SYSTEMS. JOHN H. BLOOD, New York, N. Y., assignor to Abraham B. Levy, New York, N. Y. Filed May 22, 1903. Serial No. 158,219.

Claim.—1. The combination of a casing having chambers and inlet and outlet passages and ports communicating therewith, with a piston in one chamber, a rotative valve adapted to control an out-

let, and means connecting the piston with said valve for rotating the latter by the movements of said piston, substantially as described.



2. The combination of a casing having chambers and inlet and outlet passages and ports communicating therewith, with a piston in one chamber, a valve to control an outlet, and a pin-and-slot connection between the piston and said valve, substantially as described.

3. The combination of a casing having chambers and inlet and outlet passages and ports communicating therewith, with a piston in one chamber, a valve to control an outlet, a pin-and-slot connection between the piston and said valve, and means to prevent rotation of said piston, substantially as described.

4. The combination of a casing having chambers and inlet and outlet passages and ports communicating therewith, with a piston, means to prevent rotation of the piston, a rotative valve having a port to register with an outlet-port, and means connecting the piston with said valve for rotating the latter during the reciprocations of the piston, substantially as described.

5. The combination of a casing having chambers and inlet and outlet passages and ports communicating therewith, with a piston provided with a stem, a valve journaled on said stem and arranged to control an outlet-port, and means connecting the piston with the valve for rotating the latter during the reciprocations of the piston, substantially as described.

6. The combination of a casing having chambers, a piston between said chambers, said casing having air-supply passages communicating with said chambers, means to maintain equal pressure in said chambers on opposite sides of the piston, means to reduce the pressure in one chamber on one side of the piston, a rotative valve adapted to control an outlet-port communicating with the other chamber, and means connecting said piston with said valve for rotating the latter, whereby on reduction of air-pressure on one side of the piston the latter will move to cause said valve to turn to open the outlet-port, substantially as described.

7. The combination of a casing having chambers and air-supply passages and ports communicating therewith, a piston between said chambers, a valve to control the admission of air simultaneously through said passages and ports, said casing having an exhaust-passage, said valve being provided with means for placing one of said ports in communication with said exhaust-passage to cause a reduction of air-pressure on one side of the piston, a rotative valve arranged to control an outlet-port communicating with one chamber, and means connecting said piston with said valve for causing the latter to turn to permit a reduction of air-pressure on the other side of said piston, substantially as described.

8. The combination of a casing having an air-supply chamber and pressure-regulating chambers, a piston between the last-named chambers, a rotary valve to control an outlet from one of said chambers, means to cause the piston to turn said valve, said casing having a passage leading to the air-supply chamber and passages connecting the air-supply chamber with the pressure-chambers on opposite sides of the piston, a pressure-regulating valve, said casing having a passage connecting said valve with the first-named chamber and a passage connecting said valve with the passage leading to the pressure-chamber on the train-pipe side of the piston, and a valve in the first-named chamber having ports and passages adapted to control the ports connected with said chamber, substantially as described.

9. The combination of a casing having an air-supply chamber, a pressure-regulating valve connected by a passage with said chamber, said casing having chambers D and D′, a piston between said chambers, passages connecting said air-supply chamber with said chambers D and D′, a passage providing communication between said valve and chamber D, and a valve to control the passages leading from the air-supply chamber, said valve having means to cause a reduction of pressure in the chamber D′ as required, said valve also having means to admit air from the air-supply chamber to the regulating-valve for recharging the system in the customary "lap" position, substantially as described.

10. The combination of a casing provided with an air-supply chamber, a chamber D for connection with a train-pipe and provided with an outlet, a passage connecting said chambers, the casing having a chamber D′, a piston between the chambers D and D′, a valve operated by said piston to control the outlet from chamber D, the casing having a passage connecting the chamber D′ with the air-supply chamber, a pressure-regulating valve having a chamber connected by a passage with the air-supply chamber and another chamber connected by a passage with the passage leading to chamber D, and a slide-valve in the air-supply chamber provided with means to direct air in the "running" position to the first-named valve which then serves as a pressure-reducing valve for the system, the slide-valve also having means to cause air to escape in the "service" position, and having means to cause air to pass through the pressure-regulating valve in the customary "lap" position to cause said pressure-regulating valve to act as a recharging-valve for the system, substantially as described.

11. The combination of a casing having an air-supply chamber, a pressure-regulating valve connected by a passage with said chamber, said casing having chambers D and D′, a piston between said chambers, passages connecting said air-supply chamber with said chambers D and D′, a passage providing communication between said valve and chamber D, and a valve to control the passages leading from the air-supply chamber, said valve having means to cause a reduction of pressure in the chamber D′ as required, said valve also having means to admit air from the air-supply chamber to the train-pipe while the other passages controlled by said valve are blanked and the brakes are applied, substantially as described.

12. The combination of a casing having an air-supply chamber, a pressure-regulating valve connected by a passage with said chamber, said casing having chambers D and D′, a piston between said chambers, passages connecting said air-supply chamber with said chambers D and D′, a passage providing communication between said valve and chamber D, and a valve to control the passages leading from the air-supply chamber, said valve having means to cause a reduction of pressure in the chamber D′ as required, said valve also having a port to coact with a port and passage in the casing to supply air to the train-pipe while the other passages controlled by said valve are blanked and the brakes applied, substantially as described.

13. The combination of a casing having an air-supply chamber, a pressure-regulating valve connected by a passage with said chamber, said casing having chambers D and D′, a piston between said chambers, passages connecting said air-supply chamber with said chambers D D′, and a passage providing communication between said valve and chamber D, and a valve to control the passages leading from the air-supply chamber, said valve having means to cause a reduction of pressure in the chamber D′ as required, said valve also having means to admit air from the air-supply chamber to the regulating-valve for recharging the system through said regulating-valve while the other passages controlled by said valve are blanked and the brakes are applied, substantially as described.

14. The combination of a casing having an air-supply chamber, a pressure-regulating valve connected by a passage with said chamber, said casing having chambers D and D′, a piston between said chambers, passages connecting said air-supply chamber with said chambers D and D′, a passage providing communication between said valve and chamber D, and a valve to control the passages leading from the air-supply chamber, said valve having means to cause a reduction of pressure in the chamber D′ as required, said valve also

having a port to coact with a port and passage in the casing communicating with said regulating-valve to supply air through said regulating-valve to the system to recharge the system while the other ports controlled by the valve are blanked and the brakes are applied, substantially as described.

15. The combination of a casing provided with an air-supply chamber, a chamber D for connection with a train-pipe and provided with an outlet, a passage connecting said chambers, the casing having a chamber D′, a piston between the chambers D and D′, a valve operated by said piston to control the outlet from chamber D, the casing having a passage connecting the chamber D′ with the air-supply chamber, a pressure-regulating valve having a chamber connected by a passage with the air-supply chamber and another chamber connected by a passage with the passage leading to chamber D, and a slide-valve in the air-supply chamber provided with means to direct air in the "running" position to the first-named valve which then serves as a pressure-reducing valve for the system, the slide-valve also having means to cause air to escape in the "service" position, and having means to cause air to pass to the train-pipe while the other passages controlled by said slide-valve are blanked and the brakes are applied, substantially as described.

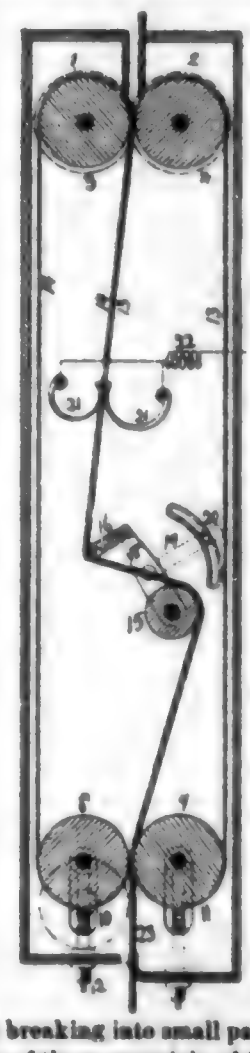
16. The combination of a casing provided with an air-supply chamber, a chamber D for connection with a train-pipe and provided with an outlet, a passage connecting said chambers, the casing having a chamber D′, a piston between the chambers D and D′, a valve operated by said piston to control the outlet from chamber D, the casing having a passage connecting the chamber D′ with the air-supply chamber, a pressure-regulating valve having a chamber connected by a passage with the air-supply chamber, and another chamber connected by a passage with the passage leading to chamber D, and a slide-valve in the air-supply chamber provided with means to direct air in the "running" position to the first-named valve which then serves as a pressure-reducing valve for the system, the slide-valve also having means to cause air to escape in the "service" position, and having a port to coact with a port and passage in the casing to supply air to the train-pipe while the other passages controlled by said valve are blanked and the brakes are applied, substantially as described.

17. The combination of a casing provided with an air-supply chamber, a chamber D for connection with a train-pipe and provided with an outlet, a passage connecting said chambers, the casing having a chamber D′, a piston between the chambers D and D′, a valve operated by said piston to control the outlet from chamber D, the casing having a passage connecting the chamber D′ with the air-supply chamber, a pressure-regulating valve having a chamber connected by a passage with the air-supply chamber and another chamber connected by a passage with the passage leading to chamber D, and a slide-valve in the air-supply chamber provided with means to direct air in the "running" position to the first-named valve which then serves as a pressure-reducing valve for the system, the slide-valve also having means to cause air to escape in the "service" position, and having means to cause air to pass through the pressure-regulating valve while the other passages controlled by the slide-valve are blanked and the brakes are applied, substantially as described

18. The combination of a casing provided with an air-supply chamber, a chamber D for connection with a train-pipe and provided with an outlet, a passage connecting said chambers, the casing having a chamber D′, a piston between the chambers D and D′, a valve operated by said piston to control the outlet from chamber D, the casing having a passage connecting the chamber D′ with the air-supply chamber, a pressure-regulating valve having a chamber connected by a passage with the air-supply chamber and another chamber connected by a passage leading to chamber D, and a slide-valve in the air-supply chamber provided with means to direct air in the "running" position to the first-named valve which then serves as a pressure-reducing valve for the system, the slide-valve also having means to cause air to escape in the "service" position, and having a port to coact with a port and passage in the casing communicating with said regulating-valve to supply air through said regulating-valve to the system to recharge the system while the other ports controlled by the valve are blanked and the brakes are applied, substantially as described.

814,351. **MACHINE FOR PREPARING COATED MATERIALS.** CHARLES H. BRIGHAM, New York, N. Y., and GEORGE P. HARVEY, Jersey City, N. J. Filed Mar. 15, 1904. Serial No. 198,336.

Claim.—1. A machine for breaking into small particles the substance or film covering a surface of those materials which consist of a thin material having a surface covered by a substance or film adhering thereto or formed in part by treating the material to which it adheres, which consists of a suitable frame, two belts which hold the material between them, and means intermediate the ends of the frame to break the gum or film into small particles, leaving it adhering to the material.



2. A machine for breaking into small particles the substance or film covering a surface of those materials which consist of a thin material having a surface covered by a substance or film adhering thereto or formed in part by a suitable frame, two endless belts within the frame which belts hold the material between them, rollers for supporting said belts and means intermediate of the supporting-rollers provided with an edge adapted to break the gum or film into small particles, leaving it adhering to the material.

3. In a machine for preparing gummed paper, court-plaster and other manufactures, consisting of a thin material having a surface covered by a substance or film adhering thereto or formed in part by treating the material to which it adheres, the combination of a frame, two endless belts within the frame so arranged as to hold the material between them and an edge adapted to break the film into small particles leaving it adhering to the material.

4. A machine for breaking into small particles the substance or film covering a surface of those materials which consist of a thin material having a surface covered by a substance or film adhering thereto or formed in part by treating the material to which it adheres, such as gummed paper, court-plaster and analogous manufactures, which consists of a suitable frame, an edge, two belts which hold the material between them and thus draw it over the edge.

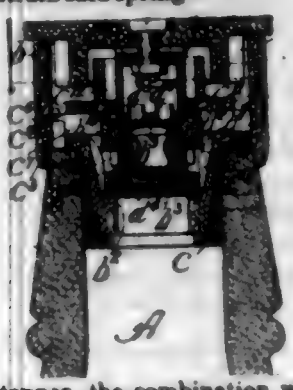
5. In a machine for preparing gummed paper, court-plaster and other manufactures consisting of a thin material having a surface covered by a substance or film adhering thereto or formed in part by treating the material to which it adheres, a combination of two endless belts to hold and break the material with an edge across which the material is bent at an angle.

6. In a machine for preparing gummed paper, court-plaster and other manufactures consisting of a thin material having a surface covered by a substance or film adhering thereto or formed in part by treating the material to which it adheres, a combination of two endless belts to hold the material, a roller and edge so arranged that the belts draw the material over the roller and bend it across the edge so that the adhering substance or film is broken or fractured.

814,352. **STOPPER.** CHARLES N. BRISCO, Morgantown, W. Va., assignor to Union Stopper Company, Morgantown, W. Va., a Corporation. Filed Sept. 21, 1905. Serial No. 279,420.

Claim.—1. In a bottle-stopper, the combination with a valve-seat and valve, of a member provided with a guide and valve, a tubular stem working through said guide and provided with a port guard-

ed by said second-named valve, a spring carried with said stem, operative upon release to automatically lock said first-named valve, and a mutable body housed in said stem subject to liquid action and normally operative to restrain said spring.



2. In a bottle-stopper, the combination with a valve-seat and valve, of a combination valve-guard and guide equipped with a valve, a tubular stem working through said guide and closed by said second-named valve when the stem is depressed, a spring operative upon release to automatically lock said first-named valve, and a mutable liquid-affected body housed in said stem and normally restraining said spring.

3. In a bottle-stopper, the combination with a valve-seat and valve, of a valve-guard provided with a guide, a tubular stem working through said guide provided with a port and having an open lower end, a hollow valve-follower confined in the lower end of said stem and having a detachable top provided with a port, a spring confined within said follower, a body subject to liquid action located adjacent to said second-named port and normally restraining said spring, said spring operating upon release to force the follower against the valve.

4. In a bottle-stopper, the combination with a valve-seat and valve, of a tubular stem provided at its upper portion with a port, a sectional spring-casing confined within the lower end of the stem and provided at its upper end with a port, a spring and mutable restraining body therefor, confined in said casing, a guide for the stem equipped with a valve for the first-named port, and a knob connected with and serving in the manual operation of said stem.

5. In a stopper, the combination with a valve-seat and valve, of a valve-guard equipped with a guide and thereat with a valve, and provided also with a cam, a tubular stem working through said guide and equipped with a cam coacting with said first-named cam, said cam being vertically slidable in one position with relation to the valve-guard and having a port at its upper portion, a sectionally-constructed spring-casing confined in the lower end of said stem and provided at its upper end with a port, a spring and mutable restraining body therefor confined in said casing, and a knob operative to raise and lower and rotate said stem at will.

6. In a bottle-stopper, the combination of a plug equipped at its lower portion with a valve-seat, a valve, a valve-guard non-removably secured in the tubular plug, a stem extending through said guard and equipped at its upper end with a knob, and a spring and mutable restraining body carried by the lower end of said stem, for the purpose set forth.

7. In a bottle-stopper, the combination of a tubular plug having a downwardly-flaring extension equipped with a valve-seat and provided with an external flange at its lower end adapted to contact with the inner surface of a bottle-neck, a valve-guard non-removably secured in said tubular plug, a valve above said valve-seat and a stem above said valve extending through said valve-guard and equipped at its upper end with a knob.

8. The combination with a bottle-neck of a tubular plug having a downwardly-flaring extension equipped at its lower end with an external flange, cement supported on said flange between said extension and inner surface of the bottle-neck, a valve-seat carried by said extension, a valve, a valve-guard non-removably secured in the tubular plug, a stem working through said valve-guard and a knob connected with the upper end of said stem.

9. In a bottle-stopper, the combination of a tubular plug having an extension adapted to fit in a bottle-neck, said extension being provided with a valve-seat, a gravity-valve, a valve-guard comprising a sleeve equipped with an external flange and with projecting arms non-removably secured in the tubular plug, a valve carried by said sleeve, a tubular stem provided at its upper portion with a port, a knob connected with said stem, a spring-casing confined in the lower end of said stem, and a spring and soluble restraining body therefor confined in said spring-casing, for the purpose set forth.

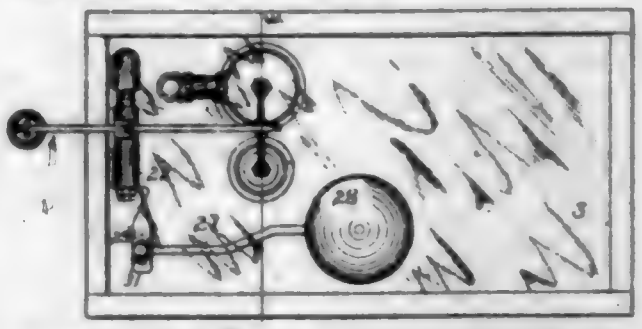
10. In a bottle-stopper, the combination of a tubular plug having a frusto-conical extension adapted to fit in a bottle-neck, said extension equipped with a valve-seat and provided internally above the valve-seat with guides for the valve, a valve-guard secured in the tubular plug and provided with a guide, a tubular stem working through the valve-guard, a spring and mutable restraining body therefor housed in the lower end of said stem, and an operating-knob connected with the upper end of the stem, for the purpose set forth.

11. In a bottle-stopper, the combination of a valve-guard comprising a sleeve equipped at its lower end with cam-surfaces and provided with internal vertical slots, and a stem working through said valve-guard equipped at its lower end with lateral lugs adapted to engage said cam-surfaces in one position of the stem, and to slide within said slots in another position of the stem, for the purpose set forth.

12. In a bottle-stopper, the combination of a tubular plug provided internally with bayonet-sockets, a valve-guard equipped with arms received by said bayonet-sockets, and means securing said arms within said sockets, for the purpose set forth.

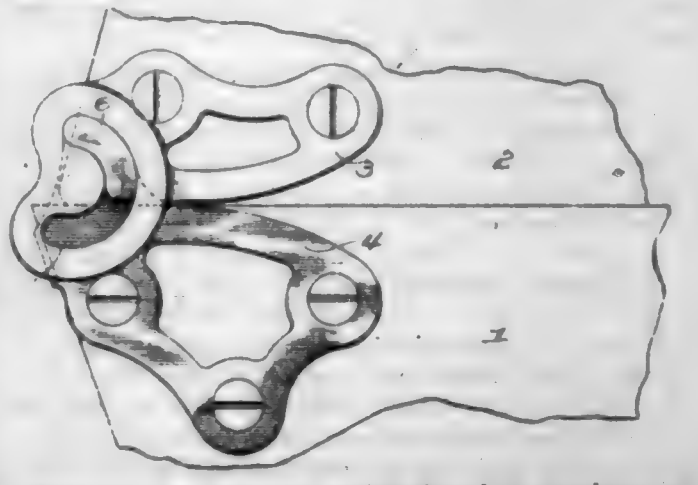
13. In a bottle-stopper, the combination of a tubular plug comprising a cylindrical portion and a frusto-conical extension joined thereto by an offset recessed on its lower side to fit on the top of a bottle-neck, thereby affording a depending flange adapted to fit over the top of the bottle-neck, a valve-seat carried by said extension, a flange at the lower portion of the extension adapted to fit within the bottle-neck, a non-removable valve-guard within the cylindrical portion of the tubular plug, and a stem working through said valve-guard, for the purpose set forth.

814,858. **FLUSHING-TANK.** WILLIAM BURNS, Sr. Dayton, Ohio. Filed Oct. 31, 1904. Serial No. 230,648.



Claim.—In a flushing-tank, an inlet-valve for said tank comprising an inlet-tube arranged horizontally adjacent to the base of the tank and having an outlet-port in the lower side thereof, an inclosing tube for said inlet-tube having one end thereof solid, and the body of said inclosing tube having a port adapted to register with the port in the inlet-tube, means for preventing longitudinal movement of the inclosing tube, and an arm adjustably secured to the solid end of said inclosing tube, said arm supporting the float, substantially as set forth.

814,854. **HINGE.** JOHN R. CARTER, Augusta, Ky., assignor to Ernst H Huesefeld, Cincinnati, Ohio. Filed Mar. 24, 1905. Serial No. 251,862.



Claim.—1. In a hinge, the combination of two members, one of said members having a single curved guide-opening provided with a continuous guide-wall, and a lug on the other member entering said curved guide-opening and adapted to travel on the guide-wall to control and pivot the parts together.

2. In a hinge, the combination of two members having overlapping portions, the overlapping portion of one member having a curved guide and a lug on the overlapping portion of the other mem-

ber engaging the curved guide and constituting the only connection between the members.

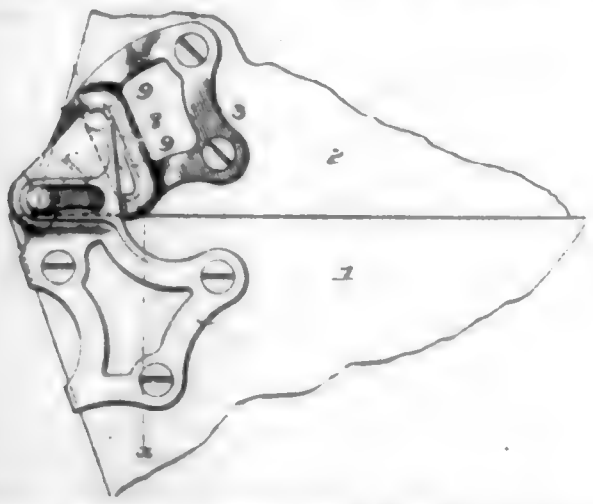
3. In a hinge, the combination of two members having overlapping portions, the overlapping portion of one member made with a single curved guide-opening, and a lug on the overlapping portion of the other member having a curved edge conformable with and movable against the wall of the curved guide-opening.

4. In a hinge, the combination of two members having overlapping portions. the overlapping portion of one member made with a curved guide-slot, and means on the other member located in said slot and which in either extreme position of the hinge has one bearing-point at one end and one at or near the center of the slot.

5. In a hinge, the combination of upper and lower members having overlapping portions, the overlapping portion of one member having a single curved slot and the other member having a lug in said slot said lug and the wall of the slot coöperating to pivotally support one member relatively to the other and throw the upper member forward when opened.

6. In a hinge, the combination of two members having overlapping portions, the overlapping portion of one member having a curved guide and means on the overlapping portion of the other member engaging the curved guide and constituting the only connection between the members.

814,355. HINGE. JOHN R. CARTER, Augusta, Ky., assignor to Ernst H. Huesefeld, Cincinnati, Ohio. Filed Mar. 24, 1905. Serial No. 251,862.



Claim.—1. A hinge comprising two members, each having a slotted portion, each of said members overlapping the slot in the other, and each member having a pin to enter the slot in the other member, one of said pins projecting in a direction opposite to that of the other.

2. A hinge comprising a lower member and an upper member, each of said members having a general triangular shape, the upper member having a transverse slot, and an outwardly-projecting pin below said slot, the lower member having a transverse slot to receive said outwardly-projecting pin on the upper member, said lower member having an inwardly-projecting pin to enter the slot in the upper member.

3. A hinge comprising an upper member and a lower member, having triangular overlapping portions, and each member having a laterally-projecting pin at the apex of its triangular portion, the upper member having a transverse slot above the pin thereon to receive the pin on the lower member, and the lower member having a horizontal slot below the pin thereon to receive the pin on the upper member.

4. In a hinge, the combination of two members having overlapping portions, each member having a guiding-slot in its overlapping portion, a lug or pin on each member located in and guided by the slot of the other member, and means for locking the members against lateral separation and bracing the upper end of the lower member.

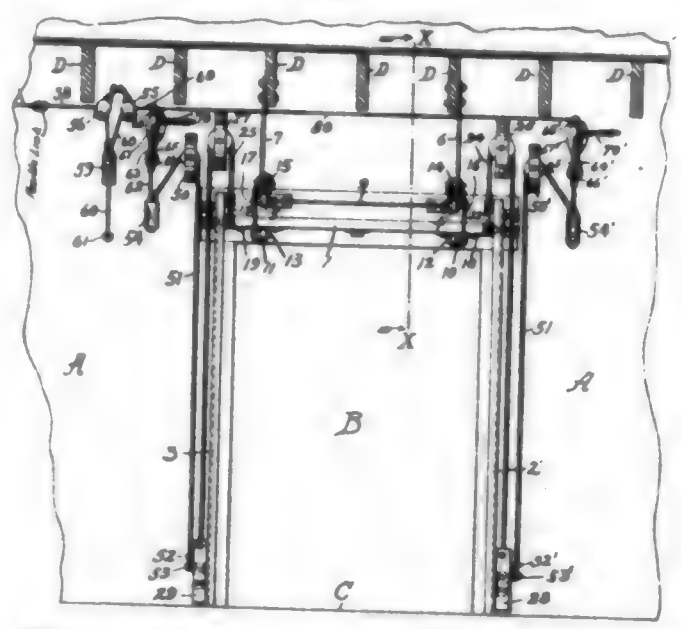
5. In a hinge, the combination of two members having overlapping portions one of said members having a guide, a lug or pin on the other member movable against the guide, and means projecting from the guide for preventing lateral escape of the lug or pin therefrom and for bracing the upper end of the lower member.

6. In a hinge, the combination of two members having overlapping portions, one of said members having a guide-slot, a lug or pin on the other member located in said slot, and a flange on the wall of the slot preventing lateral escape of the lug or pin and bracing the upper end of the lower member.

7. In a hinge, the combination of upper and lower members having overlapping portions, the overlapping portions of the lower member having an approximately horizontal slot therein, and the overlapping portion of the upper member having an inclined slot, an outwardly-projecting pin or lug on the upper member located in the slot of the lower member and an inwardly-projecting pin or lug on the lower member located in the inclined slot of the upper member.

8. In a hinge the combination of upper and lower members, having overlapping portions, the overlapping portion of the lower member having an approximately horizontal slot therein, and the overlapping portion of the upper member having an inclined slot therein, an outwardly-projecting pin or lug on the upper member located in the slot of the lower member, an inwardly-projecting pin or lug on the lower member located in the slot of the upper member, and a flange on the slotted portion of the upper member projecting over the lower member and holding the members against lateral separation.

814,350. COMBINED DOOR AND AUTOMATIC CLOSING MEANS THEREFOR. CLARENCE L. COLBY, Richmond, Ind. Filed Apr. 1, 1905. Serial No. 253,239.



Claim.—1. A counterbalanced door operative on a vertical and a horizontal track, in combination with suspended auxiliary weights, and devices whereby the auxiliary weights may be released and add their weight to that of the door to close it automatically, substantially as set forth.

2. The combination with a counterbalanced door operating on a vertical and a horizontal track, auxiliary weights for raising the counterbalancing-weights to close the door, means for releasing the auxiliary weights automatically by the action of heat, and means for operating the door manually without displacing the automatic mechanism, substantially as shown and described.

3. A counterbalanced door operative on vertical and horizontal tracks, in combination with suspended auxiliary weights, and devices whereby the auxiliary weights may be released by heat and add their weight to that of the door to close it automatically, all substantially as shown and described.

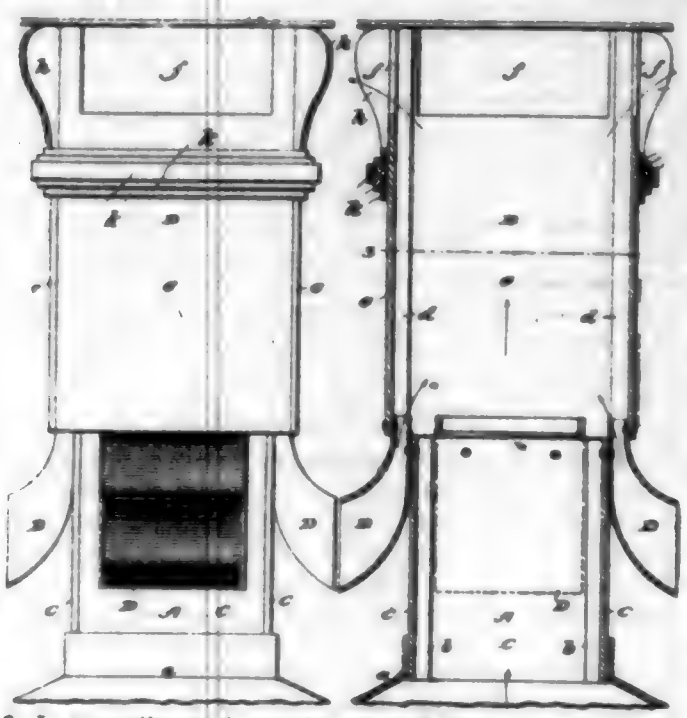
4. The combination with a counterbalanced door operating on vertical and horizontal tracks, auxiliary weights for raising the counterbalancing-weights to close the door, means for releasing the auxiliary weights automatically, and means for operating the door manually without displacing the automatic mechanism, all substantially as shown and described.

814,357. VENTILATOR. WILLIAM T. COTTIER, Chicago, Ill. Filed Feb. 3, 1905. Serial No. 244,000.

Claim.—1. In a ventilator, the combination with an uptake comprising a lower portion, and an upper portion, comparatively large in cross-section, arranged with its lower end flush with the upper end of the lower portion, whereby vertically-disposed openings are formed between the said ends of the portions; of inductors arranged outside the uptake and having their discharge ends secured in the openings between the adjacent ends of the lower and upper portions.

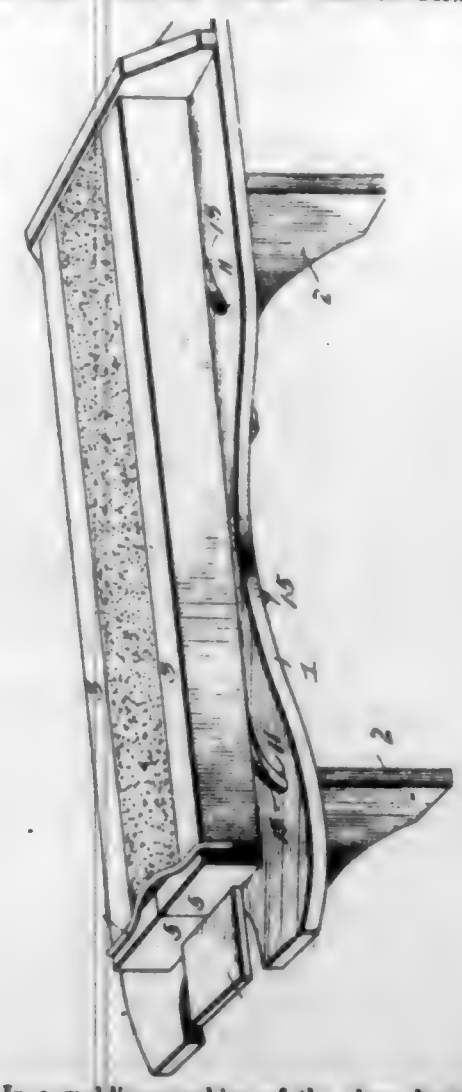
2. In a ventilator, the combination of a lower uptake portion comprising corner-posts and a covering arranged on and connected to said posts, an upper uptake portion, comparatively large in cross-section, comprising corner-posts and a covering arranged on and connected to said corner-posts; the lower end of the covering of the upper portion being flush with the upper end of the covering of the lower portion, whereby vertically-disposed openings are afforded be-

tween the said ends of the portions, and inductors arranged outside the uptake and having their discharge ends secured in the said openings of the uptake.



3. In a ventilator, the combination of a lower uptake portion comprising corner-posts and a covering arranged on and connected to said posts, an upper uptake portion, comparatively large in cross-section, comprising corner-posts and a covering arranged on and connected to said corner-posts; the lower end of the covering of the upper portion being flush with the upper end of the covering of the lower portion, whereby vertically-disposed openings are afforded between the said ends of the portions, inductors arranged outside the uptake and having their discharge ends secured in the said openings of the uptake, and means closing the spaces between the sides of the inductors and the adjacent corner-posts.

814,338. PLASTIC-BLOCK-MOLDING MACHINE. James J. Cox, Jackson, Mich. Filed Mar. 3, 1905. Serial No. 248,316.



Claim.—1. In a molding-machine of the class described, the mold proper having endwise-movable side walls, and an operating device comprising means for reciprocating both of said walls to affect a troweling action on the molded article, said device also having means for moving said side walls off and away from the sides of the article.

2. In a molding-machine of the class described, the mold proper having endwise-movable and laterally-shiftable walls.

3. In a molding-machine of the class described, the mold proper having endwise-movable and laterally-shiftable side walls, said walls being movable in a straight line during a portion of their movement to effect a troweling action on the molded article.

4. In a molding-machine of the class described, the mold proper having endwise-movable and laterally-shiftable side walls, and means for synchronously operating said walls to carry the same along the sides of the molded article in a troweling action for a portion of their movement prior to their separation from the article.

5. In a molding-machine of the class described, a base, a fixed end wall arranged on the base, and endwise-movable side walls arranged for movement on the base into and out of engagement with the fixed end wall and carrying at one end end-wall sections or halves.

6. In a molding-machine of the class described, a base, a fixed end wall on the base, a removable bottom mold member arranged on the base, and endwise-movable side walls arranged for movement on the base into and out of engagement with the fixed end walls and carrying at one end end-wall sections or halves engaging over the bottom mold member.

7. In a molding-machine of the class described, a base, a fixed upright end wall having keeper-mortises, endwise-movable side walls having at one end tenons working into and out of said mortises and provided at their opposite ends with inturned end-wall sections or halves, and a removable bottom mold member arranged upon the base between the said side walls.

8. In a molding-machine of the class described, the mold proper having endwise-movable side walls, and an operating device for said side walls having a member constituting a mold-clamp engaging with the said side walls.

9. In a molding-machine of the class described, the mold proper having endwise-movable side walls, guiding devices for said side walls comprising means for guiding the same in a longitudinal direction and also for camming said walls outward and inward, and an operating device having means for synchronously moving said walls.

10. In a molding-machine of the class described, the base having separate pairs of guiding-slots having straight and outwardly-deflected portions, the mold proper having endwise-movable side walls carrying guide-pins working in said slots, and an operating device comprising a swinging lever having a cranked rock-shaft member journaled on the base, and link connections between the crank of said shaft and the opposite side walls.

11. In a molding-machine of the class described, the base, the mold proper having endwise-movable and laterally-shiftable side walls, an operating device having adjusting connections with said side walls and provided with a lever member having a yoke-shaped handle constituting a mold-clamp engaging the opposite side walls at one end of the mold when the latter is closed.

12. In a molding-machine of the class described, the base having a series of supporting-rollers thereon, and the mold proper having endwise-movable and laterally-shiftable side walls, and a removable bottom member arranged for support upon said rollers.

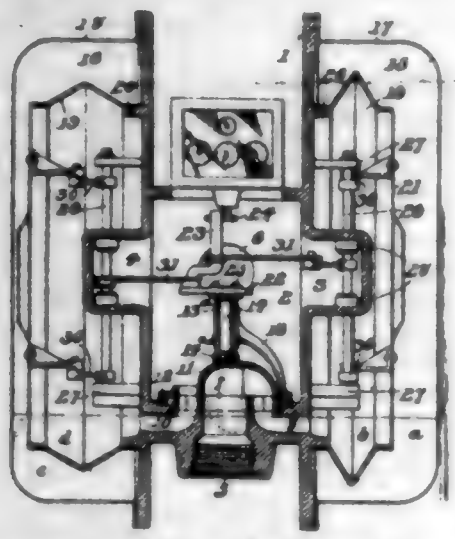
13. In a molding-machine of the class described, the base having a series of supporting-rollers thereon, and the mold proper including a removable bottom member arranged for support upon said rollers.

814,359. GAS-METER. Samuel E. Crawford, Avalon, Pa. Filed Aug. 18, 1905. Serial No. 274,690.

Claim.—1. In a gas-meter, a body portion formed with a central chamber, side measuring-chambers, a diaphragm in each measuring-chamber, a rotary valve mechanism located in the central chamber and between the diaphragms, a link connection located in the central chamber, and means comprising a rocking shaft connecting each diaphragm and the link connection arranged to effect a horizontal transmission of operative power from the diaphragms to the valve mechanism.

2. In a gas-meter, a body portion formed with a central chamber and two side chambers or wings, side measuring-chambers a diaphragm in each measuring-chamber, a rotary valve mechanism located between the diaphragms, and means connecting the diaphragms and valve mechanism comprising, a rocking shaft extend-

ing into each side chamber or wing, and a stuffing-box for each shaft located in each side chamber or wing.



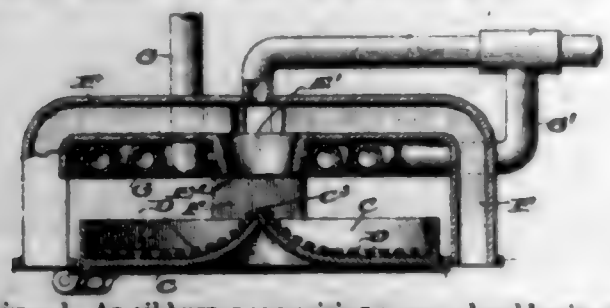
3. In a gas-meter, a body portion formed with a central chamber and side chambers or wings in communication with the central chamber, a rocking shaft in each side chamber side measuring-chambers, a diaphragm in each measuring-chamber, and a rotary valve mechanism located in the central chamber between the diaphragms and connected up with the rocking shafts.

4. In a gas-meter, a body portion having a central chamber, measuring-chambers, a diaphragm dividing each measuring-chamber into an inner and an outer compartment, side chambers extending from the central chamber into the inner compartments of the measuring-chambers, a rotary valve mechanism in the central chamber, and means comprising a rocking shaft connecting each diaphragm with the rotary valve mechanism.

5. In a gas-meter, a central chamber, measuring-chambers each divided by a diaphragm into two compartments, side chambers between the measuring-chambers and the central chamber, a rotary valve mechanism located in the central chamber between the diaphragms, and means connecting each diaphragm and valve mechanism comprising a rocking shaft extending into each side chamber, and provided with a rock-arm within each side chamber, and a rock-arm within each inner compartment of the measuring-chambers.

6. In a gas-meter, a body portion formed with a central chamber, side measuring-chambers outside of the body portion, a diaphragm in each measuring-chamber, a rotary valve mechanism located in the central chamber and between the diaphragms, and means for effecting a horizontal transmission of power from each diaphragm to the rotary valve mechanism comprising a rocking shaft and means connecting the rocking shaft and the valve mechanism.

814,860. CRUDE-OIL BURNER. EDWIN DARBY, Iowa City, Iowa, assignor of one-half to Benjamin J. Hardy, Iowa City, Iowa. Filed Dec. 8, 1903. Renewed July 6, 1905. Serial No. 268,556.



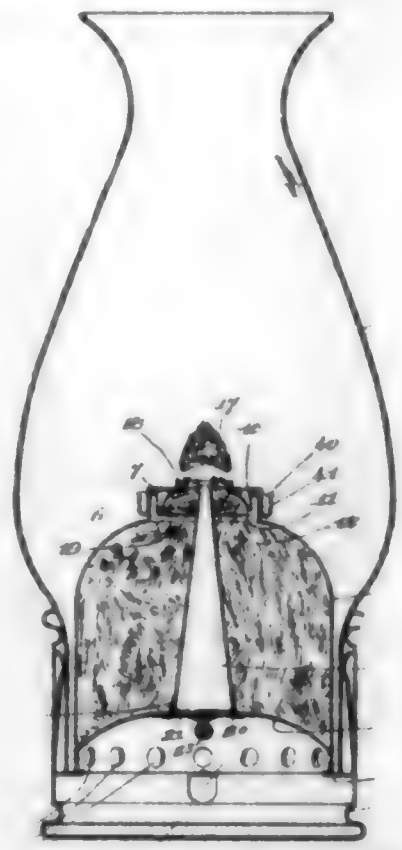
Claim.—1. An oil-burner comprising a pan, a hood having integral air-trunks by means of which the said hood is supported, said air-trunks communicating with the central opening in the hood, the oil-pipe leading into the air-trunks, the water-pipe arranged between the hood and pan, and connected with the oil-pipe, as set forth.

2. An oil-burner comprising a pan, a ring surrounding the said pan and having a plurality of openings, a hood having integral air-trunks, the depending legs of which fit into the openings in the ring, the horizontal portions of said air-trunks converging at the center of the hood, said hood having an opening at the convergents of the air-trunks, and the water-pipe arranged within said hood and connected with the oil-pipe leading into the air-trunk, as set forth.

3. An oil-burner comprising a ring having a plurality of openings, a pan hinged to the said ring and having a conical-shaped bottom, a hood having a plurality of air-trunks, the depending legs of which are adapted to fit into the openings in the rings, the horizontal members of said air-trunks converging at the center of the hood, said hood having a central opening surrounded by a depending collar, and the water-pipes arranged within said hood and connected with the oil-pipe as set forth.

4. An oil-burner comprising a ring having a plurality of openings, a pan hinged to said ring and having a conical bottom, a hood having the air-trunks integral therewith the depending legs of said air-trunks fitting in the openings in the ring, the horizontal members of said air-trunks converging at the center of the hood, said hood having a central opening, said opening being surrounded by a depending collar which collar tapers toward the apex of the conical bottom, an oil-pipe leading into the air-trunks at their conjunction or intersection, a water-pipe passing through the top of the hood and coiled beneath the hood, the discharge end of said water-pipe being connected to the oil-pipe, and asbestos wicking arranged upon the conical-shaped bottom of the pan, as set forth.

814,361. LAMP. THEODORE D. DAVIS, Boston, Mass. Filed Sept. 2, 1904. Serial No. 223,073.



Claim.—1. In a lamp, a chamber having wick-receiving openings in its top through which openings tufts of the wick material within the chamber are adapted to project, the space above the chamber through which the tufts project being free and entirely open, whereby when the lamp is burning the flame bridges the space between the tufts, and means to deliver air through the top of the chamber between the openings and directly beneath the flame.

2. In a lamp, a chamber having wick-receiving openings in its top through which openings tufts of the wick material within the chamber are adapted to project, the space above the chamber through which the tufts project being free and entirely open, whereby when the lamp is burning the flame bridges the space between the tufts, and an air-tube extending through the chamber and terminating at its top between said wick-receiving openings and directly beneath the flame.

3. In a lamp, a chamber having a plurality of openings in its top through which wicks extend, a wall surrounding said openings and forming an uncovered space into which the wicks project, whereby when the lamp is burning the flame bridges the space between the wicks, and an air-tube extending through the chamber and terminating at its top between said openings and directly underneath the flame.

4. In a lamp, a chamber having a plurality of openings in its top through which wicks extend, a wall surrounding said openings and forming an uncovered space into which the wicks project, whereby when the lamp is burning the flame bridges the space between the wicks, and a tapering air-tube extending through the chamber and terminating at its top between said openings and directly underneath the flame.

5. In a lamp, a chamber having an open top, a cap to be applied to said top, said cap having one or more openings, a flange or wall

surrounding said openings and inclosing an uncovered mixing-chamber, and an air-tube extending through the chamber and delivering air into the mixing-chamber.

6. In a lamp, a chamber adapted to be filled with material for absorbing oil, said chamber being shaped to present a neck surrounding an opening, the material of the chamber at the neck being bent backwardly to form an annular space surrounding the neck, and a cap to encircle said neck, said cap having a portion to engage the backwardly-bent portion of the neck.

7. In a lamp, an oil-chamber, said chamber being shaped to form a neck surrounding an opening, said neck having an annular flange projecting inwardly therefrom, and a cap to sit over and embrace the neck, said cap having a flange, to fit within the neck and engage the horizontal flange.

8. In a lamp, an oil-chamber having an opening surrounded by a neck, a cap to sit over said neck, said cap being provided with an annular gutter, and a plurality of separate wick-receiving openings through which project tufts of wick material filling the chamber.

9. In a lamp, a holder having punched therefrom a plurality of series of fingers, the fingers of one series engaging the chimney nearer the base thereof than those of the other series.

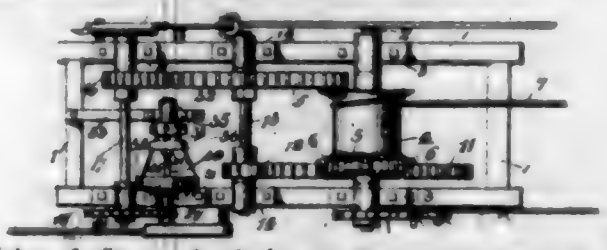
10. In a lamp, a cylindrical member to support a chimney, said cylindrical member having portions punched therefrom to form spring-fingers to engage the chimney.

11. In a lamp, a cylindrical member to support a chimney, said cylindrical member having portions punched therefrom to engage the chimney at different points along its length.

12. In a lamp, an annular base having chimney-holding fingers punched from its sides, and a wick-containing chamber removably supported by the base, said wick-containing chamber having at its upper end wick-receiving openings.

13. In a lamp, an annular base having means to support a chimney, and chimney-holding fingers punched from the walls thereof, a wick-receiving chamber sitting within the base and removably supported thereby, said chamber having a plurality of wick-receiving openings in its top, and wick material loosely filling said chamber and extending through said openings.

814,362. **MOTOR.** CHARLES H. DILL, Danville, Ind., assignor, by direct and mesne assignments, of one-third to Enoch J. Dill, Arkansas City, Kans., and one-third to William H. Harah, Shawnee, Okla. Filed June 20, 1904. Serial No. 213,352.



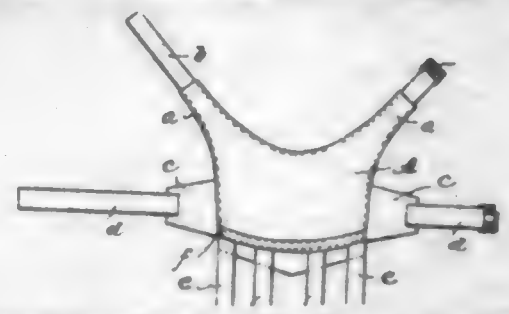
Claim.—1. In a mechanical motor, the combination with a train of gears, of a controlling means, comprising a fixed drum having a projecting flange or rim, a revoluble shaft, a pair of spring-arms situated on opposite sides of said shaft having their free ends projecting within the rim of said fixed drum, centrifugal friction-weights on the free ends of said spring-arms, and means for adjusting said spring-arms.

2. In a mechanical motor, the combination with a train of gears, of a controlling means, comprising a fixed drum having a projecting flange or rim, a revoluble shaft, a pair of spring-arms situated on opposite sides of said shaft having their free ends projecting within the rim of said fixed drum, centrifugal friction-weights on the free ends of said sprjng-arms, an adjusting-block situated on said shaft, and means whereby said block may be adjusted and secured in any position between the fixed ends of said arms and the fixed drum whereby said spring-arms are adjusted.

3. In a mechanical motor, the combination with a train of gears, of a governor-shaft connected to said gearing and driven thereby at a higher rate of speed, a fixed drum situated concentrically with said governor-shaft, a governor-block fixed on said governor-shaft, spring-arms secured on said governor-block and extending therefrom in a direction longitudinally with said shaft toward said fixed drum, centrifugal friction-weights secured to the free ends of said spring-arms and arranged to contact with the inner surface of said drum as described, and means for adjusting said spring-arms.

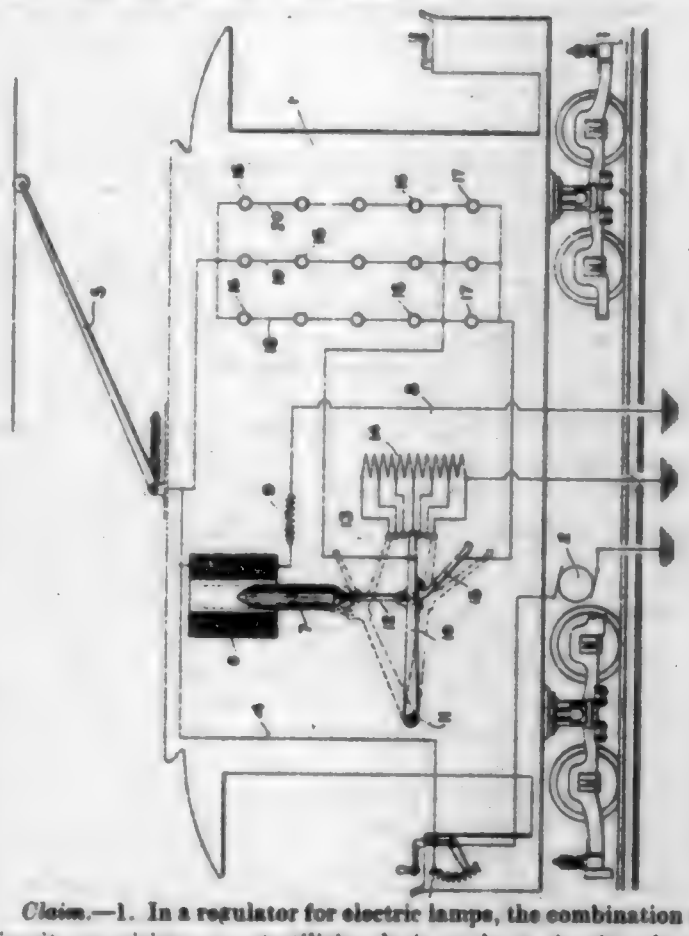
4. In a mechanical motor, the combination with a train of gears, of a governor-shaft connected to said gearing and driven thereby at a higher rate of speed, a fixed drum situated concentrically with said governor-shaft, a governor-block fixed on said governor-shaft, spring-arms secured on said governor-block and extending therefrom in a direction longitudinally with said shaft toward said fixed drum, centrifugal friction-weights secured to the free ends of said spring-arms and arranged to contact with the inner surface of said drum as described, and a wedge or adjusting-block situated between said weight-bearing spring-arms adjustably mounted on said shaft.

814,363. **HOSE-SUPPORTER.** KATHERINE M. DOWLING, Little Rock, Ark. Filed June 13, 1905. Serial No. 264,849.



Claim.—A hose-supporter of the character described, comprising the broad pad A having the extensions *a* at the upper corners thereof and adapted to extend partly around the waist, straps attached to the ends of the extensions, side pieces *c c* attached to the side edges of the pad to extend over the hips, and straps *d d* attached to the side pieces and fastened over the buttocks; together with the elastic straps *e* having adjusting means and clasps, and a strip of fabric or tape *f* sewed over the ends of the elastic straps to secure them to the pad above the lower edge of the latter, as herein shown and described.

814,364. **LAMP-REGULATOR.** ALPHONSUS L. DRUM, Lake Forest, Ill. Filed Mar. 26, 1905. Serial No. 252,433.



Claim.—1. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a shunt-circuit, a rheostat in the lamp-circuit a second lamp-circuit, and means located in the shunt-circuit for maintaining a constant current in either lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

2. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat in the lamp-circuit, a movable rheostat-arm operating upon the rheostat, a shunt-circuit, means located in the shunt-circuit for operating the movable rheostat-arm, and a second lamp-circuit, the means in the shunt-circuit being adapted to operate upon the first-named lamp-circuit to maintain a uniform current in the same and simultaneously to close the second circuit and maintain a uniform current in that circuit during the opening and closing of the circuit comprising the current-utilizing devices.

3. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat in the lamp-circuit, a movable rheostat-arm operating upon the rheostat, a second lamp-circuit, a rheostat-arm extending from the movable rheostat-arm and adapted to operate upon the rheostat, a shunt-circuit, and means located in the shunt-circuit to cause the movable rheostat-arm and the rheostat-arm to operate upon the rheostat for maintaining a uniform current in either lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

4. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat in the lamp-circuit, a second lamp-circuit, a movable rheostat-arm operating upon the rheostat, a rheostat-arm extending from the movable rheostat-arm and insulated therefrom, a shunt-circuit, and means in the shunt-circuit for operating the rheostat-arm upon the rheostat to maintain uniform current in the first lamp-circuit, said means being adapted to disengage the rheostat-arm from the rheostat and simultaneously to engage the movable rheostat-arm with the rheostat, thereby opening the first lamp-circuit and closing the second lamp-circuit to maintain a uniform current during the opening and closing of the circuit comprising the current-utilizing devices.

5. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat located in the lamp-circuit, a pivoted rheostat-arm adapted to operate upon the rheostat, a rheostat-arm extending from the pivoted rheostat-arm and insulated therefrom, a shunt-circuit, a solenoid located in the shunt-circuit, and means connecting the armature of the solenoid with said pivoted rheostat-arm such that a movement of said armature will be communicated to said first-mentioned rheostat-arm to cause said second-mentioned rheostat-arm to move over the rheostat to maintain a uniform current in the lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

6. In a regulator for electric lamps, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat located in the lamp-circuit, a pivoted rheostat-arm operating upon the rheostat, a rheostat-arm extending from the movable rheostat-arm and insulated therefrom, the ends of the pivoted arm and the rheostat-arm being spaced apart, a shunt-circuit, a solenoid located in the shunt-circuit, a link connecting the armature of the solenoid with the pivoted arm whereby a movement of the armature will cause a corresponding movement of the rheostat-arm over the rheostat to maintain a constant current in the lamp-circuit, and a second lamp-circuit adapted to be closed by the contacting of the movable rheostat-arm with the rheostat whereby the first lamp-circuit is closed, thereby causing a constant current in the second lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

7. The combination in a controller for electric lamps of a circuit comprising current-utilizing devices, a lamp-circuit, a rheostat in the lamp-circuit, a shunt-circuit, means in the shunt-circuit for automatically controlling the lamp-circuit, and a second lamp-circuit adapted to be controlled by the means in the shunt-circuit, the means in the shunt-circuit being adapted to open the first lamp-circuit and simultaneously to close the second lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

8. The combination in an electrically-propelled vehicle of a circuit comprising current-utilizing devices, lamp-circuit and a shunt-circuit connected with a common source of supply, a movable rheostat-arm, a rheostat-arm extending from the movable rheostat-arm and insulated therefrom, a second lamp-circuit, and means in the shunt-circuit for controlling both lamp-circuits, the means in the shunt-circuit being adapted to open the first lamp-circuit and simultaneously to close the second lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

9. In an electrically-propelled vehicle, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a second lamp-circuit, and means for automatically opening the first lamp-circuit and simultaneously closing the second lamp-circuit, the said means being adapted to maintain a uniform current in one of said lamp-circuits during the opening and closing of the circuit comprising the current-utilizing devices.

10. In an electrically-propelled vehicle, the combination of a circuit comprising current-utilizing devices, a lamp-circuit, a second lamp-circuit, and a rheostat arranged to be inserted in either lamp-circuit for maintaining a uniform current in either lamp-circuit during the opening and closing of the circuit comprising the current-utilizing devices.

11. In apparatus of the class described, in combination, a plurality of lamps serially connected to a source of electric supply of varying potential, and automatic means connected with said source of supply adapted upon a fall in potential of said source of supply to cut out a certain number of said lamps.

12. In apparatus of the class described, a plurality of lamps serially connected to a source of electric supply of varying potential, and means connected with said source of supply adapted upon a fall in potential of said source of supply to cut out a certain number of said lamps.

13. In apparatus of the class described, in combination, a plurality of lamps serially connected to a source of electric supply of varying potential, and automatic means for maintaining a uniform current in said lamps upon a fall in potential of said source of supply, said means being adapted to operate to cut out a certain number of said lamps.

14. In an apparatus of the class described, in combination, a plurality of lamps serially connected to a source of electric supply of varying potential, a certain number of lamps adapted to be connected to said source of supply, and means adapted to be automatically connected with said source of supply and adapted upon a rise in potential of said source of supply to connect said second-mentioned lamps with the first-mentioned lamps.

15. In apparatus of the class described, in combination, a plurality of lamps serially connected to a source of electric supply of varying potential, a second plurality of lamps and automatic means connected with said source of supply adapted upon a rise in potential of said source of supply to connect said second-mentioned plurality of lamps with the first-mentioned lamps, said means being adapted to maintain a uniform current in all of said lamps.

16. In apparatus of the class described, in combination, a plurality of lamps serially connected to a source of electric supply, means connected with said source of supply for maintaining a uniform current in the lamps, said means being adapted upon a fall in potential of said source of supply to cut out one or more lamps and also to maintain a uniform current in the remainder of said lamps.

17. In an apparatus of the class described, a variable-potential source of supply, a circuit connected therewith embodying a plurality of lamps, means adapted upon a change of potential of said source of supply to maintain a constant current through said lamps, means adapted upon a further change in potential of supply to cut out a certain number of said lamps, and means adapted upon a still further change of potential of the source of supply to maintain a uniform current in the remainder of said lamps.

18. In an apparatus of the class described, a variable-potential source of supply, a plurality of lamps connected in a circuit therefrom, means adapted to compensate for initial change in the potential of the supply to maintain a uniform current through said lamps, upon a further change in the potential of the supply to cut out certain of said lamps and to compensate for a still further change in the potential of the supply to maintain a uniform current through the remainder of said lamps.

19. In an apparatus of the class described, a source of supply, current-utilizing devices and a lamp system connected therefrom, means adapted upon a variation of the potential of the current-supply caused by the operation of the current-utilizing devices to maintain a constant current through said lamp system, means adapted upon a different operation of said current-utilizing devices to cut out a part of said lamps and upon further operation of said utilizing devices to maintain a constant current through the remainder of said lamps.

20. In an apparatus of the class described, a source of supply, current-utilizing devices and a lamp system connected in shunt therefrom, means adapted upon a variation of the potential of the current-supply caused by the operation of the current-utilizing devices to maintain a constant current through said lamp system, means adapted upon a different operation of said current-utilizing devices to cut out a part of said lamps and upon further operation of said utilizing devices to maintain a constant current through the remainder of said lamps.

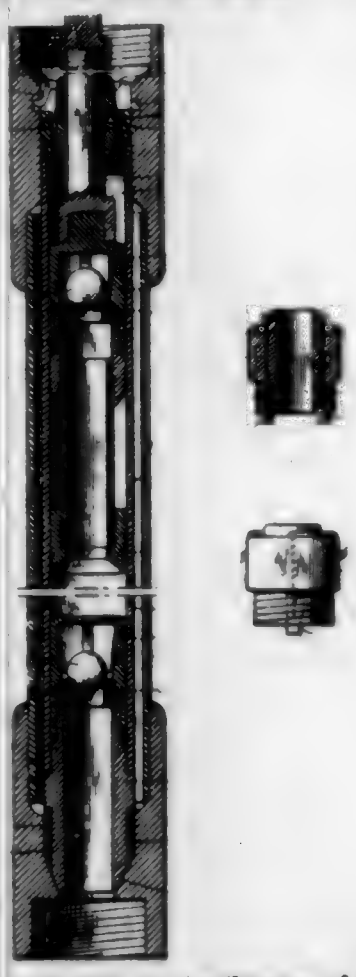
21. In an apparatus of the class described, a source of power-supply, power-utilizing devices connected therewith, supplementary power-utilizing devices connected with said power-supply, means adapted upon operation of said main current-utilizing devices to determine the operation of said supplementary current-utilizing devices, upon a further operation of said main current-utilizing devices to cut out a part of said supplementary utilizing devices and upon a still further operation of said current-utilizing devices to determine the supply to the remainder of said supplementary utilizing devices.

22. In apparatus of the class described, a source of current-supply, current-utilizing devices connected therewith, a lamp system

also connected therewith, and means depending upon the operation of the current-utilizing devices adapted to determine the number of lamps connected with said source of current-supply and the amount of current supplied thereto.

23. In apparatus of the class described, a source of current-supply, current-utilizing devices connected therewith, a lamp system also connected therewith, and means adapted upon the operation of the current-utilizing devices initially to determine the current supplied to said lamp system secondarily to determine the number of lamps in said system and further to determine the current supplied to the final number of said lamps.

814,365. **WELL-PUMP.** ALFRED T. EVANS and VERNON C. GARAGAN, Guffey, Pa.; said Gahagan assignor to William A. McGregor, Guffey, Pa. Filed June 7, 1905. Serial No. 264,099.

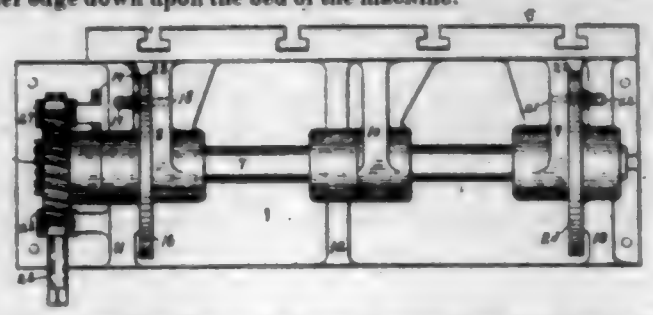


Claim.—1. The combination, in a well-pump, of an upper and lower coupling forming a part of the well-tube, the lower coupling having a seat and the upper coupling an inner annular recess, a removable pump-cylinder located in the well-tube between the couplings and resting upon the seat, catches carried by the pump-cylinder and adapted to engage the aforesaid annular recess in the upper coupling, a piston working in the pump-cylinder, and means for releasing the catches by the piston-rod.

2. In a well-pump, the combination of an upper and lower coupling forming a part of the well-tube, the lower coupling having a seat and the upper coupling an annular recess, a removable pump-cylinder located in the well-tube between the couplings and resting upon the seat, a bushing in the upper part of the pump-cylinder, and a standing valve in the lower part thereof, catches in the bushing engaging the aforesaid annular recess, rods connecting said catches with push-buttons projecting below the bushing, springs for projecting the catches into said recess, a valved piston working in the pump-cylinder and connected to a piston-rod having a shoulder adapted to engage the push-buttons and release the catches from the annular recess of the upper coupling and thereby permit the pump-cylinder and parts to be removed from the well-tube, substantially as shown and described.

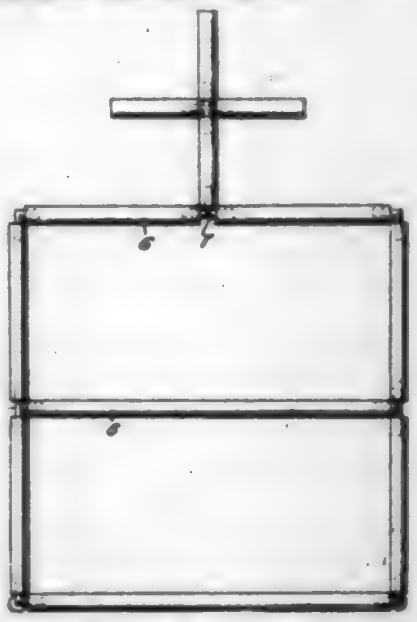
814,366. **WORK-HOLDING ATTACHMENT.** ADAM PERTIS and RICHARD T. KNOLL, New York, N. Y. Filed Apr. 1, 1904. Serial No. 201,065.

Claim.—1. A work-holding attachment comprising two plates hinged back to back, one of said plates being provided with work-holding means and being broader than the other, and being movable upon the hinge to a position alongside of the other upon either side thereof, in which position the edge of the work-holding plate is flush with the bottom surface of the other plate; and means for fastening the work-holding plate where adjusted; whereby the position of the work-holding plate for making right-angle cuts upon either side of the work may be mechanically determined by setting said plate with either edge down upon the bed of the machine.



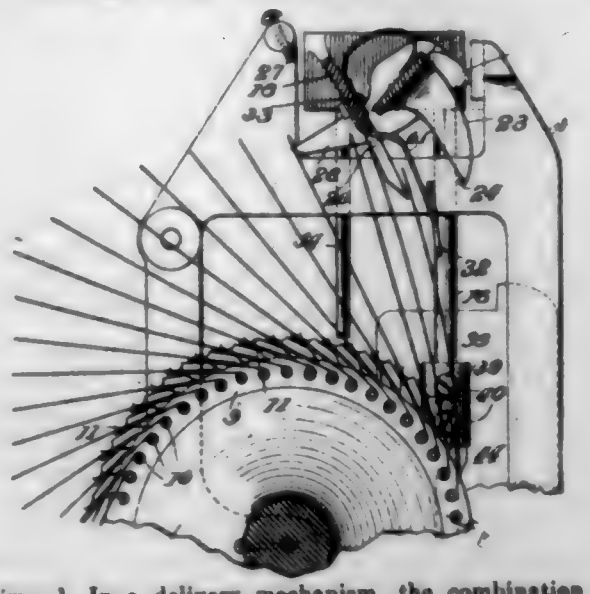
2. A work-holding attachment comprising two plates hinged back to back, one of said plates being provided with work-holding means and being broader than the other, and being movable upon the hinge to a position alongside of the other upon either side thereof, in which position the edge of the work-holding plate is flush with the bottom surface of the other plate; means for fastening the work-holding plate where adjusted; and micrometer mechanism, including a worm and screw, for adjusting said work-holding plate.

814,367. **TOY BUILDING-BLOCK.** JAMES B. GIVEN, Chicago, Ill. Filed Apr. 26, 1905. Serial No. 257,496.



Claim.—The toy building-blocks comprising tubular pieces, and joint-pieces having a plurality of angular arms constructed to fit in the ends of said tubular pieces.

814,368. **DELIVERY DEVICE.** JULIUS GREGORY, Weehawken, N. J. Filed May 11, 1905. Serial No. 260,131.



Claim.—1. In a delivery mechanism, the combination with means for holding a plurality of articles independently of each other, means for bringing any of the articles into an exposed position, and means for removing from the holding means the article exposed.

2. In a delivery mechanism, the combination with means for holding a plurality of articles independently of each other, means for

moving the articles so as to bring them successively into an exposed position to permit of the selection of any one of the articles and means for delivering the selected article.

3. In a delivery mechanism, the combination with means for holding a plurality of articles independently of each other, of means for engaging the articles and removing them from the holding means, and means for moving any of the articles carried by the holding means into position to be taken by the removing means, the article which is in position to be removed being exposed to view.

4. In a delivery mechanism, the combination with means for holding a plurality of articles independently of each other, of grippers, means for operating the grippers, and means for bringing any of the articles to be delivered into position to be taken by the grippers.

5. In a delivery mechanism, the combination with an endless carrier, of means for supporting a series of articles on the carrier independently of each other, means adapted to engage the articles and means for operating the engaging means whereby they may be caused to engage any desired article carried by the carrier.

6. In a delivery mechanism, the combination with means for supporting a series of articles independently of each other on the carrier, grippers, means for operating the grippers, and means whereby the grippers may be caused to take any desired article carried by the carrier.

7. In a delivery mechanism, the combination with a rotatable drum, of means for supporting a series of articles on the drum independently of each other, grippers, means for operating the grippers, and means whereby the grippers may be caused to take any desired article carried by the drum.

8. In a delivery mechanism, the combination with an endless carrier, of means for supporting a series of articles on the carrier independently of each other, means for moving the carrier, grippers adapted to be moved toward and away from the carrier, means for operating the grippers and means whereby the grippers may be caused to take any desired article carried by the carrier.

9. In a delivery mechanism, the combination with a drum, of means for supporting a series of articles on the drum independently of each other, grippers adapted to be moved toward and away from the drum, means for operating the gripper and means whereby the grippers may be caused to take any desired article carried by the drum.

10. In a delivery mechanism, the combination with a carrier, of a plurality of clips pivotally mounted in the carrier and adapted to support a plurality of articles, means for operating the carrier to bring the articles carried by the clips successively to view, and means for removing from the clips the article which is exposed to view.

11. In a delivery mechanism, the combination with a drum provided with a plurality of clips adapted to hold different articles, means for bringing the articles successively into view and means whereby the article exposed to view may be removed.

12. In a delivery mechanism, the combination with a drum of a plurality of rods arranged circumferentially around the drum, clips mounted on the rods adapted to support articles to be delivered, means for rotating the drum to bring the articles successively into view and means adapted to deliver the exposed article.

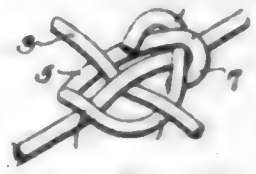
13. In a delivery mechanism, the combination with means for holding a plurality of articles independently of each other, means whereby any one of the articles may be brought to a predetermined position, and a gripper mechanism adapted to engage the article which is in the predetermined position.

14. In a delivery mechanism, the combination with means for holding a plurality of articles and means whereby any one of the articles may be brought to a predetermined position, of a gripper mechanism adapted to engage the article which is in a predetermined position and means carried by the grippers for supporting the article in its predetermined position and guiding the same into the grippers.

15. A gripper mechanism comprising a bar carrying a gripper-jaw, a second bar pivoted to the first bar and carrying the other jaw, a spring tending to press the bars apart and the jaws together, an arm carried by the pivoted bar, a stationary stop with which the arm is adapted to contact when the gripper is in its normal position, a cam carried by the pivoted bar and adapted to contact with a fixed part, when the gripper is moved to hold the gripper open during part of its movement and means for reciprocating the gripper.

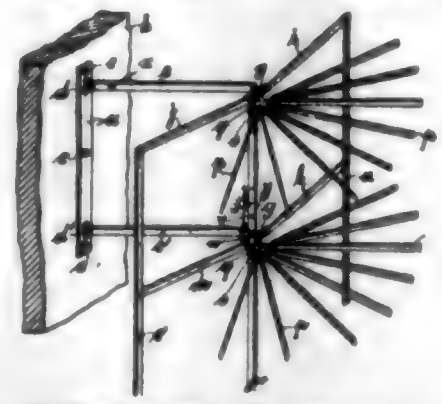
16. A gripper comprising a bar carrying the fixed gripper-jaws, a second bar pivoted to the first bar carrying the movable jaws, a spring normally tending to force the jaws together, a cam carried by the movable jaw and adapted to contact with a fixed plate to hold the jaws open against the action of the spring, said cam being pointed to prevent the return of jaws during their operating movement while the cam is in contact with the cam-plate.

814,369. **METAL-FENCE TIE.** Benjamin Griffin, Adrian, Mich., assignor, by direct and mesne assignments, to Alanson M. Keeney, Ann Arbor, Mich. Filed June 16, 1905. Serial No. 265,571.



Claim.—The combination with crossed wires, of a staple-shaped wire-lock straddling one of the wires with its sides passing across the opposite side of the other wire, and thence bent inwardly and mutually crossed across the first-mentioned wire, the extremities of the lock being bent in opposite directions around the respective opposite sides of the lock.

814,370. **FOLDING CLOTHES-RACK.** Joseph Grünberg, New York, N. Y. Filed Oct. 31, 1904. Serial No. 230,023.



Claim.—1. A folding clothes-rack comprising a rear bar having two small supports arranged in reverse order near its ends, one horizontal wooden bar movably secured to each support, a long vertical bar movably secured alternately to the side ends of the horizontal bars, stop-hinges permanently fixed one to the top front end of the vertical bar and one to its center, horizontal side bars connected to the hinges, long vertical bars connecting each two of the last-named horizontal side bars, blocks secured one to the center front portion of each hinge, a support on each block, and a device thereon having radial members.

2. In a folding clothes-rack the combination of a rear bar, movably-connected horizontal and long vertical front bars, connecting side bars between said front bars connected to stop hinges so that the exterior, long front bars may be moved backward, with blocks secured one to each hinge, a support on each block, and a device thereon having radial members

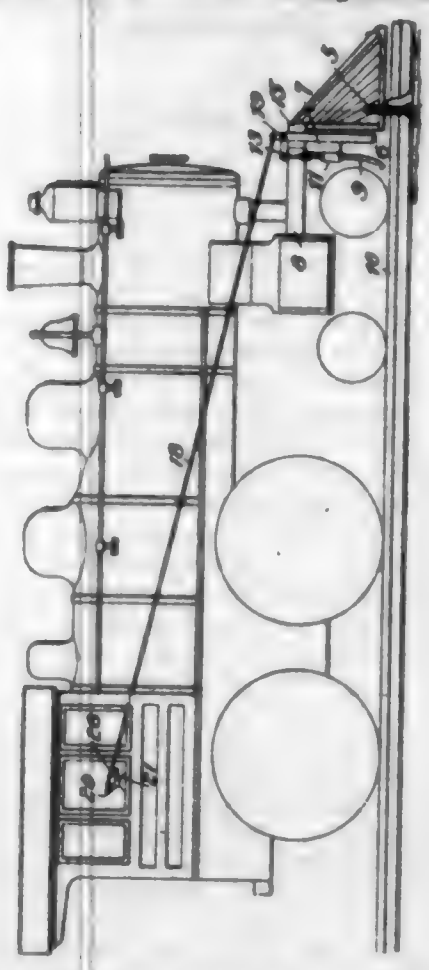
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814,371. **MEANS FOR OILING TRACKS AND APPLYING THE AIR-BRAKES FOR STOPPING RAILWAY-TRAINS.** Elijah S. Gunn and Harry R. Rosenberg, Winona, Miss. Filed Dec. 26, 1905. Serial No. 293,246.

Claim.—1. For neutralizing the traction-power of a locomotive-engine, mechanism consisting of an oil-containing tank, a chamber containing a valve at each end of said tank, a pipe connecting each valved chamber arranged to deliver oil upon the tops of the rails, a rock-rod on said tank, an arm on each end of said rock-rod, connections for each arm with said valves, an arm depending from said rod at one end of the tank, in combination with means for opening said valves consisting of a rock-rod extending from the station to the track and having an impact-arm at its track end, and means whereby said station rock-rod is caused to be rocked in one direction to raise its impact-arm in the path of the depending arm whereby the latter is caused to be operated to feed the oil, and rocked in the opposite direction to lower said impact-arm out of the path of said depending arm when the feed of the oil is not desired.

2. For causing the slipping of the drivers of a locomotive-engine, mechanism consisting of an oil-containing tank, a chamber containing a valve at each end of said tank, a pipe connecting each valved chamber arranged to deliver oil upon the tops of the rails, a rock-rod on said tank, an arm on each end of said rock-rod, connections for each arm with said valves, an arm depending from said rock-rod at one end of the tank, in combination with means for opening said valves consisting of a rock-rod extending from the station to the

track and having an impact-arm at its track end, and means whereby said station rock-rod is caused to be rocked in one direction to raise its impact-arm in the path of the depending arm whereby the latter is caused to be operated to feed the oil, and rocked in the opposite direction to lower said impact-arm out of the path of said depending arm, and means connected with said tank automatically to hold said valves open, and means under the control of the engineer and connected with said tank rock-rod for closing said valves.



3. For causing the slipping of the drivers of a locomotive-engine, the following instrumentalities, an oil-containing tank, a chamber containing a valve at each end of said tank, a pipe connecting each valved chamber arranged to deliver oil upon the tops of the rails, a rock-rod on said tank, an arm on each end of said rock-rod, connections for each arm with said valves, an arm depending from said rock-rod at one end of the tank, a rock-rod extending from the station to the track and having an impact-arm at its track end, the other end of said rod having connections for rocking it in one direction to raise its impact-arm in the path of the tank depending arm whereby it is caused to feed the oil and for rocking said rod in the opposite direction to lower said impact-arm out of the path of said depending arm, friction-clamps connected with said tank and its rock-rod to hold said valves open, and a pull-rod under the control of the engineer and connected with said tank-rod for closing said valves.

4. For causing the slipping of the drivers of a locomotive-engine and simultaneously causing the air-brakes to be applied, an oil-tank, a chamber containing a valve at each end of said tank, a pipe connecting each valved chamber arranged to deliver oil upon the tops of the rails, a rock-rod on said tank, an arm on each end of said rod, connections for each arm with said valves, an arm depending from said rock-rod at one end of the tank, in combination with the air-brake lever, means for opening and for closing said valves and for applying the brakes consisting of a rock-rod extending from the station to the track, an impact-arm fixed on the track end of said rod, the other end of the latter having connection for rocking it in one direction to raise its impact-arm in the path of the depending arm, means for supporting said track impact-arm in vertical position against the impact of the depending arm, means connected with the tank and with said rod for holding the valves open, a pull-rod having connection with said tank-rod, and means connecting said pull-rod with the air-brake lever, whereby said tank-rod is rocked in one direction by the depending arm to lift its valve-connections to open said valves and to draw said rod in the same direction to operate the air-brake lever to apply the brakes.

5. For causing the slipping of the drivers of a locomotive-engine, the combination with an oil-tank, a valve-containing chamber on each end thereof, a pipe connecting each oil-chamber arranged to deliver oil upon the tops of the rails, a rock-rod on said tank, an arm on each end of said rock-rod, connections for each arm with said valves, an arm depending from said rod at one end of the tank, a rock-rod extending from the station to the track and having an impact-arm on its track end, the other end of said rod having connections for rocking it to raise and to lower its impact-arm, means for supporting said impact-arm in its raised position against the impact of the depending arm, means connected with the tank and its rock-rod for automatically holding said valves open, means under the control of the engineer and connected with said tank rock-rod for closing said valves, whereby said tank-rod is rocked in one direction by the movement of the train to open the oil-feeding valves and rocked in the opposite direction by the engineer to close said valves.

6. For neutralizing the traction-power of the drivers of a locomotive-engine, and for applying the brakes, means for feeding oil to the tops of the rails, means for operating the air-brake levers to apply the brakes both said means carried by the engine and operatively connected thereon independent of the engineer, in combination with an impact device fixed at the track and serving to actuate the means for feeding the oil and for applying the brakes, the means for effecting the feed of the oil constituting the means whereby the air-brakes are applied, and means for raising and lowering said impact device from the station, substantially as described, for the purpose specified.

7. For stopping railroad-trains without the intervention of the engineer, means for automatically feeding oil upon the rails in front of the drivers and means for actuating the air-brake lever, both said means carried by the locomotive-engine, and operated simultaneously by the same connections, and a track device for actuating said means by the movement of the train.

8. Mechanism for stopping railway-trains comprising a rock-rod extending from the track to the block-house and having an impact-arm on its track end, and hand operating connections at the block-house, an oil-tank mounted on the locomotive-engine, conduits for feeding oil from said tank upon the track-rails in front of the traction-drivers, a valve for each conduit, an arm depending from one end of said oil-tank, in the path of the track impact-arm, means connecting said depending arm with said valves to cause them to be opened to allow the flow of the oil, means for automatically holding said valves open, means under the control of the engineer for closing said valves, and means for supporting the impact-arm against the impact of the depending tank-arm, whereby, in the movement of the engine, the tank depending arm is caused, by impact against the fixed track-arm, to be swung to open the oil-feeding valves, or to pass over said track impact-arm without contact therewith.

9. A semaphore-signal for railway-trains, an arm at the side of the track, means connecting said arm and the signal with connections at the block-house for operating both at the same time, an arm depending from the engine-frame in front of the drivers, an oil-tank, valve connections with said oil-tank and with said depending arm for causing a flow of oil from said tank, means whereby said oil-flow is caused to be delivered upon the rails, whereby the track impact-arm and the signal may, by the same means and at the same time be set for stopping the train or to let it pass.

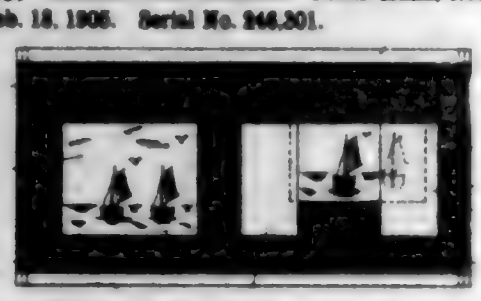
10. Means for applying the air-brakes of railway-trains comprising a rock-rod extending from the track to the block-house and having an impact-arm on its track end, a rock-rod mounted on the front of the engine-frame, an arm depending from said rock-rod at one side of said frame in the path of the impact track-arm, means connecting the block-house end of said rock-rod for raising and lowering its impact-arm, and a pull-rod connecting the rock-rod of the engine with the lever of the air-brake, whereby the movement of the locomotive will cause its depending arm to come in contact with the track-rod impact-arm and thereby cause the air-brake lever connected rod to be pulled forward and cause the brakes to be applied.

11. In an oiling device for railway-rails, an oil-containing tank mounted on the locomotive-engine, feed-controlling connections for the oil, and a movable track device adapted to operatively engage said feed-controlling connections by the movement of the train, and means whereby said movable track device is rendered inoperative.

12. For stopping railway-trains without the intervention of the engineer, a rock-rod extending from the track to the block-house and having an impact-arm at its track end, connections at its other end for rocking said rod, and an intermediate arm thereon, a signal, a chain connecting it with said intermediate arm, and an abutment-support for the impact-arm, in combination with an arm depending from the engine in the path of the impact-arm, an oil-tank, means for delivering oil therefrom upon the rails in front of the drivers, means controlled by said depending arm for causing the flow of the oil, and means controlled by said depending arm for causing the air-brakes to be applied.

13. Means for applying the air-brakes of railway-trains without the intervention of the engineer, comprising a rock-rod extending from the track to the block-house and having an impact-arm on its track end, a rock-rod mounted on the engine-frame, an arm depending from said rock-rod at one side of said frame in the path of the impact track-arm, the air-brake lever, a pull-rod connecting the engine rock-rod, and a chain connecting the pull-rod with the air-brake lever, whereby the pull-rod is caused to operate the air-brake lever while the latter is free to be operated by the engineer independent of the pull-rod.

814,872. **EXHIBITION-BOARD.** DAVID HAAR, New York, N. Y. Filed Feb. 18, 1905. Serial No. 246,201.

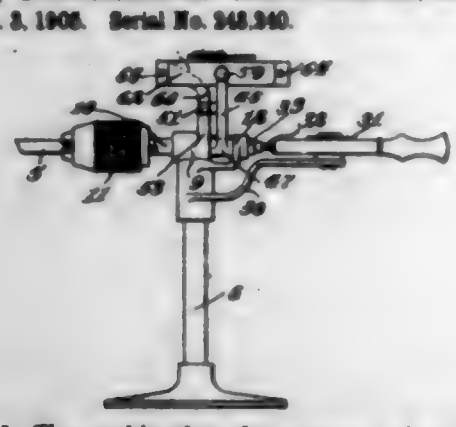


Claim.—1. The combination of a support having a face on which objects may be supported, a plurality of binding members for retaining the objects on said face, said binding members being parallel and adjacent members being in close contact throughout the extent of said surface.

2. The combination of a support having a face on which objects may be supported, a plurality of binding members for retaining the objects on said face, said binding members being parallel and adjacent members being in close contact throughout the extent of said surface, and said binding members anchored to said support.

3. The combination of a support having a face on which objects may be supported, a plurality of binding members for retaining the objects on the face of said support, said binding members being parallel and adjacent members being in close contact throughout the extent of said surface, and strips adapted to be supported by said binding members.

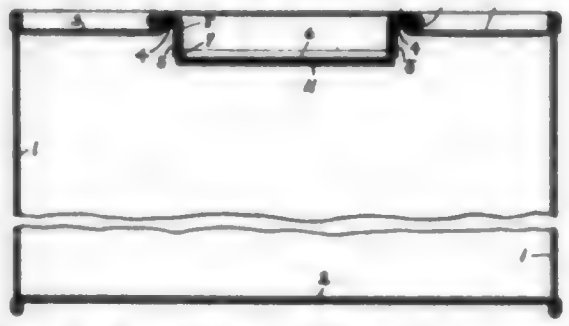
814,873. **DYNAMOMETER.** JOHN F. HAMMOND, New York, N. Y. Filed Mar. 3, 1905. Serial No. 248,240.



Claim.—1. The combination of a support, a shaft having bearings on the support, a pair of arms pivoted on the support and frictionally engaging said shaft on opposite sides respectively, a spring member having opposite portions arranged in proximity to said arms respectively, an adjustable member carried by each arm and contacting with opposite portions of the spring, an indicating device connected to one portion of the spring in close proximity to its portion engaging said contact device, and an arm on the opposite portion of the spring member adjacent its engagement with the contact device, and means on the indicating device whereby the movement of the spring effected by each of said adjustable contacts will operate the indicating means.

2. The combination of a support, a shaft having a bearing on said support, a pair of arms independently pivoted on said support and having their extremities engaging opposite portions of said shaft respectively, an elliptical spring supported from one end on said support and arranged with its intermediate portion between said arms, an adjusting-screw carried by each arm and engaging opposite middle portions of the spring respectively whereby the spring will swing the arms to tightly engage said shaft, a supporting-arm screwed to one portion of the spring adjacent its portion engaged by said screw, a spindle rotatable on said supporting-arm, a pointer carried on the spindle, a dial arranged adjacent the path of the pointer, a gear mounted on said spindle, and a rack-arm secured to the portion of the spring engaged by the other said screw and having its rack portion meshing with said gear, whereby the adjustment of said spring by each said screw, will be relatively indicated by said pointer on the dial.

814,874. **CONTAINER-CLOSURE.** JERVIS R. HARBECK, Detroit, Mich., assignor to Gem Fibre Package Company, Detroit, Mich., a Corporation of Michigan. Filed July 27, 1905. Serial No. 271,411.



Claim.—1. In a container, the combination of a head having a downwardly-extending cylindrical flange and a raised circular bead adjacent thereto, a closure comprising a cylindrical portion having a tapering end closed by a circular disk and a flat outwardly-extending flange, and an absorbent fibrous gasket compressed between the cylindrical portion of the closure and the cylindrical flange of the head, and between the flange of the closure and the bead on the head, said gasket being secured to the closure.

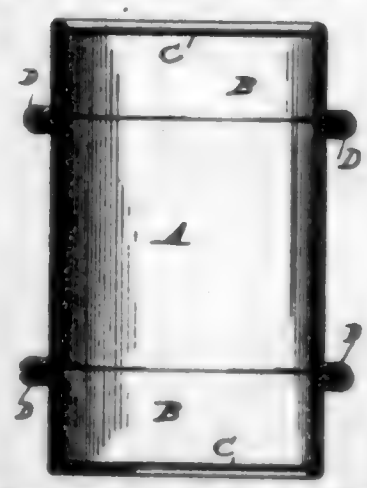
2. In a container, the combination of a head having a downwardly-extending cylindrical flange, a closure comprising a cylindrical portion closed by a circular disk and a flat radial flange, and an absorbent fibrous gasket secured to said closure and adapted to be compressed between the cylindrical portion of the closure and the cylindrical flange of the head.

3. In a container, the combination of a head having a cylindrical flange, a closure comprising a cylindrical portion closed at one end and having a radial flange at the other, and a fibrous gasket adapted to be compressed between the cylindrical portion of the closure and the cylindrical flange of the head.

4. A closure for containers comprising a cylindrical body closed at one end and having an outwardly-extending flange at the other, and a fibrous gasket having a cylindrical body tightly fitted to the body of the closure, the flange of the closure being bent around the adjacent edge of the gasket to secure the same to the closure so as to unite the closure and gasket.

5. In a container, the combination of a head having a downwardly-extending cylindrical flange, a closure comprising a cylindrical portion closed by a disk at its lower end, and an absorbent fibrous gasket secured to the closure and compressed between the cylindrical portion of the closure and the cylindrical flange of the head and adapted to expand between the free edge of the cylindrical flange of the head and the closure to form a fluid-tight joint.

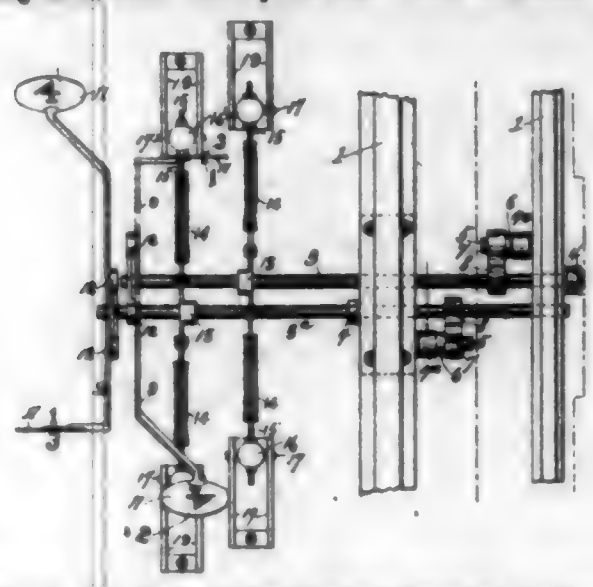
814,875. **BARREL.** ROBERT W. HARDIE, New York, N. Y. Filed June 17, 1905. Serial No. 265,602.



Claim.—1. In a barrel, the combination of two cylindrical sections having their adjacent ends provided with interlocking outwardly-extending flanges, and an annular hoop provided with a bendable flange adapted to bear against and clamp the edges of said flanges together, substantially as shown and described.

2. In a barrel, the combination of two cylindrical sections having their adjacent ends provided with outwardly-extending crimped flanges, and an annular hoop provided with a bendable flange adapted to bear against and clamp the edges of said flanges together, substantially as shown and described.

814,376. RAILWAY SIGNALING DEVICE. SAMUEL C. HARVEY, Bowling Green, Ohio. Filed Apr. 12, 1905. Serial No. 255,080.



Claim.—1. In a device of the described character, a railway, a shaft journaled transversely of the railway, and two members connected with said shaft and adapted for engagement with a vehicle movable upon the railway, the arrangement of said two members being such that their like movements actuate the shaft in opposite directions.

2. In a device of the described character, a shaft journaled transversely of a railway, a pair of upwardly-projecting arms whose identical movements actuate the shaft in opposite directions, an indicator controlled by the shaft, and signaling devices controlled by the indicator.

3. In a device of the described character, a railway, a pair of shafts journaled transversely thereof, a pair of upwardly-projecting arms for each of said shafts, indicator-targets, connections intermediate the shafts and targets for actuating the targets, signals, means governed by the movement of the shafts for controlling the signals, a vehicle upon the railway, and means upon the vehicle for engaging at will either of said upwardly-projecting arms.

4. In a device of the described character, a single-track railway, a series of turnouts for the railway, signaling devices at each turnout, connections between the signaling devices of neighboring turnouts, indicator-targets at each turnout, means for actuating the signaling devices in harmony with the position of the indicator-targets, and means for actuating the targets from a vehicle moving upon the railway.

5. In a device of the described character, a railway, a pair of shafts journaled transversely of the railway, a pair of arms for each of said shafts, said pairs being arranged by their like movements to rotate their respective shafts in opposite directions, a pair of rocker-arms connected with said pair of shafts, indicator-targets mounted upon said rocker-arms, signaling devices controlled by said rocker-arms, and means for at will engaging either of said first-mentioned arms with movable members mounted upon a vehicle moving upon said railway.

6. In a device of the described character, a railway, a vehicle thereon, two concentric staffs thereon, a handle for the top of each of the staffs, a crank for the bottom of each of the staffs, a pair of rods connected with each of said cranks, a vertically-movable member connected with each of said rods, a piece disposed in the lower path of and adapted to contact with each of said vertically-movable members, and signaling devices adapted to be controlled by such contact.

814,377. SHOE FOR PNEUMATIC TIRES. JOHN W. HYATT, Newark, N. J. Filed May 22, 1905. Serial No. 261,562.

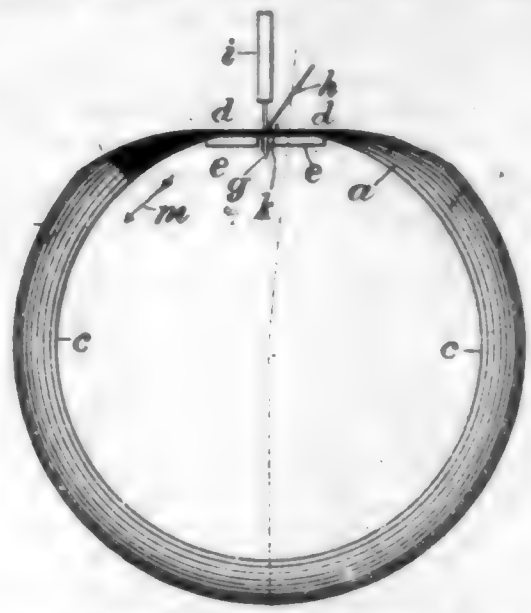
Claim.—1. An endless trough-shaped shoe for pneumatic tires, comprising an endless warp with wire rings at opposite edges and a transverse filling having selvage at opposite edges engaging such rings.

2. An endless trough-shaped shoe for pneumatic tires, comprising a spirally-wound warp with a transverse filling having selvages at the opposite edges of the shoe.

3. An endless trough-shaped shoe for pneumatic tires, comprising a continuous spirally-wound warp with a transverse filling of sewed stitches forming a selvage at the opposite edges of the shoe.

4. An endless trough-shaped shoe for pneumatic tires, comprising a spirally-wound warp with wire rings at opposite edges, with a transverse filling having selvages embracing the wire rings.

5. An endless trough-shaped shoe for pneumatic tires, comprising a spirally-wound warp with wire rings at opposite edges, and a transverse filling of sewed stitches forming a selvage at the opposite edges embracing the wire rings.



6. An endless trough-shaped shoe for pneumatic tires, having a single continuous spiral cord comprising the warp, and a filling of transverse stitches dividing the coils of the cord into groups, whereby the lateral flexibility of the shoe is secured.

7. An endless trough-shaped shoe for pneumatic tires, having a single continuous spiral cord comprising the warp, and a filling of transverse stitches dividing the coils of the cord into groups with intermediate channels between the groups upon the outer side of the shoe, to admit the india-rubber coating between the groups.

8. An endless trough-shaped shoe for pneumatic tires, having a single continuous spiral cord comprising the warp, with wire rings at opposite edges, and a filling of transverse stitches dividing the coils of the cord into groups, with a selvage at each edge of the shoe embracing the said wire rings.

9. A trough-shaped shoe for pneumatic tires comprising a spirally-wound warp, a filling of transverse stitches forming continuous parallel strands with continuous channels or grooves *p* between the same, and an india-rubber coating forced into said grooves, the grooves and rubber tongues in the same permitting great flexibility in the fabric.

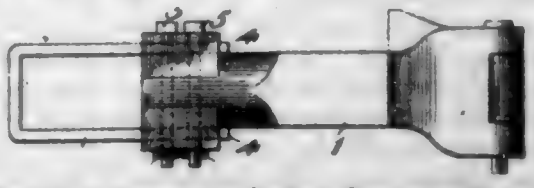
814,378. PROJECTILE. ELIAS M. JOHNSON, New York, N. Y., assignor to Isaac G. Johnson and Company, New York, N. Y. Filed June 7, 1905. Serial No. 264,179.



Claim.—1. A projectile having its point or effective portion formed of steel of a maximum carbon content and a maximum hardness, and its base portion formed of a softer grade of steel or metal having a less carbon content than the first-mentioned portion the carbon gradually decreasing in quantity from the effective portion to the base portion.

2. A projectile having its point formed of steel of a maximum carbon content and maximum hardness and the base portion formed of an admixture of a softer metal of less carbon content, said carbon gradually decreasing in quantity from the point to the base.

814,379. CAR-COUPLING. SAMUEL F. KLOBE, Chicago, Ill. Filed Oct. 7, 1905. Serial No. 281,766.



Claim.—1. A car-coupler having slots adapted to receive a yoke or spring-pocket, said coupler on opposite sides of each slot being provided with means adapted to support a yoke-fastening.

2. A car-coupler having its rear end provided with a portion

adapted to be interposed between the ends of a yoke or spring-pocket and having a portion adapted to overlie an end of said yoke, and form a support for a yoke-fastening.

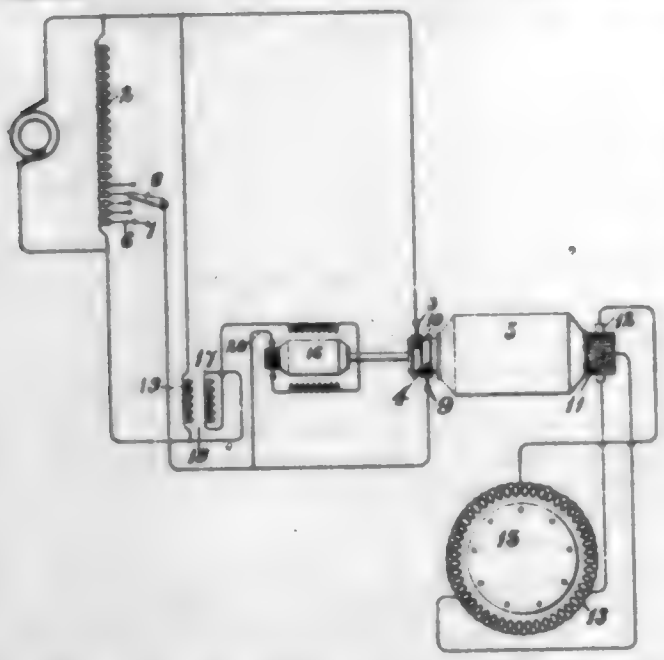
3. A car-coupler having its rear end adapted to engage a yoke or spring-pocket and having portions adapted to overlie said yoke, and form a support for a yoke-fastening.

4. A car-coupler adapted to be connected to a yoke or spring-pocket by a suitable fastening, the shank of said coupler being provided with means for supporting said fastening in double shear.

5. The combination with a car-coupler, of a yoke or spring-pocket, and a suitable fastening in double shear connecting said coupler and yoke.

6. The combination with a car-coupler having slots adapted to receive a yoke, a yoke or spring-pocket, and bolts connecting said coupler and yoke, said bolts being in double shear.

814,380. SYSTEM FOR VARIABLE-SPEED OPERATION OF ALTERNATING-CURRENT MOTORS. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 1, 1904. Serial No. 227,704.



Claim.—1. The combination with a source of alternating-current electrical energy of approximately constant frequency and a translating device, of means for varying the voltage from said source and separate means for automatically varying the frequency of current alternations supplied to said device in accordance with the voltage variations.

2. The combination with a source of alternating-current electrical energy of approximately constant frequency and a translating device, of means for varying the voltage from said source and separate means for automatically varying the frequency of current alternations supplied to said device in approximately the same ratio.

3. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer having no magnetizing field-coils, and a translating device supplied from the commutator of said frequency-changer, of means for varying the voltage supplied to the collector-rings of said frequency-changer and means for driving the frequency-changer at speeds approximately proportional to the variations in voltage.

4. The combination with a source of alternating-current electrical energy, means for changing the frequency of current alternations comprising a dynamo-electric machine having no magnetizing field-coils, and a translating device supplied from the commutator of said frequency-changer, of means for varying the voltage supplied to the collector-rings of said frequency-changer and means for driving the frequency-changer armature at variable speeds.

5. The combination with a source of alternating-current electrical energy, a machine for changing the frequency of current alternations comprising a rotary converter having no magnetizing field-coils, and an armature which is provided with collector-rings and a commutator, and a translating device supplied from the commutator of said machine, means for varying the voltage supplied to the collector-rings of the machine and means for varying the speed of rotation of the armature of the frequency-changing machine.

6. The combination with a source of alternating-current electrical energy, a machine for changing the frequency of current alternations comprising a rotary converter having no magnetizing field-coils and an armature which is provided with collector-rings and a commutator, and a translating device supplied from the commutator of said machine, of means for varying the voltage supplied to the collector-rings of the machine and means for varying the speed of rotation of the armature of the frequency-changing machine approximately in proportion to the variations in voltage.

7. The combination with a source of alternating-current electrical energy, a frequency-changer comprising an armature rotatable in a magnetizable frame, a winding therefor, collector-rings and a commutator, and a motor supplied with energy from the commutator of the frequency-changer, of means for varying the voltage supplied to the collector-rings of the frequency-changer.

8. The combination with a source of alternating-current electrical energy, a frequency-changer comprising an armature rotatable in a magnetizable frame, a winding therefor, collector-rings and a commutator, and a motor supplied with energy from the commutator of the frequency-changer, of means for varying the voltage supplied to the collector-rings of the frequency-changer substantially in proportion to the changes in frequency of alternations of the current delivered therefrom.

9. The combination with a source of alternating-current electrical energy, means for varying the frequency of current alternations comprising a rotary converter having no magnetizing field-coils, and a translating device supplied from the commutator of said rotary converter, of means for varying the voltage supplied to the collector-rings of said rotary converter, and a driving-motor for said rotary converter the speed of which is varied approximately in inverse proportion to the variations in voltage of the rotary converter.

10. The combination with a source of alternating-current electrical energy, means for changing the frequency of current alternations comprising a rotary converter having no magnetizing field-coils, and a translating device supplied from the commutator of said rotary converter, of means for varying the voltage supplied to the collector-rings of said rotary converter, a driving-motor for said rotary converter and means for supplying a voltage thereto which is inversely proportional to the voltage supplied to the rotary converter.

11. The combination with a source of alternating-current electrical energy of approximately constant frequency, and a translating device, of means for varying the voltage from said source, and separate means for varying the frequency of current alternations supplied to said device.

12. The combination with a source of alternating-current electrical energy of approximately constant frequency and a translating device, of means for varying the voltage from said source, and separate means for automatically varying the frequency of current alternations supplied to said device.

13. The combination with a source of alternating-current electrical energy of approximately constant frequency, and a translating device, of means for varying the voltage from said source, and separate means for varying the frequency of current alternations supplied to said device in approximately the same ratio.

14. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of driving means for the frequency-changer and means for varying the speed thereof approximately in proportion to variations in the voltage supplied to the translating device.

15. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of a driving-motor for the frequency-changer and means for varying the speed of the driving-motor approximately in proportion to variations in the voltage supplied to the translating device

16. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency changer and a translating device supplied therefrom, of a driving-motor for the frequency-changer and means for varying the voltage supplied to the driving-motor approximately in inverse proportion to variations in the voltage supplied to the translating device.

17. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of means for varying the voltage from said source, a driving-motor for said frequency-changer, and a transformer whereby the voltages supplied to the driving-motor are increased when the voltages supplied to the translating device are decreased.

18. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of means for varying the voltage from said source, a driving-motor for said frequency-changer, and a trans-

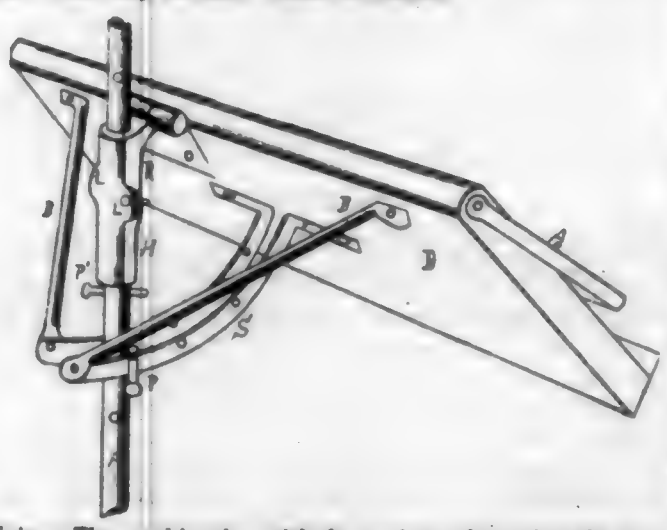
former whereby the speed of the driving-motor is caused to increase as the voltage supplied to the translating device is decreased.

19. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of means for varying the voltage from said source, a driving-motor for said frequency-changer, and a transformer whereby the voltage supplied to the driving-motors is caused to vary approximately inversely proportional to variations in the voltage supplied to the translating device.

20. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of means for varying the voltage from said source, a driving-motor for said frequency-changer, and a transformer whereby the speed of the driving-motor is caused to vary approximately inversely proportional to the variations in voltage supplied to the translating device.

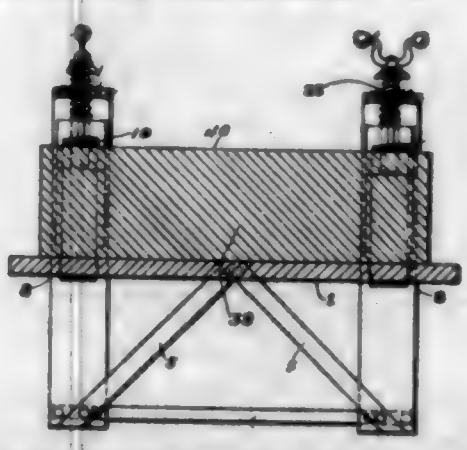
21. The combination with a source of alternating-current electrical energy, a dynamo-electric frequency-changer and a translating device supplied therefrom, of means for varying the voltage from said source, a driving-motor for said frequency-changer, and a transformer whereby the speed of the driving-motor is adjusted and the frequency of the current alternations supplied to the translating device is varied in accordance with the voltage variations.

814,381. **READING-DESK.** William J. Lonergan, Brookfield, Wis. Filed July 11, 1904. Serial No. 216,012.



Claim.—The combination with the perforated standard F of the desk D, the book-holding bail A pivoted to the ends thereof, the two-part sleeve H loosely mounted on the standard and hinged to the desks, one part of said sleeve forming part of the hinge, the perforated segments S secured to the desk the braces B secured to the segments and to the desk, the pin P adapted to enter the perforations in the segments for adjustment of the inclination of the desk, and the pin P′ adapted to enter the perforations in the standard and support the sleeve thereby supporting the desk in adjusted vertical position.

814,382. **VENEERING-MACHINE.** Robert H. Lynn, Bolivar, Pa. Filed Oct. 20, 1905. Serial No. 283,622.

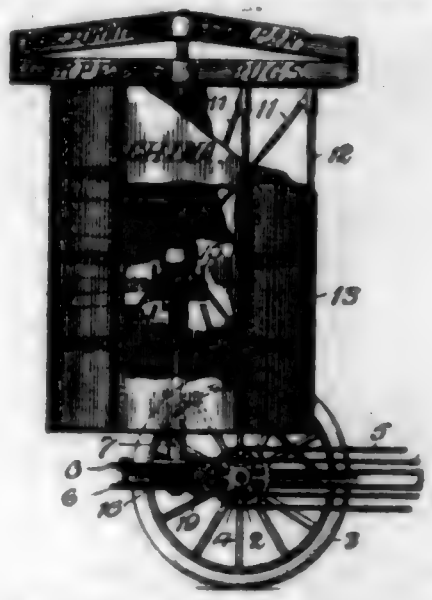


Claim.—1. In a veneering-machine, the combination with the table supported by uprights, and beams connecting said uprights, of frames resiliently mounted between said uprights, adjustable plates carried by said frames and forming funnel-shaped openings between said frames and said table, means to adjust said frames, substantially as described.

3. In a veneering-machine, the combination with a table, of resiliently-mounted frames carried by said table, plates adjustably mounted between said frames, means to adjust said plates, and means to adjust said frames, substantially as described.

3. The combination with a table supported by uprights, of frames mounted upon said table and forming funnel-shaped openings in alinement with one another, means to vertically adjust said frames, means to horizontally adjust said frames to regulate the size of said openings, substantially as described.

814,383. **ADVERTISING DEVICE.** Alexander W. MacArthur, Philadelphia, Pa. Filed Dec. 19, 1904. Serial No. 237,491.



Claim.—1. An advertising device, comprising a vehicle, a rotating body carried by said vehicle having advertising matter represented thereon, a vertical spindle upon which said body is carried, a sleeve carried by the body of the vehicle, and having a bearing at its upper end for supporting said spindle, the lower end of said spindle being connected with driving mechanism carried by said vehicle.

2. An advertising device, comprising a vehicle, a rotating body carried by said vehicle having advertising matter thereon, a vertical spindle, a hub on said spindle, and having supports or braces extending therefrom to said rotating body, a sleeve carried by the frame of the vehicle through which said spindle passes, a bearing carried by the upper end of said sleeve adapted to support said spindle, and means connected with the lower end of said spindle for rotating the same, said means being connected with a suitable motor-driven means carried by the vehicle.

3. An advertising device comprising a vehicle, a sound-conveying spindle carried thereby, a body carried by said spindle, having advertising matter thereon, sound-producing means carried by said vehicle, and connections between said sound-producing means and the said spindle.

4. An advertising device comprising a vehicle, a sound-conveying spindle carried thereby, a rotating body having advertising matter thereon carried by said vehicle, and mounted on said spindle, sound-producing means carried by said vehicle, and connections between said sound-producing means and the said spindle.

5. An advertising device, comprising a vehicle, a rotating body carried by said vehicle, a hollow spindle upon which said body is carried, sound-conveying means connected with said spindle and extending to the surfaces of said body, a sound-producing device, and means connecting said sound-producing device with said spindle.

6. An advertising device, comprising a vehicle, a rotating body carried by said vehicle having advertising matter thereon, a hollow spindle upon which said body is mounted, a hollow hub carried by said spindle, sound-conducting means radiating from said hub and extending to the surfaces of said body, a sleeve carried by the frame of the vehicle, and having a bearing at its upper end for said spindle, a sound-producing device, and a tube connecting said sound-producing device with said spindle.

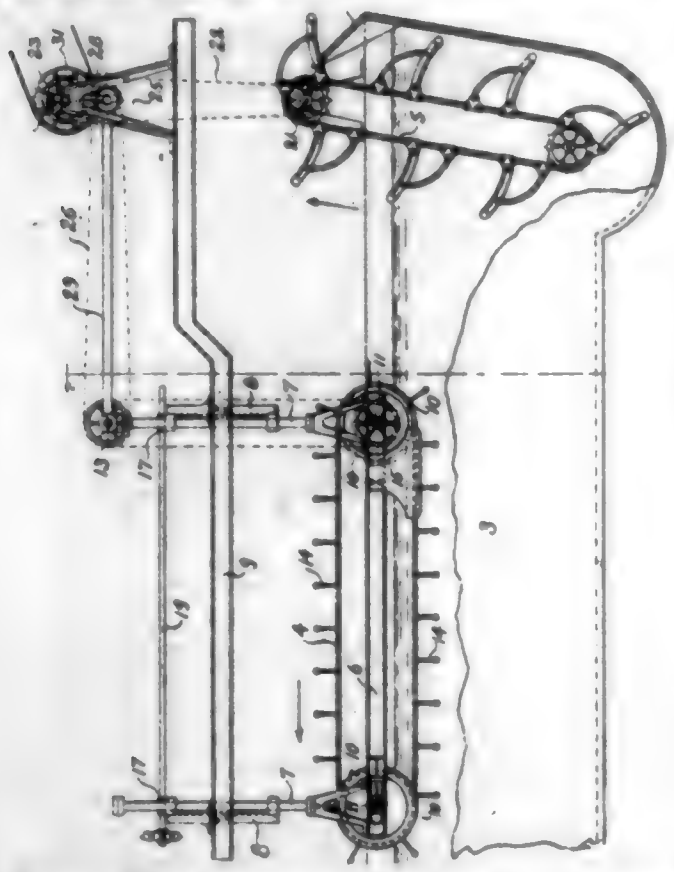
7. An advertising device, comprising a vehicle, sound-amplifying means carried by said vehicle, a sound-producing device, means connecting said amplifying means with said sound-producing means, and means for causing an air-pressure about said sound-producing means, the blast produced by said pressure being adapted to aid in carrying the sound-waves to said amplifying means.

8. An advertising device, comprising a vehicle, a body having an advertising member carried thereon, sound-amplifying devices within said body, a sound-producing device, and means for causing

an air-pressure about said sound-producing device, and a conduit connecting said sound-producing device with said amplifying means.

9. An advertising device, comprising a vehicle, a rotating body carried by said vehicle having advertising matter thereon, amplifying-horns located within said body, a sound-producing device, a casing inclosing said sound-producing device, means for producing an air-pressure within said casing, and a conduit connecting said casing with said sound-amplifying means.

814,384. HOG-SCALDER. John H. MacLeod, Chicago, Ill. Filed Apr. 20, 1905. Serial No. 256,549.



Claim.—1. The combination of a tank, a supporting-frame depending from above said tank, a horizontally-disposed conveyer-frame mounted to slide vertically on said supporting-frame, a conveyer on said conveyer-frame adapted to dip below the surface of the water in the tank and move the hogs along the same, and gearing connecting said supporting-frame with said conveyer for raising and lowering the conveyer.

2. A hog-scalder, comprising a tank, a horizontally-disposed conveyer mounted above said tank and adapted to move the hogs along the tank below the surface of the water therein, said conveyer having its bearings on one side free from the wall of the tank to provide for unobstructed access between said wall and the conveyer, said tank being widened on said side to permit hogs to be withdrawn from the side of the conveyer.

3. The combination of a tank, a supporting-frame above said tank, a horizontally-disposed conveyer-frame mounted to slide vertically on said supporting-frame, a conveyer on said conveyer-frame adapted to dip below the surface of the water in the tank and move the hogs along the same, vertically-disposed threaded shafts carried by the supporting-frame and engaging the conveyer-frame for controlling the vertical position of said conveyer, and gearing connecting said shafts and coacting therewith for raising and lowering the conveyer.

4. The combination of a tank, a supporting-frame above said tank, uprights mounted in said frame and vertically slidable therein, a horizontally-disposed conveyer mounted upon the lower ends of said uprights, means for shifting said uprights vertically in said frame, a shaft journaled near the upper end of said uprights and connected with said conveyer for operating the same, a counter-shaft mounted in the supporting-frame in parallel relation to said shaft, an arm loosely mounted on said counter-shaft and carrying a second counter-shaft geared to the first, a belt connecting said shaft and second counter-shaft, and a link connecting said shaft and second counter-shaft, all arranged to permit the continuous operation of the conveyer regardless of its vertical position in the supporting-frame.

814,385. CUSPIDOR. Patrick L. Madden and George Pfender, Pittsburg, Pa. Filed Oct. 2, 1905. Serial No. 281,096.

Claim.—1. In a cuspidor the combination with a suitable receptacle having an open-neck portion, tracks carried by said neck portion and separable quadrant-shaped funnel members supported by and movable radially on said tracks, substantially as described.

2. In a cuspidor, the combination with a receptacle having an open-neck portion, of tracks supported by said neck portion, separable quadrant-shaped funnel members adapted to slide in said tracks and when in contact to form the funnel of said cuspidor, substantially as described.

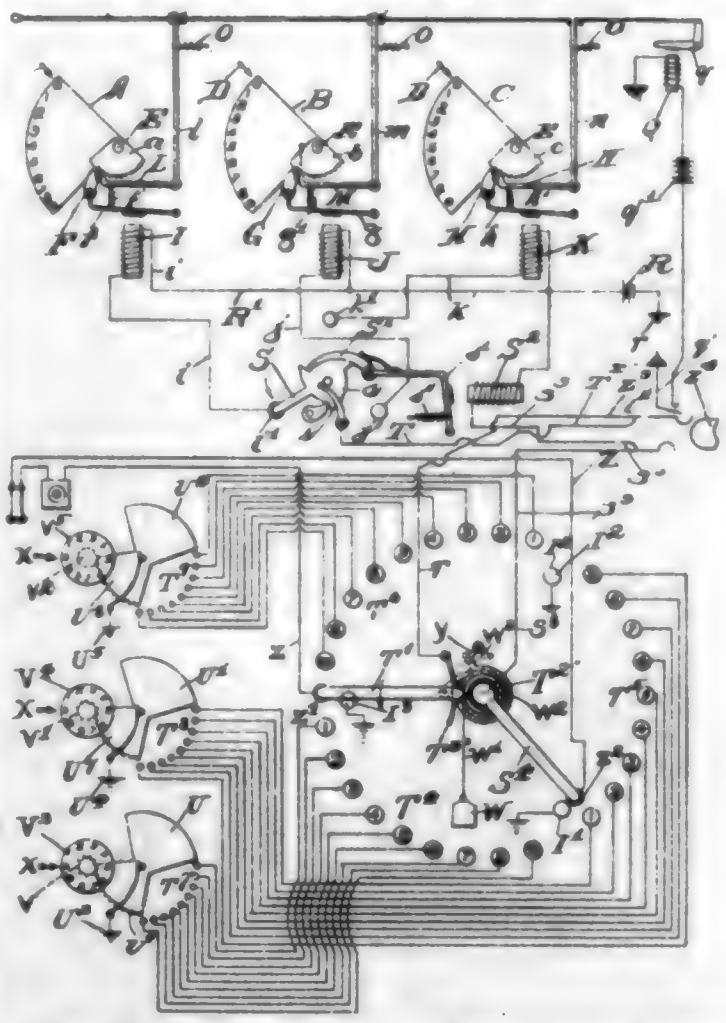
3. A cuspidor of the character described consisting of a receptacle having an open-neck portion, a plurality of separable quadrant-shaped funnel members carried by said neck and forming when assembled the funnel of the cuspidor and means to detachably connect said members to said neck, substantially as described.

4. A cuspidor consisting of a receptacle, tracks carried by said receptacle, separable quadrant-shaped funnel members adapted to slide in said tracks and forming when assembled the funnel of the cuspidor, substantially as described.

5. A cuspidor consisting of a receptacle having a funnel-shaped opening, said funnel-shaped opening being formed by a plurality of separable quadrant-shaped members, substantially as described.

6. A cuspidor consisting of a receptacle, a plurality of separable quadrant-shaped members carried by said receptacle and adapted to form the top and receiving-opening thereof, substantially as described.

814,386. TELEPHONE-EXCHANGE. William M. Marran, Belvidere, Ill. Filed June 6, 1904. Serial No. 211,263.



Claim.—1. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of character-bearing movable members located at the central exchange, independent electroresponsive devices and circuits for actuating said members respectively, a main signal-switch for connecting the main signal-circuit with any one of the first said circuits, a switch-circuit, means for closing said switch-circuit, means acting simultaneously with said means for sending a various number of impulses over said signal-circuit and means under the control of the subscriber for varying the number of said impulses at will.

2. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of digit-indicators located at the central exchange, electroresponsive devices and circuits for said indicators respectively, a switch for closing said circuits respectively, contacts for said circuits respectively arranged in a series with the first next the last in the line of movement of said switch, said switch being movable continuously successively over said contacts from the first to the last and the last to the first, a main signal-circuit and means under the control of the subscriber for actuating said switch and sending impulses over said signal-circuit.

3. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of digit-indicators located at central exchange, a corresponding number of electroresponsive devices and circuits for actuating said indicators respectively, a main signal-circuit having a movable terminal, means for switching said signal-circuit to any one of the first said circuits comprising a switch-circuit having a movable terminal, a plurality of series of contacts corresponding to said indicators respectively and arranged in the line of movement of the first said movable terminal, and means under the control of the operator for grounding any number of said contacts in each series thereof.

4. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of digit-indicators located at central exchange, a corresponding number of electroresponsive devices and circuits for actuating said indicators respectively, a main signal-circuit having a movable terminal, means for switching said signal-circuit to any one of the first said circuits, comprising a switch-circuit having a movable terminal, a plurality of series of contacts corresponding to said indicators respectively and arranged in the line of movement of the first said movable terminal, grounded contacts for said switch-circuit alternating with said series of contacts and means for moving said movable terminals in concert successively over their respective contacts.

5. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of indicators located at central exchange, a corresponding number of electroresponsive devices and circuits for actuating said indicators respectively, a main signal-circuit having a movable terminal, means for switching said signal-circuit to any one of the first said circuits, a plurality of series of contacts corresponding to said indicators respectively and arranged in the line of movement of said movable terminal, a plurality of grounded independently-movable contacts for connecting electrically with one or more of the contacts of the said plurality of series of contacts respectively, and movable index members under the control of the operator, for said movable contacts respectively bearing numbers corresponding to the number on said digit-indicators respectively.

6. In a telephone-exchange, the combination of a telephone-circuit, a main signal-circuit leading to the central exchange, a visual indicator device located at central exchange comprising a plurality of movable indicators, and means under the control of the subscriber for sending impulses over said signal-circuit to any one of said indicators, comprising means for subsequently and automatically closing the telephone-circuit.

7. In a telephone-exchange, the combination of a numbering-machine comprising a plurality of indicators located at central exchange; a corresponding number of electroresponsive devices and circuits for actuating said indicators respectively, a main signal-circuit, a plurality of series of indicator-contacts corresponding to said indicators respectively, means under the control of the subscriber for grounding one or more of said indicator-contacts, a plurality of grounded switch-contacts corresponding to said indicators respectively, a switch for connecting said signal-circuit with any one of said first circuits, a switch-circuit for said switch, movable terminals for said signal-circuit and switch-circuit respectively adapted to sweep over said indicator-contacts and switch-contacts respectively and movable continuously in the same direction, power-storing mechanism under the control of the subscriber and means for moving said terminals by the power thus stored.

8. In a telephone-exchange the combination of a numbering-machine comprising a plurality of character-bearing indicators located at central exchange, a corresponding number of electroresponsive devices and circuits for actuating said indicators respectively, a main signal-circuit, means for switching said signal-circuit to any one of the first said circuits comprising a switch-circuit, a plurality of series of contacts corresponding to said indicators respectively, means for successively connecting said contacts with said main signal-circuit, and means acting in concert with the last said means for closing the switch-circuit at periods between the time that the last one of said contacts of each series and the first one of the next succeeding series is connected with the signal-circuit, and means under the control of the operator for grounding one or more of said contacts of any one or more of said series.

814,387. SPRING. Frederick J. Mercer, Hyde Park, Mass. Filed Sept. 20, 1905. Serial No. 279,241.



Claim.—1. A spring comprising a plurality of overlaid plates, and a cage interposed between two of said plates and provided with antifriction members.

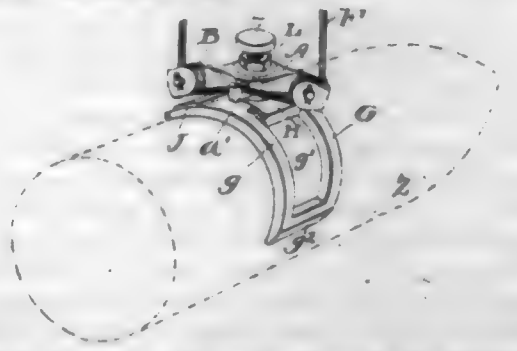
2. A spring comprising a plurality of overlaid plates, and a cage interposed between two of said plates and provided with a plurality of transverse rollers.

3. A spring comprising a plurality of overlaid plates, and a cage interposed between two of said plates and provided throughout its length with transverse rollers.

4. A spring comprising a series of overlaid plates in combination with a plurality of transverse rollers interposed between said plates, and a cage for holding said rollers having sides of a width somewhat less than the diameter of the said rollers.

5. A spring comprising a series of overlaid plates in combination with a plurality of transverse rollers interposed between said plates, and having trunnions at either end, and a cage for holding said rollers, having inner spring side walls adapted to yield to permit the insertion of said rollers, and then retain them in position.

814,388. GRAPPLE. Edward T. Moore, Cleveland, Ohio. Filed Nov. 1, 1905. Serial No. 285,578.



Claim.—1. A grapple comprising a pair of arc-shaped arms slidably connected and having free ends, whereby the arms may be extended to embrace more than a semicircle or telescoped to occupy substantially a semicircle, and supporting means on the convex side of said arms.

2. A grapple comprising an arc-shaped arm having a pair of parallel side members, with a recess between them and a second arc-shaped arm guided to slide in said recess.

3. In a grapple, the combination of a pair of arc-shaped arms one being recessed to receive the other, there being grooves and ribs formed on the coöperating edges of said arms.

4. A grapple comprising a pair of arms adapted to telescope with reference to each other and having disconnecting ends adapted to be spread thereby, and a supporting-bar swiveled to one of said arms near its inner end.

5. In a grapple, the combination of an arc-shaped arm, a bar swiveled thereto, a second arc-shaped arm bifurcated and extending onto opposite sides of the first arm, and ribs and grooves on the cooperating edges of said arms.

6. A grapple comprising a bifurcated arc-shaped arm, a second arc-shaped arm guided in an arc in said bifurcation, a supporting-bar swiveled to said last-mentioned arm, and equalizing-sheaves carried by said bar.

7. A grapple comprising a bifurcated arc-shaped arm, a second arc-shaped arm guided in an arc in said bifurcation, a supporting-bar swiveled to said last-mentioned arm, and a clamping-screw screwing through the swivel.

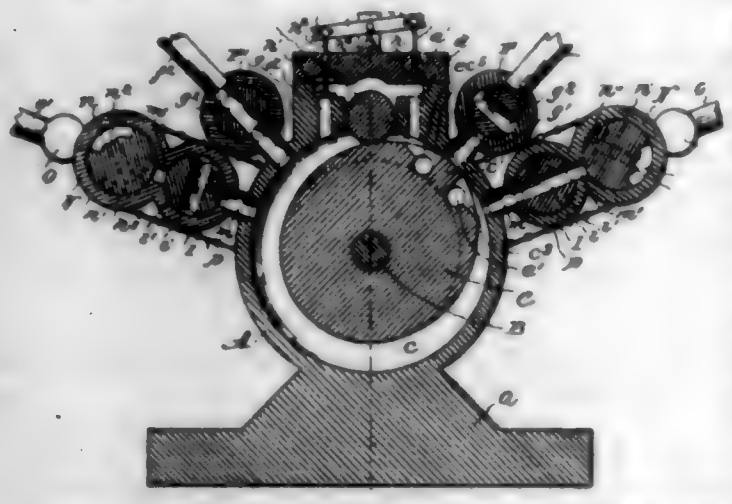
8. In a grapple, the combination of a bifurcated arm, an intermediate arm extending into the bifurcation thereof, ribs and grooves on the coöperative edges of said arms, a stud mounted in the intermediate arm, a supporting-bar above the intermediate arm in which said stud is also mounted, said stud being internally screw-threaded, and a clamping-screw occupying such internal screw-thread and adapted to project below the intermediate arm and having a head above the supporting-bar.

9. A grapple comprising a pair of coöperating arms, a supporting-bar swiveled thereto, an equalizing-sheave carried near each end of the bar, and a support for the flexible elevating member carried by the bar intermediate of said sheaves, said support being at one side of the swivel and the sheaves being set at an angle to allow such flexible member to pass directly onto said support.

10. A grapple, comprising a pair of arms adapted to telescope with reference to each other and having disconnected ends made to approach or recede from each other by reason of such telescoping, and a supporting-bar swiveled substantially on a vertical axis to one of said arms.

11. A grapple, comprising a pair of arc-shaped arms adapted to telescope with reference to each other and having disconnected ends approaching or receding from each other by reason of such telescoping, and a radial clamping-screw carried by one of said arms.

814,389. **ROTARY ENGINE.** William S. Moses, Tracy, Minn. Filed July 26, 1905. Serial No. 271,167.



Claim.—1. In a rotary engine, the combination with the cylinder having a housing in one side thereof, of a piston rotatable in the cylinder and provided with steam-chambers decreasing in depth to provide heads, ports leading out through the piston at opposite sides of the heads, steam-passages arranged circumferentially of the piston and communicating with said ports, and inlet and exhaust valves, the former communicating with the aforesaid steam-passages.

2. In a rotary engine, the combination with the cylinder having a housing at one side thereof, of a piston rotatable in the cylinder and provided with steam-chambers extending circumferentially around the piston and decreasing in depth to provide opposed heads, ports leading through the piston longitudinally and opening out at opposite sides of the piston-heads, two series of steam-passages disposed circumferentially of the piston side by side and the passages of each series spaced apart, said passages communicating with the aforesaid ports, feed-valves opening into the line of travel of the steam-passages, and an abutment located in the housing and adapted to move in and out of the steam-chambers, the cylinder having exhaust-ports.

3. In a rotary engine, the combination with the cylinder having a housing at one side thereof, of a piston rotatable in the cylinder and provided circumferentially with steam-chambers decreasing in depth to provide piston-heads opposed to each other, ports leading through the piston longitudinally and opening out into the steam-chambers at opposite sides of the piston-heads, steam-passages disposed circumferentially of the piston between the steam-chambers and communicating with the ports respectively, valves disposed at opposite sides of the housing and provided with inlet and exhaust openings at right angles to each other, the inlet-openings adapted to register with the steam-passages of the piston and the exhaust-openings adapted to aline with the exhaust-ports through the cylinder into the steam-chambers of the piston; together with an abutment adapted to move in and out of the steam-passages and operated by the piston-heads.

4. In a rotary engine, the combination with the cylinder, of a rotary piston mounted therein and provided with two circumferential steam-chambers decreasing in depths as shown to provide opposed piston-heads, ports extending longitudinally through the piston and opening out at opposite sides of the heads, two series of circumferentially-disposed steam-passages connected to the ports respectively, inlet-valves leading to the passages, and exhaust-ports leading to the steam-chambers; together with rollers adapted to move in and out of the steam-chambers, steam-passages at opposite sides of the rollers or abutments and leading to a point above the same, valves adapted to close said passages alternately, and a rocking beam to which the valves are connected.

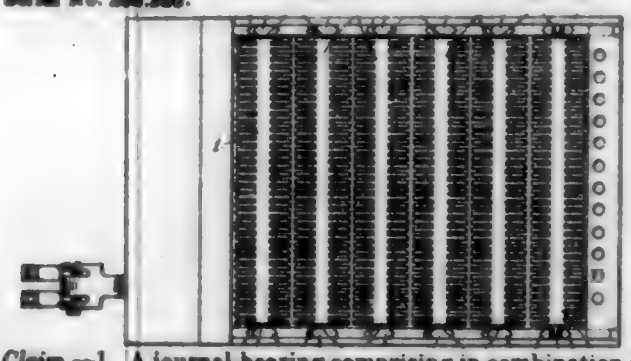
5 In a rotary engine, the combination with the cylinder, of a rotary cylindrical piston mounted in the cylinder and provided with steam-chambers spaced apart and decreasing in depth to provide piston-heads, ports extending longitudinally through the piston between the chambers therein and opening out into the steam-chambers at opposite sides of the piston-heads, steam-passages arranged in series circumferentially of the piston between the steam-chambers and connecting with the ports respectively, inlet-valves communicating with the steam-passages, exhaust-ports leading through the cylinder on a line with the steam-chambers, and reciprocating abutments operated by the piston-heads and adapted to enter the steam-chambers; together with auxiliary feed-valves opening into the steam-chambers.

6. In a rotary engine, the combination with the cylinder, of a rotary cylindrical piston mounted in the cylinder and provided with steam-chambers spaced apart and decreasing in depth to provide piston-heads, ports extending longitudinally through the piston between the chambers therein and opening out into the steam-chambers at opposite sides of the heads, steam-passages arranged in series circumferentially of the piston between the steam-chambers and connected to the ports respectively, inlet-valves communicating with the steam-passages, exhaust-ports leading through the cylinder on a line with the steam-chambers, and reciprocating abutments operated by the piston-heads; together with auxiliary feed mechanisms comprising a valve, a steam-chest and an intermediate rotary plug having opposite connected segmental recesses out of line with each other and adapted to communicate, respectively, with the steam chest and valve, and sprocket chain and wheel connections between the shaft of the engine and the aforesaid rotary plug, whereby steam is admitted directly to the steam-chambers intermittently and in addition to the feed through the ports in the piston.

7. In a rotary engine, the combination with the cylinder, of a rotary cylindrical piston mounted in the cylinder and provided with steam-chambers spaced apart and decreasing in depth to provide piston-heads, ports extending longitudinally through the piston and opening out at opposite sides of the piston-heads, opposite valves having feed and exhaust openings, an intermediate reciprocating abutment, a cam operating the latter, and an auxiliary feed comprising a rotary plug having segmental recesses out of line with each other and connected by a diagonal passage, an inlet-port through the cylinder in line with one of said segmental recesses, and a supply-opening in line with the other of said recesses, substantially as shown and described.

8. In a rotary engine, the combination with the cylinder, of a rotary cylindrical piston mounted therein and provided with circumferential steam-chambers decreasing in depth to provide piston-heads, ports extending longitudinally through the piston and opening into said steam-chambers, steam-passages extending circumferentially around the piston and connected to said ports, inlet-valves communicating with said steam-passages, exhaust-ports through the cylinder on a line with the steam-chambers in the piston, and a swinging abutment located to one side of the piston and having a spring for projecting the abutment into the steam-chambers, together with the auxiliary feed mechanism comprising a rotary valve-plug having opposite segmental recesses out of line with each other, one communicating with an inlet-port and the other with a steam-supply opening, said segmental recesses being connected by a diagonal passage through the plug, and means for turning the plug from the shaft of the engine, substantially as shown and described.

814,390. JOURNAL-BEARING. Spencer Nichols, Troy, N. Y., assignor to Keenan Bros., Troy, N. Y., a Firm. Filed Mar. 27, 1905. Serial No. 252,220.



Claim.—1. A journal-bearing comprising in combination a supporting-frame provided with a seat having a contracted open end; a journal-bearing block loosely insertible in said seat; and a key insertible through the contracted open end of said seat and with said block substantially filling the seat.

2. A journal-bearing comprising in combination a supporting-frame provided with a seat having a contracted open end; a journal-bearing block loosely insertible in said seat having one of its sides engageable with the side wall of said seat, and its opposite side parallel with the opposite side wall of said seat and forming therewith a key-slideway opening through the contracted open end of the seat; and a key insertible through the open end of said seat and slideway.

3. A journal-bearing comprising in combination a supporting-frame provided with an open seat having a side wall inclined inwardly toward its open end; and a journal-bearing block and key separately insertible, the key after the bearing-block, in said seat and together substantially filling said seat, one of said insertible parts having a side surface engageable, and inclined to correspond with, said inclined side wall.

4. A journal-bearing comprising in combination a supporting-frame provided with a seat having a contracted opened end; a journal-bearing block loosely insertible in said seat, and a key interlockable with the bearing-block and separately insertible through the contracted open end of the seat.

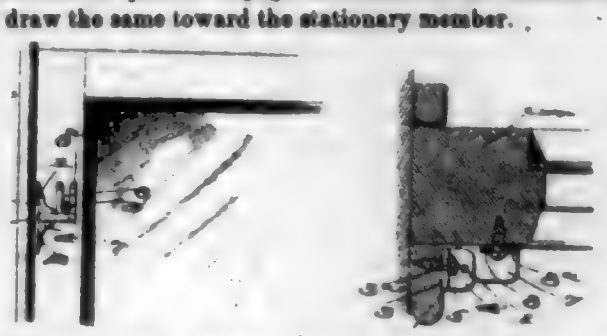
5. A journal-bearing, comprising in combination a supporting-frame provided with an open seat having a side wall inclined inwardly toward its open end; a journal-bearing block and key separately insertible, the key after the block, in said seat through the open end thereof, said block having an inclined side parallel with said inclined seat-wall, and said key having its opposite sides engageable, and corresponding in inclination with, the respective inclined seat-wall and inclined side of the journal-block.

6. A journal-bearing comprising in combination a supporting-frame provided with an open seat having its side walls inclined inwardly toward the open end thereof and each formed with a longitudinal V-shaped groove; a journal-bearing block loosely insertible within said seat having its opposite sides formed with similarly V-shaped tongues and corresponding in inclination with the respective seat-walls with one of which one side of said cap is engageable; and a key insertible in said seat having its opposite sides corresponding in inclination with one of said seat-walls and the neighboring side of said cap between which said key is insertible through the open end of the seat and having on one side a V-shaped tongue fitting the groove in said seat-wall and provided on the opposite side with a similar V-shaped groove to receive the tongue on the neighboring side of the block.

7. A journal-bearing comprising in combination a pillow provided with an open seat leading to a journal-bearing surface having the seat-walls inclined inwardly toward the open end thereof and each formed with a longitudinal V-shaped groove; a cap insertible within said seat having on its inner end a complementary journal-bearing surface and having its opposite sides formed with V-shaped tongues and corresponding in inclination with the respective seat-walls with one of which one side of said cap is engageable; and a key insertible in said seat having its opposite sides corresponding in inclination with one of said seat-walls and the neighboring side of said cap between which said key is inserted and having on one side a V-shaped tongue fitting the groove in said seat-wall and provided on the opposite side with a V-shaped groove to receive the tongue on the neighboring side of the cap.

814,391. DETACHABLE HINGE FOR WINDOWS AND THE LIKE. George H. Parker, New York, N. Y., assignor to Charles Hemingway Platt, New Haven, Conn. Filed Apr. 23, 1904. Serial No. 204,530.

Claim.—1. In combination, a slidable member, a stationary member, means fixed upon the slidable member, means fixed upon the stationary member, detachable hinged means comprising a pair of pivotally-connected members one of which is constructed to engage the means on the stationary member and interlock therewith the other of said pivotally-connected members being provided with inclined means adapted to engage the means on the slidable member and draw the same toward the stationary member.



2. In combination, a slidable member, a stationary member, means fixed upon said slidable member, means fixed upon said stationary member, and detachable hinged means constructed to engage the fixed means on the stationary member and interlock therewith and provided with a beveled surface adapted to engage the fixed means on the slidable member.

3. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first mentioned fixed means and a second plate hinged thereto and adapted to engage said second-mentioned means and provided with means whereby said second plate is adapted to lock said first plate in engagement with said first-mentioned fixed means.

4. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first-mentioned fixed means, posts upon said plate, and a second plate hinged thereto adapted to engage said second means and provided with means whereby said second plate is adapted to lock said first-mentioned plate in engagement with said first-mentioned fixed means.

5. In combination, a slidable member, a stationary member, means fixed upon the slidable member, means fixed upon the stationary member and a hinge comprising a plate adapted slidably to engage the means upon the fixed member, and a plate pivoted thereto provided with means automatically to engage the fixed means upon the sliding member and draw the latter toward the fixed member.

6 In combination, a hinge-plate; fixed means adapted to be engaged thereby, said hinge-plate having a channel through which a portion of said fixed means is adapted to pass, a part upon said hinge-plate having an auxiliary channel through which another portion of said fixed means is adapted to pass, and a second hinge-plate pivotally connected to the first hinged plate and provided with means adapted to obstruct said auxiliary channel and leave said first-mentioned channel clear.

7. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first fixed means, and a second plate hinged thereto and provided with an upright member adapted to engage said second means, and means whereby said second plate is adapted to lock said first plate in engagement with said first-mentioned fixed means.

8. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first-mentioned fixed means, a second plate hinged thereto provided with a bifurcated upright member constructed to engage said second-mentioned fixed means, and means whereby said second plate is adapted to lock said first plate in engagement with said first fixed means.

9. In combination, a slidable member, a stationary member, means fixed upon said slidable member, means fixed upon said stationary member, a plate adapted to engage said second-mentioned fixed means, a second plate hinged thereto adapted to engage said first-mentioned fixed means and provided with means whereby said second plate is adapted to lock said first plate in engagement with said second fixed means, and means whereby said slidable member is drawn toward said stationary member upon engagement of said second-mentioned plate with the means fixed thereon.

10. In combination, a slidable member, a stationary member, means fixed upon said slidable member, means fixed upon said stationary member, a plate adapted to engage said second-mentioned fixed means, posts upon said plate, a second plate hinged thereto and

adapted to engage said first-mentioned means and provided with means whereby said second plate is adapted to lock said first plate in engagement with said second-mentioned fixed means, and means whereby said slidable member is drawn toward said stationary member upon engagement of said second-mentioned plate with the means fixed thereon.

11. In combination, a slidable member, a stationary member, means fixed upon said slidable member, means fixed upon said stationary member, a plate adapted to engage said second-mentioned fixed means, a second plate hinged thereto, an upright member mounted thereon and adapted to engage said first-mentioned means, said second plate being provided with means whereby the same is adapted to lock said first plate in engagement with said second fixed means, and beveled surfaces upon said upright member whereby said slidable member is drawn toward said stationary member upon engagement of said second-mentioned plate with the means fixed thereon.

12. In combination, a sash, a frame, a post upon said sash, a plurality of posts on said frame, a plate constructed to engage said posts upon said frame and a plate hinged thereto constructed to engage said post upon said sash and to lock said first-mentioned plate in engagement with said posts upon said frame.

13. In combination, a sash, a frame, a post upon said sash, a plurality of posts upon said frame, a plate constructed to engage said posts on said frame, and a plate constructed to engage said post on said sash and having a projection adapted to lock said first plate in engagement with said posts on said frame.

14. In combination, a sash, a frame, posts having enlarged heads upon said frame, a post having an enlarged head upon said sash, a plate constructed to engage said posts on said frame, and a plate hinged thereto constructed to engage said post on said sash and having a projection adapted to engage the head of one of said posts upon said frame and lock the same in engagement with said first-mentioned plate

15. In combination, a sash, a frame, a post having an enlarged head upon said sash, posts having enlarged heads upon said frame, a plate having a channel into which said posts upon said frame are adapted to slide, and a plate hinged thereto having a channel into which said post upon said sash is adapted to slide, said second-mentioned plate being provided with a projection adapted to engage the head of one of said posts upon said frame and lock said first-mentioned plate in engagement with said posts upon said frame.

814,392. MACHINE FOR MAKING WIRE GOODS.

John C. Perry, Clinton, Mass., assignor to Clinton Wire Cloth Company, Clinton, Mass. Filed May 15, 1903. Serial No. 157,258.

Claim.—1. In combination with the coöperative elements of a wire-fabric machine, a series of laterally-adjustable welding-jaws, a series of stationary laterally-adjustable receivers, a series of laterally-adjustable transfer devices, means for feeding the strand-wire, means for feeding the stay-wire, whereby a fabric may be produced with any desired number or arrangement of welds.

2. In combination with the coöperative elements of a wire-fabric machine, means for welding wires, means for feeding strand-wires, means for feeding stay-wires, laterally-adjustable cutting and coiling mechanism whereby the fabric may be divided and the cut ends of the stay-wire coiled at any desired point.

3. A device for straightening strand-wires comprising a bracket adjustable laterally on the machine, an adjustable slide carried by said bracket, and complemental rolls upon the slide and bracket for engaging the strand-wire.

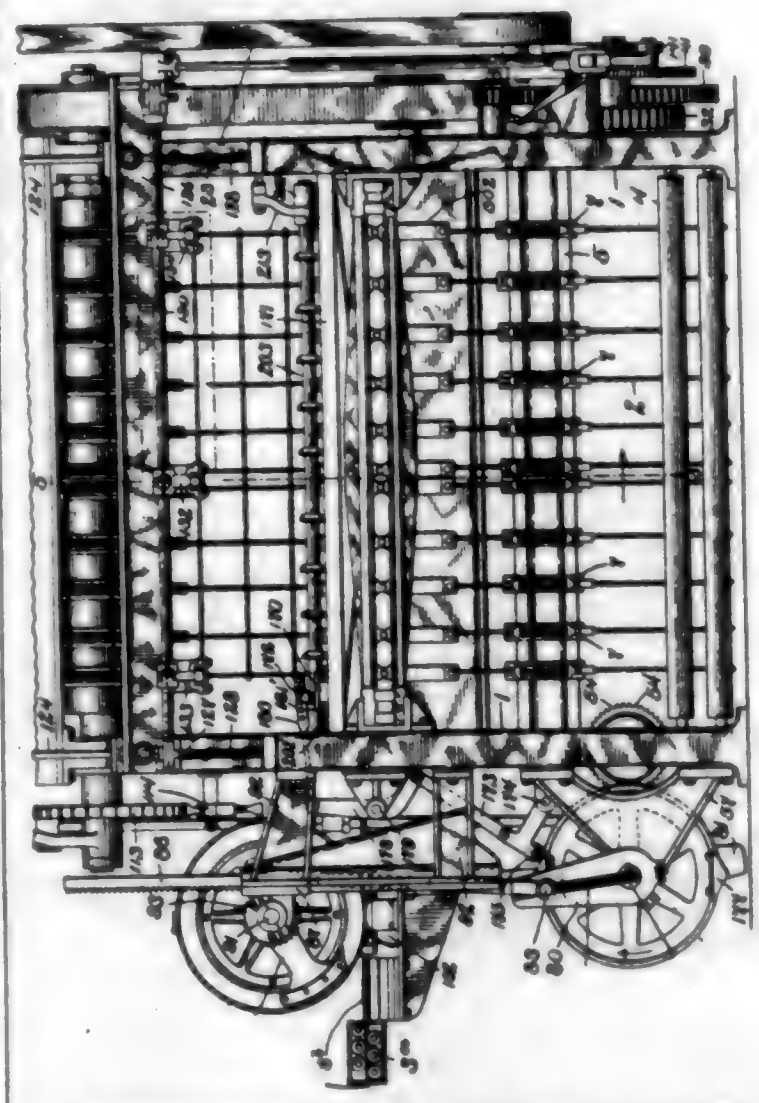
4. In combination with the coöperative elements of a wire-fabric machine, a carriage, a slide mounted on said carriage, coiling-fingers arranged to be operated by said slide, and a knife arranged to be operated by said slide, whereby a stay-wire may be automatically cut and its cut ends coiled.

5. In combination with the coöperative elements of a wire-fabric machine, an adjustable girth, an adjustable cutter carried by said girth whereby the stay-wire may be cut at any desired point in the fabric.

6. In combination with the coöperative elements of a wire-fabric machine, an adjustable girth, and an adjustable coiler carried by said girth whereby the stay-wire may be coiled at any desired point in the fabric.

7. In combination with the coöperative elements of a wire-fabric machine, an adjustable rail, an adjustable carriage mounted on said rail, and combined cutting and coiling mechanism on said carriage whereby the stay-wire may be cut and its ends coiled at any desired point in the fabric.

8. In combination with the coöperative elements of a wire-fabric machine, strand-feeding mechanism comprising two complemental feed-wheels, means for causing said wheels to grip the stay-wire, means for rotating one of said wheels, and automatic means for separating said wheels at predetermined times to release their grip from the wire to stop the feeding action.



9. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, a series of laterally-adjustable transformer-bars, a series of transformers carried by said bars, and welding-jaws suitably connected to said bars.

10. In combination with the coöperative elements of a wire-fabric machine, a movable plunger-rail, compound cams, and connections between said cams and the rail.

11. In combination with the coöperative elements of a wire-fabric machine, a crank, an adjusting-screw carried by said crank, a nut arranged on said screw, a pitman connected to said nut, and connections between said pitman and operating mechanism of the machine.

12. In combination with the coöperative elements of a wire-fabric machine, a slotted rail, a series of cylinders arranged in said slot, and means for maintaining said cylinders in any desired position, comprising clamps secured to one of said parts adapted to engage the beveled face of the other of said parts.

13. In a machine of the class specified, means for feeding strand members, means for welding strand and stay members to form a fabric, and automatically-acting means for subdividing said fabric.

14. In a machine of the class specified, means for feeding strand members, means for welding strand and stay members to form a fabric, automatically-acting means for subdividing said fabric and coiling the ends of the cut or divided stay-wire.

15. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, a combined cutting and coiling means arranged to subdivide the stay-wire and to coil the cut ends, whereby the welded fabric may be subdivided and finished into any number of stripe.

16. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, a combined cutting and coiling means adjustable in the direction of the strand-wires and arranged to subdivide the stay-wire after the welding operation and to coil the cut ends, whereby the welded fabric may be subdivided and finished into stripe.

17. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, comprising a series of pairs of copper bars, the members of each pair being connected together but insulated from each other, a transformer connected to each pair of copper bars, a welding-jaw connected to one end of each of the said bars, and means for adjusting said bars to position the welding-jaws.

18. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising a pair of laterally-adjustable transformer-bars, the members of which are connected together but insulated from each other, a transformer having one terminal of its secondary rigidly secured to one member of said pair and its other terminal secured to the other member of said pair, and a welding-jaw connected to each bar.

19. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, comprising two laterally-adjustable copper bars, each connected to a terminal of the secondary circuit of the transformer, a movable welding-jaw and a flexible copper connection between the said jaw and free end of one of said bars, and a complemental welding-jaw suitably connected to the other bar whereby the opening and closing movement of said jaw will be secured without the use of sliding contacts.

20. In combination with the coöperative elements of a wire-fabric machine, means for feeding the strand members, means for feeding a stay member, means for welding said members at points of intersection comprising a series of pairs of welding-jaws, a transformer for each pair of welding-jaws, and an adjustable copper bar connecting each welding-jaw to a terminal of the secondary circuit of its complemental transformer.

21. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, and means for straightening the strand-wires, comprising a clamp adapted to be adjustably secured upon the framework of the machine carrying two series of staggered rolls, and means for adjusting one series of rolls toward and from the other.

22. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, said stay-feeding means comprising pressure-wheels arranged to grip and feed the stay-wire, means for driving said wheels and automatic means for intermittently releasing the grip of said wheels on the wire

23. In combination with the coöperative elements of a fabric-machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, said stay-feeding means comprising a pair of pressure-wheels arranged to grip and feed the wire, means for driving said wheels continuously in the same direction, a continuously-driven wheel carrying a trip device, and connections between said tripping device and the pressure-wheels whereby their grip upon the wire may be intermittently released.

24. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand members, means for feeding a stay member, means for welding said members at points of intersection, means for subdividing the stay-wires, comprising a pair of sliding knives, and means for coiling the cut ends of the wire.

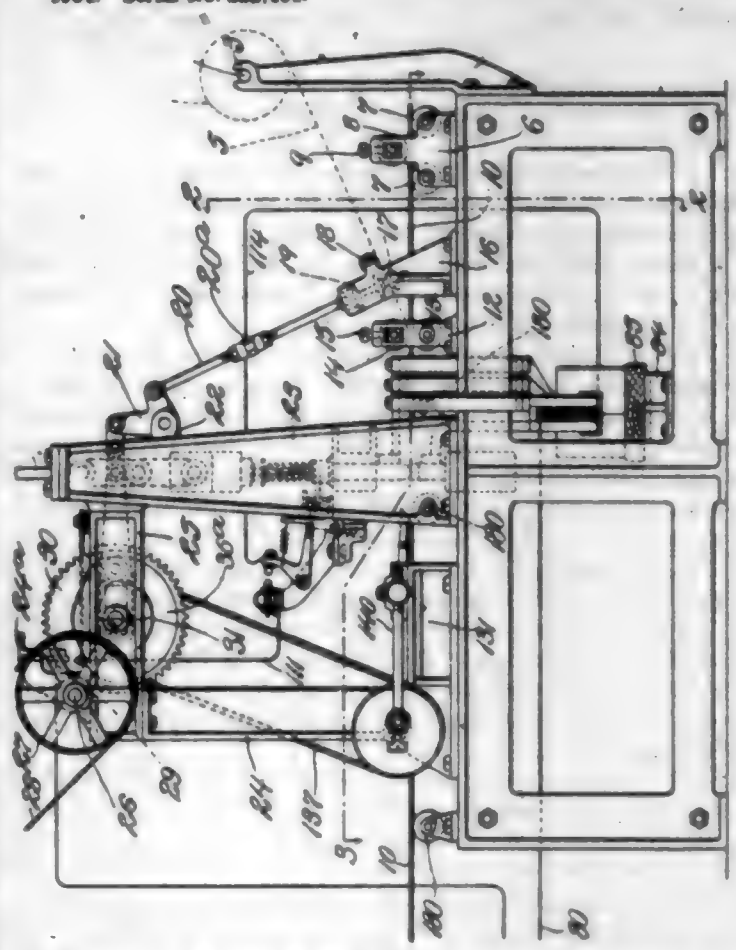
25. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, means for subdividing the stay-wire, and means for coiling the cut end of the stay-wire, comprising a pair of stationary anvils, a pair of reciprocating fingers for partially coiling the wire, and a pair of reciprocating anvils to complete the coiling or bending.

26. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection to form a fabric, and automatically-acting means for subdividing said fabric.

27. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding a stay-wire, means for welding said wires at points of intersection, means to form a fabric, and automatically-acting means for subdividing said fabric and coiling the ends of the cut or subdivided wire.

814,393. MACHINE FOR MAKING INTERPOSED FABRIC.

John C. Perry, La Junta, Colo., assignor to Clinton Wire Cloth Company, Boston, Mass., a Corporation of Massachusetts. Filed Aug. 27, 1904. Serial No. 222,461.



Claim.—1. In combination with the coöperative elements of a fabric-machine, means for feeding strand members and means for welding said members to cross members at points of contact, comprising a plurality of pairs of welding-jaws, means for closing and opening said jaws, a transformer, a bar of conducting material connecting one jaw of each pair to its complemental transformer, said bar being deflected between its ends to provide an unobstructed passage between said jaws.

2. In combination with the coöperative elements of a fabric-machine, means for feeding strand members and means for welding said members to cross members at points of contact, comprising a double sliding girth, a series of rods carried by the rear member of said girth and adjustable thereon, a series of boxes carried by the forward member of said girth and adjustable thereon, a complemental series of plungers carried by said boxes, a spring connecting each rod with its complemental plunger, and means for adjusting the tension of said springs.

3. In combination with the coöperative elements of a fabric-machine, means for feeding strand members and means for welding said members to cross members at points of contact, comprising a double sliding girth, a series of rods carried by the rear member of said girth and adjustable thereon, a series of boxes carried by the forward member of said girth and adjustable thereon, a complemental series of plungers carried by said boxes, a spring connecting each rod with its complemental plunger, and means for adjusting the tension of said springs, a stationary girth, a series of stationary plunger members carried thereby and adjustable thereon and arranged to coact with their complemental movable plungers.

4. In combination with the coöperative elements of an interposed-fabric machine, means for feeding strand-wires, means for feeding an interposed fabric, means for bonding stay-wires to the strand-wires through the interposed fabric at predetermined points, and means for feeding the completed fabric, comprising two bars or gripping-plates arranged with the finished product between them, a pitman connected to each end of one of said bars whereby the latter may be reciprocated in the direction of the feed of the fabric, and means for moving one bar toward and away from the other at predetermined times, comprising a cam carried by the said pitman and connections between said cam and the relatively movable bar.

5. In combination with the coöperative elements of a wire-fabric machine, means for feeding strand-wires, means for feeding an interposed fabric, means for bonding the stay-wires to the strand-wires through the interposed fabric at points of intersection, comprising a gang of pairs of complemental welding-jaws, electric con-

nections between each of said pairs comprising copper bars, said connections between their ends being deflected beyond the plane of said gang.

6. In combination with the coöperative elements of an interposed-fabric machine, means for feeding the product, comprising a reciprocating girth and a plurality of hooks carried by said girth, said hooks being arranged to engage the bonded stay-wire on each side of the strand-wire, and means for varying the amount of reciprocation of the girth.

7. In combination with the coöperative elements of an interposed-fabric machine, means for feeding the product comprising a reciprocating girth and a plurality of hooks carried by said girth, said hooks being arranged to engage the bonded stay-wire on each side of the strand-wire, and means for giving to said girth an intermittently-variable speed.

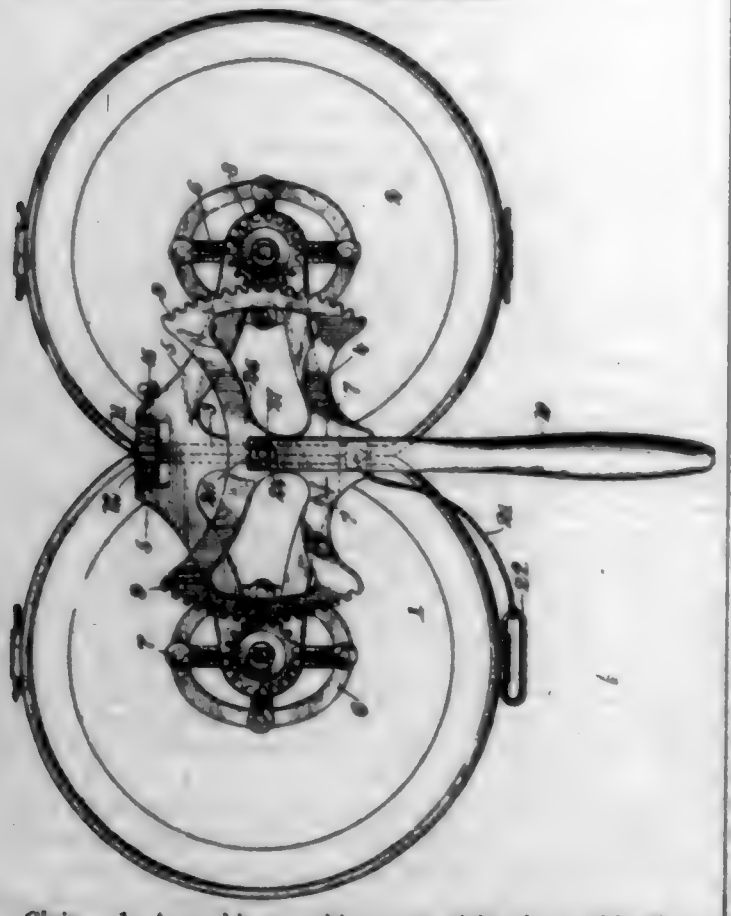
8. In a machine for bonding cross and stay wires through an interposed fabric, means for feeding strand-wires, means for feeding an interposed fabric, means for bonding stay-wires to the strand-wires through the interposed fabric at points of intersection, and one or more yielding members carried by the bonding members arranged to position the stay-wires for bonding and to yield to the feeding motion of the stay-wires after bonding.

9. In a machine for bonding cross and stay wires through an interposed fabric, means for feeding strand-wires, means for feeding an interposed fabric, means for bonding stay-wires to the strand-wires through the interposed fabric at points of intersection, and a yieldingly-mounted bell-crank or lever arranged to position the stay-wire for bonding but to yield to the feeding motion of the stay-wire after bonding.

10. In a machine for bonding cross and stay wires through an interposed fabric, means for simultaneously feeding strand-wires and an interposed fabric, means for bonding stay-wires to the strand-wires through the interposed fabric at points of intersection, and means for shaping or forming the interposed fabric, comprising a stationary girth or former and a reciprocating complemental girth or former.

11. In combination with the coöperative elements of an interposed-fabric machine, means for feeding strand-wires, means for feeding an interposed fabric, means for bonding stay-wires to the strand-wires through the interposed fabric at points of intersection, and means for feeding the completed fabric.

814,394. WASHING-MACHINE. Harry P. Pflum, New York, N. Y. Filed Oct. 11, 1904. Serial No. 227,961.



Claim.—1. A washing-machine, comprising in combination a pair of tubs presenting abutting substantially flat faces, agitating mechanism including a frame projecting over said tubs, a clamp attached to the upper edges of said flat faces, and a hinge connection between said clamp and said frame.

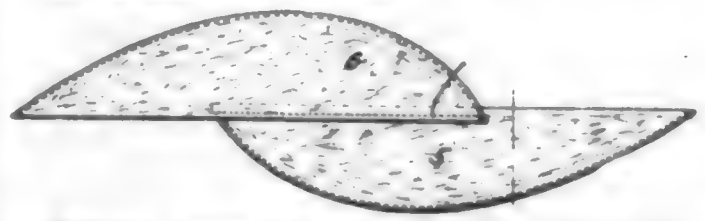
2. A washing-machine, comprising in combination tubs, a frame thereabove, spiders supported on said frame, a segment adapted to actuate said spiders, a removable handle for said segment, pins carried by said spiders, and a clamp having a pivotal connection with said frame and adapted to attach to the edge of a tub.

3. In a washing-machine, agitating mechanism comprising a frame, clamps at the opposite sides of said frame, a hinge connection at one of said clamps, spiders carrying pins and supported from said frame, a segment adapted to actuate said spiders, and a handle removably attached to said segment.

4. In a washing-machine in combination, a pair of tubs presenting substantially flat abutting faces, a removable saddle-clip adapted to seat upon the upper edges of said faces to position the same, and agitating mechanism removably attached to the upper edges of said faces.

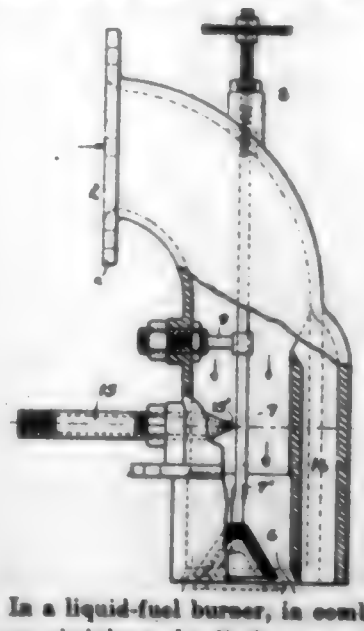
5. In a washing-machine in combination, a frame, spiders supported thereby, pinions rigid with said spiders, a segment between said pinions and meshing therewith, a central bolt projecting upwardly from said segment, said segment having a spur projecting upwardly therefrom, and a handle having a throat opening to the edge at the inner extremity thereof into which said bolt may slide, said handle further having a recess on the under side thereof receiving said spur.

814,395. GARMENT-PAD. Robert Raphael, Chicago, Ill. Filed Aug. 11, 1905. Serial No. 273,787.



Claim.—A garment-pad comprising two substantially segmental-shaped members which are connected along a portion of their straight edges, whereby said members are offset from each other longitudinally, and their curved edges are oppositely presented.

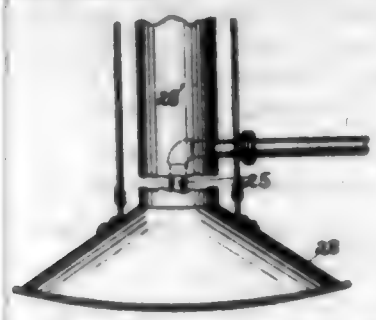
814,396. BURNER FOR LIQUID FUEL. Joseph R. Russell, Chicago, Ill. Filed May 22, 1905. Serial No. 261,590.



Claim.—1. In a liquid-fuel burner, in combination, a mixing chamber having an air-inlet and a discharge-opening, an oil-inlet, a cone placed in said discharge-opening with its apex extending inwardly, a vertically-extending offset cone-stem arranged eccentrically with respect to the discharge-outlet for supporting said cone, the cone-stem being located directly in the path of and closely adjacent to the discharge-orifice of the said oil-inlet and thereby constituting means down which the oil flows by gravity upon the apex of said cone, and means for turning said cone-stem for regulating the extent of opening at any desired position in the discharge-opening, substantially as and for the purpose specified.

2. In a liquid-fuel burner, in combination, a mixing-chamber having an air-inlet and discharge-opening, an oil-inlet, a cone arranged in said discharge-opening, a cone-stem for supporting same, said cone-stem serving to conduct the oil from the oil-inlet to said cone, and a by-pass for the air leading from a position in the air-inlet above the oil-inlet to the discharge-outlet at a point below the cone, substantially as and for the purpose specified.

814,397. **FURNACE.** JOSEPH R. RUSSELL, Chicago, Ill. Filed June 8, 1905. Serial No. 263,554.



Claim.—1. In a furnace, in combination, a fire-box, a plurality of laterally and radially disposed pockets leading therefrom, a single burner centrally arranged above said fire-box, and an upwardly-concave deflector located in the bottom of said fire-box and beneath said burner for deflecting the flames into said pockets.

2. In a furnace, in combination, a fire-box, a plurality of radially-disposed pockets leading therefrom, a burner arranged above said fire-box, and a feed-pipe for conducting the oil to the said burner, said feed-pipe leading directly above and closely adjacent to one of said pockets.

3. In a furnace, in combination, a fire-box, a plurality of radially-disposed pockets leading therefrom, a burner arranged above said fire-box, a feed-pipe for conducting the oil to said burner, said feed-pipe being provided with an enlarged portion in the run thereof which is located directly above and closely adjacent to one of said pockets.

4. In a furnace, in combination, a fire-box, a plurality of radially-disposed pockets leading therefrom, a burner arranged above said fire-box, an oil-feed pipe, a hood and pipe leading upwardly therefrom for conducting the waste gases from the furnace, and an air-blast pipe located within said hood and hood-pipe for supplying air to said burner.

5. In a furnace, in combination, a fire-box, a plurality of radially-disposed pockets leading therefrom, a burner arranged above said fire-box, an oil-feed pipe for conducting oil to said burner, said feed-pipe leading directly above and closely adjacent to one of said pockets, a hood and pipe for conducting the waste gases from the furnace, and an air-blast pipe located within said hood and hood-pipe for supplying air to said burner.

6. In a furnace, in combination, a hollow base, a blast-receiving chamber rotatably mounted thereon its interior communicating with said hollow base, a fire-box casing having laterally-arranged pocket-casings, in connection therewith, suitable linings for said fire-box and fire-box casing, pipes leading from said blast-receiving chamber upwardly and terminating adjacent to said pockets for conducting a flame-retarding blast, and a single burner arranged above said fire-box casing.

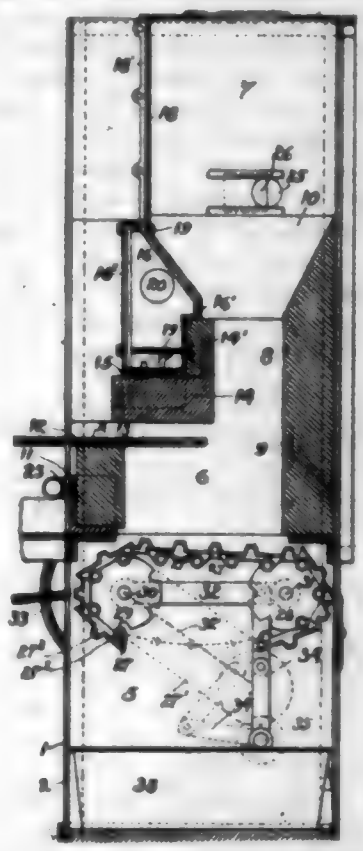
7. In a furnace, in combination, a hollow base, a blast-receiving chamber rotatably mounted thereon its interior communicating with said hollow base, a fire-box casing mounted on said blast-receiving chamber, a plurality of independently-constructed pocket-casings secured to the sides of the said fire-box casings, suitable lining for said fire-box and pocket casings and tire-receiving openings therebetween, pipes leading from said blast-receiving chamber upwardly and terminating adjacent to said pockets for conducting a flame-retarding blast, and a single burner arranged above said fire-box casing.

814,398. **FURNACE.** JOSEPH R. RUSSELL, Chicago, Ill. Filed June 19, 1905. Serial No. 265,970.

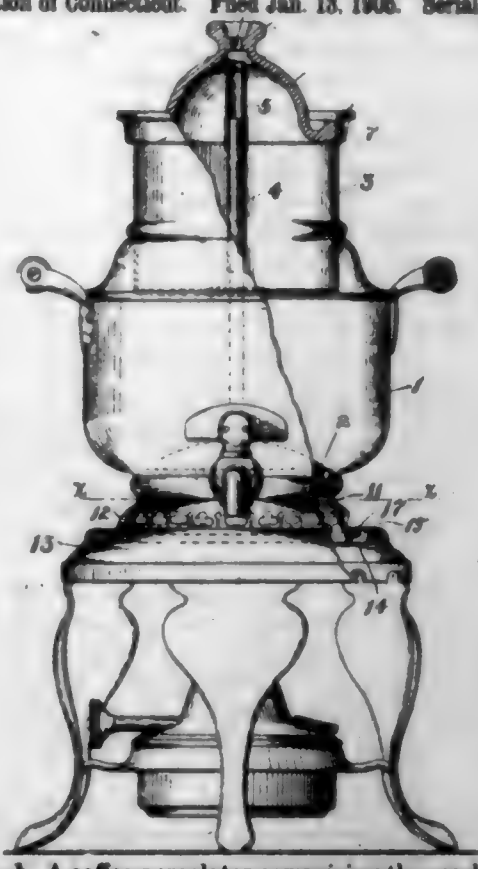
Claim.—1. In a furnace of the class described, in combination, a closed fuel-receptacle, a fire-pot located beneath said receptacle, a heating-compartment extending forwardly from the upper portion of said fire-pot, and a blast-heating chamber located above said heating-compartment and arranged to form one of the walls of the said fuel-receptacle.

2. In a furnace of the class described, in combination, a closed fuel-receptacle provided with a throat leading to the fire-pot, a fire-pot located beneath said fuel-receptacle, a heating-compartment extending forwardly from the upper portion of said fire-pot, a metal blast-heating chamber located above said compartment, said chamber forming the front wall of the fuel-receptacle, and fire-brick linings interposed between the top of said compartment and said chamber and between the throat of said fuel-receptacle and said compartment.

3. In a furnace, in combination, a rectangular upright casing of substantially uniform cross-section throughout its height, a brick-lined fire-pot intermediate of the length of said casing, a movable chain grate beneath said fire-pot, an ash-pit within said casing and below said fire-pot, a fuel-receptacle above said fire-pot, a heating-compartment leading forwardly from the upper portion of said fire-pot, and a blast-heating chamber located above said heating-compartment and adjacent to said fuel-receptacle.



814,399. **COFFEE-PERCOLATOR.** GEORGE E. SAVAGE, Meriden, Conn., assignor to Manning, Bowman & Company, Meriden, Conn., a Corporation of Connecticut. Filed Jan. 13, 1906. Serial No. 240,854.



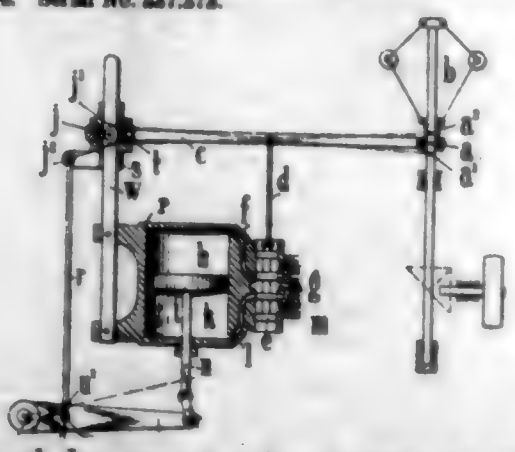
Claim.—1. A coffee-percolator comprising the combination of a stand having a top ring with a supporting rim or flange, a plurality of projections extending inward laterally from said ring slightly above the supporting-rim, a fluid-holding body having an imperforate bottom, a percolator-bell forming a compression-chamber above the bottom, an annular base-ring extending downwardly below the bottom and united with said body, an annular flanged reinforcing lower edge integral with said base-ring having a plurality of vertical passages in the flange corresponding with the projections on the stand-ring, whereby the parts may be securely locked together or readily separated, substantially as described and for the purpose specified.

2. In a device of the character described, the combination of a stand having a series of lateral projections, a fluid-holding body, a base-ring separately formed but permanently secured thereto and having an upturned lower edge with a series of vertical passages, all adapted to lock on the stand substantially as described, said base-ring also having a series of lateral perforations for the circulation of air.

3. In a device of the character described, the combination of a fluid-holding body portion, a receptacle mounted therein, a transparent dome-shaped glass cover for said receptacle having a perforation for relieving the pressure within said receptacle, and an annular rim around said passage for collecting condensation.

4. In a device of the character described, the combination of a fluid-holding body portion, a percolator-tube, a receptacle mounted in said body, a tip having a series of lateral perforations for the escape of hot water and steam and a dome-shaped transparent glass cover having a central perforation for relieving the pressure within said receptacle, said laterally-perforated tip being located within said dome and directly beneath said central perforation.

814,400. GOVERNOR MECHANISM FOR MOTORS. CARLOS SCHMITTENNER, Heidenheim-on-the-Brenz, Germany, assignor to J. M. Voith, Heidenheim-on-the-Brenz, Germany, a Firm. Filed Oct. 5, 1904. Serial No. 227,272.



Claim.—1. In a governor such as described, the combination, with a servomotor, of a centrifugal governor in operative connection with the valve thereof, means for returning said valve to its median or non-acting position at high speed after small variations of load, and means for returning said valve to non-acting position at high and low speed consecutively after greater variations of load.

2. In a governor such as described, the combination, with a servomotor, of a centrifugal governor in connection with the valve thereof, means controlled by said governor for returning said valve to non-acting position at high speed after small variations in load, and means controlled by said governor for actuating said valve at high speed at the beginning and at low speed at the end of the return motion after greater variations of load.

3. The combination, with a servomotor embodying a slide-valve, of a governor in connection with said valve, means for returning said slide-valve to non-acting position, a second means for returning the same at different speed, and means for operatively connecting said first or last named means consecutively with said governor and slide-valve upon greater variations of load.

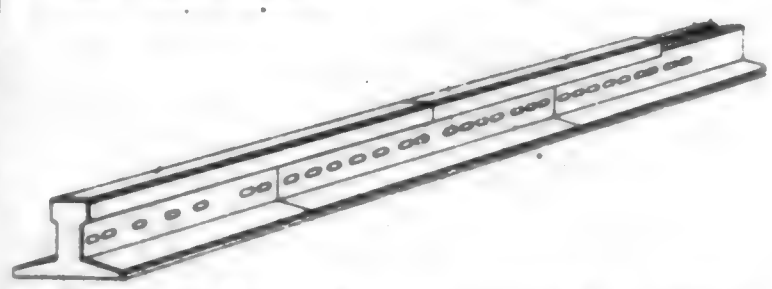
4. The combination, with a servomotor embodying a slide-valve, of a governor in connection with said valve, a rod for returning said slide-valve to non-acting position, a second rod likewise controlled by said governor and operable to return said valve at different speed, a coupling in connection with one of said rods, and means for automatically releasing said coupling toward the end of a greater return motion.

5. The combination, with a servomotor and its slide-valve, a governor controlling said valve, a rod controlled by said governor for returning said slide-valve to its median or non-acting position at low speed, a second rod controlled by said governor for returning said valve at high speed, and a yielding coupling in connection with one of said rods.

6. The combination, with a servomotor, of a governor for controlling the valve thereof, a rod controlled by said governor for returning the valve of said servomotor to its median or non-acting position at low speed, a second rod controlled by said governor for returning said valve at high speed, a yielding coupling in connection with one of said rods, and stops connected with the other rod for automatically releasing said coupling.

7. In combination, a servomotor embodying a reciprocating piston, a slide-valve and a working shaft, a governor, a connection between said governor and said slide-valve, a lever connecting said piston with said working shaft, axially-movable high and low speed rods in operative connection with said slide-valve and said lever for returning the former to non-acting position, a yielding coupling in connection with said high-speed rod and stops guided on said high-speed rod and connected with said low-speed rod for automatically releasing said coupling.

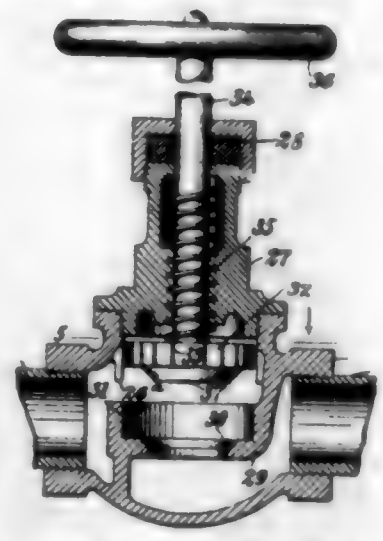
814,401. RAIL. CARMAN M. SIMPSON, Millvale, Pa. Filed Nov. 24, 1905. Serial No. 288,386.



Claim.—1. A rail of the type described, consisting of a plurality of base-sections, a plurality of separate head or tread sections, certain of said base-sections being formed with vertical web-flanges having vertical openings formed therein, said tread-sections having web portions adapted to fit in the vertical openings in the base-sections, certain other of said base-sections being formed with integral heads for a portion of their length and said integral heads and the web-flanges of the last-named sections being prolonged beyond the base-flanges thereof and seating in the vertical openings in the web-flanges of the first-named base-sections.

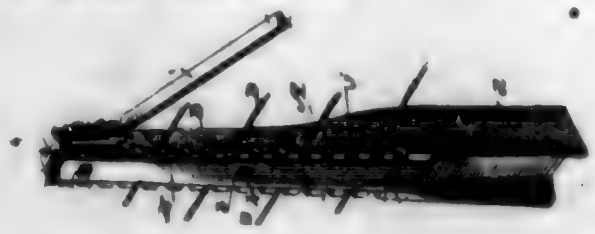
2. A rail of the type described, consisting of a base-section, having a web-flange with a vertical opening therein, and a base-section having an integral web and tread portion, the web and tread portion of the last-named section being prolonged beyond the base-flanges thereof, and the said prolonged web portion seating in the vertical opening in the web-flange of the first-named section.

814,402. VALVE. CHARLES B. SIMPSON, Portsmouth, Ohio. Filed May 25, 1904. Serial No. 209,711.



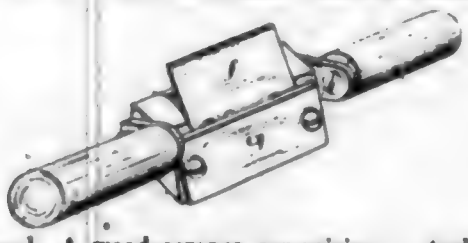
Claim.—In a valve, the combination with a casing provided with a web having a valve-seat, said casing being further provided with an annular portion integral with said web, a movable valve member encircled by said annular portion and adapted to engage said valve-seat, said movable valve member being provided with a strainer portion adapted to fit tightly against said web when said valve member engages said seat, said strainer portion being free to strain a liquid when the valve is closing and being out of use when the valve is either open or closed completely.

814,403. FENCE-POST. GEORGE B. SMITH, Gallatin, Mo. Filed Nov. 20, 1905. Serial No. 288,186.



Claim.—A channeled fence-post having notches for the fence-wires and a channeled clamp for securing the wires to the post, said post having a longitudinally-adjustable bracket and a diagonal brace hinged to said bracket, substantially as and for the purpose specified.

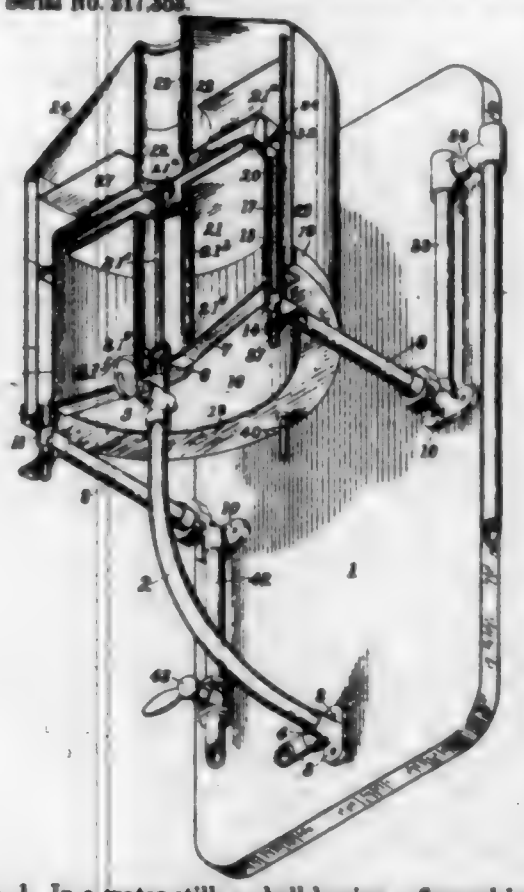
814,404. WOOD-SCRAPING TOOL. George D. Smith, Owen Sound, Canada. Filed Oct. 6, 1905. Serial No. 281,881.



Claim.—1. A wood-scraper comprising a stock, the sole of which is finished to contact the surface of the material to be scraped and the scraper-holding side of which is inclined at an angle less than a right angle to the sole, a shaving-aperture in the scraper-holding side of the stock, scraper-seats at the sides of said aperture, a scraper mounted upon the scraper-seats, a yoke detachably connected to the stock having ribs to engage the scraper and hold it securely on the scraper-seats and an unoccupied space between said ribs and the adjacent faces of the scraper and yoke.

2. A wood-scraper comprising a stock, the sole of which is finished to contact the surface of the material to be scraped and the scraper-holding side of which is inclined at an angle less than a right angle to the sole, a shaving-aperture in the scraper-holding side of the stock, scraper-seats at the sides of said aperture, a scraper mounted upon the scraper-seats, a yoke detachably connected to the stock having ribs to engage the scraper and hold it securely on the scraper-seats, an unoccupied space between said ribs and the adjacent sides of the scraper and yoke, and handles connected to the stock.

814,405. STILL. John H. Smith, Allegheny, Pa. Filed July 20, 1904. Serial No. 217,353.



Claim.—1. In a water-still, a shell having a flanged lower end and provided with a flue in its top, a casing surrounding said shell and resting on the flanged lower end of the shell with a space between the casing and the shell, an exterior shell having a pipe receiving the flue of the first-mentioned shell, and having its sides projecting down to lie within the flanged lower end of said interior shell, a diaphragm within the space between the interior shell and the surrounding casing, and having an opening establishing communication between the space above and the space below said diaphragm, a burner arranged within the interior shell, a fuel-supply pipe communicating with said burner, a water-supply pipe communicating with the space between the interior shell and the casing, substantially as described.

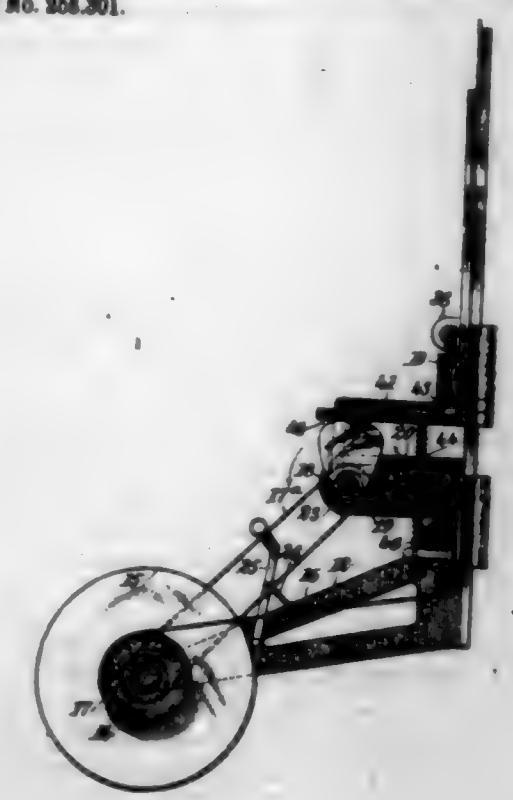
2. In a water-still, an interior casing having a flanged lower end and provided with a flue in its top, a casing surrounding said shell, and received at its lower end within the flanged lower end of the shell, a diaphragm supported from the interior shell and dividing the space between said shell and casing into upper and lower compartments which are in communication one with the other, an exterior shell supported on the inner shell, a hydrocarbon-burner arranged within the interior shell, a fuel-supply pipe communicating with said burner, a water-supply pipe communicating with the space between the interior shell and the casing, and a discharge-pipe communicating with the space between the casing and exterior shell.

3. In a water-still, an interior shell having a flanged lower end and provided with a flue in its top, a casing surrounding said shell, and received at its lower end within the flanged lower end of the shell, a diaphragm supported from the interior shell and separating the space between said shell and casing into upper and lower compartments which are in communication one with the other, an exterior shell supported on the inner shell, a hydrocarbon-burner arranged within the interior shell, a fuel-supply pipe communicating with said burner, a water-supply pipe communicating with the space between the interior shell and the casing, a discharge-pipe communicating with the space between the casing and interior shell, and a water-inlet pipe also communicating with said space, substantially as described.

4. In a water-still, an interior annular casing having an outwardly and upwardly flanged lower end, and provided in its upper end with a flue, a casing surrounding said shell with its lower end resting on the outwardly-flanged portion of the shell, a diaphragm dividing the space between said shell and casing into upper and lower compartments which are in communication with each other, an exterior shell supported from the interior shell with its lower end inclosed by the upwardly-flanged portion of the interior shell whereby a water seal is formed around the lower end of said exterior casing, a burner, a fuel-supply pipe leading to said burner, a water-supply pipe leading to the space between the inner shell and casing, and a distillate-discharge pipe communicating with the space between the casing and the exterior shell, substantially as described.

5. In a water-still, an inner shell having a flue in its top, a surrounding casing spaced from said shell, a diaphragm separating the space between the shell and the casing into an upper and lower compartment in communication one with the other, a water-supply pipe communicating with said space, a burner arranged within the inner shell, a fuel-supply pipe leading to said burner, an insulated pipe communicating with the space between the inner shell and the casing an overflow-pipe communicating with said insulated pipe, an exterior shell surrounding the casing and the inner shell and spaced away from the casing, and an outlet-pipe for the distilled water communicating with the space between the outer shell and the casing, substantially as described.

814,406. FILM-HOLDER FOR PICTURE-EXHIBITING MACHINES. Magnus Smith, Winnipeg, Canada. Filed May 1, 1905. Serial No. 258,301.



Claim.—1. In film-holders for picture-exhibiting machines, a body-plate having an exposure-opening therein, a guide for the film back of the said opening, a main shaft, a sliding gripper above the main shaft, a fixed gripper below said shaft, both grippers being in the path of the film, and means operated by the shaft for alternately carrying one gripper to gripping position and for releasing the other gripper.

2. In film-holders for picture-exhibiting machines, a body-plate having an exposure-opening therein, a guide for the film back of the said opening, a main shaft, a sliding gripper above the main shaft, a fixed gripper below said shaft, both grippers being in the path of the film, means operated by the shaft for alternately carrying one gripper to gripping position and for releasing the other gripper, and a device also carried by the shaft for controlling the sliding movement of the sliding gripper.

3. In a film-holder for picture-exhibiting machines, a body-plate, an imperforate film, guards for the same, a main shaft, a gripper mounted for pivotal and a sliding movement, a gripper below the shaft having pivotal movement only, both grippers being located in the path of the film, a lifting-cam for the upper gripper controlled by the said shaft, cams forming portions of the shaft, having their highest points facing in opposite directions, fingers connected with the grippers in engagement with the shaft-cams, whereby when one gripper opens the other closes, and a reeling device for the film also operated from the same shaft.

4. In film-holders for picture-exhibiting machines, a body-plate having an exposure-opening therein and an opening below the exposure-opening, an imperforate film which crosses the two openings in the body-plate, a guide for the film at the exposure-opening, a spring-controlled slide having movement at the upper portion of the lower opening, a gripper pivoted on the said slide, having ribs which extend through openings in the slide, a spring arranged to normally hold the said gripper closed, a drive-shaft below the said frame, a supporting-plate crossing the lower opening at its lower portion, a second gripper located below the said shaft, being pivoted on said supporting-plate, said second gripper having a spring which normally closes it, and ribs upon the said second gripper which pass through its supporting-plate, a door carried by the slide, being arranged opposite the gripper thereon, a second door carried by the body-plate, being opposite the second or lower gripper, and means substantially as described for raising and lowering the said slide and opening and closing the gripper carried thereby, and means also operated from the said shaft, for opening and closing the lower gripper alternately with the upper one, the said film being passed across the exposure-opening and between the grippers and the said doors.

5. In a film-holder for picture-exhibiting machines, a body-plate having an exposure-opening therein and a second opening below the exposure-opening, a slide mounted upon the body-plate at the rear and at the upper portion of the lower opening therein, a gripper carried by the said slide, a projection extending from the slide and a spring connected with the projection and the said body-plate, a shaft located below the said slide, a fan-shaped cam secured to the said shaft and arranged for engagement with the projection from the slide, a cam formed in the shaft at each side of the fan-shaped cam, the latter cams having their highest points facing in opposite directions, a support crossing the lower portion of the lower opening in the body-plate, a second gripper pivoted on said support, tension devices for both grippers, and fingers extending from the grippers, which fingers engage with the cams on said shaft, the grippers being adapted for alternately opening and closing movement relative to the film passed over the exposure-opening, as described.

814,407. METHOD OF EXTRACTION OF PURE RAW RUBBER FROM RUBBER-PLANTS. Karl von Strchow, Wiesbaden, Germany. Filed July 8, 1905. Serial No. 268,969.

Claim.—The herein-described process of obtaining raw rubber from rubber-plants consisting in crushing the comminuted plants in water and extracting the raw material so obtained with mixtures of acetone, amyl and methyl oxy hydrate and alcohol under the action of heat until the resin, oil, wax and the like adhering to the rubber is completely separated and the pure rubber obtained.

814,408. TOILET ARTICLE. Frederick A. Steele, New Rochelle, N. Y. Filed Feb. 28, 1905. Serial No. 247,706.

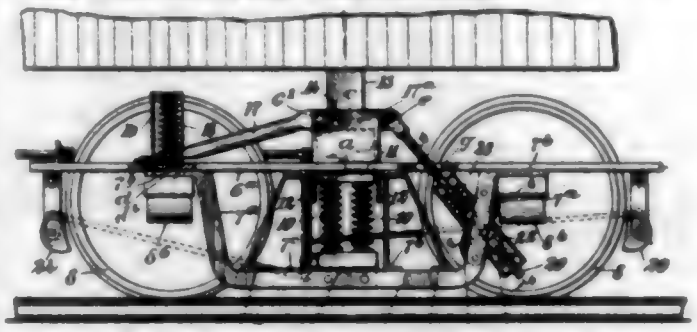
Claim.—1. A toilet article for treating diseases of the anus, comprising two paper backing-sheets connected to each other by an integral tongue, a mass of dry absorbent medicated material engaged with each backing-sheet, and a woven-fabric covering for each mass of absorbent material, said coverings having their edges secured respectively to the backing-sheets to hold the absorbent material in place whereby the pad may be moistened to render the medicant active.



2. A toilet article for treating diseases of the anus comprising two paper backing-sheets connected by a narrow integral tongue and adapted to fold the one over the other, a mass of absorbent medicated material located on the upper side of each backing-sheet and a woven-fabric covering for each mass of absorbent material, said coverings having their edges secured to the upper surfaces of the respective backing-sheets to hold the absorbent material in place.

3. A new article of manufacture for treating diseases of the anus, comprising a backing or body of sheet material, a mass of medicated absorbent material lying against one side of the backing or body, and a thin woven-fabric covering for said absorbent material, said covering having its edges secured to the backing-sheet, to hold in place the absorbent material, whereby upon moistening the absorbent material and covering, the medicament will be allowed to act through the covering, and the backing or body sheet will serve to retain the form of the article and permit manipulation thereof.

814,409. RAILWAY-CAR TRUCK. George C. Stewart, Marengo, Ind. Filed Oct. 27, 1905. Serial No. 284,653.



Claim.—1. The combination with the car-body, of a car-truck frame, a spring-supported bolster-beam carried transversely of the frame, a guide-box laterally inclosing the bolster, an equalizing-bar pivoted centrally on the beam and secured to the car-body, and oppositely-arranged flexible connections between the equalizing-bar and the car-truck frame at each end of said bar.

2. The combination with a car-body, of a car-truck frame having parallel side members, a bearer-beam hung from the side members, springs mounted on the bearer-bar, a bolster-beam seated upon the spring, a guide-box laterally incasing the bolster-beam, the ends of the guide-box being secured on the side members of the frame, an equalizing-bar pivoted centrally on the beam and secured to the car-body, and oppositely-arranged flexible connections between the equalizing-bar and the car-body frame at each end of said bar.

3. In a car-truck, the combination with a frame having parallel side members, two carrier-bars having upturned legs secured on said side members, a bearer-beam secured at its ends on level portions of the carrier-bars, and springs on the bearer-beam, of a bolster-beam mounted upon the springs, an equalizing-bar centrally pivoted on the bolster-beam, and spring cushioning means carried on the frame and loosely engaging the ends of the equalizing-bar.

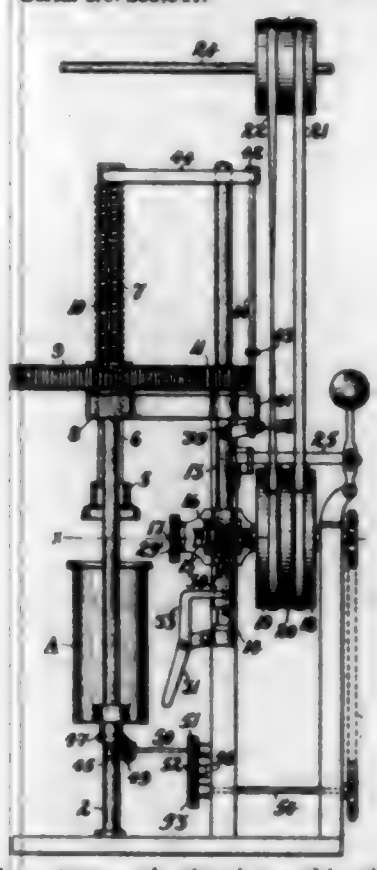
4. In a car-truck, the combination with a frame, and a spring-supported bolster-beam mounted transversely thereon, of a cushioning device on each side of the frame, comprising a rock-arm pivoted on a projection from the frame, a spring on the frame pressing on one end of the rock-arm, a trunnioned bar on the bolster-beam whereon the rock-arm is loosely mounted, a plunger-rod pivoted at one end on the other end of the rock-arm, a guide-block carried on the frame, through which the plunger-rod works, a roller on the guide-block on which the rod bears, and a spring mounted upon the plunger-rod and bearing at one end on the guide-block and pressing at the opposite end on a projection from the plunger-rod.

5. In a car-truck, the combination with a frame having parallel side members, an essentially U-shaped carrier-bar depending from each of said frame members, and a spring-pressed bolster-beam supported on the carrier-bars, of a cushioning device on each side member of the frame, each comprising a bent rock-arm, an equalizing-bar pivoted centrally on the bolster-beam and having a trunnion at each end, whereon the rock-arms are respectively mounted to rock,

said arms being respectively pivoted near their bends upon a projection from the frame, a pressure-spring bearing upon a flattened end on each rock-arm, a plunger-rod pivoted at its upper end on the remaining end of a corresponding rock-arm, a guide-block carried on a leg of each carrier-bar and through which a respective plunger-rod works, and cushioning-springs mounted upon the plunger-rods, having one end of each spring seated on the adjacent guide-block, and the other end thereof bearing on a projection from the plunger-rod.

6. The combination with a car-body, a car-truck frame, a spring-supported bolster-beam carried transversely on the frame, and an equalizing-bar centrally pivoted on the beam and secured on the car-body, said bar having trunnions on its ends, of a cushioning device mounted on the frame at each side thereof, and comprising a bent rock-arm pivoted near the bend on a bracket-stand erected from the frame, and also loosely mounted near said pivot on a respective trunnion end of the equalizing-bar, a spring on the frame pressing one end of a respective rock-arm, a plunger-rod pivoted upon the remaining end of each rock-arm, a guide-block carried on the frame and through which the plunger-rod works, and a spring mounted upon each plunger-rod, pressing at one end on a guide-block and at the opposite end on a projection from the plunger-rod.

814,410. **PASTE-PRESS.** SEBASTIANO TOPANELLI, San Francisco, Cal., assignor of one-half to Loyd C. Dibert, San Francisco, Cal. Filed Apr. 11, 1905. Serial No. 255,047.



Claim.—1. A paste-press having in combination a cylinder, a follower operable therein, and provided with a stem, means for operating the follower said means including a master-gear on the follower-stem and a plurality of drive-gears adapted to engage the master-gear and means for operating said drive-gears at different rates of speed.

2. A paste-press having in combination a cylinder, a follower operable therein, means including a master-wheel and two drive-gears engaging the same and operable at different rates of speed, and means actuated by the follower to automatically reverse the same at either end of its stroke.

3. A paste-press having in combination a cylinder, a follower operable therein, means for operating the follower said means including a master-wheel and two drive-gears engaging the same and operable at different rates of speed, and fast and loose pulleys and connections between the same and said drive-gears, and follower-reversing means and means carried by the follower for actuating said reversing means.

4. A paste-press having in combination, a cylinder, a follower provided with a stem, means for operating the follower, said means including a master-wheel on the follower-stem and two drive-gears engaging said wheel, and automatic reversing mechanism for the follower, a cutting mechanism, and means connected with the power devices which actuate the follower for operating the cutting mechanism automatically and coördinately with the rate of discharge of the pressed material.

5. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for said follower, a stationary nut in which said threaded portion turns, a master-gear through which the stem is slidable and with which the stem is turnable, two drive-gears engaging said master-gear, a common source of power for said drive-gears and means for driving either of said gears without driving the other.

6. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for said follower, and means for operating said follower, said means including a master-gear with which said stem is turnable and in which it is slidable, a plurality of drive-gears engaging the master-gear, a common source of power connected with the said drive-gears, and means whereby power is applied to only one of said drive-gears at a time.

7. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for said follower, and means for operating said follower, said means including a master-gear with which said stem is turnable and in which it is slidable, a plurality of drive-gears engaging the master-gear, a common source of power connected with the said drive-gears, and means whereby power is applied to only one of said drive-gears at a time, said drive-gears each operatable at different rates of speed.

8. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for the follower, a master-gear engaging the stem two drive-gears meshing with said master-gear, shafts for said drive-gears and means for driving said shafts at different rates of speed.

9. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for the follower, a master-gear engaging the stem, two drive-gears meshing with said master-gear, shafts for said drive-gears, an operating-shaft for said drive-gear shafts and connections between said operating-shaft and the drive-gear shafts whereby one of the latter may be operated without operating the other.

10. A paste-press consisting of a cylinder, a follower operatable therein, a threaded stem for the follower, a master-gear engaging the stem, two drive-gears meshing with said master-gear, shafts for said drive-gears, an operating-shaft for said drive-gear shafts and connections between said operating-shafts and the drive-gear shafts whereby one of the latter may be operated without operating the other, the connections between the operating-shaft and the drive-gear shafts permitting of the operation of one of said drive-gear shafts at a different rate of speed from the other.

11. A paste-press comprising a cylinder, a follower operatable therein, a screw for operating the follower, a master-gear engaging the screw, two drive-gears meshing the master-gear, shafts for said drive-gears, an operating-shaft connected with each of said drive-gear shafts, and means by which only one of said drive-gear shafts may be operated at one time.

12. A paste-press comprising a cylinder, a follower operatable therein, a screw for operating the follower, a master-gear engaging the screw, two drive-gears meshing the master-gear, shafts for said drive-gears, an operating-shaft connected with each of said drive-gear shafts, means by which only one of said drive-gear shafts may be operated at one time, fast and loose pulleys on the operating-shaft, drive-belts for said pulleys and means operatable by the follower to shift said belts automatically to reverse the follower at the end of its stroke.

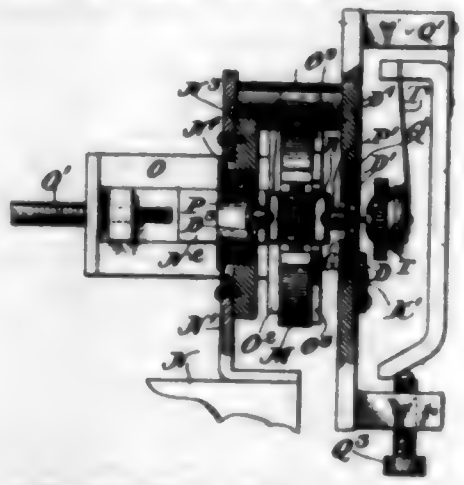
13. A paste-press comprising a cylinder, a follower operatable therein, a screw for operating the follower, a master-gear engaging the screw two drive-gears meshing the master-gear, shafts for said drive-gears, an operating-shaft connected with each of said drive-gear shafts, means by which only one of said drive-gear shafts may be operated at one time, fast and loose pulleys on the operating-shaft, drive-belts for said pulleys and means operatable by the follower to shift said belts automatically to reverse the follower at the end of its stroke, said last-named means including a radial arm on the follower-stem, a vertical slide-rod with which said arm engages and by which it is reciprocated, a shifting member and a bell-crank connected with said member and said rod.

14. A paste-press consisting of a cylinder, a follower operatable therein, a follower-stem, means for reciprocating the stem and follower, said last-named means including a pulley-shaft with fast and loose pulleys, and connections between the pulley-shaft and stem, pulleys on the pulley-shaft, a belt for said pulleys and means for automatically shifting the belt to reverse the follower, said means including a radial arm carried by and turnable independently of the

stem, a turnable guide for said arm, a slide-rod engageable by and having a limited movement with the arm, a shifter member and connections between said member and said rod whereby the belt is shifted on the movement of the rod by the arm.

15. A paste-press consisting of a cylinder, a die therein, a follower operatable in the cylinder, a rotary cutter below the die, means for operating the cutter coördinately with the movement of the follower and means by which the rate of movement of the cutter may be varied without changing the speed of the follower to permit of tubes of different length being cut, said cutter-operating means including intermeshing gears one of which is interchangeably mounted to permit gears of different sizes being used.

814,411. TELEPHONIC RELAY. JOHN TROWBRIDGE, Cambridge, Mass. Filed July 14, 1905. Serial No. 269,626.



Claim.—1. In a telephonic relay, a receiver, its diaphragm, a vibrator opposed to the receiver-diaphragm, an air layer between the vibrator and diaphragm, in free communication with the circumambient atmosphere, a transmitter in connection with the vibrator, and continuous solid sound-transmitting connections between the vibrator and the diaphragm.

2. In a telephonic relay, a receiver, its diaphragm, a vibrator opposed to the receiver-diaphragm and spaced therefrom, a transmitter in connection with the vibrator, and a close metallic connection between the vibrator and the diaphragm.

3. In a telephonic relay, a receiver, its diaphragm, a vibrator opposed to the receiver-diaphragm and spaced therefrom, a transmitter in connection with the vibrator, and a close metallic connection between the vibrator and the diaphragm at the margin of the latter, to insure sound communication and to permit mutually independent adjustment of the transmitter and receiver, and means to adjust the transmitter independently of the receiver.

4. In a telephonic repeater, the combination of a receiving instrument and a transmitter, each provided with a diaphragm, the diaphragms arranged parallel and opposed to each other, separated by an intervening layer of air which is in free communication with the surrounding atmosphere, the transverse area of said air layer being substantially at least coequal with the area of the smaller diaphragm, and solid sound-transmitting connections from the edge of one diaphragm to the edge of the other.

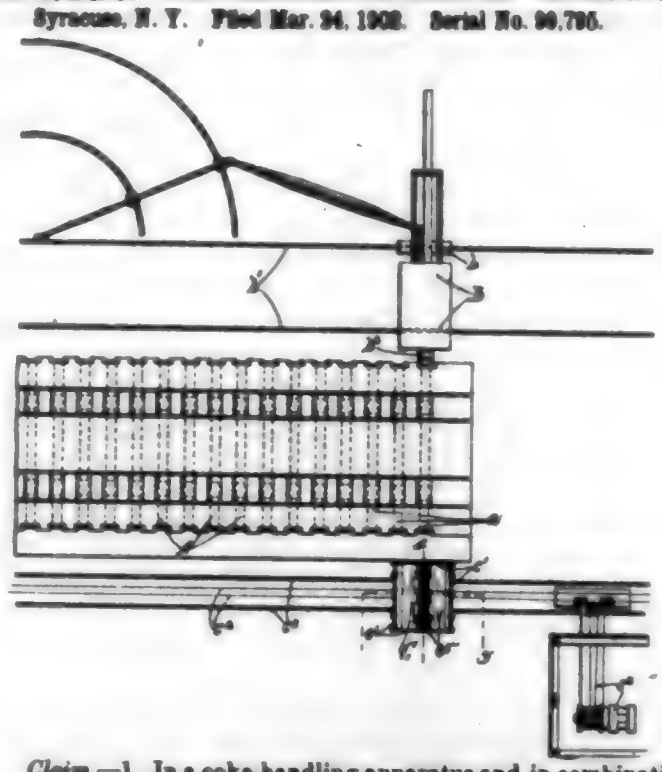
5. In a telephonic repeater, the combination of a receiving instrument and a transmitter, each provided with a diaphragm, the diaphragms arranged parallel and opposed to each other, separated by an intervening layer of air which is in free communication with the surrounding atmosphere, the transverse area of said air layer being substantially at least coequal with the area of the smaller diaphragm, and solid sound-transmitting connections from the edge of one diaphragm to the edge of the other, and means to adjust the receiver and the transmitter independently.

6. In a telephonic repeater, the combination of a receiving instrument and a transmitter, each provided with a diaphragm, the transmitter-diaphragm of larger effective superficial area than that of the receiver, and a solid sound-transmitting connector which bears upon the periphery of the receiver-diaphragm and upon the transmitter-diaphragm between the periphery and the center thereof.

7. In a telephonic repeater, the combination of a receiver and a transmitter, each provided with a diaphragm, the transmitter diaphragm of substantially greater superficial area than that of the receiver, the two diaphragms separated by an intervening layer of air which is in free communication with the surrounding atmosphere, and a solid sound-transmitting connector bearing upon the receiver-diaphragm at the periphery thereof and upon the transmitter-diaphragm between the periphery and center thereof.

8. In a telephonic repeater, the combination of a receiver and a transmitter, each provided with a diaphragm, the transmitter-diaphragm of superficially greater area than the receiver-diaphragm the two diaphragms concentrically arranged and in parallel opposition, and a ring of solid sound-transmitting material interposed between the diaphragms and bearing upon the periphery of the receiver-diaphragm and upon the transmitter-diaphragm at a region between the center and periphery thereof.

814,412. COKE-HANDLING APPARATUS. EDWARD N. TRUMP, Syracuse, N. Y. Filed Mar. 24, 1902. Serial No. 99,795.



Claim.—1. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and means arranged at one side of the last-mentioned means for receiving the coke therefrom, substantially as and for the purpose described.

2. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and means arranged at each side of the last-mentioned means for receiving the coke therefrom, substantially as and for the purpose specified.

3. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and means arranged in a lower plane than the last-mentioned means and at the side thereof for receiving the coke therefrom, substantially as and for the purpose set forth.

4. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, and a platform located in front of the coke-oven having a surface extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and a second surface extending downwardly from the former surface at one side thereof for receiving the coke therefrom, substantially as and for the purpose described.

5. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, and a platform located in front of the coke-oven having a surface extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and surfaces extending downwardly from opposite sides of the former surface for receiving the coke therefrom, substantially as and for the purpose specified.

6. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means extending substantially parallel with the line of movement of the mass of coke in a plane substantially coincident with the lower face of said mass and forming a temporary support therefor, and means arranged at one side of the last-mentioned means for receiving the coke therefrom, substantially as and for the purpose set forth.

7. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means extending substantially parallel with the line of movement of the mass

of coke in a plane substantially horizontal and coincident with the lower face of said mass and forming a temporary support therefor, and means arranged at each side of the last-mentioned means for receiving the coke therefrom, substantially as and for the purpose described.

8. In a coke-handling apparatus and in combination, a coke-oven having an exit-opening, means for forcing the coke in a mass from the exit-opening, and a platform having a surface extending substantially parallel with the line of movement of the mass of coke and coincident with the bottom of said exit-opening and forming a temporary support for the mass of coke, and surfaces extending downwardly from opposite sides of the former surface and disposed substantially parallel therewith for receiving the coke therefrom, substantially as and for the purpose specified.

9. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, and a platform located in front of the coke-oven having a substantially central surface extending substantially parallel with the line of movement of the mass of coke in a plane substantially coincident with the intermediate portion of the lower face of said mass and forming a temporary support therefor, and surfaces extending downwardly from opposite sides of the former surface for receiving the coke therefrom, substantially as and for the purpose set forth.

10. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, means of less width than the mass of coke extending substantially parallel with the line of movement of said mass and forming a temporary support therefor, and means arranged at one side of the last-mentioned means for receiving the coke therefrom, substantially as and for the purpose described.

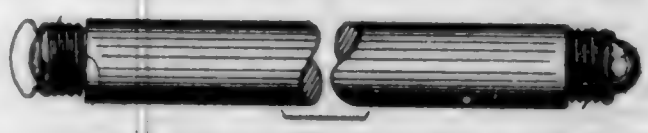
11. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, and a platform located in front of the coke-oven having a surface extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and surfaces formed of greater width than the mass of coke and extending downwardly from opposite sides of the former surface for receiving the coke therefrom, substantially as and for the purpose specified.

12. In a coke-handling apparatus and in combination, a coke-oven, means for forcing the coke in a mass from the oven, a platform located in front of the coke-oven having a surface extending substantially parallel with the line of movement of the mass of coke and forming a temporary support therefor, and a second surface extending downwardly from the former surface at one side thereof for receiving the coke therefrom, and means for moving the platform in a plane disposed at substantially right angles with said surfaces, substantially as and for the purpose set forth.

13. In a coke-handling apparatus and in combination, coke-ovens provided with a plurality of chambers arranged side by side, means for successively discharging the coke in an elongated mass from each of the chambers, a platform located in front of the coke-ovens and having a substantially central surface extending in parallelism with the lines of movement of the masses of coke and substantially coincident with the planes of the bottoms of the chambers, said platform having surfaces extending downwardly from opposite sides of its substantially central surface and arranged parallel therewith for receiving the coke therefrom, and means for shifting said platform to successively aline the substantially central surface thereof with the intermediate portions of the bottoms of said chambers, substantially as and for the purpose described.

14. In a coke-handling apparatus, the combination with a coke-oven, means for discharging the coke in an elongated mass from the oven, and a guideway arranged in advance of the exit end of the oven; of a shiftable platform movable along said guideway and having a temporary supporting-surface extending substantially crosswise of the guideway, and a final receiving-surface extending downwardly from said temporary supporting-surface, substantially as and for the purpose specified.

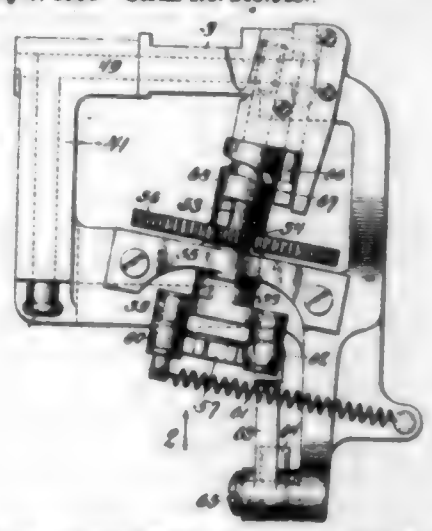
814,413. **MEANS OF ATTACHMENT FOR ERASERS.** Clara H. Tupper, Somers, Conn. Filed July 10, 1905. Serial No. 268,949.



Claim.—1. A straight body adapted to be used as a ruler, in combination with a hemispherical pencil-eraser at one end and a flat ink-eraser at the other, both held in place by threaded ferrules having inturned flanges, substantially as shown.

2. A round, straight body adapted to be used as a ruler, and having its end portions threaded and of less diameter than the body, threaded ferrules having their outer faces inturned mounted on the threaded end portions of the body, a pencil-eraser mounted at one end and a flat ink-eraser at the other, both having flanges, and mounted in position by the flanges being clasped under the inturned flange of the ferrules, substantially as shown.

814,414. **ADHESIVE-SUPPLYING MECHANISM.** Olof Tyberg and Joseph G. C. Mantle, New York, N. Y., assignors to Rufus L. Patterson and George Arents, Jr., New York, N. Y. Filed Sept. 24, 1901. Renewed July 7, 1904. Serial No. 215,645.



Claim.—1. The combination with wrapper-applying means, of an adhesive-containing chamber, an outlet-orifice in communication with said chamber, means for opening and closing the orifice, and an adhesive-forcing device independent of said opening and closing means and operated therefrom, substantially as described.

2. The combination with a wrapper-applying means, of an adhesive-containing chamber, a plurality of orifices in communication therewith, means for opening and closing the orifices, and a forcing mechanism independent of said opening and closing means and operated therefrom, substantially as described.

3. The combination with a wrapper-applying means, of an adhesive-containing chamber, a plurality of orifices in communication therewith, means for successively opening and closing said orifices, and a forcing mechanism operated from said opening and closing means, substantially as described.

4. The combination with means for applying a wrapper to a cigar-bunch, of an adhesive-containing chamber, a plurality of orifices in communication with said chamber, means for opening and closing the orifices, and a forcing mechanism independent of said opening and closing means and operated therefrom, substantially as described.

5. The combination with a cigar-header having a plurality of orifices in its walls, of an adhesive-containing chamber in communication with said orifices, a valve for opening and closing said orifices, and a forcing mechanism operated from said valve, substantially as described.

6. The combination with a cigar-header having a plurality of orifices in its walls, of an adhesive-containing chamber in communication with said orifices, a valve for opening and closing said orifices, and a forcing-piston operated from said valve, substantially as described.

7. The combination with a cigar-header having a plurality of orifices in its walls, of an adhesive-containing chamber in communication with said orifices, a valve for successively opening and closing the orifices, and a forcing mechanism operated from said valve, substantially as described.

8. The combination with a cigar-header having a plurality of orifices in its walls, of an adhesive-containing chamber in communication with said orifices, a valve for successively opening and closing the orifices, and a forcing-piston operated from said valve, substantially as described.

9. The combination with a cigar-header having an orifice in its wall, of a rotating valve for opening and closing the orifice, and a forcing mechanism operated from the valve, substantially as described.

10. The combination with a cigar-header having a plurality of orifices in its walls, of a rotating valve for successively opening and closing the orifices, substantially as described.

11. The combination with a cigar-header having a plurality of orifices in its walls, of a rotating valve for successively opening and closing the orifices, and a forcing mechanism operated from said valve, substantially as described.

12. The combination with a wrapper-applying means, of an adhesive-containing chamber, an orifice in communication with said chamber, means for opening and closing the orifice, a conduit supplying adhesive to the chamber, and a piston located in the chamber reciprocating across the mouth of the conduit, said piston being independent of the opening and closing means, subetantially as described.

13. The combination with a wrapper-applying means, of an adhesive-containing chamber, a plurality of orifices in communication with said chamber, means for opening and closing the orifices, a conduit supplying adhesive to the chamber, and a piston located in the chamber reciprocating across the mouth of the conduit, said piston being independent of the opening and closing means, substantially as described.

14. The combination with a wrapper-applying means, of an adhesive-containing chamber, an orifice in communication with said chamber, means for opening and closing the orifice a conduit supplying adhesive to the chamber, a piston located in the chamber reciprocating across the mouth of the conduit, and operating connections between the piston and the means for opening and closing the orifice, substantially as described.

15. The combination with a wrapper-applying means, of an adhesive-containing chamber, a plurality of orifices in communication with said chamber, means for opening and closing the orifices, a conduit supplying adhesive to the chamber, a piston located in the chamber reciprocating across the mouth of the conduit, and operating connections between the piston and the means for opening and closing the orifices, substantially as described.

16 The combination with a wrapper-applying means, of an adhesive-containing chamber, a plurality of orifices in communication with said chamber, means for successively opening and closing the orifices, a conduit supplying adhesive to the chamber, a piston located in the chamber reciprocating across the mouth of the conduit, and operating connections between the piston and the means for opening and closing the orifices, substantially as described.

17. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication therewith, a hol ow valve rotating in said chamber and having spirally-arranged ports for registering with the orifices, and means for rotating the valve, substantially as described.

18. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication therewith, a hollow valve rotating in said chamber and having spirally-arranged ports for registering with the orifices, means for rotating the valve, and a forcing mechanism operated from the valve, substantially as described.

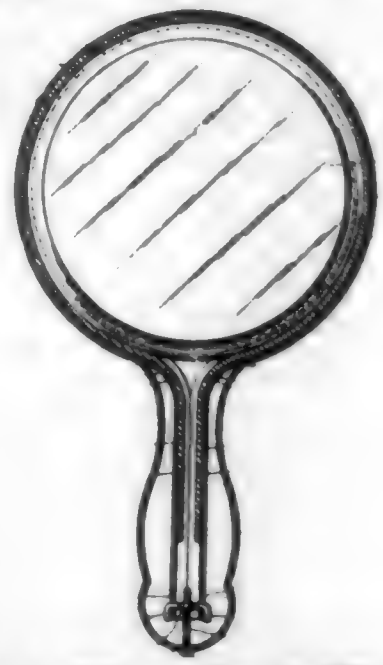
19. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication with the orifices, a hollow valve located in the chamber and having a plurality of spirally-arranged ports for registering with the orifices, a piston working in the chamber, means for rotating the valve, and operating connections between the piston and the valve, substantially as described.

20. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication with the orifices, a hollow valve located in the chamber and having a plurality of spirally-arranged ports for registering with the orifices, a piston working in the chamber, a cam on the stem of the valve, means whereby the cam operates the piston, and means for rotating the valve, substantially as described.

21. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication with the orifices, a hollow valve rotating in said chamber and having a plurality of spirally-arranged ports for registering with the orifices, a conduit for supplying adhesive to the chamber, a piston located in the chamber reciprocating across the mouth of the conduit, a cam on the stem of the valve, connections between the cam and the piston, and means for rotating the valve, substantially as described.

22. The combination with a cigar-header having a plurality of orifices, of an adhesive-containing chamber in communication with the orifices, a hollow valve rotating in said chamber and having a plurality of spirally-arranged ports for registering with the orifices, a conduit for supplying adhesive to the chamber, a piston located in the chamber reciprocating across the mouth of the conduit, a cam on the stem of the valve, connections between the cam and the piston, a gear for rotating the valve, and a pawl-and-ratchet mechanism for operating the gear, substantially as described.

814,415. COMBINED FRAME AND HANDLE FOR TOILET ARTICLES, &c. Louis Van Gale, Newark, N. J. Filed Apr. 22, 1905. Serial No. 256,589.



Claim.—1. In an article, as a mirror, medallion, or the like, a frame comprising a main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable terminals or end members, means for securing said terminals or end members together, and a reinforcing means or stiffener comprising a segmental body fitted upon the marginal edge of the mirror or the like, and provided with end terminals fitted against the terminals or end members of the frame, substantially as and for the purposes set forth.

2. In an article, as a mirror, medallion, or the like, a frame, comprising a main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable terminals or end members, means for securing said terminals or end members together, and a reinforcing means or stiffener comprising a segmental body fitted upon the marginal edge of the mirror or the like, and provided with end terminals fitted against the terminals or end members of the frame, a hollow handle slipped over said terminals or end members of said main body, and a tightening means between said handle and said terminals or end members, substantially as and for the purposes set forth.

3. In an article, as a mirror, medallion, or the like, a frame comprising an interiorly-channeled main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable and interiorly-channeled terminals or end members, means for securing said terminals or end members together, and a reinforcing means or stiffener comprising a segmental body arranged within the interiorly-channeled portions of said main body of the frame and fitted upon the marginal edge of the mirror or the like, and provided with end terminals fitted against the terminals or end members of the frame, substantially as and for the purposes set forth.

4. In an article, as a mirror, medallion, or the like, a frame comprising an interiorly-channeled main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable and interiorly-channeled terminals or end members, means for securing said terminals or end members together, and a reinforcing means or stiffener comprising a segmental body arranged within the interiorly-channeled portions of said main body of the frame and fitted upon the marginal edge of the mirror or the like, and provided with end terminals fitted against the terminals or end members of the frame, a hollow handle slipped over said terminals or end members of said main body, and a tightening means between said handle and said terminals or end members, substantially as and for the purposes set forth.

5. In an article, as a mirror, medallion or the like, a frame comprising a main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable terminals or end members, said terminals being provided near their lower end portions with oppositely-located receiving-openings, a holding-yoke between said terminals or end members, and retaining-lugs on said yoke extending through the openings in the terminals or end mem-

bers and bent over against the outer faces of said terminals or end members, substantially as and for the purposes set forth.

6. In an article, as a mirror, medallion or the like, a frame comprising a main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable terminals or end members, said terminals being provided near their lower end portions with oppositely-located receiving-openings, a holding-yoke between said terminals or end members, and retaining-lugs on said yoke extending through the openings in the terminals or end members and bent over against the outer faces of said terminals or end members, a hollow handle slipped over said terminals or end members of said main body, and a tightening means between said handle and said terminals or end members, substantially as and for the purposes set forth.

7. In an article, as a mirror, medallion, or the like, a frame comprising a main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable terminals or end members, said terminals being provided near their lower end portions with oppositely-located receiving-openings, a holding-yoke between said terminals or end members, retaining-lugs on said yoke extending through the openings in the terminals or end members and bent over against the outer faces of said terminals or end members, said yoke being provided with a screw-threaded hole, a reinforcing means upon said main body and said terminals or end members, a hollow handle slipped over said terminals or end members of said main body, and a tightening-screw connected with said handle and screwed into the screw-threaded hole of said yoke, substantially as and for the purposes set forth.

8. In an article, as a mirror, medallion, or the like, a frame comprising an interiorly-channeled main body adapted to be arranged about the marginal edge of said article, said main body having a pair of separable and interiorly-channeled terminals or end members, said terminals being provided near their lower end portions with oppositely-located receiving-openings, a holding-yoke between said terminals or end members, retaining-lugs on said yoke extending through the openings in the terminals or end members and bent over against the outer faces of said terminals or end members, said yoke being provided with a screw-threaded hole, a reinforcing means arranged within the interiorly-channeled portions of said main body and said terminals or end members, a hollow handle slipped over said terminals or end members of said main body, and a tightening-screw connected with said handle and screwed into the screw-threaded hole of said yoke, substantially as and for the purposes set forth.

814,416. FABRIC BELT FOR CONVEYERS. JOHN J. VOORHEES, Jersey City, N. J. Filed Aug. 25, 1905. Serial No. 275,755.

Claim.—1. As a new article of manufacture, a composition fabric comprising a cementing medium, a woven fabric embedded therein and extending longitudinally thereof, and a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, said cementing medium separating the woven fabric from the vertical fibers, substantially as described.

2. As a new article of manufacture, a composition fabric comprising a cementing medium having a plurality of layers of woven fabric embedded therein and extending longitudinally thereof, and a fibrous material also embedded therein, the fibers of the latter being arranged in vertical planes in the said composition fabric, said cementing medium separating the woven fabric from the vertical fibers, substantially as described.

3. As a new article of manufacture, a composition fabric comprising a cementing medium and a fibrous material the fibers of which are wholly embedded within the said cementing medium and are disposed longitudinally, and a fibrous material embedded in said cementing medium, the fibers of which are disposed perpendicularly to the fabric and form part of the wearing-surface, the two sets of fibers being separated by the cementing medium, substantially as described.

4. As a new article of manufacture, a composition fabric comprising a cementing medium having a woven fabric disposed longitudinally of the fabric, the fibers of which are wholly embedded within the cementing material, and a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, and the said woven fabric and fibrous material being separated by the cementing medium substantially as described

5. As a new article of manufacture, a composition fabric comprising a cementing medium, having a plurality of layers of woven fabric disposed longitudinally of the fabric, the fibers of which are wholly embedded therein and a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, the said woven fabric and fibrous material being separated by said cementing medium, substantially as described.

6. As a new article of manufacture, a composition fabric comprising a cementing medium and a series of isolated clusters of fibrous material embedded therein, the fibers of the said material being arranged in planes perpendicular to the fabric, substantially as described.

7. As a new article of manufacture, a composition fabric comprising a cementing medium and a series of isolated clusters of a fibrous material embedded therein, the fibers of said material being so disposed that the ends thereof only form part of the wearing-surface of the fabric, substantially as described.

8. As a new article of manufacture, a composition fabric comprising a cementing medium and a fibrous material embedded therein, a portion of said material being disposed in isolated clusters of fibers disposed perpendicularly to the fabric, substantially as described.

9. As a new article of manufacture, a composition fabric comprising a cementing medium having a woven fabric embedded therein and series of isolated clusters of a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, substantially as described.

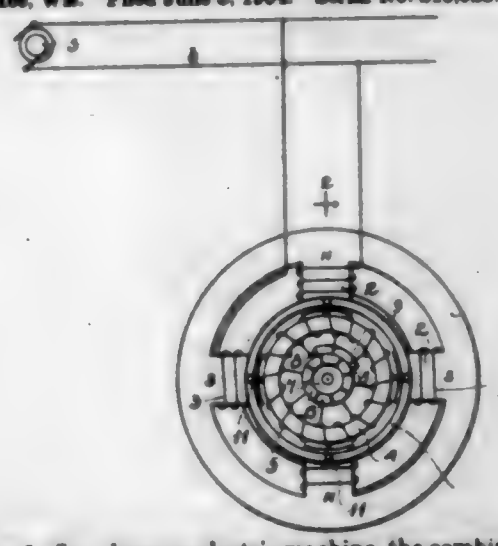
10. As a new article of manufacture, a composition fabric comprising a cementing medium having a plurality of layers of woven fabric embedded therein and a series of isolated clusters of a fibrous material also embedded therein, the fibers of the latter being arranged in planes perpendicular to the said composition fabric, substantially as described.

11. As a new article of manufacture, a belting material consisting of woven fabric embedded in rubber and a fibrous material also embedded in said rubber, above the woven fabric and the fibers of which extend in planes perpendicular to the belt, so that the ends thereof constitute part of the wearing-surface of the belt, substantially as described.

12. As a new article of manufacture, a belting material consisting of woven fabric embedded in rubber and a series of clusters of fiber also embedded in said rubber, above the woven fabric, and the fibers of which extend in planes perpendicular to the belt, so that the ends thereof constitute part of the wearing-surface of the belt, substantially as described.

13. A flexible conveyer-belt, composed of rubber and having embedded therein fibrous material, so disposed that the ends thereof shall form part of the wearing-surface of the belt, and material wholly embedded in said rubber longitudinally to strengthen the belt; the said strengthening material and fibrous material, separated by said rubber, substantially as described.

814,417. DYNAMO-ELECTRIC MACHINE. WILLIAM L. WATERS, Milwaukee, Wis. Filed June 3, 1904. Serial No. 210,923.



Claim.—1. In a dynamo-electric machine, the combination with a field-frame having salient poles, of an armature associated with said field-frame, and a continuous ring of magnetic material at each side of the field-frame and secured to the poles near the faces thereof.

2. In a dynamo-electric machine, the combination with a field-frame having salient poles, of an armature associated with said poles, a continuous ring of magnetic material at each side of the field-frame

disposed near the faces of the poles, and bolts passing through said rings and said poles for securing said ring in position.

3. In an alternating-current-motor dynamo-electric machine, the combination with a field-frame having salient poles and composed of laminations, of an armature associated with said poles, a continuous wrought-iron ring at each side of the field-frame and engaging the poles near their faces, and bolts passing through said poles and said rings, said bolts serving to secure the rings in position and also to secure together the laminations from the field-frame.

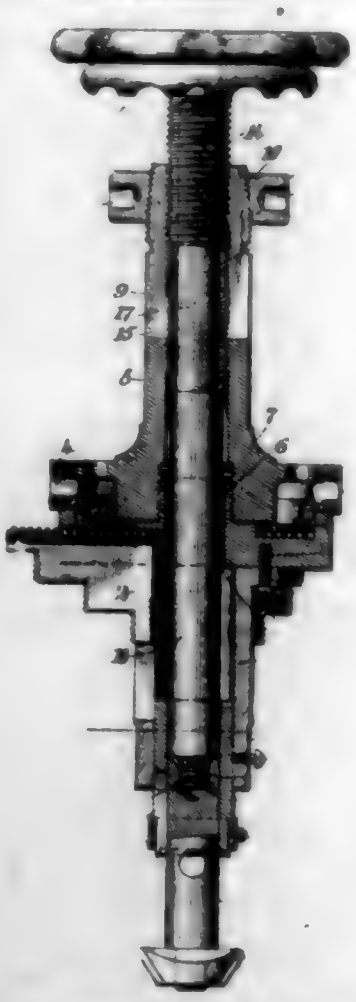
4. In a single-phase alternating-current motor, the combination with a field-frame having salient poles, of energizing-windings for said poles, an armature associated with said field-frame, a commutated winding on said armature, a commutator for said winding, brushes engaging said commutator, a circuit including said brushes, and a ring of magnetic material at each side of the field-frame, said rings engaging the sides of the poles near the faces thereof and encircling the armature.

5. In an alternating-current motor, the combination with a field-frame having salient poles, of energizing-windings for said poles, an armature associated with said poles, a commutated winding for said armature, a commutator for said winding, brushes engaging said commutator, a circuit including said brushes, a ring of magnetic material at each side of the field-frame, each ring engaging the sides of the poles near the faces thereof, and bolts passing through said rings and said poles for securing said rings in position.

6. In an alternating-current motor, the combination with a field-frame having salient poles, of energizing-windings for said poles, an armature associated with said poles, a commutated winding for said armature, a commutator for said winding, brushes engaging said commutator, a circuit including said brushes, a ring 10 at each side of the field-frame engaging the sides of the poles near the faces thereof, and bolts 11, 11 passing through the rings and through the poles on the center line thereof for securing said rings in position

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814,418. ROTARY CUTTING DEVICE. THOMAS B. WILLIAMS, Orange, Mass., assignor to The Leavitt Machine Co., Orange, Mass. Filed July 7, 1905. Serial No. 268,657.



Claim.—1. A device of the character described comprising a chuck, a tubular member thereon, a rotatable spindle working within the tubular member and provided with a cutter, a feed connection between the spindle and the tubular member, means whereby to disconnect the feed connection, a second tubular member on the chuck and in alinement with the first member, a bushing in the free end of the second tubular member, and means whereby to adjust the bushing longitudinally of said tubular member, the said tubular member and the bushing extending in the direction of the cutter and adjacent thereto.

2. A device of the character described, comprising a chuck, a tubular member thereon, a rotatable spindle working in the tubular member and chuck and provided with a cutter, and means applied to the opposite face of the chuck for furnishing an extended bearing-support for said spindle, embodying a circular yoke and a longitudinally-adjustable bushing thereon, the said yoke and bushing extending in the direction of the cutter and adjacent thereto.

3. A device of the character described comprising a chuck, a tubular member thereon, a rotatable spindle working in the tubular member and chuck and provided with a cutter, and means applied to the opposite face of the chuck for furnishing an extended bearing-support for said spindle, embodying a circular yoke and a longitudinally-adjustable bushing thereon provided with a ring having a set-screw, the yoke and bushing extending in the direction of the cutter and adjacent thereto.

4. As an attachment for a rotary cutting device of the character herein described, a yoke having means for securing the same to the chuck of the device and provided with an extensible bushing, the said yoke and bushing extending in the direction of the cutting device and adjacent thereto.

814,419. ADJUSTABLE COLLAR HOLDER OR SUPPORTER. THOMAS ALLSOPP, Newark, N. J., assignor to Allsopp & Allsopp, Newark, N. J., a Firm. Filed June 10, 1905. Serial No. 264,597.



Claim.—1. A holder or supporter for collars or the like, comprising an adjustable body portion adapted to be brought in engagement with the side of the collar, said adjustable body portion consisting, essentially, of a pair of centrally-pivoted arms, end arms pivotally secured to the said centrally-pivoted arms, and means for securing the said adjustable body portion in its adjusted position to the collar, substantially as and for the purposes set forth.

2. A holder or supporter for collars or the like, comprising an adjustable body portion adapted to be brought in engagement with the side of the collar, said adjustable body portion, consisting, essentially, of a pair of centrally-pivoted arms, end arms pivotally secured to the said centrally-pivoted arms, stops upon said end arms, adapted to limit the adjustment of said adjustable body portion, and means for securing the said adjustable body portion in its adjusted position to the collar, substantially as and for the purposes set forth.

3. A holder or supporter for collars or the like, comprising an adjustable body portion adapted to be brought in engagement with the side of the collar, said adjustable body portion, consisting, essentially, of a pair of centrally-pivoted arms, end arms pivotally secured to the said centrally-pivoted arms, stops upon said end arms, adapted to limit the adjustment of said adjustable body portion, and means for securing the said adjustable body portion in its adjusted position to the collar, consisting of ratchet-toothed disks upon said end arms, adapted to engage one with the other, screw-threaded shanks upon said ratchet-toothed disks adapted to pass through holes or openings in the opposite ratchet-toothed disks, and studs or nuts adapted to be screwed upon said screw-threaded shanks to secure the locking or holding engagement of the said ratchet-toothed disks, substantially as and for the purposes set forth.

4. A holder or supporter for collars or the like, comprising an adjustable body portion adapted to be brought in engagement with the side of the collar, said adjustable body portion consisting, essentially, of a pair of centrally-pivoted arms, end arms pivotally secured to the said centrally-pivoted arms, stops upon said end arms, adapted to limit the adjustment of said adjustable body portion, and means for securing the said adjustable body portion in its adjusted position to the collar, consisting of ratchet-toothed disks upon said end arms, adapted to engage one with the other, screw-threaded shanks upon said ratchet-toothed disks adapted to pass through holes or openings in the opposite ratchet-toothed disks, studs or nuts adapted to be screwed upon said screw-threaded shanks to secure the locking or holding engagement of the said ratchet-toothed disks, and a jewel-setting upon the head of said studs or nuts, adapted to receive precious stones or other ornamental devices, substantially as and for the purposes set forth.

5. A holder or supporter for collars or the like, comprising an adjustable body portion, adapted to be brought in engagement with the side of a collar or the like, and means for securing the said ad-

justable body portion in its adjusted position to a collar or the like, consisting, essentially, of ratchet-toothed disks upon said adjustable body portion, adapted to engage one with the other, and means to secure the holding engagement of said ratchet-toothed disks, substantially as and for the purposes set forth.

6. A holder or supporter for collars or the like, comprising an adjustable body portion, adapted to be brought in engagement with the side of a collar or the like, and means for securing the said adjustable body portion in its adjusted position to a collar or the like, consisting, essentially, of ratchet-toothed disks upon said adjustable body portion, adapted to engage one with the other, screw-threaded shanks upon said ratchet-toothed disks, adapted to pass through holes or openings in the opposite ratchet-toothed disks, and studs or nuts adapted to be screwed upon said screw-threaded shanks to secure the locking or holding engagement of the said ratchet-toothed disks, substantially as and for the purposes set forth.

7. A holder or supporter for collars or the like, comprising an adjustable body portion, adapted to be brought in engagement with the side of a collar or the like, and means for securing the said adjustable body portion in its adjusted position to a collar or the like, consisting, essentially, of ratchet-toothed disks upon said adjustable body portion, adapted to engage one with the other, screw-threaded shanks upon said ratchet-toothed disks, adapted to pass through holes or openings in the opposite ratchet-toothed disks, studs or nuts adapted to be screwed upon said screw-threaded shanks to secure the locking or holding engagement of the said ratchet-toothed disks, and a jewel-setting upon the head of said studs or nuts adapted to receive precious stones or other ornamental devices, substantially as and for the purposes set forth.

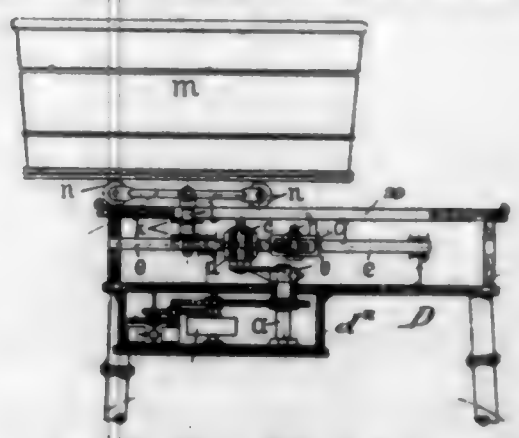
8. A holder or supporter for collars or the like, comprising a pair of centrally-pivoted arms 2 and 3, end arms 5, 6, 7 and 8, pivotally connected with the ends of said pair of centrally-pivoted arms 2 and 3, ratchet-toothed disks 9, 10, 11 and 12 upon the ends of said end arms 5, 6, 7 and 8, respectively, the said ratchet-toothed disks 9 and 11 engaging with the said ratchet-toothed disks 10 and 12 respectively, screw-threaded shanks 14, centrally disposed upon the ratchet-toothed disks 9 and 11, adapted to pass through holes or openings in said ratchet-toothed disks 10 and 12 respectively, studs or nuts 19 adapted to screw upon said screw-threaded shanks 14 to secure the locking or holding engagement of the respective disks 9 and 10, and 11 and 12, and jewel-settings 22 upon said studs or nuts 19 adapted to receive a precious stone 23 or other ornamental device, substantially as and for the purposes set forth.

9. In a holder or supporter for use with a lace collar or other limp article of wear, comprising a lazy-tongs, and ornamental holding devices at the ends of said lazy-tongs, substantially as and for the purposes set forth.

10. In a holder or supporter for use with a lace collar or other limp article of wear, comprising a lazy-tongs, and serrated or toothed holding members at the respective ends of said lazy-tongs, substantially as and for the purposes set forth.

11. In a holder or supporter for use with a lace collar or other limp article of wear, comprising a lazy-tongs, serrated or toothed holding members at the respective ends of said lazy-tongs, and an ornamented tightening means coöperating with the serrated holding members for securing the parts of said lazy-tongs in fixed immovable relation to each other, substantially as and for the purposes set forth.

814,420. SELF-MOVING CRADLE. Friedrich Alboth, Plauen-Dresden, Germany. Filed Aug. 5, 1905. Serial No. 272,886.



Claim.—1. In a self-moving cradle, a casing, a lever pivoted adjacent one end of said casing and extending into the same, mechanism in said casing for rocking said lever, a carriage attached to the inner end of said lever, and a cradle-body mounted on said carriage and movable over the top or cover of said casing.

2. In a self-moving cradle, in combination, a casing, an axially-slidable shaft therein, a slotted bar carried by said shaft, a crank having a wrist-pin engaging the slot in said bar, means for rotating said crank, a cradle-body above said casing, and an operative connection between said shaft and said body.

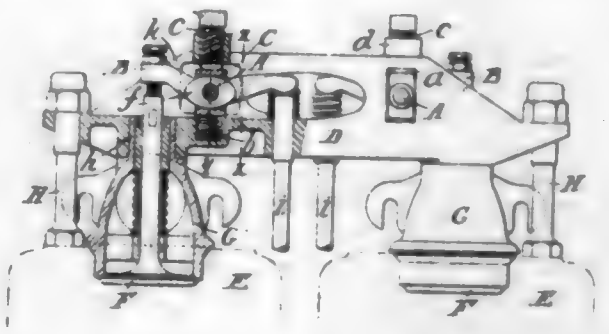
3. In a self-moving cradle, in combination, a slidably-mounted shaft, means for reciprocating the same, a lever rocked by said shaft, and a reciprocating cradle-body attached to one end of said lever.

4. In a self-moving cradle, in combination, an axially-slidable shaft, means for reciprocating the same, a pivoted lever operable by said shaft, a carriage attached to the free end of said lever, means for guiding said carriage, and a cradle-body mounted on said carriage.

5. In a self-moving cradle, in combination, an axially-slidable shaft provided with a pin, a lever pivoted adjacent said shaft and having a slot engaging said pin, a cradle-body attached to the free end of said lever, and means for supporting and guiding said body.

6. In a self-moving cradle, in combination, a casing, a transversely-disposed axially-slidable shaft mounted in said casing adjacent one end thereof, means for reciprocating said shaft, a lever pivoted adjacent the end of said casing and rockable by said shaft, a carriage carried at the free end of said lever and embodying rollers movable on the top or cover of said casing, and a cradle-body mounted on said carriage.

814,421. VALVE MECHANISM FOR INTERNAL-COMBUSTION ENGINES. Herbert Austin, Birmingham, England, assignor to The Wolseley Tool and Motor Car Company, Limited, Birmingham, England. Filed Aug. 27, 1904. Serial No. 222,418.



Claim.—1. Means of regulating the area of opening of an air-valve of an internal-combustion engine which comprise a lever through the medium of which the valve is operated, means for actuating said lever, a bridle within which the lever is fulcrumed, guides within which such bridle may move in an inward and outward direction, a spring which tends to move the bridle in one direction along its guides, and a screw device by which the bridle may be moved in the opposite direction against the pressure of the spring, substantially as set forth.

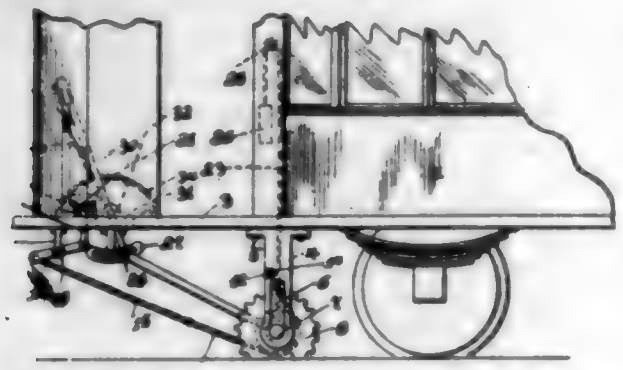
2. An internal-combustion engine with a plurality of motor-cylinders, having valve-boxes, mountings which are integral with each other and fit detachably about the outer ends of the said valve-boxes, breech-end pillar-screws which aid in supporting said mountings on the cylinders, and valve-actuating mechanism of the cylinders carried by and removable with said mountings, substantially as set forth.

3. An internal-combustion engine, having two motor-cylinders disposed side by side and provided with valve-boxes on their respective breech ends, a mounting extending across and fitting detachably about the respective valve-boxes, pillar-screws between the ends of the respective cylinders and the ends of said mounting, and valve-actuating mechanism of the cylinders carried by the said mounting and removable therewith, substantially as set forth.

4. An internal-combustion engine, having a valve-box on its cylinder, a mounting which is fitted detachably about the outer end of said valve-box, breech-end pillar-screws so disposed as to act as additional supports for said mounting, and valve-actuating mechanism carried by said mounting and removable therewith.

5. Means for regulating the area of opening of an air-valve of an internal-combustion engine, which comprise a lever through the medium of which the valve is operated, means for actuating said lever, an inwardly and outwardly adjustable fulcrum for such lever, a spring device tending to move the fulcrum in one direction, and an adjustable stop by means of which the fulcrum may be moved in the opposite direction, substantially as set forth.

814,422. BRAKE. Hugh Beatty, Pittsburg, Pa. Filed Jan. 8, 1906. Serial No. 295,232.



Claim.—1. In a car-brake, the combination with a car, of depending slotted brackets carried by the platform of said car, a shaft mounted in said brackets, cog-wheels mounted upon said shaft and adapted to engage racks mounted upon the surface over which the car travels, a wheel mounted upon said shaft, a band engaging said wheel, means to move said band into engagement with said wheel, means to elevate said shaft, and means to lower shaft, substantially as described.

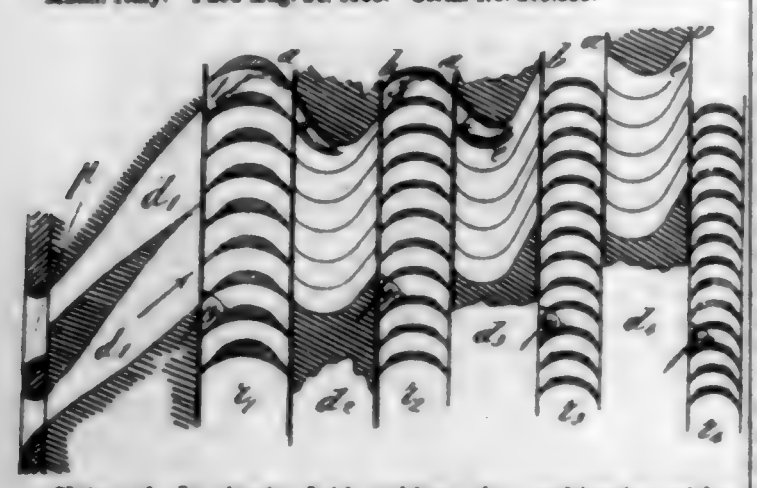
2. The combination with a car, and the rails over which said car travels, of depending brackets carried by said car, a shaft journaled in said brackets, cog-wheels mounted upon said shaft, racks mounted adjacent to said rails and adapted to be engaged by said cog-wheels, weighted cables connected to said shaft and extending upwardly into said car, to normally hold said shaft in an elevated position, means to lower said shaft, means to lock said means in a fixed position, and means to retard the movement of said shaft, substantially as described.

3. In a brake, the combination with a car and the rails over which it travels, of brackets carried by said car, cog-wheels revolubly supported by said brackets, racks mounted adjacent to said rails and adapted to be engaged by said cog-wheels, means to normally hold said wheels in an elevated position, means to lower said wheels, means to lock said wheels in a lowered position, and means to retard the movement of said wheels, substantially as described.

4. In a brake, the combination with a car, and the rails over which it travels, of cog-wheels revolubly supported beneath said car, racks mounted adjacent to said rails and adapted to be engaged by said cog-wheels, means to normally hold said wheels in an elevated position, means to lower said wheels, and means to retard the movement of said wheels, substantially as described.

5. In a brake, the combination with a car and the rails over which it travels, of racks mounted adjacent to said rails, revolubic cog-wheels carried by said car and adapted to engage said racks, means to raise and lower said wheels, and means to retard the movement of said wheels, substantially as described.

814,423. ELASTIC-FLUID TURBINE. Giuseppe Belluso, Milan, Italy. Filed Aug. 24, 1905. Serial No. 275,559.



Claim.—1. In elastic-fluid turbines, the combination with a nozzle, of a plurality of bucket-wheels arranged successively to receive the motive fluid, the angles of delivery into the bucket-wheels and the angles of the inlet portions of the buckets of the several bucket-wheels to the line of travel of said wheels being arranged to decrease from the nozzle side toward the exhaust side of the turbine.

2. In elastic-fluid turbines, the combination with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels arranged successively to receive the motive fluid, the angles of delivery into the bucket-wheels and the angles of the inlet portions of the buckets of the several bucket-wheels to the line of travel of said wheels being arranged to decrease from the nozzle side toward the exhaust side of the turbine.

3. In elastic-fluid turbines, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels arranged successively to receive the motive fluid, and fluid-guiding members, said nozzle and guiding members having their angles of delivery into the bucket-wheels arranged to decrease successively from the nozzle to the last of the guiding members, and the buckets of said bucket-wheels having the angles of their inlet portions to their line of travel arranged to decrease from the nozzle side toward the exhaust side of the turbine.

4. In elastic-fluid turbines, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels, and fluid-guiding members, said nozzle and guiding members having their angles of delivery into the bucket-wheels arranged to decrease successively from a value of substantially fifty degrees in the nozzle to the last one of the guiding members, and the buckets of said bucket-wheels having the angles of their inlet portions to their line of travel arranged to decrease form the nozzle side toward the exhaust side of the turbine.

5. In an elastic-fluid turbine, the combination, with a nozzle, of a plurality of bucket-wheels and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width decreasing from the inlet side to the exhaust side of the turbine.

6. In an elastic-fluid turbine, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width decreasing from the inlet side to the exhaust side of the turbine.

7. In an elastic-fluid turbine, the combination, with a nozzle, of a plurality of bucket-wheels, and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width and their distance from one another decreasing from the inlet side to the exhaust side of the turbine.

8. In an elastic-fluid turbine, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels, and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width and their distance from one another decreasing from the inlet side to the exhaust side of the turbine.

9. In an elastic-fluid turbine, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width and their distance from one another decreasing from the inlet side to the exhaust side of the turbine, the width of the buckets of the last wheel being not less than one inch and one-sixth.

10. In an elastic-fluid turbine, the combination, with an expanding-nozzle arranged to convert the pressure of the fluid into velocity, of a plurality of bucket-wheels, and fluid-guiding members arranged to receive successively the motive fluid, the buckets of consecutive wheels having their width and their distance from one another decreasing substantially in the same ratio from the inlet side toward the exhaust side of the turbine.

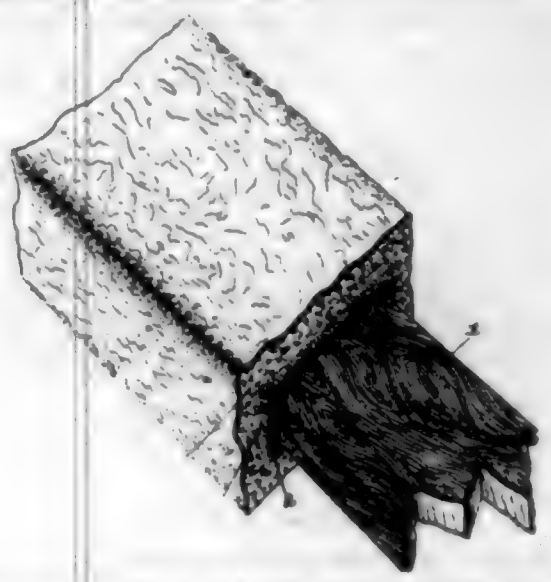
11. In an elastic-fluid turbine, the combination, with a plurality of bucket-wheels, of a nozzle, and a fluid-guiding member arranged about a part of the periphery of said bucket-wheels, said guiding member having guiding-blades and having its cut-off wall curved backward in the direction of the travel of the rotating member discharging into the same at an angle smaller than that of said guiding-blades to such an extent that the outlet of each of the passages of said rotating member is still open when its inlet is cut off.

12. In an elastic-fluid turbine, the combination, with a plurality of bucket-wheels, of a nozzle, and a fluid-guiding member arranged about a part of the periphery of said bucket-wheel, said guiding member having guiding-blades and having its cut-off wall curved backward in the direction of the travel of the rotating member discharging into the same at such an extent that the outlet of each of the passages of said rotating member is still open when its inlet is cut off, the last of said blades of the guiding members having a part of its discharge end cut away.

814,424. COATING. John H. Bletther, Pittsburg, Pa. Filed Mar. 21, 1905. Serial No. 251,223. (Specimens.)

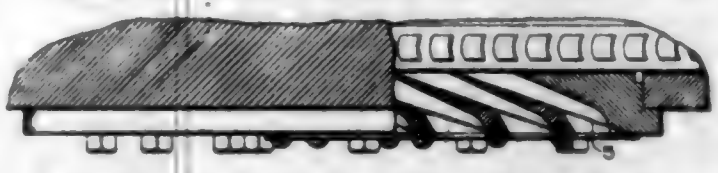
Claim.—1. The herein-described composition of matter consist-

ing of three parts Keene's cement, one part white sand, two parts water, and one part consisting of marble-dust, powdered oyster-shells, oxid of zinc and cream of tartar.



2. A coating comprising an interior layer of asphaltum and tar, an intermediate layer of gravel, and an outer layer consisting of cement, sand, water, marble-dust, powdered oyster-shells, oxid of zinc and cream of tartar.

814,425. **NOZZLE FOR ELASTIC-FLUID TURBINES.** FREDERIC R. C. BOYD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 14, 1904. Serial No. 228,377.



Claim.—1. In a nozzle, the combination of a nozzle-plate containing a slot having concentric walls, detachable partitions located in the slot for dividing it into passages, and supply-ports for the passages.

2. In a nozzle, the combination of a nozzle-plate containing a slot having concentric walls, detachable partitions located in the slot for dividing it into fluid-expanding passages, and a chest inclosing the admission ends of the passages.

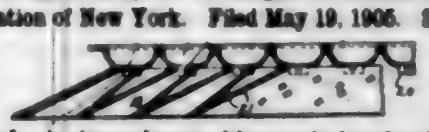
3. In a nozzle, the combination of a nozzle-plate containing a slot having concentric walls, detachable partitions located in the slot for dividing it into fluid-expanding passages, projections on the partitions which enter grooves in the slot, and a ported plate for holding the partitions in place through which the motive fluid passes.

4. In a nozzle, the combination of a slotted nozzle-plate, partitions located in the slot for dividing it into passages, a ported plate whose ports register with the admission ends of the passages, and a chest which incloses the ported plate.

5. In a nozzle, the combination of a slotted nozzle-plate, partitions located in the slot for dividing it into passages, a ported plate whose ports register with the admission ends of the passages, valves for controlling the passage of fluid to the nozzle-passages, and a chest which incloses the plate and valves.

6. A turbine comprising a bucket-wheel and casing, in combination with a nozzle attached to the casing and comprising a nozzle-plate, a detachable partition which forms passages in the plate, and valves which control the admission of fluid to said passages.

814,426. **NOZZLE FOR ELASTIC-FLUID TURBINES.** CHAUNCEY BRADWAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 19, 1905. Serial No. 261,150.



Claim.—1. An interchangeable nozzle for elastic-fluid turbines, comprising a fluid-discharging conduit or passage whose fluid guiding and directing walls consist of separately-formed sheet-metal pieces.

2. A nozzle for elastic-fluid turbines, comprising a fluid-discharging conduit or passage whose fluid guiding and directing walls consist of separately-formed sheet-metal pieces, and means for securing the pieces together.

3. As an article of manufacture, a nozzle for an elastic-fluid turbine, comprising independent and concentrically-curved side walls, and transversely-arranged partitions which unite the side walls and with the latter form fluid-discharging passages.

4. A nozzle for elastic-fluid turbines, comprising sheet-metal end and side walls which guide and direct the passage of motive fluid, means for securing the walls together, and a supporting-plate for the said walls by which the nozzle is mounted in the turbine.

5. A nozzle for elastic-fluid turbines, comprising a section having one or more fluid-discharging passages, and a sheet-metal section provided with a chamber which collects and delivers the motive fluid to the discharging passage or passages, and means for securing the sections together to form a unitary structure.

6. A sheet-metal nozzle for elastic-fluid turbines, comprising curved side plates, partitions secured between them which form one or more fluid-discharging passages, a supporting member, integral securing-flanges provided on the supporting member, and means for securing the side plates to the flanges.

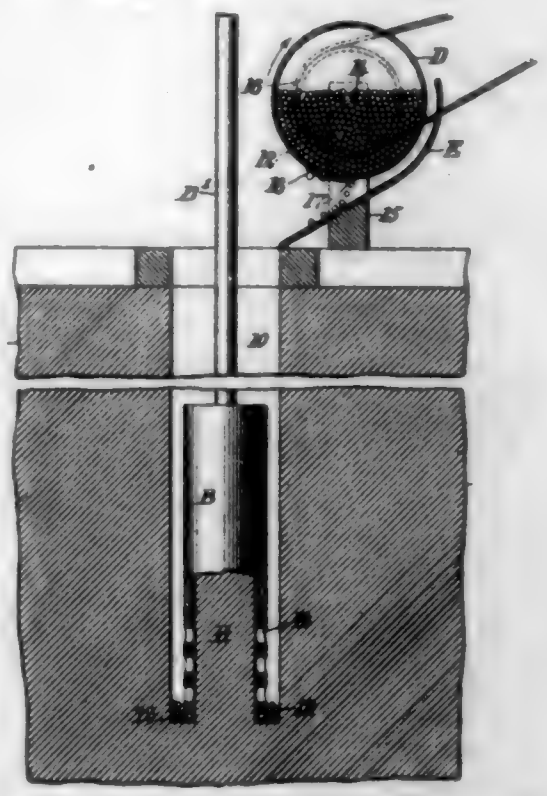
7. A sheet-metal nozzle for elastic-fluid turbines, comprising curved side plates, partitions secured between them which form one or more fluid-discharging passages, a sheet-metal supporting member provided with an opening, depressed walls adjacent the opening which form a chamber for collecting and delivering the motive fluid to the discharge passage or passages, and integral flanges formed on the supporting member at the edges of the opening for supporting the side plates.

8. A nozzle for elastic-fluid turbines comprising two independent and parallel side members, and partitions rigidly secured between the members to constitute a plurality of closely-associated fluid-discharging passages, in combination with a diaphragm or other support to which the nozzle is removably secured.

9. The combination of a diaphragm or other support having an arc-shaped slot or opening, and a nozzle corresponding in shape to the slot or opening and removably fitted therein, said nozzle comprising arc-shaped side plates, and transversely-arranged partitions which are secured to the side plates and coöperate therewith to form a plurality of closely-associated passages having the same angle of discharge.

10. As an article of manufacture, a distributing-chamber for a nozzle, comprising a sheet-metal plate formed with one or more dished or bowl-shaped portions which serve to collect and deliver the motive fluid to the discharge passage or passages of the nozzle.

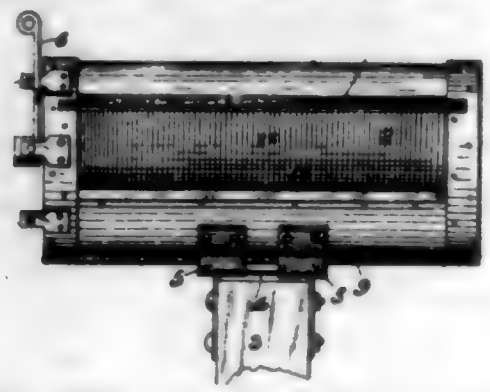
814,427. **SHOT-FEED FOR DRILLS.** KARRELL BROOKS, New York, N. Y. Filed Feb. 25, 1905. Serial No. 247,206.



Claim.—1. In a shot-feed for drills, a rotatable receiver having a discharge-opening, and a conductor beneath the receiver.

2. In a shot-feed for drills, a rotatable receiver having a discharge-opening, an adjustable cover for the said opening, and a conductor supported adjacent to the receiver.

814,428. RURAL MAIL-BOX. Jerome A. Brown and Burt Byers, Portsmouth, Ohio. Filed May 1, 1905. Serial No. 258,226.

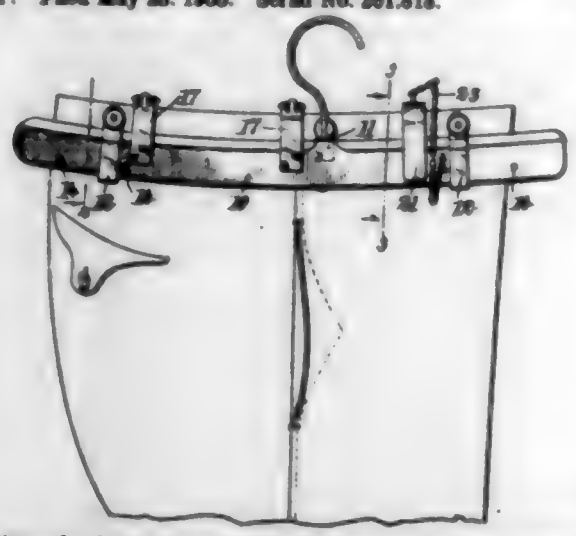


Claim.—1. A device or contrivance of the character described, embracing an inner rotary receptacle having a mail receiving and delivering opening, each serving the purpose of the other, an outer stationary receptacle or closure for said rotary receptacle, having registering openings, and a lever for actuating said rotary receptacle, said rotary receptacle having thereon certain suggestive indicia adapted by the actuation of the latter to indicate or signal the fact that mail has been placed in the latter by the postman or carrier, or by the owner of the device, said stationary receptacle being equipped with means for predetermining the interval of movement of said lever and its retention in position.

2. A device or contrivance of the character described, embracing an inner rotary cylinder and an outer stationary cylinder or closure therefor both having registering mail receiving and delivering openings, a lever for actuating said rotary cylinder, and said stationary cylinder having projecting therefrom holding-studs for said lever, adapted to predetermine the interval of movement of said lever, said rotary cylinder having thereon certain suggestive indicia adapted in connection with the actuation of said rotary cylinder to indicate or signal the fact that mail has been placed in said rotary cylinder by the postman, or by the owner or those controlling the use of the device.

3. A device or contrivance of the character described, comprising an outer stationary receptacle or cylinder provided with opposite openings and with weather-guards overhanging the latter, and having the bottom edge of each of said openings equipped or faced with a strip extending within the plane of said cylinder, a rotary cylinder arranged within the aforesaid cylinder and also having an opening, one edge of which opening having a bead or stop effective to engage the inward-extending portion of said outer cylinder-strips, a lever for actuating said rotary cylinder, and holding-studs secured to said stationary cylinder for said lever, said rotary cylinder having produced thereon certain suggestive indicia adapted, in connection with the actuation of the latter, to indicate or signal the fact that mail has been placed in said rotary cylinder by the carrier or postman, or by the owner of the device.

814,429. TROUSERS-HANGER. Axel Chelberg, New York, N. Y. Filed May 23, 1905. Serial No. 261,818.



Claim.—1. A trousers-hanger having means for engaging buttons on the trousers to be supported, and means for clasping the top of the trousers; said last-named means comprising a pivoted tongue adapted to engage the trousers, and resilient means for holding the tongue against the trousers.

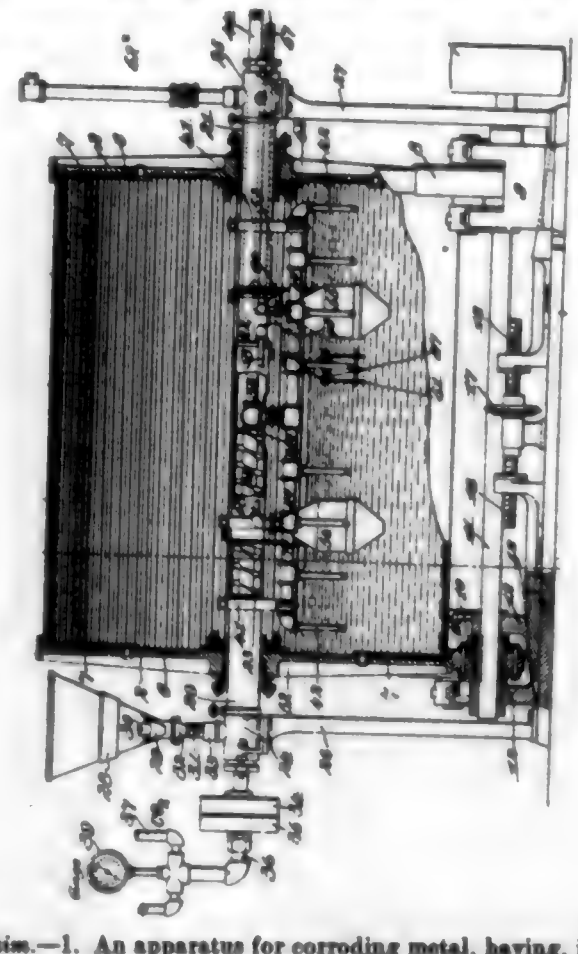
2. A trousers-hanger having a body, a clamp extending upwardly therefrom, a pivoted tongue depending from the clamp for engaging the trousers, and resilient means on the clamp for at all times forcing the tongue toward the body to clasp the trousers.

3. A trousers-hanger having a clamp provided with a depending pivoted freely-swinging tongue, and a resilient tongue integrally mounted on the clamp and adapted to engage the pivoted tongue to yieldingly and constantly hold it in position for engagement with the trousers to be supported.

4. A trousers-hanger having means for engaging buttons on the trousers to be supported, means for clasping the top of the trousers, said last-named means comprising a series of clamps each having a tongue adapted to engage the trousers, and a bodily-removable spring-clamp adapted to pass over the body of the hanger.

5. A trousers-hanger comprising a body, a clamp member extending upwardly therefrom and rigidly connected with the body, said clamp member having a laterally-projecting resilient member provided with a downwardly-extending tongue, and a second tongue pivoted to the clamp member and depending therefrom, the first tongue engaging the second tongue at all times and forcing it yieldingly toward the body of the hanger.

814,430. APPARATUS FOR CORRODING METAL. George D. Coleman, Boston, Mass. Filed Apr. 20, 1901. Serial No. 57,003.



Claim.—1. An apparatus for corroding metal, having, in combination, a rotating corroding-cylinder, having provision for the introduction of comminuted metal and water and for drawing off the product, and a pipe for introducing a gas or gases into said cylinder having a plurality of jets extending below the level of the water and discharging the gas or gases near the rising side of the cylinder, substantially as described.

2. An apparatus for corroding metal, having, in combination, a corroding-cylinder having provision for the introduction of comminuted metal, gas and water, and means for drawing off the product consisting of a vessel having an opening therein below the level of the water and a pipe leading from inside the vessel and below the level of the water out of the corroding-cylinder, substantially as described.

3. An apparatus for corroding metal, having, in combination, a corroding-cylinder, having provision for the introduction of comminuted metal, gas and water, and means for drawing off the product consisting of a vessel having an opening therein below the level of the water, a pipe leading from inside the vessel and below the level of the water out of the corroding-cylinder, and means for maintaining an equilibrium of pressure on the inside and outside of the vessel, substantially as described.

4. An apparatus for corroding metal, having, in combination, a corroding-cylinder, having provision for the introduction of comminuted metal, gas and water, and means for drawing off the product consisting of a vessel having an unlevel bottom provided with an

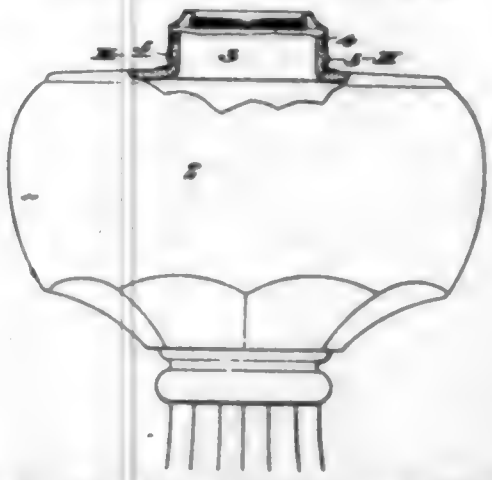
opening therein at its lowest part and below the level of the water and a pipe leading from inside the vessel and below the level of the water out of the corroding-cylinder, substantially as described.

5. An apparatus for corroding metal, having, in combination, a corroding-cylinder, having provision for the introduction of comminuted metal, gas and water, and means for drawing off the product consisting of a vessel having an unlevel bottom provided with an opening therein at its lowest part and below the level of the water, a pipe leading from inside the vessel and below the level of the water out of the corroding-cylinder, and means for maintaining an equilibrium of pressures on the inside and outside of the vessel, substantially as described.

6. An apparatus for corroding metal, having, in combination, a corroding-cylinder, having provision for the introduction of comminuted metal, gas and water, and means for drawing off the product consisting of an arrester having an inverted conical bottom provided with an opening at its apex below the level of the water, a pipe leading from inside the arrester and below the level of the water out of the corroding-cylinder and an opening in the arrester above the level of the water communicating with the outside of the arrester above the level of the water, substantially as described.

7. An apparatus for corroding metal, having, in combination, a corroding-cylinder, having provision for the introduction of comminuted metal, gas and water, a pipe for drawing off water and the products suspended therein, and means for separating metallic particles from the water before its admission into the said pipe, substantially as described.

814,431. COLLAR FOR LAMPS. James W. Collins, New Martinsville, W. Va. Filed Sept. 14, 1904. Serial No. 224,356.



Claim.—1. A lamp having a rigid glass neck with one or more protuberances projecting laterally therefrom, and a plain thin metal collar forced endwise over said protuberance or protuberances and locked by contraction of the metal thereunder; substantially as described.

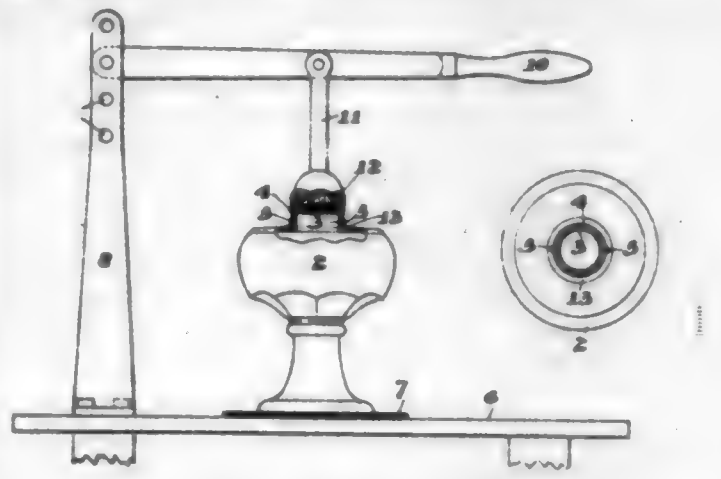
2. A lamp having a glass bowl and a glass neck with one or more protuberances projecting from the side of the neck above its lower end, and a metal collar normally smaller than the neck plus the protuberance forced over the protuberance and contracted thereunder; substantially as described.

3. A lamp having a bowl and a glass neck with one or more protuberances on the side of the neck above its lower end, and a thin metal collar having a lower circular flange, said collar being forced over the protuberance or protuberances and locked thereunder by the action of the lamp-body upon the collar-flange; substantially as described.

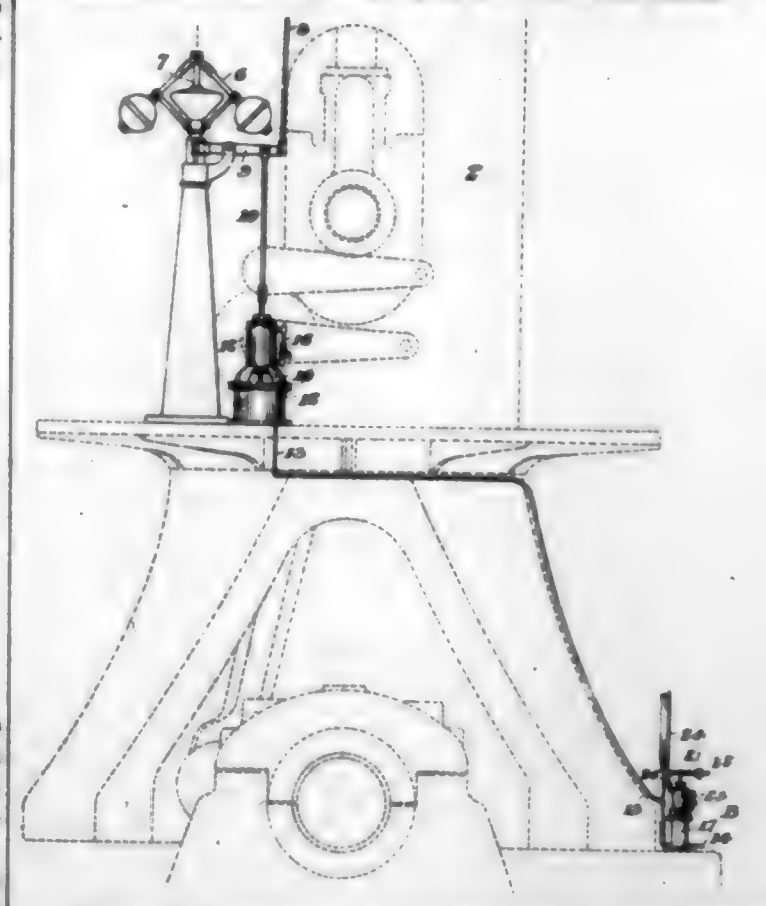
814,432. METHOD OF FASTENING METAL COLLARS TO GLASS LAMPS. James W. Collins, New Martinsville, W. Va. Filed July 23, 1905. Serial No. 270,557.

Claim.—1. The method of fastening lamp-collars to glass necks, consisting in providing a glass neck with a lateral protuberance or ridge, and then forcing thereover by circumferential or radial expansion under direct endwise pressure a metal collar normally smaller than the neck plus the protuberance or ridge, whereby the collar is locked by contraction under the protuberance or ridge; substantially as described.

2. The method of fastening lamp-collars to glass necks, consisting in providing a lamp-bowl with a glass neck having a side protuberance or ridge, and forcing thereover by circumferential or radial expansion a thin metal collar of less diameter than the greatest diameter of the neck, and having a lower flange or lateral extension, and thereby locking the metal of the collar under the protuberance or ridge; substantially as described.



814,433. SPEED-GOVERNOR. Charles E. Conkling, McKeesport, Pa., assignor to Mesta Machine Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 20, 1904. Serial No. 208,950.



Claim.—1. In combination with an engine delivering fluid under pressure, a speed-governor, means for opposing to the governor the pressure of the fluid, and means for varying the applied pressure and maintaining it at determined degree for governing the engine and keeping its speed at the rate desired; substantially as described.

2. In combination with an air-blowing engine and speed-governor, a cylinder opposing air-pressure to the governor, a regulating-valve adapted to regulate the pressure in said cylinder, and adjustable means for varying the point at which such pressure is maintained; substantially as described.

3. In combination with an air-blowing engine and speed-governor, an air-pipe extending to a furnace, means for applying variable pressure to the governor, and means at the furnace for varying such pressure; substantially as described.

4. In combination with an air-blowing engine and speed-governor, means for opposing the governor with the pressure of the air, and means for automatically restraining the rise of such pressure above a determined point, whereby on sudden removal of the air-pressure the pressure is relieved from the governor and the speed of the engine is reduced automatically to the minimum limit of the governor; substantially as described.

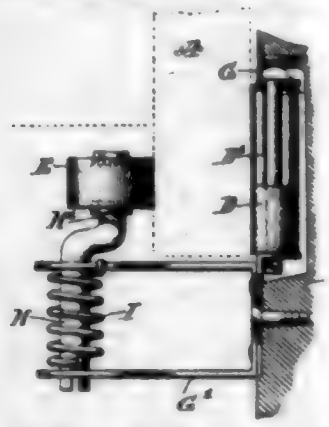
5. In combination with an air-blowing engine and governor, a governor-controlling device at the engine and a second governor-controlling device at a distant point connected with the first, each being adapted to control the governor only within the limit at which the other is set; substantially as described.

6. In combination with an air-blowing engine and speed-governor, a cylinder opposing the governor, an air-supply passage therefor, a regulating-valve in said passage having a relief-opening, and an adjustable resistance to the regulating-valve; substantially as described.

7. In combination with an air-blowing engine and governor, an air-pipe extending to a furnace, means for applying variable pressure to the governor, means at the furnace for varying such pressure, and a snort-valve in the air-pipe; substantially as described.

8. In combination with an air-blowing engine and governor, a cylinder opposing air-pressure to the governor, a regulating-valve adapted to regulate the pressure in said cylinder, adjustable means for varying the point at which such pressure is maintained, and a second regulating-valve also in the air-supply passage to said cylinder; substantially as described.

814,434. STAYING DEVICE FOR SLIDING DOORS. FRANK DAHLUND, Redmond, N. D. Filed June 18, 1904. Serial No. 213,125.



Claim.—1. A staying device for sliding doors, comprising an inner or rubbing roller, a bracket, a spring-pressed shaft mounted in the bracket and having at one end a crank-arm projecting beyond the bracket, and a pressure-roller mounted on the crank-arm.

2. A staying device for sliding doors, comprising a bracket, a rubbing-roller mounted in the bracket, a second bracket projecting at right angles to the first bracket, a shaft mounted in the second bracket and having at one end a crank-arm projecting beyond the bracket, a pressure-roller on the crank-arm, and a spring surrounding the shaft and having one end secured to said shaft and its other end to the bracket.

3. A staying device for sliding doors, comprising a bracket, a vertical pin secured to the bracket, a hollow rubbing-roller mounted on the pin, a plurality of rollers arranged between the inner vertical wall of the hollow roller and the said pin, a second bracket, a spring-pressed shaft mounted in the second bracket and having a crank-arm at one end, and a pressure-roller mounted on the crank-arm.

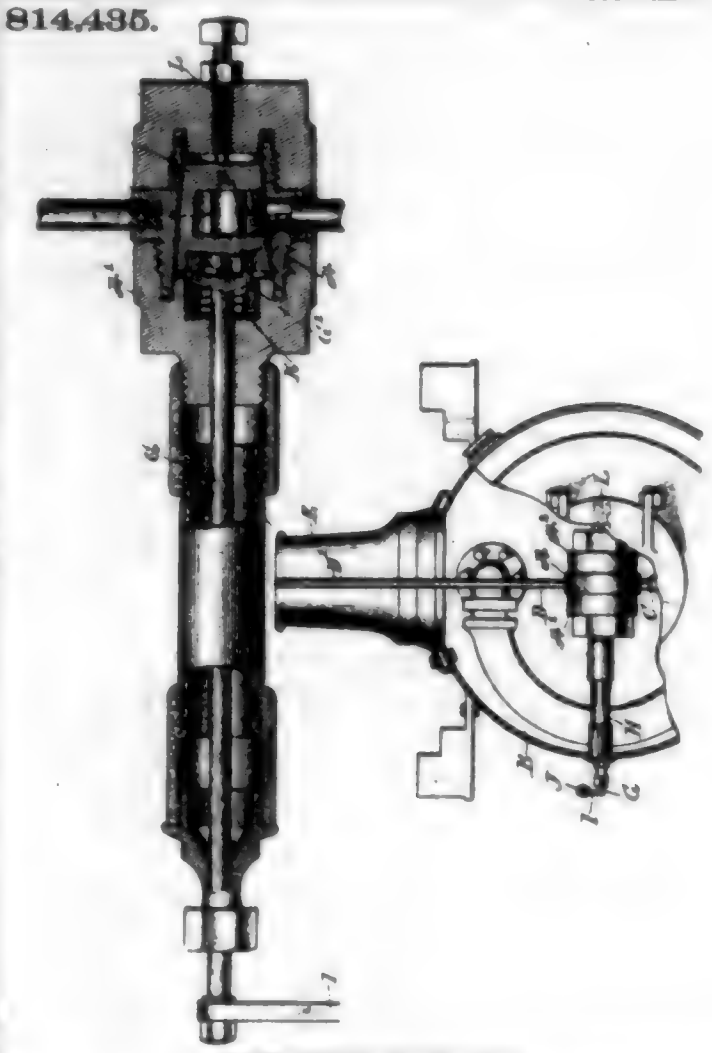
4. In a staying device for sliding doors, a bracket having parallel members, a shaft mounted in the members of the bracket and having at one end a crank-arm projecting beyond the bracket, a pressure-roller mounted on the crank-arm, and a spring coiled on the shaft between the members of the bracket and having one end secured to said shaft and its other to one member of the bracket.

814,435. EXHAUST-VALVE FOR STEAM-ENGINES. WILLIAM H. DYER, Ionia, Mich., assignor of one-half to Emma J. Colton, Ionia, Mich. Filed July 12, 1905. Serial No. 269,275.

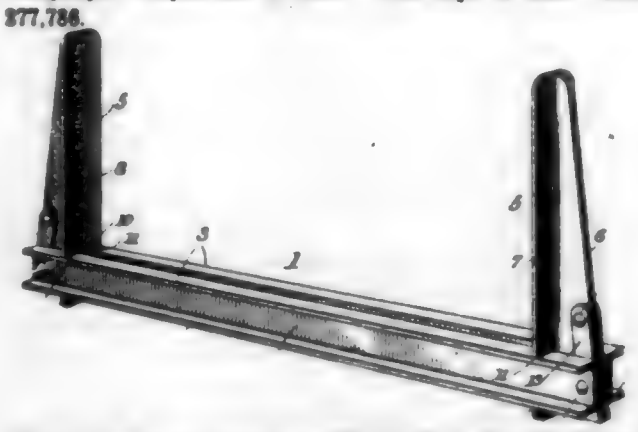
Claim.—1. A locomotive provided with an exhaust-valve in the smoke-box, the valve comprising a casing having an inlet connected with the engine-exhaust, two outlets of different lengths extending from the casing, one outlet terminating in the smoke-box and the other at the upper end of the smoke-stack, a valve-plug mounted to turn in the said casing and adapted to connect the said inlet with either or both outlets, a rod mounted to turn and connected with the said plug, an arm on the said rod, and an operating device under the control of the engineer and connected with the said arm.

2. A locomotive provided with an exhaust-valve in the smoke-box, the valve comprising a casing having an inlet connected with the engine-exhaust, two outlets of different lengths extending from the casing, one outlet terminating in the smoke-box and the other at the upper end of the smoke-stack, a valve-plug mounted to turn in the said casing and adapted to connect the said inlet with either or both outlets, an adjusting device for said plug, a rod mounted to turn and connected with the said plug, an arm on the said rod, and an operating device under the control of the engineer to turn the said arm.

814,435.



814,436. WAGON BOLSTER AND STAKE CONSTRUCTION. EMIL RIEVELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Sept. 9, 1905. Serial No. 277,786.



Claim.—1. In combination with a bolster formed of two members arranged side by side, a stake having a flat portion extending between said members, filling-plates connected with the flat portion of the stake on opposite sides and extending downwardly between the bolster members, and a fastening device connecting the members of the bolster with the filling-plates and flat portion of the stake.

2. In combination with a bolster comprising two members arranged side by side, a stake having a tongue extending between said members and provided with a web of less thickness than the tongue, said web forming a continuation of the tongue and extending between the bolster members, filling-plates applied to the opposite sides of the stake-web and extending between the bolster members, and a rivet passing through the bolster members, the filling-plates and stake-web.

3. In combination with a bolster comprising two complementary members having flat upper and lower sides, a stake comprising a web extending between the bolster members, and lateral flanges provided with recesses in which the members of the bolster extend, and means for fastening the stake-web to the bolster members.

4. In combination with a bolster comprising two members arranged side by side, each with upper and lower horizontal flanges, a stake having a central web and oppositely-extending flanges, the latter being formed near their lower ends with open recesses, and the said web extending between the bolster members, with the upper and lower walls of the recesses bearing respectively against the upper and lower flanges of the bolster members, and means for connecting the stake-web with the bolster members.

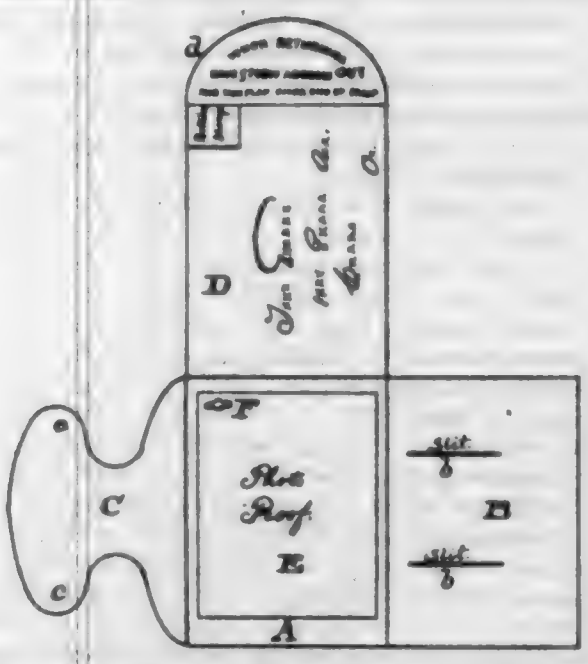
5. A metal stake adapted for application to a two-part bolster, said stake having a central web adapted to extend between the parts of the bolster, and formed with oppositely-extending flanges having recesses forming upper and lower walls adapted to bear against the upper and lower sides respectively of the two-part bolster.

6. In combination with a bolster formed of two members arranged side by side, a stake having a flat portion, filling-plates connected with the flat portion of the stake on opposite sides and extending downwardly between the bolster members, and a fastening device connecting said plates with the bolster members.

7. In combination with a bolster comprising two complementary members having flat upper sides, a stake provided with a web and lateral flanges, the flanges being seated on the flat upper sides of the bolster members, and filling-plates fastened to the opposite sides of the web and extending downwardly between said bolster members and firmly secured to the same.

8. In combination with a bolster comprising two complementary members spaced apart and having flat upper sides, a stake formed with a central web and two oppositely-extending lateral flanges, said flanges being seated on the upper sides of the bolster members, filling-plates extending on opposite sides of the web and downwardly between the bolster members, a fastening device securing said filling-plates to the web, and an intermediate plate extending between the filling-plates in a continuation of the plane of the stake-web, and a fastening device securing the bolster members, the filling-plates and the intermediate plate firmly together.

814,437. **PHOTOGRAPHER'S RETURN-ENVELOP.** THEO ENDEAN, Cleveland, Ohio. Filed Sept. 24, 1903. Renewed Aug. 7, 1905. Serial No. 273,198.



Claim.—The herein-described return-envelop, consisting of body member having a folding leaf, provided with tucking-slits, on one side, and a folding leaf provided with tucking-ears, on its opposite side; a folding leaf on one end of said body member having a narrow folding flap on its free end, for the attachment of a proof-print, and adapted to be folded over onto either side of the body member and concealing the proof, said envelop having the sending and return addresses covered or exposed, by the folding of said leaves, substantially as and for the purpose specified.

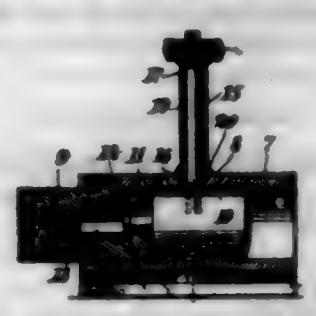
814,438. **CARD-HOLDER.** HERMAN L. FRANKE, Chicago, Ill. Filed Dec. 26, 1905. Serial No. 293,626.



Claim.—1. A holder for cards or the like, comprising a back having forwardly-projecting side and bottom flanges and inwardly-projecting flanges at the front edges of said flanges, and a rearwardly-projecting flange at the upper edge of the back.

2. A holder for cards or the like, comprising a back-board, and a series of sheet-metal holders secured thereto, each consisting of a back having forwardly-projecting flanges at the bottom and sides and a rearwardly-projecting flange at the top, the latter flange being engaged over the bottom flange of the next holder above.

814,439. **WINDOW-FASTENER.** ROBERT G. FRAZER, Philadelphia, Pa. Filed Apr. 27, 1905. Serial No. 257,692.



Claim.—The combination of a barrel provided with means whereby it may be mounted upon a window-sash or the like, said barrel being provided with a spiral slot, a revoluble head mounted within said barrel, a stem passing radially through said slot and engaging said revoluble head, a sleeve encircling said stem, a nut threaded upon said stem and movable relatively to said sleeve for the purpose of clamping said stem at different angles relatively to said barrel, a plunger mounted within said barrel and loosely connected with said revoluble head, said plunger being provided with a central aperture, and a cushion of resilient material mounted upon said plunger and provided with a portion extending into said central aperture thereof.

814,440. **GARMENT-SUPPORT.** MATTHEW S. GOLDMAN, Pittsburg, Pa. Filed Apr. 27, 1905. Serial No. 257,613.



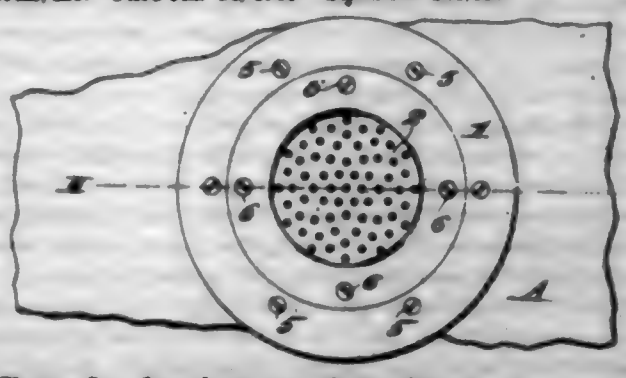
Claim.—1. A garment-support of the character described comprising two members, one of said members consisting of a curved plate having a substantially wedge-shaped opening formed therein, a stud carried by each end of said plate, the second member consisting of pieces of metal adjustably connected together by elastic tape, said pieces of metal having substantially keyhole-shaped slots formed therein, adapted to engage over said studs, and tabs carried by said pieces of metal, substantially as described.

2. A garment attachment of the character described comprising two members, one of said members consisting of a curved plate, said plate having a substantially wedge-shaped opening formed therein, studs carried by said plate, the second member consisting of pieces of metal adjustably connected together, tabs carried by said pieces of metal, and means to secure said pieces of metal in engagement with said studs, substantially as described.

3. A garment-support of the character described consisting of a plate, studs carried by said plate, separate pieces of metal adapted to engage over said studs, a piece of flexible material connecting said pieces of metal together, means to retain said pieces of metal in engagement with said studs, and means to secure a garment to said plate, substantially as described.

4. A garment-support of the character described consisting of a curved plate adapted to partially embrace a limb, pieces of metal adjustably connected together, means to secure said pieces of metal in engagement with said plate means to retain a garment between said pieces of metal and said plate, and means to secure a piece of garment to said plate, substantially as described.

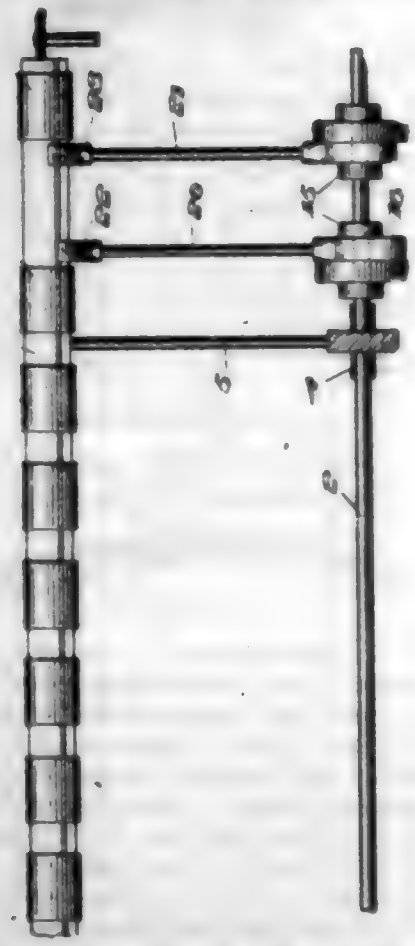
814,441. **FLOOR DRAIN AND TRAP.** HARRY C. GRADWOHL, St. Louis, Mo. Filed Jan. 14, 1905. Serial No. 241,107.



Claim.—In a floor-drain trap, the combination of a supporting-ring having an annular recess therein, a strainer seated in the recess of the ring, a basin having a screw-threaded upper part and provided with an annular flange detachably secured to the ring, inlet and out-

let pipes connected to said basin, and a seal-tube having a screw-threaded upper end engaging with the screw-threads on the upper part of the basin and having its lower end open and extending downwardly in said basin beyond said pipes; said seal-tubes being provided with spanner-receiving lugs.

814,442. CARRIER-SUPPORT FOR CAN-MACHINES. Charles W. Graham, Rome, N. Y., assignor to Utica Industrial Company, Rome, N. Y., a Corporation of New York. Filed Nov. 14, 1904. Serial No. 233,577.



Claim.—1. In a machine of the class described, in combination, a supporting member, a plurality of supports for the same, and means adapted to withdraw said supports from engagement therewith said means being adapted to maintain one of said supports at all times in engagement with said supporting member.

2. In a machine of the class described, in combination, a supporting member, two supports for the same, and means adapted alternately to withdraw said supports from engagement therewith said means being adapted to maintain one of said supports at all times in engagement with said supporting member.

3. In a machine of the class described, in combination, a supporting member, two supports for the same, and means adapted alternately to withdraw said supports from engagement therewith.

4. In a machine of the class described, in combination, a supporting member, two supports adapted to engage the same, and means adapted alternately to withdraw and replace said supports said means being adapted to replace each of said supports before each withdrawal of the other thereof.

5. In a machine of the class described, in combination, means adapted to support and guide a can-body, a plurality of members adapted to support the end thereof, means adapted to propel said can-body along said first-mentioned means, and means adapted consecutively to withdraw said supports from engagement therewith upon said can-bodies reaching a position opposite to the same.

6. In a machine of the class described, in combination, means adapted to support and guide a can-body, a plurality of members adapted to support the end thereof, means adapted to propel said can-body along said first-mentioned means, and positively-acting means adapted consecutively to withdraw said supporting members upon said can-body reaching a position opposite the same.

7. In a machine of the class described, in combination, means adapted to support and guide a can-body, a plurality of members adapted to support the end thereof, means adapted to propel said can-body along said first-mentioned means, and positively-acting means adapted consecutively to withdraw said supporting members upon said can-body reaching a position opposite the same, said propelling means and withdrawing means being driven from a single source of power.

8. In a machine of the class described, in combination, a horizontal supporting member, two vertical supports for the same, and means adapted alternately to withdraw said supports from engagement therewith the end of said horizontal supporting member adjacent said vertical supports being free from engagement with fixed supporting means at all times.

9. In a machine of the class described, in combination, a horizontal member adapted to support and guide a can-body, a plurality of members adapted to support the end thereof, means adapted to propel the can-body along said first-mentioned member, and means adapted consecutively to withdraw said second-mentioned members from operative position upon said can reaching a position opposite thereto.

10. In a machine of the class described, in combination, a supporting member, a driving-shaft, a plurality of members extending from said driving-shaft and adapted to support the end of said first-mentioned member, and a plurality of angularly-displaced positively-acting cams upon said driving-shaft having a connection with said second-mentioned members and adapted consecutively to withdraw the same from engagement with said first-mentioned member said cams being adapted to maintain at all times one of said second-mentioned members in engagement with said first-mentioned member.

11. In a machine of the class described, in combination, a member adapted to support and guide a can-body, means adapted to propel the can-body upon the same, a plurality of supporting members adapted to support the end of said first-mentioned means, and a plurality of cams angularly displaced with reference one to another adapted consecutively to withdraw said supporting members upon said cams reaching a position opposite thereto.

12. In a machine of the class described, in combination, a carrier, means adapted to propel a can-body along the same, a driving-shaft, two supporting members extending from said driving-shaft and adapted to support the end of said carrier, and cams upon said shaft having an angular displacement with reference one to another and adapted alternately to withdraw said supports from engagement with the end of said carrier.

13. In a machine of the class described, in combination, a carrier, means adapted to propel a can-body along the same, a driving-shaft, two supporting members extending from said driving-shaft and adapted to support the end of said carrier, and cams upon said shaft having an angular displacement with reference one to another and adapted alternately to withdraw said supports from engagement with the end of said carrier upon said cams reaching a point substantially opposite thereto.

14. In a machine of the class described, in combination, a supporting member, means adapted to support one end thereof, and means adapted to propel a can-body along said supporting member at a uniform rate of speed throughout a portion thereof and at a greater rate of speed throughout another portion thereof, said second-mentioned portion including that opposite said supporting means.

15. In a machine of the class described, in combination, a carrier, means adapted to support one end thereof, a chain adapted to propel a can-body along said carrier at a uniform rate of speed throughout a portion thereof, and a second chain adapted to propel the same at a greater rate of speed throughout another portion thereof, said second-mentioned portion including that opposite said supporting means and said chains being driven from a common source of power.

16. In a machine of the class described, in combination, a carrier, means adapted to support one end thereof, a shaft, two sprockets of different diameters fixed upon said shaft, a sprocket-chain upon the larger of said sprockets running substantially parallel with the portion of said carrier opposite said supporting means, a sprocket-chain upon the smaller of said sprockets running substantially parallel to the remainder of said carrier, and arms upon said sprocket-chains adapted to engage and propel can-bodies upon said carrier.

17. In a machine of the class described, in combination, a supporting member, a plurality of supports for the same, means adapted consecutively to withdraw said supports from engagement therewith, and means adapted to propel a can-body along said supporting member at a uniform rate of speed throughout a portion thereof and at a greater rate of speed throughout another portion thereof, said second-mentioned portion including that opposite said supporting members.

18. In a machine of the class described, in combination, a carrier, a plurality of supporting members adapted to support one end thereof, means adapted consecutively to withdraw said supporting members from engagement therewith, a chain adapted to propel a

can-body along said supporting member at a uniform rate of speed throughout a portion thereof, and a chain adapted to propel said can-body at a greater rate of speed throughout another portion thereof, said second-mentioned portion including that opposite said supporting members.

19. In a machine of the class described, in combination, a carrier, two supporting members adapted to support the end thereof, means adapted alternately to withdraw and replace said supporting members, a chain adapted to propel a can-body along said carrier a a uniform rate of speed throughout a portion thereof, and a chain adapted to propel said can-body along the remainder of said carrier at a greater rate of speed, said second-mentioned portion including that opposite said supporting members.

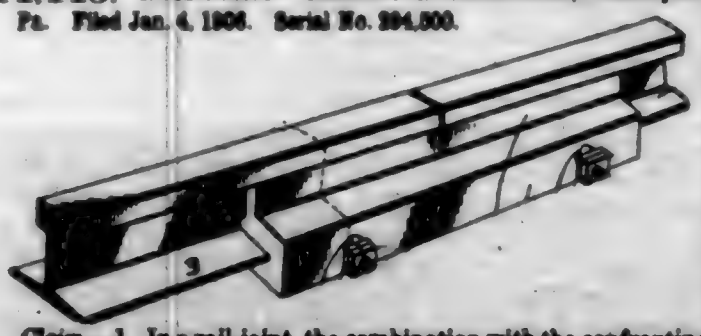
20. In a machine of the class described, in combination, a horizontal carrier, a pair of supporting members adapted to support one end thereof, positively-acting means adapted alternately to withdraw said supporting members from engagement with said carrier, a propelling-chain adapted to drive said can-bodies at a uniform speed throughout a portion of the length of said carrier, and a chain adapted to propel said can-bodies at a greater speed throughout another portion of said carrier, said second-mentioned portion including that opposite said supporting members and said chains and said supporting members being driven from a common source of power.

21. In a machine of the class described, in combination, a carrier, a plurality of supporting members adapted to support one end thereof, a driving-shaft, a plurality of cams fixed upon said driving-shaft and having an angular displacement with reference one to another, a connection between said cams and said supporting members whereby said cams are adapted to withdraw said supporting members consecutively from engagement with said carrier, a sprocket-chain adapted to propel a can-body along said carrier at a uniform rate of speed throughout a portion thereof, and a second chain adapted to propel said can-body at a greater rate of speed throughout another portion of said carrier, said second-mentioned portion including that opposite said supporting members.

22. In a machine of the class described, in combination, a carrier, a plurality of supporting members adapted to support one end thereof, a driving-shaft, a plurality of cams fixed upon said driving-shaft and having an angular displacement with reference one to another, a connection between said cams and said supporting members whereby said cams are adapted to withdraw said supporting members consecutively from engagement with said carrier, a sprocket-chain adapted to propel a can-body along said carrier at a uniform rate of speed throughout a portion thereof, and a second chain adapted to propel said can-body at a greater rate of speed throughout another portion of said carrier, said second-mentioned portion including that opposite said supporting members and said chains being driven from sprocket-wheels of different diameters fixed upon a single shaft.

23. In a machine of the class described, in combination, a horizontal carrier, a pair of supporting members adapted to support the end thereof, a driving-shaft, a pair of cams upon said driving-shaft having an angular displacement with reference one to another and connected respectively to said supporting members, said cams being adapted alternately to withdraw and replace said supporting members from engagement with said carrier, a second shaft, a connection whereby said second shaft is driven from said driving-edaft, a pair of sprockets of different diameters upon said second shaft, a sprocket-chain upon the smaller of said sprockets extending substantially parallel to said carrier and adapted to propel a can-body thereon throughout a portion of its length, and a sprocket-chain upon the larger of said sprocket-wheels adapted to propel said can-body thereon throughout another portion of said carrier, said second-mentioned portion including that opposite said supporting means.

814,443. **RAIL-JOINT.** GEORGE C. H. HASSEMANN, McKeesport, Pa. Filed Jan. 4, 1906. Serial No. 294,500.



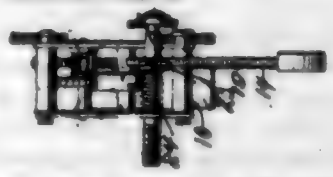
Claim.—1. In a rail-joint, the combination with the confronting ends of two sections of rails, the base-flanges of said rails having notches formed therein, of members adapted to embrace the web portions and base-flanges of said rails, said members having transverse openings formed therein, ribbed collars mounted in said openings and adapted to engage the notches of said rails, bolts passing through said collars and locking said members in engagement with said rails, substantially as described.

2. In a rail-joint, the combination with the confronting ends of two sections of rails, the base-flanges of said rails having notches formed therein, of members embracing said rails, said members having transverse alining openings formed therein, collars mounted in said openings and adapted to engage in the notches of said rails, and means to retain said collars within said openings, substantially as described.

3. In combination with sections of rails, the base-flanges of said rails having notches formed therein, of members embracing said rails, collars mounted in said members and engaging in the notches of said rails, means to retain said collars therein, and means to retain said members in engagement with said rails, substantially as described.

4. In combination with rails, members adapted to embrace said rails, ribbed collars mounted in said members and engaging said rails, and means to lock said collars within said members, substantially as described.

814,444. **ALARM-BELL.** ARNOLD J. HANCOCK, Chicago, Ill. Filed Nov. 21, 1904. Serial No. 233,748.



Claim.—1. The combination with a bell, of a push-pin controlling the operation thereof, and means for operating the push-pin comprising a lever pivoted to the bell and having a depression into which one end of the pin normally extends to hold the bell inactive, said pin being actuated to release the bell when the lever is swung in either direction.

2. The combination with a bell, having an escapement-wheel, a pallet, and a hammer carried by the pallet, of a push-pin constructed to engage the hammer-stem and normally prevent vibration of the pallet, and a lever pivoted to the bell and having a depression into which the pin extends when the pallet is held, said pin being actuated to release the pallet when the lever is swung in either direction.

3. The combination with a bell, of a push-pin controlling the operation thereof, and means for operating the push-pin, comprising a lever pivoted to the bell and having a depression into which one end of the pin normally extends to hold the bell inactive, said pin being actuated to release the bell when the lever is swung in either direction, a pull connected to the lever to swing it in one direction, and a spring connected to the lever to swing it in the other direction.

4. The combination with a bell, of a push-pin controlling the operation thereof, and a lever pivoted to the bell and bearing against the pin and constructed to release the same when swung.

814,445. **FASTENER.** HARRY S. HANSTINE and JAMES F. THOMPSON, Pittsburg, Pa. Filed July 16, 1904. Serial No. 216,812.



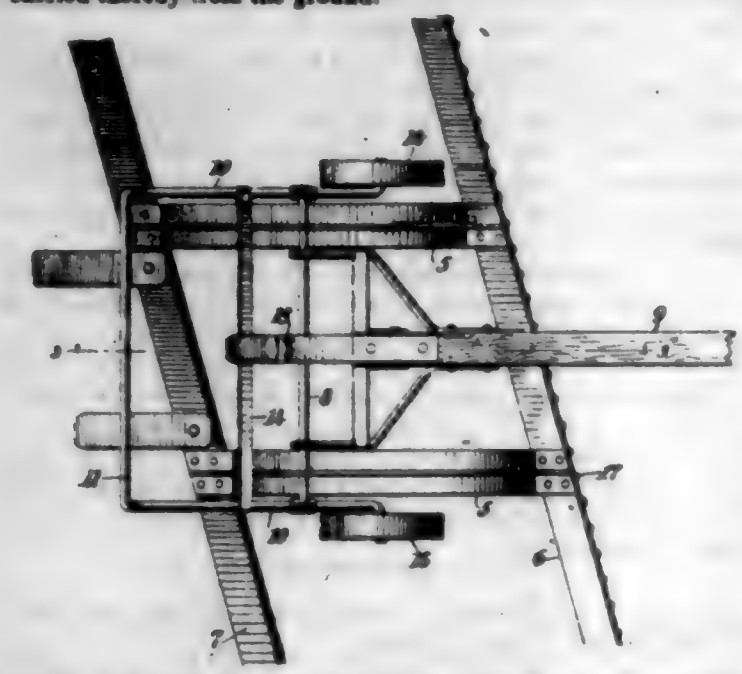
Claim.—1. In a fastening for shoes, the combination with an underlying flap and a plurality of stirrups riveted to the said flap, each stirrup comprising a U-shaped piece and a cross-pin, of an overlying flap and a plurality of hooks riveted to the overlying flap, each hook extending inwardly from the point of attachment to the fly and having a bent end returned on the body of the hook adjacent the inner surface of the overlying flap.

2. The combination with a shoe-upper having an overlying flap and underlying flap, of curved hooks attached to one flap on the under side thereof, buttons having shanks which serve to attach said hooks to said flap, the said hooks being formed with return-bends on their ends, and stirrups rigidly secured to the underlying flap, said stirrups engaging said hooks.

814,446. **DIRT-SCRAPER.** JOSEPH HARTER, Tiffin, Ohio. Filed Mar. 18, 1905. Serial No. 250,756.

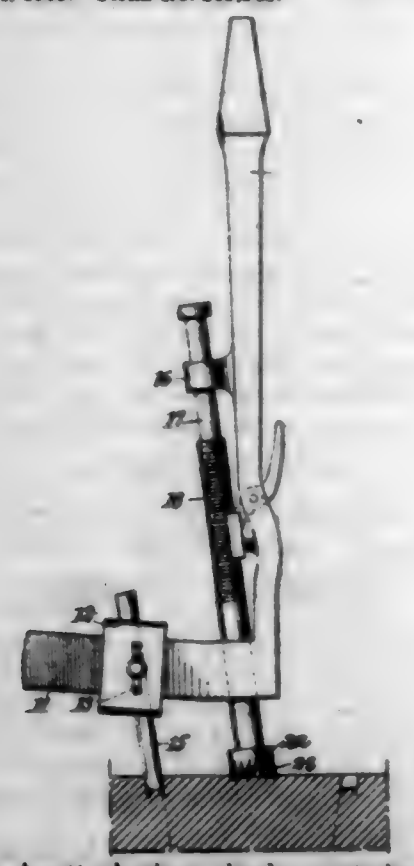
Claim.—1. A dirt-scraper comprising a frame having side bars, a front bar and a rear bar, the said front and rear bars being ar-

ranged diagonally with relation to said side bars, a rod mounted to turn in bearings in the side bars, a handle having side bars connected to said rod, wheels pivoted to said side members, and means for holding the wheels in downward position to raise the frame and the blades carried thereby from the ground.



2. A dirt-scraper comprising a frame having side members and front and rear members, the said front and rear members being arranged diagonally with relation to the side members, breaking-teeth carried by the front member, a scraper carried by the rear member, a rod having bearings in the side members, a tongue having swinging connection with said rod, a handle having side members connected to said rod, wheels mounted on the side members below their connections with said rod, a bar connecting with the side members of the handle, and a hook-clip for engaging with said bar.

814,447. CUTTING-TOOL. John B. Hawley, Walton, N. Y. Filed June 6, 1905. Serial No. 263,945.



Claim.—1. A cutter having a shank, a centering device mounted on an inclined axis with respect to the axis of the shank, means on the shank for holding a cutting-tool, and means for feeding the tool in a line parallel with the centering device.

2. A cutter having a shank by which it is adapted to be rotated, a centering device mounted on an inclined axis with respect to the axis of the shank, the axis of the centering device crossing the axis of the shank at a point beyond the end of the shank, means on the shank for holding a cutting-tool, and means for feeding the tool in a line parallel with the centering device.

3. A cutter having a shank for engaging a stock or handle, a centering device inclined with respect to said shank, a tool rigidly mounted with respect to the shank, and means for feeding the tool along the centering device in a line parallel therewith.

4. An implement of the class described, comprising a shank, a bar slidably mounted thereon at an angle thereto, a projection upon the shank, and means on the projection for mounting a tool in a position parallel with said bar.

5. An implement comprising a shank, a bar at an angle to the shank slidably and rotatably mounted with respect thereto, said bar having means for engaging work and centering the implement, and means for supporting a tool rigidly with respect to the shank and on a line parallel with said bar.

6. An implement comprising a shank, a bar at an angle to the shank slidably and rotatably mounted with respect thereto, said bar having means for engaging work and centering the implement, means for supporting a tool rigidly with respect to the shank and on a line parallel with said bar, and means for feeding said bar in an upward direction as the implement is rotated.

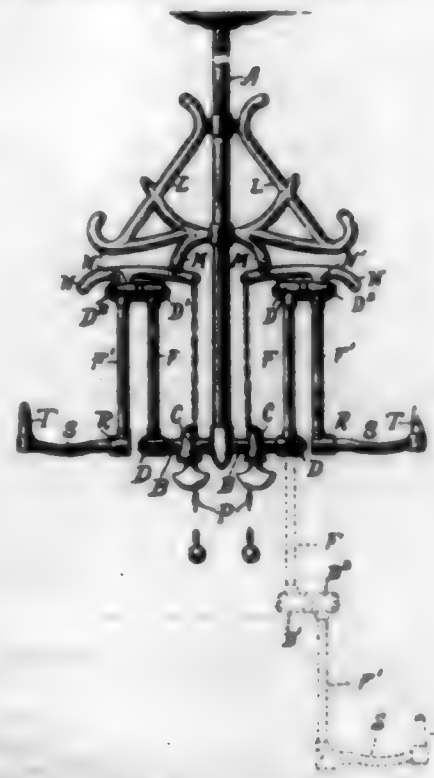
7. An implement comprising a vertical shank, an inclined bar slidably and rotatably mounted with respect thereto, said bar having means for engaging work and centering the implement, means for supporting a tool rigidly with respect to the shank and on a line parallel with said bar, and means for feeding said bar in an upward direction as the implement is rotated; said means comprising screw-threads upon the bar, and a jaw connected with the shank and adapted to engage said screw-threads.

8. An implement comprising a shank, means for mounting a cutting-tool thereon, a bar slidably mounted upon the shank in an inclined position, means for preventing said bar from turning upon its own axis as the implement is rotated, said bar being provided with screw-threads, and a lever mounted on the shank and having a jaw provided with teeth for engaging said screw-threads.

9. An implement comprising a shank, means for mounting a cutting-tool thereon, a bar mounted on the shank in an inclined position, and means for feeding the bar along the shank when the implement is rotated.

10. An implement comprising a shank, means for mounting a cutting-tool thereon, a bar slidably mounted upon the shank in an inclined position, said bar being provided with screw-threads, and a lever mounted on the shank and having a jaw provided with teeth for engaging said screw-threads.

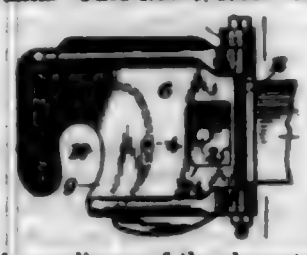
814,448. GAS-LIGHT CHANDELIER. Michael Hirth, Butler Pa. Filed Mar. 10, 1904. Serial No. 197,579.



Claim.—In a gas-fixture, the combination of a main supply-pipe, two branch pipes arranged at the lower end thereof, two independently-movable drop-lights which are composed of two sections, one of which is independently swiveled on the end of each branch pipe, and both of which are attached to a swivel, the connection with the branch pipe and the said swivel being so constructed as to permit of the passage of gas through the drop-light at all positions of the same, brackets carried by said main supply-pipe and catches pivoted on said brackets and adapted to engage the swivel connection of the two

sections of the said drop-lights and chains attached to said catches and extending below said branch pipes.

814,449. APPLIANCE FOR CAR-COUPLINGS. PETER W. HOGAN, Durand, Mich. Filed Nov. 3, 1905. Serial No. 285,719.

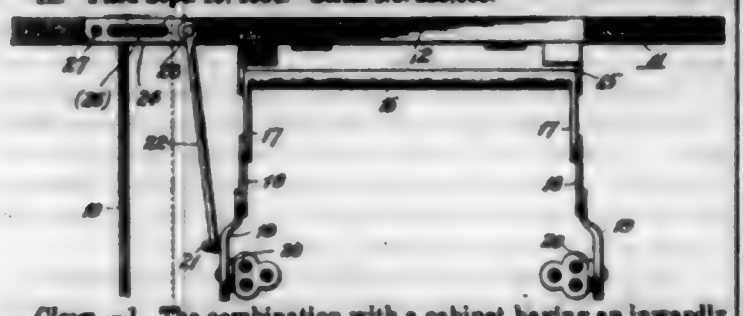


Claim.—1. An appliance of the character specified, comprising a hood adapted to be applied to a head of a car-coupling, having a recess therein, and provided with a knuckle and a jaw, separated by a space, the jaw being formed in correspondence with the recess.

2. An appliance of the character specified, comprising a hood adapted to be applied to a hood of a car-coupling, having an open side, and an opening in its opposite side, and provided with means for engagement therewith of a knuckle carried by the other head of the coupling, a detachable member applied to the open side of the appliance, and means for securing said member to the appliance, and for securing the latter in place upon said first-named head.

3. An appliance for car-coupling heads having recesses, comprising a knuckle and a jaw separated by a space, the jaw being formed in correspondence with the recess, and means for securing the appliance to the head with the jaw in the recess.

814,450. SEWING-MACHINE CABINET. EMIL G. JOHANSON, Rockford, Ill., assignor to John Mortenson and Frank Johnson, Chicago, Ill. Filed Sept. 19, 1904. Serial No. 225,004.



Claim.—1. The combination with a cabinet having an inwardly folding leaf, of a set of knee-jointed links supporting the same, a thrust bar attached thereto for breaking the joints of said folding links, a slotted sliding link positively engaging a pivot pin fixed in the fixed top of the table, and means operated from outside the cabinet to slide the link on the pin and thrust the thrust bar, the sliding link being adapted to change its leverage on its pivot pin as the folding leaf is thrust downward and to exert positive leverage force on the thrust bar in both directions, substantially as described.

2. In a lift and drop sewing machine cabinet, the combination with the machine supporting leaf hinged in an opening in the top, of a set of knee-jointed links pivoted to said cabinet and to the leaf to support the same, a thrust bar pivoted at one end to one of said knee jointed links and at the other end to a sliding and rotating lever, and means operated from outside the cabinet and actuating said lever, to raise the thrust bar and means whereby the raising of the thrust bar moves the folding knee jointed links downward to a position for supporting the hinged leaf within the opening.

3. In a sewing machine cabinet, an inwardly folding leaf, a set of knee-jointed links normally supporting said leaf, a spring and connected gear for normally holding the knee-jointed links in extended position, and mechanism operated from outside the cabinet for breaking the joints of said knee-jointed supporting links to lower the table.

4. In a cabinet an inwardly folding leaf and means for supporting and moving said leaf, comprising a set of knee-jointed links normally in alinement, a lever and a connected thrust rod for breaking the joints of said links, a supplemental fly leaf and a thrust lever pivoted thereto, said lever being slidingly pivoted upon the cabinet, whereby raising the supplemental fly leaf moves the sliding lever and breaks the knee-jointed links to lower the main fly leaf, substantially as described.

5. In a lift and drop sewing machine cabinet, the combination with the machine supporting leaf hinged in an opening in the top, of a set of knee jointed links pivoted to said cabinet and to the leaf to move and support the same, a thrust bar pivoted at one end to one of said knee jointed links and at the other end to a sliding and rotating lever, and means operated from outside the cabinet and actuating said lever, to thrust the said bar downward, and means whereby the lowering of the thrust bar breaks the knee jointed links from extended position and folds the same upward thus bringing the hinged leaf to a position below the opening.

814,451. HAT-FASTENER. SPENCE M. JOHNSTONE, New York, N. Y. Filed June 13, 1905. Serial No. 264,960.



Claim.—1. A hat-fastener, comprising two bars, one being provided with a transverse loop and with a longitudinal shank extending from the central portion of said loop, said shank being provided with a head and the other bar being provided with a hook passing through said loop and adapted to engage said shank.

2. A hat-fastener comprising two bars arranged in substantially parallel position with respect to each other and connected together at their inner ends, one of said bars being provided with a transverse loop and with a longitudinal shank extending from the central portion of said loop, said shank being provided with a head, and the other bar being provided with a curved sharpened hook passing through said loop and adapted to engage said shank.

3. A hat-fastener comprising a wire having a transverse loop near one end, and a bar extending from the loop and adapted to be passed through a hat, said bar being bent at its inner end and forming a second bar having a hook on its outer end for engaging said loop to hold the two bars together.

4. A hat-fastener, comprising a single piece of wire having a transverse loop near one end, and a bar extending from the loop and adapted to be passed through a hat, said bar being bent at its inner end and forming a second bar adapted to pass again through the hat, and having a pointed hook on its outer end adapted to engage said loop and hold the two bars together.

814,452. METAL-LEACHING PROCESS. THOMAS B. JOSEPH, San Francisco, Cal. Filed Aug. 23, 1904. Serial No. 221,266.

Claim.—1. The herein-described process of extracting gold and silver from ore containing the same when in a suitable condition, which consists in subjecting said ore to the leaching action of an aqueous solution containing sodium cyanid, hydrate of calcium, barium dioxid, and ammonium bicarbonate, substantially as described.

2. The herein-described process of extracting gold and silver from ore containing the same when in a suitable condition, which consists in subjecting said ore to the leeching action of an aqueous solution containing sodium cyanid, hydrate of calcium, barium dioxid, ammonium bicarbonate, and simultaneously agitating the ore with compressed air, substantially as described.

814,453. COMPASSES. HERMANN KERN, Aarau, Switzerland. Filed Mar. 14, 1905. Serial No. 250,227.



Claim.—1. In a mathematical instrument, the combination, with the two head-plates and a clamping device therefor, of a handle connected with the clamping device and provided with an axial bore, a forked piece longitudinally displaceable in the bore, and having the extremities of its prongs turned in opposite directions laterally to engage recesses in the head-plates.

2. In a mathematical instrument, the combination, with the two head-plates, a slotted plate arranged between the head-plates, and a clamping device therefor, of a handle connected with the clamping

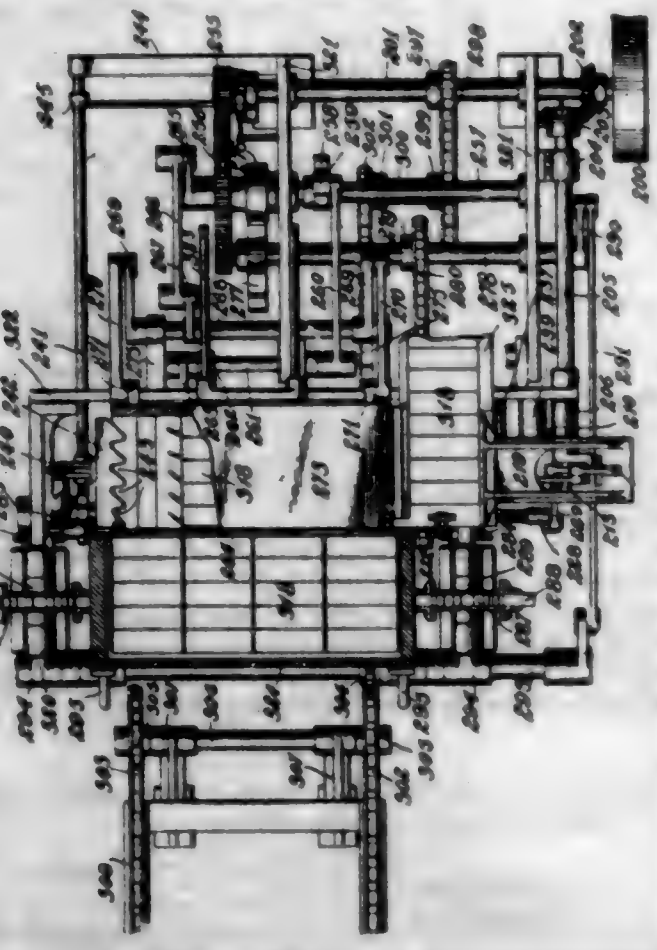
device and provided with an axial bore, a forked piece longitudinally displaceable in the bore with its prongs lying in the slots, and a connection between the ends of the prongs and the head-plates.

3. In a mathematical instrument, the combination, with the two head-plates, a slotted plate arranged between the head-plates, a yoke embracing the plates, and a clamping device passing through the yoke and plates, of a handle connected with the yoke and provided with an axial bore, a forked piece longitudinally displaceable in the bore with its prongs lying in the slots, and a connection between the end of each of the prongs and one of the head-plates.

4. In a mathematical instrument, the combination, with the two head-plates, a disk arranged between the head-plates and provided with curved slots extending on each side of its axis, a yoke embracing the plates and disk, and a clamping device passing through the yoke-plates and disk, of a handle connected with the yoke and provided with an axial bore, a forked spring having its stem longitudinally displaceable within the bore with its prongs lying in the curved slots, and lugs extending in opposite directions from the extremity of each prong into engagement one with each of the head-plates.

5. In a mathematical instrument, the combination, with the two head-plates, a disk arranged between the head-plates, and provided with curved slots extending on each side of its axis with an interposed spur extending radially from the axis, a yoke embracing the head-plates and disk, a threaded bolt passing through the yoke, head-plates and disk and provided with a conical shoulder forming a pivot bearing upon one of the head-plates, a second conical pivot embracing the bolt and bearing against the other head-plate, pins securing the pivots against rotation, and a lock-nut on the threaded end of the bolt, of a handle connected with the yoke and provided with an axial bore, a forked spring-piece having its stem longitudinally displaceable in the bore with its prongs lying in the slots on each side of the spur, and lugs extending laterally in opposite directions one from the extremity of each prong and engaging with one of the head-plates.

814,454. PACKING-MACHINE. James A. Keyes, New York, N. Y. Filed Feb. 1, 1904. Serial No. 191,430.



Claim.—1. In packing-machines, a chute for supplying articles, a table adjacent said chute, a carrier mounted on said table, a plunger adjacent said chute, means to operate said plunger, said means comprising a trigger in the path of said articles to be engaged by the foremost article of a row, a stop between said chute and said table and means to operate said stop when said plunger is operated, a latch adjacent said table, means to operate said carrier when said latch is engaged by the foremost row of a layer of articles in said carrier, box-feeding means and means adjacent said table to engage said articles inserted into said box by said carrier.

2. In packing-machines, a table, a substantially inclosed carrier mounted on said table, means to feed a series of articles into said carrier, means to operate said carrier, a stop adjacent said table and means to operate said stop to engage said articles in said carrier when said carrier is operated.

3. In packing-machines, a table, a substantially inclosed carrier mounted on said table, means to operate said carrier to insert articles into a receptacle, a stop coöperating with said carrier and means to operate said stop to discharge the articles from said carrier after their insertion into said receptacle.

4. In packing-machines, a table, a carrier comprising a series of supporting-plates, means to operate said carrier to insert articles into a receptacle, and a stop to pass between said plates and to engage the articles in said carrier after they are inserted in said receptacle.

5. In packing-machines, a box-guide, a feeding-chain coöperating with said box-guide, spring-pressed pawls mounted on said chain at distances corresponding with and equal to a multiple of the thickness of layers of articles to be inserted in boxes and a discharger coöperating with said guide to remove boxes therefrom.

6. In packing-machines, a box-guide to receive a series of boxes, means to insert articles in said boxes, feeding means coöperating with said guide, spring-pressed lugs on said means spaced apart at distances corresponding with and equal to a multiple of the thickness of layers of articles in said boxes and a pivoted discharger at the end of said guide and spring-pressed retainers opposite said discharger to remove filled boxes from said guide.

7. In packing-machines, a box-guide to support boxes, means to insert articles horizontally into said boxes, means to feed said boxes along said guide and a discharger coöperating with said guide to remove filled boxes therefrom and to turn them over with their open sides uppermost.

8. In packing-machines, a vertical box-guide to receive boxes, means to insert articles into said boxes, means to feed said boxes vertically during the insertion of said articles and a discharger to receive the filled boxes and to rotate them out of said guide to turn the open side of said boxes upward.

9. In packing-machines, a chute to supply articles, a table adjacent said chute and on the same level therewith, a carrier coöperating with said table, a spring-pressed latch adjacent said table to operate said carrier, a plunger to transfer articles from said chute upon said table and a stop between said table and said chute to engage said transferred articles and hold them on said table.

10. In packing-machines, a chute to supply wrapped articles, a table adjacent said chute, means to transfer articles from said chute to said table, a carrier to discharge said articles from said table and a notched latch-bar adjacent said table to be engaged by the foremost row of said articles to actuate said carrier.

11. In packing-machines, a chute to supply wrapped articles, a table adjcent said chute to receive articles therefrom, means to discharge said articles from said table and a latch-bar adjacent said table to be engaged by said articles to actuate said means, said latch-bar having recesses to engage said articles without disturbing their wrappers.

12. In packing-machines, a table, a carrier coöperating with said table to receive and support articles, means to operate said carrier to insert articles into a receptacle and a stop coöperating with said carrier to discharge the articles therefrom after their insertion into said receptacle.

13. In packing-machines, a carrier to receive and support articles, means to operate said carrier to insert said articles into a receptacle and means to engage said articles to discharge them from said carrier after their insertion into said receptacle.

14. In packing-machines, a movable carrier to receive a series of articles and insert them into a receptacle and a stop coöperating with said carrier to discharge the articles therefrom after their insertion into said receptacle.

814,455. CAR-SEAT. John B. Kilburn, Philadelphia, Pa., assignor to The Hale & Kilburn Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 18, 1904. Serial No. 213,170.

Claim.—1. In a car-seat, the combination with a frame and a movable cushion supported thereby, of a back, supporting-arms therefor carried by said frame below the cushion, and a lever pivoted to one of said arms and connected with said back, said lever coacting with either of two stops carried by the seat, substantially as set forth.

2. In a car-seat, the combination with a frame, of a cushion supported thereby, a back pivotally carried upon back-supporting arms

movable forward and rearward, a lever carried by one of said arms and pivotally connected with the lower edge of said back, its lower end being free and means for operating said lever upon movement of the parts to one or another operative position to effect the rearward movement of such lower edge of said back, substantially as set forth.



3. In a car-seat, the combination with a frame and a cushion supported thereby, of a back-supporting arm, a back pivotally carried thereby and having an end plate, a lever carried by said arm and coacting with a recess in said end plate, and means, including stops carried by said cushion, for automatically actuating said lever upon movement of said back-supporting arm to operative position, substantially as set forth.

4. In a car-seat, the combination with a frame, of a cushion supported upon movable rockers carried by said frame, back-supporting arms supported by said frame, a back pivoted to said arms, and a lever pivoted to one of said arms, its upper end coacting with the lower edge of said back and its lower end coacting with stops carried by one of said rockers, substantially as set forth.

5. In a car-seat, the combination with a frame and cushion, of back-supporting arms, a back pivotally mounted therein and having a slotted plate at one end thereof, a lever pivoted to one of said arms and having at its upper end a stud or sheave coacting with the slot in said plate, and two fixed stops adapted to be engaged by the lower end of said lever when the back is approaching the end of a movement to one or the other of its operative positions, substantially as set fortth.

6. In a car-seat, the combination with a frame, of rockers pivoted thereto and supporting a seat-cushion, back-supporting arms movably carried by said frame, a back pivoted to said arms, and a lever also pivoted to said arms, its upper end being provided with a stud or sheave coacting with a slot in said back and its lower end coacting with stops carried by said rockers, substantially as set forth.

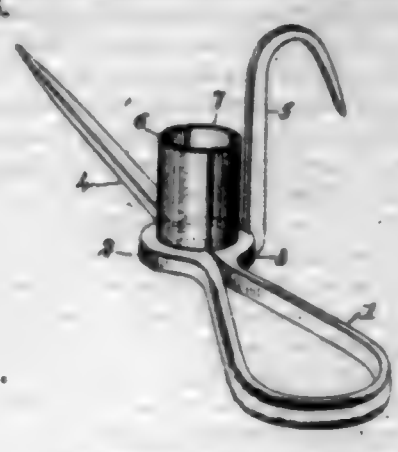
7. In a car-seat, the combination with a frame, of rockers pivoted thereto and supporting a seat-cushion, back-supporting arms movably carried by said frame and coacting with said rockers, a back pivoted to said arms, and a lever also pivoted to said arms, its upper end being provided with a stud or sheave coacting with a slot in said back and its lower end coacting with stops carried by said rockers, substantially as set forth.

8. In a car-seat, the combination with a frame and a cushion movably supported thereby, of back-supporting arms movably supported at their lower ends upon ribs or flanges carried by said frame, a back pivotally mounted upon said arms, and means controlled by said arms and including a lever carried by said arms and coacting with said back at one end and free at the other end for automatically moving said back relatively thereto on the approach of said arms to either operative position, substantially as set forth.

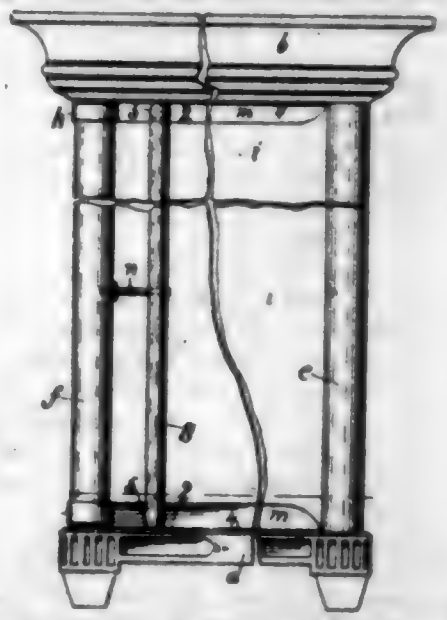
814,456. CANDLESTICK. Joseph Kindelan, Leadville, Colo. Filed Oct. 14, 1905. Serial No. 283,794.

Claim.—A miner's candlestick comprising a body portion consisting of a single length of spring-steel bent to form a loop terminating in segmental portions; a spike extending from one of the segmental portions; a hook on one end of the segmental portions and segmental plates secured to said segmental portions.

814,456.



814,457. WARDROBE. Ludwik Kosciowski, New York, N. Y. Filed Oct. 5, 1904. Serial No. 227,190.



Claim.—1. In a wardrobe, cabinet or similar structure, the combination with a flexible-material curtain, of a fixed column at one side to which one vertical edge of said curtain is secured, a roller to which the other vertical edge of said curtain is secured, bearing-plates forming pivots at the ends of said roller, a rod to be grasped by hand standing between and secured to said plates parallel with said roller, grooved rollers secured to the opposite ends of said hand-rod, tracks for the same and grooves for the plates in the upper surface of the bottom and under surface of the top of the cabinet, the same forming straight-line guiding devices across the front of the wardrobe or cabinet upon which the said devices move, and means for insuring the winding up of the curtain on said roller with the movement of said parts.

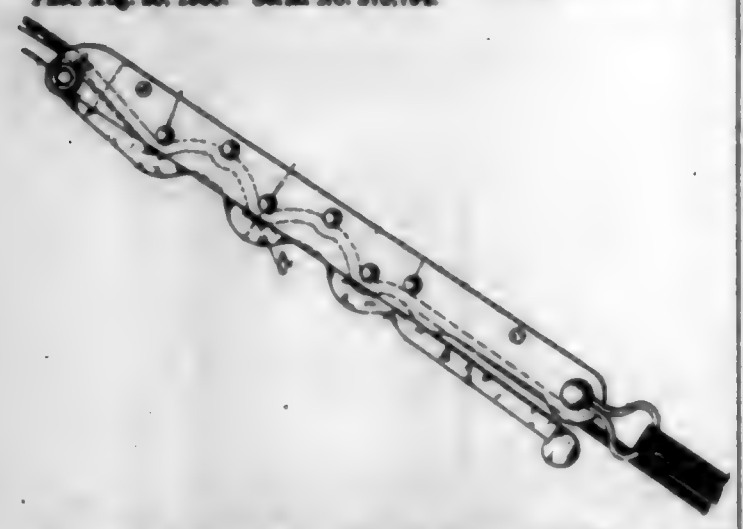
2. In a wardrobe, cabinet or similar structure, the combination with a flexible-material curtain, of a fixed column at one side to which one vertical edge of said curtain is secured, a roller to which the other vertical edge of said curtain is secured, bearing-plates forming pivots at the ends of said roller, a rod to be grasped by hand standing between and secured to said plates parallel with said roller, grooved rollers secured to the opposite ends of said hand-rod, tracks for the same and grooves for the plates in the upper surface of the bottom and under surface of the top of the wardrobe, the same forming straight-line guiding devices across the front of the wardrobe or cabinet upon which the said devices move, bands secured to and extending around the opposite ends of the roller in the opposite direction to the flexible curtain, and a spring-controlled fastening for the opposite ends of said bands.

3. In a wardrobe, cabinet or similar structure open at the front, the combination with the bottom and top of the cabinet, of ribs secured to the under surface of the top and upper surface of the bottom near the front of the wardrobe, a fixed column at one side of the wardrobe, a manually-actuated series of devices including a roller forming the counterpart of the said column at the opposite side of the cabinet, a flexible curtain to close the cabinet connected along one vertical edge to the fixed column and along the other vertical edge to the said roller, the top and bottom edges of the curtain overlapping the said ribs so as to insure the closing of the wardrobe, and means forming guides for the manually-actuated series of devices during their movement back and forth across the front of the wardrobe.

4. In a wardrobe, cabinet or similar structure open at the front,

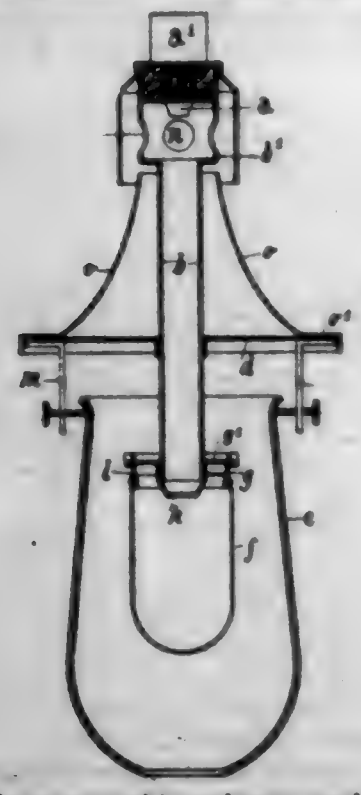
the combination with the bottom and top of the cabinet, of ribs secured to the under surface of the top and upper surface of the bottom near the front of the wardrobe, a fixed column at one side of the wardrobe, a manually-actuated series of devices including a roller forming the counterpart of the said column at the opposite side of the wardrobe, a flexible curtain to close the wardrobe connected along one vertical edge to the fixed column and along the other vertical edge to the said roller, the top and bottom edges of the curtain overlapping the said ribs so as to insure the closing of the wardrobe, means forming guides for the manually-actuated series of devices during their movement back and forth across the front of the wardrobe, and bands extending around the opposite ends of the said roller in the direction opposite to the winding of the flexible curtain, and spring tension devices to which the opposite ends of the said bands are secured so as to insure the winding up and the unwinding of the flexible curtain for opening and closing the wardrobe.

814,458. FIRE-ESCAPE. CHRISTIAN KRAHER, New York, N. Y. Filed Aug. 25, 1905. Serial No. 275,794.



Claim.—In a fire-escape, a friction device embodying parallel opposing plates one of which extends at one end beyond the other, a plurality of rope-guiding elements extending between said plates and irregularly offset from alinement with each other, and a clamping-bar pivoted to the overlapping portion of the plate which overlaps or extends beyond the other and movable between said plates, said bar being provided upon its inner edge with undulations conforming to the arrangement of said rollers.

814,459. INVERTED INCANDESCENT GAS-BURNER. ERWIN KRAHER, Berlin, Germany. Filed Apr. 20, 1904. Serial No. 204,084.



Claim.—1. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; and means for suspending the globe, substantially as described.

2. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe having air-admission apertures at its lower end; and means for supporting the globe, substantially as described.

3. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; and a protecting-globe fixed to the heating-plate, substantially as described.

4. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe which surrounds the lower part of the mixing-tube; and means for supporting the globe, substantially as described.

5. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber having air-admission apertures; a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; and a protecting-globe which surrounds the lower part of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the upper edge of the globe, substantially as described.

6. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube; a mouthpiece with a narrow mouth detachably fixed to the free end of the mixing-tube; a heating-plate arranged on the mixing-tube; a protecting-globe; and means for supporting the globe, substantially as described.

7. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube; a mouthpiece with a narrow mouth detachably fixed to the free end of the mixing-tube; a heating-plate arranged on the mixing-tube; and a protecting-globe which surrounds the lower part of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the edge of the globe, substantially as described.

8. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; means for supporting the globe; and a casing above the heating-plate which is closed in its lower part and incloses a mantle of hot air round the mixing-tube, substantially as described.

9. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe having air-admission apertures at its lower end; means for supporting the globe; and a funnel-shaped casing fixed upon the heating-plate, thus forming a chamber in which a mantle of hot air is inclosed round the mixing-tube, substantially as described.

10. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube with a contracted mouth; a heating-plate fixed with its center on the mixing-tube; a protecting-globe; means for supporting the globe; and a funnel-shaped casing fixed with a flange of its lower wider end to the upper face of the heating-plate, substantially as described.

11. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber having air-admission apertures; a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; means for supporting the globe; and a funnel-shaped casing which is fixed with a flange at its lower wider end to the upper face of the heating-plate and the upper narrow end of which is not in contact with the mixing-tube, substantially as described.

12. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a mixing-tube; a heating-plate arranged on the mixing-tube; a protecting-globe which surrounds the lower end of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the edge of the globe; and a funnel-shaped casing fixed upon the heating-plate, thus forming a chamber in which a mantle of hot air is inclosed round the mixing-tube, substantially as described.

13. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; means for supporting the globe; a funnel-shaped casing fixed with a flange of its lower wider end to the upper face of the heating-plate, and a cap surrounding the head of the mixing-tube and the upper narrow end of the funnel, substantially as described.

14. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber with air-admission apertures; a mixing-tube; a heating-plate arranged on the mixing-tube;

a protecting-globe which surrounds the lower part of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the edge of the globe; a funnel-shaped casing fixed with a flange of its lower wider end to the upper face of the heating-plate and the upper narrow end of which is not in contact with the suction-chamber nor mixing-tube; and a cap surrounding the suction-chamber and the narrow end of the funnel, substantially as described.

15. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber with air-admission apertures; a mixing-tube; a mouthpiece with a contracted mouth detachably fixed to the free end of the mixing-tube; a heating-plate arranged on the mixing-tube; a protecting-globe with air-admission apertures at its lower end; means for supporting the globe; a funnel-shaped casing which is fixed with a flange of its lower wider end to the upper face of the heating-plate and the upper narrow end of which is not in contact with the mixing-tube; and a cap surrounding the suction-chamber and the narrow end of the funnel, substantially as described.

16. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber having air-admission apertures; a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; means for supporting the globe; and a cap surrounding the head of the burner, substantially as described.

17. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube; and a body of insulating material inserted between the mixing-tube and the gas-nozzle, substantially as described.

18. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube having a contracted mouth; and a body of insulating material inserted between the mixing-tube and the gas-nozzle, substantially as described.

19. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material which is inserted between the suction-chamber and the nozzle; a mixing-tube; and a heating-plate arranged on the mixing-tube, substantially as described.

20. In an inverted incandescent gas-burner the combination with a gas-nozzle; of a suction-chamber; a body of insulating material which is inserted between the suction-chamber and the nozzle; a mixing-tube having a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe; and means for supporting the globe, substantially as described.

21. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber having air-admission apertures; a body of insulating material which is inserted between the suction-chamber and the nozzle; a mixing-tube; a mouthpiece with a contracted mouth detachably fixed to the free end of the mixing-tube; a heating-plate arranged on the mixing-tube; and a protecting-globe which surrounds the lower part of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the edge of the globe, substantially as described.

22. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material inserted between the suction-chamber and the nozzle; a mixing-tube; a heating-plate arranged on the mixing-tube; a protecting-globe with air-admission apertures which surrounds the lower part of the mixing-tube and is fixed below the heating-plate at such a distance as to allow the waste gases to escape between the plate and the edge of the globe; and a funnel-shaped casing fixed upon the heating-plate, thus forming a chamber which incloses a mantle of hot air, substantially as described.

23. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material inserted between the suction-chamber and the nozzle; a mixing-tube; a mouthpiece with a contracted mouth detachably fixed to the free end of the mixing-tube; a heating-plate arranged on the mixing-tube; a protecting-globe; means for supporting the globe; and a casing above the heating-plate which incloses a mantle of hot air round the mixing-tube, substantially as described.

24. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material inserted between the suction-chamber and the nozzle; a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe having air-admission apertures at its lower end; means for supporting the globe; a funnel-shaped casing which is fixed with a flange of its lower wider end to the upper face of the heating-plate and the upper narrow end of which is not in contact with the mixing-tube; and a cap which surrounds the head of the burner, substantially as described.

25. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material which is inserted between the suction-chamber and the nozzle; a cap surrounding the suction-chamber; a mixing-tube with a contracted mouth; and a heating-plate arranged on the mixing-tube, substantially as described.

26. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a suction-chamber; a body of insulating material inserted between the suction-chamber and a nozzle; a cap which surrounds the suction-chamber; a mixing-tube with a contracted mouth; a heating-plate arranged on the mixing-tube; a protecting-globe which surrounds the lower part of the mixing-tube; and means for fixing the globe below the heating-plate, substantially as described.

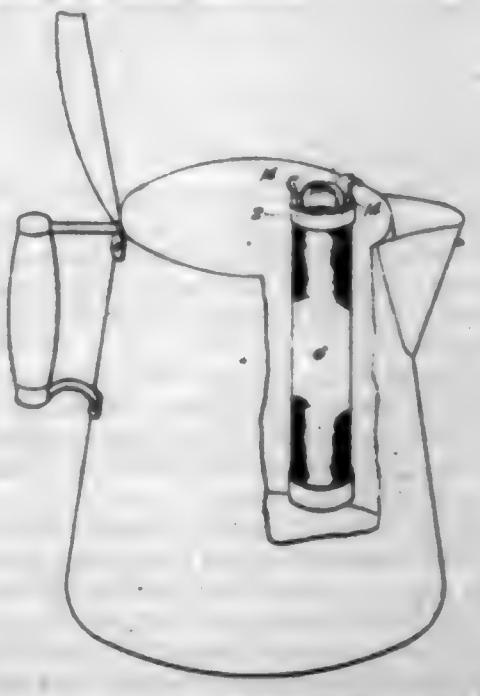
27. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube; a heating-plate fixed with its center on the mixing-tube; and a funnel-shaped casing fixed upon the heating-plate, thus forming a chamber round the mixing-tube, substantially as described.

28. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a vertical mixing-tube; a heating-plate fixed with its center on the mixing-tube; and a funnel-shaped casing fixed upon the heating-plate, thus forming a chamber round the mixing-tube, which casing is made of highly-polished metal, substantially as described.

29. In an inverted incandescent gas-burner, the combination with a gas-nozzle; of a mixing-tube having a contracted mouth; a heating-plate arranged with its center on the mixing-tube; a protecting-globe; arms downwardly projecting from the heating-plate; and set-screws which engage beneath the flanged edge of the globe, substantially as described.

30. In an inverted incandescent gas-burner, the combination with a gas-nozzle, of a mixing-tube, a heating-plate arranged with its center on the mixing-tube, a protecting-globe and means projecting downwardly from the heating-plate for supporting said globe, substantially as described.

814,460. **COFFEE-BOILER.** John Kruckewitt, Pittsburg, Pa. Filed Mar. 18, 1905. Serial No. 250,736.

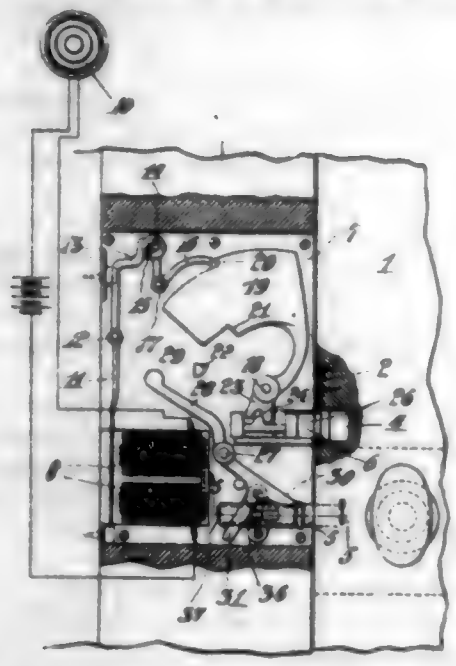


Claim.—1. In a coffee-boiler, an apparatus comprising in combination a supporting-ring having a spring extremity adapted to embrace the top of a coffee-pot and to bind against its outer side, said ring being provided with oppositely-located bayonet-joint openings through its upper edge and outwardly-bowed upwardly-extending resilient lifting-lugs located opposite to each other, a removable coffee-tube of perforated material provided with oppositely-located supporting and locking abutments adapted to engage said bayonet-joint openings, and a cover for said tube of perforated material adapted to be set within its top and provided with an upwardly-bowed lifting-bail connected with opposite sides of said removable top, substantially as set forth.

3. The combination with a coffee-pot, of a coffee-boiler, com-

prising in combination a supporting-ring having a spring extremity adapted to embrace the top of the coffee-pot and to bind against its outer side, said ring being provided with oppositely-located bayonet-joint openings through its upper edge and outwardly-bowed upwardly-extending resilient lifting-lugs located opposite to each other, a removable coffee-tube of perforated material provided with oppositely-located supporting and locking abutments adapted to engage said bayonet-joint openings, and a cover for said tube of perforated material adapted to be set within its top and provided with an upwardly-bowed lifting-bail connected with opposite sides of said removable top, substantially as set forth.

814,461. **ELECTRIC DOOR-RELEASING DEVICE.** Lieberond A. Leon, Montreal, Canada. Filed May 8, 1905. Serial No. 259,264.



Claim.—1. In a device of the character indicated, a pivoted gravity-hammer, a rockable locking-bar adapted to normally hold said hammer in an elevated position, electrically-operated means for rocking said locking-bar, a rockable lever one portion of which is in the line of movement of said hammer, and a latch-releasing device in the path of movement of said rockable lever.

2. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, and latch-releasing means normally in the path of movement of said rockable lever.

3. In a device of the character indicated, a pivoted gravity-hammer, gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be actuated by said lever, and a resetting-latch in operative engagement with said hammer.

4. In a device of the character indicated, a pivoted gravity-hammer having a bifurcated portion below the pivotal point thereof, a resetting-latch in engagement with said bifurcated portion, a rockable locking-bar adapted to rest normally in contact with said hammer, an electrically-operated means for rocking said locking-bar from engagement with the hammer, a rockable lever one portion of which is in line of movement of said hammer, and a latch-releasing device in the path of movement of said rockable lever.

5. In a device of the character indicated, a pivoted gravity-hammer, rockable locking means therefor, an electrically-operated lever in engagement with said locking means, a rockable lever in the path of movement of said hammer, and latch-releasing means normally in the path of movement of said rockable lever.

6. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, latch-releasing means normally in the path of movement of said rockable lever, and a resetting-latch engaging said hammer.

7. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, latch-releasing means normally in the path of movement of said rockable lever, and a resetting-latch actuated by said hammer.

8. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking-bar supported in convenient proximity to said hammer, a rockable armature-arm engaging said rockable locking-bar, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be operated by said lever, and a resetting-latch in operative engagement with said hammer.

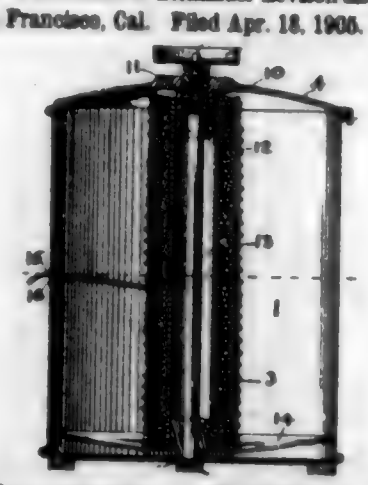
9. In a device of the character indicated, a pivoted gravity-hammer, gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, and a reciprocatory latch-operating means adapted to be actuated by said lever.

10. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated releasing means adapted to actuate said locking means, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be actuated by said lever, and a resetting-latch in operative engagement with said hammer.

11. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, a reciprocatory latch-operating means normally in the path of movement of said lever, and a resetting-latch in operative engagement with said hammer.

12. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, a reciprocatory latch-operating means normally in the path of movement of said lever, and a reciprocatory, beveled resetting-latch in operative engagement with said hammer.

814,462. **TWINE-HOLDER.** Benjamin Levison, San Francisco, Cal., assignor of one-third to Alexander Levison and one-third to Harry Levison, San Francisco, Cal. Filed Apr. 18, 1905. Serial No. 256,238.



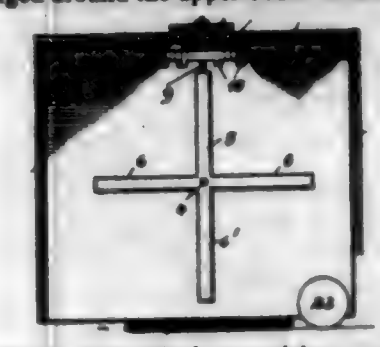
Claim.—1. In combination, a cylindrical can, closed at one end, an axial shaft secured to said closed end, a carrier plate or disk revolubly supported in the bottom of the can around the shaft, said shaft extending upward above said disk sufficiently far and the upper end of the shaft being free to permit a hollow cylinder of twine to be placed around the shaft at its free end to rest on the carrier, and means for closing the other end of the cylinder, said cylinder having an aperture in its side to permit the twine to be drawn therethrough, substantially as described.

2. In combination, a cylindrical can, closed at one end, an axial shaft secured to said closed end, a carrier plate or disk revolubly supported in the bottom of the can around the shaft, said shaft extending above said carrier sufficiently to permit a hollow cylinder of twine to be placed on the carrier around the shaft, a lid through the center of which the shaft passes and having a shouldered hub, a spring within the hub resting upon said shoulder, and a nut upon the upper threaded end of the shaft, the can having an aperture in its side to permit the twine to be drawn therethrough, substantially as described.

814,463. **TOY.** Charles V. Lindeman and Clarence W. Corson, East Pittsburg, Pa. Filed Mar. 30, 1905. Serial No. 253,737.

Claim.—1. A toy of the class described comprising a box having a plurality of openings formed therein, a member pivoted to the sides of said box and adapted to slightly elevate the box about its support, a bladed wheel journaled in said box, a rod journaled in said box and protruding through the top of said box, a toothed wheel mounted upon said rod and adapted to engage the first-named wheel, a dial mounted upon the top of the box and surrounding the protruding end of said rod, and a pointer fixed upon the end of said rod.

2. A toy of the class described comprising a box having a plurality of openings formed therein, a shaft journaled in said box, a bladed wheel mounted upon said shaft, a rod journaled in said box, the upper end of said rod protruding through the top of the box, and a wheel mounted upon said rod and adapted to engage the blades of the first-named wheel, a pointer carried by the upper end of said rod, and a dial arranged around the upper end of said rod.

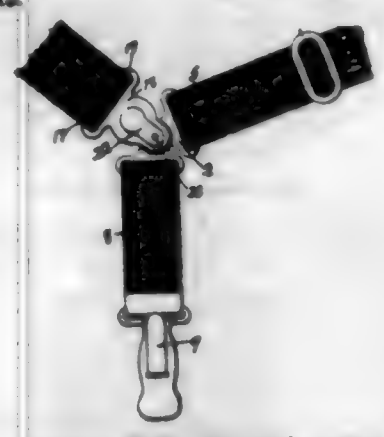


3. A toy of the class described, comprising a casing having a plurality of openings formed therein, a dial mounted upon the top of said casing, a revoluble pointer located above said dial, and means to locate said pointer said means being operable from without said casing, substantially as described.

4. A toy of the class described comprising a casing, a revoluble pointer mounted upon the top of said casing, and means to revolve said pointer said means to revolve the pointer being operable by an object injected into the casing from without said casing.

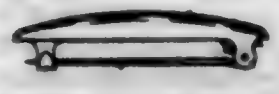
5. A toy of the class described, comprising a casing, contacting wheels revolubly mounted within said casing, a pointer mounted upon the casing, and revolved by said wheels, one of the latter being adapted to be revolved by an object inserted into the casing.

814,464. **FASTENING DEVICE FOR MEN'S GARTERS.** JULIUS MALTBY, Waterbury, Conn., assignor to The Waterbury Buckle Company, Waterbury, Conn., a Corporation. Filed May 22, 1905. Serial No. 261,512.



Claim.—In a fastening device for men's garters, the combination with a triangular corner-plate made from a single piece of metal and having a single straight-sided upper slot and a single straight-sided lower slot, the former being slightly inclined from the vertical and the latter being arranged horizontally, and the central portion of the plate being struck up from the back about midway the length of the slots to form a circular recess upon the back of the plate and a boss upon the front of the plate which is formed with a perforation passing centrally through the said boss; of an eyelet having a shank, a body and a rim, the said shank passing through the said perforation in the boss and upset within the said recess; and a complementary fastening member constructed to be applied to the other end of the garter-webbing and adapted to be detachably engaged with the body and rim of the said eyelet.

814,465. **PIN.** CHARLES F. MARKHAM, Providence, R. I. Filed June 29, 1905. Serial No. 267,549.



Claim.—1. As an article of manufacture, a pin having a body portion that is provided with a catch member and two joint-ears, a pin-tongue, and a fulcrum member formed independently of said body and said ears and held in position by the latter.

2. As an article of manufacture, a pin having a body portion that is provided with a catch member and two joint-ears, a pin-tongue, and a fulcrum member formed independently of said body and said ears, said ears being pressed inwardly, whereby said fulcrum member is held in position by the pressure of the stock against it.

3. As an article of manufacture, a pin having a body portion that is provided with a catch member and two joint-ears, a pin-tongue, and a flat fulcrum-plate formed independently of said body and ears, the edges of said fulcrum-plate being gripped by the pressure of the stock against them, whereby the same is supported in position.

4. As an article of manufacture, a pin having a body portion provided with a catch member and two ears, a pin-tongue, and an independent fulcrum-plate held in position by the pressure or grip of the stock, said plate being turned up at one edge to serve as a fulcrum for said pin-tongue.

5. As an article of manufacture, a pin provided with a body portion cut from sheet-stock, said body being provided with oppositely-arranged lateral ears located adjacent one end and a catch member adjacent the other end, said ears and catch member being bent over to form a joint and catch, respectively, a pin-tongue mounted in said joint, and a fulcrum member formed independently of said body and joint and held in position by the latter.

6. An article of manufacture comprising a pin provided with a body portion cut from sheet-stock, said body having oppositely-arranged lateral ears located adjacent one end and a catch member adjacent the other end, said ears and catch member being bent over to form a joint and catch, respectively, a pin-tongue mounted in said joint, an independent fulcrum member secured in position by the pressure of said joint, said member being turned out at one edge to serve as a fulcrum for said pin-tongue.

814,466. **NOZZLE FOR ELASTIC-FLUID TURBINES.** GUSTAV MEYENBERG, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed May 6, 1905. Serial No. 259,090.



Claim.—1. A nozzle for elastic-fluid turbines, comprising oppositely-disposed flat members, and oppositely-disposed symmetrical members which form with the flat members a fluid-discharging passage having an enlarged inlet end.

2. A nozzle for elastic-fluid turbines, comprising oppositely-disposed flat members, and oppositely-disposed symmetrical members which form with the flat members a fluid-discharging passage having an enlarged inlet, and an expanding discharge portion connected with the inlet.

3. In a nozzle, the combination of a support, parallel plates arranged on the support which form a plurality of closely-associated fluid-discharging passages, and forming-pieces which impart the desired configuration to the passages.

4. In a nozzle, the combination of a support provided with an opening or slot, plates arranged in the opening which divide the same into passages, and a pair of forming-pieces arranged between adjacent plates which impart to the passages the desired configuration.

5. In a nozzle, the combination of a support provided with an opening, and symmetrically-arranged forming-pieces arranged adjacent the opposite walls of the opening.

6. In a nozzle, the combination of a support having a curved opening, a plurality of forming-pieces which are symmetrically arranged adjacent the longitudinal walls of the opening, and plates arranged transversely of the opening which divide the same into independent fluid-discharging passages.

7. In a nozzle, the combination of a support having a segmental opening, plates therein which divide the opening into fluid-discharging passages and serve as walls of the latter, and pieces which form the other walls of the passages and are shaped to impart the desired configuration to the passages.

8. In a nozzle, the combination of a support having a segmental opening whose end walls are inclined and parallel, transversely-arranged plates spaced apart in the opening and disposed parallel to the end walls thereof, and forming-pieces between the plates whose adjacent surfaces are symmetrical and whose outer surfaces conform to the curvature of the walls of the openings.

9. In a nozzle, the combination of a support having a segmental opening whose end walls are inclined and parallel, transversely-arranged plates in the opening which are disposed parallel to the end walls, and forming-pieces arranged along the curved side walls of the opening and between the plate and wedged in position by the latter.

10. In a nozzle, the combination of a support having an elongated opening whose end walls are inclined and parallel, transversely-arranged plates spaced apart in the opening and disposed parallel to the end walls thereof, forming-pieces arranged along the side walls of the opening and between the plates, and interlocking retaining-shoulders on the support and the said pieces.

11. In a nozzle for turbines, the combination of a support having an orifice, detachable members mounted therein which form walls of the fluid-discharging passage and guide and direct the passage of the motive fluid, and other detachable members also located in the orifice which form the otherwalls of the passage and assist in guiding and directing the motive fluid.

12. In a nozzle for turbines, the combination of a support having an orifice, a detachable member mounted therein which forms a side wall of a discharge-passage and guides and directs the passage of motive fluid, and another detachable member also mounted in the orifice which forms an end wall of the same passage and assists in guiding and directing the motive fluid.

13. In a nozzle for turbines, the combination of a support having an orifice, a plurality of partitions therein which form the side walls of the nozzle-passages, and direct and guide the motive fluid, and detachable members which are also located within the orifice and between the partitions for guiding and directing the motive fluid, the said detachable members engaging the partitions.

14. In a nozzle for turbines, the combination of a support having a bowl, a passage of smaller cross-section than the bowl and receiving fluid therefrom, and members in the passage which face the walls thereof and direct and guide the motive fluid.

15. In a nozzle for turbines, the combination of a support having an opening or orifice, one portion of the opening forming a converging bowl or distributing-chamber, the other portion of the opening having inclined end walls, and members for facing the end walls which guide and direct the motive fluid.

16. In a nozzle for turbines, the combination of a support having a segmental opening or orifice, one portion of the opening having converging walls which form an inlet or bowl, the other portion of the opening having parallel and inclined end walls, and members arranged in the opening parallel to the end walls, some of the members facing said walls and the other or others dividing the opening into separate fluid-discharging passages.

17. In a nozzle for turbines, the combination of a support having a plurality of bowls or distributing-chambers and openings communicating with the bowls, and plates which face the walls of the openings and form passages which guide and direct the motive fluid.

18. In a nozzle for turbines, the combination of a support having a distributing-chamber, a plurality of passages communicating with the chamber and receiving fluid therefrom, thin sheet-metal plates which separate the passages, each passage comprising a bowl, a throat receiving fluid from the bowl, and a discharge portion which receives fluid from the throat and directs it against the bucket-wheels.

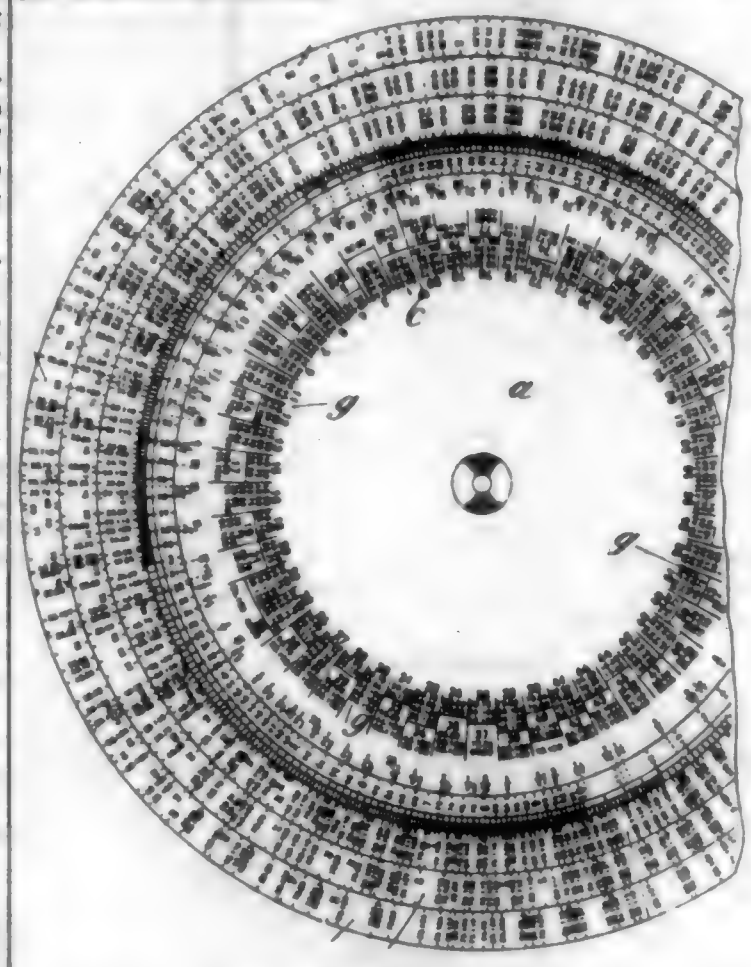
19. A nozzle for turbines, the combination of a support provided with an opening, members therein each of uniform cross-section which divide the opening into closely-associated fluid-discharging passages, certain of the members serving to face the end walls of the opening.

20. In combination, a supporting member cast with a segmental nozzle-receiving opening, one portion of the opening being enlarged to form a bowl or chamber for receiving motive fluid and discharging it to the nozzle-passages, and members in the other portion of the opening which divide it into fluid directing and discharging passages.

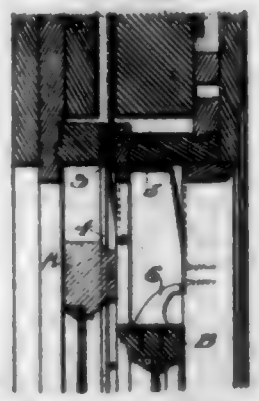
814,467. GEARING-INDICATOR FOR SCREW-CUTTING LATHES. Henri Möglenbrock, Lausanne, Switzerland. Filed Feb. 23, 1904. Serial No. 195,214.

Claim.—1. A universal table of gearings for screw-cutting lathes, having a scale for indicating the ratio of the desired screw pitch to the lead-screw pitch and a scale of pairs of numbers of gear-wheels, the graduations of the latter scale being such that the distance apart of the two graduations corresponding to the required combinations of numbers will be equal to the distance apart of the graduations on the former scale indicating the ratio of the products of such pairs of numbers.

2. A universal table of gearings for screw-cutting lathes, having two concentric logarithmic scales, one scale having graduations accompanied by numbers and also having a series of tables of pairs of numbers provided with reference-numbers, the other scale having graduations some of which are accompanied by pairs of numbers and others of which are accompanied by reference-numbers corresponding to the reference-numbers of the tables on the first-mentioned scale, and means for simultaneously indicating two required graduations on the latter scale having the same distance apart as two given graduations on the first scale.



814,468. WINDOW AND SCREEN ATTACHMENT. Rosalia Moss, San Francisco, Cal. Filed Aug. 23, 1905. Serial No. 275,303.



Claim.—1. The combination with a window-casing and the sliding sashes, said casing having pockets made respectively above and below, of screens slidable so as to be concealed within said pockets, means for retaining one of the screens in its pocket, and means carried by one of the sashes for tripping the retaining means to release the retained screen.

2. In a window, a casing having a pocket in the upper part, a screen mounted in a frame and slidable in said pocket, a channel upon the top rail of the upper sash in which the lower edge of the screen-frame rests so as to be normally moved in unison with the sash, and a member upon the casing adapted to project into the path of movement of the upper screen, for locking the screen within its pocket and holding it suspended independent of said upper sash.

3. In a window, the casing having a head or pocket in the upper part, a screen slidable within said pocket and having its lower edge adapted to normally rest upon and move with the upper sash, a latch whereby the screen is engaged and retained within its pocket and means for disengaging said latch to release the screen.

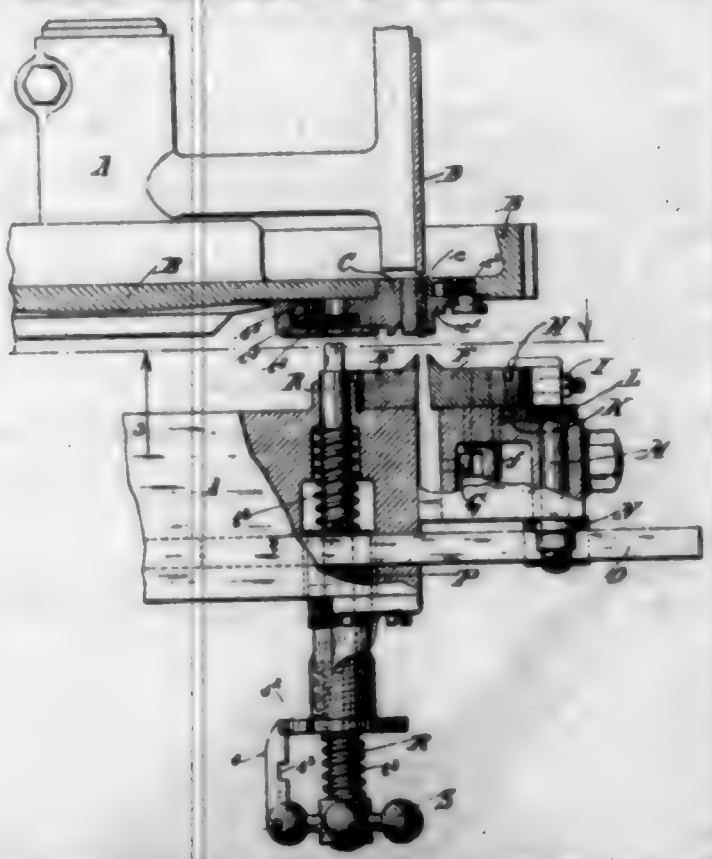
4. In a window, a casing having a pocket or channel in the top, a screen-frame slidable within said pocket, said screen-frame resting normally upon and movable with the sash an elastic latch adapted to

engage and lock the screen within its pocket when the upper sash is closed, a lug or projection carried by the upper rail of the lower sash so as to engage said spring and release the screen when the lower sash is raised for the purpose.

5. In a window, the combination of a casing having pockets at top and bottom, screens slidably mounted within said pockets, means whereby the screens may be detachably carried by the sashes to allow the screens to be moved with the sashes or the sashes to be moved independently of the screens, and a member on the casing adapted to automatically project into the range of action of the upper screen-frame and thereby support said screen-frame in its pocket independent of the upper sash.

6. In a window the combination with a casing having a sill with an upturned inner edge said casing having, also, a channel or pocket made below the sill, of a screen-frame vertically movable into and out of the pocket and having at its upper end an inclined plate of greater width than the frame and of sufficient width to cover and extend each side of the entrance to the pocket, one edge of said plate extending over the lip of the sill and turned downwardly over said lip to inclose the latter, and said plate having its opposite edge upturned and extended over the inclined portion of the plate and spaced therefrom to form an engaging loop, a hook member on the lower sash adapted to slide over the loop of said plate and to interlock therewith, and a push member carried by the hook member to effect the disengagement thereof with the loop.

814,469. LINOTYPE-MACHINE. Carl Mueller, Berlin, Germany, assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 20, 1905. Serial No. 283,602.



Claim.—1. In a linotype-machine, the combination of an adjustable mold, an adjustable slug-trimming knife, and a common means for effecting the adjustment of the mold and knife.

2. In a linotype-machine, the combination of a mold, a trimming-knife, and means for simultaneously adjusting the knife and mold.

3. In a linotype-machine, the combination of an adjustable mold, an adjustable knife, and operating means adapted to adjust said parts jointly or to adjust the knife separately, at will.

4. In a linotype-machine, the combination with the fixed knife, the opposing movable knife, the stepped wedge acting between a fixed support and the movable knife to advance the latter definite distances toward its companion, a spring urging the knife backward against the wedge, and means for moving the wedge endwise; whereby the distance between the knives may be varied instantly and definitely by a single action.

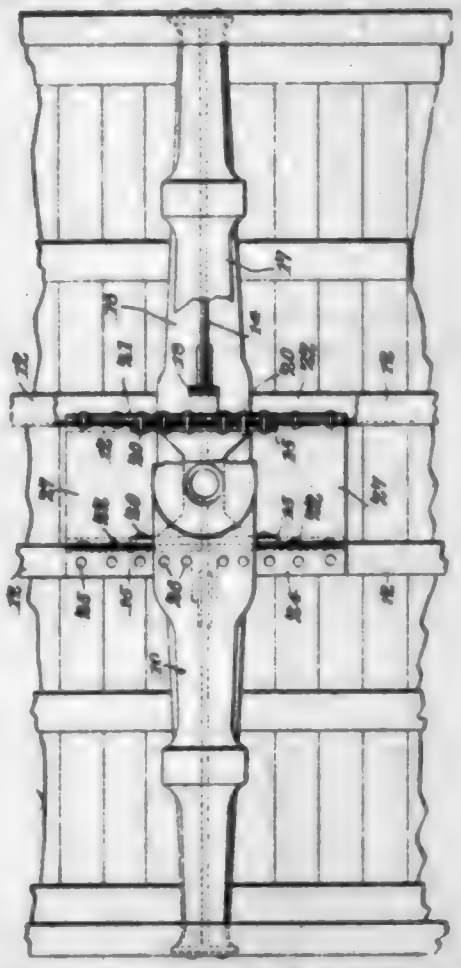
5. In a linotype-machine, the knife and its adjusting wedge and pinion, and the mold and its adjusting wedge and pinion, and connections between the pinions to cause their movement in unison.

6. A linotype-mold comprising a body portion and a cap portion fitted together to inclose the intermediate slot or mold proper, and movable one in relation to the other to vary the height of the slot, a spring tending to change the distance between the cap and body, and a stepped wedge acting in opposition to the spring to adjust the movable member definite distances, said elements combined in an integral structure, substantially as described.

7. In a linotype-machine, and in combination with means for adjusting the mold and knife, means to arrest the adjusting device positively at definite points, whereby the adjustment of the parts in the exact positions required is insured.

8. In a linotype-mold, in combination with the cap and body portions and means for changing the distance between them, removable overlapping liners c^{10} and c^{13} attached to the cap and body respectively, and serving to determine the length of the mold slot or cell.

814,470. CAR-BOLSTER. John V. McAdam, Granite City, Ill. Filed Sept. 11, 1905. Serial No. 277,940.



Claim.—1. In car-frame construction, a bolster and longitudinal sills, the latter being formed in sections the ends of which abut within the limits of the bolster.

2. In car-frame construction, sills formed of abutting sections, and a bolster member secured to said sections.

3. In a car-frame construction, the combination with the bolsters, of sill members formed in sections, the ends of the sections abutting within the limits of the bolster and being connected to form continuous draft members.

4. In car-frame construction, a bolster having an opening, and a sectional sill, the sections of the sill fitting within said openings and having abutting ends.

5. In car-frame construction, a bolster having a transverse opening and a sectional sill, portions of the sill-sections being cut away to permit the insertion of said sills within the bolster-opening, the ends of said sections abutting.

6. In car-frame construction, a bolster, a sectional sill, the bolster and sill-sections being recessed to permit the sill-sections to abut, and means for securing said sill-sections to the bolster.

7. In car-frame construction, a bolster having a flanged opening, a sill formed in sections the ends of which are arranged within said openings and abut, and means for securing said sill-sections to the flange.

8. In car-frame construction, a bolster having a transverse opening one wall of which is provided with flanges forming laterally-extending wings, a sill formed in sections the vertical webs of the sections being recessed for the reception of portions of the bolster, and the ends of said sections abutting within the lines of the bolster, and means for securing the vertical webs to said wings.

9. In car-frame construction, a bolster, a sectional sill, the ends

of said sections abutting within the limits of the bolster, and splice-bars connecting said sections independent of the bolster.

10. In car-frame construction, a bolster, a sill having sections the ends of which abut within the limits of the bolster, and splice-bars connecting said sections.

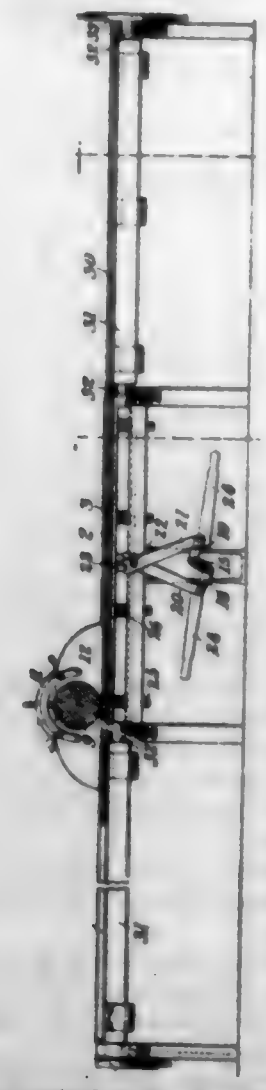
11. In car-frame construction, a bolster having a transverse opening, the wall of which is flanged, a sectional sill, the ends of the sections extending partly in said opening and abutting, splice-bars, and means for securing the splice-bars to the sill-sections.

12. In car-frame construction, a bolster having a flanged opening, a sill formed in sections, the ends of said sections being partly recessed to fit around the bolster, means for securing said sill-sections to the bolster-flange, splice-bars, and means for securing the splice-bars to the sill-sections.

13. In car-frame construction, a bolster having a transverse opening, the wall of which is flanged, a sill formed of sections the ends of the sections abutting, means for securing the sections to the flanges, splice-bars, means for securing the splice-bars to the sill-sections, and means for securing the flanges of the sill-sections, and splice-bars together.

14. In car-frame construction, a bolster having a transverse opening the wall of which is flanged, a sill formed of sections, the ends of said sections being arranged within said opening and arranged to permit the transmission of endwise strains without the intervention of the bolster, and means for securing said sections to each other.

814,471. MANUFACTURE OF SHEET OR PLATE GLASS. WILLIAM T. NICHOLLS, Wellsburg, W. Va. Filed Mar. 25, 1905. Serial No. 251,985.



Claim.—1. The method of forming plate-glass with a pattern consisting in rolling a sheet or plate of glass on a table having the desired pattern, and then jarring or jiggling the plate loose; substantially as described.

2. The method of forming prism-glass, consisting in rolling a sheet or plate and simultaneously forming prisms on the table-face of the sheet, and then oscillating the table-sections to loosen the glass; substantially as described.

3. The method of making figured or patterned glass, consisting in rolling the glass on a table, and simultaneously forming the figure or pattern on its table-face, loosening the sheet and drawing it endwise on another table, turning the latter table over to reverse the position of the sheet, and then feeding it through the leer with its figured side uppermost; substantially as described.

4. The method of forming figured glass, consisting in rolling it on a table having sections and simultaneously forming the figures on its table-face, and then moving the table-sections to jiggle or jar the glass loose and removing the sheet; substantially as described.

5. The method of forming prism-glass, consisting in rolling the glass on a table, and simultaneously forming prisms on its lower or table face, and then oscillating adjacent sections of the table in opposite directions, and removing the sheet; substantially as described.

6. The method of forming plate-glass, consisting in rolling the glass in one direction on a table, drawing it to a receiving-table at one end, then rolling another plate, moving the roller in another direction, and withdrawing the second plate on a receiving-table at the other end from that of the first receiving-table; substantially as described.

7. The method of forming plate-glass with a pattern, which consists in rolling it on a sectional table having the desired pattern, and then jarring or jiggling the table-sections to loosen the plate; substantially as described.

8. A table for rolling glass, in combination with mechanism for jarring or jiggling the same; substantially as described.

9. A glass-rolling table formed in sections, and mechanism for jarring or jiggling the sections to loosen the glass; substantially as described.

10. A glass-rolling table formed in sections, having rib and grooved junctures, and means for jarring or jiggling the sections; substantially as described.

11. The combination with a fixed rolling-table having a figured or patterned upper surface, of an invertible receiving-table adjacent thereto, and to which the rolled sheet or plate is transferred, and means for holding the sheet to the receiving-table; substantially as described.

12. A table for rolling glass having a figure or pattern on its upper face, and mechanism for jarring or jiggling the table to loosen the glass; substantially as described.

13. A rolling-table having invertible receiving-tables at both ends, in combination with a roller having a double-ended shoe or plow; substantially as described.

14. A glass-rolling table formed in sections, means for effecting the longitudinal movement of the sections relatively to each other, and means for jarring one or more of said sections; substantially as described.

814,472. FIRE-ESCAPE. ALBERT S. NOONAN, Rome, N. Y. Filed Apr. 13, 1904. Serial No. 202,987.



Claim.—1. In a fire-escape, the combination of a braided tube of non-combustible material, a collar inserted in one end thereof, a clamping-collar surrounding said end, means for securing the two collars together, a supporting member, a rigid connector between said member and said clamping device, and means for securing said supporting member to a stationary part.

2. In a fire-escape, the combination of a braided tube of non-combustible material, a collar inserted in one end thereof, a clamping-collar surrounding said end, means for securing the two collars together, a supporting-plate, an eye riveted thereto, a rigid connector between said eye and said clamping device, and means for securing said supporting-plate to a stationary part.

3. In a fire-escape, the combination of a braided tube of non-combustible material, a collar inserted in the end thereof, a clamping-collar surrounding said end, means for securing the two collars together, a fastening-plate, and a rigid link connecting said plate and clamping device.

4. In a fire-escape, the combination of a tube composed of a plurality of strands of non-combustible material braided together, a supporting-plate, an eye riveted thereto, a socket secured to one end of said tube, and a rigid link interposed between said socket and said eye.

5. In a fire-escape, the combination of a tube composed of a plurality of flat strands of non-combustible material braided together, a socket on one end thereof, a supporting-plate, an eye riveted to said plate, and a rigid link interposed between said socket and said eye.

6. In a fire-escape, the combination of a braided tube of non-combustible material, a collar inserted in one end thereof, a clamping-collar surrounding said end, a pin extending diametrically through said clamping-collar, a supporting member secured to a stationary part, and a connector between said pin and said supporting member.

7. In a fire-escape, the combination of a rope, a socket consisting of a collar inserted in one end of said rope, a clamping-collar surrounding said end, and means for securing the two collars together, and supporting means for said socket.

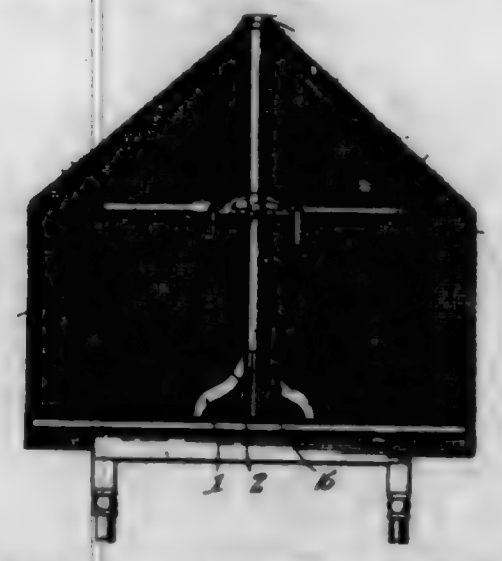
8. In a fire-escape, the combination of a rope, a collar inserted in one end thereof, a clamping-collar surrounding said end, a pin extending diametrically through said collars, a supporting member, and a connector between said pin and supporting member.

9. In a fire-escape, the combination of a rope, a socket consisting of a member inserted in the end of said rope and a second member adapted to clamp said end between it and said inserted member, and supporting means for said socket.

10. In a fire-escape, the combination of a rope, a socket consisting of a member inserted in the end of said rope, a member for clamping said end thereto and means for securing said clamping member to said inner member, and supporting means for said socket.

11. In a fire-escape, the combination of a rope, a socket consisting of a member inserted in one end thereof, a clamping-collar surrounding said end and means for securing said collar to said inner member, a supporting member, and a connector between said socket and said supporting member.

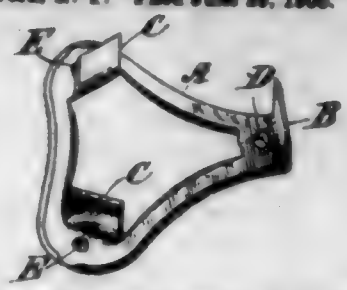
814,473. TABLE-SCREEN. Joseph C. Patterson, Meadville, Pa. Filed May 16, 1905. Serial No. 260,733.



Claim.—1. A table-screen comprising a standard, a sleeve adjustably mounted thereon, brackets having notched upper edges radiating from the sleeve, arms pivoted to the said brackets, pawls carried by the said arms and engaging the notched edges of the brackets, and a canopy secured to the standard and the said arms.

2. A table-screen comprising a hollow standard, a collar on the upper end of said standard provided with radial openings, a sleeve adjustably mounted on the standard, foldable arms carried by the sleeve, a series of cords secured to the outer ends of said arms and passing therefrom to the collar and through the openings therein into the standard, flexible connections between the ends of the foldable arms, and a screen secured to the standard and supported by said flexible connections, the arms and the series of cords.

814,474. ANTISLIPPING DEVICE FOR SHOES. Grover L. Pierce, New York, N. Y. Filed June 20, 1905. Serial No. 265,611.

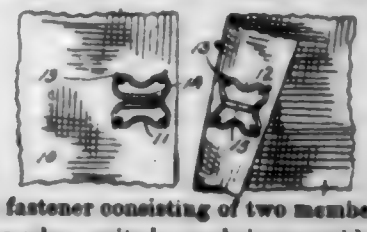


Claim.—1. As an improved article of manufacture, an antislipping device for a shoe, consisting wholly of an open base-frame of metal of substantially triangular form provided with three spurs only, one near each angle of the frame, the front spur being bent downward and inward to a position at right angles to the frame, and the latter being provided with a screw-hole at the inner side of said spur, and the two rear spurs being bent downward and outward, at right angles to the frame and the latter provided with screw-holes, disposed respectively exterior to the last-named spurs.

2. As an improved article of manufacture, an antislipping device for a shoe, consisting wholly of an open base-frame A, of substantially triangular form, said frame having at its front angle a spur B and hole D, and having at its respective rear angles spurs C, C, and holes E, E, the spurs C being formed from the metal within the frame bent downward and outward, and the holes E being in the base exterior to the respective spurs C.

3. As an improved article of manufacture, an antislipping device, consisting wholly of an open, frame-like base of sheet metal of somewhat triangular form, said plate having a spur B at its front end formed by bending metal of the base downward and inward, two rear spurs C formed by bending metal of the base downward and outward, a screw-hole in the plate interior to the spur B, and two screw-holes in the base exterior to the respective spurs C, substantially as set forth.

814,475. FASTENER FOR CLOTHING. Leslie D. Pierce, Indianapolis, Ind. Filed Apr. 7, 1905. Serial No. 254,294.



Claim.—1. A fastener consisting of two members adapted to fit one upon the other when united, one being provided with an elongated slot in substantially the middle thereof and closed at one end, and the other member provided at its middle portion with a projection elongated parallel with and reduced in width near the body thereof, whereby it is longitudinally slidable into said slot for uniting the two members.

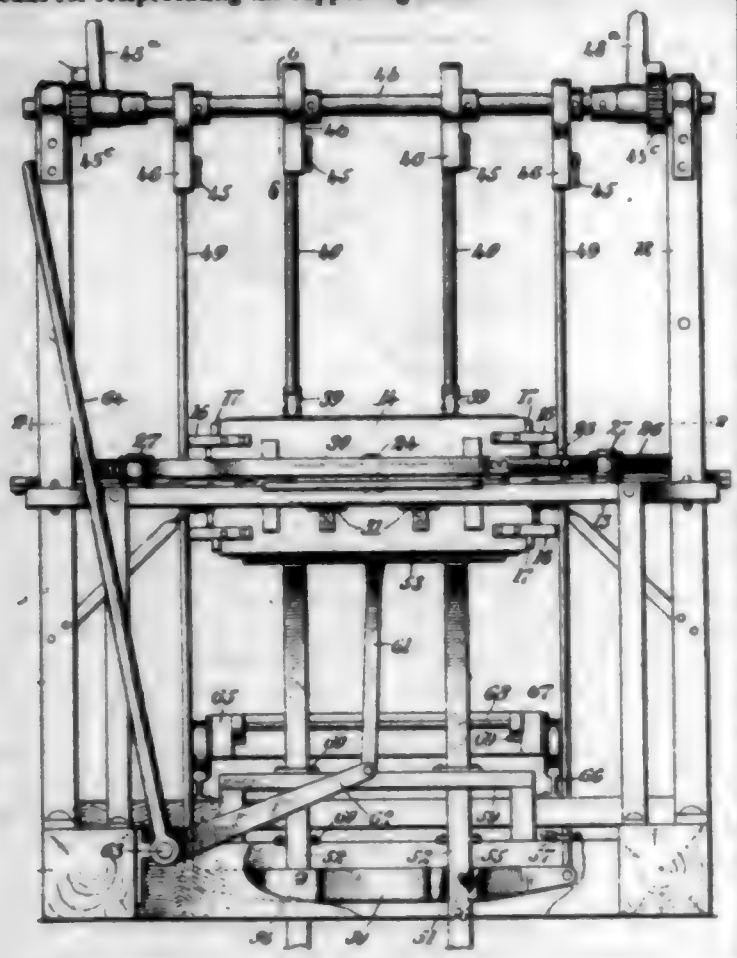
2. A fastener consisting of two members, made of wire bent into the desired form, one member having a centrally-located elongated slot formed by a loop of the wire in substantially the same plane as the body of the member, and the other member of the fastener having an elongated projection formed by the wire being looped at a right angle to the plane of the body of said member, whereby said projection may be longitudinally moved into said slot.

3. The combination with cloth and the like, of a fastener consisting of two members made of wires bent into the desired form, the body portion of each member being substantially rectangular with outwardly-projecting curved corners, one member having a centrally-located elongated slot formed by looping the wire in substantially the same plane as the body of the member, and the other member having a centrally-located elongated projection formed by looping the wire substantially at a right angle to the plane of the body portion of said member and reduced in width at each end so that it may be slipped longitudinally into said slot in the other member, and stitches for securing the corners of said members to the cloth.

814,476. MOLDING-MACHINE. Charles Reed, Portland, Ind. Filed Mar. 13, 1905. Serial No. 249,773.

Claim.—1. A molding-machine, comprising a press-plate, means

for movably supporting said plate, means for adjusting the supporting means comprising a cam engaging the supporting means, and means for reciprocating the supporting means.



2. A block-molding machine, comprising a press-plate, means for movably supporting it to swing about a movable axis, means for adjusting the supporting means comprising a cam engaging the supporting means, and means for reciprocating the supporting means.

3. A molding-machine, comprising a pair of press-plates, one of them being swingingly mounted, and means for simultaneously reciprocating the plates in opposite directions; said means comprising a shaft, and eccentrics on the shaft connected with each of the press-plates and located at an angle of one hundred and eighty degrees from each other.

4. A molding-machine, comprising a press-plate, a rod, means for pivotally supporting the press-plate on the rod, and means for pivotally mounting the rod.

5. A molding-machine, comprising a press-plate, a rod, means for pivotally supporting the press-plate on the rod, means for pivotally mounting the rod, and means for adjusting the position of the rod longitudinally.

6. A molding-machine, comprising a press-plate, a rod adapted to guide the press-plate in a straight line, a supporting-bar having means for engaging said rod and supporting it, and means for reciprocating said bar.

7. A molding-machine, comprising a press-plate, a rod rigidly connected therewith and adapted to guide it in a straight line, said rod being provided with a slot, a supporting-bar having means for engaging said slot, and means for reciprocating said bar.

8. A molding-machine, comprising a press-plate, a guide-bar therefor, a movable bridge having means for engaging said bar, and means for disengaging the bar from the bridge.

9. A molding-machine, comprising a mold, a press-plate located below the mold and movable upwardly to the mold, a track located adjacent to the path of the press-plate, and a truck on the track having a supporting device movable into the path of the press-plate to receive the molded article therefrom.

10. A molding-machine, comprising a pair of press-plates, means for simultaneously moving them toward each other, independent means for moving one of them toward the other, a track located adjacent to said first-mentioned means, and a truck located on the track and adapted to move into the path of movement of one of said press-plates.

11. A molding-machine, comprising a press-plate, means for reciprocating it, a track located adjacent to the path of movement of the press-plate, and a truck movably mounted upon said track; said truck being provided with a pivoted shelf adapted to move into the path of the press-plate, and means for supporting the shelf in a position transverse to said path.

12. In a molding-machine, the combination of means for producing a molded article, and means for removing said article from the producing means, comprising a movable plate for receiving the molded article, a track adjacent thereto, and a truck adapted to run on the track, said truck having a shelf provided with two side pieces and having a space between them for the passage of the plate.

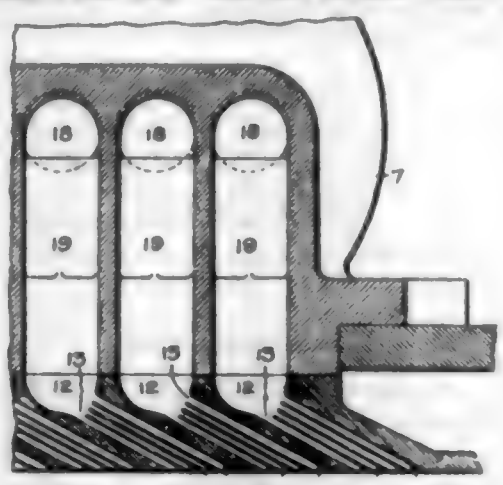
13. In a molding-machine, the combination of means for producing a molded article, and means for removing said article from the producing means, comprising a movable plate for receiving the molded article, a track adjacent thereto, and a truck adapted to run on the track, said truck being provided with a shelf pivotally mounted thereon, said shelf comprising two side pieces with a space between them for the passage of the plate, and the truck having means for holding the shelf in horizontal position.

14. In a molding-machine, the combination of means for producing a molded article, and means for removing said article from the producing means, comprising a movable plate for receiving the molded article, a track adjacent thereto, a truck adapted to run on the track, said truck being provided with a shelf pivotally mounted thereon, said shelf comprising two side pieces with a space between them for the passage of the plate, and the truck having means for holding the shelf in horizontal position, and a movable plate for supporting the molded article.

15. A molding-machine, comprising means for applying pressure to molding material, and a mold having reciprocable walls each provided with guides for another wall, said guides comprising projections extending outwardly from each wall, the projection of one wall being contained between those of another.

16. A molding-machine, comprising means for applying pressure to molding material, a mold having reciprocable walls each provided with guides for another wall, and means for moving said walls after the pressure has been applied.

814,477. NOZZLE FOR ELASTIC-FLUID TURBINES. Richard H. Rice, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 19, 1904. Serial No. 233,467.



Claim.—1. In a nozzle for elastic-fluid turbines, the combination of one or more separately-formed nozzles having enlarged bowls, a nozzle-plate having a number of orifices corresponding to the number of nozzles each orifice receiving a bowl, and means for securing each of the nozzles to the plate

2. In a nozzle for elastic-fluid turbines, the combination of one or more separately-formed nozzles, each nozzle having a bowl and a discharge portion, a nozzle-plate which is provided with as many orifices as there are nozzles each orifice receiving a bowl, and projections or walls that engage the discharge portion of the nozzle or nozzles.

3. In a nozzle for elastic-fluid turbines, the combination of a nozzle-plate containing one or more orifices, one or more sheet-metal nozzles, each having a discharge portion, and an enlarged flanged bowl, the flange on the bowl or bowls engaging with the plate and acting as a securing means for the nozzle or nozzles.

4. In a nozzle for elastic-fluid turbines, the combination of one or more separately-formed nozzles, a divided plate which receives the nozzle or nozzles, and means for uniting the parts of the plate.

5. In a nozzle for elastic-fluid turbines, the combination of a plate having one or more orifices, which is divided in a plane passing through the center of the orifices, nozzles corresponding in number to the orifices, each nozzle being provided with a bowl which fits into an orifice and a discharge portion, and means for clamping the parts of the plate around each of the bowls.

6. In an elastic-fluid turbine, the combination of a bucket-wheel, a casing therefor having an opening to receive the nozzle or

nozzles, one or more separately-formed nozzles, a divided nozzle-plate which receives the nozzles and supports them at the bowl and also at the discharge portion, and means for uniting the parts of the nozzle-plate and for securing the plate to the casing.

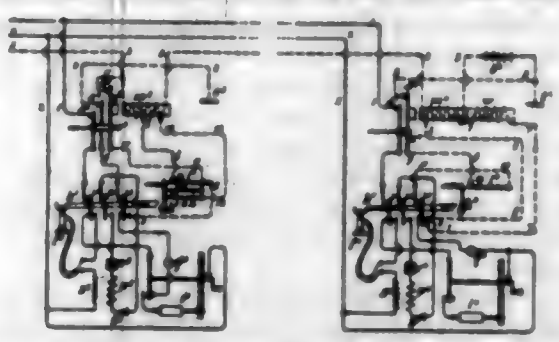
7. In a nozzle for elastic-fluid turbines, the combination of side walls therefor, other walls which separate the space between the first-mentioned walls into a plurality of sections and also coöperate to form an individual bowl for each section, and partitions in the sections which extend from the bowls to the end of the nozzle for directing the passage of and causing the fluid particles to flow in parallel planes and preventing eddies.

8. A nozzle comprising a bowl, and a discharge portion having plane walls two of which are parallel, in combination with a plurality of partitions located in the discharge portion and extending from the throat to the end of the nozzle to form individual expanding passages common to the bowl, said partitions being parallel to the parallel walls of the discharge portion and to each other.

9. A sectionalized nozzle for an elastic-fluid turbine, comprising a plurality of nozzle-passages which are alike in form and angle of delivery, each passage having two parallel walls and two diverging walls, a bowl and throat for each nozzle, and partitions in each passage which are parallel with said parallel walls.

10. In combination, a nozzle having outwardly-extending end flanges with a divided supporting-plate which engages the nozzle and also both of the flanges.

814,478. **TELEPHONE OR TELEGRAPH SYSTEM.** GEORG RITTER, Stuttgart, Germany. Filed June 16, 1904. Serial No. 212,805.



Claim.—1. The combination, with a main-line circuit, and a plurality of substation instruments connected to said main-line circuit, of a controlling device at each substation operating directly to render its substation instrument inoperative, an electric circuit including the controlling devices, mechanism at each substation arranged to regulate the admission of electric current to the circuit connecting said electric devices, and to render its own disconnecting device inoperative, and means at each substation arranged to prevent the operation of its own controlling device.

2. The combination, with a main-line circuit, and a plurality of substation instruments normally connected to said main line, of disconnecting devices at each substation arranged to disconnect said substation from the main-line circuit, mechanism at each substation arranged to operate the disconnecting devices of the other substations, means at each substation arranged to prevent the operation of its own disconnecting device, and connections intermediate said means and its disconnecting device for rendering said means inoperative upon the operation of its disconnecting device.

3. The combination, with a main-line circuit, a plurality of substation instruments normally connected to said circuit, a normally open party-circuit connecting said substations, and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being arranged in series in said party-circuit, mechanism at each substation arranged to close the party-circuit and simultaneously to render its own disconnecting device inoperative, and independent means at each substation arranged to prevent the operation of its disconnecting device upon closure of the party-circuit at another substation.

4. The combination, with a main-line circuit, a plurality of substation instruments normally connected to said circuit, a normally open party-circuit connecting said substations, and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its substation from the main-line circuit, said disconnecting devices being arranged in series in said party-circuit, mechanism at each substation arranged to close the party-circuit and simultaneously to render its own disconnecting devices inoperative, independent means at each substation arranged to prevent the operation of the disconnecting device upon closure of the party-circuit at another substation, and connections between the said independent means and the corresponding disconnecting device of the respective substations whereby the said means is rendered inoperative upon the operation of its disconnecting device.

5. The combination, with a main-line circuit, a plurality of substation signal-receiving instruments normally connected to said main line, a normally open party-circuit connecting said substations and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its signal-receiving instrument, said disconnecting devices being included in the party-circuit, a telephone transmitting and receiving instrument at each substation, whose microphones are included in the party-circuit, and mechanism at each substation for connecting said transmitting and receiving instrument to the main-line circuit, closing the party-circuit and simultaneously rendering its disconnecting device inoperative.

6. The combination with a main-line circuit, and a plurality of substation instruments normally connected to said circuit, of a normally open party-circuit connecting said substations, a source of electricity arranged to send currents of different direction through different sections of the party-circuit, a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being included in series in the said party-circuit, and mechanism at each substation arranged to close the party-circuit and to render its own disconnecting device inoperative, whereby all the disconnecting devices except its own are operated to disconnect their respective substation instruments from the main-line circuit.

7. The combination, with a main-line circuit, and a plurality of substation instruments normally connected to said circuit, of a normally open party-circuit connecting said substations, a source of electricity connected to the main-line circuit and arranged to send currents of different direction through different sections of the party-circuit, a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being included in series in the said party-circuit, and mechanism at each substation arranged to close the party-circuit and to render its own disconnecting device inoperative, whereby all the disconnecting devices except its own are operated to disconnect their respective substation instruments from the main-line circuit.

8. The combination, with a main-line circuit, and a plurality of substation instruments normally connected to said circuit, of a normally open party-circuit connecting said substations, a source of electricity connected to the main-line circuit and arranged to send currents of different direction through different sections of the party-circuit, a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being included in series in the said party-circuit, and means at each substation to close the party-circuit and to render its own disconnecting device inoperative by connecting its disconnecting device to the main-line circuit.

9. The combination, with a main-line circuit, and a plurality of substation instruments normally connected to said circuit, of a normally open party-circuit connecting said substations, a source of electricity arranged to send currents of different direction through different sections of the party-circuit, a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, an electromagnet for each disconnecting device and included in series in said party-circuit, and means at each substation to close the party-circuit and to render its own electromagnet inoperative, whereby all the disconnecting devices except its own are operated to disconnect their respective substation instruments from the main-line circuit.

10. The combination, with a main-line circuit, a plurality of substation instruments normally connected to said circuit, a normally open party-circuit connecting said substations, and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being arranged in series in said party-circuit, mechanism at each substation arranged to close the party-circuit and simultaneously to render its own disconnecting device inoperative, and independent means at each substation arranged to reopen the party-circuit closed by said mechanism, whereby said disconnecting devices are again put into their normal non-operating position.

11. The combination, with a main-line circuit, a plurality of substation instruments normally connected to said circuit, a nor-

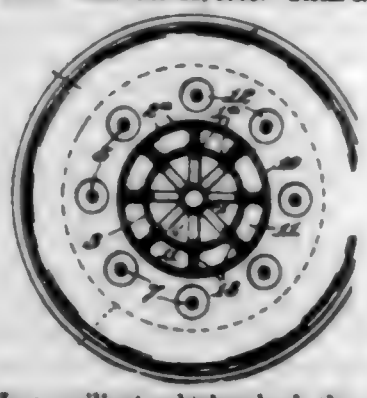
mally open party-circuit connecting said substations, and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being arranged in series in said party-circuit, mechanism at each substation arranged to close the party-circuit and simultaneously to render its own disconnecting device inoperative, and independent means at each substation arranged to bridge its disconnecting device and to reopen the party-circuit closed by said mechanism, whereby the operation of its disconnecting device upon closure of the party-circuit at another substation is prevented and the disconnecting devices at the substations are again put into their normal non-operating position.

12. The combination, with a main-line circuit, a plurality of substation instruments normally connected to said circuit, a normally open party-circuit connecting said substations, and a source of electricity for energizing said party-circuit, of a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being arranged in series in said party-circuit, mechanism at each substation arranged to close the party-circuit and simultaneously to render its own disconnecting device inoperative, independent means at each substation arranged to bridge its disconnecting device and to reopen the party-circuit closed by said mechanism, and a key included in the bridging connection and operated by said disconnecting means to prevent the same from being bridged.

13. The combination, with a main-line circuit, and a plurality of substation instruments normally connected to said circuit, of a normally open party-circuit connecting said substations, a source of electricity included in said party-circuit, a disconnecting device at each substation arranged to disconnect its substation instrument from the main-line circuit, said disconnecting devices being included in series in the said party-circuit, mechanism at each substation arranged to close the party-circuit and to render its own disconnecting device inoperative, and means at each substation to prevent the operation of said mechanism after closure of the party-circuit at another station.

14. The combination, with a main-line circuit and a plurality of substation instruments normally connected to said main-line circuit, of a disconnecting device at each substation and arranged to disconnect said substation from the main-line circuit, said disconnecting device including a resistance and means to insert said resistance between the receiver and the main-line circuit, and mechanism at each substation arranged to operate the disconnecting devices of the other substations.

814,479. **RESILIENT VEHICLE-WHEEL.** JOHN W. ROUDY, Washington, D. C. Filed Oct. 21, 1905. Serial No. 283,755.



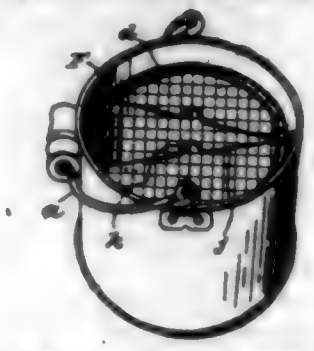
Claim.—1. In a resilient vehicle-wheel, the combination, with the hub-flanges having inwardly-projecting rims, of the wheel-web having side rims, a series of spiral springs interposed between the flange-rims and the web-rims, and means to loosely clamp the web between the flanges.

2. In a resilient vehicle-wheel, the combination, with a wheel-web having a central opening surrounded by a series of holes, of the hub-flanges covering said opening and holes, sleeves on each flange which meet in the holes, the spiral springs, and suitable bolts to clamp the flanges together with the web loose therebetween.

3. In a resilient vehicle-wheel, the combination, with a wheel-web having a series of holes and a circular rim on each side, of the flanges covering the holes and having lateral meeting rims connected to the wheel-hub, spiral springs interposed between the web-rims and the flange-rims, and suitable clamping-bolts extending through the holes to permit radial and concentric movement of the web between the flanges.

4. In a resilient vehicle-wheel, the combination with a wheel-web having a series of holes, a rim on each side of the web adjacent to the holes, and a series of cups projecting inwardly from the rims of the wheel-flanges covering the holes and having rims connected to the wheel-hub and adapted to meet opposite said cups, half-cups joined at the meeting edges of the flange-rims and projecting outwardly opposite the web-cups, the springs held by the cups, sleeves on each flange which meet in said holes, and suitable bolts extending through the sleeves to clamp the flanges together and to permit radial and concentric movement of the web between said flanges.

814,480. **COMBINED MINNOW BUCKET AND TRAP.** SILAS B. SAFFELL, Indianapolis, Ind. Filed July 14, 1905. Serial No. 269,594.



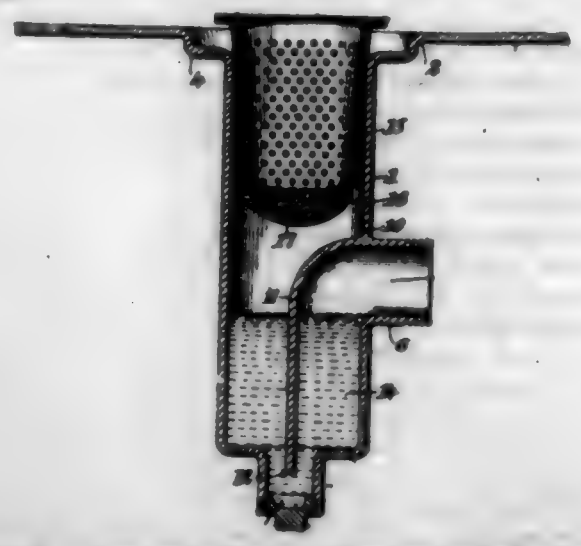
Claim.—1. A minnow-trap comprising two telescopic sections of different diameters, each section being smaller at one end than at the other end, the larger section having a ring in the smaller end thereof, and the smaller section having a ring outside of the larger end thereof, one end of one section being closed by netting, and one end of the other section having a funnel-shape end formed of netting with an opening therein to receive the minnows.

2. A combined minnow bucket and trap including a water vessel provided therein with a removable basket-like minnow-receptacle comprising telescopic sections of which one section has a funnel-shape end serving as a trap for the minnows and another section of which has a hinged closure end opposite the funnel-shape end and also serving as a movable lid for the minnow-receptacle when in the water vessel.

3. A combined minnow bucket and trap comprising an open-top water vessel having a bail, a basket-like telescopic minnow trap and receptacle consisting of a section having a hinged end provided with a fastener, and a section having a funnel-shape end and movable endwise in the other section and provided with a device to which a cord may be attached.

4. A combined minnow bucket and trap including a water vessel having a bail, a basket-like combined minnow receptacle and trap comprising a plurality of telescopic sections of different diameters, one section having a ring fixed in one end thereof, and another section having a ring fixed outside of an end thereof, one end of one section being closed by netting, and one end of another section having a funnel-shape end formed of netting with an opening therein to receive the minnows.

814,481. **TRAP FOR SINKS, BATH-TUBS, AND THE LIKE.** ARTHUR SAVARD, Omaha, Nebr. Filed May 26, 1905. Serial No. 262,304.



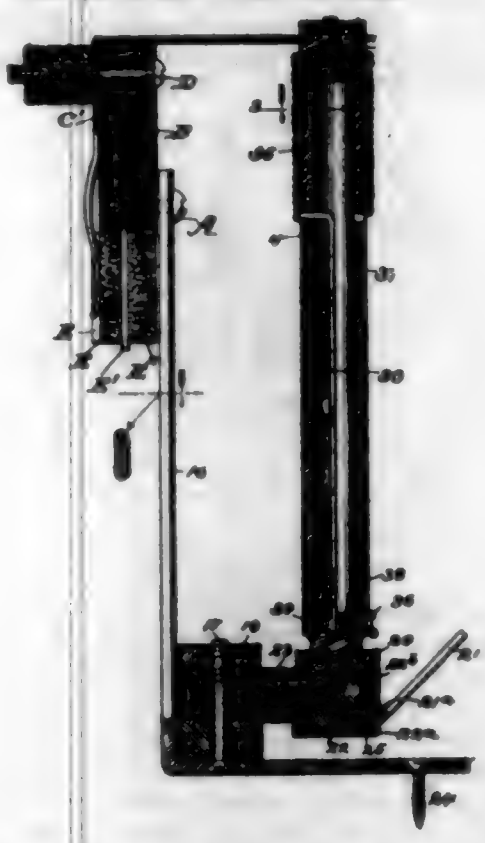
Claim.—1. A trap comprising an outer receptacle forming an integral part of a sink, bath-tub or the like and contracted at its lower extremity to form a hollow extension, the latter being for the full width of the receptacle and closed by a screw-plug, an arched member extending from the upper edge of the outlet-opening of said receptacle and having the lower extremity thereof extending below

the plane of the bottom of the receptacle and within the said hollow extension, and an inner receptacle of foraminated material removably fitted within said outer receptacle at the upper part thereof.

2. A trap comprising an outer receptacle forming an integral part of a sink, bath-tub or the like and contracted at its lower extremity to form a hollow extension, the latter being for the full width of the receptacle and closed by a screw-plug, an arched member extending from the upper edge of the outlet-opening of said receptacle and having the lower extremity thereof extending below the plane of the bottom of the receptacle and within the said hollow extension, and an inner receptacle of foraminated material removably fitted within said outer receptacle at the upper part thereof, said inner receptacle being self-seating within the said outer receptacle with the sides thereof tapering downwardly and the bottom thereof concaved.

3. A trap for sinks, bath-tubs or the like comprising an outer receptacle having an outlet-opening therein at one side and formed at its lower end with a downward extension disposed for the full width thereof and provided with a closing device, and an arched member leading from the upper edge of said outlet-opening and extending below the plane of the upper surface of the bottom of the receptacle substantially intermediate of opposite sides of the said downward extension whereby siphoning of the liquid forming the seal for the trap is obviated.

814,482. **LIGHTNING-ARRESTER.** FRANK K. SNEED, Wheeling, W. Va. Filed Apr. 17, 1905. Serial No. 255,926.



Claim.—1. The combination substantially as herein described of the fuse-holding tube, the fuse within the tube, the choke-coil outside the tube, suitable terminals, and a spark-gap device in connection therewith.

2. In an apparatus, substantially as described, the combination of a frame, a non-conducting block supported thereon and having a fuse-holding line-plate and spark-gap devices coöperating therewith, a fuse-holding tube connected at one end with the said line-plate, a terminal block having a plate for connection with the cable, and connected with the other end of the fuse-tube, a fuse-strip in the said tube and a choke-coil wound about the tube and in electrical connection at one end with the line-plate and at its other end with the fuse, substantially as set forth.

3. The combination with the frame having an upright and a base portion, a non-conducting block on the base portion, a terminal block supported by the non-conducting block and having a plate for cable connection, a non-conducting block supported on the upright of the frame, a line-connection plate, a screw securing said plate to the block, spark-gap devices in connection with said plate, a tubular casing extending between said line-connection plate and the lower terminal, a fuse-strip in the lower portion of the tubular casing and a choke-coil around the upper portion of said tubular casing and having at one end electrical connection with the line connection and at its other end electrical connection with the fuse-strip, substantially as set forth.

4. In a lightning-arrester the combination of a frame, a tubular non-conducting casing, a choke-coil on the outer side of the casing, a fuse within the casing and connected at one end with one end of the choke-coil, a terminal with which the outer end of the choke-coil connects at one end of the casing, a terminal with which the outer end of the fuse connects at the opposite end of the casing, a ground-plate and spark-gap devices attached to the frame and independent of the casing, substantially as set forth.

5. A lightning-arrester comprising an insulating-tube, a choke-coil on the outer side of said tube, a fuse within the tube, terminals with which said coil and fuse are electrically connected, and a spark-gap and ground-plate independent of the fuse and choke-coil, substantially as set forth.

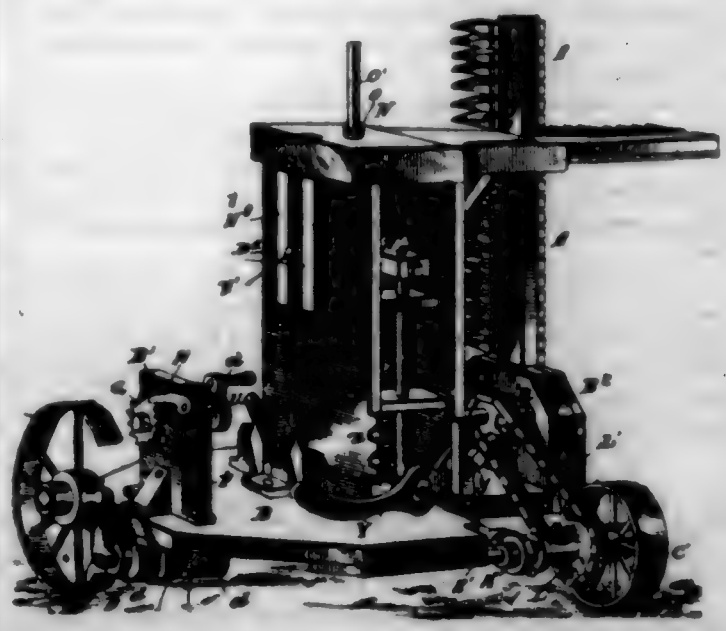
6. A lightning-arrester comprising a framing, a fuse-holding plate connected with the framing, a ground-block, devices connected with the fuse-holding plate and forming with the ground-block a spark-gap, a terminal opposite the fuse-holding plate and having an attached cable connection, a casing extending between the fuse-holding plate and opposite terminal and having an insulating-tube, a fuse therein and connected with the lower terminal and a choke-coil surrounding the insulating-tube and having electrical connection at one end with the fuse within said tube and electrical connection at its other end with the fuse-holding plate, substantially as set forth.

7. A lightning-arrester, comprising a non-conducting base-block, a terminal block supported by said base-block and having a plate for cable connection, a line-connection plate, a non-conducting block to which said plate is secured, spark-gap devices in connection with the line-connection plate, a tubular casing extending between said line-connection plate and the terminal on the base-block, a fuse-strip in one end of said tube, and a choke-coil around the other end of the tube and having at one end electrical connection with the line connection and at the other end electrical connection with the fuse-strip, substantially as set forth.

8. In a lightning-arrester the combination with the opposite terminals and insulating-supports therefor, of the combined fuse and choke-coil extending between said terminals and electrically connected therewith, the said fuse and choke-coil comprising the tube, the fuse within the tube, and the choke-coil outside the tube and connected wth the fuse, substantially as set forth.

9. In a lightning-arrester the combination of opposite insulating-blocks, a terminal block supported by one insulating-block, a terminal plate supported by the other insulating-block, a ground-block and means carried by the insulating-block supporting the plate and coöperating with the ground-block in forming a spark-gap, and the combined fuse and choke-coil extending between the terminal block and terminal plate, substantially as set forth.

814,483. **HEDGE-TRIMMING MACHINE.** RICHARD SMITHERS, Mortonville, Kans. Filed Apr. 3, 1905. Serial No. 253,727.



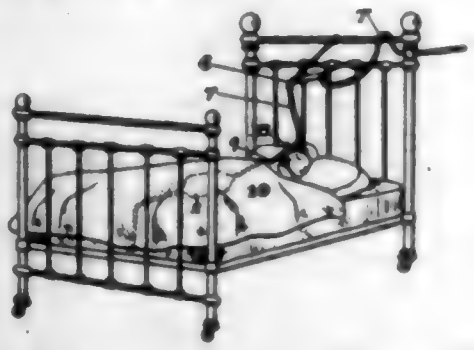
Claim.—1. In a hedge-trimmer, the combination with a platform and running-wheels, two of which are located in front and rear respectively, of a vertical sickle-bar and a horizontal sickle-bar, and means for reciprocating the same, such means comprising in part gearing connected with the axles of the two running-wheels speci-

fied, and including shiftable clutches, and lever mechanisms connected with the respective clutches of the two shafts, whereby either or both of the clutches may be thrown into or out of action, so that the two sickle-bars may be reciprocated or thrown out of action simultaneously or separately as conditions require.

2. In a hedge-trimmer, the combination with a horizontal platform, vertical standards fixed on said platform, and running-wheels supporting the latter, of a horizontal sickle-bar and means operatively connecting it with one of the axles of the running-wheels, the frame carrying such sickle-bar mounted adjustably on the platform-standards, and means for adjusting it vertically, the same comprising a vertical shaft and a pivoted lever connected with the lower end of such shaft, substantially as described.

3. In a hedge-trimmer, the combination with a platform, and running-wheels supporting the same, of a horizontal sickle-bar, a guide-frame in which the same is held and reciprocated, a hollow vertical shaft with which the sickle-bar is operatively connected, a polygonal shaft extending through such hollow shaft, and means operatively connecting the polygonal shaft with one of the axles of the running-wheels, the guide-frame of the sickle-bar being vertically adjustable, substantially as described.

814,484. INHALING APPARATUS. ADOLF VELSCHOW, Oakland, Cal. Filed May 26, 1905. Serial No. 262,356.



Claim.—1. In an apparatus for providing fresh air for breathing purposes, a tube having an inlet and outlet at opposite portions, means on said tube at points between its ends for supporting the tube relative to the face of the patient, one of said supports constituting a mouthpiece, valves in the tube operating to admit fresh air during the inhalations of the patient and to discharge vitiated air during exhalation, and a conductor for the exhaled air adapted to convey the warmth of said air to the patient's body.

2. An apparatus of the character described comprising a tube with inlet and discharge passages, side projections on the tube fashioned to fit the mouth and forehead of the patient and provided with means for maintaining the tube in position, a fresh-air-admission tube and means suspending the same from an article of furniture, valves in the first tube and alternately acting to admit to the mouthpiece fresh air and to exhale vitiated air, a conductor for vitiated air connecting with the discharge-passage, and a receiver in the length of the conductor through which the vitiated air is caused to pass before final delivery.

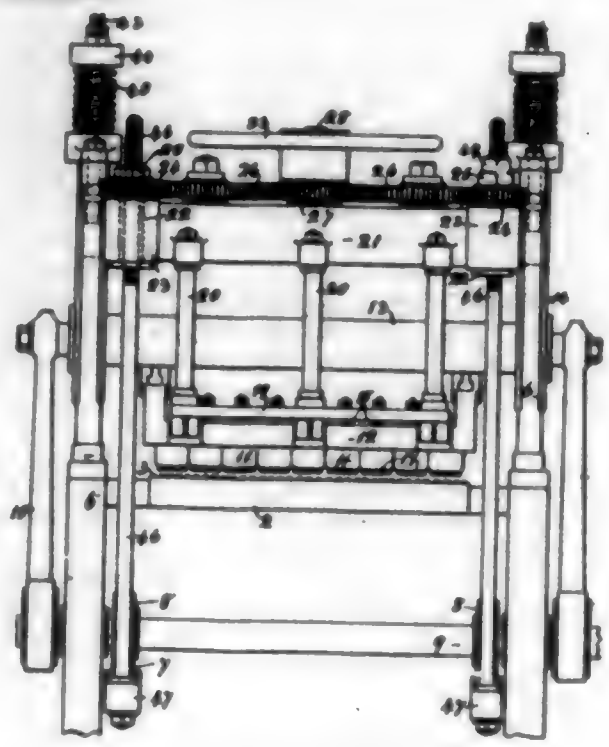
3. In a fresh-air apparatus, an inlet-tube and valves, a mouthpiece, an outlet-tube and valves, and a conductor of bag form connected with the outlet, and adapted as a receiver for exhaled air and to be applied to the person of the user said receiver having a discharge-passage through which the exhaled air is successfully delivered.

4. In a fresh-air-supply apparatus, a mouthpiece and means for attaching it, a connecting inlet-tube with inwardly-opening valve, a discharge-tube with outwardly-opening valve, a flexible bag adapted to fit the person of the user, and through which the discharged air is caused to pass said bag having a delivery-tube through which the exhaled air is discharged.

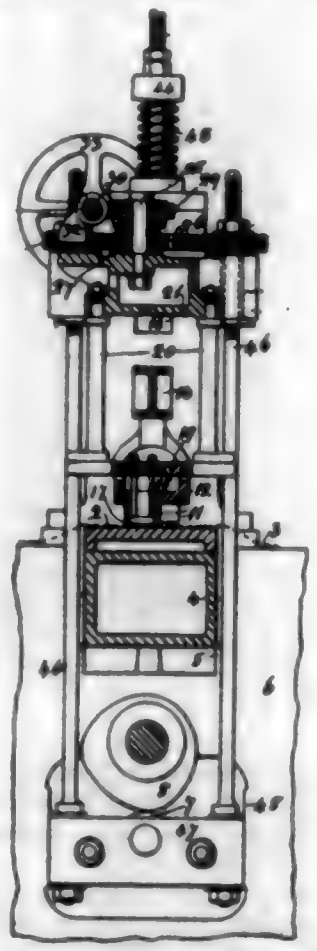
814,485. BISCUIT STAMPING AND CUTTING MACHINE. THOMAS VICARS and JOHN VICARS, the Younger, Barlestown, England. Filed Nov. 23, 1903. Serial No. 182,345.

Claim.—In combination with biscuit stamping and cutting machines having independently-reciprocating stamps and cutters, the stamps being disposed within the cutters, regulating devices on the connections between the stamps and their operating-gear, and mechanism for operating all the regulating devices simultaneously to regulate the position of the stamps relative to the surface of the cutting table; substantially as described.

814,485.



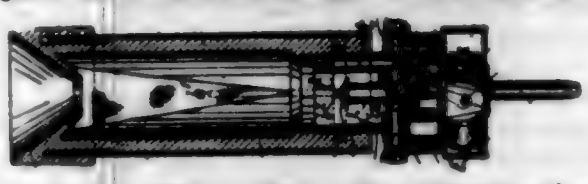
814,486. BISCUIT STAMPING AND CUTTING MACHINE. THOMAS VICARS and JOHN VICARS, the Younger, Barlestown, England. Filed Nov. 23, 1903. Serial No. 182,346.



Claim.—1. In biscuit stamping and cutting machines, the combination of a reciprocating cutting-table, fixed cutters reciprocating stamps disposed within the cutters, mechanism for operating the table, and mechanism for pressing the stamps on the dough before cutting commences and withdrawing the stamps before the cutting out is finished; substantially as described.

2. In biscuit stamping and cutting machines, the combination of a reciprocating cutting-table, fixed cutters, reciprocating stamps disposed within the cutters, mechanism for operating the table, and mechanism for pressing the stamps on the dough before cutting commences and withdrawing the stamps before the cutting out is finished, regulating devices on the connections between the stamps and their operating mechanism, and mechanism for operating all the regulating devices simultaneously to regulate the position of the stamps relative to the surface of the cutting-table; substantially as described.

814,487. MILKING APPLIANCE. ROBERT WALLACE, Castle Douglas, Scotland. Filed Dec. 28, 1904. Serial No. 238,614.



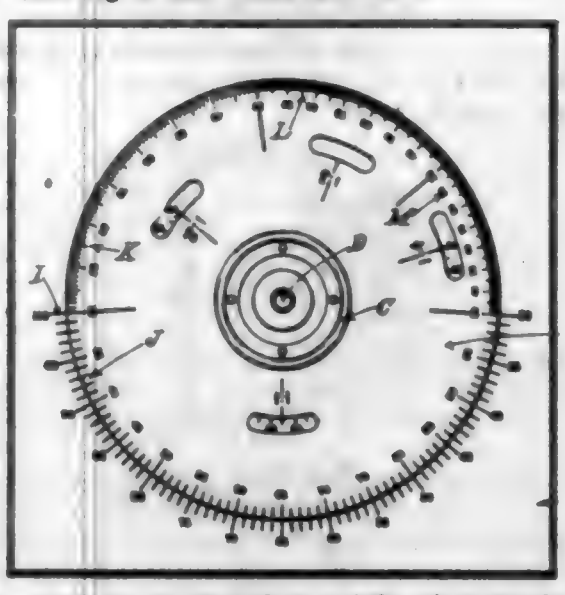
Claim.—1. In a milking appliance, the combination of a group of individual double-walled cups, a separate vacuum-motor secured to each of said cups for operating the same, and means for maintaining the suction within each cup at a continuous vacuum, the inlet of atmospheric air through the motor to the outer chamber of the cup producing a pulsating action around the teat.

2. In a milking appliance, the combination of an individual double-walled cup with a vacuum-motor secured to such individual cup, and a single suction-tube connected to the motor and the milk-receiving portion of said cup.

3. In milking appliances the combination of a cup, a vacuum-motor discharging its air into center of cup, with the rubber tube formed with vertical grooves and horizontal groove, and surrounded by an outer metal shell.

4. In milking appliances the combination of an outer metal tube, and an inner rubber tube having longitudinal and horizontal grooves, with means for communicating suction and atmospheric action alternately thereto.

814,488. COMPUTING DEVICE. WILLIAM H. WATSON, Danvers, Mass. Filed Aug. 18, 1905. Serial No. 274,691.



Claim.—1. In a computing device of the character described the combination with a fixed and a movable card, of a greater-weight scale and a result-scale on the fixed card, the said result-scale having a length equal to that of the greater-weight scale plus the length of a lesser-weight scale, a lesser-weight scale on the said movable card having a length proportionate to the length of the greater-weight scale and the relative weight to be given to the two numbers to be averaged, and a pointer for the said lesser-weight scale to indicate divisions of said result-scale.

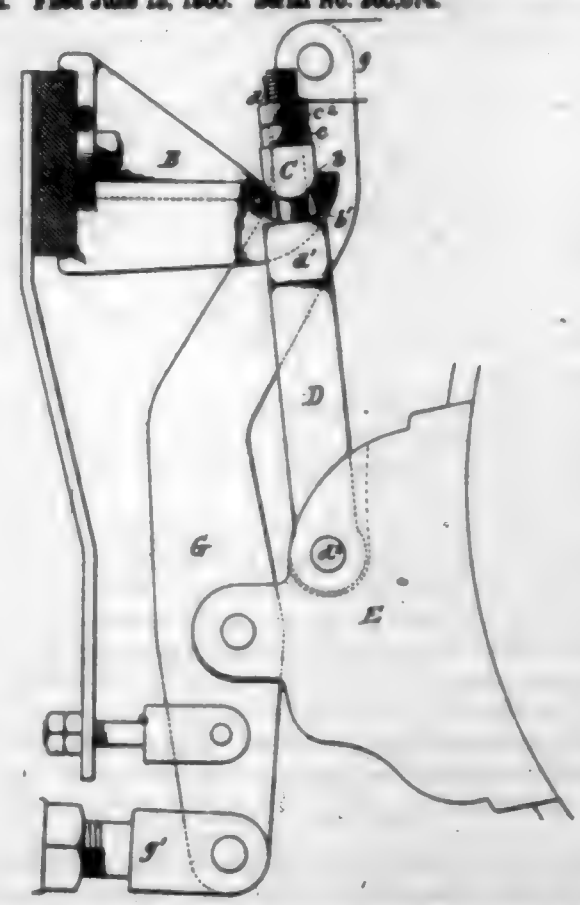
2. In a computing device of the character described the combination with a fixed and movable card of a greater-weight scale and a series of result-scales on the fixed card, the said result-scales having a length equal to that of the said greater-weight scale plus the length of a corresponding lesser-weight scale, lesser-weight scales on the said movable card having lengths proportionate to the length of the said greater-weight scale and the relative weights to be given the two numbers to be averaged, and a pointer for each of the said lesser-weight scales.

3. In a computing device of the character described, the combination with a fixed and movable card, of a greater-weight scale and a series of result-scales on the fixed card, the said result-scales having a length equal to that of the said greater-weight scale plus the length of a corresponding lesser-weight scale, lesser-weight scales arranged about the circumference of the said movable card having lengths proportionate to the length of the said greater-weight scale and the relative weights to be given to the numbers to be averaged and a pointer on the median line of each of the said lesser-weight scales.

4. In a computing device of the character described, the combination with a fixed and a movable card, of a greater-weight scale and result-scales arranged on the fixed card concentrically with relation to each other, the said result-scales having a length equal to that of the greater-weight scale plus the length of a corresponding lesser-weight scale, a lesser-weight scale on the said movable card having a length proportionate to the length of the greater-weight scale and the relative weight to be given to the two numbers to be averaged, and a pointer to indicate divisions of said result-scales.

5. In a computing device of the character described, the combination with a fixed and a movable card, of greater-weight scale and a result-scale arranged concentrically with relation to each other, the said result-scale having a length equal to that of the greater-weight scale plus the length of a lesser-weight scale, a lesser-weight scale on the said movable card having a length proportionate to the length of the greater-weight scale and the relative weight to be given to the two numbers to be averaged, slots in the said movable card for each lesser-weight scale through which the divisions of the result-scale are visible, and a pointer to indicate divisions of said result-scales.

814,489. BRAKE-HANGER. WALTER O. WEBSTER, Philadelphia, Pa., assignor to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed June 13, 1905. Serial No. 265,074.



Claim.—1. The combination in a brake-shoe hanger, of a bracket having a curved pocket and having a carved portion directly under the pocket, a hanger-rod having an enlarged portion bearing against the under side of the bracket and having a stem extending through a slot in the bracket, a shoe carved to fit the pocket and having an opening through which the stem of the rod passes, and means for adjusting the shoe on the stem so as to make a neat fit between the shoe and the pocket and the enlarged portion of the rod and the bracket, substantially as described.

2. The combination in a brake-hanger, of a bracket secured to the frame of a truck, said bracket having a transverse curved pocket at its outer end, the bracket having a bearing-face directly under the pocket taken on the same lines as the curve of the pocket, a rod, a brake-shoe carried by the lower end of the rod, said rod having an enlarged upper end bearing against the curved under side of the bracket and having a stem extending through a slot in the bracket, a shoe curved to fit the pocket and having an opening through which the stem passes, and a nut on the threaded stem of the rod so as to adjust the parts to prevent chattering, substantially as described.

3. The combination of two brackets spaced apart, a curved pocket in each bracket and having a curved surface under each pocket, a brake-shoe and two hanger-rods attached to said shoe, each rod having a portion adapted to the under side of a bracket and a shoe mounted in each pocket and connected to a rod, substantially as described.

4. The combination of two brackets spaced apart, a curved pocket in each bracket and having a curved surface under each pocket, a brake-shoe and two hanger-rods attached to said shoe, each rod having a portion adapted to the under side of a bracket and a

shoe mounted in each pocket and connected to a rod, with an operating-lever pivoted to the brake-shoe and passing between the brackets, substantially as described.

814,490. **BINDING AGENT AND PROCESS OF FORMING SAME.** Ludwig Weiss, Budapest, Austria-Hungary. Filed Mar. 18, 1904. Serial No. 198,827.

Claim.—1. The hereinbefore-described process of forming a binding agent for pulverulent substances, consisting in decomposing a mixture of carbonates of calcium and magnesium by sulfuric acid, drying the product obtained, burning a portion thereof, and thoroughly mixing the burned with the unburned powder, whereby a product results which when moistened solidifies in a solid substance at an ordinary temperature, substantially as described and for the purpose set forth.

2. The hereinbefore-described process of forming a binding agent which consists in decomposing by sulfuric acid a total mixture of two hundred parts composed of one hundred parts by weight of dolomite, fifty parts calcium carbonate, and fifty parts carbonate of magnesium, drying the decomposed precipitated products, burning a portion of the precipitated products, and mixing the unburned and burned portions together, whereby a product results which when moistened solidifies in a solid substance at an ordinary temperature, substantially as described and for the purpose set forth.

3. A binding agent composed of a mixture of salts of calcium and magnesium and carbonates of the said metals decomposed by sulfuric acid which have been dried, and a portion burned and again mixed with the unburned residue.

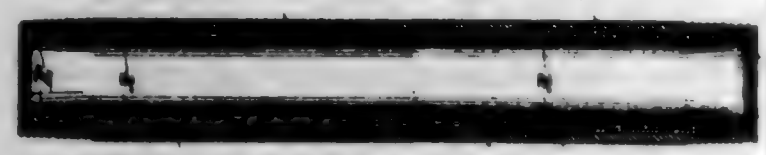
4. A binding agent composed of a mixture of decomposed salts of calcium and magnesium and carbonates of the said metals which have been dried, and a portion burned and again mixed with the unburned residues.

5. A binding agent composed of one hundred parts by weight of decomposed dolomite, fifty parts decomposed calcium carbonate, and fifty parts decomposed carbonate of magnesium, a portion only of which is burned.

6. A binding agent, composed of decomposed dolomite and decomposed carbonate of magnesium, a portion only of which is burned

7. The hereinbefore-described process of forming a binding agent for pulverulent substances, consisting in decomposing a mixture of calcium and magnesium carbonate, drying the mixture, burning a portion thereof and thoroughly mixing the burned with the unburned powder, whereby a product results which when moistened solidifies in a solid substance at an ordinary temperature, substantially as described and for the purpose set forth.

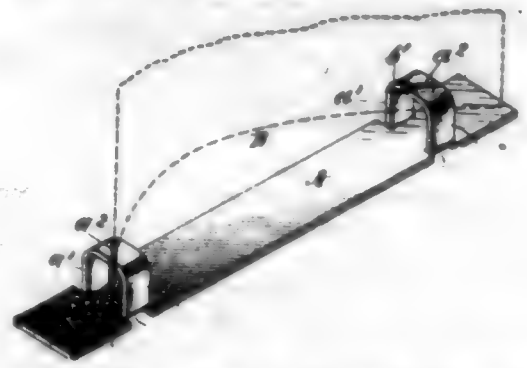
814,491. **WORKING BARREL FOR OIL AND OTHER PUMPS.** William H. Westerman, Marietta, Ohio. Filed Mar. 16, 1905. Serial No. 250,451.



Claim.—1. The herein-described improvement in working barrels for pumps consisting of a thin inner brass tube, a thicker outer iron tube, an intermediate filling of fusible metal attached to the inner and outer tubes and uniting them in a single homogeneous tube, said tube having its outer surface reduced at its upper and lower ends and externally screw-threaded to receive coupling-sleeves, the inner surface of the complete tube being swaged outwardly at its upper and lower ends to increase the internal diameter of the tube at such ends, whereby when the coupling-sleeves are applied, the upper and lower ends of the tube will not be compressed sufficiently to collapse and cause the internal diameter of the tube at its upper and lower ends to become less than that of the body portion of the tube.

2. As a new article of manufacture, a working barrel for pumps consisting of a tubular cylindrical section having its external surface reduced at its upper and lower ends and externally screw-threaded at such points to receive threaded coupling-sleeves, the inner surface of the tube being swaged outwardly at its upper and lower ends to increase the internal diameter of the tube at those points, whereby when coupling-sleeves are applied to the ends of the tube, the internal diameter of the tube at its upper and lower ends will not be reduced to less than the internal diameter of the body portion of the tube.

814,492. **LOOSE-LEAF BINDER.** William M. Wheildon, Boston, Mass., assignor of one-half to Dimock Wilbert Sutherland, Boston, Mass. Filed Sept. 27, 1905. Serial No. 280,262.

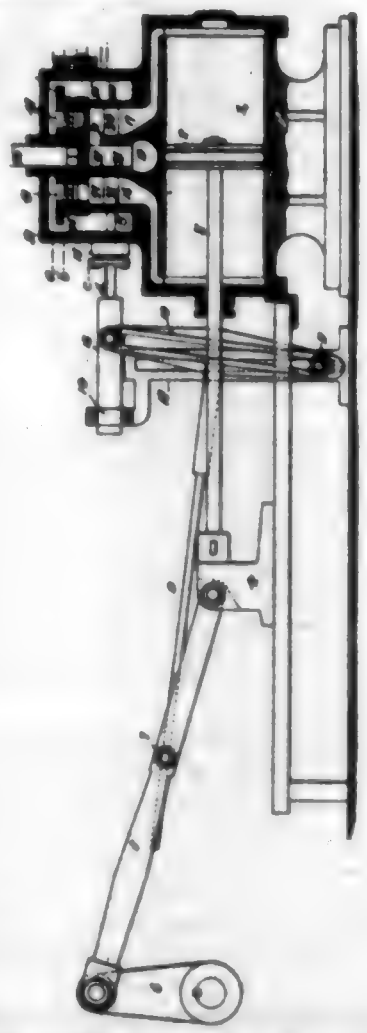


Claim.—1. A loose-leaf binder consisting of a plate having a leaf-holding arch portion rigid therewith, bent so as nearly but not quite to form a closed loop, the adjacent terminals of the loop reciprocally guarding each other to prevent the escape of a flat leaf therefrom.

2. A loose-leaf binder, consisting of a plate having fingers rigid therewith bent upward and inward so as nearly but not quite to meet above the plate, the adjacent terminals of the fingers reciprocally guarding each other to prevent the escape of a flat leaf therefrom.

3. A loose-leaf binder consisting of a plate having fingers rigid therewith, bent upward and inward so as nearly but not quite to meet above the plate, the adjacent terminals of the fingers being beveled, to form an open slot angularly transverse to the center line of the plate.

814,493. **CUT-OFF AND REVERSING VALVE MECHANISM FOR ENGINES.** William Wills, Philadelphia, Pa. Filed June 19, 1905. Serial No. 265,909.



Claim.—1. The combination of the cut-off valve, and means for operating the same, with the reversing-valve coöperating with the cut-off valve and having oppositely-disposed pairs of steam supply and exhaust passages, and intermediate passages for causing equalization of pressure in opposite ends of the cylinder as the reversing movement of the valve is being effected, substantially as specified.

2. The combination of the cylinder and its passages, the cut-off valve, the reversing-valve on the back of the same, and a balancing-plate in the steam-chest against which the back of said reversing-valve has its bearing, substantially as specified.

3. The combination of the cylinder and its passages, the cut-off

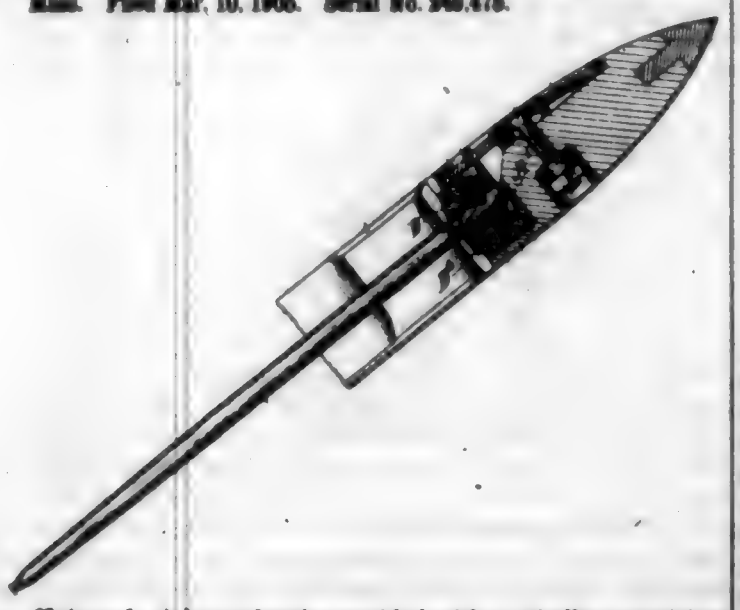
valve, the reversing-valve on the back of the same, a balancing-plate in the steam-chest against which the back of said reversing-valve has its bearing, and packing-rings surrounding passages of the reversing-valve and bearing against the backing-plate, substantially as specified.

4. The combination of the cylinder and its passages, the cut-off valve, the reversing-valve on the back of the same, and a stem passing through a stuffing-box on the back of the valve-chest and engaging said reversing-valve, substantially as specified.

5. The combination of the cylinder and its passages, the cut-off valve, the reversing-valve on the back of the same, a balancing-plate against which said reversing-valve has its bearing, and a stem passing through said balancing-plate and through the valve-chest cover, and serving to operate the reversing-valve, substantially as specified.

6. The combination of the cylinder and its passages, the cut-off valve, and the reversing-valve on the back of the same having a tubular stem adapted to a bearing in the cylinder and also providing a bearing for the cut-off valve, substantially as specified.

814,494. LOOM-SHUTTLE. WILLIAM H. WILSON, New Bedford, Mass. Filed Mar. 10, 1905. Serial No. 249,475.



Claim.—1. A loom-shuttle provided with a spindle comprising a shank, a removable head for the shank, and a pivot-pin for the spindle, the said pin also serving to fasten the shank in place in the head.

2. A loom-shuttle comprising a body provided with a recess, a bearing fitting in said recess and provided with spaced lugs, means for removably securing the bearing in place, a spindle having a shank, a head on said shank, fitting between the lugs and mounted to turn thereon, the said head having a heel engaging the front of the bearing, a spring pressing on the head of the spindle to hold it in position in the bearing, and means for holding the spring in place and adjusting the tension thereof.

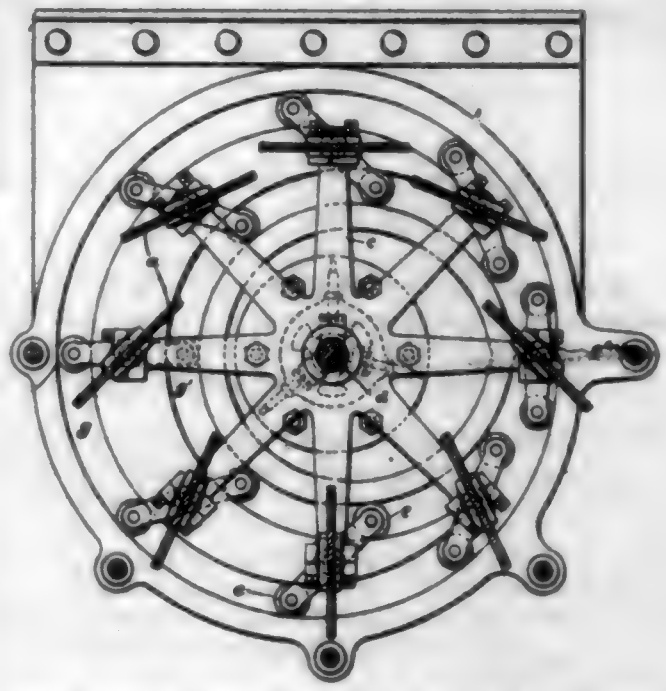
3. A loom-shuttle comprising a body, a bearing removably held in the said body, a spindle having a shank provided with a transverse notch at its base end, a head having an aperture for receiving the base end of the shank, and a pivot-pin for the spindle, mounted to turn on said bearing, the said pin being held in the head and engaging the said notch in the shank to fasten the shank in place in the head.

4. A loom-shuttle comprising a body, a bearing fitting into a recess in the said body and provided with spaced lugs, a pin extending through the bearing and the sides of the shuttle-body, for removably securing the bearing in place, a spindle having a shank, a head, and a pivot-pin, the latter fastening the shank in place in the said head and mounted to turn on the said lugs.

5. A loom-shuttle comprising a body provided with a bearing, a spindle having a shank, a removable head, and a pivot-pin, the said pivot-pin fastening the shank in place in the said head and mounted to turn on the said bearing.

814,495. PADDLE-WHEEL. GUSTAF A. WIKAN, Malmö, and FRIDOLF SCHAUMAN, Stockholm, Sweden. Filed June 1, 1904. Serial No. 210,981.

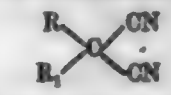
Claim.—1. In paddle-wheels, stationary end plates, a shaft passing concentrically through said plates, each of said plates having a pair of slots disposed eccentrically around said shaft and so placed one within the other that they intersect at a given point, the intersecting point of the slots in one end plate being at a phase difference of substantially ninety degrees from the intersecting point of the slots in the other end plate, paddle-boards interposed between said end plates, pivot members rigidly secured to each end of said paddle-boards, supporting-arms for said pivot members carried by said shaft, and rollers carried by said pivot members adapted to travel in said slots whereby the relation of the planes of the paddle-boards to the shaft will be constantly varied during the travel of the boards around said shaft.



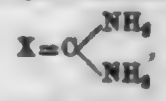
2. In paddle-wheels, a shaft, end plates disposed around said shaft, each of said plates having a pair of slots disposed eccentrically around said shaft and so placed one within the other that they will intersect at a given point, the intersecting point of the slots in one plate being at a phase difference of substantially ninety degrees from the intersecting point of the slots in the other plate, paddle-boards interposed between said plates, and means coöperating with said paddle-boards and the slots in said plates whereby the planes of the paddle-boards to the shaft will be constantly varied at all times during the travel of the boards around said shaft.

814,496. PROCESS OF MAKING BARBITURIC ACIDS. OTTO WOLFES, Darmstadt, Germany, assignor to The Firm of E. Merck, Darmstadt, Germany. Filed Nov. 8, 1904. Serial No. 231,572.

Claim.—1. The process of manufacturing a barbituric acid consisting in the condensation of a malonitrile of the general formula



with a substance having the general formula

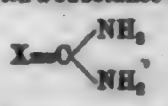


whereby a 4.6 diimino-pyrimidin of the general formula.



is produced, the latter being subsequently converted by saponification into a 4-6-dioxypyrimidin.

2. The process of manufacturing a barbituric acid consisting in condensing a malonitrile with a substance of the general formula

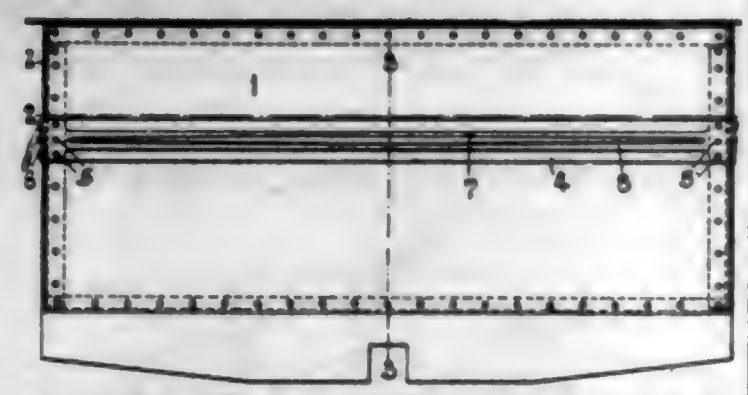


and converting the iminobarbituric acid thus formed into barbituric acid by saponification.

3. The process consisting in condensing diethylmalonitrile with guanidin with the aid of sodium alcoholate, and subsequently saponifying to produce barbituric acid.

814,497. END BRACE FOR CARS. HERMAN W. WOLFF, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 11, 1905. Serial No. 291,986.

Claim.—1. A brace for strengthening the end wall of a car, said brace being in the form of a dish-shaped truss extending transversely across the end of the car and provided with marginal flanges through which fastenings pass to secure said brace to said end wall; substantially as described.



2. An end brace for cars comprising a member in the form of a dish-shaped truss which extends transversely of the end wall of the car, said member being widest at its center and having its ends secured to the end wall near the sides of the car; substantially as described.

3. An end brace for cars, the same being in the form of a dish-shaped truss widest at its center and whose ends extend around the corners of the car and secured to the side walls thereof; substantially as described.

4. An end brace for cars, the same being in the form of a dish-shaped truss widest at its center and having marginal flanges throughout its length, the ends of said brace extending around the corners of the car and being secured to the side walls thereof; substantially as described.

5. A brace adapted to extend transversely of the end wall of a car comprising a strip of sheet metal provided with a substantially U-shaped portion which is of greatest dimensions at the central portion of the strip and varies gradually in dimensions toward the opposite ends of the strip; substantially as described.

6. A sheet-metal brace adapted to extend transversely of the end of a car and comprising a portion which is substantially U-shaped in cross-section, said portion being of greatest dimensions at the central part of the brace and decreasing gradually toward the opposite ends of the brace and merging into the body portion thereof, and marginal flanges extending throughout the length of said brace; substantially as described.

7. A sheet-metal brace adapted to extend transversely of the end of the car and comprising a U-shaped portion which is of greatest dimensions at the central part of the brace and decreases gradually in dimensions toward the opposite ends of the brace, a rib formed on the crown of said U-shaped portion, and marginal flanges extending throughout the length of said brace; substantially as described.

8. A sheet-metal brace adapted to extend transversely of the end of a car and having its ends deflected to extend around the side walls of the car, said brace being provided with a substantially U-shaped portion which for a part of its length is of uniform dimensions and then gradually tapers toward the opposite ends of the brace, the crown of said U-shaped portion being provided with a rib which varies in dimensions as the dimensions of the U-shaped portion vary; substantially as described.

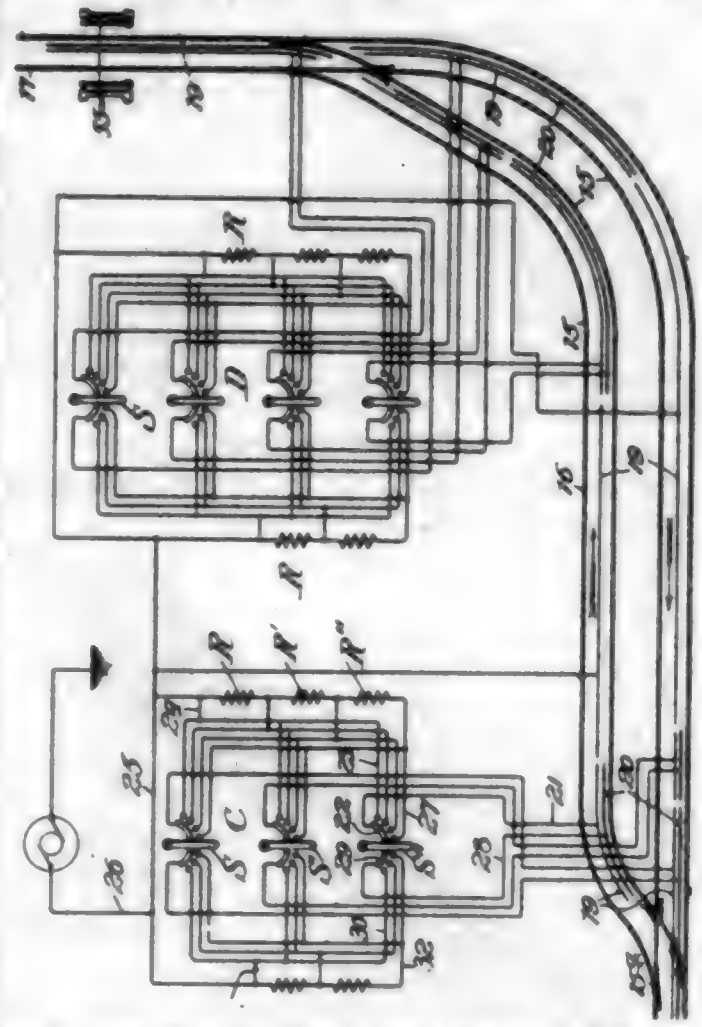
9. An end brace for cars, the same being in the form of a dish-shaped truss extending across the end of the car and having its ends secured to the side walls of the car; substantially as described.

10. A device for bracing the end wall of a car, comprising a member in the form of a dish-shaped truss having ribs formed on the crown of the dish-shaped portion, said member being arranged horizontally on the end wall of the car and secured to said wall; substantially as described.

11. A sheet-metal brace adapted to be arranged horizontally on the end wall of a car, the same having a U-shaped portion, marginal flanges provided with openings to receive fastenings for securing said brace to said end wall, and a rib on the crown of said U-shaped portion; substantially as described.

814,498. CAR-HANDLING APPARATUS. FRANK R. WOODRUFF, Chicago, Ill., assignor to Homer Company, Chicago, Ill., a Corporation of Maine. Filed Mar. 2, 1905. Serial No. 248,102.

Claim.—1. The combination with a railway track, of two electric feed conductors independent of the track and of each other, a central switchboard having differential resistance coils and a single switch to vary the current in either of said conductors; and a series of independent cars on the track provided with motors and brakes, and motor and brake circuits having operative contact with said conductors, substantially as described.



2. The combination with a circuit of track, a series of cars thereon, electric motors and brakes on each car, and conductors for supplying current to the same, and a central switchboard having means to differentially vary the current in different sections in said track and conductors in alternation.

3. The combination with a car having an electric motor and an electric brake, of a track and separate conductors for feeding the motor and brake, and a single central switch differentially controlling the current for both the motor and the brake conductors from a distant central station, substantially as described.

4. The combination with a motor driven car having thereon an electrical brake, of a distant switch controlling station and independent feed conductors therefrom to the motor and brake, and a single switch adapted to alternately energize the motor and brake conductors, and means attached thereto to vary the current in each of said conductors.

5. The combination with a track and a motor car thereon, of means for supplying current to said motor comprising separate connections to various portions of the supply conductor, and a set of resistance coils located at a central station and arranged for varying the current in said several portions and to energize the motor and brake circuits in alternation.

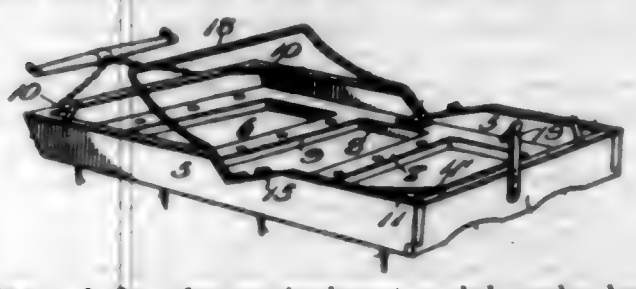
6. The combination with a track and a motor car having an electric brake, of separate conductors independent of each other and of the track for feeding the motor and the brake of the car and means located at a central station to energize them at will from a distant point independently of each other and only in alternation.

7. The combination with several motor cars each having an electric brake and a separate feed conductor for the motor and brake, and a distant central switchboard having means to vary the current in both the motor and brake conductors, including a single switch to operate both the motor and the brake connection.

8. In car handling apparatus the combination with a source of current, and suitable electric connections for supplying current to a moving motor car, of a brake for the car comprising a pair of pivoted jaws embracing a revolving portion of the car driving mechanism a toggle link for closing said jaws operated by a solenoid, and means for energizing the solenoid by current from a point external to the car substantially as described.

9. The combination with a motor-driven-car having an electric brake, feed conductors for the motor and brake, and a single switch to operate the motor and brake in alternation from a distant point.

814,498. CLOD-CRUSHER AND HARROW. EDWARD C. ABRAHAM, Santa Cruz, Cal. Filed May 27, 1905. Serial No. 262,848.



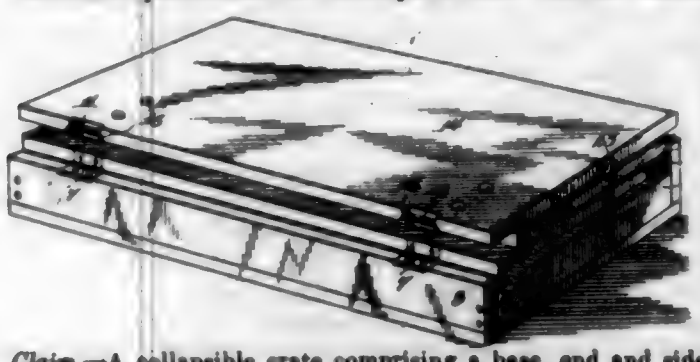
Claim.—1. In a farming implement, a clod-crusher having closed bottom, sides and ends, the sides being formed with V-shaped recesses, a harrow-frame mounted within the clod-crusher, and a lever connected with the frame and bearing on the V-shaped recess, whereby in the operation of said lever the harrow may be moved to operative position.

2. A farming implement comprising a clod-crusher having closed bottom, sides and ends, the front end of the crusher being inclined from the vertical, the side walls of the crusher being formed with V-shaped recesses, a harrow-frame mounted within the clod-crusher, a lever pivotally connected to said frame and bearing above the wall of said V-shaped recess, and a device carried by said V-shaped recess to provide a fulcrum for the lever.

3. A farming implement comprising a clod-crusher having closed bottom, sides and ends, the front end of the crusher being inclined from the vertical, the side walls of the crusher being formed with V-shaped recesses, a harrow-frame mounted within the clod-crusher, a lever pivotally connected to said frame and bearing above the wall of said V-shaped recess, and a roller mounted in said recess to provide a fulcrum for the lever.

4. A farming implement comprising a clod-crusher having closed bottom, sides and ends, the front end of the crusher being inclined from the vertical, the side walls of the crusher being formed with V-shaped recesses, a harrow-frame mounted within the clod-crusher, a lever pivotally connected to said frame and bearing above the wall of said V-shaped recess, a roller mounted in said recess to provide a fulcrum for the lever, and a catch to hold the lever in operative position.

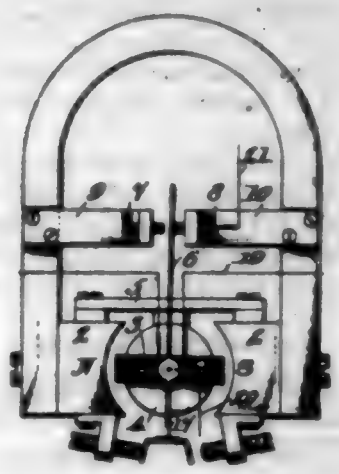
814,500. COLLAPSIBLE OR KNOCKDOWN CRATE. JACOB ACKERMAN, Spinnerstown, Pa. Filed Apr. 11, 1905. Serial No. 254,936.



Claim.—A collapsible crate comprising a base, end and side flanges extending from the base, said side flanges being higher than the end flanges, end and side walls hinged to the end and side flanges, respectively, said end walls being adapted to fold inward upon the base and the side walls adapted to fold inward over the end walls and to overlap, a top, links connecting the top with one of the side walls and constituting hinges, said top adapted to swing backward and lie flat upon the side walls to which it is connected when the crate is collapsed, each of the side walls having recesses adjacent its ends, and grooves connecting with the recesses and extending from the upper edges of said walls, a retaining-plate secured over each recess, a spring-pressed lever pivotally mounted between each retaining-plate and the end wall of its recess, one end of the lever extending across one end of the groove, heads upon the levers and hooks extending inwardly from the end walls and adapted to be automatically engaged by the heads of the levers when the crate is set up, one of the end walls having recesses therein to receive the hooks on the other end wall when the crate is collapsed, and means upon the end flanges of the base for engaging the top to hold the crate together when collapsed.

814,501. RELAY. JAMES ALLEN, U. S. Army. Filed July 31, 1905. Serial No. 271,966.

Claim.—1. A relay having a system mounted for deflective movement in a magnetic field, an armature mounted for movement by said system and independent of the magnetization of said system, and a pair of pole-pieces between which said armature is adapted to oscillate.

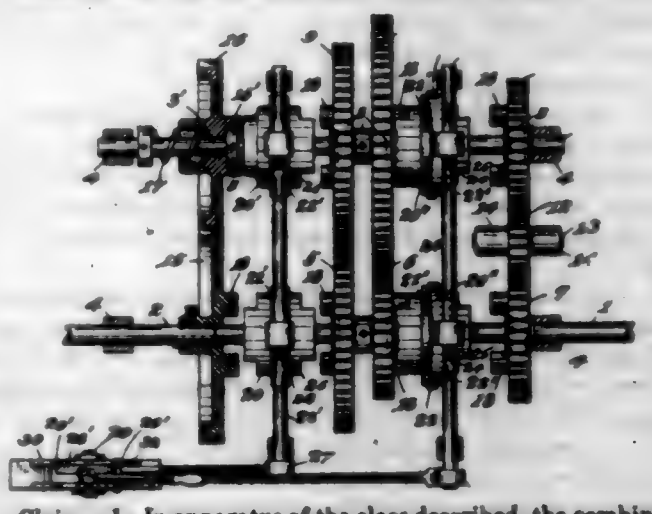


2. A relay having a coil system mounted for deflective movement in a magnetic field, a soft-iron armature mounted for movement by said system and independent of the magnetization of said system, and a pair of adjustable pole-pieces between which said armature is adapted to oscillate.

3. In a relay, the combination with a magnet, of a coil mounted for deflective movement between the poles of said magnet, a contact-tongue mounted for movement by said coil, contact-stops for said tongue, an armature mounted for movement by said coil but independent of the magnetization thereof, and a pair of auxiliary adjustable pole-pieces between which said armature is arranged to oscillate.

4. In a relay, the combination with a permanent magnet, of a coil mounted for deflective movement between the poles of said magnet, a contact-tongue of non-magnetic conducting material mounted for movement by said coil, contact-stops for said tongue, a soft-iron armature operatively connected to said tongue and coil but independent of the magnetization of said coil, and a pair of adjustable pole-pieces between which said armature is arranged to oscillate.

814,502. VARIABLE-SPEED GEARING. JOACHIM ANDERSON, Seattle, Wash. Filed Dec. 20, 1904. Serial No. 237,607.



Claim.—1. In apparatus of the class described, the combination of a driving-shaft, gears loosely mounted upon said shaft, a driven shaft, a gear fixedly mounted upon said driven shaft, an intermediate shaft, gears loosely mounted upon the last-named shaft and in mesh with the said gears of the driving-shaft, another gear splined to the intermediate shaft and normally meshing with the said gear of the driven shaft, means for clutching the gears of the driving-shaft to the latter and also the corresponding gears of the intermediate shaft to their shaft, and means to clutch the driving and driven shafts directly to each other, substantially as described.

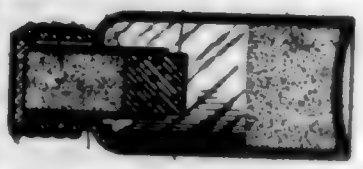
2. In an apparatus of the class described, the combination of a driving-shaft, a driven shaft, means for positively connecting and disconnecting said shafts, an intermediate shaft, gears normally loose upon said driving and intermediate shafts, and continuously meshing with each other, means for clutching said gears to their respective shafts, a gear splined to said intermediate shaft, a gear fixedly connected to said driven shaft, means for disengaging the said two last-named gears, substantially as described.

3. In apparatus of the class described, the combination of a driving-shaft, a loose gear thereon, an intermediate shaft, a loose

gear mounted on said intermediate shaft and continuously in mesh with the first-named gear, means to clutch said gears coincidently to their respective shafts, a gear rotatable with said intermediate shaft, a driven shaft, a gear fixedly secured to said driven shaft and meshing with the last-named gear on the intermediate shaft, means by which the driving and driven shafts may be directly connected together and means for moving said last-named gear out of mesh with the fixed gear on the driven shaft when the driving and driven shafts are directly connected.

4. In apparatus of the class described, the combination of the shafts and the gears thereof, with coupling-sleeves slidably mounted upon said shafts, a forked arm for each of said sleeves, a rocker-shaft, said arms being loosely hung upon said rocker-shaft, and a resilient connection between said arms and the rocker-shaft, substantially as described.

814,503. **RECEPTACLE.** Mogens Andersen, Otto Magershöft, and Gerhard Ollendorff, Berlin, Germany, assignors to Action Gesellschaft für Anilin Fabrikation, Berlin, Germany. Filed July 11, 1905. Serial No. 269,234.



Claim.—1. In a receptacle of the character described, the combination of an outer receptacle having a threaded neck, an inner removable receptacle comprising a tubular portion having its lower end formed open and designed to receive a removable stopper and its upper end closed and provided with an annular flange, said inner removable receptacle being constructed to be passed into the neck of the said outer receptacle and to be held in position by the said annular flange, and a threaded cap constructed to be passed over said annular flange and to thread on said threaded neck of said outer receptacle and to engage said annular flange to force the same down toward the said threaded neck to form a tight closure, substantially as described.

2. In a receptacle of the character described, the combination of an outer receptacle, an inner removable receptacle formed open at its lower end to receive a stopper and having a flange at its closed end to engage the mouth of said outer receptacle to suspend the said inner removable receptacle within the said outer receptacle, and a cap constructed to be passed over said flange and over the neck of said outer receptacle, and to engage said flange to form a tight closure for said outer receptacle, substantially as described.

3. In a receptacle of the character described, the combination of an outer receptacle, an inner removable receptacle having its upper end closed and a flange at said end to engage the mouth of said outer receptacle to suspend said inner removable receptacle within said outer receptacle and a cap for said outer receptacle, substantially as described.

4. In a receptacle of the character described, the combination of an outer receptacle, an inner removable receptacle having its upper end closed and constructed to be suspended within said outer receptacle, and an independent cap for said outer receptacle constructed to engage said inner removable receptacle to hold the same within said outer receptacle, substantially as described.

5. In a receptacle of the character described, the combination of an outer receptacle, an inner removable receptacle having its upper end closed and constructed to be suspended within said outer receptacle, an independent cap for said outer receptacle constructed to engage said inner removable receptacle and to center the said inner removable receptacle within the said outer receptacle, substantially as described.

814,504. **RAILWAY-SWITCH.** Victor Anderson, Ridley Park, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 8, 1905. Serial No. 264,907.



Claim.—1. The combination of a body portion of a switch, a pivoted tongue, a bar extending laterally from said tongue, a pivoted lever having a constant weight and having a portion pressing upon said bar, so as to hold the bar against accidental displacement.

2. The combination of a body portion of a switch, a pivoted tongue, a bar extending laterally from said tongue, said bar having a notched surface, a pivoted lever having a constant weight and having a toothed portion arranged to engage the notched surface of the bar and hold it against accidental displacement but which will allow the bar to slide past the lever when it is desired to shift the tongue.

3. The combination of a body portion, a switch-tongue, a box at one side of the body portion, a bar attached to the switch-tongue and extending into the box, said bar having a serrated surface, a lever pivoted to the box and having an arm, with a serrated surface engaging the serrations of the bar, substantially as described.

4. The combination of a body portion, a switch-tongue, a box at one side of the body portion, bearings in the box, a lever pivoted to the bearings, a weight on said lever, an arm on the lever having an opening, a transverse bar attached to the switch-tongue and extending into the box and through the opening in the arm of the lever, the said arm and the bar being serrated, substantially as described.

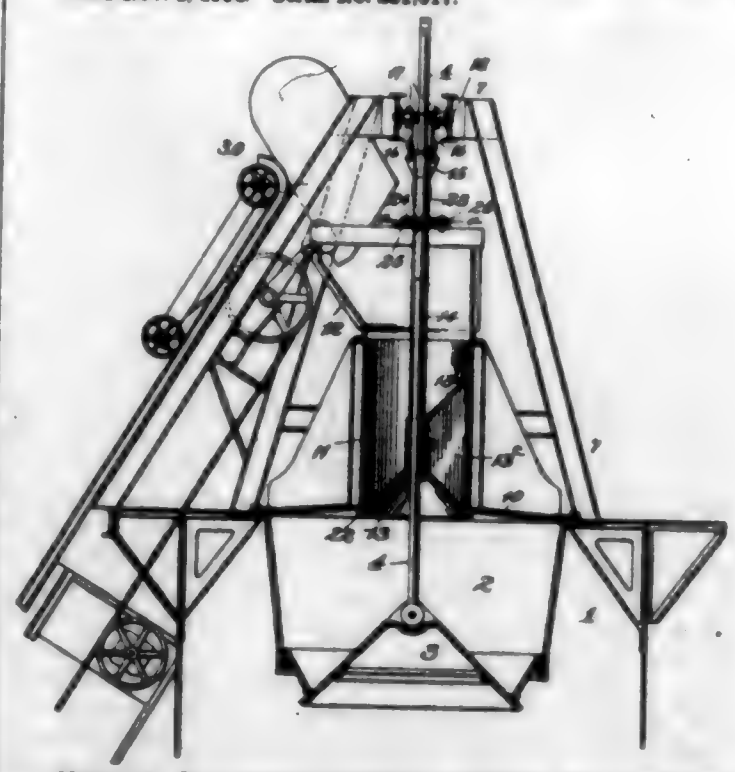
814,505. **RAILWAY-SWITCH.** Victor Anderson, Ridley Park, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 8, 1905. Serial No. 264,908.



Claim.—1. The combination in a switch structure, of a body portion, a pivoted tongue, a bar extending laterally from the tongue and having two notches therein with beveled sides, a box at one side of the switch structure, a pocket in the box, a block mounted in the pocket and having a projection arranged to engage the notched bar, and a yielding support within the pocket back of the block, substantially as described.

2. The combination in a switch structure, of a body portion, a pivoted tongue, a laterally-arranged bar connected to the tongue, said bar having notches therein, a box, a block mounted in the box and having a projection arranged to enter the notches, a spring back of the block, and a screw for adjusting the pressure of the block against the bar, substantially as described.

814,506. **FURNACE-CHARGING MECHANISM.** David Baker, Wayne, Pa., assignor of one-half to Albrecht B. Neumann, Joliet, Ill. Filed Nov. 1, 1904. Serial No. 231,017.



Claim.—1. In a furnace-charging mechanism the combination with a receiving-chamber communicating with the interior of the furnace, of a distributing-bell adapted to close the lower end of said chamber and constructed to accumulate the stock delivered to the chamber to one side of the same when the bell is in closed position, means for opening the distributing-bell to discharge the contents of the chamber, and means for shifting the position of the bell to vary the point of discharge.

2. In a furnace-charging mechanism the combination with a vertical receiving-cylinder, of a vertically-movable distributing-bell adapted to close the lower end of the cylinder, said bell being constructed with relation to the cylinder to form a receiving-cavity within the cylinder extending but partly around the same, means for feeding the charging material into the top of the cylinder, means for lowering the bell to discharge the contents of the cylinder, and means for changing the position of the bell around a vertical axis.

3. In a furnace-charging mechanism the combination of a main hopper, its closure, a receiving-cylinder rising therefrom, a vertically-movable distributing-bell closing the lower end of the receiving cylinder, means carried by the bell for accumulating the stock entering the cylinder to one side, means for lowering the bell to discharge the contents of the cylinder, and means for shifting the position of the bell between the successive discharges of the material.

4. In a furnace-charging mechanism the combination with a receiving-cylinder communicating with the interior of the furnace, of a vertically-movable distributing-bell adapted when in raised position to close the communication of the cylinder with the furnace, means carried by the bell for accumulating the stock to the side when the bell is closed, means for lowering the bell to discharge the contents of the cylinder, means for raising the bell to close the cylinder, and means controlled by the rising movement of the bell for shifting the same around a vertical axis.

5. In a furnace-charging mechanism the combination with a receiving-cylinder, of a distributing-bell adapted to close the lower end of the same, a vertical rotary stem to which the bell is fixed, means for raising and lowering the stem and means controlled by the vertical movement of the stem for rotating it.

6. In combination with a receiving-cylinder, a distributing-bell closing the same, a vertical rotary stem to which the bell is fixed, means for moving the stem vertically, a spiral rib on the stem, a rotary member affixed against vertical movement and formed with an opening to receive the stem and having a groove to receive the spiral rib, and means for preventing the rotation of said member in one direction only.

7. In a furnace-charging mechanism, the combination with a receiving-cylinder, of a distributing-bell closing the same, a rotary vertically-movable stem fixed to the bell, a spiral rib on said stem, a horizontal ratchet-wheel formed with an opening to receive the stem and with a groove to receive the spiral rib, a pawl engaging the ratchet-wheel, and means for moving the stem vertically.

8. In a furnace-charging mechanism the combination with a receiving-cylinder, of a distributing-bell closing the lower end of the same, said bell having a portion only of its distributing-surface exposed to the fall of the material fed into the cylinder, and means for shifting the position of the bell to adjust the exposed portion of the same to different points around the cylinder.

9. In a furnace-charging mechanism and in combination with a receiving-cylinder, a distributing-bell therefor, an upright wall rising from its distributing-surface, and means for directing the stock to one side of said wall.

10. In a furnace-charging mechanism and in combination with a receiving-chamber, a relatively movable distributing-bell for closing the same, a shield carried by the bell and acting to direct the stock fed to the chamber to one side, and means for shifting the position of the bell with reference to the chamber to vary the point of discharge of the stock.

11. In a furnace-charging mechanism and in combination with a receiving-cylinder, a distributing-bell closing the same, an upright wall carried by the bell and extending across the cylinder, and an inclined shield extending upward and outward from the upper end of the wall, and having its edge curved to conform to the curvature of the cylinder.

12. A distributer for blast or similar furnaces consisting of a chute and a distributing-plate diagonally disposed in the chute, means for raising and lowering the distributing-plate, and means for imparting a partial revolution thereto.

13. In a distributer for blast and similar furnaces, the combination of a discharging-hopper, means for controlling the discharge from the hopper, a chute leading thereto, a discharging-plate diagonally disposed in the chute, a shaft for raising and lowering the discharging-plate, and means for imparting a partial revolution to the shaft.

14. A distributer for blast or similar furnaces, consisting of a lower discharging-hopper, a conical bell adapted when in raised position to close the mouth of the discharging-hopper, a shaft by which the bell is supported, a chute opening into the lower or discharging hopper, a distributing-plate diagonally disposed in the chute, a tubular shaft surrounding the first-mentioned shaft, to which the distributing-plate is secured, means for raising and lowering the tubular shaft, means for imparting a partial revolution thereto, and means for raising and lowering the shaft supporting the lower bell.

15. A distributer for blast or similar furnaces, consisting of a discharging-hopper having converging said walls, a bell adapted when raised to close the mouth of the discharging-hopper, a chute opening into the discharging-hopper, a bell adapted when raised to close the mouth of the chute, a distributing-plate secured to the bell and extending diagonally across the chute, a tubular shaft to which the last-mentioned bell and distributing-plate are secured, means for raising and lowering the tubular shaft, means for imparting a partial revolution thereto, and a second shaft passing through the tubular shaft and connected with the discharging-bell and adapted to be raised and lowered.

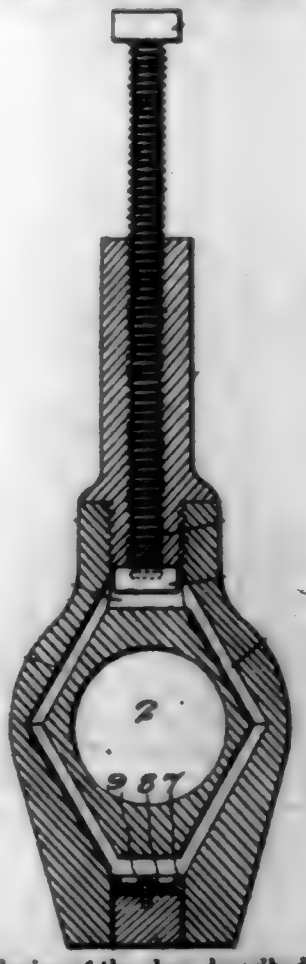
814,507. **CHECKREIN-FASTENER.** Charles W Barrett, Hanford, Cal. Filed May 23, 1905. Serial No. 261,804.



Claim.—1. The combination with a saddletree and a checkrein-hook, of a plate secured on the saddletree, a pintle secured to said plate, a spring-wire fastening device having its ends coiled around said pintle, and a finger-plate attached to the upper end of said wire.

2. The combination with a saddletree and a checkrein-hook, of a metal plate secured to the saddletree and having upwardly-extended opposite sides, a pintle secured to said sides at the rear ends, a fastener consisting of spring-wire having portions coiled around said pintle and having its ends secured to said plate, and a finger-plate on the upwardly-extended portion of said wire.

814,508. **HYDRAULIC PRESSURE DEVICE.** John J. Barry, Nashville, Tenn. Filed June 27, 1905. Serial No. 267,260.



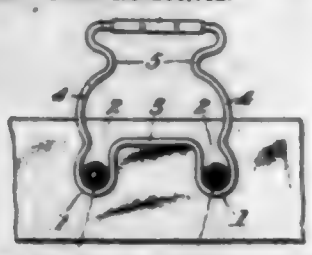
Claim.—1. In a device of the class described, a body provided with a transverse opening and having a pair of chambers, a duct connecting said chambers and adapted to receive a liquid, a pressure

member disposed in one of said chambers for projection therefrom, and a plunger in the other chamber and operating through the medium of the liquid to project the pressure member.

2. In a device of the class described, a body having an opening to receive a connecting-pin and provided with a pair of chambers, a liquid-receiving duct connecting and communicating with said chambers, a pressure-head movable in one of the chambers for projection beyond the body, and a plunger operatively disposed in the other chamber to act upon the liquid for projecting the pressure-head.

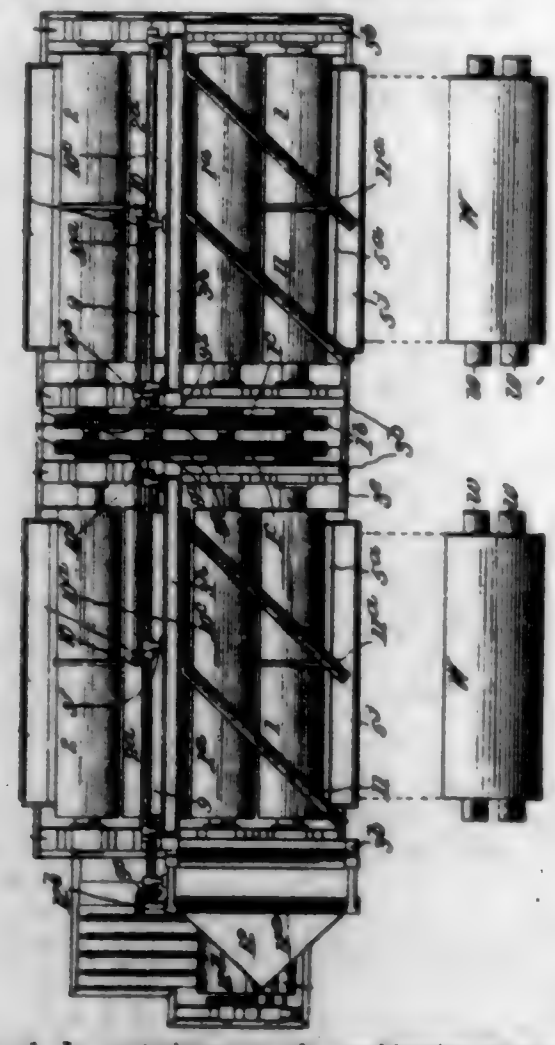
3. In a device of the class described, a body having an opening to receive a connecting-pin and provided with a pair of chambers, a liquid-receiving duct connecting and communicating with said chambers, a pressure-head movable within one of the chambers for projection beyond the adjacent face of the body, a tubular stem carried by the latter, a plunger disposed in the other chamber, and a plunger-screw threaded through the stem and operatively connected with the plunger.

814,509. SUSPENDER-LOOP. Charles W. Bartrum, Newburgh, N. Y., assignor to Sweet, Orr & Company, Newburgh, N. Y., a Firm. Filed Nov. 10, 1905. Serial No. 286,712.



Claim.—As a new article of manufacture, the herein-described suspender-loop, composed of a wire bent upon itself to form adjacent cells, having constricted entrances and a rigid connection, outwardly-bowed sides having inwardly-bent portions above the cells, the ends of the wire being bent toward each other to form a cross-bar and such ends rigidly connected.

814,510. ROTARY PRINTING-PRESS. Henry F. Bechman, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed July 26, 1905. Serial No. 271,267.



Claim.—1. In a printing-press, the combination of two rotary perfecting printing mechanisms arranged end to end in one frame and closely adjacent, the printing-couples in each being parallel with and adjacent to each other, and a folding mechanism exterior to said mechanisms.

2. In a printing-press, the combination of a plurality of perfecting mechanisms, each comprising two plate and two impression cylinders arranged longitudinally of the press and close together, the perfecting mechanisms being arranged substantially end to end and closely adjacent, and a folding mechanism outside the printing mechanisms.

3. In a printing-press, the combination of a plurality of perfecting mechanisms, each comprising two plate and two impression cylinders arranged longitudinally of the press and close together, the perfecting mechanisms being substantially end to end and adjacent, and a folding mechanism at the outer end of one of the perfecting mechanisms, and means for directing the webs to the folding mechanism.

4. In a printing-press, the combination of a plurality of perfecting mechanisms, each comprising two plate and two impression cylinders arranged longitudinally of the press, the perfecting mechanisms being arranged adjacent; a folding mechanism at the outer end of one of the perfecting mechanisms; and angle-bars above the printing mechanisms whereby the web may be directed to the folder.

5. In a newspaper-printing press, the combination of a plurality of perfecting mechanisms in substantially the same plane, each comprising two plate-cylinders and two impression-cylinders arranged longitudinally of the press, and close together, the perfecting mechanisms being arranged closely adjacent end to end, and a folding mechanism outside the printing mechanism.

6. In a newspaper-printing press, the combination of a plurality of perfecting mechanisms in substantially the same plane, each comprising two plate and two impression cylinders arranged longitudinally of the press and close together; the perfecting mechanisms being arranged closely adjacent end to end; a folding mechanism at the outer end of one of the perfecting mechanisms; and means for directing the webs to the folding mechanism.

7. In a newspaper-printing press, the combination of a plurality of perfecting mechanisms each comprising two plate and two impression cylinders arranged longitudinally of the press and close together; the two perfecting mechanisms being arranged closely adjacent end to end; a folding mechanism outside the printing mechanisms, and angle-bars above the mechanisms whereby the web may be given a quarter-turn and directed to the folder mechanism.

8. In a printing-press, the combination of two cylinder perfecting printing mechanisms arranged end to end in one frame, a folder at one end of such mechanisms, and means for directing all webs after being printed in a straight line to said folder.

9. In a printing-press, a main frame, two rotary intergeared printing mechanisms therein arranged end to end longitudinally of the frame and substantially in one plane, and a folding mechanism at one end of the printing mechanisms.

10. In a printing-press, the combination of two rotary web-perfecting printing mechanisms arranged longitudinally of the press end to end in one frame, a single folding mechanism at one end of the press exterior to the mechanisms, and means for directing all the webs after being perfected into such folder.

11. In a printing-press, the combination of two printing mechanisms in one frame, each comprising rotary plate and impression cylinders extending longitudinally of the press, the printing-couples being arranged closely adjacent without intervening mechanism the plate-cylinders being outermost, and the adjacent mechanisms being arranged closely adjacent end to end and longitudinally of the frame; means for driving the cylinders, and inking mechanisms for the plate-cylinders arranged parallel therewith.

12. In a printing-press, the combination of two sets of perfecting mechanism, each comprising two plate and two impression cylinders arranged longitudinally of the press; the perfecting mechanisms being arranged end to end in one frame and closely adjacent; with gearing for driving said cylinders mounted in the press intermediate the perfecting mechanisms.

13. The combination of two sets of perfecting mechanisms, each comprising two plate and two impression cylinders, arranged in substantially the same plane, the cylinders in the adjacent mechanisms being arranged longitudinally of the press, end to end, and those in adjacent sets being axially alined; with gearing for driving all the cylinders, arranged intermediate the adjacent ends thereof.

14. The combination with a pair of plate-cylinders and coacting impression-cylinders, arranged end to end longitudinally of the press, and a folder at the end of the press; of parallel diagonally-arranged turner-bars mounted above the cylinders, and unsupported at their outer ends.

15. The combination of two sets of plate-cylinders and coacting impression-cylinders, arranged end to end longitudinally of the press and in substantially the same plane, and a folder at the end of the

press; with diagonally-arranged turner-bars mounted above each set of cylinders, and unsupported at their outer ends.

16. In a printing-press, a main frame, two rotary intergeared printing mechanisms therein arranged end to end longitudinally of the frame and substantially in one plane, a folding mechanism at one end of the printing mechanisms, inking mechanism, and a web-supply parallel with the printing mechanism.

17. In a printing-press, the combination of the main frame, a pair of printing-couples therein arranged end to end longitudinally of the press, an inking mechanism beside each plate-cylinder and parallel therewith, gearing between the printing-couples, a folder, angle-bars above the printing-couples, and means for slitting the web before it reaches the angle-bars, substantially as described.

18. In a printing-press, the combination of a main frame, a pair of printing-couples mounted therein end to end and longitudinally of the press; with the plate-cylinders outermost, and in substantially the same plane, an inking mechanism adjacent to and below each plate-cylinder and parallel therewith, a folder at the end of the press, angle-bars above the printing-couples, web-guides, and means for slitting the web before it reaches the angle-bars, substantially as described.

19. The combination with plate and impression cylinders and a folder at one end of the said cylinders having its cutting-cylinders in alinement with the printing-cylinders; of means for directing a web laterally into the press, means for slitting the web, and angle-bars arranged above the cylinders whereby the halves of the web may be given a quarter-turn after printing, and together directed into the folder.

20. In a rotary web-perfecting printing-press, the combination of two rotary perfecting mechanisms in one frame, each having a pair of plate-cylinders, all of the plate-cylinders being in substantially one plane, and those in adjacent mechanisms arranged end to end; with a folder at one end of the press having its cutting-cylinders in alinement with the printing-cylinders.

21. The combination with a main frame, of two sets of rotary printing-cylinders arranged end to end in and longitudinally of the frame, a folder at one end of the frame, and a set of diagonally-arranged deflectors above each set of cylinders whereby the webs printed by the cylinders may be directed to the folder.

22. A rotary printing-press comprising a main frame, two sets of plate-cylinders and coacting impression-cylinders arranged end to end therein and intermediate gearing whereby the cylinders in each set may be rotated synchronously; with means whereby one set of cylinders may be thrown out of operation, a folding mechanism, and diagonally-arranged web-guides adjacent to each printing mechanism whereby the web printed by any cylinder may be directed to the folder.

23. In a printing-press the combination of two sets of perfecting mechanism, each comprising two plate and two impression cylinders arranged longitudinally of the press; and gearing for driving said cylinders mounted in the press intermediate the perfecting mechanisms; with a folder at one end of the press, and angle-bars above each perfecting mechanism, the angle-bars being parallel and adapted to direct the webs to the folder.

24. The combination of two sets of perfecting mechanism, each comprising two plate and two impression cylinders, arranged in substantially the same plane, the cylinders being arranged longitudinally of the press, end to end, and those in adjacent sets being axially alined; and gearing for driving all the cylinders, arranged intermediate the adjacent ends thereof; with a folder at one end of the press, and parallel angle-bars above each perfecting mechanism adapted to direct the webs to the folder.

25. In combination with plate and impression cylinders and a folder at one end thereof having its cutting-cylinders in alinement with the plate-cylinders; of angle-bars supported at one end only, and arranged above the printing-cylinders, whereby the web is directed to the folder.

26. In combination with plate and impression cylinders in substantially one plane, and a folder at one end of said cylinders, having its cutting-cylinders in alinement with the printing-cylinders; of means for directing a web laterally into the press, means for slitting the web, and means whereby the web may be given a quarter-turn, after printing, and directed into the folder, substantially as described.

27. In combination with plate and impression cylinders in substantially the same plane, and a folder at one end of said cylinders having its cutting-cylinders in alinement with the printing-cylinders; of means for directing a web laterally into the press, means for slitting the web, and angle-bars supported at one end only, arranged above the cylinders, whereby the halves of the web may be given a quarter-turn, after printing, and directed into the folder, substantially as described.

28. In a printing-press the combination of two plate-cylinders, and two coacting impression-cylinders between the plate-cylinders and parallel therewith, the printing-couples being closely adjacent and without intervening mechanism, and all said cylinders extending longitudinally of the press with the plate-cylinders outermost; with ink-drums, ink-fountains, and ink-distributing and form rollers parallel with the cylinders and at the outer sides of the press, substantially as set forth.

29. In a printing-press the combination of two plate-cylinders and two coacting impression-cylinders, in substantially the same plane, the plate-cylinders being outermost, and all extending axially longitudinally of the press, ink drums and fountains at the outer sides of the press and extending parallel with the cylinders, sets of ink-distributing rollers for supplying ink from the fountain to the ink-drum, and from the drum to the plate-cylinders, and means for moving the rollers to and from the drum, and to and from the plate-cylinders respectively, substantially as described.

30. In a printing-press the combination of two sets of perfecting mechanism, each comprising two plate-cylinders and two coacting impression-cylinders in substantially the same plane, the plate-cylinders outermost and the cylinders in adjacent sets being end to end, and extending longitudinally of the press; with an ink drum and fountain for each plate-cylinder at the outer sides of the press and parallel with the plate-cylinders, sets of ink-rollers for supplying ink from the fountain to the ink-drum, and from the drum to the plate-cylinders, and gearing located between the perfecting mechanisms for driving all the cylinders and inking mechanism.

31. In a printing-press the combination of two sets of perfecting mechanism, each comprising two plate-cylinders and two coacting impression-cylinders, in substantially the same plane, the plate-cylinders being outermost, and all extending axially longitudinally of the press, ink drums and fountains below the plate-cylinders and at the outer sides of the press and extending parallel with the cylinders, sets of ink-distributing rollers for supplying ink from the fountain to the ink-drum, and from the drum to the plate-cylinders, and means for moving each and any set of rollers to and from its drum, and to and from its plate-cylinder, substantially as described.

814,511. **SPREADER FOR SHOT-CARTRIDGES.** THOMAS G. BENNETT, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Dec. 12, 1904. Serial No. 236,565.



Claim.—1. As a new article of manufacture, a shot or multicharge spreader for cartridges, the said spreader consisting of a single piece of sheet-like material folded into a predetermined cup-like form permitting its insertion into a cartridge and its immediate unfolding on leaving the muzzle of the gun.

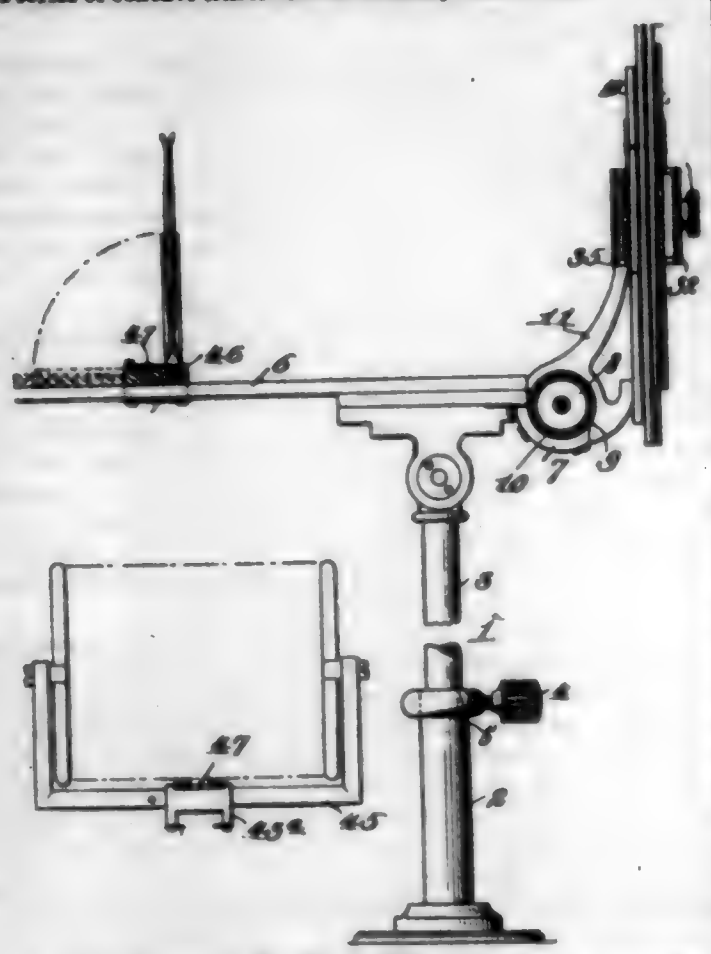
2. As a new article of manufacture, a shot or multicharge spreader for cartridges, the said spreader consisting of a single piece of sheet-like material folded into a predetermined form having inwardly-extending webs or partitions dividing it into connecting compartments, and adapting it to immediately unfold on its leaving the muzzle of the gun.

814,512. **OPTOMETER.** WILLIAM B. BROWN, Baltimore, Md. Filed Mar. 25, 1905. Serial No. 252,049.

Claim.—1. In an optometer, the combination with a standard, of an arm pivotally mounted on said standard and provided with a dioptric scale, and having lens supporting and adjusting means connected thereto, lens-disks carried by said means at one side of the pivotal connection of the arms with the standard, the lens-disks being simultaneously adjustable in opposite directions with relation to each other through the medium of said means, a test-card holder adjustable on said arm, and a test-card swiveled in said holder, substantially as described.

2. In an optometer, the combination with a standard, of an arm pivotally mounted on said standard and provided with a dioptric scale, and with a seat at one side of its pivotal connection with the standard, a two-part telescopic lens supporting and adjusting device arranged in said seat, lens-disks held by said device and simultaneously and equally adjustable in inward and outward directions, and connections between said disks and the elements of said supporting and adjusting device, substantially as described.

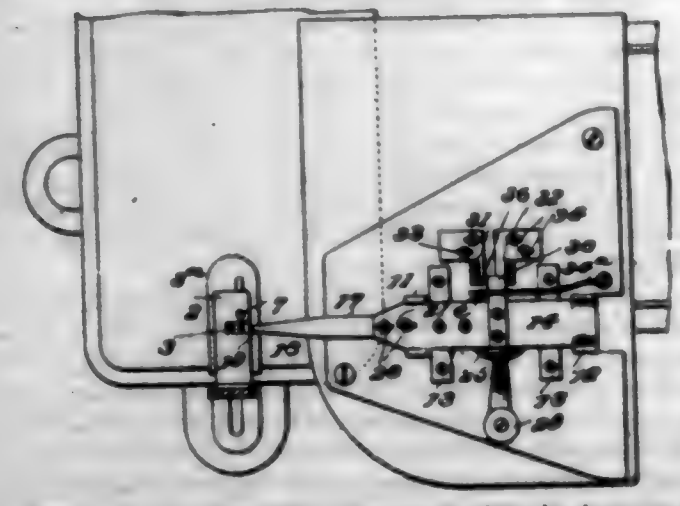
3. In an optometer, the combination of a standard, a graduated lens-disk and test-card carrying arm pivotally mounted thereon, a reversible test-card holder disposed on the said arm, the arm being graduated in inches at one edge and provided with a dioptric scale at its opposite edge, and lens-disks coöperating with said arm and arranged in pairs, one of said disks carrying a series of convex lenses and also an auxiliary concave lens, and the other of said disks carrying a series of concave lenses and an auxiliary convex lens.



4. In an optometer, the combination of a standard, a graduated lens-disk and test-card carrying arm pivotally mounted thereon, a reversible test-card holder disposed on the said arm, the said arm being graduated in inches at one edge and provided with a dioptric scale at its opposite edge, and lens-disks coöperating with the said arm and arranged in pairs and respectively carrying series of concave and convex lenses.

5. In an optometer, the combination with a standard, of lens-disks supported thereby and arranged in pairs, one disk of each pair having a series of convex lenses and also an auxiliary concave lens, the other disk of each pair having a series of concave lenses and an auxiliary convex lens, plates arranged in front and rear of said disks and provided with eye-openings, one disk of each pair provided with counterbored openings, lens-holder bases set into and rotatable in said counterbored openings, lens-holders carried by said bases, and graduated confining-rings arranged flush with the plates and engaging and confining the lens-holder-carrying bases, substantially as described.

814,518. GUIDE FOR SEWING-MACHINES. Henry Beyer, Cohoes, N. Y. Filed May 18, 1905. Serial No. 261,006.



Claim.—1. In combination a sewing-machine having a needle and a presser-foot, formed with a recess and a needle-receiving opening, said foot being perforated in the recess, a gage, and means to move the gage laterally of the presser-foot and into and out of said perforation in the recess.

2. In combination, a sewing-machine having a presser-foot formed with a recessed portion, said presser-foot being perforated in said recessed portion, a gage movable into and out of said perforation, a sliding plate supporting the gage, and means for locking said plate at predetermined points of travel.

3. In combination, a sewing-machine having a presser-foot formed with a recess, said presser-foot being perforated in said recess, a gage having a guiding-point to rest in said perforation, and mechanism to lift said point clear of the perforation and move the gage to a new position.

4. In combination, a sewing-machine having a presser-foot formed with a recess, said presser-foot being perforated in said recess, a gage having a guiding-point to rest in said perforation, mechanism to lift said point from the perforation and move the gage laterally of the presser-foot, and means for locking the gage in predetermined position.

5. In combination, a sewing-machine having a presser-foot formed with a recess, said presser-foot being perforated in said recess, a gage having a guiding-point to rest in said perforation, a sliding plate pivotally supporting the gage, and means to swing the gage on its pivot and move the sliding plate to adjust the gage.

6. In combination, a sewing-machine having a presser-foot formed with a recess, said presser-foot being perforated in said recess, a gage having a guiding-point to rest in said perforation, a sliding plate pivotally supporting the gage, a cam for moving said guiding-plate, and means for locking the sliding plate at predetermined points of travel.

7. In combination, a sewing-machine having a presser-foot formed with a recess, said presser-foot being perforated in said recess, a gage having a guiding-point to rest in said perforation, a sliding plate pivotally supporting the gage, a cam for lifting the guiding-point of the gage and moving the sliding plate, and automatically locking means for said sliding plate.

8. In a sewing-machine, the combination with a work-plate, a feeding device, a presser-foot formed with a recess in its upper surface and a gage-receiving perforation extending from the recess through the foot, and a fabric-edge gage adapted to be passed down through said perforation to the top surface of the work-plate, and means to move the gage from said perforation to serve as a guide beyond the presser-foot.

9. In a sewing-machine, the combination with a work-plate, a feeding device, a reciprocating needle, and a presser-foot provided with a needle-hole and with a perforation adjacent said needle-hole, of a gage arranged to be passed through said perforation to the said top surface of the work-plate to operate as a fabric-edge gage near the said needle, and means to move the gage from said perforation to a point on the surface of the said work-plate which is farther off from said needle-hole and in alinement with the said needle and said perforation, as and for the purposes set forth.

10. In a sewing-machine, the combination with a work-plate, a reciprocating needle, a presser-foot provided with a needle-hole and with a gage-receiving perforation, a movable gage within said perforation serving as a guide, mechanism to transfer said gage to a point farther from the needle out of said perforation and on the surface of said work-plate to adjust said gage to determine the distance at which another portion of the same piece of fabric is to receive its line of stitching, as and for the purposes set forth.

11. In a sewing-machine, the combination with a work-plate, a reciprocating needle, a presser-bar, and a gage movable from one point on said work-plate to any one of several other points thereon, the presser-foot being formed with a series of gage-receiving perforations arranged in alinement, and mechanism to transfer said gage from any one of said perforations to any one of the others in said series, and the reverse, as and for the purposes set forth.

12. In a sewing-machine, the combination with a work-plate, a feeding mechanism, a reciprocating needle and a fabric-edge gage adjustable on said work-plate, of an arm having its forward end connected with said gage, a tilting plate having its forward end connected with said arm, a reacting spring holding said tilting plate in normal position, a sliding plate on which said tilting plate is pivoted, and mechanism to raise and to lower the forward end of said tilting plate and move said sliding plate both rearward and forward, as and for the purpose set forth.

13. In a sewing-machine, the combination with a work plate, a feeding mechanism, a reciprocating needle, a presser-foot formed with a needle-hole and with one or more gage-receiving recesses, of a gage movable through either of said openings and seated on said

work-plate, an arm carrying said gage, a tilting plate carrying said arm, a sliding plate carrying said tilting plate, a reacting spring, and a cam mounted on a shaft and operating said tilting plate and said sliding plate, as and for the purposes set forth.

14. A guiding device for a sewing-machine comprising a gage-arm, a gage carried by the arm, mechanism for first elevating the gage-arm and gage and moving it in a horizontal direction while elevated, and upon reversal of the movement of said mechanism the gage-arm and gage are lowered, and means for locking the gage when lowered.

15. A guiding device for a sewing-machine comprising a gage-arm and a gage, means for adjusting the gage in line with its horizontal movement, mechanism for elevating the gage moving it in a horizontal direction, and then lowering it to change its position, and means locking the gage after its position has been changed.

16. A guiding device for a sewing-machine comprising a gage-arm, a gage adjustably mounted on the arm, means for elevating the gage and moving it in a horizontal direction while elevated and then lowering it, and adjustable stops for limiting the movement of the gage.

17. A guide for a sewing-machine comprising a gage-arm, a gage carried thereby, a cam having limiting stopping-walls and a flange provided with a notch, a stationary pin in the path of the stopping-walls, a lug coöperating with the notch in the flange to permit of the lowering of the gage, and means for locking the gage when lowered.

18. A guiding device for a sewing-machine comprising a gage, mechanism for elevating the gage, moving it in a horizontal direction and lowering it, stops to limit the movement of the gage, a pin, and two openings spaced to correspond to the limit of movement of the gage, the pin engaging one of the openings when the gage is lowered.

19. A guiding device for a sewing-machine comprising a gage, mechanism for elevating the gage, moving it in a horizontal direction and lowering it, adjustable stops to limit the movement of the gage, each stop being formed with an opening, a pin, said pin engaging one of the openings when the gage is lowered.

20. A guiding device for a sewing-machine comprising a gage-arm, a gage adjustably carried thereby, mechanism for elevating, moving in a horizontal direction and lowering the gage, adjustable stops, an opening formed in each stop, and a pin on the gage-arm, said pin engaging an opening in one of the stops when lowered.

21. A guiding device for a sewing-machine comprising a gage, mechanism for elevating, moving in a horizontal direction when elevated and held in elevated position when a stop is encountered, and stops to limit the movement of the gage, said gage being lowered by reversing the movement of the gage-operating mechanism.

22. A guiding device for a sewing-machine, comprising a gage, elevating mechanism having a notch which coöperates with the gage, said mechanism moving the gage in a horizontal direction while elevated, and the notch permitting of the lowering of the gage after it has been horizontally moved a predetermined distance in either direction.

23. A guiding device for a sewing-machine comprising a gage-arm, a gage carried by the arm, and means coöperating with the gage-arm for elevating the gage, moving it in a horizontal direction while elevated and lowering it.

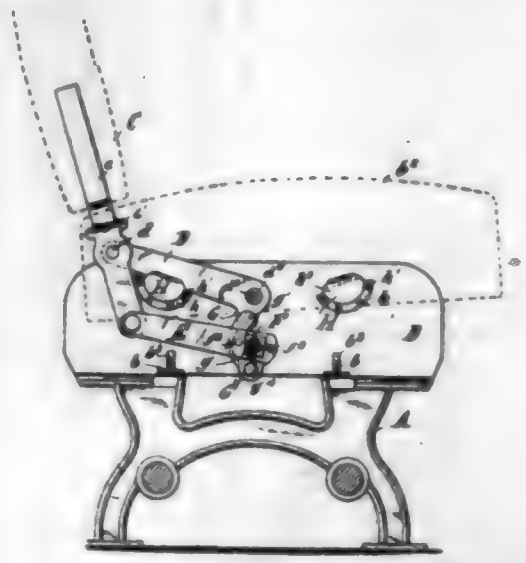
24. In combination, a sewing-machine having a needle and a presser-foot formed with a needle-receiving opening and a gage-opening, a gage, and means to move the gage laterally of the presser-foot and into and out of said gage-receiving opening.

814,514. CAR-SEAT. EDWARD G. BUDD, Philadelphia, Pa., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 19, 1905. Serial No. 261,181.

Claim.—1. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers pivoted to said arm in the longitude thereof and at their other ends to said frame, and a link extending between and connecting said levers adjacent to their inner ends, the connection between said link and each of said levers being arranged at an angle to the longitude of such levers, and one of said connections being a fixed pivotal connection and the other a slot-and-pin connection, substantially as set forth.

2. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers pivoted to said arm in the longitude thereof and at their other ends to said frame, angular ears carried by said levers adjacent to their inner ends, and a link connected at each end with one of said ears, the connection at one end of said link being a fixed pivotal connection and that at the other end a slot-and-pin connection, substantially as set forth.

3. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their inner ends to said frame in a vertical plane, and a link extending between and connecting said levers adjacent to their inner ends, one end of said link having fixed pivotal connection to the upper lever at an angle to the longitude thereof and the other end of said link having a slot-and-pin connection with the lower lever at an angle to the longitude thereof, substantially as set forth.



4. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their other ends to said frame in a vertical plane, said levers having angular ears adjacent to their inner ends, and a link having at one end fixed pivotal connection with the angular ear formed on the upper lever and at its other end a slot-and-pin connection with the angular ear formed on the lower lever, substantially as set forth.

5. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their other ends to said frame in a vertical plane, said levers having angular ears adjacent to their inner ends, and a link having at one end fixed pivotal connection with the angular ear formed on the upper lever and at its other end a pin or stud coacting with a slot formed in the angular ear upon the lower lever, substantially as set forth.

6. In a seat, the combination with a frame, a back and a back-supporting arm, of a lever secured at one end to said frame and at the other end to said arm, and a stop coacting with said lever and comprising a cup-shaped receptacle secured to the frame and containing an impact-block, substantially as set forth.

7. In a seat, the combination with a frame, a back and a back-supporting arm, of means for supporting and guiding said arm, and a stop carried by said frame and comprising a cup-shaped receptacle secured thereto and carrying an impact-block, substantially as set forth.

814,515. APPARATUS FOR MAKING WIRE-GLASS. WILLIAM BUTLER, Indianapolis, Ind. Filed Aug. 8, 1905. Serial No. 273,247.

Claim.—1. In glass-rolling mechanism, a roller having automatic return mechanism, and a brake operated by the roller and arranged to stop the roller at a predetermined point on its return; substantially as described.

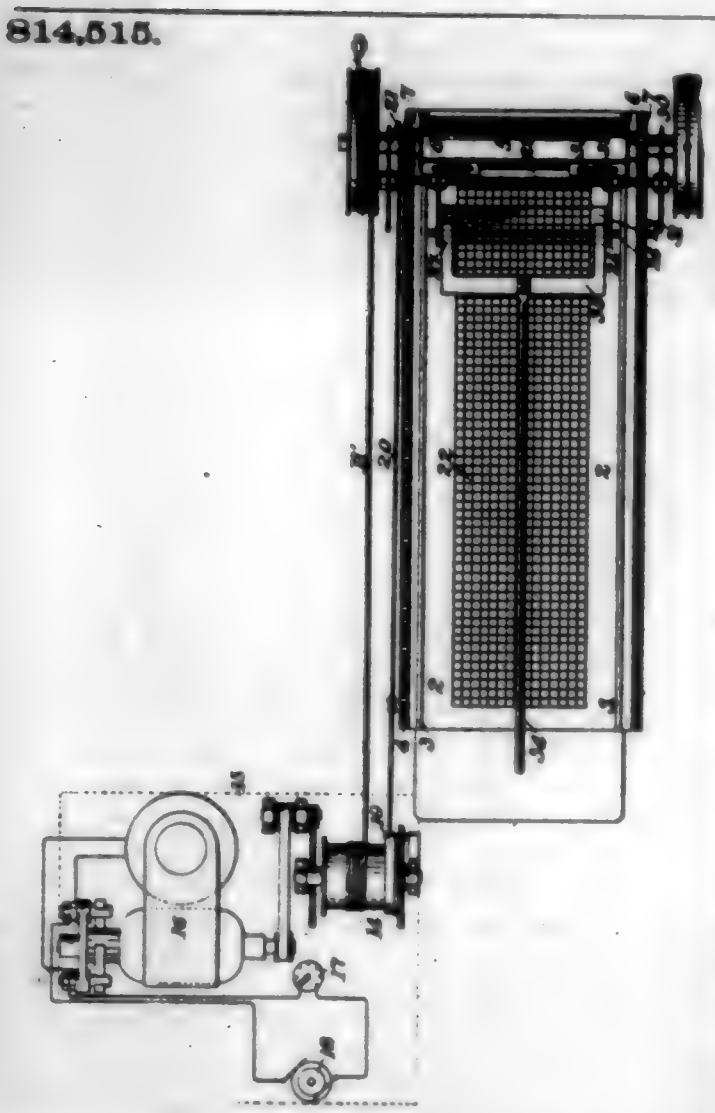
2. In apparatus for making wire-glass, a lifting plate or bar movable with the roller, and means for adjusting the same toward the roller during the rolling operation; substantially as described.

3. In apparatus for making wire-glass, a lifting plate or bar movable with the roller, springs for normally forcing said bar away from the roller, and means for forcing said bar toward the roller against the action of the springs; substantially as described.

4. In apparatus for making wire-glass, the combination with a table and a roller arranged to move thereover, of side shoes or plows, a lifting-bar supported by the shoes or bars, and means for forcing the lifting-bar toward the roller during the rolling operation; substantially as described.

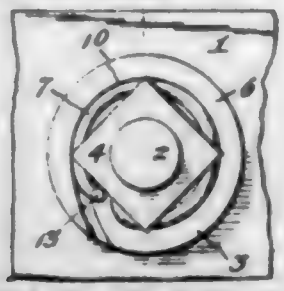
5. In apparatus for rolling glass, the combination with a table and a roller, of a lifting-bar movable with the roller, a supporting-rod for said bar, a tilting frame pivoted to the rod and carrying a friction-roller arranged to travel over the fabric, and a handle connected to the frame; substantially as described.

814,515.



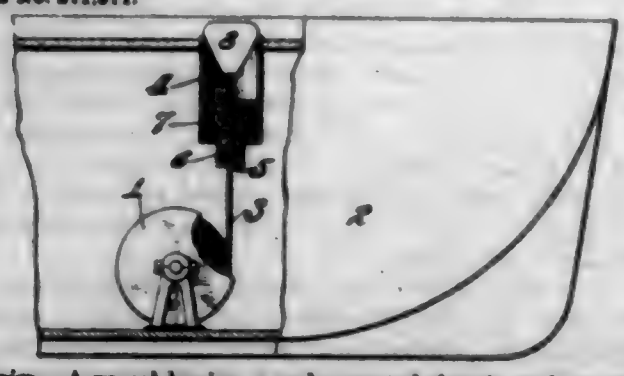
open to provide a seat for a float, and having its lower end contracted to form a housing of less diameter than the main portion of the receptacle, a relatively light line connected to said float and normally lying in the main portion of said receptacle, the other end of said line having a link fastened thereto which stands in a substantially vertical position in the housing at the lower end of the receptacle, and a cable wound upon said reel and extending through an opening in the bottom of the contracted portion of said receptacle and being connected to the lower end of said link; substantially as described.

814,516. NUT-LOCK. JAMES H. BUTTERFIELD, Logan, Ohio. Filed July 10, 1905. Serial No. 269,103.



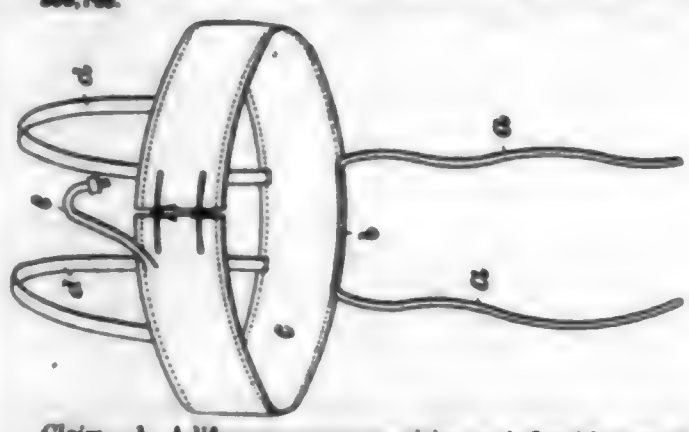
Claim.—The combination of a bolt and nut thereon, with a washer on the bolt and a locking-wire, said washer having projections on its inner side to engage the object against which it is placed, to prevent it from turning, and being provided in its outer face with a spiral groove, terminating outwardly at the edge of the washer, and with an opening 12 at the inner end of said groove, said wire having a spiral portion seated in said groove, its inner end bent and extended into the opening 12 and its outer end bent at an angle and bearing against one side of the nut, the depth of the said groove being equal to the diameter of the locking-wire and the said nut presenting a flat inner surface engaged by the flat outer faces of the washer, substantially as described.

814,517. MEANS FOR LOCATING AND RAISING SUNKEN VESSELS. WILLIAM G. CAIN, Victoria, La. Filed July 31, 1905. Serial No. 271,971.



Claim.—A vessel having a reel mounted therein and provided with a deck, a receptacle mounted in said deck having its upper end

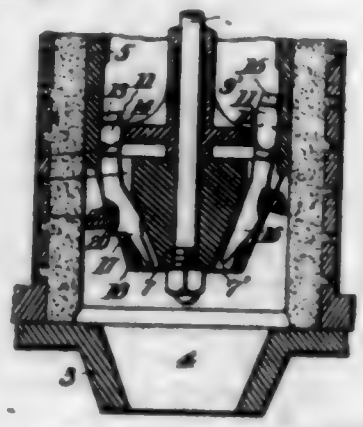
814,518. LIFE-SAVING APPARATUS. BERGER CARLSEN, Bodö, Norway. Filed Nov. 8, 1905. Renewed Feb. 6, 1906. Serial No. 299,746.



Claim.—1. A life-preserver comprising an inflatable belt adapted to encircle the body and provided with shoulder-straps and with means for tightening the belt on the body; in combination with means for compressing the inflated belt at the rear to displace the air or a portion thereof from the rear to the front, for the purpose set forth.

2. A life-preserver, comprising an inflatable belt adapted to encircle the body and provided with shoulder-straps and with means for tightening the belt on the body; in combination with the bands a a attached to the lower edge of the belt midway of its ends, for the purpose set forth.

814,519. APPARATUS FOR FORMING BEADS ON CAST-IRON PIPE. CHARLES H. CHURCH, Burlington, N. J. Filed Dec. 1, 1904. Serial No. 235,119.



Claim.—1. In a device for molding beads of cast pipe, the combination with the main pipe-pattern, of a bead-ring comprising a plurality of bead-sections arranged to swing therein and formed with cam portions and operating means for coöperating with said cam portions to swing said sections inwardly from the bead-mold after the latter has been formed.

2. In a device for molding beads on cast pipe, the combination with the main pipe-pattern, of a bead-ring comprising sets of alternating bead-sections, arranged to swing into and out of the pipe-pattern and formed with cam portions, and means coöperating with said cam portions to swing said sections inwardly from the bead-mold after the latter has been formed, said cam portions and operating means being so constructed and arranged as to effect the swinging of said sections in sets.

3. In a device for molding beads on cast pipe, the combination with the main pipe-pattern, of a bead-ring comprising two sets of bead-sections having cam portions, a plug having operating means for engaging said cam portions and effecting the withdrawal of the bead-sections in sets from the bead-mold after the latter has been formed, and means for effecting the movement of the plug.

4. In a device for molding beads on cast pipe, the combination with the main pipe-pattern, of a disk in said pattern, a bead-ring comprising a plurality of bead-sections, mounted to swing in said disk, and formed with cam portions, a plug below said disk having

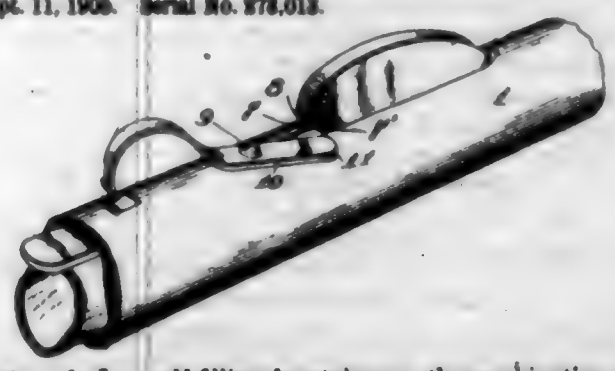
operating portions adapted to engage the cam portions and effect the inward movement of the bead-sections, from the bead-mold, and means for effecting the movement of the plug.

5. In a device for molding beads on cast pipe, the combination with the main pipe-pattern, of a disk in said pattern, a bead-ring comprising a plurality of bead-sections having stems mounted to rock in the disk and downwardly-extending cam portions, a plug below the disk having slots to receive said cam portions and an operating portion to engage the cam portions and effect the rocking of said bead-sections to withdraw them from the bead-mold after the latter has been formed, and means for effecting the movement of said plug.

6. In a device for molding beads on cast pipe, a flask, a chill-plate having a central opening, a main pipe-pattern, a plug carried thereby fitting in said opening of the chill-plate, a bead-ring comprising a plurality of bead-sections, an enlargement on said sections forming a ring on the under side thereof for the purpose set forth, and means for collapsing said bead-ring.

7. In a device for molding beads of cast pipe, the combination with the main pipe-pattern of a bead-ring comprising two sets of bead-sections arranged alternately, and means adapted to successively engage the sets of bead-sections and withdraw the same from the bead-mold in sets when the mold has been formed.

814,520. FOUNTAIN-PEN. ROY CONKLIN, Toledo, Ohio. Filed Sept. 11, 1905. Serial No. 278,013.



Claim.—1. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a lever or latching member pivoted to said barrel for forcing said rib lengthwise against one end of said slot.

2. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, said rib having an undercut end, and a lever or latching member pivoted to said barrel for forcing said rib lengthwise to cause its undercut end to receive and engage one end of said slot.

3. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a latching member or lever pivoted to said barrel for locking said rib and presser-bar.

4. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a latching member or lever pivoted to said barrel for engaging with and locking said rib.

5. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, said rib having an undercut portion or notch, and a latching member or lever pivoted to said barrel for engaging with said undercut portion or notch to lock the rib and presser-bar.

6. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, a latching member or lever pivoted to said barrel for locking said rib, and means for securing said latching member or lever in locked position.

7. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a latching member or lever pivoted to said barrel for locking said rib and provided with means to engage the barrel and secure said latching member in locked position.

8. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a springy or resilient latching member or lever pivoted to said barrel for locking said rib and adapted to hold itself in locked position.

9. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a latching member or lever pivoted to said barrel for locking said rib, said latching member or lever having a bowed resilient portion engageable with the barrel to secure the lever in locked position.

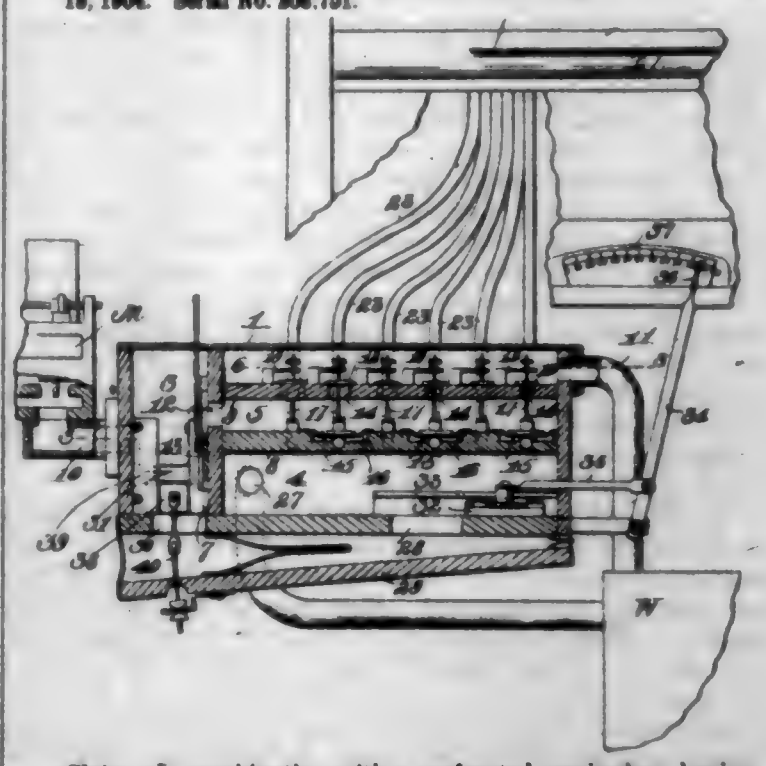
10. In a self-filling fountain-pen, the combination with a barrel having a slot and a recess or notch, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, and a locking member or lever pivoted to said barrel for locking said rib, said latching member or lever having a bowed resilient portion adapted to engage the notch or recess in locked position.

11. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, said rib having a cammed portion, and a lever or latching member pivoted to said barrel for engaging said cammed portion to force said rib lengthwise to cause it to engage one end of said slot.

12. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, said rib having a double-cammed portion, and a lever or latching member pivoted to said barrel and adapted to swing both ways relative to said rib to engage either part of the double-cammed portion thereof to force said rib lengthwise to cause it to engage one end of said slot.

13. In a self-filling fountain-pen, the combination with a barrel having a slot, of an elastic ink-reservoir in said barrel, a presser-bar having a rib projecting through said slot, said rib having a shoulder and an undercut double-cammed portion, and a lever or latching member pivoted to said barrel and adapted to swing both ways relative to said rib to engage either part of the double-cammed portion thereof under the shoulder to force said rib lengthwise to cause it to engage one end of said slot and also to support said rib by engagement with said shoulder, said lever having a bowed resilient portion engageable with the barrel to secure the lever in locked position.

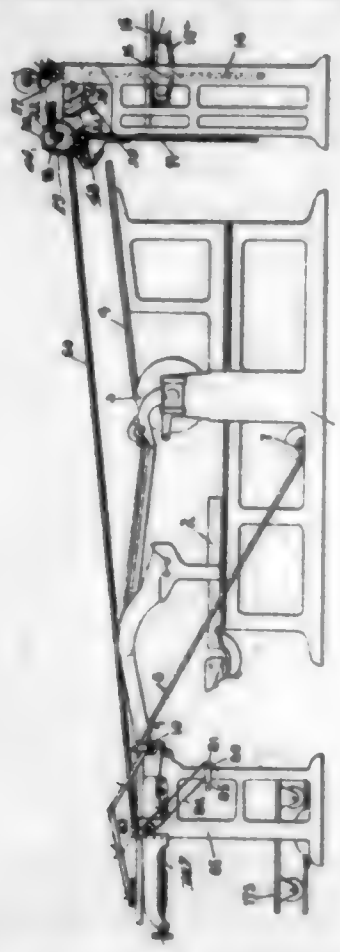
814,521. MEANS FOR GOVERNING THE TEMPO IN MECHANICAL MUSICAL INSTRUMENTS. WALTER D. MOSES, (by judicial change of name now Walter Moses Davis,) New York, N. Y. Filed May 19, 1904. Serial No. 208,751.



Claim.—In combination with a perforated music-sheet having note-perforations and a series of auxiliary perforations, a tracker-board having a range of note-ducts, and a series of supplemental ducts arranged to coöperate with the auxiliary perforations in the music-sheet, a valve-casing, a vertical and two horizontal partitions dividing said casing, in connection with the walls thereof, into an end chamber 3, an upper chamber 6, a lower chamber 4, and an intermediate chamber 5, said end and intermediate chambers communicating through said vertical partition, a motor communicating with said end chamber, a wind-chest communicating with said upper chamber, a series of wind-pockets formed in the lowermost partition, diaphragms covering said wind-pockets, a series of valve-openings of graded area in the upper partition, valve-stems connected to said diaphragms and having valves located in the upper chamber and covering said valve-openings, and a series of conduits

leading from the said supplemental ducts to said air-pockets, the combination operating as described.

814,522. SHEET-HANDLING MACHINERY FOR PRINTING-PRESSES AND OTHER MACHINES. Talbot C. Dexter and Henry Hallstream, Pearl River, N. Y.; said Hallstream assignor to said Dexter. Filed Dec. 29, 1903. Serial No. 187,015.



Claim.—1. The combination with a machine designed to operate upon sheets of paper, of a receiving-table adapted to receive sheets delivered from said machine, means for automatically lowering said table as the received sheets pile upon it, and variably-adjustable means for regulating or controlling the lowering of the table to meet the varying requirements, as set forth.

2. The combination with a machine designed to operate upon sheets of paper, and a delivery mechanism for said machine, of a vertically-movable receiving-table adapted to receive sheets delivered from said machine, means, for lowering said receiving-table, including a ratchet-wheel and an oscillatory pawl, an adjustable controller-plate mounted adjacent to said ratchet-wheel and adapted to engage a part of said pawl for determining the length of the active stroke of the pawl, and means for automatically adjusting said controller-plate to meet the varying requirements, substantially as set forth.

3. The combination with a machine designed to operate upon sheets of paper, of a feed-table from which sheets are fed to said machine, means for raising said feed-table as the sheets are fed off, an automatic governing device controlling the feed-table-raising means, a receiving-table upon which the sheets are delivered from said machine, means controlled by the feed-table-governing device for automatically lowering said receiving-table as the delivered sheets are piled upon it, and variably-adjustable means for controlling the lowering of the receiving-table, substantially as and for the purpose set forth.

4. The combination with a machine designed to operate upon sheets of paper, of a feed-table from which sheets are fed to said machine, means for raising said feed-table as the sheets are fed off, an automatic governing device controlling the feed-table-raising means, a receiving-table upon which the sheets are delivered from said machine, means for automatically lowering said receiving-table as the delivered sheets are piled upon it, said receiving-table-lowering means including a ratchet-wheel, an oscillatory operating-pawl, and a movable controller-plate mounted adjacent to said ratchet-wheel and adapted to engage a part of said pawl for determining the length of its active stroke, and means connecting the feed-table-governing device with said controlling-plate, substantially as set forth.

5. The combination with a machine designed to operate upon sheets of paper, and a delivery mechanism for said machine, of a feed-table, suitable elevating mechanism for said feed-table including an oscillating operating-arm, a governing device controlling the operation of the operating-arm according to the height of the pile of sheets upon the feed-table, a receiving-table upon which the sheets are delivered from said machine, lowering means for said receiving-table including a ratchet-wheel, an oscillatory operating-pawl, and a movable controller-plate adapted to engage a part of the pawl for determining the length of its active stroke, and means connecting the operating-arm of the feed-table with said controller-plate, substantially as set forth.

6. The combination with a machine designed to operate upon sheets of paper, of a sheet-receiving frame, a vertically-movable table supported in said frame, vertical feed-screws journaled in said frame and engaging said table, horizontal short shaft-sections journaled in the upper part of the side frames of said receiving-frame and geared to said feed-screws, a transverse shaft mounted upon said frame out of the vertical path of the table and suitably connected with said short shaft-sections for causing them to operate in unison, means for operating said short shaft-sections for lowering said table as the received sheets are piled upon it, and suitable sheet-jogging devices mounted upon the upper part of said sheet-receiving frame independently of said receiving-table, substantially as set forth.

7. The combination with a machine designed to operate upon sheets of paper, of a sheet-receiving frame, a receiving-table mounted in said frame, means for automatically lowering said table as the received sheets pile upon it, suitable rods or bars extending transversely of said frame adjacent to its top, frames or carriages mounted upon said transverse rods or bars, means for adjusting said frames or carriages transversely of the machine, independent brackets mounted upon said frames or carriages and adjustable thereon longitudinally of the machine, and independent sheet-jogging devices mounted upon said adjustable brackets, substantially as set forth.

8. The combination with a machine designed to operate upon sheets of paper, of a receiving-table adapted to receive sheets delivered from said machine, means for automatically lowering said table as the received sheets are piled upon it, means for regulating or controlling the lowering of said table, a framework supported above and independently of the table, suitable sheet-jogging devices supported upon said framework in position to operate upon the upper portion of a constantly-increasing pile of sheets upon the lowering table, and means for operating said jogging devices, as set forth.

9. The combination with a machine designed to operate upon sheets of paper, of a feed-table from which sheets are fed to said machine, means for raising said feed-table as the sheets are fed off, an automatic governing device controlling the feed-table-raising means, a receiving-table upon which the sheets are delivered from said machine, means for automatically lowering said receiving-table as the delivered sheets are piled upon it, suitable sheet-jogging devices mounted independently of said receiving-table in position to operate upon the upper part of a pile of sheets, and means connecting the feed-table-governing device with the receiving-table-lowering means, substantially as and for the purpose set forth.

10. The combination with a machine designed to operate upon sheets of paper, of a receiving-table for the sheets delivered from said machine, a jogger-supporting frame including suitable horizontal supporting-bars, brackets mounted upon said supporting-bars, each of said brackets comprising a main bracket portion and a bracket-arm extension extending approximately at right angles to the main bracket portion, independent sheet-jogging plates or boards mounted respectively upon the main portion of the bracket and upon the angularly-extended bracket-arm, and suitable operating means connected with said independent sheet-jogging plates or boards for operating them, substantially as set forth.

11. The combination with a machine designed to operate upon sheets of paper, of a sheet-receiving table for said machine, a jogger-supporting frame including suitable horizontal supporting-bars, a series of brackets adjustably mounted upon said supporting-bars and each bracket comprising a main bracket portion and an auxiliary bracket-arm extension projecting approximately at right angles to the main bracket portion, an independent sheet-jogging plate or board movably mounted upon each of the main bracket portions and upon each of the bracket-arm extensions, suitable guide-rods projecting from said jogging plates or boards and guiding upon said bracket portions, actuating-levers engaging parts projecting from said guide-rods, means connecting the actuating-levers of each pair of jogging plates or boards mounted upon the same bracket, and operating means suitably connected with said operating-levers, substantially as set forth.

12. The combination with a machine designed to operate upon sheets of paper, of a receiving-table adapted to receive sheets deliv-

cred from said machine, a jogger-supporting frame including suitable horizontal supporting-bars, a series of brackets adjustably mounted upon said supporting-bars, each bracket comprising a main bracket portion and a bracket-arm extending approximately at right angles to the main bracket portion, independent sheet-jogging plates or boards formed with outwardly-projecting guide-rods which are slidingly mounted in suitable guides formed in the main bracket portions and extension bracket-arm portions, pins projecting from one of the guide-rods of each jogging plate or board, rock-arms engaging said pins, means connecting the rock-arms of each pair of jogging plates or boards upon the same supporting-bracket, means for operating said rock-arms for drawing the jogging plates or boards outwardly, and an independent spring actuating each jogging plate or board for tending to move it inwardly into engagement with the pile independently of the other jogging plates or boards, substantially as set forth.

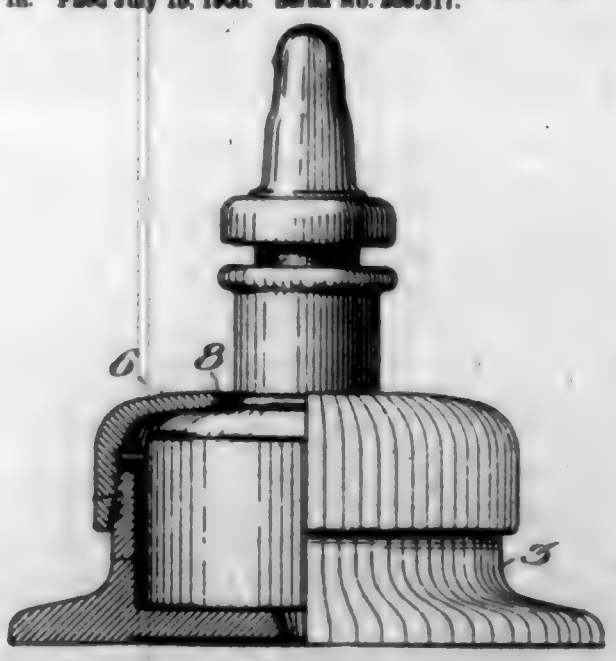
13. The combination with a machine designed to operate upon sheets of paper, of a sheet-receiving table adapted to receive sheets delivered from said machine, a jogger-supporting frame including suitable horizontal supporting-bars, a series of four brackets adjustably mounted upon said supporting-bars and each bracket comprising a main bracket portion and a bracket-arm extension projecting approximately at right angles to the main bracket portion, a series of eight independent jogging plates or boards mounted upon said brackets, two being mounted upon each of said brackets with their jogging-faces extending approximately at right angles to each other, suitable guide-rods projecting outwardly from each jogging plate or board and slidingly mounted in one of the brackets, an independent spring engaging each jogging plate or board and tending to move it inwardly into engagement with the pile, a controlling or operating rock-arm engaging a part connected with each jogging plate or bar, means connecting said controlling rock-arms in pairs, and two operating-bars each of which is operatively connected with two connected pairs of jogger-actuating rock-arms, substantially as set forth.

814,523. **REFRIGERATOR.** STEFANO DI VECCHIO, San Francisco, Cal. Filed Aug. 11, 1904. Serial No. 220,425.



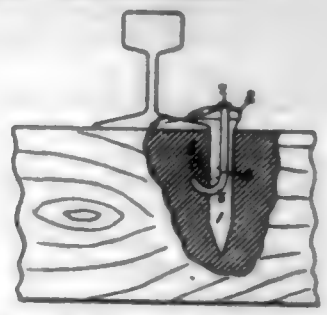
Claim.—A refrigerator including a storage-chamber and an ice-chamber above it, an ice-supporting rack separating said chambers one from the other, and a draining-pan under said rack, said pan comprising three coacting sections having each a frame, a sheet of insulated absorbent paper therein, a metallic lining insulated from said sheet, means for causing a circulation of air under the absorbent paper, and a discharge into a drain-pipe with a suitable trap and connections.

814,524. **BOTTLE-HOLDER.** EDGAR L. DRINKWATER, Chicago, Ill. Filed July 15, 1905. Serial No. 269,817.



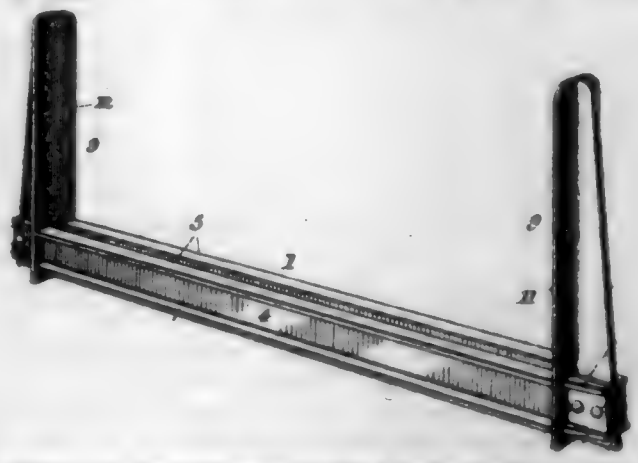
Claim.—A bottle-holder comprising a supporting member having an enlarged base and a vertically-projecting circumferential flange, and an inclosing member comprising a disk formed with an opening to receive the neck of the bottle, and with a circumferential depending flange to receive the flange of the supporting member, said flanges being arranged for threaded connection to permit the disk of the inclosing member to bear upon the bottle adjacent the neck thereof.

814,525. **TRACK-FASTENER.** CHARLES L. DURBORAW, Baltimore, Md., assignor of one-fourth to William F. Seim, one-fourth to Abraham Lehman, and one-fourth to Louis B. Bernel, Baltimore, Md. Filed May 22, 1903. Serial No. 158,220.



Claim.—A track-fastener for railroads consisting of a spike having a head, and two grooves diametrically opposite each other which extend downwardly on a true vertical line from the upper surface of the said head parallel with the sides of the spike and turn off at right angles and terminate one above the other at the front directly under the projecting part of the head, said grooves being approximately square in cross-section; and an independent key fitted within each of said grooves and having their outer surfaces flush with the sides of the spike and their lower ends projecting from the said spike one above the other directly under the projecting part of the head of the spike, said keys being approximately square in cross-section and each having a head at one end which rests upon the head of the spike and a pointed end rounded on one side to conform to the curvature of the groove and to cut into the cross-tie.

814,526. **WAGON BOLSTER-AND STAKE CONSTRUCTION.** EMIL EISFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Sept. 9, 1905. Serial No. 277,785.



Claim.—1. In combination with a stake having a web, and a lateral flange formed with an opening therethrough, a bolster having its end extended through said opening and fastened to the web.

2. In combination with a stake formed with a central web and two lateral flanges, the latter having openings therethrough, a bolster in the form of complementary members having their ends extended through said openings, and fastened to the opposite sides of the web of the stake.

3. In combination with a stake having a web, and a lateral flange formed with an opening therethrough, a bolster formed with a reduced end extended through the opening and fastened to the web and having a shoulder bearing against the inner face of the flange.

4. In combination with a stake having a web and flange, the latter being formed with an opening, a bolster having a tapered reduced end, and shoulders, the reduced end of the bolster being extended through the opening in the flange and fastened to the side of the web, with the shoulder bearing against the inner face of the flange.

5. In combination with a stake having a central web, and two lateral flanges formed each with an opening therethrough, a bolster

in the form of two complementary flanged members having their ends reduced and provided at the inner extremities of the reduced portions with shoulders, the said reduced ends of the bolster members being extended through the openings in the stake-flanges and firmly fastened to the opposite sides of the stake-web, with the shoulders bearing against the inner face of the said flanges.

814,527. TRAP. EDGAR L. FLEET, East Hiram, Me. Filed July 18, 1905. Serial No. 270,262.



Claim.—1. In a device of the class described, a pivoted frame adapted for movement from non-trapping to trapping position, a net operatively connected with the frame, means for swinging the latter to trapping position, means for locking the frame in non-trapping position, and a depressible platform operable for automatically releasing the frame to permit movement of the latter to trapping-position.

2. In a device of the class described, a pivoted frame, a trapping-net operatively connected therewith for movement to trapping position, a movable locking member adapted for operative engagement with the frame to lock the same in normal position, a depressible platform, a keeper thereon for maintaining the locking member in frame-locking position, said platform being operable for automatically releasing the locking member and frame, and means for automatically throwing the latter to trapping position.

3. In a device of the class described, a pivoted trapping member equipped with a trapping-net, a longitudinally-movable locking-rod, a locking device on the member for engagement with said rod, a depressible platform, a keeper thereon adapted for engagement with the rod to maintain the same in locking position, a spring for moving the rod to releasing position, and means for automatically moving the trapping member and net to trapping position.

4. In a device of the class described, a pivoted trapping member equipped with a trapping-net, a movable locking member operatively engaged with and for maintaining the trapping member in open position, a depressible platform, a keeper carried thereby for engagement with and to maintain the locking member in locking position, means for moving the locking member to releasing position, and means for automatically moving the trapping member when released to trapping position.

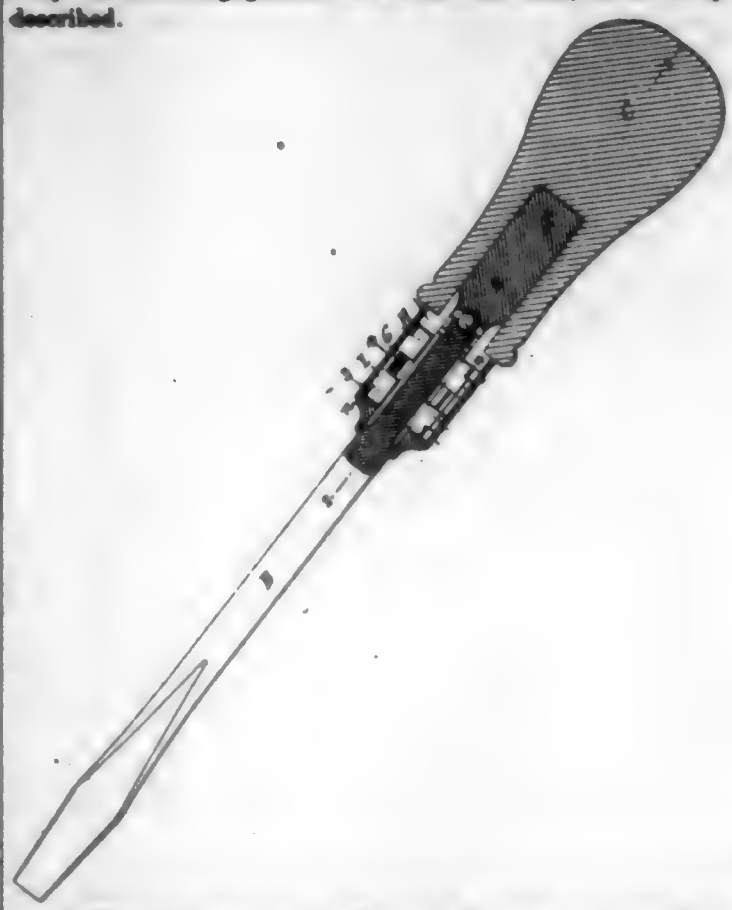
5. In a device of the class described, a casing, a shaft journaled therein, means for automatically rotating the shaft, a frame connected with and for swinging movement by the latter, a trapping-net carried by the frame, a locking member adapted for operative engagement with and to lock the frame in open position, a depressible platform, and a keeper carried by the platform for locking or releasing the locking member.

6. In a device of the class described, a casing, a shaft journaled therein, a power-spring for rotating the shaft, a trapping-net operatively connected with and for movement to trapping position by the shaft, a locking member adapted for maintaining the net in open position, a depressible platform, and a keeper carried by the platform for locking or releasing the locking member.

814,528. RATCHET-TOOL. ZACHRY T. FOWLER, Philadelphia, Pa., assignor to North Brothers Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 25, 1903. Serial No. 149,524.

Claim.—1. The combination in a ratchet-tool of a body portion having a slot and an annular groove, a spindle provided with a toothed portion, a bodily-movable pawl mounted in the slot and placed to engage the ratchet-teeth, with a cam slidably carried in the annular groove of the body portion and placed to engage said pawl in such manner as to bodily move the same while retaining it parallel to the lines of the ratchet-teeth, substantially as described.

2. The combination in a ratchet-tool, of a body portion having an opening therein, a spindle mounted in the opening and having ratchet-teeth, the body having radial slots and annular grooves, a bodily-movable pawl in each slot arranged to engage the ratchet-teeth of the spindle, springs for the pawls, and a cam mounted in one of the grooves of the body and arranged to bodily lift either one of the pawls out of engagement with the ratchet-teeth, substantially as described.



3. The combination of a body portion having an opening therein and having two radial slots communicating with the opening and also having three annular grooves, a spindle having ratchet-teeth therein, that portion of the spindle having the ratchet-teeth being in the opening of the body, pawls mounted in each slot, each pawl being recessed at the center, springs in the outer grooves of the body portion engaging the pawls, and a cam mounted in the central groove and having tapered arms arranged to pass into the recesses in the pawls and push the pawls away from the ratchet-teeth, substantially as described.

4. The combination of a body portion having an opening therein and radial slots extending from said opening and also having annular grooves, a spindle having ratchet-teeth thereon, the toothed portion of the spindle being in the opening of the body, a casing on the body portion, a pawl in each slot, each pawl having a central recess and notched at each end, a spring mounted in each end groove resting on the notched portions of the pawls, a cam mounted in the central groove and having tapered arms shaped to enter the recesses in the pawls and to move them away from the ratchet-wheels, substantially as described.

5. The combination of a body portion having an opening therein and radial slots extending from said opening and also having annular grooves, a spindle having ratchet-teeth thereon, the toothed portion of the spindle being in the opening of the body, a casing on the body portion, a pawl in each slot, each pawl having a central recess and notched at each end, a spring mounted in each end groove and resting on the notched portions of the pawls, a cam mounted in the central groove and having tapered arms shaped to enter the recesses in the pawls and to move them away from the ratchet-wheels, the ends of the springs being bent to engage the pawls, substantially as described.

6. The combination in a ratchet-tool, of a body portion having an opening, a spindle in said opening, a ratchet on said spindle, bodily-movable pawls extending substantially parallel to the spindle and a pair of segmental springs, one at each end of the pawls, for forcing the same into engagement with the ratchet, the ends of the springs being bent to engage the pawls, substantially as described.

7. The combination in a ratchet-tool, of a body portion, an opening therein, a spindle in said opening, a ratchet on the spindle, a pawl having a central recess, a cam having a flat surface and arranged to enter the recess and lift the pawl bodily out of engagement with the ratchet, substantially as described.

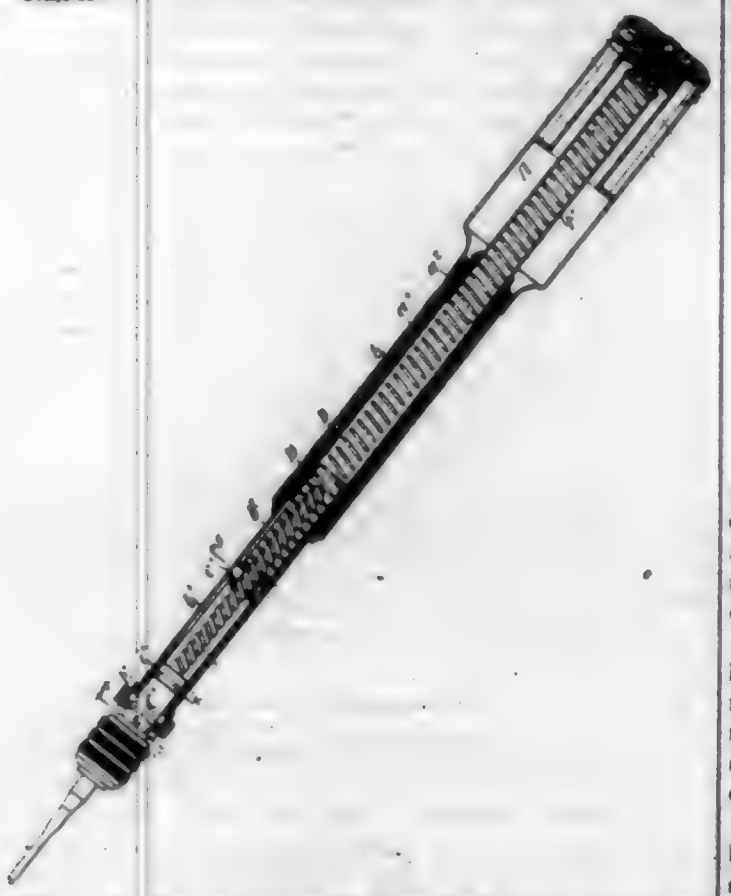
8. The combination in a ratchet-tool, of a body portion, an opening therein, a spindle in said opening, a ratchet on said spindle, two pawls, each pawl having a recess, a segmental cam having arms arranged to enter the recesses in the pawls and lift them out of engagement with the ratchet, said cam having shoulders acting as stops, substantially as described.

9. The combination in a ratchet-tool, of a body portion having

a slot therein, a ratchet-wheel, a pawl therefor mounted in said slot of the body portion and movable bodily therein, a spring acting upon the pawl, and a cam for bodily moving said pawl in a line substantially radial to the axis of the ratchet-wheel into and out of engagement with said wheel, substantially as described.

10. The combination in a ratchet-tool of a body portion having a slot, a spindle provided with a toothed portion, an elongated bodily-movable pawl mounted in the slot so as to extend in a line substantially parallel to the line of the spindle and capable of engagement with the ratchet-teeth, with a cam carried by the body portion and shaped to be capable of causing movement of the pawl as a whole toward and from the spindle while retaining it parallel to the line of the ratchet-teeth, substantially as described.

814,529. **PUSH-DRILL.** SACHET T. PUSEIRE, Philadelphia, Pa., assignor to North Brothers Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 12, 1903. Serial No. 172,940.



Claim.—1. The combination in a push-drill of a hollow handle, a hollow drill-carrier, means whereby the carrier will be turned on the reciprocation of the handle, a spring mounted in the hollow handle and carrier and a longitudinally-adjustable abutment for said spring arranged to slide in one of said parts, substantially as described.

2. The combination in a push-drill, of a handle, a drill-carrier, a nut on one part engaging a thread on the other part, a spring mounted between the two parts, a screw-actuated abutment for said spring whereby said spring can be longitudinally adjusted, substantially as described.

3. The combination in a push-drill of a handle, a drill-carrier, means whereby the carrier will be turned on the reciprocation of the handle, a screw on one part, a nut adjustable on said screw and forming an abutment, and a spring mounted between the abutment-nut and the other part, substantially as described.

4. The combination in a push-drill, of a handle, a nut thereon, a carrier, a screw thereon engaged by the nut, a chuck mounted in the carrier, means for coupling the said chuck to the carrier, a screw on the chuck, a nut on the screw and engaging the carrier, and a spring between the last-mentioned nut and the handle of the drill, substantially as described.

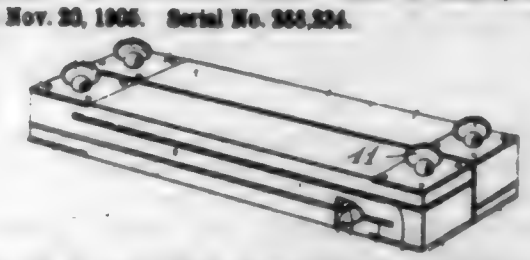
5. The combination in a push-drill, of a handle, a carrier on which the handle slides, a spring for returning the handle, a chuck, a screw attached to the chuck, a nut on the screw forming one bearing for the spring so that when the chuck is turned independently of the carrier it will move the nut and adjust the spring, and means for locking the chuck to the carrier, substantially as described.

6. The combination in a push-drill, of a handle, a carrier on which the handle slides, a spring for returning the handle, a chuck, a screw attached to the chuck, a nut on the screw forming one bearing for the spring so that when the chuck is turned independently of the carrier it will move the nut and adjust the spring, a notched sleeve on the carrier, a pin on the chuck arranged to enter the notch of the sleeve, substantially as described.

7. The combination in a push-drill, of a handle, a carrier on which the handle slides, a spring for returning the handle, a chuck, a screw attached to the chuck, a nut on the screw forming one bearing for the spring so that when the chuck is turned independently of the carrier it will move the nut and adjust the spring, a notched sleeve on the carrier, a pin on the chuck arranged to enter the notch of the sleeve, and a friction-spring for retaining the sleeve in its adjusted position, substantially as described.

8. The combination in a push-drill, of a handle made in two parts, a nut on one part of the handle, a two-part carrier, a screw-thread on one part of the carrier engaging the nut on the handle, a slot in the other part of the carrier, a nut traveling in said part and having a pin entering the slot, a spring mounted in the handle and in the carrier and resting against the nut in the carrier, a casing surrounding the slotted portion of the carrier, a chuck secured to the end of the carrier and having a screw arranged to pass through the nut in the carrier, and means for locking the chuck to the carrier, substantially as described.

814,580. **ADJUSTABLE GAGE.** JOHN R. GIFFIN, Juniata, Pa. Filed Nov. 20, 1905. Serial No. 288,224.

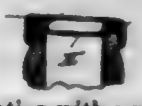


Claim.—1. A gage of the character described comprising end members having longitudinal slots opening at their opposite ends, a central member adjustably connecting said end members and pivotally mounted in the slots opening at the adjacent ends of the same, and blades adjustably pivoted in the slots opening at the opposite ends of said end members.

2. A gage of the character described comprising end members having longitudinal slots opening at their opposite ends, a central member adjustably connecting said end members and pivotally mounted in the slots opening at the adjacent ends of the same, blades adjustably pivoted in the slots opening at the opposite ends of said end members, and spurs upon said end members.

3. A gage of the character described comprising two end members having parallel longitudinally-extending slots opening at opposite ends of the same, a slotted member pivoted by a set-screw in one of the slots in one of said end members and adjustably pivoted by a set-screw in the corresponding slot of the other of said end members, and blades pivoted by means of set-screws in the other slots of said end members, substantially as shown and described.

814,531. **SEAL FOR BOTTLES.** GEORGE H. GILLETTE, New York, N. Y., assignor to The Crown Cork and Seal Co., Baltimore, Md., a Corporation of Maryland. Filed Sept. 10, 1901. Renewed Apr. 26, 1904. Serial No. 204,719.



Claim.—1. The combination with a metallic external retaining-cap, of a metallic lining of different metal from that of said cap, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

2. The combination with an external retaining-cap, of an aluminium lining therefor, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

3. The combination with a retaining-cap of a lining therefor having before use a downwardly-projecting central portion of soft metal adapted in use to fit and to assume the shape of the mouth of a bottle when pressed downward thereinto, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

4. The combination with a retaining-cap of a lining therefor having before use a downwardly-projecting central portion of aluminium adapted in use to fit and to assume the shape of the mouth of a bottle when pressed downward thereinto, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

5. The combination with an external retaining-cap, of a lining adapted before use to move laterally of said cap and to enter into and center itself upon the mouth of the bottle independently of the lateral position of the retaining-cap, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

6. The combination with an external retaining-cap, of a lining adapted before use to move laterally of said cap and having before use a downwardly-projecting central portion of soft metal adapted in use to fit and to assume the shape of the mouth of a bottle when pressed downward thereinto, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

7. The combination with a botttle of a retaining-cap, and a lining within said cap having a downwardly-projecting central portion of soft metal fitting the mouth of said bottle, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

8. The combination with an external retaining-cap, of a washer comprising a lining and a packing-ring fastened together, said washer being movable laterally of said cap so as to center itself on the mouth of a bottle independently of the lateral position of the retaining-cap, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

9. The combination with an external retaining-cap, of a washer comprising a lining and a packing-ring fastened together, and adapted before use to enter into and center itself upon the mouth of a bottle independently of the lateral position of the retaining-cap, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

10. The combination with an external retaining-cap, of an annular packing-ring, and a lining member adapted to be clamped between the top of the cap and the packing-ring and to bear upon the packing-ring alone, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

11. The combination with an external retaining-cap, of an annular packing-ring, and a lining member adapted to be clamped between the top of the cap and the packing-ring and to bear upon the packing-ring alone, said lining member being movable independently of the cap so as to center itself over the mouth of a bottle independently of the lateral position of the cap, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

12. The combination with an external retaining-cap, of an annular packing-ring and a lining member D having a central downwardly-projecting portion E lying within the packing-ring, and a rim F adapted to be clamped between the top of the cap and the packing-ring and to bear upon the packing-ring alone, said cap having a plain depending flange and being of soft metal whereby it may be bent under and in direct unyielding contact with a projecting shoulder on the head of the bottle at any point to which the cap may be pressed down.

13. In a receptacle-closure, the combination of a gasket fitting over the top edge of a receptacle and provided with an opening, a protecting device comprising a depressed portion and an outwardly-extending flat portion, the latter fitting over the gasket and compressing said gasket against the top edge of the receptacle-mouth, and the depressed portion of the protecting device fitting in the opening of the gasket and entering the mouth of the receptacle and held in wedging contact with the interior wall of the receptacle-mouth, the said protecting device being composed of a material which is impervious to and which will not deleteriously affect the liquid contents of the receptacle, a cap fitting over the gasket and the protecting device and over the receptacle-mouth, and means for holding said cap in place over the bottle-mouth.

14. A bottle-closure comprising a member having an opening in its top and a depending flange to lie on the exterior of the bottle, a second member closing the opening in the top of the first member and being of soft non-corrosive material which is exposed at said opening and which, when the cap is applied to the bottle bears against a portion thereof at the mouth, and a permanently-attached gasket within the closure, said flange being adapted to be bent into locking engagement with an exterior shoulder on the bottle at any point to which the closure may be forced down.

15. A closure for bottles comprising a member having a portion to extend down on the outer side of the bottle to have holding engagement therewith, a gasket to fit over the top edge of the bottle-mouth, a cup-shaped member fitting in the opening of the gasket and adapted to extend into the mouth of the bottle to contact with the inner wall of said mouth, said gasket being permanently attached to the cup-shaped member, substantially as described.

16. In combination with a bottle having a lip rounded on its side and inner edge, a sealing member having a portion extending into the bottle-mouth and substantially tangential to the said rounded inner edge forming a crevice contracting toward the bottle-mouth, and a packing resting on the bottle-lip and underlying and pressed upon by a portion of the said sealing member, and a part to be locked to the exterior of the bottle, substantially as described.

17. The combination in a closure of a member consisting of a retaining-cap, a second member providing a downwardly-projecting central portion of soft metal adapted in use to fit and assume the shape of the bottle when pressed down into engagement therewith and a permanently-carried gasket within the cap, said cap being flanged for engagement with a shoulder on the exterior of the bottle when it is bent thereunder, substantially as described.

18. The combination in a closure of a member consisting of a retaining-cap, a second member providing a downwardly-projecting portion adapted to have lateral movement in respect to the cap to adjust itself to the bottle and being of soft metal to conform under pressure to any irregularities in the portion of the bottle with which it contacts, and a yielding gasket carried within the cap, substantially as described.

814,532. SEAL FOR BOTTLES. George H. Gillette, New York, N. Y., assignor to The Crown Cork & Seal Company, Baltimore, Md., a Corporation of Maryland. Filed Apr. 25, 1905. Serial No. 257,347.



Claim.—1. A washer or seal for bottle-caps comprising a lining of suitable material and a packing material of ring form attached thereto, substantially as described.

2. A washer or seal for bottle-caps comprising a lining of suitable material and a ring of packing material attached thereto by a portion of the lining clamping the packing, substantially as described.

3. A washer or seal for bottle-caps comprising a lining having flanges and a ring of packing material held between the said flanges, substantially as described.

4. A washer or seal for bottle-caps comprising a lining of disk form having a ring packing attached to its periphery, substantially as described.

5. A washer or seal for bottle-caps comprising a lining comprising a cup-shaped piece of aluminium having flanges with a ring packing held between said flanges, substantially as described.

6. A washer or seal for bottle-caps comprising a cup-shaped piece having flanges one of which is of double thickness and a ring-shaped packing clamped between the two flanges, substantially as described.

7. In combination with a bottle having an exterior shoulder and a bottle-cap locked beneath said exterior shoulder, an unattached washer within the cap consisting of a piece having attached thereto packing material resting on the lip of the bottle, said piece bearing on the bottle around the edge of its mouth, substantially as described.

8. In combination with a bottle having an exterior shoulder and

a bottle-cap locked beneath said exterior shoulder thereon, a washer within the cap comprising a piece having flanges about its edge, and a ring packing clamped by the flanges, said packing resting on the bottle-lip and the flange of the piece engaging the bottle-mouth about its edge, substantially as described.

9. A lining member for bottle-caps of substantially cup shape having flanges and a packing held thereby.

10. In combination with a bottle-cap, a lining therefor of inverted-cup shape having packing material attached thereto.

11. In combination with a bottle, a bottle-cap, a lining therefor of inverted-cup shape and having packing material attached thereto, said lining material resting on the lip of the bottle, substantially as described.

12. A bottle or like closure comprising a member adapted to extend across the bottle-mouth, packing material, said member having a portion extending outwardly beneath the packing to attach the packing to the said member with means adapted to engage the outer side of the bottle for holding the closure to the bottle, substantially as described.

13. A bottle or like closure comprising a cup-shaped member adapted to extend across the bottle-mouth, ring packing material, said member having a portion extending outwardly beneath the packing to hold the same to said member with means adapted to engage the outer side of the bottle for holding closure to the bottle, substantially as described.

14. A bottle or like closure comprising a member adapted to extend across the bottle-mouth, ring packing material, said member having a portion in clamping contact with the packing with means engaging the outer side of the bottle for holding closure to the bottle, substantially as described.

15. A closure comprising an outer member, a second member having flanges and a ring of packing material permanently carried between the said flanges, substantially as described.

16. A closure comprising an outer member, a second member consisting of a cup-shaped piece having flanges with a ring packing permanently carried between said flanges, substantially as described.

17. A closure comprising an outer member, a cup-shaped piece having flanges, one of which is of double thickness and a ring-shaped packing located between the two flanges, substantially as described.

18. In combination with a bottle, an outer member locked beneath an exterior shoulder thereon, a second member comprising a piece having flanges about its edge, and a ring packing between the flanges, said packing resting on the bottle-lip and the flange of the said second member engaging the bottle-mouth about its edge, substantially as described.

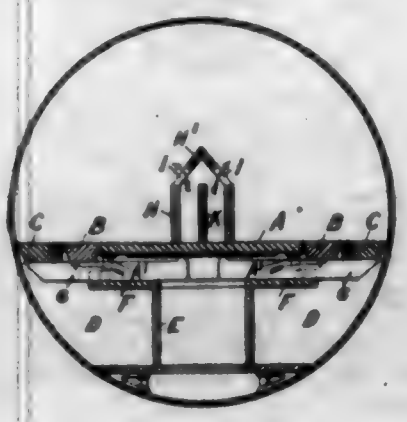
19. A closure comprising an outer member to be locked to the exterior of the bottle, and a second member of disk form having a packing-ring at its edge, said second member and packing-ring being carried by the outer member, substantially as described.

20. A closure comprising an outer member and a second member, consisting of a disk of material having packing material about the edge of the same, substantially as described.

21. A bottle-seal comprising an outer member having a depending flange and a portion to extend entirely over the bottle-mouth, a second member and a gasket carried permanently thereby, substantially as described.

22. A bottle or like closure comprising a member adapted to extend across the mouth of the bottle and having flanges about its edge, permanently-carried ring packing material in the space between said flanges and means to engage the outer side of the bottle, substantially as described.

814,533. FURNACE FOR STEAM-BOILERS, &c. Alexander S. Golder, Uddingston, Scotland. Filed May 31, 1905. Serial No. 262,105.



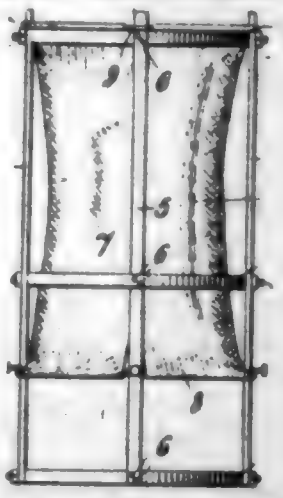
Claim.—1. In the furnaces of steam-boilers and the like, fuel-supporting plates and a hooded central air-chamber located above said plates, with exits for the outflow of heated air, and a dividing-partition in said chamber in combination with an air-admitting sliding door at the front end of said chamber.

2. In the furnaces of steam-boilers and the like, the combination of a solid central fire-bar plate, an air-heating chamber below said plate, a narrow bar on each side thereof, open spaces on each side of said narrow bars through which the heated air passes to the furnace from said chamber, and a hooded chamber above said central plate with exits therein for the outflow of heated air.

3. In the furnaces of steam-boilers and the like, the combination of a solid central fire-bar plate, a chamber beneath said solid plate, a bar on each side of said plate, open spaces on each side of said bars through which the heated air passes to the furnace from said chamber, a hooded chamber above said plate with exits therein for outflow of heated air, and means to regulate the air admitted to said chamber.

4. In the furnaces of steam-boilers and the like, the combination of the fire-bar plates, a central air-heating chamber below said plates, and a hooded chamber above said plates, said hooded chamber having its detachable hooded part supported by flanged bearings on the lower part.

814,534. BANANA-SHIPPING CRATE. Otto Graner, La Crosse, Wis. Filed May 29, 1906. Serial No. 319,344.



Claim.—The herein-described banana-crate comprising the pair of stripe or bars, the series of hoops on the inner sides of said bars and at opposite points pivoted thereto to enable said hoops to be turned angularly with respect to the bars, the sack having stiffening-hoops near its ends and provided with openings through which the bars extend, said stiffening-hoops being on the outer sides of said bars, one of said stiffening-hoops bearing on one of the pivoted hoops and the other stiffening-hoop being slidable on said bars, and a brace-strip connecting the pivoted hoops.

814,535. ELECTRIC SIGNAL APPARATUS. Lawrence Griffith, Yonkers, N. Y. Filed Oct. 28, 1904. Serial No. 230,260.

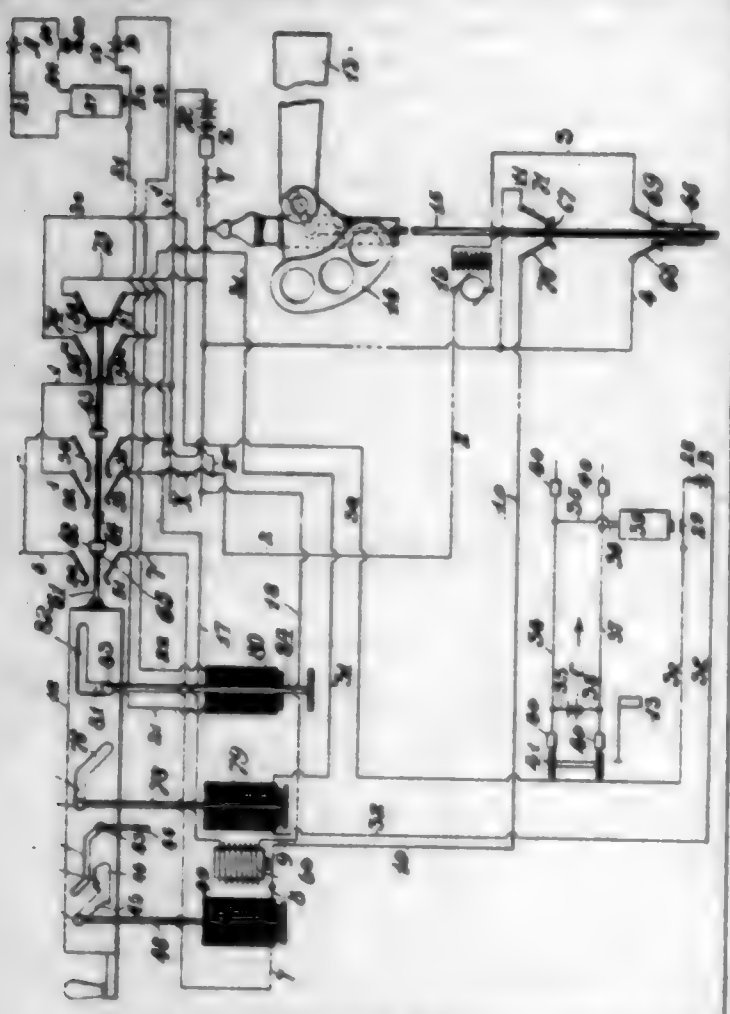
Claim.—1. In electric signal apparatus for railways comprising an electric indicator and an electric motor or unit for moving the signal, electric means separate from the indicator for preventing the action of the indicator while there is electric energy supplied to said motor.

2. In electric signal apparatus for railways comprising an electric indicator and an electric motor or unit for moving the signal, means for preventing the action of the indicator while there is electric energy supplied to said motor which consists of a relay adapted to break the electric connection of said indicator at said times.

3. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator

4. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor, and for setting

said apparatus in operative position for said indicator, with means for preventing the action of the indicator while there is electric energy supplied to said motor.



5. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with electrically-controlled means independent of the operator of said apparatus for locking and unlocking the same.

6. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with means for preventing the action of the indicator while there is electric energy supplied to said motor, with electrically-controlled means independent of the operator of said apparatus for locking and unlocking the same.

7. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with means for shunting current on the circuit of said motor to battery when the apparatus is at normal position.

8. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with means for preventing the action of the indicator while there is electric energy supplied to said motor, and means for shunting current on the circuit of said motor to battery when the apparatus is at normal position.

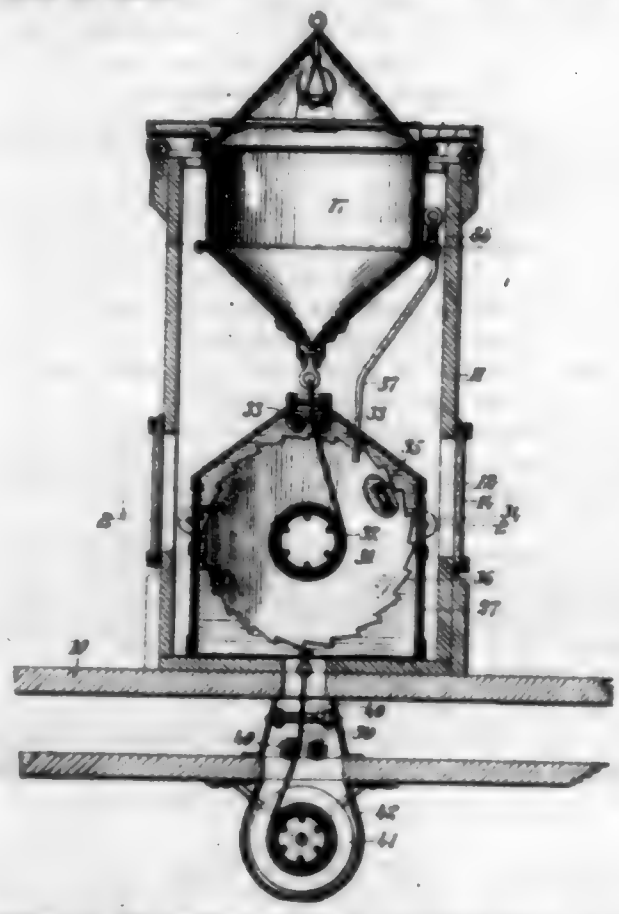
9. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with electrically-controlled means independent of the operator of said apparatus for locking and unlocking the same, and means for shunting current on the circuit of said motor to the battery when the apparatus is at normal position.

10. In electric signal apparatus for railways comprising an electric indicator, automatic means for cutting off the source of electric energy from the indicator as the indicator operates to indicate, and an electric motor or unit for moving the signal, the combination of means controlled by a moving train for returning the signal to normal position after it has been moved by said motor and for setting said apparatus in operative position for said indicator, with means for preventing the action of the indicator while there is electric energy supplied to said motor, with electrically-controlled means independent of the operator of said apparatus for locking and unlocking the same, and means for shunting current on the circuit of said motor to battery when the apparatus is at normal position.

11. In an electric switch or circuit controller the combination of three pairs of stationary contact-points with a movable bridge or circuit-maker adapted to make a closed circuit with two of said pairs of points, one upon each limit of its stroke, and to make a closed circuit with the other of said pairs of points upon its movement in one direction and not in the other direction.

12. In an electric switch or circuit controller the combination of two pairs of stationary contact-points with a movable bridge or circuit-maker adapted to make a closed circuit with one of said pairs of points upon the limit of its stroke in one direction and to make a closed circuit with the other of said pairs of points upon its movement in one direction and not in the other direction.

814,536. APPARATUS FOR MARKING SUNKEN VESSELS. Frederick W. Johnson, Dawson, Canada, assignor of one-half to John P. Peterson, Dawson, Canada. Original application filed Sept. 22, 1903, Serial No. 174,209. Divided and this application filed July 18, 1905. Serial No. 270,191.



Claim.—1. The combination with a vessel, of a buoy, a vault, a reel in the vault, a buoy-line connected to the buoy and to the reel, and a second line connecting the vault with the vessel.

2. The combination of a buoy, a vault, a reel in the vault, a buoy-line connecting the buoy and reel, a reel mounted on the vessel, and a line connecting the vault and the second-named reel.

3. The combination with the decks of a vessel, of a housing built thereon, a buoy, a vault capable of being contained within the housing, a reel within the vault, a line connecting the buoy and reel, a reel mounted on the vessel, and a line connecting the vault and the second-named reel.

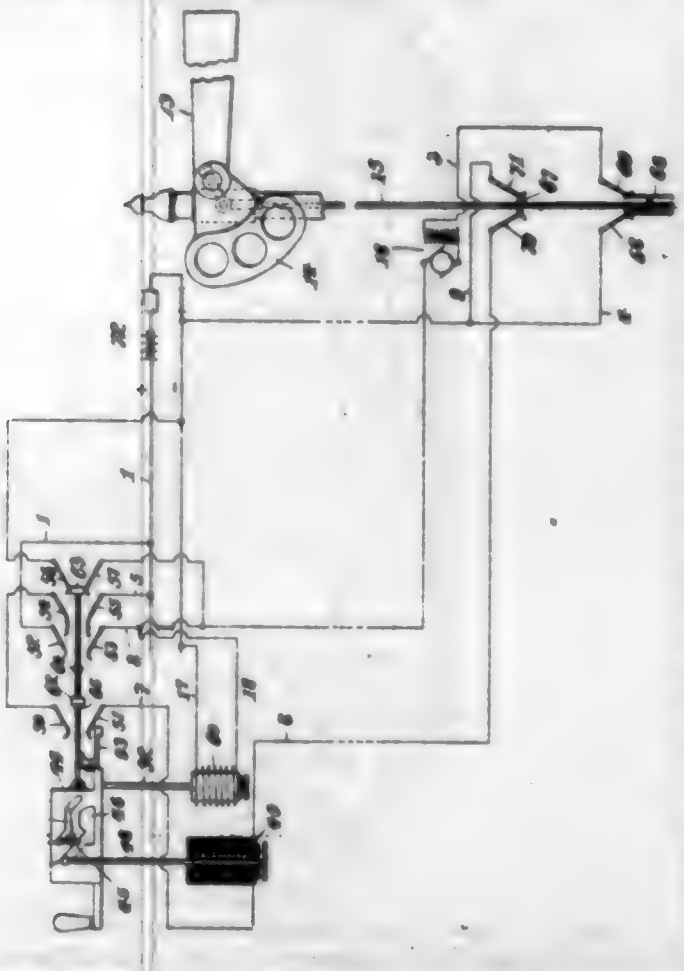
4. The combination with a vessel, of a buoy, a vault, a line connecting the two, and a second line connecting the vault with the vessel.

5. The combination with a vessel, of a buoy, a vault, a line connecting the two, a second line connecting the vault with the vessel, and a housing mounted on the vessel and adapted normally to contain the vault and buoy.

6. The combination of a buoy, a reel, a line connecting the reel and buoy, and a restraining means for the reel, said restraining means being connected with the buoy.

7. The combination of a buoy, a reel having a ratcheted flange, a line connected with the buoy and wound over the reel, and a rod attached to the buoy and normally connected with the ratcheted flange of the reel.

814,537. **SAFETY DEVICE FOR RAILWAY SWITCH AND SIGNAL APPARATUS.** Lawrence Griffith, Yonkers, N. Y. Filed Sept. 20, 1905. Serial No. 279,232.



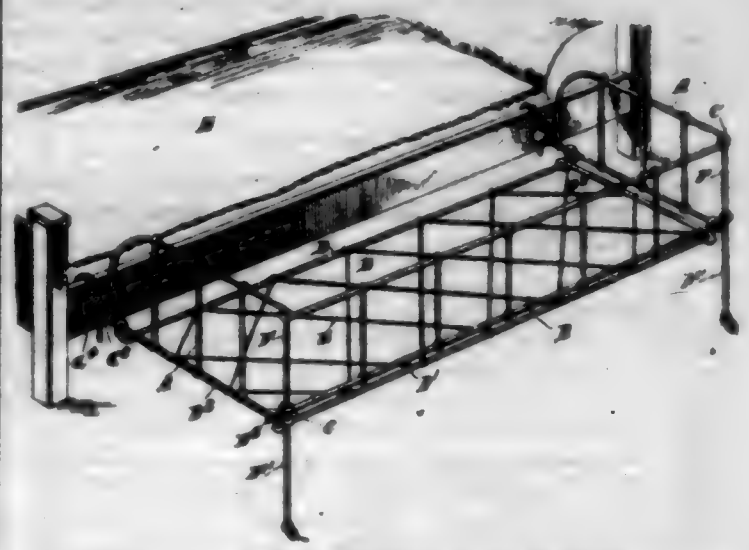
Claim.—1. In apparatus for operating switches, signals and the like, comprising an electric indicator and an electrically-operated motion plate or device to be moved, means for preventing the action of the indicator while there is electric energy supplied to the operative means of said motion-plate, which consists of a mechanical lock for said indicator, operated by electric means separate from said indicator.

2. In electric apparatus for operating switches, signals and the like, comprising an electric indicator and an electrically-operated motion plate or device to be moved, means for preventing the action of the indicator while there is electric energy supplied to the operative means of said motion-plate, which consists of a mechanical lock for said indicator, operated by electric means separate from said indicator.

3. In apparatus for operating switches, signals and the like, comprising an electric indicator and a plurality of electrically-operated motion plates or devices to be moved, means for preventing the action of the indicator while there is electric energy supplied to the operative means of any of said motion-plates, which consists of a mechanical lock for said indicator, operated by electric means separate from said indicator.

4. In electric apparatus for operating switches, signals and the like, comprising an electric indicator and an electrically-controlled motion plate or device to be moved, means for locking the apparatus against the indicator or operator while there is energy supplied to the controlling means of the motion-plate, which consists of a mechanical lock for said apparatus operated by electric means separate from said indicator.

814,538. **CRIB.** William W. Gressett, New Orleans, La., assignor of one-half to Walter Scott Wilkinson, New Orleans, La. Filed Nov. 2, 1904. Renewed Jan. 16, 1906. Serial No. 296,280.

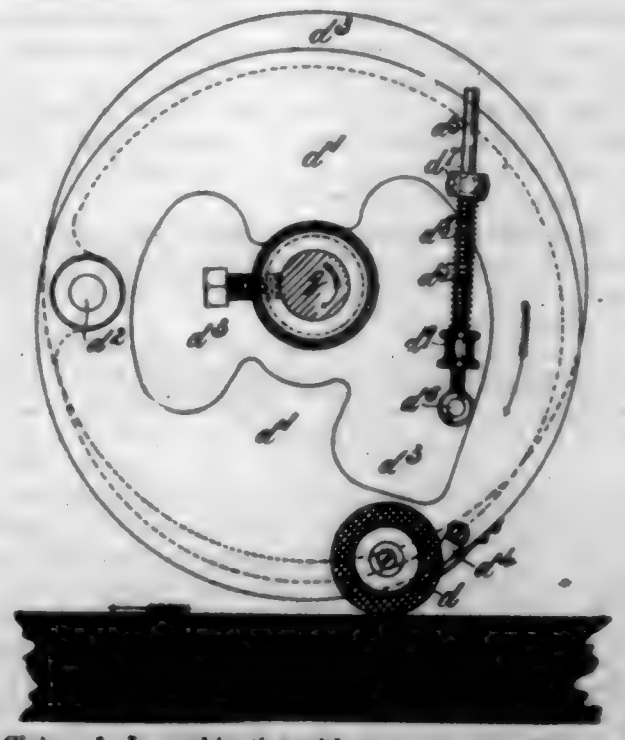


Claim.—1. A folding crib consisting of end pieces and a side secured together, by hinge-acting joints, a detachable bottom with devices whereby it is supported in place, supporting-legs at the outer end of the end pieces, and hooked devices at the inner ends of the end pieces, adapted for engagement with the side rails of a bedstead and adapted to extend under the bedstead-mattress, between the latter and its support, substantially as described.

2. A folding crib consisting of end pieces and a side secured together, by hinge-acting joints, a detachable bottom with hooked devices whereby it is supported in place, supporting-legs at the outer end of the end pieces, and adjustable hooked devices at the inner end of the end pieces, adapted for engagement with the side rails of the bedstead, the hooked devices being elongated adapted to extend under the bedstead-mattress, substantially as described.

3. The combination with a folding crib employing ends, a side, a detachable bottom and suitable legs, the ends of the crib having sockets, as described, of hooked devices with their outer portions or ends bent adapted to be arranged in said sockets and their inner portion or ends bent adapted to extend under the bedstead-mattress, and means on the sockets for securing the hooked devices in an adjustment, substantially as set forth.

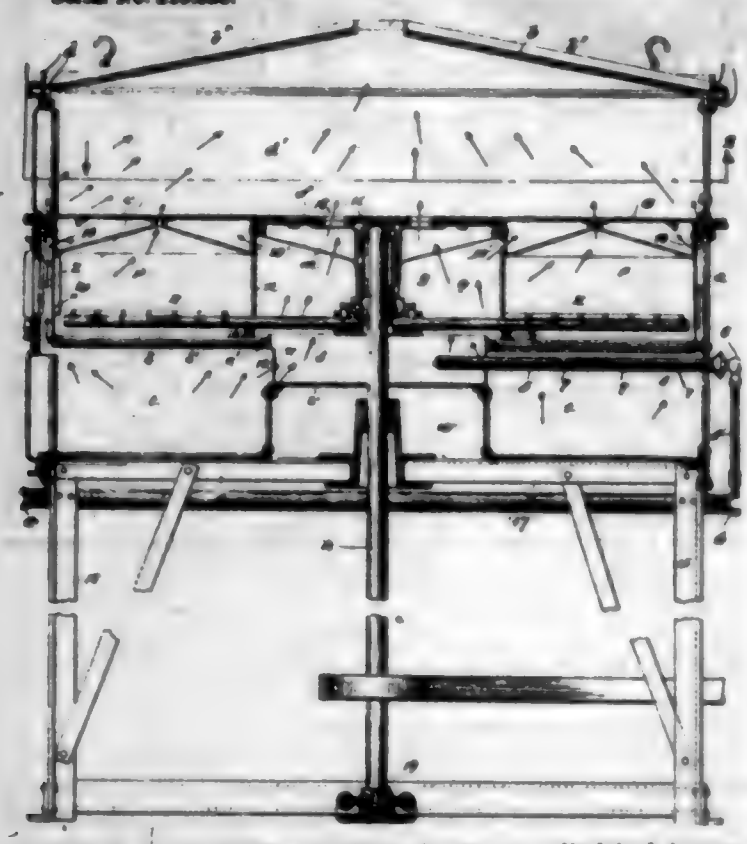
814,539. **TAKING-OFF DISK FOR FEEDING PAPER IN PRINTING AND THE LIKE MACHINES.** James Hall, Reddish, and Maximilian T. Barber, Manchester, England, assignors to Printers' Engineers Limited, Manchester, England. Filed Sept. 19, 1904. Serial No. 225,126.



Claim.—1. In combination with a rotary carrier disk or plate, a feeding-disk rotating therewith but connected thereto for independent transverse, gravitating movement, a spring arranged to resist said independent movement and means for adjusting the tension and resistance of said spring substantially as set forth.

2. In combination with a rotating carrier-disk, a paper-feeding disk turning therewith but pivoted thereto at one side of the center in order that it may drop down independently for contact with the paper, a rod attached at one end to one of the said disks and working through a lug on the other, a nut on said rod, and a spring adjustable by said nut and arranged to support the said feeding-disk against gravity to a degree determined by said nut substantially as set forth.

814,540. COOKING-MACHINE. HARRIET A. HIGBEE, Worcester, Mass., assignor to Henry D. Perky, Glencoe, Md. Filed June 22, 1904. Serial No. 213,832.



Claim.—1. A cooking-machine, having a cylindrical incasement and vertical central shaft, a lower annular oven-chamber, a top chamber, and between said chambers, a double-wall middle chamber, bearing upon said central shaft, and a rotary table-top which forms the main floor of the top chamber, substantially as specified.

2. A cooking-machine, consisting of a cylindrical incasement, a lower annular chamber, and above the same, a double-wall chamber, in combination with a table-top to said double-wall chamber and a rack within the same carried by a rotary shaft, substantially as specified.

3. A cooking-machine, consisting of a cylindrical incasement a lower annular chamber provided with heating-burners, and, above this chamber, a double-wall chamber having a rotary rack and rotary table-top, substantially as specified.

4. The combination with a cylindrical oven-incasement having a double-wall flue around its middle portion, and an annular heating-chamber below, of a rotary rack, inner wall and top for said middle portion, substantially as specified.

5. In a cooking-machine, the combination with an incasement, an annular heating-chamber and a middle flue-chamber, of a detachable radial jet-pipe, jointed branch pipes and a main supply-pipe for the gas, substantially as specified.

6. In a cooking-machine, the combination with a cylindrical casing, its central shaft, a double-wall flue portion, a lower annular chamber and an annular ledge of a rotary rack, table-top and inner guard-wall carried by the central shaft, substantially as specified.

7. In a cooking-machine, the combination with a cylindrical casing, and double-wall chamber of a radial arm rotary rack, its removable grates, baffle-plates below said rack, removable radial jet-pipes, a gas-supply pipe and jointed branch pipes, substantially as specified.

8. A cooking-machine, having a rotary shaft, in combination with a baking-rack, and a hub loose on said shaft in connection with said baking-rack, substantially as specified.

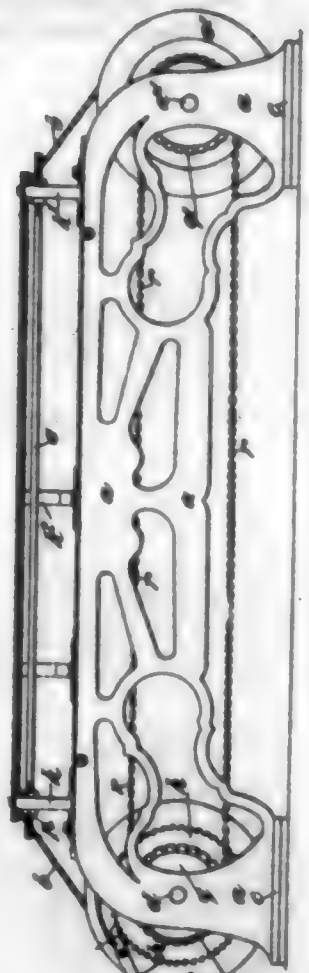
9. In a cooking-machine, the combination with a central shaft and an incasement, a lower annular heating-chamber, a central flue portion, an annular ledge and a double-wall flue between said heating-chamber and ledge, of a rotary rack and table-top in connection with said shaft and a circular flue-wall, substantially as specified.

10. A cooking-machine, consisting of a cylindrical incasement, an annular heating-chamber, radial burner-pipes in said chamber, a central flue portion, a rotary shaft, and a rack having a hub loose on said shaft, substantially as specified.

11. The combination with the rotary shaft, of the baking-rack and its hub loose on said shaft, the cylindrical oven-incasement and its doors, substantially as specified.

12. The cooking-machine, having the lower annular heating-chamber, and the central bottom recess, the double-wall flue middle chamber with central flue, the rotary rack and table-top, vertical shaft and hub, and the radial gas-burners in the heating-chamber, substantially as specified.

814,541. DEVICE FOR TESTING STRINGS FOR MUSICAL INSTRUMENTS. CHARLES W. HOGGARD, Plumstead, England. Filed July 31, 1905. Serial No. 272,032.



Claim.—1. In a device for testing the strings of musical instruments, the combination of a supporting-frame, bridges thereon over which the string to be tested is adapted to be stretched to the desired tension coöperating means for stretching said string and moving said string along said frame without varying the tension thereof, substantially as described.

2. In a device for testing the strings of musical instruments, the combination of a supporting-frame, adjustable bridges supported thereby, a scale on the top of said frame, a movable bridge between said adjustable bridges, coöperating means for stretching the string to be tested to the desired tension and moving a new portion of the string along said bridge without varying the tension of said string, substantially as described.

3. In a device for testing the strings of musical instruments, the combination of a supporting-frame, pulleys to which the ends of the string to be tested are attached, a movable part operatively associated with one of said pulleys, whereby the string to be tested may be stretched to and held at the desired tension, a movable stop for limiting the motion of the other pulley, and means for causing said pulleys to move simultaneously, substantially as described.

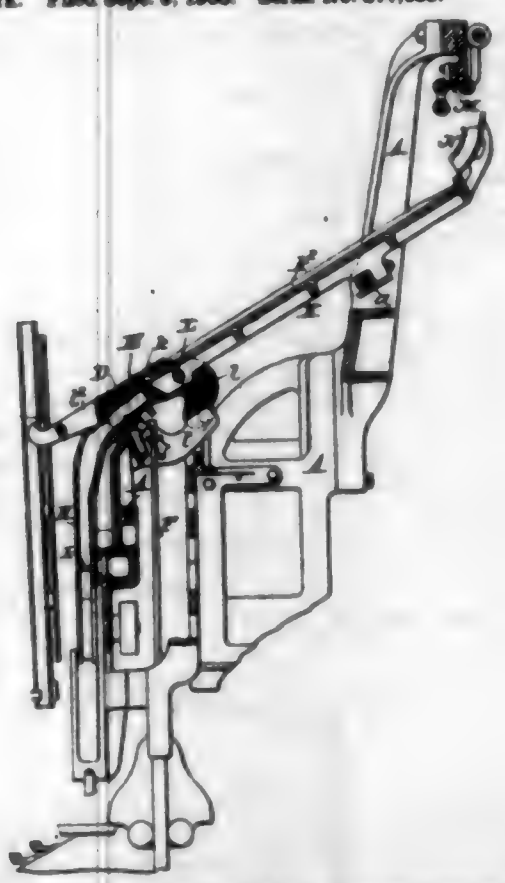
4. In a device for testing the strings of musical instruments, the combination of a supporting-frame having two parts provided with longitudinal guides on their upper edges, transverse spindles, pulleys for supporting and moving the string to be tested mounted on said pulleys, adjustably-fixed transverse bridges located near the ends of said frame, stays connecting said bridges, a movable bridge sliding in the guides of said frame, and means for connecting said pulleys together so that they will revolve simultaneously, substantially as described.

5. In a device for testing the strings of musical instruments, the combination of a supporting-frame over which the string to be tested

is adapted to be stretched, pulleys to which the ends of said string are attached, a movable part operatively associated with one of said pulleys, whereby the tension of the string may be varied, a movable spring-stop adapted to engage the other of said pulleys, and means for connecting said pulleys together so that they will move simultaneously, substantially as described.

6. In a device for testing the strings of musical instruments, the combination of a frame, a pulley mounted at one end of said frame, and a second pulley mounted at the opposite end of said frame, said pulleys being adapted to receive the ends of the string to be tested, a ratchet-wheel adjacent said first pulley, a spring-pawl carried by said first pulley coöperating with said ratchet-wheel, a spring-operated stop for said second pulley, and means operatively connecting said second pulley with said ratchet-wheel, substantially as described.

814,542. LINOTYPE-MACHINE. Thomas S. Homans, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 9, 1905. Serial No. 277,850.



Claim.—1. In a linotype-machine, the combination of a main frame, an inclined magazine-supporting frame mounted to move vertically at its lower forward end, a magazine mounted on said supporting-frame and independently removable in a forward direction, and means for sustaining the end of the supporting-frame at the delivery end of the magazine above its normal position, whereby the magazine may be supported and guided while being removed and applied at the front of the machine.

2. In a linotype-machine, a main frame, a supporting-frame for the magazine movably mounted in the main frame, a magazine detachably applied to the supporting-frame, and removable in a forward direction and mechanism for lifting the free end of the supporting-frame, whereby the end of the magazine may be moved from its operative position preparatory to its removal from the machine.

3. In a linotype-machine, a main frame, a magazine-supporting frame arranged in an inclined position and mounted to turn on a horizontal axis, a magazine mounted on said frame and removable at the front of the machine, means for raising the forward end of the frame and the magazine thereon, and an escapement-bar fixed on the main frame and forming a continuation of the magazine when the latter is in operative position.

4. In a linotype-machine, a main frame, escapement devices secured thereon to control the delivery of matrices, a detachable magazine, a magazine-supporting frame, jointed to the main frame to permit vertical movement of the delivery end of the magazine to and from the operative position, and mechanism for effecting the movement of the supporting-frame.

5. In a linotype-machine, the combination of the main frame, the magazine B, removable at the front of the frame, the magazine-supporting frame K, mounted to swing upward and downward at the delivery end, and cams *l*, to lift and sustain the frame K.

6. In a linotype-machine, the combination of the main frame, the magazine adapted to be withdrawn endwise therefrom, and arms l^3 pivoted to swing forward and backward and adapted in their forward positions to sustain the detached magazine.

7. In a linotype-machine, the main frame, the removable magazine, and the movable magazine-supporting frame K, in combination with a rock-shaft L, provided with means to raise and sustain the frame K and also with means to suspend the magazine.

8. In a linotype-machine, the combination of the main frame, the detachable magazine, the magazine-supporting frame K, mounted to swing upward and downward, the cam *l*, arranged to raise and sustain said frame, and arms l^3 adapted to sustain the magazine when moved from its operative position.

9. In a linotype-machine and in combination with a main frame, an inclined magazine removable endwise in a forward direction, a movable frame whereon the magazine is seated, means for moving the said frame from its normal position and means for horizontally guiding the magazine during its movement to and from the operative position

10. In a linotype-machine and in combination with a main frame and a magazine removable therefrom, arms for temporarily sustaining the magazine, said arms pivoted to turn forward beyond the front of the frame, substantially as described.

11. In a linotype-machine, a main frame, a vertically-movable frame therein, a magazine detachably applied to the movable frame, and movable magazine-supporting arms adapted to form a continuation of the magazine-supporting frame to facilitate the application and removal of the magazine, substantially as described.

12. In a linotype-machine and in combination with the independently-removable magazine, its supporting-frame, K, mounted to swing upward and downward at the lower end, and the magazine throat or entrance, N, jointed to the movable frame; whereby the removal of the magazine independently of the throat is permitted and proper operative relation of the parts insured when the magazine is in place.

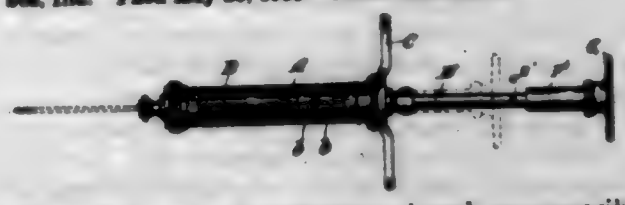
13. In a linotype-machine, the combination of an inclined magazine independently removable at the front of the machine, a vertically-movable support for the magazine, and means for sustaining the magazine as it is withdrawn from said support; whereby its removal is facilitated.

14. In a linotype-machine, the combination of a main frame, a vertically-movable frame thereon, a magazine removably mounted on the movable frame, and means extending in advance of the movable frame to assist in supporting the magazine as it is removed and applied.

15. In a linotype-machine, in combination with the main frame having the fixed matrix-channels H, an inclined independently-removable magazine arranged to deliver the matrices into said channels, means for supporting the magazine and for lifting its end clear of the channels H, and means extending forward of the magazine-support adapted to suspend the magazine during the course of its removal from or application to the machine.

16. The linotype-magazine provided with a longitudinal guide to control its movement to and from the machine, and with supporting devices at its two opposite edges whereby it may be suspended endwise.

814,543. HYPODERMIC SYRINGE. Jacob W. Horner, Columbus, Ind. Filed May 20, 1905. Serial No. 261,237.



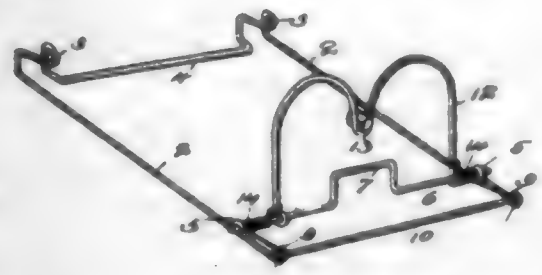
Claim.—1. A syringe comprising a barrel, an expansible piston, a compound piston-rod consisting of a central stem and an inclosing tube, each having an expanding face for the piston, a tubular nut screwed upon the central stem and bearing against the inclosing tube, a terminal handle fixed rigidly to the end of the hollow piston-rod behind the tubular nut and moving with the compound piston-rod as an integral part whereby it is manually advanced by direct longitudinal pressure the tubular nut being completely housed by the tubular portion of the piston-rod and its terminal handle, substantially as described.

2. A syringe comprising a barrel, an expansible piston, a compound piston-rod consisting of a central stem and an inclosing tube each having an expanding face for the piston, a tubular nut screwed

upon the central stem and bearing against the inclosing tube, a tubular housing of larger diameter than the piston-tube and rigidly fixed to the same and a terminal handle fixed rigidly to the end of the housing behind the tubular nut and moving with the same and the piston-rod as an integral part and arranged to be manually advanced by direct longitudinal pressure substantially as described.

3. A syringe comprising a barrel, an expansible piston, a compound piston-rod consisting of a central stem and an inclosing tube each having an expanding face for the piston, a tubular nut screwed upon the central stem and bearing against the inclosing tube, and a terminal handle fixed rigidly to the end of the hollow piston-rod behind the tubular nut and having a central hole of smaller size than the end of the tubular nut within said terminal handle being arranged to be manually advanced by direct longitudinal pressure as described.

814,544. PROTECTOR FOR PIANOS. William Hoskin and James A. Hoonan, Central City, Colo. Filed Sept. 21, 1905. Serial No. 279,475.



Claim.—1. In a guard for musical instruments, the combination of a base, a frame pivotally mounted thereon, a covering for said frame, a cushion carried by said frame and means for normally retaining said cushion in contact with said musical instrument.

2. A guard for musical instruments, comprising a base, a shield pivotally mounted thereon, a yoke-shaped part forming the lower side of said shield, and means for exerting a continuous pressure on said shield for holding the same in position.

3. A guard for musical instruments, comprising a base, a frame pivotally mounted thereon forming with a V-shaped recess on the upper side thereof, a cushion-block wedged in the said recess, fabric covering said frame, and means for holding said frame yieldingly in position.

4. A guard for musical instruments, comprising a base, a bar formed with a yoke-shaped portion intermediate its length mounted thereon, a pivotally-mounted shield carried by said bar and means carried by the bar for normally pressing said shield for retaining the shield in operative position.

5. A guard for musical instruments, comprising a base, a bar formed with a yoke-shaped portion intermediate its length mounted thereon, a pivotally-mounted shield carried by said bar and springs at each end of said bar engaging said shield and said base for normally pressing said shield for retaining it in position.

6. A guard for musical instruments, comprising supporting-rods, a transverse rod formed with a yoke-shaped portion intermediate its length connecting the supporting-rods, a shield pivotally carried thereby, a spring connecting said rods and engaging said shield for normally holding the shield in position.

7. In a guard for musical instruments, the combination of supporting-bars, a hook formed on one end of each of said bars, and adapted to engage a part of a musical instrument for sustaining the parts in position and a pivotally-mounted shield carried by said bars and adapted to be disposed in front of said instrument.

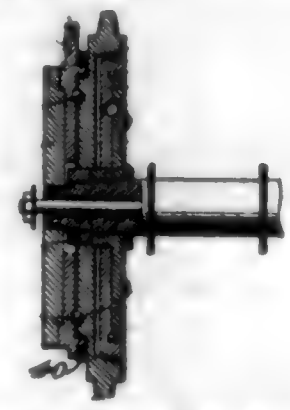
8. A guard for musical instruments, comprising a base, a shield pivotally mounted thereon and positioned in front of said instrument, a spring pressing said shield, toward said instrument and a cushion-block carried by said shield for holding said shield out of contact with said instrument.

9. In a guard for musical instruments, the combination of a base, a fabric-covered frame pivotally mounted thereon, a rubber block carried by said frame and means for normally holding said frame in operative position.

10. A guard for musical instruments, comprising a base formed of a plurality of supporting-rods, a yoke-shaped transverse rod carried thereby and a pivotally-mounted shield carried by said transverse rod, said rod forming part of said shield and sustained in position by a spring carried by said transverse rod.

11. A guard for musical instruments, comprising supporting-bars, a hook carried by each of said bars at the rear end thereof and formed integrally therewith, a rod connecting said hooks, a shield carried by the front end of said rods and means connecting the front ends of said rods for retaining the parts in position.

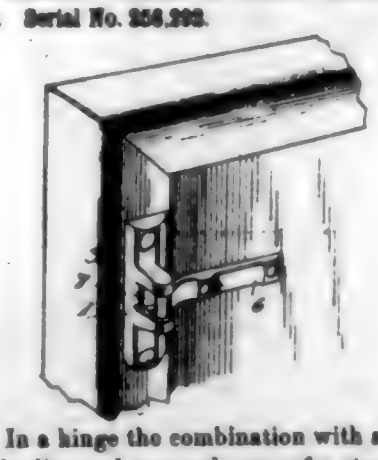
814,545. CLUTCH. Charles C. Keyser, Newport News, Va. Filed Feb. 13, 1905. Serial No. 245,452.



Claim.—1. In a friction throw-off for motor-cycles, a friction-disk adapted to be secured to the rear hub of the vehicle and comprising a rigid disk and a movable disk, said two disks being connected by a series of cushion-springs, a ball-bearing between said disks, a sprocket-wheel having a recess to receive the friction-disk and a friction-surface, a movable wedge-disk, ball-bearings between the sprocket-wheel and the wedge-disk and a rigid wedge-disk secured to the frame of the vehicle, substantially as described.

2. The herein-described friction device comprising the two members 1, 3, one member being secured rigidly to a hub and the other member adapted to move thereon, intermediate curved springs between the two members, the ends of the springs bearing against lugs on the members, ball-bearings between the members, a sprocket-wheel provided with a recess to accommodate the friction-disk and a friction-surface, a rigid wedge-disk, and a movable wedge-disk between the sprocket-wheel and the movable wedge-disk, substantially as described.

814,546. HINGE. Harry G. Kemple, Dickenburg, Pa. Filed May 1, 1905. Serial No. 258,292.



Claim.—1. In a hinge the combination with an apertured base having oppositely-disposed grooved ears; of a strap, oppositely-extending projections thereon engaging the ears, and means within the aperture for holding the projections within the ears.

2. In a hinge the combination with an apertured base having ears adjacent its aperture, of a strap projecting between the ears, oppositely-extending projections thereon engaging the ears, and a detachable follower seated within the aperture and adapted to hold the projections against displacement.

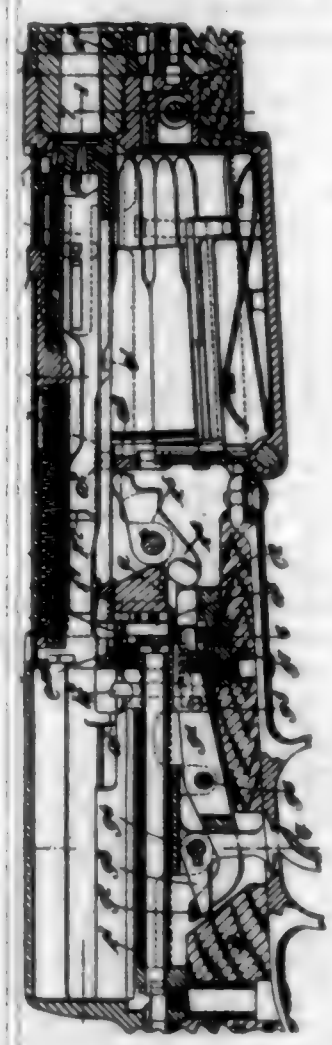
3. In a hinge the combination with an apertured base having longitudinally-grooved ears adjacent its aperture, of a strap, oppositely-extending projections thereon rotatably mounted within the grooves, and a detachable follower within the apertured grooves for holding the projections against displacement.

4. In a hinge the combination with a supporting structure, of an apertured base secured thereto and having ears adjacent its aperture, a strap extending between and rotatably mounted within the ears, and a follower within the aperture and interposed between the strap and supporting structure.

5. In a hinge the combination with an apertured base adapted to be secured to a supporting structure, and longitudinally-grooved ears adjacent the aperture, of a strap between the ears, oppositely-extending projections upon the strap rotatably mounted within the grooves, and a follower detachably mounted within the aperture and grooves for holding the projections against displacement, said follower adapted to be held against movement by the structure to which the hinge is secured.

6. A hinge comprising a member having an aperture therein and integral ears, another member between and engaging the ears, and means within the aperture for holding said last-mentioned member in engagement with the ears.

814,547. AUTOMATIC FIREARM. Rudolf B. Kjellman, Stockholm, Sweden, assignor to Aktiebolaget Stockholms Vapenfabrik, Stockholm, Sweden. Filed Aug. 3, 1905. Serial No. 272,559.



Claim.—1. In an automatic firearm, the combination with the recoiling barrel, the recoil-spring, the breech-bolt, and the return-spring; of means for locking the barrel after it and the bolt have recoiled, means for unlocking the bolt from the barrel and permitting it to continue its rearward movement independently of the barrel and extract the empty cartrigde-case, means for locking the bolt in its retracted position and releasing the barrel, means for enabling the barrel to eject the extracted cartridge-case as said barrel advances to its forward position, means for enabling the barrel to release the bolt as said barrel advances, and means whereby the bolt in moving forward to close the breech introduces a fresh cartridge into the barrel substantially as described.

2. In an automatic firearm, the combination with the recoiling barrel, the recoil-spring, the breech-bolt and the return-spring; of a non-recoiling spring-controlled catch, means whereby the barrel in completing its recoil movement will be engaged and held by said catch, means whereby the breech-bolt in completing its independent rearward movement will disengage said catch from the barrel and itself become engaged and held by said catch, and means whereby the barrel in completing its forward movement disengages the catch from the bolt to permit the latter to advance and close the breech substantially as described.

3. In an automatic firearm, the combination with the recoiling barrel, the recoil-spring, the breech-bolt, and the return-spring; of a non-recoiling spring-controlled catch provided with three projections, one of which coöperates with the barrel in its recoil in order to restrain its return, another of which coöperates with the breech-bolt in order to liberate the barrel and restrain the return of the bolt, and the other of which coöperates with the barrel to release the bolt as the said barrel completes its forward movement substantially as described.

4. In an automatic firearm, the combination with the recoiling barrel, of means for enabling the amplitude of the recoil movement of the barrel to be limited when the firearm is to be used as an ordinary magazine-rifle substantially as described.

5. In an automatic firearm, the combination with the recoiling barrel of a non-recoiling stop-piece, and a stop-piece angularly displaceable relative to the axis and the barrel and which is movable with the barrel and adapted to hit or miss said non-recoiling stop-piece in accordance with its angular adjustment for the purpose specified.

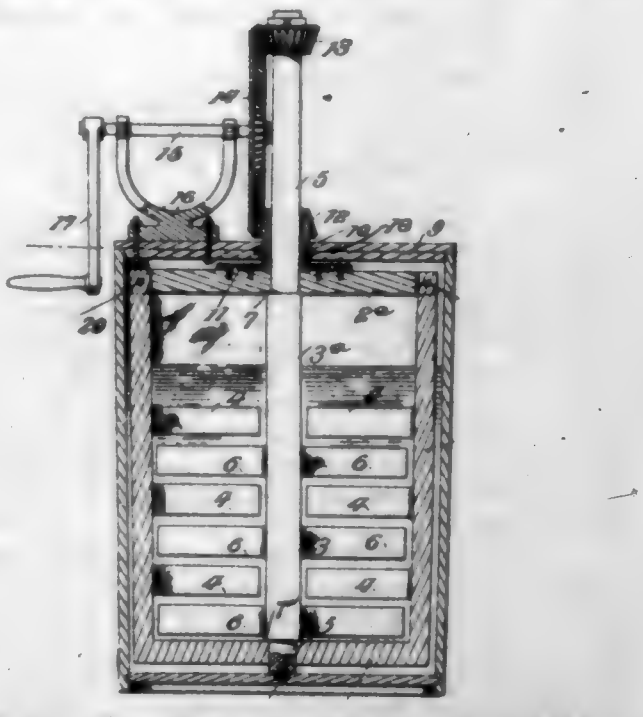
6. In an automatic firearm, the combination with the stock carrying the recoiling parts of the mechanism and the butt carrying the non-recoiling parts of said mechanism, of a transversely-movable spring-pin for readily separating and reconnecting the said stock and butt for the purpose specified.

7. In an automatic firearm, the combination with the detachable stock and butt, of a transversely-movable spring-pin carried by the stock and adapted to engage with apertures in the butt, an inclined head on said spring-pin for enabling the butt to depress the spring-pin in the act of bringing said butt and stock together, and means whereby the recoil-spring is slightly compressed during such bringing together of the stock and butt substantially as described.

8. In an automatic firearm, the combination with the trigger, of a spring-controlled lever having one fulcrum near its middle and another near its forward end, and means whereby the lever will turn about its forward fulcrum during the first part of the trigger's movement and will turn about its middle fulcrum during the last part of the trigger's movement for the purpose specified.

9. In an automatic firearm, the combination with the trigger, of a spring-controlled lever having a fulcrum-pin near its middle and another near its forward end, the said middle fulcrum-pin extending through an elongated opening in the lever for enabling lost motion to take place at this point during the first part of the trigger's movement for the purpose specified.

814,548. CHURN. Louie M. Kaemerauer, Hiteman, Iowa. Filed Sept. 11, 1905. Serial No. 277,963.

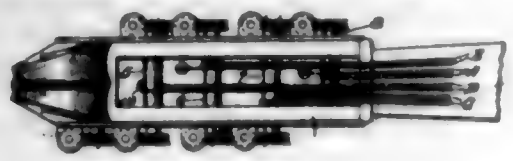


Claim.—In a churn, a body, a cover therefor composed of sections having a tongue-and-groove joint in their meeting edges and having a centrally-disposed opening in the vertical walls of which an annular groove is formed, concentric dashers, a plate secured to the outer dasher and having a tubular extension passed through the central opening of the cover and provided at its upper end with a pinion, a washer fitted in the annular groove of the cover and snugly fitting the tubular extension of the plate, the shaft of the inner dasher obtaining a bearing in the extension of said plate, a pinion fitted to the upper end of said shaft, a gear-bracket secured to one side of the cover, a shaft mounted in the arms of said gear-bracket and provided at its outer end with a crank-handle, and a gear fast to the inner end of said shaft and in mesh with the pinions having connection with the respective concentric dashers.

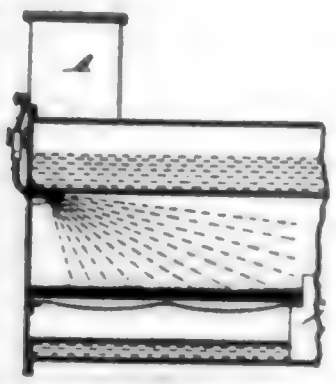
814,549. VIOLIN. Otto H. Laurens, Lockhart, Minn. Filed Oct. 23, 1905. Serial No. 283,973.

Claim.—The combination with a violin having a recessed head and apertures through the bottom of the recess; of side plates secured to the head, keys rotatably mounted within the plates outside

the recess and adjacent the apertures, and keys rotatably mounted within the head and extending through the recess, every key within said recess being paired with a key below the head, means for rotating the keys, the means of each pair being disposed on the same side of the head, two sets of strings arranged in pairs, the strings of each pair being of the same tone and secured to a pair of keys, one string of each pair extending through an aperture to its key.



814,550. APPARATUS FOR PREVENTING SMOKE. FREDERICK A. LEWIS, Melbourne, Victoria, Australia. Filed Mar. 22, 1905. Serial No. 251,474.

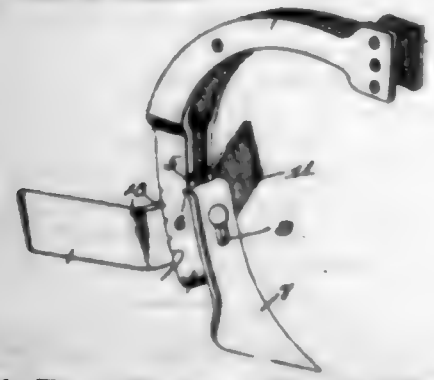


Claim.—1. In an apparatus of the class described, the combination with a boiler, of a reservoir positioned upon said boiler, a removable top or cap carried by said reservoir, a valve secured to said reservoir, a combined steam valve and injector secured to said boiler, a discharge-pipe connecting said valve and combined steam valve and injector, a steam and liquid pipe secured to said combined steam valve and injector and extending over the fire-box of said boiler, and a nozzle secured to the lower end of said steam and liquid pipe, said nozzle comprising right and left hand apertured, semicircular extensions.

2. In an apparatus of the class described, the combination with a boiler, of a reservoir carried by said boiler, a removable cover or cap carried by said reservoir, a valve secured to said reservoir, a combined steam valve and injector secured upon said boiler and communicating with the interior thereof, a vertical discharge-pipe connected to said valve carried by the reservoir and to said steam valve and injector carried by said boiler, a vertical steam and liquid pipe secured to said combined steam valve and injector, a nozzle secured to the lower end of said steam and liquid pipe, said nozzle comprising semicircular, apertured extensions, said extensions bearing against the furnace-crown.

3. In an apparatus of the character described, the combination with a boiler, of a reservoir carried by said boiler, a removable cover carried by said reservoir, a valve secured to said reservoir, a tubing or pipe secured to said valve and extending into and over the fire-box, a nozzle secured to the inner end of said tubing, said nozzle comprising semicircular, apertured extensions, said extensions engaging the furnace-crown

814,551. PLOW. RICHARD R. LUKEFORD, Dorsey, Ga. Filed Sept. 20, 1905. Serial No. 279,218.



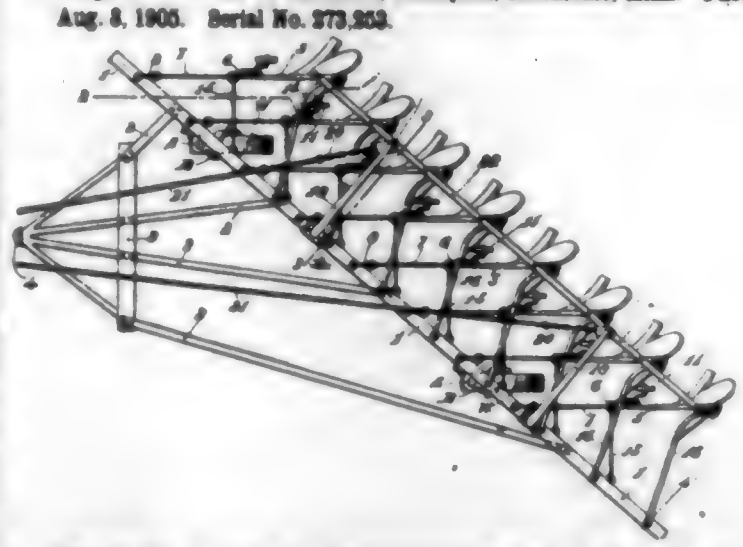
Claim.—1. The combination with a slotted plowshare having a flange at one end and an angular scraper having a flange; of a stock formed of a curved strip of metal folded upon itself at the center and having its ends enlarged and apertured, the edges of said strip being notched adjacent the fold and adapted to be engaged by the flanges, and securing means extending through the slot in the plowshare and through the scraper.

2. The combination with a stock comprising a curved metal strip folded upon itself and having notches in its edges; of a slotted plowshare upon one edge of the stock and adjacent the fold, a scraper upon the other edge of the stock and adjacent the fold, flanges extending from the share and scraper and adapted to be seated in the notches, a tongue extending from the scraper and into the stock, and means extending through the slot in the share and into engagement with the scraper for clamping the share and scraper upon opposite edges of the stock.

3. A stock for plows formed of a curved strip of metal folded upon itself at the center and having its edges notched adjacent the fold, the ends of said strip being spaced apart a greater distance than the notched portions thereof and enlarged and apertured for the reception of draft means between said ends.

4. The combination with a slotted plowshare, having a flange at one end, an angular scraper having a centrally-disposed flange at one edge and a tongue at the opposite edge; of a stock formed of a curved strip of metal folded upon itself at the center and having its ends enlarged and apertured, the edges of said strip being notched adjacent the fold, and adapted to be engaged by the flanges, the tongue on the scraper extending into the fold, the ends on said strip being spaced apart a greater distance than the notched portions thereof, and securing means extending through the slot in the plowshare and through the scraper.

814,552. GANG-PLOW. GEORGE R. MARRIAGE, Mullinville, Kans., assignor of one-half to Charles A. Thompson, Mullinville, Kans. Filed Aug. 8, 1905. Serial No. 273,252.



Claim.—In a gang-plow, a frame consisting of a single obliquely-disposed beam, rotary supporting means for said beam, a plurality of plow units including beams, links connecting the front ends of the plow-beams with the draft-beam, spacing members connecting the front ends of the plow-beams with the draft-beam, spacing members connected rigidly with the plow units and flexibly with the draft-beam, and means for effecting vertical adjustment of the front ends of the individual plow-beams to thereby effect adjustment of the points of the individual plows.

814,553. CHECK PERFORATING AND INDICATING APPARATUS. ALBERT MARSH, London, England. Filed Mar. 30, 1905. Serial No. 253,957.

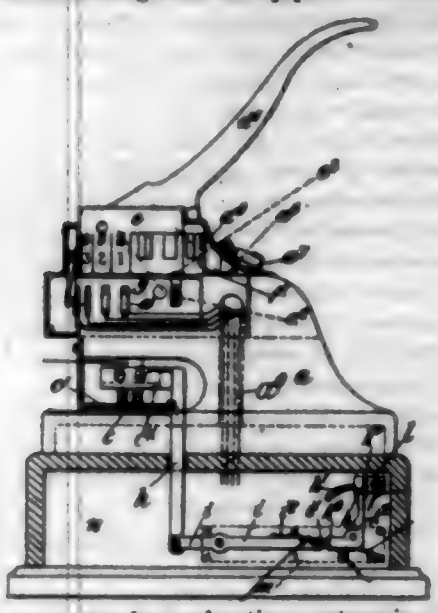
Claim.—1. In an apparatus for perforating or stamping, a rotatable turret, having a contact member, a lever carried by said turret, a punch actuated by said lever and means adapted on the operation of the punch, to close an electric circuit.

2. In an apparatus for perforating or stamping, a plunger having punches, a rotatable head having an operating-lever in operative relation to the plunger, and means operated by the plunger and the head for completing a circuit.

3. In apparatus for perforating or stamping, a plunger having punches a rotatable head or turret adapted to carry the operating-lever and hold the same in operative relation to the plunger pertaining to the punches and a "fly-away" contact device comprising a lever, a pivoted or trip piece thereon adapted during the operation of the punches to turn the contact-maker about its pivot and complete an electric circuit.

4. In apparatus for perforating or stamping, a rotatable head or turret, a notched segment about said head, a lever pivoted in the

head, a plunger having punches a nose or projection on said lever, a cam on the lever in operative relation to the plunger pertaining to the punches, a lever connected with the plunger, a pivoted or trip piece on said lever, a contact-maker in operative relation to said trip-piece and springs for controlling the said trip-piece and the contact-maker.



5. In an apparatus for perforating or stamping, a rotatable turret, a segmental notched ring about said turret, a plunger having punches, a lever pivoted in the turret adapted to engage with one of the notches in said ring, and in operative connection with the plunger, a contact member carried by the turret, and means coöperative with the plunger for completing an electric circuit, said notches in said ring forming stops for the pivotal lever.

6. In an apparatus of the class described, a shiftable contact-arm, a holder therefor, a spring for controlling said arm, a punching member, means coöperative with the latter to complete an electric circuit, and a lever carried by the holder for operating the punching member.

7. In an apparatus for perforating or stamping, a rotatable turret having a contact-arm, a lever carried by said turret, a punch actuated by said lever, and means controlled by the movement of the punch to complete an electric circuit.

8. In an apparatus for perforating or stamping, a plunger having punches, a "fly-away" contact comprising a lever, a pivoted trip-piece on said lever, a spring for controlling said trip-piece, a pin on said lever for holding the trip-piece, a contact-maker, a pin on the contact-maker adapted to be engaged by the trip-piece and a spring for controlling the said contact-maker.

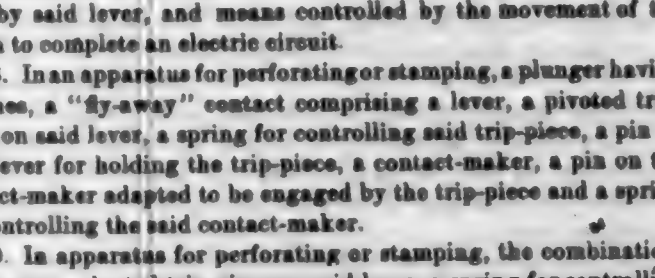
9. In apparatus for perforating or stamping, the combination, of a lever, a pivoted trip-piece on said lever, a spring for controlling said trip-piece, a pin on said lever for holding the trip-piece, a pivoted contact-maker, a roller on said contact-maker, a yielding contact adjacent to said contact-maker, a pin on the contact-maker and a spring for controlling the said contact-maker.

10. In an apparatus of the class described, a rotatable turret, a plunger having punches, means independently operated by the latter and the said turret for completing an electric circuit, and a lever carried by said turret for operating the punches.

11. In an apparatus of the class described, a rotatable turret having a lever and a contact-arm, a plunger having a punch actuated by the lever, and means controlled by the movement of the plunger for completing an electric circuit.

12. In an apparatus of the class described, a movable section having a lever, a contact-arm carried by said movable section, a punching device actuated by the lever and a contact-making device actuated by the punching device for completing an electric circuit.

814,554. **HAME AND BREECHING TUG.** Ivison B. Martin, Paris, Tenn., assignor of one-fourth to Jasper L. Holland, Paris, Tenn. Filed Sept. 20, 1905. Serial No. 279,269.



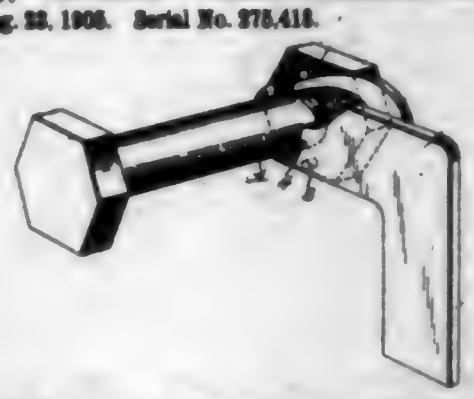
Claim.—1. A hame-tug for harness, comprising a clip having one end provided with pins, a tug arranged on said clip, a trace engaging said pins, a loop covering said clip and the end of the trace, and means engaging said loop and trace for preventing the loop moving longitudinally on said clip and trace.

2. A hame-tug for harness, comprising a clip having one end bent on itself to form a ring or hook and provided with pins, a tug for said clip, a trace having perforations for engagement with said pins, a loop for covering said trace end and clip, and a key engaging said trace and said loop to prevent longitudinal movement of the latter.

3. A hame-tug for harness, comprising a clip having a hook or ring at one end and provided with pins, a trace having perforations for engagement with said pins, a loop for covering said trace end and clip, and a key engaging said trace and said loop to prevent longitudinal movement of the latter.

4. A hame-tug for harness, comprising a clip having a hook or ring at one end and provided with pins, a tug for said clip, a trace having perforations for engagement with said pins, a loop covering said trace end and clip, and a key adapted to be inserted within said loop and to engage the same and the trace to prevent longitudinal movement of said loop.

814,555. **NUT-LOCK.** Walter R. Mechenbier, Bloomington, Ill. Filed Aug. 22, 1905. Serial No. 275,418.



Claim.—1. The combination with a plate having an aperture therein; of a bolt within the aperture, a nut upon the bolt, a dog pivoted to the plate and normally seated by gravity upon the bolt between the nut and plate, and means upon the nut adapted to overlap and contact with the dog at a point between its ends.

2. The combination with a plate having an aperture therein; of a bolt within the aperture, a nut upon the bolt, a dog pivoted to the plate and normally seated by gravity upon the bolt between the nut and plate, and a lug extending from one face of the nut and overlapping the dog, said lug and dog adapted to contact at a point between the ends of the dog to bind the dog upon the bolt.

814,556. **HOOK AND EYE.** Anna G. Muller, Muskegon, Mich. Filed Dec. 7, 1905. Serial No. 290,779.



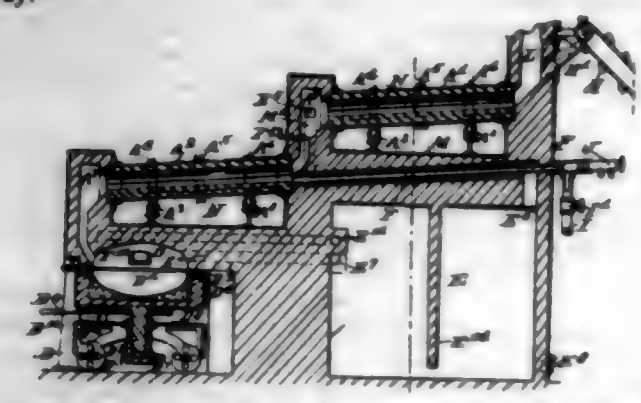
Claim.—A fastening device of the character described comprising a hook having attaching members, prongs formed on the ends of said members, a flat, offset eye-receiving portion, a centrally-disposed bill formed in said portion and lying in the same plane therewith, a loop-shaped eye, attaching-prongs formed on said eye, means to facilitate the engagement of the eye with the hook, and means to prevent the casual separation of said hook and eye, substantially as described.

814,557. **APPARATUS FOR THE TREATMENT OF ORE FOR THE MANUFACTURE OF IRON AND STEEL THEREFROM.** Montague Moore, Melbourne, and Thomas J. Heskett, Brunswick, Victoria, Australia. Filed Aug. 15, 1904. Serial No. 220,808.

Claim.—1. In an apparatus for treating ores, the combination of a heating-chamber, a deoxidizing-chamber, a gas-furnace and a regenerating-chamber, a vertical passage for establishing communication between the heating-chamber and the deoxidizing-chamber, a vertical passage for establishing communication between the deoxidizing-chamber and the gas-furnace, a plurality of flues and a passage for establishing communication between the gas-furnace and the regenerating-chamber, and a tube communicating with said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.

2. The combination with a heating-chamber, a deoxidizing-

chamber, a gas-furnace and a regenerating-chamber, of flues and a passage for connecting the gas-furnace with said regenerating-chamber, and a tube communicating with the upper end of said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.



3. In an apparatus for treating ores, a rotatable heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace, and a tube communicating with the upper end of said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.

4. In an apparatus for treating ores, a rotatable inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace, and a tube communicating with the upper end of said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.

5. An apparatus for treating ores comprising a rotatable inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged over said gas-furnace, a vertical passage between the two chambers, a slide-valve operating in said passage, a vertical passage between the deoxidizing-chamber and the furnace, a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and a tube communicating with said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.

6. In an apparatus for treating ores, the combination of a heating-chamber, a deoxidizing-chamber, a gas-furnace, and a regenerating-chamber, a passage for establishing communication between the heating-chamber and the deoxidizing-chamber in such a way that the ore shall pass by gravitation from the upper to the lower, a passage for establishing communication between the deoxidizing-chamber and the gas-furnace in such a way that the ore shall pass by gravitation from the upper to the lower, a plurality of flues and a passage for establishing communication between the gas-furnace and the regenerating-chamber, and a tube communicating with the said deoxidizing-chamber and provided with a gas-supply pipe.

7. In an apparatus for treating ores, a rotatable internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable deoxidizing-chamber arranged at a higher level than the gas-furnace and adapted to communicate with the heating-chamber, and with the gas-furnace, a regenerating-chamber arranged at a lower level than the heating-chamber and adapted to communicate with the gas-furnace, and a tube communicating with the said deoxidizing-chamber and provided with a gas-supply pipe and an oil-spray.

8. In an apparatus for treating ores, a rotatable inclined heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged at a higher level than the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber, arranged at a lower level than the heating-chamber and adapted to communicate with the gas-furnace, and a tube communicating with the said deoxidizing-chamber and provided with a gas-supply pipe.

9. An apparatus for treating ores comprising a rotatable inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged at a higher level than the said gas-furnace and at a lower level than the heating-chamber, a passage between the two chambers so arranged that the ore may pass by gravitation from the heating-chamber to the deoxidizing-chamber, a slide-valve operating in said passage and adapted to so regulate the orifice that while allowing free passage to the ore it shall at the same time prevent escape of deoxidizing-gases, a passage between the deoxidizing-chamber and the furnace so arranged that the ore shall pass by gravitation from the deoxidizing-chamber to the furnace, a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and a tube connecting with the said deoxidizing-chamber provided with a gas-supply pipe.

10. In an apparatus for treating ores, the combination with an internally-heated chamber, a deoxidizing-chamber, a gas-furnace and a regenerating-chamber, of means for establishing communication between said internally-heated chamber and said deoxidizing-chamber, means for establishing communication between said deoxidizing-chamber and the gas-furnace, means for establishing communication between the gas-furnace and said regenerating-chamber, and means for establishing communication between the regenerating-chamber and the internally-heated chamber.

11. In an apparatus for treating ores, the combination with a deoxidizing-chamber, means for supplying a deoxidizing-gas thereto, a gas-furnace, means for establishing communication between the gas-furnace and said deoxidizing-chamber, a regenerating-chamber, communicating with said gas-furnace, an internally-heated chamber communicating with said deoxidizing-chamber and adapted to receive the material to be treated from which it passes into the deoxidizing-chamber, and means for establishing communication between the regenerating-chamber and said internally-heated chamber.

12. In an apparatus for treating ores, the combination with an internally-heated rotatable heating-chamber, a rotatable deoxidizing-chamber, a gas-furnace and a regenerating-chamber, of means for establishing communication between the internally-heated chamber and the deoxidizing-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, means for establishing communication between the gas-furnace and the regenerating-chamber, and means for establishing communication between the regenerating-chamber and the internally-heated chamber.

13. In an apparatus for treating ores, the combination with an internally-heated rotatable heating-chamber, a rotatable deoxidizing-chamber, a gas-furnace and a regenerating-chamber, of means for establishing communication between the internally-heated chamber and the deoxidizing-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, means for establishing communication between the gas-furnace and the regenerating-chamber, means for establishing communication between the regenerating-chamber and the internally-heated chamber, and a regulatable air-supplying means communicating with said regenerating-chamber.

14. In an apparatus for treating ores, the combination of an internally-heated chamber, a deoxidizing-chamber, a gas-furnace, a regenerating-chamber, a passage for establishing communication between the heating-chamber and the deoxidizing-chamber, a vertical passage for establishing communication between the deoxidizing-chamber and the gas-furnace, a plurality of flues and a passage for establishing communication between the gas-furnace and the regenerating-chamber, and means for establishing communication between the regenerating-chamber and the internally-heated chamber.

15. In an apparatus for treating ores, an internally-heated rotatable and inclined material-heating chamber communicating with a source of material-supply, a rotatable inclined deoxidizing-chamber adapted to communicate with said heating-chamber, a gas-furnace communicating with said deoxidizing-chamber, a regenerating-chamber, flues and a passage for connecting the regenerating-chamber with a gas-furnace, and a passage for connecting the regenerating-chamber with the heating-chamber.

16. In an apparatus for treating ores, an internally-heated rotatable and inclined material-heating chamber communicating with a source of material-supply, a rotatable inclined deoxidizing-chamber adapted to communicate with said heating-chamber, a gas-furnace communicating with said deoxidizing-chamber, a regenerating-chamber, flues and a passage for connecting the regenerating-chamber with a gas-furnace, a passage for connecting the regenerating-chamber with the heating-chamber, and means for supplying a deoxidizing-gas to said deoxidizing-chamber.

17. In an apparatus for treating ores, an internally-heated and rotatable heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, and a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace and the heating-chamber.

18. In an apparatus for treating ores, an internally-heated and rotatable heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace and the heating-chamber, and a gas-supply communicating with said deoxidizing-chamber.

19. In an apparatus for treating ores, an internally-heated rotatable and inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, and a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace and the heating-chamber.

20. In an apparatus for treating ores, an internally-heated rotatable and inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace and the heating-chamber, and means for supplying gas to said deoxidizing-chamber.

21. In an apparatus for treating ores, an internally-heated rotatable and inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged over the gas-furnace and adapted to communicate with the heating-chamber and with the gas-furnace, a regenerating-chamber arranged below the heating-chamber and adapted to communicate with the gas-furnace and the heating-chamber, means for supplying gas to said deoxidizing-chamber, and a regulating air-supply means for the said regenerating-chamber.

22. An apparatus for treating ores, comprising an internally-heated rotating and inclined heating-chamber adapted to communicate with a source of supply, a gas-furnace, a rotatable and inclined deoxidizing-chamber arranged over said gas-furnace, a passage between the two chambers, a slide-valve operating in said passage, a passage between the deoxidizing-chamber and the gas-furnace, a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and means for establishing communication between the regenerating-chamber and the heating-chamber.

23. In an apparatus for treating ores, a rotatable internally-heated heating-chamber adapted to communicate with a source of ore-supply, a rotatable deoxidizing-chamber arranged below said heating-chamber and adapted to communicate with said heating-chamber, a gas-furnace arranged below said deoxidizing-chamber and adapted to communicate therewith, a regenerating-chamber arranged below said heating-chamber and at the side and adjacent to said gas-furnace and said deoxidizing-chamber, means for establishing communication between the gas-furnace and the regenerating-chamber, means for establishing communication between the regenerating-chamber and the heating-chamber, and means for supplying a deoxidizing medium to said deoxidizing-chamber.

24. In an apparatus for treating ores, an internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a deoxidizing-chamber interposed between the heating-chamber and the gas-furnace, a generating-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, means for supplying a deoxidizing medium to the deoxidizing-chamber, a passage for establishing communication between the heating-chamber and the deoxidizing-chamber, an adjustable closure for said passage, means opening into said regenerating-chamber and in said passage at a point above the said closure for establishing communication between the heating-chamber and the regenerating-chamber, and means for establishing communication between the regenerating-chamber and the gas-furnace.

25. In an apparatus for treating ores, an internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a deoxidizing-chamber interposed between the heating-chamber and the gas-furnace, a regenerating-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, means for supplying a deoxidizing medium to the deoxidizing-chamber, a passage for establishing communication between the heating-chamber and the deoxidizing-chamber, an adjustable closure for said passage, means opening into said regenerating-chamber and in said passage at a point above said closure for establishing communication between the heating-chamber and the regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and a regulatable air-supply means for said regenerating-chamber.

26. In an apparatus for treating ores, a heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace having a stationary and a rotatable section, a deoxidizing-chamber, means for establishing communication between the deoxidizing-chamber and said gas-furnace, means for establishing communication between the heating and the deoxidizing chamber, a regenerating-chamber, means for establishing communication between the gas-furnace and said regenerating-chamber, and means for establishing communication between said regenerating-chamber and said heating-chamber.

27. In an apparatus for treating ores, a heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace having a fixed and a rotatable section, a deoxidizing-chamber, a regenerating-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, a passage for establishing communication between the deoxidizing-chamber and the heating-chamber, an adjustable closure for said passage, means opening into the regenerating-chamber and into said passage at a point above said closure for establishing communication between the regenerating-chamber and the heating-chamber, and means for establishing communication between the regenerating-chamber and the gas-furnace.

28. In an apparatus for treating ores, a heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace having a fixed and a rotatable section, a deoxidizing-chamber, a regenerating-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, a passage for establishing communication between the deoxidizing-chamber and the heating-chamber, an adjustable closure for said passage, means opening into the regenerating-chamber and into said passage at a point above said closure for establishing communication between the regenerating-chamber and the heating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and a regulatable air-supply means for said regenerating-chamber.

29. In an apparatus for treating ores, a heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace having a fixed and a rotatable section, a deoxidizing-chamber, a regenerating-chamber, means for establishing communication between the deoxidizing-chamber and the gas-furnace, a passage for establishing communication between the deoxidizing-chamber and the heating-chamber, an adjustable closure for said passage, means opening into the regenerating-chamber and into said passage at a point above said closure for establishing communication between the regenerating-chamber and the heating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, regulatable air-supply means for said regenerating-chamber, and means for supplying a deoxidizing medium to said deoxidizing-chamber.

30. In an apparatus for treating ores, a rotatable and inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable and inclined deoxidizing-chamber, means for supplying a heating medium to said deoxidizing-chamber, a regenerating-chamber, a passage for establishing communication between the deoxidizing-chamber and the heating-chamber, a closure for said passage, means opening into said regenerating-chamber and into the passage above the closure for establishing communication between the heating-chamber and the regenerating-chamber, and means for establishing communication between the regenerating-chamber and the gas-furnace.

31. In an apparatus for treating ores, a rotatable and inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable and inclined deoxidizing-chamber, means for supplying a heating medium to said deoxidizing-chamber, a regenerating-chamber, a passage for establishing communication between the deoxidizing-chamber and the heating-chamber, a closure for said passage, means opening into said regenerating-chamber and into the passage above the closure for establishing communication between the heating-chamber and the regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and a regulatable air-supply means for said regenerating-chamber.

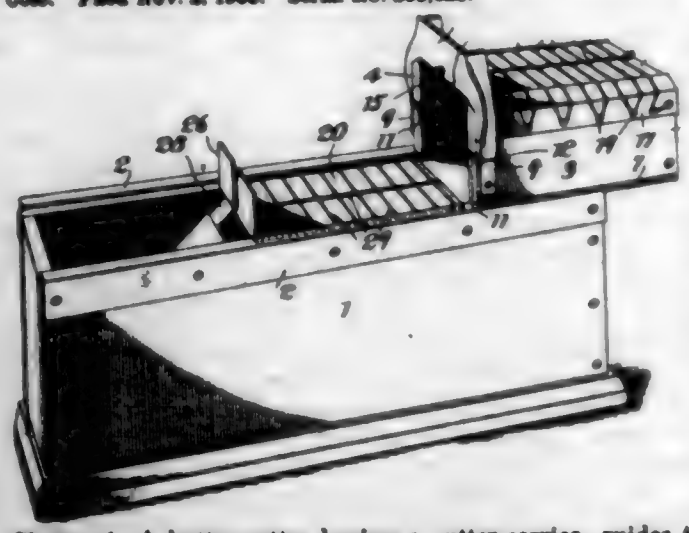
32. An apparatus for treating ores, comprising a rotatable inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged at a higher level than the said gas-furnace and at a lower level than the said heating-chamber, a passage between the two chambers so arranged that the ore may pass by gravity from the heating-chamber to the deoxidizing-chamber, a slide-valve operating in said passage and adapted when adjusted to allow free passage of the ore and prevent the escape of the deoxidizing-gas,

a passage between the deoxidizing-chamber and the furnace so arranged that the ore can pass by gravity from the deoxidizing-chamber to the gas-furnace; a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, and means for establishing communication between the regenerating-chamber and the heating-chamber.

33. An apparatus for treating ores, comprising a rotatable inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged at a higher level than the said gas-furnace and at a lower level than the said heating-chamber, a passage between the two chambers so arranged that the ore may pass by gravity from the heating-chamber to the deoxidizing-chamber, a slide-valve operating in said passage and adapted when adjusted to allow free passage of the ore and prevent the escape of the deoxidizing-gases, a passage between the deoxidizing-chamber and the gas-furnace so arranged that the ore can pass by gravity from the deoxidizing-chamber to the gas-furnace, a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, means for establishing communication between the regenerating-chamber and the heating-chamber, and means for supplying a gas to said deoxidizing-chamber.

34. An apparatus for treating ores, comprising a rotatable inclined internally-heated heating-chamber adapted to communicate with a source of ore-supply, a gas-furnace, a rotatable inclined deoxidizing-chamber arranged at a higher level than the said gas-furnace and at a lower level than the said heating-chamber, a passage between the two chambers so arranged that the ore may pass by gravity from the heating-chamber to the deoxidizing-chamber, a slide-valve operating in said passage and adapted when adjusted to allow free passage of the ore and prevent the escape of the deoxidizing-gases, a passage between the deoxidizing-chamber and the gas-furnace so arranged that the ore can pass by gravity from the deoxidizing-chamber to the gas-furnace, a regenerating-chamber, means for establishing communication between the regenerating-chamber and the gas-furnace, means for establishing communication between the regenerating-chamber and the heating-chamber, means for supplying a gas to said deoxidizing-chamber, and a regulatable air-supply means for said regenerating-chamber.

814,558. **BUTTER-CUTTING DEVICE.** HERMAN MOYER, Denver, Colo. Filed Nov. 2, 1905. Serial No. 285,623.



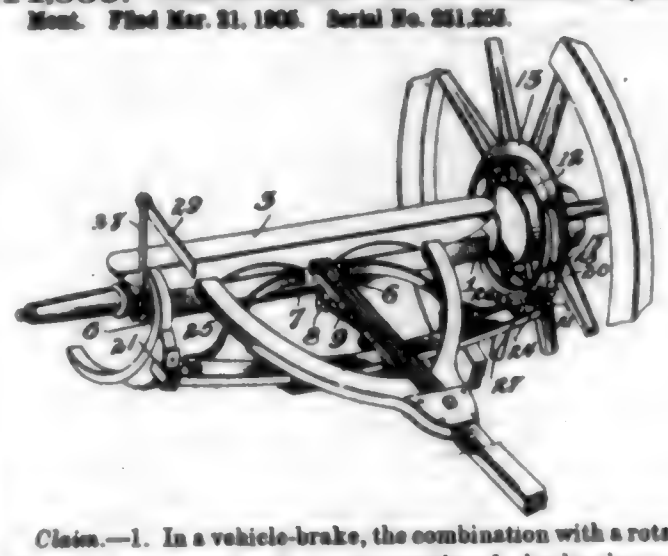
Claim.—1. A butter-cutter having a cutter-carrier, guides to direct the movement of said carrier, a table movable by the movement of the carrier in a plane intersecting and at an angle to that of the movement of the carrier, and means to so direct such movement of the table.

2. In a device of the character described, the combination of a support, a butter-supporting table, parallel links for said table and said support, and a sliding carrier upon said support adapted to cutter-engage said table and move it vertically through the same.

3. In a device of the character described, the combination of a support, a butter-supporting table, parallel links for said table and said support, a stop upon one end of said table, guides upon said support, a cutter-carrier slidable upon said guide, cutter-wires at the end and top of said carrier, and means upon said carrier for engaging said table, substantially as described.

4. In a machine of the character described, the combination of a support having guides at its top, a butter-supporting table having grooves in its top, parallel links pivotally connecting said table to said support, a stop at one end of said table, a carrier slidable in the grooves in said support and having an open top, bottom and front end, cutting-wires arranged across the open top and end of said carrier, and a projection upon the rear of said carrier adapted to engage said table, substantially as described.

814,559. **VEHICLE-BRAKE.** JOHN W. MCILVAIN, Canyoncreek, Mont. Filed Mar. 21, 1905. Serial No. 251,255.



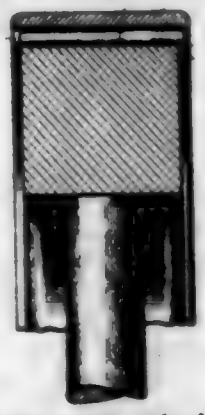
Claim.—1. In a vehicle-brake, the combination with a rotatable device having an annular flange at one side; of a brake-shoe, a suitable support therefor, a flange extending from the shoe at one side, a friction device interposed between the shoe and rotatable device and interposed betwen and detached from their flanges, and means for preventing longitudinal displacement of the friction device.

2. The combination with a rotatable device adapted to be secured to a wheel of a vehicle; of a beam, a recessed shoe forming a seat for the beam, an angular strap secured to the shoe and extending over the recess, said strap surrounding the beam, means within the strap for adjustably securing the shoe to the beam, an integral flange at one side of the shoe, and a friction-plate concentric with the rotatable device and engaging the shoe and overlapping by its flange, said plate adapted to contact with, and to be held in engagement with the shoe solely by, the rotatable device.

3. The combination with wheels of a vehicle and flanged friction-drums secured thereto; of a spring-controlled brake-beam interposed between said wheels, recessed shoes constituting seats for the brake-beam, angular straps secured to said shoes and extending around the beam, means within the straps for adjustably securing the shoes to the beam, said shoes having integral flanges upon their adjoining faces, friction-plates concentric with the drums and interposed between the flanges of the shoes and drums, and means upon the plates for detachably engaging the shoes, said plates being adapted to contact with, and to be held in engagement with the shoes solely by, the drums.

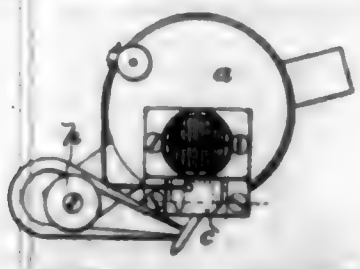
4. In a vehicle-brake, the combination with a rotatable device having an annular flange at one side; of a beam, a brake-shoe secured thereto, a flange extending from the shoe, a friction-plate interposed between the shoe and the rotatable device and between their flanges, and means upon the plate for loosely engaging the shoe, said means being held in engagement with the shoe by the rotatable device upon which the friction-plate works.

814,560. **TIRE.** PATRICK W. O'CONNOR, Lincoln, Nebr. Filed June 27, 1905. Serial No. 267,262.



Claim.—The combination with a wheel-felly, of a tire with one edge flanged and its opposite edge projecting beyond the felly, and a fastening member which passes transversely through the felly and the flange, said member having its head partly cut away to bind against the projecting portion of the tire and serve to prevent loosening of the fastening member.

814,561. GRAMOPHONE. Charles A. Parsons, Newcastle-upon-Tyne, England. Filed Sept. 26, 1904. Serial No. 226,978.



Claim.—1. A needle attachment for gramophones and the like, comprising, a socket-arm attached to the sound-producing means, said socket-arm having a diamond-shaped socket therein adapted to receive a needle, and hold the same jammed with no lateral freedom when resting on the record and means external to said socket acting on the portion of the needle which projects therefrom for holding the needle in the socket, substantially as described.

2. A needle attachment for gramophones and the like, comprising a socket-arm having a socket for the needle, and a magnet external to said socket and acting on the projecting portion of the needle, substantially as described.

3. A needle attachment for gramophones and the like, comprising a socket-arm attached to the sound-producing means, said socket-arm having a diamond-shaped hole therein adapted to receive a needle, and hold the same jammed with no lateral freedom when resting on the record, and an adjustably-mounted magnet adapted to retain the needle in plate when not resting on the record, as set forth.

4. A needle attachment for gramophones and the like, comprising a socket-arm having a socket for the needle, a magnet arranged independent of the socket and socket-arm and acting on the projecting portion of the needle, substantially as described.

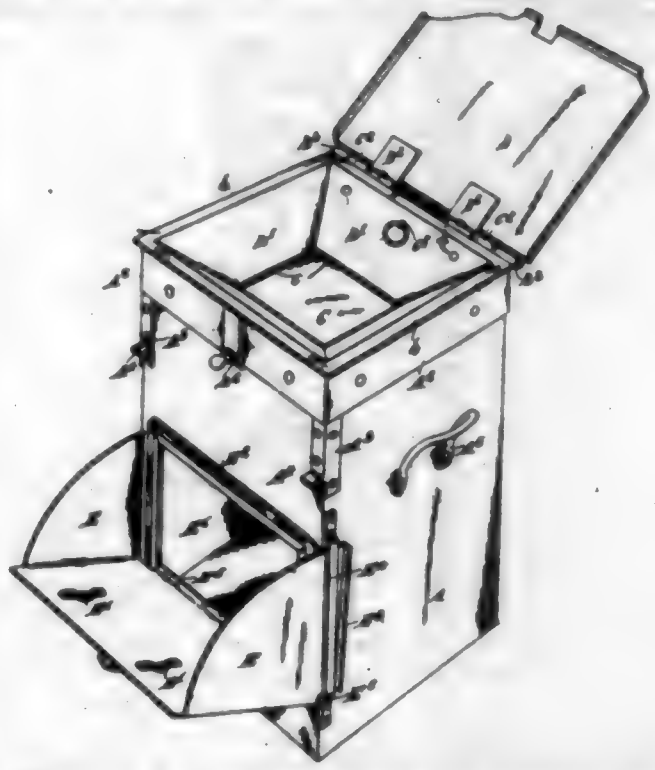
814,562. STOVE-LEG CASTER. William Peters, Melvin, Ill., assignor of one-half to William Stathers, Melvin, Ill. Filed Jan. 9, 1905. Serial No. 240,260.



Claim.—1. The combination with a supporting member having a transverse stop near the lower end and movable stop spaced from said transverse stop, of an arm pivoted to said supporting member between said stops and provided with a caster in the free end, a spring-controlled trip-catch connected to said arm for yieldable engagement with said transverse stop when said arm is extended, and means for engaging said arm with said movable stop when the arm is disposed in elevated position.

2. A hollow stove-leg having a housed stop near its lower end, an arm pivoted in the cavity of said stove-leg and provided with a caster at its free end, and a spring-controlled catch carried by the arm for yieldable engagement with said stop when the arm is extended, said catch being housed when in its operative position.

814,563. GARBAGE-CAN. Ezra S. Ford, Toledo, Ohio. Filed Nov. 18, 1903. Serial No. 181,373.



Claim.—1. In a garbage-can having an opening in the side thereof, a door hinged to the lower edge of said opening, having segmental sides adapted to slide outside of and in close engagement with the side walls of said can when said door is closed, said segmental sides being turned outward along their rear edges to form lugs, and a bridge secured to the can and passing over a segmental side so as to be contacted by its lug when the door is opened and so as to form a guide for a segmental side, substantially as described.

2. The combination of a can or receptacle, a hopper of frusto-pyramidal form fitted within the top of the can or receptacle and resting upon the upper edges thereof, a lid forming a cover for both the hopper and the can or receptacle, a valve consisting of a plate hinged to the hopper at the bottom thereof, arms extending laterally from the valve, springs connected with the arms and with the hopper for holding the valve normally closed, an inclined arm extending rearwardly from the valve, and an operating device piercing the rear wall of the hopper and connected with the rearwardly-extending arm.

3. The combination of a can or receptacle, a hopper of frusto-pyramidal form fitted within the top of the can or receptacle and resting upon the upper edges thereof, a lid forming a cover for both the hopper and the can or receptacle, said lid and hopper having a common hinge-joint, a valve consisting of a plate hinged to the hopper at the bottom thereof, arms extending laterally from the valve, springs connected with the arms and with the hopper for holding the valve normally closed, an inclined arm extending rearwardly from the valve, and an operating device piercing the rear wall of the hopper and connected with the rearwardly-extending arm.

814,564. DRAFT-RIGGING. Pinkney H. Raspberry, Birmingham, Ala. Filed Apr. 15, 1905. Serial No. 255,791.

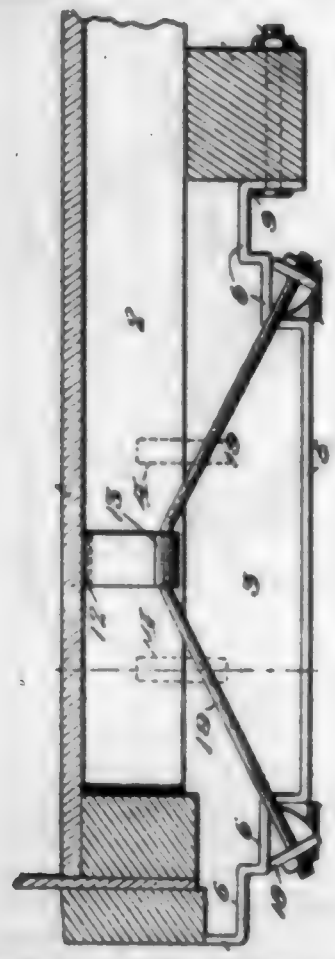
Claim.—1. The combination with the draw-sills of a car, of draw-timbers formed with projecting pins to engage recesses in the sills, supporting-straps secured to the draw-timbers and terminally secured to the car-bolsters, and truss-rods supported from the draw-sills and mediately connecting with the supporting-straps.

2. The combination with a car having draw-sills, of draw-timbers connected therewith, supporting-straps terminally secured to the car-bolster and underlying the draw-timbers, and means connecting said supporting-straps with the car-sills, said straps and draw-timbers being formed with a plurality of coöperating shoulders.

3. The combination with the draw-sills of a car, of draw-timbers connected with the draw-sills, supporting-straps underlying said draw-timbers, and terminally secured to the car-bolster, cross-straps uniting the supporting-straps of the respective draw-timbers, and truss-rods supported by the car-sills and engaging said cross-straps.

4. The combination with the draw-sills of a car, of draw-timbers connected with the draw-sills, supporting-straps underlying said draw-timbers, and terminally secured to the car-bolster, cross-straps uniting the supporting-straps of the respective draw-timbers

a hanger-strap supported by the draw-sills and terminally formed with hooks, truss-rods supported in said hooks and terminally engaging the cross-straps.

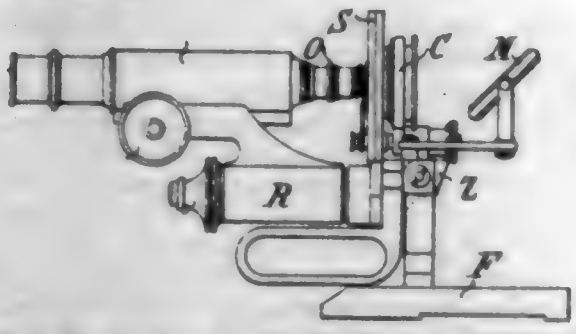


5. The combination with the draw-sills of a car, of draw-timbers connected with the draw-sills, supporting-straps underlying said draw-timbers, and terminally secured to the car-bolster, cross-straps uniting the supporting-straps of the respective draw-timbers, a hanger-strap supported by the draw-sills and formed with terminal hooks, truss-rods centrally supported in said hooks, the ends of said rods being threaded and passed through openings in the terminals of the cross-straps, and nuts to engage said threaded ends of the truss-rods beyond the cross-straps.

6. The combination with a car having draw-sills, of draw-timbers, cross-straps underlying said timbers and formed with offsets to prevent lateral movement of the timbers, and means adjustably connecting said cross-straps with the car-sills.

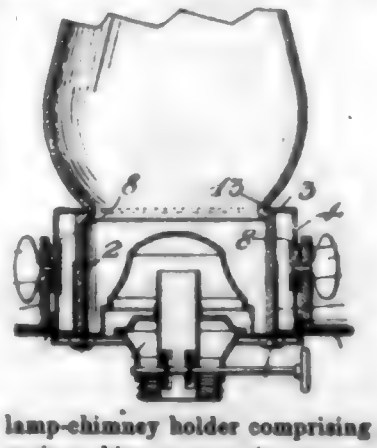
7. The combination with a car having draw-sills, of draw-timbers, cross-straps arranged beneath said timbers and formed with offsets to engage the timbers, and truss-rods connected with the car-sills and with said cross-straps.

814,565. PIVOTABLE MICROSCOPE-STAND. Carl Reichert and Bernhard Heyer, Vienna, Austria-Hungary. Filed June 1, 1905. Serial No. 263,942.



Claim.—In a microscope, a foot having an upright, an intermediate member pivotally connected to said upright and adapted to support a prism and a stage, the said intermediate member having an extension integrally formed therewith and shaped to provide a handle, a column adjustably connected to the prism, the handle extension of the intermediate member being always parallel with the column, a shiftable tube supported by the said column and having lenses, and a mirror also carried by the intermediate member and simultaneously movable with the latter and the remaining parts of the microscope controlled by said intermediate member to always bring the said mirror into operative position with relation to the stage and the tube having lenses.

814,566. LAMP-CHIMNEY HOLDER. William J. Snow, Vienna, Ark. Filed Nov. 20, 1905. Serial No. 288,288.

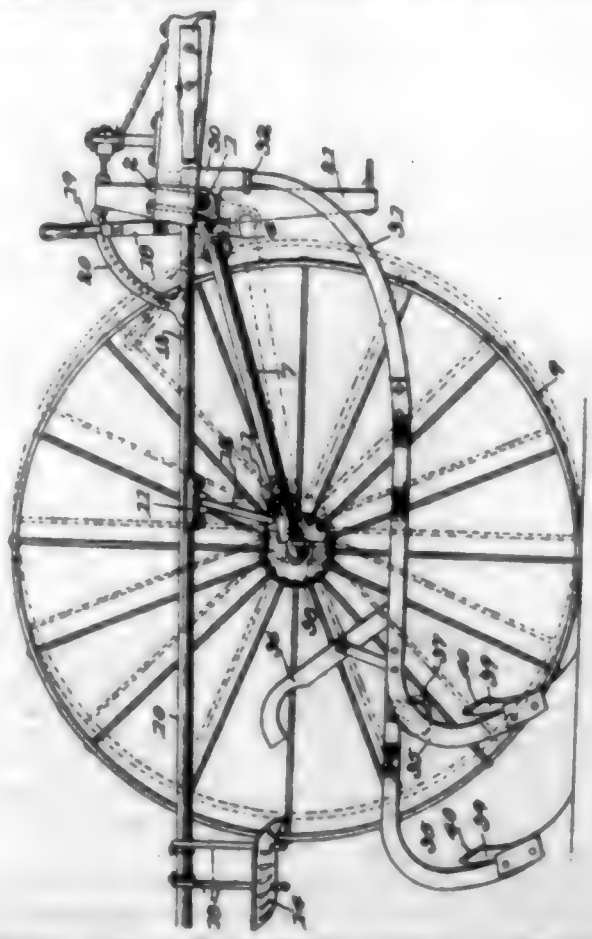


Claim.—1. A lamp-chimney holder comprising a series of upwardly-projecting spring chimney-engaging tongues arranged on the flange of the burner, semicircular spring holding-rods secured on said flange to engage a groove in said chimney, upwardly-projecting posts arranged at diametrically opposite points on the burner, cam-blocks pivotally mounted on said posts and between the downwardly-turned ends of said spring holding-rods, and means to turn said cam-blocks to cause the same to spread said arms, substantially as described.

2. A lamp-chimney holder comprising a series of upwardly projecting spring-tongues, semicircular spring-metal chimney-holding rods having downwardly-bent attaching-arms, coil-springs formed at the lower end of said arms, upwardly-projecting posts, grooved cam-blocks pivotally mounted in said posts and disposed between said attaching-arms, and heads arranged on said blocks whereby the latter are turned, substantially as described.

3. A lamp-chimney holder comprising an attaching-flange having securing tongues or lugs adapted to be bent into engagement with a burner-flange, a series of upwardly-projecting spring-tongues, semicircular spring-metal chimney-holding rods having downwardly-bent attaching-arms, coil-springs formed at the lower end of said arms, upwardly-projecting posts, grooved cam-blocks pivotally mounted in said posts and disposed between said attaching-arms, and heads arranged on said blocks whereby the latter are turned, substantially as described.

814,567. CULTIVATOR. Samuel A. Spitz, David City, Nebr., assignor of one-half to Peter B. Gainer, David City, Nebr. Filed Aug. 25, 1905. Serial No. 275,813.

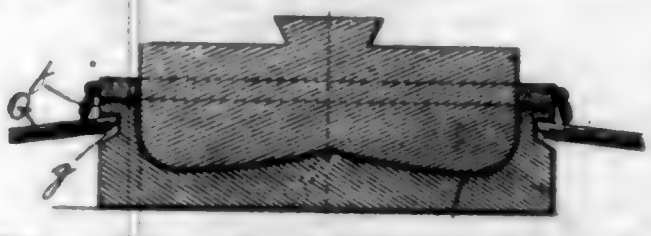


Claim.—1. In a riding-cultivator, a tongue, a pair of parallel frame-bars having converging front ends secured upon the sides of the tongue, a cross-bar secured upon the under side of the tongue,

links pivoted upon said cross-bar and having operating-levers, wheel-carrying bars connected pivotally with the links and terminating at their free ends in spindles upon which the carrying-wheels are supported for rotation, and auxiliary links connecting the wheel-carrying bars with the parallel frame-bars.

2. In a riding-cultivator, a tongue, a pair of parallel frame-bars having converging front ends secured upon the sides of the tongue, a cross-bar secured upon the under side of the tongue, links pivoted upon said cross-bar and having operating-levers connected therewith, wheel-carrying bars connected pivotally with the links and terminating at their free ends in spindles upon which wheels are supported for rotation, auxiliary links connecting the wheel-carrying bars with the parallel frame-bars, seat-supporting bars hingedly engaging one of the frame-bars and having hook-shaped ends loosely engaging the other frame-bar, and collars adjustably engaging one of the frame-bars adjacent to the hinged ends of the seat-supporting members to retain the latter at various adjustments upon the frame-bar.

814,568. METHOD OF MAKING SCRAPER-BOWLS. THOMAS H. STAGG, Columbus, Ohio, assignor to The Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio, a Corporation of Ohio. Filed Oct. 15, 1904. Serial No. 228,570.



Claim.—1. The herein-described improvement in the art of producing bowls or the like which consists in shaping a sheet of metal between dies constructed to form two bowls connected end to end, and during the shaping operation, stretching the metal of each bowl from the line of prospective separation of the bowls, whereby the quality of the metal at the edges produced by the separation, is improved.

2. The herein-described art of producing scraper-bowls or the like, which consists in shaping a sheet of metal between dies constructed to produce two bowls connected at their front or cutting ends, and during such shaping operation, stretching the metal of each bowl from the line of prospective separation of the bowls to improve the metal at the ultimate cutting edges and dividing the blank thus produced.

3. The process of producing scraper-bowls which consists in stamping a sheet of metal between dies constructed to form two bowls connected at their open front or cutting ends, and during such stamping operation, stretching the metal of each bowl toward its rear end from the line of connection between the bowls, and thereafter dividing the blank thus produced along such line of connection.

4. The art of producing scraper-bowls or the like which consists in stamping a sheet of metal between dies constructed to form two such articles connected at their front or cutting ends, supporting the metal at such line of connection or line of prospective separation, before completion of the stamping operation whereby the metal is stretched from said line toward the opposite ends of the bowls and thereafter dividing the blank thus formed to produce two bowl-blanks.

5. The herein-described art of producing scraper-bowls or the like which consists in stamping a sheet of suitable metal between dies constructed to produce two such articles, connected at their cutting ends, whereby the metal of each prospective bowl sustains the metal of the other bowl at said cutting edge and prospective line of separation, supporting the metal at said line of connection or prospective separation, during the latter part of the stamping operation and finally separating the blank thus formed into two bowls.

6. The herein-described improvement in the art of producing earth-scraper bowls or the like which consists in stamping a sheet of metal between dies constructed to form two bowls connected at their front or cutting ends along the line of prospective separation and with the middle raised portion corresponding in position to such line, and stretching the metal over such raised portion during the stamping operation.

7. The herein-described improvement in the art of producing earth-scraper bowls or the like, which consists in stamping a sheet of metal between dies constructed to produce two bowls connected at their open front or cutting ends, sustaining the edges of the sheet at its ends and sides during the stamping operation, with a pressure that permits the metal to draw inward but which resists such drawing sufficiently to cause stretching of the metal in the ultimate bowls to be produced, and causing such stretching to take place from the line of connection or prospective separation and thereafter separating the blank thus produced along said line.

814,569. ATTACHMENT FOR LISTERS, PLOWS, AND THE LIKE. LEMUEL N. STEWART, Agency, Mo. Filed July 17, 1905. Serial No. 270,049.



Claim.—1. In combination in an agricultural implement embodying a share, a moldboard, and a pulverizing knife or blade attached to the share and provided with a tang projecting toward the moldboard and connected therewith to attach said moldboard to the share, the pulverizing knife or blade being curved upwardly and then inwardly toward the moldboard or opposite to the direction of curvature of the latter.

2. In combination in an agricultural implement embodying a share, a pulverizing blade or knife projecting rearwardly and outwardly from the share and formed with an inwardly-extending tang integral therewith and projecting from said share, and a moldboard attached to the tang of the pulverizing-blade and thereby connected with the share and arranged above the tang of said blade to protect the latter, the pulverizing blade or knife curving upwardly and inwardly toward the moldboard, as specified.

3. In combination, an agricultural implement of the class described embodying a share, a moldboard, and a pulverizing knife or blade connecting the share with the moldboard and operating in advance of the latter.

814,570. HANDLE OR GRIP. CLARENCE L. STOCKDELL, Atlanta, Ga. Filed Apr. 3, 1905. Serial No. 253,534.



Claim.—1. A dumb-bell having a grip or handle comprising a bar of general diamond form in cross-section, the edges of the bar at the intersection of the sides thereof being curved or rounded.

2. A dumb-bell having a grip or handle comprising a bar cross-sectionally of elongate diamond form, the edges of the bar at the intersection of the sides thereof being curved or rounded.

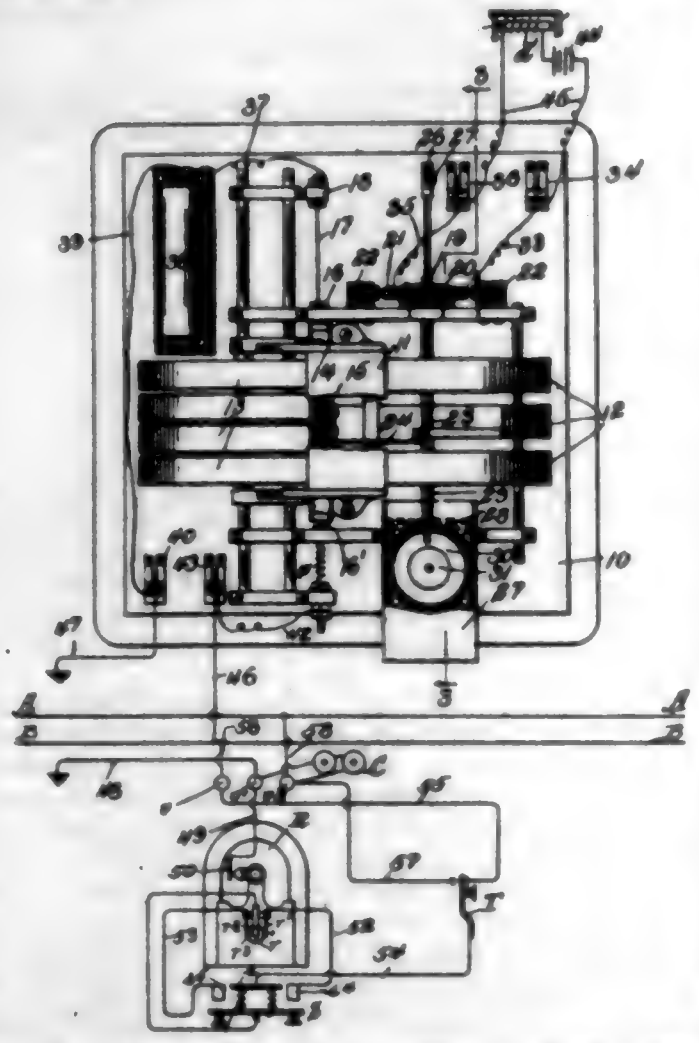
3. A grip or handle comprising a bar provided with a plurality of angularly-related sides, said sides being arranged to impart a diamond form in cross-section to the bar, the edges of the bar at the points of intersection of the sides being rounded to give a truncate formation and to fit within the folds of a clasped hand, substantially as described.

814,571. TELEPHONE SYSTEM. ELMER A. TERPENING, Geneseo, Ill. Filed Sept. 6, 1904. Serial No. 223,413.

Claim.—1. In a telephone system, in combination, a party-line circuit connecting a plurality of subscribers' stations and a central station, at each subscriber's station means for producing alternating and direct current in the lines, and a signaling device responsive to alternating current only, and at the central station a relay comprising a coil supported for oscillation in a magnetic field, and means for retarding the oscillation of said coil.

2. In a telephone system in combination, a party-line circuit connecting a plurality of subscribers' stations and a central station, at each subscriber's station means for producing alternating and direct current in the line, and a signaling device responsive to alternat-

ing current only; and at the central station a relay comprising a coil supported for oscillation in a magnetic field, means for retarding the oscillation of said coil, and a signaling device operatively connected with said coil.



3. In a telephone system in combination, a party-line circuit connecting a plurality of subscribers' stations in a central station; at each subscriber's station means for producing alternating and direct current in the line, and a signaling device responsive to alternating current alone; and at the central station a relay comprising a light coil supported for oscillation in a magnetic field, means for retarding the oscillation of said coil in one direction, and a signaling device operatively connected with said coil to respond to its prolonged movement in one direction only.

4. In a calling apparatus for telephone systems, in combination, a line-circuit connecting a subscriber's station and a central station, at the subscriber's station means for causing direct current to flow through the line, and at central station a relay comprising permanent magnets arranged with their poles in opposition to form between them strong magnetic fields, a coil electrically connected with the line, supported for oscillation with its windings passing between the adjacent poles of the magnets, contact devices arranged for connection in another circuit, and operative connection between the movable element of said contact devices and the oscillating coil.

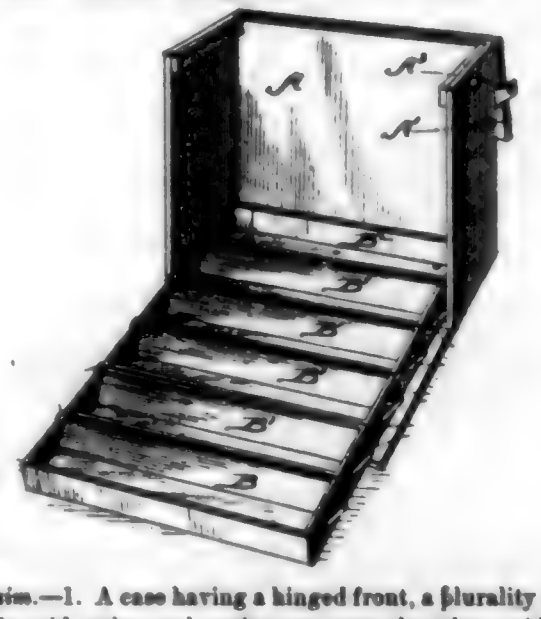
5. In a calling apparatus for telephone systems, a central signal responsive apparatus comprising a coil supported for oscillation in a magnetic field and connected in the call-receiving circuit; a normally open local circuit including an indicator, a source of current-supply, and contact devices comprising a movable part and a stationary part, and operative connection between said oscillating coil and the movable contact part, whereby said coil is arranged to actuate said contact devices controlling the local circuit.

6. In a telephone system, a central-station signaling apparatus comprising a coil supported for oscillation in a magnetic field and connected in the calling-circuit, a local circuit comprising a signal device, and contact devices controlling said local circuit, operative connections between a movable member of said contact devices and the coil, whereby said coil actuates the contact device; and means for retarding the oscillation of the coil whereby it is made insensible to alternating currents.

7. In a telephone system, a central-station signal apparatus, comprising a coil supported for oscillation in a magnetic field and connected in circuit with the subscriber's calling device, an impedance-coil in said circuit, a local circuit including a drop and circuit-controlling devices, operative connections between said circuit-controlling devices and the coil; a normally open alarm-circuit arranged to be closed by the shutter of the drop and including an alarm, a source of current-supply, and a winding about the said impedance-coil.

8. In a telephone system, in combination a metallic party-line circuit connecting a plurality of subscribers' stations and a central station; at each subscriber's station a generator for producing alternating or direct current in the line, and a bell responsive to alternating current only, bridged between one side of the line and ground, the bells at different subscribers' stations being bridged from opposite sides of the line; and means for switching the generator for connection with either side of the line; and at the central station a signaling device responsive only to direct current.

814,572. CANDY OR CRACKER SAMPLE CASE. EDWARD J. THIELBORGER and PHILIP C. LE CORGNE, New Orleans, La. Filed June 28, 1905. Serial No. 267,475.

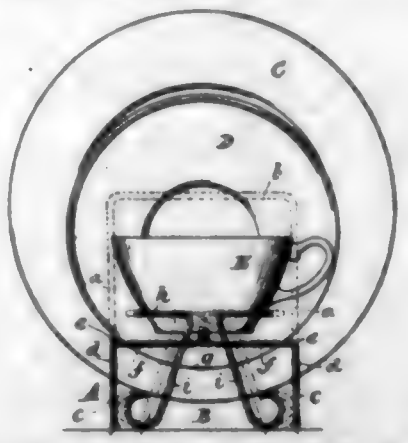


Claim.—1. A case having a hinged front, a plurality of trays arranged in said casing and resting one upon the other, said trays having inclined side walls, and means for pivotally connecting the trays, said trays when drawn outwardly resting in a common horizontal plane, the inclined wall of each tray bearing against the inclined wall of an adjacent tray.

2. A sample-case having a hinged top and side, a tray secured to the bottom of the case, a plurality of superimposed trays, the bottom and top trays having one inclined side wall and the intermediate trays having both side walls inclined, and means carried by the ends of the trays for pivotally connecting them together.

3. The combination with a casing a plurality of trays having sloping walls, said trays resting snugly against each other in a horizontal position, and means for pivotally connecting adjacent trays, the said trays resting within the casing and in vertical alinement when swung into normal position within the casing.

814,573. DISPLAY-EASEL. JOHN B. THIEBLAKE, Jackson, Mich. Filed May 18, 1905. Serial No. 261,056.



Claim.—1. A display rack or easel for dishes having two elements A and B, the element A having an upward-extending support for the back of a flat article and having stops in front of the lower edge of the article, and the element B having a ring-like holder with downwardly-extending legs arranged in front of said stops on the element A, said ring-like holder being adapted to support a cup independently of the flat article in the rear, said rack or easel being made of wire bent to provide the aforesaid elements, substantially as set forth.

2. A display rack or easel for dishes having a rear element A

formed with an upwardly-extending support *a*, *b*, and with an upper step *c* for a dish of small diameter and a lower step *d* for a dish of larger diameter, the aforesaid parts of the easel being formed of a single wire, and a front element B extending forward from the element A and having a wire ring-like support *h* for a cup, substantially as set forth.

3. A display rack or easel for dishes having a front cup-support formed of the two-part wire ring with the downwardly-extending leg or legs and a rear support for saucers or plates having the upwardly-extending back support and stops or rests for the front edges of the dishes, said stops being below the aforesaid ring and between the said downwardly-extending leg or legs and the said upwardly-extending back support, and all formed of a continuous wire, substantially as set forth.

4. A display rack or easel of the class described having an upwardly-extending support for the back of a flat article and a support inclined thereto for the lower front edge of the flat article, a cup-holder secured at one side to the upper end of said inclined support and having at its other side legs with table rests or feet.

5. A display rack or easel of the class described, comprising an elevated cup-holder having legs with table-engaging feet or rests at one side, and a support for a flat article having an upwardly-extending element adapted to support the back of the article and an inclined element adapted both to support the front edge of the article to be displayed and to assist in supporting the said cup-holder.

6. A display-easel of the class described formed of a single piece of wire having upwardly-extending supports for the back of a flat article, an inclined support for the front lower edge of said flat article, and a cup-holder at the upper end of said inclined support having supports with table-engaging rests or feet.

7. A display-easel formed of a single piece of wire comprising an upwardly-extending support for the back of a flat article, an inclined support for the lower front edge of said flat article, a horizontally-disposed cup-holder at the top of said inclined support and projecting forward therefrom, and having legs with table-engaging feet or rests.

8. A display-easel of the class described comprising an upwardly-extending support for the back of a flat article, an inclined support having a plurality of stops adapted to engage with the lower front edge of flat articles to be displayed, and a cup-holder extending forward from the upper end of said inclined support and having a horizontally-disposed cup-engaging portion and legs with table-engaging rests or feet.

9. A display-easel comprising an upright portion adapted to support the back of a flat article, a support for the lower front edge of said flat article inclined to the back support and secured thereto at its lower end, and a horizontally-disposed cup-holder secured to the upper end of said inclined portion extending forward therefrom, and having upright supporting-legs independent of said inclined support.

10. A display-easel of the class described, formed of a single piece of wire bent to comprise an upright part adapted to support the back of a flat article and having parallel legs connected by an elevated cross-bar, and an inclined part having stops for the article to be displayed extending forward and upward from the legs at lower ends of the legs of said upright part, the strands at the upper end of said inclined part being intertwisted and then bent away from each other to form a horizontally-disposed ring-like cup-holder and then bent downwardly to form supports with table-engaging rests or feet.

814,574. HOLDER FOR NURSING-BOTTLES. PAUL J. THIELEMANN, Jackson, Mich. Filed Nov. 11, 1905. Serial No. 286,826.



Claim.—1. In a nursing-bottle holder, the combination of an elastic band adapted to encircle and fit the enlarged portion of a nursing-bottle near its base, and means connected directly with and held immediately adjacent to said band for securing it to a bottle-support, substantially as set forth.

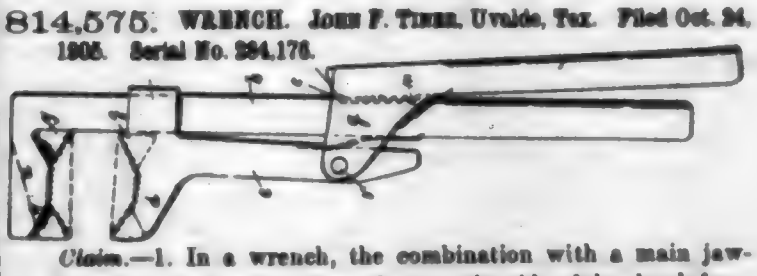
2. In a holder for nursing-bottles, the combination of an elastic band adapted to encircle and closely fit the enlarged portion of a nursing-bottle, a clip arranged to engage the neck of the bottle and connected with the said band, and a means for securing the holder to a support for the bottle connected to both the clip and the band, substantially as set forth.

3. In a holder for nursing-bottles, the combination of a clip adapted to encircle the neck of the bottle and provided with a stem extending alongside the body of the bottle, an elastic band for encircling the bottle near its base, a pin for securing the holder to a support for the bottle, and means for connecting together the stem of the clip, the encircling band and the pin, substantially as set forth.

4. In a holder for nursing-bottles, the combination of a metal clip having one end bent to form a loop *d* adapted to encircle the neck of the bottle and its other end bent to form the loop d^3, the two loops being connected by the stem portion d' of the shank, an elastic band adapted to encircle the bottle near its base passing through the loop d^3 of the clip, and a safety-pin, one leg of which passes through the loop d^3 of the clip, substantially as set forth.

5. In a holder for nursing-bottles, the combination of an elastic band adapted to encircle the bottle near its base, a pin for securing the bottle to its support, means for uniting the pin directly to the band, and means for centering the pin relative to the band, substantially as set forth.

814,575. WRENCH. JOHN F. TIMM, Uvalde, Tex. Filed Oct. 24, 1905. Serial No. 284,176.



Claim.—1. In a wrench, the combination with a main jaw-shank having a series of teeth on the opposite side of the shank from the jaw, of a movable jaw having a short shank and spring on one side of the main jaw-shank and on the other side thereof an obtuse-angle lever pivoted to the shank of the movable jaw and having fulcrum-teeth in the angle, and beyond said teeth a slide end, substantially as specified.

2. In a wrench, the combination of a fixed jaw-shank, a movable jaw-shank having at one end thereof a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever, substantially as specified.

3. In a wrench, the combination of a fixed jaw-shank, a movable jaw-shank having at one end thereof a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever of about one hundred and thirty-five degrees, and a spring between the fixed jaw and the movable jaw, substantially as specified.

4. In a wrench, the combination of a fixed jaw-shank, a movable jaw-shank having at one end thereof a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever, and having a rounded slide end, and a spring for separating the movable jaw from the fixed jaw, substantially as specified.

5. In a wrench, the combination of a fixed jaw-shank, a movable jaw-shank having at one end thereof a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank, and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever and having a rounded slide and fulcrum end, and a spring between the movable jaw and the fixed jaw, substantially as specified.

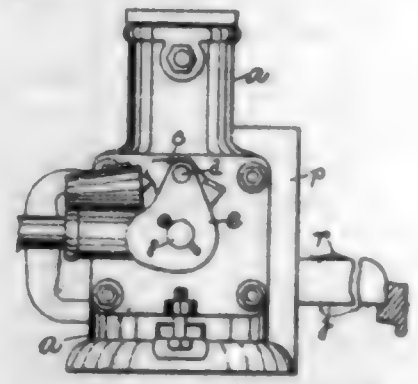
6. In a wrench, the combination of a fixed jaw-shank a movable jaw-shank having at one end thereof, a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever, the jaws of the wrench having alined tongues and grooves adapted to engage for small work, substantially as specified.

7. In a wrench, a toothed fixed jaw and a toothed movable jaw, said jaws having alined tongues and grooves adapted to engage for small work, substantially as specified.

8. In a wrench a toothed fixed jaw and a toothed movable jaw, said jaws having alined tongues and grooves and having lateral converged lines of teeth of an angular relation to the horizontal of about thirty degrees, and connected by a substantially horizontal line of teeth, substantially as specified.

9. In a wrench, the combination of a fixed jaw-shank, a movable jaw-shank having at one end thereof a loop connection with the fixed jaw-shank, a handle-lever having a pivotal connection with the other end of the movable jaw-shank, and a movable fulcrum-toothed engagement with the fixed jaw-shank, said handle-lever having a work-arm having an obtuse-angle relation to the handle end of the lever, the jaws of the wrench having alined tongues and grooves, and being each provided with converging lines of teeth of an angular relation to the horizontal of about thirty degrees connected by a substantially horizontal line of teeth, substantially as specified.

814,576. LIFTING-JACK. ERVIN T. TREFETHEN, Boston, Mass., assignor to Arthur O. Norton, Coaticook, Canada. Filed Nov. 4, 1905. Serial No. 285,806.



Claim.—1. In a lifting-jack, in combination, a stationary member and a movable member, a housing attached to the stationary member and provided with a pocket or receptacle and with a vertically-arranged slot, and a holding device provided with a head located in said pocket or receptacle and with a shank or bar extended through said slot, substantially as and for the purpose specified

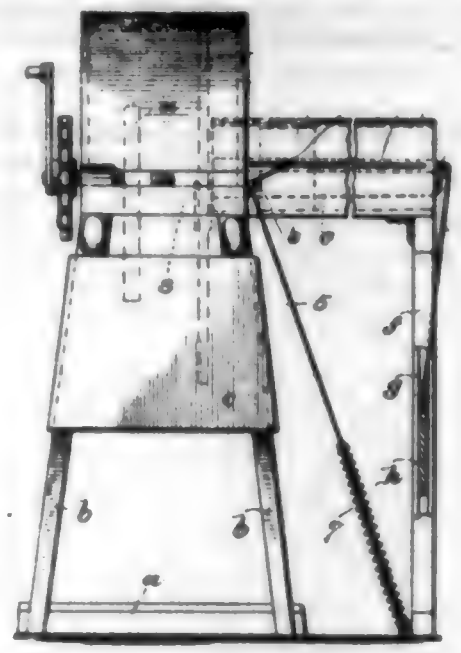
2. In a lifting-jack, in combination, a stationary member and a movable member, a housing attached to said stationary member to form a pocket or receptacle, said housing having a vertically-arranged slot in its front wall and having teeth or serrations on the wall opposite said slot, and a holding device having a head provided with teeth to engage the teeth within the pocket or receptacle and having a shank or bar extended through said slot, substantially as described.

3. In a lifting-jack, in combination, a stationary member and a movable member, a housing attached to said stationary member, said housing being open at its top and provided with a slot in its front wall intermediate the sides of said housing, and a holding device consisting of a bar or shank extended through said slot and having a head movable in said housing and engaging the rear side of said front wall, substantially as described.

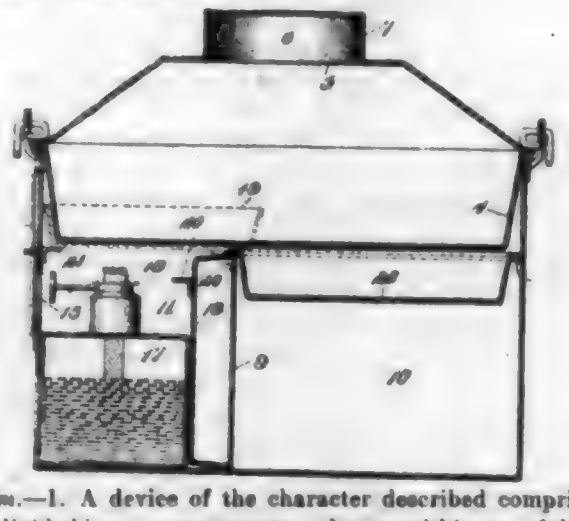
4. In a lifting-jack, in combination, a stationary member and a movable member, a housing attached to said stationary member, said housing being open at its top and provided with a slot in its front wall, a holding device consisting of a bar or shank extended through said slot and having a head movable in said housing, and a spring attached to said shank and adapted to engage an inner wall of said housing to secure said holding device in said housing when not in use, substantially as described.

814,577. VEGETABLE-CUTTER. JOSEPH S. URBAN, Indianapolis, Ind., assignor of one-half to Andrew Edward Nibbling, Indianapolis, Ind. Filed May 20, 1905. Serial No. 261,475.

Claim.—A vegetable-cutter having a rotary knife, and a guard-casing provided with a lateral opening, a detachable lateral feed-casing fitting in said opening, and having a hinged support provided with grooves, said feed-casing having horizontal guide-slots, front and rear pulleys, a follower-block in said feed-casing having lateral arms engaging said guide-slots, retracting-springs having connections to said lateral arms passing over the front pulleys and connected at each side to the bottom of said hinged support, and a foot-pressure device working in the grooves of said hinged support and having a suspension-cord, passing over the rear pulley and connected to the follower-block, substantially as specified.



814,578. LUNCH-PAIL. JOHN WALTER, Ottawa, Ill. Filed Mar. 21, 1905. Serial No. 251,313.



Claim.—1. A device of the character described comprising a body subdivided into compartments; a heater within one of the compartments, a bracket within said compartment with the heater, a saucepan adapted to be supported by the bracket and one wall of the compartment, and means upon the saucepan for preventing its displacement when in such position.

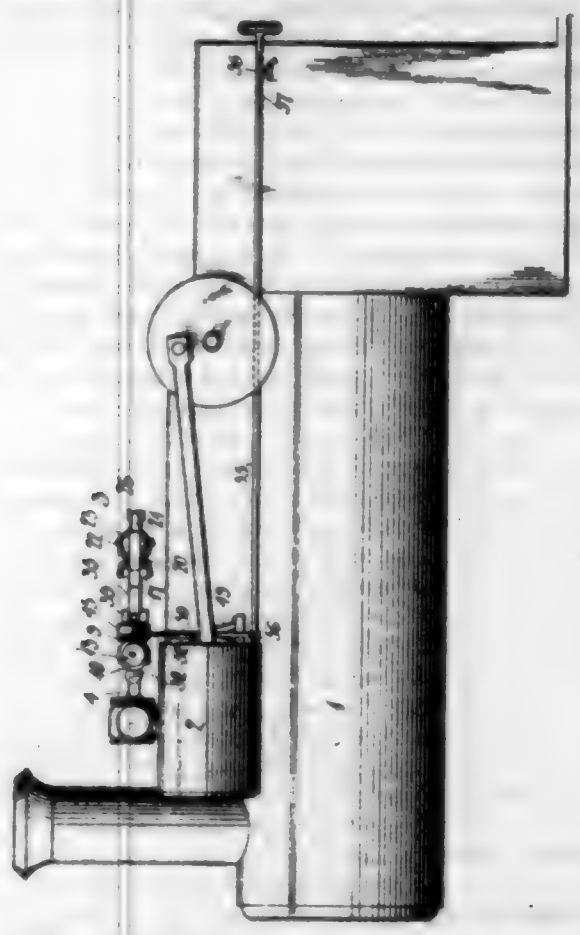
2. In a device of the character described the combination with a body subdivided into compartments; of a heater in one of said compartments, said compartment having apertures in one wall, means for normally closing the apertures, a bracket within the compartment with the heater, a saucepan adapted to be supported by the bracket and one wall of the compartment, and means depending from the saucepan for engaging the wall to prevent displacement of the saucepan when in such position.

3. In a device of the character described the combination with a body having apertures in one wall and means for normally closing the apertures; of a burner within the body, a partition adjacent thereto forming compartments within the body, a bracket in the compartment with the burner, a saucepan adapted to rest upon the partition and bracket, and a depending device upon the saucepan for contacting with the partition to prevent displacement of the pan.

814,579. GOVERNOR. LESLIE J. WATSON, Port Huron, Mich., assignor of one-half to Arthur S. White, Port Huron, Mich. Filed Feb. 27, 1905. Serial No. 247,594.

Claim.—1. A governor of the character described, comprising a stationary shaft, a sleeve mounted to rotate thereon, a fixed guide at one end of said sleeve, an adjusting-sleeve mounted to rotate and slide upon said shaft, centrifugal weights or balls mounted between said guide and said adjusting-sleeve, a spring-holder slidably mounted upon the first-mentioned rotary sleeve, springs secured upon said holder and engaged with said guide and said weights, each of said springs consisting of a plurality of overlapping leaves of unequal length, a loose collar upon said holder, an operating-lever, a forked arm pivoted upon said collar and slidably mounted upon said

lever, and means for adjusting and securing said lever in an adjusted position, substantially as described.



2. In a governor of the character described, the combination with a slidably-mounted spring-holder, of a collar mounted to rotate loosely thereon, an operating-lever having one of its ends formed with a tubular socket, a forked arm slidably mounted in said socket and pivotally connected to said collar, an operating-rod pivoted at one of its ends to the opposite end of said lever, and formed at its opposite end with a series of notches, and a keeper stud or tooth adapted to be engaged by the notches in said lever.

814,580. VEHICLE-WHEEL. George H. Williams, Los Angeles, Cal. Filed Aug. 31, 1905. Serial No. 276,469.

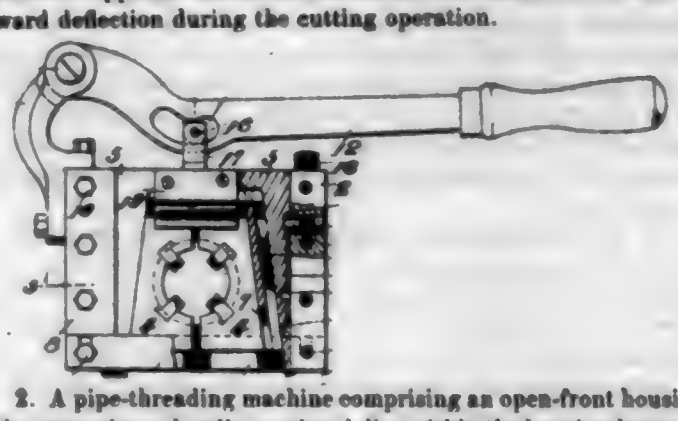


Claim.—1. A vehicle-wheel comprising outer and inner rims, U-shaped springs between said rims, and clamps fastening the respective ends of the springs to the respective rims and having end portions engaging at the sides of the rims to prevent lateral movement.

2. A vehicle-wheel comprising inner and outer members, springs between said members, each spring having an outer member bent in U form with the end portions lying flat against the inner and outer wheel members, and fastened at their extremities to said members, and an inner spring member extending and fastened in the bend of the outer spring member and extending freely within and against the flat portions of the outer spring member, but terminating short of the fastenings thereof.

814,581. ADJUSTABLE DIE-STOCK. Bradford Borden, Warren, Ohio, assignor, by mesne assignments, to The Borden Company, Warren, Ohio, a Corporation of Ohio. Filed Jan. 4, 1905. Serial No. 239,670.

Claim.—1. A pipe-treading machine comprising an open-front housing having opposite end walls, sectional dies within the housing between such walls, a free sliding adjuster filling the spaces between said dies and said end walls for moving the dies toward and away from each other, means for preventing forward deflection of the adjuster, and means carried by the adjuster for engaging the dies and so acting on the latter and the adjuster as to force the dies and adjuster in opposite directions and enable the former to resist any forward deflection during the cutting operation.

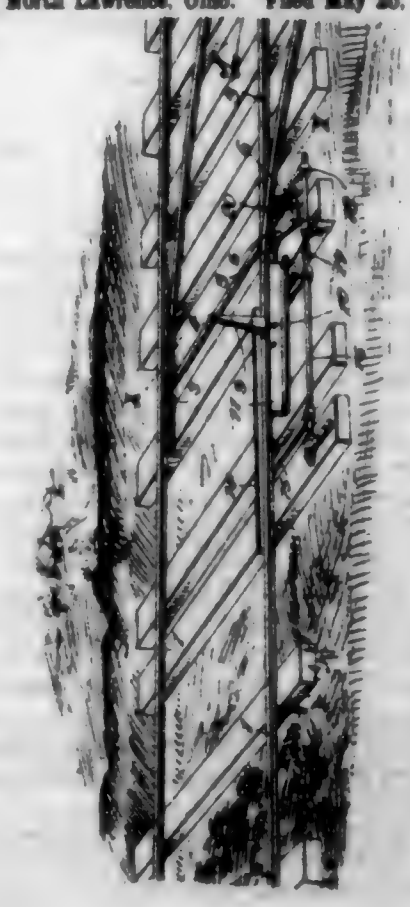


2. A pipe-threading machine comprising an open-front housing having opposite end walls, sectional dies within the housing between such walls, a free sliding adjuster filling the spaces between said dies and said end walls for moving the dies toward and away from each other, means for preventing forward deflection of the adjuster, and a heavy spring-plate carried by the adjuster for engaging the front faces of the dies during the cutting operation, said plate being disengaged from said dies when the adjuster is moved outwardly, permitting the dies to be moved from the housing.

3. A pipe-threading machine comprising an open-front housing having opposite end walls, sectional dies within the housing between such walls, a free sliding adjuster filling the spaces between said dies and said end walls for moving the dies toward and away from each other, said adjuster having corresponding side members and a connecting portion, plates secured to said housing overlapping said side members, a spring-plate secured to said connecting portion for engaging the front faces of said dies, and a lever for operating said adjuster, said spring-plate being of such width that when the adjuster is moved outwardly by the lever it will be disengaged from the dies.

4. The combination with the housing, the dies and the free sliding adjuster therefor having a longitudinal groove in one side and recesses at the upper and lower ends of said groove and a third recess near said lower end, and an actuating-lever connected to said adjuster, of a spring-pressed pin mounted in the housing and extended into said groove, said pin being designed to hold said adjuster and lever raised when the pin is in either of the lower recesses.

814,582. SWITCH-OPERATING MECHANISM. Newton K. Bowman, North Lawrence, Ohio. Filed May 26, 1905. Serial No. 262,256.



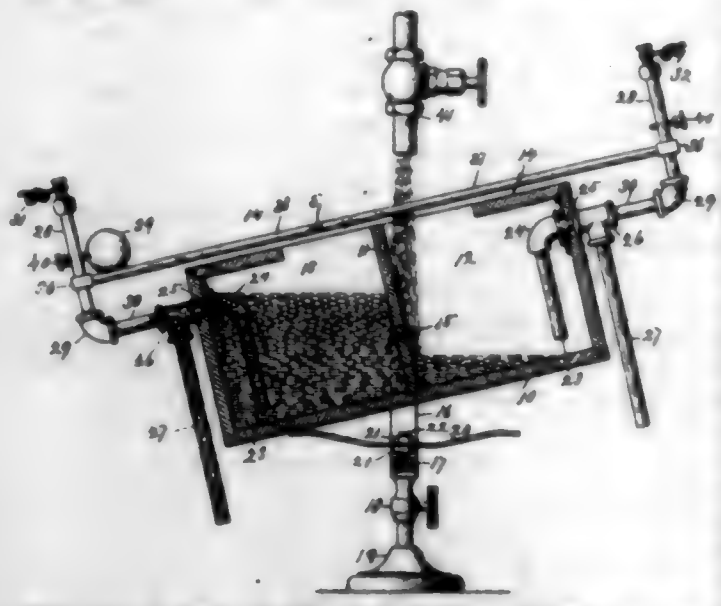
Claim.—1. In switch-operating mechanism of the type described, the combination of main rails, siding-rails, a switch-point, a switch-bar, means for holding the switch-bar in a position with the switch-point closed, means operable by the rolling-stock for actuating the switch-bar to open the switch-point, a rock-shaft, means for operating the rock-shaft, and a lock-arm carried by the rock-shaft for engagement with the switch-bar.

2. In switch-operating mechanism of the type described, the combination of main rails, siding-rails, a switch-point, a switch-bar, means for holding the switch-bar in a position with the switch-point closed, means operable by the rolling-stock for actuating the switch-bar to open the switch-point, a rock-shaft, a lock-arm carried by the rock-shaft for engagement with the switch-bar, said rock-shaft being operable by the rolling-stock, and spring means coöperating with the rock-shaft.

3. In switch-operating mechanism of the type described, the combination of a main track, a siding-track, switch-points and a switch-bar, a trip-lever operable by the rolling-stock, a bell-crank lever connected with the switch-bar, a rod connecting the trip-lever with the bell-crank lever, a rock-shaft, a depressible rail connected with the rock-shaft, a lock-arm projected from the rock-shaft, a lug extended from the lock-arm to engage the switch-bar, and spring means coöperating with the switch-bar, the trip-lever, and the rock-shaft.

4. In switch-operating mechanism, the combination of a switch-bar, means normally holding said switch-bar in a predetermined position, means operable by the rolling-stock for throwing the switch-bar out of its normal position, and means actuated by the rolling-stock and including a spring-actuated spring-arm adapted to positively engage with the switch-bar after it has been thrown out of its normal position, said arm being automatically operable to release the bar when the rolling-stock has passed the switch to permit said bar to return to its normal position.

814,583. APPARATUS FOR FEEDING ELECTROLYTIC CELLS. Frank J. Briggs, Everett, Mass. Filed May 9, 1905. Serial No. 259,567.



Claim.—1. A device for feeding cells in electrolytic apparatus, comprising a pivotally-supported tank containing separated chambers or compartments on opposite sides of its pivotal support, siphon-pipes extending from the interior of each chamber to the exterior and adapted to be connected with a cell, a track supported by the tank, a ball on said track, and a water-supply located over the pivotal support of the tank, whereby when the tank is tilted down in either direction the supply of water enters the chamber which is tilted up.

2. A device for feeding cells in electrolytic apparatus, comprising a pivotally-supported tank containing separated chambers or compartments on opposite sides of its pivotal support, siphon-pipes extending from the interior of each chamber to the exterior and adapted to be connected with a cell, a track supported by the tank, a ball on said track adapted to roll freely from a position on one side of the pivotal support to the other side, means at opposite ends of the track for limiting the movement of the ball, and a water-supply located over the pivotal support of the tank, whereby when the tank is tilted down in either direction the supply of water enters the chamber which is tilted up.

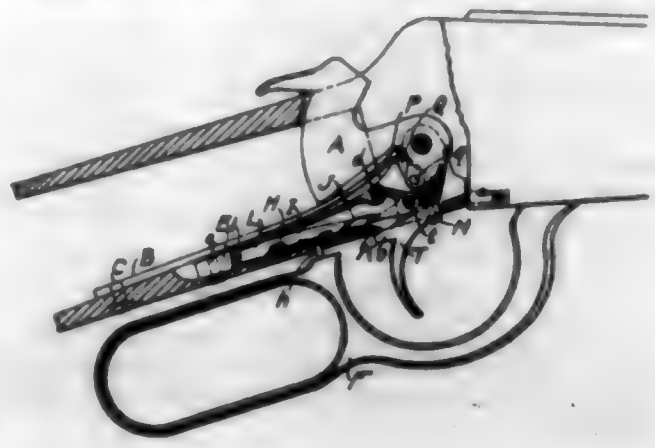
3. A device for feeding cells in electrolytic apparatus, comprising a pivotally-supported tank containing separated chambers or compartments on opposite sides of its pivotal support, siphon-pipes extending from the interior of each chamber to the exterior and adapted to be connected with a cell, a track supported by said tank and extending from one side of the pivotal support to the other and consisting of two pairs of metallic rods extending from opposite sides of the pivotal support of the tank, the rods in each pair being of unequal length and the longer rod in each pair being opposite the shorter rod in the opposite pair and overlapping the longer rod in the opposite pair, a freely-rolling ball on said track, and a water-supply located over the pivotal support of the tank, said track making a portion of an electrical circuit, whereby as the tank is tilted down in either direction the supply of water enters the chamber which is tilted up, and the stream of water which is siphoning out through the opposite chamber is broken thus breaking any electrical current which is passing through said stream, and when the rolling ball passes over the point at which the longer rods overlap it completes the electrical circuit of which said rods form a part.

4. A device for feeding cells in electrolytic apparatus, comprising a pivotally-supported tank containing separated chambers or compartments on opposite sides of its pivotal support, siphon-pipes extending from the interior of each chamber to the exterior and adapted to be connected with a cell, a track supported by said tank and extending from one side of the pivotal support to the other and consisting of two pairs of metallic rods extending from opposite sides of the pivotal support of the tank, the rods in each pair being of unequal length and the longer rod in each pair being opposite the shorter rod in the opposite pair and overlapping the longer rod in the opposite pair, a freely-rolling ball on said track, and a water-supply located over the pivotal support of the tank, said track making a portion of an electrical circuit containing a register, whereby as the tank is tilted down in either direction the supply of water enters the chamber which is tilted up, and the stream of water which is siphoning out through the opposite chamber is broken thus breaking any electrical current which is passing through said stream, and when the rolling ball passes over the point at which the longer rods overlap it completes the electrical circuit of which said rods form a part and registers the emptying of a chamber.

5. In a device for feeding cells in an electrolytic apparatus, a tank made of insulating material and provided with a central partition and containing chambers or compartments on opposite sides thereof, a pivotal support for said tank in line with the partition, a water-supply located directly over the upper edge of the partition when the tank is level, siphon-pipes extending from the interior of each chamber to points outside the tank and adapted to connect with a cell, a track comprising two pairs of metallic rods 37 and 38, the pairs of rods extending from opposite sides of the pivotal support of the tank and the longer rods 38 being in line with the shorter rods 37 and with their ends separated from the shorter rods by small spaces, supports for the outer ends of said rods extending from the siphon-pipes, and a metallic ball freely rolling on said track, said track making a part of an electrical circuit which contains a register, whereby when the ball reaches the center of the track it connects electrically the two longer rods 37 and completes said circuit.

6. In a device for feeding cells in electrolytic apparatus, the tilting tank 10 divided by means of a partition into two compartments 12 and 13, a standard pivotally supporting said tank, the pivotal support being in line with the partition, the spring 20 supported centrally by the standard and extending longitudinally under the tank, a water-supply located over the upper edge of the partition when the tank is level, and siphon-pipes extending from the interior of each compartment to a point outside the tank, substantially as and for the purpose set forth.

814,584. RIFLE SET-LOCK AND SAFETY SET-TRIGGER. Daniel Brown, Cranston, R. I. Filed May 3, 1905. Serial No. 258,366.



Claim.—1. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending angularly from said trigger, a roller mounted on said arm, a spring engageable with said roller, a sear pivotally mounted, a spring engageable with said sear and a screw in said trigger adapted to engage with said sear, as and for the purposes set forth.

2. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending angularly from said trigger, a spring engageable with said arm, a sear pivotally mounted, a spring engageable with said sear, and a screw in said trigger adapted to engage with said sear, substantially as specified.

3. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a sear pivotally mounted, a spring engageable with said sear and means to regulate the forward swing of said trigger, substantially as described.

4. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a bifurcated pivotally-mounted sear, a spring engageable with one of the arms of said sear, a lever engageable with the other arm of said sear, a spring having a lateral projection, which is engageable with said lever, and a screw in said trigger adapted to engage with said sear to limit the forward swing of said trigger, substantially as shown.

5. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending from said trigger, a roller mounted on said arm, a spring engageable with said roller, a bifurcated pivotally-mounted sear, a spring engageable with one of the arms of said sear, a lever engageable with the other arm of said sear, a spring having a lateral projection which is engageable with said lever, a spring engageable with the heel of said trigger, a lateral projection on said last-mentioned spring which is engageable with said lever, substantially as set forth.

6. In a rifle-lock, the combination of a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a sear, a spring engageable with said sear, a lever engageable with said sear, means to disengage said lever and said sear, a spring engageable with said trigger, and means to disengage said trigger and said spring substantially as specified.

7. In a rifle-lock the combination of a trigger, a sear, a spring engageable with said sear, a lever adapted to be held in firm engagement with said sear, a spring engageable with said trigger and means to disengage both said lever and said sear and said trigger and said spring, substantially as and for the purposes set forth.

8. In a rifle-lock, the combination of a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a sear, a spring engageable with said sear, a lever engageable with said sear, a spring engageable with said trigger, a movable trigger-guard and means of applying pressure upon said lever by operating said trigger-guard to disengage at the same time both said lever and sear and said trigger and said spring, substantially as set forth.

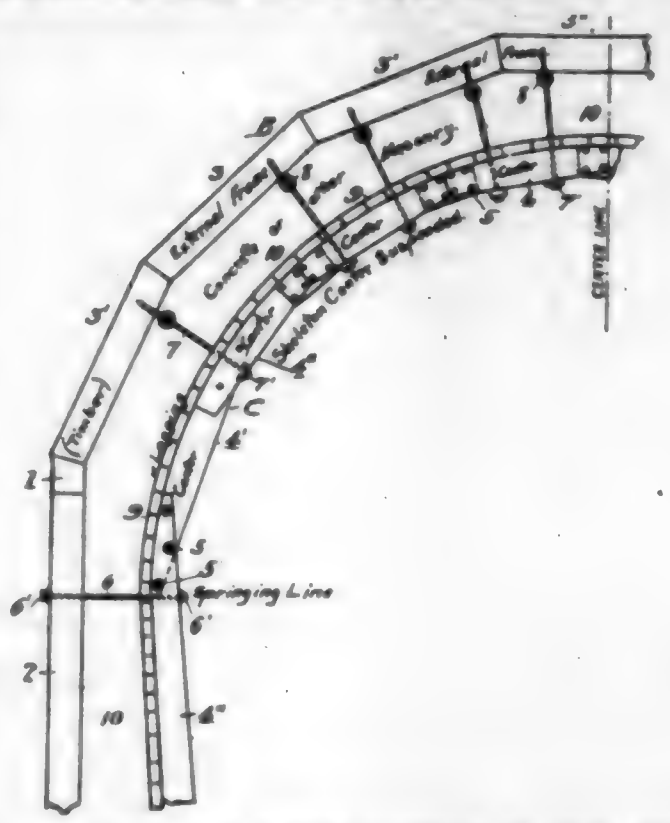
9. In a rifle-lock the combination of a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a sear, a spring engageable with said sear, a lever engageable with said sear, a spring having a lateral projection which is engageable with said lever and means to disengage said lever and said sear, substantially as and for the purposes shown.

10. In a rifle-lock, the combination of a hammer, a pivotally-mounted trigger, an arm extending from said trigger, a spring engageable with said arm, means to reduce friction between said spring and said arm, a sear, means to hold said sear firmly in engagement with said hammer and a means to hold said last-mentioned means out of engagement with said sear, substantially as and for the purposes set forth.

814,585. PROCESS OF SUPPORTING FORMS USED IN THE CONSTRUCTION OF CONCRETE AND OTHER MASONRY. MARSHALL W. BROWN, Pittsburg, Pa. Filed Mar. 3, 1904. Serial No. 196,333.

Claim.—1. In apparatus for supporting materials for arches, tunnels, &c., the combination with the tunnel face or lining, of forms carrying lagging and composed of a series of sections, said sections being suspended from said face or lining for forming a space for said materials and being removably connected together, and means for suspending said forms from said face or lining.

2. In apparatus for supporting materials for arches, tunnels, &c., the combination with the tunnel face or lining, of forms carrying lagging and composed of a series of sections, said sections being suspended from said face or lining to form a space for said materials and being removably connected together, and bolts or rods connecting said face or lining and forms for suspending the latter.

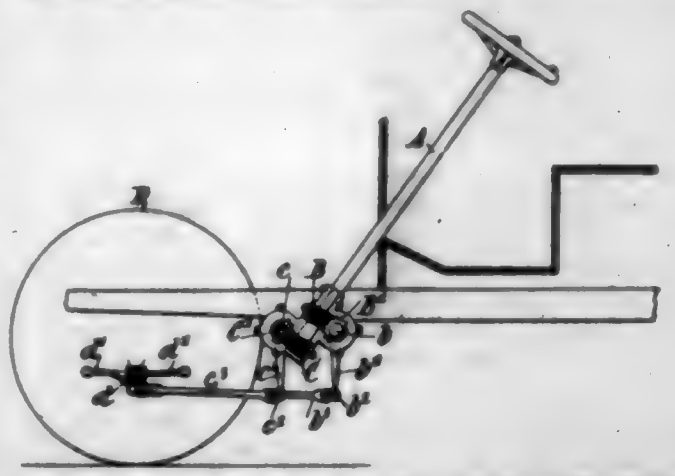


3. In apparatus for supporting materials for arches, tunnels, &c., the combination with the tunnel face or lining, of forms carrying lagging and suspended from said ribs to form a space for said materials, lag-screws connected to said face or lining, and bolts or rods connecting said lag-screws and forms for suspending the latter.

4. In apparatus for supporting materials for arches, tunnels, &c., the combination with the tunnel face or lining, of forms carrying lagging and composed of a series of sections, said sections being suspended from said face or lining to form a space for said materials, lag-screws connected to said face or lining, and bolts or rods connecting said lag-screws and forms for suspending the latter.

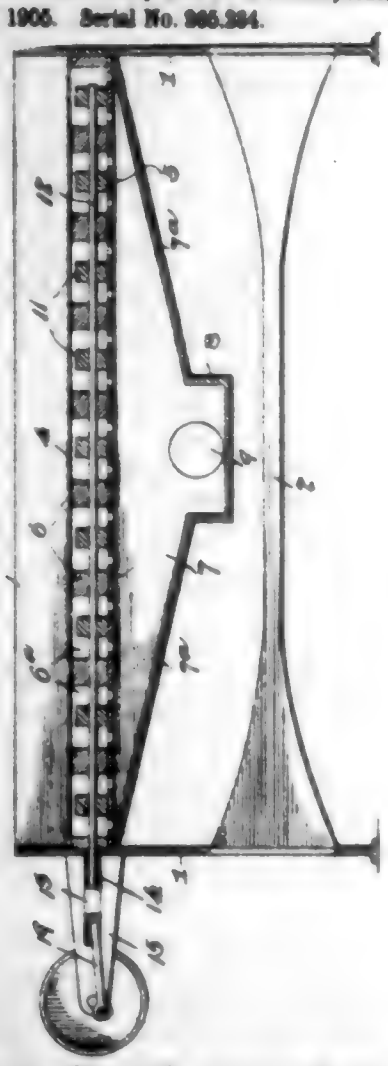
5. In apparatus for supporting materials for arches, tunnels, &c., the combination with the tunnel face or lining, of forms carrying lagging and composed of a series of sections, said sections being suspended from said face or lining to form a space for said materials and being removably connected together, lag-screws connected to said face or lining, and bolts or rods connecting said face or lining and forms for suspending the latter.

814,586. SAFETY STEERING MECHANISM FOR AUTOMOBILE CARRIAGES. EMILE D. CARON, Paris, France, assignor to Société Anonyme d'Electricité et d'Automobiles Mors, Paris, France. Filed June 15, 1905. Serial No. 265,264.



Claim.—A safety steering mechanism for automobiles, in which the pillar of the steering-wheel controls two sectors or nuts connected respectively by two sets of connecting-rods and transmission-devices to the pivots of the two steering road-wheels, the latter being also connected together by one or two sets of levers and coupling-rods.

814,587. PAPER AND PULP SCREEN. Frank M. Chapman, Port Edward, N. Y., assignor, by direct and mesne assignments, to Mill Machinery Manufacturers, Sandy Hill, N. Y., a Corporation of New York. Filed June 14, 1905. Serial No. 265,284.



Claim.—1. In a machine of the character described, the combination with a screen-plate, of a perforated bottom arranged below said plate, a piston arranged between said screen-plate and bottom and adapted to move in a plane parallel to said plate, and means to reciprocate said piston.

2. In a machine of the character described, the combination with a screen-plate, of a bottom plate provided with a series of perforations, and arranged below said screen, a piston arranged between said screen-plate and bottom and adapted to move in a plane parallel to said screen, and means to reciprocate said piston.

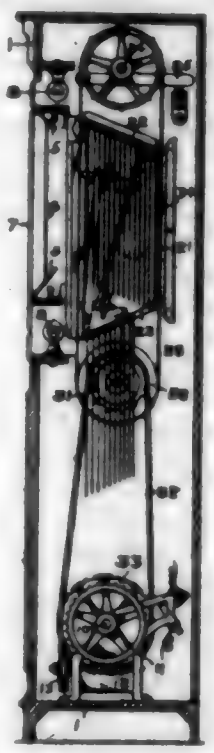
3. In a machine of the character described, the combination with a screen-plate, of a perforated bottom arranged below said plate, cross-pieces arranged between said screen-plate and bottom and dividing the space between them into a series of chambers, a series of pistons, one arranged in each of said chambers, and adapted to move in a plane parallel to said plate, and means to reciprocate said pistons in unison.

4. In a machine of the character described, the combination with a screen-plate, of a perforated bottom below said plate, cross-pieces arranged between said screen-plate and bottom and dividing them into a series of chambers, a series of pistons, one arranged in each of said chambers and adapted to move in a plane parallel to said plate, a common piston-rod extending through said cross-pieces and connected to each of said pistons, and means to reciprocate said piston-rods.

5. In a machine of the character described, the combination with a screen-plate, of a perforated bottom below said plate, cross-pieces arranged between said screen-plate and bottom and dividing them into a series of chambers, a series of pistons, one arranged in each of said chambers and adapted to move in a plane parallel to said plate, a common piston-rod extending through said cross-pieces and connected to each of said pistons, brackets secured to the frame of the machine and having ways therein, a block connected to the end of said piston-rod and adapted to move in said ways, a crank-shaft carrying a drive-pulley journaled in said brackets and pivoted rod connection between said crank and block.

6. In a machine of the character described, the combination with a screen-plate, of a perforated bottom below said plate, a chamber for the screened pulp below said bottom, an outlet flow-box leading from said chamber, an adjustable cut-off for said flow-box, a series of cross-pieces arranged between said screen-plate and bottom and dividing the space between into a series of piston-chambers, a series of pistons, one arranged in each of said piston-chambers and adapted to move in a plane parallel to said screen-plate, and means to reciprocate said pistons.

814,588. CARD-DISPLAYING APPARATUS. Thomas S. Craft, Indianapolis, Ind., assignor of one-half to Robert C. Finch, Indianapolis, Ind. Filed June 27, 1904. Serial No. 214,330.



Claim.—1. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having a rearwardly-sloping groove connecting their tops and a groove connecting their bottom ends which slopes downwardly toward the front, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, a friction-spring to press against the bars in the top groove to regulate their movement therein, means to regulate the tension of said spring, of endless conveying-belts having their vertically-extending portions opposite said vertical guideways, means for moving said belts in a forward direction and carriers mounted on said belts.

2. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having a rearwardly-sloping groove connecting their tops and a groove sloping toward the front connecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, means for discharging said bars *seriatim* into said vertical grooves, carriers moving in a constant upward direction past the front vertical grooves and downwardly adjacent the rear vertical grooves to carry said bars between said inclined grooves, a spring at the top of the front vertical grooves to discharge the bars into the top inclined groove and a switch opposite the entrance to said top inclined groove to withdraw the carriers from the bar being discharged from the vertical to the inclined groove.

3. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having rearwardly-sloping grooves connecting the tops of said vertical grooves and forwardly-sloping grooves connecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, carriers moving constantly upward past the front vertical grooves and downward past the rear vertical grooves to carry said supporting-bars, levers pivoted at the discharge ends of the top inclined grooves having ends projecting in the path of the supporting-bars to restrain the latter, pivoted levers at the front of the apparatus having ends projecting in the path of the upwardly-carried supporting-bars whereby they are tripped, said last levers being connected with the first-mentioned levers and a spring to return them to a normal position.

4. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having rearwardly-sloping grooves connecting the tops of said vertical grooves and forwardly-sloping grooves connecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, carriers moving constantly upward past the front vertical grooves and downward past the rear vertical grooves to carry said supporting-bars, pivoted levers at the

lower ends of the top inclined grooves to restrain the discharge of said bars, a longitudinally-movable bar having a wedge-shaped lower end to restrain and regulate the discharge of said supporting-bars from the lower inclined groove, pivoted levers having ends projecting in the path of the upwardly-moving supporting-bars and moved thereby, some of said levers being connected with the restraining-levers at the ends of the top grooves and other of said levers being connected with the longitudinally-movable bars, and means to return the said tripping-levers to normal positions.

5. In a card-displaying apparatus, a cabinet having sides with runs or grooves forming an endless circuit, card-supporting bars having ends inserted in said grooves, means for moving said bars intermittently in the same direction in said grooves, means to regulate the movement of said bars in said grooves so their movement will be intermittent but regular, and means to operate said last means comprising a plate secured by end screws said plate having a transverse perforation for one of said screws to permit lateral adjustment of said end, a lever pivoted to said plate and extending into the vertical path of said moving supporting-bars, a stop to arrest the downward movement of said lever, a spring to hold it against the stop.

6. In a card-supporting apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves and having rearwardly-sloping grooves connecting the tops of said vertical grooves, and forwardly-sloping groovesconnecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, bar-retaining stops situated at the lower ends of said inclined grooves, a shaft, band-wheels on said shaft, band-wheels directly beneath said band-wheels, some of said band-wheels having radial peripheral pins, endless belts connecting said upper and lower band-wheels, and opposite said forward and rearwardly extended guideways, said belts having longitudinal slots to receive the band-wheel pins, bar-carriers yieldingly mounted on said belts, and means for moving said belts in one direction.

7. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having rearwardly-sloping grooves connecting the tops of said vertical grooves and forwardly-sloping grooves connecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, bar-retaining stops situated at the lower ends of said inclined grooves, a shaft situated above said inclined top grooves, levers pivoted at their ends on which said shaft is mounted and means to raise and lower the opposite or free ends of said levers to adjust the height of the shaft, band-wheels on said shaft, band-wheels directly beneath said upper band-wheels, endless belts connecting said upper and lower band-wheels and opposite said forward and rearward vertically-extending guideways, bar-carriers yieldingly mounted on said belt and means for moving said belts in the same direction without intermission.

8. In a card-displaying apparatus, a cabinet having a front window, carriers moving inside of the cabinet vertically past said window, horizontal supporting-bars carried by said carriers, display mediums suspended from said bars and springs at the bottom of the window to press the bottoms of the passing display mediums inwardly of the cabinet to insure that each one shall pass in front of the one preceding it.

9. In a card-displaying apparatus, a cabinet having endless grooves, card-supporting bars having ends entering the grooves in the opposite ends of the cabinet, card-frames suspended by hooks from said bars, carriers to carry the supporting-bars in vertical directions and means for pressing the lower end of an upwardly-moving card inwardly out of the path of the supporting-bar following it.

10. In a card-displaying apparatus, a pair of endless belts moving in a constant direction, horizontal card-supporting bars, located within the area inclosed by said belts, carriers hinged at one end of each to the outer face of its respective belt said carriers having extensions at their opposite ends which project inwardly past the belt and means for depositing the bars in consecutive order on the carriers and for removing them therefrom.

11. In a card-displaying apparatus, carrying-belts, carriers hinged at their ends to the outer faces of the belts, springs to hold their opposite ends normally in close contact with their respective belts said opposite ends having projections on each side of its belt which extend in past the belt to form supports for card-supporting rods.

12. In a card-displaying apparatus, carrying-belts having eyelets in horizontal pairs on their outer faces, pins located therein having elastically-expanded ends and carriers having perforated side members to receive the expanded ends of said pins.

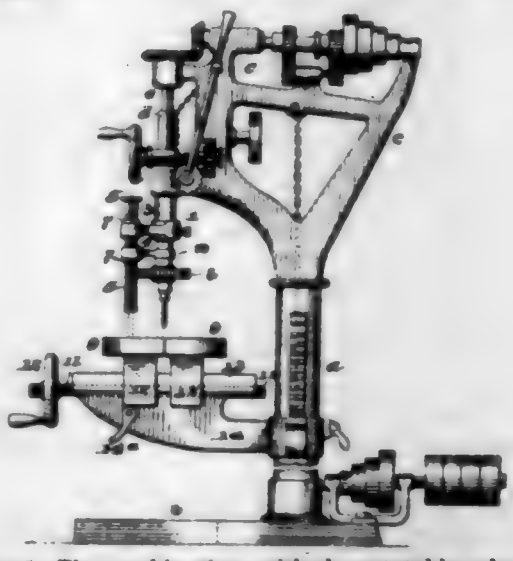
13. In a card-displaying apparatus, carrying-belts having eyelets in horizontal pairs on their outer faces, pins located therein having U-shaped bends between said eyelets, carriers having perforated side members which are removably secured to said pin ends said side members being continued at the opposite end of the carrier from said perforations to form supports for card-supporting rods.

14. In a card-displaying apparatus, carrying-belts having eyelets in horizontal pairs on their outer faces, pins located therein having U-shaped bends between said eyelets, carriers having perforated side members to receive the ends of said pins and a spring secured to the carrier and bearing against the U-shaped bend of the pin to hold the carrier elastically against the band.

15. In a card-displaying apparatus, the combination with a cabinet having sides with opposing front and rear vertical grooves, and having rearwardly-sloping grooves connecting the tops of said vertical grooves and forwardly-sloping grooves connecting their bottoms, of card-supporting bars adapted to be supported at their ends in said top and bottom inclined grooves, endless conveying-belts having vertically-extended portions opposite said vertical grooves, means for moving said belts continuously in the same direction, a switch at the top of the front vertical groove opposite its junction with the top inclined groove, carriers hinged at one of their ends to said belts, a spring for each carrier to hold it normally in close contact with its belt and lateral extensions from said carriers at opposite ends from their pivoted ends, to enter said switch.

16. In a displaying device, a cabinet having endless grooves, supporting-bars having ends entering said grooves and means for traversing the bars therein, and a device for regulating the discharge of said bars from a transverse to a vertical groove comprising a longitudinally-moving bar having a diagonal slot, a stationary pin in said slot, a lever pivoted to the end of the bar having a pointed end and an under side notch, a spring pressing the pointed end of the lever between the supporting-bars and a second stationary pin to hold the lever in position between the supporting-bars except when the notch in said lever is opposite the pin.

814,589. **COMBINED DRILLING AND BOLT-CUTTING MACHINE.** KENNETH C. DAVIS, Ely, Nev. Filed May 17, 1905. Serial No. 260,821.



Claim.—1. The combination, with the rotatable arbor or spindle of a drilling-machine, of an attachment consisting of a tubular tool-carrier grooved or toothed throughout its length, and made slidable in its support means for supporting the same and holding it rotatably, and a gear on the arbor meshing with the said tool-carrier, substantially as described.

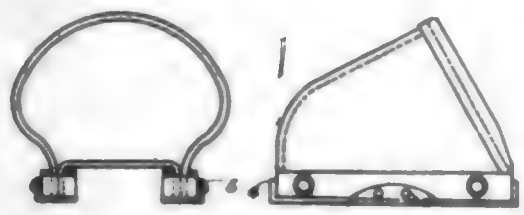
2. The improved attachment for a vertical drilling-machine comprising sleeves adapted for support upon the drill arbor or spindle of such machine and having lateral arms with alined openings therein, rotatable sleeves held in said arms and provided with grooves interiorly, and a tubular tool-holder which is grooved longitudinally corresponding to the sleeves and adapted for vertical adjustment therein, substantially as described.

3. An improved attachment for a rotatable arbor or spindle consisting of a tubular open-end tool-carrier which is fluted or grooved longitudinally, and a suitable holder for the tool-carrier which is adapted for attachment to the said arbor, said tool-carrier being slidable in said holder, substantially as described.

4. The combination, with the rotatable arbor or spindle having a gear fixed thereon, of sleeves provided with laterally-projecting arms, rotatable sleeves provided with flanges and toothed or grooved interiorly, and held rotatably in the aforesaid arms, and a vertically-

adjustable tool-holder which is grooved or toothed longitudinally and adapted to fit and slide vertically in the flanged sleeves and to rotate therewith the same engaging the aforesaid gear, substantially as described.

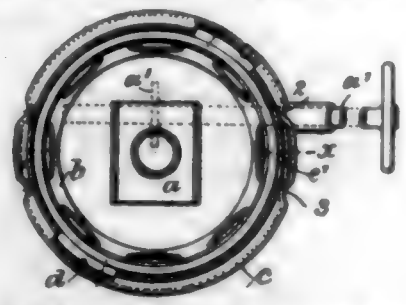
814,590. LINK OF BUCKET DREDGING MACHINERY. ROBERT R. DOUGLAS, Dunedin, New Zealand. Filed Mar. 14, 1905. Serial No. 250,110.



Claim.—1. Improvements relating to the bucket-links, elevator-links and connecting-links of bucket dredging machinery consisting of in combination a link of the class described, a shoe, and means for securing said shoe to the under side of said link substantially as and for the purposes set forth.

2. Improvements relating to the bucket-links, elevator-links, and connecting-links of bucket dredging machinery comprising in combination a link of the class described, a shoe, a packing-piece, and means for securing said shoe and packing-piece to said link, substantially as and for the purposes set forth.

814,591. LAMP-BURNER. CHARLES H. DRESSEL, New York, N. Y., assignor to The Dressel Railway Lamp Works, New York, N. Y., a Corporation of New York. Filed Sept. 20, 1905. Serial No. 279,244.



Claim.—1. In a lamp-burner, a chimney gallery or support having a rim internally grooved at its upper part, in combination with a chimney having ribs at one end and at opposite sides and cut-away portions providing an entrance for the ribs of the chimney to the grooved rim of the gallery and means coming at each end of the ribs of the chimney for firmly holding the chimney in place.

2. The combination in a lamp-burner, with a chimney having ribs at one end and at opposite sides, of a lamp-burner having a gallery or support and a grooved rim provided with notches at opposite sides of a length in excess of the length of the ribs of the chimney, and means connected with said grooved rim and adapted to come at opposite ends of the ribs of the chimney to hold the chimney in place in said rim.

3. The combination in a lamp-burner, with a chimney having ribs at one end and at opposite sides, of a lamp-burner having a gallery or support and a grooved rim provided with notches at opposite sides of a length in excess of the length of the ribs of the chimney, and projections of the rim extending into the groove to an appreciable extent and separated a distance in excess of the length of the ribs of the chimney, said ribs being adapted to be forced past the first projections and come to a position of rest between the said projections where they are held and the chimney supported thereby.

814,592. COMBINED LABEL AND PREMIUM-COUPON. HARRY B. DUANE, Boston, Mass. Filed Apr. 7, 1905. Serial No. 254,402.

Claim.—1. The combination with a label having an opening therein, of a premium-coupon held in position by said label and exposed to view through said opening.

2. The combination with a label having an opening therein, of a premium-coupon secured to the rear of said label and exposed to view through said opening.

3. The combination of a package, a label therefor, a premium-coupon interposed between said package and label, the label being provided with means for exposing said coupon to view through said label.

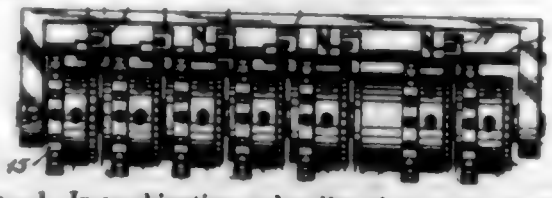
4. The combination of a package, a label therefor, a premium-coupon of contrasting color interposed between said package and label, the label being provided with means for exposing said coupon to view through said label.



5. The combination with a label having an opening therein, of a premium-coupon of contrasting color secured to the rear of said label and exposed to view through said opening.

6. The combination of a package provided with shoulders at either end, a label therefor extending from one shoulder to the other and provided with an opening therein, and a premium-coupon interposed between said label and package and exposed to view through said opening.

814,593. TRANSFER AND INDICATING MECHANISM FOR CALCULATING-MACHINES. HARRY C. DUNCAN, Jackson, Ohio, assignor of one-half to Edwin Jones, Jackson, Ohio. Filed Dec. 19, 1904. Serial No. 237,459.



Claim.—1. In combination a plurality of numeral-wheels, gear-wheels one arranged at each side of each numeral-wheel and connected thereto so as to allow any of the numeral-wheels to move independently of the other numeral-wheels of a higher or lower denomination, each gear-wheel adapted to move independently of the other gear-wheels and also adapted to impart motion to the numeral-wheels, and a transfer mechanism in engagement with the teeth of the gear-wheels adapted to transfer motion from each numeral-wheel to the gear-wheel of the next adjacent numeral-wheel of a higher order.

2. In an adding device the combination with a recessed numeral-wheel provided upon its outer periphery with a ring of fixed teeth free from engagement with other parts of the device, of a gear-wheel having connection with the recessed portion of the numeral-wheel so as to impart motion thereto or to allow the numeral-wheel to move independently thereof, and a transfer device engaging the teeth of the gear-wheel.

3. An adding device comprising a recessed numeral-wheel formed with an internal ratchet, a gear-wheel having a portion projecting into the numeral-wheel, and a spring-pressed pawl carried upon the said projecting portion of the gear-wheel and engaging with the internal ratchet.

814,594. PROCESS OF PRECIPITATING AND PRESERVING CASEIN. HENRY V. DUNHAM, Bellows Falls, Vt., assignor to Casein Company of America, a Corporation of New Jersey. Filed May 4, 1905. Serial No. 258,382.

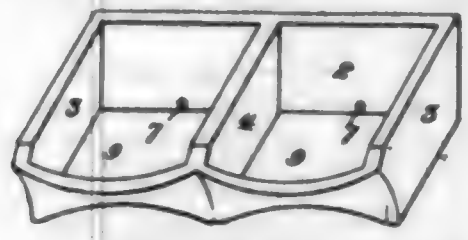
Claim.—1. The herein-described process for precipitating and preserving casein, consisting in precipitating the casein with an acid with which a small percentage of a preservative has been previously mixed.

2. The herein-described process for precipitating and preserving casein, consisting in precipitating the casein with an acid with which a small percentage of boracic acid has been previously mixed.

814,595. PLANT OR FLOWER POT. ALFRED J. EGGLETON, Dunedin, New Zealand. Filed Feb. 20, 1905. Serial No. 246,614.

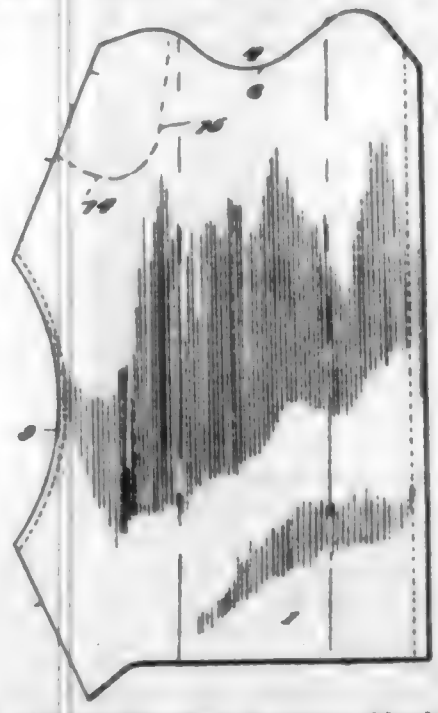
Claim.—1. A flower-pot comprising bottom, side and end walls and a central partition forming two compartments, one of the side walls, forming the front of the device, being outwardly curved and cut away opposite each compartment and the other side, forming the back of the pot, being provided with apertures forming drainage-ports for each compartment.

3. A flower-pot formed as an integral structure and affording several compartments, the front wall of each compartment being outwardly curved and having its upper edge portion cut away.



3. A flower-pot formed as an integral structure and affording several compartments, the front wall of each compartment being outwardly curved and having its upper edge portion cut away, and standards or feet projecting outwardly from the front of said compartment, the rear wall of each compartment being provided with a drainage-opening.

814,596. HORSE-COLLAR. WILLIAM B. ESTES, Atlanta, Ga., assignor, by direct and mesne assignments, to Atlanta Horse Collar Company, Atlanta, Ga. Filed Feb. 3, 1905. Serial No. 244,002.



Claim.—1. A horse-collar blank having one side edge and one end edge at approximately right angles to each other, the opposite end edge being of a double irregular curve, and the opposite side edge being inclined in reverse directions from the respective ends toward the center.

2. A horse-collar having an arcuate depression in one edge and a leather inset having a curved edge of less radius than the curvature of said depression, said curved edges of the inset and depression being secured together, whereby to provide a fullness at the point of the inset.

3. In a horse-collar, a blank and a housing designed to be secured to said blank with two edges in alinement with the edges of the blank and a third edge of greater length than either of said edges overlying the body of the blank adjacent the rim, whereby the bend at the upper portion of the collar is without fullness or wrinkles.

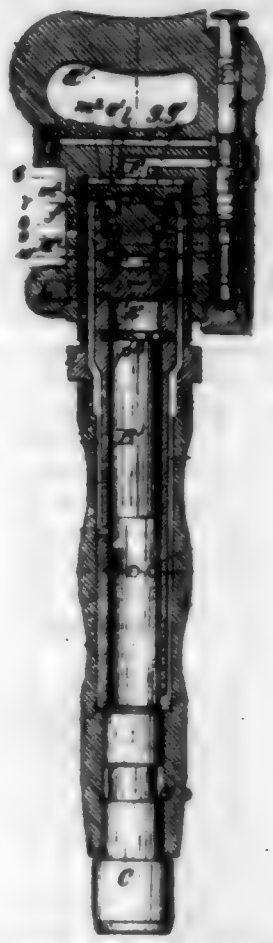
4. In a horse-collar, a blank having an arcuate depression in one edge, and a lug having a curved edge to be secured to the curved edge of said depression.

5. In a horse-collar, a blank, having a depression in one edge and an inset having a straight edge and a curved edge and secured to the blank with its curved edge coincident with the edge of the depression.

6. In a horse-collar, a blank having a housing secured thereto, said housing having opposite edges of different lengths and secured to the blank with two edges in alinement with and approximately of the same contour as the edges of the blank.

7. A horse-collar blank having one side edge and one end edge at approximately right angles to each other, the opposite end edge being of a double irregular curve, and the opposite side edge being inclined in reverse directions from the respective ends toward the center, said latter edge being cut out on an arc between the inclined portions thereof.

814,597. RECIPROCATING TOOL OR ENGINE. CHARLES A. FASSLER, Buffalo, N. Y. Filed Nov. 21, 1903. Serial No. 182,060.



Claim.—1. The combination of a barrel provided with a cylinder-cavity, a removable cylinder located in said cavity and having an interlocking detachable engagement with said barrel and having a portion which projects out of one end of the barrel and is shaped for the engagement of a tool for detaching the cylinder from the barrel, said cylinder having external grooves which together with said barrel form fluid-passages, a piston in said cylinder, a hollow head detachably secured to the projecting portion of the cylinder, and a valve inclosed in said hollow head, substantially as set forth.

2. The combination of a barrel, a cylinder removably screwed into said barrel and provided with grooves which with the barrel form fluid-passages, said cylinder having a portion which projects out of one end of the barrel and is provided with screw-threaded end and with a part shaped for the engagement of a tool for turning the cylinder, a valve-casing seated on the end of said cylinder, a valve in the valve-casing, a hollow head surrounding said valve-casing and screwed on the projecting threaded end of said cylinder, said valve-casing being held in place by said hollow head, and a piston in the cylinder, substantially as set forth.

3. The combination of a cylinder, a piston in said cylinder, a hollow head provided with a supply-passage for the motive fluid, a valve-casing located in said head at the end of said cylinder and forming a distributing-chamber between the end of the valve-casing and the adjacent end of the head, which distributing-chamber communicates with said supply-passage in the head, a longitudinally-disposed valve-chamber in said valve-casing having an annular enlargement, a solid valve movable longitudinally in said valve-chamber and having an enlarged portion located in the enlargement of said valve-chamber, said valve-casing having longitudinal passages connecting said distributing-chamber with opposite ends of said valve-chamber, additional longitudinal passages connecting said distributing-chamber with one end of the valve-chamber, and a plurality of longitudinal passages connecting said last-mentioned end of the valve-chamber with the adjacent end of the cylinder, said valve-casing and cylinder having passages controlled by said valve for admitting and exhausting motive fluid to and from opposite ends of the cylinder, substantially as set forth.

4. The combination of a cylinder, a piston therein, a head, a valve-casing located in said head at one end of said cylinder and provided with a valve-chamber disposed longitudinally relative to said cylinder and having reduced opposite end portions and an enlarged intermediate portion, a solid valve movable longitudinally in said valve-chamber and having reduced opposite end portions working in the end portions of said valve-chamber and an annular enlargement working in the enlarged intermediate portion of said valve-chamber,

fluid-passages in said valve-casing connecting with the opposite end and intermediate portions of said valve-chamber, passages connecting the adjacent ends of said valve-chamber and cylinder, a passage connecting the far ends of said cylinder and valve-chamber, a port connecting said passage with the enlarged portion of said valve-chamber, a passage connecting the intermediate portion of said cylinder with the far end of the valve-chamber and with the enlarged portion of the valve-chamber beyond the annular enlargement of said valve, exhaust-passages in said cylinder, and exhaust-passages leading from said valve-chamber, substantially as set forth.

5. The combination of a cylinder, a piston in said cylinder, a hollow head provided with a supply-passage for the motive fluid, a valve-casing located in said hollow head and provided in one end with a recess forming a distributing-chamber communicating with said supply-passage in said head, a valve-chamber disposed longitudinally in said valve-casing and having an enlarged intermediate portion, a solid valve having an annular enlargement movable longitudinally in said valve-chamber for controlling the admission and exhaust of the motive fluid to and from said cylinder, said valve-casing having passages connecting said distributing-chamber in its end with the opposite ends of said valve-chamber, and passages connecting the opposite ends and intermediate portion of the valve-chamber with the opposite ends and intermediate portion of said cylinder, and exhaust-passages leading from said cylinder and valve-chamber, substantially as set forth.

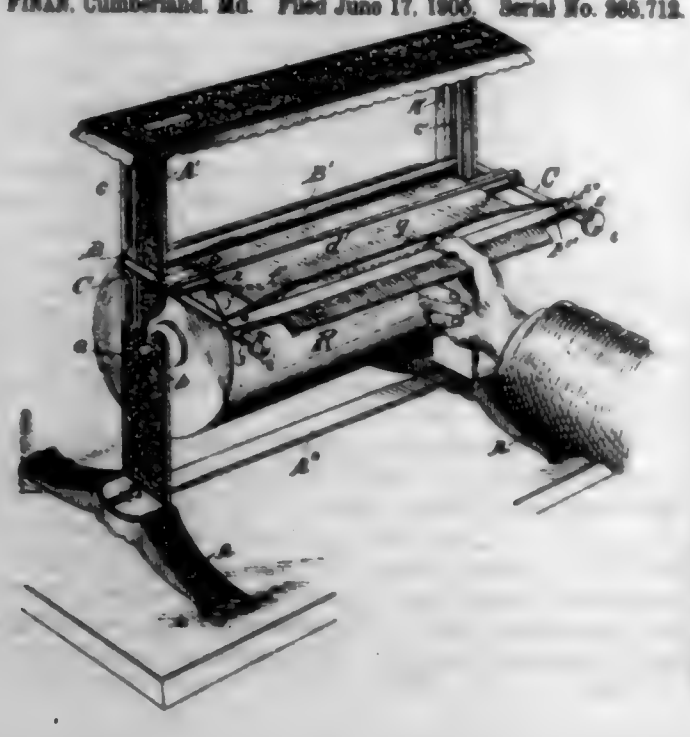
6. The combination of a cylinder, a piston in said cylinder, a hollow head provided with a supply-passage for the motive fluid, a valve-casing located in said hollow head and provided in one end with a recess communicating with said supply-passage, a longitudinally-disposed valve-chamber in said valve-casing having different diameters, a solid valve having parts of different diameters movable longitudinally in said valve-chamber and controlling the operation of the engine, and longitudinal passages in said valve-casing connecting said recess in the end of the valve-casing with opposite ends of said valve-chamber, substantially as set forth.

7. The combination of a hollow head, a body having a screw-threaded engagement with said hollow head, a locking-block confined in a recess in one of the said parts and movable toward the threaded portion of said other part, and a wedge for forcing said locking-block against said threaded portion, substantially as set forth.

8. The combination of a head having a cavity provided with an internal screw-thread, a threaded body screwed into said cavity, a locking-block confined in a recess in said head, and a wedge for forcing said locking-block against said threaded body, substantially as set forth.

9. The combination of a head having a cavity provided with an internal screw-thread, a threaded body screwed into said cavity, a locking-block confined in a recess in said head and having teeth adapted to engage said threaded body, a wedge confined in a recess in said head, and bearing against said locking-block and having a screw-thread stem, and a nut screwed on said stem and bearing against said head to move said wedge endwise to force said locking-block against said threaded body, substantially as set forth.

814,598. ROLL-PAPER HOLDER AND CUTTER. JOHN F. FINAN, Cumberland, Md. Filed June 17, 1905. Serial No. 265,712.

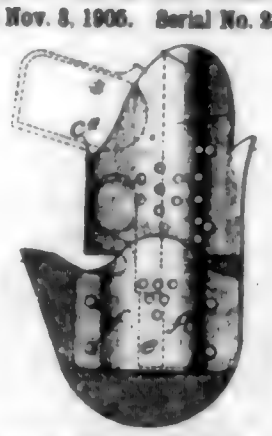


Claim.—1. A roll-paper holder and cutter, comprising a pair of vertical standards having bearings for the roll of paper and formed with external vertical guides on their outer faces, separate sliding blocks arranged outside the standards and sliding in the guides, and horizontal arms fixed to said blocks and bearing yielding cutting devices substantially as described.

2. A roll-paper holder and cutter comprising a pair of vertical standards having bearings for the roll of paper and formed with external vertical guides on their outer faces, and internal vertical guides on their inner faces, separate sliding blocks arranged outside the standards and sliding in the guides, horizontal arms fixed to said blocks and bearing yielding cutting devices, and a brake-rod arranged with its ends in the inside guides of the standards and resting upon the roll of paper as described.

3. A roll-paper holder comprising the two feet A A having cross-bar A^3 connecting them, the upright standards A′ A′ with bearings for the paper-roll and having inside and outside vertical guides, the slotted cross-bar A^3 connecting the tops of the standards, the separate blocks B sliding in the outside guides of the standards and having rigid arms carrying yielding cutting devices and a roller-brake rod B′ having its ends arranged in the inside guides of the standards and resting upon the roll of paper substantially as described.

814,599. POCKET-HOLDER FOR WEAPONS. OTTO FREYER, Chicago, Ill. Filed Nov. 3, 1905. Serial No. 286,436.

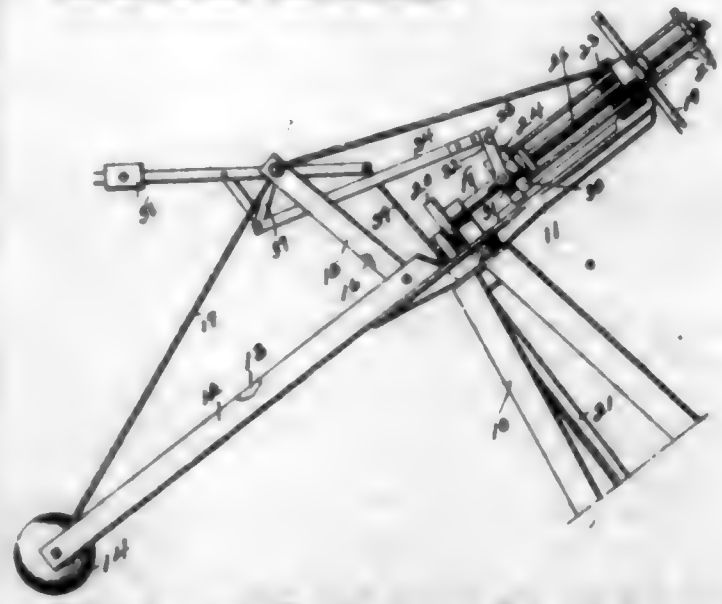


Claim.—1. A pistol-holder having a back plate, pistol-holding means secured to the upper portion of the back plate, and outwardly-turned stops integral with the back plate.

2. A pistol-holder having a back plate, pistol-holding means secured to the upper portion of the back plate, and outwardly-turned stops integral with the back plate on opposite sides thereof.

3. A blank for forming the pistol-holder, comprising an upper part formed in two similarly-shaped portions connected at their lower ends and provided with outwardly-projecting stops, and a lower portion provided with an outwardly-projecting stop.

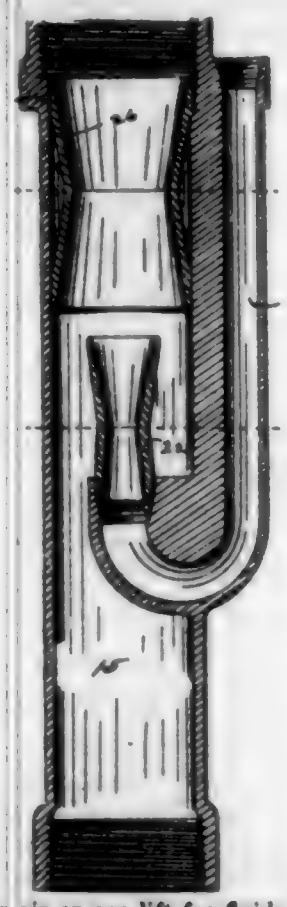
814,600. WINDMILL. PHILEMON H. HANCHETT, Fairbury, Nebr. Filed Jan. 18, 1905. Serial No. 241,606.



Claim.—In a windmill of the class described, a shaft mounted horizontally, a wind-wheel rigidly mounted on said shaft, pitman-driving mechanism on said shaft, an umbrella-spider loosely mounted on the outer end portion of said shaft, a follower-head formed in two parts adapted to embrace said shaft and mounted on and feathered to and arranged for longitudinal movement on and rotation with said shaft, said follower-head located between the wind-wheel and

the pitman-driving mechanism, means for connecting the members of the follower-head, rods connecting the follower-head and the umbrella-spider, said rods arranged on opposite sides of the shaft and extending through the hub of the wind-wheel, and means for shifting said follower-head longitudinally of said shaft.

814,601. AIR OR GAS LIFT FOR FLUIDS. Walter B. Harris, Indianapolis, Ind., assignor to Harris Air Pump Company, Indianapolis, Ind., a Corporation of Indiana. Filed Sept. 28, 1904. Serial No. 226,721.



Claim.—1. In an air or gas lift for fluids, a flow-pipe for the fluid with the passage-way therethrough contracted at one point and flaring in both an upward and a downward direction from said contracted portion, and a compressed-air tube entering the flow-pipe and turned in the direction of the flow therein with the vent thereof located immediately below the lower flaring portion of the passage-way through said flow-pipe, the passage-way through said air-tube being contracted near the vent and flaring from the contracted portion of the passage-way through the air-tube to said vent, said flow-pipe being enlarged about the air-tube so that the dimensions of the flow-pipe will be substantially uniform

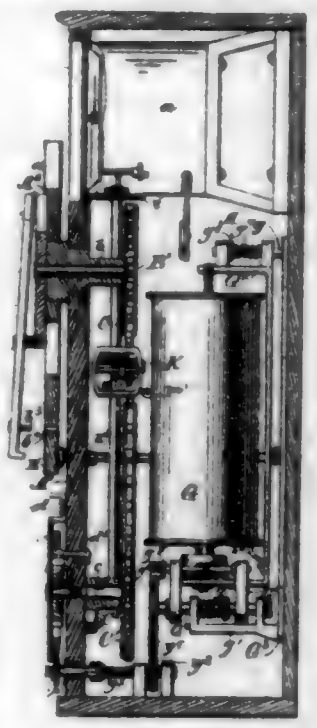
2. In an air or gas lift for fluids, a flow-pipe for the fluid having its passage-way contracted at one point, and a compressed-air tube entering the flow-pipe and turned in the direction of the flow therein with its vent located immediately below said contracted portion of the flow-pipe, said air-tube being contracted near its vent, the contraction in the air-tube and flow-pipe being in substantially the same ratio.

3. In an air or gas lift for fluids, a flow-pipe for the fluid with its passage-way contracted at one point and flaring both upward and downward from said point, and a compressed-air tube entering said flow-pipe and turned in the direction of the flow therein with its vent immediately below the lower flaring portion of the passage-way in the flow-pipe, the transverse area of said air-tube at the vent having less than one-half the transverse area of the passage-way through the flow-pipe, the contracted portions of said flow-pipe and air-tube having their transverse areas reduced in subetantially the same ratio.

4. In an air or gas lift for fluids, an ejector with a passage-way therethrough for the flow of the fluid that is internally threaded near its upper end, a sleeve externally threaded near its upper end that is adapted to fit snugly into said passage-way and which is contracted between its ends, an air-tube entering said passage-way in the ejector and turned in the direction of the flow of the fluid therein and substantially in the center of the passage-way and internally threaded, and a nozzle adapted to screw into said air-tube with its vent immediately below said sleeve, said nozzle being contracted between its ends, the wall of said ejector being enlarged about the air-tube so that the dimensions of the passage-way through the ejector may be substantially uniform.

5. In an air or gas lift for fluids, an ejector with a passage-way therethrough for the flow of the fluid that is internally threaded near its upper end, a sleeve externally threaded near its upper end that is adapted to fit snugly into said passage-way and which is contracted between its ends, an air-tube entering said passage-way in the ejector and turned in the direction of the flow of the fluid therein and substantially in the center of the passage-way and internally threaded, and a nozzle adapted to screw into said air-tube with its vent immediately below said sleeve, said nozzle being contracted between its ends with the transverse area of the vent greater than the transverse area of the main portion of the air-tube the wall of said ejector being enlarged about the air-tube so that the dimensions of the passage-way through the ejector may be substantially uniform.

814,602. WORKMAN'S TIME-RECORDER. Daniel Hepp, Chicago, Ill. Filed Jan. 31, 1906. Serial No. 243,480.



Claim.—1. In a time-recorder, a manually-revoluble record-sheet-carrying cylinder, a horizontally-movable frame for supporting the cylinder, means adapted to engage the frame and move the cylinder carried thereby toward the front, springs for moving the frame rearward, a casing having at its front a swinging door, vertical guide-bars and a dial carried by the door, a sprocket-wheel actuated by the dial, time-imprinting mechanism in movable engagement with the guide-bars and a chain which engages the sprocket-wheel and to which is attached the time-printing mechanism, substantially as shown.

2. In a time-recorder, a casing having a swinging door, a rotary record-sheet support mounted upon a frame which is movable manually toward the door, a printing mechanism and means for raising and lowering the same carried by the door, and externally-operated means for bringing the record-sheet and the printing mechanism together, substantially as shown.

3. In a workman's time-recorder, a casing having a swinging door, a pointer, a dial-plate having a plurality of numbers thereon, a sprocket-wheel movable by the pointer, guide-bars having a printing mechanism in sliding engagement therewith, a chain connecting the printing mechanism with the sprocket-wheel, such parts being carried by the swinging door of the casing, a record-cylinder and means for moving the record-cylinder toward the printing mechanism, for the purpose set forth.

4. In a time-recorder, a casing having a swinging door, printing mechanism attached to the door and driven synchronously with a time-indicator, a setting-dial carried by the door, means for placing said dial in gear with a record-cylinder when the door is closed, a record-cylinder mounted on a movable frame and means for effecting a movement of the record-cylinder against the printing-wheel of the printing mechanism.

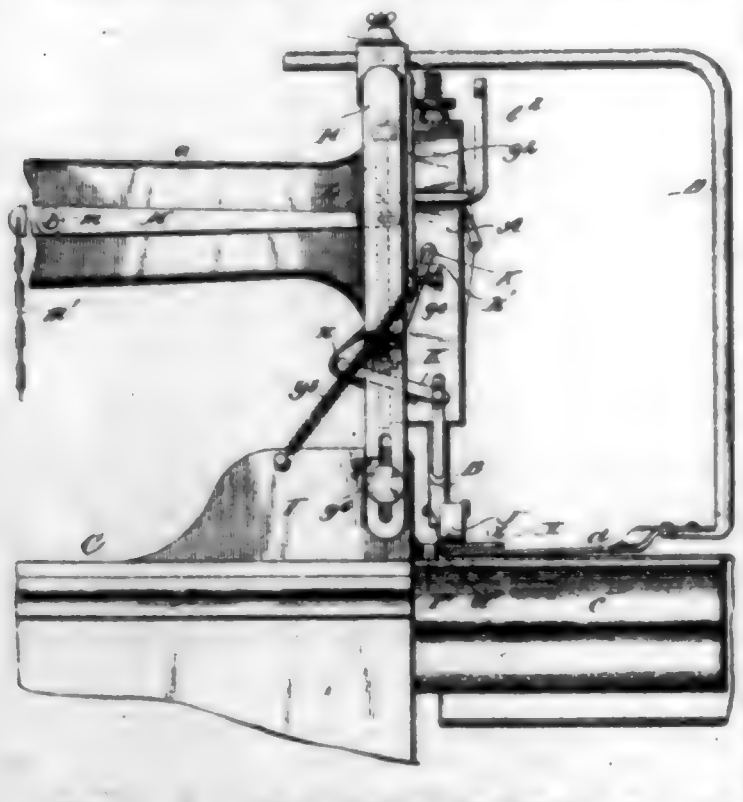
5. In a workman's time-recorder, the combination of the following instrumentalities, a number-plate, a pointer movable over the same and connected to a sprocket-wheel, guide-bars upon which a printing mechanism is maintained in sliding engagement, a sprocket-wheel below the sprocket-wheel attached to the pointer, chains which engage the sprocket-wheels and are attached to the printing mechanism, a movable frame supporting a record-cylinder, means

for moving the record-cylinder toward the printing mechanism, a dial or index-wheel, means for turning the same, the turning means also engaging means for turning the record-cylinder, substantially as shown and for the purpose set forth.

6. In a workman's time-recorder, the combination with time mechanism, of a casing having at its front a swinging door, guide-shafts attached to the inner side of the door, printing mechanism mounted on the shafts, a pointer adapted to be manually operated to change the position of the printing mechanism on the guide-shafts, imprinting-wheels for the printing mechanism which are geared to be in synchronism with the time mechanism, a record-cylinder within the casing, gears connecting the record-cylinder with a dial or index-wheel, and a push-button for effecting a movement of the record-cylinder toward the printing mechanism.

7. In a workman's time-recorder, the combination of a casing having a hinged door for carrying printing mechanism and vertically-maintained guide-bars, a time mechanism connected to one of the guide-bars to turn the same and impel the printing-disks of the printing mechanism, a movable pointer for raising and lowering the printing mechanism, a revoluble cylinder which is adapted to carry a record-sheet, externally-operated means for turning the cylinder and other externally-operated means for moving the cylinder toward the printing mechanism.

814,603. BLINDSTITCHING SEWING-MACHINE. Frederick Herman, Lincoln, Nebr. Filed Feb. 2, 1904. Serial No. 191,646.



Claim.—1. In a sewing-machine for blindstitching, the combination with a stationary cloth-guide arranged on the bed-plate and alongside the needle, of a yielding cloth-guide arranged opposite the stationary guide and outside the same, a needle arranged between the two guides, the yielding guide having a bearing-point adjacent to the needle and sloping away from the line of feed in front of the needle or on the operator's side of the machine, and yielding means for holding the cloth down while being operated upon, substantially as described.

2. In a sewing-machine for blindstitching, the combination with a stationary cloth-guide arranged on the bed-plate, a yielding cloth-guide opposite the stationary guide, a needle arranged between the two guides, the said yielding guide having a bearing-point which slopes away from the line of feed on the side of the needle that is farthest from the operator's side of the machine, substantially as described.

3. In a sewing-machine for blindstitching, the combination with a normally stationary cloth-guide, a movable cloth-guide arranged on the outer side thereof and farther from the base of the head of the machine, and lying substantially in the direction of the line of feed, a needle interposed between the two guides, and a presser-foot arranged adjacent to the needle and having a bearing or friction surface on the side which is farthest from the head of the machine, substantially as described.

4. In a sewing-machine for blindstitching, the combination with a fixed cloth-guide, a yielding cloth-guide having a rounded point and a needle interposed between such point and the fixed guide, a presser-foot arranged adjacent to the needle, both the presser-foot and movable guide being farther from the base of the head of the machine than the fixed guide and thus outside the latter, substantially as described.

5. In a sewing-machine for blindstitching, the combination with a stitch-forming mechanism, and a normally stationary guide, of a yielding guide working opposite the stationary guide and a presser-foot having a groove in its under side to receive said yielding guide, substantially as described.

6. In a sewing-machine for blindstitching, the combination with a stitch-forming mechanism, a yielding cloth-guide, and a normally stationary guide, of a presser-foot which is provided on the under side adjacent to the stationary guide and nearest to the base of the head of the machine with a groove arranged lengthwise of the presser-foot, for reception of the yielding cloth-guide, as described.

7. In a sewing-machine for blindstitching, the combination with stitch-forming mechanism including a reciprocating needle, of a normally stationary cloth-guide arranged on the bed-plate of the machine and having its working face formed of two parts arranged at an obtuse angle, a yielding cloth-guide having a rounded point which when in working position is adjacent to the angle of the stationary guide, the latter being nearer the base of the head of the machine than the yielding guide, and the needle interposed between the two guides whereby the yielding guide yields to the seams of the cloth and allows the seams to approach the needle so that the latter enters the turned edge of the cloth always at an equal depth or distance from the normally stationary cloth-guide.

8. In a sewing-machine for blindstitching, the combination with a stationary cloth-guide, a yielding cloth-guide arranged adjacent to, but outside, the said stationary guide and thus farther from the base of the head of the machine, a needle interposed between the two guides and a presser-foot arranged adjacent to the needle and having its adjacent under side cut away to receive the movable cloth-guide.

9. In a sewing-machine for blindstitching, the combination with a fixed cloth-guide, a yielding cloth-guide arranged adjacent to, but outside, the fixed guide and thus farther from the base of the head of the machine, a needle arranged to work between the two guides and having a point which is at one side of the longitudinal axis of the needle and on the side toward the base of the head of the machine, substantially as described.

10. In a sewing-machine for blindstitching, the combination with a stationary cloth-guide and stitch-forming mechanism including a reciprocating needle, of a yielding cloth-guide located outside the stationary guide or farthest from the machine-head, and serving as a cloth-carrier, and having a shank which is extended substantially in the direction of the line of feed and provided with a rounded bearing-point and a concave curve adjacent to said point on the side nearest the front of the machine, in order to facilitate feeding the goods, the apex of said point being adjacent to the needle, substantially as described.

11. In a sewing-machine for blindstitching, the combination with a movable guide, of a yielding cloth-guide having a rounded bearing-point, and a reciprocating needle arranged adjacent to said point, the point of said needle being out of line with the longitudinal axis of the same and on the side farthest from the point of the movable guide, substantially as described.

12. In a sewing-machine for blindstitching, the combination with a stitch-forming mechanism including a needle and a stationary cloth-guide, of the yielding cloth-carrying guide whose point is adapted to work opposite the stationary guide both guides being adjacent to the needle, a pivoted and swinging holder for the movable guide by which it is held in working position, and a set-screw forming an attachment of the holder and serving as an adjustable stop for arresting the movement of the movable holder relative to the needle, substantially as described.

13. In a blindstitch sewing-machine, the combination with a stitch-forming mechanism, a stationary cloth-guide, a movable cloth-guide and a presser-foot, of a lever under the control of the operator, and means connecting it with the movable cloth-guide and the presser-foot whereby the operation of said lever raises the presser-foot to the required height and holds it substantially at rest while acting on the movable cloth-guide, substantially as specified.

14. In a sewing-machine for blindstitching, the combination, with stitch-forming mechanism, a stationary cloth-guide and a presser-foot having a bottom recess, of a yielding, cloth-carrying guide whose free end projects, when in normal working position, into said recess in the presser-foot, and lies adjacent to the said stationary cloth-guide, it being adapted to yield laterally away from the

stationary guide and the base of the head of the machine, substantially as described.

15. In a sewing-machine for blind-stitching the combination with stitch-forming mechanism, a stationary guide, a yielding cloth-carrying guide, a needle constituting an element of the stitch-forming mechanism interposed and adapted to work between the two guides, and yielding means for holding down the work while being operated on, substantially as described.

16. In a sewing-machine for blindstitching, the combination with a suitable stitch-forming mechanism, and a normally stationary guide, of the movable cloth-guide having a lower horizontal portion adapted to work opposite the stationary guide, a rocking holder for such movable guide, in which the latter is adjustable for varying the distance between the working point and the stationary guide, and a device for clamping the movable guide in any adjustment, substantially as described.

17. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, and a normally stationary cloth-guide, of a movable cloth-guide whose lower portion is adapted to work opposite the stationary guide for pressing the cloth against the same, and a support and holder for the movable guide which is adjustable vertically, substantially as described.

18. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, and a normally stationary cloth-guide, of a movable cloth-guide adapted to work opposite the stationary one, a rocking holder for the same, a vertical bar upon which the rocking holder is mounted, and means for adjusting such holder higher or lower substantially as described.

19. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, and a normally stationary cloth-guide, of a movable cloth-guide, a rocking holder for the same, a vertical support on which such holder is mounted, a rigid arm pendent from the holder, a set-screw passing through the free end of such arm and bearing upon the aforesaid support for the rocking holder and a retracting-spring connected with the said arm, and a fixed portion of the machine, substantially as and for the purpose specified.

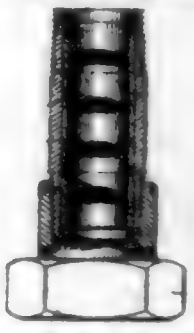
20. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, a vertically-movable presser-foot, a stationary cloth-guide, and a movable cloth-guide adapted to work opposite the stationary guide, of an angular lever having one of its arms connected with the presser-foot and its other arm having an obtuse angular portion and provided with a slot extending longitudinally of the arm and past the angle thereof, a vertically-slidable bar having a pin adapted to work in the obtuse-angle slot, an arm connected with said rod and adapted to engage the movable cloth-guide, and means under the control of the operator for raising the slidable bar whereby the presser-foot is first raised and then the movable cloth-guide, substantially as described.

21. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, a normally stationary cloth-guide, a vertically-movable presser-foot, and a movable cloth-guide whose lower horizontal portion is adapted to work opposite the stationary guide for pressing the cloth against the latter, and a rocking support for the movable guide, of an angular lever pivoted to a fixed portion of the machine, one arm thereof being connected with the presser-foot and the other having an obtuse angular portion, a movable device which is operatively connected with such obtuse angular arm and provided with a member adapted to engage the movable cloth-guide for raising the same out of normal working position, a spring for retracting the movable cloth-guide, and a lever pivoted to the arm of the machine and operatively connected with the aforesaid device, said lever being under the control of the operator, whereby he may raise first the presser-foot and then the movable cloth-guide when the work is to be removed or adjusted, substantially as described.

22. In a sewing-machine for blindstitching, the combination with suitable stitch-forming mechanism, including a vertically-reciprocating needle, a normally stationary cloth-guide, a presser-foot having the portion which is directly opposite the vertically-reciprocating needle rounded or sloped backward on its upper side, and the under portion provided with a groove extending lengthwise of the presser-foot and opening on the side adjacent to the stationary guide, of the movable cloth-guide having a horisontal shank adapted to swing into and lie in the groove of the presser-foot, substantially as described.

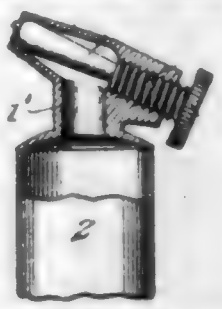
23. The improved blindstitching attachment for a sewing-machine proper, comprising an angular plate adapted to be secured upon the bed-plate of the sewing-machine, an adjustable cloth-guide attached to and supported upon such angular plate, means for adjusting and clamping such guide, a vertical bar attached to the vertical member of the angular plate, a rocking device mounted thereon, a movable cloth-guide supported and held in said device, a rigid arm which is pendent from said device, and a spiral spring connecting said arm with the angular plate for holding the movable cloth-guide in normal position when in use, substantially as described.

814,604. GAS-PRESSURE REGULATOR AND GOVERNOR. Robert Hillis, East Orange, N. J., and William J. Hillis, New York, N. Y. Filed May 4, 1905. Serial No. 258,753.



Claim.—The herein-described gas regulator and governor, the same being composed of an outer imperforate cylindrical tube-section having threaded ends, an inner removable imperforate cylindrical tube-section, a series of perforated and concaved disks of equal diameters located in the inner tube-section and frictionally held in place therein, the perforations in the disks varying both in size and in number from the beginning to the end of the series, and threaded unions for removably coupling the device with a meter and with a gas service-pipe, substantially as shown and described.

814,605. COLLAPSIBLE TUBE. Forrest C. Holly, Vance City, Miss. Filed Feb. 18, 1905. Serial No. 246,399.



Claim.—1. A collapsible tube having a neck formed with a bore having a smooth portion and a threaded portion, one end of the smooth portion being contracted to form a valve-seat, a valve having a smooth portion provided with an eccentrically-located projection and disposed in the smooth portion of the neck, and a threaded portion to fit the threaded portion of the neck, and a passage communicating with the smooth portion of the bore of the neck at an angle thereto.

2. A collapsible tube having a neck formed with a bore having a contracted valve-seat, a valve fitted into said bore and having an eccentrically-disposed projection for the purpose specified.

3. A collapsible tube having a neck, a valve-seat, and a valve angularly disposed with respect to the neck, and provided with an eccentrically-located projection.

814,606. DAVENPORT. Frank A. Jacob, Indianapolis, Ind., assignor to Francis P. Bailey, Indianapolis, Ind. Filed Aug. 11, 1904. Serial No. 220,477.



Claim.—1. In a davenport, the combination, of the main frame, the end gates hinged thereto, and the swinging bed member, of a pair of levers 20, a link connecting each lever with the adjacent end gate, an arm carried by said swinging bed member adjacent each lever for engaging and swinging the lever.

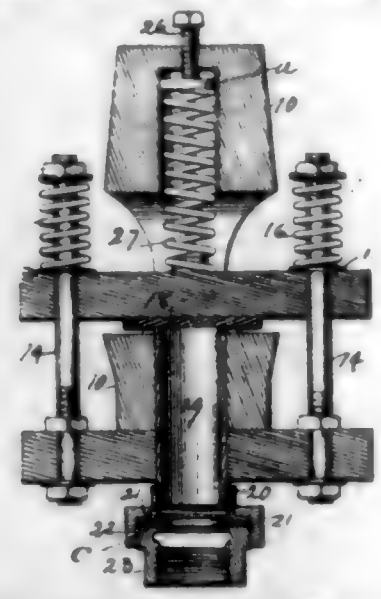
2. In a davenport, the combination, of the main frame, the end gates hinged thereto, and the swinging bed member, of a pair of levers 20, a link connecting each lever with the adjacent end gate, an

arm carried by said swinging bed member adjacent each lever for engaging and swinging the lever, a rock-shaft mounted on the main frame, a pair of catches carried by said rock-shaft and adapted to engage the end gates when in their folded position, and means for rocking said shaft to release the gates.

3. In a davenport, the combination, with a main frame, end gates hinged thereto, and the swinging bed member, of a pair of levers 20 each having a toothed end 20′, a connection between each of said levers and the adjacent end gate, and a pair of arms carried by the swinging bed member each of said arms being provided with a short finger and a long finger between which the end 20′ of the adjacent lever 20 may be engaged, substantially as and for the purpose set forth.

4. In a davenport, the combination with a main frame, end gates hinged thereto, and the swinging bed-frame mounted therein, of a driving element arranged in the lower part of the main frame, intermediate connection between said driving element and an end gate whereby operation of the driving element will swing the connected end gate, and means carried by the lower edge of the swinging bed-frame for engaging and moving said operating member during the short portion of the swing of the bed-frame immediately adjacent its vertical position.

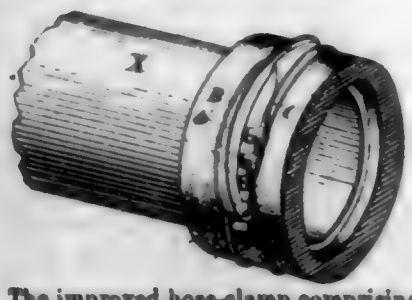
814,607. SAFETY ATTACHMENT FOR WINDMILL-PUMPS. Andrew Jensen, Exira, Iowa. Filed Apr. 24, 1905. Serial No. 257,774.



Claim.—1. In a safety-valve for windmill-pumps, a frame that has a bore in its lower end portion and a transverse opening at its center, an open-ended tube fitted in the bore, a spring-actuated cross-bar extended through the opening and a leather disk fixed to the under side of the bar to close the top of the tube in the manner set forth, for the purposes stated.

2. In a safety-valve for windmill-pumps, a frame that has a bore in its lower end portion and a transverse opening at its center, an open-ended tube fitted in the bore, a spring-actuated cross-bar extended through the opening and a leather disk fixed to the under side of the bar to close the top of the tube, an extension fixed to the lower end of the tube and provided with an exterior flange at its lower end and a pipe-coupling adjustably connected with the flanged extension by a collar having an internal flange at its top and an internal screw in its lower portion, in the manner set forth, for the purposes stated.

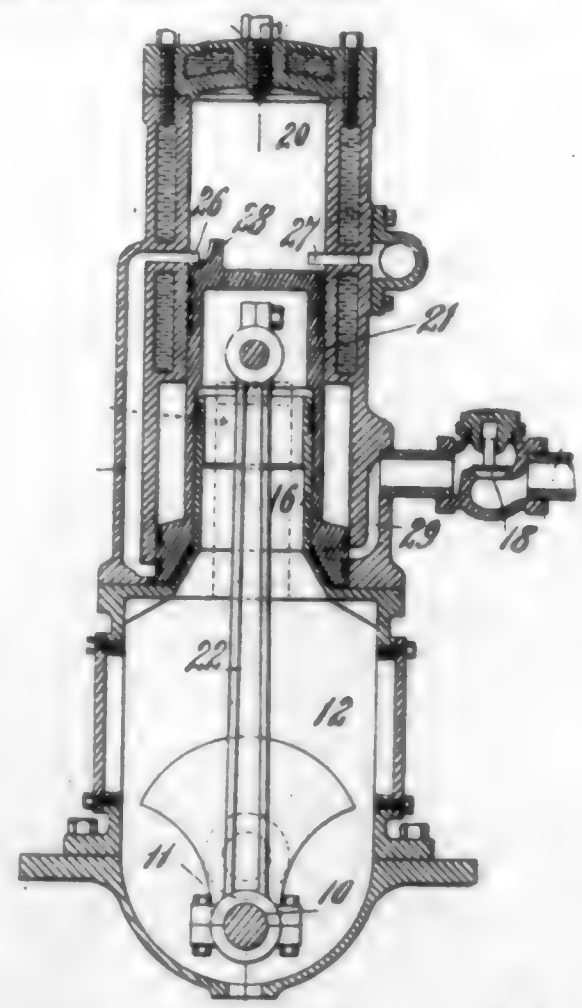
814,608. HOSE-CLAMP. John E. Johnson, New Paynesville, Minn., assignor of one-third to Johan Martin Dalhaug, New Paynesville, Minn. Filed Mar. 28, 1906. Serial No. 308,534.



Claim.—1. The improved hose-clamp comprising a flexible tie, a curved lever pivoted to the tie adjacent to one end of the latter and having a series of hooks on its inner side, the opposite end of the tie being provided with a loop adapted to engage such hook, and the end of the tie to which the lever is pivoted being extended beyond the point of pivotal attachment of the lever whereby it is adapted to serve as a shield in the manner shown and described.

2. The improved hose-clamp comprising a sheet-metal band having near one end a narrow tongue formed by slitting and slotting the band, such tongue being turned back and riveted, a lever pivoted to the loop formed by said tongue and adapted for engagement with the opposite end of the band, the band being extended beyond the pivotal attachment of the lever to form a shield for the hose in the manner described.

814,609. GAS-ENGINE. Elwin C. Kavanagh, Holyoke, Mass. Filed May 17, 1904. Serial No. 208,400.



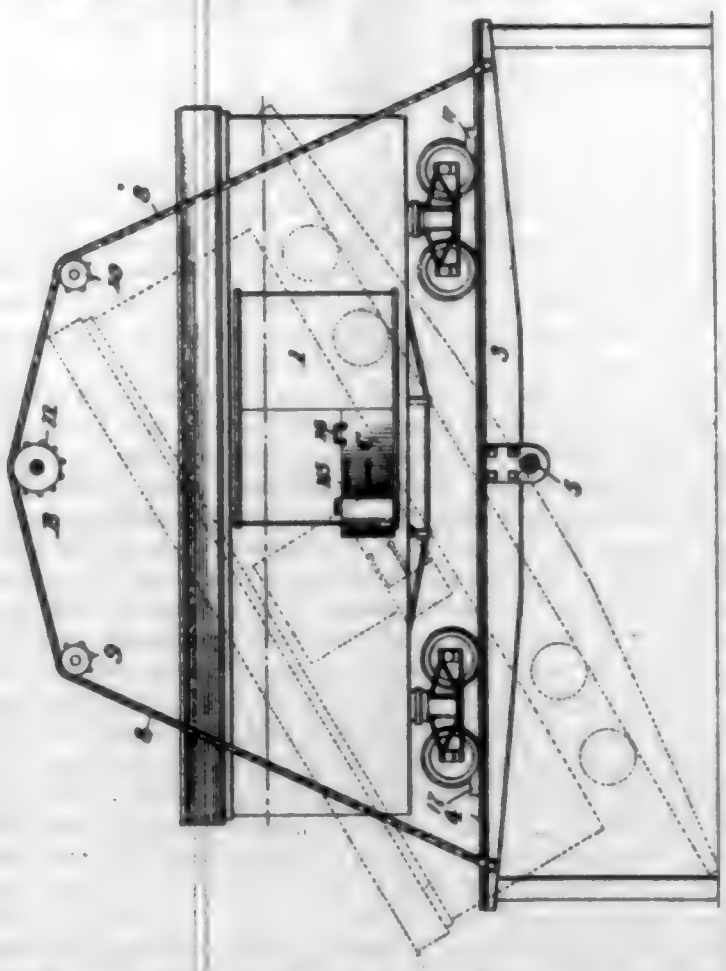
Claim.—1. In a gas-engine, the combination with a cylinder having the cylinder-chamber formed with portions of different diameters, and a piston working therein and formed with a flange or enlargement corresponding to the cylinder portion of the larger diameter, a gas-supply inlet entering one end of the larger cylinder portion, a conduit leading from the lower end portion of the larger cylinder portion into the smaller cylinder portion, and an air-relief leading from a portion of the larger cylinder-chamber, above the piston enlargement downwardly to communication with the crank-inclosing portion of the engine-casing.

2. In a gas-engine, a crank-casing formed with a cylindrical dome, a cylinder secured to said casing, said cylinder comprising a working cylinder, and a compression-cylinder into the latter of which said dome extends whereby said cylinder is made annular in form, a working piston in the first-mentioned cylinder and an annular piston in the compression-cylinder, said annular piston being formed integral with the working piston, a gas-inlet to the compression-cylinder, a port by which the compressed charge passes from the compression-cylinder to the working cylinder, the outlet of said port being so located as to be closed by the working piston except when the latter is at the end of its working stroke, and an exhaust-port for the working cylinder disposed in alinement with the discharge-opening of said first-named port, the arrangement being such that the charge is compressed in the compression-cylinder during the outward stroke of the working piston, and delivered to the working cylinder at the end of said stroke.

3. In a gas-engine, a crank-casing having an opening in the wall thereof formed with a cylindrical dome, a cylinder secured to said casing, said cylinder comprising a working cylinder, and a compression-cylinder into the latter of which said dome extends whereby said cylinder is made annular in form, the dome forming the inner wall thereof, a hollow piston surrounding said dome and in sliding contact therewith, said piston formed at one end to constitute the

piston for the working cylinder and at its opposite end to provide an annular piston for the compression-cylinder, a gas-inlet to the compression-cylinder, a port by which the compressed charge passes from the compression-cylinder to the working cylinder, the outlet of said port being so located as to be closed by the working piston except when the latter is at the end of its working stroke, an exhaust-port for the working cylinder disposed in alinement with the discharge-opening of said first-named port, the arrangement being such that the charge is compressed in the compression-cylinder during the outward stroke of the working piston, and delivered to the working cylinder at the end of the said stroke, and an air-relief pass communicating with the upper portion of the compression-cylinder and opening into the crank-chamber.

814,610. **CAR-DUMP.** CHARLES S. LEFFERTS, Council Bluffs, Iowa, assignor of one-half to Charles T. Peavey, Omaha, Nebr. Filed Apr. 8, 1905. Serial No. 254,599.



Claim.—1. The combination with a car having an opening in each side, of means for simultaneously guiding contents of said car to said openings when said car is tilted, and means for tilting said car, substantially as described.

2. The combination with a car having an opening in each side, of means for simultaneously guiding contents of said car to said openings when said car is tilted, and means for longitudinally tilting said car, substantially as described.

3. The combination with a car having opposite side openings of a V-shaped guide extending from one side of one opening to the corresponding side of the opposite opening, substantially as described.

4. The combination with a car having a side opening of a diagonal partition adapted to guide contents of said car to said opening when said car is tilted, said guide having an outwardly-turned portion near said opening for preventing spilling of the car contents, substantially as described.

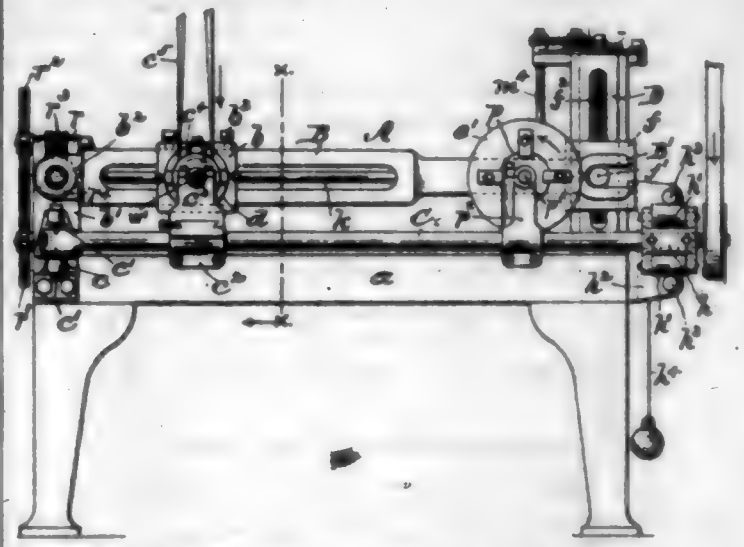
5. The combination with a car having opposite side openings of a V-shaped guide extending from one side of one opening to the corresponding side of the opposite opening and having outwardly-curved ends projecting beyond said openings, substantially as described.

6. The combination with a car having a side opening, of a V-shaped guide adapted to guide contents of said car to said opening, substantially as described.

7. The combination with a car having a side opening, of a diagonal guide secured to said car and adapted to guide contents of said car to said opening when said car is tilted, substantially as described.

8. The combination with a car having a plurality of side openings, of a V-shaped guide comprising a plurality of members secured to each other and to said car, and adapted to guide contents of said car to said openings when said car is tilted, substantially as described.

814,611. **DIE-ENGRAVING MACHINE.** ALBERT J. LOHREIDER, Providence, R. I., assignor to Rhode Island Automatic Machine Company, Providence, R. I., a Corporation of Rhode Island. Filed Apr. 10, 1905. Serial No. 255,430.



Claim.—1. In an engraving-machine of the character described, the combination of a mechanically-actuated swinging work-bar, revoluble pattern and work holders mounted thereon, a swinging tool-bar, a stylus and cutting-tool mounted on said tool-bar, and having the movements of said work and tool bars effected in planes at right angles to each other.

2. In an engraving-machine of the character described, a swinging non-revoluble work-bar, means for imparting angular movement to said bar, and revoluble pattern and work holders mounted thereon, in combination with a suitably guided and supported swinging tool-bar, a stylus and a revoluble cutter adjustably mounted on said tool-bar

3. In an engraving-machine of the character described, the combination of a pivotally-mounted swinging work-bar, pattern and work holders mounted on and carried by the bar, mechanism connected to and swinging in unison with said bar for rotating said holders, and a swinging cutter-carrying bar mounted to move perpendicular to the plane of movement of the said work-bar.

4. In an engraving-machine of the character described, a mechanically-operated swinging work-bar adapted to move in one plane, and revoluble pattern and work holders mounted on said bar, in combination with a swinging tool-bar mounted to move perpendicular to the plane of movement of the said work-bar, a stylus and a revoluble cutter adjustably mounted on said tool-bar and arranged to coact with said pattern and work holders, respectively, substantially as described.

5. In an engraving-machine of the character described, the combination with a swinging work-bar fulcrumed at one end and revoluble pattern and work holders mounted thereon, of a revoluble shaft for imparting a corresponding movement to said holders, said bar and shaft members being arranged to move or swing in unison with each other, means for rotating said shaft, and mechanism connected with and supporting the free end of the work-bar for swinging the latter in a circular arc, substantially as described.

6. In an engraving-machine of the character described, the combination of a work-bar pivoted at one end, pattern and work holders mounted thereon, and a movable carriage or cross-head supporting the other end of said bar, whereby the latter is adapted to swing through a circular arc.

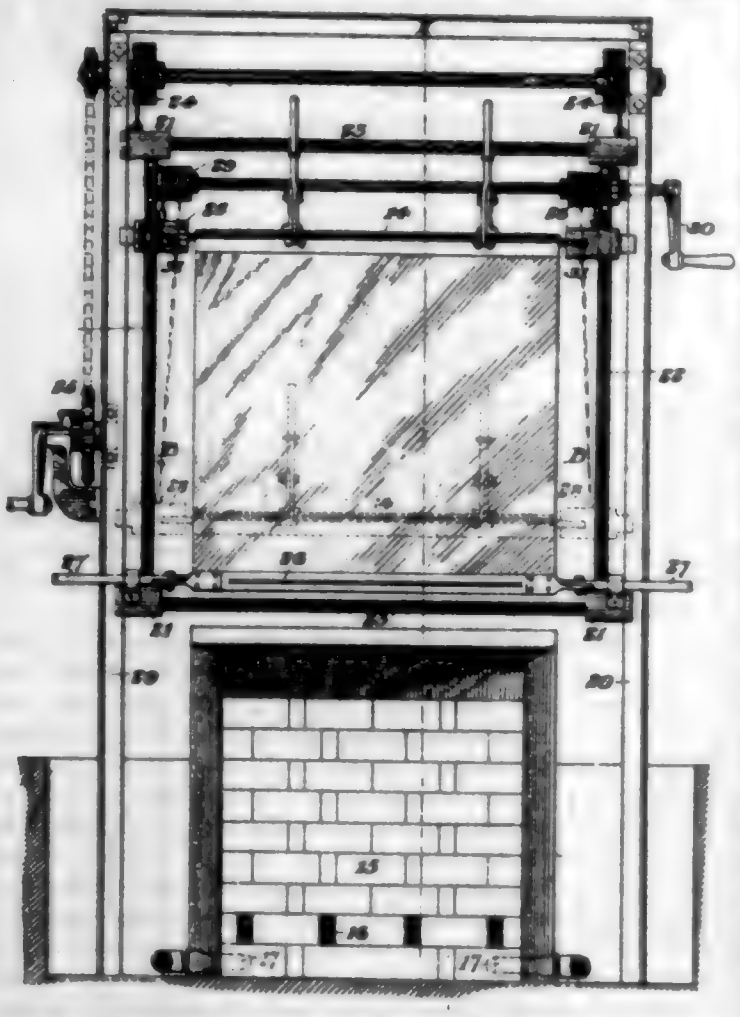
7. In an engraving-machine of the character described, the combination of a pivoted work-bar, a suitably-mounted revoluble shaft parallel therewith, means for simultaneously moving said bar and shaft in a circular arc, and a pivoted tool-bar arranged to swing perpendicular to the plane of movement of the said work-bar.

8. In an engraving-machine of the character described, the combination of a pivotally-mounted work-bar, a vertically-movable cross-head supporting the outer or free end of the bar for imparting a swinging movement to the latter, a pivoted tool-bar mounted to move perpendicular to the plane of movement of the work-bar, and rigidly-fixed members for supporting and guiding the free end of the tool-bar, substantially as described.

9. In an engraving-machine of the character described, the combination of a work-bar pivotally mounted at one end, a revoluble pattern-holder non-adjustably mounted in the opposite or free end portion of the bar, a revoluble work-holder adjustably mounted on the bar, mechanism for rotating said holders in unison, and means for slowly swinging the bar and its revoluble holders through a short circular arc.

10. In an engraving-machine of the character described, the combination of a pivoted work-bar, means for swinging said bar through a circular arc, pattern and work holders mounted on and movable with said bar, means operatively connected with said holders for revolving the latter while the bar is in any working position, a pivoted tool-bar mounted to move perpendicular to the plane of movement of the said work-bar, and stylus and cutting-tool members mounted on said tool-bar.

814,612. METHOD OF MAKING GLASS SHEETS. JOHN H. LUBARS, New Kensington, Pa. Filed Dec. 10, 1897. Serial No. 661,373.



Claim.—1. The method of making sheet-glass, consisting in drawing and elongating a slab of heated glass in its own plane by applying a pulling force to one end of the slab; substantially as described.

2. The method of making sheet-glass, consisting in drawing and elongating a glass slab in its own plane and upwardly by applying a pulling force to one end of the sheet, and heating it during the elongating; substantially as described.

3. The method herein described which consists in scooping out a body of glass from a furnace and depositing the same in the form of a slab and then stretching it in the plane of the slab; substantially as described.

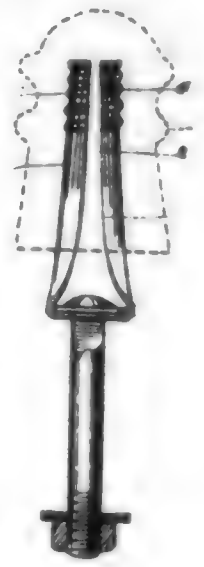
4. The method herein described which consists in scooping out a body of glass from a furnace, depositing the same in the form of a slab and shearing the ragged edge of said slab; substantially as described.

5. The method herein described which consists in scooping out a body of glass from a furnace, depositing the same in the form of a slab, shearing the ragged edge of the slab, and stretching the sheared slab into the form of a sheet; substantially as described.

6. The method of making sheet-glass, consisting in forming a glass slab or plate of plastic glass, and elongating the same by drawing it upwardly in a vertical direction; substantially as described.

7. The method of making sheet-glass, consisting in pulling upwardly in a vertical direction on a plate of plastic heated glass, and then carrying the sheet of stretched glass horizontally through an annealing-chamber; substantially as described.

814,618. INSULATOR-PIN. FRANK MACKRAS, Chicago, Ill. Filed Feb. 20, 1905. Serial No. 246,429.

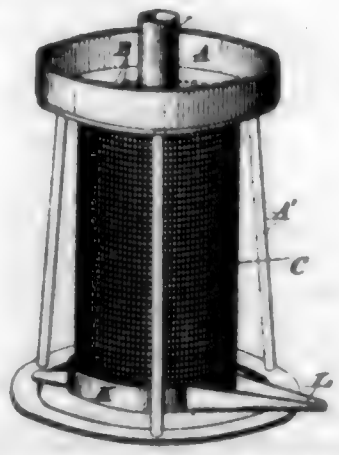


Claim.—1. An insulator-pin formed from a continuous strip of sheet metal, said strip having threads formed upon the ends thereof, the strip being folded upon itself forming a loop at its lower end, the threads upon the ends being brought into coincidence with each other, the threaded portions of the ends being so shaped as to present a cylindrical threaded portion upon which the insulator is mounted, for the purpose set forth substantially as described.

2. An insulator-pin formed from a continuous strip of sheet metal, said strip having threads formed upon the ends thereof, the strip being folded upon itself forming a loop at its lower end, said loop being formed with a flat rectangular base adapted to furnish a seat for the pin upon the cross-arm, said base having an opening in its center, a bolt or screw mounted therein to secure the pin to the cross-arm, the threads upon the ends being brought into coincidence with each other, the threaded portions of the ends being so shaped as to present a cylindrical threaded portion upon which the insulator is mounted, for the purpose set forth substantially as described.

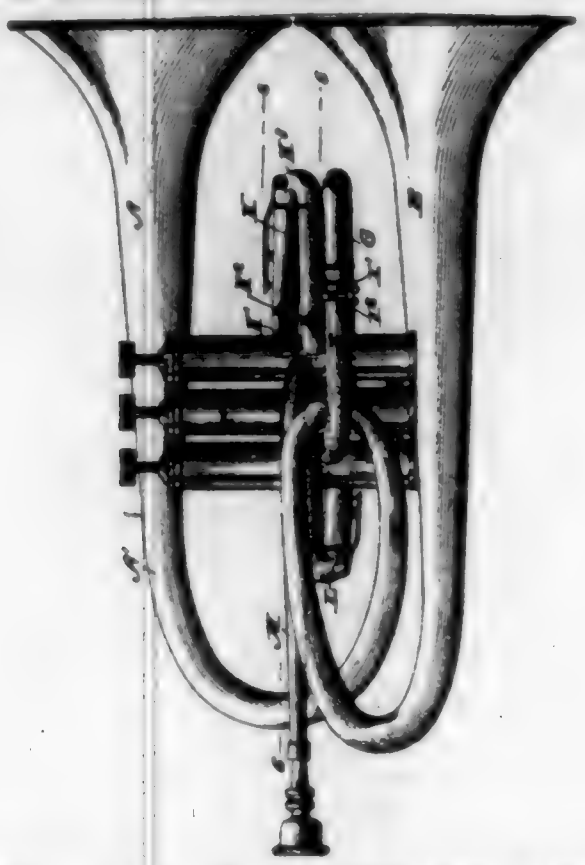
3. An insulator-pin formed from a continuous strip of sheet metal, said strip having threads formed upon the ends thereof, the strip being folded upon itself forming a loop at its lower end, said loop being circular in form and engaging a round cross-arm, said pin being held in place by the pressure exerted by the drawing together of the two ends of the metal strip when the insulator is screwed down upon the threaded ends thereof, the threads upon the ends being brought into coincidence with each other, the threaded portions of the ends being so shaped as to present a cylindrical threaded portion upon which the insulator is mounted, for the purpose set forth substantially as as described.

814,614. MILK-COOLER. GEORGE MATTESON, near Colvin, Ill. Filed June 23, 1904. Serial No. 213,904.



Claim.—The herein-described means to cool milk, or other liquids, comprising the cylindrical wire screen C, provided with a liquid-receptacle A on the top thereof, having holes B in the bottom thereof, so disposed therein as to drop the liquid therethrough directly upon the upper end of the wire screen; a bottom receptacle K to receive the liquid provided with a spout L; a centrally-mounted ice-receiving pan N in the top thereof; a liquid-receiving pan O disposed below the same and provided with a discharge-opening O' substantially as and for the purpose herein shown and described.

814,615. CORNET. Albert Meredith, Tahlequah, Ind. Ter. Filed Jan. 18, 1901. Serial No. 43,888.



Claim.—1. A cornet or like instrument having the usual three valves only and the first and second bells, the latter being connected with the second valve-casing and emitting the tone when the second valve is depressed and the first bell emitting the tone upon the depression of either the first or third valves or both without the second substantially as set forth.

2. A cornet or like instrument having the three valves, the first and third slides and the connecting-pipe between the first and third valve, the tuning-slide between the first and second valve, such slides and the connecting-pipe being bent on gradually-rounded curves, and the first and second bells leading from the second valve, the second bell being used in lieu of the usual second slide, and the mouth-pipe leading to the third valve-casing, such mouth-pipe and the communicating branch of the third slide opening into the casing practically on opposite sides thereof whereby to avoid sharp bends or angles substantially as set forth.

3. A cornet or like instrument provided with the usual bell and with the first, second and third valves only and with the first and third slides and also having in lieu of the second slide a second bell similar to the usual one, the tube of the second bell furnishing the length of the tube usually supplied by the second slide, and provided with a valve which when depressed directs the tone to discharge from the second bell, substantially as described.

4. A cornet or like instrument provided with the valves and their casings and having the first and third slides in connection with their respective valve-casings and gradually curved, the mouth-pipe leading to the third valve-casing and opening thereinto practically on the opposite side from the opening into the casing of the slide with which the mouth-pipe communicates, the usual bell, and the second bell connected with the second valve-casing in lieu of the usual second slide substantially as set forth.

5. A cornet or like instrument, having the three valves only and their casings and provided with the usual bell and with a second bell, both said bells being connected with the second valve-casing and lying in the same plane and in a plane parallel to that of the valve-casings, the second bell having its tubing extended to supply the length of tubing ordinarily supplied by the second slide for which the second bell is substituted, substantially as set froth.

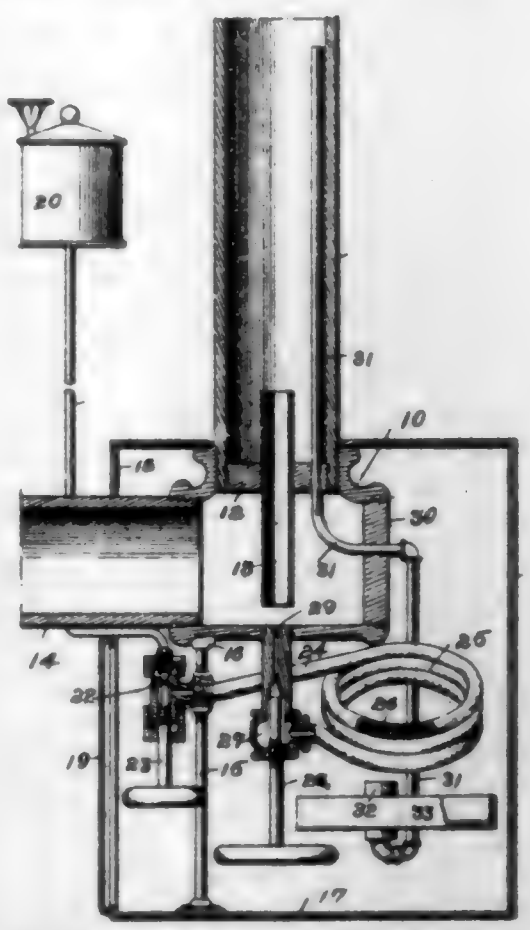
6. A cornet or like instrument substantially as described having three valves only and the corresponding first and third valves, and the mouthpiece leading to the third valve-casing, the usual first bell, and the second bell connected with the second valve-casing and having its tubing extended to supply the length of tubing ordinarily supplied by the second slide for which the second bell is substituted, substantially as set forth.

814,616. WINDOW. John L. Mahan, St. Louis, Mo. Filed May 8, 1905. Serial No. 259,343.

Claim.—In a window of the class described, a frame constructed of sheet metal and having the inner walls of the lower halves of the sides cut away to allow for the insertion of the sash when assembling the window, there being vertical grooves formed in the inner walls of the upper halves of said sides, insertible members fitted into the cut-away portions and having vertical grooves formed in their edges to coincide with the grooves in the sides of the frame, a lip integral with the lower end of each insertible member whereby the same is fastened to the window-frame; and sash fitted into the window-frame, which sash are provided with ribs on the sides of their stiles, and which ribs operate in the grooves formed in the sides of the frame and in the insertible members; and the adjacent faces of the meeting-rails of the sash being bent so as to form overlapping ribs having oppositely-arranged inclined faces which tend to draw the meeting-rails of the sash together when said sash are closed, substantially as specified.

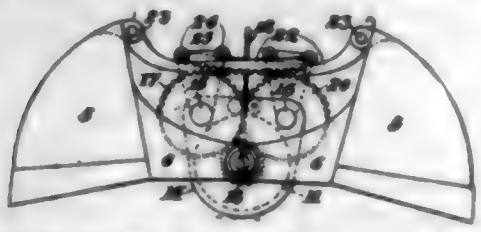


814,617. CARBURETER. Richard M. Mick, Bussey, Iowa. Filed June 1, 1905. Serial No. 263,293.



Claim.—An improved carbureter, comprising a T pipe-coupling, a supply-main screwed into one branch thereof, an air-pipe screwed into another branch thereof, a supporting-leg connected with the T pipe-coupling, a plug in the lower end of the supply-pipe, an open-ended tube supported by said plug, a hydrocarbon-supply pipe, a valve therein, said valve supported upon the said supporting-leg, a coil-pipe communicating with said valve, said coil inclined as set forth and filled with granular substance, a valve communicating with said coil and discharging into the T-coupling below said tube, a burner arranged below the coil, a pipe contained within the supply-main passed through the plug in the bottom thereof, a plug in the T-coupling having said pipe passed through it, a burner-pan supported upon said burner and a casing completely inclosing the burner, the coil and said valves and formed with a doorway to provide access to the interior thereof, as set forth.

814,618. DREDGING-BUCKET. CHARLES A. MORSE, Bloomfield, N. J., assignor to Hayward Company, New York, N. Y., a Corporation of New York. Filed Oct. 27, 1905. Serial No. 284,612.



Claim.—1. A sectional bucket provided with a power-shaft uniting the sections, a rack carried by each of said sections, and gears operated from the shaft cooperating with said rack to actuate the sections.

2. A bucket comprising sections pivoted upon a power-shaft to which said sections are pivoted, and mechanism for actuating said sections comprising drums fast on said shaft, a rope connected with each of said drums to impart power through the drum to the shaft, and means operated from said shaft for moving the sections around said pivot.

3. A bucket comprising a plurality of sections, a power-shaft connecting said sections, drums upon said power-shaft, an opening-rope and a hoisting-rope connected to the drums and adapted to operate said drums to actuate the shaft, a train of gears operatively connected to the shaft and actuated thereby, and racks secured to the sections and operated from said gears.

4. A bucket comprising a plurality of sections, a power-shaft connecting said sections, a plurality of ropes or lines for turning said shaft in opposite directions, a bearing supported from said shaft, a train of gears carried by said bearing, and rack mechanism connected to the bucket-section and designed to be actuated by the motion of said gear-wheel the power-shaft is operated by the ropes.

5. A bucket comprising a plurality of sections, a power-shaft connecting the same, gears actuated from said power-shaft, means meshing with said gears and connected to the bucket-sections, guide members for said gear-meshing means, and means for actuating the power-shaft.

6. A bucket comprising a plurality of sections, a power-shaft connecting the same, a plurality of drums of relatively different size fast on said power-shaft, a rope for operating each of said drums, and means connected to the sections and actuated from the power-shaft for actuating said sections.

7. A bucket comprising a plurality of sections, a shaft connecting said sections, a web for each of said sections, a segmental rack carried by said web, gears interposed between the power-shaft and the segmental racks for imparting motion from said shaft to said racks, and means including a plurality of lines for actuating the shaft.

8. A bucket comprising a plurality of sections having inwardly-extending arms or brackets, a power-shaft passing through said arms or brackets and connecting the sections, a plurality of ropes for turning said power-shaft in opposite directions, a rack member for each section, means for supporting said rack member, and a train of gearing interposed between the power-shaft and the rack members whereby motion is imparted from said shaft to the racks to swing said sections on the power-shaft as a pivot.

9. A bucket comprising a plurality of sections, a power-shaft connecting said sections and about which said sections are adapted to move, a plurality of ropes for actuating the power-shaft, guides for said ropes, and mechanism interposed between the power-shaft and the bucket-sections for actuating the latter.

10. The combination of an engine having a plurality of drums, a line connected to each of said drums at one end, a bucket formed of sections pivoted to a power-shaft, the other ends of the lines being connected to said shaft to actuate the latter, and rack-and-pinion members actuated from the power-shaft by movement of the lines when the engine-drums are operated, to raise and lower and actuate the bucket-sections.

814,619. NON-REFILLABLE BOTTLE. MERRITT W. PALMER, Hamilton, Mich., assignor of one-fourth to H. M. Parker, Hamilton, Mich. Filed June 16, 1905. Serial No. 265,433.

Claim.—1. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck and a pouring-aperture in one side of the neck, said shell adapted to fit in the bottle-neck, a valve-seat at the lower end of the shell, said valve-seat having a central pouring-aperture and a vent-aperture, a valve within the shell to seat on said valve-seat and close the apertures therein, a guard within the shell above the valve, and a cap above the shell, said cap having a pouring-aperture and a vent-aperture.



2. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck and a pouring-aperture in one side of the neck, said shell adapted to fit in the bottle-neck, a valve-seat at the lower end of the shell, said valve-seat having a central pouring-aperture and a vent-aperture, a valve within the shell to seat on said valve-seat and close the apertures therein, a guard within the shell above the valve, and a cap above the shell, said cap having a pouring-aperture and a vent-aperture, and means for closing said pouring and vent apertures.

3. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck and a pouring-aperture in one side of the neck, said shell adapted to fit in the bottle-neck, a valve-seat at the lower end of the shell, said valve-seat having a central pouring-aperture and a vent-aperture, a valve within the shell to seat on said valve-seat and close the apertures therein, a guard within the shell, a cap having a pouring-aperture and a vent-aperture, and a vent-pipe connected to the valve-seat and communicating with the vent-aperture therein and extending down into the bottle.

4. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck and a pouring-aperture in one side of the neck, said shell adapted to fit in the bottle-neck, a valve-seat at the lower end of the shell, said valve-seat having a central pouring-aperture and a vent-aperture, a valve within the shell to seat on said valve-seat and close the apertures therein, a guard within the shell above the valve, and a cap above the shell, said cap having a pouring-aperture and a vent-aperture, and means for positively holding the valve to its seat.

5. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck and a pouring-aperture in one side of the neck, said shell adapted to fit in the bottle-neck, a valve-seat at the lower end of the shell, said valve-seat having a central pouring-aperture and a vent-aperture, a valve within the shell to seat on said valve-seat and close the apertures therein, a guard within the shell, said cap having a pouring-aperture and a vent-aperture, and a vent-pipe connected to the valve-seat and communicating with the vent-aperture therein and extending down into the bottle, and means for positively holding the valve to its seat.

6. In a device of the character stated, the combination with a shell having a pouring-aperture at one end, a valve-seat secured to the shell at the other end, said valve-seat having a pouring-aperture, a buoyant valve held within said shell for seating on said valve-seat to close the aperture therein, of a cap adapted to be fitted above having a pouring-aperture and a vent-aperture, substantially as shown and described.

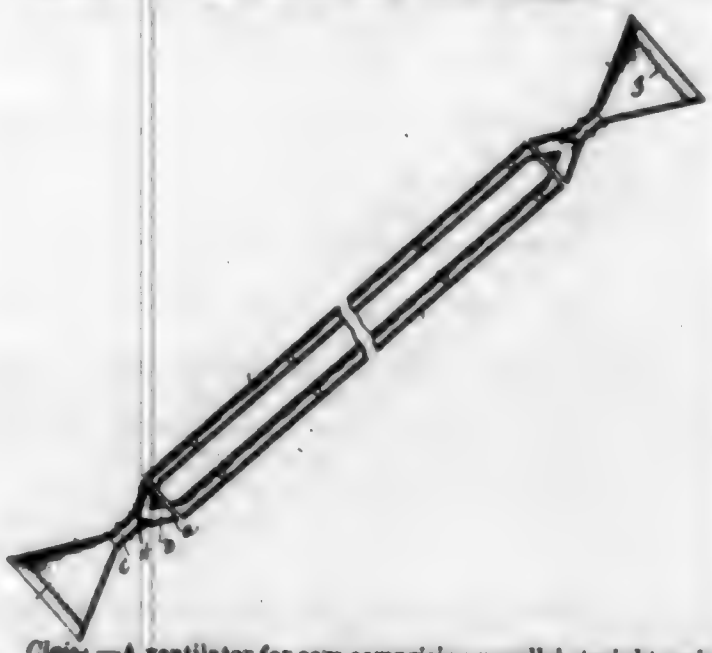
7. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck terminating in a beveled face, and having a pouring-aperture in one side of the tapering neck, said shell having a shoulder, and an internal annular groove at one end, a valve-seat forming a closure-plug for said grooved end of the shell and adapted to abut the shoulder thereof, said valve-seat having a convexed valve-engaging face and a central pouring-aperture, said valve-seat having a vent-aperture, a vent-pipe connected with said valve-seat and communicating with the vent-aperture therein and extending down into the bottle, a valve within the shell and having a concaved valve-seat-engaging face, a wire guard detachably held within the shell above said valve-seat to limit the movement of the valve, a hook member secured to said valve-seat, and means connecting with the valve and hook for positively holding the valve to its seat and a cap adapted to be fitted in the bottle-neck above the shell, said cap having a pouring-aperture and a vent-aperture, substantially as shown and described.

8. In a non-refillable bottle, the combination with a bottle, of a

tubular shell having an upper tapering neck terminating in a beveled face, and having a pouring-aperture in one side of the tapering neck, said shell having a shoulder, and an internal annular groove at one end, a valve-seat forming a closure-plug for said grooved end of the shell and adapted to abut the shoulder thereof, said valve-seat having a convexed valve-engaging face and a central pouring-aperture, said valve-seat having a vent-aperture, a vent-pipe connected with said valve-seat and communicating with the vent-aperture therein and extending down into the bottle, a valve within the shell and having a concaved valve-seat-engaging face, a wire guard detachably held within the shell above said valve-seat to limit the movement of the valve, a hook member secured to said valve-seat and means connecting the hook member and the valve for positively holding the valve to its seat and a cap adapted to be fitted in the bottle-neck above the shell, said cap having a pouring-aperture and a vent-aperture, said cap having its pouring-aperture arranged in substantial alinement with the beveled face of the shell and having its vent-aperture extending through the cap at an angle to the plane of the cap, and in a plane with the pouring-aperture of the shell, all being arranged substantially as shown and described.

9. In a non-refillable bottle, the combination with a bottle, of a tubular shell having an upper tapering neck terminating in a beveled face, and having a pouring-aperture in one side of the tapering neck, said shell having a shoulder, and an internal annular groove at one end, a valve forming a closure-plug for said grooved end of the shell and adapted to abut the shoulder thereof, said valve-seat having a convexed valve-engaging seat and a central pouring-aperture, said valve-seat having a vent-aperture, a vent-pipe connected with said valve-seat and communicating with the vent-aperture therein and extending down into the bottle, a valve within the shell and having a concaved valve-seat-engaging face, a wire guard detachably held within the shell above said valve-seat to limit the movement of the valve, a hook member secured to said valve-seat and means connecting the hook member and the valve for positively holding the valve to its seat, and a cap adapted to be fitted in the bottle-neck above the shell, said cap having a pouring-aperture and a vent-aperture, said cap having its pouring-aperture arranged in substantial alinement with the beveled face of the shell and having its vent-aperture extending through the cap at an angle to the plane of the cap and in a plane with the pouring-aperture of the shell, said cap having an enlargement beneath the vent-aperture, and closure-plugs for the cap-apertures, substantially as shown and described.

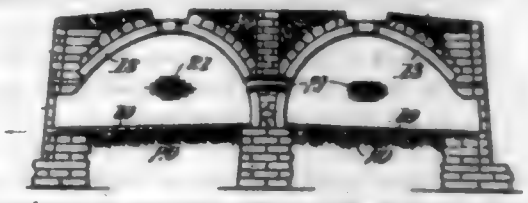
814,620. **VENTILATING APPARATUS.** ESEKIEL L. PARRISH, Crockett, Tex. Filed June 17, 1903. Serial No. 161,854.



Claim.—A ventilator for cars comprising parallel straight main tubes having converging ends, conductor-pipes secured one on each of the said converging ends of the tubes and having each an automatic inwardly-opening valve, funnel-shaped inlets provided with reticulated material and secured one to the outer end of each conductor and arranged in line with the main tube, a series of flexible tubes depending from the main tube each provided with funnel-shaped outlets, and each having a valve therein, as hereinbefore specified.

814,621. **COKE-OVEN.** GERMIA PIERROW and PASQUALE BUFANO, Connellsville, Pa. Filed Oct. 14, 1905. Serial No. 282,822.

Claim.—1. A coke-oven provided with an arched roof made up of a plurality of tiers, each tier being formed of a plurality of fire-brick each provided with a threefold taper, the ends of each tier being united by a fire-brick also provided with a threefold taper, the horizontal taper of the latter brick being greater than the corresponding taper of the former brick, whereby in the assembling of said bricks a roof of approximately ovoid form as to its base-line is obtained.



2. A coke-oven provided with an arched roof made up of a plurality of tiers, each tier being formed of a plurality of fire-brick each provided with a threefold taper, the ends of each tier being united by a fire-brick also provided with a threefold taper, the horizontal taper of the latter brick being greater than the corresponding taper of the former brick, whereby in assembling said bricks a roof of approximately ovoid form as to its base-line is obtained, and a brick of approximately ovoid shape forming the top of the arch of said roof, said ovoid brick being provided with an opening forming the vent of the oven.

3. A coke-oven of ovoid form provided with an arched roof and an approximately ovoid-shaped brick located centrally of said roof and provided with an opening forming the vent of the oven.

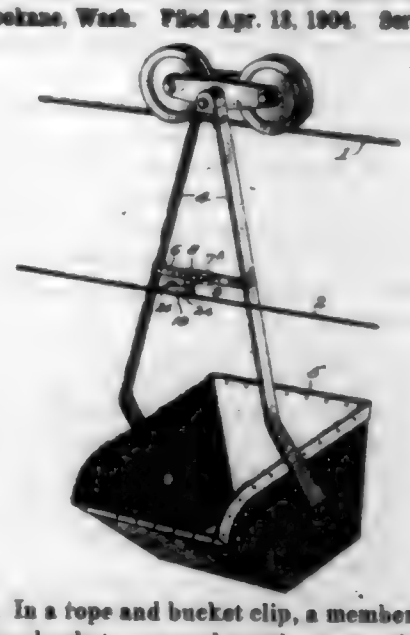
4. A coke-oven provided with a door or opening, the wall adjacent said door or opening being provided with an inwardly-extended arched or curved portion.

5. A coke-oven of ovoid form provided with a door or opening, the wall adjacent said door or opening being provided with an inwardly-extended arched or curved portion.

6. A coke-oven of ovoid form provided with an arched roof, a centrally-located approximately ovoid eye-brick closing the top of the arch of said roof, said oven being provided with a door or opening, the wall adjacent said door or opening being provided with an inwardly-extended arched or curved portion.

7. A coke-oven of ovoid form provided with an arched roof constructed of a plurality of bricks of keystone form and arranged in tiers, a horizontally-tapered key-brick for closing each tier, and an approximately ovoid eye-brick closing the top of the arch of said roof, said oven being provided with a door or opening, the wall adjacent said door or opening being concaved or arched horizontally.

814,622. **TRAMWAY BUCKET AND ROPE CLIP.** BYRON C. RISLEY, Spokane, Wash. Filed Apr. 18, 1904. Serial No. 203,788.



Claim.—1. In a rope and bucket clip, a member secured at one end to a tramway-bucket, a second member secured at one end to a traction-rope and a ball-and-socket joint connecting the opposite ends of said members operatively together.

2. In a rope and bucket clip, a socket member secured to a tramway-bucket and a body portion with a ball at one end pivotally secured in said socket and attached at its opposite end to a traction-rope.

3. In a rope and bucket clip, a bracket secured at one end to a tramway-bucket, a hollow spherical socket at the opposite end of said bracket, a plate secured at one end to a traction-rope and a ball projecting from said plate and pivotally secured in said socket.

4. In a rope and bucket clip, a bracket member secured at one end to a tramway-bucket and provided with a spherical aperture at its opposite end, a plate secured at one end to a traction-rope and having a spherical ball at its opposite end pivotally secured in the spherical aperture of said bucket member, and means for connecting and disconnecting said ball to and from the said socket of said bucket member, substantially as described.

5. In a rope and bucket clip, a bracket member secured at one end to a tramway-bucket, a plate secured at one end to a traction-rope; and a universal joint formed partially at the opposite ends of each end of both of said bracket and plate members, and pivotally connected together, substantially as described.

6. In a rope and bucket clip, a bucket member provided with a base, means for securing said base to a tramway-bucket, a hollow spherical aperture in the free end of said base, a plate provided with bolts adapted to secure said plate to a traction-rope, a stem projecting from said plate; a ball on the end of said stem pivotally secured in the spherical apertures of said bucket, and means for disconnecting said ball from the spherical socket of said bracket.

7. In a rope and bucket clip, a socket member secured to a tramway-bucket, and provided with a removable portion adapted to admit a spherical member, a plate member secured at one end to a traction-rope, and having at its opposite end a spherical or ball member, pivotally connected to said socket member.

8. In a rope and bucket clip, the plate, bolts connected with said plate and arranged to clamp said plate to a traction-rope; a spherical ball on said plate; a bracket divided into two parts, said parts being secured at one end to a tramway-bucket; a hollow spherical aperture in the opposite end of said bracket formed partially in each part and surrounding and secured to said ball, and means for separating the parts of said brackets to release said socket from and to connect it to said ball, substantially as described.

9. In a rope and bucket clip, the combination with the traction-rope and the bucket, of the plate, having the rope-groove in one edge, the projecting lugs on the opposite edge, the V or yoke bolts extending through said lugs, and adapted to clamp said rope to said plate, the ball projecting from said plate and the socket member operatively arranged to surround said ball, and to pivotally swing on it in any direction, and means for attaching said socket to said bucket, substantially as described.

10. In a rope and bucket clip, the combination with the traction-rope and the bucket, of a bracket member divided through its stem portion, a bolt arranged to clamp said divided portions together, a plate on each divided portion of said bracket, means for detachably securing the plate at one of the divided parts of said bracket to said bucket, means for rigidly securing the plate of the other part of said bracket to said bucket, a hollow ball-socket formed in the end of said bracket partially in each of its parts, a plate secured at one end to said traction-rope, and a ball on said plate pivotally connected to said socket, substantially as described.

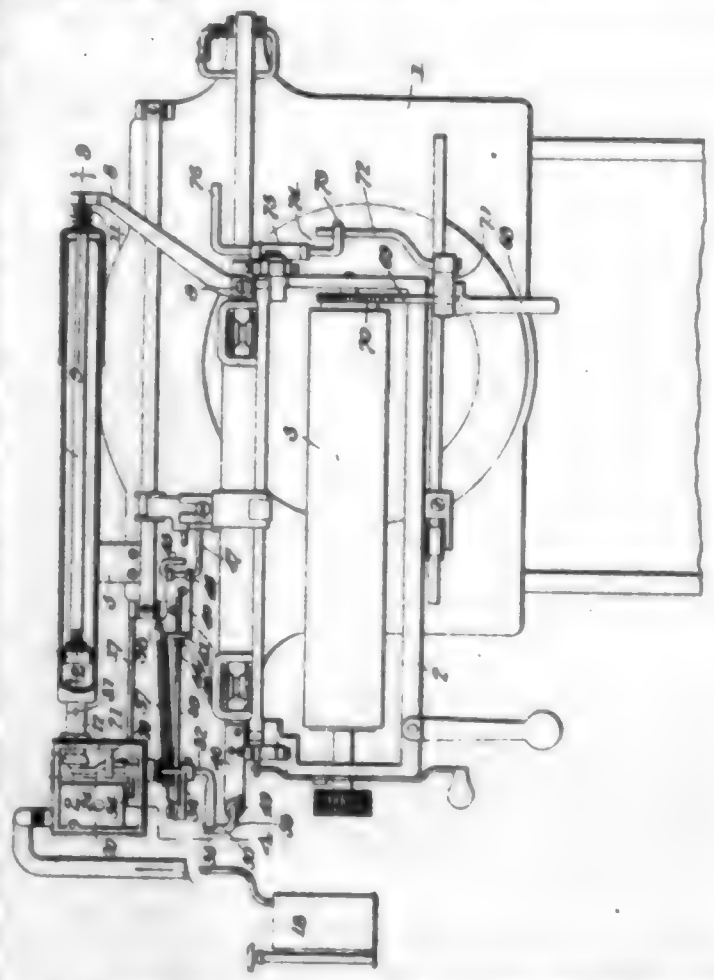
11. In a rope and bucket clip, the combination with the traction-rope, the bucket, the plates, the V-bolts, the stem projecting from said plate and the ball at the end of said stem, of the divided bracket secured at one end to said bucket, and pivotally secured by a socket-joint to the ball of said plate, and having a vertical recess in its terminal end adapted to permit said bucket and socket to swing through a predetermined arc around said ball in a vertical plane, substantially as described.

12. In a rope and bucket clip, the combination with the bucket having a cross-bar, of a bracket arranged to straddle said cross-bar, means for securing said bracket to said cross-bar, a ball-socket at the opposite end of said bracket having an entrance through its shell, a plate secured at one end to a traction-rope and having a ball at its opposite end pivotally connected to said socket, and a block secured in said entrance to said socket, adapted to fit the adjacent side of said ball, substantially as described.

13. In a rope and bucket clip, the combination with the bucket, of the bracket secured at one end to said bucket, the socket in the opposite end of said bracket, provided with an open-sided casing and an entrance-aperture, the plate arranged and adapted at one end to be secured to a traction-rope and having a projecting ball adapted to be inserted in said socket through said casing, the plug fitting in said casing and the pin arranged to secure said plug to said casing, substantially as described.

814,623. TYPE-WRITING MACHINE. William A. Robbins and Benjamin S. Hyatt, Vinita, Ind. Ter. Filed Sept. 27, 1904. Serial No. 226,181.

Claim.—1. In a type-writing machine, the combination with the frame and the carriage thereof, of automatic carriage-return mechanism comprising a cylinder, a piston, a piston-rod, a connection between the piston-rod and the carriage, a pressure-chamber, a valved communication between the chamber and the cylinder, valve-controlling means including a crank-shaft projected externally of the chamber, and a trip mounted upon the carriage to engage the crank of the crank-shaft at the forward limit of the carriage movement and thereby trip the valve.



2. In a type-writing machine, the combination with the carriage thereof, of pneumatic carriage-return mechanism including a normally closed valve having a pivotal stem, a spring-actuated crank-shaft having a tappet-arm for engagement with the valve-stem to swing the latter upon its pivot, and a trip mounted upon the carriage with the crank of the crank-shaft disposed in the path of the forward movement of the trip for actuation thereby to trip the valve at the forward limit of the carriage.

3. The combination with the frame of a type-writing machine and the carriage thereof, of automatic carriage-return mechanism including a valve, a movable valve-controlling device, a spring extending between the controlling device and the frame of the machine, means to limit the movement of the controlling device under the influence of the spring, and a trip mounted upon the carriage for engagement with the valve-controlling device to trip the same against the influence of the spring.

4. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve having a movable controlling device, a spring to yieldably maintain the controlling device at one limit, movable means connected to the controlling device to limit the movement of the same under the influence of the spring, and a trip mounted upon the carriage to trip the valve-controlling device against the influence of the spring.

5. In a type-writing machine, the combination with the carriage thereof, of pneumatic carriage-return mechanism including a normally closed valve, a controlling crank-shaft therefor, a spring connected to the crank-shaft, a movable limiting device connected to the shaft, a stop carried by the frame of the machine with the limiting device normally engaging the stop, and a trip mounted upon the carriage in position to engage the crank of the shaft and trip the same against the action of the spring at the forward limit of the carriage to open the valve.

6. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve having a controlling crank-shaft, an arm upon the shaft, a spring extending between the arm and the frame of the machine, a slotted stop upon the frame, a limiting-bar connected to the arm with a portion working through the slot of the stop and provided

with a shoulder normally engaged with said stop, and a trip mounted upon the carriage and located to engage the crank of the crank-shaft and trip the latter at the forward limit of the carriage to open the valve.

7. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve having a controlling crank-shaft, an arm upon the shaft, a spring connected to the arm and to the frame of the machine, a slotted stop upon the frame, a limiting-bar pivoted to the arm and working through the slot of the stop, the bar being provided with a succession of shoulders for individual engagement with the stop to limit the forward movement of the bar, a spring to yieldably maintain the bar at one limit of the slot, means to adjustably guide the bar for contact of any of its shoulders with the stop, and a trip mounted upon the carriage for engagement with the crank of the shaft to trip the same and open the valve at the forward limit of the carriage.

8. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve having a controlling crank-shaft, an arm carried by the shaft, a spring connected to the arm and the frame of the machine, a slotted stop upon the frame, a limiting-bar pivotally connected to the arm and working in the slot, one edge of the bar being provided with stepped shoulders for individual engagement with the stop to adjustably limit the spring-actuated movement of the shaft, a bowed spring carried by the bar and working in one end of the slot, means to adjustably guide the bar for individual engagement of the shoulders thereof with the stop, and a trip mounted upon the carriage for engagement with the crank of the crank-shaft to trip the same against the influence of the spring.

9. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve, a spring-actuated valve-controlling device, a limiting-bar pivotally connected to the controlling device and provided with a succession of stop-shoulders, a stop carried by the frame in coöperative relation with the limiting-bar, means to adjustably guide the bar for individual engagement of its shoulders with the stop comprising a rocking link mounted upon the frame to alternately receive and lie beneath the bar, a handle for controlling the link, and a trip mounted upon the carriage for engagement with the valve-controlling device to trip the same against the influence of the spring at the forward limit of the carriage.

10. The combination with the frame of a type-writing machine and the carriage thereof, of pneumatic carriage-return mechanism including a valve having a controlling crank-shaft, a spring to maintain the shaft at one limit, an arm carried by the shaft, an upstanding slotted stop upon the frame, a limiting-bar pivoted to the arm and working in the lower portion of the slot with its under side provided with stepped shoulders for individual engagement with the stop, a spring carried by the bar and working through the slot in engagement with the upper end thereof, a vertically-tiltable link mounted upon the frame to alternately receive and lie beneath the free forward end of the bar and provided with a handle for manual adjustment thereof, and a trip upon the carriage to engage the crank of the shaft and trip the same against the influence of the spring at the forward limit of the carriage.

11. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a controlling crank-shaft, a pivotal trip device mounted upon the carriage for engagement with the crank of the controlling device, means to prevent yielding of the trip when in contact with the crank-arm during the forward movement of the carriage, said trip device capable of wiping past the crank-arm during the return movement of the carriage, and means to return the trip device to its normal position after repassing the crank.

12. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a controlling-crank, and a trip device comprising an upstanding rotatable shaft mounted upon the carriage and provided with upper and lower substantially horizontal crank-arms, one of the arms being located to engage the controlling-crank, a stop for engagement by the other arm of the trip device to prevent yielding of the first-mentioned arm when engaged with the controlling-crank, said trip device capable of wiping past the crank during the return movement of the carriage, and a spring to automatically return the trip device to its normal position after repassing the crank.

13. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a cylinder, a piston, a piston-rod projected at one end of the cylinder, a bracket carried by the carriage, a slidable connection between the piston-rod and the bracket, and a spring-buffer to cushion the slidable movement of the plunger-rod upon the bracket at the rear limit of the carriage.

14. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a cylinder, a piston, a piston-rod projected at one end of the cylinder, a bracket carried by the carriage, a slidable connection between the piston-rod and the bracket, a sleeve carried by the projected end of the piston-rod and telescopically embracing the cylinder, and a spring-buffer interposed between the sleeve and the bracket.

15. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a cylinder, a piston, a piston-rod projected at one end of the cylinder with its projected end provided with a longitudinal socket, a bracket carried by the carriage and provided with a pin telescoping in the socket of the piston-rod, a sleeve carried by the piston-rod and telescopically embracing the cylinder, and a helical spring embracing the pin and bearing against the sleeve and the bracket to cushion the plunger.

16. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a cylinder, a piston, a piston-rod projected at one end of the cylinder, a bracket carried by the carriage, the piston-rod having a slidable connection with the bracket, a spring engaging the bracket and the piston-rod to yieldably force the latter away from the bracket, and means extending between the bracket and the piston-rod to limit the spring-pressed movement thereof.

17. The combination with the carriage of a type-writing machine, of carriage-return mechanism including a cylinder, a piston, a piston-rod projected at one end of the cylinder, a bracket carried by the carriage, the piston-rod having a slidable connection with the bracket, a sleeve carried by the piston-rod and telescopically embracing the cylinder, a spring bearing in opposite directions against the piston-rod and the bracket, an arm carried by the bracket and overlapping the sleeve, a guide carried by the sleeve and telescopically receiving the arm, and a shoulder upon the arm in front of the guide to limit the spring-pressed movement of the piston-rod.

18. In a type-writing machine, the combination with a shiftable escapement-rack, means for automatically shifting the rack-bar consisting of a track, a shifting device carried by the rack-bar and having a portion traveling against one side of the track in the forward movement of the carriage and against the opposite side of the track in the reverse movement of the carriage to maintain the rack-bar in an inoperative position, a trip located in the path of the shifting device to move the same out of engagement with the track at the forward limit of the carriage, and means to direct the shifting device to the opposite side of the track upon the return movement of the carriage to shift the rack-bar.

19. In a type-writing machine, the combination with a shiftable escapement rack-bar, of means for shifting the same into an inoperative position consisting of an upstanding spring-actuated rock-shaft having upper and lower crank-arms, a track supported above the top of the machine and having one end inclined downwardly, the lower crank-arm of the rock-shaft traveling beneath and against the track during the forward movement of the carriage, and a trip-bar located in the path of the forward movement of the upper crank-arm of the rock-shaft whereby the lower crank-arm is swung out of engagement with the track at the forward limit of the carriage, the inclined end of the track operating to elevate the rock-shaft and the rack-bar during the return movement of the carriage.

814,624. FISH-HOOK. DANIEL E. ROBINSON, Otego, N. Y. Filed Mar. 6, 1905. Serial No. 248,615.



Claim.—1. A fish-hook having shanks with hook-terminals normally held apart by intermediate resilient means with which said shanks are continuous, one shank having an angular locking projection integral therewith to engage the opposite shank, the locking projection being located close to one of the hook-terminals to permit a close assemblage of the shanks, and the hook-terminals having barbed extremities.

1. A hook of the class set forth having shanks normally sprung outwardly from each other, one of the shanks having an angular locking projection to extend across the other shank when both shanks are drawn into close relation, and hook-terminals with laterally-deflected barbed extremities which extend inwardly in reverse directions when the shanks are brought together and locked, the hook-shanks having seat-bends reversely arranged and continuing into the hook-terminals.

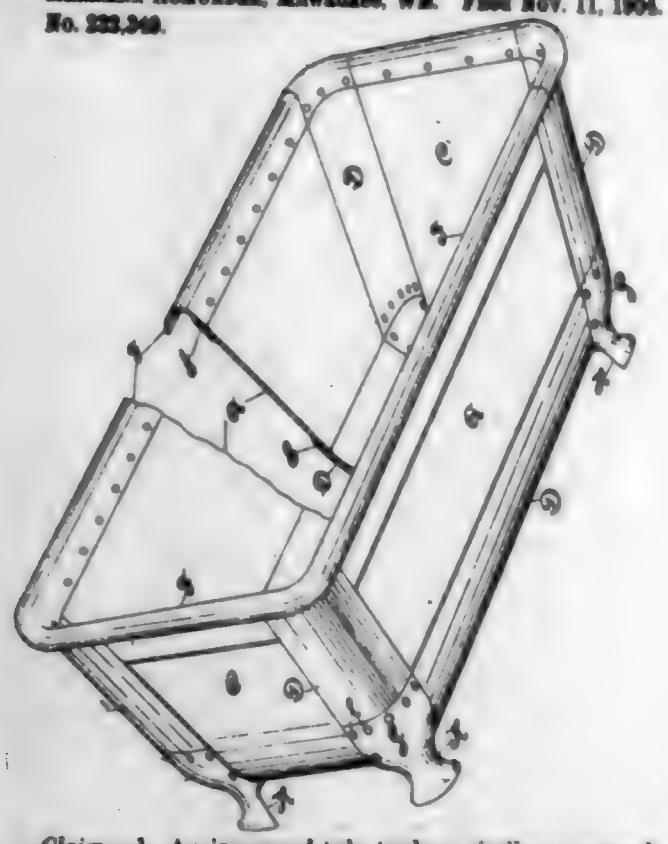
3. A spring-hook having shanks with hook-terminals, one of the shanks having an angular locking projection forming a part thereof to extend across and engage a portion of the opposite shank without surrounding or intertwisting with the latter to hold the hook-terminals in operative juxtaposition.

4. A hook of the class set forth, having normally separated spring-shanks with hook-terminals, the shanks adjacent to the terminals being reversely struck out to form seats to permit the said shanks to be drawn closely together to set the hook-terminals in close position to hold a bait thereon, one of the shanks close to its seat-bend having an angular locking projection to extend across the other shank above the position of both seat-bends of the two shanks.

5. A hook of the class set forth, having normally separated resilient shanks carrying hook-terminals with reversely-deflected barbed extremities, the one shank having a looped locking projection forming a part thereof and disposed at an angle to engage the other shank to hold the hook-terminals in juxtaposition when set, the locking projection extending across but not surrounding or intertwisting the shank with which it engages, the shanks and terminals being released to spring apart by a pressure exerted on the barbed extremities in a direction transversely with respect to the hook-terminals.

814,625. TUB, TANK, AND OTHER LIKE RECEPTACLE.

Hermann Rohlfing, Milwaukee, Wis. Filed Nov. 11, 1904. Serial No. 232,949.



Claim.—1. An improved tub, tank or similar receptacle, composed of side and end walls and a bottom, forming the body-plates of the receptacle, and being separated from each other by intervening spaces, and curved edge plates connected to and overlapping the adjacent edges of said body-plates, and caps or corner-plates connected to and forming the corners of the receptacle.

2. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom, end and side walls, and a number of curved edge plates, the said body-plates being spaced apart and suitably secured to the said curved edge plates, the flat portions of the curved edge plates and the adjacent edges of the body-plates overlapping each other, the overlapping parts, of sufficient size to produce strong joints, being suitably secured to one another; and caps or corner-plates suitably secured to and forming the corners of the receptacle.

3. An improved tub, tank or similar receptacle composed of a number of separated body-plates, forming the bottom and end and side walls, and a number of curved edge plates, the said bottom, end and side walls being spaced apart and connected at their adjacent edges to the said curved edge plates, which overlap and are suitably joined to the adjacent wall-plates, and caps or corner-plates connected to the body and edge plates of the said receptacle at the corners thereof.

4. An improved tub, tank or similar receptacle, consisting of a number of body-plates forming the side and the end walls and the bottom, and being separated from each other by intervening spaces, the said body-plates being suitably connected at their adjacent edges to curved edge plates with flat portions or flanges, the body-plates and flat portions of the edge plates overlapping each other and forming strong impervious joints with a smooth inner surface; a number of caps or corner-plates of suitable form and material secured to and forming the corners of the said receptacle and legs or feet, suitably provided on the said caps or corner-plates.

5. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom, end and side walls, and being separated from each other by intervening spaces, curved edge plates suitably connected to the adjacent edges of the said body-plates, reinforcing-strips secured to the side and end walls at their upper edges, and a number of caps or corner-plates, suitably connected to and forming the corners of the receptacle, substantially as shown and described.

6. An improved tub, tank or similar receptacle, composed of a number of angularly-disposed and substantially flat body-plates forming the bottom, end and side walls, and a number of curved edge plates, the said body-plates being spaced apart and connected at their adjacent edges to the said edge plates, which partly overlap and are suitably joined to the adjacent bottom and end and side wall plates, reinforcing-strips secured to the side and end walls at their upper edges, and a number of caps or corner-plates connected to and forming the corners of the receptacle, substantially as shown and described.

7. An improved tub, tank or similar receptacle consisting of a number of body-plates spaced apart and forming the side walls and end walls and the bottom, and a number of curved edge plates, the said body-plates being suitably connected at their adjacent edges to the said edge plates, the body-plates and the edge plates partly overlapping each other and forming strong impervious joints with a smooth inner surface; a rim integral with or suitably secured to the body and edge plates, a reinforcing-strip suitably secured to the side and end walls at their upper edge, and caps or corner-plates suitably secured to and forming the corners of the said receptacle and being provided with legs or feet secured in suitable manner to the said caps or corner-plates.

8. An improved tub, tank or similar receptacle composed of a number of separate body-plates forming the bottom and end walls and the side walls, and curved edge plates provided with flat portions, the said body-plates being spaced apart and suitably secured at their adjacent edges to the said edge plates, the flat portions of the said edge plates overlapping the edges of the body-plates, a rim of suitable form and material secured to the body portion of the said receptacle, a reinforcing-strip secured to the rim and the side and end walls at the outside of the receptacle and covering and reinforcing the joint of the rim and the side and end walls, and caps or corner-plates secured to and forming the corners of the said receptacle and being provided with legs or feet secured in suitable manner to the said caps or corner-plates.

9. An improved tub, tank or similar receptacle, composed of a number of angularly-disposed body-plates forming the bottom, end and side walls and being separated from each other by intervening spaces, a number of curved edge plates overlapping the edges of adjacent body-plates, and a number of caps or corner-plates, all suitably connected to form a receptacle of great strength and durability and of light weight, the overlapping portions of adjacent plates being suitably joined together, a suitable waterproof packing material being placed between the caps or corner-plates and the body and edge plates to produce waterproof joints at the corners of the receptacle, substantially as shown and described.

10. An improved tub, tank or similar receptacle, composed of side and end walls and a bottom, formed by a number of angularly-disposed body-plates, a number of curved edge plates provided at each of the approximating edges of the separate body-plates and overlapping the edges of the said approximating body-plates, and caps or corner-plates suitably provided with legs or feet and secured to and forming the corners of the receptacle.

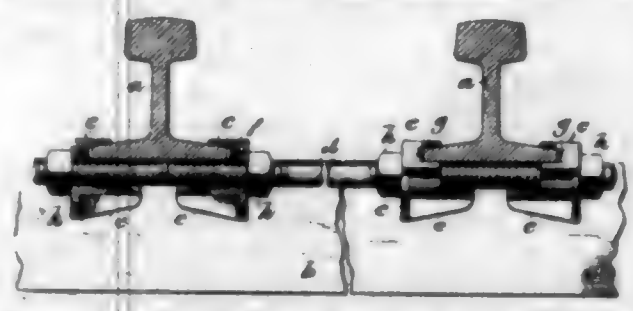
814,626. ARTIFICIAL TRACK FOR SKEE-RUNNERS, SLEDGES, AND THE LIKE.

Albert Schumann, Berlin, Germany. Filed May 8, 1905. Serial No. 259,596.

Claim.—A track of the character described comprising an upper straight section and a lower straight section inclined relatively to one another and separated by a gap; the upper section being provided with a curved portion at its lower end and the lower section having its upper end located at a lower elevation than the deepest point of the curved end of the upper section; the lower section having a trackway formed exclusively of resilient elastic material.



814,627. **RAIL-ANCHOR.** JOHN M. SCOTT, Racine, Wis. Original application filed Mar. 10, 1904, Serial No. 197,477. Divided and this application filed Dec. 22, 1905. Serial No. 292,945.



Claim.—1. A rail-anchor comprising a jaw adapted to be clamped on the base-flange of a rail and having a tooth adapted to bite into the flange and prevent the rail from slipping in the anchor, substantially as described.

2. A rail-anchor comprising a recessed jaw adapted to be clamped on the base-flange of a rail and having in its recess a hardened tooth which is adapted to bite into the rail-flange and prevent the rail from slipping in the anchor, substantially as described.

3. A rail-anchor comprising a recessed jaw adapted to be clamped on the base-flange of a rail, and a hardened toothed bit inserted in the recess of the jaw and adapted to bite into the flange and prevent the rail from slipping in the anchor, substantially as described.

4. A rail-anchor comprising a toothed jaw adapted to be clamped on the base-flange of a rail, and a bearing arranged to abut against the side of a tie, substantially as described.

5. A rail-anchor composed of a pair of jaws having longitudinal recesses, hardened toothed bits in said recesses adapted to grip the base of a rail, and a bolt adjustably connecting said jaws, substantially as described.

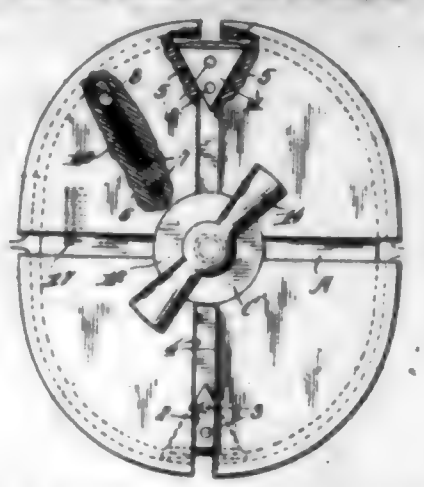
6. A rail-anchor composed of a pair of jaws having longitudinal recesses provided with hardened toothed bits adapted to grip the edges of a rail-base, bearing-faces adapted to abut against a tie, and a threaded bolt passing through holes in the jaws and adjustably connecting the same, substantially as described.

7. A rail-anchor comprising two pairs of jaws adapted to be clamped on the base-flanges of parallel rails, and a tie-rod connecting the two pairs of jaws, each pair of jaws having a bearing arranged to abut against the side of a cross-tie and the jaws of each pair being out of contact with each other below the rails and capable of sliding on the tie-rod, and means for holding the jaws in their adjustment on the rod, substantially as described.

8. A rail-anchor comprising two pairs of jaws adapted to be clamped on the base-flanges of parallel rails, and a tie-rod connecting the two pairs of jaws and threaded on the ends and adjustably connecting the two jaws of each pair, each pair of jaws having a bearing arranged to abut against the side of a cross-tie and the jaws of each pair being out of contact with each other below the rails and capable of sliding on the tie-rod, and a nut for drawing the jaws of each pair toward each other, substantially as described.

9. A rail-anchor composed of two pairs of jaws adapted to grip the base-flanges of two parallel railway-rails and having bearing-faces adapted to abut against a tie, and a bolt adjustably connecting both pairs of jaws and serving as a tie-rod for the rails, the jaws of each pair being out of contact with each other below the rail and capable of sliding on the rod, and means for drawing the jaws of each pair toward each other, substantially as described.

814,628. **HAT-STRETCHER.** EDWARD W. SHARBAUGH, East Pittsburg, Pa. Filed Jan. 13, 1906. Serial No. 240,887.



Claim.—1. A hat-stretcher comprising a base having wedge-pieces arranged diametrically opposite one another, segmental blocks movably secured upon said base and having parts arranged to abut against the inclined faces of said wedge-pieces, means for forcing said blocks simultaneously outward against the wedge-pieces, and means for moving the blocks toward one another.

2. A hat-stretcher comprising a base having wedge-pieces arranged diametrically opposite one another, segmental blocks movably secured upon said base and having parts arranged to abut against the inclined faces of said wedge-pieces, springs arranged to move said blocks toward one another and means for forcing the blocks against the wedge-pieces consisting of a conical wedge arranged at the center of the stretcher and adapted to engage the adjacent corners of the several blocks.

3. A hat-stretcher comprising a base-plate having fixed wedge-pieces arranged diametrically opposite one another, segmental blocks movably secured to said base and having parts arranged to abut against the wedge-pieces, means for guiding said blocks parallel with the inclined faces of said wedges, and means for forcing said blocks simultaneously apart.

4. A hat-stretcher comprising a base-plate having fixed wedge-pieces arranged diametrically opposite one another, segmental blocks movably secured to said base and having parts arranged to abut against the wedge-pieces, means for guiding said blocks parallel with the inclined faces of said wedges, means for forcing said blocks simultaneously apart and means for moving said blocks toward one another.

5. A hat-stretcher comprising a base-plate, having fixed wedge-pieces arranged diametrically opposite one another and having guide-slots parallel with the inclined faces of said wedge-pieces, segmental blocks movably secured to said base by guiding devices secured to the blocks and extending into said slots, means for forcing said blocks simultaneously apart and means for moving the blocks toward one another.

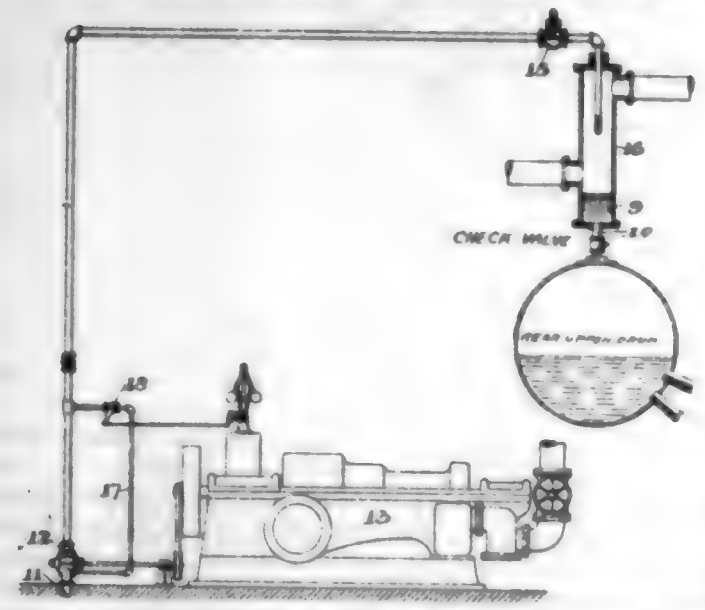
6. A hat-stretcher comprising a base, segmental blocks movably secured upon said base, adjacent blocks having cam surfaces or faces converging inwardly toward the diametral line of the base, parts secured to the base and arranged to abut against said inclined faces when the blocks are forced outwardly, and means, at the center of the stretcher, for forcing said blocks against said parts.

7. A hat-stretcher comprising a base-plate having fixed wedge-pieces arranged diametrically opposite one another, guide-slots parallel with the inclined faces of said wedge-pieces and stops at the outer ends of said slots, segmental blocks upon said base having parts engaging said inclined faces and having grooves in their lower sides parallel with said slots, springs within said grooves, guiding devices secured to the blocks and extending through said slots, and means for forcing said blocks simultaneously apart.

8. A hat-stretcher comprising a base-plate having fixed wedge-pieces arranged diametrically opposite one another, guide-slots parallel with the inclined faces of said wedge-pieces and stops at the outer ends of said slots, segmental blocks upon said base having parts engaging said inclined faces and having grooves in their lower sides parallel with said slots, springs within said grooves, guiding devices secured to the blocks and extending through said slots, and means for forcing said blocks simultaneously apart comprising a stud engaging a threaded opening at the center of the base and hav-

ing a suitable handle, and a conical wedge secured to said stud and engaging the adjacent corners of the blocks.

814,629. METHOD OF REGULATING THE TEMPERATURE OF SUPERHEATED STEAM. James P. Sneddon, Barberton, Ohio, assignor to The Stirling Consolidated Boiler Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 28, 1904. Serial No. 230,375.



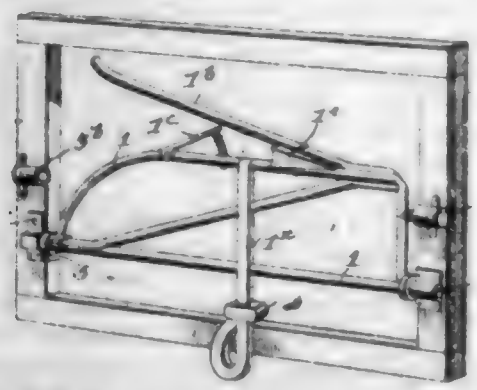
Claim.—1. The method of regulating the temperature of superheated steam, consisting in spraying an excess of water into a conduit through which the superheated steam passes, and withdrawing the surplus water from the conduit.

2. The method of regulating the temperature of superheated steam, consisting in spraying an excess of water into a conduit through which the steam passes from the superheater, and withdrawing the surplus water from the conduit.

3. The method of regulating the temperature of superheated steam, consisting in introducing an excess of water into a conduit through which the superheated steam flows, and withdrawing the surplus water from the conduit.

4. The method of regulating the temperature of superheated steam, consisting in introducing an excess of water into a conduit through which the steam flows from the superheater, and conducting the surplus water from the conduit to the boiler.

814,630. MAIL-BAG CATCHER. Delmer F. Stokes, Kenton, Ohio, assignor of one-half to Albert Moore, Jr., Kenton, Ohio. Filed June 21, 1905. Serial No. 266,315.



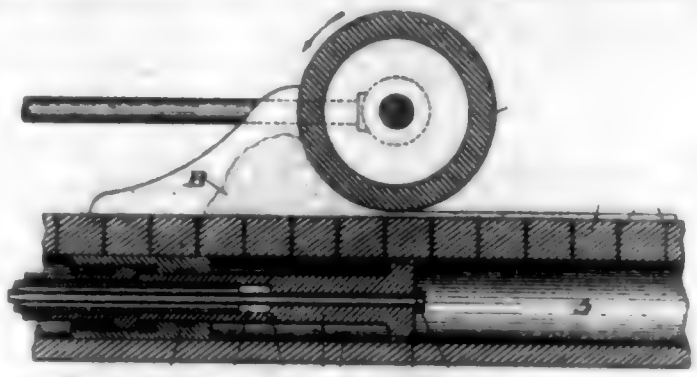
Claim.—1. A mail-bag catcher comprising a frame and a catcher proper axially hung therein and equipped with a spring-actuated latch engaging a keeper in said frame.

2. A mail-bag catcher comprising a catcher and a supporting-frame therefor, said catcher being axially hung therein and having a spring-actuated latch effective for the retention of said catcher in vertical position, said frame also having outstanding therefrom brackets effective for the retention of said catcher in horizontal position.

814,631. MANUFACTURE OF GLASS. Frank L. O. Wadsworth, Morgantown, W. Va. Filed June 7, 1904. Serial No. 211,490.

Claim.—1. The method herein described of forming glass, which consists in applying pressure to a body of glass between non-absorbent surfaces, and interposing a gaseous film between the glass and forming-surface at the point of application of pressure; substantially as described.

2. The method herein described of forming glass, which consists in applying pressure to a body of glass, interposing a gaseous film between the glass and forming-surface, and discharging the gaseous film before the glass becomes cold; substantially as described.



3. The method herein described of forming glass, which consists in applying pressure to a body of glass, interposing a gaseous film between the glass and forming-surface, and exhausting the gaseous film before the glass becomes cold; substantially as described.

4. The method herein described of forming glass, which consists in applying pressure to a body of glass between non-absorbent surfaces, and interposing steam between the glass and forming-surface at the point of application of pressure; substantially as described.

5. The method herein described which consists in spreading a glass sheet on a forming-surface, interposing a film of gaseous fluid between the surface and the glass at the place of application of the spreading pressure, and discharging the gaseous fluid as the sheet is formed; substantially as described.

6. The method herein described which consists in spreading a glass sheet on a forming-surface, interposing a film of gaseous fluid between the surface and the glass at the place of application of the spreading pressure, and exhausting the gaseous fluid as the sheet is formed; substantially as described.

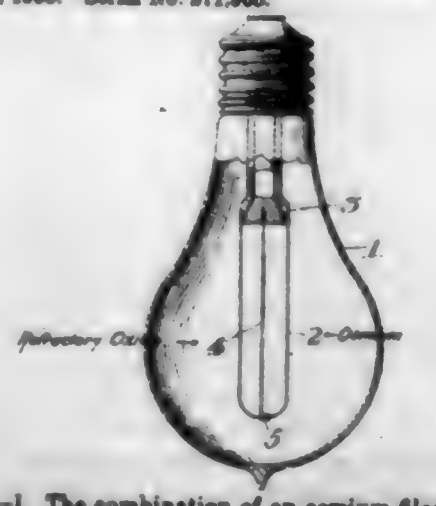
7. The method herein described which consists in spreading a glass sheet on a forming-surface, interposing a film of gaseous fluid between the surface and the glass at the place of application of the spreading pressure, discharging the gaseous fluid as the sheet is formed, and applying a like gaseous fluid between the opposite side of the glass and its forming-surface; substantially as described.

8. The method of forming glass having a pattern-surface, which consists in spreading a glass sheet over a pattern-forming surface and interposing a film of gaseous fluid, and then discharging the fluid and permitting the formed sheet to come into direct contact with the pattern; substantially as described.

9. The method herein described of forming glass, which consists in applying pressure to a body of glass between non-absorbent surfaces, interposing a gaseous film between the glass and forming-surface, and limiting the point of application of such film to the surface of contact between the mass of unformed glass and the forming-surface; substantially as described.

10. The method herein described of forming glass, which consists in applying pressure to a body of glass between non-absorbent surfaces, and interposing a dried gaseous film between the glass and forming-surface at the point of application of pressure; substantially as described.

814,632. SUPPORT FOR OSMIUM FILAMENTS. Carl A. von Welsbach, Vienna, Austria-Hungary. Filed May 31, 1901. Renewed July 31, 1905. Serial No. 271,965.



Claim.—1. The combination of an osmium filament and a support for the same, said support composed of sintered or fritted refrac-

tory oxid, non-adherent to incandescent osmium and chemically indifferent thereto; substantially as described.

2. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of refractory oxids, non-adherent to incandescent osmium and chemically indifferent thereto; substantially as described.

3. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of rare metal oxid and other refractory oxid; substantially as described.

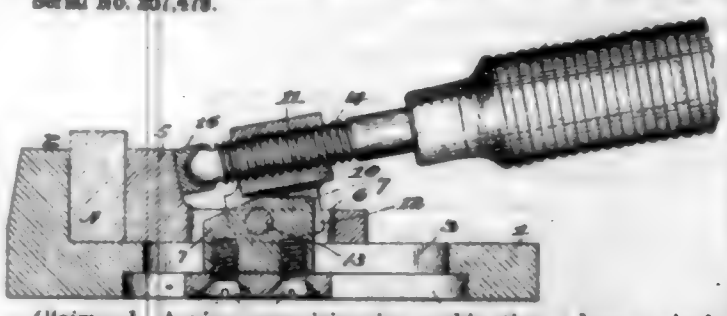
4. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of rare metal oxid and magnesia; substantially as described.

5. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of thorium oxid and other refractory oxid; substantially as described.

6. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of thorium oxid and magnesia; substantially as described.

7. The combination of an osmium filament and a support for the same, said support composed of a sintered or fritted mixture of ten parts by weight of thorium oxid and one part by weight of magnesia, substantially as described.

814,633. **HAND-VISE.** SEBASTIAN J. WELTER, Chicago, Ill., assignor of one-half to Frank J. Welter, Chicago, Ill. Filed Apr. 26, 1905. Serial No. 257,479.



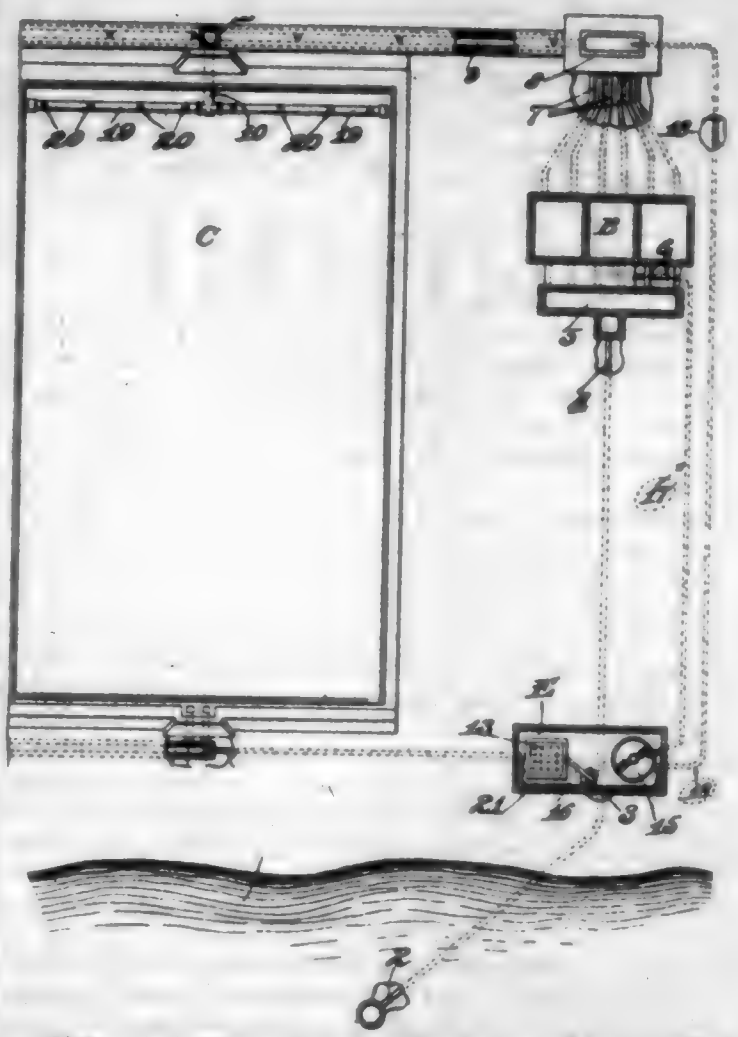
Claim.—1. A vise comprising in combination a base or body member provided with a jaw and having therein a slot, a coöperating jaw member slidably mounted upon said base or body member and provided with an opening therein arranged to register with said slot, a locking member for locking said base and jaw members together and working through said slot and opening, and an actuating member operatively connected with said locking member and engaging said movable jaw member, whereby to simultaneously lock said members together and advance said jaw member into a tightened gripping position.

2. In a hand-vise, the combination of a base or body member provided with a jaw and a slot, a coöperating jaw member slidably mounted thereupon and provided with an opening registering with said slot, a through member sliding within said slot with said jaw member, a cam member pivoted upon said through member and working in the opening in said jaw member and operating to lock said members together, and an actuating member through said cam member and engaging said jaw member, whereby the operating of said actuating member rocks said cam member and advances said jaw member simultaneously, substantially as described.

3. A hand-vise comprising in combination a base or body member provided with a jaw, a coöperating jaw member slidably mounted upon said base or body member, a through member operatively connected with both of said members and moving with the jaw member, a cam member provided with an eccentrically-disposed cam-surface and mounted upon said through member, and an actuating member having threaded engagement with said cam member and bearing against said movable jaw member, whereby the turning of said actuating member operates to simultaneously rock said cam member to lock said base and jaw members against relative movement and to tighten the gripping hold of the jaw members, substantially as described.

4. A hand-vise comprising in combination a base or body member provided with a jaw and having therein a slot with ratchet-teeth along its sides, a coöperating jaw member sliding upon said base member and having an opening therethrough, an eccentric-cam member provided with ratchet-teeth and having operative connection with said base and jaw members, a combined handpiece and actuating member threaded through said cam member and bearing against said movable jaw member, whereby the turning of said handpiece operates to simultaneously advance said jaw member into tightened gripping position and to lock said base and jaw member against relative sliding movement, substantially as described.

814,634. **WATER-PURIFICATION SYSTEM.** JOHN F. WILFORD, St. Louis, Mo. Original application filed May 1, 1905, Serial No. 258,326. Divided and this application filed Oct. 21, 1905. Serial No. 283,722.



Claim.—1. A system of water purification comprising a settling-basin, a main conduit emptying into said basin, a reagent-solution tank, a lime-digester, two conduits extending through said tank and said digester, respectively, and opening into said main conduit at different points, the point nearer the basin being at such a distance from the basin that the water will require several minutes to flow therefrom into the basin.

2. A system of water purification comprising a settling-basin, a main conduit emptying into said basin, a reagent-solution tank, a lime-digester, two conduits extending through said tank and said digester respectively and both opening into said main conduit far enough from said basin to require several minutes for the water to reach the basin from such points of opening into said main conduit.

3. A system of water purification comprising a settling-basin, a conduit emptying into said basin, means to introduce a reagent into said conduit, a lime-digester and a conduit extending through said lime-digester into said first-mentioned conduit at a point between said basin and the point of admission of said reagent.

4. A system of water purification comprising a settling-basin, a delivery-well, a conduit connecting said well and said basin, a supply-conduit emptying into said well, means to introduce a reagent into said supply-conduit, a lime-digester and a conduit extending through said digester into said delivery-well.

5. A system of water purification comprising a settling-basin, a supply-conduit emptying into said basin, a reagent-solution tank and a lime-digester, clear-water conduits emptying into said tank and said digester, respectively, a conduit connecting said tank to said supply-conduit at a distance from said basin, and a conduit connecting said lime-digester with said supply-conduit at a point nearer said basin.

6. A system of water purification comprising a settling-basin, a delivery-well, a conduit connecting said basin and said well and communicating with said well near the bottom, a supply-conduit opening into said well near the top, a reagent-solution conduit arranged to introduce a reagent into said supply-conduit, and means to introduce a second reagent into said delivery-well, said means comprising a conduit having a lime-digester therein.

7. A system of water purification comprising a settling-basin, a delivery-well, a conduit connecting said basin and said well, a supply-conduit emptying into said well, a reagent-solution conduit opening into said supply-conduit at a distance from said well, and

means for introducing a second reagent near the point of connection of said supply-conduit with said well, said means comprising a conduit containing a lime-digester.

814,635. CARTRIDGE-CONVEYER. Franklin K. Young, Boston, Mass., and James B. Sherry, New York, N. Y., assignors to American Automatic Arms Company, Saco, Me., a Corporation of Maine. Original application filed Dec. 7, 1903. Serial No. 184,057. Divided and this application filed May 7, 1904. Serial No. 206,308.



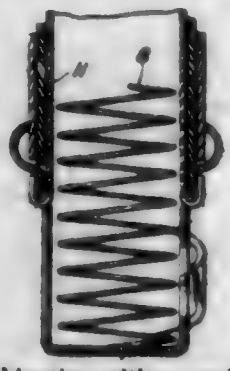
Claim.—1. A cartridge-conveyer comprising a series of cylindro-segmental cartridge-holders hinged together by pins, the pins projecting laterally beyond the holders and formed with a flanged head and a neck adapted to be engaged by a sprocket-wheel.

2. A cartridge-conveyer comprising a series of cylindro-segmental cartridge-holders hinged together, having pins which project from between the holders laterally beyond the ends of the holders, and adapted to be engaged by a sprocket-wheel.

3. A cartridge-conveyer for firearms comprising a series of cylindro-segmental cartridge-holders hinged together, a wall at the rear end of each holder, the hinge-pins having a neck which projects laterally and terminates in a flanged head, the projecting neck portion of the hinge-pins being adapted for engagement by an actuating sprocket-wheel.

4. A cartridge-conveyer for firearms comprising a series of cylindro-segmental cartridge-holders hinged together, a wall at the rear end of each holder, the pivots of the hinges having necks which project laterally beyond the ends of the holders, and are adapted for engagement by a sprocket-wheel.

814,636. RESILIENT BASE FOR CANDLE-HOLDERS. Francis Rauner, New York, N. Y. Original application filed June 15, 1905, Serial No. 265,318. Divided and this application filed Oct. 17, 1905. Serial No. 283,197.



Claim.—1. In combination with a candle-holding tube, a base secured to the lower end thereof, said base adapted to fit within the well of a candlestick and comprising a cylinder having an unbroken lower edge and spring-fingers cut out of the side of said cylinder, said fingers having their direction of length substantially at right angles to the height of the base.

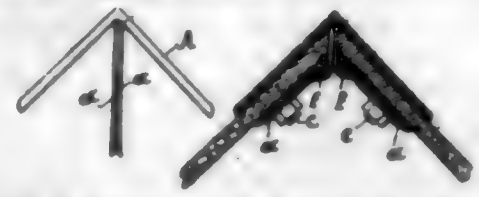
2. In combination with a candle-holding tube, a base secured to the lower end thereof, said base adapted to fit within the well of a candlestick and comprising a cylinder having a substantially closed bottom and an open top and spring-fingers extending from the sides of the cylinder and a spring within the tube and cylinder and resting upon its closed bottom.

3. A resilient base adapted to fit the well of a candlestick comprising a cylinder having an unbroken lower edge and spring-fingers extending from the surface of the cylinder, the upper rim of said cylinder being flared out, a tube secured to the cylinder and within the flared-out part and a second tube concentric therewith having its lower end depending into said flared-out part.

4. A resilient base adapted to fit the well of a candlestick comprising a cylinder having an unbroken lower edge and spring-fingers extending from the surface of the cylinder, a closed bottom and an open top to the cylinder and a spring resting upon said bottom and passing through the open top.

5. A resilient base adapted to fit the well of a candlestick comprising a cylinder having an unbroken lower edge and spring-fingers extending from the surface of the cylinder, the upper rim of said cylinder being flared out, a tube secured to the cylinder and within the flared-out part and a second tube concentric therewith having its lower end depending into said flared-out part, a closed bottom and an open top to the cylinder and a spring resting upon said bottom and passing through the open top.

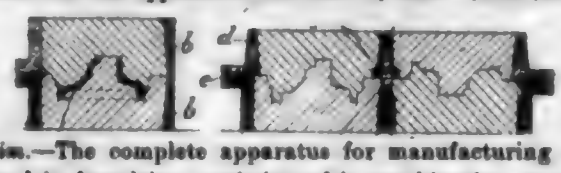
814,637. FASTENER FOR GLASS JOINTS. William B. Beyer, Cleveland, Ohio, assignor to Martin Koster, Cleveland, Ohio. Filed Oct. 31, 1905. Serial No. 285,779.



Claim.—1. A fastener for glass joints in show-windows and the like, comprising an outer bracket having perforated leaf members extending therefrom through the gab between the glasses and an inner slotted bracket receiving said leaf members and having lugs and screw-threaded studs with nuts protruding from its inner face for the purpose of clamping said leaf members in the manner as shown and set forth.

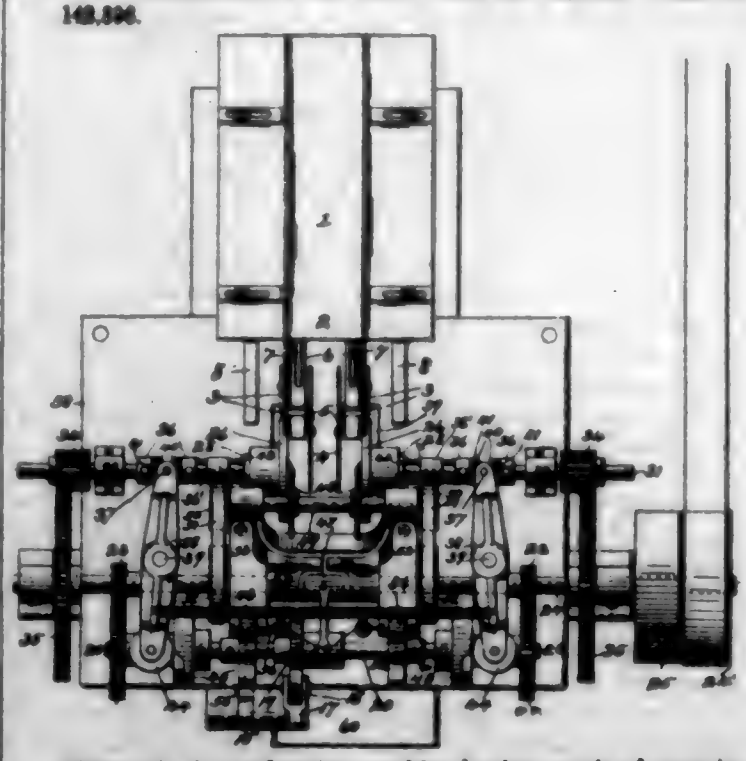
2. A fastener for the joints of "all-glass" show cases, windows, &c., comprising a bracket placed on the outside of the glasses, said bracket having perforated leaf members, which extend through the gab of the joining glasses, and an inner bracket having a slot in the corner thereof and screw-threaded studs with nuts at or near its terminals, the said slot engaging said leaf members and the studs with nuts retaining said members in spread condition for the purpose of binding the glasses by and with said brackets.

814,638. APPARATUS FOR USE IN MANUFACTURING SMALL METALLIC PATTERN-PLATES. Philibert Bonvillain, Paris, France. Original application filed July 20, 1904, Serial No. 218,626. Divided and this application filed Mar. 14, 1905. Serial No. 250,067.



Claim.—The complete apparatus for manufacturing pattern-plates used in foundries consisting of in combination, two similar frames having two faces and their edges machined, a frame adapted to cover the above-mentioned frames and to fit on their edges and provided in the center with a rib at the bottom so as to come into position above the juxtaposed sides of the two other frames, a frame with lateral grooves adapted to be placed between the juxtaposed frames and the superposed frame and a rule or bar adjusted in the grooves of the said frame with lateral grooves, substantially as hereinbefore described and for the purpose specified.

814,639. CAN-FLANGING MACHINE. Julius Breitinger, New York, N. Y., assignor to The Max Ams Machine Company, New York, N. Y., a Corporation of New York. Filed Feb. 11, 1903. Serial No. 142,896.



Claim.—1. A can-flanging machine having a pair of opposite, similar, longitudinally-slidable and rotatable flanging-rolls, fixed

supports in which said rolls are adapted to slide, means to feed a can automatically to a position to inclose the circumferences of said rolls, means to project said rolls within said can, said rolls adapted to form the sole support for the can during flanging, complementary bearing-surfaces for said can, and means to withdraw said rolls to permit the automatic discharge of a can, substantially as described.

2. A can-flanging machine having a can-feed chute, fixed guide-plates adapted to inclose a can-body and of a distance apart to guide the ends of said body, and opposite rotatable flanging-rolls slidable through said guide-plates and adapted to receive and support the can-body, complementary bearing-surfaces, and means to withdraw said rolls whereby the can-body is automatically discharged, substantially as described.

3. A can-flanging machine having a rotatable and longitudinally-slidable flanging-roll, a complementary roll and a swinging frame on which said latter roll is mounted, means to automatically deliver the can over the circumferential extension of the slidable roll, whereby it is supported by said roll when the delivering means are withdrawn, substantially as described.

4. A flanging-machine having a pair of longitudinally-slidable flanging-rolls, can-guide plates, means to feed a can to the space between said plates, means to project said slidable rolls through said plates to receive and support said cans in combination with a pair of complementary rotatable rolls, a swinging frame on which said rolls are mounted, and means to successively swing said latter rolls into position to coöperate with the first rolls and means to successively withdraw the swinging rolls, and the slidable rolls, whereby the can is automatically dropped from the machine through said space between the guides, substantially as described.

5. A can-flanging machine, a swinging frame, arms carried by and movable with said frame, yielding buffer means between said arms and frame, and flanging-rolls, carried by said arms and a cam for rocking said frame to bring said rolls into flanging position and positively hold them in such position, substantially as described.

6 A can-flanging machine having opposite flanging-rolls, longitudinally-movable shafts for said rolls and having a can-feeding mechanism comprising a reciprocating frame movable at right angles to said shafts having can-body-supporting means adapted to carry a can to the space between said rolls, substantially as described.

7. A can-flanging machine having a reciprocating feeding-frame having can-body-supporting means and provided with means to adjust it longitudinally, consisting of longitudinal slots formed in said frame, horizontal arms secured in said slots, can-holding fingers carried by said arms, substantially as described.

8. A can-flanging machine having a reciprocating feeding-frame which has can-body-supporting means and provided with means to adjust said frame laterally consisting of lateral slots in the frame, arms adjustably secured therein and can-holding fingers carried by said arms, substantially as described.

9. A can-flanging machine having a reciprocating feeding-frame having an upper can-stopping part and can-receiving fingers below said upper part and extending in the same direction, a flanging mechanism, guide-plates between which the can is held to flange the same, said fingers extending between said guide-plates, substantially as described.

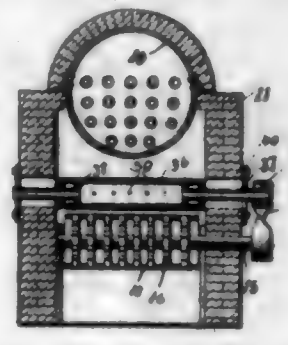
10. A can-flanging machine provided with an inclined chute a stop at the forward part thereof, a reciprocating frame below said chute, said frame having an upper part, consisting of parallel horizontal arms, and lower parallel fingers extending beyond the end of the upper part, substantially as described.

11. A can-flanging machine having a flanging mechanism which supports the can said mechanism consisting of longitudinally-movable rolls, movable into opposite ends of the can, guide-plates having plane faces through which said rolls pass, and means for withdrawing the flanging mechanism from the support of the can, and a discharge-chute below said guide-plates whereby the can is permitted to be discharged from the machine, substantially as described.

12. A can-flanging machine having a mechanism for flanging both ends of a can simultaneously, means for supporting said can solely by the flanging mechanism, means, for feeding said can into position to be engaged by the flanging mechanism, means to move said flanging mechanism into supporting position and means to withdraw said flanging mechanisms to permit the discharge of the can from the machine, substantially as described.

814,640. **BOILER-FURNACE.** John Collis, Des Moines, Iowa, assignor to W. P. Collis, New York, N. Y. Filed Mar. 2, 1905. Serial No. 248,037.

Claim.—1. In a furnace, the combination with a traveling grate, of a bridge-wall arranged above and between the ends of the fuel-supporting portion of the traveling grate, spaced apart from the top of the traveling grate to permit the fuel to pass under it, means for advancing the traveling grate so that fuel on it may pass under the bridge-wall and continue to burn in the compartment in the rear of the bridge-wall and means for directing the products of combustion arising from the chamber in front of the bridge-wall over the bridge-wall and over the portion of the grate in the rear of the bridge-wall.



2. In a furnace, the combination with a traveling grate, of a bridge-wall arranged above and between the ends of the fuel-supporting portion of the traveling grate and spaced apart from the top of the traveling grate to permit the fuel to pass under it, means for advancing the traveling grate so that fuel on it may pass under the bridge-wall and continue to burn in the compartment in the rear of the bridge-wall and means for directing the products of combustion arising from the chamber in front of the bridge-wall, over the bridge-wall and then downwardly over the portion of the grate in the rear of the bridge-wall.

3. In a furnace the combination of a traveling grate, a partition below the central portion of the traveling grate to direct draft upwardly through the portion of the grate in front of the partition, a bridge-wall above the central portion of the traveling grate and above the said partition, said bridge-wall spaced apart from the grate to permit fuel to pass under it and means for directing the products of combustion from one side of the grate over the bridge-wall and over the portion of the grate on the opposite side of the bridge-wall.

4. In a furnace the combination of a traveling grate, a partition below the central portion of the traveling grate to direct draft upwardly through the portion of the grate in front of the partition, a bridge-wall above the central portion of the traveling grate and above the said partition, said bridge-wall spaced apart from the grate to permit fuel to pass under it, and means for directing the products of combustion from one side of the grate over the bridge-wall and over the portion of the grate on the opposite side of the bridge-wall, and a deflecting-arch above the rear portion of the grate to direct products of combustion passing over the bridge-wall, downward toward the rear portion of the grate.

5. In a boiler-furnace, the combination of furnace-walls, a boiler, a traveling grate, a partition beneath the central portion of the traveling grate, a bridge-wall above and spaced apart from the central portion of the traveling grate, and a deflecting-arch beneath the rear end of the boiler.

6. In a furnace, the combination of a traveling grate, a rotatable bridge-wall above the grate and spaced apart from it to permit fuel to pass under the bridge-wall, said bridge-wall shaped to remain in contact with the fuel while its under surface is moving in the same direction as the fuel upon the grate.

7. The combination with a furnace, of a rotatable bridge-wall, said bridge-wall provided with discharge-openings and means for introducing air into the bridge-wall.

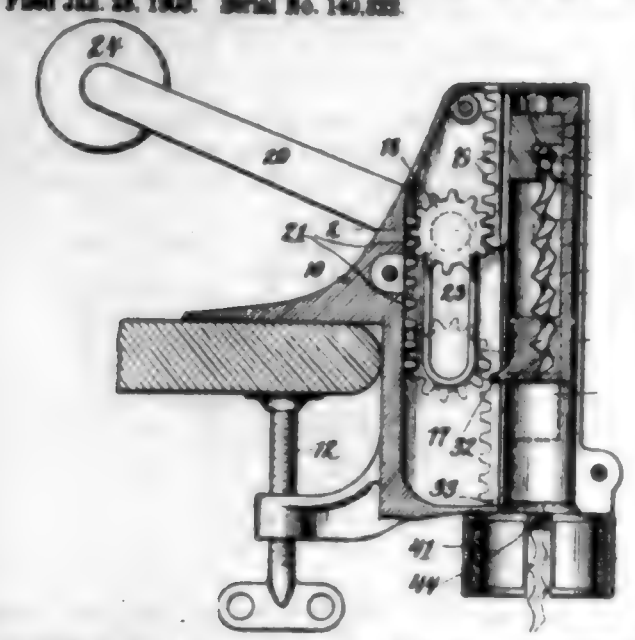
8. The combination with a furnace and a traveling grate, of a rotary bridge-wall connected with the traveling grate to be rotated thereby.

9. The combination with a furnace and a traveling grate, of a rotatable bridge-wall capable of limited up-and-down movement and normally resting on the fuel on the grate.

10. In a furnace, the combination of a traveling grate a bridge-wall normally resting upon the fuel on the grate and capable of being moved up and down by the variations in the thickness of the layer of fuel on the traveling grate passing over the bridge-wall.

11. The combination of a boiler-furnace and a traveling grate, of a cylindrical, perforated bridge-wall, open-ended shafts communicating with the interior of the bridge-wall and rotatably and slidingly supported in the side walls of the furnace and means for connecting the bridge-wall with the traveling grate so that its under surface is advanced in the same direction as the grate.

814,641. CORK-EXTRACTOR. James Coomber, New York, N. Y., assignor, by mesne assignments, to Hugo Reisinger, New York, N. Y. Filed Jan. 28, 1903. Serial No. 140,522.



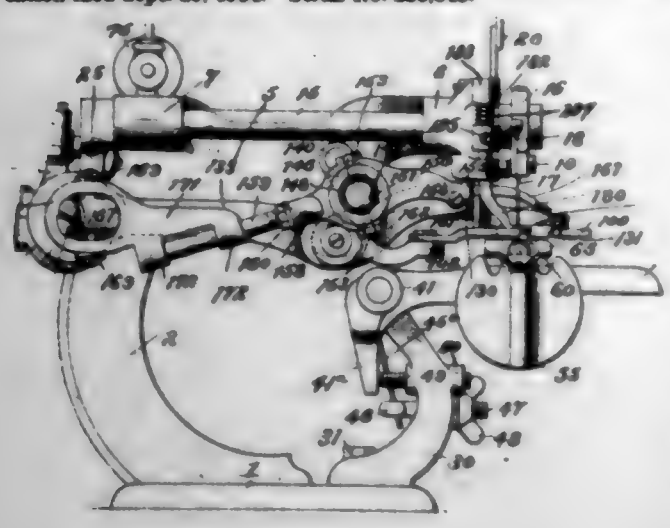
Claim.—1. The combination with a frame of a longitudinally-movable carrier, a corkscrew journaled in said carrier, a nut for rotating said corkscrew having a limited longitudinal movement, a part rigidly secured to and traveling longitudinally with said nut and having a projecting abutment at its upper end in engagement with the carrier when the carrier is in its normal position, to determine the relative position of the carrier and nut during a part of the travel of the corkscrew in one direction.

2. The combination with a frame, of a longitudinally-movable carrier, a corkscrew journaled in said carrier, a nut for rotating said corkscrew and through which said corkscrew is extended and having a limited longitudinal movement, friction-surfaces longitudinally movable with the carrier and nut respectively and engaging each other to cause unison travel of the nut and carrier, said corkscrew being loosely mounted at its bearing in the carrier so that when said surfaces are forced into friction engagement, the corkscrew remains in accurate alinement, and an operating-lever.

3. The combination with a frame, of a longitudinally-movable carrier, a corkscrew journaled in said carrier, a nut for rotating said corkscrew and through which said corkscrew is extended and having a limited longitudinal movement, a part secured to travel with the nut having an extended friction-surface, a friction-surface movement with the carrier, said surfaces being held in engagement with each other to cause unison longitudinal movement of the nut and carrier, said corkscrew being loosely mounted at its bearing in the carrier so that when said surfaces are forced into frictional engagement the corkscrew will remain in accurate alinement

4. In a cork-puller, the combination with a frame, of a longitudinally-movable carrier guided by said frame, a corkscrew journaled in said carrier and having a head at its upper end, said carrier having an open recess through which the head can be inserted laterally into the journal of the carrier, a part movable with said nut, extended adjacent said recess to retain the corkscrew in the carrier and an operating-lever for imparting movement to the carrier.

814,642. STITCH-FORMING MECHANISM FOR SEWING-MACHINES. Charles A. Dearborn, New York, N. Y. Original application filed July 21, 1904. Serial No. 217,474. Divided and this application filed Sept. 20, 1904. Serial No. 226,548.



Claim.—1. In a sewing-machine, the combination with suitable stitch-forming mechanism including a needle, means for supporting the work which is to be operated upon, a suitable feed device, a reciprocating stem carrying a needle-guide and having lifting means, bearings in which said stem is mounted, a spring arranged to lower the stem so as to move the needle-guide away from the needle, and a cam arranged to engage said lifting means and intermittently raise the stem, so as to move the needle-guide into guiding position.

2. In a sewing-machine, the combination with suitable stitch-forming mechanism, including a needle, means for supporting the work to be operated upon, a suitable feed device, a vertically-reciprocating needle-guide, bearings in which said needle-guide is mounted, an arm mounted upon the needle-guide, an oscillatory cam engaging said arm for raising the guide into active position, and a spring engaging the needle-guide for lowering it into inactive position under the control of the cam, substantially as set forth.

3. In a sewing-machine, the combination with a work-support, a suitable feed device, and a needle, of a looper-bar carrying a looper at its forward end and a guide-rod at its rear end, a suspended rock-arm on which the looper-bar is journaled, means for actuating the rock-arm for imparting forward and backward movement to the looper, and a bearing-frame movable laterally and up and down, the guide-rod of the looper-bar being journaled in the bearing-frame and by which the looper is made to move laterally and up and down, substantially as set forth.

4. In a sewing-machine, the combination with a suitable support for work, a suitable feed device, and a needle, of a looper-bar carrying a looper at its forward end and a guide-rod at its rear end, a suspended rock-arm on which the looper-bar is journaled, means for operating said rock-arm for imparting forward and backward movements to the looper, an eccentric crank mechanism, and a laterally-swinging floating bearing having universal-joint connection with said crank mechanism and bearings engaging the guide-rod of the looper, substantially as set forth.

5. In a sewing-machine, the combination of a suitable support for work, a suitable feed device, and a needle and operating mechanism, with a looper-bar carrying a looper at its forward end and a guide-rod at its rear end, a suspended rock-arm carrying a stud, a sleeve freely journaled upon said stud, an opening formed through the looper-bar and loosely surrounding said sleeve, center screws passing through the looper-body and seated in the sleeve, means for operating said suspended rock-arm, and a laterally-swinging floating bearing having bearings which engage the guide-rod of the looper, substantially as set forth.

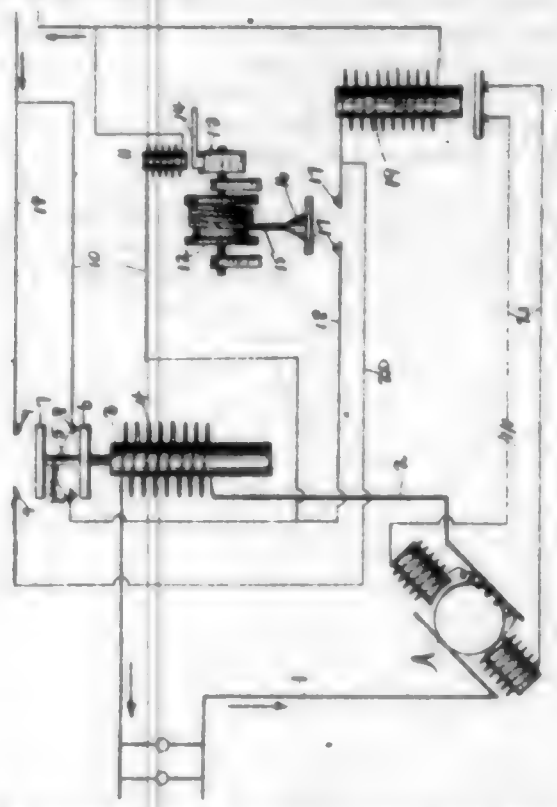
6. In a sewing-machine, the combination with a suitable support for work, a suitable feed device, and a needle, of a looper-bar carrying a looper at its forward end and a guide-rod at its rear end, a suspended rock-arm carrying a stud, a sleeve freely journaled upon said stud, an opening formed through the looper-bar and loosely surrounding said sleeve, center screws passing through the looper-body and seated in the sleeve, a rock-shaft upon which said suspended rock-arm is mounted, means for operating said rock-shaft, eccentric crank mechanism, and a laterally-swinging floating bearing having universal-joint connection with said crank mechanism and formed with bearings which engage the guide-rod of the looper, substantially as set forth.

7. In a sewing-machine, the combination with a suitable support for work, a suitable feed device, and a needle, of a looper-bar carrying a looper at its forward end and a guide-rod at its rear end, a suspended rock-arm on which the looper-bar is journaled, means for operating said rock-arm for imparting forward and backward movements to the looper, an eccentric crank mechanism, including an inclined crank-pin, a laterally-swinging floating bearing, comprising a loop or yoke surrounding said crank-pin and having universal-joint connection therewith, and alined bearing-sockets integral with said loop or yoke, the guide-rod of the looper-bar being freely journaled in said alined bearing-sockets, substantially as set forth.

814,643. PLURAL-SPEED ELECTRICAL CONTROLLER. George W. Eastman, Chicago, Ill., assignor to Mineralac Company, Chicago, Ill., a Corporation of Illinois. Filed May 5, 1904. Serial No. 206,535.

Claim.—1. The combination with an overload-current device, of a controlling device included in an electrical circuit, means for closing said circuit by the passage of a largely-excessive current, a mechanical device requiring a moderate interval of time for its operation, an electromagnetic device for permitting the actuation of said mechanical device, said magnetic device being included in a second

circuit, means for closing said second circuit on the passage of a moderately-excessive current, and means whereby said mechanical device causes the closure of said first-mentioned circuit when operated, substantially as described.



2. The combination of an overload-current relay provided with a pair of circuit-closing devices, a controlling device included in a circuit including contacts adapted to coöperate with one of said circuit-closing devices, a mechanical device requiring a time interval for its operation, an electromagnetic device controlling said mechanical device and included in a second circuit, which includes contacts arranged to coöperate with the other circuit-closing device of said overload-relay, and means whereby the operation of said mechanical device causes the closure of said first-mentioned circuit including the controlling device, substantially as described.

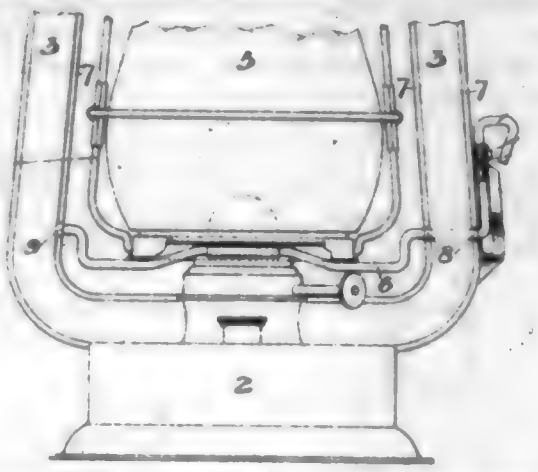
3. The combination of an overload-current relay provided with a pair of circuit-closing devices, a controlling device included in a circuit including contacts adapted to coöperate with one of said circuit-closing devices, a mechanical device requiring a time interval for its operation, an electromagnet controlling said mechanical device and included in a second circuit which includes contacts arranged to coöperate with the other circuit-closing device of said overload-relay, said sets of contacts being arranged to be closed, the last-mentioned set before the first-mentioned set, and means whereby the operation of said mechanical device causes the closure of said first-mentioned circuit including the controlling device, substantially as described.

4. The combination with an overload-current relay provided with a pair of circuit-closing devices, of two sets of contacts arranged to coöperate with said circuit-closing devices, one set being arranged to be closed before the other, a trip-coil included in a circuit with the contacts which are last closed, an electromagnet included in a second circuit which includes the other set of contacts, a mechanical device requiring a time interval for its operation, whose actuation is permitted by energization of said electromagnet, and contacts in said trip-coil circuit whereby the same is closed by said mechanical device, substantially as described.

5. The combination with an overload-current relay provided with a pair of circuit-closing devices, of two sets of contacts arranged to coöperate with said circuit-closing devices, one set being arranged to be closed before the other, a trip-coil included in a circuit with the contacts which are last closed, an electromagnet included in a second circuit which includes the other set of contacts, a mechanical device requiring a time interval for its operation, comprising a rotary drum provided with a coil of cord or rope carrying a weight, and whose actuation is effected by the energization of said electromagnet, and contacts in said trip-coil circuit whereby the same is closed by said mechanical device, substantially as described.

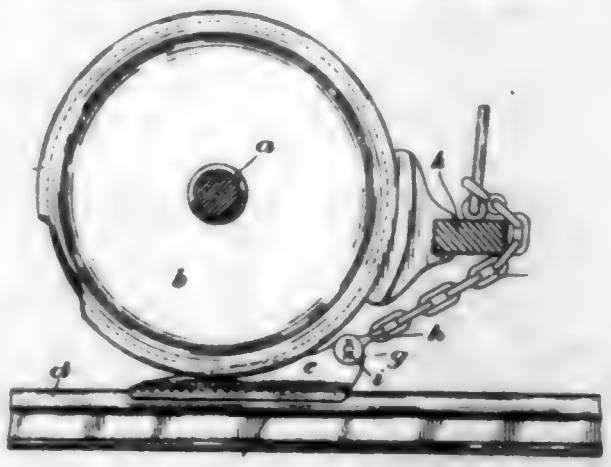
814,644. LANTERN CRANK MECHANISM. ALONZO L. EDWARDS, Wheeling, W. Va. Filed Feb. 15, 1904. Serial No. 193,504.

Claim.—1. A lantern having side air-tubes, each provided with opposite longitudinal seams therein in line with each other, one of said tubes having its opposite seams cut open and spread apart to form bearings near the lower end of the tube, and a crank-lifter shaft extending transversely through the tube and journaled in said two seam-bearings; substantially as described.



2. A crank-lift lantern having a slotted guide secured at the outer seam of the air-tube, said guide having a laterally-bent upper socket arranged to fit the crank, and a crank extending through the slotted guide and arranged to spring into the socket when in vertical position; substantially as described.

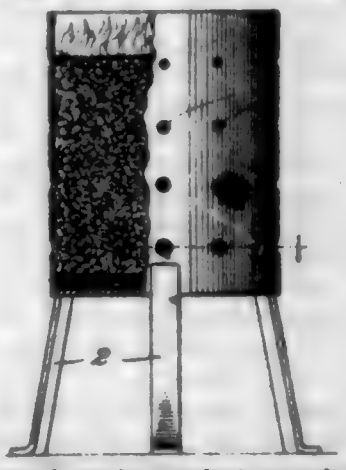
814,645. RAILWAY-CAR-WHEEL SKID. WILLIAM H. FLETCHER, White River, Canada, assignor of one-half to John McCallum, White River, Canada. Filed Apr. 4, 1905. Serial No. 253,912.



Claim.—1. A railway-car-wheel skid comprising a body portion having an even inclined mounting-surface, an even horizontal tread, a depending flange at the inner side thereof and a means for detachably connecting the railway-car-wheel skid to the car so as to slide upon the track and carry the car-wheel upon it.

2. A railway-car-wheel skid having an even horizontal tread, an even inclined mounting-surface of a shorter length than the tread, a flange at one side of the tread only, an apertured lug at the thicker end of the skid, a link pivoted to the lug and a flexible connecting means attached to the link.

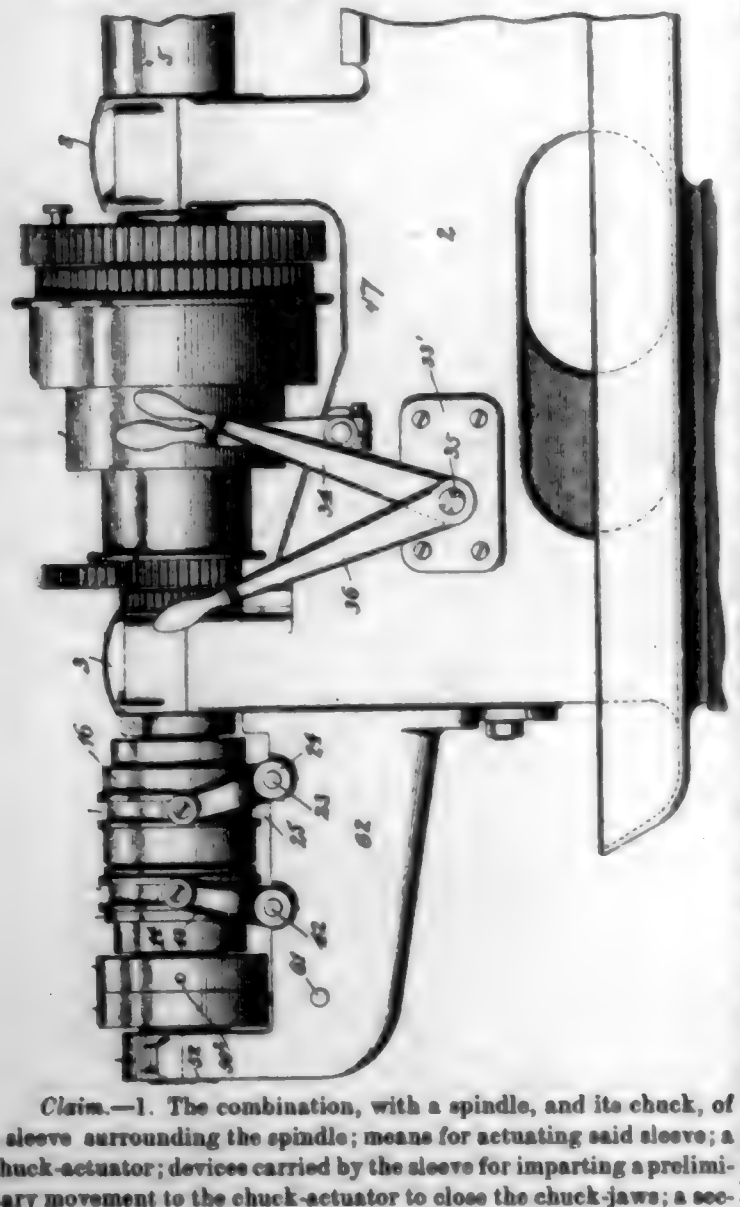
814,646. PRODUCTION OF HEAT AND SMUDGE. GEORGE GRIFFITH, Los Angeles, Cal. Filed Apr. 10, 1905. Serial No. 254,744.



Claim.—A heat and smudge producing method which consists in inclosing the lower part of a fuel mass, of divided ligneous material coated with petroleum having a heavy base, to prevent access of

air thereto, igniting the upper part of the mass and allowing access of air thereto as it burns away, to cause the petroleum at the upper part of the mass to be separated by the heat of the combustion, into a lighter constituent which burns off and into a heavier residuum, and rendering such heavier residuum sufficiently fluid by the action of heat to cause it to run down into the lower part of the mass, to allow the ashes of the fuel mass to accumulate together with this residuum at the bottom of the mass, and to cause combustion of the residuum by the aid of said ashes acting as a wick.

814,647. **MECHANISM FOR ACTUATING CHUCKS.** BENJAMIN W. HARSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed June 6, 1903. Serial No. 160,356.



Claim.—1. The combination, with a spindle, and its chuck, of a sleeve surrounding the spindle; means for actuating said sleeve; a chuck-actuator; devices carried by the sleeve for imparting a preliminary movement to the chuck-actuator to close the chuck-jaws; a second sleeve movable on the first-named sleeve; means carried by said second sleeve for imparting an additional movement to said devices to cause the chuck-actuator forcibly to compress said chuck-jaws upon the stock; and means independent of those for operating the first sleeve for actuating said second sleeve.

2. The combination, with a spindle and its chuck, of a sleeve movable on said spindle; mechanism for independently actuating said sleeve; means controlled by said sleeve for preliminarily closing the chuck; a second sleeve movable on the first sleeve; means controlled by the second sleeve for imparting a final closing movement to said chuck; and devices independent of those for operating the first sleeve for actuating said second sleeve.

3. The combination, with a spindle and its chuck, of a right-and-left screw; a device rigid with the spindle, and into which one section of said screw is threaded; means for actuating said screw; and means actuated by the screw for closing the chuck.

4. The combination, with a tubular spindle, of a chuck carried by the spindle; a chuck-closing device within the spindle; a sleeve carried by the spindle; means actuated by said sleeve for imparting a preliminary closing movement to said chuck-closing device while the spindle is in rotation; and a second sleeve movable on the other sleeve for actuating said means and imparting a final closing movement to said chuck-closing device while the spindle is in rotation, and means independent of those for actuating the first sleeve for operating said second sleeve.

5. The combination, with a tubular spindle, and with a chuck carried by said spindle, said chuck being composed of jaws having conical outer surfaces, of a chuck-actuator having a head shaped to engage the outer surfaces of said jaws; a sleeve movable upon the spindle, and having threaded seats; a collar on the spindle, and also having threaded seats of reverse pitch to those of the sleeve; right-and-left screws for engaging the seats in said collar and sleeve; means for actuating said screws; and devices carried by the sleeve, and having parts in engagement with the chuck-actuator.

6. The combination, with a tubular spindle, of a chuck carried by said spindle; a chuck-actuator within the spindle; a slotted sleeve movable upon the spindle; levers pivoted to said sleeve and working in the slots thereof, said levers having projections in engagement with the chuck-actuator; and a second sleeve movable upon the first-named sleeve, and having cam-plates extending into the slots of said first-named sleeve and engaging said levers.

7. The combination, with a tubular spindle, of chuck-jaws having conical peripheries; a chuck-actuator within the spindle, and having a head conforming on its inner side to the peripheries of said jaws; a sleeve slidable upon the spindle; nuts on said sleeve; right-and-left screws for actuating said sleeve; nuts carried by the spindle; gearing for actuating the screws; and devices carried by the sleeve and in contact with the end of the chuck-actuator.

8. The combination, with a tubular spindle and its chuck, of a chuck-actuator; a slotted sleeve movable upon the spindle; means for actuating said slotted sleeve; levers pivoted in the slots of the sleeve, and having projections adapted to engage the rear end of the chuck-actuator; a second sleeve movable upon the first-named sleeve; cam-plates on the inner side of said second sleeve projecting into the slots of the slotted sleeve, and serving to lock the same against independent rotation on the first sleeve, said cam-plates acting against the rear ends of the pivoted levers; and means for actuating said second sleeve.

9. The combination, with a tubular spindle having a head, of chuck-jaws mounted in said head; a chuck-actuator; a sleeve surrounding and movable upon the spindle; a collar rigid with the spindle; right-and-left screws working in the sleeve and collar; gearing for actuating said screws; and means carried by the sleeve for operating the chuck-actuator.

10. The combination, with a tubular spindle, of a chuck carried by said spindle; a sleeve within the spindle, and having a portion shaped to actuate the chuck; a sliding sleeve upon the spindle; means carried by the sliding sleeve for engaging the chuck-actuating sleeve; a screw engaging a nut in the sliding sleeve; relatively fixed device engaged by the screw; a gear carried by the screw; and means for actuating said gear.

11. The combination, with a tubular spindle, of a chuck carried by said spindle; a sleeve within the spindle, and having a head for actuating the chuck; a sliding sleeve upon the spindle; means carried by the sliding sleeve for engaging the chuck-actuating sleeve; a right and left hand screw having an intermediate gear; a device carried by the spindle and having a nut for engaging one section of said screw; a nut in the sliding sleeve for engaging the other section of said screw; and means for rotating said gear.

12. The combination, with a tubular spindle, of a chuck mounted within a head of said spindle; a chuck-actuating sleeve mounted within the spindle, and having a head shaped to engage and contract the chuck-jaws; a sliding sleeve upon the spindle, said sleeve having a nut; means carried by the sliding sleeve for engaging the chuck-actuating sleeve; a collar on the spindle having a nut; a right and left hand screw having an intermediate gear; a rack for actuating said intermediate gear; and means for reciprocating the rack.

13. The combination, with a rotary spindle and its chuck, of a chuck-actuator; a collar secured to the spindle and having a nut; a screw engaging the nut; a sleeve operated by the screw; means for rotating the screw; and means on the sleeve for engaging the chuck-actuator.

14. The combination, with a spindle and its chuck, of a chuck-actuator; a sleeve on the spindle; levers pivoted to said sleeve, and having parts in engagement with the chuck-actuator; means for actuating the sleeve; a second sleeve mounted for sliding movement on, and rotation with, the other sleeve, means for actuating said second sleeve; and cam-plates carried by the second sleeve for operating the pivoted levers, said cam-plates working in grooves of the first sleeve.

15. The combination, with a tubular spindle, and a chuck supported in a head thereof, of a sleeve having a chuck-actuator, said sleeve being mounted in the spindle; a collar rigid with the sleeve and having a pair of nuts; a sleeve loose upon the spindle, and having nuts of reverse pitch to those of said collar; a pair of right-and-

left screws, each having a gear: means carried by the sleeve loose on the spindle for engaging the sleeve within the spindle; and means for engaging said gears and thereby rotating the screws.

16. The combination, with a tubular spindle and a chuck supported in a head thereof, of a sleeve within the spindle; a chuck-actuator rigid with said sleeve; a device rigid with the spindle, and having a nut; a sleeve loose upon the spindle, and having a nut of reverse pitch to that of said device; means on said sleeve for engaging the inner sleeve; a right and left hand screw engaging said nuts, and having an intermediate gear; a rack for rotating said gear; and means for actuating the rack.

17. The combination, with a tubular spindle having a head, of a sleeve within said spindle and carrying a chuck-actuator, a chuck within the spindle-head; a collar secured to the spindle, and having nuts; a sleeve slidable upon the spindle, and having nuts of reverse pitch to those of the collar; means carried by the slidable sleeve and bearing against the sleeve carrying the chuck-actuator; right and left hand screws in engagement with the nuts of said slidable sleeve and said collar; a spiral gear on each screw intermediate the reversely-pitched parts thereof; racks for rotating said spiral gears; and means for actuating said racks.

18. The combination, with a tubular spindle, of a chuck carried by said spindle; a sleeve within the spindle; a chuck-actuator carried by the sleeve; a collar on the spindle, said collar having a nut; a sleeve slidable upon the spindle and having a nut of reverse pitch to that of the collar; means for engaging said sleeve with the sleeve in the spindle; a screw having right and left hand threads engaging said nuts, and a spiral gear intermediate said threads; a rack in mesh with said spiral gear; and means for actuating the rack.

19. The combination, with a tubular spindle, of a chuck carried by said spindle; a sleeve within the spindle; a chuck-actuator carried by the sleeve; a collar on the spindle, and having nuts; a sleeve slidable on the spindle, and provided with nuts reverse in pitch to those of the collar; screws having right-and-left sections in engagement with the nuts, and spiral gears intermediate said sections; racks for actuating said spiral gears; a carrier for the racks; and means for actuating said carrier.

20. The combination, with a tubular spindle, of a chuck carried by said spindle; means for actuating the chuck; a collar on the spindle, said collar having a nut; a slidable device, constituting a part of the chuck-actuating means, and having a nut of reverse pitch to that of the collar; a screw having right-and-left sections in engagement with said nuts, and a gear intermediate said sections; a rack in engagement with said gear; a carrier for the rack; a lever connected to said carrier; and means for actuating the lever.

21. The combination, with a spindle, and with a chuck carried thereby, of a chuck-actuator within the spindle; a sleeve surrounding the spindle; means carried by the sleeve and in engagement with the chuck-actuator; a collar on the spindle, said collar having oppositely-disposed nuts; oppositely-disposed nuts reverse in pitch to those of the collar in the sleeve upon the spindle; right and left hand screws engaging said nuts; gears carried by said screws; a sliding collar upon the sleeve; racks carried by said collar, and in engagement with the gears of the screw; and means for actuating the rack-carrying collar.

22. The combination, with a tubular spindle having a head, of a sleeve within said spindle, and having a head with an inclined, inner surface; a chuck, the jaws of which have conical peripheries; a sleeve fitted for sliding movement on the spindle; means carried by the sleeve for imparting forward movement to the sleeve within the spindle; right and left hand screws in engagement with nuts carried by the spindle and by the sleeve movable thereon; spiral gears on said screws; racks in engagement with said spiral gears; a collar movable upon the sleeve surrounding the spindle; a lever for actuating said collar; and lever-and-link mechanism for operating the lever.

23. The combination, with a spindle, of a chuck carried by said spindle; a chuck-actuator within the spindle; a sliding sleeve surrounding the spindle; levers pivoted within the sleeve and having projections for engaging the chuck-actuator; a second sleeve surrounding the other sleeve; cam-plates carried by said second sleeve, and in engagement with the free ends of said pivoted levers; mechanism for sliding the primary sleeve upon the spindle to impart a preliminary movement to the chuck-actuator; and means for independently actuating the second sleeve to cause the levers to impart a final movement to said chuck-actuator.

24. The combination, with a tubular spindle, and its chuck, of a chuck-actuating sleeve within the spindle, and having a head to engage said chuck; a sleeve surrounding the spindle, and having internal threads at its forward end; means on said sleeve for engaging the chuck-actuating sleeve; a collar on the spindle having internal threads reverse in pitch to those of the sleeve upon the spindle; a right-and-left screw engaging the threads of said sleeve and said collar; a spiral gear carried by said screw; a collar surrounding the sleeve on the spindle; a rack on the collar and in engagement with said spiral gear; a fork for reciprocating the collar; and means for actuating the fork.

25. The combination, with a tubular spindle, of a sleeve within said spindle; a chuck carried by the spindle, and actuated by a part of the sleeve; a sleeve surrounding the spindle and having internal threads; a collar on the spindle having internal threads of reverse pitch to those of the sleeve; right-and-left screws engaging the threads of said sleeve and collar; spiral gears rigid with said screws; devices carried by the sleeve on the spindle for engaging the sleeve within the same; a collar surrounding the sleeve on the spindle; racks carried by the collar, and in mesh with the spiral gears of the screws; and lever-and-link mechanism for actuating the rack-carrying collar.

26. The combination, with a tubular spindle having a head, of a sleeve within the spindle, and having a head with an inclined, inner surface; a chuck having an inclined peripheral surface; a sleeve slidable upon the spindle; levers pivoted to said sleeve, and having projections in engagement with the end of the inner sleeve; mechanism for reciprocating the sleeve upon the spindle; a sleeve surrounding said sleeve upon the spindle; cam-plates carried by the surrounding sleeve, and in engagement with the free ends of the pivoted levers; a fork having projections fitted in a groove of the surrounding sleeve; a lever for actuating said fork; a link connected at one end to the lever; a rock-arm to which said link is also connected; and means for actuating said rock-arm.

27. The combination, with a tubular spindle and its chuck, of an inner sleeve having a head for actuating the chuck; a sleeve surrounding the spindle, and having nuts; levers pivoted to said sleeve and in engagement with the end of the inner sleeve; a collar secured to the spindle and having nuts of reverse pitch to those of the outer sleeve; right and left hand screws in engagement with the nuts of the sleeve and collar; spiral gears carried by said screws; a collar on the outer sleeve; racks on said collar, and in mesh with the spiral gears, a pivoted fork for reciprocating the collar; a link connected to an arm of said fork; a rock-arm; and means for actuating said rock-arm.

28. In mechanism of the class described, the combination, with a tubular spindle, of a sleeve within said spindle; a chuck adapted to be actuated by a part of said sleeve; an outer sleeve having nuts; pivoted levers carried by said outer sleeve, and having projections in engagement with the inner sleeve; a collar secured to the spindle, and having nuts of a pitch reverse to those of said outer sleeve; right and left hand screws engaging the nuts of the outer sleeve and collar; spiral gears carried by said screws; a rack-carrier upon the outer sleeve; racks supported by said carrier, and in mesh with the spiral gears; a fork for reciprocating the rack-carrier; lever-and-link mechanism for actuating the fork; a second sleeve movable on said outer sleeve; cam-plates carried by said second sleeve, and in engagement with the free ends of the pivoted levers; a fork for reciprocating said second sleeve; and lever-and-link mechanism for actuating said fork.

814,648. **CHUCK FOR METAL-WORKING MACHINES.** Benot M. W. Hanson, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed June 6, 1903. Serial No. 160,356.

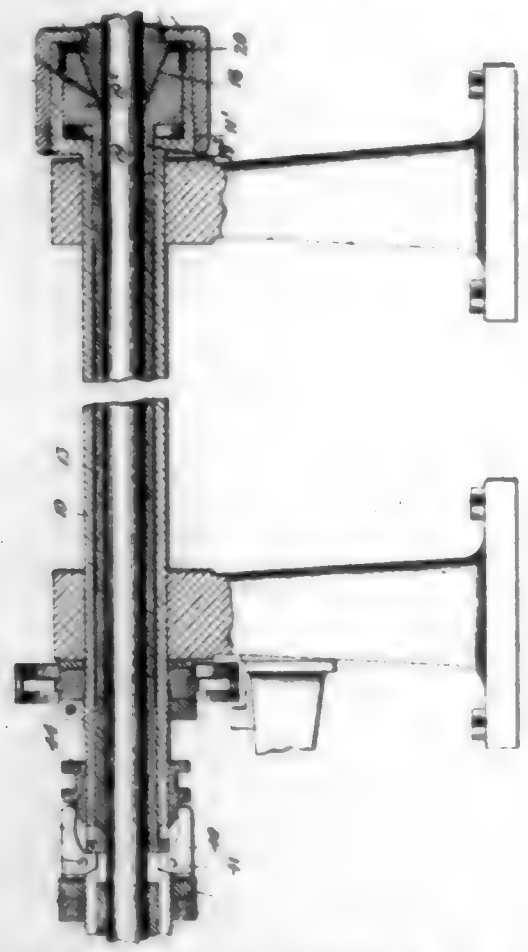
Claim.—1. The combination, with a head having an abutment, of a chuck composed of independent jaws; a jaw-actuator; plungers carried by said jaw-actuator, and serving to hold the jaws against said abutment; and springs between said plungers and a part of the jaw-actuator.

2. The combination, with a chambered head, of independent chuck-jaws mounted in said head and each having a stop; a cap having a perforated flange against which the stops of the jaws are held; a jaw-actuator; means for operating said actuator to close the jaws; spring-actuated plungers carried by the jaw-actuator, and serving to hold the chuck-jaws against the flange of the cap; and means for retracting the jaw-actuator to cause it to release the jaws.

3. The combination, with a chambered head having a perforated flange at its forward end, of independent chuck-jaws, each having a shoulder on its outer surface; a jaw-actuator; plungers carried by said jaw-actuator, and bearing against the inner surfaces of said shoulders; and springs for actuating said plungers.

4. The combination, with a chambered head, of independent

chuck-jaws mounted in said head and having conical exterior surfaces; a jaw-actuator shaped to engage said surfaces; a cap rigid with the head, and having a perforated abutment at its forward end; plungers fitted in longitudinal recesses of the jaw-actuator; and springs for causing said plungers to hold the chuck-jaws against said abutment.



5. The combination, with a chambered head, of a perforated abutment overlapping the forward end of said head; chuck-jaws having conical and undercut surfaces; a recessed jaw-actuator having a conical interior; and spring-actuated plungers located in the recesses of the actuator and having inclined ends for fitting the undercut surfaces of said chuck-jaws.

6. The combination, with a chuck composed of jaws each of which is provided with a recess having an undercut wall, of a head in which said chuck is mounted; a cap having a flange at its forward end, said cap being rigid with the head; a series of plungers having inclined ends adapted to engage the undercut walls of the recesses; a support for said plungers; and means for forcing said plungers forward to thereby hold the chuck-sections against the flange, and to prevent them from inward movement when the chuck is open.

7. The combination, with a chambered head, of conical jaw-segments mounted in said head, and having notches with undercut walls; a recessed jaw-actuator having an inclined inner surface; plungers seated in the recesses of the actuator and having inclined forward ends received within the notches of the jaws; and springs for impelling said plungers against the undercut walls of said notches, and thereby preventing inward movement of the jaws when they are in their open positions.

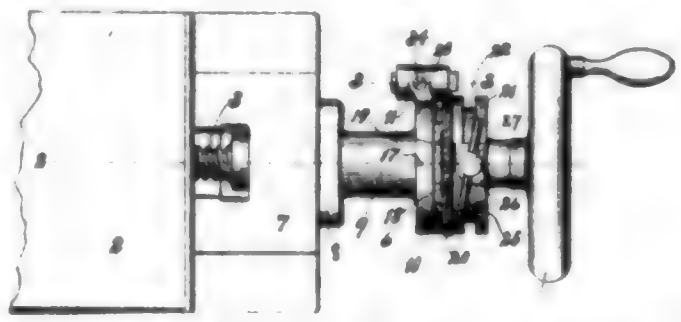
8. The combination, with a chambered head, of a cap removably secured to the head and having a perforated flange; a series of conical jaw-segments, each having a shoulder and a recess with an undercut wall; a conical jaw-actuator having recesses; plungers with inclined forward ends fitted in the recesses of the jaw-actuator, springs bearing against the plungers and impelling them forward; and means for operating said jaw-actuator.

9. The combination, with a conical actuator, of chuck-jaws having grasping-surfaces formed on an arc struck from an axis concording with the axis of the chuck when the latter is in engagement with the largest size of stock within the capacity of the chuck, and conical peripheral surfaces formed on arcs struck from an axis conforming to the axis of the smallest size of standard stock which the jaws are adapted to engage.

10. A chuck composed of jaws each having a curved grasping-surface and a conical peripheral surface eccentric to said grasping-surface, the peripheral surfaces being formed on arcs struck from an axis nearer the grasping-surface than the axis of the curve on which the grasping-surface is formed.

11. A chuck-jaw having a curved grasping-surface, and an outer conical surface, said outer conical surface being formed on arcs struck from an axis nearer the grasping-surface than the axis of the curve on which the said grasping-surface is formed.

814,649. **FEED-ADJUSTING DEVICE FOR THE CROSS-SLIDES OF METAL-WORKING MACHINES.** BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Dec 19, 1904. Serial No. 237,545.



Claim.—1. The combination, with a support, and with a slide thereon, of a screw for actuating said slide; a bearing projecting from the support, said bearing having a head provided with a graduation; a carrier connected to the screw; a stop adjustable circumferentially of said carrier; and a graduated ring also adjustable circumferentially of the carrier, and located adjacent to the head of the bearing.

2. The combination, with a support, and with a slide movable thereon, of a tubular bearing projecting from the support, and having a head provided with a graduation; a carrier rigid with the barrel of the screw adjacent to said head; a graduated ring adjustable circumferentially of the carrier; a stop also adjustable circumferentially of the carrier; and a movable stop carried by the head, and coöperating with the stop of the carrier.

3. The combination, with a support, of a bearing having an indicating-mark; a screw journaled in said bearing; a slide on the support, and actuated by the screw; a grooved head rigid with the screw; a split ring adjustable circumferentially of the head, said ring being graduated; a stop adjustable in the groove of the head; and a stop slidably mounted on the bearing.

4. The combination, with a support, of a cross-slide thereon; a screw for actuating said cross-slide; a bearing projecting from the support, and in which the barrel of the screw is journaled, said bearing having a plate at its outer end provided with an indicating-mark; a bearing projecting from the plate; a pin provided with notches and having an inclined end mounted for sliding movement in the bearing of the plate; a detent for engaging the notches and locking the pin; a graduated split ring; a head rigid with the barrel of the screw, and over which said split ring is adjustable; and a stop circumferentially adjustable on the head.

814,650. **AIR-FEEDING DEVICE.** ERRO HARCHARICK, Wilkes-Barre, Pa. Original application filed Apr. 1, 1904. Serial No. 201,121. Divided and this application filed Aug. 9, 1904. Serial No. 220,113.

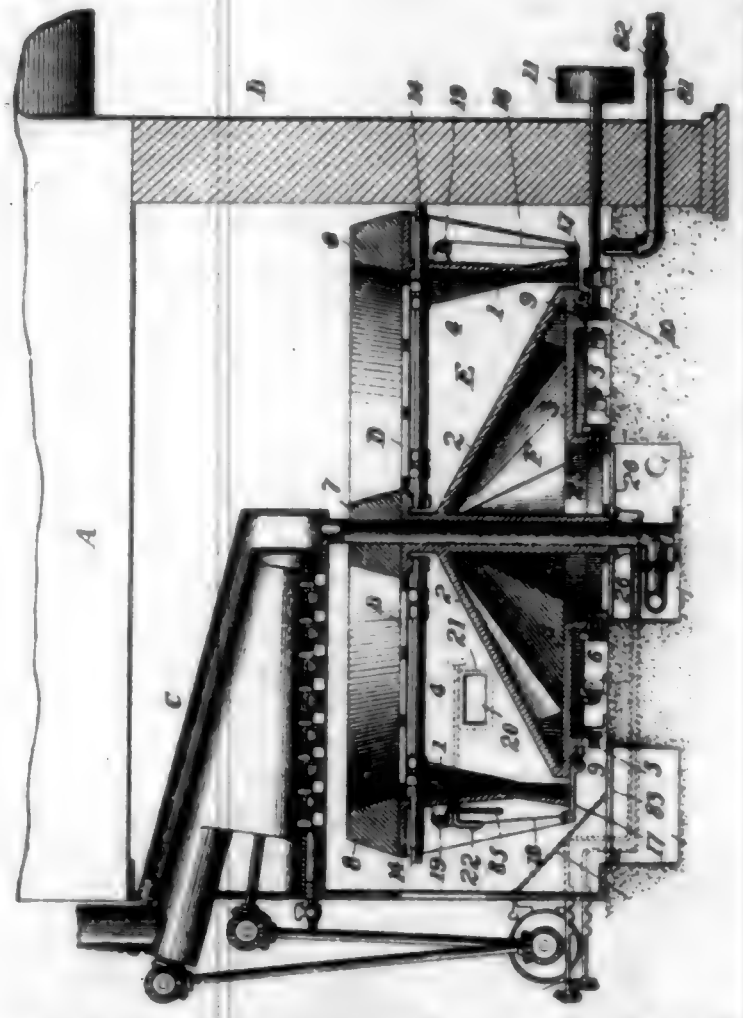
Claim.—1. In a furnace, the combination of a frame having its interior divided into a central air-chamber and an ash-chamber arranged about and over said air-chamber, a grate supported above said ash-chamber, and means for controlling the passage of air from the air-chamber to the ash-chamber, substantially as described.

2. In a furnace, the combination of a frame having its interior divided into a central air-chamber and a plurality of ash-chambers arranged about and over said air-chamber, a sectional grate supported by said frame and having each of its sections arranged over one of the ash-chambers, and independent means for controlling the passage of air from the air-chamber to each of the ash-chambers, substantially as described.

3. In a furnace, the combination of a frame having its interior divided into a central air-chamber and a plurality of ash-chambers arranged about and over said air-chamber, a sectional grate supported by said frame and having each of its sections arranged over one of the ash-chambers, means for controlling the admission of air to the air-chamber, and independent means for controlling the passage of air from the air-chamber to each of the ash-chambers, substantially as described.

4. In a furnace, the combination of an inclosed frame or support having its interior divided into a central air-chamber and a plurality of ash-chambers arranged over said air-chamber, and having aper-

tures formed in their walls, a grate supported by said frame, and means for opening and closing the apertures in the walls of said ash-chambers to control the passage of air to said chambers, substantially as described.



5. In a furnace, the combination of a rotatable frame having its interior divided into a central air-chamber and an ash-chamber arranged about and over said air-chamber, a sectional grate supported by said frame above the ash-chamber, means for revolving said frame, and means for controlling the passage of air from the air-chamber into the ash-chamber below the grate, substantially as described.

6. In a furnace, the combination of a rotatable frame, having its interior divided to provide a central air-chamber, and a plurality of ash-chambers arranged about and over said air-chamber, a sectional grate carried by said frame above the ash-chambers each section of said grate being arranged above one of the ash-chambers, means for revolving said frame, and means for independently controlling the admission of air to each of the ash-chambers, substantially as described.

7. In a furnace, the combination with a suitable chamber, of a frame arranged in and separated from the side walls of said chamber, the interior of said frame being divided into a central air-chamber and an ash-chamber arranged above said air-chamber, a grate supported by said frame, means for supplying air to said central air-chamber, means for supplying fluid under pressure to the furnace-chamber outside of said frame, and independent means for controlling the passage of air to the ash-chamber and grate, substantially as described.

814,651. VENTILATOR. JOSEPH L. HARRINGTON, Chicago, Ill., and SCHUYLER C. HODGE, Milwaukee, Wis.; said Hodge assignor to said Harrington. Filed Mar. 14, 1905. Serial No. 250,083.



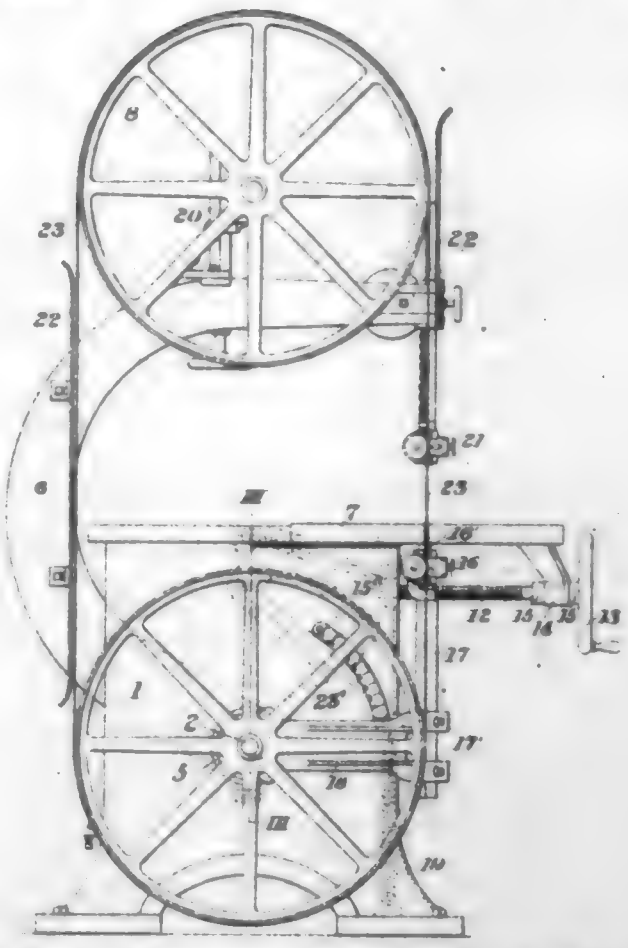
Claim.—1. A ventilator comprising a casing having an outer wall and side openings, partitions made of perforated material and forming air-passages, and other perforated partitions extending inwardly from said outer wall.

2. A ventilator comprising a casing having an outer wall with rearwardly-extending curved portions, and having side openings, and partitions made of perforated material, located in said casing, two of said partitions being curved to correspond to the outer wall of said casing, the two others being curved outwardly from the middle of the casing at which point they are connected with said outer wall.

3. A ventilator comprising a casing having an outer wall with rearwardly-extending curved portions, and having side openings, and partitions made of perforated material, located in said casing, two of said partitions being curved to correspond to the outer wall of said casing, the two others being curved outwardly from the middle of the casing at which point they are connected with said outer wall, said central partitions being provided with backwardly-turned ends.

4. A ventilator, comprising a casing having an outer wall and side openings, partitions made of perforated material and forming air-passages, other perforated partitions extending inwardly from said outer wall, and a longitudinally-corrugated bottom for said casing.

814,652. BAND-SAW MACHINE. ELMER HARROLD and CLINTON G. WILDERSON, Leetonia, Ohio. Filed Sept. 25, 1905. Serial No. 279,903.



Claim.—1. In a band-saw machine, the combination with a rocking yoke carrying the upper band-wheel, a horizontally-movable table, and means for moving the same, of toothed gearing intermediate said yoke and table arranged to cause a varying movement of said yoke as its angular position changes; substantially as described.

2. In a band-saw machine, the combination with an angularly-adjustable yoke carrying the upper band-wheel, a horizontally-movable table, and means for moving the table, of intermeshing gearing connecting the yoke and table and having compound pitch-lines whereby its action varies as the angular position of the yoke changes; substantially as described.

3. In a band-saw machine, the combination with an angularly-movable yoke carrying the upper band-wheel, a horizontally-movable saw-table, and means for moving the said table, of a toothed rack on the table, and a toothed segment on the yoke engaging said rack, said rack and segment having compound pitch-lines; substantially as described.

4. In a band-saw machine, having an angularly-adjustable yoke, a horizontally-movable saw-table, and means for actuating said table, intermeshing segment and rack-gear connecting said table and yoke and having variable pitch-lines to increase the angular movement of said arm with respect to a given movement of the table as the angular position of said arm becomes greater; substantially as described.

5. In a band-saw machine, the combination of an angularly-adjustable yoke carrying the upper band-wheel, and centered on the axis of the lower band-wheel, a toothed segment-arm on said yoke, a

horizontally-slidable table, a rack on the under side of said table and having its teeth engaging those of the segment, said rack and segment having their pitch-lines straight at one portion and curved at another portion, and means for actuating the table; substantially as described.

6. In a band-saw machine, the combination with a rocking yoke carrying the upper band-wheel, and actuating means therefor, of a lower band-guide, and a carrier therefor having a sliding support in the said yoke; substantially as described.

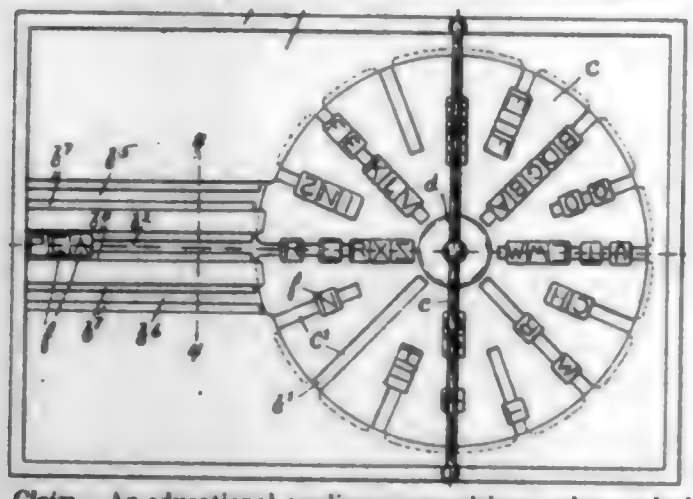
7. In a band-saw machine, the combination with a rocking yoke carrying the upper band-wheel, a table, and means for actuating said yoke and table, of a lower band-guide, a support for said guide, and a slidable connection between the support and the said yoke; substantially as described.

8. In an adjustable band-saw machine having a horizontally-movable table and a tilting yoke for its upper band-wheel, a lower saw-guide linked to the table; substantially as described.

9. In an adjustable band-saw machine having a horizontally-movable table and a tilting yoke for its upper band-wheel, a guide-arm secured to the trunnion of the tilting yoke and a saw-guide movably supported in the said arm; substantially as described.

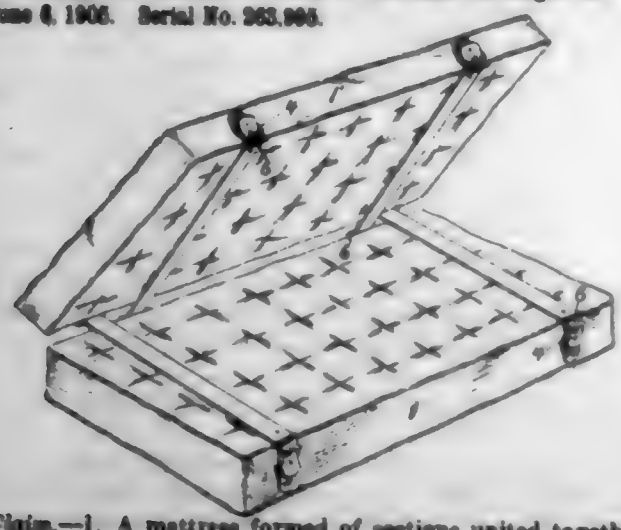
10. A band-saw machine having a horizontally-movable table, and a tilting yoke carrying the upper band-wheel, a lower saw guide secured to the trunnion of the tilting yoke, and a link connection between said guide and the table; substantially as described.

814,653. EDUCATIONAL APPLIANCE. JAMES A. HEALEY, Wakefield, Mass., assignor to American Toy Manufacturing Company, a Corporation of Maine. Filed Feb. 24, 1905. Serial No. 247,102.



Claim.—An educational appliance comprising a plate or body having a circular aperture therethrough and having a block-receiving slot leading to said aperture and an annular guideway-slot leading from said aperture in the plane of the plate, supports connected to said plate and extending over said aperture, a flat disk located in said aperture journaled on said supports and having a projecting tongue at its edge portion located in said guiding-slot, said disk also having a series of block-holding slots leading to its periphery and adapted to register with the end of said receiving-slot, and a series of blocks slidably mounted in said receiving and holding slots, substantially as described.

814,654. SECTIONAL MATTRESS. HENRY C. KER, Carthage, Mo., assignor of one-half to Philip R. Hannum, Carthage, Mo. Filed June 6, 1905. Serial No. 263,995.



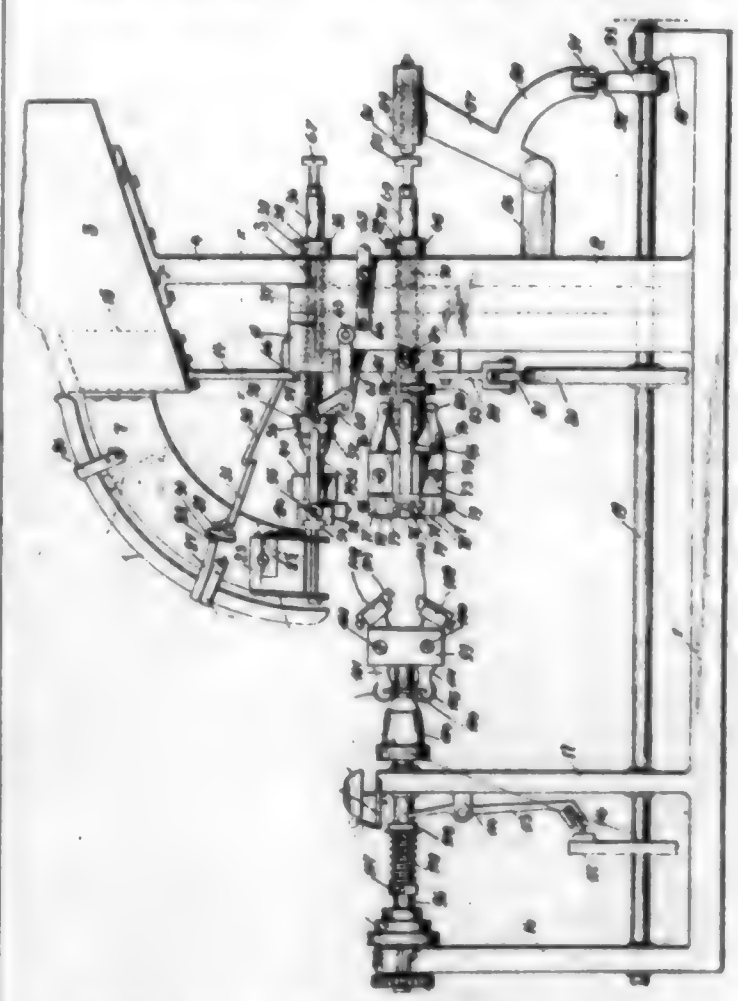
Claim.—1. A mattress formed of sections united together by pairs of straps, one pair of straps being attached to one edge of one section and to the corresponding edge of the other section, and the other pair of straps being attached to the opposite edges of the sections to which the first-named pair of straps is attached, the said pairs of straps passing across corresponding faces of the sections, substantially as set forth.

2. A mattress formed of sections united by pairs of straps or bands, one pair of straps being connected to one edge of one section and the corresponding edge of the other section, and the other pair to the edges of the sections that are opposite those to which the first-named pair of straps is connected, the straps being secured to the mattress-sections by clasps and constructed to permit pivotal or turning movements of the straps or bands relative to the mattress-sections, substantially as set forth.

3. A mattress formed of sections united together by pairs of straps, one pair of straps being attached to one edge of one section and the corresponding edge of the other section, and the other pair of straps being attached to the opposite edges of the sections to which the first-named pair of straps is attached, the said pairs of straps passing across the corresponding faces of the sections, and each strap being formed of two parts with a take-up device, whereby it may be adjusted as to its length, substantially as set forth.

4. In a mattress formed of sections united together by pairs of straps, one pair of straps being attached to one edge of a section and to the corresponding edge of the other section, and the other pair of straps being attached to the opposite edges of the sections to which the first-named pair of straps is attached, the said pairs of straps passing across the corresponding faces of the sections, and loops at the edges of the mattress-sections through which the straps pass, substantially as set forth.

814,655. BOLT THREADING AND TAPERING MACHINE. RAIMUND KIENZL, Pittsburg, Pa., assignor of one-half to George Schmidt, Pittsburg, Pa. Filed Mar. 1, 1905. Serial No. 247,918.



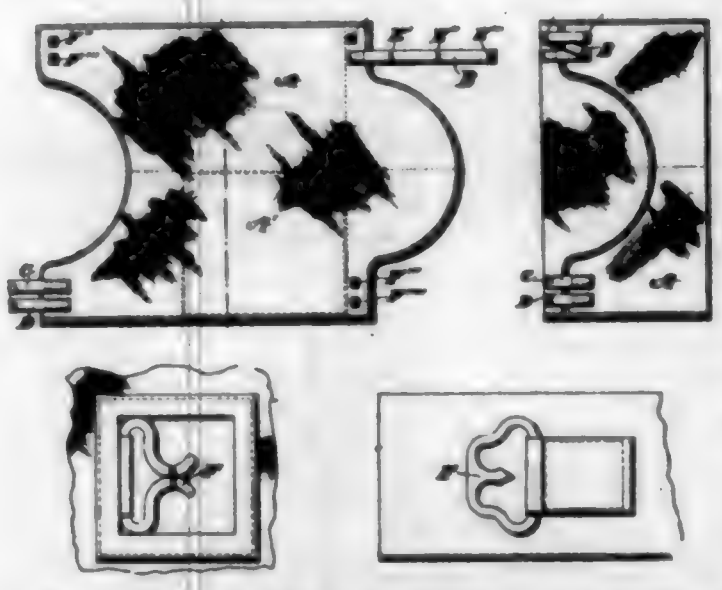
Claim.—1. In a machine for threading and tapering bolts, the combination with a suitable supporting-frame, and blank-feeding mechanism mounted on the frame, blank-holding devices carried by the blank-feeding mechanism, a reciprocable block mounted on said frame, mechanism mounted on the frame for reciprocating said block at regular intervals, a reciprocable rod carried by said reciprocable block, blank-gripping devices carried by said rod, blank-tapering devices carried by said rod, a rotary shaft journaled in said frame, blank-gripping devices carried by said rotary shaft, a second rod carried by said reciprocable block, threading devices carried by said second rod and means mounted on the frame for reciprocating said rods alternately while each is in alinement with said rotary shaft.

2. In a machine of the type described, the combination of a suitable frame, blank-feeding mechanism mounted on the frame, a reciprocable block mounted on the frame, mechanism for reciprocating said block, a rod carried by said block, a cutter carried by said rod, gripping devices carried by said rod, means mounted on the frame for automatically operating said gripping devices, a rotary shaft journaled on the frame, gripping devices carried by said rotary shaft, means for automatically operating the gripping devices on said rotary shaft.

3. In a machine of the type described, the combination with a suitable frame, a reciprocable block mounted on said frame, mechanism for reciprocating said block, a reciprocable rod carried by said reciprocable block, blank-gripping devices carried by said rod, blank-tapering devices carried by said rod, a rotary shaft mounted on the frame, automatically-operating blank-gripping devices carried by said rotary shaft, a second rod carried by said reciprocable block, a threading-die carried by said second rod, means for reciprocating said rods when each is in alinement with said shaft.

4. In a machine of the type described, the combination with a vertical reciprocable member, of gripping mechanism and a tapering mechanism carried by said member, a feeding mechanism arranged to deliver a bolt in position to be grasped by said gripping mechanism, means for operating said gripping mechanism, thread-cutters carried by said member, a revolving head adapted to grip a bolt while being acted upon by said tapering mechanism and said thread-cutters, means to operate said member, means to revolve said head and means to release said bolt from said head when the operation has been finished, substantially as described.

814,656. **HORSE-BLANKET.** CARL LOUSBERY, Los Angeles, Cal. Filed June 27, 1904. Serial No. 214,416.



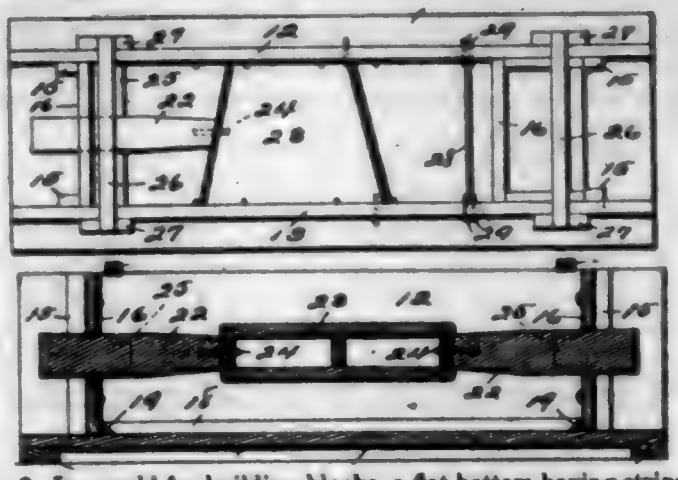
Claim.—1. As an article of manufacture, a horse-blanket the forward end of which is recessed to receive and fit the neck and the rear end projecting correspondingly so that the ends when folded and brought together and superimposed upon the middle of the blanket fit each other and produce a saddle-blanket of uniform thickness throughout.

2. As an article of manufacture, a horse-blanket having a portion only of its surface waterproof, said waterproof portion folded outside when the article is used as a saddle-blanket, thereby preventing the passage of moisture to any other parts of the folded blanket.

3. As an article of manufacture, a horse-blanket the ends of which are adapted to engage each other throughout the width of the blanket when folded upon the center, whereby there are two thicknesses throughout, one-half of the center fold being waterproof, a second fold in the blanket bringing the waterproof section outermost, whereby moisture is prevented from passing to the remaining folds of the blanket.

814,657. **TRANSFORMABLE MOLD FOR BUILDING-BLOCKS.** HAROLD A. LOW, Lake City, Iowa, assignor to Electrical Concrete Post Company, Lake City, Iowa. Filed May 26, 1905. Serial No. 262,511.

Claim.—1. In a mold for building-blocks, a flat bottom having strips of molding fixed on its top near its longitudinal edges, movable parallel sides fitted on the bottom and against the fixed strips of molding and movable ends having strips of molding at their bottoms and inside faces fitted on top of the bottom and against the movable sides and means to attach the movable sides and ends together on the flat bottom.



2. In a mold for building-blocks, a flat bottom having strips of molding fixed on its top near its longitudinal edges, movable parallel sides fitted on the bottom and against the fixed strips of molding and movable ends having strips of molding at their bottoms and inside faces fitted on top of the bottom and against the movable sides, a movable core and the movable ends provided with central apertures and core-supports extended through the apertures and their inner ends connected with the core and means to detachably fasten the movable parts together.

3. In a mold for building-blocks, a flat bottom having strips of molding fixed on its top near its longitudinal edges, movable parallel sides fitted on the bottom and against the fixed strips of molding and movable ends having strips of molding at their bottoms and inside faces fitted on top of the bottom and against the movable sides, a movable core and the movable ends provided with central apertures and core-supports extended through the apertures and their inner ends connected with the core and cores fixed to the inside faces of the movable ends at the sides of the apertures and means to detachably fasten the movable parts together.

4. In a mold for building-blocks, a flat bottom, having strips of molding fixed on its top near its longitudinal edges, parallel sides detachably connected with the bottom and its fixed moldings, a movable end having a fixed molding at the bottom of its inside face fitted between the parallel sides and provided with a central aperture, a movable core-support fitted in the aperture, a movable core fitted between the parallel sides, means to connect the inner end of the core-support with the movable core, means to connect the ends of the core with the inside faces of the parallel sides and a flat movable plate fitted between the parallel sides to close the end of the mold as required to make one end of a block solid and shorter in the same mold.

5. In a mold for building-blocks, a flat bottom, parallel movable sides, movable ends fitted between the parallel sides, an auxiliary movable bottom on top of the bottom and between the sides, a movable piece of molding on top of the auxiliary bottom and extended longitudinally against one of the sides and means for detachably fastening all the parts together as required to produce a water-table on the front face of the block, extending from end to end.

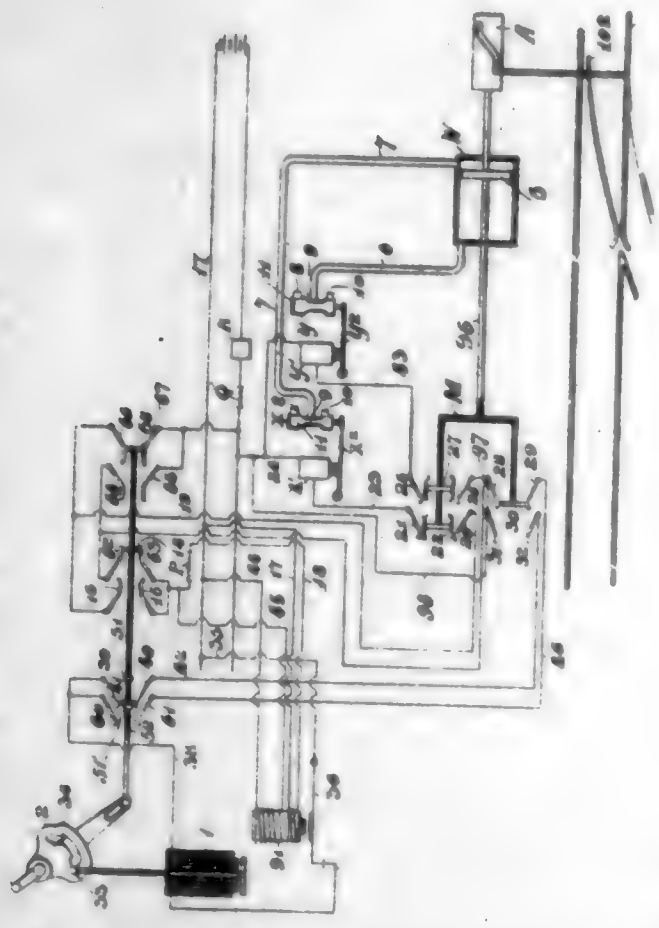
6. In a mold for building-blocks, a flat bottom having strips of molding fixed on its top near its longitudinal edges, movable parallel sides fitted on the bottom, movable ends, having fixed pieces of molding on their inside faces and bottom edges and central apertures, core-supports fitted in the apertures, a movable core connected with the inner ends of the core-supports and with the inside faces of the parallel sides, means to retain one of the ends on the central portion of the bottom and means for detachably fastening all the movable parts together as required to produce short blocks in the same mold.

814,658. **SAFETY DEVICE FOR RAILWAY SWITCH AND SIGNAL APPARATUS.** LAWRENCE GRIFFITH, Yonkers, N. Y. Filed Nov. 5, 1904. Serial No. 231,514.

Claim.—1. In apparatus for operating switches, signals, and the like, comprising an electric indicator and an electrically-controlled pneumatic motor for the motion-plate or device to be moved, means for preventing the action of the indicator while there is air under pressure supplied to the pneumatic motor of said motion-plate.

2. In apparatus for operating switches, signals, and the like, comprising an electric indicator, a pneumatically-operated motion-plate or device to be moved, and two electropneumatic valves for controlling the supply of air under pressure to the operative means of said motion-plate, means for preventing the action of the indicator while there is electric energy supplied to either of said valves.

3. In apparatus for operating switches, signals, and the like comprising an electric indicator and an electrically-controlled pneumatic motor for the motion-plate or device to be moved, means for preventing the action of the indicator while there is electric energy supplied to the controlling means of said motor, which consists of a relay adapted to break the electric connection of said indicator at said times.



4. In apparatus for operating switches, signals, and the like comprising an electric indicator and an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, means for holding the apparatus by the action of the indicator upon its circuit being accidentally returned to source of energy.

5. In apparatus for operating switches, signals, and the like having an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, the combination of an electric indicator, means for shunting current away from the controlling means of said motor, with means for preventing action of the indicator while there is electric energy supplied to said controlling means of the motor.

6. In apparatus for operating switches, signals, and the like having an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, the combination of means for shunting current away from the controlling means of said motor when the apparatus is at normal or reverse position, with a fuse or cut-out device in the circuit of said controlling means.

7. In apparatus for operating switches, signals, and the like having an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, an indicator consisting of a mechanical device operated by a single electric unit and means for connecting said unit with the same source of electric energy that actuates the controller of said motor.

8. In apparatus for operating switches, signals, and the like having an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, an indicator whereby the apparatus is thrown to full-reverse or normal position, consisting of a mechanical device operated by a single electric unit.

9. In apparatus for operating switches, signals, and the like having an electrically-controlled fluid-pressure motor for the motion-plate or device to be moved, an electric indicator whereby the apparatus is automatically thrown to full-reverse or normal position upon each complete movement of said motion-plate.

DESIGNS.

37,864. BADGE. Charles M. Waite, New York, N. Y. Filed Feb. 3, 1906. Serial No. 298,371. Term of patent 7 years.

37,864.



Claim.—The ornamental design for a badge as shown.

37,865. BADGE. Charles J. Diegns, New York, N. Y. Filed Feb. 5, 1906. Serial No. 299,671. Term of patent 14 years.



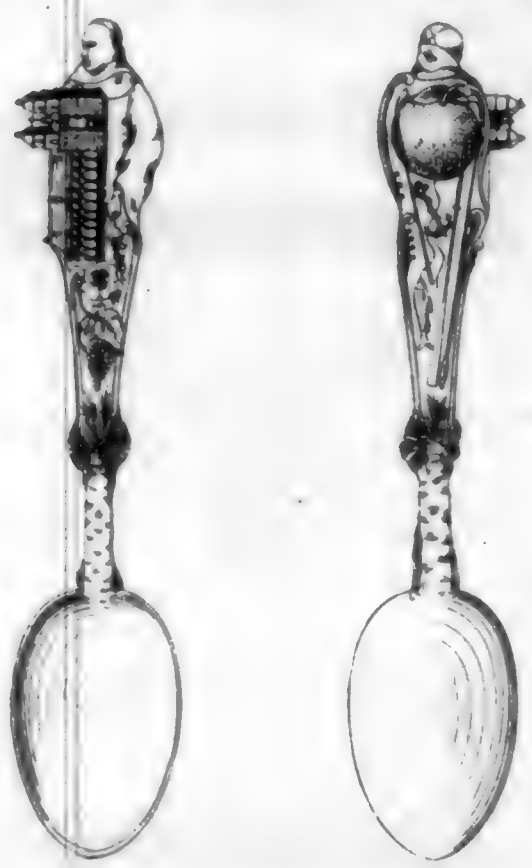
Claim.—The ornamental design for a badge, as shown.

37,866. SPOON OR SIMILAR ARTICLE. John R. Bookwalter, Oklahoma, Okla. Filed Jan. 5, 1906. Serial No. 294,790. Term of patent 7 years.



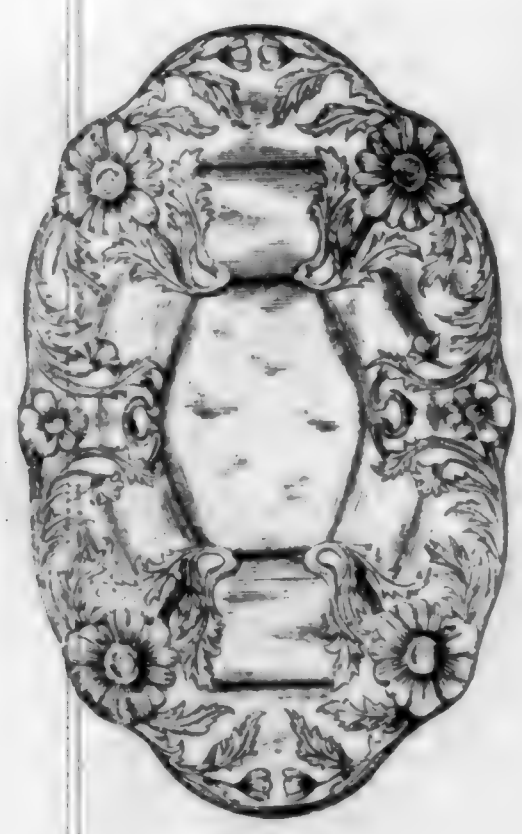
Claim.—The ornamental design for a spoon or similar article, as shown.

37,867. SPOON-HANDLE. EDWARD MERRY, Jr., Salt Lake City, Utah. Filed Jan. 22, 1906. Serial No. 297,594. Term of patent 7 years.



Claim.—The ornamental design for a spoon-handle, as shown.

37,868. BREAD-TRAY. WILLIAM MISCHLER, New York, N. Y., assignor to Frederick H. Webster and Hawley T. Webster, Brooklyn, N. Y., a Firm. Filed Jan. 17, 1906. Serial No. 296,577. Term of patent 3½ years.



Claim.—The ornamental design for a bread-tray or similar article, substantially as shown.

37,869. PENCIL. EBERHARD FABER, New York, N. Y. Filed July 31, 1905. Serial No. 272,134. Term of patent 7 years.

37,869.



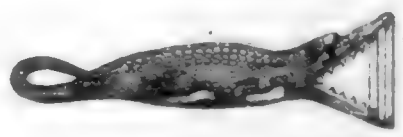
Claim.—The ornamental design for a pencil, as shown.

37,870. PENCIL. EBERHARD FABER, New York, N. Y. Filed July 31, 1905. Serial No. 272,135. Term of patent 7 years.



Claim.—The ornamental design for a pencil, as shown.

37,871. BODKIN. JOSEPH H. CROSBY, Jacksonville, Fla. Filed Jan 24, 1906. Serial No. 297,720. Term of patent 7 years.



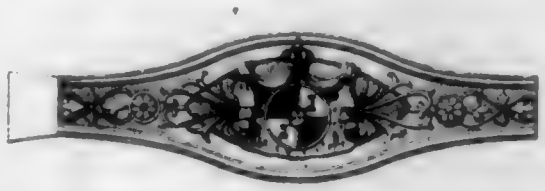
Claim.—The ornamental design for a bodkin as shown.

37,872. CIGAR-BAND. LOUIS C. WAGNER, New York, N. Y. Filed Feb. 2, 1906. Serial No. 299,213. Term of patent 7 years.



Claim.—The ornamental design for a cigar-band, as shown.

37,873. CIGAR-BAND. LOUIS C. WAGNER, New York, N. Y. Filed Feb. 2, 1906. Serial No. 299,214. Term of patent 7 years.



Claim.—The ornamental design for a cigar-band, as shown.

37,874. TABLET OR LOZENGE. JOHN PETERSON, Buffalo, N. Y. Filed Jan. 16, 1906. Serial No. 296,423. Term of patent 14 years.



Claim.—The ornamental design for a tablet or lozenge, as shown.

37,875. ROSARY. HERMAN F. NEHR, New York, N. Y. Filed Jan. 23, 1906. Serial No. 297,523. Term of patent 7 years.

87,875.



Claim.—The ornamental design for a rosary as shown.

87,876. ROSARY. Bruno Teubner, New York, N. Y. Filed Jan. 25, 1906. Serial No. 297,911. Term of patent 7 years.



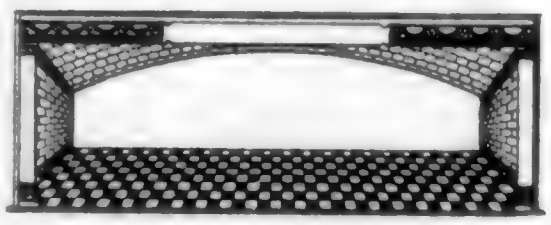
Claim.—The ornamental design for a rosary as shown.

87,877. DISPLAY-CASE. Bernhard Faber, New York, N. Y. Filed July 31, 1905. Serial No. 272,137. Term of patent 7 years.



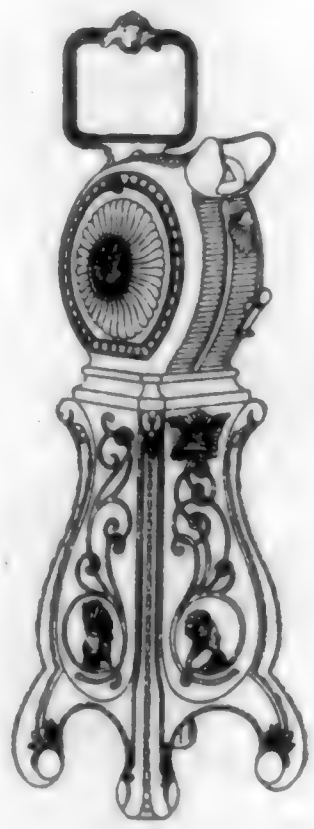
Claim.—The ornamental design for a display-case as shown.

87,878. DISPLAY-CASE. Bernhard Faber, New York, N. Y. Filed July 31, 1905. Serial No. 272,136. Term of patent 7 years.



Claim.—The ornamental design for a display-case as shown.

87,879. PICTURE-DISPLAY CABINET. George Euler Knowles, Brooklyn, N. Y. Filed Jan. 22, 1906. Serial No. 297,522 Term of patent 7 years.



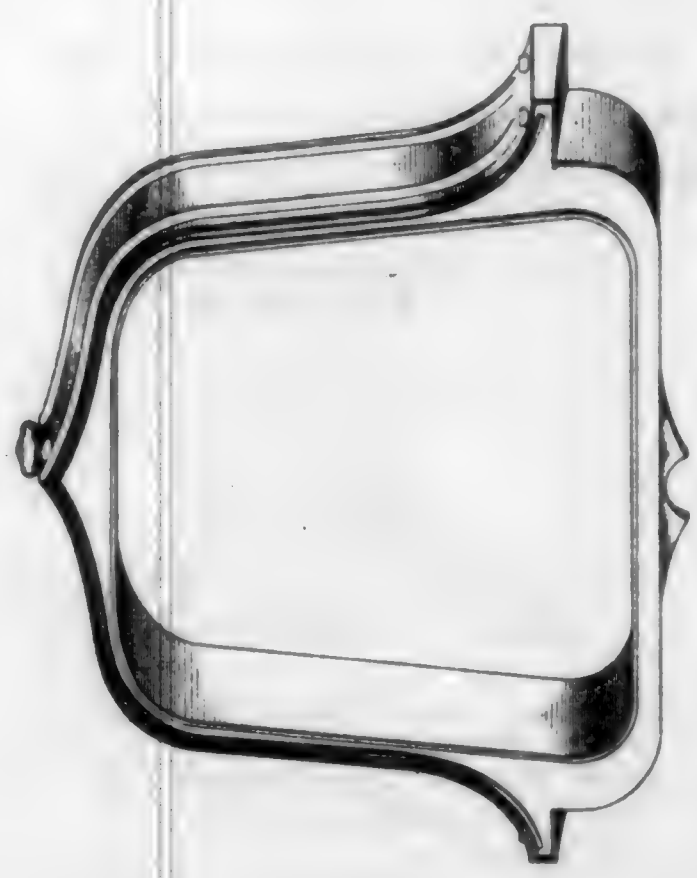
Claim.—The ornamental design for a picture-display cabinet, as shown.

37,880. INCANDESCENT GAS-BURNER. VICTOR F. VON LOSSBERG, New York, N. Y., assignor to Gilbert and Barker Manufacturing Company, Springfield, Mass., a Corporation of Massachusetts. Filed Jan. 3, 1906. Serial No. 294,476. Term of patent 14 years.



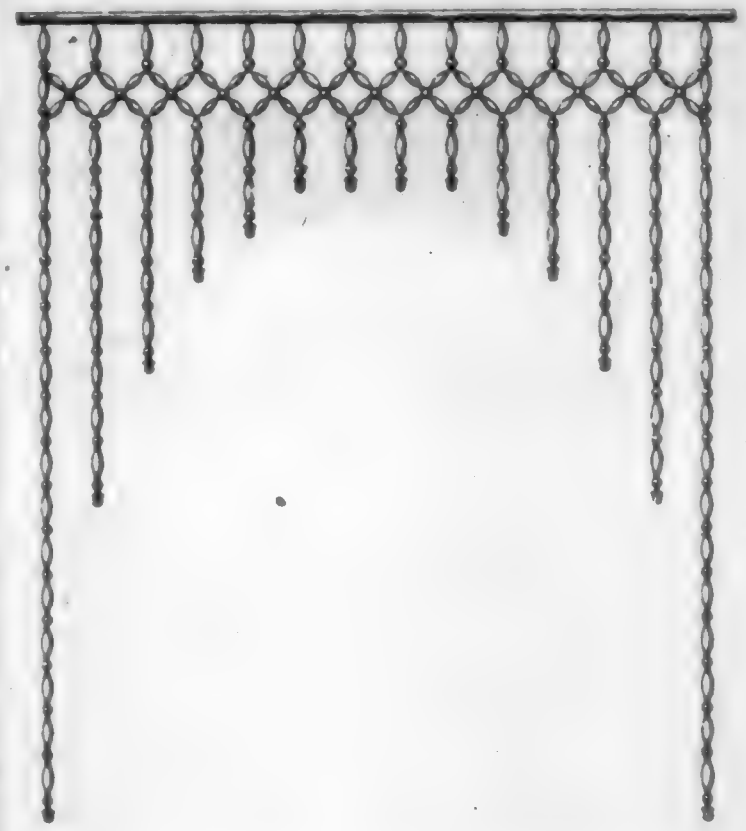
Claim.—The ornamental design for an incandescent gas-burner, as shown.

37,881. FRAME OF RADIATORS FOR AUTOMOBILES. ALBERT E. SCHAAF, Toledo, Ohio. Filed Sept. 20, 1905. Serial No. 280,731. Term of patent 7 years.



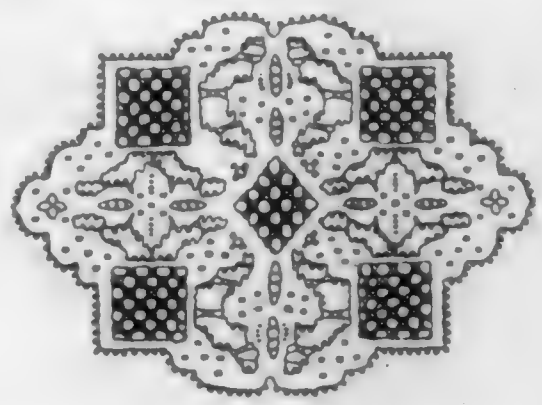
Claim.—The ornamental design for a frame of a radiator for automobiles as shown.

37,882. GRILLE-CURTAIN. FRED B. ERICKSON, Chicago, Ill. Filed Jan. 19, 1906. Serial No. 296,912. Term of patent 7 years.



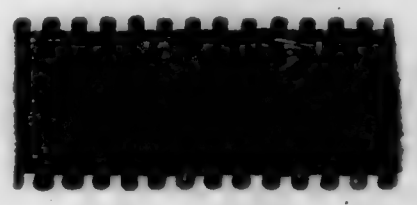
Claim.—The ornamental design for a grill-curtain, as shown.

37,883. LEVERS LACE. CHARLES W. BIRKIN, Nottingham, England. Filed Dec. 22, 1905. Serial No. 293,031. Term of patent 14 years.



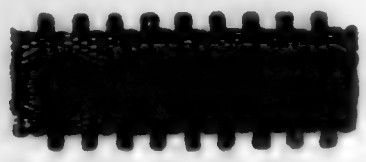
Claim.—The ornamental design for levers lace as shown.

37,884. RIBBON. CHARLES P. SCHLEGEL, Rochester, N. Y. Filed Aug. 18, 1905. Serial No. 274,796. Term of patent 7 years.



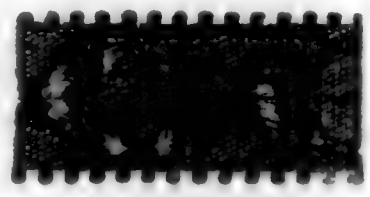
Claim.—The ornamental design for a ribbon as herein shown.

37,885. RIBBON. CHARLES P. SCHLEGEL, Rochester, N. Y. Filed Aug. 18, 1905. Serial No. 274,797. Term of Patent 7 years.



Claim.—The ornamental design for a ribbon, as herein shown.

37,886. RIBBON. CHARLES P. SCHLEGEL, Rochester, N. Y. Filed Aug. 18, 1905. Serial No. 274,798. Term of patent 7 years.



Claim.—The ornamental design for a ribbon, as herein shown.

TRADE-MARKS

PUBLISHED MARCH 6, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

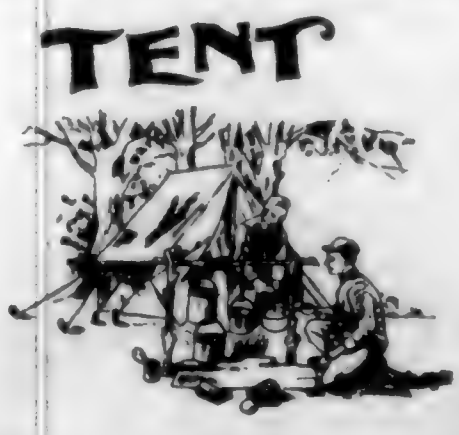
Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 173. CANNED FRUITS AND VEGETABLES. BLOOMINGTON CANNING CO., Bloomington, Ill. Filed Apr. 1, 1905.



The word "TENT," associated with the representation of a tent with trees in the background and two men in the foreground cooking before a fire, cooking utensils being displayed about the fire.

Ser. No. 385. COAL AND COKE. HULL COAL AND COKE CORPORATION, Roanoke, Va. Filed Apr. 4, 1905.

RED JACKET

The words "RED JACKET."

Ser. No. 756. PURE CHESTNUT OAK EXTRACT USED FOR THE PURPOSES OF TANNING AND DYEING. CLINTON A. SPENCER, Boston, Mass. Filed Apr. 7, 1905.



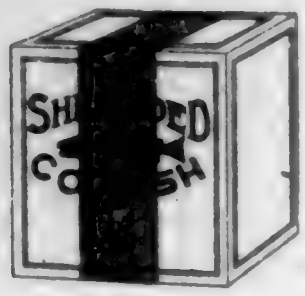
The words "ACME BRAND" and the representation of a diamond figure printed in green.

Ser. No. 1,102. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y. Filed Apr. 11, 1905. Used ten years.



The words "BEARDSLEY'S SHREDDED CODFISH" and the representation of a codfish between the words "SHREDDED" and "CODFISH."

SER. No. 1,108. SALTED AND BONELESS CODFISH. J. W. BRADSLEY'S SONS, New York, N. Y. Filed Apr. 11, 1905.



The representation of a box with a red band arranged centrally thereon and the words "SHREDDED CODFISH," with the picture of a codfish on the front of the box.

SER. No. 1,197. WHEAT-FLOUR. BERRTON BROS., Baltimore, Md. Filed Apr. 12, 1905. Used ten years.

Best in The World
WARRANTED
WM. M. POWELL & CO.
BALTIMORE, MD.

The words "BEST IN THE WORLD WARRANTED WM. M. POWELL & CO. BALTIMORE, MD."

SER. No. 1,457. HATS AND CAPS. JOHN B. STETSON COMPANY, Philadelphia, Pa. Filed Apr. 14, 1905. Used ten years.

STETSON

The name "STETSON."

SER. No. 1,575. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.



The word "EMBLEM," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

SER. No. 1,607. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

SER. No. 1,607.



The word "RIDER," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

SER. No. 1,791. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.



The word "AUTOMOBILE," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

SER. No. 2,083. STOVES AND RANGES. BERGSTROM STOVE CO., Neenah, Wis. Filed Apr. 17, 1905.

ROYAL

The word "ROYAL."

SER. No. 2,153. PORTLAND CEMENT. WILLIAM H. MEHRHOLZ, New York, N. Y. Filed Apr. 18, 1905.



The word "TITAN" on a diametric band across a circular band and the words "PORTLAND CEMENT" on the circular band.

SER. No. 2,526. HOSIERY. BUSTER BROWN STOCKING COMPANY, New York, N. Y. Filed Apr. 21, 1905.

BUSTER BROWN

The words "BUSTER BROWN."

SER. No. 2,527. HOSIERY. BUSTER BROWN STOCKING COMPANY, New York, N. Y. Filed Apr. 21, 1905.

BUSTER BROWN'S SISTER'S

The words "BUSTER BROWN'S SISTER'S."

SER. No. 2,721. FERTILIZERS. THE ROGERS & HUBBARD CO., Middletown, Conn. Filed Apr. 22, 1905.



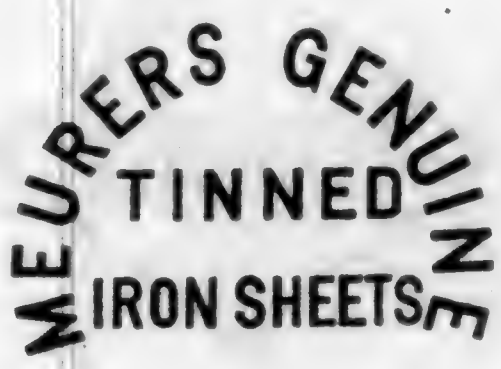
The representation of a black diamond and the word "HUBBARDS" thereon.

SER. No. 3,062. OIL AND VARNISH PAINTS, ENAMELS, VARNISHES, AND WOOD-STAINS. GERSTENDORFER BROS., New York, N. Y. Filed Apr. 26, 1905.

"SAPOLIN"

The word "SAPOLIN" inclosed in quotation-marks.

SER. No. 3,092. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y. Filed Apr. 28, 1905. Used ten years.



The words "MEURERS GENUINE TINNED IRON SHEETS."

SER. No. 3,093. MEURER ROOFING

The words "MEURER ROOFING."

SER. No. 3,508. FLASH-LIGHT COMPOUNDS. HUGO PFAHL, Delavan, Wis. Filed Apr. 28, 1905.



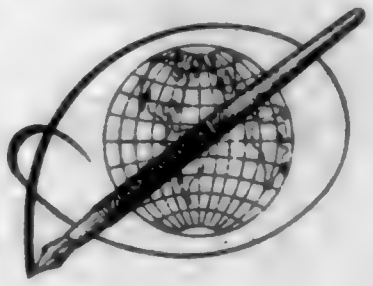
The representation of a star with rays radiating therefrom and having thereon the word "ASTRA" and a torch.

SER. No. 4,032. WAX SUITABLE FOR FINISHING FLOORS, WOODWORK, AND FURNITURE. S. C. JOHNSON & SON, Racine, Wis. Filed May 2, 1905. Used ten years.



A yellow background bearing the name "JOHNSON'S" and a rectangular figure overlying a circular figure, said circular figure inclosing a serrated figure and the rectangular figure bearing the words "PREPARED WAX FOR FLOORS & INTERIOR FINISH," with a streamer below the same.

SER. No. 4,348. FOUNTAIN-PENS. L. E. WATERMAN COMPANY, New York, N. Y. Filed May 6, 1905.



The arbitrarily-associated representation of a globe, a fountain-pen extending across the same, and a line extending from the pen-point and surrounding the globe.

Ser. No. 4,368. PREPARED ROOFING-FELT. Elmer A. Laughlin, Chicago, Ill. Filed May 5, 1905.



The representation of a swastika or four-footed cross.

Ser. No. 4,546. WHISKY. John Pr Straub, Chicago, Ill. Filed May 6, 1905. Used ten years.



The words "Forest Hill" and a forest scene showing trees, vegetation, a waterfall, and rocks.

Ser. No. 4,550. LUBRICATING-GREASE. Adam Cook's Sons, New York, N. Y. Filed May 6, 1905. Used ten years.

ALBANY

The word "Albany."

Ser. No. 4,649. POWDERED STOVE-POLISH. X-Ray Stove Polish Co., New York, N. Y. Filed May 8, 1905.

X-RAY

The word "X-Ray."

Ser. No. 4,880. STRINGS FOR VIOLIN, GUITAR, ZITHER, AND BANJO. Sigmund Blumenthal, New York, N. Y. Filed May 10, 1905. Used ten years.

Ser. No. 4,880.



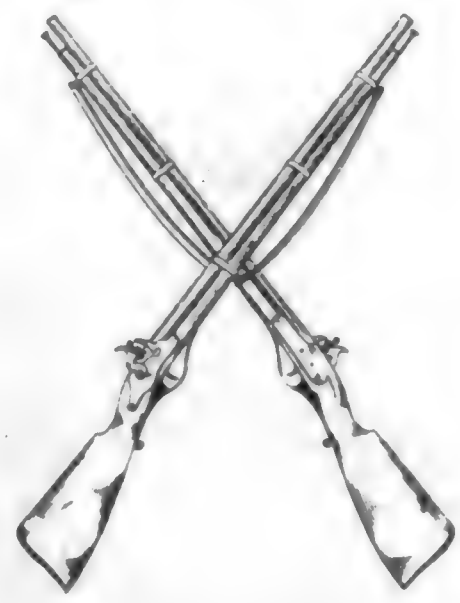
The words "Our Challenge."

Ser. No. 4,882. STRINGS FOR VIOLIN, GUITAR, ZITHER, AND BANJO. Sigmund Blumenthal, New York, N. Y. Filed May 10, 1905. Used ten years.

SILVER MEDAL

The words "Silver Medal."

Ser. No. 4,983. COTTON PIECE GOODS. Massachusetts Cotton Mills, Lowell, Mass. Filed May 10, 1905



The representation of two crossed muskets.

Ser. No. 5,012. OIL AND WATER COLOR PAINTS FOR APPLICATION TO BUILDINGS AND ANALOGOUS STRUCTURES. Columbia Refining Co., New York, N. Y. Filed May 11, 1905.



The arbitrarily-chosen word-symbol "Linhuile" inclosed by a diamond-shaped figure.

Ser. No. 5,138. WHISKY. Ben J. Goldman Co., San Francisco, Cal. Filed May 11, 1905. Used ten years.

SER. No. 5,138.

GOLDMAN'S WEDDING

The words "GOLDMAN'S WEDDING."

SER. No. 5,215. CANDY. BRAMBLE & SMITH CO., Philadelphia, Pa. Filed May 11, 1905.



The fanciful title "SATIN FINISH," the representation of a dog and a child, the latter sitting on the former, and a box on which the feet of the dog are rested, said box having the words "PURITY" and "QUALITY" thereon.

SER. No. 5,236. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905. Used ten years.



The word "ASHLAND."

SER. No. 5,257. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.



The representation of three horned owls' heads partially inclosed in concentric circles, leaves being arranged above and below the circles of the central head, the lower leaves extending partially under the circles of the outer heads.

SER. No. 5,537. WHISKY. ISAAC MERKEL & SONS, Plattsburg, N. Y. Filed May 13, 1905.



The words "WEDDING BOUQUET" and the picture of a wedding party inclosed in a frame with an ornamental panel beneath bearing the word "WHISKEY" and with cooing doves, bells, flowers, and circles on each side of the frame, one of which circles bears the word "PURE" and the other the word "RYE."

SER. No. 5,558. CANNED FRUITS AND VEGETABLES. TORRCH PACKING CO., Baltimore, Md. Filed May 13, 1905. Used ten years.



The word "PEERLESS" inclosed in quotation-marks, and the word "BRAND," and the representation of a girl holding an oyster in her right hand, while the left hand is supporting the folds of her dress, in which are a number of oysters, and at the feet of the girl is a collection of fruit and a panel on which appear the words "THEY ARE PEERLESS IN NAME, QUALITY AND FLAVOR."

SER. No. 5,560. TONIC REMEDY FOR ANEMIA, DEBILITY, NEURASTHENIA, AND OTHER CONDITIONS RESULTING FROM IMPURITY OF THE BLOOD. THOMAS A. MILLER, Toledo, Ohio. Filed May 13, 1905.



The word "OXOGEN" and the representation of an ox-head within a wreath of wheat upon opposite sides of which appear bunches of grapes.

SER. No. 5,867. WOOD-PRESERVING COMPOUNDS. PHILIP H. GERRARD, Austin, Tex. Filed May 15, 1905.



A five-pointed star inclosed in a triangle, which has the letters "C A" appearing in each side of the triangle.

SER. No. 5,918. MEDICINAL PREPARATION FOR THE TREATMENT OF DISEASES OF THE BLOOD AND SKIN. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed May 17, 1905.

ALPEN
KRÄUTER

The words "ALPEN KRÄUTER."

SER. No. 6,016. STEEL PENS. THE DREKA COMPANY, Philadelphia, Pa. Filed May 18, 1905. Used ten years.

THE DREKA ENGROSSING PEN

The words "THE DREKA ENGROSSING PEN."

SER. No. 6,277. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa. Filed May 22, 1905. Used ten years.



The representation of a banner having thereon the words "GUCKENHEIMER PURE RYE WHISKEY."

SER. No. 6,332. WHISKY. H. W. HUGHLEY COMPANY, Boston, Mass. Filed May 26, 1905.

GOLD SEAL

The words "GOLD SEAL."

SER. No. 6,362. WHISKY. FREDERICK C. REKENHAUSEN, Pittsburg Pa. Filed May 22, 1905. Used ten years.

LARGE

The word "LARGE."

SER. No. 6,386. CIGARS, CHEROOTS, STOGIES, TOGETHER WITH TOBACCO USED FOR MAKING THE SAME. HENRY P. STRAUSS, New York, N. Y. Filed May 23, 1905.



The representation of a trophy-cup of the ewer type, associated with the words "PRIZE CUP."

SER. No. 6,389. WHEAT-FLOUR. P. DAUSSA & CO., New York, N.Y. Filed May 23, 1905.

GIBRALTAR

The word "GIBRALTAR."

SER. No. 6,490. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

PIEDMONT

The word "PIEDMONT."

SER. No. 6,601. WHISKY. LOUIS NELSON, Nashville, Tenn. Filed May 25, 1905. Used ten years.



The words "ROCK CORN," below which is a representation of two ears of corn and a string of rock-candy.

SER. No. 6,768. LAUNDRY STARCH. ELECTRIC LUSTER STARCH COMPANY, Boston, Mass. Filed May 27, 1905.



The words "ELECTRIC LUSTER STARCH," used in connection with a cut representing a woman standing at a table, behind which is a window and upon which is a flat-iron, holding up a shirt upon the front of which the reflection of her face appears.

SER. No. 6,825. CATHARTIC MEDICINE. STERLING REMEDY COMPANY, Kramer, Ind. Filed May 27, 1905.



The word "CASCARETS."

SER. No. 6,913. CIGARS. SANCHEZ & HAYA CO., Tampa, Fla. Filed May 29, 1905.



The word "AMERICUS" and the representation of the head and shoulders of Columbus in the foreground of a scene comprising a ship, water, and mountains, and to the sides of the portrait are arranged two groups, one representing a landing party headed by Columbus and the other a group of Indians gathered around a council-fire.

SER. No. 7,057. POWDERS USED WITH THE PLATES OF FALSE TEETH TO IMPROVE THE FIT OF THE ARTIFICIAL PLATES, AND PRODUCE A PERFECT SUCTION OF THE SAME IN THE MOUTH. EDWIN BETTS, Newark, N. J. Filed May 30, 1905.

CON-FORMAGEN

The hyphenated word "CON-FORMAGEN."

SER. No. 7,080. PLASTERS FOR APPLICATION TO PARTS OF THE BODY AFFECTED BY RHEUMATISM, PAIN, SORENESS, AND INFLAMMATION. ANGELICUS R. IDOUX, Pittsburg, Pa. Filed May 29, 1905.

SER. No. 7,080.



A bust picture of myself, accompanied with the compound word "SURA-CURA."

SER. No. 7,088. LIQUORS OR CORDIALS. LEOPOLD BEUGNOLLE, Matha, France. Filed May 25, 1905.



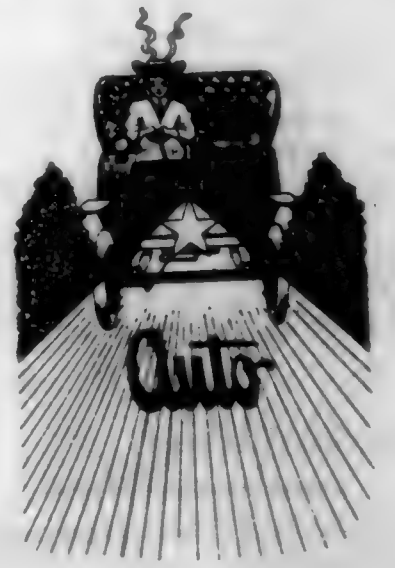
The word "ANGELICA" within a Greek cross. In the upper and lower arms is a landscape. Above the word "ANGELICA" is the word "VÉRITABLE," and below are the words "(ARCHANGELICA) DES PYRÉNÉES LIQUEUR STIMULANTE À BASE DE FINE CHAMPAGNE AUTHENTIQUE DISTILLERIE DE MATHA FRANCE."

SER. No. 7,266. CORRUGATED BRASS SHOE-NAILS. THE RIVER CO., Waterbury, Conn. Filed June 2, 1905. Used ten years.



The representation of a round metallic box having the words "BRASS NAILS" upon its cover and the letters "R. C." upon its side.

SER. No. 7,296. FACIAL CREAM. HALBERMAN & MICHAEL, Chicago, Ill. Filed May 31, 1905.



A representation of an automobile with a woman seated therein and with a star on the front thereof from which radiating rays of light extend, and on said rays appears the word "AUTO."

SER. No. 7,313. TURBO-COMPRESSORS AND PUMPS. CHARLES ALGERNON PARSONS, Newcastle-upon-Tyne, England. Filed June 3, 1905.



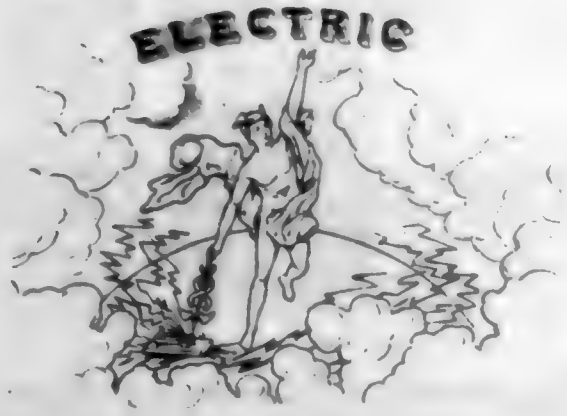
The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.

SER. No. 7,314. STEAM-TURBINES AND PARTS THEREOF. CHARLES ALGERNON PARSONS, Newcastle-upon-Tyne, England. Filed June 3, 1905.



The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.

SER. No. 7,353. CIGARS. ELECTRIC CIGAR COMPANY, Boston, Mass. Filed June 3, 1905. Used ten years.



The word "ELECTRIC," associated with a representation of a portion of a globe surrounded by clouds with a figure representing the god Mercury with the left arm raised perpendicularly above the shoulder standing on the said globe and producing by the touch of the caduceus held in the right hand lightning to scatter in every direction from a small magneto electric engine.

SER. No. 7,640. AXES AND HATCHETS. NATIONAL CUTLERY CO., Detroit, Mich. Filed June 8, 1905.

S&S

The letters and character "S & S."

SER. No. 7,661. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed June 8, 1905.

SER. No. 7,661.

YORK CLIFF

The words "YORK CLIFF."

SER. No. 7,682. WATER-WHEELS AND WATER-WHEEL MOTORS. THE PELTON WATER WHEEL CO., San Francisco, Cal. Filed June 8, 1905. Used ten years.

PELTON

The word "PELTON."

SER. No. 7,781. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine. Filed June 10, 1905.

EDUCATOR

The word "EDUCATOR."

SER. No. 7,815. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1905. Used ten years.

Gail Borden

The facsimile of the signature of Gail Borden, deceased.

SER. No. 8,011. PORTLAND CEMENT. AUDLEY CLARKE, Brooklyn, N. Y. Filed June 13, 1905.

RELIANCE

The word "RELIANCE."

SER. No. 8,016. STOMACHIC AND CARMINATIVE. ELIZABETH DORT, Buffalo, N. Y. Filed June 13, 1905. Used ten years.



The representation of a woman in the act of comforting a child, inclosed in an oval frame on which appear the words "SZAWEY BALSAM MACIERZYŃSKI."

SER. No. 8,107. ORANGES, LEMONS, AND GRAPE-FRUIT. FERNANDO FRUIT GROWERS ASSOCIATION, Fernando, Cal. Filed June 14, 1905.



The representation of a train entering a tunnel, associated with the word "TUNNEL."

SER. No. 8,112. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN'S AND BOYS' WEAR, AND LADIES' HATS. FRANK SCHOBLE & Co., Philadelphia, Pa. Filed June 14, 1905.



The fanciful title "WELLINGTON." Above the same is a quartered heraldic shield having heraldic figures of lions and a harp thereon, the shield being supported on each side by a unicorn standing on a scroll on which are the words "DIEU ET MON DROIT," and above the shield is a plumed helmet.

SER. No. 8,116. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN'S AND BOYS' WEAR, AND LADIES' HATS. FRANK SCHOBLE & Co., Philadelphia, Pa. Filed June 14, 1905. Used ten years.

JAMESON & Co

The arbitrary title "JAMESON & Co."

SER. No. 8,120. SET-OFF LIQUOR AND PRINTERS' PASTE. GEORGE STEELE DUNCAN, Edinburgh, Scotland. Filed June 14, 1905.

PARALOID

The arbitrary word "PARALOID."

SER. No. 8,114. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN'S AND BOYS' WEAR, AND LADIES' HATS. FRANK SCHOBLE & Co., Philadelphia, Pa. Filed June 14, 1905.



The word "WARBURTON," above which is a quartered heraldic shield having figures of lions and a harp thereon. Around the shield is a belt with a buckle and the words "HONI SOIT QUI MALY PENSE" thereon. The shield supports a crown, above which is the figure of a lion on a heraldic wreath having a branch in one paw, branches of flowers embracing the belt, and the words "OXFORD ST." on a panel below the word "WARBURTON."

SER. No. 8,172. PREPARED TAPIOCA. WHITMAN GROCERY COMPANY, Orange, Mass. Filed June 15, 1905. Used ten years.

Minute

The word "MINUTE."

SER. No. 8,189. INSECT KILLER OR EXTERMINATOR. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905. Used ten years.

INSTANT

The word "INSTANT."

SER. No. 8,294. RAZORS. HENRY KENDEL, Baltimore, Md. Filed June 15, 1905. Used ten years.

RANGOON

The word "RANGOON."

SER. No. 8,349. CANNED FISH, CANNED LOBSTERS, CANNED CLAMS, CANNED FISH-CHOWDER, AND CANNED CLAM-CHOWDER. SNOW FLAKE CANNING Co., Brunswick, Me. Filed June 16, 1905.

Snow Flake

The words "SNOW FLAKE."

Ser. No. 8,350. CANNED VEGETABLES. The Baxter Bros Co., Brunswick, Me. Filed June 16, 1905.

EMPRESS

The word "Empress."

Ser. No. 8,450. HAND-SOAP. The American Perfumer Company, Springfield, Mass. Filed June 19, 1905.

Instanto

The word "Instanto."

Ser. No. 8,589. GRASS, GRAIN, TIMOTHY, CLOVER, HEMP, CANARY, AND RAPE SEEDS. Albert Dickinson Company, Chicago, Ill. Filed June 20, 1905. Used ten years.

circle

The word "Circle."

Ser. No. 8,687. IRISH AND SWEET POTATOES. Eastern Shore of Virginia Produce Exchange, Onley, Va. Filed June 21, 1905.



The words "Red Star Brand," the letters and abbreviations "E S Va Pro Ex," and a pictorial representation of a red star.

Ser. No. 8,721. CORN-STARCH OR CORN-FLOUR. New York Glucose Co., New York, N. Y. Filed June 21, 1905.



The words "The Harvest Queen" and a circular panel upon which appears the bust form of a young lady with flowing hair and ears of corn projecting onto the panel.

Ser. No. 8,829. CIGARETTES. Butler-Butler, (Incorporated,) New York, N. Y. Filed June 23, 1905.



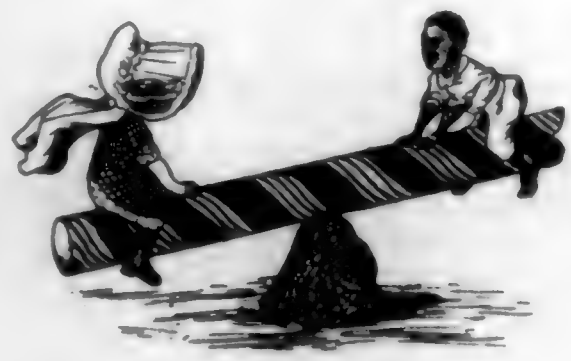
The word "Sovereign," beneath which is the representation of the sun radiating rays of light, a liberty-cap superimposed on the sun, a wreath encircling the latter, and shields flanking the same, upon one of which three crowns appear and upon the other of which three fleur-de-lis appear. Above the word "Sovereign" appear the words "Extra Mild," and below the representation of the sun and shields appear the words "Qualité Supérieure. Blended by Butler-Butler New York, U. S. A."

Ser. No. 8,992. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated, a Corporation of Maine. Filed June 24, 1905.

First Step

The words "First Step."

Ser. No. 9,127. CANDIES. Charles B. Underwood, Dayton, Ohio. Filed June 26, 1905.



A representation of a girl and colored boy astride a stick of candy balanced on a chocolate-drop in the act of playing seesaw.

Ser. No. 9,213. SILK PIECE GOODS. Rogers & Thompson, New York, N. Y. Filed June 27, 1905.

Burlingham

The word "Burlingham."

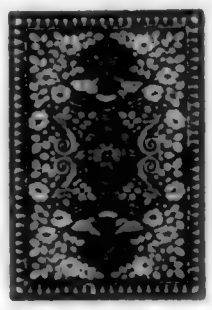
Ser. No. 9,228. PLAYING-CARDS. The New York Consolidated Card Company, New York, N. Y. Filed June 27, 1905. Used ten years.

SER. No. 9,223.



A panel of rectangular shape with curved corners showing two bulldogs on their hind legs straining toward each other against chains attached to their collars. Behind each dog is a dog-house, and a bone lies on the ground between the animals. On the collar of the lower dog is the word "SQUEEZER," and on the collar of the upper dog is the word "TRIP." In the upper left-hand corner is shown a full moon with a smiling face thereon surrounded by flaky clouds.

SER. No. 9,224. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed June 27, 1905. Used ten years.



A rectangular panel inclosed by a conventional border displaying at the center an ornamental rosette and at each end the representation of a beehive having a bee thereon. Extending along the sides of the panel are conventional sprays of leaves and flowers.

SER. No. 9,281. RUBBER FOR DENTAL PURPOSES. TRAUB RUBBER CO., New York, N. Y. Filed June 27, 1905.

IDEAL

The word "IDEAL."

SER. No. 9,403. NON-ALCOHOLIC TONIC BEVERAGES. CALEB D. BRADHAM, Newbern, N. C. Filed June 30, 1905.

PEP-KOLA

The hyphenated word "PEP-KOLA."

SER. No. 9,820. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.

PITTSBURG

The word "PITTSBURG."

SER. No. 9,524. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL OR BOTH AND SOLES THEREFOR. MOSES & ROSENS, New York, N. Y. Filed June 30, 1905.



The representation of a horseshoe framing a boy mounted upon a pony.

SER. No. 9,636. FACE-CREAMS. FREDERICK F. INGRAM, Detroit, Mich. Filed July 3, 1905. Used ten years.

MilkWeed

The words "MILK WEED."

SER. No. 9,642. CASTOR-OIL. GRIGGS, COOPER AND COMPANY, St. Paul, Minn. Filed July 3, 1905.

Whynot

The word "WHYNOT" written in script.

SER. No. 9,829. WHISKY. A. OVERHOLT & CO., Pittsburg, Pa. Filed July 6, 1905. Used ten years.



A bust portrait of Abraham Overholt, the former proprietor of the business of the present firm and who is now deceased.

SER. No. 9,924. PHARMACEUTICAL PREPARATION MANUFACTURED FROM OIL OF WINTERGREEN AND USED AS AN ANTISEPTIC. LLOYD BROTHERS, Cincinnati, Ohio. Filed July 8, 1905. Used ten years.

ASEPSIN

The word "ASEPSIN."

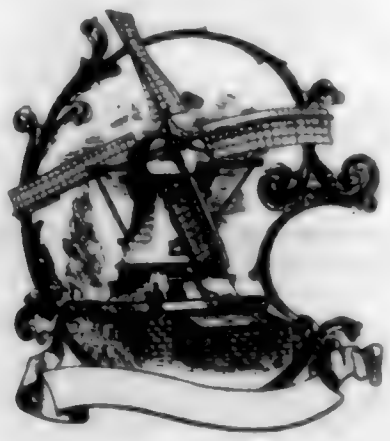
SER. No. 9,853. MEDICINE FOR FEVERS USED IN LIQUID FORM. G. KARPATI MEDICINE CO., New Orleans, La. Filed July 6, 1905.

MARINOLLA



The word "MARINOLLA," associated with the portrait of Dr. Karpati, a member of the firm.

SER. No. 9,944. BISCUITS KNOWN AS RUSKS. HOLLAND RUSK CO., Holland, Mich. Filed July 8, 1905.



The representation of a characteristic windmill of Holland, which is surrounded by an ornamental scroll border, within which border a Dutch landscape likewise appears, and at the lower portion of the said border a leaf scroll appears.

SER. No. 9,946. LAGER-BEER. OLYMPIA BREWING CO., Olympia, Wash. Filed July 8, 1905.



The representation of a horseshoe. Within the horseshoe is shown a waterfall, and in the background is a bridge. On the toe of the horseshoe are the words "GOOD LUCK," and below the horseshoe appears the word "TUMWATER."

SER. No. 10,078. COCKTAIL-SAUCE. CHARLES I. MOREY, New York, N. Y. Filed July 11, 1905.

SER. No. 10,078.



The coat of arms and crest of the Morey family, which coat of arms and crest embody a shield-like figure provided with ornamental panels and surmounted by a crown, with the representation of a greyhound at opposite sides of the shield with its fore feet resting on the shield and its hind feet resting on a scroll extending underneath the shield. Above the crown is a representation of a bird's nest containing a number of young birds and showing the parent bird standing in the nest in the act of feeding the young.

SER. No. 10,131. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.



A rectangular design within a frame of two heavy lines having dark corners displaying light elaborate scrolls which spring from an inner frame surrounding a dark surface displaying a conventional rosette. An outer frame of scrolls surrounds the central device.

SER. No. 10,184. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.



A rectangular design inclosed by a conventional border in which ornamental ribbon-like bands extend from each corner, curving toward the center to form adjoining circles, within each of which is shown a conventional spray of flowers and leaves springing from a central rosette. At each side where the circles join a fan-like figure appears.

SER. No. 10,146. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.



A design within a conventional frame having at the center a group of globules from which extend four crown-like scrolls inclosed by an elaborate circular band. In each corner is a cornucopia full of flowers. Extending from the sides are curved scrolls which extend around the cornucopias. At each end is a small urn from which extends a five-leafed figure.

SER. No. 10,152. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 12, 1905.



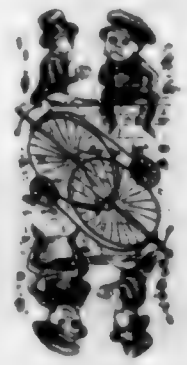
A scene in which the central figure is a buffalo sniffing at the head of a huntsman who lies upon the ground. In the distance other buffaloes are shown. Beneath this scene in the foreground appears the sentence "ARE YOU A BUFFALO!"

SER. No. 10,280. ANTISEPTIC SOLUTION. JOHN H. EBERHARDT, New York, N. Y. Filed July 13, 1905.

ALPHASOL

The word "ALPHASOL."

SER. No. 10,297. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed July 14, 1905.



The representation of two old-style or ordinary bicycles entwined, associated with the representation of four brownies seated on walls.

SER. No. 10,318. PILLS FOR USE AS A REMEDY IN KIDNEY DISEASES AND ALL DISEASES RESULTING FROM A DISORDERED CONDITION OF THE KIDNEYS. JOHN ARNOLD MCKEE, Toronto, Canada. Filed July 14, 1905.



The combination of the words "DODD'S KIDNEY PILLS" in white letters on a dark surface or background, which surface is circular in form with a series divergent short straight lines indicating serrations around the edge of the surface.

SER. No. 10,335. BRAZING COMPOUND. R. Y. ROWLEY & CO., Denton, Tex. Filed July 14, 1905.



The words "BULL DOG BRAZING COMPOUND" and the representation of a bulldog.

SER. No. 10,352. WHISKY. ANSELM MYERS, Philadelphia, Pa. Filed July 15, 1905.



The word "SCHUYLKILL," associated with the representation of a keystone.

SER. No. 10,396. ICE-CREAM, ICES, AND FROZEN CUSTARDS. J. M. HORTON ICE CREAM CO., New York, N. Y. Filed July 15, 1905. Used ten years.

HORTON'S

The word "HORTON'S."

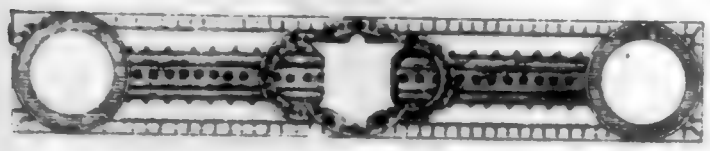
SER. No. 10,471. LEATHER BOOTS AND SHOES. ANNA S. PEABBY, Albany, N. Y. Filed July 17, 1905.

SER. No. 10,471.

ECLIPSE

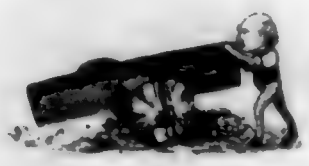
The word "ECLIPSE."

SER. No. 10,514. HANDKERCHIEFS. COCHRANE MANUFACTURING CO., East Dedham and Malden, Mass., and New York, N. Y. Filed July 18, 1905.



The representation of a shield appearing over a longitudinal band extending across the front of a central ring, the band passing through side rings located on opposite sides of the central ring, said band and rings being ornamented with disks and crosses respectively, and the whole appearing on an ornamental band wider than the first band and having rings at its ends to which the first band extends.

SER. No. 10,678. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.



The representation of a man sawing a log of wood with a comb.

SER. No. 10,694. WHISKY. W. A. TAYLOR & CO., New York, N. Y. Filed July 22, 1905.



The words "GOLF CLUB" and the representation of a lion rampant on an oval panel with a scroll upon which is the motto "LABORE ET HONORE" and with a monogram consisting of the letters, character, and abbreviation "W A T & Co."

SER. No. 10,696. MADEIRA WINES. W. A. TAYLOR & CO., New York, N. Y. Filed July 22, 1905.



The representation of yoke of oxen attached to a sledge upon which are two casks and beside which is a man dressed in Portuguese costume.

SER. No. 10,719. WHISKY. JOHN P. CONNOR, Lowell, Mass. Filed July 22, 1905.



The word "FIDDLE" and a representation of a violin and bow upon a sheet of music with a background of sprays of flowers and a circular disk crossed by a ribbon upon which appear the words "RYE WHISKEY."

SER. No. 10,720. WHISKY. JOHN P. CONNOR, Lowell, Mass. Filed July 22, 1905.



A panel bearing the words "MY DOCTOR PURE RYE" and scrolls bearing the words "AGED IN WOOD" and a representation of a sick-room showing a patient in bed and a nurse holding a glass to the patient, and also showing a bottle on a table and bottles, cups, and a clock on a mantelpiece, above which appear the words "NOT IN USE."

SER. No. 10,920. DENTIFRICE. BLUMENTHAL BROS., New York, N. Y. Filed July 27, 1905.

DENTA-ROMA.

The compound word "DENTA-ROMA."

SER. No. 10,965. HOLLOW-WALLED VESSELS CONTAINING COOLING MATERIAL WITHIN THE HOLLOW WALLS. HERMANN FERDINAND MEIER, Dresden-Blasewitz, Germany. Filed July 28, 1905.

Frigorit

The arbitrary word "FRIGORIT."

SER. No. 11,041. RED PAINT. F. O. PIERCE COMPANY, New York, N. Y. Filed July 31, 1905.

RUBEINA

The coined word "RUBEINA."

SER. No. 11,042. COLOR-VARNISH. F. O. PIERCE COMPANY, New York, N. Y. Filed July 31, 1905.

TRIUNE

The coined word "TRIUNE."

SER. No. 11,044. RED PAINT. F. O. PIERCE COMPANY, New York, N. Y. Filed July 31, 1905.

UZATONA

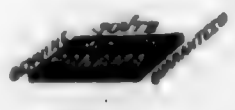
The coined word "UZATONA."

SER. No. 11,142. CANNED OYSTERS. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Aug. 2, 1905. Used ten years.



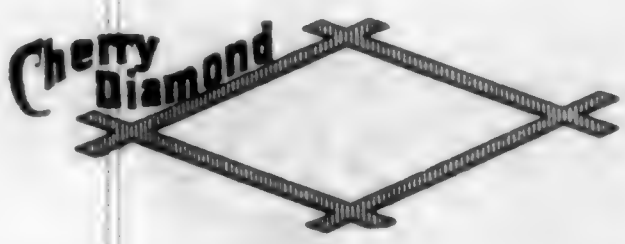
The words "THE MONKEY BRAND," associated with the representation of a monkey seated on a cut-off section of a trunk and limb of a tree holding an oyster-shell by one hand and foot.

SER. No. 11,147. PANAMA HATS. LUSTIG BROS., New York, N. Y. Filed Aug. 2, 1905.



A rectangular plate shown in perspective, the words "AMERICAN PANAMA" appearing upon the plate, while around the same are the words "SOUTH GENUINE GUARANTEED."

SER. No. 11,172. CANNED FISH. GENNERICH & VON BREMEN, New York, N. Y. Filed Aug. 2, 1905.



A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" in connection therewith.

SER. No. 11,209. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Aug. 2, 1905.



The word "PEDAL," associated with the representation of a king riding a bicycle, the word "BICYCLE" arranged on a curved panel, the abbreviation and figures "No. 808," together with a mile-stone upon which appear the figures and letter "808 M."

SER. No. 11,218. MEDICINAL PLASTERS. J. M. GROSVENOR & CO., Boston, Mass. Filed Aug. 3, 1905. Used ten years.



The representation of a bell with the words "BELL-CAP-SIC" printed thereon.

SER. No. 11,214. MEDICINAL PLASTERS. J. M. GROSVENOR & CO., Boston, Mass. Filed Aug. 3, 1905. Used ten years.

BELLCAPSIC

The word "BELLCAPSIC."

SER. No. 11,266. SILKS. ACKERMANN & GOEBRICH, New York, N. Y. Filed Aug. 4, 1905.



The representation of an Indian woman clothed in her native costume and engaged in a characteristic dance movement.

SER. No. 11,277. LAGER-BEER. JOSEPH SCHLITZ BREWING COMPANY, Milwaukee, Wis. Filed Aug. 4, 1905. Used ten years.

SER. No. 11,277.



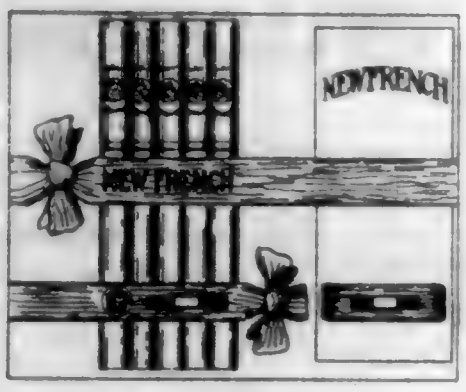
A rhomboidal panel bearing the word "SCHLITZ" in ornamental script type with paraph beneath, the words "THE BEER THAT MADE MILWAUKEE FAMOUS," and the representation of a globe encircled by a belt having thereon the word "SCHLITZ."

SER. No. 11,279. MEN'S, YOUTHS', BOYS', AND CHILDREN'S READY-MADE COATS, OVERCOATS, PANTS, AND VESTS. OBER & Co., Baltimore, Md. Filed Aug. 4, 1905.

ACME

The word "ACME."

SER. No. 11,280. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Aug. 4, 1905.



A representation of a carton opened out and having thereon two panels, on one of which are the words "NEW FRENCH" and on the other a representation of a number of cigarettes, said panels appearing as joined by ribbon-like bands, on one of which appear the words "NEW FRENCH" and on the other a monogram of the letters "B B," superimposed upon the word "BUTLER," and two red, white, and blue panels, and each of the cigarettes having thereon a monogram of the letters "B B," superimposed upon the word "BUTLER."

SER. No. 11,387. REMEDIES FOR STOMACH, INTESTINAL, AND BOWEL DISORDERS. E. J. HART & Co. LIMITED, New Orleans, La. Filed Aug. 7, 1905.

Lac-Bismo

The word "LAC-BISMO."

SER. No. 11,391. WHEAT-FLOUR. HARRY-FRASER MILLING CO., Danville, Pa. Filed Aug. 7, 1905.



The words "CREAM BLENDED FLOUR" arranged in a circular field and the representation of crossed sheaves of wheat arranged below the word "CREAM" and forming a background for the words "BLENDED FLOUR." The field is bounded by parallel concentric lines, between which appears a wreath formed of heads of wheat.

SER. No. 11,439. CANNED VEGETABLES. EDWARD V. STOCKHAM, Perryman, Md. Filed Aug. 8, 1905.



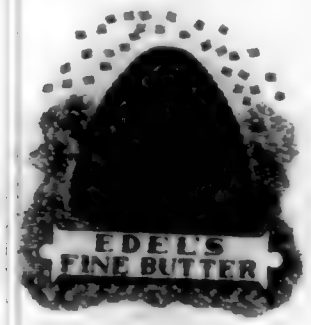
The words "RED CRESCENT," accompanied by the figure of a crescent arranged under said words. Between the horns of the crescent occurs a five-pointed star having lines radiating therefrom, and back of the crescent occurs a section of a bordered band.

SER. No. 11,458. GRAIN-BINDING HARVESTERS, CORN-HARVESTERS, RICE-HARVESTERS, MOWERS AND REAPERS, AS WELL AS EXTRA AND REPAIR PARTS FOR SUCH APPARATUS. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill. Filed Aug. 9, 1905.



The letter "O" in old English surrounded by a wreath of wheat heads and stems. The stems are tied at the base.

SER. No. 11,511. BUTTER. S. T. EDEL'S SONS, Baltimore, Md. Filed Aug. 10, 1905. Used ten years.



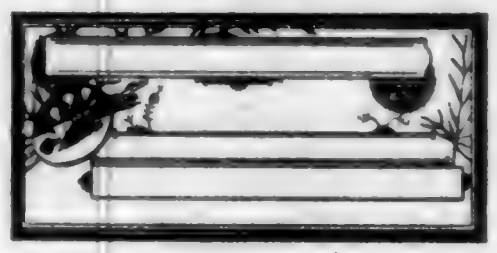
The representation of a beehive with bees hovering about and resting upon the same and an ornamental panel at the base thereof bearing the words "EDEL'S FINE BUTTER."

SER. No. 11,528. POLISH FOR CLEANING AND POLISHING RUSSET AND TAN-COLORED SHOES. WHITTEMORE BROTHERS AND COMPANY, Cambridge, Mass. Filed July 20, 1905.



The representation of a five-pointed star, half of each ray of which is printed black, and at the center of the star is a disk bearing the letter "W."

SER. No. 11,575. READY-MIXED PAINTS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905. Used ten years.



The representation of a palette and brushes, associated with two longitudinal panels, branches and leaves appearing in proximity to the upper panel and the palette and flower-stalks appearing between the upper and lower panels.

SER. No. 11,580. WATERPROOFING PAINT. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.

KONKERIT

The word "KONKERIT."

SER. No. 11,583. METAL AND WOOD PRESERVATIVE PAINT. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.

KAR KOAT

The words "KAR KOAT."

SER. No. 11,589. METALLIC PAINTS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1905.

TOXIBARN

The word "TOXIBARN."

SER. No. 11,614. CARBON-PAPER MANIFOLDING-BOOKS, AUTOGRAPHIC REGISTERS, AND PRINTED ROLLS FOR MANIFOLDING. PHILIP HANO & CO., New York, N. Y. Filed Aug. 12, 1905. Used ten years.



The word "HANO."

SER. No. 11,705. ICE-SHAVING MACHINES. CLEMENT COLERIDGE CLAWSON, Flagtown, N. J. Filed Aug. 16, 1905.

JACK
FROST

The words "JACK FROST."

SER. No. 11,706. ICE-SHAVING MACHINES. CLEMENT COLERIDGE CLAWSON, Flagtown, N. J. Filed Aug. 16, 1905.

SNOW KING

The words "SNOW KING."

SER. No. 11,758. SPOOL-COTTON. JOHN J. CLARK & CO., Pawtucket, R. I. Filed Aug. 18, 1905. Used ten years.

Ser. No. 11,758.



The word "Arlington."

Ser. No. 11,759. SPOOL-COTTON. John J. Clark & Co., Pawtucket, R. I. Filed Aug. 18, 1905.



The hyphenated word "Mail-Exp's" upon a background consisting of a disk and radiating lines of light.

Ser. No. 11,781. SPOOL-COTTON. John J. Clark & Co., Pawtucket, R. I. Filed Aug. 18, 1905.



The word "Regent."

Ser. No. 11,782. SPOOL-COTTON. John J. Clark & Co., Pawtucket, R. I. Filed Aug. 18, 1905.



The word "Favorite."

Ser. No. 11,783. SPOOL-COTTON. John J. Clark & Co., Pawtucket, R. I. Filed Aug. 18, 1905. Used ten years.



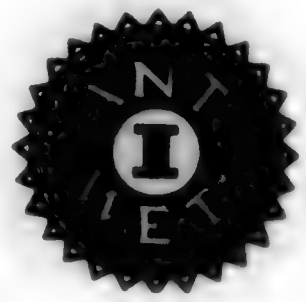
The words "Nassau Mills."

Ser. No. 11,779. SPOOL-COTTON. Blodgett & Orswell Co., Pawtucket, R. I. Filed Aug. 18, 1905.



The letters, character, and abbreviation "B. & O. Co."

Ser. No. 11,840. WATERPROOF TEXTILE FABRICS AND GARMENTS FOR EXTERNAL WEAR, INCLUDING OVERCOATS, COATS, VESTS, AND TROUSERS MADE THEREFROM. Hirsh Brothers, New York, N. Y. Filed Aug. 21, 1905.



The word "Antiwet" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.

Ser. No. 11,960. SEWING-MACHINES. Albert G. Mason, Cleveland, Ohio. Filed Aug. 24, 1905. Used ten years.

FLORENCE

The word "Florence."

Ser. No. 11,981. LIQUID REMEDY FOR LIVER AND BOWEL AILMENTS. H Javers Remedy Co., Baltimore, Md. Filed Aug. 24, 1905.



The word "Laxatate."

Ser. No. 12,063. COFFEE. The C. S. Morey Mercantile Company. Denver, Colo. Filed Aug. 28, 1905.



The word "Solitaire," in connection with the representation of a solitaire-diamond ring inclosing the said word "Solitaire."

Ser. No. 12,112. SELF-BINDING HARVESTERS, REAPERS, MOWERS, AND SEPARATE PARTS THEREOF. International Harvester Co. of America, Chicago, Ill. Filed Aug. 31, 1905.



The representation of a Maltese cross made of mower-knife sections with the words "The Wilwaukee Leads" upon the arms of the cross.

SER. No. 12,147. WRENCHES. WALWORTH MANUFACTURING CO., Boston, Mass. Filed Sept. 1, 1905.



The representation of a heraldic sword with the letter "W" thereon.

SER. No. 12,167. WHEAT-FLOUR. THE GOODLANDER MILLING COMPANY, Fort Scott, Kans. Filed Sept. 2, 1905.



A circular device containing in the central portion an irregular shield-shaped figure upon a diagonal band on which appears the word "AMBROSIA." Around the upper section are the words and abbreviation "GOODLANDER MILLING CO." and around the lower the words "FORT SCOTT, KANSAS." The words "HIGH PATENT" appear upon one side of the shield and the representation of a diminutive winged human figure upon the other.

SER. No. 12,182. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

RHEONINE

The word "RHEONINE."

SER. No. 12,183. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

NEPTUNE

The word "NEPTUNE."

SER. No. 12,184. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

ASTACINE

The word "ASTACINE."

SER. No. 12,185. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

MARS

The word "MARS."

SER. No. 12,186. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

FLAVANTHRENE

The word "FLAVANTHRENE."

SER. No. 12,187. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 2, 1905.

SORBINE

The word "SORBINE."

SER. No. 12,231. PLOWS AND CULTIVATORS. THE VULCAN PLOW CO., Evansville, Ind. Filed Sept. 5, 1905.

VULCAN

The word "VULCAN."

SER. No. 12,240. WHEAT-FLOUR. WATERLOO MILLING COMPANY, Waterloo, Ill. Filed Sept. 5, 1905.



The word "ONERTA" and the words "WATERLOO MILLING COMPANY FANCY PATENT WATERLOO, ILLS.," all arranged in connection with the ears of wheat and flowers over the representation of a horseshoe.

SER. No. 12,264. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

KRYOGENE

The word "KRYOGENE."

SER. No. 12,265. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

PYRAMINE

The word "PYRAMINE."

SER. No. 12,266. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

CYANANTHROL

The word "CYANANTHROL."

SER. No. 12,267. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

INDANTHRENE

The word "INDANTHRENE."

SER. No. 12,268. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

AUTOL

The word "AUTOL."

SER. No. 12,269. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

ANTHRAZUROL

The word "ANTHRAZUROL."

SER. No. 12,270. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 6, 1905.

LITHOL

The word "LITHOL."

SER. No. 12,305. COTTON PIECE GOODS. LEDOUX GALITZUNE, New York, N. Y. Filed Sept. 7, 1905.

"AMOR Y TRABAJO"



The words "AMOR Y TRABAJO" inclosed in quotation-marks and associated with the representation of a statuary group comprising the figures of a man and woman standing together with the head of the woman resting on the shoulder of the man.

SER. No. 12,376. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Corvoline

The word "CORVOLINE"

SER. No. 12,377. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Melanthrene

The word "MELANTHRENE."

SER. No. 12,378. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Typophor

The word "TYPOPHOR."

SER. No. 12,380. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

SER. No. 12,380.

Cyananthrene

The word "CYANANTHRENE."

SER. No. 12,381. DYESTUFF. BADISCHE ANILIN- & SODA-FABRIK, Ludwighafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Corvan

The word "CORVAN."

SER. No. 12,436. SMOKING-JACKETS, BATH AND LOUNGING ROBES FOR MEN, KIMONOS, DRESSING-SACKS, AND EIDER-DOWN WRAPPERS. THOMPSON & CHRISTIE, New York, N. Y. Filed Sept. 9, 1905.



The representation of a rose and thistle surrounded by two circles between which are the letters and word "T AND C."

SER. No. 12,456. MOLASSES FOOD FOR HORSES AND CATTLE. EDWARD P. MUELLER, Milwaukee, Wis. Filed Sept. 11, 1905.



The sign of the United States dollar and representations of the heads of a calf and a bridled horse projecting through the scrolls of the said sign and partly obscuring the bars of the same, the calf-head being uppermost and facing in a direction opposite that of the horse-head.

SER. No. 12,489. REFRIGERATORS. THE LORILLARD REFRIGERATOR CO., New York, N. Y. Filed Sept. 12, 1905. Used ten years.

THE LORILLARD

The words "THE LORILLARD."

SER. No. 12,463. BEER IN BOTTLES. THE CLEVELAND & SANDUSKY BREWING COMPANY, Cleveland, Ohio. Filed Sept. 11, 1906.



The word "KELLERHOFF" in white and gold letters on a red background placed above a circular-shaped view of the roofs and steeples of an ancient German city situated on the shores of a body of water. In the foreground is a representation of a beer-cellar and the figure of a man blowing a trumpet. Below the circular-shaped view above referred to are the words in white letters on a red background "BOTTLED BY CLEVELAND & SANDUSKY BREWING CO. CLEVELAND."

SER. No. 12,476. STEEL RANGE. FRED E. LEE and WM. G. HOWARD, Dowagiac, Mich., executors of Philo D. Beckwith, deceased. Filed Sept. 11, 1905.

ROUND OAK

CHIEF

The words "ROUND OAK CHIEF."

SER. No. 12,519. VEGETABLE COMPOSITIONS MADE UP TO RESEMBLE FLESH MEATS. VEGETARIAN MEAT COMPANY, Washington, D. C. Filed Sept. 13, 1905.

Vegetarian Meat.

The words "VEGETARIAN MEAT."

SER. No. 12,537. ROOFING, SHEATHING, AND BUILDING FELT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y. Filed Sept. 13, 1905. Used ten years.

COMPOSITE

The word "COMPOSITE" written diagonally upward in ornamental block capitals.

SER. No. 12,588. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y. Filed Sept. 13, 1905.

Ser. No. 12,538.

CRYSTAL

The word "Crystal."

Ser. No. 12,563. TOILET SOAPS. Munyons Homeopathic Home Remedy Co., Philadelphia, Pa. Filed Sept. 14, 1905.



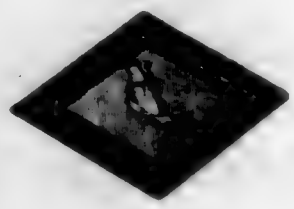
A representation of a woman clad as a witch and presenting a branch of leaves to a man representing Mr. Munyon, who is holding his hands outstretched to receive said branch.

Ser. No. 12,643. ALE. The Robert Smith Ale Bwg Co., Philadelphia, Pa. Filed Sept. 15, 1905.

CREAM

The word "Cream."

Ser. No. 12,690. LEATHER BOOTS AND SHOES. V. Schoenbober Boot & Shoe Company, Milwaukee, Wis. Filed Sept. 11, 1905.



The pictorial representation of a shoe on a diamond-shaped field of red color surrounded by a black border.

Ser. No. 12,707. COFFEE. Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Filed Sept. 16, 1905.



The word "Owl" or the picture of an owl perched upon a branch.

Ser. No. 12,710. ANTISEPTICS AND DEODORANTS. Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Sept. 16, 1905.

ISOFORM

The word "Isoform."

Ser. No. 12,725. WHEAT-FLOUR. Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Filed Sept. 16, 1905.



A circular panel bearing the words "Royal Mail" and a representation of a steamship under full headway and spears of wheat tied with a ribbon on which appear the words "Special High Grade Patent," the words "Lawrenceburg Roller Mills Co." appearing below the spears of wheat.

Ser. No. 12,727. WHEAT-FLOUR. Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Filed Sept. 16, 1905.



The words "Paul Jones Highest Grade Winter Wheat Patent Indiana." inclosed in an ornamental circular border.

Ser. No. 12,741. WOODEN TOOTHPICKS. Oscar H. Hersey, Portland, Me. Filed Sept. 18, 1905.

Velvet

The arbitrary word "Velvet."

Ser. No. 12,898. BISCUITS. Julius Neuberger, Newark, N. J. Filed Sept. 21, 1905.

SER. No. 12,896.

DELEKTA

The word "DELEKTA."

SER. No. 12,912. PLOWS AND PARTS THEREOF. THE COLLINS COMPANY, Collinsville, Conn. Filed Sept. 22, 1905. Used ten years.



The word "COLLINS" arranged on a ribbon or scroll.

SER. No. 12,959. LINIMENT. MINARD'S LINIMENT MANUFACTURING COMPANY, Boston, Mass. Filed Sept. 25, 1905. Used ten years.



The representation of a king arranged upon a circular panel, having the word "THE" at the left of said panel, the word "OF" at the right thereof, and the word "PAIN" on a scroll on the bottom of the panel.

SER. No. 13,007. COCOA. RUNKEL BROTHERS, INCORPORATED, New York, N. Y. Filed Sept. 25, 1905. Used ten years.

RUNKEL'S

The word "RUNKEL'S."

SER. No. 13,008. CHOCOLATE. RUNKEL BROTHERS, INCORPORATED, New York, N. Y. Filed Sept. 25, 1905. Used ten years.

Runkel's

The word "RUNKEL'S."

SER. No. 13,085. SEWING COTTON AND THREAD. JONAS BROOK & BROS., LIMITED, Meltham, England. Filed Sept. 27, 1905. Used ten years.

BROOK'S

The designation "BROOK'S."

SER. No. 13,084. AXES, ADZES, AND HATCHETS. FREDERICK WILLIAM PECK, Coboes, N. Y. Filed Sept. 26, 1905.



The words "PECKS INVINCIBLE BRAND EDGE TOOLS" upon a diamond-shaped background.

SER. No. 13,129. PAPER FOR COVERING ROOFS AND OTHER OUTER SURFACES OF STRUCTURES. F. W. BIRD & SON, Walpole, Mass. Filed Sept. 29, 1905.

PAROID

The word "PAROID."

SER. No. 13,131. CORDIALS. BASILEA & CALANDRA, New York, N. Y. Filed Sept. 29, 1905.



The representation of a triangular or pyramidal shaped figure bearing the word "BASCAL," and to each end of said word "BASCAL" is arranged a triangular ornamentation.

SER. No. 13,146. LUBRICATING-OILS. WILBURINE OIL WORKS, LTD., New York, N. Y. Filed Sept. 29, 1905.

WILBURINE

The word "WILBURINE."

SER. No. 13,147. PETROLEUM OR MINERAL JELLY. WILBURINE OIL WORKS, LTD., New York, N. Y. Filed Sept. 29, 1905.

WILBURINE

The word "WILBURINE."

SER. No. 13,275. COLLARS. EARL & WILSON, Troy, N. Y. Filed Oct. 4, 1905. Used ten years.

Ser. No. 13,275.

EARL OF TROY

The words "Earl of Troy."

Ser. No. 13,286. HEEL-BALL, BLACK BALL, AND POLISHING-WAX FOR SHOEMAKERS' USE. Philipp Ostermayer, Jersey City, N. J. Filed Oct. 4, 1905. Used ten years.



The letters "PH. O," which are arranged within the inner circle of two concentric circles, the word "Mainzer" being placed in the space between the two circles above the letters "PH. O" and the word "Wachs" in the space below the same.

Ser. No. 13,350. BOOKS ON SALESMANSHIP. The National School of Salesmanship, Minneapolis, Minn. Filed Oct. 5, 1905.



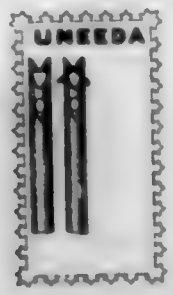
The representation of the world with the words "The National School Teaches" thereon and a circular shaded border having thereon the words "Wholesale Retail Special Salesmanship."

Ser. No. 13,431. REMEDIES FOR DISEASES OF THE THROAT, NASAL ORGANS, AND LUNGS. Charles J. Ulrich, New York, N. Y. Filed Oct. 9, 1905.

"MORRHUALTA"

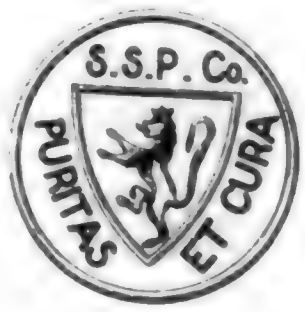
The word "Morrhualta" inclosed in quotation-marks.

Ser. No. 13,433. SELF-THREADING NEEDLES. The London Needle Company, New York, N. Y. Filed Oct. 9, 1905.



The word "Uneeda," together with pictures of the upper parts of two notched needles, of which one shows the thread in the act of being inserted therein, all inclosed within an ornamental rectangular border.

Ser. No. 13,442. OLIVE-OIL. Crappard & Coudere, Salon, Bouches-du-Rhone, France. Filed Oct. 9, 1905.



The representation of a circle inclosing a triangular shield on which is a lion rampant, with the letters "S. S. P. Co." above the shield and the words "Puritas et Cura" arranged in proximity to the other sides of the shield.

Ser. No. 13,484. TOOL-STEEL. Royal Metal Steel Co., New York, N. Y. Filed Oct. 11, 1905.

EXCELSIOR

The word "Excelsior."

Ser. No. 13,508. LAXATIVE FOR THE BOWELS PUT UP IN CONCRETE FORM OR COMPRESSED TABLETS. Dr. Shoop Family Medicine Co., Racine, Wis. Filed Oct. 12, 1905.

Lax-ets

The hyphenated word "Lax-ets."

Ser. No. 13,518. COCOA AND CHOCOLATE PRODUCTS—NAMELY, BREAKFAST-COCOAS, COCOA POWDERS, CHOCOLATE POWDERS, CHOCOLATE COATINGS, CHOCOLATE LIQUORS, PREMIUM NO. 1 CHOCOLATE, AND SWEET LUNCH COCOAS. Frederick Bischoff, New York, N. Y. Filed Oct. 12, 1905. Used ten years.

BISCHOFF'S

The word "Bischoff's."

Ser. No. 13,563. GOLF-BALLS. A. G. Spalding & Bros., New York, N. Y. Filed Oct. 13, 1905.

DOT

The word "Dot."

SER. No. 18,556. OIL-MEAL MADE FROM LINSEED. B. F. DARRELL & Co., New York, N. Y. Filed Oct. 13, 1905.



TAURUS

The word "TAURUS," associated with the representation of a bull.

SER. No. 18,565. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa. Filed Oct. 13, 1905.

SWAN DOWN

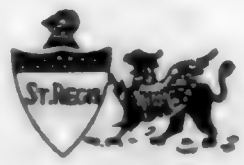
The title "SWAN DOWN."

SER. No. 18,603. CANDLES AND TAPERS. PRICE'S PATENT CANDLE COMPANY LIMITED, London, Battersea, and Bromborough Pool Works, England. Filed Oct. 14, 1905.



The representation of a large ship under full sail on the sea surrounded by a border.

SER. No. 18,652. LEATHER BOOTS AND SHOES. RANDALL-ADAMS Co., Lynn, Mass. Filed Oct. 16, 1905.



A heraldic figure comprising a pictorial representation of a mythical animal having the head, wings, and talons of a bird and the hind quarters, rear legs, and tail of a lion, associated with a shield bearing the name "ST. REGIS" and a starry field, said shield being surmounted by a helmet.

SER. No. 18,680. MEDICINE FOR KIDNEY AND HEART DISEASES. KNOLL & Co., Ludwigshafen-on-the-Rhine, Germany. Filed Oct. 17, 1905.

SER. No. 18,680.

Diuretal

The word "DIURETAL."

SER. No. 18,764. DRIED FRUITS. GENNERICH & VON BREMEN, New York, N. Y. Filed Oct. 19, 1905.



A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set upon a representation of a ribbon stretched across the upper part of the diamond.

SER. No. 18,766. CANNED OR BOTTLED VEGETABLES. GENNERICH & VON BREMEN, New York, N. Y. Filed Oct. 19, 1905.



A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set on a straight line across the upper half of the inner field of the diamond.

SER. No. 18,806. BONE FOR CASE-HARDENING, COLORING, AND ANNEALING. THE ROGERS & HUBBARD Co., Middletown, Conn. Filed Oct. 21, 1905.



The representation of a black diamond with the word "HUBBARDS" thereon.

SER. No. 18,880. DRESS-SILK. LIBERTY SILK COMPANY, New York, N. Y. Filed Oct. 23, 1905.

SER. No. 13,880.

LIBERTY

The word "LIBERTY."

SER. No. 13,890. TOILET LOTION FOR THE CURE OF BLACK-HEADS AND FACIAL PIMPLES. MERTON B. WAITE, Syracuse, N. Y. Filed Oct. 24, 1905.

Běra LOTION

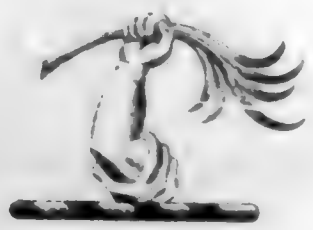
The words "BĚRA LOTION."

SER. No. 13,904. RUBBER BELTING. GORHAM RUBBER COMPANY, San Francisco, Cal. Filed Oct. 24, 1905.

AMAZON

The word "AMAZON."

SER. No. 13,965. COGNAC BRANDY. A. C. MEUKOW & Co., Cognac, France. Filed Oct. 26, 1905.



An arm bare to the elbow holding a palm branch and resting on a bar.

SER. No. 13,980. TONIC BEVERAGE. THE SALT LAKE CITY SODA WATER Co., Salt Lake City, Utah. Filed Oct. 27, 1905.

Koko-ale

The word "KOKO-ALE."

SER. No. 14,020. LUBRICATING-OILS. AMERICAN PETROLEUM PRODUCTS Co., New York, N. Y. Filed Oct. 28, 1905.

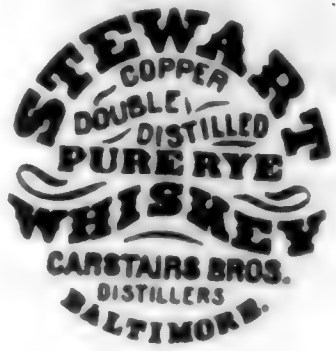
The representation of an owl with spread wings holding in its claws a bar from which depends an antique lamp.

SER. No. 14,031. GLOVES. POWNES BROTHERS & Co., London, England, and New York, N. Y. Filed Oct. 28, 1905.

La Tosca

The words "LA TOSCA."

SER. No. 14,073. WHISKY. CARSTAIRS BROS., Highlandstown, Md. Filed Oct. 30, 1905. Used ten years.



The word "STEWART," associated with the words "COPPER DOUBLE DISTILLED PURE RYE WHISKEY CARSTAIRS BROS. DISTILLERS BALTIMORE."

SER. No. 14,148. INTERNAL REMEDIES FOR THE TREATMENT OF INTESTINAL INFLAMMATIONS AND STOMACH DISORDERS. HENRY F. EDSALL, San Francisco, Cal. Filed Nov. 1, 1905. Used ten years.

Fruitola

The word "FRUITOLA."

SER. No. 14,149. INTERNAL REMEDIES HAVING TONIC AND ALTERATIVE PROPERTIES. HENRY F. EDSALL, San Francisco, Cal. Filed Nov. 1, 1905. Used ten years.

TRAXO

The word "TRAXO."

SER. No. 14,163. COLD-CREAM. FISCHER CHEMICAL IMPORTING Co., New York, N. Y. Filed Nov. 1, 1905.

La Belle

The words "LA BELLE."

SER. No. 14,222. COMPOUND FOR EXTERMINATING VERMIN. EDGAR A. MURRAY, Detroit, Mich. Filed Oct. 28, 1905.

Doom

The word "DOOM."

SER. No. 14,380. WRINGERS AND THE ROLLS THEREOF. METROPOLITAN MANUFACTURING COMPANY, Boston, Mass. Filed Nov. 4, 1905.

METROPOLITAN

The word "METROPOLITAN."

SER. No. 14,432. HAIR-NETS. ALBERT G. JENNINGS, New York, N. Y. Filed Nov. 2, 1905.

Directoire

The arbitrarily-selected word "DIRECTOIRE."

SER. No. 14,433. HAIR-NETS. ALBERT G. JENNINGS, New York, N. Y. Filed Nov. 2, 1905.

ARENA

The arbitrarily-selected word "ARENA."

SER. No. 14,466. WHISKY. ELIZABETH KUHLMANN, Cincinnati, Ohio. Filed Nov. 9, 1905.

Goodfaw

The word "GOODFAW."

SER. No. 14,470. ANTISEPTIC SOLUTION. NETTIE M. HOON, Mercer, Pa. Filed Nov. 8, 1905.



The word "SAVOL" on an artistic scroll, and at each end of said scroll is a white cross within a dark circle.

SER. No. 14,481. WHISKY. B. BOMBY, New York, N. Y. Filed Nov. 10, 1905.



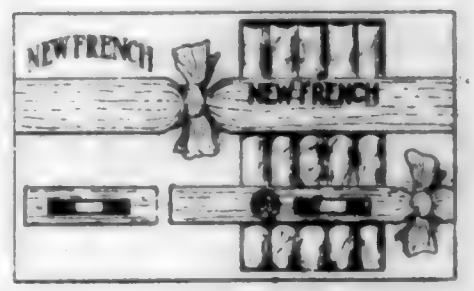
The word "PROSPECT" placed over the picture of the heads of an elk and a bear with a mountainous landscape in the background, said picture being inclosed in a heart-shaped frame with a spray of grain on either side and a short section of an ornamental band, the whole being inclosed in a rectangular border with rounded corners.

SER. No. 14,471. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LIMITED, Minneapolis, Minn. Filed Nov. 10, 1905.



The representation of a polar bear standing on an ice floe with icebergs in the background and a five-pointed star over the bear. Surrounding this representation is a circular frame containing the words "POLAR STAR WINTER WHEAT GUARANTEED." Separating the words "POLAR STAR" and the other words are two five-pointed stars, one at each side of the frame, the whole being arranged in the particular and distinctive manner shown in the drawings.

SER. No. 14,484. LITTLE CIGARS. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Nov. 10, 1905.



A rectangular panel running lengthwise on which appears the representation of two ribbons, each of which has a bow-knot, the ribbons passing over a vertical row of five cigarettes. On the upper ribbon appear the words "NEW FRENCH," and on the lower ribbon, which is broken, is shown on each part a small band in contrasting colors. The words "NEW FRENCH" also appear in one corner of the panel.

SER. No. 14,504. TONIC FOR THE CURE OF STOMACH TROUBLES, DYSPEPSIA, INDIGESTION, ECZEMA, AND ERUPTIONS. MARY T. GOLDMAN, St. Paul, Minn. Filed Nov. 11, 1905.



The representation of the figure of a nun holding in her right hand a bunch of herbs, associated with the words "Mother Mary's Herb Tonic." The words "Mother Mary's" appear above the figure and "Herb Tonic" below and inclosed by a rectangular diagram.

Ser. No. 14,521. SOAP. R. Hudnut's Pharmacy, New York, N. Y. Filed Nov. 13, 1905.

VIOLET
SEC

The words "Violet Sec."

Ser. No. 14,522. TOILET POWDER AND SACHET-POWDER. R. Hudnut's Pharmacy, New York, N. Y. Filed Nov. 13, 1905.

VIOLET
SEC

The words "Violet Sec."

Ser. No. 14,570. MEN'S, YOUTHS', AND BOYS' LEATHER SHOES. Beals & Torrey Shoe Co., Milwaukee, Wis. Filed Nov. 13, 1905.

TRINITY

The arbitrary word-symbol "Trinity."

Ser. No. 14,636. SAUER-KRAUT. John G. McCaskey, Pittsburg, Pa. Filed Nov. 14, 1905.



The representation of a woman's head and a crescent on which appear the words "Duch-Ess Sauer Kraut." The woman's head and the crescent are surrounded by concentric circles, and at opposite sides of the crescent is the representation of a butterfly arranged on the background appearing on one of the concentric circles.

Ser. No. 14,658. HOSIERY. O'Callaghan & Fredgen, New York, N. Y. Filed Nov. 15, 1905.

"MOTHERS' FRIEND HOSE"

The words "Mothers' Friend Hose" inclosed in quotation-marks.

Ser. No. 14,726. VARNISH ESPECIALLY ADAPTED FOR USE UPON WINDOW SILLS AND SASHES, THE SPARS AND WOODWORK OF VESSELS, DOORS AND DOOR-FRAMES, AND IN BATH-ROOMS OR OTHER LOCATIONS REQUIRING A HARD-DRYING DURABLE VARNISH. The Glidden Varnish Company, Cleveland, Ohio. Filed Nov. 16, 1905.

WIND-O-SPAR

The hyphenated word "Wind-O-Spar," with which are associated four straight lines radiating from the letter "O."

Ser. No. 14,890. WHISKY. W. P. Squibb & Co., Lawrenceburg, Ind. Filed Nov. 21, 1905. Used ten years.

OLD DEARBORN
MILLS

The words "Old Dearborn Mills"

Ser. No. 15,019. ROTARY WASHING-MACHINES. Berdow-Brammer Manufacturing Company, St. Louis, Mo. Filed Nov. 27, 1905.

SER. No. 15,019.

PEACMAKER

The word "PEACEMAKER."

SER. No. 15,058. ELECTRO GOLD AND SILVER PLATED HOLLOW, TABLE, AND FLAT WARE. ROCKFORD SILVER PLATE CO., Rockford, Ill. Filed Nov. 29, 1905.



The representation of scales or balances arranged within a circle.

SER. No. 15,060. LOZENGES OR TABLETS FOR FERMENTATION PURPOSES. THE KEFILAC COMPANY, Atlanta, Ga. Filed Nov. 29, 1905.

Kefilac

The word "KEFILAC."

SER. No. 15,260. BACON AND HAMS. JOHN MORRELL & COMPANY, LIMITED, Ottumwa, Iowa. Filed Dec. 2, 1905.



The representation of a railroad semaphore-signal standing at "clear," associated with the words "ALLRITE BRAND."

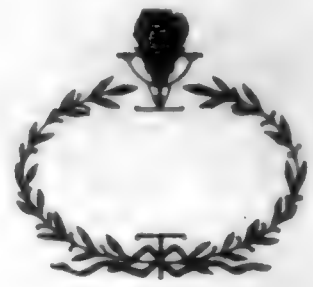
SER. No. 15,265. BELT AWLS AND PUNCHES. GREENE TWEED & Co., New York, N. Y. Filed Dec. 2, 1905. Used ten years.

Lothrop's

The word "LOTHROP'S."

SER. No. 15,343. DIARIES. WILLIAM H. LEE, Chicago, Ill. Filed Dec. 11, 1905.

SER. No. 15,343.



The representation of a wreath and a flaming torch which rises from the open upper side of the wreath, and directly beneath the torch, at the lower side of the wreath, is the capital letter "T."

SER. No. 15,406. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN AND BOYS, AND LADIES' HATS. FRANK SCHOBLE & Co., Philadelphia, Pa. Filed Dec. 14, 1905.



The fanciful title "COLWOOD" inclosed in an ornamental figure the sides of which are columns.

SER. No. 15,407. SOFT AND STIFF FUR-FELT HATS, STRAW AND SILK HATS, CAPS FOR MEN'S AND BOYS' WEAR, AND LADIES' HATS. FRANK SCHOBLE & Co., Philadelphia, Pa. Filed Dec. 14, 1905.



The fanciful title "CHAPSON MIEM," the same being shown in an octagonal frame. Above said frame is a scroll upon which is shown the representation of a lion.

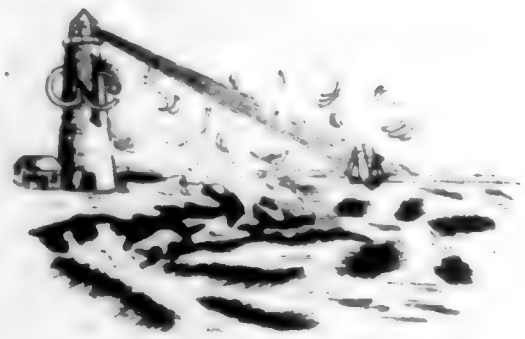
SER. No. 15,639. WHISKY. S. HIRSCH & Co., Kansas City, Mo. Filed Dec. 26, 1905.



The words "KENDALL CLUB" and an ornamental panel bearing the representation of an entrance to a club-house and showing men entering the club-house and a carriage standing before the entrance.

SER. No. 15,643. SYRUP AND MOLASSES. NATIONAL GROCER COMPANY, Chicago, Ill. Filed Dec. 26, 1905.

LIGHT HOUSE



The words "LIGHT HOUSE" and the pictorial representation of a marine scene showing a lighthouse in the foreground on a ledge of rock, from the top of which lighthouse is shown a flash of light thrown out to sea upon a vessel, and the letters and abbreviation "N G Co" formed into a monogram.

SER. No. 15,855. MINT CANDY. MANUFACTURING COMPANY OF AMERICA, Philadelphia, Pa. Filed Dec. 26, 1905.

AFTER DINNER

The words "AFTER DINNER."

SER. No. 15,880. CANDY. HERBERT L. HILDRETH, Boston, Mass. Filed Jan. 2, 1906.

Velvet

The word "VELVET."

SER. No. 15,952. SPOOL-COTTON. BLODGETT & ORSWELL CO., Pawtucket, R. I. Filed Jan. 6, 1906.



The monogram "B & O."

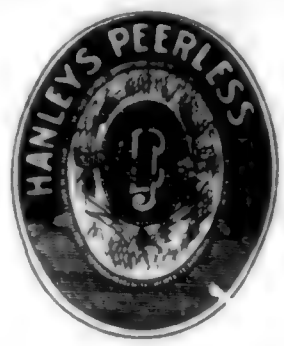
SER. No. 16,045. WHIPS. CARGILL CLEVELAND & Co., Westfield, Mass. Filed Jan. 8, 1906.

SER. No. 16,045.

EARLY BIRD

The words "EARLY BIRD."

SER. No. 16,047. ALE. THE JAMES HANLEY BREWING CO., Providence, R. I. Filed Jan. 8, 1906. Used ten years.



The words "HANLEY'S PEERLESS" on an oval band inclosing an oval design bearing the monogram "T J H B Co," bordered at each side by a scroll and sprays of grain.

SER. No. 16,051. CORKS. OSCAR HEYMAN & Co., New York, N. Y. Filed Jan. 8, 1906.

DUPLEX

The word "DUPLEX."

SER. No. 16,063. GLYCERIN. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England. Filed Jan. 9, 1906.



The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.

SER. No. 16,084. ANILIN DYES. CASSELLA COLOR COMPANY, New York, N. Y. Filed Jan. 10, 1906.

C.C.Co.

The letters "C. C. Co."

SER. No. 16,096. CORSETS. DOWNER, HAWES AND COMPANY, INCORPORATED, Bridgeport, Conn. Filed Jan. 10, 1906.

La Resista

The words "LA RESISTA."

SER. No. 16,101. BUST-FORMS. WRIGHT & CO., Hoboken, N. J. Filed Jan. 10, 1906.

Fairy

The word "FAIRY."

SER. No. 16,148. WHISKY. FREDERICK GLASSUP, New York, N. Y., assignor to John Gow & Company, New York, N. Y., a Firm. Filed Jan. 12, 1906.



The word "ARCHER," associated with the pictorial representation of an Indian holding a drawn bow and arrow.

SER. No. 16,152. ELASTIC FOOT-COVERINGS FOR HORSES. MICHAEL HALLAHAN, New York, N. Y. Filed Jan. 12, 1906.

PAN AMERICAN

The words "PAN AMERICAN."

SER. No. 16,177. PORTER. THE ROBERT SMITH ALE BWG CO., Philadelphia, Pa. Filed Jan. 13, 1906.

CREAM

The word "CREAM."

SER. No. 16,314. CHOCOLATE-COATED CANDY. HOOK & CROWNFIELD, Baltimore, Md. Filed Jan. 19, 1906.

SPONGE-ATE

The word "SPONGE-ATE."

SER. No. 16,363. FLOUR MADE FROM WHEAT. SHEFFIELD-KING MILLING CO., Minneapolis, Minn. Filed Jan. 22, 1906.

SER. No. 16,363.

Gold Mine

The words "GOLD MINE."

SER. No. 16,366. FLOUR MADE FROM WHEAT. SHEFFIELD-KING MILLING CO., Minneapolis, Minn. Filed Jan. 22, 1906.

SUPREMA

The word "SUPREMA."

SER. No. 16,390. DRESSED AND DYED FURS. ATLANTIC CHEMICAL CO., New York, N. Y. Filed Jan. 22, 1906.



Two concentric circles, the monogram of "A C Co" arranged within the inner circle, and the words "ATLANTIC DYE" produced in the space between the two circles.

SER. No. 16,395. INTENSIFIERS FOR WEAK NEGATIVES. KIRK-GEARY & COMPANY, Sacramento and San Francisco, Cal. Filed Jan. 22, 1906.

MOTAX

The arbitrary word "MOTAX."

SER. No. 16,407. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

TURCOLEAF

The word "TURCOLEAF."

SER. No. 16,408. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

HANSOM

The word "HANSOM."

SER. No. 16,411. LITTLE CIGARS. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

BELFORT

The word "BELFORT."

SER. No. 16,413. SMOKING-TOBACCO. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

SEABOARD

The word "SEABOARD."

SER. No. 16,427. GINGER-ALE. ABRAHAM S. HOLBERG, Mobile, Ala. Filed Jan. 23, 1906.



The words "RED FEATHER" and the design of a red feather.

SER. No. 16,444. TALCUM POWDER. POND'S EXTRACT COMPANY, New York, N. Y. Filed Jan. 24, 1906.



The representation of the draped head of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Illinois.

SER. No. 16,445. CREAM FOR THE TREATMENT OF THE SKIN. POND'S EXTRACT COMPANY, New York, N. Y. Filed Jan. 24, 1906.



The representation of the draped head of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Illinois.

SER. No. 16,446. DENTIFRICES IN POWDER, PASTE, OR LIQUID FORM. POND'S EXTRACT COMPANY, New York, N. Y. Filed Jan. 24, 1906.



The representation of the laughing face of a young lady, the same being a portrait of Miss Carrie E. Giltner, of Springfield, Illinois.

SER. No. 16,454. FACE-POWDER. THE ARTESIA CERAM COMPANY, Waco, Tex. Filed Jan. 24, 1906.

ARTESIA

The word "ARTESIA."

SER. No. 16,480. SHIRTS, COLLARS, AND CUFFS. MOSES H. LAMBERT, New Haven, Conn. Filed Jan. 25, 1906.

Varsity

The word "VARSITY."

SER. No. 16,516. WIRE FENCING. LEON FENCE CO., Adrian, Mich. Filed Jan. 25, 1906.



The representation of a lion.

SER. No. 16,568. ELECTRICALLY-PLAYED PIANOS AND ELECTRICAL PLAYERS FOR PIANOS. STOKES & SMITH COMPANY, Philadelphia, Pa. Filed Jan. 27, 1906.

Electrelle

The word "ELECTRELLE."

SER. No. 16,583. MONTHLY MAGAZINES. THE BOOK-KEEPER PUBLISHING COMPANY, LTD., Detroit, Mich. Filed Jan. 29, 1906.

The
Business Man's
MAGAZINE
& THE BOOK-KEEPER

The words "THE BUSINESS MAN'S MAGAZINE & THE BOOK-KEEPER."

SER. No. 16,594. WEEKLY NEWSPAPER. THE AMERICAN STANDARD PUBLISHING COMPANY, New York, N. Y. Filed Jan. 30, 1906.

The Standard and
VANITY FAIR

The words "THE STANDARD AND VANITY FAIR."

SER. No. 16,625. LEGGINGS. ROSENWASSER BROS., New York, N. Y. Filed Jan. 30, 1906.

RHEUMA-NOT

The word "RHEUMA-NOT."

SER. No. 16,649. FLAVORING EXTRACTS. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 31, 1906.

Ferndell

The arbitrarily-selected word "FERNDELL."

SER. No. 16,651. BAKING-POWDER. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 31, 1906.

Ferndell

The arbitrarily-selected word "FERNDELL."

SER. No. 16,652. SPICES. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 31, 1906.

Ferndell

The arbitrarily-selected word "FERNDELL."

SER. No. 16,653. SYRUP. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 31, 1906.

Ferndell

The arbitrarily-selected word "FERNDELL."

SER. No. 16,656. MONTHLY MAGAZINE. JOHN LANE COMPANY, New York, N. Y. Filed Feb. 1, 1906.

THE INTERNATIONAL STUDIO

The words "THE INTERNATIONAL STUDIO."

SER. No. 16,666. LEATHER LEGGINGS. CHANAVAS & SLAENGER, INC., New York, N. Y. Filed Feb. 1, 1906.

AUTO

The word "AUTO."

SER. No. 16,669. COTTON PIECE GOODS, SHEETINGS, SHIRTINGS, AND DRILLS. SUFFERN & Co., New York, N. Y. Filed Feb. 1, 1906.

ALTONAH

The word "ALTONAH."

SER. No. 16,671. PEACH-TREES. JOSEPH W. ROCKEY, Miamisburg, Ohio. Filed Feb. 1, 1906.

ROCKEY'S LATE STAR

The words "ROCKEY'S LATE STAR," together with the picture of a star with the pictorial representation of a peach in the center of said star.

SER. No. 16,685. COCOA AND PREPARATIONS THEREOF. ARBUCKLE BROS., New York, N. Y., Pittsburg, Pa., and Chicago, Ill. Filed Feb. 2, 1906.

DRINKSOME

The word "DRINKSOME."

SER. No. 16,686. CHOCOLATE AND PREPARATIONS THEREOF. ARBUCKLE BROS., New York, N. Y., Pittsburg, Pa., and Chicago, Ill. Filed Feb. 2, 1906.

DRINKSOME

The word "DRINKSOME."

SER. No. 16,706. MOPS. ESTES MILLS, Fall River, Mass. Filed Feb. 2, 1906.

SLASHER

The word "SLASHER."

SER. No. 16,707. MOPS. ESTES MILLS, Fall River, Mass. Filed Feb. 2, 1906.

BEE

The word "BEE."

SER. No. 16,708. MOPS. ESTES MILLS, Fall River, Mass. Filed Feb. 2, 1906.

ALPHA

The word "ALPHA."

SER. No. 16,709. MOPS. ESTES MILLS, Fall River, Mass. Filed Feb. 2, 1906.

ACME

The word "ACME."

SER. No. 16,710. MOPS. BOYDS MILLS, Fall River, Mass. Filed Feb. 3, 1906.

O.K.

The letters "O. K."

SER. No. 16,733. REFRIGERATORS. MCCRAY REFRIGERATOR CO., Kendallville, Ind. Filed Feb. 3, 1906. Used ten years.

Mc CRAY

The word "McCRAY."

SER. No. 16,734. TWIST-TOBACCO. ROBARDS TOBACCO CO., Mayfield, Ky. Filed Feb. 3, 1906.

HILLSIDE

The word "HILLSIDE."

SER. No. 16,736. LEATHER BOOTS AND SHOES. LOUIS WERBER, New York, N. Y. Filed Feb. 3, 1906. Used ten years.

RIVERSIDE

The word "RIVERSIDE." Immediately beneath the word "RIVERSIDE" and extending from the last letter to a point somewhat below the first letter are two curved lines joined at either end making a representation of the flourish of a pen below the word.

SER. No. 16,740. PACKAGE-ROLLS OF GOLD, SILVER, ALUMINUM, COMPOSITION, OR OTHER METAL LEAF. W. H. COE MFG. COMPANY, Providence, R. I. Filed Feb. 5, 1906. Used ten years.

COE'S

The word "COE'S."

SER. No. 16,777. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed Feb. 6, 1906.

MARCEL

The word "MARCEL."

SER. No. 16,778. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y. Filed Feb. 6, 1906.

SQUARE DEAL

The words "SQUARE DEAL."

SER. No. 16,779. HYBRID SEEDLING VARIETIES OF GRAPEVINES, CUTTINGS, SCIONS, GRAFTS, ROOTS, AND STOCKS OF THE VARIETIES OF GRAPES KNOWN AS DELAWARE AND LINDLEY GRAPES. STARK BRO'S. NURSERIES & ORCHARDS COMPANY, Louisiana, Mo. Filed Feb. 6, 1906.

BANNER

The word "BANNER," the first and last letters of the word being larger than the other letters and having their bottoms depending below the bottoms of the remaining letters.

SER. No. 16,780. GRAPEVINES, CUTTINGS, SCIONS, GRAFTS, ROOTS, AND STOCKS REPRODUCED FROM THE SEEDLING OF A VARIETY OF GRAPES KNOWN AS BRILLIANT GRAPE. STARK BRO'S. NURSERIES & ORCHARDS COMPANY, Louisiana, Mo. Filed Feb. 6, 1906.

SUNRISE

The word "SUNRISE," the first and last letters of the word being larger than the other letters and having their bottoms depending below the bottoms of the remaining letters.

SER. No. 16,787. CORSETS. BERDEN SCHIRR CO., New York, N. Y. Filed Feb. 6, 1906.

La Reine

The words "LA REINE."

SER. No. 16,792. DAMPERS FOR HOT-AIR PIPES AND SMOKE-PIPES. THE S. M. HOWES COMPANY, Boston, Mass. Filed Feb. 6, 1906.

YANKEE

The word "YANKEE."

SER. NO. 16,793. CANDY. DILLING & CO., Indianapolis, Ind. Filed Feb. 6, 1906.



A reclining figure of a woman in oriental costume between the words "LUCKY GYPSY" on one side and "FORTUNE TELLER" on the other, the same being inclosed within a rectangular ornamental border.

SER. NO. 16,820. CORSETS. ROSENBAUM COMPANY, Pittsburg, Pa. Filed Feb. 8, 1906.



The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having the representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter the letters "ARCO," and the fourth quarter the letter "R." and the abbreviation "Co."

SER. NO. 16,863. WATERPROOF STRUCTURAL AND ROOF PAINT. THE ATLANTIC REFINING COMPANY, Cleveland, Ohio. Filed Feb. 9, 1906.

ARCO

The fanciful word "ARCO" printed in plain letters.

SER. NO. 16,875. LEATHER BOOTS AND SHOES. E. S. WOODBURY & COMPANY, Boston, Mass. Filed Feb. 9, 1906.

INSTRUCTOR

The word "INSTRUCTOR."

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NEW YORK

TRADE-MARKS

REGISTERED MARCH 6, 1906.

50,066. LIQUID DRESSING FOR BOOTS AND SHOES. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass.

The words "PEERLESS GLOSS" arranged upon an oblong bordered panel. Above the word "PEERLESS" is the word "HAUTHAWAY'S." Below the word "GLOSS," within the panel, is the monogram "C L H & SONS" inclosed in a circle of ornamental design. Below the circle are the words "FOR LADIES' & CHILDREN'S BOOTS, SHOES &c." The words "BOOTS, SHOES &c." are represented as printed upon a folded ribbon. Used ten years.

Filed July 20, 1905. Serial No. 10,588. PUBLISHED JANUARY 9, 1906.

50,067. LIQUID DRESSING FOR LEATHER BOOTS AND SHOES. C. L. HAUTHAWAY & SONS, INCORPORATED, Portland, Me., and Boston, Mass.

The words "IDEAL DRESSING" printed on a blue shield having an ornamental outline and border. Above the shield is the word "HAUTHAWAY'S." Below the word "DRESSING," on the shield, are the words "FOR LADIES & CHILDREN'S SHOES." Below the shield is an open space surrounded by a blue border of ornamental design. Used ten years.

Filed July 20, 1905. Serial No. 10,589. PUBLISHED JANUARY 9, 1906.

50,068. CIGARS. E. H. GATO CIGAR COMPANY, Key West, Fla.

The representation of a cowboy riding a horse at full speed and waving a lasso. In the background is the picture of two horses running at full speed. Above the picture of the cowboy is the word "LASSO" in fancy capital letters. Used ten years.

Filed July 19, 1905. Serial No. 10,576. PUBLISHED JANUARY 9, 1906.

50,069. LAGER-BEER. F. A. POTH & SONS, INCORPORATED, Philadelphia, Pa.

The representation of a heraldic robe surmounted by a crown with a Maltese cross, and on the face of the robe is a shield, within which is displayed a goblet of foaming beer, with the words "POTH'S EXTRA" and a paraph across the face of the representation and above the words and character "F. A. POTH & SONS, INCORPORATED" and beneath the word "BEER" and all inclosed within a double border. Used ten years.

Filed August 1, 1905. Serial No. 11,114. PUBLISHED JANUARY 9, 1906.

50,070. METAL-POLISH. HINDS & COON, Boston, Mass.

The word "RUBY-RUB" and the representation of a shield.

Filed December 4, 1905. Serial No. 15,183. PUBLISHED JANUARY 9, 1906.

50,071. PUMICE-SOAP. IOWA SOAP COMPANY, Burlington, Iowa.

The words "BARR'S MECHANIC." Used ten years

Filed November 28, 1905. Serial No. 15,043. PUBLISHED JANUARY 9, 1906.

50,072. ORGANS. W. W. PUTNAM & Co., Staunton, Va.

The word "PUTNAM." Used ten years.

Filed November 24, 1905. Serial No. 14,960. PUBLISHED JANUARY 9, 1906.

50,073. PLAYING-CARDS THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having a border of conventional leaves and flowers. At the center is a rosette, from which extend toward the sides and ends four fleur-de-lis figures alternately arranged with scrolls and inclosed by a circle. The rest of the design is occupied by a vine-like scroll.

Filed July 12, 1905. Serial No. 10,133. PUBLISHED JANUARY 9, 1906.

50,074. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A design having three large leaves at each corner. Within a central circle four open flowers are arranged alternately with four buds which spring from an inner circle containing a figure composed of four buds. At the sides and ends is lattice-work of rough branches.

Filed July 12, 1905. Serial No. 10,136. PUBLISHED JANUARY 9, 1906.

50,075. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design displaying a central rosette supporting at each end an elaborate vase surmounted by two sea-horses. At each side of the design are two winged sea-horses, and in each corner a vine-like scroll appears with a bird perched thereon.

Filed July 12, 1905. Serial No. 10,142. PUBLISHED JANUARY 9, 1906.

50,076. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design with an outer frame having scrolls at the corners. A central panel with rounded ends displays at each end two branches with leaves and berries and an elaborate scroll. In the center a round rosette-like figure is displayed.

Filed July 12, 1905. Serial No. 10,143. PUBLISHED JANUARY 9 1906.

50,077. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having at the center a diamond-shaped leaf device and at each end a stork with outspread wings. The rest of the design is covered by conventional scrolls of vines and leaves.

Filed July 12, 1905. Serial No. 10,144. PUBLISHED JANUARY 9, 1906.

50,078. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The representation of an electric or motor bicycle.

Filed July 14, 1905. Serial No. 10,298. PUBLISHED JANUARY 9, 1906.

50,079. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The representation of a safety-bicycle.

Filed July 14, 1905. Serial No. 10,299. PUBLISHED JANUARY 9, 1906.

50,080. MALT EXTRACT. VALENTIN BLATZ BREWING CO., Milwaukee, Wis.

The representaton of a six-pointed star upon which is produced the representation of a hop-blossom, to the stem of which are attached a number of barley-stalks extending to either side of the blossom, and upon the blossom in turn is inscribed a monogram of the letters "V B."

Filed November 13, 1905. Serial No. 14,561. PUBLISHED JANUARY 9, 1906.

50,081. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J.

The word "VICTROLA."

Filed December 1, 1905. Serial No. 15,106. PUBLISHED JANUARY 9, 1906.

50,082. TALKING-MACHINES AND PARTS THEREOF. VICTOR TALKING MACHINE COMPANY, Camden, N. J.

The word "VICTROLA."

Filed December 1, 1905. Serial No. 15,107. PUBLISHED JANUARY 9, 1906.

50 083. SHEATHING-PAPER. W. H. RANKIN COMPANY, Elizabeth, N. J.

The representation of a double-headed arrow with the word "EMPIRE" between the heads.

Filed August 21, 1905. Serial No. 11,868. PUBLISHED JANUARY 9, 1906.

50,084. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y.

The word "ANCHOR." Used ten years.

Filed December 4, 1905. Serial No. 15,197. PUBLISHED JANUARY 9, 1906.

50,085. PITCH. WARREN-EHRET COMPANY, Philadelphia, Pa.

The letter "E" upon a diamond-shaped background.

Filed August 26, 1905. Serial No. 12,040. PUBLISHED JANUARY 9, 1906.

50,086. CIGARS. PAUL E. WATSON, Salisbury, Md.

The word "EL-MARDO."

Filed September 16, 1905. Serial No. 12,703. PUBLISHED JANUARY 9, 1906.

50,087. MALT EXTRACT. BERNHEIM DISTILLING CO., INC., Louisville, Ky.

The word "SHAW'S" above a circle surrounded by radiations and containing the word "SHAW'S." Used ten years.

Filed June 30, 1905. Serial No. 9,497. PUBLISHED JANUARY 9, 1906.

50,088. CIGARS. WILLIAM BOUCHER, Baltimore, Md.

A monogram of the letters "W B," associated with the words "HAND" and "MADE."

Filed April 28, 1905. Serial No. 3,505. PUBLISHED JANUARY 9, 1906.

50,089. FILES AND RASPS. CARVER FILE COMPANY, Philadelphia, Pa.

A triangle containing the representation of a file upright.

Filed December 7, 1905. Serial No. 15,254. PUBLISHED JANUARY 9, 1906.

50,090. PORTLAND CEMENT. AUDLEY CLARKE, Brooklyn, N. Y.

The representation of a pennant with the word "RELIANCE" printed thereon.

Filed June 13, 1905. Serial No. 8,012. PUBLISHED SEPTEMBER 12, 1905.

50,091. NEEDLES. CHARLES H. CROWLEY, New York, N. Y.

The representation of a lighthouse, an expanse of water, and a ship, together with the word "HELIX." Used ten years.

Filed August 16, 1905. Serial No. 11,710. PUBLISHED JANUARY 9, 1906.

50,092. FRESCO, CALCIMINE, AND WALL-PAPER CLEANER. CLIMAX CLEANER MFG. CO., Cleveland, Ohio.

The word "CLIMAX."

Filed July 3, 1905. Serial No. 9,752. PUBLISHED JANUARY 9, 1906.

50,093. CIGARS. E. H. GATO CIGAR COMPANY, Key West, Fla.

The representation of a flying eagle, on which is seated a female figure in flowing robes and with a star ornamentation in her hair, the right arm being extended upwardly and pointing to a star, from which radiate rays of light, the left arm being extended downwardly and wreath in the hand. In the lower foreground, to the left, is a landscape showing a town and a bridge in the distance and to the right a tropical scene. On the left-hand side of hand pointing to the star is the word "LA" and on the right-hand side the word "ESTRELLA," said words being arranged in fancy capital letters.

Filed July 7, 1905. Serial No. 9,880. PUBLISHED JANUARY 9, 1906.

50,094. WATCHES. ELGIN NATIONAL WATCH CO., Elgin and Chicago, Ill.

The words and abbreviations "ELGIN NATL WATCH CO." written in script.

Filed September 7, 1905. Serial No. 12,306. PUBLISHED JANUARY 9, 1906.

50,095. CHAMPAGNE AND STILL-WINE. F. KORBEL & BROS., INC., San Francisco, Cal.

The words "GRAND PACIFIC."

Filed June 24, 1905. Serial No. 8,978. PUBLISHED JANUARY 9, 1906.

50,096. WINE. ITALIAN SWISS COLONY, San Francisco, Cal.

The word "TIPO" and the design of a Greek cross in a fanciful circular figure surmounted by a crown and inclosed in a wreath with three overlapping medals at each side.

Filed May 24, 1905. Serial No. 6,522. PUBLISHED JANUARY 9, 1906.

50,097. WINE. ITALIAN SWISS COLONY, San Francisco, Cal.

The representation of a Greek cross and a crown and wreath inclosed within a circular design with ornamental lines and scrollwork at the top, bottom, and sides of the same.

Filed May 25, 1905. Serial No. 6,580. PUBLISHED JANUARY 9, 1906.

50,098. PLUG, CUT-PLUG, AND SMOKING TOBACCO. JOSEPH G. DILL, INC., Richmond, Va.

The word "VALISE" and the representation of a negro boy carrying upon his head a valise or suit-case having centrally located thereon an oval field bearing the name "J. G. DILL."

Filed May 1, 1905. Serial No. 3,858. PUBLISHED JANUARY 9, 1906.

50,099. CORN KILLING PLASTERS. M. R. KELLY & CO., Joliet, Ill.

The words "HONEST JOHN," associated with the picture of a man in a standing position representing "Honest John" and dressed in the costume of a farmer, with top boots and a slouch hat and holding the front of his coat in his hands at each side.

Filed July 3, 1905. Serial No. 9,739. PUBLISHED JANUARY 9, 1906.

50,100. GREASE. KENT LUBRICATING COMPANY, Milwaukee, Wis.

The representation of a Ferris wheel within a fair-ground and a crowd of people appearing at its base. Used ten years.

Filed May 3, 1905. Serial No. 4,172. PUBLISHED JANUARY 9, 1906.

50,101. WINE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "MINERVA," above which is the representation of a shield, upon which is the monogram composed of the letters and abbreviation "P J B L Co," and on either side of the shield is a cluster of grape-vines and leaves and three bunches of grapes.

Filed June 21, 1905. Serial No. 8,637. PUBLISHED JANUARY 9, 1906.

50,102. FRUIT-WINE. LOUIS ROSENZWEIG, Chicago, Ill.

The word "DIANA," with the representation of the goddess Diana and a stag in an oval design, with ornamental panel and scrollwork at each side of the same.

Filed May 22, 1905. Serial No. 6,296. PUBLISHED JANUARY 9, 1906.

50,103. LAUNDRY BLUING. THE RUSS COMPANY, South Bend, Ind.

The representation of a red Greek cross with the words "RED CROSS" thereupon.

Filed May 17, 1905. Serial No. 5,909. PUBLISHED JANUARY 9, 1906.

50,104. CARBORUNDUM ABRASIVE MATERIAL. THE CARBORUNDUM COMPANY, Niagara Falls, N. Y.

The representation of an Indian's head on a dark circular background.

Filed April 27, 1905. Serial No. 3,230. PUBLISHED JANUARY 9, 1906.

50,105. BALL-BEARINGS. THE HESS-BRIGHT MANUFACTURING CO., Philadelphia, Pa.

The letters "D. W. F."

Filed December 13, 1905. Serial No. 15,394. PUBLISHED JANUARY 9, 1906.

50,106. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A conventional scroll-like frame of flowers and curves inclosing the representation of a female figure seated on a stone bench having her lower limbs draped and one foot extended to support a cupid standing thereon and joining hands with the female.

Filed June 27, 1905. Serial No. 9,240. PUBLISHED JANUARY 9, 1906.

50,107. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A design displaying a panel with many fleurs-de-lis arranged in regular order, surrounded by two heavy lines with diamonds between, inclosed by a border of trident-like spikes pointing outward.

Filed July 1, 1905. Serial No. 9,581. PUBLISHED JANUARY 9, 1906.

50,108. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design in which many five-pointed leaves are arranged with their stems leading to a group of berries at the center. Other groups of berries appear at each end and along the sides.

Filed July 12, 1905. Serial No. 10,125. PUBLISHED JANUARY 9, 1906.

50,109. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having a border of conventional rosettes surrounding an inner panel of small squares shaded to represent minute pyramids.

Filed July 12, 1905. Serial No. 10,126. PUBLISHED JANUARY 9, 1906.

50,110. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A basket-like design in which parallel groups of four lines are interwoven with similar lines perpendicular thereto.

Filed July 12, 1905. Serial No. 10,127. PUBLISHED JANUARY 9, 1906.

50,111. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design in which the central figure consists of four ray-like prongs pointing outward from an inner circle in connection with intertwined scrolls. The central figure is inclosed by four connected arches. The rest of the design displays vines conventionally suggesting grape-vines bearing grapes.

Filed July 12, 1905. Serial No. 10,128. PUBLISHED JANUARY 9, 1906.

50,112. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having as a central figure a large rosette suggesting a flower, which is placed upon a background of basket-work, inclosed by a frame with loops at the corners. Along the sides and ends of the frame, between the loops, are displayed conventional scrolls.

Filed July 12, 1905. Serial No. 10,129. PUBLISHED JANUARY 9, 1906.

50,113. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having an inner panel inclosed by a conventional border. In the center is an eight-pointed rosette, from which extends on each side a conventional pointed figure. At each end is an ornamental curved frame inclosing the figure of two monkeys. At the corners of the panel are conventional oak-leaves.

Filed July 12, 1905. Serial No. 10,130. PUBLISHED JANUARY 9, 1906.

50,114. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having a border of globules surrounding a rectangle of light circles inclosing four-pointed figures. At the center is a plain dark rectangle surrounded by a leafless vine with many flowers.

Filed July 12, 1905. Serial No. 10,132. PUBLISHED JANUARY 9, 1906.

50,115. UPHOLSTERERS' NAILS. THE TRAUT & HINE MFG. CO., New Britain, Conn.

The word "MATCHLEATHER."

Filed August 10, 1905. Serial No. 11,472. PUBLISHED JANUARY 9, 1906.

50,116. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "TEXAN." Used ten years.

Filed April 15, 1905. Serial No. 1,611. PUBLISHED JANUARY 9, 1906.

50,117. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "TREASURY."

Filed April 15, 1905. Serial No. 1,809. PUBLISHED JANUARY 9, 1906.

50,118. CALCINED PLASTER. CALVIN TOMKINS, New York, N. Y.

The words "STANDARD PLASTER" appear upon a standard or banner. Associated with the above is a rayed background, the monogram "C T," and the words "HILLSBOROUGH ROCK CALCINED PLASTER, CALVIN TOMKINS, NEW YORK." Used ten years.

Filed May 1, 1905. Serial No. 3,926. PUBLISHED JANUARY 9, 1906.

50,119. CIGARS. JOSEPH WEINREICH, Dayton, Ohio.

The word "OPPORTUNITY" and the signature of John J. Ingalls below the bust portrait of the late Senator Ingalls inclosed in a circular border and the words "I KNOCK UNBIDDEN ONCE AT EVERY GATE." A scroll ornamentation is above the same.

Filed June 2, 1905. Serial No. 7,221. PUBLISHED JANUARY 9, 1906.

50,120. COTTON-CLOTH BUFF-WHEELS. WILLIAMSVILLE MANUFACTURING COMPANY, Killingly, Conn.

The character "A1" inclosed in an ellipse, together with the words "WILLIAMSVILLE MFG. CO. KILLINGLY, CONN." Used ten years.

Filed April 4, 1905. Serial No. 371. PUBLISHED JANUARY 9, 1906.

50,121. PRESSED GLASSWARE. A. H. HEISEY & CO. INC., Newark, Ohio.

The letter "H" inclosed in a diamond-shaped figure.

Filed June 22, 1905. Serial No. 8,754. PUBLISHED JANUARY 9 1906.

50,122. BRAKE-SHOES. AMERICAN BRAKE SHOE & FOUNDRY COMPANY, New York, N. Y.

A three-sided figure formed of two vertical bars or arms and a cross-bar connecting the upper ends of the two vertical bars.

Filed April 14, 1905. Serial No. 1,559. PUBLISHED JANUARY 9 1906.

50,123. STRINGS FOR VIOLINS, GUITARS, ZITHERS, AND BANJOS. SIGMUND BLUMENTHAL, New York, N. Y

The words "GOLD MEDAL." Used ten years.

Filed May 10, 1905. Serial No. 4,881. PUBLISHED JULY 4, 1905.

50,124. STRINGS FOR VIOLINS, GUITARS, ZITHERS, AND BANJOS. SIGMUND BLUMENTHAL, New York, N. Y.

The words "OLE BULL." Used ten years.

Filed May 10, 1905. Serial No. 4,883. PUBLISHED JULY 4, 1905.

50,125. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The words "POCKET-POSITIVE."

Filed August 1, 1905. Serial No. 11,096. PUBLISHED JANUARY 9, 1906.

50,126. TRAVELING TOILET-CASES. WM. E. DISBROW, New York, N. Y.

The words "THE GEM."

Filed July 11, 1905. Serial No. 10,080. PUBLISHED JANUARY 9, 1906.

50,127. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.

The representation of an eagle with outstretched wings holding pencils in its beak and talons.

Filed September 2, 1905. Serial No. 12,204. PUBLISHED JANUARY 9, 1906.

50,128. PENHOLDERS. EAGLE PENCIL COMPANY, New York, N. Y.

The representation of an eagle with outstretched wings holding pencils in its beak and talons.

Filed September 2, 1905. Serial No. 12,205. PUBLISHED JANUARY 9, 1906.

50,129. LEATHER BOOTS AND SHOES. F. MAYER BOOT & SHOE CO., Milwaukee, Wis.

The word "MAYER." Used ten years.

Filed November 16, 1905. Serial No. 14,724. PUBLISHED JANUARY 9, 1906.

50,130. CHAINS, FOBS, CHATELAINES, AND CHAIN-TRIMMINGS. CHARLES R. HARRIS, North Windham, Conn.

The representation of a bullfrog on the bank of a pool.

Filed April 11, 1905. Serial No. 1,132. PUBLISHED JANUARY 9, 1906.

50,131. CYCLE-SADDLES. J. B. BROOKS & CO., LIMITED, Birmingham, England.

The word "BROOKS." Used ten years.

Filed May 19, 1905. Serial No. 6,088. PUBLISHED JANUARY 9, 1906.

50,132. LEATHER BOOTS AND SHOES. ISRAEL LEVINSTEIN, Baltimore, Md.

A representation of an ax and a man climbing a helve, with the hyphenated word "KLIM-AX" upon the head of the ax.

Filed May 31, 1905. Serial No. 7,128. PUBLISHED JANUARY 9, 1906.

50,133. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va.

The word "EQUIVALENT," associated with the picture of a young man holding a shoe in one hand and a bag of money in the other.

Filed November 13, 1905. Serial No. 14,541. PUBLISHED JANUARY 9, 1906.

50,134. LEATHER BOOTS AND SHOES. NESMITH SHOE COMPANY, Brockton and Boston, Mass.

The word "FREAK."

Filed November 16, 1905. Serial No. 14,729. PUBLISHED JANUARY 9, 1906.

50,135. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I., and Beaver Falls, Pa.

The words "GT. WESTERN."

Filed June 12, 1905. Serial No. 7,900. PUBLISHED JANUARY 9, 1906.

50,136. FILES AND RASPS. NICHOLSON FILE COMPANY, Providence, R. I.

The words "GREAT WESTERN" on a representation of a file, the letters "G W F Co" in the form of a monogram, and an illustrated representation of the works where the goods are made. Used ten years.

Filed June 12, 1905. Serial No. 7,901. PUBLISHED JANUARY 9, 1906.

50,137. FILES, RASPS, AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

The word "NICHOLSON." Used ten years.

Filed June 14, 1905. Serial No. 8,102. PUBLISHED JANUARY 9, 1906.

50,138. AXES, HATCHETS, AND ADZES. THE COLLINS COMPANY, Collinsville, Conn.

The word "COLLINS." Used ten years.

Filed April 6, 1905. Serial No. 485. PUBLISHED JANUARY 9, 1906.

50,139. RUBBER INSULATING COMPOUND. THE OKONITE COMPANY, LIMITED, New York, N. Y.

The word "OKONITE."

Filed June 30, 1905. Serial No. 9,531. PUBLISHED JANUARY 9, 1906.

50,140. WHISKY. UNITED WINE AND TRADING COMPANY, New York, N. Y.

The word "DUNWOODIE."

Filed July 12, 1905. Serial No. 10,154. PUBLISHED JANUARY 9, 1906.

50,141. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The words "YOUNG LADIES CHOICE."

Filed September 7, 1905. Serial No. 12,356. PUBLISHED JANUARY 9, 1906.

50,142. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The word "MAGNET," associated with the representation of a magnet.

Filed September 7, 1905. Serial No. 12,357. PUBLISHED JANUARY 9, 1906.

50,143. HOSIERY. JOHN BLOOD & Co., Philadelphia, Pa.

A central shield having on its field the representation of a lion rampant and above said lion a border of conventional design. The shield is surmounted by a helmet, above which appears a lion's head. Above the lion's head and below the shield are scrolls, and surrounding all of said features is a frame of irregular and fanciful shape. Used ten years.

Filed June 15, 1905. Serial No. 8,265. PUBLISHED JANUARY 9, 1906.

50,144. MANUFACTURED FURS FOR WEARING-APPAREL. C. G. GUNTHER'S SONS, New York, N. Y.

The words "GUNTHER'S FURS." Used ten years.

Filed July 19, 1905. Serial No. 10,569. PUBLISHED DECEMBER 5, 1905.

50,145. OVERALLS. H. W. CARTER & SONS, Lebanon, N. H.

The pictorial representation of a locomotive and train of cars and associated therewith the words "CARTER'S RAILROAD OVERALLS." Used ten years.

Filed June 28, 1905. Serial No. 9,320. PUBLISHED JANUARY 9, 1906.

50,146. OVERALLS. H. W. CARTER & SONS, Lebanon, N. H.

The pictorial representation of a locomotive and a train of cars and associated therewith the words "THE ORIGINAL LEBANON OVERALLS." Used ten years.

Filed June 28, 1905. Serial No. 9,321. PUBLISHED JANUARY 9, 1906.

50,147. LEATHER BOOTS AND SHOES. JOHN H. CROSS, Lynn, Mass.

A Maltese cross and the word "CROSS" thereon.

Filed July 1, 1905. Serial No. 9,589. PUBLISHED JANUARY 9, 1906.

50,148. FLAX PACKING. DUNHAM, CARRIGAN & HAYDEN CO., San Francisco, Cal.

The word "PLYMOUTH." Used ten years.

Filed August 7, 1905. Serial No. 11,346. PUBLISHED JANUARY 9, 1906.

50,149. PERIODICAL. ADAM E. DUNN, Chicago, Ill.

Two concentric circles with the words "THE METHODISTS" printed in the space between the said two concentric circles, the roof and spire of a church appearing within the inner circle, with the spire projecting beyond the outer circle.

Filed December 4, 1905. Serial No. 15,190. PUBLISHED JANUARY 9, 1906.

50,150. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo.

The word "CHARACTER."

Filed November 8, 1905. Serial No. 14,401. PUBLISHED JANUARY 9, 1906.

50,151. WHISKY. HURLEY & Co., Boston, Mass.

The words "CHERRY CLUB," beneath which is a fanciful design of a scroll inclosing a representation of a clump of trees and a winding path about them

Filed June 26, 1905. Serial No. 9,118. PUBLISHED JANUARY 9 1906.

50,152. WHISKY. I. MICHELSON & BROS., Cincinnati, Ohio.

The words "LORD BACON," associated with the representation of a fanciful coat of arms comprising winged dragons rampant against a shield having thereupon a monogram of the letters, character, and abbreviation "I M & BROS," with stalks of rye rising from the top of the shield. Used ten years.

Filed May 12, 1905. Serial No. 5,352. PUBLISHED JANUARY 9, 1906.

50,153. WHISKY. HARRY KAHN, Cincinnati, Ohio.

The word "BUDWEISER," above which is a monogram composed of the letters and abbreviation "E D Co" on a fanciful scroll design with incurved corners and extended in ornamental form at the top, bottom, and at each side, which extensions are crossed by a circular band.

Filed May 25, 1905. Serial No. 6,662. PUBLISHED JANUARY 9, 1906.

50,154. WHISKY. L. & A. SCHARFF, St. Louis, Mo.

The word "AMELIORATED." Used ten years.

Filed June 26, 1905. Serial No. 9,106. PUBLISHED JANUARY 9. 1906.

50,155. LEATHER BOOTS AND SHOES. ISRAEL LEVINSTEIN, Baltimore, Md.

The arbitrary word "SAIF-TI," associated with a representation of a safe and a bulldog, the words "SAFE INVESTMENT" being printed on the safe.

Filed May 29, 1905. Serial No. 7,036. PUBLISHED JANUARY 9, 1906.

50,156. HOSIERY. O'CALLAGHAN & FEDDEN, New York, N. Y.

The representation of a partly-dressed child shown seated upon a chair and in the act of putting on its stockings, said representation being inclosed by an elliptical border or outline and associated with the words "THE LITTLE BEAUTY HOSE."

Filed November 15, 1905. Serial No. 14,657. PUBLISHED JANUARY 9, 1906.

50,167. LEATHER BELTING. PATTERSON, GOTTFRIED & HUNTER LIMITED, New York, N. Y.

A right-angled triangle represented in red.

Filed October 2, 1905. Serial No. 13,187. PUBLISHED JANUARY 9, 1906.

50,168. MONTHLY MAGAZINE. REVIEW PUBLISHING COMPANY, New York, N. Y.

The words "THE FURNITURE TRADE REVIEW AND INTERIOR DECORATOR."

Filed August 23, 1905. Serial No. 11,943. PUBLISHED JANUARY 9, 1906.

50,159. BLOTTING-PAPER. STANDARD PAPER M'F'G. CO., Manchester, Va.

The word "IMPERIAL" inclosed in quotation-marks.

Filed September 5, 1905. Serial No. 12,225. PUBLISHED JANUARY 9, 1906.

50,160. RYE WHISKY. THE HENRY B. GILPIN CO., Baltimore, Md.

The word "ARMSTRONG" inclosed by a double rectangular border. Used ten years.

Filed August 30, 1905. Serial No. 12,097. PUBLISHED JANUARY 9, 1906.

50,161. ANNUAL PUBLICATION. THE INDUSTRIAL PRESS, New York, N. Y.

The words "THE MECHANICAL INDEX."

Filed July 17, 1905. Serial No. 10,450. PUBLISHED JANUARY 9, 1906.

50,162. RUBBER NIPPLES FOR NURSING BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn.

A picture of Geraldine Doyle.

Filed May 22, 1905. Serial No. 6,325. PUBLISHED JANUARY 9, 1906.

50,163. HOSIERY. THE SHEBOYGAN KNITTING COMPANY, Sheboygan, Wis.

The words "GOLD SILK."

Filed November 23, 1905. Serial No. 14,929. PUBLISHED JANUARY 9, 1906.

50,164. WHISKY. THE WEIDEMAN COMPANY, Cleveland, Ohio.

The words "AULD LANG SYNE" and a picture of a household scene showing two men seated at a table drinking and clasping each other's hands, with a woman and another man looking on. The picture is inclosed by an oval design, at each side of which are stems and heads of grain. At the lower left-hand side of the picture is a double circle inclosing a monogram composed of the letters "T W Co" and at the lower right-hand side is a double circle inclosing a thistle design.

Filed April 21, 1905. Serial No. 2,586. PUBLISHED JANUARY 9, 1906.

50,165. ENVELOPS. TRANSO-PAPER COMPANY, Chicago, Ill.

The word "TRANSO."

Filed June 5, 1905. Serial No. 7,488. PUBLISHED JANUARY 9, 1906.

50,166. WOOLEN CLOTHS. AMERICAN WOOLEN COMPANY, Boston, Mass.

Two pairs of concentric circles inclosing the head of a merino ram, under which head are the letters "A. W. Co."

Filed June 10, 1905. Serial No. 7,813. PUBLISHED JANUARY 9, 1906.

50,167. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.

The word "OAKLAND."

Filed April 4, 1905. Serial No. 346. PUBLISHED JUNE 27, 1905.

50,168. SHEETINGS. CAREY, BAYNE & SMITH COMPANY, (INCORPORATED,) New York, N. Y.

The representation of a cow, associated with which are the words "CREAM OF THE MILL."

Filed November 8, 1905. Serial No. 14,429. PUBLISHED JANUARY 9, 1906.

50,169. COTTON PIECE GOODS. CATLIN & Co., New York, N. Y.

The representation of a stirrup, a hound jumping through the stirrup, and crossed horns at the back of the hound and appearing at the front of the stirrup, together with the word "HIGHLAND."

Filed October 14, 1905. Serial No. 13,607. PUBLISHED JANUARY 9, 1906.

50,170. BITTERS. FRANKEL REGENTHAL AND DAMLER, St. Paul, Minn.

The word "FIRESIDE," below which is a picture of an old man and woman sitting before an open grate. The man is holding in his right and upraised hand a glass of liquor. On the mantel above the grate appear a liquor-bottle, clock, and vase, and on the wall above these are hung a pipe and a picture. At the left side of the grate is a rocking-chair in which a cat is lying. The picture is inclosed in a fancy-shaped line outline.

Filed June 26, 1905. Serial No. 9,111. PUBLISHED JANUARY 9, 1906.

50,171. COCKTAILS. GEORGE F. HEWETT Co., Worcester, Mass.

The word "GILNOCKIE" and the monogram composed of the letters "G F H" in a shield design.

Filed June 8, 1905. Serial No. 7,685. PUBLISHED JANUARY 9, 1906.

50,172. SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "BLUE GRASS," associated with the representation of a woman on horseback within a rectangular border, the background having a diagonal bar.

Filed November 16, 1905. Serial No. 14,696. PUBLISHED JANUARY 9, 1906.

50,173. WHISKY. H. W. HUGULEY COMPANY, Boston, Mass.

The word "AMOR" and a fanciful design of a panel and circle for description. Above the circle is an outline of a winged dragon-head surmounting a heraldic roll and the same is bordered by fanciful line and scroll work.

Filed May 22, 1905. Serial No. 6,331. PUBLISHED JANUARY 9, 1906.

50,174. COTTON DUCK. HOGANSVILLE MANUFACTURING COMPANY, Hogansville, Ga.

The representation of the insect commonly called the "yellow jacket."

Filed August 18, 1905. Serial No. 11,781. PUBLISHED JANUARY 9, 1906.

50,175. WHISKY. JESSE MOORE HUNT Co., Louisville, Ky.

The words "JESSE MOORE" inclosed in a dotted circle, on the top of which is a pair of deer-horns, and beneath which is a monogram of the letters and abbreviation "J M H Co," the whole being on the design of a barrel-head. Used ten years.

Filed June 24, 1905. Serial No. 8,930. PUBLISHED JANUARY 9, 1906.

50,176. CORSETS. KABO CORSET COMPANY, Chicago, Ill.

The words "LA BELLE."

Filed July 10, 1905. Serial No. 9,972. PUBLISHED JANUARY 9, 1906.

50,177. WITHDRAWN.

50,178. WOOL BLANKETS. SIMON LEVI, Terre Haute, Ind.

The words "FORT HARRISON" together with a pictorial illustration of a fort and a body of water in the foreground.

Filed August 3, 1905. Serial No. 11,222. PUBLISHED JANUARY 9, 1906.

50,179. WHISKY. J. & E. MAHONEY, Portsmouth, Va.

The word "ARLINGTON." Used ten years.

Filed June 30, 1905. Serial No. 9,434. PUBLISHED JANUARY 9, 1906.

50,180. WHISKY. MARYLAND DISTILLING Co., Chicago, Ill.

The words "KING MARYLAND" and a design showing a barrel with arms and legs, a bottle for the neck and a crown for the head, standing on and bordered by stems, leaves, and heads of grain. On the barrel is a monogram composed of the letters and abbreviation "M D Co" inclosed by the representation of a wreath.

Filed May 6, 1905. Serial No. 4,478. PUBLISHED JANUARY 9, 1906.

50,181. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word-symbol "WOODBERRY" in the arc of a circle, used in conjunction with a representation of rays in a smaller arc of a circle. Used ten years.

Filed May 18, 1905. Serial No. 5,980. PUBLISHED JANUARY 9, 1906.

50,182. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word "AVONDALE." Used ten years.

Filed July 26, 1905. Serial No. 10,841. PUBLISHED JANUARY 9, 1906.

50,183. GIN. HENRY R. MYERS, Covington, Ky.

The word "FULTON." Used ten years.

Filed June 8, 1905. Serial No. 7,702. PUBLISHED JANUARY 9, 1906.

50,184. GIN. NATIONAL DISTILLING CO., Milwaukee, Wis.

The words "GOLD BULLION," the word "BULLION" being in a ribbon design and the whole surrounded by a circle.

Filed May 25, 1905. Serial No. 6,607. PUBLISHED JANUARY 9, 1906.

50,185. WHISKY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "FRIARS," below which is a picture of two friars, one holding a glass of whisky and the other a flask and glass, the whole surrounded by an ornamental line border, four heads of grain included in the border.

Filed June 21, 1905. Serial No. 8,628. PUBLISHED JANUARY 9, 1906.

50,186. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C.

The word "CELTIC."

Filed October 19, 1905. Serial No. 13,771. PUBLISHED JANUARY 9, 1906.

50,187. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The word "GOLF."

Filed June 3, 1905. Serial No. 7,322. PUBLISHED JANUARY 9, 1906.

50,188. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The word "SAPPHIRE."

Filed June 3, 1905. Serial No. 7,327. PUBLISHED JANUARY 9, 1906.

50,189. WHISKY. S. GRABFELDER & CO., Louisville, Ky.

The words "ROSE VALLEY."

Filed May 22, 1905. Serial No. 6,328. PUBLISHED AUGUST 15, 1905.

50,190. LINKS, SLEEVE-BUTTONS, COLLAR-BUTTONS, STUDS, AND BLOUSE-BUTTON SETS. STANDARD BUTTON COMPANY, Attleboro, Mass.

A shell-like figure with a border of scroll design, on the face of the figure being two dollar-marks.

Filed May 10, 1905. Serial No. 4,929. PUBLISHED JANUARY 9, 1906.

50,191. SILK AND MIXED COTTON AND SILK PIECE GOODS. THE B. MAKOVER CO., New York, N. Y.

The letters "B·H·M," with a dot between the letters "B" and "H" and "H" and "M."

Filed June 2, 1905. Serial No. 7,269. PUBLISHED JANUARY 9, 1906.

50,192. DRAPERY AND UPHOLSTERY TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A panel having a representation of an Egyptian column at each end and inclosing a representation of pyramids, a sphinx, and palm-trees.

Filed July 14, 1905. Serial No. 10,301. PUBLISHED JANUARY 9, 1906.

50,193. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The words "STEEL GREY" and "FAST BLACK," associated with an obverse and reverse representation of a medal, the obverse bearing the words "AMERICAN INSTITUTE NEW YORK" and a representation of the coat of arms of said institute and the reverse bearing the words "AWARDED TO WM. SIMPSON & SONS FOR SUPERIOR CAMBRIC PRINTS. 1869," the whole being inclosed in a border having fancy corners. Used ten years.

Filed July 22, 1905. Serial No. 10,701. PUBLISHED JANUARY 9, 1906.

50,194. THREAD. THE NONOTUCK SILK COMPANY, Northampton and Boston, Mass.

The representation of the head of a kitten surmounting a spool of silk thread suspended from the kitten's mouth, associated with the word "CORTICELLI."

Filed June 9, 1905. Serial No. 7,732. PUBLISHED JANUARY 9, 1906.

50,195. COTTON, SILK, HEMP, AND OTHER FIBER THREADS. THE SINGER MANUFACTURING COMPANY, New York, N. Y.

The word "SINGER." Used ten years.

Filed October 25, 1905. Serial No. 13,927. PUBLISHED JANUARY 9, 1906.

50,196. WHISKY. THE WM. BERGENTHAL CO., Milwaukee, Wis.

The words "MEADOW SPRING" and the monogram "W B."

Filed May 29, 1905. Serial No. 6,971. PUBLISHED AUGUST 15, 1905.

50,197. WHISKY. WILLIAM H. LEE & CO., St. Louis, Mo.

The words "BILLY LEE'S." Used ten years.

Filed June 30, 1905. Serial No. 9,421. PUBLISHED JANUARY 9, 1906.

50,198. SILKS AND SATINS. WILLIAM SKINNER MANUFACTURING COMPANY, Holyoke and Boston, Mass.; New York, N. Y.; Chicago, Ill., and Philadelphia, Pa.

The word "SKINNER'S."

Filed April 27, 1905. Serial No. 3,282. PUBLISHED JANUARY 9, 1906.

50,199. WHISKY. A. A. WOLF & CO., Pittsburg, Pa.

The word "AFRICANDER" and the picture of two horses and their riders racing past a judges' stand, inclosed in an oval picture-frame border.

Filed April 17, 1905. Serial No. 1,917. PUBLISHED JANUARY 9, 1906.

50,200. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The letters, character, abbreviation, and word "A. B. & B. Co's BEST."

Filed September 7, 1905. Serial No. 12,355. PUBLISHED JANUARY 9, 1906.

50,201. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The word "SUCCESS."

Filed September 7, 1905. Serial No. 12,358. PUBLISHED JANUARY 9, 1906.

50,202. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y.

The words "GILT EDGE."

Filed September 7, 1905. Serial No. 12,360. PUBLISHED JANUARY 9, 1906.

50,203. WHISKY. HARTMAN, GOLDSMITH & CO., New York, N. Y.

The word and number "THE '400,'" with quotation-marks before and after the number, and the monogram "H G & Co." Used ten years.

Filed June 8, 1905. Serial No. 7, 671. PUBLISHED JANUARY 9, 1906.

50,204. NATURAL AND ARTIFICIAL WHALEBONE. DANIEL HONE, London, England.

The representation of the head and shoulders of a man attired in a fur cap and overcoat, having mountains in the background arranged within an oval-shaped border, in connection with the word "GREENLANDER."

Filed May 26, 1905. Serial No. 6,750. PUBLISHED JANUARY 9, 1906.

50,205. WHISKY. F. W. HUNT & CO., Boston, Mass.

The words "GOLDEN HARVEST." Used ten years.

Filed June 19, 1905. Serial No. 8,465. PUBLISHED NOVEMBER 14, 1905.

50,206. RUBBER HEELS FOR BOOTS AND SHOES. P. W. MINOR & SON, Batavia, N. Y.

The word "TREADEASY."

Filed June 8, 1905. Serial No. 7,641. PUBLISHED JANUARY 9, 1906.

50,207. WHISKY. MUELLER, WATHEN & KOBERT, Lebanon, Ky.

The word "CUMBERLAND." Used ten years.

Filed May 13, 1905. Serial No. 5,438. PUBLISHED JANUARY 9, 1906.

50,208. WHISKY. ROCK-SPRING DISTG. CO., Owensboro, Ky.

The words "OLD KENTUCKY COLONEL" and a picture of a fanciful old Kentucky colonel holding a whisky-glass in his hand.

Filed April 26, 1905. Serial No. 3,119. PUBLISHED JANUARY 9, 1906.

50,209. SOLE-LEATHER. S. H. FRANK & CO., San Francisco, Cal.

An oval figure inclosing a horizontally-arranged cross and the

words, character, and abbreviation "KIRBY & Co., SANTA CRUZ." Used ten years.

Filed June 23, 1905. Serial No. 8,804. PUBLISHED JANUARY 9, 1906.

50,210. HARNESS. STUDEBAKER BROTHERS MANUFACTURING COMPANY, South Bend, Ind.

The word "STUDEBAKER" arranged in the particular and distinctive form of script shown in the drawing.

Filed September 8, 1905. Serial No. 12,393. PUBLISHED JANUARY 9, 1906.

50,211. WHISKY. W. P. SQUIBB & Co., Lawrenceburg, Ind.

The words "CHIMNEY CORNER." Used ten years.

Filed November 21, 1905. Serial No. 14,892. PUBLISHED JANUARY 9, 1906.

50,212. PEACH-TREES. SNEED & WOOD, Tyler, Tex.

The words "YELLOW SWAN."

Filed August 2, 1905. Serial No. 11,148. PUBLISHED JANUARY 9, 1906.

50,213. GLOVES AND MITTENS. THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill.

The word "ASBESTOL."

Filed April 13, 1905. Serial No. 1,355. PUBLISHED JANUARY 9, 1906.

50,214. LACING-HOOKS AND LACING-STUDS. TUBULAR RIVET & STUD COMPANY, Boston, Mass.

A monogram of the letters, character, and abbreviation "T R & S Co."

Filed June 12, 1905. Serial No. 7,981. PUBLISHED JANUARY 9, 1906.

50,215. WHISKY. JOHN D. ULRICH, Brooklyn, N. Y.

The words "WHITE ELEPHANT," associated with the picture of an elephant resting his fore feet upon a barrel, upon the head of which appears a monogram of the letters "J D U," and flying a streamer from his trunk, upon which appear the words "WHITE ELEPHANT."

Filed May 29, 1905. Serial No. 7,016. PUBLISHED JANUARY 9, 1906.

50,216. YARNS OF ALL DESCRIPTIONS. WM. H. HORSTMANN COMPANY, Philadelphia, Pa.; New York, N. Y.; Boston, Mass.; Baltimore, Md.; Detroit, Mich., and Paris and Lyon, France.

The allegorical figure of Columbia represented as being seated with a distaff in one hand and surrounded by a flock of sheep in the foreground of a scene showing trees with foliage and a hillock, and the word "COLUMBIA." Used ten years.

Filed April 13, 1905. Serial No. 1,331. PUBLISHED JANUARY 9, 1906.

50,217. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. ANGER BAKING Co., New York, N. Y.

The representation of a baby's head in a circular figure, such representation being the reproduction of a portrait of the son of John A. Anger.

Filed September 12, 1905. Serial No. 12,502. PUBLISHED JANUARY 9, 1906.

50,218. CROUSTADES. FERDINAND BEAUMONT, New York, N. Y.

The words "ST. JACQUES."

Filed June 7, 1905. Serial No. 7,565. PUBLISHED JANUARY 9, 1906.

50,219. MEDICINE FOR STOPPING EXCESSIVE PERSPIRATION. FREDRICK BOETTGER, Peoria, Ill.

The word "ODORA."

Filed July 21, 1905. Serial No. 10,644. PUBLISHED JANUARY 9, 1906.

50,220. MEDICINE FOR DIPHTHERIA AND RHEUMATISM. FREDERICK E. BONYMAN, Boston, Mass.

The word "ALPHA." Used ten years.

Filed June 21, 1905. Serial No. 8,742. PUBLISHED JANUARY 9, 1906.

50,221. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.

The words "ALIZARINE LANACYL BLUE."

Filed June 14, 1905. Serial No. 8,080. PUBLISHED JANUARY 9, 1906.

50,222. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.

The words "IMMEDIAL INDONE."

Filed June 14, 1905. Serial No. 8,084. PUBLISHED JANUARY 9, 1906.

50,223. BLOOD TONIC OR NUTRIMENT. CHARLES HAMMESFAHR COMPANY, Chicago, Ill.

The word "SALSANIT."

Filed July 11, 1905. Serial No. 10,061. PUBLISHED JANUARY 9, 1906.

50,224. TONIC. COLBURN BIRKS & Co., Peoria, Ill.

The words "GRANT'S CALISAGA AND IRON TONIC" with the fanciful scroll ornamentation beneath the word "GRANT'S," around the word "AND," and above and below and at each end of a rectangular panel inclosing the word "TONIC." Used ten years.

Filed June 30, 1905. Serial No. 9,420. PUBLISHED JANUARY 9, 1906.

50,225. SPICES. E. R. DURKEE & Co., New York, N. Y.

The letters "X X X."

Filed May 2, 1905. Serial No. 3,974. PUBLISHED JANUARY 9, 1906.

50,226. LYE AND POTASH. EAGLE LYE WORKS, Milwaukee, Wis.

The word "EAGLE," associated with a circular panel having thereupon the representation of an eagle with outstretched wings standing upon a rock, with one foot resting upon a can bearing the word "LYE."

Filed April 17, 1905. Serial No. 1,900. PUBLISHED JANUARY 9, 1906.

50,227. LYE AND POTASH. EAGLE LYE WORKS, Milwaukee, Wis.

A label printed in red, with a checkered upper and lower border, alternating black and yellow, the word "EAGLE" printed upon the upper part of the label in a color sharply contrasting with the label and above a scroll of contrasting color, having a central circular disk of black bearing an eagle in sharply-contrasting color, with wings outstretched, with one foot upon a red can.

Filed July 7, 1905. Serial No. 9,894. PUBLISHED JANUARY 9, 1906.

50,228. BLOOD REMEDIES OR PURIFIERS. AXEL L. FILLEAU, Brooklyn, N. Y.

The word "HYGEIAVERUS."

Filed May 16, 1905. Serial No. 5,833. PUBLISHED JANUARY 9, 1906.

50,229. DYEING PREPARATION. EDWARD C. FOSTER, Providence, R. I.

The word "AZONIL."

Filed May 9, 1905. Serial No. 4,821. PUBLISHED JANUARY 9, 1906.

50,230. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY Co. San Francisco Cal.

The word "ARROW" traversed by an arrow and the representation of a standing Indian pulling a bow and directing or aiming an arrow.

Filed November 25, 1905. Serial No. 14,980. PUBLISHED JANUARY 9, 1906.

50,231. BLOOD, NERVE, AND BRAIN FOOD. MAURICE H. GROSSMAN, Philadelphia, Pa.

The words "VIMEN" and "TONE" with a hyphen between the words. These words are arranged within a scroll border, and the letters composing the words decrease in size from the outer ends inwardly.

Filed October 5, 1905. Serial No. 13,324. PUBLISHED JANUARY 9, 1906.

50,232. PRESERVED OLIVES. CHARLES GULDEN, New York, N. Y.

The words "BON TON."

Filed April 13, 1905. Serial No. 1,323. PUBLISHED JANUARY 9, 1906.

50,233. ANTISEPTIC COMPOUND. PER HÅKANSSON, Eslöf, Sweden.

The word "SALUBRIN."

Filed May 16, 1905. Serial No. 5,850. PUBLISHED JANUARY 9, 1906.

50,234. PULL-SOCKETS. HARVEY HUBBELL, INCORPORATED, Bridgeport, Conn.

The representation of a sphere having meridian lines and across the center thereof the word "HUBBELL."

Filed October 18, 1905. Serial No. 13,737. PUBLISHED NOVEMBER 28, 1905.

50,235. WORM-POWDER. DR. HESS & CLARK, Ashland, Ohio.

A pictorial illustration showing the heads of a horse, cow, sheep, hog, and fowl, the picture being inclosed or framed by the representation of a worm and against a rectangular panel of contrasting color and associated with the words "DR. HESS WORM POWDER."

Filed June 15, 1905. Serial No. 8,190. PUBLISHED JANUARY 9, 1906.

50,236. COFFEE. HULMAN & Co., Terre Haute, Ind.

The word "DAUNTLESS" inclosed in a fanciful scroll outline, above which is a picture of a warrior wearing a coat of mail with sword and shield, with rocks at each side and in the background, within a circle.

Filed June 21, 1905. Serial No. 8,641. PUBLISHED JANUARY 9, 1906.

50,237. MEDICINE FOR CERTAIN NAMED DISEASES. HORACE OLIVER HURLEY, Louisville, Ky.

The word "AURICOL."

Filed June 26, 1905. Serial No. 9,047. PUBLISHED JANUARY 9, 1906.

50,238. FLAVORING EXTRACTS. JORDAN STABLER CO., Baltimore, Md.

The word "STERLING" and a representation of the sign of the English pound-mark. Used ten years.

Filed April 1, 1905. Serial No. 136. PUBLISHED JANUARY 9, 1906.

50,239. TABASCO CATCHUP AND TOMATO CATCHUP. JOSEPH CAMPBELL COMPANY, Camden, N. J.

A panel with an upper red portion and a lower white portion, with the word "CAMPBELL'S" upon the red portion in characteristic script type.

Filed December 8, 1905. Serial No. 15,267. PUBLISHED JANUARY 9, 1906.

50,240. CHILI SAUCE, TABASCO SAUCE, AND SALAD-DRESSING. JOSEPH CAMPBELL COMPANY, Camden, N. J.

A panel with an upper red portion and a lower white portion, with the word "CAMPBELL'S" upon the red portion in characteristic script type.

Filed December 8, 1905. Serial No. 15,268. PUBLISHED JANUARY 9, 1906.

50,241. REMEDY FOR EPILEPSY. ANTHONY K. MANDIS, Washington, D. C.

The word "TRISSELION."

Filed October 23, 1905. Serial No. 13,876. PUBLISHED JANUARY 9, 1906.

50,242. CONDENSED MINCE-MEAT. MERRELL-SOULE COMPANY, Syracuse, N. Y.

The words "NONE SUCH."

Filed April 5, 1905. Serial No. 425. PUBLISHED JUNE 6, 1905.

50,243. RHEUMATIC CURE. OLD VETERAN RHEUMATIC CURE COMPANY, Adairville, Ky.

The words "OLD VETERAN."

Filed October 5, 1905. Serial No. 13,307. PUBLISHED JANUARY 9, 1906.

50,244. ANTISEPTIC HEALING-OIL. PARIS MEDICINE CO., St. Louis, Mo.

The representation of a mechanic standing in front of a piece of machinery, wearing a cap and an apron and represented as applying a bandage to an injured hand.

Filed October 4, 1905. Serial No. 13,271. PUBLISHED JANUARY 9, 1906.

50,245. ANTISEPTIC HEALING-OIL. PARIS MEDICINE CO., St. Louis, Mo.

The representation of a boy gazing at one of his hands which he has cut with a penknife which he holds in his other hand. A stick which he has been whittling, as well as a chip cut therefrom, are shown as falling to the ground.

Filed October 4, 1905. Serial No. 13,272. PUBLISHED JANUARY 9, 1906.

50,246. LIQUID DISINFECTANTS. MARY ESTELLA PLATT, New York, N. Y.

A circular disk, the representation of a bottle arranged upon it, and the word "PLATT" written upon the disk across the representation of the bottle. Used ten years.

Filed June 7, 1905. Serial No. 7,606. PUBLISHED JANUARY 9, 1906.

50,247. DRIED, SMOKED, PICKLED, SALTED, AND CANNED FISH. WILLIAM T. SHUTE, Gloucester, Mass.

The representation of a fish with the word "FISHERED." Used ten years.

Filed May 3, 1905. Serial No. 4,077. PUBLISHED JANUARY 9, 1906.

50,248. REMEDY FOR ASTHMA. TAFTS ASTHMALENE COMPANY, New York, N. Y.

The word "ASTHMALENE."

Filed October 9, 1905. Serial No. 13,458. PUBLISHED JANUARY 9, 1906.

50,249. POPCORN. THE ALBERT DICKINSON COMPANY, Chicago, Ill.

The words "SNOW BALL."

Filed June 17, 1905. Serial No. 8,410. PUBLISHED JANUARY 9, 1906.

50,250. LIQUID DENTIFRICES. THE AMERICAN PEROXIDE AND CHEMICAL COMPANY, New York, N. Y.

The word "FLORAFOAM."

Filed June 14, 1905. Serial No. 8,103. PUBLISHED JANUARY 9, 1906.

50,251. DESICCATED COCOANUT. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.

The words "GOLDEN RULE" and a representation of a shield bearing a monogram of the letters "C W S Co," above which is a scroll bearing the words "GOLDEN RULE," and above the scroll, in the corners of the shield, two stars appear, while in the bottom angle of the shield a single star appears.

Filed August 15, 1905. Serial No. 11,654. PUBLISHED JANUARY 9, 1906.

50,252. LIQUID SUBSTITUTE FOR COURT-PLASTERS. THE DOUGLAS MANUFACTURING COMPANY, Newark, N. J.

The representation of a knife and torch crossed.

Filed July 22, 1905. Serial No. 10,711. PUBLISHED JANUARY 9, 1906.

50,253. LAXATIVES. THE PARACAMPH COMPANY, Louisville, Ky.

The words "CHERRY CHIP" and the representation of a bunch of cherries and a bust picture of a child in the act of placing a chip in its mouth, the whole being surrounded by a rectangular border.

Filed July 24, 1905. Serial No. 10,765. PUBLISHED JANUARY 9, 1906.

50,254. HAIR-RESTORATIVES. S. R. VAN DUZER, New York, N. Y.

The words "MRS. S. A. ALLEN'S WORLD'S HAIR RESTORER." Used ten years.

Filed June 29, 1905. Serial No. 9,376. PUBLISHED JANUARY 9, 1906.

50,255. HAIR-RESTORER. S. R. VAN DUZER, New York, N. Y.

The words "MELROSE FAVORITE HAIR RESTORER." Used ten years.

Filed June 29, 1905. Serial No. 9,377. PUBLISHED JANUARY 9, 1906.

50,256. ANTISEPTIC. RICHARD S. WALKER, Midlothian, Tex.

The words "SINGLE STROKE," in connection with the representation of the sphere encircled by a dragon, together with the representation of St. George on a winged horse in the act of spearing the dragon, the words "SINGLE STROKE" appearing on a banner streaming from the spear.

Filed July 15, 1905. Serial No. 10,388. PUBLISHED JANUARY 9, 1906.

50,257. CONDENSED MILK AND EVAPORATED CREAM. ADAM ROTH GROCERY COMPANY, St. Louis, Mo.

The word "SQUIRREL" and the representation of a squirrel sitting upon a branch eating a nut. Used ten years.

Filed August 19, 1905. Serial No. 11,796. PUBLISHED JANUARY 9, 1906.

50,258. CHEWING-GUM. AMERICAN CHICLE CO., New York, N. Y.

The compound word "KIS-ME" inclosed in quotation-marks. Below the same, within a rectangular panel, appears the representation of a boy and a girl embracing. Outside of the panel are the

words "CHEWING GUM" and scrollwork, the whole being inclosed within a rectangular border. Used ten years.

Filed June 15, 1905. Serial No. 8,146. PUBLISHED NOVEMBER 14, 1905.

50,259. WHISKY. J. T. S. BROWN & SONS, Louisville, Ky.

The words "OLD PRENTICE." Used ten years.

Filed June 15, 1905. Serial No. 8,281. PUBLISHED JANUARY 9, 1906.

50,260. BRANDY. HENRY CAMPE & Co., San Francisco, Cal.

The name "WALDEN," above which is a monogram of the letters, character, and abbreviation "H C & Co" arranged between two bunches of grapes hanging from grape-vines, all inclosed in an ornamental border. Used ten years.

Filed May 25, 1905. Serial No. 6,634. PUBLISHED JANUARY 9, 1906.

50,261. VINEGAR USED FOR PICKLING. CHAS. E. MEYER & Co., Freeport, Ill.

The words "MEYER'S EXTRA PICKLING." Used ten years.

Filed July 3, 1905. Serial No. 9,664. PUBLISHED DECEMBER 5, 1905.

50,262. SPIRIT-VINEGAR. CHAS. E. MEYER & Co., Freeport, Ill.

The word "CERES."

Filed July 3, 1905. Serial No. 9,666. PUBLISHED DECEMBER 5, 1905.

50,263. WHISKY. DREYFUSS, WEIL & Co., Paducah, Ky.

The words "OLD COLD SPRING," associated with the words and address "OLD FASHION HAND MADE KENTUCKY WHISKEY DREYFUSS, WEIL & CO. DISTILLERS, PADUCAH, KY." and with the representation of a barrel, behind which is a spray of grain and at the right of which is a scroll. On the head of the barrel appear the words "HAND MADE OLD FASHION KENTUCKY WHISKEY OLD COLD SPRING," the whole being surrounded by a rectangular outline, with ornamental scrollwork in each corner. Used ten years.

Filed September 15, 1905. Serial No. 12,649. PUBLISHED DECEMBER 19, 1905.

50,264. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex.

The words "TARPON CLUB."

Filed June 24, 1905. Serial No. 8,938. PUBLISHED JANUARY 9, 1906.

50,265. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex.

The words "MYRTLE SPRINGS." Used ten years.

Filed June 24, 1905. Serial No. 8,940. PUBLISHED JANUARY 9, 1906.

50,266. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio.

The word "PUCK" and a fanciful picture of a Puck figure holding a bottle.

Filed June 24, 1905. Serial No. 8,903. PUBLISHED JANUARY 9, 1906.

50,267. GINGER-ALE. GEORGE F. HEWETT Co., Worcester, Mass.

The words "COLD BLAST," accompanied by the representation of a still standing upright on a support which raises it from the floor.

Filed May 29, 1905. Serial No. 6,970. PUBLISHED JANUARY 9, 1906.

50,268. WINE. HENRY BLOCK Co. LIMITED, New Orleans, La.

The words "VINO USO SICILIA."

Filed May 12, 1905. Serial No. 5,309. PUBLISHED NOVEMBER 28, 1905.

50,269. WHISKY. H. GROVES SONS, Madison, Wis.

The words "HENRY KNOX," beneath which is a bust picture of Henry Knox in uniform with epaulets on the shoulders, and each side of the head are leaves and heads of grain.

Filed June 15, 1905. Serial No. 8,224. PUBLISHED JANUARY 9, 1906.

50,270. LIQUID MEDICINAL PREPARATION. HENRY HEIL CHEMICAL Co., St. Lous, Mo.

The word "BOROSENPHENE."

Filed April 17, 1905. Serial No. 1,817. PUBLISHED JANUARY 9, 1906.

50,271. WHISKY. F. W. HUNT & Co., Boston, Mass.

The words "GOLDEN SHIELD."

Filed June 19, 1905. Serial No. 8,468. PUBLISHED NOVEMBER 14, 1905.

50,272. BAKING-POWDER. HULMAN & Co., Terre Haute, Ind.

The word "CLABBER" and a picture of a house scene on an oblong panel with rounded corners with a woman churning and a woman, children, and a cat in the background. The woman in the background holds a goose on her lap, and in the lower right-hand corner are a bucket and a bench.

Filed June 21, 1905. Serial No. 8,645. PUBLISHED JANUARY 9, 1906.

50,273. WHISKY. HURLEY & Co., Boston, Mass.

The word "PARROT," underneath which is the representation of a parrot standing on a branch inclosed in a circle. In front of the picture is a scroll representing the parrot speaking the words "TRY PARROT RYE."

Filed June 26, 1905. Serial No. 9,117. PUBLISHED JANUARY 9, 1906.

50,274. AUTOMATIC FIRE-EXTINGUISHING APPARATUS. INTERNATIONAL SPRINKLER Co., Philadelphia, Pa.

The representation of the terrestrial globe the same being surrounded by a relatively heavy circular border. Upon this globe is placed the representation of a sprinkler-head.

Filed April 15, 1905. Serial No. 1,719. PUBLISHED JANUARY 9, 1906.

50,275. WHISKY. JAS. E. PEPPER & Co., Lexington, Ky.

The words "HENRY CLAY." Used ten years.

Filed June 8, 1905. Serial No. 7,695. PUBLISHED JANUARY 9, 1906.

50,276. WHISKY. KAUFMANN, BAER & Co., Cincinnati, Ohio.

The letters "J. O'R."

Filed May 6, 1905. Serial No. 4,508. PUBLISHED JANUARY 9, 1906.

50,277. WHISKY. LEE LEVY & Co., St. Louis, Mo.

The words "JOHN HART" and the picture and facsimile signature of John Hart. The picture is inclosed in a heart-shaped figure with scrolls at each side.

Filed June 21, 1905. Serial No. 8,649. PUBLISHED JANUARY 9, 1906.

50,278. WHISKY. SAMUEL LIEBERMAN, Brooklyn, N. Y.

The word "MARATHON," associated with a barrel displaying upon the head thereof a monogram of the letters "S L," with two lion supporters surmounted by crowns.

Filed August 4, 1905. Serial No. 11,250. PUBLISHED JANUARY 9, 1906.

50,279. WHISKY. JOS. A. MAGNUS & Co., Cincinnati, Ohio.

The words "SAND MOUNTAIN," in connection with a picture representing a mountain distillery, at the right of which is shown a cornfield and at the left a still and a rocky elevation, at the base of which bags of corn are piled. In the distance are shown mountains. Used ten years.

Filed June 8, 1905. Serial No. 7,704. PUBLISHED JANUARY 9, 1906.

50,280. WHISKIES. MEADVILLE, PENNSYLVANIA DISTILLING COMPANY, Meadville, Pa.

The arbitrary word "PURYO" superposed across the representation of a heart-shaped figure, upon which latter is seated an allegorical female figure having wings and holding a trumpet.

Filed May 8, 1905. Serial No. 4,638. PUBLISHED JANUARY 9, 1906

50,281. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash.

The name "PANSY." Used ten years.

Filed August 7, 1905. Serial No. 11,311. PUBLISHED JANUARY 9, 1906.

50,282. CANNED SALMON. JOSEPH G. MEGLER, Brookfield, Wash.

The name or brand "GOLDEN POPPY."

Filed August 7, 1905. Serial No. 11,313. PUBLISHED JANUARY 9, 1906.

50,283. LEATHER BOOTS AND SHOES. P. W. MINOR & SON, Batavia, N. Y.

The word "TREADEASY."

Filed June 7, 1905. Serial No. 7,599. PUBLISHED JANUARY 9, 1906.

50,284. CANNED SARDINES. CLARENCE B. MITCHELL, Boston, Mass.

The words "BONNE BOUCHE."

Filed June 29, 1905. Serial No. 9,385. PUBLISHED JANUARY 9, 1906.

50,285. REMEDIES FOR MALARIAL DISEASES. PARIS MEDICINE CO., St. Louis, Mo.

The words "FEBRILINE OR LYON'S TASTELESS SYRUP OF QUININE."

Filed April 25, 1905. Serial No. 2,986. PUBLISHED JANUARY 9, 1906.

50,286. CHEESE. PHENIX CHEESE CO., South Edmeston, N. Y.

The word "EXCELSIOR" arranged between two circles, there being a diamond arranged within the inner circle, having therewithin the letters "L X C R," the "X" being superimposed upon the "C." Used ten years.

Filed May 13, 1905. Serial No. 5,585. PUBLISHED JANUARY 9, 1906.

50,287. CHOCOLATES AND BONBONS. R. L. PERRY CO., Boston, Mass.

The word "ALPINE."

Filed June 9, 1905. Serial No. 7,751. PUBLISHED JANUARY 9, 1906.

50,288. RHEUMATIC CURE. RENAL PHARMACAL CO., Mount Vernon, N. Y.

The hyphenated word "TRI-URI-CIDE."

Filed October 19, 1905. Serial No. 13,761. PUBLISHED JANUARY 9, 1906.

50,289. REMEDY FOR DIABETES. RENAL PHARMACAL CO., Mount Vernon, N. Y.

The hyphenated word "DIABE-RENAL."

Filed October 19, 1905. Serial No. 13,762. PUBLISHED JANUARY 9, 1906.

50,290. YEAST-POWDER. RUMFORD CHEMICAL WORKS, Providence, R. I.

The words "RUMFORD YEAST POWDER." Used ten years.

Filed May 16, 1905. Serial No. 5,768. PUBLISHED JANUARY 9, 1906.

50,291. CANNED VEGETABLES AND FRUITS. STEPHEN J. SENECA, Havre de Grace, Md.

The representation of a red Greek cross, upon which appear the words "RED CROSS BRAND."

Filed August 19, 1905. Serial No. 11,790. PUBLISHED JANUARY 9, 1906.

50,292. MINERAL WATERS. SOLON VENDOPHONE CO., Solon Springs, Wis.

The words "SOLON SPRINGS" and a design showing a portion of a globe bearing a map of the Upper Mississippi Valley and Lakes Superior, Michigan, Huron, and Erie. On the central portion of the map is shown a gushing spring, above which is the picture of a fish, the whole being inclosed in a circle. Used ten years.

Filed July 11, 1905. Serial No. 10,059. PUBLISHED JANUARY 9, 1906.

50,293. WHISKY. W. P. SQUIBB & Co., Lawrenceburg, Ind.

The word "GREENDALE." Used ten years.

Filed November 21, 1905. Serial No. 14,899. PUBLISHED JANUARY 9, 1906.

50,294. RYE-FLOUR. THE BOUTWELL MILLING & GRAIN CO., Troy, N. Y.

The word "ULTIMATOR."

Filed September 5, 1905. Serial No. 12,218. PUBLISHED NOVEMBER 14, 1905.

50,295. LARD. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr.

The word "REX."

Filed November 7, 1905. Serial No. 14,392. PUBLISHED NOVEMBER 14, 1905.

50,296. BEEF EXTRACT. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr.

The arbitrarily-selected word "REX."

Filed November 7, 1905. Serial No. 14,393. PUBLISHED JANUARY 9, 1906.

50,297. LARD. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr.

The letter "C" inclosed in a diamond figure.

Filed November 7, 1905. Serial No. 14,396. PUBLISHED JANUARY 9, 1906.

50,298. RYE WHISKY. THE HENRY B. GILPIN CO., Baltimore, Md.

The words "OLD TERRAPIN" inclosed by a double rectangular border.

Filed August 30, 1905. Serial No. 12,098. PUBLISHED JANUARY 9, 1906.

50,299. COFFEE. THE INDEPENDENCE COFFEE AND SPICE CO., Pueblo, Colo.

The words "BREAKFAST CALL," associated with the representation of a maid ringing a bell in a hallway, surrounded by a wreath of coffee-plant branches.

Filed July 29, 1905. Serial No. 11,004. PUBLISHED JANUARY 9, 1906.

50,300. TABLETS FOR DISEASES OF THE ENTIRE DIGESTIVE TRACT. THE ILLINOIS LABORATORIES, Chicago, Ill.

The word "NATURO."

Filed May 26, 1905. Serial No. 6,705. PUBLISHED JANUARY 9, 1906.

50,301. WHISKY. THE I. TRAGER CO., Cincinnati, Ohio.

The word "EDGEMONT" and the design of a fanciful coat of arms showing a barrel-head with the motto "HONOR ET FIDES," two bears, and a deer-head, with grain, a tent, and trees in the background, inclosed in a circle. Used ten years.

Filed May 24, 1905. Serial No. 6,482. PUBLISHED JANUARY 9, 1906.

50,302. WHISKY. THE MCCART MOSSET CO., Cleveland, Ohio.

The letters and word "M AND M," in connection with a fancy dotted double circle inclosing a monogram composed of the word, letters, and abbreviations "THE MCC M CO."

Filed June 24, 1905. Serial No. 8,909. PUBLISHED JANUARY 9, 1906.

50,303. WHEAT-FLOUR. THE MODEL MILLING & ELEVATOR COMPANY, Greeley, Colo.

The word "SNOW-FLAKE."

Filed May 15, 1905. Serial No. 5,666. PUBLISHED JANUARY 9, 1906.

50,304. WHEAT-FLOUR. THE PURCELL MILL & ELEVATOR COMPANY, Purcell, Ind. Ter.

The words "OUR LEADER," the word "OUR" being in a panel, said words being shown above the representation of a steer's head, below which are the words "HIGH PATENT" in a panel or frame above the words and abbreviations and character "PURCELL MILL & ELEVATOR CO., PURCELL, I. T."

Filed August 10, 1905. Serial No. 11,479. PUBLISHED JANUARY 9, 1906.

50,305. WHEAT-FLOUR. THORNTON & CHESTER MILLING CO., Buffalo, N. Y.

The representation of a shield having the letters and character "T & C" arranged as a monogram thereon. Used ten years.

Filed May 9, 1905. Serial No. 4,794. PUBLISHED JANUARY 9, 1906.

50,306. WHISKY. NATHAN M. URI, Louisville, Ky.

The word "INTERNATIONAL" within parallel lines which cross a shield outline design. Used ten years.

Filed April 17, 1905. Serial No. 1,824. PUBLISHED JANUARY 9, 1906.

50,307. LINIMENT. JAMES J. WALSH, Quincy, Ill.

The hyphenated word "COMMON-SENSE."

Filed April 28, 1905. Serial No. 3,471. PUBLISHED JANUARY 9, 1906.

50,308. MALT WHISKY. WICHMAN, LUTGEN & CO., San Francisco, Cal.

The representation of a wax seal having a central circular depression and two loops of ribbon extending from its upper side and two streamers below. Upon the circular depression in the seal the words "FOERSTER'S WHISKEY CO." appear, arranged in circular form, while between the word "FOERSTER'S" and the words "WHISKEY CO." the words "PURE MALT" appear in a straight line across the center of the seal.

Filed May 8, 1905. Serial No. 4,716. PUBLISHED JANUARY 9, 1906.

50,309. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.

The words "OLD RELIABLE," associated with the representation of the stern portion of a sailing vessel and of a helmsman hav-

ing hold of the steering-wheel and looking into the compass in front of him, a portion of the boom and sail of the vessel appearing over the head of the helmsman, all being contained within a border.

Filed November 16, 1905. Serial No. 14,698. PUBLISHED JANUARY 9, 1906.

50,310. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "ROUGH RIDER," associated with the representation of a mounted cavalryman in the uniform of the Rough Riders in the late Spanish-American war.

Filed November 16, 1905. Serial No. 14,699. PUBLISHED JANUARY 9, 1906.

50,311. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The phrase "THE NATION FIRST LAST AND ALL THE TIME," associated with the representation of crossed and sheathed cavalry or Rough Riders' swords.

Filed November 16, 1905. Serial No. 14,697. PUBLISHED JANUARY 9, 1906.

50,312. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The word "STARLIGHT," associated with the representation of a nude figure partially draped on a starry field.

Filed November 16, 1905. Serial No. 14,701. PUBLISHED JANUARY 9, 1906.

50,313. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The word "ONWARD," associated with the representation of a man clad in the buckskin dress of a pioneer with a powder-horn at one side, a gun in one hand, and in the act of stepping onward.

Filed November 16, 1905. Serial No. 14,702. PUBLISHED JANUARY 9, 1906.

50,314. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "THE VILLAGE BELLE," associated with the profile representation of a female appearing within a wreath of morning-glories.

Filed November 16, 1905. Serial No. 14,708. PUBLISHED JANUARY 9, 1906.

50,315. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The word "CONQUEROR," associated with the representation of a male figure in erect posture on a central panel, the figure being nude except for a breech-cloth, a torch on a panel at each side of the figure, and a border inclosing the panel.

Filed November 17, 1905. Serial No. 14,744. PUBLISHED JANUARY 9, 1906.

50,316. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "SUMMER-TIME," associated with the representation of a bust figure of a female and flowers emblematic of summer-time, the flowers consisting of a branch of roses and a garland of violets, the female figure appearing surrounded by a portion of the branch of roses and a portion of the garland.

Filed November 17, 1905. Serial No. 14,748. PUBLISHED JANUARY 9, 1906.

50,317. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The word "HOMEWARD" and the representation of a working schooner under sail on the water, all appearing within a border.

Filed November 17, 1905. Serial No. 14,749. PUBLISHED JANUARY 9, 1906.

50,318. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "STORM KING," associated with the representation of the bust of a man with folded arms and appearing in clouds.

Filed November 17, 1905. Serial No. 14,752. PUBLISHED JANUARY 9, 1906.

50,319. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "TRUE BLUE," associated with the representation of an Indian fighting scene, showing a few United States soldiers in different positions and grouped around a regimental flag in the act of repulsing an attack by mounted Indians appearing in the background.

Filed November 17, 1905. Serial No. 14,753. PUBLISHED JANUARY 9, 1906.

50,320. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & Co., New York, N. Y.

The words "DRAGON-FLY," associated with the representation of a dragon-fly and sweet-peas.

Filed November 17, 1905. Serial No. 14,755. PUBLISHED JANUARY 9, 1906.

50,321. WHISKY. DAVID WISE & Co., Chicago, Ill.

The words "GOLDEN AGE."

Filed April 15, 1905. Serial No. 1,727. PUBLISHED JANUARY 9, 1906.

50,322. WHEAT-FLOUR. WM. A. COOMBS MILLING COMPANY, Coldwater, Mich.

A circular device containing in the lower section the words "ROB ROY" upon a scroll, above which is the picture of three men in Highland costume upon a bank overlooking a body of water, representing the Scottish chief Rob Roy and his two sons. In the distance are shown a mountain and sky and upon the lake or body of water a sail. Around the border, shown at intervals, is the representation of Scottish plaids. Above this picture, in the segment of a circle, are displayed the words, letters, and abbreviation "W. A. COOMBS MILLING CO." At the bottom of the device, immediately below the words "ROB ROY," are the word and abbreviation "COLDWATER, MICH." in a panel. On one side of the central picture is the word "ROLLER" and upon the opposite side the word "PATENT," both upon scroll-shaped figures.

Filed August 10, 1905. Serial No. 11,467. PUBLISHED JANUARY 9, 1906.

LABELS

REGISTERED MARCH 6, 1906.

12,693.—*Title:* "BOHEMIAN." (For Beer.) THE MILWAUKEE LITHOGRAPHING COMPANY, Milwaukee, Wis. Filed January 22, 1906.

12,694.—*Title:* "MALT JUICE." (For Malt-Juice.) CARL HENRY VON KLEIN, Chicago, Ill. Filed January 20, 1906.

12,695.—*Title:* "CENTURY MAIDENS." (For Cigars.) JOHN F. O'DONNELL, Kansas City, Mo. Filed January 23, 1906.

12,696.—*Title:* "RADIUM-I-SEE." (For Medicine.) WOLVERTON'S N. Y. Co., Brooklyn, N. Y. Filed February 3, 1906.

12,697.—*Title:* "BRAINALGINE." (For Medicine.) THOMAS E. SMITH, Mobile, Ala. Filed January 16, 1906.

12,698.—*Title:* "DENOL." (For Tablets.) THOMAS ARCHBALD ALLEN, Binghamton, N. Y. Filed February 3, 1906.

12,699.—*Title:* "BALLARD'S HELEO-ROSA." (For a Preparation for the Cure of Dandruff.) ALICE BALLARD, New York, N. Y. Filed February 3, 1906.

12,700.—*Title:* "COMPORTO." (For Sponges.) A. MOSES SONS & CO., INC., New York, N. Y. Filed Febru ry 8, 1906.

PRINTS

REGISTERED MARCH 6, 1906.

1,587.—*Title:* "IMPERIAL HATS 1906." (For Hats.) THE SAMUEL MUNDHEIM CO., Brooklyn, N. Y. Filed February 5, 1906.

1,588.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed February 3, 1906.

1,589.—*Title:* "A A DENTIFRICE CREAM." (For a Dentifrice.) ATLANTA ANTISEPTIC CO., Atlanta, Ga. Filed February 3, 1906.

1,590.—*Title:* "WRAPPER FOR PLAYING CARDS." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed February 3, 1906.

1,591.—*Title:* "STAR ENAMEL AND SAPOLIN VARNISH STAIN." (For Enamel and Varnish.) GERSTENDORFER BROS., New York, N. Y. Filed February 5, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE RUTHENBURG.

Decided December 13, 1905.

1. ABANDONMENT OF APPLICATION—RESPONSIVE ACTION.

Where claims are placed under rejection, an applicant is not excused from making a proper response to said rejection merely because the claims had at one time been regarded by the Examiner as allowable.

2. SAME—DELAY IN BRINGING PETITION.

Where an applicant delayed one year after notice that his case was abandoned in bringing his petition, *Held* that he was not in an equitable position to demand any leniency in considering the question whether he had complied with the rule requiring diligent and proper prosecution of his case.

ON PETITION.

MAGNETIC SEPARATORS FOR ORE OR CONCENTRATES.

Mr. Arthur E. Paige for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner holding that the above-entitled application is abandoned through the failure of applicant to take such action as the condition of the case required within the year allowed by law.

The record shows that on August 2, 1902, the Examiner rejected some claims and intimated that others would be allowable if amended in certain respects indicated. On August 1, 1903, an amendment was presented seeking to comply with the suggestion; but the claims embodied therein were rejected on September 4, 1903, upon a new reference. On September 3, 1904, the applicant presented an amendment making a formal change of a word in claim 6 and adding two new claims. This amendment was accompanied by a mere request for reconsideration without any argument pointing out the supposed errors in the previous action rejecting the claims. In letters dated September 10 and October 17, 1904, the Examiner notified the applicant that his action was insufficient and that the case was abandoned. He further intimated that there might be some excuse for the insufficiency of the amendment and that if a petition were promptly taken he might make a favorable recommendation. No petition or other action was taken by the applicant until October 17, 1905, when this petition was filed.

The argument made in support of this petition is that the new claims presented in the amendment of August 11, 1903, were drawn in accordance with the Examiner's suggestion in his letter of August 2, 1902, and that they should have been allowed by the Examiner. It is said that it was unnecessary to present an argument in connection with the request for reconsideration made on September 3, 1904, because of the previous intimation by the Examiner that the subject-matter of the claims was patentable. This argument has no force whatever in view of the subsequent action of the Examiner dated September 4, 1903, rejecting the claims. Whether or not the Examiner had once regarded the claims as patentable, it is clear that at the time of the applicant's action dated September 3, 1904, those claims stood under rejection, and it was necessary for the applicant to make proper response to the rejection.

It is noted that the delay of one year after the notice to the applicant that the case was abandoned does not place him in an equitable position to demand any leniency in considering the question whether or not he has complied with the rule requiring diligent and proper prosecution of a case.

The petition is denied.

NIEDRINGHAUS *v.* MARQUARD *v.* MCCONNELL.

Decided December 13, 1905.

1. INTERFERENCE—PUBLIC USE.

Where the evidence taken in an interference shows, in the opinion of the Examiner, that the subject-matter of the issue was in public use for more than two years before any of the applications involved were filed, *Held* that the Office is not justified in continuing the interference without investigating and finally determining the question of public use.

2. SAME—SAME—EVIDENCE.

Evidence which was presented upon the issue of priority of invention and not upon that of public use cannot be used by this Office as a basis for a final determination of the question of public use without giving the parties an opportunity to take further testimony in explanation or rebuttal.

ON ORDER.

MANUFACTURE OF STEEL.

Messrs. Bakewell & Cornwall for Niedringhaus.

Mr. Ellis Spear for Marquard.

Messrs. Bakewell & Byrnes for McConnell.

ALLEN, *Commissioner:*

The Primary Examiner has reported that in his opinion the evidence taken in this interference shows that the subject-matter of count 3 of the issue was in public use for more than two years before any of the applications involved were filed. He has further reported that counts 1 and 2 are not patentably different from count 3.

In view of this conclusion it is believed that the Office is not justified in continuing the interference without investigating and finally determining the question of public use. (*Oliver* v. *Felbel*, 101 O. G., 2384.) Since, however, the evidence was presented upon the issue of

priority of invention and not upon that of public use, this Office cannot use it as a basis for a final determination of the question of public use without giving the parties an opportunity to take further testimony in explanation or rebuttal. (*Ex parte Weber*, 101 O. G., 2570.) The parties are therefore notified that the testimony already taken will be used as a *prima facie* case in support of the allegation of public use and that if any one of them wishes to take testimony in explanation or rebuttal he must so notify this Office within twenty days.

NIEDRINGHAUS *v.* MARQUARD *v.* MCCONNELL.

Decided December 13, 1905.

1. CONFLICTING DECISIONS OF LOWER TRIBUNALS—REFERENCE TO HIGHER TRIBUNAL—PRACTICE.

Where the Examiners-in-Chief, under Rule 126, call attention to the fact that in their opinion the evidence in an interference showed public use of the invention in issue for more than two years prior to the filing date of any of the parties and that the issue was therefore unpatentable and the case is referred to the Primary Examiner for consideration and report, and he agrees with the Examiners-in-Chief, the fact that the Primary Examiner previously held the issue patentable does not present a case of conflicting decisions of lower tribunals which the Commissioner should decide under the practice announced in *Snider* v. *Bunnell*, (103 O. G., 890; C. D., 1903, 117.)

2. PUBLIC USE SHOWN BY EVIDENCE IN INTERFERENCE—ACTION BY EXAMINERS-IN-CHIEF UNDER RULE 126—REFERENCE TO PRIMARY EXAMINER.

Where the Examiners-in-Chief, under Rule 126, call attention to the fact that in their opinion the evidence in an interference shows that the issue is not patentable because of two years' public use, the question presented is whether the interference should be stopped for the purpose of permitting the parties to present further evidence upon the question of public use, so that judgment can be rendered upon this question prior to a final determination of the question of priority. Under these circumstances the case is referred to the Primary Examiner for his report and not for decision.

ON PETITION.

MANUFACTURE OF STEEL.

Messrs. Bakewell & Cornwall for Niedringhaus.

Mr. Ellis Spear for Marquard.

Messrs. Bakewell & Byrnes for McConnell.

ALLEN, *Commissioner:*

This is a petition by Niedringhaus for a review of the Primary Examiner's ruling that counts 1 and 2 of the issue are unpatentable.

The record shows that in considering the question of priority of invention the Examiners-in-Chief called attention, under Rule 126, to the fact that in their opinion the evidence showed that the subject-matter of count 3 of the issue had been in public use for more than two years before the application date of any of the parties to this interference. They further said that counts 1 and 2 contained nothing patentable over the subject-matter of count 3 and that therefore the public use constituted a bar against the allowance of claims corresponding to any of the counts of the issue. On September 22, 1905, an order was made referring the case to the Primary Examiner for consideration and report. On October 19 he made a report stating that he agreed with the conclusion announced by the Examiners-in-Chief and referring to the testimony supporting that conclusion.

The petitioner, Niedringhaus, asks for a review of the Examiner's ruling because of the fact that he has heretofore pronounced the issues patentable. It is thus said that there is a conflict of opinion between the Examiner and Examiners-in-Chief and that the matter should be reviewed under the practice announced in *Snider* v. *Bunnell*, (103 O. G., 890; C. D., 1903, 117.)

This contention is not well founded, since the Examiner now agrees with the Examiners-in-Chief, and whatever opinion he may have announced in the past becomes immaterial. If his report dated October 19 is to be regarded as a decision, the parties have a right of appeal to the Examiners-in-Chief under the express provisions of Rule 126. It is very clear, however, that his report is not a decision dissolving the interference and is therefore not appealable. The case was referred to him for report and not for decision, since, as pointed out in the order of September 22, no final decision upon the question of public use can be based upon the evidence now in the case without affording the parties an opportunity to present other evidence. The question for determination was whether the interference should be stopped for the purpose of permitting the parties to present further evidence upon the question of public use, so that this Office could render judgment upon that question before proceeding to a final determination of the question of priority. The Examiner's report shows that in his opinion a *prima facie* case of public use has been made out, and therefore it is believed that the interference should be suspended for the purpose of investigating and determining that matter.

The petition is denied.

EX PARTE BOTZKY.

Decided December 14, 1905.

ABANDONMENT OF APPLICATION—UNVERIFIED STATEMENT—INTENTIONAL DELAY.

Where it appears from an unverified statement that an amendment was mailed in Berlin in time to reach this Office before the expiration of the year allowed by law for taking action, but the amendment was not actually received until two days after the expiration of the year, *Held* that the showing is insufficient, as the statement is not verified, and it seems probable that action was intentionally delayed.

ON PETITION.

CHUCK FOR LATHES, ETC.

Mr. H. Botzky pro se.

ALLEN, *Commissioner:*

This is a petition for a ruling that the above-entitled application is not abandoned, notwithstanding a delay of more than one year in responding to the last Office action.

This action was dated July 12, 1904, and no reply was received until July 14, 1905. In an unverified statement filed by the applicant it is said:

> The amendment in question was mailed July 1, 1905, at Berlin, and in view of the fact that ten to eleven days are usually needed for the transmission of such sendings to the U. S. Patent Office, I was convinced that the said amendment would arrive in due time to save the application from abandonment.

No affidavit seeking to excuse the delay has been filed, and it is probable from the statement made by the applicant that action was intentionally delayed until the last of the time allowed by law.

The petition is denied.

IN RE ELBERSON.

Decided December 14, 1905.

APPLICATION—INCOMPLETE.

Where the Office receives from a party a sketch, together with fifteen dollars, and a letter asking that he be forwarded blank

forms for the preparation of an application, *Held* that the letter, sketch, and fifteen dollars should not have been regarded as an incomplete application, but that the money should have been entered to the applicant's credit unapplied to any case.

ON PETITION.

Mr. R. G. Dyrenforth for the applicant.

ALLEN, *Commissioner:*

This is a petition asking that the petitioner be permitted to complete an application for patent upon which the fee was paid July 13, 1904. It is said that the delay in completing the application was unavoidable.

An examination of the records shows that this Office received from the applicant a sketch, together with fifteen dollars, and a letter asking this Office to forward blank forms for preparing an application for patent. The letter itself shows that the applicant did not intend it as an application, but expected to file the application papers thereafter. It is believed, therefore, that the letter, sketch, and fifteen dollars should not be regarded as even an incomplete application. The money should have been entered to the applicant's credit unapplied to any case, and therefore he will now be permitted to use that money as the first fee upon any application he concludes to file.

To the extent indicated the petition is granted.

STRUBLE *v.* YOUNG.

Decided December 29, 1905.

1. INTERFERENCE — MOTION FOR DISSOLUTION — TRANSMISSION.

Where the motion for dissolution presents matters which can be considered in connection with or as part of the determination of priority and which should only be so considered, *Held* that it raises no proper question for consideration by the Primary Examiner and transmission was properly refused.

2. SAME — EARLIER APPLICATION IN EVIDENCE — CONSIDERED WITH PRIORITY.

The question of whether an applicant in interference is entitled to the benefit of the dates of his earlier applications, raised by the introducing of his earlier applications in evidence and by the testimony taken concerning them, should be considered by the Examiner of Interferences and appellate tribunals as part of the case upon priority of invention.

3. APPLICATION — CONTINUING — EFFECT OF FOREIGN PATENTS.

Where it is urged that Struble is barred from obtaining a patent upon the invention in issue by his foreign patents in view of his failure to refer to his prior applications and in view of the statements in the oath which forms part of the application in interference excluding foreign patents, *Held* that if the invention in issue was disclosed in the earlier applications, then the latter application is a continuation of said earlier applications and the foreign patents are no bar to the issue of a patent thereon.

APPEAL on motion.

RAILWAY SIGNALING.

Mr. George E. Cruse for Struble.

Mr. George H. Benjamin and *Mr. George R. Hamlin* for Young.

ALLEN, *Commissioner:*

This is an appeal by Young from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner Young's motion for dissolution of the interference.

The refusal of the Examiner of Interferences to transmit the motion was based in part on the ground that it was filed long after the time provided by the rules for bringing such motions and in part on the ground that the motion was one involving consideration of the testimony which has been taken in this case; but the principal reason for refusing transmission seems to have been that the motion presents for consideration matters which can be considered in connection with or as part of the determination of priority and which should only be so considered. I am of the opinion that the motion presents no proper question for consideration by the Primary Examiner at this time and that transmission was properly refused. It is not necessary, therefore, to consider the question of delay in bringing the motion or whether the motion is one involving consideration of the testimony.

The facts upon which the motion is based, as set forth by Young, are, in substance, as follows: The application of Struble in interference was filed to claim an invention which Struble had attempted to claim by amendment in prior applications and which the Primary Examiner had held to be new matter in the prior applications. The claims in issue were adopted by Struble upon the suggestion of the Primary Examiner made in the new application. In the testimony taken by Struble he has attempted to show that the invention in issue was disclosed by him in his prior applications. It is alleged that foreign patents have issued to Struble upon the inventions of his earlier applications and that the applications for these foreign patents were filed more than twelve months before the filing of the application in interference, though within the period of twelve months prior to the filing of Struble's earlier applications in this country. Struble's application in interference contains no reference to his earlier applications, and the oath forming part of his application in interference states that no application for patent on the invention thereof has been filed by him or his representatives or assigns in any foreign country. The earlier applications are still pending.

Dissolution is urged by Young on the ground that Struble is barred from obtaining a patent upon the invention in issue by his foreign patents in view of his failure to refer, in the application in interference to his prior applications and in view of the statements in the oath which forms part of the application in interference excluding foreign patents. If the invention in issue was disclosed by Struble's earlier applications in this country, as contended by Struble, then the application in interference is a continuation of his earlier applications and the foreign patents are no bar to the issue of a patent thereon. If, on the other hand, the invention in issue was not disclosed by the earlier applications of Struble, as seems to have been held by the Primary Examiner in the course of the prosecution of those applications, it is not contended by Young that the foreign patents could act as a bar in the present case. If the application of Struble in interference is eventually held to be a continuation of Struble's earlier applications, reference to the earlier applications could be made therein by amendment and a new oath acknowledging the foreign patents could be filed, or it may be that Struble, if he prevails in this interference on the disclosure of his earlier applications, could transfer the claim in issue from the application in interference to one of the earlier applications. If it is finally determined that the interference issue is not disclosed in the prior applications, the application in interference will need no reference thereto and the present oath will be sufficient. In any event no valid ground for dissolution has been alleged.

The real question involved in the contentions of Young

is whether Struble is entitled to the benefit of the dates of his earlier applications in this interference. This question has been raised by Struble through the introduction of his earlier applications in evidence and by the testimony taken concerning them and should be considered by the Examiner of Interferences and appellate tribunals as part of the case upon priority of invention, as has been pointed out in the case of *Raulet and Nicholson* v. *Adams*, (114 O. G., 1827.)

It is charged that the omission from Struble's application in interference of reference to his earlier applications and the statement regarding foreign patents in the oath thereof show fraud. Considering all the circumstances, I am unable to find any basis for the charge of fraud.

The decision of the Examiner of Interferences refusing to transmit Young's motion to the Primary Examiner is affirmed.

STRUBLE *v.* YOUNG.

Decided December 29, 1905.

INTERFERENCE—RULE 126—MOTION FOR DISSOLUTION THEREUNDER IMPROPER.

Held that Rule 126 does not provide for the filing of motions and that a motion to dissolve purporting to be brought thereunder should not be transmitted or considered.

ON MOTION.

RAILWAY SIGNALING.

Mr. George E. Cruse for Struble.

Mr. George H. Benjamin and *Mr. George R. Hamlin* for Young.

ALLEN, *Commissioner:*

This is a motion by Young, entitled as one under Rule 126, requesting dissolution of the interference, return of the case to the Primary Examiner for consideration of a statutory bar, and suspension of proceedings pending determination of the questions raised by the motion. Rule 126 does not provide for the filing of motions, and no sufficient reason is apparent why a motion of this kind should be considered. The motion is dismissed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE HILL.

Decided December 5, 1905.

PATENTABILITY.

The decision of the Commissioner of Patents refusing a patent upon a grain-door construction for car-doors affirmed as to claims 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 17, 18, 19, and 20 and reversed as to 6 and 7.

GRAIN-DOOR.

Mr. J. B. Connolly, *Mr. J. H. Raymond*, and *Mr. Otto R. Barnett* for the appellant.

Mr. J. M. Coit for the Commissioner of Patents.

McCOMAS, *J.:*

This is an appeal from a decision of the Commissioner of Patents refusing to grant a patent including certain claims upon doors for railway-cars to be used in shipping grain.

The Examiner, the Examiners-in-Chief, and the Commissioner of Patents successively rejected the claims now before us on appeal. These claims are sixteen in number and they are limited to details of construction. The appellant has abandoned claims numbered 1, 8, 9, 17, and 20, and concedes that claims 2 and 3 are probably too broad. The decision of the Commissioner of Patents is affirmed in respect of these claims.

The remaining claims are:

5. The combination with a car-door, of a vertical guide-rod, and connections between the car-door and the guide-rod, said connections comprising an arm mounted upon the door and extending outwardly therefrom, and opposite to the guide-rod, said arm being provided with an eye, the center of which is arranged substantially opposite to the axis of said guide-rod, a link engaging said eye, and a second link engaging said first link and engaging said guide-rod.

6. The combination with a car-door, of a vertical guide-rod, and connections between the car-door and guide-rod, said connections comprising an arm secured to the door and projecting outwardly therefrom and opposite to the guide-rod, said arm being provided with an eye, a round link engaging said eye, an elongated link engaging said round link and slidably engaging said guide-rod.

7. The combination with a car, of a door comprising separable upper and lower sections, vertical guiding means mounted upon said car, slidable connections between the lower door-section and the vertical guiding means, and vertically-slidable connections between the guiding means and the upper door-section, said last-named connections comprising an arm mounted upon the upper door-section and provided with an eye, a link engaging said eye, and an elongated link engaging said first-named link and slidably engaging said guiding means.

10. The combination with a door provided with a door-opening, of guide-rods mounted one upon each side of the door-opening and rigidly secured to the car, each of said guide-rods being provided with an upwardly-inclined portion adjacent to its upper end, and with a shoulder extending backwardly from said inwardly-inclined portion, slidable connections between the door and said guide-rods, said connections comprising arms mounted upon the door, each arm extending outwardly from the door and opposite to a guide-rod, and coengaging means, mounted upon the upper edge of the door and upon the car at the opposite edge of the door-opening, adapted to automatically engage each other so as to form a hinged connection between the door and the car, when the upper door-section is slidingly raised upon said guide-rods.

11. In a device of the class described, means for holding the free edge of the door adjacent to the roof of the car, said means comprising a hook secured to the roof of the car by a pivot and provided with an arm extending adjacent to the upper face of the door in its supported position, and arranged to contact with said door only at one side of said pivot, said hook being cut away at the junction between said arm and the body of the hook.

12. In a device of the class described, an attachment adapted to be pivotally secured to the roof of the car, said attachment being provided with a portion depending vertically from the center upon which the device is to be hung, a hook projecting from the lower end of said vertical portion, and an arm extending outwardly and above said hook, said attachment being cut away at the junction between the arm and the vertical portion.

13. In a device of the class described, an attachment adapted to be pivotally secured to the roof of the car, said attachment comprising a vertical portion provided with a hook extending outwardly therefrom, and an arm extending outwardly above and opposite to said hook, said attachment being cut away at the junction between the arm and the vertical portion.

18. The combination with a car, of a door, means for hingingly supporting the upper edge of the door adjacent to the roof of the car, and means for supporting the lower edge of the door adjacent to the roof of the car, said means comprising a hook provided with a deeply-looped portion, the lower portion of said hook extending to form a tongue projecting beyond said looped portion, said hook being pivotally supported at one side of its center of gravity, so that the extended portion thereof will normally project in an upward direction.

19. In an attachment for car-doors, comprising an arm adapted to be rigidly mounted on a door, and provided with an eye having one side thereof flattened, and a link loosely engaging said eye and adapted to slidably connect said arm with a vertical guide for the door.

The device shown and described in the drawings and specifications is a grain-door for railroad-cars and attachments for connecting the door to the car. Such doors are attached to cars which may be alternately used to transport grain and other freight. When used for grain, the grain-door must be used; when used for other freight, the grain-door must be readily and securely disposed of so as not to impede or endanger workmen.

The door consists of an upper and a lower section, each connected, so as to slide, with vertical guide-rods which are partly seated within rabbets formed in the door-post. To facilitate the lifting of the door-sections without binding upon the vertical rods, whether the door be lifted evenly or unevenly, the applicant has provided certain "shackle connections" between the door-sections and the guide-rods, which connections prevent the door from bind-

ing on the guide-rods and at the same time maintain such a relation between the sections of the door and its guide-rods that the latter will hold the door in a vertical position in the uplifting of the door automatically without special attention or effort by the workman lifting the door. Because we are of opinion that the claims 6 and 7 do meet such requirements and to that extent mark an advance over the prior art, we decide that such claims should have been allowed by the Commissioner of Patents. These claims read as follows:

6. The combination, with a car-door, of a vertical guide-rod, and connections between the car-door and guide-rod, said connections comprising an arm secured to the door and projecting outwardly therefrom and opposite to the guide-rod, said arm being provided with an eye, a round link engaging said eye, an elongated link engaging said round link and slidably engaging said slide-rod.

7. The combination, with a car, of a door comprising separable upper and lower sections, vertical guiding means mounted upon said car, slidable connections between the lower door-section and the vertical guiding means, and vertically-slidable connections between the guiding means and the upper door-section, said last-named connections comprising an arm mounted upon the upper door-section and provided with an eye, a link engaging said eye, and an elongated link engaging said first-named link and slidably engaging said guiding means.

Claim 5 is related to claims 6 and 7 but is too broad, and was therefore properly rejected.

Claim 10 covers the grain-door made in sections and the old form of guide-rods shown in the patent to Hill, No. 426,183. In addition it includes hooks and eyes for supporting the upper door in an elevated position and constituting a pivot whereon it turns. Similar hooks and eyes appear in the patent to Shroeder, No. 475,422. True, in Shroeder's construction the hook and eye may not automatically engage each other, but it is an old expedient to so shape the guide-rods as to make similar hooks and eyes automatically engage as in McGuire, No. 375,499. The applicant's automatic hinge is very like Schroeder's hook with McGuire's means of guiding.

Claims 11, 12, and 13 cover the applicant's supporting-hook intended to *reliably* support the free edge of the door adjacent to the roof of the car. It is claimed that the characteristic feature of this hook is the cut-away portion of the hook where the horizontal arm joins the body or vertical part of the hook. Where the hook and arm join, the metal is cut away.

The patent to McGuire, No. 375,499, those to Hill, No. 651,438 and No. 613,273, and Schroeder's patent show hooks very like applicant's own hook. These claims were properly rejected.

Claim 18 covers applicant's second form of hook so shaped that its pivot is on the side next to the point of the hook. The purpose of having the weight on the side of the pivot opposite the open side of the hook is to cause it to engage automatically the door and so remain. The difference between patents showing the same hooks with like functions and this hook is a slight variation only. This hook has a longer loop and a longer free end. The difference between it and the prior art is only a difference in degree.

Claim 19 specifies an arm rigidly mounted on a door and provided with an eye having one side thereof flattened and a link loosely engaging said eye and adapted, by sliding, to connect said arm with a vertical guide for the door. The patents, Hill, No. 613,273, and McGuire, No. 606,170, show attachments having eyes of this form. The interposed link to connect with the vertical rods is not shown. The two patents to Hill, No. 426,183 and No. 651,438, however, show the expedient of such an eye in connection with a link attaching it to the vertical slide-rod. The part of the attachment receiving the link is straight-sided and accomplishes the same purpose in the same way. This claim was properly rejected.

Some of these claims thus disposed of make appropriate certain remarks of the Supreme Court in *Richards* v. *Chase Elevator Company*, (158 U. S., 302:)

It is not claimed that there is any novelty in any one of the elements of the above combination. They are all perfectly well known, and if not known in the combination described, they are known in combinations so analogous that the Court is at liberty to judge of itself whether there be any invention in using them in the exact combination claimed. * * * Unless the combination accomplishes some new result, the mere multiplicity of elements does not make it patentable. So long as each element performs some old and well-known function, the result is not a patentable combination, but an aggregation of elements. Indeed the multiplicity of elements may go on indefinitely without creating a patentable combination, unless by their collocation a new result be produced.

In conclusion we decide that claims 6 and 7 should have been allowed, and to that extent the judgment is reversed. We affirm the decision of the Commissioner of Patents in rejecting all other claims appealed from.

The clerk of this court will certify this opinion and the proceedings of the court in this cause to the Commissioner of Patents according to law.

TRADE-MARK PROTECTION IN THE PHILIPPINE ISLANDS.

Letter from the Bureau of Insular Affairs of the War Department.

WAR DEPARTMENT,
BUREAU OF INSULAR AFFAIRS,
Washington, December 11, 1905.

SIR: I have the honor to state that this Bureau is in receipt of a letter from the Chief of the Bureau of Patents, Copyrights and Trade-Marks of the Philippine Islands, dated October 23, 1905, in which he states that under the internal-revenue law of the Philippines, enacted July 2, 1904, a fee of ten cents is required for an internal-revenue stamp, in addition to the twenty-five dollars for registration required by section 11 of Act No, 666, Philippine Commission, a copy of which is inclosed.

Very respectfully,

FRANK MCINTYRE,
Captain 19th U. S. Infantry, Acting Chief of Bureau.

The honorable the COMMISSIONER OF PATENTS,
Washington, D. C.

Incl: Act No. 666.]

ACT NO. 666.

AN ACT DEFINING PROPERTY IN TRADE-MARKS AND IN TRADE-NAMES AND PROVIDING FOR THE PROTECTION OF THE SAME, DEFINING UNFAIR COMPETITION AND PROVIDING REMEDIES AGAINST THE SAME, PROVIDING REGISTRATION FOR TRADE-MARKS AND TRADE-NAMES, AND DEFINING THE EFFECT TO BE GIVEN TO REGISTRATION UNDER THE SPANISH ROYAL DECREE OF EIGHTEEN HUNDRED AND EIGHTY-EIGHT RELATING TO THE REGISTRATION OF TRADE-MARKS AND THE EFFECT TO BE GIVEN TO REGISTRATION UNDER THIS ACT.

By authority of the United States, be it enacted by the Philippine Commission, that:

SECTION 1. A trade-mark is a name, emblem, sign, or device, employed by any person, firm or corporation, to designate the goods dealt in or manufactured by such person, firm or corporation, for the purpose of enabling the public to recognize such goods and manufacture, and to distinguish them from the goods and manufactures of others.

SEC. 2. Any one who produces, or deals in, merchandise of any kind by actual use thereof in trade may appropriate to his exclusive use a trade-mark, not so appropriated by another, to designate the origin or ownership thereof: *Provided*, That a designation or part of a designation which relates only to the name, quality, or description of the merchandise or geographical place of its production or origin, cannot be the subject of a trade-mark.

SEC. 3. The ownership or possession of a trade-mark, heretofore or hereafter appropriated, as in the foregoing section provided, shall be recognized and protected in the same manner, and to the same extent, as are other property rights known to the law. To this end any person entitled to the exclusive use of a trade-mark to designate the origin or ownership of goods he has made or deals in, may recover damages in a civil action from any person who has sold goods of a similar kind, bearing such trade-mark, and the measure of the damages suffered, at the option of the complaining party, shall be either the reasonable profit which the complaining party would have made had the defendant not sold the goods with the trade-mark aforesaid, or the profit which the defendant actually made out of the sale of the goods with the trade-mark, and in cases where actual intent to mislead the public or to defraud the owner of the trade-mark shall be shown, in the discretion of the court, the damages may be doubled. The complaining party, upon proper showing, may have a preliminary injunction restraining the defendant temporarily from use of the trade-mark pending the hearing, to be granted or dissolved in the manner provided in the code of civil procedure, and such injunction upon final hearing, if the complainant's property in the trade-mark and the defendant's violation thereof shall be fully established, shall be made perpetual, and this injunction shall be part of the judgment for damages to be rendered in the same cause as above provided.

SEC. 4. In order to justify recovery for violation of trade-mark rights in the preceding sections defined, it shall not be necessary to show that the trade-marks have been registered under the royal decree of eighteen hundred and eighty-eight, providing for registration of trade-marks in the Philippine Islands, in force during the Spanish sovereignty in these Islands, nor shall it be necessary to show that the trade-mark has been registered under this act. It shall be sufficient to invoke protection of his property in a trade-mark, if the party complaining shall prove that he has used the trade-mark claimed by him upon his goods a sufficient length of time so that the use of the trade-mark by another would be an injury to him and calculated to deceive the public into the belief that the goods of that other were the goods manufactured or dealt in by the complaining party.

SEC. 5. A trade-name is the name, device, or mark by which is intended to be distinguished from that of others, the business, profession, trade or occupation in which one may be engaged and in which goods are manufactured or sold to the public, work is done for the public, or professional services are rendered to the public. It is not essential that the trade-name should appear on the goods manufactured or dealt in by the person owning or using the same. It is sufficient if the trade-name is used by way of advertisements, signs over the place of business, upon letter-heads, and in other ways to furnish to the public a method of distinguishing the business, trade, or occupation of the person owning and using such name. Property in trade-names shall be as fully protected as property in a trade-mark by the civil remedies provided in section three of this act for the protection of property in trade-marks.

SEC. 6. Any person who, with intent to defraud the public or the owner of a trade-mark or trade-name, shall use the trade-mark of another on his goods offered for sale, or the trade-name of another in his business, occupation or profession, and any person who, knowing that a trade-mark has been fraudulently used on goods with the intent aforesaid, shall sell such goods or offer the same for sale and any person who shall knowingly aid or abet another in such fraudulent use of a trade-mark or trade-name, shall be punished by a fine of not exceeding two thousand five hundred dollars, or by imprisonment not exceeding three years, or both, in the discretion of the court. Any person knowing the purposes for which such trade-mark or trade-name is to be used, and that it is the property of one person, prints, lithographs, or in any way reproduces such trade-mark or trade-name, or a colorable imitation thereof, for another person, to enable that other person fraudulently to use such trade-mark or trade-name in the deception of the public and the defrauding of the real owner of the trade-mark or trade-name, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding eighteen months, or both, in the discretion of the court.

SEC. 7. Any person who in selling his goods shall give them the general appearance of goods of another manufacturer or dealer, either in the wrapping of the packages in which they are contained, or the devices or words thereon, or in any other feature of their appearance, which would be likely to influence purchasers to believe that the goods offered are those of a manufacturer or dealer other than the actual manufacturer or dealer, and who clothes the goods with such appearance for the purpose of deceiving the public and defrauding another of his legitimate trade or any subsequent vender of such goods or any agent of any vender engaged in selling such goods with a like purpose, shall be guilty of unfair competition, and shall be liable to an action for damages, in which the measure shall be the same as that provided for a violation of trade-mark rights, together with discretionary power in the court to impose double damages, if the circumstances call for the same. The injured party may also have a remedy by injunction similar to that provided for in cases of violation of trade-marks. This section applies in cases where the deceitful appearance of the goods, misleading as to origin or ownership, is effected not by means of technical trade-marks, emblems, signs, or devices, but by the general appearance of the package containing the goods, or by the devices or words thereon, even though such packages, devices, or words are not by law capable of appropriation as trade-marks; and in order that the action shall lie under this section, actual intent to deceive the public and defraud a competitor shall affirmatively appear on the part of the person sought to be made liable, but such intent may be inferred from similarity in the appearance of the goods as packed or offered for sale to those of the complaining party.

SEC. 8. Any person guilty of unfair competition, as defined in the preceding section, in addition to the civil remedies to which he may be subject, shall also be liable criminally, in case of conviction for the same, to a fine of not exceeding two thousand dollars or imprisonment not exceeding two years, or both, in the discretion of the court.

SEC. 9. No action, or suit, or criminal prosecution shall be maintained under the provisions of this act in any case where the violation of the trade-mark or trade-name or the unfair competition complained of has been in any unlawful business, or with respect to any article trade in which is unlawful, or is against public policy, or in any case where the trade-mark, trade-name, or the indicia of origin, ownership, or manufacture have been used by the complaining and injured party for the purpose of himself deceiving the public with respect to the character of the merchandise sold by him or of the business or profession or occupation carried on by him.

SEC. 10. The use of a trade-mark or trade-name by the assignee of the original manufacturer or dealer who first used and established the exclusive right to use such trade-mark or trade-name in his business, shall be lawful and shall be protected under this act if the fact of the assignment from the original owner is shown in association with the trade-mark or trade-name wherever used by the assignee.

SEC. 11. The owners of trade-marks or trade-names domiciled in the Philippine Islands, or the United States, or in any foreign country which by treaty, convention, or law affords similar privileges to the citizens of the United States and of the Philippine Islands, may obtain registration of such trade-marks or trade-names by complying with the following requirements:

First. By causing to be recorded in the Bureau of Patents, Copyrights and Trade-Marks a statement specifying the name, domicile, location, and citizenship of the applicant; the general class or classes of merchandise to which the trade-mark claimed has been appropriated; or in case of a trade-name the description of the business, profession, or occupation it is to distinguish; a description of the trade-mark or trade-name itself, with facsimiles thereof, and a statement of the mode in which the same is applied and affixed to goods, or is to be used in the business, profession or occupation, and the length of time during which the trade-mark or trade-name has been used.

Second. By paying into the Bureau of Patents, Copyrights and Trade-Marks the sum of twenty-five dollars in money of the United States and complying with such regulations as may be prescribed by the Chief of said Bureau.

SEC. 12. The application prescribed in the foregoing section must be accompanied by a written declaration verified by the person, or by a member of the firm, or by an officer of the corporation applying, to the effect that such party has at the time a right to the use of the trade-mark or trade-name sought to be registered, and that no other person, firm, or corporation has the right to such use, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; and that the description and facsimiles presented for registry truly represent the trade-mark sought to be registered.

SEC. 13. The time of the receipt of any such application shall be noted and recorded. But no alleged trade-mark or trade-name shall be registered which is merely the name, quality, or description of the merchandise upon which it is to be used or the geographical place of its production or origin, or which is identical with a registered or known trade-mark owned by another and appropriate to the same class of merchandise, or which so nearly resembles another person's lawful trade-mark or trade-name as to be likely to cause confusion or mistake in the mind of the public, or to deceive purchasers. In an application for registration the Chief of the Bureau of Patents, Copyrights and Trade-Marks shall decide the presumptive lawfulness of claim to the alleged trade-mark.

SEC. 14. Certificates of registration of trade-marks and trade-names under the Spanish sovereignty in these islands unannulled, under the royal decree of eighteen hundred and eighty eight, shall be conclusive evidence of the exclusive right of ownership of such trade-marks or trade-names in respect to the goods and articles of merchandise or the business, profession, or occupation to which they by the terms of the registration apply.

SEC. 15. Certificates of registry of trade-marks and trade-names shall be issued in the name of the Insular Government of the Philippine Archipelago, under the seal of the Department of the Interior, and shall be signed by the Chief of the Bureau of Patents, Copyrights and Trade-Marks, and a record thereof, together with printed copies of the specific trade-marks or trade-names, shall be kept by him in books for that purpose. Certified copies of trade-marks or trade-names and of statements and declaration filed therewith, and original certificates of registry, shall be evidence in any suit in which such trade-marks or trade-names shall be brought into controversy. But registration of trade-marks and trade-names under this act shall only be *prima facie* evidence of the exclusive right by the person securing the registration to use the same.

SEC. 16. A certificate of registry shall remain in force for thirty years from its date, except in cases where the trade-mark is claimed for, and applied to, articles not manufactured in this country, and in which it receives protection under the laws of a foreign country for a shorter period, in which case it shall cease to have any force in this country by virtue of this act at the time that such trade-mark ceases to be exclusive property elsewhere. At any time during the six months prior to the expiration of the term of thirty years, such registration may be renewed on the same terms and for a like period.

SEC. 17. Applicants for registration under this act shall be credited for any fee or part of a fee heretofore paid into the Bureau of Patents, Copyrights and Trade-Marks with intent to procure protection for the same trade-mark or trade-name.

SEC. 18. Any person who shall procure the registry of a trade-mark, or of himself as the owner of a trade-mark or trade-name, or an entry respecting a trade-mark or trade-name, in the Bureau of Patents, Copyrights and Trade-Marks, by a false or fraudulent representation or declaration, orally or in writing, or by any fraudulent means, or any person who shall aid or abet such fraudulent procuring of registry, shall be liable to pay any damages sustained in consequence thereof to the injured party; and shall further be liable to criminal prosecution, and upon conviction shall be punished by a fine of not more than one thousand dollars or imprisonment for not more than one year and one day, or both, in the discretion of the court.

SEC. 19. The Chief of the Bureau of Patents, Copyrights and Trade-Marks is authorized to make rules and regulations and prescribe forms for the transfer of the right to use trade-marks or trade-names and for recording such transfers in his office.

SEC. 20. The citizens and residents of this country wishing the protection of trade-marks in any foreign country, the laws of which require registration here as a condition precedent to getting such protection there, may register their trade-marks for that purpose, as is above allowed to foreigners, and have certificate thereof from the Bureau of Patents, Copyrights and Trade-Marks, upon payment of the same fee as that required by section eleven.

SEC. 21. All the duties appertaining to the Bureau of Patents, Copyrights and Trade-Marks are hereby devolved upon the Chief of the Bureau of Forestry.

SEC. 22. The royal decree of eighteen hundred and eighty-eight as to the registration of trade-marks, as continued in force by military order, is hereby repealed.

SEC. 23. This act shall take effect on its passage.

Enacted March 6, 1903.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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ISSUE OF MARCH 13, 1906.

Patents	664	No. 814,659 to No. 815,322	inclusive.
Designs	12	No. 37,887 to No. 37,898	inclusive.
Trade-Marks	115	No. 50,323 to No. 50,437	inclusive.
Labels	11	No. 12,701 to No. 12,711	inclusive.
Prints	5	No. 1,592 to No. 1,596	inclusive.
Reissues	2	No. 12,462 to No. 12,463	inclusive.
Total issue	809		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	Nevada	.....	1
Alaska, District of	1	.....	New Hampshire	3	1
Arizona Territory	.....	.....	New Jersey	28	9
Arkansas	3	.....	New Mexico Ter't'y	1	.....
California	29	4	New York	99	36
Colorado	15	.....	North Carolina	5	.....
Connecticut	12	3	North Dakota	1	.....
Delaware	1	.....	Ohio	47	9
District of Columbia	7	1	Oklahoma Territ'y	3	.....
Florida	.....	1	Oregon	.....	.....
Georgia	2	1	Pennsylvania	71	13
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	1	.....	Rhode Island	3	2
Illinois	69	7	South Carolina	1	.....
Indian Territory	2	.....	South Dakota	1	.....
Indiana	11	4	Tennessee	8	2
Iowa	15	3	Texas	11	1
Kansas	8	.....	Utah	3	.....
Kentucky	4	2	Vermont	.....	.....
Louisiana	1	.....	Virginia	5	1
Maine	3	1	Washington	7	.....
Maryland	8	2	West Virginia	8	.....
Massachusetts	29	12	Wisconsin	16	1
Michigan	27	2	Wyoming	.....	.....
Minnesota	11	2	U. S. Army	.....	.....
Mississippi	4	.....	U. S. Navy	.....	.....
Missouri	19	4			
Montana	1	.....	Total to citizens of the United States	614	126
Nebraska	6	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Netherlands	.....	.....
Argentina	.....	.....	Newfoundland	.....	.....
Austria-Hungary	1	.....	New South Wales	.....	.....
Belgium	1	.....	New Zealand	4	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	9	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	1	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	1	.....
England	9	5	Sweden	.....	.....
France	10	.....	Switzerland	.....	.....
Germany	21	.....	Transvaal, South Africa	2	.....
India	.....	.....	Victoria	1	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	1	.....			
Japan	.....	.....			
Java	.....	.....			
Mexico	1	.....	Total to citizens of foreign countries	62	5

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 7, 1906.

John H. Thompson & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 9, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 6, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Feb. 26	Jan. 22	283
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Feb. 23	Dec. 12	225
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 20	Jan. 7	480
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 20	Dec. 16	328
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Feb. 20	Oct. 5	351
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 19	Jan. 27	210
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Feb. 19	Oct. 16	664
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Feb. 19	Aug. 26	679
	Under one month.			
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 17	Jan. 20	323
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Feb. 16	Feb. 7	226
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 15	Jan. 9	253
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 15	Oct. 14	584
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Feb. 15	Sept. 16	620
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Feb. 14	Oct. 16	662
332	X. Carriages and Wagons	Feb. 14	Oct. 13	918
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 13	July 19	375
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 12	June 27	745
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 8	Aug. 21	722
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 7	Jan. 16	363
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 7	Nov. 13	505
113	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 6	Aug. 25	601
	Between one and two months.			
233	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 5	Feb. 5	314

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 3	Oct. 30	314
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 2	Dec. 1	443
327	XVIII. Steam-Engineering, etc	Dec. 1	Nov. 14	412
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Jan. 31	Nov. 7	351
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Jan. 29	Sept. 7	716
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Jan. 29	July 11	452
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 26	Oct. 21	308
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Jan. 26	July 6	1121
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Jan. 23	Jan. 8	404
109	XVI. Telegraphy and Telephony	Jan. 20	Dec. 12	323
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 19	Dec. 21	478
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 18	Nov. 11	479
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Jan. 9	Sept. 13	726
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 8	June 7	1057
	Between two and three months.			
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Dec. 29	Sept. 12	603
	Between three and four months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Nov. 28	Oct. 2	534

Total number of applications awaiting action 19,152

Room No.	Trade-Marks, Designs, Labels and Prints.			
159	***Between one and two months.***			
	Trade-Marks	Jan. 29	Jan. 22	2645
	Under fifteen days.			
	Designs		Feb. 6	46
	Labels and Prints	Mar. 2	Mar. 3	16

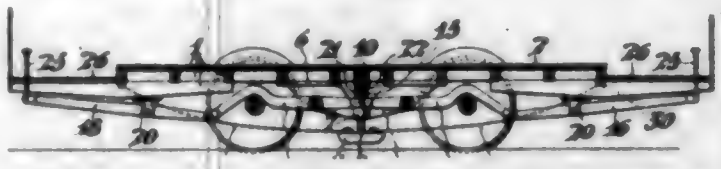
Patents to Assignees.

RULE 200. In every case where it is desired that the patent shall issue to an assignee, the assignment must be recorded in the Patent Office at a date not later than the day on which the final fee is paid. (See Rule 26.) The date of the record is the date of the receipt of the assignment at the Office.

PATENTS

GRANTED MARCH 13, 1906.

814,659. **EMERGENCY-BRAKE.** ADDISON H. ARMS, Philadelphia, Pa., assignor of one-half to James B. Stahl, Philadelphia, Pa. Filed June 8, 1905. Serial No. 264,344.



Claim.—1. In a brake mechanism, the combination of a plurality of brake members, a bar extending transversely of the car, rods connecting the said brake members to the said transverse bar, means connected to the underframe of the car for supporting and guiding the said rods, means for holding the said brake members out of engagement with the ground or pavement over which the car is located, a system of levers pivotally connected to the said transverse bar and extending therefrom to an end of the car, the said lever being adapted to occasion movement of the said brake members into frictional engagement with the ground or pavement, substantially as described.

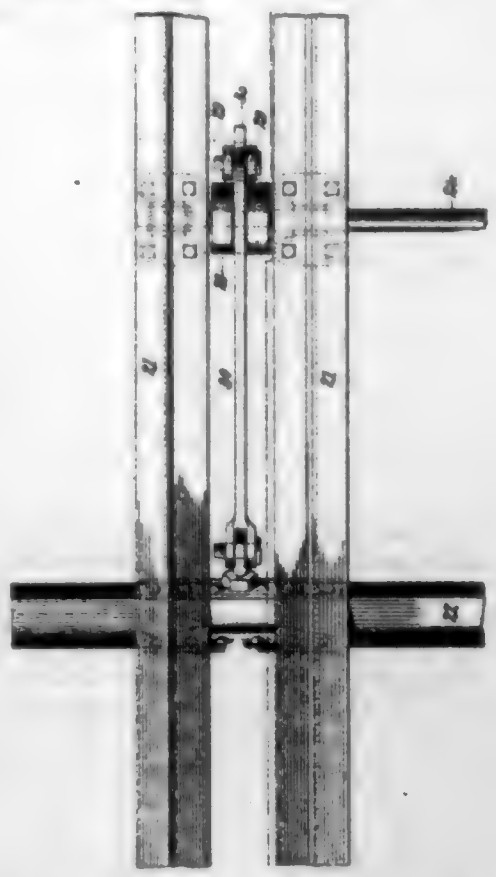
2. In a brake mechanism, the combination of a plurality of brake members, a bar extending transversely of the car, rods connecting the said brakes to the said transverse bar, means connected to the underframe of the car for supporting and guiding the said rods, means for holding the said brake members out of engagement with the ground or pavement over which the car is located, a system of levers pivotally connected to the said transverse bar and extending therefrom to an end of the car, the said levers being adapted to occasion movement of the said brake members into frictional engagement with the ground or pavement, a plurality of cables or chains connected to the said brake members and extending in opposite directions therefrom and connected to the underframe of the car.

3. A brake mechanism, in combination, a plurality of brake members having rods extending therefrom, a plurality of supports having perforations provided therein through which the said rods extend, a transverse bar located above the said hanger-supports to which the said rods are connected, coiled wire springs surrounding the said rods and being located between the said bar and the said hanger-supports and being adapted to hold the said brake members out of contact with the ground or pavement over which the said car may be located, systems of levers pivotally connected to the said transverse bar and extending in opposite directions therefrom to the opposite ends of the car, means connected to the said systems of levers whereby each system may be operated to occasion movement of said brake members into frictional engagement with the said ground or pavement, and a plurality of cables or chains connected to the said brake members and extending in opposite directions therefrom to the underframe, to which the said cables are connected, substantially as described.

814,660. **TRANSPORTATION-CAR AND THE LIKE.** JOHN M. ARMS, New Brighton, N. Y., assignor to Benjamin A. Hegeman, Jr., North Plainfield, N. J. Filed Apr. 12, 1905. Serial No. 255,096.

Claim.—1. In a car or the like having a discharge-gate at its bottom, the gate mechanism comprising the transverse operating-shaft, the crank-arm thereon having members between which is formed a web or stop, the link having one end pivotally secured between said members and provided with a finger to engage said stop, and the rod pivotally connected at one end with the gate and at its other end between the members of the bifurcated other end of said link, this end of said rod having a stop-finger to engage the upper edge of said link when the gate is opened and also a bend to lock around said shaft when the gate is closed; substantially as set forth.

2. In a car or the like having a discharge-gate, at its bottom, the gate mechanism comprising the transverse operating-shaft, the crank-arm thereon, the link pivotally connected therewith and the rod pivotally connected with said link and said gate and having a bend at its upper end to lock around said shaft when the gate is closed, combined with the ratchet-wheel on said shaft, the dog to engage the same, and the weight for locking said dog in engagement with said wheel; substantially as set forth.

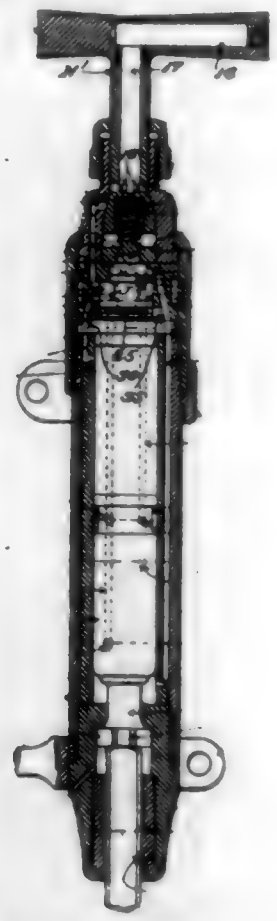


3. In a car or the like having a discharge-gate, at its bottom, the gate mechanism comprising the transverse operating-shaft, the crank-arm thereon, the link pivotally connected therewith and the rod pivotally connected with said link and said gate and having a bend at its upper end to lock around said shaft when the gate is closed, combined with the ratchet-wheel on said shaft and having a single recess, the pivoted dog having a detent to enter said recess and automatically leave the same under the weight of the load on the gate when the latter is otherwise released to open, and the pivoted weight for locking said dog in fixed engagement with said ratchet-wheel; substantially as set forth.

4. In a car having a discharge-gate at its bottom, the gate mechanism comprising the transverse operating-shaft, the crank-arm thereon, the link pivotally connected therewith, and the rod pivotally connected with said link and gate and at its upper end being extended downwardly at an angle, thereby forming a bend in said rod enabling the latter to, upon the closing of the gate, lock around the upper side of said shaft, said link being pivoted to the lower end of the upper angular portion of said rod at a point below a center line through the pivot-point at the lower end of said rod and said operating-shaft, for automatically locking the gate in closed position; substantially as set forth.

814,661. **IMPACT-TOOL.** GEORGE L. BADGER, Quincy, Mass. Filed Feb. 2, 1905. Serial No. 244,795.

Claim.—1. In a fluid-controlled impact-tool, a piston-chamber and piston, a tubular valve for controlling the movements of the piston, means controlled by said piston for actuating said valve, a valve-block for the valve having a bore of two diameters in alinement with the piston-chamber and a port opening into the inner end of the larger diameter of the bore, a retaining-head for the valve-block adapted to limit the travel of the valve in the direction of said head to prevent the valve closing said port, and a port in the forward end of the retaining-head in alinement with the bore of the valve-block which is always open to the interior of the valve.



2. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber and a port opening into the inner end of the larger diameter of the bore, a tubular valve in the valve-block provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, a retaining-head for the valve-block adapted to limit the travel of the valve in the direction of said head to prevent the valve closing said port, and a port in the forward end of the retaining-head in alinement with the bore of the valve-block which is always open to the interior of the valve.

3. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, the smaller diameter being at the rear end of said block and a port opening into the inner end of the larger diameter of the bore, a tubular valve in the valve-block for controlling the movements of the piston, means controlled by the piston for actuating said valve, a retaining-head for the valve-block adapted to limit the travel of the valve in a rearward direction to prevent the valve closing the said port, and a port in the forward end of the retaining-head in alinement with the bore of the valve-block which is always open to the interior of the valve.

4. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, the smaller diameter being at the rear end of said block and a port opening into the inner end of the larger diameter of the bore, a tubular valve in the valve-block for controlling the movements of the piston, having diameters corresponding to the bore of the valve-block and an annular groove between the large and small diameters, means controlled by the piston for actuating said valve, a retaining-head for the valve-block adapted to limit the travel of the valve in a rearward direction whereby said port in the valve-block is always open to said annular groove in the valve, a port in the forward end of the retaining-head in alinement with the bore of the valve-block which is always open to the interior of the valve.

5. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston, means controlled by the piston for actuating the valve, said valve having an exterior annular groove open to the interior of the valve, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with said groove in the valve when the latter is at the end of its movement in one direction, a passage leading from the opposite end of the piston-chamber provided with two ports, one of said ports opening into the smaller bore of the valve-block, the other of said ports opening into the larger bore of the block and adapted to register with said annular groove in the valve when the latter is at the end of its movement in an opposite direction, a retaining-head for the valve-block having a port in alinement with the bore of said block whereby said last-mentioned port is alternately placed in communication through said groove in the valve with opposite ends of the piston-chamber.

6. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston, means controlled by the piston for actuating the valve, said valve having an exterior annular groove open to the interior of the valve, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with said groove in the valve when the latter is in its rearward position, a passage leading from the opposite end of the piston-chamber provided with two ports, one of said ports opening into the smaller bore of the valve-block, the other port opening into the larger bore and adapted to register with said groove in the valve when the latter is in its forward position, a retaining-head for the valve-block having a port in alinement with the bore of said block whereby the opposite ends of the piston-chamber are alternately placed in communication through said groove in the valve with said last-mentioned port.

7. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston, means controlled by the piston for actuating the valve, said valve having an exterior annular groove open to the interior of the valve, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with said groove in the valve when the latter is in its rearward position, a passage leading from the opposite end of the piston-chamber provided with two ports, one of said ports opening into the smaller bore of the valve-block, the other port opening into the larger bore and adapted to register with said groove in the valve when the latter is in its forward position, and open to the bore of the valve-block forward of said valve when the latter is in its rearward position.

8. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston having opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, means controlled by the piston for actuating the valve, said valve being provided with an exterior annular groove located between the large and small diameters, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with said annular groove in the valve when the latter is at the end of its movement in one direction, a passage leading from the opposite end of the piston-chamber provided with two ports opening into the valve-block, one of said last-mentioned ports being adapted to register with said annular groove in the valve when the latter is at the end of its movement in an opposite direction and the other of said last-mentioned ports being open to the larger area of the valve when the latter is in said last-mentioned position.

9. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston having opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, means controlled by the piston for actuating the valve, a passage leading from one end of the piston-chamber provided with two ports controlled by said valve, one of said ports opening into the smaller and the other opening into the larger bore of said valve-block, the latter port being adapted to admit the motive fluid from said passage to the larger area of the valve when it is in one position, said port being opened by the valve to exhaust the motive fluid from said passage when said valve is in an opposite position.

10. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a bore of two diameters in alinement with the piston-chamber, a tubular valve for controlling the movements of the piston having opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, means controlled by the piston for actuating the valve, a

passage leading from one end of the piston-chamber provided with one port opening into the smaller and another port opening to the larger bore of the said valve-block, said ports being controlled by the valve; the first-mentioned port being opened to admit motive fluid through the said passage to the said end of the piston-chamber, and the other port being opened to admit the motive fluid from the said passage to the larger area of the valve when the valve is at one end of its stroke.

11. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber of two diameters in alinement with the piston-chamber, a tubular valve located therein provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, a port in the valve-block which is always open to the larger diameter of the valve-chamber, a head or plate located between the piston-chamber and valve-chamber to close respectively the rearward and forward ends of said chambers, a retaining-head forming the rear wall of the valve-chamber and adapted to limit the travel of the valve, said head being provided with a port in alinement with the valve and always open to the interior of the latter.

12. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to shift the valve, and against the smaller of which areas the motive fluid constantly acts to press the valve in one direction, a passage controlled by the piston and opened by the latter when it approaches one end of its stroke to admit motive fluid to the larger pressure-surface of the valve and shift the valve, said passage being opened by the piston on its opposite stroke to admit an additional amount of motive fluid to said pressure-surface of the valve to retain the valve in said position, until the piston approaches the end of said last-mentioned stroke.

13. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to shift the valve, and against the smaller of which areas the motive fluid constantly acts to press the valve in one direction, a passage controlled by the piston and opened by the latter when it approaches the forward end of its stroke to admit motive fluid to the larger pressure-surface of the valve to shift the valve, said passage being opened by the piston on its rearward stroke to admit an additional amount of motive fluid to said pressure-surface of the valve to retain the valve in said position until the piston approaches the end of said last-mentioned stroke.

14. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, and against the smaller of which areas the motive fluid constantly acts to press the valve forward, a passage controlled and opened by the piston when it approaches one end of its stroke to admit motive fluid to the larger pressure area of the valve to move the valve rearward, said passage being opened by the piston on its opposite stroke to admit an additional amount of fluid to said larger area of the valve to retain the valve in position until the piston approaches the end of said last-mentioned stroke.

15. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, and against the smaller of which areas the motive fluid constantly acts to press the valve in one direction, a passage controlled and opened by the piston when it approaches one end of its stroke to admit motive fluid to the larger pressure area of the valve to move the valve, said passage being opened by the piston on its opposite stroke to admit an additional amount of motive fluid to the larger area of the valve, and an exhaust-port opened by the piston when it approaches the end of said last-mentioned stroke to exhaust the motive fluid from said larger area of the valve.

16. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions and against the smaller of which the motive fluid constantly acts to press the valve forward, a passage leading from the larger area of the valve to the piston-chamber controlled by the piston and opened by the latter near the end of its forward stroke to admit motive fluid to the larger area of the valve to move the valve rearward, said passage being opened by the piston on its rearward stroke to admit an additional amount of fluid to the larger area of the valve, an exhaust-port opened by the piston near the end of its rearward stroke to reduce the pressure on the larger area of the valve to allow the constantly-acting pressure on the smaller area of the valve to move the valve forward, said valve when moved forward opening a passage leading from the forward end of the piston-chamber to allow the motive fluid to escape from said end of the piston-chamber and from the larger area of the valve.

17. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, means controlled by the piston for actuating said valve, passages leading from said valve to opposite ends of the piston-chamber to alternately admit and exhaust the motive fluid to and from said ends of the piston-chamber, a passage leading from the larger area of the valve to the piston-chamber, said passage being always open to one end of the piston-chamber except when the piston is near one end of its stroke whereby the motive fluid is alternately admitted to and exhausted from the larger area of the valve during the intermediate travel of the piston in opposite directions.

18. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, a passage leading to one end of the piston-chamber and controlled by said valve to alternately admit and exhaust motive fluid to and from said end of the piston-chamber, a passage leading from the larger area of the valve to said end of the piston-chamber whereby motive fluid is admitted to and exhausted from the larger area of the valve through the piston-chamber, said last-mentioned passage being closed to the piston-chamber by the piston when the piston is near said end of the piston-chamber, a live-fluid passage leading from the source of supply to the piston-chamber and opened by the piston to said passage leading to the larger area of the valve to shift the valve when the piston is at said end of the piston-chamber.

19. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber, the larger diameter being at the forward end of the head and forming an internal shoulder near said forward end, a throttle-valve located in the larger bore of the head and provided with a rearwardly-projecting stem of smaller diameter, said throttle-valve being adapted to be seated against said shoulder when in a rearward position and means for normally holding said throttle-valve in seated position.

20. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber, the larger diameter being at the forward end of the head and forming an internal shoulder near said forward end, a throttle-valve for controlling the initial admission of motive fluid to the tool, said throttle-valve being located in the larger bore of the head and adapted to be seated against said shoulder when in a rearward position, means for normally holding the throttle-valve in seated position, a stem located in the smaller bore of the head and engaging said throttle-valve, a grasping-handle for holding the tool to the work and adapted to hold said throttle-valve in an unseated position when the tool is held to the work.

21. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber, the larger diameter being at the forward end of the head and forming an internal shoulder near said forward end, a throttle-valve for controlling the initial admission of motive fluid to the tool, said throttle-valve being located in the larger bore of the head and adapted to be seated against said shoulder when in a rearward position, means for normally holding the throttle-valve in seated position, a stem located in the smaller bore of said head, means to retain said stem in the head, a grasping-handle secured to said stem and adapted for holding the tool to the work, said grasping-handle and stem being adapted to hold said throttle-valve in an unseated position when the tool is held to the work.

22. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber,

the larger diameter being at the forward end of the head and forming an internal shoulder near said forward end, a throttle-valve for controlling the initial admission of motive fluid to the tool, said throttle-valve being located in the larger bore of the head and adapted to be seated against said shoulder when in a rearward position, means for normally holding the throttle-valve in seated position, said throttle-valve being provided with a rearwardly-projecting stem of smaller diameter corresponding to the bore at the rear end of said head and means for closing the forward end of the larger bore after the throttle-valve and stem are placed in position therein.

23. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber, the smaller diameter being at the rear end of the head, said head having an internal shoulder near the forward end, a throttle-valve provided with a rearwardly-projecting stem of smaller diameter corresponding to the bore at the rear end of the head, said throttle-valve being adapted to be seated against said shoulder when in a rearward position, means for normally holding the throttle-valve in seated position, a grasping-handle secured to the stem for holding the tool to the work, said handle and stem being adapted to hold said throttle-valve in an unseated position when the tool is pressed to the work.

24. In a fluid-controlled impact-tool, a cylinder and piston, a valve-block having a controlling-valve therein, a retaining-head for the valve-block having a longitudinal bore of different diameters, the smaller diameter being at the rear end of the head, a throttle-valve located in the larger bore and provided with a rearwardly-projecting stem of smaller diameter corresponding to the bore in the head and rotatably mounted therein, means for holding said cylinder, valve-block and retaining-head in assembled position, and means whereby said cylinder may be rotated with relation to said stem and throttle-valve.

25. In a fluid-controlled impact-tool, a cylinder and piston, a valve-block having a controlling-valve therein, a retaining-head for the valve-block having a longitudinal bore of different diameters, the smaller diameter being at the rear end of the head, a throttle-valve located in the larger bore and provided with a rearwardly-projecting stem of smaller diameter, the throttle-valve being adapted to be seated in the head when in a rearward position, said throttle-valve and stem being longitudinally and rotatably mounted in the bore of the head, means for holding said cylinder, valve-block and retaining-head in assembled position, and means whereby said cylinder may be rotated with relation to said stem and throttle-valve.

26. In a fluid-controlled impact-tool, a cylinder and piston, a valve-block having a controlling-valve therein, a retaining-head for the valve-block having a longitudinal bore of different diameters, the smaller diameter being at the rear end of the head, a throttle-valve located in the larger bore and provided with a rearwardly-projecting stem of smaller diameter, the throttle-valve being adapted to be seated in the head when in a rearward position, said throttle-valve and stem being longitudinally and rotatably mounted in the bore of the head, a grasping-handle secured to said stem and adapted for holding the tool to the work, said grasping-handle and stem being adapted to hold the throttle-valve in an unseated position when the tool is pressed to the work, means for holding said cylinder, valve-block and retaining-head in assembled position and means whereby said cylinder may be rotated with relation to said grasping-handle and throttle-valve.

27. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve therein for controlling the movements of the piston, a retaining-head for the valve-block having a bore of different diameters in alinement with the piston-chamber, the larger diameter being at the forward end of the head, a throttle-valve located in the larger bore of the head and provided with a rearwardly-projecting stem having a passage therein through which the motive fluid is supplied to the tool, said throttle-valve being adapted to be seated in the head when in a rearward position, means for normally holding the throttle-valve in seated position, a grasping-handle secured to said stem and adapted for holding the tool to the work, a passage in said handle communicating with said passage in the stem and adapted to be connected to a source of fluid-pressure supply, said grasping-handle and stem being adapted to hold the throttle-valve in an unseated position when the tool is held to the work.

28. In a fluid-controlled impact-tool, a cylinder and piston, a valve-block having a controlling-valve therein, a retaining-head for the valve-block having a longitudinal bore of different diameters, the smaller diameter being at the rear end of the head, a throttle-valve located in the larger bore and provided with a rearwardly-projecting stem of smaller diameter corresponding to the bore at the rear of the head and rotatably mounted therein, a passage in said stem through which the motive fluid is supplied to the tool, a grasping-handle secured to said stem having a passage communicating with said passage in the stem and adapted to be connected to a source of fluid-pressure supply, means for holding said cylinder, valve-block and retaining-head in assembled position, and means whereby said cylinder may be rotated with relation to said grasping-handle and source of fluid-pressure supply.

29. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of said piston, means controlled by said piston for actuating said valve, a valve-block having a port therein controlled by said valve and connected by a passage to one end of the piston-chamber to admit and exhaust the motive fluid to and from one side of the piston, a passage leading from the opposite end of the piston-chamber and provided with two ports opening into the valve-block, one of said ports being controlled by said valve to admit and exhaust the motive fluid to and from said last-mentioned end of the piston-chamber and the other of said ports being controlled by said valve to provide additional means for exhausting the fluid from said end of the piston-chamber.

30. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of said piston, means controlled by said piston for actuating said valve, a valve-block having ports and passages in proximity to the forward and rear ends respectively and connected with opposite ends of the piston-chamber and controlled by said valve to alternately admit and exhaust the motive fluid to and from the respective ends of the piston-chamber, said valve-block being provided with an auxiliary port which is controlled by said valve to provide additional means for exhausting the fluid from one end of the piston-chamber.

31. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of said piston, means controlled by said piston for actuating said valve, a valve-block having ports and passages in proximity to the forward and rear ends respectively and connected with opposite ends of the piston-chamber and controlled by said valve to alternately admit and exhaust the motive fluid to and from the respective ends of the piston-chamber, an auxiliary port controlled by said valve and connected with the passage leading to the forward end of the piston-chamber, said auxiliary port being of greater capacity than the port through which the motive fluid is supplied to said passage leading to said end of the piston-chamber, whereby additional means of greater capacity is provided for exhausting the fluid from said forward end of the piston-chamber.

32. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of said piston, means controlled by said piston for actuating said valve, a valve-block having a port connected with a passage leading to the rear end of the piston-chamber and a port connected with a passage leading to the forward end of the piston-chamber, said ports being controlled by said valve to alternately admit and exhaust the motive fluid to and from the respective ends of the piston-chamber, an auxiliary port connected with the passage leading to said forward end of the piston-chamber and opened by said valve when the latter is moved in one direction to allow part of the fluid from the forward end of the piston-chamber to exhaust through said auxiliary port.

33. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of said piston, means controlled by said piston for actuating said valve, a valve-block having a port connected with a passage leading to the rear end of the piston-chamber and a port connected with a passage leading to the forward end of the piston-chamber, said ports being controlled by said valve to alternately admit and exhaust the motive fluid to and from the respective ends of the piston-chamber, an auxiliary port connected with the passage leading to said forward end of the piston-chamber and opened by said valve when the latter is moved in one direction to admit an additional supply of air to the forward end of said valve and when moved in the opposite direction to allow part of the fluid from the forward end of the valve-chamber to exhaust through said auxiliary port.

34. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve for controlling the movements of the piston consisting of a tubular shell having opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, a valve-block having ports and passages connected respectively with opposite ends of the piston-chamber and controlled by said valve to alternately admit and exhaust the motive fluid to and from the opposite ends of the piston, an auxiliary port connected with one of said passages and controlled by said valve to provide additional means for exhausting the fluid from one end of the piston-chamber.

35. In a fluid-controlled impact-tool, a piston-chamber and piston, and source of fluid-supply, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, an exhaust-port opened by the piston near the end of its rearward stroke to exhaust the fluid from the largest area of the valve, a live-air passage leading directly from the source of supply to the piston-chamber, a passage leading from the piston-chamber to said larger area of the valve, said last-mentioned passage having two ports opening into the piston-chamber, one of said ports being connected to said live-air passage by a groove in the piston when the latter is near the end of its forward stroke, the other of said ports being adapted by the shifting of the valve to admit an additional amount of fluid to the larger area of the valve on the rearward stroke of the piston.

36. In a fluid-controlled impact-tool, a piston-chamber and piston, and source of fluid-supply, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, an exhaust-port opened by the piston near the end of its rearward stroke to exhaust the fluid from the largest area of the valve, a live-air passage leading directly from the source of supply to the piston-chamber, a passage leading from the piston-chamber to said larger area of the valve, said last-mentioned passage having two ports opening into the piston-chamber, one of said ports being always closed by the piston except when the latter is near the end of its forward stroke, the other of said ports being always open to the piston-chamber except when the piston is near the end of its forward stroke and is adapted by the shifting of the valve to alternately admit and exhaust the motive fluid to and from the larger area of the valve.

37. In a fluid-controlled impact-tool, a piston-chamber and piston, and source of fluid-supply, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, an exhaust-port opened by the piston near the end of its rearward stroke to exhaust the fluid from the largest area of the valve, a live-air passage leading directly from the source of supply to the piston-chamber, a passage leading from the piston-chamber to said larger area of the valve, said last-mentioned passage having two ports opening into the piston-chamber, one of said ports being controlled by the piston and opened by the latter to admit motive fluid to the larger area of the valve and the other of said ports being controlled by the piston to alternately admit the motive fluid to and exhaust it from the larger area of the valve during the travel of the piston.

38. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber of different diameters, a tubular valve for controlling the movements of the piston, means controlled by the piston for actuating the valve, said valve being provided with a series of holes or ports opening into the interior of the valve, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with one or more of said holes or ports in the valve when the latter is at the end of its movement in one direction, a passage leading from the opposite end of the piston-chamber provided with two ports, one of said last-mentioned ports opening into the smaller diameter of the valve-chamber, the other of said ports opening into the larger diameter of the valve-chamber forward of said valve when the latter is at the end of its rearward movement.

39. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber of different diameters, a tubular valve for controlling the movements of the piston, means controlled by the piston for actuating the valve, said valve having an exterior annular groove, a port in said valve-block connected by a passage to one end of the piston-chamber and adapted to register with said groove in the valve when the latter is at the end of its movement in one direction, a passage leading from the opposite end of the piston-chamber provided with two ports, one of said last-mentioned ports opening into the smaller diameter of the valve-chamber, the other of said ports being open to the larger diameter of the valve-chamber forward of said valve when the latter is in its rearward position.

40. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber and a valve therein for controlling the movements of the piston, a retaining-head having a bore of different diameters in alinement with the valve-chamber and separated from the latter by a removable partition, a throttle-valve located in the larger bore of the retaining-head and provided with a rearwardly-projecting stem of diameter to fit the smaller bore of the head, said throttle-valve being adapted to be seated in the head when in rearward position and means for normally holding said throttle-valve in seated position.

41. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber and a valve therein for controlling the movement of the piston, a retaining-head having a bore of different diameters in alinement with the valve-chamber and separated from the latter by a removable partition, a throttle-valve located in the larger bore of the retaining-head and adapted to be seated therein when in a rearward position, means for normally holding the throttle-valve in seated position, a stem located in the smaller bore of the head and engaging said throttle-valve, a grasping-handle for holding the tool to the work and adapted to hold said throttle-valve in an unseated position when the tool is held to the work.

42. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber and a valve therein for controlling the movements of the piston, a retaining-head having a bore of different diameters in alinement with the valve-chamber, a throttle-valve located in the larger bore of the retaining-head and provided with a rearwardly-projecting stem of a diameter corresponding to the smaller bore of the head, a removable partition which separates the valve-chamber from said bore in the head, a port in the forward side of said partition in alinement with the valve-chamber, said throttle-valve being adapted to be seated in said head when in a rearward position, a grasping-handle for holding the tool to the work and adapted to hold said throttle-valve in an unseated position when the tool is held to the work.

43. In a fluid-controlled impact-tool, a piston-chamber and piston, a source of fluid-pressure, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions and to the smaller of which areas the motive fluid is constantly admitted to press the valve in one direction, means controlled by said piston for actuating said valve, an auxiliary port controlled by the piston and opened by the latter to admit an additional amount of motive fluid to the larger pressure-surface of the valve to retain the latter in position when the piston is on its rearward stroke.

44. In a fluid-controlled impact-tool, a piston-chamber and piston, a source of fluid-pressure, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, and against the smaller of which areas the motive fluid constantly acts to press the valve in one direction, means controlled by said piston for actuating said valve, an auxiliary port controlled by the piston, and closed by the latter when at one end of its stroke, said auxiliary port when uncovered by the piston being adapted by the shifting of the valve to alternately admit motive fluid to and exhaust it from the larger area of the valve.

45. In a fluid-controlled impact-tool, a piston-chamber and piston, a source of fluid-pressure, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, and against the smaller of which areas the motive fluid constantly acts to press the valve in a forward direction, means controlled by said piston for actuating said valve, an auxiliary port controlled by the piston and opened by the latter on its rearward stroke to admit an additional amount of motive fluid to the larger pressure-surface of the valve to retain the latter in a rearward position.

46. In a fluid-controlled impact-tool, a piston-chamber and piston, a source of fluid-pressure, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, means controlled by said piston for actuating said valve, an auxiliary port controlled by the piston and closed by the latter when at one end of its stroke, said auxiliary port being open to the piston-chamber to exhaust the motive fluid from the larger pressure-surface of the valve when the piston is on its forward stroke and adapted by the shifting of said valve to admit an additional amount of motive fluid to said larger pressure-surface when the piston is on its rearward stroke.

47. In a fluid-controlled impact-tool, a piston-chamber and piston, a source of fluid-pressure, a valve for controlling the movements of the piston, said valve being provided with opposing pressure-surfaces of different areas to which the motive fluid is admitted to move the valve in opposite directions, and against the smaller of which areas the motive fluid constantly acts to press the valve in one direc-

tion, means controlled by said piston for actuating said valve, an auxiliary port controlled by the piston and opened by the latter, after the movement of the valve has been effected by the piston, to admit an additional amount of motive fluid to the larger pressure-surface of the valve to retain the latter in position.

48. In a fluid-controlled impact-tool, a cylinder, a valve-block, a retaining-head, means for holding said cylinder, valve-block and retaining-head in assembled position, a controlling-valve in said valve-block, said retaining-head having a longitudinal bore of different diameters, the smaller bore being at the rearward end of the head, a throttle-valve provided with a rearwardly-projecting stem having a diameter corresponding to the bore of the head, said throttle-valve being adapted to be seated in the head when in a rearward position, means for normally holding said throttle-valve in seated position, a grasping-handle adapted for holding the tool to the work, said grasping-handle and stem being adapted for holding said throttle-valve in an unseated position when the tool is pressed to the work.

49. In a fluid-controlled impact-tool, a cylinder, a valve-block, a retaining-head, means for holding said cylinder, valve-block and retaining-head in assembled position, a controlling-valve in said valve-block, said retaining-head having a longitudinal bore of different diameters, the smaller bore being at the rearward end of the head, a throttle-valve provided with a rearwardly-projecting stem having a diameter corresponding to the bore of the head, said throttle-valve being adapted to be seated in the head when in a rearward position, means for closing the forward end of said bore after the throttle-valve and stem are placed in position therein, a passage in said retaining-head for conducting the motive fluid from the throttle-valve to a port in the valve-block, an auxiliary passage leading from said first-mentioned passage to said bore in the head forward of the end of said throttle-valve.

50. In an impact-tool, a cylinder provided with screw-threads, a threaded member or sleeve adapted to engage said cylinder, a valve-block contained in said sleeve, a retaining-head for the valve-block having a flange engaged by said sleeve, a split clamp having a bore of different diameters, one bore adapted to engage said sleeve and the other to engage the cylinder, said clamp being provided with projecting lugs, a threaded bolt engaging said lugs and having a jam-nut thereon.

51. In an impact-tool, a cylinder, a member or sleeve in threaded engagement with said cylinder, a valve-block contained in said sleeve, a controlling-valve in said valve-block, a retaining-head for said valve-block, a split clamp having a bore of different diameters and provided with projecting lugs, a threaded bolt engaging said lugs, one part of said clamp being adapted to grip the cylinder and the other part to grip the sleeve, said sleeve having a flange at its rear end adapted to engage said retaining-head to hold the latter in position.

52. In an impact-tool, a cylinder, a member or sleeve in threaded engagement with said cylinder, a valve-block contained in said sleeve, a controlling-valve in said valve-block, a retaining-head for said valve-block, a plate located between said valve-block and cylinder, a split clamp having a bore of different diameters and adapted to grip said sleeve and cylinder, said sleeve being provided with an internal annular flange at its rear end adapted to engage said retaining-head to hold the latter in position.

53. In an impact-tool, a cylinder provided with a forward head having a longitudinal bore of different diameters, a striker operating in the bore and having a stem of smaller diameter projecting rearwardly into the cylinder, a bushing fitting into said bore to prevent displacement of the striker and having an opening to receive the shank of the working tool, said striker having a series of longitudinal grooves in its largest diameter.

54. In an impact-tool, a cylinder provided with a forward head having a longitudinal bore of different diameters, a striker operating in the bore and having a stem of smaller diameter projecting rearwardly into the cylinder, a bushing fitting into said bore to prevent displacement of the striker and having an opening to receive the shank of the working tool, said striker having a series of longitudinal grooves in its largest diameter and an exhaust-port opening into the bore of the head between the rear end of said bushing and the forward end of said striker.

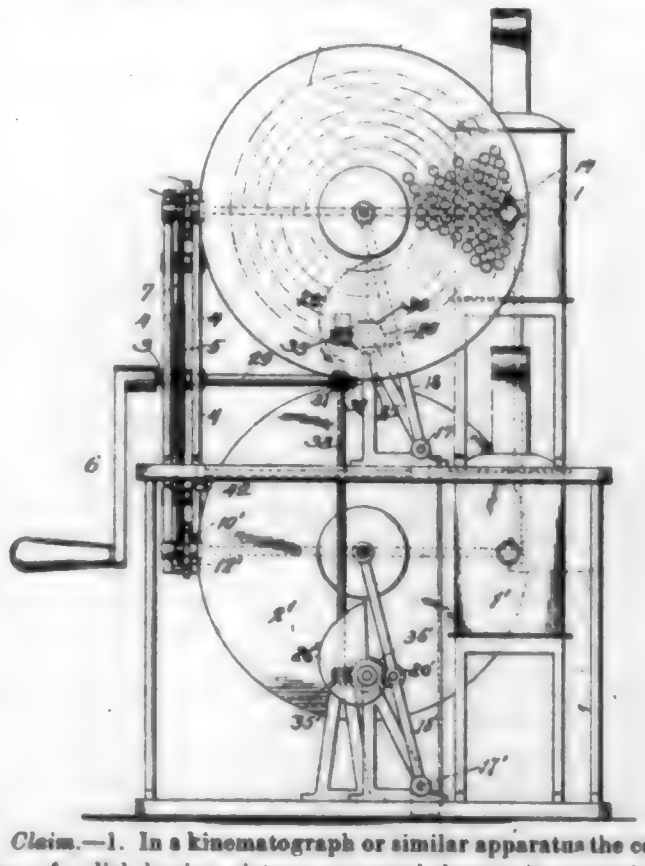
55. In a fluid-controlled impact-tool, a piston-chamber and piston, a tubular valve for controlling the movements of the piston, means controlled by said piston for actuating said valve, a valve-block having a valve-chamber of different diameters and a port opening into said valve-chamber, a retaining-head for the valve-block having a bore of different diameters in alinement with the valve-chamber and separated from the latter by a partition, a throttle-valve located in the larger bore of said head and provided with a rearwardly-projecting stem of a diameter to fit the smaller bore of the head, said partition being adapted to limit the travel of said valve to prevent closing said port in the valve-block.

56. In a fluid-controlled impact-tool, a piston-chamber and piston, a tubular valve for controlling the movements of the piston, means controlled by said piston for actuating said valve, a valve-block having a valve-chamber of different diameters and a port opening into said valve-chamber, a retaining-head for the valve-block having a bore of different diameters in alinement with the valve-chamber and separated from the latter by a partition, a throttle-valve located in the larger bore of said head and provided with a rearwardly-projecting stem of a diameter to fit the smaller bore of the head, said partition being adapted to limit the travel of said valve to prevent closing said port in the valve-block, and a port in the forward side of said partition in alinement with the valve-chamber.

57. In a fluid-controlled impact-tool, a piston-chamber and piston, a tubular valve for controlling the movements of the piston, means controlled by said piston for actuating said valve, a valve-block having a valve-chamber of different diameters and a port opening into said valve-chamber, a retaining-head for the valve-block adapted to limit the travel of the valve to prevent closing said port, and a port in the forward side of the retaining-head in alinement with the valve-chamber which is always open to the interior of the valve.

58. In a fluid-controlled impact-tool, a piston-chamber and piston, a valve-block having a valve-chamber of different diameters, a valve for controlling the movements of the piston having opposing pressure-surfaces of different areas, means controlled by the piston for actuating the valve, a passage leading from one end of the piston-chamber provided with two ports, one of said ports opening into the smaller and the other opening into the larger diameter of the valve-chamber, the latter port being adapted to admit the motive fluid from said passage to the larger area of the valve when the latter is in one position, said port being opened by the valve to exhaust the motive fluid from said passage when the valve is in an opposite position.

814,662. **KINEMATOGRAPH.** WILLIAM H. BAKER, Central Falls, R. I. Filed Feb. 6, 1904. Serial No. 192,311.



Claim.—1. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk at a uniformly-varying rate of speed, and means to continuously advance the axis of said disk toward or away from the optical axis.

2. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk, and means to continuously advance the axis of said disk toward or away from the optical axis at a uniformly-varying rate of speed.

3. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, means to

intermittently rotate said disk at a uniformly-varying rate of speed, and means to continuously advance the axis of said disk toward or away from the optical axis at a uniformly-varying rate of speed.

4. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk at a uniformly-varying rate of speed, and independently-operated means to continuously advance the axis of said disk laterally toward or away from the optical axis.

5. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, of means for intermittently rotating said disk at a uniformly-varying angular speed while maintaining a constant period of exposure, and means for continuously advancing the axis of said disk toward or away from the optical axis at a uniformly-varying rate of speed.

6. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk at a uniformly-varying rate of speed, a cam adapted to advance the axis of said disk toward or away from the optical axis at a continuous uniformly-varying rate of speed, and means to continuously rotate said cam.

7. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, a rack-disk mounted on the same shaft as said picture-disk, the teeth on said rack-disk being arranged in a spiral path similar to, and corresponding in position and number to the pictures on the picture-disk, a toothed wheel engaging said rack-disk and means for intermittently rotating said toothed wheel.

8. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, a wheel adapted to intermittently rotate said disk at a uniformly-varying rate of speed, a cam adapted to continuously advance said disk toward or away from the optical axis, a power-shaft, and independent means connecting said shaft to said wheel and cam respectively to produce the stated movements of the picture-disk.

9. In a kinematograph or similar apparatus the combination with a pivotally-supported frame, of a disk carried by said frame said disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk, and means to simultaneously move said frame on its pivotal support to carry said disk across the optical axis.

10. In a kinematograph or similar apparatus the combination with a pivotally-supported frame, of a disk carried by said frame said disk having pictures arranged thereon in a spiral path, means to intermittently rotate said disk, a cam bearing against said frame and adapted to move it on its pivotal support at a continuous but uniformly-varying rate of speed, and means to continuously rotate said cam.

11. In a kinematograph or similar apparatus the combination with a pivotally-supported frame, of a shaft supported by said frame, a disk having pictures arranged thereon in a spiral path and supported on said shaft, a rack-disk also supported on said shaft, means to continuously move said frame on its pivotal support so as to carry the picture-disk across the optical axis at a uniformly-varying rate of speed, and means to intermittently rotate said rack-disk while said frame is being moved.

12. In a kinematograph or similar apparatus the combination with a pivotally-supported frame, of a shaft supported by said frame, a disk having pictures arranged thereon in a spiral path and supported on said shaft, a rack-disk also supported on said shaft, means to continuously move said frame on its pivotal support so as to carry the picture-disk across the optical axis at a uniformly-varying rate of speed, means to intermittently rotate said rack-disk while said frame is being moved, and means to release said rack-disk from its driving means to permit the parts to be restored to their initial positions.

13. In a kinematograph or similar apparatus the combination of a disk having pictures arranged thereon in a spiral path, a rack-disk having teeth thereon arranged in a similar spiral path, a shaft on which both said disks are mounted, a shaft extending parallel with the plane of said rack-disk and across the axis thereof, a toothed wheel mounted on said last-named shaft in line with the optical axis and engaging said rack-disk, and means to intermittently rotate said wheel.

14. In a kinematograph or similar apparatus the combination with a frame, of a shaft supported therein, arms engaging said shaft, pivotal supports for said arms, a picture-disk carried by said shaft, cams adapted to bear against said arms, a power-shaft and means actuated thereby to impart a continuous rotary movement to said cams to thereby rock said frame to advance the picture-disk toward or away from the optical axis.

15. In a kinematograph or similar apparatus the combination with a pivotally-supported frame, of a shaft carried by said frame, a disk on said shaft having the pictures arranged thereon in a spiral path, a second disk on said shaft having a rack thereon also arranged in a spiral path, a toothed wheel engaging said rack, a power-shaft, a train of gears connected to said shaft adapted to intermittently rotate said toothed wheel, said train comprising a single-tooth driving-wheel meshing with a notched driven wheel, said driven wheel being mounted on the shaft of said rack-engaging wheel.

16. In a kinematograph or similar apparatus the combination of two disks both having pictures arranged thereon in a spiral path, the two sets of pictures constituting a single group with successive pictures alternating on the disks, means for exhibiting a picture first on one disk and then on the other so as to successively present to view the pictures of a group, and means to intermittently rotate said disks at a uniformly-varying rate of speed, and means to continuously advance the axes of said disk toward or away from the optical axes.

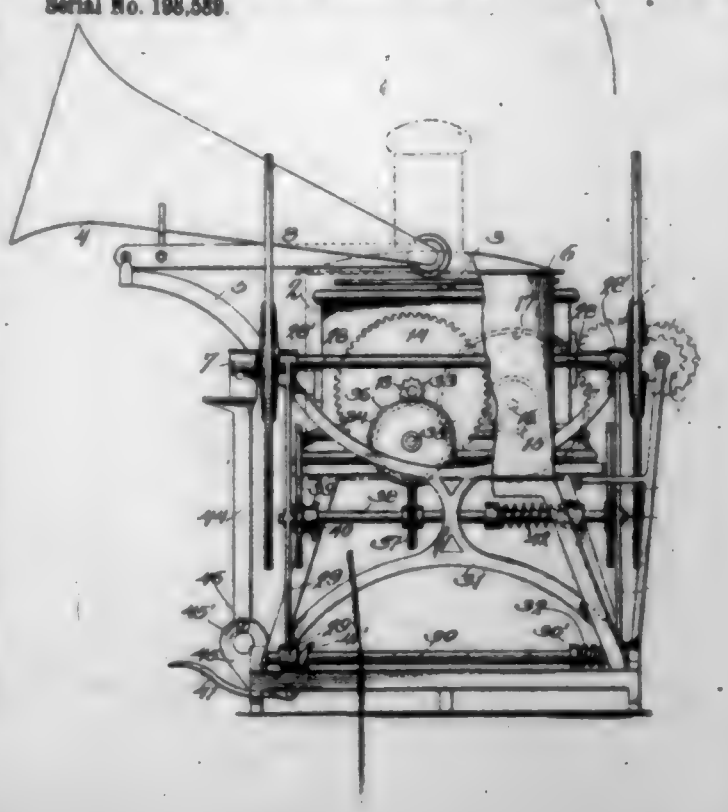
17. In a kinematograph or similar apparatus the combination of two disks both having pictures arranged thereon in a spiral path, the two sets of pictures constituting a single group with successive pictures alternating on the disks, means for intermittently rotating said disks alternately, said means comprising independent trains of gears connected to the power-shaft said trains including single-toothed driving-wheels set diametrically opposite.

18. In a kinematograph or similar apparatus the combination of two disks both having pictures arranged thereon in a spiral path, the two sets of pictures constituting a single group the successive pictures alternating on the disks, means for intermittently rotating said disks alternately at a uniformly-varying rate of speed, and means to continuously advance the axes of said disks toward or away from the optical axis at a uniformly-varying rate of speed.

19. In a kinematograph or similar apparatus the combination of two disks having pictures arranged thereon in a spiral path, the two sets of pictures constituting a single group with successive pictures alternating on the disks, independent pivotally-supported frames on which said disks are mounted, a power-shaft, independently-operated means connected to said shaft for intermittently rotating said disks alternately at a uniformly-varying rate of speed, independent sets of cams bearing against said frames and adapted to advance said disks toward or away from the optical axis at a uniformly-varying rate of speed, and means actuated by said power-shaft to continuously rotate said cams.

20. A kinematograph or similar apparatus comprising two projecting lanterns, means to support picture-disks in proper relation to said lanterns, said disks having pictures arranged thereon in a spiral path the two sets of pictures constituting a single group with successive pictures alternating on the disks, independent cams adapted to advance said disks continuously at a uniformly-varying rate of speed toward or away from the optical axis, worm-gearing and means actuating the same to impart a continuous simultaneous rotary movement to said cams, and means to intermittently rotate said disks alternately at a uniform varying rate of speed.

814,663. **PICTURE AND SOUND REPRODUCING APPARATUS.** WILLIAM H. BAKER, Central Falls, R. I. Filed Mar. 17, 1904. Serial No. 198,589.



Claim.—1. In an apparatus of the character described the combination of a picture-exhibiting mechanism comprising a disk having pictures arranged thereon in a spiral path, a sound-reproducing mechanism comprising a sound-record, a motor, means actuated by said motor to impart to said sound-record a continuous rotary movement, and means also actuated by said motor to impart to said picture-disk an intermittent rotary movement at a uniformly-varying rate of speed, and a continuous lateral movement toward or away from the optical axis.

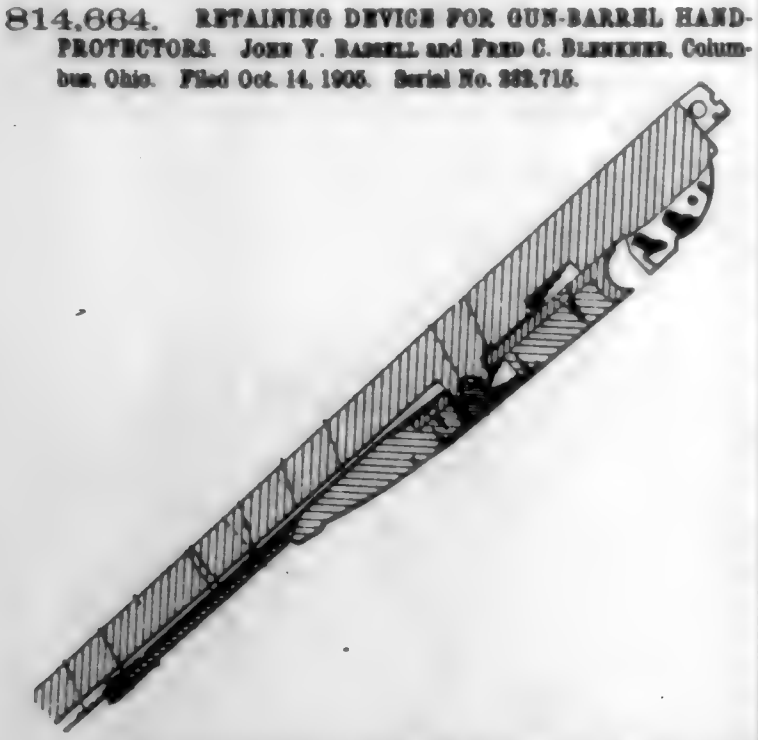
2. In an apparatus of the character described the combination of a picture-exhibiting mechanism comprising a disk having pictures arranged thereon in a spiral path, a sound-reproducing mechanism comprising a sound-record, a motor, means actuated by said motor to impart to said sound-record a continuous rotary movement, and means also actuated by said motor to intermittently rotate said picture-disk, and also to move said disk laterally toward or away from the optical axis continuously at a uniformly-varying rate of speed.

3. In an apparatus of the character described the combination of a picture-exhibiting mechanism comprising a disk having pictures arranged thereon in a spiral path, a sound-reproducing mechanism comprising a sound-record, a motor, means actuated by said motor to impart to said sound-record a continuous rotary movement, and means also actuated by said motor to intermittently rotate said picture-disk at a uniformly-varying rate of speed, and simultaneous with said rotary movement to continuously advance said disk laterally toward or away from the optical axis at a uniformly-varying rate of speed.

4. In an apparatus of the character described the combination of a picture-exhibiting mechanism comprising a disk having pictures arranged thereon in a spiral path, a sound-reproducing mechanism comprising a sound-record, a motor and means actuated thereby to impart a continuous rotary movement to said record, a shaft geared to said motor, a train of gears connected to said shaft to intermittently rotate said disk at a uniformly-varying rate of speed, and a second train of gears connected to said shaft to continuously advance said disk toward or away from the optical axis at a uniformly-varying rate of speed

5. In an apparatus of the character described the combination of a sound-reproducing mechanism comprising a sound-record, a motor and means actuated thereby to impart a continuous rotary movement to said record, a picture-exhibiting mechanism comprising a disk having pictures arranged thereon in a spiral path, a pivotally-supported frame for said disk a rack-disk also supported by said frame on the same shaft as the picture-disk, a train of gears actuated by said motor to intermittently rotate said rack-disk and thereby the picture-disk at a uniformly-varying rate of speed, cams adapted to bear against said pivoted frame and a train of gears also connected to said motor to continuously rotate said cams so as to rock said frame on its support to advance the picture-disk toward or away from the optical axis at a uniformly-varying rate of speed.

814,664. **RETAINING DEVICE FOR GUN-BARREL HAND-PROTECTORS.** JOHN Y. BASSELL and FRED C. BLENKNER, Columbus, Ohio. Filed Oct. 14, 1905. Serial No. 282,715.



Claim.—1. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of longitudinally-adjustable means for retaining the hand-protector in position.

2. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of extensible means for retaining the hand-protector in position.

3. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of an extensible retaining device having one end secured to the barrels and the other end engaged with the hand-protector.

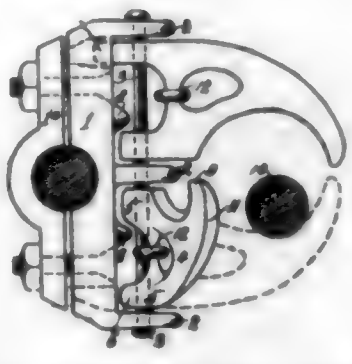
4. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of an extensible retaining device having one end secured to the barrels and the other end engaged with the hand-protector, and a fastening device carried by the retaining device and engaging with the hand-protector.

5. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of a longitudinally-adjustable retaining device having one end secured to the barrels and the other end engaged with the hand-protector.

6. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of a retaining device comprising adjustably-connected sections, one of which is connected in fixed relation to the barrels and the other having engagement with the hand-protector.

7. The combination with the barrels of a shotgun and a hand-protector arranged thereon, of a retaining device comprising adjustably-connected sections, one of which is connected in fixed relation to the barrels and the other having engagement with the hand-protector, and a fastening carried by the last-named section adapted to engage with the hand-protector.

814,665. **GATE-LATCH.** ELWOOD O. BAYLOR, Adrian, Mich. Filed June 14, 1905. Serial No. 265,197.



Claim.—1. In a gate-fastening device, a finger curved laterally at its outer end to form a hook and having its outer under side transversely inclined, and means for pivotally supporting the finger in an upwardly-inclined position, the arrangement being such that the finger swings vertically upon its pivot.

2. In a gate-fastening device, a plate adapted for engagement with its support, transversely-bored horizontally-arranged lugs on the plate, a pintle supported in the bore of the lugs, a latch pivotally mounted upon the pintle, said latch being horizontally curved on one side, as a hook, and stops which limit the movement of the latch upon its pivot.

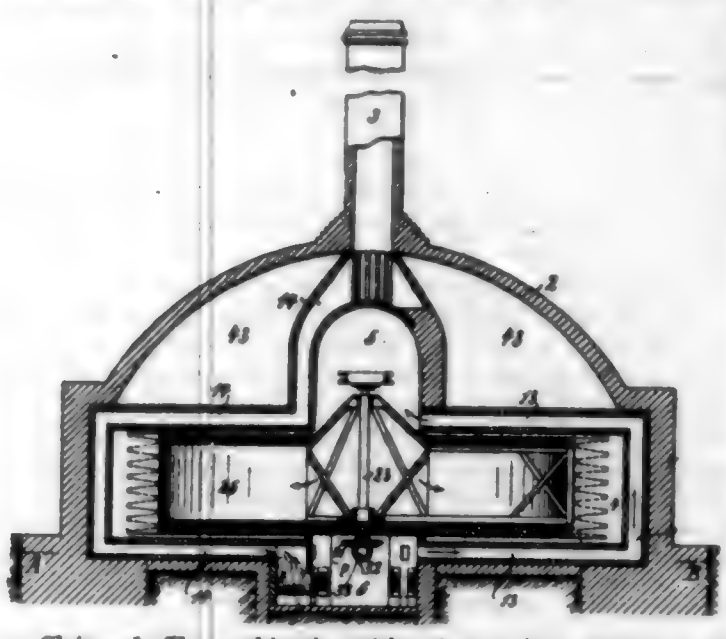
3. In a gate-fastening device, a plate, a pair of latches pivotally connected side by side at their inner ends to the plate, the outer ends of the latches being curved toward each other, and stops which limit the swing of the latches upon their pivots.

4. In a gate-fastening device, a plate adapted for engagement with its support, horizontally-projecting lugs on the plate, said lugs having transverse bores arranged in alinement with each other, a pintle in said bores, a pair of latches pivoted side by side upon the pintle and being curved toward each other at their outer ends, and means for limiting the swing of the latches upon their pivots.

5. In a gate-fastening device, a plate, three lugs on the plate having transverse bores arranged in alinement with each other, the bore of the middle lug being laterally elongated, a pintle in said bores, a latch pivoted upon said pintle at one side of the middle lug, a latch pivoted upon said pintle at the opposite side of said lug, said two latches being curved toward each other at their free ends, and means for limiting the swing of the latches upon their pivots.

6. In a gate-fastening device, a pair of fingers curved laterally at their outer ends to form hooks, the outer under sides of the hooks being transversely inclined, means for pivotally supporting said fingers, one above the other, in an upwardly-inclined position, said fingers being arranged to swing vertically upon their pivots, and connections between the upper and lower fingers which cause them to swing in harmony upon their pivots combined with a stop which limits the swing of a gate beyond its closed position.

814,666. **DRYING APPARATUS.** WILHELM BELL, Burgbrohl, Germany. Filed Aug. 23, 1904. Serial No. 221,532.



Claim.—1. The combination with a circular drying-chamber, of means for heating said drying-chamber, a drum perforated on the periphery and mounted to turn around a vertical axis in said circular drying-chamber, a plurality of perforated rings on the periphery of said drum to form a plurality of grooves adapted to receive goods or products to be dried, a plurality of detachable perforated straps for securing the goods or products, and means for driving said drum.

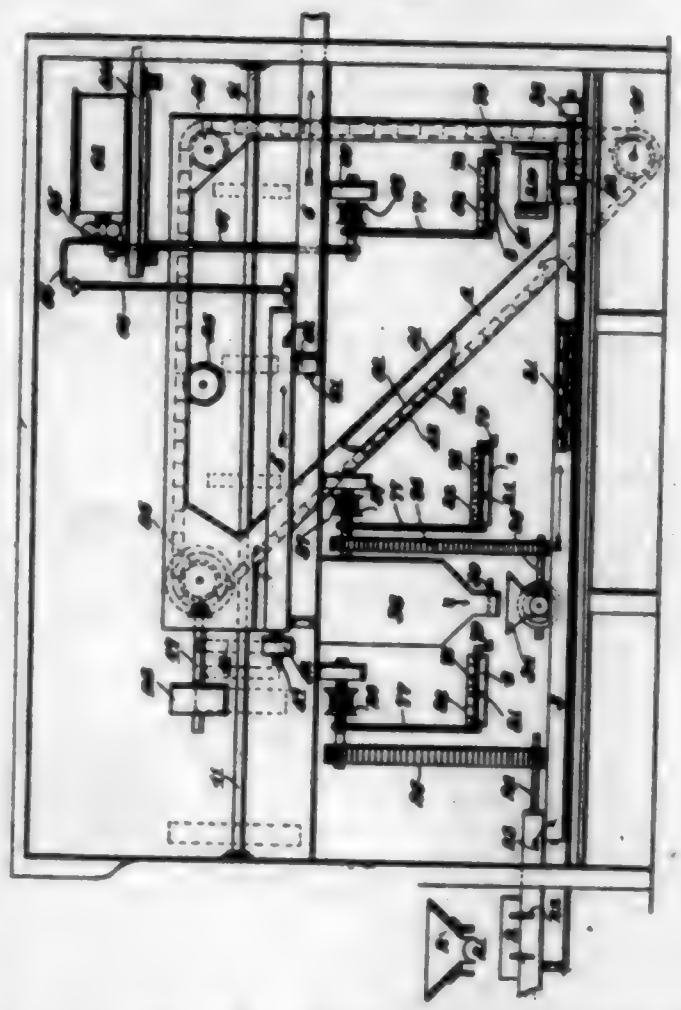
2. In a drying apparatus, the combination with a circular drying-chamber, of means for heating said drying-chamber, a drum perforated on the periphery and mounted to turn around a vertical axis in said circular drying-chamber, a plurality of perforated rings on the periphery of said drum to form a plurality of grooves adapted to receive goods or products to be dried, a plurality of perforated detachable straps for securing the goods or products, a plurality of ventilating-ladles within said drum and adapted to force the hot air through the drum-wall, and means for driving said drum.

3. In a drying apparatus, the combination with a drum mounted to turn around a vertical axis in a circular drying-chamber and having its peripheral wall made of wire fabric, of means for rotating said drum, a plurality of rings of wire fabric arranged on the periphery of said drum to form a plurality of grooves adapted to receive goods or products to be dried, a plurality of detachable straps of wire fabric strengthened with wire ropes for securing the goods or products in the drum-grooves, an operating-drum adapted to wind on said plurality of detachable straps from said drum and to apply same on the latter, a plurality of ventilating-ladles inside said drum and adapted to force the hot air through the drum-wall, and means for heating the circulating air.

4. In a drying apparatus, the combination with a circular drying-chamber having a central dome, of a central space beneath said circular drying-chamber, an air-shaft leading from without to said central space, a plurality of furnaces around said central space, a plurality of flues leading from said plurality of furnaces radially in the floor, vertically in the peripheral wall and radially in the cover of said circular drying-chamber and upward in the wall of said central dome to the chimney, a plurality of air-channels on the sides of said plurality of flues and communicating with the upper part of said central space and with said central dome, a plurality of inclined air-channels communicating with the lower part of said central space and with said circular drying-chamber at the periphery, a drum perforated on the periphery and mounted to turn around a vertical axis in said circular drying-chamber, a plurality of perforated rings on the periphery of said drum to form a plurality of grooves adapted to receive goods or products to be dried, a plurality of perforated detachable straps for securing the goods or products, a plurality of ventilating-ladles inside said drum and adapted to force the hot air through the drum-wall, a charging and discharging door in the wall of said circular drying-chamber, an operating-drum adapted to wind on said plurality of detachable straps from said drum and to apply same on the latter, and means for rotating said drum at a convenient varying speed.

814,667. **MIXING PLANT.** CHARLES E. BENNINGS, Stamford, Tex., assignor to Eric Pierson Swenson, New York, N. Y. Filed June 20, 1905. Serial No. 267,744.

Claim.—1. In a mixing plant, a conveying and mixing trough, means for continuously feeding a plurality of different materials to said trough, a second mixing and conveying trough, means for delivering the mixed contents of said first-named trough to said last-named trough, means for feeding a liquid material to said last-named trough, and independent means for varying the quantity of each of said materials fed to said troughs.



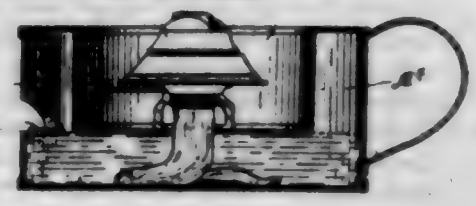
2. In a mixing plant, a conveying and mixing trough, means for continuously feeding a plurality of different materials to said trough, a second mixing and conveying trough, means for delivering the mixed contents of said first-named trough to said last-named trough, means for feeding a liquid material to said last-named trough, and independent means including an indicating-gage for varying the quantity of each of said materials fed to said troughs without interruption of the feeding and mixing operations.

3. In a mixing plant, a conveyer-trough, a rotary feed-screw in said trough, and a hopper movable longitudinally of said trough and having its forward end formed with a projection extending downwardly into said trough and recessed to fit the periphery of said screw.

4. In combination, a power-transmission device, means for varying the speed of the driven portion of said device including a threaded shaft, and an indicating device comprising a second threaded shaft, means connecting said shafts for simultaneous movement, manual means for turning said last-named shaft at will, a nut longitudinally movable on said last-named shaft, and a scale on which said nut runs.

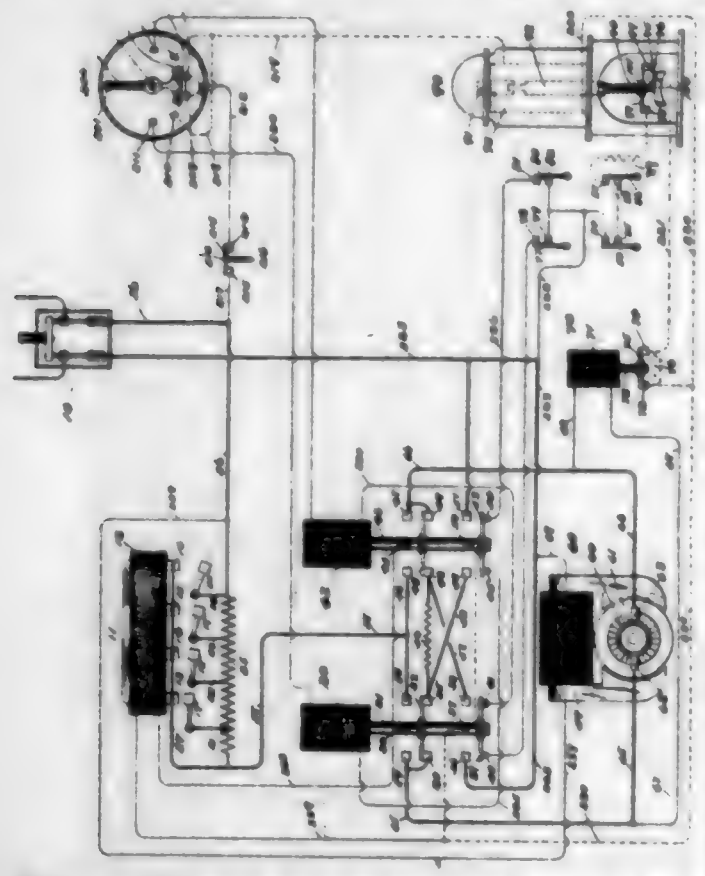
5. In combination with a power-transmitting device comprising driving and driven pulleys and levers for simultaneously varying their effective diameters, a right and left screw for moving said levers, a manually-operated threaded shaft for turning said screw, a nut restrained from rotary motion and movable longitudinally on said shaft, and a scale over which said nut passes, said nut and said scale together forming an indicating-gage for determining the speed of the driven pulleys.

814,668. **OIL-LAMP.** HERBERT BOSCO, Cobourg, Canada. Filed June 23, 1905. Serial No. 266,632.



Claim.—In a lamp, a bowl having a central recess having its bottom on a line with the oil-level, and its vertical walls forming a chamber above the oil-level, said bottom having a central orifice therein, a screw-cap situated over said orifice and extending up from the said bottom, a burner designed to be screwed into the cap and screw-plugs located in the bowl at the oil-level, said plugs being outside the recess.

814,669. **ELEVATOR-BRAKE.** JOHN B. BOYCE, New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 11, 1905. Serial No. 240,604.



Claim.—1. The combination with an electric motor, of a brake therefor, and manually-controlled means for applying the brake with full power or with different degrees of power depending upon the speed of the motor.

2. The combination with an electric motor, of an electric brake, and means for automatically easing off the brake as the motor comes to rest.

3. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, and automatic means depending upon the speed of the motor for varying the current in such magnet.

4. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, a resistance in series with said magnet, and means depending upon the speed of the motor for automatically short-circuiting the resistance.

5. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, a resistance for said magnet, a source of electrical supply, manually-operable means for connecting said magnet directly to the source of electrical supply or connecting the magnet to the source of supply through the resistance, and means depending upon the speed of the motor for automatically short-circuiting such resistance.

6. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, resistances adapted to be connected in series with said magnet, a source of electrical supply, manually-operable means for connecting the magnet directly to the source of electrical supply or for connecting the magnet to the source of electrical supply through said resistances, and means depending upon the speed of the motor for short-circuiting part of said resistances.

7. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, resistances adapted to be connected in series with said magnet, a source of electrical supply, manually-operable means for connecting the magnet directly to the source of electrical supply or for connecting the magnet to the source of electrical supply through said resistances, automatic means for cutting off all current which flows to the magnet except that which flows through said resistances, and means depending upon the speed of the motor for short-circuiting part of said resistances.

8. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, resistances adapted to be connected in series with said magnet, a source of electrical supply, manually-operable means for connecting the magnet directly to the source of electrical supply or for connecting the magnet to the source of electrical supply through said resistances, automatic means for cutting off the current which flows to the magnet except that which flows through said resistances, means depending upon the speed of the motor for short-circuiting part of said resistances, and additional automatic means for cutting off all current from the magnet.

9. The combination with an electric motor, of a brake therefor, an electromagnet arranged to release said brake, resistances adapted to be connected in series with said magnet, a source of electrical supply, manually-operable means for connecting the magnet directly to the source of electrical supply or for connecting the magnet to the source of electrical supply through said resistances, automatic means for cutting off the current from said magnet except that which flows through the resistances, means depending upon the speed of the motor for short-circuiting one of said resistances, additional automatic means for cutting off all current from said magnet.

814,670. **PENCIL-HOLDER.** EDWARD J. BRANDT, Watertown, Wis., assignor to Brandt Cashier Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 3, 1905. Serial No. 253,462.



Claim.—1. A pencil-holder comprising a tubular member having a longitudinally-slotted cylindrical inner end portion provided with external protuberances and also with inwardly-turned projections adapted to bite into the body of the pencil, and a sheath or outer casing adapted to telescope over said cylindrical inner end of the holder and through pressure on said protuberances compress the holder into gripping engagement with the pencil.

2. A pencil-holder comprising a member having a pencil-receiving bore and provided exteriorly with a seat, a tubular clamping member having a seat-engaging portion adapted to said seat and slotted to render it expansible and contractible, and a sheath or tubular casing adapted to have telescopic engagement with said clamping member, whereby the latter is contracted into gripping engagement with said pencil, substantially as described.

3. A pencil-holder comprising a member having a pencil-receiving bore and provided exteriorly with a circumferentially-extending seat, a tubular clamping member having an inwardly-projecting seat-engaging portion adapted to said seat and slotted to render it expansible and contractible, and a sheath or tubular casing adapted to receive an eraser at one end and at its other end adapted to have telescopic engagement with said clamping member, whereby the latter is contracted into gripping engagement with the pencil, substantially as described.

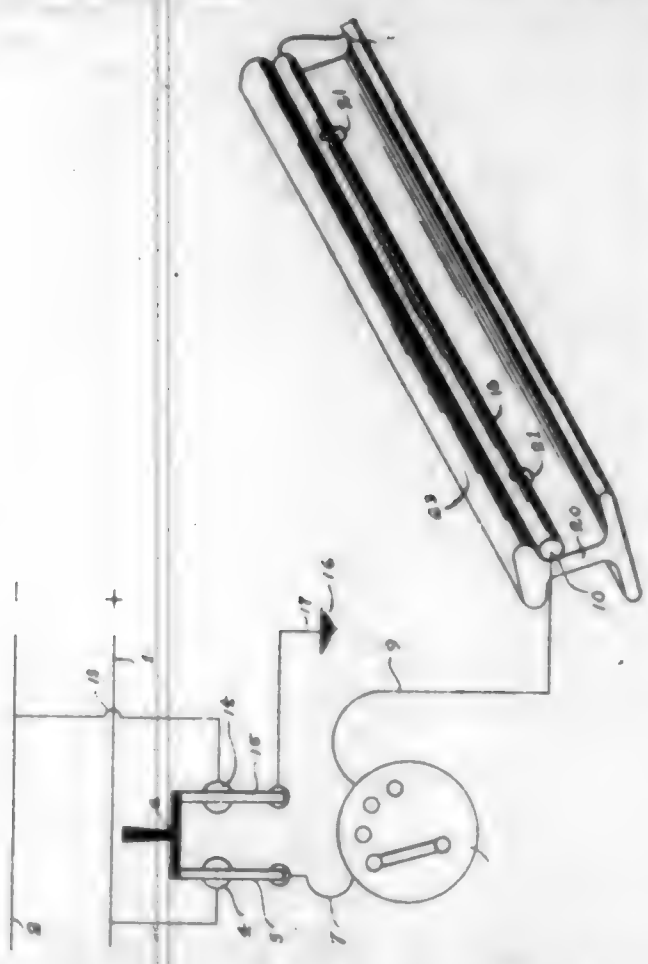
814,671. **SYSTEM OF PREVENTING THE COLLECTION OF ICE ON RAILS.** JEREMIAH D. BURNS, Washington, D. C., assignor of twenty-four one-hundredths to Lincoln Guynn, Wabash, Ind., and William J. Sheetz, Washington, D. C. Filed Feb. 7, 1905. Serial No. 244,549.

Claim.—1. In a system of this character the combination with electric feed-wires and the rails of a railway system, of a metallic support carried by the web of the rails, and means for increasing the temperature of the rails to melt or prevent snow or ice from collecting on the rails carried by said supports above the same and directly below the tread of the rail, the said means being connected directly to the feed-wires, for the purpose set forth.

2. In a system of this character, the combination with electric feed-wires and the rails of a railway system, of metallic supports carried by the webs of the rails, a metallic tube or pipe removably supported in said supports, a resistance-wire incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the resistance-wire, and means for connecting the wire to said resistance-wire.

3. In a system of this character, the combination with electric feed-wires and the rails of a trolley system, of metallic supports carried by the web of the rails and a metallic tube or pipe removably supported in said supports, a resistance-wire incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and sur-

rounding the resistance-wire, and means for connecting the feed-wire to said resistance-wire.



4. In a system of this character, the combination with electric feed-wires and the rails of a trolley system, of metallic supports carried by the web of the rails, a metallic tube or pipe removably supported in said supports, a coiled resistance-wire incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the coiled resistance-wire, and means for connecting the feed-wires to said resistance-wire.

5. In a system of this character, the combination with feed-wires and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic envelop detachably carried by the supports, and a resistance-wire so mounted within the envelop as to be free from the action of oxygen thereon so that the wire cannot be burned out and means for connecting the feed-wires to said resistance-wire.

6. In a system of this character, the combination with feed-wires and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic envelop detachably carried by the supports, a coiled resistance-wire so mounted within the envelop as to be free from the action of oxygen thereon so that the wire cannot be fused, and means for connecting the feed-wires to said resistance-wire.

7. The combination with bus-bars and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic tube or pipe removably supported by the supports, a resistance-wire incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the resistance-wire and conductors for electricity connected to the bus-bars and the resistance-wire.

8. In a system of this character, the combination with bus-bars and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic tube or pipe removably supported by the said supports, a coiled resistance-wire incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the coiled resistance-wire, and conductors for electricity connected to the bus-bars and resistance-wire.

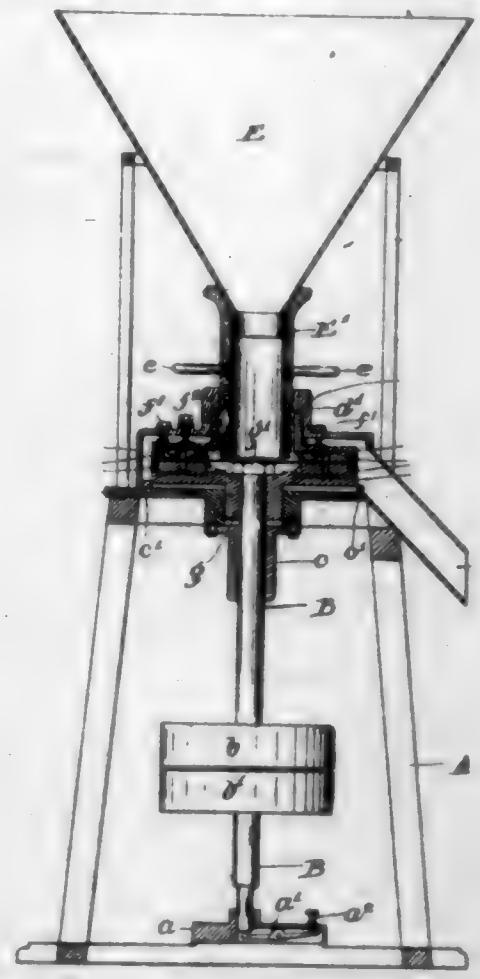
9. In a system of this character, the combination with electric feed-wires and the rails of a trolley system, of metallic supports carried by the web of the rails, a metallic tube or pipe removably attached to the supports, a resistance-wire of low conductivity incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the resistance-wire and means for connecting the feed-wire to said resistance-wire.

10. In a system of this character the combination with feed-wires and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic envelop detachably supported by the supports, a resistance-wire of low conductivity so mounted within the envelop as to be free from the action of oxygen thereon so that the wire cannot be fused and means for connecting the feed-wires to said resistance-wire.

11. The combination with bus-bars and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic pipe or tube removably attached to the rails, a resistance-wire of low conductivity incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the resistance-wire, and conductors of electricity connected to the bus-bars and the resistance-wire.

12. In a system of this character, the combination with bus-bars and rails of a trolley system, of metallic supports carried by the web of the rails, a metallic tube removably attached to the supports, a coiled resistance-wire of low conductivity incased within said tube or pipe, a plastic non-conductor of electricity and conductor of heat forming a homogeneous mass within the tube or pipe and surrounding the coiled resistance-wire, and conductors for electricity connected to the bus-bars and the resistance-wire.

814,672. MILL. JULIAN CIHALEWSKI, Chicago, Ill., assignor to J. Cihalewski Farm Hill Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 23, 1905. Serial No. 242,250.



Claim.—In a device of the class described, the combination with a base-plate having an annular rib upon its upper face, of a hood fitted upon said rib and extending up from the base-plate, a stationary millstone adjustably supported by said hood and a rotatably-mounted millstone fitting the inner edge of said rib.

814,673. RAILWAY-SWITCH. PHILO CLEVELAND, Seattle, Wash. Filed Mar. 29, 1905. Serial No. 252,753.

Claim.—1. In a railway-switch, the combination of a switch-point, and the pivot-pin thereof, a bar fixed to said pivot-pin, a pivotally-mounted lever, links connecting the opposite free portions of said bar and lever respectively, and means to be actuated by a device on a car for swinging said lever in opposite directions.

2. In a railway-switch, the combination with a rail, the switch-point, and the pivot-pin thereof, a bar fixed to said pivot-pin, a lever pivoted intermediate its ends, links pivoted to said bar and lever respectively, rods connected to said lever and having their free ends ar-

ranged adjacent the rail, arms rigidly secured to the free ends of said rods and being provided with cam-faces, and fixed means engaging said cam-faces whereby the said arms are lowered when moved.



3. In a railway-switch, the combination of a rail, and the switch-point, slide-arms arranged along the side of the rail for movement longitudinally thereof and being formed with convex cam-faces, means secured to said rail and engaging said cam-faces whereby said arms are lowered when they are moved, springs for normally holding said arms elevated and mechanism actuated by said slide-arms for moving the switch-point.

4. In a railway-switch, the combination of a rail, the switch-point, and the pivot-pin thereof, a bar secured to said pivot-pin, a lever pivoted to the under face of the rail, links pivoted to said lever and bar, rods projecting through apertures in said lever and having nuts bearing on one face thereof, springs carried by the rods and bearing on the other face of said lever, and means adapted to be actuated by a device on the car for reciprocating said rods.

5. In a railway-switch, the combination of a rail and the switch-point, a lever pivoted to the rail and being formed with apertures, casings extending from the lever, rods arranged in said casings and projecting through the apertures in said lever and having a yielding connection therewith, means actuated by said lever for swinging the switch-point, and means adapted to be actuated by a device on the car for reciprocating said rods.

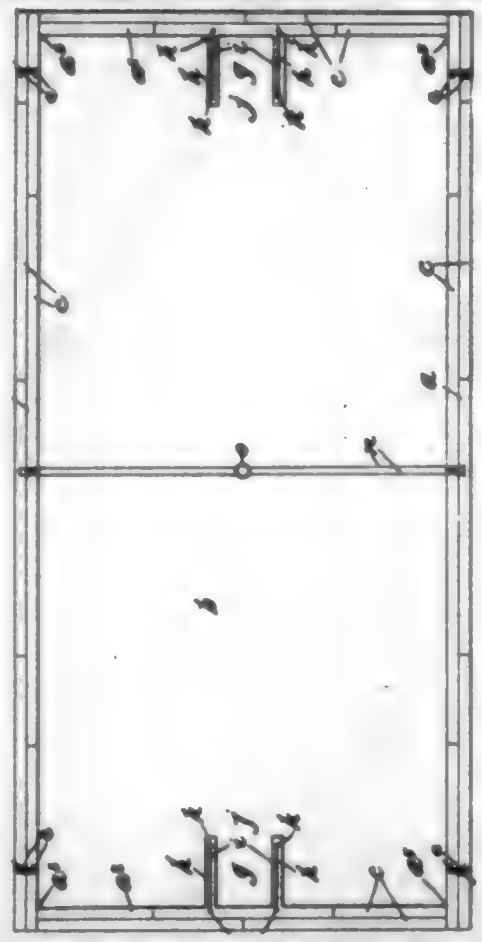
6. In a railway-switch, the combination of a rail, and the switch-point, slide-arms arranged alongside of the rail for movement longitudinally thereof and being formed with cam-faces, means engaging said cam-faces whereby said arms are lowered when they are moved, resilient means for normally holding said arms elevated, and mechanism actuated by said slide-arms for moving the switch-point.

7. In a railway-switch, the combination with a rail, and a switch-point, of a lever pivoted to said rail and being formed with apertures, means actuated by said lever for moving the switch-point in opposite directions, slide-arms adapted to be moved by a device on a car, said arms projecting through the aperture of said lever, and resilient means arranged on said slide-arms and bearing on the forward face of said lever.

814,674. WATER-POLO APPARATUS. John F. Conkling, Hawley, Pa. Filed May 4, 1905. Serial No. 258,709.

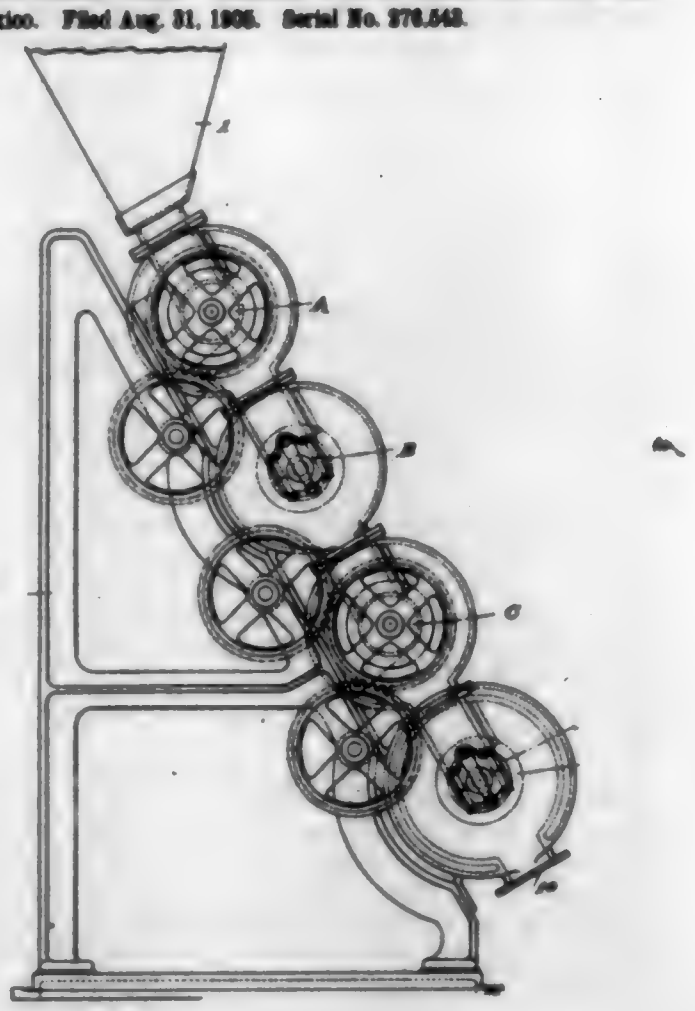
Claim.—1. A frame for use in playing games on water, said frame being composed of parallel side and parallel end members consisting of separate parts detachably connected and provided at their opposite ends with goals which open toward the center of the frame, said frame being also provided centrally with a transverse raised device for dropping a ball in the middle of the frame, substantially as shown and described.

2. A frame for use in playing games on water, said frame being composed of parallel side and parallel end members consisting of separate parts detachably connected and provided at their opposite ends with goals which open toward the center of the frame, said frame being also provided centrally with a transverse raised device for dropping a ball in the middle of the frame, consisting of upright side members and wires or cords connected with the tops thereof and extending transversely of the frame and connected at the center of the frame with a ring, substantially as shown and described.



3. A frame of the class described designed for use in marking off a "field" on water within which to play a game, said frame being composed of separate detachably-connected parts, and being oblong in form and provided at each end with goals which open inwardly, said frame being also provided transversely of the middle thereof with means for dropping a ball centrally thereof, substantially as shown and described.

814,675. PROCESS OF EXTRACTING RUBBER AND THE LIKE FROM WOOD. Antonio V. de la Corte, San Luis Potosi, Mexico. Filed Aug. 31, 1905. Serial No. 276,543.



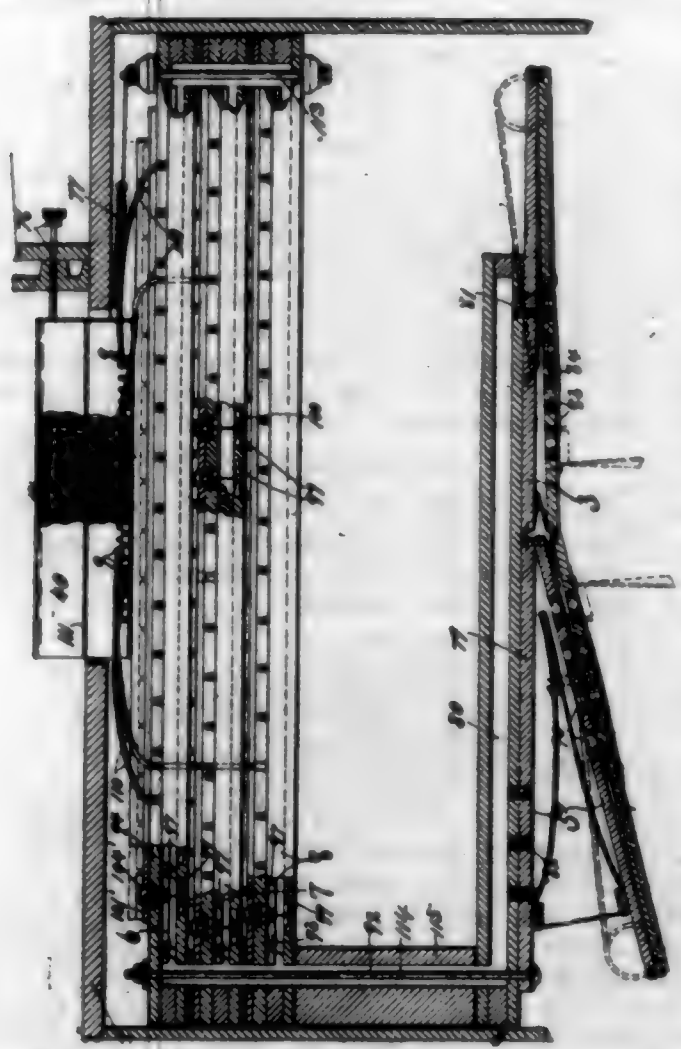
Claim.—1. The herein-described process for extracting rubber or caoutchouc-like substances contained in certain woods, said process consisting in subjecting the material to a series of dry grindings under pressure, and to the influence of heat, whereby the rubber is caused to separate mechanically from the wood.

2. The herein-described process for extracting rubber or caoutchouc-like substances contained in certain woods said process consisting in subjecting the material to a series of dry grindings under pressure to mechanically separate the rubber therefrom and in heating said material during the process of grinding or rubbing to aid the agglomeration of the particles of separated rubber.

3. The herein-described process for extracting rubber or caoutchouc-like substances contained in certain woods said process consisting in breaking the wood to be treated into suitable size and subjecting this broken material to repeated dry grindings under pressure and under the influence of heat.

4. The herein-described process for extracting rubber or caoutchouc-like substances contained in certain woods, said process consisting in breaking the wood to be treated into suitable size, subjecting this material to successively finer dry grindings and during the final grinding to pressure and heat.

814,676. PLAYING APPARATUS FOR MUSICAL INSTRUMENTS. Lewis B. Doman, Elbridge, N. Y., assignor to Amphion Piano Player Company, Elbridge, N. Y., a Corporation of New York. Filed May 31, 1902. Serial No. 109,692.



Claim.—1. In a pneumatic self-playing musical instrument the combination of a plurality of separable valve-shelves having exhaust-chambers and registering wind-ports for direct communication between said exhaust-chambers and a means passed through said registering ports for clamping the valve-shelves together.

2. In a pneumatic self-playing musical instrument the combination of a plurality of separable valve-shelves disposed one above the other and provided with registering wind-ports in contiguous sides, said valve-shelves having exhaust-chambers communicating with each other through said registering wind-ports and a clamping-bolt passed through the registering wind-ports for clamping the shelves together.

3. In a pneumatic self-playing musical instrument a plurality of separable valve-shelves each inclosing a group of valves and an exhaust-chamber which is common to the valves which it incloses, said shelves having registering wind-ports for direct communication between the exhaust-chambers.

4. In a pneumatic self-playing musical instrument a plurality of separable valve-shelves each inclosing a group of valves and an exhaust-chamber which is common to the valves which it incloses, said shelves having registering wind-ports for direct communication between the exhaust-chambers, and means passed through said registering ports for clamping the shelves together.

5. In a pneumatic self-playing musical instrument a plurality of separable valve-shelves each having an exhaust-chamber inclosing a definite group of valves, said shelves being provided with registering wind-ports in contiguous sides near one end for direct communication between the exhaust-chambers and means for clamping said shelves together.

6. In an instrument of the class described, a plurality of separable valve-shelves spaced apart one above the other and having connected registering wind-ports in contiguous sides for direct communication between the interiors of said shelves, each shelf inclosing a definite group of valves, and an exhaust-chamber common to the valves which it incloses and including a valve-board coextensive with its exhaust-chamber, said valve-board having a series of channels one for each valve, in combination with a series of striker-pneumatics each in communication with one of said channels.

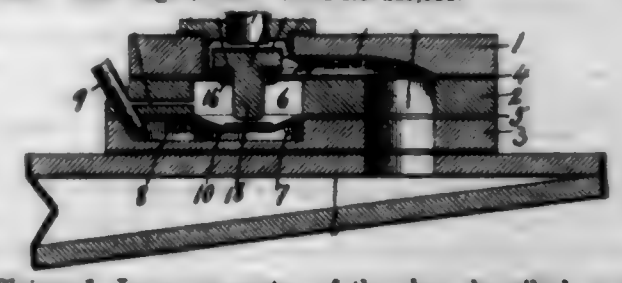
7. In an instrument of the class described, a plurality of separable valve-shelves each containing a definite group of valves and an exhaust-chamber common to the valves which it incloses, said valve-shelves having registering wind-ports for direct communication between said exhaust-chambers, each valve-shelf including a valve-board having a top plate provided with a series of ports opening to atmosphere and a series of tubular valve-seats each adjustably mounted in one of said ports.

8. In an instrument of the class described, a plurality of valve-shelves spaced apart one above the other, each containing a definite group of valves and an exhaust-chamber common to the valves which it incloses, said valve-shelves having connected registering wind-ports for direct communication between the exhaust-chambers, a group of primary pneumatics one for each valve, a series of tubes permanently secured in each valve-shelf and each connected to one of the primary pneumatics, each of the upper shelves having an opening therethrough in vertical alinement with the tubes of the next lower shelf, in combination with a tracker and flexible conduits leading from the tracker through the openings in the upper shelves and attached to the tubes of the lower shelves, whereby the adjacent ends of the flexible conduits are held in fixed relation to the tubes to which they are attached.

9. In an instrument of the class described, a plurality of separable valve-shelves each inclosing a definite group of valves and a corresponding number of primary pneumatics and also having an exhaust-chamber common to the valves which it incloses, said shelves having registering wind-ports for direct communication between the exhaust-chambers, and means to clamp the shelves together, in combination with a tracker having its ducts connected to their respective primary pneumatics, and a series of striker-pneumatics each controlled by one of said valves.

10. In a piano-player, the combination with a series of finger-levers each operatively connected with a motor and an individual valve mechanism for controlling the same; of a plurality of separable valve-shelves, each inclosing a definite number of said valves and each comprising a vacuum-chamber common to the valves which it incloses; and, registered wind-ports in the respective valve-shelves, for direct communication between said vacuum-chambers, substantially as set forth.

814,677. PNEUMATIC PLAYING APPARATUS FOR MUSICAL INSTRUMENTS. Lewis B. Doman, Elbridge, N. Y., assignor to Amphion Piano Player Company, Elbridge, N. Y., a Corporation of New York. Filed Aug. 8, 1904. Serial No. 219,938.



Claim.—1. In an apparatus of the class described, a valve-board having an air-passage, and a thin layer of different material across the passage and adhesively secured to the valve-board, a metal eyelet through said layer for forming an air-port, and a valve guided in the eyelet.

2. In an apparatus of the class described, a wind-chest having an exhaust-chamber common to and inclosing a plurality of primary pneumatics, a comparatively thin body of pasteboard adhesively secured to the top face of the wind-chest and extending across the exhaust-chamber, and a valve-board adhesively secured to the top face of the pasteboard whereby the adhering surfaces are made rigid with each other while the intervening portion of the pasteboard yields under the uneven shrinkage or swelling of the valve-board and wind-chest.

3. In an apparatus of the class described, a valve-board, and a thin layer of cardboard or equivalent material adhesively applied to one face of the valve-board, and an eyelet through said layer forming an air-port.

4. In an apparatus of the class described, a valve-board of wood having a bottom of paper or equivalent material provided with a metal eyelet therethrough for forming an air-port.

5. In an apparatus of the class described, a wind-chest having an exhaust-chamber, in combination with a thin layer of pasteboard across the chamber and provided with a metal eyelet forming an air-port.

6. In an apparatus of the class described, a valve-board having a bottom of pasteboard or equivalent material provided with an eyelet which forms an air-port and valve-seat, in combination with a valve guided in the eyelet.

7. In an apparatus of the class described, a wind-chest having an air-chamber and a thin layer of yielding material extending across the chamber and provided with a metal eyelet which forms a port and valve-seat, and a valve guided in the eyelet.

8. In an apparatus of the class described, a wind-chest and a valve-board, in combination with a body of yielding material between the contiguous faces of the wind-chest and valve-board, an eyelet through said body and forming a port and a valve-seat, and a valve guided in the eyelet.

9. In an apparatus of the class described, a valve having a stem both formed of a single piece of wood, in combination with a metal eyelet receiving and guiding the stem.

10. In an apparatus of the class described, a primary pneumatic and a valve-board having a port opening to atmosphere, in combination with a partition between the primary pneumatic and port and itself provided with a port, a metal eyelet in the partition constituting a port and a valve-seat, and a valve playing between the ports and having a stem guided in the eyelet and clear from the primary pneumatic.

11. In an apparatus of the class described, a metal eyelet constituting a valve-seat and air-port, in combination with a valve of wood having a stem of the same material guided by the eyelet.

12. In an apparatus of the class described, two metal valve-seats each having a port, in combination with a valve playing between the seats and having a stem in sliding engagement with the sides of one of the ports.

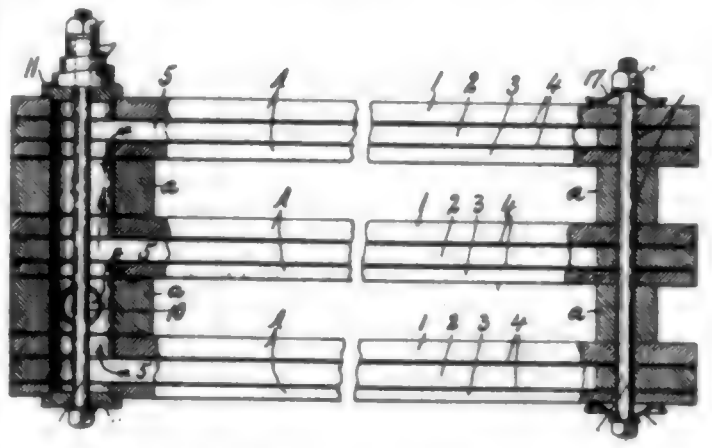
13. Two metal valve-seats each having an air-port and one being adjustable toward and from the other, in combination with a wood valve having a stem of the same material guided in one of the ports.

14. In a pneumatic self-playing musical instrument, the combination of a one-piece valve-board and a wind-chest inclosing a group of valves and primary pneumatics, said wind-chest having an exhaust-chamber common to all of the pneumatics, a comparatively thin body of pasteboard, or equivalent material, interposed between and coextensive with the valve-board and wind-chest and provided with a series of openings therethrough, one for each valve, metal valve-seats surrounding said openings, valves guided in the metal valve-seats and primary pneumatics, one for each valve and normally out of operative connection therewith to permit a slight action of the primary pneumatic without effecting the operation of the valve.

15. In a pneumatic self-playing musical instrument, the combination of a valve-board and wind-chest inclosing a group of valves and primary pneumatics for operating the same, said wind-chest having an exhaust-chamber common to all the primary pneumatics, metal eyelets forming ports communicating with said chamber, primary pneumatics, one for each port, and valves normally seated upon the eyelets and each having a stem guided in its eyelet, the distance between each valve-seat and the valve-operating face of its primary pneumatic when the latter is in its normal position being slightly greater than the length of the valve-stem to allow a slight movement of the primary pneumatic independently of the valve.

16. In a pneumatic self-playing musical instrument, the combination of a one-piece valve-board and a wind-chest inclosing a group of valves and their primary pneumatics, said wind-chest having an exhaust-chamber common to all of the primary pneumatics, a body of pasteboard or equivalent material interposed between and coextensive with the adjacent faces of the valve-board and wind-chest and provided with a plurality of openings, one for each valve, a metal eyelet in each opening forming a port communicating with the exhaust-chamber, valves guided in said eyelets and primary pneumatics, one for each valve, and normally out of contact therewith.

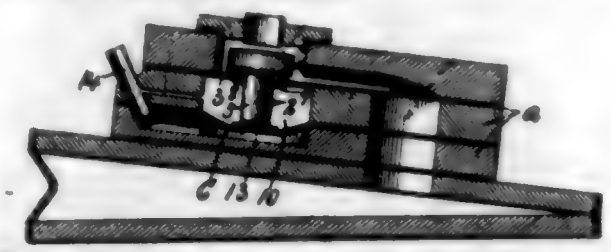
814,678. **SELF-PLAYING MUSICAL INSTRUMENT.** LEWIS B. DOMAN, Elbridge, N. Y., assignor to Amphion Piano Player Company, Elbridge, N. Y., a Corporation of New York. Filed Aug. 24, 1904. Serial No. 221,996.



Claim.—1. In a self-playing musical instrument, a plurality of separable valve-shelves disposed one above the other and having registering wind-ports for direct communication with the interiors of the shelves, and clamping means passed through the registering ports for drawing the shelves together and including a spring whereby the shelves are held together under yielding pressure.

2. In a self-playing musical instrument, a plurality of separable valve-shelves spaced apart, and intervening spacing-blocks, said shelves and blocks having registering wind-ports for direct communication between the shelves, a bolt passed through the wind-ports and attached to one of the outside shelves, and a yielding connection between the other end of the bolt and the other outside shelf, whereby said shelves are yieldingly clamped together.

814,679. **PNEUMATIC SELF-PLAYING MUSICAL INSTRUMENT.** LEWIS B. DOMAN, Elbridge, N. Y., assignor to Amphion Piano Player Company, Elbridge, N. Y., a Corporation of New York. Filed Sept. 15, 1904. Serial No. 224,565.



Claim.—1. In a pneumatic self-playing musical instrument, a valve-action including a valve having a head and a guide-stem flexibly connected together, the head supporting the stem and both parts having a free oscillatory movement one upon the other.

2. In a pneumatic self-playing musical instrument, the combination with two ports and valve-seats therefor, of a valve comprising two parts, one part being connected by a universal joint to the other part and playing between the two seats and the other part guided by one of the ports.

3. In a pneumatic self-playing musical instrument, the combination with two ports and valve-seats therefor, of a valve having a guide-stem guided by the sides of one of the ports and provided with a head playing between the seats and flexibly connected to the stem.

4. In a pneumatic self-playing musical instrument, the combination with a primary pneumatic and a key-operating pneumatic communicating with the exhaust-chamber and with the atmosphere, of an exhaust-chamber, a valve between the primary and key-operating pneumatic consisting of a head and a stem flexibly connected to each other and each having a free oscillatory movement one upon the other.

5. In a pneumatic self-playing musical instrument, a valve-shelf having a valve-chamber and opposite ports, a primary pneumatic, a valve consisting of a head and stem flexibly connected to oscillate freely one upon the other, the head playing between the ports

and the stem supported by the head free from the primary pneumatic and guided by the sides of one of the ports.

6. In a pneumatic self-playing musical instrument, a valve consisting of a head and stem, one of the parts having a recess and the other part having a head playing in the recess and provided with a comparatively small neck, and a comparatively thin covering secured to one of said parts and having an aperture receiving said neck.

7. In a pneumatic self-playing musical instrument, a valve-shelf having a port and a valve-seat, a primary pneumatic directly under the port, and a valve consisting of a head normally resting on the seat and a stem guided by the sides of the port and flexibly attached to and supported by the head with its lower end in the path of the primary pneumatic, the distance between the seat and lower end of the stem being less than the distance between the seat and upper face of the primary pneumatic when the active parts are in their normal position.

814,680. **TELEPHONE ATTACHMENT.** BERNHARD EHRLICH, Vienna, Austria-Hungary. Filed May 3, 1905. Serial No. 258,609.



Claim.—1. An attachment for telephones, consisting of a rigid body-piece and a plurality of leaves or sheets placed one upon another and secured to the body-piece, said attachment having an opening extending therethrough, and a removable plate or slide carrying netting treated with germicidal substance placed over the opening aforesaid and slidably engaging the rigid body-piece.

2. An attachment for telephones, consisting of a rigid body-piece and a plurality of separately-removable leaves or sheets placed one upon another and secured to the body-piece, said attachment having an opening extending therethrough, and a removable plate or slide carrying netting treated with germicidal substance placed over the opening aforesaid and slidably engaging the attachment.

3. An attachment for telephones, consisting of a rigid body-piece and a plurality of separately-removable leaves or sheets placed one upon another and secured to the body-piece, said attachment having an opening extending therethrough, a removable plate carrying netting treated with germicidal substance placed over the opening aforesaid and metallic overlapping portions securing the plate and attachment together.

4. An attachment for telephones, consisting of a rigid body-piece and a plurality of separately-removable leaves or sheets placed one upon another and secured to the body-piece, said attachment having an opening extending therethrough, a pair of guides carried by the back of the attachment, and a removable plate or slide slidably engaged with the guides aforesaid, said plate or slide carrying netting in line with the opening through the attachment and treated with germicidal substance.

814,681. **TYPE-SETTING MACHINE.** WALTER J. ENNESON, New York, N. Y., assignor to The Unitype Company, Manchester, Conn., a Corporation of New Jersey. Filed Apr. 18, 1902. Serial No. 103,491.

Claim.—1. The combination with a circular series of type-chambers, of a circular raceway, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

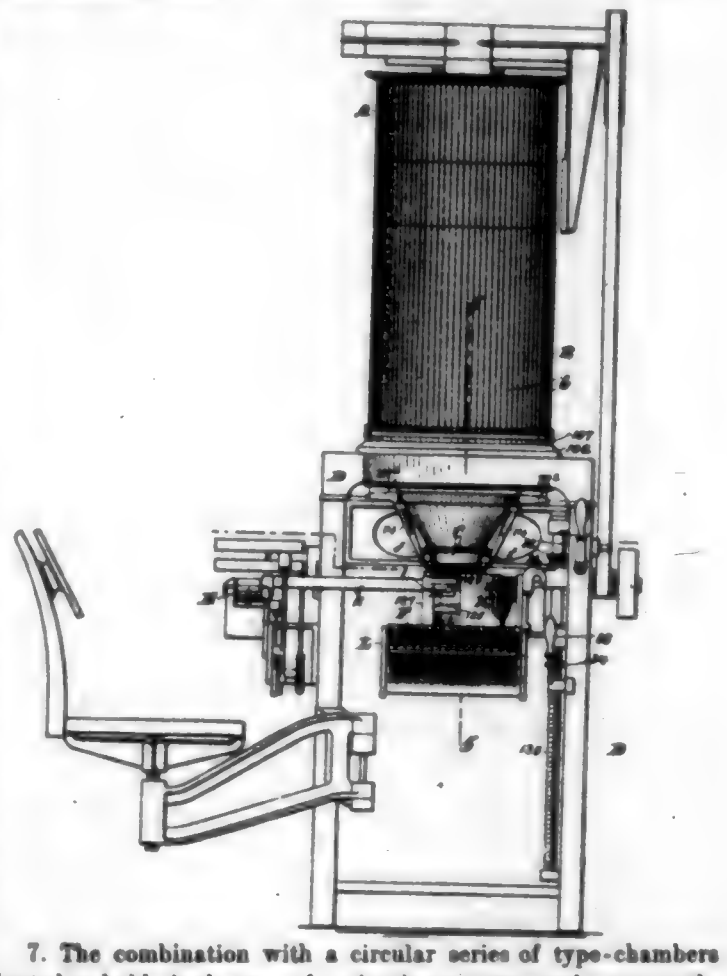
2. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

3. The combination with a circular series of type-chambers arranged to hold vertical type, of a circular raceway adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

4. The combination with a circular series of type-chambers, of a circular raceway arranged within the circular series of chambers, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

5. The combination with a circular series of type-chambers, of a circular raceway arranged within the circular series of chambers, and adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

6. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway arranged within the circular series of chambers, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.



7. The combination with a circular series of type-chambers adapted to hold single type, of a circular raceway, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

8. The combination with a circular series of type-chambers adapted to hold single type, of a circular raceway adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

9. The combination with a circular series of type-chambers adapted to hold single vertical type, of a circular raceway adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

10. The combination with a circular series of type-chambers adapted to hold single type, of a circular raceway arranged within the circular series of chambers, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

11. The combination with a circular series of type-chambers adapted to hold single type, of a circular raceway arranged within the circular series of chambers and adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

12. The combination with a circular series of type-chambers adapted to hold single vertical type, of a circular raceway arranged within the circular series of chambers adapted to guide vertical type laterally, and a type-gathering device revolving in said raceway and adapted to gather type in said raceway, substantially as described.

13. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type laterally therein, and means for delivering type from said chambers to said raceway and adapted to gather type in said raceway, substantially as described.

14. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway adapted to guide vertical type laterally therein, and means for delivering type from said chambers to said raceway and adapted to gather type in said raceway, substantially as described.

15. The combination with a circular series of type-chambers adapted to hold single vertical type, of a circular raceway, and means for delivering type from said chambers to said raceway and adapted to gather type in said raceway, substantially as described.

16. The combination with a circular series of type-chambers adapted to hold single vertical type, of a circular raceway adapted to

guide vertical type laterally therein, and means for delivering type from said chambers to said raceway and adapted to gather type in said raceway, substantially as described.

17. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway adapted to guide vertical type sidewise therein, means for delivering single type from said chambers to said raceway, a type-gathering device revolving in said raceway, and means for guiding type from said raceway and adapted to gather type in said raceway, substantially as described.

18. The combination with a circular series of type-chambers, of a circular raceway and means for delivering type from said chambers into position over said raceway and then downward into said raceway, substantially as described.

19. The combination with a circular series of type-chambers, of a circular raceway within the circle of said chambers, and means for delivering type from said chambers into position over said raceway, substantially as described.

20. The combination with a circular series of type-chambers, of a circular raceway below said chambers adapted to guide vertical type sidewise therein, and means for delivering type from said chambers laterally into vertical position directly over said raceway whereby the type may drop vertically onto said raceway, substantially as described.

21. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway below said chambers adapted to guide vertical type sidewise therein, and means for delivering type from said chambers laterally into vertical position directly over said raceway whereby the type may drop vertically onto said raceway, substantially as described.

22. The combination with a circular series of type-chambers, of a circular raceway below said chambers adapted to guide vertical type sidewise therein, means for delivering type from said chambers laterally into vertical position directly over said raceway whereby the type may drop vertically onto said raceway, and a plunger for assuring the passage of the type into the raceway, substantially as described.

23. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway below said chambers adapted to guide vertical type sidewise therein, and ejectors delivering type sidewise from said chambers into position directly over said race, substantially as described.

24. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway below and within the circle of said chambers, and means for delivering type from said chambers laterally into vertical position directly over said raceway whereby the type may drop vertically onto said raceway, substantially as described.

25. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway below and within the circle of said chambers adapted to guide vertical type sidewise therein, and ejectors delivering type sidewise from said chambers into position directly over said race, substantially as described.

26. The combination with a circular series of type-chambers adapted to hold vertical type, of a circular raceway, ejectors delivering type sidewise from said chambers into position directly over said raceway, and plungers adapted to move the type downward into the raceway, substantially as described.

27. The combination with a circular series of type-chambers, of a circular raceway, ejectors delivering type sidewise from said chambers into position directly over said raceway, vertical plungers above said raceway closing said type-chambers to the raceway, and means for withdrawing said plungers to permit a type to be moved over the raceway by the ejectors and for returning the plungers to position, substantially as described.

28. The combination with a circular series of type-chambers, of a circular raceway, means for delivering type from said chambers to a position over said raceway, and an abutting surface against which the type are delivered by said means, substantially as described.

29. The combination with a circular series of type-chambers, of a circular raceway below said chambers, ejectors adapted to transfer type from said chambers to position over said raceway, and means for retaining said ejectors temporarily in the ejecting position, substantially as described.

30. The combination with a circular series of type-chambers, of a circular raceway below said chambers, ejectors adapted to transfer type from said chambers to position over said raceway, means for retaining said ejectors temporarily in the ejecting position, and means for forcing said type downward into the raceway while said ejectors are thus retained, substantially as described.

31. The combination with a circular series of type-chambers, of a circular raceway below said chambers, ejectors for transferring type from said chambers to position over said raceway, an abutting surface opposite said ejectors, and means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, substantially as described.

32. The combination with a circular series of type-chambers, of a circular raceway, ejectors for transferring type from said chambers into position over said raceway, an abutting surface opposite said ejectors, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, and means for retaining the ejectors in ejecting position until the type have moved downward into the raceway, substantially as described.

33. The combination with a circular series of type-chambers, of a circular raceway, ejectors for transferring type from said chambers into position over said raceway, an abutting surface opposite said ejectors, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, means for retaining the ejectors in retaining position until the type have moved downward into the raceway, and vertical plungers following said type into the raceway while the ejectors are thus retained, substantially as described.

34. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein, ejectors delivering type sidewise from said chambers into vertical position directly over said raceway, vertical plungers above said raceway closing said type-chambers to the raceway, and means for withdrawing said plungers to permit a type to be moved over the raceway by the ejectors and for returning the plungers to position, substantially as described.

35. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein, means for delivering type from said chambers to vertical position over said raceway, and an abutting surface against which the type are delivered by the ejectors, substantially as described.

36. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein below said chambers, ejectors adapted to transfer type from said chambers to vertical position over said raceway, and means for retaining said ejectors temporarily in the ejecting position, substantially as described.

37. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein below said chambers, ejectors adapted to transfer type from said chambers to vertical position over said raceway, means for retaining said ejectors temporarily in the ejecting position, and means for forcing said type downward into the raceway while said ejectors are thus retained, substantially as described.

38. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein below said chambers, ejectors for transferring type from said chambers to vertical position over said raceway, an abutting surface opposite said ejectors, and means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, substantially as described.

39. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein, ejectors for transferring type from said chambers into vertical position over said raceway, an abutting surface opposite said ejectors, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, and means for retaining the ejectors in ejecting position until the type have moved downward into the raceway, substantially as described.

40. The combination with a circular series of type-chambers, of a circular raceway adapted to guide vertical type sidewise therein, ejectors for transferring type from said chambers into vertical position over said raceway, an abutting surface opposite said ejectors, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, means for retaining the ejectors in retaining position until the type have moved downward into the raceway, and vertical plungers following said type into the raceway while the ejectors are thus retained, substantially as described.

41. The combination with a type-raceway, of a series of type-chambers, ejectors delivering type sidewise from said chambers over said raceway, and plungers adapted to move the type downward into the raceway, substantially as described.

42. The combination with a type-raceway, of a series of type-chambers, ejectors delivering type sidewise from said chambers over said raceway, an abutting surface against which the type are delivered by the ejectors, and means for retaining said ejectors temporarily in the ejecting position, substantially as described.

43. The combination with a type-raceway, of a series of type-chambers, ejectors delivering type sidewise from said chambers over said raceway, an abutting surface against which the type are delivered by the ejectors, means for retaining said ejectors temporarily in the ejecting position, and means for forcing said type downward into the raceway while said ejectors are thus retained, substantially as described.

44. The combination with a type-raceway, of a series of type-chambers, ejectors delivering type sidewise from said chambers over said raceway, and means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, substantially as described.

45. The combination with a type-raceway, of a series of type-chambers, ejectors delivering type sidewise from said chambers over said raceway, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, and means for retaining the ejectors in ejecting position until the type have moved downward into the raceway, substantially as described.

46. The combination with a type-raceway, of a series of type chambers, ejectors delivering type sidewise from said chambers over said raceway, means for stopping the ejectors to prevent their clamping the type against the abutting surface whereby the ejected type are permitted to drop into the raceway, means for retaining the ejectors in ejecting position until the type have moved downward into the raceway, and vertical plungers following said type into the raceway while the ejectors are thus retained, substantially as described.

47. The combination with a circular raceway adapted to guide vertical type sidewise, of a concentric circular series of type-chambers arranged on the upper surface of one of the walls of said circular raceway and adapted to hold single vertical type, substantially as described.

48. The combination with a circular raceway adapted to guide vertical type sidewise, of a concentric circular series of type-chambers arranged on the upper surface of the outer wall of said circular raceway and adapted to hold single vertical type, substantially as described.

49. The combination with a circular raceway, of a circular series of type-chambers arranged to hold vertical type with their pointwise dimensions radial to the raceway, substantially as described.

50. The combination with a circular raceway adapted to guide vertical type, of a circular series of type-chambers arranged to hold vertical type with their pointwise dimensions radial to the raceway, means for delivering type to the raceway with their pointwise dimension transverse to the raceway, and means for advancing the type setwise in the raceway, substantially as described.

51. The combination with a circular raceway adapted to guide vertical type, of a circular series of type-chambers arranged to hold vertical type with their pointwise dimensions radial to the raceway, ejectors for moving the type pointwise from the chambers into position transversely to the raceway, and means for advancing the type setwise in the raceway, substantially as described.

52. In a type-setting machine, a series of type-chambers arranged in circular form and adapted to hold in circular alinement the characters of a font of vertical type arranged side by side and separated by the partition-walls of said chambers, the width of the chambers being such as to hold the type setwise, substantially as described.

53. In a type-setting machine, a series of type-chambers arranged in circular form and adapted to hold in circular alinement the characters of a font of vertical type arranged side by side and separated by the partition-walls of said chambers, the width of the chambers being such as to hold the type setwise, and a circular raceway within the circle of type-chambers adapted to guide the type moving setwise therein, substantially as described.

54. In a type-setting machine, a series of converging tubes or channels arranged longitudinally, as upon the periphery of a cone, the internal dimensions of such tubes or channels being of a width and depth substantially that of the respective set and point wise dimensions of the type and adapted to hold type end to end therein, substantially as described.

55. In a type-setting machine, an inverted conical type-case having upon its periphery and extending longitudinally thereof type-channels, the lower ends of which terminate in type-chambers adapted to hold a single vertical type and means for delivering vertical type sidewise from said chambers, substantially as described.

56. The combination with a circular type-raceway, of a series of radial converging tubes or channels of a width and depth substantially that of the respective set and point wise dimensions of the type and adapted to hold vertical type end to end therein and means for delivering vertical type sidewise from the bottom of said channels, substantially as described.

57. The combination with a circular type-raceway, of a series of radial converging type-channels adapted to hold vertical type end to end therein and means for delivering vertical type sidewise from the bottom of the channels, substantially as described.

58. The combination with a circular type-raceway, of a series of radial converging type-channels adapted to hold vertical type end to end therein, and chambers at the lower ends of said channels adjacent to the raceway adapted to hold a single type and means for delivering type from said chambers to said raceway in vertical position, substantially as described.

59. The combination with a circular type-raceway, adapted to guide vertical type sidewise, of a series of radial converging type-channels adapted to hold vertical type end to end therein, and chambers at the lower ends of said channels adjacent to the raceway adapted to hold a single vertical type and means for delivering single type from said chambers to said raceway in vertical position, substantially as described.

60. The combination with a circular type-raceway, of a type-pusher revolving in said raceway, substantially as described.

61. The combination with a circular type-raceway adapted to guide vertical type sidewise therein, of a type-pusher revolving in said raceway, substantially as described.

62. The combination with a circular type-raceway adapted to guide vertical type sidewise therein, of a type-pusher revolving in said raceway, said driving device being of substantially the full height and width of the type, substantially as described.

63. The combination of a circular type-raceway having a slotted wall and adapted to guide vertical type sidewise, of a type-pusher projecting through the slotted wall and revolving within the raceway, said pusher being of substantially the full height and width of the type, substantially as described.

64. The combination of a circular type-raceway, a type-driving device revolving therein, a series of type-chambers and corresponding type-ejectors, and ejector-actuating means including a revolving ejector-actuating cam, substantially as described.

65. The combination of a circular type-raceway, a type-driving device revolving therein, a series of type-chambers and corresponding type-ejectors, ejector-actuating means including a revolving ejector-actuating cam, and an actuating-sleeve carrying said ejector-actuating cam and type-gathering device, substantially as described.

66. The combination of a circular type-raceway, a type-driving device revolving therein, a series of type-chambers and corresponding type-ejectors, and ejector-actuating means including an ejector-actuating cam mounted to revolve within said series of ejectors, substantially as described.

67. The combination of a circular type-raceway, a circular series of type-chambers concentric therewith, a circular series of ejectors adapted to transfer type from said chambers to said raceway, a type-pusher revolving in said raceway and a circular series of key-actuated ejector-controlling devices, substantially as described.

68. The combination of a circular type-raceway, a circular series of type-chambers concentric therewith, a circular series of ejectors adapted to transfer type from said chambers to said raceway, a circular series of key-actuated ejector-controlling devices, and an ejector-actuating cam mounted to revolve within said series of ejector-controlling devices, substantially as described.

69. The combination with a circular series of type chambers and ejectors, of a circular raceway inside said circle of type-chambers, and ejector-actuating means including a revolving ejector-actuating cam, substantially as described.

70. The combination with a circular series of type chambers and ejectors, of a circular raceway inside said circle of type-chambers, and ejector-actuating means including a revolving ejector-actuating cam mounted to revolve within said series of ejectors, substantially as described.

71. The combination with a circular series of type chambers and ejectors, of a circular raceway inside said circle of type-chambers, a type-driving device revolving in said raceway, and ejector-actuating means including a revolving ejector-actuating cam mounted to revolve within said series of ejectors, substantially as described.

72. The combination with a circular series of type chambers and ejectors, of a circular raceway inside said circle of type-chambers, a type-driving device revolving in said raceway, ejector-actuating means including a revolving ejector-actuating cam mounted to revolve within said series of ejectors, and a revolving sleeve carrying said cam and type-driving device, substantially as described.

73. The combination with a circular series of type-chambers and corresponding ejectors, of an ejector-actuating cam, and a keyboard and connections for controlling selected ejectors to secure their actuation by the cam, substantially as described.

74. The combination with a circular series of type-chambers and corresponding ejectors, of an ejector-actuating cam, a keyboard and connections for positioning selected ejectors to be actuated by said cam, and means for connecting and disconnecting the ejectors with and from the cam and keyboard connections, substantially as described.

75. The combination with a circular series of type-chambers and corresponding ejectors, of power-driven ejector-actuating devices, a keyboard, means controlled from said keyboard for connecting said ejectors and actuating devices, and means whereby said ejector-actuating devices are automatically disconnected after the ejectors have been operated, substantially as described.

76. The combination with a raceway and series of type-chambers and corresponding ejectors, of ejectors for delivering type from said chambers over said raceway, plungers for securing the movement of said type downward to said raceway, power-driven ejector and plunger actuating devices, a keyboard, means controlled from said keyboard for connecting said ejectors and plungers to the actuating devices, and means whereby said ejectors and plungers are automatically disconnected from the actuating devices after the ejectors have been operated, substantially as described.

77. The combination with type-ejectors and plungers for moving the type after delivery by the ejectors, of power-driven actuating devices, and actuating connections between the plungers and ejectors, substantially as described.

78. The combination with type-chambers and type-ejectors, of plungers forming a part of said chambers, means for withdrawing said plungers for the delivery movement of the ejectors and returning them to position, and connections for actuating the ejectors by said plungers, substantially as described.

79. The combination with a raceway and type-chamber, of an ejector delivering type sidewise from said chamber into position over the raceway, and a plunger adapted to move the type downward into the raceway, substantially as described.

80. The combination with a type-chamber, of a raceway, an ejector delivering type from said chamber into position over the raceway, a vertical plunger above said raceway normally closing the type-chamber, and means for withdrawing said plunger to permit a type to be moved over the raceway by the ejector and for returning the plunger to position, substantially as described.

81. The combination with a type-chamber adapted to hold vertical type, of means for delivering type from said chamber sidewise and in a vertical position, and an abutting surface against which the vertical type are delivered, substantially as described.

82. The combination with a type-chamber, of an ejector adapted to deliver type sidewise from said chamber, and means for retaining said ejector temporarily in ejecting position, substantially as described.

83. The combination with a type-chamber, of an ejector adapted to deliver type sidewise from said chamber, means for retaining said ejector temporarily in ejecting position, and means for forcing the ejected type downward while the ejector is thus retained, substantially as described.

84. The combination with a type-chamber adapted to hold vertical type, of an ejector for transferring type sidewise from said chamber in vertical position, an abutting surface opposite said ejector, and means for stopping the ejector to prevent its clamping the type against the abutting surface, whereby the ejected type is permitted to drop endwise, substantially as described.

85. The combination with a type-chamber, of an ejector for transferring type sidewise from said chamber, an abutting surface opposite said ejector, means for stopping the ejector to prevent its clamping the type against the abutting surface, whereby the ejected type is permitted to drop, and means for retaining the ejector in ejecting position until the type has moved downward, substantially as described.

86. The combination with a type-chamber, of an ejector for transferring type sidewise from said chamber, an abutting surface opposite said ejector, means for stopping the ejector to prevent its clamping the type against the abutting surface, whereby the ejected type is permitted to drop, means for retaining the ejector in ejected position until the type has moved downward, and a vertical plunger following the type downward while the ejector is thus retained, substantially as described.

87. The combination with a circular type-raceway, of a supplemental curved type-raceway tangential thereto, and means for delivering type from said circular raceway to said supplemental raceway, substantially as described.

88. The combination with a circular type-raceway, of a supplemental type-raceway tangential thereto, a type-gathering device revolving in said circular raceway, and a type-driving device moving in said supplemental raceway, substantially as described.

89. The combination with a circular type-raceway, of a curved supplemental type-raceway tangential thereto, and a type-driving device mounted to reciprocate in said supplemental raceway on an arc struck from the center of said raceway, substantially as described.

90. The combination with a circular type-raceway, of a supplemental type-raceway, a type-gathering device revolving in said circular raceway, and a type-driving device reciprocating in said supplemental raceway, substantially as described.

91. The combination with a circular raceway adapted to guide vertical type laterally, of a supplemental raceway, and means for guiding type from said circular raceway into said supplemental raceway, subtantially as described.

92. The combination with a circular raceway adapted to guide vertical type laterally, of a supplemental raceway, a type-driving device revolving in the circular raceway, a switch for guiding type from said circular raceway into said supplemental raceway, and a type-driving device moving in said supplemental raceway, substantially as described.

93. The combination with a circular raceway adapted to guide vertical type laterally, of a supplemental raceway, a switch for guiding type from said circular raceway into said supplemental raceway, a type-gathering device revolving in said circular raceway, and a type-driving device reciprocating within said supplemental raceway and extending into the circular raceway to take type from the gathering device, substantially as described.

94. The combination with a circular type-raceway, of a circular series of type-chambers and ejectors for delivering the type to said circular raceway, a type-gathering device moving in said circular raceway, a supplemental raceway, a type-driving device, a switch for guiding type from the circular raceway to the supplemental raceway, and means for actuating the ejectors, type-gathering device and type-driving device, substantially as described.

95. The combination with a circular type-raceway, of a circular series of type-chambers and ejectors for delivering the type to said circular raceway, a type-gathering device moving in said circular raceway, a supplemental raceway and type-driving device moving therein, an actuating-sleeve carrying said type-gathering device and a cam on said sleeve for actuating said type-driving device, substantially as described.

96. The combination with a circular type-raceway, of a circular series of type-chambers and ejectors for delivering the type to said circular raceway, a type-gathering device moving in said circular raceway, a supplemental raceway and type-driving device moving therein, an actuating-sleeve carrying said type-gathering device, and a cam on said sleeve for actuating said ejectors, substantially as described.

97. The combination with a circular type-raceway, of a circular series of type-chambers and ejectors for delivering the type to said circular raceway, a type-gathering device moving in said circular raceway, a supplemental raceway and a type-driving device moving therein, an actuating-sleeve carrying said type-gathering device, and cams on said sleeve for actuating said type-driving device and ejectors, substantially as described.

98. The combination with a circular type-raceway and type-gathering device revolving therein, a curved supplemental raceway tangential to said circular raceway and type-driving device reciprocating in said supplemental raceway, a circular series of type-chambers concentric with said circular raceway, and a circular series of ejectors for transferring type from said chambers to said circular raceway, ejector-actuating devices, an actuating-sleeve carrying said type-gathering device, and cams on said sleeve for actuating said ejector-actuating devices and said type-driving device, substantially as described.

99. In a type-setting machine, the combination with a series of setting type-chambers, of a series of magazine-chambers and type-

transferring means connecting the two series of chambers, substantially as described.

100. In a type-setting machine, the combination with a series of setting type-chambers, of a series of magazine-chambers and type-channels connecting the two series of chambers, substantially as described.

101. In a type-setting machine, the combination with a series of setting type-chambers adapted to hold vertical type, of a series of magazine-chambers adapted to hold horizontal type, and type-transferring means connecting the two series of chambers, substantially as described.

102. In a type-setting machine, the combination with a series of setting type-chambers adapted to hold vertical type, of a series of magazine-chambers above said setting-chambers adapted to hold horizontal type, and channels connecting said magazine-chambers with said setting-chambers and provided with guiding-surfaces for changing the type from horizontal to vertical position, substantially as described.

103. In a type-setting machine, the combination with a circular series of setting type-chambers adapted to hold vertical type, of a circular series of magazine-chambers above said setting-chambers and non-radial thereto, type-channels for connecting the two series of chambers and arranged radially to the setting-chambers, and guiding-surfaces for turning the type from said magazine-chambers into position radial to the setting-chambers, substantially as described.

104. The combination with a series of setting type-chambers, of a series of magazine-chambers, type-channels connecting the two series of chambers, key-controlled ejectors for said chambers, and connections between said ejectors whereby the movement of a key secures the delivery of a type from one of the setting-chambers for setting and the delivery of type from a magazine-chamber to said setting-chamber, substantially as described.

105. The combination with a circular series of setting-chambers adapted to hold vertical type, a corresponding circular series of magazine-chambers above said setting-chambers, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and key-controlled mechanism for delivering type from said setting-chambers for setting and from the magazine-chambers to the channels, substantially as described.

106. The combination with a circular series of setting-chambers adapted to hold vertical type, a corresponding circular series of magazine-chambers adapted to hold horizontal type one upon the other above said setting-chambers, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and key-controlled mechanism for delivering type from said setting-chambers for setting and from the magazine-chambers to the channels, substantially as described.

107. The combination with a circular series of setting-chambers adapted to hold vertical type, a corresponding circular series of magazine-chambers adapted to hold horizontal type one upon the other above said setting-chambers, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, key-controlled mechanism for delivering type from said setting-chambers for setting and from the magazine-chambers to the channels, and a distributing mechanism for distributing type into said magazine-chambers, substantially as described.

108. The combination with a series of type-chambers each adapted to hold a single type, of a series of magazine-chambers, type-channels connecting the two series of chambers, and ejector mechanism for delivering type from said setting-chambers for setting and from the magazine-chambers to the setting-chambers, substantially as described,

109. The combination with a circular raceway, of a circular series of setting type-chambers each adapted to hold a single type, a corresponding series of magazine-chambers, type-channels connecting the two series of chambers, and ejector mechanism for delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, substantially as described.

110. The combination with a circular raceway, of a circular series of setting type-chambers each adapted to hold a single type, a corresponding series of magazine-chambers, type-channels connecting the two series of chambers, an ejector mechanism for delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, and a type-gathering device revolving in said raceway, substantially as described.

111. The combination with a series of setting type-chambers each adapted to hold a single vertical type, of a series of magazine-chambers, type-channels connecting the two series of chambers, and ejector mechanism for delivering type from the setting-chambers for setting and from the magazine-chambers to the type-channels, substantially as described.

112. The combination with a series of setting type-chambers each adapted to hold a single vertical type, of a series of magazine-chambers adapted to hold horizontal type, type-channels connecting the two series of chambers, and ejector mechanism for delivering type from said setting-chambers for setting and from the magazine-chambers to the type-channels, substantially as described.

113. The combination with a series of setting type-chambers each adapted to hold a single vertical type, of a series of magazine-chambers above said setting-chambers adapted to hold horizontal type, type-channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and ejector mechanism for delivering type from said setting-chambers for setting and simultaneously delivering type from the magazine-chambers to the type-channels, substantially as described.

114. The combination with a circular series of setting type-chambers each adapted to hold a single vertical type, of a corresponding circular series of magazine-chambers adapted to hold horizontal type one upon the other above said setting-chambers, type-channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and ejector mechanism for delivering type from said setting-chambers for setting and simultaneously delivering type from the magazine-chambers to the type-channels, substantially as described.

115. The combination with a circular series of setting type-chambers each adapted to hold a single vertical type, of a corresponding circular series of magazine-chambers adapted to hold horizontal type one upon the other above said setting-chambers, type-channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, an ejector mechanism for delivering type from said setting-chambers for setting and simultaneously delivering type from the magazine-chambers to the type-channels, and a distributing mechanism for distributing type into said magazine-chambers, substantially as described.

116. The combination with a circular raceway adapted to guide vertical type sidewise therein, and a type-gathering device revolving in said raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a corresponding circular series of magazine-chambers, type-channels connecting the two series of chambers, and key-controlled ejector mechanism for simultaneously delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, substantially as described.

117. The combination with a circular raceway adapted to guide vertical type sidewise therein, and a type-gathering device revolving in said raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a corresponding circular series of magazine-chambers above said setting-chambers adapted to hold horizontal type, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and key-controlled ejector mechanism for simultaneously delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, substantially as described.

118. The combination with a circular raceway adapted to guide vertical type sidewise therein, and a type-gathering device revolving in said raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a corresponding circular series of magazine-chambers above said setting-chambers adapted to hold horizontal type one upon the other, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, and key-controlled ejector mechanism for simultaneously delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, substantially as described.

119. The combination with a circular raceway adapted to guide vertical type sidewise therein, a type-gathering device revolving in said raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a corresponding circular series of magazine-chambers above said setting-chambers adapted to hold horizontal type one upon the other, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, key-controlled ejector mechanism for simultaneously delivering type from the setting-chambers to the raceway for setting and from the magazine-chambers to the setting-chambers, and a distributing mechanism for distributing type into said magazine-chambers, substantially as described.

120. The combination with a circular raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a series of magazine-chambers above said setting-chambers, type-channels connecting the two series of chambers, said type-channels being radial to the setting-chambers and converging from the magazine-chambers, ejector mechanism for delivering type from the setting-chambers for setting and from the magazine-chambers to the type-channels, substantially as described.

121. The combination with a circular raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a series of magazine-chambers above said setting-chambers, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, said channels being arranged as upon the surface of a cone with its base at the magazine-chambers, ejector mechanism for delivering type from the setting-chambers for setting and from the magazine-chambers to the type-channels, substantially as described.

122. The combination with a circular raceway, of a circular series of setting type-chambers each adapted to hold a single vertical type, a series of magazine-chambers above said setting-chambers adapted to hold horizontal type one above the other, channels for conducting type vertically and endwise from said magazine-chambers to said setting-chambers, said channels being arranged as upon the surface of a cone with its base at the magazine-chambers, ejector mechanism for delivering type from the setting-chambers for setting and from the magazine-chambers to the type-channels, substantially as described.

123. The combination with a series of setting type-chambers each adapted to hold a single vertical type, of a series of magazine-chambers above said setting-chambers adapted to hold horizontal type, and channels connecting said magazine-chambers with said setting-chambers and provided with guiding-surfaces for changing the type from horizontal to vertical position, substantially as described.

124. The combination with a circular series of setting type-chambers each adapted to hold a single vertical type, of a circular series of magazine-chambers above said setting-chambers and non-radial thereto, type-channels connecting the two series of chambers and arranged radially to the setting-chambers and provided with guiding-surfaces for turning the type from said magazine-chambers into position radially to the setting-chambers, substantially as described.

125. The combination with a series of setting type-chambers each adapted to hold a single vertical type, of a series of magazine-chambers, type-channels connecting the two series of chambers, and key-controlled ejector devices for delivering a type from one of the setting-chambers for setting and simultaneously delivering a type from the magazine-chamber to said setting-chamber, substantially as described.

126. The combination with a cylindrical type-case having vertical channels adapted to hold horizontal type, of an inverted conical composing-case provided with inclined type-channels connecting with the type-chambers of the type-case and means for selecting and delivering type from said composing-case, substantially as described.

127. The combination with a cylindrical type-case having vertical channels adapted to hold horizontal type, of an inverted conical composing-case provided with inclined type-channels connecting with the type-chambers of the type-case, means for selecting and delivering type from said composing-case and guiding-surfaces for turning the type from horizontal to vertical position in said channels, substantially as described.

128. The combination with a cylindrical type-case having vertical type-channels of the pointwise width of the type and of a depth substantially the length of the type, of an inverted conical composing-case having upon its periphery vertical inclined type-channels corresponding in location and number to the channels of the cylindrical type-case and being of a width and depth substantially equal, respectively, to the pointwise and setwise dimensions of the type and means for selecting and delivering type from said composing-case, substantially as described.

129. In a type-setting machine, an inverted setter-cone consisting of two cone-frustums, one of said frustums being mounted for withdrawal from the other, substantially as described.

130. In a type-setting machine, a vertical inverted setter-cone consisting of two cone-frustums and means for raising and lowering the lower frustum, substantially as described.

131. The combination with a cylindrical type-case, and a setter-cone below said type-case, of means for separating the cylinder and cone for access to the parts inside the cone, substantially as described.

132. The combination with the single-type chamber *c* for vertical type, of the vertical channels *b* for horizontal type, converging channels *d* for conducting type endwise, and means for delivering type from the channels *b* to the channels *d*, substantially as described.

133. The combination with the single-type chamber *c* for vertical type, of the vertical channels *b* for horizontal type, converging channels *d* for conducting type endwise, horizontal ejectors for delivering type from the channels *b*, and slots for guiding the type from the channels *b* to the channels *d*, substantially as described.

134. The combination with the circular series of single-type chambers *c* for vertical type, of the circular series of vertical type-channels *b* for horizontal type, said channels being non-radial to the chambers *c*, converging vertical type-channels *d* arranged radially to the type-chambers *c*, and slots 106 for guiding type from the channels *b* to vertical position in the radial channels *d*, substantially as described.

135. The combination with the type-channel *b*, of horizontal ejector *e* for delivering type sidewise from said channel and having the beveled edge 1, and curved surface 2 for guiding the type downward as it is ejected from the channel, substantially as described.

136. The combination with a single-type chamber *c* for vertical type, of a magazine-chamber *b* for horizontal type, channel *d* connecting the chambers, vertical ejector *f* for the single-type chamber, horizontal ejector *e* for the magazine-chamber, levers for actuating said ejectors, and connections between said levers for securing the joint action of the ejectors, substantially as described.

137. The combination with actuating mechanism, of ejector-actuating bar 116, latch 117 normally holding said bar out of position to be actuated, and a key and connections for moving said latch to release the bar for its movement by the actuating mechanism, substantially as described.

138. The combination with ejector-actuating cam 121, of ejector-actuating bar 116, hooked latch 117 for holding said bar normally out of position to be actuated by the cam, and a key and connections for actuating said latch to release the bar for its movement by the cam, said cam being constructed to return the bar to position to be engaged by the latch at the end of the ejecting movement, substantially as described.

139. The combination with the ejector-slide 115, of swinging ejector-actuating bar 116 carried thereby, cam 121 for actuating said bar, latch 117 normally holding said bar out of position to be actuated by the cam, and a key and connections for releasing said bar from the latch, and an ejector actuated by the cam through said bar 116, substantially as described.

140. The combination with the ejector-slide 115, of swinging ejector-actuating bar 116 carried thereby, cam 121 for actuating said bar, latch 117 normally holding said bar out of position to be actuated by the cam and a key and connections for releasing said bar from the latch, and a pivoted ejector actuated by the cam through said bar 116, substantially as described.

141. The combination with the ejector-slide 115, of swinging ejector-actuating bar 116 carried thereby, cam 121 for actuating said bar, latch 117 normally holding said bar out of position to be actuated by the cam, a key and connections for releasing said bar from the latch, and magazine and setting chamber ejectors actuated by the cam through said bar 116, substantially as described.

142. The combination with the ejector-arm m^2 having side plates 14, of ejector *f* held between said plates by spring 15, substantially as described.

143. The type-raceway *i* having the portion 25 of its side wall movable for access to the raceway, substantially as described.

144. The curved type-raceway *i* having the swinging portion 25 of its side wall movable for access to the raceway, substantially as described.

145. The curved type-raceway *i* and type-driving device *l* reciprocating therein, said type-raceway having the portion 25 of its side wall mounted to swing concentrically with said raceway for opening the latter, substantially as described.

146. The curved type-raceway *g* in combination with type-raceway *i* tangential thereto and having portion 25 of its side wall opposite the junction of the two raceways movable to open the raceways, substantially as described.

147. The curved type-raceway *g* in combination with type-raceway *i* tangential thereto, switch *m* at the junction between the two raceways, and movable portion 25 of the side wall of raceway *i* opposite the switch for opening the raceways, substantially as described.

148. A reciprocating type-driving device in combination with actuating means therefor, constructed and arranged to move the type-driving device less rapidly at the end of its type-advancing

movement than in the previous part of its movement, substantially as described.

149. The combination with a moving type-gathering device, of a type-driving device arranged to take type from the type-gathering device and means for moving the said type-driving device at a higher speed than the type-gathering device in taking type from the latter and for moving said type-driving device slowly at the end of its type-advancing movement, substantially as described.

150. The combination with the circular raceway *g* and revolving type-gathering device *h* therein, of raceway *i* tangential to said raceway *g*, type-driving device *l* in said raceway *i* and arranged to pass through the raceway *g* and type-gathering device *h* at the intersection of the raceways, and means for moving said type-driving device *l* at a higher speed than tape-gathering device *h* in transferring type from raceway *g* to raceway *i*, substantially as described.

151. The combination with the circular raceway *g* and revolving type-gathering device *h* therein, of raceway *i* tangential to said raceway *g*, type-driving device *l* in said raceway *i* and arranged to pass through the raceway *g* and type-gathering device *h* at the intersection of the raceways, and means for moving said type-driving device *l* at a higher speed than type-gathering device *h* in transferring type from raceway *g* to raceway *i* and for moving said type-driving device *l* slowly at the end of its type-advancing movement, substantially as described.

152. In a machine for handling type, a type-raceway having a false bottom onto which the type are dropped, substantially as described.

153. In a machine for handling type, a type-raceway having a false bottom formed of a metal plate on yielding material and onto which the type are dropped, substantially as described.

154. The combination with a circular series of type-chambers, of a circular raceway, a type-pusher revolving in said raceway, a series of key-controlled ejectors, and actuating mechanism timed to actuate the selected ejector or ejectors and then actuate the pusher to advance the type ejected.

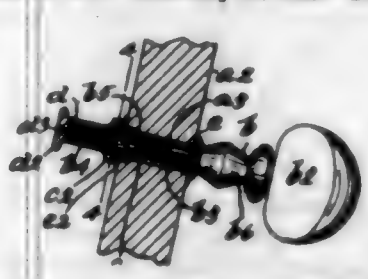
155. The combination with a circular series of type-channels, of a circular raceway inside said circle, a series of key-controlled ejectors, and actuating mechanism timed to actuate the selected ejector or ejectors and then actuate the pusher to advance the type ejected.

156. The combination with a circular series of type-channels adapted to hold vertical type, of a circular raceway inside said circle of type-chambers adapted to guide vertical type sidewise therein, a series of key-controlled ejectors for delivering type from said channels to said raceway, a type-pusher revolving in said raceway, and actuating mechanism timed to actuate the selected ejector or ejectors and then actuate the pusher to advance the type ejected.

157. The combination with a circular type-raceway, of a supplemental type-raceway, a type-gathering device revolving in said circular raceway, and means for moving the type in said supplemental raceway, substantially as described.

158. The combination with a circular type-raceway, of a supplemental type-raceway, a type-gathering device revolving in said circular raceway, and a type-driving device moving in said supplemental raceway, substantially as described.

814,682. **KEY FOR STRINGED INSTRUMENTS.** ALFRED A. FARLAND, Plainfield, N. J. Filed July 25, 1905. Serial No. 271,134.



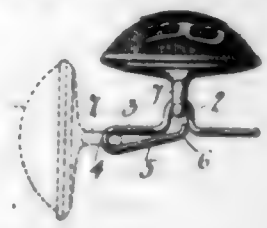
Claim.—1. A string-key for stringed musical instruments, said key comprising a shank member having a projecting end portion, said shank member and said end portion being provided with reverse threads, a nut mounted on the shank portion and a lock-nut mounted on the projecting end portion, substantially as shown and described.

2. A string-key for stringed musical instruments, said key comprising a shank member having a projecting end portion, said shank member and said end portion being provided with reverse threads, a nut mounted on the shank portion and a lock-nut mounted on the projecting end portion, said lock-nut forming the string-drum, substantially as shown and described.

3. A string-key for stringed musical instruments, comprising a shank member having a reduced end portion, said shank member and said end portions being provided with reverse threads, a nut mounted on the shank member and a lock-nut mounted on the reduced end portion, said lock-nut forming a drum with which in practice the string is connected, and the opposite end of the shank portion being provided with a handle-head, substantially as shown and described.

4. A string-key for stringed musical instruments, comprising a shank portion provided at one end with a head, said shank portion being also provided at the opposite end with an extension, and said shank portion and said extension being provided with reverse threads, a sleeve-nut mounted on the shank portion and a string-drum mounted on the extension and constituting a lock-nut, substantially as shown and described.

814,683. **BUTTON-FASTENER.** JOHN S. FISSEL, West Philadelphia, Pa. Filed Apr. 13, 1905. Serial No. 255,387.



Claim.—The herein-described button-fastener designed to be secured to the eye of a button prior to its attachment to a garment and consisting of a piece of wire bent to form a single-strand bodkin member 1, a loop 2 for the button-eye, a member 3 extending from said loop and bent upon itself to form an end seat 4 for the button-eye and continued to form an inclined spring-tongue 5 extending across under the loop 2 and having an upwardly-curved terminal end 6 disposed within the loop 2 for the button-eye and bearing against the inner portion of one side thereof, said fastener being formed from a single strand of wire, substantially as described.

814,684. **ILLUMINATED SIGN.** SAMUEL W. FLEMING and FRANK A. CHILDS, New London, Ohio. Filed Jan. 6, 1905. Serial No. 239,914.



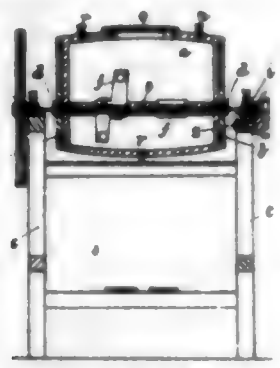
Claim.—1. In a sign, the combination with a case, of a series of individual character-bearing scrolls having open-ended tubular rollers in longitudinal alinement, each roller being provided with an internal key-seat, the case being provided with openings in alinement with the respective series of rollers, and a key capable of being inserted through any of the perforations in the case and through the rollers, said key having a ward for engagement with the key-seats of the respective rollers and also provided upon its stem with a scale having its elements successively spaced in accordance with the distances between the seats of the successive rollers.

2. In an illuminated sign, the combination with a case having a series of exposure-openings in its front, cross-bars within the case adjacent the front thereof and located opposite the intervals between the exposure-openings, the backs of the bars being provided with roller-bearing slots, a series of scrolls having their rollers mounted in the respective slots of the cross-bars, rods extending across the front edges of the cross-bars in engagement with the rear sides of the scrolls to hold the latter against the front of the case, and endwise-adjustable color-strips interposed between the cross-bars and the backs of the scrolls and located between adjacent pairs of rods.

3. In a sign, the combination of a case having spaced upright bars at the front thereof, scrolls disposed in the spaces between the bars and arranged in horizontal and vertical series, each scroll having substantially horizontal rollers mounted upon the adjacent bars and carrying matter to be displayed, a light-excluding front having openings to expose the data of the respective scrolls, rods extending transversely across the front of the upright bars and against the backs

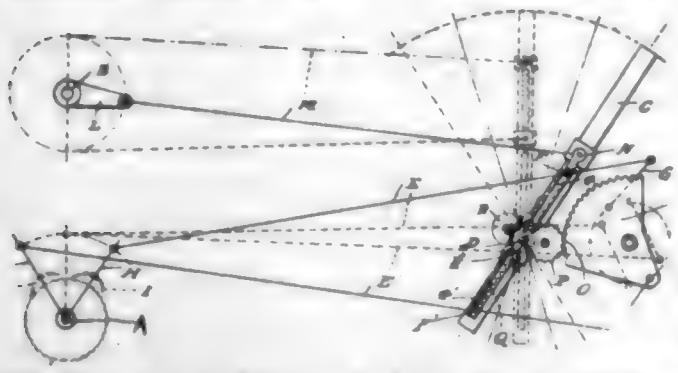
of the scrolls to hold the latter against the light-excluding front, and color-scrolls extending across the backs of the horizontal series of character-scrolls, each color-scroll being disposed between the horizontal rods and also between the backs of the character-scrolls and the front of the upright bars.

814,685. CHURN. HARLAND GARBUTT, Seamer, England. Filed Dec. 21, 1905. Serial No. 292,773.



Claim.—A churn consisting of a horizontal barrel, a dasher-shaft running through glands at the ends of the barrel; a stand and ball-bearings for supporting the said shaft: means for tilting the barrel: an outlet-plug at the other side of the barrel: multiplying-gear for rotating the barrel: means for driving the gear: air-valves at the top of the barrel, and a guard to protect the driving-gear, substantially as hereinbefore described.

814,686. MECHANICAL MOVEMENT. STEPHEN H. GARST, Detroit, Mich., assignor to American Harrow Company, Detroit, Mich., a Corporation of Michigan. Filed Jan. 19, 1905. Serial No. 241,328.



Claim.—1. A transmission mechanism comprising a longitudinally-slotted rock-arm, a rod actuated thereby, a pivot on said rod engaging said slot, a swinging link connected to said rod and means for shifting the pivot of said link to adjust said pin in said slot toward or from the fulcrum of said rock-arm, said slot being enlarged at its inner end to permit the limited movement of said arm, independent of said rod.

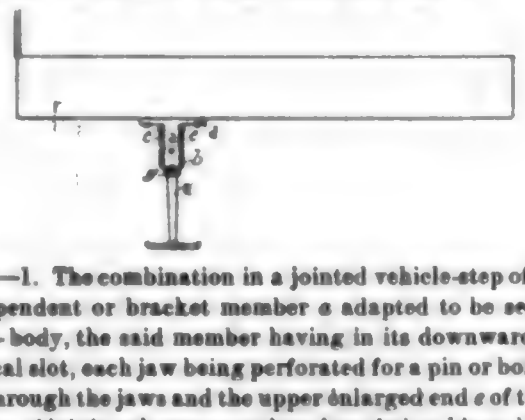
2. A transmission mechanism comprising a rock-lever, provided with arms extending oppositely from the fulcrum, reciprocatory rods connected to said opposite arms, pivotal connections between said rods and arms, longitudinally slidable on the latter, swinging links for said rods determining the path of movement thereof, and a double crank to which said links are pivoted, adapted to simultaneously and correspondingly shift said pivotal connections toward or from the fulcrum.

3. A transmission mechanism comprising a rock-arm, two reciprocatory rods pivotally connected thereto, the one constituting an actuating and the other an actuated member and means for simultaneously adjusting the pivotal connections of said rods oppositely in relation to the fulcrum of said rock-arm.

4. A transmission mechanism comprising a rotary crank, a rock-arm, a pitman-rod connecting said crank and rock-arm, a pivotal connection between said pitman and rock-arm, longitudinally adjustable on the latter, a reciprocatory rod, a pivotal connection between said rod adjustable longitudinally of said rock-arm, a swinging link connected to said rod and determining the path of movement thereof, means for shifting the pivot of said link to adjust the pivotal connection for said rod upon said rock-arm, and means simultaneously actuated for shifting the pivotal connection of said pitman on said rock-arm, oppositely in relation to the fulcrum.

5. A transmission mechanism comprising a longitudinally-slotted rock-arm and two reciprocatory rods, one constituting an actuating and the other an actuated member, a pivot for said actuated member longitudinally adjustable in said slot, a pivotal connection for said actuating member longitudinally adjustable on said rock-arm, a swinging link connected to said actuated rod, a crank to which said link is pivoted, forming the means for shifting the position thereof, a rack connected to said pivotal connection for said actuating-rod, a pinion meshing therewith, and a peripheral gear-segment on said crank engaging said pin on, whereby the pivotal connections for said rods are simultaneously shifted oppositely in relation to the fulcrum.

814,687. JOINTED VEHICLE-STEP. FRANK M. GAULT, Oklahoma, Okla. Filed Apr. 26, 1905. Serial No. 257,242.

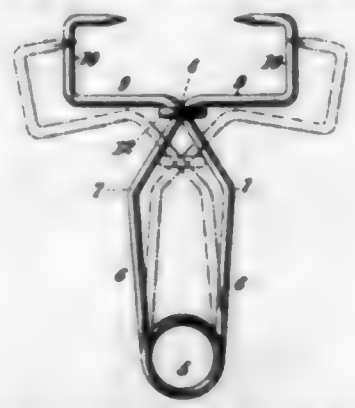


Claim.—1. The combination in a jointed vehicle-step of a pendent and dependent or bracket member *a* adapted to be secured to the vehicle-body, the said member having in its downward projection a vertical slot, each jaw being perforated for a pin or bolt adapted to pass through the jaws and the upper enlarged end *c* of the pendent member; *a'* joining the two members loosely in a hinge-like manner; both members having holes *g''* in line and adapted to a wood pin; the bracket member *a* having secured thereto, on the front and rear surfaces compared to the vehicle, vertical, elongated springs *c c* in a manner that they normally press against the edges of the upper end of the pendent member *a*, the bracket member *a* being provided with a reinforcing-brace *f*, all substantially as described and for the purposes set forth.

2. In combination with a vehicle-body, a bracket secured thereto, an arm carrying a step pivoted to the bracket; said arm being pivoted at a point between its ends, said arm depending vertically normally and springs secured at one end to opposite sides of the bracket, the free portions of the springs bearing against opposite sides of the arm to hold it in its normal position.

3. In combination with a vehicle-body, a bracket secured thereto, an arm carrying a step pivoted to the bracket; said arm being pivoted at a point between its ends, said arm depending vertically normally and springs secured at one end to opposite sides of the bracket, the free portions of the springs bearing against opposite sides of the arm to hold it in its normal position and breakable means carried by the bracket, engaging the arm to hold the arm normally against movement on its pivot.

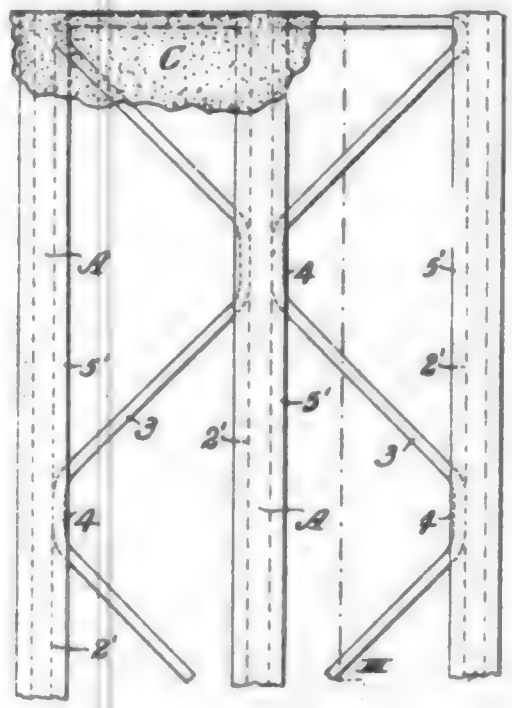
814,688. CORN-HOLDER. ALFRED M. GITTERMAN, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,144.



Claim.—1. A corn-holder comprising the opposite side portions which first form the handle and then cross each other and thence extend laterally in opposite directions and thence forwardly and thence inwardly toward each other to form the engaging prongs, a spring for normally pressing the said prongs toward each other, and a ring whose opening is in line with the length of the instrument and which encompasses said side portions at their crossing-point at the outer end of the handle; substantially as set forth.

2. A corn-holder comprising a piece of wire coiled at its middle portion to form the spring 5 and thence bent to form the handle members 6 having the converging sections at their outer ends which cross each other, the laterally-extending members 9, forwardly-extending members 10, and inwardly-extending prong members 11, and the ring 12 which encompasses the handle members at their crossing-point; substantially as set forth.

814,689. **METAL OPEN-WORK FABRIC.** JOHN F. GOLDING, Washington, D. C., assignor to Monolith Steel Company Incorporated, a Corporation of Virginia. Filed July 13, 1905. Serial No. 269,563.



Claim.—1. In combination with a body of concrete, cement or the like, a longitudinal tension bar or member having lips extending from and beyond the main body of the bar, said lips forming a continuous groove which flares or widens outwardly substantially as and for the purposes described, and a rod or supplemental member secured in said groove by the compression of the bar, the concrete entering within the open portions of said groove and embedding said lips.

2. A metal open-work structure for use in concrete and other purposes, consisting of longitudinal tension bars or members each having lips extending from and beyond the main body of the bar said lips forming a continuous groove which flares or widens outwardly, and a rod or supplemental member secured in said grooves by the compression of the metal of the bars and securely connecting the bars, substantially as and for the purposes described.

3. A metal open-work structure for use in concrete and other purposes, consisting of a longitudinal tension bar or member having lips extending from and beyond the main body of the bar, said lips forming a groove which flares or widens outwardly the flaring or widening beginning at points distant from the bottom of the groove a distance equal substantially to half the width of the groove, substantially as and for the purposes set forth, and a rod or supplemental member secured in said groove by the compression of the bar.

4. A metal open-work structure for use in concrete and other purposes, consisting of longitudinal tension bars or members having lips extending from and beyond the main body of the bar, said lips forming continuous grooves which flare or widen outwardly, the flaring or widening beginning at points distant from the bottoms of the grooves, and a rod or supplemental member secured in said grooves by the compression of the metal of the bars and securely connecting the bars, substantially as and for the purposes described.

5. A metal open-work structure for use in concrete and other purposes, consisting of a longitudinal tension bar or member having lips extending from and beyond the main body of the bar, and a rod or supplemental member secured between the lips by the compression of the bar, said lips forming a groove which flares or widens outwardly from points at or beyond the middle of the secured portion of the rod or supplemental member, substantially as and for the purposes described.

6. An element for a metal open-work structure for use in concrete and other purposes, consisting of a longitudinal tension bar or member having lips which extend from and beyond the main body of the bar and are adapted for the securing of rods or supplemental members by the compression of the bar, and lips forming a continuous groove which is curved at its bottom and thence flares or widens outwardly substantially as and for the purposes described.

7. A structural element for metal open-work, for use in concrete and other purposes, consisting of a longitudinal tension bar or member having lips which extend from and beyond the main body of the bar forming continuous grooves and are adapted for the securing of rods or supplemental members, by the compression of the bar, the outer extremities of the lips being rounded, substantially as and for the purposes described.

8. A structural element for metal open-work, for use in concrete and other purposes, consisting of a longitudinal or tension bar having lips 2'', which extend at intervals from and beyond the main body of the bar forming continuous grooves and are adapted for the securing of rods or supplemental members by the compression of the bar, substantially as and for the purposes described.

9. In combination with a body of concrete, cement or the like, a strengthening metal bar formed on its sides with continuous grooves, and with lips 5' at the sides of the grooves of substantially the same thickness as the width of the grooves, said grooves flaring outwardly and the lips being rounded at their outer parts and embedded in said body of concrete, which enters said grooves, substantially as and for the purposes described.

10. In combination with a body of concrete, cement or the like, a strengthening metal bar formed on its sides with continuous grooves which flare or widen outwardly, the flaring or widening beginning at points distant from the bottoms of the grooves a space substantially equal to half the width of the groove, and rounded lips 5' at the sides of the grooves, the concrete entering within the grooves and embedding said lips, substantially as and for the purposes described.

11. A strengthening-bar for use in concrete, cement and the like formed on its sides with grooves and with lips 5' at the sides of the grooves of substantially the same thickness as the width of the grooves, said grooves flaring outwardly and the lips being rounded at their outer parts, the depth of the grooves below the flaring portions being greater than the radii of the grooves, substantially as and for the purposes described.

12. A strengthening metal bar for use in concrete, cement and the like formed, on its sides with grooves and with lips 5' at the sides of the grooves, which lips are of substantially the same thickness as the width of the groove and of substantially the same contour as the groove, said grooves flaring outwardly and the lips being rounded at their outer parts, the depth of the grooves below the flaring portions being greater than the radii of the grooves, substantially as and for the purposes described.

814,690. **COMBINED RULE AND SQUARE.** CHARLES V. GREEN, Bradford, Pa. Filed June 15, 1905. Serial No. 265,380.



Claim.—1. A combined rule and square, comprising a base-section having a beveled recess in one end and a movable section, a longitudinal recess in the base-section to receive the movable section, a shaft keyed to the movable section, a serrated wheel mounted at each end of said shaft, adapted to be engaged by spring-pressed pawls, for the purpose of limiting the movement of said wheels to hold the movable section at various angles, a beveled plate to be received by the beveled portion of the base-section to hide the serrated wheels, substantially as specified.

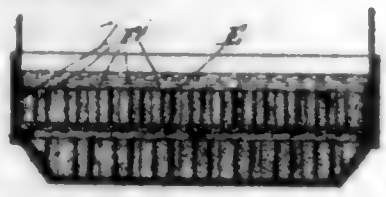
2. A combined rule and square, comprising a base-section, having a recess adapted to receive a movable section, said sections being pivoted together by a shaft, ratchet or serrated wheels mounted on each end of said shaft, pawls adapted to hold said wheels against rotation, substantially as described.

3. A combined rule and square, comprising a base-section, having a longitudinal recess, a movable section adapted to engage said recess, a rod pivoting the two sections together, ratchet-wheels mounted on each end of said rod, pawls engaging said ratchet-wheels, in opposite directions, plates fitting over said wheels, substantially as and for the purpose described.

814,691. **STORAGE BATTERY.** HOWARD B. HALLOCK, Germantown, Pa., assignor to Samuel S. Williamson, Philadelphia, Pa. Filed May 15, 1905. Serial No. 260,413.

Claim.—1. In a storage battery, a jar of non-conducting material, two horizontally-arranged plates contained within the jar, the lower plate resting upon the bottom of the jar, the lower end of the sides of the jars to a height approximately level with the top of the lower plate being inclined inward and downward, the lower plate consisting of a grid of conducting material, said grid consisting of a

frame inclined to fit upon the inside surface of the inclined sides of the jar and surrounding the plate with ribs extending across from one side to the other, active material pasted into the grid, a separator resting upon the top of the lower plate, the other plate resting upon the top of the separator.



2. In a storage battery, a jar, the lower end of the sides of which are inclined inward and downward, conductive material lining the inside surfaces of the inclined portions, ribs of conducting material extending across and connected to the conductive lining, a lug extending upward from this conductive material, active material pasted into the grid, thus forming a plate, a separator resting upon the top of the plate thus formed, a second plate resting upon the top of the separator, both of said plates provided with vertical holes formed through the active material.

3. In a storage battery, a jar, the lower end of the sides of which are inclined inward and downward, a horizontally-arranged plate resting upon the bottom of the jar, said plate consisting of active material, and a conductor surrounding the plate and extending through the active material from one side to the other, the surrounding conductor being inclined to fit the inclined surfaces of the jar, a lug extending upward from the conductor of this plate, a separator resting upon the top of the plate, said separator consisting of a porous perforated sheet, spacers arranged above and below said sheet, a second plate arranged upon the top of the upper spacer, the openings through the perforated or porous sheet being smaller in diameter than the width of the space between the sheet and either of the plates, each of the plates being provided with vertical openings formed through the active material thereof.

814,692. **MERCURIAL ALKALINE PROCESS.** WILLIS R. HARMON, Mechanic Falls, Me., assignor to American Electrolytic Company, Philadelphia, Pa., a Corporation of Delaware. Filed July 6, 1905. Serial No. 268,594.

Claim.—1. In a mercurial alkaline process, the insertion of pieces of carbon in the amalgamating-compartment in contact with both the mercury and the electrolyte.

2. In a mercurial alkaline process the method of increasing the efficiency of the process, which consists in placing a small quantity of carbon between the electrolyte and the mercury in the amalgamating-compartment.

3. In a mercurial alkaline process, the method of increasing the efficiency of the process which consists in adding a small quantity of powdered carbon to the electrolyte in the amalgamating-compartment, and maintaining the quantity of the carbon therein fairly constant as the process proceeds.

814,693. **ALKYL-OXYACETYL-CYANAMID AND PROCESS OF MAKING SAME.** ARNOLD H. C. HEITMANN and ERIK C. CLEMMENSEN, Detroit, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a Corporation of Michigan. Filed Nov. 25, 1905. Serial No. 289,104.

Claim.—1. A new body being a condensation product of an alkyl-oxyacetic acid and a cyanamid, which is characterized by being crystalline, colorless, having a high melting-point, being soluble in water and alcohol but insoluble in ether and only slightly soluble in other organic solvents; upon treating with a hydrolyzing agent, such as dilute sulfuric acid, is transposed into a ureid of alkyl-oxyacetic acid.

2. A new body which is a condensation product of diethyl-oxyacetic acid and cyanamid, which is characterized by being crystalline, colorless, soluble in water and alcohol but insoluble in ether and only slightly soluble in other organic solvents and melting at a temperature of 235° centigrade; upon hydrolyzing, it is transposed into a ureid of diethyl-oxyacetic acid.

3. The process of forming alkyl-oxyacetyl-cyanamids which consists in condensing an alkyl-oxyacetic acid and a cyanamid.

4. The process of forming alkyl-oxyacetyl-cyanamids which consists in treating with a condensing agent an alkyl-oxyacetic acid and a urea in which the oxygen has been substituted.

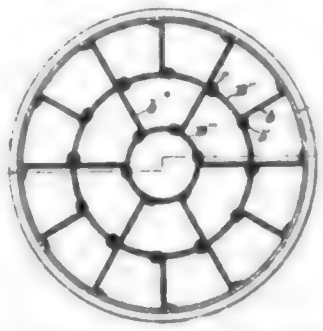
5. The process of forming diethyl-oxyacetyl-cyanamid which consists in treating with a condensing agent the diethyl-oxyacetic ester and a cyanamid.

6. The process of forming diethyl-oxyacetyl-cyanamide which consists in treating with a condensing agent diethyl-oxyacetic ester and a urea in which the oxygen has been substituted.

7. The process of forming alkyl-oxyacetyl-ureas which consists in forming a condensation product of an alkyl-oxyacetic acid and a cyanamid and in hydrolyzing said product to form the alkyl-oxyacetyl-urea.

8. The process of forming alkyl-oxyacetyl-ureas which consists in forming a condensation product of an alkyl-oxyacetic acid and a cyanamid by the treatment with a condensing agent of a mixture of the said acid and a urea, in which the oxygen atom is replaced, and in then hydrolyzing the product to obtain the alkyl-oxyacetyl-urea.

814,694. **NOZZLE.** JAMES HENDERSON, Three Rivers, Mich., assignor to The Sheffield Car Company, Three Rivers, Mich. Filed Dec. 11, 1903. Serial No. 184,755.



Claim.—1. In a stand-pipe, the combination of a horizontal pipe-section; an elbow at the end thereof; and a nozzle consisting of a sheet-metal casing, a comparatively heavy protecting-ring on the outer end of said casing, sheet-metal rings concentrically arranged in said casing, forming partition-walls therein, and cross-walls of sheet metal secured to said rings and to said casing, whereby said rings are supported and said nozzle is divided into a plurality of delivery-passages, for the purpose specified.

2. In a stand-pipe, the combination of a horizontal pipe-section; an elbow at the end thereof; and a nozzle consisting of a sheet-metal casing, sheet-metal rings concentrically arranged in said casing, forming partition-walls therein, and cross-walls of sheet metal secured to said rings and to said casing, whereby said rings are supported and said nozzle is divided into a plurality of delivery-passages, for the purpose specified.

814,695. **VAPOR ELECTRIC LAMP.** PETER C. HEWITT, New York, N. Y., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Filed July 7, 1904. Serial No. 215,578.



Claim.—1. A volatile negative electrode, and means for condensing approximately all the vapors of the negative electrode at or near the same, in combination with a gas or vapor differing from the

vapor developed from the negative electrode, the said other gas or vapor acting as a conducting medium through a portion of the vapor apparatus.

2. In a gas or vapor electric apparatus comprising a container, electrodes therein, at least one of which is of a material which is capable of being volatilized and again condensed, a gas or vapor other than that developed from the said electrode, and means for condensing approximately all the vapors developed from said electrode at or near the electrode itself.

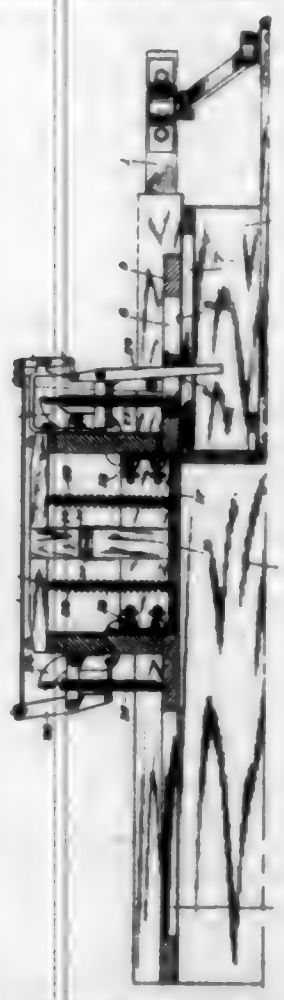
3. In a gas or vapor electric apparatus comprising a container, electrodes therein, at least one of which is of mercury, a gas or vapor other than mercury-vapor, and means for condensing approximately all the vapor of mercury developed from said electrode at or near the electrode itself.

814,696. METHOD OF PRODUCING LIGHT. PETER C. HEWITT, New York, N. Y., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Original application filed July 7, 1904. Serial No. 215,578. Divided and this application filed Oct. 19, 1904. Serial No. 229,054.



Claim.—The method of producing a predetermined luminous effect by means of a gas or vapor electric apparatus containing as one of its electrodes a conducting liquid capable of being volatilized and condensed under the influence of electric current and also containing a gas or vapor other than the one which is developed from the conducting liquid under current influence, which consists in starting the apparatus by any approved means, and condensing all or a portion of the vapors developed from the described electrode at or near the point of development, thereby permitting current to pass mainly through the said other gas or vapor and developing its characteristic light.

814,697. HAY-BALER. FRANK HEMKER, Chinese Camp, Cal. Filed Sept. 18, 1905. Serial No. 279,022.



Claim.—1. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, and a cable or chain connecting said presser-boxes to any ordinary horse-power, as specified.

2. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, means for pulling said boxes forward and backward, means for holding said boxes in the forward position while the plunger of said machine is making its stroke, and means for automatically releasing said boxes again, as set forth.

3. In a hay-baler a transverse feed-box having presser-boxes arranged therein, cross-pieces arranged at each end of said chamber, means for pulling said presser-boxes forward, and springs pulling between the heads of said boxes and the said cross-pieces.

4. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, two cross-pieces secured across each end of said chamber, an inwardly-extending block secured to each cross-piece, an outwardly-extending block secured to the head of each presser-box and extending between said inwardly-extending blocks, rollers secured to said outwardly-extending blocks and bearing between said inwardly-extending blocks, and means for pulling said presser-boxes forward and backward, as set forth.

5. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, means for pulling said boxes forward and backward, retaining-hooks extending through the sides of the said chamber and adapted to hold said boxes in their forward position and means for automatically releasing said hooks, as set forth.

6. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, retaining-hooks secured to the said chamber, springs regulating the position thereof, and means for automatically releasing said retaining-hooks, as set forth.

7. In a hay-baler a feed-chamber, presser-boxes arranged therein, substantially S-shaped retaining-hooks pivotally mounted on the sides of said chamber and extending through the sides thereof, springs regulating the position of said retaining-hooks and means for releasing said hooks with each stroke of the plunger of the machine, as specified.

8. In a hay-baler S-shaped retaining-hooks, springs regulating the position of said hooks, U-shaped levers fulcrumed to the sides of the machine and linked to said retaining-hooks, connecting-rods connecting each set of U-shaped levers and means for automatically setting said system of levers and retaining-hooks in motion.

9. In a hay-baler a transverse feed-chamber, a plunger-box provided with a slot in each side thereof, a small catch extending into each of said slots and curving toward the inner ends of the said slots, a plunger provided with slots coinciding with said first-named slots, catches extending upward into said last-named slots and curving toward the inner ends of the said slots, levers fulcrumed to the sides of the feed-chamber and extending into said slots, and a system of retaining-hooks connected suitably to said levers for the purpose set forth.

10. In a hay-baler a transverse feed-chamber, presser-boxes arranged therein, retaining-hooks pivotally mounted on the outsides of the said chamber and extending into the said chamber and adapted to hold the presser-boxes in their forward position, springs regulating the position of said hooks, U-shaped levers fulcrumed to the sides of said chamber and linked to the said retaining-hooks, rods connecting each set of U-shaped levers, a plunger-box provided with a slot in each side thereof, catches extending upward into said slots and curving toward the inner ends of the said slots, a plunger provided with slots coinciding with said first-named slots, catches extending upward into said slots at the inner ends thereof and curving toward the inner ends of the said slots, levers fulcrumed to the sides of the said chamber and extending into said slots, smaller levers fulcrumed to the sides of the said chamber and linked at one end to said last-named levers and at the other to said U-shaped levers, as set forth.

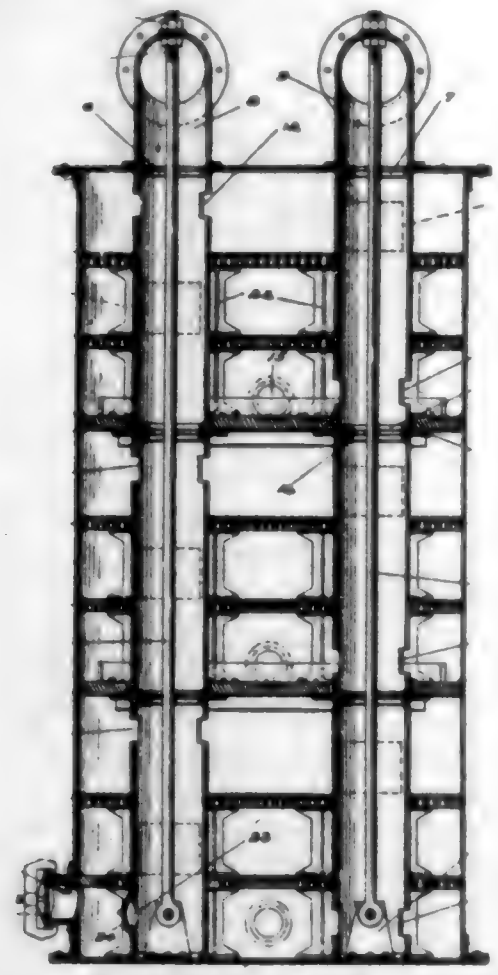
814,698. GAS-PURIFIER. FRANKLIN G. HUBART, Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 20, 1905. Serial No. 256,639.

Claim.—1. In a purifier for gas or liquid, the combination with a shell, of a plurality of removable trays bearing filtering material supported therein, and a pair of parallel conduits passing snugly through apertures in said trays, one of said conduits having inlet-ports on one side of the trays, the other conduit having outlet-ports on the other side of the trays, for the purpose described.

2. In a purifier for gas or liquid, the combination with a shell, of a plurality of removable partitions forming a plurality of compartments therein, a plurality of removable trays bearing filtering material supported in each compartment, a pair of conduits passing the length of the shell and each formed of a plurality of complementary sections having inlet and outlet ports, substantially as described.

3. In a purifier for gas or liquid, the combination with a casing, of a bottom therefor, a plurality of partitions, a plurality of trays bearing filtering material, inlet and outlet conduits, and a closure for

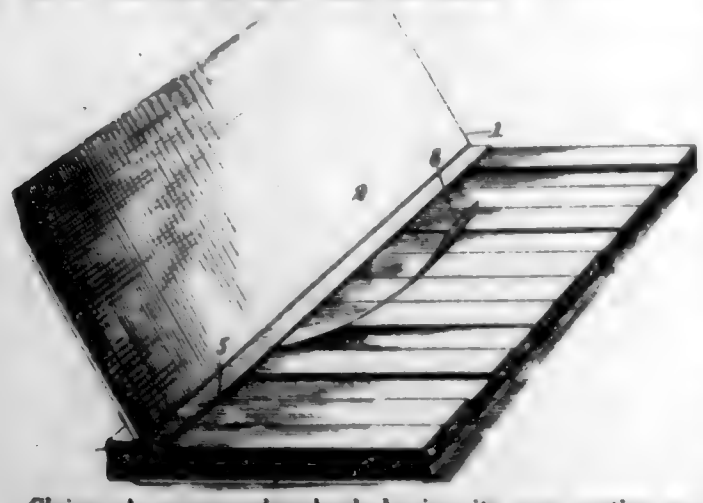
the top of the casing, said partitions, trays and conduits being adapted to be inserted through the end of said casing.



4. In a purifier for gas or liquid, the combination with a casing having a bottom, of a plurality of removable trays bearing filtering material supported in said casing, and a pair of ported conduits resting on said bottom and passing through said trays, substantially as described.

5. In a purifier for gas or liquid, the combination with a casing having a bottom, of a plurality of removable partitions closely fitting the interior of said casing forming compartments therein, trays bearing filtering material supported in said compartments, an apertured closure for the top of the casing, and a pair of sectional conduits extending from the bottom of said casing into registration with the apertures in said closure, each section being ported and extending substantially the length of a compartment, substantially as described.

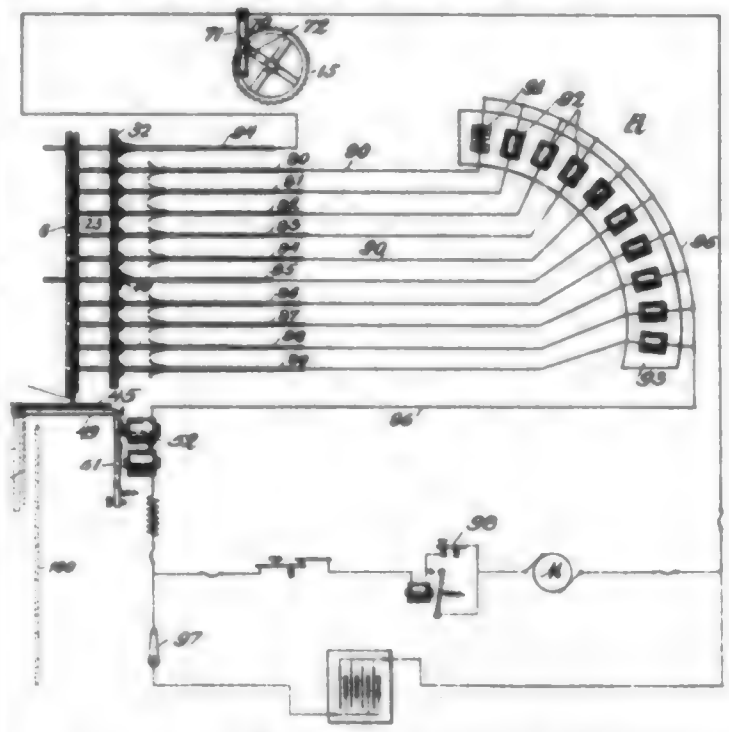
814,699. MEMORANDUM-BOOK. JOHN J. HOEY, New York, N. Y. Filed Mar. 11, 1905. Serial No. 249,658.



Claim.—A memorandum-book having its rear portion composed of a plurality of full leaves and having the leaves of its forward portion divided by parallel transverse slits into a plurality of ribbons, said ribbons having perforate lines enabling the same to be detached near one extremity thereof.

814,700. APPARATUS FOR USE IN TABULATING AND OTHER LIKE SYSTEMS. HERMAN HOLLERITH, Garrett Park, Md., assignor, by mesne assignments, to The Tabulating Machine Company, a Corporation of New Jersey. Filed Jan. 10, 1905. Serial No. 240,628.

Claim.—1. In apparatus of the character described, record-actuated selecting devices, a swinging record-supporting device, means for holding said device under the records and means controlled by the records for releasing said holding means to permit the supporting device to swing out of the path of the record.



2. In apparatus of the character described, record-actuated selecting devices, a swinging record-supporting device, means for holding said device under the records, means controlled by the records for releasing said holding means to permit the supporting device to swing out of the path of the record, and resetting means for said supporting device.

3. In apparatus of the character described, record-actuated selecting devices, a reciprocating member for presenting the record to the action of the selecting devices, a pivoted record-supporting device, means for releasing said device and permitting it to swing out of the path of the record and resetting means for said support

4. In apparatus of the character described a movable record-carrier, a movable record-support, means for releasing said support and resetting means therefor.

5. In apparatus of the character described, record-actuated selecting devices, a record-supporting device and means actuated directly by any of the selecting devices for releasing the record-supporting device.

6. In apparatus of the character described, record-actuated selecting devices, a record-supporting device, means actuated directly by the selecting devices for releasing the supporting device, and resetting means for said supporting device.

7. In apparatus of the character described the combination of record-actuated contacts, a record-supporting device, releasing means therefor controlled directly by said record-actuated contacts and means for returning said supporting device to initial position.

8. The combination of record-actuated selecting devices, record-carrying means, a motor for imparting relative movement to the selecting devices and carrying means, a record-supporting device, means actuated directly by the selecting devices for releasing said supporting device and means actuated by the motor for resetting said supporting device.

9. The combination of record-actuated selecting devices, a record-supporting device, releasing means therefor directly controlled by the actuation of the selecting devices and resetting means free from the control of the selecting devices.

10. The combination of record-actuated contacts, a record-supporting device, a releasing device therefor, and an electromagnet directly connected with the record-actuated contacts for operating the releasing device.

11. The combination of record-actuated contacts, a record-supporting device, a releasing device therefor, an electromagnet directly connected with the record-contacts for operating the releasing device, and resetting means for the supporting device.

12. The combination with record-actuated selecting devices, of a record-supporting device, an armature for locking the supporting device and an electromagnet for actuating said armature to release the supporting device.

13. The combination with record-actuated selecting devices, of a record-supporting device, an armature for locking the supporting

device, an electromagnet for actuating the armature to release the supporting device, and resetting means for said supporting device.

14. The combination with record-actuated selecting devices, of a record-supporting device, an independently-movable releasing device therefor adapted to engage therewith, and means such as a spring for moving said supporting device out of the path of the record when released from engagement with its releasing device.

15. The combination with record-actuated selecting devices, of a record-supporting device, an independently-movable releasing device therefor adapted to engage therewith, means such as a spring for moving said supporting device out of the path of the record, and resetting means for said supporting device.

16. The combination of a plurality of record-actuated selecting devices, a record-supporting device, means actuated directly by any one of said selecting devices for releasing said supporting device, and resetting means free from the control of the selecting devices, for said supporting device.

17. In apparatus of the character described, the combination of a record-support, a locking device therefor, means for releasing the locking device from engagement with the support, means for moving the support when such engagement is released, and resetting means.

18. In apparatus of the character described, the combination of a record-support, a locking device for holding it in a fixed position, releasing means, actuating means independent of the locking and releasing means for moving said support, and resetting means.

19. The combination of record-actuated contact devices, record-carrying mechanism, means for effecting a relative reciprocation of the record-carrying mechanism and the contact devices, a record-supporting device, releasing means therefor comprising an electromagnet controlled by the record-actuated contacts, and means free from the control of the record-actuated contacts for resetting said supporting device.

20. In apparatus of the character described, comprising record-controlled devices such as register-indicators or sorting-guides, electromagnets arranged in multiple across the mains of a normally open circuit, means for holding the magnet-circuits normally closed, record-actuated means for opening a predetermined number of the magnet-circuits and means for closing the circuit through the unseparated contact or contacts.

21. The combination with record-controlled devices such as register-indicators or sorting-guides, of electromagnets for controlling the operation of such devices arranged in multiple across the mains of a normally open circuit, contacts for each of said magnet-circuits normally together, record-actuated means for separating a predetermined number of said contacts and means for closing the circuit through the unseparated contact or contacts.

22. The combination of contact devices, normally in contact, a supporting-frame therefor, a record and means for relatively reciprocating the record and the supporting-frame to open said contacts, substantially as set forth.

23. The combination of a supporting-frame, pins carried thereby, contacts carried by the pins, coöperating contacts carried by the frame, and a record for actuating said pins to control said contacts.

24. The combination of a plurality of movable pins, normally closed contacts adapted to be separated by the movement of the pins, a record for controlling the movement of the pins, and means for closing an electric circuit through the unseparated contacts, substantially as set forth.

25. The combination of a plurality of opposed contacts normally together, means controlled by a record for separating said contacts, and means for closing an electric circuit through the unseparated contacts.

26. The combination of a supporting-frame, a plurality of opposed contacts supported thereby and normally together, a record for separating a predetermined number of said contacts, and means for closing an electric circuit through the unseparated contacts.

27. The combination with a plurality of opposed contacts normally together and out of circuit, record-actuated means for separating said contacts and means for closing the circuit through the unseparated contacts.

28. The combination of a stationary frame, record-controlled opposed contact devices, circuit-closing devices, supported in said frame, a reciprocating record-carrying device, centering-fingers for adjusting the card in position in the carrier, and means controlled by the reciprocating mechanism of the card-carrying device to actuate said centering-fingers.

29. The combination of a stationary frame, record-controlled contacts movably supported in said frame, coöperative fixed contacts also mounted in said frame, a reciprocating record-carrying device, and a yielding plate mounted between the frame and the carrier for clamping the record while moving toward the frame.

30. The combination of a stationary frame, yielding pins carried thereby, contacts carried by said pins, coöperating contact-surfaces also carried by said frame, a reciprocating record-carrier and an apertured plate yieldingly mounted between said frame and said carrier for clamping the record while the latter is moving toward the frame.

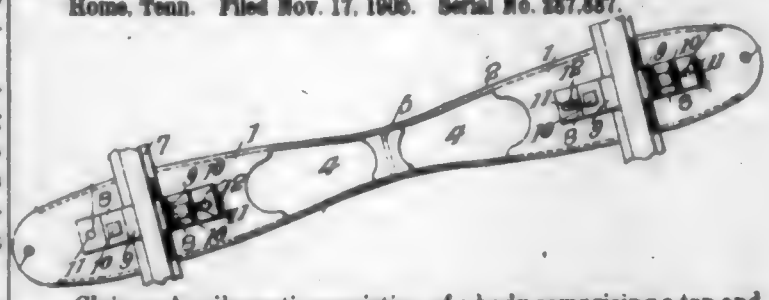
31. The combination with a record of record-actuated selecting devices supported in a stationary frame, means for reciprocating the records toward the selecting devices and means for supporting the record in vertical alinement with the selecting devices during the reciprocating movement, substantially as set forth.

32. The combination with a record, of record-actuated selecting devices mounted in a stationary support, means for reciprocating the record toward the selecting devices to actuate the latter, means for supporting the record in vertical alinement with the selecting devices during its reciprocating movement, and means for releasing the record from engagement with its supporting means.

33. The combination with a record, of record-actuated selecting devices mounted in a stationary frame, means for reciprocating the record toward the selecting devices to actuate the latter, means for supporting the record in vertical alinement with the selecting devices during its reciprocating movement, centering devices for positioning the record horizontally during its said movement, and means for releasing the engagement of the record and its supporting means.

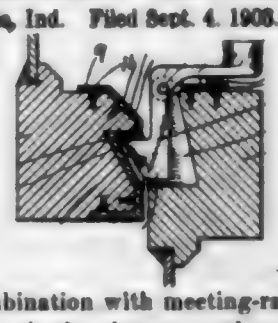
34. In apparatus of the character described, the combination of record-actuated selecting devices comprising a plurality of opposed contacts normally together, record-supporting devices, record-controlled means for separating a predetermined number of said contacts, means for closing an electric circuit through the unseparated contacts, means controlled directly by the selecting devices for releasing the record-supporting device and means for resetting the same.

814,701. **RAILWAY-TIE.** PHINEAS HOLMES, National Soldiers Home, Tenn. Filed Nov. 17, 1905. Serial No. 287,887.



Claim.—A railway-tie consisting of a body comprising a top and sides, the sides being cut away at the ends of the tie, the top being cut away centrally of the ends of the tie, a horizontal web connecting the sides at the center of the tie, transverse reinforcing-braces beneath the top of the tie at the ends thereof and connected with the sides to reinforce the same, and rail-clamping plates disposed on the top of the tie near the ends adjacent to the portions beneath which the transverse reinforcing-braces aforesaid are arranged.

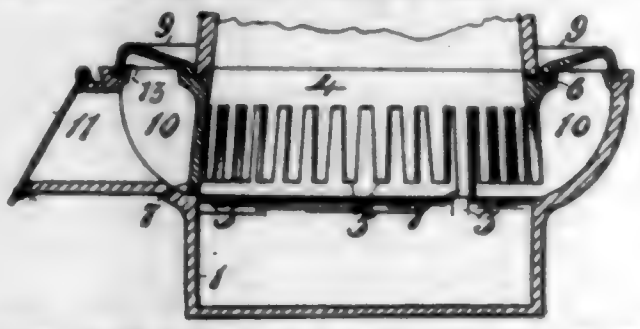
814,702. **WINDOW-LOCK.** CARL V. HOSBECKER and OTTO W. KLIPPLE, Brookville, Ind. Filed Sept. 4, 1903. Serial No. 171,809.



Claim.—The combination with meeting-rails of sashes having their inner faces recessed, of a plate secured upon the upper surface of one of the meeting-rails and having ears formed therewith and projecting from one side edge thereof to lie over the recess therebeneath, an angular lever pivoted within the ears of said plate, the lower portion of the lever being extended downwardly beneath said ears and having a barbed end for movement in the recesses of both meeting-rails simultaneously, a keeper-plate secured within the recess of the rail opposite the one having the plate secured upon its upper surface, said keeper-plate having a socket entering the recess of the rail to protect the latter and its upper and lower flanges secured against the top and bottom faces of said rail, the upper wall of the socket be-

ing in a horizontal plane for cooperation with the horizontal edge of the barbed end of the aforesaid lever when the meeting-rails are together, the upper angular portion of said lever being arranged to lie over the first-named plate and having its free end weighted to normally force the upper portion of the lever downwardly and the barbed end thereof outwardly, and a stop-pin formed upon the upper face of the first-named plate immediately beneath the upper portion of said lever to limit the downward movement of the weighted end of the latter.

814,703. STOVE OR FURNACE. HIRAM J. HOUSE, Akron, Ohio, assignor to The Fiebeger Heating Company, Akron, Ohio, a Corporation of Ohio. Filed July 27, 1905. Serial No. 271,433.



Claim.—1. The combination in a device of the class described, of an ash-pit provided at its upper part with an outwardly-flaring annular portion forming with the main body of the ash-pit a shoulder, a slotted annular member arranged to seat on said shoulder and having means to sustain the fire-pot of the device, the top of said annular member being spaced apart from the top of the outwardly-flaring portion of said ash-pit, and means to cover the space existing between them.

2. The combination in a device of the class described, of an ash-pit provided at its upper part with an integral outwardly-flaring portion forming with the main body of the ash-pit at its junction therewith an annular shoulder, an annular member arranged to seat on said shoulder having upwardly-extending slots in its lower portion, and means on its upper portion to sustain the fire-pot of the device, the top of said annular member being spaced apart from the top of the ash-pit, and means to cover said space.

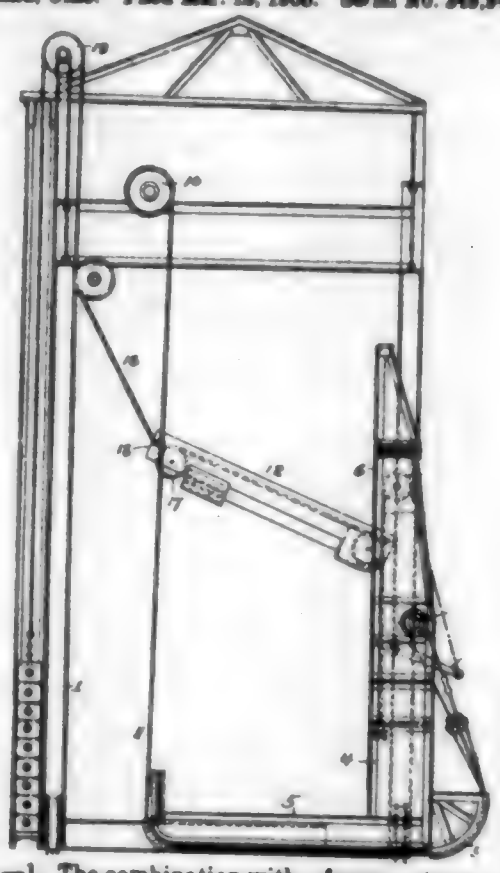
3. The combination in a device of the class described, of an ash-pit provided at its upper portion with an integral outwardly-flaring annular portion forming a shoulder at its point of junction with the main body of the ash-pit, an annular member arranged to rest on said shoulder, having downwardly-extending teeth at its lower portion, and means at its top for sustaining the fire-pot of the device, the top of said annular member being spaced apart from the top of the ash-pit, and means to cover said space.

4. The combination in a device of the class described, of an ash-pit provided at its upper portion with an integral outwardly-flaring annular portion forming with the main body of the ash-pit at its junction therewith an annular shoulder, an annular member provided with downwardly-extending teeth in its lower portion, a plurality of said teeth being longer than the balance thereof, said elongated teeth being arranged to rest on the annular shoulder of said ash-pit and sustain said annular member, said annular member having at its top means to sustain the fire-pot of the device, said top portion of said annular member and the top of said ash-pit being spaced apart, and means to cover said space.

5. The combination in a device of the class described, of an ash-pit provided at its upper part with an integral outwardly-flaring annular portion forming with the main body of the ash-pit at its junction therewith an annular shoulder, an annular member provided with downwardly-extending teeth in its lower portion, a plurality of said teeth being longer than the balance thereof, said elongated teeth being arranged to rest on said annular shoulder and sustain said annular member spaced apart from said shoulder, said annular member having means at its top for sustaining the fire-pot of the device, the top of said annular member being spaced apart from the top of said ash-pit, and means to cover said space.

6. The combination in a device of the class described, of an ash-pit provided at its upper portion with an integral outwardly-flaring annular portion forming with the main body of the ash-pit at its junction therewith an annular shoulder, an annular member mounted on said shoulder and provided with means at its top to sustain the fire-pot of the device, the top of said annular member being spaced apart from the top of said ash-pit, means to cover said space, and means to admit air to the space existing between said annular member and the outwardly-flaring portion of said ash-pit.

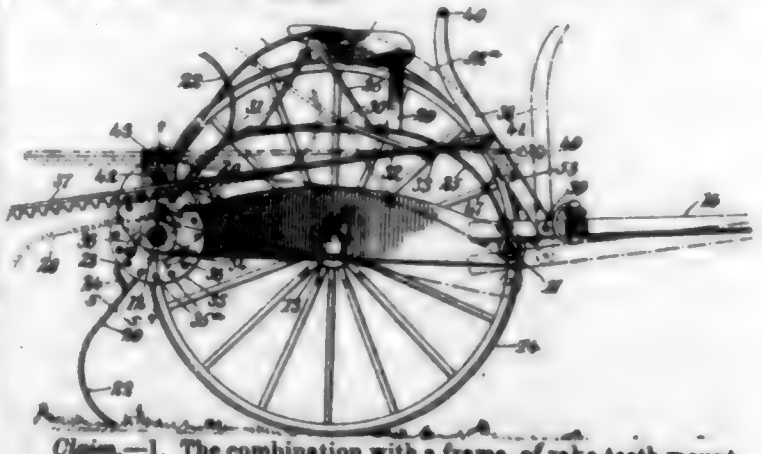
814,704. CAR-DUMPING APPARATUS. GEORGE H. HULETT, Cleveland, Ohio, assignor to The Wellman-Seaver-Morgan Company, Cleveland, Ohio. Filed Mar. 13, 1905. Serial No. 249,947.



Claim.—1. The combination with a frame or tower, of a cradle, comprising a horizontal platform and uprights at one end pivotally supported between their ends, chains or cables secured to the pivotal point of the cradle, a segment at the angle of the cradle, and said chains or cables passed around the segment, thence beneath the platform, and upward over a pulley, and means for controlling the movement of the cradle.

2. In a car-dumping apparatus, the combination with a tower, and a cradle pivotally mounted therein, of clamps for holding a car on the cradle, weighted cables attached to said clamps, pivoted levers, pulleys above the clamps and cables attached at one end to the clamps, passed over the pulleys and connected at their other ends to said levers.

814,705. RAKE. WILLIAM W. IRWIN, Juneau, Alaska. Filed Sept. 22, 1904. Serial No. 225,452.



Claim.—1. The combination with a frame, of rake-teeth mounted thereon, means for holding the teeth in the operating position, means for revolving the teeth to release accumulated material, means for tilting the said frame, and means for separately connecting the revolving means and tilting means.

2. The combination with a frame, of rake-teeth mounted thereon, means for holding the teeth in the operating position, means for revolving the teeth to release accumulated material, means for raising the rake-frame, and means for separably connecting the revolving means and raising means.

3. The combination with a frame, of a supporting-axle, teeth carried by the frame, shafts connected with the frame, a seat-support projecting above the frame, a lever fulcrumed upon the shafts, and a link connecting the lever and seat-support.

4. The combination with a frame, of a supporting-axle, teeth carried by the frame, shafts connected with the frame, a seat-support projecting above the frame, a lever fulcrumed upon the shafts, a link connecting the lever and seat-support, and means for locking the link and lever together.

5. The combination with a frame, of a supporting-axle, teeth revolving upon the frame, shafts connected with the frame, a lever for revolving the teeth, a lever fulcrumed to the shafts and connected to the frame, and means for joining the levers to one another.

6. A rake comprising a series of opposite plates, and pairs of teeth clamped between the plates and extending at opposite sides thereof, the ends of the teeth contacting with the companion teeth at opposite sides of the plates.

7. A rake comprising a support, pairs of teeth extending upon opposite sides of the support and each tooth having a depression outside the support in which the companion tooth rests.

8. The combination with a frame including a cross-bar, of a supporting-axle, a sleeve rotatable about the cross-bar, teeth fixed to the sleeve, a gear rotatable about the bar, a rack meshing with the gear, a lever to which the rack is joined, shafts connected with the frame, a lever fulcrumed to the shafts and connected to the frame, and means for joining the levers to one another.

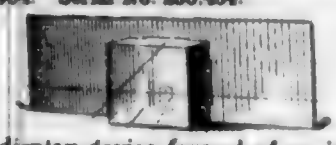
9. The combination with a frame including a cross-bar, of a supporting-axle, a sleeve rotatable about the cross-bar, teeth fixed to the sleeve, a gear rotatable about the bar, ratchet mechanism connecting the gear and sleeve, a rack meshing with the gear, a lever to which the rack is joined, shafts connected with the frame, a lever fulcrumed to the shafts and connected to the frame, and means for joining the levers to one another.

10. The combination with a frame provided with an upward extension, of a supporting-axle, revolving teeth, shafts connected with the frame, a lever, means for revolving the teeth from the said lever, a lever fulcrumed to the shafts and connected with the frame extension, and means for joining the levers to one another.

11. The combination of revoluble rake-teeth, means for holding the teeth in an operative position, means for revolving the teeth to release the accumulated material, means for bodily raising the teeth, and a connection between the revolving and raising means.

12. A rake comprising a support, and pairs of teeth extending upon opposite sides of the support, the ends of the teeth contacting with the companion teeth at opposite sides of the support.

814,706. **SHOW DEVICE.** CLARENCE E. ISAACS. New York, N. Y. Filed Dec. 27, 1904. Serial No. 238,484.



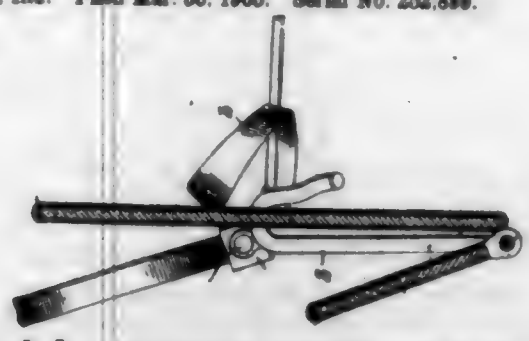
Claim.—1. A display device formed of an integral section of paper or other sheet material and having a card, walls forming a box at one edge of the card whereby said box may support the card in upright position, one of said walls being connected directly to the card, and means adapted removably to connect the other of said walls with the card, for the purpose specified.

2. A display device comprising a card, walls adapted to form a box integral therewith, and one of said walls being connected directly to the card, and means for removably connecting the other of said walls with the card.

3. A display device formed of an integral sheet of paper or equivalent material and comprising a card and front end side and back walls forming a box, one of said walls being connected directly to the card, and the other of said walls having tabs thereon adapted to engage openings in the card.

4. A display device formed of an integral section of sheet material and having a card, walls forming a box of which walls one is directly connected to and contiguous with the card, and means for removably fastening another of said walls adjacent to the base of the card.

814,707. **ATTACHMENT FOR SPECTACLES.** JOHN P. JACKSON, Orleans, Ind. Filed Mar. 30, 1905. Serial No. 252,899.



Claim.—1. In a grab-front for spectacles or eyeglasses, a frame having wide hooks for loose engagement with the main lens-mounting, and including arms which follow generally the curvature of the inner and lower portions of the main lens-supporting rims, auxiliary lens-supporting rims carried by said arms and bent outward in a plane oblique to the general plane of said arms, said auxiliary rims having enlarged ears or lugs which are forced by gravity against the lower portions of the main rims to form fulcrums for effecting outward movement of the upper portion of the frame with respect to the main lens-mounting.

2. In a grab-front for spectacles or eyeglasses, a frame including a pair of curved arms and a nose-piece, a pair of weighted hooks for engagement with the main lens-mounting, auxiliary lens-carrying rims having their lower edges secured to the end portions of the arms, the auxiliary rims being bent outward at an angle oblique to the general plane of the arms, the upper portion of the nose-piece being bent out at an angle to such plane, thereby throwing the center of gravity forward and causing the lower portions of said rims to rest against the lower portions of the main lens-rims.

814,708. **STAMP AND SEAL HANDLING DEVICE.** GEORGE B. KILBON, Springfield, Mass. Filed Oct. 23, 1902. Serial No. 128,484.



Claim.—1. The combination, in a device for handling stamps, seals, &c., with an affixer having a cleft base, capable of being vibrated to open and close the cleft, and provided with means to engage such stamps, seals, &c., of a receiver for said stamps, seals, &c., adapted to admit said base.

2. The combination, in a device for handling stamps, seals, &c., with an affixer having a cleft base, capable of being vibrated to open and close the cleft, and provided with spurs projecting from such base on opposite sides of such cleft to engage such stamps, seals, &c., of a receiver adapted to hold such articles as stamps, &c., and to admit said base.

3. The combination with a suitable receiver, of an affixer separable at one end and there provided with projecting spurs arranged on opposite sides of the line of separation, one or more of said spurs being inclined relative to the surrounding surface.

4. The combination with a suitable receiver, of an affixer having a cleft base and inclined projecting spurs fixed thereto on opposite sides of the cleft therein.

5. The combination, in a device for handling stamps, seals, &c., with an affixer having a cleft base, capable of being vibrated to open and close the cleft, and provided with spurs projecting from such base for a distance approximately equal to the thickness of the stamp, seal, or other object, to be acted upon, of a receiver adapted to hold such articles as stamps, &c., and to admit said base.

6. The combination with a suitable receiver, of an affixer separable at one end and there provided with spurs projecting for a distance approximately equal to the thickness of the stamp, seal, or other object, to be acted upon, one or more of said spurs being inclined relative to the surrounding surface.

7. The combination with a receiver capable of holding a bunch of stamps, seals, and the like, of an affixer having a body separated by a cleft into sections and adapted to enter said receiver and provided with spurs adapted to penetrate a stamp or seal when the cleft sections of said body are compressed and to release the same when such compression is relaxed.

8. The combination with a receiver capable of holding stamps, seals, and the like, of an affixer comprising a body having a cleft extending through the same and adapted to enter said receiver and provided with spurs projecting from the base thereof each side of the cleft therein, and means to limit the separation of the sections of said body.

9. The combination with a receiver capable of holding stamps, seals, and the like, of an affixer comprising a cleft body provided with spurs projecting from the base thereof each side of the cleft therein, and means to normally separate the sections of said body.

10. The combination with a receiver capable of holding stamps, seals, and the like, of an affixer comprising a cleft body provided with spurs in the base thereof at each side of the cleft therein, means to normally separate the sections of said body, and means to limit the amount of separation.

11. The combination with a receiver provided with a comparatively soft block for the reception of stamps, seals, and the like, of an

affixer cleft at the base and provided on its bottom with projecting spurs, said block being adapted to be penetrated by the spurs when the latter are brought into contact therewith.

814,709. FILLING-CARRIER. FREDERIC E. KIP, Montclair, N. J. Filed Oct. 3, 1902. Serial No. 125,612.



Claim.—1. A loom-shuttle skewer having a head provided with a jacket of artificial substance made from a vegetable fiber, and one or more annular ribs or projections surrounding said jacket.

2. A loom-shuttle skewer having a head provided with a jacket of "hard fiber," and one or more annular ribs or projections surrounding said jacket.

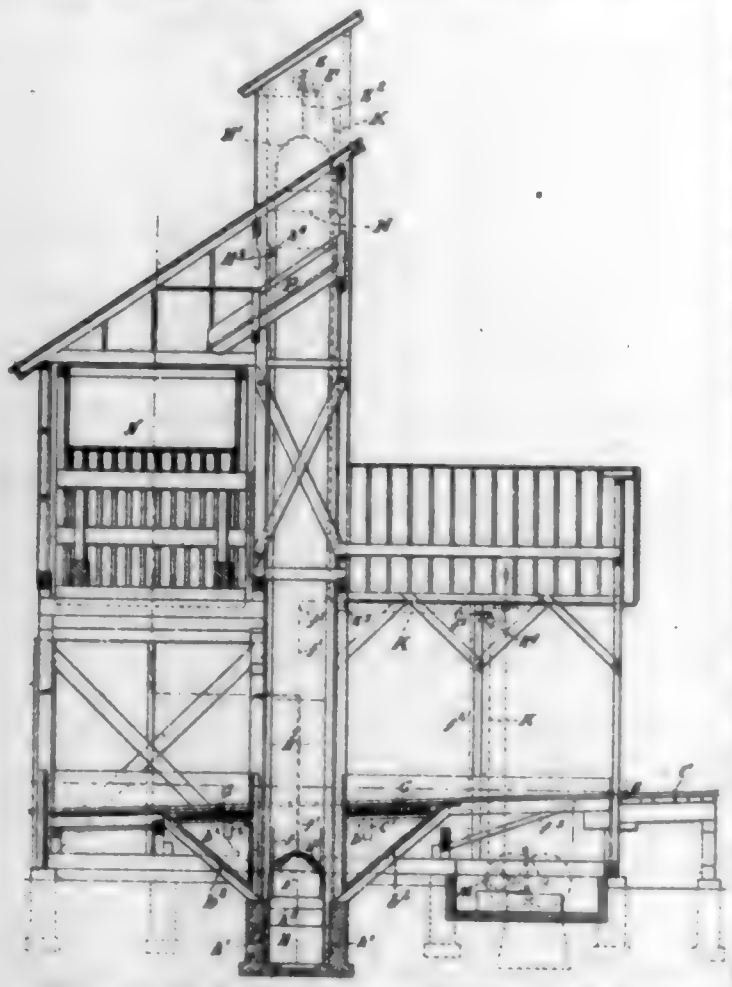
3. A skewer having a head of "hard fiber" and rings or projections surrounding said head.

4. A loom-shuttle skewer having on its head a jacket of artificial fiber and one or more annular ribs or projections surrounding said jacket.

5. A loom-shuttle spindle having on its head a jacket of elastic or resilient material and one or more annular ribs or projections surrounding said jacket.

6. A filling-carrier having a ring or rings and a bed of resilient material between the ring and the carrier in which the ring will embed itself.

814,710. COAL UNLOADING, BREAKING, AND LOADING APPARATUS. WALTER T. KRAUSCH, La Grange, Ill. Filed Sept. 18, 1905. Serial No. 278,897.



Claim.—1. A railway coaling-station apparatus for unloading, breaking and loading coal, comprising a car-unloading track, a double-incline unloading-hopper below said track, sliding doors for opening and closing the unloading-hopper, elevator-bucket pits at the lower ends of the unloading-hopper inclines, coal-breaker bars above the unloading-hopper, a double-incline loading-hopper above the unloading-hopper, sliding doors for opening and closing the same, a pair of automatic-dumping elevator-buckets having bails hinged thereto below and to one side of the center of gravity, and provided with guide-blocks, upright guides for the guide-blocks on the bucket-bails, upright guides for the buckets, stop-pins on the buckets to engage the bucket-bails and limit the righting tilting movement of the buckets, stops on the buckets engaging the bucket-bail guides to limit the dumping tilting movement of the buckets, inclined chutes into which the coal is dumped from the buckets and by which it is delivered into the loading-hopper, and a winding-drum and cables and pulleys for operating the buckets, substantially as specified.

2. A railway coaling-station apparatus for unloading, breaking and loading coal, comprising a car-unloading track, a double-incline unloading-hopper below said track, sliding doors for opening and closing the unloading-hopper, elevator-bucket pits at the lower ends of the unloading-hopper inclines, coal-breaker bars above the unloading-hopper a double-incline unloading-hopper above the unloading-hopper sliding doors for opening and closing the same, a pair of automatic-dumping elevator-buckets having bails hinged thereto below and to one side of the center of gravity, and provided with guide-blocks, upright guides for the guide-blocks on the bucket-bails, upright guides for the buckets, stop-pins on the buckets to engage the bucket-bails and limit the righting tilting movement of the buckets, stops on the buckets engaging the bucket-bail guides to limit the dumping tilting movement of the buckets, inclined chutes into which the coal is dumped from the buckets and by which it is delivered into the loading-hopper, and a winding-drum and cables and pulleys for operating the buckets, the inclines of said loading-hopper having hinged extensions and means for raising and lowering said hinged extensions, substantially as specified.

3. In a railway station apparatus for unloading, loading and breaking coal, the combination with a double-incline unloading-hopper, of breaker-bars above the same, doors for opening and closing the unloading-hopper, elevator-bucket pits, elevator-buckets, upright guides for the elevator-buckets, bucket-bails pivotally connected thereto below and to one side of the center of gravity, upright guides for the bucket-bails, guide devices on the bucket-bails engaging said upright guides, a winding-drum, cables and pulleys for operating the elevator-buckets and stops on the elevator-buckets engaging the bucket-bail guides to limit the dumping tilting movement of the buckets, substantially as specified.

4. In a railway station apparatus for unloading, loading and breaking coal, the combination with a double-incline unloading-hopper, of breaker-bars above the same, doors for opening and closing the unloading-hopper, elevator-bucket pits, elevator-buckets, upright guides for the elevator-buckets, bucket-bails pivotally connected thereto below and to one side of the center of gravity, upright guides for the bucket-bails, guide devices on the bucket-bails engaging said upright guides, a winding-drum, cables and pulleys for operating the elevator-buckets and stops on the elevator-buckets engaging the bucket-bail guides to limit the dumping tilting movement of the buckets, and stops on the buckets engaging the bucket-bails for limiting the righting tilting movement of the buckets, substantially as specified.

5. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket, substantially as specified.

6. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket and stops on the bucket engaging the bucket-bail guides to limit the dumping, tilting movement of the bucket, substantially as specified.

7. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail, and upright guides for the bucket, and stops on the bucket engaging the bucket-bail to limit the righting tilting movement of the bucket, substantially as specified.

8. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail, upright guides for the bucket, stops on the bucket engaging the bucket-bail guides to limit the dumping tilting movement of the bucket, and stops on the bucket engaging the bucket-bail to

limit the righting tilting movement, of the bucket, substantially as specified.

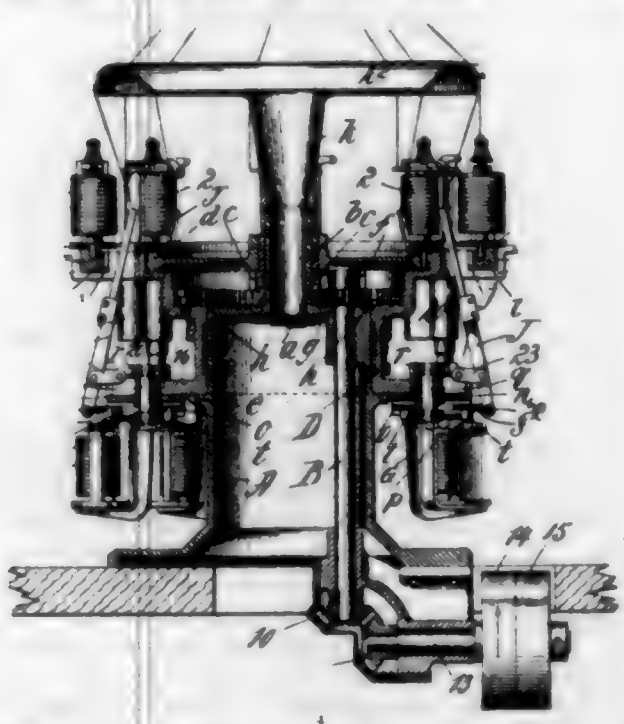
9. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket and a loading-hopper above the unloading-hopper, substantially as specified.

10. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket and a loading-hopper above the unloading-hopper, and a chute for receiving the coal from the elevator-bucket and delivering it to the loading-hopper, substantially as specified.

11. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto below and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket, and a winding-drum, cable and pulleys for operating the elevator-bucket, substantially as specified.

12. In a coal unloading, breaking and loading apparatus, the combination with an unloading-hopper, of breaker-bars above the unloading-hopper, a bucket-pit at the lower edge of the unloading-hopper incline, an automatic-dumping elevator-bucket, a bail pivotally connected thereto and to one side of the center of gravity, guides on the bucket-bail, upright guides engaging the guides on the bucket-bail and upright guides for the bucket, a winding-drum, cable and pulleys for operating the elevator-bucket, a sliding door for the unloading-hopper, and an operating-lever line and pulleys for operating the sliding door, substantially as specified.

814,711. BRAIDING-MACHINE. HENRY W. LARSSON, Springfield, Mass. Filed Sept. 10, 1903. Serial No. 172,685.



Claim.—1. In a braiding-machine, in combination, two circularly-arranged sets of bobbins in different planes, a rotary support or carrier for one of the sets, and means for revolubly moving the other set in the reverse direction, thread-carriers pertaining to the first set of bobbins pivotally mounted on the support therefor, and revoluble in unison therewith, cams on said support, radially-movable slides actuated by the cams, and operably connected with the thread-carriers.

2. In a braiding-machine, in combination, an annular body or carrier and a set of bobbins 1 mounted thereon in circular arrangement in a horizontal plane, and revoluble in unison therewith, and said body having at an upper part thereof an annular raceway, a set of bobbin-carriers, having bobbins 2 mounted thereon, movable in said raceway, said body furthermore being provided with the radial apertures *v* extending across said raceway, means for turning said annular body in a given direction, and means for reversely revolving the carriers for the set of bobbins 2, a series of reciprocatory thread-carriers pertaining to the first set of bobbins, mounted on the annular body adjacent such bobbins, and having their upper extremities playing through said radial apertures *v*, and a cam for each thread-guide rotatably mounted on and carried by the annular body, and operable on said thread-carriers, for imparting thereto, as they revolve, their inward and outward motions

3. In a braiding-machine, the combination of the upper and lower sets of bobbins revolubly movable in different planes and in different directions, with a series of thread-carriers pertaining to the first set of bobbins, pivotally mounted for swinging movements in vertical planes radial to the axis of the machine, slides pivotally engaged to a member of each thread-carrier and movable radially to the axis of the machine, rotary cams for actuating said slides, and means for rotating the several cams in unison.

4. In a braiding-machine, the combination of upper and lower sets of bobbins revolubly movable in different planes and in different directions, a circularly-movable support for the lower set of bobbins, a series of thread-carriers pertaining to the lower set of bobbins pivotally mounted on the circularly-movable support therefor, for swinging movements in vertical planes radial to the axis of the machine, said circularly-movable support having a plurality of radially-arranged slideways therein, slides in said ways having oppositely-located studs and connected with said thread-carriers, cams rotatably mounted on said support, disposed between and operable against said studs of the respective slides, and means for imparting the rotary movements to said cams.

5. The annular body having the raceway and the radial slots *v* intersecting same, and carrying therebelow the set of bobbins 1, bobbin-carriers with bobbins 2, movable in said raceway reversely of the motion of said body, slides movable radially in ways which are formed in said body, thread-carriers pivotally connected to fixtures therefor on the body, and also pivotally linked to said slides at points removed from the pivotal connections to the body, the free extremities of said thread-carriers being tubular and extended through said radial slots *v*, cams respectively actuating the slides, and means for rotating all the cams in unison.

6. In a braiding-machine, the combination of the cylindrical standard, the annular body supported for rotation about said standard and having its upper portion formed cup-shaped, and provided therein with an internal gear-wheel affixed thereto, a driving-shaft vertically journaled within the said standard, having at an upper portion thereof a spur gear-wheel in driving connection with said internal gear-wheel, and upper and lower sets of bobbins, the latter being carried on the annular body revolubly in one direction, and the upper set being carried by the upper portion of said annular body and being revoluble in a reversed direction, relatively to said annular body, a series of thread-carriers pertaining to the first set of bobbins, and means for imparting inward and outward swinging movements thereto.

7. In a braiding-machine, the combination of the standard, the annular body having a circular raceway, the set of bobbins 1, mounted on said annular body, a set of bobbin-carriers, fitted for revoluble movements in said raceway, a spur-gear located adjacent an upper part of the annular body and journaled for rotary movements independently thereof, an internal gear affixed to an upper part of the annular body, a power-shaft B, having thereon a gear-wheel, a gear-wheel in mesh with said last-mentioned gear-wheel and connected with said spur-gear, another gear-wheel on said power-shaft and an intermediate gear in mesh therewith and with said internal gear, rack-teeth provided to the several bobbin-carriers in the raceway, and pinions journaled at an upper portion of the said annular body, in mesh with the bobbin-carrier rack-teeth, and with said spur-gear.

8. In a braiding-machine, in combination, the central supporting-standard having an axially-located upwardly-extending portion *a*, and having a spur gear-wheel *c* fitted for rotation around said part *a* and having a larger spur gear-wheel *d* also fitted for rotation thereabout, the annular body D rotatably fitted about said standard having an annular raceway therein and provided with an internal gear-wheel *h*, a set of bobbins 2 and bobbin-carriers therefor movably fitted in said raceway, and having rack-toothed portions, a set of bobbins 1 mounted on said annular body and revoluble therewith, a series of pinions revolubly carried by, and journaled in, said annular body, in mesh with and between said spur gear-wheel *d* and the said racks of the bobbin-carriers, a power-shaft B having a gear-wheel *f*

thereon, in mesh with the gear-wheel *e* and through it driving said spur gear-wheel *d* and also having a gear-wheel *g* thereon meshing with which is an intermediate gear-wheel in driving connection with the internal gear-wheel *h*, a series of reciprocatory thread-carriers carried by said annular body, pertaining to the set of bobbins 1, and means for imparting backward and forward movements thereto.

9. In a braiding-machine, in combination, the annular body rotatably mounted having the annular raceway and associated therewith the spur gear-wheel *d*, and provided with a set of bobbins 1 mounted thereon to be bodily revolved in unison with said annular body, a set of thread-carriers pertaining to said set of bobbins 1 mounted on the annular body for revoluble movement in unison therewith, and also capable of back and forth swinging movements radially relatively thereto, a set of bobbins 2, and bobbin-carriers therefor, movable in said annular raceway and provided with rack-teeth, spaced spur pinion-wheels concentrically journaled at an upper portion of the annular body, between and in mesh with said spur gear-wheel *d* and the rack-teeth of the said bobbin-carriers, and certain of said spur-pinions having shafts m^3 downwardly extended, rotary cams *p* for operating said thread-carriers, in driven connection with the said shafts m^3.

10. In a braiding-machine, in combination, the rotary annular body having the annular raceway in its upper portion, having a set of bobbins 2 and bobbin-carriers individual thereto, movable around in said raceway, said carriers having rack-teeth, and said annular body having mounted thereon a set of bobbins 1, and equipped with a series of slides radially movable having oppositely-located studs *t t*, a series of thread-carriers, pertaining to the set of bobbins 1, bodily carried by the annular body and jointed thereto for radially swinging movements relatively thereto, and connected with said slides, cams *p* located between said studs and having their shafts rotatably carried by said annular body and provided with gear-wheels *r*, a set of spur gear-wheels *m* journaled for rotation at an upper portion of the annular body, in mesh with the rack-teeth of said set of bobbin-carriers, and a number thereof corresponding to the number of the thread-carriers having downwardly-extended shafts, provided at their lower portions with pinion-wheels *n* in mesh with the said gear-wheels *r*, means for imparting rotary movement to the annular body, and means for imparting individual rotary movements to the series of pinions *m*, for the purposes set forth.

11. In a braiding-machine, in combination, the cylindrical standard A provided with the external supporting-flange *e* and having the shaft B vertically journaled therethrough, the annular body D fitted for rotation about the said standard and supported on said flange, having the annular raceway therein, a set of bobbins 2, and bobbin-carriers having rack-teeth at their inner edges and movable in said raceway, a spur gear-wheel *d* rotatable about and relatively to an upper portion of the cylindrical standard, a series of spur-pinions concentrically arranged and journaled at an upper portion of the annular body and between and in mesh with said spur gear-wheel *d* and the rack-teeth of the bobbin-carriers, a set of bobbins 1 circularly arranged on, and movable with, the annular body, a set of thread-carriers supported by, and jointed to, said annular body, pertaining to the set of bobbins 1, means operated by the shaft B for rotating said spur gear-wheel *d*, means operated by the shaft B for rotating the annular body, and means for imparting inward and outward radially swinging movement to said thread-carriers.

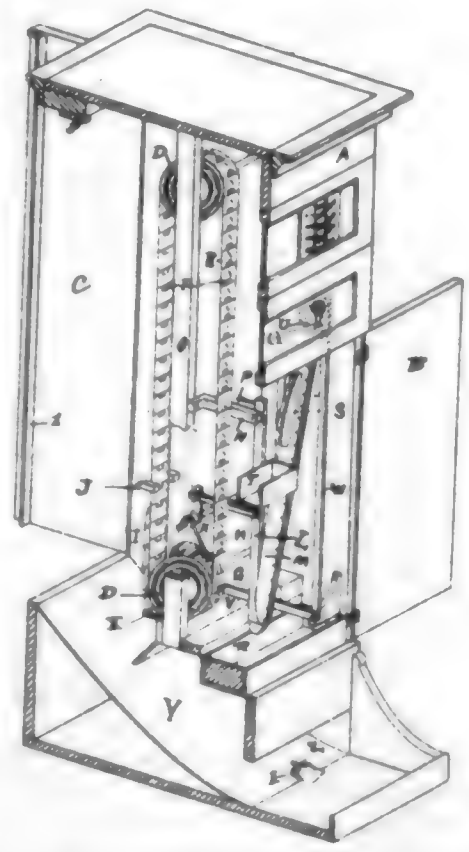
12. In a braiding-machine, the combination with the rotatable annular body, sets of bobbins carried thereby and means for revolving said sets in different directions, of thread-carriers pivotally mounted on said body, a continuously-rotating cam for each thread-carrier and a radially-movable slide to transmit motion from each cam to its thread-carrier.

13. In a braiding-machine, the combination with the rotatable annular body, sets of bobbins carried thereby and means for revolving said sets in different directions, of thread-carriers pivotally mounted on said body, a continuously-rotating cam for each thread-carrier to actuate the latter, a shaft geared to each cam and gearing connecting said shaft to the means for revolving the bobbin sets.

14. In a braiding-machine, the combination with the rotatable annular body, sets of bobbins carried thereby and means for revolving said sets in different directions, of thread-carriers pivotally mounted on said body, a continuously-rotating cam for each thread-carrier to actuate the latter, a shaft for each cam, a second shaft geared to the first-named shaft and gearing connecting the second shaft to the means for revolving the bobbin sets.

15. In a braiding-machine, the combination with the rotatable annular body, sets of bobbins carried thereby and means for revolving said sets in different directions, of thread-carriers pivotally mounted on said body, a cam for each carrier mounted on the body for rotation in a horizontal plane, a shaft for each cam, a second shaft geared to the first-named shaft, and gearing connecting the second shaft to the means for revolving the bobbin sets.

814,712. **VENDING-MACHINE.** WILLIAM E. LEIGHTON, Pembroke, and FRED A. HOLMES, Eastport, Me. Filed Dec. 8, 1904. Serial No. 235,935.



Claim.—1. In a vending-machine, a suitable casing, an endless link carrier mounted therein, each link being provided with means for supporting a package in pendent position, mechanism for imparting a step-by-step rotation to said link carrier and means for automatically discharging the packages from said carrier.

2. In a vending-machine, a suitable casing, sprocket-wheels mounted therein, an endless link carrier mounted on said wheels, each link provided with an opening into which the cogs on the sprocket take, means for imparting a step-by-step rotation to said carrier, each link being provided with a package-suspending device and means for discharging packages from said carrier consisting of an open frame mounted beneath the sprocket and positioned so as to come between the carrier as it passes around the sprocket and the free extremity of the package.

3. In a vending-machine, a suitable casing, a link carrier, each link being provided with a curved package-suspending device, apparatus for imparting a step-by-step rotation to said carrier and means for automatically discharging the packages from said curved package-suspending device.

4. In a vending-machine, a suitable casing, sprocket-wheels mounted therein, endless link carriers mounted upon said sprocket-wheels, apparatus adapted to impart a step-by-step rotation to said sprocket-wheels and carriers, said carriers being provided with package-suspending devices, in combination with a door having partitions adapted when the door is closed to separate the packages upon adjacent carriers from each other.

5. In a vending-machine, a suitable casing, sprocket-wheels mounted therein, endless link carriers mounted upon said sprocket-wheels, apparatus adapted to impart a step-by-step rotation to said sprocket-wheels and carriers, said carriers being provided with package-suspending devices, in combination with a door having partitions adapted when the door is closed to separate the packages upon adjacent carriers from each other, one of said partitions being hinged, and a wedge-shaped projection on the casing to open said hinged partition as the door closes.

814,713. **COMB-CLEANER.** WILLIAM H. LONG, Brooklyn, N. Y. Filed Apr. 10, 1905. Serial No. 254,783.

Claim.—1. As an article of manufacture, a comb-cleaner consisting of a single piece of material, said material being bent to form a handle portion and two wing portions all in one general plane or

direction, said wing portions being shaped and disposed for removably holding a series of plies of filament.



2. As an article of manufacture, a comb-cleaner consisting of a single piece of spring material, said material being bent to form a handle portion and two wing portions, all in one general plane or direction, said wing portions being shaped and disposed for removably holding a series of plies of filament.

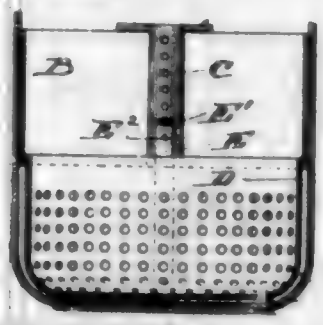
3. As an article of manufacture, a comb-cleaner consisting of a single piece of flat spring material, said material being bent to form a handle portion and two wing portions, said wing portions being shaped and disposed for removably holding a series of plies of filament substantially in a single plane.

4. As an article of manufacture, a comb-cleaner provided with two flat wing portions, each wing portion having its end bent outwardly at an angle to the main part of said wing portion and away from the other wing portion, said end being provided with means for holding a series of plies of filament.

5. As an article of manufacture, a comb-cleaner provided with two flat wing portions, each wing portion having its end bent outwardly at an angle to the main part of said wing portion, said end being provided with serrations for holding a series of plies of filament.

6. As an article of manufacture, a comb-cleaner consisting of a single piece of flat spring material, said material being bent to form a handle portion and two wing portions, the ends of said wing portions being bent outwardly from each other and each having a row of serrations for holding a series of plies of filament.

814,714. **KETTLE ATTACHMENT.** JOHN E. LONGHENRY, Gloversville, N. Y., assignor to H. L. Smith, Gloversville, N. Y. Filed May 9, 1905. Serial No. 259,504.



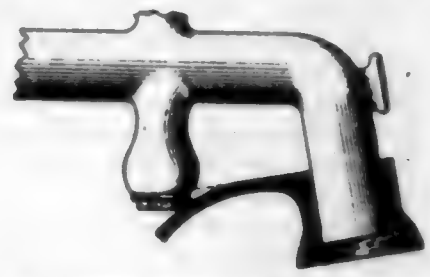
Claim.—1. A steamer comprising an upper section adjustable in diameter, a telescoping section adapted to move vertically within the first-mentioned section, means for suspending the first-mentioned section within the kettle, and means for locking the telescoping section in its adjusted position within the first-mentioned section.

2. A steamer comprising upper and lower sections, the upper section being split longitudinally, the lower section telescoping within the split section, means for suspending the split section within a kettle, and means for locking the telescoping section in its adjusted position within the upper section.

3. A device of the kind described comprising a steamer divided into two sections, the upper section being split longitudinally, and the lower section being reticulated and movable within the upper section, perforated bars carried by the inner sides of the upper section, said bars being angled at their upper ends, an inverted bail adapted to support the lower movable section, and pins carried by the bail adapted to engage the perforations of the bars.

4. A device of the kind described comprising a steamer formed in the upper and lower sections, vertical bars carried upon the inner sides of the upper section, angled plates connected to the upper ends of the bars and projecting over and beyond the upper edges of the upper section, an inverted spring-bail having its free end portions turned inwardly, said bail being adapted to move vertically within the upper section, pins carried by the bail adapted to engage the perforations of the bars, and a lower reticulated section supported within the bail, as and for the purpose set forth.

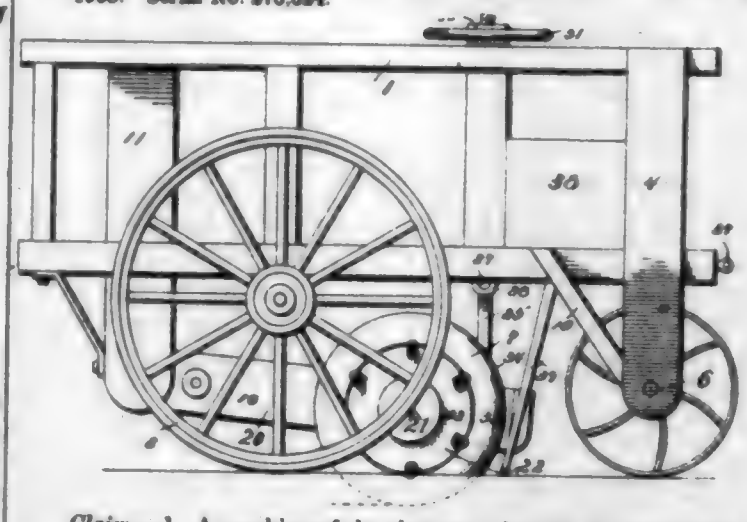
814,715. **FAUCET ATTACHMENT.** HENRY M. LUMMIS and FREDERICK W. HERBERT, Elizabeth, N. J. Filed Dec. 31, 1904. Serial No. 239,129.



Claim.—1. In a faucet attachment, the combination of a complete circle or band of elastic rubber encircling the mouth of the faucet and having at its lower edge an umbrella-shaped part dropping downward and outward from said faucet so that no part of the rubber touches the edge of the faucet where the liquid issues, a flat arm or projection commencing at the top of said band and extending backward therefrom a short distance under the bearing or horizontal part of the faucet, held well up against the same by its own elastic recoil, its normal position being in a horizontal plane with the top of the band, all in one piece, substantially as shown.

2. In a faucet attachment, the combination of a band of elastic rubber encircling the part of the faucet near the mouth thereof, so elastic as to fit any of the larger faucets in general use, supporting an umbrella-shaped collar somewhat larger at its lowest point (inside measurement) than the mouth of the faucet, protecting the article from contact with said mouth of the faucet, yet not coming into contact with the said mouth of the faucet or the liquor which flows therethrough, a flat arm or projection extending from the top of the band horizontally or nearly or normally so along under the shank or level part of the faucet and being held up against same by its own elastic recoil, all said several parts being made into one piece, detachable from said faucet and reattachable thereto by the simple motion of the hand, being held thereupon by its elastic contraction all substantially as set forth.

814,716. **COMBINED LAND-ROLLER, FURROW OPENER, AND MARKER.** ALLAN MACDONELL, Laredo, Tex. Filed Sept. 16, 1905. Serial No. 278,824.



Claim.—1. A machine of the character described, comprising a frame having wheels adjacent to its rear end, rollers carried by the forward end of the frame and supporting the same, a frame pivoted adjacent to the wheels and extending forward, means for vertically adjusting the forward end of said frame, and combined furrow disks and markers carried by the forward end of said pivoted frame.

2. A machine of the character described, comprising a frame supported by wheels at its rear end, land-rollers supporting the frame at the forward end, a swinging frame within said frame, and combined furrow-opening disks and markers carried by the said swinging frame.

3. A machine of the character described, comprising a frame supported by wheels at its rear end, land-rollers supporting the frame at the forward end, a frame swingingly supported at its rear end within the wheel-supported frame, means for vertically adjusting the forward end of said swinging frame, and furrow-disks carried by the forward end of said swinging frame, and projections carried by the disks for marking the furrow and indicating the place of planting.

4. A machine of the character described, comprising a frame supported by wheels at the rear end, land-rollers supporting the frame at the forward end, a frame swingingly supported at its rear

end to said frame, a link connected to the forward end of said swinging frame, a vertically-adjustable screw carried by the wheeled frame and pivotally connected to the links for vertically adjusting the forward end of said swinging frame, furrow-disks rotatably mounted in the forward end of the swinging frame, and removable projections carried by the side of the disks for marking the furrows and indicating the place of planting.

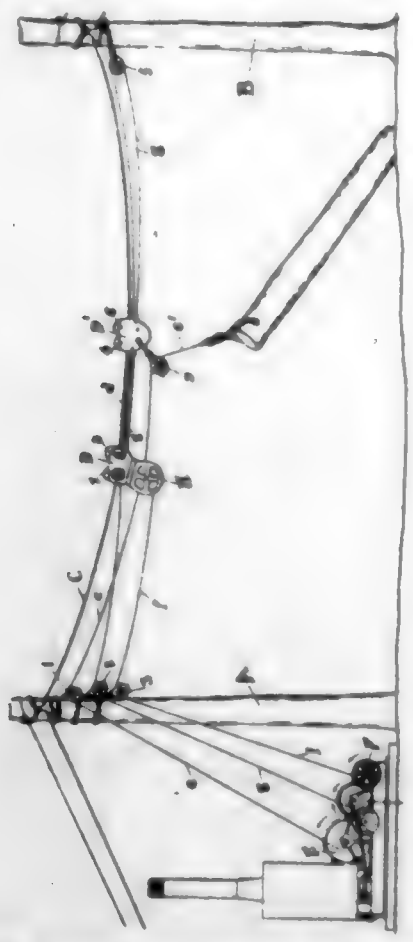
5. A furrow-opening disk, comprising a body portion having a beveled peripheral cutting edge, and projections carried by the side of said body portion.

6. A furrow-opening disk, comprising a body portion having a beveled peripheral cutting edge, and removable projections carried by the side of the said body portion.

7. A furrow-opening disk, comprising a body portion having a beveled peripheral cutting edge, and removable projections bolted to the side of the body portion.

8. A furrow-opening disk, comprising a body portion having a beveled peripheral cutting edge, and laterally-extending markers bolted to the side of the body portion adjacent to the inner end of said beveled cutting edge.

814,717. HOISTING AND CONVEYING APPARATUS. THOMAS S. MILLER, South Orange, and JOSEPH H. DICKINSON, Montclair, N. J. Filed Nov. 14, 1903. Serial No. 181,202.



Claim.—1. In a hauling apparatus, in combination, a cable or trackway, a carriage mounted to run thereon, a rope-drum mounted in said carriage, ropes for propelling said drum in opposite directions, stationary drums for actuating said ropes, clutches of different capabilities for actuating said drums, a fall-rope connected with the rope-drum of the carriage, and a pilot-sheave over which said fall-rope passes between the last-mentioned drum and the fall.

2. In a hauling apparatus, in combination, a traveling drum, ropes for driving said drum in opposite directions, fixed drums for actuating said ropes, a rope for connecting said traveling drum with the object to be hauled, and a pilot-sheave for the last-mentioned rope.

3. In a hauling apparatus, in combination, a traveling drum, two ropes for propelling the same in opposite directions, two stationary drums for actuating said ropes respectively, and two friction-clutches of different capabilities for actuating said two drums, respectively.

4. In a hauling apparatus, in combination, two stationary drums, a cable or trackway, a duplex carriage thereon, a rope-drum mounted on one part of the carriage and driven from the stationary drums, and a pilot-sheave mounted on the other part of the carriage.

5. In a hauling apparatus, in combination, a cable or trackway, a duplex carriage thereon consisting of separate frames with a connection between the same, a stationary drum mounted outside the carriage, a rope-drum mounted on one of said frames, and driven from the stationary drum, and a pilot-sheave on the other of said frames.

6. In a hauling apparatus, in combination, a cable or trackway, a duplex carriage consisting of separate frames connected by a distancing member, a rope-drum mounted on one of said frames, and means mounted outside the carriage for driving said rope-drum in opposite directions.

7. In a hauling apparatus a duplex carriage comprising separate frames, one of said frames having a rope-drum provided with a plurality of drum-barrels of different diameters, a second of said frames being spaced apart from the drum-carrying frame, and a connection between said frames.

8. In a hauling apparatus, a duplex carriage comprising a frame having a plurality of drum-barrels of different sizes, a second frame separated from the first-mentioned frame, a connection between said frames, and a swinging rope-support carried by the second frame.

9. In a hauling apparatus, in combination, a duplex carriage having a traveling drum, a rope connecting said drum with the object to be hauled, a pilot-sheave on the carriage for said rope, and means for propelling the drum in opposite directions.

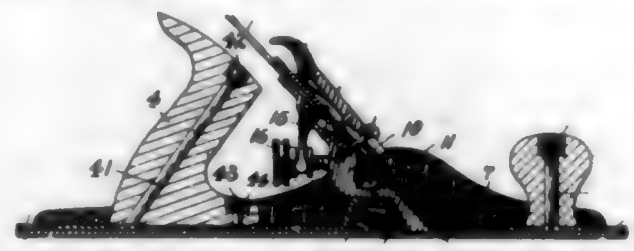
10. The combination of two carriage members spaced apart, a rope-drum carried by one of said members, two ropes for driving said drum in opposite directions, two stationary drums for actuating said ropes respectively, and a swinging sheave secured to the second of the carriage members.

11. In combination, a traveling drum, a rope operated by said drum for connection with an object to be hauled, a pilot-sheave for said rope, two ropes having their tail ends at said drum and tending to operate the same in opposite directions and two stationary drums with which the heads ends of said ropes are connected.

12. In combination, two traveling-drum parts connected in axial alinement, two stationary drums, a rope connecting each of said stationary drums with one of said traveling-drum parts to operate inversely, a rope operated by said traveling-drum parts for connection with an object to be hauled, and a pilot-sheave for said last-named rope.

13. In combination, three traveling-drum parts connected in axial alinement, two stationary drums, a rope connecting each of said stationary drums to one of said drum parts to operate inversely, a rope connected with said third drum part for connection with an object to be hauled, and a pilot-sheave for said last-named rope.

814,718. PLANE. CHARLES E. MITCHELL, New York, N. Y. Filed Mar. 26, 1903. Serial No. 100,012.



Claim.—1. A plane comprising, a body formed of sheet metal and having a sole portion and integral upturned reinforcing-flanges forming the sides, a reinforcing and strengthening plate secured between the side flanges having a stiffening-rib adjacent the throat and a handle separately formed but secured to said reinforcing-plate.

2. A plane comprising a body portion having a sole and sides of sheet metal integral therewith and reinforcing and strengthening plates secured in place against the top of the sole and between the sides having stiffening-ribs adjacent the throat and handle members for said plates, a frog mounted above one of said plates and means for adjusting said frog.

3. A plane comprising a body portion having a sole and sides of metal integral therewith, and a reinforcing and strengthening piece situated above the sole and between the sides, a chair portion integral therewith between the said sides and supported above the sole leaving a space beneath the seat of the chair, and a separate frog mounted on said chair and secured thereto.

4. A plane comprising a body portion formed of sheet metal and having a sole and sides integral therewith, a sheet-metal chair portion supported by the sole and mounted between the sides, a frog supported on said chair, a pair of securing-screws passing through said frog and said chair and a single plate having screw-threaded openings to act as a nut for both of said securing-screws.

5. A plane comprising, a body portion with integral upturned

side flanges, a chair portion supported by the sole and mounted between the sides having a recess below the same, a frog mounted on said chair, a plurality of securing-screws passing through said frog, and the top of said chair, and a plate having screw-threaded openings mounted in the recess beneath said chair and coacting with all of the adjusting-screws.

6. A plane comprising a body portion formed of sheet metal and having a sole and integral side flanges, a reinforcing-plate mounted in a groove in the said side flanges and immediately above the sole portion but resting thereon, a chair portion integral with the reinforcing-plate and a frog mounted on the chair portion and secured thereto.

7. A plane comprising a body portion of sheet metal having a sole and upturned flange portions, a reinforcing-plate secured between said side flanges and coacting with the upper surface of the sole portion, a supporting-chair formed integrally with the reinforcing-plate and mounted between the side flanges and a frog mounted upon the said chair.

8. A plane comprising the combination of a body portion having upwardly-extending reinforcing side flanges and a throat between said flanges, means for mounting a plane-iron and a reinforcing-plate supported above the bottom of said body portion and having an integral bend or reinforcing portion 7 immediately in front of said throat.

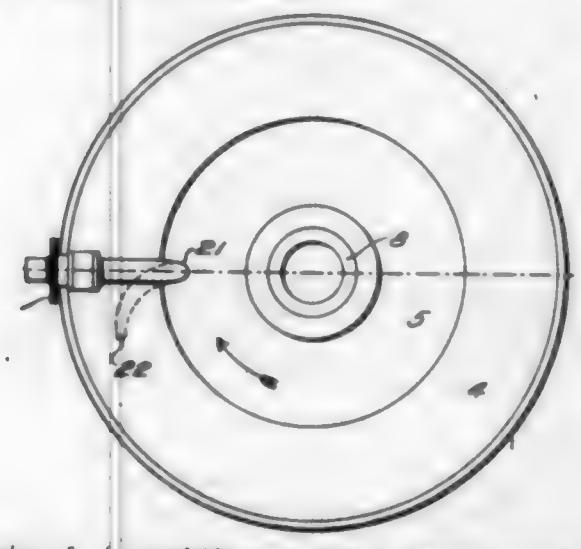
814,719. **INTERCHANGEABLE PLATEN FOR TYPEWRITERS.** CARL J. MOHRS, Chemnitz, Germany, assignor to the firm of Wanderer Fahrradwerke vorm. Winklhofer & Jaenicke A.-G., Schönau, Germany. Filed Apr. 16, 1904. Serial No. 203,504.



Claim.—1. A platen having a disk secured to each end thereof, said disks having conical recesses therein ending in a straight portion and carrying-pins fitting in said recesses, said pins having an intermediate conical portion ending in a straight portion.

2. A platen having disk secured to each end thereof, said disks having conical recesses therein, said conical recesses ending in straight screw-threaded portions and carrying-pins fitting in said recesses, said pins having conical intermediate portion ending in a straight screw-threaded portion.

814,720. **EMULSIFIER.** CHARLES D. MONROE, Elgin, Ill. Filed Oct. 18, 1905. Serial No. 283,343.



Claim.—1. An emulsifier comprising a frame, a vessel mounted to rotate on an axis in said frame and having in its interior a central receiving-chamber and an outer annular delivery-chamber, a tortuous passage connecting said chambers to permit the contents of said receiving-chamber to flow outwardly under centrifugal force to said delivery-chamber, said passage comprising a series of alternate portions of enlarged and reduced transverse sectional area communicating with each other, and each portion of said passage being without outlet other than its respective connections with the next preceding and the next succeeding portions, whereby all of the contents of said receiving-chamber will flow successively through said portions and into said delivery-chamber.

2. An emulsifier comprising a frame, a vessel rotatably mounted in said frame and having a central tubular part extending upwardly from the bottom thereof, a horizontally-disposed plate carried by said tubular part and subdividing the interior of said vessel into an upper and lower compartment, said upper compartment being of greater diameter than the lower compartment, a passage connecting said compartments near the outer edge of said plate, a plurality of concentric annular partitions subdividing the interior of said lower compartment, alternate partitions being secured respectively to said plate and the bottom of said vessel, and said partitions being of less height than said lower compartment to provide passages of contracted area connecting the subdivisions of said lower compartment, means for adjusting said plate vertically on said tubular part for varying the areas of said contracted passages, and means for drawing off the contents of the upper compartment.

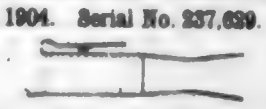
3. An emulsifier comprising a bowl-shaped vessel, mounted to rotate on a vertically-disposed axis and having in its interior two superimposed compartments, the upper compartment being of considerably-greater diameter than the lower compartment, a central vertically-disposed tubular part rigidly mounted on the bottom of the vessel and communicating at its lower end with said lower compartment, said tubular member being threaded on its outer surface, a horizontally-disposed partition mounted on said tubular part and adapted to separate said upper and lower compartments, said vessel having therein a passage connecting said upper and lower compartments at the outer edge of said partition, a plurality of annular partitions subdividing the interior of said lower compartment, alternate partitions being secured respectively to said horizontal partition and to the bottom of said vessel and all being adapted to agitate the contents while flowing centrifugally outward from said tubular part toward said upper compartment, and one or more nuts meshing with said tubular part and adapted to adjustably secure said horizontal partition thereon, substantially as described.

814,721. **PLOW.** ARCHIBALD MORRISON, Covington, Tenn. Filed Nov. 4, 1905. Serial No. 285,916.



Claim.—A metallic plow beam and standard consisting of a single flat bar folded upon itself and bent edgewise to an acute angle between the doubled portion and the terminal ends, said ends being welded together and reduced and the members in rear of the welded portion being spaced apart, and the beam portion and the standard portion being each provided with a pair of transverse perforations, spaced apart; in combination with a brace inserted between the flat members of the beam and standard near the angle at the intersection of said beam and standard, permanent fastening means for said brace extending through the transverse perforations in the beam and standard nearest the angle, and handles and handle-braces secured upon the standard and upon the beam by means extending through the transverse perforations in said standard and beam distant from the angle.

814,722. **CLAMP FOR RULES.** JACOB T. MOYER, Milford Square, Pa. Filed Dec. 20, 1904. Serial No. 237,639.



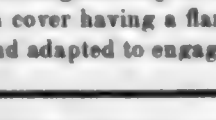
Claim.—1. A clamp for retaining elongated objects, comprising a rectangular box having an outwardly-curved flange extended from the upper end of its front wall, and an inwardly-bowed jaw extended from the lower end of said wall, and a clamping-tongue extended from the upper end of its rear wall, and having an upwardly and inwardly extended spur, and an inwardly-bowed jaw extended from the lower end of said rear wall, all of said parts being formed integral, substantially as shown and described.

2. A clamp comprising a box open at each end and having a curved flange on its front wall and a clamping-tongue extended from its rear wall, said tongue having an inwardly and upwardly extended spur, and oppositely-located inwardly-bowed jaws on the lower end of the said box, substantially as shown and described.

3. In a clamp for retaining elongated objects and for connec-

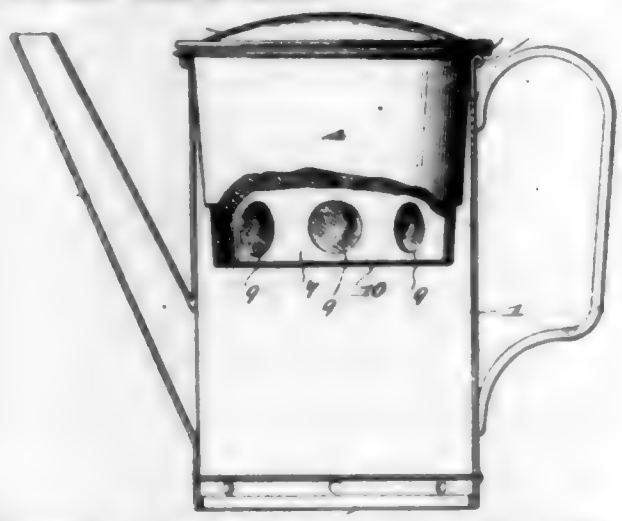
tion to parts of a garment, the combination with a rectangular box open at each end; of the lower spring clamping-jaws, and the upper spring-tongue having the upwardly and inwardly extended spur, engaging the said garment, and all of said parts formed by cutting and bending one piece of resilient sheet metal, substantially as shown and described.

814,723. CLIP. MARY E. NICKERSON, Cleveland, Ohio. Filed Oct. 19, 1905. Serial No. 283,428.



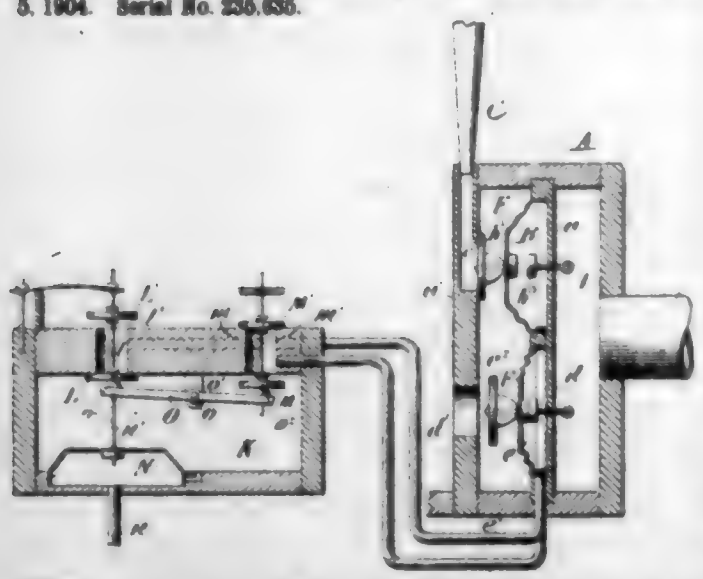
Claim.—A clip comprising a spring-plate having projecting teeth at its opposite ends, the tooth at one end extending at an obtuse angle, so that when driven in a board the plate inclines upwardly therefrom, and a screw extending through the plate adjacent to said tooth.

814,724. COFFEE-POT. MACRANUS B. PERRY, Rogers, Ark. Filed June 9, 1905. Serial No. 264,514.



Claim.—A pot comprising a receptacle provided with a discharge-spout, a tapered tube proportioned to be inserted in the upper open end of the receptacle and having a flange at its larger end to engage the upper edge of the receptacle, a tapered ring proportioned to slide within the tube and provided at its larger end with an outturned obliquely-disposed flange having its outer periphery formed into a biting edge, and a cover having a flange proportioned to be placed within the tube and adapted to engage and expand the ring.

814,725. AUTOMATIC MUSICAL-INSTRUMENT PLAYER. FRANK A. PILCHER, Marietta, Ohio, assignor of one-third to Frederick S. Brasor and one-third to Samuel S. Porter, Marietta, Ohio. Filed Dec. 5, 1904. Serial No. 235,635.



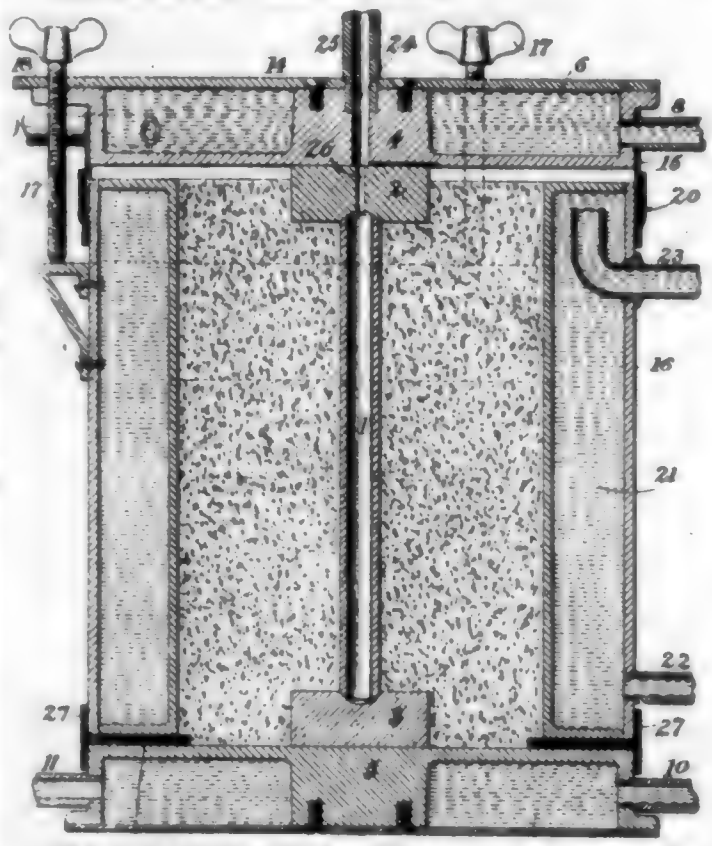
Claim.—1. In a solo attachment for musical instruments, the combination with sounding devices, a wind-chest divided into compartments by apertured partitions, a pair of pneumatics in each compartment, a valve connected to one of said pneumatics arranged to control the admission of air to said sounding devices, a valve connected to the other pneumatic arranged to close the aperture in the partition leading to the next compartment, when said first-mentioned valve is open, and means constructed and arranged to actuate said pneumatics alternately.

2. In a solo attachment for musical instruments, the combination with sounding devices, a wind-chest divided into compartments by apertured partitions, a pair of pneumatics in each compartment, a valve connected to one of said pneumatics arranged to control the admission of air to said sounding devices, a valve connected to the other pneumatic arranged to control the aperture in the partition leading to the next compartment, and a primary having separate controlling means for the said pneumatics.

3. In a solo attachment for musical instruments, the combination with sounding devices, a wind-chest divided into compartments by apertured partitions, a pair of pneumatics in each compartment, a valve connected to one of said pneumatics arranged to control the admission of air to said sounding devices, a valve connected to the other pneumatic arranged to close the aperture in the partition leading to the next compartment, and a primary having separate valves controlling wind connections to the said pneumatics, together with a primary pneumatic connected to said valves so as to close and open them alternately and reciprocally.

4. In a solo attachment for musical instruments, the combination with sounding devices, a wind-chest divided into compartments by apertured partitions, a pair of pneumatics in each compartment, a valve connected to one of said pneumatics arranged to control the admission of air to said sounding devices, a valve connected to the other pneumatic arranged to close the aperture in the partition leading to the next compartment, and a primary having separate valves controlling wind connections to the said pneumatics, together with a primary pneumatic connected to a tilting lever having its opposite ends connected to the two valves so as to open and close them reciprocally and alternately.

814,726. VACUUM ELECTRIC FURNACE. HENRY M. POTTER, New Rochelle, N. Y., assignor to George Westinghouse, Pittsburg, Pa. Filed July 22, 1903. Serial No. 166,667.



Claim.—1. An air-tight electric furnace having cool portions of an articulated containing vessel interposed between the highly-heated furnace interior and an exterior seal or seals.

2. An inclosed electric furnace having an articulated container with at least one insulated joint separating portions of the container serving as furnace-electrodes.

3. An electric furnace having metallic terminals so shaped that in conjunction with an insulating-partition, they constitute a containing vessel for said furnace

4. In an electric furnace, a refractory heating-conductor and terminals therefor, the shape of the abutting surfaces of said conductor and at least one of its terminals being conformably rounded.

5. In an electrical apparatus, a pair of contacting electrical conductors having calotte-shaped contact-surfaces.

6. In an electrical apparatus, a pair of coöperating graphite conductors having calotte-shaped contact-surfaces.

7. In an electric furnace, a heating-conductor of carbon, carbon terminals contacting with opposite ends of said heating-conductor

and metal terminals contacting with the end surfaces of said carbon terminals, and means for applying pressure to the said metal terminals, so that all the said parts are held in position thereby.

8. An air-tight electric furnace for performing heating operations under reduced gas-pressure, having an articulated container with joints with seals adapted to be tightened by the excess of external pressure.

9. In an electric furnace, a container of rounded or prismatic section, a smaller conforming portion articulating therewith, and a seal clasping both articulating portions.

10. A three-part container for an electric furnace, consisting of two large metal parts acting as electrical connections between the interior and the exterior portions of the furnace-circuit, together with a relatively small insulating part mechanically joining, but electrically separating the said large metal parts.

11. An electric furnace having a suitable chamber, means for articulating and sealing the said chamber, means for water-cooling the chamber, and means for creating a vacuum within the chamber.

12. An electric furnace having a suitable chamber, a refractory conducting-core centrally disposed therein, conducting-terminals connected with the said core, and means for creating a vacuum in the space between the core and the chamber-walls.

13. In an electric furnace, a suitable chamber, a core centrally disposed therein, terminal conducting-pieces for connecting the said core with an external circuit, and means for creating a vacuum in the space between the core and the chamber-walls.

14. In an electric furnace, a suitable chamber, a core arranged within the same the ends of the said core being curved or rounded, in combination with terminal blocks having contact-surfaces conformably curved or rounded.

15. In an electric furnace, a suitable chamber, a core of graphite or other refractory conducting material, the ends of the said core being curved or rounded, in combination with terminals blocks of similar refractory material engaging with the ends of the core and having contact-surfaces similarly curved or rounded, metal blocks engaging with the said terminal blocks, and provided with means for connection with an electric circuit.

16. An electric furnace having a suitable chamber, a core centrally disposed therein, a conducting-support for the said core, a conducting terminal block adapted to press upon the end of the core, and means for relieving the pressure of the said terminal connection.

17. An electric furnace having a suitable chamber, a core centrally disposed therein, a conducting-support for the said core, a conducting terminal block adapted to press upon the end of the core, means for relieving the pressure of the said terminal connection, and means for sealing the chamber.

18. An electric furnace having a suitable chamber, a core centrally disposed therein, a conducting-support for the said core, a weighted conducting terminal block adapted to press upon the end of the core, means for relieving the pressure of the said terminal connection, means for sealing the chamber, and means for creating a vacuum in the chamber.

19. In an electric furnace, a suitable chamber, a cap for the said furnace carrying conducting-terminals and provided with a depending sleeve adapted to slip over and surround the said chamber, in combination with a sealing-band surrounding the joint between the said chamber and the said sleeve.

20. In an electric furnace, a suitable chamber having double walls for providing a water-cooling space, inlet and outlet tubes leading to and from the water-space, and a tube connecting with the chamber, the said last-named tube being adapted to be connected with a suitable vacuum-pump.

21. In an electric furnace, a suitable chamber, an independent insulated support for the walls thereof, a cap covering the top of the said chamber, and means for sealing the joints between the chamber and its support at one end and the chamber and its cap at the other end.

22. In an electric furnace, a suitable chamber, an independent insulated support for the walls of the said chamber, a central metallic terminal, and a refractory conducting-block within the chamber, covering the said metallic terminal and making contact therewith.

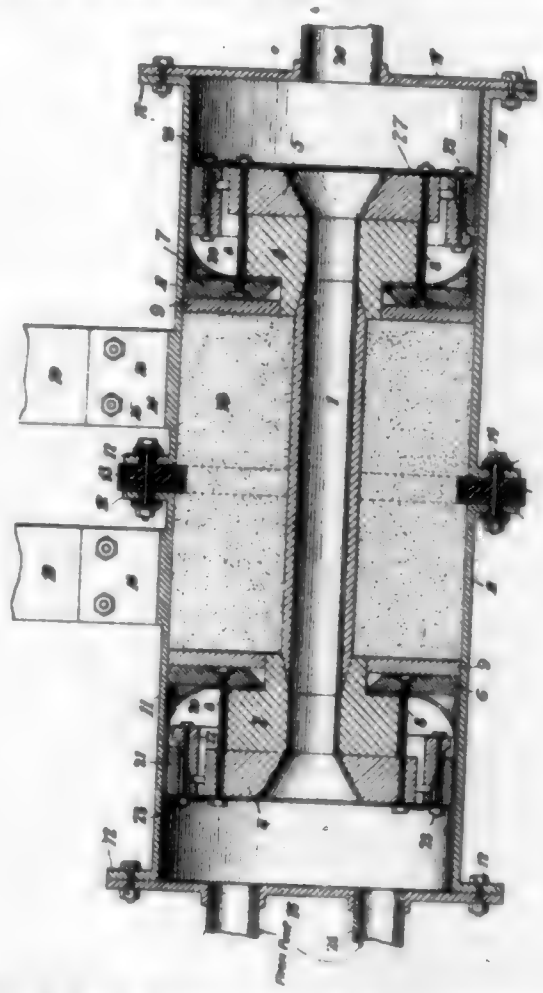
23. In an electric furnace, a suitable chamber, an insulated support for the walls thereof, a central metallic terminal in the said support, a core of refractory conducting material within the chamber, terminal blocks of refractory conducting material for the said core, a cap for the said chamber carrying a metallic terminal in contact with one of the said blocks, the said metallic terminal being centrally located with respect to the said cap, water-jackets for the said metallic terminals and for the furnace-chamber, and means for connecting the terminals with an electric circuit.

24. In an electric furnace, a suitable chamber, a hollow core within the same, means for creating a vacuum within the chamber, and a vent connecting the interior of the core with the chamber.

25. In an electric furnace, an air-tight chamber, consisting in part of an impervious packing clamped between thin metal portions of said chamber, the said metal portions being water-cooled wherever they adjoin the said packing.

26. In an electric furnace, a containing-chamber of two or more parts separated by insulating or packing material, said constituent parts of said chamber being water-cooled where they adjoin said insulating or packing material.

814,727. **ELECTRIC PRESSURE-FURNACE.** HENRY N. POTTER, New Rochelle, N. Y., assignor to George Westinghouse, Pittsburg, Pa. Filed July 22, 1903. Serial No. 166,668.



Claim.—1. In an electric furnace, an inner conducting-tube, an outer conducting-tube surrounding the same, and electrical connections between the ends of the inner tube and the ends of the outer tube, the latter being insulated from each other except through the inner tube.

2. In an electric furnace, an inner conducting-tube, an outer conducting-tube surrounding the same, insulating material interposed between the two tubes, the outer tube being made in two or more parts separated by insulating material, and terminal connections for an external circuit attached to the outer tube.

3. In an electric furnace, a conducting inclosing tube made in two or more parts, the successive parts being separated by one or more insulating-gaskets, in combination with terminal connections for an external circuit attached to the end sections of the tube.

4. In an electric furnace, an inner tube adapted to contain the material to be heated and an outer tube having end sections which form the terminals of the furnace.

5. In an electric furnace, an inner tube adapted to contain the material to be heated and an outer tube having end sections insulated from each other and forming the terminals of the furnace, the said end sections being electrically connected with the ends of the inner tube.

6. In an electric furnace, an inner conducting-tube adapted to contain the material to be heated and surrounded by refractory insulating material, an outer conducting-tube outside the inner tube and the insulating material, the said outer tube being made in sections, and the several sections being insulated from each other by ring-shaped gaskets.

7. In an electric furnace, an inner conducting-tube, an outer conducting-tube surrounding the same and composed of mutually insulated sections, and terminals for the inner tube, and a cup-shaped strap connecting the walls of the end sections of the outer tube with the said end terminals for the inner tube.

8. In an electric furnace, a conducting inner tube, carbon end terminals therefor, metallic terminals coöperating with the said carbon terminals, and means for compressing the respective carbon and metallic terminals at either end of the tube, all in combination with an outer conducting-tube forming part of the furnace-circuit and extending at each end beyond the limits of the terminals for the inner tube.

9. In an electric furnace, an inner conducting-tube adapted to contain the material to be heated and terminals therefor, an outer conducting-tube surrounding the same, and having a chamber at each end.

10. In an electric furnace, an inner conducting-tube, hollow terminals therefor, the openings in the said terminals registering with the openings at the ends of the inner tube, in combination with an outer tube having a chamber at each end, inlet-tubes connecting with one chamber, and an outlet-tube connecting with the other chamber, as and for the purpose set forth.

11. In an electric furnace, an inner tube, terminals therefor, in combination with an outer tube, a cup-shaped connection between the walls of the outer tube and the said terminals, and means for securing a firm connection between the cup-shaped piece and the walls of the outer tube.

12. In an electric furnace, an inner tube adapted to contain the material to be heated, refractory insulating material surrounding the said tube, end terminals for the said tube, and an outer tube surrounding the parts named, in combination with a ring of asbestos or other yielding material separating the insulating material from the terminal connections of the inner tube, the asbestos or similar material being adapted to relieve the tendency of the insulating material to "pack" under the influence of the furnace heat.

13. An electric pressure-furnace, consisting of a conducting-tube and end terminals therefor having a continuous opening throughout, in combination with chambers communicating with the ends of the said opening, and inlet and exhaust pipes communicating with the said chambers.

14. An electric pressure-furnace open at both ends and having its open ends each communicating with a chamber, in combination with inlet and outlet pipes communicating with the respective chambers, and terminal connections for the said furnace.

15. A terminal for an electric tube-furnace, consisting of a tube-section surrounding the said furnace, an inner tube constituting the main operative portion of the furnace, and intermediate electrical connections between one end of the inner tube and the said tube-section.

16. In an electric furnace, the combination with one end of the tube constituting the main operative portion of the furnace, of a terminal consisting of an outer tube surrounding the said inner tube, a carbon terminal in contact with one end of the inner tube, metallic plates on opposite sides of the said carbon terminal, a cup-shaped strap connecting the carbon terminal and the outer tube, means for pressing the rim of the cup-shaped piece against the wall of the outer tube, and means for pressing the bottom portion of the cup-shaped piece between the carbon terminal and one or the other of the metallic plates adjacent to the said terminal.

17. An electric resistance-furnace inclosed in a gas-tight chamber, and means for modifying the pressure in the furnace.

18. An electric resistance-furnace inclosed in a gas-tight chamber, the said resistance being in the form of a tube.

19. An electric resistance-furnace inclosed in a gas-tight chamber, and surrounded by refractory heat-resisting material.

20. An electric resistance-furnace inclosed in a gas-tight chamber, one or more of the walls of the furnace constituting a furnace-terminal.

21. In an electrical furnace inclosed within a cylindrical containing-chamber, the combination with said chamber of one or more conducting furnace-terminals, adapted to slide axially within said chamber, and to be expanded into firm mechanical and electrical connection therewith.

22. In an electric furnace, a terminal connection intermediate between a cylindrical furnace-housing and a heating resistance therein, said connection being adapted to contact firmly with both resistance and housing and yet permit slight axial displacement of said resistance.

23. In an electric furnace, a housing having a cylindrical inner surface, a terminal disk adapted to slide axially within said housing and be expanded into contact therewith at any point within a range of axial movement.

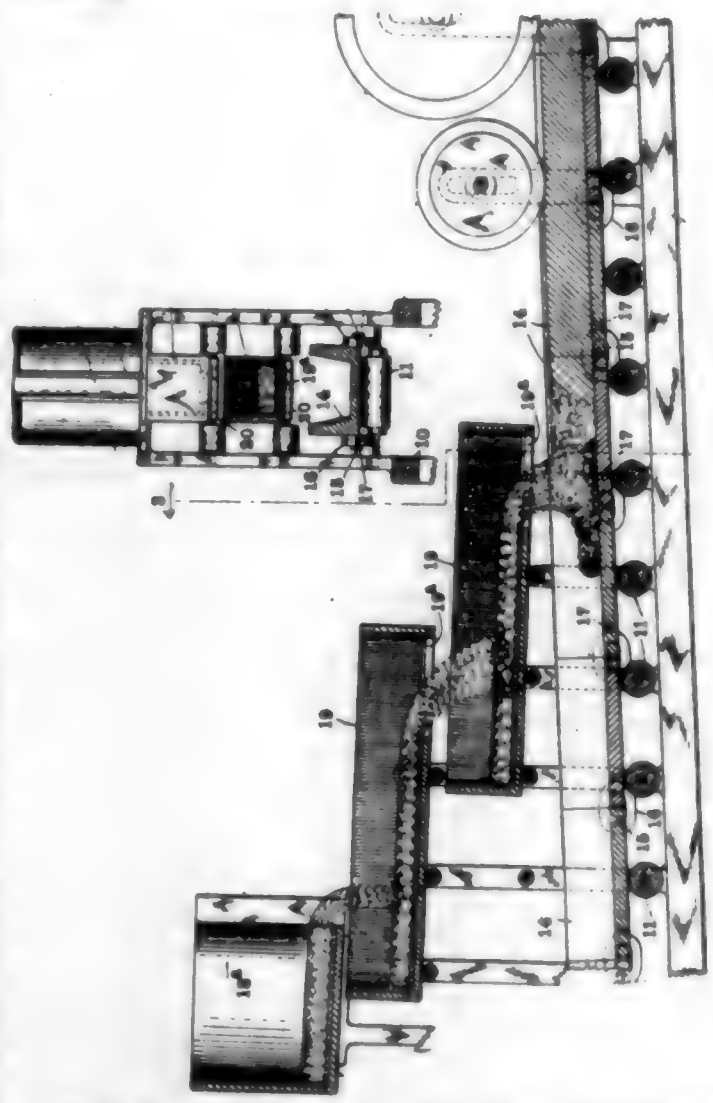
24. In an electric furnace, a housing having a cylindrical form and divided transversely to the axis into two electrically-insulated portions.

25. In an electric furnace, a housing of cylindrical form and divided into two cylindrical sections, insulated electrically from each other and connected on their outer surfaces to the opposite poles of a supply-circuit, and on their inner surfaces to the opposite poles of the furnace-conductor.

26. In an electric furnace, a housing of cylindrical form, having circuit-terminals connecting to its convex surface or developments thereof, and having at its ends removable plates, which together with the housing completely inclose the furnace.

814,728. CONTINUOUS STEEL-BILLET-CASTING MACHINE.

OSCAR POTTER, Wilmington, Del. Filed Sept. 26, 1904. Serial No. 226,991.



Claim.—1. A billet-casting machine consisting of an inclined support, a series of open-ended molds, means for driving said molds in succession end to end up the incline, and means for introducing molten metal into said molds as they are presented to casting position.

2. In a billet-casting machine, the combination of, an inclined support, a series of open-ended molds adapted to lie end to end on said support, means for introducing molten metal into said molds, and means for causing a relative movement between the molds and the filling means, said movement being such that, relative to the mold, the filling-point will pass down the mold.

3. In a billet-casting machine, the combination with an inclined trough-like mold, of means for introducing molten metal into said molds, means for causing a movement between the molds and the filling means, said movement being such that, relative to the mold, the filling-point will pass down the mold, the angle of the inclination of the mold being such that the molten metal passing into the mold will not strike the bottom of the mold directly but will strike molten metal already in the mold, as and for the purpose set forth.

4. In a billet-casting machine, the combination, with an inclined trough-like mold, of means for introducing molten metal into said mold, means for causing a movement between the mold and introducing means, said movement being such that, relative to the mold,

the filling-point will pass down the mold, the angle of an inclination of a mold being such that the molten metal passing into the mold will not strike the bottom of the mold directly but will strike molten metal already in the mold, and means for engaging the poured molten metal in the mold to compact the same at a point higher in the incline than the point of introduction of the molten metal.

5. In a billet-casting machine, the combination with an open-topped trough-like mold, of a pouring vessel therefor consisting of a receiving-body having a vertical slot formed through its wall with lips projecting from each edge of said slot beyond the vessel-bottom in alinement with the mold, and means for causing a relative movement longitudinally between the mold and vessel, as and for the purpose set forth.

6. A pouring vessel for controlling the flow of molten metal, said vessel consisting of a receiving-body having a vertical slot formed through its wall, and a vertical lip extending outward along each edge of the slot and beyond the bottom, whereby the metal will issue from the vessel in a comparatively narrow vertical stream.

7. In a billet-casting machine, the combination with a trough-like mold, of a plurality of receiving vessels arranged in a cascade above said mold with the lower vessel arranged to discharge into the mold whereby the molten metal will flow from an upper vessel into the one next below and lengthwise through said vessel to the opposite end and from thence to the next lower vessel, and means for driving the mold beneath said last-mentioned vessel.

8. A billet-casting machine consisting of an inclined support, a series of open-ended molds, means for driving said molds in succession end to end up the incline, means for introducing molten metal into said molds as they are presented to casting position, and means for compacting the poured metal into the mold.

9. In a billet-casting machine, the combination of, an inclined support, a series of open-ended molds adapted to lie end to end on said support, means for introducing molten metal into said molds, means for causing a movement between the introducing means and the molds, said movement being such that, relative to the mold, the filling-point will pass down the mold, and means for compacting the poured metal into the mold at a point higher than the point of introduction of the molten metal.

10. In a billet-casting machine, the combination with an inclined trough-like mold, of means for introducing molten metal into said molds at continuously-successive points longitudinally thereof the pouring metal moving downward toward the empty lower portion of the mold, the angle of inclination of the mold being such that the molten metal passing into the mold will not strike the bottom of the mold directly, but will strike molten metal already in the mold, and means arranged up the incline from the pouring-point for compacting the poured metal into the mold, as and for the purpose set forth.

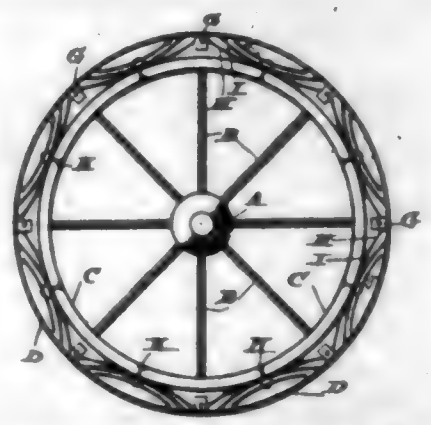
11. In a billet-casting machine, the combination with an inclined trough-like mold, of means for introducing molten metal into said mold at continuously-successive points longitudinally thereof the pouring metal moving downward toward the empty lower portion of the mold, the angle of inclination of the mold being such that the molten metal passing into the mold will not strike the bottom of the mold directly but will strike molten metal already in the mold, means arranged up the incline from the pouring-point for engaging the poured metal in the mold to compact the same, as and for the purpose set forth.

12. In a billet-casting machine, the combination with an open-topped trough-like mold, of a pouring vessel therefor consisting of a receiving-body having a vertical slot formed through its wall with lips projecting beyond each edge and the bottom of said slot in alinement with the mold, means for causing a relative movement longitudinally between the mold and vessel, and means for compacting the poured metal into the mold, as and for the purpose set forth.

13. In a billet-casting machine, the combination with a trough-like mold, of a plurality of receiving vessels arranged in a cascade above said mold with the lower vessel arranged to discharge into the mold the molten metal flowing from an upper vessel into the adjacent end of the next lower vessel and from thence through said lower vessel and discharging therefrom at the opposite end, means for driving the mold beneath said last-mentioned vessel, and means for compacting the poured metal into the mold.

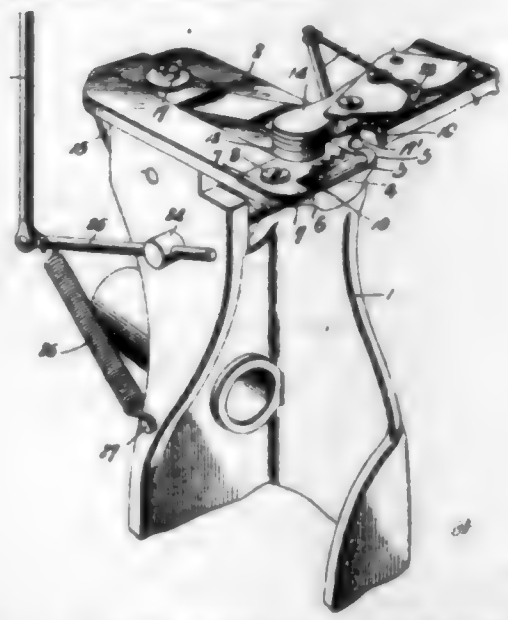
814,729. **CUSHION-TIRE.** RAYSON E. RATHBUN, Sioux City, Iowa. Filed Feb. 6, 1905. Serial No. 244,260.

Claim.—1. In a vehicle-wheel, the combination of an inner felly, an outer rim having blocks projecting at regular intervals toward the felly, a layer of outwardly-curving springs secured at the middle to the felly between the blocks, the longest of said springs extending between the blocks, the shortest of the springs being normally free of contact with the outer rim until pressure is brought thereon, substantially as described.



2. In a vehicle-wheel, the combination of an inner felly, an outer rim forming a space between the felly and the rim, blocks secured to the inner surface of the rim and projecting toward but not normally touching the felly, springs H, I and J secured at the middle to the felly between the blocks and projecting outwardly toward the rim, shields secured to the rim covering the space between the felly and rim, and bolts passing inside the felly and securing the rims together, substantially as described.

814,730. **SEWING-MACHINE.** GEORGE RIEL, Manchester, N. H. Filed July 27, 1905. Serial No. 271,490.



Claim.—1. In a sewing-machine, a throat-plate and a channel entering and turning nose integral therewith and formed by beveling the forward end and the outer side of said plate.

2. In a sewing-machine, a throat-plate, a plow integral with said plate at the forward end and side thereof and formed to open a channel in advance of the sewing operation and to allow said channel to close after said operation.

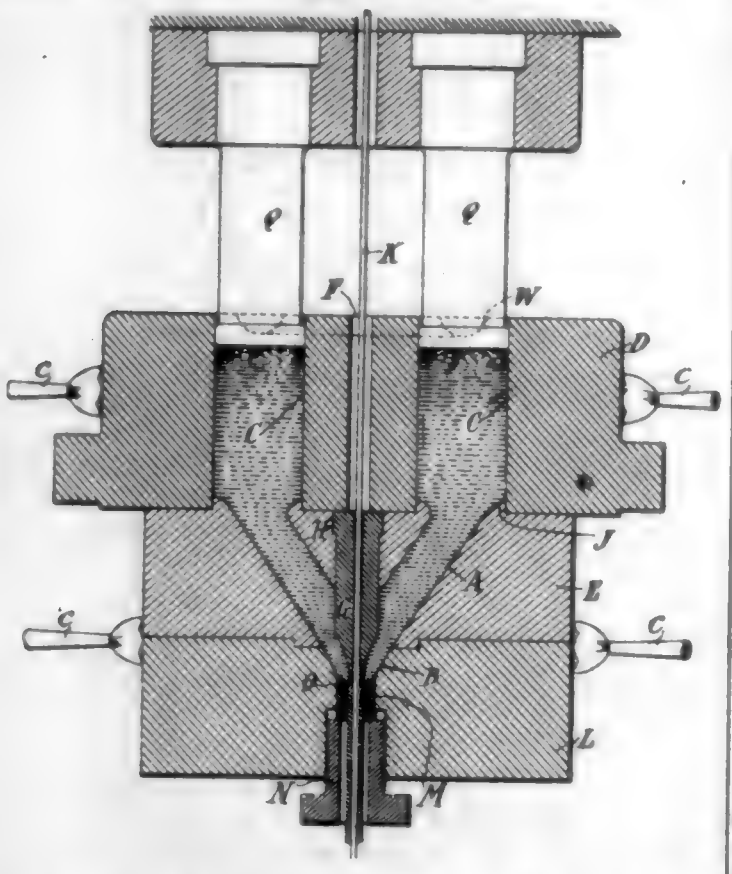
3. In a sewing-machine, a throat-plate, a channel entering and turning plow integral with said plate the point of the plow being at the front of the plate, a downward extension of the plate forming at its forward end a continuation of the plow and having its rear end beveled to permit self-closing of the turned channel.

814,731. **APPARATUS FOR EXTRUDING METALS.** NORMAN A. ROBERTSON, New York, N. Y. Filed Jan. 27, 1905. Serial No. 242,207.

Claim.—1. An extruding-machine comprising a block having a plurality of separate cylinders, and a second block having corresponding inclined passages leading from said cylinders to the die-chamber.

2. An extruding-machine comprising a block having a plurality of separate cylinders, a second block having corresponding inclined passages leading from said cylinders to the die-chamber, said passages and cylinders being spaced apart a considerable distance from each other whereby a heavy wall is provided between them capable of resisting extreme pressures at high temperatures.

3. An extruding-machine comprising a block having a plurality of separate cylinders, a second block having corresponding inclined passages leading from said cylinders to the die-chamber, said passages and cylinders being spaced apart a considerable distance from each other, and a core arranged between said passages, with a heavy wall between said passages and said core capable of resisting extreme pressures at high temperatures.



4. An extruding-machine comprising an upper and a lower block and having a plurality of passages leading vertically through said upper block and obliquely through said lower block to the die-chamber, and a core carried in the lower block and projecting into said chamber.

5. An extruding-machine having a die-chamber, a plurality of passages converging into said chamber, and cylinders extending longitudinally, unconnected with each other, leading into said passages and formed separately from the portion of the machine having said passages.

6. A vertical extruding-machine having a lower block carrying a vertical die and forming the bottom of the die-chamber, an intermediate block forming the top of said chamber and having converging passages leading to said chamber, and an upper block fitting on top of said intermediate block and through which said passages are extended in a longitudinal direction to the top.

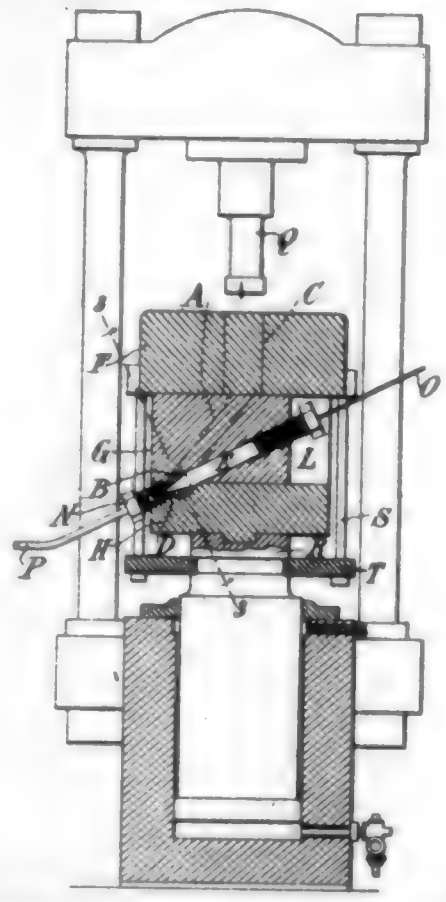
7. An extruding-machine having one part in which are passages leading to a die-chamber, a second part separate from the first and through which the material is conducted to said passages, a core carried by said first-mentioned part and lying between said passages so that they converge toward it, and means for forcing material through all of said passages simultaneously so that the pressures on the core from said passages balance each other.

8. An extruding-machine having a block E in which are converging passages A leading to a die-chamber, a second block D separate from the first and in which are formed cylinders C connecting with the ends of the passages A, a core carried by said first-mentiond block and lying between said passages A so that they converge toward it, and means for forcing material through all of said passages simultaneously so that the pressures on the core from said passages balance each other.

9. An extruding-machine having an end block in which is a die, an intermediate block in which is a core, and an opposite end block in which is a cylinder for conducting material to the die-chamber, the intermediate block being confined between the two end blocks.

814,732. APPARATUS FOR EXTRUDING METALS. Norman A. Robertson, New York, N. Y. Filed Feb. 11, 1905. Serial No. 245,309.

Claim.—1. An extruding-machine having a die-chamber with a die at one side and a core entering the chamber at the opposite side, cylinders in lines offset from said chamber, and passages extending obliquely from the cylinders in the direction of the chamber and converging toward said chamber.



2. An extruding-machine having an end block in which is a lateral die, an intermediate block in which is a lateral core carried entirely by said intermediate block, and an opposite end block in which is a cylinder for conducting material to the die-chamber.

3. An extruding-machine having a block in which is a lateral die, and a second block in which are a lateral core and converging passages leading downward to the die-chamber.

4. An extruding-machine having a lower block in which is a lateral die, an intermediate block in which are a lateral core and a passage leading downward to the die-chamber, and an upper block in which is a cylinder from which the material is forced into and through said passage.

5. An extruding-machine having a block in which is a die, and a second block in which is a core extending at an angle with the axis and in which is an oblique conduit extending at an acute angle with said core.

6. An extruding-machine having an end block in which is a die, an intermediate block in which is a core extending at an angle with the axis and in which is an oblique conduit extending at an acute angle with said core, and an opposite end block in which is a cylinder in the axial plane for conducting material to said oblique conduit.

7. An extruding-machine having a die-chamber with a die at one side and a core entering the chamber at the opposite side, a pair of cylinders in a plane offset from said chamber, and a pair of passages extending obliquely from the plane of the cylinders in the direction of the chamber and converging toward said chamber.

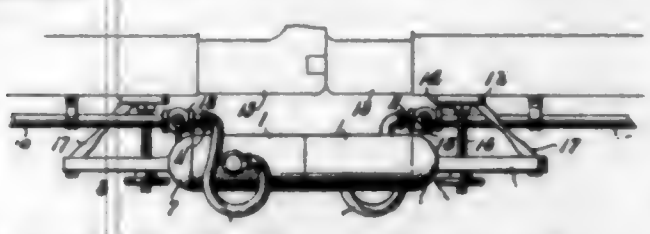
8. An extruding-machine having a die-chamber with a die at one side and a core entering the chamber at the opposite side, and having vertical cylinders C and converging passages A leading downward to said chamber, said chamber being offset from the plane of said cylinders, and said passages A being inclined to direct the material toward the side of the chamber in which is the die, so as to minimize the strain on the core and to counterbalance each other.

9. An extruding-machine having an end block H in which is a lateral die, an opposite end block F in which are vertical cylinders C, and an intermediate block G in which is a lateral core E carried entirely by said intermediate block, the meeting faces of said blocks H and G being formed to provide a die-chamber B between them and offset from the plane of said cylinders, and said intermediate block having converging passages A leading downward obliquely from said cylinders to said die-chamber.

814,733. TRAIN-PIPE COUPLING. Louis M. Sartain, Coalmont, Tenn. Filed Dec. 15, 1905. Serial No. 291,294.

Claim.—1. In a train-pipe coupler, the combination of a hanger, a coupler-head carried by and yieldable vertically upon the hanger,

said head also having a pivotal movement upon the hanger, and means yieldably resisting vertical and pivotal movements of the coupler-head.



2. In a train-pipe coupler, the combination of a hanger, a coupler-head carried by and yieldable vertically upon the hanger, a spring-bar inclined to the vertical and connected at opposite ends to the coupler and the hanger to yieldably resist vertical and pivotal play of the coupler.

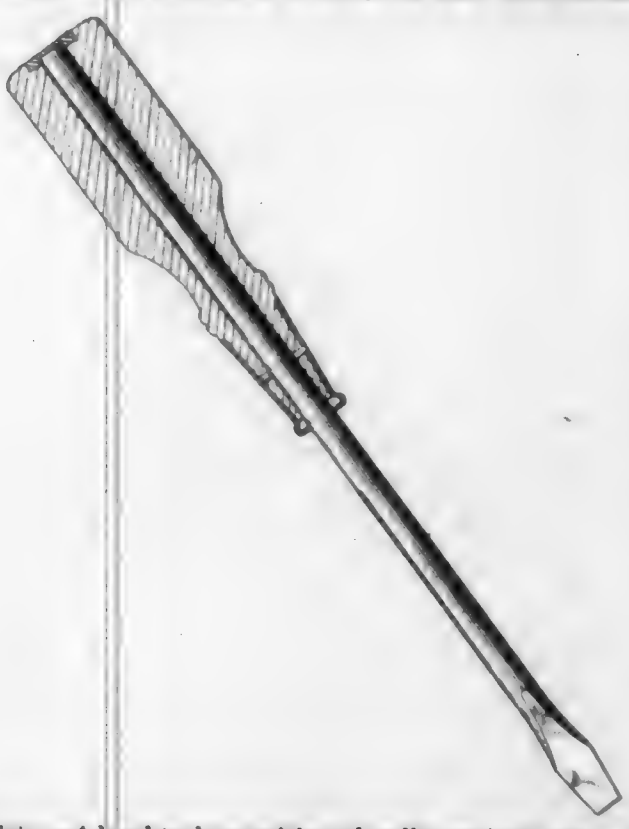
3. In a train-pipe coupler, the combination of a hanger including a depending stem, a coupler-head having a portion loosely pierced by the stem, and a nut carried by the stem and engaging the coupler to adjustably elevate the latter.

4. In a train-pipe coupler the combination of a hanger having a depending stem, a coupler-head having a portion loosely pierced by the stem, a nut adjustable upon the stem and engaging the coupler to elevate the same, and a spring connected at opposite ends to the hanger and the coupler to yieldably resist the movement thereof.

5. In a train-pipe coupler, the combination of a hanger, a coupler-head carried by and movable vertically thereon, vertically-adjustable means upon the hanger independent of and engaging the lower side of the coupler to adjustably elevate the same, said coupler capable of moving vertically independent of the adjusting means, and a spring to yieldably resist vertical play of the coupler.

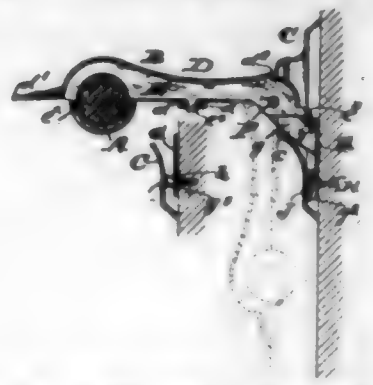
6. In a train-pipe coupler, the combination of a hanger having a depending stem, a coupler-head having a portion loosely pierced by the stem and capable of vertical pivotal movements thereon, an adjusting-nut carried by the stem and engaging the under side of the coupler, the latter capable of pivotal and vertical movements independently of the nut, and a spring connected at opposite ends to the coupler and the hanger to yieldably resist vertical and pivotal movements.

814,734. **SCREW-DRIVER.** EDMUND A. SCHADE, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Apr. 20, 1905. Serial No. 256,594.



Claim.—A hand-tool comprising a handle member having a longitudinal passage with an angular pocket at one end, a round metal shank having a side recess near the upper end, said shank being carried by said handle member, and an angular metal cap seated in the pocket in said handle member and having a recess for the upper end of said shank with an integral projecting portion fitted into the side recess in the upper end of said shank and permanently and rigidly uniting the metal parts and preventing the independent rotation of handle and shank.

814,735. **DROP-HANDLE.** GEORGE A. SCHEER, Cincinnati, Ohio. Filed Oct. 2, 1905. Serial No. 280,879.



Claim.—1. In a drop-handle, the combination of attaching brackets, skeleton links having an opening at one end and a semicircular recess at the other, pivot-pins occupying these openings for connection to the attaching-brackets, a handle fitted into the recesses, means to hold the handle in place and a shell to cover each link.

2. In a drop-handle, the combination of attaching-brackets, skeleton links pivotally connected to these brackets and having a semicircular recess at their free ends and an attaching-lug c^3 thereat, a handle fitted into these recesses and held therein by these lugs which are twisted to receive a tack or screw for connection and a shell to cover each link.

3. In a drop-handle, the combination of attaching-brackets, skeleton links pivotally connected to these brackets and having a semicircular recess at their ends and a lug c^4 projecting from their inner edge, a handle secured within these recesses and a sheet-metal shell to cover the front edge of these links and having lugs *d d* adapted to engage lug c^4 as shown and described.

4. In a drop-handle, the combination of attaching-brackets, skeleton links having semicircular recesses at their free end pivotally connected thereto, a handle supported between the free ends of these links and in the recesses thereat and a sheet-metal shell attached to cover their front edge and the front half of the handle only at the point where the same is supported by the links.

5. In a drop-handle, the combination of the handle proper, swinging arms or links which between them support the handle at one of their ends, attaching-brackets having laterally-projecting lugs to which the other ends of these links are pivotally connected and an escutcheon-plate to cover each bracket, said plates being provided with an opening to permit attachment of the links to the brackets within, that part of these plates in which this opening is located being raised so as to also cover and hide the pivotal connection between bracket and link.

6. In a drop-handle, a one-piece sheet-metal attaching-bracket having the forwardly-projecting lugs *g g*, the forwardly-bent shoulder g^2 resting upon the upper edges of these lugs, in combination with the handle-supporting arms supported on them and provided each with a nose which is adapted to rest upon this shoulder when the handle is used.

7. In a drop-handle, a one-piece sheet-metal attaching-bracket having the forwardly-projecting lugs *g g*, the forwardly-bent shoulder g^2 resting upon the upper edges of these lugs which latter are bent to approach each other in front of this shoulder, handle-supporting skeleton links supported in the narrow space between these lugs and an ornamental shell to cover each link.

8. In a drop-handle, the combination of the handle, the arms supporting it, an attaching-bracket for each arm, to which they are pivotally connected, an escutcheon-plate to cover each attaching-bracket and attaching-screws with a projecting head and an intermediate shoulder, they passing through both, the head holding the plate and the shoulder holding the bracket.

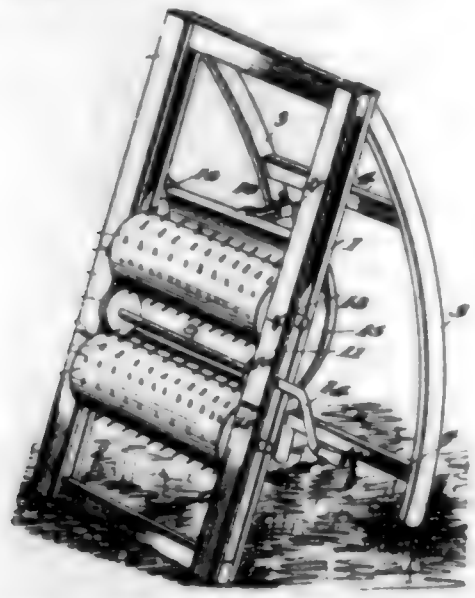
9. A drop-handle having ornamental pressed-metal tips at its ends, each formed of two semicircular longitudinally-divided shells.

814,736. **MACHINE FOR BALING VINES, HAY, AND THE LIKE IN CYLINDRICAL FORM.** JOHN T. SCOTT, Simpsonville, Tex. Filed May 12, 1905. Serial No. 260,182.

Claim.—1. A baling-machine comprising a bed-roller, a spindle, and a compressing-roller, the latter being weighted and adapted to have its effectiveness regulated by inclining the frame more or less to the perpendicular.

2. In a cylindrical baling-machine, the combination of bale-forming rollers, a spindle about which the material is wrapped, and packers fitted to one or more of said bale-forming rollers to materi-

ally assist in compressing the material during the formation of the bale, substantially as set forth.



3. In a cylindrical bale-forming machine, the combination of bale-forming rollers, a spindle about which the material is wound, a deflector for directing the material around said spindle, an arm hingedly connected with said deflector, and a weight mounted upon said arm.

4. In combination, a frame, a baling mechanism mounted thereon, and a brace for supporting said frame in operative position and constituting a runner upon which the machine glides when drawn from one place to another.

5. In combination, a frame, a baling mechanism mounted thereon, and a brace for sustaining the frame in an upright position and comprising longitudinally-curved bars, said bars having hinged connection with the frame and adapted to be used as runners for supporting the machine when moved from one place to another.

814,737. TIRE. BENJAMIN C. SEATON, St. Louis, Mo., assignor of three-eighths to F. A. Kehl, St. Louis, Mo. Filed May 26, 1905. Serial No. 262,409.



Claim.—1. A wheel-tire comprising two rims having alining walls, the edges of which are in the form of sinusoidal curves, the projections formed by said curves alternating with each other, and transversely-arranged tension-springs connected to the transversely-opposite projections; substantially as described.

2. A wheel-tire comprising two rims spaced apart, the adjacent edges of the rims forming a sinuous slot, coil-springs connecting the projections on one rim with those on the other, and protector-plates carried by one of the rims and overlapping the other to close the slot; substantially as described.

3. A wheel-tire comprising two rims spaced apart, the adjacent edges of the rims forming a sinuous slot, coil-springs connecting the projections on one rim with those on the other, protector-plates carried by one of the rims and overlapping the other to close the slot, and a resilient tread carried by the outer rim; substantially as described.

4. A wheel-tire comprising two rims each of which is provided with two parallel walls, and each of which is provided with outstanding projections arranged in transverse alternating series, each projection on one of the rims transversely alining with those on the opposite side of the other rim, and coil-springs connecting the transversely-alining projections; substantially as described.

5. A wheel-tire comprising two rims one within the other and both of said rims having vertical walls alining with each other, springs arranged within the rims and having their opposite ends connected to the vertical walls of the inner and outer rims respectively so that all of the springs will be in tension under load; substantially as described.

6. A wheel-tire consisting of inner and outer rim portions the walls of which aline with each other, said inner and outer rim portions having diametrically opposite overlapping projections on their respective sides, and horizontally-arranged coil-springs connected to the oppositely-arranged overlapping projections and normally under tension; substantially as described.

7. A wheel-tire comprising spaced rims whose walls aline with each other, and a series of coil-springs connecting said rims, which springs are alternately oppositely inclined under abnormal tension; substantially as described.

8. A wheel having a tire comprising two sections, one of which is the inner section and approximately U-shaped in cross-section with side flanges disposed outwardly, the other section being the outer section and having side flanges which aline with those on the inner section, the flanges on the side walls of one section having projections which aline with those on the opposite section, the projections on the inner rim overlapping those on the outer rim, and said projections on each side of the inner rim transversely alining with the projections on the opposite side of the outer rim, and a spring connecting each projection on the outer rim with the transversely-alining projection on the inner rim; substantially as described.

9. A wheel-tire comprising an inner rim and an outer rim, the outer rim having side walls which aline with the side walls of the inner rim, said outer and inner rims being spaced apart, and transversely-arranged springs confined within the rim, one end of each spring being connected to the inner rim, while the other end is connected to the outer rim; substantially as described.

814,738. MACHINE FOR MAKING PAPER MOUTHPIECES AND APPLYING THE SAME TO CIGARETTE-TUBES. IVAN SEMENOFF, St. Petersburg, Russia. Filed Oct. 30, 1901. Renewed Aug. 10, 1905. Serial No. 273,674.

Claim.—1. In combination in a machine for making and applying mouthpieces to cigarettes, a supply-roll for the paper from which the mouthpieces are to be formed, means for feeding a strip of cotton-wool roving upon one edge of said paper strip, and intermittingly-operating means for rolling a section of said strip into a mouthpiece with the roving within the same, substantially as described.

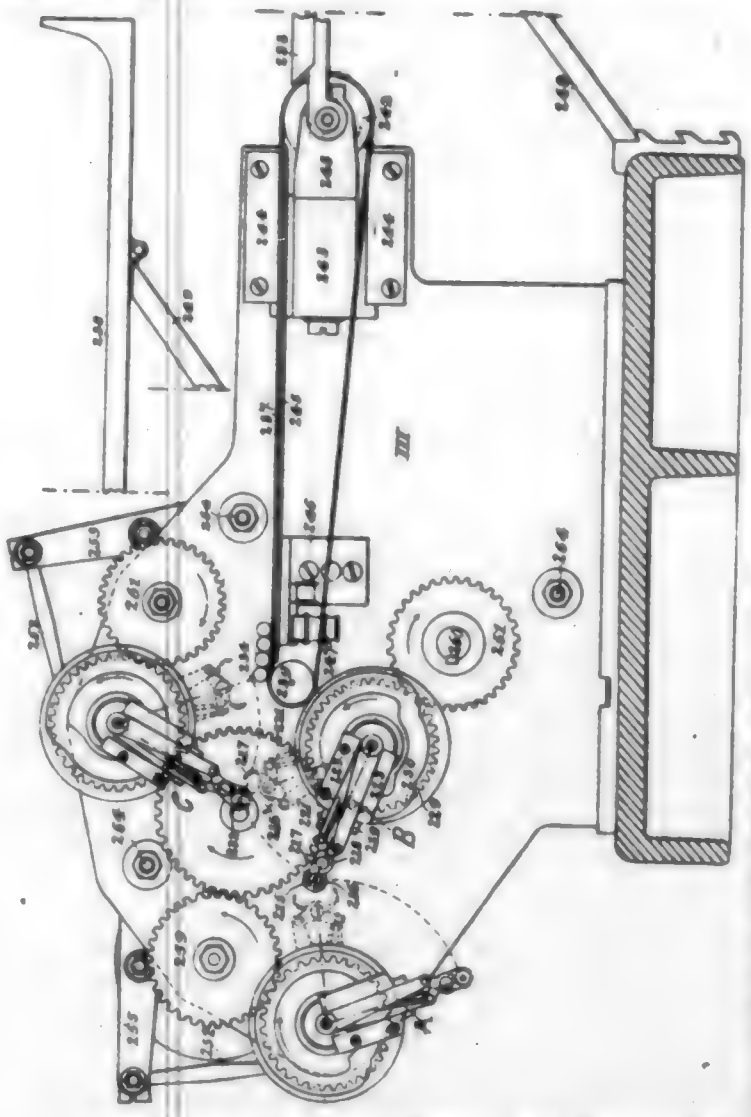
2. In combination in a machine for applying mouthpieces, rolling mechanism, feeding mechanism consisting of a pair of rollers, one of which is a feed-roll and the other a presser-roll, means for imparting to the feed-roller a backward and forward rotary movement and means for imparting to the presser-roller an oscillating movement, the said feed-roller first drawing the paper taut and then forcing the same into the rolling mechanism, substantially as described.

3. In a machine of the class described, the combination with rolling mechanism, and means to support a paper strip located on one side thereof, of feed-rollers located on the opposite side of said rolling mechanism, severing mechanism located between the feed-rollers and rolling mechanism, and means for rotating said feed-rollers first in one direction and then in the other, whereby a portion of the paper is drawn taut over the severing mechanism, severed and then returned to the rolling mechanism, substantially as described.

4. In a machine of the class described, the combination with gripping devices for holding the end of a cigarette, winding means, means for rotating said winding means to wind a paper tube of a smaller exterior diameter than the interior of the cigarette end, means to move the tube into the cigarette end, and means operating within the tube to partially unwind said tube in said end, substantially as described.

5. In a machine of the class described, the combination with gripping devices for holding the end of a cigarette, winding means, means for rotating said winding means to wind a paper tube of a smaller diameter than the interior of the cigarette end, means to move the tube into the cigarette end, and exterior and interior devices coacting upon said tube and cigarette to unwind the tube.

6. In a machine of the class described, the combination with gripping devices for holding the end of a cigarette, winding means, comprising a solid central spindle and coacting rollers bearing against the surface of said spindle, means for rotating said winding means to wind a paper tube of a smaller diameter than the interior of the cigarette end, means to move the tube into the cigarette end, and exterior and interior devices coacting upon said tube and cigarette to unwind the tube.



7. In a machine of the class described, a disk having a central tube or thimble, radially-moving catches or hooks adapted to engage the end of a cigarette to expand said end against said thimble, means for rolling a paper-tube mouthpiece, and means for inserting the same in said expanded end, substantially as described.

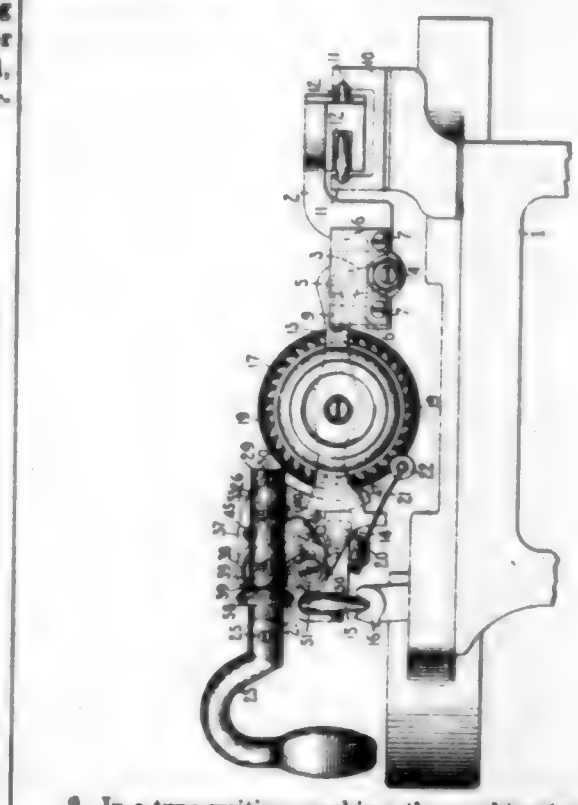
8. In combination in a cigarette-mouthpiece-applying machine, means for holding the cigarette-tube comprising a disk with a removable socket, catches moving radially of the said socket for pressing the cigarette-tube against the socket and means for introducing the mouthpiece-tube into the cigarette-tube, substantially as described.

9. In combination in a cigarette-mouthpiece-applying machine, means for transporting the tubes consisting of jaws, a slide for opening and closing said jaws, means for reciprocating the slide radially, levers carrying the jaws, and means for imparting a rotary movement to the said levers.

10. In combination in a cigarette-mouthpiece-applying machine, a tube-holder and means for pushing the cigarette-tube into the tube-holder consisting of a ram with a buffer and means for reciprocating the ram, substantially as described.

814,739. TYPE-WRITING MACHINE. GEORGE H. SMITH, Evanston, Ill., assignor to Densmore Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Dec. 2, 1904. Serial No. 235,211.

Claim.—1. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the pawl on the ratchet, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.



2. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the pawl on the ratchet, a stop coöperative with said gage to limit the downward movement of the pawl, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.

3. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the pawl on the ratchet, a stop coöperative with the pawl-carrying arm and the ratchet to limit the upward movement of the pawl, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.

4. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the pawl on the ratchet, a stop affixed to the pawl-carrying arm and coöperative with said arm and the ratchet to limit the upward movement of the pawl, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.

5. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the

pawl on the ratchet, a device coöperative with the pawl-carrying arm and the ratchet and pawl to lock the platen in the desired position, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.

6. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, an adjustable gage operative to regulate the action of the pawl on the ratchet, a stop affixed to the pawl-carrying arm and coöperative with other parts of the mechanism to limit the upward movement of the pawl and to lock the platen in the desired position, and a restoring-spring operative on the spacing-lever and pawl-carrying arm.

7. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, a pawl-carrying arm mounted on a fixed pin, means connecting the rock-shaft with said pawl-carrying arm, a spring-pressed pawl pivoted to said arm, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage operative to regulate the action of the pawl on the ratchet, said gage comprising a locking device on the exterior of the carriage-frame, a pawl-engaging stop, and a pin to which said locking device and stop are attached, this pin having a bearing in the carriage-frame and being movable on its axis by means of said locking device.

8. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, a pawl-carrying arm mounted on a fixed pin, means connecting the rock-shaft with said pawl-carrying arm, a spring-pressed pawl pivoted to said arm and extending within the carriage-frame, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage operative to regulate the action of the pawl on the ratchet, said gage comprising a locking device on the exterior of the carriage-frame, and a stop connected with said locking device and operative on the pawl within the carriage-frame.

9. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage operative on the pawl within the carriage-frame.

10. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet, and provided at its upper end with an extension, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage operative on said extension of the pawl.

11. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet and provided at its upper end with an extension, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage comprising a locking device on the exterior of the carriage-frame, and a stop connected with said locking device and operative on said extension of the pawl.

12. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet and provided at its upper end with an extension, a restoring-spring operative on the spacing-lever and pawl-carrying arm, and an adjustable gage comprising a stop underneath said extension of the pawl and means for securing this stop at different elevations.

13. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, the axis of the rock-shaft being higher than that of the platen, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet and provided at its upper end with an extension, a restoring-spring operative on the spacing-lever and pawl-carrying arm, an adjustable gage operative to regulate the action of the pawl on the ratchet, and a stop on said pawl-carrying arm above said extension of the pawl, said stop being coöperative with the ratchet to limit the upward movement of the pawl.

14. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever including a rock-shaft mounted on the platen-carriage, a pawl-carrying arm mounted on a fixed pin and extending backward from said pin toward the ratchet on one side of the rock-shaft, means connecting the rock-shaft with said pawl-carrying arm at the front end of said arm, a spring-pressed pawl pivoted to said arm at the rear end of the arm and extending thence downward in front of the ratchet and provided at its upper end with an extension, a restoring-spring operative on the spacing-lever and pawl-carrying arm, a stop on said pawl-carrying arm above said extension of the pawl, and an adjustable gage comprising a stop underneath said extension of the pawl and means for securing this stop at different elevations.

15. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever, including a rock-shaft having bearings in a tubular case fast on the carriage-frame, the axis of the rock-shaft being higher than that of the platen, a restoring-spring confined in said case and connected with the rock-shaft, a pawl-carrying arm mounted on a pin affixed to said case, said arm extending backward beside the case from said pin, bevel-gearing connecting the pawl-carrying arm with the rock-shaft, a spring-pressed pawl pivoted to the rear end of said pawl-carrying arm and extending thence downward in front of the ratchet, and an adjustable gage operative to regulate the action of the pawl on the ratchet.

16. In a type-writing machine, the combination with the platen and platen-carriage of a ratchet-wheel on the platen, a line-spacing lever, including a rock-shaft having bearings in a tubular case fast on the carriage-frame, the axis of the rock-shaft being higher than that of the platen, a restoring-spring confined in said case and connected with the rock-shaft, a pawl-carrying arm mounted on a pin affixed to said case, said arm extending backward beside the case from said pin, bevel-gearing connecting the pawl-carrying arm with the rock-shaft, a pawl pivoted to the rear end of said pawl-carrying arm and extending thence downward in front of the ratchet, a pawl-spring confined in a recess between the pawl and pawl-carrying arm, and an adjustable gage operative to regulate the action of the pawl on the ratchet.

814,740. **ELECTRIC MOTOR.** JOHN A. SMITH, Dayton, Ky., assignor to United States Electric Tool Company, Cincinnati, Ohio, a Corporation. Filed Nov. 28, 1904. Serial No. 234,454.

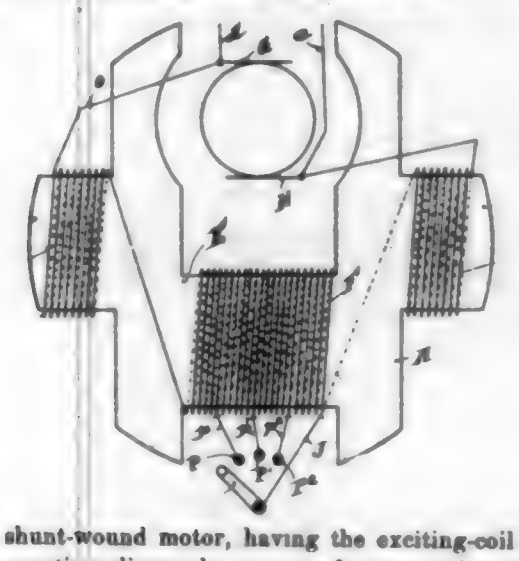
Claim.—1. A shunt-wound motor having a plurality of fields of different permeability, and means for varying the active length of the exciting-coil, substantially as described.

2. A shunt-wound motor, having the exciting-coil disposed in plurality of sections, forming a plurality of magnetic circuits of different permeability, and means for varying the active length of the exciting-coil, substantially as described.

3. A shunt-wound motor, having the exciting-coil wound in sections upon different cores disposed to create two or more magnetic circuits, and means for varying the active length of one of said coil-sections, substantially as described.

4. A shunt-wound motor, having the exciting-coil wound in

sections upon cores disposed to create two or more magnetic circuits, of different permeability, and means for varying the active length of one of said sections, substantially as described.



5. A shunt-wound motor, having the exciting-coil wound in one or more sections disposed on cores to form one substantially complete metallic magnetic circuit, and a second magnetic circuit, having an air-gap for lowering the permeability of the second relative to the first circuit, and means for varying the active length of the exciting-coil, substantially as described.

6. In a shunt-wound motor, an exciting-coil wound in three sections disposed around the armature to form one substantially complete metallic magnetic circuit, the core of one or more of said sections being exposed outside of the line of said metallic circuit, forming an additional circuit or circuits of lower permeability, and means for varying the active length of one of said sections, substantially as described.

7. In a shunt-wound motor, an exciting-coil wound in sections upon three different cores, said coil-sections disposed around one side of the armature to form one substantially complete metallic magnetic circuit, the cores of two of said sections being exteriorly presented upon opposite sides of the armature, and outside of the first-named circuit to form two balanced magnetic circuits of lower permeability than the first-named circuit, and means for varying the active length of the wire in the intermediate section, substantially as described.

8. In a shunt-wound motor, an exciting-coil wound in sections upon three different cores disposed around one side of the armature, the axis of the intermediate core being disposed substantially parallel with the axes of the outside cores, whereby a substantially complete metallic circuit is formed and two balanced magnetic circuits of lower permeability, and means for varying the active length of the intermediate coil-section, substantially as described.

9. In a shunt-wound motor, an exciting-coil wound upon two or more cores disposed in planes substantially parallel, and means for varying the active length of the coil on one of said cores, substantially as described.

10. In a shunt-wound motor, an exciting-coil wound upon different cores, one of which cores is disposed to form a substantially complete metallic magnetic circuit through the armature, and one of the cores being disposed to present a pole outside of the first-named circuit to form a second magnetic circuit, having an air-gap between the armature and said outside pole, and means for varying the active length of the coil, substantially as described.

11. In a shunt-wound motor, an exciting-coil wound upon three different cores, disposed around the armature, one of said cores being substantially concentric and the other two substantially radial relative to the armature forming three magnetic circuits, one of which is a substantially complete metallic circuit through the armature, and the other two of which are substantially balanced circuits, each having an air-gap between its outside pole and the armature, and means for varying the active length of the coil, substantially as described.

12. In a shunt-wound motor, a metallic blank, having two limbs between it upon which the armature revolves, an exciting-coil having a section wound upon said blank to form a substantially complete metallic circuit through said blank and armature, said coil having one or more additional sections wound upon said blank to form one or more magnetic circuits, each having an air-gap between its pole and armature, forming through the said blank and armature two or more magnetic circuits of substantially different permeability and means for varying the active length of the coil-section creating the complete metallic circuit, substantially as described.

13. A field-core having two parallel limbs united by a transverse base-piece, the inner opposite faces of said parallel limbs being hollowed out to receive the armature, the parallel limbs having field extensions projected outwardly substantially at right angles to said limbs respectively at points opposite the armature, a shunt-wound coil upon said lateral extensions and the said base-piece, and means for varying the active length of said exciting-coil, substantially as described.

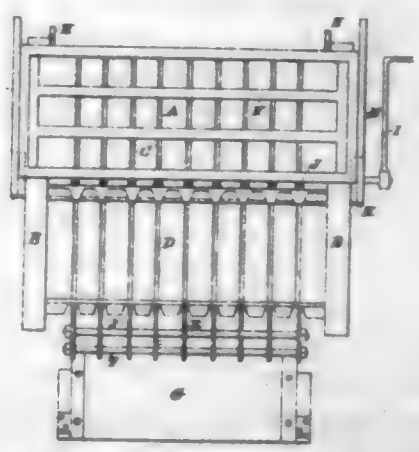
14. A field-core having two parallel limbs united by a transverse base-piece, the inner opposite faces of said limbs being hollowed out to receive the armature, the said limbs having field extensions on their outer sides projected substantially at right angles to said limbs opposite the armature, the coil being wound in shunt-circuit on said base-piece and said side extensions, and means for varying the active length of the section of the coil disposed on said base-piece, substantially as described.

814,741. **FACE-MASK.** HARRISON R. SOUTHWORTH, Chicago, Ill. Filed July 29, 1905. Serial No. 271,778.



Claim.—In a face-mask, the combination with a main portion shaped to cover the chin and jaws of the wearer and strings secured to the upper ends thereof for tying the same upon the head, of a band secured to the main portion and extending underneath the jaws and adapted to hold the main portion snugly up against the jaws.

814,742. **MACHINE FOR PRESSING CONCRETE BRICKS.** HENRY H. SPEARS, Louisville, Ky. Filed June 10, 1905. Serial No. 264,557.



Claim.—1. In a machine for pressing concrete bricks and containing a mold and a frame of slides for dividing the mold into chambers, a lid with slots running through it where it meets the slides of the same length with these slides, which slots widen upward into gutters.

2. In a machine for pressing concrete bricks, and containing a mold and frame of slides, and slots widening into gutters in the lid, a row of buttons set on the rear wall of the mold, each button made up of a pin and disk, so located that they will pass through the slots and gutters, when the lid is shoved to the rear.

3. In a machine for making machine-bricks with a mold divided by slides into chambers for the single bricks, a platform for receiving the frame with which the slides are combined; which platform is

raised by the same leverage which bears up the concrete toward and against the lid, and means for stopping the ascent of this platform, such as are shown in the specifications and drawings, Figs. 4 and 5, at a height at which the frame of slides is drawn out from the concrete and replaced on the platform.

814,743. CAR-ROOF CONSTRUCTION. GUSTAV STEINMEYER, Sr., St. Louis, Mo. Filed Aug. 30, 1905. Serial No. 276,411.



Claim.—1. In a car-roof construction, a carline having sloping terminals and a central horizontal portion, and a reinforcing-plate secured to the sloping terminals and spaced from the central portion, substantially as set forth.

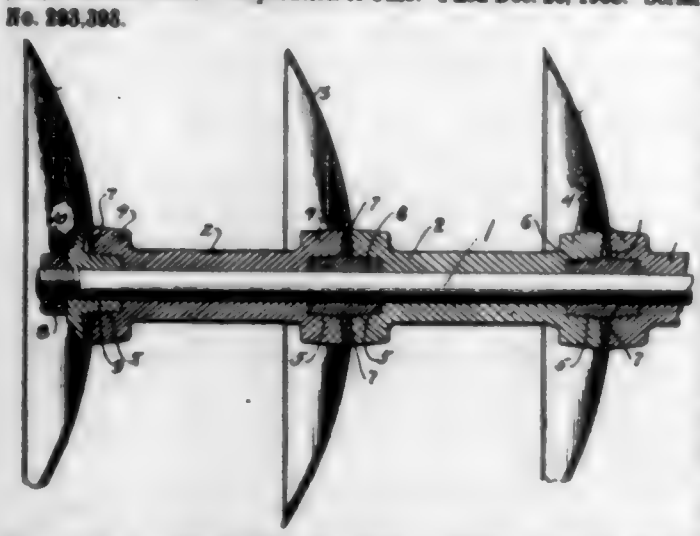
2. In a car-roof construction, a carline having sloping terminals and a central horizontal portion, a reinforcing-plate secured to the sloping terminals and spaced from the central portion, and a centrally-depressed saddle formed in the reinforcing-plate, substantially as set forth.

3. In a car-roof construction, a carline comprising a channel-bar having sloping terminals and a central horizontal portion, a reinforcing-plate secured to the outer faces of the web of the sloping terminals of the carline, and conforming to the slope of said portions, a centrally-depressed saddle formed in the reinforcing-plate, a ridge-pole resting in said saddle, the ends of the reinforcing-plate extending beyond the carline and having depending deflected portions, and side plates confined between said depending portions and the adjacent ends of the carline, substantially as set forth.

4. In a car-roof construction, a carline comprising a channel-bar having a central horizontal portion, and sloping terminals corresponding to the pitch of the car-roof, a reinforcing-plate secured to the outer faces of the webs of the sloping terminals, and conforming to the slope of said portions, a centrally-depressed saddle resting with its base on the web of the central portion of the carline, a ridge-pole embraced and centered by said saddle, the ends of the reinforcing plate extending beyond the carline and having depending terminals, terminal depending wings at opposite ends of carline, a side plate confined between the wings, the reinforcing-plates and their depending terminals, and securing-bolts passed through the wings, side plates and depending terminals of the reinforcing-plates, substantially as set forth.

5. In a car-roof construction, a carline having sloping terminals and a central horizontal portion, a reinforcing-plate secured to the sloping terminals and spaced from the central portion, and filler-blocks inserted into said space, substantially as set forth.

814,744. CONNECTION FOR HARROW-DISKS. JONATHAN M. STEWART, Canton, Ohio, assignor to The Bucher & Gibbs Plow Company, Canton, Ohio, a Corporation of Ohio. Filed Dec. 28, 1905. Serial No. 293,393.

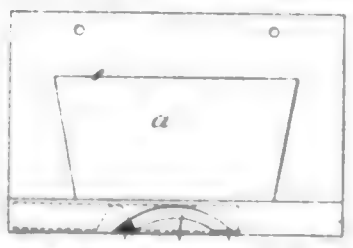


Claim.—1. A gang-rod having located thereon, a series of thimbles provided with socket-heads, a disk-block located in the sockets of the thimble-heads and a harrow-disk mounted upon the block and clamped between two adjacent thimble-heads, substantially as and for the purpose specified.

2. The combination of a gang-rod, a series of thimbles mounted upon the gang-rod, said thimbles provided with heads, angled sockets formed in the heads, angled disk-blocks adapted to be located in the angled sockets of the thimble-heads, and harrow-disks mounted upon the angled blocks and the disks clamped between the thimble-heads, substantially as and for the purpose specified.

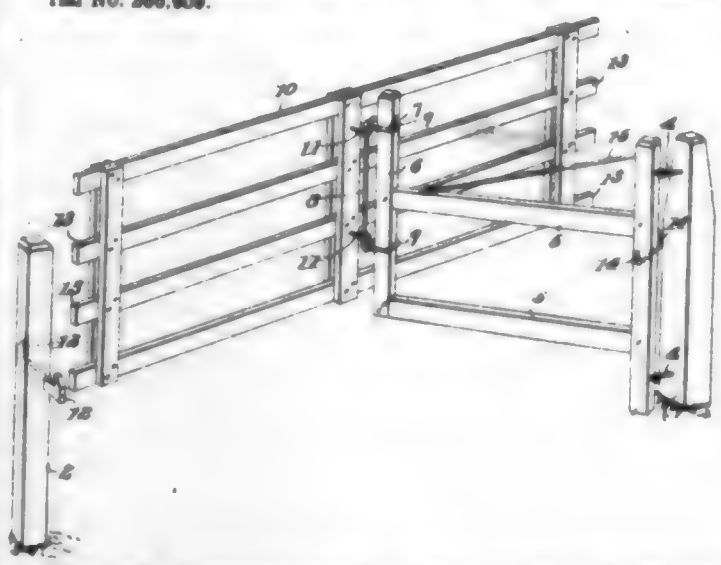
3. As an improved connection for harrow-disks, thimbles provided with heads having sockets and a disk-block removably connected to the socket-heads and a harrow-disk adapted to be mounted upon the removable block, substantially as and for the purpose specified.

814,745. SAFETY MATCH-BOX. RALPH L. STORM, Waterloo, Iowa. Filed June 30, 1905. Serial No. 267,697.



Claim.—An ignition device, comprising in combination with a match-box, a slotted compartment attached thereto, an igniting-surface therein, a slide-piece movable over said surface within said compartment and having a suitable opening for a match to pass therethrough and contact with said igniting-surface, said slide-piece having its opening so arranged as to progressively partially uncover the slot in said compartment when moved therein.

814,746. GATE. JAMES F. STROUD, Emerson, Iowa, assignor of one-half to Sylvester Stroud, Mills county, Iowa. Filed June 23, 1905. Serial No. 266,669.



Claim.—1. A gate comprising, a post, an arm hinged to the post, an upright fixed to the free end of the arm, a rod vertically slidable upon the upright and a gate-panel centrally hinged upon the rod.

2. A gate comprising, a post, an arm hinged to the post, an upright fixed to the free end of the arm and provided with a notch adjacent the top, a rod embracing the upright and arranged to engage within the notch, and a gate-panel centrally hinged to the rod.

3. A gate comprising, a post, an arm hinged to the post and to swing in a horizontal plane in either direction, an upright fixed to the free end of the arm, a rod vertically slidable upon the upright and a gate-panel centrally hinged to and movable with the rod.

4. A gate comprising, a post, an arm hinged to the post, an upright fixed to the free end of the arm, a rod disposed adjacent to and parallel with and having a loop at each end slidably embracing the upright, and a gate-panel hinged to and slidable with the rod.

5. A gate comprising, a post, an arm hinged to the post, an upright fixed to the free end of the arm and provided with a notch, a rod disposed adjacent to and parallel with and having at each end a loop embracing the upright one of said loops arranged to engage within the notch, and a gate-panel centrally hinged to and slidable with the rod.

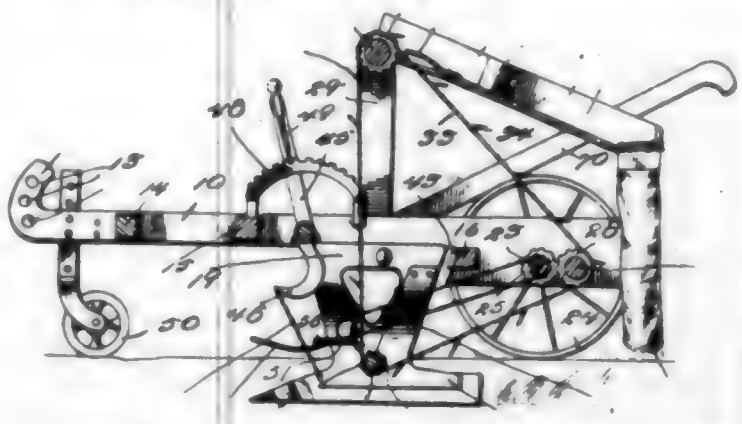
6. A gate comprising spaced posts, a vertical pivot-bar hinged to one post, an arm rigidly outstanding from the pivot-bar, an upright fixed upon the free end of the arm, a rod vertically slidable upon the upright, a gate-panel hinged to the rod, latch members secured to opposite sides of the pivot-bar, latch members mounted upon opposite sides of the post opposite the pivot-bar and means carried by each end of the gate for engaging either of said latch members.

7. A gate comprising, spaced posts, a vertical pivot-bar hinged

to one post, an arm rigidly outstanding from the pivot-bar, an upright fixed upon the free end of the arm and provided adjacent its upper end with a notch, a rod disposed adjacent to and parallel with the upright and having at each end a loop loosely embracing the upright and capable of moving vertically thereon and the uppermost loop engaging within the notch, latch members mounted upon opposite sides of the pivot-bar, latch members mounted upon opposite sides of the post opposite the pivot-bar, a gate-panel centrally hinged upon the rod and movable therewith and means at each end of the gate for engaging either latch member and at either height.

8. A gate comprising gate-posts, an arm vertically hinged to one post and carrying a vertical upright at its end extending above the arm and provided with a rod vertically slidable upon the upright, and means for retaining the rod in a raised or a lowered position, a gate-panel hinged at its central line upon the slidable rod, latch members secured upon opposite sides of one post, and means carried by each end of the panel for engagement with the latch member upon either post.

814,747. **BEET-HARVESTER.** TIMOTHY J. SULLIVAN, Read, Colo. Filed Mar. 3, 1904. Serial No. 196,302.



Claim.—1. A beet-harvester comprising a frame, laterally-spaced excavating devices secured to the frame, supplemental devices disposed between said excavating devices and adapted to receive the beets therefrom, a shaft mounted in the supplemental devices and bridging the space therebetween, a sprocket-wheel carried by the shaft and an elevator engaged with said sprocket-wheel and movable thereon and adapted to receive the beets from said supplemental devices.

2. A beet-harvester comprising a frame, laterally-spaced excavating devices secured to the frame and separated at their rear end by a narrowed throat, supplemental devices disposed between said excavating devices in position to receive beets therefrom, an elevator movable through the throat in position to receive beets from the supplemental devices, and a topping mechanism carried by the excavating devices in advance of said supplemental devices.

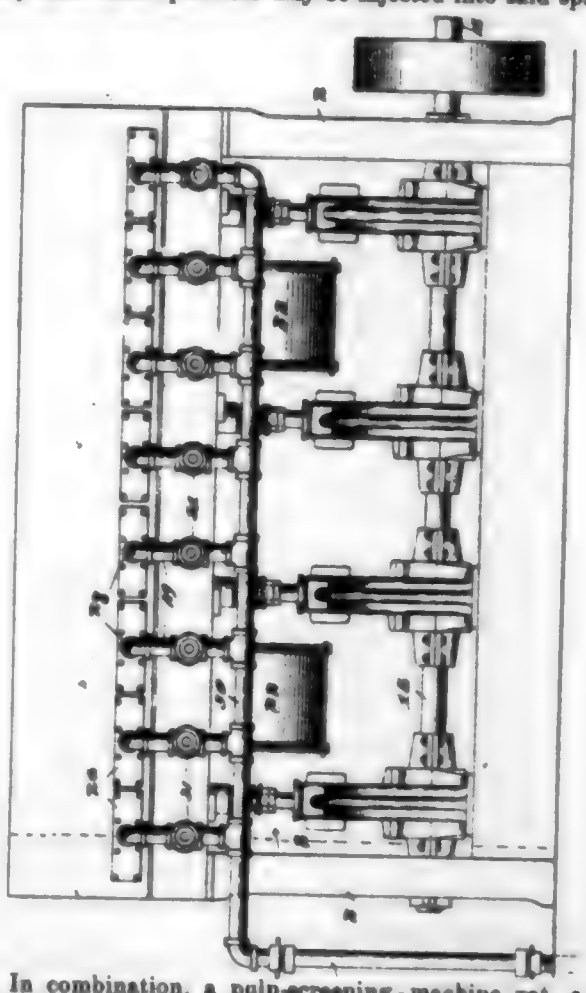
3. A beet-harvester comprising a frame, laterally-spaced excavating devices secured to the frame and separated at their rear end by a narrowed throat, supplemental devices disposed between said excavating devices in position to receive beets therefrom, an elevator movable through the throat in position to receive beets from the supplemental devices, and a topping mechanism carried by the excavating devices in advance of said supplemental devices, said topping mechanism being vertically movable independently of the excavating devices.

4. A beet-harvester comprising a frame, laterally-spaced excavating devices secured to the frame, supplemental devices disposed between the excavating devices and adapted to receive beets therefrom, an elevator movable between the supplemental devices in position to receive the beets therefrom, a chute disposed to receive from the elevator, a vertically-adjustable topping mechanism carried by the excavators in advance of the supplemental devices, and a spring-arm carried by the connecting mechanism and extending forwardly and downwardly therefrom to raise the cutting mechanism.

5. A beet-harvester comprising a frame, laterally-spaced excavating devices pivoted to the frame for movement to enter the ground to varying depths, stops for limiting the movement of said excavators in one direction and means for shifting the excavators in the opposite direction.

814,748. **MACHINE FOR SCREENING FIBROUS PULP.** PETER R. THOM, Appleton, Wis., assignor of two-thirds to Kimberly & Clark Company, Neenah, Wis., a Corporation of Wisconsin. Filed May 31, 1904. Serial No. 210,494.

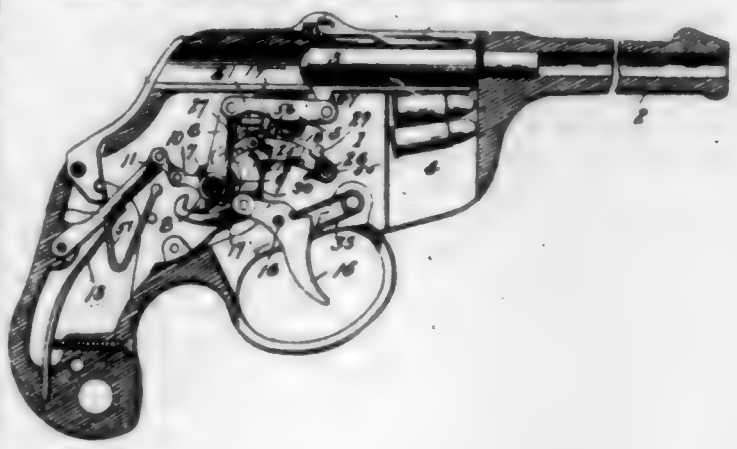
Claim.—1. In a pulp-screening machine, the combination of a vat, a screen-plate, provided with restricted screen-openings arranged to extend across and partition said vat below the normal liquid-level line thereof, the flow-space of said vat below said screen-plate being devoid of obstructions on which pulp could lodge during its onward flow therethrough, and a fluid-injector mechanism arranged to communicate with said flow-space of the vat below the screen-plate and whereby fluid under pressure may be injected into said space.



2. In combination, a pulp-screening-machine vat, a slotted screen-plate arranged within said vat and dividing the interior thereof below the normal liquid-level therein, a slot-like opening leading in through the side wall of said vat and communicating with the space below the screen-plate, a header-box communicating with said slot, a supply-pipe connected with said header-box, and a source of fluid-supply under pressure communicating with said supply-pipe.

3. In combination with a pulp-screening machine comprising a vat, a series of compartments in said vat, and screen-plates arranged within the respective compartments and dividing the interior thereof at points below the normal liquid-level therein, a series of header-boxes mounted in the side wall of the vat, one opposite each compartment therein and forming parts of said side wall, slot-shaped passages leading from the respective header-boxes through the side wall of the vat and discharging into the spaces below the respective screens and in a plane approximately parallel therewith, a series of supply-pipes connected with the several header-boxes, each provided with a controlling-cock, and a main header-pipe communicating with the several supply-pipes and with a source of fluid under pressure.

814,749. **AUTOMATIC GUN.** WILLIAM TRABUE, Louisville, Ky., assignor of one-third to Delozier Moxley and one-third to C. C. McClarty, Louisville, Ky. Filed Mar. 18, 1905. Serial No. 250,843.



Claim.—1. The combination, in a firearm, of a bolt, a trigger and mechanism connected thereto by which the breech may be opened by the trigger movement, and a spring acted on by the recoil of the breech-bolt when thrown to extreme position, beyond that rear position controlled by the trigger movement, so as to close the bolt independently of the trigger movement.

2. In a gun, the combination of the breech-bolt, trigger, and toggle-lever mechanism by which the bolt may be opened by the trigger movement, a sear engaging the mechanism to hold the bolt retracted, and a spring to close the bolt when the sear is released by further trigger movement.

3. In a gun, the combination of a bolt, an operating-lever connected thereto, and a spring operating to close the bolt under normal conditions of hand manipulation, and a second spring operating on the bolt only at its extreme rearward movement such as is caused by recoil, to throw the bolt forward.

4. In a gun, a bolt, a trigger connected thereto by mechanism whereby the bolt may be opened by the trigger movement, a sear in position to normally engage the mechanism to hold the bolt open, and means outside the frame whereby the sear may be held inoperative and the mechanism left under control of the trigger.

5. In a gun, the combination of the breech-closing bolt, automatic means whereby the bolt may be closed from full-recoiled position, and a lever mechanism connected to the bolt by which the bolt may be opened far enough to load without engaging the automatic bolt-closing means.

6. In a gun, the combination of a breech-bolt, lever mechanism by which the bolt may be opened, a trigger engaging said lever mechanism to operate the same, a light spring acting on the lever mechanism to close the bolt, and a heavy recoil-taking spring acting on the bolt when at the rear of its trigger-operated position.

7. In a gun, the bolt and a lever mechanism operated from the trigger to open the bolt, a spring for closing the bolt, a sear engaging the mechanism to hold the bolt open, and means for setting said sear out of position for such engagement, all combined.

8. In a gun, the breech-bolt and its lever mechanism operating to open and close the same, a sear engaging said mechanism to hold the bolt open, a sliding piece in the frame by which said sear is thrown out of engagement, and means for locking said sliding piece.

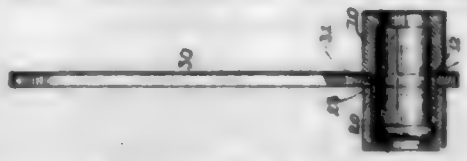
9. In a gun, the breech-bolt and its operating lever mechanism, a sear engaging the mechanism to hold the bolt open, a slide-piece inside the frame by which said sear may be lifted, and a sliding bar outside the frame with which said slide in the frame engages through a slot in the frame.

814,750. **COMPOSITION OF MATTER.** LEONARD S. VAN WESTRUM, Berlin, Germany. Filed Jan. 27, 1905. Serial No. 242,979.

Claim.—1. A composition of matter for preventing packings and the like from being dissolved by petroleum or equivalent lubricant, comprising castor-oil and caustic lime, producing saponification, substantially as described.

2. A composition of matter for preventing packings and the like from being dissolved by petroleum or equivalent lubricant, comprising five parts of castor-oil, three to four parts of fine graphite and one to two parts of caustic lime, substantially as described.

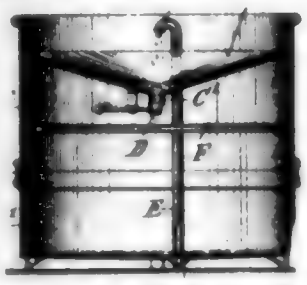
814,751. **CRANK-ARM SLEEVE-BEARING.** CHARLES WALES, Detroit, Mich. Filed July 24, 1905. Serial No. 271,090.



Claim.—1. A sleeve-bearing for crank-arms, comprising an interior sleeve provided with an inwardly-projecting annular bearing-flange at one and reduced in outer diameter toward the opposite end forming a shoulder on the outside at the junction of the different diameters, and an exterior sleeve also provided with an inwardly-projecting annular bearing-flange at one end, its main body being of a size to permit it to be forced over the reduced portion of the interior sleeve, whereby an arm, slipped on said reduced portion, may be held between the shoulder and the end of the exterior sleeve.

2. The combination, with an interior sleeve provided with an inwardly-projecting annular bearing-flange at one end and having its outer diameter reduced toward the opposite end forming a shoulder on its outside, of a crank-arm having a suitable opening fitted over the reduced end and resting against the shoulder, and an exterior sleeve provided with a like inwardly-projecting annular bearing-flange at one end forced over the reduced portion of the interior sleeve and clamping the crank-arm between the inner end of the exterior sleeve and said shoulder.

814,752. **MEAT-ROASTER.** DANIEL G. WALKER, Lindsay, Nebr. Filed Jan. 27, 1905. Serial No. 242,868.



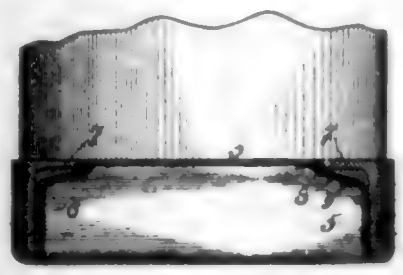
Claim.—1. A meat-roaster comprising a pan having a roasting-chamber for the meat, a hopper-shaped partition forming a reservoir over the roasting-chamber and in communication therewith, and a pipe extending from near the bottom of the chamber and through said partition, to discharge basting fluid into the reservoir.

2. A meat-roaster comprising a pan having a roasting-chamber for the meat, a hopper-shaped partition forming a reservoir over the roasting-chamber and in communication therewith, a pipe extending from near the bottom of the chamber through the partition, to discharge basting fluid into the reservoir, and a distributer beneath said platform in the upper portion of the chamber, upon which passes the basting fluid from the reservoir.

3. A meat-roaster comprising a pan having a roasting-chamber for the meat, a reservoir over the roasting-chamber and in communication therewith, a pipe extending from near the bottom of the chamber through the top thereof, to discharge basting fluid into the reservoir, and a valve controlling the flow of the basting fluid from the reservoir into the roasting-chamber, and preventing escape of steam from the roasting-chamber.

4. A meat-roaster comprising a pan having a hopper-shaped partition in its upper portion, to provide a roasting-chamber below the portion and the partition forming a reservoir above the roasting-chamber, a valve controlling the discharge-spout of the partition, a pipe leading from near the bottom of the roasting chamber and discharging into the said reservoir, and a screen in the roasting-chamber, below the said spout.

814,753. **TANK.** JOHN W. WALLACE, Brooklyn, N. Y. Filed Oct. 18, 1904. Serial No. 228,933.



Claim.—1. A metal vessel comprising a main body, a bottom elevated in the body and formed with integral inner and outer flanges the upper edge of the outer flange being on a level with the bottom and spaced from the inner flange, and a metal ring, the lower edge of the main body and the said ring being inserted in the space between the said flanges and soldered or brazed therein, substantially as described.

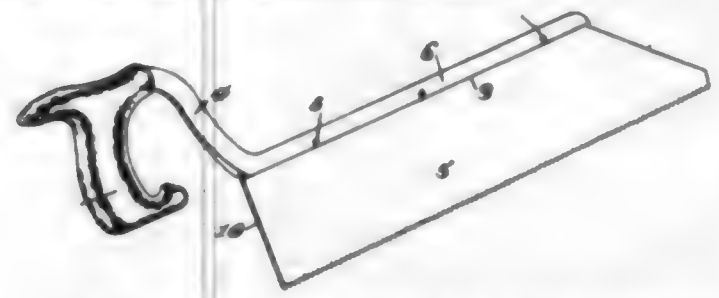
2. A metal vessel comprising a main body, a bottom elevated in the body and formed with inner and outer flanges and an angle-piece, the body and one member of the angle-piece being soldered or brazed together between the said flanges, substantially as shown and described.

3. A metal vessel comprising a main body, a bottom elevated in the body and formed with an inner and outer flange and depressed adjacent to the inner flange, and an angle-piece the vertical member of which is brazed or soldered together with the main body in the space between the said flanges the horizontal member of which overlies the said depression in the bottom and brazed or soldered thereto, substantially as described.

814,754. **COMBINATION SAW, SQUARE, AND MITER.** RICHARD J. WARD, New York, N. Y. Filed May 5, 1905. Serial No. 258,220.

Claim.—1. A saw-blade provided with a strip on its back edge,

one end of the saw-blade extending at a right angle to the inner face of the strip, the other end of the saw-blade extending from the inner face of the strip at an angle of forty-five degrees, and a handle secured to the said strip and free from the blade.

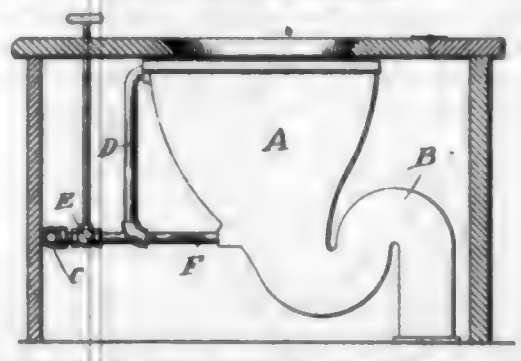


2. A saw-blade provided with a strip at its back edge, one end of the saw-blade extending at a right angle to the inner face of the strip, the other end of the blade extending from the inner face of the strip at an angle of forty-five degrees, and a handle secured to said strip and arranged out of alinement with the free portion of the saw-blade.

3. A saw provided with a projecting portion on its back edge, having a plane face extending at right angles to the adjacent side of the saw-blade, the blade having one end extending from said face at an angle of forty-five degrees, and a handle secured to the saw and located on the opposite side of the plane of said face from the saw, whereby no portion of the handle is intersected by the plane of said face of the projecting portion.

4. A saw comprising a strip having a longitudinal slot extending throughout one side, a blade having its back edge secured in the slotted portion of the strip, the blade having one end extending from the inner face of the strip at an angle of forty-five degrees, the strip at one end being bent upward away from the blade and to the rear thereof, a handle portion secured to the bent portion of the strip, the handle and bent portion being out of alinement with the free portion of the saw-blade.

814,755. AUTOMATIC CLEAN-SWEEP WASTE FOR OUTSIDE HOPPERS. HENRY C. WETZEL and EUGENE R. PRUITT, Baltimore, Md. Filed May 16, 1905. Serial No. 260,669.



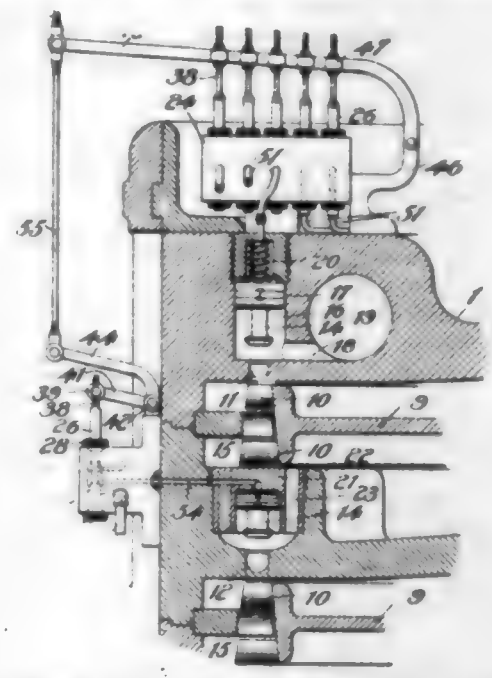
Claim.—The combination with a bowl and flush-pipe, of a connecting-pipe secured at the lower end of the flush-pipe and bowl, said connecting-pipe having an internal cone-shaped constriction formed in one end thereof, whereby to slowly bleed the flush-pipe of its contents after flushing the bowl without interference with the ordinary flushing of the bowl.

814,756. CONTROLLER MECHANISM FOR TURBINES. JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Jan. 20, 1905. Serial No. 241,971.

Claim.—1. In a governing mechanism for turbines, the combination of a number of fluid-controlled valves for varying the flow of motor fluid through nozzle-passages against rotatable elements, a number of secondary valves operating on the controller fluid for said nozzle-valves to open or close them, and a common actuator for said secondary valves which brings them successively into position where they effect the opening or closing of said nozzle valve or valves under their control.

2. In a governing mechanism for turbines, the combination of a number of valves for varying the flow of motor fluid through independent nozzle-passages, fluid-motors for operating said valves, separate conduits for admitting controller fluid to said motors, separate valves controlling the admission of fluid to said conduits, and a governor-shifted actuator common to a group of said latter valves and adapted to move them so as to effect a successive opening or closing of said nozzle-valves.

3. In a governing mechanism for turbines, a number of nozzles through which motor fluid flows against rotatable elements, separate piston-actuated valves for said nozzle-passages, cylinders for said pistons to which the motor fluid is admitted and acts on said pistons to open said valves, conduits to admit an opposing fluid-pressure to said cylinders, secondary valves controlling the admission of fluid to said conduits, and a governor-shifted actuator common to a group of said secondary valves and adapted to move them so as to successively admit or exhaust fluid from said conduits.



4. In a controller mechanism for a turbine, the combination of a plurality of valves controlling the flow of motor fluid through the turbine, rotatable buckets driven by said motor fluid, and a common actuator to which said valves are swivelly connected, substantially as described.

5. In a controller mechanism for a turbine, the combination of a plurality of fluid-actuated valves controlling the flow of motor fluid through nozzle-passages, a plurality of secondary valves which control by fluid-pressure means the operation of said nozzle-valves, and a common actuator for said secondary valves which are of relatively different conformation, as and for the purposes described.

6. In a controller mechanism for a turbine, the combination of a plurality of controller-valves, a traveling member to which said valves are directly connected and by means of which they are simultaneously moved and ports for said valves which are opened at different times during a synchronous movement of the valves, the opening and closing of said ports effecting by fluid-pressure means the opening and closing of turbine-nozzles, substantially as described.

7. In a controller mechanism for turbines, a plurality of nozzles, piston-operated valves therefor, and a controlling mechanism for said valves comprising a group of secondary valves, conduits adapted to be successively opened and closed by said valves which admit an actuating fluid to the piston-operated valves, and a governor-shifted actuator to which a group of said secondary valves are adjustably connected and by means of which they are moved synchronously and brought successively into position where they open or close the conduits under their control.

8. In a controller mechanism for turbines, the combination of a plurality of fluid-controlled nozzle-valves for varying the admission of motor fluid to the turbine, a plurality of slide-valves of relatively varying conformation, an actuator to which said slide-valves are adjustably connected, and means to move said slide-valves to effect, by fluid-pressure under their control, the opening and closing of turbine-nozzle valves.

9. In a controller mechanism for a turbine, a controller-casing comprising a plurality of valve-chambers, a plurality of controller-valves adapted to successively admit a high or low pressure to said chambers, valves controlling turbine-nozzles which are opened and closed under the control of the pressure in said chambers, and an actuator device by which all or a group of said controller-valves are connected and synchronously moved, said valves being adapted to open and close their respective ports in any desired manner.

10. In a controller mechanism for a turbine, a plurality of supply-nozzles for a wheel-compartment, valve means to open and close said nozzles, and a set of secondary valves controlling said valve means, a pivoted actuator member to which said secondary valves are pivotally connected, substantially as described.

11. In a controller mechanism for a turbine having a plurality of supply-valves, a plurality of secondary valves controlling said supply-valves, an actuator member for said secondary valves, and means to swivelly connect said secondary valves to said actuator member, substantially as described.

12. In a controller mechanism for a turbine, a plurality of valves for controlling the flow of motor fluid through nozzle-passages, an actuator-bar for said valves, and means to swivelly and adjustably connect each of said valves to said bar, substantially as described.

13. In a controller mechanism for a turbine, the combination of a plurality of valves controlling the flow of motor fluid through nozzle-passages, an actuator-bar for a number of said valves, eyebolts to which said valves are pivotally connected, and means to adjustably connect said eyebolts to said actuator-bar.

14. In a controller mechanism for a turbine, a number of secondary controller-valves utilizing a relay power to actuate turbine-valves, a controller-casing for said secondary valves, a chamber for each valve, and ports which are opened and closed by said valves for admitting to said chamber a high or exhaust pressure, conduits to communicate said chamber-pressure to control the operation of the turbine-valves, and a common actuator by which a number of said secondary valves are simultaneously adjusted, substantially as described.

15. In a controller mechanism for a turbine, a controller-casing comprising a plurality of valve-chambers, ports for admitting a high and a low pressure to said chamber, and slide-valves having reduced portions which act to maintain one or the other of said ports open, said valves being adapted to continue their movement after opening one of said ports without further effect, and means to control the operation of said secondary valves.

16. In a controller mechanism for a turbine, a controller-casing, a plurality of elongated valve-chambers therein, ports to admit a high and a low pressure to said chambers, elongated slide-valves in said chambers which perform their controlling function of opening or closing one or the other of said ports during a fractional part of their total travel, passages leading from said chambers and conducting a high or low pressure to control the operation of turbine-valves, and means to operate said secondary valves.

17. In a controller mechanism for turbines, a controller-casing two passages leading longitudinally through said casing and communicating respectively with high and low pressures, a plurality of valve-chambers communicating by by-passages with each of said pressure-passages, said chambers being enlarged between said pressure-ports to form controller-chambers, slide-valves movable in said chambers and adapted to establish communication between their respective controller-chambers and one or the other of said ports, a common actuator for a plurality of said slide-valves and passages to conduct the controller-chamber pressure to effect the opening and closing of turbine-nozzles.

18. In a controller mechanism for turbines, a controller-casing having a plurality of valve-chambers leading entirely through the casing, slide-valves disposed in said chambers, packing means for said valves at each end of said chambers, said valves acting to control the admission of motor fluid to turbine-nozzles, and means to actuate said valves, substantially as described.

19. In a multiple-stage turbine, a plurality of controller-valves for the turbine-valves controlling the supply of motor fluid to each stage, a separate actuator for the controller-valves for each stage whereby said valves are moved together and substantially uniformly and act to effect a successive opening of the turbine-nozzles, means to move said actuators simultaneously to control the flow of fluid across stages, substantially as described.

20. In a controller mechanism for multiple-stage turbines, a group of controller-valves to regulate the admission of motor fluid to initial supply-nozzles, a common actuator for a group of said valves, a group of secondary valves controlling admission of motor fluid to a succeeding stage, a common actuator for a group of said valves, an adjustable connection between said actuators, and a governor for moving said actuators simultaneously.

21. In a multiple-stage turbine, a group of controller-valves for controlling admission of pressure to each stage, a separate actuator for a plurality of valves for each stage, a governor, and means to couple up said actuators to said governor.

22. In a multiple-stage turbine, an inner casing, an outer frame disposed about the inner casing to hold the same together, controller mechanism for the stage-valves disposed between webs of said frame and connected to said inner casing, one or more controller-valves in said casing acting to vary the volume of motor fluid flowing through the stage nozzle or nozzles, and means to actuate said valves.

814,757. TURBINE-BUCKET WHEEL. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed May 5, 1905. Serial No. 258,969.



Claim.—1. In a turbine-bucket wheel, a rim portion provided with a plurality of undercut openings of less width than said rim, a plurality of buckets adapted to be inserted into said openings and held against lateral displacement between the side walls thereof, and means to lock said buckets in place comprising wedging devices adapted to be inserted through transverse openings in the rim and to engage and bend said bucket-shanks into the undercut portions of said openings to lock the buckets in position.

2. A turbine-bucket wheel comprising a rim provided with a plurality of radially-disposed openings therein of less width than the rim, said openings being undercut, a plurality of buckets having integral shanks of less width than the buckets and adapted to be inserted in the openings, transverse openings in the wheel-rim, and locking devices inserted through these transverse openings and passing through the radial openings, said devices being adapted to hold said shanks in engagement with the undercut portions of said openings to prevent the radial displacement of the buckets.

3. In combination with a plurality of buckets stamped from a rolled strip of metal which is curved in cross-section and tapers from the center to the sides, shanks integral with said buckets and cut from the thick central portions of said strip, a bucket element provided with radial openings into which said shanks are adapted to be inserted and which conform to the curved rear face of the shanks, said openings being undercut opposite the rear face of said shanks, and transversely-disposed locking-pins which hold said shanks in engagement with the undercut wall of said openings and prevent radial displacement of the buckets.

4. In a turbine-bucket wheel, a rim portion having a plurality of radially-disposed circular openings undercut at one side, a plurality of buckets having bent shanks disposed within the undercut portions of said openings and locking-pins, inserted transversely of said rim, which engage said shanks and lock them in said openings.

5. In combination, a rotatable bucket element, a plurality of openings bored therein, said openings being of greater area at their inner than their outer ends, buckets adapted to be inserted in said openings, blocks for substantially filling the openings at their outer ends after the insertion of the buckets, and means, adapted to be inserted between said block and bucket near the inner end of said openings, which bend the bucket for the purposes described.

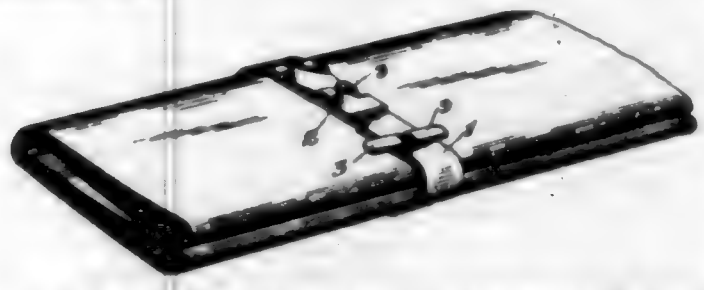
6. In combination, a bucket-wheel for turbines having a plurality of openings bored radially into its periphery, said openings being formed with an undercut recess, buckets, shanks integral with said buckets and adapted to enter said openings, and means engaging the said undercut recesses to lock the buckets in place.

7. In a bucket-wheel, a rim portion provided with a plurality of circular radial openings in its periphery, said openings being provided with an undercut recess, a plurality of transverse bolt-openings intersecting said circular openings near their inner ends, in combination with a plurality of buckets having integral shanks adapted to be inserted into said peripheral openings and disposed opposite said undercut recesses, blocks adapted to be inserted into said openings and substantially conforming in cross-sectional area with that portion of the outer end of the circular openings not filled by the bucket-shanks, and means adapted to be inserted through said bolt-openings and between said block and shank to bend the shank into said recess and lock it in its bent position, and means to lock said locking means in place in the wheel.

8. In a bucket-wheel having peripheral openings, buckets having integral shanks, blocks adapted to be inserted with said shanks into said openings to substantially fill the same, a groove in the face of said block which abuts against said shank, an opening in the wheel opposite said groove in the block, when the latter is in position, a tapering device adapted to be inserted through said opening and into said groove, and to spread said shank into a recess in the wheel-opening, and means to lock said shank in its bent position, substantially as described.

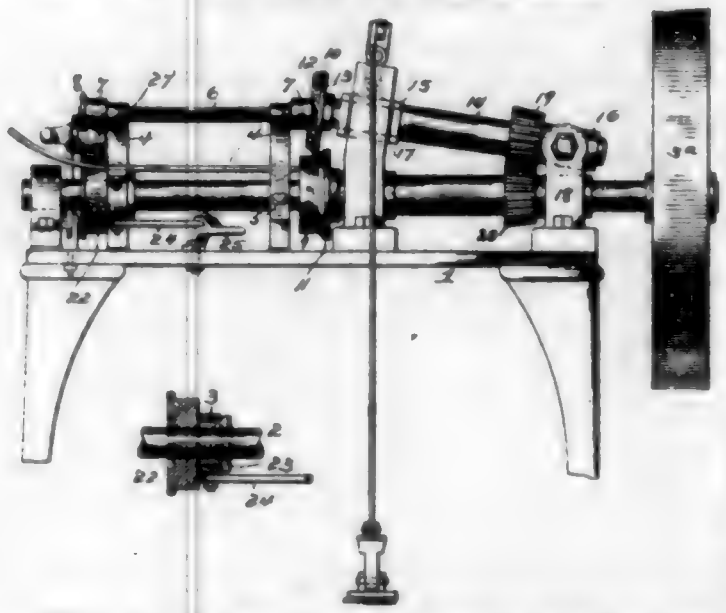
814,758. TIE FOR PACKAGES. JOHN S. WILLIAMSON, Elizabethtown, N. C. Filed June 27, 1905. Serial No. 267,259.

Claim.—1. A tie consisting of a band provided at one end with spaced shoulders, spaced tongues arranged laterally at opposite edge portions of the other end of the tie and adapted to be folded upon themselves and engage the spaced shoulders before mentioned, and other spaced tongues arranged similar to those first mentioned and adapted to engage over the end of the tie having the spaced shoulders to hold said spaced shoulders in engagement with the first-mentioned tongues.



2. A tie consisting of a band provided at one end with spaced shoulders, spaced laterally-extending tongues upon the opposite end of the band, and a head integral with said tongues and upon one side of the band while the tongues pass through an opening in the band and are bent flatwise upon the opposite side, the extremities of the tongues being refolded or bent over into engagement with the shoulders at the end of the band above mentioned.

814,759. CAN-SEAMING APPARATUS. GEORGE C. WITT, Cincinnati, Ohio. Filed June 14, 1905. Serial No. 265,270.



Claim.—1. In an apparatus of the character described, the combination of a flanged roll, and a movable roll having a flat edge to engage a can on the first-mentioned roll and perform one step in the flanging operation, and also having a beveled bending face to be engaged by the bent edge of the can and perform another step of the bending operation.

2. In an apparatus of the character described, the combination of a lower flanged roll, an upper movable roll having a flat and a beveled face to perform separate steps of the flanging operation, and means for feeding a cylindrical body to and between the rolls.

3. In an apparatus of the character described, the combination of a longitudinally-movable frame for supporting a can, and seaming-rolls engaging the edge of the can to turn, by three separate steps, a seam at the end of the can.

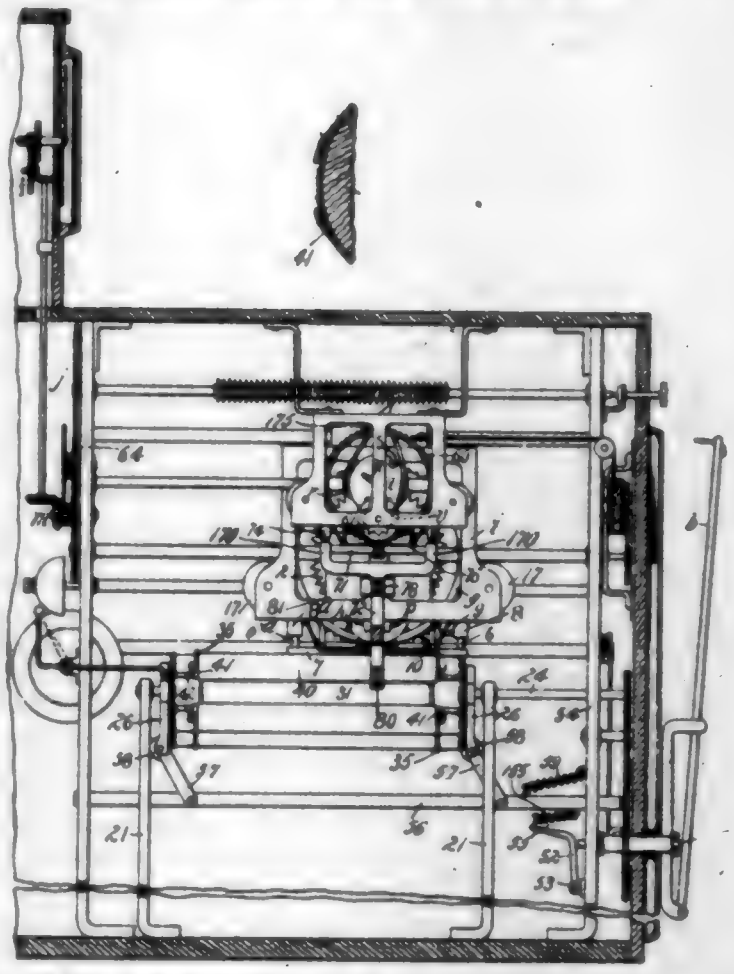
4. In an apparatus of the character described, the combination of a longitudinally-movable frame supporting a can, means for moving the frame longitudinally, a seaming-roll supporting and turning one end of the can when the latter is thereon, a beveled flange on said roll, and a movable seaming-roll having a flat and a beveled face to contact with the can end.

5. In an apparatus of the character described, the combination of an adjustable frame-support for a can, means for moving the frame longitudinally, of a flanged roller-support for the can at one end of the frame a lever, a grooved roller to secure the flange of the first-mentioned roller and hold the can firmly against the same, and seaming-rolls at the other end of the frame.

6. In an apparatus of the character described, the combination with a supporting-frame, of a fixed flanged seaming-roll, a movable seaming-roll above the same having an annular smooth face, and a beveled roughened face, a lever controlling the movement of the movable seaming-roll, and a lever to move the frame toward and away from said seaming-rolls.

7. In an apparatus of the character described, the combination with a fixed driving-shaft, a pivotally-supported shaft, and gearing connecting them, of a flanged seaming-roll on the fixed shaft, a beveled seaming-roll on the pivotally-supported shaft, a manually-movable frame to support a can and move it to and from the rolls and means, independent of the seaming-rolls and operated by the driving-shaft for rotating the can.

814,760. WORKMAN'S TIME-RECORDER. WILLIAM A. WOOD, Montreal, Canada. Filed May 7, 1903. Serial No. 156,073.



Claim.—1. In a workman's time-recorder comprising, in a single inclosing case, time-printing means, means for supporting a time-sheet in position to receive an impression from such printing means, a time-indicating device for operating the printing means, an auxiliary time-printing means operated by said time-indicating device and means whereby a time-card is supported in position to receive an impression from the auxiliary printing means.

2. In a workman's time-recorder, the combination with a clock-movement, time-printing wheels, and means operatively connecting the clock-movement to the time-printing wheel, of a star-wheel mounted upon one of the printing-wheels to rotate therewith, a notched disk connected to the other of the printing-wheels to rotate therewith, and a fork fulcrumed at its crotch above the latter, one of the legs of such fork having its end bent to engage the notch in the disk, a retractile helical spring retaining such leg out of engaging position, the other leg of the fork having its end bent to present an angular tooth to engage between the points of the star-wheel.

3. In a workman's time-recorder, the combination with a clock-movement, minute and hour printing wheels, and means operatively connecting the said clock-movement to said time-printing wheels, of a star-wheel rigidly connected to and rotatable with said minute-wheel, a movable part adapted to be engaged and moved by a part actuated by the workman, a suitably-supported rotatable spindle, a rod secured at one end of said spindle and having its free end bent to extend toward the points of said star-wheel and tapered, a collar rotatably mounted upon said spindle, a bar connected at one end rigidly to said collar, and connected at its other end to and movable with said first-mentioned movable part, a stop limiting the movement of said collar relatively to said spindle, and a spring yieldingly retaining said bar and rod against movement toward one another.

4. In a workman's time-recorder, the combination with time-printing wheels of a carrier for a time-sheet, said carrier consisting of a frame pivoted at one end to a stationary part of the recorder, and having its opposite end extending beneath said time-printing

wheels, a pair of rollers, one mounted in each end of said carrier, a platen extending parallel to the roller in the free end of said carrier and adapted to be brought into bearing relation with said time-printing wheels when the free end of said carrier is raised, means for connecting a time-sheet to said rollers, means for rotating said rollers, and means for raising and lowering said carrier.

5. In a workman's time-recorder, the combination with time-printing wheels, and the workman's lever, of a carrier for a time-sheet, said carrier consisting of a frame pivoted at one end to a stationary part of the recorder, and having its opposite end extending beneath said time-printing wheels, means for rotatably supporting the time-sheet upon said frame, a platen extending parallel to and beneath said time-printing wheels and carried by said frame, a slidable rod adapted to be slid by said workman's lever when it is moved axially, a lever pivoted beneath the inner end of said slidable rod and extending upwardly across same and adapted to be moved thereby, a bar extending beneath said pivoted frame, toggle-bars connecting said last-mentioned bar to said pivoted frame, means for supporting said last-mentioned bar constantly in the same horizontal plane, a coiled spring connected at one end to said lever at the upper end of the latter, the other end of said spring being connected to said horizontal bar, a second coiled spring connected at one end to said horizontal bar and at its other end to a stationary part of the recorder.

6. In a workman's time-recorder, the combination with time-printing wheels, of a carrier consisting of a frame pivoted at one end to a stationary part of the recorder, and having its opposite end extending beneath said printing-wheels, a platen extending parallel to and beneath said time-printing wheels and carried by said carrier, and means for raising said carrier and causing said platen to bear upon said time-printing wheels each time said workman's time-recorder is operated.

7. In a workman's time-recorder, the combination with a clock-work, of time-printing wheels, means for supporting said time-printing wheels, means for connecting said clock-movement to said time-printing wheels and rotating the latter, a movable platen, a workman's lever adapted to be swung and depressed, means connecting said lever to said platen whereby said platen will be moved into bearing relation with said time-printing wheels upon the depression of said workman's lever, inking devices for inking the type upon said time-printing wheels, a movable detent for at times preventing the swinging of said workman's lever, the frame of said recorder having a slot in a line with the point between said platen and time-printing wheels, auxiliary time-printing wheels, means connecting the clock-work to said auxiliary time-printing wheels whereby the latter are rotated, a lever fulcrumed adjacent to said auxiliary time-printing wheels and having one arm projecting beneath the latter and its other arm projecting outside of said recorder, a spring yieldingly retaining said lever in a position with its inner arm away from said time-printing wheels, a flexible platen upon the inner end of said inner arm, a guide upon the upper side of said arm, the frame of the recorder having a slot in line with said guide, a slidable bar having one end projecting outside of the recorder and graduated, a stop upon the inner end of said slidable bar for limiting the extent to which a card may be inserted through said slot and guide.

8. In a workman's time-recorder, the combination with time-printing wheels, of a time-sheet carrier consisting of a pair of rollers arranged a short distance apart and beneath said time-printing wheels, means for connecting a time-sheet to said rollers in band form, means for inking the type of said time-printing wheels and means for raising and lowering one of said rollers toward and from said time-printing wheels.

9. In a workman's time-recorder, a time-sheet carrier consisting of a frame pivoted at one end, a roller rotatably mounted in each end of said frame, each of said rollers having an annular guard near each end thereof, an endless flexible impression-apron stretched around said rollers between said guards, means for securing the time-sheet upon said apron a platen carried by said frame and extending transversely of and beneath the upper portion of said apron, and means for raising and lowering the free end of said frame.

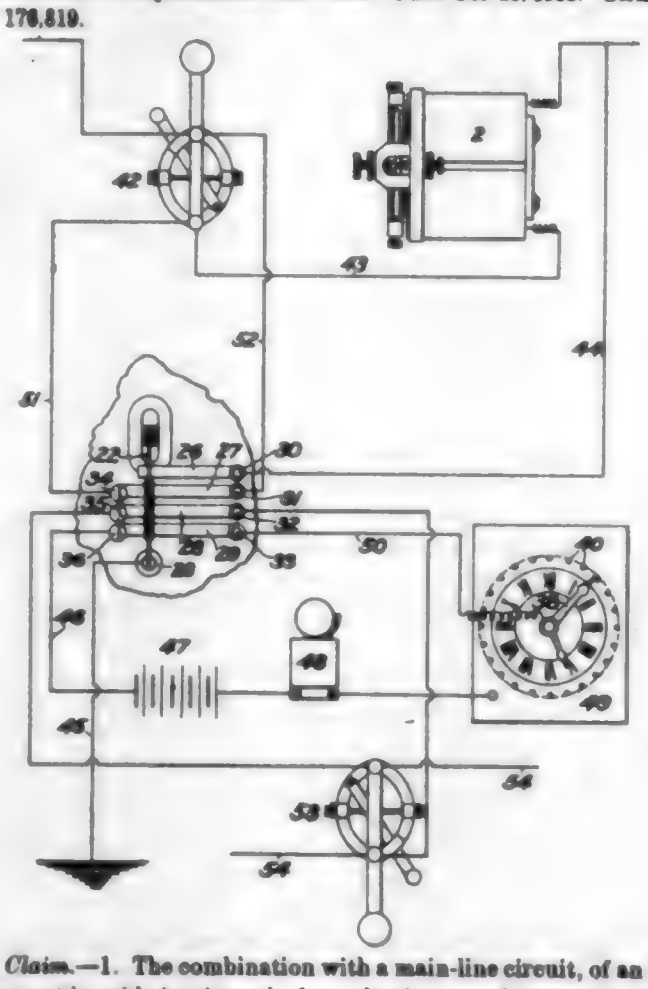
10. In a workman's time-recorder, the combination with the casing thereof and time-printing wheels, of a time-sheet carrier consisting of a pair of rollers arranged a short distance apart and beneath said time-printing wheels, means for connecting a time-sheet to said rollers in band form, means for inking the type of said time-printing wheels and means for raising and lowering one of said rollers toward and from said time-printing wheels the said casing of the recorder having a card-slot in line with the space between said rollers and time-printing wheels.

11. In a workman's time-recorder the combination with a workman's lever, a carrier for a time-sheet, means for connecting said time-sheet to said carrier with a space between the ends of said time-sheet, of means for locking the workman's lever in a position with the space between the ends of the time-sheet in the printing-line of the recorder.

12. In a workman's time-recorder the combination with the time-indicating device, combined time-sheet and time-card printing means and an operative connection between said time-indicating device and said combined printing means, a workman's lever and means operatively connected to said workman's lever for moving said time-sheet relatively to said time-printing means, of means when in one position simultaneously locking the workman's lever against movement and allowing the insertion of a time-card and when in a different position simultaneously allowing the workman's lever to move and preventing the insertion of a time-card.

13. In a workman's time-recorder, the combination with a clock-work, of time-printing wheels, means for supporting said time-printing wheels, means for connecting said clock-movement to said time-printing wheels and rotating the latter, a movable platen, a workman's lever, means whereby said platen will be moved into bearing relation with said time-printing wheels, inking devices for inking the type upon said time-printing wheels, the frame of the recorder having a slot in a line with a point between the platen and the time-printing wheels, auxiliary time-printing wheels, means connecting the clockwork to the auxiliary time-printing wheels whereby the latter are rotated, the frame of the recorder having a slot in line with the auxiliary printing-wheels for the insertion of a card, and means whereby the auxiliary printing means is caused to make an impression upon the card last mentioned.

814,761. **TELEGRAPHIC SAFETY DEVICE.** SELDEN R. WRIGHT, Morton, N. Y., assignor to Circuit Protecting Relay Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 13, 1903. Serial No. 176,819.



Claim.—1. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein a spring contact-strip normally adapted to complete said circuit, and a part of said clock mechanism adapted to make and break said circuit periodically; means normally engaging said contact-strip to break the bell-circuit; a part automatically moved into engagement with said clock mechanism, when said main circuit is broken, and adapted to be moved thereby; and means operated by the movement of said part by the clock mechanism for releasing said spring contact-strip.

2. The combination with the main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit, including therein a spring contact-strip normally adapted to complete said circuit, a plurality of separate contact-points and a part of said clock mechanism, whereby said circuit is periodically made and broken; means normally engaging said contact-strip to break said bell-cir-

cuit; a part automatically moved into engagement with said clock mechanism when said main circuit is broken, and adapted to be moved thereby; and means operated by the movement of said part by the clock mechanism for releasing said contact-strip.

3. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein a spring contact-strip normally adapted to complete said circuit, and a part of said clock mechanism adapted to make and break said circuit periodically; means normally engaging said contact-strip to break said bell-circuit; a lever whereby said means are held in engagement with said contact-strip; and a part automatically moved into engagement with said clock mechanism when said main circuit is broken, and adapted to be moved thereby to tilt said lever to release thereby said contact-strip from said engaging means.

4. The combination with a main-line circuit of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein a spring contact-strip normally adapted to complete said circuit, and a part of said clock mechanism adapted to make and break said circuit periodically; a lever adapted to engage said contact-strip, whereby said bell-circuit is broken; a second lever adapted to engage the first to hold it in engagement with said contact-strip; and a part automatically moved into engagement with said clock mechanism when said main circuit is broken, and adapted to be moved thereby to tilt said last-mentioned lever to release thereby said first-mentioned lever.

5. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein a spring contact-strip normally adapted to complete said circuit, and a part of said clock mechanism adapted to make and break said circuit periodically; means normally engaging said contact-strip to break the bell-circuit; a bar adapted to be moved by said clock mechanism to release said engaging means from said contact-strip; a connection between said bar and the armature of the electromagnet in said main circuit, whereby said bar is held out of engagement with said clock mechanism when said main circuit is completed; and a spring adapted to bring said bar into engagement with said clock mechanism when said main circuit is broken.

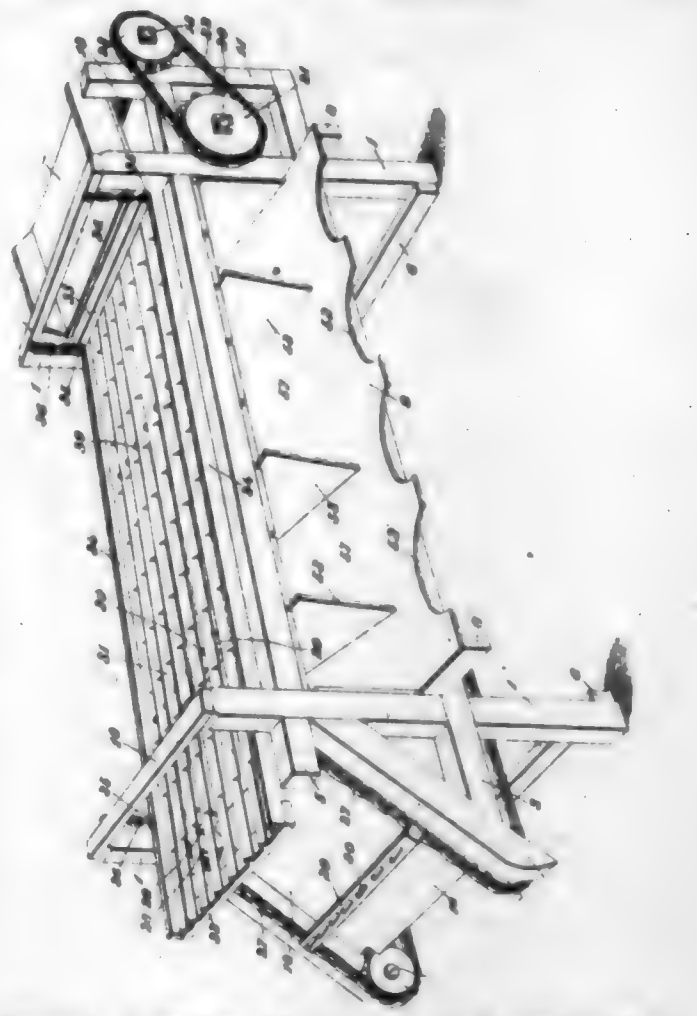
6. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein a spring contact-strip normally adapted to complete said circuit, and a part of said clock mechanism adapted to make and break said circuit periodically; means normally engaging said contact-strip to break the bell-circuit; a bar adapted to be moved by said clock mechanism to release said engaging means from said contact-strip; a connection between said bar and the armature of the electromagnet in said main circuit, whereby said bar is held out of engagement with said clock mechanism when said main circuit is completed; a spring adapted to bring said bar into engagement with said clock mechanism when said main circuit is broken; and means for relaxing the tension of said spring.

7. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit, including therein the circuit-breaker consisting of the hand 38 of the clock mechanism and the equidistant contact-points 40, said circuit being normally broken at another point; a part automatically moved into engagement with said clock mechanism when said main circuit is broken and adapted to be moved thereby; and means operated by the movement of said part to close said bell-circuit,

8. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit including therein the elastic contact-strip 29 and its post 36, and parts of said clock mechanism by which said last-mentioned means said circuit is periodically made and broken; the vertical lever 22 adapted to engage said strip 29 to force it out of contact with the post 36; the horizontal lever 20 adapted to retain the lever 22 in the position last described; the longitudinally-movable bar 4 adapted to tilt said lever 20 so as to release said lever 22; and the spring 16 attached to said bar 4 at one end and to a stationary support at the other end, whereby said bar 4 is drawn into engagement with said clock mechanism; substantially as shown and described.

9. The combination with a main-line circuit, of an electromagnet in said circuit; a clock mechanism; an electric bell-circuit; the bar 4 adapted to be moved by said clock mechanism to close said bell-circuit; a connection between said bar 4 and the armature of said magnet whereby said bar is held out of engagement with said clock mechanism when said main circuit is completed; the spring 16 connected at one end with said bar 4 and at the other end to the post 18; and the spring supporting-arm 19; substantially as shown and described.

814,762. PICKLE-GRADING MACHINE. THOMAS C. YEAGER, Canton, Mo. Filed Apr. 14, 1905. Serial No. 255,660.



Claim.—1. A machine of the class described embodying in its construction transversely-expansible grading elements, and resilient clamping elements for holding them in adjusted positions.

2. A machine of the class described embodying in its construction transversely-expansible graduated grading elements, and resilient clamping elements for holding them in adjusted positions.

3. A machine of the class described embodying in its construction a vibratory screen composed of transversely-expansible grading elements.

4. A machine of the class described embodying in its construction a screen comprising sectional grading elements, and resilient means for holding the sections of elements at any desired adjustment.

5. A machine of the class described comprising a screen composed of transversely-expansible graduated grading elements, means for vibrating the screen, and traveling agitating elements to project between the grading elements.

6. In a machine of the class described, the combination with a vibratory screen composed of spaced transversely-expansible graduated grading elements, of an endless traveling member carrying agitating members projecting between the grading elements.

7. A machine of the class described comprising a vibratory graduating-screen embodying transversely-expansible grading elements, a traveling agitating element having fingers projecting through the grading elements, and a receiving-table arranged beneath the screen and having adjustable partitions.

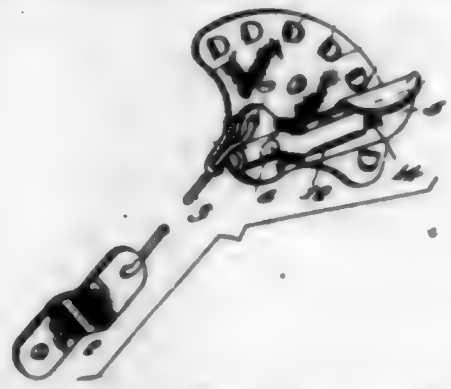
8. In a machine of the class described, the combination with adjustable grading elements, of an inclined receiving-table, and partitions adjustable relatively to the length of the table.

9. In a machine of the class described, a suspended grading-screen embodying expansible grading elements, means for vibrating the same, and a traveling agitating device coacting with the screen and driven from the mechanism that actuates the same.

814,763. STAY FOR SCREEN-DOORS. EDWARD ANDERSON, Harvey, Ill. Filed Apr. 27, 1905. Serial No. 257,775.

Claim.—1. In combination, a door, a stay or brace therefor including a stay-rod connected at one end with the door, a take-up device comprising a lock-plate, a pivoted lever connected with the stay-rod, a plurality of inclined teeth projected from the lock-plate, and a tooth projected from the lever and inclined in a direction opposite the inclination of the teeth on the lock-plate, the tooth on the lever

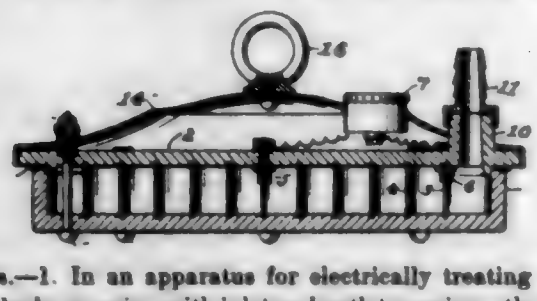
being adapted to engage and interlock with a selected one of the teeth on the lock-plate by reason of the opposite inclination of said teeth.



2. In combination, a screen-door, a brace or stay therefor comprising a rod secured at its lower extremity to the lower portion of the door, a lock-plate secured to the upper portion of the door, a lever, a pivot for said lever comprising a screw, a straining-lug projected from the lever adjacent the pivot thereof, an aperture to receive the upper extremity of the said rod, a plurality of inclined teeth pressed upwardly from the top of the lock-plate on an arc or circle struck from the pivot of the lever aforesaid as a center, and an inclined tooth pressed inwardly from the lever and extending from the under side thereof for coöperation with the teeth of the lock-plate, the tooth of the lever being adapted to engage and interlock with the inclined teeth of the lock-plate, the extremity of the lever remote from the pivot thereof having an outwardly-bent finger-piece.

3. In combination, a door, a stay or brace therefor including a stay-rod connected at one end with the door, a take-up device comprising a lock-plate, a pivoted lever connected with the stay-rod, a plurality of inclined teeth projected from the lock-plate, a tooth projected from the lever and inclined in a direction opposite the inclination of the teeth on the lock-plate, the tooth on the lever being adapted to engage and interlock with a selected one of the teeth on the lock-plate by reason of the opposite inclination of said teeth, and an adjustable pivot for the lever adapted to positively force the lever toward the lock-plate and thereby lock the tooth on the lever in interlocking relation to the tooth of the lock-plate engaged therewith.

814,764. APPARATUS FOR PURIFYING WATER BY ELECTROLYSIS. Henry C. Bailey, St. Louis, Mo., assignor to Electra-Pura Water Company, New York, N. Y., a Corporation of New Jersey. Filed May 23, 1901. Renewed July 22, 1903. Serial No. 166,554.



Claim.—1. In an apparatus for electrically treating water, a separable body or casing with inlet and outlet openings, the opposite heads or walls of said body portion being formed of insulating material and having oppositely-arranged grooves, plates or stripes of electrically-conductive material removably seated edgewise in said grooves, whereby when the body or casing is separated, the plates may be removed, and means for conducting an electric current to the plates or stripes, substantially as described.

2. In an apparatus for electrically treating water, a casing provided with a body portion, an insulating-cover, a plurality of spirally-arranged metallic stripes or plates secured between the lower part of the casing and the insulating-cover, the inner terminals of said spiral metallic plates or stripes being arranged near the center of the receptacle and the outer ends of said stripes or plates extending to the sides of the receptacle, and means for supplying electric current to said plates or stripes; substantially as described.

3. In an apparatus for purifying water electrically, a receptacle having inlet and outlet openings, a plurality of spiral metallic stripes or plates forming channels parallel to each other, the inner terminals of which are near the center of the receptacle and adjacent each other, means for admitting water into the outer convolutions of one of the channels, the water passing through said channels in a rotary movement toward the center where it enters a secondary channel in a reverse direction, flowing toward the periphery of the receptacle, through the outlet-opening, and means for supplying electric current to the plates or stripes; substantially as described.

4. In a water-purifying apparatus, the combination with a hollow casing having a removable wall, said removable wall and the wall opposite the same being formed of insulating material with oppositely-placed grooves therein, metallic plates or stripes with their edges resting in said grooves, and means for conducting an electric current to the plates or stripes; substantially as described.

5. In an apparatus for electrically treating water, a separable body as described, each component part being provided respectively with an inlet and an outlet opening, and having a plurality of spiral grooves on its inner surface, said grooves being opposite to and on a line with each other when the parts of said body are placed together, in combination with a plurality of coiled metallic strips adapted to be seated edgewise in the said grooves, and means for electrically connecting said strips with opposite poles of a source of electric supply, substantially as described.

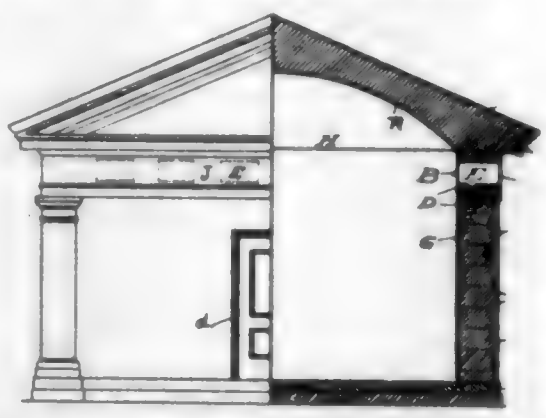
6. In combination with a filter, a lid therefor comprising a hollow separable body of insulating material, an inlet and outlet to said body, said body being adapted to receive water under pressure and carry it to the filter, a pair of substantially parallel metal strips forming two coils mounted in said body in such a manner as to form two channels, and means carried by opposite ends of said strips to connect said strips to an electrical supply.

7. In an apparatus for the purpose described, a hollow separable body composed of insulating material, spiral grooves in the upper and lower interior sides of said body, a pair of spiral metallic coils fitting in said grooves and having their outer ends secured in the sides of the body and their inner ends extending to the center thereof, and an electrical connecting means connected to said coils.

8. In an apparatus for the purpose described, a hollow separable body composed of insulating material, spiral grooves in the upper and lower interior sides of said body, a pair of spiral metallic coils fitting in said grooves and having their outer ends secured in the sides of the body and their inner ends extending to the center thereof, said coils being so arranged as to allow water to flow in one direction toward the center and then reverse and allow it to flow toward the outer side without traversing the same channel more than once, an inlet to one channel, an outlet to the other channel, and an electrical source having its positive and negative connected, respectively, to the coils

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814,765. MONOLITHIC BUILDING. Wells D. Butterfield, Detroit, Mich. Filed Feb. 6, 1905. Serial No. 244,369.



Claim.—1. In a building, in combination with translucent slabs forming the inner and outer surface, a concrete filling between the slabs, there being portions of the wall in which the concrete filling is omitted, and the translucent surface slabs utilized for the admission of light through the wall, substantially as described.

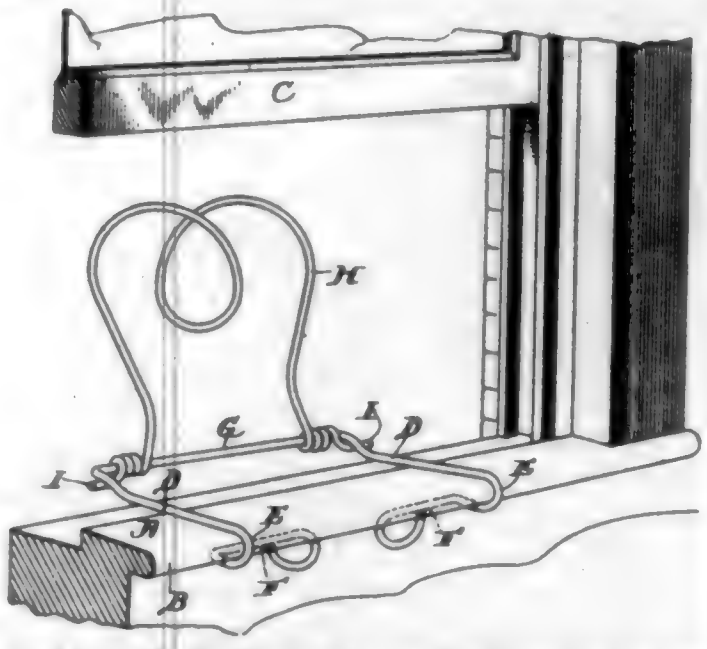
2. In a building, in combination with surface slabs of translucent material, having the space between them filled with concrete with intervals in the concrete to serve for the admission of light through the translucent slabs and a roof of concrete carried up as a continuation of the side walls, substantially as described.

814,766. REMOVABLE BACK FOR SEATS. Worthy L. C. Chambers, Chicago, Ill. Filed Nov. 29, 1904. Serial No. 234,732.

Claim.—1. A removable back for seats, comprising a back piece, supporting side pieces therefor, underturned expansible and contractile hooks at the front ends of said side pieces to take under the edge of a seat, and extensions on said hooks to bear against the under side of a seat.

2. A removable back for seats, comprising a back piece, sup-

porting side pieces therefor, a hinge connection between said back piece and said side pieces, underturned expansible and contractile hooks at the front ends of said side pieces to take under the edge of a seat, and extensions on said hooks which bear against the under side of the seat.



3. A removable back for seats, comprising a back rod and side pieces formed of a single piece of wire, underturned hooks at the front ends of said side pieces, extensions on said hooks at the ends of said side pieces to bear against the under side of a seat, and a back pivoted to the said back rod.

4. A removable back for seats comprising a back rod and side pieces formed of a single piece of wire, underturned hooks having right-angle extensions to bear against the under side of the seat, a back piece formed of a single piece of wire and having its free ends coiled about said back rod to form a hinge connection, and extended stubs on said hinge-coil to engage said side pieces, and serve as stops to limit the movement of the back piece.

5. A removable back for seats, comprising a seat portion formed of a single piece of wire and having a back rod and side limbs underturned hooks on the side limbs of said seat portion, right-angle extensions on said hooks to bear against the under side of a seat, a back piece formed of a single piece of wire and having its ends coiled about the back rod of said seat portion to form a hinge connection therewith, and tie-links connecting said back piece and the side limbs of said seat portion.

6. A removable back for seats, comprising a seat portion having side limbs formed of wire with ends underturned to form seat-engaging hooks, and a back piece formed of wire and having spring-coil connections with said seat portion.

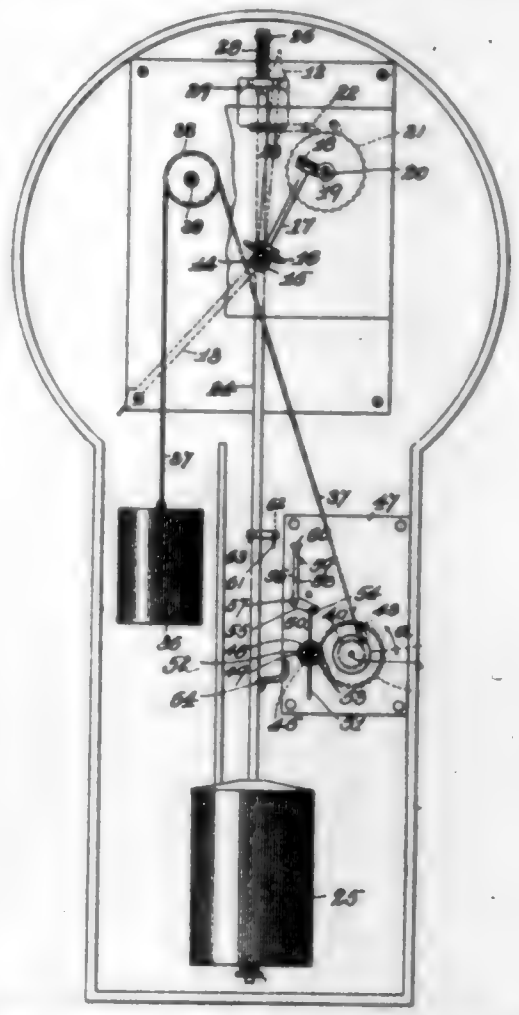
7. A removable back for seats comprising a seat portion, having side limbs formed of wire with ends underturned to form seat-engaging hooks, and a back piece formed of wire, and having a spring-coil-hinge connection with said seat portions.

814,767. CLOCK. FRANK M. CLARK, Tilton, N. H., assignor of one-third to Charles H. Philbrick, Tilton, N. H., and one-third to Frank G. Balcom, Medford, Mass. Filed June 11, 1904. Serial No. 212,061.

Claim.—1. A clock comprising in its construction a pendulum, a power-driven arbor, an arm fast to said arbor, a detent-lever adapted to engage said arm and prevent said arbor from rotating, and a tripper pivoted to said pendulum and adapted to contact with said detent-lever at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one of a series of movements of said pendulum and thereby releases said arm.

2. A clock comprising in its construction a pendulum, a power-driven arbor, an arm fast to said arbor, a detent-lever adapted to engage said arm and prevent said arbor from rotating, a tripper pivoted to said pendulum and adapted to contact with said detent-lever at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one of a series of movements of said pendulum and thereby releases said arm, and a projection fast to said arbor constructed to engage and vibrate said pendulum when said arm is released.

3. A clock comprising in its construction a pendulum, a power-driven arbor, means to lock said arbor against rotation, a tripper pivoted to said pendulum and adapted to contact with said locking means at each swing of said pendulum, said locking means provided with a recess into which said tripper enters and thereby locks said means to said pendulum during a portion of one of a series of movements of said pendulum and thereby unlocks said means from said arbor.



4. A clock comprising in its construction a pendulum, a power-driven arbor, means to lock said arbor against rotation, a tripper, and a vibrating support to which said tripper is pivoted, said support connected to and moved by said pendulum, said tripper adapted to contact with said locking means at each swing of said pendulum, said locking means provided with a recess into which said tripper enters and thereby locks said means to said pendulum during a portion of one of a series of movements of said pendulum and thereby unlocks said means from said arbor.

5. A clock comprising in its construction a pendulum, a power-driven arbor, an arm fast to said arbor, a lever adapted to engage said arm and prevent said arbor from rotating, and a loosely-depending tripper pivoted to said pendulum and adapted to contact with said lever at each swing of said pendulum, said lever provided with a recess into which said tripper enters and thereby locks said lever to said pendulum during a portion of one of a series of movements of said pendulum and thereby releases said arm, said tripper adapted to subsequently release said lever and allow it to again engage said arm.

6. A clock comprising in its construction a pendulum, a tripper, a vibrating support to which said tripper is pivoted, said support connected to and moved by said pendulum, and a detent-lever with which said tripper contacts at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one of a series of movements of said pendulum.

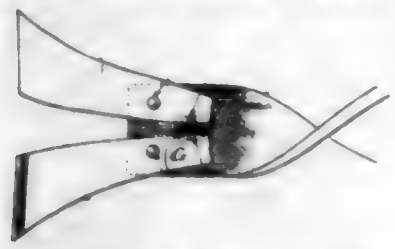
7. A clock comprising in its construction a pendulum, a tripper, a vibrating support to which said tripper is pivoted, said support connected to and moved by said pendulum, a detent-lever with which said tripper contacts at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one of a series of movements of said pendulum, a rotary arbor, and an arm upon said arbor adapted to engage said detent-lever.

8. A clock comprising in its construction a pendulum, a tripper, a vibrating support to which said tripper is pivoted, said support connected to and moved by said pendulum, a detent-lever with which said tripper contacts at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one

of a series of movements of said pendulum, a rotary arbor, an arm upon said arbor adapted to engage said detent-lever, and a projection fast to said arbor adapted to engage and vibrate said pendulum.

9. A clock comprising in its construction a pendulum, a tripper, a vibrating support to which said tripper is pivoted, said support connected to and moved by said pendulum, a detent-lever with which said tripper contacts at each swing of said pendulum, said detent-lever provided with a recess into which said tripper enters and thereby locks said detent-lever to said pendulum during a portion of one of a series of movements of said pendulum, a rotary arbor, an arm upon said arbor adapted to engage said detent-lever, a projection fast to said arbor adapted to engage and vibrate said pendulum, a train of gears connected to said arbor, and a weight connected to and adapted to rotate said gears.

814,768. **EXPANSION-BIT FOR COAL-DRILLS.** WILLIAM H. CLARKSON, Edwards Station, Ill., assignor to Hulda J. Clarkson, Edwards Station, Ill. Filed Jan. 30, 1905. Serial No. 243,443.



Claim.—1. In a coal-drill, the drill-body, cutting members bifurcated at one end and straddling the said body, the same being pivoted to the body, adjustable means back of the pivots of the members for closing such members together at their cutting extremities, said adjustable means capable of being adjusted to permit the members to separate at will when working within a boring.

2. In a coal-drill, the drill-body, a pair of bifurcated members straddling the extremity of the body, and pivoted to the said extremity, said members having cutting edges at their free extremities, and means rearward of the pivots for separating the rear ends of the members to close the free ends together.

3. In a coal-drill, the drill-body, a pair of cutting members bifurcated at one end and inclosing the extremity of such drill-body, each being pivoted thereto, the free extremity of the members having cutting edges and adapted for separation by swinging on the pivots, said cutting edges being substantially at right angles to the axis of the drill-body whether separated or closed together and means for closing the members together, such means also when adjusted permitting the members to separate when a hole of larger diameter is to be bored.

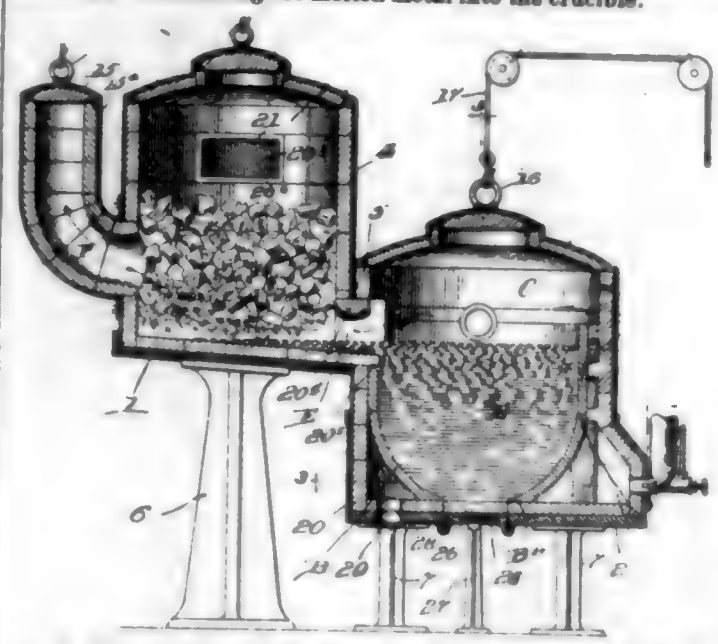
4. In a coal-drill, the drill-body, a pair of bifurcated members straddling the extremity of the said body and pivoted thereto and adapted to separate or close together, a member carried in the body rearward of the pivots of the members, the same adapted when in one position to close the free cutting ends of the members together and in the other position to permit the said cutting ends to separate at will.

5. In a coal-drill, the drill-body, a pair of cutting members bifurcated at one end to straddle the extremity of the body and pivoted thereto, a member carried in the drill-body between the members rearward of the pivots, the same being adjustable to permit the free ends of the members to separate or to positively close them together for the purposes set forth.

814,769. **CUPOLA.** FRED N. CLINE, Chicago, Ill. Filed Oct. 24, 1904. Serial No. 229,775.

Claim.—1. A cupola-furnace comprising a metal-melting chamber having a gas-discharge passage leading from the bottom thereof; a crucible for the molten metal lower than the melting-chamber and adapted to receive molten metal by gravity from the bottom of the melting-chamber; a chamber within which the crucible is contained and of which the interspace about the crucible constitutes the fire-chamber, the sole flame-discharge from said fire-chamber leading into the bottom part of the melting-chamber laterally with respect thereto, and the sole metal-discharge from the melting-chamber leading into the crucible through the same lateral bottom passage.

2. A cupola-furnace comprising a metal-melting chamber having a gas-discharge passage; a crucible for the molten metal lower than the melting-chamber; a second chamber within which the crucible is contained, and the interspace of which about the crucible constitutes the fire-chamber, the sole flame-discharge from said fire-chamber leading into the lower part of the crucible laterally with respect thereto, the sole metal-discharge from the melting-chamber leading into the crucible through the same lateral bottom discharge-passage, the melting-chamber having a fire-clay lining which continues into and through said passage and over the upper edge of the crucible for conducting the molten metal into the crucible.



3. A cupola-furnace comprising a metal-melting chamber having a gas-discharge passage; a crucible for the molten metal lower than the melting-chamber; a chamber within which the crucible is contained whose cavity is continuous with that of the melting-chamber, the crucible wall at the side toward the melting-chamber having the upper edge recessed, the throat or passage between the two chambers having a fire-brick lining which extends into such recess making junction with the lower and two side walls of the recess for conducting molten metal from the melting-chamber into the crucible, and means for directing flame into the interspace of the second chamber around the crucible for discharge over the upper edge of the crucible and through said throat into the melting-chamber.

4. A cupola-furnace comprising a metal-melting chamber having a gas-discharge passage leading from the bottom at one side and thence upward; a crucible for the molten metal lower than the melting-chamber; a second chamber within which the crucible is contained and whose cavity is continuous with that of the melting-chamber, such cavity comprising a restricted throat or passage between the two chambers, said throat or passage leading off from the melting-chamber at a point in the periphery of the bottom thereof opposite that at which the gas-passage opens from said chamber and means for directing flame into the interspace of the second chamber around the crucible for discharge thereabove through said throat and across the lower part of the melting-chamber to the gas-discharge passage.

5. A cupola-furnace comprising a metal-melting chamber; a crucible into which said melting-chamber discharges the molten metal; a chamber in which the crucible is contained having an interspace for flame around the crucible and means for directing flame thereinto for heating the same; a throat or passage leading from the melting-chamber for conducting the metal therefrom into the crucible, said throat or passage having free communication over the top of the crucible with the said flame-interspace, and a gas-discharge flue leading from the lower part of the melting-chamber.

814,770. **FIXTURE FOR AWNINGS, CURTAINS, AND THE LIKE.** ARTHUR COPELAND, Washington, D. C., assignor of one-half to Martin G. Copeland, Washington, D. C. Filed Apr. 18, 1903. Serial No. 153,163.



Claim.—1. A supporting-fixture for awnings, curtains or the like, consisting of a tubular body portion, having a longitudinal slot therein, means for supporting said body portion and means formed integral with and on the exterior surface of said body portion for supporting a sheave-block, said last-named means being independent of the supporting means, substantially as described.

2. A supporting-fixture for awnings, curtains or the like, con-

sisting of a slotted ring or collar, a perforated lug carried thereby intermediate the ends thereof, and a hook on the exterior surface of said ring or collar, said hook being directly beneath said supporting-lug, substantially as described.

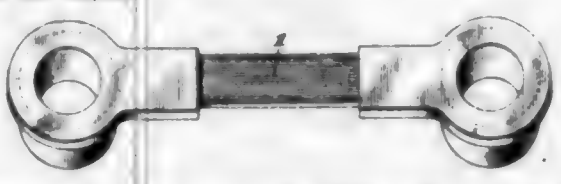
3. The combination of an awning, curtain or the like, having a hem or fold at its upper edge, a retaining means within said hem or fold, of supporting-fixtures therefor, each comprising a ring or collar having a slot parallel to its longitudinal axis, means for supporting the ring or collar and means carried by said ring or collar for supporting a sheave-block, said ring or collar being adapted to embrace and clamp the hem or fold around said retaining means, substantially as described.

4. The combination of an awning having a hem or fold at its upper edge, a retaining means within said hem or fold, of supporting-fixtures for said awning comprising a ring or collar having a slot parallel to its longitudinal axis, a perforated lug on the exterior portion of said ring or collar, diametrically opposite said slot and a hook carried by said ring intermediate the lug and slot, said ring or collar being adapted to embrace and clamp the hem or fold around said retaining means, substantially as described.

5. The combination of an awning, curtain or the like, having a fold therein, a retaining means within said fold, a supporting-fixture therefor independent of said retaining means and comprising a tubular body portion having a longitudinal slot therein, a perforated lug projecting from said body portion between its ends and having the axis of the perforation at substantially right angles to the axis of the tubular portion, a supporting-stud engaging the perforation whereby the fixture is freely supported, the slotted body portion embracing the fold and clamping the same about the retaining means and to the fixture, substantially as described.

6. A supporting-fixture for awnings, curtains or the like, consisting of a slotted ring or collar, a perforated lug carried thereby intermediate the ends thereof, and a hook on the exterior surface of said ring or collar, said hook being beneath said supporting-lug, substantially as described.

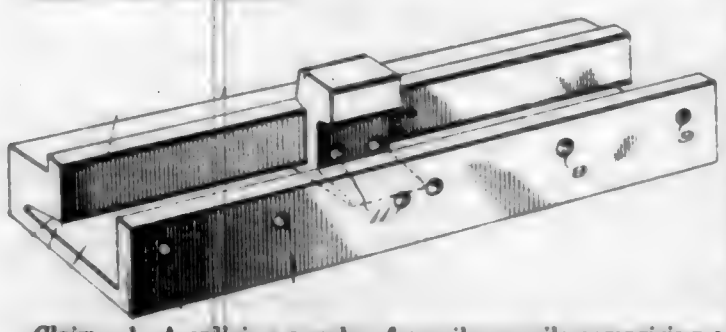
814,771. **ELECTRIC RAIL-BOND AND METHOD OF MAKING SAME.** SAMUEL P. COWARDIN, Richmond, Va. Filed Mar. 6, 1903. Serial No. 146,542.



Claim.—1. An electric rail-bond comprising a conductor and a terminal each formed of a metal which will alloy with the metal of the other, the metal of the terminal being in intimate union with the metal of the conductor and alloyed with a metal having a lower fusing-point than that of the conductor and terminal, substantially as described.

2. The method of forming an electric rail-bond consisting in applying to the end of the conductor a metal having a lower fusing-point than the metal of the conductor and of the terminal and then applying molten metal to the end of the conductor to form the terminal, and effecting a union between the terminal and conductor by alloying the metal of the conductor and terminal with the metal of lower fusing-point, substantially as described.

814,772. **RAIL-JOINT.** JONAH DAVIES, Drums, Pa. Filed June 3, 1905. Serial No. 263,673.

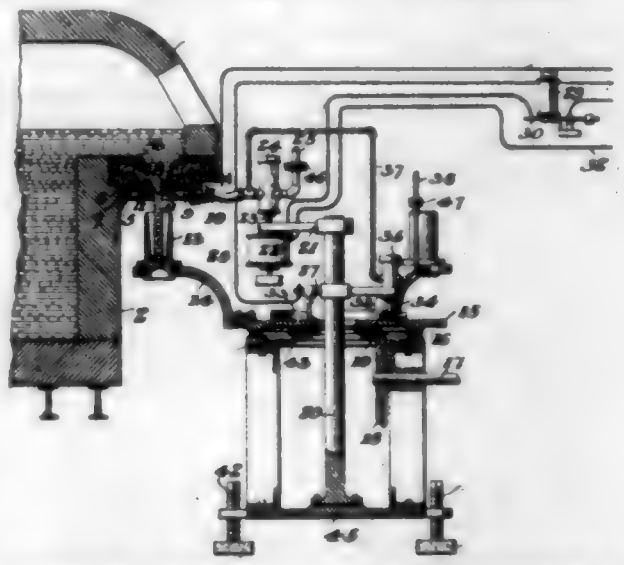


Claim.—1. A splicing member for railway-rails comprising a base portion and a pair of spaced side portions, one of said portions being adapted to bear upon one side of the rail, clamping elements entered through the other side portion, a clamping member adapted to bear against the other side of the rail and to be maintained in place by the clamping elements, a bearing-block provided between the ends of the splicing member, and a strengthening element extended through said block and the last-named side portion of the spring member.

2. A splicing member for railway-rails comprising a base portion and a pair of spaced side portions, a bearing-head provided on said member at a point between its ends, a clamping member, clamping elements engaged with one of the side portions and adapted to act upon said clamping member for maintaining the latter in clamping position, a strengthening element entered through the head and last-named side portion, and nuts tapped onto the strengthening element and designed to bear respectively against the said side portions and clamping member.

3. A splicing member for railway-rails comprising a base portion and a pair of spaced side portions, clamping-bolts threaded through one of said side portions, a clamping-plate adapted to bear upon the rails and to be acted upon by the clamping-bolts, a bearing-head provided on the splicing member at a point between the ends of the latter, a pair of strengthening-bolts entered through the head and last-named side portion.

814,773. **METHOD OF FEEDING GLASS.** HENRY L. DIXON and GEORGE A. MARSH, Pittsburg, Pa., assignors to Automatic Machine Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Dec. 5, 1904. Renewed Aug. 1, 1905. Serial No. 272,194.



Claim.—1. The method of severing glass, consisting in directing a current of fluid under pressure against the glass while in a molten or plastic condition; substantially as described.

2. The method of severing glass, consisting in directing a current of gaseous fluid under pressure against the glass while in a molten or plastic condition; substantially as described.

3. The method of severing glass, consisting in delivering against the glass while in a molten or plastic condition a current of gaseous fluid under pressure and at such an angle as to cause a swirl; substantially as described.

4. The method of feeding glass from a tank or receptacle, consisting in allowing the glass to flow outwardly through a hole and directing a current of fluid under pressure against the side of said stream to sever it; substantially as described.

5. The method of feeding glass from a tank or receptacle, consisting in allowing the glass to flow out from the same in a stream and directing a current of gaseous fluid under pressure against the side of the stream; substantially as described.

6. The method of severing a stream of molten glass, consisting in driving a current of gaseous fluid under pressure against the molten or plastic glass at a downward angle; substantially as described.

7. The method of severing a stream of molten glass, consisting in driving a current of gaseous fluid under pressure against the molten or plastic glass at a downward angle and a portion of said current in a non-radial direction to cause a swirl; substantially as described.

8. The method of severing a stream of molten glass, consisting in directing streams of gaseous fluid under pressure against different sides of the stream of molten or plastic glass in a non-radial direction; substantially as described.

9. The method of severing a stream of molten glass, consisting in driving against said molten or plastic glass a current of gaseous fluid under pressure in a downward and non-radial direction; substantially as described.

10. The method of severing a stream of molten glass, consisting

in confining the stream upon its sides and delivering against the side of the confined stream a thin sheet of gaseous fluid under pressure; substantially as described.

11. The method of severing a stream of molten glass, consisting in allowing the same to flow through a confining-hole and delivering against the side of the stream a series of thin currents of gaseous fluid under pressure; substantially as described.

12. The method of severing a stream of molten glass, consisting in allowing the same to flow through a confining-hole and delivering against the side of the stream a series of thin currents of gaseous fluid under pressure in a non-radial direction; substantially as described.

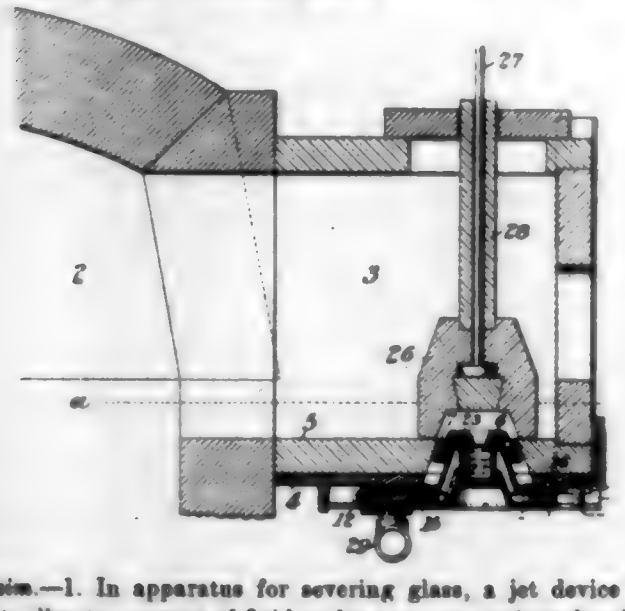
13. The method of cutting off a stream of glass, consisting in allowing the same to flow through an inclosed hole, directing against the side of the stream within the hole currents of gaseous fluid in a non-radial direction, and allowing the air to flow down around the stream in a thin annular sheet; substantially as described.

14. The method of feeding glass in a tank or receptacle, consisting in allowing the glass to flow outwardly therefrom, automatically admitting a current of gaseous fluid under pressure against the side of the stream to cut it off and then automatically shutting off said gaseous fluid; substantially as described.

15. The method of feeding glass from a tank or receptacle consisting in allowing the molten or plastic glass to flow out in a stream, directing a current of fluid under pressure against the side of the stream to sever it, allowing the glass to flow out from another hole in the receptacle, and cutting it off while the stream in the first-named hole is starting outward; substantially as described.

16. The method of feeding glass in a tank or receptacle consisting in presenting the molds or cups alternately to different outlet-holes in the tank or receptacle, and alternately cutting off the streams of glass by directing a current of fluid against them; substantially as described.

814,774. APPARATUS FOR SHEARING GLASS. HENRY L. DIXON and GEORGE A. MARSH, Pittsburg, Pa., assignors to Automatic Machine Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 10, 1905. Serial No. 249,457.



Claim.—1. In apparatus for severing glass, a jet device arranged to direct a current of fluid under pressure against the glass while in a molten or plastic condition; substantially as described.

2. In apparatus for severing glass, a jet device arranged to direct a current of fluid under pressure against the glass while in a molten or plastic condition, and a connection leading from a source of gaseous fluid under pressure to the jet device; substantially as described.

3. In apparatus for severing glass in a molten or plastic condition, a jet device arranged to direct a current of fluid under pressure against the glass at an angle to cause a swirl; substantially as described.

4. In glass-severing apparatus, a ring surrounding a portion of molten glass, and means for directing a current of fluid under pressure against the glass while surrounded by the ring; substantially as described.

5. In glass-severing apparatus, a nozzle through which the glass flows, and a jet device arranged to direct a current of gaseous fluid against the glass while inclosed by the nozzle; substantially as described.

6. In glass-severing apparatus, a nozzle through which the glass flows, and a jet device arranged to direct a current of gaseous fluid against the glass in a non-radial direction while inclosed by the nozzle; substantially as described.

7. In glass-severing apparatus, a nozzle or inclosing ring arranged to surround a portion of molten or plastic glass, and non-radial slots therein arranged to direct a current of gaseous fluid against the glass in a direction to cause a swirl therein; substantially as described.

8. In glass-severing apparatus, a nozzle arranged to contain a stream of glass and having non-radial slots arranged in opposite directions to cause opposite swirls in the glass stream and sever the same; substantially as described.

9. In glass-severing apparatus, a nozzle or surrounding ring having a slot arranged to direct a current of fluid under pressure against the molten glass at a slight upward angle; substantially as described.

10. In glass-severing apparatus, a nozzle or surrounding ring having a slot arranged to direct a current of fluid under pressure against the molten glass at a slight upward angle and in a non-radial direction to cause a swirl; substantially as described.

11. A receptacle for molten glass having an outlet-hole with a nozzle arranged to direct a thin sheet of fluid against the stream of molten glass, and an outlet for the air under pressure; substantially as described.

12. A receptacle for glass having an outlet-hole with a nozzle arranged to direct a cutting blast of fluid into the glass at a slight upward angle, and relief-ports for the excess fluid; substantially as described.

13. A receptacle for molten glass having an outlet-hole with a nozzle, said nozzle having ports on opposite sides connected to a source of fluid under pressure and arranged to deliver a series of thin currents of the fluid against the stream of glass; substantially as described.

14. A receptacle for molten glass having an outlet with a nozzle, said nozzle having two series of ports connected to a source of gaseous fluid under pressure, said ports being arranged to cause opposite swirls in the stream of molten glass; substantially as described.

15. A receptacle for molten glass having a refractory nozzle and a blow-ring below the nozzle arranged to surround the glass and direct a thin sheet of fluid against it; substantially as described.

16. A receptacle for molten glass having an outlet-nozzle and a blow-ring of slightly larger internal diameter below the nozzle and having slots arranged to direct a blast of gaseous fluid against the stream of glass inclosed by the ring; substantially as described.

17. A glass-receptacle having a removable blowing device supported beneath a hole therein and arranged to direct a cutting-off jet against the molten glass; substantially as described.

18. A receptacle for molten glass having a hole in its bottom with a blowing device for cutting off, and an internal stopper arranged to cut off the glass from the bottom hole; substantially as described.

19. A receptacle for molten glass having a blow-plate removably secured to its bottom, and connected to a source of fluid under pressure; substantially as described.

20. A receptacle for molten glass having a refractory nozzle in its bottom, a blow-ring below the nozzle, and air-escape ports between the ring and the nozzle; substantially as described.

21. A receptacle for molten glass having a bottom refractory nozzle and a blow-plate below the nozzle having a fluid-chamber with a central ring having non-radial slots; substantially as described.

814,775. EMBALMING COMPOUND. GEORGE B. DODGE, Boston, Mass. Filed Nov. 11, 1904. Serial No. 232,342.

Claim.—1. A composition for use in embalming consisting of boracic acid and formalin combined substantially in the proportions described to form a paste.

2. A composition for use in embalming containing boracic acid, glycerin, formalin, and creosote combined substantially in the proportions described to form a paste.

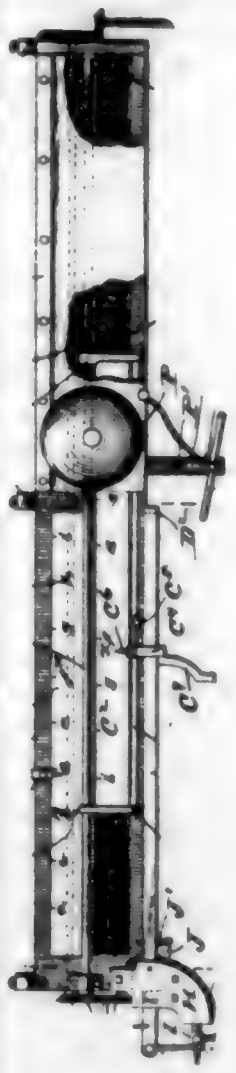
3. A composition for use in embalming containing boracic acid, formalin, creosote, sulfate of zinc, and glycerin, combined substantially in the proportions described to form a paste.

4. A composition for use in embalming containing boracic acid, glycerin, formalin, creosote, and suitable perfuming, and coloring-matter, combined substantially in the proportions described to form a paste.

5. A composition for use in embalming composed of boracic acid, formalin, and glycerin, combined substantially in the proportions described to form a paste.

6. A composition for use in embalming composed of boracic acid, sulfate of zinc, glycerin, creosote, formalin, eucalyptus, alcohol, bergamot, and carmine, combined substantially in the proportions described to form a pasty mass.

814,776. RAILWAY-ENGINE-SIGNALING DEVICE. WILLIAM S. FILLEY, Toledo, Ohio. Filed Apr. 13, 1905. Serial No. 255,373.



Claim.—1. A device of the kind described comprising a fixed and a movable chart, a pointer carried by the movable chart, a hanger carried by the movable chart and movable with reference thereto, a pivoted signal-blade adapted to be supported by the hanger and to fall when the hanger has traveled a predetermined distance in unison with the movable chart, and means for moving the movable chart and hanger at a speed proportion to the speed of a train.

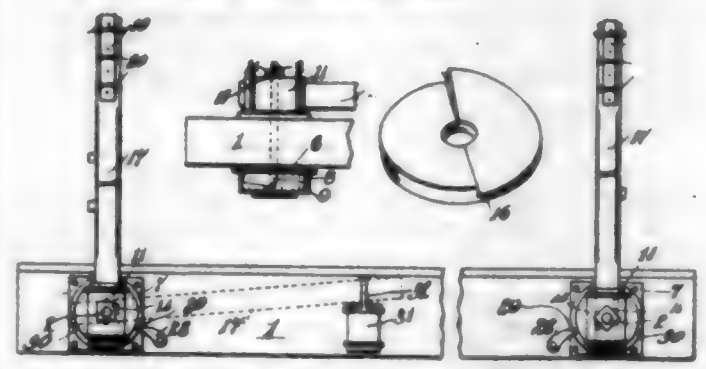
2. A device of the kind described comprising a fixed scale, a movable frame carrying a scale corresponding to the fixed scale, a pointer on the frame adapted to travel on the fixed scale, a movable hanger on the frame, means for locking the hanger in position on the frame, a pivoted blade adapted to have its free end in engagement with the hanger, and means for moving the frame and hanger in a direction away from the pivotal point of the blade.

3. A device of the kind described comprising a fixed scale, a frame carrying a movable scale, said scale reading in reverse direction from that of the fixed scale, a pointer carried by the frame and adapted to travel along the fixed scale, a movable pointer on the frame, means for moving the frame at a speed proportional to the distance traveled by an engine, and means for giving an alarm when the pointer on the frame reaches a point on the fixed scale corresponding to the point on the movable scale for which the pointer carried by the frame is set.

4. A device of the kind described comprising a fixed scale, a movable frame having a pointer adapted to travel on the fixed scale and carrying a similar scale, a hanger movable on the frame along the scale last mentioned, means for locking the hanger in position, a signal-blade pivoted adjacent one end, an emergency-blade parallel to the signal-blade and pivoted adjacent one end, the free end portions of the blades being normally supported by the hanger, the free end portion of the signal-blade being shorter than that of the emergency-blade, an alarm adapted to be actuated by fall of the signal-blade, and a valve adapted to set the train-brakes adapted to be operated by the fall of the emergency-blade.

5. A device of the kind described comprising a chart, a frame adapted to move along said chart and carrying a similar chart reading in reverse direction, a movable hanger on the frame, a pivoted blade having its free end portion normally supported by the hanger, means for moving the frame at a speed proportional to that of an engine, an alarm adapted to be sounded by fall of the said blade, a printing implement adapted to bear on the movable chart, and means for moving the said implement on the fall of the blade, as and for the purpose set forth.

814,777. RAILWAY-CAR. ROBERT GAIR, Shubenacadie, Canada. Filed Aug. 19, 1905. Serial No. 274,843.



Claim.—1. In a railway-car, a side sill, a pin projecting through said sill, a stake-pocket connected with said pin on one side of said sill, a cam rotatable with said pin, and a coöperating cam through which said pin passes.

2. In combination with a railway-car having a side sill, a plate disposed on one side of the sill and provided with cam-surfaces, a stake-pocket disposed on the opposite side of the sill, a pin projected through the sill and the plate and adapted to rotate the pocket, and means on the pin adapted to contact with and slide on said cam-surface for moving the pocket laterally.

3. In a railway-car, a rockable stake-pocket, means for supporting said pocket, and coöperating cams for projecting said pocket laterally of the car when said stake is rocked to predetermined positions.

4. In a device of the character described, a rockable pin, a stake-pocket connected with said pin, a cam near the opposite end of the pin, and a second cam adapted to be secured to a car.

5. In a railway-car, a side sill, a cam mounted on said sill, a pin projecting through said sill and cam, a coöperating cam movable with said pin, and a stake-pocket also movable with said pin.

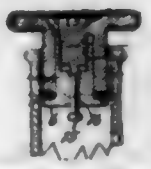
6. In a railway-car, a side sill, a cam mounted on said sill, a pin projecting through said sill and cam, a coöperating cam movable with said pin, a rub-plate on said sill, a coöperating plate movable with said pin, and a stake-pocket also movable with said pin.

7. In a railway-car, rockable supporting members, stake-pockets connected with said supports, stakes in said pockets, cams on said car, and coöperating cams on said rockable members.

8. In a railway-car, rockable supporting members, stake-pockets connected with said supports, stakes in said pockets, cams on said car, coöperating cams on said rockable members, and means for supporting said stakes in vertical position.

9. In a railway-car, rockable supporting members, stake-pockets connected with said supports, stakes in said pockets, cams on said car, coöperating cams on said rockable members, tie-rods connected with said stakes, and a locking means.

814,778. BOTTLE-STOPPER. BARRETON H. GILFILLAN, Chicago, Ill., assignor to William M. Hayner, Troy, Ohio. Filed Apr. 27, 1905. Serial No. 257,662.



Claim.—1. In a bottle-stopper the combination of a body, a packing or gasket carried thereby, an expanding means for said packing, a screw countersunk in said body for actuating said expanding means and having a key socket or seat, a bushing covering said screw and socket and having a keyhole, and means for rotatably holding said bushing.

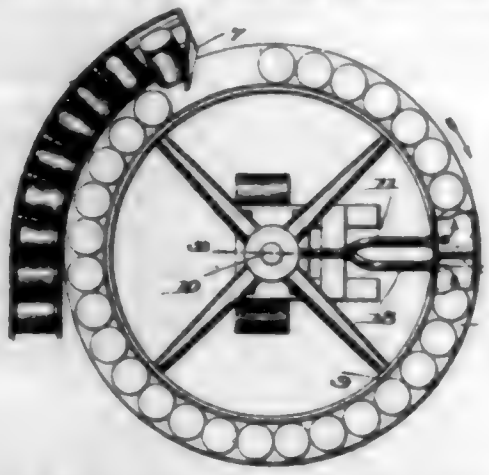
2. In a bottle-stopper the combination of a body, a gasket carried thereby, means for expanding said gasket, a screw for actuating said expanding means, countersunk in said body, and having a key-

seat, a rotatable bushing covering said screw and key-seat and having a keyhole, and a cap fitting over said bushing and having an aperture central with relation to said keyhole.

3. In a bottle-stopper the combination of a body, a slide movable longitudinally therein but held against relative rotation, a flange on said slide, an expansible gasket between said flange and body, a screw screw-threaded in said slide and held against longitudinal movement in said body, and a stop on said screw for limiting the downward movement of the slide.

4. In a bottle-stopper the combination of a body, a squared slide therein, a flange on the lower end of said slide below said body, a gasket arranged between said flange and the end of the body, a screw held against longitudinal movement in the body and screw-threaded into said slide, and a stem projecting from said screw through said slide and having a head located below the slide for limiting the downward movement of the slide.

814,779. METHOD OF SOLDERING. CHARLES W. GRAHAM, Rome, N. Y., assignor to Utica Industrial Company, Rome, N. Y., a Corporation of New York. Filed June 11, 1903. Serial No. 160,975.



Claim.—1. The method of setting solder at a joint comprising a solder-holding pocket, which consists in withdrawing heat from all of the solder within said pocket through the closed end of said pocket thereby progressively solidifying the solder of the joint from the concealed to the exposed portions thereof.

2. The method of setting solder between a plurality of overlapping members, which overlapping members form a joint closed at one end, which consists in withdrawing heat from the entire joint by the application of a cooling member to one of said overlapping members of said joint at the closed end thereof, on a line opposite the edge of another of said overlapping members, and thereby progressively solidifying the solder of the joint from the concealed to the exposed portions thereof.

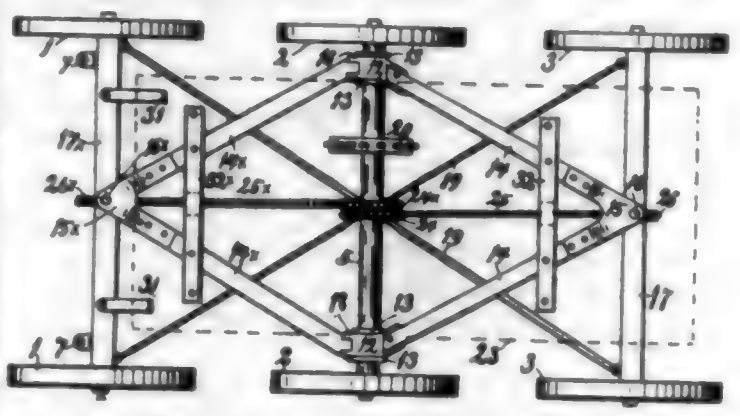
3. The method of setting solder between two members, a part of one of which is flanged about the edge of the other, forming a joint with one end thereof closed, which consists in withdrawing heat from all of said solder through a part thereof remote from its exposed surfaces and thereby progressively lowering the temperature of and solidifying the joint from its concealed toward its exposed portions.

4. The method of setting solder between a can-head provided with a flange and an annular depression and a can-body the edge of which rests within said flange and in said annular depression, which consists in withdrawing heat from the portion of the solder within said annular depression by application of a cooling member to the outer surfaces thereof remote from the exposed portions of the joint and thereby progressively reducing the temperature of and solidifying the solder from its concealed portion within said depression toward its exposed portion adjacent the upper edge of said flange.

814,780. VEHICLE. CHARLES C. GROSSHAUSER, Shakopee, Minn. Filed Apr. 28, 1905. Serial No. 257,862.

Claim.—1. An automobile having three axles with six wheels arranged to support equally the weight of the vehicle, and means for driving all of said wheels in unison, the front and rear wheels having ratchet-wheel and dog connection with the axles to allow rearward motion of the wheels on the axles.

2. An automobile comprising a frame, a yoke pivoted at its middle to swing horizontally in the end of the frame, a steering-axle journaled in the ends of the yoke, a wheel mounted by a universal joint upon the middle of the axle, guiding means for holding said wheel always in longitudinal direction of the vehicle, a motor on the vehicle and means connecting the motor with said wheel, and means for swinging the yoke in steering.

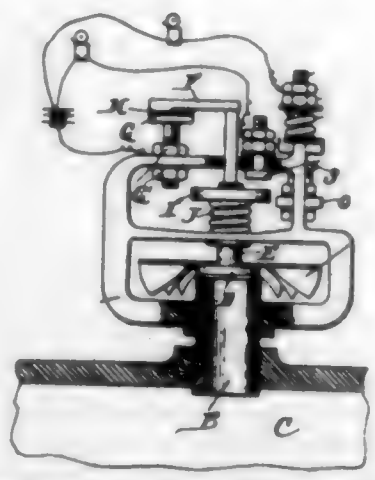


3. An automobile comprising a frame, a yoke pivoted at its middle to swing horizontally in the end of the frame, a steering-axle journaled in the ends of the yoke, a wheel mounted by a universal joint upon the middle of the axle, guiding means for holding said wheel always in longitudinal direction of the vehicle, a motor on the vehicle and means connecting the motor with said wheel, and means for swinging the yoke in steering; said connecting means consisting of a chain belt and sprocket-teeth on the driving and driven wheel.

4. A vehicle comprising three axles and six supporting-wheels, one at each end of the axles, a frame made up of two sections, one section resting on the middle axle and one of the end axles, the other section being pivotally secured to the first section by a vertically-swinging joint and having its other end supported by the other end axle, and means for supporting a load upon said frame.

5. A vehicle comprising three axles and six supporting-wheels, one at each end of the axles, a frame made up of two sections, one section resting on the middle axle and one of the end axles, the other section being pivotally secured to the first section by a vertically-swinging joint and having its other end supported by the other end axle, and means for supporting a load upon said frame, said frame having a longitudinal play in its connection with the load-supporting means.

814,781. FIRE-ALARM AND SPRINKLER ATTACHMENT. JAMES HARTLEY, Philadelphia, Pa. Filed June 9, 1905. Serial No. 264,394.



Claim.—1. In a device of the character described, a framework, a tubular plug carried by said framework, the lower end of said plug adapted to be threaded into a water-pipe, a valve-disk normally closing the upper end of said plug, a valve-stem extending upward from the valve-disk through the framework, an adjustable block secured to the frame, an arm adapted to come in contact with the upper end of the valve-stem and hold the valve upon its seat, fusible substance cementing the arm to the adjustable block, a spring adapted to force the valve from off its seat, a winged wheel journaled loosely upon the valve-stem above the valve-disk and adapted to be revolved by the flow of water, a contact-point secured to but insulated from the frame, an adjustable extension carried by the valve-stem adapted to come in contact with the contact-point when the valve is raised, a battery, an electric signal, a wire leading from the frame to the insulated contact-point and including in the circuit the battery and the signal, and means for sounding an alarm preliminary to the fusing of the fusible substance controlling the sprinkler attachment, as and for the purpose specified.

2. In a device of the character described, a framework, a tubular plug carried by said framework, the lower end of said plug adapted to extend into a water-pipe, a valve-disk normally fitted to close

the upper end of said plug, a spring tending to force the valve-disk off its seat, fusible substance adapted to hold the valve upon its seat, means for sounding an alarm when the valve is removed from its seat, a movable contact-point, an adjustable block secured to the frame but insulated therefrom, fusible substance cementing the contact-point and block together and holding the contact away from the frame, a spring tending to force the contact against the frame, said fusible substance adapted to fuse at a lower temperature than the fusible substance controlling the valve, and means for sounding an alarm when the movable contact-point comes in contact with the frame, as and for the purpose specified.

814,782. **HORSESHOE.** GEORGE HAUF, Milwaukee, Wis. Filed Oct. 27, 1905. Serial No. 284,690.



Claim.—1. A horseshoe comprising the combination of rubber and metallic members, the rubber member being provided with integral heel-calks and the metallic member being provided with a toe-calk and extended rearwardly between the rubber heel-calks.

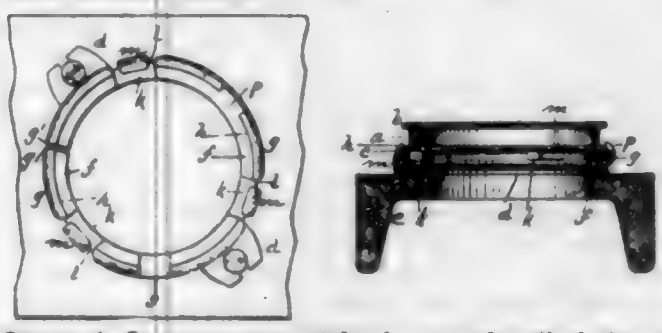
2. A horseshoe comprising the combination of rubber and metallic members, the rubber member being provided with integral heel-calks projecting downwardly on each side of the rear portion of the metallic member and the metallic member being provided with a toe-calk, said heel-calks being disposed in advance of the heel and in the rear of the transverse center line of the shoe.

3. A horseshoe comprising the combination of rubber and metallic members, the rubber member being provided with integral heel-calks projecting downwardly on each side of the rear portion of the metallic member and the metallic member being provided with a toe-calk, said metallic member being thickened from the toe-calk rearwardly.

4. A horseshoe comprising the combination of flexible and rigid members, the flexible member being provided with integral heel-calks located near the transverse median line of the shoe, and the rigid member being provided with a toe-calk and having a portion extending rearwardly between the heel-calks.

5. A horseshoe comprising the combination of flexible and metallic members, the flexible member being provided with integral heel-calks projecting downwardly near each side margin and the metallic member being provided with a continuous toe portion conforming substantially to the shape of the forward portion of the hoof and having a central portion extended rearwardly between the flexible heel-calks and of less thickness than the heel-calks.

814,783. **RING SPINNING AND TWISTING APPARATUS.** JOEL HAYDEN, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company, a Corporation of Maine. Filed Dec. 28, 1904. Serial No. 238,635.



Claim.—1. In an apparatus of the character described, the spinning-ring, the supporting plate or holder, a permanent spring member of the shape of a split ring intermediate of the spinning-ring and the supporting plate or holder and rigid with the spinning-ring and resting wholly on the horizontal surface of the plate or holder, and means for connecting said plate or holder and intermediate spring member whereby said member is allowed to move horizontally on the surface of said plate or holder but prevented from continuous rotative movement.

2. In an apparatus of the character described, the spinning-ring, the supporting plate or holder, a permanent spring member of the shape of a split ring intermediate of the spinning-ring and the supporting plate or holder and rigid with the spinning-ring and resting wholly on the horizontal surface of the plate or holder, and means for connecting said plate or holder and intermediate spring member whereby said member is allowed to move horizontally on the surface of said plate or holder and is in contact therewith during the entire horizontal movement.

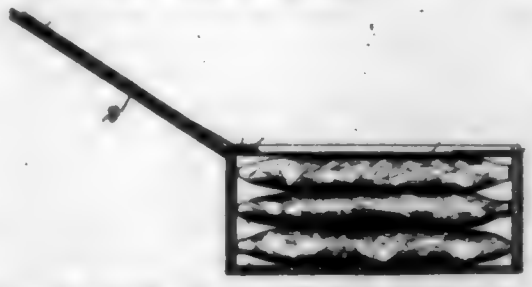
3. In an apparatus of the character described, the spinning-ring, the supporting plate or holder having a flat horizontal upper surface, a permanent weighted spring member of the shape of a split ring intermediate of the spinning-ring and supporting plate or holder and rigid with the spinning-ring and resting on the horizontal surface of the plate or holder, and means for connecting said plate or holder and intermediate member whereby said intermediate member is allowed curved horizontal movement on lines which are non-concentric with the periphery of the spinning-ring but prevented from continuous rotative movement.

4. In an apparatus of the character described, the combination with the spinning-ring and the supporting plate or holder, of a member intermediate of the plate or holder and the spinning-ring and adapted to be spread or sprung over a flange of the ring, said intermediate member being provided with recesses or notches adapted to receive an instrument whereby the ring may be assisted into or out of engagement with said intermediate member.

5. In an apparatus of the character described, the combination with the spinning-ring and the supporting plate or holder, of a member intermediate of the plate or holder and the spinning-ring and adapted to be spread or sprung over a flange of the ring, said intermediate member being provided with a substantially horizontal recess or notch extending under the flange of the ring when it is in engagement with said member for the purpose set forth.

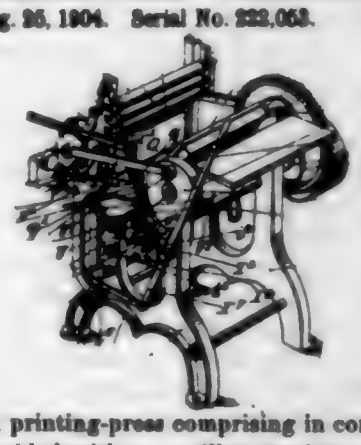
6. In an apparatus of the character described, the combination with the spinning-ring and the supporting plate or holder, of a member intermediate of the plate or holder and the spinning-ring and adapted to be spread or sprung over a flange of the ring, said intermediate member being provided with a substantially vertical recess or notch extending down outside the flange of the ring when it is in engagement with said member, for the purpose set forth.

814,784. **CIGAR-BOX.** JAMES R. HENDON, New York, N. Y. Filed Mar. 22, 1905. Serial No. 251,655.



Claim.—A cigar-box having a body and a covering making a hinged connection at the upper rear edge thereof, a label attached to said cover and having an extension, an isinglass sheet disposed at the upper portion of said body and constituting a covering for the contents thereof, said sheet being attached to said extension at its rear edge, and a strip attaching said sheet to said body at its forward edge.

814,785. **PRINTING-PRESS.** WILLIAM HOLLAND, Philadelphia, Pa. Filed Aug. 26, 1904. Serial No. 222,053.



Claim.—1. A printing-press comprising in combination, a stationary frame provided with an oscillatory platen, a reciprocatory bed, a carriage mounted upon the bed and provided with inking-rollers, an inking-cylinder journaled in the bed, a rack-and-pinion mechanism for operating the carriage, and a cam adapted to operate the rack and by a connecting-link simultaneously move the bed substantially as specified.

2. A printing-press comprising in combination, a stationary frame provided with an oscillatory platen, a reciprocatory bed ful-

crumed at the base of the frame, an inking-cylinder journaled in the bed, a carriage guided upon the bed, rocking levers fulcrumed to the bed and operatively connected to the carriage and a cam adapted to operate the rocking levers and to simultaneously operate the bed substantially as specified.

3. A printing-press, in combination with the stationary frame, oscillatory platen, and reciprocatory bed, a carriage guided upon the bed and provided with inking-rollers, an inking-cylinder, rocking levers fulcrumed to the bed, links interposed between the rocking levers and carriage, a rack-and-pinion movement for operating the rocking levers, and a cam for operating the rack-and-pinion movement, substantially as specified.

4. A printing-press in combination with the main frame and platen; a reciprocatory bed, an inking-cylinder rotatable therein, a roller-carriage guided upon the bed, rocking levers connected to a shaft carried by the bed, links interposed between the rocking levers and carriage, a pinion mounted upon the shaft carrying the rocking levers, a rack operatively connected to said pinion, and a cam for operating the rack, substantially as specified.

5. A printing-press in combination with the frame and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and connected at their inner ends by links to the roller-carriage, a counterbalance-weight connected to opposite or outer ends of rocking levers, a segmental pinion detachably secured to one of the rocking levers, a rack engaging said pinion and a cam for operating said rack, substantially as specified.

6. A printing-press, in combination with the frame, and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and connected to the carriage by links, a counterbalance-weight fastened to the other ends of the rocking levers, a pinion journaled upon the fulcrum of said levers, a latch interposed between the pinion and one of the rocking levers means to cause the engagement and disengagement of the latch with the rocking lever, a rack meshing with said pinion and a cam for operating the rack, substantially as specified.

7. A printing-press, in combination with the frame and its platen, a reciprocatory bed, an inking-cylinder, a roller-carriage guided upon the bed, a shaft extending across the bed, rocking levers fixedly secured to the shaft, a pinion loosely mounted upon the shaft, a latch fulcrumed to the pinion at one end and detachably secured to one of the rocking levers at its opposite end, means to cause the latch to become engaged and disengaged with a locking lever, a rack meshing with said pinion, and means for operating the rack, substantially as specified.

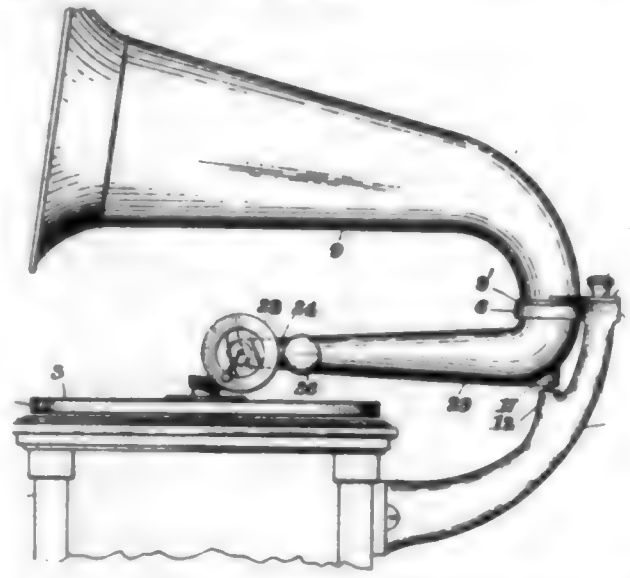
8. A printing-press in combination with the frame and platen, the reciprocatory bed and its inking-cylinder, a roller-carriage, rocking levers fulcrumed to the bed and linked to the carriage, a pinion, means for operating the pinion, a latch interposed between the pinion and one of the rocking levers, means to cause said latch to become engaged and disengaged with the rocking lever, an impression-throw-off mechanism, a cam working in conjunction with the throw-off mechanism and so interposed between it and one of the rocking levers as to limit the upward movement of the rocking arm and place the latch in proper position to engage the same.

9. In combination with the stationary frame and its platen; the reciprocatory bed and its inking-cylinder, the roller-carriage, rocking levers fulcrumed to the bed and united together at their outer ends by a counterweight, a pinion, a rack in engagement therewith, a latch interposed between the pinion and one of the rocking levers, a lever fulcrumed to the frame and connected at one of its ends, to the above-mentioned rack, a cam-plate fulcrumed to the opposite end of said lever, a cam adapted to operate said lever in one direction against the action of a spring, and means for lifting the cam-plate and to cause it to disengage the latch when the bed begins to move away from the frame, substantially as specified.

10. In combination with the stationary frame and its platen; the reciprocatory bed and its inking-cylinder, rocking levers fulcrumed to the bed, a counterbalance-weight for said levers, a pinion, a rack in engagement therewith, an interposing latch between the pinion and one of the rocking levers, a cam for operating said rack, a cam-plate adapted to be moved into the path of the latch to release the same from engagement with its rocking lever, an impression-throw-off mechanism and a cam operated in conjunction therewith to cause the rocking lever to again register with the latch after it has been disengaged, substantially as described.

814,786. TALKING-MACHINE. ELDRIDGE R. JOHNSON, Philadelphia, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Feb. 13, 1903. Serial No. 143,069.

Claim.—1. In a talking-machine, an amplifying-horn proper, a record-support, a tapering sound-tube movable independent of the amplifying-horn proper and communicating therewith, a sound-box mounted upon and communicating with the small end of said sound-tube and movable independently of said sound-tube toward and away from the record-support and supporting means at the communicating portions of the horn and tube.



2. In a talking-machine, an amplifying-horn proper, a record-support, a tapering sound-tube movable independent of the amplifying-horn proper and supported to move in a given plane parallel with said record-support, a sound-box mounted upon and communicating with the small end of said tube and movable independently thereof toward and away from the record-support, said horn and tube communicating, and supporting means at the communicating portion of said horn and tube.

3. In a talking-machine, an amplifying-horn proper, a record-support, a tapering sound-tube supported in a given plane parallel therewith, and having its large end coupled with the small end of said horn, said tube being movable independent of the amplifying-horn proper, and a sound-box mounted upon and communicating with the small end of said tube and movable independently thereof toward and away from the record-support.

4. In a talking-machine, a record-support, a tapering sound-tube, a sound-box mounted upon and communicating with the small end thereof and movable independently of said tube toward and away from the record-support, and a tapering horn having its small end coupled with the large end of said tube, said horn and tube being relatively movable.

5. In a talking-machine, a record-support, a tapering sound-tube, a sound-box mounted upon and communicating with the small end thereof and movable independently of said tube toward and away from the record-support, and a removable tapering horn having its small end coupled with the large end of said tube, said horn and tube being relatively movable.

6. In a talking-machine, a record-support, a tapering sound-tube, a sound-box mounted upon and communicating with the small end thereof, and movable independently of said tube toward and away from the record-support, and a horn having its small end coupled with the large end of said tube, said horn and tube being independently supported.

7. In a talking-machine, a record-support, a tapering sound-tube supported in a given plane parallel therewith, a sound-box mounted upon and communicating with the small end of said tube and movable independently thereof toward and away from the record-support, and a horn having its small end coupled with the large end of said tube, said horn being independently supported and movable transversely independently of said tube.

8. In a talking-machine, a sound-tube and communicating sound-box, a removable horn having its small end communicating with said sound-tube, a support for said horn, said horn being movable relative to said tube, a lateral projection or shoulder at the small end of said horn, and means for engaging said shoulder for holding said horn in position upon its support.

9. In a talking-machine, a tapering sound-tube and sound-box communicating therewith, a horn having its small end deflected laterally and communicating with the large end of said tube, said horn being movable only in a horizontal plane.

10. In a talking-machine, a tapering sound-tube and sound-box communicating therewith, the large end of said sound-tube being deflected laterally at its point of support, and a horn having its small

end deflected laterally and communicating with the large end of said tube, said horn and tube being supported to move in given horizontal planes.

11. In a talking-machine, a tapering sound-tube and sound-box communicating therewith, a support therefor, the large end of said sound-tube being deflected laterally at its point of support, and a horn having its small end deflected laterally and communicating with the large end of said tube, said horn and tube being independently supported and relatively movable in given horizontal planes.

12. In a talking-machine, a tapering sound-tube and sound-box communicating therewith, a support therefor, the large end of said sound-tube being deflected laterally at its point of support, and a horn having its small end deflected laterally and communicating with the large end of said tube, said horn and tube being independently supported and relatively movable in given horizontal planes and the support for the horn serving as a coupling for uniting the horn and tube.

13. In a talking-machine, a sound-tube supported in a given horizontal plane and having a movable small transverse end section extending laterally therefrom, and a sound-box mounted upon and communicating with said section.

14. In a talking-machine, a sound-tube having a movable end section extending laterally therefrom, and a sound-box mounted upon and communicating with said section, said section being adapted to rest upon and be supported by said tube in an inoperative position.

15. In a talking-machine, a sound-tube, a movable end section extending laterally therefrom and comprising a plurality of limbs, and a sound-box mounted upon and communicating with the outer limb, said section being adapted to rest upon and be supported upon said tube in an inoperative position.

16. In a talking-machine, a sound-tube having a semicircular section movably mounted upon the end thereof, to move independently of the sound-tube during its operative movement, and a sound-box mounted upon and communicating with the outer limb of said section.

17. In a talking-machine, a sound-tube having a transversely-extending tubular bearing portion, a tubular section movably mounted therein to move independently of the sound-tube, during its operative movement, and a sound-box mounted upon and communicating with said section.

18. In a talking-machine, a sound-tube having a movable end section, a sound-box mounted upon and communicating with said section, said tube being located in the path of said movable end section, whereby the latter is adapted to be supported upon said arm to hold the sound-box in an inoperative position.

19. In a talking-machine, a sound-tube having a movable bent end section extending laterally therefrom, and a sound-box mounted upon and communicating with said section, said tube being located in the path of said movable end section, whereby the sound-box is adapted to be supported by said tube in an inoperative position.

20. In a talking-machine, a record-support, a tapering sound-tube, a horn having its small end communicating with the large end of said tube, the communicating ends of said tube and horn being deflected laterally toward each other, said horn and tube being supported at their deflected portions to move in a given plane parallel with the record-support, and a sound-box mounted upon and communicating with the small end of said tube and movable independently thereof toward and away from the record-support.

21. In a talking-machine, a record-support, a tapering sound-tube having a laterally-deflected large end, said tube being supported at its deflected portion to move in a given plane parallel with the record-support, a sound-box mounted upon and communicating with the small end of said tube and movable independently thereof toward and away from the record-support, and a horn having its small end laterally deflected and communicating with the deflected large end of said tube.

22. In a sound recording or reproducing mechanism, a hollow tapering sound-conducting arm, a record-support, said arm being vertically pivoted at its larger end to constrain its smaller end to move in a given plane parallel with the face of the record-support, a sound-box mounted upon the smaller end of said arm and having communication therewith, and means to allow a movement of the sound-box toward and from the record-support independently of the hollow arm.

23. In a sound recording or reproducing mechanism, a hollow tapering sound-conducting arm, a vertical pivot at its larger end which constrains said arm to move in a given plane parallel with the face of the record, a sound-box mounted upon the smaller end of said arm and a bent pivoted tube connecting said arm and said sound-box to allow a movement of the sound-box toward and from the record independently of the hollow arm and to carry said sound-box in substantial alinement with the tapering portion of said arm.

24. In a sound recording or reproducing mechanism, a hollow tapering sound-conducting arm, a vertical pivot at its larger end which constrains said arm to move in a given plane parallel with the face of the record, a sound-box mounted upon the smaller end of said arm and a semicircular pivoted tube connecting said arm and said sound-box to allow a movement of the sound-box toward and from the record independently of the hollow arm and to carry said sound-box in substantial alinement with the tapering portion of said arm.

25. In a sound recording or reproducing mechanism, a horizontally-pivoted tapering hollow arm, a curved portion mounted at the end of said horizontally-pivoted portion and adapted to swing vertically, a sound-box mounted on the end of said curved portion, an adjustable flanged horn communicating with the pivoted end of said horizontally-pivoted arm, a ring adapted to receive the flange of said horn and means for securing the flange upon said ring.

26. In a sound recording and reproducing mechanism, a horizontally-pivoted tapering arm, a strap or ring at the smaller end thereof, a semicircular portion, the end of which is mounted to turn in said strap or ring, a sound-box mounted at the outer end of said semicircular portion, a support for the pivot of said horizontally-pivoted arm and a fixed adjustable horn carried by said support.

27. In a sound recording and reproducing mechanism, a horizontally-pivoted tapering arm, a curved tapering portion joined to said horizontally-pivoted arm, a sound-box carried by said curved portion, a pivot-pin for said horizontal arm, a supporting-arm for said pivot-pin, a spring-pressed block forming a bearing for said pin and carried by said supporting-arm, a horizontal ring carried by said supporting-arm and having a cross-bar adapted to receive the upper end of the pivot-pin an adjustable flanged horn adapted to rest upon said ring and a yoke for retaining the flange of the horn in position upon the ring.

28. In a sound recording and reproducing mechanism, a hollow tapering sound-conducting arm constrained to move in a given plane parallel with the face of the record, a sound-box mounted upon the smaller end of said arm and having communication therewith, means to allow of a movement of the sound-box toward and from the record independent of the hollow arm, a support for the larger end of said arm and an amplifying-horn also carried by said support.

29. In a sound recording or reproducing mechanism, a hollow tapering sound-conducting arm, a sound-box mounted upon the smaller end of said arm, said end comprising a semicircular tube pivoted to the straight portion of said arm.

30. In a talking-machine, a record-support, a hollow swinging arm extending horizontally above the same, movable in a given plane parallel with the face of the record-support, and having a hinged joint intermediate in its length to permit one section to move vertically, and a sound-box having means for holding a stylus-point, said sound-box being mounted upon and communicating with said vertically-movable section and movable away from the record-support to a position to permit the insertion or withdrawal of a stylus-point.

31. In a talking-machine, a swinging longitudinally-extended tapering sound-conducting tube movable in a given plane parallel to that of a record-tablet directly over which the small end of said tube extends, a fixed vertical support provided with a collar in which the larger end of said tube is pivoted, a laterally-extended stub-tube pivotally connected to the small end of said tapering tube whereby it may swing toward and away from the record-tablet independently of said sound-tube, and a longitudinally-projecting tapering horn, swiveled to said collar whereby it may be turned on a vertical axis, said tapering sound-tube, collar and horn constituting a sound-conduit gradually increasing on cross-section from the small end of the sound-tube to the large end of said horn.

32. In a talking-machine adapted to reproduce from a horizontally-disposed flat record-tablet having a record-groove of even depth with lateral undulations in the sides thereof, a record-support, a hollow sound-conducting arm mounted to swing freely in a given plane parallel with said support, a sound-box mounted upon, communicating with one end of said arm and movable independently of said arm toward and away from the record-support, the horizontal movement of said arm and sound-box across the record being substantially uninfluenced by the weight of said arm and sound-box, and a horn having its small end coupled with the other end of said arm.

33. In a talking-machine, a record-support, a hollow sound-conducting arm movable in a given plane parallel with said support, a sound-box mounted upon, communicating with, and movable in-

dependently of said arm toward and away from the record-support, and means forming part of the machine for holding, independent of other means, the said sound-box in an inoperative position relative to the record.

34. In a talking-machine, a record-support, a hollow sound-conducting arm movable in a given plane parallel with said support, and a sound-box mounted upon, communicating with, and movable independently of said arm toward and away from the record-support, said arm serving as a support upon which said sound-box rests and is maintained in an inoperative position.

35. In a talking-machine, a record-support, a hollow sound-conducting arm movable in a given plane parallel with said support, and a sound-box mounted upon, communicating with, and movable independently of said arm, toward and away from the record-support, said sound-box being movable away from the record to, and being adapted to be supported by the arm in an inoperative position independent of other means.

36. In a talking-machine, a record-support, a hollow sound-conducting arm movable in a given plane parallel with said support, and a sound-box mounted upon, communicating with, and movable independently of said arm toward and away from the record-support, said sound-box being movable upwardly and to the other side of its point of support, whereby it may be supported in an inoperative position by contact with said arm or a portion thereof.

37. In a talking-machine, a record-support, a hollow sound-conducting arm movable in a given plane parallel with said support, and a sound-box mounted upon, communicating with, and movable independently of said arm toward and away from the record-support, said sound-box having a removable stylus, and the movement of said sound-box independent of the arm being to an extent to permit the removal and insertion of said stylus.

38. In a talking-machine, a record-support, a sound-tube movable in a given plane parallel with said support, and a sound-box movable toward and away from said support independently of said tube and having a diaphragm extending and movable only in a plane parallel with the axis of said tube when the sound-box is moved away from or toward the record-support.

39. In a talking-machine, a record-support, a sound-tube movable when reproducing in a given plane parallel with the record-support, a sound-box mounted upon and communicating with said tube, said sound-box having a movement independent of the movement of the sound-tube and sound-box in reproducing to move the stylus toward and away from the record-support and means forming part of said machine for holding, independent of other means, the sound-box in an inoperative position relative to the record.

40. In a talking-machine, a support, a longitudinally-extending tapering sound-conducting tube having its larger end mounted upon said support to swing in a given plane parallel to that of a record-tablet directly over which the small end of said tube extends, a laterally-extending stub-tube movably connected with the small end of said tapering tube whereby it can move toward or away from the record-tablet independently of said sound-tube, and a longitudinally-projecting tapering horn having its small end movably mounted upon said support whereby said horn can swing, the small end of said horn and the larger end of said tapering sound-tube communicating through said support, and said tapering sound-tube, support and horn constituting a sound-conduit gradually increasing in cross-section from the small end of the sound-tube to the larger end of said horn.

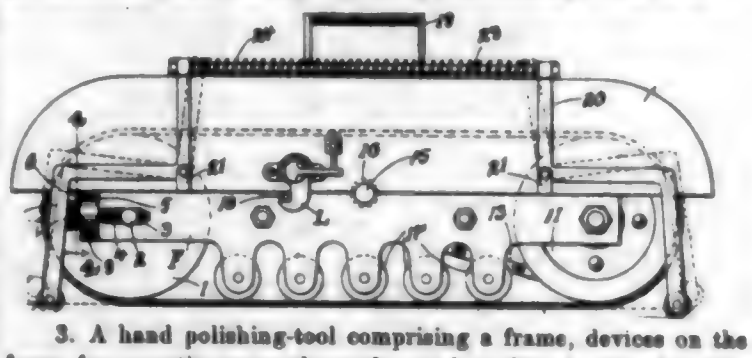
41. A talking-machine, comprising a tapering sound-conveyer, means for attaching sound-reproducing means to the small end thereof, and a horn-coupling at the large end portion of said conveyer.

42. A talking-machine, comprising a tapering sound-conveyer, means for attaching sound-reproducing means to the small end thereof, and horn coupling and supporting means with which the other end of said conveyer is movably connected.

814,787. **POLISHING-MACHINE.** Joseph Leuteritz, St. Louis, Mo. Filed Sept. 8, 1905. Serial No. 277,537.

Claim.—1. A hand polishing-tool comprising a suitable frame, a substantially centrally disposed drive-shaft mounted across the frame, drums at opposite ends of the frame, intermediate gearing between the drive-shaft and one of the drums for imparting rotation thereto, and a polishing-belt traveling about the drums, substantially as set forth.

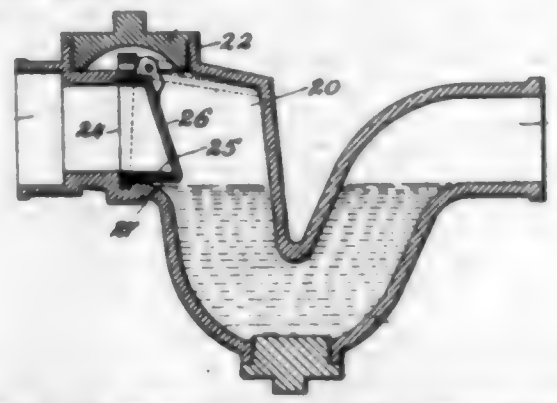
2. A hand polishing-tool comprising a frame, devices on the frame for operating upon the surface to be polished, and a spring-controlled support for raising the operating parts of the machine off the surface on which it may be placed, substantially as set forth.



3. A hand polishing-tool comprising a frame, devices on the frame for operating upon the surface to be polished, a hood for the frame, spring-controlled belt-levers at each end and on opposite sides of the hood, rollers mounted between the lower ends of a pair of levers at each end of the hood, and springs engaging the upper ends of each pair of levers on the same side of the hood, and means for locking the hood to the frame, substantially as set forth.

4. A hand polishing-tool comprising an oblong frame, a centrally-disposed transverse drive-shaft on the frame, a central sprocket-pinion on the shaft, drums or pulleys at opposite ends of the frame, means for adjusting the axis of one of the terminal drums longitudinally along the frame, a polishing-belt encompassing the drive-shaft and passing over the drums, a detachable hood for the frame, a yielding support for the frame carried by the hood, a sprocket-wheel on the shaft of one of the terminal drums, and a drive-chain connecting said sprocket-wheel with the sprocket-pinion, substantially as set forth.

814,788. **SEWER VALVE OR TRAP.** Philip F. Lenhart, Brooklyn, N. Y., assignor to Perfect Sewer Trap Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Sept. 10, 1904. Serial No. 223,962.



Claim.—1. In combination, a valve-casing provided between its ends with a reduced portion having a valve-seat provided with a groove open at the top and the side walls of which diverge from bottom to top, and a valve located in said seat having a body portion shaped to conform to the groove of the valve-seat, whereby the valve can be dropped into the seat from above and will automatically set and fit tightly in said seat by the wedging of the one within the other.

2. A sewer-trap having in combination a casing provided with a hand-hole formed by a projecting flange; a valve-seat projecting beyond and partially closing the hand-hole; a plug or cover provided with a recess in its bottom, for sealing the hand-hole, thus providing a chamber between the valve-seat and the plug; and a valve structure retained in said seat and projecting well into said chamber and provided in said projecting portion with means to receive a removing implement, whereby when the plug is removed the valve structure presents itself for easy and ready removal.

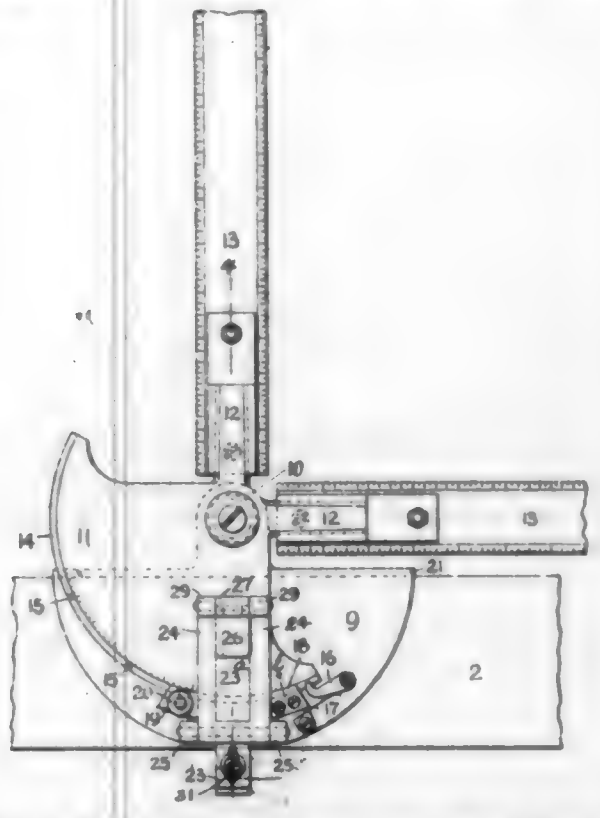
3. A sewer-trap comprising a casing provided with a valve-seat having a flared groove, in combination with a valve the body portion of which is provided with an extended flange and with a converging portion coöperating with and automatically tightly wedging itself into the flared groove, and said body portion having pivoted thereto above the flange a valve-lid hanging at an angle to the valve-body against said flange, whereby the valve is rigidly set in place and its lid normally remains closed.

4. In combination with the valve-casing having the inner section provided with a valve-seat, the latter having a flared groove; of a composite valve structure having a wedge-shaped body portion seated and removably held in said groove, said structure having the extended flange portion at the bottom; and a valve-lid pivoted to the body portion at the top and coöperating with said flange portion and held by the latter at an angle to the valve structure so as to remain normally closed and at rest upon the said flange.

5. In combination, a valve-casing having between its ends a hand-hole, and immediately below said hole a cylindrical portion which partially closes said hole and has a flared valve-seat in its end, a complete composite valve structure, including a wedge-shaped body portion, flange portion and pivoted lid portion, retained in said valve-seat portion by the structure of the latter and the body portion in position permitting bodily removal through said hand-hole, and means for sealing said hand-hole.

6. A sewer-trap comprising a casing provided with a groove the side walls of which converge from top to bottom and the top of which groove is open, in combination with a valve structure consisting of a body portion having a lid pivoted thereto, said body portion being shaped to conform to the shape of the said groove, whereby the valve structure can be dropped into the groove from above and will automatically wedge itself into place and be firmly held in said groove.

814,789. DRAWING AND PLOTTING DEVICE. EDWARD D. MACKINTOSH, New York, N. Y. Filed Dec. 21, 1904. Serial No. 237,737.



Claim.—1. In a drawing and plotting instrument of the character designated the combination of a laterally-movable blade, means connected therewith for maintaining its parallelism with relation to a prescribed base-line, a slide movable longitudinally upon said laterally-movable blade, and a protractor pivotally attached to said slide and formed with means for the support of a ruler and a pressure-lever and bolt actuated thereby upon the slide, whereby a downward pressure may be exerted upon the protractor, slide and blade, to hold the parts in a prescribed position with relation to each other, the slide being simultaneously clamped to the blade for the purpose described.

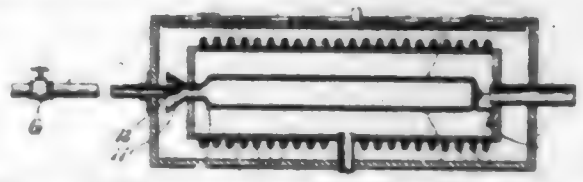
2. In a drawing and plotting instrument of the character designated, the combination with a drawing-board of a laterally-movable blade, means connected therewith and with the board for maintaining its parallelism with relation to a prescribed base-line on the board, a slide movable longitudinally upon said laterally-movable blade, a protractor pivotally attached to said slide and formed with means for the support of a ruler, and a pressure-lever and bolt actuated thereby upon the slide whereby a downward pressure may be exerted upon the protractor, slide, blade and board to hold the parts in a prescribed position with relation to each other, the slide being simultaneously clamped to the blade for the purpose described

3. In a drawing and plotting instrument of the character designated, the combination with a drawing-board of a laterally-movable blade, means connected therewith and with the board for maintaining its parallelism with relation to a prescribed base-line on the board, a slide movable longitudinally upon said laterally-movable blade, a protractor pivotally attached to said slide and formed with means for the support of a ruler, means for adjusting the protractor axially on the slide and holding it in a prescribed position thereon, and a pressure-lever and bolt actuated thereby upon the slide, whereby a downward pressure may be exerted upon the protractor, slide, blade and board, to hold the parts in a prescribed position with relation to each other, the slide being simultaneously clamped to the blade for the purpose described.

4. In a drawing and plotting instrument, a laterally-movable blade, a slide movable longitudinally upon said laterally-movable blade, a ruler supported on said slide, and means whereby pressure acting temporarily in a direction toward and perpendicular to the flat side of the said blade will cause the said slide to be temporarily clamped edgewise upon and against said laterally-movable blade in the direction of the width of the latter for the purpose described.

5. In a drawing and plotting instrument a blade, a slide movable longitudinally thereon, and a pressure-lever and bolt so arranged that the movement of an arm of the pressure-lever toward a flat side of the blade causes the latter to be pinched on two edges between a lip on the slide and another on the bolt.

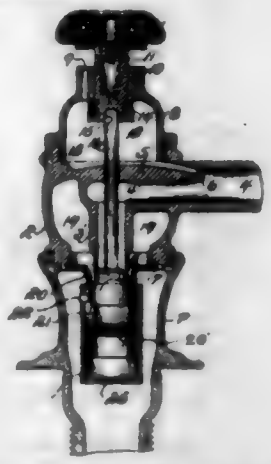
814,790. VEHICLE-HEATER. WILLIAM R. MARENTETTE, Detroit, Mich. Filed Apr. 14, 1905. Serial No. 255,478.



Claim.—1. In a vehicle-heater, the combination of a casing provided with openings for the admission of air and having an open top, laterally-projecting ears on the sides of the casing at their upper edges by means of which the casing is attached to the bottom of a vehicle-body, a cover hinged to the casing to close the top thereof and provided with openings for the escape of the heated air, a slide carried by said cover to close the openings, a cylindrical radiator provided with hollow protuberances on its surface supported within the casing and provided with an upper portion hinged to the lower portion, pipes extending through the casing and communicating with the interior of the radiator to supply air thereto to maintain combustion therein and to draw off the products of combustion, a perforated burner-tube supported in the axis of the radiator with one end extending through the end of said radiator, a funnel on the end of the burner-tube outside the radiator, an oil-supply pipe extending through the casing, and a nozzle on the end of the supply-pipe extending into said funnel, and an exhaust-pipe in the opposite end of the casing and supporting the end of the radiator, one end of said tube being supported by said funnel, and means for supporting said tube at the other end from within the radiator.

2. In a vehicle-heater, a casing having integral securing-ears and openings for the admission of air, a hinged cover with openings, and a movable plate cooperating therewith, a perforated burner-tube extending lengthwise of said casing, a cylindrical radiator inclosing said tube, said tube being supported from within said radiator and out of contact with the walls thereof, means for supplying air to said radiator, an exhaust-pipe from said radiator, and a fuel-supply to said burner-tube, the end of said tube extending through one end of the radiator and having a funnel-shaped portion between the end of the radiator and casing, said radiator having radial hollow protuberances.

814,791. VALVE. FREDERIC H. MASON, Spokane, Wash. Filed Nov. 18, 1903. Serial No. 181,579.



Claim.—1. The combination with a valve-shell and valve, of a fluid pressure and flow regulating and valve-governing device, comprising a hollow, stationary, inner member surrounding and inclosing the valve seat or opening and having an inlet-port through its side, and a hollow, movable, outer member connected to and movable

with the valve and telescoping over the inlet-port portion of said stationary member.

2. The combination with a valve and valve-operating rod, of a valve-shell having a valve seat and opening and a contracted delivery-channel leading from the valve seat and opening to the delivery-spout, and an enlarged channel leading from said contracted channel to the end of the delivery-spout and provided with a drainage-chamber and an inclined drainage-channel leading from the drainage-chamber to the junction between said contracted delivery-channel and said enlarged channel, and a fluid pressure and flow regulating valve-governing device, comprising a hollow stationary inner member surrounding and inclosing the valve seat or opening and having an inlet-port through its side, and a hollow movable outer member connected to and movable with the valve and telescoping over the inlet-port portion of said stationary member.

3. The combination with a valve and valve-operating rod, of a valve-shell having a valve seat and opening and a contracted delivery-channel leading from the valve seat and opening to the delivery-spout, and an enlarged channel leading from said contracted channel to the end of the delivery-spout and provided with a drainage-chamber and an inclined drainage-channel leading from the drainage-chamber to the junction between said contracted delivery-channel and said enlarged channel, and a removable cap or bonnet provided with a vent-opening.

4. In combination, a casing, a valve-seat therein, a valve, a stationary ported member separating and protecting the valve from fluid-flow and fluid-pressure, and a movable cup-shaped member connected to the main valve and surrounding the stationary member.

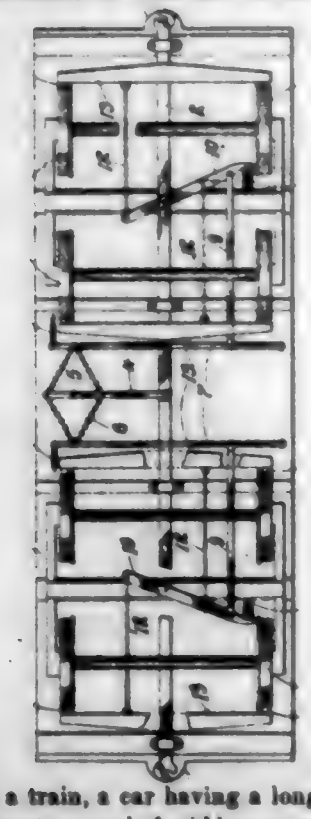
5. In combination, a main valve and valve-seat, a stationary ported member detachably secured to the valve-casing, and through which the fluid passes on its way to the main valve and a cup-shaped member surrounding the ported member and serving as an auxiliary valve for the ports of the stationary member, said cup-shaped member having an extensive movement to automatically compensate for wear of the main valve.

6. In a valve, a shell, a hollow member closing the bottom of the shell, and provided with an inlet-port, a valve-seat in said shell, a valve adapted to said seat, a secondary valve, a cross-pin connecting said valves.

7. In a valve, a shell, a hollow member inclosing the bottom of the shell, and provided with an inlet-port, a valve-seat in said shell, a valve adapted to said seat, a secondary valve, a cross-pin connecting said valves and extending through the said inlet-port.

8. In a valve, two valve-openings at an angle to each other, two valves controlling said openings and movable in the same direction, and a pin extending transversely of the said direction to connect the valves.

814,792. **BRAKE MECHANISM FOR RAILWAY-CARS.** Ernst Melchert, Mount Olive, Ill. Filed Nov. 13, 1905. Serial No. 287,055.



Claim.—1. In a train, a car having a longitudinally-movable draft-bar, a coupling at one end of said bar, an engine having a coupling coöperating with the coupling on the draft-bar of the car, a wedge or equivalent device for permitting of a variable distance between the adjacent ends of said engine and car, and a brake mechanism on the car controlled by the longitudinal movement of the draft-bar, substantially as set forth.

2. In a car, a longitudinally-movable draft-bar, couplers at opposite ends thereof, and suitable rounded formations or noses on the cars overhanging the couplers, substantially as set forth.

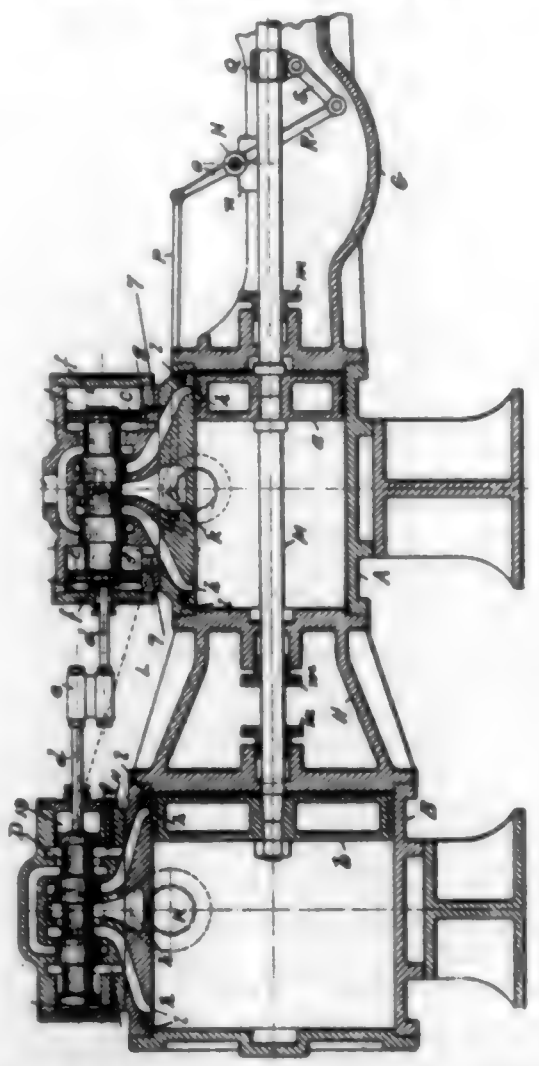
3. In a car, a longitudinally-movable draft-bar, brake mechanism normally set against the wheels for a central position of the bar, intermediate link connections between the draft-bar and brakes for releasing the latter upon a shifting of the draft-bar in either direction from its central position, and terminal couplers forming a rigid part of said bar and moving with the same, substantially as set forth.

4. In combination with an engine, a car, a longitudinally-movable draft-bar on the car adapted to be coupled to the engine, brake mechanism actuated by the movement of the draft-bar in either direction, and suitable devices adapted to be interposed between the engine and car for preserving the distance between them and thereby preserving the pull on the draft-bar and keeping the brakes released, substantially as set forth.

5. In a car, a longitudinally-movable draft-bar, brake mechanism effectively applied to the car-wheels for a normal position of the draft-bar, couplers forming rigid terminals of the draft-bar for coupling a series of draft-bars mounted on a corresponding series of cars in juxtaposed relation upon a joint displacement from their original positions of said several draft-bars, and devices interposed between the draft-bars and their corresponding brakes for releasing the latter upon the joint displacement aforesaid, substantially as set forth.

6. In a train, a car having a longitudinally-movable draft-bar, a coupling at one end thereof, an engine having a coupling coöperating with the coupling on the draft-bar, means for permitting of a variable distance between the engine and car, and a brake mechanism on the car actuated by the longitudinal movement of the draft-bar, the extent of said movement depending on the distance between the engine and the car, substantially as set forth.

814,793. **STEAM PUMPING-ENGINE.** Foster M. Metcalf, Battle Creek, Mich. Filed Sept. 26, 1904. Serial No. 226,878.



Claim.—1. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central steam-chamber and two end chambers connecting therewith by reduced passages, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable within the steam-chest and of a diameter equal to the diameter of said reduced passages, said

valve having enlarged heads within said end chambers and reduced portions in rear thereof, said reduced portions being arranged to occupy alternately the reduced passages to permit passage of steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers near the reduced passages to the main-cylinder ports, ports opening into the end chambers near the other ends thereof, an auxiliary valve constructed to permit entrance of live steam through one of the last-mentioned ports and exit of spent steam through the other of said ports for the purpose of reversing the main valve, the auxiliary valve at other times blocking passage of live or spent steam through said ports, and an automatic regulating-passage, one for each end chamber, communicating at one end with its chamber at a point in front of the passage leading to the main-cylinder port and at the other end with the steam-cylinder.

2. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central steam-chamber and two end chambers connecting therewith by reduced passages, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable within the steam-chest and of a diameter equal to the diameter of said reduced passages, said valve having enlarged heads within said end chambers and reduced portions in rear of such enlarged portions, said reduced portions being arranged to occupy alternately said reduced passages to permit passage of live steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers near the reduced passages to the main-cylinder ports, ports opening into the end chambers near the other ends thereof, an auxiliary valve constructed to permit entrance of live steam through one of the last-mentioned ports and exhaust of spent steam through the other of said ports for the purpose of reversing the main valve, the auxiliary valve at other times blocking passage of live or spent steam through said ports, link-and-lever mechanism connecting with a movable part for operating the auxiliary valve, and an automatic regulating-passage, one for each end chamber, communicating at one end with its chamber at a point in front of the passage leading to the main-cylinder port and at the other end with the steam-cylinder.

3. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central chamber and two end chambers communicating therewith by reduced passages, the main steam-pipe opening into said central chamber, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable within the steam-chest and of a diameter equal to the diameter of said reduced passages, said valve having enlarged heads within the end chambers and reduced portions in rear of said enlarged heads, said reduced portions being arranged to occupy said reduced passages alternately to permit passage of live steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers in rear of the enlarged valve-heads when in their inner positions to the main-cylinder ports, ports opening into the end chambers near the outer ends thereof and in front of the enlarged heads of the main valve, an auxiliary valve constructed to permit entrance of live steam through one of the last-mentioned ports and exhaust of spent steam through the other of said ports, the auxiliary valve at other times blocking passage of live or spent steam through said ports, link-and-lever mechanism connecting with a movable part for operating the auxiliary valve, and an automatic regulating-passage, one for each end chamber, communicating at one end with its chamber in front of the enlarged head of the main valve in the inner position of the latter and at the other end with the steam-cylinder, said end chambers being closed to passage of steam except as specified.

4. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central steam-chamber and two end chambers communicating therewith by reduced passages, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable within the steam-chest and of a diameter equal to the diameter of said reduced passages, said valve having enlarged heads within said end chambers and reduced regions in rear of said heads, said reduced portions being arranged to occupy said reduced passages alternately to permit passage of live steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers in rear of the enlarged valve-heads when in their inner positions to the main cylinder-ports, ports opening into the end chambers near the outer ends thereof and in front of the enlarged heads of the main valve, an auxiliary valve constructed to permit entrance of live steam through one of the last-mentioned ports and exhaust of spent steam through the other of said ports for the purpose of reversing the main valve, the auxiliary valve at other times blocking passage of live or spent steam through said ports, link-and-lever mechanism connecting with a movable part for operating the auxiliary valve, and an automatic regulating-passage, one for each end chamber, communicating at one end with its chamber at a point in front of the enlarged head of the main valve in the inner position of the latter and at the other end with the main-cylinder port.

5. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central steam-chamber and two end chambers communicating therewith by reduced passages, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable in the steam-chest and of a diameter equal to the diameter of said reduced passages, said valve having enlarged heads within the end chambers and reduced portions in rear of said heads, said reduced portions being arranged to occupy said reduced passages alternately to permit passage of live steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers in rear of the enlarged valve-heads when in their inner positions to the main-cylinder ports, ports opening into the end chambers near the outer ends thereof and in front of the enlarged heads of the main valve, an auxiliary-valve seat provided with a port leading to the exhaust and with other ports communicating with the last-named ports, an auxiliary oscillating disk valve on said seat provided on its inner surface with an arc-shaped exhaust-passage and with an arc-shaped steam-passage, the latter only communicating with the outer surface of the valve, live-steam connection to the outer surface of the auxiliary valve, link-and-lever mechanism connecting with a moving part for positioning the auxiliary valve with the exhaust-passage therein covering the exhaust-port and one of the other ports in the valve-seat and the steam-passage over the remaining port, the auxiliary valve at other times blocking passage of live or spent steam through the ports in its seat, and an automatic regulating-passage, one for each chamber, communicating at one end with its chamber at a point in front of the enlarged head of the main valve in the inner positon of the latter and at the other end with the main-cylinder port.

6. In a steam-valve mechanism for pumping-engines, the combination with the steam-cylinder, of a steam-chest having a central steam-chamber and two end chambers communicating therewith by reduced passages opening into the cylinder at a distance from its ends, main-cylinder ports and an exhaust-port, a main valve longitudinally reciprocable within the steam-chest and of a diameter equal to the diameter of said reduced passages, said valve being provided with enlarged heads within the end chambers and reduced portions in rear of said heads, said reduced portions being arranged to occupy the reduced passages alternately to permit passage of live steam from the central chamber to an end chamber and to cause said steam in its flow to impinge against the rear of the enlarged valve-head to tend to move the valve to close the reduced passage, passages extending from the end chambers in rear of the enlarged valve-heads when in their inner positions to the main-cylinder ports, ports opening into the end chambers near the outer ends thereof and in front of the enlarged heads of the main valve, an auxiliary valve constructed to permit entrance of live steam through one of the last-mentioned ports and exhaust of spent steam through the other of said ports for the purpose of reversing the main valve, the auxiliary valve at other times blocking passage of live or spent steam through said ports, link-and-lever mechanism connecting with a moving part for operating the auxiliary valve, an automatic regulating-passage, one for each chamber, communicating at one end with its chamber at a point in front of the enlarged valve-head in the inner position of the latter and at the other end with the main-cylinder port, and a passage extending from each end of the steam-cylinder to the adjacent cylinder-port.

814,794. METHOD OF PRODUCING VACUUM-LAMPS. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Original application filed Sept. 2, 1903, Serial No. 171,587. Divided and this application filed Apr. 21, 1904. Serial No. 204,173.

Claim.—1. The herein-described method of manufacturing elec-

trically-operated vacuum-tubes, consisting in coating the interior of a tube or receptacle of any desired form adapted for use in the completed device with an organic substance, electrolyzing said substance to form an adherent coating of an electrolytically-produced substance upon the interior of the receptacle or tube and utilizing said tube as a tube or section of tube in the complete device.



2. The herein-described method of manufacturing electric lights in which the light-giving source is a rarefied gas, consisting in treating an organic substance contained in a section of the tube or lamp by an electrolytic process, producing thereby a fixed solid residue forming an adherent coating upon the wall of the tube and utilizing said section for a section of the complete lamp and then exhausting the latter in the ordinary way.

3. The herein-described method of manufacturing electric lights in which the light-giving source is a rarefied gas, consisting in treating an organic substance contained in a section of the tube or lamp by an electrolytic process with the application of external heat, producing thereby a fixed solid residue forming an adherent coating upon the wall of the tube and utilizing said section for a section of the complete lamp and exhausting the latter in the ordinary way.

4. The herein-described method of producing vacuum-tubes for electric lighting consisting in coating the interior of a glass receptacle with a liquid hydrocarbon, passing an electric current through said receptacle while at the same time exhausting air and gas from the tube, producing thereby a fixed solid residue forming an adherent coating upon the wall of the tube and utilizing said receptacle as a section or portion of another tube or receptacle designed for employment as a complete lamp and exhausting the latter in the ordinary way.

5. The herein-described method of manufacturing vacuum-tube lamps containing a material designed to form a source of gas-supply during operation of the lamp, consisting in first subjecting an organic substance to electrolytic action, exhausting the lamp and subsequently and while the electrolytically-treated substance is contained therein sealing off the lamp.

6. The herein-described method of producing vacuum-tube lamps without spots or discolorations arising from the decomposing substance, consisting in first electrolyzing an organic substance designed to form a source of gas-supply during operation of the lamp and finally sealing off the lamp after exhaustion and while the previously electrolytically decomposed substance is contained therein.

7. The method of producing vacuum-tube lamps with a stable vacuum and with a contained material designed to form a source of gas-supply during operation of the lamp, consisting in introducing an organic substance into the lamp, passing an electric current through the lamp to decompose such substance and at the same time exhausting the lamp and after decomposition has been practically completed, sealing the lamp off.

8. The herein-described method of securing a stable vacuum in vacuum-tube lamps containing an electrolyzed organic substance, consisting in first subjecting such substance to electrolytic action to completely decompose it, and applying the exhaust-pump, and finally sealing off.

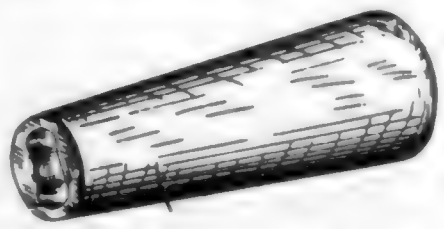
9. The method of producing vacuum-tube lamps with stable vacuum and with a contained material, adapted to maintain the desired degree of rarefaction, consisting in reducing an organic material by electrolytic action to its final form and sealing off the lamp after exhaustion to the degree of rarefaction desired for commercial operation.

10. The herein-described method of manufacturing vacuum-tube lamps, containing a substance designed to form the source of gas during operation of the lamp, consisting in introducing an organic substance into the lamp, passing an electric current through the lamp to decompose the substance to its final form while at the same time exhausting the lamp, and finally sealing off.

11. The herein-described method of manufacturing vacuum-tube lamps containing electrolytically-treated aubepine forming during operation of the lamp a source of a gas by which the desired degree of rarefaction and luminosity is maintained, consisting in first subjecting the aubepine to the action of an electric current by which it may be reduced to its final form and sealing off the lamp while it contains the completely-reduced aubepine and subsequently to the exhaustion of the tube to secure the desired degree of rarefaction of its gaseous contents.

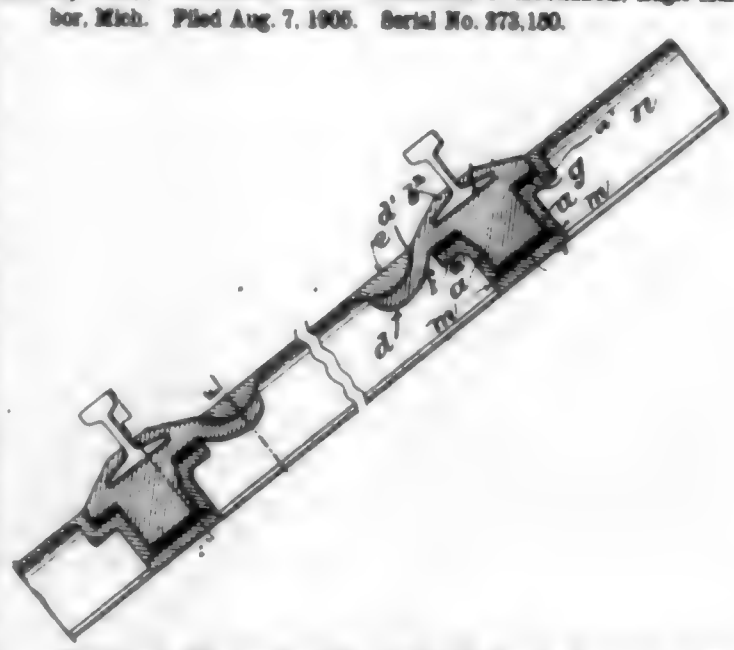
814,795. ELASTIC BANDAGE. HENRY MYERS, Philadelphia, Pa. Filed Sept. 28, 1905. Serial No. 280,166.

Claim.—1. As a new article of manufacture, an elastic bandage, of homogeneous construction, having its interior walls shaped to closely approximate the limb to which it is to be applied, all substantially as shown and described.



2. As a new article of manufacture, an annular, flexible sleeve, adapted to be used as a bandage, having a smooth, regular exterior and an inner molded surface made in conformity to the part to which it is to be applied, all substantially as shown and described.

814,796. RAILWAY-TIE. ARCHIBALD J. MCCALLUM, Eagle Harbor, Mich. Filed Aug. 7, 1905. Serial No. 273,150.

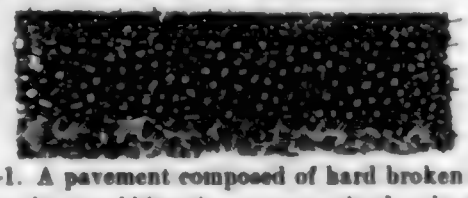


Claim.—1. The combination with a hollow railway-tie having boxes formed therein, of rail-chairs fitting in said boxes and having lateral extensions engaging under the top of the tie.

2. The combination with a hollow railway-tie having boxes formed therein, of rail-chairs fitting in said boxes and having hook-shaped extensions engaging under the top of the tie.

3. The combination with a hollow railway-tie having bosses formed on the inside thereof, of rail-chairs having hook-shaped extensions engaging said bosses.

814,797. PAVEMENT. JOHN I. MCDONALD, St. Joseph, Mo. Filed Jan. 30, 1905. Serial No. 243,296.



Claim.—1. A pavement composed of hard broken stone and a binder of ground natural bituminous stone mixed and rolled without heating.

2. A pavement having its upper portion composed of hard broken stone mixed with a binder of finely-ground natural bituminous stone.

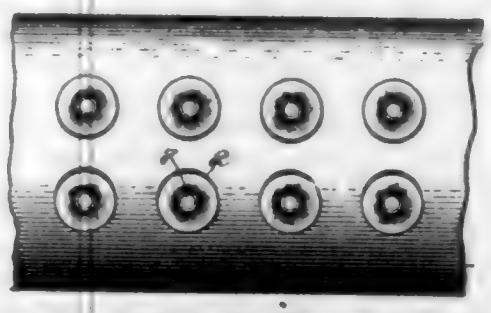
3. A pavement having a foundation of macadam, and a top portion of hard broken stone, the voids being filled with a binder of ground natural bituminous stone.

4. The process of making a pavement which consists in grinding natural bituminous stone, mixing it with hard broken stone to constitute a binder therefor, spreading the mixture on a suitable foundation, and subjecting the whole to heavy pressure.

814,798. TIRE-PROTECTOR. HENRY P. PALIN, North Attleboro, Mass. Filed June 15, 1905. Serial No. 265,355.

Claim.—1. A tire-protector sleeve or the like provided with a plurality of outwardly-tapering frustum-shaped burs secured to the tread-face thereof, said burs each being formed with an outwardly-flaring central hole through the bur and having securing means con-

sisting of a rivet having a flange on the inner end which bears against the inner face of the protector and a shank which passes outwardly through the sleeve and the hole in the bur, the shank of the rivet being headed down and spread after being passed through the bur so as to completely fill the flaring hole in the bur to the outer end thereof.

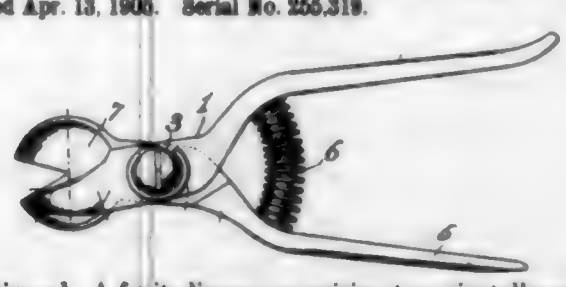


2. A tire-protector sleeve or the like provided with a plurality of outwardly-tapering frustum-shaped metallic burs secured to the tread-face thereof, said burs each being formed with an outwardly-flaring central hole through the bur and having securing means consisting of a rivet having a flange on the inner end which bears against the inner face of the protector and a shank which passes outwardly through the sleeve and the hole in the bur, the shank of the rivet being headed down and spread after being passed through the bur so as to completely fill the flaring hole in the bur to the outer end thereof, the rivets being formed of softer metal than the burs.

3. A tire-protector sleeve or the like provided with a plurality of outwardly-tapering frustum-shaped burs secured to the tread-face thereof, said burs each being formed with concaved outer sides and an outwardly-flaring central hole through the bur and having securing means consisting of a rivet having a flange on the inner end which bears against the inner face of the protector and a shank which passes outwardly through the sleeve and the hole in the bur, the shank of the rivet being headed down and spread after being passed through the bur so as to completely fill the flaring hole in the bur to the outer end thereof.

4. A tire-protector sleeve or the like composed of tough leather and provided with a plurality of outwardly-tapering frustum-shaped burs secured to the tread-face thereof, said burs each being formed with concave sides, an outwardly-flaring central hole through the burs, the diameter of the outer end of the hole being a little less than the diameter of the outer end of the bur so as to form a thin outer edge, and securing means for said bur consisting of a rivet having a flange on the inner end which bears against the inner face of the protector and a shank which passes outwardly through the sleeve and the hole in the bur and before being headed down extends beyond the end of the bur, the shank of the rivet being then headed down and spread after being passed through the bur so as to completely fill the flaring hole in the bur to the outer end thereof, said bur being made of steel and the rivet being composed of malleable metal.

814,799. **FRUIT-CLIPPER.** HOWARD H. PRITTY, Pomona, Cal. Filed Apr. 13, 1905. Serial No. 255,319.

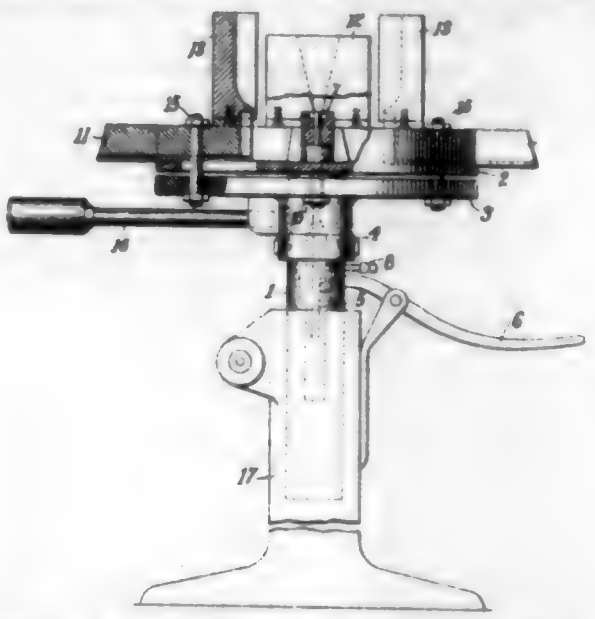


Claim.—1. A fruit-clipper comprising two pivotally-connected members, one of which has a jaw formed as a portion of a bowl with an inwardly-extending wedge-shaped notch having a cutting edge, and the other member has a jaw fitting and sliding within the aforesaid jaw and having a cutting edge coöperating with the aforesaid cutting edge.

2. A fruit-clipper comprising two pivotally-connected members, one of which has a jaw shaped as a portion of a bowl and notched at its forward side, and the other jaw being curved to fit within said bowl, the opposing edges of the inner jaw and of the notch being provided with cutting edges.

3. A fruit-clipper comprising two pivotally-connected members, one of which has a wedge-shaped opening with a cutting edge, the other member having a cutting edge and being formed to fully expose the wedge-shaped opening of the other member, when opened, so that the wedge-shaped opening can receive the fruit-stems of various sizes and will tightly grip the stem while it is being snipped.

814,800. **BOTTLE-MAKING DEVICE.** ALBERT PHILIPPOTEAUX, Reims, France. Filed July 22, 1905. Serial No. 270,886.



Claim.—1. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, and guide-pins working in the slots and adapted to move each half-mold toward or from its complemental half so as to close and open the molds.

2. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complemental half so as to close and open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pressure to the inside of the mandrel and a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically.

3. In a bottle-making device the combination of a fixed table, a measuring and a finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complemental half so as to close or open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pressure to the inside of the mandrel, a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically, and a base forming a socket in which the support for the mold-table is rigidly fixed.

4. The combination of two bottle-making devices consisting each of a fixed table, a measuring and finishing mold carried by said table, the halves of said molds being radially movable, a revoluble table placed under the mold-table, slots in both tables, guide-pins working in the slots and adapted to move each half-mold toward or from its complemental half so as to close or open the molds, a hollow support rigidly connected to the mold-table, a hollow mandrel inside of the support, means to supply air under pressure to the inside of the mandrel, and a neck-mold fixed in the mold-table into which the mandrel is adapted to move vertically, with two sockets adapted to revolve around an axis placed between them and into which the supports for the mold-table of the respective bottle-making devices are rigidly fixed, and means to revolve the sockets.

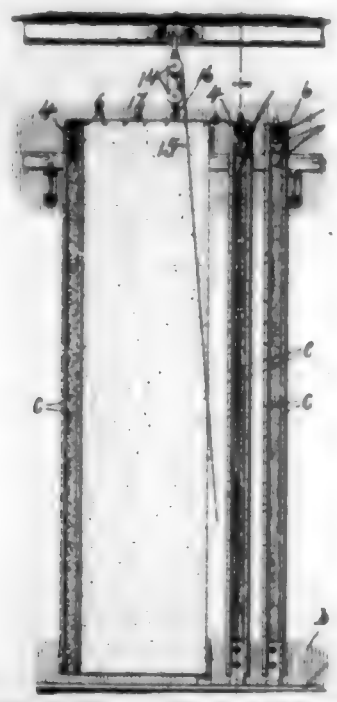
814,801. **DISPLAY-RACK FOR RUGS, CURTAINS, AND SIMILAR ARTICLES.** FREDERICK W. PIERCE, Syracuse, N. Y. Filed Nov. 3, 1904. Serial No. 231,231.

Claim.—1. A display-rack for rugs, curtains and similar articles, comprising a horizontally-swinging arm having means for engaging and supporting the article to be displayed, supports upon which both ends of the arms are loosely seated and means connected to the central portion of the arm to raise and lower said arm from said supports.

2. A display-rack for rugs, curtains and similar articles, comprising a support, an arm loosely pivoted at one end to the support to swing horizontally, and means connected to the center of the arm for raising and lowering the arm away from the support.

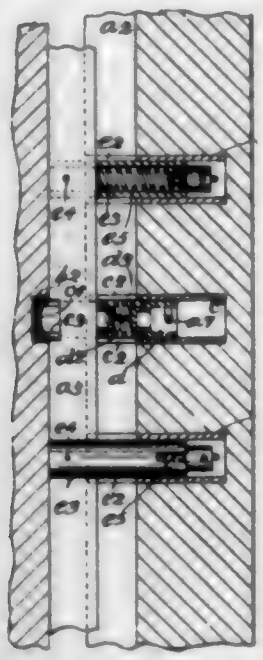
3. A display-rack for rugs, curtains and similar articles, comprising lower and upper bearings, a frame journaled in said bearings

and including a horizontal bar and a diagonal brace-bar, the horizontal bar being loosely seated on the brace-bar to be removed and means on the horizontal bar to engage and hold the article to be displayed.



4. In a display-rack, the combination of lower and upper bearings, a horizontally-swinging frame loosely seated in the bearings and having an independent vertical movement to disengage it from said bearings, said frame comprising a horizontal bar and a diagonally-disposed brace-bar, upon which one end of the horizontal brace-bar is loosely seated and means on the horizontal bar to engage and hold the article to be displayed.

814,802. COMBINATION DRAFT-EXCLUDER AND LOCK. WILLIAM POTTER, New York, N. Y. Filed May 16, 1905. Serial No. 260,696.

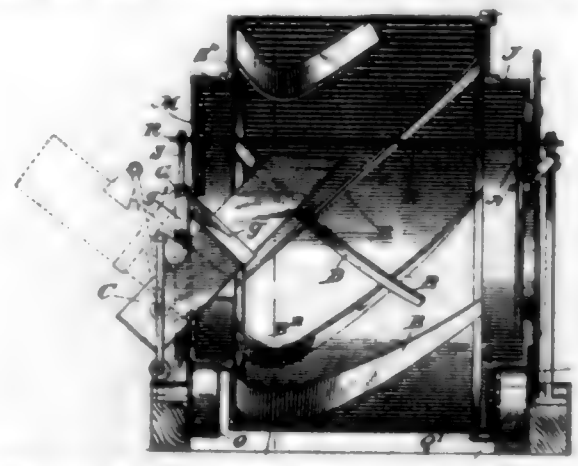


Claim.—1. A draft-excluder for doors, sashes and the like, comprising a bar movable in a recess in said door or sash and adapted to bear against the frame thereof, a tube secured in said door or sash, a supplemental tube slidable therein and provided with slots in the opposite sides thereof through which said bar passes and said bar being provided with a recess adapted to recieve the end of said supplemental tube, a block slidable in said first-named tube, a spring between said block and said supplemental tube and adapted to force said supplemental tube outwardly, devices for moving said block backwardly and forwardly in said first-named tube, coil-springs mounted in said door or sash adjacent to said tube and adapted to force said bar outwardly, substantially as shown and described.

2. A draft-excluder for doors, sashes and the like, comprising a bar movable in a recess in said door or sash and adapted to bear against the frame thereof, a tube secured in said door or sash, a supplemental tube slidable therein and provided with slots in the opposite sides thereof through which said bar passes and said bar being provided with a recess adapted to receive the end of said supplemental tube, a block slidable in said first-named tube, a spring between said block and said supplemental tube and adapted to force said supplemental tube outwardly, devices for moving said block backwardly and forwardly in said first-named tube, coil-springs mounted in said door or sash adjacent to said tube and adapted to force said bar outwardly, and said devices comprising a lever mounted on the face of said door or sash, and a pin eccentrically mounted on said lever and slidably mounted in said block, substantially as shown and described.

3. A draft-excluder and lock for doors, sashes and the like, comprising a bar movable in a recess in said door or sash and adapted to bear against the frame thereof, springs for forcing said bar outwardly, a tube arranged centrally of said springs, a supplemental tube slidable in said first-named tube and provided with slots in the opposite sides thereof through which said bar passes and in which it is engaged, said bar being provided with a recess to receive the end of said supplemental tube, devices in operative connection with said supplemental tube for moving the same inwardly and outwardly, means for moving said supplemental tube outwardly a distance greater than the movement of said bar and a recess in said frame adapted to receive said supplemental tube and thereby lock said door or sash, substantially as shown and described.

814,803. CONCRETE-MIXING MACHINERY. ERNEST L. RANSOME, New York, N. Y. Filed Apr. 1, 1903. Serial No. 100,938.



Claim.—1. In a mixer, the combination of a revoluble mixing-drum having an open end, a lifting-shelf secured within the same, a chute extending outward from the interior of the drum through said open end, a bail attached to the chute, means on which the bail is pivotally mounted, a second bail connected to the chute, and a lever connected to the second bail to permit the reversal of the chute, for the purpose specified.

2. A mixer having a revoluble drum adapted to receive material at one end and discharge it at the other, the drum having a centrally-orificed head at the discharge end, a shelf secured within the drum and extending along the inner side thereof diagonally with respect to the axis of the drum, the discharge end of the shelf extending to the head at the discharge end of the drum and forming a pocket in connection therewith, an additional shelf secured within the drum and extending diagonally of the axis thereof across the first-named shelf, and a means extending through the said orifice in the discharge-head of the drum, for carrying off the material from the drum.

3. A mixing apparatus having a revoluble drum, adapted to receive the material at one end and discharge it at the other end, a lifting-shelf secured to the drum against the inner side thereof, the shelf extending diagonally with respect to the axis of the drum for the major portion of the length of the shelf, and said major portion of the length of the shelf being relatively straight, and the shelf terminating at the discharge end of the drum in an offset portion, the concave side of which faces the direction of revolution of the drum, whereby to form a lifting-pocket.

4. A mixing apparatus having a revoluble drum adapted to receive the material at one end and discharge it at the other end, and a lifting-shelf secured in the drum against the inner side thereof, the shelf extending diagonally with respect to the axis of the drum for the major portion of the length of the shelf, and a shelf terminating at the discharge end of the drum in an offset portion, the concave side of which faces the direction of revolution of the drum, whereby to form a lifting-pocket.

5. A mixing apparatus having a revoluble drum adapted to receive the material at one end and discharge it at the other end, a shelf secured in the drum against the inner side thereof, the shelf extending diagonally with respect to the axis of the drum for the major portion of the length of the shelf, and the shelf terminating at the discharge end of the drum in an offset portion, the concave side of

which faces the direction of revolution of the drum, whereby to form a pocket, and an additional shelf secured in the drum and extending diagonally of the axis thereof across the first-named shelf.

6. A mixing apparatus having a revoluble drum adapted to receive the material to be mixed, and a lifting-shelf secured on the drum against the inner side, the shelf extending diagonally with respect to the axis of the drum for a part of the length of the shelf and terminating at one end in an offset portion, the concave side of which faces the direction of revolution of the drum and overhangs the inner surface of the drum at an acute angle whereby to form a lifting-pocket, for the purpose specified.

7. A machine of the class described, having a revoluble hollow member provided at its discharge end with a head, a plurality of shelves secured to the inside of the member and having offset ends disposed relatively to said head to form a series of lifting-pockets adjacent to the discharge end of the revoluble member, and other shelves extending across the first-named shelves.

8. A mixing apparatus, comprising the combination with a base, of the drum revolubly mounted thereon, said drum having open ends respectively for charging and discharging the material being mixed, a rod extending longitudinally through the drum beyond the ends thereof, means at each end of the drum for mounting the rod on the base independently of the drum, a closure located at each end of the drum and supported from said rod, a chute adapted to project into the discharge end of the drum, means for tiltably mounting the chute independently of the drum, and means for adjusting the chute.

9. A mixing apparatus comprising a revolubly-mounted drum having an open end, lifting-shelves in the drum, a closure located at said open end and comprising two relatively movable parts, and means in connection with one of said parts for mounting the closure independently of the drum whereby to permit the free rotation of the drum independently of the closure, and to allow the other part of the closure to swing, for the purpose specified.

10. In a mixer, the combination of a base, a drum revolubly mounted thereon and having an inlet-opening at one end, lifting-shelves in the drum for the purpose specified, a closure commanding said inlet-opening, and means hingedly mounting the closure on the base independently of the drum, whereby to permit the closure to swing into the drum during the charging thereof.

11. The combination with a revoluble drum having an open end, of a guard-plate suspended within said open end of the drum, an annular guard-plate surrounding said open end and attached to the drum to lie outside of the suspended plate and a stationary guard-plate in lapping relation to the annular guard-plate.

814,804. **METHOD OF MAKING TURBINE-BLADES.** AUGUSTE C. E. RATEAU and GASTON SAUTTER, Paris, France, assignors to Rateau Turbine Company, Chicago, Ill., a Corporation of West Virginia. Filed June 3, 1904. Serial No. 211,037.



Claim.—1. The herein-described method of making turbine-blades in pairs, which consists in forming an oblong blank from sheet metal, bending said blank into a U shape, curving the arms of the U laterally and oppositely with respect to each other, and dividing the blank by a transverse cut across the base of the U, whereby two separate similar blades are produced.

2. The herein-described method of making turbine-blades in pairs, which consists in forming an oblong blank into a U shape, imparting a similar but opposite lateral curvature to the arms of the U, severing the U into two similar L-shaped parts, and imparting to the edge of the severed end of each blade a contour adapted to conform to the exterior curvature of the other blade.

3. The method of making turbine-blades, which consists in stamping out from a sheet of metal an oblong blank, bending said blank into a U shape and simultaneously therewith imparting concave inner and convex outer surfaces to the arms of the U, dividing the blank by a transverse cut across the base of the U into two similar blades and imparting a concave edge to the severed end of each blade, adapted to conform to the exterior curvature of the other blade.

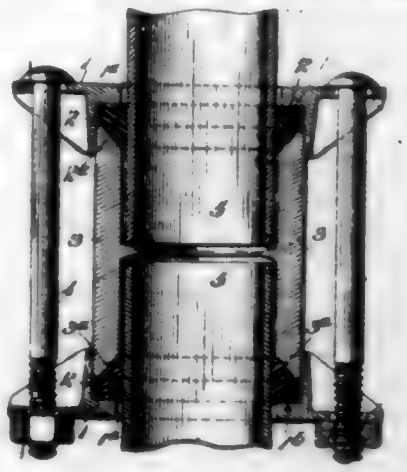
4. The method of making turbine-blades, which consists in stamping out from a sheet of metal an oblong blank having a central portion of less width than the ends of the blank, bending the ends of the blank at an angle with the central portion to form a U shape, and simultaneously therewith imparting concave inner and convex outer surfaces, to the arms thereby bringing the sides of the arms into alinement with the base of the U, and severing the U into two parts by punching out an elliptical piece from the central portion of the base; whereby two similar turbine-blades are produced, each blade having a base with an inwardly-curved rear edge adapted to conform to the exterior curvature of a similar blade.

814,805. **FOUNTAIN-PEN.** EVELYN DE LA RUE, London, England. Filed Aug. 1, 1905. Serial No. 273,143.



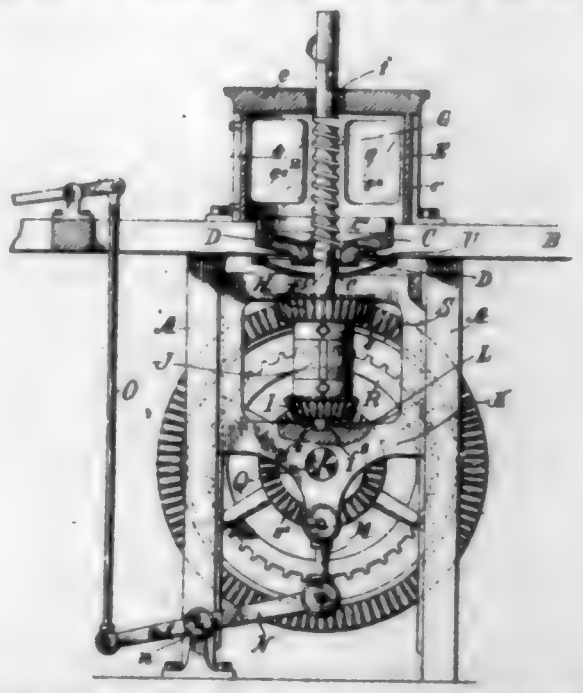
Claim.—In a fountain-pen, the combination of a piston, a left-handed bayonet-fastening adapted to retain it in the rear end of the barrel, a piston-rod contained in the barrel and passing out through its rear end, and a right-handed bayonet-fastening for engaging the rod with the piston.

814,806. **PIPE-COUPLING.** LOUIS C. SANDS, Pittsburg, Pa., assignor to Oil Well Supply Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Dec. 31, 1904. Serial No. 239,162.



Claim.—In a pipe-coupling, the combination of clamp-sections having gasket-chambers of rectangular cross-section, gaskets or packing-rings having the cross-sectional form of a rectangle from which the outer edge at one end has been removed to form a beveled or inclined face, and an interposed sleeve having its ends beveled or inclined to correspond with the inclined faces of the gaskets and provided with annular shoulders adjacent to the bevels thereon, substantially as and for the purposes specified.

814,807. **MACHINE FOR MAKING METAL BALLS.** CARL T. SCHEITTER, Cleveland, Ohio. Filed May 12, 1905. Serial No. 260,110.



Claim.—1. A machine for making balls, comprising an endwise-movable revoluble spirally-grooved shaft or roller and a die through which said roller operates.

2. The combination of a die having a vertical opening and a

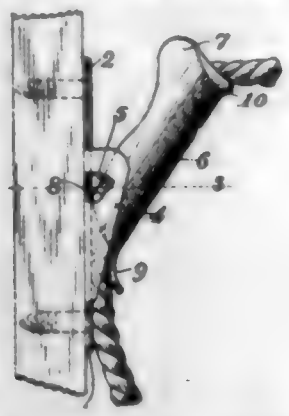
groove surrounding the opening, a shaft formed with a spiral groove and extending through the die and means for rotating the shaft and for moving it endwise.

3. A machine for making and finishing balls comprising a stationary die, a spirally-grooved shaft extending through the die and means for rotating said shaft and for moving it endwise.

4. A machine for making balls comprising a stationary die having an inclined surface, a central opening, and a groove surrounding the opening, a housing covering the die, a spirally-grooved shaft extending through the die, and means for rotating the shaft and for moving it endwise.

5. A machine for making balls comprising a stationary die, its housing, a spirally-grooved shaft extending through the die, a vertically-movable frame supporting the shaft and means for moving the frame vertically and for rotating the shaft.

814,808. LINE-HOLDER. THEODORE A. SMITH, Grand Rapids, Mich. Filed Mar. 15, 1905. Serial No. 250,167.



Claim.—1. In a line-holder, a sheet-metal structure comprising a bed-plate, parallel flanges projecting at right angles from the opposite sides of the bed-plate and provided with sector-shaped openings, a lever having the form of the portion of a hollow truncated cone, and oppositely-projecting flat lugs on the lever and pivotally engaging the lower angles of the openings in the flanges.

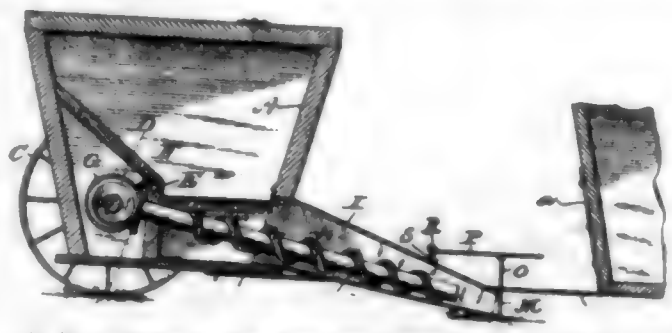
2. In a line-holder, a bed-plate, means for securing the bed-plate to a support, flanges at each side of the bed-plate, and having sector-shaped openings, a lever having the form of a portion of a hollow truncated cone, flat lugs at each side of the lever and engaging the openings in the flanges, upward projections on the upper end of the lever, a rounded concave portion between the said projections and a laterally-projecting gripper on the lower end of the lever.

3. A line-holder consisting of a sheet-metal bed-plate having a rectangular middle portion, diverging upper extensions and a rounded lower extension, said extension having openings for screws, flanges at each side of the bed-plate, sector-shaped openings in the flanges, a sheet-metal lever having the form of a portion of a hollow truncated cone, upwardly-projecting portions on the upper end of the lever, a concave and rounded middle portion between said portions, flat outwardly-bent lugs on the lever and pivoted at their edges in the lower angles of the openings in the flanges, and a laterally-projecting gripper on the lower end of the lever and having a convex inner surface to engage a line.

4. In a line-holder, the combination of a bed-plate having flanges provided with sector-shaped openings, each opening arranged with one radial side parallel with the bed-plate, a sheet-metal lever having the form of a portion of a hollow truncated cone, upwardly-projecting portions on the upper end of the lever, a rounded concave middle portion on said end, an outwardly-bent lug at each side of the lever, each lug having a width substantially equal to the radial dimensions of the flange-opening, and pivoted at its lower edge in the lower angle of the said flange-opening, and a laterally-projecting gripper on the lower end of the lever, said gripper also having a convex and corrugated inner surface opposite the bed-plate.

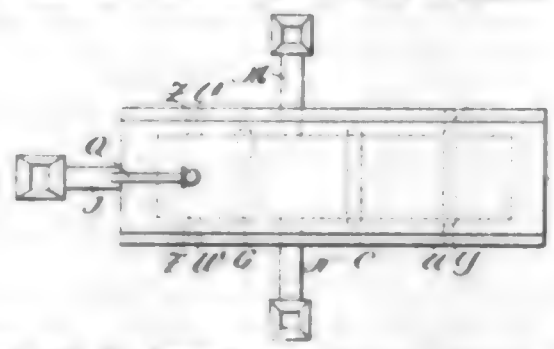
814,809. BRAN-DISTRIBUTER. NATHAN S. SHELLY, Manheim, Pa. Filed Oct. 5, 1905. Serial No. 281,478.

Claim.—1. In a device of the character described, a suitable hopper, suitable ground-wheels supporting the hopper, gearing driven by the movement of the ground-wheels, a worm actuated by the gearing, a chute into which the worm projects, said chute being in communication with the hopper, a trap-door at the end of the chute, said door having an extension above its pivots, a rod pivotally connected to the upper end of the trap-door, a rock-arm to which the inner end of the rod is connected and a spring to hold the rock-arm normally projected.



2. In a device of the character described, a suitable hopper, ground-wheels supporting the hopper, gearing within the hopper, means whereby the movement of the ground-wheels drives the gearing, a screw conveyer within the hopper, a chute into which the conveyer projects, a trap-door pivoted at the end of the chute, the upper end of said door projecting above the pivots, an operating-rod pivoted to the upper end of the door, the outer end of said rod having a foot adapted to be pressed to open the door, a rock-arm to which the inner end of the rod is pivoted, and a spring anchored to the side of the chute, and having an angular end bearing against the rock-arm to project the rod normally outward.

814,810. METALLURGICAL PROCESS. FREDERICK T. SNYDER, Oak Park, Ill. Filed June 23, 1905. Serial No. 266,540.



Claim.—1. The herein-described process of treating sulfid ore which consists in dissolving the same in a fused-mineral bath, and subjecting the mixture to the action of an electric current in the presence of carbon, at a high temperature, the sulfid being broken down, the metal thereof liberated and carbon bisulfid formed at the same time by the reaction of the sulfur and carbon.

2. The process of treating zinc ore containing sulfur which consists in mixing said ore with carbon and with slag-forming materials and smelting the mixture upon a bath of molten slag in the absence of air by electrically maintaining in the slag a temperature above the volatilization-point of zinc, thereby producing zinc-vapor and a sulfur-bearing compound.

3. The process of treating sulfid ore, which consists in smelting said ore with crushed carbon and slag-forming materials upon a slag-bath in a furnace in which heat is developed internally by the passage of an electric current, thereby breaking down the sulfid, liberating the metal and forming carbon bisulfid by the reaction of the carbon and sulfur.

4. The process of treating zinc-sulfid ore which consists in feeding said ore in contact with a bath of molten slag in an electric furnace from which air is excluded, and there reducing said ore with carbon and slag-forming materials, by passing an electric current through said slag sufficient to maintain a temperature above the volatilization-point of zinc, thereby liberating the zinc as metallic vapor and at the same time forming carbon bisulfid by the reaction of the sulfur and carbon, condensing and collecting the zinc-vapor and isolating and collecting the carbon bisulfid.

5. The process of treating zinc-sulfid ore which consists in heating said ore with carbon, above the volatilization temperature of zinc, in an electric furnace from which air is excluded, thereby liberating the zinc as metallic vapor and forming carbon bisulfid by the reaction of the sulfur with the carbon, condensing and collecting the zinc-vapor and isolating and collecting the carbon bisulfid.

6. The process of treating zinc-sulfid ore which consists in feeding said ore into contact with a bath of molten slag in an electric furnace, and there reducing said ore with carbon and slag-forming materials, by passing an electric current through said slag sufficient to maintain a temperature above the volatilization-point of zinc, thereby liberating the zinc and at the same time forming carbon bisulfid by the reaction of the sulfur and carbon.

7. The process of treating zinc sulfids, which consists in electrolyzing said sulfid in a fused mineral electrolyte, thereby liberating zinc at one electrode and sulfur at a second electrode, said second electrode being formed of carbon, whereby sulfur combines with the carbon of the electrode to form carbon bisulfid, and separately collecting said zinc and said carbon bisulfid in the absence of air.

8. The process of treating zinc sulfid, which consists in electrolyzing said zinc sulfid in a fused mineral electrolyte at a temperature such that volatile zinc is liberated at one electrode and sulfur is liberated at a second electrode, the second electrode being formed of carbon, whereby the carbon and liberated sulfur combine to form carbon bisulfid, and collecting without intermingling the liberated zinc and the carbon bisulfid.

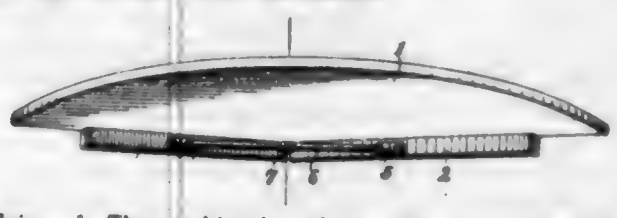
9. The process of treating zinc sulfid, which consists in treating said zinc sulfid with a fused mineral electrolyte in the presence of carbon, by the passage of an electric current, thereby producing a temperature such that volatile zinc and sulfur are liberated, whereby the carbon and liberated sulfur combine to form carbon bisulfid, collecting the liberated zinc and carbon bisulfid, conveying said liberated carbon bisulfid to an engine and there combining said carbon bisulfid with oxygen to develop mechanical power.

10. The process of treating zinc sulfid, which consists in electrolyzing said zinc sulfid in a fused mineral electrolyte at a temperature such that volatile zinc is liberated at one electrode and sulfur is liberated at a second electrode, the second electrode being formed of carbon, whereby the carbon and liberated sulfur combine to form carbon bisulfid, collecting without intermingling the liberated zinc and carbon bisulfid, thereafter condensing the collected volatile zinc, conveying said liberated carbon bisulfid to an engine, there combining said carbon bisulfid with oxygen to develop mechanical power and causing said power to drive an electric generator supplying current for said electrolysis.

11. The process of electrolyzing fused zinc sulfid at a temperature such that volatile zinc is liberated at one electrode and sulfur is liberated at a second electrode, said second electrode being formed of carbon, whereby the carbon and liberated sulfur combine to form carbon bisulfid, and collecting without intermingling the liberated zinc and carbon bisulfid.

12. The process of electrolyzing fused zinc sulfid at a temperature such that volatile zinc is liberated at one electrode and sulfur is liberated at a second electrode, the second electrode being formed of carbon, whereby the carbon and liberated sulfur combine to form carbon bisulfid, collecting without intermingling the liberated zinc and the carbon bisulfid, thereafter condensing the collected volatile zinc, conveying said liberated carbon bisulfid to an engine, and there combining said carbon bisulfid with oxygen to develop mechanical power.

814,811. SHELF-SUPPORT. JOSHUA SPEED, Grand Rapids, Mich. Filed Apr. 14, 1905. Serial No. 255,497.

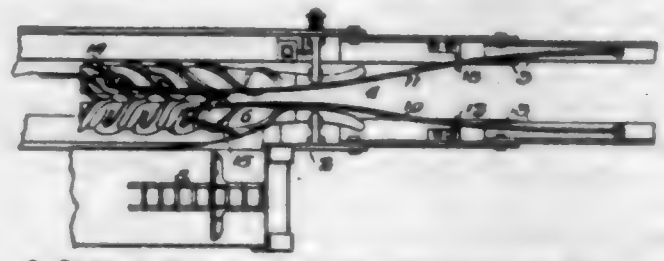


Claim.—1. The combination of two rails arranged end to end and substantially at right angles to each other and also detached at their adjacent ends, spurs and sockets on the respective rails, one of said sockets being screw-threaded, and a screw-threaded brace-rod engaging the sockets and having a squared intermediate portion.

2. The combination of two detached rails arranged end to end and substantially at right angles to each other, spurs on said rails, a brace-rod having one end conical and the other end screw-threaded and also having a squared and perforated portion, a socket having a conical recess and attached to one rail, and a socket having a screw-threaded opening and attached to the other rail.

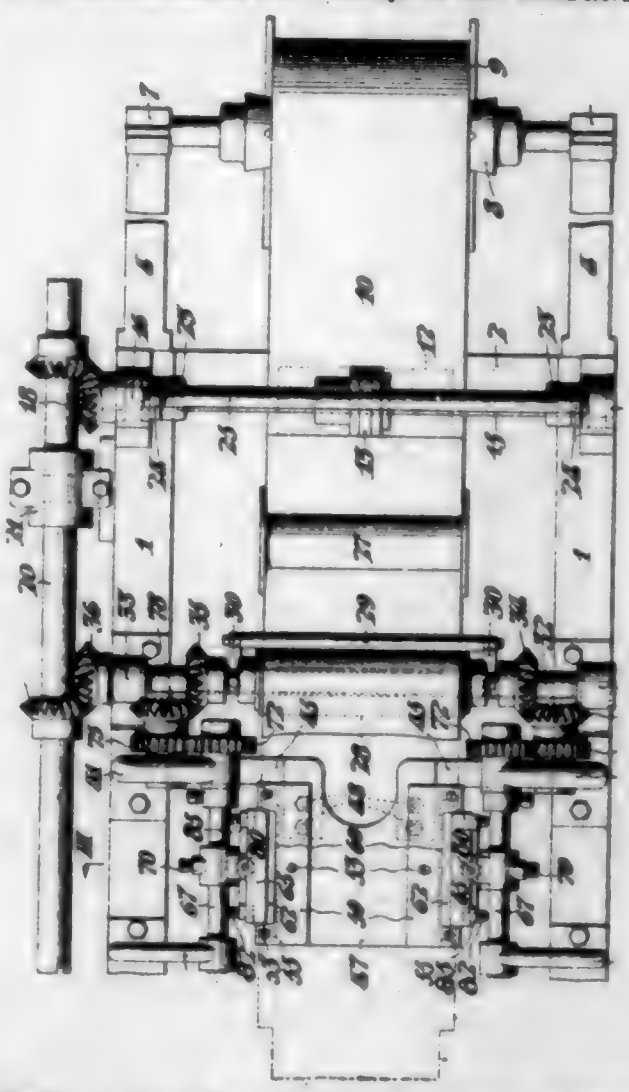
814,812. CORN HARVESTER AND HUSKER. JOHN A. STONE, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Oct. 14, 1905. Serial No. 282,741.

Claim.—1. In a corn-harvester, the combination of a main drive-wheel, a wheel-frame having forwardly-projecting members forming a passage-way for the cornstalks, snapping-rollers suitably mounted upon opposite sides of said passage-way and inclined rearward and upward, an ear-conveyer arranged at one side of said passage-way, means for delivering the corn to said snapping-rollers comprising rearwardly, inwardly and upwardly inclined yielding fender-rods having their forward ends secured to said forwardly-projecting frame members and their rear ends extending substantially parallel with each other in a plane above and substantially parallel with said snapping-rollers, forming a narrow yielding passage-way for the incoming stalks and having the rear end of the fender-rod adjacent said ear-conveyer curved laterally downwardly and forwardly toward said ear-conveyer in a manner to deflect the ears thereto.



2. In a corn-harvester, the combination of a main drive-wheel, a wheel-frame having forwardly-projecting members forming a passage-way for the cornstalks, snapping-rollers suitably mounted upon opposite sides of said passage-way and inclined rearward and upward, an ear-conveyer arranged at one side of said passage-way, means for delivering the corn to said snapping-rollers comprising rearwardly, inwardly and upwardly inclined yielding fender-rods having their forward ends secured to said forwardly-projecting frame members and their rear ends extending substantially parallel with each other in a plane above and substantially parallel with said snapping-rollers, forming a narrow yielding passage-way for the incoming stalks and having the rear end of the fender-rod adjacent said ear-conveyer curved laterally downwardly and forwardly toward said ear-conveyer in a manner to deflect the ears thereto, and the oppositely-disposed fender-rod extended in rear of the end of the first-mentioned rod and loosely connected with a fixed part of the machine.

814,813. ROTARY SHEARING MECHANISM. GEORGE W. SWIFT, Jr., Bordentown, N. J. Filed Apr. 13, 1905. Serial No. 255,350.



Claim.—1. In mechanism of the class described, the combination with a stationary blade; of means arranged to progress a web of fabric with respect to said blade; a rotary blade having a cutting edge substantially parallel with the direction of travel of the web, arranged to rotate in coöperative relation with said stationary blade in definite relation to the traverse of said web, substantially as set forth.

2. In mechanism of the class described, the combination with a stationary blade; of means arranged to progress a web of fabric with respect to said blade; a rotary blade having a cutting edge extending in the direction of the traverse of the web, arranged to rotate in coöperative relation with said stationary blade; and means arranged to actuate said rotary blade in definite relation to the movement of said web, substantially as set forth.

3. In mechanism of the class described, the combination with a stationary blade; of means arranged to progress a web of fabric with respect to said blade; a straight rotary blade having a cutting edge extending in the direction of the traverse of said web, arranged to rotate in coöperative angular relation with said stationary blade, in definite relation to the traverse of said web, substantially as set forth.

4. In mechanism of the class described, the combination with a frame; of a stationary blade adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blade; a rotary shaft; and a blade adjustably secured to said shaft having a cutting edge extending in the direction of the traverse of said web, and arranged to rotate in coöperative relation with said stationary blade, to shape said fabric, substantially as set forth.

5. In mechanism of the class described, the combination with a frame; of a stationary blade adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blade; and a rotary blade arranged to coöperate with said stationary blade in longitudinal angular relation with respect to the plane of the web, to shape said web, substantially as set forth.

6. In mechanism of the class described, the combination with a frame; of a stationary blade adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blade; a rotary shaft; a frame carried by said shaft; and a blade having a cutting edge extending in the direction of the traverse of the web, adjustably secured to said frame and arranged to rotate in coöperative relation with said stationary blade to shape said web, substantially as set forth.

7. In mechanism of the class described, the combination with a frame; of a pair of stationary blades adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blades; a pair of rotary shafts having their axes arranged substantially parallel to the line of travel of said web; and a blade carried by each of said shafts having its cutting edge in longitudinal angular relation to the plane of said web, substantially as set forth.

8. In mechanism of the class described, the combination with a frame; of a pair of stationary blades adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blades; a pair of rotary shafts having their axes arranged substantially parallel to the line of travel of said web; a rotary frame adjustably secured to each of said shafts; and a blade adjustably secured to each of said rotary frames in longitudinal angular relation to a plane parallel to the axes of said shafts, substantially as set forth.

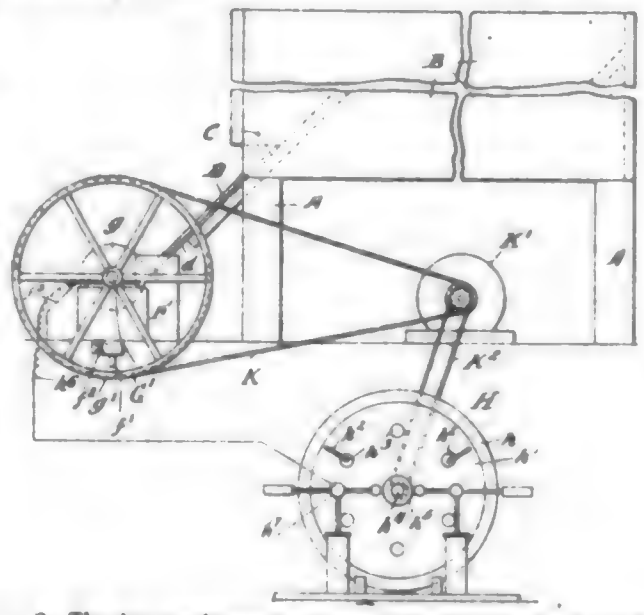
9. In mechanism of the class described, the combination with a frame; of a stationary blade adjustably secured to said frame; means arranged to progress a web of fabric with respect to said blade; bolts arranged to extend through slots in said frame to secure said blades in adjusted position; a rotary frame arranged to rotate on an axis substantially parallel to the line of travel of said web; a rotary blade pivotally secured intermediate of its length to said rotary frame; and set-screws in threaded engagement with said rotary frame arranged to adjust said rotary blade, substantially as set forth.

10. In an envelop-machine, the combination with a pair of stationary blades; of means arranged to progress a web of fabric with respect to said blades; of a pair of rotary shafts having their axes arranged substantially parallel to the line of travel of said web; a blade carried by each of said shafts in longitudinal angular relation to a plane parallel to their axes; a guide-roller; a shaft for said roller; and gears arranged to connect said guide-roller shaft with the blade-carrying shafts, substantially as set forth.

814,814. AMALGAMATING PROCESS. HERBERT A. THOMAS, Chicago, Ill., assignor to Dry Amalgamation Co., Chicago, Ill., a Corporation of Arizona. Filed Aug. 22, 1904. Serial No. 221,635.

Claim.—1. The dry amalgamating process herein described consisting in insulating a body of liquid mercury, charging it electrostatically, and feeding through it a thin sheet of pulverized ore, whereby the precious metals are amalgamated or removed from the ore and the mercury completely freed and separated from the tailings, substantially as specified.

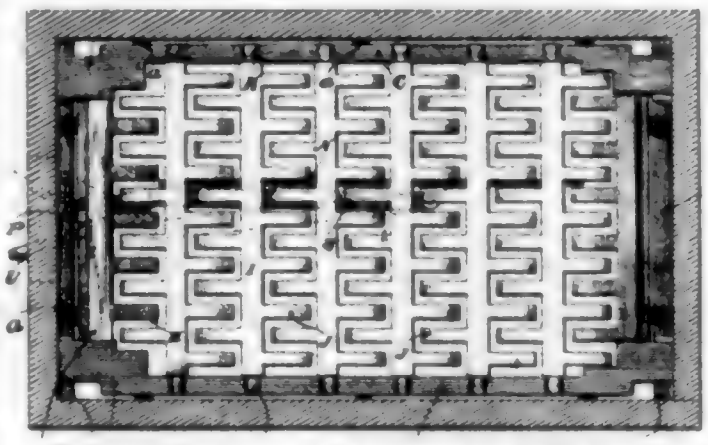
2. The dry amalgamating process herein described consisting in feeding the pulverized ore in a thin, continuous sheet or layer through a body of insulated and electrostatically-charged liquid mercury, substantially as specified.



3. The dry amalgamating process herein described consisting in electrostatically charging an insulated body of liquid mercury and feeding the pulverized ore in a thin, continuous sheet or layer through the electrostatically-charged liquid mercury and maintaining said mercury in an electrostatically-charged condition, substantially as specified.

4. The dry amalgamating process herein described consisting in electrostatically charging a body of insulated liquid mercury, feeding and conveying the pulverized ore in a thin sheet or layer through said body of electrostatically-charged liquid mercury and maintaining said mercury in an electrostatically-charged condition as the pulverized ore is conveyed through it, substantially as specified.

814,815. GRATE. GEORGE E. TRAVIS, Henry, Ill. Filed Aug. 10, 1904. Serial No. 220,193.



Claim.—1. In a grate of the character described, the combination with the fire-box of a boiler, the same having ledges therein for supporting a grate, of side bars adapted to rest at their ends upon the ledges, there being a recess formed in the inner side of each end of the said bars, end bars having their ends lying within the recesses, the said ends of the end bars being covered by overhanging portions of the side bars wherein the recesses are formed, a series of tilting bars parallel with the end bars and supported on the side bars, there being recesses in the top edges of the latter for receiving the tilting bars, a connecting-bar for connecting all of the tilting bars and means contained within the fire-box beneath the grate for moving the connecting-bar for tilting all of the tilting bars simultaneously as set forth, said means also adapted to lock all of the tilting bars from moving when in their normal positions.

2. In combination with a fire-box having a ledge therein at each end, a grate comprising two side bars resting at their ends upon said ledges, each side bar being provided at each end with an enlargement, each said enlargement being offset inwardly and provided with a horizontally-disposed recess, there being lugs on the outer sides of the bars for the purposes set forth, an end bar whose ends enter the said recesses, said end bars being at right angles to the side bars there being lugs on the outer faces of the said end bars for the purposes described, there also being a series of fingers on the inner surfaces of the end bars, a series of rocking grate-bars resting upon the side bars parallel with the end bars and having a series of fingers at each side, the fingers of adjacent bars intermeshing, each rocking bar having a depending ear, a connecting-bar pivotally connecting

all of the ears, a link pivoted at one end to the connecting-bar, a lever pivoted between its ends to one of the end bars to swing horizontally and having the opposite end of the link pivoted to its inner end, said lever adapted to tilt the rocking bars through the medium of the said link and connecting-bar, the said lever and link adapted to lock the rocking bars from moving when the latter are occupying their normal positions as set forth.

3. In combination with a fire-box, a grate comprising a series of tilting grate-bars, a connecting-bar for connecting all of them, a link pivotally attached at one end to the connecting-bar, and a lever pivoted between its ends near the front of the fire-box and having the opposite end of the link pivoted to one end thereof, said lever and link adapted to rock the grate-bars but to lock them from movement by throwing the point of connection of the said lever and link against the connecting-bar at which time said point of connection lies between said connecting-bar and a line connecting the fulcrum of the lever and point of connection of the link with the said connecting-bar.

4. In combination with a fire-box, a grate comprising a series of tilting grate-bars, a connecting-bar for connecting all of them, a link pivotally attached at one end to the connecting-bar, a lever pivoted between its ends at a point near the front of the fire-box and having the opposite end of the said link pivoted to one end thereof, a lug at the bottom of each grate-bar against which the said connecting-bar rests when the grate-bars are in their normal positions, the lugs preventing the grate-bars moving beyond a horizontal position, the lever and link adapted to rock the grate-bars but lock them from movement when this point of connection lies between the connecting-bar and a line connecting the fulcrum of the lever and the point of connection of the link with the connecting-bar as set forth.

5. In a grate, the combination of the separate side and end bars, each side bar being provided at each end with an enlargement, each of said enlargements being offset inwardly and provided with a horizontally-disposed recess and receiving the ends of the end bars as described, there being lugs on the outside faces of the said end bars for contacting with the walls of the fire-box, and a series of tiltable grate-bars carried on the side bars, means for tilting said grate-bars and means for locking the tilting means and the said bars substantially as set forth.

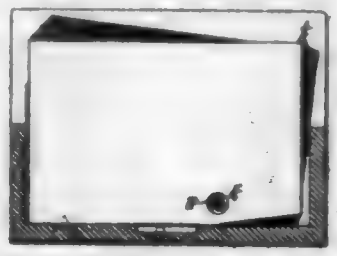
6. In combination with a fire-box, a grate comprising a series of tilting grate-bars, a connecting-bar for connecting all of them, a link pivotally attached at one end to the connecting-bar, and a lever pivoted between its ends near the front of the fire-box and having the opposite end of the link pivoted to one end thereof, said lever and link adapted to rock the grate-bars but to lock them from movement in one direction by throwing the point of connection of the said lever and link against the connecting-bar at which time said point of connection lies between said connecting-bar and a line connecting the fulcrum of the lever and point of connection of the link with the said connecting-bar, and a lug on the bottom of each grate-bar for contacting with the top of the connecting-bar for preventing the said grate-bars tilting in the opposite direction.

7. In combination with a fire-box, a grate comprising a series of tilting grate-bars, a connecting-bar for connecting all of them, a link pivotally attached at one end to the connecting-bar, and a lever pivoted between its ends near the front of the fire-box and having the opposite end of the link pivoted to one end thereof, said lever and link adapted to rock the grate-bars but to lock them from movement in one direction by throwing the point of connection of the said link and lever against the connecting-bar at which time said point of connection lies between said connecting-bar and a line connecting the fulcrum of the lever and point of connection of the link with the said connecting-bar, the grate-bars being prevented from tilting in the opposite direction by contact of the connecting-bar with the under sides thereof.

8. In combination with a fire-box, a grate comprising a series of tilting grate-bars, a connecting-bar for connecting all of them, a link pivotally attached at one end to the connecting-bar, and a lever pivoted between its ends near the front of the fire-box and having the opposite end of the link pivoted to one end thereof, said lever and link adapted to rock the grate-bars but to lock them from movement in one direction by throwing the point of connection of the said lever and link against the connecting-bar at which time said point of connection lies between said connecting-bar and a line connecting the fulcrum of the lever and point of connection of the link with the said connecting-bar, and means on the bottom of the grate-bars for preventing the said bars tilting in the opposite direction.

814,816. CARD-FILE. GEORGE A. WHEELER, New York, N. Y. Filed Sept. 23, 1902. Serial No. 124,573.

Claim.—1. In an index-card file, an index-card having a tilting surface *e'* upon one of its edges and an aperture *f'* adjacent thereto.



2. In a card-file consisting of a series of cards having apertures adapted to engage a locking-rod, a series of similar surfaces upon edges of the cards adjacent to said apertures and adapted to form pivotal bearings upon which the cards may be tilted in the planes of their faces, substantially as and for the purpose set forth.

3. In a card-index device, a casing, and a card normally supported in the casing in an upright position, one of such members being provided with a fulcrum portion disposed adjacent to the bottom of the card and between its ends, on which the card can be tilted in the plane of its face from its upright position.

4. In a card-index device, a casing, and a card normally supported in the casing in an upright position, one of such members being provided with a fulcrum portion disposed coincident with the bottom of the card and between its ends, on which the card can be tilted in the plane of its face from its upright position.

5. In a card-index device, a casing, and a card normally supported in the casing in an upright position, one of such members being provided with a fulcrum portion disposed adjacent to the bottom of the card and located at one side of the middle vertical line of the card, on which the card can be tilted in the plane of its face from its upright position.

6. In a card-index device, a casing, and a card normally supported in the casing in upright position, one of such members being formed with a salient angle whereon the card can be tilted in the plane of its face from its upright position.

7. In a card-index device, a casing, and a card normally supported in the casing in upright position, one of such members being formed with a salient angle whereon the card can be tilted in the plane of its face from its upright position, the apex of such angle being disposed to one side of the middle vertical line of the card.

8. In a card-index device, a casing, and a set of cards, each card being normally supported in the casing in an upright position, one of such members being provided with a fulcrum portion disposed adjacent to the bottom of the card between its ends, on which the cards can be tilted to relative positions in which the side edge in proximity to one upper corner of each card will project a short distance beyond the corresponding part of the succeeding card.

9. In a card-index device, a casing, and a series of cards each normally supported in the casing in an upright position, one of such members being provided with a fulcrum portion disposed adjacent to the bottom of the card between its ends, on which the card can be tilted in the plane of its face from its upright position, and registering apertures in the cards located in proximity to such fulcrum portions.

10. In a card-index device, a series of cards, and a casing arranged to support the cards, each card having a fulcrum portion formed on its bottom edge between its ends, whereby the cards can be tilted to a position in which one side in proximity to the upper corner of each card will project a short distance beyond the corresponding part of the succeeding card.

11. A card for a card-index file, provided with a fulcrum on its bottom edge between its ends.

12. A card for a card-index file, provided with a fulcrum on its bottom edge located between its ends and to one side of the middle of such edge.

13. A card for a card-index file, having its bottom edge formed of two straight parts meeting at an angle.

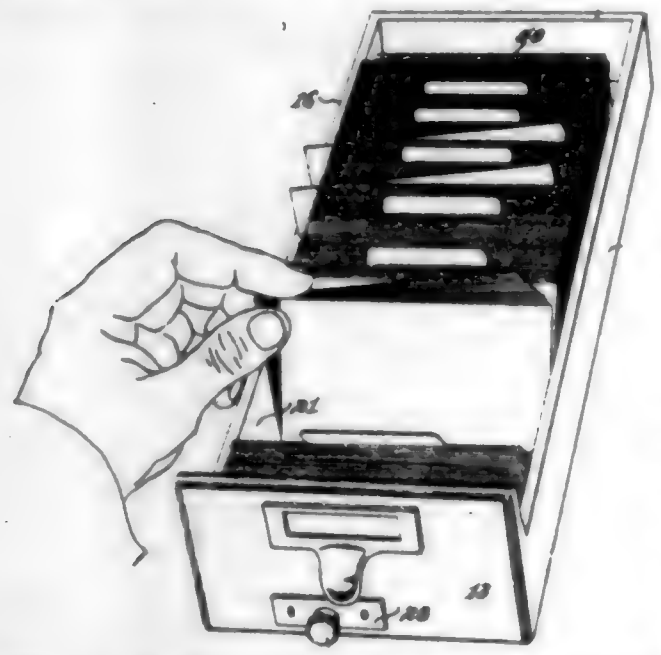
14. A card for a card-index file, having its bottom edge inclined upward at one side to form a fulcrum.

15. A card for a card-index file, provided with a fulcrum on its bottom edge whereon the card can be tilted in the plane of its face, and an aperture located in proximity to such apex.

16. A card for a card-index file, provided with a fulcrum on its bottom edge located to one side of the middle of such edge, and an aperture located in proximity to such apex.

17. A card for a card-index file, having its bottom edge formed of two straight parts meeting at an obtuse angle located at one side of the middle of such edge.

814,817. CARD-INDEX. GEORGE A. WHEELER, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,700.



Claim.—1. A casing for a card-index device having a portion of the casing that normally supports the cards in upright position, provided with means whereby the cards can be tilted in the planes of their faces from such position.

2. A casing for a card-index device having a portion of the bottom that normally supports the card in upright position, formed with a fulcrum on which the cards can be tilted in the planes of their faces from such postion.

3. A casing for a card-index device having a portion of the bottom that normally supports the card in upright position, formed with a fulcrum on which the cards can be tilted in the planes of their faces from such position, one of the sides of the casing being inclined to engage the side edge of the cards when in such tilted position.

4. A casing for a card-index device having its bottom portion that supports the cards formed with two plane portions meeting at an angle constituting a ridge extending parallel with the sides of the casing.

5. A casing for a card-index device having a portion of the bottom that normally supports the cards in upright position, formed with a fulcrum located to one side of the middle of the bottom edge of the cards, on which the cards can be tilted in the planes of their faces from such upright position.

6. A casing for a card-index device having a portion of the bottom that normally supports the cards in upright position, formed with a fulcrum located to one side of the middle of the bottom edge of the cards on which the cards can be tilted in the planes of their faces from such upright position, and a locking-rod in the casing disposed in alinement with such fulcrum portion.

7. A casing for a card-index device having a portion of the base inclined downward to form a ridge upon which the cards can be tilted in the planes of their faces from their normal upright position.

8. A casing for a card-index device having a portion of the base inclined downward to form a ridge upon which the cards can be tilted in the planes of their faces from their normal upright position, the side of the casing adjacent such inclined portion of the bottom being disposed substantially at a right angle to such portion.

9. A casing for a card-index device having at the bottom an inclined portion extending along one side and forming a ridge with the base that is disposed to one side of the middle of the bottom edge of the card, whereby the cards can be tilted in the planes of their faces from their normal upright position, and when released from such positions will gravitate to their normal upright position.

10. A casing for a card-index device having a portion of the bottom that normally supports the cards in upright position, formed with a fulcrum on which the cards can be tilted to a position in which the side edge adjacent one end of each card will project a short distance beyond the succeeding card.

11. A casing for a card-index device having the bottom of the casing that normally supports the cards in upright position, inclined from its intermediate portions downwardly to each side edge, whereby the cards can be tilted to each side from their normal upright position.

12. In a card-index device, the combination of a casing having a portion of the bottom that normally supports the cards in upright position, formed with a fulcrum located to one side of the middle of the bottom edge of the card, on which the cards can be tilted from their upright position, a locking-rod located in alinement with such fulcrum, and cards having perforations disposed to engage such locking-rod.

13. The combination of a casing member having an aperture therein, a rod located in the aperture of the casing, a head secured to the end of the rod, and clamping means carried by said members arranged to be operated by the rotation of the head to grip opposite faces on the casing member.

14. The combination of a casing having an aperture therein, a rod located in said aperture, a head secured on the end of the rod, a clamping member carried by the rod, a clamping member connected with the head whereby the rotation of the head will cause the clamping members to grip opposite faces on the casing.

15. The combination of a casing member having an aperture therein, a rod extending through the aperture of the member, a head secured on the rod, a collar having a screw-threaded engagement with the head and rotatable on the rod, an abutment fast on the rod and arranged to engage an inner face on the casing, and a detent carried by the collar and arranged to engage the casing member to prevent rotation of the collar, whereby upon rotation of the head the collar will be advanced relative to the head and engage an outer face on the casing member and clamp the member between the collar and said abutment, and lock the rod.

16. The combination of a casing member having an aperture therein, a rod extending through such aperture, a head secured on the rod and provided with a threaded bore, a collar engaging the threaded bore of the head and freely rotatable on the rod, an abutment-pin secured to the rod and arranged to engage an inner face on said casing member, said aperture being oblong to permit the insertion of the rod and abutment-pin, and detents carried by said collar and arranged to engage the walls of said oblong aperture to prevent rotation of said collar, whereby upon rotation of the head the collar will be advanced to engage an outer face on the casing and clamp the member between it and said abutment-pin.

17. The combination of a casing member having an aperture therein, a rod located in said aperture, a head secured on the end of the rod, and provided with a threaded bore, a threaded collar rotatable on the rod and engaging the threaded bore of the head, an abutment-pin secured to the rod and arranged to engage an inner face on said casing member, said aperture being oblong to permit the insertion of the rod and abutment-pin, and detents projecting from the face of said collar and arranged to enter said oblong aperture and permit that face to engage the outer face of said member and also to prevent rotation of said collar, whereby upon rotation of the head the collar will be advanced and clamp the casing member between it and said abutment-pin.

18. The combination of a casing member having an oblong aperture therein, a rod located in said aperture, a head on the end of the rod, a stop-pin secured on the rod and adapted to pass through said oblong aperture in the casing member, and clamping means carried by the rod whereby the rotation of the rod to move the stop-pin from registering with the aperture to a position engaging the inner face of the casing member will cause the casing member to be clamped between such means and the stop-pin.

19. In a card-index device, a casing provided with a follower, the bottom of the casing having one or more upright members provided with ridges extending transverse to the bottom, the follower being provided with one or more ridge portions arranged to engage said ridge portions and support the follower in adjusted positions.

20. In a card-index device, a casing provided with a follower, the bottom of the casing having a pair of parallel upright members provided with ridges extending transverse to the bottom and projecting toward each other, the follower being provided with one or more pairs of oppositely-extending ridge portions arranged to engage said ridge portions and support the follower in adjusted positions.

21. In a card-index device, a casing having a channel extending longitudinally along the bottom, a corrugated strip located in each of the opposite side walls of the channel, and a follower provided with a plurality of oppositely-extending projections arranged to fit into such corrugations and support the follower in adjusted positions.

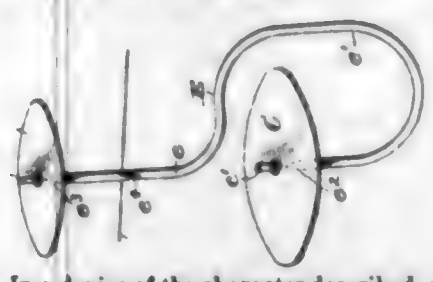
22. In a card-index, a casing having a channel-shaped member longitudinally disposed at its bottom, the opposite side walls of the member being corrugated substantially transverse to the bottom, and a follower provided with projections extending in opposite directions and arranged to engage with the corrugated portions of the channel member and support the follower in adjusted positions.

23. In a card-index, a casing provided with a channel-shaped

member longitudinally disposed at its bottom, the opposite side walls of the casing having corrugations extending substantially transverse to the bottom, the follower having an engaging member secured thereto, said member comprising an inverted-channel-shaped body having its edges bent laterally in opposite directions and provided with projections arranged to engage with the corrugated side walls of the said channel member and support the follower in adjusted positions.

24. In a card-index device, a casing provided with a follower, the casing having a pair of parallel upright members provided with ridges extending transverse to the bottom and projecting toward each other, the ridges also being inclined forward, the follower being provided with one or more pairs of oppositely-extending ridge portions arranged to engage said ridge portions and support the follower in adjusted positions.

814,818. SPINNING-TOP. WILLIAM WESTFIELD, Justin, Tex. Filed Sept. 26, 1904. Serial No. 226,032.



Claim.—1. In a device of the character described, a supporting-wire, a supporting device adapted to be secured thereto intermediate its ends, a spinning member carried by one end of said supporting device and the opposite end of said supporting device being provided with a balancing portion, said spinning member and balancing portion being arranged one above and the other below the supporting-wire.

2. In a device of the character described, a supporting wire or cord, a supporting device adapted to be secured thereto intermediate its ends, and a spinning member supported upon a portion of the supporting device above the wire, said supporting device being provided with a balancing portion below the supporting-wire.

3. In a device of the character described, a supporting-wire, a supporting device adapted to be secured thereto intermediate its ends, a spinning member carried by the upper end of said supporting device, and a balancing member carried by said supporting device below the supporting-wire, said balancing member embodying a spinning member.

4. In a device of the character described, a supporting wire or cord, a supporting device comprising a member pointed at its upper end and provided with a balancing portion at its lower end and with an upwardly-extending notch intermediate its ends adapted to engage the wire, and a spinning member adapted to be spun upon the pointed end of said member.

5. In a device of the character described, a supporting wire or cord, a supporting device comprising a member provided with an upwardly-extending notch intermediate its ends adapted to engage the wire, a spinning member carried by said supporting device, and a balancing member carried by said supporting device, said spinning member and balancing member being arranged one above and the other below the supporting-wire.

6. In a device of the character described, a swinging supporting device supported intermediate its ends, a spinning member carried by one end of said supporting device, and the opposite end of said supporting device being provided with a balancing member.

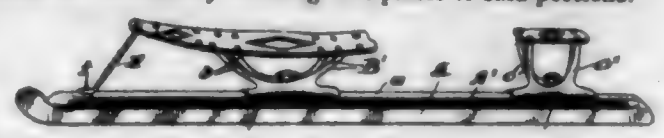
7. In a device of the character described, a supporting cord or wire, a supporting device adapted to be suspended from said wire and having its lower end bent upwardly to directly underlie the point of suspension, and a spinning member supported upon said lower end.

8. A supporting member for spinning-tops comprising a substantially straight upper portion and a C-shaped lower portion terminating in an upwardly-extending point directly underlying said upper straight portion.

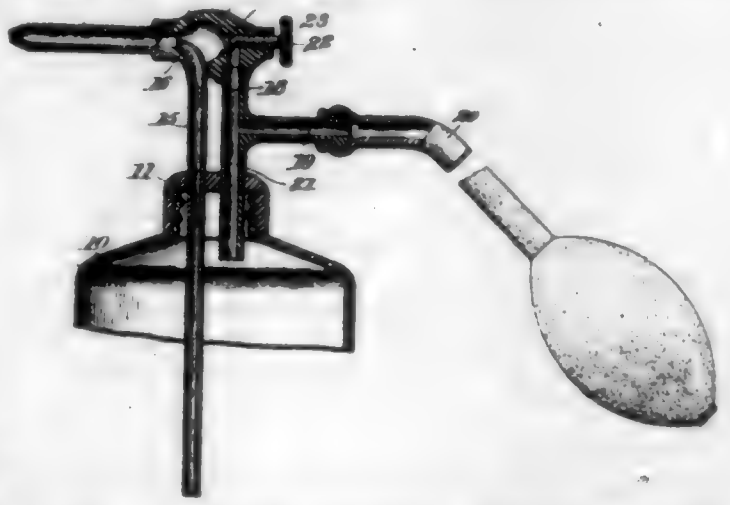
814,819. SKATE. SAMUEL A. WILLIS, Parry Sound, Canada. Filed Sept. 21, 1904. Serial No. 225,373.

Claim.—1. In a skate the combination with the blade, a solid rounded rib formed integral with the upper edge thereof, of the toe and heel plates having a concave bottom adapted to fit the rounded rib and means for detachably securing the said plates to the rib.

2. In a skate, the combination with the blade, a solid rounded rib formed integral with the upper edge of the same, said rib having enlarged portions, of the toe and heel plates having their bottoms concave so as to fit the rounded enlarged portions of the rib and means for detachably securing said plates to said portions.



814,820. ATOMIZER. WILLIAM H. WOOD, Cleveland, Ohio. Filed Mar. 28, 1905. Serial No. 252,231.



Claim.—1. An atomizer comprising a casing having a mixing-chamber and a transversely-arranged bore communicating with the latter, said casing being also provided with a vertical air-channel intersecting said bore, a threaded valve working in said bore, the forward end of said valve being extended transversely across the top of said air-channel, and a liquid-tube communicating with said chamber.

2. An atomizer comprising a casing having a mixing-chamber the rear wall of which is provided with a transversely-arranged bore communicating with said chamber, said wall being also provided with a vertical air-channel intersecting said bore near the forward end of the latter, a threaded valve working in said bore, the forward end of said valve being extended transversely across the top of said air-channel, and a liquid-tube communicating with said chamber.

3. An atomizer comprising a casing having a mixing-chamber the front wall of which is provided with a horizontally-arranged outlet-tube, the rear wall of said chamber being provided with a horizontal bore in line with said outlet-tube, and a vertical air-channel intersecting said bore, a threaded valve working in said bore, the forward end of said valve being extended transversely across the top of said air-channel, and a liquid-tube communicating with said chamber.

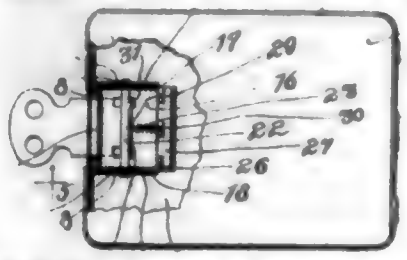
4. An atomizer comprising a casing provided with a forwardly-arranged mixing-chamber and a thickened rear wall, said chamber having an outlet-opening, said rear wall being provided with an air-channel communicating with said chamber, a threaded valve working in said wall and controlling said air-channel, a liquid-tube communicating with the bottom of said chamber, an air-tube communicating with said air-channel and provided with a branch pipe, and means for supplying compressed air through said branch pipe.

5. An atomizer comprising a casing provided with a forwardly-arranged mixing-chamber and a thickened rear wall, said wall being provided with an air-channel communicating with said chamber, a detachable outlet-pipe leading from said chamber, a liquid-tube detachably secured to said casing and projecting into said chamber, an air-tube detachably connected to said casing and leading to said air-channel, means for supplying compressed air to said air-tube, and means for varying the volume of air passing from said air-tube to said chamber.

814,821. COIN-RECEPTACLE. WILLIAM H. WOOLUMS, Chicago, Ill., assignor to Superior Bank Company, Cook county, Ill., a Corporation of Illinois. Filed Aug. 21, 1905. Serial No. 274,994.

Claim.—1. In a coin-receptacle or savings-bank, the combination with a body part having a slot through a wall thereof for the entrance of coins, of a cover hinged thereto, a detent disposed within the body part at each side of said entrance-slot, a locking-bar supported at the interior of the cover, a spring engaging between the

center of said locking-bar and a stationary part on the cover, the ends of said bar being adapted upon engagement of the cover with the body part to be engaged by the detents and to be thereafter held in locking engagement with the detents by means of said spring, and a key adapted for insertion through the entrance-opening for releasing said bar from the detents whereby said cover may be opened.



2. In a coin-receptacle or savings-bank, the combination with a body part having a slot in one wall thereof for the entrance of coins, of a cover hinged thereto, a detent-frame secured within the body part behind the entrance-opening, detents on said frame, a locking-frame secured within the cover and adapted to fit within the detent-frame upon closure of the cover, a locking-bar within said locking-frame, and a spring engaging an intermediary point of the locking-bar and said frame, the ends of said locking-bar being adapted for engagement in the detents upon closure of the cover and to be thereafter held in locking engagement by means of said spring, there being openings into said locking-frame near said locking-bar whereby said locking bar may be engaged by a key inserted through the entrance-opening and removed from locking engagement with the detents.

3. In a coin-receptacle or savings-bank, the combination with a body part having a slot through a wall thereof for the entrance of coins, of a cover hinged thereto, a detent-frame within the body part, detents on said frame, one at each side of the entrance-opening, a locking-frame in the cover of the receptacle, said locking-frame being adapted to engage within the detent-frame upon closure of the cover to form an entrance passage-way for coins entering through the slot, a locking-bar within the locking-frame, the ends of said bar extending outwardly from the sides of said locking-frame, and a spring engaging said locking-bar and said locking-frame, the ends of said locking-bar being moved into locking engagement with the detents upon closure of the cover and held in locking engagement by means of said spring, said locking-bar being adapted to be engaged by a key entering through said entrance-slot to be withdrawn from locking engagement with the detents to allow opening of the cover.

4. In a coin-receptacle or savings-bank, the combination with a body member stamped integral from sheet material and having a slot through a wall thereof, a cover hinged thereto, a U-shaped detent-frame stamped of sheet material and secured within the body part and extending rearwardly from the entrance-slot, detents provided in the side walls of said frame, one at each side of the entrance-slot, an inclosed locking-frame stamped integral of sheet material and secured within the cover, said locking-frame being adapted upon closure of the cover to fit within the detent-frame and to form therewith a passage-way toward the interior of the box from the entrance-slot, a locking-bar within the locking-frame, the ends of said locking-bar extending from the locking-frame, and a spring secured to the middle of the locking-bar and to the locking-frame, closure of the box causing the locking-bar ends to form locking engagement with the detents and to be held in such locking engagement by the action of said spring, there being openings through said locking-frame through which locking members of a key may enter to engage the locking-bar and to cause unlocking engagement thereof from the detents, said key entering through the entrance-opening and passage-way.

5. In a coin-receptacle or savings-bank, the combination with a body member stamped integral of sheet material and having an inlet-slot through one wall thereof, of a cover part hinged thereto and also stamped integral of sheet material, a locking-frame within the cover part near the inlet-opening, a U-shaped locking-frame stamped integral of sheet material and disposed within the cover behind the inlet-opening, detents on said frame, an inclosed locking-frame stamped entirely of sheet material and disposed within the cover part, said locking-frame being adapted to fit within the detent-frame upon closure of the cover to form a passage-way for the coins to the interior of the receptacle, said locking-frame having slots in its sides, a locking-bar within the locking-frame having its ends extending through said slots, and a spring engaging said locking-bar at an intermediary point and connected with the locking-frame, said locking-bar ends being adapted upon closure of the box to pass into locking engagement with the detent and to be held in locking engagement therewith by means of said spring, there being openings through the base-wall of the locking-frame below the locking-bar, and a key adapted for insertion through the entrance-opening or passage-way and having locking members for passing through the openings in said locking-frame for engagement with the locking-bar, actuation of the key causing the locking-bar to be removed from locking engagement with the detents whereby the receptacle may be opened.

6. In a coin-receptacle or savings-bank, the combination with a body part, of a cover part hinged thereto, said body part having a notch cut in the upper edge of one wall thereof to form an entrance-slot when the cover is closed, associated locking mechanism within the cover part and body part adapted to automatically lock the cover upon closure thereof, and a key adapted for insertion through said slot and into engagement with the locking mechanism to unlock said mechanism, said key serving also as a means for raising the cover after unlocking thereof.

7. In a coin-receptacle or a savings-bank, the combination with a body part, of a cover part hinged thereto, there being a slot through one side of the receptacle for the entrance of coins, lock mechanism at the interior of the cover part, said locking mechanism being disposed before said slot to lock the cover to the body part and adapted to be unlocked by a key inserted into said slot, moved upwardly and pulled outwardly.

8. In a coin-receptacle or savings-bank, the combination with a body part, having a slot through one wall for the entrance of coins, of a cover hinged thereto, a detent-frame secured within the body part behind the entrance-opening, detents extending from the side walls of the detent-frame, a lock-frame secured within the cover and adapted to fit within said detent-frame upon closure of the cover, a locking-bar within the locking-frame, the ends of the said locking-bar extending through the side walls of said locking-frame and adapted upon closure of the receptacle to engage the detents of the detent-frame to lock the receptacle.

9. In a coin-receptacle or savings-bank, the combination with a body part, having a slot through one wall for the entrance of coins, of a cover hinged thereto, a detent-frame secured within the body part behind the entrance-opening, detents extending from the side walls of the detent-frame, a lock-frame secured within the cover and adapted to fit within the detent-frame upon closure of the cover, a locking-bar extending through the side walls of said locking-frame and adapted upon closure of the receptacle to engage the detents of the detent-frame to lock the receptacle, said bar being yieldingly pivoted at a point between its ends.

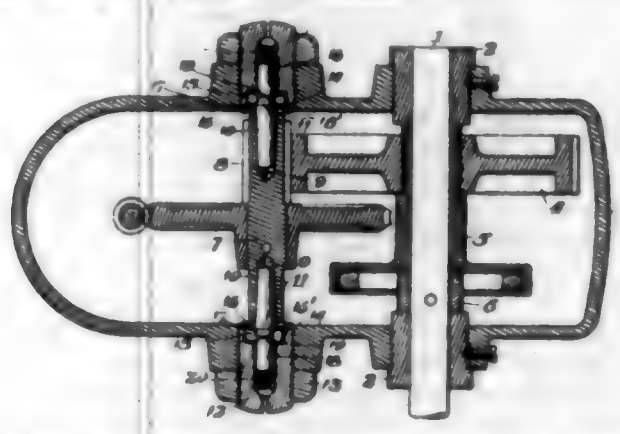
10. In a coin-receptacle or savings-bank, the combination with a body part, having a slot through one wall for the entrance of coins, of a cover hinged thereto, a detent-frame secured within the body part behind the entrance-opening, detents extending from the side walls of the detent-frame, a lock-frame secured within the cover and adapted to fit within said detent-frame upon closure of the cover, a locking-bar extending through the side walls of said locking-frame and adapted upon closure of the receptacle to engage the detents of the detent-frame to lock the receptacle, a spring pivoted to the center of the bar for retaining said bar in engagement with the detents and a key having actuating extensions, there being openings through the locking-frame in register with the bar for receiving the actuating extensions upon insertion of the key in the slot, withdrawal of the key causing said bar to be released from said detents against the action of said spring.

11. In a coin-receptacle or savings-bank, the combination with a body part, having a slot through one wall for the entrance of coins, of a cover hinged thereto, a detent-frame secured within the body part behind the entrance-opening, detents extending from the side walls of the detent-frame, a lock-frame secured within the cover and adapted to fit within said detent-frame upon closure of the cover, a locking-bar extending through the side walls of said locking-frame and adapted upon closure of the receptacle to engage the detents of the detent-frame to lock the receptacle, a spring pivoted to the center of the bar for retaining said bar in engagement with the detents and a key having actuating extensions, there being openings through the locking-frame in register with the bar for receiving the actuating extensions upon insertion of the key in the slot, withdrawal of the key causing said bar to be released from said detents against the action of said spring, said key after disengagement of the locking-bar from the detents serving also as a means for raising the cover.

814,822. JOURNAL-BEARING. SEVERIN C. ANKER-HOLTE, Riverside, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Sept. 27, 1905. Serial No. 280,272.

Claim.—1. In a journal-bearing, the combination of a shaft hav-

ing conical-shaped ends, adjustable hollow plugs secured to a fixed part of the mechanism in axial alinement and having counterbores at their inner ends adapted to form a race for balls inserted therein and forming bearings for the conical ends of the shaft, retaining means at one end of the counterbore portions adapted to hold said balls in contact with the end walls thereof, and spring-pressed bolts slidingly mounted within said hollow plugs and having hemispherical ends engaging with said balls in a manner to hold them against the side walls of the counterbore portions.



2. In a journal-bearing, the combination of a shaft having conical-shaped ends, adjustable hollow plugs secured to a fixed part of the mechanism in axial alinement and having counterbores at their inner ends adapted to form a race for balls inserted therein and forming bearings for the conical ends of the shaft, said counterbore portions having annular channels at their ends, and removable rings seated in said channels and adapted to hold said balls in contact with the end walls of the counterbores, and spring-pressed bolts slidingly mounted within said hollow plugs and having hemispherical ends engaging with said balls in a manner to hold them against the side walls of the counterbore portions.

3. In a journal-bearing, the combination of a shaft having conical-shaped ends, adjustable hollow plugs secured to a fixed part of the mechanism in axial alinement and having counterbores at their inner ends adapted to form a race for balls inserted therein and forming bearings for the conical ends of the shaft, said counterbore portions having annular channels at their ends, and removable split rings seated in said channels and adapted to hold said balls in contact with the end walls of the counterbore portions, and spring-pressed bolts slidingly mounted within said hollow plugs and having hemispherical ends engaging with said balls in a manner to hold them against the side walls of the counterbore portions.

4. In a journal-bearing, the combination of a shaft having conical-shaped ends, adjustable hollow plugs secured to a fixed part of the mechanism in axial alinement and having counterbores at their inner ends adapted to form a race for balls inserted therein and forming bearings for the conical ends of the shaft, said counterbore portions having annular channels at their ends, and removable split rings having radially-projecting tangs projecting beyond the periph eries thereof and engaging with said annular channels, said rings adapted to hold said balls in contact with the end walls of the counter bore portions, and spring-pressed bolts slidingly mounted within said hollow plugs and having hemispherical ends engaging with said balls in a manner to hold them against the side walls of the counterbore portions.

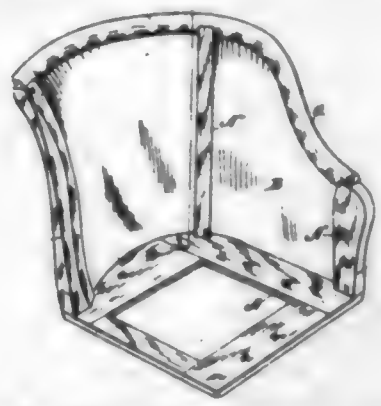
5. In a journal-bearing, the combination of a shaft having conical-shaped ends, adjustable hollow plugs secured to a fixed part of the mechanism in axial alinement and having counterbores at their inner ends adapted to form a race for balls inserted therein and forming bearings for the conical ends of the shaft, retaining annular rings at one end of the counterbore portions adapted to hold said balls in contact with the end walls thereof, spring-pressed bolts slidingly mounted within said hollow plugs and having hemispherical ends engaging with said balls in a manner to hold them against the side walls of the counterbore portions, said plugs being screw-threaded upon their exterior longitudinal surfaces and having jam-nuts adjustable thereon.

6. A journal-bearing comprising, in combination, an adjustable hollow plug having a counterbore at one end adapted to form a race for balls inserted therein, said counterbore portion having an annular channel at the outer end thereof, a removable ring inserted in said channel and adapted to hold said balls in contact with the end wall of the counterbore, and a spring-pressed bolt slidingly mounted within said hollow plug and having a hemispherical end engaging with said balls in a manner to hold them against the side wall of the counterbore.

7. A journal-bearing comprising, in combination, an adjustable hollow plug screw-threaded upon its exterior longitudinal surface having a jam-nut engaging therewith, and having a counterbore at one end thereof, balls inserted in said counterbore, said counterbore having an annular channel at the end outside said balls, a removable ring inserted in said channel and adapted to hold said balls in contact with the end wall of the counterbore, and a spring-pressed bolt slidingly mounted within said hollow plug and having a hemispherical end engaging with said balls in a manner to hold them against the side wall of the counterbore.

8. A journal-bearing comprising, in combination, an adjustable hollow plug screw-threaded upon its exterior longitudinal surface having a jam-nut engaging therewith, and having a counterbore at one end thereof, balls inserted in said counterbores, said counterbores having an annular channel at the end outside said balls, a removable ring inserted in said channel and adapted to hold said balls in contact with the end wall of the counterbore, a bolt slidably mounted in said hollow plug and having a hemispherical head engaging with said balls, and a coiled spring operative between the opposite end of said bolt and the end wall of the hollow plug to hold the bolt against said balls.

814,823. VEHICLE-BODY. HARRY E. BRADNER, Lansing, Mich. Filed Aug. 7, 1905. Serial No. 273,170.

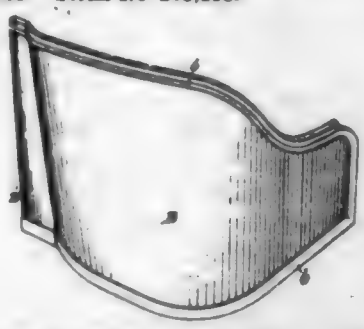


Claim.—1. A vehicle-body, comprising a suitable frame; a panel therefor of hard fiber, suitably conformed and secured to said frame by strips arranged at its edges.

2. A vehicle-body, comprising a suitable frame; and a panel of irregular curvature of hard fiber suitably conformed and secured to said frame.

3. In a vehicle-body, a panel of irregular curvature of hard fiber, suitably conformed.

814,824. VEHICLE-BODY. HARRY E. BRADNER, Lansing, Mich. Filed Aug. 7, 1905. Serial No. 273,180.

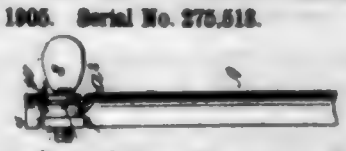


Claim.—1. A vehicle-body, comprising a suitable frame; a panel built up of an inner body portion of wood and an outer portion of veneer of hard fiber suitably conformed and secured thereto.

2. A vehicle-body, comprising a suitable frame; a panel made up of an inner body portion of layers of wood, and an outer portion or veneer of hard fiber suitably conformed and secured thereto.

3. In a vehicle-body, a panel comprising an inner body portion, or shell, and a veneer of hard fiber conformed and secured thereto.

814,825. BATTERY-ZINC. HORATIO J. BREWER, New York, N. Y. Filed Aug. 24, 1905. Serial No. 275,518.



Claim.—1. An electrode for electrogalvanic batteries consisting of a cylindrical rod of zinc formed with an external flat surface

for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, the rod being also formed with a transverse hole extending through said contact-surface, and with a transverse shoulder adapted to engage and support a flat side of a screw-nut, and a binding-screw engaging said transverse hole and arranged to secure a terminal wire against said contact-surface, for the purpose described.

2. An electrode for electrogalvanic batteries consisting of a cylindrical rod of zinc formed with a flat portion affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, the rod being also formed with a transverse hole extending through said contact-surface, and with a transverse shoulder adapted to engage and support a flat side of a screw-nut, a binding-screw engaging said transverse hole and arranged to secure a terminal wire against said contact-surface, and a nut engaging said binding-screw, said nut being formed with a flat side for engagement with said lateral shoulder on the cylindrical zinc, for the purpose described.

3. An electrode for electrogalvanic batteries consisting of a cylindrical rod of zinc formed with an external flat portion between two cylindrical portions of the rod, said flat portion affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, the rod being also formed with a transverse hole extending through said contact-surface, and with a transverse shoulder adapted to engage and support a screw-nut, and a binding-screw engaging said transverse hole and arranged to secure a terminal wire against said contact-surface, for the purpose described.

4. An electrode for electrogalvanic batteries consisting of a cylindrical rod of zinc formed with an external flat portion affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, said flat portion forming lateral projections upon the rod for the support of the rod upon the battery-cover, the rod being also formed with a transverse hole extending through said contact-surface, and a binding-screw engaging said transverse hole and arranged to secure a terminal wire against said contact-surface, for the purpose described.

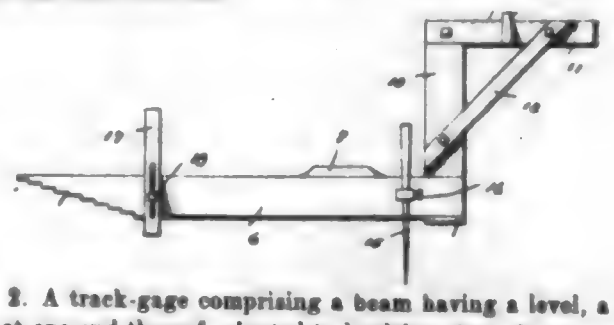
5. An electrode for electrogalvanic batteries consisting of a cylindrical rod of zinc formed with an external flat portion between two cylindrical portions of the rod, said flat portion affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, said flat portion also having lateral projections upon the rod for the support of the rod upon the battery-cover, the rod being also formed with a transverse hole extending through said contact-surface, and a binding-screw engaging said transverse hole and arranged to secure a terminal wire against said contact-surface for the purpose described.

6. An electrode for electrogalvanic batteries consisting of a single rod of zinc, formed with an external flat portion affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, said flat portion also having lateral projections upon the rod for the support of the rod upon the battery-cover, the rod being also formed with a transverse hole extending through said contact-surface and with a transverse shoulder for engagement with a screw-nut, and a binding-screw passing through said transverse hole and engaging a nut upon the other side of the rod, together with said nut, the said binding-screw and said nut being arranged to secure a terminal wire against the contact-surface for the purpose described.

7. An electrode for electrogalvanic batteries consisting of a single rod of zinc formed with an external flat portion between two cylindrical portions thereof affording a surface for contact with a terminal wire, said contact-surface extending longitudinally with relation to the axis of the rod, said flat portion also having lateral projections upon the rod for the support of the rod upon the battery-cover, the rod being also formed with a transverse hole extending through said contact-surface and with a transverse shoulder for engagement with a screw-nut, and a binding-screw passing through said transverse hole and engaging a nut upon the other side of the rod, together with said nut, the said binding-screw and said nut being arranged to secure a terminal wire against the contact-surface, for the purpose described.

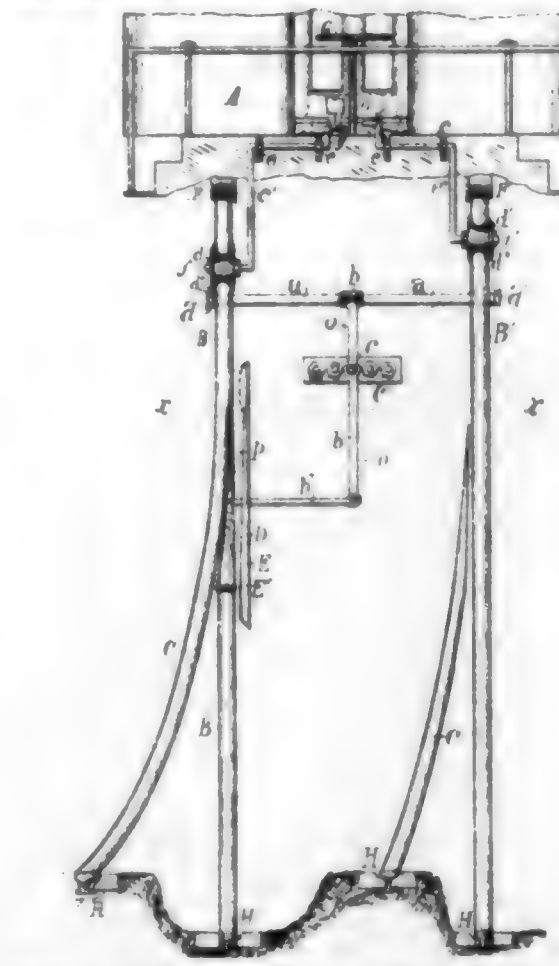
814,826. **RAILWAY-TRACK GAGE.** EDWARD A. BROWN and ALLEN WILLIAMS, Carbondale, Ill. Filed May 11, 1905. Serial No. 260,004.

Claim.—1. A track-gage comprising a beam provided with a level, and having steps at one end, and an upright perpendicular thereto at the other end, said upright having at its foot a laterally-extending piece adapted to lie upon and along the rail, and an arm extending perpendicularly from the top of the upright and having a scale and index thereon.



2. A track-gage comprising a beam having a level, a pointed rod at one end thereof adapted to be driven into the ground or tie and having an adjustable connection with the beam to support the same in raised position thereon, and a vertically-adjustable foot at the other end of the beam, adapted to rest on a rail.

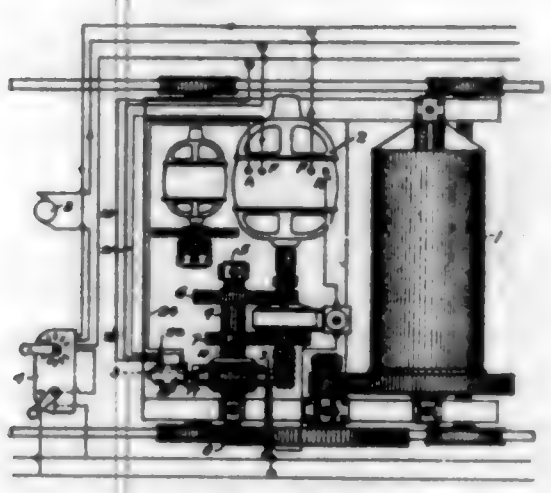
814,827. **STREET-RAILWAY SWITCH.** EWING BROWNFIELD, Oklahoma, Okla., assignor of one-half to Theodore L. Klaffke, Oklahoma, Okla. Filed May 29, 1905. Serial No. 262,799.



Claim.—1. The combination in a street-railway, of a switching device consisting of an operating cross-bar *a* extending across the track beneath the track-rails and having upon each of its ends upwardly-extending lugs, *a'* and *a''*, one of which normally rests against the outer side of the track portion of the rail, while the opposite similar lug is a little space distant from the same relative position of the other track-rail, the said operating cross-bar being adapted to a longitudinal movement and having its ends resting on the antifriction-rollers *h h*, provided with the journal rests or supports *h' h'*, secured to the cross-tie I'; the operating-lever *b*, pivoted upon the stud *c*, of the pivot-plate *c'*, secured to the cross-tie I''; the said operating-lever, *b*, having one of its ends attached to the said operating cross bar *a*, and having its opposite end attached to the inner end of the deflecting-bar *b''*, having its outer end provided with an upwardly-extending stud or pin adapted to its seat in the switch-point E, substantially as described.

2. In the combination of a street-railway having a switching device and a street-car adapted to operate in conjunction therewith, the switch-throwing device consisting of the switch-throwing wheels *d* and *d'*, having grooved double-flanged faces adapted to engage the track-rail, and having their outer flanges beveled to nearly sharp edges; and rotating upon axles attached to the street-car, and being provided with means for maintaining the said wheels normally above and free from the track-rails; also means being provided whereby the motorman operates the said switch-throwing wheels, as described and for the purposes set forth.

814,828. **SAFETY LOWERING DEVICE.** VICTOR B. BROWNING and EARL H. BROWNING, Nottingham, Ohio. Filed May 10, 1904. Serial No. 207,343.



Claim.—1. In hoisting apparatus, a driven member, a motor for turning said member, and gearing connecting said motor and member, a safety lowering device in said gearing, said device having a solenoid that is in series with the motor, and means for reversing the direction of current through said solenoid and motor.

2. In hoisting apparatus, a driven member, a motor for driving said member, and gearing connecting said motor and member, a safety lowering device in said gearing, said device having clamping-disks and ratchet-wheels, and a pawl adapted to engage said ratchet-wheels, a solenoid adapted to control said pawl, connections placing said solenoid in series with the said motor, and means for reversing the current through the said solenoid and motor, for the purpose specified.

3. In hoisting apparatus, a motor, a driven member, and gearing connecting said motor and member, a safety lowering device interposed in said gearing, said device having clamping-disks and ratchet-rings, and a pawl for engaging said rings, a plunger connected with said pawl, and a pair of solenoids surrounding said plunger, one of said solenoids being in series with the motor-armature, and the other solenoid being in series with the motor-fields, and means for reversing the direction of the current through one of the solenoids.

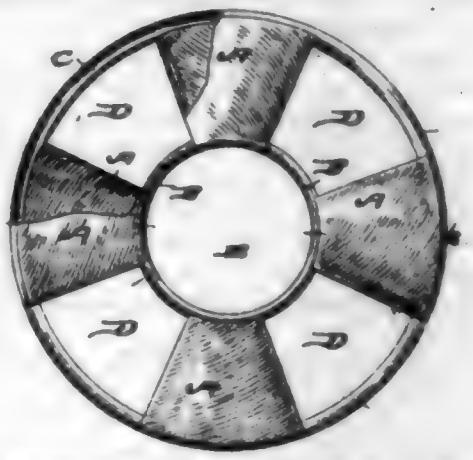
4. In hoisting apparatus, a motor, a driven member, gearing connecting the motor and member, and a safety lowering device interposed in said gearing, said device having clamping-disks and ratchet-rings and a pawl for engaging with said rings, said pawl being adapted to normally engage the rings, a plunger connected with said pawl, and a pair of solenoids surrounding said plunger, one of said solenoids being in series with the motor-armature, and the other solenoid in series with the field-coils of the motor, and means for reversing the current through the fields, whereby when the motor is turned in a reverse direction, the currents in the solenoids will flow in opposite directions and will thus neutralize their effect upon the plunger so that the pawl can engage with the ratchet-rings.

5. In hoisting apparatus, a motor, a driven member, gearing connecting said motor and member, a safety lowering device interposed in said gearing, said device having clamping-disks and ratchet-rings and a pawl for engaging said rings, a plunger connected with said pawl, and a pair of solenoids surrounding the plunger, one of said solenoids being in series with the motor-armature and the other solenoid in series with the motor-fields, a metallic shell surrounding the said solenoids, and means for reversing the current through the armature-fields and one of the solenoids, for the purpose specified.

6. In hoisting apparatus, a motor, a driven member, gearing connecting said motor and said member, a safety lowering device interposed in said gearing, said device having clamping-disks and ratchet-rings and a pawl engaging said rings, and means for holding said pawl out of engagement with said rings while the motor is turned in one direction, and for permitting the pawl to engage the rings while the motor is turned in the reverse direction.

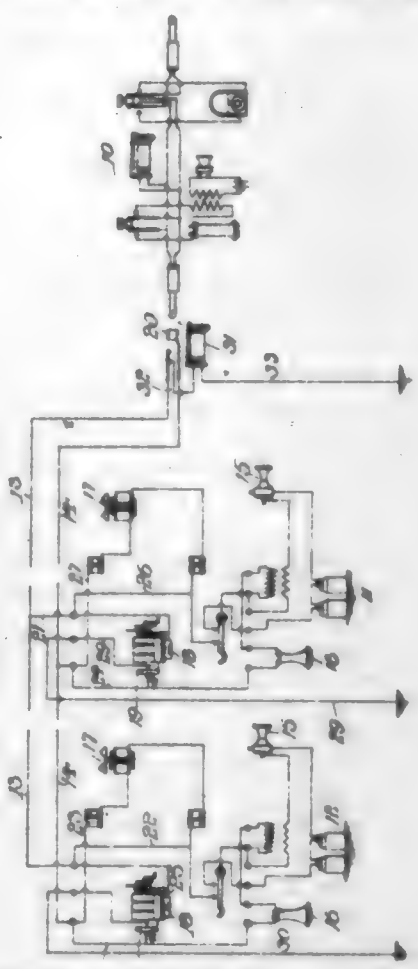
7. In hoisting apparatus, a motor, a driven member, gearing connecting said motor and said member, a safety lowering device interposed in said gearing, said device having clamping-disks and ratchet-rings and a pawl for engaging said rings, said pawl being adapted to engage the rings when the motor is stopped or is turning in one direction, and means for holding said pawl out of engagement while the motor is turned in the opposite direction.

814,829. **AIR-CUSHION.** HARRIET A. CARL, West Fulton, N. Y. Filed May 2, 1904. Serial No. 206,001.



Claim.—A cushion comprising a central ring, a plurality of inflatable bags connected thereto, and an inflating-tube connecting the outer ends of said bags.

814,830. **TELEPHONE SYSTEM.** LOUIE W. CARROLL, Anamosa, Iowa, assignor to The Kellogg Switchboard & Supply Company, Chicago, Ill. Filed Mar. 24, 1903. Serial No. 149,265.



Claim.—1. In a telephone system, in combination, a central or exchange station, a metallic circuit leading therefrom and being normally open at said station, a plurality of telephones bridged into the circuit, each telephone having an annunciator and a signaling-generator, a normally open grounded connection for each signaling-generator, and an annunciator at the central or exchange station located in a grounded connection of one side of the metallic circuit.

2. In a telephone system, in combination, a central or exchange station, a metallic circuit leading therefrom and being normally open at said station, a plurality of telephones bridged into the circuit, each telephone having an annunciator and a signaling-generator, a grounded connection for each signaling-generator, a switch connecting the return side of the generator alternately with the grounded connection and with the metallic circuit, and an annunciator at the central or exchange station located in a grounded connection of one side of the metallic circuit.

3. In a telephone system, in combination, a central station, a plurality of substations, a metallic circuit normally closed between substations and normally open at the central station, an annunciator at the central station, a grounded connection from one branch of the metallic circuit through the annunciator, and means for grounding

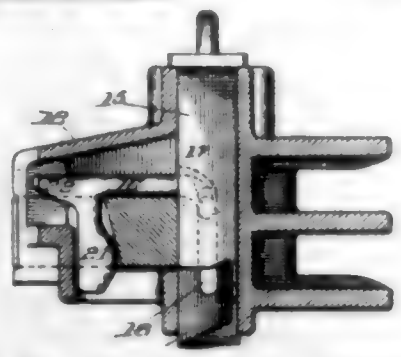
the circuit at each substation independently of the telephone instrument.

4. In a telephone system, in combination, a central station and a plurality of substations, a metallic circuit connecting all of such stations, a grounded branch of the circuit at the central station containing an annunciator, a dynamo signaling device in the circuit, and means for grounding one terminal of the dynamo.

5. In a telephone system, in combination, a central station, a metallic circuit normally open at the central station, a plurality of substations on the circuit, a grounded branch of the circuit at the central station, an annunciator in such branch, a signaling device normally in the metallic circuit at each substation, and means independent of the telephone instrument for grounding one terminal of the signaling device.

6. In a telephone system, in combination, a central station, a metallic circuit normally open at the central station, a normally closed ground for one branch of such circuit at the central station, a plurality of substations each bridged into the metallic circuit, a signaling device in the local circuit of each substation, and means in connection with each signaling device for grounding the terminal thereof which is not connected with the normally grounded branch of the metallic circuit.

814,831. CAR-COUPLING. CHARLES A. CARSCADIN, Chicago, Ill., assignor of one-half to George A. Woodman, Chicago, Ill. Filed Apr. 7, 1905. Serial No. 254,276.



Claim.—1. In a car-coupling, the combination of a head, a knuckle pivoted to the head and provided with a tailpiece, a pin for locking the knuckle in closed position and provided with a longitudinal slot, and a kicker loosely arranged within the head, said kicker having its toe arranged in said slot and its heel arranged to engage the tailpiece.

2. In a car-coupling, the combination of a head, a knuckle pivoted to the head and provided with a tailpiece, a pin for locking the knuckle in closed position and provided with a longitudinal slot, and a kicker loosely arranged within the head, said kicker having a toe arranged in the slot in said pin, a heel arranged to engage the tailpiece and a guide operating in a pocket in the head.

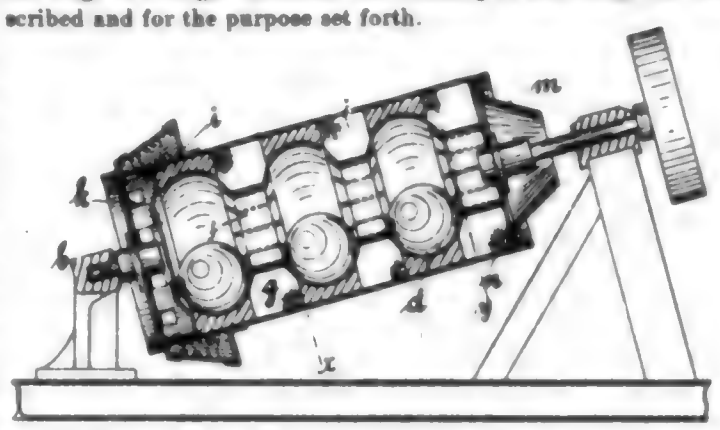
3. In a car-coupling, the combination of a head, a knuckle pivoted to the head and provided with a tailpiece, a pin for locking the knuckle in closed position, a kicker operated by the pin for throwing the knuckle into open position, said pin having an elongated longitudinal slot, opening on two faces of the pin, said kicker having an angularly-bent toe to operate in said slot.

4. In a car-coupling, the combination of a head, a knuckle pivoted to the head and provided with a tailpiece, a pin for locking the knuckle in closed position and provided with a longitudinal slot opening on two faces of the pin, and a kicker loosely arranged within the head, said kicker having an angularly-bent toe to operate in said slot and a heel arranged to engage the tailpiece and a guide operating in a pocket in the head.

5. In a car-coupling, the combination of a head, a knuckle pivoted to the head and provided with a tailpiece, a pin for locking the knuckle in closed position and provided with an elongated angular longitudinal slot, and a kicker loosely arranged within the head, said kicker having an angularly-bent toe to operate in the angular slot in said pin, an enlarged heel arranged to engage the tailpiece and a rearwardly-extending guide operating in a pocket in the head.

814,832. CRUSHING-MILL. GOTTHARD COMMICHAU, Magdeburg, Germany. Filed June 17, 1905. Serial No. 265,651.

Claim.—1. In a crushing-mill the combination of an inclined cylinder, a series of inside trough-shaped rings in the interior of same, broad cells formed by radially-directed walls between the said rings, short inner cylinders concentrical to the outer cylinder, joining the rear edges of the walls of the cells and forming openings in the same backward and forward, balls with respect to the breadth of the rings of a larger diameter, one running in each ring, all as described and for the purpose set forth.



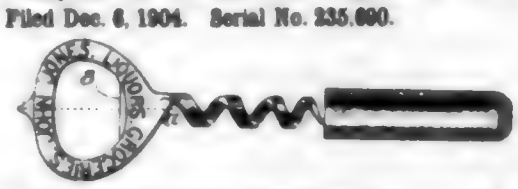
2. In a crushing-mill the combination of an inclined cylinder, a series of inside trough-shaped rings in the interior of same, broad cells formed by radially-directed walls between the said rings, short inner cylinders concentrical to the outer cylinder, joining the rear edges of the walls of the cells and forming openings in the same backward and forward, balls of a diameter larger with respect to the breadth of said rings, one running in each ring, a hopper on the upper front wall having inlets, outlets round the lower end of the cylinder, a conical screen concentrical with respect to the cylinder and flaring from its lower to its higher end, substantially as described and shown.

814,833. HAT-PIN. ELISABETH S. CONDRA, Corona, Cal. Filed Aug. 22, 1904. Serial No. 221,630.



Claim.—A hat-pin comprising a metal rod having one end sharpened to form a tip or point, a head at the other end, the rod being provided with a hat-coil and a hair-coil, the hat-coil consisting of but extremely few turns and being located very close to the tip with its axis in line with the rod, the hair-coil consisting of many turns located midway between the head and the hat-coils and the axis of the hair-coils being in line with the rod.

814,834. CORKSCREW. JOSEPH D. COUGHLIN, Boston, Mass., assignor of fifty-one one-hundredths to Benjamin W. O'Neil, Boston, Mass. Filed Dec. 6, 1904. Serial No. 235,690.



Claim.—1. A blank from which to make a corkscrew, said blank being stamped from sheet metal and presenting a head portion and a tapered tail portion standing at an angle to the central line of the head portion, whereby the screw portion of the corkscrew may be formed by coiling the tail about the center line of the head.

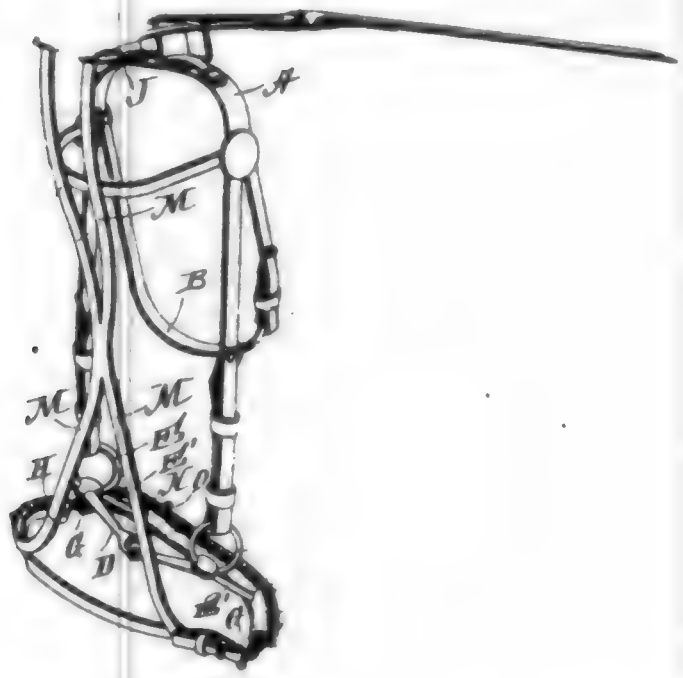
2. A corkscrew made from sheet metal and presenting a head portion and a flat-sided tail portion of uniform thickness but tapering in width coiled about the center line of the head as an axis to form a corkscrew portion.

814,835. CHECKING SYSTEM FOR HARNESS. JOHN CURTAIN, Elkfalls, Kans., assignor of one-half to Clarence Curtain, Circleville, Ohio. Filed Sept. 6, 1905. Serial No. 277,192.

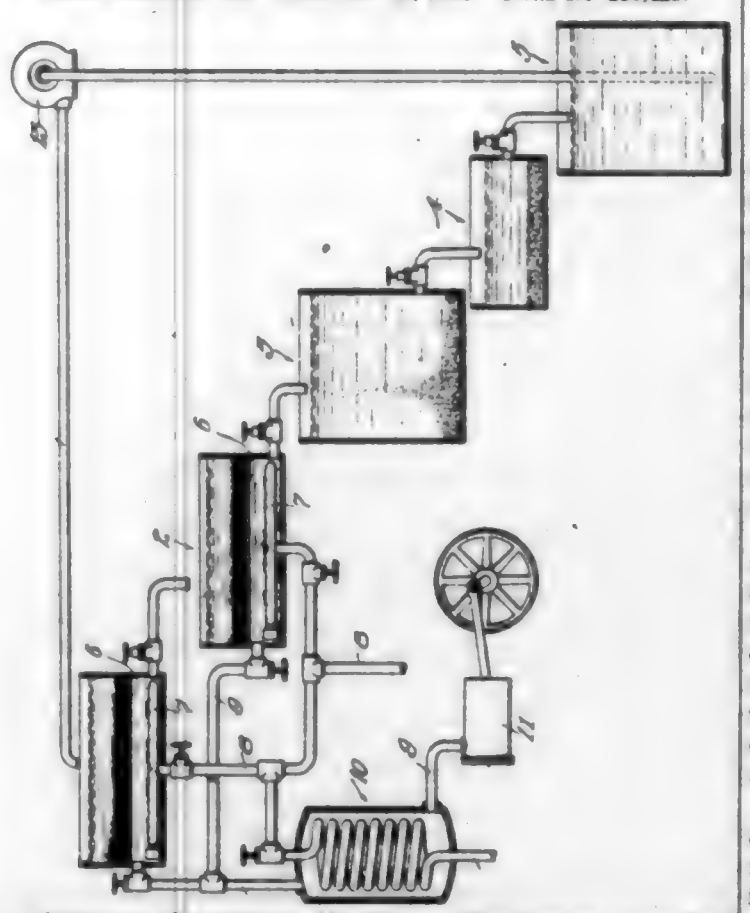
Claim.—1. A checking apparatus for harnesses comprising, in combination with a bit and bridle, a yielding member, connections between the same and said bit for holding said member in place, an overdraw check-strap connected to said member, loop-plates fastened to the crown-strap of the bridle, the rear ends of said plates being bent at right angles and having apertures therein, the forward ends projecting from the forward edge of the crown-strap and having apertures to receive the check-strap, as set forth.

2. A checking apparatus for harnesses comprising, in combination with a bit and bridle, springs, eyes to which the eyes of said springs are connected, an overdraw check-strap having ends secured to said eyes, means for holding said check-straps from contact with the face and head of an animal, a covering for said springs, said covering for the springs having apertures to receive fingers which project from the rings of the bit, and cross-pieces fastened to said fingers to retain the latter in the apertures of said covering, as set forth.

814,835.



814,836. PROCESS OF COPPER SEPARATION. ALEXANDER ELLIOTT, Littlerock, Cal. Filed Dec. 19, 1904. Serial No. 237,423.



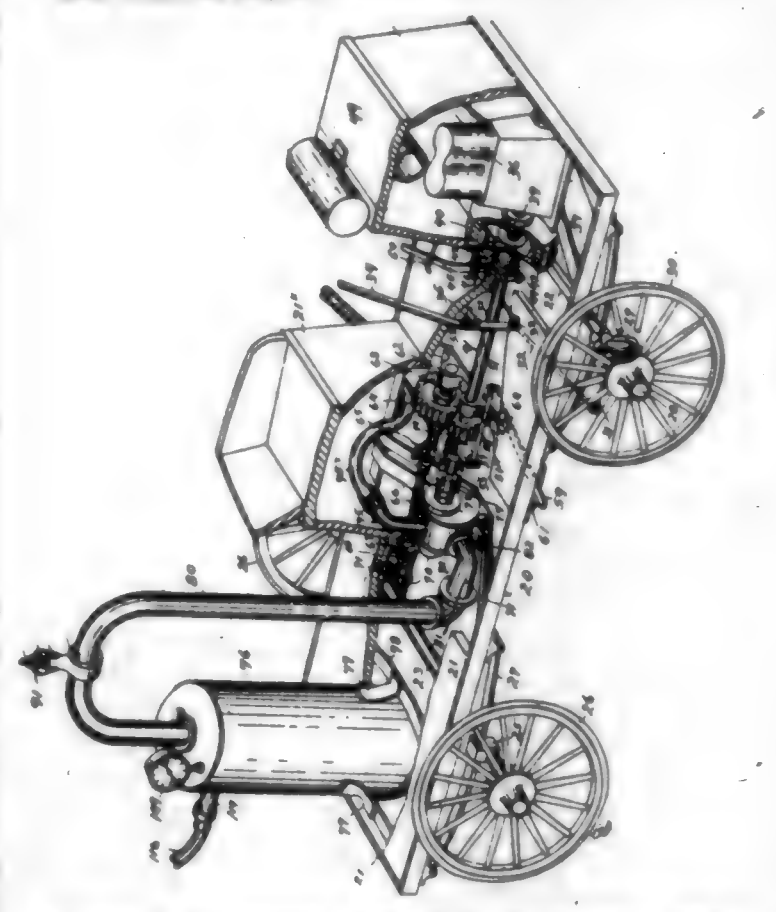
Claim.—1. The process of leaching oxidized copper ores which consists in submitting the ore to the action of a non-acid solution of ferrous sulfate and passing air through the solution during the operation of leaching.

2. The process of leaching oxidized copper ores which consists in submitting the ore to the action of a hot non-acid solution of ferrous sulfate and passing air through the solution during the operation of leaching.

3. The process of separating copper from oxidized ores which consists in leaching the ore with a hot non-acid solution of ferrous sulfate, passing air through the solution during the operation of leaching, separating the solution from the residue, and precipitating the copper from the solution by means of iron, thereby regenerating the ferrous sulfate for a repetition of the process.

4. The process of separating copper from ores containing basic gangue, which consists in leaching the ore with a hot non-acid solution of ferrous sulfate, passing air through the solution during the operation of leaching, separating the solution from the residue, precipitating the copper from the solution by means of iron and utilizing the resulting solution of ferrous sulfate for a repetition of the process.

814,837. PNEUMATIC DUST REMOVING AND COLLECTING APPARATUS. EPHRAIM H. PRESTON, Kansas City, Mo. Filed Nov. 4, 1904. Serial No. 231,948.



Claim.—1. In a pneumatic, dust-collecting apparatus, the combination with a vacuum-tank and conductors for the dust leading to the tank, of inclined, dust-deflecting plates within said tank, an air-suction apparatus connected with the tank, and a rotary separating-fan within the tank, energized by the air entering and passing through the tank.

2. In a pneumatic, dust-collecting apparatus, the combination with a vacuum-tank for the dust, and with a conductor for the dust leading to the tank, of dust-deflecting plates within said tank, an air-suction apparatus connected with the tank, a rotary fan within the tank actuated by the air entering and passing through the tank, and means between the suction apparatus and the entrance to the tank self-acting to regulate the exhaust from the tank.

3. In a pneumatic dust-collecting apparatus, the combination with a vacuum-tank for the dust and with a conducting-pipe for the dust leading within the tank, of a suction-pipe leading within the tank and terminating in a downwardly-extended, outwardly-flaring end, an air-suction apparatus connected with the suction-pipe, and means in said pipe for regulating the exhaust in the tank, dust-deflecting devices within the tank, and a rotary fan intermediate the outwardly-flaring, downwardly-extended end of the suction-pipe and the dust-deflecting devices.

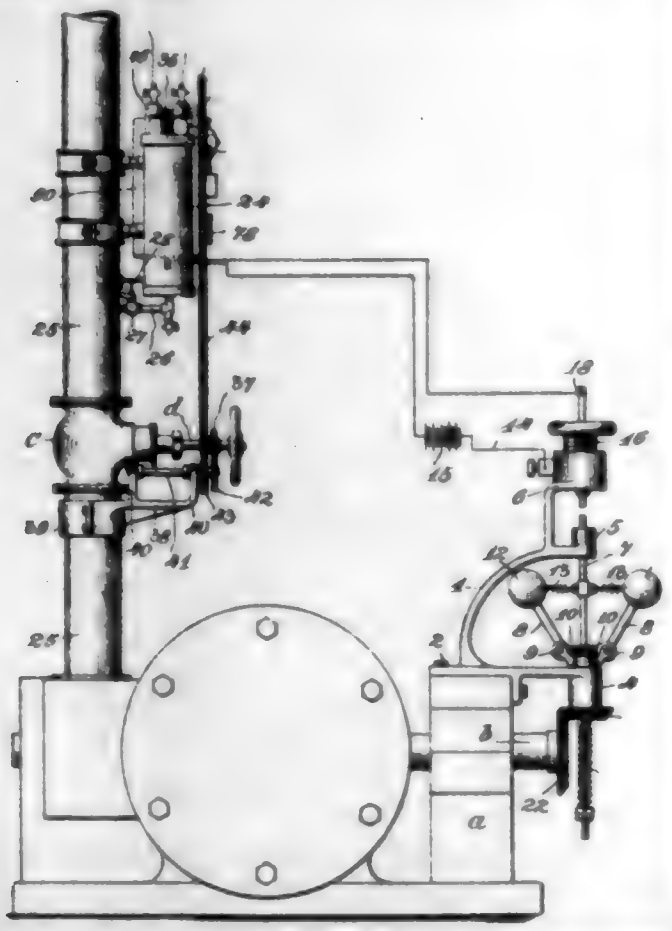
4. The combination with a vacuum-tank for collecting dust, &c., and with a conductor leading to the tank of a suction-pipe connected with the tank and a suction apparatus, a discharge-pipe leading from the suction apparatus, and a valved receptacle connected with the suction-pipe.

814,838. STOP MECHANISM FOR STEAM-ENGINES. JOSEPH E. J. GOODLETT, Memphis, Tenn. Filed Apr. 27, 1905. Serial No. 257,650.

Claim.—1. In combination with a steam-operated mechanism to close the throttle-valve of a steam-engine, a valve to admit steam to said throttle-valve-closing mechanism, a spring to open said valve, a locking-bolt for said valve, a trigger to hold said bolt in locking position, and means to disengage said trigger from said bolt.

2. In combination with a steam-operated mechanism to close the throttle-valve of a steam-engine, a valve to admit steam to said throttle-valve-closing mechanism, a spring to open said valve, a locking-bolt for said valve, a trigger to hold said bolt in locking position, a hammer to actuate said trigger, a detent to hold the hammer in operative position and having an armature, an electromagnet to attract said armature, and a centrifugally-operated circuit-closer for the circuit in which the electromagnet is included, substantially as described.

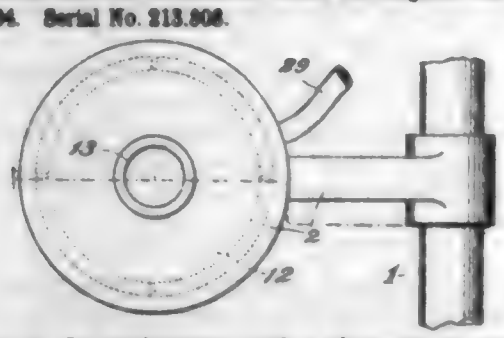
3. A steam-actuated throttle-valve closer for a steam-engine, comprising a cylinder, means to admit steam thereto, a piston in the cylinder, a rack-rod operated by the piston, a gear engaged by the rack-rod, and means to convey power from said gear to the throttle-valve to close the latter.



4. A steam-actuated throttle-valve closer for a steam-engine, comprising a cylinder, means to admit steam thereto, a piston in the cylinder, a rack-rod operated by the piston, a gear engaged by the rack-rod, means to convey power from said gear to the throttle-valve to close the latter, and means to cushion the piston at the end of its stroke.

5. A steam-actuated throttle-valve closer for a steam-engine, comprising a cylinder, means to admit steam thereto, a piston in the cylinder, a rack-rod operated by the piston, a gear engaged by the rack-rod, means to convey power from said gear to the throttle-valve to close the latter, and pneumatic means to cushion the piston at the end of its stroke.

814,839. SOUND REPRODUCING AND MAGNIFYING MEANS. Jesse L. Gray, Santa Ana, Cal., assignor of one-half to Percy F. Rice, Santa Ana, Cal., and William H. Faust, Los Angeles, Cal. Filed June 23, 1904. Serial No. 213,808.



Claim.—1. In combination with a phonograph-reproducer, an annular valve controlled thereby to move in response to the movements of the reproducer, a chamber having a supply connection for an elastic fluid and provided with a bearing within which said annular valve slides, and a seat for said annular valve, the annular valve having a seat-opposing portion of substantially the same diameter as the part that slides in the bearing.

2. In combination with a phonograph-reproducer, an annular valve controlled thereby to move in response to the movements of the reproducer, a chamber having a supply connection for an elastic fluid and provided with a bearing within which said annular valve slides, and a seat for said annular valve, said annular valve having a flared upper end terminating in an annular valve-lip of the same diameter as the bearing for the valve.

3. In combination with a phonograph-reproducer, an annular valve controlled thereby to move in response to the movement of the reproducer, a chamber having a supply connection for elastic fluid and provided with a bearing wherein said valve slides, and a flat seat for the valve extending in a plane transversely to the movement of the valve.

4. In combination, a chamber having a fluid-pressure supply and outlet valve, a record-carrier, a reproducer, a movable support for the reproducer operatively engaging the valve, means for operating on the movable support to press the reproducer toward the record-carrier, and adjustable means connected to the valve to adjust its position independently of the reproducer.

5. In combination with a phonographic reproducer, a valve-chamber and a valve working therein, and operatively connected to the reproducer, means for passing fluid through said chamber and valve, a movable support for the reproducer, means to control the operating pressure of the reproducer and adjustable resilient means connected to the valve to adjust its position independently of the position and pressure of the reproducer.

6. In combination, a carrier, a lever pivoted thereto and provided with pressure means, an arm pivoted to said lever and carrying a reproducer, a valve-chamber, a valve working in said chamber and operatively engaging the reproducer-carrying arm, and adjustable resilient means connected to the valve to adjust the same independently of the position of the reproducer and of the pressure exerted thereon by the aforesaid pressure means.

7. In combination with a record-carrier, a pivoted reproducer-carrier, movable bodily with its attached parts to and from the record-carrier to bring it into and out of operative position, a lever pivoted to the reproducer-carrier and having pressure means, an arm pivoted to said lever and carrying a reproducer, a valve-chamber carried by the reproducer-carrier, a valve working in said chamber and operatively engaging the reproducer-arm, a lever pivoted to the reproducer-carrier and having a resilient connection with said valve, means for adjusting the last-named lever and means for passing fluid through said valve-chamber under control of said valve.

8. In a sound-reproducing apparatus, in combination, a member movable in accordance with sound undulations, a carrier movable toward and from said member, a valve-chamber on said carrier, a valve working within said chamber and operatively connected to said member, means for passing fluid through said chamber under control of said valve, an independent means for adjustment of the carrier and of the position of the valve, each of said adjusting means comprising a part for yielding by supporting the parts adjusted thereby.

9. In a sound-reproducing apparatus, in combination, a member movable in accordance with sound undulations, a carrier movable toward and from said member, a valve-chamber on said carrier, a valve working within said chamber and operatively connected to said member, means for passing fluid through said chamber under control of said valve, the movement of the fluid being transverse to the movement of the valve, and the parts of the valve exposed to pressure by said fluid, being balanced relatively to the direction of movement of the valve.

10. In a sound-reproducing apparatus, in combination, a member movable in accordance with sound undulations, a carrier movable toward and from said member, a valve-chamber on said carrier, a valve working within said chamber and operatively connected to said member, means for passing fluid through said chamber under control of said valve, the movement of the fluid being transverse to the movement of the valve, and the parts of the valve exposed to pressure by said fluid, being balanced relatively to the direction of movement of the valve, and means for adjusting the position of the valve independently of the position of the operating member.

814,840. METALLIC RAILWAY-TIE. Wilhelm Griesser, Joplin, Mo. Filed Oct. 23, 1905. Serial No. 284,043.



Claim.—1. A metallic railway-tie having a hollow portion, triangular in cross-section, and provided adjacent to the apex of said triangular portion with flanged supporting members extending outwardly at right angles to a line drawn perpendicular to the base.

2. A hollow metallic railway-tie having a triangular cross-section and provided adjacent to the apex of said triangular portion with flanged extensions, and braces formed integral with said triangular portion and said flanged extensions.

3. A hollow metallic railway-tie formed of a single sheet of metal and having a triangular body portion, flanged extensions lo-

cated adjacent to the apex of said triangular portion and extending outwardly parallel with the base thereof, said cross-tie having near opposite ends a projecting tongue formed from the body of the tie, and opposite each tongue a bolt-hole.

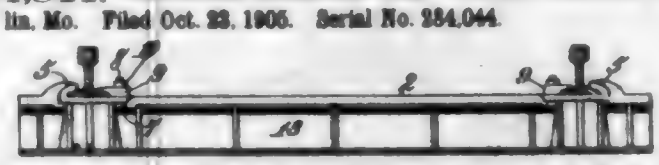
4. A hollow metallic railway-tie formed from a single sheet of metal and comprising as an integral structure a triangular body portion, flanged extensions located adjacent to the apex of said triangular portion and extending parallel with its base, brace members located at intervals throughout the length of said tie connecting said body portion with said flanged extensions, and a rail-engaging member projecting from the base of said triangular portion.

5. A hollow metallic railway-tie formed from a single sheet of metal and comprising as an integral structure a triangular body portion, flanged extensions located adjacent to the apex of said triangular portion and extending parallel with its base, triangular base members located at intervals throughout the length of said tie and connecting said body portion with said flanged extensions, and a rail-engaging member projecting from the base of said triangular portion.

6. A metallic railway-tie formed from a single sheet of metal bent upon itself to form a flat top portion and converging side members, said side members being extended in right lines from their point of convergence to form web members and being bent to extend outwardly at right angles to said web members to form a base parallel with said top portion, said tie being provided on opposite sides with integral brace members connecting said base with the converging side members, said web members being connected together, and means for securing rails to one of the parallel sides of said cross-tie and near opposite ends of the latter, respectively.

7. A metallic railway-tie formed from a single sheet of metal bent upon itself to form a flat top portion and converging side members, said side members being extended in right lines from their point of convergence to form web members and being bent to extend outwardly at right angles to said web members to form a base parallel with said top portion, said tie being provided on opposite sides with integral brace members connecting said base with the converging side members, bolts connecting said web members, said top portion being provided near opposite ends of the tie with a projecting tongue, and opposite each tongue with a bolt-hole.

814,841. **METALLIC RAILWAY-TIE.** WILHELM GRIESSER, Joplin, Mo. Filed Oct. 23, 1905. Serial No. 284,044.



Claim.—1. A metallic cross-tie comprising a flat base and a head or top circular in cross-section and provided near opposite ends with seats for the rails.

2. A metallic cross-tie comprising a flat base and a head or top circular in cross-section and provided near opposite ends with a seat and an integral rail-engaging member.

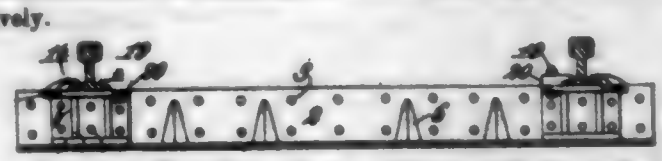
3. A metallic railway-tie having a flat base and a circular head or top connected to said base by a central web member, said tie being provided near opposite ends of its top with seats for the rails and with integral rail-engaging members.

4. A metallic railway-tie comprising a flat base and a circular head or top connected thereto by a longitudinal web member, a seat for the rail formed near each end of said tie, an integral tongue overhanging each of said seats, and a bolt-hole formed in each seat opposite said tongue.

5. A metallic railway-tie made of a single sheet of metal bent upon itself to form a circular top portion, web members extending in right lines from said top portion, and flanged extensions projecting at right angles to said web members to form a base, said tie having a portion of its top near each end of the tie depressed and flattened to form rail-seats, and having its circular head cut away at the outer end of each of said seats to provide a rail-engaging member, and each of said seats being provided with a bolt-hole.

814,842. **METALLIC RAILWAY-TIE.** WILHELM GRIESSER, Joplin, Mo. Filed Oct. 23, 1905. Serial No. 284,045.

Claim.—1. A metallic railway-tie comprising metal plates riveted together to form a web and bent outward in opposite directions, at right angles to said web, to form a base, metal castings secured to said web member and base near the outer ends of the tie and providing seats for the bases of the rails of a track, and members integral with said seats for engaging one side of each of said rails, respectively.

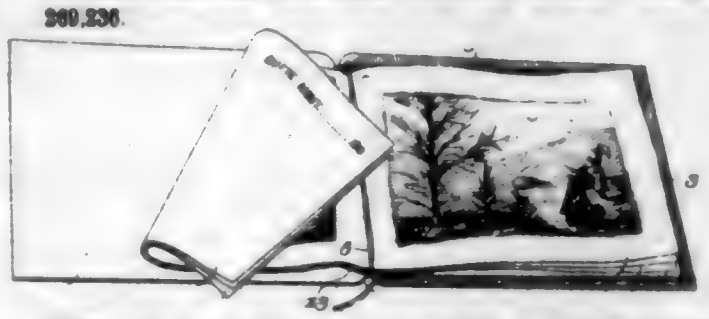


2. A metallic railway-tie comprising metal plates riveted together to form a web and bent outward in opposite directions at right angles to said web to form a base, metal castings formed in two parts and secured on opposite sides of said cross-tie and near opposite ends thereof to the web and base members thereof, each of said pairs of castings affording a flattened portion forming a seat for the rail and having an integral tongue for engaging one side of the base of said rail, and opposite said tongue a bolt-hole.

3. A metallic railway-tie comprising metal plates secured together to form a web member and bent outwardly in opposite directions at right angles to said web member to form a base, and having integral braces connecting the web member with said base on both sides of the tie, and metal castings formed in two parts and secured on opposite sides of the tie near the outer ends thereof, each of said pairs of castings being provided with a flat seat for receiving the base of the rail, an integral tongue to engage one side of the base of the rail and opposite said tongue with a bolt-hole whereby a suitable clamp may be applied to the other side of the base of the rail.

4. A metallic railway-tie comprising a sheet of metal bent upon itself to provide two members extending parallel and in contact with each other to form a web and being bent outwardly in opposite directions at right angles to said web to form a base, said parallel members being connected together, and angular metal castings secured to and in face-contact with said base and web near opposite ends of said tie and affording seats for the bases of the two rails of a track, and means for securing said rails to said seats.

814,843. **COMBINED ENVELOP AND SOUVENIR-ALBUM.** WINFIELD S. HAWES, Butte, Mont. Filed July 11, 1905. Serial No. 269,236.



Claim.—1. A souvenir-album comprising an envelop provided intermediate its ends with notches and recesses, and an extensible loop engaging the notches and adapted to hold a plurality of leaves assembled with the envelop, and having a portion constituting an envelop-opener.

2. A souvenir-album comprising an envelop, and an extensible loop combined therewith and having a member detachably secured to the margin of one side of the envelop and constituting an opening element.

3. A souvenir-album comprising a sheet of paper, to form an envelop, the edges on one side of the median line of which are gummed, and an extensible loop loosely combined with the envelop and adapted to hold a plurality of leaves assembled with the envelop, and having a portion forming an envelop-opener secured to the said gummed edges.

4. A souvenir-album comprising an envelop having a combined loop and envelop-opener assembled therewith, the loop being adapted to hold a plurality of leaves assembled with the envelop, and a stub arranged at the bend of the leaves and having gummed portions.

814,844. **RING SPINNING AND TWISTING APPARATUS.** JOEL HAYDEN, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company, a Corporation of Maine. Filed Dec. 27, 1904. Serial No. 238,252.



Claim.—1. In an apparatus of the character described, the spinning-ring, the supporting plate or holder, a permanent member

intermediate of the spinning-ring and the supporting plate or holder and rigid with said spinning-ring and conforming substantially in shape thereto, and means for connecting said plate or holder and intermediate member whereby said intermediate member is allowed to move horizontally only on the surface of the plate or holder but prevented from continuous rotative movement.

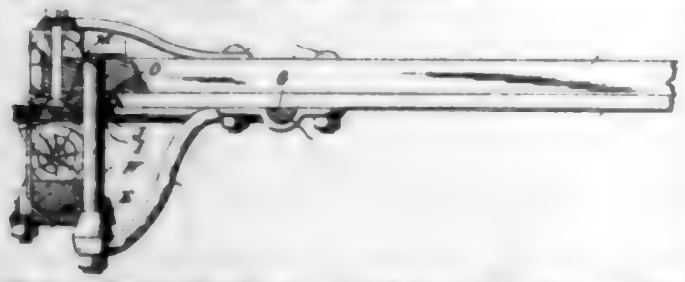
2. In an apparatus of the character described, the spinning-ring, the supporting plate or holder, a permanent ring intermediate of the spinning-ring and the supporting plate or holder and rigid with the spinning-ring and resting wholly on the horizontal surface of the plate or holder, and means for connecting said plate or holder and intermediate ring whereby the intermediate ring is allowed to move horizontally on said plate or holder and is in contact therewith during the entire horizontal movement.

3. In an apparatus of the character described, the spinning-ring, the supporting plate or holder having a flat horizontal upper surface, a permanent ring-shaped weighted member intermediate with the spinning-ring and the supporting plate or holder and rigid with the spinning-ring and resting on the horizontal surface of the plate or holder, and means for connecting said plate or holder and the intermediate ring whereby the intermediate ring is allowed curved horizontal movement on lines which are non-concentric with the periphery of the spinning-ring but prevented from continuous rotative movement.

4. In an apparatus of the character described, a spinning-ring; a stationary plate or holder, a member intermediate of the spinning-ring and plate or holder and rigid with the ring, said member being provided with passages having oppositely-curved edges; and engaging mechanism extending from the plate or holder into said passages, said engaging mechanism being provided at its contact ends with curvatures opposite the curvatures in said passages, for the purpose set forth.

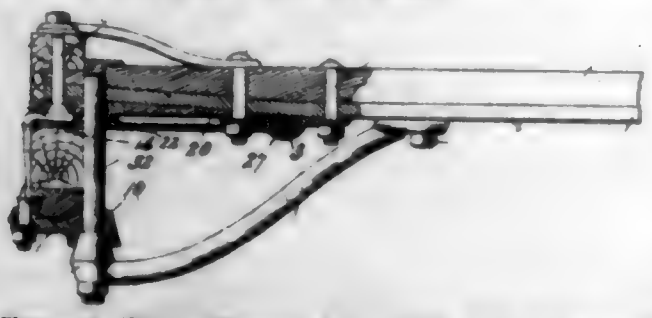
5. In an apparatus of the character described, a spinning-ring; a stationary plate or holder, a member intermediate of the spinning-ring and plate or holder and rigid with the ring, said member being provided with horizontal passages; and engaging mechanism extending from the plate or holder into said passages and being provided with rounded or curved edges at the points where it comes into horizontal contact with the walls of said passages, for the purpose set forth.

814,845. VEHICLE-GEAR. LESTER E. HICKOK, Mechanicsburg, Pa. Filed June 7, 1905. Serial No. 264,094.



Claim.—The combination in a vehicle-gear, of an integral fifth-wheel plate and circle, said plate and circle being provided with two parallel rows of threaded holes extending entirely therethrough; perforated axle-yokes; an axle and axle-bed; and clip-bolts threaded at each end, the upper ends screwed into the threaded holes in the plate and circle, and the lower ends passed through the perforations in the yokes and secured by nuts.

814,846. VEHICLE-GEAR. LESTER E. HICKOK, Mechanicsburg, Pa. Filed June 7, 1905. Serial No. 264,095.



Claim.—1. The combination in a vehicle-gear having a fifth-wheel plate with a recess or seat in the surface, of a clip provided with a head which fits the recess and forms an interlocking connection, in substance as set forth.

2. The combination in a vehicle-gear having a fifth-wheel plate and a seat or recess in the top surface, of a clip provided with a head which interlocks with the seat in the said plate and with a bolt end which is secured to the axle-yoke.

3. The combination in a vehicle-gear, of an axle, axle-bed, fifth-wheel plate with lugs having threaded holes, clip-bolts with threaded ends, and yokes; each of said clip-bolts having an enlarged upper end 33, for the purpose specified.

4. The combination in a vehicle-gear, of a head-block; a head-block plate provided with an arm at right angles thereto; a reach; and a reach-iron bolted to the reach and to the arm of the head-block plate; said reach-iron being secured to the head-block.

5. The combination in a vehicle-gear, of a head-block; a head-block plate having an arm with a beveled surface; a reach; and a reach-iron; the said reach-iron being bent upwardly at the end, located above said arm, and secured to the head-block; in substance as set forth.

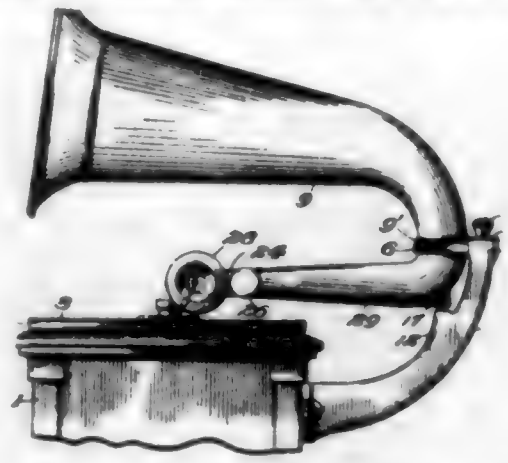
6. The combination in a vehicle-gear, of an axle; axle-bed; fifth-wheel plate and circle; a head-block; head-block plate; reach; reach-iron; axle-yoke; clips; and king-bolt; said king-bolt being passed through the reach, reach-iron, fifth-wheel plate, and axle-yoke; the fifth-wheel circle being held in place against the reach-iron by a clip; and the front end of the axle-yoke being united to the fifth-wheel plate by a removable clip-bolt.

814,847. WOOD-FILLER. EDWIN J. HUBLEY, Lancaster, Pa., assignor, by direct and mesne assignments, to John L. McLaughlin, Lancaster, Pa. Filed July 29, 1905. Serial No. 271,849.

Claim.—1. The herein-described composition of matter, consisting of graphite, red lead, soapstone, a liquid to give a smooth, hard surface, and turpentine.

2. The herein-described composition of matter for filling the grain of wood and the cracks in paint, consisting of graphite four pounds, red lead three pounds, soapstone one and one-half pounds, of a liquid to give a smooth, hard surface three pints, these proportions to a gallon, and turpentine sufficient to make a paste of the mixture.

814,848. AMPLIFYING-HORN. ELDRIDGE R. JOHNSON, Merion, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Original application filed Feb. 12, 1903, Serial No. 143,060. Divided and this application filed Feb. 9, 1904. Serial No. 193,735.



Claim.—1. A tapering amplifying-horn having independently-supported movable coupled sections.

2. A tapering amplifying-horn having independently-supported laterally-movable coupled sections.

3. A tapering amplifying-horn having two tapering radial sections connected by a vertically-curved portion, said sections movable about a vertical axis.

4. A tapering amplifying-horn having two tapering radial sections in different horizontal planes and movable about a vertical axis.

5. A tapering amplifying-horn having two tapering radial sections independently movable about a vertical axis.

6. A tapering amplifying-horn having two independently-supported radial tapering sections, movable about a vertical axis, said sections lying in substantially parallel planes and movable only in said planes.

7. An amplifying-horn, comprising a continuously-tapering tube having a joint to allow a movement of one end of said horn in relation to the other, said horn being supported at said joint.

8. An amplifying-horn, comprising a continuously-tapering tube having a joint in the tapering portion thereof to allow independent lateral movement of the ends thereof in different horizontal planes, said horn being supported at said joint.

9. An amplifying-horn, comprising a continuously-tapering

tube having a joint in the tapering portion of said horn to allow horizontal movement of the smaller end of said tube independently of the larger or bell portion thereof, said horn being supported at said joint.

10. An amplifying-horn, comprising a tapering curved tube, said tube being pivoted on a substantially vertical axis to allow a horizontal movement of the smaller end of said tube, the curved portion of said horn connecting sections thereof lying in substantially parallel planes.

11. An amplifying-horn, comprising a tapering curved tube, said tube being pivoted on a substantially vertical axis to allow a horizontal movement of the smaller end of said tube, the curved portion of said horn connecting sections thereof lying in substantially parallel planes, said axis passing through or adjacent said curved portion.

12. An amplifying-horn, comprising a substantially U-shaped tube tapering from end to end, having substantially horizontal arms, the curved portion of said tube being pivoted on a substantially vertical axis, about which said arms swing.

13. An amplifying-horn, comprising a U-shaped tube tapering from end to end having its curved portion supported on a substantially vertical axis, and a joint in said curved portion to allow of independent horizontal movement of the smaller and larger ends of said tube, about said vertical axis.

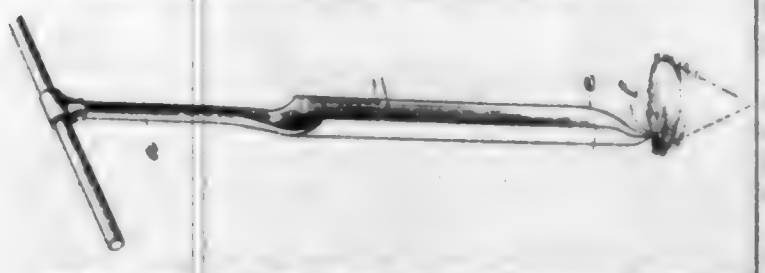
14. An amplifying-horn, comprising a curved tube tapering from end to end, and having a joint to allow of independent horizontal movement of the smaller end of said tube about a substantially vertical axis, the larger portion of said tube being rigidly supported and capable of adjustment to swing in different directions.

814,849. METHOD OF DIGGING HOLES. IRA D. KEMMERER, Nora, Nebr. Filed Sept. 8, 1905. Serial No. 277,494.



Claim.—The method herein described of forming holes in the earth consisting in first scooping out a portion of the earth at the point where the hole is to be made and pouring water in the said cavity, then separating the earth to be removed by a concave tool and simultaneously forming the separated body of earth into a core the water in the cavity being caused to run or seep down into the cut formed in the earth around the core, this water facilitating the formation of the core into an adhering mass and making its outer surface sticky enough to cause it to adhere to the tool and be removed therewith.

814,850. TOOL FOR DIGGING HOLES. IRA D. KEMMERER, Lincoln, Nebr. Filed Dec. 23, 1905. Serial No. 293,128.



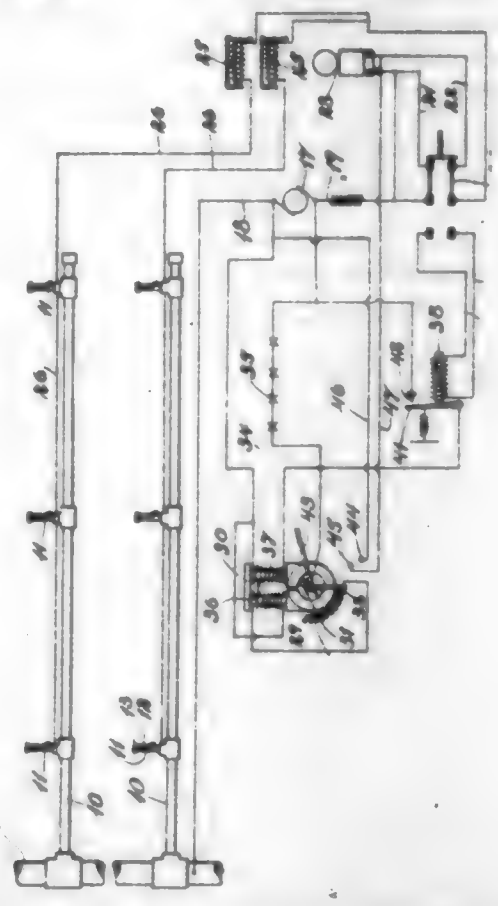
Claim.—A tool for digging holes consisting of a shank provided at one end with means for handling it and at its other end with a blade substantially crescent-shaped in cross-section and having its longitudinal edges parallel and sharpened and its lower or entering end brought to a point, this point having cutting edges which are continuous with the side edges, the back of the tool being convex.

814,851. CLIP. FRANK B. LARD, Springfield, Mass. Filed Dec. 27, 1902. Serial No. 136,861.



Claim.—A clip comprising two contacting body portions having arms extending therefrom and arranged in angular relation to each other, such body portions being joined together at one side of said arms, and the arms of one body portion normally contacting with those of the other body portion, substantially as shown.

814,852. ELECTRIC SPRINKLER APPARATUS. JOSEPH W. LARKIN, Boston, Mass., assignor to Gas and Electric Protective Company, Boston, Mass., a Corporation of Maine. Filed June 4, 1904. Serial No. 211,116.



Claim.—1. In a sprinkler system, the combination of a sprinkler-head comprising a valve-controlling pivoted lever, fusible means normally holding the latter in valve-closing position, electric contacts closed by said lever in its valve-releasing position, and soluble means normally holding said contacts apart.

2. In a sprinkler system, the combination of a sprinkling device, a circuit containing a translating device and protective mechanism for automatically limiting the current flowing in said circuit, and means whereby the outflow from said sprinkling device actuates said protective device.

3. In a sprinkler system, the combination of a sprinkling device, a circuit containing a translating device, protective means to automatically limit the current flowing in said circuit, and temperature-controlled means to actuate said protective means.

4. In a sprinkler system, the combination of a sprinkling device, a circuit containing a translating device, protective means for automatically limiting the current flowing in said circuit, and means controlled by the sprinkling device for effecting the actuation of said protective means.

5. In a sprinkler system, the combination of a sprinkling device, a circuit containing a translating device, means controlled by the current in said circuit for automatically limiting said current, a relay for short-circuiting said translating device, and means whereby the outflow from said sprinkling device actuates said relay.

6. In a sprinkler system, the combination of a sprinkler-head comprising electric contacts, soluble means normally holding said contacts apart, a valve-controlled pivoted lever bridging the said contacts in its valve-releasing position, and fusible means normally holding the lever in its valve-closing position.

7. In a sprinkler system, the combination with a sprinkler-head, an electric circuit, contacts in the said circuit, soluble means normally holding said contacts apart, a valve-controlled pivoted lever

adapted to close the circuit when in its valve-releasing position, and fusible means normally holding the lever in its valve-closing position.

8. In a sprinkler system, the combination of sprinkling devices, an electric circuit comprising branches to the several sprinkling devices, a source of current common to the said branches, annunciators in the said branches, a bell branch associated with the annunciator branches, normally opened contacts in the bell branch, a second circuit containing translating devices, an electrically-actuated switch for controlling the current through the translating devices, and for closing the normally open contacts in the bell branch of the first-named circuit, a switch in the second circuit, and an electromagnet included in circuit with the annunciator branches to actuate the said switch and thereby cause the controlling-switch to cut down the current in the second circuit and close the bell branch of the first circuit.

9. In a sprinkler system, the combination of sprinkling devices, a source of electrical energy, an alarm-circuit from said source to the sprinklers, comprising a plurality of branches, annunciators located in the said branches, a bell branch associated with the annunciator branches, an electromagnet in series with the annunciator branches, a consumption-circuit from the said source, an electrically-actuated controlling-switch and translating devices therein, a circuit-closer, actuated by the electromagnet, in series with the annunciator branches, in shunt to the translating devices and in series with the actuating-coils of the controlling-switch, contacts controlled by the controlling-switch for closing the bell branch, and circuit-completing means controlled by the sprinkling devices located in the several annunciator branches.

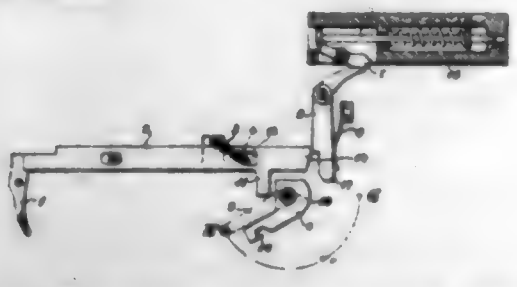
814,853. FLUE-STOP. MILO B. LEE, Columbus, Ohio. Filed Apr. 1, 1905. Serial No. 253,303.



Claim.—1. In a device of the class described, the combination with a stopping-plate, of a clip pivotally secured to said stopping-plate and provided with ways, and members held within said ways and extending oppositely to each other and adapted to engage the flue to hold the stopping-plate in position.

2. In a device of the class described, the combination with a stopping-plate, of a clip pivotally secured to said stopping-plate and provided with ways, and bow-shaped springs slidably mounted within said ways adapted to engage the flue whereby the stopping-plate is held in position.

814,854. FIRING MECHANISM FOR GUNS. HERMANN LEHMANN, Magdeburg, Germany, assignor to Fried. Krupp Aktiengesellschaft Grusonwerk, Magdeburg-Buckau, Germany. Filed Aug. 24, 1905. Serial No. 275,533.



Claim.—1. The combination with the firing-pin, the sear for the pin, the trigger, of a reciprocating bar operated by the trigger, a lever adapted to be engaged by the trigger-bar and to engage the sear, and means for causing a movement of the trigger-bar after the sear has been operated, to break the connection between the trigger-bar and the lever.

2. The combination with the firing-pin, the sear for the pin, and the trigger, of a bar operated by the trigger, an intermediate pivoted lever operated by the bar and operating the sear, and a stop-lever movable to a position to engage the pivoted lever and prevent its movement and to engage the bar and prevent its movement.

3. The combination with the firing-pin, the sear for the pin, and the trigger, of a connection between the trigger and the sear embodying a pivoted lever, and a swinging stop-lever provided with a notch to receive a portion of the pivoted lever and prevent the movement of the pivoted lever.

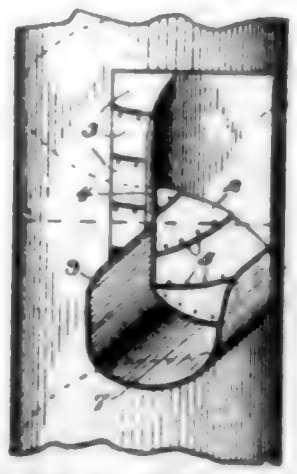
4. The combination with the breech-bolt, the firing-pin, the sear for the pin carried by the breech-bolt, and the trigger, of a connection between the trigger and the sear, said connection engaging the sear in such a manner that the sear cannot be moved except upon the movement of the sear-and-trigger connection.

5. The combination with the breech-bolt, the firing-pin, the sear carried by the breech-bolt, and the trigger, of a connection between the trigger and the sear, having a protuberance and groove connection with the sear.

6. The combination with the breech-bolt, the firing-pin, the sear carried by the breech-bolt, and the trigger, of a connection between the trigger and the sear embodying a pivoted lever having a protuberance and groove connection with the sear.

7. The combination with the breech-bolt, the firing-pin, the sear for the pin carried by the breech-bolt and the trigger, of a connection between the trigger and the sear, said connection engaging the sear in such a manner that the sear cannot be moved except upon the movement of the sear-and-trigger connection, and means for locking the trigger-and-sear connection against movement.

814,855. SPIRAL SLIDEWAY. WILLIAM H. LOGAN, Louisville, Ky. Filed Feb. 2, 1905. Serial No. 243,797.

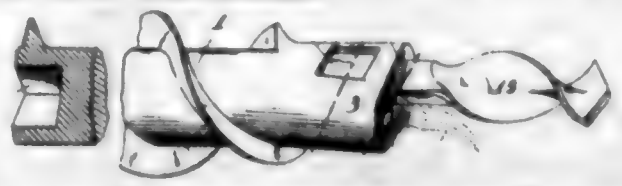


Claim.—1. The combination with a spiral slideway, of a casing therefor, said casing being provided with an opening therein, a switch or auxiliary chute independent of said slideway constructed to be inserted in said opening and to engage said slideway at an angle to lead an object from said slideway through said opening.

2. The combination with a spiral slideway, of a casing therefor, said casing being provided with an opening therein, a switch or auxiliary chute independent of said slideway constructed to be inserted in said opening and to removably engage said slideway at an angle to lead an object from said slideway through said opening, and means for holding said switch or auxiliary chute in position.

3. The combination with a spiral slideway of a removable switch or auxiliary chute constructed to be placed on said slideway at a point intermediate the top and bottom of said slideway to lead an object from said slideway.

814,856. MINING-DRILL. FRANK LORSKI, Plymouth, Pa. Filed Oct. 19, 1905. Serial No. 283,474.

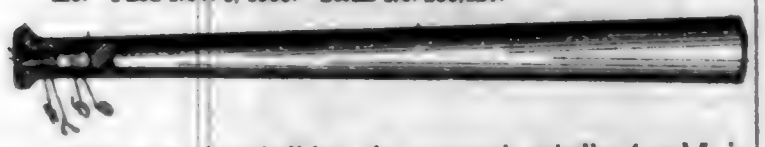


Claim.—1. A chuck for mining-drills having a bit-socket, an opening for the head of the bit-fastening bolt which intersects the socket, and an aperture for the shank of the bit-fastening bolt, in combination with a fastening-bolt having a head with a beveled or undercut portion to engage the bit, and which is received in the opening aforesaid and prevented from turning thereby and provided with a shank passing through the aperture and having a narrow portion adjacent to said head, and a nut on said shank.

2. A chuck for mining-drills having two sockets, an opening to receive and engage the head of the bit-fastening bolt, and an aperture, in combination with a single bolt having its head received in the

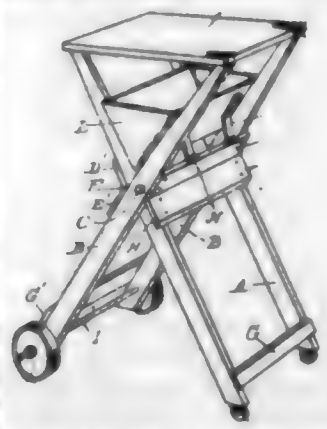
opening and adapted to engage the bits in both of said sockets and having its shank passing through the aperture and provided with a narrow portion with which said bits engage, and a nut secured to said shank.

814,857. BASE-BALL BAT. FREDERICK MARCHLING, St. Louis, Mo. Filed Nov. 6, 1905. Serial No. 286,137.



Claim.—In a base-ball bat, the concentric spindles 4 and 5, in combination with a ferrule provided with concentric chambers adapted to fit over the concentric spindles, and a plate whereby the ferrule is secured to the bat, substantially as specified.

814,858. FOLDING TRUCK. WILLIAM F. MARKHAM, Plymouth, Mich., assignor to Markham Air Rifle Company, Plymouth, Mich. Filed Jan. 11, 1904. Serial No. 188,576.



Claim.—1. The combination of the two-wheeled frames A, B, the bars of each frame being connected together by cross-bars D, D′, and E, E′, in such relation that said cross-bars will act as stops to limit the angular movement of said frames, and a pivot-bar connecting the frames and upon which they turn in relation to each other substantially as described, the frames above the pivot-point being separated from one another by unobstructed spaces.

2. The combination of two pairs of bars A, B, the cross-bars D, D′, connecting the bars A, and the cross-bars E, E′, connecting the bars B, above and below the pivotal point thereof, the pivot-bar C connecting the two frames and a top extending between and removably secured to the upper portion of the two frames.

3. The combination of a truck, consisting of two frames pivoted together and adapted to be moved into an X shape, stops to limit the angular relation of the two frames and a top O hinged to the upper ends of one of the frames and adapted to rest upon the tops thereof or to be moved to hang from the side of said frame, the space between the pivot-point and said top being unobstructed for the storage of articles, substantially as described.

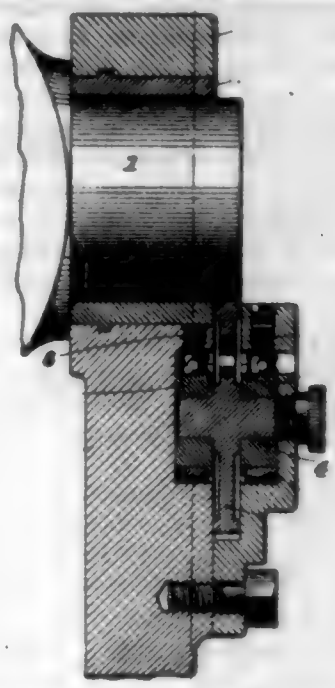
4. The combination of two frames pivoted together and adapted to be moved into a substantial X shape, of a detachable receptacle adapted to fit into the V-shaped bearing above the pivot of the frames, and legs M on said receptacle extending to the lower edge thereof adapted to support said receptacle upon a horizontal surface when removed from the truck.

5. The combination of the two pairs of bars A and B having the cross-bars D and D′ and E and E′ respectively, wheels on the lower ends of the bars, the pivot-bar C, the V-shaped receptacle L adapted to fit in the V-shaped bearing above the pivot of the bars, and the top O hinged to the upper edge of one pair of bars and adapted to rest across the tops of the bars or to be moved into a suspended position from one edge of one pair of bars, substantially as described.

6. The combination of a truck, of two continuous flat frames pivoted together intermediate their ends, a detachable receptacle arranged within the V-shaped space above the pivot, and a swinging top at the upper end of the frame affording access to the receptacle.

814,859. PEDESTAL-MOUNT. JOHN F. METZ and HERMAN G. JAKOBSSON, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Aug. 19, 1903. Serial No. 170,035.

Claim.—1. The combination with a gun and its trunnions, of a bearing for each trunnion, greater in internal diameter than the latter, and means for normally centering and supporting the trunnions independently of the bearings, for the purpose set forth.



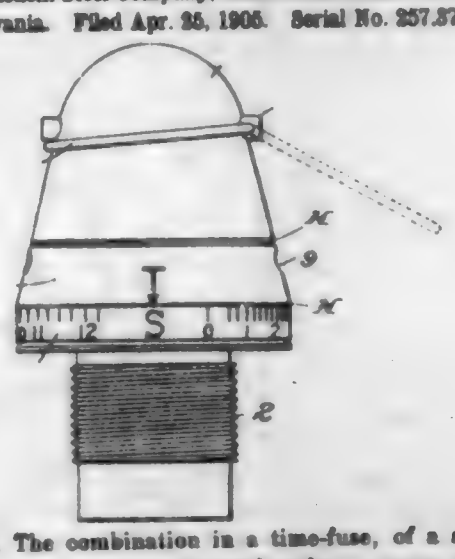
2. The combination with a gun and its trunnions, of a bearing for each trunnion, said bearings being greater in internal diameter than said trunnions, and a series of separated antifriction-bearings for normally centering each of the said trunnions in its bearings, for the purpose set forth.

3. The combination with a gun and its trunnions, of a bearing for each trunnion, said bearings being greater in internal diameter than said trunnions, and a series of separated spring-seated antifriction-bearings for centering each of the said trunnions in its bearing, for the purpose set forth.

4. The combination with the trunnions of a gun, and with fixed bearings beyond which the trunnions project, of antifriction-bearings on which the said trunnions rest, said antifriction-bearings being located outside the fixed bearings, and said gun-bearings being of larger internal diameter than said trunnions, and means independent of the bearings for normally centering the trunnions in the gun-bearings, for the purpose set forth.

5. The combination with the trunnion of a gun, of the antifriction-wheel 3, antifriction-balls 10, and springs forcing the same toward the trunnion, substantially as set forth.

814,860. COMBINATION TIME AND PERCUSSION FUSE. JOHN F. MEIGS and EMIL A. GATHMANN, South Bethlehem, Pa., assignors to Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Apr. 25, 1905. Serial No. 257,376.



Claim.—1. The combination in a time-fuse, of a setting-ring having a socket, a bar adapted to said socket, a recess in the fuse-casing for the temporary reception of the bar, and means for holding the bar in said recess, substantially as set forth.

2. The combination with a time-fuse and with the hammer thereof, of a setting-ring having a socket, a bar adapted to said socket, a recess in the fuse and in the hammer for the temporary reception of the bar, and means for holding the bar in said recess, substantially as set forth.

3. In a time-fuse, a casing having a chamber for a hammer and a recess extending through the casing and also through the hammer, combined with a bar adapted to extend through said recess to retain

the hammer in place, a resilient ring connected with the bar and adapted to encircle a part of the casing, and a setting-ring having a socket adapted to receive the end of the bar, substantially as set forth.

4. In a time-fuse, a casing having a cap with a chamber for a hammer and a recess extending through the cap and also through the hammer, combined with a bar adapted to extend through said recess to retain the hammer in place; and a detent-spring ring extending through a transverse recess at the end of the bar to swing over the end of and encircle the cap and hold the bar detachably in place.

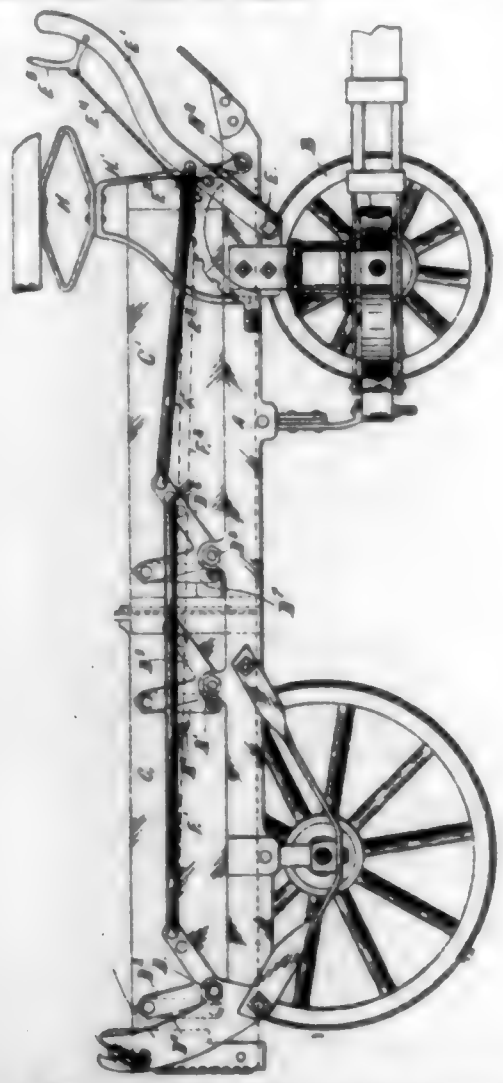
5. The combination with the casing, hammer and socketed setting-ring of a time-fuse, of a detachable bar adapted to a recess in the casing and hammer and also to the socket of the setting-ring, substantially as and for the purpose set forth.

6. A fuse for projectiles having a cap and a body portion with an annular seat, ducts for an ignition charge and a lighting charge, and a setting-ring having an annular chamber open at the top and communicating with the ignition-duct and a lip below the latter, substantially as set forth.

7. In a percussion-fuse, a body with a magazine and with a seat for an exploder, a duct containing a flashing charge communicating with said seat, a cap, a setting-ring rotatable between the body and cap and having an annular flame-chamber communicating with the duct, and a curved fuse-chamber communicating with the flame-chamber and with the magazine, substantially as set forth.

8. A time-fuse provided with an exploder, a duct for a flashing charge extending to the exploder, a chamber for fuse composition, a train-ring with a lip, a vacant flame-chamber above the lip and between the duct and fuse-chamber, the flame-chamber open at the top, and a vent-port communicating with said chamber, substantially as set forth.

814,861. **DUMPING-WAGON.** CONRAD MILLER, Denver, Colo. Filed Feb. 6, 1904. Serial No. 192,426.



Claim.—1. The combination with a suitable framework, of two dumping-body sections overlapping to form a tight receptacle when the said sections are in the upright position, each section being pivoted on the framework, bell-crank levers fulcrumed on the framework and having one arm connected with the forward dumping-body section on each side, a rock-shaft journaled in the framework, a hand-lever connected to operate the rock-shaft on one side of the wagon, a crank-arm having its lower extremity secured to the rock-shaft on the opposite side of the wagon, a connecting-rod connecting the hand-lever on one side of the wagon with the bell-crank lever on the corresponding side, another rod connecting the crank-arm of the rock-shaft on one side of the wagon with the bell-crank lever on the corresponding side, other bell-crank levers fulcrumed on the framework and having one arm of each connected with the rear section of the wagon-body in the rear of its pivot, and a rod connecting the bell-crank levers of the forward body-section with the bell-crank levers of the rear body-section whereby as the hand-lever is manipulated the two body-sections are simultaneously tilted to the dumping position.

2. In a dumping-wagon, the combination with a suitable frame, of a dumping-body section pivotally mounted on the frame, two bell-crank levers also pivotally mounted on the frame, a link connecting one arm of each bell-crank lever with the wagon-body section, a rock-shaft journaled in the frame, a hand-lever connected with the rock-shaft to rotate the latter on one side of the wagon, a crank-arm connected with the rock-shaft on the other side of the wagon, a connecting-rod connecting the hand-lever with one arm of the bell-crank lever on one side of the wagon, and a similar connecting-rod connecting the rock-shaft crank-arm with the bell-crank lever on the corresponding side of the wagon, whereby as the hand-lever is manipulated the wagon-body section may be tilted to the dumping position and restored to its upright position at will.

3. In a dumping-wagon, the combination with a suitable framework, of a dumping-body section pivotally mounted thereon, two levers fulcrumed on the framework near each extremity of the dumping-section, a link connecting each lever with the body-section, a hand-lever fulcrumed on the framework, and a suitable connection between the hand-lever and one of the levers connected with the body-section, whereby the latter may be tilted to the dumping position, substantially as described.

4. In a dumping-wagon, the combination with a suitable framework, having upwardly-projecting rigid arms at its extremities, one being on each side of the wagon, an end-gate supported on the said projections, a dumping-body section pivoted on the framework and located to have one extremity closed by the said end-gate when the dumping-body section is in its upright or normal position, a bell-crank lever fulcrumed on the framework, a connection between one arm of the lever and the dumping-section, and means connected with the other arm of the lever for manipulating the dumping-section.

5. In a dumping-wagon, the combination with a suitable framework provided with upwardly-projecting parts, and a body-section tiltably mounted on the framework and provided with slotted ears, the projections of the framework being also slotted to register with the slots in the ears of the dumping-body section when the latter is in the upright position, and an end-gate provided at its upper extremity with a rod adapted to simultaneously engage the slots of the projections in the ears of the dumping-body section when the latter is in its upright or normal position, the arrangement being such that as the wagon-body section is tilted in one direction, the end-gate is suspended by the projections on the framework, while when the wagon-body section is tilted in the opposite direction, it takes the end-gate with it, substantially as described.

814,862. **NOODLE-DOUGH-CUTTING APPARATUS.** SAMUEL MUELLER, Jersey City, N. J., assignor to C. F. Mueller and Co., Jersey City, N. J., a Firm. Filed Jan. 16, 1905. Serial No. 241,174.

Claim.—1. In a noodle-dough-cutting machine, a lower vertical series of drying-belts traveling in alternate directions, an upper belt inclosed in a casing, and a blower adapted to produce a forced draft through said casing.

2. In a noodle-dough-cutting machine, a lower vertical series of drying-belts traveling in alternate directions, an upper belt inclosed in a casing, a perforated partition in said casing upon which the conveying portion of the belt travels, and a blower adapted to produce a forced draft through said casing.

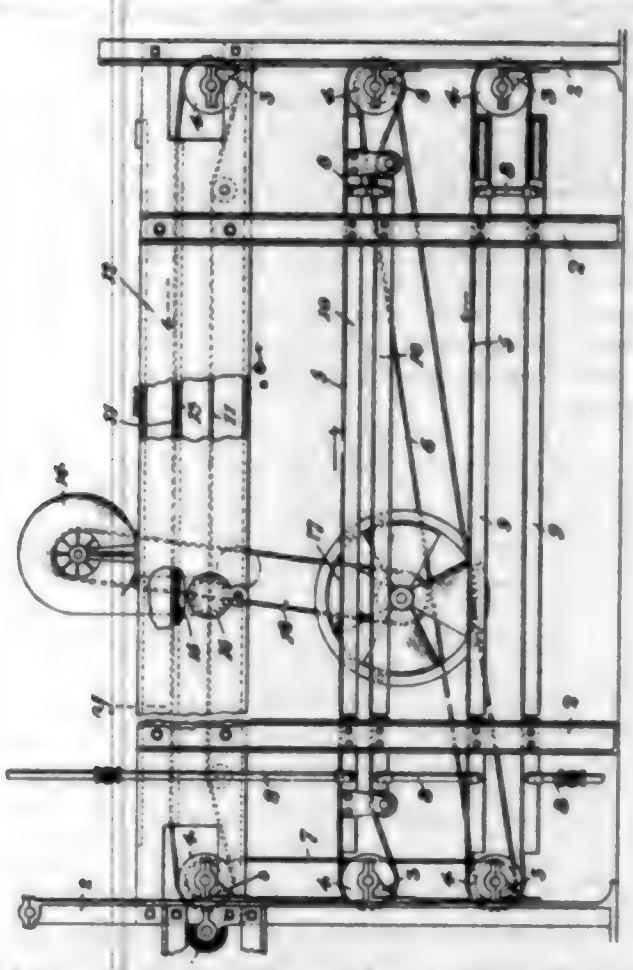
3. In a noodle-dough-cutting machine, the combination with a vertical series of drying-belts adapted to travel in alternate directions, an inclined conveyer-belt adapted to automatically receive the sheets from the said drying-belts, and a transverse roller adjacent to said incline having a longitudinally-disposed knife adapted to sever the sheets.

4. In a noodle-dough-cutting machine, a series of drying-belts adapted to travel in alternate directions, means for heating and ventilating the lower belts, and a blower for cooling the upper belt.

5. In a noodle-dough-cutting machine, a series of drying-belts adapted to travel in alternate directions, means for heating and ventilating the lower belts, a blower for cooling the upper belt, an inclined conveyer-belt adapted to receive the sheet from the said horizontal belts, a cutting-roller adjacent to the lower front end of said inclined conveyer, and a table for receiving the cut sheets.

6. In a noodle-dough-cutting machine, a lower vertical series

of drying-belts traveling in alternate directions, an upper finishing-belt, a casing inclosing said belt, a blower adapted to produce a forced draft in said casing, regulating means in the walls of the casing, and delivering and cutting means at one end of said finishing-belt.



7. In a noodle-dough-cutting machine, a vertical series of drying-belts, heating-plates beneath the folds of the lower of said drying-belts, a blower adapted to direct a current of air across said plates and belts, a casing inclosing an upper one of said drying-belts, a blower communicating with said casing, and regulating means in the walls of said casing.

814,863. CATTLE-GUARD. IRVIN MYERS and CHARLES SIMENSEN, Spokane, Wash. Filed Oct. 21, 1905. Serial No. 283,826.



Claim.—1. A cattle-guard comprising a series of ties having beveled upper surfaces and a series of blocks secured upon said beveled surfaces with their greater length extending transversely of the ties; and having upper surfaces which are inclined transversely of their greater length.

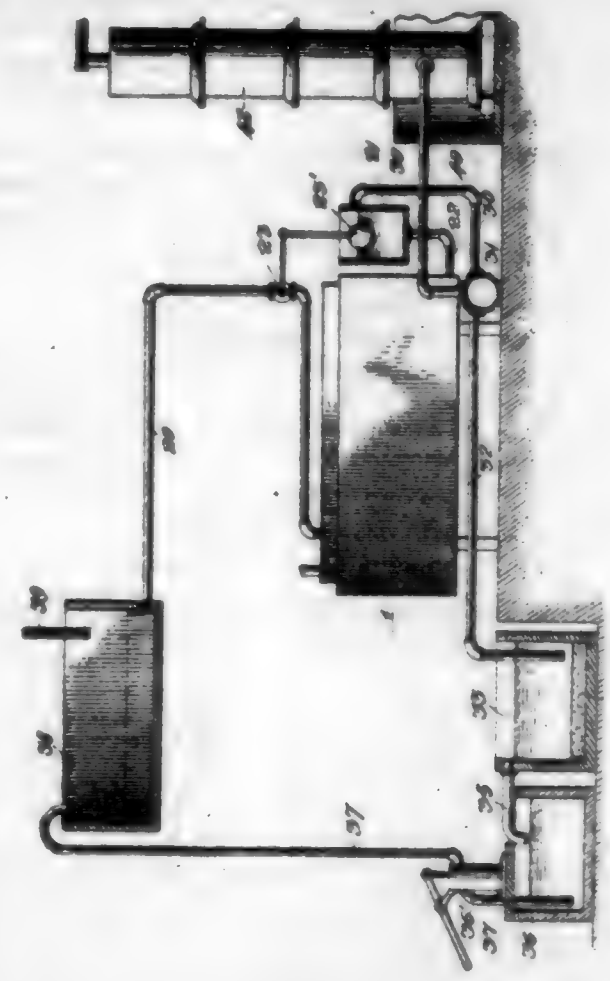
2. A cattle-guard comprising a series of ties having beveled upper surfaces and a series of blocks secured thereto and having a triangular cross-section.

3. A cattle-guard comprising a series of ties or like bearing members extending transversely of the track, and a series of blocks of triangular cross-section secured to said ties with their length substantially parallel with the rails and inclined lengthwise the track, said blocks being spaced so as to substantially cover the space to be protected.

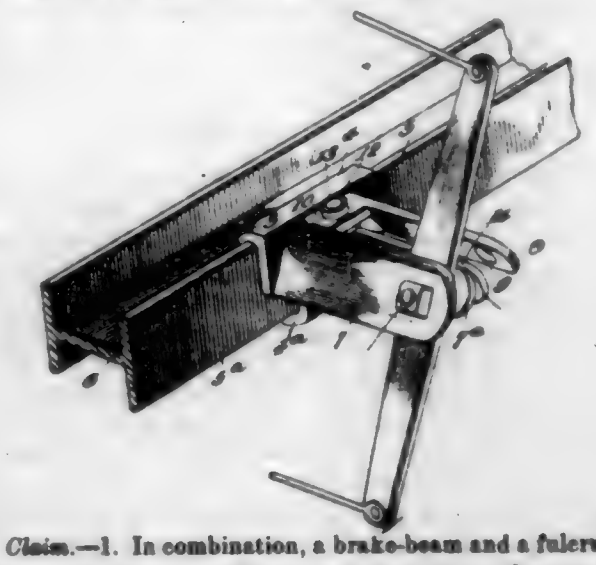
4. A cattle-guard comprising a series of ties having bevelled upper surfaces and a series of blocks of a triangular cross-section secured thereto by lag-screws, a portion of said screws being inclined with reference to the central plane of the blocks.

814,864. ELECTROLYTIC APPARATUS. FRANK MCDONALD, Roaring Spring, Pa. Filed Apr. 27, 1905. Serial No. 257,636.

Claim.—In an apparatus of the character described, the combination of an electrolytic cell, a tank in communication with the anode-compartment of said cell, a supply-pipe for supplying a solution of brine to said anode-compartment, a valve in said supply-pipe, a ball-float in said tank connected by levers to said controlling-valve, a resaturating-tank, an overflow connection between the first-mentioned tank and said resaturating-tank, an overflow-tank, an elevated tank, a pump for elevating the liquid from said overflow-tank to said elevated tank, means for conducting the brine in said elevated tank to said valve, a gas-collecting pipe and a series of vertical towers connected to said gas-collecting pipe, substantially as described.



814,865. BRAKE-BEAM FULCRUM. JAMES W. MCGEE, Bessemer, Ala., assignor of one-half to William F. Hanby, Bessemer, Ala. Filed Apr. 18, 1906. Serial No. 311,904.



Claim.—1. In combination, a brake-beam and a fulcrum therefor composed of upper and lower members, means for securing said members to the brake-beam, and a plurality of coöperating pivot-lugs projected from each member of the fulcrum.

2. In combination, a brake-beam and a fulcrum therefor composed of upper and lower members, means for securing said members to the brake-beam, and a plurality of oppositely-inclined pivot-lugs projected from each of said members.

3. In combination, a brake-beam and a fulcrum therefor composed of upper and lower members, means for securing said members to the brake-beam, and a plurality of oppositely-inclined pivot-lugs projected from each of said members, the lugs of the upper member being spaced.

4. In combination, a brake-beam and a fulcrum therefor composed of upper and lower members, means for securing said members to the brake-beam, and a plurality of oppositely-inclined pivot-lugs projected from each of said members, the lugs of the upper member being spaced, the lugs of the lower member being connected.

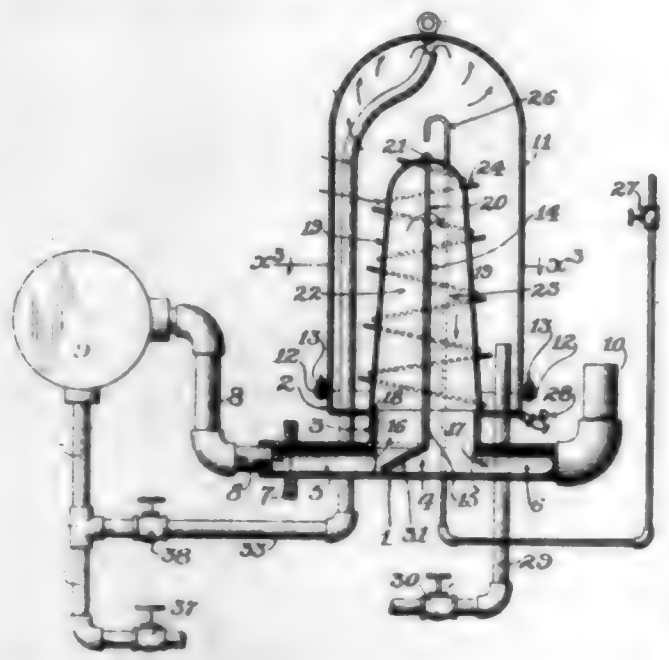
5. In combination, a brake-beam and a fulcrum therefor composed of upper and lower members, means for securing said members to the brake-beam, and a plurality of oppositely-inclined pivot-lugs projected from each of said members, the lugs of the lower member being of integral formation.

6. In a fulcrum for brake-beams, the combination of a brake-beam, a fulcrum therefor composed of spaced members, means for securing said members to opposite sides of the brake-beam, a jaw carried by each member, and a plurality of pivot-lugs projected from the jaw of each member.

7. In a fulcrum for brake-beams, the combination of a brake-beam therefor composed of spaced members, each of said members consisting of plates, a jaw formed with the plate of each member, a plurality of oppositely-inclined pivot-lugs projected from each jaw aforesaid, and means for securing the spaced members of the fulcrum together at opposite sides of the jaws thereof.

8. In a fulcrum for brake-beams, the combination of a brake-beam, a fulcrum therefor composed of spaced members, each of said members consisting of plates, a jaw formed with the plate of each member, a plurality of oppositely-inclined pivot-lugs projected from each jaw aforesaid, and means for securing the spaced members of the fulcrum together at opposite sides of the jaws thereof, the jaws of said spaced members interlocking with one another.

814,866. CRUDE-OIL GENERATOR. WILLIAM H. NEHER, Inglewood, Cal. Filed Jan. 24, 1905. Serial No. 242,510.



Claim.—1. A generator comprising a base-chamber, a vaporizing member above the base-chamber, a covering-dome housing and nesting with the vaporizing member, suitable means unattached to the covering-dome for conducting exhaust-gas through the vaporizing member and for conveying fuel to the interior of the covering-dome and for conveying gas from the interior thereof, and for passing air in an upwardly-directed current into the dome.

2. A generator comprising a base-chamber, a vaporizing member detachably mounted above the same, a removable covering-dome housing and nesting with the vaporizing member and completely exposing the same when removed, suitable means unattached to the covering-dome for conducting exhaust-gas through the vaporizing member and for conveying fuel to the exterior of the vaporizing member and removing gas from the interior of the covering-dome.

3. A generator comprising a base with a chamber, a cup above the chamber and connected therewith by a neck, a vaporizing member mounted upon the base and a covering-dome resting upon the cup and housing the vaporizing member, and means for conveying exhaust-gas to said chamber.

4. A generator comprising a base with a chamber, a cup with its rim slightly above the top of the base and connected with the chamber by a neck, a vaporizing member detachably mounted upon the base, and a covering-dome resting upon the rim of the cup and housing the vaporizing member, and means for conveying exhaust-gas to said chamber.

5. A generator comprising a base with a chamber, a cup with its rim slightly above the top of the base and connected with the chamber by a neck, a vaporizing member detachably mounted upon the base, a covering-dome resting upon the cup and housing the vaporizing member, a fuel-supply pipe extending up through the base inside the covering-dome and discharging upon the vaporizing member, a gas-pipe extending up through the base inside the covering-dome and arranged with its mouth opening upwardly near the top of the covering-dome, and means for conducting exhaust-gases through the vaporizing member.

6. A generator comprising a base with a chamber, a cup with its rim slightly above the top of the base and connected with the chamber by a neck, a vaporizing member detachably mounted upon the base, a covering-dome resting upon the rim of the cup and housing the vaporizing member, a fuel-supply pipe extending up through the base inside the covering-dome and discharging upon the vaporizing member, a gas-pipe extending up through the base inside the covering-dome and arranged with its mouth opening upwardly near the top of the covering-dome, means for conducting exhaust-gases through the vaporizing member, and a valve within said chamber for regulating the amount of exhaust-gas admitted to the vaporizing-chamber.

7. A generator comprising a base-chamber, a vaporizing member above the base-chamber, a covering-dome housing and nesting with the vaporizing member, and a gas-pipe extending up through the base inside the covering-dome and arranged with its mouth facing the top of the covering-dome.

8. A vaporizing member comprising a conical dome, and horse-shoe-shaped flanges thereon.

9. A vaporizing member comprising a conical dome, and horse-shoe-shaped flanges thereon arranged in two sets, the flanges of one set being parallel with one inclined plane, and the flanges of the other set being parallel with an oppositely-inclined plane.

10. A generator comprising a base with a chamber, an upwardly-projecting web formed integral with the base, and a vaporizing member detachably mounted on the base, the edges of the web closely fitting the walls of the vaporizing member and forming two passages therein, and means for conducting exhaust-gas to said chamber.

11. A generator comprising a base with an annular groove, an upwardly-projecting web formed integral with the base, a vaporizing member with its rim nested in the groove, a bolt extending from the web up through the vaporizing member with a nut thereon for engaging the vaporizing member.

12. A generator comprising a base with a chamber, a cup connected therewith by a neck, a dome with its rim detachably fastened to the rim of the cup, a web formed integral with the base and extending up into the dome, a vaporizing member detachably fastened to the cup and closely fitting the web, a web extending down into the chamber in the base, a valve thereon, a fuel-pipe extending through the base into the covering-dome and discharging upon the top of the vaporizing member, an air-pipe extending up through the base into the dome, and means for conducting exhaust-gas to and from the vaporizing member.

13. A generator comprising a base, means for conducting exhaust-gas through the base, a vaporizing-chamber situated near the base, a vaporizing member in the vaporizing-chamber, a removable dome covering the vaporizing member and nested therewith and a valve in the base for controlling the amount of exhaust-gas admitted to the vaporizing member, and means for conducting that part of the exhaust-gas which is not admitted to the vaporizing member by the valve, freely away from the generator.

14. A generator comprising a base, means for conducting exhaust-gas through the base, a vaporizing-chamber situated near the base, a vaporizing member in the vaporizing-chamber, a removable dome covering the vaporizing member and nested therewith, a valve in the base for controlling the amount of exhaust-gas admitted to the vaporizing member and a drain-cock for the vaporizing-chamber, and means for conducting that part of the exhaust-gas which is not admitted to the vaporizing member by the valve, freely away from the generator.

814,867. PUMP. WILLIAM NEIL and GEORGE ALSTAD, Chicago, Ill.; said Alstad assignor to said Neil. Filed May 24, 1905. Serial No. 262,051.

Claim.—1. A plunger-pump of the class described, in which is combined a rack, a pinion mounted in a movable eccentric-bearing for engaging said rack, means for shifting said pinion from one side to the other at the respective ends of the rack to reciprocate the pump-plunger by a continuous rotation of said pinion, and means for adjusting the position of said eccentric upon the shaft, to vary the length of the plunger-stroke.

2. A pump of the class described, in which is combined a rack, a pinion mounted in a movable bearing for engaging said rack,

means for shifting said pinion from one side to the other at the respective ends of the rack, and an adjustable revoluble eccentric-bearing mounted upon the shaft of said pinion for varying the distance between the axis of the eccentric and the pins of the rack when said shift occurs.



3. A pump of the class described, in which is combined a rack, a pinion mounted in a movable bearing for engaging said rack, means for shifting said pinion from one to the other side of said rack, and means for locking said rack against endwise movement during the time the pinion is being shifted from a positive engagement with the rack upon one side, to a like engagement therewith upon the other.

4. A pump of the class described, in which is combined a rack, a pinion mounted upon a shaft supported in a movable eccentric-bearing for engaging said rack, means for shifting said pinion from one to the other side of said rack, and means upon opposite sides of said rack for engaging said shaft to hold the teeth of the pinion in constant engagement with the rack while the pinion is rotated.

5. A pump of the class described, in which is combined a rack, a pinion mounted in a movable bearing for engaging said rack, means upon opposite sides of said rack for holding the teeth of the pinion into constant engagement with the rack throughout its length, means for shifting said pinion at each end of said rack from one to the other side thereof, and means for locking said rack against endwise movement during the time the pinion is being shifted from a position of positive engagement with the rack upon one side to a position of like engagement therewith upon the other.

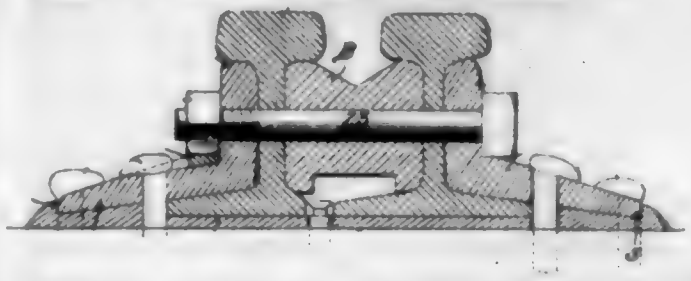
6. The combination with a measuring-pump of a rack and pinion for actuating the plunger, and an eccentric-bearing adjustably mounted upon the pinion-shaft for controlling the relation between the axis of the eccentric and the pins of the rack at each end of the latter.

7. The combination with a measuring-pump, of a rack and pinion for reciprocating the plunger, said pinion being mounted in a bearing adapted to be moved transversely of the plane of the rack to permit the shifting of the pinion from one side to the other of said rack, and a revoluble eccentric for varying the relation between the axis of the eccentric and the respective end pins of the rack.

8. The combination with a measuring-pump, of a rack and pinion for reciprocating the plunger, said pinion being mounted in a bearing adapted to be moved transversely of the plane of the rack to permit the shifting of the pinion from one side to the other of said rack, said pinion-shaft being adjustably mounted in the eccentric within said transversely-movable bearing, and means for rotating said eccentric with said shaft.

9. The combination with a pump of the class described, of a rack and pinion for reciprocating the plunger, the shaft of said pinion being adjustably mounted in an eccentric-bearing, which eccentric is, in turn, mounted in an oscillatory support free to shift from one to the other side of the plane of the rack when the pinion is brought into engagement with either end thereof, means for rigidly connecting said eccentric to said shaft, and stationary guides upon opposite sides of the rack for alternately engaging a portion of the pinion-shaft to hold the pinion into engagement with the rack.

814,868. **GUARD-RAIL FASTENER.** HENRY C. NUNN, Canterbury, W. Va. Filed Dec. 5, 1905. Serial No. 290,455.



Claim.—1. A guard-rail fastener comprising a base-plate provided with terminal and intermediate abutments, and with a boss disposed intermediate of its ends, cheek-plates adapted to engage the terminal abutments, the intermediate abutments and boss being designed to be engaged by the sides of the bases of the guard and main-line rails.

2. A guard-rail fastener comprising a base-plate provided with terminal and intermediate abutments and with spike-openings adjacent to the abutments, and cheek-plates designed to engage the terminal abutments and having spike-openings to register with those of the base-plate.

3. A rail-guard fastener comprising a base-plate provided with terminal and intermediate abutments, and with spike-openings adjacent to the abutments, cheek-plates designed to engage the terminals of the abutments and having spike-openings to register with those of the base-plate, one of the cheek-plates being provided with a seat, and a nut-locking key adapted to engage the seat.

4. The combination with a main rail, and a guard-rail, of a base-plate provided with terminal and intermediate abutments, and a boss intermediate of the ends of the plate, the intermediate abutments and boss being engaged by the edges of the bases of the rails, cheek-plates to engage the terminal abutments, a spacing member disposed between the two rails, assembling-bolts passing through the cheek-plates, rails and spacing member, and means combined with one of the cheek-plates for locking the nuts of the assembling-bolts against rotation.

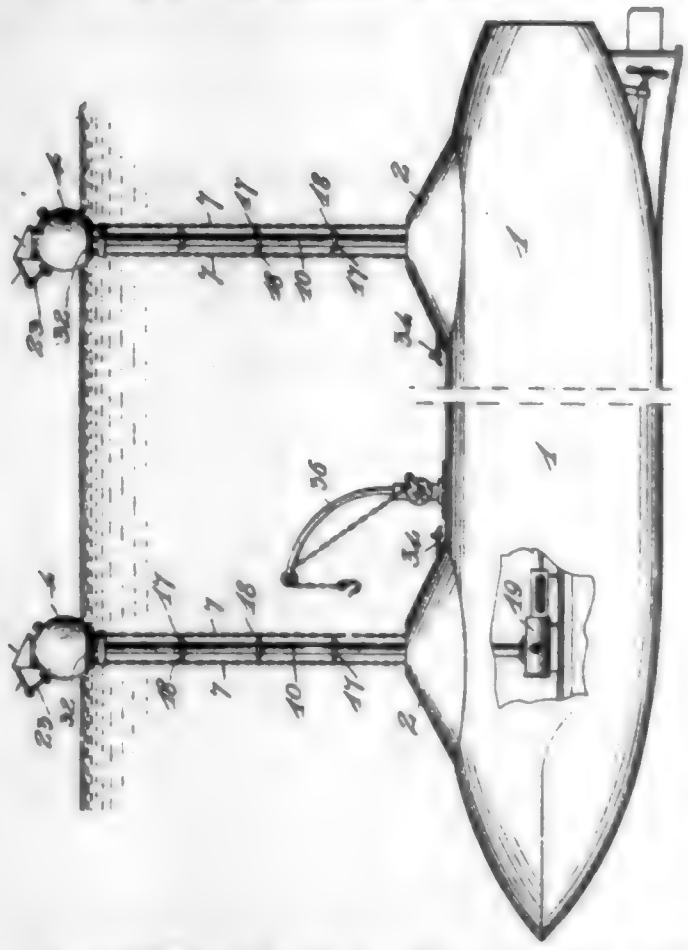
814,869. **SUBMARINE BOAT.** WILLIAM J. O'HAIRE, Washington, D. C., assignor of one-half to Jeremiah O'Connor, Washington, D. C. Filed Sept. 29, 1905. Serial No. 280,664.

Claim.—1. A submarine boat having a housing on its upper side forming a chamber and provided with a seat-opening, a float adapted to be seated in said opening, means to secure the float when seated and to release the float, a flexible ventilating-pipe connecting the float and the boat, and flexible connections, independent of said pipe, between the float and the boat, said pipe and connections being secured to the boat within the chamber formed by the housing and passing through the seat-opening of the latter when the float is released.

2. A ventilating apparatus for submarine boats, consisting of hollow floats having formed in their upper sides an air-inlet opening, a door to open and close said opening, means to open and close said door from within the boat, inner and outer air-supply tubes connecting said hollow float with the interior of the boat, a universal joint arranged at each end of said outer tube to connect the same with the float and with the boat, chains to secure the float to the boat when the latter is submerged, and means to secure said float directly to the boat when the latter is afloat, substantially as described.

3. In a submarine boat, housings arranged on the top or deck of the same, seats formed in said housings, hollow floats adapted to be secured in said seats when the boat is floating on the surface of the water, means operated from within the boat to release said floats, chains to hold the floats when the same are released from the housings and the boat submerged, inner and outer flexible air-supplying tubes, short sections of metallic tubes secured to and projecting into said float and boat, universal joints to connect the opposite ends of said outer flexible tube with said short metallic tubes, valves ar-

ranged in the boat to open and close the inner ends of said tubes, a door hinged to the upper side of said float to open and close an air-inlet opening formed in the latter and means to open and close said door from within the boat, substantially as described.



4. In a submarine boat, housings arranged on the top or deck near each end thereof, seats formed in said housings, hollow floats adapted to be engaged with said seats, screws adapted to work through packed bearings in the top of the boat, nuts secured to said float and adapted to be engaged by said screws to hold the float in place in said seats, when the boat is afloat, chains to secure said floats to the boat when the former are released from the seats and the boat submerged, means whereby said chains are swiveled to the boat and to the float, inner and outer flexible air-supply tubes, universal joints to connect the opposite ends of said outer tube with said float and boat, a door hinged to the top of the float to open and close an inlet-opening in the latter, means to open and close said door from within the boat, and valves arranged in the inner ends of the tubes to open and close the latter, substantially as described.

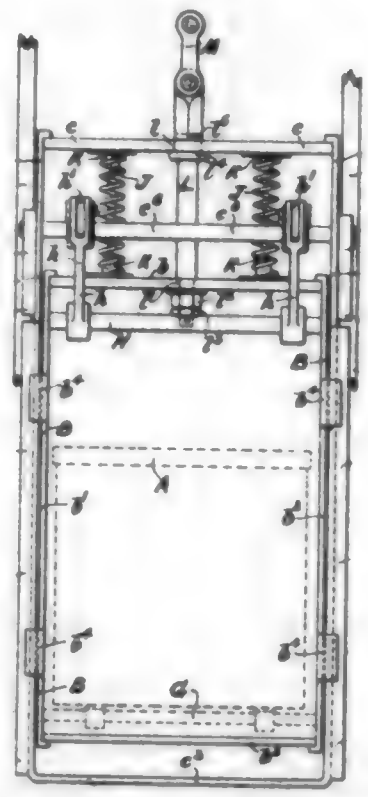
5. In a submarine boat, housings arranged on the top or deck at each end of the same, hollow floats seated in said housings, screws, adapted to be operated from within the boat to secure the floats in said seats when the boat is afloat, drain-cocks arranged in said housings, chains to secure said floats to the boat when the latter is submerged and the floats released from their seats, rings connected to the outer ends of said chains, means whereby said rings are revolubly connected to said boat and float, inner and outer flexible air-supply tubes, universal joints arranged on the opposite ends of said outer tubes, metallic tube-sections connected to said joints and adapted to be screwed into the float and top of the boat, thereby connecting said outer tubes with the float and boat, bracing bands or collars arranged on said tubes and connected to said chains, valves arranged in the inner ends of said tubes to open and close the same, a pump adapted to be connected to the inner end of said outer tube within the boat, a door hinged to the upper side of the float to open and close an inlet-opening therein and cords or ropes connected to said door and adapted to work through said outer tube whereby said door may be opened and closed from within the boat, substantially as described.

6. A submarine boat having a housing forming a chamber and provided with a seat-opening, a float adapted to be seated in said opening, a flexible element connecting the boat and the float, and means operated from within the boat, to secure the float to the housing and to release it therefrom.

814,870. SAFETY MECHANISM FOR HOISTING APPARATUS.

JOHN H. PICKAVANCE, Johannesburg, Transvaal. Filed Dec. 21, 1904. Serial No. 237,830.

Claim.—1. Safety mechanism for hoisting apparatus comprising in combination, an outer frame adapted to traverse the guides of the shaft, spindles journaled in said frame on each side of the guides, catches fixed on said spindles, an inner frame adapted to slide in the outer frame, rods supported in said inner frame, connections between the spindles in the outer frame and the rods in the inner frame which operate the catches when the inner frame falls inside the outer frame, and means for effecting said falling movement of the inner frame when said inner frame becomes unsupported, substantially as described.



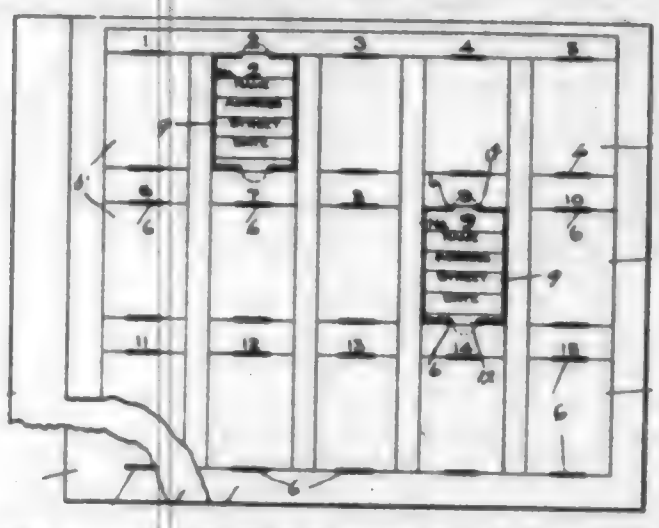
2. Safety mechanism for hoisting apparatus, comprising in combination, an outer frame adapted to traverse the guides of the shaft, spindles journaled in said frame at each side of the guides, catches fixed on said spindles at each side of the guides, rock-arms fixed on said spindles, an inner frame adapted to slide on the outer frame, rods supported in said inner frame, links loosely mounted on said rods and loosely pivoted at their other ends to the rock-arms fixed on the spindles carried by the outer frame, and springs interposed between the frames which operate to cause relative movement of the frames in the event of said inner frame becoming unsupported to operate the catches, substantially as described.

3. Safety mechanism for hoisting apparatus comprising in combination, an outer frame having flanges adapted to traverse the guides of the shaft, two horizontally-arranged spindles journaled in bearings in the upper end of the frame, one at each side of said guides, catches fixed on the extremities of said spindles at each side of the guides, rock-arms fixed on said spindles at each end, an inner frame constructed with flanges adapted to traverse the sides of the outer frame, two horizontally-arranged rods supported in the upper end of said inner frame, links loosely mounted on each end of each of said horizontal rods, said links being attached at their other ends to the rock-arms fixed on the horizontal spindles carried by the outer frame, springs arranged between the top horizontal members of the two frames which serve to cause the inner frame to fall inside the outer frame when said frame becomes unsupported, and means for attaching the hauling-rope to said inner and outer frames, substantially as described.

4. Safety mechanism for hoisting apparatus comprising in combination, the guides in the shaft, the inner frame having lugs at its upper end forming bearings at each side of said guides, two horizontally-arranged spindles journaled in said bearings, a pair of rock-arms fixed on each spindle, one at each end, a pair of catches fixed on each of said spindles, one at each extremity outside the outer frame and adapted to engage the guides, said outer frame having flanges and adapted to traverse the guides and formed with a hole in the top horizontal member through which the draw-bar works, the draw-bar, an inner frame having flanges adapted to traverse the vertical members of the outer frame, constructed at its lower end to support the bucket or the like and having lugs which form bearings at each side of the guides, two horizontally-disposed rods supported in said bearings, a pair of links loosely mounted on each rod, one at each end, said links being pivotally attached at their upper ends to the outer ends of the rock-arms, the top horizontal member of said inner frame

having a hole through which the lower end of the draw-bar projects and in which it is secured, the draw-bar having a collar which by engaging the top horizontal member of the outer frame prevents the inner frame rising in the outer frame beyond a certain point, and a pair of spiral springs located between the top horizontal members of the two frames, and the two cylindrical projections on said top horizontal members to maintain said springs in position between the frames, substantially as and for the purposes described and shown.

814,871. SHIPPING-BOOK. JAMES W. PLACE and HERMAN L. CONTER, Decatur, Ind. Filed Mar. 13, 1905. Serial No. 249,742.



Claim.—1. A shipping-book having duplicate leaves secured to the opposite sides of an intermediate dividing-leaf, the outer face of each duplicate leaf being divided into a plurality of blank spaces provided with a proper separating-space between them at their opposite ends, the said separating-spaces being numbered as described, and the opposite ends of the said blank spaces being slotted to receive the retaining ends of a detachable shipping-tag coupon correspondingly numbered with the indicated space into which it is received and retained.

2. A shipping-book whose leaves are divided into a plurality of blank spaces, having a proper separating-space between them at their ends and sides, the said end spaces being numbered for the purpose specified, and the opposite ends of the said blank spaces being provided with slots adapted to receive the retaining ends of a detachable shipping-tag coupon correspondingly numbered with the indicated space into which it is received and retained.

814,872. CHALK-HOLDER. FRANK T. PRIMUS and EDWARD G. BOOLSTON, Vinton, Iowa. Filed Oct. 30, 1905. Serial No. 285,111.



Claim.—1. A chalk-holder comprising an open-ended receptacle with indentured walls, one end thereof having an inwardly-turned flange, a closure telescoping within said receptacle, a member having resilient angled arms carried by said closure, and means for throwing the angled ends of said arms into indentures formed in the walls of said receptacles, as set forth.

2. A device for holding chalk comprising an open-ended receptacle, one end of which has inwardly-turned flanges, two of the opposite walls of said receptacles being indentured, a closure telescoping within said receptacle, a U-shaped member fixed to said closure and having resilient arms, the ends of which are angled, and means for throwing said angled ends into said indentures whereby the closure may be locked within the casing, as set forth.

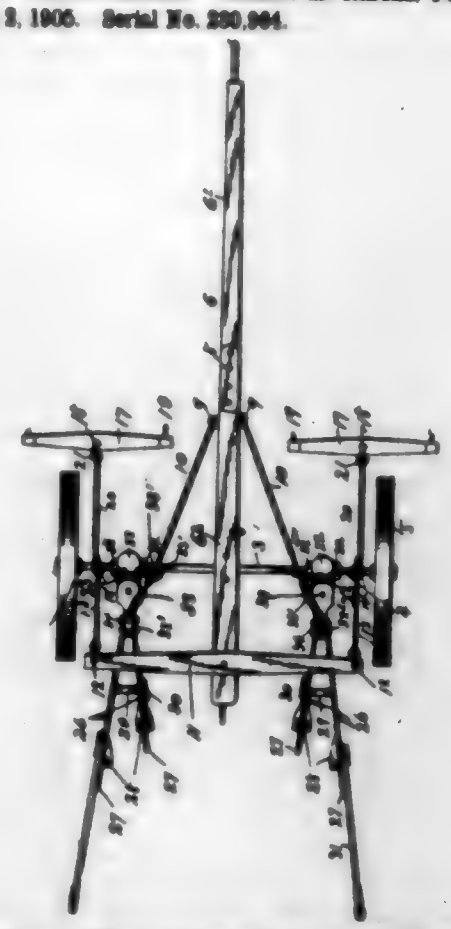
3. A device for holding chalk comprising an open-ended receptacle, one end of which has inwardly-turned flanges, two of the opposite walls of said receptacles being indentured, a closure telescoping within said receptacle, a U-shaped member fixed to said closure and having resilient arms, the ends of which are angled, a rotatable shaft journaled within said closure and having oppositely-disposed wings which are adapted to throw the angled ends of said member into said indentures of the casing, as set forth.

4. A device for holding chalk comprising an open-ended receptacle, one end of which has inwardly-turned flanges, two of the opposite walls of said receptacle being indentured, a closure telescoping within said receptacle, a U-shaped member fixed to said closure and having resilient arms, the ends of which are angled, a shaft journaled in the walls of said closure and having one end hollow adapted to receive a key, oppositely-disposed wings upon said shaft designed to engage indentures in the arms of said member whereby the angled ends of said member may be thrown into indentures in said receptacle, as set forth.

5. A chalk-holder comprising an open-ended receptacle, one end of which has an inwardly-turned flange, indentures formed in the opposite walls of said receptacle, a closure adapted to telescope within the receptacle, a U-shaped locking member having resilient arms which are indentured and provided with angled ends, a screw-eye passing through the end of the closure and engaging said member, a rotatable shaft having oppositely-disposed wings designed to engage the indentures of said arms to hold the angled ends thereof into the indentures in said receptacle, as set forth.

6. A chalk-holder comprising an open-ended receptacle, one end of which has an inwardly-turned flange, indentures formed in the opposite walls of said receptacle, a closure adapted to telescope within the receptacle, a U-shaped locking member having resilient arms which are indentured and provided with angled ends, a screw-eye passing through the end of the closure and engaging said member, a rotatable shaft having oppositely-disposed wings designed to engage the indentures of said arms to hold the angled ends thereof into the indentures in said receptacle, and ribs formed in the end of said closure and adapted to hold said member from turning, as set forth.

814,873. CULTIVATOR. THOMAS M. RIDDEL, Fullerton, Nebr. Filed Oct. 2, 1905. Serial No. 280,964.

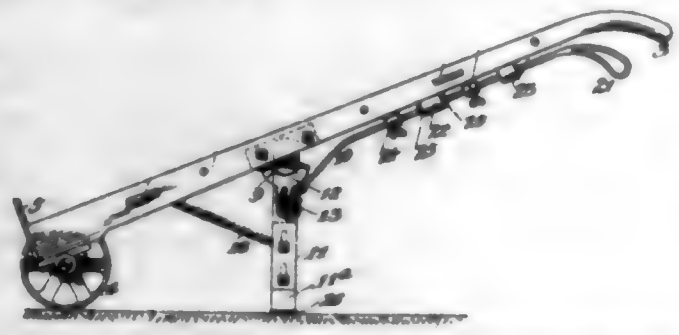


Claim.—1. In a cultivator a bowed axle, provided with two outwardly-extending threaded spindles 4; wheels 5, mounted on said spindles; a tongue 6, secured to the top of said bowed axle; hubs 22, having necks 23, secured to said bowed axle; beams 26, provided with sockets 30, and terminating downwardly at their rear ends in feet 27, provided with plow-points 28; braces 29; handles 31, secured to said beams; blocks 32', bifurcated at their front ends, forming upper jaws 33, and lower jaws 34, provided with vertical perforations; coiled springs 33', provided at their upper ends with chains secured to said blocks, and nuts 32, screwing on said threaded spindles, the plows of said cultivator being adapted to be brought any desired distance apart, by screwing said nuts inwardly or outwardly, substantially as shown and described and for the purposes set forth.

2. In a cultivator a bowed axle 3, provided with upper bars 39, lower bars 40, and outwardly-extending spindles 4; blocks 37, provided at each end with a recess 38; blocks 32', bifurcated at their front ends, forming upper jaws 33, and lower jaws 34, provided with transverse perforations; beams 26, secured at their front ends to said

blocks, said beams extending downwardly at their rear ends and terminating in feet 27, provided with plow-points 28, and handles 31, said cultivator provided with tongue and swingletrees.

814,874. TRUCK. David H. Rowe, Oakland, Cal. Filed Jan. 19, 1906. Serial No. 341,859.



Claim.—1. In a truck, a wheel-supported carrying-frame provided with handles, supporting-legs pivotally secured to the frame intermediate its length, adjustable means between the legs and the frame, for limiting the movement of said legs, and means adjacent to said handles for moving the legs.

2. A truck frame and wheels, in combination with supporting-legs hinged to the frame behind the wheels, rods connected to said legs and extending along the handles and means for locking said rods to the handles and for releasing said rods, whereby the legs can be held in any position to form supports, and can also be released and caused to swing so as to vary their angular relation to said frame, substantially as and for the purposes set forth.

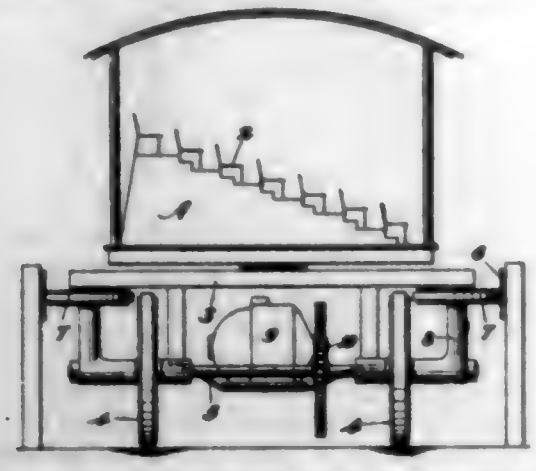
3. In a truck, a wheel-supported frame provided with handles, depending semicircular extensions on the side rails of the frame, supporting-legs pivotally secured to the frame intermediate its length, a rod from the legs to the handles for swinging the legs on their pivots, and adjustable stops for locking the legs against movement in any adjusted position.

4. In a truck, a frame, carrying-wheels journaled therein, extensible two-part supporting-legs pivoted to said frame behind the carrying-wheels so as to form variable fulcrums, and means for changing the angular relation of said legs to said frame.

5. In a truck, the frame composed of side rails and cross-pieces, carrying-wheels journaled in said frame, plates secured to said side pieces behind the carrying-wheels and having depending circular ears, legs pivoted in said ears, and a bracket on said legs adapted to fit said circular ears.

6. In combination with a truck-frame and its carrying-wheels, pivoted legs, a rod connected to said legs, guides for said rods and adjustable stops on said rods coöperating with said guides for limiting their motion.

814,875. RACE-TRACK OBSERVATORY. Mark P. Schettel, Oakland, Cal. Filed May 10, 1905. Serial No. 259,760.



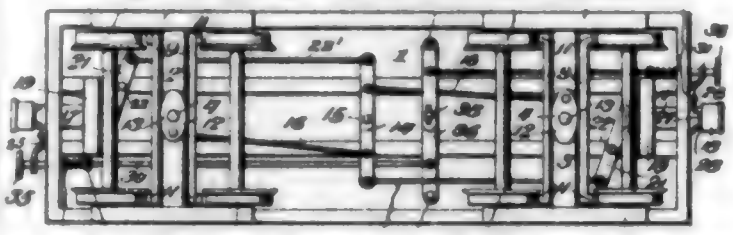
Claim.—1. In a race-track observation-car, a car-body having seats arranged thereon, axles for said car said axles provided with main bearing-wheels and having, also, vertically-disposed end standards, wheels journaled to turn in a horizontal plane on said standards, and vertically-disposed tracks or rails against which the last-named wheels travel.

2. An endless race-track, and a second track substantially concentric therewith, and an observation-car having wheels adapted to travel upon said second track, vertically-journaled guide-wheels carried upon the car and inclosing rails or tracks against which said guide-wheels travel.

3. An endless race-track and a second track concentric therewith, said second track having interior and exterior concentric rails or tracks, a car with wheels to travel on the second track-surface, and guide-wheels carried by the car and adapted to travel between and against the guide-rails.

4. The combination with a race-track, of a second track conforming substantially to the contour thereof and having a substantially horizontal, endless annular flat surface, a car adapted to travel thereon, vertically-disposed tracks or guides for the car, and wheels journaled upon the car so as to travel against said tracks.

814,876. AUTOMATIC CAR-BRAKE. Charles L. Schultz, Wheeling, W. Va. Filed Oct. 30, 1905. Serial No. 285,061.



Claim.—1. In an automatic brake for cars or the like, the combination with a frame and wheeled trucks thereon, of swinging brake-beams carrying shoes to engage the wheels of said trucks, actuating-cams disposed between said brake-beams, sliding draw-bars, a centrally-disposed lever, links connecting said lever and said cams, levers actuated by said sliding draw-bars, links connecting the last-mentioned levers and said centrally-disposed lever, and swinging elements upon the ends of said frame adapted to engage said sliding draw-bars to hold them against movement.

2. In an automatic brake for railway-cars or the like, the combination with a frame and wheeled trucks mounted thereon, of brake-beams pivotally suspended from said trucks, brake-shoes upon said beams adapted to engage the wheels of said trucks, cams pivoted centrally between said brake-beams and adapted to actuate the latter, a centrally-disposed lever pivoted at its center upon said frame, links connecting said lever and said cams, longitudinally-slidable draw-bars in the ends of said lever, levers pivoted upon said frame adjacent to said draw-bars and adapted to be actuated by the inner ends of the latter, links connecting the last-mentioned levers and said centrally-disposed lever, shoulders upon said draw-bars, levers pivoted upon the ends of said frame and adapted to be swung into and out of engagement with the shoulders of said draw-bars, and means for actuating said levers.

3. In an automatic brake for railway-cars or the like, the combination of a brake mechanism, sliding draw-bars for actuating the same, levers for locking said draw-bars against movement, and sliding rods operatively connected at one end and having inclined faces at their opposite end adapted to actuate said levers.

4. In an automatic brake for railway-cars or the like, the combination of a brake mechanism, sliding draw-bars for actuating the same, levers for locking said draw-bars against movement, and sliding rods operatively connected at one end, springs for actuating said rods, and bumpers upon the outer ends of said rods.

5. In an automatic brake for railway-cars or the like, the combination of a brake mechanism, sliding draw-bars for actuating the same, levers for locking said draw-bars against movement, a pair of levers pivotally mounted upon said frame at their outer ends and loosely connected at their inner ends, sliding rods connected to said levers, and having at their outer ends oppositely-inclined faces adapted to actuate the first-mentioned levers, springs for actuating said sliding rods, and bumpers upon the outer ends of said sliding rods, substantially as described.

814,877. COMBINED STEP-LADDER AND IRONING-BOARD. Alexander Scott, Aspen, Colo. Filed June 17, 1905. Serial No. 265,798.

Claim.—1. A combined step-ladder and ironing-board comprising a ladder member, an ironing-board member hinged to the top of the ladder and provided upon its under side with an intermediate seat and a terminal seat adjacent the free end of the board, and a combined prop and brace member having a pivotal connection with the ladder member and slidable endwise upon said pivotal connection to permit engagement of one end of the member with the terminal seat of the ironing-board for use as a brace when the device is set up as a ladder and also to permit of said end of the combined brace and prop engaging the intermediate seat of the ironing-board to operate as a prop when the device is set up as an ironing-board.

2. A combined step-ladder and ironing-board comprising a ladder member, an ironing-board member hinged to the top of the ladder member and provided upon its under side with a terminal hooked seat and a pair of transversely-spaced intermediate seats, a bar extending across the side rails of the ladder member, and a combined prop and brace made up of spaced longitudinally-slotted side bars and terminal cross-bars, the cross-bar of the ladder being received within the slots of the prop and the latter being slidable endwise across said bar and also pivotally supported thereon to permit of one of the cross-bars of the prop member being engaged with the terminal hooked seat of the board when the device is set up as a ladder and to permit of the ends of the sides of the prop member being engaged with the intermediate seats of the ironing-board when the device is set up for use as an ironing-board.



3. A combined step-ladder and ironing-board comprising a ladder member having a cross-bar disposed in rear thereof, an ironing-board hinged to the top of the ladder member and provided upon its under side with an intermediate seat and a terminal seat located adjacent the free end of the board, and a longitudinally-slotted combined prop and brace member receiving the cross-bar of the ladder-section in the slotted portion thereof with the prop member slidable endwise across the cross-bar and also pivotally supported thereon, the prop capable of being turned upon the cross-bar into substantial parallelism with the ladder-section at the back thereof and between said section and the ironing-board when the device is folded, one end of the prop capable of being engaged with the terminal seat of the ironing-board when the device is set up as a ladder, and also capable of being engaged with the intermediate seat when the device is set up as an ironing-board.

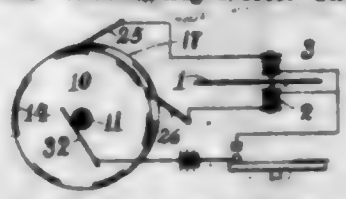
4. The combination of a ladder member, a cross-bar carried by the ladder and offset in rear thereof, a top member hinged to the top of the ladder and provided upon its under side with a terminal seat, and a longitudinally-slotted prop member receiving the cross-bar in the slotted portion thereof with the prop slidable endwise across the bar and also pivotally sustained thereon, the prop capable of being turned into substantial parallelism with the ladder member at the back thereof to lie between said member and the top in the folded condition of the device, and also to have one end of the brace engaged with the seat of the top when the ladder is set up in condition for use.

5. The combination of a leg member, a top member hinged thereto, and a prop member pivotally connected to the leg member at a point in rear of the latter and also capable of being slid in an endwise direction across said pivotal connection to dispose the prop in substantial parallelism with the leg member in rear thereof and between said member and the top in the folded condition of the device, said top being provided upon its under side, with a seat and the upper end of the prop capable of being engaged with the seat when the prop is crossed with the leg member to support the top in a substantially horizontal position, the leg being provided with a stop disposed for engagement by the upper side of the prop in the set-up condition of the device.

6. The combination of a leg member, a top member hinged thereto, and a prop member pivotally connected to the leg member at a point in rear of the latter and also capable of being slid in an endwise direction across said pivotal connection to dispose the prop in substantial parallelism with the leg member in rear thereof and between said member and the top in the folded condition of the device, said top being provided upon its under side, with a seat and the upper end of the prop capable of being engaged with the seat when the prop is crossed with the leg member to support the top in a substantially horizontal position.

7. In a combined step-ladder and ironing-board, the combination of a step member having its side rails provided with corresponding rear extensions, a cross-bar carried by said extensions in rear of the side rails, an ironing-board hinged to the upper end of the ladder, a hook-shaped seat upon the under side of the board adjacent the free end thereof, a pair of spaced seats upon the under side of the board intermediate of the ends thereof, a combined brace and prop member made up of spaced longitudinally-slotted side bars and terminal cross-bars connecting the same, the cross-bar of the ladder being received within the slots of the prop and said prop being slidable endwise across the bar and pivotally mounted thereon to permit of the prop being turned into substantial parallelism with the ladder-section at the back thereof and between the ladder-section and the ironing-board in the folded condition of the device, one of the cross-bars of the prop capable of being engaged with the terminal hooked seat of the ironing-board when the device is set up as a ladder, the prop capable of being turned upon the cross-bar of the ladder and slid endwise through said ladder across the same and have the upper ends of the prop members engaged with the intermediate seats of the ironing-board to support the device for use as an ironing-board, and stops carried by the inner sides of the rails of the ladder-section in position to engage the upper edges of the prop-bars and brace the structure when set up as an ironing-board.

814,878. ELECTRIC MUSICAL INSTRUMENT. MELVIN L. SEVERY, Arlington Heights, and GEORGE B. SINCLAIR, Winthrop, Mass., assignors to Choraleelo Manufacturing Company, a Corporation of Maine. Filed Nov. 24, 1900. Renewed Aug. 1, 1905. Serial No. 272,193.



Claim.—1. In an electric means for vibrating sonorous bodies, the combination of a plurality of toothed members operating a plurality of sonorous bodies tuned to contiguous notes of the scale, brushes for said members, and means for producing relative motion between said members and brushes; one or more members having equally-spaced teeth throughout the greater part thereof but not for the entire relative traverse of the member and its brush, substantially as described.

2. In an electric pulsator for vibrating sonorous bodies, the combination of toothed members, brushes therefor, and means for producing relative motion between said members and brushes; one or more members having teeth the majority of which are equally spaced but some of which are spaced in non-conformity to the remainder, substantially as described.

3. In a pulsator for electrically-vibrated sonorous bodies, the combination of a plurality of uniformly-rotated toothed disks, and brushes therefor; one or more of said disks having the majority of the teeth thereof spaced to correspond to the number of the vibrations of the associated sonorous body, but a portion of the periphery of such disk or disks not being so spaced.

4. In a pulsator for electrically-vibrated sonorous bodies, the combination of a plurality of uniformly-rotated toothed disks, and brushes therefor; one or more of said disks having the majority of the teeth thereof spaced to correspond to the number of the vibrations of the associated sonorous body, but the remaining teeth of said disk or disks being differently spaced and adapted to change the phase of the vibrations of the sonorous body between the terminations of the equally-spaced teeth.

5. In an electrically-operated musical instrument, the combination with a string, of a pair of pulsatory magnets located at opposing sides of said string, and means for supplying electric pulsations to said magnets alternately whereby the energized intervals of one magnet occur during the demagnetized intervals of the other, and the string is thereby given a positive pull in each direction of its vibration, substantially as described.

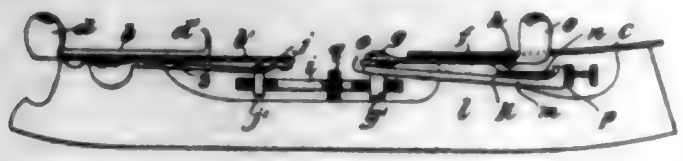
6. In an electrically-operated musical instrument, the combination with a sonorous body, of a plurality of pulsatory magnets located upon opposing sides of said body and energized alternately, substantially as described.

814,879. SKATE. HERBERT A. SILVERA, New York, N. Y. Filed Feb. 28, 1905. Serial No. 247,935.

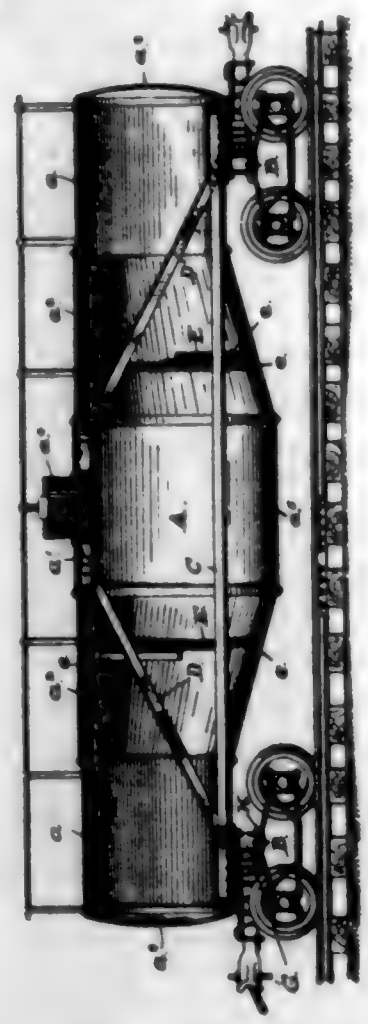
Claim.—1. A clamp-skate having toe and heel clamps operatively connected, and a stop in combination therewith, to arrest the closing action of the toe-clamps before the final closing action of the heel-clamps.

2. In a clamp-skate, the combination with toe and heel clamps

and a common operating device therefor, of a yoke connected to said toe-clamps and movable therewith, and an adjusting stop-screw carried by said yoke and arranged to coact with a fixed portion of the skate.



814,880. RAILROAD TANK-CAR. HENRY J. SMALL, San Francisco, and JAMES B. SPEED, Berkeley, Cal. Filed Sept. 19, 1905. Serial No. 279,112.



Claim.—1. A railroad tank-car, the tank of which is composed of cylindrical end sections, a middle cylindrical section of greater diameter than that of the end sections, and conical intervening sections uniting the end and middle sections, said tank-sections being relatively arranged to depress the intertruck portion of the tank below the level of its ends.

2. A railroad tank-car, the tank of which is composed of cylindrical end sections, a middle cylindrical section of greater diameter than that of the end sections, and conical intervening sections uniting the end and middle sections, said tank-sections being relatively arranged to form of their tops a continuous level throughout the length of the tank, while their bottoms, intermediate the trucks, are depressed below the level of the end sections.

3. In a railroad tank-car, a tank having an interior stiffening-truss comprising horizontal struts extending lengthwise of its bottom, and inclined struts extending from the ends of said horizontal struts to the middle top of said tank.

4. In a railroad tank-car, a tank having an interior stiffening-truss comprising horizontal struts extending lengthwise of its bottom, and inclined struts extending from the ends of said horizontal struts to the middle top of said tank, and interior baffle-diaphragms on each side of the median transverse plane of such tank.

5. In a railroad tank-car, a tank constituting, of itself, the sole intertruck connection, said tank having an interior stiffening-truss comprising horizontal struts extending lengthwise of its bottom, and inclined struts extending from the ends of said horizontal struts to the middle top of said tank.

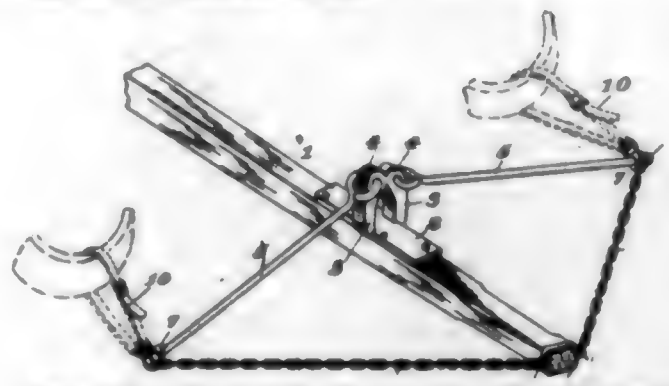
6. In a railroad tank-car, a tank composed of cylindrical end sections, a cylindrical middle section of diameter greater than that of the end sections, and intervening conical sections uniting the end and middle sections, said tank-sections being relatively arranged to depress the bottom of the tank intermediate the trucks, in combination with an interior stiffening-truss comprising horizontal struts extending lengthwise of the bottom of the tank and bridging its depressed portion, and inclined struts extending from the ends of said horizontal struts to the middle top of said tank.

7. In a railroad tank-car, a tank composed of cylindrical end sections, a cylindrical middle section of diameter greater than that of the end sections, and intervening conical sections uniting the end and middle sections, said tank-sections being relatively arranged to depress the bottom of the tank intermediate the trucks, in combination with an interior stiffening-truss comprising horizontal struts extending lengthwise of the bottom of the tank and bridging its depressed portion, and inclined struts extending from the ends of said horizontal struts to the middle top of said tank, and interior baffle-diaphragms on each side of the median transverse plane of said tank.

8. In a railroad tank-car in which the tank constitutes, of itself, the sole intertruck connection, the means for connecting the tank end with the body-bolsters of the trucks consisting of the intervening stress-distributing plates independently riveted to both tank and bolsters.

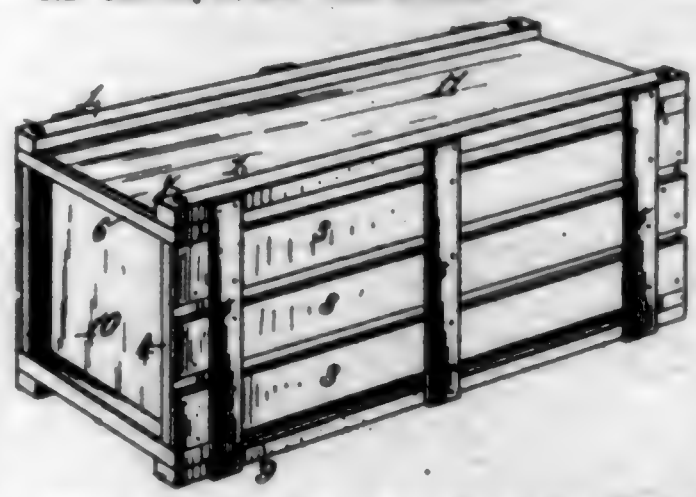
9. In a railroad tank-car, the combination of a tank; wheeled trucks; a body-bolster connected with each truck; a stress-distributing plate under each end of the tank; rivets passing through said plates and tank-shell only; and other rivets passing through the bolsters, and through said plates only.

814,881. NECK-YOKE. CAPTAIN A. SMITH, Uniontown, Pa. Filed Aug. 18, 1905. Serial No. 274,733.



Claim.—In a device of the character described, the combination, with a vehicle tongue or pole, of a plate mounted on said tongue or pole and extending longitudinally thereof, a pair of upwardly-projecting arms or lugs formed integral with the plate and curved to meet each other at their upper ends where they are integrally united, laterally-extending rods having their ends pivotally mounted in openings in said lugs or arms, a knob formed integral with the outer end of each rod, an annular collar formed integral with each rod at a comparatively short distance from its outer end, a chain secured to each rod between the collar and the knob, and a band mounted on the outer end of the tongue or pole and having laterally-projecting lugs with openings therein whereby the other ends of the chain are secured to the band.

814,882. CRATE OR COOP. ELLSWORTH SPERLING, Longview, Tex. Filed July 26, 1905. Serial No. 271,602.



Claim.—1. A crate or coop of the class set forth having side panels with end posts, upper and lower rails to which said panels are secured, the posts being of less length than the distance between the rails, pivot means inserted through the opposite extremities of the rails and extended partially into the posts, hinge-strips terminally

interposed between the rails and the post ends and also having the pivot means passing therethrough, ends for the crate or coop, and a removable bottom and top.

2. A crate or coop of the class set forth having side panels with end posts, upper and lower rails to which the panels are secured, the distance between the opposite sides of the rails being greater than the length of the posts, hinge-strips terminally interposed between the ends of the rails and the posts, pivot devices extending through the ends of the rails and hinge-strips and partially projecting through the length of the posts, end closures held against the hinge-strips and posts, a removable bottom, and a detachable top or cover.

3. In a crate or coop of the class set forth, a body having side panels with end posts, upper and lower rails to which the panels are secured, the posts being of less length than the distance between the rails, and hinge-strips terminally interposed between the rails and the post ends, pivot means passing partially through the rails, hinge-strips, and posts, a removable bottom, and a detachable cover or top having cross-cleats on the under side thereof projecting beyond one side for removable insertion under one of the upper rails, the opposite extremities of the bottom and detachable cover or top being supported on the hinge-strips between the posts.

4. In a crate or coop of the class set forth, the combination of a foldable body having end posts, upper and lower rails, and hinge-strips, the hinge-strips being interposed between the ends of the rails and posts, means for removably connecting the ends of the rails, hinge-strips and posts, a removable bottom insertible in and withdrawable through the upper portion of the body, a detachable top or cover, the bottom and top or cover being supported at their terminals on the hinge-strips between the posts, and end closures held within the body of the crate and maintained in position by the bottom and top or cover.

5. In a crate or coop of the class set forth, the combination of a foldable body involving upper and lower rails, end posts, and hinge-strips terminally interposed between the ends of the rails and posts, means for pivotally connecting the ends of the rails, hinge-strips, and posts, a removable bottom of slightly less length than the interior of the body, removable end closures against the lower portion of which the opposite extremities of the bottom have contact, and a detachable top or cover having the opposite extremities held on the upper hinge-strips and also provided with means for engaging the upper portions of the removable end closures.

6. In a crate or coop of the class set forth, a collapsible body involving end posts, upper and lower rails, and hinge-strips interposed between the ends of the rails and the posts, means for pivotally connecting the ends of the rails, hinge-strips and posts, a removable bottom, removable end closures against the lower portion of which the said bottom has bearing, and a detachable top or cover having cross-cleats projecting therefrom at one side to engage the under portion of one of the upper rails, and also provided with means for contacting with the upper portions of the end closures, the opposite extremities of the top or cover being held on the upper hinge-strips between the upper rails.

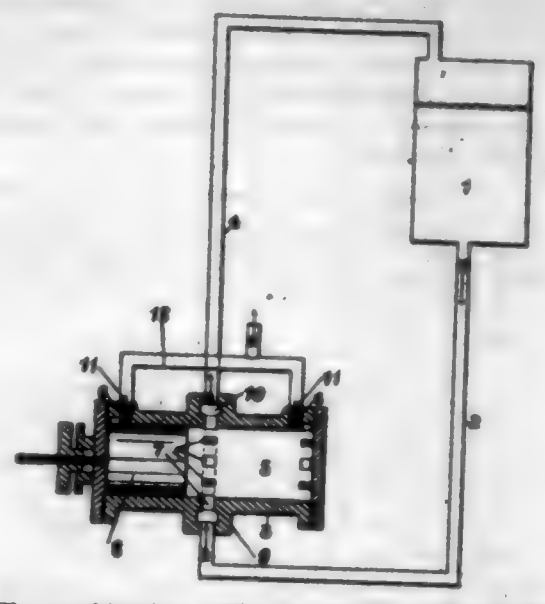
7. In a crate, the combination of sides and ends having intersecting members including upper and lower hinge-strips which are respectively located below the upper and lower portions of the crate, pivot devices extending through portions of said members and inserted in reverse position, said pivot members projecting only partially through the vertical extent of the corners of the body, a removable bottom, and a removable top terminally engaging the upper hinge-strips.

8. In a crate or coop of the class set forth, the combination of side panels having end posts and vertical securing-strips projected above and below the same, upper and lower rails to which the securing-strips are attached, the distance between the opposing sides of the rails being greater than the length of the posts, hinge-strips terminally interposed between the rails and posts, pivot devices extending through the rails and hinge-strips and projecting partially into the posts, end closures, a removable bottom, and a detachable top or cover.

814,883. **MEANS FOR PUMPING LIQUIDS.** JOHN E. STARR, New York, N. Y. Filed Apr. 13, 1905. Serial No. 255,267.

Claim.—1. The combination, with a source of supply of liquid to be pumped, of a pump having an inlet connected to such source of supply, and an equalizing-passage connecting said pump to said source of supply and serving to return thereto gas which accumulates in the pump.

2. The combination, with a source of supply of liquid to be pumped, of a pump having an inlet connected to such source of supply, and having also a gas-escape port at the top of its cylinder, connected to said source of supply, said pump comprising automatic means for closing said port during the pumping stroke.



3. The combination, with a source of supply of liquid to be pumped, of a pump having an inlet connected to such source of supply, and an equalizing-passage connecting said pump to said source of supply and serving to return thereto gas which accumulates in the pump, said pump comprising automatic means for closing said passage during the pumping stroke and for permitting escape of gas therethrough prior to such closing.

4. The combination with a source of supply of liquid to be pumped, of a pump having an inlet and gas-escape ports, the former connected to said source of supply, the latter likewise connected to said source of supply and adapted to return thereto gas which accumulates within the pump, said pump comprising automatic means for opening said inlet-port to permit entrance of liquid, and for opening said gas-escape port to permit escape of gas within the pump, and for closing said ports.

5. The combination with a pump comprising a pumping cylinder and piston, said cylinder having inlet and gas-escape ports arranged to be uncovered by said piston near one end of its stroke, said gas-escape port located at the top of the cylinder, of a source of supply of liquid to be pumped, such source of supply connected to said inlet-port and the normal level of the liquid therein being above the level of such pump-cylinder, said escape-port also connected to said source of supply.

6. In refrigerating apparatus, the combination with an absorber or other receptacle containing aqua-ammonia at or near its boiling-point, of a pump having an inlet connected to such absorber or receptacle, and an equalizing-passage connecting said pump to such absorber or receptacle, said pump comprising automatic means for opening and closing said equalizing-passage.

7. In refrigerating apparatus, the combination with an absorber or other receptacle containing aqua-ammonia at or near its boiling-point, of a pump having a central inlet connected to such absorber or receptacle, and having also a central gas-escape port, the piston of said pump arranged to open and close said inlet and gas-escape port, and an equalizing-passage connecting said gas-escape port with said absorber or receptacle.

814,884. **UMBRELLA.** WILLIAM A. STETTNER, Elgin, Ill. Filed June 22, 1905. Serial No. 266,466.



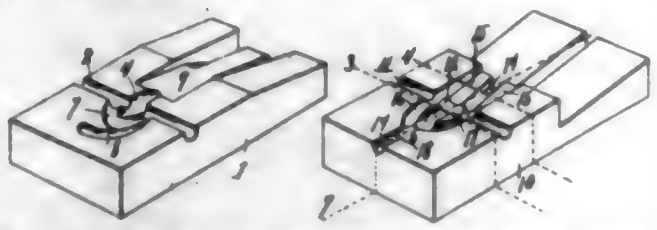
Claim.—1. In a removable cover for umbrellas, the combination with the ribs provided with a loop near the ends thereof and a ring carried in said loop, of a cover having the material turned under at the points thereof and secured in such manner as to form an opening to receive the rib and a ring secured under said cover adjacent the said points arranged to engage the said loop and said ring on said ribs, substantially as described.

2. In a removable cover for umbrellas, the combination with the ribs provided with a ring near the ends thereof, of a cover having the material at the points thereof secured in such manner as to form an

opening to receive the rib and a ring secured under said cover adjacent the points thereof and arranged to receive the rib and to engage the said ring on the rib, substantially as described.

3. In a removable cover for umbrellas, the combination with the ribs, of a cover having the material at the points thereof arranged to form an opening to receive the ribs, a ring secured under said cover adjacent the said points arranged to receive the rib and means on said ribs to engage said ring to hold the same at the end of said rib, substantially as described.

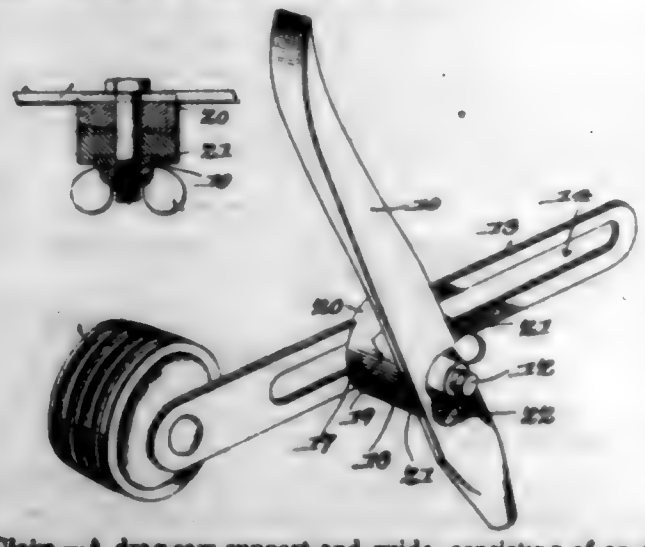
814,885. DIES FOR TYING INTERSECTING WIRES. ORANGE S. STURTEVANT, Adrian, Mich., assignor to Adrian Wire Fence Company, Adrian, Mich., a Corporation. Filed Nov. 8, 1904. Renewed Aug. 14, 1905. Serial No. 274,238.



Claim.—1. Dies for tying intersecting wires, one of which is provided in the face thereof with a transverse channel, an intersecting oblong concavity, a curved way whose terminals communicate with said channel and which embraces one end of said concavity, and a diverging curved way leading from said channel at the point of its junction with said first-mentioned way, the other die having a transverse channel adapted to register with the channel in the first-mentioned die and intersected by a central depression, a longitudinal channel crossing said depression, an inclined way having curved branches leading therefrom, one branch crossing the transverse channel and terminating at the longitudinal channel, the other branch crossing the longitudinal channel above the plane thereof, and terminating in a downwardly-extending portion which partially embraces said channel.

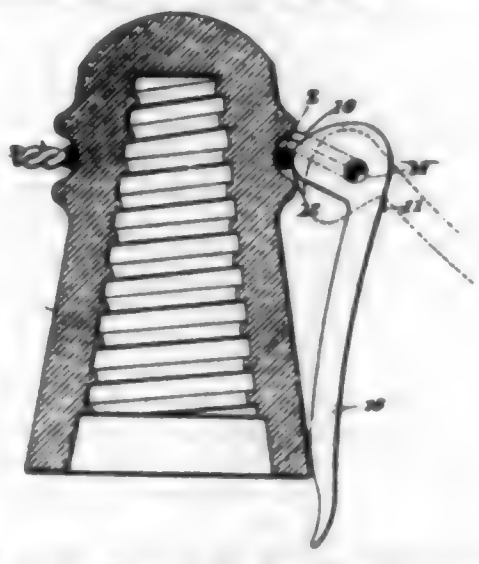
2. Dies for tying intersecting wires, one of which has in the face thereof a transverse channel, a central oblong concavity intersecting said channel, a curved way which embraces said concavity and whose terminals rest upon said channel, and a diverging curved way leading from one terminal of said first-mentioned way, the other die having a longitudinal and a transverse channel, an inclined way having curved branches leading from its base, one branch crossing below the transverse channel and terminating at the longitudinal channel, the other branch also crossing below the transverse channel and intersecting the longitudinal channel above the plane of its base, the end portion thereof crossing the longitudinal channel and terminating in a downwardly-extending part which partially embraces the longitudinal channel.

814,886. UNDERCUT-SAW GUIDE. BERT C. SWAGGERT, Eureka, Cal. Filed Feb. 28, 1905. Serial No. 247,647.



Claim.—A drag-saw support and guide, consisting of an arm for driving into a log and provided with an intermediate transverse aperture, an arm having a longitudinal slot, a saw-guiding roller connected to said slotted arm at one end, a disk having a central aperture and radial serrations on one face and spaced ribs upon the other face for bearing over the edges of said slotted arm, a disk having a central aperture and radial serrations upon one face engaging the serrations on the first-mentioned disk and with spaced ribs upon the outer face for bearing over the edges of said log-engaging arm adjacent to the aperture therein, a bolt having a head at one end and extending through the slot in said roller-bearing arm and the apertures in the serrated disks and the log-engaging arm, and a clamp-nut operating on said bolt and bearing against said log-engaging arm.

814,887. INSULATOR ATTACHMENT. HANS SWANSON, Warren, Minn. Filed Apr. 26, 1905. Serial No. 257,516.



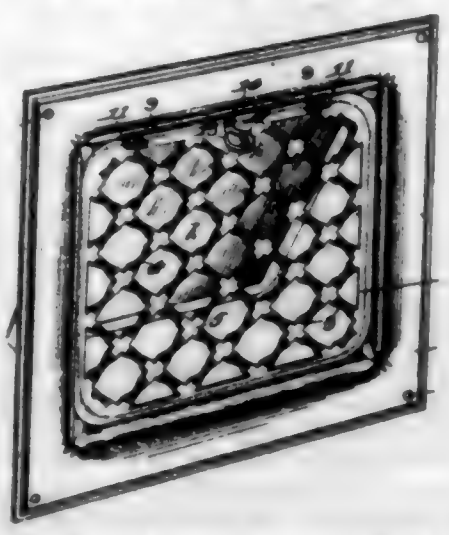
Claim.—1. A wire-clamp of the class described, comprising a cam-lever, a fulcrum-loop supporting the lever and adapted to surround the insulator, the cam being arranged to engage against the face of the wire, and the lever being movable to a locking position in a direction at right angles to the length of the wire.

2. A wire-clamp of the class described, comprising a cam-lever, and a fulcrum-loop arranged to surround the insulator, the wire-engaging face of the cam being concaved.

3. A wire-clamp of the class described, comprising an insulator-encircling loop, and a cam mounted thereon, the wire-engaging face of the cam being concaved to correspond to the contour of the periphery of the insulator.

4. A wire-clamp of the class described, comprising a loop for encircling the insulator, and a cam fulcrumed on the loop, said cam having a wire-engaging nose, the face of which is concaved to correspond to the curvature of the insulator, the cam having an elongated operating-handle arranged at a right angle to the length of the wire to be clamped.

814,888. HOT-AIR REGISTER. HERBERT SYMONDS, East St. Louis, Ill. Filed Mar. 30, 1905. Serial No. 253,915.



Claim.—1. In a wall-register, the combination of an integral grille and frame, a valve mounted thereon, said valve having one of its edges formed into a roll and a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, substantially as specified.

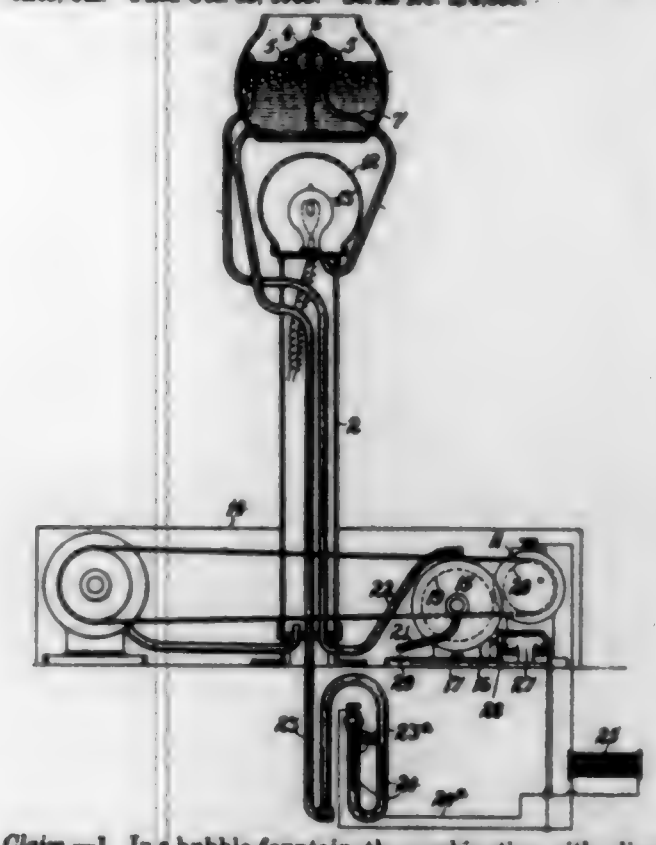
2. In a wall-register, the combination of an integral grille and frame, a valve mounted thereon, said valve having one of its edges formed into a roll, a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, and means for opening and closing the valve, substantially as specified.

3. In a wall-register, the combination of an integral grille and

frame, a valve mounted thereon, said valve having one of its edges formed into a roll, a member secured to said frame and curved to frictionally embrace said roll and thereby hinge said valve to said frame, so that the valve may be turned into and retained in any one of several positions of adjustment, and a tongue mounted through the roll and projecting through the grille to open and close the same, substantially as specified.

4. In a wall-register, a combined grille and register-frame formed from a single metallic sheet, the frame being adapted to be directly attached to the face of the wall, and the grille being recessed from the plane of the outer surface of the frame, a valve pivotally mounted upon the inner face of the grille, and means for opening and closing the valve, substantially as specified.

814,889. **BUBBLE-FOUNTAIN.** SAMUEL H. TACY, San Francisco, Cal. Filed Oct. 13, 1903. Serial No. 176,833.



Claim.—1. In a bubble-fountain, the combination with a liquid-container having a discharge-orifice above the surface of the liquid and a liquid-inlet, of a submerged nozzle, a source of air-supply, a source of liquid-supply, liquid-conducting passages and means including pump mechanism disposed in said passages for automatically returning liquid discharged from said container again to said container.

2. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply, a liquid-containing reservoir, means for delivering the liquid discharged from the container back into said reservoir, a pump connected with said reservoir and said container, and means for operating the pump to return the liquid to the container.

3. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply and a source of liquid-supply, and pumping mechanism operated coördinately with the rise and fall of the liquid in the container to replenish the contents of the container.

4. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply connected with said nozzle, a source of liquid-supply, pump mechanism and means for operating it intermittently on the fall of the liquid in the container below a predetermined level.

5. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply connected with said nozzle, a source of liquid-supply and means for delivering liquid from said source of supply to the container coördinately with the rise and fall of the liquid in said container.

6. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply, a source of liquid-supply, pumping mechanism and electrical connections, and switch mechanism operatable by the rise and fall of the liquid in the container to actuate said pumping mechanism.

7. In a bubble-fountain, a liquid-container having a vertically-disposed rigid guide, a float slidable on said guide, an adjustable nozzle carried by said float, and connections between said nozzle and a source of air-supply.

8. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply and a source of liquid-supply, a liquid-inlet pipe discharging its contents against the sides of the interior of the container to prevent undue agitation of the liquid already in the container, and pump mechanism for delivering liquid from the source of supply through said pipe to the container.

9. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply connected with said nozzle, means intermediate the source of supply and nozzle for heating the air, and means for automatically delivering liquid to the container as its contents become diminished below a certain predetermined point.

10. In a bubble-fountain, the combination of a base, a liquid-container centrally supported thereon, a submerged nozzle, a catchment-basin beneath the container, a reservoir, air-supply means connected with said nozzle, and pumping mechanism connected with the reservoir and container for returning the liquid to the container.

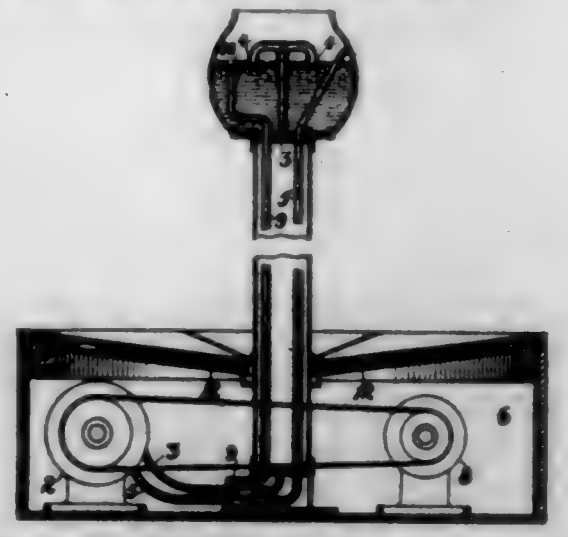
11. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a source of air-supply, a reservoir, pumping mechanism connected with said reservoir and container, an oscillating carriage for said pumping mechanism and means for operating said pumping mechanism intermittently by the oscillation of the carriage.

12. In a bubble-fountain, the combination with a liquid-container, an inlet-pipe, a submerged nozzle, a stand-pipe connected with the container, a source of air-supply, a source of liquid-supply, pump mechanism and means including a switch operatable by the pressure in said stand-pipe for operating the pump mechanism.

13. In a bubble-fountain, the combination with bubble-forming mechanism, of a liquid-container and a reservoir, an oscillating carriage a pump mounted thereon and means for operating the pump on the oscillation of the carriage.

14. In a bubble-fountain, the combination of a liquid-container, a submerged nozzle, a stand-pipe connected with the container, a motor, a blower, a reservoir, a pump mounted on an oscillating carriage, flexible connections between said pump, reservoir and container, electromagnetic means for effecting the oscillation of said carriage, and means for driving the pump from the motor intermittently on the oscillation of said carriage.

814,890. **BUBBLE-FOUNTAIN.** SAMUEL H. TACY, San Francisco, Cal. Filed Oct. 13, 1903. Serial No. 176,834.



Claim.—1. In a bubble-fountain, the combination of a vessel adapted to contain liquid, an air-nozzle, a source of air-supply, a source of liquid-supply, and pumping means for maintaining the liquid in said vessel at a constant level.

2. In a bubble-fountain the combination of a generating vessel, a source of air-supply, a source of liquid-supply, connections between said several sources of supply and generating vessel and means for maintaining a constant circulation between said vessel and said source of liquid-supply.

3. In a bubble-fountain, the combination with a generating vessel of an air-nozzle, a source of air-supply, a source of liquid-supply and means for delivering an excess of liquid to said vessel over and above the amount necessary for generating purposes and means for returning the excess to the source of supply.

4. In a bubble-fountain, the combination with a generating vessel, of an air-nozzle, a source of air-supply, a reservoir, connections

between said reservoir and vessel for delivering a constant supply of liquid to the latter, and means for discharging the excess of liquid in the vessel back into the reservoir.

5. In a bubble-fountain, the combination with a generating vessel, of an air-nozzle, a source of air-supply, a source of liquid-supply, an overflow-pipe opening into said vessel, and means for adjusting the mouth of said overflow-pipe to different horizontal planes to vary the level of the liquid in the vessel.

6. In a bubble-fountain, the combination with a generating vessel of an air-nozzle, a blower, a liquid-containing reservoir, a pump, connections between said pump and the reservoir and the vessel, an overflow-pipe connecting the vessel and reservoir, and means for operating the blower and pump.

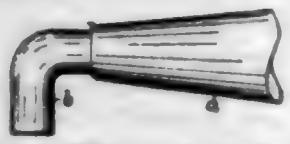
7. In a bubble-fountain, the combination with a generating vessel, a source of air-supply and a source of liquid-supply, of an adjustable nozzle adapted to be submerged in the liquid in said vessel, an overflow-pipe opening into said vessel, and an adjustable section on said overflow-pipe to vary the volume of liquid in said vessel.

8. In a bubble-fountain, the combination of a generating vessel closed at the top and having a bubble-discharge at the side, and bubble-generating mechanism operatably associated with said vessel, said closed-top generating vessel serving temporarily to confine the bubbles to allow them to drain, and directing them to one side only of the apparatus.

9. In a bubble-fountain, the combination of a generating vessel, a liquid-feed pipe, an air-feed pipe, lateral mains connecting with said air-pipe, and a plurality of discharge-nozzles connected with said lateral mains.

10. In a bubble-fountain, the combination of a generating vessel, having a lateral bubble-discharge, bubble-generating mechanism, and a plain translucent vertical surface with horizontal baffles traversable by the discharged bubbles.

814,891. **HORN FOR RECEIVING AND DELIVERING SOUND.** LEONARD L. TERHUNE, Newark, N. J. Filed May 22, 1903. Serial No. 158,244.



Claim.—1. An amplifying-horn, having a conical body, a cylindrical ferrule and a shoulder connecting said body and ferrule, said ferrule and shoulder being swaged from said conical body.

2. An amplifying-horn, having a conical body and a cylindrical ferrule, a shoulder connecting said body and ferrule, said shoulder and ferrule being swaged from the body of the horn, and the end of the ferrule being bent at right angles to that portion thereof which is adjacent to the body of the horn.

3. The improved horn having a longitudinal seam formed by turning and interlocking the opposite edges of said horn, said horn having a cylindrical small end and a flaring large end, the said longitudinal seam projecting inwardly throughout the length of the flaring and cylindrical parts.

814,892. **SASH-HOLDER.** DAVID P. TRUMP and BURNARD M. GRIMES, Holcomb, W. Va.; said Trump assignor to said Grimes. Filed Nov. 29, 1905. Serial No. 289,599.

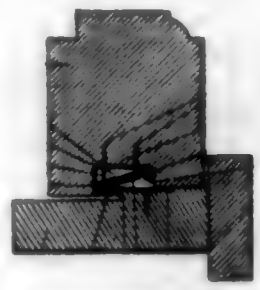


Claim.—1. A device of the character described comprising a casing having a channel therein formed with an inclined surface and with guides, an operating-piece slidable in said guide, an antifriction device in said operating-piece adapted to coact with the inclined surface in said casing, and a spring for holding said operating-piece against movement.

2. A casing for attachment to a window-sash and having a longitudinal channel in one side, the bottom of which channel is inclined and the side walls of which are provided with inclined slots converging toward one end of the casing, in combination with a yoke slidable in said slots, extending across the channel and having an opening between the side walls thereof, and a roller in said channel and extending through the opening in the yoke.

814,893. **WEATHER-STRIP.** CLIFTON VOSS, Brooklyn, N. Y. Filed Aug. 7, 1903. Serial No. 168,681.

Claim.—1. A weather-strip comprising two plates on one part, one movable and the other fixed, arranged as shown, so that the fixed plate shields the movable one and performs the double function of defending it against injury, and also of arresting the passage of water or wind; and one plate on the other part arranged to be received between the fixed and the movable plate, all substantially as herein specified.



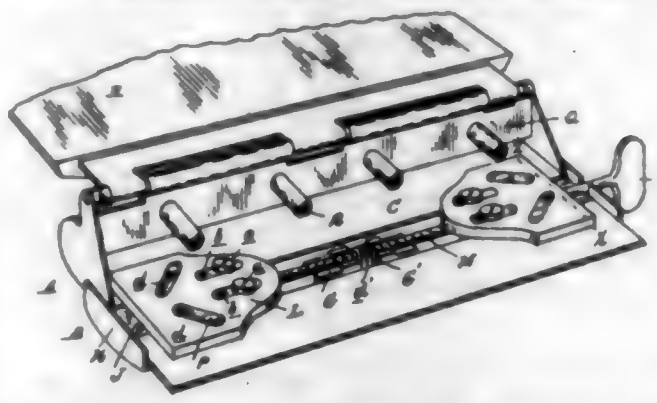
2. A weather-strip comprising two plates on one part, namely, a rigid plate in the more exposed position and a yielding plate behind the same; and a plate on the other part arranged to be received between the first-mentioned plates, substantially as described.

3. In a weather-strip, a sheet-metal trough with each edge deflected inward to form a hook, in combination with a movable part engaged in the manner of a hinge in one of the hooks, and a plate arranged to be received between said plates and to make a tight contact with the movable one, all substantially as herein specified.

4. A weather-strip in which a hook, and a flap in the form of a strip resting at the edge on said hook, on one part, are combined with a plate on the other part, the edge of said plate entering between said flap and hook, substantially as described.

5. A weather-strip having a flap which is supported by hooks at opposite edges of said flap, in combination with a plate which enters between the flap and one of said hooks, substantially as described.

814,894. **LEDGER.** WILLIAM N. WINFIELD and JAMES BARKER, Detroit, Mich., assignors to The Richmond & Backus Company, Detroit, Mich., a Corporation. Filed May 8, 1906. Serial No. 316,417.



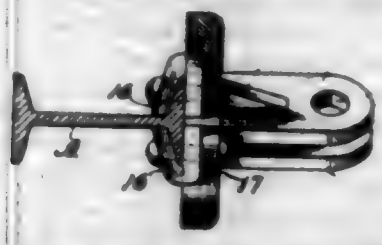
Claim.—1. In a loose-leaf ledger, the combination with a ledger-back comprising a back proper and transversely-movable side sections thereon, of adjusting-plates for said side sections each having two pairs of guide-slots, one of said pairs engaging projections on said back proper, the other pair engaging projections on said side sections and means of adjusting said plates, for the purpose described.

2. In a loose-leaf ledger, the combination with a ledger-back comprising a back proper and transversely-movable side sections, of vertical and horizontal end bearings and horizontal intermediate bearings on said back proper engaging the side sections, for the purpose described.

3. In a loose-leaf ledger, the combination with a ledger-back comprising a back proper and transversely-movable sides, of means mounted on said back proper for adjusting said side sections, bearings on said back proper engaging said side sections, and legs on said back proper engaging notches in said side sections, for the purpose described.

4. In a loose-leaf ledger, the combination with the ledger-back comprising a back plate and two complementary inclosing side sections mounted upon the plate for sliding movement transversely thereof, adjusting-plates secured to the back plate for longitudinal movement, each provided with two pairs of guide-slots, projections upon the side sections engaging one pair of said slots, projections on the back plate engaging the other pair of slots, and a screw swiveled upon the back plate and having right and left hand threads engaging the adjusting-plates.

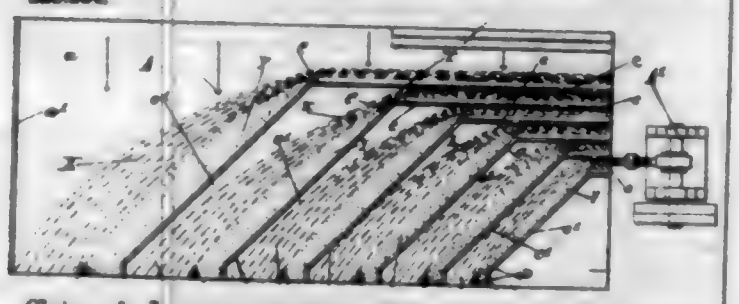
814,895. **BRAKE-LEVER FULCRUM.** OWEN W. WITTMER, Columbus, Ohio. Filed Oct. 31, 1905. Serial No. 285,336.



Claim.—1. A brake-lever fulcrum having pivot-ears and a base member, and a clamping-ring having a circular recess for the reception of said base and provided with inclined brake-beam-engaging lugs facing, respectively, in opposite directions to permit their engagement with the beam by circumferential adjustment of the ring.

2. A brake-beam fulcrum having pivot-lugs and a base member, and a clamping-ring having a recess to receive said base member, said clamping-ring being provided with brake-beam-engaging lugs arranged at diametrically opposite points and facing, respectively, in opposite directions to permit their engagement with the beam by circumferential adjustment of the ring, the inner faces of said lugs being inclined and serving to force the clamping-ring tightly against said base member.

814,896. **ORE-CONCENTRATING APPARATUS.** JOHN F. C. ARELEPTHS, Charlestown, England. Filed Aug. 15, 1904. Serial No. 220,994.



Claim.—1. In a concentrator, a transversely-inclined reciprocating table, feeding means extending along a portion of the upper longitudinal edge of the table, longitudinal riffles extending transversely of the line of feed for a portion of the table length, partitions extending from the ends of the said riffles diagonally to the lower side of the table, and means at the lower end of each of the concentrating-sections formed by said partitions for separately collecting the grades separated by said sections.

2. In a concentrator, a transversely-inclined reciprocating table, feeding means extending along a portion of the upper longitudinal edge of the table, riffles extending transversely of the line of feed for a portion of the table length and sloping downwardly at a small angle, partitions extending from the ends of the said riffles diagonally to the lower side of the table, and means at the lower ends of each of the concentrating-sections formed by said partitions for separately collecting the grades separated by the sections.

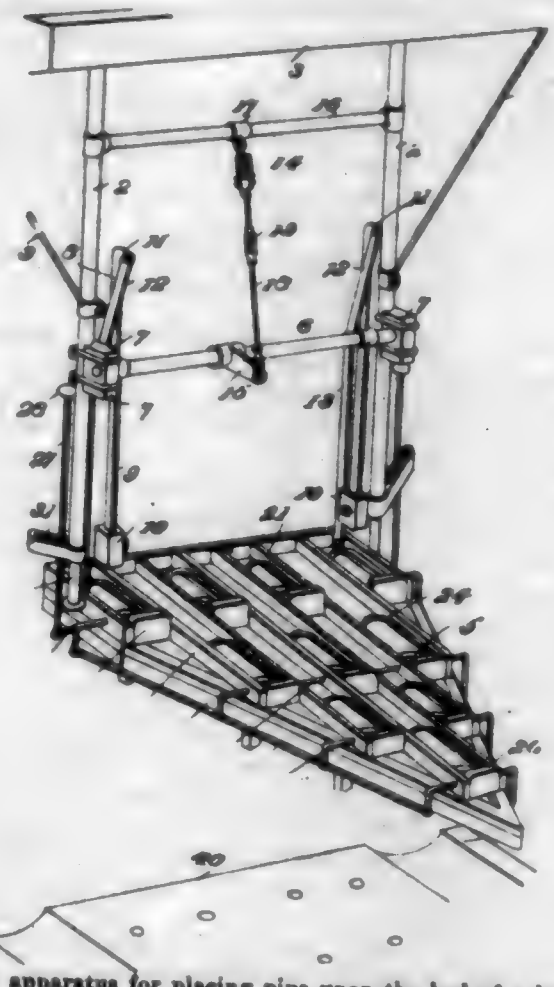
3. In a concentrator, a transversely-inclined reciprocating table, feeding means extending along a portion of the upper longitudinal edge of the table, parallel longitudinal riffles extending transversely of the line of feed for a portion of the table length, partitions parallel to each other extending from the ends of the said riffles diagonally to the lower side of the table, and means at the lower end of each of the concentrating-sections formed by said partitions for separately collecting the grades separated by the sections.

814,897. **PIN SPOTTER AND SETTER FOR BOWLING-ALLEYS.** JOHN C. BACKUS, Smethport, Pa. Filed Mar. 31, 1905. Serial No. 253,133.

Claim.—1. In apparatus for placing pins upon the bed of a bowling-alley, the combination of a carrier for receiving the pins and movable toward and from the bed of the alley, a variable counterbalance therefor, and connecting means between said carrier and counterbalance having a variable effective leverage.

2. In apparatus for placing pins upon the bed of a bowling-alley, the combination of a carrier for receiving the pins and movable toward and from the bed of the alley, a rod or bar pivotally supported between its ends, and normally occupying a vertical position, a weight attached to the pendent arm of said bar, and connecting means between the upper arm of said bar and the carrier.

3. In apparatus for placing pins upon the bed of a bowling-alley, the combination of a carrier for receiving the pins and movable toward and from the bed of the alley, a rock-shaft, bars fast to opposite end portions of the rock-shaft to turn therewith and comprising upper and lower arms, a weight attached to the lower arm of the bars, and connecting means between the upper arm of said bars and the carrier.



4. In apparatus for placing pins upon the bed of a bowling-alley, the combination of a carrier receiving the pins and movable toward and from the bed of the alley, a counterbalance for the carrier, and means for checking the movement of the carrier in each direction and serving to impart an initial movement to the carrier upon its return travel.

5. In mechanism for spotting and setting pins of a bowling-alley, the combination of a carrier movable toward and from the bed of the alley and adapted to receive the pins, a bar pivotally supported between its ends and normally occupying an approximately vertical position, a counterbalance connected to the lower arm of said bar, means connecting the upper arm of the bar with the carrier, and means operatively connected with said bar for easing the movement of the carrier in each direction and imparting an initial impetus thereto on its return travel.

6. In mechanism for spotting and setting pins of a bowling-alley, the combination of a carrier movable toward and from the bed of the alley and adapted to receive the pins, a rock-shaft having an arm projected therefrom, a counterbalance for the carrier connected with said rock-shaft to impart movement thereto, a buffer having connection at one end with the arm of the rock-shaft, and means loosely connecting the other end of the buffer with an overhead support and movable to adapt itself to the direction of strain as the buffer changes its angular direction.

7. In mechanism for spotting and setting pins of a bowling-alley, the combination of a carrier movable toward and from the bed of the alley and adapted to receive the pins, a rock-shaft, a counterbalance for the carrier having connection with said rock-shaft, an arm projected from the rock-shaft and fast thereto, and means having connection with said arm for easing the movement of the carrier in each direction of its travel and serving to give an initial impetus thereto on its return movement.

8. In mechanism for spotting and setting pins of a bowling-alley, the combination of a carrier movable toward and from the bed of the alley and adapted to receive the pins, a rock-shaft, bars fast to opposite end portions of the rock-shaft and normally occupying a vertical position, weights attached to the lower ends of said bars, means connecting the upper ends of the bars with said carrier, an arm fast to and projected from the rock-shaft, an overhead support and a buffer having one end connected to said arm and its opposite end loosely connected to said overhead support to move and admit of the buffer adapting itself to the direction of strain.

9. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means comprising rods mounted upon the carrier to receive a rocking movement and having crank portions, and actuating means for rocking said rods for throwing the crank portions into an approximately upright position for arighting pins and effecting their discharge through said pin-openings.

10. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, rods journaled to the carrier and having portions bent into loop form to provide crank portions, and actuating means for turning the rods to throw the loop-shaped crank portions into an approximately upright position for arighting pins and effecting discharge thereof through said pin-openings.

11. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, rods journaled to the carrier and having crank portions for arighting and effecting discharge of the pins through said pin-openings, means connecting the rods for simultaneous movement, and actuating means for turning the rods.

12. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier for effecting discharge of the pins upon the bed of the alley, and actuating means for said pin-shifting means comprising coöperating stops, the one connected with the pin-shifting means and the other with the overhead framework.

13. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier for effecting a discharge of the pins upon the bed of the alley, an operating-rod connected with the pin-shifting means and provided with a stop, and a corresponding stop projected from the overhead framework.

14. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier to effect delivery of the pins upon the bed of the alley, slotted extensions projected from the overhead framework, and operating-rods connected to the pin-shifting means and passed through the slots of said extensions and provided with stops to effect actuation of the pin-shifting means when the carrier has nearly reached the limit of its movement toward the bed of the alley.

15. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, and pin-guides for the openings of the carrier comprising upper and lower complemental parts or members arranged, respectively, above and below the carrier.

16. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper and lower complemental parts or members, and spring connections between the complemental guide members.

17. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper and lower members or parts, and connecting means between corresponding upper and lower members to effect a simultaneous movement thereof in opposite directions, said movement being controlled by the pins in their passage through the pin-openings.

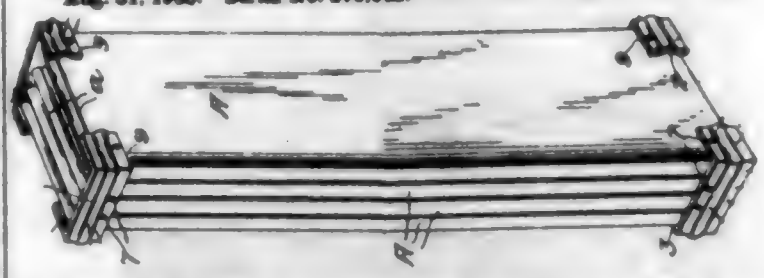
18. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising complemental upper and lower members, the upper members being slidably mounted and the lower members pivotally mounted, and connecting means between corresponding upper and lower members to effect simultaneous movement thereof in opposite directions.

19. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising complemental members, one set of said members being arranged above the carrier and the other set located below the carrier, and connecting means between corresponding upper and lower members extended across the plane of the carrier to effect simultaneous movement of said members in opposite directions.

20. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper slidable members and lower pivoted members, and spring-arms attached to the pivoted members and extended through openings of the carrier and engaged with the sliding members, whereby corresponding members receive a simultaneous movement in opposite directions and are controlled by the pins in their passage through the pin-openings.

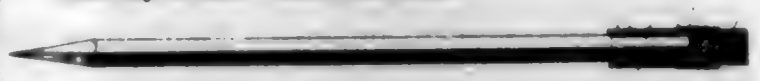
21. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, movable pin-guides mounted upon the carrier and having their inner end portions extended into the respective pin-openings to be engaged by the pins, and spring means normally tending to press the movable pin-guides inward.

814,898. CLAMP. MILTON L. BLOOMBERG, Greensboro, N. C. Filed Aug. 31, 1905. Serial No. 276,645.



Claim.—A clamp for securing together the leaves or fills of extensible tables or the like, comprising a substantially U-shaped metal body adapted to fit over the side edges of a stack of fills and to project beyond the ends of the same, the ends of said body having apertures to receive screws to enter the outermost fills of the stack, and the central portion of the body having an aperture to receive a screw to enter one of the intermediate fills of the stack, said apertures being arranged nearer to one side of the clamp than to its opposite side, substantially as shown and described.

814,899. RUBBER ERASER. AUGUST BRAUNS, Green Bay, Wis. Filed July 31, 1905. Serial No. 272,085.



Claim.—1. In combination with a lead-pencil, a non-rotatable cap or sleeve fitted on over the end thereof, this sleeve being provided with an annular head at its outer end and an annular flange or projection at its inner end, this latter being of less height than the head portion, a rotatable sleeve enlarged at its outer end to form a socket for the head portion of the permanent sleeve, and a rubber tip removably fastened in the outer end of said rotatable sleeve, for the purpose set forth.

2. In combination with a pencil, a freely-rotatable sleeve mounted thereon and projecting beyond the end of the pencil and carrying a rubber eraser in said projecting portion, said rubber eraser being fastened to the sleeve so as to rotate with it, substantially as set forth.

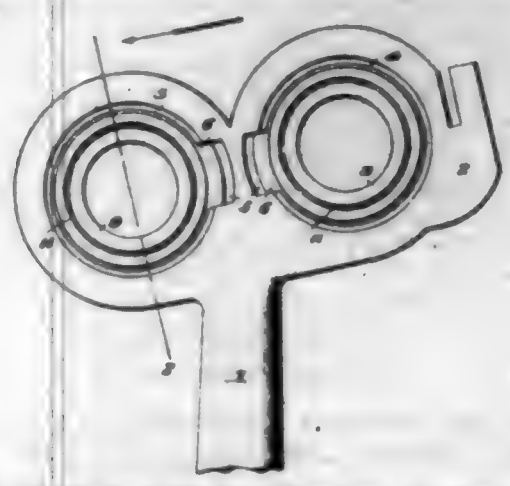
3. In combination with a lead-pencil, a non-rotatable cap or sleeve fitted on over the end thereof, this sleeve being provided with an annular head at its outer end, a rotatable sleeve enlarged at its outer end to form a socket for the head portion of the permanent sleeve, and a rubber tip removably fastened in the outer end of said rotatable sleeve, for the purpose set forth.

814,900. ROLLER-STAND. FRANK A. BARBER, Philadelphia, Pa. Filed Oct. 27, 1904. Serial No. 230,247.

Claim.—1. A roller-stand provided with a ball-bearing mounted to automatically adjust itself to the desired angle with the feed-roll, said bearing embodying two concentric independently-movable members with a radial opening through one of said members and means for closing said radial opening.

2. A roller-stand provided with a universal roller and bearing mounted to automatically adjust itself with relation to said roller and embodying two concentric independently-movable members one of which has a radial opening, and means movably mounted to close said opening.

3. The combination with the roller-stand, of a ring therein, a sleeve within the ring with a ball-race formed between the ring and sleeve, balls therein, and means for preventing displacement of the balls and allowing independent and universal movement of the ring and sleeve.

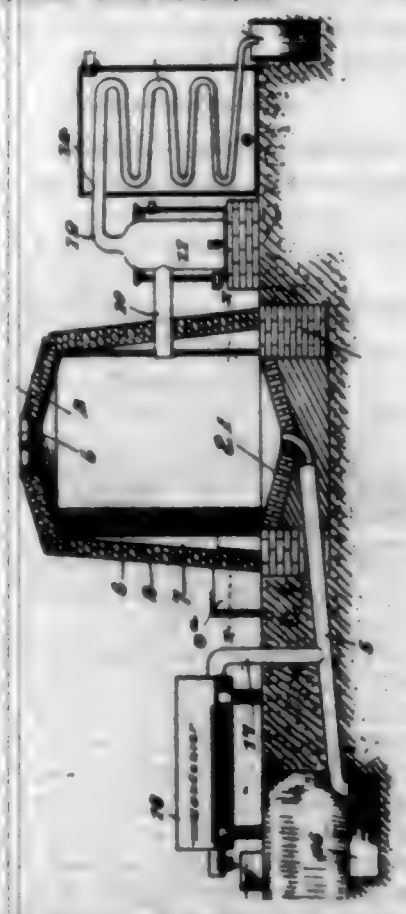


4. The combination with the roller-stand, of a ring therein, a sleeve within the ring, a ball-race being formed in the adjacent walls of the ring and sleeve, balls in said ball-race, and means entered from the stand and engaging the ring to hold the parts against displacement.

5. The combination with the roller-stand having an opening with rounded wall, of a ring therein with rounded outer face, a sleeve within the ring, balls interposed between the ring and sleeve, and means engaging the stand, the ring and the sleeve for securing the parts against displacement yet allowing universal movement.

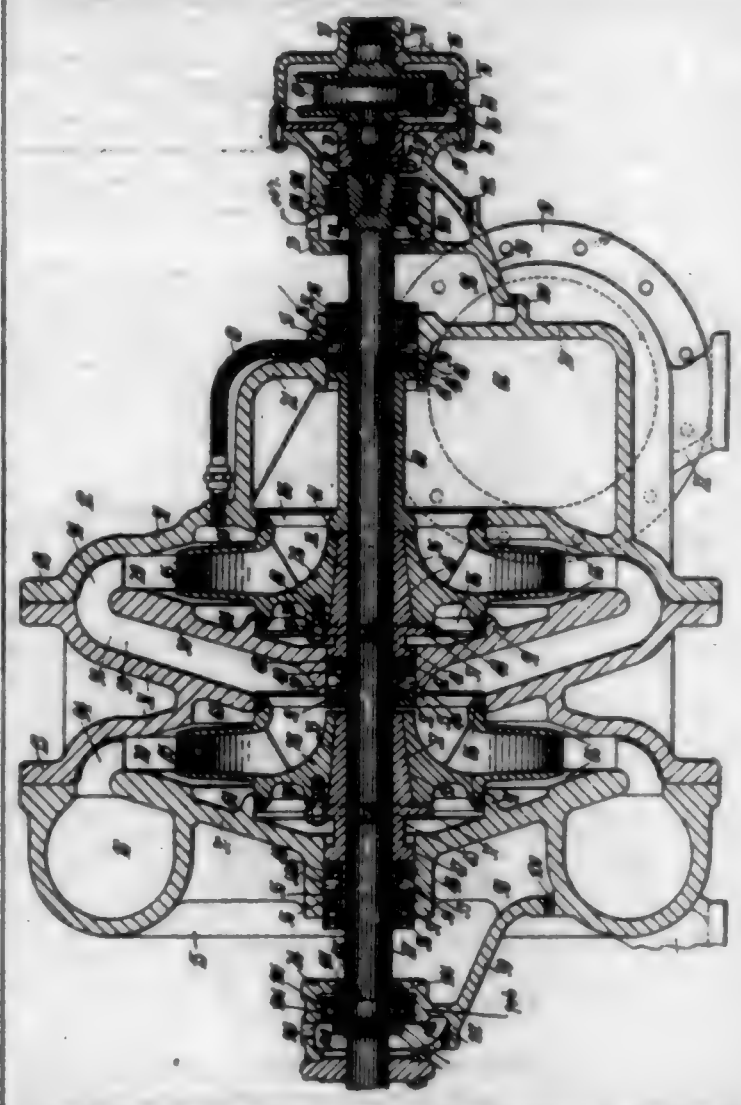
6. The combination with the roller-stand having an opening, of a ring therein, a sleeve within the ring, interposed balls, and a screw engaged in an opening in the stand and in the ring and having a projection to prevent displacement of the balls.

814,901. **WOOD-STILL.** HENRY COPILOVICH, Hinckley, Minn., assignor to Standard Turpentine Manufacturing Co., St. Paul, Minn. Filed Jan. 12, 1905. Serial No. 240,789.



Claim.—In an apparatus for the destructive distillation of wood a masonry furnace comprising foundation-walls and a crown, the said walls inclining toward their upper ends or top, and the foundation being provided with a depressed floor, a bottomless metal shell in the form of a right cylinder supported on said foundation within the masonry walls with its upper end or top in contact with the masonry crown and its lower open end resting on the foundation and surrounding the depressed floor thereof, means for heating said furnace and shell, means for withdrawing the lighter distillates from the shell, a downwardly-extending pipe having one end located at the bottom of the depressed floor and designed to receive the tarry products, the other end of said pipe being arranged to discharge such products into a suitable receptacle and said pipe being provided at a point in its length with a vertical branch pipe 17, and a condenser connected to the upper end of said last-named pipe, as and for the purpose set forth.

814,902. **MEANS FOR BALANCING CENTRIFUGAL PUMPS.** JULIUS DEGEN, Trenton, N. J., assignor, by mesne assignments, to Lea Degen Pump Company, Trenton, N. J., a Corporation of New Jersey. Filed July 6, 1905. Serial No. 268,400.



Claim.—1. In a device of the character specified, the combination with a casing having a cell with chambers in communication therewith, an impeller rotatably mounted in said cell, and means to automatically shift the impeller relatively to the walls of the cells to vary the size of the outlet from the chambers to the cell whereby to balance the device, said means consisting of a member adapted to be actuated from the impeller-shaft, and means adapted to be operated thereby in alternation for shifting the member in opposite directions also in alternation.

2. In a device of the character specified, the combination with a casing having cells with chambers in communication with each cell, impellers rotatably mounted in each cell, and means to automatically shift the impellers relatively to the walls of the cells to vary the size of the outlets from the chambers to the cells whereby to balance the device, said means consisting of a rotating member adapted to be actuated by the shaft carrying the impellers, and means to be operated thereby in alternation for shifting the member in opposite directions also in alternation.

3. In a device of the character specified, the combination with a casing made up of a plurality of sections, and comprising cells with chambers in communication therewith, a rotatably-mounted shaft, impellers carried by the shaft, devices located on said shaft for removably securing the impellers to the shaft, automatic packing devices carried by said devices, and means to automatically shift the shaft longitudinally to adjust the impellers relatively to the walls of the cells, said means consisting of a rotatably-mounted member adapted to rotate in unison with the shaft, and means adapted to be moved axially by said member, said axially-movable members being operated by the alternating contact of the member carried by the shaft, with said members.

4. A balancing device for centrifugal pumps consisting of a

9. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means comprising rods mounted upon the carrier to receive a rocking movement and having crank portions, and actuating means for rocking said rods for throwing the crank portions into an approximately upright position for arighting pins and effecting their discharge through said pin-openings.

10. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, rods journaled to the carrier and having portions bent into loop form to provide crank portions, and actuating means for turning the rods to throw the loop-shaped crank portions into an approximately upright position for arighting pins and effecting discharge thereof through said pin-openings.

11. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, rods journaled to the carrier and having crank portions for arighting and effecting discharge of the pins through said pin-openings, means connecting the rods for simultaneous movement, and actuating means for turning the rods.

12. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier for effecting discharge of the pins upon the bed of the alley, and actuating means for said pin-shifting means comprising coöperating stops, the one connected with the pin-shifting means and the other with the overhead framework.

13. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier for effecting a discharge of the pins upon the bed of the alley, an operating-rod connected with the pin-shifting means and provided with a stop, and a corresponding stop projected from the overhead framework.

14. In a pin spotting and setting mechanism for bowling-alleys, the combination of a carrier provided with pin-openings and movable toward and from the bed of the alley, pin-shifting means mounted upon the carrier to effect delivery of the pins upon the bed of the alley, slotted extensions projected from the overhead framework, and operating-rods connected to the pin-shifting means and passed through the slots of said extensions and provided with stops to effect actuation of the pin-shifting means when the carrier has nearly reached the limit of its movement toward the bed of the alley.

15. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, and pin-guides for the openings of the carrier comprising upper and lower complemental parts or members arranged, respectively, above and below the carrier.

16. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper and lower complemental parts or members, and spring connections between the complemental guide members.

17. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper and lower members or parts, and connecting means between corresponding upper and lower members to effect a simultaneous movement thereof in opposite directions, said movement being controlled by the pins in their passage through the pin-openings.

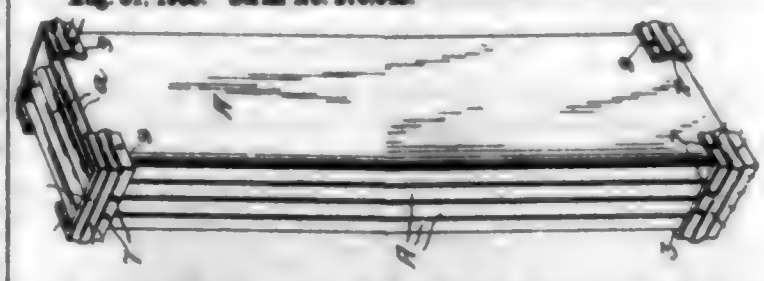
18. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising complemental upper and lower members, the upper members being slidably mounted and the lower members pivotally mounted, and connecting means between corresponding upper and lower members to effect simultaneous movement thereof in opposite directions.

19. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising complemental members, one set of said members being arranged above the carrier and the other set located below the carrier, and connecting means between corresponding upper and lower members extended across the plane of the carrier to effect simultaneous movement of said members in opposite directions.

20. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, pin-guides for the openings of the carrier comprising upper slidable members and lower pivoted members, and spring-arms attached to the pivoted members and extended through openings of the carrier and engaged with the sliding members, whereby corresponding members receive a simultaneous movement in opposite directions and are controlled by the pins in their passage through the pin-openings.

21. In mechanism for spotting and setting pins of bowling-alleys, the combination of a carrier adapted to receive the pins and movable toward and from the bed of the alley and provided with pin-openings, movable pin-guides mounted upon the carrier and having their inner end portions extended into the respective pin-openings to be engaged by the pins, and spring means normally tending to press the movable pin-guides inward.

814,898. CLAMP. MILTON L. BLOCKBERG, Greensboro, N. C. Filed Aug. 31, 1905. Serial No. 276,645.



Claim.—A clamp for securing together the leaves or fills of extensible tables or the like, comprising a substantially U-shaped metal body adapted to fit over the side edges of a stack of fills and to project beyond the ends of the same, the ends of said body having apertures to receive screws to enter the outermost fills of the stack, and the central portion of the body having an aperture to receive a screw to enter one of the intermediate fills of the stack, said apertures being arranged nearer to one side of the clamp than to its opposite side, substantially as shown and described.

814,899. RUBBER ERASER. AUGUST BRAUER, Green Bay, Wis. Filed July 31, 1905. Serial No. 272,065.



Claim.—1. In combination with a lead-pencil, a non-rotatable cap or sleeve fitted on over the end thereof, this sleeve being provided with an annular head at its outer end and an annular flange or projection at its inner end, this latter being of less height than the head portion, a rotatable sleeve enlarged at its outer end to form a socket for the head portion of the permanent sleeve, and a rubber tip removably fastened in the outer end of said rotatable sleeve, for the purpose set forth.

2. In combination with a pencil, a freely-rotatable sleeve mounted thereon and projecting beyond the end of the pencil and carrying a rubber eraser in said projecting portion, said rubber eraser being fastened to the sleeve so as to rotate with it, substantially as set forth.

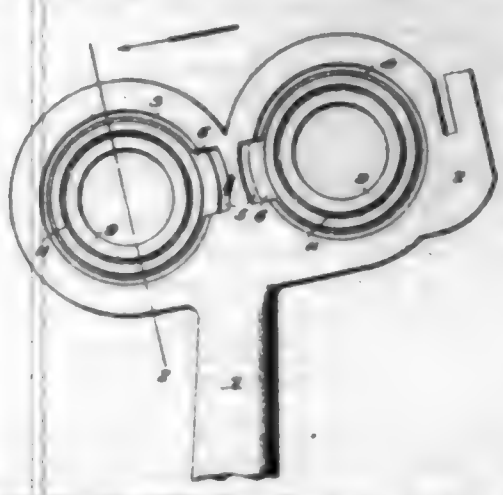
3. In combination with a lead-pencil, a non-rotatable cap or sleeve fitted on over the end thereof, this sleeve being provided with an annular head at its outer end, a rotatable sleeve enlarged at its outer end to form a socket for the head portion of the permanent sleeve, and a rubber tip removably fastened in the outer end of said rotatable sleeve, for the purpose set forth.

814,900. ROLLER-STAND. FRANK A. BREER, Philadelphia, Pa. Filed Oct. 27, 1904. Serial No. 230,247.

Claim.—1. A roller-stand provided with a ball-bearing mounted to automatically adjust itself to the desired angle with the feed-roll, said bearing embodying two concentric independently-movable members with a radial opening through one of said members and means for closing said radial opening.

2. A roller-stand provided with a universal roller and bearing mounted to automatically adjust itself with relation to said roller and embodying two concentric independently-movable members one of which has a radial opening, and means movably mounted to close said opening.

3. The combination with the roller-stand, of a ring therein, a sleeve within the ring with a ball-race formed between the ring and sleeve, balls therein, and means for preventing displacement of the balls and allowing independent and universal movement of the ring and sleeve.

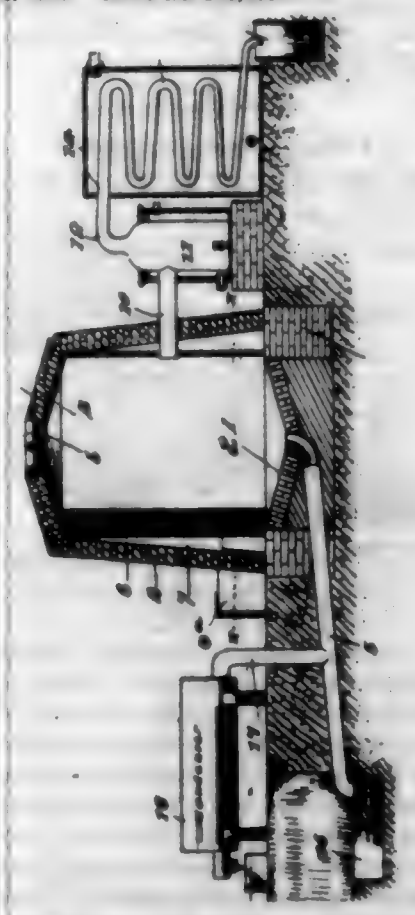


4. The combination with the roller-stand, of a ring therein, a sleeve within the ring, a ball-race being formed in the adjacent walls of the ring and sleeve, balls in said ball-race, and means entered from the stand and engaging the ring to hold the parts against displacement.

5. The combination with the roller-stand having an opening with rounded wall, of a ring therein with rounded outer face, a sleeve within the ring, balls interposed between the ring and sleeve, and means engaging the stand, the ring and the sleeve for securing the parts against displacement yet allowing universal movement.

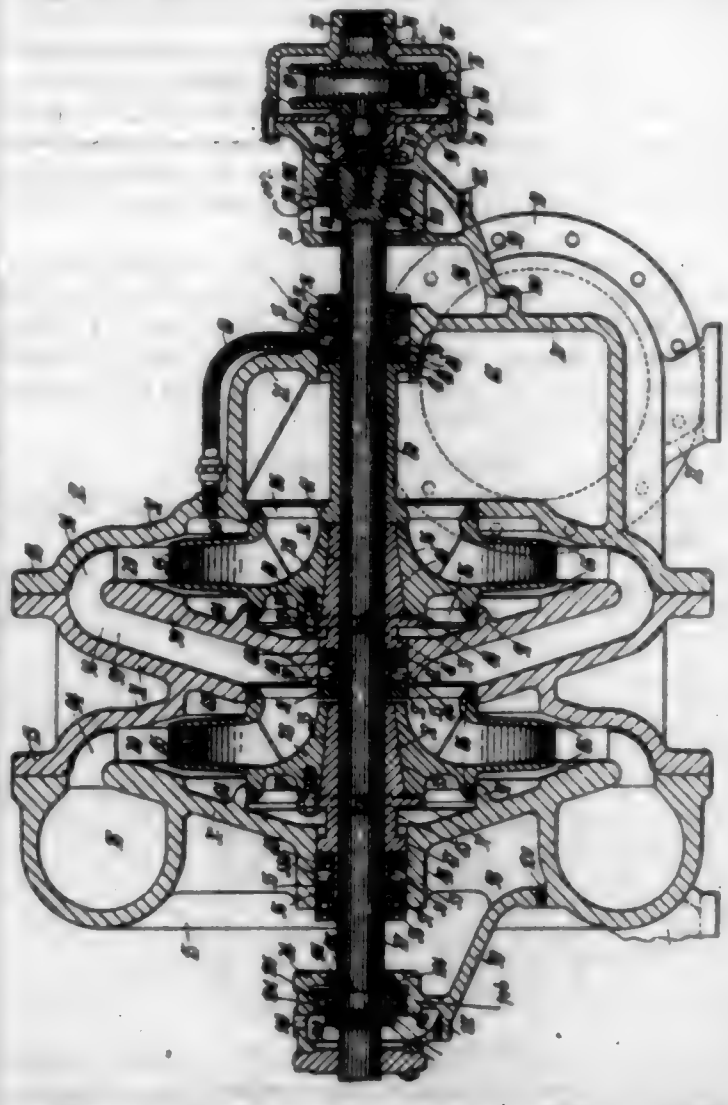
6. The combination with the roller-stand having an opening, of a ring therein, a sleeve within the ring, interposed balls, and a screw engaged in an opening in the stand and in the ring and having a projection to prevent displacement of the balls.

814,901. **WOOD-STILL.** HENRY COPILOVICH, Hinckley, Minn., assignor to Standard Turpentine Manufacturing Co., St. Paul, Minn. Filed Jan. 13, 1905. Serial No. 240,789.



Claim.—In an apparatus for the destructive distillation of wood a masonry furnace comprising foundation-walls and a crown, the said walls inclining toward their upper ends or top, and the foundation being provided with a depressed floor, a bottomless metal shell in the form of a right cylinder supported on said foundation within the masonry walls with its upper end or top in contact with the masonry crown and its lower open end resting on the foundation and surrounding the depressed floor thereof, means for heating said furnace and shell, means for withdrawing the lighter distillates from the shell, a downwardly-extending pipe having one end located at the bottom of the depressed floor and designed to receive the tarry products, the other end of said pipe being arranged to discharge such products into a suitable receptacle and said pipe being provided at a point in its length with a vertical branch pipe 17, and a condenser connected to the upper end of said last-named pipe, as and for the purpose set forth.

814,902. **MEANS FOR BALANCING CENTRIFUGAL PUMPS.** JULIUS DEGEN, Trenton, N. J., assignor, by mesne assignments, to Lea Degen Pump Company, Trenton, N. J., a Corporation of New Jersey. Filed July 6, 1905. Serial No. 268,400.



Claim.—1. In a device of the character specified, the combination with a casing having a cell with chambers in communication therewith, an impeller rotatably mounted in said cell, and means to automatically shift the impeller relatively to the walls of the cells to vary the size of the outlet from the chambers to the cell whereby to balance the device, said means consisting of a member adapted to be actuated from the impeller-shaft, and means adapted to be operated thereby in alternation for shifting the member in opposite directions also in alternation.

2. In a device of the character specified, the combination with a casing having cells with chambers in communication with each cell, impellers rotatably mounted in each cell, and means to automatically shift the impellers relatively to the walls of the cells to vary the size of the outlets from the chambers to the cells whereby to balance the device, said means consisting of a rotating member adapted to be actuated by the shaft carrying the impellers, and means to be operated thereby in alternation for shifting the member in opposite directions also in alternation.

3. In a device of the character specified, the combination with a casing made up of a plurality of sections, and comprising cells with chambers in communication therewith, a rotatably-mounted shaft, impellers carried by the shaft, devices located on said shaft for removably securing the impellers to the shaft, automatic packing devices carried by said devices, and means to automatically shift the shaft longitudinally to adjust the impellers relatively to the walls of the cells, said means consisting of a rotatably-mounted member adapted to rotate in unison with the shaft, and means adapted to be moved axially by said member, said axially-movable members being operated by the alternating contact of the member carried by the shaft, with said members.

4. A balancing device for centrifugal pumps consisting of a

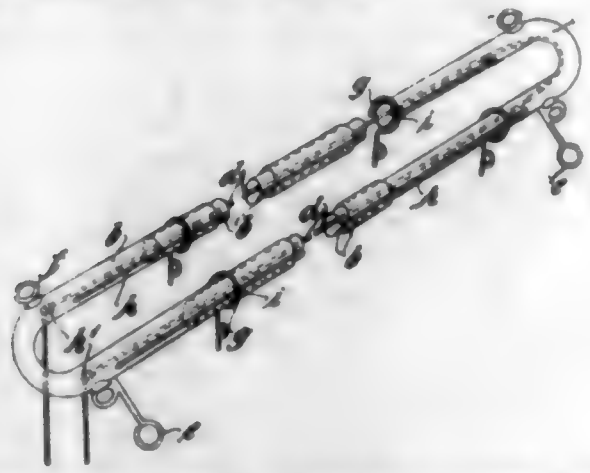
member adapted to be affixed to an impeller-shaft, of a member having a bearing in a left-hand screw-threaded member, of another member having a bearing in a right-handed screw-threaded member, means for operating said members in unison, the member affixed to the shaft being adapted to alternately contact with the members and move them axially in opposite directions in their screw-threaded bearings whereby to shift the shaft in opposite directions.

5. In a device of the character specified, the combination with a shaft, of a disk rotating therewith, a pair of members adapted to be operated by the disk, said members being adapted to operate axially in opposite directions when one of them is in contact with the disk, and means to rotate the members in unison, and in opposite directions.

6. In a device of the character specified, the combination with a shaft, of a disk connected therewith two members adapted upon contact with the disk to shift the latter in opposite directions, each member operating in a screw-threaded bearing, said screw-threaded bearings being left and right handed respectively, and means operating in conjunction with both members for operating them in unison axially.

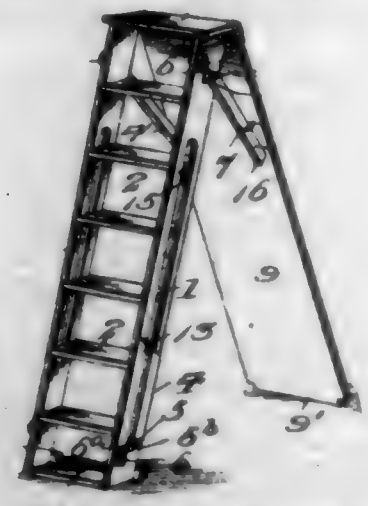
7. In a device of the character specified, the combination with a disk attached to a shaft, of a member having a spindle which is provided with a left-handed screw-thread, of another member having a spindle provided with a right-handed screw-thread, means for causing the two members to move in unison in said threads when the disk alternately contacts with said members.

814,903. CURTAIN-ROD. ANTON ELCHINGER, Leipzic, Germany. Filed Aug. 26, 1904. Serial No. 223,330.



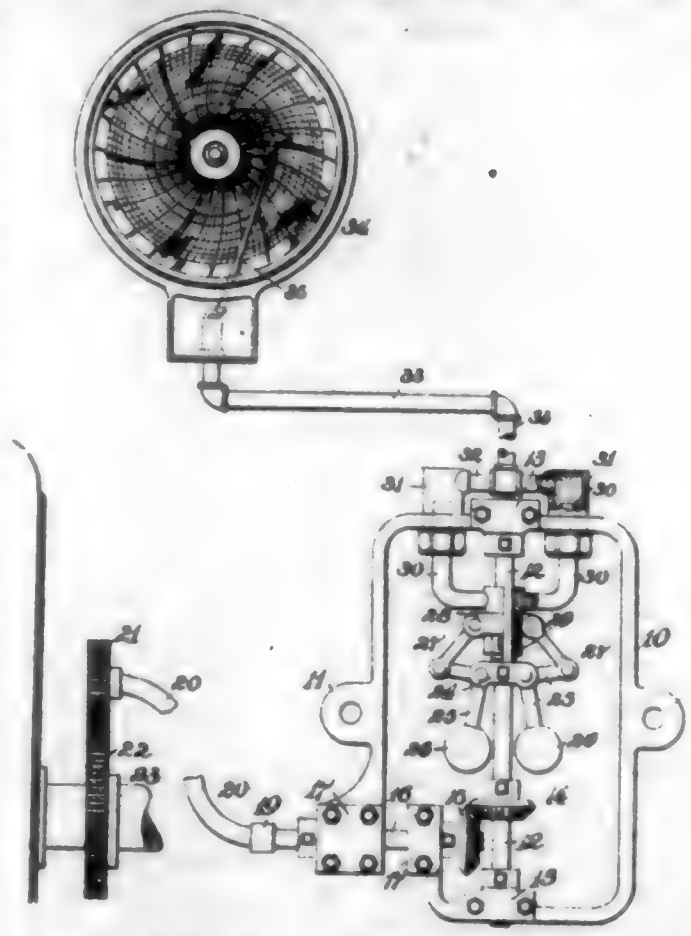
Claim.—In combination, telescopically-cooperating tubular members forming a frame and having longitudinal slots, rings running on the members and cords passing through and along the latter and connected to the rings, substantially as described.

814,904. COMBINED WASHBENCH AND STEP-LADDER. CHARLES B. EMORY, Pittsburg, Pa. Filed May 19, 1903. Serial No. 157,759.



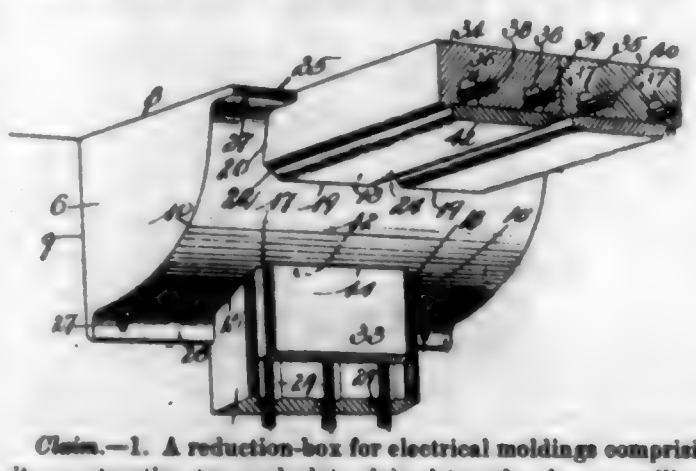
Claim.—In a step-ladder, legs pivoted to the side of the ladder, the legs at one end also serving as braces, bracing-plates for the legs secured to the sides of the ladder, a rigid strip extending across the ladder at the top and bottom thereof, the bottom strip having a recess in one edge thereof, a combined seat and support hinged to the upper strip at one end, a projection on the opposite end adapted to fit in the recess of the lower strip, means for securing the legs to the ladder and means for securing one pair of legs to the support.

814,905. SPEED-INDICATOR. CHARLES O. ERICSON, Helmetta, N. J. Filed Mar. 24, 1905. Serial No. 251,773.



Claim.—An apparatus of the kind described comprising a supporting-frame adapted to be attached to a vehicle, a shaft journaled in the frame, a sleeve slidable on the shaft, speed-balls hung on the shaft and connected with the sleeve to operate it, a recording-gage, a pair of opposed liquid-containing cylinders supported on the aforesaid frame and connected with the recording-gage, and arms extending from opposite sides of the sleeve and terminating in pistons which project into the aforesaid cylinders.

814,906. BOX FOR ELECTRIC MOLDINGS. JOHN L. GLEASON, Jamaica Plain, Mass. Filed July 10, 1905. Serial No. 268,906.



Claim.—1. A reduction-box for electrical moldings comprising in its construction two end plates joined together by a curvilinear front plate, integral therewith, said front plate provided in each of its opposite edges, respectively, with a recess, one of said recesses being larger than the other, said recesses each having two ends connected by a longitudinal side, and a beveled corner connecting each of said ends to said sides at opposite ends thereof, respectively.

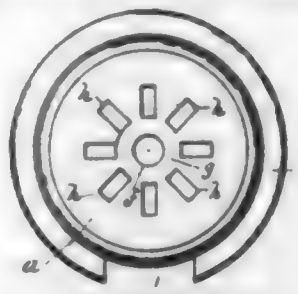
2. A reduction-box for electrical moldings comprising in its construction two end plates joined together by a curvilinear front plate, integral therewith, said front plate provided in each of its opposite edges, respectively, with a recess, one of said recesses being larger than the other, said recesses each having two ends connected by a longitudinal side, and a beveled corner connecting each of said ends to said sides at opposite ends thereof, respectively, and a V-shaped projection extending into the larger of said recesses from said longitudinal side, midway between said corners.

3. A reduction-box for electrical moldings comprising in its construction two end plates joined together by a curvilinear front plate, integral therewith, said front plate provided in each of its opposite edges, respectively, with a recess, one of said recesses being

larger than the other, and flanges projecting from the longitudinal edges of said front plate substantially at right angles to each other.

4. A reduction-box for electrical moldings comprising in its construction two end plates joined together by a curvilinear front plate, integral therewith, said front plate provided in each of its opposite edges, respectively, with a recess, one of said recesses being larger than the other, said recesses each having two ends connected by a longitudinal side, and a beveled corner connecting each of said ends to said sides at opposite ends thereof, respectively, and flanges projecting from the longitudinal edges of said front plate, substantially at right angles to each other and fastened to two supporting-walls at an angle to each other; in combination with moldings projecting into said recesses and caps for each to said moldings, said beveled corners bearing against the edges of said caps, whereby said caps are clamped against said moldings, and said moldings are clamped against said supporting-walls.

814,907. **JUNCTION-BOX FOR ELECTRIC WIRES IN BUILDINGS.** JOHN L. GLEASON, Boston, Mass. Filed July 12, 1905. Serial No. 269,309.



Claim.—1. The herein-described improved junction-box, comprising a side wall, and a substantially flat top provided with a complete circle of radiating slots A, for the purpose set forth.

2. The herein-described improved junction-box, comprising a circular side wall, and a substantially flat top provided with a series of radial slots constituting a complete circle of slots, said circle being concentric with the periphery of the top, for the purpose set forth.

3. The herein-described improved junction-box, comprising a circular side wall, and a substantially flat top provided with a series of radial slots constituting a complete circle of slots, said circle being concentric with the periphery of the top, and said slots having their edges beveled outward toward the under side of the top, for the purpose set forth.

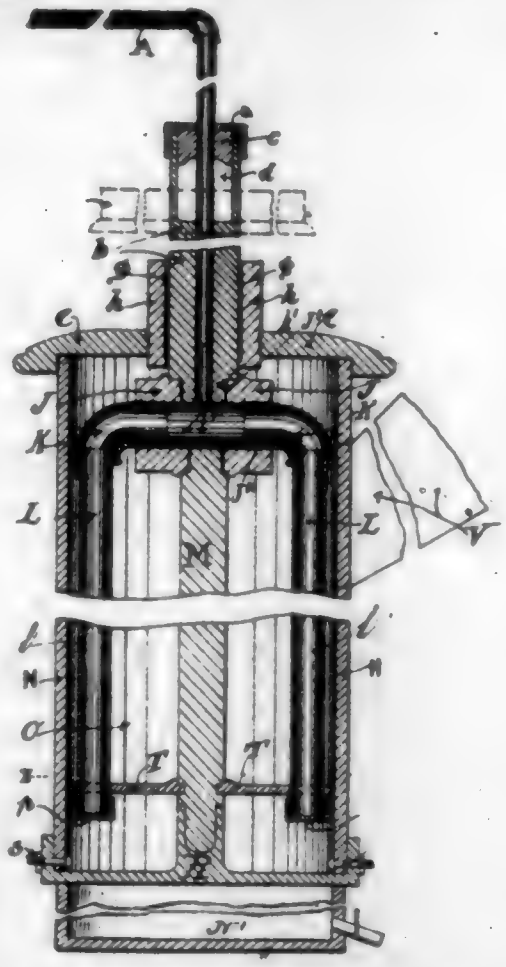
814,908. **CONVEYER-BAND FOR CIGARETTE-MAKING MACHINES.** PHILIPP HUMMEL, Strassburg, Germany, assignor to Mathilde Hummel, Strassburg, Germany. Filed Aug. 10, 1905. Serial No. 273,672.

Claim.—A conveyer-band for cigarette-machines, comprising in combination, a rubber or the like pliable filling, and a fabric envelop, the meeting edges of which are united by means of an undulous seam, approximately along the longitudinal middle line of the band, substantially as and for the purpose set forth.

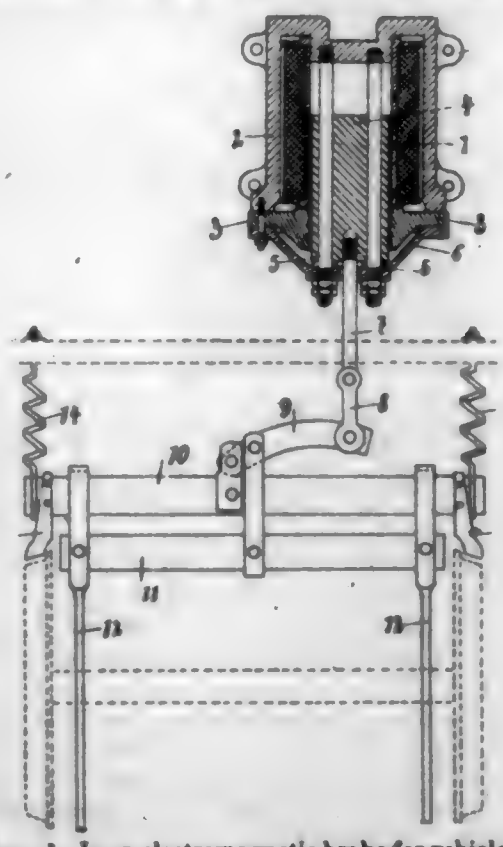
814,909. **STEAMING GRAIN.** EDMOND F. KILER, Sr., Santa Barbara, Cal. Filed Dec. 13, 1904. Serial No. 236,780.

Claim.—1. A grain-steamer, consisting of an upright barrel, open at its lower end, adapted to be provided with any style bottom applicable to the device; a cap *c*, fitting on the upper end of said barrel, and having in its center a threaded perforation; a cylinder *h*, fitting vertically in said threaded perforation; a packing-cylinder *b*, fitting in the last-mentioned cylinder *h*, and adapted to revolve therein; a lining *g*, fitting between the two last-mentioned cylinders; a pulley *f*, rigidly secured to the cylinder *b*, above the upper end of said cylinder *h*; a packing-ring *e*, secured in the upper end of said cylinder *b*; a perforated cap *a*, secured on the upper end of said cylinder *b*; a steam-pipe A, passing down through said cylinder *b*; a cross-pipe A′, secured to the lower end of said pipe A; perforated cylinders K and L, branching out from said cross-pipe and running down parallel to each other to near the bottom of the barrel; a supporting-shaft M, extending from the lower part of the cross-cylinder A′, secured in block J, its lower end pivoted in the bearing *m*; arms T, extending inwardly from the wall of the barrel, supporting the lower end of said shaft, and a chute V, for conducting the grain in the said barrel, substantially as shown and described, and for the purposes set forth.

2. A vertical barrel open at its lower end, and adapted to be provided with a bottom; a perforated cap, secured on the upper end of said barrel; a bearing, vertically secured in the perforation of the said cap and carrying a lining; a cylinder, vertically journaled in said bearing; a pulley rigidly secured near the upper end of said cylinder; a steam-pipe, passing down through said cylinder; a packing-ring, secured in the upper end of said cylinder and held in by a cap; a perforated block, secured in the lower end of said cylinder; a U-shaped pipe, its horizontal part secured to said steam-pipe and in said block, its parallel arms perforated and extending downwardly into said barrel, said cylinder, said block and said U-shaped pipe adapted to be revolved by said pulley, and a chute adapted to carry the grain into said barrel, substantially as shown and described and for the purposes set forth.



814,910. **ELECTROMAGNETIC BRAKE.** ERWIN KRAMER, Berlin, Germany. Filed Aug. 3, 1904. Serial No. 219,401.



Claim.—1. In an electromagnetic brake for vehicles, the combination with an electromagnet, having a coil, an iron casing inclos-

ing the coil, an iron shoe closing the open end of the casing, a central opening in the shoe coinciding with the hole of the coil, a core adapted to move axially in the said cavity of the coil and shoe, the core being of such a length that its outer end takes a position within the shoe, when the core is drawn into the coil; of a system of brake-levers which bear the brake-blocks and are connected to the core; a current-generator coupled with the vehicle-axle which produces different current intensities in conformity with the rotative speed of the wheels; and circuit connections between the electromagnet and the current-generator, substantially as described.

2. An electromagnet for vehicle-brakes, having a coil, an iron casing inclosing the coil, an iron shoe closing the open end of the casing, a central opening in the shoe coinciding with the hole of the coil, a core adapted to move axially in the said cavity of the coil and shoe, the core being of such a form that the cross-section of the path of the lines of force from the shoe to the core is reduced, when the core is drawn into the coil, substantially as described.

3. An electromagnet for vehicle-brakes, having a coil, an iron casing inclosing the coil, an annular iron shoe partially closing the open end of the casing, a core adapted to move axially in the cavity of the coil and shoe, the core being of such a form that the cross-section of the path of the lines of force from the shoe to the core is reduced, when the core is drawn into the coil, which electromagnet is energized by the vehicle-motor, with which it is short-circuited; in combination with a system of brake-levers, substantially as described.

814,911. **CURTAIN-ROD SUPPORT.** Frank La Otis Latrobe, Wallingford, Conn., assignor to H. L. Judd Company, New York, N. Y., a Corporation of New York. Filed Oct. 17, 1905. Serial No. 283,089.



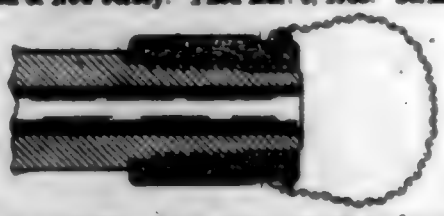
Claim.—1. A support for curtain-rods and the like comprising a body, an upwardly-projecting hook and two spring-tongues having free ends arranged one on each side of said hook and adapted to coöperate therewith substantially as described.

2. A support of the character described, comprising a sheet-metal body or base, an outwardly and upwardly projecting hook integral therewith, and two spring tongues or arms integral with but projecting in front of the body and to the rear of and on each side of said hook.

3. A support for curtain-rods or other devices, comprising a sheet-metal body, an outwardly and upwardly struck-up hook integral therewith, and a spring tongue or arm integral with said body and struck up adjacent thereto and having a free end relatively to the rear of said hook.

4. A support of the character described comprising a sheet-metal body, a corrugated hook integral therewith, and a spring-tongue adjacent the hook and adapted to coöperate for the purpose specified.

814,912. **MANTLE SUSPENSION.** Charles M. Lungren, Bayonne, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Mar. 6, 1905. Serial No. 248,513.



Claim.—1. In a device of the class described, in combination, a gas-nozzle provided with a threaded portion, an incandescent-lamp mantle and a single member having the open end of said mantle directly secured to one portion thereof and having a threaded portion engaging with said threaded portion upon said gas-nozzle, whereby said gas-mantle is securely and detachably mounted upon said gas-nozzle and is adjustable with reference thereto.

2. In a device of the class described, in combination, a gas-nozzle provided with a threaded portion, an incandescent-lamp mantle and a single member formed of compressed asbestos having the open end of said mantle directly secured to one portion thereof and having a threaded portion engaging with said threaded portion upon said gas-nozzle, whereby said gas-mantle is securely and detachably mounted upon said gas-nozzle and is adjustable with reference thereto.

3. In a device of the class described, in combination, a gas-nozzle provided with a threaded portion, an incandescent-lamp mantle and a single fibrous member having the open end of said mantle directly secured to one portion thereof and having a threaded portion engaging with said threaded portion upon said gas-nozzle, whereby said gas-mantle is securely and detachably mounted upon said gas-nozzle and is adjustable with reference thereto.

4. In a device of the class described, in combination, a gas-nozzle provided with a threaded portion, an incandescent-lamp mantle and a single member having the open end of said mantle directly secured to one portion thereof and having a threaded portion engaging with said threaded portion upon said gas-nozzle, whereby said gas-mantle is securely and detachably mounted upon said gas-nozzle and is adjustable with reference thereto, said member being provided with an exposed portion adapted to be seized in turning the same.

5. In a device of the class described, in combination, a gas-nozzle, a spool of compressed asbestos having a threaded connection therewith and provided with a groove, and a pendent mantle secured directly within said groove.

6. In a device of the class described, in combination, a supporting member, and a pendent mantle having a closed lower end and having its upper end cemented into fixed relation with said supporting member.

7. In a device of the class described, in combination, a mantle, a supporting member having a groove within which said mantle is tied, and means adapted to hold said supporting member and the adjacent portions of said mantle in fixed relation one with another.

8. In a device of the class described, in combination, a mantle, a refractory supporting member to which said mantle is tied, and a refractory adhesive substance inserted between and joining said supporting member and the adjacent portions of said mantle.

9. In a device of the class described, in combination, a mantle, a relatively rigid fibrous supporting member, and an adhesive substance inserted between and joining said supporting member and the adjacent portions of said mantle.

10. In a device of the class described, in combination, a mantle, a relatively rigid fibrous supporting member to which said mantle is tied, and means adapted to hold said supporting member and the adjacent portions of said mantle in fixed relation one to another.

11. In a device of the class described, in combination, a mantle, a refractory fibrous supporting member to which said mantle is tied, and refractory means adapted to hold said supporting member and the adjacent portions of said mantle in fixed relation one to another.

12. In a device of the class described, in combination, a fibrous, refractory supporting member, and a pendent mantle having a closed lower end and an upper end cemented into fixed relation with said supporting member.

13. In a device of the class described, in combination, a gas-nozzle, an asbestos supporting member secured upon said gas-nozzle and a pendent mantle having a closed lower end opposite said gas-nozzle and an upper end cemented into fixed relation with said supporting member.

14. In a device of the class described, in combination, a supporting-spool of compressed asbestos provided with a groove, a mantle having an end tied within said groove, and an adhesive substance inserted between said spool and the adjacent portions of said mantle and joining the same.

15. In a device of the class described, in combination, a gas-nozzle, a spool of compressed asbestos secured thereto and provided with a groove in its outer surface, a pendent mantle having its lower end opposite said gas-nozzle and its upper end tied within said groove, and a refractory adhesive substance inserted between said supporting member and the adjacent portions of said mantle and joining the same one with another.

16. In a device of the class described, in combination, a conduit having a threaded lower end and provided with a shoulder, a spool of compressed asbestos threaded upon said conduit and resting against said shoulder, said spool being provided with a groove in its outer surface, a pendent mantle having a closed lower end opposite the open end of said conduit and having its upper end tied within said groove, and a refractory adhesive substance inserted between said spool and the adjacent portions of said mantle and holding the same in fixed relation one to another.

17. In a device of the class described, in combination, a supporting member, a conduit having a threaded connection with said supporting member, and a pendent mantle having a closed lower end and having its upper end cemented into fixed relation with said supporting member.

18. In a device of the class described, in combination, a gas-nozzle, a spool of compressed asbestos having a threaded connection

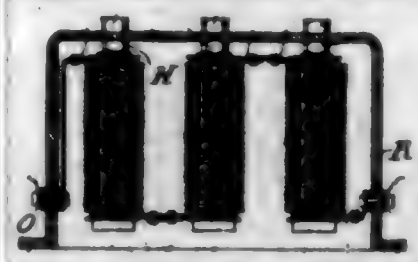
therewith and provided with a groove in its outer surface, a pendent mantle having its lower end opposite said gas-nozzle and its upper end tied within said groove, and a refractory adhesive substance inserted between said supporting-spool and the adjacent portions of said mantle and joining the same one with another.

19. In a device of the class described, in combination, a conduit having a threaded end and a shoulder, a spool of compressed asbestos threaded upon said conduit and resting against said shoulder, and a pendent mantle having a closed lower end and having its upper portions cemented into fixed relation with the lower portion of said spool.

20. In a device of the class described, in combination, a gas-conduit, a pendent mantle adapted to coact with said conduit as a source of light, and a single member provided with a groove within which the upper end of said mantle is tied and threaded upon said conduit, said member being provided with an exposed portion adapted to be seized in turning the same relative to said conduit.

21. In a device of the class described, in combination, a gas-conduit, a pendent, globular mantle adapted to coact with said conduit as a source of light, and a single resilient member having a depressed portion within which the upper end of said mantle is tied and being threaded directly upon said gas-conduit, said member being provided with an exposed portion adapted to be seized in turning the same relative to said conduit.

814,913. **RHEOSTAT.** EDMUND C. MORGAN, Chicago, Ill., assignor to Morgan Electric Machine Company, East Chicago, Ind., a Corporation of West Virginia. Filed Dec. 5, 1904. Serial No. 235,449.



Claim.—1. A rheostat element comprising metallic sections piled upon each other to from a space therethrough and therebetween, and means for clamping the pile of sections together.

2. A rheostat element comprising metallic sections piled the one upon the other in crosswise relation to form a central opening or passage therethrough, and a clamp-bolt passing through said passage or opening for clamping said sections together.

3. A rheostat element comprising wire sections piled the one upon the other in crosswise relation, and means for clamping said sections together.

4. A rheostat element comprising sections of iron piled the one upon the other in crosswise relation, and a clamp-bolt extending through the pile and out of contact with said sections for clamping said sections together.

5. A rheostat element comprising substantially U-shaped metallic sections piled in crosswise relation the one upon the other, and means for clamping said sections together.

6. A rheostat element comprising substantially U-shaped wire sections piled in crosswise relation the one upon the other, and means for clamping said sections together.

7. A rheostat element comprising sections of wire piled the one upon the other in crosswise relation to form spaces therebetween, and a clamp-bolt passing through such pile and out of contact with the sections composing the same for clamping said sections together.

8. A rheostat element comprising metallic sections piled crosswise upon the adjacent sections having a plurality of crossing-points, said sections in electrical contact with each other at the crossing-points thereof, and means for clamping said sections together.

9. A rheostat element comprising metallic sections piled crosswise upon each other, each metallic section having bearing contact with the next adjacent section on opposite sides thereof only at the several separated points where said sections cross each other, and means for clamping said sections together.

10. A rheostat element comprising metallic sections piled in crosswise relation the one upon the other to form a space therethrough and therebetween, in combination with terminal plates associated with each pile, and means for clamping said sections and terminal plates together.

11. A rheostat element comprising metallic sections circular in cross-section piled the one upon the other in crosswise relation, terminal plates arranged at the ends of the pile of sections, and means for clamping said terminal plates and sections together.

12. A rheostat element comprising wire metallic sections piled the one upon the other in crosswise relation, a headed bolt extending through the pile of sections, and a clamp-nut mounted on the end of said bolt for clamping said sections in assembled relation between said nut and head.

13. A rheostat element comprising open metallic sections piled in crosswise relation the one upon the other, so as to form an enlarged open space at the middle, a headed bolt extending through the pile of assembled sections but out of contact therewith, a nut mounted upon said bolt for clamping said sections together, and insulating-washers interposed, respectively, between the pile of sections and the head of said bolt and said nut.

14. A rheostat element comprising metallic sections piled the one upon the other in crosswise relation, a headed bolt extending through the pile of assembled sections but out of contact therewith, the body portion of said bolt being free from insulation; a nut mounted upon the end of said bolt for clamping said sections between said nut and the head of said bolt, and terminal plates interposed, respectively, between said nut and the head of said bolt and the pile of assembled metallic sections.

15. A rheostat element comprising metallic sections piled the one upon the other in crosswise relation, a headed bolt extending through the pile of assembled sections but out of contact therewith, the body of the bolt being surrounded by an air-space, a nut mounted upon the end of said bolt for clamping said sections between said nut and the head of said bolt, terminal plates interposed, respectively, between said nut and the head of said bolt and the pile of assembled metallic sections, and means for insulating said terminal plates from said bolt.

16. A rheostat element comprising metallic sections piled the one upon the other in crosswise relation, a headed bolt extending through the pile of assembled sections but out of contact therewith, the body of the bolt being free from insulating material but surrounded by an air-space, a nut mounted upon the end of said bolt for clamping said sections between said nut and the head of said bolt, terminal plates interposed, respectively, between said nut and the head of said bolt and the pile of assembled metallic sections, and insulating means for centering said terminal plates with respect to said bolt.

17. In a rheostat element, a bolt threaded at one end and provided with a head at the other end, metallic sections strung over said bolt and piled the one upon the other in crosswise relation, said metallic sections each having a plurality of separated points of contact with the adjacent sections and a nut mounted upon the threaded end of said bolt to clamp or hold the pile of assembled sections between the same and the head of said bolt.

18. In a rheostat element, a bolt threaded at one end and provided with a head at the other end, metallic sections strung over said bolt and piled the one upon the other in crosswise relation, said metallic sections each having a plurality of separated points of contact with the adjacent sections, a nut mounted upon the threaded end of said bolt to clamp or hold the pile of assembled sections between the same and the head of said bolt, and insulating-washers interposed between said nut and head, respectively, and the pile of assembled sections.

19. A rheostat comprising one or more elements, each element including a bolt, metallic sections consisting of wires bent so as to form each section with an enlarged central opening piled the one upon the other in crosswise relation and supported by said bolt, a supporting-casing, and means for clamping said bolt to said casing.

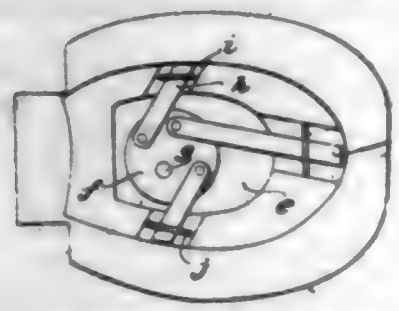
20. A rheostat comprising one or more elements, each element including a bolt, a pile of metallic sections consisting of wires bent so as to form each section with an enlarged central opening superposed in crosswise relation the one upon the other and strung upon said bolt, terminal plates, a supporting-casing, and means for clamping said plates to said casing.

21. A rheostat comprising one or more elements, each element including a bolt, a pile of metallic sections superposed in crosswise relation the one upon the other and strung upon said bolt, terminal plates, a supporting-casing, means for clamping said plates to said casing, and circuit-terminal studs in electrical connection with the terminal plates at opposite ends, respectively, of said elements.

814,914. **OVERSHOE FOR HORSES.** JAMES J. MCELHINNY, Philadelphia, Pa. Filed Aug. 31, 1905. Serial No. 276,552.

Claim.—1. A device of the character designated adapted to be applied to the shod foot of a horse comprising a tread of elastic material, the upper part of which forms an annular rim for the accom-

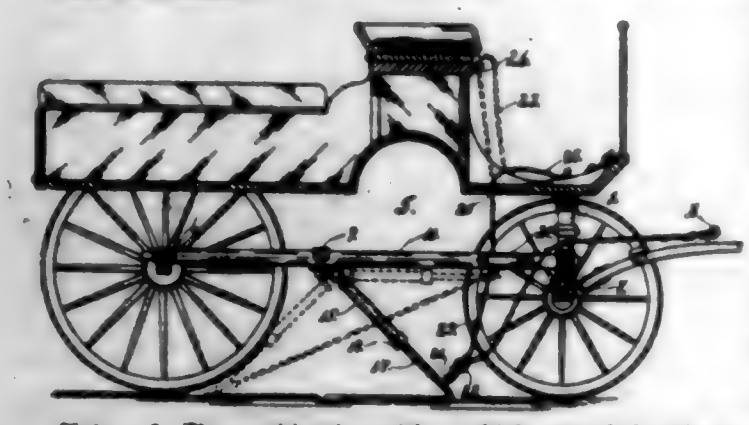
modation of the shoe, an elevated portion having a recess therein, eccentric-controlled attachment means within said recess, and a pad for the frog of the hoof, substantially as described.



2. A device of the character indicated adapted to be applied to the shod foot of a horse comprising a tread of elastic material, the upper part of which forms an annular rim for the accommodation of the shoe, an elevated portion having a recess therein, an eccentric within said recess, arms pivotally secured thereto and adapted to engage said shoe, and a pad for the frog of the hoof, substantially as described.

3. A device of the character designated adapted to be applied to the shod foot of a horse comprising a tread of elastic material, the upper part of which forms an annular rim for the accommodation of the shoe, an elevated portion having a recess therein, an eccentric within said recess, arms pivotally secured thereto and arranged to move through slots and guides upon the said elevated portion, and a pad for the frog of the hoof, substantially as described.

814,915. **HORSE-CONTROLLING ATTACHMENT FOR VEHICLES.** ALBERT M. MCGRARY, Canon City, Colo. Filed July 11, 1905. Serial No. 269,159.

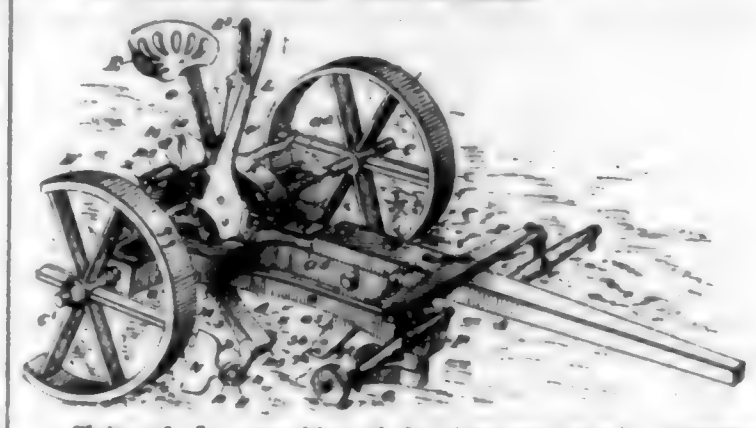


Claim.—1. The combination with a vehicle provided with two bearings one on each side of the reach, of a device composed of two parts one being hollow to receive the other, the latter being provided with a T-head engaging the said bearings whereby the upper end of the device is pivotally connected with the vehicle, a coil-spring located within the hollow member of the device and acting on the other member which is freely movable therein, the spring-actuated member having a collar, and the hollow member a stop at its outer extremity to limit the outward movement of the spring-actuated member, the length of the device being such that its spring-actuated member is adapted to engage and catch in the surface forward of the pivot, and a connection between the device and the animal to be checked or hitched.

2. In a horse-hitching attachment for vehicles, the combination with a vehicle provided with two bearings centrally located, and a device having a T-head engaging the said bearings, the said device being composed of a hollow member, and a second member engaging the hollow member and moving freely therein, a coil-spring located within the hollow member and acting to throw the telescoping member outwardly, the two members being constructed to limit the outward movement of the telescoping member, the free extremity of the telescoping member being adapted to engage and catch in the surface engaged by the vehicle, and means for connecting the device with the animal to be hitched.

3. The combination with a vehicle, of a clip secured thereto and provided with two bearings located on opposite sides of the longitudinal center of the vehicle, a hitching-device having a T-head engaging the bearings of the clip at one extremity, its opposite extremity being pointed and adapted to catch in the surface which forms a stop for the engaging extremity of the device, the said device consisting of two members having a telescoping connection, a coil-spring being located within the one member and acting to throw the other member outwardly for the purpose set forth.

814,916. **COTTON-CHOPPER.** JACOB R. MCKEE, Mount Calm, Tex. Filed Oct. 21, 1905. Serial No. 283,793.



Claim.—1. In a machine of the character stated, a whirling frame which comprises a rotatably and vertically adjustably mounted shaft, an obtuse-angled member secured to the lower end thereof, a hoe adjustably mounted in each end of the angled member and a means for imparting rotary motion to the shaft, and a means for setting the shaft at vertical angles with respect to the line of draft of the machine.

2. In a wheeled cotton-chopper, a whirling frame, supported on the wheel-axles, a lever-set means for adjusting said frame to different vertical angles with respect to the line of draft of the machine, a shaft mounted to rotate on the said frame, a cross member secured to the lower end of said shaft, a cutter-hoe adjustably mounted on each of the cross member and gear devices actuated from one of the wheels, and connected with the rotary shaft, for the purposes described.

3. In a cotton-chopper, of the character described, comprising the wheels, two axle members, one of which is fixedly connected, the other having its wheel loosely mounted thereon, a frame rockably mounted on the axle members, a drive-gear on the inner end of the axle that turns with its wheel, a swinging frame loosely mounted on the other axle, a whirling frame comprising a shaft journaled in the swinging frame, a pinion on the upper end of the said shaft that engages the drive-gear, a cross member adjustably mounted on the lower ends of the said shaft, a cutting-hoe adjustably mounted on each end of said cross member, a beam-frame loosely hung at its rear end on the axle, a caster-wheel frame on the front end of said beam, a lever pawl and ratchet devices that join the loosely-held beam and the swinging frame, all being arranged substantially as shown and for the purposes specified.

4. The combination with the vertically-adjustable rotary shaft and the means for rotating the same; of an obtuse-angle-shaped cross member secured to the lower end of the shaft, a chopping hoe or blade for each end of the obtuse-angled member, and means for adjustably connecting the said hoes whereby to set them at different angles, for the purposes specified.

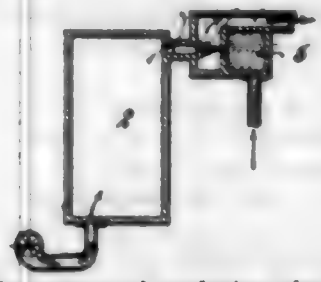
5. The combination with the main frame, a supplemental beam loosely mounted at its rear end on the frame to swing in a vertical plane, and the caster-wheel support on the front end of the supplemental beam; of the rotary shaft, a supporting-frame therefor loosely mounted on the frame, means for swinging said frame to different vertical angles, devices for interlocking the swinging frame with the supplemental beam, a hoe-carrying cross-arm secured to the lower end of the rotary shaft and means for rotating said shaft actuated by the rotation of the wheels, as set forth.

6. In a cotton-chopping machine of the character described, in combination with the wheeled supporting-frame, including the rotary and fixedly-held axle members, the driving-gear on the rotary axle-section, and the supplemental beam loosely supported at the rear end on the fixedly-held axle-section, a caster-wheel support for the front end of said beam, and a ratchet-disk fixedly connected to the rear end of the beam; of the swinging frame loosely mounted on the fixed axle member adjacent the ratchet-disk, said frame having a lever-arm, and a pawl carried thereon to engage the ratchet-disk, a rotary shaft mounted in the swinging frame, the pinion on the upper end of said shaft that engages the drive-gear, an obtuse-angle-shaped cross member on the lower end of the rotary shaft and the hoes adjustably connected to the cross member, all being arranged substantially as shown and described.

7. In a cotton-chopper of the character described, in combination with the wheel-carrying or main frame and the draft-tongue; of a supplemental beam hung at its rear end on the main frame, a caster-wheel support on the front end of the supplemental beam, a stop-guide on the tongue to limit the drop of the supplemental beam, another frame H hung in the main frame, means for shifting the vertical

position of the frame H with respect to the main frame, and for connecting the said other frame H with the supplemental beam whereby the up-and-down movement of the supplemental beam is transmitted to the said frame H, a rotary shaft journaled in the frame H, means actuated from one of the wheels for imparting motion to the shaft, the obtuse-angle-shaped cross-bar secured to the lower end of the shaft and hoes adjustably connected to the end of the angled-shaped cross-bar, all being arranged substantially as shown and described.

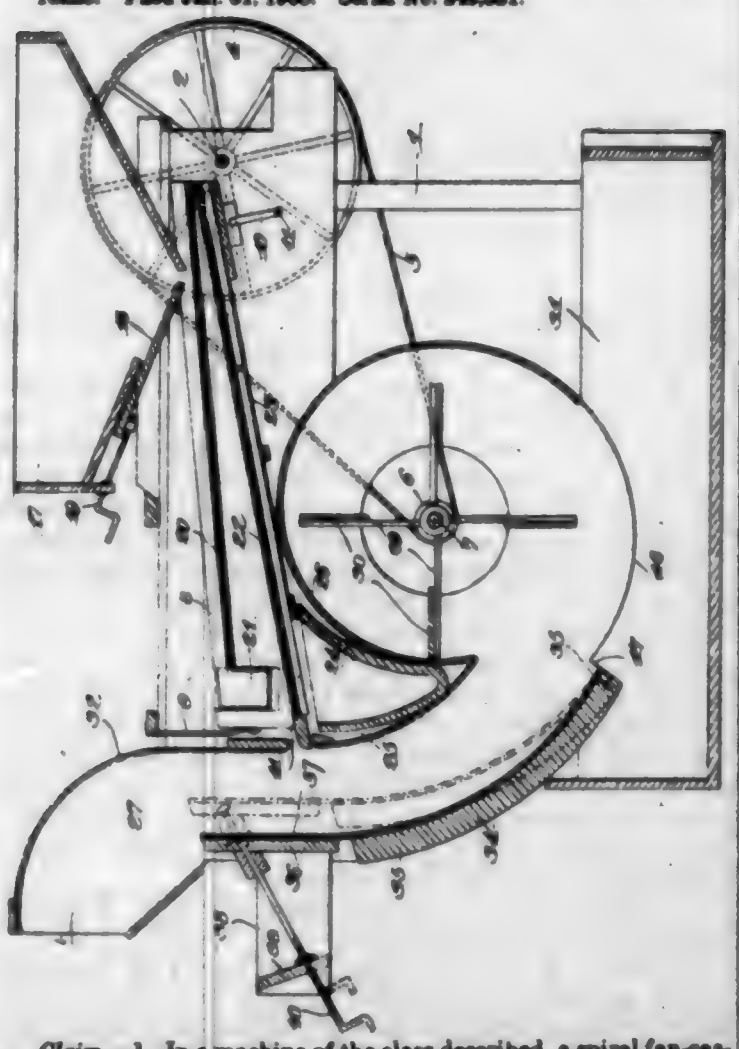
814,917. PROCESS OF MAKING NITRIC ACID FROM AIR. ARTHUR PAULING and HARRY PAULING, Bismarck, Germany; assignors to The Firm of Chemische Fabriken Gladbeck, Gesellschaft mit Beschränkter Haftung, Gladbeck, Germany. Filed Mar. 24, 1904. Serial No. 199,660.



Claim.—1. The process of producing nitric acid, consisting in heating a mixture of oxygen and nitrogen to as high a temperature as possible to the exclusion of all cold, and in then at once cooling the resulting nitrous products with all possible suddenness in immediate proximity to the place of maximum heating, the rapidity being such that reversal of the previous action is prevented, substantially as described.

2. The process of producing nitric acid, consisting in heating a mixture of oxygen and nitrogen to as high a temperature as possible to the exclusion of all cold, and in then at once cooling the resulting nitrous products with all possible suddenness in immediate proximity to the place of maximum heating, the rapidity being such that reversal of the previous action is prevented, and in supplying water-vapor to the said nitrous products, substantially as described.

814,918. SEED AND GRAIN CLEANING MACHINE. FRANCIS A. POWERS, Parma, Idaho, assignor of one-half to Frank Gahley, Parma, Idaho. Filed Jan. 31, 1905. Serial No. 243,581.

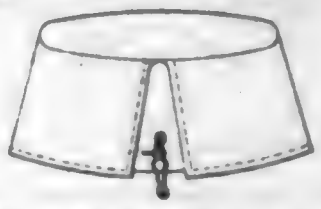


Claim.—1. In a machine of the class described, a spiral fan-casing, and a discharge-spout for the same, said spout including a breast supported pivotally at its lower end.

2. In a machine of the class described, a spiral fan-casing, and a discharge-spout for the same, said spout including a breast supported pivotally at its inner end between the sides of the spout; and means for adjusting the outer end of said breast to regulate the outlet of the spout.

3. In a machine of the class described, a spiral fan-casing having a discharge-spout the cross-sectional area of which at its receiving end is greater than the eccentric portion of the fan-casing with which it is connected; said spout including a movable portion or breast which is pivotally supported below the terminal of the eccentric portion of the fan-casing.

814,919. HOLDER FOR CRAVATS OR TIES. ROBERT RIETMÜLLER, Hanover, Germany. Filed Mar. 18, 1905. Serial No. 250,884.



Claim.—A cravat-holder comprising two parallel spaced wires connected at their outer ends and curved outwardly from one another at their centers, the ends being turned back toward one another substantially as described and illustrated.

814,920. WINDOW-VENTILATOR. ULYSSES G. RUSSELL, Marysville, Kans. Filed Dec. 20, 1904. Serial No. 237,719.



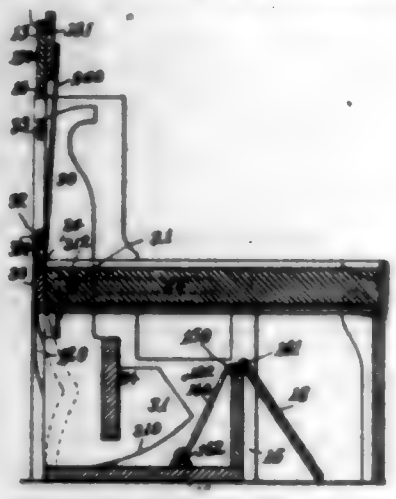
Claim.—1. As an article of manufacture, a window-ventilator, comprising a main frame having two openings arranged side by side therein, a pair of coacting sections mounted in each opening, said sections including end plates and cross-slats rigidly mounted in the plates, and pintles projecting from said plates substantially centrally of the same, and finding bearings in the side walls of the main frame.

2. As an article of manufacture, a window-ventilator, comprising a main frame having two openings arranged side by side therein, a pair of coacting sections mounted in each opening, said sections including end plates and cross-slats equidistantly spaced and rigidly mounted in the end plates, the slat at the end of each section coacting with the adjacent section being so spaced that the distance between the adjacent slats of the two sections will be substantially the same width, when the sections are in closed position, as the distance between the remaining slats of each section, whereby when the sections are closed the same present a unitary or uniform appearance.

814,921. FOLDING BED. ALTON A. SAUNDERS, New York, N. Y. Filed Aug. 10, 1906. Serial No. 273,528.

Claim.—1. In a device of the kind described, an intermediate frame interposed between the permanent frame and the bed-frame

and comprising two side members, each terminating at the bottom in curved surfaces, and each provided with inwardly-projecting pins upon which the bed-frame is adapted to rotate, and a plurality of transverse members adapted to hold the bedding in place.



2. In a device of the kind described, an intermediate frame interposed between the permanent frame and the bed-frame, comprising two side members, each terminating at the bottom in curved surfaces, and each provided with inwardly-projecting pins upon which the bed-frame is adapted to rotate, and a plurality of transverse members adapted to hold the bedding in place, in combination with a bed-frame having side members, provided with slots, in which the pins of the intermediate frame engage.

3. In a device of the kind described, a permanent frame comprising a front member, a movable seat and side member; a bed-frame; a frame intermediate the permanent frame and the bed-frame and upon which the bed-frame is supported, and a sliding connection between the bed-frame and the intermediate frame.

4. In a device of the kind described, a permanent frame comprising a front member, a movable seat and side members; a bed-frame; a frame intermediate the permanent frame and the bed-frame and upon which the bed-frame is supported, and a sliding connection between the bed-frame and the intermediate frame, consisting of inwardly-projecting pins on the intermediate frame and slots in the bed-frame with which said pins are adapted to engage.

5. In a device of the kind described, comprising a front member provided with rollers at or near its upper edge, a seating-piece pivoted to swing outwardly and against said rollers.

6. In a device of the kind described, comprising a permanent frame, the side walls of which are shaped like the side walls of a settee and which is provided with a permanent front piece and a removable seating-piece, a bed-frame adapted to swing back within the permanent frame and a hinged front piece adapted to serve as a front support for a bed when opened and as a back for the seat when the bed is closed.

7. In a device of the kind described, comprising a permanent frame, the side walls of which are shaped like the side walls of a settee and which is provided with a permanent front piece and a removable seating-piece, a bed-frame adapted to swing back within the permanent frame, a hinged front piece adapted to form a back for the seat when the bed is closed, and a hinged upper rail on the permanent frame adapted to register with the hinged front piece of the bed-frame to form an upper continuation of the said seat-back.

8. In a device of the kind described, a permanent frame, a bed-frame, an intermediate frame, adapted to support the bed-frame and upon which the latter is capable of rotating and which is provided with transverse bedding-retaining stripe.

9. In a device of the kind described, a permanent frame, a bed-frame, an intermediate frame adapted to support the bed-frame and upon which the latter is capable of rotating and which is provided with transverse bedding-retaining stripe, in combination with a supplemental bedding-retaining device secured to the bed-frame.

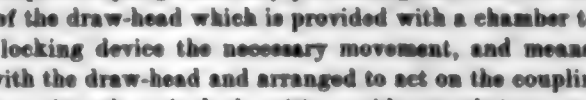
814,922. **DOUBLE BOGIE FOR RAILWAY-CARS AND OTHER VEHICLES.** HANS SCHLICK, Hamburg, Germany. Filed Sept. 26, 1904. Renewed Nov. 8, 1905. Serial No. 286,497.



Claim.—1. A double bogie for railway-cars and other vehicles in which that axle of the single bogie which is nearest to the main vertical axle of the double-bogie frame is located between the axles of the other single bogie, substantially as shown and described.

2. In a double bogie for railway-cars, a single-bogie frame located within the wheels at the four corners of such frame, a like single-bogie mating frame exterior to the wheels at the four corners thereof, and a double-bogie frame securing the two single-bogie frames together, in such manner that those wheels and axles of each frame nearest to the center of the double-bogie frame are located between the front and rear wheels and axles of the other bogie-frames, substantially as shown and described.

814,923. **STETHOSCOPE.** OTTO STADTLER, Gelsdorf, Germany. Filed July 24, 1905. Serial No. 271,106.



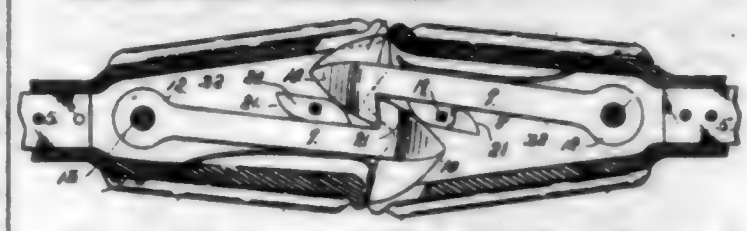
Claim.—1. In a stethoscope the combination of a stem and disk comprising a plurality of hinged parts one of which is integral with the stem.

2. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions hinged to said central portion.

3. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions and hinges connecting the side and central portions and permitting limited folding movement to the side portions.

4. In a stethoscope the combination of a stem and a tripartite disk comprising a central portion integral with the stem and two side portions and hinges connecting the side and central portions and permitting limited folding movement to the side portions together with a flexible packing-ring attached to the face of said disk substantially as and for the purpose set forth.

814,924. **CAR-COUPLING.** CHARLES H. TOMLINSON, Denver, Colo., assignor to The Tomlinson Coupler Company, Denver, Colo. Filed Dec. 9, 1904. Serial No. 236,091.



Claim.—1. In a car-coupler, the combination with a car, of a hollow draw-head pivotally connected therewith, a spring-actuated coupling device pivotally connected with the draw-head and having a hook-shaped coupling extremity protruding from the forward extremity of the draw-head which is provided with a chamber to permit the locking device the necessary movement, and means connected with the draw-head and arranged to act on the coupling device to throw it to the unlocked position, said means being accessible from the outside of the draw-head, the latter being provided with a top protecting-plate for the unlocking means and the forward extremity of the draw-head being notched to interlock with the corresponding extremity of the opposite draw-head.

2. The combination with a car, of a draw-bar pivotally connected therewith, a draw-head rigidly secured to the draw-bar and having a chamber open in front, the forward extremity of the draw-head being notched to interlock with the corresponding extremity of the opposite draw-head, a coupling device located in the said chamber and pivotally connected with the draw-head at its rear extremity, its forward extremity being hook-shaped, and protruding from the forward extremity of the draw-head, a spring engaging the coupling device and normally holding it in position to interlock with the corresponding coupling device of an opposite draw-head, a cam movably mounted on the draw-head and adapted to be manipulated from the outside, the said cam acting as a stop to limit the movement of the coupling device in response to its spring and also acting on the coupling device to throw it to the unlocked position, and means connected with the cam but located outside of the draw-head chamber, for manipulating the cam, the draw-head being provided with a protecting-plate for the said manipulating means.

3. In a car-coupler, the combination with a car, of a hollow draw-head pivotally connected with the car whereby it is allowed a lateral swing on its pivot, the draw-head having its forward extremity notched, a coupling device pivotally mounted in the draw-head and having its forward extremity hook-shaped and protruding from the forward extremity of the draw-head to interlock with the corresponding device of an opposite draw-head, a spring acting on the coupling device, a spindle journaled in the draw-head, a cam fast

on the spindle and located within the draw-head and in position to act on the coupling device to throw it to the unlocked position, and means connected with the spindle whereby the cam may be manipulated from the outside of the draw-head, the latter being provided with a top plate for protecting the said cam-manipulating means.

4. In a car-coupler, the combination of a hollow draw-head, a spring-actuated coupling device movably mounted therein, means for throwing the coupling device to the unlocked position consisting of a cam located within the draw-head, a spindle connected with the cam and journaled in the draw-head, a lever-arm connected with the spindle, a flexible device connected with the lever-arm and occupying a position exteriorly of the draw-head and along one side thereof, thedraw-head being provided with a rib along the side thereof, to protect the flexible device for the purpose set forth.

5. The combination of a draw-head, a suitable coupling device, a cam located within the draw-head and acting on the coupling device, a spindle journaled in the draw-head to which spindle the cam is made fast, the upper part of the draw-head being provided with a recess open at the sides but covered on top, and a lever-arm made fast to the spindle and adapted to move within the said recess for manipulating the spindle to operate the cam for the purpose set forth.

6. In a car-coupler, the combination of two hollow draw-heads pivotally connected with their respective cars whereby they have a swinging movement, the adjacent extremities of the draw-heads being notched to interlock to prevent independent lateral movement when the cars are coupled, coupling devices movably mounted in the draw-heads and having protruding hook-shaped coöperating coupling extremities, springs engaging the coupling devices, cams movably mounted in the respective draw-heads, each cam being adapted to act on both coupling devices to throw them to the unlocked position, and means connected with the cams but located outside of the draw-head chambers for manipulating the cams within the chambers, the draw-heads being provided with top protecting plates for the cam-manipulating means.

7. The combination of a swinging draw-head and a coupling device movably mounted therein and having a coupling extremity provided with a horizontally-disposed deflecting part projecting outwardly from the head, the latter being provided with a slot in the side remote from the deflecting part, to receive the said part of the coupling device of the opposite draw-head.

8. The combination of two draw-heads, and coupling devices movably mounted in the draw-heads, the said devices having hook-shaped interlocking heads, the space between each coupling device and one wall of its draw-head being less than the length of the interlocking hooks of the coupling devices for the purpose set forth.

9. The combination of a draw-head, a coupling device located therein, and means for manipulating the coupling device from the outside of the draw-head, the said means including an exteriorly-located member, the draw-head being provided with a top protecting-plate for the said member.

10. The combination of a draw-head, a coupling device located therein, and means for manipulating the coupling device from the outside of the draw-head, the said means including an exteriorly-located member, the draw-head being provided with a top protecting-plate for the said member, the latter being located in a recess formed in the top wall of the draw-head, the said top-plate having its upper surface lying in the same plane with the corresponding surface of the body of the draw-head.

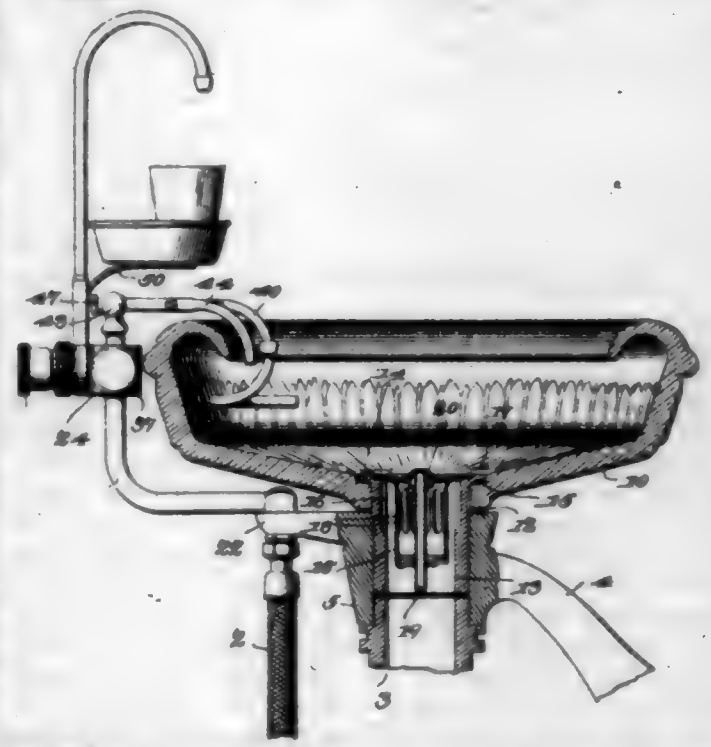
11. In a car-coupler, the combination of two hollow draw-heads pivotally connected with their respective cars, coupling devices pivotally mounted in the respective draw-heads and normally spring held in the coupled position, the said coupling devices protruding from the draw-heads in front and adapted to interlock for coupling purposes, the abutting extremities of the draw-heads being provided with interlocking counterpart recesses and projections located in the rear of the forward extremities of the coupling devices to prevent independent lateral movement of the draw-heads when the cars are coupled.

12. The combination with a draw-head, of a suitable coupling device, a cam located within the draw-head and acting on the coupling device, a spindle journaled in the draw-head to which spindle the cam is made fast, and a lever-arm made fast to the spindle and actuating the latter to throw the locking device to the unlocked position, the draw-head being provided with a lug adapted to engage the lever and hold it in the position corresponding with the unlocked position of the cam and spindle.

13. The combination with a draw-head, of a suitable coupling device, a cam located within the draw-head and acting on the coupling device, a spindle journaled in the draw-head to which spindle the cam is made fast, and a lever-arm made fast to the spindle for manipulating the latter to operate the cam, the upper part of the draw-head adjacent the spindle being provided with lugs forming stops to hold the lever-arm in either position of adjustment.

14. The combination with a draw-head, of a spring-actuated coupling device located therein, a lever located outside of the draw-head and connected with the coupling device for throwing the latter to the unlocked position, the draw-head being provided adjacent the lever with an inclined lug having an offset for holding the lever in the position corresponding with the unlocked position of the coupling device.

814,925. GOLD-CATCHER FOR FOUNTAIN-SPITTOONS. FRANK E. WEBSTER, Buffalo, N. Y. Filed Oct. 19, 1904. Serial No. 229,180.



Claim.—A trap comprising a cylindrical body portion, closed at the bottom and provided at the upper end with an outwardly-extending flange, the vertical wall of the cylinder being provided with a plurality of openings at a point above the closed bottom thereof, a tube extending through the bottom, the upper end of the tube being continued to a point adjacent to the top of the trap, and the upper end of said tube being perforated, and a hood or cap extending over the top of the tube and forming a finger-hold for removing said trap and a protection against clogging of the tube.

814,926. BRICKLAYER'S TOOL. EDWARD WEBB, Denver, Colo. Filed Mar. 22, 1905. Serial No. 251,356.

Claim.—1. A bricklayer's tool, comprising a bar provided with fingers angular in cross-section, the faces of the fingers being inclined to the horizontal so that when in use the corners of the fingers or apices of their angles engage the walls.

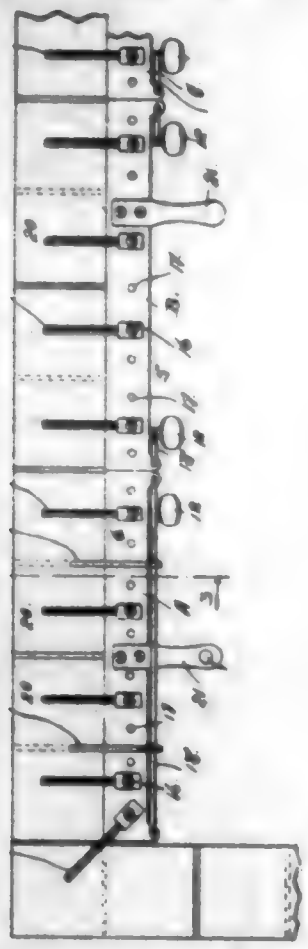
2. A bricklayer's tool comprising a bar provided with fingers angular in cross-section and wider in one direction than the other, the said fingers being removably connected with the bar and reversible to allow them to be applied to the bar to utilize their width in either of two directions extending at right angles to each other.

3. A bricklayer's tool comprising a bar provided with fingers angular in cross-section and wider in one direction than the other, the faces of the fingers being inclined to the horizontal so that when in use the corners of the fingers or apices of their angles engage the wall or surface where the instrument is used.

4. A bricklayer's tool comprising a bar provided with fingers angular in cross-section and wider in one direction than the other, the faces of the fingers being inclined to the horizontal so that when in use the corners of the fingers or apices of their angles engage the wall or surface where the instrument is used, the fingers being removably connected with the bar and reversible to allow them to be applied to the bar to utilize their width in either direction, and suitable means for holding the fingers in place upon the bar.

5. A bricklayer's tool comprising a bar provided with fingers angular in cross-section, the fingers being connected with the bar so that their faces shall be inclined to the horizontal so that when the fingers are applied to a horizontal surface, their corners or the apices

of their angles shall engage said surface, the portions of the fingers which engage the bar being provided with openings extending at right angles to each other, the axes of the openings being respectively parallel with diagonal lines connecting the apices of the opposite angles of the fingers and intersecting at the centers of the latter, and fastening devices adapted to be passed through the said openings for removably securing the fingers in place.



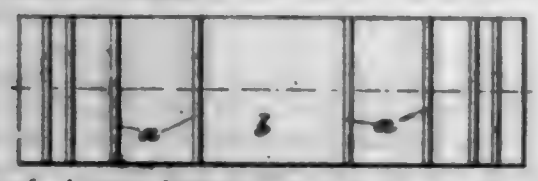
6. In a bricklayer's tool, the combination of a bar provided with fingers fixedly connected therewith and adapted to separate the upper and lower layers of bricks while building a wall, and other fingers movably mounted on the bar and adapted to separate the ends of bricks of the same layer, substantially as described.

7. A bricklayer's tool comprising a bar, fingers connected with the bar for separating the upper and lower adjacent layers of a brick wall, other fingers movably mounted on the bar and adapted to separate the extremities of the bricks of the same layer, and suitable handles connected with the bar for the purpose set forth.

8. In a bricklayer's tool, the combination of a bar provided with fingers for the purpose specified, a leveling device connected with the bar for determining horizontal surfaces, and another leveling device connected with the bar for the purpose of determining vertical or plumb surfaces.

9. In a bricklayer's tool, the combination of a main bar consisting of a number of members provided with apertured lugs, an auxiliary bar passing through the lugs of any two adjacent members and on which the members are slidably mounted, fingers angular in cross-section and removably attached to the members, the said fingers being wider in one direction than the other, and their faces occupying positions inclined to the horizontal when the device is in use.

814,927. **APPARATUS FOR PRODUCING MATRICES FOR ELECTROTYPES AND THE LIKE.** EUGEN ALBERT, Munich, Germany, assignor to Ferdinand Wessl, New York, N. Y. Filed Oct. 6, 1905. Serial No. 281,602.



Claim.—1. A press having upon or integral with one of its platens a continuous and smooth elevated surface, and a receding surface fixed with respect to the elevated surface.

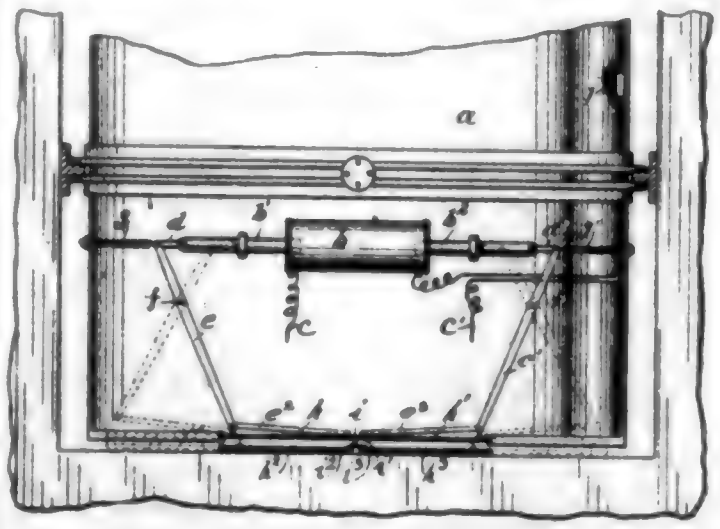
2. A press having upon or integral with one of its platens a continuous and smooth elevated surface, and a receding surface fixed with respect to the elevated surface upon each side of the elevated surface.

3. A press having upon or integral with one of its platens a continuous and smooth central elevated surface extending from side to side, a surface fixed with respect to the elevated surface and receding therefrom toward the front of the press, and a surface fixed with respect to the elevated surface and receding therefrom toward the back of the press.

4. A press having upon or integral with one of its platens a continuous and smooth elevated surface, and a stepped surface fixed with respect to the elevated surface upon each side of the elevated surface.

5. A press having upon or integral with one of its platens a continuous and smooth central elevated surface extending from side to side, a stepped surface fixed with respect to the elevated surface and receding therefrom toward the front of the press, and a stepped surface fixed with respect to the elevated surface and receding therefrom toward the back of the press.

814,928. **ELECTRICAL DOOR-OPENER FOR ELEVATORS.** CHARLES G. ARMSTRONG and CHARLES A. DRESSER, Chicago, Ill., assignors to G. A. Edward Kohler and Franklin W. Kohler, Chicago, Ill. Filed Apr. 3, 1901. Serial No. 54,132.



Claim.—1. The combination with an elevator-car of an electromagnetic device located on said car, a movable door also mounted on the car, an operative connection between said door and the electromagnetic device by means of which the door may be opened, a door at the elevator-landing, and a detachable connection between the two doors whereby both doors may be simultaneously opened by the electromagnetic device under predetermined conditions.

2. The combination with an elevator-car of an electromagnetic device carried thereby, a movable door mounted upon the car, an operative connection between said movable door and the electromagnetic device, a door at the landing, normally independent of said electromagnetic device, and means for bringing said latter door under the influence of said electromagnetic device under predetermined conditions.

3. The combination with an elevator-car of two sliding, separating doors mounted on the car, a solenoid also mounted upon said car, two independent cores therefor, each of said cores operatively connected with one of the sliding doors on the car, a retracting device for each of said cores, and means on the car for controlling the position of said cores, substantially as described.

4. The combination with an elevator-car, of an electromagnetic device thereon, a door carried upon said car, a door at the landing, means for connecting said electromagnetic device with the door carried upon the car, and a part mounted upon the car-door for engaging and opening the door at the landing, substantially as described.

5. The combination with an elevator-car of a sliding door carried thereby, an electromagnetic device mounted upon the car and operatively connected with said door so as to control the same, a door at the landing normally independent of said electromagnetic device on the car, and means for connecting the door at the landing with said electromagnetic device as the car moves up and down.

6. The combination with an elevator-car, of a pair of doors, a single electromagnetic device mounted upon the car, and intermediate mechanism between said electromagnetic device and said doors, whereby both of said doors are opened when the electromagnetic device is actuated, substantially as described.

7. The combination with an elevator-car, of a solenoid carried thereon, a pair of car-doors carried upon said car, a pair of cores for said solenoid, one at each end thereof, and intermediate mechanism

between each of said cores, and one of said doors, whereby the doors are opened when the solenoid is energized, substantially as described.

8. The combination with an elevator-car, of an electromagnetic device carried thereon, a car-door, intermediate mechanism between said car-door and said electromagnetic device so that the said door can be opened by the electromagnetic device, a door at the landing inaccessible to the operator when the car-door is closed, and a part carried upon said car-door for engaging said door at the landing, the engaging parts being constructed so that the door at the landing can be opened only when the car is in the immediate vicinity of the landing, whereby the door at the landing is beyond the direct control of the operator, substantially as described.

9. The combination with an elevator-car, of a solenoid mounted thereon at the top of the car, a car-door, a pivoted lever above the head of the car operator and having one end connected with said door and the other end connected with the core of said solenoid, and a retracting device for retracting said core, substantially as described.

10. The combination with an elevator-car, of an electromagnetic device carried thereon, a switch carried upon said car in convenient location to be reached by the operator, a door, also on the car, and intermediate mechanism between said door and said electromagnetic device, comprising a series of horizontally-disposed connecting-pieces, substantially as described.

11. The combination with an elevator-car, of a solenoid carried thereon, a pair of car-doors carried upon said car, a pair of cores for said solenoid one at each end thereof, and a lever between each of said cores and one of the doors, whereby when the solenoid is energized both doors are opened, substantially as described.

12. The combination with an elevator-car, of a pair of car-doors located upon the car, a pair of doors at the landing out of reach of the operator when the car-doors are closed and a single electromagnetic means carried upon the car for opening both pairs of doors, substantially as described.

13. The combination with an elevator-car, of a pair of car-doors upon the car, a pair of doors at each landing, the doors on the car shielding the doors on the landing so that they cannot be directly operated by the operator, a single electromagnetic device mounted upon the car for opening both pair of doors, and means whereby the landing-doors can be opened only when the car is in the immediate vicinity thereof, substantially as described.

14. The combination with an elevator-car, of a pair of car-doors carried upon the car, a pair of doors for each landing shielded from the direct control of the operator by the doors on the car, outwardly-projecting lugs or arms upon the car-doors, inwardly-projecting lugs or portions upon the landing-doors, the said car-door lugs being adapted to engage the landing-door lugs when the car is in the vicinity of the landing, whereby the landing-doors are opened by the opening of the car-doors and a single electromagnetic device carried upon the car to open said car-doors, substantially as described.

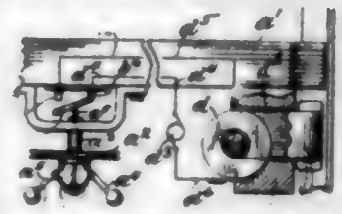
15. The combination with an elevator-car, of a solenoid at the top of said car, a pair of doors carried upon the car and horizontal levers extending between the solenoid and the top of said doors to open them, substantially as described.

16. The combination with an elevator-car, of a solenoid horizontally mounted upon and carried at the top of the car, a pair of cores for said solenoid, one at each end thereof, a pair of doors carried upon the car vertical posts or standards secured to said doors, and a horizontal lever extending between each solenoid-core and the vertical post or standard upon one of the doors, substantially as described.

17. The combination with an elevator-car of two sliding separating doors mounted thereon, a solenoid above the doors provided with two independent horizontally-positioned cores, each provided with suitable retracting devices, a pivoted angularly-disposed solenoid-lever connected with each core and projecting toward the said doors, a connecting-piece pivotally connected with each solenoid-lever, said connecting-pieces connected with the doors near the meeting faces, and means for energizing and demagnetizing said solenoid so as to control the position of said doors.

18. The combination with an elevator-car of an electromagnetic device carried thereby, a door associated with the elevator-shaft, a shielding or protecting device between said door and the car operator, a connection between said shielding or protecting device and said electromagnet, so that the shielding or protecting device may be moved, and means for connecting said shielding or protecting device with the door associated with the elevator-shaft when the car is opposite the landing.

814,929. **AUTOMATIC CHECKING DEVICE FOR ELEVATORS.** CHARLES C. ARMSTRONG and CHARLES A. DEHNER, Chicago, Ill., assignors to G. A. Edward Kohler and Franklin W. Kohler, Chicago, Ill. Filed July 10, 1901. Serial No. 67,774.



Claim.—1. The combination with an elevator-car of a magnetic retarding device having a divided magnetic circuit, one part of which is carried on the car, and another part of which is separate from the car, said latter part attached to a stationary support.

2. The combination with an elevator-car of a magnetic retarding device having a part on the car, and a part separate from the car, and means on the car for automatically actuating said retarding device under predetermined conditions.

3. The combination with an elevator-car of a stationary runway therefor, an electromagnetic clutch on the car having movable parts opposed to said runway, and adapted to move therealong, said parts forming part of the magnetic circuit of the clutch, and a governor on the elevator-car responsive to the speed of the car for controlling said clutch.

4. The combination with an elevator-car of a stationary runway separate from the car, an electromagnetic clutch having a movable part adapted to be held by the force of magnetism in contact with the runway under predetermined conditions, said runway of magnetic material so as to attract the energized parts of the electromagnetic clutch a suitable winding, a switch for controlling the circuit through said winding, and a device responsive to the speed of the elevator-car for operating said switch, substantially as described.

5. The combination with an elevator-car of a stationary runway of magnetic material separate from said car, an electromagnetic clutch having shoes adapted to engage and grip said runway, said shoes and runway being included in the magnetic circuit of said clutch, and a governor responsive to the speed of said car to control said clutch, substantially as described.

6. The combination with an elevator-car, of a runway for said car, an electromagnetic clutch comprising a winding, a core for said winding comprising two arms, each of which projects partially into said winding, shoes carried on the ends of said arms and adapted to grip the said runway when said electromagnet is energized, said arms of opposite polarity, and a device responsive to the speed of the elevator-car and located beneath it for controlling the circuit through the said electromagnetic clutch, substantially as described.

7. The combination with an elevator-car, of a runway for said car, an electromagnetic clutch comprising a winding, a core comprising two arms pivoted together and of opposite polarity when the magnet is energized, shoes carried on the ends of said arms and adapted to grip the said runway when said electromagnet is energized, and a device responsive to the speed of the elevator-car for controlling the circuit through the electromagnetic clutch, substantially as described.

8. The combination with an elevator-car, of a runway for said car, an electromagnetic clutch comprising a winding, a core comprising two arms pivoted together by means of a lap-joint, one on each side of the winding, and a governor responsive to the speed of the elevator-car and adapted to close a switch for controlling the circuit through the said electromagnetic clutch, substantially as described.

9. The combination with an elevator-car of a stationary runway therefor, a clutch-magnet associated with the car and comprising a movable part adapted to move along and engage the stationary runway to check the movement of the car, said part forming a portion of the magnetic circuit of said magnet, a portion of the winding of the magnet being wound thereabout, substantially as described.

10. The combination with an elevator-car of a clutch-magnet on the car, comprising a pivoted arm contained within and forming a part of the magnetic circuit of the magnet, a stationary part in proximity to the car, along which said movable part of the magnet moves as the car travels back and forth, and means for automatically moving said movable part into contact with said stationary part under predetermined conditions.

11. The combination with an elevator-car of a magnetic retarding device made up of a part on the car and moving therewith, and a stationary part separate from the car so that part of the magnetic circuit of said retarding device when operating is on the car and another part off the car.

12. The combination with an elevator-car, of a runway therefor, a clutch-magnet mounted on the car, said magnet having two arms adapted to engage said runway when the magnet is energized to check the movement of the car, said arms being included in the magnet-circuit of said clutch-magnet so as to be of opposite polarity, substantially as described.

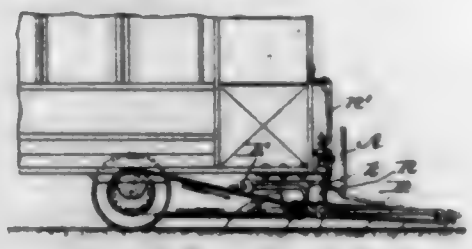
13. The combination with an elevator-car of an electromagnet mounted on said car, a stationary part in proximity to the car and separate therefrom, a movable part associated with said magnet and adapted, when the magnet is energized, to be held by magnetism in contact with said stationary part to retard or stop said car, and an automatic controlling device on the car outside of the control of the operator, which automatically controls the magnet under predetermined conditions.

14. The combination with an elevator-car of an electromagnet mounted on the car and provided with opposed poles, a stationary part extending along the path of the elevator and projecting between said opposed poles, and an automatic controlling device for energizing said magnet under predetermined conditions, so as to cause it to coact with said stationary part to retard or stop the elevator-car.

15. The combination with an elevator-car of a magnetic retarding device located partly on the car and partly separate from the car so that the magnetic circuit is partly on the car and partly off the car, a device located beneath the car and responsive to variations in speed, for automatically setting the electromagnetic retarding device into operation under predetermined conditions.

16. The combination with an elevator-car of a magnetic retarding device having a divided magnetic circuit, one part of which is movably mounted on the car and another part of which is separate from the car and attached to a stationary support, the movable part on the car provided with a winding extending therearound and adapted to be connected in an electric circuit.

814,930. VEHICLE-FENDER OR OBSTRUCTION-REMOVER FOR ROAD-VEHICLES. PEDRO ARRIETA Y SANZ, Pamplona, Spain. Filed Oct. 8, 1903. Serial No. 176,450.



Claim.—1. In a vehicle-fender, the combination of a folding descendible cage or scoop; means attached thereto for automatically applying the brake and cutting off the motive power, when the cage or scoop is caused to descend by the additional weight thrown into it; and a continuously-rotary cylinder calculated to raise the obstacles encountered and convey same into the cage or scoop, and formed by a number of fluted pieces of rifled rubber or other suitable material, keyed on a rod.

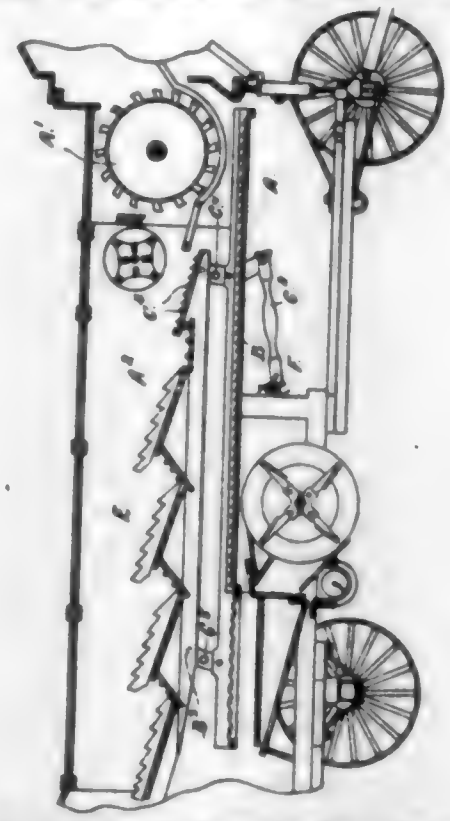
2. In a vehicle-fender, the combination of a folding descendible cage or scoop; means attached thereto for automatically applying the brake and cutting off the motive power, when the cage or scoop is caused to descend by an additional weight; a continuously-rotary cylinder calculated to raise the obstacles encountered and throw same into the cage or scoop, and formed by a number of fluted pieces of rifled rubber or other suitable material, keyed on a rod; and oscillating levers, carrying at their front downwardly-bent ends the aforesaid cylinder and at their rear upwardly and horizontally bent ends counterweights serving to hold normally such cylinder in a comparatively raised position, the cage or scoop being caused to descend and act upon the brake of the vehicle by the oscillation of these levers, when the cylinder conveys an obstacle into the cage or scoop.

3. In a vehicle-fender, the combination of a folding descendible cage or scoop; means attached thereto for automatically applying the brake and cutting off the motive power, when the cage or scoop is caused to descend by an additional weight; a continuously-rotary cylinder calculated to raise the obstacles encountered and throw same into the cage or scoop, and formed by a number of fluted pieces of rifled rubber or other suitable material keyed on a rod; oscillating levers carrying at their front downwardly-bent ends the aforesaid cylinder and at their rear upwardly and horizontally bent ends counterweights serving to hold normally such cylinder in a comparatively raised position; and supports and brackets extending downwardly from the platform and pivotally supporting said bent rocking levers, by the oscillation of which the cage or scoop is caused to descend and act upon the brake of the vehicle, when the cylinder conveys an obstacle into the cage or scoop.

4. In a vehicle-fender, the combination of a folding descendible cage or scoop; means attached thereto for automatically applying the brake and cutting off the motive power, when the cage or scoop is caused to descend by an additional weight; a continuously-rotary cylinder calculated to raise the obstacles encountered and throw same into the cage or scoop, and formed by a number of fluted pieces of rifled rubber or other suitable material keyed on a rod; oscillating levers carrying at their front downwardly-bent ends the aforesaid cylinder and at their rear upwardly and horizontally bent ends counterweights serving to hold normally such cylinder in a comparatively raised position, the cage or scoop being caused to descend and act upon the brake of the vehicle and interrupter of the motive power by the oscillation of these levers, when the cylinder conveys an obstacle into the cage or scoop; supports and brackets extending downwardly from the platform and pivotally supporting said bent oscillating levers; and means for revolving the cylinder at a high speed and in a direction opposite to the travel of the vehicle.

5. In a vehicle-fender, the combination of a rocking lever, a scoop and a rifled rubber cylinder attached to said lever, means for rotating said cylinder in the opposite direction of the movement of the vehicle, a counterweight on said lever for holding the same in the desired position, and means connected with the fender for automatically cutting off the motive power and operating the brake of the vehicle when the cylinder conveys an obstacle into the scoop.

814,931. GRAIN-PAN FOR THRESHERS. ELIJAH F. ATHEY, Lucerne, Colo. Filed Feb. 15, 1904. Serial No. 193,661.

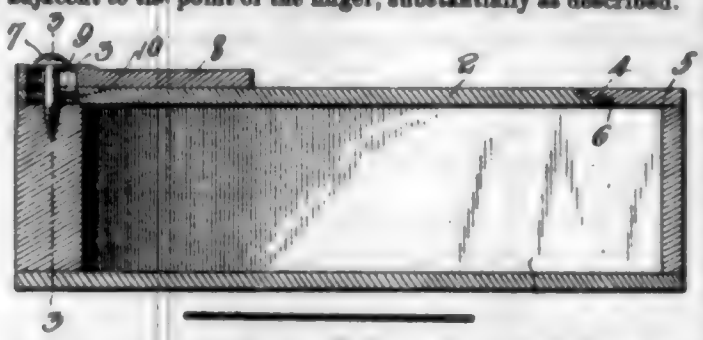


Claim.—1. A vibratory grain-pan having a sheet-metal bottom provided with vertical, longitudinally-disposed partitions formed integral with the bottom of the pan and consisting of folds formed in the plate of which the bottom is composed, and corrugated parts mounted on the bottom between the partitions and having their grooves or valleys arranged in a direction crosswise of the pan or in a direction at right angles to the travel of the material thereon, the extent of the corrugations in the direction of the pan's length being somewhat less than the length of the stroke in one direction due to the vibratory movement of the pan.

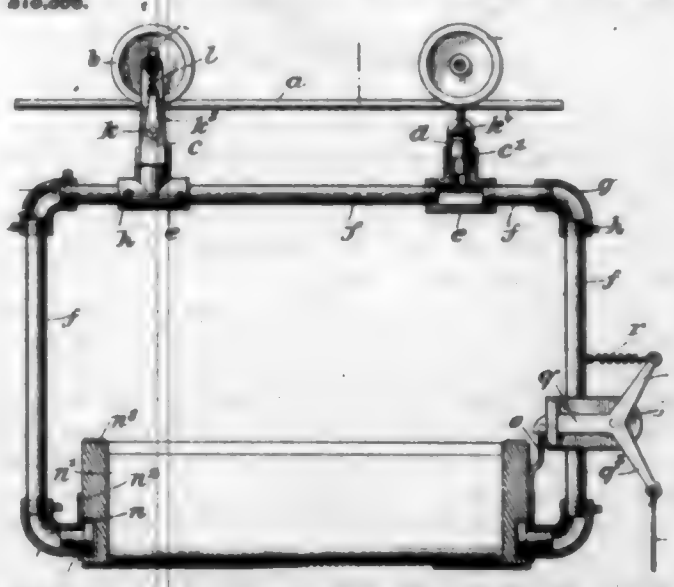
2. The combination of a grain-pan, and means for imparting a longitudinal vibration or reciprocation thereto, the said pan consisting of a bottom having vertical longitudinally-disposed partitions formed integral therewith, and corrugated longitudinally-extending members mounted on the bottom of the pan between the partitions, and having their grooves or valleys arranged crosswise of the pan or extending in a direction crosswise of the travel of the material thereon, the length of the units of the corrugations being somewhat less than the length of the stroke of the pan in one direction.

814,932. BOX-TOP-SECURING DEVICE. ARTHUR BRADLEY, Manistique, Mich. Filed Apr. 3, 1905. Serial No. 253,602.

Claim.—The herein-described box and a cover therefor comprising a box having an undercut or rabbeted board 5 secured to one end of its upper side, a pivoted cover 2 having a rabbeted end to fit the rabbet on the end board 5, an aperture 3 in the opposite end of the cover 2, a pin 7 forming a pivot for said cover, a finger 8 pivoted upon said pin and provided with a recess 9 therein and a block 10 of less thickness than the cover or finger placed in the recess in said cover and finger, and adapted to slide upon the pin 7, and a scale on the box adjacent to the point of the finger, substantially as described.



814,933. CONVEYING DEVICE. IVER E. BENDICKSON, Cambridge, Wis., assignor of one-third to Crist. Legreid and one-third to Frank Woelfer, Cambridge, Wis. Filed Aug. 9, 1905. Serial No. 273,386.



Claim.—1. A conveying device, comprising a frame formed of pipes secured together by pipe-fittings, set-screws secured in said fittings to prevent movement of the pipes with respect thereto, a pair of studs mounted in said frame, and a carrier having depressions for receiving said studs at a point below the center of gravity of the carrier, said carrier being of semicircular cross-section, whereby its contents may be easily dumped.

2. A conveying device, comprising a frame formed of pipes secured together by pipe-fittings, set-screws secured in said fittings to prevent movement of the pipes with respect thereto, a pair of studs mounted in said frame, a carrier having depressions for receiving said studs at a point below the center of gravity of the carrier, said carrier being of semicircular cross-section, a spring-latch for normally holding the carrier in upright position, and means for disengaging the latch from the carrier.

3. A conveying device comprising a frame, a carrier supported thereby, said frame consisting of a series of pipes and pipe-fittings connecting the pipes together; said fittings at the top of the frame being in the form of T's, each T being provided with a head and a swivel-bracket mounted on each head for supporting an overhead-trolley wheel.

4. A conveying device, comprising a frame, a carrier pivotally supported by the frame at a point below its own center of gravity, said carrier having a curved plate extending upwardly therefrom and provided with a notch near its upper end, a pivoted latch adapted to engage said notch, resilient means for holding said latch in the notch, means for disengaging the latch from the notch, said frame consisting of a series of pipes and pipe-fittings connecting the pipes together, certain fittings at the top of the frame being of the form of T's, each T being provided with a head, and a swiveled bracket mounted on each head for supporting a trolley-wheel.

5. A conveying device comprising a frame for supporting a carrier, a bracket movably mounted with respect to the frame, a trolley-wheel supported by the bracket, a movable plate on the bracket having a depression for receiving a portion of a track for said wheel, and means for holding said plate in such position as to constitute a guard for the track.

6. A conveying device comprising a frame for supporting a carrier, a bracket connected with the frame, a wheel supported by the bracket, a movable plate mounted on said bracket, said plate having a depression for receiving a portion of a trolley-track and means for holding said plate in such position as to constitute a guard for the track, said means comprising an arm fixedly mounted with respect to the plate, and a spring connecting said arm with the bracket.

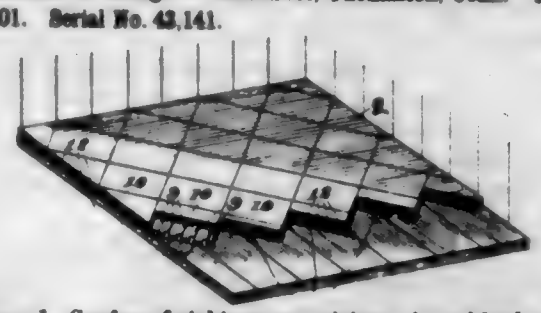
7. A conveying device, comprising a frame for supporting a carrier, a swiveled bracket on the frame, a trolley-wheel mounted on the bracket and adapted to ride upon a trolley-rail, a pivotally-mounted plate on said bracket, said plate having a depression for receiving the lower portion of the trolley-track, and means for holding said plate in elevated position to constitute a guard for the track.

8. A conveying device, comprising a frame for supporting a carrier, a swiveled bracket on the frame, a trolley-wheel mounted on the bracket and adapted to ride upon a trolley-rail, a pivotally-mounted plate on said bracket, said plate having a depression for receiving the lower portion of the trolley-track, and means for holding said plate in elevated position to constitute a guard for the track, said means comprising an arm fixedly mounted with respect to the plate and a spring connecting said arm with the bracket.

9. A conveying device, comprising a frame having a head, a bracket connected with said head, a shaft rotatably mounted on the bracket, a plate fixed to the shaft and having a depression for receiving the lower part of a trolley-rail, said plate constituting a guard for the trolley-rail, and a trolley-wheel mounted on the bracket above said guard, said plate having a flat lower surface adapted to engage said head to prevent the rotation of the plate and shaft when the head is lifted into engagement with said flat surface.

10. A conveying apparatus comprising a frame having a head, a bracket connected with said head, a shaft rotatably mounted on the bracket, a plate on the shaft having means for engaging a part of a rail, said plate constituting a guard for the rail, and a wheel mounted on the bracket, said plate having a flat surface adapted to engage the head to prevent the rotation of the plate and shaft when the head is moved into engagement with the flat surface.

814,934. SURFACE-FINISHING FOR FLOORS, CEILINGS, &c. JOHN J. BLACKMAN, New Britain, Conn., assignor, by direct and mesne assignments, to George P. Bradstreet, Thomaston, Conn. Filed Jan. 14, 1901. Serial No. 43,141.



Claim.—1. Surface-finishing comprising a base-block provided with a series of separated tongues or ribs having overhanging sides and adapted to be securely fastened to a support, and an upper block of the same dimensions as the base-block, and provided with a series of tongues or ribs adapted to interlock with the tongues or ribs of the base-block when said upper block is slid to position upon the base-block.

2. The combination, with a support, of a base-block having a series of separated tongues or ribs with overhanging side edges extending entirely across said base-plate; means passing through perforations in ribs of the base-block for securing said base-block to the support; and a top block having a series of separated tongues or ribs with overhanging sides extending entirely across said top block and located on its under surface, said tongues or ribs of the top block being fitted and interlocked in sliding engagement with the tongues or ribs of the base-block.

3. The combination, with a support, of a base-block secured to said support and having a series of separated tongues or ribs extending across the same and provided with stepped or zigzag sides; and a top block also having a series of separated tongues or ribs extending across said top block and having stepped or zigzag sides, said top block being held in sliding engagement with the base-block by interlocking the tongues or ribs of both said blocks, and both blocks being of the same dimensions.

4. The combinaton, with a support, of a base-block having an odd number of tongues or ribs formed with overhanging sides and extending across said base-block; means for securing the base-block to the support; and a top block of the same dimensions as the base-block and also having an odd number of tongues or ribs with over-

hanging sides on its under side, the tongues or ribs of both blocks being fitted in sliding and interlocking engagement with each other.

5. A surface-finishing comprising a base adapted to be secured to a support and a facing-plate independent of the base but corresponding in dimensions to the dimensions thereof, the upper surface of the base and the lower surface of the facing-plate being formed to interlock with each other by sliding one upon the other.

6. A wood flooring-section comprising a base adapted to be secured to the floor, and a facing-plate independent of the base but corresponding in dimensions to the dimensions thereof, the upper face of the base and the lower face of the facing-plate being formed to be interlocked with each other by sliding one upon the other.

7. As an article of manufacture, a wood flooring-block made up of two parts, a base-plate and a face-plate of the same dimensions, interlocked with each other by sliding one upon the other.

8. As an article of manufacture, a single wood flooring-block made up of two readily-separable parts, a base-plate and a face-plate of the same dimensions, interlocked with each other by dovetails of the same width from end to end and by sliding one upon the other.

9. A surface-finishing, comprising a base of wood adapted to be secured to a support, and a facing-plate also of wood independent of the base, but corresponding in dimensions to the dimensions thereof, the upper surface of the base and the lower surface of the facing-plate being formed to interlock with each other by sliding one upon the other with the grain of the facing-plate crossing the grain of the base-plate.

10. A wood flooring-block comprising a base adapted to be secured to the floor and a facing-plate independent of the base but corresponding in dimensions to the dimensions thereof, the upper face of the base and the lower face of the facing-plate being formed to be interlocked with each other by sliding one upon the other with the grain of the facing-plate crossing the grain of the base-plate.

11. A wood flooring-block comprising a single, complete block or section, one flat part of which constitutes the surface finish of the under floor to which it is applied, composed of two registering parts of the same dimensions interlocked by sliding one upon the other, one a complete and independent base to be first secured in place to the under floor, and the other a complete and independent facing-plate fully facing said base, to be subsequently secured to such base.

12. A wood flooring-block comprising a single, complete block or section of wood, one flat part of which constitutes the surface finish of the under floor to which it is applied, composed of two registering parts of the same dimensions, dovetail interlocked by sliding one upon the other, the grain of one part crossing the grain of the other, and one part constituting a complete and independent base to be first secured in place to the under floor, and the other part a complete and independent facing-plate fully facing said base, to be secured subsequently to such base.

13. A wood flooring, comprising a base adapted to be secured to a floor by means passing vertically through it, a facing-plate independent of the base but corresponding in dimensions to the dimensions of the base, and adapted to be passed over it, and tongue-and-groove connection between the base and facing-plate, substantially as described.

14. A wood flooring, comprising a base formed in its upper face with longitudinal dovetail ribs, and a facing-plate independent of but corresponding in dimensions to the base, and formed in its under face with dovetail grooves corresponding to the ribs in the base over which it is adapted to be passed after the base is secured in position, substantially as described.

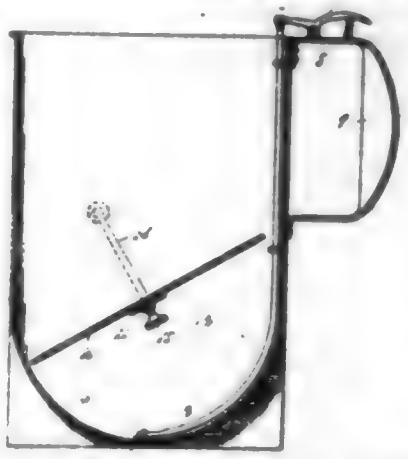
15. A wood flooring-block made up of two parts, a base-plate and a face-plate of the same dimensions, interlocked with each other by zigzag dovetails.

16. A wood flooring-section comprising a base adapted to be secured to a floor, and a facing-plate independent of the base but corresponding in dimensions to the dimensions thereof, the upper face of the base and the lower face of the facing-plate having stepped or zigzag-formed tongues and grooves interlocking with each other, the grain of the facing-plate crossing the grain of the base.

17. In a hard-wood or parquet floor, the combination with an under flooring, of a series of independent blocks, each separately attached to said under floor, edge to edge and each comprising a base-plate of one wood secured to such under floor and a top plate of the same dimensions as the base-plate and fully facing the same, and of a different wood, and dovetail interlocked with said base-plate by sliding it thereupon.

814,935. BATTER-MIXING MACHINE. ALEXANDER BURGESS, Detroit, Mich. Filed May 2, 1904. Serial No. 206,971.

Claim.—1. A batter-mixer, consisting of a vessel provided with a handle, vertical sides and a rounded bottom, and with a central orifice through said bottom, a valve closing said orifice, a curved valve-stem engaging along the curved bottom and a vertical side and terminating with its upper end adjacent to the handle, an actuating-lever pivoted to the handle and to the valve-stem and provided with a thumb-piece, a beater on a shaft central to the curved bottom and provided with an actuating-crank, whereby the beater may be actuated by one hand, while the mixer is held and the valve may be actuated by the other hand, substantially as described.



2. A batter-mixer, consisting of a vessel provided with a handle, vertical sides and a rounded bottom, and with a central orifice through said bottom, a valve closing said orifice, a curved valve-stem engaging along the curved bottom and a vertical side and terminating with its upper end adjacent to the handle, an actuating-lever pivoted to the handle and to the valve-stem and provided with a spring-lifted thumb-piece, a beater on a shaft central to the curved bottom and provided with an actuating-crank, whereby the beater may be actuated by one hand while the mixer is held and the valve may be actuated by the other hand, substantially as described.

3. A batter-mixer, consisting of a vessel having vertical sides and a rounded bottom, and with a central orifice through said bottom, a horizontal revoluble shaft having a mixer secured thereto, said shaft being pivoted so as to turn about an axis at the center of curvature of the bottom, a valve adapted to open and close said orifice, an integral stem secured at one end to said valve curved in a plane at right angles to said shaft to extend along the bottom, then extending along a vertical side, a guide for the vertical portion of said stem, a handle to said vessel adjacent to the upper end of said stem, and a lever pivoted to said handle in position to be operated by a hand grasping said handle, said lever being adapted to reciprocate said stem vertically, and a crank upon said shaft outside of said vessel.

4. A batter-mixer, consisting of a vessel having vertical sides and a rounded bottom, and with a central orifice through said bottom, a horizontal revoluble shaft having a mixer secured thereto, said shaft being pivoted so as to turn about an axis at the center of curvature at the bottom, a valve adapted to open and close said orifice, an integral stem secured at one end to said valve curved in a plane at right angles to said shaft to extend along the bottom, then extending along a vertical side, a guide for the vertical portion of said stem, a handle to said vessel adjacent to the upper end of said stem, and a lever pivoted to said handle in position to be operated by a hand grasping said handle, said lever being adapted to reciprocate said stem vertically, said mixer being cut out at its edges to produce a clearance around said stem.

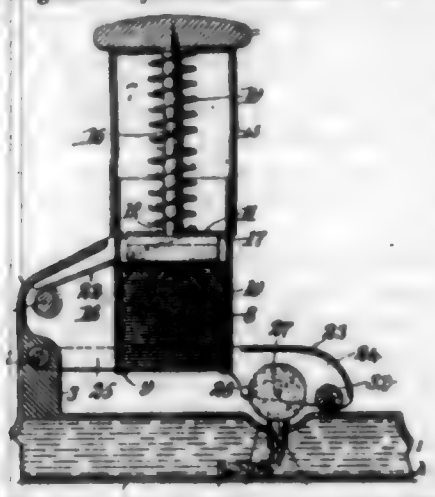
814,936. STAMP-AFFIXING DEVICE. MARCUS R. BURROWES, Sarnia, Canada. Filed May 3, 1905. Serial No. 258,680.

Claim.—1. In a device of the class described, in combination, a moistening-roller normally occupying a depressed position, means for feeding moisture to said roller, means for locking said roller against rotation by a displacement thereof, and a magazine for stamps or labels.

2. In a device of the class described, in combination, a base, a moistening-roller normally occupying a depressed position, a ratchet-wheel carried by said roller, a member having a fixed point of support and adapted to engage said ratchet-wheel when the same is elevated, means for feeding a moistening fluid to said roller when in said depressed position, and a stamp-attaching magazine beyond said roller.

3. In a device of the class described, in combination, a casing, an arm pivoted thereto, a moistening-roller carried by said arm, a

spring adapted to engage said arm when moved upwardly, means for locking said roller against rotation when moved upwardly, and a stamp-affixing magazine beyond said roller.



4. In a device of the class described, in combination, a base constituting a reservoir and having a depression in the upper face thereof, a casing, an arm pivoted to said casing, a moistening-roller carried by said arm and normally resting in said depression, a spring adapted to engage said arm when moved upwardly, a ratchet-wheel rigid with said roller, a second spring carried by said casing adapted to engage said ratchet-wheel to lock said roller, and a stamp-affixing magazine provided in said casing.

5. In a device of the class described, a magazine comprising a body having a compartment adapted to receive stamps, and a transverse head thereabove, said head having an opening therethrough, a bonnet slidably mounted on said body, and a plunger carried by said bonnet and adapted to advance the body of said stamps, said opening affording means for the escape of air from the interior of said bonnet into said stamp-compartment.

814,937. **CIGAR-TIP CUTTER.** EVERETT R. BUSSEY, Cambridge, and HAROLD D. WATERHOUSE, Quincy, Mass. Filed Oct. 9, 1905. Serial No. 281,838.



Claim.—1. The combination in a cigar-tip cutter, of a knife-chamber, a cover having a central opening, knives extending into the opening and having tongues clamped between the chamber and cover whereby the knives are rigidly held in a cutting position within the opening.

2. The combination in a cigar-tip cutter, of a knife-chamber having a central aperture, circumferential flanges provided with notches, knives extending through the notches and partly into the aperture, and a gripping-collet for securing the knives.

3. The combination in a cigar-tip cutter, of a knife-chamber having a central aperture, a cover having a similar aperture, inverted truncated cones for both the chamber and cover, channels in the cones, circumferential rims for both the chamber and cover, notches in the rim of the chamber, rigid knives extending from without the chamber through the channels and partly into the central apertures so that their pointed ends nearly meet, tongues rigidly attached to the knives and adapted to be held firmly in place between the rims, and each knife provided with upper and lower beveled edges, substantially as shown and described.

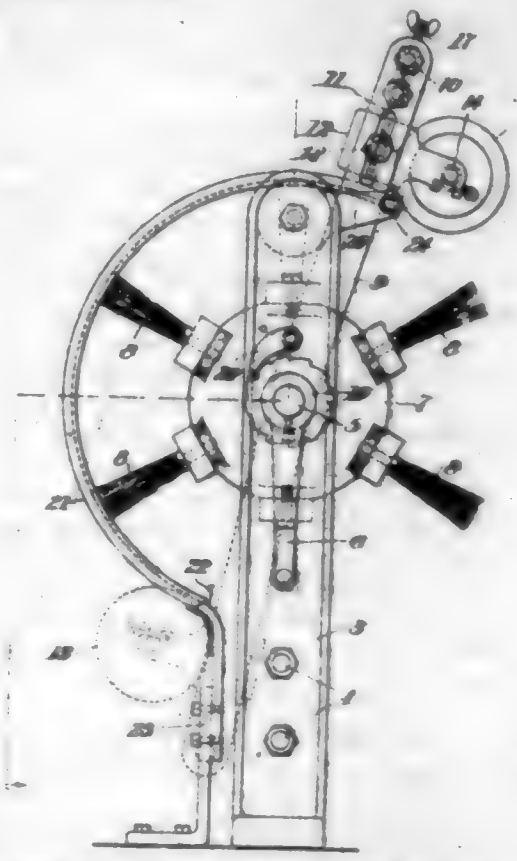
814,938. **DRYING-MACHINE.** AUGUSTUS C. CAREY, Boston, Mass. Filed Jan. 3, 1906. Serial No. 294,402.

Claim.—1. A drying-machine, comprising a plate-support, a frame, a rotary brush mounted on said frame and adapted to act on the concave or inside of a stereotype-plate arranged upon said support, and a swinging absorbent roll also mounted on said frame and adapted to be passed over the convex or printing side of said plate.

2. In a drying-machine, the combination of uprights, a rotary shaft mounted therein, a brush on said shaft, means to rotate said shaft, a swinging frame mounted on said shaft and a pad-roll carried by said frame.

3. In a drying-machine, the combination of uprights, a rotary shaft mounted therein, a brush on said shaft, means to rotate said shaft, a swinging frame mounted on said shaft, a pad-roll carried by said frame, and a support for the stereotype-plate.

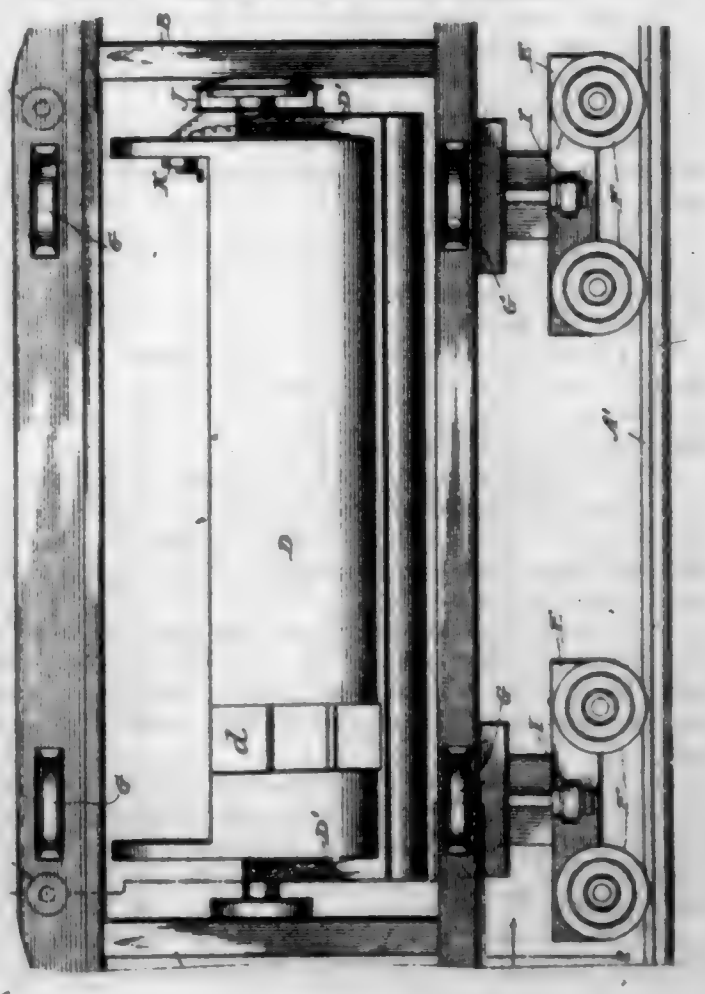
4. A drying-machine, comprising essentially a frame, a rotary shaft supported in said frame, a brush on said shaft, means to limit the rotation of said brush in one direction only, a frame mounted to swing on the shaft independently of its rotation, a pad-roll carried by said swinging frame, and means to support a printing-plate between the brush and the pad-roll.



5. A drying-machine, comprising essentially a frame, a rotary shaft supported in said frame, a brush on said shaft, means to limit the direction of rotation of said brush, a frame mounted to swing on the shaft independently of its rotation, a pad-roll carried by said swinging frame, means to adjust the pad-roll in said frame, and means to support a printing-plate between the brush and the pad-roll.

6. In a drying-machine, the combination of a frame, a rotary brush supported in said frame, a swinging frame mounted in the brush-frame, brackets on said swinging frame, a detachable absorbent pad-roll mounted in said brackets, and means to support a printing-plate between the brush and the pad-roll.

814,939. **AMUSEMENT-RAILWAY.** FRANK A. CERRUTI, New York, N. Y. Filed Oct. 6, 1905. Serial No. 281,565.



Claim.—1. A pleasure-railway having lines of rails below, above, and on each side, in combination with a carriage having corresponding wheels, all substantially as herein specified.

2. A pleasure-railway having lines of rails below, above and on each side, in combination with a carriage having corresponding wheels and having trucks on the under side and wheels carried on the sides thereof, arranged to directly receive any lateral pressure of such trucks.

3. A pleasure-railway having lines of rails below, above, and on each side, arranged helically in combination with a carriage having corresponding wheels, all substantially as herein specified.

4. In combination with a railway of the character described and a car adapted to run and be revolved therein, a basket for passengers, carried within the car and adapted to maintain its upright position while the main body revolves around it, all substantially as herein specified.

5. In combination with a railway of the character described and a car adapted to run and be revolved therein, an internal basket adapted to maintain its upright position while the main body revolves around it and provisions for locking such basket to the car when required, all substantially as herein specified.

6. In combination with a railway of the character described and a car adapted to run and be revolved in the inclosing way thus formed, an internal basket adapted to maintain its upright position while the main body revolves around it and a device M adapted to perform the double functions of a gang-plank and locking means, substantially as herein specified.

814,940. EXTRACTION VESSEL. CLARENCE M. CHAMBERLAIN, Lead, S. D. Filed May 31, 1905. Serial No. 263,020.



Claim.—1. An extraction-tank comprising a substantially air-tight vessel, means for inclining the vessel, a filter-bed therein and a discharge-gate extending across the vessel at the end of the filter-bed, substantially as described.

2. An extraction-tank comprising a substantially air-tight vessel, a tray mounted therein, a filter-bed in said tray and a discharge-gate extending across said vessel opposite said tray, substantially as described.

3. An extraction-tank comprising a substantially air-tight vessel, means for inclining the vessel, a tray mounted therein, a filter-bed in said tray and a discharge-gate extending across said vessel opposite said tray, substantially as described.

4. An extraction-tank comprising a substantially air-tight vessel, a tray mounted therein, a filter-bed in said tray, conduits communicating with said tray above and below said bed and a discharge-gate extending across said vessel opposite said tray, substantially as described.

5. An extraction-tank comprising a substantially air-tight vessel, a plurality of trays mounted therein, a filter-bed in each tray and a discharge-gate extending across said vessel opposite said trays, substantially as described.

6. An extraction-tank comprising a substantially air-tight vessel, means for inclining the vessel, a plurality of trays mounted therein, a filter-bed in each tray, and a discharge-gate extending across said vessel opposite said trays, substantially as described.

7. An extraction-tank comprising a substantially air-tight vessel, a plurality of trays mounted therein, a filter-bed in each tray, conduits communicating with each tray above and below the filter-bed, and a discharge-gate extending across said vessel opposite said trays, substantially as described.

8. An extraction-tank comprising a substantially air-tight vessel, a tray mounted therein, a filter-bed in said tray, a discharge-gate extending across said vessel opposite said tray, and a closure for said discharge-gate constituting one wall of said tray, substantially as described.

9. An extraction-tank comprising a substantially air-tight vessel, a plurality of trays mounted therein, a filter-bed in each tray, a discharge-gate extending across said vessel opposite said trays, and a closure for said discharge-gate constituting one wall of said trays, substantially as described.

10. An extraction-tank, a filter-tray therein having upper and lower compartments separated by a filter-bed, and a support for said bed comprising angle-bars secured to the bottom of the tray, substantially as described.

11. An extraction-tank, a filter-tray therein having upper and lower compartments separated by a filter-bed, a support for said bed comprising angle-bars secured to the bottom of the tray, and reinforcing members below said tray, substantially as described.

12. An extraction-tank, a filter-tray therein having upper and lower compartments separated by a filter-bed, a support for said bed comprising angle-bars longitudinally secured to the bottom of the tray, and transverse reinforcing members below said tray, substantially as described.

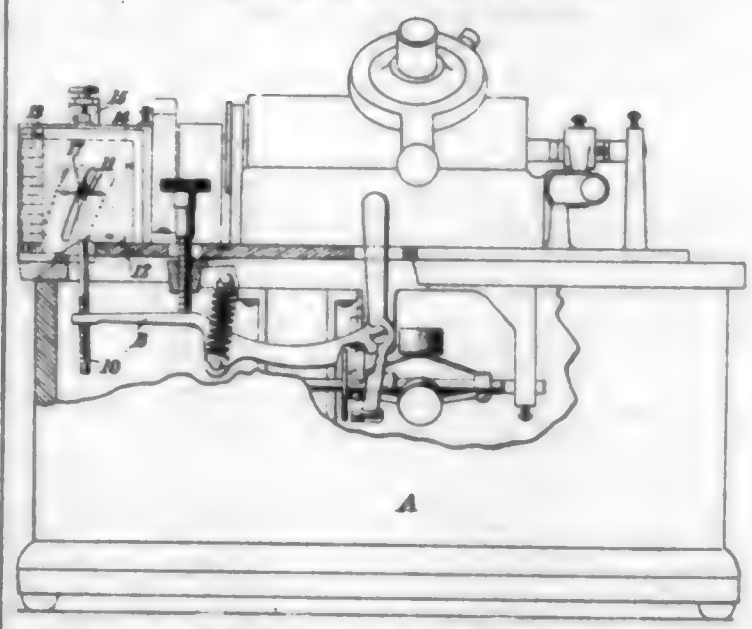
13. An extraction-tank comprising a substantially air-tight vessel, a flange secured to each end thereof, a closure adapted to be secured to one of said flanges, and a filter-bed in said vessel arranged transversely to said closure, said closure having external conduits communicating with the interior of said vessel, substantially as described.

14. An extraction-tank comprising a substantially air-tight vessel, a flange secured to each end thereof, a closure adapted to be secured to one of said flanges, and a filter-bed in said vessel arranged transversely to said closure, said closure having external conduits communicating with the interior of said vessel above and below said filter-bed, substantially as described.

15. An extraction-tank comprising a substantially air-tight vessel, removable closures for each end of said vessel, and a filter-tray in said vessel, said closures constituting opposite walls of said filter-tray, substantially as described.

16. An extraction-tank comprising a substantially air-tight vessel, removable closures for each end of said vessel, and a plurality of superposed filter-trays in said vessel, said closures constituting opposite walls of said filter-trays, substantially as described.

814,941. PITCH-INDICATING ATTACHMENT FOR SOUND-REPRODUCING MACHINES. CHARLES L. CHESHOLM, North Sydney, Canada. Filed Aug. 8, 1905. Serial No. 273,266.



Claim.—1. In apparatus of the class described, a table bearing in parallel columns the pitch-indicating symbols of musical notation, a metronome time-indicating scale, a double pointer movable between said columns to indicate the pitch and tempo of reproduction, and a speed-controlling mechanism connected to said pointer.

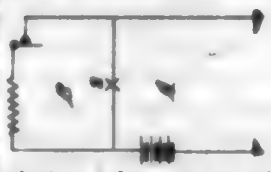
2. In apparatus of the class described, a dial or table bearing pitch-indicating symbols, and a metronome time-indicating scale, the face of said table being provided with a slot, a standard, an adjusting-screw carried by the standard and forming a suspension means for said table, a double pointer, a pointer-support extending through the slot, a rod carrying the pointer-support, and means connecting said rod to the speed-controlling mechanism of the machine.

3. In apparatus of the class described, a table for indicating the different keys in which a reproduction is made, said table being adjustable to the end that a given graduation of the table will correspond to the pitch or key in which the record is made, and means connected to the speed-controlling mechanism for indicating on said table the absolute pitch of reproduction both above and below the pitch of recording.

4. An indicating attachment for a phonograph or like machine, having a speed-controlling mechanism, said indicating means comprising a table or dial having graduations designated by the characters employed in musical notation, a pointer movable over the table

and under the control of the speed-controlling mechanism, and a means for effecting adjustment of the table with relation to the pointer, whereby said table may be adjusted in accordance with the pitch and tempo of the reproduction.

814,942. **WIRELESS TELEPHONY.** ARCHIE F. COLLINS, New York, N. Y. Filed Aug. 21, 1905. Serial No. 275,098.



Claim.—1. In a wireless telephone or telegraph the combination of a source of electromotive force, an arc-light, a circuit connecting the same and having the conductor-terminals embedded in the earth or other medium, and a circuit containing a sound-converter for transmitting or receiving, said sound-converter being in a circuit of its own outside the main influence of the arc-light circuit, substantially as shown and described.

2. In a wireless telephone or telegraph, the combination of a source of electromotive force, an arc-light, a circuit with terminals forming connection with or embedded in the earth or other medium, and means for modifying the current flowing through the said circuit, said means consisting of an independent circuit containing a sound-converter, substantially as shown and described.

3. In a wireless telephone or telegraph, the combination of a source of electromotive force, an arc-light, a circuit with terminals connecting the same with the earth or other medium, a circuit including the arc-light and containing also a sound-converter for transmitting or receiving substantially as described.

4. In a wireless telephone or telegraph, the combination of a source of electromotive force, an arc-light, a circuit with terminals connecting the same with the earth or other medium, a circuit including the arc-light and containing a resistance and a sound-converter, substantially as shown and described.

5. In a wireless telephone or telegraph, the combination of a transmitter proper, mechanism connected therewith for producing a so-called "speaking-arc," for varying the current forming said arc and producing current impulses, and means for transmitting said current impulses to a natural medium capable of conveying the same to a distance.

6. In a wireless telephone or telegraph, the combination with a transmitting apparatus of the kind described; of a receiving apparatus comprising a source of electromotive force, an arc-light, a circuit connecting the same and having its conductor-terminals embedded in the earth, or other natural mediums, an independent circuit containing a receiver and a source of electromotive force and means for influencing the current in said circuit containing the receiver by the variations in the arc-light, substantially as described.

814,943. **CONVEYER-BELT.** MILTON H. COOK, San Francisco, Cal. Filed Sept. 29, 1905. Serial No. 280,009.



Claim.—1. A carrying-belt composed of an upper surface of mineral-tanned leather and a rubber and canvas body to which the upper surface is integrally secured.

2 A carrying-belt consisting of an upper surface of mineral-tanned leather, a body or base consisting of a rubber and canvas fabric, rivets by which the two fabrics are secured together and buttons fixed upon the upper surface of the belt.

3. In a carrying-belt, a body composed of rubber and canvas fabric, a surface of mineral-tanned leather, rivets by which the two are secured together from side to side and raised knobs or buttons fixed along the central portion of the belt.

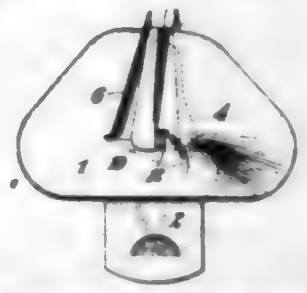
4. A carrying-belt consisting of a body of rubber and canvas fabric, a surface of mineral-tanned leather secured thereto, concaved bearing-rollers over which the belt travels and by which it is given a concave form, and knobs or buttons fixed in close proximity on the central and wearing portion of the belt.

5. A carrying-belt having an upper surface of mineral-tanned leather, and raised devices fixed upon said surface.

6. A carrying-belt and means for supporting the same, said belt having an upper surface composed of mineral-tanned leather and said surface having rows of independent raised devices fixed to the central portions thereof.

7. A carrying-belt and supporting-rollers therefor made concaved between the ends and formed of revoluble sections, said belt having an upper surface composed of mineral-tanned leather, and rows of raised devices fixed to the central portion of said surface.

814,944. **FOLDER FOR SEWING-MACHINES.** ALBERT H. DE VOE, Elizabeth, N. J., assignor to The Singer Manufacturing Company, Elizabeth, N. J., a Corporation of New Jersey. Filed June 17, 1904. Serial No. 213,227.

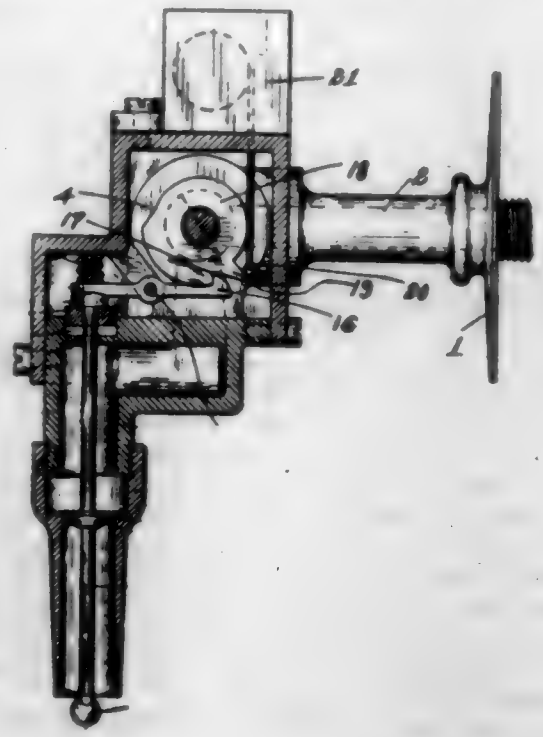


Claim.—1. A sewing-machine folder comprising a base-plate, an edge-turning scroll rigidly attached thereto and having the opposite guiding edges of its delivery end rigidly connected together and spaced a fixed distance apart, and flat supporting-tongues for the material disposed intermediate the upper and lower portions of said scroll and each adapted to yield edgewise and inwardly from the guiding edge in conjunction with which it acts in the production of a fold in the material.

2. A sewing-machine folder comprising two rigidly-sustained edge-turning scrolls having the guiding edges of their delivery ends a fixed distance apart, a rigid material-supporting tongue embraced by each of said scrolls, and an edgewise-yielding spring-tongue normally resting against the edge portion of each of said rigid tongues, and adapted to yield inwardly away from the guiding edge of its respective scroll.

3. A sewing-machine folder comprising a base-plate, two edge-turning scrolls carried thereby and having the guiding edges of their delivery ends a fixed distance apart, an intermediate slotted block to which each of said scrolls is rigidly secured, and a pair of material-supporting tongues having an elastic connection which is provided with an intermediate spring-finger disposed in transverse relation to said tongues and loosely secured in the slot of said block for yieldingly maintaining said tongues in normal position each within its respective scroll.

814,945. **SELF-REGISTERING FAUCET.** PATRICK DOHERTY, Philadelphia, Pa. Filed July 3, 1905. Serial No. 268,063.



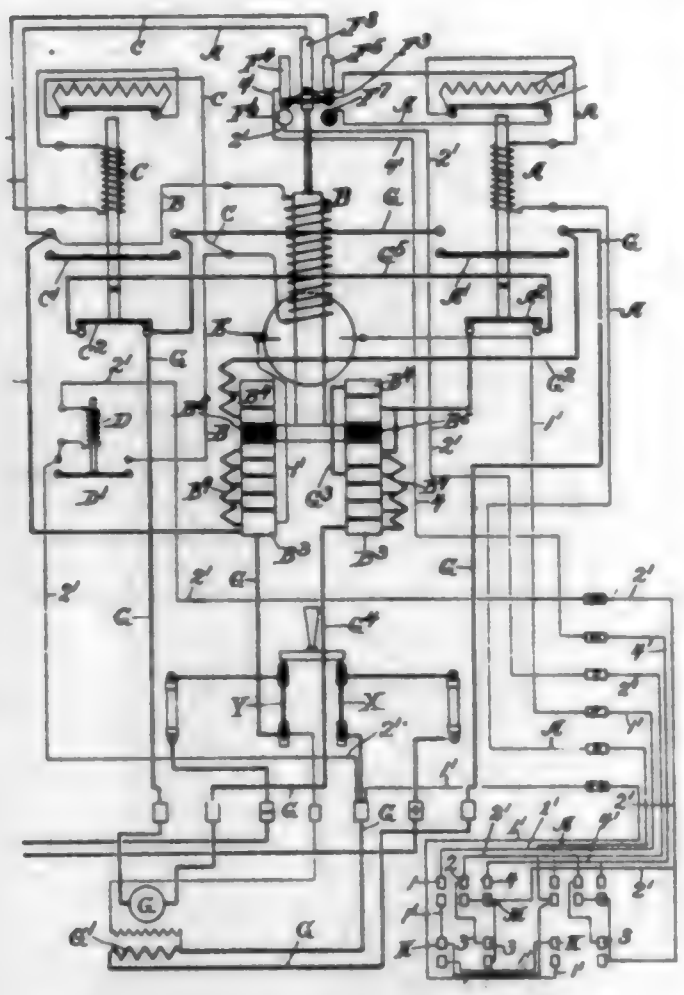
Claim.—1. In a self-registering faucet, the combination with a faucet-body, a handled plug therefor and a register of ratchet-teeth on the said plug, a pawl adapted to engage the ratchet, means for operating the pawl, and means for actuating the said register, all substantially as shown and described.

2. In a self-registering faucet, the combination with a body, a plug therefor and a suitable register, of means for securing the plug while closed, means for releasing the plug and means for actuating the said register, all substantially as shown and described.

3. In a self-registering faucet, the combination with a faucet-body, an operative plug therein and a suitable registering means, of a globular valve-seat within the spout of the said faucet-body, a valve, extending below the spout-opening, a rod attached to the valve and passing outward through the upper part of the said faucet, a catch on the said plug, a detent combined therewith adapted to be operated by the rod and a projecting member integral with the said plug adapted to operate the said registering means, all substantially as shown and described.

4. In a self-registering faucet, the combination with a suitable faucet-body, having a handled plug and depending spout, of a valve-seat thereon, a spring-controlled valve fitted to the seat, means for operating the valve, a detent on said plug, a pawl-lever combined therewith and operable by the valve, a registering device and means for operating the same combined with the said plug, all substantially as shown and described.

814,946. CONTROLLING DEVICE FOR MOTORS. CHARLES A. DARRAH, Chicago, Ill., assignor to G. A. Edward Kohler and Franklin W. Kohler, Chicago, Ill. Filed Sept. 12, 1903. Serial No. 172,874.



Claim.—1. A controlling device for motors comprising a solenoid, a core therefor provided with a contact device, a series of contacts along which said core is adapted to move, an intermediate point where said contact device normally stands when the motor is not running and means for returning said contact device to said intermediate point when moved in either direction therefrom.

2. A controlling device for motors comprising two sets of contacts, a contact device adapted to move therealong, an intermediate neutral contact, or contacts, engaged by said contact device when the motor is idle, means controlled from a distant point for moving the contact device in one direction from the neutral contacts and a separate means controlled from a distant point for moving the contact device in the other direction, whereby the contact device cannot be moved from one set of contacts to the other without being stopped at the neutral contacts.

3. A controlling device for motors comprising a series of forward resistance-contacts and a series of reversing resistance-contacts, an intermediate neutral contact, or contacts, a contact device normally associated with the neutral contacts, an electromagnetic device for controlling said contact device, two switches located at a distant point, one adapted when operated to cause the contact device to move to the neutral point and the other adapted when operated to move the contact device along the reversing-contacts.

4. A controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, an intermediate neutral point, a solenoid provided with a core, a contact device associated with said core and adapted to be moved along said contacts, a stop device for the contact device, inoperative when the contact device is moving along the reverse-contacts but adapted to stop the contact device at the neutral point.

5. A controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, an intermediate neutral point, a contact device adapted to move along said contacts, a controlling-solenoid therefor, a circuit-controlling device in the motor-circuit, a switch device controlled by said solenoid and adapted to cause the circuit-controlling device to break the motor-circuit when the contact device is moved toward the neutral point.

6. A circuit-controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, a neutral point between said contacts, a contact device adapted to move along said contacts, an electromagnetic controlling device therefor, two electrically-controlled switches in the motor-circuit, one adapted to be actuated when the contact is moved in one direction from the neutral point and the other adapted to be actuated when the contact is moved in the other direction from the neutral point.

7. A circuit-controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, a neutral point between said contacts, a contact device adapted to move along said contacts, an electromagnetic controlling device therefor, two electrically-controlled switches in the motor-circuit, one adapted to be actuated when the contact is moved in one direction from the neutral point and the other adapted to be actuated when the contact is moved in the other direction from the neutral point, and a circuit-controlling device associated with said contact device and adapted to control said switches.

8. A controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, an intermediate neutral point, a contact device adapted to be moved along said contacts, a controlling-solenoid therefor, two circuits associated with said solenoid, one adapted when closed to cause the contact device to move along the forward contacts and the other adapted when closed to cause the contact device to move along the reverse-contacts.

9. A controlling device for motors comprising two sets of resistance-contacts, one for starting the motor forward and the other for reversing it, an intermediate neutral point, a contact device adapted to be moved along said contacts, a controlling-solenoid therefor, two circuits associated with said solenoid, one adapted when closed to cause the contact device to move along the forward contacts and the other adapted when closed to cause the contact device to move along the reverse-contacts, two electrically-operated switches in the motor-circuit, one controlled by each of said solenoid-circuits.

10. A controlling device for motors, comprising a series of resistance-contacts, a movable device adapted to move therealong, a controlling-solenoid for said movable device, a switch in the motor-circuit, a controlling-switch at a distant point adapted when moved to cause the switch in the motor-circuit to be opened and the solenoid to be energized so as to move the movable device to its initial position.

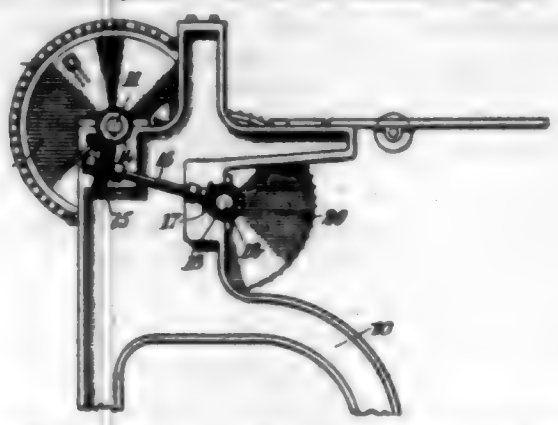
814,947. CARPET-CUTTING MACHINE. RAPHAEL B. DUBE and WILFRID A. DUBE, Faribault, Minn. Filed June 2, 1905. Serial No. 263,307.

Claim.—1. A cutting-machine, comprising a series of rotary cutters each having a blade secured thereto at an angle to its surface, and a series of rotary feeders mounted between the cutters.

2. A carpet-cutting machine, comprising a rotary knife, an adjustable plate mounted in stationary position adjacent to the knife and having a slot for receiving the knife, and an end adapted to support material adjacent to the knife.

3. A carpet-cutting machine, comprising two sets of rotary knives, one adapted to cut longitudinally and the other transversely, a series of feeders mounted between said knives, an adjustable plate mounted in stationary position between the knives and each having a

slot for receiving the longitudinal cutting-knife, and an end adapted to support material adjacent to one of said transverse knives.

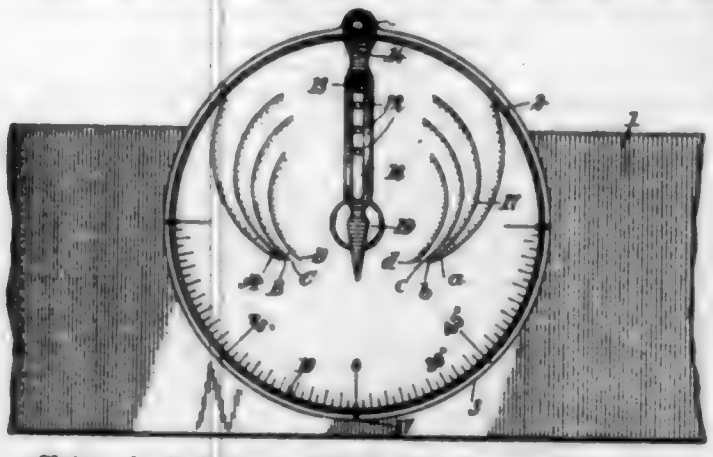


4. A cutting-machine comprising a series of rotary knives, a curved plate adjustably mounted between each two adjacent knives, said plate having a longitudinal slot, a curved support for said plate, and means passing through said slot for securing the support to the plate.

5. A carpet-cutting machine, comprising a frame, two rotary shafts journaled thereon, means for transmitting the motion of rotation from one shaft to the other at a different rate of speed, a series of circular cutting-knives upon one of said shafts, and a series of circular feeding devices upon the other.

6. A carpet-cutting machine, comprising a frame, two rotary shafts journaled thereon, means for transmitting rotation from one shaft to the other at a different rate of speed, a series of circular knives upon one of said shafts, a series of circular feeding devices upon the other shaft, a series of cross-bars upon the frame mounted between said knives and each of said cross-bars having a circular depression for receiving the edges of the knives and feeding devices.

814,948. RAFTER-SCALE. WILLIAM W. DWIGANS and JOB M. ADAMS, Arkadelphia, Ark. Filed Nov. 15, 1905. Serial No. 287,452.



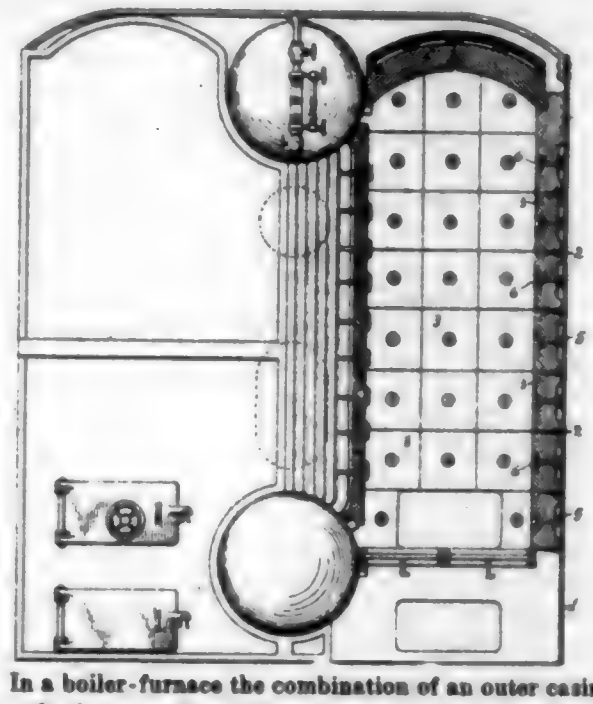
Claim.—1. An instrument of the class described, comprising in combination, a dial-case, a graduated dial rotatably mounted therein, a pointer pivoted on said case, a pin adapted to be fixed in said dial and engaging said pointer to guide the same upon said dial, said dial having scales coöperating with said pointer.

2. In an instrument of the class described, in combination, a dial-case, a graduated dial rotatably mounted therein, a pointer pivotally attached to said case and having a longitudinally-disposed slot therein, a pin passing through said slot, means for attaching said pin to said dial in a plurality of positions, said dial having scales formed on the face thereof coöperating with said pointer and corresponding to the different positions of said pin, said scales representing rafter lengths.

3. In an instrument of the class described, in combination, a dial-case, a counterweighted dial rotatably mounted thereon and having graduations on the edge thereof, a pointer depending from said case across the face of said dial and having a longitudinal slot therein, a pin passing through said slot, and means for attaching said pin to said dial in a plurality of positions, the said dial having a plurality of curved graduated scales thereon giving the lengths of rafters corresponding to different pitches thereof, said scales coöperating with said pointer.

814,949. BOILER-FURNACE. ELLIS F. EDGAR, Woodbridge, N. J. Filed Oct. 27, 1905. Serial No. 284,672.

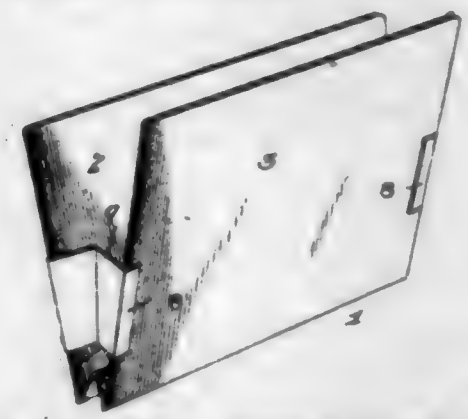
Claim.—1. In a boiler-furnace the combination of an outer casing with projections on the furnace side and non-combustible blocks secured to said casing protecting the same and extending over the face of said projections to protect them, said blocks being spaced apart to allow for expansion and contraction all substantially as set forth.



2. In a boiler-furnace the combination of an outer casing provided on the furnace side with pockets, of non-combustible blocks secured in said pockets, said blocks extending over the edges of said pockets to protect the same and also being spaced apart to allow for expansion and contraction.

3. In a boiler-furnace, the combination of an outer casing, provided on the furnace side with projections, of non-combustible blocks secured to said projections in such a manner as to protect them, said blocks being provided with recesses to form in connection with the casing dead-air cells, the blocks being spaced apart to allow for expansion and contraction.

814,950. FILING-FOLDER. CLARENCE R. EVANS, Baltimore, Md. Filed Nov. 10, 1905. Serial No. 286,748.



Claim.—As a new article of manufacture, a filing-folder, consisting of flaps having a plaited hinge, constituting an extensible bottom for the folder, and folding hinges connecting the sides of the flaps, and having their lower end located above the plait of the hinge, and tapering from top to bottom in proportion to the width of the plaited hinge when extended, as herein set forth.

814,951. CAPACITY. REGINALD A. FESSENDEN, Washington, D. C., assignor to The National Electric Signaling Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Dec. 14, 1904. Serial No. 236,858.

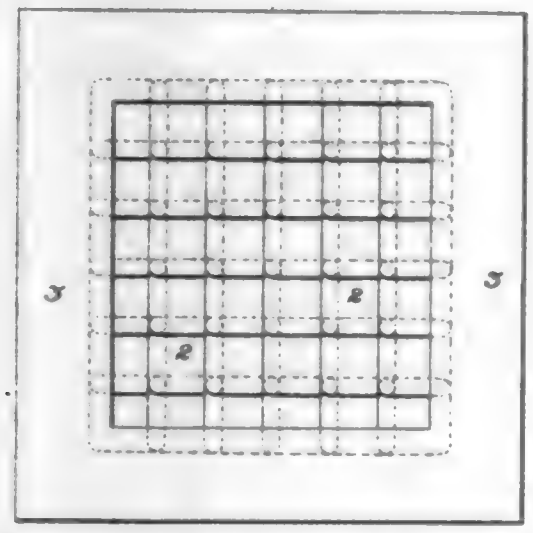
Claim.—1. A condenser having in combination a dielectric and metallic coatings composed of a number of small areas electrically connected.

2. A condenser having in combination a dielectric and metallic coatings in continuous contact with the dielectric except at such portions as the areas contact with each other.

3. A condenser having in combination a dielectric and metallic coatings composed of a number of small areas electrically connected and in continuous contact with the dielectric.

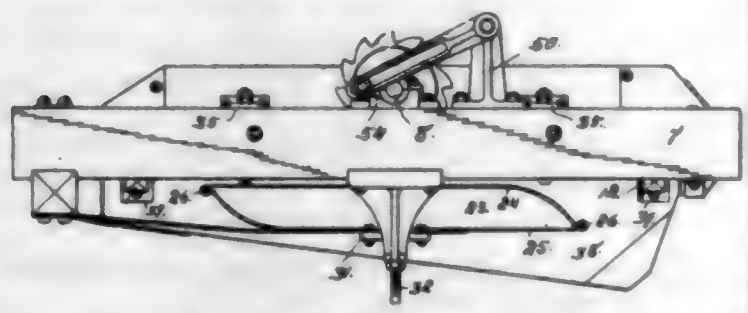
4. A condenser having in combination a solid dielectric and metallic coatings in continuous contact with the dielectric and having their edges protected by solid insulating material.

5. A condenser having in combination a dielectric and non-integral metallic coatings in electrical contact.



6. A condenser having in combination a dielectric and non-integral metallic coatings in electrical contact with one another and in continuous contact except at such portions as the areas contact with each other with the dielectric.

814,952. VIBRATING SCREEN. NORMAN V. FITTS, Denver, Colo., assignor to The Colorado Iron Works Company, Denver, Colo. Filed Dec. 5, 1904. Serial No. 235,465.



Claim.—1. In a vibrating screen, the combination with a stationary frame, of a screen provided with a frame relatively movable with reference to the stationary frame, springs centrally connected with the screen-frame and suitably supported, said springs being composed of members connected at their extremities and supported intermediate their extremities, tie-bars connected with the said springs at one extremity and with the stationary frame at the opposite extremity, multiple cam-wheels engaging the central portions of the screen-frame on opposite sides whereby the said frame is alternately depressed and released, and suitable means for limiting the reverse movement of the screen-frame.

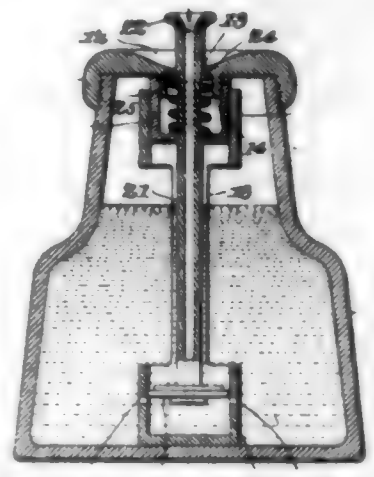
2. The combination with a relatively stationary frame, of a screen, springs centrally connected with the screen and supported from the frame, tie-bars secured to the springs, the said bars being stationary at one extremity, multiple cam-wheels acting on the central portions of the screen on opposite sides, and means centrally acting on the screen-frame in direct opposition to the springs, whereby the latter are placed under tension.

3. The combination with a stationary frame, of a screen, springs secured to the central portions of the frame of the screen, tie-bars having one extremity connected with the stationary frame and their opposite extremity secured to the springs, adjustable means engaging the central portion of the springs for regulating their tension, and cams acting centrally on the screen in direct opposition to the tension-regulating means for imparting a vibratory action to the screen, substantially as described.

4. The combination with a stationary frame, of a screen, springs centrally connected with the screen on opposite sides, the said springs being composed of upper and lower separated members, tie-bars connected at one extremity with the springs and at their opposite extremities with the stationary frame, adjustable means centrally engaging the lower members of the springs, and cams acting centrally on the screen in opposition to the upper members of the springs which are placed under tension by the cams whereby a vibratory movement is imparted to the screen.

5. The combination of a screen provided with a suitable frame, a housing surrounding the screen proper, the framework of the screen being provided with side bars located outside of the housing, and end bars which protrude through openings with which the housing is provided, springs engaging the screen-frame outside of the housing and on opposite sides of the latter, the springs being composed of upper and lower separated members, tension-regulating means for supporting the said springs, and centrally engaging the same, tie-bars having one extremity of each attached to the said springs, the opposite extremities of the tie-bars being secured to a stationary support.

814,953. DISPENSING-BOTTLE. KARL A. PFEIFFER, Atlanta, Ga. Filed May 22, 1905. Serial No. 261,642.

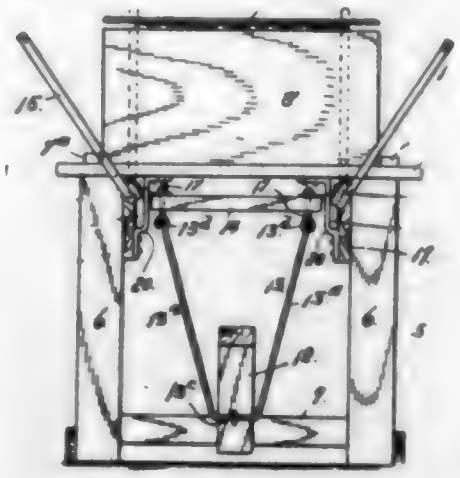


Claim.—1. In a device of the class described, a receptacle having a detachable closure, a supporting member depending from said closure, a cup disposed within said receptacle and provided with intermediate inlet-apertures, supporting means between said cup and supporting member, a plunger operating in said cup and having a tubular stem extending through said closure, and a spring bearing upon said supporting member and operating to maintain said plunger yieldably at one end of its stroke.

2. In a device of the class described, a receptacle having a detachable closure provided with a threaded annular stud, a threaded supporting member engaging said stud, a cup disposed within said receptacle and provided with intermediate inlet-apertures, supporting means between said cup and supporting member, a plunger operating in said cup and having a tubular stem extending through said closure, and a spring bearing upon said supporting member and operating to maintain said plunger yieldably at one end of its stroke.

3. In a device of the class described, a receptacle having a detachable closure formed with a concave upper surface, a cup disposed within said receptacle and provided with intermediate inlet-apertures, supporting means between said cup and closure, a plunger operating in said cup and provided with a tubular stem extending through the concaved portion of said closure and with an intermediate shoulder, a washer carried by said stem and bearing beneath said shoulder and likewise bearing beneath said closure, and a spring bearing between said supporting member and washer and maintaining said plunger yieldably at one end of its stroke.

814,954. APPLE-BOX PRESS. WARREN L. GOVETT, Canon City, Colo. Filed Sept. 15, 1905. Serial No. 278,084.



Claim.—1. In an apple-box press, the combination with a support for the box, of an ordinary movable cross-head mounted thereon, yokes hinged to the cross-head, means arranged to cause the yokes to swing inwardly automatically as the cross-head is moved

downwardly, the yokes being so hinged that they have a tendency to swing outwardly.

2. In apparatus of the class described, the combination with a box-supporting frame, of a vertically-movable cross-head, and box-embracing yokes so hinged to the cross-head that there is a tendency to swing outwardly.

3. The combination with a box-supporting frame, of box-embracing yokes, the frame being provided with guides for the lower extremities of the yokes, a cross-head whose extremities are hinged to the yokes, and means connected with the cross-head for raising and lowering the same, the hinged connection between the cross-head and yokes being such that the yokes have a tendency to swing outwardly by gravity, the guides being constructed to allow the yokes to swing outwardly as the cross-head is raised and to cause them to swing inwardly as the cross-head is lowered.

4. The combination of a box-supporting frame provided with guides, yokes having parts adapted to move vertically in said guides, and means connected with the yokes for raising and lowering the same, the yokes being hinged to the said connection and having a tendency to swing outwardly by gravity, the guides being constructed to cause the yokes to swing inwardly as they are moved downwardly and to allow them to swing outwardly when they have reached their upward limit of movement.

5. The combination with a box-supporting frame, of box-embracing yokes vertically movable on the frame, a cross-head to the opposite extremities of which the yokes are so hinged that they have a tendency to swing outwardly, guides for the yokes constructed to allow them to swing outwardly when raised and to cause them to swing inwardly when lowered, and an operating-lever connected with the cross-head for manipulating the latter, substantially as described.

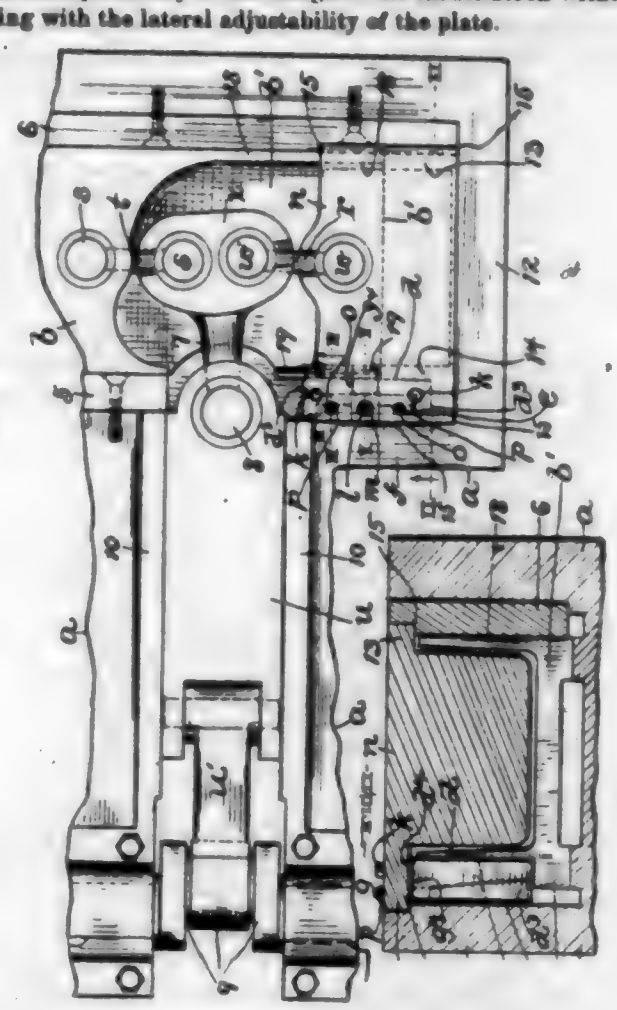
6. The combination with a box-supporting frame, of box-embracing yokes vertically movable on the frame, a cross-head to which the yokes are hinged, a spring-supported foot-lever connected with the frame, and an operative connection between the foot-lever and the yoke whereby as the foot-lever is depressed, the cross-head and the yokes are moved downwardly, while as the pressure ceases to act on the foot-lever, the latter will move upwardly carrying the cross-head and the yokes with it, the frame being provided with guides for the yokes whereby they are caused to swing inwardly as they move downwardly, the yokes being so hinged to the cross-head that they have a tendency to swing outwardly.

7. The combination with a box-supporting frame, of box-embracing yokes, a vertically-movable cross-head to whose extremities the yokes are hinged, guides for the yokes, the hinged connection between the cross-head and yokes being such that the yokes have a tendency to swing outwardly by gravity, the guides being constructed to cause the yokes to swing inwardly and occupy a vertical position as they move downwardly, but allowing the yokes to swing outwardly when raised a predetermined distance, the frame being also provided with means for guiding the yokes during their lateral or swinging movement.

8. The combination with a box-supporting frame, of a vertically-movable cross-head, box-embracing yokes so hinged to the cross-head that there is a tendency of the yokes to swing outwardly, guides for the yokes during their vertical movement, the said guides causing the yokes to swing inwardly and assume a vertical position as they move downwardly allowing them to swing outwardly when they are raised a predetermined distance, the frame being also provided with means for guiding the yokes during their swinging lateral movement.

814,955. PRESSURE-EXERTING MACHINE. GEORGE W. GREENWOOD, Cleveland, Ohio. Filed Oct. 23, 1902. Serial No. 128,227.

Claim.—The combination, with a toggle-joint, means for operating the toggle-joint; a stationary thrust-block connected with one link of the toggle-joint; a pressure-exerting block operatively connected with the other link of the toggle-joint; means for guiding the pressure-exerting block, and the said pressure-exerting block having an extension which extends in under the said joint to and in under the thrust-block and has an upwardly-projecting flange formed thereon adjacent to the inner side edge of the said extension, of a laterally-adjustable plate affording bearing to the outer side of the said flange; means for shifting or adjusting the said plate laterally relative to the aforesaid flange and holding the said plate in the desired adjustment; there being a flange formed upon the thrust-block at the top and inner side of the block and overhanging the aforesaid plate, and means for preventing displacement of the aforesaid plate endwise independently of the flange of the thrust-block without interfering with the lateral adjustability of the plate.



814,956. GRATE. OSCAR E. HALDERMAN, Marion, Ind. Filed Feb. 3, 1906. Serial No. 243,972.



Claim.—1. The combination with a fire-box, of a shaft rotatably supported thereon, a member having a recess and being fixed upon the shaft, curved grate-bars carried by the shaft, and a door movable over the end of the shaft and coöperating with the recess to limit the rotation of the shaft.

2. The combination with a fire-box, of a shaft rotatably supported thereon, a member having a recess and being fixed upon the end of the shaft outside the fire-box, curved grate-bars carried by the shaft, and a door hinged upon the fire-box and having a projection to enter the recess.

814,957. GRAIN-DRILL TUBE. HENRY C. HAM, Liberty, Ind., assignor to The Rude Brothers Manufacturing Company, Liberty, Ind., a Corporation of Indiana. Filed Oct. 25, 1905. Serial No. 284,261.



Claim.—1. In a grain-drill tube, the combination, with a seed-receiver, and a delivery-tube secured thereto, of a telescopic extension-tube therefor, with washers on the outside of one and the inside of the other tube, for holding the two together.

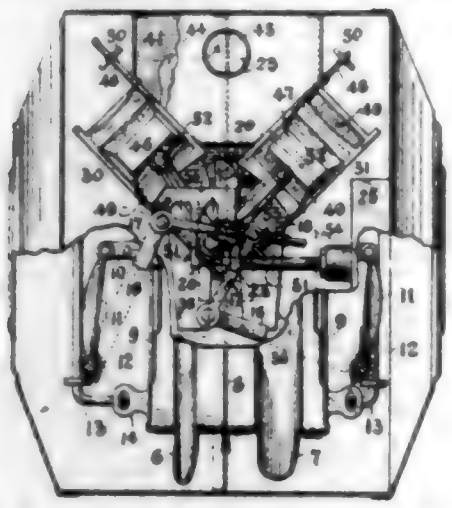
2. In a grain-drill tube, the combination, with a seed-receiver, and a spiral-wire tube of uniform diameter throughout, of a telescopic extension-tube therefor, with washers on the outside of the lower end of the spiral tube, and on the inside of the upper end of the extension-tube, for holding the two together.

3. In a grain-drill tube, the combination, with a seed-receiver, and a spiral-wire tube of uniform diameter throughout, of a telescopic rubber extension-tube therefor, with washers on the outside of the lower end of the spiral tube and on the inside of the upper end of the rubber extension-tube for holding the two together.

4. In a grain-drill tube, the combination with a seed-receiver, and a cylindrical wire tube adapted to screw into said receiver, of a telescopic rubber extension-tube therefor, with a coiled-wire washer screwed onto the lower end of the wire tube, and a washer on the inside of the rubber extension to engage said wire washer.

5. In a grain-drill tube, the combination with a seed-receiver, and a spiral-wire tube of uniform diameter throughout adapted to screw into said receiver, of a telescopic rubber extension-tube therefor, with a coiled-wire washer screwed onto the lower end of the wire tube and a washer on the inside of the rubber extension to engage said wire washer.

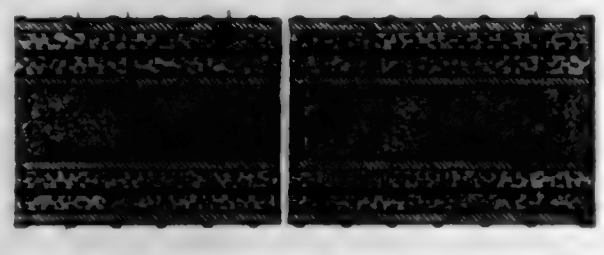
814,958. GAS-METER. WALTER K. HARRINGTON, Andover, N. J., assignor to Consolidated Gas Company, New York, N. Y., a Corporation of New York. Filed Nov. 13, 1905. Serial No. 286,975.



Claim.—1. In a gas-meter, a main casing having a horizontal gas-tight partition therein dividing the same into an upper gas-distributing chamber and a lower motor-chamber, a vertical valve-operating shaft journaled and contained entirely within said gas-distributing chamber at about the center thereof, slide-valves for the motor disposed within said gas-distributing chamber and upon said partition at an angle to each other and pitman-rods connecting said valves with said vertical shaft, in combination with a double bellows-motor in the motor-chamber adapted to rotate said shaft and horizontal conduits disposed on the upper surface of said horizontal partition on opposite sides of said valve-shaft and leading respectively from the valves to the interior of said bellows.

2. In a gas-meter, a main casing having a horizontal gas-tight partition therein dividing the same into upper and lower chambers, a motor mechanism in the lower chamber, two slide-valves mounted on said partition within said upper chamber, said valves being disposed at an angle to each other, in combination with an outlet-box formed on the upper surface of said horizontal partition between the valves and having communication with the lateral exhaust-ports of each of them, and an outlet-pipe connected to the top of said outlet-box and leading through the top of the main casing, said pipe being located within the vertical boundary of the meter.

814,959. CYLINDER-PIER CONSTRUCTION. WILLIAM H. HEALY, San Francisco, Cal. Filed Nov. 6, 1905. Serial No. 285,990.



Claim.—1. An improved pier construction, comprising two concentric wooden-stave cylinders, a concrete filling between the cylinders, and a filling of sand or like substantially permanently loose material in the inner cylinder.

2. An improved pier construction, comprising a concrete tubular structure, and an inner core of substantially permanently loose sand, rock, or such like material.

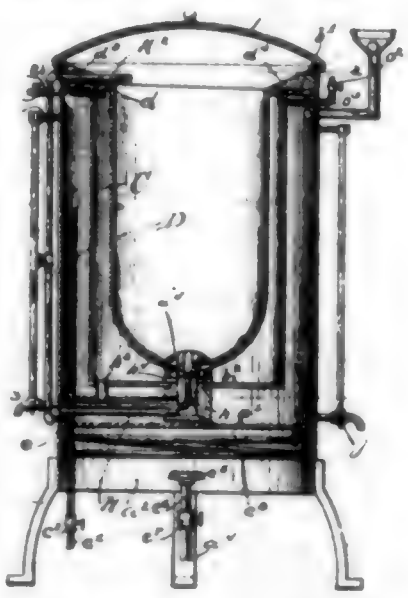
3. A concrete tubular pier having metal supports embedded in the concrete and running lengthwise of the pier, and a sand or like core of permanently loose material.

4. A concrete pier construction, comprising inner and outer wooden-stave cylinders, a concrete filling between the cylinders, twisted-wire cables embedded in the concrete, and a filling of sand or the like in the interior cylinder.

5. The combination with a cylinder, of an internal brace therefor comprising a series of conjoined movable segments, and wedges operable between the segments to expand the brace.

6. The combination with a cylinder, of an internal brace therefor comprising a series of conjoined movable angle-segments having keyways provided at their adjacent ends, and wedges fitting said keyways.

814,960. COFFEE-URN. HENRY HEUBEL, Chicago, Ill., assignor, by mesne assignments, to Combination Urn Manufacturing Company. Filed Sept. 1, 1904. Serial No. 222,921.



Claim.—1. In an apparatus of the class described, an outer jacket and an inner jacket with a space between forming a water-chamber, a beverage-container arranged within the inner jacket and spaced therefrom to form an air-chamber, a draw-off pipe connecting with said beverage-container, said draw-off pipe being centrally arranged within a larger pipe adapted to form an air-chamber surrounding the draw-off pipe and connecting with the air-chamber surrounding said beverage-container and means for heating the water in the water-chamber.

2. In an apparatus of the class described, an outer jacket and an inner jacket with a space therebetween forming a water-chamber, a beverage-container arranged within the inner jacket and spaced therefrom to form an air-chamber, means for heating the water in the water-chamber, and means for effecting a circulation of air in the air-chamber.

3. In an apparatus of the class described, an outer and an inner jacket with a space therebetween forming a water-chamber, a beverage-container arranged within said water-chamber and spaced therefrom to form an air-chamber, a beverage-draw-off pipe, an air-chamber surrounding said draw-off pipe, and connecting with the said first-mentioned air-chamber, means for effecting a circulation of air in the said chambers and means for heating the water in said water-chamber.

4. In an apparatus of the class described, an outer jacket and an inner jacket with a space therebetween forming a water-chamber, a beverage-container arranged within the inner jacket and spaced therefrom to form an air-chamber, means for heating the water in the water-chamber, means for effecting a circulation of air in the air-chamber, and means for controlling the circulation of air in the air-chambers.

5. In an apparatus of the class described, an outer jacket closed at the top and bottom, an inner jacket spaced and sealed from the outer jacket to form a chamber, means for introducing water to said chamber and means for heating the water in said chamber, a beverage-container arranged within said inner jacket and spaced and sealed therefrom to form a chamber, means for introducing air to said chamber and means for withdrawing air from said chamber, and means for conducting water from said water-chamber to said beverage-container.

6. In an apparatus of the class described, an outer jacket closed at the top and bottom, an inner jacket spaced and sealed from said outer jacket to form a chamber, means for introducing water to said chamber, means for heating the water in said chamber, and means for effecting a circulation of water in said chamber, a beverage-container arranged within said inner jacket and spaced therefrom, means for conducting water from said water-chamber to said con-

tainer and means for controlling the introduction of water to said container.

7. In an apparatus of the class described, an outer jacket closed at the top and bottom, an inner jacket spaced and sealed from said outer jacket to form a chamber, means for introducing water to said chamber, means for heating the water in said chamber, and means for effecting a circulation of water in said chamber, a beverage-container arranged within said inner jacket and spaced therefrom, means for conducting water from said water-chamber to said container said means being a pipe and leading from one to the other, and means for opening and closing said pipe.

8. In an apparatus of the class described, an outer jacket closed at the top and bottom, an inner jacket spaced and sealed from said outer jacket to form a chamber, means for introducing water to said chamber, means for heating the water in said chamber, means for effecting a circulation of water in said chamber through a coil-heater beneath said chamber, and means for controlling the supply of water to said chamber, a beverage-container arranged within said inner jacket and spaced therefrom, means for conducting water from said water-chamber to said container said means being a pipe and leading from one to the other, and means for opening and closing said pipe.

9. In an apparatus of the class described, a water-chamber, a beverage-container arranged within said water-chamber and spaced therefrom to form an air-chamber, a beverage draw-off pipe, an air-chamber surrounding said draw-off pipe, and means for heating the water in said water-chamber.

10. In an apparatus of the class described, a water-chamber, a beverage-container arranged within said water-chamber and spaced therefrom to form an air-chamber, a beverage-draw-off pipe, an air-chamber surrounding said draw-off pipe, and means for heating the water in said water-chamber.

11. In an apparatus of the class described, a water-chamber, a beverage-container arranged within said water-chamber and spaced therefrom to form an air-chamber, a beverage-draw-off pipe, an air-chamber surrounding said draw-off pipe, means for effecting a circulation of air in said air-chambers, and means for heating the water in said water-chamber.

12. In an apparatus of the class described, a water-chamber, a beverage-container arranged within said water-chamber and spaced therefrom to form an air-chamber, a beverage-draw-off pipe, an air-chamber surrounding said draw-off pipe, and means for effecting and means for controlling the circulation of air in said air-chambers, and means for heating the water in said water-chamber.

13. In an apparatus of the class described, a chamber adapted to contain a heating medium, a beverage-container exposed to the action of said chamber, an independent chamber intervening the two first-mentioned chambers, means for establishing the circulation of a cooling medium in the intervening chamber, and means for interrupting said circulation.

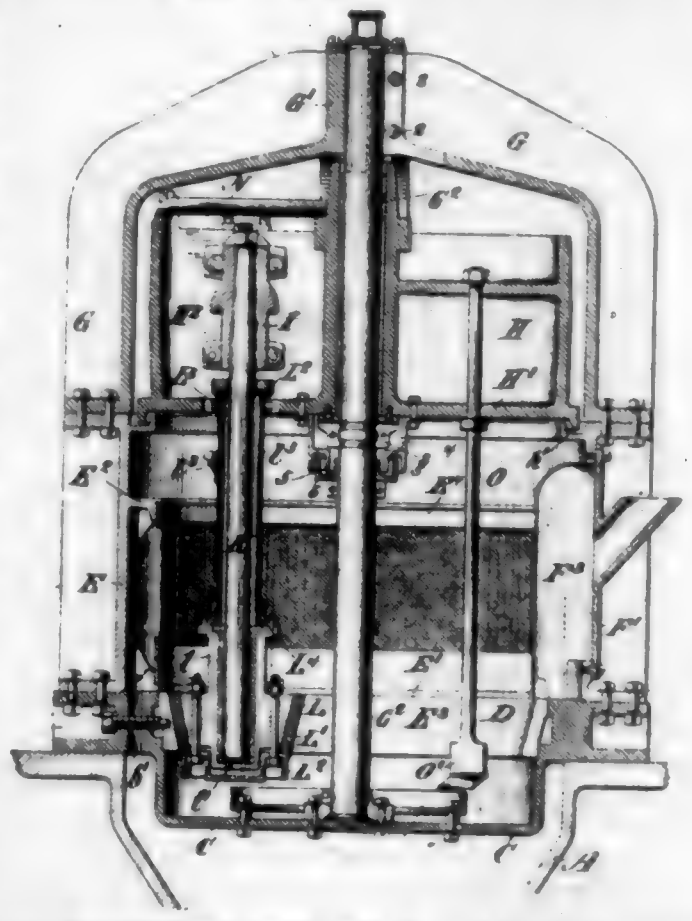
814,961. PULVERIZING-MILL. EDWARD H. HURRY, Bethlehem, Pa. Filed Dec. 13, 1898. Serial No. 699,132.

Claim.—1. A centrifugal grinding-mill, comprising the combination of a horizontally-arranged grinding-ring having an upwardly and outwardly flaring grinding-face, a downwardly-extending roll-shaft, a driver above the ring with which the roll-shaft is connected, and a roll with a downwardly-tapering periphery, connected with the roll-shaft and traveling around the ring.

2. In a centrifugal grinding-mill, the combination of a pan for the reception of the material to be pulverized, a horizontally-arranged grinding-ring having an upwardly and outwardly flaring grinding-face, a downwardly-extending radially-movable roll-shaft, a driver above the ring with which the roll-shaft is connected, and a roll with a downwardly-tapering periphery, connected with the roll-shaft and traveling around the ring clear of the bottom of the pan.

3. In a centrifugal grinding-mill, the combination with an upwardly-flaring grinding-ring, of a downwardly-projecting, radially-movable roll-shaft, a driver above the ring with which the roll-shaft is connected, a roll having a downwardly-tapering periphery and mounted revolubly on the roll-shaft, and an upwardly-extending sleeve attached to the roll.

4. In a centrifugal grinding-mill, a horizontally-arranged grinding-ring having an upwardly and outwardly flaring face, and a rotating grinding-roll with a downwardly-tapering periphery traveling around the ring, whereby the reaction between the ring and roll and the centrifugal force developed, when the mill is in operation, impart to the roll a tendency to rise relatively to the ring, in combination with a driver located above the ring, a downwardly-extending shaft connected with the driver and free to swing radially and traveling bodily around the axis of the ring, and a connection between the roll and shaft which permits the roll to drop, when the mill is not in operation, out of normal operative relation to the ring and which limits the upward movement of the roll.



5. In a centrifugal grinding-mill, the combination of a horizontally-arranged grinding-ring having an upwardly and outwardly flaring face, a rotating grinding-roll with a downwardly-tapering periphery traveling around the ring and free to move, within limits, longitudinally of its axis and which descends, when the mill is at rest, out of normal operative relation to the ring, and, when the mill is in operation, is caused to rise by the reaction between the ring and roll and the centrifugal force developed, and a stop for limiting the downward movement of the roll.

6. In a centrifugal grinding-mill, a horizontally-arranged grinding-ring having an upwardly and outwardly flaring face, a rotating driver located above the ring, a downwardly-extending substantially vertical but radially-swinging roll-shaft operatively connected with the driver, and a roll having a downwardly-tapering periphery coöperating with the ring, whereby the reaction between the ring and roll and the centrifugal force developed when the mill is in operation impart to the roll a tendency to rise.

7. In a centrifugal grinding-mill, a horizontally-arranged grinding-ring having an upwardly and outwardly flaring face, a rotating driver located above the ring, a downwardly-extending substantially vertical but radially-swinging roll-shaft operatively connected with the driver, and a roll associated with the shaft, having a downwardly-tapering periphery and capable of free movement, within limits, longitudinally of its axis, whereby when the mill is not in operation the roll descends out of complete coöperative relation to the ring and when the mill is in operation rises into complete coöperative relation therewith by reason of the reaction between the ring and roll and the centrifugal force developed.

8. In a centrifugal grinding-mill having a stationary grinding-ring and a central vertical shaft, the combination of a rotative driver adapted to have the driving power applied directly to its periphery, having a central bore for the reception of the shaft, and a chamber located between its periphery and hub, a roll-shaft pivoted at its upper end in said chamber, and a grinding-roll on the lower end of the shaft.

9. In a grinding-mill, the combination of a driving-head adapted to have power applied to its periphery, and formed with a chamber having parallel opposite walls, a roll-shaft head movably supported in said chamber, and wearing strips or plates interposed between the head and the walls of the chamber.

814,962. TOY TOP. JAMES A. IRVINE, Philadelphia, Pa. Filed June 8, 1905. Serial No. 264,220.

Claim.—1. In a toy top, the combination with an outer casing,

open at one end; of a shaft fixed in said casing and extending through both ends thereof; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; and, means carried by said shaft independently of said casing retaining said wheel in said casing, substantially as set forth.



2. In a toy top, the combination with an outer casing, open at one end; of a shaft fixed in said casing and extending through both ends thereof; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; and, a knob carried by said shaft independently of said casing retaining said wheel in said casing, substantially as set forth.

3. In a toy top, the combination with an outer casing, open at one end; of a shaft fixed in said casing and extending through both ends thereof; a head on said shaft arranged to support the top in operative position; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; and, means carried by said shaft independently of said casing retaining said wheel in said casing, substantially as set forth.

4. In a toy top, the combination with an outer casing, open at one end; of a shaft fixed in said casing and extending through both ends thereof; a conical head on said shaft having shoulders supporting said casing in operative position; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; and, means carried by said shaft independently of said casing retaining said wheel in said casing, substantially as set forth.

5. In a toy top, the combination with an outer casing, open at one end; of a balance-wheel arranged to rotate within said casing independently thereof; a shaft fixed in said casing and extending through said wheel exterior to said casing; means on said shaft retaining said wheel in said casing; a bearing-washer between said casing and said wheel; and, a bearing-washer between said wheel and the wheel-retaining means, substantially as set forth.

6. In a toy top, the combination with an outer casing, open at one end; of a balance-wheel arranged to rotate within said casing independently thereof; a shaft fixed in said casing and extending through said wheel exterior to said casing; means on said shaft retaining said wheel in said casing; a flange on said casing overhanging the upper edge of said wheel; a scale on said flange; and, an index on said wheel arranged to register with different sections of said scale, substantially as set forth.

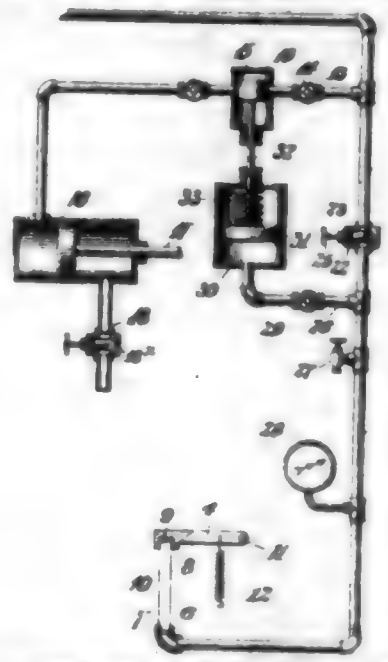
7. In a toy top, the combination with an outer casing; of a balance-wheel arranged to rotate within said casing independently thereof; a shaft fixed in said casing and extending through said wheel exterior to said casing; means on said shaft retaining said wheel in said casing; a flange on said casing overhanging the upper edge of said wheel; a scale on said flange comprising a series of sections; means on said flange indicating different values for the respective sections; and, an index on said wheel arranged to register with different sections of said scale, substantially as set forth.

8. In a toy top, the combination with an outer casing of resilient material open at one end; of a shaft fixed in said casing; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; means carried by said shaft independently of said casing retaining said wheel in said casing; and a primarily separate annulus comprising a flange overhanging the upper edge of said wheel, substantially as set forth.

9. In a toy top, the combination with an outer casing of resilient material open at one end; of a shaft fixed in said casing; a balance-wheel arranged to rotate on said shaft within said casing at the open end thereof; means carried by said shaft independently of said casing retaining said wheel in said casing; a primarily separate annulus of metal having a cylindrical flange embracing said casing; and a flange overhanging said wheel, substantially as set forth.

814,983. BLOCK-SIGNAL TRAIN-CONTROLLING APPARATUS. Gray W. Johnson, Washington, D. C. Filed July 11, 1905. Serial No. 269,306.

Claim.—1. A block-signal safety device for locomotives, comprising a main pipe having two sections, one of which is placed in communication with the usual train-pipe, a destructible tube in communication with the second section of said main pipe, a semaphore connection arranged to move into and out of the path of said tube, and connections from said main pipe for initially closing the throttle of the engine and subsequently applying the air-brakes.



2. A block-signal safety device for locomotives, comprising a main pipe having two sections one in communication with the usual train-pipe of the engine, a destructible member, a semaphore connection arranged to move into and out of the path of said destructible member, branch pipe connections from each of said main pipe sections leading to pneumatic valves, and means operated by said pneumatic valves for closing the throttle of the engine and subsequently releasing the pressure in the train-pipe.

3. A block-signal safety device for locomotives, comprising a main pipe having two sections one of which is in communication with the usual train-pipe, a destructible member in communication with said second section, a movable arm in the path of said destructible member, a throttle-closing cylinder, a branch leading from the first section of the main pipe to said throttle-closing cylinder, a valve in said pipe, and a piston having communication with the second section of said main pipe for opening said valve.

4. A block-signal safety device for locomotives, comprising a main pipe having two sections one of which is in communication with the train-pipe of the locomotive, a destructible member in communication with said second section, a valve having a minutely-adjustable opening between said sections, and pneumatic means operated by a difference of pressure between said sections for initially closing the throttle of the engine and subsequently releasing the pressure in the train-pipe.

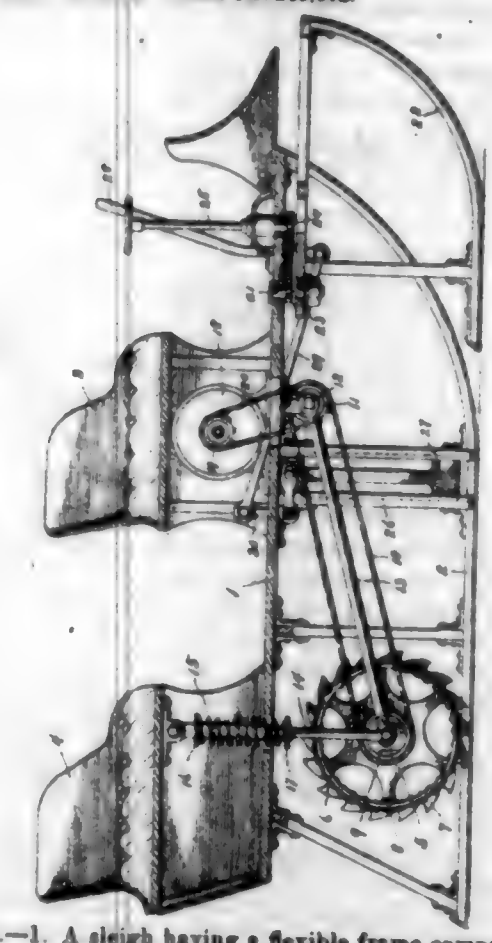
5. A block-signal safety device for locomotives, comprising a train-pipe having two sections, one of which is in constant communication with the train-pipe of the locomotive, a destructible member in communication with said second section, a movable arm arranged to be interposed in the path of said destructible member, a minutely-adjustable valve between said sections, a pneumatic cylinder having a spring-pressed piston in communication with said second section, a valve operated by said piston and lying in a branch connection from said first section, and a pneumatic cylinder operable from said last-named branch connection for initially closing the throttle-valve of the engine and subsequently releasing the pressure in the train-pipe.

6. A block-signal safety device for locomotives, comprising a main pipe having two sections one of which is in constant communication with the train-pipe of the locomotive, a destructible member in communication with said second section, said destructible member including a glass tube supported between adjustable packing rings or washers, a valve between said first and second sections, a pneumatic cylinder for operating the throttle, and having an inlet-port in communication with the first section of said main pipe, and an outlet-port in communication with the atmosphere, a valve in said communication between the main pipe and the throttle-operating cylinder, and a pneumatic cylinder for opening said valve, said pneumatic cylinder having a communication with the second section of said main pipe.

7. A block-signal safety device for locomotives, comprising a train-pipe having two sections one of which is in constant communication with the train-pipe of the locomotive, a destructible member in communication with the said second section, a movable arm arranged to be interposed in the path of said destructible member, a

charging-valve for admitting a charge of compressed air into said second section, and means operable by the release of the pressure charge in said second section for initially closing the throttle, and finally applying the air-brakes.

814,964. MOTOR-CUTTER. FRANK P. JORDAN, New York, N. Y. Filed June 13, 1905. Serial No. 265,072.



Claim.—1. A sleigh having a flexible frame comprising a pivoted tube, a plunger in said tube and provided with a forked bearing end, a spring bearing on said tube and plunger, hanger-bars pivoted to the said fork and to the sleigh-body, and a motor-driven traction-wheel journaled in said forked bearing.

2. A sleigh having a pivotal steering portion at its front, a flexible frame comprising a pivoted tube, a plunger in said tube and provided with a forked bearing end; a spring bearing on said tube and plunger, hanger-bars pivoted to the fork and to the sleigh-body and a motor-driven traction-wheel journaled in the forked bearings; a transverse shaft and means for rotating the same, a brake-shoe at each side of the sleigh, and connections between said shoes and shaft for operating the same.

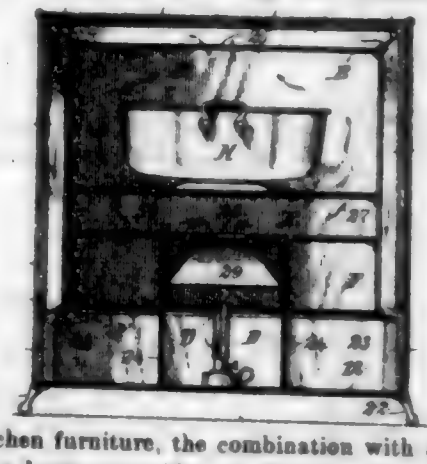
3. A sleigh having a motor-driven traction-wheel journaled in a flexible frame comprising a pivoted tube, a plunger in said tube provided with a forked end, and hanger-bars pivoted to said forked ends and to the sleigh: a transverse shaft supported on the sleigh, guideways at each side of the sleigh, brake-shoes in said ways and connected to be operated by said shaft, and means for rotating said shaft.

4. A sleigh having a motor-driven traction-wheel journaled in a flexible frame comprising a pivoted tube a plunger in said tube provided with a forked bearing end, and hanger-bars pivoted to said forked end and to the sleigh: vertical guideways at each side of the sleigh, brake-shoes movable in said ways, a shaft and means for turning the same, and a slotted lever-arm on the shaft pivoted to each of said shoes.

814,965. KITCHEN FURNITURE. JOHN N. KNACKSTEDT, Omemee, N. D. Filed July 27, 1905. Serial No. 271,456.

Claim.—1. In kitchen furniture, a cabinet for raising dough, comprising an outer and an inner shell having a continuous circulating-chamber between them, extending uninterruptedly around the inner shell from a point near the bottom and having communication with the inner shell, the said inner shell being provided with a heat-producing chamber, a heat-distributing chamber in communication with the heat-producing chamber, a dough-receiving chamber separated from the heat-distributing chamber by an open-work partition, a door carried by the inner shell, leading into the dough-receiving chamber, and a door also provided for the outer shell for access to the dough-receiving chamber, and a door for the heating-chamber.

2. In kitchen furniture, a cabinet for raising dough, comprising an outer and an inner shell having a continuous circulating-chamber between them, extending uninterruptedly around the inner shell from a point near the bottom and having communication with the interior of the inner shell, the said inner shell being provided with a heat-producing chamber, a heat-distributing chamber in communication with the heat-producing chamber, a dough-receiving chamber separated from the heat-distributing chamber by an open-work partition, doors carried by the inner shell, leading into the dough-receiving chamber, a door also provided for the outer shell for access to said dough-receiving chamber, and a door for the heating-chamber, compartments at each side of the heating-chamber, which compartments are in communication with the heat-distributing chamber and are provided with outlets for discharge of the heated air.



3. In kitchen furniture, the combination with an outer shell provided with a door at one side near the top, a lower centrally-located door having a sight-opening and a ventilating-slide, and a compartment for the reception of heated air at each side of the lower door, which compartments are provided with ventilating devices, and a base-board extending around the lower portion of the said outer shell, resting on the bottom of the same, of a perforated inner shell of corresponding shape but of lesser dimensions than the outer shell, forming thereby a circulating-chamber for air between the said inner and outer shells, the inner shell being provided with a marginal flange at its bottom, which is open, the said flange being secured to a base-board.

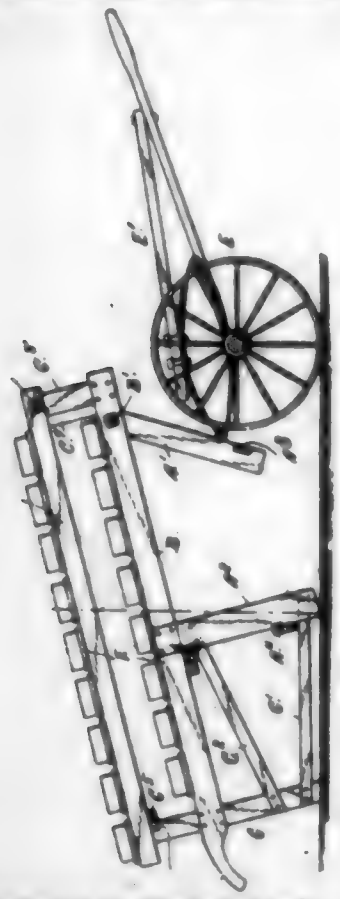
4. In kitchen furniture, the combination with an outer shell provided with a door at one side near the top, a lower centrally-located door having a sight-opening and a ventilating-slide, and a compartment for the reception of heated air at each side of the lower door, which compartments are provided with ventilating devices, and a base-board extending around the lower portion of the said outer shell, resting on the bottom of the same, of an inner shell of corresponding shape but of lesser dimensions than the outer shell, forming thereby a circulating-chamber for air between the said inner and outer shells, the inner shell being provided with a marginal flange at its bottom, which is open, said flange being secured to said base-board, a horizontal partition located in the inner shell, having an opening therein, vertical partitions extending down from the said horizontal partition, one at each side of the opening therein to the bottom of the outer shell and from front to rear of the said outer shell, forming a heat-producing chamber at the rear of the lower door in the outer-shell, a perforated partition located above the first-named partition, forming an upper dough-receiving chamber which has communication with the circulating-chamber, which latter chamber is in communication also with the said compartments for the reception of heated air.

814,966. PORTABLE BRICK-DRYING RACK. CHARLES R. KNIGHT and JACOB TENNEBEN, Denver, Colo. Filed July 25, 1904. Serial No. 217,966.

Claim.—1. A brick-drying rack composed of a pallet-supporting deck, forwardly-located hinged legs, and a pair of rearwardly-located legs, located rearwardly of the center of the rack when the deck is in a horizontal position, the rack being also provided with a rearwardly-located part whose lower extremity is above the ground or other supporting-surface when the deck is in a horizontal position, the arrangement of the said parts being such that when the rack is tilted rearwardly to cause the said rearwardly-located part to engage the ground or other surface, the center of gravity of the rack or the rack and its load is thrown to the rear of a line passed through the point where the rear legs of the rack engage the supporting-surface.

2. The combination of a brick-drying rack composed of a pallet-supporting deck, a central support located in the rear of the cen-

ter of the deck when the latter is in a horizontal position, a hinged forward support engaging the supporting-surface when the deck is in a horizontal position, and a rearwardly-located support which is above the surface when the forward support engages the latter, the arrangement of the parts being such that when the rack is tilted on the central support sufficiently to throw the rearward support to engagement with the supporting-surface, the center of gravity of the rack is thrown to the rear of a line passed through the point where the central support engages the supporting-surface, and a truck removably connected with the rack, the hinged forward support being in the path of the truck when placed in position whereby the hinged support is raised, the said support being allowed to drop when the truck is removed.



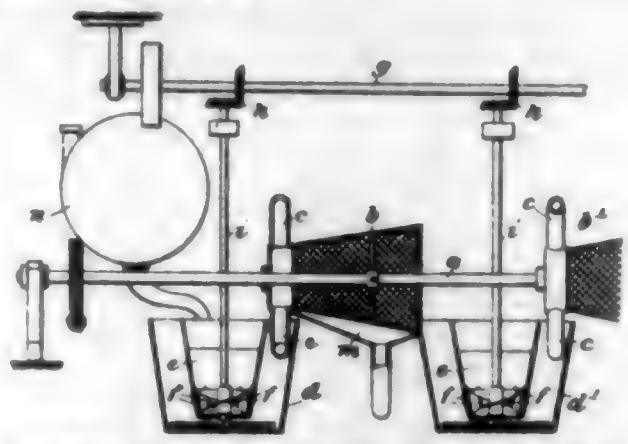
3. The combination of a brick-drying rack consisting of a central support and forward and rearward supports, the forward support being hinged or pivoted the rearward support being normally above the supporting-surface and the rack being tiltable on the central support to cause the rearward support to engage the supporting-surface and lift the forward support above the supporting-surface, the central support being located to bring the center of gravity forward of it when the rack is in the horizontal position and rearward of the point where the central support engages the supporting-surface when the rack is tilted rearwardly; and a truck removably connected with the rack, the hinged forward support being in the path of the truck when placed in position, whereby the said support is raised and allowed to drop when the truck is removed.

4. A brick-drying rack composed of a pallet-supporting deck forward and rearwardly located legs supporting said deck, the forward legs being pivoted to fold as described, an upwardly-projecting forwardly-located part connected with the lower deck, and an upper deck pivotally connected with said upwardly-projecting part, the rack being provided with a rearwardly-located part engaging the rear extremity of the upper deck when the latter is in the lower position.

814,967. APPARATUS FOR OBTAINING PURE COTTON OR FIBROUS MATERIAL FOR TEXTILE AND LIKE PURPOSES FROM WASTE PRODUCTS. CARL KNOPF, Hemelingen, near Bremen, Germany, assignor, by mesne assignments, to Johannes Diedrich Barth, Bremen, Germany, and Paul Hermann Minck, Hemelingen, Germany. Filed June 19, 1905. Serial No. 266,070.

Claim.—1. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of sloping sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

2. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of conical sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.



3. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shafts, a plurality of sloping sieves and a corresponding number of bent tube-shaped scooping devices *c* in the form of hollow arms open at their outer and at their inner ends mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

4. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, said mixing device comprising a substantially vertical shaft, and a screw fixed thereon, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of sloping sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

5. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, said mixing device comprising a substantially vertical shaft, a screw fixed thereon, and a conical sleeve surrounding the same, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of sloping sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

6. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, said mixing device comprising a substantially vertical shaft, a screw fixed thereon, a conical device surrounding the same and having vertical ribs *f* on its inner surface, means for operating said mixing devices, a shaft passing over said vat, means for rotating said shaft, a plurality of sloping sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

7. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, said mixing device comprising a substantially vertical shaft, a screw fixed thereon, a conical device surrounding the latter, and beaters *l* fixed on said shaft, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of sloping sieves and a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats,

and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

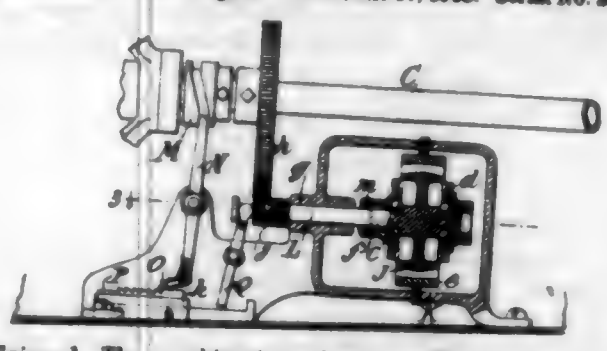
8. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, a shaft passing over said vats means for rotating said shaft, a plurality of conical sieves and a corresponding number of scooping devices mounted on said shaft, a dish m situated under each sieve, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

9. Hulling and washing apparatus of the type described, comprising in combination, a plurality of vats, a mixing device in each of said vats, means for operating said mixing devices, a shaft passing over said vats, means for rotating said shaft, a plurality of sloping sieves, a corresponding number of scooping devices mounted on said shaft, one scooping device being adjacent to each sieve and each sieve being arranged in proximity to two vats, and each scooping device being adapted to dip into a vat and transfer material therefrom into its neighboring sieve which delivers the solid material to another vat, substantially as described.

814,968. **NUTRITIVE PREPARATION.** GUST KÖHLER, Altenburg, Germany. Filed Mar. 10, 1905. Serial No. 249,505.

Claim.—A powdery nutritive preparation, consisting of the white of eggs, spinach, peas and sugar, prepared substantially as described.

814,969. **GYROSCOPE SPINNING DEVICE.** FRANK M. LEAVITT, New York, N. Y., assignor to E. W. Bliss Company, Brooklyn, N. Y., a Corporation of West Virginia. Filed June 17, 1905. Serial No. 265,756.



Claim.—1. The combination of a propelling-engine, a gyroscope, means for connecting them whereby to spin up the gyroscope upon the starting of the engine, and means for disconnecting them after a predetermined interval.

2. In an automobile torpedo, a propelling-engine and shaft, a gyroscope, a geared connection between said shaft and the gyroscope for spinning up the gyroscope upon the starting of the engine, and means for disconnecting them after a predetermined interval.

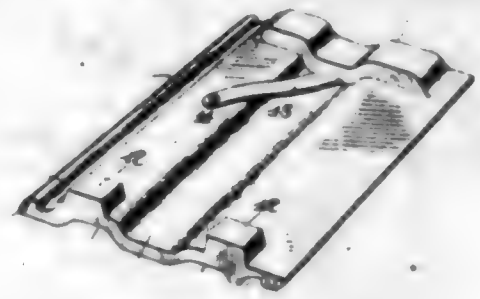
3. In an automobile torpedo, a gyroscope, and a connection between it and the propelling-engine, whereby to spin up the gyroscope upon the starting of the engine, and means for disconnecting them and for releasing the gyroscope after a predetermined interval.

4. The combination of a propelling-engine, a gyroscope, a longitudinally-movable shaft geared to the engine and adapted to engage the gyroscope fly-wheel, and means for displacing this shaft after a predetermined number of revolutions to disconnect it from said fly-wheel.

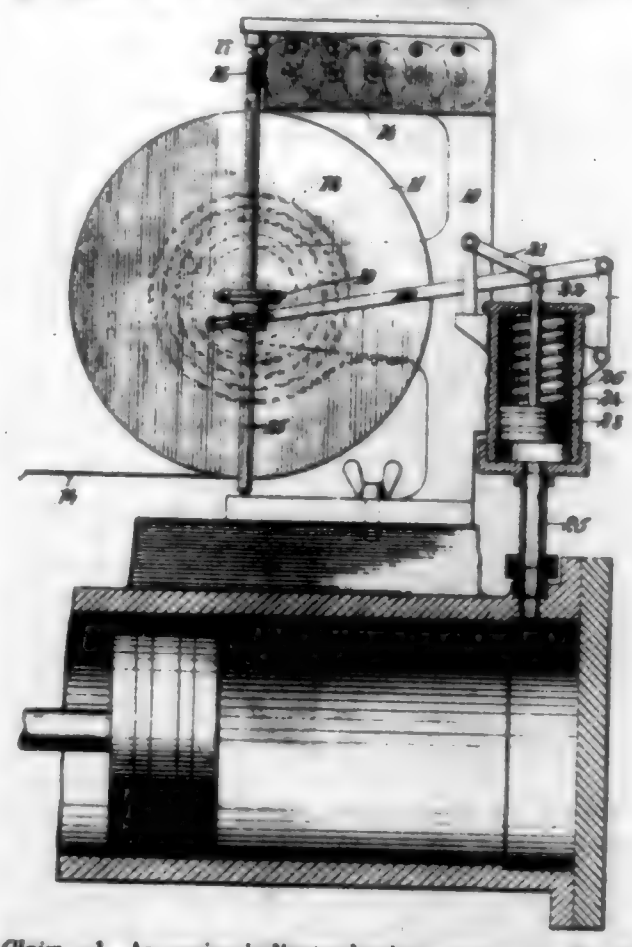
5. The combination of a propelling-engine, a gyroscope, a longitudinally-movable shaft geared to the engine and adapted to engage the gyroscope fly-wheel, the inner ring of the gyroscope adapted to be engaged by said shaft, whereby it holds this ring immovable during spinning, and means for displacing said shaft to disconnect it from said inner ring to set the gyroscope free.

814,970. **ARTIFICIAL-STONE ROOFING TILE OR SHINGLE.** FREDERICK M. LEUSCH, Traer, Iowa. Filed Dec. 14, 1904. Serial No. 236,865.

Claim.—A tile having a corrugated body portion provided with oppositely-disposed longitudinal locking-lips adapted to engage the locking-lips of adjacent tiles, said body portion having its upper or exposed face unobstructed and its lower face provided at one end of the tile with a plurality of spaced lugs for engagement with the transverse batten of a roof, the opposite end of the lower face of the tile being formed with a transversely-disposed depending lug conforming to the shape of the tile and adapted to engage the unobstructed upper face of a succeeding tile, and a retaining-strap secured to the tile at said transverse lug and adapted to engage the rear end of said succeeding tile and the adjacent transverse batten of the roof.



814,971. **ENGINE-INDICATOR.** WILLIAM F. LLOYD, Philadelphia, Pa., assignor of one-third to Clarence A. Stimpson, Philadelphia, Pa. Filed Sept. 21, 1905. Serial No. 279,461.



Claim.—1. An engine-indicator having a counter, a disk driven in unison with the piston speed of the engine, a shaft extending across the face of the disk and having connection with the counter, a shiftable connection between the shaft and the face of the disk, and means controlled by the working pressure of the engine for shifting the connection.

2. An engine-indicator having a counter, a gear-disk, means for oscillating the same in unison with the stroke and speed of the engine, a shaft extending across the face of the gear-disk and having connection with the counter, a gear splined on the shaft engaged with the gear-disk, and means for shifting the second gear, said means being controlled by the working pressure of the engine.

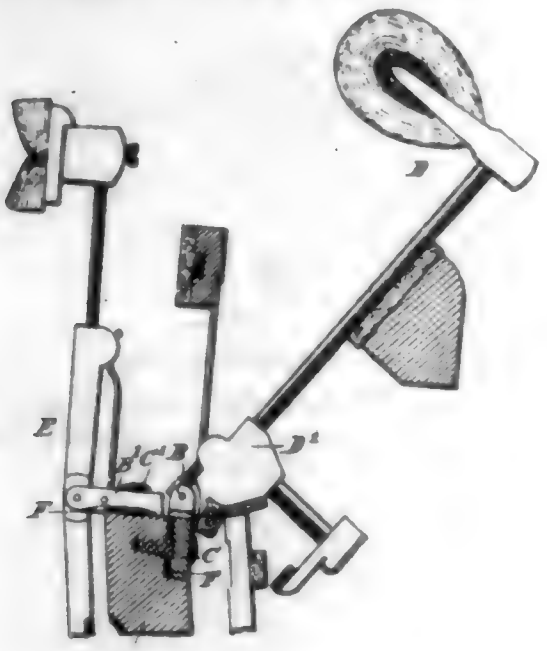
814,972. **PIANO-ACTION.** FRANK B. LOWE, Los Angeles, Cal. Filed Oct. 12, 1904. Renewed Jan. 30, 1906. Serial No. 298,612.

Claim.—1. The combination with a rail having on a face thereof a raised longitudinal rib, of a flange having a recess receiving the rib against the base thereof, a fastening-screw for the flange entering the rib, and a compressible resilient material filling the recess on either side of the rib.

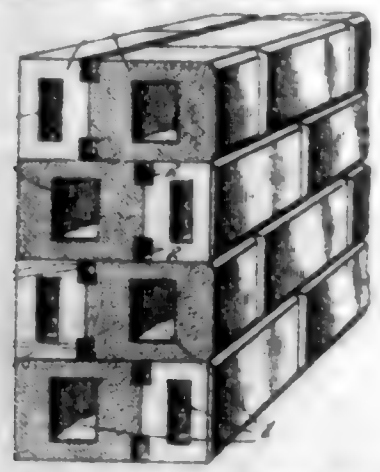
2. The combination with a rail having on a face thereof a raised longitudinal rib, of a plurality of flanges having corresponding recesses receiving the rib against the bases thereof, fastening-screws for the flanges, each entering the rib, and a compressible resilient material filling the recesses on either side of the rib.

3. The combination with a rail of a piano-action provided with a raised longitudinal rib, of a flange having a recess on its inner face

receiving the rib, a flanged fastening-screw for the flange entering the said rib, and a layer of cork filling the recess of the flange on opposite sides of the said rib, and adapted to be compressed between the flange and the rail on screwing up the fastening-screw.



814,973. BUILDING-BLOCK. John Lovett, Martinsburg, W. Va. Filed Jan. 20, 1905. Serial No. 241,958.



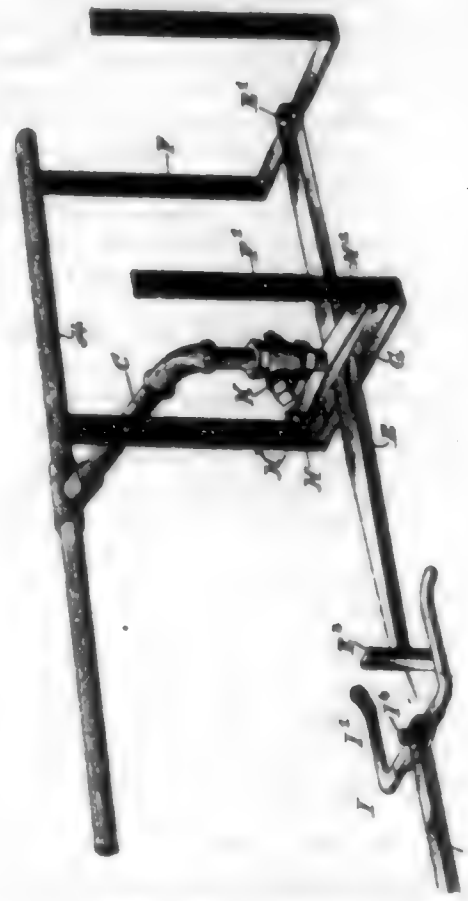
Claim.—1. A wall composed of hollow blocks having recessed inner corners extending throughout the length of the blocks, said blocks so placed in the wall that the corner-recesses come together, these recesses at the corners overlapping the main orifices in the center of the blocks, whereby to completely insulate and prevent dampness from passing therethrough.

2. A wall composed of hollow building-blocks each block having an upper and lower recessed corner, the recesses extending through the length of the block, whereby an intervening projection is formed, said projections placed against each other in the wall, whereby channels are formed between the upper and lower ends of adjacent blocks corresponding to the width of two of the corner-recesses.

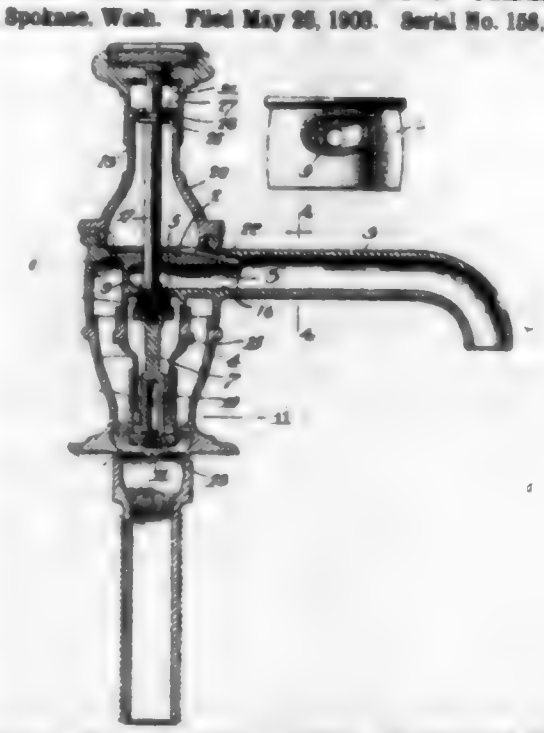
814,974. AIR-BRAKE APPLIANCE. Hans C. Luck, Telluride, Colo. Filed July 10, 1905. Serial No. 268,926.

Claim.—1. An air-brake appliance for automatically setting the brakes on the derailment of a car in the train, comprising a fork fixed on the car-truck and having its members arranged in a horizontal plane, a branch pipe connected with the train-pipe, and a valve in the form of a lever fulcrumed on the car-body and normally closing the end of said branch pipe, the free end of said lever extending between the members of the said fork whereby the rotation of the truck upon the car-body beyond a predetermined angle may operate the lever to open the valve.

2. An air-brake appliance for automatically setting the brakes on the derailment of a car in the train, comprising a fork fixed on the car-truck and having its members in a horizontal plane, a branch pipe connected with the train-pipe, a valve in the form of a lever fulcrumed on the car-body and normally closing the end of the said branch pipe, the free end of said lever extending between the members of the said fork, whereby the rotation of the truck upon the car-body beyond a predetermined angle may operate the lever to open the valve, and a manually-controlled cut-out valve on the said branch pipe.



814,975. AUTOMATIC BALANCED VALVE. Frederic H. Mason, Spokane, Wash. Filed May 25, 1903. Serial No. 158,689.



Claim.—1. In combination, a valve, a valve-seat therefor, a valve-stem having a piston member, a stationary ported member forming a protecting device for the valve, and a cup-shaped member slidable upon the stationary member and serving as an auxiliary valve, said cup-shaped member having a loose connection with the valve-stem.

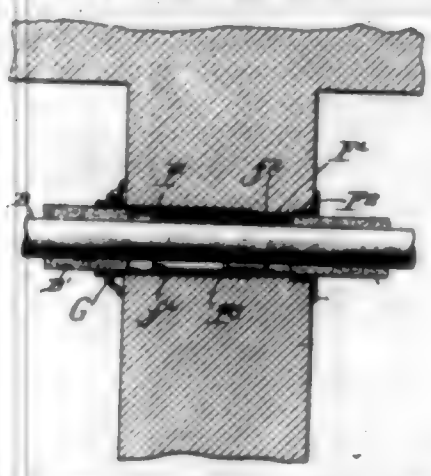
2. In a device of the class specified, the combination with a main valve, a discharge-spout, a valve-seat, a valve, a valve-chamber, a drainage-chamber connected to the discharge-spout, and a bonnet member having a vent-opening to permit the entrance of air to the drainage-chamber when the valve has been moved to closed position.

3. In a device of the class specified, a valve-casing having a valve-seat, a valve, a discharge-spout, a drainage-chamber connecting with the spout, a bonnet having a vent-opening for the admission of air, a flange projecting inward from the bonnet and having a recess forming an air-passage, a valve-operating rod, a flange thereon, a cushion member between the two flanges, and an operating-knob secured to the outer end of the rod.

4. In a device of the class specified, a valve-casing having a discharge-passage, a drainage-chamber in communication therewith, an air-vent for placing the drainage-chamber in communication with

the outer air, a valve, a valve-operating rod, a spring for retracting the rod, and a spring-inclosing casing arranged beyond the drainage-chamber.

814,976. STEAM-PIPE THIMBLE. GEORGE MEHRING, Chicago, Ill. Filed June 20, 1904. Serial No. 214,604.



Claim.—1. A thimble for insulated pipes comprising a tube open at both ends, the opening at one end thereof being made of the full diameter of the tube, the opening at the other end being made of smaller diameter, and a flange located within and between the ends of the tube and formed with an opening in line with and of the same diameter as the smaller end opening of the tube.

2. A thimble for insulating-pipes comprising a two-part tube, one part of which is made shorter than and fits within the other, the inclosed or shorter part being turned inwardly at its inner end to form an opening of less diameter than the end opening of the larger or inclosing part.

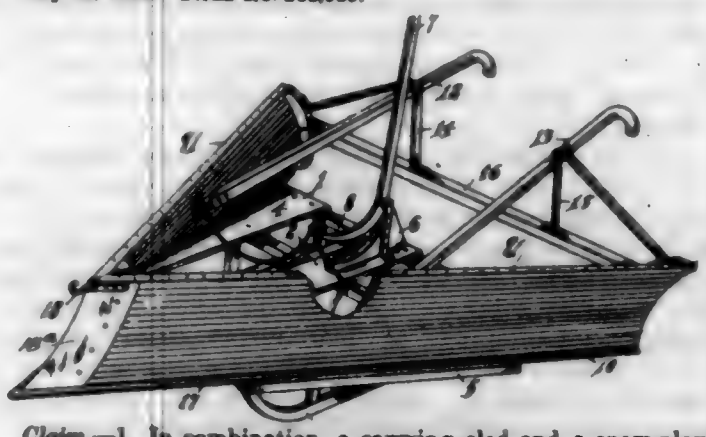
3. A thimble for insulated pipes comprising a two-part tube, one part of which is made shorter than and fits within the other, the shorter or inclosed part being flanged inwardly at both ends to form alined openings of less diameter than the end opening of the inclosing tube.

4. A thimble for insulated pipes comprising a two-part tube, one part of which is made shorter than and fits within the other, the shorter or inclosed part being flanged inwardly at both ends to form alined openings of less diameter than the end opening of the inclosing tube, and said inclosed part being also provided at its outer end with a radial flange which limits its entrance in the inclosing part.

5. The combination with a pipe provided with an insulating-covering, of a thimble through which the pipe extends comprising a tube made of sufficient diameter at one end to receive said insulating-covering and a flange between the ends of the tube having an opening within which the uncovered part of the pipe closely fits.

6. The combination with a pipe provided with an insulating-covering, of a thimble through which the pipe extends comprising a two-part tube, one part of which is made shorter than and fits within the other, the outer or inclosing part of said tube being made of a diameter to receive the insulating-cover of the pipe, and the shorter or inclosed part thereof being flanged to provide an opening which closely fits the uncovered part of the pipe.

814,977. SNOW-PLOW. GEORGE C. MOORE, Detroit, Mich. Filed May 18, 1905. Serial No. 260,959.



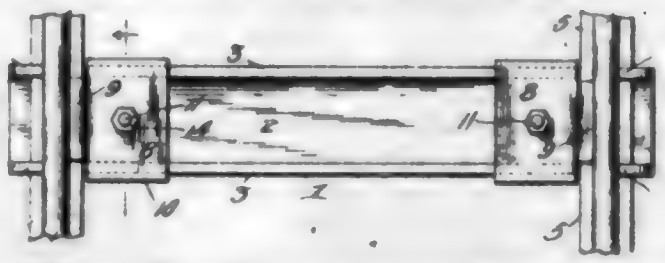
Claim.—1. In combination, a carrying-sled and a snow-plow carried thereby, the said snow-plow having a forward terminal central to the sled and moldboards diverging to each side from the center line of said sled, a lever pivoted to the sled and having connections to the plow whereby the plow may be shipped and unshipped from the sled, substantially as described.

2. In combination, a sled provided with platforms widening from front to rear and furnished with cleats, a triangular snow-plow adapted to rest on the platforms of said sled and engage behind said cleats, a lever pivoted to the sled and having connections to the plow and adapted to actuate the plow to ship and unship the same from said sled, substantially as described.

3. In a snow-plow, in combination, moldboards meeting at a pointed front terminal and having sides diverging from said meeting-point and warping from the front toward the rear with the upper edges thereof overhanging the lower edges at the rear and with a shoe secured to said moldboards and projecting beyond the meeting edges at the point, substantially as described.

4. In a snow-plow, the combination of a carrying-vehicle, platforms to said vehicle provided with cleats, a triangular-shaped snow-plow adapted to rest on said platforms behind said cleats, means for lifting the plow with respect to the vehicle, substantially as described.

814,978. METALLIC RAILWAY-TIE. CARL L. MUELLER, Wapakoneta, Ohio. Filed June 12, 1905. Serial No. 264,861.

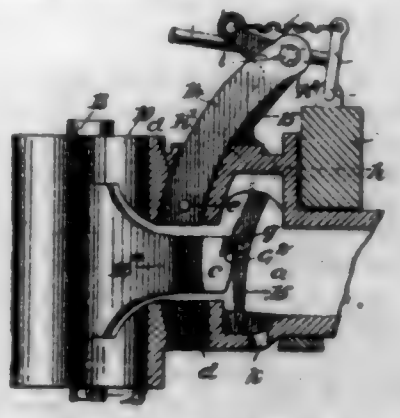


Claim.—1. The combination of a metallic railway-tie comprising a body portion formed with apertures, parallel flanges bent up from the sides of said body, and enlargements at the ends of said flanges formed with undercut portions to receive the outer base-flanges of the track-rails, rail-clamps upon the top of said tie having portions engaging the inner base-flanges of track-rails and downturned side flanges engaged with the outer faces of the flanges of said tie, and means for securing said clamps to said tie, substantially as described.

2. The combination of a metallic railway-tie comprising a body portion formed with apertures, parallel flanges bent up from the sides of said body, and enlargements at the ends of said flanges formed with undercut portions to receive the outer base-flanges of the track-rails, rail-clamps upon the top of said tie having portions engaging the inner base-flanges of track-rails and downturned side flanges engaged with the outer faces of the flanges of said tie, screw-bolts passed through alining openings in said clamps and said tie, and locked nuts upon said bolts, substantially as described.

3. The combination with a track-rail, of a metallic tie comprising a plate having its sides bent up to form flanges upon which said rail is adapted to seat, enlargements at the ends of said flanges formed with undercut portions to engage one of the base-flanges of said rail, and a clamping-plate having a portion to engage the opposite base-flange of said rail and downturned side flanges to engage the outer sides of the flanges of said tie, and a fastening device passed through alining openings formed in said tie and in said clamping-plate, substantially as described.

814,979. CAR-COUPLING. CHARLES MCCARTER, Indianapolis, Ind. Filed Aug. 22, 1905. Serial No. 275,204.



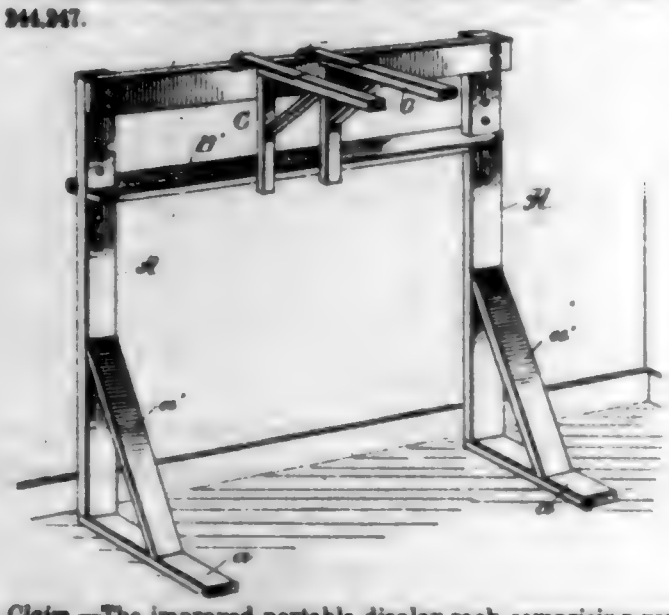
Claim.—1. The combination with a hollow draw-head and a draw-bar therein, of a knuckle having an angularly-bent tailpiece pivoted at its angle between ears on the draw-head at one side and front thereof, a locking-block curved edgewise and held loosely in coacting curved slots formed in the upper and lower walls of the

draw-head, said block, when lowered, contacting with one side edge of the tailpiece for holding the knuckle closed, a lifting-bar pivoted on the locking-block at one side for reciprocation of said block, and means for manipulating the lifting-bar.

2. The combination with a hollow draw-head and a draw-bar thereon, of a knuckle comprising a locking-jaw and a tailpiece projected at an angle from said jaw, the knuckle being pivoted at its angle between ears on the draw-head at one side and front thereof, a locking-block curved edgewise and working in corresponding curved slots in the upper and lower walls of the draw-head so as to trend upward and rearward when raised, a stop on the lower end of the locking-block that defines its elevation, a lifting-bar bent edgewise and having a forwardly-projected arm on its upper end, said bar being pivoted at its upper end laterally on the upper end of the locking-block, said block being adapted for contact with the inner side of the tailpiece when the knuckle is closed and the block dropped by gravity, a flexible connection on the arm of the lifting-bar that is engaged with an arm on a rock-shaft carried by the car, means for rocking said shaft and elevating the lifting-bar and locking-block, and a projection on the lifting-bar that may seat upon the tailpiece when the knuckle is open and retain the locking-bar raised until the knuckle is closed.

3. In a car-coupling of the character described, the combination with the hollow draw-head, the knuckle having an angularly-bent tailpiece and rockable in the draw-head, said tailpiece having a rabbet on its upper side, of a locking-block curved edgewise and working in a curved slot in the upper and lower walls of the draw-head so as to trend upward and rearward when raised, a stop-pin on the lower end of the locking-block that limits its upward movement, said block being adapted to loosely contact with the inner side of the tailpiece when said tailpiece is closed toward a side of the draw-head, an angularly-bent lifting-bar having a hook on its forward edge near the lower end, said lifting-bar having a forwardly-projecting arm on its upper end, the bar being pivoted at the angular junction of its arm therewith upon an adjacent side of the locking-block at the upper end of said block, and means for simultaneously elevating the lifting-bar and locking-block so that the lower end of the block clears the tailpiece and the hook on the lifting-bar seats upon the rabbet on said tailpiece.

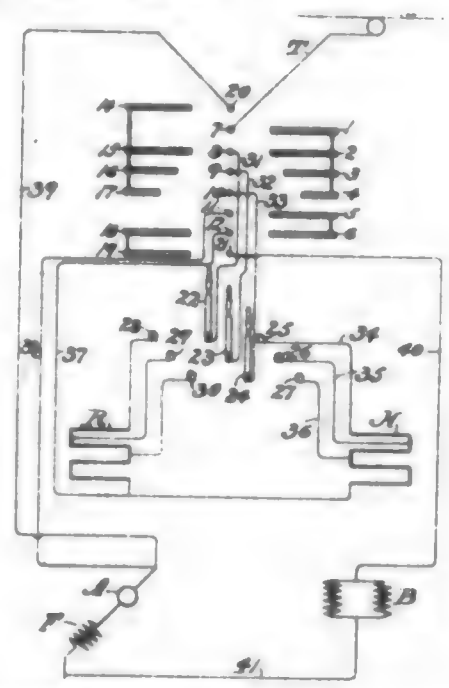
814,980. **FURNITURE-DISPLAY RACK.** CHARLES MCCLOSKEY and JOHN MCLAUGHLIN, Sedalia, Mo. *Filed Feb. 4, 1905. Serial No. 244,247.*



Claim.—The improved portable display-rack comprising vertical standards spaced apart and having horizontal feet for supporting them, bars connecting their upper ends and spaced apart and adapted for vertical adjustment on the standards, and brackets having horizontal and vertical members, the former being provided at their inner ends with hooks adapted to engage the top bar, the horizontal members projecting laterally from said top bar to adapt them to support articles of furniture, and the vertical members bearing against the lower cross-bar of the frame, the brackets being adjustable along the frame-bars so they may be placed at different distances from each other, or the ends of the frame.

814,981. **ELECTRIC HEATING SYSTEM FOR CARS.** FRANK C. NEWELL, Wilmerding, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. *Filed Jan. 5, 1903. Serial No. 473.*

Claim.—1. The combination on a car of an electric motor for propelling the car, a running or motor circuit for supplying current to the motor, a local brake-circuit containing a brake-magnet, an electric heater located within the car and having a series of coils of different resistance capacity for regulating the current in both circuits, and controlling switch mechanism having contact-points for varying the connections of the heater-coils in the running-circuit and other contact-points for connecting up the motor to act as a generator in the local brake-circuit and for varying the connections of the heater-coils in said brake-circuit.



2. The combination on an electric car, of a motor, a motor-circuit for supplying current to the motor, a local brake-circuit, an electric heater located within the car and having a series of coils of different cross-sectional area for regulating the current in both circuits, and switch mechanism for cutting out the motor-circuit, connecting up the motor to act as a generator in the local brake-circuit with the heater and varying the connections of the heater-coils in said local circuit.

3. The combination on an electric car, of a motor, a motor-circuit for supplying current to the motor, a local brake-circuit, a controller for cutting out the motor-circuit and connecting up the motor to act as a generator in the local brake-circuit, an electric heater located within the car and having a series of coils of different resistances, a rheostat located outside the car and having a corresponding series of coils, and a series of switches for connecting one or more of the coils of either the heater or of the rheostat into the local circuit.

4. The combination, on an electric car, of a motor for propelling the car and also adapted to be operated as a generator by the momentum of the car when the line-current is cut off from the motor, a local brake-circuit to which current may be supplied by the generator, an electric heater having a series of coils of different cross-sectional area adapted to serve as a rheostat for both the motor-circuit and the brake-circuit, a magnetic brake device in said brake-circuit, and means for varying the connections of the coils of the heater in the running or motor circuit and in the brake-circuit.

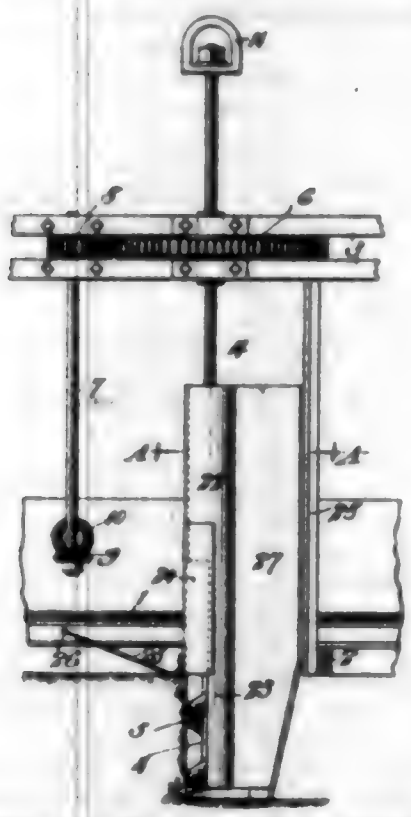
5. An electric heater for cars, comprising a plurality of separate casings arranged in series, a plurality of resistance-coils of different cross-sectional area and current-carrying capacity in each casing, the respective coils of the same size in the different casings being connected together in series, and the several sets of coils also being connected in series.

6. The combination on a car of an electric motor for propelling the car, a running or motor circuit for supplying current to the motor, a local brake-circuit containing a brake-magnet, an electric heater located within the car and having a series of coils of different resistance capacity for regulating the current in the brake-circuits, and controlling switch mechanism having contact-points for connecting up the motor to act as a generator in the local brake-circuit and for varying the connections of the heater-coils in said brake-circuit.

814,982. **DITCHING-MACHINE.** JACOB NILON, Stockport, Iowa. *Filed June 30, 1905. Serial No. 267,711.*

Claim.—1. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for operating it and a spiral cutting-blade carried by the conveyer.

2. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for operating it and a spiral cutting-blade composed of a plurality of sections secured to the conveyer.



3. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for operating it and a spiral cutting-blade removably secured to the conveyer.

4. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for operating it and a spiral cutting-blade composed of a plurality of sections removably secured to the conveyer.

5. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it, a shoe carried by the conveyer and an antifriction-bearing between the conveyer and shoe.

6. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it and a conveyer-casing comprising an upper cylindrical portion and a lower semicylindrical back portion.

7. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it and a conveyer-casing comprising an upper cylindrical portion, a lower semicylindrical back portion and a vertically-adjustable front shield for that portion of the semicylindrical back portion which is above the surface of the ground.

8. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it, a conveyer-casing comprising an upper cylindrical portion, a lower semicylindrical back portion, a vertically-adjustable front shield and means engaging the ground for maintaining the bottom of the front shield at all times in proximity to the ground.

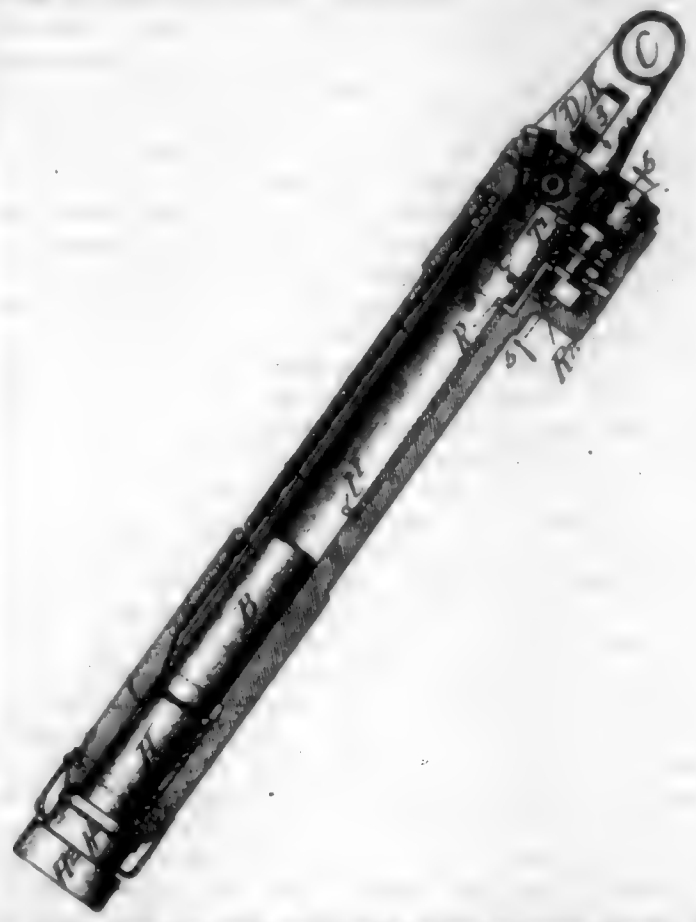
9. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it, a conveyer-casing comprising an upper cylindrical portion, a lower semicylindrical back portion, a vertically-adjustable front shield and a spring-arm carried by the framework and connected to the shield for maintaining the bottom of the shield in proximity to the ground.

10. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for rotating it, a shoe provided with a front cutting edge and a casing for the conveyer, the said shoe and casing being carried by the conveyer.

11. In a ditching-machine, a suitable framework, a vertically-arranged screw conveyer, means for operating it, a shoe, an antifriction-bearing between the conveyer and shoe and a conveyer-casing, the said shoe and casing being carried by the conveyer.

814,988. **PNEUMATIC HAMMER.** REINHOLD A. NOBLING, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed May 31, 1905. Serial No. 263,077.

Claim.—1. The combination with a cylinder and a plunger therein, of a live-air-actuated controlling-valve and an auxiliary valve, operated by air compressed within the inner end of the cylinder in the backward stroke of the plunger, for controlling the admission to the controlling-valve of air to actuate the said controlling-valve.



2. The combination with a cylinder and plunger therein, of a controlling-valve for controlling the admission and exhaust of air into and from the cylinder, embracing a valve-piston having two faces of different areas, means controlled by the plunger for admitting live air to act on the larger face of said valve-piston, and an auxiliary valve controlling the admission of live air to act on the smaller face of the said piston, said auxiliary valve being operated by pressure of air compressed in the inner end of the cylinder in the backward stroke of the plunger.

3. The combination with a cylinder and plunger therein, of a live-air-actuated controlling-valve, and an auxiliary valve for controlling the admission to the controlling-valve, said auxiliary valve having a valve-piston provided with two faces of different areas, its face of smaller area being subject to the pressure of air compressed in the cylinder in the backward stroke of the plunger, and means controlled by the plunger for admitting live-air pressure to the larger face of said piston.

4. The combination with a cylinder and a plunger therein, of a live-air-actuated controlling-valve embracing a valve-piston which is of larger area at one end than the other, means controlled by the plunger for admitting live air to act on the larger end of said valve-piston, and an auxiliary valve for controlling the admission of live air to act on the smaller end of said valve-piston, said auxiliary valve embracing a valve-piston having two faces of different areas, its smaller face being subject to the pressure of air compressed within the inner end of the cylinder in the back stroke of the plunger, and its larger face being subject to live-air pressure controlled by the movement of the plunger in the cylinder.

5. The combination with a cylinder and plunger therein, of a live-air-actuated controlling-valve, and an auxiliary valve for controlling the admission to the controlling-valve of live air to actuate the latter, said auxiliary valve having a shifting plug provided with two faces of different areas, its face of smaller area being subject to pressure of air compressed within the inner end of the cylinder in the backward stroke of the plunger, and its face of larger area being subject to direct air-pressure from an air-passage communicating with the outer end of the cylinder through a port which is uncovered by the plunger in its outward movement.

6. The combination with a cylinder and plunger therein, of a controlling-valve actuated by live air delivered thereto from the cylinder, and an auxiliary valve for controlling the supply of live air to the cylinder for operating the controlling-valve, said auxiliary valve being actuated by the pressure of air compressed in the inner end of the cylinder by the plunger in the backward stroke of the latter.

7. The combination with a cylinder and a plunger therein, of a controlling-valve controlling the admission and exhaust of air into and from the opposite ends of the cylinder, said valve embracing a

valve-piston having at its ends faces of different areas, and which slides in a valve-chamber; the larger end of said valve-chamber being connected with the interior of the cylinder by a passage opening into the cylinder through a port near the outer end of said cylinder and which is uncovered by the plunger in its outward movement, and the smaller end of said chamber being connected with the interior of the cylinder by a passage opening into the cylinder near the inner end of the latter, an air-supply passage through which live air is delivered to the inner end of the cylinder to act on the smaller end of the controlling-valve piston, and an auxiliary valve for controlling the inflow of air to the cylinder through said supply-passage, embracing a valve-chamber larger at one end than the other and a valve-piston in the said chamber, having opposite faces of different areas, the smaller end of said auxiliary-valve chamber being in direct communication with the interior of the cylinder at the inner end of the latter, and the larger end of the said chamber communicating with a passage opening into the interior of the cylinder near its outer end through a port which is uncovered by the plunger when near the outer limit of its stroke.

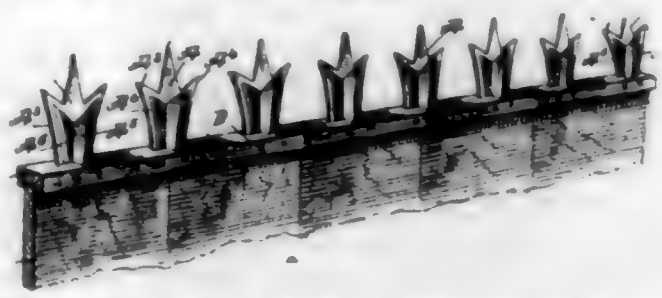
8. The combination with a cylinder and a plunger therein, of a valve controlling the admission and exhaust of air into and from the opposite ends of the cylinder, said controlling-valve embracing a valve-chamber larger at one end than at the other, and a valve-piston in said chamber having opposite faces of different areas, said cylinder being provided with a passage connected with the larger part of the controlling-valve chamber and opening into the outer end of the cylinder by a port which is uncovered by the plunger in its outward movement, an auxiliary valve embracing a valve-chamber having larger and smaller parts, and provided in its smaller part with a port communicating with the air-supply passage, and a valve-piston in said auxiliary-valve chamber provided with faces of different areas, the cylinder having a passage connecting the larger part of the auxiliary-valve chamber with the outer end of the cylinder and opening into the latter by a port which is uncovered by the plunger in its outward movement; the smaller end of said auxiliary-valve chamber opening into the inner end of the cylinder, whereby the smaller face of the said auxiliary-valve piston is subject to the pressure of air compressed within said inner end of the cylinder in the backward stroke of the plunger.

9. The combination with a cylinder and a plunger therein, of a valve controlling the admission and exhaust of air into and from the opposite ends of the cylinder, said valve embracing a valve-casing having large and small parts, and a valve-piston in said chamber having opposite faces of different areas, said cylinder being provided with a passage connecting the larger part of the valve-chamber with the interior of the cylinder near its outer end, and which opens into the cylinder through a port which is uncovered by the plunger in its outward movement, said cylinder being also provided with a passage connecting the smaller end of said controlling-valve chamber with the interior of the cylinder near the inner end of the latter, an auxiliary valve embracing a valve-casing having a port communicating with the air-supply passage, and a valve-piston in said auxiliary-valve chamber provided with opposite faces of different areas, a passage connecting the larger part of the auxiliary-valve chamber with the outer end of the cylinder and which opens into the latter through a port which is uncovered by the plunger in its outward movement, the smaller end of the controlling-valve chamber being in open communication with the said cylinder at the inner end of the latter, said auxiliary valve operating to open and close communication between the air-supply passage and the inner end of the cylinder, and the auxiliary-valve piston being operated to open the auxiliary valve by air compressed in the inner end of the cylinder acting on the smaller end of said piston, whereby the smaller end of the controlling-valve piston is subject to the pressure of air entering the cylinder from the auxiliary valve and passing from the cylinder to the smaller part of said controlling-valve chamber.

10. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-chamber which is closed at both ends and is provided at its ends with cylindric parts of different diameters, said valve-chamber being provided with five lateral, longitudinally-separated ports, to wit, an admission-port for the inner end of the cylinder, a main air-supply port, a supply and exhaust port for the outer end of the cylinder, a main exhaust-port, and an exhaust-port for the inner end of the cylinder, said main air-supply port being located between the admission-port for the inner end of the cylinder and the admission and exhaust port for the outer end of the cylinder, and the main exhaust-port being located between the said supply and exhaust port for the outer end of the cylinder and the exhaust-port for the inner end of the cylinder, and said exhaust-port for the inner end of the cylinder being located in the cylindric smaller part of the chamber, and a valve-piston having at one end a larger cylindric flange that fits and slides in the lower end of the valve-chamber and is adapted to open and close communication between the admission-port for the inner end of the cylinder and the main supply-port, and at its opposite end with a smaller flange, which is adapted to fit and slide within the smaller end of the cylinder and to open and close communication between the exhaust-port for the inner end of the cylinder and the main exhaust-port, and said valve-piston being provided with an intermediate flange adapted to be shifted to one side or the other of the admission and exhaust port for the outer end of the cylinder to bring the same into communication with either the main admission-port or the main exhaust-port, and means for supplying air under pressure to the opposite ends of the valve-chamber for actuating said valve-piston.

11. The combination with a cylinder and a plunger therein, of a controlling-valve comprising a valve-chamber which is closed at both ends and is provided at its ends with cylindric parts of different diameters, said valve-chamber being provided with five lateral, longitudinally-separated ports, to wit, an admission-port for the inner end of the cylinder, a main air-supply port, a supply and exhaust port for the outer end of the cylinder, a main exhaust-port, and an exhaust-port for the inner end of the cylinder, said main air-supply port being located between the admission-port for the inner end of the cylinder and the admission and exhaust port for the outer end of the cylinder, and the main exhaust-port being located between the said supply and exhaust port for the outer end of the cylinder and the exhaust-port for the inner end of the cylinder, and said exhaust-port for the inner end of the cylinder being located in the cylindric smaller part of the chamber, and a valve-piston having at one end a larger cylindric flange that fits and slides in the lower end of the valve-chamber and is adapted to open and close communication between the admission-port for the inner end of the cylinder and the main supply-port, and at its opposite end with a smaller flange which is adapted to fit and slide within the smaller end of the cylinder and to open and close communication between the exhaust-port for the inner end of the cylinder and the main exhaust-port, said cylinder being provided with a passage leading from the larger end of the valve-chamber toward the outer end of the cylinder and opening into the latter through a port which is uncovered by the plunger when the latter approaches the outward limit of its stroke, and with a passage connected with the smaller end of said valve-chamber through which air under pressure is admitted to the latter.

814,984. **CAT-GUARD.** FRANK H. PALMER, New York, N. Y. Filed July 6, 1905. Serial No. 268,351.



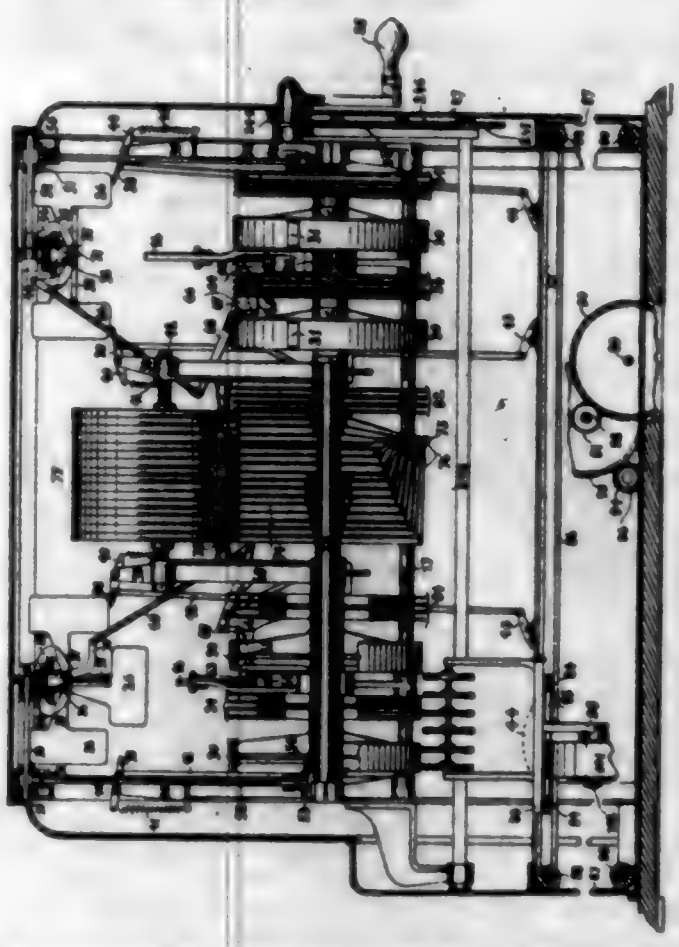
Claim.—1. A cat-guard for fences, railings and like structures, made of a single piece of sheet metal and comprising a flat body pointed at its upper end and having pointed longitudinal wings, pointed transverse wings struck up from the said longitudinal wings, and a pointed base depending from the said body and adapted to be driven into the structure.

2. The combination of the top rail of a fence, railing or like structure, a cat-guard having a pointed body, longitudinal and transverse wings, a pointed base engaging a recess in the said top rail, the lower edges of the transverse wings resting on the said top rail, and a fastening device for securing the pointed base in place on the said top rail.

814,985. **MACHINE FOR PRINTING AND ISSUING RAILWAY-TICKETS.** ROBERTO T. PISCICELLI, Naples, Italy. Filed July 6, 1903. Serial No. 164,361.

Claim.—1. A machine for printing and issuing railway-tickets, comprising a set of drums fitted with type-plates printing on the

tickets for predetermined stations matter previously prepared in the machine, a hand-operated type-setter printing tickets for occasional stations, means for cutting from a continuous paper ribbon the ticket in the required length and for printing thereon the necessary indications, date, progressive number, number of train, class, destination, price and cipher of the railway company, means by which said indications are rendered visible to the clerk and the traveler before the issue of the ticket, and means for recording said indications on a duplicate of the ticket, a summing apparatus which sums up the prices of the tickets, and numerators recording separately the number of each kind of tickets issued.



2. In machines for printing and issuing railway-tickets of any kind, the combination of a fixed shaft carrying a set of printing-drums fitted with plates bearing engraved the kind and price of the tickets and the names of the stations for which they are issued, and a set of type-wheels loosely mounted, certain of said type-wheels bearing engraved on their edges a double set of the alphabetical and others of said type-wheels bearing the numerical signs 0 to 9; a sliding carriage which can be brought in correspondence and operatively connected with any one of the printing-drums for printing and issuing tickets for predetermined stations, and with the set of type-wheels for printing and issuing tickets for occasional stations; means by which the printing-drums are caused to rotate and locked in the position corresponding to the station for which the ticket is required; means by which the type-wheels are rotated in order to compose the matter to be printed on the ticket, and means by which the sliding carriage is brought in its operative positions underneath the printing-drums and the type-wheels of the type-setter.

3. In machines for printing and issuing railway-tickets of any kind and for any desired station, the combination of a setting device, cams turning together with the type-wheels of the setting device printing the numerical signs, each of said cams consisting of a disk fitted with notches the depth of which is proportional to the value of the numbers engraved on the edge of the type-wheel; sliding rods, the stroke of which is determined by the depth of said notches, commanding a summing apparatus, and a traveling carriage, bearing the summing apparatus and impression-surface; which carriage can be moved under the setting device in such position that the impression-surface comes under the type-wheels of the setting device ready to coöperate with them in printing and issuing a ticket while the sliding rods of the summing apparatus come in correspondence with the cams, ready to add the price of the ticket issued.

4. In machines for printing and issuing railway-tickets for predetermined stations, the combination of printing-drums and sets of cams turning together with the printing-drums, said cams having notches proportional in depth to the value of the numerical signs of which each price to be printed is composed; sliding rods, controlling the movement of a summing apparatus, the stroke of which is determined by the depth of said notches, and a traveling carriage, bearing the summing apparatus and impression-surface, which carriage can be moved under any one of the printing-drums in such position, that the impression-surface comes under the type-plate of the printing-drum ready to coöperate with them in printing and issuing the ticket, while the sliding rods of the summing apparatus come in correspondence with the cams, ready to add the price of the ticket issued.

5. In machines for printing and issuing railway-tickets for predetermined stations, the combination with a printing-drum of a set of indicating-labels, a sliding guide controlling the fall of said labels, a rod bent like a U normally lowered, a lever controlling the printing-drum, and means for rotating said rod to elevate a fallen label when the printing-drum is rotated.

6. In machines for printing and issuing railway-tickets for predetermined stations, the combination of a set of printing-drums mounted on the same shaft, a traveling carriage with printing and adding mechanisms, means for shifting the carriage underneath any drum to print a ticket, a set of indicating-labels in correspondence with each drum, a cranked arm preventing normally the labels from lowering, a vertical rod and rocking lever connected thereto, which when the traveling carriage comes underneath the printing-drum, lowers the cranked arm thus releasing the labels of the set corresponding to the drum ready to print a ticket.

7. In machines for printing and issuing railway-tickets, the combination of a set of printing-drums and a setting device mounted on the same shaft, a traveling carriage bearing printing and summing mechanisms, a perforated ribbon fastened at both ends to said traveling carriage, a gear, a handle controlling the same and projecting from the front of the machine, and a pin-wheel actuated by said handle and engaging the holes of the said steel ribbon, said pin-wheel affording means to move said carriage in the desired position.

8. In machines for printing and issuing railway-tickets, the combination with a traveling carriage, of means for supporting a continuous ribbon for the tickets, means for supporting a continuous ribbon for the duplicates, a set of printing-cylinders, which print on the ticket-ribbon the name of the issuing station, the date of issue, the number of the train and the progressive number of the ticket, a setting device, mechanism for cutting the ticket to the desired size and pressing the paper against the printing-drum and the type-wheels of the setting device, means for actuating all said mechanisms, and means for shifting the traveling carriage underneath any one of the printing-drums and type-wheels of the setting device.

9. In machines for printing and issuing railway-tickets, the combination with the printing-drums and a setting device, of a traveling carriage, which can be brought in correspondence with any one of the printing-drums and the type-wheels of the setting device, means for supporting a roll of continuous paper ribbon whereon the tickets are printed, means for supporting a second roll of continuous paper ribbon, whereon the duplicates of the tickets are printed, mechanisms for cutting the tickets to a given size and pressing the same and the ribbon for the duplicates against the printing-drums and the said type-wheels, two printing-cylinders defacing the tickets and stamping on them the cipher of the railway company, and means by which said printing-cylinders are returned always to the same position after the issue of a ticket.

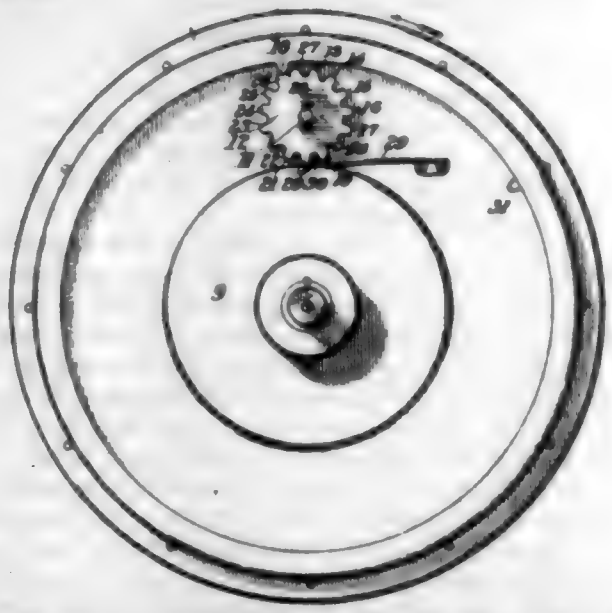
10. In machines for printing and issuing railway-tickets, the combination of printing-drums and a setting device mounted on the same shaft; a traveling carriage with mechanisms for cutting, printing and defacing the tickets and means for summing up the prices of the tickets issued, and cams connected with the printing-drums and the type-wheels of the setting device to control the summing apparatus mounted on the traveling carriage.

11. In machines for printing and issuing railway-tickets of any kind and for any station, a traveling carriage with a ticket and a duplicate ribbon, means for shifting the carriage to various operative positions for the issue of the various classes of tickets, a rocking lever on said carriage, and means for rocking the lever from the main shaft of the machine every time a ticket is issued, said lever acting, in the various operative positions of the carriage, on a sliding rod fixed to the casing of the machine and actuating the numerator corresponding to that class of tickets, which the carriage is ready to print.

12. A machine for printing and issuing railway-tickets, comprising in combination, a shaft a set of printing-drums and a setting device mounted on said shaft, the setting device comprising type-wheels with numbers and type-wheels with letters, cams connected with said last type-wheels, sets of cams connected with the printing-drums, a summing mechanism controlled by said cams, a set of indicating-labels in correspondence with each printing-drum, a set of indicating type-wheels working in connection with the type-wheels of

the setting device, a traveling carriage with continuous ticket and duplicate ribbons, means for cutting the ticket, means for defacing the tickets and printing the duplicates, means for moving said carriage under any printing-drum in operative position, means for driving the mechanism of said carriage in any of its operative positions, numerators counting the total number of tickets issued and separately the number of tickets of each kind, means for regulating the position of the printing-drums, turning the type-wheels of the setting device and controlling the indicating-labels.

814,986. STOP MECHANISM FOR EXPANSIBLE PULLEYS. CHARLES J. REED, Philadelphia, Pa., assignor to Reed-Merrill Electric Co., a Corporation of Pennsylvania. Filed June 23, 1904. Serial No. 214,507.



Claim.—1. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, one member of said stop mechanism carried by an adjusting-disk and the other member carried by a guide-plate, as set forth.

2. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, one member of said stop mechanism carried by an adjusting-disk and the other member carried by a piece which extends from a guide-plate past the edge of said disk, as set forth.

3. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, said pinion carried by an adjusting-disk and said tooth carried by a guide-plate, as set forth.

4. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, said pinion journaled on the outer face of an adjusting-disk and said tooth carried by a piece which extends from a guide-plate past the edge of said disk, as set forth.

5. An expansible pulley, comprising rim-sections having toothed ends, radially-slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, one member of said stop mechanism carried by an adjusting-disk and the other member carried by a guide-plate, as set forth.

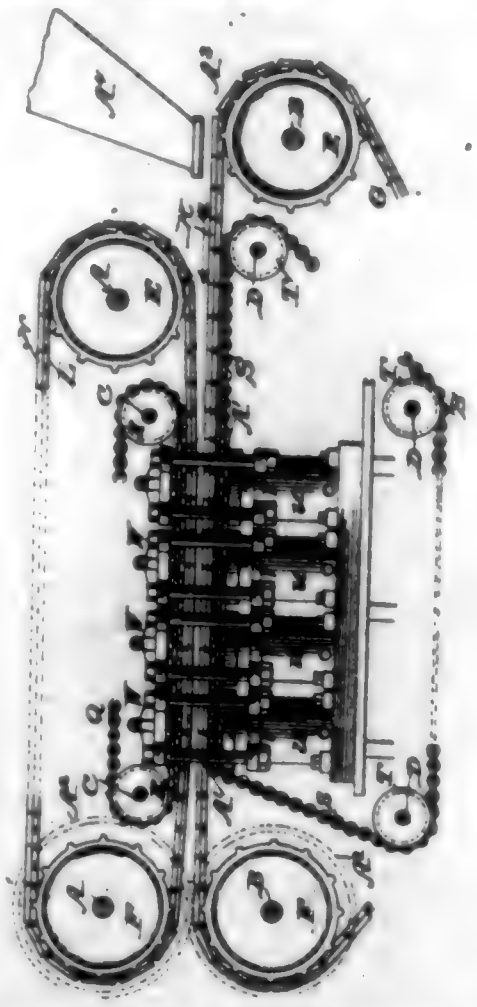
6. An expansible pulley, comprising rim-sections having toothed ends, radially-slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, said pinion journaled on the outer face of an adjusting-disk and said tooth carried by a piece which extends from a guide-plate past the edge of said disk, as set forth.

7. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion and a tooth engaging said pinion, one member of said stop mechanism carried by an adjusting-disk and the other member carried by a guide-plate, and a spring-actuated detent for said pinion, as set forth.

8. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism carried by a guide-plate and adjusting-disk and consisting of an incomplete pinion and two spaced teeth in position to engage said pinion, as set forth.

9. An expansible pulley, comprising rim-sections, guide-plates and adjusting-disks, said plates and disks relatively revoluble, and a stop mechanism consisting of an incomplete pinion journaled on the outer face of an adjusting-disk and two spaced teeth in position to engage said pinion and carried by a guide-plate, as set forth.

814,987. OIL-PRESS. JOSEPH C. RICHARDSON, Altonpark, Tenn. Filed Oct. 27, 1905. Serial No. 284,758.



Claim.—The combination of an endless series of press-boxes, secured to plates in the make-up of an endless chain, a series of followers secured to plates of an endless chain, chains of rollers arranged to travel above and below the press-box and follower chains, fixed thrust-plates arranged above the expressing series of press-box, follower, and roller chains, and jacks adapted for exerting pressure upwardly against the said press-box, follower, and roller chains, forcing them against the fixed thrust-plates, substantially as described.

814,988. DROP-LIGHT. BENJAMIN F. SHUART, Oberlin, Ohio. Filed Oct. 6, 1904. Serial No. 227,441.

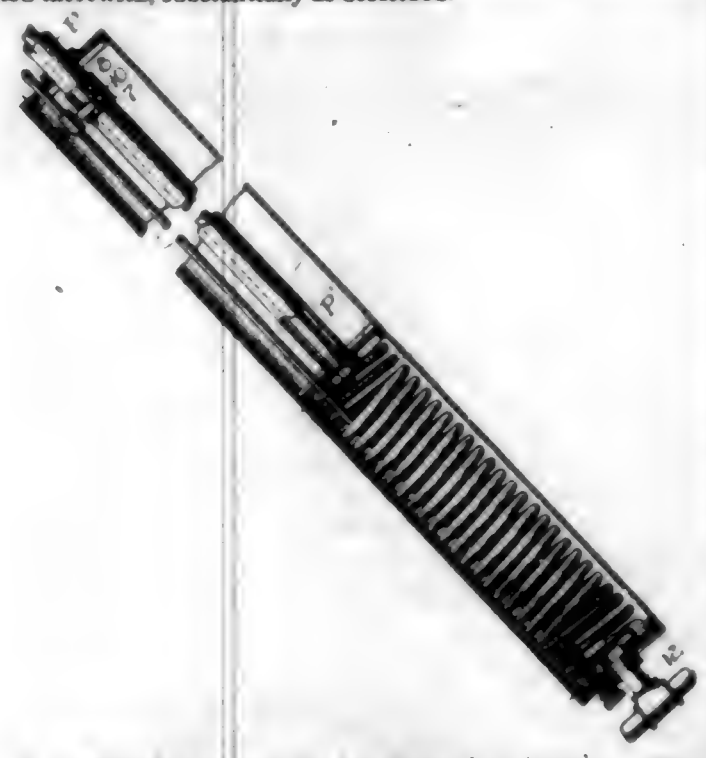
Claim.—1. In extensible drop-lights, a flexible gas-conveying tube and a wire extending through the same from end to end, said tube and wire bent into spiral form of the same cross-section from end to end, and the ends of said wire projecting out beyond the ends of the tube, thereby affording portions for fastening said ends of the wire and the tube.

2. In extensible drop-lights, a flexible gas-tube bent to spiral form, a wire coil extending through said tube and adapted to hold the tube at uniform spirality from end to end and having its ends extending outward beyond the ends of said coil, and means in which both the ends of the tube and the ends of the wire are separately secured.

3. In drop-lights, a supporting-cylinder, a flexible gas-conducting hose and heads within said cylinder with which the ends of said hose are connected and the cylinder slidable on the upper of said heads, said hose being equipped with a wire coil extending from end to end thereof and the coils of the wire fixed to a width less than the interior of the cylinder and constructed to keep the hose out of contact with the side of the cylinder, substantially as described.

4. In drop-lights, a cylinder having a fixed head and a depend-

ing gas-pipe on which said head is slidably engaged, hose provided with a uniform wire coil extending through the same from end to end having a fixed width of coil sufficiently smaller than the interior of the cylinder to keep the hose out of contact with the wall of the cylinder, a head in the lower end of said cylinder having one end of said hose connected therewith, and another head on the lower end of said gas-pipe within said cylinder having the other end of the hose connected therewith, substantially as described.



5. A cylindrical support for drop-lights, hose having a uniform coil from end to end within said support and having a wire extending through the bore thereof with uniform coils from end to end and constructed to hold all the coils of the hose apart from the side of said support, in combination with a gas-supply pipe from which said support is suspended and gas connections for said hose at the end of said pipe and at the lower end of said support, respectively, substantially as described.

6. A cylindrical support for a drop-light and a gas-pipe upon which said support is adjustable up and down, in combination with spirally-wound flexible hose located in said support, and means in said hose extending from end to end constructed to spread the coils of the hose uniformly when extension occurs, and curved connections for the ends of said hose in the bottom of said support and on the end of said gas-pipe within said support, substantially as described.

7. In drop-lights, a fixed gas-pipe and a head on its lower end, and a cylindrical support slidable on said head, a head fixed in the lower end of said support, a uniformly-coiled hose connected at its ends with said heads and provided with an internal wire coil of uniform width from end to end and connected with said heads at its ends, substantially as described.

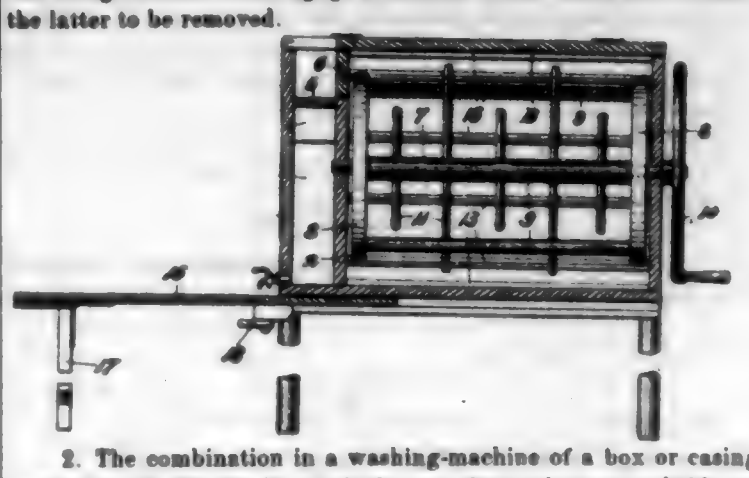
8. In extensible drop-lights, a suitable support having a hollow interior and a gas-pipe on which it is adapted to slide up and down, a head on the extremity of said pipe and another head in the bottom of said support, and curved supports inside of said heads for a gas-tube, in combination with a coiled flexible gas-conveying tube united with said supports at its ends, and a wire extending through the coils thereof, substantially as described.

9. A flexible gas-conveying tube and a wire having fixed and uniform coils from end to end extending through said tube internally and smaller than the bore of the tube, thus leaving a gas-passage about said wire, in combination with a cylinder in which said tube is confined, a gas-pipe projecting into said cylinder from the top, heads on the lower end of said pipe and the lower end of said cylinder respectively, and the said tube and the wire therein fixed to said heads, substantially as described.

10. The fixed gas-pipe and the head thereon, in combination with a cylinder slidable on said head and having a head in its top slidably engaged on said pipe and a head in its bottom, and a rod through said heads preventing rotation of said cylinder, substantially as described.

814,989. **WASHING-MACHINE.** JOHN V. DA SILVEIRA, Oakland, Cal. Filed Mar. 9, 1905. Serial No. 249,233.

Claim.—1. The combination in a washing-machine of a box having internal longitudinally-disposed ribs, a shaft having end disks and arms, a journal-opening in one of the ends of the box through which one of the shaft-journals passes, a supplemental false piece at the opposite end of the box said false piece having a bearing for the journal at the opposite end of the beater-shaft said supplemental end being movable to disengage it from the beater-shaft and to allow the latter to be removed.

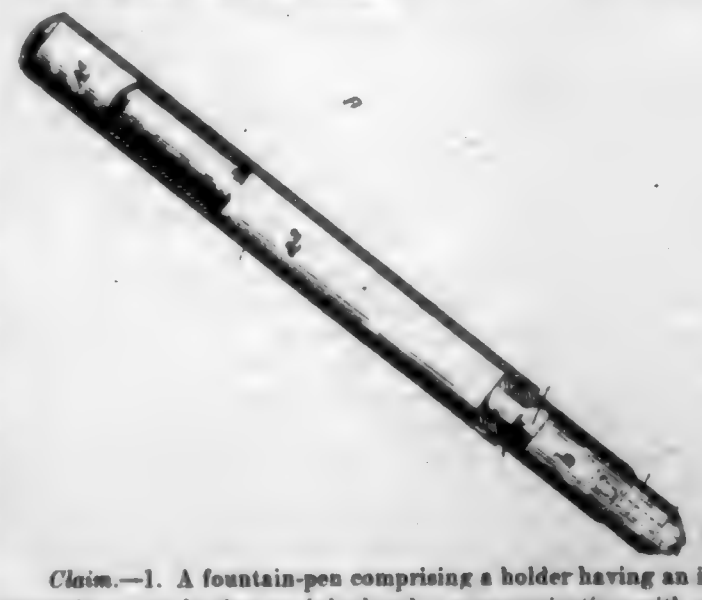


2. The combination in a washing-machine of a box or casing having longitudinally-disposed ribs upon its top bottom and sides, a shaft having end disks and arms, a removable false end piece spaced from one end of the box said false piece and the opposite end of the case having means for supporting the journal ends of the shaft, said shaft being extended beyond the box at one end and provided with means whereby the shaft may be rotated, and bars extending between the disks near their peripheries.

3. In a washing-machine, the combination of a box having ribs upon its bottom and sides, a removable false end, a shaft journaled in said false end and the opposite end of the box said shaft being extended beyond the box and provided with means whereby it may be rotated, a cover for the box said cover having ribs upon its under surface, said false end terminating short of said cover, vertically-removable standards for maintaining the false end in position, said standards having lugs or shoulders, a bar supported on said lugs and adapted to hold the standards in place, and a supplemental piece interposed between the top of the false end and the cover and supported against said standards.

4. In a washing-machine, a box having a hinged cover, a shaft with beaters and radial arms, a false and movable end located at a distance from one of the main box ends and carrying one of the journals of the beater-shaft, the other journal extending through the opposite end of the box and having a removable crank-wheel fixed thereto, said cover having means permitting the attachment of a wringer to the fixed end of the box.

814,990. **FOUNTAIN-PEN.** JAMES SINNOTT, Chatham, Ill. Filed Jan. 27, 1905. Serial No. 243,858.



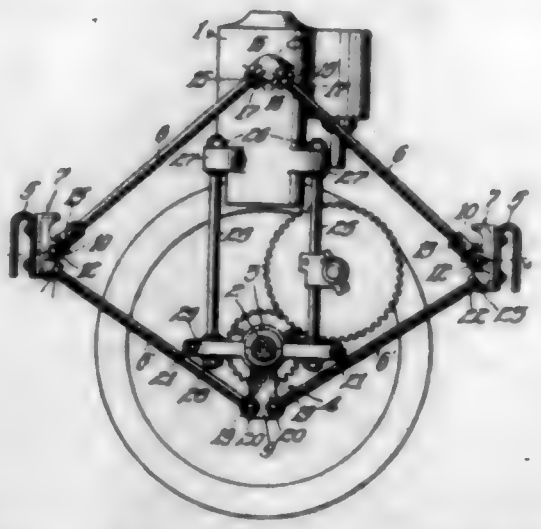
Claim.—1. A fountain-pen comprising a holder having an ink-reservoir, a pen having an ink-chamber communicating with said ink-reservoir and having in its edges slits of different lengths; and a tongue mounted on said pen and coöperating with the slits in said pen, to produce double lines of different widths.

2. A pen having an ink-chamber, also having in its edges slits of different lengths and an opening to supply ink to said ink-chamber; in combination with an elongated removable pen-tongue mounted and slidable in the ink-chamber of said pen.

3. A pen comprising an outer concavo-convex plate; an inner concavo-convex plate having an opening and a depression; and a tongue retained in position between said plates by contact with the walls of said depression.

4. In a fountain-pen the combination of a holder having an ink-reservoir, also having a pen-socket provided with an interior chamber in communication with said ink-reservoir and also having a lower curved part adapted to fit around the shank of a pen and a contracting ink-duct leading from the chamber in the socket and adapted to conduct ink to the pen fitting in the pen-socket, and a pen having an ink-chamber and an opening communicating with the ink-chamber of said pen, said pen being slidable in said socket to vary the extent of the opening communicating between the duct of the pen-socket and the ink-chamber of the pen to control the flow of ink through the pen.

814,991. **AUTOMOBILE-ENGINE SUSPENSION.** ALFRED C. STEWART, Los Angeles, Cal. Filed Mar. 1, 1905. Serial No. 247,879.



Claim.—1. In an automobile, the combination with an automobile engine-frame and supporting members therefor on the automobile, of a truss supporting the engine-frame on said supporting members and comprising upper truss members extending obliquely downward from the upper part of the engine-frame to said supporting members, and lower truss members extending obliquely upward from the lower part of the engine-frame to said supporting members.

2. The combination with an automobile engine-frame having abutments at its upper portion, and automobile frame members, of truss means supporting the engine-frame on said automobile frame members and comprising upper truss members engaging the abutments on the engine-frame and extending obliquely downward therefrom and engaging at their lower ends with the said automobile frame members.

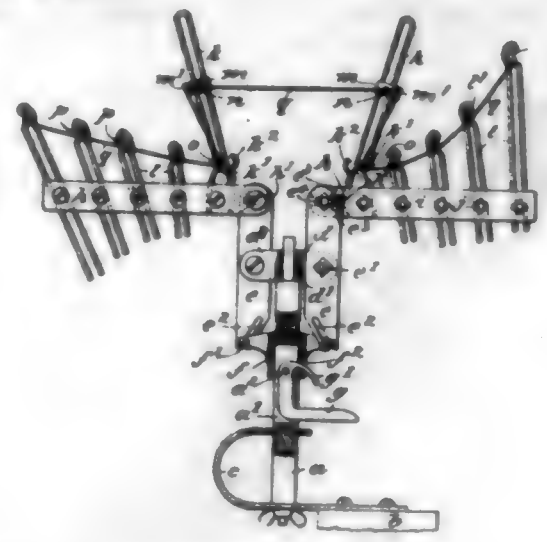
3. The combination with an automobile engine-frame having abutments at its upper portion, and automobile frame members, of truss means supporting the engine-frame on said automobile frame members and comprising upper truss members engaging the abutments on the engine-frame and extending obliquely downward therefrom and engaging at their lower ends with the said automobile frame members, and lower truss members connected to the lower end of the engine-frame and extending obliquely upward and outward therefrom and connected at their upper ends to the automobile frame members.

4. The combination with an automobile engine-frame having abutments at its upper portion and automobile frame members, of truss means supporting the engine-frame on said automobile frame members and comprising upper truss members engaging the abutments on the engine-frame and extending obliquely downward therefrom and engaging at their lower ends with the said automobile frame members, and lower truss members connected to the lower end of the engine-frame and extending obliquely upward and outward therefrom and connected at their upper ends to the automobile frame members, the connections at one end of said members being adjustable.

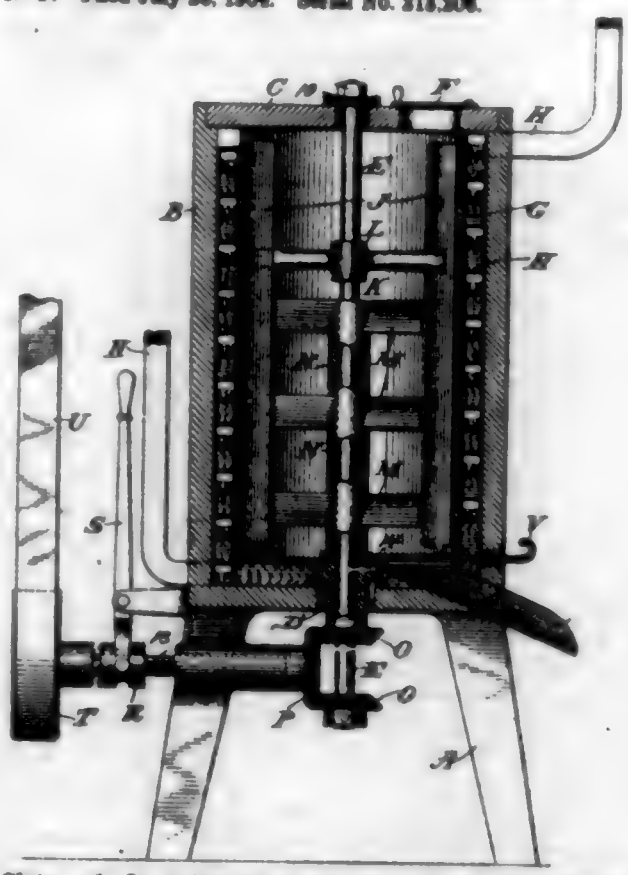
5. The combination with an automobile engine-frame having abutments at its upper portion, and automobile frame members, of truss means supporting the engine-frame on said automobile frame members and comprising upper truss members engaging the abutments on the engine-frame and extending obliquely downward therefrom and detachably engaging at their lower ends with the said automobile frame members.

814,992. **MACHINE FOR MAKING HAT-FRAMES.** WILLIAM STOLL, Ashtabula, Ohio. Filed Aug. 12, 1905. Serial No. 273,866.

Claim.—In a machine for making hat-frames, the combination of a rotatable spindle with a slide, a series of levers engaged thereby, a series of arms, means for adjustably securing the arms to the levers, crown-supports and rim-supports adjustably secured to the arms, and slides mounted on the crown-supports and rim-supports, substantially as specified.



814,993. **FREEZING DEVICE.** EMERY THOMPSON, New Rochelle, N. Y. Filed July 26, 1904. Serial No. 218,206.



Claim.—1. In a freezing apparatus, the combination with a casing, of a receptacle mounted therein, agitating mechanism situated within the receptacle, driving mechanism for said agitating mechanism located below the casing, and a discharge-conduit leading from the lower portion of the receptacle.

2. In a freezing apparatus, the combination with a casing, of a receptacle mounted therein, a rotatable sleeve extending through the bottom of the casing and receptacle and having a flange engaging the inner side of the bottom of the casing, an agitator carried by the sleeve within the receptacle, a rotatable shaft extending through and above the sleeve, an agitator carried by the shaft, a removable upper bearing for the shaft, and means below the casing for driving the sleeve and shaft.

3. In a freezing apparatus, the combination with a casing, of a receptacle mounted therein, a rotatable agitating-sleeve extending through the bottom of the casing and receptacle and reaching but a portion of the distance through said receptacle, mixing-blades carried by the sleeve, a shaft extending through the sleeve, scraper-blades secured upon the shaft above the sleeve, and driving mechanism for the sleeve and shaft located below the casing.

4. An ice-cream freezer having an outer casing, a receptacle located therein, a holder for cooling means situated between the casing and receptacle, a hollow shaft passing vertically through the

bottom of the casing and receptacle and revolubly mounted on the latter, an agitating device carried by the hollow shaft within the receptacle, a shaft extending loosely through the hollow shaft, an agitator in connection with the second-named shaft and within the receptacle, a removable bearing for the upper end of the agitator-shaft, gearing below the casing in connection with the two shafts for independently rotating the same, a discharge-chute extending through the lower part of the receptacle and casing, and a closure commanding the discharge-chute.

814,994. GIRDLE ATTACHMENT FOR SUPPORTING GARMENTS. EFFIE A. TOUSSAINT, Philadelphia, Pa. Filed Feb. 23, 1905. Serial No. 247,063.



Claim.—The combination with a girdle, of an oblong solid strip having transverse slits located adjacent to the ends thereof, a clip on the back of said strip and extending through an opening in the same, the ends of said clip being spread out onto the face of said strip, a pin with an angular end engaging said clip, and said pin extending longitudinally of said strip, and a keeper or catch struck up on the back of said strip for shielding or concealing the pointed free end of said pin, substantially as described.

814,995. WINDOW-FASTENER. JOSEPH TRAFFORD, Boston, Mass. Filed Jan. 3, 1905. Serial No. 239,261.



Claim.—1. A window-fastener comprising in its construction a plate adapted to be fastened to one of a pair of sliding window-sashes, said plate provided with a vertical slot having two parallel sides and a recess at one end thereof, a flat spring fast at one end thereof to said plate, extending longitudinally of and adjacent to said recess, and an arm pivotally supported upon the other of said sashes and adapted to project into said slot, said arm provided upon its free end with a lateral projection adapted to pass through said recess when said arm is rocked upon its pivot.

2. A window-fastener comprising in its construction a plate adapted to be fastened to one of a pair of sliding window-sashes, said plate provided with a vertical slot having two parallel sides and a recess at one end thereof and two notches 24, 24, a flat spring fast at one end thereof to said plate, extending longitudinally of and adjacent to said recess, and an arm pivotally supported upon the other of said sashes and adapted to project into said slot, said arm provided upon its free end with a lateral projection adapted to pass through said recess when said arm is rocked upon its pivot, and a lock-plate supported upon said arm and movable thereon toward and away from the pivot of said arm.

3. A window-fastener comprising in its contruction a plate adapted to be fastened to one of a pair of sliding window-sashes, said plate provided with a vertical slot having two parallel sides and a recess at one end thereof and two notches 24, 24, a flat spring fast at one end thereof to said plate, extending longitudinally of and adjacent to said recess, and an arm pivotally supported upon the other of said sashes and adapted to project into said slot, said arm provided upon its free end with a lateral projection adapted to pass through said recess when said arm is rocked upon its pivot, and a lock-plate slidable longitudinally of said arm through said notches and into and out of engagement with said slotted plate.

814,996. GAME-CARDS. CASLER WARNE, Asbury Park, N. J. Filed July 1, 1905. Serial No. 267,853.

Claim.—1. A deck of cards made up of two suits in which several cards in each suit are distinguished by a sign from the remaining cards of the suit, and other cards in the same suit which have in one place the said sign in connection with the character denoting the suit and in another place the character without the said sign.

2. A deck of cards made up of a series of suits each of which is divided, each suit having cards each of which represents the different divisions of one suit.



3. A deck of cards made up of a plurality of suits, several cards of each of said suits being in duplicate, one of each of said duplicate cards being marked with a sign, and other single cards in each suit which have the characteristic of the two duplicate cards.

4. A deck of cards in which the face-cards represent the chessmen in a game of chess, and a series of numeral-cards.

5. A deck of cards in which the face-cards represent the chessmen in a game of chess, and a series of numeral-cards in duplicate, the duplicate cards of the same suit being distinguished by a sign.

6. A deck of cards in which the face-cards correspond in number and in character with the kings, queens, bishops, knights and castles in a game of chess, and a series of numeral-cards, in duplicate, the duplicate face and numeral cards being distinguished by a sign.

7. A deck of cards in which the face-cards correspond in number and in character with the kings, queens, bishops, knights and castles in a game of chess, and a series of numeral-cards, in duplicate, the duplicate face and numeral cards being distinguished by different colors and a sign.

8. A deck of cards in which the face-cards correspond in number and in character with the kings, queens, bishops, knights and castles in a game of chess, the duplicate cards being distinguished by a difference in color and a series of numeral-cards.

9. A deck of cards in which the face-cards in two suits correspond in number and in character with the kings, queens, bishops, knights and castles in a game of chess, the duplicate cards in the same suits being distinguished by signs and a series of numeral-cards.

10. A deck of cards in two suits, in which the face-cards in each suit represent in number and in character the king, queen, bishops, knights and castles on one side of the board in a game of chess, the duplicate cards in the same suit being distinguished by signs and the king and queen of each suit having the characters of each of the duplicate cards of the same suit.

11. A deck of cards composed of forty-eight cards in which the face-cards represent in number and in character the kings, queens, bishops, knights, and castles in a game of chess, and in which the remaining thirty-two cards are numeral-cards.

814,997. HOSE-SUPPORTER. HENRY B. WEED, Williamsport, Pa. Filed Apr. 4, 1905. Serial No. 253,840.

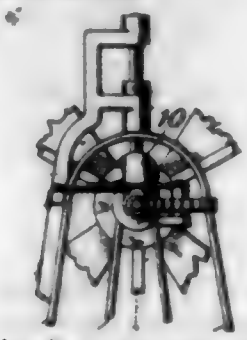


Claim.—In a garter-clasp, the body A, having a slot F, extending inward and downward, the metal on one side of said slot forming a flexible arm E, attached only at the bottom, and at the point D, the inner edge of the arm extending near to the body A, so as to close the slot at that point above the material held, so that said material cannot be inserted or withdrawn except by springing the arm laterally or sidewise at the upper end, all substantially as set forth.

814,998. POWER-FAN. GEORGE W. WEISS, New York, N. Y. Filed Dec. 8, 1904. Serial No. 235,917.

Claim.—1. In a power-fan the combination with a support, of a standard comprising oppositely-arranged legs, a bearing located between said legs and supported thereby, a fan-shaft journaled in said bearing, said shaft being arranged with its longitudinal axis extending through the space between said legs, a belt-pulley on said shaft arranged to rotate in a plane common to the legs of the standard, a

driving-pulley on the support and in the plane of the first-named pulley and a belt connecting said pulleys, the arrangement being such that the runs of the belt move in the space bounded by said legs and in a plane common to the latter whereby each leg serves as a guard for the adjacent run of the belt.



2. In a power-fan the combination with a support, of a standard thereon comprising oppositely-arranged legs, a pivoted bearing located between said legs and supported thereby, a fan-shaft journaled in said bearing, said shaft being arranged with its longitudinal axis extending through the space between said legs, a belt-pulley on said shaft located in a plane common to the legs of the standard, a driving-pulley on the support arranged to rotate in the plane of the first-named pulley, a belt connecting said pulleys, each of said legs serving as a guard for the adjacent run of the belt, and means to oscillate the bearing on its pivot.

3. In a power-fan, the combination with a support, of a standard thereon comprising oppositely-arranged legs, a bearing pivotally suspended between said legs for oscillation in a horizontal plane, a fan-shaft journaled in said bearing, said shaft being arranged with its longitudinal axis extending through the space between said legs, a belt-pulley on said shaft located in the plane common to the legs of the standard, a driving-pulley on the support arranged to rotate in the same plane as the first-named pulley, a belt connecting said pulleys, and means actuated by said fan-shaft to oscillate said bearing on its pivot.

4. In a power-fan, the combination of a standard comprising oppositely-disposed legs, a bearing-block pivotally suspended between said legs for oscillation in a horizontal plane, said block having depending projections, a fan-shaft journaled in said projections, said shaft being arranged with its longitudinal axis extending through the space between said legs, a belt-pulley on said shaft between said projections, and means to oscillate the bearing-block on its pivot.

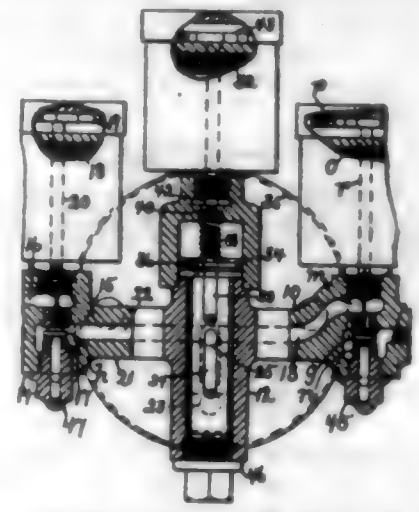
5. In a power-fan, a standard comprising oppositely-arranged legs, a bearing-block pivotally suspended between said legs, means for adjusting said block vertically, a fan-shaft journaled in said block with its longitudinal axis extending through the space between the legs, a belt-pulley on said shaft, and means to oscillate the block on its pivot.

6. In a power-fan, a standard comprising oppositely-disposed legs, a pivoted bearing-block suspended from said standard between the legs thereof, a fan-shaft journaled in said block, a fan carried at one end of said shaft and a worm carried on or adjacent the opposite end of said shaft, a belt-pulley on the shaft arranged to rotate in a plane common to the standard-legs, a gear pivoted on the bearing-block in mesh with said worm, and a link connected at one end with a stationary pivot, the opposite end of said link being eccentrically connected to said gear.

7. In a power-fan, a standard comprising oppositely-disposed legs, a pivoted bearing-block suspended from said standard between the legs thereof, a fan-shaft journaled in said block, a fan carried at one end of said shaft and a worm carried at or adjacent the opposite end of said shaft, a belt-pulley on the shaft arranged to rotate in a plane common to the standard-legs, a gear pivoted on the bearing-block in mesh with said worm, a link connected at one end with a stationary pivot, the opposite end of said link being eccentrically connected to said gear and means for adjusting the connection between the link and gear toward and away from the center of the latter.

814,999. **SYSTEM OF AUTOMATIC BRAKES.** PAUL WINSOR, Weston, Mass., assignor to Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation. Filed Mar. 22, 1905. Serial No. 251,658.

Claim.—1. In a braking system of the class described, in combination, a car, a reservoir containing fluid under pressure, a brake-cylinder carried by said car and connected with said reservoir, a valve controlling the admission of pressure from said reservoir into said brake-cylinder, a valve controlling the exhaust from said brake-cylinder, an emergency-valve controlling the admission of pressure into said brake-cylinder independently of the said admission-valve, electromagnets controlling the operation of said valves, and means for controlling the operation of said electromagnets, substantially as described.



2. In a braking system of the class described, in combination, a brake-cylinder, an admission-valve controlling the admission of pressure into said cylinder, a release-valve controlling the exhaust from said cylinder, an emergency-valve controlling the admission of pressure into said cylinder independently of said admission-valve, electromagnets controlling the operation of said valves, and means to control said electromagnets, substantially as described.

3. In a braking system of the class described, in combination, a brake-cylinder, a valve-chest connected with said brake-cylinder, a source of pressure connected with said valve-chest, a piston connected with said valve, a cylinder in which said piston reciprocates provided with an exhaust port or opening and in communication with said valve-chest to substantially balance said piston when said exhaust-port is closed, means rendered effective to move said piston in one direction when the pressures on opposite sides of said piston are substantially equal, a valve controlling the exhaust-port of said cylinder, an electromagnet to operate said valve, and means to control the operation of said electromagnet.

4. In a braking system, of the class described, in combination, a brake-cylinder provided with a port or passage, a valve-casing provided with an inlet-port and with an outlet-port, the latter communicating with the passage in said brake-cylinder, independent valve-casings provided with inlet and outlet ports, the inlet-port of one valve-casing and the outlet-port of the other valve-casing being connected with the valve-casing connected with said brake-cylinder, valves in said independent valve-casings, electromagnets for controlling the operation of said valves, and means to control said electromagnets, substantially as described.

5. In a braking system of the class described, in combination, a brake-cylinder provided with a fluid-inlet port, a valve-casing provided with a fluid-outlet port communicating with the fluid-inlet port of said brake-cylinder, and having a fluid-inlet port connected with the source of fluid-pressure, said source of fluid-pressure, a second valve-casing provided with an inlet-port connected with the source of fluid-pressure and having an outlet-port connected with the first-mentioned valve-casing, a valve in said second-mentioned casing controlling the passage of fluid through it, a valve in said first-mentioned casing controlling the passage of fluid from the second-mentioned casing to said brake-cylinder, a third valve-casing having an inlet port connected with said first-mentioned valve-casing and provided with an outlet-port, a valve controlling the passage through said third-mentioned casing, electromagnets controlling the operation of said valves, and means for controlling the operation of said electromagnets.

6. In a braking system of the class described, in combination, a brake-cylinder provided with a fluid-inlet port, a valve-casing provided with a fluid-outlet port communicating with the fluid-inlet port of said brake-cylinder, and having a fluid-inlet port connected with the source of fluid-pressure, said source of fluid-pressure, a second valve-casing provided with an inlet-port connected with the source of fluid-pressure and having an outlet-port connected with the first-mentioned valve-casing, a valve in said second-mentioned casing controlling the passage of fluid through it, a valve in said first-mentioned casing controlling the passage of fluid from the second-mentioned casing to said brake-cylinder, a third valve-casing having an inlet-port connected with said first-mentioned valve-casing and provided with an outlet-port, a valve controlling the passage through

said third-mentioned casing, and means to operate said valves, substantially as described.

7. In a braking system of the class described, in combination, a brake-cylinder, an admission-valve controlling the admission of pressure into said cylinder, a release-valve controlling the exhaust from said cylinder, an emergency-valve controlling the passage of fluid from said admission-valve into said brake-cylinder and the exhaust from said brake-cylinder to the release-valve, and controlling also the admission of fluid into said brake-cylinder independently of said admission-valve, electromagnets governing the operation of said valves, and means for controlling the operation of said electromagnets, substantially as described.

8. In a braking system of the class described, in combination, a brake-cylinder, a valve-casing provided with an outlet-port communicating with said brake-cylinder and having two independent inlet-ports, a valve in said casing connecting one of said inlet-ports with said outlet-port and disconnecting the other of said inlet-ports from said outlet-port when the valve is in one position, and disconnecting the first-mentioned inlet-port from and connecting the second inlet-port with said outlet-part when the valve is in another position, an electromagnet governing the operation of said valve, and means to control said electromagnet, substantially as described.

9. In a braking system of the class described, in combination, a brake-cylinder, a valve-casing provided with an outlet-port communicating with said brake-cylinder and having two independent inlet-ports, a valve in said casing connecting one of said inlet-ports with said outlet-port and disconnecting the other of said inlet-ports from said outlet-port when the valve is in one position, and disconnecting the first-mentioned inlet-port from and connecting the second inlet-port with said outlet-port when the valve is in another position, a valve-casing provided with an outlet-port communicating with the atmosphere, and having an inlet-port communicating with an inlet-port of the first-mentioned valve-casing, a valve in said second casing, electromagnets governing the operation of said valves, and means to control said electromagnets.

10. In a braking system of the class described, in combination, a brake-cylinder, an electrically-operated fluid-admission valve for said cylinder, an electrically-operated release-valve for said cylinder, an electrically-operated emergency-valve governing the communication of said admission and release valves with said brake-cylinder and also governing the admission of fluid into said brake-cylinder independently of said admission-valve, and means to control the operation of said valves, substantially as described.

11. In a braking system of the class described, in combination, a brake-cylinder, an admission-valve controlling the admission of pressure into said cylinder, a release-valve controlling the exhaust from said cylinder, an emergency-valve controlling the admission of pressure into said cylinder, electromagnets for operating said valves, an electric circuit for each of said valves comprising service, release and emergency train-line wires to which the admission, release and emergency magnets are connected, a circuit-controller comprising a movable member connected with the emergency train-line wire, contact-terminals connected with said service and release train-line wires, a battery-terminal, and a ground-terminal, substantially as described.

12. In a braking system of the class described, in combination, a brake-cylinder, an admission-valve for said brake-cylinder, an exhaust or release valve for said cylinder, and an electrically-operated valve interposed between said admission and release valves and said cylinder and governing the communication between said valves and said brake-cylinder, substantially as described.

13. In a braking system of the class described, in combination, a brake-cylinder, a valve controlling the supply of pressure to said brake-cylinder, and an electrically-controlled valve interposed between said supply-valve and said brake-cylinder and in one position placing the admission of fluid-pressure into said brake-cylinder under the control of the first-mentioned valve and in another position effecting the admission of fluid-pressure into said brake-cylinder independent of the said first-mentioned valve, substantially as described.

14. In a braking system of the class described, in combination, a brake-cylinder, a valve-controlling communication with said brake-cylinder, and an electrically-controlled valve interposed between the first-mentioned valve and the said brake-cylinder and in one position placing communication with said brake-cylinder under control of the first-mentioned valve and in another position taking the control of said communication from the first-mentioned valve and effecting the admission of pressure into said brake-cylinder, substantially as described.

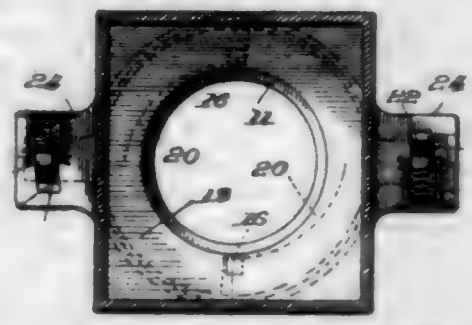
15. In a braking system of the class described, in combination, a brake-cylinder, a release-valve controlling the exhaust from said cylinder, an emergency-valve controlling the exhaust from the brake-cylinder to the release-valve and controlling also the admission of fluid into said brake-cylinder, electromagnets governing the operation of said valves, and means for controlling the operation of said electromagnets.

16. In a braking system of the class described, in combination, a source of fluid-pressure, a brake-cylinder, a valve-casing connected with the source of supply and with said brake-cylinder, a valve in said casing controlling the connection of the source of supply with said brake-cylinder, a release-valve communicating with said brake-cylinder through said valve-casing and controlled by the valve in said casing, an electromagnet governing the operation of the valve in said casing, and means for operating said electromagnet, substantially as described.

17. In a braking system of the class described, in combination, a brake-cylinder, a valve controlling communication with said brake-cylinder, an electromagnet controlling the operation of said valve, an electric circuit in which said magnet is included, a source of current included in said electric circuit, a circuit-controller coöperating with said circuit to govern the operation of said electromagnet, and means coöperating with said electric circuit to short-circuit said electromagnet and thereby prevent its operation, substantially as described.

18. In a braking system of the class described, in combination, a train-line, a plurality of electromagnets connected with said train-line, a circuit-controller connected with said train-line and governing the operation of said electromagnets, a plurality of brake-cylinders, a plurality of valves controlling communication with said brake-cylinders, and means coöperating with said electric circuit to short-circuit said electromagnets and prevent their operation, substantially as described.

815,000. DUST-GUARD. GEORGE A. WOODMAN, Chicago, Ill. Filed Mar. 9, 1905. Serial No. 249,198.



Claim.—1. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, and means having a constant tendency to rotate relative to the ring and concentric therewith for tightening the ring on the journal.

2. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, and spring-actuated means rotatable relative to the ring and concentric therewith to draw the ends thereof toward each other and exert a constantly-tightening action of the ring on the journal.

3. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, and spring-actuated means rotatable relative to the ring and concentric therewith for clamping the ring with a constantly-tightening action against the back end of the box.

4. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, and means having a constant tendency to rotate relative to the ring and concentric with the ring for simultaneously tightening the ring on the journal and clamping the ring against the back end of the box.

5. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, and means having a constant tendency to rotate relative to the ring for simultaneously tightening the ring on the journal and clamping the ring against the back end of the box.

6. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, a clamping member rotatable relative to the ring for tightening the ring on the journal and clamping the ring against the back end of the box, and means operating on the clamping member for continuously imparting a rotatory movement thereto to thereby exert a constant tightening and clamping action on the ring.

7. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being an eccentric bearing on said ring, and a clamping member rotatable relative to the ring, there be-

ing a part on said member arranged to operate in said bearing to clamp the ring on the journal and against the back end of the box.

8. A dust-guard for car journal-boxes comprising a packing-ring to encircle the journal, there being a depression in said ring gradually increasing in depth from one end to the other, and a clamping member rotatable relative to the ring, there being a stud on said clamping member arranged to operate on the bottom of said depression to clamp the ring against the back end of the box.

9. A dust-guard for car journal-boxes comprising a packing-ring to encircle the journal, there being oppositely-disposed depressions in one side of said ring each gradually increasing in depth from one end to the other, and a clamping member rotatable relative to the ring, there being studs on said clamping member arranged to operate on the bottom of said depressions to clamp the ring against the back end of the box.

10. A dust-guard for car journal-boxes comprising a packing-ring to encircle the journal, there being a depression in said ring gradually increasing in depth from one end to the other, a clamping member rotatable relative to the ring, there being a stud on said clamping member arranged to operate on the bottom of said depression, and means acting on the clamping member to impart thereto a constant tendency to rotate and thereby clamp the ring against the back of the box.

11. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being a wall on said ring eccentric to the center of the ring, and a clamping member rotatable relative to the ring, there being a stud on the clamping member arranged to operate against said wall to tighten the ring on the journal.

12. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being oppositely-disposed walls on one side of said ring each eccentric to the center of the ring, and a clamping member rotatable relative to the ring, there being studs on the clamping member arranged to operate against said eccentric walls to tighten the ring on the journal.

13. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being a wall on said ring eccentric to the center of the ring, a clamping member rotatable relative to the ring, there being a stud on said member arranged to operate against said eccentric wall, and means constantly acting on the clamping member to impart thereto a tendency to rotate and thereby tighten the ring on the journal.

14. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being oppositely-disposed eccentric bearings on said ring, and a clamping member rotatable relative to the ring, there being oppositely-disposed studs on the clamping member arranged to operate in said bearings to simultaneously clamp the ring in place on the journal and against the back end of the box.

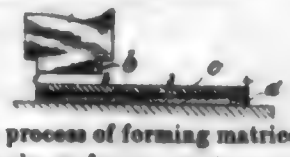
15. A dust-guard for car journal-boxes comprising a divided ring, there being bearings on one side of said ring formed by depressions in the ring each deeper at one end than at the other and each provided with an inner wall eccentric to the center of the ring, and a clamping member rotatable relative to the ring, there being studs on the clamping member arranged to operate against the bottom and inner wall of the bearings to simultaneously clamp the ring in place on the journal and against the back end of the box.

16. A dust-guard for car journal-boxes comprising a divided ring, there being bearings on one side of said ring formed by depressions in the ring, each deeper at one end than at the other end and each provided with an inner wall eccentric to the center of the ring, a clamping member rotatable relative to the ring, there being studs on the clamping member arranged to operate against the bottom and inner wall of the bearings, and means constantly acting on the clamping member to impart thereto a tendency to rotate and clamp the ring on the journal and against the back end of the box.

17. A dust-guard for car journal-boxes comprising a ring to encircle the journal, there being eccentric bearings on said ring, a clamping member rotatable relative to the ring, there being studs on the clamping member to operate on said bearings, and outwardly-projecting ears on said clamping member, and springs operating on said ears to impart to the clamping member a constant tendency to rotate.

18. A dust-guard for car journal-boxes comprising a divided ring to encircle the journal, there being eccentric bearings on said ring, a clamping member rotatable relative to the ring, there being studs on said clamping member to operate on said bearings, and outwardly-projecting ears on the clamping member, springs operating on said ears to impart to the clamping member a constant tendency to rotate, and means for preventing backward movement of the clamping member on the journal.

815,001. PROCESS OF MAKING MATRICES. Eugen Albert, Munich, Germany, assignor to Ferdinand Wessel, New York, N. Y. Filed Apr. 28, 1905. Serial No. 257,255.



Claim.—1. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in placing the matrix-plate and form together, advancing the matrix-plate and form between the pressing-surfaces by an intermittent movement, and compressing a portion of the plate between the successive movements thereof.

2. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in placing the matrix-plate upon the form, advancing the matrix-plate and form between the pressing-surfaces by an intermittent movement, and compressing different portions of the plate each time the plate comes to rest between the successive movements thereof.

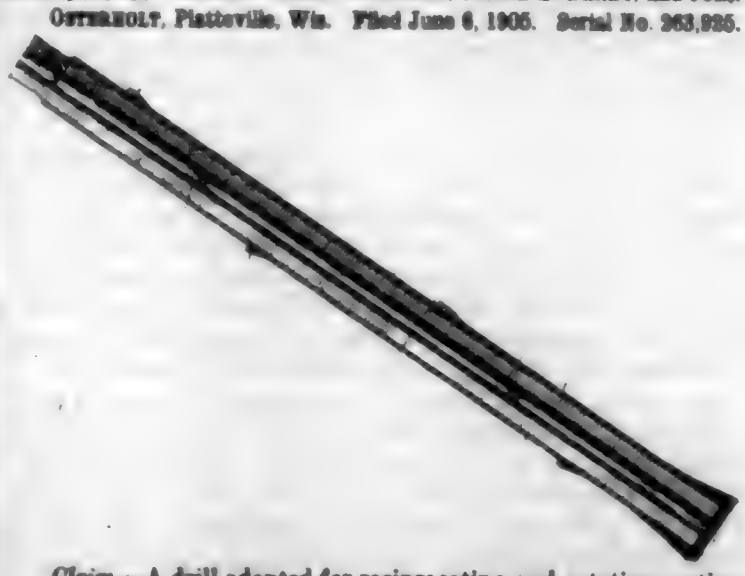
3. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in placing the matrix-plate upon the form, compressing a portion of the matrix-plate while stationary, then moving said plate and form relatively to the pressing-surface in order to bring another portion of said plate within range of the pressing-surface, stopping the plate and form and compressing said other portion of the plate.

4. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in compressing a portion of the matrix-plate by a main pressure and applying a supplemental pressure to said plate adjacent to the portion subjected to the main pressure to offset the lateral yielding of said plate.

5. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in compressing a portion of the matrix-plate by a main pressure, applying a supplemental pressure to said plate adjacent to the portion subjected to the main pressure to offset the lateral yielding of said plate, moving said plate relatively to the pressing-surface in order to bring another portion of said plate within range of the pressing-surface, and applying a main pressure and a supplemental pressure to another portion of the plate as before and so on until said plate has received the complete impression.

6. The process of forming matrices or molds for use in copying printing blocks or forms, autotypes, wood blocks and the like, which process consists in employing a yielding layer between the pressing-surface and the matrix-plate, pressing a portion of the matrix-plate by a main pressure, and applying a supplemental pressure to said plate adjacent to the portion subjected to the main pressure to offset the lateral yielding of said plate.

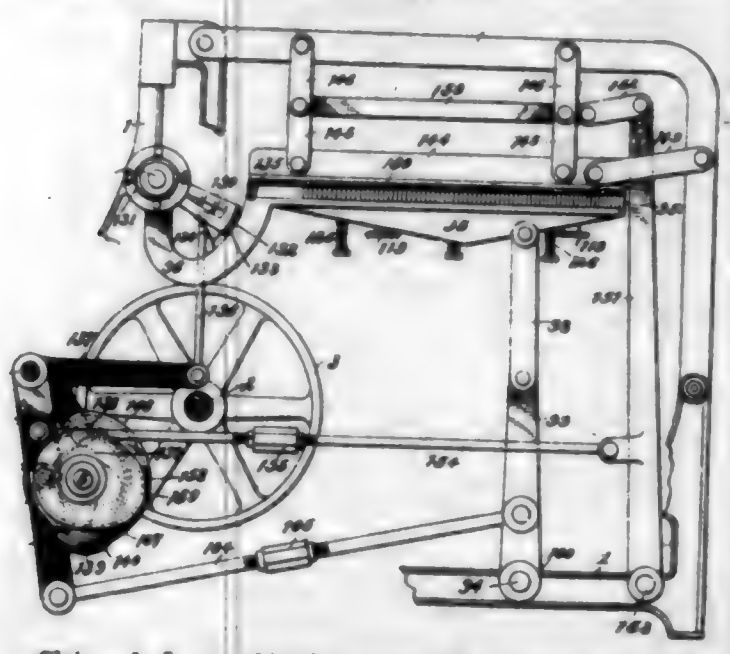
815,002. DRILL. Lewis W. Baney, Frank E. Baney, and John Ostrholt, Platteville, Wis. Filed June 6, 1905. Serial No. 263,925.



Claim.—A drill adapted for reciprocating and rotating motion and having a series of ribs extending longitudinally parallel to each other and laterally at an angle to each other and flaring outwardly at

their lower ends and provided at said ends with cutting edges, the said ribs being provided on their outer edges with a series of lugs arranged spirally and each lug having its upper side inclined to the direction of length of its respective rib and sloping from said upper edge inwardly to merge at its lower end with the outer edge of the rib, all substantially as described, whereby upon the outward movement of the drill, the said lug will tend to move the waste or detritus outwardly and will not retard the inward movement of the drill, the lugs forming no projection laterally beyond the side faces of their respective rib, all substantially as and for the purpose set forth.

815,008. MACHINE FOR SECURING FLIES TO BOXES. JAMES P. BIRD, Worcester, Mass. Filed July 6, 1900. Serial No. 22,960.



Claim.—1. In a machine for securing flies to boxes, employing a continuous strip of paper, means for gumming the paper, means for feeding the paper onto the box-receiving table, an intermittently-actuated paper-cutting knife, an oscillating box-receiving table, an intermittently-actuated presser-bar, means for actuating the paper-feeding mechanism, means for operating the paper-cutting knife, and means for moving the box-receiving table and the presser-bar toward and from each other.

2. In a machine, for securing flies to boxes, glue-distributing mechanism, intermittently-actuated paper-feeding mechanism, an intermittently-actuated paper-cutting knife, a movable box-receiving table, an intermittently-actuated presser-bar and means for moving the table and presser-bar toward and away from each other.

3. In a machine for securing flies to boxes, the combination of a frame a pivotally-supported box-receiving table, a presser-bar, a rock-shaft journaled in the frame, toggle-links connecting said table to the rock-shaft, a driving-shaft, an auxiliary shaft driven thereby, a cam on said auxiliary shaft, and suitable means connecting said cam to the toggle-links whereby the rotary action of the cam will operate the toggle-links to raise and lower the table for the purposes described.

4. In a machine for securing flies to boxes, the combination of a frame, a presser-bar, a pivotally-supported box-receiving table, toggle-links connected to the table, a rock-shaft journaled in the frame, a driving-shaft, an auxiliary shaft driven thereby, a cam on said auxiliary shaft, a cam-lever pivoted to the machine-frame and operated by said cam and a rod connecting the toggle-links and the cam-lever whereby the rotary action of the cam causes the toggle-links to intermittently raise and lower the table for the purposes described.

5. In a machine for securing flies to boxes, the combination of a frame, a presser-bar, a pivotally-supported box-receiving table, a fly-holding plate carried by the table, means connected with the plate to hold and release the fly when the table is raised and lowered, the driving-shaft, an auxiliary shaft driven thereby, toggle-links connected to the table, a rock-shaft journaled in the frame of the machine, a grooved-face cam on the auxiliary shaft, a cam-lever journaled to the side frame, and carrying a roller that travels in the groove in the cam and an adjustable rod connecting the toggle-links with the cam-lever whereby the table is raised and lowered during each revolution of the cam, for the purposes described.

6. In a machine for securing flies to boxes, the combination of a movable box-receiving table, a movable presser-bar, means for moving the table and presser-bar toward and from each other, a fly-holding plate carried by the table, the plate adapted to hold the ungummed portion of the fly when the table is raised and release it when the table is lowered, a key-bar supported on the table, a series of sliding blocks mounted on the key-bar and means for lowering and raising said key-bar to clamp and release the sliding blocks.

7. In a machine for securing flies to boxes, the combination of a pivotally-supported box-receiving table, a presser-bar, means for moving the table and presser-bar toward and from each other, a fly-holding plate, pins carried by the plate and received in holes in the table, resilient means carried by the pins for drawing the plate down upon the fly when the table is traveling toward one limit of its movement and means for lifting the fly-holding plate when the table is traveling toward its opposite limit of movement.

8. In a machine for securing flies to boxes, the combination of a feed-roll shaft a knife-bracket pivotally supported on the feed-roll shaft and having a knife adjustably attached thereto, an opposing shear-block, the driving-shaft, an auxiliary shaft driven thereby, a grooved-face cam secured to the auxiliary shaft, a side frame, a bell-crank lever journaled to the side frame and carrying a roller that travels in the groove in the cam, and a connecting-rod having its respective ends pivoted to the knife-bracket and the bell-crank lever, said parts operating to intermittently lower and raise the knife-bracket during each revolution of the cam for the purposes described.

9. In a machine for securing flies to boxes, the combination of a feed-roll shaft a knife-bracket pivotally supported on the feed-roll shaft and having a knife adjustably attached thereto, an opposing shear-block a plate fastened to the bracket for supporting the end of the paper after the knife has descended, the driving-shaft the auxiliary shaft, the cam, the bell-crank lever and the connecting-rod operating to lower and raise the knife for the purposes described.

10. In a machine for securing flies to boxes, the combination of a frame, an operating-lever pivoted to the frame, toggle-links connected to the operating-lever, a presser-bar pivotally connected with the frame by means of the toggle-links, a table adapted to coöperate with the presser-bar, the driving-shaft, the auxiliary shaft driven thereby, a grooved-face cam on said auxiliary shaft, a cam-lever journaled to the side frame and carrying a roller that travels in a groove in the cam and an adjustable connecting-rod having its respective ends connected to the cam-lever and the operating-lever, whereby the presser-bar will be intermittently lowered and raised during each revolution of the cam for the purposes described.

11. In a machine for securing flies to boxes, the combination of a driving-shaft, an auxiliary shaft driven thereby, a gear on said auxiliary shaft, a rack-bar operated by the gear and adapted to engage a pinion on the feed-roll shaft, the feed-roll and supporting-shaft carrying the rack-engaging pinion feed-wheels and a pawl and ratchet operatively connected to the pinion and feed-roll shaft for intermittently feeding the paper for the purposes described.

12. In a machine for securing flies to boxes, the combination of a driving-shaft, an auxiliary shaft driven thereby, said auxiliary shaft having a gear thereon a pinion secured to the driving-shaft meshing with and driving the gear on the auxiliary shaft, a rack-bar adjustably attached to said gear, a rack-bar guide pivotally supported on the bearings of the feed-roll shaft, the feed-roll shaft having a pinion loosely mounted thereon and engaging the rack-bar, a feed-roll on said shaft, feed-wheels a pawl-carrying disk mounted on and secured to the rack-bar pinion, a friction-disk carried on the feed-roll shaft, a ratchet-wheel secured to the feed-roll shaft, the pawl on the pawl-carrying disk engaging the ratchet-wheel a pin on the periphery of the friction-disk engaging the pawl to throw it in and out of engagement with the ratchet-wheel and a spring forcing the friction-disk in contact with the ratchet-wheel for the purposes described.

13. In a machine for securing flies to boxes, the combination of a driving-shaft an auxiliary shaft driven thereby, a rotatably-supported feed-roll shaft, a feed-roll thereon, a gear on the auxiliary shaft, a rack-bar operated by the gear, a pinion and a pawl-carrying disk on the feed-roll shaft, the pinion and pawl-carrying disk being operatively connected, a pawl on the disk, a ratchet-wheel secured to the feed-roll shaft and engaged by the pawl, and a plurality of adjustable feed-wheels held in contact with the feed-roll.

14. In a machine for securing flies to boxes the combination of the machine-frames, the feed-roll, a slotted bar secured thereto over the feed-roll, a plurality of feed-wheels supported on studs sleeves in which the studs are adjustably held and guided said sleeves secured to the slotted bar and held in frictional contact with the feed-roll by springs in the sleeves for the purposes described.

15. The combination in a fly-pasting machine, with a suitably-driven shaft, and a wheel carried thereby, of a slotted block secured to the wheel, a headed stud, the head of which is received in the slot,

means in the slot and engaging the head of the stud for adjusting the latter longitudinally of the slot, a rack-bar one end of which is journaled on the projecting portion of the stud, a suitably-supported feed-roll and means engaged by the rack-bar for communicating motion to the feed-roll.

16. The combination in a fly-pasting machine, with a feed-roll, of a swinging box-supporting table located in advance of the feed-roll whereby a space is left between the feed-roll and the table, a swinging paper-cutting means operating in the space, and a paper-supporting means carried by the paper-cutting means for bridging the space between the feed-roll.

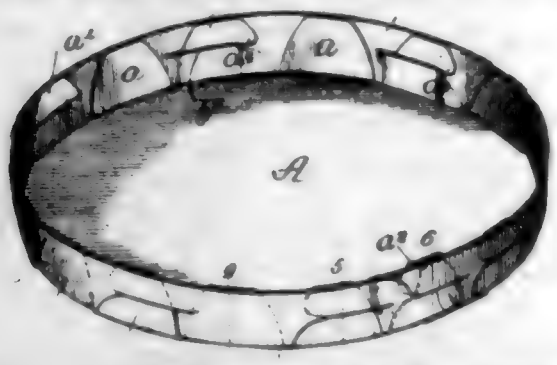
17. The combination in a fly-pasting machine with a feed-roll, of a swinging table spaced apart from the feed-roll, a knife carried by that edge of the table nearest the feed-roll, a swinging paper-cutting knife operating in the space between the feed-roll and table and in conjunction with the knife carried by the table and a paper-supporting means carried by the swinging knife and bridging the space between the feed-roll and the table.

18. The combination in a fly-pasting machine, of a pivotally-supported swing-box-supporting table, a paper-feeding mechanism for feeding a fly onto the table, a paper-cutting mechanism and means for swinging the paper-cutting mechanism and the table simultaneously in opposite directions to effect a cutting of the paper and to bring the box-carrying table into operative position.

19. The combination in a fly-pasting machine, of a box-supporting table, a key-bar supported on the table, a series of blocks slidably mounted on the bar and means for locking and releasing the blocks relative to the key-bar and table.

20. The combination in a fly-pasting machine, of a movable box-supporting table, a fly-holding plate carried by the table and normally tending to lie thereupon and projecting means carried by the plate adapted to engage a stationary portion of the machine during the movement of the table to raise the plate away from the table.

815,004. PAPER TRAY. HOWARD J. BROWN, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Apr. 22, 1904. Serial No. 204,456.



Claim.—1. A tray comprising a flat bottom provided with marginal flaps that are folded upwardly therefrom, some of said flaps being provided with tongues which extend laterally at one side thereof, and a rim consisting of a strip the ends of which are interlocked with each other, said strip being provided with longitudinal slits longer than the width of the flaps and adapted to receive the tongued flaps and to be engaged with the tongues thereof by endwise movement of the rim with respect to the flaps on the bottom, said strip being laced between the flaps with the flaps of unlike sets against the opposite faces of the rim.

2. A tray comprising a flat bottom provided with marginal flaps folded upwardly therefrom, the alternate flaps being provided with tongues extending laterally therefrom and a strip forming a rim and provided with longitudinal slits longer than the width of the tongued flaps and adapted to receive said tongued flaps and to be interlocked therewith by endwise movement of said strip relatively to the flaps, said strip being laced between the flaps with the flaps of unlike sets against the opposite faces of the rim.

815,005. ARTIFICIAL FLOWER AND METHOD FOR MAKING THE SAME. ESTELLA CASE, New York, N. Y. Filed Dec. 3, 1902. Serial No. 133,695. (Specimens.)

Claim.—1. The method for producing an artificial flower, &c., consisting in cutting a blank into suitable shape leaving raw edges; finishing the edges of said blank with an overstitch; retaining by said stitch a gathering-cord; and gathering or manipulating the entire blank by said cord into a definite form.

2. The method for producing an artificial flower, &c., comprising cutting a blank into suitable shape leaving raw edges; attaching a cord to such blank along its periphery; and drawing said cord across the body of said blank, thus gathering the material of the blank in imitation of natural markings.



3. The method for producing an artificial flower, &c., comprising cutting a plurality of blanks into forms suitable for the elementary parts of the desired article; finishing the cut edges of said blanks; gathering the blanks separately in a manner to simulate the forms of such elementary parts, and joining and arranging the several blanks thus formed to produce said article.

4. The method for producing a fabric, consisting in forming a blank of suitable material and shape; finishing the edges of said blank and permanently attaching to such blank a cord by which the same may be gathered, crimped, or puckered; gathering or manipulating the blank to produce the desired effect; and suitably connecting a plurality of such products into the predetermined form or fabric.

5. The method for producing an artificial flower, &c., comprising shaping a plurality of pieces of material by cutting, thus also producing raw edges; connecting said pieces by a joining-seam to form a composite blank; and securing a gathering-cord to the product, whereby the blank may be manipulated to produce the desired natural effects in the article.

6. As an article of manufacture, artificial flowers, leaves, &c., comprising a blank consisting of a plurality of parts cut into suitable shape leaving raw edges; means for finishing the raw edges of the parts, said parts being combined and connected to produce the desired natural effect; and means loosely secured to said blank by which the same may be manipulated into and retained in various forms along the edges and in the body thereof to produce the predetermined form or article.

7. As an article of manufacture, artificial flowers, leaves, &c., comprising a blank consisting of a plurality of elementary parts cut into suitable shape leaving raw edges; means for finishing the raw edges of the parts, said parts being of contrasting colors and combined and connected to produce the desired natural effect; and means loosely secured to said blank by which the same may be manipulated into and retained in various forms along the edges and in the body thereof to produce the predetermined form or article.

8. As an article of manufacture, artificial flowers, leaves, &c., comprising a blank cut into suitable form leaving raw edges; means loosely secured to said blank by which the same may be manipulated and retained in various forms along its edges and in the body thereof; and an overstitch applied to said blank for finishing its raw edges.

9. As an article of manufacture, an artificial flower, &c., comprising a blank consisting of a plurality of elementary parts cut to form raw edges, said parts being connected edge to edge to form the blank, and each of said parts having its raw edges finished, and said blank being provided with a permanently-attached gathering-cord by which it may be held in shape.

10. As an article of manufacture, an artificial flower, &c., comprising a plurality of parts each of which is cut to have an elemen-

tary shape suitable for making the desired article, said parts being grouped to have the definite form of the desired article, and each of said parts having a permanently-attached cord for retaining its elementary shape.

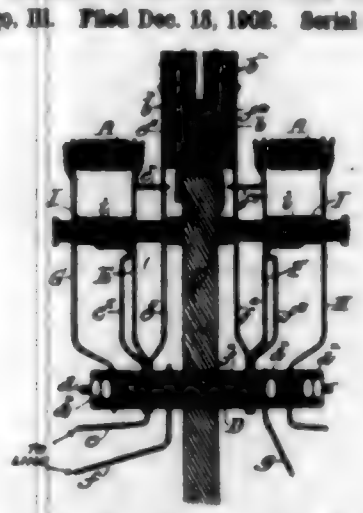
11. As an article of manufacture, an artificial flower, &c., comprising a blank consisting of a plurality of elementary parts, said parts being joined edge to edge by stitching, and a gathering-cord attached to said blank and permanently held thereto by stitching.

12. An artificial flower, fruit or leaf, consisting of one or more parts cut from textile fabric, the said parts each having its edges finished by overstitching, and a gathering-cord inclosed in the stitching, said cord being drawn to form the parts into the desired shape and secured to retain said shape.

13. As an article of manufacture, a blank for artificial flowers, &c., cut to the shape resembling an elementary part of a flower, &c., and to form raw edges, said blank being provided with a gathering-cord attached thereto by a finishing-stitch applied to the raw edges, the disposition of the cord being such that the blank may be drawn by said cord into a shape resembling an elementary part of a flower, &c.

14. As an article of manufacture, artificial flowers, leaves, &c., comprising a plurality of blanks of suitable material and shape; means attached to said blanks by which the same may be manipulated into and retained in various forms along the edges and in the body thereof; said blanks being of contrasting colors and combined and connected to produce a predetermined form or effect.

815,006. THERMAL PROTECTOR AND ALARM. FRANK B. COOK, Chicago, Ill. Filed Dec. 18, 1902. Serial No. 135,677.



Claim.—1. A protector, comprising a flat metal plate, heat-coil devices mounted at each side of said plate, carbon lightning-arresters mounted along the edge of said plate, and a local alarm-circuit having a plurality of normally open switch-points in series adapted to be closed by the operation of any one of said heat-coil devices, said metal plate forming part of said local alarm-circuit and each heat-coil device having a line-spring adapted when released to constitute part of the alarm-circuit.

2. A protector, comprising a flat metal plate, heat-coil devices suitably mounted at each side of said plate, carbon lightning-arresters mounted along the edge of said plate, a conductor connecting said plate with ground, and a local alarm-circuit having a plurality of normally open switch-points in series adapted to be closed by the operation of any one of said heat-coil devices, said plate serving as part of both the alarm-circuit and the connection to ground, and the ground-circuit including one of said switch-points and each heat-coil device having a line-spring adapted when released to constitute part of the alarm-circuit.

3. A protector, comprising a metal support, heat-coil devices suitably mounted on said support, and a local alarm-circuit having a plurality of normally open switch-points in series adapted to be closed by the operation of any one of said heat-coil devices, said metal support serving as a part of said local alarm-circuit and each heat-coil device having a line-spring adapted when released to constitute part of the alarm-circuit.

4. A protector, comprising a flat metal plate, rods of insulation inserted through said plate, line and switchboard springs mounted on said rods, heat-coil devices removably applied to the ends of said springs, and a local alarm-circuit having a plurality of normally open switch-points in series adapted to be closed by the operation of any one of said heat-coil devices, said metal plate, and also each of said line-springs, being adapted to form part of said local alarm-circuit and each heat-coil device having a line-spring adapted when released to constitute part of the alarm-circuit.

5. A protector, comprising a metal support, line and switchboard springs mounted on said support and insulated therefrom, heat-coil devices removably applied to the ends of said springs, and a local alarm-circuit having a plurality of normally open switch-points in series adapted to be closed by the operation of any one of said heat-coil devices, said metal support, and also each of said line-springs being adapted to serve as a part of said local alarm-circuit.

6. A protector, comprising a flat metal plate, line and switchboard springs mounted upon said plate and insulated therefrom, a single metallic contact-rod mounted at each side of said plate and insulated therefrom, auxiliary line-springs normally held out of contact with said metallic rods, heat-coil devices removably applied to the ends of said line and switchboard springs, and a local alarm-circuit adapted to be closed by the operation of any one of said heat-coil devices, the said metallic contact-rods, and also the said line and auxiliary springs being adapted to serve as a part of said local alarm-circuit.

7. A protector, comprising a flat metal plate, line and switchboard springs mounted upon said plate and insulated therefrom, metallic contact-rods mounted upon the said plate and also insulated therefrom, auxiliary line-springs normally held away from said metallic contact-rods, heat-coil devices removably applied to the ends of said line and switchboard springs, and a local alarm-circuit adapted to be closed by the operation of any one of said heat-coil devices, said metal plate and also said line and auxiliary springs and metallic contact-rods being adapted to serve as a part of said local alarm-circuit.

8. A protector, comprising a flat metal plate, line and switchboard springs mounted upon said plate and insulated therefrom, two auxiliary line-springs associated with each line-spring and electrically connected with the latter, carbon lightning-arresters normally held in place on said metal plate by certain of said auxiliary line-springs, metallic contact-rods normally out of contact with the other of said auxiliary line-springs, heat-coil devices removably applied to the ends of said line and switchboard springs, a conductor connecting the said metal plate with ground, and a local alarm-circuit adapted to be closed by the operation of any one of said heat-coil devices, said local alarm-circuit including said metal plate, and each of the said auxiliary line-springs which are held normally away from said contact-rods being adapted to serve as part of said local alarm-circuit.

9. In a protector, a heat-coil device, comprising the heads c and c', the mass of insulation c^5, the tubular stem c^2 having one end buried in this mass of insulation, the inner stem c^3 electrically connected with the head c' and inserted in the said tubular stem, the solder c^4 for uniting said stems, and the heating-coil c^6 wrapped around said stems, the solder and heating-coil being connected in series.

10. In a device of the character described, the combination of a metallic support, an inner line-spring and an outer switchboard-spring suitably mounted on said support, a heat-coil device removably applied to the ends of said springs, a normally open ground-circuit including said support and inner spring, and a normally open alarm-circuit including said support and inner line-spring.

11. In a device of the character described, the combination of a metallic support, an inner line-spring and an outer switchboard-spring suitably mounted on said support, a heat-coil device removably applied to the ends of said springs, a normally open ground-circuit including said support and one of said springs, and a normally open alarm-circuit including said support and said inner line-spring.

12. In a device of the character described, the combination of a metallic support, an inner line-spring and an outer switchboard-spring suitably mounted on said support, a heat-coil device removably applied to the ends of said springs, a normally open ground-circuit including said support and one of said springs, and an alarm-circuit normally open at two points and including said support and line-spring.

13. In a device of the character described, the combination of a metallic support, line and switchboard springs suitably mounted on said support, a heat-coil device suitably applied to said springs, and an alarm-circuit normally open at a plurality of points and including said support and line-spring.

14. In a device of the character described, the combination of a metallic support, an electrothermal cut-out suitably mounted on said support, said cut-out including a line-spring, and an alarm-circuit normally open at a plurality of points and including said support and line-spring.

15. A thermal protector and alarm apparatus, comprising a metal support, line and switchboard springs mounted in pairs at

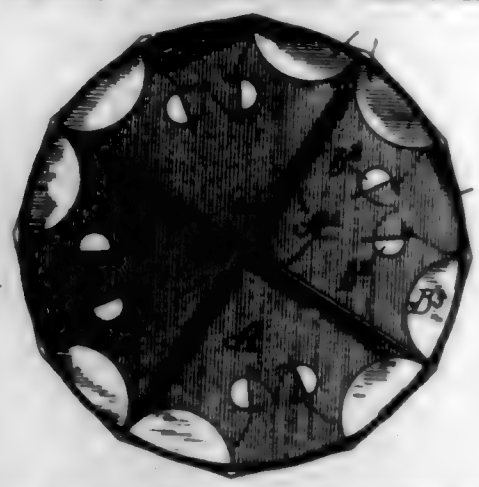
each side of said support, suitable heat-coil devices applied to the ends of said pairs of springs, line-terminals connected with the line-springs and all mounted at one side of said support, switchboard-terminals connected with the switchboard-springs and all mounted at the other side of said support, a normally open ground-circuit including said support, each line-spring when released being adapted to constitute part of said ground-circuit, and a normally open alarm-circuit, each line-spring when released being also adapted to constitute part of the alarm-circuit.

16. A thermal protector and alarm apparatus, comprising a metal support, line and switchboard springs suitably mounted on said support, suitable heat-coil devices applied to said springs to normally hold them under tension, a normally open ground-circuit including said support, each line-spring when released being adapted to constitute part of said ground-circuit, and an alarm-circuit normally open at two points, each line-spring when released being adapted to also constitute part of said alarm-circuit.

17. A thermal protector and alarm apparatus, comprising a metal support, line and switchboard springs mounted on said support, suitable heat-coil devices applied to the said springs to normally hold the same under tension, a normally open ground-circuit including said support, each line-spring when released being adapted to constitute part of the said ground-circuit, and an alarm-circuit normally open at two points and including said support, each line-spring when released being also adapted to constitute part of the said alarm-circuit.

18. In a device of the character described, the combination of a metallic support, line and switchboard springs mounted in pairs at each side of said support, heat-coil devices suitably applied to said springs, a normally open alarm-circuit including the line-springs, line-terminals connected with the line-springs and all mounted at one side of said support, and switchboard-terminals connected with the said switchboard-springs and all mounted at the other side of said suppert.

815,007. PAPER TRAY. FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Mar. 31, 1904. Serial No. 200,947.



Claim.—1. A tray comprising a flat bottom and a rim consisting of a strip provided with flaps which extend beneath said bottom, said flaps having laterally and oppositely extending tongues, the tongues of each flap being inserted upwardly through two adjacent slits in the bottom and said strip being provided with other flaps extending inwardly from the rim over the bottom.

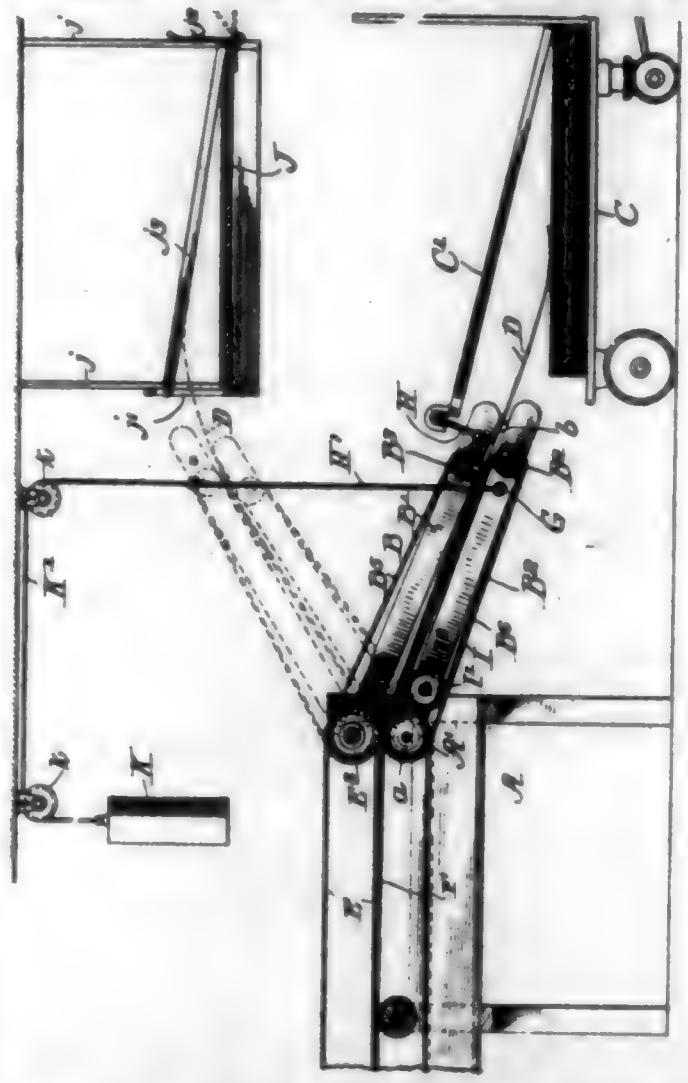
2. A tray comprising a bottom provided with a plurality of radial partitions each formed by an upwardly-folded portion of said bottom, and a rim consisting of a strip the ends of which are secured together and which is provided with flaps that are folded beneath and have locking-tongues that enter slits in said bottom.

3. A tray comprising a bottom provided with a plurality of radial partitions, each formed by upwardly-folded partition-sections, and some of which have at their inner ends tabs which extend between the folded sections of other partitions, and a rim consisting of a strip provided at its lower margin with flaps some of which are folded inwardly and extend over said bottom and others of which are folded beneath the bottom and are provided with tongues which engage slits in the bottom.

4. A tray comprising a bottom provided with a plurality of radial partitions, each formed by upwardly-folded partition-sections, and a rim consisting of a strip provided at its lower margin with flaps, some of which have overlapping engagement with the margin of said bottom, and others of which have interlocking connection therewith.

5. A tray comprising a bottom provided with a plurality of radial partitions, and a rim consisting of a strip provided with a plurality of inwardly-folded flaps extending beneath the bottom and provided with locking-tongues which are adapted to enter slits in the said bottom; the rim being provided also between each two adjacent locking-flaps with other flaps which extend over the bottom, the ends of the partitions being inserted between two of the latter flaps.

815,008. PAPER-DELIVERY. FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed July 17, 1905. Serial No. 270,069.



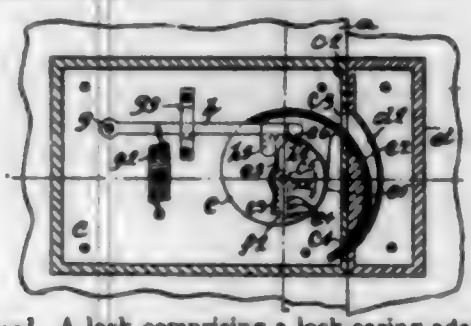
Claim.—1. The combination with a machine for operating on sheets of cardboard or the like, of a vertically-swinging delivery device hinged to the discharge end of the machine and embracing upper and lower frames which are separately pivoted to the machine-frame, upper and lower sets of traveling belts or tapes between the adjacent laps of which the sheets are received, and upper and lower sets of supporting pulleys or rollers for said belts associated with the said upper and lower frames; the pulleys or rollers at the inner or pivoted ends of the upper and lower frames being arranged concentrically with the pivotal axes of said frames.

2. The combination with a machine for operating upon sheets of cardboard and the like embracing upper and lower traveling belts or tapes between the adjacent laps of which the sheets are conveyed through the machine, and upper and lower rollers at the discharge end of the machine about which said belts or tapes are trained, of a sheet-delivery device comprising upper and lower vertically-swinging frames which are separately hinged to the machine-frame to swing on pivotal axes concentric with said upper and lower rollers, rollers carried by the outer ends of said swinging frames and upper and lower sets of endless belts or tapes trained about the rollers carried by the machine and frame and between which belts the sheets are received and thereby discharged.

3. The combination with a machine for operating upon sheets of cardboard and the like embracing upper and lower belts or tapes between the adjacent laps of which the sheets are conveyed through the machine, and upper and lower rollers about which said belts are trained, of a vertically-swinging delivery device at the discharge end of the machine comprising upper and lower frames which are separately hinged to the machine-frame so as to swing on axes concentric with the said upper and lower rollers of the machine rollers carried by the outer ends of said swinging frame, upper and lower end-

less belts or tapes trained about said inner and outer rollers, and between which the sheets are received and thereby discharged, a bail hinged to the outer end of the lower frame, a counterbalancing-weight and a cable connecting said weight with the bail.

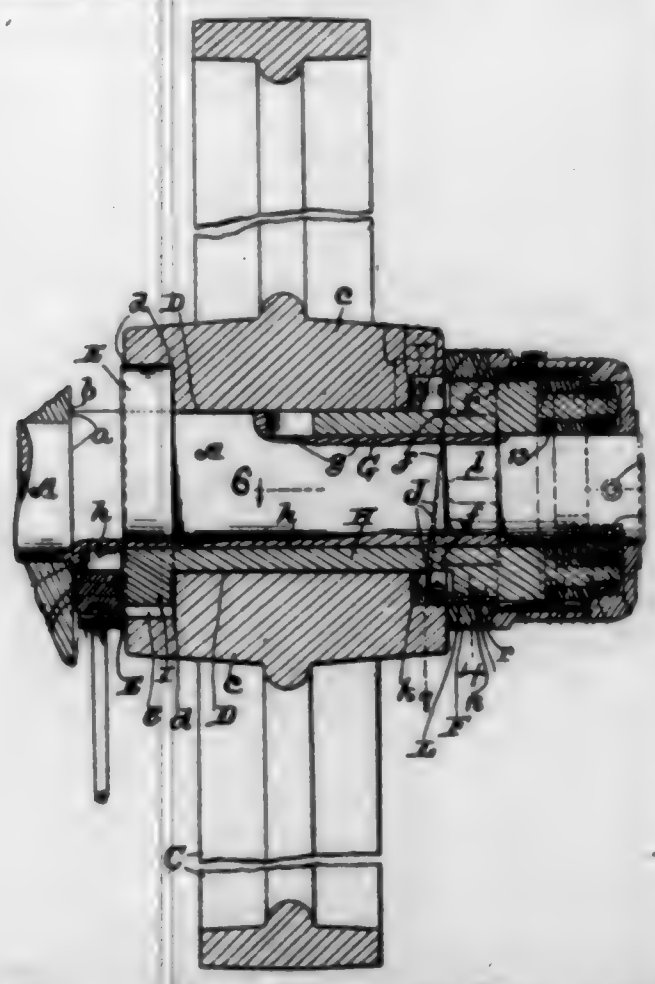
815,009. DOOR-LOCK. WALTER W. FRESLER, New York, N. Y. Filed May 16, 1905. Serial No. 260,421.



Claim.—1. A lock comprising a lock-casing adapted to be secured to a door and a keeper adapted to be secured to a door-frame, the keeper being provided in the face thereof adjacent to the door when the latter is closed with a segmental passage both ends of which are open; and the lock-casing being provided with a pivoted disk having an eccentric curved arm adapted to be projected through said passage into said casing, said disk being adapted to be operated by a key, and a spring-operated lock-arm mounted in the lock-casing and adapted to hold said disk in both the locked and unlocked position, substantially as shown and described.

2. A lock comprising a casing adapted to be secured to a door and a keeper adaptd to be secured to a door-frame, the adjacent faces of said casing and said keeper being closed and the face of the casing being provided with two openings and the face of the keeper with a segmental passage which communicates therewith when the door is closed, said casing being also provided with a rotatable disk having an arm adapted to pass through said passage, and said disk being adapted to be operated by a key, and means for holding said disk in a predetermined position, substantially as shown and described.

815,010. CLUTCH. GEORGE W. GREENWOOD, Cleveland, Ohio. Filed May 27, 1903. Serial No. 158,934.



Claim.—1. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of and parallel with the axial line of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided in one end face of the hub, with a recess which connects and communicates with the bore in the hub and is open at its outer end, and a guideway formed in the said face and extending circumferentially of the shaft and opening at one end thereof into the said recess at one side of the recess and gradually reduced in depth toward the opposite end of the recess, which hub is provided, in its opposite end face and interiorly, with an annular recess which forms an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and extending from end to end of the bore in the hub, which bar, at one end, has a key-forming head arranged to engage the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means for exerting pressure against the outer end of the last-mentioned head to actuate the bar endwise in one direction, and means for actuating the bar endwise in the opposite direction, and the aforesaid way in the shaft being long enough to accommodate the location and operation of the said bar, and the arrangement of the parts being such that the key-forming head of the bar shall engage the aforesaid recess, or the other head of the bar shall engage the aforesaid bore enlargement, according as the bar is in the one or the other of its positions.

2. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of and parallel with the axial line of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, interiorly and at one end face of the hub, with a recess which connects with the bore in the hub and is open at the said face, which hub is provided, in its opposite end face and interiorly, with an annular recess which forms an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and extending from end to end of the bore in the hub, which bar, at one end, has a key-forming head arranged to engage the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means for exerting pressure against the outer end of the last-mentioned head to actuate the bar endwise in one direction; and means for actuating the bar in the opposite direction, and the aforesaid way in the shaft being long enough to accommodate the location and operation of the said bar, and the arrangement of the parts being such that the key-forming head of the bar shall engage the aforesaid recess, or the other head of the bar shall engage the aforesaid bore enlargement, according as the bar is in the one or the other of its positions.

3. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of and parallel with the axial line of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face of the hub, with a recess which connects and communicates with the bore in the hub and is open at its outer end, which hub is provided, in its opposite end face and interiorly, with an annular recess which forms an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub, which bar at one end, has a key-forming head arranged to engage the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means for exerting pressure against the outer end of the last-mentioned head to actuate the bar in the direction required to render the key-forming head of the bar inoperative; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming head and the aforesaid recess and thereby render the said key-forming head operative, and the aforesaid way in the shaft being long enough to accommodate the location and operation of the said bar, and the arrangement of the parts being such that the key-forming head of the bar shall engage the aforesaid recess, or the other head of the said bar shall engage the aforesaid bore enlargement, according as the bar is in the one or the other of its positions.

4. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of and parallel with the axial line of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face of the hub, with a recess which connects and communicates with the bore in the hub and is open at its outer end, which hub is provided, in its opposite end face and interiorly, with an annular recess which forms an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and terminating, at one end, in a key-forming member arranged to engage the aforesaid recess, which bar is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means for operatively engaging the said head and thereby actuating the bar endwise in the direction required to render the key-forming member of the bar inoperative; means for actuating the said bar endwise in the direction required to establish

engagement between the key-forming member and the aforesaid recess and thereby render the said key-forming member operative, and the aforesaid way in the shaft being long enough to accommodate the location and operation of the said bar, and the arrangement of the parts being such that the key-forming member shall engage the aforesaid recess, or the aforesaid head shall engage the aforesaid bore enlargement, according as the bar is in the one or the other of its positions.

5. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with a recess which connects and communicates with the bore in the hub and is open at its outer end, and the shaft extending outwardly beyond the said face of the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming head or member which is arranged to engage the aforesaid recess and extends outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the said key-forming member engages the said recess; means acting to retain the said bar in its operative position, a dust-guard-forming shell surrounding the shaft next adjacent the aforesaid face of the hub and comprising a collar operatively mounted upon the shaft and abutting against the aforesaid shoulder, which collar is provided with a slideway for the aforesaid key-forming member.

6. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face of the hub, with a recess which connects and communicates with the bore in the hub and is open at its outer end, and the shaft extending outwardly beyond the said face of the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming member which is arranged to engage the aforesaid recess during the rotation of the aforesaid loosely-mounted rotary member and extends outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the said key-forming member engages the said recess; means for operating the said bar; a reservoir-forming shell surrounding the shaft adjacent the aforesaid face of the hub and comprising a collar fixed upon the shaft at the inner end of the reservoir, which collar is provided with a port or passage-way establishing communication between the interior chamber of the said shell and the aforesaid recess.

7. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face of the hub, with a recess which connects and communicates with the bore in the hub and is open at its outer end, and the shaft extending outwardly beyond the said face of the hub and reduced diametrically, at the said face, to form an annular shoulder upon the shaft, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming head or member which is arranged to engage the aforesaid recess during the rotation of the aforesaid loosely-mounted rotary member and extends outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the said key-forming member engages the said recess; means for operating the said bar; a reservoir-forming shell surrounding the shaft next adjacent the aforesaid face of the hub and comprising a collar fixed upon the shaft and abutting against the aforesaid shoulder, which collar is provided with a port or passage-way establishing communication between the interior chamber of the said shell and the aforesaid recess.

8. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with a recess which connects and communicates with the bore in the hub and is open at its outer end, which hub is provided, in its opposite end face and interiorly, with an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and extending from end to end of the bore in the hub, which bar has, at one end, a key-forming member adapted to engage with the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess, and means for engaging the aforesaid head and actuating the said bar endwise in the opposite direction.

9. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with a recess which connects and communicates with the bore in the hub and is open at its outer end, which hub is provided, in its opposite end face and interiorly, with an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and extending from end to end of the bore in the hub, which bar has, at one end, a key-forming member adapted to engage with the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess, and a movable incline for exerting pressure against the outer end of the aforesaid head.

10. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with a recess which connects and communicates with the bore in the hub and is open at its outer end, which hub is provided, in its opposite end face and interiorly, with an annular enlargement of the aforesaid bore, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub, which bar has, at one end, a key-forming member adapted to engage with the aforesaid recess and is provided, at its opposite end, with a head arranged to engage the aforesaid annular bore enlargement; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess; a pivotally-supported arm having an incline exerting pressure against or being out of engagement with the outer end of the aforesaid head according as the arm is in the one or the other of its two positions, and mechanism for actuating the said arm.

11. The combination, with a shaft provided in its periphery with grooves or waves extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with recesses connecting and communicating with the bore in the hub and open at their outer ends, which recesses are arranged to render them capable of simultaneously registering with the different aforesaid ways respectively, and the shaft extending outwardly beyond the aforesaid face of the hub and reduced diametrically at the said face to form an annular shoulder upon the shaft of endwise-shiftable bars engaging and extending longitudinally of the peripheral ways in the hub and provided with key-forming heads or members arranged to engage with the aforesaid recesses and extending outwardly beyond the aforesaid face of the hub, which bars are in their operative position when their key-forming members engage the aforesaid recesses; means for shifting the said bars from their inoperative into their operative position; means for actuating the said bars from their operative position into their inoperative position, and a reservoir-forming casing surrounding the shaft next adjacent the aforesaid face of the hub and comprising a collar fixed upon the shaft and abutting against the aforesaid shoulder, which collar is provided with slideways engaged by the aforesaid key-forming members, and passage-ways arranged to feed oil from the interior chamber of the said casing to the aforesaid recesses.

12. The combination, with a shaft provided in its periphery with two grooves or ways extending longitudinally of the shaft and arranged diametrically opposite each other, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with two diametrically opposite recesses connecting and communicating with the bore in the hub and open at their outer ends, and one of the aforesaid ways extending beyond opposite ends of the hub, and the other of the said ways terminating at one end centrally between the ends of the hub, of two bars engaging and shiftable endwise of the different aforesaid ways respectively and provided each with a key-forming head or member for engaging with the one or the other of the aforesaid recesses, which bars are in their operative position when their key-forming members engage the aforesaid recesses; means for shifting the said bars simultaneously from their inoperative into their operative position; means for actuating the said bars simultaneously from their operative position into their inoperative position, and means for feeding lubricating liquid to the aforesaid recesses.

13. The combination, with a shaft provided in its periphery with grooves or ways extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft

and provided, in one end face thereof, with recesses connecting and communicating with the bore in the hub and open at their outer ends, which recesses are arranged to render them capable of registering with the different aforesaid ways respectively, and the shaft extending outwardly beyond the aforesaid face of the hub, of endwise-shiftable bars engaging and extending longitudinally of the aforesaid ways and provided with key-forming heads or members engaging or out of engagement with the aforesaid recesses according as the bars are in their operative or inoperative position and provided, at their outer ends, with studs projecting longitudinally and outwardly from the said key-forming members; a sleeve slidably mounted on the shaft and embracing the said studs; nuts on the studs at the outer end of the sleeve; a casing surrounding the sleeve and mounted on and fixed to the shaft at the outer end of the sleeve; means interposed between the outer end face of the sleeve and the opposing surface of the casing and acting to retain the aforesaid bars in their operative position; means for actuating the said bars from their operative into their inoperative position, and a collar operatively mounted on the shaft and interposed between the inner end of the said casing and the aforesaid hub, which collar has slideways engaged by the aforesaid key-forming members.

14. The combination, with a shaft provided in its periphery with grooves or ways extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with recesses connecting and communicating with the bore in the hub and open at their outer ends, which recesses are arranged to render them capable of registering with the different aforesaid ways respectively, and the shaft extending outwardly beyond the aforesaid face of the hub, of endwise-shiftable bars engaging and extending longitudinally of the aforesaid ways and provided with key-forming heads or members engaging or out of engagement with the aforesaid recesses according as the bars are in their operative or inoperative position, which key-forming members are provided, at their outer ends, with studs projecting longitudinally and outwardly from the said key-forming members; a sleeve slidably mounted on the shaft and embracing the said studs, which sleeve has recesses in its outer end face; nuts on the studs at the outer end of the sleeve; a casing surrounding the sleeve and mounted on and fixed to the shaft at the outer end of the sleeve and provided with recesses opposite the recesses in the sleeve; spiral springs extending from within the recesses in the sleeve into the recesses in the said casing and under tension in the inoperative position of the aforesaid bars, and means for actuating the said bars from their operative into their inoperative position.

15. The combination, with a shaft provided in its periphery with grooves or ways extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with recesses connecting and communicating with the bore in the hub and open at their outer ends, which recesses are arranged to render them capable of simultaneously registering with the different aforesaid ways respectively, and the shaft extending outwardly beyond the aforesaid face of the hub, of endwise-shiftable bars engaging and extending longitudinally of the aforesaid ways and provided with key-forming heads or members engaging or out of engagement with the aforesaid recesses according as the bars are in their operative or inoperative position; a sleeve slidably mounted on the shaft and operatively connected with the aforesaid bars; a casing surrounding the sleeve and mounted on and fixed to the shaft at the outer end of the sleeve; means interposed between the outer end face of the sleeve and the opposing surface of the said casing and acting to retain the sleeve in its inner position, and means for actuating the aforesaid bars from their operative into their inoperative position.

16. The combination, with a shaft provided in its periphery with grooves or ways extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided, in one end face thereof, with recesses connecting and communicating with the bore in the hub and open at their outer ends, which recesses are arranged to render them capable of simultaneously registering with the different aforesaid ways respectively, and the shaft extending outwardly beyond the aforesaid face of the hub, of endwise-shiftable bars engaging and extending longitudinally of the aforesaid ways and provided with key-forming heads engaging or out of engagement with the aforesaid recesses according as the bars are in their operative or inoperative position; a sleeve slidably mounted on the shaft and operatively connected with the said bars; a casing surrounding the sleeve and mounted on and fixed to the shaft at the outer end of the sleeve; means for actuating the sleeve endwise in the direction required to shift the aforesaid bars from their inoperative position into their operative position, and means for actuating the said bars from their operative into their inoperative position.

17. The combination, with a shaft provided in its periphery with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess connecting and communicating with the bore in the hub, of an endwise-shiftable bar engaging and extending longitudinally of the aforesaid way and provided with a key-forming head engaging or out of engagement with the aforesaid recess according as the bar is in its operative or inoperative position; a member slidable longitudinally of the shaft and operatively connected with the said bar; a casing containing the said slidable member and surrounding and supported from the shaft; means for actuating the said slidable member endwise in the direction required to shift the aforesaid bar from its inoperative position into its operative position, and means for actuating the said bar from its operative into its inoperative position.

18. The combination, with a shaft provided in its periphery with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess connecting and communicating with the bore in the hub, of a bar engaging and shiftable endwise of the aforesaid way and provided with a key-forming head or member for engaging with the aforesaid recess, which bar is in its operative position when its key-forming member engages the aforesaid recess; means for shifting the said bar from its inoperative into its operative position; means for actuating the said bar from its operative into its inoperative position, and means for feeding lubricating liquid to the aforesaid recess.

19. The combination, with a shaft provided in its periphery with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess connecting and communicating with the bore in the hub, which recess is arranged to register with the aforesaid way, and the shaft extending outwardly beyond a face of the hub and reduced diametrically at the said face to form an annular shoulder upon the shaft, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming head or member arranged to engage with the aforesaid recess and extending outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the key-forming member of the bar engages the aforesaid recess; means for shifting the said bar from its inoperative into its operative position; means for actuating the said bar from its operative position into its inoperative position, and a reservoir-forming casing surrounding the shaft next adjacent the aforesaid face of the hub and comprising a collar on the shaft and arranged next the aforesaid shoulder, which collar is provided with a slideway engaged by the aforesaid key-forming member, and a port or passage-way arranged to feed oil from the interior chamber of the said casing to the aforesaid recess.

20. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess which connects and communicates with the bore in the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub, which bar has a key-forming member adapted to engage with the aforesaid recess and is also provided with a head; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess; a movable member having an incline exerting pressure against or being out of engagement with the outer end of the aforesaid head according as the said incline-forming member is in the one or the other of its two positions, and mechanism for actuating the said incline-forming member.

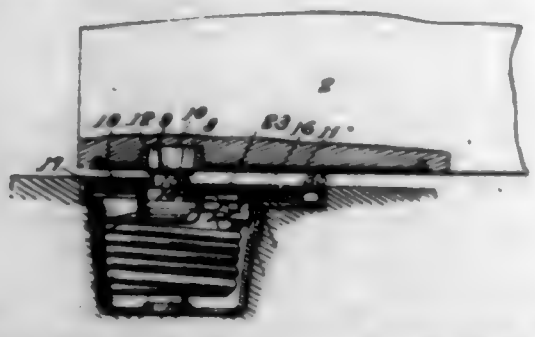
21. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess which connects and communicates with the bore in the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and extending from end to end of the bore in the hub, which bar has a key-forming member adapted to engage with the aforesaid recess and is also provided with a head a suitable distance from the key-forming member; means acting to shift the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess, and means for engaging the aforesaid head and actuating the said bar endwise in the opposite direction.

22. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess which connects and communicates with the bore in the hub, and the shaft extending outwardly beyond a face of the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming member which is arranged to engage the aforesaid recess during the rotation of the aforesaid loosely-mounted rotary member and extends outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the said key-forming member engages the said recess; means for operating the said bar; a reservoir-forming shell surrounding the shaft adjacent the aforesaid face of the hub and comprising a collar mounted on the shaft at the inner end of the reservoir, which collar is provided with a port or passage-way establishing communication between the interior chamber of the said shell and the aforesaid recess.

23. The combination, with a shaft provided in its periphery with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess which connects and communicates with the bore in the hub and the shaft extending outwardly beyond a face of the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and provided with a key-forming head or member which is arranged to engage the aforesaid recess and extends outwardly beyond the aforesaid face of the hub, which bar is in its operative position when the said key-forming member engages the said recess; means acting to retain the said bar in its operative position, a dust-guard-forming shell surrounding the shaft adjacent the aforesaid face of the hub and comprising a collar mounted on the shaft, which collar is provided with a slideway for the aforesaid key-forming member.

24. The combination, with a shaft provided, in its periphery, with a groove or way extending longitudinally of the shaft, and a wheel or rotary member having a hub loosely mounted on the shaft and provided with a recess which connects and communicates with the bore in the hub, of an endwise-shiftable bar engaging and extending longitudinally of the peripheral way in the hub and having a key-forming member arranged to engage the aforesaid recess; means for operatively engaging the said bar and thereby actuating the bar endwise in the direction required to render the key-forming member of the bar inoperative; means for actuating the said bar endwise in the direction required to establish engagement between the key-forming member and the aforesaid recess and thereby render the said key-forming member operative, and the aforesaid way in the shaft being long enough to accommodate the location and operation of the said bar.

815,011. FLOOR-HINGE. STUART HANSON, Racine, Wis. Filed Nov. 22, 1904. Serial No. 234,071.



Claim.—1. In spring-hinges, a double-acting spring formed of two coils one within the other with an intervening space, the coils merging together at one end of the spring, both coil ends or terminals being arranged at the opposite end of the spring.

2. In combination, a casing, a pintle rotatively mounted therein and having an arm projecting laterally therefrom, a double coiled spring having its terminals at the same end, spring-holders mounted on said pintle and normally in contact with opposite sides of said arm, said holders being in engagement, respectively, with said spring-terminals to actuate said pintle in either one of two directions, and means to maintain either holder in its normal position when said pintle is rotated to force the other holder from its normal position.

3. In combination, a casing, a pintle rotatively mounted therein and provided with a lateral arm, a double coiled spring having its terminals at its upper end, spring-holders in engagement, respectively, with said spring-terminals and normally engaging opposite sides of said arm to actuate said pintle in either one of two directions, an adjustable member having an abutment coacting with said holders, and adjustable securing means for said member, whereby the position of said abutment can be changed to vary the normal position of said pintle.

4. In combination, a casing, a pintle rotatively mounted therein, a coiled spring, a spring-centering sleeve within said spring and on said pintle, opposing spring-holders independent of said sleeve and mounted on said pintle and connected with spring-terminals, respectively, an abutment, and means whereby said spring-holders control said pintle to yieldingly hold the same in its normal position and actuate the same in either one of two directions.

5. In combination, a casing, a pintle rotatively mounted therein, a spring comprising two coils, one within the other, with their terminals at one end of the spring, spring-holders controlled by said spring and connected with said terminals, respectively, and means whereby said spring-holders yieldingly hold said pintle in its normal position, substantially as described.

6. A spring floor-hinge comprising in its construction, a casing, a pintle rotatively mounted therein and extending above the casing, spring-actuated mechanism within the casing controlling the movement of the pintle in one direction, in combination with a floor-plate slotted to receive the pintle and removable laterally from the pintle and casing and provided with securing means exterior of the casing and plate, whereby the floor-plate can be released and removed while the door is in place.

7. A double-acting spring floor-hinge comprising, in its construction, a casing, a vertical pintle rotatively mounted therein and projected upwardly to receive the door, and spring mechanism controlling the movement thereof in one direction, in combination with a floor-plate having a slot to receive the pintle, whereby the floor-plate can be slipped laterally from the casing and pintle, a clamping-plate to cover said slot and hold the floor-plate to the casing and securing means for said clamping-plate.

8. An upper hinge comprising a socket-plate adapted to be secured to the upper edge of the door, a plate having an opening therethrough and adapted to be secured to the frame above the door, a lever fulcrumed on said frame-plate and provided with a pivot-stud arranged in said opening, a spring acting on said lever to swing the same in one direction, and a screw passing through said frame-plate and engaging said lever to force the same in the opposite direction against the tension of said spring.

9. An upper hinge comprising a plate adapted to be secured to the frame above the door and provided with an opening therein, a vertically-swinging lever arranged at the top face of the plate and at its free end having a depending pivot-stud rigid therewith, said free end of the lever adapted to abut against the face of said plate, and a screw passing loosely through said plate and screwing into said lever between its ends, whereby the lever can be drawn by said screw down tightly against said plate with its stud depending below the same, and a socket-plate adapted to be secured to the upper edge of the door in place to engage said depending lever-stud.

10. An upper hinge comprising a plate adapted to be secured to the frame above the door having an opening therein and provided with bearing-lugs at its upper face, a lever arranged longitudinally above said plate and at one end having trunnions confined to oscillate in said lugs, the free end of said lever having a depending pivot-stud arranged to project downwardly through an opening in said plate, a screw having a headed lower end and passing loosely through said plate and screwing into said lever between its ends, and a socket-plate adapted to be secured to the upper edge of the door in place to engage the depending stud of the lever, substantially as described.

11. In spring-hinges, a casing, a pintle rotatively mounted therein and extended up to receive the door, and spring-controlling mechanism for said pintle comprising spring-coils, opposing spring-holders arranged above and coupled with the upper ends of said coils respectively, means whereby said holders control said pintle to yieldingly hold the same in its normal position and actuate the same in either one of two directions, and abutment mechanism for said holders, substantially as described.

12. In spring-hinges, in combination, a casing, a double coiled spring arranged therein and consisting of two coils merging together at one end and having opposing terminals at the opposite end, said coils arranged one within the other, and door-controlling mechanism arranged within said casing and connected with and controlled by said coils to yieldingly hold the door in its normal position and actuate the same in either one of two directions, substantially as described.

13. In a spring-hinge, in combination, a door-receiving pintle, spring-coils around said pintle, opposing spring-holders arranged

on said pintle above and connected with said spring-coils, respectively, means whereby said holders control said pintle, to yieldingly hold the same in its normal position and actuate the same in either one of two directions, and an abutment, one of said holders having a depending annular flange arranged between and spacing the upper ends of said coils, substantially as described.

14. In a spring door-hinge, in combination, a casing, a pintle rotatively mounted therein and projected upwardly to receive the door, spring-actuated pintle-controlling mechanism controlling the movement thereof in one direction, an under cover-plate arranged over said mechanism and forming the upper bearing for said pintle, and a sectional laterally-removable covering for said casing, said pintle projecting upwardly above said covering, said covering being laterally removable from said pintle while the door is thereon.

15. In a spring door-hinge, in combination, a casing having a depending cup, an under cover-plate over the cup, a removable floor-plate over the casing, a pintle rotatively mounted in the cup and having a top bearing in said under cover-plate and projecting above said floor-plate to receive the door, a spring on the pintle and in said cup, opposing spring-holders beneath said under cover-plate and controlled by said spring, means whereby said holders control said pintle to yieldingly hold the same in its normal position and actuate the same in either one of two directions, an adjustable center stop for said holders and arranged in said cup, and adjustable securing means for said center stop arranged beneath said floor-plate and readily accessible on the removal of said floor-plate.

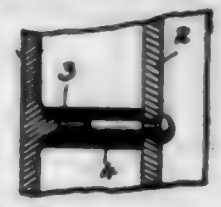
815,012. **WELL-REAMER.** HOWARD R. HARDENBURG and FREDERICK SAGER, Saginaw, Mich. Filed Oct. 6, 1905. Serial No. 281,653.



Claim.—1. The combination in a well-reamer of a body portion adapted to be secured to a drill-stem, and provided with longitudinal slots therein, a collar on the lower portion of said body portion, shoulders on the lower face of said collar, inclined ways below said shoulders, bits operating vertically in said inclined ways and against said shoulders, a spiral spring seated upon said collar, mechanism actuated by said spring to retain said bits in a normally upward and expanded position, substantially as described.

2. The combination in a well-reamer of a body portion adapted to be secured to a drill-stem, and provided with longitudinal slots therein, a collar adjacent to the lower end thereof, undercut shoulders on said collar, inclined ways below said shoulders, bits operating vertically in said inclined ways and against said undercut shoulders, links having shoulders on their upper ends removably secured to said bits and resting in said longitudinal slots, and a spiral spring, compressed between said collar on the body portion and the shoulders on said links, operating to retain the bits normally on the upper portion of said inclined ways, substantially as set forth.

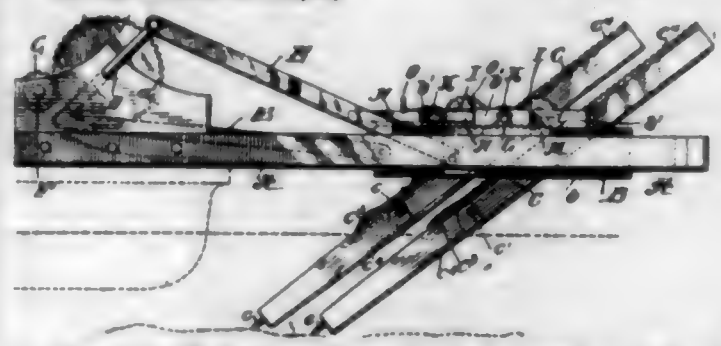
815,013. **WATER-JACKET.** CHARLES W. HAWES, Springfield, Ill. Original application filed Nov. 18, 1904, Serial No. 233,201. Divided and this application filed Feb. 11, 1905. Serial No. 245,255.



Claim.—1. A water-jacket comprising an inside and an outside sheet, a series of stay-bolts having one of their ends welded to the inside sheet, and their opposite ends passed through and riveted on the outside to the outside sheet, substantially as set forth.

2. A water-jacket comprising an inside and an outside sheet, a series of stay-bolts welded to the inside sheet and having their free ends passed through and riveted to the outside sheet, substantially as set forth.

815,014. **PULLING-MACHINE FOR STEAMBOATS, &c.** FRANKLIN W. HAYES and CHARLES A. BULLENS, Wendling, Cal. Filed June 12, 1905. Serial No. 264,970.



Claim.—1. The improved attachment for water-craft for the purpose specified, comprising a frame adapted for attachment to the craft and to project forward thereof, the same having parallel slots or guideways, bearings adapted to slide therein, a double crank-shaft and connecting-rods for reciprocating such bearings, simultaneously, in opposite directions, and push-bars connected with such bearings and extending downward therefrom at a rearward inclination, and means for adjusting them higher or lower corresponding to the depth of the stream being navigated, substantially as described.

2. In an apparatus for the purpose specified, the combination, with a frame having parallel longitudinal guideways, of bearings adapted to slide in the latter, means for imparting simultaneous reciprocation to the bearings in opposite directions, push-bars attached to the bearings and projecting downward at a suitable angle and provided with joints adapting their lower parts to bend backward as the bearings are pushed forward, racks applied to the push-bars and the side portions of the frame, and gearing including a slidable shaft which is adapted for adjustment for locking the push-bars in any required position and for shifting them vertically as conditions may require.

3. In an apparatus for the purpose specified the combination, with a frame adapted for attachment to the bow of a water-craft and having a lengthwise guide, of a bearing adapted to slide on such guide, means for reciprocating it, and a push-bar connected with the bearing and projecting downward therefrom at a rearward inclination, substantially as described.

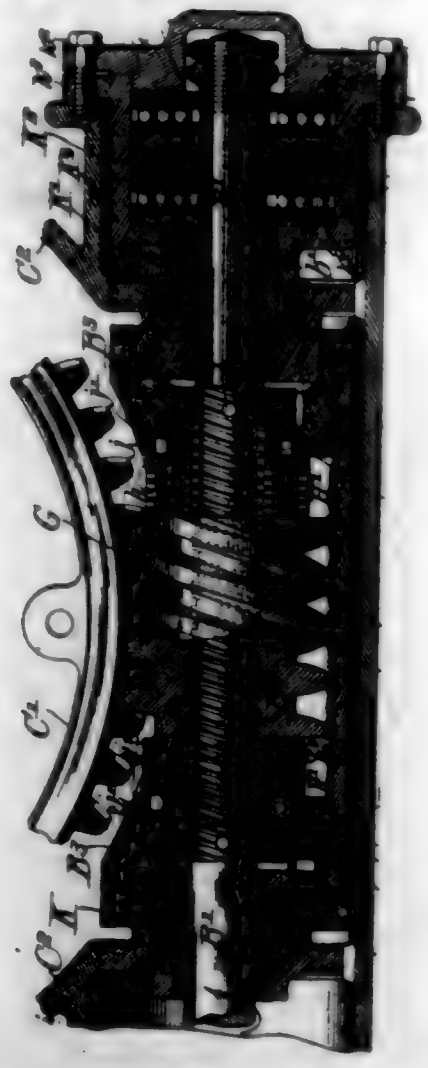
4. In an apparatus for the purpose specified, the combination, with a frame adapted for attachment to the bow of a water-craft and having a lengthwise guide, of a bearing adapted to slide on such guide, means for reciprocating it, a push-bar connected with the bearing and projecting downward therefrom at a rearward inclination and means for locking such push-bar in any required adjustment and for adjusting it higher or lower as conditions may require.

5. In an apparatus for the purpose specified, the combination, with a frame having a side rack and adapted for attachment to the bow of a water-craft, and having a longitudinal guideway, of a bearing adapted to reciprocate in said frame, a push-bar extending downward through a slot in the bearing and projecting rearward at a suitable inclination for engagement with the bottom of the stream, a rack applied to such push-bar, a gear engaging the rack-bar and having a shaft provided with a polygonal head, a parallel shaft adapted to slide in its bearings and having pinions adapted for engagement with the aforesaid gear and the rack on the frame, and a lever connected with the slidable shaft and also adapted for engagement with the polygonal shaft for use in adjusting the gear for locking the push-bar or for adjusting it vertically, as conditions may require.

6. In an apparatus for the purpose specified, the combination with a frame and a slide-bearing therein, of a push-bar extending through the bearing and inclined rearward, a rack applied to the push-bar, a gear engaging the same and supplemental gearing for use in adjusting the push-bar higher or lower, a lever for throwing the gearing into or out of action, and a locking device for engaging such lever and holding it in either of the two required positions, substantially as described.

7. In an apparatus for the purpose specified, the combination, with a frame having guideways, of bearings adapted to reciprocate therein, push-bars passing down through such bearings and formed in two longitudinal sections or members which are connected by a rule-joint, and springs applied on the rear side of the joints whereby the lower members of the push-bars are adapted to bend backward upon meeting an obstruction when the bearings are pushed forward, substantially as described.

815,015. AUTOMATIC BRAKE FOR POWER-ACTUATED ELEVATORS. THADDEUS W. HERRMANN, Evanston, Ill. Filed Jan. 16, 1905. Serial No. 241,366.



Claim.—1. In a power-driven elevator, the combination with the car, its counterweight, a motor for driving the car and a brake for arresting the motor, of a braking mechanism for the car constructed to arrest the car by the momentum of the load acting in either direction.

2. In a power-driven elevator, the combination with the car, its counterweight, a motor for driving the car and a brake for arresting the motor, of a braking mechanism for the car, and connection between said braking mechanism and the car and counterweight constructed to be actuated by the load or momentum of the car and counterweight acting in either direction to automatically bring the car to rest.

3. In a power-driven elevator, the combination with the car, its counterweight, a motor for driving the car and a brake for arresting the motor, of a braking mechanism for the car and connections between the braking mechanism and car and counterweight so constructed that said braking mechanism operates independently of the motor-brake to arrest the car by the load or momentum of the car and counterweight acting in either direction.

4. In a power-driven elevator, the combination with the car, its counterweight, a motor for driving said car, gearing connecting the motor with the car and a brake for arresting the motor, of a friction braking mechanism operatively connected with the car and counterweight and designed to be set in motion by the momentum or weight of the load in either direction for arresting the car.

5. In a power-driven elevator, the combination with the car, its counterweight, a drum to the opposite sides of which the car and counterweight, respectively, are connected, a reversible rotary motor-shaft geared to the drum, and a brake for said shaft, of a braking mechanism for the car embracing in part a portion of the gearing between the shaft and drum and in part braking elements coöperating therewith in a manner to utilize the weight or momentum of the load on the drum in either to arrest the car.

6. In a power-driven elevator, the combination with the car, its counterweight, a motor for driving said car, gearing connecting the motor with the car and counterweight embracing a screw-threaded rotative motor-shaft, a gear surrounding and having screw-threaded engagement with said shaft, and designed to be locked to the shaft through rotation of said shaft to constitute part of the car-driving-gear mechanism and to be temporarily released from the shaft when the load tends to drive the shaft, and a brake for arresting the motor, of a braking mechanism for arresting the car, comprising means coöperating with said screw-threaded gear when said gear is temporarily released from the shaft as a driving connection for locking said screw-threaded gear to arrest the car.

7. In an elevator, the combination with the car, its counterweight, a motor for driving the car, gearing connecting the motor with the car and counterweight comprising a screw-threaded, rotative motor-shaft and its bearing, a screw-threaded gear mounted on said shaft and meshing with a coacting gear forming part of the driving-gear, and a brake for the motor, of means whereby said screw-threaded driving-gear is locked to the shaft when the motor is driving the car, and means whereby said gear is frictionally locked to the motor-shaft bearing when the load of the car or counterweight tends to drive the screw-threaded gear.

8. In an elevator, the combination with the car, its counterweight, a motor for driving the car, gearing connecting the motor with the car and counterweight embracing a screw-threaded motor-shaft and its stationary bearing, a worm-screw surrounding and having screw-threaded engagement with said shaft and meshing with a worm-wheel forming part of the gearing between said motor and the car and counterweight, means whereby the worm-screw is locked to the shaft by rotation of the latter to constitute part of the driving mechanism, and a brake for said motor, of a braking mechanism coöperating with said worm-screw, and operative when the worm-screw is released from the motor-shaft to frictionally lock the worm-screw to the stationary bearing of the motor-shaft.

9. In an elevator, the combination with the car, its counterweight, a motor for driving the car, gearing connecting the motor with the car and counterweight, embracing a screw-threaded motor-shaft and its stationary bearing, a worm-screw surrounding and having screw-threaded engagement with the shaft and meshing with a worm-wheel forming part of the gearing between said motor and the car, and counterweight, means whereby the worm-screw is locked to the shaft by rotation of the latter to constitute part of the driving mechanism, and a brake for said motor-shaft, of a car-braking mechanism coöperating with said worm-screw, comprising two sets of coacting friction-washers at each end of said screw, one set carried by the worm-screw, and rings loosely surrounding the motor-shaft and carrying the other or coacting set of washers, one ring rotating freely in one direction and the other in the other direction, and means for locking each ring from backward rotation.

10. In an elevator, the combination with the car, its counterweight, a motor for driving the car, gearing connecting the motor with the car and counterweight, embracing a screw-threaded motor-shaft and its stationary bearing, a worm-screw surrounding and having screw-threaded engagement with the shaft and meshing with a worm-wheel forming part of the gearing between said motor and the car and counterweight, means whereby the worm-screw is locked to the shaft by rotation of the latter to constitute part of the car-driving mechanism, and a brake for said motor-shaft, of a car-braking mechanism coöperating with said worm-screw, comprising coacting friction devices, one set being carried by each end of the worm-screw, rings loosely surrounding the motor-shaft at each end of the screw and carrying the other coacting friction devices, and means for locking said rings from rotation in one direction while permitting them to rotate with the shaft in the other direction and so arranged that the rings are locked from rotation in opposite directions relatively to each other.

11. The combination with an elevator-car, its counterweight, and a driving-motor, of driving connections between the motor and car, including a screw-threaded rotative shaft, a worm-screw sur-

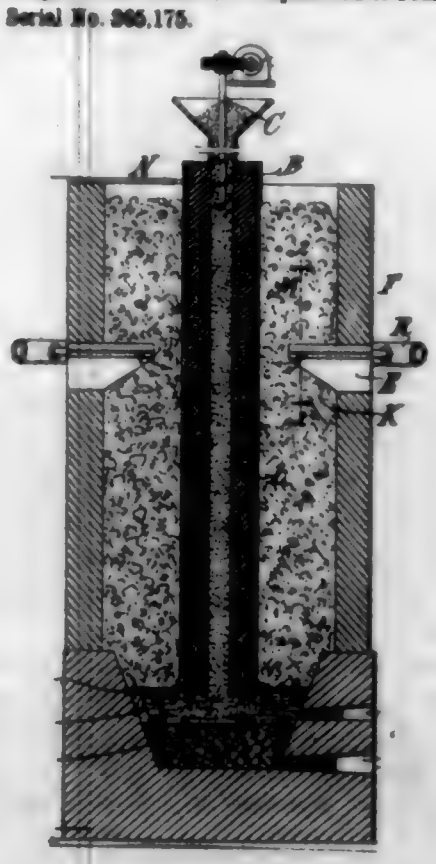
rounding and having screw-threaded engagement with said shaft, a worm-wheel meshing therewith, means for locking said worm-screw to the shaft when the shaft is rotated in a direction to drive the car, and means for frictionally locking said worm-screw from rotation independently of the shaft when the motor of the car or counterweight on the worm-wheel acts to drive the worm-screw in either direction.

12. The combination with an elevator-car, and a motor, of driving connections between the motor and car, which includes a brake mechanism comprising a screw-threaded rotative shaft, a worm-screw surrounding and having screw-threaded engagement with said shaft, a worm-wheel meshing therewith to the opposite sides of which are connected the car and counterweight, collars fixed to the shaft, one at each end of the worm-screw, a ring loosely mounted on the shaft between the worm-screw, and each collar and adapted to rotate with the shaft in one direction, but to be locked from rotation in the other direction, and coacting friction devices carried by said worm-screw and rings.

13. The combination with an elevator-car, its counterweight and its motor, of a driving and braking mechanism comprising, in combination with a screw-threaded motor-shaft, a worm-screw surrounding and having screw-threaded engagement with said shaft and meshing with a worm-gear constituting part of the car-driving mechanism, and to the opposite sides of which the car and counterweight are connected, collars fixed to said shaft, one at each end of said worm-screw, rings loosely mounted on said shaft between said collars and worm-screw, said rings and worm-screw being provided with sleeves entering one within the other, friction-washers surrounding the inner one of said sleeves affixed alternately to the said sleeves, whereby alternate washers of each set have frictional engagement with each other, and means whereby said rings are locked from rotation in one direction and are free to rotate with the shaft in the other direction.

14. The combination with an elevator-car, its counterweight, and its motor, of a combined driving and braking mechanism therefor, comprising a rotative screw-threaded shaft, a worm-screw surrounding and having screw-threaded engagement with the shaft, and meshing with a worm-gear constituting part of the elevator-driving mechanism and to the opposite sides of which gear the car and counterweight are connected, collars on the shaft at each end of the worm-screw, rings loosely mounted on said shaft between said collars and screw-threaded gear, and provided with a plurality of arms having at one side thereof wedge or cam faces and at the other side rounded recesses, rollers interposed between said arms and occupying chambers surrounding said rings, said rings and screw-threaded gear being provided with sleeves which fit one within the other, and friction-washers arranged between and carried in alternation by said sleeves.

815,016. **PROCESS OF SMELTING IRON ORE.** PAUL L. T. HÉROULT, La Praz, France, assignor to Société Electro Metallurgique Française, Froges, Isère, France, a Corporation of France. Filed June 14, 1905. Serial No. 265,175.

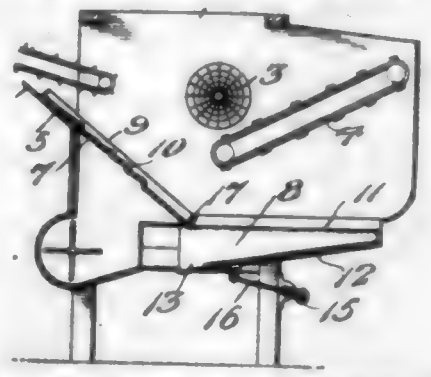


Claim.—1. In the smelting of iron ore, the process which consists in feeding the ore, introducing carbon at the base of the charge while protecting it from the action of the carbon dioxid generated by the smelting operation, whereby a mixture of carbon monoxid and carbon dioxid is formed of gradually-increasing richness in carbon dioxid as the gases rise to the point at which the reduction of ore substantially ceases, and introducing oxygen at such point to further oxidize the carbon monoxid and increase the heating effect in the furnace.

2. In the smelting of iron ore, the process which consists in feeding the ore, introducing carbon at the base of the charge while protecting it from the action of the carbon dioxid generated by the smelting operation, and introducing oxygen at a higher point to further oxidize the carbon monoxid formed and increase the heating effect in the furnace.

3. In the smelting of iron ore, the process which consists in feeding the ore, introducing carbon at the base of the charge sufficient to produce the chemical reactions necessary while protecting it from the action of the carbon dioxid generated by the smelting operation, and supplying the necessary heat by means of the passage of an electric current, and introducing oxygen at a higher point to further oxidize the carbon monoxid formed at the base and to increase the heating effect in the furnace.

815,017. **GRAIN-SEPARATOR.** GEORGE E. HOLLIDAY, Rock Rapids, Iowa. Filed July 29, 1905. Serial No. 271,720.



Claim.—1. In a corn-sheller, a shaking-shoe, a guide-plate slidably supported at its upper end, and means for connecting the lower end of said plate with the shoe to impart reciprocatory and tilting motion to said plate when the shoe is reciprocated.

2. In a corn-sheller, a frame, a stationary supporting member on the frame, an inclined grain-delivery plate slidably supported at its upper end by said supporting member, and means for imparting sliding and tilting motion to said plate.

3. In a corn-sheller, a frame, a feeder, an inclined guide and supporting plate carried by the frame and provided with notches to permit passage of the feeder, an inclined grain-delivery pan slidably supported at its upper end by said plate, and means pivotally connected with the lower end of the pan for imparting a sliding and tilting motion thereto.

4. In a corn-sheller, a frame, a corn-conveyer, and shelling mechanism, in combination with an inclined supporting-plate arranged below the delivery end of the conveyer, an inclined grain-delivery plate or pan slidably supported at its upper end by said plate and having its lower end arranged below the shelling mechanism, and means pivotally connected with the lower end of the pan to impart a sliding and tilting motion thereto.

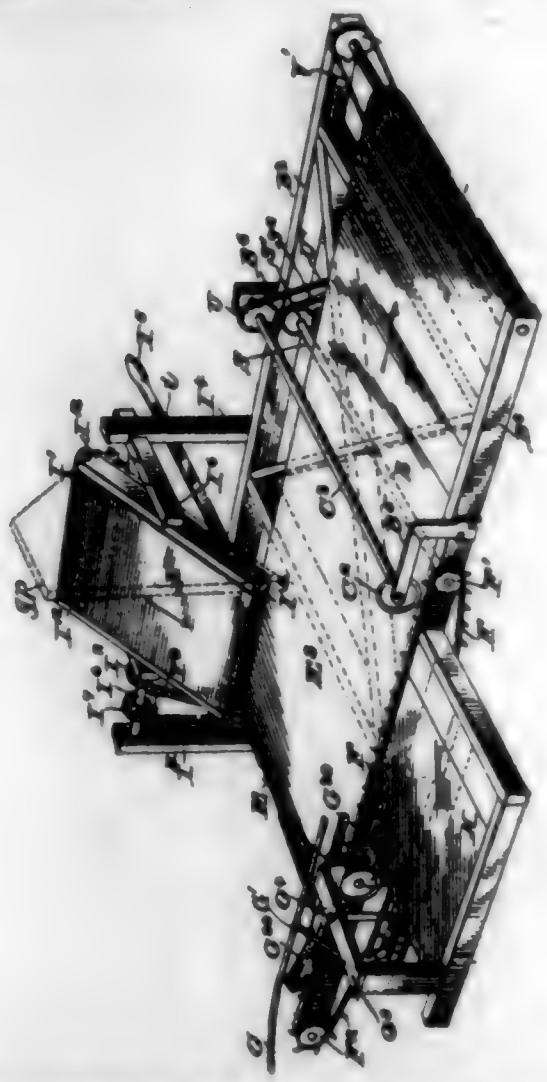
815,018. **BROOM-CORN-CUTTING MACHINE.** CHARLES R. HUCKLEBERRY, Paris, Ill. Filed Dec. 31, 1904. Renewed Dec. 2, 1905. Serial No. 290,981.

Claim.—1. A machine for cutting the tops of growing plants, comprising a cutting device, a horizontal endless carrier and an evener-belt arranged transversely to and above the plane of the carrier at an inclination to the same and opposite the cutting device its operating-surface moving toward the cutting device and acting on the heads or brush ends of the cut tops to extend the surplus length of the butt-ends substantially as described.

2. A machine for cutting the tops of growing plants, comprising a cutting device, a carrier, and an evener arranged opposite the cutting devices and acting on the heads or brush ends of the cut tops, said evener being constructed as an endless traveling belt arranged at an incline and geared to move downwardly on the side next to the cutting devices substantially as described.

3. A machine for cutting the tops of growing plants, comprising

a cutting device, a carrier, an evener arranged opposite the cutting devices and acting on the heads or brush end of the cut tops, said evener being constructed as an endless traveling belt arranged on axes at right angles to those of the carrier and geared to move downwardly on the side next the cutting devices, and a second cutting device arranged to act upon the butt-ends of the tops after being evened substantially as described.



4. The combination with the carrier, the cutting devices, and the inclined evener-belt arranged above and transversely to the carrier; of a guard arranged in a vertical plane adjacent to and projecting above the edge of the evener-belt on the side of the evener-belt next to the delivery end of the carrier as and for the purpose described.

5. A machine for cutting the tops of growing plants, comprising two rotating cutters, a carrier extending past both cutters and an evener-belt arranged on the opposite side of the carrier from the cutters substantially opposite the space between the cutters to even the heads or brush ends preparatory to trimming their butts, substantially as described.

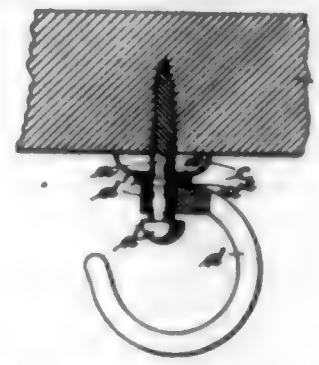
6. A machine for cutting the tops of growing plants, comprising two rotary cutting devices arranged in vertical planes, a carrier extending past both, an automatic evener arranged on the opposite side of the carrier from the cutters in a position substantially opposite the space between the cutters, and a laterally-projecting table arranged on the other side of the plane of the cutters in a position between the cutters substantially as described.

7. A machine for cutting the tops of growing plants, comprising a curved and laterally-extending gathering-arm, a spiked chain belt, an endless-carrier apron, two rotary cutters, an evener arranged on one side of the plane of the cutters, and a table arranged on the opposite side of the plane of the cutters substantially as described.

8. A machine for cutting the tops of growing plants, comprising cutting devices, a horizontal endless carrier and an evener device composed of an endless belt arranged transversely to and above the plane of the carrier at an inclination to the same and on the opposite side of the carrier from the cutting devices and means for adjusting its inclination substantially as described.

9. A machine for cutting the tops of corn, comprising a wheeled body-frame, an elevated superstructure carrying cutting devices, said superstructure being composed of a framework having inclined bars B horizontally pivoted about the rear axle to give vertical adjustment to the front of the superstructure, and means for adjusting said superstructure arranged between the wheeled body-frame and the said inclined bars as described.

815,019. HOOK. Otto Kampen, New York, N. Y. Filed Aug. 22, 1905. Serial No. 275,271.



Claim.—1. A hook comprising a screw, a hook member and shank surrounding and connected thereto and revoluble about the screw and interposed engaging and coacting devices by means of which the screw may be turned by the revoluble member to connection with a support and thereafter the release of the revoluble member permits the same to move slightly along the screw and to be freely turned by hand about the screw-stem.

2. A hook comprising a screw, a hook member and shank surrounding and connected thereto and revoluble about the screw and interposed engaging and coacting devices in part on each member by which the screw may be turned and connected to a support or the revoluble member be free to be turned.

3. A hook comprising a stem, threaded at one end and having a head at the opposite end, a hook part and shank surrounding said stem and revoluble about the same, said shank having opposite recesses in its upper face, and devices associated with the stem and adapted to be received by the recesses, by which, when the revoluble member is grasped by the hand, the stem may be turned to connect the hook to a shelf or other support.

4. A hook comprising a stem, threaded at one end and having a head at the opposite end, a hook part and shank surrounding said stem and revoluble about the same, said shank having opposite recesses in its upper face, and a pin passing transversely through a hole in the stem and adapted to be received by the recesses by which, when the revoluble member is grasped by the hand, the stem may be turned to connect the hook to a shelf or other support.

5. A hook comprising a stem, threaded at one end and having a head at the opposite end, a hook part and shank surrounding said stem and revoluble about the same, said shank having opposite recesses in its upper face, and a pin passing transversely through a hole in the stem and adapted to be received by the recesses by which, when the revoluble member is grasped by the hand, the stem may be turned to connect the hook to a shelf or other support, and a washer interposed between the pin and the under surface of the shelf or support surrounding the screw-stem, and provided with a recess in the outer face partially receiving the pin and concealing the same from view.

815,020. SHEET-METAL SUPPORT OR BRACKET. Louis R. Keller, Oil City, Pa. Filed May 16, 1905. Serial No. 260,541.

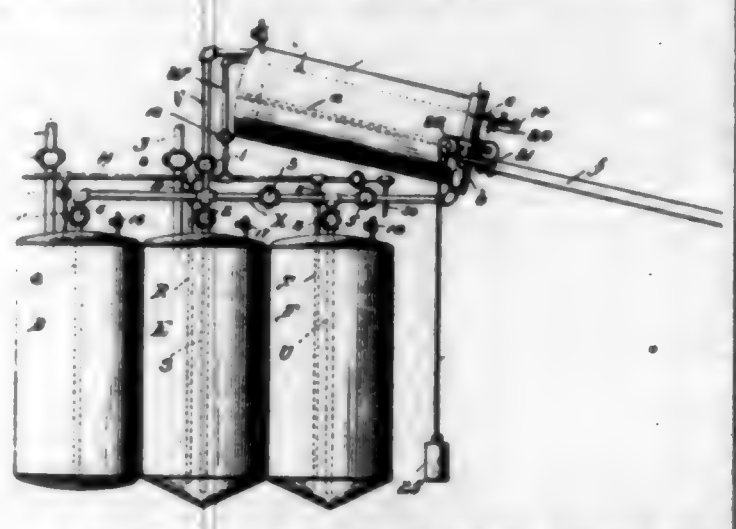


Claim.—As an improved article of manufacture, a curved sheet-metal bracket formed from a single sheet or piece, said bracket comprising horizontal, parallel, primary and auxiliary supporting portions, parallel shade and curtain pole supporting arms integral with said supporting portions and extending at right angles thereto, and said curtain-pole-supporting arm provided with a drapery-pole-receiving notch, said portions and arms producing an integral "stepped" structure, whereby a shade-roller, drapery-pole, and a curtain-pole may be positioned in different horizontal planes, one above the other, respectively.

815,021. APPARATUS FOR SEPARATING OR FILTERING SLIMES. David J. Kelly, Salt Lake City, Utah. Filed May 8, 1905. Serial No. 259,434.

Claim.—1. In an apparatus for separating slimes from which

precious metals have been dissolved, a means for recovering the precious metals in solution said means comprising a closed tank, a carrier slidably mounted therein said carrier containing a filter medium, means for supplying the slimes to the tank under pressure whereby the liquid carrying the precious metals in solution are forced through the filter while the worthless solid matter is collected upon the outside of the filter, and a pipe or conduit through which the separated liquid is delivered outside the tank.



2. In an apparatus of the character described the combination of a closed vessel, a slimes-supply connecting therewith and adapted to fill the tank with metal-bearing slimes under pressure, a carrier within and slidably mounted relative to the tank and a filter medium supported on the carrier so that it will be submerged in the slimes whereby the liquid carrying the precious metals in solution is separated from the slimes-tailings while the slimes are under pressure.

3. In an apparatus of the character described the combination of a closed tank or vessel, a filter supported therein out of contact with the inner walls, a movable carrier for the filter slidably mounted within and relative to the tank, means for filling the tank with metal-bearing slimes under pressure whereby the liquid bearing the metals in solution are driven through the filter and the worthless solid matter is collected upon the outside of the filter, and an outlet from the filter for the separated liquid.

4. In an apparatus of the character described the combination of an inclined, closed tank capable of holding slimes under pressure, a filter supported in the tank out of contact with the inner walls thereof said filter having fibrous filtering sides exposed to the slimes under pressure, a carrier for the filter said carrier being slidably mounted within and removable endwise from the tank, means for filling the tank and submerging the filter with slimes while under pressure whereby the liquid bearing the precious metals in solution is driven through said sides and thereby separated from the slime-tailings, and a pipe leading from the filter to the outside of the tank and forming a discharge for the filtered liquid.

5. In an apparatus of the character described the combination of an inclined closed tank capable of holding slimes under pressure, a carrier movably mounted in said tank, filter-frames supported on the carrier and having fibrous sides exposed to the slimes, means for filling the tank with slimes under pressure whereby the fluid matter is forced through said filter sides and the worthless solid matter accumulated on the outside of the filter, and means for delivering the separated fluid outside the tank, said tank having a removable closure at one end, allowing the withdrawal of the carrier and affording access to the filter-frames carried thereby.

6. In an apparatus of the character described, the combination of a tank closed on all sides except for one end, a carrier movable into and out of the tank, and carrying a member which forms a closure for the open end of the tank, means for rigidly securing said closure to the tank when the carrier is within the tank, filter-frames supported on the carrier and having fibrous filtering sides, means within the frames and supporting said sides from outside pressure, means for filling said tank with metal-bearing slimes under pressure whereby the fluid matter is driven through the filter sides and the worthless solid matter accumulates on the outside of the sides, means whereby the separated liquid is deliverable to the outside of the tank.

7. In an apparatus of the character described the combination of a tank closed on all sides except one end, a guideway in the tank, a carrier adapted to travel on said guideway, a closure for the open end of the tank, and means for securing said closure after the carrier is in position in the tank, a pressure-filter supported on the carrier out of contact with the inner side of the tank, means for filling the tank with metal-bearing slimes under pressure whereby the liquid containing the metals in solution is forced through the sides of the filter, means within the frames supporting the filter sides against the pressure of the slimes, and means for conducting the separated liquid from within the frames to the outside of the tank.

8. In an apparatus of the character described the combination of a tank closed on all sides except one end, a movable closure for the open end of the tank, a carrier slidably mounted in the tank and having a pressure-filter supported out of contact with the inner sides of the tank, means for admitting slimes to the tank under pressure whereby the fluid matter is forced through the filter while the solid matter collects upon the outside of the filter, means for conducting the separated fluid to the outside of the tank, said tank being inclined to form a settling-chamber at the lower end, and means for removing the settlings in said chamber by pressure from within the tank.

9. In an apparatus of the character described, the combination of a closed tank, a pressure-filter within the same, a carrier for the filter said carrier movably mounted within and removable endwise from the tank, a slimes-tank and fluid-pressure means for filling the first-named tank with slimes under pressure whereby the fluid matter is separated from the solid matter.

10. In an apparatus of the character described the combination of a closed tank, a pressure-filter therein, a tank into which slimes are first delivered, an overflow-tank and a valved connection between the same and the slimes-tank, valved connection between the overflow-tank and the lower end of the pressure-filter tank whereby the latter may be filled from the overflow-tank, and communication may then be shut off between the overflow-tank and the pressure-filter tank, means connecting the overflow-tank with the upper end of the filled pressure-filter-tank, and means for generating a pressure in the overflow-tank and agitating the slimes therein and delivering said slimes while under pressure, into the upper end of the pressure-filter tank.

11. In an apparatus of the character described, the combination of a closed tank, a pressure-filter therein, said tank being inclined whereby a settling-chamber is formed in its lower portion, a tank adapted to contain slimes, a pipe connecting said slimes-containing tank with the lower end of the pressure-filter tank, an overflow-tank and a pipe leading thereto from the slimes-supply pipe, a compressed-air pipe having branches leading into the slimes-tank and overflow-tank, and means for cutting out the overflow-tank from the slimes-supply and the air-pressure, means for reducing the pressure in the overflow-tank and means for establishing connection between this tank and the lower portion of the pressure-filter tank, and means for delivering slimes under pressure direct from the slimes-tank to the upper portion of the pressure-filter tank for displacing the accumulations in the settling-chamber of the pressure-filter tank and conducting the settlings back to the overflow-tank.

12. In an apparatus of the character described the combination with a closed inclined tank containing a pressure-filter, of a series of closed tanks, one of which contains slimes, and another a leaching solution, pipe connections between the series of tanks and the filter-tank with valves by which any one or more of the series of tanks may be cut off from the others and from the filter-tank, a compressed-air pipe having valve-controlled branches leading into the series of tanks for inducing a pressure therein, a valve-controlled connection between the first-named pipe and the upper end of the filter-tank, and a valve-controlled connection between the said filter-tank and the compressed-air pipe.

13. In an apparatus of the character described the combination with means for supplying slimes under pressure, of an inclined tank closed except at one end, said tank having internal guide-rails, a carrier mounted on said rails, said carrier having a member adapted to form a closure for the open end of the tank, a filter supported on the carrier and comprising an open frame and filtering fabric inclosing the same, a plate within the frame and supporting the fabric sides of the filter against pressure from without said plate having a channeled surface forming runways for filtered liquid, and a pipe extending along the filter-frame and into which the several runways of the plate empty.

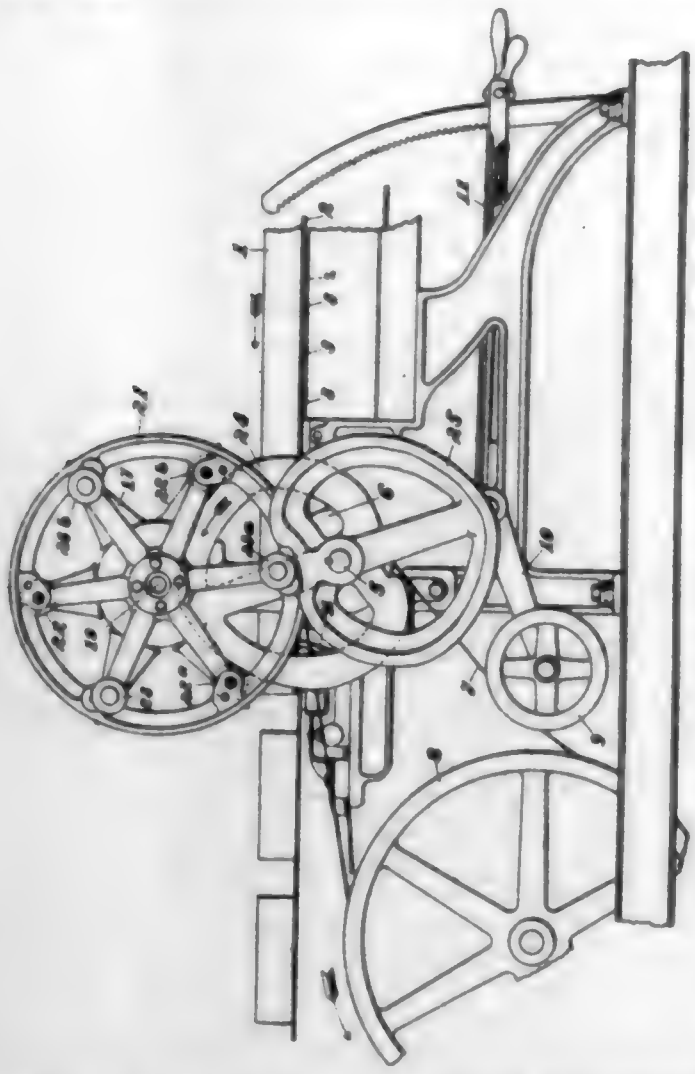
14. In an apparatus of the character described, the combination with means for supplying slimes under pressure, of an inclined tank closed except at one end, guide-rails within the tank, a carrier mounted on said rails and having its front end serving as a closure for the open end of the tank, means for removably locking this closure to the tank, a filter having fibrous sides and an internal plate supporting said sides and having runways for the filtered liquid, and a conduit extending along the filter into which the several runways of the plate empty.

15. In an apparatus of the character described the combination

with an inclined tank closed except at one end and having internal guides, of a carrier mounted within the tank and having its front forming a closure for the open end of the tank, means detachably locking the closure to the tank, a track outside the tank and substantially in line with the internal guides, and a counterbalance connected with the carrier, said counterbalance having less power than the weight of the loaded filter and carrier and greater power than the weight of an empty filter and carrier.

16. In an apparatus of the character described the combination with means for supplying slimes under pressure, of an inclined tank, a carrier thereon, a pressure-filter on the carrier, and comprising a series of frames each having fibrous filtering-bags and an internal plate with runways for separated liquid, a conduit extending along each filter-frame and receiving the liquid from the runways, a pipe connecting with the outer end of each conduit and a test-cock for said pipe.

815,022. CUT-OFF MECHANISM FOR BRICK-MACHINES. HOWARD K. KIRK, Philadelphia, Pa., assignor to Chambers Brothers Company, a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,569.



Claim.—1. In combination with a brick-machine comprising means for forming and moving a continuous bar of plastic material, cam-operated wire cut-off mechanism controlled by the travel of the bar.

2. A cam operated and controlled wire cut-off for brick-machines controlled by the travel of the clay bar.

3. In combination with a brick-machine comprising means for forming and moving a continuous bar of plastic material, a cut-off device comprising cut-off wires and means for moving the same across the path of travel of the bar, said moving means comprising a cam controlled by the travel of the bar.

4. In a brick-machine, the combination of a cut-off wire adapted to move across the path of travel of a horizontally-moving bar to sever the same into brick lengths, and a cam for so moving said wire relatively to the moving bar as to cause a straight cut of said bar.

5. In a brick-machine, the combination of a cut-off wire adapted to move across the path of travel of a horizontally-moving bar to sever the same into brick lengths, and cam-operated means controlled by the moving bar for so moving said wire relatively to the moving bar as to cause a straight cut of said bar.

6. In combination with a brick-machine comprising means for forming and moving a continuous bar of plastic material, rotary wire cut-off mechanism and means controlled by the travel of the bar for causing the rotation of the cut-off at varying speed.

7. In combination with a brick-machine comprising means for forming and moving a continuous bar of plastic material, cut-off mechanism therefor comprising cut-off wires and supporting structure therefor, mounted upon a rotatable shaft, and a cam, having a rotation relative to the travel of the bar, for causing the rotation of said shaft.

8. In combination with a brick-machine comprising means for forming and moving a continuous bar of plastic material cut-off, mechanism therefor, comprising cut-off wires and supporting structure therefor, mounted upon a rotatable shaft, and a cam controlled by the movement of the bar, for causing and controlling the rotation of said shaft.

9. In combination with a machine for forming and moving a continuous bar of plastic material, a measuring-pulley having operative relationship therewith, a rotatable shaft, a cut-off wire and supporting structure therefor mounted upon said shaft, and a cam rotating with the measuring-pulley for causing and controlling the rotation of said shaft.

10. In combination with a machine for forming and moving a continuous bar of plastic material, a regulating-belt moving therewith, a rotatable shaft, a cut-off wire, a supporting structure therefor mounted upon said shaft, a cam for causing and controlling the rotation of said shaft, and means whereby the rotation of the cam is controlled by the travel of the measuring-belt.

11. In combination with a machine for forming and moving a continuous bar of plastic material, a rotatable shaft, a cut-off wire, a supporting structure therefor mounted upon said shaft, a plurality of rollers mounted upon said shaft symmetrically positioned and at a distance from the shaft's axis and a cam, having a rotation relative to the travel of the bar, for coöperating with said rollers for causing the rotation of the shaft.

12. In combination with a machine for forming and moving a continuous bar of plastic material, a rotatable shaft, a cut-off wire, a supporting structure therefor mounted upon said shaft, a roller-supporting structure mounted upon said shaft provided with two series of rollers one on each side thereof and a cam, having a rotation relative to the travel of the bar, for each series of rollers for coöperating therewith for causing the rotation of the shaft.

13. In combination with a machine for forming and moving a continuous bar of plastic material, a rotatable shaft, a cut-off wire, a supporting structure therefor, mounted upon said shaft, a roller-supporting structure mounted upon said shaft provided with two series of rollers one on each side thereof, and a cam, having a rotation relative to the travel of the bar, for each series of rollers for coöperating therewith for causing and controlling the rotation of the shaft.

14. In combination with a machine for forming and moving a continuous bar of plastic material, a rotatable shaft, a cut-off wire, a supporting structure therefor mounted upon said shaft, means for controlling the movement of the cut-off wire relatively to the movement of the continuous bar, a movable delivery-plate and cam-operated means for moving it, with the required dwell in each position, through three different positions.

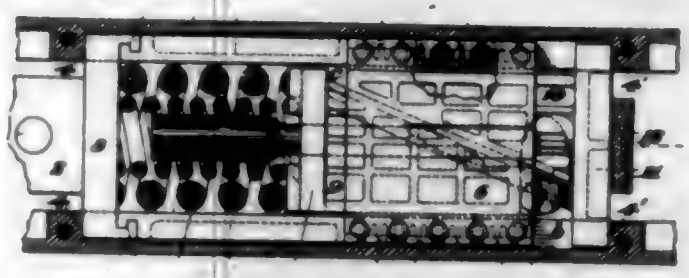
15. In combination with a machine for forming and moving a continuous bar of plastic material, a rotatable shaft, a cut-off wire, a supporting structure therefor mounted upon said shaft, means for controlling the movement of the cut-off wire relatively to the movement of the continuous bar, a movable delivery-plate adapted to be shifted from one position to another, with the required dwell in each, through three different positions with each cut-off operation and cam means for causing such operation.

16. In combination with a machine for forming and moving a continuous bar of plastic material, a cut-off wire and means for causing the same to cross the path of travel of said bar, a carry-off belt for the severed sections of said bar, a delivery-plate adapted to be moved from one to the other, with the required dwell in each, of the following positions, the position in which first is receives the severed section, then delivers the severed section to the carry-off belt, and then drops out of the path of travel of the cut-off wire, and cam-operated means for causing such actuation.

815,023. FRICTIONAL DRAFT-RIGGING. HARRY T. KRAKAU, Cleveland, Ohio, and LEUDELL A. COFFEE, Jr., Pittsburg, Pa., assignors to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed May 3, 1902. Serial No. 105,714.

Claim.—1. A frictional draft-rigging having an external friction member and wedges, one of said wedges being restrained by a

step and the other of said wedges being adapted to move with the draw-bar to effect the frictional engagement of the friction elements; substantially as described.



2. A frictional draft-rigging having an external friction member and wedges, one of the said wedges being adapted to be restrained by a stop, the other wedge being adapted to move with the draw-bar, and a spring bearing on one of said wedges; substantially as described.

3. In a frictional draft-rigging the combination with the movable friction members, wedges having a longitudinal face adapted to engage said movable friction members, a stop for one of the wedges, and a spring bearing against the other wedge; substantially as described.

4. In a frictional draft-rigging, the combination with external movable friction members, of wedges having lateral engagement therewith, a stop for one of the wedges, a spring bearing against the other wedge, and a head or follower connected to the friction-plates whereby the frictional engagement of the friction elements is effected; substantially as described.

5. In a frictional draft-rigging, the combination of movable friction members, wedges having a plain face upon one side, and a downwardly and transversely beveled face opposite thereto, a stop for one of the wedges, a spring bearing against the other wedge, a head or follower connected to the friction-plates, and a stop for said head or follower; substantially as described.

6. A frictional draft-gear comprising a friction-plate and another frictional member adjacent thereto, said friction-plate having its working face inclined to prevent vertical motion of the other friction member; substantially as described.

7. A frictional draft-rigging having wedge members in contact with each other, said wedge members having transversely-inclined meeting faces to maintain their frictional contact; substantially as described.

8. A frictional draft-rigging having wedging friction members, and a movable piece adapted to be engaged at or near the limit of motion to cause their reverse motion and release; substantially as described.

9. A frictional draft-rigging having wedging friction members, a moving part carried with one of said members and adapted to be engaged at or near the limit of motion and to cause the reverse motion and release of the wedges; substantially as described.

10. A frictional draft-rigging having wedging friction members, a moving part carried with one of said members and adapted to be engaged at or near the limit of motion and to cause the reverse motion and release of the wedges, and a spindle adapted to be engaged by a follower in said draft-rigging and to actuate said movable piece; substantially as described.

11. A frictional draft-rigging having wedging friction members, and a movable piece adapted to be engaged by one of the moving parts of the draft-rigging at or near the limit of motion to cause their reverse motion and release; substantially as described.

12. A frictional draft-rigging having wedging friction members, and a lever adapted to be engaged at or near the limit of motion to cause their reverse motion and release; substantially as described.

13. A frictional draft-rigging having wedging members, a moving part carried with one of said members and adapted to be engaged at or near the limit of motion and to cause the reverse motion and release of the wedges, and a spindle extending loosely through the wedges, adapted to be engaged by a follower in said draft-rigging and to actuate said movable part, and a transversely-inclined surface adapted to maintain the frictional contact of the wedges by gravity; substantially as described.

14. A frictional draft-rigging having wedging friction members, and a lever carried with one of said members and bearing on the other, and means for actuating said lever at or near the limit of motion of the draft-rigging; substantially as described.

15. In a mechanism of the character indicated, a friction member, a spring-seat having frictional engagement with one side of said friction member, a follower having frictional engagement with the opposite side thereof, and means whereby when the mechanism is subjected to strain said spring-seat and follower act upon each other to cause them to frictionally engage said friction member, substantially as described.

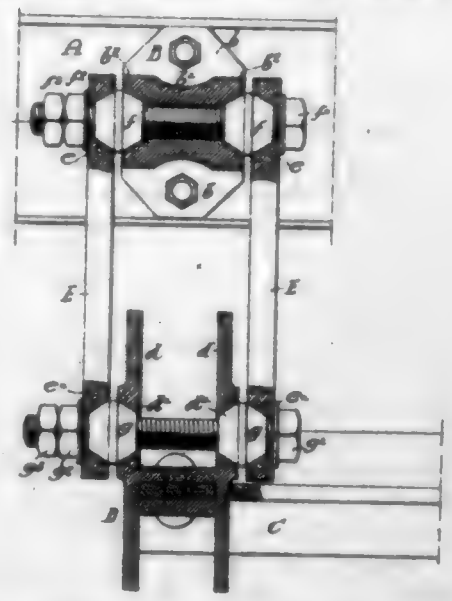
16. In a mechanism of the character indicated, a friction member, a spring-seat having frictional engagement with one side of said friction member, and a follower having frictional engagement with the opposite side thereof and having wedging engagement with said spring-seat to cause said seat and follower to frictionally engage said friction member when the mechanism is subjected to strain, substantially as described.

17. In a frictional draft-rigging, the combination with one or more friction members, of wedges having longitudinal faces for contact with said friction member or members, said wedges also having coacting inclined faces operating under draft and buffing movements of the draw-bar to cause a lateral expansion of the wedges against the friction member or members; substantially as described.

18. In a frictional draft-rigging, the combination of a friction member or members having friction-faces extending longitudinally of the rigging, of longitudinally-movable wedges having faces parallel with their lines of movement and contact with the friction member or members, said wedges also having coacting inclined faces, a spring bearing against one of the wedges, and means for restraining the lateral movement of the wedges; substantially as described.

19. In a frictional draft-rigging, the combination with a friction member or members, having friction-faces extending longitudinally of the rigging, of wedges contacting with the friction member or members, and having coacting inclined faces extending across the line of draft and arranged to expand the wedges upon longitudinal movement; substantially as described.

815,024. **BRAKE-BEAM HANGER.** MORRIS LINTON, Moorestown, N. J., assignor to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed Jan. 8, 1906. Serial No. 295,113.



Claim.—1. The combination in a brake-beam hanger, of a bearing, a brake-beam, links connecting the two, a bolt passing through the links and one of the parts, conical sleeves on the bolt, the parts being recessed to receive the sleeves, substantially as described.

2. The combination in a brake-beam hanger, of a bearing, a brake-beam hung therefrom, links connecting the bearing with the beam, a bolt passing through the links and one of the parts, conical sleeves on the bolt between the links and one of the parts, and means for drawing the links and sleeves toward a central part, substantially as described.

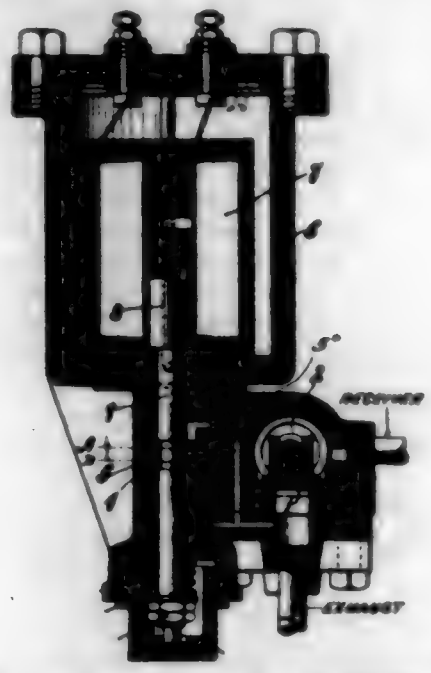
3. The combination in a brake-beam hanger, of a bearing, a brake-beam, links connecting the brake-beam with the bearing, a transverse bolt passing through the bearing and the links, conical sleeves mounted on the bolts, the opening in the bearing and the openings in the links being countersunk for the reception of the sleeves, substantially as described.

4. The combination in a brake-beam hanger, of a bearing, a brake-beam, links extending from the brake-beam to the bearing, openings in each end of each link, a transverse opening in the bearing and a transverse opening in the brake-beam, bolts adapted to said openings, and conical sleeves mounted on the bolts and resting in countersunk portions of the bearing, brake-beam and links, substantially as described.

5. The combination in a brake-beam hanger, of a bearing having an opening therein countersunk at each end, a brake-beam, a

brake-shoe mounted thereon, countersunk openings in the brake-shoe, links extending from the bearing to the brake-shoe, said links having countersunk openings in each end, bolts passing through the openings in the links, one bolt passing through the bearing and the other bolt passing through the opening in the shoe, two conical sleeves on each bolt arranged to fit the countersunk openings in the parts, and nuts on the bolts for taking up the lost motion, substantially as described.

815,025. **MEANS FOR OPERATING THE ELECTRIC UNLOADERS OF AIR-COMPRESSORS.** Frederick Van Dusen Lombard, New York, N. Y., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Nov. 20, 1903. Serial No. 181,865.



Claim.—1. An air-compressor, a discharge-valve therefor, a main regulator-valve for controlling the pressure behind the discharge-valve, an auxiliary valve for controlling the movements of the main regulator-valve, an electromagnet for operating the auxiliary valve and means for energizing and deënergizing the electromagnet.

2. A main regulator-valve for an air-compressor, an auxiliary valve for controlling the movements of the same, an electromagnet for operating the auxiliary valve and air-pressure-controlled means for permitting the energization and deënergization of the electromagnet.

3. An unloader for an air-compressor and electrically-controlled means for operating the unloader comprising a rheostat, an electromagnet connected in series therewith and arranged to be deënergized when the rheostat-arm reaches a predetermined point.

4. An unloader for an air-compressor and electrically-controlled means for operating the unloader comprising a rheostat, an electromagnet connected in series therewith and a holding-magnet for the rheostat-arm.

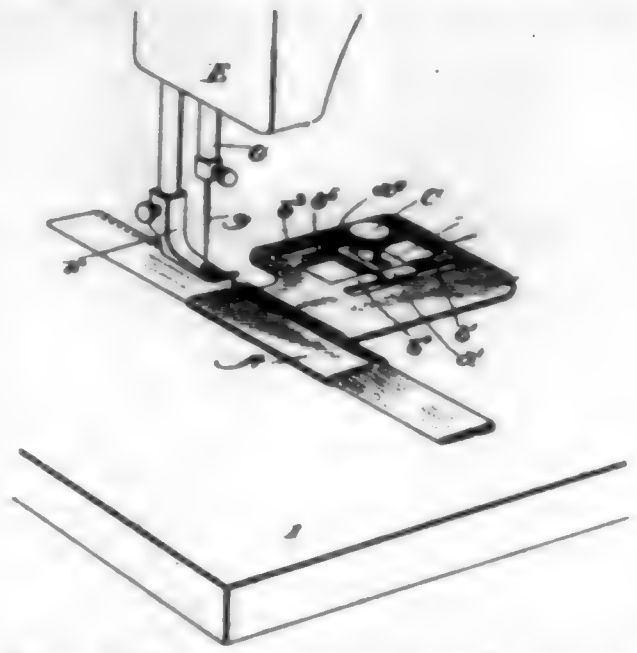
5. An unloader for an air-compressor and electrically-controlled means for operating the unloader comprising a rheostat, an electromagnet connected in series therewith, a magnetic clutch for controlling the movement of the rheostat-arm, a motor for operating the magnetic clutch when the circuit is completed therethrough and air-pressure-controlled means for making and breaking the circuit.

6. An unloader for an air-compressor and electrically-controlled means for operating the unloader comprising a rheostat, a holding-magnet, a magnetic clutch, a motor for operating it, a magnetic switch and an air-pressure-governed electric contractor controlling the circuit through the magnetic switch, the magnetic clutch and the holding-magnet.

7. An unloader for an air-compressor and electrically-controlled means for operating the unloader comprising a rheostat, an electromagnet connected in series therewith, a magnetic clutch, a motor for driving the same, a magnetic-controlled contactor, a magnetic switch and an air-pressure-governed electric contactor for making and breaking the circuit through the several parts.

8. An unloader for an air-compressor and electrically-controlled means for operating it comprising a rheostat, a holding-magnet for the rheostat-arm, a magnetic clutch for moving the arm, a motor connected to the magnetic clutch, a magnetic-controlled contactor, a magnetic switch and an air-pressure-governed electric contactor for controlling the operation of the several parts.

815,026. **FOLDING ATTACHMENT FOR SEWING-MACHINES.** Margaret A. B. Lunns, Hoboken, N. J. Filed Apr. 29, 1905. Serial No. 257,257.



Claim.—1. A folding attachment for sewing-machines, consisting of a plate folded to form an open-edge flattened tube, one of the edges of said plate being straight and the other edge overlapping the straight edge leaving a slot between the two edges through which the material to be operated on may be inserted, a plate extending from said tube, said plate being provided with strips, a slide connected to said strips and adapted to move longitudinally thereon, said slide having an opening therein in a direction transverse to the strips, and adapted to receive a screw by which the attachment may be secured to the bed of a machine,.

2. A folding attachment for sewing-machines consisting of a flattened tube one edge of which overlaps the other but with a longitudinal opening between through which the material is to be inserted, a plate secured to the tube, said plate having parallel strips, a slide secured to move longitudinally on said strips, said slide having an opening therein adapted to receive a set-screw by which the attachment is secured to the bed of the machine.

3. A folding attachment for sewing-machines consisting of a flattened tube one edge of which overlaps the other, there being left a longitudinal slot between the edges of the tube through which the material is to be inserted, a plate secured to the tube, said plate having parallel strips, a slide turned over the edges of the strips by which it is secured to the strip and adapted to be moved longitudinally thereof, said slide being provided with a longitudinal slot and a set-screw passing through the slot and into the bed of the machine.

815,027. **ELECTROPLATING APPARATUS.** Guy L. Meaker, Chicago, Ill. Filed Dec. 28, 1904. Serial No. 238,583.

Claim.—1. An electroplating apparatus comprising a tank for containing an electrolyte, a tray for supporting the articles to be plated, the bottom of which is made of conducting material, and means for giving endwise vibratory motion to said tray constructed to advance articles resting on the tray-bottom from one end of the tray to the other.

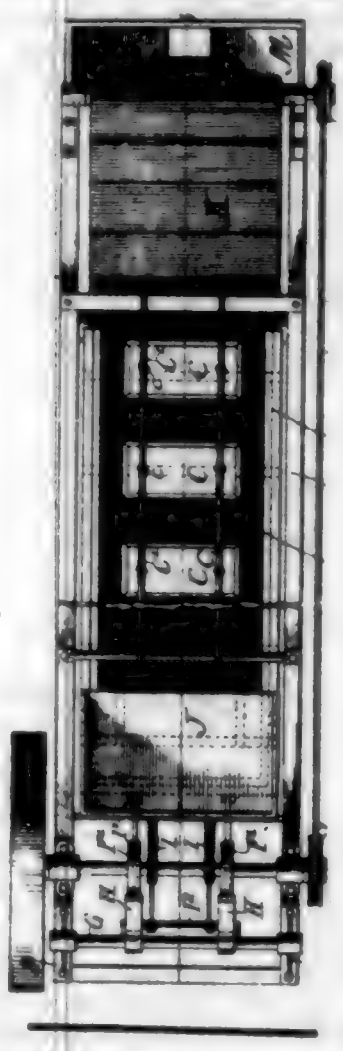
2. An electroplating apparatus embracing a tank containing an electrolyte, a generator, an anode, a tray for supporting the articles to be treated, the bottom of which constituting the cathode-terminal and means for giving endwise vibratory motion to said tray; the supporting-surface of the tray having transverse shoulders to effect the turning of the said articles during their progressive movement.

3. An electroplating apparatus comprising a tank containing an electrolyte, a generator, an anode, a tray for supporting the articles to be plated, the bottoms of which constitutes the cathode-terminal, and means for giving endwise vibratory movement to said tray adapted to afford a slow rearward and rapid forward movement of the same.

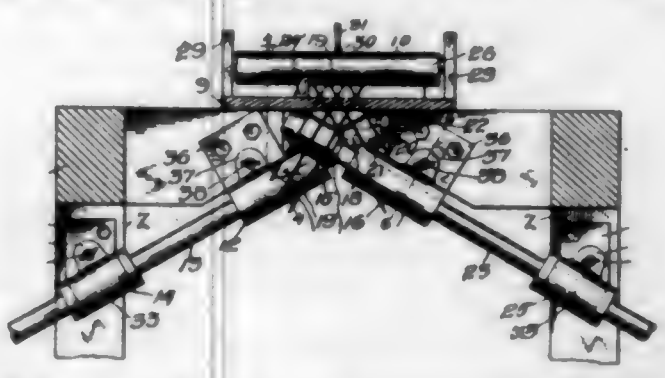
4. An electroplating apparatus comprising a tank containing an electrolyte, a generator, an anode, a tray for supporting the articles to be plated, said tray having a bottom which constitutes the cathode-terminal, and means for giving vibratory movement to said tray, the said bottom of the tray being of ridged or corrugated form.

5. An electroplating apparatus comprising a tank containing an electrolyte, a horizontally-moving tray located in said tank, and

means for giving endwise vibratory movement to said tray, embracing a rotating cam having an abrupt shoulder and a lever which is acted upon by said cam and which is connected with said tray



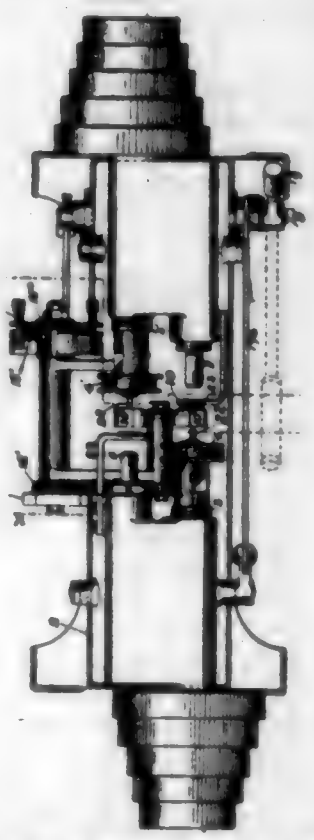
815,028. SAWING-MACHINE. GEORGE MOSKIN, Fruithurst, Ala., assignor of one-third to Lee Frazier, Lawrenceburg, Tenn. Filed Mar. 8, 1905. Serial No. 248,976.



Claim.—A machine of the class described comprising a frame including legs, a slotted bed-plate removably disposed upon the frame, bearings secured to the legs, each of said bearings including a section having a laterally-extending attaching-plate, and a section hinged to the first-named section for movement into and out of position for coöperation therewith to receive a shaft, the second section having the plate thereof arranged to rest against the attaching-plate when said section is in operative position, means engaged in the two plates for holding the sections in operative position, shafts removably journaled in the bearings and intersecting the planes of each other at one end, said shafts having flanges thereon adjacent to said ends, saws engaged with the shafts, spacing-collars engaged with the shafts between the saws of each shaft, one saw of each shaft resting against the flange thereof, and caps removably engaged with the shafts and arranged to hold the saws thereupon, said saws projecting through the slots of the bed-plate.

815,029. COUNTERSINKING OR FACING MACHINE. OLIVER M. MOWAT, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 11, 1905. Serial No. 245,285.

Claim.—1. A countersinking or facing machine having a plurality of tools, a carrier by means of which the articles to be operated upon are brought successively to the tools, said tools and carrier having a fixed relation to each other, and means by which the articles are engaged and moved endwise in the carrier toward and away from the tools.



2. In a machine of the character described, a plurality of tools, a carrier for bringing the articles to be operated upon successively to the tools, said tools and carrier having a fixed relation to each other, mandrels arranged to engage and move the articles in the carrier toward and away from the tools, and means for engaging said mandrels with the articles.

3. In a machine of the character described, oppositely-directed tools, a carrier intermediate of the tools for carrying the articles to be operated upon thereto, said carrier and tools having a fixed relation to each other, and devices for engaging and moving the work in the carrier endwise toward and away from the tools.

4. In a machine of the character described, oppositely-directed tools, a carrier intermediate the tools for bringing the articles to be operated upon successively thereto, reciprocable mandrels for moving the articles in the carrier toward and away from the tools, and means for reciprocating the mandrels simultaneously to move the articles on the carrier toward and away from the tools.

5. In a machine of the character described, oppositely-directed tools, a carrier intermediate of the tools for carrying the articles to be operated upon successively thereto, mandrels for engaging and moving the articles endwise on the carrier toward and away from the tools, and means for retracting the mandrels and thereupon advancing the carrier.

6. In a machine of the class described, the combination with oppositely-directed tools, of an intermediate rotary carrier, arranged to bring the articles to be operated upon successively to the said tools, and means for engaging and moving the articles endwise on said carrier toward and away from the tools.

7. In a machine of the character described, oppositely-directed tools, a rotary carrier intermediate of the tools and having sockets adapted to carry the articles to be operated upon successively into line with the tools, said tools and carrier being in fixed endwise or longitudinal relation to each other and means for moving the articles in the sockets into contact with the tools and away from the same.

8. In a machine of the class described, oppositely-arranged tools, a rotary carrier intermediate of the tools and having sockets arranged to carry the articles to be operated upon successively into line with the tools, reciprocable mandrels for moving the articles in said sockets endwise toward and away from the tools, and means for effecting an opposite simultaneous reciprocation of the said mandrels.

9. In a machine of the class described, oppositely-directed tools, a rotary carrier intermediate of the tools for bringing the articles to be operated upon successively in line therewith, oppositely-reciprocating mandrels for moving the articles in the carrier toward and away from the tools, and means for retracting the mandrels and thereupon advancing the carrier.

10. In a machine of the character described, a plurality of tools, a carrier for bringing the articles to be operated upon successively into line with the said tools, strippers opposite each tool, adjacent

to the carrier, mandrels alined with each tool and projecting past the corresponding strippers for engaging the articles in the carrier and moving them toward and from the tools, and means for operating the mandrels.

11. In a machine of the character described, two oppositely-directed tools out of line with each other, a carrier intermediate the tools, for bringing the articles to be operated upon successively into line therewith, mandrels alined with the tools for engaging the articles on the carrier to move them toward and away from the tools, and operating means for the tools, carrier and mandrels.

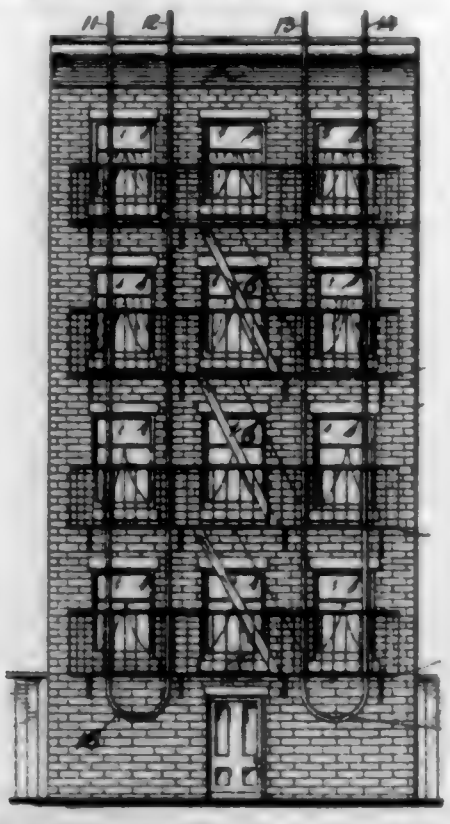
12. In a machine of the character described, the combination of the oppositely-directed tools, the intermediate rotary carrier, said tools and carrier being fixed with respect to movement toward and away from each other, the manually-operated reciprocable mandrels, and means for simultaneously operating said mandrels in opposite directions.

13. In a machine of the character described, the combination with the oppositely-directed tools, the intermediate rotary carrier, and the oppositely-reciprocating mandrels, of gearing for actuating the said carrier, said gearing including a friction-clutch and means for actuating the said mandrels arranged to control the operation of said clutch.

14. In a machine of the character described, the combination with a plurality of tools, a rotary carrier, and reciprocating mandrels arranged to coöperate with the carrier in bringing the work to the tools, of gearing for operating said carrier including a friction-clutch, a stop for the said gearing, and means for actuating the said mandrels arranged to control the action of said stop and clutch.

15. In a machine of the character described, the combination with the rotary work-carrier and the reciprocating mandrels which coöperate with the said carrier, of an operating-lever for said mandrels, actuating connections between the lever and mandrels, intermittently-acting gearing for rotating the carrier, and means controlled by said lever for controlling the operation of the said gearing.

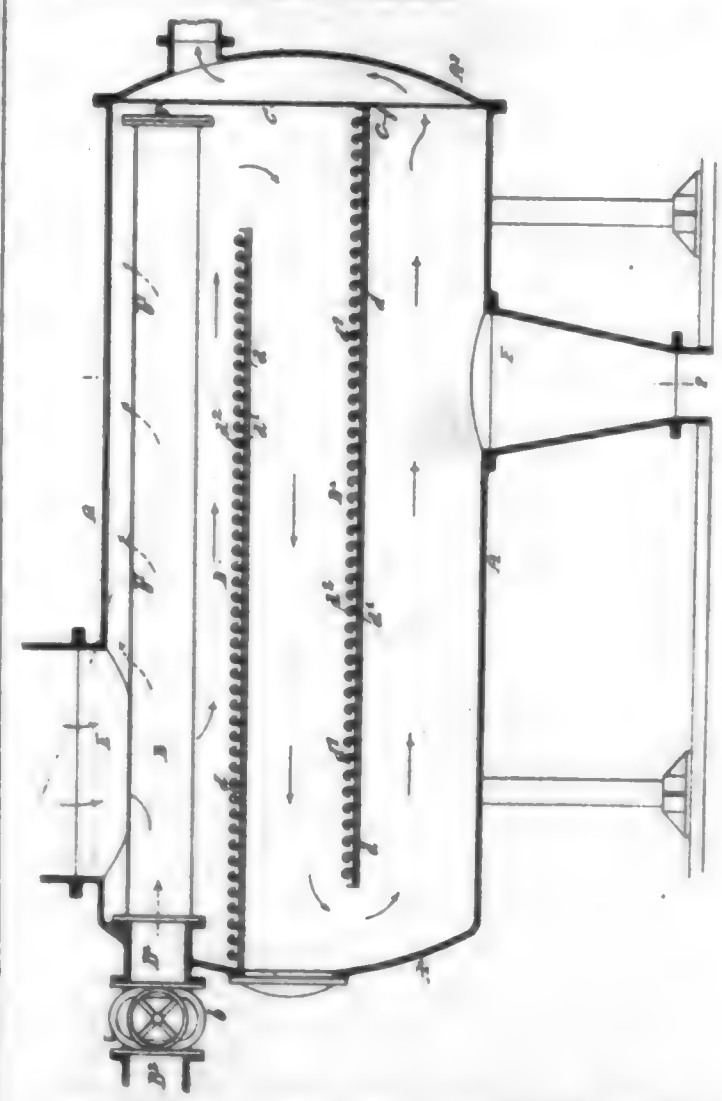
815,030. **FIRE-ESCAPE.** JAMES P. MCKENNA, Brooklyn, N. Y. Filed Nov. 28, 1905. Serial No. 289,474.



Claim.—1. The combination with a building having a plurality of balconies each formed with an opening staggered with relation to the opening in the next adjacent balcony, of a pair of parallel pipes curving over the edge of the roof and extending down through the balconies, one of said pipes passing through the opening of the first balcony so as to permit free descent from the roof to the second balcony, and the other pipe extending through a small opening in the first balcony and through a large opening in the second balcony, the two pipes being curved together and connected at their lower ends, substantially as described.

2. The combination with a building having a plurality of balconies and steps connecting said balconies, each of said balconies being provided with a pair of openings staggered with relation to the openings of the next adjacent balcony, of two pair of parallel pipes curving over the edge of the roof and extending down through the balconies, one pipe of each pair passing through one of the openings of the first balcony so as to permit free descent from the roof to the second balcony, and the other pipe of each pair extending through a small opening in the first balcony and through a large opening in the second balcony, the two pipes of each pair being curved together and connected at their lower ends substantially as described.

815,031. **CONDENSER.** GEORGE M. NEWHALL, Philadelphia, Pa. Filed Mar. 1, 1905. Serial No. 247,973.



Claim.—1. The combination in a condenser, of a casing, a horizontal deflector made up of a series of trapped troughs spaced apart so that water will overflow from each trough in a thin sheet, a water-supply pipe above the deflector arranged to discharge water onto said deflector, said casing having an inlet and an outlet for vapor, substantially as described.

2. The combination in a condenser, of a casing, two horizontal deflectors, one mounted above the other, each deflector made up of a series of trapped troughs so that water will overflow from the troughs and fall in a thin sheet, a water-supply pipe above the uppe; deflector and arranged to discharge water to said deflector, the water in the upper deflector discharging onto the lower deflector, said casing having an inlet and an outlet for the vapor to be condensed.

3. The combination in a condenser, of a casing having an inlet for vapor and an outlet, a water-supply pipe at the upper end of the condenser, and two deflectors, each made up of a series of trapped troughs spaced apart so that water will overflow from each trough in a thin sheet, one deflector stopping short of one end of the casing and the other deflector stopping short of the other end of the casing and one mounted below the other to form a circuitous passage for the vapor, so that the said vapor will pass through sheets of water escaping from the water-supply pipe and passing through the deflectors, substantially as described.

4. The combination in a condenser, of a casing having an inlet for vapor and an outlet, and having two deflectors, one mounted below the other, one deflector stopping short of one end of the casing and the other stopping short of the other end of the casing, each deflector being made up of a series of spaced troughs, each trough having a trap so that the water as it escapes from the supply-pipe will fall onto the first deflector and pass through the first deflector onto the second deflector and pass through the second deflector to the bottom of the casing, the traps preventing the vapor passing through

the deflectors so that it must follow a circuitous passage and pass through the sheets of water, substantially as described.

5. The combination in a condenser, of a casing having an inlet for vapor and an outlet, a horizontal supply-pipe in the upper portion of the condenser, said pipe having a longitudinal slot in its upper portion so that the water must fill the pipe and overflow through the slot and over the outer surface of the pipe, and two deflectors, one mounted under the other, each deflector composed of a series of spaced troughs, substantially as described.

6. The combination in a condenser, of a longitudinally-arranged cylinder having a head at each end, an inlet for vapor at the upper end of the cylinder near one end, and an outlet, a water-supply pipe extending nearly the full length of the cylinder and having a slot in its upper surface, two deflectors, one arranged above the other, the upper deflector terminating a short distance from the end opposite the inlet end for the vapor, the other terminating a short distance from the other end, each deflector being made up of a series of spaced and trapped troughs so that the condensing water will pass from the supply-pipe in a thin film and pass through each deflector in thin sheets while the vapor will pass over the first deflector and return between it and the second deflector, and finally pass out under the second deflector, substantially as described.

7. The combination in a condenser, of a longitudinal casing having a head at each end, a diaphragm at one end of the casing terminating a short distance from the bottom of the condenser forming a space between the head and the diaphragm, an outlet in the head which may be connected to a vacuum-pump, a supply-pipe for the condensing water situated in the upper portion of the condenser, and a deflector between said supply-pipe and the lower edge of the diaphragm, said deflector being perforated for the passage of condensing water, substantially as described.

8. The combination in a condenser, of a cylindrical casing, an inlet at the upper end for vapor and a hot-well connection in the lower portion of the casing, a vacuum-pump connection in one head of the condenser, a longitudinally-arranged water-supply pipe open throughout its length so as to allow a film of water to escape from the pipe, two deflectors, one mounted above the other and each deflector made up of a series of trapped troughs, substantially as described.

9. The combination in a condenser, of a casing, an inlet for vapor at the upper end of the casing, a connection to the hot-well at the lower end of the casing, an outlet-passage at one end of the condenser arranged to be connected to the vacuum-pump, a supply-pipe for the condensing water, two deflectors, one mounted below the other and arranged so that the vapor will travel in a circuitous path, a diaphragm at the outlet end of the casing, said diaphragm extending to a point below the lower deflector, substantially as described.

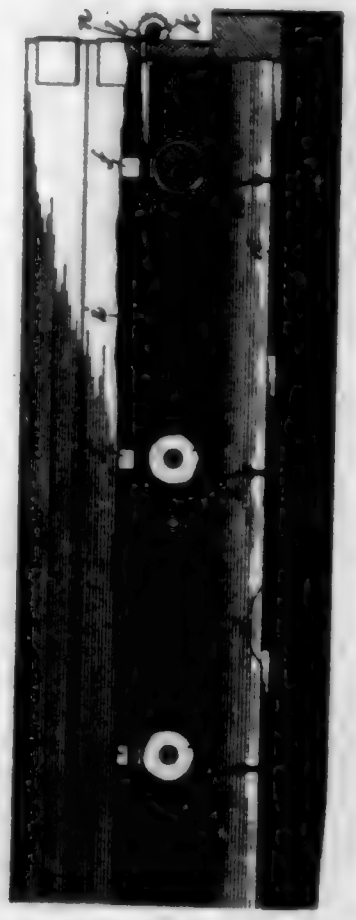
10. A deflector for horizontal condensers consisting of a series of trapped troughs spaced apart so that as the water overflows from the troughs it will fall in thin sheets, substantially as described.

11. The combination in a condenser, of an inlet for vapor, an outlet, a supply-pipe for condensing water situated in the upper portion of the casing, two deflectors, one mounted below the other, one terminating a short distance from one end of the casing and the other terminating a short distance from the opposite end of the casing, each deflector being made up of a series of transversely-arranged troughs, the troughs being spaced apart and each trough having a low flange on one side and a high flange on the other side which is curved and overlaps the lower flange of the adjoining trough so as to form a trap whereby the water, as it passes from the supply-pipe at the upper end of the casing, will pass into the troughs of the upper deflector and pass from this deflector in a series of thin transverse sheets to the troughs of the lower deflector and will escape from these troughs in a series of transverse films to the lower portion of the cylinder, so that the vapor as it passes through the condenser must pass through a number of films of water, substantially as described.

815,032. DUMP-CAR. SPENCER OTIS, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D., and Chicago, Ill., a Corporation of South Dakota. Filed Dec. 26, 1903. Serial No. 186,643.

Claim.—1. A car of the class described having a bottom comprising swinging dumping-doors, and means for operating the doors comprising a longitudinally-movable member and a rotatable member and flexible connections between the longitudinally-movable member and the rotatable member and between the rotatable member and the doors.

2. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom portion formed of a plurality of swinging sections pivotally secured at their inner edges to the framework of the car at each side of the longitudinal center, a plurality of pulleys rotatably mounted on the framework of the car transversely thereof—at least one for each swinging bottom section, chain mechanism securing the pulleys to the swinging bottom section, an operating-bar slidably mounted longitudinally of the car and adjacent to the pulley mechanism, chain mechanism securing said sliding bar to each and every pulley, and means for moving said sliding or operating bar, substantially as described.



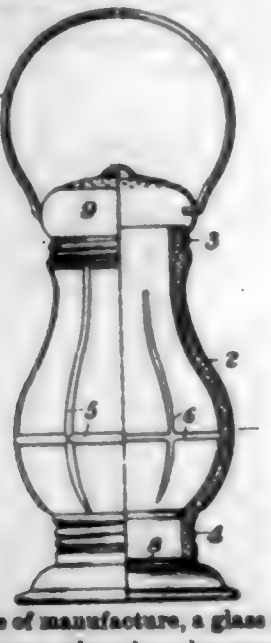
3. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto at their inner edges and at each side of the longitudinal center, a plurality of sheave-pulleys rotatably mounted on the frame of the car transversely thereof, chain mechanism securing such sheave-pulleys and drop-bottom sections together, a sliding operating-bar arranged above and adjacent to said sheave-pulleys, chain mechanism securing said sliding bar to each and every sheave-pulley, a main operating-shaft rotatably mounted in the frame of the car transversely thereof, and chain mechanism securing such sliding bar to the main operating-shaft, substantially as described.

4. In a dump-car of the class described, the combination of a supporting-framework, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured thereto at their inner edges and at each side of the longitudinal center, a plurality of sheave-pulleys rotatably mounted on the frame of the car transversely thereof, chain mechanism securing such sheave-pulleys and drop-bottom sections together, a sliding operating-bar arranged above and adjacent to said sheave-pulleys, chain mechanism securing said sliding bar to each and every sheave-pulley, a main operating-shaft rotatably mounted in the frame of the car transversely thereof, chain mechanism securing such sliding bar to the main operating-shaft, and ratchet-and-dog mechanism on said main operating-shaft to hold it in desired position, substantially as described.

5. In a dump-car of the class described, the combination of a supporting-frame portion, a drop-bottom therefor formed of a plurality of swinging sections pivotally secured to the framework of the car at each side of the longitudinal center, a longitudinally-movable slidable operating-bar, means connected with said slidable bar to close said swinging drop-bottom sections, and a main winding-shaft provided with chain mechanism connecting it with said slidable bar to operate the same and thereby close the swinging drop-bottom sections, substantially as described.

815,033. GLASS ARTICLE. JAMES PAULL and ASA G. NEVILLE, Wellsburg, W. Va., assignors to Eagle Glass & Manufacturing Company, Wellsburg, W. Va., a Corporation of West Virginia. Filed Sept. 18, 1905. Serial No. 278,881.

Claim.—1. As a new article of manufacture, a lantern-shaped glass body having an open top with external screw-threads and an open bottom with external screw-threads, and an expanded intermediate portion, in combination with a metal base, screwed on the bottom of the body and carrying a closure, and a metal cap screwed to its top; substantially as described.

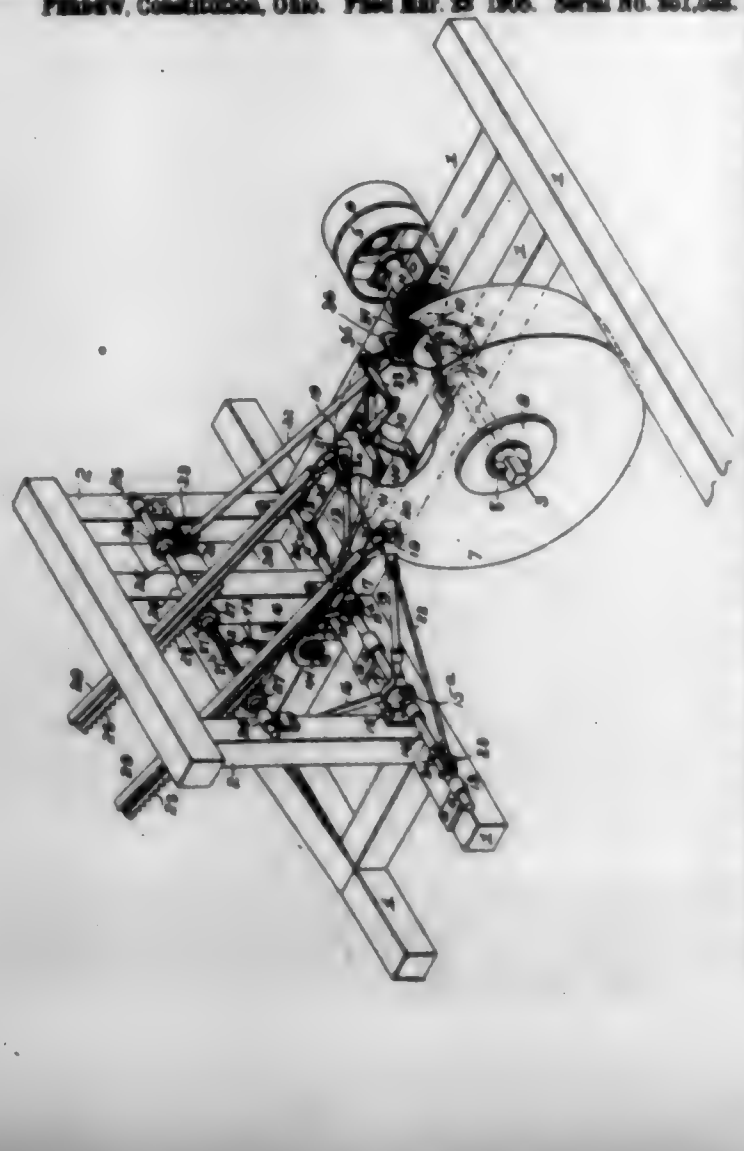


2. As a new article of manufacture, a glass receptacle having an open top with external screw-threads and an open bottom with screw-threads, an intermediate expanded portion provided with external ribs, a metal base provided with a metal closure screwed to the base of the receptacle, and a perforated metal cap screwed to its top; substantially as described.

3. As a new article of manufacture, a glass receptacle having an open top with external screw-threads, an open bottom, and an expanded intermediate portion with external ribs and internal corresponding recesses, a metal base screwed to the bottom and provided with a metal closure, and a perforated metal cap screwed to the top and having a bail; substantially as described.

4. As a new article of manufacture, a glass receptacle having an open top with external screw-threads, an open bottom, and an expanded intermediate portion with external ribs and internal corresponding recesses, a metal base screwed to the bottom and having a perforated metal closure, and a perforated metal cap screwed to the top and having a bail; substantially as described.

815,034. GRINDSTONE-TURNING APPARATUS. Douglas Pendew, Constitution, Ohio. Filed Mar. 22 1905. Serial No. 251,522.



Claim.—1. In a machine of the character described, the combination with means for rotating a stone, of a pivoted arm, a cutter carried by said arm, a longitudinally-movable bar pivotally connected with said arm, and means for moving said bar and permitting its forward end to simultaneously descend with the pivoted arm and cutter.

2. In a machine of the character described, the combination with means for rotating a stone, of a pivoted arm carrying a cutter, a shaft, a pinion on said shaft, and a rack-bar mounted upon said pinion and pivotally attached to the arm carrying the cutter.

3. In a machine of the character described, the combination with a rotary mounting for a stone, of a pivoted arm carrying a cutter for dressing the stone, a shaft, a pinion on the shaft, a rack-bar mounted upon said pinion and pivotally connected with the arm carrying the cutter, and gearing between said rotary mounting and said shaft.

4. In a machine of the character described, the combination with means for rotating a stone, of a pivoted arm, a cutter carried by said arm, means for adjusting said arm longitudinally and means connected with said pivoted arm to move the cutter in contact with the stone.

5. In a machine of the character described, the combination with means for rotating the stone, of two pivoted arms, cutters carried by said arms, longitudinally-movable bars pivotally connected with said arms, and means for driving said bars and permitting their forward ends to simultaneously descend with the pivoted arms and cutters.

6. In a machine of the character described, the combination with means for rotating a stone, of two pivoted arms, cutters carried by said arms, means for adjusting said arms longitudinally and means connected with said pivoted arms to move the cutters in contact with the stone.

7. In a machine of the character described, the combination with a shaft constructed to receive a stone to be turned, of two pivotally-supported arms, cutters carried by said arms, rack-bars pivotally-connected with said arms, pinions on which said rack-bars are mounted and means for operating said pinions.

8. In a machine of the character described, the combination with a shaft to receive a stone to be turned, and driving means for said shaft, of two pivotally-supported arms, cutters carried by said arms, rack-bars pivotally connected with said arms, pinions upon which said rack-bars are mounted, and means intermediate the driving-shaft and said pinions for operating the latter when the driving-shaft and stone are rotated.

9. In a machine of the character described, the combination with a rotary mounting for a stone to be ground, of bit-carrying devices, longitudinally-movable bars pivotally connected with said devices, racks on said bars, and pinions engaging said racks for feeding the bits to the stone as the latter is ground.

10. In a machine of the character described, the combination with rotary mounting for a stone, of pivoted arms, bits carried by said arms, longitudinally-movable bars connected at one end to said arms, racks on said bars, pinions engaging said racks, and means for turning said pinion controlled by the turning of the stone-mounting.

11. In a machine of the character described, the combination with a shaft, means for securing a stone thereon, and facing beveled friction-gears on said shaft, of pivoted bit-carrying arms, bars connected with said arms, racks on said bars, pinions engaging said racks, a friction-gear to drive said pinions, and means for moving said friction-gear into engagement with either of the first-mentioned friction-gears according to the direction of movement desired for the bars.

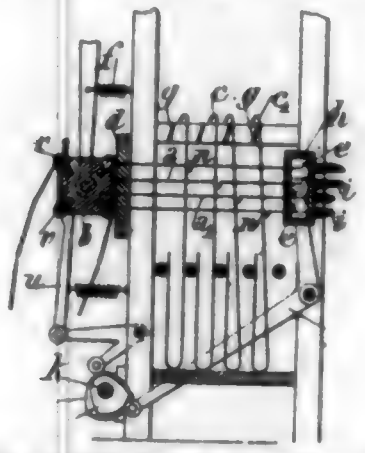
12. In a machine of the character described, the combination with rotary mounting for a stone to be ground, of a shaft, eccentrics thereon, straps or bands on said eccentrics, arms secured to said straps or bands and cutter heads or blocks carried by said arms, and levers secured to the eccentrics and adapted to turn them to adjust the arms longitudinally.

13. In a machine of the character described, the combination with a rotary mounting for a stone to be ground, of laterally-adjustable pivotally-supported arms, cutters carried thereby, longitudinally-movable rack-bars pivotally connected with said arms, a shaft under said rack-bars, pinions laterally adjustable on said shaft and meshing with the rack-bars, means for driving said shaft and means for rotating the stone-mounting.

14. In a machine of the character described, the combination with a rotary stone-mounting, of swinging arms, means for supporting the same, bits carried by said arms, lateral brace-rods pivotally

secured to the arms at one end, and means at the other ends of the brace-rods to adjust the arms laterally.

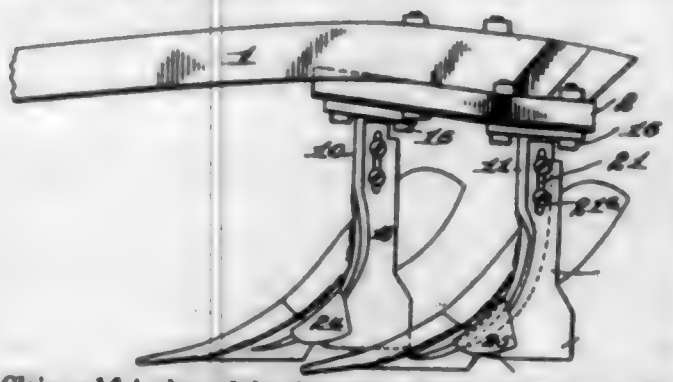
815,035. JACQUARD-MACHINE. JEAN M. PERRIN and JEAN B. PERRAUD, Lyons, France. Filed Sept. 6, 1904. Serial No. 223,504.



Claim.—1. The combination in a jacquard mechanism of a frame with griffs *g* moving vertically, of lifting-wires *c* having their lower ends bent upwardly to form spring portions, bearings for the spring portions, of needles *a* provided with projections *a* for pushing said lifting-wires forward so as to cause them to engage with the griffs, of a frame *h* in the rear of the needles, springs connecting the needles with the frame, said frame pushing said needles against the hooks by means of the springs, and pattern-controlled mechanism for selecting the needles to be made operative.

2. In jacquard-machines the combination of a card-cylinder which is fixed at the time of acting and has a rotary motion to bring a fresh card-section into use, horizontal needles having a forward motion imparted to them to push them against the cards, a frame at the rear end of said horizontal needles, springs connected to the rear of said frame and to the needles, means for giving to-and-fro motion to said frame, vertically-moving griff knives or blades, spring-actuated hooks normally out of the path of the knives or blades and projections on the horizontal needles to enable the selected needles to push the hooks into the path of the knives or blades.

815,036. PLOW. ALVY G. PERRY, Coldwater, Miss. Filed Sept. 16, 1905. Serial No. 278,742.



Claim.—1. A plow of the character described, having a hollow cross-head formed of a flanged plate and a plate provided with lugs, said flanges abutting against one face of the said plate provided with the lugs, and the said lugs adapted to engage said flanges to position said flanged plate upon the other of the plates, and means for securing the plates together.

2. A plow of the character described having a hollow cross-head formed of a flanged plate and a plate provided with lugs, said flanges abutting against one face of the said plate provided with the lugs, and the said lugs adapted to engage said flanges to position said flanged plate upon the other of the plates, collars interposed between the plates to prevent the collapsing thereof, and means for securing the plates together.

3. A plow of the character described having a hollow cross-head formed of a flanged plate and a plate provided with lugs, said flanges abutting against one face of the said plate provided with the lugs, and the said lugs adapted to engage said flanges to position said flanged plate upon the other of the plates, collars interposed between the plates to prevent the collapsing thereof, and means extending through the collars and plates for connecting the plates together.

4. A plow of the character described having a hollow cross-head formed of a flanged plate and a plate provided with lugs, said flanges abutting against one face of the said plate provided with lugs, said lugs adapted to engage said flanges to position said flanged plate upon the other of the plates, each of said plates provided at each end with two pairs of openings, the pairs of openings of one plate alining with the pairs of openings of the other of the plates, and means extending through the pair of openings at each end of the cross-head for connecting the plates together.

5. A plow of the character described having a hollow cross-head formed of a flanged plate and a plate provided with lugs, said flanges abutting against one face of the said plate provided with lugs, said lugs adapted to engage said flanges to position said flanged plate upon the other of the plates, each of said plates provided at each end with two pairs of openings, the pairs of openings of one plate alining with the pairs of openings of the other of the plates, collars in alinement with the alining pairs of openings, and means extending through the alining pairs of openings and the collars for connecting the plates together.

6. A hollow cross-head having its top and bottom provided at each end with two pairs of openings, the two pairs of openings at each end of the top of the cross-head alining with the two pairs of openings at each end of the bottom of the cross-head, said plurality of pairs of openings adapted to permit of adjustably connecting a pair of plowshare-supporting standards to the cross-head, combined with a pair of plowshare-supporting standards, each of said standards provided with a cross-piece, and means extending through said cross-piece of each of the standards and two pairs of alining openings at each end of the cross-head for adjustably connecting the standards to the cross-head.

7. A hollow cross-head provided with two pairs of alining openings at each end thereof to permit of adjustably connecting a pair of standards to the cross-head, the pair of standards, each of said standards provided with a cross-piece abutting against the cross-head, a pair of collars within said cross-head at each end thereof, said pair of collars at each end of the cross-head in alinement with a pair of openings at each end of the cross-head, and means extending through said cross-pieces, said collars and a pair of alining openings at each end of the cross-head for adjustably connecting the standards to the cross-head.

8. A plow comprising a pair of plates suitably spaced apart and constituting a cross-head, a pair of standards adjustably connected thereto, extending in a diagonal direction with respect to the direction in which the cross-head extends and torsionally twisted near the upper end thereof, said standards having their lower portions formed in a curvilinear manner and constituting seats, a moldboard and a plowshare mounted in each of said seats and suitably connected to the standards, and rudders having elongated neck portions, the upper end of said neck portions being secured to the standards above the twist therein and that portion of the rudders below the twist in the standards being free of the standards.

9. A plow of the character described, comprising a standard, a plowshare connected thereto, a moldboard connected to the standard, a rearwardly-extending fender attached to the standard, and a rearwardly-extending rudder adjustably connected with the standard.

10. A plow of the character described, comprising a cross-head, a pair of standards depending therefrom, a flanged plowshare connected to each of the standards, a flanged moldboard connected to each of the standards and forming a continuation of the share, a rearwardly-extending fender attached to each of the standards, and an adjustable rudder suitably connected with each of the standards and extending rearwardly.

11. A plow comprising a pair of plates constituting a cross-head, a pair of standards each provided with a cross-piece, means extending through the said cross-pieces and through the said plates for connecting the latter together and to the standards, a plowshare and a moldboard secured to each of the standards, and a yielding and vertically-adjustable rudder connected to and extending rearwardly from each of the standards.

12. A plow comprising a pair of plates constituting a cross-head, a pair of standards, each provided with a cross-piece, means extending through the said cross-pieces and through the said plates for connecting the latter together and to the standards, a plowshare and a moldboard secured to each of the standards, a yielding and vertically-adjustable rudder connected to and extending rearwardly from each of the standards, and a rearwardly-extending fender connected to each of the standards and overlapping the lower portion of the rudders.

13. A plow of the character described, comprising a cross-head, a pair of standards suitably connected thereto, extending diagonally with respect to the direction in which the cross-head extends and torsionally twisted near the upper end thereof, said standards hav-

ing their lower portions formed in a curvilinear manner constituting seats, a moldboard and a plowshare mounted in each of said seats and suitably connected to the standards, said moldboard and share having a portion thereof bent to form an upwardly-extending flange substantially segment-shaped in contour, and rudders having their upper portions adjustably connected to the standards above the curvilinear portions of the standards, said rudders having the portions thereof opposing the curvilinear portions of the standards shaped to conform to said curvilinear portions and free of the said curvilinear portions.

14. A plow of the character described, comprising a pair of plates, one of said plates being flanged and abutting against the other of said plates and constituting a hollow cross-head, a pair of plowshare-supporting standards, a series of bolts extending through the plates and adapted to connect the said standards to the cross-head, and means mounted upon the said bolts and interposed between the plates to prevent the collapsing of the cross-head.

15. A plow of the character described, comprising a pair of plates, one of said plates being flanged and abutting against the other of said plates and constituting a hollow cross-head, a pair of plowshare-supporting standards, a series of bolts extending through the plates and adapted to connect the said standards to the cross-head, means mounted upon the said bolts and interposed between the plates to prevent the collapsing of the cross-head, a plow-beam mounted upon the cross-head, bolts extending through the plates and through the beam for connecting the latter to the cross-head, and means mounted upon the said last-mentioned bolts to prevent the collapsing of the cross-head.

16. A plow of the character described, provided with a vertically-adjustable and yielding rearwardly-extending rudder.

17. A plow of the character described, provided with a vertically-adjustable and yielding rearwardly-extending rudder, and a rearwardly-extending fender for said rudder.

18. A plow of the character described, provided with a vertically-adjustable and yielding rearwardly-extending rudder, and a rearwardly-extending fender overlapping said rudder.

19. A plow of the character described, comprising a plowshare-supporting standard, a share suitably connected therewith, and a rearwardly-extending rudder having its upper end adjustably connected to said standards and its lower end yielding.

20. A plow of the character described, comprising a pair of plowshare-supporting standards, a plowshare connected to each of said standards, and a rearwardly-extending rudder for each of the shares, said rudders having their upper ends adjustably connected to the standards and their lower end yieldable.

21. A plow of the character described, comprising a vertically-adjustable rudder having an enlarged and yieldable lower end.

22. A plow having a hollow cross-head consisting of a pair of plates, one of said plates ribbed and provided with side flanges extending at an angle with respect to the plate and the other of said plates having stop-lugs at each side extending at the rear of the flanges.

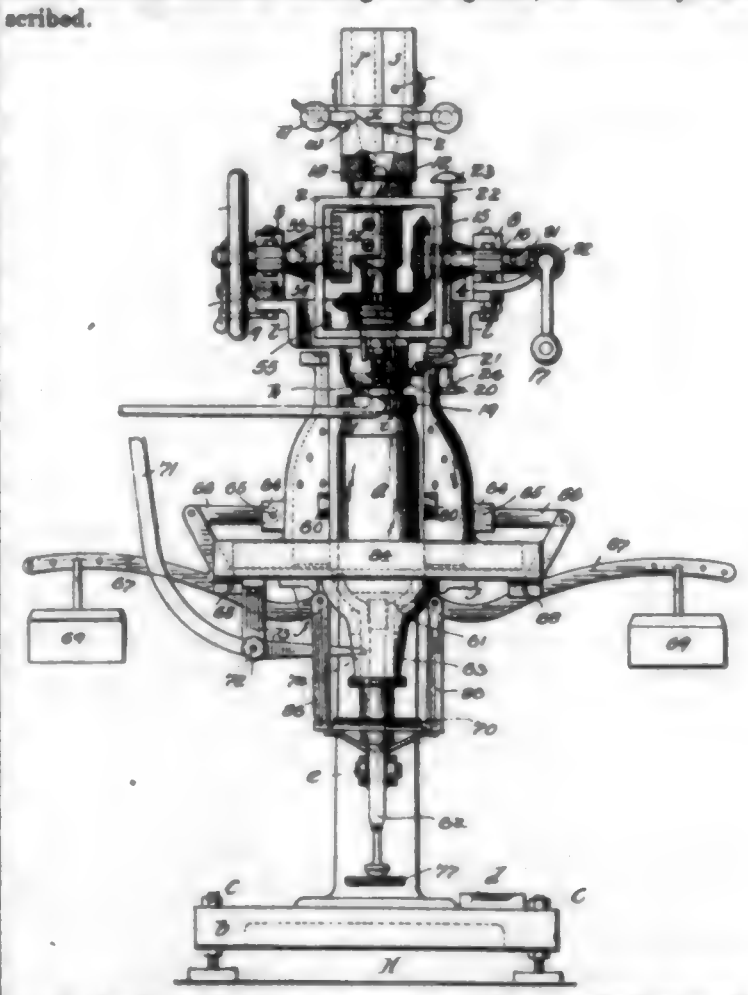
815,037. APPARATUS FOR MAKING GLASS BOTTLES AND THE LIKE. Albert Philippoteaux, Rheims, France. Filed May 18, 1903. Serial No. 157,622.

Claim.—1. A machine for manufacturing glass bottles comprising a supporting-column, revoluble glass supporting and blowing means carried thereby, a two-part preliminary mold vertically arranged and adapted to receive the molten glass and coöperate with said supporting and blowing means, a final mold, and means for swinging or rotating the supporting-machine with the partially-formed bottle carried thereby to bring it into operative relation to the final mold, substantially as described.

2. A machine for manufacturing glass bottles, comprising a supporting-column, a two-part separable vertically-disposed preliminary mold carried by said column, a revoluble frame supported from said standard and having means for coöperating with the mouth of the preliminary mold to form the bottle-neck, neck-engaging devices included in said means, means for swinging the revoluble frame after the preliminary mold has been opened to reverse the bottle and a working block or mold adjustable about its axis for further operating upon the bottle, substantially as described.

3. In a machine of the character described, a frame 2, a hollow shaft 10 supported thereby, a mold at one end thereof for forming the neck of the bottle, gripping devices in said mold for retaining the glass, a mandrel 18 for compressing and blowing the glass guided by said hollow shaft, and a block 57 pivoted to the frame for working the glass.

4. In combination, a telescoping standard, brackets carried thereby, vertically-disposed rods journaled in said brackets having outwardly-inclined arms *p* and *q*, means tending normally to separate said arms, a half-mold carried by each arm, and latch means carried by the half-molds for holding them together, substantially as described.



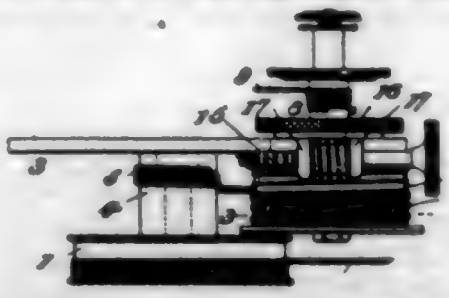
5. In a bottle-forming machine, means for partially blowing the bottle in an inverted position, means for swinging and rotating it into any desired position, a working device, means for permitting said working device to move in a half-circle so that it may work upon the bottle while held in any position, and a final mold for completing the bottle while in an upright position, substantially as described.

6. In a bottle-forming machine, a final mold, comprising a supporting member 84, a bottom-supporting mold or device carried thereby having a central passage, a bottom-forming spindle working therein, and side-shaping parts 60 removably carried by the member 84, substantially as described.

7. In a device of the class described, a neck-mold in one piece having prongs for holding and releasing the bottle, substantially as described.

8. In a device of the class described a neck-mold having prongs for holding and releasing the bottle and a reciprocating shaft for operating the neck-mold, substantially as described.

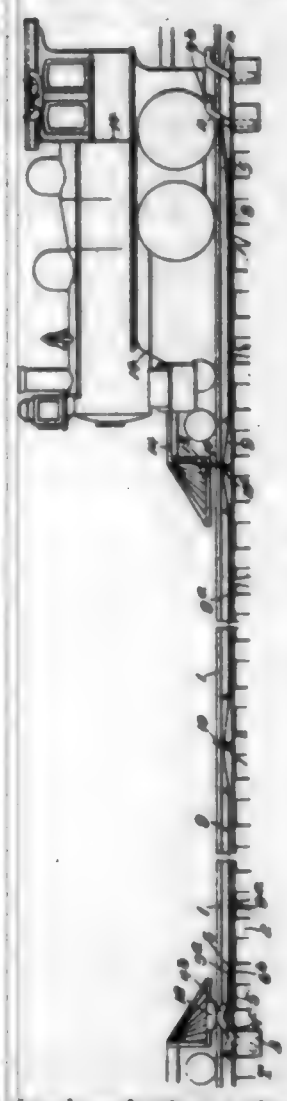
815,088. INDICATOR REDUCING-WHEEL. James L. Robertson, Jr., New York, N. Y. Filed May 11, 1905. Serial No. 261,075.



Claim.—1. In a steam-engine-indicator reducing device, a drum, a cord wound on said drum connecting the latter mediately to a piston whereby said drum is located in the movement of said piston, a pulley designed to effect the return rotation of said drum, a cord wound upon said pulley and said drum, said pulley having an internal coil-spring, a normally stationary sleeve extending into said pulley to which one end of said spring is secured, the other end being secured to said pulley, a gear-wheel rigid on said sleeve, and a worm engaging said gear-wheel to effect the rotation of said sleeve and consequent regulation of the tension of said spring proportionate to the speed of the piston.

2. In an indicator reducing device, the combination with the base-plate, the pulley, the spindle rigidly secured to said pulley and extending through said base-plate, said pulley having an internal coil-spring, of a sleeve rotatable in a bearing in said base-plate and inclosing said spindle, said spring being secured to said sleeve and to said pulley, a gear-wheel rigid on said sleeve, lugs or ears on said base-plate, a worm journaled in said lugs and meshing with said gear-wheel, and a hand-wheel on said worm.

815,039. RAILWAY-SIGNAL. STEPHEN ROMAIN, New Orleans, La., assignor of one-half to Traynere Baptiste, Mobile, Ala. Filed July 13, 1905. Serial No. 269,553.



Claim.—1. In a signal mechanism, a plurality of signaling devices arranged in sets, each set arranged end to end on each side of the track, the sets on one side of the track being arranged one-half length in advance of those on the other side of the track to overlap one another, each of said sets comprising a pair of trigger members fulcrumed for movement in a vertical plane, a lever fulcrumed for movement in a horizontal plane adjacent each of said trigger members, and connecting-rods connecting one end of each of said levers to their adjacent triggers, a supplemental lever pivotally mounted for movement in a horizontal plane adjacent one of said first-mentioned levers and having one end connected to the opposite end of the adjacent first-mentioned lever, a cable or chain connecting the free end of the other first-mentioned lever to the free end of the supplemental lever, guide-pulleys for said cable or chain and a plurality of bell-blocks pivotally mounted for movement in the vertical plane and connected with said cable, means carried by the train for engaging said trigger members to operate the same, and signal-bell devices carried by the train having means for engaging said bell-blocks to operate the same, all being arranged so that when the first trigger member of a section is depressed, the other trigger member of that section will be elevated and the bell-blocks will be elevated, substantially as shown and described.

2. In a signal mechanism, a plurality of signaling devices arranged in sets, each set arranged end to end on each side of the track, the sets on one side of the track being arranged one-half length in advance of those on the other side of the track to overlap one another, each of said sets comprising a pair of trigger members fulcrumed for movement in a vertical plane, a lever fulcrumed for movement in a horizontal plane adjacent each of said trigger members, and connecting-rods connecting one end of each of said levers to their adjacent triggers, a supplemental lever pivotally mounted for movement in a horizontal plane adjacent one of said first-mentioned levers, and having one end connected to the opposite end of the adjacent first-mentioned lever, a cable or chain connecting the free end of the other first-mentioned lever to the free end of the supplemental lever, guide-pulleys for said cable or chain and a plurality of bell-blocks pivotally mounted for movement in a vertical plane and connected with said cable, means carried by the train for engaging said trigger members to operate the same, and signaling-bell devices carried by the train having means for engaging said bell-blocks to operate the same, all being arranged so that when the first trigger member of each section is depressed the other trigger member of that section will be elevated and the bell-blocks will be elevated, said bell-blocks comprising elongated members, a shaft on which said members are mounted, bearings for said shaft, a crank-arm secured to said shaft and said cable, and a resting-block mounted adjacent to the bell-blocks to limit their downward movement, all being arranged substantially as shown and described.

3. In a signal mechanism, a plurality of signaling devices arranged in sets, each set arranged end to end on each side of the track, the sets on one side of the track being arranged one-half length in advance of those on the other side of the track to overlap one another, each of said sets comprising a pair of trigger members fulcrumed for movement in a vertical plane, a lever fulcrumed for movement in a horizontal plane adjacent each of said trigger members, a connecting-rod connecting one end of each of said levers to their adjacent triggers, a supplemental lever pivotally mounted for movement in a horizontal plane adjacent one of said first-mentioned levers, and having one end connected to the opposite end of the adjacent first-mentioned lever, a cable or chain connecting the free end of the other first-mentioned lever to the free end of the supplemental lever, guide-pulleys for said cable or chain and a plurality of bell-blocks pivotally mounted for movement in a vertical plane and connected with said cable, means carried by the train for engaging said trigger members to operate the same, signal-bell devices carried by the train having means for engaging said bell-blocks to operate the same, all being arranged so that when the first trigger member of each section is depressed the other trigger member of that section will be elevated and the bell-blocks will be elevated, said bell-blocks comprising elongated members, a shaft on which said members are mounted, bearings for said shaft, a crank-arm secured to said shaft and said cable, a resting-block mounted adjacent to the bell-block to limit their downward movement, and a housing for each of said trigger members having an aperture in its top through which the trigger member projects, substantially as shown and described.

4. In a signal mechanism, a plurality of signaling devices arranged in sets, each set arranged end to end on each side of the track, the sets on one side of the track being arranged one-half length in advance of those on the other side of the track to overlap one another, each of said sets comprising a pair of trigger members fulcrumed for movement in a vertical plane, a lever fulcrumed for movement in a horizontal plane adjacent each of said trigger members, and connecting-rods connecting one end of each of said levers to their adjacent triggers, a supplemental lever pivotally mounted for movement in a horizontal plane adjacent one of said first-mentioned levers and having one end connected to the opposite end of the adjacent first-mentioned lever, a cable or chain connecting the free end of the other first-mentioned lever to the free end of the supplemental lever, guide-pulleys for said cable or chain and a plurality of bell-blocks pivotally mounted for movement in a vertical plane and connected with said cable, means carried by the train for engaging said trigger members to operate the same, signal-bell devices carried by the train having means for engaging said bell-blocks to operate the same, all being arranged so that when the first trigger member of each section is depressed the other trigger member of that section will be elevated and the bell-blocks will be elevated, said bell-blocks comprising elongated members, a shaft on which said members are mounted, bearings for said shaft, a crank-arm secured to said shaft and said cable, and a resting-block mounted adjacent to the bell-blocks to limit their downward movement, a housing for each of said trigger members having an aperture in its top through which the trigger member projects, and means within the housing for locking the trigger member to the limit of its movement in either direction, substantially as shown and described.

815,040. INSTRUMENT FOR STOPPING TEETH. PERCY F. RUTHERFORD, London, England. Filed Mar. 6, 1905. Serial No. 248,903.

Claim.—1. An instrument for stopping teeth which consists of an elastic flexible cup to contain the stopping material and an elastic

presser for pressing the stopping material into the cavity, substantially as described.



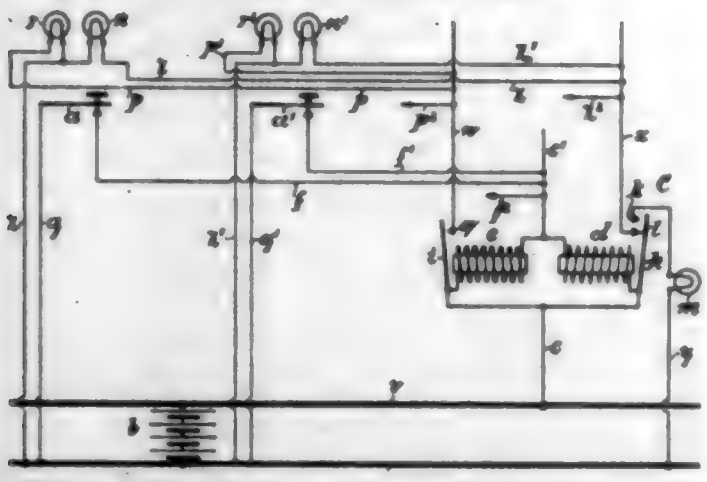
2. An instrument for stopping teeth consisting of a head comprising at one end an elastic flexible cup and at the other end a presser and a handle connected to said head between the ends thereof and extending at right angles to said head.

815,041. INSTRUMENT FOR STOPPING TEETH. PERCY F. RUTHERFORD, London, England. Filed Dec. 23, 1905. Serial No. 293,194.



Claim.—In an instrument for stopping teeth in which a cup to contain the stopping is fixed to the end of a handle, the device for securing the cup to the handle, which consists of a ring *d* through which the stem *b* of the cup *a* is passed and in which it is secured by the screw-threaded end *c* of the handle *c* passing through a screw-threaded hole in the side of the ring and into or through the said stem of the cup, substantially as described.

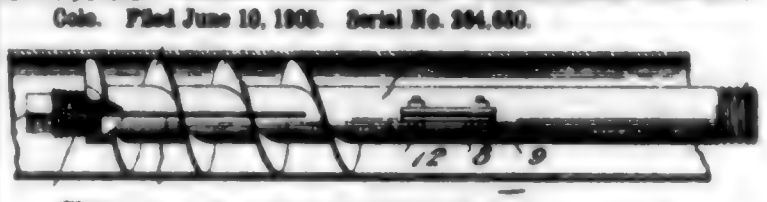
815,042. TELEPHONE-EXCHANGE. BENNO SALEMANN, Berlin, Germany. Filed Nov. 16, 1905. Serial No. 287,722.



Claim.—1. In a telephone-exchange, the combination with a plurality of keys, signaling devices and additional signaling devices, each key, each signaling device and each additional signaling device for a distributing-switch operator, of two relays and a signaling device for a connecting-switch operator, primary circuits controlled by said plurality of keys and including said two relays which are connected in multiple, the first of said two relays being arranged for alone attracting its armature under the action of a current of ordinary strength and both relays being arranged for simultaneously attracting their armatures under the action of a current of a greater strength, secondary circuits controlled by the armature of the first of said two relays and including said plurality of signaling devices, a circuit shunted to said secondary circuits and including said signaling device, and circuits shunted to said secondary circuits and including said plurality of additional signaling devices and controlled by the second of said two relays.

2. In a telephone-exchange, the combination with two main conductors, of a source of electricity connected with said two main conductors, a plurality of keys each for a distributing-switch operator, a plurality of contact-pieces for said plurality of keys, two electromagnets for a connecting operator, lines connecting in multiple the coils of said two electromagnets on the one hand with the one of said two main conductors and on the other hand with said plurality of contact-pieces, a plurality of lines connecting said plurality of keys with the other of said two main conductors, a plurality of signaling devices each for a distributing-switch operator, the first of said two electromagnets being arranged for alone attracting its armature under the action of a current of ordinary strength and both electromagnets being arranged for simultaneously attracting their armatures under the action of a current of a greater strength, secondary circuits controlled by the armature of the first of said two electromagnets and including said plurality of signaling devices and the other of said two main conductors, a line shunted to said secondary circuits and to the other of said two main conductors and including a signaling device for said connecting-switch operator, a plurality of additional signaling devices each for a distributing-switch operator, and lines shunted to said secondary circuits and including said plurality of additional signaling devices and forming circuits which are controlled by the armature of the second of said two electromagnets.

815,043. BOILER-FLUE CLEANER. CHARLES SCHEER, Silverton, Colo. Filed June 10, 1905. Serial No. 264,660.

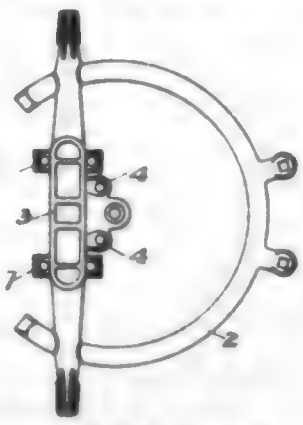


Claim.—1. A flue-cleaner provided with an expansible forward end, adjustable scraping-knives in rear thereof, a spiral scraper carried by the expansible end, and means for expanding the said expansible end to vary the diameter of the spiral scraper.

2. A flue-scraper comprising a tubular stem having a split expansible forward end and formed in rear thereof with radial slots, a spiral scraper surrounding said expansible end and split to expand therewith, means for expanding the said expansible end of the stem and spiral scraper, scraper-blades mounted in said radial slots, and means for supporting and adjusting said blades.

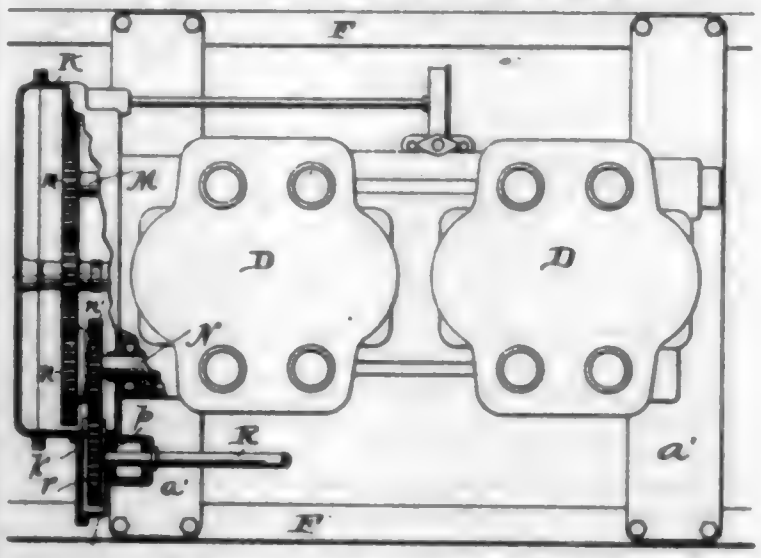
3. A flue-cleaner provided with an expansible forward end and radial slots in rear thereof, a spiral scraper carried by the expansible end, means for expanding the said expansible end to vary the diameter of the spiral scraper, a holder projecting through said radial slots, and radially-adjustable scraper-blades carried by said holder.

815,044. FIFTH-WHEEL. WILLIAM A. SCHLEICHER, Cleveland, Ohio. Filed May 9, 1904. Serial No. 206,973.



Claim.—The herein-described fifth-wheel construction having an integral fifth-wheel plate and head-block, the latter having a rearward extension formed with a seat for a king-bolt, and a separate perch-iron having a registering seat for a king-bolt and secured to said extension at each side of the king-bolt by vertical connections; substantially as described.

815,045. AUTOMOBILE. CHARLES SCHMIDT, Cleveland, Ohio, assignor to The Peerless Motor Car Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Oct. 9, 1905. Serial No. 281,881.



Claim.—1. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-

separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings.

2. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and the section E having a depending sediment-pocket provided with holes in its ends, and plugs for closing said holes.

3. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and the section E having a depending sediment-pocket provided with holes in its ends, and plugs for closing said holes, and a longitudinally-extended baffle-bar fixed in the casing member E over the said pocket.

4. A crank-case consisting of three longitudinally-separable sections, to wit, the upper section A which carries the upper half of the crank-shaft bearings and has an internal partition-piece J which carries the upper half of the middle crank-shaft bearing, and an intermediate section B which carries the lower half of the crank-shaft bearings and has an internal partition-piece J′ which carries the lower half of the middle bearing for the crank-shaft, which partition-pieces J and J′ divide the casing into independent chambers, and two lower dish-shaped sections E which are removably secured to the lower edges of the section B.

5. A crank-case consisting of three longitudinally-separable sections, to wit, the upper section A which carries the upper half of the crank-shaft bearings and has an internal partition-piece J which carries the upper half of the middle crank-shaft bearing, and an intermediate section B which carries the lower half of the crank-shaft bearings and has an internal partition-piece J′ which carries the lower half of the middle bearing for the crank-shaft, which partition-pieces J and J′ divide the casing into independent chambers, and two lower dish-shaped sections E which are removably secured to the lower edges of the section B, and each of said sections E having a dependent pocket which communicates with the interior of the casing and has in its ends the holes *g*, *g*, and removable plugs for closing said holes.

6. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and two dust-guard plates secured respectively to the side frame members and to the sides of the casing member B.

7. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and a gear-case formed on one end of said crank-case and having in its side a slot, and a removable cover for said slot.

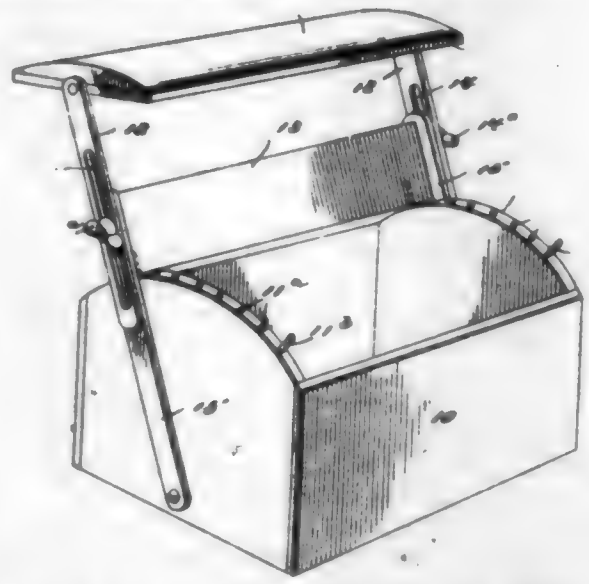
8. In an automobile, the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and a gear-case formed on one end of said crank-case and having in its side a slot, and a removable cover for said slot, which cover is in the form of a supplemental casing carrying bearings for a magneto-shaft.

9. In an automobile the combination with two side frame members, of a crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms which are secured to said side frame members, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and a gear-case formed on one end of said crank-case, which gear-case is provided with a removable end cap.

10. A crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings.

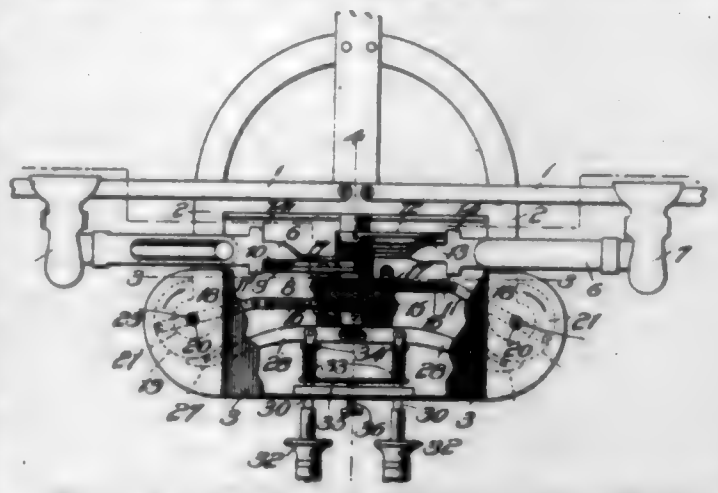
11. A crank-case consisting of three longitudinally-separable sections, to wit, the section A having laterally-extended arms, a bottom dish-shaped section E, and an intermediate section B, the section A being formed with the upper half of the crank-shaft bearings, and section B with the lower half of said bearings, and the section E having a depending sediment-pocket provided with holes in its ends, and plugs for closing said holes.

815,046. **FOOT-REST.** EMIL SHERMAN, Chicago, Ill. Filed Aug. 31, 1905. Serial No. 276,584.



Claim.—A foot-rest comprising a base-box having a series of holes in its ends and stop-pins in said holes, extensible arms pivoted to said ends and having a cross-piece arranged to strike against said stops, and a pivoted foot-board carried between said arms.

815,047. **MUSIC-LEAF TURNER.** CHESTER B. SHULER, Clifton, Kans. Filed June 27, 1905. Serial No. 267,311.

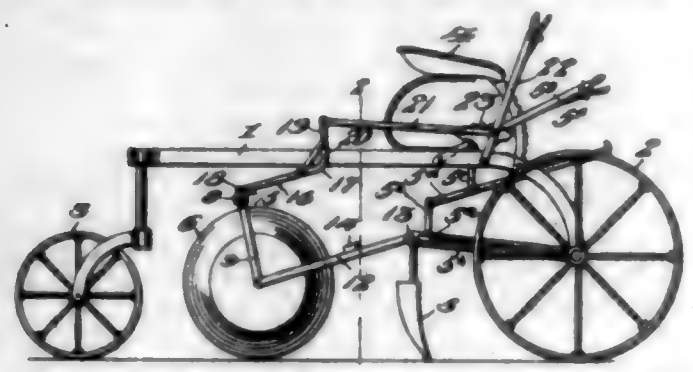


Claim.—1. A sheet-turner consisting of a shaft, a series of arms pivoted upon said shaft each adapted to engage a sheet and each adapted to swing, a means for swinging said arms successively in one direction, and a means for swinging said arms successively in the opposite direction, both of said arm-swinging means being of like construction and each having an operating-key, a tension device attached to each operating-key and a single means for regulating the stress of both tension devices simultaneously.

2. A sheet-turner consisting of a shaft, a series of arms pivoted upon said shaft each adapted to engage a sheet and each adapted to swing, a means for swinging said arms successively in one direction and a means for swinging said arms, successively in the opposite direction, both of said arm-swinging means being of like construction and each having an operating-key, a tension-spring attached to each

operating-key, a plate engaging both said tension-springs and a screw engaging said plate and adapted to move the same.

815,048. FURROW SMOOTHER AND PACKER. Carroll B. Smith, Redlands, Cal. Filed Apr. 22, 1905. Serial No. 256,967.



Claim.—1. A furrow forming, smoothing and packing device comprising a supporting-frame, a furrow-digger carried by said frame, a furrow smoothing and packing roller arranged to follow in the path of the digger, said roller having a periphery corresponding in form to the shape of the furrow produced by the digger, means for raising and lowering the digger, and means whereby an operator seated on the frame may adjust the roller independent of the digger to regulate the pressure of said roller at any time on the walls of the furrow.

2. A furrow forming, smoothing and packing device comprising a wheeled supporting-frame, a plurality of furrow-diggers carried by said frame, means for raising and lowering the diggers in unison, a plurality of furrow smoothing and packing rollers arranged to follow in the path of the furrow-diggers, said rollers having peripheries corresponding in form to the shape of the furrows produced by the diggers, and means for adjusting the rollers in unison independent of the diggers, said means being arranged to permit the rollers to be controlled by an operator seated on the frame to vary their pressure at any time upon the walls of the furrows.

3. A furrow forming, smoothing and packing device comprising a wheeled supporting-frame, a transverse beam carried by said frame, furrow-diggers carried by the beam, means for adjusting the beam to raise and lower the diggers, furrow smoothing and packing rollers arranged to follow the diggers and pivotally connected with the beam, said rollers having peripheries corresponding in form to the shape of the furrows produced by the diggers, and means for adjusting the rollers independently of the beam and diggers, whereby the pressure of said rollers upon the walls of the furrows may be regulated and varied at any time.

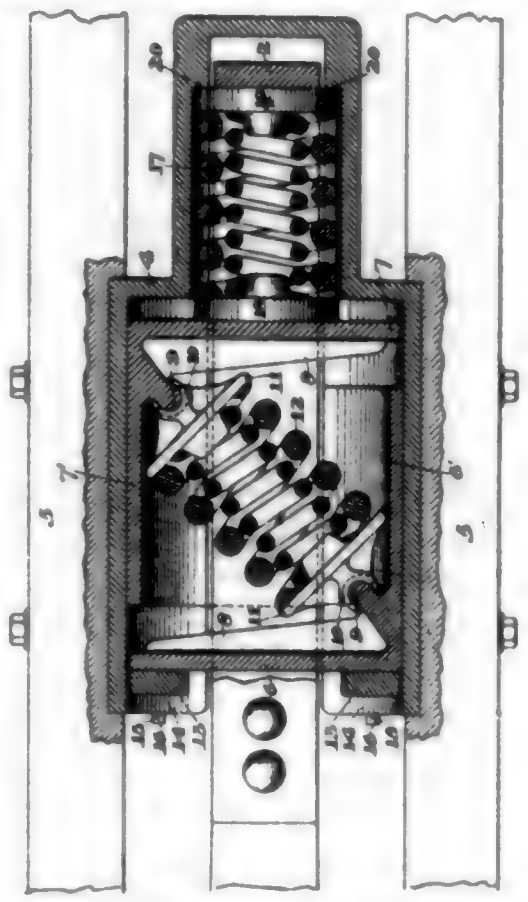
4. A furrow forming, smoothing and packing device comprising a wheeled supporting-frame, a cross-beam pivotally mounted upon said frame, furrow-diggers carried by said beam, means for raising and lowering the beam to adjust the diggers, furrow smoothing and packing rollers arranged in rear of the diggers and pivotally connected with the beam, said rollers being connected for simultaneous adjustment, and means under control of an operator seated on the frame for raising and lowering said rollers to vary their pressure at any time upon the walls of the furrows.

5. A furrow forming, smoothing and packing device comprising a wheeled supporting-frame, a digger carried by said frame, a furrow smoothing and packing roller arranged to follow in the path of the digger, and independent adjusting means for the digger and roller arranged to be actuated by an operator seated on the frame, whereby the roller may be adjusted while the digger is in action to vary its pressure upon the walls of the furrow.

815,049. DRAFT-RIGGING. Clinton A. Tower, Cleveland, Ohio, assignor to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed Feb. 9, 1905. Serial No. 244,836.

Claim.—1. A spring friction structure for the draft-gear of railway-cars, comprising elements having friction-surfaces substantially parallel to the line of draft, and a spring disposed diagonally to the line of draft, said spring arranged to force the friction elements into contact; substantially as described.

2. A spring friction structure for the draft-gear of railway-cars, comprising elements having friction-surfaces substantially parallel to the line of draft, a spring disposed diagonally to the line of draft, said spring arranged to force the friction elements into contact, and a supplementary spring parallel with the longitudinal axis of the draft-gear and through which pressure is exerted upon said spring friction structure; substantially as described.



3. A frictional draft-rigging, comprising elements having friction-surfaces substantially parallel to the line of draft, and yielding mechanism inclined to the line of draft and arranged to force said friction elements into contact; substantially as described.

4. A frictional draft-rigging, comprising elements having friction-surfaces substantially parallel to the line of draft, and an inclined spring arranged to force said friction elements into contact; substantially as described.

5. A spring friction structure for the draft-gear of railway-cars, comprising lateral confining-surfaces, opposite followers between said surfaces, and an inclined spring arranged to force said followers into contact with said confining-surfaces; substantially as described.

6. A spring friction structure for the draft-gear of railway-cars, comprising lateral confining-surfaces, opposite followers between said surfaces, an inclined spring arranged to force said followers into contact with said confining-surfaces, and a supplementary spring parallel with the longitudinal axis of the draft-gear and through which pressure is exerted upon said spring friction structure; substantially as described.

7. A frictional draft-rigging, comprising lateral confining-surfaces, opposite followers between said surfaces, and yielding mechanism arranged to force said followers into contact with said confining-surfaces; substantially as described.

8. A frictional draft-rigging, comprising lateral confining-surfaces, opposite followers between said surfaces, and an interposed spring arranged to force said followers into contact with said confining-surfaces; substantially as described.

9. A frictional draft-rigging, comprising a case having friction-surfaces arranged substantially parallel to the line of draft, interposed friction-followers, and an inclined spring arranged to force said followers against said case; substantially as described.

10. A frictional draft-rigging, comprising friction-surfaces substantially parallel to the line of draft, friction-followers between said surfaces, and an inclined spring between said followers; substantially as described.

11. A frictional draft-rigging comprising a case, opposite followers of L shape, and spring mechanism extending between the followers and bearing on the corner portions thereof; substantially as described.

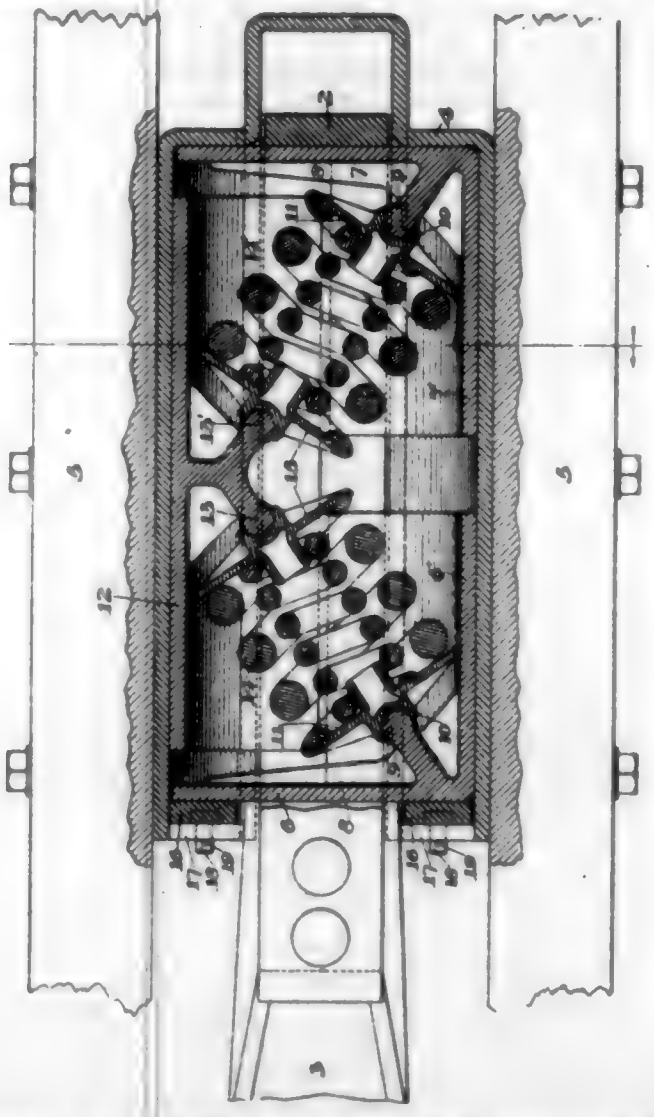
12. A frictional draft-rigging comprising a case, friction elements therein, an inclined spring, and a key by which the friction devices are held removably within the case; substantially as described.

13. A frictional draft-rigging comprising friction elements, an interposed inclined spring, and spring-plates, said spring-plates having a knuckle-joint connection with the friction elements, substantially as described.

14. A frictional draft-rigging comprising a case, friction ele-

ments therein arranged to be removable horizontally from the end of the case, and a key at the end of the case by which the friction devices are held removably therein; substantially as described.

815,050. DRAFT-RIGGING. CLINTON A. TOWER, Cleveland, Ohio, assignor to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 6, 1905. Renewed Jan. 2, 1906. Serial No. 294,188.



Claim.—1. A frictional draft-rigging having friction elements and a plurality of springs inclined to the line of draft when not under buffing or pulling strains and also when under such strains; substantially as described.

2. A frictional draft-rigging comprising friction elements, and interposed springs which extend in opposite directions and at an angle to the line of draft; substantially as described.

3. A frictional draft-rigging comprising friction elements set between lateral confining-surfaces, and interposed springs which extend in opposite directions and at an angle to the line of draft; substantially as described.

4. A frictional draft-rigging comprising a case, opposite friction-followers, a friction-plate or member, and springs extending from the followers to the friction-plate or member and inclined to the line of draft; substantially as described.

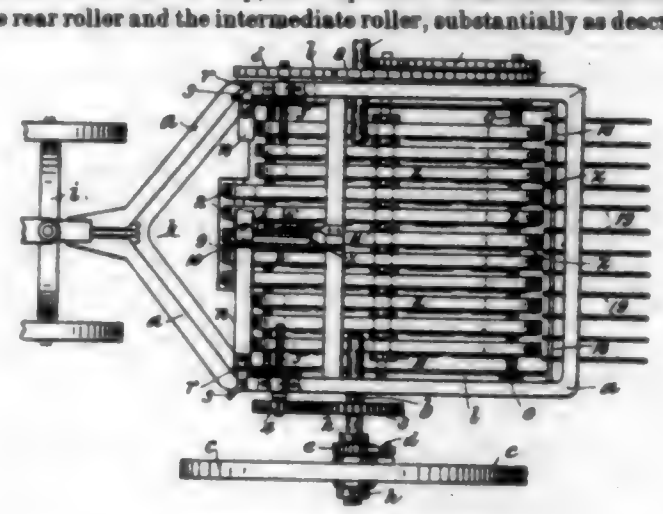
5. A frictional draft-rigging comprising a case, opposite friction-followers, a friction-plate or member, and springs extending in opposite directions from the followers to the friction-plate or member and inclined to the line of draft; substantially as described.

6. A frictional draft-rigging comprising a case, opposite followers of L shape, a friction-plate or member, and spring mechanism extending from the friction-plate or member to the corner portions of the followers; substantially as described.

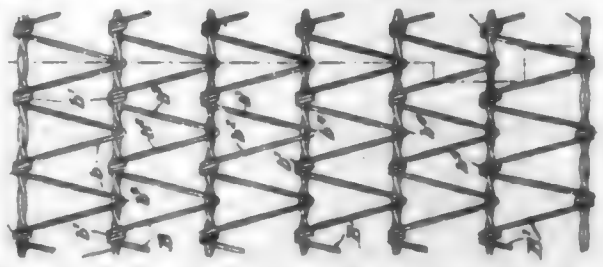
7. A frictional draft-rigging comprising a case, opposite followers of L shape, a friction-plate or member, and spring mechanism extending from the middle portion of the friction-plate or member to the corner portions of the followers; substantially as described.

815,051. POTATO-DIGGER. JOHN VORBACH, Renwicktown, New Zealand. Filed Sept. 17, 1902. Serial No. 173,398.

Claim.—In a potato-digger, the combination of a main frame, a scoop pivotally hung from the rear part of the said frame, a frame of arch form comprising the depending straps m connected to the front end of the scoop and reaching up within and above the main frame, a hand-lever connected to the said arched frame for adjusting the same, screws located on the outer sides of the depending straps m, and arranged to bear on the main frame, the axles and wheels upon which the main frame is supported, pawl-and-ratchet connections between the wheels and axle, a traveling grating associated with the scoop, front and rear rollers around which the traveling grating passes, supporting-rollers for the intermediate part of the said traveling grating and means for driving the rear roller and one of the intermediate supporting-rollers consisting of a cross-shaft 5, geared to the main axle, and sprocket-chain connections between said shaft 5 and the rear shaft of the scoop, and a sprocket-chain connection between the rear roller and the intermediate roller, substantially as described.



815,052. WOVEN-WIRE FENCE. WILLIAM M. WADLEIGH, Chicago, Ill. Filed Sept. 19, 1904. Serial No. 224,955.



Claim.—1. A wire fence, comprising a plurality of strand or line wires, and a plurality of continuous diagonal mesh-wires each diagonal mesh-wire extending between two adjacent line-wires, each of said mesh-wires having a series of coils surrounding and tightly embracing and rigidly secured to one of the line-wires, and each of said mesh-wires having a series of closely-adjacent depending V-shaped or angle loops extending to and about and loosely engaging the next adjacent line-wire below, said series of adjacent depending angle-loops dividing the space between the two adjacent line-wires connected by it into substantial uniform meshes or open spaces, each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

2. A wire fence, comprising a plurality of strand or line wires, and a plurality of continuous diagonal mesh-wires each diagonal mesh-wire extending between two adjacent line-wires, each of said mesh-wires having a series of coils surrounding and tightly embracing and rigidly secured to one of the line-wires, and each of said mesh-wires having a series of closely-adjacent depending V-shaped or angle loops extending to and about and loosely engaging the next adjacent line-wire below, said series of adjacent depending angle-loops dividing the space between the two adjacent line-wires connected by it into substantially uniform mesh or open spaces, the lowermost diagonal mesh-wire which extends between the two lowermost line-wires having its tight coils about the lowermost line-wire and loose coils about its adjacent line-wire above, each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

3. A woven-wire fence, comprising in combination a series of line-wires and a series of continuous diagonal mesh-wires, each extending between two adjacent line-wires and dividing the space between said line-wires into substantially uniform angular meshes or open spaces, and provided with coils tightly embracing one of its line-wires, and depending angle-loops loosely embracing and supporting its adjacent line-wire below each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

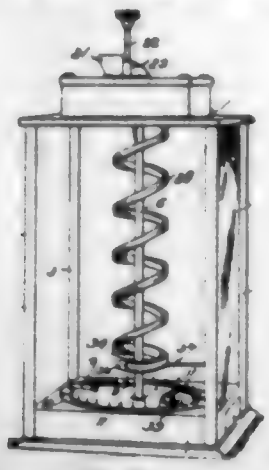
4. A woven-wire fence, comprising in combination a series of line-wires and a series of continuous diagonal mesh-wires, each extending between two adjacent line-wires and dividing the space be-

tween said line-wires into substantially uniform angular meshes or open spaces, and provided with coils tightly embracing one of its line-wires, and depending angle-loops loosely embracing and supporting its adjacent line-wire below, the lowermost diagonal mesh-wire of the fence having a set of tight coils embracing one of its line-wires and a set of loose coils embracing its adjacent line-wire, each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

5. A woven-wire fence, comprising a series of strand or line wires, and a series of continuous diagonal mesh-wires, each diagonal mesh-wire extending between and connecting two adjacent line-wires and dividing the space between such line-wires into substantially uniform angular meshes, and having coils embracing one of its line-wires, and angle-loops embracing and supporting its other line-wire, each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

6. A woven-wire fence, comprising a series of strand or line wires, and a series of continuous diagonal mesh-wires, each diagonal mesh-wire extending between and connecting two adjacent line-wires and dividing the space between such line-wires into substantially uniform angular meshes, and each having coils embracing one of its line-wires, and angle-loops embracing and supporting its other line-wire, the lowermost diagonal mesh-wire having an upper and lower set of coils, each of the line-wires passing through the coils of one of the mesh-wires, substantially as specified.

815,053. **GAME APPARATUS.** THOMAS A. WATTS, Springfield, Ohio. Filed Feb. 25, 1903. Serial No. 144,957.



Claim.—1. A coin-controlled game or chance apparatus comprising an inclosing casing having a transparent wall, a vertical shaft mounted to rotate within the casing, a coin-controlled operating mechanism connected with said vertical shaft to impart to the same an initial rotatory impulse, a spiral coin-raceway connected with the shaft so as to rotate in unison therewith, said raceway being grooved or U-shaped in cross-section and embracing only the lower edge of the coin so as to expose the body thereof, a receptacle located below said raceway, means for conducting the coin from the impulse mechanism to the raceway and from the raceway to the receptacle, and a base provided with a circular chance-indicating scale, the shaft being provided with a coöperating indicator, and the spiral raceway being so constructed and arranged that the weight of the descending coin thereon adds a propelling increment to the initial rotatory mechanism, substantially as described.

2. A coin-controlled game or chance apparatus comprising an inclosing casing having a transparent wall, a vertical shaft mounted to rotate within the casing, a coin-controlled operating mechanism connected with said vertical shaft to impart to the same an initial rotatory impulse, said operating mechanism comprising a coin-chute open at its lower end, a guide-plate mounted on said shaft below said chute and provided with a slot or opening, a spiral coin-raceway connected with the shaft so as to rotate in unison therewith, having its upper end located below said slot or opening, and having at its lower end a discharge-slot and a terminal stop, said raceway being grooved or U-shaped in cross-section and embracing only the lower edge of the coin so as to expose the body thereof, a fixed guide-plate located below said raceway and having a discharge slot or opening, and a receptacle located below said last-mentioned slot or opening, the base being provided with a circular chance-indicating scale and corresponding projections and the shaft being provided with a resilient indicater engaging said projections, the spiral raceway being so constructed and arranged that the weight of the descending coin thereon adds a propelling increment to the initial rotatory impulse imparted to the operating mechanism, substantially as described.

3. A coin-controlled game or chance apparatus, comprising a chance-indicating device, a shaft controlling the same, a gear secured on the shaft, a spring-pawl to prevent reverse motion of said gear, a spring-actuated vibrating lever, a pinion mounted on said lever and adapted to engage the gear, a spring-pawl to prevent rotation of the pinion on its return movement, an operating-lever connected with the vibrating lever, a coin-chute into which the operating-lever extends, and a pusher to engage the coin in the chute, substantially as described.

815,054. **MARKING DEVICE FOR UMBRELLAS, &c.** CARTER WEAVER, Pittsburg, Pa. Filed Aug. 10, 1905. Serial No. 273,823.



Claim.—1. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental holder constructed to hold said sheet on said part, and a segmental cover applied to said holder across the opening in the side thereof, substantially as set forth.

2. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental holder which is more than half a circle in cross-section and which engages with said sheet for holding the same on said cylindrical part, and a segmental cover which is more than half a circle in cross-section and which is applied to said holder across the opening in the side thereof, substantially as set forth.

3. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental spring-holder which is more than half a circle in cross-section and engages said sheet, and a segmental spring-cover which is more than half a circle in cross-section and is applied to said holder so as to extend across the opening in the side thereof, substantially as set forth.

4. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental spring-holder which is more than half a circle in cross-section and engages said sheet, and a segmental spring-cover which is more than half a circle in cross-section and is applied to said holder so as to extend across the opening in the side thereof, the peripheral length of said holder being greater than that of said cover so as to permit of interlocking the holder and cover by engaging the longitudinal edges of the cover with the holder on opposite sides of its side opening and then pressing the cover and holder together so that the longitudinal edges of the cover spring past the diameter of the holder, substantially as set forth.

5. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental holder engaging with said sheet, a segmental cover applied to said holder so as to extend across the opening in the side thereof, and interlocking parts arranged on said holder and cover, substantially as set forth.

6. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental spring-holder which is more than half a circle in cross-section and which engages said sheet, a segmental spring-cover which is more than half a circle in cross-section and is sprung over said holder so as to extend across the opening in the side thereof, and interlocking parts arranged on said holder and cover, substantially as set forth.

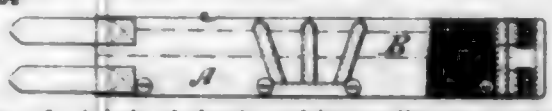
7. A device for marking articles having a cylindrical part, consisting of an inscription-sheet adapted to be applied to said part, a segmental spring-holder which is more than half a circle in cross-section and which engages said sheet, a segmental spring-cover which is more than half a circle in cross-section and is sprung over said holder so as to extend across the opening in the side thereof, lugs arranged on opposite sides of said holder, and hooks arranged on opposite sides of said cover and adapted to coöperate with said lugs, said holder and cover being coupled by first springing the cover over the holder while these parts are lengthwise out of register and then moving the cover lengthwise into register with the holder for interlocking its hooks with the lugs of the holder, substantially as set forth.

815,055. **SEPARABLE BUTTON.** CHARLES WEISS, Chicago, Ill. Filed Apr. 12, 1905. Serial No. 255,243.



Claim.—A button comprising a hollow head with a central opening and with a rounded swelled portion and a groove below the same, the wall of the hollow head having slotted sections, a base-piece having an opening of smaller size than the opening of the head and communicating therewith, said central opening being adapted for the passage of the head of a screw and the smaller opening for the passage of the tang of said screw, said slotted sections serving to be sprung toward each other for the passage of an eyelet over the head of the button to permit of its engagement with said groove.

815,056. **WAISTBAND, BELT, AND THE LIKE.** EDOUARD ABADIE-LÉOTARD, Paris, France. Filed Jan. 28, 1905. Serial No. 243,164.

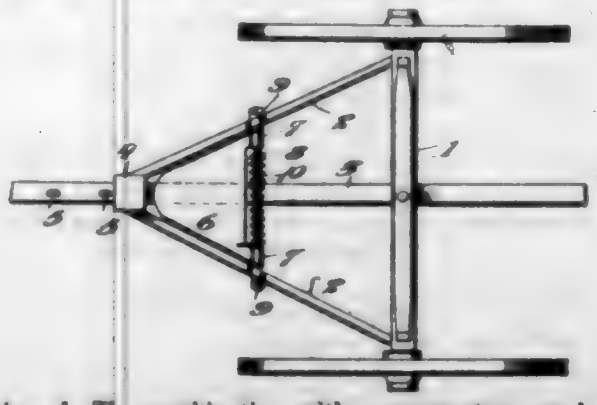


Claim.—1. A belt of elastic and integrally-woven fabric, having elastic zones which offer different degrees of resistance to strain exerted to extend the belt elastically lengthwise, the lowermost zone offering the greatest resistance and the uppermost zone the least elastic resistance.

2. A belt of elastic and integrally-woven fabric, in two sections connected by fastening means at the back of the wearer, said belt being divided longitudinally into three zones which offer different degrees of resistance to elastic extension when a force is applied longitudinally of the belt.

3. A belt of elastic and integrally-woven fabric, having its width divided into three zones extending longitudinally, the lower zone being the widest and having, proportionately to its width, more elastic material in its cross-section than either of the other zones, and the upper zone having, proportionately to its width, less elastic material, in its cross-section than either of the other zones.

815,057. **WAGON-REACH ADJUSTER.** EMERY J. ABBOTT, Orleans, Minn. Filed Apr. 5, 1905. Serial No. 254,058.

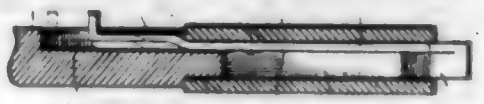


Claim.—1. The combination with convergent wagon-hounds and a reach-bar movably connected therewith, of a reach-block pivotally supported between the hounds and adapted to engage the reach-bar.

2. The combination with convergent wagon-hounds and a reach-bar slidably connected therewith, of a reach-block pivotally connected between the hounds and adapted to engage said bar, and a spring for maintaining said block in operative position.

3. The combination with convergent wagon-hounds, of a reach-bar formed with a longitudinally-arranged series of openings, a reach-block pivotally supported between the hounds, and a pin depending from said block and adapted to engage either of the openings in the bar.

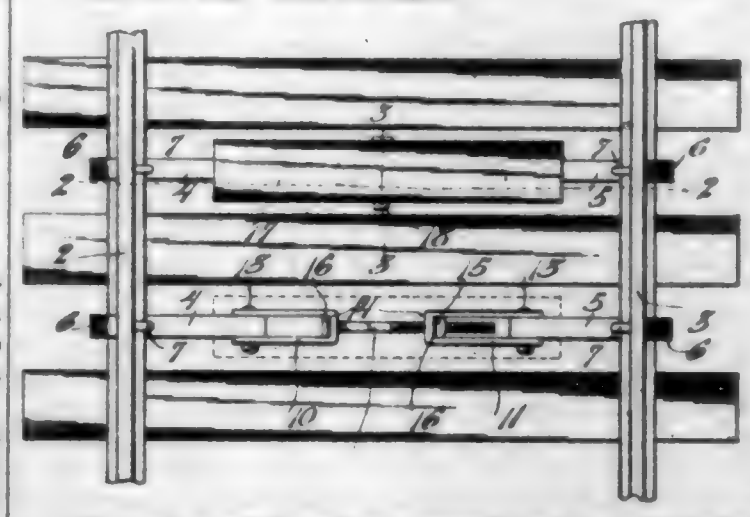
815,058. **BROOM-HANDLE.** ERNEST T. ATWELL, Waukomis, Okla. Filed May 6, 1905. Serial No. 259,730.



Claim.—1. In a detachable handle, the combination of a socket, a handle having a split shank to enter the socket, and a sliding operating element carrying a wedge having an upwardly-directed point adapted to be drawn between the portions of the shank to spread the same apart and into frictional engagement with the walls of the socket.

2. In a detachable handle, the combination of a socket, a handle provided with a split shank and having a longitudinal groove extending above the shank and terminating in a mortise, a stop-piece inclosing the handle above the shank and below the upper portion of the mortise, and a key sliding in said groove and mortise and provided at its lower end with a shank-expanding wedge and at its upper end with a finger-piece projecting laterally from the mortise and adapted to be limited in its downward movement by the stop-piece.

815,059. **RAIL TIE AND BRACE.** NED B. BARNES, Willis, Tex. Filed Oct. 5, 1905. Serial No. 281,495.



Claim.—1. A rail tie and brace comprising brace-arms having clamps to engage the rails, and an intermediate adjustable coupling, said brace-arms being pivotally connected with the coupling to permit them to have limited vertical play with the rails.

2. A rail tie and brace comprising brace-bars having clamps to engage the rails, bail-shaped coupling members attached to the bars, and an adjustable coupling connection between said bail-shaped members.

3. A rail tie and brace comprising brace-bars provided with means of attachment to the rails, and an adjustable pivotal connection between the bars.

4. A rail tie and brace comprising brace-bars provided with means of attachment to the rails, bail-shaped coupling members connected with the inner ends of the bars, and a coupling-bolt adjustably connecting said coupling members.

5. A rail tie and brace comprising brace-bars provided with means of attachment to the rails, a coupling connection between said bars, and a shield or housing covering the coupling connection.

6. A rail tie and brace comprising brace-bars provided with means of attachment to the rails, a coupling connection between said bars, an inverted-U-shaped shield or housing covering the coupling connection, and a fastening member engaging the shield and coupling connection to secure the shield in place.

815,060. **COAT-HANGER.** DOW R. BEERS, Bridgeport, Conn. Filed Jan. 18, 1905. Serial No. 241,561.

Claim.—In a detachable garment-hanger of the class described the combination of a pair of hook-like supporting members adapted to engage the back of the seat and having outwardly-deflected shank portions, a bar intermediate of such shank portions and detachable connections intermediate of the supporting hooks and bar.



815,081. FRAME FOR DRYING-RACKS. JOHN C. BELLOFF and ARTON ROTH, New Brunswick, N. J. Filed Dec. 27, 1905. Serial No. 293,536.



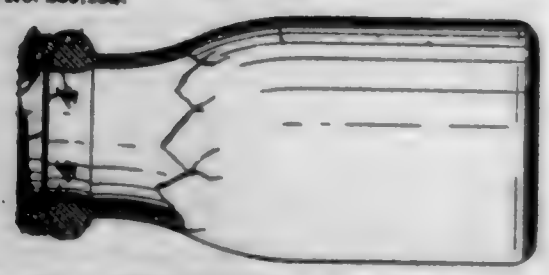
Claim.—1. A tray for drying gelatin and other substances, consisting of a metallic frame, plates having an angled flange about two edges thereof and against which the angled corner of the frame is adapted to bear, bolts passing through apertures in said plates and provided with hooked ends embracing the frame adjacent to an angled corner thereof, nuts upon the bolts adapted to hold the plate to the frame, and a projection from each plate serving as a leg, as set forth.

2. A tray for drying gelatin and other substances, consisting of a metallic frame, plates having an angled flange about two edges thereof and against which the angled corner of the frame is adapted to bear, bolts passing through apertures in said plates and provided with hooked ends embracing the frame adjacent to an angled corner thereof, nuts upon the bolts adapted to hold the plate to the frame, and a V-shaped projection upon the under surface of each plate, serving to brace the plate and form a leg therefor, as set forth.

3. A tray for drying gelatin and other substances, consisting of a metallic frame, plates having an angled flange about two edges thereof and against which the angled corner of the frame is adapted to bear, bolts passing through apertures in said plates and provided with hooked ends embracing the frame adjacent to an angled corner thereof, nuts upon the bolts adapted to hold the plate to the frame, and a V-shaped projection upon the under surface of each plate, serving to brace the plate and from a leg therefor, the edges of said V-shaped portion being cut away, and the apex of the projection being adjacent to the inner marginal edge of the plate, as set forth.

4. A drying-rack comprising a rectangular outlined frame of metal, plates, each having a flange extending about two of its edges, hooked bolts passing through apertures in said plates, nuts upon the threaded portions of said bolts, the hooked ends of the bolts embracing said frame, V-shaped projections upon the under surfaces of said plates, a cross-bar intermediate the opposite longitudinal edges of the frame, unions to which the ends of said cross-bar are connected, and lugs projecting from said unions forming legs, as set forth.

815,082. CLOSURE FOR CREAM AND MILK JARS OR BOTTLES. WILLIAM H. BENNETT, Newark, N. J. Filed Nov. 27, 1905. Serial No. 289,152.



Claim.—1. A seal or cap for cream or milk jars or bottles, comprising a base, an upwardly-extending and tapering flange, said base and flange being joined by a rounded marginal edge, and an annular sealing member of a concavo-convex cross-section extending outwardly from the upper edge of said flange, said base and flange forming a receiving depression, substantially as and for the purposes set forth.

2. A seal or cap for cream or milk jars or bottles, comprising a base, an upwardly extending and tapering flange, said base and flange being joined by a rounded marginal edge, and an annular sealing member of a concavo-convex cross-section extending outwardly from the upper edge of said flange, said base and flange forming a receiving depression, and a finger-piece extending outwardly from the marginal edge of said annular sealing member, substantially as and for the purposes set forth.

3. In a cream or milk jar or bottle, the combination, with the mouth of the said jar or bottle, provided with an inner annular seat, of a seal or cap comprising a base, and an upwardly-extending flange adapted to be fitted directly upon said seat, and an annular sealing member extending outwardly from the upper edge of said flange, said base and flange forming a receiving depression extending into the mouth of the jar or bottle directly above said seat, and said sealing member being fitted directly upon the upper surrounding edge portion of the mouth of the jar or bottle, substantially as and for the purposes set forth.

4. In a cream or milk jar or bottle, the combination, with the mouth of the said jar or bottle, provided with an inner annular seat, of a seal or cap comprising a base, and an upwardly-extending flange adapted to be fitted directly upon said seat, and an annular sealing member extending outwardly from the upper edge of said flange, said base and flange forming a receiving depression extending into the mouth of the jar or bottle directly above said seat, said sealing member being fitted directly upon the upper surrounding edge portion of the mouth of the jar or bottle, and a finger-piece extending outwardly from the marginal edge of said annular sealing member, substantially as and for the purposes set forth.

5. In a cream or milk jar or bottle, the combination, with the mouth of the said jar or bottle, said mouth being provided with an annular seat, an inclined or tapering surface portion, and an upper convex edge portion, of a seal or cap comprising a base having its marginal edge portion fitted upon said seat, an upwardly-extending and inclined or tapering flange connected with said base, the taper of said flange being of a less degree than the taper of said inclined or tapering surface portion of the mouth of the jar or bottle, said base and flange forming a receiving depression extending into the mouth of the jar or bottle directly above said seat, and an annular sealing member of a concavo-convex cross-section extending outwardly from the upper edge of said flange, the said concaved surface of the said sealing member being fitted directly upon the upper convex edge portion of the mouth of the jar or bottle, substantially as and for the purposes set forth.

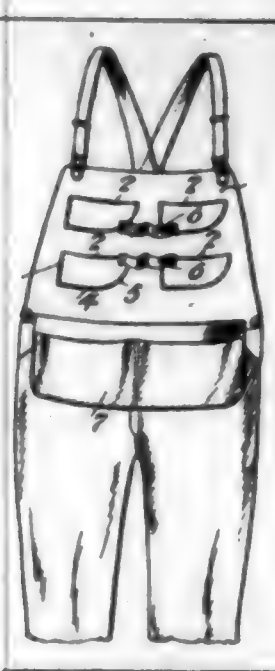
6. In a cream or milk jar or bottle, the combination, with the mouth of the said jar or bottle, said mouth being provided with an annular seat, an inclined or tapering surface portion, and an upper convex edge portion, of a seal or cap comprising a base having its marginal edge portion fitted upon said seat, an upwardly-extending and inclined or tapering flange connected with said base, the taper of said flange being of a less degree than the taper of said inclined or tapering surface portion of the mouth of the jar or bottle, said base and flange forming a receiving depression extending into the mouth of the jar or bottle directly above said seat, an annular sealing member of a concavo-convex cross-section extending outwardly from the upper edge of said flange, the said concaved surface of the said sealing member being fitted directly upon the upper convex edge portion of the mouth of the jar or bottle, and a finger-piece extending outwardly from the marginal edge of said annular sealing member, substantially as and for the purposes set forth.

815,083. OVERALLS. FREDERICK H. BRENNAN, Baltimore, Md. Filed July 14, 1905. Serial No. 269,672.

Claim.—1. An overalls including a bib, and a series of pockets secured to the face of the bib and arranged in horizontal rows, and two straps secured to the bib and extending from the pockets of one set to the pockets of the other set, said straps being secured to the pockets and bib by stitching arranged to reinforce the stitching of the pockets.

2. An overalls having a pocket formed with a side entrance, the upper wall of the pocket being inclined downwardly from said entrance-point, and straps secured to the overalls adjacent the pocket, one of the straps overlying the pocket and serving to reinforce the face-strip thereof in use.

815,063.



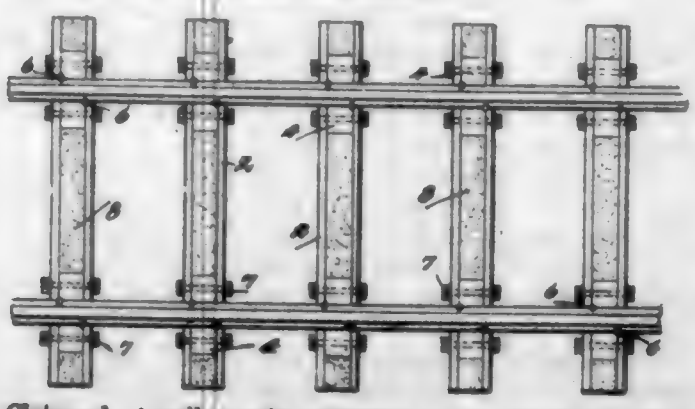
815,064. CARPENTER'S IMPLEMENT OR TOOL. Clell D. Campbell, Lincoln, Nebr. Filed Oct. 14, 1905. Serial No. 282,738.



Claim.—1. A combined nail-extractor and beam-adjusting tool comprising a handle-bar having an integral transverse head having an outer face curved to provide a rocking fulcrum and having at one end claws projecting from one side of said handle-bar and having on its inner face at the other side of said handle-bar a substantially rectangular recess adapted to engage around the corners of a beam.

2. A combined nail-extractor and beam-adjusting tool comprising a handle-bar having an integral transverse head having an outer face curved to provide a rocking fulcrum and having at one end claws projecting from one side of said handle-bar and having on its inner face at the other side of the handle-bar a substantially rectangular recess adapted to engage around the corners of a beam and said head having a pair of claws at the other end.

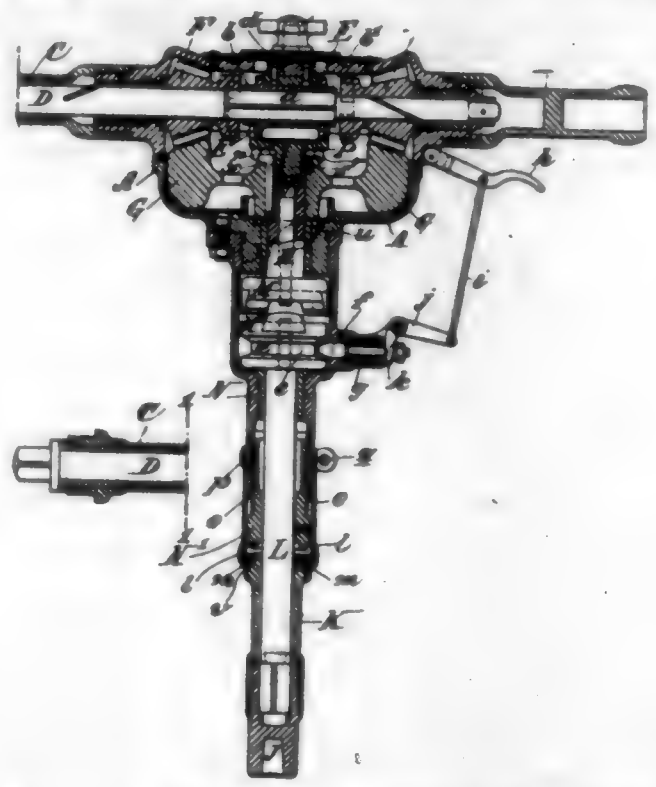
815,065. RAIL-TIE. Frank Coleman, Bridgewater, Canada. Filed June 27, 1905. Serial No. 267,253.



Claim.—1. A railway-tie consisting of two channeled plates, blocks positioned between said plates to space them and to receive the means for fastening the rails to the ties, and a filling of concrete.

2. A railway-tie comprising two channeled plates, blocks provided with reduced portions adapted to be received by said channels, whereby the plates are spaced apart, said blocks being adapted to receive the means for fastening rails to the ties, and a filling of cement.

815,066. PORTABLE APPARATUS FOR TRANSMITTING MOTION TO TOOLS. Albert Collet, Paris, France. Filed May 19, 1904. Serial No. 208,780.



Claim.—1. An apparatus for the purpose specified, having a casing, driving mechanism in said casing, a shaft H in the casing and driven by the above mechanism, said shaft having on its extremity a clutch member M, a shaft L, mounted rotatively and slidably in the casing and alined with the shaft H, said shaft L having on its extremity a clutch member M′ to engage the member M, means for preventing, normally, the interlocking of the teeth of said clutch members, and a tool-holder carried by the shaft L.

2. An apparatus for the purpose specified, having a casing, driving mechanism within said casing, a shaft H rotatively mounted in the casing and driven from the said mechanism, said shaft provided at its lower end with a clutch member M, a shaft L, alined with the shaft H and mounted rotatively and slidably in the casing, said shaft L provided at its upper end with a clutch member M′ to engage the member M for driving, spring-operated means for preventing the interlocking of the teeth of said clutch members, means for limiting the endwise movement of the shaft L, and a tool-holder on the shaft L.

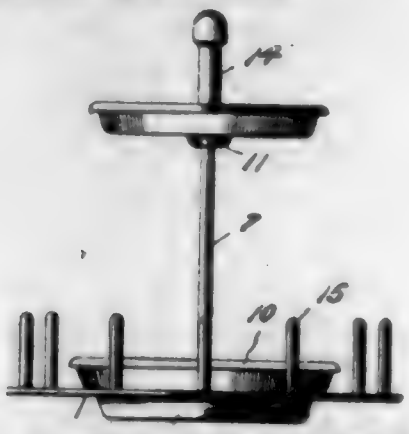
3. An apparatus for the purpose specified, having a casing A, with a tubular pendent part N, a tubular part N′ which screws into the outer end of the part N, a ferrule o fixed to the part N′, and embracing the part N, means for clamping said ferrule to the part N, a shaft L, mounted slidably and rotatively in the part N, a tubular tool-holder secured to the shaft L and alined with the part N′, a ball-bearing between the part N′ and the tool-holder, a shaft H rotatively mounted in the casing and axially alined with the shaft L, said shafts being provided with clutch members for engagement, and mechanism in the casing for driving the shaft H.

4. An apparatus for the purpose specified, having an inclosing casing with handles, driving mechanism within said casing, a tool-holder adapted to be driven by said mechanism and capable of yielding axially, clutch mechanism with beveled teeth connecting the tool-holder for driving, and means for regulating the depth of engagement of said clutch-teeth.

5. An apparatus for the purpose specified, having a casing with a tubular pendent part N, a tubular part N′ which screws onto the outer end of the part N, a ferrule o fixed to the part N′ and embracing the part N, means for clamping said ferrule to the part N, a shaft L mounted slidably and rotatively in the part N, a tubular tool-holder secured to the shaft L and alined with the part N′, an antifriction-bearing between the tool-holder and the part N′, a shaft H rotatively mounted in the casing and axially alined with the shaft L, a toothed clutch member M on the shaft H, a corresponding clutch member M′ on the upper end of the shaft L to engage the member M for driving,

a spring-operated device which normally prevents the interlocking of the teeth of said clutch members, and manually-operatable means for controlling said spring-operated device.

815,067. **WORK-STAND.** WILLIAM H. COMMONS, Chicago, Ill. Filed Sept. 21, 1905. Serial No. 279,484.



Claim.—1. A work-stand comprising a base depressed to form a base-flange having a horizontal flange, a spool-carrying member secured to said horizontal flange, and a tray carried by said base.

2. A work-stand comprising a base having a flange, a spool-carrying member secured to said flange, a standard secured to the base, and a tray secured to said standard.

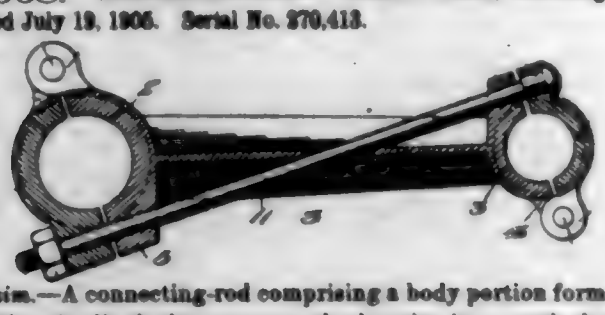
3. A work-stand comprising a base having a flange, a spool-carrying member secured to said flange, a tray mounted upon said base, a standard for securing said tray in applied position, and another tray secured to said standard.

4. A work-stand comprising a base having a flange, a spool-carrying member secured to said flange, a standard secured to said base, a tray positioned upon said standard, and means for securing said tray in applied position, said means being adapted to receive a thimble.

5. A work-stand comprising a base, a standard secured thereto, a tray secured to said standard, and means for securing said tray in applied position, said means being adapted to receive a thimble.

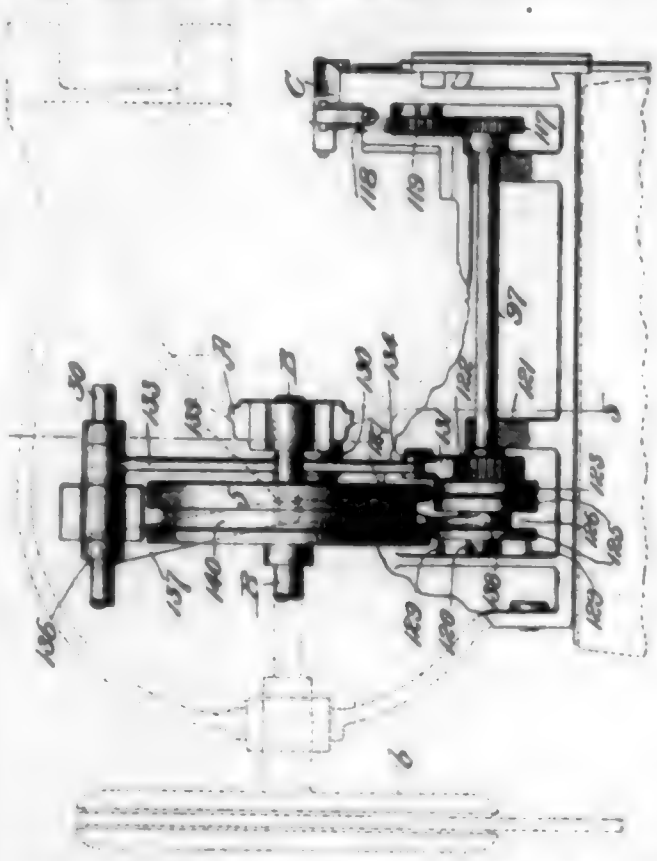
6. A work-stand comprising a member depressed to provide a base and a flange, a spool-carrying member secured to said flange, a standard secured to said member, and a tray carried by the standard.

815,068. **CONNECTING-ROD.** JAMES F. COOK, Cambridge, Ill. Filed July 19, 1905. Serial No. 270,413.



Claim.—A connecting-rod comprising a body portion formed of parallel longitudinal plates arranged edgewise in a vertical plane and free from connection between their edges so as to prevent the transmission of strain above the center line from one plate to the other, whereby said body portion is relieved from excessive stiffness, said body portion being provided with stationary bearing members integral with the ends of the plates and forming the sole connections therebetween, caps coöperating with the bearing members to form couplings, said caps being hinged to the stationary members on opposite sides of said body portion, and a stay-bolt extending diagonally between the body-plates and terminally connected with the hinged members of the coupling-bearings to adjust the caps toward and from the coacting stationary bearing members, one end of the bolt having a connection with one of the stationary bearing members to hold said bolt from rotation, the body portion also being provided with a bracing-web extending horizontally and longitudinally between the body-plates and connected at its ends with the stationary bearing members and its side edges with said body-plates at a point substantially midway of the upper and lower edges thereof, said web having an opening for the passage of the bolt and bearing at all points about the opening against the intermediate portion of the bolt, whereby the bolt is braced between its ends and all the intermediate connections between the bearings mutually tied and intimately reinforced at the center of the rod to stay the same against both vertical and transverse strain.

815,069. **SHUTTLE-ACTUATING MECHANISM FOR SEWING-MACHINES.** GEORGE L. CORCORAN and GEORGE A. DOSTER, St. Louis, Mo., assignors, by direct and mesne assignments, to Champion Shoe Machinery Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 20, 1903. Serial No. 144,318.



Claim.—1. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, a plate pivoted for rocking movement and coöperating with said gear, a cam, a pivotally-supported arm connected to said rocking plate and provided with a part coöperating with said cam, a clutch adapted to connect said gear and said shaft, and means for operating said clutch; substantially as described.

2. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a shaft in driving connection therewith, a gear having movement independent of said shaft, a plate pivoted for rocking movement and coöperating with said gear, a pivotally-supported arm connected to said rocking plate, a clutch adapted to connect said gear and said shaft, a second pivotally-supported arm adapted to throw said clutch, and a cam-disk provided with cams which respectively coöperate with said respective arms; substantially as described.

3. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a gear having movement independent of said shuttle, an intermittently-movable driving member coöperating with said gear, means for locking said driving member against movement, a clutch adapted to connect said gear to said shuttle, means whereby said clutch is locked to said gear to hold the shuttle against movement during the time that the said driving member is locked against movement, means whereby said clutch is locked against shuttle-driving movement and out of engagement with said gear, to lock said shuttle against movement during the movement of said driving member other than shuttle-driving movement, and means whereby said clutch connects said gear and said shuttle and is free to receive shuttle-driving movement during the time that said driving member moves through its shuttle-driving movement; substantially as described.

4. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of the shaft, a plate pivoted for rocking movement and coöperating with said gear, a cam-disk having a plurality of cams, a pivotally-supported arm connected to said rocking plate and provided with a part coöperating with one of said cams, a clutch slidable on said shaft and adapted to connect said gear and means for operating said clutch, connecting with another of said cams.

5. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, a plate pivoted for rocking movement and coöperating with said gear, a pivotally-supported arm having a pivotal connection with said rocking plate, a clutch adapted to connect said gear and said shaft, and cams operatively connected respectively with said pivotally-supported arm and said clutch.

6. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, a rocking segment coöperating with said gear, means for reciprocating said segment including an arm pivotally supported at one end and having a link connection at its opposite end with said segment, and a cam operatively connected with said arm intermediate its ends, a clutch adapted to connect said gear and said shaft, and means for operating said clutch.

7. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, a rocking plate coöperating with said gear, a rock-shaft, means for reciprocating said rocking plate including an arm pivotally supported at one end to said rock-shaft, a link connection at the opposite end thereof with said rocking plate, a cam-disk having a cam coöperating with said arm intermediate its ends, a clutch adapted to connect said gear and said shaft, an auxiliary cam on said disk, and an arm connecting respectively with said auxiliary cam and the clutch.

8. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, means for imparting movement to said gear, the said gear having a plurality of apertures in one of its sides, a stationary support arranged opposite said gear having a plurality of pins projecting inwardly in line with said apertures, a clutch-sleeve slidably mounted upon said shaft said sleeve having in its opposite sides apertures and pins complementary to the aforementioned apertures and pins, and means for imparting movement to said sleeve to engage and disengage respectively the apertures in the gear and stationarily-supported pins including a cam-actuated pivoted arm.

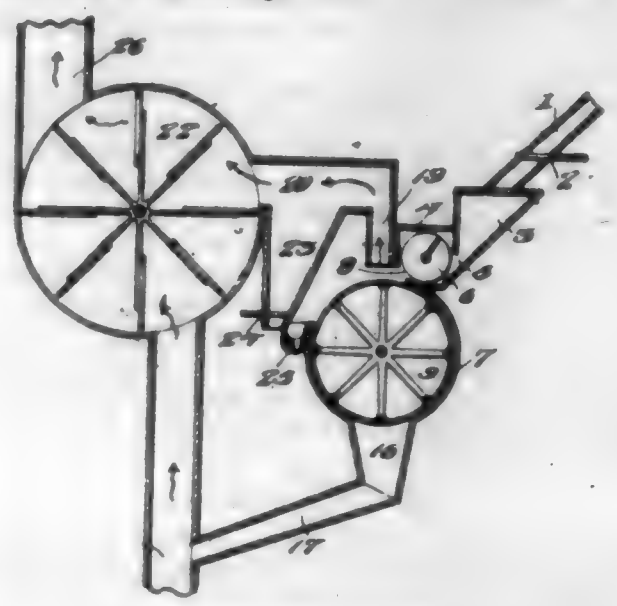
9. The combination with a shuttle and its complementary stitch-forming mechanism, of means for intermittently operating said shuttle and comprising a driving-shaft having driving connection therewith, a gear having movement independent of said shaft, means for imparting movement to said gear including a cam, a plate pivoted for rocking movement and coöperating therewith and a pivotally-supported arm connected to said rocking plate and provided with a part coöperating with said cam, the said gear having a plurality of apertures in one of its sides, a stationary support arranged opposite said gear having a plurality of pins projecting inwardly in line with said apertures, a clutch-sleeve slidably mounted upon said shaft said sleeve having in its opposite sides apertures and pins complementary to the aforementioned apertures and pins, and means for imparting movement to said sleeve to engage and disengage respectively the apertures in the gear and stationarily-supported pins, including a cam-actuated pivoted arm.

815,070. **GRAIN-SEPARATOR.** WILLIAM W. CULVER, Wichita, Kans. Filed Jan. 2, 1906. Serial No. 240,366.

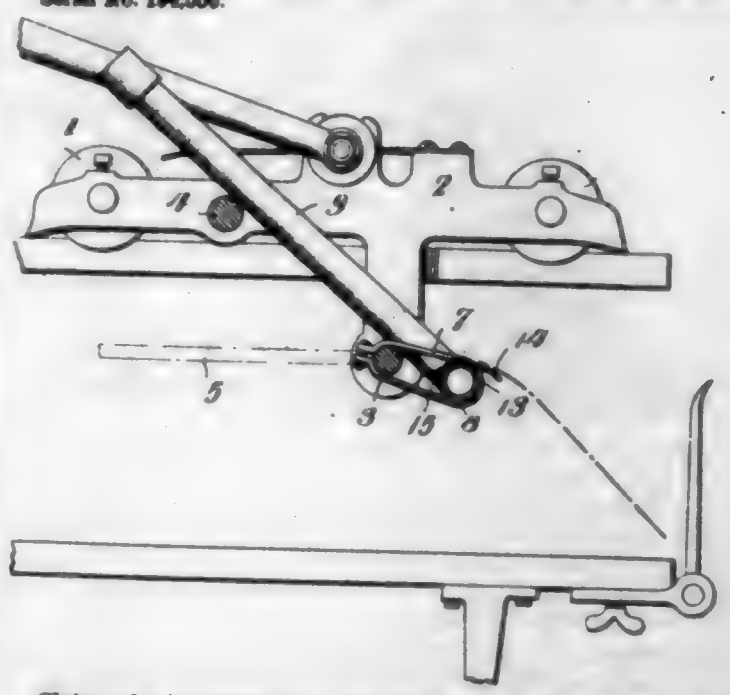
Claim.—1. A grain-separator comprising a feed-box, a feed-screw therein having spiral coils extending in reverse directions from the center, and a revolving screen mounted forward of the feed-box, the operative surface of said screen being formed of a single length of material wound in concentric coils about the screen-body, the screw being arranged longitudinally of and above the screen and adapted to deliver the material longitudinally of the screen.

2. A grain-separator comprising a feed-box, means for delivering the material therefrom, a revolving screen mounted forward of the feed-box, a suction-fan, an open-ended passage leading to said fan and terminating immediately above the delivery from the feed-box to the screen, and a discharge-chute communicating with the delivery from the screen, said discharge-chute being in open communication with the fan-casing.

3. A grain-separator comprising a feed-box, a revolving screen, a casing for the screen terminating adjacent the feed-box in the direction of rotation of the screen, a discharge-gutter supported adjacent the terminal of the screen-casing, a fan-casing, a fan therein, an open-ended passage communicating with the fan and terminating above the delivery to the screen, a well in said passage between its end and the fan-casing, and a discharge-chute communicating with the delivery from the screen, said discharge-chute being in open communication with the fan-casing.



815,071. **PRINTING-PRESS ATTACHMENT.** CLARENCE M. DANA and EDWARD KIBBEY, Grand Rapids, Mich. Filed Feb. 20, 1904. Serial No. 194,556.



Claim.—1. A printing-press provided with a burner movably mounted thereon to project a flame in direct running contact with the printed sheets of paper.

2. A printing-press provided with a reciprocating burner to project a flame in direct running contact with the printed sheets of paper.

3. In an attachment for printing-presses, the combination with a movable delivery-carriage having a shaft connecting the sides thereof; of arms secured to the shaft, one of said arms having an inlet, a burner parallel with the shaft and integral with the arms, and a deflecting-shield upon the burner.

4. The combination with a delivery-carriage of a press having a shaft connecting the sides thereof; of tubular arms secured to the shaft, a burner integral with and connecting the arms, one of said arms having a fuel-inlet, and a deflecting-shield secured to and extending longitudinally of the burner.

5. The combination with the delivery-carriage of a press having a shaft connecting the sides thereof; of tubular arms secured to the shaft, an apertured tube connecting the arms and forming a burner, one of the arms having a fuel-inlet, and a deflecting-shield extending longitudinally of the burner, said burner and shield being adapted to contact with the paper while the same is carried from the tapes to the delivery-board of the press.

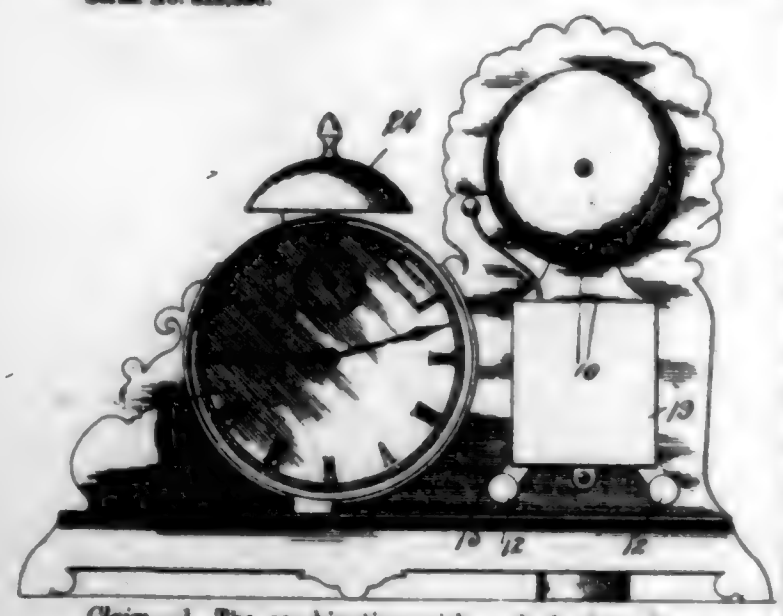
6. A printing-press provided with a burner movably mounted thereon and provided with a shield to project the flame therefrom in direct contact with the printed sheets of paper, whereby the flame moves in running contact with the sheets of paper.

7. A printing-press provided with a burner movably mounted thereon and provided with a jet-aperture arranged to project a flame upwardly and forwardly in the direction of movement of the printed sheets of paper, and a shield having a deflecting-surface arranged over and projecting beyond the aperture to intercept the flame and direct it against the surface of said paper in advance of said aperture, whereby the proper direction of the flame in running contact with the paper is insured to prevent its destruction while dissipating the electricity.

8. A device for dissipating electricity from the printed sheets being delivered from a printing-press, the same comprising a flame-projecting burner, means for intercepting and directing the flame to contact with the printed sheets, and means for movably mounting the burner upon a press to bring the flame into traveling contact with the sheets of paper.

9. In an attachment for printing-presses, the combination with a movable delivery-carriage, of a burner extending transversely of the carriage and secured to and movable therewith, said burner having orifices for the outflow of gas therefrom and adapted to project jets of flame in an upward and forward direction, and an imperforate shield having a free deflecting edge projecting over and beyond the orifices of the burner.

815,072. ELECTRIC ALARM-CLOCK. AUGUSTA Y. DARCHE, Chicago, Ill., executrix of George C. Darche, deceased. Filed June 13, 1904. Serial No. 212,233.



Claim.—1. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary electrode arranged in the path of movement of said arm and an insulating-sleeve movably mounted on said stationary electrode and adapted to be positioned between said arm and stationary electrode for preventing contact therebetween and thus maintaining the circuit open.

2. A signal mechanism, comprising a mechanical alarm-clock, a metal arm connected to the alarm mechanism of said alarm-clock and adapted to be moved thereby, an electric signal, a circuit for said signal including a source of current, said electric signal, a stationary contact secured to said source of current and having stops formed thereon, a movable contact on said mechanical alarm-clock, and an insulating-sleeve adjustably mounted on the said stationary contact, the said sleeve being limited in its movement by said stops.

3. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact arranged in the path of movement of said arm, and an insulating-sleeve mounted on said stationary contact formed with means projecting therefrom, adapted to engage said movable arm for maintaining said sleeve in position to hold apart the said contact-points.

4. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact positioned in the path of said arm, an insulating-sleeve carried by said contact, said contact being arranged to permit said sleeve to be moved by gravity when said arm is on the sleeve adapted to engage the arm for sustaining the sleeve between the arm and contact when the arm is in contact with the sleeve.

5. The combination with a clock-alarm mechanism, and an arm adapted to be moved thereby, of an electric signal, a circuit for said signal including said arm, a source of current, a stationary contact arranged in the path of movement of said arm and an insulating-sleeve mounted on said stationary contact formed with a flange on one end thereof, said flange being adapted to engage said movable arm for maintaining said sleeve in position between the contacts.

815,078. SIGN. JOHN L. DAWES, Pittsburg, Pa. Filed Oct. 31, 1904. Serial No. 229,493.



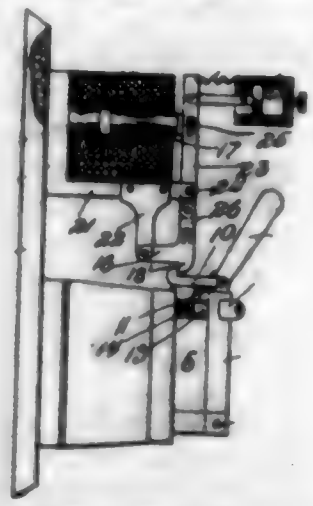
Claim.—1. A sign having a back-plate with top and bottom projections, said plate and projections being bent to form a channel or recess, a frame secured to the back-plate and arranged to cover the projections, and means whereby the sign may be attached to a support; substantially as described.

2. A sign consisting of a sheet-metal back-plate bent to form a recess arranged to fit a support, a surrounding frame secured to the back-plate, and a sign proper having its marginal portion clamped between one edge of the back-plate and the frame; substantially as described.

3. A sign having a back-plate with top and bottom projections, said plate and projections having longitudinal channels or recesses, an ornamental frame secured to the back-plate and arranged to cover the projections, and a sign proper secured between the edge of the back-plate and frame; substantially as described.

4. A sign having a back-plate with top and bottom projections, said plate and projections being bent to form a vertical channel or recess, a frame secured to the back-plate and arranged to cover the projections, the frame and projections having registering holes to receive screws or securing means; substantially as described.

815,074. CIRCUIT-BREAKING APPARATUS. FREDERICK P. DE WILDE, Chicago, Ill. Filed Nov. 12, 1904. Serial No. 232,625.



Claim.—1. In combination with a dynamo-electric machine, having an element wherein its electromotive force is developed, and the circuit therefor, a switch included in said circuit, an electroresponsive apparatus for controlling said switch, and a potential trap from the winding of said generating element of the dynamo-electric machine subject to less than the entire potential of said element, and including the windings of said electroresponsive apparatus.

2. In combination with a dynamo-electric machine having an element wherein its counter electromotive force is developed, and the circuit therefor, an automatically-opening switch included in said circuit, means for maintaining the switch in closed position and electroresponsive apparatus controlling the operation of said means, and a potential tap from the winding of said element of the dynamo-electric machine subject to less than the entire potential of said element, and including the winding of said electroresponsive apparatus.

3. In combination with an induction-motor and the circuit therefor, an automatically-opening switch included in said circuit, means for maintaining said switch closed, electroresponsive apparatus controlling said means, and a potential tap from the generating element of the motor wherein counter electromotive force is developed subject to less than the entire potential of said element, and including the winding of the electroresponsive apparatus.

4. In combination with a dynamo-electric machine having an element wherein counter electromotive force is developed, and a circuit therefor, a circuit-breaking apparatus comprising an automatically-opening switch included in said circuit, means for maintaining said switch in closed position, and electroresponsive apparatus arranged to actuate said means to release the switch when the movable element of the electroresponsive apparatus is moved beyond a certain limit in either direction by increase or decrease beyond certain limits of the current-flow in the windings of said responsive apparatus, and a potential tap from the said generating element of the dynamo-electric machine subject to less than the entire potential of said element, and including therein a winding of the electroresponsive apparatus.

5. In combination with a semi-automatic switch, means for maintaining the switch against automatic movement, comprising a movable latch member, an electroresponsive device, and a toggle connection between the electroresponsive device and the latch member operable to release the switch upon the actuation of the electroresponsive device by variation of its energization above or below normal limits.

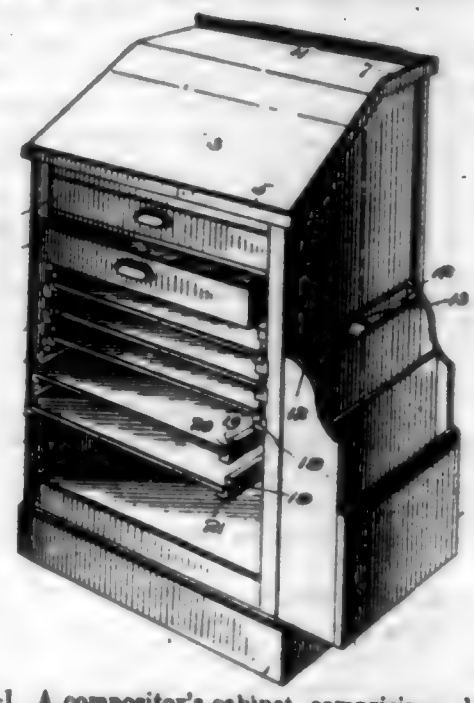
6. In combination with a semi-automatic switch, means for maintaining the switch against movement comprising a movable latch, an electromagnetic coil, a movable magnetically-responsive member associated with said coil for movement thereby in one direction, means for moving said member in the opposite direction, and a toggle between the said member and the latch arranged to maintain the latch in position to prevent movement of the switch when the said member is positioned within certain limits, and to move the latch to switch-releasing position when said member is moved without said limits in either direction.

815,075. RELATING TO PREPARATORY MACHINES AND TO SPINNING, DOUBLING, WINDING, AND THE LIKE PROCESSES AND TO APPARATUS THEREFOR. HENRI DOLL, Paris, France, assignor to Peignages & Filatures De Bourre De Soie, Paris, France, a Society. Filed Aug. 10, 1904. Serial No. 220,185.



Claim.—In a preparatory or other spinning machine, the combination of a spindle, a ring coaxial to and rotating with the spindle, a second ring also coaxial to the spindle, but non-rotatable and movable to and from a plane above that of said first-named ring, by a movement through the same, the thread being passed from the drawing-rollers through an eye and under the first ring and over the second to the spindle cup or bobbin, as and for the purpose set forth.

815,076. CABINET. HENRY DORSEY, Dallas, Tex. Filed Mar. 6, 1905. Serial No. 248,685.

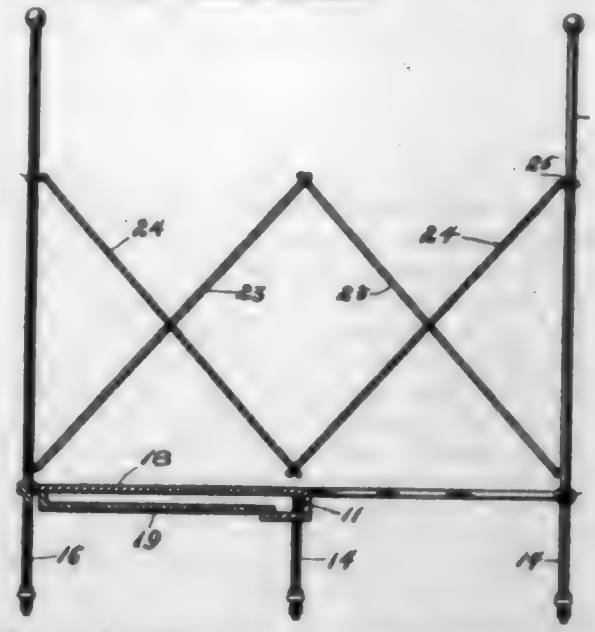


Claim.—1. A compositor's cabinet, comprising a body, means formed upon said body for receiving empty galleys, said means comprising a receptacle provided with vertical partitions, one of said partitions extending from the top edge to the bottom of said receptacle, the other partition extending from the top edge of said receptacle to substantially the central part of said receptacle, said partitions forming compartments in said receptacle, bottoms formed in said receptacle for closing the lower end of some of said compartments, said bottoms being positioned in different horizontal planes, the innermost compartments of different widths than the other compartments.

2. A compositor's cabinet, comprising a body provided with means for receiving and retaining empty galleys in vertical positions, said means comprising a receptacle provided with an outer and inner compartments, said receptacle provided with an intermediate compartment of greater depth than the inner compartments and of less depth than the outer compartment, said inner compartments of substantially the same width and each of less width than the other compartments.

3. A compositor's cabinet, comprising a body, a galley-receptacle carried by said body, said receptacle provided with an outer, an inner, and an intermediate compartment, the floor of said intermediate compartment positioned above the floor of the outer compartment and the floor of said inner compartment positioned above the floor of the intermediate compartment, the positioning of said floors producing compartments of different depths for receiving galleys of different dimensions.

815,077. BEDSTEAD. JOHANNAH V. DOUGHERTY, Detroit, Mich. Filed Mar. 8, 1905. Serial No. 248,974.



Claim.—1. A bedstead comprising a main frame including rails and connected end pieces and supporting-legs, one of the rails having depending portions at its ends, and a supplemental frame comprising a rail, end pieces and supporting-legs, the end pieces of the supplemental frame comprising vertically-spaced rods, the upper-

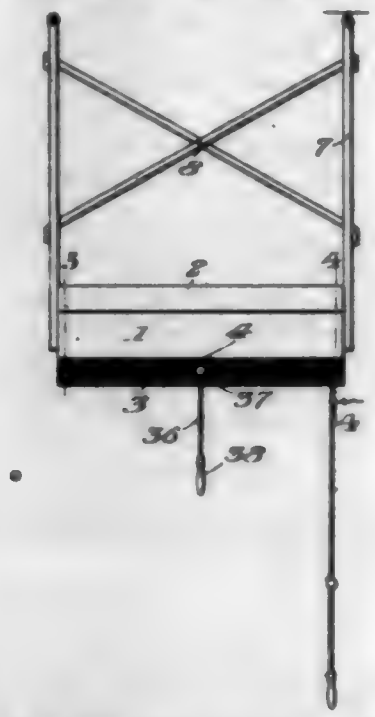
most rod of each end piece being slidably engaged in a depending portion of the main frame and returned therebelow beneath the lower rod.

2. A bedstead comprising a frame including rails and connected end pieces and supporting-legs, a supplemental frame comprising a rail, end pieces and supporting-legs, the end pieces of the supplemental frame comprising spaced rods, the uppermost rod of each end piece being slidably engaged with a portion of the main frame and turned therebelow beneath the lower rod the said lower rod being movably engaged with the said upper rod to permit of detachment of one frame with respect to the other.

3. A bedstead comprising a main frame including rails and connected end pieces and supporting-legs, one of the rails having depending portions at its ends, and a supplemental frame comprising a rail, end pieces and supporting-legs, the end pieces of the supplemental frame comprising vertically-spaced rods, the uppermost rod of each end piece being slidably engaged in the depending portion of the main frame and returned therebelow beneath the lower rod, and lazy-tongs connecting those portions of the legs above the rails at each end, the said tongs including members slidably connected with said legs.

4. A bedstead comprising a frame including rails and connected end pieces and supporting-legs, a supplemental frame comprising a rail, end pieces and supporting-legs, the end pieces of the supplemental frame comprising spaced rods, the uppermost rod of each end piece being slidably engaged with a portion of the main frame and turned therebelow beneath the lower rod the said lower rod being movably engaged with the upper rod to permit of detachment of one frame with respect to the other, and lazy-tongs connecting those portions of the rails above the rails at each end, said tongs including members slidably connected with said legs.

815,078. CURTAIN-DISPLAY CABINET. Marshall Downey, Henry, Ill. Filed May 23, 1906. Serial No. 318,323.



Claim.—1. In a device of the class described, a casing, a drum journaled for rotation therein, a flexible operating element for rotating the drum in one direction, and a brake for the drum adapted for movement by said drum-operating element to release the drum.

2. In a device of the class described, a casing, a drum journaled for rotation therein, flexible elements designed for rotating the drum in relative reverse directions, and a brake acting upon the drum for normally holding the same against movement, said brake being movable by one of the drum-operating elements to release the drum.

3. In a device of the class described, a casing, a drum journaled for rotation therein, a flexible element designed for rotating the drum in one direction, a pivoted brake member, and a spring for maintaining said member normally in engagement with the drum, said brake being movable by said drum-operating element to release the drum.

4. In a device of the class described, a casing having a hinged door designed to open by gravity, a drum journaled for rotation in the casing, an operating element for rotating the drum, and a stop member carried by the element for engagement with the door to maintain the same in closed position.

5. In a device of the class described, a casing having an opening, a drum rotatively mounted in the casing, means for detachably securing sheets of material to the drum, the latter being designed to normally stand at rest with the sheets wound thereon and the sheets being adapted, when the drum is rotated in one direction, to pass outward through the opening for display, and manually-operated means for rotating the drum.

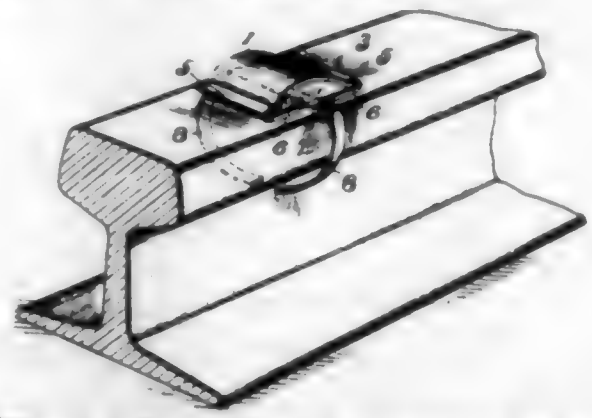
6. In a device of the class described, a rotary drum comprising in its organization a plurality of webs, means for sustaining the drum, means for rotating the latter, and a clamping member connected with one of the webs and adapted to bear on a second web for clamping a sheet of material thereto, said member comprising a pair of pivotally-connected sections and a spring action on said sections for maintaining the member in clamping position.

7. In a device of the class described, a rotary drum, means for sustaining the same, a pivoted brake member designed to normally engage the drum, said member being provided with a guide and a flexible operating element for rotating the drum in one direction, said element being arranged to travel on said guide and maintain the brake in non-engagement with the drum during rotation of the latter by the element.

8. In a device of the class described, a casing, a curtain-receiving drum rotatively mounted therein, retaining members carried by the drum for holding spacing-sheets entered between the curtains, and clamping members for maintaining the curtains detachably in position upon the drum.

9. In a device of the class described, a casing, a curtain-receiving drum rotatively mounted therein, a pivoted brake member designed for engagement with the drum to secure the latter against movement, and a pair of flexible operating elements designed to be alternately wound in reverse directions upon the drum, one of said drum-operating elements being operatively engaged with and adapted to operate the brake to release the drum.

815,079. RAILWAY SIGNAL-TORPEDO. Frank Dutcher, Versailles, Pa. Filed May 15, 1905. Serial No. 260,527.



Claim.—1. An improved torpedo, comprising a fiber case composed of a section of a fiber tube, a metal attachment applied to the tube and having flanges extending in a direction longitudinal of the tube, the flanges overlapping the longitudinal sides of the tube leaving the ends of the tube open for filling and plugging operations, and a detonating material placed within the tube.

2. An improved torpedo, comprising a fiber tubular case having a flat bottom and a curved or inclined top, a metal attachment applied to the outside of the bottom of the case, the attachment provided with flanges located at opposite longitudinal sides of the tube and overlapping and clamping the same at the junction of the top and bottom of the tube, whereby the end of the tube is open for filling purposes, and a detonating compound within the tube.

3. An improved torpedo, comprising a paper case, a metal attachment to the case having opposite inturned flanges clamping the said case, and a rail-engaging device extending in a direction longitudinal the flanges, whereby the torpedo is applied to the rail with the flanges so located that the explosion will throw the flange in a direction longitudinal the track, as contradistinguished from the lateral throw, as and for the purpose described.

4. An improved torpedo, comprising a fiber case having a flat bottom and a top curved or inclined in opposite directions, a metal attachment applied to the outer side of the bottom of the case, the metal attachment having flanges overlapping opposite sides of the case, a rail-engaging member attached to the torpedo and extending in a direction longitudinal the said flanges whereby the torpedo is supported on the rail with the flanges toward and away from the advancing car-wheel and whereby the car-wheel will engage one flange in advance of exploding the torpedo serving to prevent the flying of

the tin attachment under explosion and to cause the opposite flange to be thrown in the opposite direction but longitudinal the track.

5. An improved torpedo, comprising a fiber case, a metal attachment having side flanges overlapping opposite sides of the case, and end flanges adapted to abut against the ends of the case, for the purpose described.

6. An improved torpedo, comprising a fiber case, a metal attachment having side flanges overlapping opposite sides of the case and end flanges of a width practically equal to the thickness of the wall of the case and abutting against the end thereof, for the purpose described.

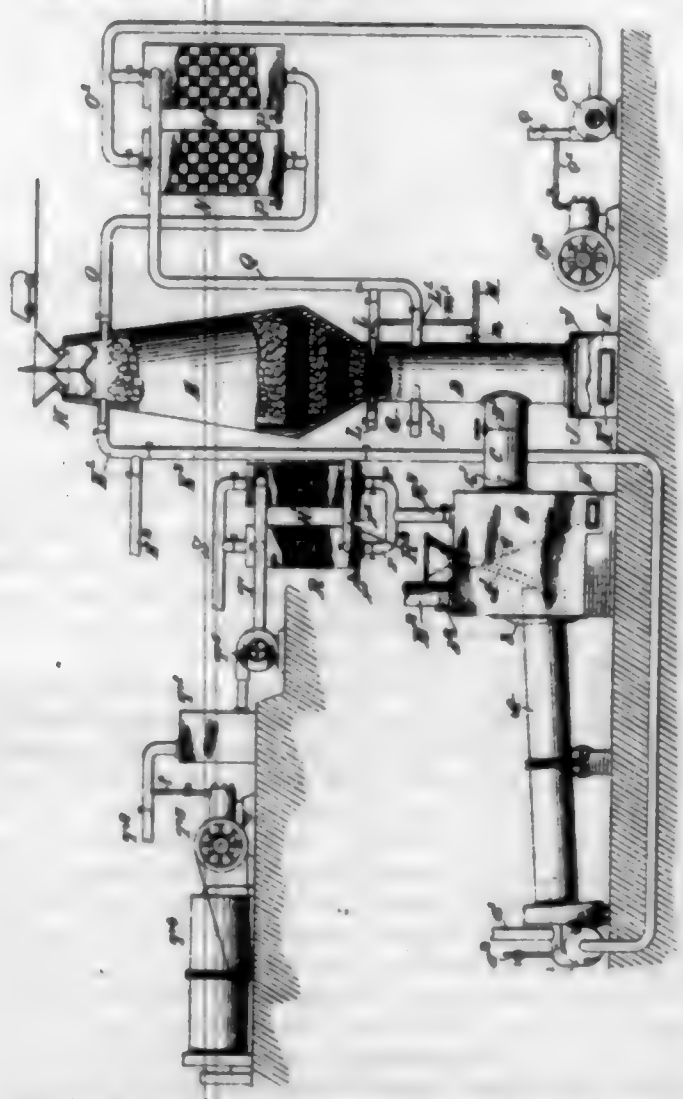
7. An improved torpedo, comprising a fiber case composed of a tube formed of a sheet of fibrous material, and a metal attachment applied to the tube and engaging and holding the end of the sheet of which the tube is formed.

8. An improved torpedo, comprising a fiber case containing explosive compound, the said case composed of a tube, a metal attachment applied to the base of the tube and having overlapping flanges extending in a direction longitudinal the tube and engaging opposite sides thereof, and a rail-engaging member passing between the attachment and the bottom of the tube.

9. An improved torpedo, comprising a tubular fibrous case having an open end, an explosive compound within the case, and an inflammable plug closing the end of the case to prevent the flying of dangerous particles from the closure of the tube when the torpedo is exploded.

10. An improved torpedo, comprising a tubular fibrous case having an open filling end, an explosive compound within the case, and a closing-plug for the open end of the case consisting of an inflammable substance and a binder therefor.

815,080. MANUFACTURE OF HYDRAULIC CEMENT AND APPARATUS THEREFOR. BERNARD ENRIGHT, Fordwick, Va. Filed Oct. 2, 1905. Serial No. 281,005.



Claim.—1. The herein-described process which consists in causing the highly-heated gaseous products of combustion and decomposition from a rotary clinker-forming cement-kiln to pass through a CO_2-producing charge containing carbon in a kiln or furnace in which the temperature and conditions are such as to cause CO_2 to be liberated from the charge and the carbon dioxid issuing from the rotary kiln and the carbon dioxid formed or set free in the vertical kiln or furnace to be converted (or largely so) into carbon monoxid then collecting or utilizing the carbon monoxid thus formed and collecting and using the cement-forming material thus produced.

2. The herein-described process which consists in causing the highly-heated gaseous products of combustion and decomposition from a rotary clinker-forming cement-kiln to pass through an incandescent charge of fuel and cement-producing material such as limerock or cement-rock in a vertical kiln, causing the cement-producing material to be partially or completely calcined effecting the change of the carbon dioxid issuing from the rotary kiln into carbon monoxid and collecting for use the calcined cement-producing material thus formed.

3. The herein-described process which consists in causing the highly-heated gaseous products of combustion and decomposition from a rotary clinker-forming kiln to pass through an incandescent charge of fuel and cement-producing material in a vertical kiln, causing the cement-producing material to be partially or completely calcined and effecting a change of the carbon dioxid issuing from the rotary kiln and the carbon dioxid formed or set free at the lower part of the vertical kiln into carbon monoxid then collecting or utilizing the carbon monoxid thus produced and collecting for use the cement-forming material thus produced.

4. The herein-described process which consists in passing the highly-heated gaseous products of combustion and decomposition from a clinker-forming rotary cement-kiln through a charge of incandescent fuel and cement-forming material maintained at such temperature and under such conditions as to convert the carbon dioxid in said products of combustion and the carbon dioxid from the charge in the vertical kiln into carbon monoxid at the same time partially or completely calcining the cement-forming material and in collecting for use the calcined or partially-calcined cement-forming material.

5. The herein-described process which consists in passing the highly-heated gaseous products of combustion and decomposition from a clinker-forming rotary cement-kiln through a charge of incandescent fuel and cement-forming material in a vertical kiln producing a reducing-atmosphere in said vertical kiln to change the carbon dioxid received from the rotary kiln and the carbon dioxid formed or set free in the vertical kiln into carbon monoxid and at the same time partially or completely calcining the cement-forming material then collecting or utilizing the carbon monoxid thus produced and collecting for use the calcined cement-forming material.

6. The process herein described which consists in passing the highly-heated gaseous products of combustion and decomposition from a clinker-forming rotary cement-kiln through a charge of cement-producing material and a relatively small proportion of incandescent fuel to largely convert the carbon dioxid in the products of combustion into carbon monoxid and then passing the resulting gases through incandescent fuel to reduce any carbon dioxid in said gases to carbon monoxid.

7. The combination of a rotary clinker-forming cement-kiln, a separating-chamber connected therewith, a vertical kiln connected with said separating-chamber, chambers containing coke or similar fuel also connected with the separating-chamber and with the vertical kiln and devices for directing the products of combustion from the rotary kiln into either of said fuel-containing chambers and for directing gases issuing from the vertical kiln into either of said fuel-containing chambers.

8. The combination of a rotary clinker-forming cement-kiln, a separating-chamber connected therewith, a vertical kiln connected with said chamber and containing fuel and cement-producing material, an emergency-stack in the separating-chamber air-blast and steam-supplying means at the lower portion of the vertical kiln and means for carrying off the gases issuing from the vertical kiln.

9. The combination of a rotary clinker-forming cement-kiln, a vertical kiln connected therewith, air-inlets in the vertical kiln, absorbers connected with the vertical kiln and also with the air-inlets, means for passing the gases issuing from the vertical kiln through the absorbers, devices for passing through the absorbers the air admitted to the vertical kiln, and means for supplying steam to the lower portion of the vertical kiln.

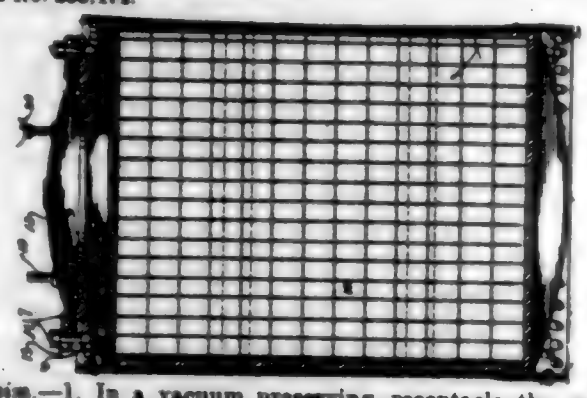
10. The combination of a rotary clinker-forming cement-kiln, a vertical kiln connected with the rotary kiln, a compartment below the vertical kiln for receiving burned rock, doors separating this compartment from the vertical kiln, an emergency-stack connected with the rotary kiln and a damper interposed between the vertical kiln and the cement-kiln.

11. The combination of a rotary clinker-forming cement-kiln, a separating-chamber connected therewith, a vertical kiln connected with said separating-chamber, means surrounding the rotary kiln to

exclude air from the separating-chamber, an emergency-stack in the separating-chamber, and means cutting off the vertical kiln from the separating-chamber.

12. The combination of a rotary clinker-forming cement-kiln, a separating-chamber connected therewith, a vertical kiln connected with said separating-chamber, a ring having an inclined periphery secured to the rotary kiln, and a ring having an inclined periphery fitting the first-mentioned ring and attached to the separating-chamber.

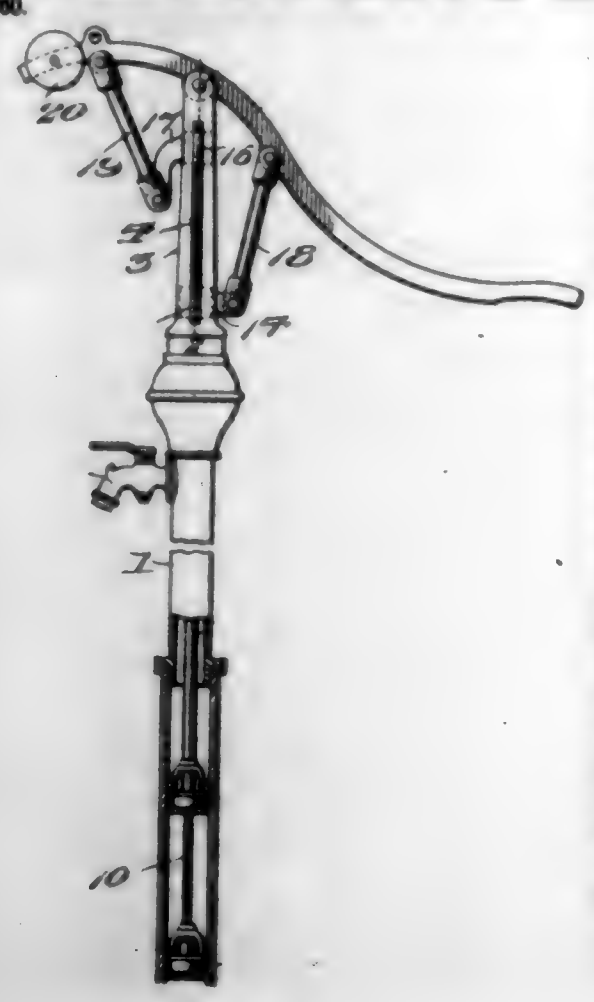
815,081. VACUUM PRESERVING-RECEPTACLE. HARRY C. FERGUSON, Canton, Ohio, assignor to The Vacuum Storage Cask Company, Canton, Ohio, a Corporation of Ohio. Filed Apr. 13, 1905. Serial No. 255,474.



Claim.—1. In a vacuum preserving-receptacle, the combination of a body having secured thereto a convexo-concave bottom, a cover-section formed convexo-concave and provided with an attaching-flange, a ring secured to said cover-section and provided with an annular flange adapted to abut against the cover-section, a removable cover formed convexo-concave, and means for attaching said cover to the ring fixed to the cover-section, and a gasket located between the removable cover and the ring, substantially as and for the purpose specified.

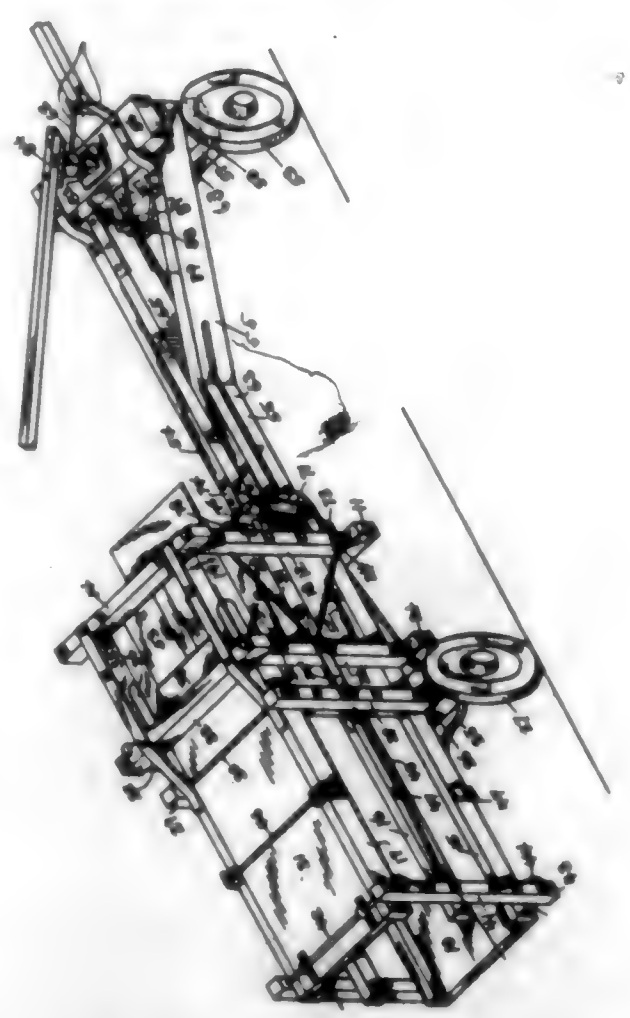
2. In a vacuum preserving-receptacle, a body provided with a convexo-concave bottom, a cover section or ring formed convexo-concave and provided with an attaching-flange, a ring connected to the cover-section and provided with an annular flange adapted to engage the cover-section, a removable cover formed convexo-concave, and a gasket located between the cover and the ring, and means for securing the removable cover, substantially as and for the purpose specified.

815,082. PUMP. WILLIAM T. FUNK, Rodkey, Ind., assignor of one-half to Albert W. Kehrer, Rodkey, Ind. Filed Mar. 15, 1905. Serial No. 250,200.



Claim.—In a pump, a pair of plunger-rods equipped with plungers, heads fixed upon the upper ends of the rods and provided with vertically-disposed radially-projecting guide-flanges, said heads being each provided with a perforated ear projecting in a radial line at right angles to the flanges, a vertical extension carried by the upper end of the pump and comprising relatively spaced side plates provided with longitudinal guide-slots designed to receive the guide-flanges, an operating-handle pivoted to the upper end of the extension between the side plates, and links pivoted respectively to the ears and pivotally connected with the handle.

815,083. HAY-PRESS. WALDO R. FRASER, Collinsville, Ill. Filed Sept. 23, 1903. Serial No. 174,289.



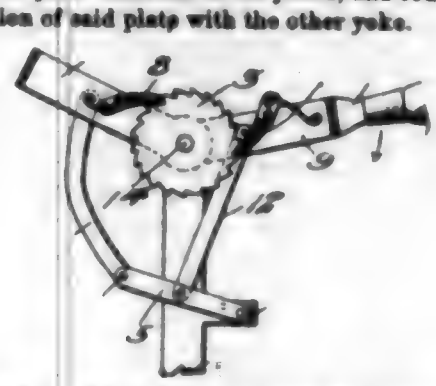
Claim.—1. In a baling-press, the combination with a hopper, of a tucker-plate having crank-arms at its ends, said plate being pivotally and vertically movable, spring-plates engaged over the crank-arms adjacent to the ends of the plate and adapted to hold the plate yieldably against upward movement, and vertical spring-plates engaged against the sides of the outer arms and adapted to hold the latter yieldably against lateral movement.

2. In a baling-press, the combination with a chute including longitudinal slats, of uprights secured to the slats in spaced relation at opposite sides of the chute, the uprights at each side being spaced from each other longitudinally of the chute, cross-rods engaged through the uprights at the discharge end of the chute, said cross-rods having adjusting-nuts at one end outwardly of one of the uprights and extending outwardly beyond the other upright and having perforations in said outwardly-extending portions, latch members carried by the last-named upright and removably engaged in the perforations to hold the rods against removal from the uprights, said rods being arranged to hold the slats at opposite sides of the chute in convergent relation toward the discharge end of the chute, transverse brace-rods secured to the uppermost and lowermost pairs of slats, and truss-rods for the intermediate slats to hold the latter against outward movement between the uprights, said truss-rods having their ends engaged between their respective slats and the uprights.

815,084. PAWL AND RATCHET. JOHN S. FLETCHER, Mound-City, Kans. Filed Apr. 20, 1904. Renewed Jan. 27, 1906. Serial No. 297,448.

Claim.—1. In mechanism of the character described, the com-

bination with a yoke having a ratchet-wheel journaled therein; of oppositely-disposed yokes extending to opposite sides of the ratchet-wheel and pivoted within the first-mentioned yoke, pawls within the oppositely-arranged yokes and normally contacting with the ratchet-wheel, a plate pivoted within the first-mentioned yoke, rods connecting one end of the plate with one of the yokes, and rods connecting the central portion of said plate with the other yoke.



2. In mechanism of the character described, the combination with a yoke having a ratchet-wheel journaled therein; of oppositely-arranged yokes, pawls therein normally engaging the ratchet-wheel, a plate pivoted to the first-mentioned yoke, and rods connecting the plate with the yokes, whereby the pawls are adapted to be moved alternately into engagement with the ratchet-wheel.

3. In mechanism of the character described, the combination with a yoke having a ratchet-wheel journaled therein; of oppositely-disposed yokes pivoted within the first-mentioned yoke and adapted to be folded thereupon, pawls therein normally engaging the ratchet-wheel, a plate pivoted to the first-mentioned yoke, rods connecting the plate with the yokes, whereby the pawls are adapted to be moved alternately into engagement with the ratchet-wheel, and means for locking the yokes in folded position.

4. In mechanism of the character described, the combination with a yoke having a handle at one end and a ratchet-wheel journaled in the other end; of a second yoke pivoted adjacent the ratchet-wheel and having a detachable handle, a pawl pivoted therein and normally engaging the ratchet-wheel, rods extending from the yoke, a plate pivoted in the first-mentioned yoke and connected between its ends to the rods, another yoke pivoted adjacent the ratchet-wheel, a pawl therein normally engaging the ratchet-wheel, and rods pivoted to said yoke and to one end of the plate.

5. In a mechanism of the character described, a supporting-yoke, a ratchet-wheel journaled therein, operating-yokes connected with the supporting-yoke, pawls carried by the operating-yokes and arranged to oppositely engage the ratchet-wheel, and a lever mechanism connecting the operating-yokes whereby when one of the operating-yokes is reciprocated the other will be reciprocated therewith and cause the pawls to continuously revolve the ratchet-wheel.

6. In a mechanism of the character described, a supporting-yoke, a ratchet-wheel journaled therein, operating-yokes connected with the supporting-yoke, means carried by said operating-yokes to continuously revolve the ratchet-wheel when said yokes are reciprocated, and means whereby to vary the arrangement of said operating-yokes to adapt said means to intermittently revolve the ratchet-wheel.

7. In a mechanism of the character described, a supporting member, a ratchet-wheel journaled therein, reciprocating operating means engaging the ratchet-wheel on opposite sides, mechanism connecting said respective operating means whereby to continuously revolve the ratchet in the reciprocation of said means, said operating means being variable as to position to effect intermittent driving of the ratchet during reciprocation of the means.

8. In a mechanism of the character described, a supporting member, a ratchet-wheel journaled therein, reciprocating operating means engaging the ratchet-wheel on opposite sides, mechanism connecting said respective operating means whereby to continuously revolve the ratchet in the reciprocation of said means, said operating means being changeable as to position to permit intermittent driving of the ratchet during reciprocation of the means, and means for locking the operating means in its changed position.

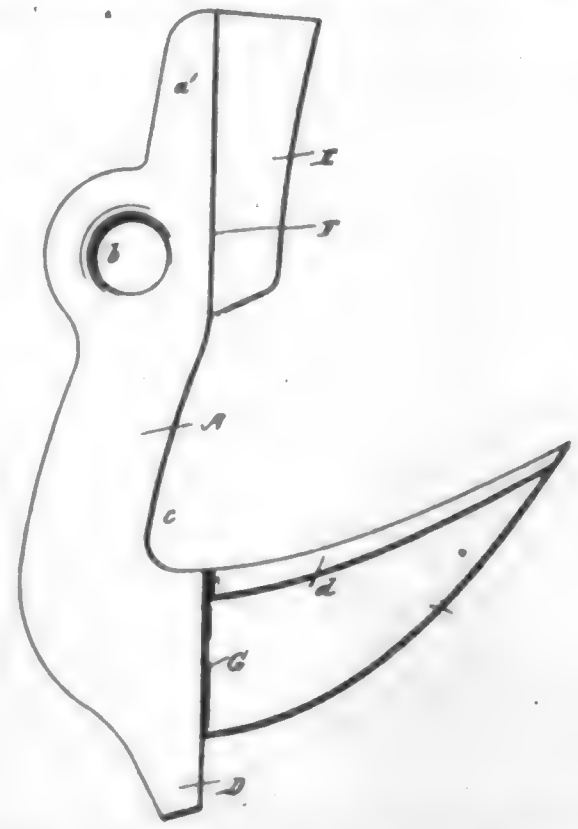
9. In a mechanism of the character described, a supporting member, a ratchet-wheel journaled therein, reciprocating operating devices for alternately engaging and imparting continuous motion to the ratchet-wheel, and means adapting said devices to simultaneously engage the ratchet-wheel and impart intermittent motion thereto.

10. In a mechanism of the character described, a rotary member, operating means to alternately engage and continuously rotate said rotary member, and means to vary the action of said operating means to simultaneously engage and effect an intermittent rotation of said rotary member.

11. In a mechanism of the character described, a ratchet-wheel, reciprocating operating devices provided with pawls to engage said ratchet-wheel, means for connecting and disposing said devices to adapt the pawls to alternately engage and continuously rotate the wheel, said means being adapted to permit said devices to fold or approach and cause said pawls to simultaneously engage and intermittently rotate the ratchet-wheel, and means for retaining said devices in folded position.

12. A ratchet-wheel, two pawls, and means to cause the pawls to alternately engage and continuously rotate the ratchet-wheels, or to simultaneously engage and intermittently rotate said ratchet-wheel.

815,085. GRAB-HOOK. JOHN E. FLYNN, Logue, Pa. Filed Aug. 29, 1905. Serial No. 276,214.



Claim.—1. A grab-hook provided with a shank having a curved hook at one end, said hook being formed with substantially flat and parallel sides and strengthening-ribs along its inside edge, a hole for the draft attachment in the said shank, and a blade or fin projecting from the shank adjacent to the said hole.

2. A grab-hook provided with a shank having a hole for a draft attachment, a blade or fin arranged longitudinally of the shank adjacent to the said hole, a curved hook projecting from the other end portion of the shank from the said blade or fin, and a spur projecting from the extreme end of the shank beyond the said hook.

3. A grab-hook provided with a shank having a curved hook at one end, a blade or fin arranged longitudinally of the said shank at its other end portion, and shoulders on the said shank at the bases of the said hook and blade, said shoulders being arranged in line with each other.

4. A grab-hook provided with a shank having a curved hook at one end, a blade or fin at its other end, and shoulders on the said shank at the bases of the said blade and hook, the said shank being arranged at an angle to the said shoulders and forming a space between them as set forth.

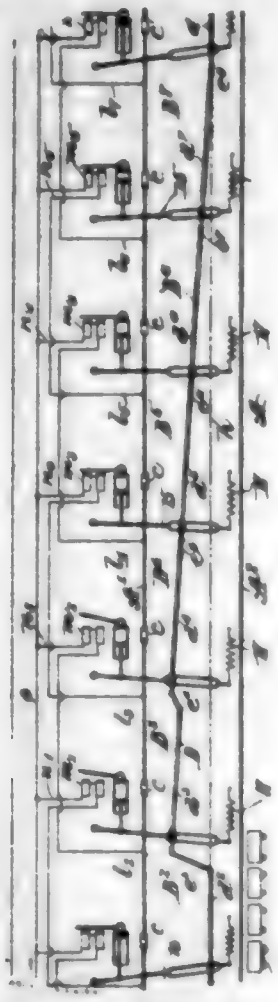
5. A grab-hook provided with a curved hook at one end, a hole for the draft attachment, and an extension which projects considerably beyond the said hole at the other end of the said shank, said extension having a long blade or fin projecting from it and having stop-shoulders on each side of the base of the said fin.

6. A grab-hook provided with a shank having a curved hook at one end, said hook having substantially flat and parallel sides and strengthening-ribs along its inside edge, a blade or fin at the other end portion of the said shank, and shoulders on the said shank at the bases of the said hook and blade.

815,086. RAILROAD SYSTEM. HANNIBAL C. FORD, Jamaica, N. Y. Filed Sept. 12, 1905. Serial No. 278,183.

Claim.—1. In a railroad system, a plurality of trains each having a traveling zone of variable influence extending from the rear car

thereof, and means governed by said zone of variable influence for controlling the speed of a following train.



2. In a railroad system, means whereby each train produces a zone of variable influence in the rear thereof, and means upon a following train for governing its speed in proportion to its entrance into said zone of influence.

3. In a railroad system, a track divided into units, train-controlling means at each unit, and means whereby a preceding train sets such controlling means at different conditions at the rear thereof so as to control the speed of a following train.

4. In a railroad system, a track divided into units, train-controlling means at each unit, means whereby a preceding train displaces such train-controlling means at its rear, and controlled parts on a following train for automatically governing its speed.

5. In a railroad system, a track divided into units, train-controlling devices at each unit arranged to be variably displaced by a passing train, and controlled means on a following train for automatically governing its speed arranged to be engaged by said controlling means.

6. In a railroad system, a plurality of train-controlling devices arranged at intervals along the track, means on each train for displacing such devices variable distances diminishing in proportion to their distance from the rear of the train, and means on a following train for governing its speed controlled by said devices.

7. In a railroad system, a plurality of trains each having means thereon for producing a traveling zone of variable influence in the rear of the train, said influence being less in proportion to its distance from the rear of the train, and means whereby the speed of a succeeding train is automatically governed according to its amount of penetration into such zone.

8. In a railroad system, a track divided into units, a mechanical device at each unit arranged to have a lateral movement, means on each train for governing its speed in proportion to such lateral movement, and means on each preceding train for setting such devices to varying degrees of lateral movement.

9. In a railroad system, a track divided into units, a mechanical device at each unit arranged to have a lateral movement, means on each train for governing its speed in proportion to such lateral movement, and means on each preceding train for setting such devices to varying degrees of lateral movement an amount inversely proportional to their distance from the train.

10. In a railroad system, a track divided into units, a device at each unit arranged to be displaced by the movement of a train a distance inversely proportional to the distance of the rear of the train, and means located at the front end of the following train and acted on by such devices for governing its speed.

11. In a railroad system, a track divided into units, means set in operation by a train for creating a traveling zone of variable influence behind such train, and means on a following train for governing its speed in proportion to its entrance into such zone of influence.

12. In a railroad system, a track divided into units, connections from each unit for displacing a mechanical device arranged to govern the speed of a following train, and means whereby such device displaces following devices to a successively less distance than its own displacement.

13. In a railroad system, means for governing the speed of a train in proportion to its distance from a preceding train.

14. In a railroad system, a train having means thereon by which its speed is automatically controlled to accord with the position of a controlling device actuated by a preceding train.

15. In a railroad system, devices along the track displaced at varying distances from a normal position, and means upon a train for governing its speed controlled by the position of such devices.

16. In a railroad system, a rail divided into subdivisions, means for displacing such subdivisions laterally to a varying distance proportioned to the distance from a preceding train, and means upon a following train for governing its speed controlled by the position of such subdivisions.

17. In a railroad system, a track divided into units, a rail divided into subdivisions corresponding to said units and laterally displaceable by a train, and an arm on each train guided by said rail arranged to govern its speed.

18. In a railroad system, a plurailty of displaceable devices arranged along the roadway, an arm on each train arranged to be displaced by such devices, a part on each train mounted to be moved in proportion to the speed of the train, and means whereby such speed is made to automatically accord with the movement of said arm.

19. In a railroad system, a plurality of devices disposed at intervals along the track and arranged to be moved laterally by the passage of a train, an arm upon a succeeding train mounted to be displaced by such devices, and means whereby the speed of such following train is automatically made to accord with the movemen of said arm.

20. In a railroad system, a plurality of devices which are displaced by the passage of a train diminishing distances in proportion to their distance from the train, and means whereby the speed of a following train is automatically reduced by such devices provided it exceeds a predetermined amount corresponding to its interval from the preceding train.

21. In a railroad system, a rail having laterally-displaceable subdivisions extending the entire length of the track, telescoping extensions for each subdivision, means actuated by a passing train for displacing a subdivision laterally, and means whereby such displacement prevents the complete return movement of the following subdivision.

22. In a railroad system, a rail divided into subdivisions which are laterally displaceable, means on each train for displacing a subdivision to its extreme limit of movement, and means whereby such movement is effective to prevent the complete return of the preceding subdivisions, whereby a traveling zone of variable and decreasing influence is created in the rear of each train for the purpose of governing the speed of a following train.

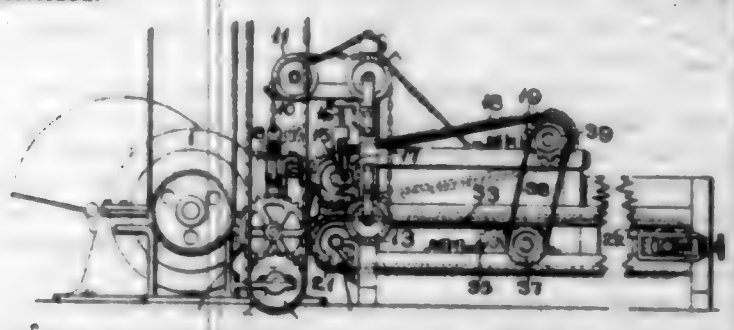
23. In a railroad system, a rail divided into subdivisions each of which is longitudinally and slightly laterally movable, telescoping extensions on each subdivision whereby the preceding subdivision is permitted a slightly less degree of movement, and fluid-pressure means controlled by the passage of a train for successively throwing the subdivisions to their limit of movement.

24. In a railroad system, a rail having a plurality of subdivisions each of which is guided to move forwardly and slightly laterally, means for moving a subdivision by the passage of a train, and means whereby such subdivision permits the partial but not complete return of the preceding subdivisions to their normal position.

815,087. FEEDING MECHANISM FOR SHREDDING-MACHINES. EDWARD H. FRICKEY, St. Louis, Mo., assignor, by mesne assignments, to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 29, 1905. Serial No. 258,112.

Claim.—1. In an apparatus of the class described, the combination of belts which are capable of being separated in their action of feeding material, feeding-rollers for receiving the material from between the belts, pulleys above and below one of the belts, and a flexible connection passing around said pulleys for connecting one of the

feeding-rollers and one of the belts and for separating said feeding-rollers coincidently with the separation of the belts; substantially as described.



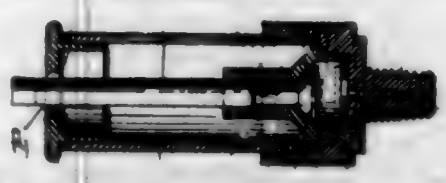
2. In an apparatus of the class described, the combination with a lower belt for advancing material to a position to be acted upon by feeding-rollers, of feeding-rollers capable of being separated, a belt above said feed-belt and coöperating therewith, pulleys above and below the top belt, and a flexible connection passing under the lower pulley and over the upper pulley and connected to the upper belt and the top feeding-roller; substantially as described.

3. In an apparatus of the character described, the combination with two feed-rollers, one of which is vertically adjustable away from and toward the other to receive different thicknesses of material, mechanism operated by material of different thicknesses, a flexible connection secured to the vertically-movable feed-roller and to said mechanism to control the position of the vertically-movable feed-roller according to the thickness of material to be received, and guide and supporting means whereby said flexible connection permits said feed-roller to move toward its companion irrespective of the position of its actuating means; substantially as described.

4. In an apparatus of the character described, the combination with two positively-driven feed-rollers capable of being separated, of two positively-driven belts capable of being separated, and a flexible connection between one of said belts and one of said feed-rollers whereby the rollers are separated a distance corresponding to the separation of the belts, said flexible connection permitting the belts to approach each other while the rollers remain separated, substantially as described.

5. In an apparatus of the character described, the combination with two positively-driven feed-rollers, of an upper and a lower belt, vertically-adjustable boxes in which one of said feed-rollers is mounted, counterbalanced springs for said adjustable roller, flexible cables connected to the boxes thereof sheaves around which said cables pass, one of which sheaves is vertically movable with respect to the other, and a part movable with said upper belt and connected to said flexible cables; substantially as described.

815,088. **LUBRICATOR.** LEWIS GLEASON, Franklin, Pa. Filed Oct. 28, 1905. Serial No. 284,572.



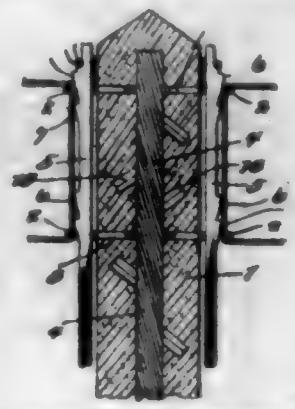
Claim.—In a lubricator for air-pumping devices, in combination with an oil-receptacle, a valve, a valve-chamber, said chamber having an opening at its lower end leading to the air-pressure device, and an opening at the upper end leading to the receptacle, said valve having a face adapted to seat by gravity on said lower opening and a face adapted to close said upper opening by the force of the air-pressure, said valve having a valve-rod, a guide-tube through which said rod extends upwardly, said rod having a close fitting in the tube at its upper end and having a reduced portion between its upper end and the valve-head, and oil-entrance openings in the wall of said tube between its ends, substantially as described.

815,089. **FENCE-POST.** HUBERT B. HILLMAN, Huckleberry, Ohio. Filed Sept. 23, 1905. Serial No. 279,796.

Claim.—1. A post for wire fences, composed of cement, and having a metallic core, a series of loops arranged upon one face of said post, a wire-holding bar having inclined faces inserted in said loops, and means to prevent vertical play thereof, substantially as described.

2. A fence-post, comprising a body portion and a plurality of loops, a wire-holding bar having inclined faces thereon, and means to prevent vertical play thereof.

3. A fence-post, comprising a body portion and loops thereon, a wire-holding bar to engage therewith, having inclined faces, means thereon to engage the line-wires, and means to prevent vertical play of said bar.

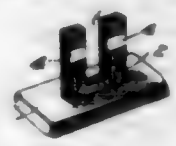


4. A fence-post, comprising a body portion and loops thereon, a wire-holding bar to coöperate therewith, a notch at the upper end of said bar, means to engage therewith, and means to prevent displacement of the first-named means and prevent a vertical play of the said wire-holding bar.

5. A post for wire fences, composed of cement, and having a metallic core, a series of loops arranged on said post, a wire-holding bar having inclined faces inserted in said loops, means to prevent vertical play thereof, said core being provided with a plurality of projections, said projections being formed with wings, substantially as described.

6. A fence-post, comprising a body portion and core therefor, a plurality of projections thereon, said projections being formed with wings, a series of loops upon one face of said post, a wire-holding bar to be inserted therethrough, said bar having inclined faces thereon, said faces having teeth to engage the line-wires, a notch at the upper end of said bar, a spring-lever to engage therewith, and a spring-catch to hold the spring-lever in place to prevent vertical play of said wire-holding bar, substantially as specified.

815,090. **GUN-SIGHT.** WILLIAM V. HUKILL, Bethany, W. Va., assignor to Israel V. B. Cox, Ethel, Mo. Filed June 30, 1905. Serial No. 267,340.



Claim.—1. A front sight for guns having a vertical focusing-slot, the walls of which are parallel and unobstructed, throughout their length, and sight-guides of a color strongly contrasting to the sight and disposed at right angles to the slot, the width and position of the guides being regulated so that the different divisions of the sight will have corresponding value in range distance.

2. A front sight for guns of somber color having a focusing-slot, the walls of which are parallel and unobstructed throughout their length, and sight-guides of bright color disposed at right angles to the slot, the width and position of the guides being regulated so that the different divisions of the sight will have corresponding value in range distance.

3. A front sight for guns of somber color having a focusing-slot, the walls of which are parallel and unobstructed throughout their length, and sight-guides of bright color disposed at right angles to the slot and intermediate of the ends of the sight, the width and position of the guides being regulated so that the different divisions of the sight will have corresponding value in range distance.

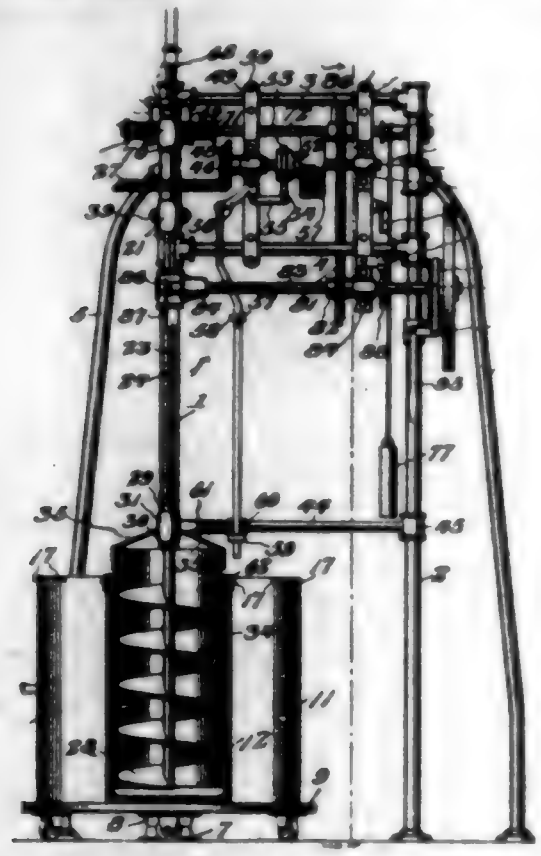
815,091. **APPARATUS FOR FILLING AND PACKING BAGS.** JOSEPH F. JONES and CHARLIE T. ODENA, Hampton, Miss. Filed Aug. 20, 1904. Serial No. 221,578.

Claim.—1. A filling and packing apparatus comprising a holding device, an automatically-movable packing-screw, means for automatically starting and stopping the operation of said screw, and means including a weight for regulating the pressure of said screw.

2. A filling and packing apparatus comprising a holding device, a packing-screw, a vertically-movable packing-screw shaft, means for rotating said shaft, means including a pawl and ratchet for holding said shaft in raised position, means including a brake for lowering said shaft, and means for regulating the pressure of said packing-screw.

3. A filling and packing apparatus comprising a holding de-

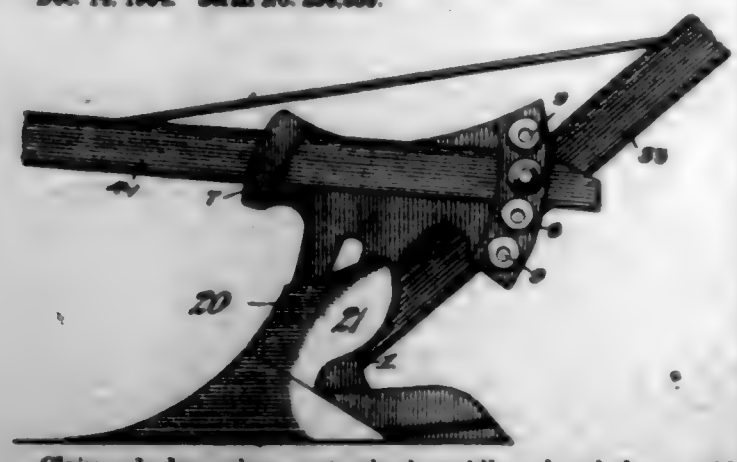
vice, an automatically-movable packing-screw, a casing surrounding said packing-screw and movable therewith, and means for feeding material to said casing.



4. A filling and packing apparatus comprising a holding device, an automatically-movable packing-screw, a casing surrounding said packing-screw and movable therewith, and telescopic means for feeding material to said casing.

5. A filling and packing apparatus comprising a rotary table, a plurality of holding devices on said table, an automatically-movable packing-screw adapted to coöperate in turn with each of said holding devices, a vertically-movable packing-screw shaft, a pair of fixed collars on said shaft, a sleeve on said shaft between the collars, a casing supported by said sleeve and surrounding said packing-screw, a laterally-projecting arm on said sleeve, a gear-wheel on said packing-screw shaft, an operating-shaft having a gear-wheel in mesh with the gear-wheel on the packing-screw shaft, a belt-wheel on said operating-shaft, a clutch member on said operating-shaft adapted to be thrown into and out of clutch with the belt-wheel, a rod connected with said clutch and having collars adapted to be struck by the laterally-projecting arm on the sleeve of the packing-screw shaft, a non-rotatable plate adapted to move longitudinally with the packing-screw shaft, a plurality of flexible elements connected with said plate, a first shaft having a plurality of drums connected with said flexible elements, a weight connected with said first shaft, a second shaft, a sprocket-chain connecting said first and second shafts, a flexible element connecting said second shaft and the sleeve on the packing-screw shaft, a ratchet-wheel on said second shaft, a pawl coöperating with said ratchet-wheel, a hand-wheel on said second shaft, a brake-band connected with said hand-wheel, and a brake-lever connected with said brake-band.

815,092. PLOW. ROBERT L. KRAENEY, Greenville, N. C. Filed Dec. 14, 1904. Serial No. 236,839.



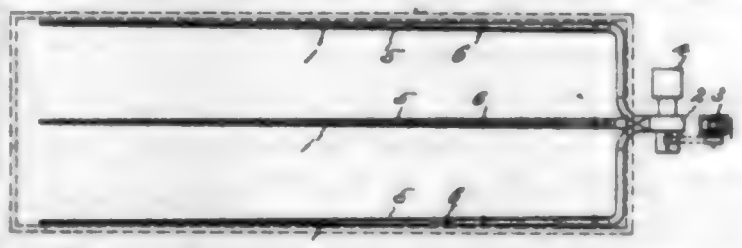
Claim.—1. In a plow, a standard, moldboard and share, said standard having a keyhole-slot and the moldboard and share being provided with headed engaging members designed to enter said slot for detachably connecting the parts, a socket provided in one of the parts, and a removable locking-key engaged in the socket and having a lug designed to enter said slot for retaining the engaging members therein.

2. In a plow, a standard, a moldboard and a share, said parts being relatively detachable, one of the parts having a keyhole-slot and the others being provided with headed engaging members designed to enter said slot, a key detachably engaged with one of the parts and having a lug designed to seat in the slot to prevent escape of the engaging members therefrom, and means for retaining the key in place.

3. In a plow, a standard having a horizontal and a vertically-disposed keyhole-slot, a detachable moldboard having a headed engaging member adapted to enter the vertical slot, a removable share having a headed engaging member designed to enter said slot beneath the first-named member and together therewith, a landside provided with a headed engaging member adapted to enter the horizontal slot, said share having a flange adapted to lie in advance and form an extension of the landside, and a locking-key detachably engaged with one of the parts and having a lug designed to seat in the vertical slot to prevent escape of the engaging members therefrom.

4. In a plow, a standard and a removable landside, one of said parts being provided with a slot and the other with a headed engaging member to enter the slot for detachably engaging the landside with the standard, the latter being provided with a vertically-disposed keyhole-slot, a moldboard having a headed engaging member entered into said slot, a share also having an engaging member seated in the vertical slot, said share being provided with a socket, a locking-key seated in the socket and having a lug to enter the keyhole-slot for preventing escape of the engaging members therefrom, and a spring carried by the key designed to bear on the share for preventing escape of the key from the socket.

815,093. TOBACCO-CURING APPARATUS. CHARLES H. KENNEY, Hartford, Conn. Filed Nov. 8, 1905. Serial No. 286,371.

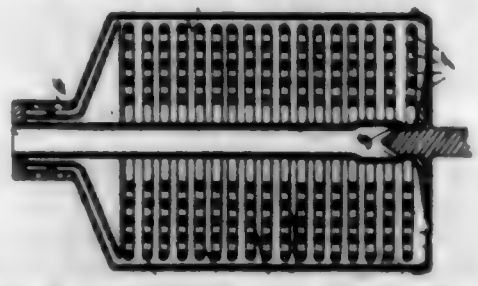


Claim.—1. A tobacco-curing apparatus having a tapering tube with a slot extending on the upper side from end to end of the tube, a blower with its discharge connected with the large end of the pipe, and a motor for operating the blower, substantially as specified.

2. A tobacco-curing apparatus having a tapering tube with a slot extending from end to end on its upper side, a blower with its discharge connected with the large end of the pipe, a motor for operating the blower, and a heater connected with the inlet of the blower, substantially as specified.

3. A tobacco-curing apparatus having a tapering tube with a slot extending from end to end on the upper side of the tube, bands encircling and holding the tube together at intervals along its length, a blower with its discharge connected with the large end of the tube, and a motor for operating the blower, substantially as specified.

815,094. CENTRIFUGAL CREAM-SEPARATOR. MANLEY KELLEY, Cole, Iowa. Filed Apr. 14, 1905. Serial No. 255,555.



Claim.—1. In a centrifugal cream-separator, the combination of a separating-bowl, and spaced inner and outer coils in said bowl.

2. In a centrifugal cream-separator, the combination of a separating-bowl, and spaced sets of inner and outer superposed coils in said bowl, the coils of each set being spaced from each other.

3. In a centrifugal cream-separator, the combination of a sepa-

rating-bowl, and sets of inner and outer spaced coils in said bowl, the coils of each set being of approximately circular formation in cross-section.

4. In a centrifugal cream-separator, the combination of a separating-bowl, and sets of inner and outer coils in said bowl, the sets of coils being so arranged as to form outflow-passages therebetween.

5. In a centrifugal cream-separator, the combination of a separating-bowl, and sets of inner and outer coils in said bowl, the sets of coils being so arranged as to form vertical outflow-spaces therebetween, the relative positions of the coils of each set being such as to form lateral outflow spaces or passages.

6. In a centrifugal cream-separator, the combination of a separating-bowl, and sets of inner and outer coils in said bowl, the sets of coils being so arranged as to form vertical outflow-spaces therebetween, the relative positions of the coils of each set with regard to the coils of the next adjacent set, being such as to form straight lateral outflow-passages.

7. In a centrifugal cream-separator, the combination of a separating-bowl, and sets of inner and outer concentric spaced coils in said bowl.

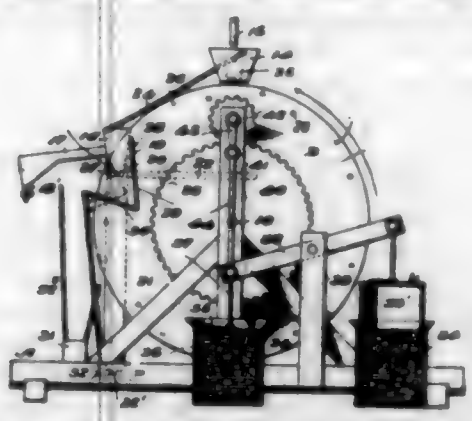
8. In a centrifugal cream-separator, the combination of a separating-bowl, sets of inner and outer concentric spaced coils in said bowl, and a feed-tube entering the bowl centrally of the innermost set of coils.

9. In a centrifugal cream-separator, the combination of a separating-bowl, sets of coils in said bowl, and spacing means between the sets of coils.

10. In a centrifugal cream-separator, the combination of a separating-bowl, and sets of coils in said bowl, each set being made of a single length of material.

11. In a centrifugal cream-separator, the combination of a separating-bowl, sets of coils disposed in the bowl, and bars connecting the coils of each set.

815,095. SAND AND SLIME SEPARATOR. DAVID J. KELLY, Salt Lake City, Utah. Filed Mar. 28, 1905. Serial No. 252,495.



Claim.—1. In a sand and slime separator, the combination with a pulp-supply, of a revolubly-mounted member having side-delivery settling-compartments adapted to be successively alined with said supply.

2. In a sand and slime separator, the combination with a pulp-supply, of a revolubly-mounted wheel divided into separate compartments said compartments having a side delivery and adapted to be successively alined with said supply.

3. In a sand and slime separator the combination with a pulp-supply, of a revolubly-mounted wheel having side-delivery settling-compartments into which the pulp is successively delivered, means for holding the wheel against movement, means for automatically releasing the wheel, and means for imparting to the wheel a step-by-step movement.

4. A sand and slime separator comprising a revoluble member having partitions dividing it into settling-compartments having a side delivery, and means for giving a partial rotation to said member to allow the slime to separate from the same and discharge over the edge of the partition.

5. In a sand and slime separator, the combination with a source of pulp-supply, of a side-delivery, settling-compartment member revolubly mounted, and means whereby the member is given a step-by-step movement in one direction to bring its compartments successively into the range of action of the pulp-supply.

6. In a sand and slime separator the combination with a source of pulp-supply, of a normally locked revolubly-mounted member having side-delivery settling-compartments, and means controlled by the overflow from one compartment for automatically releasing the member from its locked position whereby the weight of the contained material in a filled compartment produces a partial rotation of the member and brings a successive empty compartment in the range of action of the pulp-supply.

7. In a sand and slime separator, the combination with a source of pulp-supply, of a revolubly-mounted wheel having partitions dividing it into side-delivery settling-compartments, said wheel capable of a step-by-step movement in one direction to bring the compartments successively into the range of action of the pulp-supply.

8. In a sand and slime separator, the combination with a pulp-supply, of a revolubly-mounted wheel having side-delivery settling-compartments, means whereby said wheel is given a step-by-step movement, and shiftable means for diverting the pulp-supply from a filled compartment into an empty compartment coördinately with the movement of the wheel from one position to another.

9. In a sand and slime separator, the combination with a pulp-supply, of a revolubly-mounted wheel having compartments, means whereby said wheel is given a step-by-step movement, and tilting means automatically controlled by the overflow from a filled compartment for diverting the pulp-supply from said compartment into a succeeding compartment coördinately with the movement of the wheel from one position to another.

10. In a sand and slime separator the combination with a pulp-supply, of a revolubly-mounted wheel having compartments, means whereby said wheel is given a step-by-step movement, a tilting launder normally receiving the overflow from one compartment of the wheel, means whereby said overflow tilts the launder out of its normal position, and means connected with the launder for diverting the pulp-supply from a filled compartment of the wheel into a succeeding empty pocket thereof coördinately with the movement of the wheel.

11. In a sand and slime separator, the combination with a pulp-supply, of a revolubly-mounted wheel having compartments, means for imparting to the wheel a step-by-step movement, a tiltable launder normally receiving the overflow from a filled compartment, an overflow-receiving vessel connected to and movable with the launder, and means connected with the launder for diverting the pulp-supply from one compartment of the wheel to another coördinately with the movement of the wheel.

12. In a sand and slime separator, the combination with a pulp-supply, of a revoluble wheel having compartments, projections on the wheel corresponding to each of the compartments, a tiltably-mounted launder normally positioned to receive the overflow from a filled compartment, a vessel connected with the launder and receiving said overflow, a counterweighted lever connected with the launder, and means including a stop movable with the lever and normally disposed in the range of action of one of said projections for locking the wheel against discharging movement, said launder automatically tilting to release the stop from the engaged projection when the overflow overbalances the counterweighted lever.

13. In a sand and slime separator, the combination with a pulp-supply, of a revoluble wheel having compartments, projections on the wheel corresponding to each of the compartments, a tiltably-mounted launder normally positioned to receive the overflow from a filled compartment, a vessel connected with the launder and receiving said overflow, a counterweighted lever connected with the launder, and means including a stop movable with the lever and normally disposed in the range of action of one of said projections for locking the wheel against discharging movement, said launder automatically tilting to release the stop from the engaged projection when the overflow overbalances the counterweighted lever, and means controlled by the tilting of the launder for diverting the pulp-supply from the filled compartment of the wheel into a succeeding empty compartment.

14. In a sand and slime separator, the combination with a pulp-supply, a revolubly-mounted wheel having side-delivery, settling-compartments, and means whereby said wheel is given a step-by-step movement, to bring the compartments successively into the range of action of the pulp-supply, of a mechanism for governing the rate of travel of the wheel.

15. In a sand and slime separator, the combination with a pulp-supply, a revolubly-mounted wheel having compartments, means for giving said wheel a step-by-step movement to bring the compartments successively into the range of action of pulp-supply, and a governing mechanism including a fluid-containing vessel, a rising and falling vessel operable therein, and connections between said movable vessel and said wheel whereby the vessel is operated by the wheel to control the rate of movement of the latter.

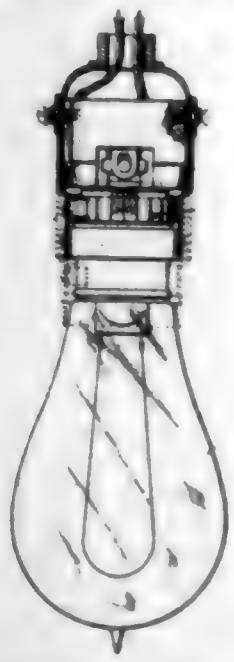
16. In a sand and slime separator, the combination with a revolubly-mounted wheel having compartments, means for giving said wheel a step-by-step movement, and mechanism for governing the

rate of movement of the wheel said mechanism including a pair of fluid-containing vessels, hollow vessels operable therein and adapted to receive the fluid displaced therefrom, and means whereby the hollow vessels are alternately moved in opposite directions.

17. In a sand and slime separator, the combination with a pulp-supply, a revolubly-mounted wheel having compartments, and means for giving the wheel a step-by-step movement, of a tiltably-mounted apron normally disposed in the range of action of the wheel and adapted to receive the overflow from a filled compartment thereof, and means carried by the apron and wheel respectively for moving the apron out of the range of action of the wheel as the latter is moving from one position to another.

18. In a sand and slime separator, the combination with a pulp-supply, a revolubly-mounted wheel having compartments, and means for giving the wheel a step-by-step movement, of a tiltably-mounted apron normally disposed in the range of action of the wheel and adapted to receive the overflow from a filled compartment thereof, and means carried by the apron and wheel respectively for moving the apron out of the range of action of the wheel as the latter is moving from one position to another, a launder into which the apron discharges, and a splash-plate opposing the apron.

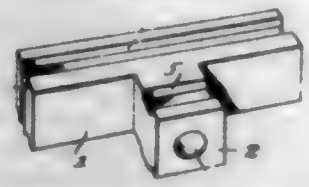
815,096. LAMP-SOCKET LOCK. JULIUS C. KRUCKER, East St. Louis, Ill. Filed Jan. 6, 1905. Serial No. 239,917.



Claim.—1. A lamp-socket comprising a head having a collar detachably connected thereto, in combination with a lamp having means for connecting it to the head of the socket, and a lock for preventing the removal of the lamp while the collar is in operative position on the head of the socket, said lock comprising two parts, one of which is on the lamp and the other on the collar of the socket; substantially as described

2. A lamp-socket comprising a head having a collar detachably connected thereto, a threaded projection on the head, a yielding pawl connected to the collar, in combination with a lamp provided with a threaded opening to receive the projection on the head of the socket, and teeth on said lamp adapted to be engaged by the pawl on the collar, whereby the lamp is prevented from being removed from the socket while the collar is in operative position; substantially as described.

815,097. BUILDING-BLOCK. ANDREW KLAY, Bluffton, Ohio. Filed May 8, 1905. Serial No. 259,418.



Claim.—1. A building-block provided in one face with a longitudinal channel and upon its opposite face with a longitudinal rib corresponding in size and shape to the channel, the channel exceeding the rib in depth, there being an intermediate extension of the block flush with the channel and rib faces thereof, said extension being provided in one face with a channel substantially parallel to the first-mentioned channel and upon its opposite face with a rib substantially parallel with the first-mentioned rib, the rib of the extension corresponding substantially in size and shape to the channel thereof with the channel exceeding the rib in depth.

2. A wall including sections separated by a vertical interspace, each section being made up of superimposed blocks having intermediate lateral extensions flush with the tops and bottoms of the blocks and resting upon the extensions of the respective next below blocks of the other wall-section, each extension being shorter than the width of the space between the wall-sections.

3. A wall including sections separated by a vertical interspace, each section being made up of superimposed blocks having intermediate lateral extensions flush with the tops and bottoms of the blocks and resting upon the extensions of the respective next below blocks of the other wall-section, each extension being shorter than the width of the space between the wall-sections, and a socket and projection interlocking connection between the adjacent extensions.

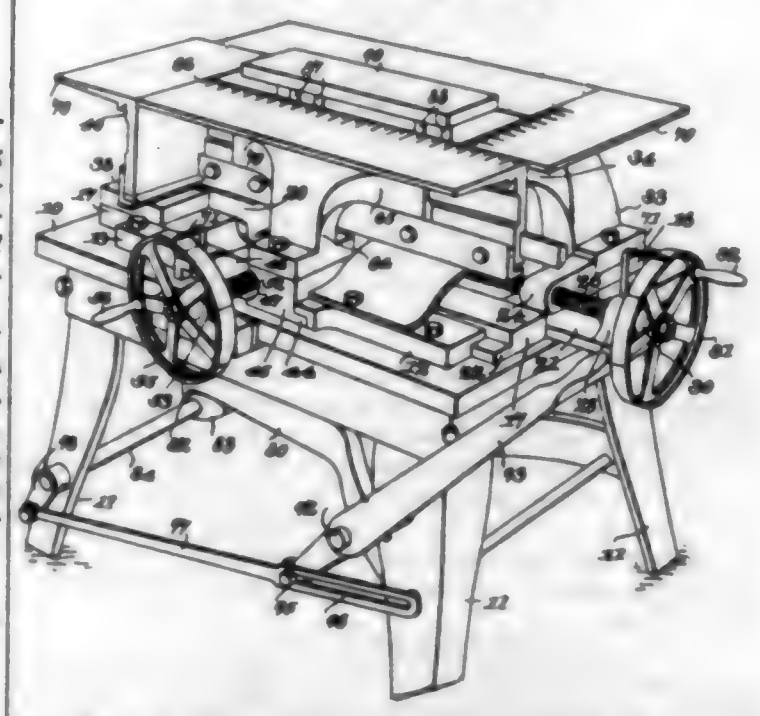
4. A wall made of blocks having their upright ends abutted in mutual contact and provided with registering grooves, which are closed by the contacting ends of the blocks and mortar filling the grooves only.

5. A building-block provided with an intermediate extension which is flush with the top and bottom of the block and is provided in one horizontal face with a channel disposed longitudinally of the block and upon its other horizontal face with a rib corresponding to the channel.

6. A building-block having an intermediate lateral extension flush with its top and bottom faces, said extension being provided with an air-chamber opening outwardly through the outer end of the extension.

7. A building block provided in one horizontal face with a longitudinal channel open at opposite ends, the other horizontal face being provided with a longitudinal rib corresponding to the channel, the ends of the block being provided with upright grooves, and an intermediate lateral extension flush with the top and bottom of the block, one horizontal face of the extension being provided with a channel substantially parallel with the first-mentioned channel, the opposite face of the extension being provided with a rib substantially parallel with the first-mentioned rib, and the extension being provided with an air-chamber opening through the outer end of the extension.

815,098. CEMENT-BLOCK MACHINE. ANDREW KLAY, Bluffton, Ohio. Filed Aug. 28, 1905. Serial No. 276,123.



Claim.—1. In a block-forming machine, a mold having side and end walls arranged in pairs, each pair constituting a side wall and an end wall, the walls of each pair being movable first singly and then simultaneously.

2. In a block-forming machine, a mold having movable side and end walls, means for loosely connecting the walls of the pairs, each pair constituting a side wall and an end wall, and a mold-opening means serving to space the walls from the molded block, and then to simultaneously move each pair of walls, one wall of each pair moving directly away from the block, and the other in a direction in parallel relation therewith.

3. In a block-forming machine, a mold having movable side and end walls connected in pairs, each pair constituting a side wall and an end wall, and means for simultaneously moving all of the walls, the walls of each pair being loosely connected to permit independent movement at the starting of the mold-opening operation.

4. In a block-forming machine, a mold-box including movable side and end walls, an operating means connecting the two side walls for simultaneous movement, and means for connecting each side wall to an end wall to insure movement of the walls in pairs.

5. In a block-forming machine, a mold including movable side and end walls, means for connecting the end walls for simultaneous movement, means for connecting the side walls for simultaneous movement, and means forming loose connections between each side wall and an end wall.

6. In a block-forming machine, a mold-box including movable side and end walls, a loose connection between one of the side walls and one of the end walls, an operating means for simultaneously moving said walls one in a direction away from the block, and the other parallel therewith, and means for spacing the latter wall from the molded block in advance of its movement with the first wall.

7. In a block-forming machine, a mold-box having movable side and end walls, guiding and supporting bars for said side and end walls, means for moving the guiding and supporting bars toward and from each other, and means for connecting the side and end walls in pairs, each constituting a side wall and an end wall, whereby movement of one set of guiding and supporting bars will space the walls carried thereby, and at the same time effect sliding movement of the remaining walls on their guiding and supporting bars.

8. In a block-forming machine, a mold-box including movable side and end walls, guiding and supporting bars for said walls, means for connecting said guiding and supporting bars and for moving the same toward and from each other, and loose connections between each side wall and an end wall, whereby movement of either with its guiding and supporting bar will effect sliding movement of the other on its guiding and supporting bar.

9. In a block-forming machine, a mold including side and end members, each movable in the direction of its length, and in a direction at a right angle to its length, and means for connecting such members in pairs, each pair constituting a side member and an end member.

10. In a block-forming machine, a mold-box including end walls and side walls, supporting and guide bars for said end walls and side walls and on which said walls are movable in the direction of their lengths, and right-and-left end screws connecting said supporting and guiding bars in oppositely-arranged pairs.

11. In a block-forming machine, a mold-box including side and end walls, carriers on which said walls are movable in the direction of their lengths, a screw having right and left hand threads connecting the side-wall carriers, and a screw having right and left hand threads connecting the end-wall carriers.

12. In a block-forming machine, a mold-box comprising side and end walls, carrying members on which said walls are slidably mounted, a screw having right and left hand threads connecting the side-wall carriers, and a screw having right and left hand threads connecting the end-wall carriers.

13. In a block-forming machine, a mold-box including side and end walls having graduations for determining the size of the mold-box, carriers on which said side and end walls are slidably mounted, a screw having right and left hand threads connecting the side-wall carriers, a screw having right and left hand threads connecting the end-wall carriers, and loose connections for coupling the walls in pairs.

14. In a block-forming machine, the combination with side and end walls, of carriers on which said side and end walls are mounted, means for moving said carriers, and a spring carried by each wall and provided with an end tongue for engagement with the wall at a right angle thereto.

15. In a block-forming machine, a mold-box including side and end walls, each having a spring-strip projecting from one end thereof and having a terminal tongue or lip for engagement with the wall at a right angle thereto, wall-carriers on which said walls are slidably movable, and means for adjusting said carriers.

16. In a block-forming machine, the combination with a frame, of two pairs of slidable bars mounted thereon, one pair being at a right angle to the other, right and left hand screws connecting the bars of each pair, side and end walls having dovetail grooves, and guiding and supporting bars fitting within said grooves and mounted on the slidable bars.

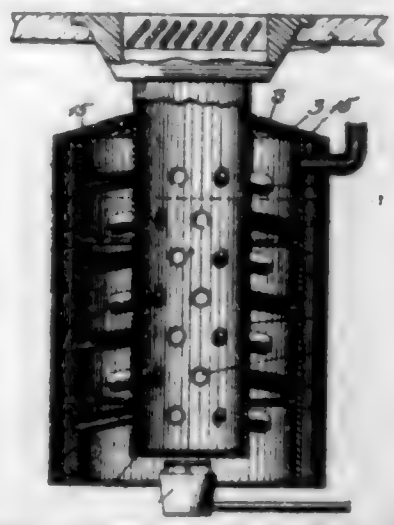
17. In a block-forming machine, the combination with a frame, of the movable side and end walls, slidable bars arranged in pairs on said frame and carrying said walls, lugs projecting from the bars and provided with openings, screws having right and left hand threads fitting within said openings and serving as means for adjusting the bars, and guard-plates fitting over said bars.

18. In a block-forming machine, the combination with the side and end members of the mold-box, of a removable pallet constituting the bottom of the mold-box, and means for forcing the pallet upward into engagement with the side and end members and locking the same in place during the molding operation.

19. In a block-forming machine, the combination with the movable side and end members, of a removable pallet forming the bottom of the mold-box, a plurality of pins on which said pallet is mounted, a supporting-plate for said pins, a lever for elevating the plate, a cam for operating said lever, and an auxiliary means for engaging the plate and raising the pallet and molded block.

20. In a block-forming machine, the combination with the side and end members of a mold-box, of a removable pallet forming the bottom of the mold-box, a lever pivoted at one end to the frame and disposed below the pallet, a cam engaging the free end of the lever, said lever having an approximately central opening, a stem guided in said opening, a plate secured to the stem, a plurality of pins extending from the plate and forming a support for the pallet, an operating-lever, a shaft on which said lever is secured, a rocker-arm on the shaft, said rocker-arm being arranged to engage the pin-carrying plate, and means operable through said lever for turning the cam.

815,099. GAS-HEATER. LEVI F. KNOERR, Columbus, Ohio. Filed Aug. 28, 1905. Serial No. 276,007.



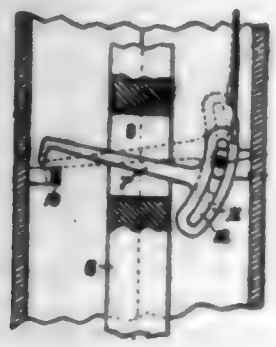
Claim.—1. In a gas-burner, the combination with a floor-register, of a hot-air chamber having communication with the register, a casing surrounding the hot-air chamber so as to provide a space therebetween, inclined inlet-tubes extending from the casing to the chamber, a shell surrounding the casing closed at its upper end and providing a space between itself and the casing, a gas-burner arranged in the lower portion of the casing directly beneath the hot-air chamber, and means for conducting the products of combustion from the casing.

2. In a gas-heater, the combination with a floor-register, of a hot-air chamber, a radiating-box carried by the chamber having communication with the register, a casing closed at its top and bottom surrounding the hot-air chamber so as to provide a space therebetween, inclined inlet-tubes extending between the hot-air chamber and the casing across the space therebetween, a shell larger than the casing surrounding the same and having an open lower end and a closed top, a gas-burner arranged in the casing beneath the hot-air chamber, retarding means arranged in the space between the hot-air chamber and the casing, and means for conducting the products of combustion from the casing.

815,100. ATTACHMENT FOR EXTENSION-TABLES. HIRAM C. KNEUSBAUM, South Bend, Ind., assignor to Emil Tyden, Hastings, Mich. Filed Mar. 16, 1903. Serial No. 147,970.

Claim.—1. In a pedestal extension-table, in combination with the table members and the pedestal members pertaining thereto respectively, means for connecting and drawing the pedestal members together comprising a fixed element on one member and a movable element on the other member, both located within the pedestal at a substantial distance from both ends thereof, the movable element having an up-and-down sliding connection with the member on which it is mounted, the engagement of said sliding element with

one of the members being effected by a surface on one of the parts engaged which is oblique to the parting plane of the two members, and operating connections from said movable element extending to the top of the pedestal.



2. In a pedestal extension-table, in combination with the separable members of the table and the pedestal members pertaining thereto respectively, means for connecting and drawing the pedestal members together comprising a fixed element on one member; an element mounted for sliding movement on the other member, both being within the pedestal; means for guiding the sliding element obliquely to the parting plane of the pedestal members, and operating connections for said sliding element extending to the top of the pedestal.

3. In a pedestal extension-table, in combination with the separable table members and the pedestal members pertaining thereto respectively, an element pivoted on one of the pedestal members having a sliding connection with its pivot, and having its free end formed to engage the other pedestal member for connecting the members together, the other pedestal member having an element for such engagement, means for guiding said pivoted element in its sliding movement adapted to guide it obliquely with respect to the parting plane of the pedestal members, and operating connections for said element extending to the top of the pedestal.

4. In a pedestal extension-table, the combination with a vertically-divided pedestal, of means for locking and binding the pedestal parts together comprising a fixed member on one part and a movable member on the other part, said movable member having a sliding pivotal connection with the part to which it pertains, and means for operating on said movable member to engage it with the fixed member and bind the parts together.

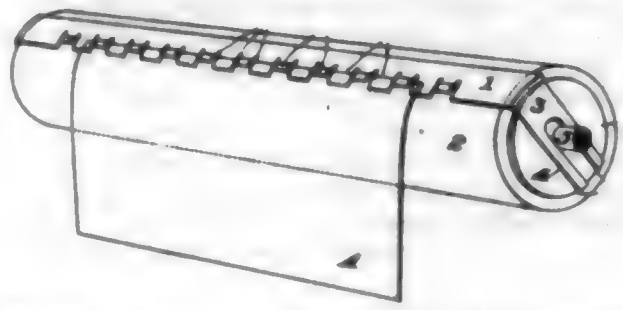
5. In a pedestal extension-table, the combination with a vertically-divided pedestal, of means for locking and binding the pedestal parts together comprising a member on each part, one of said members having a sliding fulcrumed connection with the part to which it pertains to adapt it to be tilted to engage with the other member and slide upon its fulcrum to bind the pedestal parts together.

6. In a pedestal extension-table, the combination with a vertically-divided pedestal, of means for locking and binding the pedestal parts together comprising a fixed member on one of said pedestal parts and a movable member on the other part adapted to be engaged with the fixed member after the pedestal parts have been brought together; a sliding connection between the movable member and the part to which it pertains, and means whereby the movable element is given a movement eccentric to the fixed member after the former has become engaged with the latter.

7. In combination with a vertically-divided pedestal of an extension-table, a fixed member on one of the pedestal parts and a movable member on the other pedestal part adapted to engage the fixed member, said movable member comprising a shank portion having a cross-head provided with a slot disposed eccentrically to the shank portion, a fulcrum on the pedestal part to which the movable member pertains and adapted to act as a bearing in the slot when the cross-head is moved thereon, and means connected to the cross-head to operate on the movable member to bind the pedestal parts together.

8. In a pedestal extension-table, the combination with the vertically-divided pedestal, of means for locking and binding the pedestal parts together comprising a fixed member on one of the pedestal parts, a movable member on the other pedestal part having a shank portion at one end to engage the fixed member and provided at its other end with a cross-head formed with a slot, the slot being disposed eccentrically to the shank portion, an antifriction-roller arranged within the slot and adapted to act as a fulcrum for the movable member when that element is rocked and a bearing for the slot when the cross-head end is moved thereon, and means connected to the cross-head to operate the movable member.

815,101. TYPE-WRITING MACHINE. EDWARD P. KURATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 20, 1904. Serial No. 208,886.



Claim.—1. A card-holder consisting of a strip to extend longitudinally upon the platen and curved transversely to conform to the curvature of the platen, and a row of teeth extending along one edge of the strip, alternate teeth in the row being slightly set out, so that the edge of an inserted card may be caught under the set-out teeth and rest upon the remaining teeth.

2. A card-holder comprising a strip to extend longitudinally upon the platen and curved transversely to conform to the curvature of the platen, and a row of teeth extending along one edge of the strip, said teeth being alternately long and short, and the short teeth being slightly set out from the long teeth.

3. A card-holder comprising a metal strip curved to fit the platen and having along one edge long and short teeth, the short teeth being slightly set out from the long teeth and having beveled tips.

4. A card-holder comprising a thin sheet-metal member which fits upon the platen, and a row of punched-up teeth which are set out slightly therefrom, so that the edge of a card may be caught between said teeth and the remaining portion of said sheet-metal member, said teeth overlying the openings made in the metal where they are punched up.

5. A card-holder comprising a thin sheet-metal member formed to fit upon a platen, and having a longitudinal row of teeth punched up at intervals and set out slightly, so that the edge of a card may be inserted beneath said teeth and rest upon the portions of the member between said teeth, the latter being formed with jogs against which the edge of the card may abut and overlying the openings made in the metal where they are punched up.

6. A card-holder comprising a member formed to fit upon a cylindrical platen, and having a row of teeth punched up at intervals, said teeth being slightly set out so that the leading edge of a card may be caught thereunder and rest upon the portions of said member between said teeth, and said member being provided with jogs against which said edge of the card may abut said teeth overlying the openings made in the metal where they are punched up.

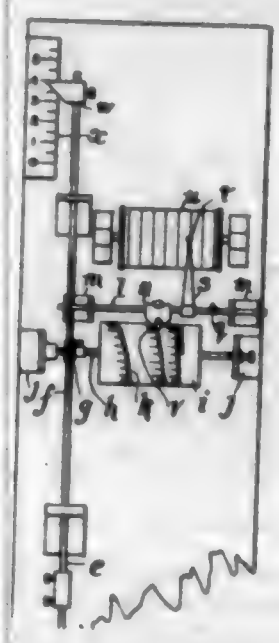
7. A card-holder comprising a sheet-metal member formed to fit upon a platen, and having a row of teeth punched up at intervals, portions of said member intervening between said teeth to coöperate therewith to hold the edge of the card; said teeth being bent up from said member to form jogs, and then bent forwardly to catch upon said edge and overlying the openings made in the metal where they are punched up.

8. A card-holder comprising a sheet-metal strip curved to fit upon a platen and having at its ends clasps for engaging the ends of the platen, each clasp comprising a forked portion to bestride the platen-axle, the forks having lips to catch over the platen-heads, and said strip having along one edge a row of incisions which divide said edge into teeth, said teeth being alternately long and short, the long teeth following the curvature of the strip, and the short teeth near their tips being bent up to form jogs and then forwardly to catch over the edge of the card, the tips of said short teeth being beveled upon their under sides.

815,102. LIQUID-FLOW MEASURER AND RECORDER. JAMES B. LEA, East Rand, Transvaal. Filed Feb. 23, 1905. Serial No. 247,208.

Claim.—1. In an apparatus of the character described, the combination with a support, of a float, a vertically-movable rod secured to said float, a rack formed upon the upper portion of said rod, a drum carried by said support, a toothed wheel connected to said drum and meshing with the rack formed upon said rod, a longitudinally-movable member provided with arms secured contiguous to said drum, a recording-cylinder secured contiguous to said longitudinally-movable member, a stationary scale formed upon said sup-

port, and a detachable pointer secured to said rod contiguous to said scale.



2. In an apparatus of the character described, the combination with a support, of a drum and a stationary scale carried by said support, a float-actuated, vertically-movable rod positioned upon said support, said rod adapted to impart movement to said drum, a pointer positioned upon said rod contiguous to said scale, a recording-cylinder carried by said support, and longitudinally-movable members coacting with said drum and recording-cylinder.

3. In an apparatus of the character described, the combination with a support, of a float-actuated, movable rod carried by said support, said rod provided with a rack, a drum and a recording-cylinder carried by said support, said drum provided with a helical groove and said grooved portion provided with a scale upon one side, a toothed wheel connected to said drum and meshing with said rack upon the rod, indicating means formed upon said support and one end of said rod, longitudinally-movable arms secured contiguous to said drum and cylinder, one of said arms provided with a pointer adapted to work in the groove of said drum.

4. In an apparatus of the character described, the combination with a support, of parallel, revoluble members carried by said support, one of said members provided with a scaled surface, a longitudinal, movable pointer coacting with said member provided with a scaled surface, recording means coacting with said pointer and one of said revoluble members, a stationary scale formed upon said support, and a movable pointer coacting with said stationary scale and moving in timed relation to said revoluble member provided with a scale.

5. In an apparatus of the character described, the combination of revoluble, parallel indicating and recording members, and longitudinally-movable means for indicating upon said indicating member and recording upon said recording member.

6. In an apparatus of the character described, the combination with a support, of parallel, revoluble members carried by said support, longitudinally-movable arms coacting with said revoluble members, and a slidable float-actuated member carried by said support and coacting with one of said revoluble members for imparting movement to said arms.

7. In an apparatus of the character described, the combination with a support, of a stationary scale and a revoluble member provided with a scale carried by said support, pointers moving in timed relation and registering upon said stationary scale and revoluble member, and recording means coacting with said revoluble member and pointers.

8. In an apparatus of the character described, the combination with a support, of parallel, revoluble recording and indicating surfaces carried by said support, longitudinal movable arms carried by said support and coacting with said revoluble surfaces, and float-actuated means coacting with one of said surfaces for imparting movement thereto and said arms.

9. In an apparatus of the character described, the combination with a support, of parallel, revoluble indicating and recording surfaces, a stationary indicating-surface carried by said support, longitudinally-movable pointers carried by said support and coacting with said surfaces, and slidable means provided with a pointer coacting with one of said surfaces and adapted to impart movement to said pointers, said pointer carried by said slidable means coacting with said stationary indicating-surfaces.

10. In a mechanism of the class described, the combination with a support, of a drum provided with a helical groove carried by said support, a longitudinal movable rod secured parallel to said drum and carried by said support, a stationary scale secured to said support, a vertically-movable, racked rod carried by said support, a toothed wheel connected to said drum and meshing with the racked portion of said rod, a removable pointer secured to the upper portion of said rod and coacting with said stationary scale, a recording-cylinder carried by said support, a primary and an auxiliary arm secured to said longitudinally-movable rod, said primary arm provided with a block positioned within the groove of said drum, and said auxiliary arm provided with a pen engaging the recording-cylinder.

11. In a mechanism of the class described, the combination with a support and a float, of a slidable rod connected to said float, and positioned upon said support, a drum carried by said support and coacting with said rod, a recording-cylinder carried by said support, a pen coacting with said recording-cylinder, and means connected to said pen and adapted to travel longitudinally of said drum, when the drum is rotated for causing said pen to travel longitudinally of said cylinder.

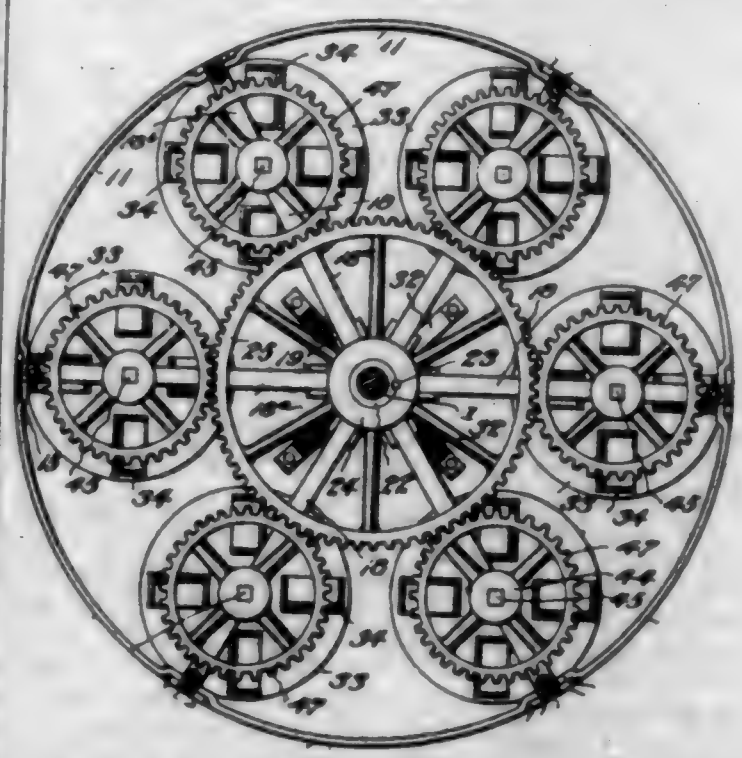
12. In an apparatus of the character described, the combination with a drum provided with a helical groove, a scale formed upon said drum, a recording-cylinder, a primary arm provided with a pointer, the pointer working in said groove of the drum, an auxiliary arm fixedly connected to said primary arm and adapted to record upon said recording-cylinder, and means adapted to rotate said drum, and thereby cause said pointer to travel in said groove for moving said arms.

13. In a device of the character described, the combination of revoluble, parallel indicating and recording members, and movable means for indicating upon said indicating member and recording upon said recording member.

14. In an apparatus of the character described, the combination of revoluble, indicating and recording members, and movable means for indicating upon said indicating member and recording upon said recording member.

15. An apparatus of the character described, the combination of revoluble indicating and recording members, means traveling longitudinally of both of said members for indicating upon said indicating member and recording upon said recording member.

815,103. ROUNDABOUT. GUSTAV LEHNERT, Brooklyn, N. Y. Filed Apr. 22, 1905. Serial No. 256,943.



Claim.—1. In a roundabout, the combination of a central shaft, a rotary frame supported thereby and turning therewith, a stationary bearing supported about the upper end of the shaft, a gear-ring rigidly connected with said bearing, a rotary head turning on said bearing and connected with the rotary frame, a series of seat-supports carried by the rotary frame, spindles journaled in said seat-supports and rotary frame, and cars attached to the upper ends of the spindles and meshing with the gear-ring.

2. In a roundabout, the combination of a central shaft, a stationary bearing arranged about the upper end of said shaft, a gear-

ring rigidly connected with the stationary bearing, a rotary head journaled on the stationary bearing, a rotary frame connected with the shaft and rotary head, spindles journaled in said rotary frame, gears carried by the spindles and meshing with the gear-ring, and seat-supports carried by said spindles.

3. In a roundabout, the combination of a central shaft, a rigid supporting-frame carrying a supporting-collar arranged about the upper end of the shaft, a rotary head mounted on said collar, a rotary frame connected to and supported by the central shaft and rotary head, seat-supporting frames hung from the rotary frame, spindles journaled in the rotary frame and seat-supporting frame and carrying gears at their upper ends, seats connected with the spindles to rotate therewith, and a gear-ring fixed to said supporting-collar and meshing with the spindle-gears.

4. In a roundabout, the combination of a central shaft, a stationary frame, a collar arranged about the upper end of the shaft and supported by said frame, a gear-ring rigidly connected with the collar, a head arranged to rotate upon the collar and between the same and the gear-ring, a rotary frame supported by the shaft and head, seat-supports, spindles carrying the same and journaled upon the rotary frame, and gears upon the upper ends of the spindles and meshing with the rigid gear-ring.

5. In a roundabout, the combination of a central shaft, a stationary frame, a collar arranged about the upper end of the shaft and supported by said frame, a gear-ring fixed to the collar, a rotary head mounted upon the collar and between the same and the gear-ring, a frame-ring, a supporting element fixed to the upper end of the shaft, braces connecting said supporting element with the frame-ring, cross-arms connecting the rotary head with the frame-ring, a series of pendent frames supported from the cross-arms, spindles journaled at their lower ends in the pendent frames and at their upper ends upon the cross-arms, seat-supports carried by the spindles, and gears upon the upper ends of the spindles meshing with the gear-ring.

6. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a stationary gear element upon the stationary frame, a rotary frame connected with the shaft and head, a series of seat-supporting spindles carried by the rotary frame, and gears carried by said spindles meshing with the stationary gear upon the stationary frame, whereby the spindles are rotated in unison from and about the stationary frame as the rotary frame revolves.

7. In a roundabout, a central shaft, a stationary frame having a bearing disposed about the upper portion of the shaft, a stationary gear supported by the frame above said bearing, a collar rotatable on said bearing, a rotary frame connected with the central shaft and collar, spindles on the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

8. In a roundabout, a central shaft, a stationary frame having a bearing portion, and a bushing surrounding the upper portion of the shaft, a stationary gear fixed to said bushing, a collar rotatable between the bearing and gear and about the bushing, a rotary frame connected with the shaft and collar, a series of seat-supporting spindles carried by the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

9. In a roundabout, a central shaft, a stationary frame provided with a supporting portion, a bearing disposed about the upper portion of the shaft, a rigid gear carried by said supporting portion, a revoluble collar supported by said bearing, a rotary frame connected with the shaft and collar, a series of seat-supporting spindles carried by the rotary frame, and gears carried by said spindles meshing with the stationary gear.

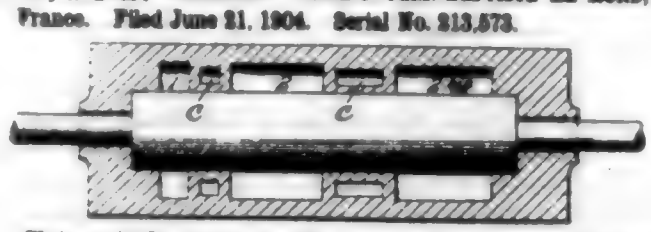
10. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a frame-ring, sectional cross-arms connected with the rotary head and frame-ring, coupling members connecting the sections of the cross-arms and provided with bearings, seat-supporting spindles journaled at their upper ends in said bearings, gears carried by said spindles, and a fixed gear upon the stationary frame for communicating motion to said spindles.

11. In a roundabout, a central shaft, a stationary frame, a rotary head on the stationary frame, a frame-ring, cross-arms connecting the rotary head with the frame-ring, each of said cross-arms being composed of two sections, couplings connecting the sections and provided with bearing-sleeves and bearing-heads, seat-supporting spindles journaled at their upper ends in said bearing-sleeves, gears carried by said spindles, antifriction-bearings between said gears and the bearing-heads, and a fixed gear carried by the stationary frame and meshing with said spindles.

12. In a roundabout, a central shaft, a stationary frame, a rotary head upon the stationary frame, a rotary frame connected with the shaft and head, a fixed gear carried by the stationary frame, rods depending from the supporting-frame and carrying cross-pieces provided with openings, bearing-sockets disposed upon the cross-pieces below said openings, seat-supporting spindles journaled at their upper ends in the rotary frame and at their lower ends in said sockets, antifriction-bearings for the journaled portions of the spindles, and gears upon the upper ends of the spindles meshing with said stationary gear upon the stationary frame.

13. In a roundabout, a central shaft, a sleeve or socket rigidly mounted upon the upper end of the shaft, a stationary frame, a rotary head supported by said stationary frame adjacent to and below said socket, a frame-ring, cross-arms between the rotary head and frame-ring, brackets having body portions fixed to the frame-ring, inwardly-extending arms connected with said cross-arms, and also having portions projecting above the frame-ring and provided with ears, braces between the sleeve or socket and ears of the bracket, a stationary gear upon the stationary frame, a series of seat-supporting spindles journaled in the rotary frame, and gears carried by said spindles and meshing with said stationary gear.

815,104. ENGINE. LOUIS J. JEAN-BAPTISTE LE ROND, Paris, France. Filed June 21, 1904. Serial No. 213,573.



Claim.—1. In a motor or like apparatus actuated by fluid-pressure, the combination with a primary pressure-chamber having fluid inlet and exhaust ports and a piston working freely therein and permitting limited leakage or escape of the motive fluid to the exhaust-port, of a secondary pressure-chamber of approximately the same capacity as the primary chamber having inlet and exhaust ports the former connected to the exhaust-port of the primary chamber, and a piston working freely in the secondary chamber and permitting limited leakage or escape of the pressure fluid to the exhaust-port of the secondary chamber.

2. In a compound motor or like apparatus actuated by fluid-pressure, the combination with high and low pressure cylinders or chambers and pistons working freely therein and each permitting limited escape or leakage of motive fluid to its corresponding exhaust-port, of a secondary cylinder or chamber having approximately the same capacity as the low-pressure chamber and having inlet and exhaust ports the former connected to the exhaust-port of said low-pressure cylinder, and a piston working freely in said secondary chamber and permitting limited escape or leakage of motive fluid to the exhaust-port.

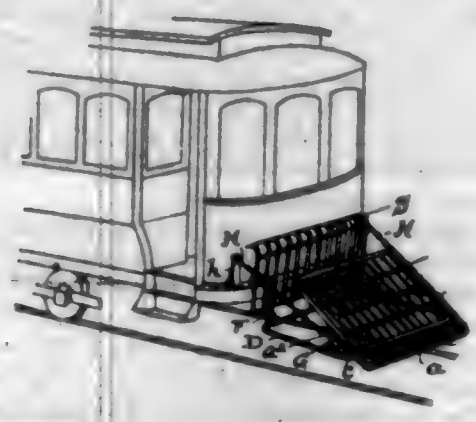
3. In a motor or like apparatus actuated by fluid-pressure, the combination with a primary pressure-chamber having fluid inlet and exhaust ports and a rotary piston working freely therein and permitting limited leakage or escape of the motive fluid to the exhaust-port, of a secondary pressure-chamber of approximately the same capacity as the primary chamber having inlet and exhaust ports the former connected to the exhaust-port of the primary chamber, and a rotary piston working freely in the secondary chamber and permitting limited leakage or escape of the pressure fluid to the exhaust-port of the secondary chamber.

4. In a compound motor or like apparatus actuated by fluid-pressure, the combination with high and low pressure cylinders or chambers and rotary pistons working freely therein and each permitting limited escape or leakage of motive fluid to its corresponding exhaust-port, of a secondary cylinder or chamber having approximately the same capacity as the low-pressure chamber and having inlet and exhaust ports the former connected to the exhaust-port of said low-pressure cylinder, and a rotary piston working freely in said secondary chamber and permitting limited escape or leakage of motive fluid to the exhaust-port.

815,105. LIFE-GUARD FENDER FOR CARS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 216,727.

Claim.—1. In car-fenders, a tilting carrier and supports therefor at its sides, a life-guard across the front of said carrier, said parts constructed to throw said guard into a raised position when the carrier has been reversely tilted, substantially as described.

2. In car-fenders, a fender mechanism comprising a pivoted carrier, a life-guard pivoted independently of said carrier and provided with side projections in actuating relation with said carrier, whereby when the carrier is tilted the said guard is tilted also into guarding position, substantially as described.



3. In car-fenders a supporting-frame having posts near its front ends, a carrier pivoted in the said frame in advance of said posts and a life-guard pivoted on said posts and engaging said carrier above said pivots, substantially as described.

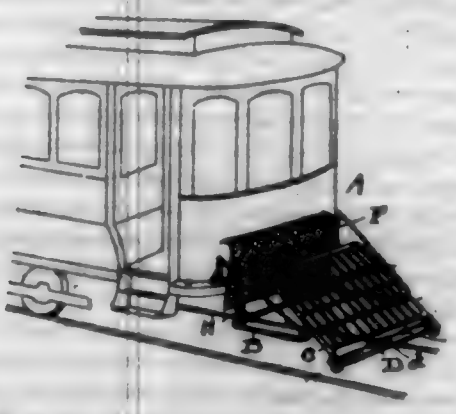
4. In car-fenders, a pivoted supporting-frame and a carrier pivoted thereon, a cushioning member and a frame carrying the same pivoted on said supporting-frame, and having free engagement beneath the carrier back of its pivots, and a catch on said supporting-frame to engage and hold said cushioning member in raised position, substantially as described.

5. In car-fenders, a supporting-frame pivoted at its rear and flexible stays supporting its front, a tilting carrier pivoted in the front of said frame, a life-guard for said carrier pivoted on said supporting-frame at the rear of the pivots for the carrier and on a plane above the same, and the said life-guard operatively connected with said carrier rear of both said pivots, whereby when the carrier is thrown down behind the life-guard is thrown up in front, substantially as described.

6. In car-fenders, the combination of a supporting-frame, a carrier pivoted thereon and a life-guard pivoted on said frame and operatively engaged with said carrier, substantially as described.

7. In car-fenders, a carrier and side supports on which the carrier is pivoted at its front corners, a life-guard frame pivoted on said side supports and having extensions back of its pivots engaged beneath said carrier, substantially as described.

815,106. TRIPPING MEMBER FOR CAR-FENDERS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 216,728.



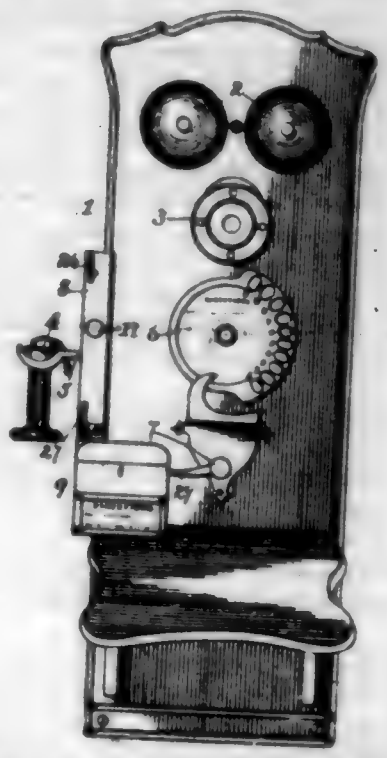
Claim.—1. In car-fenders, a fender-frame provided with forward extensions at its front corners and a flexible tripping member engaged in said extensions and having its ends connected by a flexible portion.

2. In car-fenders, a fender-frame and a flexible tripping member threaded through the front ends of the same and having its ends adjustably connected between the sides of the fender.

3. In car-fenders, a fender-frame having forward extensions at its front and corners, in combination with a flexible tripping member threaded through holes in said extensions and having its ends adjustably and flexibly connected.

4. In car-fenders, a fender provided with downward extensions at its front constructed beneath to take up wear in striking ground and provided with holes, in combination with an elastic tripping member threaded through said holes and free therein.

815,107. TELEPHONE TOLL APPARATUS. GEORGE A. LOMB, Hartford, Conn., assignor to The Gray Telephone Pay Station Company, Hartford, Conn., a Corporation of Connecticut. Filed Mar. 11, 1903. Serial No. 147,280.



Claim.—1. In a telephone instrument including a receiver, a switch-lever and a transmitter, means for locking said lever in its lower position, a coin-channel appurtenant to said locking means, a plunger extending into said coin-channel and adapted to actuate said locking means through the medium of a coin to unlock said lever, a device for arresting the coin as it drops after the said lever is released, a call-button operative by the calling subscriber to notify the called party, and operative connections between said call-button and said arresting device whereby the operation of the former will move the latter to release and deposit the coin.

2. In a telephone toll apparatus the combination with a telephone instrument including a receiver, a transmitter, a switch-lever, a connection-dial and a signaling device under the control of the calling subscriber whereby the calling subscriber can make his own connection with the line desired and make the particular call desired on that line by means of the signaling device, of means for collecting a toll for the use of said instrument, said means including a casing having a coin-channel; means having a part projecting into said casing, for locking said switch-lever in its low position; means for unlocking said lever through the medium of a coin; a device for arresting said coin as it drops after said lever is released; means connected with and operated by the signaling device for depositing the coin; and means controlled by the switch-lever for returning the coin when the signaling device is not operated, substantially as described.

3. In a telephone toll apparatus the combination with the instrument which includes a receiver, a switch-lever and a transmitter, a coin-channel having a coin-return and coin-depositing outlet, locking means for said lever projecting into said channel, a plunger projecting into the channel opposite said lever and forming therewith an obstruction to receive and hold a coin which forms an operative connection between said plunger and said locking means whereby on the operation of said plunger said switch-lever is unlocked, means actuated by said switch-lever for passing the coin through the return-outlet when the instrument is not used, a call-button and means connected therewith and actuated thereby for passing the coin through the dielivery-outlet when the instrument is used, substantially as described.

4. In a telephone toll apparatus for use with automatic telephone instruments, the combination with said instrument which includes a receiver, a switch-lever normally locked, a transmitter, a signaling device, and a connection-dial, of a casing through which said switch-lever extends, a coin-channel therein having a coin-depositing outlet, means for unlocking said lever through the medium of a coin, a detent projecting into said channel above said outlet and adapted to arrest said coin after said lever is unlocked, and operative connections between said detent and the signaling device whereby upon operation of the latter the detent is moved to open said coin-depositing outlet.

5. In a telephone toll apparatus for use with automatic telephone instruments, the combination with said instrument which in-

cludes a receiver, a switch-lever normally locked, a transmitter, a signaling device, and a connection-dial, of a casing, through which said switch-lever extends and means for unlocking said lever through the medium of a coin, a coin-channel therein, return and deposit outlets at the lower end of said coin-channel, a detent projecting into said channel above said return and deposit outlets, operative connections between said detent and the signaling device whereby upon the operation of the latter the detent is moved to open said deposit-outlet, and mechanism mounted in the casing and controlled by the switch-lever for moving the coin to the return-outlet.

6. In combination with a telephone set including a switch-lever and a signaling device both controlled at the same instrument, a coin-channel having a coin-return and coin-depositing outlet, means for retaining the coin in the channel, means for controlling the movement of the switch-lever adapted to guide the coin out of the coin-return outlet, and means connected with the signaling device for passing the coin through the depositing-outlet when the signal is actuated.

7. In combination with a telephone set including a switch-lever and a signaling device both controlled at the same instrument, a coin-channel having a coin-return and a coin-depositing outlet, a detent for retaining the coin in the channel, means actuated by the switch-lever for forcing the coin over the detent into the coin-return outlet, and means connected with and operated by the signaling device for removing the detent whereby the coin is allowed to pass through the depositing-outlet.

8. In combination with a telephone set including a switch-lever and a signaling device adapted to be manipulated by the operator at the same instrument, a coin-channel, a detent connected with the signaling device and adapted to be removed from the path of the coin when said signaling device is actuated, and means connected with the switch-lever for forcing the coin over the detent when said lever is released to assume its normal position.

9. In combination in a telephone set including a switch-lever and a signaling device and means for selecting a call-number, all under the control of the calling subscriber, a self-contained toll-collecting apparatus adapted to be applied to said instrument and provided with a lock normally engaging and locking the switch-lever, a coin-channel operatively arranged with reference to said lever, means for unlocking the lever through the medium of the coin, a coin-returning outlet and a coin-depositing outlet appurtenant to the coin-channel, a detent arranged to stop the coin adjacent to said outlets, and a connection intermediate the detent and the signaling device whereby the former is actuated by the movement of the latter, and means for discharging the coin into the return-outlet when the signaling device is not operated.

10. In combination with a telephone set including a switch-lever and a signaling device controlled by the calling subscriber, a self-contained toll-collecting apparatus adapted to be applied to said telephone set, a lock located therein and normally engaging and locking the switch-lever, a coin-channel, a coin-returning and a coin-depositing outlet operatively arranged with reference to said channel, means operated by said lock for moving the coin transversely of the channel, and means connected with the signaling device for passing the coin through the coin-depositing outlet when the signaling device is actuated.

11. The combination with a telephone set including a switch-lever, a signaling device and a connection-dial, of a lock therefor, a coin-channel, a plunger projecting into said channel and adapted to actuate said lock through the medium of a coin to unlock the lever, a coin-return and a coin-depositing outlet located appurtenant to said coin-channel, means for holding the lock disengaged from the switch-lever, coin-retaining means located in the channel above the return and depositing outlets and operatively connected with the signaling device for depositing the coin in the money-drawer when said signal device is actuated, said holding means coöperating with the switch-lever to engage the lock and the lever on the subsequent movement of the latter, and means carried by said lock for moving the coin into the return-outlet when the desired connection is not obtained.

12. In combination with a telephone set including a switch-lever and a signaling device controlled by the calling subscriber, a self-contained toll-collecting apparatus adapted to be applied to said telephone set and comprising a lock normally engaging and locking the switch-lever, a coin-channel, coin-return and coin-depositing outlets operatively arranged with reference to said channel, means for disengaging said lock from said lever, means connected with the signaling device for passing the money through coin-depositing outlet when the signal device is actuated, and means appurtenant to the switch-lever and controlled thereby for throwing the coin into the coin-return outlet when the switch-lever is returned to locked position.

13. In combination with a telephone including a switch-lever and a signaling device, both arranged to be actuated from the same instrument, a coin-channel, a plunger projecting into the channel, a lock for the switch-lever, means for holding the lock disengaged from the switch-lever, said holding means coöperating with the switch-lever to release it from an engaging position with reference to the lock, a retaining device operatively connected with the signaling device and actuated thereby for controlling one movement of a coin deposited in the coin-channel, and an ejector connected with the lock and adapted to affect a second movement of the coin when the signal device has not been operated.

14. In combination with a telephone including a switch-lever and a signaling device, a coin-channel, a plunger projecting into the channel, a swinging lock normally interposed in the path of movement of the switch-lever, a leg on said lock coöperating with said plunger through the medium of a coin to unlock said switch-lever, a latch to engage the lock located in the path of movement of the switch-lever, and a detent located in the coin-channel, and adapted to arrest the coin after the switch-lever is unlocked, said detent being connected with the signaling device.

15. In combination with a telephone including a switch-lever, a signaling device and means for selecting a call connection, a self-contained toll-collecting apparatus including a coin-channel ending in coin-returning and coin-depositing outlets, a detent arranged in the channel above said outlets, and connected with the signaling device whereby upon the operation of said signaling device said detent is moved to permit the coin to pass through the depositing-outlet, a lock normally interposed in the path of movement of the switch-lever, means for actuating said lock including the coin, said actuating means arranged to vary the position of the coin with reference to the coin-returning and coin-depositing outlets whereby said coin will fall against the detent, and means connected with the lock for throwing the coin from the detent into the coin-returning outlet when said lock assumes a normal locking position with reference to the switch-lever.

16. In combination with a telephone including a switch-lever and a signaling device, a coin-channel, a detent located in the coin-channel and connected with the signaling device, a lock normally interposed in the path of movement of the switch-lever, a finger secured to the lock to engage a coin located on the detent, means for exerting force on the lock, and a latch for holding the lock disengaged from the switch-lever and operated by the latter in its movement.

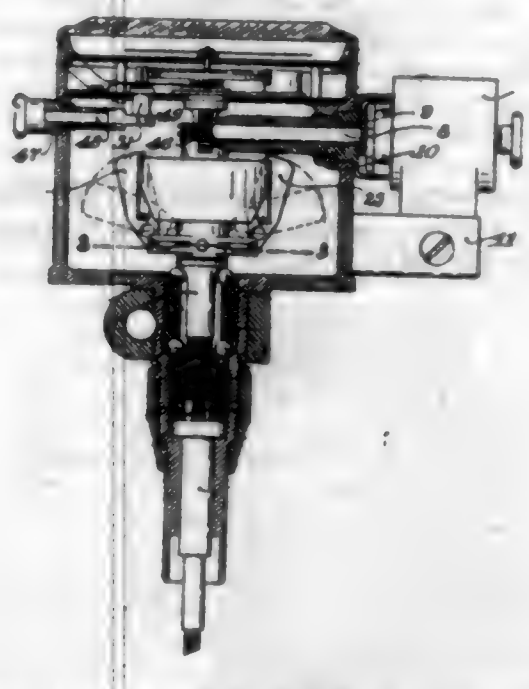
17. In combination with a telephone instrument including a switch-lever, a signaling device and means for selecting a call connection, a self-contained toll-collecting apparatus adapted to be applied to said instrument and with the switch-lever passing therethrough, a coin-channel arranged in said toll-collecting apparatus, a lock for said switch-lever and releasing means therefor actuated through the medium of a coin, means for holding said lock out of engagement with said switch-lever, said means being actuated by the switch-lever to release said lock, a coin-returning and a coin-depositing outlet, a detent operatively arranged with reference to said outlet and adapted to retain a coin, and a connection extending from said detent and connected with the signal-actuating device whereby the coin is released and passed to the depositing-outlet when the signal device is actuated, and means carried by said lock for throwing the coin out of the return-outlet when the signal device is not actuated.

18. In combination with a telephone instrument including a switch-lever, a signal device and means for selecting a call connection, a self-contained toll-collecting apparatus adapted to be applied to said instrument and with the switch-lever passing therethrough, a coin-channel arranged in said toll-collecting apparatus, a lock for said switch-lever and releasing means therefor, actuated through the medium of a coin, means for holding said lock out of engagement with said switch-lever, said means being actuated by the switch-lever to release said lock, a coin-returning outlet and a deposit-outlet, a detent operatively arranged with reference to said outlets and adapted to retain a coin, a connection extending from said detent and connected with the signal device whereby the coin is released and passed to the money-drawer outlet when the signal device is actuated, and an ejector operatively connected with the lock and controlled in its movement by the switch-lever whereby the coin is passed through the coin-returning outlet whenever the signaling device is not actuated.

19. In combination with a telephone including a switch-lever,

a signaling device and a call-wire-selecting apparatus, all actuated at the same instrument, a bodily-removable and complete toll-collecting apparatus arranged to be applied to the side of said instrument with the switch-lever projecting therethrough, a coin-channel arranged in said toll-collecting apparatus and having a coin-returning outlet and a coin-depositing outlet, a plunger and a lock projecting into said channel and adapted to be connected through the medium of the coin, said lock normally locking the switch-lever, means operated by the signaling device for directing the coin to the coin-depositing outlet, and means controlled by the switch-lever for directing the coin to the return-outlet when the signaling device is not operated.

815,108. SPEED-INDICATOR. ERNEST J. LORING, Somerville, Mass. Filed Aug. 16, 1905. Serial No. 274,400.



Claim.—1. A speed-indicator, comprising a revolving body; laterally-oscillated arms pivotally mounted in said revolving body; means operated by said oscillating arms arranged to move axially of said revolving body, said revolving body and said arms arranged to gravitationally balance each other in all positions; a rotatively-oscillating pointer rotated in one direction by said axially-moving means; and a spring to return said pointer to its normal zero position.

2. A speed-indicator comprising a revolving portion; laterally-oscillating portions pivoted thereto; means connected with said laterally-oscillating portions arranged to move longitudinally to said revolving body; a shaft rotated by said longitudinally-moving means; a spring attached to said rotating shaft; and indicating means attached to said shaft.

3. A speed-indicator, comprising a casing; a revolving body having a bearing in said casing; laterally-movable weights pivoted to said revolving body; a rotating and axially-moving member operated by said weights, said weights and said axially-movable member arranged to be in gravitational balance in all positions; means rotated by said axially-movable member; and a spring for returning said weights and rotative members to their normal zero positions.

4. A speed-indicator, comprising a revolving body; laterally-oscillating weights pivoted to said body; an axially-movable and rotative member operated by said laterally-oscillating weights; axially-movable members connected with said rotating and axially-movable member; a pointer, all said members rotating about a common center, and so arranged that the axially-movable members will be in gravitational balance with the laterally-oscillating members in all positions, whereby said means will be unaffected by position, shock or vibrations; and a spring member for returning all said members to their normal zero positions.

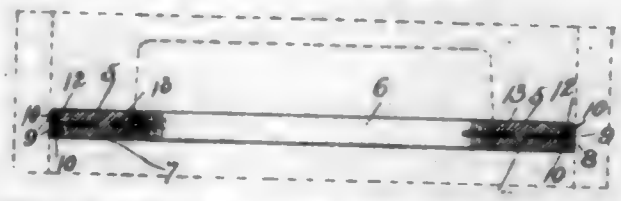
5. In a speed-indicator; a casing; a revolving body mounted in bearings in said casing; laterally-oscillated weights mounted in said revolving body; means connecting said laterally-oscillating weights with a rotating pointer, and arranged to rotate same, all said parts rotating about a common center and so arranged as to be in gravitational balance in all positions; a spring for returning all said parts to their normal zero positions; and means for locking said rotating pointer at any point in its movement.

6. In a speed-indicator, a casing, a revolving body mounted in bearings in said casing; means for revolving said revolving body; means mounted on said casing for preserving a record of the rate of revolution of said revolving body; and a spring for returning the parts to their normal positions.

7. A speed-indicator, comprising a casing; a revolving body mounted in said casing; oscillating arms pivoted to said body; axially-movable members pivoted to said oscillating arms; a rotative pointer; a spring for returning said parts to their normal zero positions, all said means being arranged to revolve about a common center and in gravitational balance with each other in all positions; and means for connecting and driving said revolving body from a center hole in a revolving body or from the surface of said body to indicate the number of revolutions of said body or of the moving speed of its surface.

8. In a speed-indicator, rotative indicating means operated by an axially-moving member; a spring for returning said indicating means to its normal zero position; a revolving body; laterally-disposed weights pivoted to said revolving body; axially-moving members slidably pivoted to said weights, said axially-movable members being so arranged as to be in gravitational balance with said laterally-movable weights in all positions; and means for revolving said oscillating weights and revoluble body from the object the speed of which is to be indicated.

815,109. PALLET FOR MOLDS. ORVILLE M. MORSE, Jackson, Mich. Filed Aug. 24, 1904. Serial No. 221,918.



Claim.—1. A pallet for molds comprising a wood body and a metal reinforcing-piece, having a central portion overlying an end portion of the wood body and having on each side of its median line a single bend, the bent edge portions projecting beyond the central portion and being embedded in the wood.

2. A pallet for molds comprising a wood body and a metal reinforcing-piece having a central portion overlying and substantially completely covering an end of the wood body, and inturned edge portions, the free edges whereof are separated a distance less than the width of the central portion, said edge portions embracing therebetween a body of the wood.

3. A pallet for molds comprising a wood body having at its end a portion of dovetailed shape narrower toward the middle of the body than at its free extremity and a metal reinforcing member of similar configuration having its edges embracing the dovetailed portion of the wood.
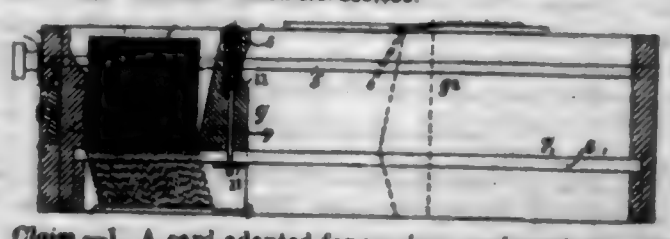
4. A pallet for molds comprising a wood body and a metal reinforcing-piece substantially covering an end of said body, having inturned portions embedded in the wood body to retain said piece upon the body.

5. A pallet for molds comprising a wood body, and a metal reinforcing-piece having a part extending along the end of the wood from side to side thereof, a portion embedded in the body of the wood, and ears projecting from the first said portion bent down over the sides of the wood body.

6. A pallet for molds comprising a flat wood body having formed in the ends thereof grooves parallel in the direction of their length, and converging in the direction of their depth to include between them a wood portion of dovetailed shape, and a metal reinforcing-piece having a central portion overlying the end of the wood body, and inturned edges interfitting in said grooves.

7. An article of manufacture consisting of a pallet for molds comprising a wood body having an aperture therein, reinforcing-pieces secured to its ends, and metal pieces embedded in the wood adjacent the aperture.

815,110. CARD-CATALOGUE. HENRY F. MORSE, Boston, Mass. Filed Apr. 17, 1905. Serial No. 255,589.



Claim.—1. A card adapted for use in a card-catalogue with a perforation for the retaining-rod, its rear side reinforced with ab-

sorbent or blotting material, and its lower edge bent rearward, as set forth.

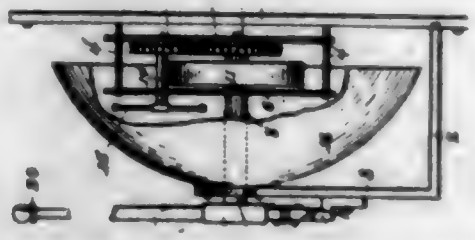
2. A card adapted for use in a card-catalogue with perforations for the retaining-rods, its central lower part cut out, the remaining ends or wings bent rearward, and its rear side reinforced, as set forth.

3. In a card-catalogue, a box or drawer with a longitudinal midway raised floor having a central opening or space, a movable perforated block or follower having its lower central part cut out and resting upon the said floor and its sides or wings extending downward and their front faces inclined rearwardly, provided with frictional means for grasping the said floor, a stack or plurality of cards between the front of the box and the said block each card having elongated perforations at its sides and the lower central portion cut away and resting upon said floor and the sides or wings extending downward and inclined toward the wings of said block, and rods passing through the ends of the box threading the perforations of the cards and of the block, with means for locking the said rods to the front end of the box.

4. In a card-catalogue, a box or drawer consisting of a stack or plurality of cards, each having elongated perforations at its ends, rods extending longitudinally through the box and threading through said perforations, a detachable device consisting of a thin board or table having a slit inward from one end, the opposite end provided with a stop or abutment, adapted to extend across the top of said box over said cards, as set forth.

5. A card adapted for use in a card-catalogue made in one piece of even thickness with elongated slots or perforations at each end for the retaining-rods, a rectangular portion cut out from its central lower part adapted to rest upon a raised central portion of the floor of the card-holder, and the remaining ends or wings creased and permanently bent rearward, as set forth.

815,111. THERMOSTATIC ALARM. Theodore A. Myers and William M. Clemans, Wheeling, W. Va., assignors of one-third to Charles C. Schmidt, Wheeling, W. Va. Filed Aug. 26, 1905. Serial No. 275,728.



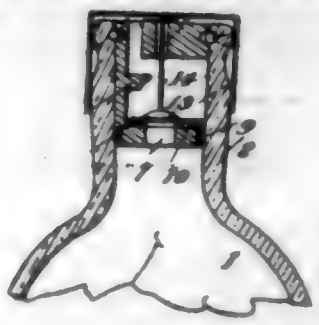
Claim.—1. In a thermostatic fire-alarm, a suitably-mounted spindle, an encircling coil-spring connected with said spindle, a head carried by said spindle, a bell, a bell-hammer, mechanism intermediate said spindle and said bell-hammer whereby when the former is released the latter is caused to sound an alarm upon the bell, and means for holding said spindle against the tension of said spring, said means comprising pivoted upright arms for embracing said head on opposite sides thereof, and a fusible wire connecting the free ends of said arms, substantially as described.

2. In a thermostatic fire-alarm, a revoluble spindle carrying a head having opposite flat faces, a coil-spring encircling said spindle and adapted for actuating said spindle to revolve, a bell, a bell-hammer, means intermediate said spindle and said bell-hammer whereby when the former is revolved the latter is actuated to beat upon the bell, and means for normally holding said spindle against the tension of said spring, said means consisting of two substantially upright arms pivoted at their lower ends below the head of said spindle and firmly engaging the flat faces of the head, and a fusible wire connecting the upper, or free, ends of said arms, substantially as described.

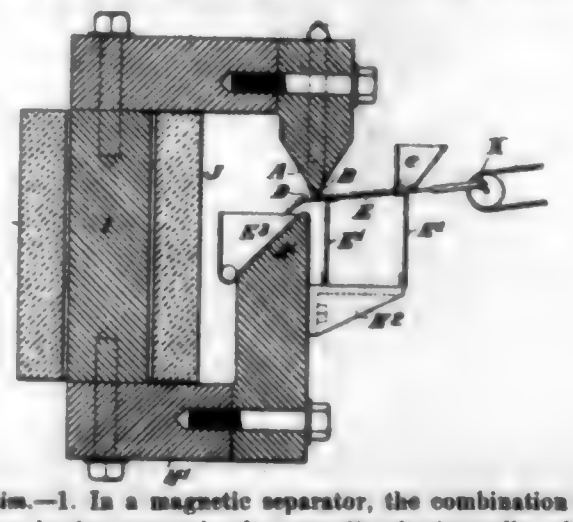
3. In a thermostatic fire-alarm, the combination with a bell, bell-hammer, and an alarm-train leading to said bell-hammer, of a revoluble spindle in operative engagement with said alarm-train, a spring for actuating said spindle to revolve, a head carried by said spindle, pivoted arms embracing said head to hold said spindle against the tension of said spring, and a fusible wire connecting said arms, said arms being adapted, when released by the fusing of the wire, to release said spindle, substantially as described.

815,112. NON-REFILLABLE BOTTLE. Stacy B. O'Dell and Herschel W. Shirley, Odon, Ind. Filed Oct. 27, 1905. Serial No. 284,726.

Claim.—In a non-refillable bottle, the combination of a neck, a closure therefor comprising a hollow body, a valve, said closure having a suitable outlet-opening, a member adapted to rest upon the valve to hold the same closed, a stem connected with said member and passing through the outer portion of the closure, an extension projecting laterally from the stem near its outer end, and a locking projection formed with the closure at its outer end and arranged to be engaged by the extension on the stem aforesaid to hold the member connected with said stem resting on the valve.



815,113. WET MAGNETIC ORE-SEPARATOR. Francis J. Obling and William Jamieson, Melbourne, Victoria, Australia. Filed May 19, 1904. Serial No. 208,652.



Claim.—1. In a magnetic separator, the combination with a field-frame having opposed poles extending horizontally, of a table extending between said poles, means for feeding a mixture of water and the material to be separated to said table to flow below the upper pole, a band of non-magnetic material adapted to travel horizontally and adjacent to the face of the upper pole, and means for maintaining a water web between said non-magnetic band and said table.

2. In a magnetic separator, the combination with a field-frame having upper and lower poles extending horizontally, of a guiding-table extending between the poles, means for feeding a mixture of water and the material to be separated along said table and below the upper pole, an endless band of non-magnetic material adjacent to the face of the upper pole, means for causing said endless band to travel, and means for maintaining a water web between said traveling band and said table, the magnetic particles being carried by said web to be delivered at the side of the poles.

3. In a magnetic separator, the combination with a field-frame having upper and lower poles extending horizontally, of a supporting table or apron extending between the faces of the poles, means for causing a mixture of water and material to be separated to flow along said supporting-table toward the pole-faces, a band of non-magnetic material disposed adjacent to the face of the upper pole, means for causing said band to travel longitudinally along said upper-pole face, means for maintaining a film or coating of water on said band, and means for maintaining a water web between said film and the water on said table, the magnetic particles being carried by said traveling film and delivered at the sides of the poles.

4. In a magnetic separator, the combination with a field-frame having upper and lower poles extending longitudinally and separated by an air-gap, of a guiding table or apron extending through said gap and near the face of the upper pole, means for feeding the material to be separated to said table, means for vibrating said table to cause the material thereon to be moved toward the upper-pole face, a band of non-magnetic material adjacent to the upper-pole face, means for causing longitudinal travel of said band, and means for maintaining a film of water on said traveling band, the magnetic material being received by said film and carried thereby to be delivered at the side of the poles.

5. In a magnetic separator, the combination with a field-frame having an upper and a lower pole-piece extending horizontally and separated by an air-gap, means for causing a film of water to travel longitudinally along the face of the upper pole-piece, a supporting table or apron extending through said air-gap near the upper-pole face, means for feeding material to be separated to said table or apron, and means for vibrating said table to cause the material to move toward the upper-pole face, the magnetic particles of the material being attracted by the upper pole and conveyed by the traveling water film thereon to be delivered at the side of the pole-piece.

6. In a magnetic separator, the combination with poles, of means for maintaining a traveling film of water on one pole, means for feeding the material to be separated toward said film whereby the magnetic particles are attracted by the pole and carried by the film to the end thereof to be delivered.

7. In a magnetic separator, the combination with magnetic poles separated by an air-gap, of a supporting-table extending through said air-gap near one pole, means for feeding material to be separated to said table and toward said pole, means for maintaining a water web between said pole and said table, and means for causing said water web to travel whereby the magnetic particles are attracted by said pole and conveyed by said traveling water web to be delivered.

8. In a magnetic separator, the combination with magnetic poles separated by an air-gap, of a guiding-table extending through said gap near one pole, means for causing a film of water to travel along the face of said pole, means for feeding a mixture of water and material to be separated to said table and toward said pole, said film and water coöperating to form a web between said pole and table, the magnetic particles being attracted by said pole and conveyed by said traveling film and web to the side of the pole to be delivered.

9. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces extending horizontally, said pole-pieces having V-shaped tips separated by an air-gap, a guiding-table extending through said air-gap near the tip of the upper pole-piece, means for feeding a mixture of water and material to be separated to said table and toward the upper-pole tip, and means for maintaining a traveling film of water along said upper-pole tip, said film and the water on the table coöperating to form a thin web between said pole-tip and the table, the magnetic particles being attracted by the upper pole and conveyed by the traveling film to be delivered.

10. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces extending horizontally, said pole-pieces having V-shaped tips separated by an air-gap, a guiding-table extending through said gap near the tip of the upper pole-piece, means for maintaining a web of water between the upper-pole tip and said table, means for causing said web to travel longitudinally along the upper-pole tip, means for feeding material to be separated to said table, and means for vibrating said table to cause the material to be conveyed toward the water web whereby the magnetic particles are attached by the upper pole-piece and conveyed by the traveling water web to be delivered.

11. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces, said pole-pieces having V-shaped tips separated by an air-gap, a guiding-table extending through said air-gap near the upper-pole tip, means for causing a film of water to travel longitudinally along the tip of the upper pole-piece, means for feeding material to be separated to said table, and means for vibrating said table to cause the particles thereon to be conveyed toward said traveling film whereby the magnetic particles are attracted by the upper pole-piece and conveyed away by said traveling film.

12. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces, said pole-pieces having V-shaped tips separated by an air-gap, of a guiding-table extending through said gap near the upper-pole tip, a band adapted to embrace the point of the upper-pole tip, means for causing said band to travel longitudinally along said pole-tip, means for supplying water to said band whereby a thin film is formed thereon, and means for feeding material to be separated to said table and toward said film whereby the magnetic particles are attracted by the upper pole-piece and conveyed away by virtue of said traveling film.

13. In a magnetic separator, the combination with a field-frame having pole-pieces extending horizontally, said pole-pieces havin V-shaped tips separated by a suitable air-gap, of a guiding-table extending through said air-gap near said upper-pole tip, a band of non-magnetic material embracing the end of the upper-pole tip, means for causing said band to travel longitudinally along said upper-pole tip, means for maintaining a film of water on said band, and means for feeding material to be separated to said table and toward said film whereby the magnetic particles are attracted by the upper pole-piece and conveyed away to be delivered by virtue of the film traveling with said band.

14. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces, said pole-pieces having V-shaped tips separated by a suitable air-gap, of a guiding-table extending through said air-gap near the upper-pole tip, a band embracing the end of the upper-pole tip and adapted to travel longitudinally along said tip, means for maintaining a film of water on said band, means for feeding a mixture of water and material to be separated to said table and toward said film, said film and water coöperating to form a traveling web between the upper-pole tip and said table, the magnetic particles being attracted by said upper pole-piece and conveyed away to be delivered by virtue of said traveling web.

15. In a magnetic separator, the combination with a field-frame having pole-pieces extending horizontally, said pole-pieces having V-shaped tips separated by a suitable air-gap, a guiding-table extending near the upper-pole tip, a band of non-magnetic material embracing the point of the upper-pole tip, means for causing said band to travel longitudinally along said pole-tip, means for supplying water to said band whereby a thin film is formed thereon, and means for feeding a mixture of water and material to be separated to said table and toward said band, said film and water coöperating to form a traveling water web between said pole-tip and said table whereby the magnetic particles are attracted by the upper pole-piece and conveyed to one end thereof by virtue of the traveling web.

16. In a magnetic separator, the combination with a field-frame having upper and lower pole-pieces, said pole-pieces having V-shaped tips separated by a suitable air-gap, a guiding-table extending near the upper-pole tip, a band of non-magnetic material embracing the point of the upper-pole tip, means for causing said band to travel longitudinally along said pole-tip, means for maintaining a film of water on said band, means for feeding material to be separated to said table and toward said band whereby the magnetic particles are attracted by the upper pole-piece and conveyed to the end thereof by the film traveling with said band, and means at the end of the upper pole-piece for decreasing the attractive influence thereof whereby the magnetic particles are released and delivered.

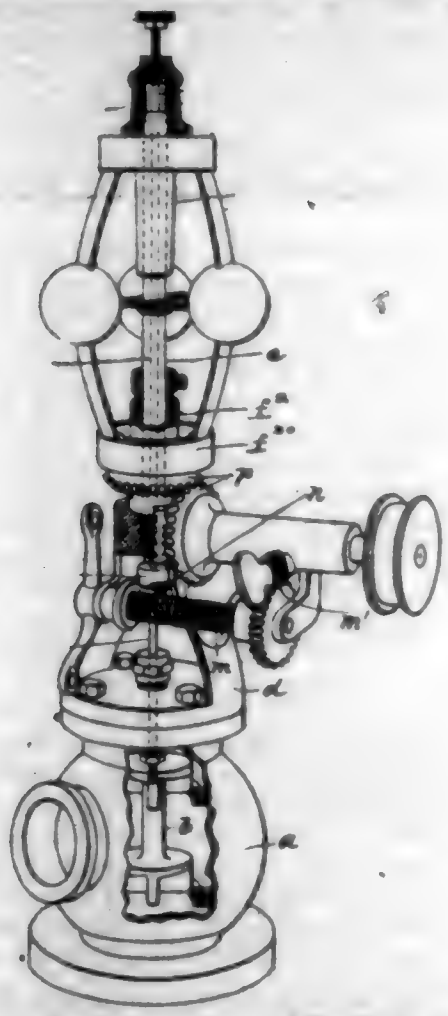
17. In a magnetic separator, the combination with a field-frame having an upper and a lower pole-piece extending horizontally, said pole-pieces having V-shaped tips separated by a suitable air-gap, a guiding-table extending near the upper-pole tip, a band of non-magnetic material embracing the point of the upper-pole tip and adapted to travel longitudinally along said tip, means for feeding a mixture of water and material to be separated to said table and toward said band, means for supplying water to said band whereby a thin film is formed thereon to travel therewith, said film coöperating with the water on said table to cause a thin web between said pole-tip and said table to travel longitudinally across the table, the magnetic particles being attracted by the upper pole-piece and conveyed by said traveling web to the end of the pole-piece, and means for diminishing the attractive influence at the end of the pole-piece whereby the magnetic particles are released to be delivered.

815,114. GOVERNOR FOR ENGINES. RICHARD H. PASCALL, Portland, Conn., assignor to The Pickering Governor Company, Portland, Conn., a Corporation of Connecticut. Filed Oct. 7, 1905. Serial No. 281,778.

Claim.—1. A governor for steam-engines and the like comprising the valve-chamber, the valve and its stem, the governor-head, and means for adjusting the valve vertically independently of the governor-head comprising a non-rotary nut and an adjusting-rod threaded into said nut with its end connected with the end of the valve-stem, and connections between the top flange of the governor-head and said adjusting-rod to cause them to move together vertically, as and for the purposes specified.

2. A governor for steam-engines and the like comprising the valve-chamber, the valve and its stem, yielding means normally exerting an upward pressure on said valve, the governor-head, and means for adjusting the valve vertically independently of the governor-head comprising a non-rotary nut and an adjusting-rod threaded into said nut with its end connected with the end of the valve-stem, and connections between the top flange of the governor-head and said adjusting-rod to cause them to move together vertically, as and for the purposes specified.

3. A governor for steam-engines and the like comprising the valve-chamber, the valve and its stem, yielding means normally exerting an upward pressure on said valve, the governor-head, and means for adjusting the valve vertically independently of the governor-head comprising a non-rotary nut, an adjusting-rod threaded into said nut with its end connected with the end of said valve-stem, and a bonnet-nut secured to the top flange of the governor-head and having engagement with said nut whereby said nut takes its vertical movement from the vertical movement of said governor-cap.



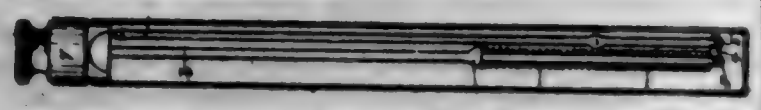
4. A governor for steam-engines and the like comprising the valve-chamber, the valve and its stem, yielding means normally exerting an upward pressure on said valve, the governor-head, and means for adjusting the valve vertically independently of the governor-head comprising a nut splined to a non-rotary part of the governor and adapted for lengthwise movement thereof, an adjusting-rod threaded into said nut with its end connected with said valve-stem, and connections between said nut and the top flange of the governor head to cause them to travel together vertically.

5. In a governor the cap and base-rings, and two or more springs secured thereto, the plane of attachment of said spring to said rings being angularly disposed with reference to the axes of the governor.

6. In a governor the cap and its rings having peripheral slots the bottoms of which are angulary disposed with relation to the axes of the governor, and springs having their ends firmly secured to the bottoms of said slots, and weights attached to said springs.

7. A governor for steam-engines and the like comprising a valve-chamber, a valve and its stem, a governor-head, and means for adjusting the valve vertically independently of the governor-head comprising an adjusting-rod threaded in a non-rotary part with its end connected with the end of said valve-stem, and engaging points on the end of said adjusting-rod.

815,115. COMBINED SIGNAL-FLAG, STAFF, AND HOLDER. EDWARD PAZ and WILLIAM D. CARRICK, Milwaukee, Wis. Filed June 23, 1905. Serial No. 266,563.



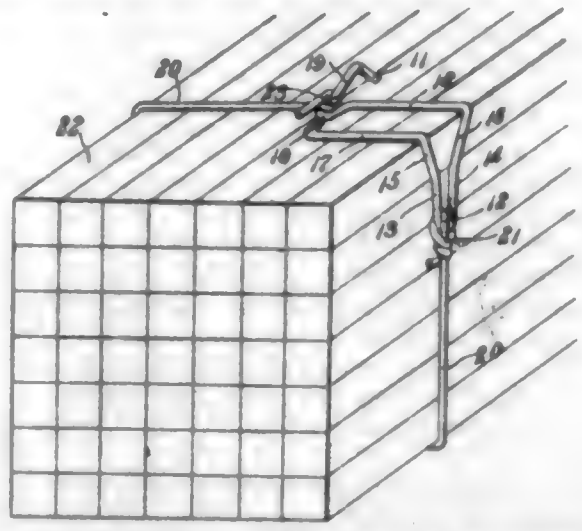
Claim.—1. In a signaling device, the combination of a flag, a staff formed of two foldable parts pivotally connected together; an inclosing case and means for attaching the base of the staff to the mouth of the staff-inclosing case.

2. In a signaling device, the combination of a flag; a staff formed of two parts pivotally connected together; a base permanently connected with the lower end of said staff; a staff-inclosing case, said base being adapted to serve the twofold purpose of a cover to the case and as a means of connecting the lower end of the staff to the top of the case when the case is used as a handle.

3. In a signaling device, the combination of a flag; a staff formed of two parts; means for pivotally connecting such parts together; a sleeve slidably supported on said staff and adapted to be slid over the pivotal connections of said parts and hold them in line with each other when extended; a base attached to the lower end of said staff; a staff-inclosing case, said base being adapted to serve both as a cover to said case and as a means of connecting said staff with the upper end of said case when used as a handle.

4. In a signaling device, the combination of a flag; a staff formed of two parts; means for pivotally connecting such parts together; a sleeve slidably supported on said staff and adapted to be slid over the pivotal connections of said parts and hold them in line with each other when extended; a sleeve-actuating spring; a spring-supporting shoulder located on the lower end of said staff, said spring being interposed between said shoulder and said sleeve and adapted by its recoil, to force said sleeve above the pivotal connections of said staff, all substantially as and for the purpose specified.

815,116. BALE-TIE. EDWARD L. PENCE, Memphis, Tenn., assignor to Southern Bale Tie Company, Memphis, Tenn., a Corporation of Tennessee. Filed Nov. 16, 1905. Serial No. 287,712.



Claim.—1. As a new article, a bale-band tie constructed from a single piece of wire having an eye at one end and a spur extending laterally from the other end, said wire section bent upon itself intermediate the ends and the side members thereby produced converging and then bent at right angles and the side member having the terminal spur passed through the terminal eye of the other side member.

2. A bale-band tie consisting of a section of wire bent upon itself and with the side members thereby produced, diverging and then bent at right angles, one side member terminating in an eye and the other side member terminating in a laterally-extending spur with the side member having the spur extending through the terminal eye of the other side member and forming a protruding tongue with the spur as a terminal, and a wire binding member connected at one end to tie at the bend of the same and of sufficient length to extend around the article to be held and engage said tongue.

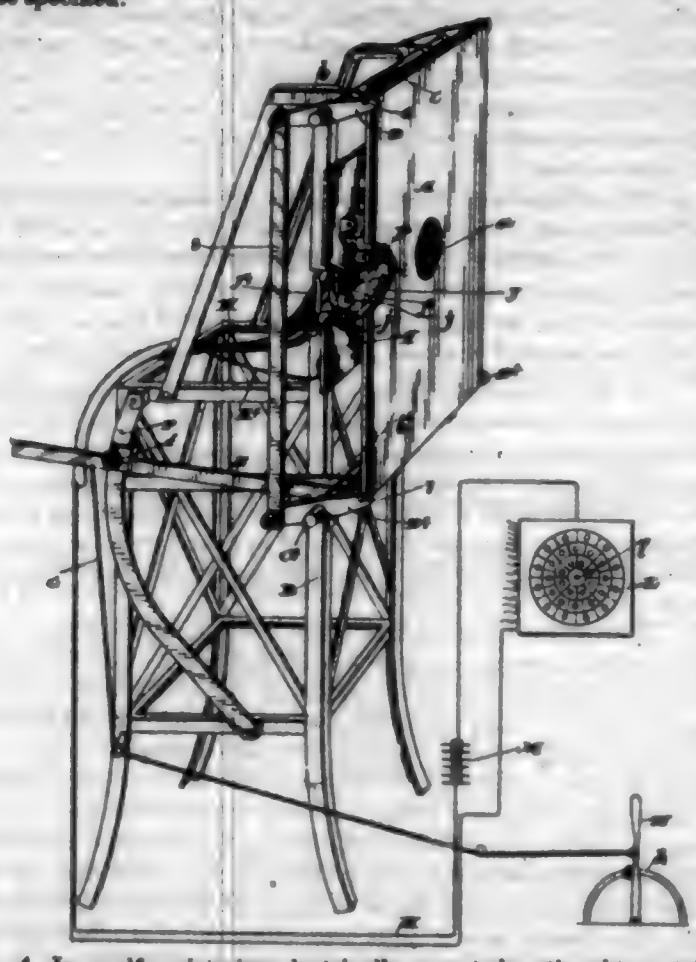
815,117. SELF-REGISTERING ELECTRICALLY-OPERATED SECTIONAL TARGET. GEORGE A. PETERS, Toronto, Canada. Filed Apr. 5, 1904. Serial No. 201,778.

Claim.—1. In a self-registering electrically-operated sectional target, an integral target or target-plate having a series of sections forming distinct potential areas of influence on the back of the plate, whereby the lines of force caused by the impact of the bullet on the face of the target are confined in proximity to the point of impact of the bullet as and for the purpose specified.

2. In a self-registering electrically-operated sectional target, a target or target-plate having a series of sections forming distinct potential areas of influence formed on the back of the plate by grooves in the plate, whereby the lines of force caused by the impact of the bullet on the face of the target are confined in proximity to the point of impact of the bullet as and for the purpose specified.

3. In a self-registering electrically-operated sectional target, a target or target-plate having on the back of the target opposite the bull's-eye on the face a circular central section of corresponding size

to the ball and forming a distinct potential area of influence, and a series of rings of arc-shape sections concentric to the central section, each forming a distinct potential area of influence, such central section and the remaining sections being formed by circular and radial grooves made in the back face of the target as and for the purpose specified.



4. In a self-registering electrically-operated sectional target, in combination a target or target-plate having a series of sections formed on the back of the plate by grooves in the plate, whereby the lines of force caused by the impact of the bullet on the face of the target are confined in proximity to the point of impact of the bullet, an annunciator having a corresponding number of sections and drops to the sections formed at the back of the target-plate and electrical connections from the corresponding sections on the back of the target to the corresponding sections of the annunciator, whereby the impact of the bullet on a section or sections throws in the circuit to the corresponding drop or drops of the annunciator as and for the purpose specified.

5. In a self-registering electrically-operated sectional target, the combination with the target or target-plate having a series of sections formed on the back of the plate by grooves in the plate, a back plate forming a support for the hammers, hammers pivoted on same and designed to normally rest on the corresponding sections in the target-plate extending through slots in the supporting-plate and having rear spurs, a sleeve for each hammer extending through an opening in the plate and provided with a bracket on which each hammer is pivoted, an insulating-plug extending through the sleeve, spring contact-fingers secured to the plug and with which the spur of the hammer is designed to contact when the hammer is thrown upwardly by the impact of the bullet on the face of the section, and electrical connections from the finger to the annunciator as and for the purpose specified.

6. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and hammers of the target-plate having the integral and independent sectional back surfaces and means for supporting and imparting movement to the target-plate, so that it may be brought nearer to or farther from the supporting-plate without altering the position of the hammers on the plate as and for the purpose specified.

7. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and pivoted hammers, of the target-plate having the integral and independent sectional back surfaces, the rock-shafts journaled in suitable bearings, the rocking arms on the rock-shafts pivotally connected to the target-plate at radial distances from the center of the rock-shafts corresponding to the radii of the hammers from their center, and means for turning the rock-shafts so as to hold the target-plate parallel to the supporting-plate of the hammers and at a predetermined distance from the same as and for the purpose specified.

8. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and pivoted hammers, of the target-plate having the integral and independent sectional back surfaces, the rock-shafts journaled in suitable bearings, the rocking arms on the rock-shafts pivotally connected to the target-plate at radial distances from the center of the rock-shafts corresponding to the radii of the hammers from their center, bars connecting the rear ends of the rocking arms and a lever secured to one of the rock-shafts as and for the purpose specified.

9. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and pivoted hammers, of the target-plate having the integral and independent sectional back surfaces, the rock-shafts journaled in suitable bearings, the rocking arms on the rock-shafts pivotally connected to the target-plate at radial distances from the center of the rock-shafts corresponding to the radii of the hammers from their center, bars connecting the rear ends of the rocking arms and a lever secured to one of the rock-shafts, and an adjustable stop designed to hold the lever in any predetermined position as and for the purpose specified.

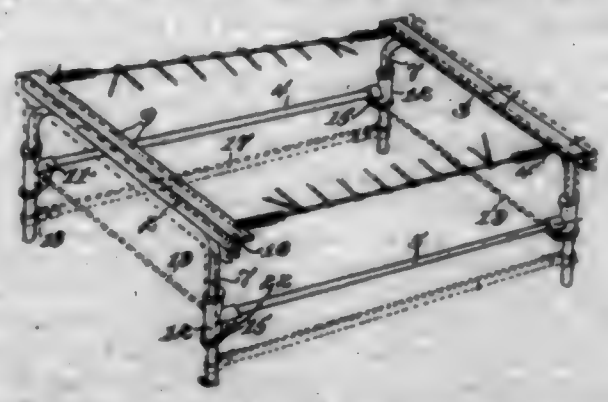
10. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and pivoted hammers, of the target-plate having the integral and independent sectional back surface, the rock-shafts journaled in suitable bearings, the rocking arms on the rock-shafts pivotally connected to the target-plate at radial distances from the center of the rock-shafts corresponding to the radii of the hammers from their center, an annunciator having corresponding sections and drops to the sections at the back of the target-plate, electrical connections from the hammers to the annunciator having their circuits normally broken and means for throwing the target-plate toward the supporting-plate for the hammers, so that all the hammers simultaneously complete the circuit to the annunciator and cause the drops to fall as and for the purpose specified.

11. In a self-registering electrically-operated sectional target, the combination with the supporting-plate and pivoted hammers, of the target-plate having the integral and independent sectional back surfaces, the rock-shafts journaled in suitable bearings, the rocking arms on the rock-shafts pivotally connected to the target-plate at radial distances from the center of the rock-shafts corresponding to the radii of the hammers from their center, an annunciator having corresponding sections and drops to the sections at the back of the target-plate, electrical connections from the hammers to the annunciator having their circuits normally broken, connecting means for the rocking arms, a lever secured to a rock-shaft, a coacting lever placed a suitable distance from the target and a cord connecting such levers and a suitable stop to limit the movement of either lever as and for the purpose specified.

12. In a self-registering electrically-operated target, the combination with the supporting-plate vertically disposed and the hammers, and target-plate vertically disposed, of means for varying the distance between the supporting-plate and the target-plate, as and for the purpose specified.

13. In a self-registering electrically-operated target, the combination with the supporting-plate vertically disposed, and the hammers, and target-plate vertically disposed, of means for varying the distance between the supporting-plate and the target-plate by imparting a parallel movement to one of the plates as and for the purpose specified.

815,118. COUCH OR COUCH-BED. CHARLES L. PLUNKETT, New York, N. Y., assignor to American Couch Company, New York, N. Y., a Corporation of New York. Filed Jan. 13, 1905. Serial No. 240,849.



Claim.—1. An extensible or sliding couch-bed, comprising a pair of sections nesting transversely one under the other, each such section comprising a pair of end frames, a pair of rigid side bars or members loosely or separably connected with said end frames, a

flexible fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said end frames, so that all of such parts are retained in assembled rigid position by the tension of the fabric, and means connecting said end frames below said side bars to prevent the spreading of the end frames under the tension of the fabric.

2. An extensible or sliding couch-bed, comprising a pair of nested sections, each section comprising a pair of end frames, a pair of rigid side bars or members loosely or separably connected with said end frames, a metallic fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said end frames, so that all of said parts are retained in assembled rigid alinement by the tension of the fabric, and means for connecting the end frames together below the side bars to prevent the spreading of the end frames under the tension of the fabric, the metallic fabric of one section movable transversely between a side bar and the metallic fabric of the other section.

3. An extensible couch-bed, comprising a pair of nested sections, each comprising a pair of integrally-formed bent end frames, a pair of side bars, and a pair of stays, all separably or loosely connected, said stays connecting the end frames below said side bars to prevent the spreading of the end frames under the tension of the fabric, and a metallic fabric connecting said end frames, the tension of said fabric maintaining all of such parts together in rigid alinement without rivets or other fastening means, and the metallic fabric of one section movable between a side bar and the metallic fabric of the other section.

4. An extensible or sliding couch-bed, comprising a pair of transversely-nesting sections, each made up of a pair of end frames comprising a pair of legs or feet and a cross-bar rigidly connected, a pair of rigid side bars or members loosely or separably connected with said end frames, a metallic fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said end frames, so that all of such parts are retained in assembled rigid alinement by the tension of the fabric, and a pair of stays in position on the feet of the end frames below the side bars to prevent the spreading of such end frames under the tension of the fabric.

5. An extensible couch or couch-bed comprising a pair of sections nested so that a metallic fabric of one section will run between a side bar and the metallic fabric of the other section, and each comprising a pair of end frames each of integral construction and consisting of a pair of legs and a cross-bar, a side-bar-receiving means carried by each leg, a pair of side bars, stays stretched between said legs below said side bars, and a metallic fabric stretched between said cross-bars, the tension of the metallic fabric fixedly connecting all said parts rigidly together without rivets or other similar fastening means.

6. An extensible couch or couch-bed comprising a pair of sections nested so that a metallic fabric of one section will run between a side bar and the metallic fabric of the other section, and each section comprising a pair of end frames each of integral construction and consisting of a pair of legs and a cross-bar, a side-bar-receiving means carried by each leg, a pair of side bars, and a metallic fabric stretched between said cross-bars, the tension of the metallic fabric fixedly connecting all of said parts rigidly together, and a brace-rod connecting the legs of each end frame of the main section together, and such main section permanently with the extensible section.

7. An extensible couch or couch-bed comprising a pair of sections each composed of a pair of end frames, a pair of side bars and a metallic mattress stretched between such end frames, a rod connecting the two legs of each end frame of the main section together, and the main section with the extensible section, whereby the sections are not separable except on the dismantling of one of the sections.

8. An extensible couch or couch-bed comprising a pair of nested sections, each comprising a pair of end frames, a pair of side bars, and a metallic mattress stretched between such end frames, the metallic mattress of one section running between the metallic mattress and a side bar of the other section, and rods or bars running through openings in the extensible section for locking the two sections against separation except on the dismantling of one of them.

9. An extensible couch or couch-bed comprising a pair of sections each comprising a pair of end frames, a pair of side bars, and a metallic mattress stretched between such end frames, the metallic mattress of one section running between the metallic mattress and a side bar of the other section, each leg of the main section having a part provided with an opening, the inner legs of the extensible section also having a part provided with an opening in register with the openings of the main section, and a rod passing through said openings and secured in position and forming a guide for the extensible section.

10. An extensible couch or couch-bed comprising a pair of nested sections each comprising a pair of end frames and a pair of side bars with a metallic mattress stretched between said end frames, and clamping means comprising spring-arms carried by the inner side bar of the extensible section, and effective to clamp the side bars of the main section in either the extended or closed position of the extensible section.

11. An extensible couch or couch-bed comprising a pair of nested sections each comprising a pair of end frames and a pair of side bars with a metallic mattress stretched between said end frames, and clamping means comprising spring-arms carried by a part of said extensible section and effective to clamp a part of the main section in either the extended or closed position of the extensible section.

12. An extensible couch or couch-bed comprising a pair of nested sections each comprising a pair of end frames and a pair of side bars with a metallic mattress stretched between said end frames, and clamping means comprising spring-arms carried by the inner side bar of the extensible section and effective to clamp the side bars of the main section in either the extended or closed position of the extensible section, said spring-arms conforming to the shape of the side bars.

13. A couch made up of four legs, two side bars and two cross-bars, with a cross-bar connecting each pair of said legs to form an end frame and the side bars connecting such end frames together, two of said bars being permanently secured to said legs and the other two bars being loosely or separably connected thereto, so that each pair of bars will have fixedly connected therewith a pair of legs, a fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said end frames, so that all of said parts are maintained in rigid alinement by the tension of the fabric, and a pair of stays connecting said legs below the side bars to prevent the spreading of the legs under the tension of the fabric.

14. A couch-section, comprising a pair of end frames and a pair of side bars or members loosely or separably connected with said end frames, a flexible fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said end frames, so that all of said parts are retained in assembled rigid position by the tension of the fabric, and means for tying the end frames together below the side bars to prevent the spreading of the end frames under the tension of the fabric.

15. A couch-section comprising two end frames each consisting of a pair of legs and a cross-bar rigid therewith and forming the tie between said legs and having means for the reception of the end of a fabric, each end frame forming a permanent structure, each leg of which is provided with a cast-socket for the reception of a side bar, a pair of side bars, and a fabric stretched between said cross-bars the tension thereof fixedly connecting the end frames and the side bars rigidly together, and stays connecting the legs of the two end frames, all said parts being assembled as an article of manufacture without the use of rivets or bolts.

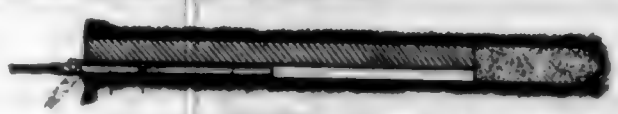
16. A couch-section, comprising a pair of end frames, each bent from a single member to form a pair of integral feet and a cross-bar, a pair of side bars loosely or separably connected with said end frames, a metallic fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to the end frames, so that such end frames and side bars are maintained in assembled rigid alinement by the tension of the fabric, and stays connecting the feet of the end frames below the side bars to prevent the spreading of the end frames under the tension of the fabric.

17. A couch-section, comprising a pair of end frames, each comprising a cross-bar and a pair of legs or feet, a pair of rigid side bars loosely or separably connected with said feet, a metallic fabric shorter than the distance between said end frames when the latter, together with its side bars, are properly assembled and set up, and stretchable between and attachable to said cross-bars, so that all of said parts are retained in rigid alinement by the tension of the fabric, the connection between said end frames and side bars being such that they are inseparable until the fabric is first removed from the end frames, and a pair of stays attached to the feet of said end frames

below the side bars to prevent the spreading of the end frames under the tension of the fabric.

18. The combination of a couch-section comprising a pair of end frames each bent from a single member to form a pair of legs and a cross-bar, said cross-bar having means for the connection of one end of a metallic fabric, and each leg having means for the reception of one end of a side bar, a pair of side bars and a metallic fabric stretched between said cross-bars and fixedly connecting the end frames and side bars in rigid position, a companion section made in a similar manner, said sections being nested so that the metallic fabric of one will run between a side bar and the metallic fabric of the other, whereby the metallic fabric will be nearly level when extended, and means for permanently connecting said sections together against separation without dismantling, said means comprising a pair of rods connected one with the legs of each end frame of the main section and with a pair of end frames of the other section.

815,119. COMPOUND SQUIB. JOHN R. POWELL, Plymouth, Pa. Filed Apr. 28, 1905. Serial No. 257,902.



Claim.—1. A squib, including a casing or tube weakened to define two integrally-connected separable sections.

2. A squib, comprising two distinct but integrally-connected separable sections and a match.

3. A squib, including a casing or tube weakened to define two integrally-connected separable sections and an integral match.

4. A squib comprising a piece or strip of material wound into tubular form to constitute a container or casing, an intermediate portion of said piece or strip being narrower than the end portions thereof to produce a thin or weakened portion in the tube.

5. A squib, including a single tube or casing having an intermediate portion which is more highly combustible than the end portions thereof.

6. A squib, including a single tube or casing having an intermediate portion which is more highly combustible than the end portions thereof and a match extending from one end of the tube and integral therewith.

7. A fuse-blank, comprising a body portion and a narrower match portion extending from one end thereof, said body portion being narrower at an intermediate portion than at the ends thereof.

8. A blank of the character described, comprising a body portion and a match portion, the body portion having converging front edges terminating at the base of the match portion.

9. A blank of the character described, comprising a body portion having converging front edges and a narrower match portion having rear edges diverging from the front end of the match portion.

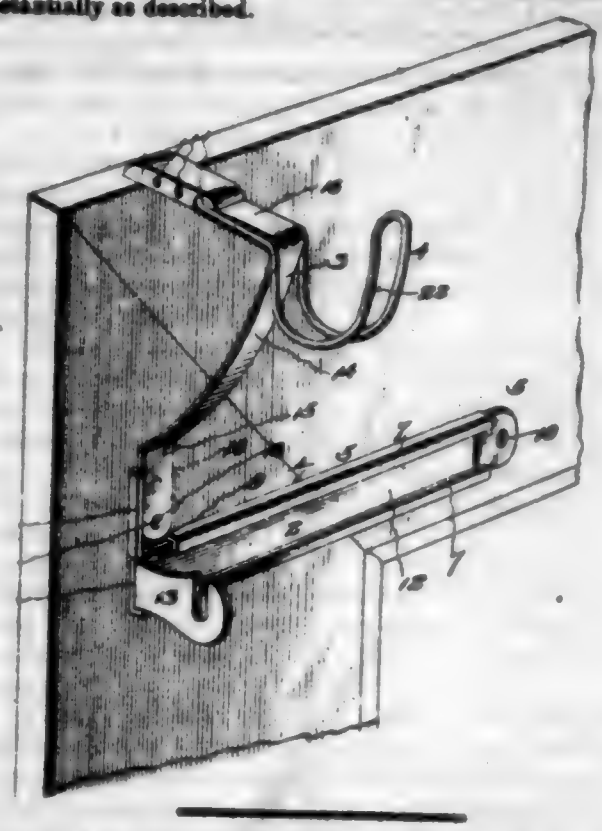
10. A blank of the character described, comprising a body portion having forwardly-converging edges, the front end of one of said edges being located opposite an intermediate point of the other, and a match portion narrower than the body portion and having rear edges diverging forwardly from the front end of the body portion, one of said diverging edges being longer than the other.

11. A blank of the character described, comprising a body portion having forwardly-converging edges, the front end of one of said edges being located opposite an intermediate point of the other, and a match portion narrower than the body portion and having rear edges diverging forwardly from the front end of the body portion, one of said diverging edges being longer than the other, and said match having an angular front edge.

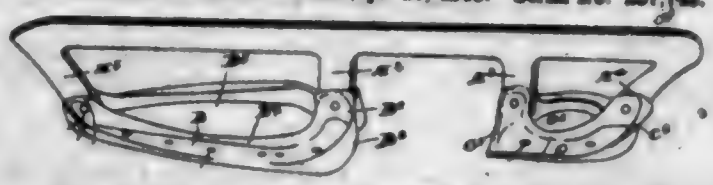
815,120. WINDOW SHADE AND CURTAIN HANGER. ORA B. REED, Decatur, Ill. Filed Apr. 20, 1905. Serial No. 256,565.

Claim.—1. In combination with a bracket for attachment to a window-casing and having an inclined side, a hook having its inner end pivotally connected to said bracket for vertical angular movement and having its outer end upturned, said hook and bracket coacting to grasp a curtain-pole between the upturned outer end of the hook and the inclined side of the bracket and to support the said pole.

2. A combined window shade and curtain hanger, comprising a base-section having a longitudinal arm and a vertical arm, the latter provided with an outstanding vertical flange, a shade-roller-bearing member detachably secured to the longitudinal arm of the base-section, a bracket having its lower end detachably secured to the vertical arm of the base-section and bearing against the outstanding flange thereof, said bracket being further provided with a horizontal arm to bear on the upper side of the window-casing, and a pole-supporting device connected to the horizontal arm of the bracket, substantially as described.



815,121. SKATE. THOMAS A. RUSSELL, Toronto, Canada, assignor to Canada Cycle and Motor Company, Limited, Toronto, Canada, a Corporation of Canada. Filed Apr. 27, 1905. Serial No. 257,743.



Claim.—1. In a skate, the combination with the blade, of a foot-supporting plate provided with reinforcing-ribs on each side of the blade so disposed as to form bracing-supports from the outside edges of the plate to the blade and means for centrally fastening the plate to the blade as specified.

2. The combination with the blade having the front and intermediate standards or uprights, of a foot-plate smooth at the top and having a central opening provided with a reinforcing-rib extending longitudinally and laterally on each side of the opening, a central rib in which the aforesaid rib merges provided with recesses into which the standards fit, and supplemental ribs located on each side of the same merging into the central rib and dying away in the plate as and for the purpose specified.

3. The combination with the blade, and the back and intermediate standards or uprights, of a heel-plate smooth at the top and having a central opening and provided with a reinforcing-rib extending around the opening on each side, central ribs in which the aforesaid rib merges provided with recesses into which the standards fit and supplemental ribs located on each side of the same merging into the central ribs and dying away in the plate as and for the purpose specified.

4. The combination with the blade and standards, of a foot-plate having central ribs provided with recesses in which the standards are secured and ribs extending laterally on each side of the central ribs and merging into the aforesaid ribs and forming a bracing-reinforcement for the plate as and for the purpose specified.

5. The combination with the blade and standards, of a foot-plate having central ribs provided with recesses in which the standards are secured and ribs extending laterally and longitudinally on each side of the central rib and merging into the aforesaid ribs and forming a bracing-reinforcement for the plate as and for the purpose specified.

6. In a skate, a foot-supporting plate having central bottom ribs provided with recesses in which the standards of the blade are secured, reinforcing-ribs merging into the aforesaid ribs and extending out from both sides thereof as and for the purpose specified.

7. In a skate, a foot-supporting plate having central bottom ribs provided with recesses in which the standards of the blade are rigidly secured as and for the purpose specified.

8. In a skate, a foot-supporting plate having central bottom ribs provided with recesses in which the standards of the blade are

rigidly secured and the internal and front and back reinforcing-ribs for the central rib and outside edge as and for the purpose specified.

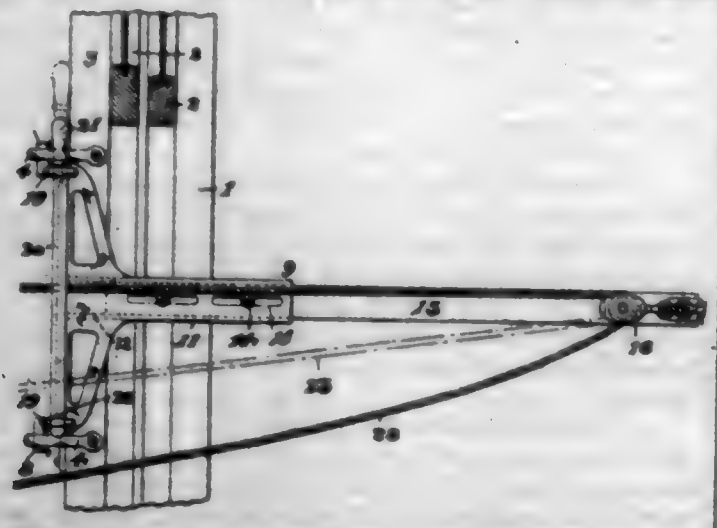
815,122. SHOVEL. LOUIS SCHAFFERT, Walton, N. Y. Filed Oct. 5, 1905. Serial No. 281,434.



Claim.—1. A tool of the type described comprising a handle, a blade carried thereby, and a strap secured to one face of the blade and provided with curved bearing-lugs.

2. A tool of the type described comprising a handle, a blade carried thereby and provided with a sharpened edge, a bracing member attached to one face of the blade at a point adjacent said edge, said bracing member being provided with a socket to receive the adjacent end of the handle and having outwardly-extending curved bearing-lugs.

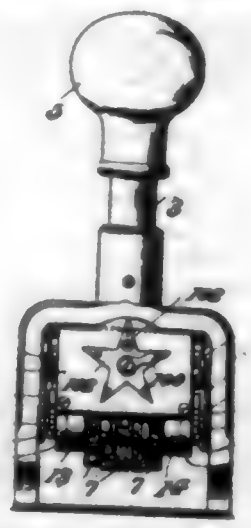
815,123. PULLEY CLOTHES-LINE ATTACHMENT. FRANK J. SCHMIDT, Jersey City, N. J. Filed Jan. 26, 1905. Serial No. 242,782.



Claim.—1. In a device of the character described, the combination with upper and lower brackets presenting pivotal bearings, of a rigid T-shaped arm in one integral piece having its head or cross-piece provided at the opposite extremities with hinge means adapted to coöperate with the said bearings and having its stem or body portion perpendicular to said head at the middle thereof, all said parts lying in the same plane and the said stem or body portion being longitudinally recessed at one side or face of the arm and the head or cross-piece having at the opposite side or face of the arm and on opposite sides of the stem or body portion horizontally-disposed perforated lugs, an extension-arm slidably arranged in said recess of the body portion, and a roller having a cylindrical portion adapted to rotatably lie in the perforations of the said lugs and an enlarged handle at one end adapted to engage the upper lug as a stop.

2. In a device of the character described, the combination with upper and lower brackets presenting pivotal bearings, of a rigid T-shaped arm in one integral piece having its head or cross-piece provided with a straight rear edge and extremities which project rearward from said edge and form hinge means adapted to coöperate with the said bearings, the stem or body portion of the T-shaped arm being in the same plane with the above-mentioned parts and perpendicular to the head or cross-piece at its middle and the said arm having at one side of itself a longitudinal recess in the stem and at its opposite side horizontally-disposed perforated lugs arranged in line with the said straight rear edge of the head or cross-piece and at the opposite ends thereof, an extension-arm slidably arranged in said recess of the body portion, and a roller having a cylindrical portion adapted to rotatably lie in the perforations of the said lugs and an enlarged handle at one end adapted to engage the upper lug as a stop, whereby the strands of the clothes-line may be confined between said roller and the head-piece of the T-shaped arm adjacent to its said straight rear edge.

815,124. NUMBERING-MACHINE. LOUIS K. SCOTFORD, Chicago, Ill. Filed July 31, 1905. Serial No. 272,035.



Claim.—1. In a numbering-machine, a series of numbering-wheels, and means for oscillating said wheels on their axes from an inking-plane to a printing-plane and from the printing-plane back to the inking-plane.

2. In a numbering-machine, a series of numbering-wheels, an inking-pad located in inking relation to said wheels, and means for oscillating said wheels on their axes from said inking-pad to the printing-plane and from the printing-plane back to said inking-pad.

3. In a numbering-machine, a movable ink-pad, a series of numbering-wheels, and means for moving said pad and for oscillating said wheels on their axes from an inking-plane to a printing-plane and from the printing-plane back to the inking-plane.

4. The combination of a series of numbering-wheels, a barrel supporting said wheels, means for oscillating said barrel and its wheels on its axis, said wheels normally occupying an inking-plane and oscillating to the printing-plane.

5. The combination of a numbering-head having a barrel and a series of numbering-wheels, said barrel having a series of detents coacting with said wheels, and the barrel and detents having a limited oscillation on the axis of said barrel, and means for oscillating said barrel so that its wheels move from an inking-plane to a printing-plane.

6. In a numbering-machine, the combination of a movable inking-pad, a numbering-head comprising a series of numbering-wheels, and a mechanism for oscillating said wheels on the depression of said head from the inking-pad to the printing-plane.

7. The combination of a series of numbering-wheels, of a pawl-bar acting on the interior surfaces of said numbering-wheels and having no rotary movement but a slight oscillation on its axis.

8. The combination in a numbering-head having a series of numbering-wheels, an oscillating pawl-bar acting on the interior surfaces of said wheels, and having no rotary movement but a slight oscillation on its own axis, and means for holding said bar out of contact with the numbering-wheels.

9. The combination in a numbering-head, numbering-wheels, a support for said wheels, and a pawl-bar coacting with the interior surfaces of said wheels and oscillating in and out of contact therewith, said pawl-bar having no rotary movement but a slight oscillation on its own axis.

10. In a numbering-head, a series of numbering-wheels, a support for said wheels, an oscillating pawl-bar coacting therewith, and exterior means projecting down and acting on said oscillating pawl-

bar, said pawl-bar having no rotary movement but a slight oscillation on its own axis.

11. In a numbering-head, a series of numbering-wheels, a support for said wheels, said wheels and said support being capable of partial rotation on their axes, an oscillating pawl-bar coacting with said wheels, said pawl-bar having no rotary movement but a slight oscillation on its own axis, and means projecting downward and acting on said oscillating pawl-carrier.

12. The combination of a series of numbering-wheels, and a barrel or support carrying said wheels and having a limited oscillation on its axis, and means independent of said wheels for oscillating said barrel.

13. The combination of an inking-pad, a series of numbering-wheels, and a barrel or support carrying said wheels and having a limited oscillation on its axis, and means independent of said wheels for oscillating said barrel and moving said wheels from the inking-pad to the printing position.

14. The combination of a series of numbering-wheels, a barrel or support carrying the same and having a limited oscillation on its axis, means as the detents carried by said barrel for moving the barrel and wheels together.

15. The combination of a series of numbering-wheels, a barrel or support carrying said wheels and having a limited oscillation on its axis, spring-actuated detents carried by said support or barrel for moving the wheels with the support or barrel.

16. The combination of a series of numbering-wheels, detents coacting within said wheels to hold the wheels in position, and means for locking said detents in position.

17. In a numbering-head, a barrel or support, a series of numbering-wheels supported on said barrel, detents coacting between said barrel and said numbering-wheels for holding the same together, and means for locking said detents in position.

18. In a numbering-head, a barrel or support, a series of numbering-wheels supported by said barrel, a detent for each wheel coacting with the barrel and wheels to hold said wheels in position, a pawl-carrier, means for moving said barrel with its detents against said carrier to lock the latter in position.

19. In a numbering-head, a barrel or support capable of a partial rotation on its axis, a series of numbering-wheels carried by said barrel, a detent for each wheel moving the barrel and wheels together and means for locking said detents to hold said wheels in their printing position.

20. The combination of a numbering-head having a barrel or support and a series of numbering-wheels, said barrel having a series of detents coacting with said wheels to lock the wheels and barrel together and the barrel and detents having a limited oscillation on the axis of said barrel, means for oscillating said barrel so that its wheels move from an inking-plane to a printing-plane, and means for locking the detents to the wheels when the wheels are in the printing position.

21. In a numbering-head, a barrel or support, a series of numbering-wheels carried by said barrel, a detent for each wheel arranged to move said barrel and wheels together, the barrel, wheels and detents having a limited oscillation or rotation from an inking-plane to a printing-plane, and a pawl-carrier arranged to lock the detents to the wheels when in the printing position.

22. In a numbering-machine, a series of numbering-wheels, a pad located adjacent to said wheels, and a lever moving against the frame and receiving motion therefrom and thereby throwing said pad against the wheels.

23. In a numbering-machine, a head carrying a series of numbering-wheels, an inking-pad held in inking relation to said wheels, and a lever for throwing said pad against said wheels, one end of said lever pivoted to said head and moving against the frame and thereby moving the pad.

24. In a numbering-machine, a series of numbering-wheels, a pad pivotally held in relation to said wheels, a spring for normally tending to throw said pad away from said wheels, and means for forcing said pad against said wheels in opposition to said spring.

25. In a numbering-machine, a series of numbering-wheels, a pad-carrier, a pad pivotally held in an inking relation to said wheels, and means for locking said pad in its normal position, said pad being movable on its pivot out of the inking position when said locking means is unlocked.

26. In a numbering-machine, a series of numbering-wheels, a rod or spindle, an inking-pad pivoted to said rod or spindle; and a connection between said pad and said rod or spindle for locking the same in inking position, said pad being movable on the rod or spindle out of position when said device is unlocked.

27. In a numbering-machine, a reciprocating head carrying a series of numbering-wheels, and an inking-pad pivotally held in inking relation to said wheels when the head is in its upper position and movable away from said wheels when the head is reciprocated to its lower position, said pad being movable on its pivot out of inking position without reciprocating the head.

28. In a numbering-machine, a reciprocating head carrying a series of numbering-wheels, an inking-pad pivotally held in inking relation to said wheels when the head is in its upper position and movable away from said wheels as the head is reciprocated downward, said pad being movable on its pivot out of inking position without reciprocating the head, and a device for normally holding said pad in its proper position.

29. In a numbering-machine, a reciprocating head carrying a series of numbering-wheels, an inking-pad held in inking relation to said wheels when the head is in its upper position and movable away from said wheels as the head is reciprocated downward, said pad being movable out of inking position without reciprocating the head, and a pivoted latch for normally holding said pad in its proper position.

30. In a numbering-machine, a series of numbering-wheels, an ink-pad box held in inking relation to said wheels, said pad-box being journaled near its center whereby it may move on its journals to take up any inequalities, and a latch for locking said box in position.

31. In a numbering-machine, a series of numbering-wheels, an ink-pad carrier pivotally held with its pad in inking relation to said wheels and capable of being thrown, on its pivot, away from said wheels, said pad-carrier carrying a pad-box journaled in its center, and a latch for locking said carrier in its normal position.

32. In a numbering-machine, a series of numbering-wheels, a spindle or rod, an ink-pad carrier pivoted to said spindle or rod and a latch for locking said carrier to said spindle or rod.

33. In a numbering-machine, a series of numbering-wheels, a spindle or rod and connections whereby said spindle or rod is rocked on the reciprocating movement of said wheels, an inking-pad pivoted to said spindle or rod and a device for locking said pad to said spindle whereby the two move together.

34. In a numbering-machine, a series of numbering-wheels, a spindle or rod and connections whereby said spindle or rod is rocked on the reciprocating movement of said wheels, an inking-pad pivoted to said spindle or rod and a pivoted latch for locking said pad to said spindle whereby the two move together.

35. In a numbering-machine, a series of numbering-wheels having reciprocating movement, a rod or spindle having means for rocking the same when said wheels are reciprocated, an ink-pad carrier pivoted to said spindle or rod, and a latch for locking said carrier to said spindle whereby they move together, said carrier being capable of being reversed on said spindle or rod when the latch is unlocked.

36. In a numbering-machine, a series of numbering-wheels having reciprocating movement, a rod or spindle having means for rocking the same when said wheels are reciprocated, an ink-pad carrier pivoted to said spindle or rod, an ink-pad supported by said carrier and journaled near its center, and a latch for locking said carrier to said spindle whereby they move together, said carrier being capable of being reversed on said spindle or rod when the latch is unlocked.

37. In a numbering-machine, a yoke, numbering-wheels carried by said yoke, a substantially flat pad pivoted to said yoke and having a swinging movement on its pivot and said pivot having no movement with respect to the yoke.

38. In a numbering-machine, a yoke carrying a series of numbering-wheels, and a pad-carrier pivoted to said yoke, and a substantially flat pad within said carrier, the axis of rotation of the pad-carrier having no movement independent of the yoke.

39. In a numbering-machine, a numbering-wheel having on its interior annular surface a series of notches and a deep recess, and also having alongside of said recess a smooth interior surface substantially flush with the interior annular surface of the wheel adapted to prevent the wheel from dropping out of alinement.

40. In a numbering-machine, a numbering-wheel having on its interior annular surface a series of notches and a deep recess, and also having means for engaging detents, said wheel also having alongside of said recess a smooth interior surface substantially flush with the annular surface of the wheel adapted to prevent the wheel from dropping out of its proper position or alinement.

41. In a numbering-machine, a series of numbering-wheels, a series of pawls and means coacting with said pawls to hold the same out of contact with said wheels and a controller separate from the pawls for periodically moving said means to release said pawls.

42. In a numbering-machine, a series of numbering-wheels, a pawl coacting with the interior of said wheels, and a controller and operative connections separate from and coacting with said pawl and permitting it to move periodically.

43. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, and automatic means periodically freeing said lever from said pawl.

44. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl to hold the same in one position and means for periodically moving the lever to release the pawl.

45. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, an automatic controller for periodically freeing said lever from said pawl and means independent of the controller for determining the position of said lever.

46. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, an automatic controller for periodically freeing said lever from said pawl, means independent of the controller for determining the position of said lever, and an indicator controlling said means.

47. In a numbering-machine, a series of numbering-wheels, a pawl, a device coacting with said pawl, a spindle coacting with said device having a bevel-gear thereon and an indicator having a bevel-gear meshing with the gear on the spindle whereby the position of said indicator controls the position of said pawl.

48. In a numbering-machine, a series of numbering-wheels, a pawl, an indicator and mechanism comprising a pair of bevel-gears between said indicator and said pawl for controlling the position of the latter.

49. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, an indicator, and mechanism between said indicator and said pawl for controlling the position of the latter, said mechanism comprising a pair of bevel-gears.

50. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, an indicator and intermediate mechanism for controlling the position of said lever, and an automatic controller periodically moving said lever.

51. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, a spindle controlling the position of said lever, an indicator for moving said spindle and an automatic controller periodically moving the lever to release it from said pawl.

52. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl and an automatic controller for periodically releasing said lever from said pawl, said controller having a step-by-step movement.

53. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, and an automatic controller for periodically releasing said lever from said pawl, said controller comprising a ratchet-wheel giving it a step-by-step movement.

54. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl and an automatic controller for periodically releasing said lever from said pawl, said controller having a member rotating against said lever and also comprising a ratchet-wheel for giving the same movement.

55. In a numbering-machine, a series of numbering-wheels, a pawl acting on the interior of said wheels, a rotary device for controlling said pawl, said device comprising a projection and a ratchet-wheel by which the same is rotated.

56. In a numbering-machine, a series of numbering-wheels, a pawl, a device as a lever coacting with said pawl, and a rotary controller having projections coacting with said lever for moving it away from the pawl, and a ratchet-wheel for rotating the controller.

57. In a numbering-machine, a series of numbering-wheels, a pawl, a device as a lever coacting with said pawl, and a rotary controller having projections coacting with said lever for moving it away from the pawl, and a ratchet-wheel for rotating the controller, said ratchet-wheel being given a step-by-step movement by the reciprocating movement of the wheels.

58. In a numbering-machine, a series of numbering-wheels, a pawl, a device as a lever coacting with said pawl, and a rotary controller having projections coacting with said lever for moving it away from the pawl, and a ratchet-wheel for rotating the controller, said ratchet-wheel being given a step-by-step movement by the reciprocating movement of the wheels, and having the number of its ratchet-teeth in multiples of the projections whereby a number of reciprocations move the numbering-wheels only once.

59. In a numbering-machine, a series of numbering-wheels, a pawl, a lever coacting with said pawl, and a spindle coacting with said lever, said spindle moving said lever to and from said pawl.

60. In a numbering-machine, a series of numbering-wheels, a pawl, a series of levers coacting with said pawl, and a spindle coacting with said levers moving the levers independently of each other.

61. In a numbering-machine, a series of numbering-wheels, a pawl, a series of levers coacting with said pawl, and a spindle coacting with said levers and moving the levers independently of each other, and an indicator controlling the position of said spindle.

62. In a numbering-machine, a series of numbering-wheels, a pawl acting on the interior surfaces of said wheels, a controller for said pawl comprising a member adapted to be rotated and a ratchet-wheel and connections for rotating the same.

63. In a numbering-machine, a series of numbering-wheels, a pawl, a series of levers coacting with said pawl, a spindle having a series of sides coacting with said levers, a dial having a series of indicating-points corresponding to said sides, and an indicator coacting with said dial and arranged to move said spindle.

64. In a numbering-machine, a series of numbering-wheels, a pawl, a series of levers coacting with said pawl, a spindle having a series of sides coacting with said levers, a dial having a series of indicating-points corresponding to said sides, an indicator coacting with said dial and arranged to move said spindle, and bevel-gearing between said indicator and said spindle.

65. In a numbering-machine, a main frame, a reciprocable yoke, a series of numbering-wheels carried thereby, means for rotating said wheels comprising a cam coacting with a part projecting from the main frame, said cam having a straight side also coacting with said projecting part of the main frame for insuring vertical movement at one part of the reciprocation.

66. In a numbering-machine, a main frame, a reciprocable yoke, a series of numbering-wheels carried thereby, means for rotating said wheels, comprising a cam coacting with a part projecting from the main frame, said cam having two straight edges also coacting with said projecting part whereby a vertical movement is insured to the wheels at the beginning and ending of the reciprocation.

67. In a numbering-machine, a yoke or wheel-frame, a series of numbering-wheels carried thereby, and mechanism coöperating with the numbering-wheels, said mechanism comprising detents, a pawl and lever, and the latter being located within said yoke.

68. In a numbering-machine, a yoke or wheel-frame, a series of numbering-wheels carried thereby, and mechanism coöperating with the numbering-wheels; said mechanism comprising detents, a pawl, a lever and a spindle for determining the position of said lever and pawl, said lever and spindle being located within said yoke.

69. In a numbering-machine, a yoke or wheel-frame, a series of numbering-wheels carried thereby, and mechanism coöperating with the numbering-wheels, said mechanism comprising detents, a pawl, a lever and a spindle for determining the position of said lever and pawl, said lever and said spindle being located within said yoke, and an indicator moving said spindle.

70. In a numbering-machine, a series of numbering-wheels, a barrel or support carrying said wheels, said wheels and said barrel being arranged to oscillate together, and a pawl coacting with said numbering-wheels and having no rotary movement but a slight oscillation on its own axis.

71. In a numbering-machine, a series of numbering-wheels, a barrel or support carrying said wheels, said wheels and said barrel being arranged to oscillate together, means for oscillating said barrel and said wheels so that the wheels move from an inking to a printing plane, and a pawl coacting with said numbering-wheels and having no rotary movement but a slight oscillation on its own axis.

72. In a numbering-machine, a series of numbering-wheels, a barrel or support carrying said wheels, said wheels and said barrel being arranged to oscillate together, a pawl coacting with said numbering-wheels and having no rotary movement but a slight oscillation on its own axis, and a periodically-moving controller coacting with said pawl.

73. In a numbering-machine, a series of wheels, a barrel or support carrying said wheels, said wheels and said barrel being arranged to oscillate together, and mechanism for oscillating all of said wheels from the inking-plane to the printing-plane, and means for holding the units-wheel and permitting the other wheels to move beyond the units-wheel on the backward oscillation.

74. In a numbering-machine, a series of wheels, means for oscillating said wheels from the inking-plane to the printing-plane, said means holding the units-wheel and permitting the other wheels to move beyond the units-wheel on the backward oscillation, and a controller coacting with the said means to make the same inactive.

75. In a numbering-machine, a series of numbering-wheels,

said wheels being arranged to oscillate, mechanism for oscillating said wheels from the inking-plane to the printing-plane, said mechanism holding the units-wheel and permitting the other wheels to move beyond the units-wheel on the backward oscillation, and means for controlling said mechanism and permitting the numbering-wheels to move together both on the backward and forward oscillations.

76. In a numbering-machine, a series of numbering-wheels, a barrel or support carrying said wheels, a pawl-bar, said wheels and said barrel being arranged to oscillate together and said pawl-bar having no rotary movement except a slight oscillation on its axis and means for holding said pawl-bar inactive.

77. In a numbering-machine, a series of numbering-wheels, means for oscillating said wheels from an inking-plane to a printing-plane and certain of said wheels from the printing-plane back to the inking-plane, and means for holding one of said wheels while the other wheels move beyond it on the backward oscillation.

78. In a numbering-machine, a series of numbering-wheels, means for oscillating said wheels from an inking-plane to a printing-plane and certain of said wheels backward from the printing-plane to the inking-plane, means for holding one of said wheels on the backward oscillation and permitting the other wheels to move beyond it, and means for making this holding means inactive.

79. In a numbering-machine, a series of numbering-wheels, means for oscillating said wheels from an inking-plane to a printing-plane and certain of said wheels backward from the printing-plane to the inking-plane, a pawl for holding one of said wheels on the backward oscillation and permitting the other wheels to move beyond it.

80. In a numbering-machine, a series of numbering-wheels, means for oscillating said wheels from an inking-plane to a printing-plane and certain of said wheels backward from the printing-plane to the inking-plane, a pawl for holding one of said wheels on the backward oscillation and permitting the other wheels to move beyond it, and means for holding said pawl inactive.

81. In a numbering-machine, a series of numbering-wheels, means for oscillating said wheels from an inking-plane to a printing-plane and certain of said wheels backward from the printing-plane to the inking-plane, a pawl holding one of said wheels on the backward oscillation and permitting the other wheels to move beyond it, and periodically-operated mechanism for controlling the position of said pawl.

815,125. BELT-HOLDER. GEORGE J. SHAW and LOUIS LONG, Buchanan, N. Y. Filed Sept. 6, 1905. Serial No. 277,945.



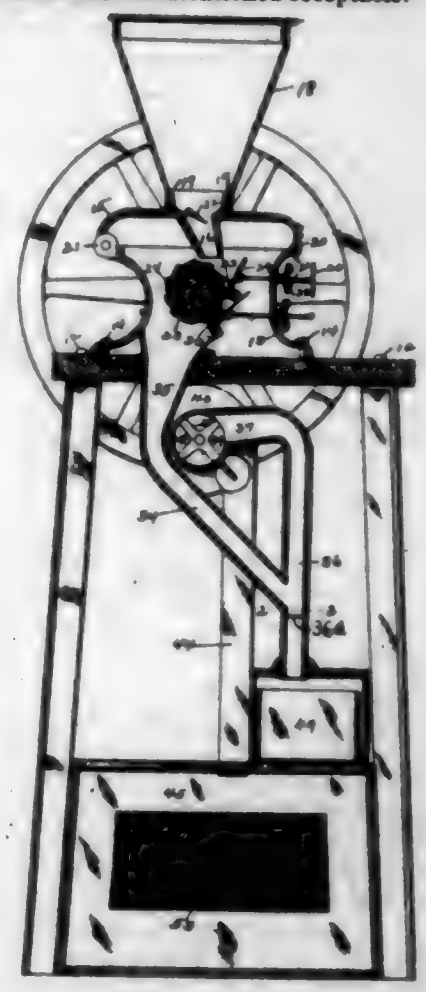
Claim.—1. A belt-holder of the class described, comprising a U-shaped member and a U-shaped clamp, one arm of which is shorter than the other, the shorter arm of the clamp being pivoted to one end of one side of the U-shaped member, and the longer arm of said clamp being adapted to fold over the opposite side of the U-shaped member, that side of the U-shaped member to which the clamp is pivoted being also provided with a jaw which ranges transversely of the open end of the U-shaped member, substantially as shown and described.

2. A belt-holder of the class described, comprising a U-shaped member, one side of which is provided at its upper end with a jaw which extends transversely of said member and is provided with serrations or teeth, and a U-shaped clamp-arm one side of which is shorter than the other, the shorter side being pivoted at the base of said jaw, and the longer side of which is adapted to fold over the free end of said jaw, substantially as shown and described.

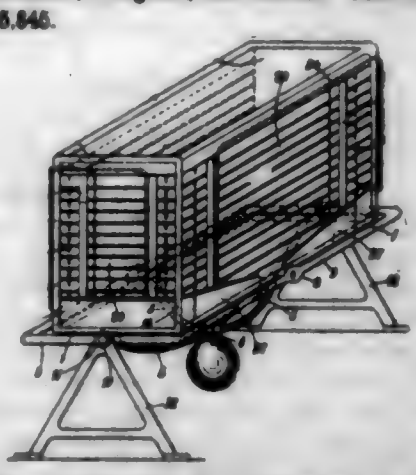
815,126. COFFEE-CUTTING MILL. ELVAR C. SMITH, Newton, Iowa. Filed Aug. 28, 1903. Serial No. 171,900.

Claim.—1. In a coffee-cutting mill, the combination of a closed receptacle for receiving cut coffee, said receptacle formed with an opening, a slide for covering the opening, a fan-casing, a tube communicating with the top of the receptacle for cut coffee extended upwardly and into the fan-casing, a tube communicating with the fan-casing and extending downwardly therefrom to a point of discharge, a fan for creating a current of air upwardly from the coffee-receptacle and downwardly to the point of discharge, coffee-cutting mechanism, a tube extending from the coffee-cutting mechanism downwardly and laterally and discharging into the tube which communicates with the coffee-receptacle and a number of cross-rods in the tube communicating with the coffee-receptacle directly below the point where the tube from the coffee-cutting devices enters it.

2. In a coffee-mill, the combination of a receptacle for receiving cut coffee, said receptacle formed with an opening, a slide for controlling said opening, a fan-casing, a tube communicating with the top of the receptacle for cut coffee, extended upwardly and into the fan-casing, a tube communicating with the fan-casing and extending downwardly therefrom to a point of discharge, a fan for creating a current of air upwardly from the coffee-receptacle and downwardly to the point of discharge, a coffee-cutting mechanism, means for operating the coffee-cutting mechanism and the fan simultaneously, a tube extending from the coffee-cutting mechanism and discharging into the tube which communicates with the coffee-receptacle, a number of cross-rods in the tube communicating with the coffee-receptacle directly below the point where the tube from the coffee-cutting mechanism enters a receptacle to receive the refuse from the coffee, and a screen side in the last-mentioned receptacle.



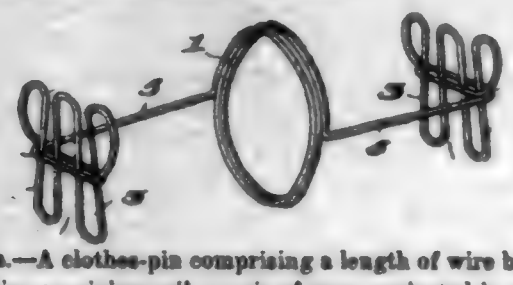
815,127. SWING-BED FOR USE ON BOARD SHIP. CHRISTOPHER SOULAS, Jerusalem, Wanganui, New Zealand. Filed Feb. 20, 1904. Serial No. 196,846.



Claim.—The combination in a swing-bed, of an inner frame, means for supporting a mattress thereon, and trunnions upon the sides of the frame, with an outer frame, bearings in the outer frame to receive the trunnions of the inner frame, friction-springs upon the trunnions, wing-nuts upon threaded extremities of the trunnions for compressing the friction-springs, trunnions upon the ends of the outer frame, fixed standards with bearings for receiving the said trunnions, friction-springs upon the said trunnions, wing-nuts upon threaded extremities of the trunnions for compressing the friction-springs, stay-tubes connected to the inner frame and converging to the center thereof, a balance-weight depending from the stay-tubes, pillars extending vertically from the inner frame, a rectangular frame carried thereby, screens composed of slats supported by said rectan-

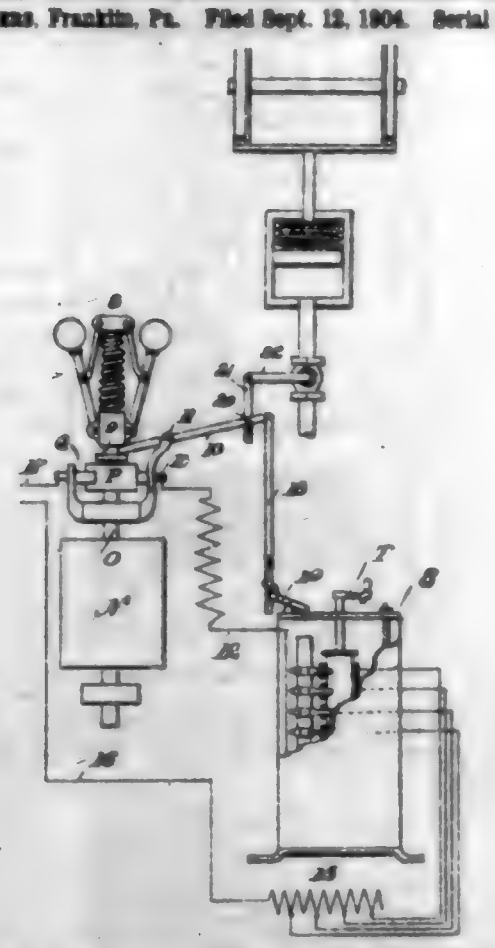
gular frame and means for raising and lowering said screens, as set forth.

815,128. CLOTHES-PIN. JAMES W. STEWART, Franklin, Tex. Filed Aug. 16, 1905. Serial No. 274,427.



Claim.—A clothes-pin comprising a length of wire bent to form a central line-receiving coil, a pair of arms projected in opposite directions from the coil and line-engaging clamps formed at the outer ends of the arms, said clamps each comprising a pair of coöperating side portions or loops disposed in a common plane on a line extending transversely of the arm and formed by folding the wire back and forth upon itself, and reinforcing-loops extending wholly around the clamps to embrace the pairs of jaws adjacent their centers, the loops being formed as an integral part of and by suitably bending the wire at the outer terminals of the arms.

815,129. DEVICE FOR CONTROLLING GENERATORS. JOSHUA STRUTHERS, Franklin, Pa. Filed Sept. 12, 1904. Serial No. 224,145.



Claim.—1. In apparatus of the character described, the combination of an electric motor, a governor operatively connected to the shaft of said motor, a controller, a rotary shaft mounted in said controller, handle mounted on said shaft, a stop mounted on said controller and adapted to engage said handle, electrical connections between said motor and said controller, and mechanism connecting said governor and said stop whereby the movement of the governor will operate said stop to limit the movement of the controller.

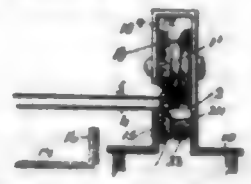
2. In apparatus of the character described the combination of an electric motor, a governor operatively connected to the shaft of said motor a controller, a rotary shaft mounted in said controller, a handle mounted on said shaft, a stop mounted on said controller and adapted to engage said handle, electrical connections between said motor and said controller, and mechanism connecting said governor and said stop whereby the movement of the governor will operate said stop to limit the movement of the controller-shaft, an air-brake valve, connections between said air-brake valve and said governor whereby the movement of the governor will operate said air-brake valve.

3. In an apparatus of the character described, the combination with a car and an electric motor mounted on the car, of a governor mounted on the car and receiving motion from said motor, a controller mounted on the car and in circuit with said motor, means connected with said governor for stopping the shaft of the controller against movement in one direction when the motor has reached a predetermined speed, braking mechanism mounted on the car and means operated by said governor for operating said braking mechanism after the movement of the controller-shaft has been stopped.

4. In apparatus of the character described, the combination with an electric motor, a governor operated by said motor, a controller, a rotary shaft by means of which the controller is operated to increase or diminish the current passing through said motor, of means connected to and operated by the said governor for mechanically interrupting the movement of said shaft and thereby preventing an increase of the current supplied to the armature when the speed of the same has reached a predetermined limit.

5. In an apparatus of the character described, the combination with a car, an electric motor mounted on the car, a governor mounted on the car and operatively connected to the armature-shaft of said motor, a controller mounted on the car, means whereby when the armature has reached a predetermined speed the shaft of the controller will be stopped against further movement in a direction tending to increase the input of current to the motor.

815,130. CASH-CARRIER. CLARK L. SWEENY, West Haven, Conn. Filed Nov. 20, 1905. Serial No. 288,211.



Claim.—1. The combination with a carrier-track, of coils of wire mounted thereon at a point where a bend or support is to be made, the ends of said coils connected with a fixed point, substantially as described.

2. The combination with a carrier-track, of a series of coils of wire arranged thereon, the ends of said coils extending to a fixed point whereby the track is supported, said coils separated from each other, and intermediate coils located between the coils first mentioned, whereby a track of uniform diameter is produced at the point of support, substantially as described.

3. The combination with a carrier-track having coils of wire arranged thereon, the ends of said coils extending to a fixed point whereby the track may be supported, and a carrier having a wheel arranged to ride on said track, the flange of said wheel having notches permitting the wheel to pass said end wires, substantially as described.

4. The combination with a carrier-track having coils of wire arranged thereon, the ends of said coils extending to a fixed point whereby the track may be supported, a carrier having a wheel arranged to ride on said track, the flange of said wheel having notches permitting it to pass said end wires, and guide-rollers arranged below said wheel and having notches to receive said end wires, substantially as described.

5. The combination with a carrier-track, supports connected therewith and extending to one side thereof, whereby the track is held in a curved line, a car having a notched wheel adapted to ride on said track-wire, and a guard arranged substantially parallel with the curved portion of the track-wire in a plane below the same, substantially as described.

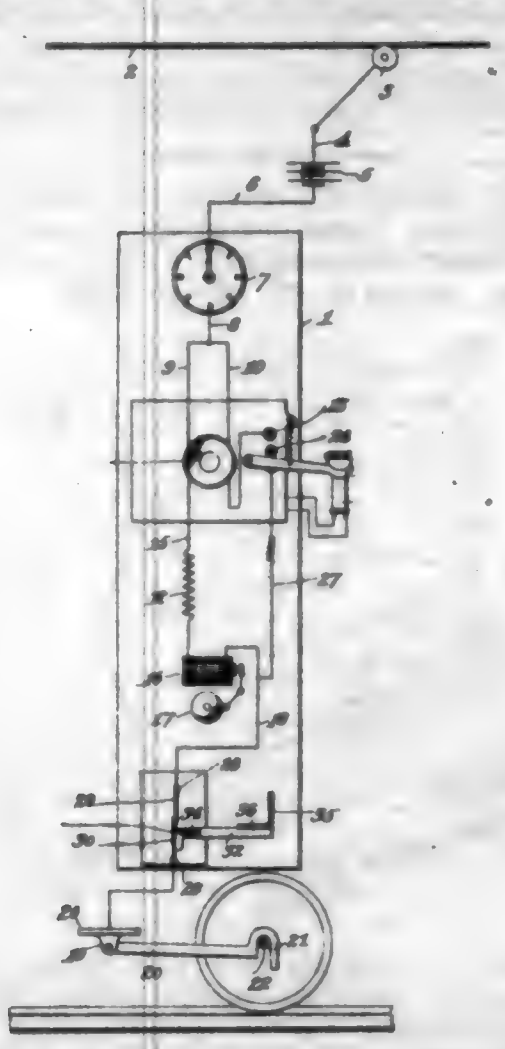
6. The combination with a carrier-track, supports connected therewith and extending transversely therefrom, a car adapted to ride on said track and having a notched wheel whereby the wheel may pass the transverse supports, substantially as described.

815,131. ELECTRIC RAILWAY SIGNALING APPARATUS. JAMES W. TATUM, Durham, N. C., assignor of one-sixth to B. N. Duke and one-sixth to W. W. Fuller, New York, N. Y., and one-sixth to B. J. Parrish, one-sixth to John W. Smith, and one-sixth to Robert B. Boone, Durham, N. C. Filed June 2, 1905. Serial No. 263,434.

Claim.—1. In an electric railway signaling system, the combination with suitable circuits, of a signaling apparatus carried by a vehicle and consisting of a line including a distance-indicating instrument, a telephone and an alarm, and a second line including all of said instruments with the exception of the alarm, and means rendered effective by the operation of the telephone to cause the current to flow through said second line whereby all of the instruments are operative but the alarm.

2. In an electric railway signaling system, the combination

with suitable circuits, of signaling apparatus carried by a vehicle and consisting of a line of high resistance including a plurality of instruments, one of which is an audible alarm, and a line of low resistance including all of the instruments with the exception of said alarm, and means rendered effective by the operation of one or more of said instruments for closing the line of low resistance whereby the current will be caused to flow thereby and be diverted from the line of high resistance.



3. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by a vehicle, and consisting of a line of high resistance, including a distance-indicating instrument, a telephone and an alarm, and a line of low resistance including all of said instruments with the exception of the alarm, and means for opening and closing said line of low resistance.

4. In an electric railway signaling system, the combination with suitable circuits, of a line of high resistance, including a distance-indicating instrument, a telephone and an alarm arranged in series, and a shunt-line of low resistance connected at one end to said first-named line at a point between the indicating instrument and the telephone, and at the other end at a point beyond said alarm, said shunt-line including the telephone, and means for opening and closing the shunt-line.

5. In an electric railway signaling system, the combination with suitable circuits, of a line of high resistance, including a distance-indicating instrument, a telephone and an alarm arranged in series, and a shunt-line of low resistance connected at one end to said first-named line at a point between the indicating instrument and the telephone, and at the other end at a point beyond said alarm, said shunt-line including the telephone, means for opening and closing the shunt-line, and a key instrument located in the line of higher resistance at a point beyond the shunt.

6. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by the vehicle and consisting of a line of high resistance, including a distance-indicating instrument, a telephone and an alarm arranged in series, a line of lower resistance including all of said instruments with the exception of the alarm, a switch located in said line of lower resistance, a pivoted hook for the telephone-receiver, and means whereby the removal of the receiver from the hook permits the operation of the hook to close said switch.

7. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by a vehicle and consisting of a line of high resistance, including a distance-indicating instrument, a telephone and an alarm arranged in series, a line of lower resistance including the indicating instrument, and the telephone, and constituting a shunt to the line of high resistance, a movable hook for the telephone-receiver, a contact member associated therewith, a second contact member in said low-resistance-line circuit, and means whereby the removal of the receiver from the hook causes the engagement of said contacts to close the line of low resistance.

8. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by the vehicle, and consisting of a line of high resistance including a plurality of instruments, one of which is an audible alarm, a line of lower resistance including all of the instruments with the exception of said alarm and constituting a shunt to the first-named line, and a combined switch and key signaling instrument located in the line of higher resistance beyond the shunt, and comprising normally closed contacts, and a lever arranged adjacent said contacts and constructed to swing on its fulcrum to separate the contacts, and also having a reciprocating movement, whereby the contacts may be intermittently separated.

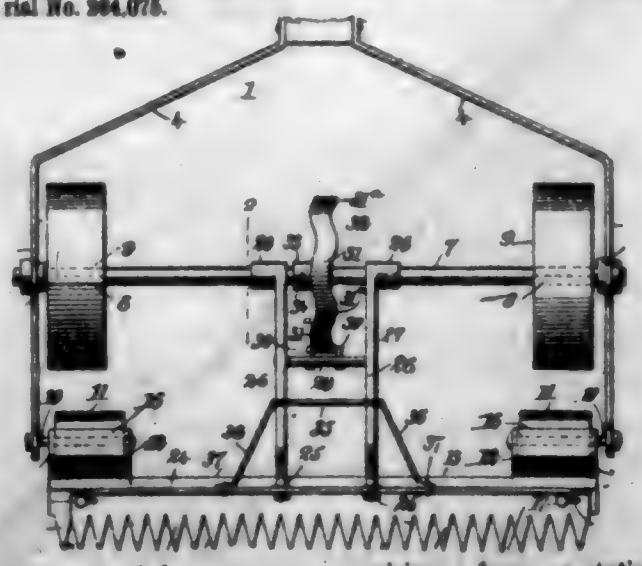
9. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by the vehicle and consisting of a line of high resistance, including a plurality of instruments, one of which is an audible alarm, a line of lower resistance including all of the instruments with the exception of said alarm and constituting a shunt to the first-named line, a combined switch and key signaling instrument located in the line of higher resistance beyond the shunt, and comprising normally engaged contacts, and a vertically-swinging lever fulcrumed adjacent said contacts and provided with a cam which operates to separate said contacts by the swinging movement of the lever.

10. In an electric railway signaling system, the combination with suitable circuits, of signaling apparatus carried by the vehicle and consisting of a line of high resistance, including a plurality of instruments, one of which is an audible alarm, a line of lower resistance including all of the instruments with the exception of said alarm and constituting a shunt to the first-named line, a combined switch and key signaling instrument located in the line of higher resistance beyond the shunt and comprising normally engaged contacts, a vertically-swinging lever fulcrumed adjacent said contacts and provided with a cam which operates to separate said contacts by the swinging movement of the lever, and indicating devices carried by said lever to indicate the position of the contacts.

11. In an electric signaling apparatus, the combination with suitable circuits including the track-rails, of signaling apparatus carried by a vehicle, and means for placing said apparatus in circuit with the rails consisting of an arm pivoted to the vehicle-body, and having said apparatus in circuit therewith, the free end of the arm being adapted to engage the axle of the vehicle.

12. In an electric signaling apparatus, the combination with suitable circuits including the track-rails, of signaling apparatus carried by a vehicle, and means for placing said apparatus in circuit with the rails consisting of an arm pivoted to the bottom of the vehicle-body to swing in a vertical plane, and having said apparatus in circuit therewith, the free end of the arm being provided with a hook adapted to engage over the axle of the vehicle.

815,182. LAWN-MOWER. HOWELL P. TERRY, Elizabeth, N. J., assignor to George F. Cornwell, Brooklyn, N. Y. Filed June 7, 1905. Serial No. 264,075.



Claim.—1. A lawn-mower, comprising a frame, a stationary cutter rigid therewith, a movable cutter coöperating with said stationary cutter, main propelling-wheels, a shaft connecting the same, means movable on said shaft, having rigid connection with the mov-

able cutter, and means carried by the shaft for imparting reciprocating motion to said first-named means.

3. A lawn-mower, comprising a frame, a stationary cutter rigid therewith, a movable cutter coöperating with said stationary cutter, main propelling-wheels, a shaft connecting the same, means movable on said shaft, having rigid connection with the movable cutter, and means carried by the shaft for imparting reciprocating motion to said first-named means, said second-named means embodying a cam having alternating projections on its opposite sides.

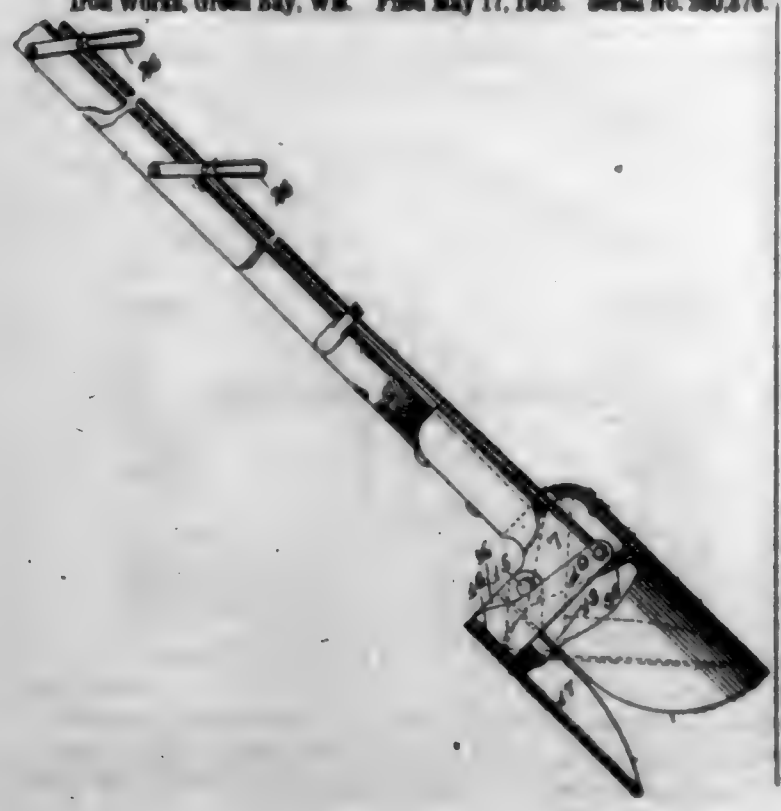
3. A lawn-mower, comprising a frame having forwardly-extending parallel members, a shaft mounted to turn in said members and provided with propelling-wheels, forwardly-disposed smaller propelling-wheels, the bearings for which are rigid with the ends of said parallel members, hoods for the smaller wheels having side members rigid with the bearings thereof, a stationary cutter rigid with the hoods and connecting the same, a movable cutter coöperating with said stationary cutter, and means from the shaft for imparting a reciprocatory motion to said movable cutter.

4. A lawn-mower, comprising a frame having forwardly-extending parallel members, a shaft mounted to turn in said members and provided with propelling-wheels, forwardly-disposed smaller propelling-wheels, the bearings for which are rigid with the ends of said parallel members, hoods for the smaller rollers having side members rigid with the bearings therefor, a stationary cutter rigid with the hoods and connecting the same, a movable cutter coöperating with said stationary cutter, and means from the shaft for imparting a reciprocatory motion to said movable cutter, embodying a yoke having parallel members rigid with the movable knife and provided with sleeves mounted on and movable lengthwise of the shaft.

5. A lawn-mower, comprising a supporting-frame and sets of propelling-wheels mounted therein, a rotatable shaft connecting the wheels of one set, a stationary cutter, a movable cutter coöperating therewith, a movable yoke having rigid connection with the movable cutter and provided with sleeves having longitudinal movement on the shaft, and a cam rigid with the shaft and having a rim provided with alternating laterally-disposed projections on its opposite sides and engaging with parts of the yoke to reciprocate both the latter and the said movable cutter.

6. A lawn-mower, comprising a supporting-frame and sets of propelling-wheels mounted therein, a rotatable shaft connecting the wheels of one set, a stationary cutter, a movable cutter coöperating therewith, a movable yoke having rigid connection with the movable cutter and provided with sleeves having longitudinal movement on the shaft, and a cam rigid with the shaft and having a rim provided with alternating laterally-disposed projections on its opposite sides and engaging with parts of the yoke which reciprocate both the latter and the said movable cutter, said yoke being constructed of curved parallel members and a connecting-brace therebetween having members also secured to the movable knife.

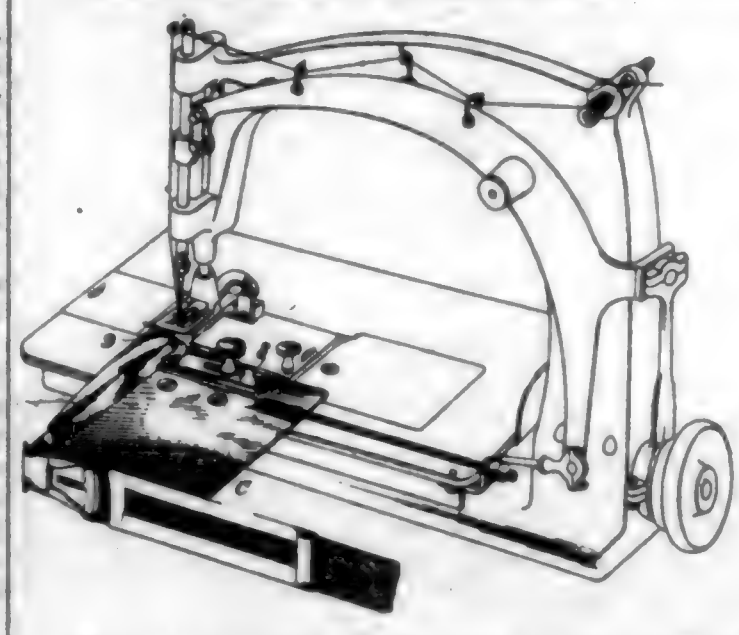
815,133. POST-HOLE DIGGER. CHARLES W. VAN DE WALKER and ROBERT T. JEFFERY, Two Rivers, Wis., assignors to Western Steel & Iron Works, Green Bay, Wis. Filed May 17, 1905. Serial No. 260,876.



Claim.—1. In a device of the class described, in combination, a bracket having an offset shoulder with an opening therethrough, a fluke rigidly carried by said bracket, a movable fluke having a rigid arm projecting toward said bracket, a link passing through said opening and attached to said arm, and hand-levers attached to said handle and making a jointed connection with said link.

2. In a device of the class described, in combination, a handle, a fixed fluke carried thereby, a movable fluke carried by said handle, said movable fluke having an arm, a lug on the inner side of said fixed fluke and constituting a stop for said arm, hand-levers carried by said handle, and a link connecting the said hand-levers and said arm.

815,134. FOLDING AND GUIDING ATTACHMENT FOR SEWING-MACHINES. RUSSEL G. WOODWARD, Waukegan, Ill., assignor to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed July 31, 1902. Serial No. 117,840.



Claim.—1. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics thereto, means for folding and guiding a binding-strip around the edges of the fabrics, and a divider independent of the folding means for separating the edges of the superposed pieces of fabric; substantially as described.

2. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabric, and means for deflecting the central body portion of the binding-strip inwardly between the edges of the fabric; substantially as described.

3. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a guide for deflecting the central body portion of the binding-strip inwardly between the edges of the fabrics and for separating said edges; substantially as described.

4. In combination with a sewing-machine having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a yielding divider independent of the folding means; substantially as described.

5. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and a swinging divider; substantially as described.

6. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and an adjustable divider; substantially as described.

7. In combination with a sewing-machine, having suitable stitch-forming mechanism, means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, means for folding and guiding a binding-strip around the edges of the fabrics, and an adjustable yielding divider; substantially as described.

8. In combination with a sewing-machine, a folding-guide com-

prising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism, and having also means for folding the edges of a binding-strip around the edges of the superposed fabrics, and means independent of the folding means for deflecting outwardly the edges of the fabric; substantially as described.

9. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabric, said means including a device for forming a crease in the binding-strip between the two edges of the fabric; substantially as described.

10. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabrics, and means for forming a crease in the binding-strip; substantially as described.

11. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabric, and a divider to deflect a portion of the binding-strip between the edges of the fabric; substantially as described.

12. In combination with a sewing-machine, a folding-guide comprising means for guiding a plurality of superposed fabrics to the stitch-forming mechanism thereof, and having also means for folding the edges of a binding-strip around the edges of the superposed fabric, and a suitable wall for the guide, having a movable member to deflect a portion of the binding-strip between the edges of the fabric; substantially as described.

13. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and a deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

14. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, means for separating the fabrics, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabric, and a deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

15. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and a swinging deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

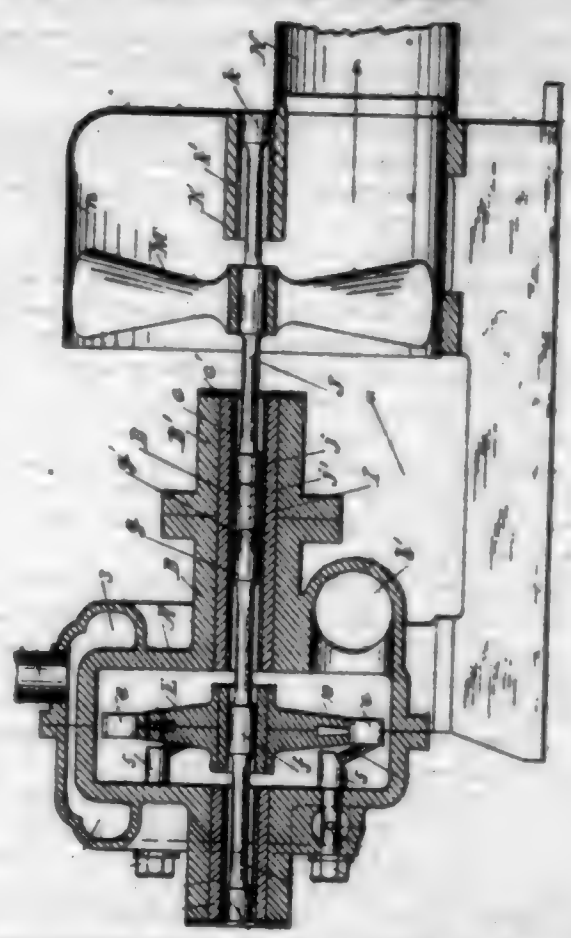
16. The herein-described guiding and folding attachment for sewing-machines, comprising means for guiding the edges of a plurality of pieces of fabric, a folding and guiding recess for a binding-strip formed to embrace the edges of the fabrics, and an adjustable swinging deflecting-divider, forming a portion of the wall of the folding and guiding recess for the binding-strip to form a crease in the binding-strip; substantially as described.

815,135. ROTARY ENGINE. WILLIAM WYARD, Collingswood, N. J. Filed July 27, 1905. Serial No. 271,535.

Claim.—1. The combination, with a cylinder provided with a long bearing on one side, of a tube journaled in the said bearing and provided with a double clutch member at its middle part, a driving-shaft member having an enlargement and a clutch member at one end which is slidably connected with the said tube and one end of its double clutch member, a motor-wheel secured on the said shaft inside the said cylinder, and a second driving-shaft member provided with an enlargement and a clutch member which is slidably connected with the said tube and the other end of the said double clutch member.

2. The combination, with a cylinder provided with bearings, of tubes journaled in the said bearings, a clutch member secured in one of the said tubes, a driving-shaft provided with an enlargement at one end which is connected with one of the said tubes and which has an enlargement and a clutch member at its other end which engages slidably with the other said tube and clutch member, and a motor-wheel mounted on the middle portion of the said shaft inside the cylinder.

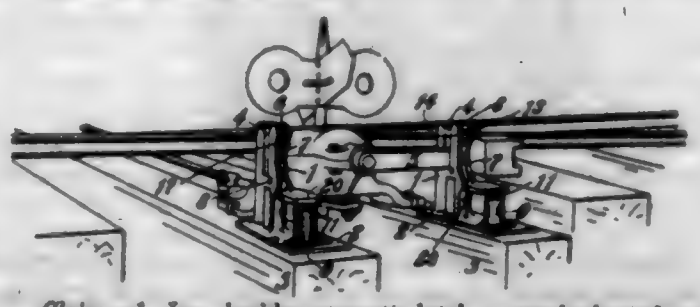
3. The combination, with a cylinder provided with bearings, of a tube journaled in one of the said bearings, a clutch member secured in the said tube, a driving-shaft supported by the said bearings and provided with an enlargement at one end which engages slidably with the said tube and clutch member, and a motor-wheel mounted on the middle part of the said shaft inside the cylinder.



4. The combination, with three stationary bearings, of tubes journaled in the end bearings, a tube journaled in the middle bearing and provided with a double clutch member at its middle part, shaft-sections having enlargements at their outer ends which are connected with the said tubes in the end bearings and having also enlargements and clutch members at their adjacent ends which engage slidably with the said tube and its double clutch member, a motor or driving-wheel on the middle part of one shaft-section, and a power-transmitting wheel or device on the middle part of the other said shaft-section.

5. The combination, with a cylinder having a steam-chamber at its side, of a steam-tube projecting through the said chamber and having a hollow head inside the said cylinder, a cap closing the projecting outer end of the said tube, a steam-jet nozzle carried by the said head, and a steam-wheel journaled inside the said cylinder.

815,136. DOUBLE AUTOMATIC LATCH. FRANK C. ANDERSON, Cincinnati, Ohio, assignor of one-half to The American Valve & Meter Company, Cincinnati, Ohio, a Corporation of West Virginia. Filed May 24, 1905. Serial No. 261,974.



Claim.—1. In a double automatic latch, a stand adapted to engage a throwing-lever, and means for automatically receiving and releasing said lever.

2. In a double automatic latch, a stand having a yoke adapted to engage a throwing-lever, and a latch adapted to automatically receive and release said lever.

3. In a double automatic latch, a stand having a yoke adapted to engage a throwing-lever, a latch pivoted to said stand, and a spring adapted to normally hold said latch in the path of said lever to secure the lever in said yoke and allow it to be forced out of the path of said lever moving in either direction.

4. In a double automatic latch, a stand adapted to engage a le-

ver, a latch for automatically receiving and releasing said lever and a stop on said latch adapted to engage said stand to limit the inward throw of the latch.

5. In a double automatic latch, a stand adapted to engage a lever, a latch for automatically receiving and releasing said lever and a stop on said latch adapted to engage said stand to limit the outward throw of the latch.

6. In a double automatic latch, a stand adapted to engage a lever, a spring-actuated latch, and means to limit the movement of the spring.

7. In a double automatic latch, a stand adapted to engage a lever and a latch pivoted thereto having a double-beveled edge, and means for normally holding said latch in the path of the throwing-lever.

8. In a double automatic latch, a stand having a yoke provided with a hole therein, a latch secured to the stand and having a hole adapted to register with the hole in the yoke to form means whereby said latch may be locked in closed position, and means for normally holding said latch in closed position independently of a lock.

9. In a double automatic latch, a stand having a yoke provided with a hole in one wall thereof, a latch having a hole with the adjacent wall thereof cut away and adapted to register with the hole in the stand to form means whereby said latch may be locked in closed position, and means for normally holding said latch in closed position independently of a lock.

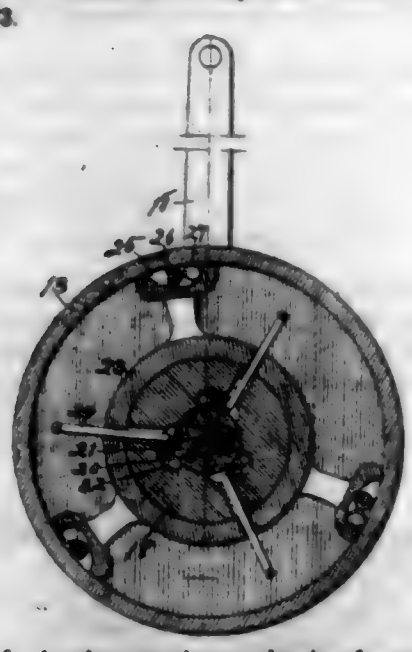
10. In a double automatic latch, a stand having a yoke adapted to engage a lever, a latch secured to said stand, a housing secured to said stand, a spring in said housing, a plunger adapted to engage the said spring, and said latch.

11. In a double automatic latch, a stand having a yoke adapted to engage a lever, a latch secured to said stand and provided with an extension to open the latch by foot-pressure.

12. In a double automatic latch, a stand having a yoke adapted to engage a lever, a latch secured to said stand and provided with an extension to open the latch by foot-pressure, and means adapted to engage said extension to return the latch to its normal position in the path of the throwing-lever.

13. In a double automatic latch, a stand having a yoke adapted to engage a lever, a latch pivoted to said stand, a housing secured to said stand, a spring within said housing, a stud within said housing to hold the spring in position, and a plunger adapted to engage said spring and latch.

815,137. SAFETY STARTING MECHANISM FOR MOTORS. ADOLPHUS H. BEECHER, Mason City, Iowa. Filed Oct. 24, 1904. Serial No. 229,573.

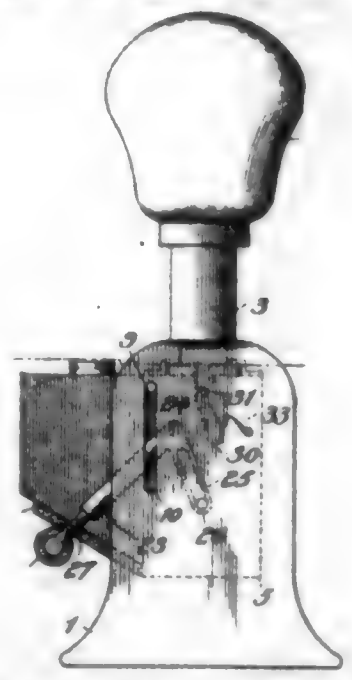


Claim.—1. A safety starting mechanism for motors, comprising a casing loosely mounted on a shaft and spring-held against rotation, a crank loosely mounted on said shaft, engaging devices between said crank and shaft and releasing devices connected with said casing and adapted to release said engaging devices.

2. A safety starting mechanism for motors, comprising a shaft, a casing mounted on said shaft loosely, means for limiting rotation of said casing, a crank loosely mounted on said shaft, friction devices interposed between said crank and shaft, a release-plate, friction devices interposed between said release-plate and the casing and release devices on said release-plate and adapted to engage and release the friction devices between the crank and shaft.

3. A safety starting mechanism for motors, comprising a shaft, a casing on said shaft, a rim on said casing, means for limiting movement of said casing on said shaft, a crank loosely mounted on said shaft, spring-pressed friction-rollers between and adapted to connect said crank and shaft, a release-plate loosely mounted on said crank, spring-pressed friction-rollers between and adapted to connect said release-plate and the rim of the casing, and arms on said release-plate adapted to engage and release the friction-rollers between the crank and shaft.

815,138. STAMP-AFFIXING MACHINE. WILLIAM P. BERRENBERG, Wheeling, W. Va. Filed May 20, 1905. Serial No. 261,322.



Claim.—1. A stamp-affixing machine consisting of a suitable support having a reciprocating portion located therein, a means for reciprocating said portion, a water-tank carried by said portion and having its bottom closed by porous material, a stamp-retainer located adjacent said water-tank and adapted to hold the stamps and a roller so mounted as to pass over the porous material against the exposed side of the bottom stamp in the stamp-retainer as the said reciprocating portion is caused to descend.

2. A stamp-affixing machine consisting of a frame, a reciprocating portion located in said frame, a means for reciprocating said portion, a water-tank carried by said reciprocating portion and having its bottom portion closed by a porous material, a stamp-holder also carried by said reciprocating portion, a roller having a porous surface adapted to pass over the porous material closing the lower end of the tank and against the exposed side of the bottom stamp retained within the stamp-holder.

3. A stamp-affixing machine consisting of a frame, a reciprocating portion located within the frame, a means for reciprocating said portion, a tank carried by said reciprocating portion, a stamp-retainer adapted to be attached to the said reciprocating portion and to hold the stamps, a follower located within said stamp-retainer and a roller adapted to pass from the tank under the said stamp-retainer.

4. A stamp-affixing machine consisting of a frame, a reciprocating portion located within said frame and a means for reciprocating said portion, a tank carried by said reciprocating portion, a stamp-retainer adapted to be attached to said reciprocating portion, springs located in the sides of said stamp-retainer and adapted to hold the stamps therein, and a roller adapted to pass under the tank and the said stamp-retainer.

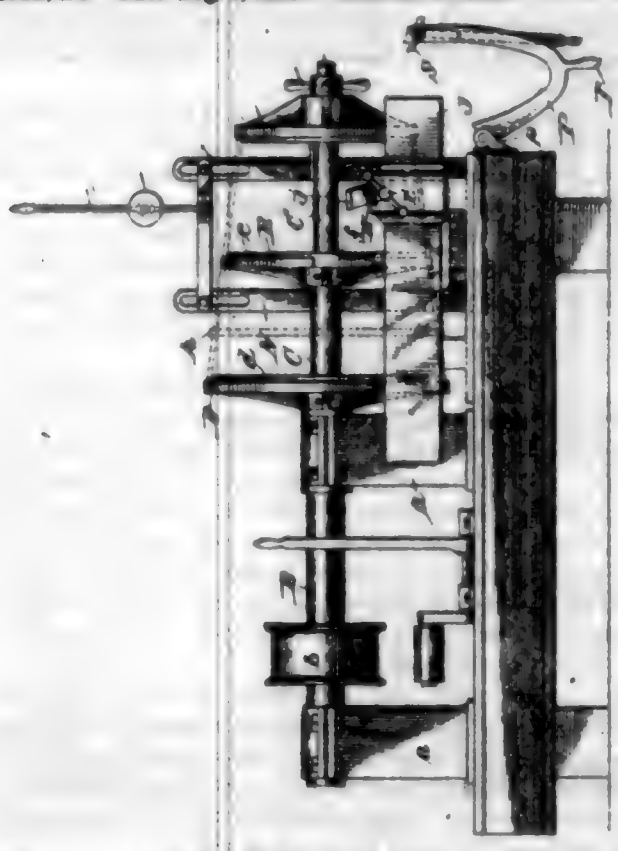
5. A stamp-affixing machine consisting of a frame, a reciprocating portion located within said frame and a means for reciprocating said portion, a tank carried by said portion, a stamp-retainer adapted to be attached to said reciprocating portion and to hold the stamps, springs located in the sides of said stamp-retainer and adapted to bear against the edges of the stamps and a follower located in the upper portion of the stamp-retainer.

6. A stamp-affixing machine consisting of a frame, a reciprocating portion located in said frame and a means for reciprocating said portion, a tank carried by said reciprocating portion, a stamp-retainer adapted to be attached to said reciprocating portion and to hold the stamps, a follower located in said stamp-retainer and a means for moving said follower vertically when the reciprocating portion is depressed.

7. A stamp-affixing machine consisting of a frame, a reciprocating portion located in said frame and a means for reciprocating said

portion, a tank carried by said portion, a stamp-retainer adapted to be attached to said portion and to hold the stamps, a roller mounted between pivoted arms and adapted to pass under the tank and the stamp-retainer, a follower located in said stamp-retainer and a means for moving said follower which is operated by the downward movement of the reciprocating portion to cause said follower to move within the stamp-retainer.

815,139. **MACHINE FOR MAKING TUBS.** HENRY BRAMER, St. Louis, Mo. Filed Aug. 1, 1903. Serial No. 167,871.



Claim.—1. A machine for the manufacture of tubs, comprising a mandrel; two chucks, the opposing faces of which are constructed to clamp staves endwise between them, and the chuck farthest from the unsupported end of said mandrel having a series of recesses in its periphery for the passage therethrough of elongated staves; and a removable clamping-ring.

2. A machine for the manufacture of tubs, comprising a mandrel; several independently-movable chucks mounted thereon, the chucks nearest the unsupported extremity of the mandrel having in its side farthest from said extremity a circular concentric groove, the other chucks having in their side facing said end chuck concentric grooves and the intermediate chuck having a series of transverse recesses in its periphery; and a removable clamping-ring.

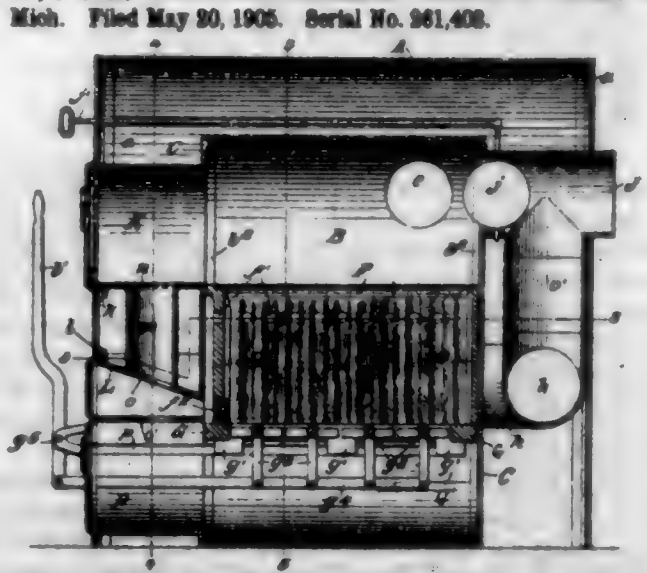
3. In a machine for the manufacture of tubs, a mandrel; several chucks mounted and independently movable thereon; means for removably retaining the chuck nearest the unsupported end of the mandrel in proper relative position; and a removable clamping-ring; in combination with a U-shaped frame pivoted at the extremity of one of its branches, and adapted to have its other branch enter longitudinally within the circumference of the work held by the chucks; and a suitable cutting device carried by said last-mentioned branch and adapted to cut a circumferential groove in the inner walls of the bottom of said work; a swinging arm mounted on a bracket near the end of the machine; a planing device carried thereby; a lever adjustable vertically on the bracket supporting said swinging arm and capable of movement in planes at right angles to each other; and a revolving disk mounted on said lever adapted to engage the circumference of the work held by said chucks.

4. In a machine for the manufacture of tubs, a mandrel; several chucks mounted and independently movable on said mandrel; means for removably retaining the chuck nearest the unsupported end of the mandrel in proper relative position; and a removable clamping-ring; in combination with a laterally-adjustable planing device; a carrier movable in a longitudinal direction upon which said planing device is mounted; a longitudinally-adjustable frame adapted to enter within the inner circumference of the work held by the chucks; and a cutting device adapted to cut a circumferential groove in the inner walls of the bottom of said work; a swinging arm mounted on a bracket near the end of the machine; a planing device carried thereby; a lever adjustable vertically on the bracket supporting said swinging arm and capable of movement in planes at right angles to each other; and a revolving disk mounted on said lever adapted to engage the circumference of the work held by said chucks.

5. In a machine for the manufacture of tubs, a mandrel; several independently-movable chucks mounted on said mandrel; means for removably retaining the chuck nearest the unsupported end of the mandrel in proper relative position; and a removable clamping-ring; in combination with a lever adjustable vertically in its standards and capable of movement in planes at right angles to each other; a revoluble disk journaled therein and adapted to be moved by said lever transversely against and longitudinally upon the circumference of the work held by the chucks; a longitudinally-movable frame adapted to enter within the inner circumference of said work; and a cutting device carried by said frame and adapted to cut a circumferential groove in the inner walls of the bottom of the work: a swinging arm pivoted to a suitable bracket mounted on the standard carrying said lever, and a planing device carried by said arm adapted to cut away the upper portion or top of the tub.

6. In a machine for the manufacture of tubs, a mandrel; several independently-movable chucks mounted on said mandrel; means for removably retaining the chuck nearest the unsupported end of the mandrel in proper relative position; and a removable clamping-ring; in combination with a transversely-adjustable planing device; a carrier movable in a longitudinal direction upon which said planing device is mounted; a lever adjustable vertically in its standards and capable of movement in planes at right angles to each other; a revoluble disk journaled therein and adapted to be moved by said lever transversely against and longitudinally upon the circumference of the work held by the chucks; a longitudinally-movable frame adapted to enter within the inner circumference of said work; and a cutting device carried by said frame and adapted to cut a circumferential groove in the inner walls of the bottom of the work; a swinging arm pivoted to a suitable bracket mounted on the standard carrying said lever, and a planing device carried by said arm adapted to cut away the upper portion or top of the tub.

815,140. **HEATING-FURNACE.** CHARLES H. BRETT, Vassar, Mich. Filed May 20, 1905. Serial No. 261,408.

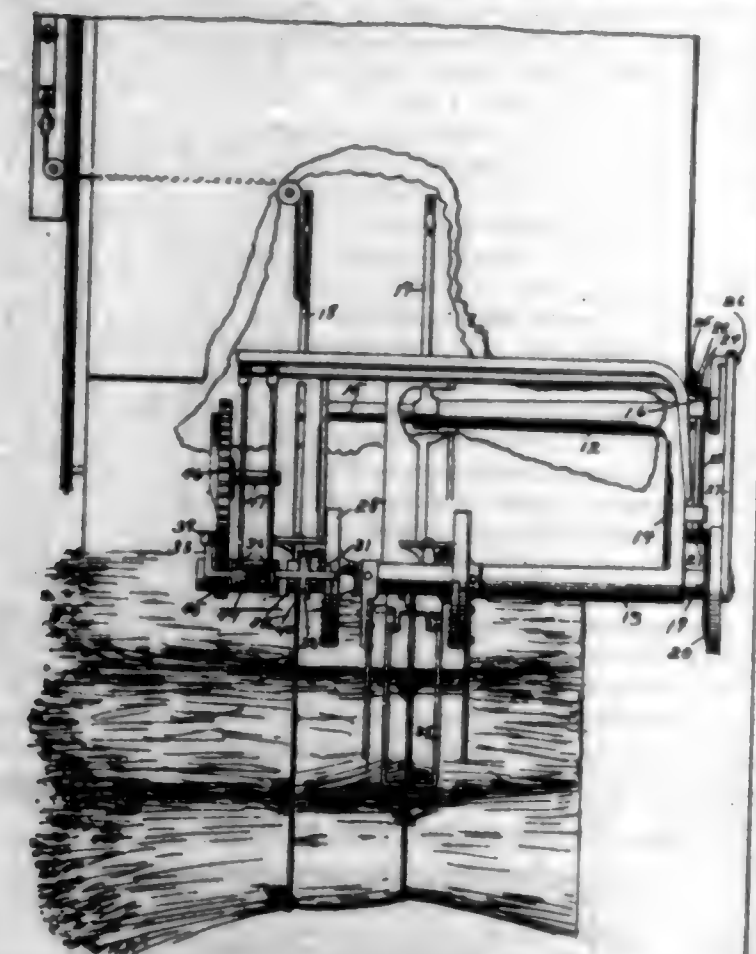


Claim.—1. In a heating-furnace, the combination of a shell-like fire-box including an ash-pit having an end wall bolted over each end thereof, the front wall being provided with a feed casing or tube and an integral casing forming an extension of the ash-pit, this latter casing being provided with grooves *p* in its opposite sides, longitudinal supporting-strips G′ attached along the opposite sides of the fire-box and provided with grooves registering with said grooves *p* in the ash-pit extension, a grate-carrying frame provided with oppositely-extending lugs slidable in said grooves, fire-pot sections within the fire-box, the side sections resting on said strips G′ and the front and back sections resting at their ends upon said strips and intermediate their ends upon the grate-frame, a casing inclosing the fire-box and having its front wall bolted to the feed-chute and ash-pit extension.

2. In a heating-furnace, the combination of a shell-like fire-box, a removable end wall bolted over each end thereof, the rear wall being provided with a smoke-outlet and the front wall being provided with two air-inlets *v*′, an integral feed-chute K and an integral ash-pit extension P, the top of the ash-pit extension and the bottom of the feed-chute being each provided with an opening, a casing L provided with a hole in its top bolted over the opening in the top of the ash-pit extension, a vertical tube *m* connecting the hole in the top of the casing L to the hole in the bottom of the feed-chute, a sectional fire-pot supported within the fire-box and having air-chambers between its sections and the shell-like wall of the fire-box, these air-chambers be-

ing in communication with the said inlets s', a casing whose front wall is bolted to the front ends of the casings K, L, and P and is provided with openings and doors opening into said casings, air-tubes connecting said inlets s' with the openings in the front wall of the furnace, which latter openings are controlled by registers, and a series of heating-flues between the fire-box and the casing.

815,141. SHOCKER ATTACHMENT FOR BINDERS. THOMAS W. BROWN, Iowa Falls, Iowa. Filed June 1, 1904. Serial No. 210,690.



Claim.—1. In a device of the class described, a needle-bearing shaft, a shocker-needle mounted on said shaft, a knotter-shaft operatively connected with the needle-shaft, a cam rotatably mounted on the knotter-shaft, a knotter and cutting mechanism designed to be operated by said cam, means for holding the cam against rotary movement on the shaft during a certain number of revolutions of the shaft and for throwing the cam into operative connection with the shaft after a certain number of revolutions of the shaft to operate the knotter and the cutting mechanism and cause the knotter to coact with the shocker-needle.

2. In a device of the class described, a needle-bearing shaft, a shocker-needle mounted on said shaft, a knotter-shaft operatively connected with the needle-shaft, a cam rotatably mounted on the knotter-shaft, a knotter and cutting mechanism designed to be operated by said cam, means for holding the cam against rotary movement on the shaft during a certain number of revolutions of the shaft and for throwing the cam into operative connection with the shaft after a certain number of revolutions of the shaft to operate the knotter and the cutting mechanism and cause the knotter to coact with the shocker-needle, and means for holding the twine used in shocking taut as the needle is operated.

3. In a binder, a needle-bearing shaft, a binder-needle on the shaft a shocker-needle mounted on the shaft, a knotter-shaft operatively connected with the needle-shaft, a cam rotatively mounted on the knotter-shaft, a knotter and cutting mechanism designed to be operated by said cam, means for holding the cam against rotary movement on the shaft during a certain number of revolutions of the shaft and for throwing the cam into operative connection with the shaft after a certain number of revolutions of the shaft to operate the knotter and the cutting mechanism and cause the knotter to coact with the shocker-needle, and means for keeping the twine used in the binding and shocking taut as the needles are operated.

4. In a device of the class described, a needle-bearing shaft, a shocker-needle mounted on said shaft, a knotter-shaft operatively connected with the needle-shaft, a cam rotatively mounted on the knotter-shaft, a knotter and cutting mechanism designed to be operated by said cam, means for holding the cam against rotary movement on the shaft during a certain number of revolutions of the shaft and for throwing the cam into operative connection with the shaft after a certain number of revolutions of the shaft to operate the knotter and the cutting mechanism and cause the knotter to coact with the shocker-needle, and means for keeping the twine used in shocking taut as the needle is operated.

5. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, and means for locking the shock-supporting rods at their upper limit of movement and for releasing said rods to allow them to swing to their lower limit of movement.

6. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, means for supporting the rods at their upper limit of movement and means for directing the rods as they are swung downwardly and rearwardly by the weight of the shock when these rods are released from their upper limit of movement.

7. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, means for locking the shock-supporting rods at their upper limit of movement and for releasing said rods to allow them to swing to their lower limit of movement, and means for directing the rods as they are swung downwardly and rearwardly by the weight of the shock when these rods are released from their upper limit of movement.

8. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, and means for keeping binding-twine taut as it is fed to the shocker.

9. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, means for rocking the shock-supporting rods at their upper limit of movement and for releasing said rods to allow them to swing to their lower limit of movement, and means for feeding binding-twine to the binder and shocker and keeping said twine taut as it is being fed.

10. In a device of the class described, a frame, a binder connected with the frame, a shocker, means connected with the shocker for throwing its operative parts out of or into operation as the binder is operated, pivotally-mounted shock-supporting rods mounted on the frame outside of the binder and shocker, means for directing the rods as they are swung downwardly and rearwardly by the weight of the shock when these rods are released from their upper limit of movement, and means for keeping said twine taut as it is being fed.

11. In a device of the class described, a binder-needle, a shocker-needle, a knotter for the shocker-needle, means for holding the knotter out of operation during a certain number of operations of the binder and shocker needles and for operating the knotter after a certain number of operations of the needles.

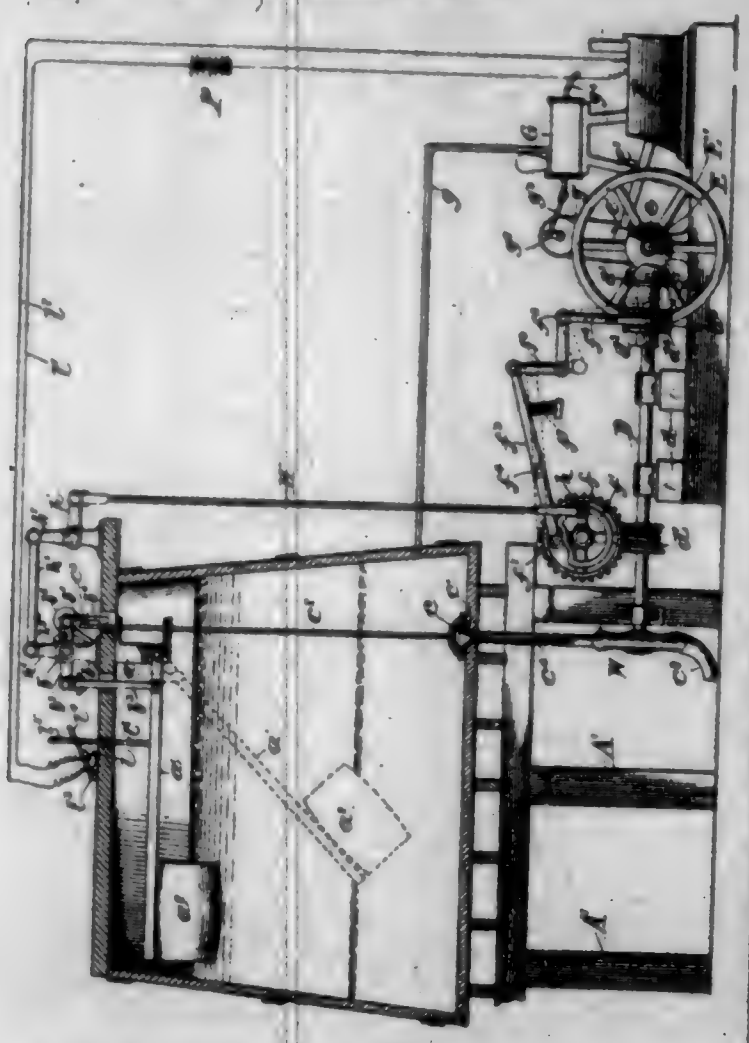
815,142. RAILWAY WATER-TANK. WILLIAM L. BROWN, Little Rock, Ark. Filed Aug. 14, 1905. Serial No. 274,093.

Claim.—1. In a device of the character described, the combination of a water-tank, a valve in said tank, a float, a trip-catch actuated by said float to raise the valve, a water-motor actuated by the water from the tank when the valve is raised, a gas-engine, a pump connected thereto, and means between the water-motor and gas-engine for starting the latter from the former.

2. In a device of the character described, the combination of a water-tank, a pump for supplying water thereto, a gas-engine for operating said pump, a water-motor, means disposed between the water-motor and gas-engine for starting the latter from the former, and a float for automatically controlling the supply of water to the water-motor and the operativeness of the gas-engine.

3. In a device of the character described, the combination of a water-tank, a water-motor adapted to be actuated by water supplied

from said tank, a float in said tank, a valve, a trip-catch between the float and said valve for raising the latter as the water-level falls in the tank, a trip-cam, and means actuated by the water-motor for operating the trip-cam and releasing the valve.



4. In a device of the character described, the combination of a water-tank, a pump for supplying water thereto, a gas-engine for operating said pump, a water-motor, devices for delivering water from the tank to the water-motor when the level of the water in the tank falls, means disposed between the water-motor and gas-engine for starting the latter from the former and then freeing the gas-engine, and means for tripping said devices and shutting off the supply of water to the water-motor and thus stopping the same after the gas-engine has been started.

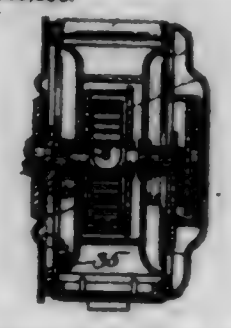
5. In a device of the character described, the combination of a water-tank, a pump for supplying water thereto, a gas-engine for operating said pump, a water-motor, a valve for controlling the supply of water from the tank to said motor, a trip-catch for operating said valve, a trip-cam, means operated from the water-motor for causing said trip-cam to trip the catch and free the valve, and means between the water-motor and gas-engine for initially starting the latter from the former, and then freeing the gas-engine, and means for stopping the gas-engine when the water in the tank reaches a desired level.

6. In a device of the character described, the combination of a water-tank, a pump for supplying water thereto, a gas-engine for operating said pump, a water-motor, devices for delivering water from the tank to the water-motor when the level of the water in the tank falls, means disposed between the water-motor and gas-engine for starting the latter from the former and then freeing the gas-engine, and means for tripping said devices and shutting off the supply of water to the water-motor and thus stopping the same after the gas-engine has been started, and means for automatically stopping the gas-engine when the water in the tank has reached a desired level.

7. In a device of the character described, the combination of a tank, a float in said tank, a valve and connections between the float and valve for raising the latter when the level of the water in the tank falls, a water-motor operable by water delivered from the tank, a gas-engine, a pump operable thereby, separable gear connections between the water-motor and gas-engine, a controller for operatively connecting and then disconnecting said gears, a trip-cam operable from the controller for tripping the connections between the float and valve to permit the latter to close connections between the tank and water-motor, and means for stopping the gas-engine when the water has reached a desired level in the tank.

8. In a device of the character described, the combination of a tank, a float in said tank, a valve and connections between the float and valve for raising the latter when the level of water in the tank falls, a water-motor operable by water delivered from the tank, a gas-engine, a pump operable thereby, separable operative connections between the water-motor and gas-engine, a controller operable from the water-motor for controlling said connections for starting the gas-engine, means for closing the valve in the tank after the gas-engine has started to thereby stop the water-motor, an electric circuit including the gas-engine and means for making and breaking said circuit as the water falls and rises in said tank.

815,143. REEL. Harvey B. Carlton, Rochester, N. Y. Filed July 8, 1905. Serial No. 268,856.



Claim.—1. In a spring-actuated reel, in combination with a casing carrying a fixed ratchet, a winding-disk operatively connected with the spring, a spring-controlled pawl carried by said disk, a slide-plate mounted on the disk and operatively associated with said pawl, and means for moving said slide-plate to move the pawl out of engagement with said ratchet or to permit said pawl to be pressed by its spring into engagement with the ratchet.

2. In a spring-actuated reel, in combination with a casing carrying a fixed ratchet, a winding-disk operatively connected with the spring, a spring-controlled pawl pivotally mounted on said disk and having a cam-surface, a slide-plate mounted on said disk and having a cam-surface coöperating with the cam-surface of said pawl, and means for moving said slide-plate whereby, through the engagement of said cam-surface, to move the pawl out of engagement with said ratchet or to permit said pawl to be pressed by its spring into engagement with the ratchet.

3. In a spring-actuated reel, in combination with a spring-barrel containing the spring, a shaft secured to said barrel, a winding-disk mounted on said shaft, a fixed bearing, a gear-wheel having a hub mounted in said bearing, a second shaft having one end of said spring connected thereto and having its outer end secured in the hub of said gear, a winding-spool, and gearing operatively connecting said gear with said winding-spool.

4. In a spring-actuated reel, in combination with a spring-barrel containing the spring, a hollow shaft secured to said barrel, a winding-disk mounted on said shaft, a fixed bearing, a gear-wheel having a hub mounted in said bearing, a second shaft having its inner end journaled in said first-named shaft and being connected to one end of said spring and having its outer end secured in the hub of said gear, a winding-spool, and gearing operatively connecting said gear with said winding-spool.

5. In a reel, in combination with the side frame members, posts connecting the same, and an uninclosed antifriction-roller mounted on one of said posts and extending across the space between the frame members, said roller having an unobstructed surface throughout its length.

6. In combination with a reel having side frame members, an uninclosed antifriction-roller suitably mounted at the periphery of said frame members and extending across the space between the same, said roller presenting an unobstructed surface throughout its length.

815,144. LANDING-NET FRAME. Harvey B. Carlton, Rochester, N. Y. Filed Nov. 28, 1905. Serial No. 289,480.

Claim.—1. A landing-netframe comprising straight spring-metal frame members, parallel flanged extensions provided at the base of one of said frame members, parallel flanged extensions carried at the base of the other frame member and having rigidly secured between them a screw-threaded nut, said latter extensions and nut being pivotally mounted between the first-named flanged extensions, and means for detachably connecting the outer ends of said frame members.

2. A landing-net frame comprising straight spring-metal frame members, parallel flanged extensions provided at the base of one of said frame members and having rigidly secured between them a screw-threaded nut, parallel wings provided at the base of the

other frame member and embracing said flanged extensions, a pivot-pin passed through said wings, flanged extensions, and nut, said wings being provided with straight outer edges adapted to lie flush with the outer face of said nut when the frame members are swung apart, and means for detachably connecting the outer ends of said frame members.



3. A landing-net frame comprising straight spring-metal frame members, parallel flanged extensions provided at the base of one of said frame members, parallel flanged extensions carried at the base of the other frame member and having rigidly secured between them a screw-threaded nut, said latter extensions and nut being pivotally mounted between the first-named flanged extensions, means for limiting the outward movement of said frame members, and means for detachably connecting the outer ends of said frame members.

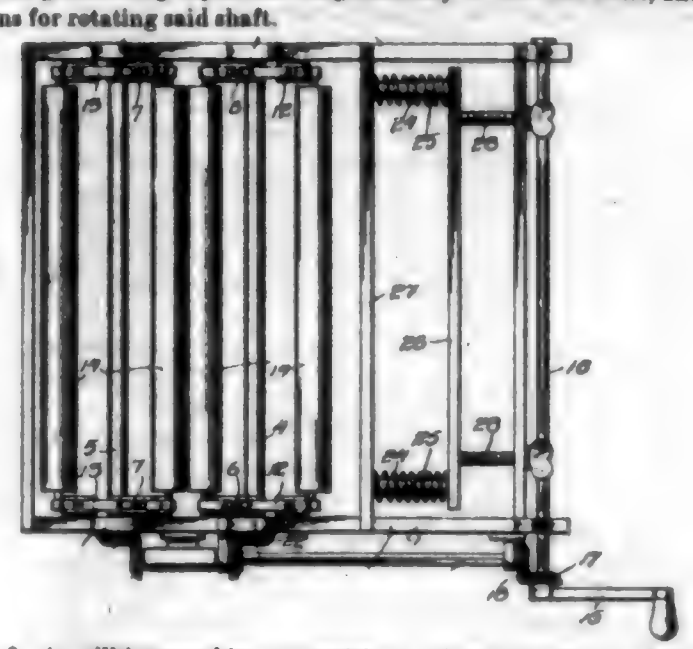
4. A landing-net frame comprising straight spring-metal frame members, a clip secured at the base of one of said frame members and having parallel flanged extensions, a screw-threaded nut rigidly secured between said extensions, a clip secured at the base of the other frame member and provided with parallel wings embracing said flanged extensions, a pivot-pin passed through said wings, flanged extensions and nut, said wings being provided with straight outer edges adapted to lie flush with the outer face of said nut when the frame members are swung apart, and means for detachably connecting the outer ends of said frame members.

5. A landing-net frame comprising straight spring-metal frame members, a clip secured at the base of one of said frame members and having parallel flanged extensions, a screw-threaded nut rigidly secured between said extensions, a clip secured at the base of the other frame member and provided with parallel wings embracing said flanged extensions, a pivot-pin passed through said wings, flanged extensions and nut, said wings being provided with straight outer edges adapted to lie flush with the outer face of said nut when the frame members are swung apart, a handle provided at its outer end with a screw-threaded shank adapted to engage in said nut and with a plate at the base of said shank adapted to be brought into engagement with the outer face of said nut and the outer edges of said wings, and means for detachably connecting the outer ends of said frame members.

6. In a landing-net frame in combination with jointed spring-metal frame members, a locking-plate provided on the outer side of each of said frame members, each of said locking-plates being provided intermediate its length with a shoulder and having a reduced portion extending beyond the end of said frame member and bent backward upon itself at its outer end, the outer ends of said locking-plates being bent in opposite directions.

815,145. MILKING-MACHINE. Mark Carmichle, Thief River Falls, Minn. Filed Nov. 19, 1904. Serial No. 233,449.

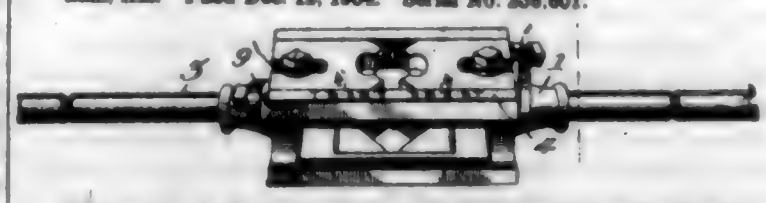
Claim.—1. A milking-machine comprising a frame having uprights, one of said uprights being slidably mounted thereon, upper and lower shafts journaled in said uprights, sprocket-wheels carried by said shafts, chains connecting said sprocket-wheels, milking-rollers carried by the chains, gears carried by the said lower shafts at one end thereof, bearings associated with the said frame, a shaft rotatably mounted in said bearings, gears on said last-named shaft, one of said gears being adjustable longitudinally of the said shaft, and means for rotating said shaft.



2. A milking-machine comprising a frame having uprights arranged in pairs, one of said uprights being slidably mounted on said frame, means for adjusting the said upright, upper and lower shafts journaled in said uprights, sprocket-wheels carried by said shaft, chains connecting said sprocket-wheel, milking-rollers carried by the chains, gears carried by the said shafts at one end thereof bearings associated with the said frame, a shaft rotatably mounted in said bearing, gears on said last-named shaft, one of said gears being adjustable longitudinally of the said shaft, and means for rotating said shaft.

3. A milking-machine comprising a frame, uprights arranged in pairs thereon, a guide carried by one of said uprights, said guide being slidably engaged with the sides of said frame and including a cross-piece having openings therein, pins engaged in said openings, a bar connected to said pins, springs engaged on said pins between said cross-piece and said bar, set-screws associated with the frame for engagement with the said bar, bearings on said frame, a shaft rotatably mounted in said bearings, gears on said shaft, one of said gears being adjustable longitudinally of the said shaft, and means for rotating said shaft.

815,146. TAP AND DIE HOLDER. Clifford E. Cole, Birmingham, Ala. Filed Dec. 13, 1904. Serial No. 236,601.



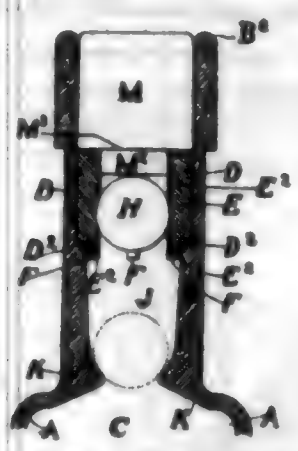
Claim.—1. A die-stock having straight parallel guide-flanges, a die fitted between said guide-flanges formed with an open-ended slot, said die being freely removable from between said guide-flanges, an adjusting-bolt extending through said slot, and an adjusting-screw arranged to engage the rear end of said die on one side of said open-ended slot.

2. A die-stock having parallel guide-flanges, a die fitted between said guide-flanges and formed with an open-ended slot, said die being freely removable from between said flanges, an adjusting-bolt extending through said slot, an inclined upright on said stock, and an adjusting-screw extending through said upright and abutting against the rear end of said die on one side of said slot.

815,147. AUTOMATIC STOPPLE AND NON-REFILLABLE BOTTLE. Alfred H. Cox, Cincinnati, Ohio. Filed Aug. 24, 1905. Serial No. 275,563.

Claim.—1. In a bottle, the neck B having a passage D, the annular shoulder D^3 at the end of said passage, an annular cork or sleeve E having the central passage G and provided with the lower projections, and a removable cork having a central lower stopple extension M^3 located in the passage G of the cork E, the neck having the lower passage J, a ball-stopple H adapted to be received within the cork E, the annular flange K at the lower part of the passage J, adapted to receive the ball-stopple H, substantially as and for the purposes specified.

2. In a bottle, the neck B having a passage D, and a passage J, an annular shoulder D^2, between said passages, an annular cork or sleeve E within the neck and having the central passage G, and seated on the shoulder D^2, a ball-stopple H adapted to be received into the passage G, an annular flange K at the bottom of passage J, adapted to seat the ball-stopple H, and means for preventing the ball-stopple, when in passage J, the bottle being inverted, from closing the passage-way of the cork E, and a removable cork having a central lower stopple extension M^2, located in the passage G, substantially as and for the purposes specified.



3. In a bottle, the neck B having a passage D, and a passage J, an annular shoulder D^2 between said passages, an annular cork or sleeve E within the neck and having the central passage G, and seated on the shoulder D^2, a ball-stopple H adapted to be received into the passage G, an annular flange K at the bottom of passage J adapted to seat the ball-stopple H, and means for preventing the ball-stopple, when in passage J, the bottle being inverted, from closing the passage-way of the cork E, and a removable cork, whose outer lower edge rests on the upper edge of the cork E, substantially as and for the purposes specified.

4. In a bottle, the neck B, having a passage D and a passage J, an annular shoulder D^2 between said passages, an annular flange K at the bottom of passage J, an annular cork or sleeve E, having a central passage-way through it, this sleeve seated on the shoulder D^2, a ball-stopple H adapted to be received into the passage G, and when in passage J receivable on the seat K, and means for preventing the stopple, when the bottle is inverted, from seating itself in the passage G, substantially as and for the purposes specified.

5. In a bottle, the neck B, having a passage D and a passage J, an annular shoulder D^2 between said passages, an annular flange K at the bottom of passage J, an annular cork or sleeve E, having a central passage-way through it, this sleeve seated on the shoulder D^2, the sleeve E being provided with the projections at its under side, substantially as and for the purposes specified.

815,148. LIFTING-HOOK. LEONARD L. DAVIS, Newport News, Va., assignor to Walter R. Temple, Newport News, Va. Filed Sept. 19, 1905. Serial No. 279,071.

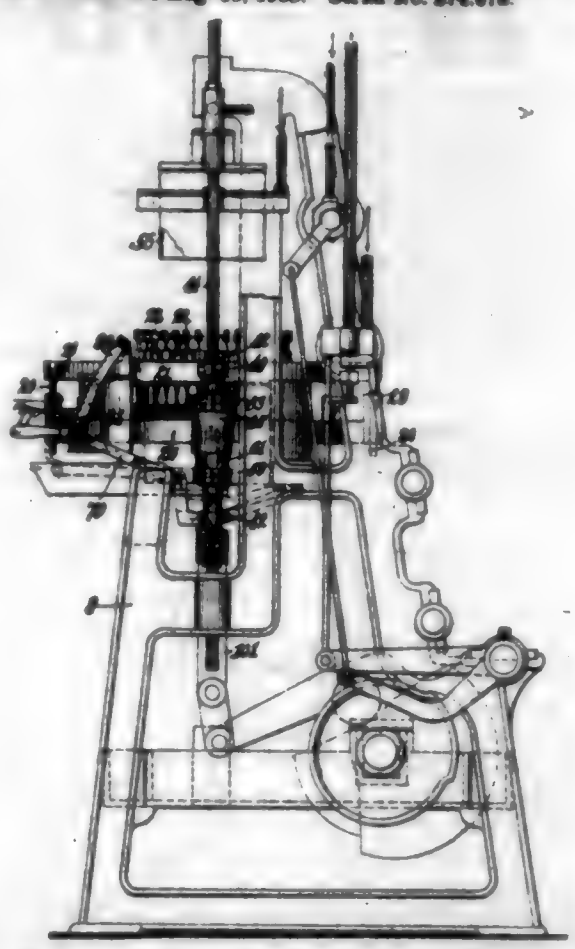


Claim.—1. A hook, consisting of a rigid hook member having a head formed with a headed bolt, a ring or swivel secured to said bolt, a movable hook member having a flat slotted extension formed on its upper end, said rigid member formed with ears between which said extension fits, and a pin secured in the ears and passing through the slot in the extension.

2. A hook consisting of a rigid hook member having a head formed with a headed bolt, a ring or swivel secured to said bolt, a movable hook member having a flat slotted extension formed on its upper end, said rigid member formed with ears between which said extension fits, a pin secured in the ears and passing through the slot in the extension, and complementary engaging lugs formed on the ends of the hook members.

3. A hook consisting of a rigid hook member having a head formed with a recess therein, a swivel secured to the head, a movable hook member having a flat slotted extension formed on the upper end thereof and adapted to be secured in said recess.

815,149. MACHINE FOR BLOCKING AND SHAPING HATS. CARL EICKEMEYER, Yonkers, N. Y., assignor to Turner Atherton & Co., Ltd., Stockport, England, a Corporation of Great Britain. Filed Dec. 17, 1904. Renewed Aug. 18, 1905. Serial No. 274,678.



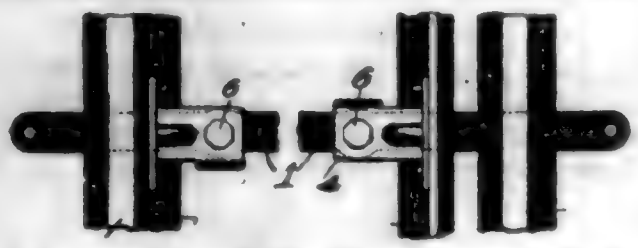
Claim.—1. In a hat blocking and stretching machine, the combination of a vertically-guided hat-block, a banding-shell, a vertically-guided main supporting-ring surrounding said hat-block, lower clamping-jaws pivoted to said supporting-ring, a clamping-ring slidably mounted on sleeves of the supporting-ring, upper clamping-jaws pivoted to said clamping-ring, a stretching-ring slidably mounted on said clamping-ring and engaging said lower clamping-jaws, operating devices connected with said supporting-ring and clamping-ring for operating the latter relatively to the former for closing said clamping-jaws, means for locking said operating devices to the supporting-ring, a stretching-lever connected with said supporting-ring and with said stretching-ring, and means for locking said stretching-ring to the supporting-ring.

2. In a hat blocking and stretching machine, the combination of a vertically-guided hat-block, a banding-shell, a vertically-guided main supporting-ring surrounding said hat-block, lower bell-crank clamping-jaws pivoted to said supporting-ring, the lower arms of said clamping-jaws being outwardly directed, a clamping-ring slidably mounted on sleeves of the supporting-ring, upper clamping-jaws pivoted to said clamping-ring, a stretching-ring at the outer side of said clamping-jaws and engaging the outwardly-directed arms of the lower jaws, said stretching-ring being slidably mounted on said clamping-ring, operating-levers connected with said supporting-ring and clamping-ring for operating the latter relatively to the former for closing said clamping-jaws, means for locking said operating-levers to the supporting-ring, a stretching-lever connected with said supporting-ring and with said stretching-ring, and means for locking said stretching-ring to the upper ring.

815,150. ADJUSTABLE SWITCH-ROD. HENRY ELLIOT, Jr., and WILLIAM H. ELLIOT, St. Louis, Mo., assignors to Elliot Frog & Switch Company, East St. Louis, Ill., a Corporation. Filed Dec. 23, 1905. Serial No. 293,180.

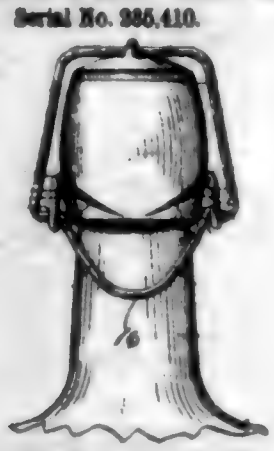
Claim.—1. A switch-rod mechanism comprising a switch-bar having a circular or round hole therein, a disk fitting in said hole, a bracket secured to one of the switch-rails and provided with a U-

shaped extension that embraces said switch-bar, and a bolt passing through said bracket extension and through said disk; the hole in said disk through which the bolt passes being eccentrically located and the head of said bolt being non-circular and fitting, when in normal position, in a non-circular socket in the extension of said bracket, substantially as set forth.



2. A switch-rod mechanism comprising a switch-bar having a circular or round hole therein, a disk fitting in said hole and having an eccentric non-circular hole, a bracket secured to one of the switch-rails and provided with an extension that bears against said switch-bar, and a bolt passing through said bracket extension and through said disk; said bolt having a non-circular portion fitting in the non-circular hole in said disk and the head of said bolt being non-circular and fitting, when in normal position, in a non-circular socket in the extension of said bracket, substantially as set forth.

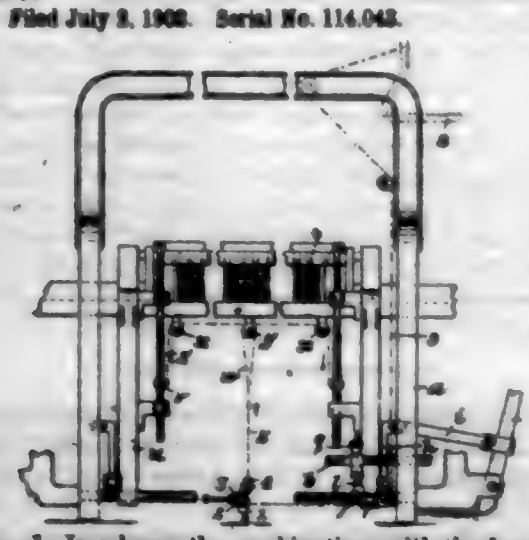
815,151. **BOTTLE-STOPPER.** SAMUEL EVANS, Washington, Pa. Filed Nov. 1, 1905. Serial No. 285,410.



Claim.—1. The combination with a bottle provided with a neck having oppositely-disposed downwardly-directed, convergent grooves and a recess formed at the upper end of each groove, a bottle-stopper arranged for coöperation with the open end of the neck of the bottle, a bail upon which the stopper is mounted; of an operating-lever pivotally mounted upon the bail and having oppositely-disposed fingers for engagement in the corresponding recesses of the neck, whereby the stopper, bail and operating-lever may be disengaged from the bottle.

2. In a bottle-stopper, the combination with a bottle provided with a neck having oppositely-disposed converging grooves and a recess at one end of each groove, the recesses being deeper than the grooves and the grooves being deeper near the recesses than at their opposite ends; of a stopper; a bail connected with the stopper; and an operating-lever having oppositely-disposed inwardly-directed fingers for engagement in the corresponding recesses and grooves.

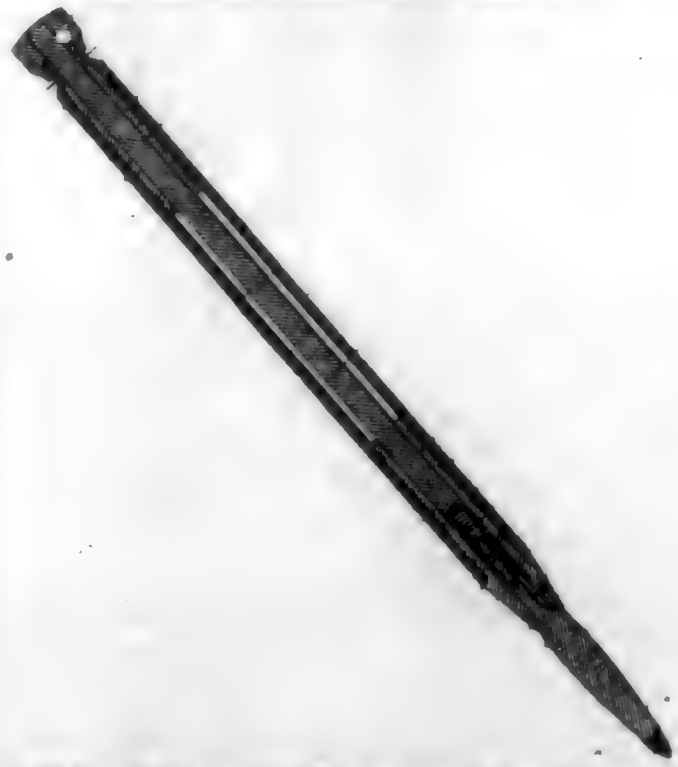
815,152. **SWIVEL-LOOM.** JAMES H. FARRAR, Passaic Junction, N. J. Filed July 2, 1902. Serial No. 114,042.



Claim.—1. In a loom, the combination, with the frame, of the cam-shaft, a picker-stick, a rock-shaft, an arm projecting from said rock-shaft, operative connecting means between the rock-shaft and the picker-stick, and a block or shoe carried by said arm and movable into and out of the path of movement of the cam or cams on said cam-shaft, substantially as described.

2. In a loom, the combination, with the frame, of the cam-shaft, a picker-stick, a rock-shaft, an arm projecting from said rock-shaft, operative connecting means between the rock-shaft and the picker-stick, a block or shoe carried by said arm and movable in the same into and out of the path of movement of the cam or cams on said cam-shaft, and means for normally holding said block or shoe in the path of said cam or cams on said cam-shaft, substantially as described.

815,153. **DENTAL TOOL.** CHARLES P. PERTH, Philadelphia, Pa., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed June 13, 1905. Serial No. 264,999.



Claim.—1. In a tool-handle, the combination with an exterior casing provided with a tool-socket at one end; of a key extending radially in said tool-socket; a nut in said casing in registry with said tool-socket; and, a head exterior to said casing whereby said nut may be rotated, substantially as set forth.

2. In a tool-handle, the combination with an exterior tubular casing; of bushings secured in the opposite ends of said casing; a tool-socket in one of said bushings; a key extending radially in said tool-socket; a spindle arranged to rotate in said casing, having a nut in registry with said tool-socket; a head on said spindle, exterior to said casing, arranged to rotate said nut; and, an annular flange on said head, engaging a corresponding groove in the contiguous bushing, arranged to prevent relative longitudinal movement of said spindle and casing, substantially as set forth.

3. In a tool-handle, the combination with an exterior tubular casing; of bushings in the opposite ends of said casing; a tool-socket in one of said bushings comprising a conical shoulder at the end thereof; a key extending radially in said tool-socket; a spindle arranged to rotate in said casing, in said bushings, having a nut in registry with said tool-socket; and, a head on said spindle, exterior to said casing, arranged to rotate said nut, substantially as set forth.

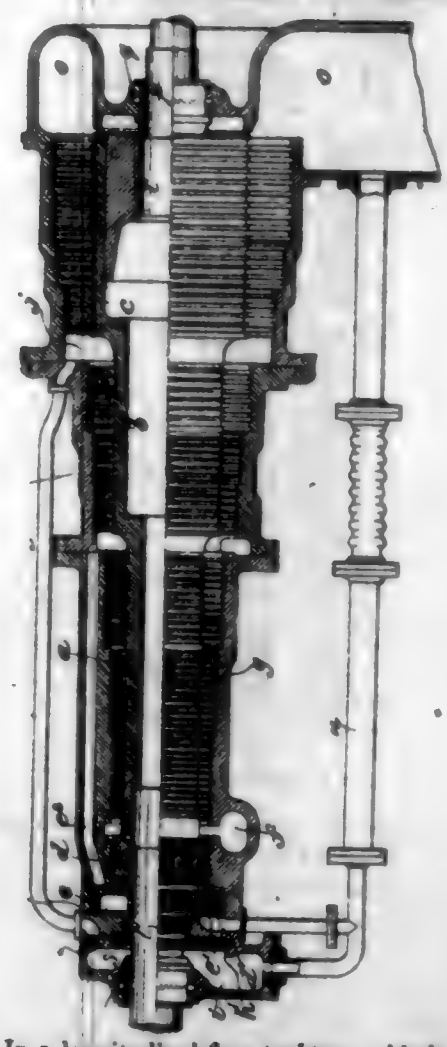
4. In a tool-handle, the combination with an exterior casing comprising a tube of resilient material; of bushings in the opposite ends of said tube, comprising projections arranged to secure said tube and bushings in relatively stationary relation; a tool-socket in one of said bushings; and means extending through the other of said bushings arranged to engage a tool in said socket, substantially as set forth.

5. In a tool-handle, the combination with an exterior casing, comprising a tube of hard rubber, and bushings in the opposite ends thereof; of a tool-socket in one of said bushings; a key extending radially in said tool-socket; a spindle arranged to rotate in said casing, having a nut in registry with said tool-socket; a head on said spindle, exterior to said casing, arranged to rotate said nut; and, an annular flange on said head engaging a corresponding groove in the contiguous bushing, arranged to prevent relative longitudinal movement of said spindle and casing, substantially as set forth.

6. In a tool-handle, the combination with an exterior casing

comprising a tube of hard rubber and metal bushings in the opposite ends thereof; of barbed projections on said bushings, securing them in stationary relation in said tube; a tool-socket in one of said bushings; a key extending radially in said tool-socket; a spindle arranged to rotate in said casing, in said bushings, having a nut in registry with said tool-socket; a head on said spindle, exterior to said casing, arranged to rotate said nut; and, an annular flange on said head engaging a corresponding groove in the contiguous bushing, arranged to prevent relative longitudinal movement of said spindle and casing, substantially as set forth.

815,154. TURBINE. Hugh P. Fullagar, Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 18, 1904. Serial No. 221,254.



Claim.—1. In a longitudinal-flow turbine, a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of balance-pistons therefor, a separate chamber in the casing for one of said balance-pistons, a separate exhaust-communication for said separate chamber, and a communication for said separate chamber to the working passage of the turbine intermediate the inlet and exhaust thereof.

2. In a longitudinal-flow turbine, a bladed spindle comprising a plurality of steps, an equal plurality of balance-pistons therefor, a chamber for one of the pistons, a separate stepped chamber for the remaining pistons, and ducts connecting the chambers to various points along the working passage of the turbine.

3. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein, separate chambers in the casing, balance-pistons in the chambers, and ducts for connecting the chambers to various points along the working passage of the turbine.

4. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein, separate chambers in the casing, balance-pistons in the chambers, separate ducts for connecting the chambers to various points along the working passage of the turbine including immediately separate ducts connecting the chambers to the exhaust.

5. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein, and a plurality of pistons subjected to different pressures for balancing endwise thrust, one of the lower pressure-subjected pistons having the inner margin of its effective surface of less diameter than the outer margin of the effective surface of any other piston.

6. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, and a plurality of pistons for balancing endwise thrust, one of the pistons having its effective surface nearer the axis than its corresponding step-surface.

7. In a longitudinal-flow turbine, the combination of a b aded casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of balance-pistons therefor, a chamber for one of the pistons, a separate stepped chamber for the remaining pistons, ducts connecting the chambers to various points along the working passage of the turbine, and the solitary piston having the inner margin of its effective surface of less diameter than the outer margin of the effective surface of the largest of the remaining pistons.

8. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, a balance-piston subject on one face to admission-pressure for the blades of a smaller step, and a balance-piston having the inner margin of its effective surface of less diameter than the outer margin of the effective surface of the former balance-piston and subject on one face to admission-pressure for the blades of a larger step.

9. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein, a chamber in the casing and removed from the exhaust end thereof, a balance-piston therein, a chamber in the exhaust end of the casing, a second balance-piston therein, and means for subjecting the second piston to a pressure of steam equal to that at a point intermediate the inlet and exhaust of the turbine.

10. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, means for subjecting said piston to admission-pressure for the blades of the largest step, a composite chamber in the head end of the casing for the remaining pistons, and means for subjecting said pistons to admission-pressure respectively for the blades of the remaining steps.

11. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, ducts in the spindle connecting said chamber and the inlet of the largest step, a composite chamber in the head end of the casing for the remaining pistons, and means for subjecting said pistons to admission-pressures respectively for the blades of the remaining steps.

12. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, said chamber surrounded by the exhaust-space of the turbine, means for subjecting said piston to admission-pressure for the blades of the largest step, a composite chamber in the head end of the casing for the remaining pistons, and means for subjecting said pistons to admission-pressures respectively for the blades of the remaining steps.

13. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, means for subjecting said piston to admission-pressure for the blades of the largest step, a composite chamber in the head and of the casing for the remaining pistons, means for subjecting said pistons to admission-pressures respectively for the blades of the remaining steps, and means for subjecting the unbalanced opposite sides of the pistons to exhaust-pressure.

14. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, said chamber surrounded by the exhaust-space of the turbine, ducts in the spindle connecting said chamber and the inlet of the largest step, a composite chamber in the head end of the casing for the remaining pistons, and means for subjecting said pistons to admission-pressures respectively for the blades of the remaining steps.

15. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, said chamber surrounded by the exhaust-space of the turbine, ducts in the spindle connecting said chamber and the inlet of the largest step, a composite chamber in the head end of the casing for the remaining pistons, means for subjecting said pistons to admission-pressures respectively for the blades of the remaining steps, and means for subjecting the unbalanced opposite sides of the pistons to exhaust-pressure.

16. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, an equal plurality of corresponding balance-pistons therefor, a chamber in the exhaust end of the casing for one of the pistons, said chamber surrounded by the exhaust-space of the turbine, ducts in the spindle connecting said chamber and the inlet of the largest step, a composite chamber in the head end of the casing for the remaining pistons, and means for subjecting the unbalanced opposite sides of the pistons to exhaust-pressure.

17. In a longitudinal-flow turbine, the combination of a bladed casing, a bladed spindle therein comprising a plurality of steps, a balance-piston subject on one face to admission-pressure for the blades of a smaller step, and a balance-piston at the exhaust end of a larger step and having the inner margin of its effective surface of less diameter than the outer margin of the effective surface of the former balance-piston and subject on one face to admission-pressure for the blades of said larger step.

18. A longitudinal-flow turbine, a casing therefor having chambers, and pressure balance-pistons in said chambers, the turbine-exhaust having communication with the ineffective side of a plurality of pistons.

19. A rotor, balance-piston thereon, a stator, and separate chambers in the stator for the pistons, a plurality of the chambers having communication with the exhaust.

20. A turbine-spindle, a casing therefor having fluid-chambers, a pressure balance-piston in one of the chambers, and means of communication leading through the spindle from one of the other chambers to the effective side of the piston.

21. A turbine having an exhaust-chamber with stationary reëntrant inner walls, and a pressure balance-piston peripherally coacting with the reëntrant inner walls.

22. A stepped turbine-spindle having a pressure balance-piston of less diameter than the low-pressure portion of the spindle, an exhaust-chamber with stationary reëntrant inner walls said piston coacting with the reëntrant inner walls.

23. In a turbine, a rotor, a plurality of bearings therefor, and a pressure balance-piston near each bearing, the ineffective side of a piston being open to exhaust.

24. In a turbine, a casing, a rotor coacting with the casing to form a working passage, balance-pistons on the rotor near its ends, means for placing the effective sides of the pistons in communication with the working passage at different points, and means for placing the ineffective side of a piston in communication with the exhaust.

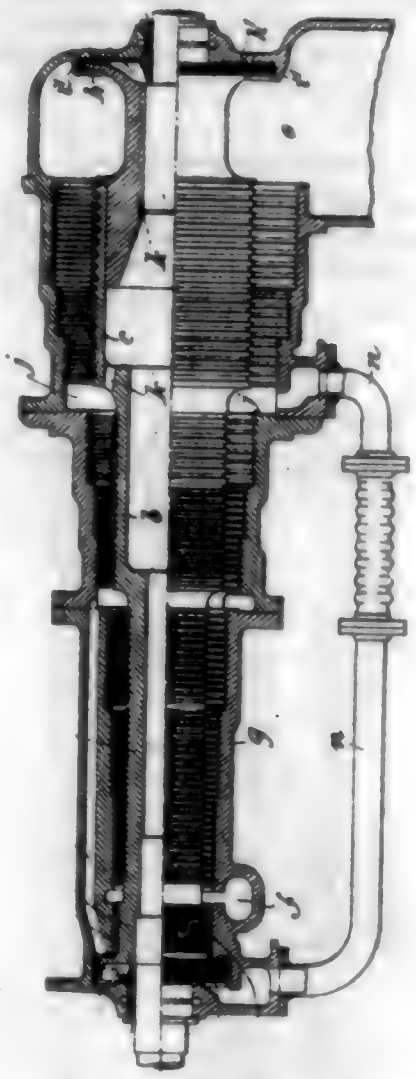
25. In a turbine, a casing, a rotor coacting with the casing to form a working passage, balance-pistons on the rotor located in separate chambers, means for placing the effective sides of the pistons in communication with the working passage at different points, and means for placing the ineffective side of a piston in communication with the exhaust.

26. In a turbine, the combination of a bladed casing having an inlet for motive fluid and an outlet for exhaust, a spindle located within said casing and comprising bladed annular steps increasing in diameter from said inlet toward said outlet, and a balance-piston for each step, the balance-piston for the step of largest diameter being located in a chamber that is separate from that containing the other balance-piston and has a separate exhaust and is in communication with the interior of the casing at a part thereof between its said inlet and outlet.

815,155. TURBINE. HUGH F. PULLAGAR, Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J., a Corporation of New Jersey. Filed Feb. 17, 1905. Serial No. 246,128.

Claim.—1. In a turbine, the combination of a bladed casing, a bladed spindle located therein, balance-pistons located in separate chambers having separate exhausts, and each adapted to balance a portion of the endwise thrust on the spindle due to fluid-pressure, one of said pistons being outside the exhaust-space.

2. In a turbine, the combination of a bladed casing having an inlet for motive fluid and an outlet for exhaust, a spindle located within said casing and provided with groups of blades fixed upon portions of said spindle of different diameters, a balance-piston for each group of blades, the balance-pistons for the several groups, except that for the group upon the largest portion of the spindle, being of different diameters and arranged in a chamber that is common to them, is of different diameters to suit the pistons, and is in communication with the interior of the casing at different parts thereof so that each balance-piston will be subject to the action of motive fluid of the same pressure as that to which the corresponding group of blades is subjected, and the balance-piston for the group upon the largest portion of the spindle being arranged in a chamber that is separate from that containing the other balance-pistons, has a separate exhaust, and is in communication with the interior of the casing at a part thereof between its ends.



3. In a turbine, the combination of a bladed casing having an inlet for motive fluid and an outlet for exhaust, a spindle located within said casing and provided with groups of blades fixed upon portions of said spindle of different diameters, a balance-piston for each group of blades, the balance-pistons for the several groups, except that for the group upon the largest portion of the spindle, being of different diameters and arranged in a chamber that is common to them, is of different diameters to suit the pistons, and is in communication with the interior of the casing at different parts thereof so that each balance-piston will be subject to the action of motive fluid of the same pressure as that to which the corresponding group of blades is subjected, and the balance-piston for the group of blades upon the largest portion of the spindle being arranged in a chamber that is separate from that containing the other balance-pistons, is upon the opposite side of the outlet-space to the blades and is in communication with the interior of the casing at a part thereof between its ends.

4. In an axial-flow turbine, the combination of a bladed casing or stator having an inlet-space and an exhaust-space, a spindle or rotor within said casing, blades and balance-pistons upon said spindle, one of said pistons being at the inlet end of the turbine and another at the exhaust end of the turbine at the exterior portion of the exhaust-space, and a passage through the rotor connecting the exterior side of the balance-piston with the interior chamber of the turbine to furnish fluid under pressure thereto above the exhaust-pressure, substantially as described.

5. In an axial-flow turbine, the combination of a bladed casing or stator, a bladed spindle or rotor located therein, an exhaust-chamber arranged between the bladed spindle and one end wall of the casing or stator, a balance-piston upon said rotor arranged between the exhaust-chamber and the end wall of the casing, a balancing-chamber between said balance-piston and the end wall of the casing, and a passage through the rotor connecting the interior of the casing with the balancing-chamber, substantially as described.

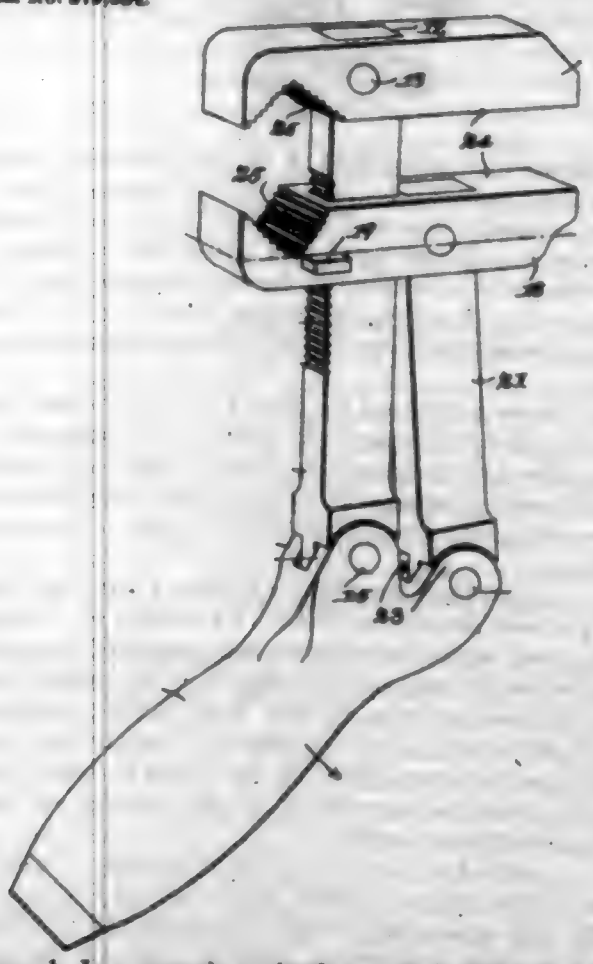
6. A bladed turbine having a single balance-piston spaced from the bladed portion near the low-pressure end, and other separate means for balancing.

7. A turbine having in the outer side of its exhaust-chamber a single balance-piston, and other independent means for balancing

8. A chambered support, a bladed rotor, pressure balance-pistons thereon, means of communication from a chamber to one piston and from the same chamber separate means of communication to a second piston, one of the pistons being spaced from the blades.

9. A chambered support, a rotor, pressure balance-pistons thereon, means of communication from a chamber through the rotor to one piston and from the same chamber means of communication outside the rotor to a second piston.

815,156. WRENCH. William D. Garrard, Bedias, Tex., assignor of two-ninths to John L. Corner, two-ninths to Harvey A. McDonald, and two-ninths to Joseph J. Plaster, Bedias, Tex. Filed Sept. 20, 1905. Serial No. 279,294.



Claim.—1. In a wrench, a shank provided with a jaw rigid therewith, a jaw slidable upon the shank, a handle pivoted to the shank, means connecting the handle and the slidable jaw whereby an angular movement of the handle slides the jaw and means carried by the jaw to prevent a return movement.

2. In a wrench, a shank provided with a jaw rigid therewith and with a rack formed rigidly along one side, a jaw slidable upon the shank, a handle pivoted to the shank, means connecting the handle and the slidable jaw whereby an angular movement of the handle slides the jaw and means carried by the jaw to engage the rack.

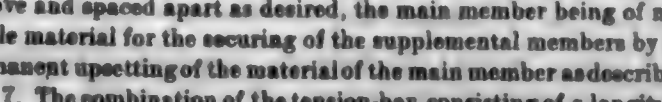
3. In a wrench a shank provided with a jaw rigid therewith and with a rack formed rigidly along one side, a jaw slidable upon the shank, a handle pivoted to the shank at the end opposite the jaw, means connecting the handle and the slidable jaw whereby an angular movement of the handle slides the jaw and means carried by the jaw to engage the rack.

4. A wrench comprising a shank provided with a jaw rigid therewith and with a rack along one side, a jaw slidable upon the shank a handle pivoted to the shank at the end opposite the jaw, a thrust-bar carried by the slidable jaw and pivoted to the handle and means carried by the jaw to engage the rack.

5. A wrench comprising, a shank provided with a jaw rigid therewith and with a rack along one side a jaw slidable upon the shank, a handle pivoted to the shank at the end opposite the rigid jaw, a thrust-bar carried by the slidable jaw and pivoted to the handle and a spring-actuated detent carried by the jaw in contact with the rack.

815,157. TENSION-BAR FOR USE IN CONCRETE AND THE LIKE. John F. Golding, Washington, D. C., assignor to Monolith Steel Company, Incorporated, a Corporation of Virginia. Filed Feb. 20, 1905. Serial No. 246,609.

Claim.—1. The combination, with a body of concrete, of a metal bar supporting such concrete and formed with a continuous longitudinal groove, and one or more supplemental members arranged in said groove at the desired points in the length of the bar and secured in the groove, substantially as and for the purposes described.



2. A metal strengthening-bar for use in concrete and the like, said bar being formed with a continuous longitudinal groove, in combination with one or more supplemental members adjustable along the groove of the bar to the desired points, the bar being adapted to be upset to secure the supplemental members, substantially as and for the purposes described.

3. The combination, with a body of concrete, of a metal bar surrounded by such concrete and formed with a continuous longitudinal groove, and one or more supplemental members secured in such groove, the open portion of the groove being adapted to receive therein, and obtain a hold on, the concrete, substantially as and for the purposes described.

4. A tension-bar for use in concrete and other purposes, consisting of a main, longitudinal, continuously-grooved member, and supplemental members arranged at desired points along the groove of said member and having their feet or ends extending longitudinally in the groove, the metal of the main member being permanently upset to cause the walls of the groove to rigidly secure said supplemental members, substantially as set forth.

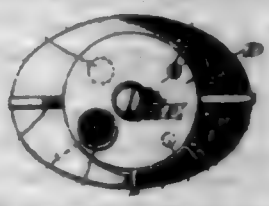
5. A tension-bar consisting of a main, longitudinally and continuously grooved member 1, and a supplemental member *a* formed with a longitudinal portion 6 arranged at a distance from the main member and with legs extending to said main member, the ends of said legs being arranged within the groove of the main member and the metal of the main member being permanently upset to cause the walls of the groove to rigidly secure such ends, substantially as set forth.

6. A tension-bar adapted to be supplied in an unassembled or knockdown condition, consisting of a main longitudinal member formed with a continuous groove 2, and supplemental members having parts fitting said groove and adapted to be arranged along such groove and spaced apart as desired, the main member being of malleable material for the securing of the supplemental members by the permanent upsetting of the material of the main member as described.

7. The combination of the tension-bar, consisting of a longitudinal and continuously-grooved member, beams supporting the ends of said longitudinal member and a tie engaging the upper part of the beam, extending in an inclined direction to said longitudinal member and having its end or foot secured by compression in the groove of the longitudinal member, substantially as set forth.

8. In combination with a body of concrete or the like, a tension-bar consisting of a main longitudinal member having a relatively heavy main body and formed with opposing lips extending outward from and beyond the main body, such lips producing a continuous groove wherein the concrete can enter, and supplemental members arranged at desired points along the said main member and having their feet or ends between such lips, such main member having its metal permanently upset to cause the lips to rigidly secure such supplemental members, and said body of concrete being arranged to surround and engage the bar and the supplemental members and to enter between said lips of the bar, substantially as set forth.

815,158. OIL-FLASK. George Graham and William Lovelace, Dorchester, Va., assignors of one-fourth to Noah Carpenter, Dorchester, Va. Filed Sept. 16, 1905. Serial No. 278,728.



Claim.—1. A flask comprising a body terminating in a mouth provided with a plug having vent and pouring apertures, a disk valve seated on said plug and having corresponding apertures, a spring-keeper at the flask-mouth having stops at both its fixed and free ends, and lugs carried by the disk valve to engage the stops of the keeper.

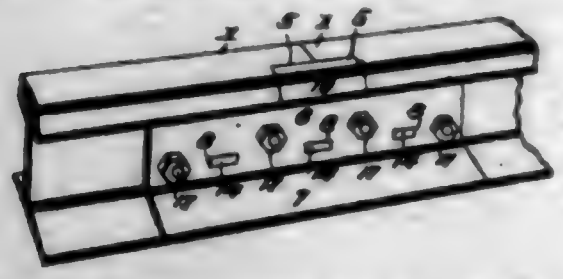
2. A flask comprising a body terminating in a mouth provided with a plug having vent and pouring apertures, a disk valve seated on said plug and having corresponding apertures, a spring-keeper at the flask-mouth having a stop at its fixed end and a slot at its free

end, and lugs carried by the disk valve to engage the stop and slot of the keeper.

3. A flask comprising a body terminating in a mouth provided with a plug having vent and pouring apertures, a disk valve seated on said plug and having corresponding apertures, a spring-keeper at the flask-mouth having a stop at its fixed end and a slot at its free end, and lugs carried by the disk valve, one of which is provided with a spur to engage the slot of the keeper.

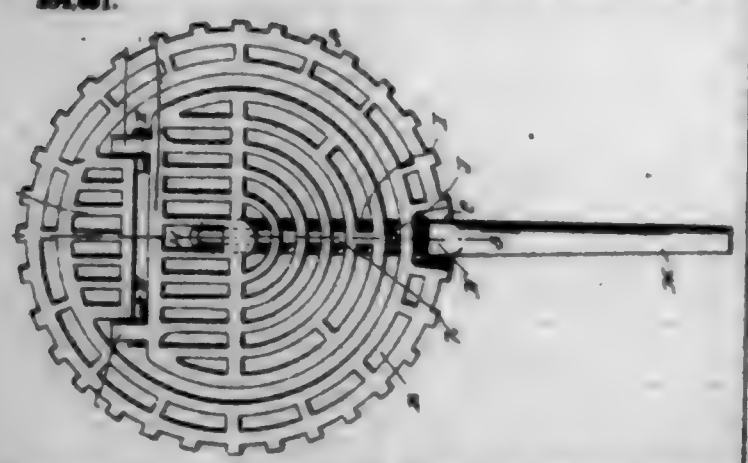
4. A flask comprising a body terminating in a mouth provided with a plug having vent and pouring apertures, a disk valve seated on said plug and having corresponding apertures, a spring-keeper at the flask-mouth having a stop at its fixed end, a slot at its free end, a ledge formed on the free end beyond the slot, and lugs carried by the disk valve to engage the stop and slot of the keeper.

815,159. RAILWAY-RAIL JOINT. George H. Grove, Hummelstown, Pa. Filed Nov. 16, 1905. Serial No. 287,602.



Claim.—A rail-joint comprising two rail ends, the heads of which are provided with coincident recesses and the webs of which are provided with recesses 2 in their meeting ends and with openings 3, in combination with fish-plates on the sides of the rail ends, one of said fish-plates having an upwardly-extending lug to fill the coincident recesses in the heads of the rails, and further provided with openings to register with the recesses 2 and openings 3, the other fish-plate being provided with lugs to extend through said openings and recesses in the rail-webs and in the first-mentioned fish-plate, and bolts securing said fish-plates to said rails.

815,160. GRATE. Leon Gechwind, Youngstown, Ohio, assignor to The Youngstown Furnace Company. Filed Nov. 28, 1904. Serial No. 234,681.



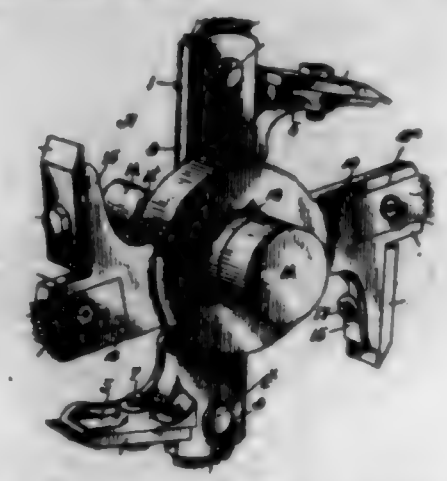
Claim.—1. A grate composed of an outer member or section adapted to remain in a horizontal position under all conditions of operation, an inner dumping member or section and means for connecting said members and for shaking both of said members and dumping the inner dumping member, said means consisting of a lever having an inner slotted end, slidingly mounted on the dumping member and adapted to engage the outer or normally horizontal member to lock the dumping-section in its horizontal position.

2. A grate composed of an outer ring-section, a hinged or dumping inner section and means for locking the sections together and for dumping said inner section or member, said means consisting of a lever having an inner slotted end, slidingly mounted on the dumping inner section and adapted to engage the outer or normally horizontal member to lock the dumping-section in its horizontal position.

3. A grate composed of a ring-section, a circular dumping-section hinged within said ring-section, and a sliding lever for locking the inner dumping-section and the ring-section together and for shaking said sections.

4. A grate composed of an outer section, a hinged inner section and a lever having a movable sliding connection with the hinged inner section for locking the sections together and for connecting and rotating the sections and dumping the hinged section.

815,161. CUTTER-HEAD. Frank D. Hall, Waukegan, Ill. Filed May 1, 1905. Serial No. 258,229.



Claim.—1. A cutter-head of the class described, comprising two sections, each having radial arms to receive the cutters, means formed integrally with each section for holding said sections at a greater or less distance apart upon rotation of the sections respectively to gage the adjustment of the same along the axial line of the cutter-head, the means of one section interfitting and coöperating with the means of the other section, substantially as shown and described.

2. A dado cutter-head comprising a pair of sections, each having a body portion provided with inclines on the adjacent end faces of the sections, the inclines of one section adapted to coöperate with those of the other section to adjust the sections along the axial line of the cutter-head and means for holding the sections in their adjusted positions.

3. A cutter-head comprising a spindle, a pair of sections, each having a body portion provided with a bearing for receiving said spindle, each section body portion being provided with integrally-formed means for determining or regulating the degree of proximity of said sections, upon the rotation of the sections respectively, to gage the adjustment of the same toward or from each other along the spindle, said last-named means of one section adapted to coöperate with the corresponding means of the other section and means for locking the sections together.

4. A cutter-head comprising a spindle, a pair of sections, each having a body portion provided with a bearing for receiving said spindle, each section body portion being provided with integrally-formed means for determining, upon the rotation of the sections respectively, the degree of proximity of said sections, to gage the adjustment of the sections toward or from each other along the spindle, said determining means of one section adapted to coöperate with the determining means of the other section and means for locking the sections together, said determining means being formed independent of the spindle and having no direct connection therewith.

5. A dado cutter-head comprising a pair of sections each having a body portion provided with inclines arranged in planes crossing the plane of rotation of the cutter-head, the inclines of one section adapted to coöperate with those of the other section, each section having rack-teeth, the rack-teeth of one section adapted to interlock with those of the other section to hold the sections in their adjusted positions, substantially as shown and described.

6. A dado-cutter comprising a pair of sections each having a body portion provided with stepped inclines arranged in planes crossing the plane of rotation of the cutter-head, the inclines of one section adapted to be engaged by the inclines of the other section to hold the sections spaced apart, substantially as shown and described.

7. A dado-cutter comprising a pair of sections each having a body portion provided with stepped inclines arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to be engaged by the inclines of the other section to hold the sections spaced apart, and means for locking the sections to their adjusted positions, substantially as shown and described.

8. A dado cutter-head comprising a pair of sections each having a body portion provided with stepped inclines arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to be engaged by those of the other section, each section having rack portions, the rack portions of one section adapted to interlock with those of the other sections to hold the sections to their adjusted positions, substantially as shown and described.

9. A cutter of the character described, comprising a pair of sections each having a cylindrical body portion, a plurality of inclines within each cylindrical body portion arranged in planes crossing the

plane of rotation of the cutter, the inclines of one section adapted to be engaged by those of the other section, the cylindrical wall of one section adapted to enter that of the other section, and means on each cylindrical wall to interlock the two sections, substantially as shown and described.

10. A cutter of the character described, comprising a pair of sections each having a cylindrical body portion, a plurality of inclines within each cylindrical body portion arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to be engaged by those of the other section, the cylindrical wall of one section adapted to enter that of the other section, means on each cylindrical wall to interlock the two sections, said means comprising rack-teeth, substantially as shown and described.

11. A dado-cutter comprising a pair of sections each consisting of a cylindrical body portion and a pair of radial arms, said radial arms having cut-away portions, cutters held in said cut-away portions, each of said radial arms having an extension, cutter-knives secured to said extensions, each of said sections having inclines within the cylindrical body portion arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to coöperate with those of the other section to space the sections apart, and means on the peripheral portion of each cylindrical body portion for interlocking the sections to hold them in their adjusted positions, substantially as shown and described.

12. A dado-cutter comprising a pair of sections each consisting of a cylindrical body portion and a pair of radial arms, said radial arms having cut-away portions, cutters held in said cut-away portions, each of said radial arms having an extension, cutter-knives secured to said extensions, each of said sections having inclines within the cylindrical body portion arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to coöperate with those of the other sections to space the sections apart, the peripheral portions of the cylindrical body portions of each section being provided with interlocking teeth, substantially as shown and described.

13. A dado-cutter comprising a pair of sections each consisting of a cylindrical body portion and a pair of radial arms, said radial arms having cut-away portions, cutters held in said cut-away portions, each of said radial arms having an extension, cutter-knives secured to said extensions, each of said sections having inclines within the cylindrical body portion arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to coöperate with those of the other sections to space the sections apart, the peripheral portions of the cylindrical body portions of each section being provided with interlocking teeth, the cylindrical body portion of one section adapted to telescopically enter the cylindrical body portion of the other section, substantially as shown and described.

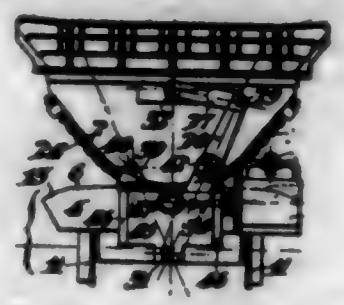
14. A dado-cutter comprising a pair of sections each consisting of a cylindrical body portion and a pair of radial arms, said radial arms having cut-away portions, cutters held in said cut-away portions, each of said radial arms having an extension, cutter-knives secured to said extensions, each of said sections having inclines within the cylindrical body portion arranged in planes crossing the plane of rotation of the cutter, the inclines of one section adapted to coöperate with those of the other sections to space the sections apart, the peripheral portions of the cylindrical body portions of each section being provided with interlocking teeth, the cylindrical body portion of one section adapted to telescopically enter the cylindrical body portion of the other section, and scale-marks on said sections for determining their adjustments substantially as shown and described.

15. A cutter-head of the character stated comprising two sections each having radial arms to receive the cutters, each section being provided with integrally formed inclined portions lying in planes crossing the plane of rotation of the cutter-head, the inclined portions of one section adapted to engage those of the other section, means for interlocking the two sections, and means for indicating the adjustments of the sections, substantially as shown and described.

16. A cutter-head of the character stated comprising two sections, stepped inclines on the adjacent portions of the sections, said inclines adapted to coöperate with one another to hold the sections at various distances from each other along the axial line of the cutter-head, means carried by the sections for interlocking them and means carried by the sections for indicating their adjustments, substantially as shown and described.

815,162. CINDER-CAR. JOHN M. HARTMAN, Philadelphia, Pa. Filed Oct. 31, 1903. Serial No. 179,390.

Claim.—1. The combination with the car-frame and the car-body arranged to rock thereon; of a pair of rocking arms pivotally secured to one another and to the frame and body; and, actuating mechanism for said arms connected to one of them between its connection with the other arm and its connection with the car-frame, substantially as set forth.



2. The combination with the car-frame and the car-body arranged to rock thereon; of a pair of rocking arms pivotally secured to one another and to the frame and body; actuating mechanism for said arms connected to one of them between its connection with the other arm and its connection with the car-frame; and, mechanism for locking one of said arms in a position corresponding with the normal position of the car-body, substantially as set forth.

3. The combination, with the car-frame and the car-body, adapted to rock thereon, of a pair of rocking arms pivotally secured to one another and to the frame and body; a screw locking-pin mounted in one of said arms; and sockets for said pin, arranged on each side of the central axis in correspondence with the alternative positions of the rocking arms, when the car-body is in its normal position, substantially as set forth.

4. The combination, with the car-body having a rolling under surface; of a truck-frame provided with supporting-wheels; shoulders on said truck-frame extending transversely with respect to the axes of said wheels, adapted to form bearing-surfaces for the rounded portion of the car-body when the latter is in its normal position, substantially as set forth.

5. The combination, with the car-body having a rounded under surface; of a frame having lugs on its under side arranged in correspondence with subjacent bearing-points; and springs whereby the frame is normally retained in a position to clear said lugs from said bearing-points, substantially as described.

6. The combination, with the car-body and its actuating mechanism comprising a lever-arm arranged to rock in a vertical plane; of an outwardly-projecting shield embracing said lever-arm; and a draw-head mounted upon said shield, substantially as described.

7. The combination with the car-frame and the car-body arranged to rock thereon; of a pair of arms arranged to rock in vertical planes; horizontally-disposed pivots securing said arms to one another and to the frame and body; and, actuating mechanism for said arms comprising a stationary cylinder and a piston arranged to reciprocate therein in connection with one of said arms, substantially as set forth.

815,163. APPARATUS FOR LAYING ELECTRIC CONDUCTORS. SAMUEL P. HATFIELD, New York, N. Y. Filed Mar. 18, 1904. Serial No. 198,858.

Claim.—1. An apparatus for laying and burying electric conductors under ground, comprising a plow arranged for forming a self-closing furrow, a gage projecting on opposite sides of the plow-beam and extending approximately the length thereof and means on the plow for directing the conductor into the lower portion of the furrow, as set forth.

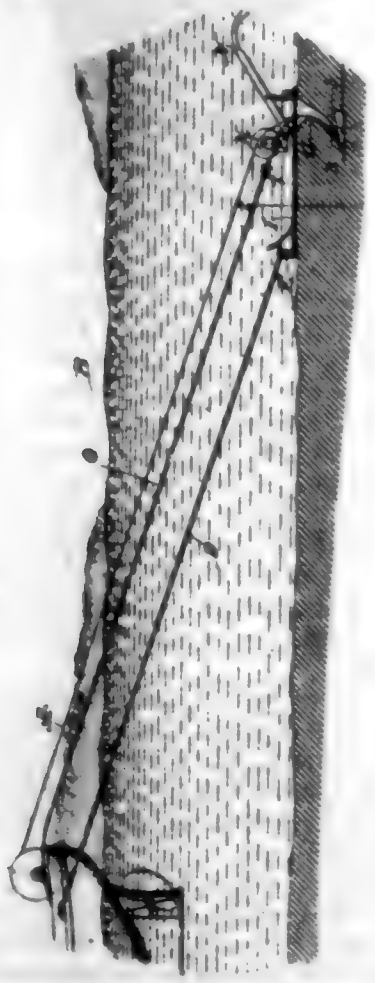
2. An apparatus for laying and burying electric conductors under ground, comprising a plow arranged for forming a self-closing furrow, a gage secured to the plow-beam and extending on opposite sides of the same, the gage having an upwardly-curved forward end, and means on the plow for directing the conductor into the lower portion of the furrow, between the shares of the plow.

3. An apparatus for laying and burying electric conductors under ground, comprising a plow arranged for forming a self-closing furrow, a drum on the plow-beam, and means on the plow for directing the conductor from the drum into the lower portion of the furrow, between the shares of the plow and in the rear of the standard of the plow, as set forth.

4. An apparatus for laying and burying electric conductors under ground, consisting of a plow having a gage-plate between the plow-beam and the share, a drum journaled on the plow-beam, and a guide on the share, for directing the conductor into the lower portion of the furrow made by the plow, as set forth.

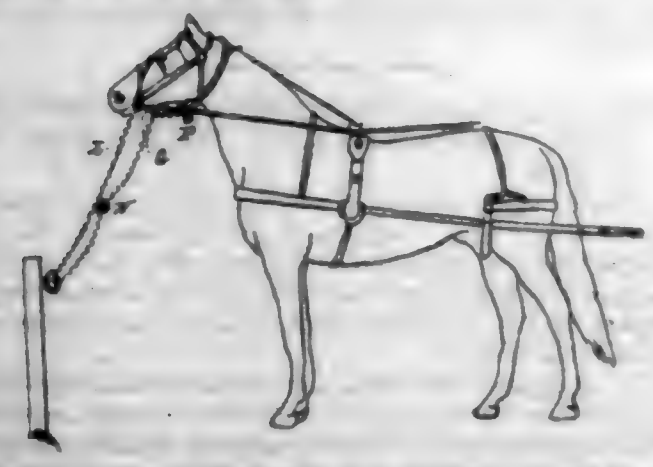
5. In an apparatus for laying and burying electric conductors,

the combination with a propelling vessel, of a plow having a port leading out through the front of its point, a flexible connection between the plow and the vessel to drag the plow along, means for directing the conductor from the vessel to the plow and into the furrow made by the plow, and a hose leading from a forced water-supply on the vessel to the rear of the plow-standard and connected with the port in the plow-point.



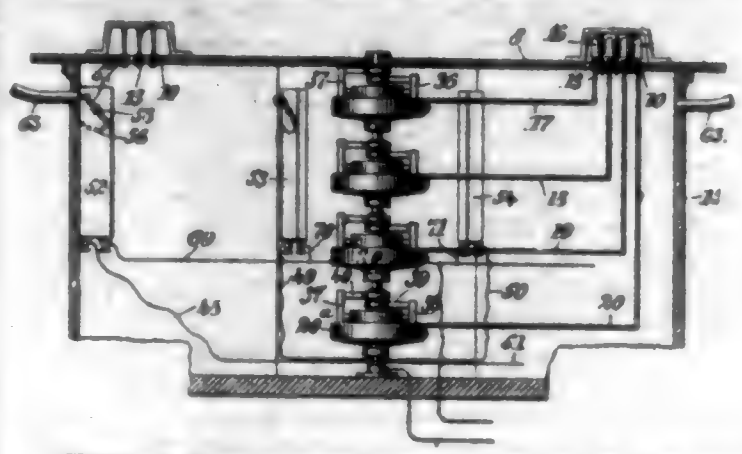
6. In an apparatus for laying and burying electric conductors, the combination with a propelling vessel, of a plow, a flexible connection between the plow and the vessel to drag the plow along, means for directing the conductor from the vessel to the plow and into the furrow made by the plow, and a gage-plate on the plow between the plow-beam and the share.

815,164. HALTER. William B. Hayner, Springboro, Ohio. Filed June 24, 1904. Serial No. 213,967.



Claim.—A halter and hitching-strap, consisting of a soft or flexible covering or neck-strap of tubular form, a chain inclosed in said tubular strap and having a double loop at one end, and a pair of parallel arms each formed with a hooked end at the other end of said chain, the short chain carrying a lock and connected to the upper loop of said double loop, the angular-shaped snap-hook engaging the hooked ends of said parallel arms, the pair of links connected together, the upper one engaging the lower loop of said double loop, the short transverse chain provided with a hook at each end adapted to engage the snap-hook and lower link for securing the neck-strap snugly under the head of the animal, the hitching-chain having its ends connected to said snap-hook and the lower link of said double links, and the guide-ring connected to one side of the hitching-chain and adapted to receive the other side of said hitching-chain.

815,165. RACE-COURSE MACHINE. Olaf Henriksen, New York, N. Y. Filed Mar. 28, 1905. Serial No. 251,584.



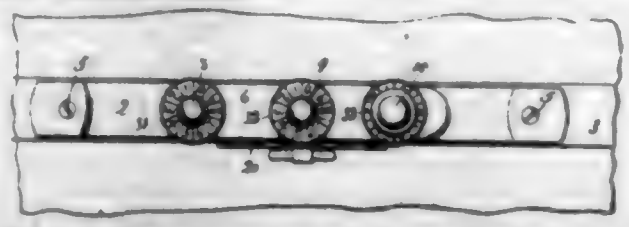
Claim.—1. In an apparatus of the character described, the combination of a blowpipe, a cap fitting thereupon, a washer held in engagement with said blowpipe by said cap, a quill inserted through said washer and removable therefrom, and mechanism controllable by said blowpipe for simulating a race.

2. In an apparatus of the character described, the combination of a blowpipe, a rubber washer disposed adjacent to the end thereof, means for holding said rubber washer against said blowpipe, a tubular member inserted through said rubber washer and removable therefrom, and mechanism controllable by said blowpipe for simulating a race.

3. In an apparatus of the character described, the combination of a plurality of dummies, separate supporting-stems therefor, a plurality of electric motors connected, respectively, with said stems, and means controllable by the pressure of the human breath for causing said motors to move said stems at different speeds.

4. In an apparatus of the character described, the combination of a plurality of electric motors, each provided with a supporting-stem movable around a center, dummies mounted upon said supporting-stems and adapted to simulate race-horses or the like, rheostatic mechanism connected with said motors for varying the speed of said dummies, and a blowpipe connected with said rheostatic mechanism for controlling the same.

815,166. PERMUTATION-LOCK. Emil Hertenstein, Meriden, Conn., assignor of one-half to Morris Port, Meriden, Conn. Filed July 3, 1905. Serial No. 268,142.



Claim.—1. In a permutation-lock, the combination with a lock-case, of one or more hollow slotted hubs mounted therein, and a sliding locking-plate having locking-lugs normally confined within the said hollow slotted hubs which are rotated to bring their slots into registration with the said lugs.

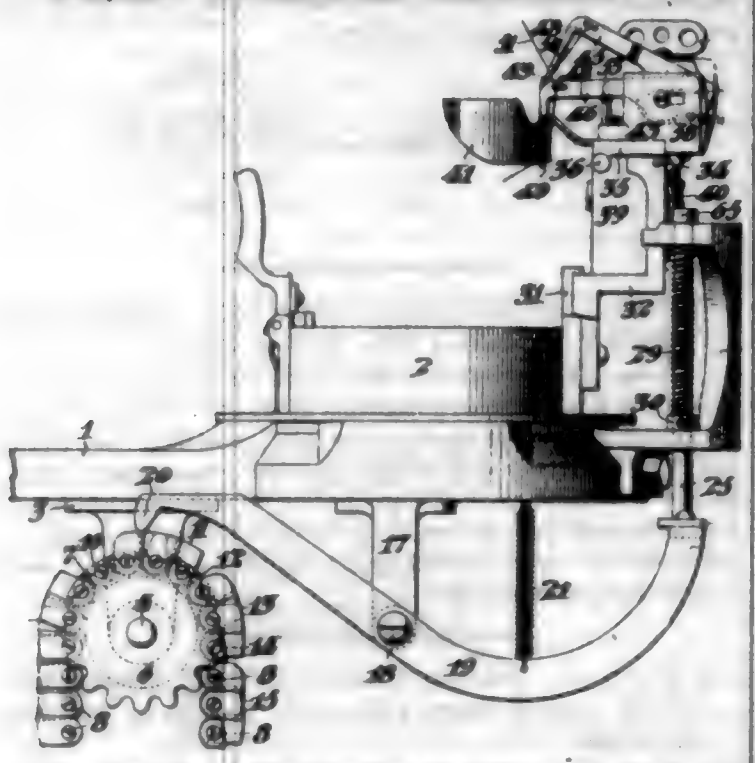
2. In a permutation-lock, the combination with a lock-case, of one or more slotted hubs mounted therein, a locking-plate having one or more lugs normally located within the said hubs which are rotated for bringing their slots into registration with the said lugs, and upper and lower check-nuts adjustable with respect to the said hubs for resetting the lock, the upper check-nut being provided with characters to guide the rotation of the hubs.

3. In a permutation-lock, the combination with the case thereof, of one or more slotted hubs mounted therein, a slotted rotary and longitudinally-movable sleeve mounted in the said case, a sliding locking-plate having lugs coacting with the said slotted hubs and with a stem or post passing through the said sliding sleeve, and upper and lower check-nuts combined with the said hubs and with the said sleeve.

4. In a permutation-lock, the combination with a lock-case having a chambered boss, of one or more rotary knobs mounted therein and terminating at their lower ends in slotted hubs, upper and lower check-nuts adjustably mounted upon the said knobs, a rotary and longitudinally-movable sleeve mounted in the said boss and formed with a slot, a sliding locking-plate located within the said boss and carrying lugs coacting with the said slotted hubs, a post carried by the said plate and rising through the said sleeve, a finger-button applied

to the upper end of the said post, a spring tending to move the plate into its locking position, the said plate also carrying means for engagement by a keeper, and check-nuts applied to the said knobs and sleeve for setting the lock.

815,167. KNITTING-MACHINE. JOHN B. HEPWELL, Reading, Pa., assignor to Windsor Machine Company, Reading, Pa., a Corporation of Pennsylvania. Filed June 23, 1904. Serial No. 214,459.



Claim.—1. In a knitting-machine, the combination with thread-changing levers, each provided with means to guide a thread to the needles; of means arranged to transpose said levers, comprising a crank-shaft provided with cranks operatively related to the respective levers; means arranged to rotate said crank-shaft, comprising a counter-shaft connected therewith; a star-wheel on said counter-shaft; a plunger; means arranged to present said plunger in operative relation with said star-wheel, comprising a lever and a pattern-chain arranged to actuate it; a shearing device arranged to sever the idle thread from the fabric, comprising a reciprocatory blade; a lever arranged to reciprocate said blade; and, a cam on said lever, in operative relation with said plunger, substantially as set forth.

2. In a knitting-machine, the combination with thread-changing levers each provided with means to guide a thread to the needles; of means arranged to shift said levers, comprising a crank-shaft provided with cranks operatively related to the respective levers; means arranged to rotate said crank-shaft, comprising a counter-shaft connected therewith; a star-wheel on said counter-shaft; a plunger; and, means arranged to present said plunger in operative relation with said star-wheel, comprising a lever and a pattern-chain arranged to actuate said lever, substantially as set forth.

3. In a circular-knitting machine, vertically-swinging thread-changing levers pivoted in parallel relation to each other; each of said levers comprising a main horizontal arm and a vertical depending extremity; and each being provided with a thread-guiding aperture piercing the vertical portion near its lower end; and a thread-eye mounted on the lever near its right-angled bend, substantially as set forth.

4. In a circular-knitting machine, the combination of thread-changing levers pivoted horizontally so that their extremities swing vertically toward or away from the needles; a cam-surface upon each of said levers; and a horizontal shaft mounted beneath the levers, carrying cranks corresponding to each of the levers, which cranks by the rotation of the shaft are brought into contact with the cam-surfaces of the levers to effect the raising thereof, substantially as set forth.

5. In a circular-knitting machine, the combination with thread-changing levers pivoted horizontally so that their extremities swing vertically toward or away from the needles; a cam-surface upon each of said levers; and a horizontal shaft mounted beneath the levers, carrying cranks corresponding to each of the levers, which cranks by the rotation of the shaft are brought into contact with the cam-surfaces of the levers to effect the raising thereof, said cam-surfaces having a contour such that, after the lever has been raised by the contact of the crank beneath it, a quarter-rotation of said crank permits the lowering of the lever, substantially as set forth.

6. In a circular-knitting machine, the combination with thread-changing levers pivoted horizontally so that their extremities swing vertically toward or away from the needles; a cam-hole in each of said levers; and a horizontal shaft passing through the cam-holes carrying cranks corresponding to each of the levers, which cranks by the rotation of the shaft are brought into contact with the lower surface of the cam-holes to effect the locking of the levers in their lower position, said lower surface having a contour such that after each lever has been locked by the crank a quarter-rotation of said crank may occur without alteration of the position of the lever, substantially as set forth.

7. In a circular-knitting machine, the combination of a pair of vertically-swinging pivoted thread-changing levers; a horizontal shaft beneath said levers: two cranks on opposite sides of said shaft in positions corresponding to the thread-changing levers; cam-surfaces on each thread-changing lever of such extent and contour that if the cranks are horizontal, a quarter-rotation raises one lever and a succeeding quarter-rotation lowers it; a star-wheel having four arms in operative connection with said shaft; and a plunger by the raising or lowering of which the star-wheel is progressed by quarter-rotations, substantially as set forth.

8. In a circular-knitting machine, the combination of a rotating cam-cylinder carrying two pivoted thread-changing levers the free arms of which swing vertically; a horizontal shaft with opposing cranks under the thread-changing levers by the rotation of which said levers are successively raised; cam-surfaces on said levers where they come in contact with the cranks of such contour that if the cranks are vertical a quarter-rotation of the shaft lowers the raised lever, while the succeeding quarter-rotation raises the other lever; a four-armed star-wheel in operative connection to said shaft; and two vertical plungers in fixed relation to each other mounted on the non-rotary parts of the machine, whereby the contact of one of these plungers with the star-wheel effects the lowering of the raised thread-changer, while its contact with the other plunger effects the raising of the other thread-changer, substantially as set forth.

9. In a circular-knitting machine, the combination of pivoted thread-changing levers, the free ends of which swing vertically into and away from proximity with the needles; a crank-shaft parallel to the pivot of said levers provided with cranks operatively related to the respective levers; and means for effecting successive partial rotation of said crank-shaft to raise and lower the levers, substantially as set forth.

10. In a circular-knitting machine, the combination of pivoted thread-changing levers, the free ends of which swing vertically into and away from proximity with the needles; a crank-shaft parallel to the pivot of said levers provided with cranks operatively related to the respective levers; and means for effecting successive partial rotation of said crank-shaft, to raise and lower the levers comprising a variable-pattern mechanism, substantially as set forth.

11. In a circular-knitting machine, the combination of a housing mounted upon the cam-cylinder; a horizontal pivot fixed therein; thread-changing levers carried thereby, the free ends of which swing vertically over the needles; springs whereby said thread-changing levers are normally pressed down into position to feed their thread to the needles; and a horizontal shaft with cranks rotating beneath said thread-changing levers by the contact of the cranks of which with the levers they are successively raised against the opposition of the springs, substantially as set forth.

12. In a circular-knitting machine, a thread-changing lever pivoted in fixed relation to the cam-cylinder and having its free end swinging vertically in relation to the needles; a cam-hole in said lever; a shaft passing through said cam-hole with a crank upon it; by the contact of which with the edges of the cam-hole the lever is operated, substantially as set forth.

13. In a circular-knitting machine, a thread-changing lever pivoted in fixed relation to the cam-cylinder and having its free end swinging vertically in relation to the needles; a cam-hole in said lever with cam-surfaces on its upper and lower edges; a shaft passing through said cam-hole with a crank which when it is turned up contacts with the upper cam-surface to raise the lever, and when it is turned down contacts with the lower cam-surface to lock the lever in its lower position, substantially as set forth.

14. In a circular-knitting machine, the combination of a pivoted thread-changing lever, having its free end swinging vertically over the needles; thread-guiding eyes whereby the thread which is controlled by the lever is caused to travel along its upper surface; and a spring-pressed thread-clamp pivotally mounted above the thread-changing lever with which the upper surface of said lever comes in contact whenever it is raised to withdraw thread from the needles,

whereby the raising of the lever clamps the thread which it controls, substantially as set forth.

15. In a circular-knitting machine, the combination of a pivoted thread-changing lever, having its free end swinging vertically over the needles; thread-guiding eyes whereby the thread which is controlled by the lever is caused to travel along its upper surface; a spring-pressed thread-clamp, pivotally mounted above the thread-changing lever with which the upper surface of said lever comes in contact whenever it is raised to withdraw thread from the needles, whereby the raising of the lever clamps the thread which it controls; and a shearing device whereby upon the raising of the thread-changing lever the thread which is withdrawn from the needles and clamped is severed between the end of the lever and the knitting, substantially as set forth.

16. In a circular-knitting machine, the combination of a plurality of pivoted thread-changing levers having their free ends swinging vertically over the needles; thread-guiding eyes whereby the thread which is controlled by each lever is caused to travel along its upper surface; a single spring-pressed thread-clamp pivotally mounted above said thread-changing levers, and extending transversely to contact with the upper surface of any one when it is raised, whereby the raising of any lever clamps the thread which it controls, substantially as set forth.

17. In a circular-knitting machine, a shearing device arranged to sever an idle thread from the fabric comprising a pair of blades one of which is arranged to reciprocate with reference to the other; thread-changing mechanism; a plunger by contact with which the thread-changing mechanism is operated and by contact with which the reciprocatory shearing-blade is also operated; the thread-changing mechanism and the thread-shearing mechanism being so mounted in relation to each other that the latter comes into contact with said plunger immediately after the former comes in contact with it, substantially as set forth.

18. In a circular-knitting machine, the combination of thread-changing mechanism comprising a plurality of thread-changing levers; two vertical plungers; means whereby contact of the thread-changing mechanism with the first plunger introduces a new thread to the knitting while contact with the second plunger withdraws the old thread from the knitting; and thread-shearing mechanism which is operated by contact with the first plunger, substantially as set forth.

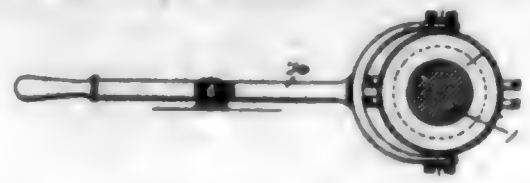
19. In a circular-knitting machine, the combination of thread-changing mechanism comprising a plurality of thread-changing levers; two vertical plungers; means whereby the contact of the thread-changing mechanism with the first plunger introduces a new thread to the knitting, while contact with the second plunger withdraws the old thread from the knitting; thread-shearing mechanism which is operated by contact with the first plunger; and a pattern mechanism whereby the elevation or depression of said plungers to contact with the thread-changing and thread-shearing mechanism is controlled, substantially as set forth.

20. In a knitting-machine, the combination with thread-changing levers, each provided with means to guide a thread to the needles; of means arranged to transpose said levers, comprising a crank-shaft provided with cranks operatively related to the respective levers; means arranged to rotate said crank-shaft, comprising a counter-shaft connected therewith; a star-wheel on said counter-shaft; plungers; means arranged to present said plungers in operative relation with said star-wheel, comprising a lever and a pattern mechanism arranged to actuate it, substantially as set forth.

21. In a knitting-machine, the combination of thread-changing levers and means to operate them; a shearing device arranged to automatically sever the idle thread from the fabric; a thread-clamping device comprising a lever, arranged to automatically clamp the idle thread when severed from the fabric and to hold it in position; a spring operatively engaged with said clamping-lever; and, means arranged to shift the thread-changing levers into operative relation with said clamping-lever, comprising a variable pattern mechanism, substantially as set forth.

815,168. FRICTION-CLUTCH. FERDINAND F. HOEHNE and AUGUST DRESSEL, Kaukauna, Wis., assignors of one-third to O. M. Farwell, Kaukauna, Wis. Filed July 17, 1905. Serial No. 270,083.

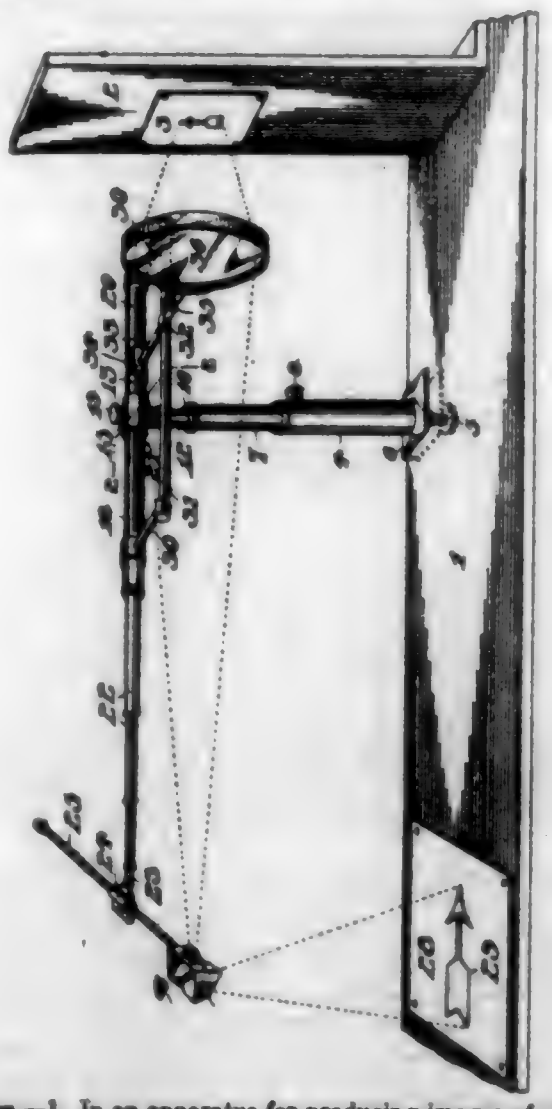
Claim.—The combination of a shaft, a pulley loosely mounted thereon, a disk keyed to said pulley and formed with apertures, sliding friction blocks or elements in said apertures, a second disk keyed to said shaft and formed with a screw-threaded hub, a flanged clamping-ring, guide-rods for slidably connecting the latter to the second-mentioned disk, springs upon said rod for forcing said ring and said disk apart, threaded rods carried by said ring, levers pivoted upon the second-mentioned disk and formed with apertures to receive said rods, adjusting-nuts upon the threaded ends of said rods, a collar upon said threaded hub, adjusting-nuts upon said threaded hub to limit the movement of said collar, bell-cranks pivoted to said collar, links connecting said bell-cranks and levers, a stop-collar surrounding said shaft and said hub, a sliding sleeve upon said shaft, links connecting said sleeve and said bell-cranks, and a lever for shifting said sleeve, substantially as described.



815,169. METHOD OF ASSORTING SILKS. HANS HOPER, New York, N. Y. Filed Feb. 3, 1905. Serial No. 244,064.

Claim.—The method of assorting silks of different sizes or thicknesses into lots comprising filaments all of substantially the same size or thickness which consists in weighing the silk in the filament, and in comparatively short lengths at a time, then separating those lengths of filament having approximately the same weight from the remainder, and then joining those lengths of filaments having approximately the same weight together to make a single thread thereof, substantially as described.

815,170. APPARATUS FOR PRODUCING IMAGES OF OBJECTS. JAMES R. HOOPER, Pittsburg, Pa. Filed Dec. 17, 1904. Serial No. 237,256.



Claim.—1. In an apparatus for producing images of objects, a vertically-adjustable support, a horizontal rod carried by the support and adjustable thereon, a lens carried by said rod and adjustable thereon, a prism also carried by said rod and adjustable toward and from the lens, and a support to receive the image.

2. In an apparatus for producing images of objects, a support, a horizontal rotatable rod carried thereby, a prism adjustable longitudinally of the rod, and a support for the image.

3. In an apparatus for producing images of objects, a support, a horizontal rod carried thereby, an arm supported by said rod and ad-

justable therealong, a lens supported on said arm, a prism arranged to transmit the real image of the object to the eye and a support for the virtual image.

4. In an apparatus for producing images of objects, a horizontal rod, a support secured thereto, an arm supported and guided by said rod and support and adjustable therealong, a lens carried on said arm, a prism, and an image-support.

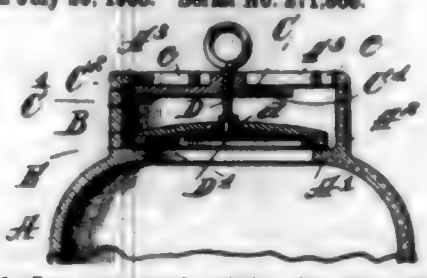
5. In an apparatus for producing images of objects, an object-support, a lens and a prism, pivotally adjustable in the same plane, and an image-support.

6. In an apparatus for producing images of objects, a horizontal rod, an arm projecting therefrom, a lens carried by the arm, a second arm carried by the rod, a prism carried by the second arm, and a support on which the virtual image of the object may be seen.

7. In an apparatus for producing images of objects, a horizontal rod, an arm projecting therefrom, a lens carried by the arm, a second arm carried by the rod, a prism carried by the second arm, and adjustable transversely thereof.

8. In an apparatus for producing images of objects, a vertical telescopic support, a telescopic rod carried thereby, a prism carried by the rod, a lens, and an image-support.

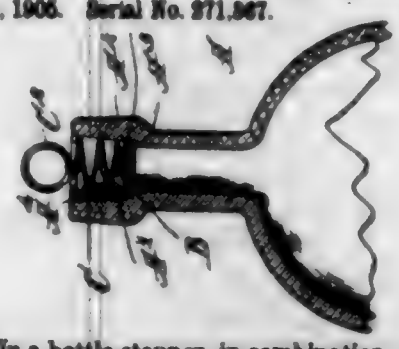
815,171. FRUIT-JAR AND COVER. JOHN S. HUFFMAN, Rockford, Ill. Filed July 29, 1905. Serial No. 271,866.



Claim.—1. In a receptacle of the class described, in combination, a fruit-jar having an inwardly-projecting annular flange-seat, in the lower portion of its neck, and provided with a plurality of inwardly-projecting radial lugs in the upper portion thereof, a circular closure fitted to the annular flange-seat in the jar-neck, a spider provided with a plurality of radial arms, the free ends whereof are adapted to pass downward between and be rotated under the radial lugs in the neck of the jar, and an exteriorly-threaded spindle tapped through the center of the spider and swiveled, by its lower end, to the closure, substantially as described.

2. In a receptacle of the class described, in combination, a fruit-jar having an inwardly-projecting annular flange-seat A′, in the lower portion of its neck A^2, and provided with a plurality of inwardly-projecting radial lugs A^3 in the upper portion thereof, a closure B fitted to the annular flange-seat A′, a spider C provided with a plurality of radial arms C′, the free ends C^2 whereof are adapted to pass downward between and be rotated under the radial lugs A^3 in the neck of the jar, and an exteriorly-threaded spindle D tapped through the center of the spider C and swiveled, by its lower end, to the closure B, substantially as described.

815,172. BOTTLE-STOPPER. JOHN S. HUFFMAN, Rockford, Ill. Filed July 29, 1905. Serial No. 271,867.

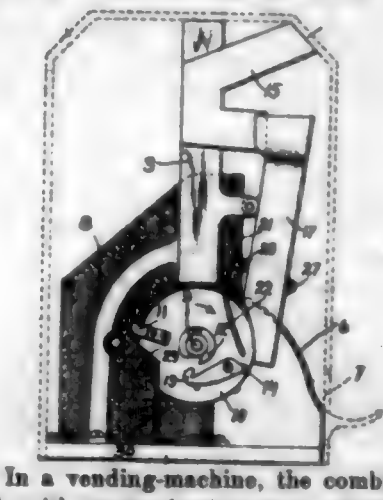


Claim.—1. In a bottle-stopper, in combination, a bottle having a transversely-enlarged circular recess, in the neck thereof, terminating, at its lower end, in a circular closure-seat and, at its upper end, in a spiral convolution, a circular closure fitted to the seat in the neck of the bottle, to hermetically seal the same, and a spiral spring includible and compressible between the closure and convolution at the upper end of the transversely-enlarged circular recess in the neck of the bottle, substantially as described.

2. In a bottle-stopper, in combination, a bottle having a transversely-enlarged circular recess, in the neck thereof, terminating, at its lower end, in a circular closure-seat and, at its upper end, in a spiral convolution, a circular closure fitted to the seat in the neck of the bottle, to hermetically seal the same, and a spiral spring connected, by its lower end, to the closure and terminating, at its upper end, in a ring, whereby to turn the same under the convolution at the upper end of the transversely-enlarged circular recess in the neck of the bottle, to secure the closure upon its seat, substantially as described.

3. In a bottle-stopper, in combination, a bottle having a circular recess A′ in the neck thereof, terminating, at its lower end, in a circular closure-seat A^5 and, at its upper end, in a spiral convolution A^4, a closure fitted to the seat A^5, and a spiral spring C connected, by its lower end, to the closure B and terminating, at its upper end, in means whereby to turn the same, substantially as described.

815,178. VENDING-MACHINE. FRANK A. HUSER, Hamilton, Ohio. Filed July 19, 1905. Serial No. 270,285.



Claim.—1. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a magazine for supporting a pile of the articles to be vended, of a drag member loose on said main shaft and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device serving to lock the drag member temporarily to said shaft, and a coin-chute having its discharge end in position to deliver a passing coin against a releasing-arm connected with the motor-restraining device and against a member serving to effect the engagement of said clutching device.

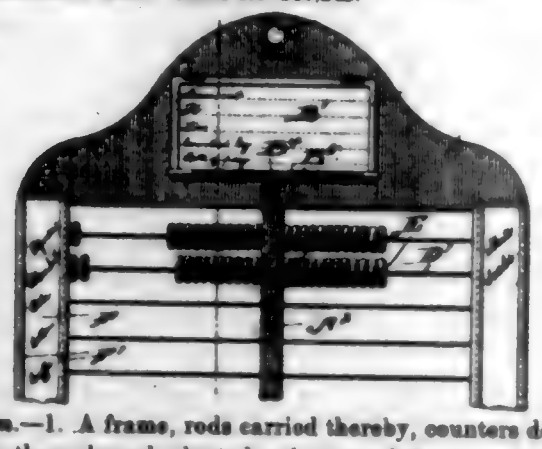
2. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a magazine for supporting a pile of the articles to be vended, of a drag member loose on said main shaft and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device serving to lock the drag member temporarily to said shaft, a spring acting on the drag member and serving to impart to it a motion of angular advance upon said shaft after the motor comes to rest, and a coin-chute having its discharge end in position to deliver a passing coin against a releasing-arm connected with the motor-restraining device and against a member serving to effect the engagement of said clutching device.

3. In a vending-machine, the combination, substantially as set forth, with a motor having a main shaft, mechanism normally restraining the motor from motion, and a plurality of magazines for supporting individual piles of the articles to be vended, of a drag member loose on said main shaft below each magazine and having claws adapted to sweep the lowermost article from the pile in the magazine, a normally disengaged clutch device for each drag member serving to lock the drag member temporarily to said shaft, a releasing-arm connected with the motor-restraining device and a coin-chute for each magazine having its discharge end in position to deliver a passing coin against the releasing-arm and against a member of the clutching device pertaining to the appropriate drag member.

4. In a vending-machine, the combination, substantially as set forth, of a motor, a main shaft therefor, a motor-restraining device serving, when released, to arrest the motion of the motor at the end of one turn of said shaft, a series of drag members loose on said shaft and each provided with drag-claws, individual clutch devices normally disengaged but serving to lock the drag members temporarily to the shaft, an individual magazine over each drag member for supporting a pile of the articles to be vended in position to have the lowermost article withdrawn by said drag-claws, a motor-starting arm appropriate to each magazine and adapted, when moved, to release the motor, an arm forming a part of each individual clutching device and serving when moved to cause the appropriate clutching device to engage, and a coin-chute for each magazine with its discharge end in position to deliver a passing coin against the appropriate motor-starting arm and clutch-engaging arm.

5. In a vending-machine, the combination, substantially as set forth, of a motor, a main shaft therefor, a motor-restraining device serving, when released, to arrest the motion of the motor at the end of one turn of said shaft, a series of drag members loose on said shaft and each provided with drag-claws, individual clutch devices normally disengaged but serving to lock the drag members temporarily to the shaft, an individual magazine over each drag member for supporting a pile of the articles to be vended in position to have the lowermost article withdrawn by said drag-claws, a motor-starting arm appropriate to each magazine and adapted, when moved, to release the motor, a clutch-engaging arm forming a part of each individual clutching device and serving when moved to cause the appropriate clutching device to engage, a coin-chute for each magazine with its discharge end in position to deliver a passing coin against the appropriate motor-starting arm and clutch-engaging arm, and a spring engaging each drag member and serving to give to the drag member a motion of angular advance after being unclutched from the shaft.

815,174. LAUNDRY-REGISTER. GUY R. JAMES, Rome, Miss. Filed June 27, 1905. Serial No. 267,345.

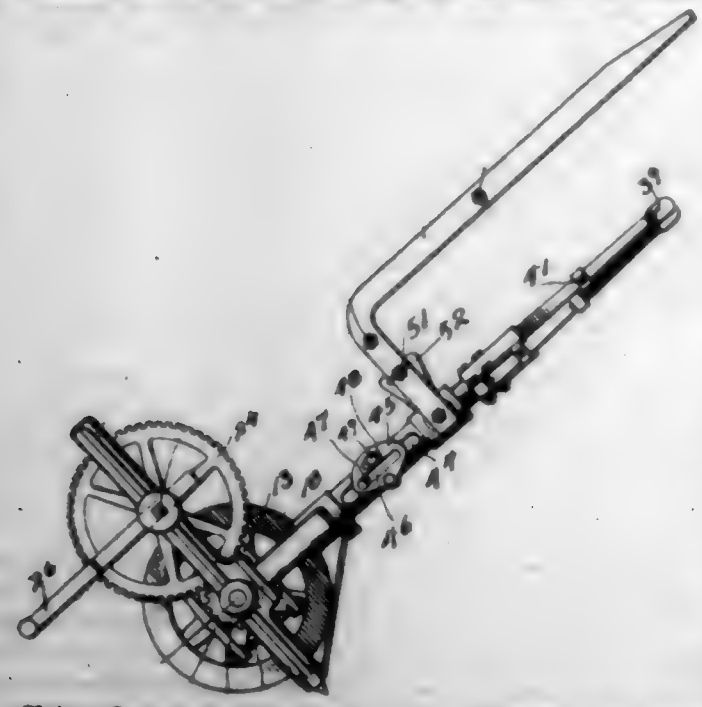


Claim.—1. A frame, rods carried thereby, counters detachably held upon the rods and adapted to be moved thereon, and a spring adapted to prevent accidental movement of the counter upon the rod.

2. The combination with a frame having a plurality of rods thereon, a counter radially slotted and a spring member extending longitudinally in the slot and connected at each end to the counter, said spring member being adapted to engage one side of one of said rods.

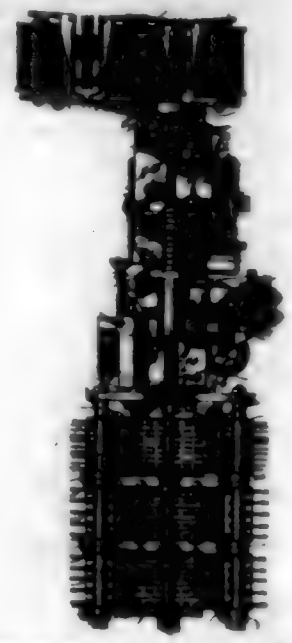
3. A device of the kind described comprising a frame, flanges carried by the sides of the frame, a strip having imprinted matter thereon held in each side of the frame by the flanges upon that side, a plurality of transverse rods carried by the frame, said rods alining with the matter imprinted upon the said strips, slotted counters carried by and movable on the rods, and a wire in the slot of each counter, adapted to hold the same to the rod, as and for the purpose set forth.

815,175. FILING-MACHINE. MONROWE W. JONES and JOSEPH A. DENNIS, Ardmore, Ind. Ter. Filed Apr. 17, 1905. Serial No. 255,993.



Claim.—In a device of the character described the combination with a frame having a slidable element and mechanism within the frame for reciprocating the element; of a grooved head at one end of said element, arms pivoted in the grooves and having means for engaging files throughout their lengths, said arms being crossed, and a spring interposed between, and contacting with, the arms to hold them normally in contact.

815,176. AUTOMATIC TELEPHONE CONNECTOR-SWITCH. ALEXANDER E. KEITH, JOHN ERICKSON, and CHARLES J. ERICKSON, Chicago, Ill., assignors to Automatic Electric Company, Chicago, Ill. Filed Apr. 21, 1905. Serial No. 256,304.



Claim.—1. A "connector" for automatic telephone systems, comprising a rotatable and endwise-movable switch-shaft having "vertical" and "rotary" ratchet-teeth, an electromagnetically-actuated pawl for engaging the "vertical ratchet-teeth" and thereby giving the said shaft a step-by-step vertical movement, an electromagnetically-actuated pawl for engaging the said "rotary ratchet-teeth" and thereby giving the said shaft a step-by-step rotary motion, a double dog having portions adapted to engage said "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a "release-magnet," and a "release-armature" adapted when attracted by the said magnet to positively draw the said double dog out of engagement with said ratchet-teeth, and to thereby allow the switch-shaft to restore itself to its normal position, and means for catching and holding the said double dog in its normal position out of engagement with the said ratchet-teeth.

2. A "connector" for automatic telephone systems, comprising an electromagnetically-actuated switch-shaft, switch-contacts operated thereby, a locking device for holding the shaft against back movement during its operation, a "release-magnet," and a "release-armature" adapted when attracted to draw the said locking device into position to release the said shaft, said locking device consisting of a "double dog" adapted when released from its normal position to prevent both endwise and rotary motion of the shaft in a backward direction and there being a line-circuit provided with a pair of bridged line-relays having normally open contacts which control the energizing of said release-magnet and which can only be closed together by the simultaneous energization of said relays.

3. A "connector" for automatic telephone systems, comprising electromagnetically-operated switching means for making the desired connection, a locking device for holding the switching means against back movement, a "release-magnet," and a "release-armature" adapted when attracted by the said magnet to move the said locking device into position to release the said switching means and thereby permit the latter to resume its normal condition, said locking device consisting of a "double dog" adapted when released from its normal position to prevent both endwise and rotary motion of the switching means in a backward direction and there being a line-circuit provided with a pair of bridged line-relays having normally open contacts which control the energizing of said release-magnet and which can only be closed together by the simultaneous energization of said relays.

4. A "connector" for automatic telephone systems, comprising switch-contacts, a shaft by which the contacts are operated, step-by-step mechanism for operating said shaft, means for locking the switch-contacts in different positions, so as to temporarily maintain any one of a number of possible connections, a "release-magnet," a "release-armature" adapted when attracted by said magnet to with-

draw said locking means and thereby release the means for operating the switch-contacts, and spring means for automatically restoring the switch-contacts to normal position upon the energizing of said magnet, said locking means consisting of a "double dog" adapted when released from its normal position to prevent both endwise and rotary motion of the shaft in a backward direction and there being a line-circuit provided with a pair of bridged line-relays having normally open contacts which control the energizing of said release-magnet and which can only be closed together by the simultaneous energization of said relays.

5. A "connector" for automatic telephone systems, comprising switching-contacts, means for operating said contacts, locking means for maintaining the switching-contacts in any desired position so as to temporarily establish any one of a number of possible connections, a "release-magnet," a "release-armature" hung at its upper end and having its lower end adapted to engage the said locking means, spring means for keeping the said armature normally retracted, means for keeping said locking means normally retracted, and for automatically releasing said locking means upon starting the operation of said switching-contacts, the said armature being adapted when attracted by the magnet to withdraw the said locking means and thereby effect a release of the switching-contacts, and automatic means for restoring the released switching-contacts to normal position.

6. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for insuring against back movement of the contacts during their operation, a "release-magnet," a flat spring having one end portion suitably mounted and held in a horizontal position, a "release-armature" having its upper end provided with engaging portions by which the armature is hung upon the opposite edge portions of the horizontal portion of the spring, said spring having a couple of side portions adapted to engage the upper end of the armature at points above the axis about which the latter swings, and the spring also having a lower portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being adapted when attracted by the magnet to withdraw the said locking device and thereby effect a release of the switching-contacts, together with automatic means for restoring the released switching-contacts to normal position.

7. A "connector" for automatic telephone systems, comprising switching-contacts, and suitable means for operating the same, a bracket having a vertically-disposed lower portion and an upper horizontal portion, a locking device for preventing back movement of the switching-contacts during their operation, a "release-magnet" having one end suitably secured to the vertical portion of said bracket, a flat spring secured to the upper horizontal portion of the bracket, a "release-armature" hung on said spring and normally held away from the magnet by the same, said armature being adapted when attracted to withdraw the said locking device and thereby effect a release of the switching-contacts, and spring means for automatically restoring the released switching-contacts to normal position.

8. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a spring-catch for normally holding said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the said locking device upon starting the operation of the switching-contacts, a "release-magnet," and a "release-armature" adapted when attracted to withdraw said locking device and thereby effect a release of the switching-contacts, together with spring means for automatically restoring the released switching-contacts to normal position.

9. A "connector" for automatic telephone systems, comprising switching-contacts mounted on the shaft, a "side switch," a locking device for preventing back movement of the shaft during the operation of the "connector," means for normally holding said locking device in an inoperative condition, means for operating the said shaft and the "side switch," automatic means for releasing the said locking device upon starting the operation of the "connector," a "release-magnet," a "release-armature" adapted when attracted by said magnet to withdraw the said locking device, and suitable connections whereby the energizing of said magnet is also accompanied by a restoration of said "side switch" together with a line-circuit, and a pair of line-relays bridged across said line-circuit, said line-relays being provided with a pair of normally separated switch-contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays.

10. A "connector" for automatic telephone systems, comprising a switch-shaft, means for operating said shaft, a locking device for preventing back movement of the shaft during its operation, a spring-catch for normally holding said locking device in an inoperative position, a "release-magnet," means for automatically throwing said locking device into action upon starting the operation of the "connector," a "release-armature" adapted when attracted by said magnet to withdraw said locking device, a "side switch," and a connection between said "side switch" and locking device whereby the energizing of said magnet and the attraction of said armature is necessarily accompanied by a restoration of both the said shaft and the said "side switch."

11. A "connector" for automatic telephone systems, comprising a switch-shaft provided with "vertical" and "rotary" ratchet-teeth, a double dog having portions adapted to engage both the "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a stationary support, a spring-catch having one end suitably secured to said support and its other end adapted to engage said double dog and thereby normally hold the latter in an inoperative condition, electromagnetically-actuated means for automatically disengaging said catch and thereby releasing the said double dog upon starting the operation of the "connector," and electromagnetically-operated means for restoring said double dog to its normal position and thereby releasing the shaft, together with spring means for automatically returning the released shaft to its normal position.

12. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a catch for normally holding the said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the locking device upon starting the operation of the "connector," and electromagnetically-operated means for positively withdrawing said locking device and moving it back into its normal position in engagement with said catch.

13. A "connector" for automatic telephone systems, comprising a rotatable and endwise-movable switch-shaft, locking means for preventing back movement of the shaft during its operation, a device for normally maintaining said locking means in an inoperative condition, means for automatically throwing the said locking means into operation upon starting the operation of the "connector," a "side switch," a "private magnet" having an armature constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," a "release-armature" adapted when attracted to restore the said locking means to normal condition and thereby effect a release of the switch-shaft, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of said "side switch" to its normal position, and spring means for restoring the released shaft to its normal position.

14. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, normally inoperative locking means adapted to prevent back movement of the switching-contacts during the operation of the "connector," and after the said contacts have been moved to the desired position, a "side switch," a "private magnet" provided with an armature and constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," means whereby the said "release-magnet" when energized effects a restoration of said locking means to normal position, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of the "side switch" to normal position, and a spring-switch for retracting the armature of the "private magnet."

15. A "connector" for automatic telephone systems, comprising switching means and means for locking the same in position to temporarily maintain any one of a number of possible connections, a "release-magnet," a flat spring having its upper horizontal portion adjustably mounted, a "release-armature" having its upper end removably hung upon the edges of the said horizontal portion of the spring, said spring having upwardly-projecting side portions adapted to engage the upper end portions of the armature at points above the axis about which the latter tilts or swings, and the spring also having a lower end portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being thereby adapted when attracted to restore the said locking means to normal condition and thus effect a release of the switching means, together with spring means for restoring the switching means when released to normal position.

16. A "connector" for automatic telephone systems, compris-

ing a rotatable and endwise-movable switch-shaft having "vertical" and "rotary" ratchet-teeth, an electromagnetically-actuated pawl for engaging the "vertical ratchet-teeth" and thereby giving the said shaft a step-by-step vertical movement, an electromagnetically-actuated pawl for engaging the said "rotary ratchet-teeth" and thereby giving the said shaft a step-by-step rotary motion, a double dog having portions adapted to engage said "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a "release-magnet," and a "release-armature" adapted when attracted by the said magnet to positively draw the said double dog out of engagement with said ratchet-teeth, and to thereby allow the switch-shaft to restore itself to its normal position, and means for catching and holding the said double dog in its normal position out of engagement with the said ratchet-teeth, together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the relays are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

17. A "connector" for automatic telephone systems, comprising an electromagnetically-actuated switch-shaft, switch-contacts operated thereby, a locking device for holding the shaft against back movement during its operation, a "release-magnet," and a "release-armature" adapted when attracted to draw the said locking device into position to release the said shaft, together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

18. A "connector" for automatic telephone systems, comprising electromagnetically-operated switching means for making the desired connection, a locking device for holding the switching means against back movement, a "release-magnet," and a "release-armature" adapted when attracted by the said magnet to move the said locking device into position to release the said switching means and thereby permit the latter to resume its normal condition, together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

19. A "connector" for automatic telephone systems, comprising switch-contacts, step-by-step mechanism for operating said contacts, means for locking the switch-contacts in different positions so as to temporarily maintain any one of a number of possible connections, a "release-magnet," a "release-armature" adapted when attracted by said magnet to withdraw said locking means and thereby release the means for operating the switch-contacts, and spring means for automatically restoring the switch-contacts to normal position upon the energizing of said magnet, together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

20. A "connector" for automatic telephone systems, comprising switching-contacts, means for operating said contacts, locking means for maintaining the switching-contacts in any desired position so as to temporarily establish any one of a number of possible connections, a "release-magnet," a "release-armature" hung at its upper end and having its lower end adapted to engage the said locking means, spring means for keeping the said armature normally retracted, means for keeping said locking means normally retracted, and for automatically releasing said locking means upon starting the operation of said switching-contacts, the said armature being adapted when attracted by the magnet to withdraw the said locking means and thereby effect a release of the switching-contacts, and automatic means for restoring the released switching-contacts to normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

21. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for insuring against back movement of the contacts during their operation, a "release-magnet," a flat spring having one end portion suitably mounted and held in a horizontal position, a "release-armature" having its upper end provided with engaging portions by which the armature is hung upon the opposite edge portions of the horizontal portion of the spring, said spring having a couple of side portions adapted to engage the upper end of the armature at points above the axis about which the latter swings, and the spring also having a lower portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being adapted when attracted by the magnet to withdraw the said locking device and thereby effect a release of the switching-contacts, together with automatic means for restoring the released switching-contacts to normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscribe and operative to effect the release and restoration of the "connector" to normal position.

22. A "connector" for automatic telephone systems, comprising switching-contacts, and suitable means for operating the same, a bracket having a vertically-disposed lower portion and an upper horizontal portion, a locking device for preventing back movement of the switching-contacts during their operation, a "release-magnet" having one end suitably secured to the vertical portion of said bracket, a flat spring secured to the upper horizontal portion of the bracket, a "release-armature" hung on said spring and normally held away from the magnet by the same, said armature being adapted when attracted to withdraw the said locking device and thereby effect a release of the switching-contacts, and spring means for automatically restoring the released switching-contacts to normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

23. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a spring-catch for normally holding said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the said locking device upon starting the operation of the switching-contacts, a "release-magnet," and a "release-armature" adapted when attracted to withdraw said locking device and thereby effect a release of the switching-contacts, together with spring means for automatically restoring the released switching-contacts to normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

24. A "connector" for automatic telephone systems, comprising switching-contacts mounted on the shaft, a "side switch," a locking device for preventing back movement of the shaft during the operation of the "connector," means for normally holding said locking device in an inoperative condition, means for operating the said shaft and the "side switch," automatic means for releasing the said locking device upon starting the operation of the "connector," a "release-magnet," a "release-armature" adapted when attracted by said magnet to withdraw the said locking device, and suitable connections whereby the energizing of said magnet is also accompanied by a restoration of said "side switch," together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling sub-

scriber and operative to effect the release and restoration of the "connector" to normal position.

25. A "connector" for automatic telephone systems, comprising a switch-shaft, means for operating said shaft, a locking device for preventing back movement of the shaft during its operation, a spring-catch for normally holding said locking device in an inoperative position, a "release-magnet," means for automatically throwing said locking device into action upon starting the operation of the "connector," a "release-armature" adapted when attracted by said magnet to withdraw said locking device, a "side switch" and a connection between said "side switch" and locking device whereby the energizing of said magnet and the attraction of said armature is necessarily accompanied by a restoration of both the said shaft and the said "side switch," the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

26. A "connector" for automatic telephone systems, comprising a switch-shaft provided with "vertical" and "rotary" ratchet-teeth, a double dog having portions adapted to engage both the "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a stationary support, a spring-catch having one end suitably secured to said support and its other end adapted to engage said double dog and thereby normally hold the latter in an inoperative condition, electromagnetically-actuated means for automatically disengaging said catch and thereby releasing the said double dog upon starting the operation of the "connector," and electromagnetically-operated means for restoring said double dog to its normal position and thereby releasing the shaft, together with spring means for automatically returning the released shaft to its normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

27. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a catch for normally holding the said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the locking device upon starting the operation of the "connector," and electromagnetically-operated means for positively withdrawing said locking device and moving it back into its normal position in engagement with said catch, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

28. A "connector" for automatic telephone systems, comprising a rotatable and endwise-movable switch-shaft, locking means for preventing back movement of the shaft during its operation, a device for normally maintaining said locking means in an inoperative condition, means for automatically throwing the said locking means into operation upon starting the operation of the "connector," a "side switch," a "private magnet" having an armature constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," a "release-armature" adapted when attracted to restore the said locking means to normal condition and thereby effect a release of the switch-shaft, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of said "side switch" to its normal position, and spring means for restoring the released shaft to its normal position, together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

29. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, normally inoperative locking means adapted to prevent back movement of the switching-contacts during the operation of the "connector," and after the said contacts have been moved to the desired position, a "side switch," a "private magnet" provided with an armature and constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," means whereby the said "release-magnet" when energized effects a restoration of said locking means to normal position, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of the "side switch" to normal position, and a spring-switch for retracting the armature of the "private magnet," together with a line-circuit, the "connector" as a whole comprising also a pair of "line-relays" bridged across the line-circuit, means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

30. A "connector" for automatic telephone systems, comprising switching means and means for locking the same in position to temporarily maintain any one of a number of possible connections, a "release-magnet," a flat spring having its upper horizontal portion adjustably mounted, a "release-armature" having its upper end removably hung upon the edges of the said horizontal portion of the spring, said spring having upwardly-projecting side portions adapted to engage the upper end portions of the armature at points above the axis about which the latter tilts or swings, and the spring also having a lower end portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being thereby adapted when attracted to restore the said locking means to normal condition and thus effect a release of the switching means, together with spring means for restoring the switching means when released to normal position, the "connector" as a whole comprising also a pair of "line-relays" and means whereby the same are controllable by a calling subscriber and operative to cause the "connector" to establish connection with the called-subscriber's line, and means whereby said relays are also controllable by a calling subscriber and operative to effect the release and restoration of the "connector" to normal position.

31. A "connector" for automatic telephone systems, comprising a rotatable and endwise-movable switch-shaft having "vertical" and "rotary" ratchet-teeth, an electromagnetically-actuated pawl for engaging the "vertical ratchet-teeth" and thereby giving the said shaft a step-by-step vertical movement, an electromagnetically-actuated pawl for engaging the said "rotary ratchet-teeth" and thereby giving the said shaft a step-by-step rotary motion, a double dog having portions adapted to engage said "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a "release-magnet," and a "release-armature" adapted when attracted by the said magnet to positively draw the said double dog out of engagement with said ratchet-teeth, and to thereby allow the switch-shaft to restore itself to its normal position, and means for catching and holding the said double dog in its normal position out of engagement with the said ratchet-teeth, together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

32. A "connector" for automatic telephone systems, comprising an electromagnetically-actuated switch-shaft, switch-contacts operated thereby, a locking device for holding the shaft against back movement during its operation, a "release-magnet," and a "release-armature" adapted when attracted to draw the said locking device into position to release the said shaft, together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

33. A "connector" for automatic telephone systems, comprising electromagnetically-operated switching means for making the desired connection, a locking device for holding the switching means against back movement, a "release-magnet," and a "release-arma-

ture" adapted when attracted by the said magnet to move the said locking device into position to release the said switching means and thereby permit the latter to resume its normal condition, together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position

34. A "connector" for automatic telephone systems, comprising switch-contacts, step-by-step mechanism for operating said contacts, means for locking the switch-contacts in different positions so as to temporarily maintain any one of a number of possible connections, a "release-magnet," a "release-armature" adapted when attracted by said magnet to withdraw said locking means and thereby release the means for operating the switch-contacts, and spring means for automatically restoring the switch-contacts to normal position upon the energizing of said magnet, together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

35. A "connector" for automatic telephone systems, comprising switching-contacts, means for operating said contacts, locking means for maintaining the switching-contacts in any desired position so as to temporarily establish any one of a number of possible connections, a "release-magnet," a "release-armature" hung at its upper end and having its lower end adapted to engage the said locking means, spring means for keeping the said armature normally retracted, means for keeping said locking means normally retracted, and for automatically releasing said locking means upon starting the operation of said switching-contacts, the said armature being adapted when attracted by the magnet to withdraw the said locking means and thereby effect a release of the switching-contacts, and automatic means for restoring the released switching-contacts to normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

36. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for insuring against back movement of the contacts during their operation, a "release-magnet," a flat spring having one end portion suitably mounted and held in a horizontal position, a "release-armature" having its upper end provided with engaging portions by which the armature is hung upon the opposite edge portions of the horizontal portion of the spring, said spring having a couple of side portions adapted to engage the upper end of the armature at points above the axis about which the latter swings, and the spring also having a lower portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being adapted when attracted by the magnet to withdraw the said locking device and thereby effect a release of the switching-contacts, together with automatic means for restoring the released switching-contacts to normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

37. A "connector" for automatic telephone systems, comprising switching-contacts, and suitable means for operating the same, a bracket having a vertically-disposed lower portion and an upper horizontal portion, a locking device for preventing back movement of the switching-contacts during their operation, a "release-magnet" having one end suitably secured to the vertical portion of said bracket, a flat spring secured to the upper horizontal portion of the bracket, a "release-armature" hung on said spring and normally held away from the magnet by the same, said armature being adapted when attracted to withdraw the said locking device and thereby effect a release of the switching-contacts, and spring means for automatically restoring the released switching-contacts to normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

38. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a spring-catch for normally holding said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the said locking device upon starting the operation of the switching-contacts, a "release-magnet," and a "release-armature" adapted when attracted to withdraw said locking device and thereby effect a release of the switching-contacts, together with spring means for automatically restoring the released switching-contacts to normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

39. A "connector" for automatic telephone systems, comprising switching-contacts mounted on the shaft, a "side switch," a locking device for preventing back movement of the shaft during the operation of the "connector," means for normally holding said locking device in an inoperative condition, means for operating the said shaft and the "side switch," automatic means for releasing the said locking device upon starting the operation of the "connector," a "release-magnet," a "release-armature" adapted when attracted by said magnet to withdraw the said locking device, and suitable connections whereby the energizing of said armature is also accompanied by a restoration of said "side switch," together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

40. A "connector" for automatic telephone systems, comprising a switch-shaft, means for operating said shaft, a locking device for preventing back movement of the shaft during its operation, a spring-catch for normally holding said locking device in an inoperative position, a "release-magnet," means for automatically throwing said locking device into action upon starting the operation of the "connector," a "release-armature" adapted when attracted by said magnet to withdraw said locking device, a "side switch," and a connection between said "side switch" and locking device whereby the energizing of said magnet and the attraction of said armature is necessarily accompanied by a restoration of both the said shaft and the said "side switch," said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

41. A "connector" for automatic telephone systems, comprising a switch-shaft provided with "vertical" and "rotary" ratchet-teeth, a double dog having portions adapted to engage both the "vertical" and "rotary" ratchet-teeth to prevent back movement of the shaft during its operation, a stationary support, a spring-catch having one end suitably secured to said support and its other end adapted to engage said double dog and thereby normally hold the latter in an inoperative condition, electromagnetically-actuated means for automatically disengaging said catch and thereby releasing the said double dog upon starting the operation of the "connector," and electromagnetically-operated means for restoring said double dog to its normal position and thereby releasing the shaft, together with spring means for automatically returning the released shaft to its normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connec-

tor" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

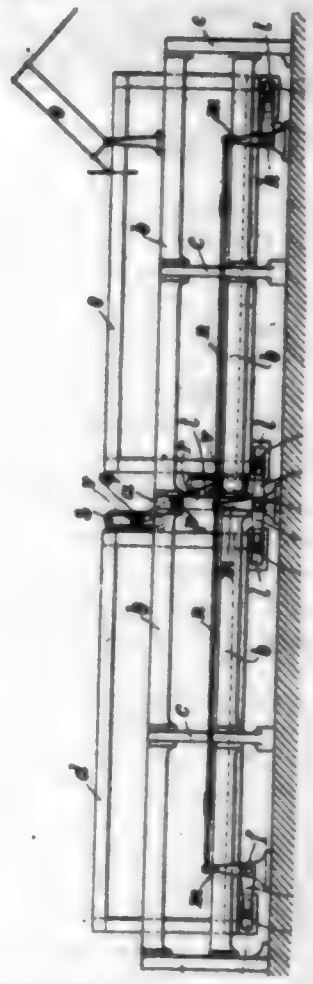
42. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, a locking device for preventing back movement of the switching-contacts during their operation, a catch for normally holding the said locking device in an inoperative condition, means for automatically disengaging said catch and releasing the locking device upon starting the operation of the "connector," and electromagnetically-operated means for positively withdrawing said locking device and moving it back into its normal position in engagement with said catch, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

43. A "connector" for automatic telephone systems, comprising a rotatable and endwise-movable switch-shaft, locking means for preventing back movement of the shaft during its operation, a device for normally maintaining said locking means in an inoperative condition, means for automatically throwing the said locking means into operation upon starting the operation of the "connector," a "side switch," a "private magnet" having an armature constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," a "release-armature" adapted when attracted to restore the said locking means to normal condition and thereby effect a release of the switch-shaft, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of said "side switch" to its normal position, and spring means for restoring the released shaft to its normal position, together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

44. A "connector" for automatic telephone systems, comprising switching-contacts and means for operating the same, normally inoperative locking means adapted to prevent back movement of the switching-contacts during the operation of the "connector," and after the said contacts have been moved to the desired position, a "side switch," a "private magnet" provided with an armature and constituting the sole means for electromagnetically setting the "side switch" in motion, a "release-magnet," means whereby the said "release-magnet" when energized effects a restoration of said locking means to normal position, suitable connections whereby the energizing of said "release-magnet" is also accompanied by a restoration of the "side switch" to normal position, and a spring-switch for retracting the armature of the "private magnet," together with a line-circuit provided with a pair of bridged line-relays having normally separated contacts which control the energizing of the release-magnet and which can only be closed together by the energizing of both relays, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

45. A "connector" for automatic telephone systems, comprising switching means and means for locking the same in position to temporarily maintain any one of a number of possible connections, a "release-magnet," a flat spring having its upper horizontal portion adjustably mounted, a "release-armature" having its upper end removably hung upon the edges of the said horizontal portion of the spring, said spring having upwardly-projecting side portions adapted to engage the upper end portions of the armature at points above the axis about which the latter tilts or swings, and the spring also having a lower end portion adapted to act as a stop to limit the movement of the armature away from the magnet, said armature being thereby adapted when attracted to restore the said locking means to normal condition and thus effect a release of the switching means, together with spring means for restoring the switching means when released to normal position, said "connector" as a whole comprising also a ringer-relay having a normally open circuit provided with a plurality of switch-points whereof one is normally open but closed while the "connector" is in use and then reopened immediately upon the energizing of the said electromagnetic means provided for effecting a restoration of the "connector" to normal position.

815,177. EMBROIDERING-MACHINE. JOHANN J. KRUSHE, Chemnitz, Germany. Filed Sept. 7, 1905. Serial No. 277,230.



Claim.—1. In embroidering-machines the combination of two embroidering-machines, each provided with an embroidery-frame, pivotal supporting members for said frames and means for moving the one frame an equal distance as the other frame in opposite direction.

2. The combination of two embroidering-frames, connected supporting means therefor causing one frame to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and means causing synchronous movement of said frames horizontally.

3. The combination of two embroidering-frames, connected supporting means loosely secured to said frames causing one to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and means loosely secured to said frames and causing synchronous movement thereof horizontally.

4. The combination of two embroidering-frames, movably-mounted supporting members therefor connected with each other and causing one frame to act as a counterbalance to the other and effecting synchronous movement of said frames in opposite directions vertically, and a lever connecting said frames and causing synchronous movement thereof horizontally.

5. The combination of two embroidering-frames, pivotally-mounted bell-crank levers connected with each other and secured to said frames to effect synchronous movement thereof in opposite directions vertically, and a pivotally-mounted lever connecting adjacent ends of said frames and causing synchronous movement thereof horizontally.

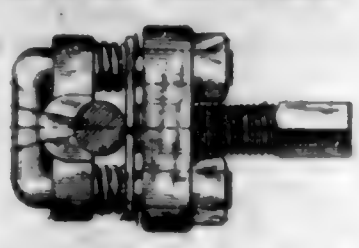
6. The combination of two embroidering-frames arranged end to end and provided with supporting-streets, bell-crank levers connected with streets at remote ends of said frames, a rocking lever connected with streets at adjacent ends of said frames, rods connecting said rocking and bell-crank levers causing synchronous movement of said frames in opposite directions vertically, and a pivotally-mounted lever connected with streets at the adjacent ends of said frames causing synchronous movement of the same horizontally.

7. The combination of two embroidering-frames, and means causing one of said frames to act as a counterbalance for the other.

8. The combination of two embroidering-frames, means caus-

ing one of said frames to act as a counterbalance for the other, and means effecting synchronous movement of said frames.

815,178. PUMP-ROD CLAMP. ANDREW KNOCKER, Humboldt, Kans. Filed Oct. 31, 1905. Serial No. 285,357.



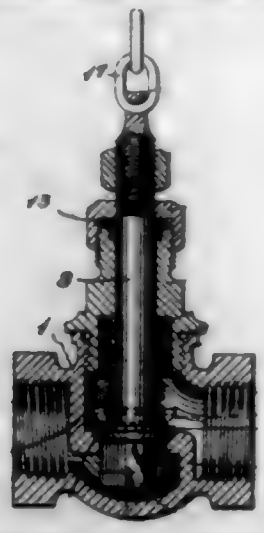
Claim.—1. A pump-rod clamp of the class described, constructed with a block, a yoke carried thereby, a block mounted upon the arms of the yoke, and a set-screw passing through said last-mentioned block; substantially as specified.

2. A pump-rod clamp, constructed with a block, a yoke carried thereby, a block mounted upon the arms of the yoke, a set-screw passing through said last-mentioned block, and a clamping-plate engaged by said set-screw for clamping upon the pump-rod; substantially as specified.

3. A pump-rod clamp, constructed with a block adapted to engage on the pump-rod, a yoke carried by said block, a second block mounted upon the arms of the yoke, a set-screw passing through said last-mentioned block, a clamping-plate arranged upon the arms of the yoke and engaged by the point of the set-screw, and expansive coil-springs arranged between the ends of the first-mentioned block and the clamping-plate; substantially as specified.

4. The combination with a pump-rod, of a block constructed to engage on said rod, a yoke carried by said block, a second block mounted upon the ends of the yoke, a set-screw passing through the center of the last-mentioned block, a clamping-plate arranged upon the yoke between the pump-rod and the second-mentioned block against which plate the point of the set-screw bears, and expansive coil-springs located upon the arms of the yoke between the clamping-plate and the first-mentioned block; substantially as specified.

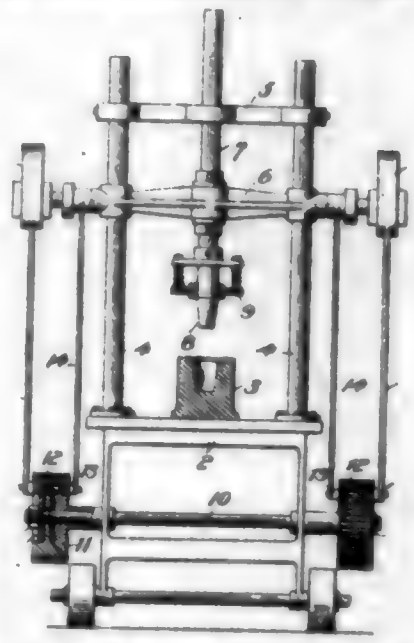
815,179. REGULATING-VALVE FOR GAS-BURNERS. LEVI F. KNODERER, Columbus, Ohio. Filed Aug. 28, 1905. Serial No. 276,006.



Claim.—The combination with a valve-casing having a dividing-wall provided with a valve-seat, of a reciprocating valve arranged above the seat and adapted to close down thereon, a stem extending upwardly from the valve passing through and projecting above the upper end of the valve-casing, a spring coiled about the valve-stem and confined between the valve and the upper end of the valve-casing, that portion of the valve-stem projecting above the valve-casing being screw-threaded, and a nut engaged with the threaded portion of the valve-stem adapted to contact with the valve-casing to prevent the valve from seating against the tension of the coiled spring and arranged to be adjusted to permit the valve to close on the seat.

815,180. GLASS-PRESS. HENRY R. KOEHLER and CHARLES L. BETZ, Rochester, Pa. Filed Nov. 26, 1904. Serial No. 234,299.

Claim.—1. In a press adapted for molding glass articles, the combination of a mold, a plunger, means for forcing the plunger into the mold including a friction device arranged to permit a slipping of the parts if the resistance to the forward movement of the plunger becomes too great, and positively-driven means for withdrawing the plunger from the mold, substantially as set forth.



2. In a press adapted to mold glass articles, the combination of a mold, a plunger, power-driven gearing, connections between the plunger and the power-driven gearing, and friction-driven means for causing a dwell or rest of the plunger after it has entered the mold and shaped the article, substantially as set forth.

3. In a molding apparatus adapted to form glass articles, the combination of a mold, a plunger, power-driven gearing, connections between the power-driven gearing and the plunger, including friction members, and means for causing throughout a portion of the cycle of movements of the parts a stoppage of that friction member that is connected with the plunger while the other friction member continues to move with the power driven gearing, whereby the plunger is caused to come to rest while within the mold, substantially as set forth.

4. In a molding apparatus adapted to form glass articles, the combination of a mold, a reciprocating plunger, power-driven gearing, connections between the power-driven gearing and the plunger for forcing the latter into the mold, including friction members arranged to permit the plunger to come to rest after having entered the mold, and means connected with the power-driven gearing for withdrawing the plunger from the mold, substantially as set forth.

5. In a press, the combination of a mold, a plunger, a cross-head in which the plunger is mounted, two wheels having frictional connection, one being power-driven, a pitman or connecting-rod between one of the wheels and the cross-head for moving the plunger into the mold, and a pitman or connecting-rod between the other wheel and the cross-head for withdrawing the plunger from the mold, substantially as set forth.

6. In a press, the combination of a mold, a plunger, a cross-head in which the plunger is mounted, means for driving the cross-head to force the plunger into the mold and for holding it therein, and other means for moving the said cross-head to withdraw the plunger from the mold and for restoring its driving means to an initial position, substantially as set forth.

7. In a press, the combination of a mold, a plunger, a cross-head in which the plunger is mounted, a wheel, a pitman connecting the wheel and the cross-head, means for turning the wheel to cause the plunger to move into the mold, means for arresting the movement of the wheel, and means for causing a backward movement of the wheel to withdraw the plunger from the mold, substantially as set forth.

8. In a press, the combination of a mold, a plunger, a cross-head in which the plunger is mounted, a pair of wheels mounted upon a common axis, each wheel being connected with the cross-head by an independent connecting-rod, and means for causing one wheel and its connecting-rod to act upon the cross-head to move the plunger into the mold, and for causing the other wheel and its connecting-rod to move the cross-head to withdraw the plunger from the mold, substantially as set forth.

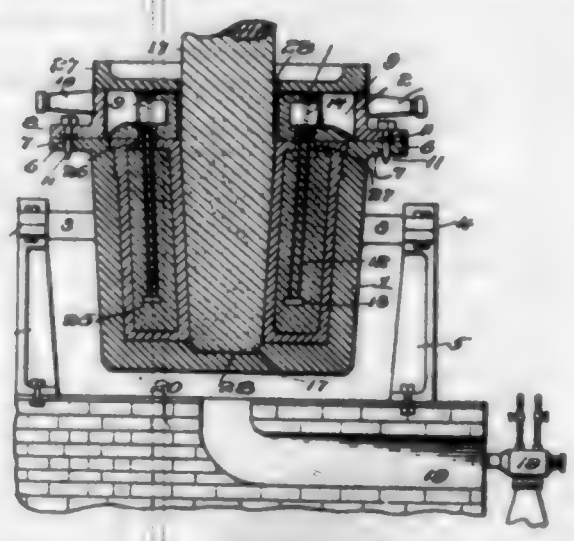
9. In a press, the combination of a mold, a plunger, a cross-head in which the plunger is mounted, a rotary shaft, a wheel mounted on said shaft and provided with a crank-pin, a connecting-rod between such crank-pin and the cross-head, the connecting-rod being so arranged that the plane in which it moves intersects the shaft on which the wheel is mounted, whereby the shaft operates as a stop to arrest the movement of the parts, means for moving the wheel to cause the

plunger to enter the mold, such means being arranged to be arrested when the resistance increases beyond a certain amount, and means for restoring the parts to an initial position, substantially as set forth.

10. In a press, the combination of a mold, a cross-head, a plunger carried thereby, a rotary shaft, a pair of wheels mounted on the shaft, one being loose and the other fast relative thereto, the wheels having frictional engaging surfaces, and one being power-driven, a connecting-rod between one of the wheels and the cross-head for moving the plunger into its mold, the connecting-rod being so arranged that its plane of movement intersects the shaft, and another connecting-rod between the other wheel and the cross-head arranged to restore the cross-head, its plunger, the other wheel and its connecting-rod to initial positions, substantially as set forth.

11. In a press, the combination of a cross-head, a plunger, a rotary shaft 10, two wheels 11, 12, mounted thereon, one being fast on the shaft and the other loose, and the wheel 12 being power-driven, means for holding the wheels in frictional engagement with each other, a connecting-rod 14 between the wheel 11 and the cross-head, the connecting-rod being so arranged that its plane of movement intersects the shaft 10, and a connecting-rod 18 between the wheel 12 and the cross-head, the end of this connecting-rod that engages with the cross-head being provided with a loop or slot 19, substantially as set forth.

815,181. **CASTING MECHANISM.** WILLIAM T. KRAUSE, Baltimore, Md., assignor of one-third to David R. Steele and one-third to Harry D. Harvey, Baltimore, Md. Filed Apr. 12, 1905. Serial No. 255,130.



Claim.—1. A casting mechanism, comprising a metallic mold or drag closed at the bottom, a cope suspended across the open top, a core suspended from said cope and vertically-movable jointed suspending means for supporting said core, the movement of said means effecting the vertical adjustment of the said core.

2. A casting mechanism, comprising a cup-shaped mold forming a metallic drag, supporting-trunnions projecting from the upper portion thereof, a cope extending across the upper edge of the same, supporting-trunnions projecting therefrom, a removable core hung from the under side of the cope, so as to project into said mold or drag and vertically-adjustable articulating supports carrying said core.

3. A casting mechanism comprising a cup-shaped unlined metal mold, a cope mounted on the upper open edge thereof and having core-supports extending inwardly over the mouth of the mold, adjustable suspension means carried by said projections, a core arranged to extend within the mold, and means embedded therein for engaging the said suspension means and thus properly holding the core within the mold.

4. A molding mechanism, comprising a hollow metallic mold, a cope capable of fitting upon said mold, a core, vertically-adjustable suspending means formed of jointed sections for holding the core upon said cope, and means for directing the cope accurately in position upon the mold for properly centering the core therein.

5. A casting mechanism, comprising a metallic mold, a cope capable of being accurately positioned over the same, a core adjustably suspended beneath the cope, the said core having hook-engaging means projecting above its upper surface and vertically-adjustable hooks carried by the cope and engaging said hook-engaging means, for holding the core in place.

6. A casting mechanism comprising a mold, a cope arranged above the same and having inwardly-extending core-supporting arms, a removable core, loops molded in the said core and means carried by said arms for engaging and removably suspending the loops from the said arms.

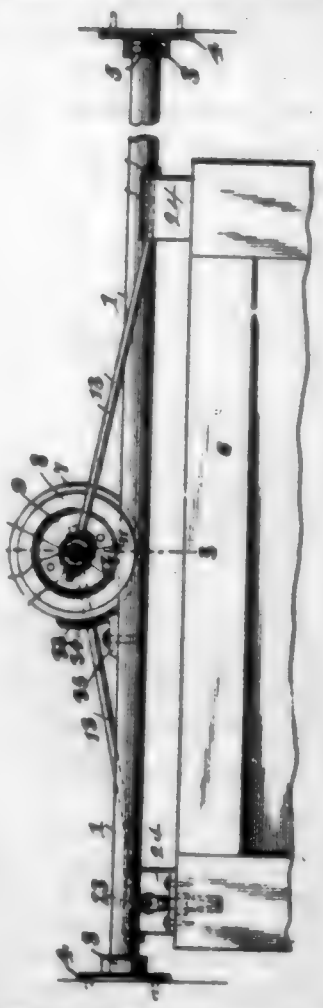
7. A casting mechanism, comprising a mold, a cope fitting upon the same, comprising a ring or frame, inwardly-projecting arms having slotted inner ends, bolts mounted in the slotted ends of said arms, and core-supporting loops hung upon said bolts for attaching a core to the cope-arms.

8. A casting mechanism, comprising a mold, a cope fitting upon the same, and provided with supporting-trunnions by which the cope may be elevated or depressed or may be turned over upon a suitable support, core-supporting arms mounted in the cope and an adjustable jointed means for suspending the core so that it projects into the mold.

9. A casting mechanism comprising a pivotally-mounted mold, a cope fitting upon the same having a sand-receiving body portion, arms projecting within the sand when tamped in the cope, core-supporting hooks mounted upon said arms, fragile loops suspended from the hooks and heads formed upon their lower ends and embedded in the core for facilitating the supporting of the core upon the cope, and means carried by the cope and engaging the mold for properly centering the core within the mold.

10. A casting mechanism, comprising a metallic mold, a removable cope mounted thereon and carrying a core, the core being capable of projecting into the mold, the cope having a central opening formed therein, and a central removable core arranged within the core-supporting cope.

815,182. **SLIDING-DOOR HANGER.** FERDINAND H. LANGE, Jr., Wilkes-Barre, Pa. Filed Aug. 31, 1904. Serial No. 222,878.



Claim.—1. A sliding-door hanger, comprising a hollow track provided at the top with a slot, a supporting-wheel having a periphery conforming to the configuration of the track and provided with a projecting flange arranged to run in the slot, and means for suspending a door from the supporting-wheel.

2. A sliding-door hanger, comprising a hollow track provided at the top with a slot, a supporting-wheel having a periphery conforming to the configuration of the track and provided with a projecting flange extending through the slot to the bottom of the track and arranged to run on the same, and means for suspending a door from the supporting-wheel.

3. A sliding-door hanger, comprising a track, a supporting-wheel, a door, and hanger-rods located at opposite sides of the track and extending from the wheel to the outer portions of the door.

4. A sliding-door hanger, comprising a track, a supporting-wheel, an axle having slots, rods arranged in the slots, blocks mount-

ed on the rods and forming seats for the axle, and means for connecting the rods with a door.

5. The combination with a door, of a supporting-track, a roller running on the track, oppositely-extending hanger-rods connected to the roller at opposite sides of the track, and plates attached to the rods and secured to the door at opposite sides of the center thereof.

6. The combination with a door, of a supporting-track, a roller running on the track, oppositely-extending hanger-rods connected to the roller and secured to the door, and rollers adjustably mounted on the door at opposite sides of the center thereof and engaging the under side of the track.

7. The combination with a door, of a supporting-track, a fixed axle, a roller journaled on the fixed axle and arranged on the track, hanger-rods connected to the axle on opposite sides of the roller, plates secured to the door and connected to the said rods, and rollers adjustably mounted on the said plates and engaging the under side of the track at opposite sides of the center of the door.

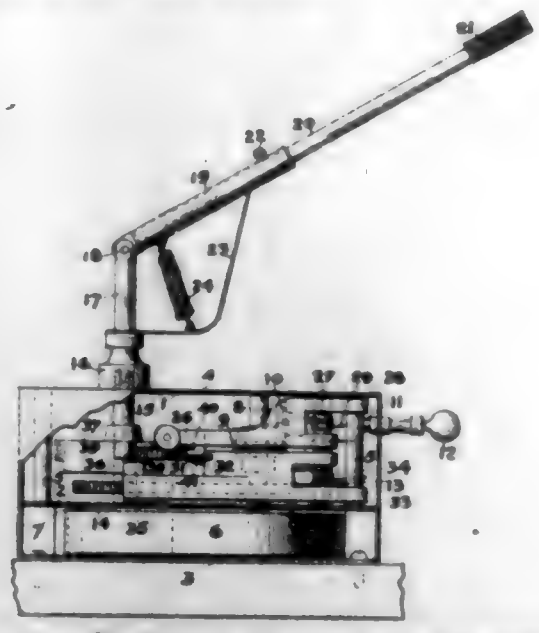
8. The combination with a door, of a track, a roller running on the track, oppositely-extending hanger-rods connected with the roller, plates secured to the door and fastened to the rods, said plates having bosses, stems threaded in the bosses, and rollers carried by the stems and engaging the track on opposite sides of the center of the door.

9. In a door-hanger, a roller having a peripheral groove and provided with a central annular flange dividing the groove into two spaces.

10. In a door-hanger, a roller having a grooved periphery and provided with a central flange dividing the groove into two spaces and projecting beyond the peripheries of the side walls of the groove.

11. In a door-hanger, a roller having a grooved periphery and provided with a central flange dividing the groove into two spaces, said roller being divided longitudinally to form two sections and the flange being carried by one of the sections.

815,183. LEAF-TURNER. Francis G. Lavin, Haywards, Cal. Filed May 26, 1905. Serial No. 262,509.



Claim.—1. In a leaf-turner, the combination of a rotary vertical shaft, an arm operatively connected to said shaft to permit said arm to swing vertically while rotating therewith, a main spring, an operative connection between said spring and vertical shaft, a latch for opposing the movement of said shaft, means for removal of said latch out of its operative position, and automatic means for returning said latch to its position to arrest the shaft on making a complete revolution, substantially as described.

2. In a leaf-turner, the combination of a rotating vertical shaft, a socket pivoted thereon to swing vertically, an arm adjustable in said socket, a main spring, an operative connection between said spring and vertical shaft, a latch for opposing the movement of said shaft, means for removal of said latch out of its operative position, and automatic means for returning said latch to its position to arrest the shaft on making a complete revolution, substantially as described.

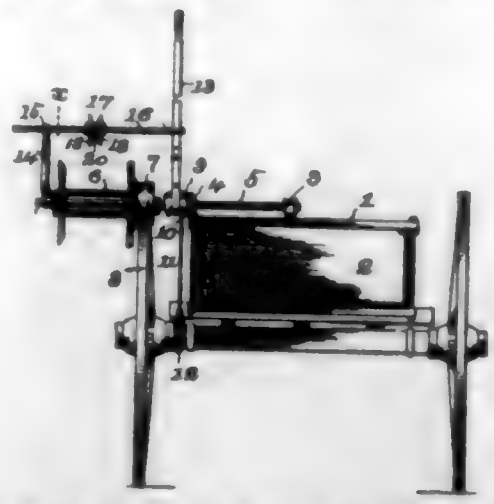
3. In a leaf-turner, the combination of a rotating vertical shaft, a socket pivoted thereon to swing vertically, an arm adjustable in said socket, a finger of yielding material upon said arm, a main spring, an operative connection between said spring and vertical shaft, a latch for opposing the movement of said shaft, means for removal of said latch out of its operative position, and automatic means for returning said latch to its position to arrest the shaft on making a complete revolution, substantially as described.

4. In a leaf-turner, the combination of a rotating vertical shaft, a socket pivoted thereon to swing vertically, an arm adjustable in said socket, a spring for normally depressing said arm, a finger of yielding material upon said arm, a main spring, an operative connection between said spring and vertical shaft, a latch for opposing the movement of said shaft, means for removal of said latch out of its operative position, and automatic means for returning said latch to its position to arrest the shaft on making a complete revolution, substantially as described.

5. In a leaf-turner, the combination of a rotating vertical shaft, a socket pivoted thereon to swing vertically, a bracket extending from said shaft, said socket resting upon said bracket, a spring for drawing said socket down to said bracket, an arm adjustable in said socket, a finger of yielding material upon said arm, a main spring, an operative connection between said spring and vertical shaft, a latch for opposing the movement of said shaft, means for removal of said latch out of its operative position, and automatic means for returning said latch to its position to arrest the shaft on making a complete revolution, substantially as described.

6. In a leaf-turner, the combination of a shaft, an arm carried thereby, a main spring, an operative connection between said spring and shaft, a collar carried by said shaft having a projection or boss, and having a flanged portion, a latch having a lug adapted to abut against the flanged portion to arrest the collar, a push-button, a hook secured thereto and engaging said latch to move said lug out of engagement with the end of the flange, a spring for returning said latch to its original position, the hook having an arm engaged by the collar to permit said latch to so return, and the collar being formed with a receding portion permitting the arm to move into the position where the hook can engage the latch for a succeeding operation, substantially as described.

815,184. REELING-MACHINE. Ward W. Lincoln, Rock Falls, Ill., assignor of one-half to Edwin J. Cochran, Sterling, Ill. Filed Dec. 23, 1904. Serial No. 238,263.



Claim.—1. In a reeling mechanism, the combination of a support, inner and outer brackets arranged in separated relation upon the support, a shaft mounted in the brackets, overhanging the support, loosely connected to the inner bracket and guided midway of its length in the outer bracket, a wire-reel journaled on said shaft, a friction-drum secured to said reel, and adapted for frictional engagement with a wagon-wheel or the like, a hub having a crank-arm and secured to said shaft, a flexible connection for the crank-arm, and a hand-lever connected to said hub and adapted to impart a semirotary adjustment to the same, substantially as set forth.

2. In a reeling mechanism, the combination of a support, a shaft attached thereto and adapted for vertical adjustment, a wire-reel journaled on said shaft, a friction-drum secured to said reel and adapted for frictional engagement with a wagon-wheel or the like, a crank-hub secured to said shaft and having link connection with a stationary point, a guide-carrying rod arranged in parallel relation above the reel, a guide carried by said rod, and a hand-lever connected to said hub and adapted to impart a semirotary adjustment to the same and a reciprocating movement to the guide and rod, substantially as set forth.

3. In a reeling mechanism, the combination of a support, a shaft attached thereto and adapted for vertical adjustment, a wire-reel journaled on said shaft, a friction-drum secured to said reel and adapted for frictional engagement with a wagon-wheel or the like, a

crank-hub secured to said shaft and having link connection with a stationary point, a guide-carrying rod arranged in parallel relation above the reel, a guide carried by said rod, a vertical standard secured to the shaft aforesaid and forming a guide for one end of said guide-carrying rod, and a hand-lever connected to said hub and adapted to impart a semirotary adjustment to the same and reciprocating movement to the guide and rod, substantially as set forth.

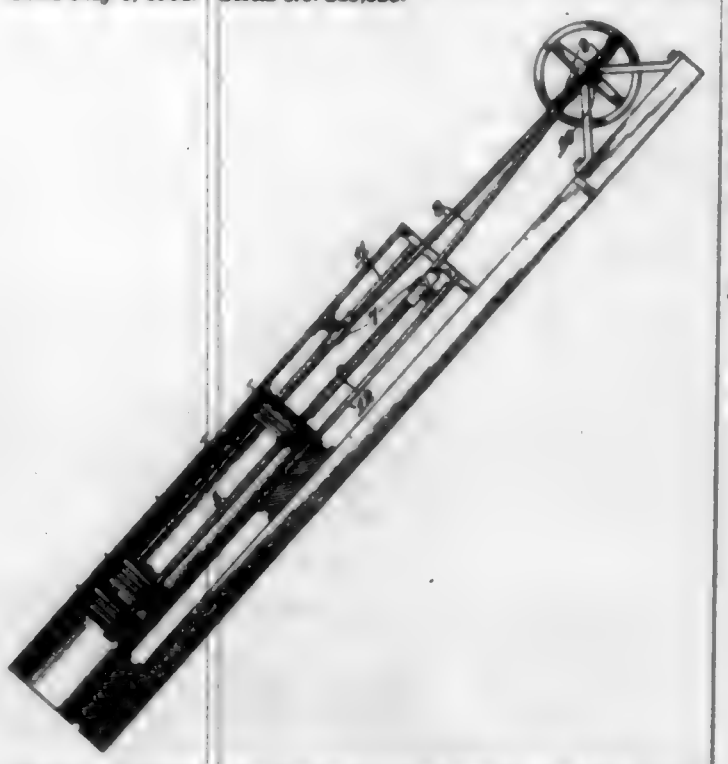
4. The combination in a wire-reeling mechanism, of the character herein described, of a revoluble reel and a wire-guiding means comprising a non-rotatable carrying-rod, a pair of disks fixedly secured to said rod, and a rotary guide arranged upon said rod intermediate of said disks, substantially as set forth.

5. The combination in a wire-reeling mechanism, of the character herein described, of a revoluble reel and a wire-guiding means comprising a non-rotatable carrying-rod, a pair of disks fixedly secured to said rod, and a rotary guide arranged upon said rod intermediate of said disks and comprising a central hub and curved prongs in staggered relation on said hub, substantially as set forth.

6. The combination in a wire-reeling mechanism, of the character herein described, of a revoluble reel and a wire-guiding means comprising a non-rotatable carrying-rod, a pair of disks fixedly secured to said rod in separated relation and formed with central circular recesses in their opposed faces, and a rotary guide arranged on said rod intermediate of said disks and with their ends fitting the recesses in the disks substantially as set forth.

7. The combination in a wire-reeling mechanism, of the character herein described, of a revoluble reel and a wire-guiding means comprising a non-rotatable carrying-rod, a pair of disks fixedly secured to said rod in separated relation and formed with central circular recesses in their opposed faces, and a rotary guide arranged on said rod intermediate of said disks and with their ends fitting the recesses in the disks the said guide comprising a central hub and curved prongs in staggered relation on said hub, substantially as set forth.

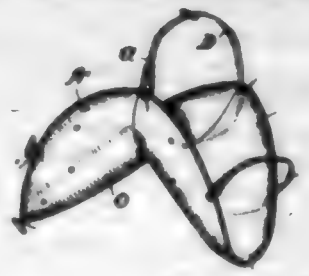
815,185. **STEAM-ENGINE.** JOHAN LINDBERG, Crookston, Minn. Filed July 5, 1904. Serial No. 215,220.



Claim.—A steam-engine having, in combination with the crank-shaft, three pistons in one cylinder, the two outer ones of which are attached to a piston-rod which slips through a stuffing-box in the middle one, while the middle piston is attached to a piston-rod which slips through a stuffing-box in the rear piston, said rods arranged one above another and connected to sliding cross-heads, the upper one of which reciprocates in top and lateral guides while the lower one reciprocates in bottom and lateral guides, and pitmen connected to oppositely-disposed cranks on the shaft and having inturned ends connected to said cross-heads, and means for admitting steam alternately between the middle and front pistons and middle and rear pistons, substantially as described.

815,186. **DRESS-SHIELD.** LILLIAN LOCKIE, San Francisco, Cal. Filed Apr. 27, 1904. Serial No. 205,212.

Claim.—A dress-shield provided with an inner and an outer portion, one of said portions being waterproof while the other portion is of a washable material and formed with a mesh, eyes formed near the edges of said portions, straps passing through said eyes and by means of which said portions are removably held together, said straps forming loops which pass around the wearer's arm, and a plurality of tabs for holding said shield in position relative to the corset-waist of the wearer, substantially as and for the purpose set forth.



815,187. **MARINE VESSEL.** CARRY A. MANKER, Pearl, Ill. Filed Oct. 8, 1904. Serial No. 228,062.



Claim.—1. A vessel-hull having its sides inclined rearwardly and inwardly in horizontal section from the point of first contact of water with the hull to the stern.

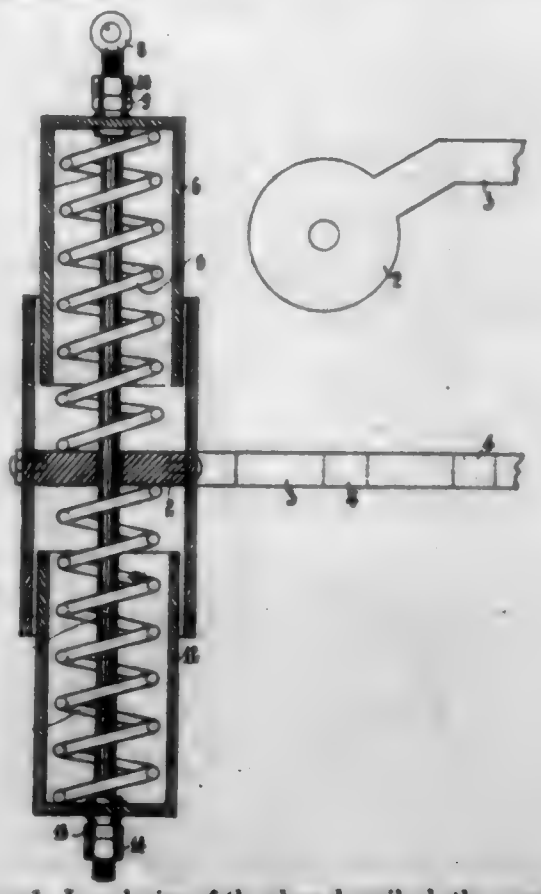
2. A vessel-hull having the horizontal water-line surfaces at its sides inclined rearwardly and inwardly from points of first impingement of the water thereagainst at the bow as the vessel moves in a forward direction, to the stern of the hull.

3. A vessel-hull narrowed longitudinally from the point of first impingement of water against its sides to its stern, and having a concaved bottom surface, said concaved bottom surface being narrower at its rear end than at its forward end.

4. A vessel-hull having its sides inclined rearwardly and inwardly from points of first impingement of water thereagainst and being of convex contour in vertical section and having a concaved bottom surface; said concaved bottom surface being narrower at its rear end than at its forward end.

5. A vessel-hull having its sides tapered inwardly and rearwardly from its bow to its stern and having a concaved bottom surface; said sides and bottom surface merging into ridges extending longitudinally of the hull from the points of first impingement of water thereagainst as the vessel moves in a forward direction.

815,188. **ANTIVIBRATION DEVICE FOR CARRIAGE-SPRINGS.** ALBERT MANS, Diegem, Belgium. Filed June 21, 1905. Serial No. 266,273.

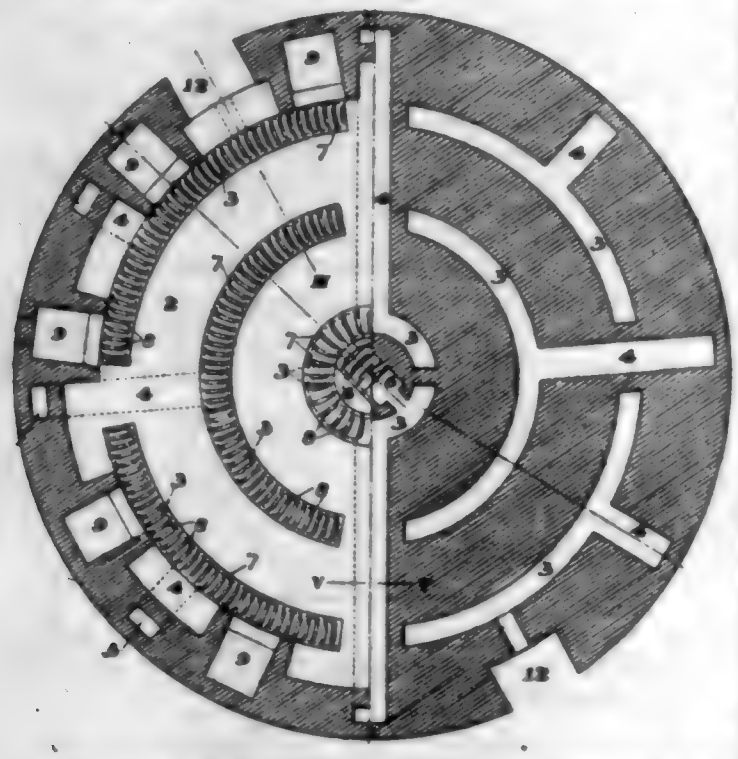


Claim.—1. In a device of the class described, the combination with a vertical open sleeve, a perforated plate secured centrally and

horizontally within said sleeve, and an outer extension on said plate capable of being attached to a wheel-axle, of upper and lower caps telescopically arranged in said sleeve, a vertical rod extending through said caps and the central plate, means for adjustably securing said rod to the closed ends of said caps, a spiral spring within the upper cap and surrounding the portion of the rod above the plate, a spiral spring within the lower cap and surrounding the portion of the rod below said plate, and means for pivotally connecting said rod with a vehicle-frame, substantially as set forth.

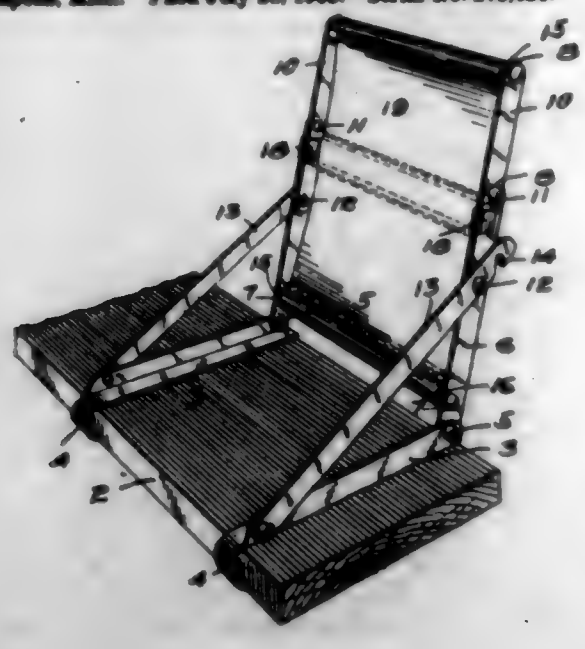
2. In a device of the class described, the combination with a vertical open sleeve, a perforated plate secured centrally and horizontally within said sleeve, and an outer extension on said plate capable of being attached to a wheel-axle, of upper and lower caps telescopically arranged in said sleeve, a vertical rod extending through said caps and the central plate, screw-threaded holes in the closed ends of said caps, screw-threaded ends on said vertical rod and adapted to be adjusted in said holes of the caps, a spiral spring within the upper cap and surrounding the portion of the rod above the plate, a spiral spring within the lower cap and surrounding the portion of the rod below said plate, and means for pivotally connecting said rod with a vehicle-frame, substantially as set forth.

815,189. BRICK-KILN. JOHN MANYPENNY, New Brighton, Pa. Filed Oct. 4, 1905. Serial No. 281,220.



Claim.—In a downdraft brick-kiln, a series of concentric circular flues in the floor of the kiln, the inner one of said flues having short enlarged flues extending inwardly therefrom to the center of the kiln, and providing for an effective central draft, and removable covers for the said flues; substantially as described.

815,190. FOLDING-SEAT BACK. CHARLES S. MARQUESSAULT, Minneapolis, Minn. Filed July 21, 1905. Serial No. 270,696.



Claim.—1. A folding-seat back comprising bars having hooked forward ends and a back composed of plates arranged in pairs, the lower plates of each pair being pivoted to said bars and having recesses in their upper ends and notches near their lower ends and intermediate slots, the upper plates of said pairs having pins at their lower ends slidable in said slots, and studs intermediate to their ends to enter said recesses and also having recesses in their upper ends, and rods adapted to enter said notches 7 and the recesses in the upper ends of said upper plates, and a flexible material connecting said rods.

2. The combination, with the bars 3 having downwardly-turned ends, of plates 6 hinged to the rear ends of said bars, plates 10 having a sliding pivotal connection with said plates 6, the contiguous ends of said plates 6 and 10 lapping by one another, a cross-bar having hooked ends to clasp the lapped ends of said plates, rods detachably connecting the opposite plates, a flexible material connecting said rods, and braces connecting said bars and said plates.

3. A folding-seat back comprising bars having downwardly-turned forward ends, and a back composed of plates arranged in pairs, the lower plates of each pair being pivoted to said bars and having a sliding connection with said upper plates and adapted to be folded one beside the other, suitable braces for said plates, detachable cross-bars connecting the opposite plates, and a flexible material carried by said bars.

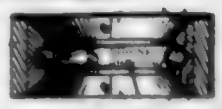
4. A folding-seat back comprising angle-bars 3 having downwardly-turned forward ends 4, back-plates pivotally connected to the rear ends of said plates 3 and composed of sections adapted to be folded one beside the other, a bar connecting the overlapping ends of said sections and preventing their premature folding, cross-bars removably supported in said plates and having a flexible connection, and braces connecting said seat-bars and said plates, for the purpose specified.

5. In a folding-seat back, the combination with the plates 6 having slotted upper ends, of plates 10 having a sliding connection with said plates 6, and pins to enter the slots in the upper ends of said plates 6, a cross-bar having hooked ends adapted to grasp the lapped ends of said plates 6 and 10, rods removably supported in said plates, and a flexible material connecting said rods.

6. A folding-seat back, comprising bars 3 having downwardly-turned forward ends, plates 6 pivotally attached to said bars 3, plates 10 pivotally connected to said plates 6 and adapted to be folded beside the same or unfolded to form a continuation thereof, cross-rods temporarily connecting the opposite plates and whereby the bar and plates on one side of the seat are rendered separable from those on the other side to permit compact folding, and a flexible material connecting said rods, substantially as described.

7. A folding-seat back, comprising bars 3 having downwardly-turned forward ends, plates 6 pivotally attached to said bars 3, plates 10 pivotally connected to said plates 6 and adapted to be folded beside the same or unfolded to form a continuation thereof, the bar and plates on one side of the seat being separable from those on the other side, cross-rods temporarily connecting the opposite plates, and a flexible material connecting said rods, and braces connecting said bars and plates, substantially as described.

815,191. SPIRIT-LEVEL. JOHANN MARTIN, Galveston, Tex. Filed Nov. 3, 1905. Serial No. 285,665.

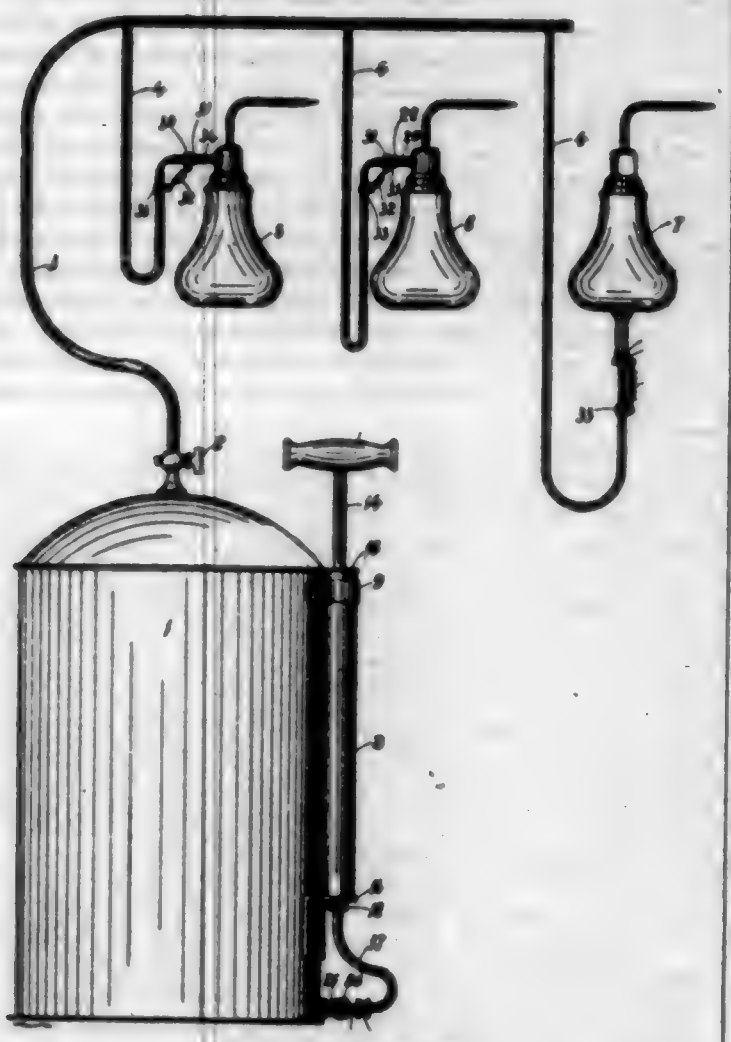


Claim.—A spirit-level comprising a stock or body with opening therethrough, a bushing independent of said stock or body and consisting of two separable and independent sections each having an outer beveled face and an inner curved seat, said seats when together forming a semicircular seat and a spirit-glass held within the seat by the two bushing-sections, substantially as and for the purpose set forth.

815,192. SPRAYER. FREDERICK MERCER, Marton, New Zealand. Filed June 13, 1904. Serial No. 212,241.

Claim.—Apparatus for the purpose indicated comprising a reservoir for containing compressed air, an air-compressor pump attached to the reservoir by brackets, a non-return valve upon the reservoir, a flexible pipe connecting the pump and the reservoir, a stop-cock on the reservoir a main air-pipe connected to the cock, branch pipes upon the main air-pipe, nipples on the branch pipes, spiral springs attached at one end to the nipples at the other end to b

around the pipes, a rubber washer upon the nipples and atomizers having necks to receive the nipples as set forth.



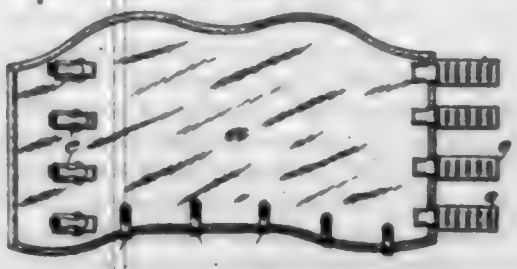
815,193. PRODUCTION OF AROMATIC ALCOHOLS. CARL METTLER, Munich, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 11, 1905. Serial No. 282,331.

Claim.—1. The manufacture of aromatic alcohols by electrolytically reducing aromatic carboxylic acids making use of a cathode of high cathodic tension.

2. The manufacture of aromatic alcohols by electrolytically reducing aromatic carboxylic acids, making use of a lead cathode.

3. The manufacture of para-hydroxy-benzyl alcohol by electrolytically reducing para-hydroxy-benzoic acid, making use of a lead cathode.

815,194. ADJUSTABLE SHOE-TOP. HENRY METZ, Bascom, Ohio. Filed July 3, 1905. Serial No. 268,118.



Claim.—An improved article of manufacture consisting of a shoe-top having its lower edge bound and provided with fastenings reaching to said lower bound edge to closely, neatly, and securely fasten or clasp the said edge on the upper edge of the ordinary shoe-top, open in front, and provided further along the front edges with buckles, whereby the top is adapted to be secured to the upper of a shoe as one with it, and be fastened around the legs and ankles of the wearer of the shoe-top when in use.

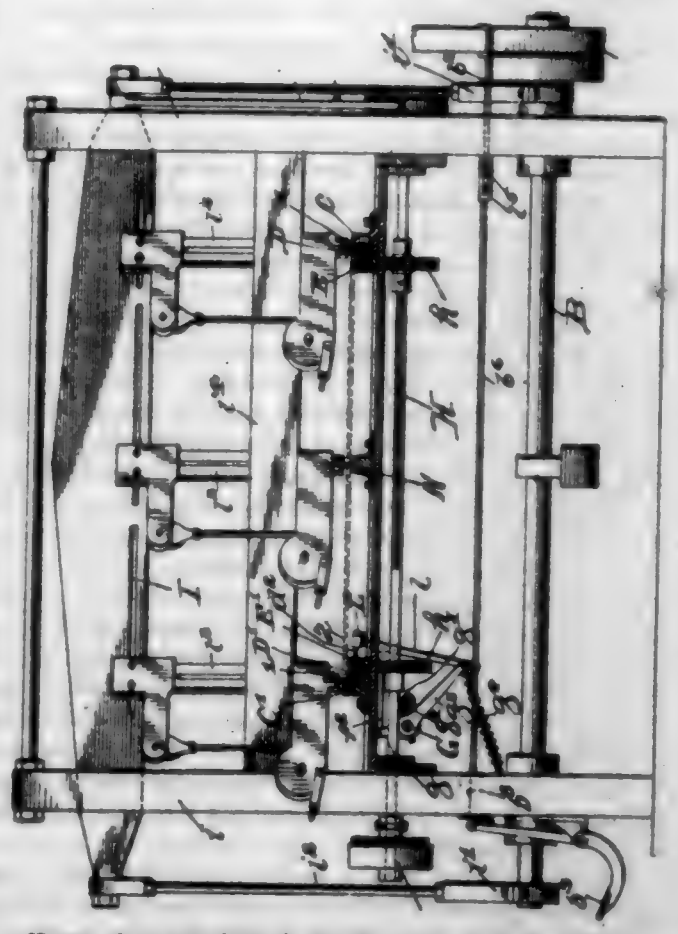
815,195. SHADE-BRACKET. HENRY METZ, West Hoboken, N. J. Filed Oct. 4, 1905. Serial No. 281,214.

Claim.—1. Shade-brackets comprising each a base-plate with guides, a bracket mounted on said base-plate consisting of a base part which slides in the guides, two incisions at one end of the base part, a central portion between said incisions, two side flanges on said central portion having each an opening, and a spring loosely mounted in said openings and resting with its ends in the guides of the base-plate and adapted to lock the bracket directly in the adjusted position by friction, and means on the latter for receiving the roller-gudgeon of the shade.

2. Shade-brackets comprising each a base-plate with guides, a bracket mounted thereon consisting of a base part which slides in said guides, two incisions at one end of the base part, a central portion between said incisions, two side flanges on the central portion having each an opening, and a wire spring in the flanges bent rearwardly on each side at a right angle and then down and outwardly resting with its ends in the guides and adapted to lock the bracket in the adjusted position by friction on the base-plate, and means on the former for supporting the roller-gudgeon of the shade.

3. In a shade-bracket a bracket proper consisting of a base part, two incisions at one side end of same, a central portion between said incisions, two side flanges on said central portion rectangular thereto and having each an opening, a wire spring loosely secured in the openings bent on each side rearwardly at a right angle and then down and outwardly, and a rectangular portion at the other end of the base part integral therewith and adapted to receive the roller-gudgeon of the shade.

815,196. MACHINE FOR MAKING WIRE-BOUND BOX-BLANKS. JULIUS J. MILLER, St. Joseph, Mich., assignor to William P. Healy, Chicago, Ill. Filed June 10, 1905. Serial No. 264,545.



Claim.—1. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for driving the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

2. A machine for making wire-bound and cleat-reinforced box-

blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

3. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, devices for giving the said cleat-engaging means a step-by-step forward feeding motion, automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

4. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, devices for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions.

5. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started.

6. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

7. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, the machine as a whole comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

8. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, the machine also comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

9. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, together with devices for giving the said cleat-engaging means a step-by-step forward feeding motion, and automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, the machine also comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

10. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, means for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, and the machine also comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths.

11. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started, the machine also comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths.

12. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, the machine also comprising suitable means whereby the cleat holding and guiding devices are adjustable toward and away from each other with respect to blanks of different widths, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

13. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, and the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the cleat-engaging members into and out of engagement with the inner sides of the cleats, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

14. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the clamping-bars into and out of engagement with the inner sides of the cleats, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

15. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, together with devices for giving the said cleat-engaging means a step-by-step forward feeding motion, automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the cleat-engaging means into and out of engagement with the inner sides of the cleats, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

16. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, devices for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, and the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the cleat-engaging devices into and out of engagement with the inner sides of the cleats.

17. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started, the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the clamping-bars into and out of engagement with the inner sides of the cleats.

18. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, and the machine also comprising a pair of parallel and longitudinally-extending bars which are movable toward and away from each other, but which are held against endwise movement, and which constitute means adapted to move the work-holding means into and out of engagement with the inner sides of the cleats, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

19. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, the said machine also comprising a device for manually driving the cleat-engaging means into engagement with the cleats.

20. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, the said machine also comprising a device for manually driving the cleat-engaging means into engagement with the cleats.

21. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, together with devices for giving the said cleat-engaging means a step-by-step forward feeding motion, automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, the said machine also comprising a device for manually driving the cleat-engaging members into engagement with the cleats.

22. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, means for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, and the said machine also comprising a device for manually driving the cleat-engaging means into engagement with the cleats.

23. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means

for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with b ank material and the machine again started, the said machine also comprising a device for manually driving the cleat-engaging means into engagement with the cleats.

24. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, and the said machine also comprising a device for manually driving the cleat-engaging means into engagement with the cleats.

25. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, means for returning said cleat-engaging members to their normal or at-rest positions, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections, said cleat-engaging members being provided with means for preventing the back pull of the binding-wires from causing endwise displacement of the cleats.

26. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, means for automatically returning the said clamping-bars to their normal or at-rest positions, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections, the said clamping-bars having means for preventing endwise displacement of the cleats by the back pull of the binding-wires.

27. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, together with devices for giving the said cleat-engaging means a step-by-step forward feeding motion, automatic means for releasing the finished blank, means for returning the cleat-engaging means to its normal or at-rest position, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections, the said cleat-engaging means having means for preventing endwise displacement of the cleats by the back pull of the binding-wires.

28. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, means for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections.

29. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving tastening devices for sebox-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections.

30. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, and suitable means whereby the power and motion is communicated to the cleats through rack-and-pinion connections, the said work-holding means having provisions for preventing endwise displacement of the cleats by the back pull of the binding-wires.

31. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging member a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, and the machine comprising suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

32. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, laterally-moving clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, and the machine also comprising suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

33. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, together with devices for giving the said cleat-engaging means a

step-by-step forward feeding motion, automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, the machine comprising suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

34. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, means for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, and the machine also comprising suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections.

35. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started, the machine comprising also suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections.

36. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving staples to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the staples, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and means for effecting a continuous return movement of the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, the machine also comprising suitable means whereby the clamping or gripping of the cleats, and also the releasing of the cleats after the blank is finished, are accomplished through the medium of connections extending across the machine, and through the medium of a longitudinally-extending rock-shaft having suitable connection with said transverse connections, there being provisions for automatically stopping the staple-driving means during the return movement of the said means for engaging and moving the cleats endwise.

37. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving fastening devices, guides for the cleats, cleat-engaging members for moving the cleats forward in their guides, means for giving said cleat-engaging members a step-by-step forward feeding motion, together with automatic means for releasing the finished blank, and means for returning said cleat-engaging members to their normal or at-rest positions, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging members having means to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

38. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, laterally-movable clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, means for giving the said clamping-bars a step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, together with automatic means for drawing said clamping-bars together upon the completion of the blank, and means for automatically returning the said clamping-bars to their normal or at-rest positions, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging bars having means to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

39. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, devices for engaging and moving the cleats forward in their guides, automatic means for releasing the finished blank, devices for stopping the operation of the means for driving the fastening devices, automatic means for reversing the motion of the cleat-engaging devices as soon as the finished blank is released, together with automatic means for stopping the operation of the machine upon the arrival of the said cleat-engaging devices at their normal or at-rest positions, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging devices having means to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

40. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, cleat-engaging means for advancing the cleats in their guides, devices for giving the said cleat-engaging means a step-by-step forward feeding motion, automatic means for releasing the finished blank, and means for returning the cleat-engaging means to its normal or at-rest position, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging means having suitable provisions to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

41. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening devices, guides for the cleats, a pair of clamping-bars adapted to engage the inner sides of the cleats and hold the same firmly in their guides, feeding devices for giving the said clamping-bars an intermittent or step-by-step forward feeding motion for the purpose of advancing the cleats in their guides, automatic means for releasing the cleats upon the completion of the blank, together with automatic means for returning the clamping-bars to their normal positions or starting-points, and means for automatically discontinuing the operation of the said means for driving fastening devices as soon as the blank is completed and until after the guides are reloaded with blank material and the machine again started, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging bars having means to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

42. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for driving fastening devices to secure the binding-wires and cleats to the body of the blank, and means for guiding the binding-wires to the means for driving the fastening

devices, guides for the cleats, and a reciprocating work-holding means adapted to engage the cleats, together with means for giving the said work-holding means a step-by-step motion in a direction to advance the cleats in their guides, and a continuous motion in a direction to return the work-holding means to its normal or at-rest position after the finished blank has been delivered at the other end of the machine, the cleat guiding and engaging means thus provided being adapted to hold the cleats of a blank end to end in parallel and longitudinally-advancing rows, and thereby keep the longitudinal or endwise motion of the cleats direct, and the said cleat-engaging means having suitable provisions to prevent the drag or back pull of the binding-wires from causing endwise displacement of the cleats.

43. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for holding the cleats of a blank end to end in parallel and longitudinally-advancing rows, means for guiding the binding-wires to the upper surface of the blank, means for inserting fastening devices to secure the binding-wires and different parts of the blank together, feed mechanism for advancing the blank materials, and a plurality of loose spacing-blocks insertible between the ends of the cleats and removable from the machine with the finished blank, together with means for preventing the back pull of the binding-wires from causing endwise displacement of the cleats.

44. In a machine of the character specified, parallel cleat-guides, parallel engaging members for engaging the inner sides of the cleats and holding the same end to end in the said guides, means for moving said engaging members endwise, and thereby moving the cleats endwise, and means for moving the members laterally to grip and release the cleats.

45. In a machine of the character specified, parallel cleat-guides, parallel engaging members for engaging the inner sides of the cleats and holding the same end to end in the said guides, means for moving said engaging members endwise, and thereby moving the cleats endwise, and means for moving the members laterally to grip and release the cleats, together with means for applying flexible connections between the ends of the cleats, connections for automatically reversing the endwise motion of said members, and means for automatically stopping the operation of the means for applying flexible connections during the return movement of the said members.

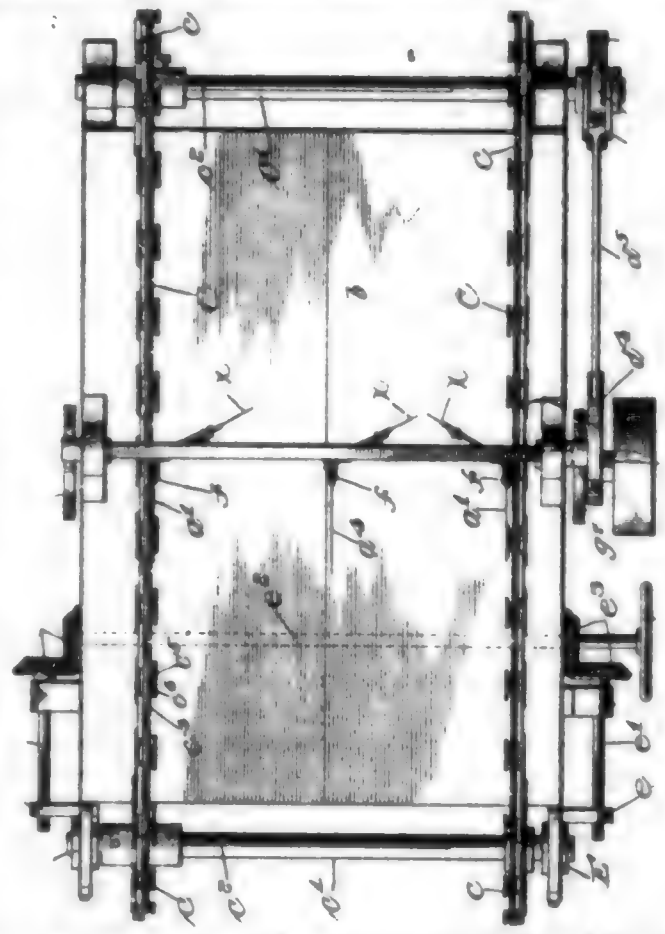
46. In a machine of the character specified, means for applying binding-wires to the blank, a combined reciprocating work-holder and binding-wire puller, adapted to communicate motion through the work to the binding-wires, means for reciprocating the work-holder, and provisions whereby the motion of the same is relatively slow and intermittent in one direction, and relatively quick and continuous in the opposite direction.

47. In a machine of the character disclosed, guides for the cleats, a pair of parallel bars for engaging and moving the cleats endwise, and connections for moving said bars toward and away from each other for the purpose of gripping and releasing the cleats.

815,197. MACHINE FOR USE IN MAKING METAL-BOUND PACKAGES. JULIUS J. MILLER, St. Joseph, Mich., assignor to William P. Healy, Chicago, Ill. Filed Nov. 18, 1904. Serial No. 233,274.

Claim.—1. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding to the blank, an endless traveling work-holder adapted to support the work, and a power-operated feeding device connected with the said work-holder, the said work-holder having parallel side portions adapted to support and hold the cleats of the blank in parallel relation thereto, and against lateral displacement therefrom, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, the said side portions of the endless work-holder being held, at least for a suitable portion of their path of travel, to a direct motion and thereby constituting guides for holding the cleats to straight lines of travel.

2. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding to the blank, a power-operated feeding device, and an endless traveling work-holder actuated by said feeding device and having parallel side portions adapted to receive and hold the cleats end to end, in two parallel longitudinal rows, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, said side portions of the endless work-holder being held, at least for a suitable portion of their path of travel, to a direct motion and thereby constituting guides for holding the cleats to straight lines of endwise or longitudinal travel, the means on the work-holder for receiving said cleats being adapted to hold the same against lateral displacement therefrom.



3. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding and cleats to the opposite surfaces of the blank a power-operated feeding device, and a work-holder composed of a plurality of link belts suitably connected with said feeding device, said link belts being provided with means for receiving and holding the said cleats in positions longthwise of the work-holder, constituting guides for holding the cleats to straight lines of endwise or longitudinal travel, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, the said endless work-holder being held, at least for a suitable portion of its path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

4. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding to the blank, a feeding device, and an endless traveling work-holder comprising a plurality of parallel link belts connected with said feeding device, said belts being provided at their inner sides with means for receiving and holding the cleats of the blank in positions lengthwise of the work-holder, constituting guides for holding the cleats to straight lines of endwise travel, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, the endless work-holder being held, at least for a suitable portion of its path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

5. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the metallic binding onto the blank, a plurality of endless traveling cleat-supports each adapted to hold the cleats end to end, in longitudinal rows, means for inserting fastening devices to secure the cleats and metallic binding to the blank, and means for operating said endless traveling cleat-supports, said cleat-supports constituting guides for keeping the endwise motion of the cleats direct, the means on the cleat-supports for receiving said cleats being adapted to hold the same against lateral displacement therefrom, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats,

the endless cleat-supports being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats.

6. A machine for making wire-bound and cleat-reinforced box-blanks, comprising a plurality of parallel link belts provided with means for receiving and holding said cleats, said link belts being also provided with blocks adapted to engage the ends of said cleats, and thereby prevent the drag or back pull of the binding from causing endwise displacement of the cleats, the blocks being adjustable toward and away from each other to accommodate cleats of different lengths, means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding lengthwise of said cleats, and means for operating the said link belts and thereby communicating motion to the blank in a direction lengthwise of said cleats and metallic binding, said link belts also constituting guides for keeping the endwise motion of the cleats direct, the means on the work-holder for receiving said cleats being adapted to hold the same against lateral displacement therefrom, and the endless work-holder being held, at least for a suitable portion of its path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats.

7. A machine for making wire-bound and cleat-reinforced box-blanks, comprising a plurality of endless traveling cleat-supports, said cleat-supports being adapted to hold the cleats longitudinally thereof, means for guiding the metallic binding onto the blank, means for inserting fastening devices to secure the metallic binding lengthwise of said cleats, together with means for operating said cleat-supports, the said cleat-supports constituting guides for keeping the endwise motion of the cleats direct, and being relatively adjustable toward and away from each other with respect to the making of blanks of different widths, the means on the cleat-supports for receiving said cleats being adapted to hold the same against lateral displacement therefrom, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless cleat-supports being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats.

8. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for feeding the metallic binding, means for inserting fastening devices to secure the cleats and binding to the blank, a pair of endless traveling link belts provided with means for receiving and holding the said cleats end to end, in two parallel rows, and constituting guides for holding the cleats to straight lines of travel, said link belts being relatively adjustable toward and away from each other and adapted to support and carry the blank bodily in a direction lengthwise of said cleats and metallic binding, the means on the link belts for receiving said cleats being adapted to hold the same against lateral displacement therefrom, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless link belts being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats.

9. A machine for making wire-bound and cleat-reinforced box-blanks, comprising an endless traveling link belt provided with cleat-holders adapted to hold the cleats parallel with said belt, and communicate motion to the blank in a direction lengthwise of said cleats and metallic binding, said link belt also constituting a guide for keeping the endwise motion of the cleats direct, together with means for inserting fastening devices to secure the metallic binding lengthwise of the cleats, guiding devices for directing the metallic binding onto the blank as the latter moves along, and spacing-blocks secured to said cleat-holders and adapted to prevent the drag or back pull of the binding from causing endwise displacement of the cleats, the endless link belt being held, at least for a suitable portion of its path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

10. A machine for making wire-bound and cleat-reinforced box-blanks, comprising a plurality of parallel and endless traveling cleat-supports adapted to support and carry the blank forward in a direction longthwise of the said cleats and metallic binding, and constituting guides for holding the cleats to straight lines of endwise travel, said cleat-supports being relatively adjustable toward and away from each other with respect to the making of blanks of different widths, and the said cleat-supports being provided with spacing-blocks which engage the ends of the cleats, and which are adjustable lengthwise of the said cleat-supports with respect to blanks of different lengths, together with means for guiding the metallic binding onto the blank as the latter moves along, means for inserting fastening devices to secure the metallic binding to the blank, and suitable means for operating said cleat-supports, the said blocks being adapted to prevent the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless cleat-supports being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

11. A machine for making wire-bound and cleat-reinforced box-blanks, comprising guides for the cleats, said guides comprising parallel endless traveling members adapted to hold the cleats to straight lines of travel, intermittent feed mechanism for advancing the cleats longitudinally with their guides and with a sheet through the machine, an intermittingly-actuated staple-driver adjacent the path of each cleat, alternating in its action with said feed mechanism, to fasten the sheet, by successive operations, to the cleat, and means for guiding strengthening-wires with the cleats and sheet across the staple-drivers, the means on the endless traveling members for receiving said cleats being adapted to hold the cleats in parallel relation thereto, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless traveling members being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

12. A machine for making wire-bound and cleat-reinforced box-blanks, comprising intermittingly-actuated staple-drivers, guides for the cleats, said guides comprising parallel endless traveling members adapted to hold the cleats to straight lines of travel, intermittent feed mechanism for advancing the cleats longitudinally with their guides and with a sheet through the machine, an intermittingly-actuated staple-driver and a guide for a strengthening-wire adjacent the path of each cleat, the staple-drivers alternating in their action with the said feed mechanism to fasten the strengthening-wires and sheet, by successive operations, to the cleats at intervals in the direction longitudinally of the cleats, the means on the endless traveling members for receiving said cleats being adapted to hold the cleats in parallel relation thereto, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless traveling members being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

13. A machine for making wire-bound and cleat-reinforced box-blanks, comprising intermittingly-actuated staple-drivers, guides for the cleats, said guides comprising parallel endless traveling members adapted to hold the cleats to straight lines of travel, guides for the strengthening-wires, and intermittingly-actuated feed devices for advancing the sheets and strengthening-wires and cleats and guides longitudinally below the said staple-drivers, the said feed devices alternating in their action with the said staple-drivers, the means on the endless traveling members for receiving said cleats being adapted to hold the cleats in parallel relation thereto, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless traveling members being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

14. A machine for making wire-bound and cleat-reinforced box-blanks, comprising guides for the cleats, said guides comprising parallel endless traveling members adapted to hold the cleats to straight lines of travel, intermittent feed mechanism for advancing the cleats longitudinally with a sheet through the machine, a serich of intermittingly-actuated staple forming and driving machines, alternating in their action with the said feed mechanism, disposed above the path of the sheet and cleats and in a horizontal line at right angles to said path, and means for guiding strengthening-

wires beneath the staple-drivers, whereby the strengthening-wires and sheets, by successive operations of the staple-drivers, are fastened to the cleats at intervals in the direction longitudinally of the cleats, the means on the endless traveling members for receiving said cleats being adapted to hold the cleats in parallel relation thereto, and having means for preventing the drag or back pull of the binding from causing endwise displacement of the cleats, and the endless traveling members being held, at least for a suitable portion of their path of travel, to a direct motion in order to insure the proper extent of endwise or straight longitudinal movement of the cleats, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

15. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the binding-wires onto the blank, means for driving staples to secure the cleats and binding-wires to the blank, a plurality of endless link belts, cleat-holders removably secured to the inner side of each belt, each cleat-holder being adjustable longitudinally of its belt, and a block secured to and longitudinally adjustable of each cleat-holder, said blocks being adapted to engage and separate the ends of the cleats and prevent endwise displacement thereof by the drag or back pull of the binding-wires, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

16. A machine for making wire-bound and cleat-reinforced box-blanks, comprising means for guiding the binding-wires onto the blank, means for driving staples to secure the cleats and binding-wires to the blank, a plurality of endless link belts, cleat-holders removably secured to the side of each belt, each cleat-holder being adjustable longitudinally of its belt, and a block secured to and longitudinally adjustable of each cleat-holder, said blocks being adapted to engage and separate the ends of the cleats and prevent endwise displacement thereof by the drag or back pull of the binding-wires, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

17. In a machine of the character specified, a link belt adapted to carry and guide a plurality of cleats held end to end, and provided with members for spacing the cleats apart endwise, and means for operating said link belt.

18. In a machine of the character specified, a plurality of link belts adapted to carry and guide a plurality of cleats held end to end in parallel and longitudinally-moving rows, and provided with means for spacing the cleats apart endwise, and means for operating said link belts.

19. In a machine of the character specified, means for supplying binding-wires, mechanism for securing the binding-wires to the cleats, and a combined endless traveling work-support and cleat-guide and binding-wire puller, the latter having means for engaging both sides of the longitudinally-disposed parallel rows of cleats, thereby holding and guiding the cleats endwise, and having also means for preventing endwise displacement of the cleats by the back pull of the binding-wires.

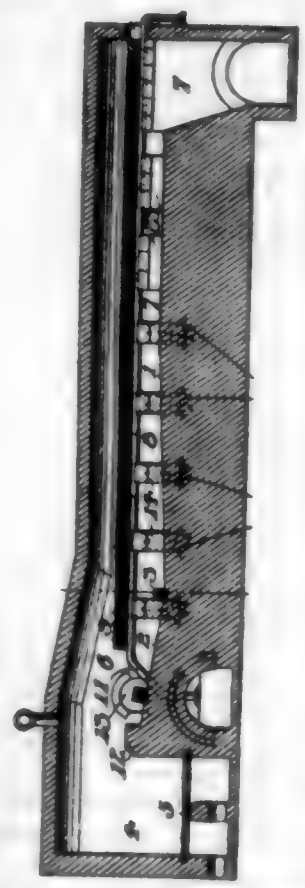
20. In a machine of the character described, an endless traveling cleat-guide provided with portions adapted to engage both sides of the longitudinally-disposed cleats and thereby hold the same against displacement laterally of their endwise direction of travel.

21. In a machine of the character specified, an intermittently-actuated endless traveling cleat-support adapted to carry and move the cleats endwise, and feed mechanism for giving the cleat-support an intermittent motion, said cleat-support having means for engaging both sides of the longitudinally-disposed cleats to prevent displacement of the same laterally of their endwise direction of travel.

22. In a machine of the character specified, an intermittently-actuated endless traveling cleat-guide adapted to guide and move the cleats endwise, and feed mechanism for giving the cleat-guide an intermittent motion, said cleat-guide having means for engaging both sides of the longitudinally-disposed cleats to prevent displacement of the same laterally of their endwise direction of travel.

23. In a machine of the character disclosed, a pair of endless link belts or cleat-carriers each provided with pockets for holding the cleats, and connections for intermittently operating said link belts and thereby advancing said cleats endwise, the traveling work-holding and cleat-guiding means thus provided including portions which engage both sides of the cleats to prevent lateral displacement of the same therefrom.

815,198. CONTINUOUS-HEATING FURNACE. WILLIAM R. MILLER, Pittsburg, Pa., assignor to Porter-Miller Engineering Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Dec. 24, 1905. Serial No. 293,260.



Claim.—1. In a continuous-heating furnace, a hollow track, hollow supports therefor extending through the floor of the furnace below the furnace-chamber, and means for leading a cooling fluid to and from said supports.

2. In a continuous-heating furnace, a hollow track, and vertical supports in pairs beneath the same having a fluid circulation therethrough, the members of the pairs extending through the furnace-bottom.

3. In a continuous-heating furnace, a hollow track, and supports beneath the same, having means for conducting a cooling fluid to and from the upper end thereof, said supports passing through the floor of the furnace.

4. In a continuous-heating furnace, a hollow track, hollow supports therefor having their axes in the vertical plane including said track, and means for supplying a cooling fluid to the hollows of said supports.

5. In a continuous-heating furnace, a hollow track, supports therefor, having means for leading a cooling fluid wholly in the vertical plane including said track.

6. In a continuous-heating furnace for billets, a hollow track, hollow fluid-cooled supports for the same, and shields on the supports extending laterally beyond the latter.

7. In a continuous-heating furnace for billets, a track, supports therefor having a fluid circulation therethrough, shields on the supports consisting of a track-supporting portion and portions diverging downwardly therefrom.

815,199. WHIP-STOCK. GIOVANNI MORETTI, Taylorville, Ill. Filed Aug. 14, 1905. Serial No. 274,143.



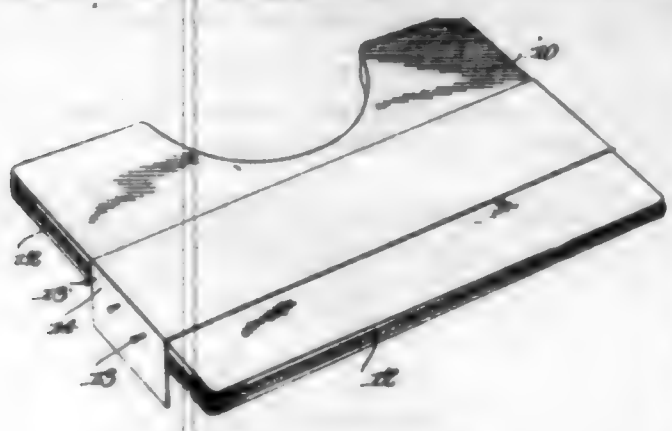
Claim.—1. A whip-stock of fibrous material having a plurality of thongs at one end, integral therewith and twisted together.

2. A whip-stock of fibrous material comprising a handle portion, and thongs at one end thereof, integral therewith and twisted together.

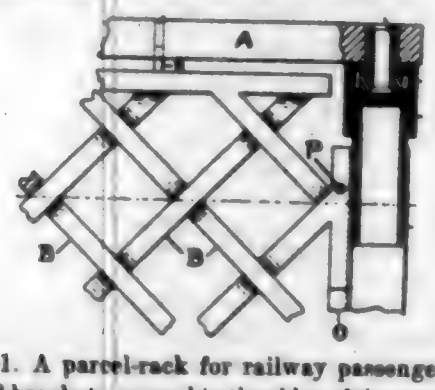
815,200. LAP-BOARD OR SEWING-TABLE. KATE M. MOORE, Middletown, Ohio. Filed Aug. 16, 1905. Serial No. 274,434.

Claim.—A lap-board comprising a substantially rectangular body portion having its opposite faces provided with flat continuous bearing-surfaces and three of its marginal edges formed with in-

wardly-extending grooves disposed intermediate the bearing-surfaces and arranged parallel therewith, and a continuous strip of penetrable material seated in said groove and projecting laterally beyond the adjacent edges of said body portion.



815,201. PARCEL-RACK. FREDERICK L. MCCLENNAN, Albany, N. Y. Filed Oct. 11, 1905. Serial No. 282,530.



Claim.—1. A parcel-rack for railway passenger-cars, consisting of two end brackets secured to the sides of the car, two tubes having screw-threads on each end and attached to and connecting said brackets, one at the front and one at the rear of said brackets, hollow tubular couplings connecting said tubes to said brackets, said couplings being each composed of two parts, one of said parts extending through its bracket and attached fixedly thereto and the other part attached loosely by one end extending over and around one end of the first-named part and the other end containing screw-threads adapted to mesh with screw-threads on the end of one of said tubes whereby said tubes may be coupled to said brackets leaving clear openings from the exterior of one bracket through said tubes to the exterior of the other bracket and a mesh attached to and supported by said tubes and extending from one tube to the other substantially as described and for the purposes set forth.

2. A parcel-rack for railway passenger-cars consisting of two end brackets adapted to be secured to the sides of a car, two hollow tubes attached to said brackets by hollow tubular couplings thereby leaving clear openings from the exterior of one bracket through said tubes to the exterior of the other bracket, said tubes being made with an offset on one side of each of said tubes, a cast or woven mesh extending from one tube to the other and attached solidly to said offsets, substantially as described and for the purposes set forth.

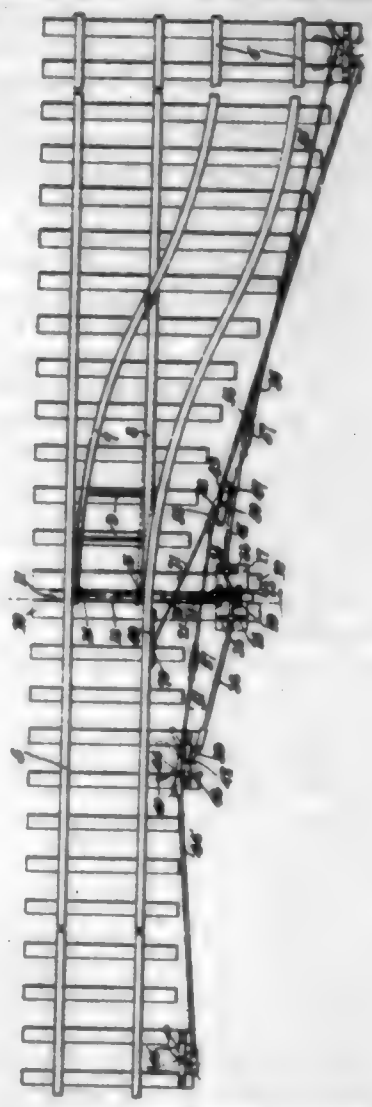
815,202. SWITCH. WILLIAM W. MCCLUNG, Butler, Pa. Filed Nov. 20, 1905. Serial No. 288,062.

Claim.—1. In a switch mechanism, the combination of a switch-bar, means for manually operating the switch-bar to open and close the switch, car-actuated means operable independently of the manually-operated means for effecting the movement of the switch-bar, and an auxiliary switch-operating device operatively connected with the car-actuated means to assist in throwing the switch-bar.

2. In switch mechanism, the combination of a switch-bar, means for manually operating the switch-bar to open and close the switch, car-actuated means operable independently of the manually-operated means for effecting the movement of the switch-bar, and a safety trip-lever forming a part of the car-actuated means for operating the switch-bar when the switch is in open position.

3. In switch mechanism, the combination of a switch-bar, means for manually operating the switch-bar to open and close the switch, a cam-bar for effecting the movement of the switch-bar independently of the manually-operated means, and car-actuated trips operatively connected with the cam-bar.

4. In switch mechanism, the combination with a switch-bar, of a manually-operated device connected to the switch-bar for moving the switch to open and closed positions, a cam-bar for shifting the manually-operated device laterally to effect the movement of the switch-bar independently of said manually-operated device, and car-actuated trips operatively connected with the cam-bar.



5. In switch mechanism, the combination with a switch-bar, of a bearing-plate, a hand-operated lever mounted for lateral movement on the bearing-plate and operatively connected to the switch-bar for moving the switch to open and closed positions, a cam-bar mounted for longitudinal movement on the bearing-plate and adapted to engage the lever for effecting the movement of the switch-bar independently of the hand-lever, and car-actuated trips operatively connected with the cam-bar.

6. In switch mechanism the combination with a switch-bar, of a bearing-plate provided with a plurality of sets of rollers, a hand-operated lever mounted for lateral movement on the bearing-plate and operatively connected to the switch-bar for moving the switch to open and closed position, a cam-bar having an offset portion for engagement with the rollers of each set to shift the lever and thereby effect the movement of the switch-bar independently of said lever, and car-actuated trips operatively connected with the cam-bar.

7. In switch mechanism, the combination with a switch-bar, of a hand-operated lever for operating the switch-bar to open and close the switch, means for locking the hand-lever in inoperative position, a cam-bar for shifting the hand-operated device laterally to effect the movement of the switch-bar independently of the hand-lever, car-actuated trips operatively connected with the cam-bar, and an auxiliary locking device for said hand-lever.

8. In switch mechanism the combination with a switch-bar of a bearing-plate, a bar slidably mounted on the bearing-plate, a hand-lever spaced from the bar and operatively connected with the switch-bar for moving the switch to open and closed position, rollers interposed between the base of the lever and the bar, a cam-bar engaging the rollers for shifting the lever laterally to thereby effect the movement of the switch-bar independently of said lever, and car-actuated trips operatively connected with the cam-bar.

9. In switch mechanism, the combination with a switch-bar, of a bearing-plate, a bar slidably mounted on the bearing-plate and provided with a vertically-disposed perforated lip, a locking-segment carried by the bar and spaced from the latter, a hand-operated lever movable with the bar and coacting with the locking-segment, a rod pivoted to the lever and extending through the perforation in the lip for engagement with the switch-bar for moving the switch to open and closed position, rollers interposed between the bar and segment,

a cam-bar engaging said rollers for shifting the lever laterally to thereby effect the movement of the switch-bar independently of the hand-lever, and car-actuated trips operatively connected with the cam-bar.

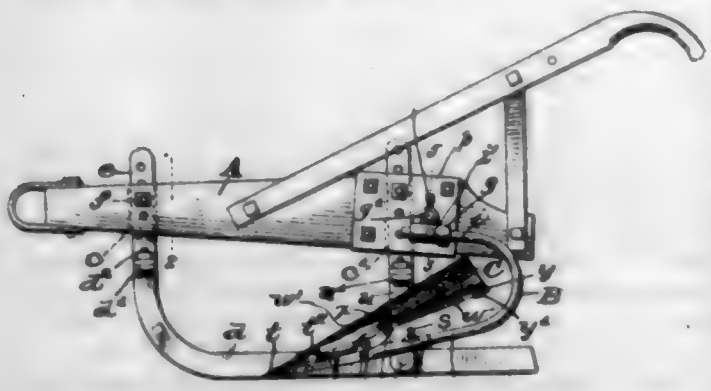
10. In switch mechanism, the combination with a switch-bar, of a bearing-plate, a bar mounted for longitudinal movement on the plate, a hand-lever pivoted to the bar and movable longitudinally therewith for operating the switch-bar to open and close the switch, a cam-bar for shifting the sliding bar to thereby effect the movement of the switch-bar independently of the hand-lever, and car-actuated trips operatively connected with the cam-bar.

11. In switch mechanism, the combination with a switch-bar, of a bearing-plate, a bar mounted for longitudinal movement on the bearing-plate and provided with a perforated lip, a toothed locking-segment secured to and spaced from the sliding bar, a hand-lever pivoted to the bar and coöperating with the locking-segment, a rod pivoted to the lever and passing through the perforation in the lip for engagement with the switch-bar for opening and closing the switch, said rod being provided with a locking-recess, a locking-collar slidably mounted on the lever and adapted to engage the recesses in the segment, an auxiliary locking device pivoted to the sliding bar and adapted to engage the recess in the rod, a cam-bar engaging the sliding bar for effecting the movement of the switch-bar independently of the hand-lever, and car-actuated trips operatively connected with the cam-bar.

12. In switch mechanism, the combination with a switch-bar, of a hand-lever for moving the switch-bar to open and closed position, a cam for shifting the hand-lever laterally to effect the movement of the switch-bar independently of the hand-lever, car-actuated trips, rods connecting the cam-bar and trips, an auxiliary switch-throwing device, and a pivoted lever one end of which is pivotally connected with one of the connecting-rods and the other end thereof operatively connected with the auxiliary switch-throwing device.

13. In switch mechanism, the combination with a switch-bar, of a bearing-plate, a hand-lever mounted for longitudinal and pivotal movement on the bearing-plate for moving the switch-bar to open and close the switch, a cam-bar for shifting the hand-lever laterally to effect the movement of the switch-bar independently of the hand-lever, a pivoted car-actuated trip disposed on each side of the bearing-plate, rods connecting the cam-bar and trips, a safety-trip, a rod connecting the safety-trip and the adjacent car-actuated trip, an auxiliary switch-operating device operable by the car-wheel, a pivoted lever one end of which is pivoted to the adjacent connecting-rod and the opposite end thereof to the auxiliary switch-operating device, and a connection between the pivoted lever and one of the car-actuated trips.

815,203. VINE-CUTTER. Andrew J. McCready, Parkesley, Va. Filed Dec. 19, 1905. Serial No. 292,457.



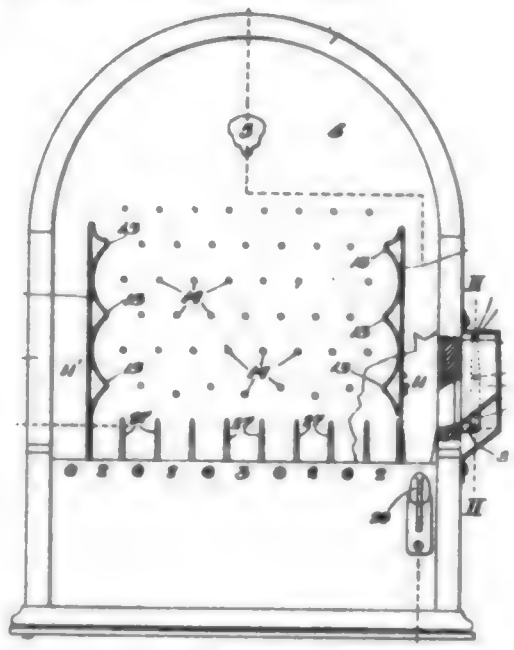
Claim.—1. In a vine-cutter, the combination of a beam; a runner composed of two bars which are adjustable for use for both a single runner and a double runner; carrier-arms attached to the beam at each side, and a cutting-blade carried by each of said arms.

2. In a vine-cutter the combination of a beam; a runner; a bearing, *g*, mounted on a trunnion projecting from the side of the beam; and a blade-carrier arm having a rounded upper end which fits in said bearing, whereby the free end of the arm may be adjusted in a swinging or curved plane, and the bearing of the arm may be adjusted by tilting in a plane at right angles with respect to the said curved plane.

3. In a vine-cutter, the combination of a beam; a runner, a U-shaped arm pivoted by one of its prongs to the beam; a vine-cutter blade and point-piece carried by the other prong, and said blade and point-piece each adjustable independently of the said prong.

4. In a vine-cutter, the combination of a beam; a runner; a U-shaped arm pivoted by one of its prongs to the beam; a point-piece carried by the other prong of said arm; a cutter-blade jointed to the point-piece and an adjusting-brace also jointed to the point-piece and set-screws for securing said brace to the cutter-blade.

815,204. GAME APPARATUS. William C. McDowell, Beaver, Pa. Filed Feb. 1, 1905. Serial No. 243,672.



Claim.—1. A game apparatus consisting of a vertically-arranged slanting front or base board provided with a series of interfering-pins, vertical side walls terminating in a semicircular top, a front plate of transparent material providing a narrow intervening space between it and the base-board, inner vertical partitions providing channels between the end walls and the inner main space, deflecting-pins providing receiving-channels, a receiving-pocket located in the upper portion of the base-board, a movable cover-plate and tongues arranged to cover said pocket and receiving-channels, and means for projecting a playing-check upwardly through one of said vertical channels, substantially as set forth.

2. A game apparatus consisting of a vertically-arranged slanting front or base board provided with a series of interfering-pins, vertical side walls terminating in a semicircular top, a front plate of transparent material providing a narrow intervening space between it and the base-board, inner vertical partitions providing channels between the end walls and the inner main space, a series of receiving-pockets at the bottom of the base-board, means for temporarily obstructing some of said pockets, an endmost channel provided at the bottom with inwardly-deflected check-supporting sides, an entrance-slot leading into said endmost channel, and a pivoted shooting-knocker located below the terminal of said channel, substantially as set forth.

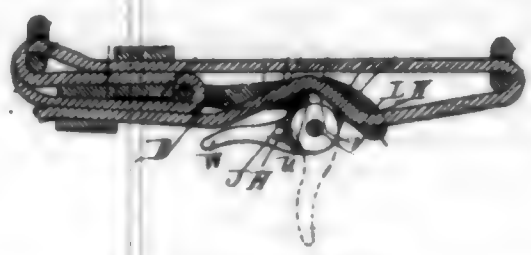
3. A game apparatus consisting of a vertically-arranged slanting front or base board provided with receiving-pockets, a cover-plate therefor of transparent material providing an intervening space, a vertical channel leading upwardly into said space and provided with inwardly-deflected lower terminal walls, a pivoted counterweighted shooting-knocker located at the base of said channel, an entrance-chute leading into said channel, a series of supporting-pins arranged below some of the receiving-pockets, and actuating devices therefor, substantially as set forth.

4. In a game apparatus, the combination of a vertically-arranged slanting base-board provided with a series of interfering-pins, vertical side walls terminating in a semicircular top, a cover-plate of transparent material providing a narrow intervening space, inner vertical partitions providing channels between the end walls and the inner main space, deflecting-pins providing receiving-channels, a receiving-pocket located in the upper portion of the base-board, a movable cover-plate therefor and a series of tongues arranged to intercept the passage between some of said receiving-channels, means for actuating said plate and tongues, and a counterweighted shooter-arm, substantially as set forth.

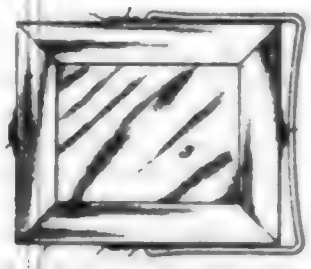
815,205. HAME-FASTENER. Peter Nelson, Chicago, Ill. Filed Aug. 17, 1904. Serial No. 221,097.

Claim.—A hame-strap buckle consisting of a main trough-

shaped body of solid metal having a slot by which said body is attached to the hame-strap, a central aperture adapted to permit part of said strap to project therethrough, and a corrugated curved part forming a fixed jaw; a pivot-bar affixed in said main body extending across said body over the aperture therein; an eccentric clamp of solid metal pivotally supported on said pivot-bar, said clamp having a corrugated part forming a jaw, and an arm whereby said clamp is operated substantially as described and for the purposes specified.



815,206. PHOTOGRAPHIC-PRINTING-FRAME ATTACHMENT. JOHN C. F. MYERS, Hartford, Conn. Filed July 6, 1905. Serial No. 268,482.



Claim.—1. A photographic-printing-frame attachment having a rabbeted frame, a mask-holding frame fitting the rabbeted frame, plates fastened to the ends of the rabbeted frame and extending rearwardly, plates fastened to the sides of the rabbeted frame and extending rearwardly, and a bail hinged to the side plates, substantially as specified.

2. A photographic-printing-frame attachment having a rabbeted frame, a mask-holding frame fitting the rabbeted frame, a plate extending rearwardly from each end of the rabbeted frame, a plate extending rearwardly from each side of the rabbeted frame, bosses extending outwardly from the side plates, and a spring-bail, hinged to the side plates and adapted to snap over and between the bosses, substantially as specified.

3. A photographic-printing-frame attachment having a rabbeted frame, a mask-holding frame fitting the rabbeted frame, a perforated spring-plate extending rearwardly from each end of the rabbeted frame, a plate with bosses extending rearwardly from each side of the rabbeted frame, and a spring-bail pivoted to the side plates and adapted to snap over and between the several bosses, substantially as specified.

815,207. FIREPROOF SIZING. THEODORE F. ODELL, Nyack, N. Y. Filed Apr. 13, 1905. Serial No. 255,446.

Claim.—A fireproof sizing consisting of sufficient water to secure the desired consistency, and glue one and one-half parts, alum four parts, glycerin one part and flour one and one-half parts, substantially as described.

815,208. HEAT-APPLYING DEVICE. WILLIAM J. O'DONNELL, Rochester, N. Y. Filed May 22, 1905. Serial No. 261,600.



Claim.—The herein-described device for applying heat to the hoofs and feet of animals, consisting of a hollow metal casing curved to fit the foot of the animal and disconnected at its ends, an inlet-cock 3, and an outlet-nipple 2 extending from said casing, and a series of loops 4 for supporting the device on the animal, and an asbestos covering secured to said casing, substantially as described.

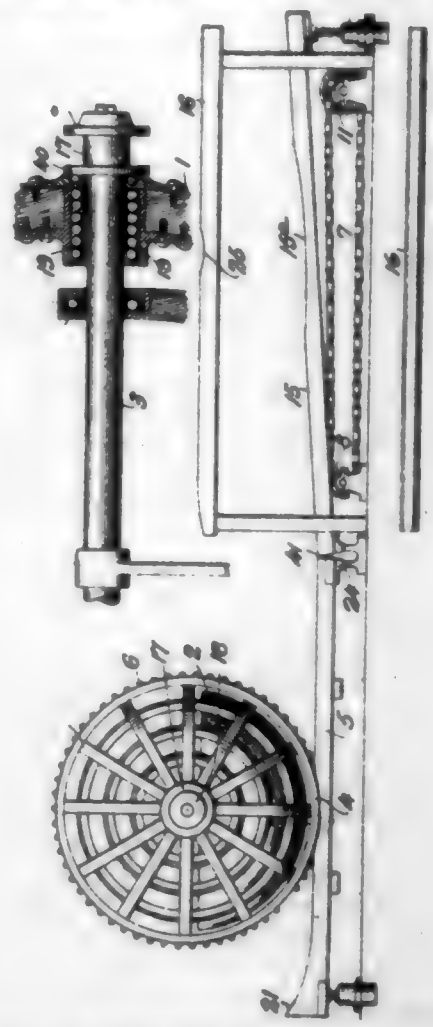
815,209. VULCANIZER. JAMES M. PADGETT, Topeka, Kans. Filed Apr. 27, 1905. Serial No. 257,626.

Claim.—1. The combination of a tire-engaging shoe formed hollow to provide a heat-chamber having an inlet at the center of its bottom and outlets at the top of its sides, legs for supporting said shoe, and a heater disposed beneath said shoe and adapted to discharge heat into the inlet of said heat-chamber, substantially as described.



2. In a device of the character described designed for the purpose of repairing tires without removing them from their wheels, comprising a tire-engaging shoe of semicircular cross-section and supported upon short legs, an aperture at one side of said shoe, a thermometer in said aperture, an oil-supply pipe passing under the shoe, a connection 10 secured to said supply-pipe and provided with a needle-valve, a combined mixer and burner secured to said connection in line with the needle-valve and provided with openings at the side and top for the purpose described, and an oil-cup under said connection, substantially as described.

815,210. SPHERICAL AMUSEMENT-VEHICLE. HERBERT H. PATTEE, New York, N. Y. Filed Apr. 11, 1905. Serial No. 254,961.



Claim.—1. A pleasure device, consisting of a ball carrying passengers, means for permitting the ball to gravitate for a certain distance, and means for revolving the ball on its axis.

2. An amusement apparatus comprising a rolling ball carrying passengers, a track for the ball, and means for rotating the ball on its axis after it leaves the track.

3. An amusement apparatus comprising a rolling ball having a foraminous wall, in combination with internal means for carrying passengers, an axis for the ball on which the internal means is supported, and means for permitting the ball to gravitate without disturbing the horizontal position of the axis.

4. An amusement apparatus comprising a spherical rolling device having a foraminous wall, an axis, a car hung on the axis for carrying passengers, means for permitting the ball to roll while the axis remains horizontal, and means for rotating the ball on its axis.

5. An amusement apparatus comprising a spherical rolling device having a foraminous wall, a horizontal shaft in said device, a passenger-carrying car supported from the shaft, a track on which the ball rolls with its shaft in a horizontal position, and means consisting essentially of a chain engaging teeth on the ball for rotating the latter after it leaves the track.

6. An amusement apparatus comprising a ball carrying passengers, said ball pursuing a forward rolling motion at times and at other times having a revolution on its axis.

7. An amusement apparatus comprising a rolling ball, and a relatively stationary car within the ball, said ball rolling at times along a path and at other times being revolved on its own axis.

8. In an amusement apparatus, the combination with a track, of a rolling ball having a foraminous wall, and carrying passengers and provided with encircling rims that engage the track.

9. In an amusement apparatus, the combination with a track, of a rolling ball having a horizontal axis, a passenger-carrying car within the ball supported from said axis, and circular grooved pieces on the ball for engaging the track so that the axis of the ball may be kept horizontal.

10. The combination with a track, of a rolling ball having a horizontal axis, a relatively stationary car within the ball supported from the axis, and means for tilting one end of the track.

11. The combination with a hollow ball carrying passengers, the walls of which are constructed to permit passengers to see without, of means for revolving said ball on its axis.

12. An amusement apparatus comprising a rolling ball carrying passengers, the walls of which are constructed to permit the passengers to see without, and means for revolving the ball on its axis consisting essentially of a circular rack on the ball and means engaging said rack.

13. The combination with a rolling ball having a foraminous wall and having a horizontal axis, of a relatively stationary car within the ball supported from the axis, a circular rack on the ball and a chain engaging said rack, and means for supporting the axis of the ball so that it may revolve on its axis.

14. An amusement apparatus comprising a rolling ball carrying passengers, a track for the ball, a horizontal shaft running through the ball and having trunnions on the end, means for supporting said trunnions at times, and means for revolving the ball when so supported consisting essentially of a circular series of teeth on the ball, and actuating means engaging the teeth.

15. The combination with a rolling ball having an axis, of a car within the ball for carrying passengers which car is hung on the axis to remain level while the ball rolls, a track engaged by grooves in the ball to permit the ball to roll forward at times, rails supporting the ends of the axis at other times, and means for rotating the ball on its axis when so supported.

16. In an amusement apparatus, the combination with a dark chamber, of a track leading thereinto, a ball carrying passengers and rolling on said track, said ball having an axis, means within the chamber for supporting the axis of the ball after it leaves the track, and means for rotating the ball on its axis so that the ball may appear to have a forward revolving motion both while rolling on the track and while rotating on its axis.

17. In an amusement apparatus, the combination with a spherical rolling device having a foraminous wall, of a horizontal axle the projecting ends of which serve as trunnions, a car hung on the axle for carrying passengers, a track engaged by encircling grooves on the rolling device, means for lifting the track so that the ball may gravitate thereon, and a second track for supporting the trunnions, and means for revolving the device on its axle when so supported.

18. In an amusement apparatus, a rolling ball carrying passengers, the walls of which are constructed to permit the passengers to see without, a track engageable by parallel encircling grooves on the ball equidistant from the center, a second track to which the ball passes from the first, an elevated track along said second track for supporting the axis of the ball when the grooves leave the second track, a circular rack on the ball, and endless chain engaging said rack so as to revolve the ball when supported by its trunnions.

19. In an amusement apparatus, the combination with a track, of a rolling ball, a relatively stationary car within the ball, and exterior flanges on the ball engaging the track.

20. In an amusement apparatus, the combination with a track or way, of a ball having encircling rims engaging the track or way, said ball being constructed to permit passengers to see without, and a relatively stationary car within the ball; said car being hung on the axis of the ball.

21. In an amusement apparatus, the combination of an outer chamber, an inner chamber, an intermediate chamber, swinging doors between the outer chamber and the intermediate chamber, and swinging doors between the intermediate chamber and the inner chamber, a track running through the several chambers, a ball carrying passengers and rolling on said track, said ball having an axis, means within the inner chamber for supporting the ball after it leaves the track, and means for rotating the ball while off the track so that it may appear to have the same forward motion as when rolling on the track.

22. In an amusement apparatus, the combination with an inner chamber, of a track leading thereinto, doors to said chamber, a ball carrying passengers and rolling on said track and opening the doors by contact therewith automatically, said ball having an axis, means within the chamber for supporting the axis of the ball after it leaves the track, and means for revolving the ball when so supported so that it will appear to have the same forward motion as when rolling on the track.

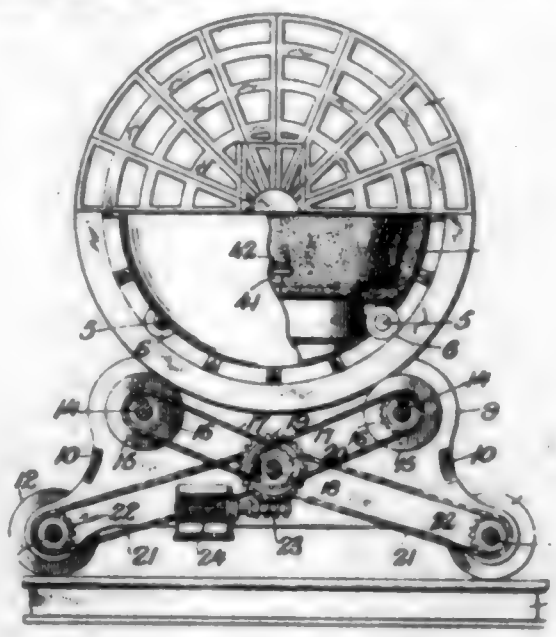
23. In an amusement apparatus, the combination of an outer chamber having hinged doors, an inner chamber having hinged doors, a chamber intermediate between the two aforesaid chambers, a track leading through the chambers, a ball carrying passengers and rolling on said track and automatically opening the doors by contact therewith, said ball having encircling rims that engage the track, and means for lifting the ball from the track in the inner chamber and rotating it when so lifted.

24. The combination with a hollow ball carrying passengers and having a foraminous wall, of means for revolving said ball on its axis, and encircling rims on the ball which engage a track or way.

25. The combination with a hollow ball carrying passengers, the walls of which are constructed to permit passengers to see without, a track, means for lifting the ball off the track, and means for rolling the ball on the track and likewise for revolving it when off the track.

26. The combination with a foraminous ball, of a relatively stationary car within the same carrying passengers, and means for rotating the ball about its axis.

815,211. AMUSEMENT-VEHICLE. HERBERT H. PATTEE, East Orange, N. J., and CHARLES L. DURNKEL, New York, N. Y. Filed May 25, 1905. Serial No. 263,160.



Claim.—1. In an amusement apparatus, the combination with a ball having an interior car carrying passengers, of means for transporting the ball.

2. In an amusement apparatus, the combination with a ball having an interior car carrying passengers, of means for transporting said ball bodily, and means for revolving it.

3. In an amusement apparatus, the combination with a ball carrying passengers, of a car for transporting it, and means consisting essentially of friction-wheels for revolving it.

4. In an amusement apparatus, the combination with a ball, of a relatively stationary car therein carrying passengers, and means for revolving the ball consisting of wheels in contact with the exterior.

5. In an amusement apparatus, the combination with a foraminous ball, of a car within the same carrying passengers, and trucks for said car in contact with the interior surface of the ball.

6. In combination with a revolving ball, having interior circular tracks, of a car within the ball carrying passengers, said car being provided with wheels engaging the said tracks.

7. The combination with a revolving ball carrying passengers, of a friction-gear applied to the exterior thereof for revolving the ball.

8. The combination with a ball carrying passengers, said ball so constructed that the passengers can see without, and having interior tracks, of a car provided with wheels engaging said tracks, which car remains stationary while the ball revolves about it, and means for revolving the ball, together with means for transporting it.

9. The combination of a revolving ball carrying passengers, a locomotive-car supporting the ball, means consisting essentially of friction-wheels for revolving the ball, and controlling means within the car together with an electric motor or motors whereby the ball may be revolved and whereby the arc which supports it may be propelled.

10. The combination with a ball of a foraminous character and carrying passengers, of a car supporting the ball, wheels or rollers on the car on which the ball rests, and means for imparting revolution to the ball.

11. In an amusement-vehicle of the character described, the combination with a ball, a relatively stationary car within the same carrying passengers, a car supporting the ball, and an electric motor for revolving the ball.

12. The combination with a ball, of a relatively stationary car within the same, friction-wheels supporting the ball, and means for driving the friction-wheels for rotating the ball.

13. The combination with a ball carrying passengers, of friction-wheels supporting it, and means for rotating the ball.

14. The combination with a ball, of a relatively stationary car therein having trucks engaging interior tracks in the ball, flanged rims on the exterior of the ball, wheels on which said flanged rims rest, and means for rotating the wheels in order to rotate the ball.

15. The combination with a ball carrying passengers, of friction-wheels supporting it, and a car carrying said friction-wheels.

16. The combination with a ball carrying passengers, of friction-wheels supporting it, and means for rotating said wheels.

17. The combination with a ball carrying passengers, of friction devices supporting it, and means for actuating said devices to revolve the ball.

18. The combination of a revolving ball carrying passengers, a car supporting the ball, means consisting essentially of friction-wheels for revolving the ball, and means within the ball for controlling the revolution of the ball and the movement of the car.

19. The combination of a revolving ball carrying passengers, a car supporting the ball, means consisting essentially of revolving friction devices for revolving the ball, a motor or motors for revolving the ball and propelling the car, and means within the ball for controlling the motor or motors.

20. In an amusement apparatus, the combination with a ball carrying passengers, of means for transporting said ball, a motor or motors for revolving the ball and for propelling the transporting means, and means within the ball for controlling the motor or motors.

21. In an amusement apparatus, the combination with a foraminous ball, of a car within the same carrying passengers, a friction-gear applied to the exterior of the ball for revolving it, a car for transporting the ball, and a motor or motors whereby said ball is revolved and said car propelled.

22. The combination of a foraminous ball, a car within the same carrying passengers, said car having trucks in contact with the interior surface of the ball, friction-wheels supporting the ball, and means for actuating the friction-wheels, including a motor or motors and shafting, which latter communicates motion to the wheels.

23. In an amusement apparatus, the combination of a ball, an interior car carrying passengers and having trucks in contact with the interior surface of the ball, and means for revolving said ball around its axis.

815,212. SQUIB-HOLDER. JOHN R. POWELL, Plymouth, Pa. Filed May 10, 1905. Serial No. 259,739.



Claim.—1. A squib-holder, including a wedge having rounded sides and converging top and bottom faces, one of which latter is provided with a longitudinal groove or channel.

2. A squib-holder, including a wedge having substantially parallel transversely-rounded sides and a longitudinal groove or channel extending along its bottom.

3. A squib-holder, including a wedge having a longitudinal groove or channel of substantially the same depth for the major portion of its length.

4. A squib-holder including a wedge having substantially parallel sides, and a groove or channel extending along one of the converging sides of the wedge and of substantially the same depth for the major portion of its length to provide for comparatively extensive engagement of the squib.

5. In combination, a squib-conduit, and a squib-holder including a wedge extended into the conduit and spaced from the upper side thereof to provide a vent, said wedge having a longitudinal groove or channel in its under side face for the reception of the squib.

6. In combination, a squib-conduit, and a squib-holder, including a wedge extended into the conduit and having its upper face spaced from the upper side of the conduit to form a vent and inclined upwardly toward the outer end of the conduit to deflect the escaping gas upwardly, and a longitudinal groove or channel extending along the under side of the wedge to receive the squib.

7. As a new article of manufacture, a squib-holder, including a wedge adapted to be inserted in the squib-conduit, and an enlarged head at one end of the wedge.

8. As a new article of manufacture, a squib-holder comprising a wedge, an enlarged head at one end thereof, and a longitudinal groove or channel for the reception of the squib.

9. A squib, having an enlarged head, a comparatively narrow wedge extended from the head, and a longitudinal groove or channel extending from end to end of the holder.

10. A squib-holder, comprising a wedge, and an enlarged head at one end thereof, said holder having a longitudinal groove or channel extending along its under side from end to end thereof, the upper face of the holder being upwardly inclined from the inner end of the wedge to the outer end of the holder.

11. A squib-holder, including a wedge having parallel sides and converging top and bottom faces, an enlarged head at one end of the wedge, a longitudinal groove extending the entire length of the holder at the under side thereof, and a concavity formed in the upper side of the head to prevent said head from obstructing the escape of gases from a squib-conduit in which the wedge is inserted.

12. As a new article of manufacture, a transversely trough-shaped squib-shield.

13. As a new article of manufacture, a transversely trough-shaped squib-shield having a longitudinal taper to permit said shield to be wedged into the squib-conduit.

14. The combination with a squib-conduit, of a squib shield and holder arranged to guard the squib-match and having a tapered portion adapted to be wedged in the conduit.

15. In combination with the blasting-barrel, a squib shield and holder formed of flame-resisting material and constructed to be secured in and project from the barrel and form a protection for the squib, the part of the shield and holder within the barrel serving to hold the squib in place.

16. In combination with the blasting-barrel, a squib-shield independent of the squib and held in place by the barrel so as to partially inclose and protect that portion of the squib projecting from the barrel.

17. As a new article of manufacture, a squib-shield of the character described, designed to shield all except the extremity of a squib-match projecting from the squib-conduit, said shield having a tapered portion adapted to be wedged in the conduit to insure its retention in place.

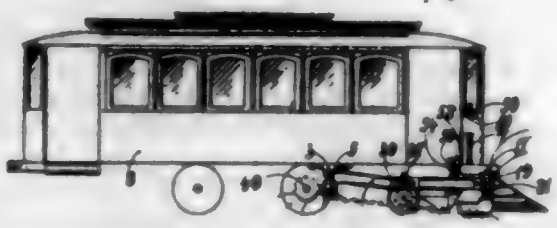
18. The combination with a squib-conduit, of a squib shield and holder retaining the squib against movement in the conduit and arranged to guard the squib-match projecting beyond the outer end of the conduit.

19. The combination with a blasting-barrel, of a tapered squib-shield wedged therein and having its larger end projecting therefrom.

815,213. APPARATUS FOR CLEANING THE RAILS OF TRAMWAYS AND THE LIKE. HILARY QUERTIER, Dunedin, New Zealand. Filed Oct. 9, 1905. Serial No. 282,669.

Claim.—1. Apparatus for the purpose indicated, composing in combination, a frame pivoted at one end beneath a vehicle, bolts attached to the frame, springs threaded upon the bolts between the nuts and the frame of the vehicle and supporting the front end of the frame, means for depressing the frame, brackets secured to the front

of the frame, swiveling stems fitting the brackets, plows fixed to the stems and having points entering the rail-grooves, bearings fitted to the frame, an axle journaled in the bearings, brushes fixed upon the ends of the axle, and means for revolving the axle, substantially as set forth.

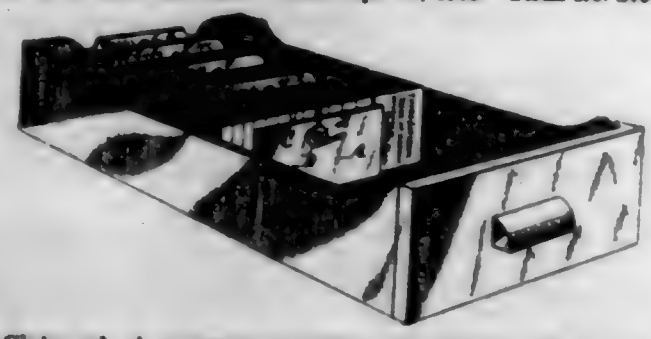


2. Apparatus for the purpose indicated, in combination, a frame pivoted at one end beneath a vehicle, bolts attached to the frame, springs threaded upon the bolts between the nuts thereof and the frame of the vehicle and supporting the front end of the frame, a treadle having a stem, a spring threaded upon the lower part of the stem, a bracket secured to the frame and adapted to receive the end of the treadle-spring, a screw, a nut receiving the screw and fixed to the vehicle, a cup-shaped bracket fixed to the frame and adapted to receive the end of the screw, swiveling plows attached to the front of the frame, bearings fitted to the frame, an axle journaled in the bearings, brushes fixed upon the ends of the axle, and means for revolving the axle, substantially as set forth.

3. Apparatus for the purpose indicated comprising in combination, a frame pivoted at one end beneath a vehicle, bolts attached to the frame, springs threaded upon the bolts between the nuts thereof and the frame of the vehicle, and supporting the front end of the frame, means for depressing the frame, brackets secured to the front of the frame, swiveling stems fitting the brackets, plows fixed to the stems and having points entering the rail-grooves, bearings fitted to the frame, an axle journaled in the bearings, brushes fixed upon the ends of the axle, a sprocket-pinion secured upon the axle, a bracket fixed to the frame, a spindle journaled in the bracket, a sprocket-wheel fixed upon the spindle, a sprocket-chain connecting the sprocket-pinion and sprocket-wheel, a tooth-pinion secured upon the spindle, and a tooth-wheel secured upon the carrying-axle of the vehicle and gearing with the tooth-pinion when the frame is depressed, substantially as set forth.

4. Apparatus for the purpose indicated comprising in combination, a frame pivoted at one end beneath a vehicle, bolts attached to the frame, springs threaded upon the bolts between the nuts thereof and the frame of the vehicle and supporting the front end of the frame, means for depressing the frame, brackets secured to the front of the frame, swiveling stems fitting the brackets, plows fixed to the stems and having points entering the rail, grooves, bearings fitted to the frame, an axle journaled in the bearings, brushes fixed upon the end of the axle, a bar fixed to the bearings of the axle, a motor fixed to the bar and mounted upon the axle, a switch attached to the vehicle, a lever-arm upon the switch and a rod connecting the frame and the lever-arm substantially as set forth.

815,214. WRAPPER FOR SALESMEN'S SLIPS, &c. JAMES H. RAND, Newtonville, Mass. Filed Sept. 20, 1905. Serial No. 279,271.

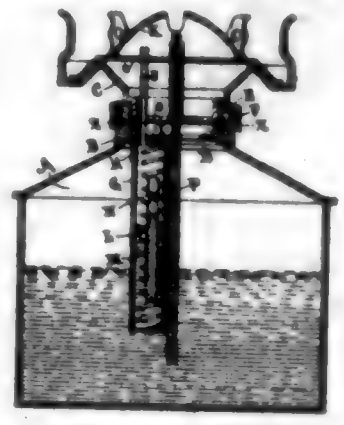


Claim.—1. A wrapper consisting of a folder adapted to embrace a package of deposit-slips or other papers, the rear wall of the folder extending above its front wall and being adapted to receive a suitable index designation on its exposed upper portion, and a fastening extending across the open upper side of the wrapper and arranged below the portion of the rear wall which receives the index designation, substantially as set forth.

2. A wrapper consisting of a folder having its rear wall provided with an index-tab which extends above its front wall and a fastening-cord attached to the rear wall below said tab, the front wall being provided with means for detachably securing the free end of the cord thereto, substantially as set forth.

3. A wrapper, consisting of a folder having its rear wall extended above its front wall and provided with an eyelet, the front wall being provided with a button, and a cord fastened to the rear wall of the folder by said eyelet and passing forwardly through the same and adapted to have its free end wound around the neck of said button, substantially as set forth.

815,215. LAMP-EXTINGUISHER. JOHN E. RICHARDSON, Elmira Heights, N. Y. Filed May 22, 1905. Serial No. 261,507.



Claim.—1. In combination with a lamp, an extinguisher comprising a receptacle containing separate compartments communicating with one another at the upper end and containing fire-extinguishing and gas-producing liquids respectively, and means for conveying liquid from the receptacle to the flame in the burner when the two liquids become mixed by the overturning of the lamp.

2. In combination with a lamp, an extinguisher comprising a liquid-receptacle, an open-ended vial to contain a gas-producing liquid inserted within said receptacle, a duct leading from the receptacle to the burner, and means for delivering the liquid from said duct to the flame in the burner should the lamp be overturned.

3. A lamp-extinguisher comprising a liquid-receptacle, means for attaching said receptacle to a lamp below the burner, a duct leading from the receptacle to a point adjacent the top of the wick, a vial containing a gas-producing liquid inserted in the receptacle, and means for delivering the liquid from said vial to the liquid in the receptacle should the lamp be overturned.

4. A lamp-extinguisher comprising a receptacle having two intercommunicating compartments containing a liquid and a gas-producing substance respectively, a tube projecting from the top of said receptacle, and means for attaching the receptacle within the reservoir below the burner with the tube in position to deliver the contents of the receptacle into the flame in the burner should the lamp be overturned.

5. The combination, with the reservoir of a lamp having a central draft-tube therein, of a receptacle having two intercommunicating compartments containing a liquid and a gas-producing substance respectively, a tube projecting from the top of said receptacle, and means for securing the receptacle within the draft-tube with the tube from the receptacle in position to deliver the contents thereof into the flame of the burner should the lamp be overturned.

815,216. STRAP. SAMUEL T. ROBERTS, Springfield, Mo. Filed Apr. 20, 1905. Serial No. 256,127.



Claim.—1. A strap, comprising a pair of leather stripe fitting flatly together and secured to each other near their upper and lower

edges, a reinforcement interposed between said strips in the form of a flattened hollow wire cable.

2. A strap, comprising a pair of strips secured together, a reinforcement interposed between said strips in the form of a hollow wire cable, and eyelets extending through said strips and reinforcement.

3. A strap, comprising a pair of strips fitting and secured together, a reinforcement in the form of a flattened hollow wire cable interposed between said strips, clasps upon the reinforcement and between the strips, and eyelets secured to the clasps and extending through the same, the reinforcement and the strips.

815,217. FOUNTAIN-PEN. JOHN R. ROBINSON, Elmira, N. Y. Filed Mar. 18, 1905. Serial No. 250,768.



Claim.—1. In a fountain-pen, the combination, with a barrel and a pen fixed at one end thereof, of a point-section for carrying said pen having a duct leading from the barrel to the pen, a feed-bar movable in said duct provided with screw-threads on its outer side, and a revoluble sleeve mounted on the end of the barrel and provided with screw-threads in engagement with the threads on the feed-bar.

2. In a fountain-pen, the combination, with a barrel, of a point-section screwed into one end thereof and having an annular groove running in from the outer end and terminating in an enlarged bore, a pen fixed in the point-section, said point-section having a duct leading from the barrel to the pen, a feed-bar movable in said duct provided with screw-threads on its outer side, a sleeve having a split flanged portion adapted to be sprung into revoluble engagement with the groove in the end of the point-section, and screw-threads on the sleeve to engage the threads on the feed-bar.

3. In a fountain-pen, the combination, with a barrel and a pen fixed at one end thereof, of a point-section for carrying said pen having a semicircular duct provided with a wedge-shaped bore which forms a gradually-increasing passage-way from the barrel to the pen, a semicylindrical feed-bar movable in said duct, the inner end of said bar being adapted to close the orifice of said duct when in retracted position, and means for projecting and retracting the feed-bar.

815,218. FOUNTAIN-PEN. JOHN R. ROBINSON, Elmira, N. Y. Filed Sept. 13, 1905. Serial No. 278,231.

Claim.—1. In a fountain-pen, the combination, with the barrel, of an adjustable vent comprising a perforated diaphragm adjacent the upper end of the barrel, a screw-cap having a central bore closing the end of the barrel and adapted to adjust the passage-way for air to the diaphragm, and a second cap having a screw-threaded stem inserted in the central bore of the first cap, said stem having a central bore with one or more transverse vent-openings leading thereinto.

2. In a fountain-pen, the combination, with the barrel, of an adjustable vent-cap closing the upper end of the barrel and having a central screw-threaded bore, a second cap centrally bored and having a transversely-perforated screw-threaded stem adapted to be inserted in the first cap, and a filler device attached to said second cap.

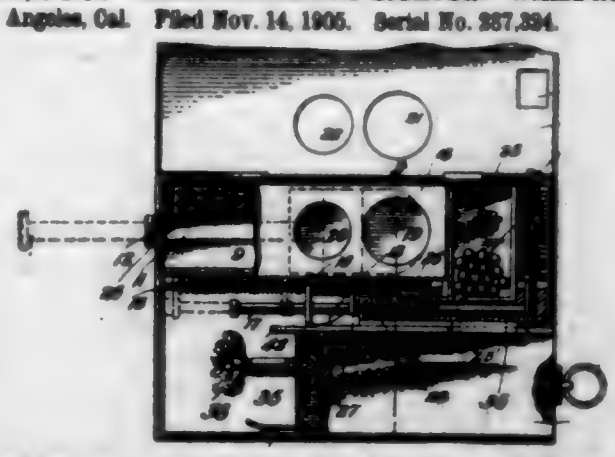
3. In a fountain-pen, the combination, with the barrel, of a filler device, a vented stem projecting from the filler device and entering the rear end of the barrel, said stem being adapted to open the filler to the atmosphere when air is to be discharged therefrom, and a valve in the barrel adapted to close communication between the barrel and filler when the vent is open.



4. In a fountain-pen, the combination, with the barrel, of a valve-chamber at the rear end thereof having an orifice at its outer end, a float-valve in said chamber adapted to close the inner end of said orifice, a valve-cap adapted to close the outer end of said orifice, a hollow vented screw in said cap, and a filler device attached to said screw.

5. In a fountain-pen, the combination with the barrel, of a valve-chamber at the rear end thereof communicating with the barrel and provided with an orifice at its outer end, a float-valve and a weighted valve in said chamber adapted to close said orifice according to the position in which the pen is held, an adjustable vent-cap fitted to the outer end of said chamber, and a filler device adapted to be attached to said cap.

815,219. CIGAR CUTTER AND LIGHTER. WILLIAM ROOLL, Los Angeles, Cal. Filed Nov. 14, 1905. Serial No. 287,394.

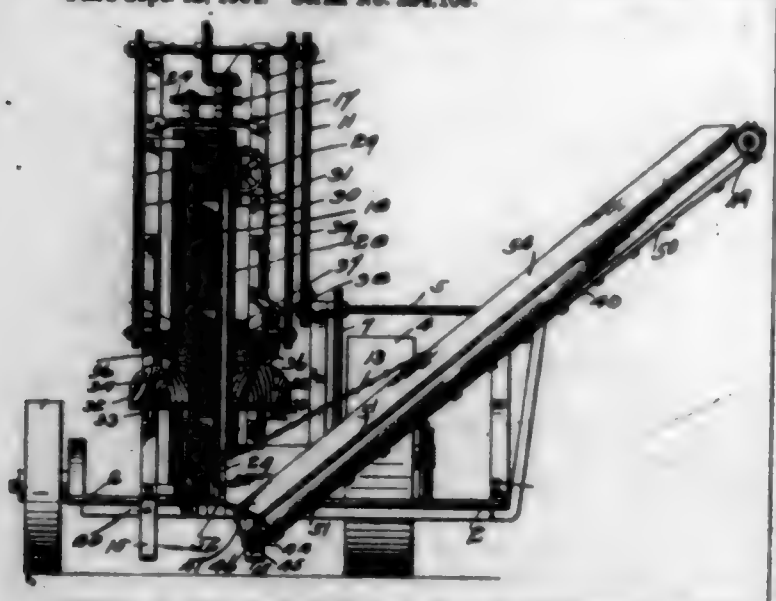


Claim.—1. A cigar-lighter comprising a fulminate-ball-holding chamber having a port in the edge thereof; a fulminate-operating rod adjacent thereto and normally closing said port; means to operate said rod to open and close said port; a pressure-rod adjacent to the end of the fulminate rod; a chamber below said pressure-rod; a reservoir adjacent to said last chamber; a wick in said reservoir; an igniter secured to said reservoir adjacent to said wick; and fulminate balls in said ball-holding chamber.

2. A cigar lighter and cutter comprising a casing having a hinged lid, said lid and casing having apertures therethrough in register; and a slot in the end of the casing; a cutter-compartment in said casing; a cutter in said compartment; a shank secured to said cutter and projecting through the end of the casing and having a notch in the end thereof; a guide-arm secured to the bottom of said cutter and projecting out of said cutter-compartment and having a stud on the end thereof; a guide-rod adjacent to said cutter-compartment and engaged by one side of said stud; a spring on said guide-rod and bearing against said stud; a guide-tube adjacent to said guide-rod; a fulminate-ball-operating rod in said guide-tube;

said tube having an aperture or port in one side thereof; a fulminate-ball-holding chamber having a port in register with the aperture in said tube adjacent thereto; a pressure-rod adjacent to said ball-holding chamber, said rod having a handle passing through an aperture in the lid; a single ball-holding chamber below said pressure-rod; a reservoir adjacent to said last chamber; an abrading-bar on the side of said chamber; a wick in said chamber having an end thereof projecting therefrom adjacent to said bar; a head on the end of the fulminate-ball-operating rod and a collar on said rod intermediate the ends thereof; and a yoke loosely mounted on the guide-rod intermediate the coils of the spring thereon, said yoke straddling said fulminate-ball-operating bar and adapted to cause said rod to deliver a fulminate ball in the path of the pressure-rod when the pressure-rod is withdrawn above the plane of the fulminate-ball-operating rod; and fulminate balls in said ball-holding chambers.

815,220. CORN-HUSKER. HENRY RUST, Worthington, Minn. Filed Sept. 12, 1904. Serial No. 224,108.



Claim.—1. The combination, with a wheeled frame, of stripping-rolls vertically arranged thereon, mechanism for driving said rolls, arms provided in advance of said rolls, belts having fingers operating lengthwise of said arms, husking-rolls arranged at an incline, a hinged plate in front of said stripping-rolls and adapted to be raised by the engagement of the cornstalk therewith, and said plate being inclined downward toward said husking-rolls to direct the ear of corn thereon, substantially as described.

2. The combination, with a wheeled frame, of stripping-rolls vertically arranged thereon and revolving toward each other, one of said rolls being of greater diameter than the other, arms arranged to straddle the corn row and direct the stalks to said rolls, and a belt operating vertically near the smaller of the two stripping-rolls, and provided with knives or fingers arranged to pass near the surface of the larger roll, substantially as described.

3. In a corn-husker, the combination, with a wheeled frame, of upright stripping or snapping rolls mounted thereon, means for guiding the stalks to said rolls, husking-rolls arranged at an incline in front of said stripping-rolls and extending laterally with respect thereto, the lower receiving ends of said husking-rolls being contiguous to the lower ends of said stripping-rolls, and means for directing the ears of corn stripped from the stalks by said first-named rolls to the receiving ends of said husking-rolls, substantially as described.

4. The combination, with a wheeled frame, of stripping-rolls vertically arranged thereon, means for guiding the cornstalks to said rolls, husking-rolls provided near said stripping-rolls, a hinged plate arranged in advance of said stripping-rolls and adapted to direct the ears of corn to the receiving ends of said husking-rolls, substantially as described.

5. In a corn-husker, the combination, with a wheeled frame, of upright stripping-rolls mounted therein, and fingers traveling along in front of and close to said stripping-rolls for snapping off the ears of corn that do not readily yield to the action of said stripping-rolls, substantially as described.

6. The combination, with a wheeled frame, of corrugated vertically-arranged stripping-rolls, mechanism for guiding the stalks of corn thereto, and a belt operating vertically in front of one of said rolls and having a series of fingers that sweep past the surface of the other roll.

7. The combination, with a wheeled frame, of vertically-arranged stripping-rolls carried thereby, means for feeding the cornstalks to said rolls, a belt provided with a series of fingers operating vertically in front of one of said rolls, and a vertically-arranged guide-board provided in advance of said rolls, substantially as described.

8. The combination, with a suitable frame, of stripping-rolls vertically arranged thereon, husking-rolls arranged at an incline and extending laterally with respect to said stripping-rolls the receiving ends of said husking-rolls being near and below the level of the lower ends of said stripping-rolls, means for guiding the stalks of corn to said stripping-rolls, and a pivoted plate arranged to direct the ears of corn from said stripping to said husking rolls.

9. The combination, with a platform having a slot in its forward edge and provided with suitable carrying-wheels, of vertically-arranged stripping-rolls mounted in front of said slot, means arranged to direct the stalks of corn to said rolls, husking-rolls arranged in advance and at one side of said stripping-rolls and inclined upwardly toward the side of the machine the lower ends of said husking-rolls being near the corresponding ends of said stripping-rolls and adapted to receive the unhusked ears of corn therefrom, substantially as described.

10. The combination, with a platform provided with carrying-wheels, of a shaft mounted in bearings above one of said wheels and geared thereto, stripping-rolls arranged vertically on the forward part of said platform and having operative connections with said shaft to be driven thereon, guiding-arms provided in advance of said stripping-rolls, husking-rolls arranged at an incline in advance of said stripping-rolls and extending laterally with respect thereto, the receiving ends of said husking-rolls being near said stripping-rolls, and said husking-rolls having driving connections with said shaft, substantially as described.

11. In a corn-husker, the combination, with a wheeled frame of upright stripping-rolls mounted thereon, means for guiding the stalks of corn to said stripping-rolls, means operating in front of said stripping-rolls to snap or break off the tough stems connecting the ears and stalks, inclined husking-rolls arranged in front of said stripping-rolls and extending laterally with respect thereto and having their lower ends contiguous to said stripping-rolls to receive the unhusked ears of corn therefrom, substantially as described.

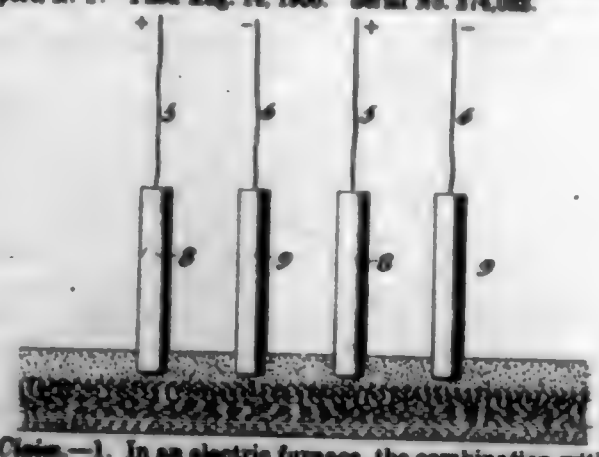
12. In a corn-husker, the combination, with a wheeled frame, of upright stripping or snapping rolls mounted thereon, means for guiding the stalks of corn to said snapping-rolls, husking-rolls provided in advance of said snapping-rolls and upwardly inclined therefrom and having their lower ends contiguous to the lower ends of said snapping-rolls, the unhusked ears of corn passing to said husking-rolls without passing through or between said snapping-rolls, and means for guiding said ears of corn into said husking-rolls, substantially as described.

13. In a corn-harvester, the combination with upright snapping-rolls, of husking-rolls arranged contiguous to the lower ends of the snapping-rolls, and an inclined platform for conducting the ears from the snapping-rolls to the husking-rolls.

14. In a corn-harvester, the combination with snapping-rolls, of husking-rolls, and a yieldingly-supported platform arranged in the interval between the contiguous portions of the snapping and husking rolls.

15. In a corn-harvester, the combination with snapping-rolls, of husking-rolls, and a yielding inclined platform arranged in the interval between the contiguous portions of the snapping and husking rolls.

815,221. ELECTRIC FURNACE. MARCUS RUTHENBURG, Lockport, N. Y. Filed Aug. 14, 1905. Serial No. 274,082.



Claim.—1. In an electric furnace, the combination with a fused bath; of a layer of inert material floated on said bath; a layer of com-

minuted resister floated on said inert layer; and, an electric circuit connected with said resister, substantially as set forth.

2. In an electric furnace, the combination with a fused bath; of a layer of inert material floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit having opposite terminals in different regions of said resister, substantially as set forth.

3. In an electric furnace, the combination with a fused bath; of a layer of inert material floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit having carbon terminals in different regions of said resister, substantially as set forth.

4. In an electric furnace, the combination with a fused bath; of a layer of inert material floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit having a plurality of positive and negative terminals disposed in alternate relation in different regions of said resister, substantially as set forth.

5. In an electric furnace, the combination with a fused metal bath; of a layer of inert material floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit connected with said resister, substantially as set forth.

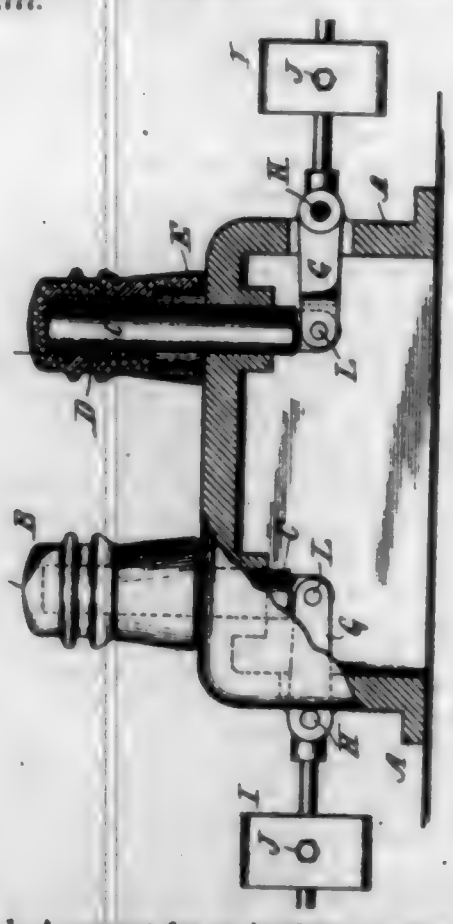
6. In an electric furnace, the combination with a fused metal bath; of a layer of inert slag floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit connected with said resister, substantially as set forth.

7. In an electric furnace, the combination with a fused metal bath; of a layer of bauxite slag floated on said bath; a layer of comminuted resister floated on said slag; and, an electric circuit connected with said resister, substantially as set forth.

8. In an electric furnace, the combination with a fused bath; of a layer of inert material floated on said bath; a layer of comminuted coke-resister floated on said inert layer; and, an electric circuit connected with said coke, substantially as set forth.

9. In an electric furnace, the combination with a fused ferruginous bath; of a layer of inert material floated on said bath; a layer of comminuted resister floated on said inert layer; and, an electric circuit connected with said resister, substantially as set forth.

815,222. DEVICE FOR SUPPORTING GLASS INSULATORS OR OTHER GLASS ARTICLES WHILE PLASTIC. WILLIAM H. SCHOELING, Brooklyn, N. Y., assignor to Henry M. Brookfield, Ardsley-on-Hudson, N. Y. Filed June 30, 1903. Renewed Jan. 25, 1906. Serial No. 297,777.



Claim.—1. A support for an insulator or other glass article when in plastic condition comprising a base upon which part of the article may rest and by which part of its weight may be supported, and a pin at least in part movable with relation to said base and projected therefrom in such location as to support a portion of the weight of said article at a part other than that part supported by said base.

2. A movable pin or stud or projection with a weighted lever or equivalent device upon which an insulator or other glass article may be set to cool off.

3. A movable pin or stud or projection with a lever or equivalent device upon which an insulator or other glass article may be set to cool off.

815,223. POP-GUN. JOSEPH SHEBOLD, THOMAS CURRAN, and MILTON L. BAGGS, Antigo, Wis. Filed Apr. 20, 1905. Serial No. 256,015.



Claim.—1. A pop-gun comprising in its construction a barrel and piston-rod provided with a piston, in combination with a barrel-cap having an inwardly-projecting annular flange adapted to be secured on the muzzle of the gun, and a gun-cap constructed to be inserted in the barrel-cap and to exactly fit therein and to rest on the said muzzle and ferrule and to be bound between the same and the inwardly-projecting flange of the barrel-cap.

2. A pop-gun comprising in its construction a barrel provided on its muzzle with a ferrule, and piston-rod provided with a piston, in combination with a barrel-cap provided with an inwardly-projecting flange adapted to carry a gun-cap fitting exactly therein with its margin resting on said flange and to bind the same on the muzzle and ferrule of the gun, and means, comprising a bayonet-joint, for readily and quickly securing the barrel-cap and gun-cap in place on the muzzle.

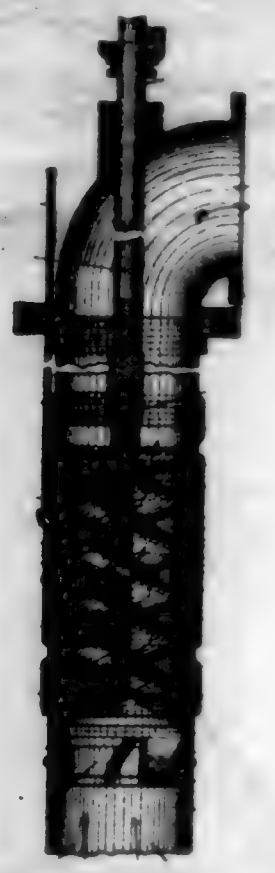
3. The combination with a pop-gun barrel having a ferrule secured to its muzzle, of a gun-cap, and barrel-cap provided with an inwardly-projecting flange adapted to rest on the end of the muzzle and bind the margin of the gun-cap therebetween, the gun-cap being of a size to fit in the barrel-cap with its margin resting on the said flange.

4. The combination with a pop-gun barrel having a ferrule secured to its muzzle, of a gun-cap and barrel-cap provided with an inwardly-projecting flange adapted to rest on the end of the muzzle and ferrule, and bind the margin of the gun-cap therebetween, the gun-cap being of a size to fit in the barrel-cap with its margin resting on the said flange, and means comprising a bayonet-joint for securing the barrel-cap in place.

815,224. SPIRAL PUMP AND PROPELLER. VICTOR SJÖSTEDT, Los Angeles, Cal. Filed Dec. 26, 1900. Serial No. 41,152.

Claim.—The combination of the tube-inclosed spiral passages and driving-shaft, the casing within which the tube-inclosed spiral passages rotate, the helical directing-blades and admission-ports in the suction-pipe, the stuffing-boxes and glands in the pump-casing of such enlarged diameter as to receive the tube-inclosed spiral passage, said glands and stuffing-boxes together with the pump-casing providing a continuous suction and discharge pipe and casing inclosing the tube-inclosed spiral passages of practically the same diameter throughout their entire length, the packing, the tube-inclosed spiral passages, the antifriction-bearings, the packing-rings, all constituting the improved pump or propeller substantially as hereinbefore described.

815,224.



815,225. POCKET-BOOK LOCK. Andrew J. Smith, Los Angeles, Cal., assignor of one-eighth to Jacob Lippman, Los Angeles, Cal. Filed Apr. 7, 1905. Serial No. 254,416.



Claim.—A pocket-book lock comprising a button adapted to be secured to the pocket-book, and a pair of U-shaped plates secured together and to the pocket-book thus having an open slot through the center of each plate adapted to receive the button and a pivoted spring-actuated latch which normally rests across the slots, it being interposed between the two plates, and means whereby the latch is withdrawn.

815,236. ICING-MACHINE. Barnet L. Sons, Pittsburg, Pa., assignor to Bair-&-Gannam Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 22, 1905. Serial No. 261,908.

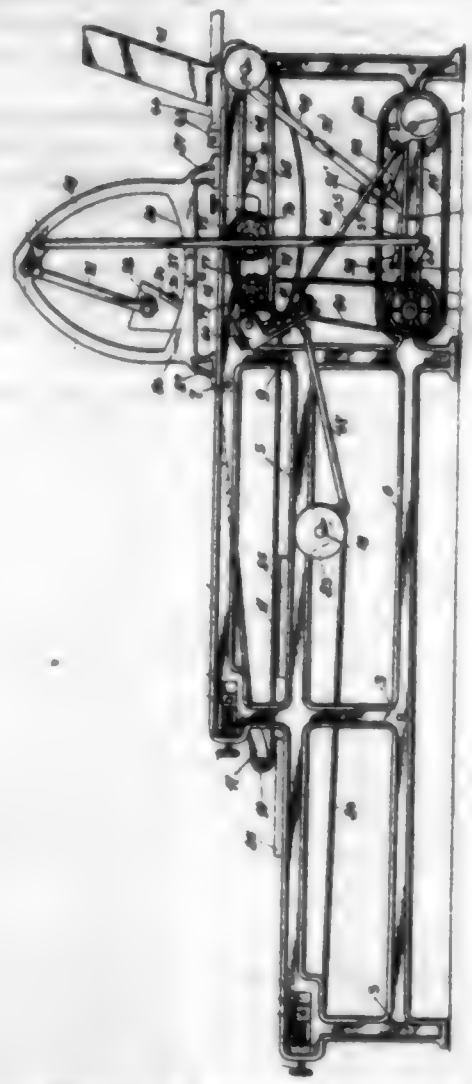
Claim.—1. In a machine of the character described, the combination with a frame, of an endless apron adapted to carry cakes, an oscillating receptacle suspended above said apron, and adapted to deposit material upon cakes, means for oscillating said receptacle, and means for imparting an intermittent movement to said apron.

2. In a machine of the character described, the combination with a frame, of an intermittently-moving endless apron adapted to carry cakes, a receptacle suspended above said apron and adapted to deposit material upon said cakes, means to simultaneously impart movement to said apron and an oscillating intermittent movement to said receptacle, substantially as described.

3. In a machine of the character described, the combination with a frame, of a moving belt adapted to carry cakes, an icing-receptacle suspended above said apron, means to elevate said apron in close proximity to said receptacle, means to independently adjust the cakes carried by said apron in relation to said receptacle, means to produce a serrated surface upon the icing deposited upon said cakes, and means to impart an oscillating intermittent movement to said receptacle.

4. In a machine of the character described, the combination with a frame, of a moving apron adapted to carry cakes, an icing-receptacle suspended above said apron, a reciprocating feeding-plate operating upon said apron, and means for oscillating said receptacle to deposit the contents of the same upon the cakes.

5. In a machine of the character described, the combination with a suitable frame, of a moving endless apron adapted to carry cakes, a receptacle suspended above said apron and adapted to deposit material upon said cakes, a reciprocating feeding-plate mounted above said apron, means carried by said receptacle to produce a serrated surface upon the material deposited upon said cakes, and means to intermittently impart an oscillating movement to said receptacle, and a reciprocating movement to said feeding-plate.



6. In a machine of the character described, the combination with a frame, of an intermittently-moving apron, a receptacle suspended above said apron, a feeding-plate mounted above said apron, means to simultaneously elevate said apron and impart a reciprocatory movement to said feeding-plate, and means to oscillate said receptacle, substantially as described.

7. In a machine of the character described, the combination with a frame, of an endless intermittently-moving apron adapted to carry cakes, a reciprocating feeding-plate mounted above said apron, a receptacle suspended above said apron and adapted to deposit material upon said cakes, means carried by said receptacle to produce a rough surface upon said material after it has been deposited upon said cakes, means to elevate said apron and quickly lower the same, means to independently adjust each cake in respect to said receptacle, and means to oscillate said receptacle.

8. In a machine of the character described, the combination with a frame, of endless aprons adapted to carry cakes, a receptacle suspended above one of said aprons and adapted to deposit material upon said cakes, a reciprocating feeding-plate mounted above said apron, and adapted to feed cakes in close proximity to said receptacle, means to elevate said cakes, and quickly lower the same, means to independently adjust said cakes when in an elevated position, and means to oscillate said receptacle.

9. In a machine of the character described, the combination with a frame, of an endless apron, a receptacle suspended above said apron, means to elevate said apron and quickly lower the same, means to adjust said apron in respect to said receptacle when in an elevated position, and means to oscillate said receptacle.

10. In a machine of the character described, the combination with an intermittently-moving apron adapted to carry cakes, of an oscillating receptacle suspended above said apron, and adapted to deposit icing upon said cakes, means carried by said receptacle to produce a rough or serrated surface upon said icing, and means to independently adjust said cakes in respect to said receptacle.

11. In a machine of the character described, the combination

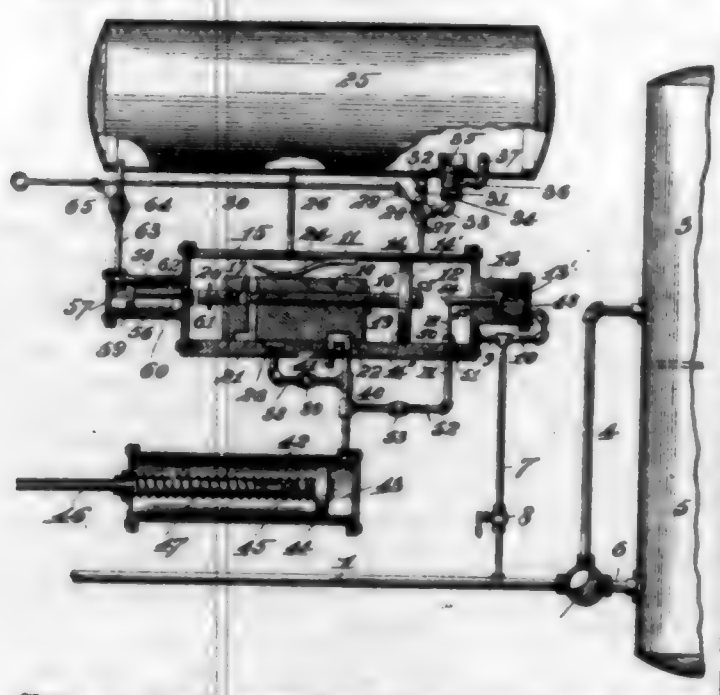
with intermittently-moving endless aprons, of an intermittently-oscillating receptacle suspended above one of said aprons, a reciprocating feeding-pate, means to intermittently elevate one of said aprons, and means to operate said receptacle, substantially as described.

12. In a machine of the character described, the combination with a platform having openings formed therein, of an endless apron mounted below said platform, a receptacle suspended above said platform and adapted to deposit material through said openings, and means to oscillate said receptacle, substantially as described.

13. In a machine of the character described, the combination with a moving apron, and means for elevating the same, of a platform mounted above said apron, said platform having openings formed therein, an oscillating receptacle suspended above said platform and sliding thereon, said receptacle adapted to intermittently deposit material through said openings, and means for oscillating said receptacle, substantially as described.

14. In a machine of the character described, the combination with a suitably-supported platform having openings formed therein, of a moving apron adapted to carry cakes, a receptacle suspended above said platform and adapted to deposit material upon said cakes, and means to oscillate said receptacle, substantially as described.

815,227. AUTOMATIC REDUCTION AND QUICK-ACTION TRIPLE VALVE. GEORGE M. SPENCER, St. Louis, Mo., assignor of one-half to Christopher J. Greliner, St. Louis, Mo. Filed Feb. 15, 1904. Serial No. 193,481.



Claim.—1. A fluid-pressure brake system consisting of a series of units and having means including an assisting-cylinder and a piston therein for producing two different pressures of fluid and utilizing said pressures for controlling the operation of the various units of the system independently, substantially as set forth.

2. In a fluid-pressure brake system consisting of a series of units the combination of a valve-housing, a valve in said housing provided with two or more ports, and means for controlling said ports in such manner as to utilize two different fluid-pressures for the operation of the various units of the system independently; said means including an auxiliary reservoir, and a plurality of communicating connections between said auxiliary reservoir and said valve-housing.

3. In a fluid-pressure brake system, the combination of a valve, means for controlling said valve, and a fluid-pressure-actuated graduating-stem performing the function of a valve to be actuated by said valve-controlling means solely through two separate flows of fluid, substantially as set forth.

4. In a fluid-pressure brake system, the combination of a valve, means for controlling said valve, and a fluid-pressure-actuated graduating-stem to be actuated by said valve-controlling means; said means and graduating-stem being controlled solely by separate flows of fluid-pressure, substantially as set forth.

5. In fluid-pressure brake system, the combination of a controlling-valve cylinder, means for conducting a flow of fluid-pressure to said valve-cylinder, an auxiliary reservoir, means for furnishing communication between said valve-cylinder and reservoir, a reducing-valve located in said last-named means, valve mechanism in said controlling-valve cylinder, an assisting cylinder or cylinders, and a piston in said assisting-cylinder arranged to assist to actuate said controlling-valve mechanism, and means of communication between said auxiliary reservoir and assisting-cylinder, substantially as set forth.

6. In a fluid-pressure brake system, means for retaining and utilizing two or more different degrees of fluid-pressure of corresponding volume in separated parts of the system from a common auxiliary; substantially as set forth.

7. The combination with a brake-cylinder and a fluid-pressure-controlled valve, of means for conducting fluid under pressure to said valve, means for reducing the pressure of the fluid delivered to said valve, means for conducting the fluid of reduced pressure to said brake-cylinder, and means for changing the fluid from a reduced pressure to a higher pressure substantially as set forth.

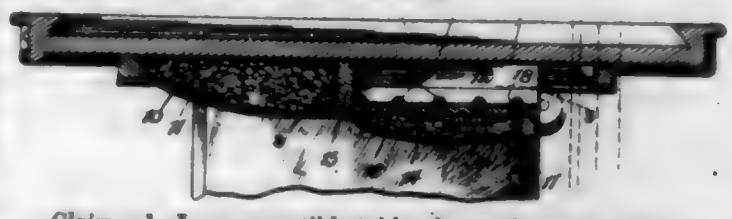
8. A controlling-valve for fluid-pressure brake systems having means connected thereto for initially conducting fluid under pressure thereto, means for reducing said pressure, means for returning said fluid with reduced pressure to said valve, and means for changing the fluid from a reduced pressure to a higher pressure substantially as set forth.

9. In a fluid-pressure brake system, the combination of a controlling-valve cylinder, a brake-cylinder, means of communication between said cylinders, a valve operating in said controlling-valve cylinder, means for supplying fluid under pressure to said controlling-valve cylinder, an auxiliary reservoir, means of communication between said controlling-valve cylinder, and auxiliary reservoir, a reducing means in said means of communication whereby the fluid passing to said reservoir is reduced in pressure to be returned to another portion of said controlling-valve cylinder, and means for changing the fluid from a reduced pressure to a higher pressure substantially as set forth.

10. In a fluid-pressure brake system, the combination of a brake-cylinder, a controlling-valve cylinder, means of communication between said cylinders, a valve in said controlling-valve, a piston having a means operating said valve, an assisting-cylinder, a piston in said assisting-cylinder having a rod arranged for engagement with said first-named piston-rod, an auxiliary reservoir having communication with said controlling-valve cylinder, and means of communication between said auxiliary reservoir and said assisting-cylinder, substantially as set forth.

11. The combination with a brake-cylinder and a fluid-pressure-controlled valve, of means for conducting fluid under pressure to said valve, means for reducing the pressure of the fluid delivered to said valve, means for conducting the fluid of reduced pressure to said brake-cylinder, means for changing the fluid from a reduced pressure to a higher pressure and means for receiving the fluid subsequent to its service in the brake-cylinder, for reuse, substantially as set forth.

815,228. CUE-RACK. NATHANIEL B. STONE, Outlook, Wash. Filed Dec. 19, 1904. Serial No. 237,564.



Claim.—1. In a convertible table, the combination with a base, of a top arranged to swing between a substantially upright position behind the base and a substantially horizontal position upon the same, said top having a top wall and another wall located along the under side of and spaced from said top wall forming therewith a holding-pocket, said pocket having a mouth disposed longitudinally along the side of the top that is lowermost when said top is in its said upright position.

2. A table having spaced side walls forming a pocket and an end wall for said pocket, one of the side walls having longitudinally-disposed grooves constituting cue-receiving seats, and the end wall having sockets alined with the grooves and receiving certain of the ends of the cues placed in said grooves.

3. In a convertible table, the combination with a base, of a top, said top having spaced relatively immovable walls in its under portion, forming a pocket, said pocket having a mouth that opens longitudinally along one side of the top, and cue and ball holding means located within the pocket.

4. In a convertible table, the combination with a base, of a top arranged to swing between a substantially upright position behind the base and a substantially horizontal position upon said base, means carried by the side of the top for forming a back when the top is in said upright position, and a pocket formed between said means and the outer surface of the top.

5. In a convertible table, the combination with a base, of a top arranged to swing between a substantially upright position behind the base and a substantially horizontal position upon said base, cushioning material carried by the under side of the top and forming a back when the top is in said upright position, and a pocket formed between said cushioning material and top and having a mouth opening at one side of the top.

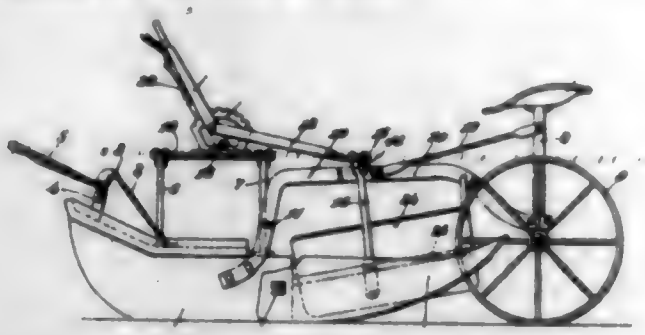
6. In a convertible table, the combination with a base, of a top arranged to swing between a substantially upright position behind the base and a substantially horizontal position upon said base, cushioning material carried by the under side of the top for forming a back when the top is in upright position, spaced walls arranged in rear of the cushioning material, forming a pocket having a mouth disposed at one side of the top, and one and ball holding means located within the pocket.

7. A table having spaced walls forming a pocket, one of said walls being provided with longitudinally-disposed grooves forming cue-receiving seats, and means for retaining the cues placed in said seats.

8. A table having a top and spaced walls carried by the under side of the top, forming a pocket, one of said walls being provided with longitudinally-disposed grooves, forming cue-receiving seats, and spring-clips for retaining the cues placed in said seats.

9. A table having a top, spaced side walls carried by said top, forming a pocket, end walls defining the ends of said pocket, one of the side walls being provided with longitudinally-disposed grooves, forming cue-receiving seats, one of the end walls having sockets alined with the seats to receive certain ends of the cues, the other end wall being provided with ball-receiving recesses, and spring-clips for retaining the balls in said recesses.

815,229. CORN-CULTIVATOR. HENRY STRIPE, Milan, Kans. Filed July 17, 1905. Serial No. 270,090.



Claim.—1. In a cultivator, a pair of sleds having independent draft members, arches connecting said sleds, an arched wheel-supported axle in rear of and spaced from the sleds, longitudinal frame members connecting the limbs of said axle with the sled-runners, blades pivoted upon the latter, and means for adjusting said blades.

2. In a cultivator, a pair of sleds, arches connecting said sleds, an arched wheel-supported axle, longitudinal frame members connecting the limbs of said axle with the sled-runners, and divergent twisted blades secured upon the latter.

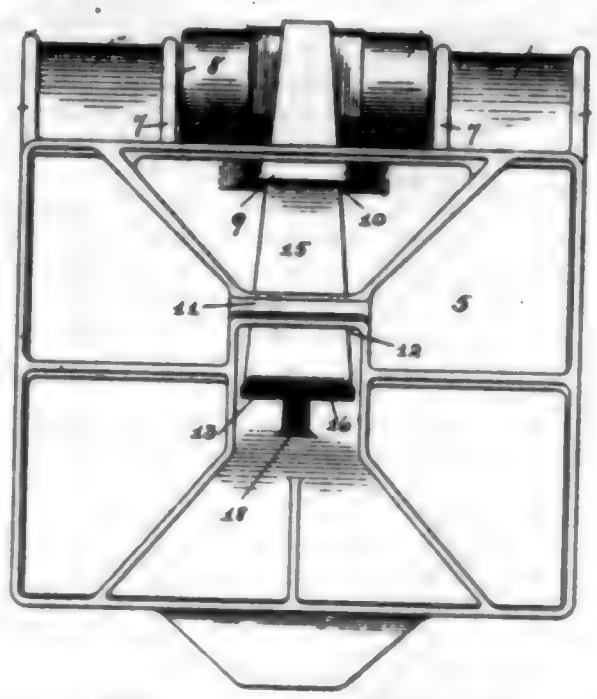
3. In a cultivator, a pair of sleds, arches connecting the same, an arched wheel-supported axle, longitudinal frame members connecting the limbs of said axle with the runners of the sleds, divergent blades connected pivotally with the latter, and a yoke supported upon the longitudinal frame members and connecting said blades: said yoke being composed of two spacing members adjustably connected.

4. In a cultivator, a pair of sleds and arch members spacing and connecting the same, an arched wheel-supported axle, longitudinal frame members connecting the limbs of said axle with the runners of the sleds, resilient blades secured upon said runners, and means for spacing the free ends of said resilient runners apart, adjustably.

5. In a cultivator, a pair of sleds and arches spacing and connecting the same, an arched wheel-supported axle, longitudinal frame members connecting the limbs of said axle with the runners of the sleds, fenders connected with said frame members and runners, resilient blades connected with the runners, and means for effecting vertical and lateral adjustment of the free ends of the blades.

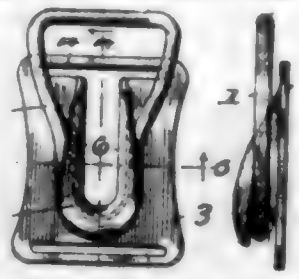
6. In a cultivator, a pair of sleds and arches spacing and connecting the same, an arched wheel-supported axle, longitudinal frame members connecting the limbs of said axle with the runners of the sleds, blades connected pivotally with the runners, a yoke connecting and spacing said blades said yoke being composed of two separately adjustably connected members, a supporting-bar connecting the arches whereby the sleds are connected, a rack-segment upon said bar, a lever pivoted upon said segment and having a stop engaging the same, and a link connecting said lever with the yoke connecting the blades.

815,230. COVER FOR JOURNAL-BOXES. THOMAS H. SYMINGTON, Baltimore, Md., assignor to The T. H. Symington Co. of Baltimore City, a Corporation of Maryland. Filed June 20, 1905. Serial No. 266,163.



Claim.—A journal-box for railway-cars having a hinged lid which is provided on its outer surface with horizontal ribs having slots, a groove, 13, formed in the lid and an inclined depression, 18, also formed in the lid adjacent said groove—the deepest part of said depression leading into said groove and being coincident with the bottom thereof; and a flat spring extending through said slots and having at one end a hook which projects into said groove, whereby when it is desired to remove the spring from the lid an edged tool may be moved along the inclined depression and forced into the groove beneath the said hook on the spring.

815,231. GARMENT-FASTENER. JAMES H. TAYLOR and ISORA TAYLOR, Philadelphia, Pa. Filed Dec. 3, 1904. Serial No. 235,206.



Claim.—1. In a garment-fastener, the combination with a loop and a base-plate, of a rigid stud having an outer retaining-surface, said surface gradually rising on one side from a point where the stud joins the base-plate, to the full height of the stud, and overhanging beyond the walls of the stud on the remaining sides thereof.

2. In a garment-fastener, the combination with a loop and a base-plate, of a stud having an outer retaining-surface, said surface gradually rising on one side from the point where the stud joins the base-plate to the full height of the stud and overhanging beyond the walls of the stud on the remaining sides thereof, the entire retaining-surface being curved longitudinally and transversely toward said plate to form a smooth curved top of large bearing-surface without abrupt edges.

3. In a garment-fastener, the combination with a loop and a base-plate, of an elongated stud having an outer retaining-surface, said surface gradually rising on one side from a point where said stud joins the base-plate to the full height of the stud and overhanging beyond the walls of the stud on the remaining sides thereof.

4. In a garment-fastener, the combination with a loop and base-plate, of a stud having an outer retaining-surface, said surface gradually rising on one side from the point where the stud joins the base-plate to the full height of the stud and overhanging beyond the walls of the stud on the remaining sides thereof, the entire retaining-sur-

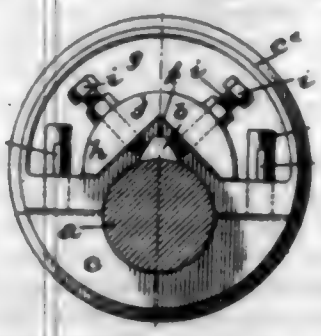
face being convex with respect to said base-plate to avoid abrupt edges.

5. A garment-fastener comprising an interlocking loop and stud, said stud consisting of a base-plate having its center stamped or rolled up into the form of a curved lip extending for substantially the whole length of the plate and its outer edge bent outwardly and downwardly to form a curved top without abrupt edges or projections.

6. In a garment-fastener, the combination of a stud and a base-plate, said stud consisting of the material of the central portion of said base-plate formed into a curved lip extending for substantially the whole length of the plate, and having its outer edge bent outwardly and then downwardly, the top of said stud being provided with a smooth curved top of large bearing-surface without abrupt edges.

7. In a garment-fastener, the combination of a stud, and base-plate, said stud consisting of the material of the central portion of said base-plate formed into a curved lip extending substantially the whole length of the plate and having its outer edge bent outwardly and downwardly, the top of said stud being provided with a surface of frictional material with an interlocking loop coöperating with said stud.

815,232. ADJUSTABLE ECCENTRIC. SAMUEL W. TAYLOR, Baltimore, Md. Filed July 20, 1905. Serial No. 270,494.



Claim.—1. The combination of an axle provided with two lugs separated by a space; an eccentric on the axle and snugly fitted in the space between the two lugs, there being a lateral flange at the side of the eccentric—said flange projecting over one of the said lugs, and two set-screws in said flange and pitched in opposite directions, the ends of the screws impinging against opposite sides of the lug, as and for the purpose set forth.

2. The combination of an axle; an eccentric on the axle and provided at each side with a laterally-projecting flange; two set-screws in each of said flanges and pitched or inclined in opposite directions, and means rigid on the axle and covered by said projecting flanges and against which the ends of said set-screws impinge.

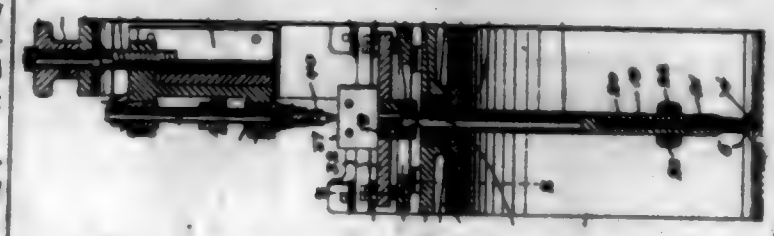
3. The combination of an axle; an eccentric on the axle, two set-screws on the eccentric and pitched or inclined in opposite directions; and means rigid on the axle against opposite sides of which the ends of said oppositely-pitched set-screws impinge.

815,233. ENGRAVING-MACHINE. BLAIR TERRELL, Columbus, Ohio, assignor of one-third to P. A. Holstein and one-third to F. A. Ray, Columbus, Ohio. Filed Jan. 21, 1905. Serial No. 242,097.

Claim.—1. In an engraving-machine, the combination with a non-traveling cutting-tool and a fixed platform arranged directly beneath the tool, of a work-carrying table supported on the said platform so as to move in a plane parallel thereto, means projecting over the work-table for holding the same in position and preventing vertical displacement thereof, and a tracing-rod universally supported in the platform and having universal connection with the bottom of the work-table.

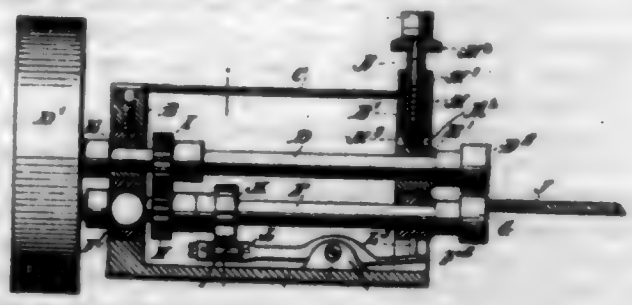
2. In an engraving-machine, the combination with a non-traveling cutting-tool and a fixed platform arranged directly beneath the tool and having guides on its upper surface, of an open table movable in said guides and having guides on its upper surface transverse to the first-named guides, a work-carrying table supported on the open table and movable in said last-named guides so as to have a universal movement in a plane parallel to the platform, a tracing-rod universally supported in the platform projecting through the open table and having universal connection with the bottom of the work-carrying table, and a pattern-support arranged beneath the fixed platform and adjacent to the lower end of the tracing-rod.

3. In an engraving-machine, the combination with a non-traveling cutting-tool and a fixed platform arranged directly beneath the tool, of an open table supported on the platform and mounted for reciprocating movement thereon in one direction, a work-carrying table supported on the open table and mounted for reciprocating movement thereon in a direction transverse to that of the open table, whereby the work-carrying table has a universal movement with reference to the fixed platform in a plane parallel therewith, a tracing-rod universally supported in the platform, projecting through the open table and having universal connection with the bottom of the work-carrying table, and a pattern-support arranged directly beneath the fixed platform and adjacent to the lower end of the tracing-rod.



4. In an engraving-machine, the combination with supporting means and a non-traveling cutting-tool arranged on the supporting means, of a platform fixed to the supporting means, horizontally-movable work-supporting devices movably mounted on the platform beneath the tool, and means mounted on the supporting means above the movable work-supporting devices for holding the same in position and preventing vertical displacement.

815,234. CREASING-MACHINE. WILLIAM H. H. TRACY, Troy, N. Y. Filed May 22, 1905. Serial No. 261,519.



Claim.—1. In a creasing-machine, the combination of two rollers geared together so as to rotate continuously in opposite directions one of said rollers being movable toward and from the other without bringing them out of gear, and means for shifting the movable roller toward and from the other roller at regular intervals as the rollers rotate.

2. In a creasing-machine, the combination of two creasing-rollers permanently geared together, and means for alternately separating the working surfaces of the rollers and again bringing them into coöperative relation at regular intervals during the revolution of the rollers.

3. In a creasing-machine, the combination of two creasing-rollers, one of which is movable toward and from the other, means for rotating said rollers in opposite directions, and a shifting device, governed by said means, for shifting said movable roller toward and from the other roller.

4. In a creasing-machine, the combination of two creasing-rollers, one of which is movable toward and from the other, means for rotating said rollers in opposite directions, a rocker-arm extending lengthwise of the shaft of the movable roller and connected therewith to shift said roller, and means, located on one of the roller-shafts, for periodically swinging said rocker-arm.

815,235. EASEL. EMANUEL J. TRUM, New York, N. Y. Filed May 29, 1905. Serial No. 262,727.

Claim.—1. An easel consisting of an integral piece of flexible material comprising a rigid section for attachment to a card, panel, picture or like object, side flap and front sections hinged together on lines that converge toward the top of the easel, the flap-section folded in against and fastened to the rigid section and the side sections adapted to be turned out at right angles to the flap and rigid sections and the front section to form a pyramidal easel, substantially as specified.

2. An easel consisting of an integral piece of flexible material comprising a rigid section for attachment to a card, panel or like object, hinged side flap and front sections hinged together on lines that converge toward the top of the easel, the front section having an integral wedge-shaped tongue connected therewith, the flap-section folded in against and fastened to the rigid section, the side sections

adapted to be turned out at right angles to the flap and rigid sections and the front section to form a pyramidal easel and the tongue adapted to be swung in between the side sections to hold them apart and fasten the easel in its open supporting position, substantially as specified.



3. An easel comprising a rigid back section adapted for attachment to a card, panel, picture or the like, foldable sections that form the sides and front and a fastening-flap, one of the side sections hinged to the rigid section and the other to the flap which is turned in and fastened to the rigid section, and means for fastening the sides apart when open to hold the easel in its unfolded supporting position, substantially as specified.

4. An easel comprising a rigid back section adapted for attachment to a card, panel, picture or the like, four side foldable sections, the edges of adjoining sections hinged together on lines that converge toward the top of the easel, said sections forming the sides and front of the easel and a fastening-flap, one of the side sections hinged to the rigid section and the other to the fastening-flap which is turned in against and fastened to the rigid section, and means for fastening the sides apart when opened to hold the easel in its unfolded supporting position, substantially as specified.

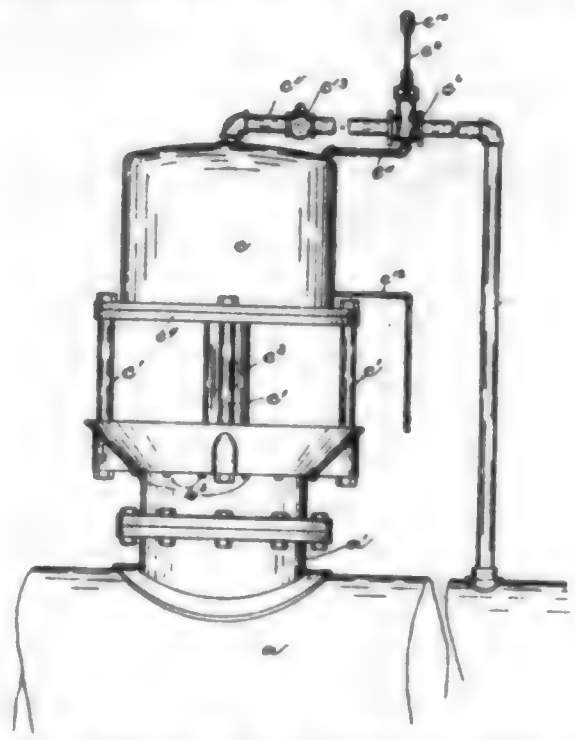
5. An easel comprising a rigid rectangular back section adapted for attachment to the back of a card, panel picture or the like, foldable sections that form the sides and front of the easel and a fastening-flap, one of the side sections hinged to the rigid section and the other to the fastening-flap which is turned in against and fastened to the rigid section and a wedge-shaped tongue connected with and forming an integral part of the front section, the side sections adapted to be turned out at right angles to the rigid section the flap-section and the front section and to be held in that position by means of the wedge-shaped tongue when pushed in between the side sections, substantially as specified.

6. An easel consisting in the combination of a rigid section, a side section hinged thereto, a front section hinged by one edge to said side section, a side section hinged to the opposite side of the front section, a flap hinged to the latter side section and a tongue hung to the front section, the said sections and tongue forming integral parts of one another, the flap-section being turned in and fastened to the rigid section and the side sections adapted to be turned out at right angles to the rigid section the flap and front sections, and the tongue adapted to be thrust in between said side sections to hold them apart to retain the easel in its unfolded supporting position, substantially as specified.

7. A blank for a foldable easel made in a single piece from cardboard comprising a rectangular section, side sections, a flap-section and a front section the rectangular section and one of the side sections being divided from each other by the creased line, the front divided from the side sections by creased lines and the flap-section divided from the side to which it is attached by a creased line, the creased divisional lines converging toward the top of the blank, and a wedge-shaped tongue in the front separated therefrom at the sides and free end by incised lines, substantially as specified.

815,236. RELIEF-VALVE FOR PIPES. FULLER TRUMP, Springfield, Ohio, assignor to The Trump Manufacturing Company, Springfield, Ohio, a Corporation of Ohio. Filed Aug. 29, 1904. Serial No. 222,206.

Claim.—1. The combination of a main, a relief-valve therein, a chamber in proximity to said relief-valve, a piston in said chamber connected to said relief-valve, a pipe connection from said main to said chamber, a valve in said pipe connection, and means controlled by said piston for operating said pipe-valve when said relief-valve is opened, substantially as specified.



2. The combination of a main, a relief-valve therein, a chamber in proximity to said relief-valve, a piston in said chamber connected to said relief-valve, a pipe leading from said main to said chamber, an air-operated valve in said pipe, and an air-pipe leading from said chamber to said pipe-valve, substantially as specified.

3. The combination of a main, a relief-valve therein, an air-chamber in proximity to said relief-valve, means connected with said valve for compressing the air within said chamber, and means for establishing a connection between said chamber and main controlled by the air compressed within said chamber, for the purpose specified.

4. A main, a relief-valve therein, an air-chamber in proximity thereto, a piston in said air-chamber connected to said valve, a normally closed connection from said main to said chamber, said piston being adapted when said relief-valve is opened to compress the air in said chamber to form an air-cushion and to open the connection between said main and chamber, substantially as and for the purpose specified.

5. A main, a relief-valve therein, operating devices connected to said valve, a normally closed connection from said main to said operating devices, and means operated by the opening of said relief-valve to open said connection to cause said operating devices to close said valve by the pressure in said main, substantially as specified.

6. A main, a relief-valve therein, a chamber in proximity to said relief-valve, a piston in said chamber connected to said relief-valve, a pipe connection from said main to said chamber, an air-operated valve in said pipe connection, a pipe connection from said chamber to said air-operated valve, and a check-valve in said first-mentioned pipe connection in proximity to said chamber, substantially as specified.

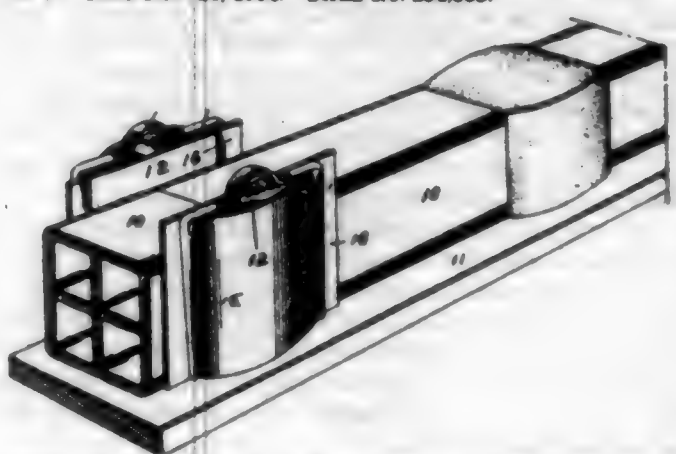
7. The combination of a main with a relief-valve therein, a piston connected with said valve, a chamber for said piston connections between said chamber and said main, means for holding said valve securely to the seat, but adapted to permit same to be opened under a certain predetermined pressure; means for opening automatically the connections extending from said chamber to said main for returning said valve to its seat, and means for preventing a discharge of the water flowing from said main through said chamber until said valve is returned to normal position, substantially as specified.

8. A main, a relief-valve therein, an air-cushion for said valve, and means operated by said air-cushion, when said valve is opened, for permitting the pressure in said main to return said valve to its seat, substantially as specified.

9. A main, a relief-valve therein, a piston connected with said relief-valve, and a chamber for said piston connections between said piston-chamber and said main, adapted to be automatically opened by said piston, means for preventing a discharge of the water from said chamber until said valve is returned to normal position, substantially as specified.

10. A main, a relief-valve therein adapted to open under a certain pressure in said main, a normally closed connection leading from said main to the outside of the actuating device, and means, when said valve is opened, for opening said connection to permit the pressure in said main to return said valve to its seat, substantially as specified.

815,287. CONDUIT-SEALING. JOSEPH W. TURNER, Schenectady, N. Y. Filed Nov. 26, 1904. Serial No. 234,263.



Claim.—1. In a conduit-sealing device, a core formed with one face shaped to lie flat against the sides of two abutting conduit-sections, a retaining-sheet fitted to the opposite side of the core with its edge margins shaped to lie flat against the sides of the conduit-sections beyond the core, and means for detachably securing the sheet to the core.

2. In a conduit-sealing device, a core, and arms secured to the top of the core and spaced apart from the body of the core.

3. In a conduit-sealing device, a core, and arms secured to the core projecting parallel with and adjacent to the side edges thereof.

4. In a conduit-sealing device, the combination of a core and a strap secured to the top of the core, having a handle formed on its central portion, and arms formed on its ends, projecting parallel with and adjacent to the side edges of the core.

5. In a conduit-sealing device, a core tapered slightly from its upper to its lower end and segmental in cross-section, and a strap secured to its top having a handle formed at its central portion, and arms formed on its ends projecting parallel with and adjacent to the side edges of the core.

6. In a conduit-sealing device, a core formed with one face shaped to lie flat against the sides of two abutting conduit-sections, a retaining-sheet fitted to the opposite side of the core with its edge margins shaped to lie flat against the sides of the conduit-sections beyond the core and means carried by the core for detachably securing the retaining-sheet to the core.

7. In a conduit-sealing device, a core, arms secured to the top of the core and spaced apart from the body of the core, and a retaining-sheet passed around the outer face of the core with its end portions projected through between the core and the arms.

8. In a conduit-sealing device, a core, and arms secured to the core projecting parallel with and adjacent to the side edges thereof, and a retaining-sheet passed around the outer face of the core with its end portions projected between the core and the arms.

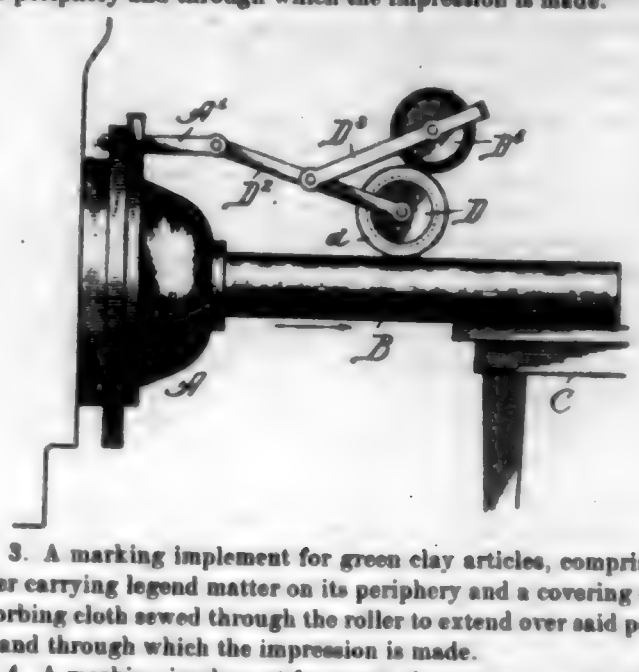
9. The method of sealing conduit-joints, which consists in first placing a core and a retaining-sheet adjacent to a joint in a conduit, then packing earth or other filler firmly against the exterior of the sheet, then removing the core, and finally filling the space between the sheet and conduit with a cementitious substance.

10. The method of sealing conduit-joints, which consists in placing a core and a retaining-sheet adjacent to a conduit-joint, said core holding the retaining-sheet spaced apart from the conduit-joint, then placing a filler against the outer surface of the retaining-sheet to support it in position, then removing the core and leaving the sheet in position spaced apart from the conduit and braced by the filler, and finally inserting between the sheet and conduit a cementitious substance.

815,288. MARKING IMPLEMENT FOR GREEN CLAY ARTICLES. ERNEST VON OVEN, Naperville, Ill. Filed Nov. 13, 1905. Serial No. 287,091.

Claim.—1. A marking implement for green clay articles, comprising a body provided with a legend-bearing surface, and a covering of oil-absorbing material secured to said body to extend over said surface and through which the impression is made.

2. A marking implement for green clay articles, comprising a roller carrying legend matter on its periphery and provided with a covering of oil-absorbing material secured to the roller to extend over said periphery and through which the impression is made.



3. A marking implement for green clay articles, comprising a roller carrying legend matter on its periphery and a covering of oil-absorbing cloth sewed through the roller to extend over said periphery and through which the impression is made.

4. A marking implement for green clay articles, comprising a roller carrying legend matter on its periphery and provided with a support, and an oil-absorbing covering of cotton flannel fastened to the roller to extend over said periphery and through which the impression is made.

5. A marking implement for green clay articles comprising, in combination, a roller carrying legend matter on its periphery and provided with a peripheral covering of oil-absorbing material through which the impression is made and means for automatically supplying oil to said covering.

6. A marking implement for green clay articles, comprising, in combination, a roller carrying legend matter on its periphery and provided with a support and with an oil-absorbing covering of cloth extending over said periphery and through which the impression is made, and an oiling device consisting of a roller connected with said support to engage said marking-roller and provided with an oil-absorbing pad about its periphery.

7. A marking implement for green clay articles comprising, in combination, a roller carrying legend matter on its periphery and provided with a support on which it is journaled and with a thin covering of oil-absorbing cloth extending about said periphery and through which the impression is made, and an oiling device consisting of a roller provided with an oil-absorbing pad about its periphery and a support on which said oiling-roller is journaled and which is pivotally connected with said first-named support to cause the pad of the oiling-roller to bear against the covering on the marking-roller.

8. In combination with a machine of the character described, a marking implement comprising a roller provided with legend matter on its periphery and having a covering of oil-absorbing material extending about said periphery and through which the impression is made, said roller being pivotally mounted on said machine to extend into the path of the material emerging therefrom.

9. In combination with a machine of the character described, a marking implement comprising a roller provided with legend matter on its periphery and having a thin covering of oil-absorbing cloth fastened to the roller and loosely extending about said periphery, a support for said roller, on which it is journaled, pivotally connected with said machine to suspend said roller in the path of the material emerging from said machine, and an oiling device consisting of a roller provided with an oil-absorbing pad about its periphery and a support on which said oiling-roller is journaled and which is pivotally connected with said first-named support to cause the pad of the oiling-roller to bear against the covering on the marking-roller.

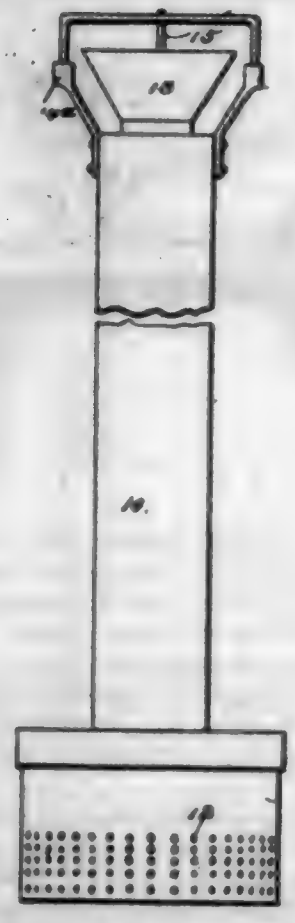
10. In combination with a machine of the character described, means for marking the green clay emerging therefrom, comprising a roller provided with legend matter on its periphery and a strip of thin oil-absorbing cloth interposed between the roller-periphery and the plane through which said clay moves in so emerging.

815,289. CREAM-SEPARATOR. CHARLES WALKER, Chicago, Ill. Filed July 31, 1905. Serial No. 271,903.

Claim.—1. A cream-separator comprising a tube through which the milk is poured, and having therein a series of rotating strainers.

2. A cream-separator comprising a tube, a turbine-wheel at the

bottom thereof, driven by milk which flows through the tube, and a series of rotating strainers in the tube, connected to and driven by the wheel.

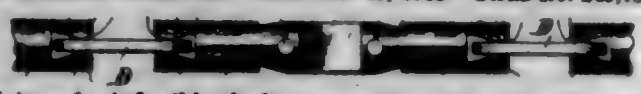


3. A cream-separator comprising a tube through which the milk is poured, and having a series of funnel-shaped rotating strainers therein.

4. A cream-separator comprising a spindle, a tube mounted thereon and having a turbine-wheel at the bottom which drives the spindle by the flow of milk through the tube, and a series of strainers secured upon the spindle, and fitting within the tube.

5. A cream-separator comprising an outer cylindrical casing having at the bottom an enlarged chamber with perforated walls, a tube rotatably mounted within said casing and having at the bottom a turbine in said chamber, driven by the flow of milk through the tube, and a series of strainers in said tube.

815,240. FLEXIBLE SHAFT. ARTHUR P. WARNER and CHARLES H. WARNER, Beloit, Wis. Filed Mar. 13, 1905. Serial No. 249,732.



Claim.—1. A flexible-shaft composed of a plurality of link-sections, one of each two adjacent parts throughout the length of the shaft having a transverse slot in the end thereof to receive the proximate end of the next adjacent section, said transverse slots being enlarged at the base thereof to permit limited relative lateral movement of the sections, a pivot-pin passing transversely through each slot and forming a pivot for the proximate end of the adjacent section, the walls of the slot serving to prevent relative rotative movement of said sections.

2. A flexible shaft, composed of parts pivotally connected at the proximate ends thereof, one of said parts having a transverse slot through the end thereof to receive the proximate end of the next adjacent part, the side surfaces of said adjacent part having direct bearing contact with the walls of said slot, said transverse slot being enlarged at the base thereof and slightly flared outwardly at the mouth thereof, and a pivot-pin passing through the jaws formed by each of said slots to form a pivotal connection of said parts.

3. A flexible shaft, composed of a plurality of parts hinged or pivoted together, each alternate part having a transverse slot through each end thereof, the slot at one end being at right angles to the slot at the other end, each slot having an enlarged base, the ends of the adjacent parts being adapted to be received within such slots, and a pivot-pin passing transversely through each slot to form the hinge or pivotal connection of said parts.

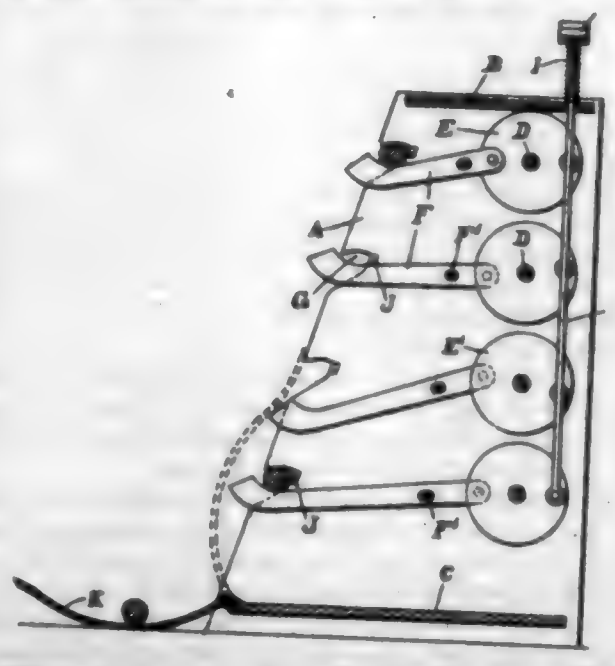
4. A flexible shaft, composed of links and intermediate couplings hinged or pivoted together at the ends thereof, the ends of each link having transverse slots therethrough to receive the ends of the intermediate couplings, the slots being enlarged at the base and slightly flared outwardly at the mouth thereof, and pivot-pins passing transversely through each slot to form the pivotal connection between the link and the proximate end of the adjacent intermediate coupling, the intermediate coupling bearing at the sides thereof directly against the inner wall of the reduced portion of the slot to prevent relative rotative movement of said link and coupling, while permitting free lateral movement.

5. A flexible shaft, composed of a plurality of cylindrical link-sections and intermediate couplings, each link-section having a transverse slot at each end thereof to receive the proximate end of an intermediate coupling, and pivot-pins passing transversely through the jaws formed by said slot and through the intermediate coupling to form the pivotal connection between these parts, said transverse slot having an enlarged base to permit of limited lateral movement of the parts, but preventing relative rotation thereof.

6. A flexible shaft composed of cylindrical link-sections and intermediate couplings, the ends of the cylindrical link-sections having transverse slots therethrough, the ends of the intermediate couplings being rounded, and pivot-pins passing transversely through said slots and rounded ends to form pivoted connections between the sections and couplings, said slots being enlarged at the bases thereof, the side surfaces of the intermediate couplings bearing directly against the walls of said slots.

7. A flexible shaft, composed of a plurality of cylindrical sections and intermediate couplings, each cylindrical section having a transverse groove or slot in each end thereof, said slots or grooves being arranged in right-angular relation with respect to each other and each having an enlarged base, the intermediate couplings being in the form of flattened plates, and pivot-pins passing transversely through said slots and forming means for pivotally connecting said link-sections and couplings.

815,241. PEN AND PENCIL RACK. FRANZ WENKE, Fort Wingate, N. Mex., assignor of one-third to Willy F. Fischer, Fort Wingate, N. Mex. Filed Aug. 23, 1905. Serial No. 275,356.



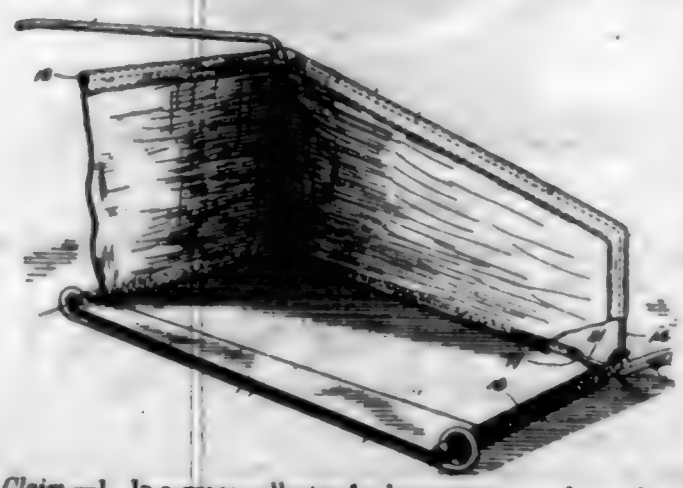
Claim.—1. In a pen and pencil rack, side plates suitably connected together, the forward edge of said side plates provided with a series of notches in which the pen or pencils are adapted to fit, the lower wall of said notches being inclined downward and forward, levers pivoted to the side plates, the forward end of said levers adapted to engage the under side of the pen or pencil and hold them in the notches, springs adapted to hold the outer end of said levers upward against the pen or pencil, a series of keys, one for each set of notches, means for depressing the levers so as to allow the pen or pencils to roll out of the notches when the keys are depressed, as and for the purpose specified.

2. In a pen or pencil rack, two side plates suitably connected together, said side plates provided with a series of notches in their forward edge, the lower wall of each of said notches being inclined downward and forward, the upper wall being undercut, levers pivoted to the side plates, the forward end of said levers being curved upward and adapted to contact the under side of the pen or pencil and hold said pen or pencil against the upper wall of the notch, the forward end of the levers extending beyond the forward edge of the side plates, springs tending to force the levers upward against the pen

or pencil, stops for limiting the upward movement of the levers when the notches are vacant, a series of keys, one for each set of levers, means for depressing said levers when the keys are depressed so as to allow the pen or pencil to fall out of the notches, a curved receiver connected with the rack for receiving the pen or pencil falling out of the notches, as and for the purpose specified.

3. In a pen or pencil rack, two side plates suitably supported, said side plates provided with notches in their forward edge, the lower wall of said notches being inclined downward and forward, levers pivoted to the side plates intermediate of their ends, the forward end of said levers being curved upward and adapted to come in contact with the lower surface of the pen and pencil and hold the pen or pencil in the notches, the forward end of said levers extending beyond the side plates, stops for limiting the upward movement of the levers when the notches are vacant, a series of shafts journaled in the side plates, two disks or cranks upon each shaft, to the outer end of which the rearward end of the levers are pivoted, a series of keys, key-rods extending downward, disks connected to the shafts, to the outer edges of which the key-rods are connected upon the opposite side of the shafts from the point where the levers are connected, springs interposed between the framework and the keys tending to force the key-rods upward, and a curved receiver hinged to the framework adapted to receive the pen or pencil falling from the notches, as specified.

815,242. GRASS-COLLECTOR FOR LAWN-MOWERS. LA FAYETTE WILDERMUTH, Columbus, Ohio. Filed Mar. 6, 1905. Serial No. 248,673.



Claim.—1. In a grass-collector for lawn-mowers, a lower frame having side members coiled to form eyes at points near their front ends, and thence extended forward and bent to form trunnion members for engagement with the frame of the lawn-mower, an upper frame bent to form rear, side and vertical front members, the ends of the upper frame being bent into parallel relation and extending through said eyes, and a helical tension-spring coiled around said parallel members and having its opposite ends connected to the vertical portions of the upper frame.

2. In a grass-collector for lawn-mowers, upper and lower frame members, a helical tension-spring arranged at the lower forward edge of the collector and connecting the side members of the frame, and a bottom-section having its forward edge extending under said spring.

3. In a grass-collector for lawn-mowers, a frame, side, rear and bottom members supported thereby, a coiled spring arranged above the lower forward edge of the collector, and connecting the side members, said spring forming a front guard to prevent the escape of material from the collector.

4. In a grass-collector for lawn-mowers, a distensible frame, rear, side and bottom members carried thereby, and a coiled spring having its opposite ends connected to the side members of the frame and arranged immediately above the forward edge of the bottom and forming a guard to prevent escape of material from the receptacle.

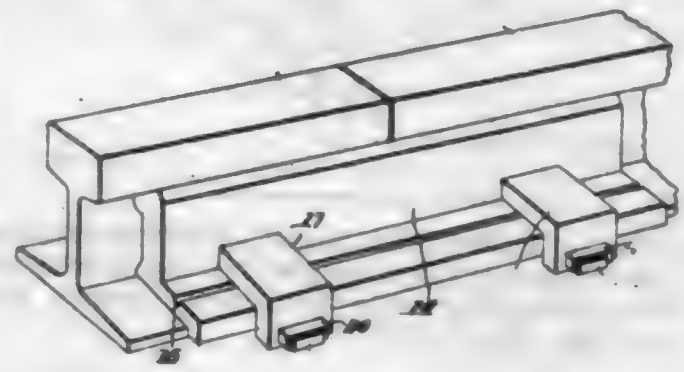
5. In a grass-collector for lawn-mowers, a distensible frame, side and rear members carried thereby, a coiled spring connecting the opposite side members at the front of the frame, and a sheet-metal bottom having its front edge below the spring, said edge being flanged and bent upward to prevent the escape of grass between the bottom and the spring.

6. In a grass-collector for lawn-mowers, a distensible frame, side and rear members carried thereby, and a bottom member formed of a plurality of sheets of metal, the outer edges of which are secured to the frame, and the inner edges of the sheets overlapping, the front edges of both sheets being provided with inturned flanges, said flanges interfitting and serving to prevent independent vertical play of the sheets.

7. In a grass-collector for lawn-mowers, a distensible frame, side and rear members supported by the frame, a bottom member formed of a plurality of overlapping plates, the outer and rear edges of which are secured to the frame, the front edges of the sheets being provided with inturned flanges, said flanges interfitting and preventing independent vertical play of the sheets.

8. In a grass-collector for lawn-mowers, a frame, side and rear members carried thereby, a bottom member formed of a plurality of overlapping sheets, the outer edges of which are secured to the frame, and the front edges of which are provided with interfitting flanges, a coiled spring connected to the opposite side members, and a brace extending under the bottom and having one end connected to the rear portion of the frame and its opposite end being bent over the front edges of the overlapping sheets and the spring for retaining said spring in proper relative position with respect to the bottom member.

815,243. RAIL-JOINT. ELEAZAR G. WILLIAMS, Harpster, Ohio. Filed July 11, 1905. Serial No. 269,220.



Claim.—1. In a rail-joint, the combination with the rails of clamp-plates bearing against the webs and provided with longitudinal grooves spaced stirrup members bearing over said clamp-plates and provided with projections engaging the grooves therein and depending below the rails and provided with transverse apertures in the depending portions, and wedge-keys passing through said apertures and bearing beneath the rails.

2. In a railway-joint, the combination with the rail of clamp-plates bearing against the webs and extending over the tie-flange and provided with longitudinal grooves, and stirrup members depending below the rails and provided with transverse notches, spaced stirrup members bearing over said clamp-plates and provided with projections engaging the grooves therein and depending below the rails and provided with transverse apertures in the depending portions, and wedge-keys passing through said apertures and bearing beneath the rails and likewise engaging the notches in said clamp-plates.

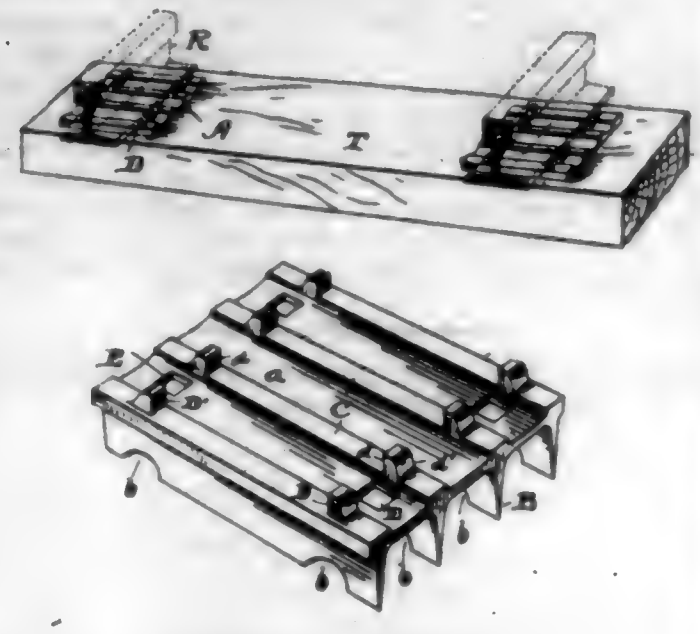
3. In a railway-rail joint the rails having transverse recesses in the tie-flanges near the ends, clamp-plates bearing against the webs of the rails and extending over the tie-flanges and provided with longitudinal channels and with transverse recesses opposite the recesses in the tie-flanges but of less width than the same, spaced stirrup members bearing over said clamp-plates and provided with projections engaging the grooves therein and provided with transverse apertures corresponding to the recesses in said clamp-plates, and wedge-keys passing through said apertures and the recesses in said clamp-plates and bearing beneath the rails within the transverse recesses in the tie-flanges of the same.

4. In a rail-joint, the combination with the rails of clamp-plates bearing against the webs and provided with longitudinal grooves, spaced stirrup members bearing over said clamp-plates and provided with projections engaging the grooves therein and depending below the rails and provided with transverse apertures in the depending portions, and wedge-keys superimposed and passing through said apertures from opposite sides and bearing beneath the rails.

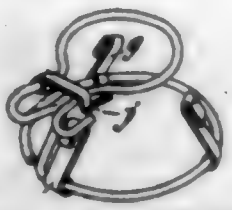
815,244. TIE-PLATE. WILLIAM J. WILLIAMS, Elyria, Ohio. Filed Mar. 16, 1905. Serial No. 250,268.

Claim.—1. A tie-plate having on its under side a plurality of extended narrow flanges having sharp lower edges and notches near the ends of said flanges, longitudinal ribs formed on the upper side of the plate in line with said flanges, and studs formed near the ends of said ribs having inner vertical faces adapted to engage the feet of the rail.

2. A tie-plate having on its under side a plurality of extended narrow flanges having sharp lower edges and notches near the ends of said flanges, longitudinal ribs formed on the upper side of the plate in line with said flanges, and studs formed near the ends of said ribs having inner vertical faces adapted to engage the foot of the rail, said plate having openings adapted to receive fastening means for securing the plate to the tie.



815,245. SHADE-HOLDER FOR INCANDESCENT ELECTRIC LAMPS. HARRY A. WRIGHT, Springfield, Mass., assignor to The Yost Electric Manufacturing Company, Toledo, Ohio, a Corporation. Filed July 9, 1904. Serial No. 215,857.



Claim.—1. A shade-holding clamp comprising two open rings in different planes and of different diameters, the smaller of the rings having two outwardly-extending finger-pieces, one of the finger-pieces constituting one of the ends of the clamp, the other of the finger-pieces extending downward from the smaller ring and integral with the lower open ring, the other end of the clamp terminating in close proximity to the downward-bent portion of the finger-piece.

2. A shade-holder for incandescent electric lamps consisting of an open ring to receive a lamp-socket and a shade-holding ring of greater diameter than said open ring and located in a lower parallel plane, said two rings being formed of one piece of metal, said open ring having ends extending outwardly therefrom one of which is bent downwardly to connect with the shade-holding ring, together with a device to secure the outwardly-extending ends of said open ring together to constrictively engage the socket of a lamp.

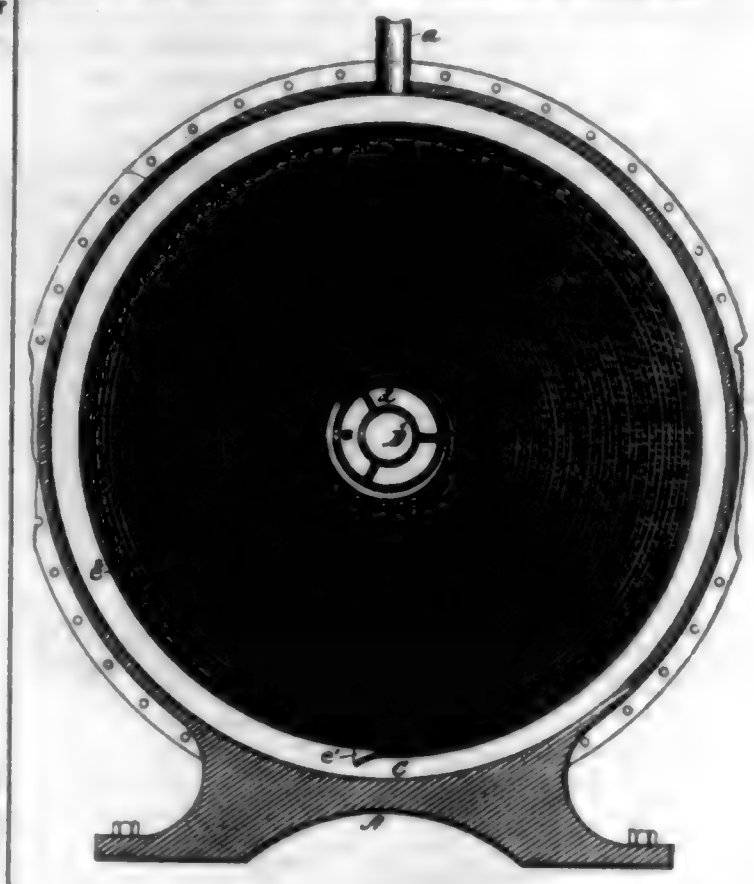
3. A shade-holder for incandescent electric lamps consisting of an open socket-engaging ring and a shade-holding ring of larger diameter and supported below, and parallel with the open ring, said two rings being formed of one piece of wire, and said open ring having outwardly-extending ends one of which is bent downward to connect with the shade-holding ring combined with a hook slidably mounted on one of the outwardly-extending ends of the open ring to engage the other end.

815,246. ROTARY ENGINE. EDWARD T. YOUNG and LEANDER J. CAVANAUGH, Boston, Mass. Filed July 27, 1905. Serial No. 269,690.

Claim.—1. An engine comprising a spiral passage, said passage being formed of a spiral sheet of metal having a relatively small distance between the convolutions of said sheet as compared with its width, the space between the convolutions of said sheet being closed on each side by a spiral wire, as described.

2. A rotary engine comprising a casing, a shaft adapted to rotate in said casing, a packing in said casing, and a plurality of means to force said shaft against said packing comprising a spring and a pressure within said casing, as described.

3. An engine comprising a tight casing, an inlet, a hollow shaft forming an outlet, supported in said casing and having a hollow spider mounted thereon, a piston-wheel mounted on said spider and having a spiral passage therein, the end of said passage next said spider being connected with the hollow shaft, as described.



815,247. BORING-BIT OR AUGER. NICHOLAS KAPUSELE, South Bend, Ind. Filed June 28, 1905. Serial No. 267,426.



Claim.—A mortise-cleaning bit provided with integral radial cutting edges, said edges being opposite and in line with each other, and merging one into the other, the outer extremity of each cutting edge being provided with an approximately vertical lip having a cutting edge, the body of said bit being in the form of a loose spiral.

815,248. RAIL-BRACE. CHARLES A. ALKINS, Memphis, Tenn., assignor, by mesne assignments, to Niagara Forged Steel Company, Buffalo, N. Y., a Corporation of New York. Filed Nov. 18, 1905. Serial No. 287,896.

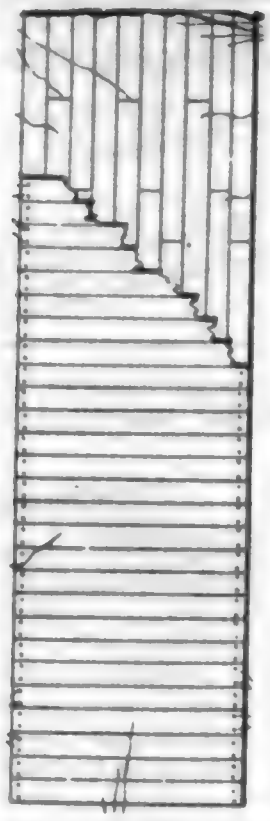


Claim.—A rail-brace pressed out of metal plate so as to form an inclined strut which is adapted to bear at its upper edge against the under side of the rail-head and at its lower end against the outer edge of the rail-base, and a web which is arch-shaped in cross-section and connects the central parts of the strut and base of the brace, said web being raised out of the stock of the strut and base to such an extent that the side edges of the corner between the strut and base are drawn inwardly and contract these portions thereof, substantially as set forth.

815,249. CAR-FLOOR AND FLOOR-FRAME. MARTIN F. ANDROUS, Atlanta, Ga. Filed Nov. 6, 1905. Serial No. 286,146.

Claim.—The car-floor and floor-frame comprising a lower base portion consisting of a series of longitudinal pieces of lumber arranged parallel and in contact with each other and so as to break joints, fastening means extending through said pieces of lumber and

securing the same together, and a layer of flooring-boards disposed transversely on the upper side of said portion and secured thereto.

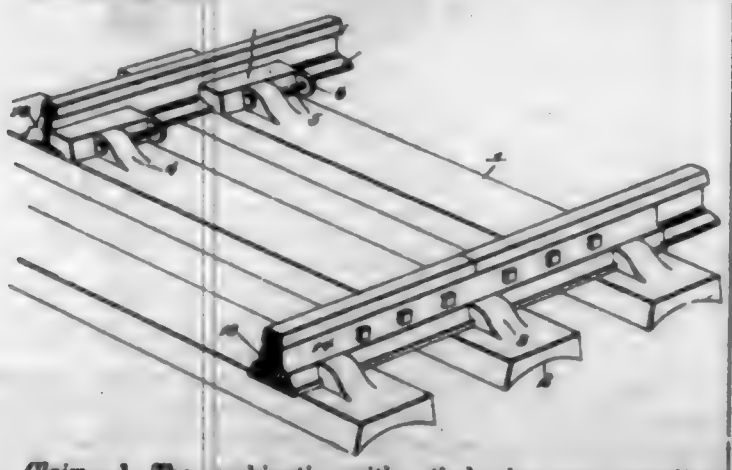


815,250. NON-REFILLABLE BOTTLE. ALFRED J. ASHFORD, Kinston, N. C. Filed May 24, 1905. Serial No. 261,967.



Claim.—A non-refillable bottle having its neck portion constituted of a cylindric formation practically continued into its body portion, the neck extension thus produced being provided with lateral aperturesopening into said body portion, said latter portion having an integral apertured partition subdividing the interior therefor, a short distance inward from the inner end of said neck extension, and a gravity-valve tapered in general outline with its tapered portion normally filling the aperture of said partition, and having a flat circular face presented toward and effective to seat against said inner end neck extension when the bottle is tilted or inverted and simultaneously with which seating action said valve is so shifted with relation to said aperture as to permit the passage by it of the bottle contents.

815,251. STEEL CROSS-TIE AND RAIL-FASTENER. JOEL AUSTIN and ROBERT MCKENDRICK, Windber, Pa. Filed Oct. 28, 1905. Serial No. 284,118.



Claim.—1. The combination with a tie having ears extending therefrom, of rail-engaging means adapted to be engaged by one of the ears, a wedge to be engaged by the other ear, and means for adjusting the wedge and locking it to its ear, said wedge and engaging means adapted to be disposed at opposite sides of the rail.

2. The combination with a tie having ears extending therefrom, of a rail-engaging device adapted to be engaged by one of the ears, a wedge engaging the other ear and adapted to clamp the rail between the ears, and means engaging the wedge for adjusting and locking it.

3. The combination with a tie having ears thereon, of a rail-engaging device engaged by one of the ears, a wedge engaged by the other ear and adapted to clamp the rail between the ears, a lug extending from the wedge, and means extending through the lug and from the ear engaging the wedge for adjusting the wedge and locking it against movement.

4. The combination with a tie having ears thereon, of engaging devices interposed between the ears and adapted to engage opposite sides of the rail, one of said devices being engaged by one of the ears, a wedge interposed between the other device and the other ear, and means for adjusting the wedge and locking it against movement.

5. The combination with a tie having ears thereon provided with overhanging ends, of rail-engaging devices interposed between the ears and adapted to receive a rail therebetween, one of said devices being notched to receive an ear and adapted to be overlapped by said ear, a wedge interposed between the other ear and the other engaging device, said wedge overlapping the engaging device contacting therewith, and means for adjustably securing the wedge and the adjoining ear.

6. The combination with a tie having ears thereon, of a bolt extending from one of the ears, a wedge interposed between the ears and adapted to clamp a rail therebetween, and a lug upon the wedge and adjustably secured upon the bolt.

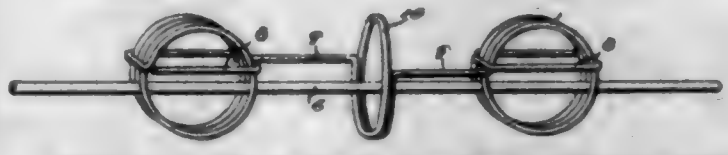
815,252. RAZOR-STROP. JAMES BAILEY, Walsall, England. Filed May 4, 1904. Serial No. 206,333.



Claim.—1. In a razor-strop, the combination of a frame having spring-uprights and a strap mounted between the said uprights and adapted to be rotated thereon, substantially as, and for the purpose, described.

2. In a strop the combination with a spring-frame and a strop rotatably mounted therein, of a handle, a hinge connecting said frame and handle whereby the handle may be turned so as to lie practically within the length of the frame.

815,253. CLOTHES-PIN. JOHN W. BAKER, Halls, Tenn., assignor of one-half to A. L. Holcomb, Halls, Tenn. Filed Sept. 14, 1905. Serial No. 278,433.



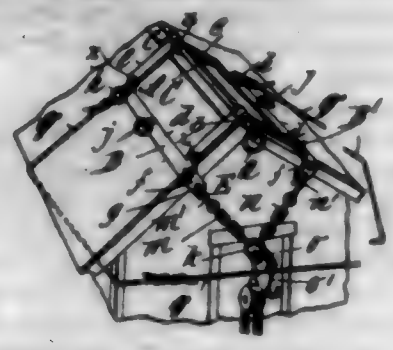
Claim.—1. A wire clothes-pin comprising a pair of connected circular coils each of which has a confining band or piece extending diametrically around the same on the outer side thereof, said bands each having a part extending laterally across the coil at about the middle thereof and arranged to rest across the line when the coils are pressed down thereon, substantially as described.

2. A wire clothes-pin comprising a pair of coils with a connection therebetween, and a loose, separate coil surrounding said connection and the clothes-line between said pair of coils.

815,254. HOISTING-SUPPORT. CHARLES A. BARNES and ALEXANDER E. CROKER, Springfield, Mass. Filed Nov. 20, 1905. Serial No. 288,103.

Claim.—1. In a hoisting-support a frame adapted for immov-

able maintenance on a roof-top and to have an end portion thereof overhang the roof and provided at such overhanging portion with chains or like connections secured to opposite points of said frame and converging downwardly and connected and affording, at such point of connection, support for a tackle.



2. In a hoisting-support, a frame having means for anchorage on a roof-top and provided with downwardly-extended lugs, chains or like connections secured to said lugs, and converging downwardly and connected, and affording at such point a connection-support for a tackle.

3. In a hoisting-support a frame adapted for immovable maintenance on a roof-top and to have an end portion thereof overhang the roof, and provided at such overhanging part with connection members, hook-ended chains detachably engaged in said connection members and downwardly convergent, and a ring connecting the approached ends of said chains.

4. In a hoisting-support a frame adapted for immovable maintenance on a roof-top and to have an end portion thereof overhang the roof, and provided at such overhanging portion with connection members *f f* arranged in opposition and also with an intermediate ring or eye, hook-ended chains detachably engaged with said connection members and downwardly convergent, a ring *b* connecting the approached ends of said chains, and a chain-like or flexible connection also engaged with said ring and having a hook for detachable engagement with the aforesaid intermediate eye of the frame.

5. A frame adapted for immovable maintenance on a roof, formed with opposite side sections hinge-connected, whereby such frame may be adapted to rest on flat or angular roofs, and having tackle-supporting means at its end portion which is adapted to overhang the roof.

6. In a hoisting-support a frame adapted to rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at its rear end portion with ring-eyes to enable connections thereat of anchoring ropes or cables.

7. In a hoisting-support a frame adapted for an immovable rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at one or both of its side portions with attachment members for making connection therewith of anchoring-ropes.

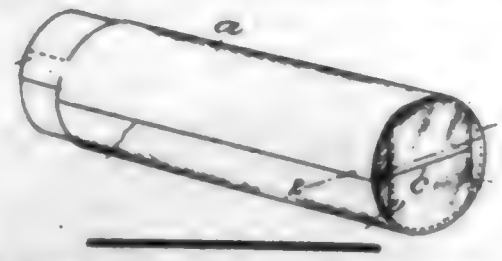
8. In a hoisting-support a frame adapted for an immovable rest on a roof-top and having an endwise portion adapted to overhang the roof, and provided with depending tackle-supporting appliances, and said frame provided at its rear end portion with ring-eyes, and provided at its side portions with ring-eyes, for the purposes explained.

9. A hoist-supporting frame adapted for an immovable rest upon a roof-top and to endwise overhang the same, and formed with an intermediate longitudinal hinge comprising a pintle or rod C, the forward end of which extends beyond the forward end of the hinged frame, and is constructed with an eye, and said frame having at its overhanging forward end depending appliances for supporting a tackle and a further supporting and reinforcing link and hook connection adapted to detachably engage the eye-formed end of said hinge-rod.

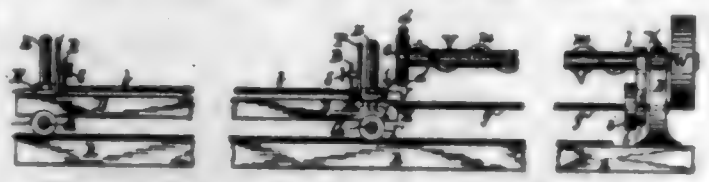
10. A frame, adapted to rest on a roof-top, and having a forwardly-endwise overhanging portion provided with hoist-supporting appliances, and said frame having at its rear portion a lever pivotally engaged therewith and rearwardly extending, and means for affording a fulcrum-bearing for said lever rearward of its pivotal engagement with the frame.

815,255. BAG OR PACKAGE. WILLIAM O. BELL, Newton, Mass. Filed Nov. 16, 1905. Serial No. 287,454.

Claim.—A bag composed of a body, and an approximately flat bottom formed in a single piece, a bottom-forming piece supported by the said bottom, and a moisture-proof lining composed of a lining-sheet formed as a tube, with loose overlapping edges, and bearing on the inner surface of the body of the bag, and a bottom-lining piece supported by the bottom-forming piece, the inner end of the lining-sheet being inserted between the bottom-lining piece and the bottom-forming piece.



815,256. WOOD-BORING MACHINE. HUNLEY BIBLE and LEE A. ROBINSON, Sherman, Tex. Filed Aug. 12, 1905. Serial No. 273,954.



Claim.—1. In a wood-boring machine, the combination with a hollow auger-spindle, of a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, U-shaped cutters secured to the spindle, said lips conforming to the outer circumference of the cutter.

2. In a wood-boring machine, the combination with a hollow auger-spindle, a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, cutters secured to the spindle, said lips conforming to the outer circumference of the cutters, of a car acting in conjunction with the cutter and carrying adjustable clamping means, and a guiding-ring carried by the car and adapted to embrace the cutter.

3. In a wood-boring machine, the combination with a car carrying clamping means and means for moving the car, of a hollow auger-spindle, a cylindrical cutter-head secured on the end thereof, said cutter-head consisting of two parts each provided with a projecting lip, U-shaped cutters secured to the spindle, said lips conforming to the outer circumference of the cutter, and a guiding-ring mounted on the car adapted to embrace the cutter.

815,257. COOLING DEVICE FOR CYLINDERS. CHARLES H. BLOMSTROM, Detroit, Mich., assignor to C. H. Blomstrom Motor Company, Detroit, Mich., a Corporation of Michigan. Filed Oct. 3, 1904. Serial No. 227,891.

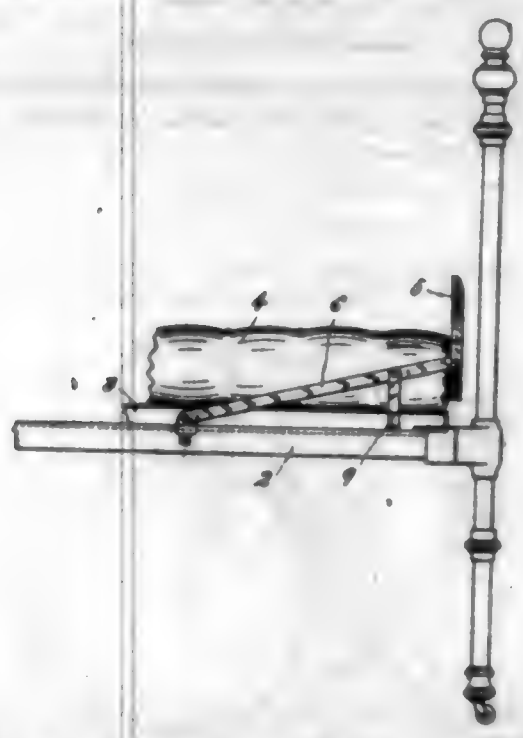


Claim.—1. A cylinder for combustion-engines having in combination with the cylinder-walls, flanges cast integral therewith and projecting therefrom and rods passing through the flanges and contacting the same so as to receive heat therefrom by conduction, substantially as and for the purpose described.

2. A cylinder for combustion-engines, having in combination with the cylinder-walls, flanges cast integral therewith and projecting therefrom, and a threaded rod passing through the flanges and engaging therewith so as to receive heat therefrom by conduction, substantially as and for the purpose described.

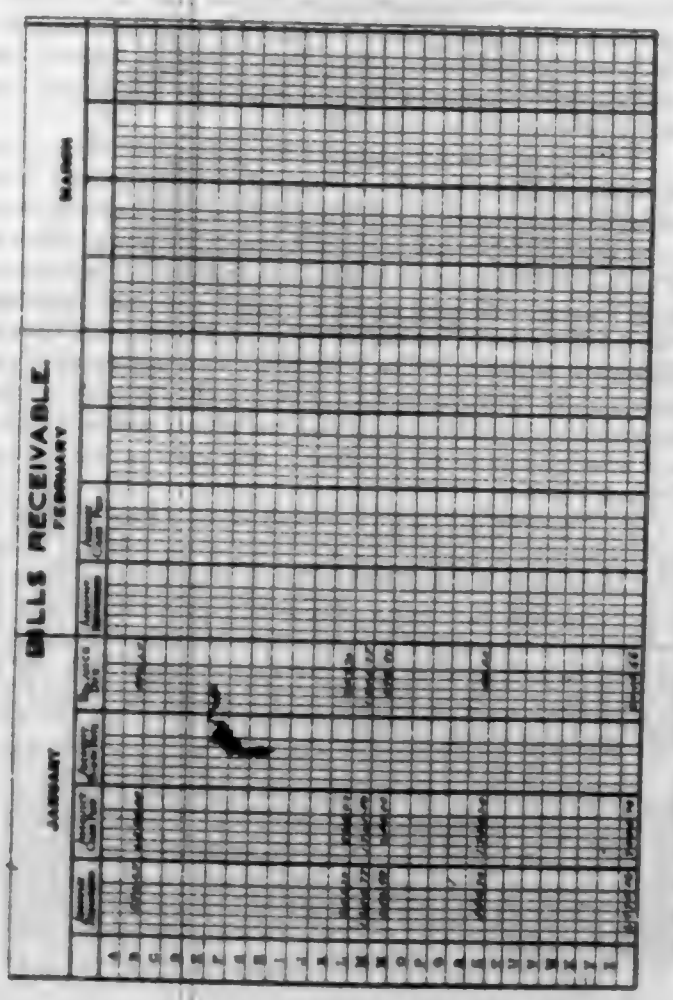
3. A cylinder for combustion-engines having in combination with the cylinder-walls, flanges on the walls and rods passing through the flanges, the cylinder and flanges being cast integral about the rods, substantially as described.

815,258. FOOTBOARD FOR IRON BEDSTEADS. LEWIS O. BARKER, Minneapolis, Minn. Filed Nov. 3, 1904. Serial No. 231,162.



Claim.—The combination with a bedstead and a bed-spring supported thereby, of a footboard 5 arranged to work between the side rails of said bedstead and the bed-spring and the foot of said bedstead, a pair of arms 6 rigidly secured at their free ends to the intermediate portion of the ends of said footboard and pivotally attached at their other ends to the side rails of said bedstead, and supporting-legs 9 pivotally attached to the intermediate portion of said arms 6 and adapted to be turned downward into engagement with the side rails of the bedstead to support said footboard and lie outside of the horizontal place occupied by the bed-springs, substantially as described.

815,259. EXTENDED LEDGER SYSTEM. FRANCIS W. BRIGGS, Lewiston, Me. Filed July 8, 1904. Serial No. 215,606.



Claim.—1. In a ledger, a series of groups, each group appropriated to an initial letter and comprising a series of sheets, each one of which sheets is specially designated to an individual in said initial-letter group, and has its special numeral, and appropriately-designated spaces for individual account; and a sheet or series of sheets having appropriately-designated monthly columns and numbered lines for all the individual accounts in the same name-initial, and referring to said individual accounts, substantially as described.

2. In a ledger, a series of groups, each group appropriated to an initial letter and comprising a series of sheets, each one of which sheets is specially designated to an individual in said initial-letter group and has its special page-numeral and appropriately-designated spaces for individual accounts; and a sheet or series of sheets having appropriately-designated monthly columns and numbered lines corresponding to all the individual accounts in the same initial and referring to said individual accounts, the said individual and monthly sheets including an appropriately-designated column for the balance due, substantially as described.

3. In a ledger, a series of groups, each group appropriated to an initial letter and comprising a series of sheets, each one of which series is specially designated to an individual in said initial-letter group, and has its special numeral and appropriately-designated spaces for individual account; and a sheet or series of sheets having monthly columns and numbered lines for all the individual accounts in the same name-initial, and referring to said individual accounts, the said individual and monthly sheets including an appropriately-designated column for the balance due, each of said groups also including an index-sheet having an appropriately-designated column for the names under the same initial letter and an appropriately-designated column for the number of every one of said names, said number referring to said names and accounts in each of the sheets of the group herein specified.

4. In a ledger, a group of sheets for a plurality of individuals having the same initial letter, an index-sheet provided with a column of reference-numbers to the sheets included in said group and appropriated to the individuals under said initial; each of the sheets in said group having its appropriate number, designated for an individual in said initial-letter group, and being divided by a weakened line and appropriately ruled to form an itemized bill and retained stub parts with appropriately-designated columns for items of sale, credits and balance, the said parts hereinbefore specified in this claim being in further combination with a sheet or series of sheets having columns and numbered lines said columns being designated for each month of the year, each of said columns and numbered lines affording spaces which are designated for the results of each individual account provided for in the stubs hereinbefore referred to, including the balance due; all of the said elements herein forming a group, substantially as described.

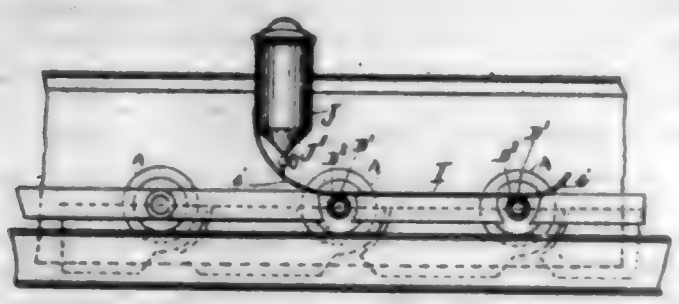
5. In a ledger a series of groups, each group being appropriated to a plurality of individuals having the same name-initial and comprising a series of appropriately ruled and designated stubs and adjacent bill-forms separated therefrom by a weakened line, said bill-forms each having an individual number, each of said stubs and bill-forms being specially designated to an individual in said initial-letter group, an index referring to numbers of individual stub and bill sheets, a sheet or sheets having appropriately-designated columns for all the months of the year to receive the combined items from the individual bill and stub sheets, and having numbered lines, and division-leaves separating the groups, and a sheet or sheets appropriate to the entire series of groups and having appropriately-designated monthly columns and alphabetically-lettered horizontal lines for receiving the amounts and balances for the series of groups, substantially as described.

6. In a ledger system; a series of groups of sheets, each group appropriated to an initial letter and comprising a series of sheets, each one of which is specially designated to an individual in said initial-letter group, and has its special numeral and appropriately-designated spaces for individual account, a sheet or sheets associated with each group having appropriately-designated monthly columns and numbered horizontal lines for all the individual accounts in the same name-initial, a sheet or sheets appropriated to the entire series of groups and having appropriately-designated monthly columns and alphabetically-lettered horizontal lines, and a summary sheet or sheets appropriated to the entire series of groups.

815,260. LUBRICATING DEVICE. GASTON A. BROWDER, Brooklyn, N. Y. Filed Aug. 14, 1903. Serial No. 169,629.

Claim.—1. The combination of an axle, a wheel thereon, a wick

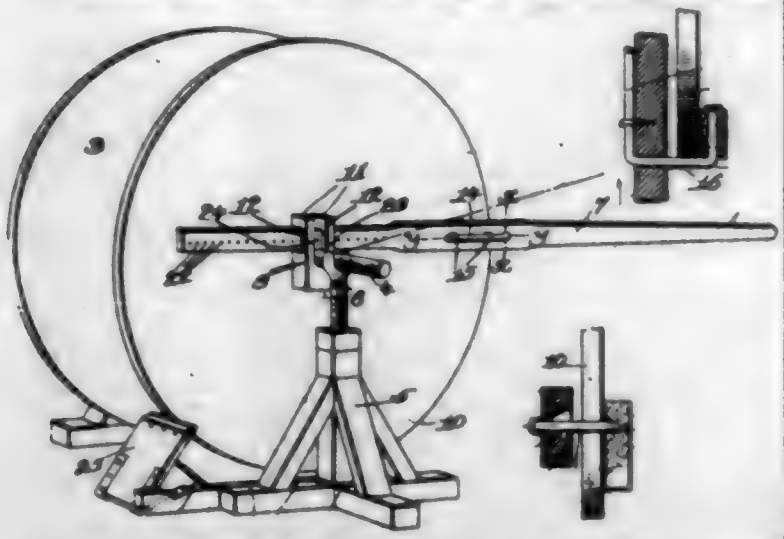
wrapped around the hub of the wheel, a wiper curved up at its ends arranged to bear on the said wick, and a reservoir for a lubricant connected with the wiper.



2. The combination of an axle, a wheel on the axle having an opening in the hub thereof and extending to the axle, a wiper curved up at its ends bearing on the hub of the wheel over said opening, so as to allow the wheel to pass under the same in one direction and in the reverse direction, and a reservoir arranged to feed a lubricant to the wiper.

3. The combination of axles, hubs of wheels on the axles having grooves in their bearing-surfaces and each having an opening in the said hubs connecting with the grooves, wicks extending through the grooves and through the said opening and also wrapped around the hub, a wiper curved up at its ends arranged to bear on both the wicks wrapped around the hubs, the curved ends of the wiper allowing the wheels to run under the same in one direction and in the reverse direction thereof, and means to feed a lubricant to the wiper.

815,261. CABLE-REEL WINDER AND BRAKE. GEORGE W. BROWN, Hyde Park, Mass. Filed Aug. 16, 1905. Serial No. 274,474.



Claim.—1. In a device of the class described a fulcrum-block adapted to be detachably secured to the arbor of a cable-reel, a lever mounted in said fulcrum-block and extending transversely to the axis of the reel, and a pivoted gripping-block carried by the lever and adapted to grip the flange of the reel.

2. In a device of the class described, a fulcrum-block to embrace the arbor of a cable-reel, a lever adjustably mounted in said fulcrum-block and extending parallel to the flange of the reel, and a gripping device carried by the lever and adapted to grip the flange of the reel.

3. In a device of the class described, an adjustable lever fulcrumed on the arbor of a cable-reel, and a gripping device carried by said lever and adapted to engage the inner face of the flange of the reel.

4. In a device of the class described, a fulcrum-block adapted to be mounted on the arbor of a cable-reel, a lever adjustably mounted in said fulcrum-block, and a gripping-block pivoted to the lever and adapted to engage the inner face of the flange of the reel.

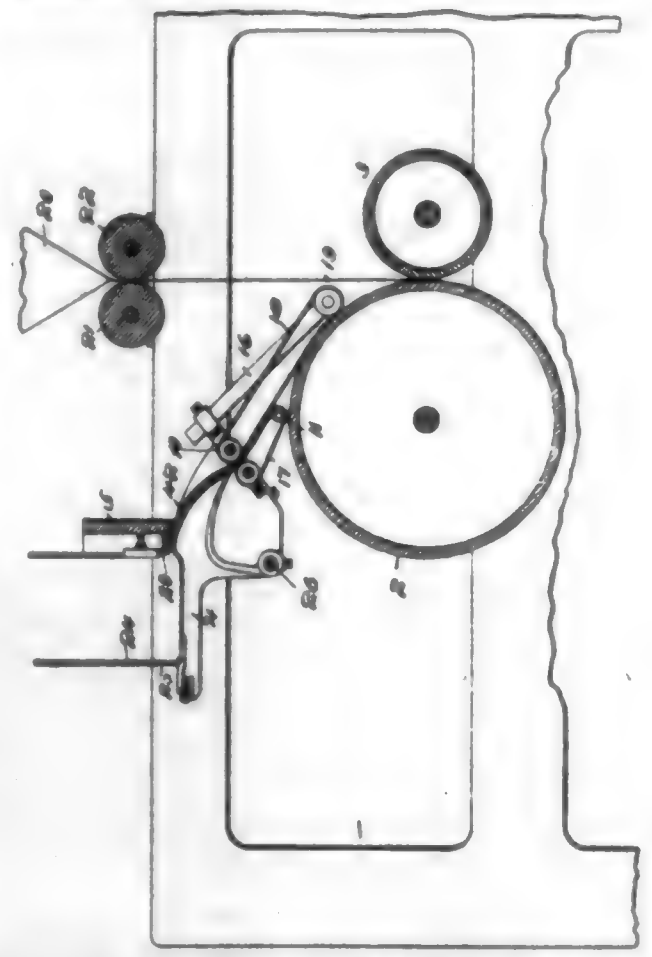
5. In a device of the class described, a bifurcated fulcrum-block adapted to straddle the arbor of a cable-reel, each arm of said fulcrum-block having an aperture therethrough, a lever extended through said apertures, and a gripping-block carried by the lever and adapted to engage the inner face of one of the flanges of the reel.

6. In a device of the class described, an adjustable lever fulcrumed on the arbor of a cable-reel, a gripping device carried by said lever and adapted to engage the inner face of the flange of the reel, and a brake to engage the rim of the reel and prevent backward rotation thereof.

7. In a device of the class described, an adjustable lever fulcrumed on the arbor of a cable-reel, a gripping device carried by said lever and adapted to engage the inner face of the flange of the reel, and a brake comprising a pivoted brake-block to engage the rim of the reel and prevent backward rotation thereof.

8. In a device of the class described, a fulcrum-block adapted to be mounted on the arbor of a cable-reel, a lever adjustably mounted in said fulcrum-block, a gripping-block pivoted to the lever and adapted to engage the inner face of one of the flanges of the reel, and an adjustably-mounted pivoted brake-block to engage the rim of the reel and prevent backward rotation thereof.

815,262. FEEDING ATTACHMENT FOR PRINTING-PRESSES. WALTER S. BROWN and HENRY W. ENDRESS, Lincoln, Nebr. Filed Jan. 17, 1905. Serial No. 241,462.



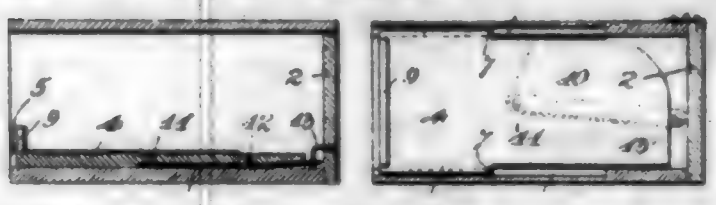
Claim.—1. The combination with the folding-cylinder of a printing-press, of an envelop-carrying belting or tape; an auxiliary belting coöperating therewith and with the periphery of said cylinder and devices for successively delivering an envelop, folder or the like between said coöperating tapes, substantially as specified and for the purpose set forth.

2. The combination with the folding-cylinder of a printing-press, of a suitable framework attached to the framework in which said cylinder is mounted; a pair of shafts each having a band-wheel; a pair of arms or brackets each having an idler or tape wheel to cooperate with its respective wheel upon said shafts; suitable means for actuating both of said shafts whereby the belting on each pair of wheels will be moved in sympathy with each other to act upon an interposed envelop or the like and deliver said envelop upon the periphery of the folding-cylinder and thence into the folds of each paper as it is delivered to the folding mechanism within the cylinder and means to deliver the envelops to said tapes as and for the purpose set forth.

3. The combination with mechanism of a press adapted to receive and fold a paper web; of stack-holding devices, a rocking shaft, fingers upon the shaft adapted to engage and remove a portion of the stack only when said fingers are moved in one direction, a carrier for receiving said portions from the fingers and delivering them to the folding mechanism and upon the paper web, and means in the path of the stack portions for preventing the removal of more than one portion from the stack at a time.

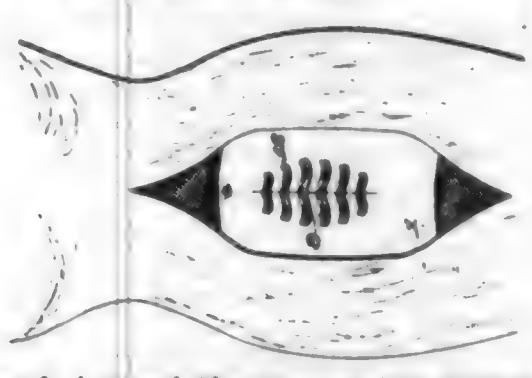
4. The combination with stack-holding devices, of rocking fingers thereunder adapted to engage and remove portions of the stack, a carrier for receiving said portions from the fingers, a folding and a cut-off cylinder adapted to receive the paper web therebetween, and folding mechanism adapted to subsequently receive the web, said carrier adapted to deliver stack portions between the folding-cylinder and the web.

815,263. MAIL-BOX. DANIEL T. BUCKWALTER, Royersford, Pa. Filed May 20, 1905. Serial No. 261,554.



Claim.—The combination with a mail-box or similar receptacle having a swinging door and provided with guide-grooves, a false bottom having flanges to slidably engage said grooves, and a recess in its under side, means for retaining mail-matter or the like upon said false bottom and a link pivotally connected to said bottom within said recess, and to said door, substantially as described.

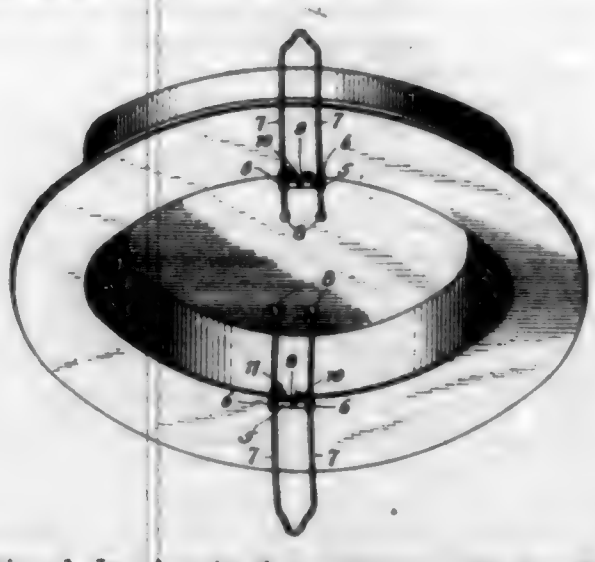
815,264. SUTURE-BRIDGE. JOSEPH E. CHAMBERS, St. Louis, Mo. Filed Feb. 27, 1905. Serial No. 247,622.



Claim.—1. A suture-bridge, constructed of a single piece of material having a central arched portion, and being provided with upturned ends, and there being a longitudinally-extending groove formed in the top surface of the arched portion; substantially as specified.

2. A suture-bridge, constructed of a single piece of material having an arched central portion and its ends being upturned and provided with thread-receiving notches, and there being a longitudinally-extending groove formed in the top surface of the arched portion; substantially as specified.

815,265. HAT-FASTENER. HOMER I. CLARK, Youngstown, Ohio. Filed May 10, 1905. Serial No. 259,773.



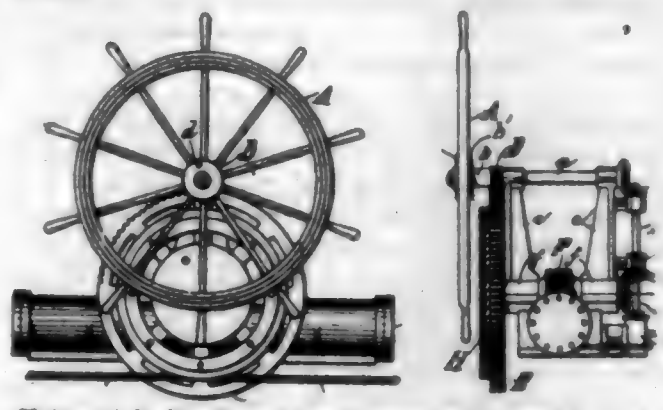
Claim.—1. In a hat-pin, the combination with pivotally-connected elements, of a hat-engaging pin and a hook coöperating therewith mounted on one of the elements, and a hair-engaging pin slidably mounted on the other element.

2. In a hat-pin, the combination with pivotally-connected elements, of a hook carried by one of said elements, a hat-engaging pin having a spring connection with the element carrying the hook and having its free end portion detachably interlocking with said hook, and a hair-engaging pin slidably mounted on the other element.

3. In a hat-pin, the combination with a holding element, of a pin having spaced side members slidable on the element, and a hat-engaging pin pivotally connected to the holding element between the side members.

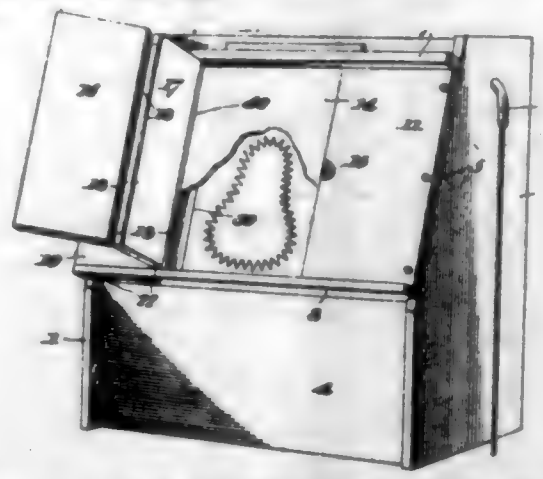
4. In a hat-pin, the combination with a holding element comprising a plate having terminal eyes, of a hair-engaging pin having spaced members slidably mounted on the eyes, and a hat-engaging pin including a base element pivoted between its ends to the holding-element plate between the eyes thereof, said base element having at one end an outturned hook and at the other end a spring-pin, the free end of which detachably engages the hook.

815,266. HYDRAULIC AND HAND STEERING-GEAR. JAMES G. COOPER, New York, N. Y., assignor, by mesne assignments, of three-fifths to Mary Budd, New York, N. Y.; Henry D. Cooper administrator of said James G. Cooper, deceased. Filed Dec. 4, 1903. Serial No. 183,863.



Claim.—A hydraulic and hand steering-gear, which consists of a steering-wheel, a hydraulic cylinder adapted to be located in the wheel-house of the vessel, a sliding piston in said cylinder, mechanism, whereby the supply-valve of said cylinder may be operated by the turning of the wheel, a slip connection in said mechanism whereby the same can be turned without operating said valve, and mechanism operated by said piston whereby motion is communicated to the rudder and the valve simultaneously returned to its initial position after each movement.

815,267. PHOTOGRAPHIC-PRINTING CABINET. OTHO C. COURTRIGHT and ALBERT D. MIKA, Fort Madison, Iowa. Filed Apr. 25, 1905. Serial No. 257,390.



Claim.—1. A printing-frame open at the front and having a back provided with an exposure-opening, negative and paper holding means associated with the opening, and a light-excluding shield extending around the top and sides of the opening and projecting in front thereof.

2. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, and a paper-supporting ledge extending across the bottom and extended at one side of the seat at the back of the frame.

3. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom and extended at one side of the seat along the back of the frame, a removable paper-holding back, and a shutter at the front of the frame.

4. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom and extended at one side of the seat along the back of the frame, and a paper-holding back adapted to close across the negative-receiving seat and capable of being moved clear of the upper side of the paper-supporting ledge.

5. A photographic-printing frame having a negative-receiving seat adapted to support a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom of the seat and projected at one side thereof along the back of the frame, and a foldable paper-holding back hinged to the frame at the opposite side of

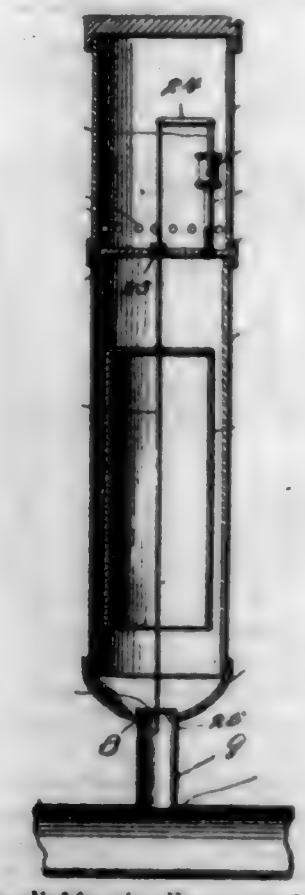
the seat and adapted to lie across the seat and also capable of being swung clear of the upper side of the paper-supporting ledge.

6. A photographic-printing frame having a negative-receiving seat adapted to hold a negative flush with the back of the frame, a paper-supporting ledge extending across the bottom of the seat with one end projected beyond the seat, and a paper-holding back adapted to fold across the seat with one end projected across the other end of the paper-supporting ledge and hinged to the frame.

7. In a photographic-printing frame, the combination of an upright main frame which is open at its front and is provided with a forwardly-inclined back portion, the inclined back portion of the frame being provided with an exposing-opening, a plate-holding frame fitted in the opening and conforming to the inclination of the inclined portion of the back, swinging shutter members mounted upon the front of the plate-holding frame, controlling means piercing one side of the main frame for simultaneously opening the shutters, a negative-receiving seat at the back of the plate-holding frame adapted to support a negative flush with the back of the frame, a paper-supporting ledge across the bottom of the seat and projected at one side thereof, and a foldable paper-holding back capable of extending across the negative-receiving seat with one end projected beyond the seat and also projected across the adjacent end of the ledge and hinged to the back of the frame.

8. A printing-frame open at the front and having a back provided with an exposure-opening, negative and paper holding means associated with the opening, and a light-excluding shield extending around the top and sides of the opening and projecting in front thereof, the portion of the back having the exposure-opening being inclined upwardly and forwardly.

815,268. AUTOMATIC AIR-RELIEF FOR PIPE-LINES. CHARLES COVELL, Grand Valley, Pa. Filed Apr. 15, 1904. Serial No. 203,681.



Claim.—An air-relief for pipe-lines comprising a cylinder adapted for attachment at its lower end to a pipe-line in communication therewith, a cylindrical extension removably connected with the upper end of the first-named cylinder and having perforations through its wall, a vent-pipe leading from the upper end of the first-named cylinder into the cylindrical extension, a relief-valve for the vent-pipe within the cylindrical extension, an operating-lever for the relief-valve, a float within the first-named cylinder, a rod passed axially through the float and secured thereto, said rod being passed through the top of the first-named cylinder, a link pivoted to the upper end of the rod and to the valve-lever and a guide for the lower end portion of the rod, said valve being movable into and out of closed position as the float rises and falls.

815,269. SAW-SWAGING MACHINE. WILLIAM L. COVEL, Biloxi, Miss. Filed Aug. 15, 1904. Serial No. 220,834.

Claim.—1. In a saw-swaging machine, the combination of a series of movable balls for swaging the saw-teeth, and means for moving the several balls of said series and simultaneously shifting said series, substantially as described.

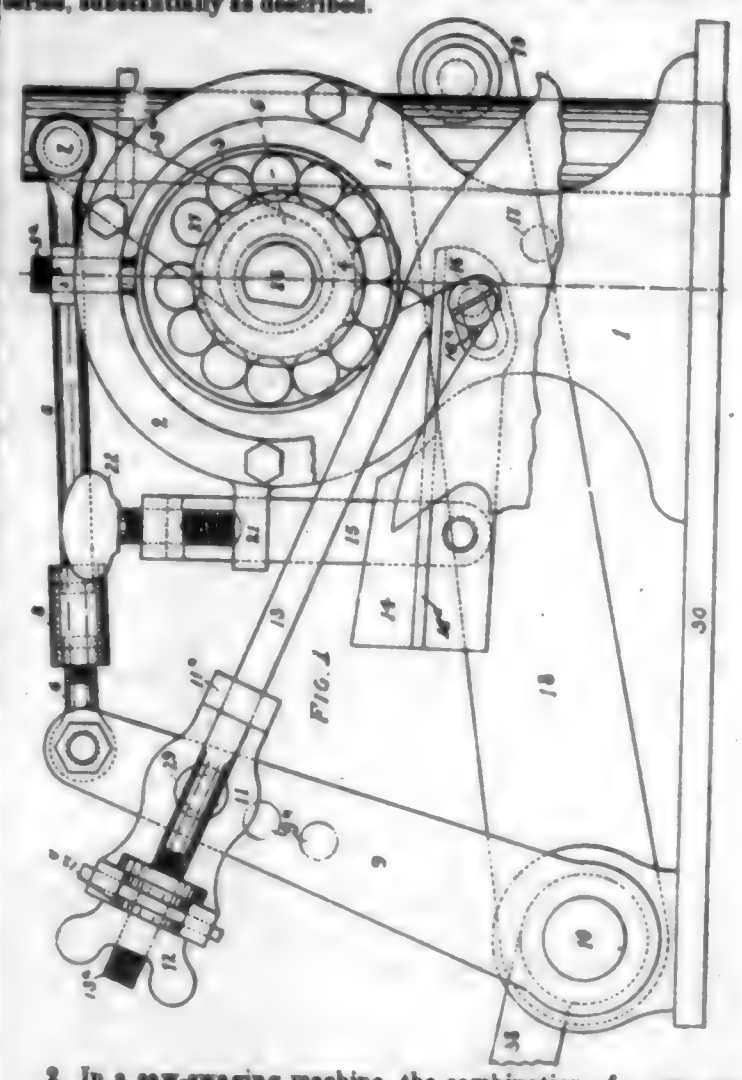


FIG. 1

2. In a saw-swaging machine, the combination of a saw-support, a series of movable balls for swaging the saw-teeth, and means for moving the several balls of said series and simultaneously shifting said series relative to said saw-support, substantially as described.

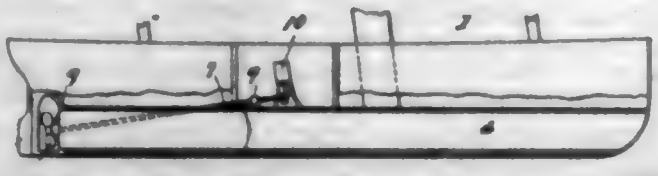
3. In a saw-swaging machine, the combination of an annular series of balls for swaging the saw-teeth, and means for rotating the several balls about the center of the annular series and simultaneously shifting such center of rotation, substantially as described.

4. In a saw-swaging machine, the combination of a series of balls for swaging the saw-teeth, a rotatable head for moving said balls, means for rotating said head, and an adjustable casing for maintaining said balls in contact with said head, substantially as described.

5. In a swaging-machine, the combination of a series of balls for swaging the saw-teeth, a rotatable head for moving said balls, means for rotating said head, and an adjustable casing for maintaining said balls in contact with said head, said casing provided with a tapering slot to permit gradual projection of the balls therethrough during a portion of their travel.

6. In a saw-swaging machine, the combination of a series of balls for swaging the saw-teeth, a rotatable head provided with a grooved track for said balls, means for rotating said head, an adjustable casing for maintaining said balls against said grooved track, and means for adjusting said casing to vary the pressure of the balls on said track, substantially as described.

815,270. PROPULSION OF VESSELS. THADDEUS DAVIDS, Little Neck, N. Y. Filed May 9, 1905. Serial No. 259,628.



Claim.—1. A vessel provided with an open tube extending from the bow to the stern and having a propeller located at the stern and outside of and directly at the rear open end of the said tube.

2. A vessel provided with an open tube extending from the bow to the stern, the rear portion of said tube being bifurcated, and hav-

ing a propeller located directly at the rear open ends of the branches of the tube, and beyond and outside the ends of said tube.

3. A vessel provided with an open tube extending from the bow to the stern, the rear portion of said tube being bifurcated and each branch thereof half round in cross-section, and having a propeller located at the open ends of the branches of the tube.

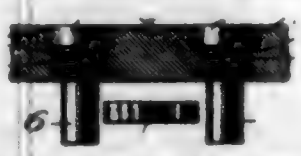
4. A vessel provided with an open tube extending from the bow to the stern and having a propeller located at the stern and outside of and directly at the rear open end of the tube; the area in cross-section of the rear end of the tube corresponding substantially to the area of the sweep of the propeller-blades.

5. The combination with a vessel having an open tube extending through the hull, said tube being bifurcated, of a propeller located at the rear open end of the branches, and a propeller-shaft located between the branches of the tube.

6. A vessel having an open tube extending through the hull, and a propeller located at the stern and outside of and directly at the rear open end of the tube; the area in cross-section of the tube corresponding substantially to the area of the sweep of the propeller-blades.

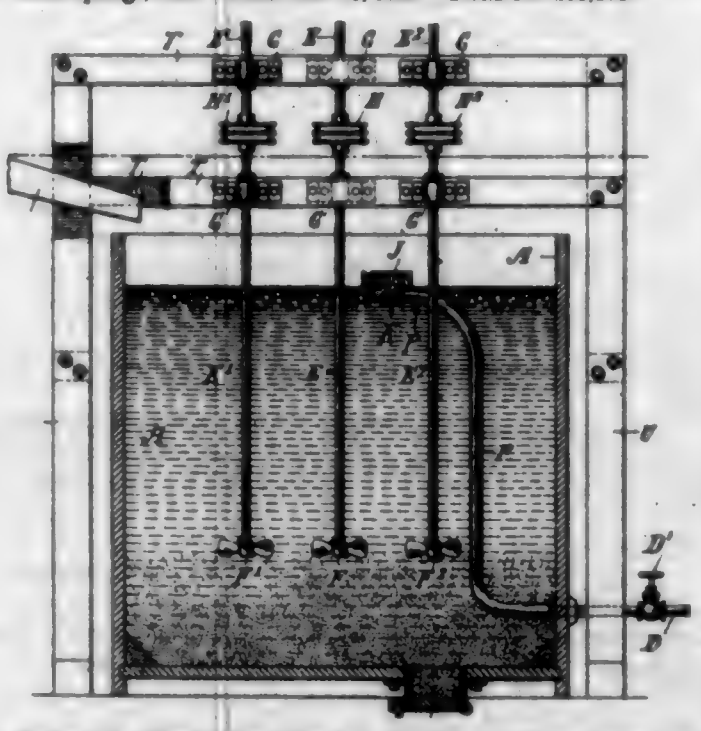
7. A vessel having an open tube extending through the hull, and a propeller located at the stern and outside of and directly at the rear open end of the tube, whereby the water which passes through the tube will be delivered in a solid mass uniformly to the propeller throughout the area of the sweep of the propeller-blades.

815,271. **BANKING-SCREW FOR WATCHES.** CHARLES E. DE LONG, South McAlester, Ind. Ter., assignor to Fred McIntyre, South McAlester, Ind. Ter. Filed June 15, 1904. Renewed Nov. 4, 1905. Serial No. 285,884.



Claim.—A banking-screw support having threaded openings, interchangeable banking-screws having enlarged heads at one end to impinge against said support, threaded portions to engage said threaded openings, and banking portions at the opposite ends, said banking portions in different screws being of different sizes; substantially as described.

815,272. **AGITATING DEVICE.** WALTER B. DEVEREUX, Glenwood Springs, Colo. Filed Mar. 15, 1905. Serial No. 250,170.



Claim.—1. The combination in a metallurgical apparatus, of a tank and a plurality of propellers arranged to rotate on vertical shafts a substantial distance above the bottom thereof and above the level to which the solid material of the charge will settle when the propellers are at rest.

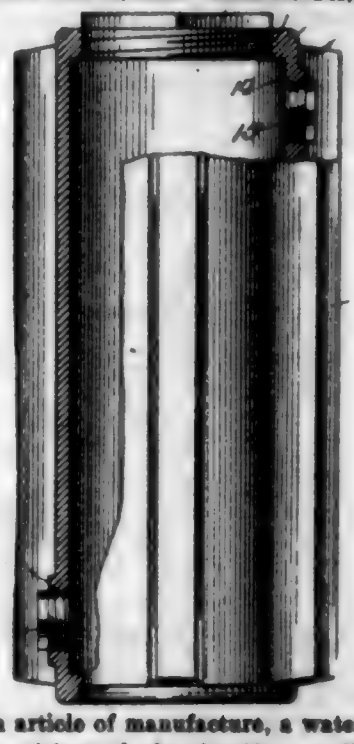
2. The combination in a metallurgical apparatus, of a tank; means for decanting the liquid contents thereof; and a plurality of propellers each arranged to rotate on a vertical shaft within the tank a substantial distance above the bottom thereof and above the level to which the solid material of the charge will settle when the propeller is at rest.

815,273. **WATER-HEATING ATTACHMENT FOR FURNACES.** GEORGE E. DIXON, Chicago, Ill. Filed Feb. 16, 1905. Serial No. 245,881.



Claim.—As an article of manufacture, a water-heater for furnaces comprising the annular shell of heat-conductive material provided with the hollow depending ribs 11 on its under side and with the converging solid ribs 13 surrounding its central opening, substantially as described.

815,274. **WATER-HEATING ATTACHMENT.** GEORGE E. DIXON, Chicago, Ill. Filed Feb. 16, 1905. Serial No. 245,882.



Claim.—As an article of manufacture, a water-heating attachment for flues, comprising a body of uniform stellate cross-section inclosing a chamber of like form, said body having apertures at opposite ends and two apertures in its side, and removable closures for said apertures.

815,275. **MALT-STIRRING APPARATUS.** JOHN F. DORNFELD, Chicago, Ill. Filed Apr. 18, 1905. Serial No. 255,189.

Claim.—1. A curved stirrer-arm for malt-stirring apparatus, said arm having a sharpened outer edge and being provided with a blade pivoted to its forward end.

2. A curved stirrer-arm for malt-stirring apparatus having a blade pivoted to its forward end, which blade is provided with a wedging-point.

3. In a malt-stirring apparatus, in combination, a stirrer-arm having a blade pivotally supported with reference thereto; means for moving said arm forward and backward; and means for rotating said arm in the plane of its to-and-fro travel.

4. In a malt-stirring apparatus, in combination, a stirrer-arm having a blade pivotally mounted thereon near its outer end; means for moving said arm forward and backward; and means for rotating said arm in the plane of its to-and-fro travel.

5. In a malt-stirring apparatus, in combination, a curved stirrer-arm having a sharpened outer edge and a blade pivoted to its forward end; means for rotating said arm; and means for moving said arm forward and backward.

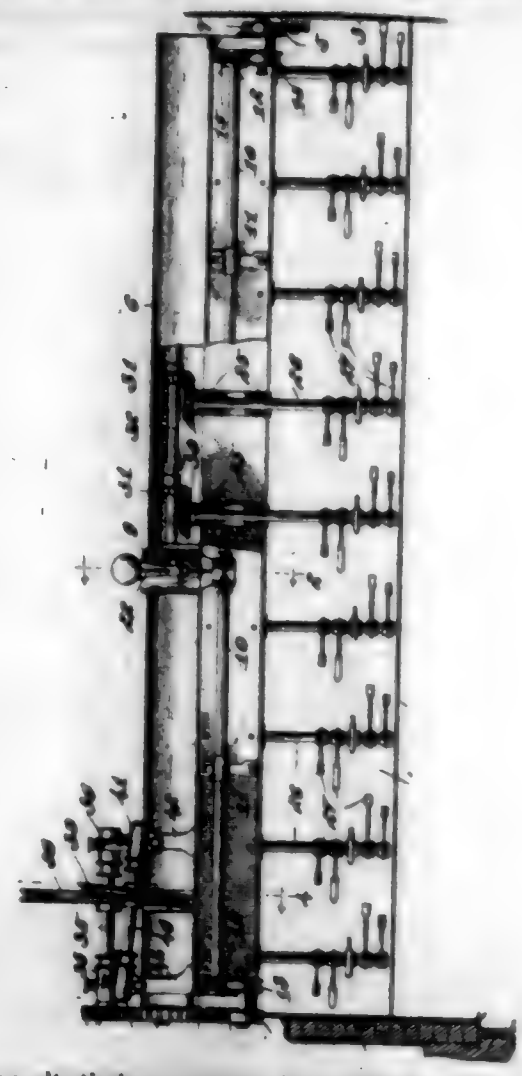
6. In a malt-stirring apparatus, in combination, a traveling carriage; a shaft supported in said carriage, which shaft is adapted to be rotated in the plane of the travel of its carriage; and a stirrer-arm fixed to said shaft, which arm has a blade pivoted to its forward end.

7. In a malt-stirring apparatus, in combination, a traveling carriage; a rotatable shaft supported in said carriage; and a curved stirrer-arm fixed to said shaft, which arm has a sharpened forward edge and a blade pivoted to its forward end.

8. In a stirring apparatus, in combination, a pivotally-supported stirrer-blade adapted to be passed through the substance to be stirred; means for advancing the blade bodily; and means for moving the blade in an orbit lying in the plane of the advancing movement of said blade.

9. In a malt-stirring apparatus, in combination, a traveling car-

riage; means for supporting said carriage; a stirrer-shaft rotatably mounted in said carriage; a stirrer-arm fixed with relation to said stirrer-shaft; a blade pivoted to the forward end of said stirrer-arm, a drive-shaft; a gear connection between said drive-shaft and said stirrer-shaft; a feed-shaft mounted on said carriage; a feed-chain stationary with reference to the travel of said carriage; a drive connection between the feed-shaft and said feed-chain; and a differential driving connection between the drive-shaft and the feed-shaft, whereby the feed-shaft may be rotated in either direction.



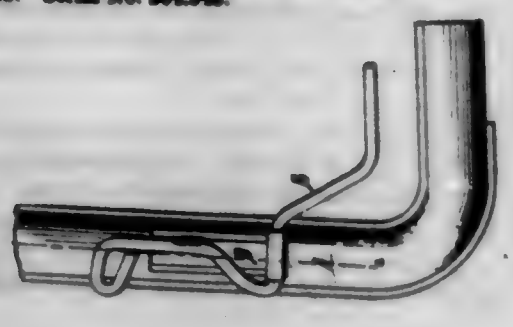
10. In a malt-stirring apparatus, in combination, a traveling carriage; means for supporting said carriage; vertical stirrer-shafts rotatably mounted in said carriage; a curved stirrer-arm fixed upon the lower end of each of said stirrer-shafts; a blade pivoted to the forward end of each of said stirrer-arms; a drive-shaft; gear connections between said drive-shaft and said stirrer-shafts; a feed-shaft mounted on said carriage; a feed-chain stationary with reference to the travel of said carriage; a drive connection between the feed-shaft and said feed-chain; and a differential driving connection between the drive-shaft and the feed-shaft, whereby the feed-shaft may be rotated in either direction.

11. A stirrer-blade for rotary stirring apparatus, having a body portion curved, with a radius smaller than that of its orbital movement.

12. A stirrer-blade for rotary stirring apparatus, pointed at its forward end and having a body portion curved, with a radius smaller than that of its orbital movement.

13. A stirrer-blade for rotary stirring apparatus, having a body portion curved, with a radius smaller than that of its orbital movement, and adapted to be pivotally supported at a point nearer to one of its ends than the other.

815,276. TUBULAR LANTERN. ERNEST C. EVERETT, New York, N. Y., assignor to E. E. Dietz Company, New York, N. Y. Filed June 12, 1905. Serial No. 264,949.

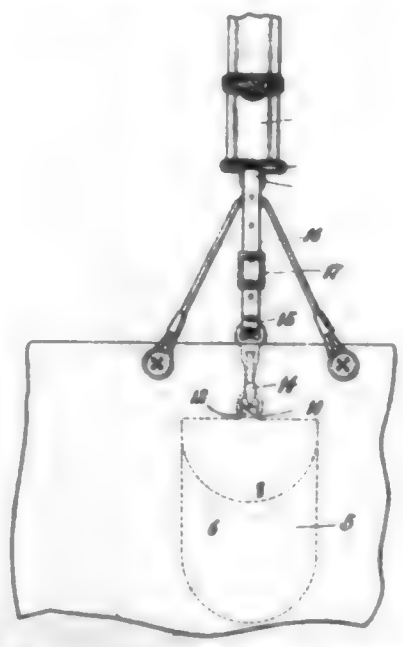


Claim.—1. The combination of a lantern-tube having slits, a lever, and an attaching-plate provided with a bearing for the lever and arranged against the outer side of the tube between the slits and against the inner side of the tube beyond said slits, substantially as set forth.

2. The combination of a lantern-tube having slits, a lever, and an attaching-plate provided with a lever-bearing which forms a stop limiting the movement of the plate in the slits, said plate being arranged against the outer side of the tube between the slits and against the inner side of the tube beyond said slits, substantially as set forth.

3. The combination of a lantern-tube having slits, a lever, and an attaching-plate provided with a lever-bearing consisting of a main portion which is open on the rear side of the plate for the introduction of the wrist of the lever and end portions which extend beyond the side edges of the plate and embrace the wrist of the lever, said plate being arranged against the outer side of the tube between the slits and against the inner side of the tube beyond said slits, substantially as set forth.

815,277. PURSE AND MEANS FOR SUSPENDING THE SAME. JOSEPH FACHTH, Hartford, Conn. Filed Feb. 17, 1905. Serial No. 246,060.



Claim.—1. The combination, with a purse or receptacle having a slot in its back, of an eye or loop secured to the front and inserted through the slot; a flap folded over the front; a locking device inserted through the eye or loop; and means for suspending said locking device.

2. The combination, with suspender-ends, and with a buckle-loop connected therewith, of a purse hung from said buckle-loop, and a detachable connection between the buckle-loop and said purse.

3. A purse comprising a pocket having a slotted flap projecting from its rear portion, and adapted to be folded over the mouth of the pocket, an eye or loop secured to the front, and inserted through the slot in the flap, combined with a suspending device, and a snap-hook carried by said suspending device, and inserted in the eye or loop.

4. A purse comprising a pocket having a slotted flap projecting from its back and a front having an eye or loop secured thereto, and inserted in the slot of the flap, combined with a snap-hook inserted in the eye or loop, and a strap carrying said snap-hook, and adapted to secure the parts to a suspending device.

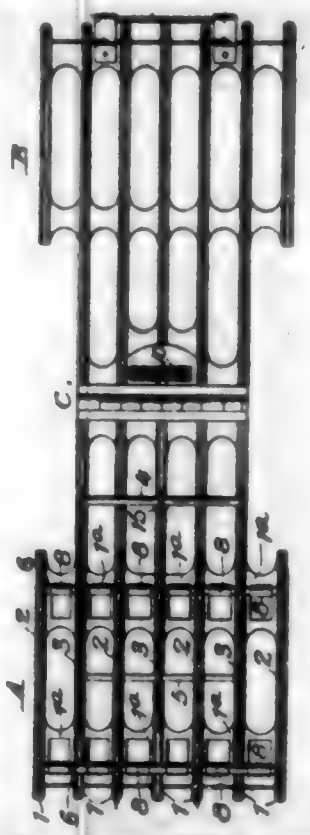
5. The combination, with suspender-ends, and with a buckle-loop connected therewith, of a purse having an eye or loop; and a strap attached to said eye or loop, and detachably connected to the suspenders.

815,278. HAIR-WAVER. HENRY P. FISKE, New York, N. Y., assignor to Isaac W. Parmenter, New York, N. Y. Filed Oct. 24, 1905. Serial No. 284,211.

Claim.—1. A device for the purpose specified, comprising a back-frame, a plurality of combs fixed to said back-frame, a plurality of combs mounted slidably in said back-frame, said slidable combs alternating with the fixed combs, means connecting the slidable combs rigidly together, means for holding the hair in place in the combs, and a collared screw, mounted in the back-frame, for moving the gang of slidable combs and for holding them where set.

2. A device for the purpose specified, comprising a back-frame,

a plurality of combs fixed in said back-frame throughout their entire length, a plurality of combs alternating with the fixed combs and slidably mounted in guides in the back-frame, means connecting the slidable combs rigidly together in a gang, means for holding the hair in place in the combs, and a screw device, mounted in the back-frame for moving the gang of slidable combs and holding them where set.



3. A device for the purpose specified, comprising a back-frame, a plurality of combs fixed to said back-frame, a plurality of combs mounted slidably in said back-frame, said slidable combs alternating with the fixed combs, means connecting the slidable combs rigidly together, a screw device for moving the gang of slidable combs and holding them where set, a cover-section hinged to the back-frame and adapted to fold over onto the comb-teeth and house their points said cover-section being in a single piece, and means for securing the cover-section in place when folded down on the teeth.

4. A device for the purpose specified, comprising a back-frame having parallel ribs of U shape in cross-section, secured rigidly together, a plurality of combs fixed by their backs in the hollows of some of said ribs, a plurality of slidable combs alternating with the fixed combs and mounted with their backs engaging the hollows in the other ribs of the back-frame, transverse bars connecting the slidable combs together rigidly, said fixed and slidable combs being shorter than the back-frame in which they are mounted, a screw device for moving the gang of fixed combs and holding them where set, and means for holding the hair in place in the combs.

5. A device for the purpose specified, comprising a back-frame and a cover-section, of substantially like construction, hinged together end to end and each provided with a plurality of parallel grooves extending longitudinally of the frame, combs secured by their backs in some of the grooves of the back-frame, similar combs mounted slidably in the other grooves of the back-frame, the fixed and slidable combs alternating with each other, means rigidly connecting the slidable combs, a screw device for moving and holding in position the gang of sliding combs, and reciprocal devices on the cover-section and fixed combs for securing said section in position with its grooves housing the teeth of the respective combs.

6. A device for the purpose specified, comprising a back-frame, four combs fixed by their backs to said frame and disposed parallel, with three spaces of substantially equal width between them, three combs slidably mounted in the respective spaces between the fixed combs, and connected rigidly together, a screw device for operating said sliding combs, a cover-section for holding the hair in place, said cover-section being hinged to the back-frame, and means for securing the cover-section in place on the combs.

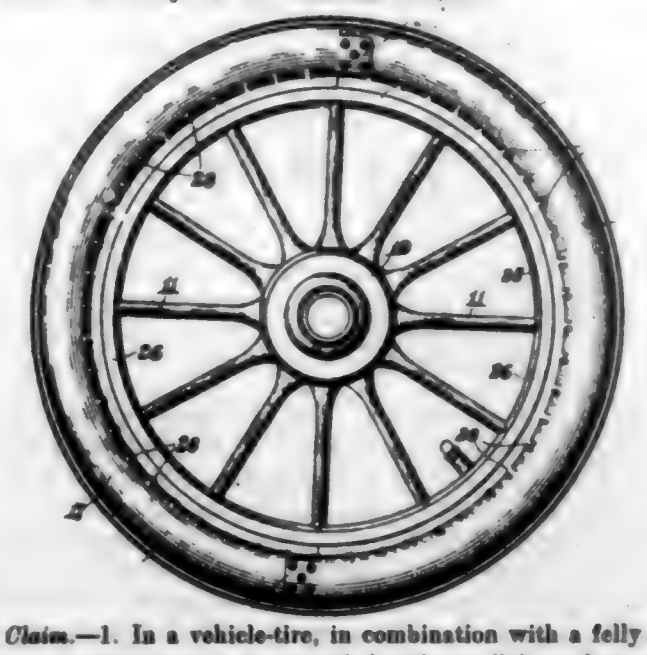
7. A device for the purpose specified, comprising a back-frame, a plurality of combs disposed parallel with each other and fixed by their backs to said back-frame, a plurality of similar combs alternating with the fixed combs, parallel therewith, connected rigidly together, and slidably mounted in grooves in the back-frame, the exterior combs being both fixed combs, a screw device for operating the slidable combs and holding them in place where set, and means for holding the hair in place in the combs.

8. A device for the purpose specified, comprising the back-frame, the fixed combs mounted on said back-frame, the slidable combs mounted in grooves in the back-frame, said slidable combs being connected together and alternating with the fixed combs, the centrally-disposed slidable comb being provided with a screw-thread 11 on its lower edge, the operating-screw 9, mounted and collared in the back-frame and engaging the screw-thread on said comb, and means for holding the hair in the combs.

9. A device for the purpose specified, comprising the back-frame, the fixed combs mounted on said back-frame, the slidable combs mounted in grooves in the back-frame, said slidable combs being connected together and alternating with the fixed combs, the centrally-disposed slidable comb being provided with a screw-thread 11 on its lower edge, the operating-screw 9, mounted and collared in the back-frame and engaging the screw-thread on the comb, the stirrup 15 of U shape, which takes under the rib in which the said middle comb plays, with its upper ends secured to said comb, and means for holding the hair in the combs.

10. A device for the purpose specified, comprising a back-frame, an even number of combs disposed parallel with each other and fixed in said back-frame, an odd number of similar combs slidably mounted in said back-frame, the slidable combs being less in number than the fixed combs, and alternating and parallel therewith in position, means connecting said slidable combs rigidly together, means for operating the gang of slidable combs, and means for holding the hair in place in the combs.

815,279. VEHICLE-TIRE. HENRY C. FOLSOM, West Somerville, Mass. Filed May 19, 1905. Serial No. 261,154.



Claim.—1. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with parallel members coöperating with the sides of said felly, a flexible non-metallic lining secured to the exterior perimeter of said felly, and a pneumatic tube within said metal tube supported by said felly.

2. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with parallel members coöperating with the sides of said felly, a flexible non-metallic lining secured to the exterior perimeter of said felly, said lining extending beyond either side of said felly, and a pneumatic tube within said metal tube supported by said felly.

3. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with parallel members coöperating with the sides of said felly, a pneumatic tube within said metal tube and supported by said felly, and a flexible non-metallic lining interposed between said tubes.

4. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with parallel members coöperating with the sides of said felly, a pneumatic tube within said metal tube and supported by said felly, and a U-shaped member secured to said felly with the parallel members thereof overlapping the parallel members of said metal tube.

5. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with parallel members coöperating with the sides of said felly, a pneumatic tube within said metal tube and supported by said felly, and flexible non-metallic members secured to the interior of said metal tube and the exterior of said felly and overlapping one another.

6. In a vehicle-tire, in combination with a felly of a wheel, two semi-annular metal tube members each provided with an extension

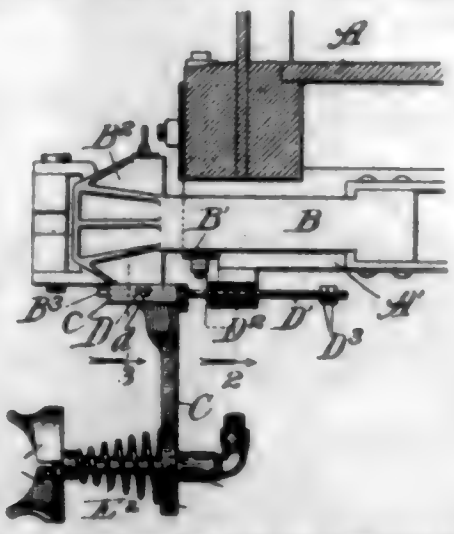
adapted to be secured to the opposite end of the companion member and having parallel members coöperating with the sides of said felly, and a pneumatic tube within said metal tube members supported by said felly.

7. In a vehicle-tire, in combination with a felly of a wheel, two semi-annular metal tube members each provided with an extension adapted to be secured to the opposite end of the companion member and having parallel members coöperating with the sides of said felly, a pneumatic tube within said metal tube members supported by said felly, and means for stiffening said parallel members.

8. In a vehicle-tire, in combination with a felly of a wheel, two semi-annular metal tube members each provided with an extension adapted to be secured to the opposite end of the companion member and having parallel members coöperating with the sides of said felly, a pneumatic tube within said metal tube members supported by said felly, and radial corrugations in said metal tube for stiffening said parallel members.

9. In a vehicle-tire, in combination with a felly of a wheel, an annular metal tube provided with a plurality of projections, and a tread member of flexible non-metallic material secured to said tube by said projections.

815,280. **TRAIN-PIPE-COUPLING SUPPORT.** JOSEPH E. FORSYTH, Chicago, Ill. Filed July 17, 1905. Serial No. 269,990.



Claim.—1. The combination with the draw-bar of a car, of a pipe-coupling support carried thereby to move therewith, and an independent support operative to support the pipe-coupling in case of accident to the draw-bar, for the purpose set forth.

2. The combination with the draw-bar of a car, of a pipe-coupling support carried thereby to move therewith, and means serving to disconnect said support from the draw-bar and sustain the pipe-coupling in case of accident to the draw-bar, for the purpose set forth.

3. The combination with the substructure of a car and a draw-bar connected therewith, of a shearingly-connected pipe-support carried by said draw-bar, and an independent supporting device for the pipe-support having lost-motion connection and possessing sufficient strength to detach the pipe-support from the draw-bar and sustain said support and its load, in case of breakage of the draw-bar or its connections.

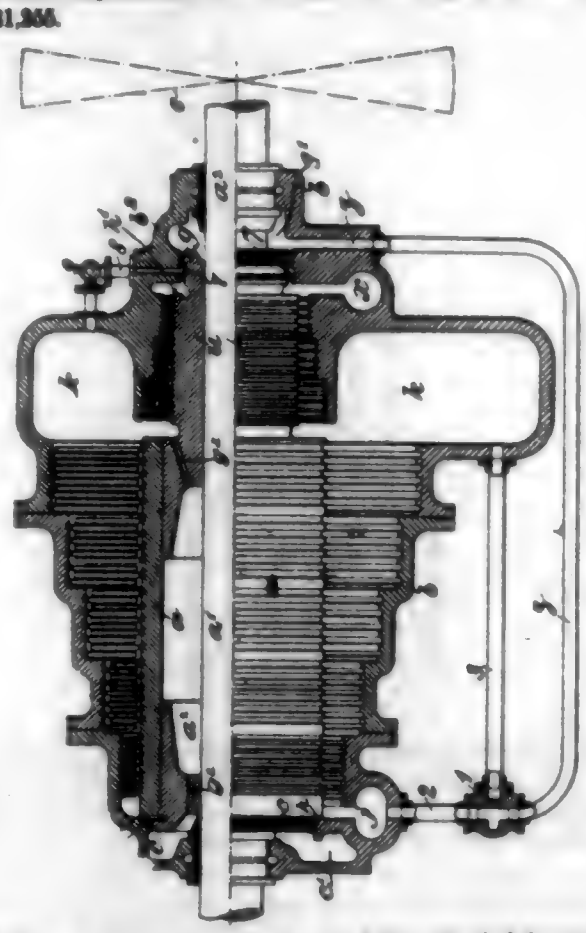
4. The combination with the substructure of a car and a draw-bar connected therewith, of a pipe-coupling support having slide connection with the draw-bar, relatively weak means for causing said support to move operatively with the draw-bar, and relatively strong lost-motion connections between said support and the substructure of the car, for the purpose set forth.

5. The combination with the substructure of a car, and a draw-bar connected therewith, of a pipe-coupling support shearingly and slidably connected at its upper end with the coupling-head of the draw-bar, a bracket connected with the substructure of the car, and a relatively strong rod connected with said coupling-support and bracket and having limited sliding movement with relation to said bracket, for the purpose set forth.

6. The combination with the substructure of a car, of a draw-bar having a coupling-head provided at its lower portion with a guide, a coupling-support having its upper end slidably mounted on said guide, a transverse shearable pin connecting the coupling-support with said guide, a bracket depending from the substructure of the car, a bolt connecting the upper end of the coupling-support and bracket and permitting limited relative motion therebetween, and a pipe-coupling connected with the lower end of said coupling-support.

7. A device for the purpose set forth, comprising a coupling-support provided at its upper end with a guide and at its lower end with a pipe-receiving head, and means for connecting said coupling-support with the substructure of a car independently of the draw-bar of the car, for the purpose set forth.

815,281. **STEAM-TURBINE.** HUGH F. FULLAGAR, Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 18, 1904. Serial No. 221,355.



Claim.—1. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end thereof and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second piston, and means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

2. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and in contact with and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second piston, and means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

3. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inner end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second piston, means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust, and means for leading to exhaust steam that will have escaped past the said two pistons in the directions indicated.

4. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a

direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second drum adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, and means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

5. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and in contact with and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second drum adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, and means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

6. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second drum adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and in contact with and located at the inlet end thereof, and means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

7. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum a resultant end thrust in the direction opposite to the aforesaid direction, a second drum adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for peripherally of said second piston retarding the escape of steam between said second piston and said casing and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust, and means for leading to exhaust steam that will have escaped past the said two pistons in the directions indicated.

8. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with and fast to the first-mentioned drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, and means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

9. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and in contact with and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with and fast to the first-mentioned drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, and means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

10. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with and fast to the first-mentioned drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and in contact with and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, and means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

11. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with and fast to the first-mentioned drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, packing means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston, means for causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust, a passage leading from an annular space at the end of said packing means nearer to said second drum to an exhaust-space, a valve adapted to control the flow of steam through said passage, and packing means located between said passage and the other end of said second piston and adapted when said valve is open to prevent steam that has leaked past the first-mentioned packing means from passing to said second drum.

12. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end of said drum and less in diameter than said end, means for peripherally of said piston retarding the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with and fast to the first-mentioned drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, passages leading from the end of said second piston opposite to said second drum, from the inlet end of the first-mentioned drum, and from an exhaust-space, a three-way valve to which said passages lead and which is adapted to enable said end of said piston to be placed into communication either with the inlet of the first-mentioned drum or with said exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, and means for

when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

13. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end thereof and less in diameter than said end, means for retarding peripherally of said piston the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, a second drum coaxial with, fast to, and having its exhaust end adjacent to the exhaust end of the aforesaid drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, and means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

14. A steam-turbine comprising a bladed drum, a piston fast to said drum and located at the inlet end thereof and less in diameter than said end, means for retarding peripherally of said piston the escape of steam between said piston and the turbine-casing in a direction away from said drum and for causing said steam to exert upon said drum an end thrust in the direction opposite to the aforesaid direction, said piston and drum being adapted to allow steam that has escaped past said means to pass through them into the exhaust-space of said drum, a second drum coaxial with, fast to, and having its exhaust end adjacent to the exhaust end of the aforesaid drum and adapted by blading for rotation in the direction opposite to that for which the first-mentioned drum is bladed, a second piston fast to said second drum and located at the inlet end thereof, means for enabling that end of said second piston which is farther from said second drum to be placed into communication either with the inlet of the first-mentioned drum or with an exhaust-space according as the first-mentioned or the second-mentioned drum is to be used, said second piston and second drum being closed to the passage through them of steam that has escaped past the second piston to the end thereof farther from said second drum, and means for when said end of said second piston is in communication with said inlet retarding peripherally of said second piston the escape of steam between said second piston and said casing from said end of said second piston and causing the last-mentioned steam to produce on said second piston an end thrust in the direction opposite to that of the first-mentioned end thrust.

15. A reversible turbine comprising a plurality of opposed sets of blades, and controllable means for placing both ends of a set of blades not developing power in communication with the exhaust.

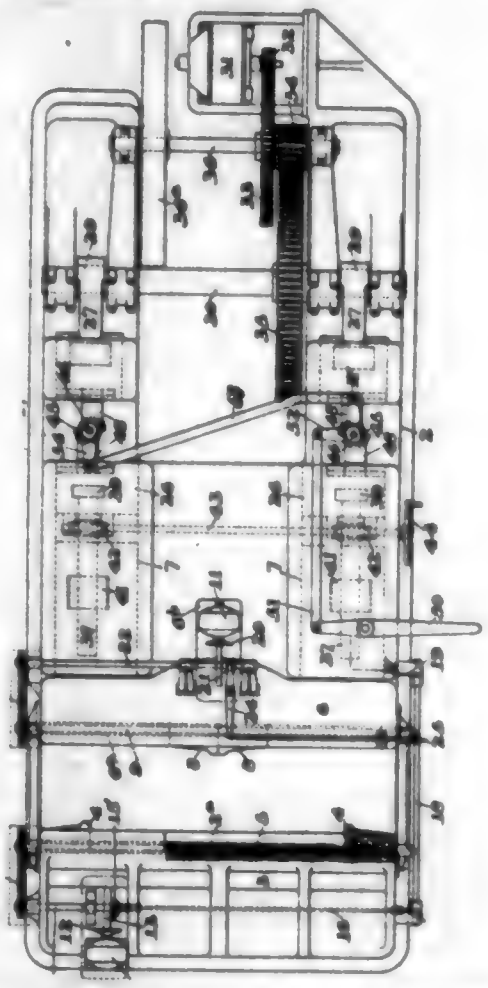
815,282. MACHINE FOR BENDING AND STRAIGHTENING METAL. Kirtland C. Gardner, Pittsburg, Pa., assignor to United Engineering & Foundry Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Nov. 27, 1905. Serial No. 289,154.

Claim.—1. In a bending or straightening press, a head, a pair of dies or anvils slidably mounted in guides of the head, a screw-shaft having oppositely-threaded portions engaging the anvils or dies, a motor for operating the screw-shaft, and means for reversing the direction of motion of the screw-shaft without reversing the motor; substantially as described.

2. In a bending and straightening press, a pair of laterally-adjustable dies or anvils, an oppositely-threaded screw-shaft engaging the same, a motor for operating said shaft, and gearing intermediate the motor and shaft, whereby the motion of the latter may be stopped without stopping the motor; substantially as described.

3. In a bending and straightening press, a pair of laterally-adjustable dies or anvils, an oppositely-threaded screw-shaft engaging the same, a motor for actuating said shaft, and gearing intermediate the motor and shaft arranged to permit the shaft to be stopped or reversed without stopping or reversing the motor; substantially as described.

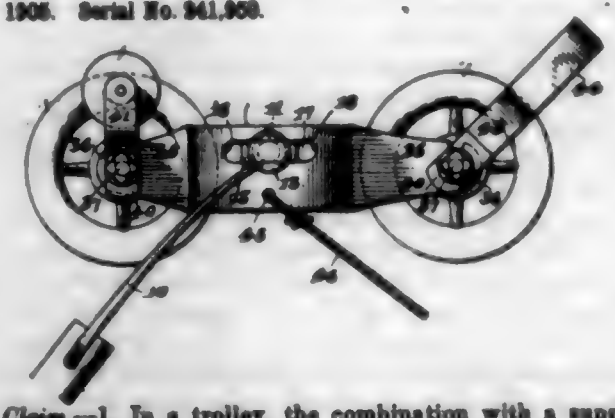
4. In a bending or straightening press, a head, a pair of dies or anvils slidably mounted thereon, an oppositely-threaded screw-shaft engaging the dies or anvils, a motor having a friction-disk, and gearing intermediate the disk and screw-shaft, such gearing including a friction-wheel and means for shifting said wheel relatively to the friction-disk; substantially as described.



5. In a bending or straightening press, a stationary head, an opposing movable head, dies or anvils in each head mounted for transverse movement, motors for actuating the dies or anvils of the movable and stationary heads, gearing intermediate the motors and the anvils or dies, and lever mechanism for controlling the operation of each of the motors and its gearing from adjacent points; substantially as described.

6. In a bending or straightening press, the combination with fixed and movable bending-heads having laterally-adjustable dies or anvils, and means for adjusting the movable head relatively to the fixed head, such means comprising two separate adjusting mechanisms, one for larger adjustments, and the other for close adjustments; substantially as described.

815,283. TROLLEY. Frank J. Gibbs, Tyrone, Pa. Filed Jan. 30, 1905. Serial No. 241,959.



Claim.—1. In a trolley, the combination with a supporting-pole having upstanding bracket-arms, of a head located between the bracket-arms, a transverse substantially horizontal pivot member connecting the head between its ends and the arms, trolley-wheels located in advance and in rear of the pivot member, and axles for the wheels carried by the head, said axles being disposed lower than the pivot member and the front axle being arranged nearer the axis of said pivot member than the rear axle, whereby the rear end of said head overbalances the front end.

2. In a trolley, the combination with a support, of a pivot member pivotally mounted on the support, and a head movably mounted

on the pivot member and swinging therewith in one direction, said head having a movement on the pivot member in another direction, and said pivot member having a portion thereof located in the path of movement of the head for limiting the swinging movement of said head upon and with respect to the pivot member.

3. In a trolley, the combination with a support, of a pivot member movably mounted on the support, and a swinging head pivotally supported on the pivot member, said pivot member having a portion constituting a stop to limit the swinging movement of the head with respect to said pivot member, said head swinging into and out of engagement with said portion.

4. In a trolley, the combination with a support, of a pivot member pivotally mounted on the support, a swinging head, and a pivot connecting the head and pivot member and extending transversely of the latter, said head being arranged to engage the pivot member upon its swinging movement on the pivot and being thereby limited in said swinging movement.

5. In a trolley, the combination with a support, of a pivot member pivotally mounted on the support, a swinging head, and a pivot connecting the head and pivot member, and extending transversely of the latter, said head having stop-shoulders arranged to abut against the pivot member.

6. In a trolley, the combination with a support, of a pivot member pivotally mounted in the support, a swinging head, and a pivot connecting the head and pivot member and extending transversely of the latter, said head having a depending wall provided with a slot through which the pivot member extends.

7. In a trolley, the combination with a pole having bracket-arms, of a member connecting the arms, a head located over the member and having depending side walls provided with slots through which the member passes, a trolley-wheel carried by the head, and a pivotal connection between the head and member.

8. In a trolley, the combination with a pole having bracket-arms, of a pivot member connecting and journaled upon the bracket-arms, a head comprising a casing located over the pivot member, a depending pivot for the head passing through the pivot member, said head having side walls provided with slots through which the pivot member passes, and trolley-wheels journaled on the head in advance and in rear of the pivot member.

9. In a trolley, the combination with a pole having bracket-arms, of a pivot member connecting the arms, a head extending over and on opposite sides of the pivot member between the arms, an upright pivot connecting the head and member, wheels carried by the head on opposite sides of the member, a series of balls interposed between the head and pivot member and disposed directly about the pivot, and other balls interposed between the pivot member and head directly adjacent to the connections of said pivot member with the bracket-arms.

10. In a trolley, the combination with a pole having upstanding arms provided with eyes, of a pivot member comprising a body portion, journal-pins engaging said body portion and passing through the eyes of the bracket-arms, a head extending over the pivot member and having oppositely-extending ears, wheels journaled to and between the ears, depending walls constituting parts of said head and having slots through which the journal-pins pass, and roller-bearings interposed between the head and body of the pivot member.

11. In a trolley, the combination with a pole having bracket-arms, of a pivot device connecting the arms, a head, a pivot connecting said device and head, a wheel carried by the head, and a positioning-spring carried by the pivot, extending longitudinally of the axis of said pivot device, and transversely of the head, said spring having an interlocked engagement with the device for maintaining the head in a predetermined position.

12. In a trolley, the combination with a support, of a pivot member pivotally carried thereby and having a guideway, a head pivoted on the member and movable therewith and with respect thereto, a wheel carried by the head, and a positioning-spring movable with the head and slidable in the guideway upon the movement of said head with respect to the pivot member.

13. In a trolley, the combination with a support, of a pivot member pivotally mounted thereon transversely of the support and having an offset lug forming a guideway, a head mounted on the pivot member, a substantially upright pivot connecting the member and head and turning in the pivot member, and a leaf-spring secured to the pivot and swinging upon the movement thereof, said spring having a free portion slidable in the guideway formed by the lug.

14. In a trolley, the combination with a pole having spaced bracket-arms, of a pivot member journaled on the bracket-arms, a head carrying a trolley-wheel, a substantially upright pivot carried by the head and journaled in an intermediate portion of the pivot member, offset lugs carried by and spaced from the pivot member on opposite sides of the pivot, and a leaf-spring secured between its ends to the pivot and having its terminal portions slidably bearing against the lugs.

15. In a trolley, the combination with a support, of a member mounted on the support transversely thereof, a head carried by the member and having a trolley-wheel, said member extending transversely of the head, a pivot carried by the head and passing through the member, a carrier-bracket secured to the pivot and turning therewith, and a leaf-spring secured between its ends to the carrier-bracket and having its terminal portions slidably interlocked with the member.

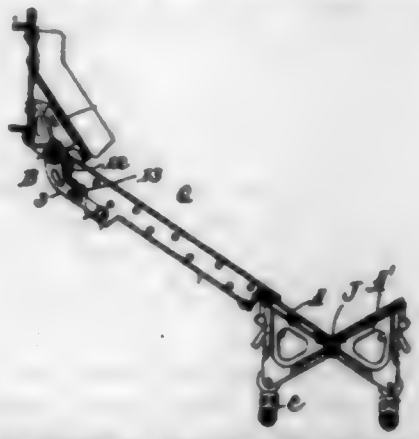
16. In a trolley, the combination with a pole having spaced bracket-arms, of a pivot member connecting the arms, a head mounted on the pivot member and having a substantially upright swinging movement, trolley-wheels located in front of and behind the pivot member, guide-rollers carried by the front portion of the head and located on opposite sides of the front wheel, and rearwardly-extending guide-arms carried by the rear end of the head and having divergently-disposed terminals located on opposite sides of the rear wheel.

17. In a trolley, the combination with a support, of an axle secured thereto a trolley journaled on the axle and having a hub provided with a reduced rotating portion forming a shoulder, and a contact-plate secured to the support and having an opening that receives the reduced portion of the hub said plate bearing against the shoulder and said reduced portion of the hub rotating in the plate.

18. In a trolley, the combination with a pole, of a head having a pivotal connection between its ends with the pole, wheels journaled upon the head and on opposite sides of said pivotal connection, the front wheel being disposed closer to the said connection than the rear wheel, rearwardly-extending guide devices carried by the rear portion of the head on opposite sides of the wheel, and means connected to the head between its ends for raising the rear portion of the head and bringing the guide devices substantially to upright position.

19. In a trolley, the combination with a support, of a member mounted on the support, a head carried by the member and having a trolley-wheel, a pivot carried by the head and passing through the member, a carrier-bracket mounted on the pivot, said bracket and pivot having an interlocking key and keyway connection, a flange forming a part of said bracket, and a spring secured to the flange and engaged with the said member.

815,284. GRAVITY DROP-DOOR. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed Apr. 20, 1905. Renewed Feb. 5, 1906. Serial No. 300,511.



Claim.—1. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having downturned side flanges and united to form a unitary structure, hinge mechanism for supporting one side of said structure having its pivotal axis transverse to the flanges thereof and removable means for supporting the opposite side of said structure.

2. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having downturned side flanges and longitudinal cleats secured to the opposite ends of said sections, in combination with hinge mechanism adapted to support one side of said door having its pivotal axis transverse to the flanges thereof and removable detent means adapted to support the opposite side of said door.

3. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having downturned side flanges, hinge mechanism with its axis transverse to said flanges, adapted to support one side of said door, and a longitudinal cleat joining the opposite ends of the said sections and forming a continu-

ous bearing-surface for the free edge of the door, in combination with removable detent means for supporting the said free edge.

4. A structural valve-door for dumping-receptacles, comprising a plurality of flanged sheet-metal sections united by their adjacent flanges to form a unitary structure, cleats respectively secured to the opposite ends of said sections and a hinged support for said door having its pivotal axis transverse to the flange-joints.

5. A structural valve-door for dumping-vehicles, comprising a plurality of sheet-metal sections formed with downturned side flanges and longitudinal cleats uniting said sections to form a unitary structure, in combination with hinge mechanism for said structure connected with the side flanges thereof and means for supporting the free ends of said sections.

6. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections formed with downturned side flanges and longitudinal cleats uniting said sections to form a rigid unitary structure, in combination with hinge-links pivotally joined at their ends respectively to said flanges and to a part supported by the receptacle beyond the ends of said sections, and means for removably supporting the opposite ends of said sections.

7. A structural valve-door for dumping-receptacles, comprising a plurality of united sheet-metal sections respectively formed with body portions and downturned side flanges, and hinge mechanism for connecting said door with the receptacle, in combination with said body portions extended beyond the free ends of the side flanges and a longitudinal cleat secured to the free ends of said flanges adjacent to said extended body portions.

8. A structural valve-door for dumping-receptacles, comprising a plurality of united sheet-metal sections formed with body portions and contiguous downturned side flanges, and hinge mechanism for supporting one side of the door secured to the flanges thereof, in combination with extensions of said body portions at the opposite side of said door beyond the free ends of said side flanges and a longitudinal cleat secured to the under sides of said extensions to form a bearing-surface.

9. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections respectively having body portions and downturned side flanges, angle-bars disposed along the ends of said sections and inwardly-bent tabs on said flanges secured to said angle-bars, in combination with hinge mechanism secured to said sections along one side of the door with its pivotal axis transverse to said side flanges, and means for removably supporting the opposite side of said door.

10. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections, respectively having body portions and downwardly-bent side flanges, an angle-bar disposed along the hinge ends of said sections and inwardly-bent tabs on said flanges secured to said bar, in combination with extensions of said body portions at the opposite ends thereof beyond their side flanges and an angle-bar having a flange adjacent to said extensions and another flange secured to the ends of said side flanges.

11. A structural valve-door for dumping-receptacles, comprising a plurality of united sheet-metal sections respectively having body portions and downturned side flanges, the ends of said flanges being bent inwardly to form tabs, and the said body portion being extended beyond said tabs, in combination with a Z-bar having its intermediate flange or web secured to said tabs with its two flanges respectively adjacent said extended body portions and the lower edges of said side flanges.

12. A structural valve-door for dumping-receptacles, comprising a plurality of united sheet-metal sections respectively having body portions and downwardly-bent side flanges, auxiliary side flanges on said side flanges and inwardly-bent tabs formed on the ends of said flanges, the said body portions being extended beyond said tabs, in combination with a Z-bar having its web secured to said tabs and with its two flanges disposed respectively adjacent to said extended body portions and said auxiliary side flanges.

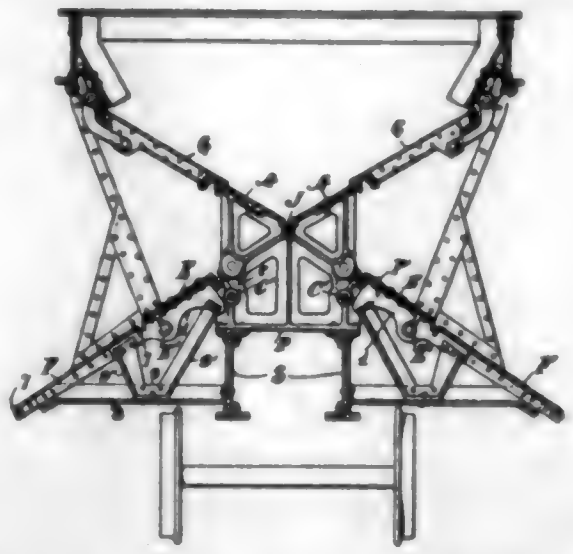
13. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having downturned side flanges provided with hinge-pin apertures, hinge members respectively engaging in said apertures, and means for supporting said hinge members from the receptacle.

14. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having body portions and contiguous downturned side flanges, and a longitudinal cleat secured to and uniting the ends of said sections, in combination with supporting hinge-links pivoted respectively to said flanges and the receptacle on opposite sides of said cleat, and means for supporting the free ends of said sections.

15. A structural valve-door for dumping-receptacles, comprising a plurality of sheet-metal sections having body portions and downturned side flanges, a longitudinal cleat secured to and uniting the ends of said sections and so disposed with respect to said united sections as to engage with the supporting hinge-links, in combination with said hinge-links disposed normally beneath said cleat and pivotally connected with said side flanges and the receptacle respectively on opposite sides of said cleat.

16. A structural valve-door for dumping-receptacles, comprised of a plurality of contiguous sheet-metal sections having downturned side flanges of less length than the body portions of said sections, in combination with angle-bars secured to the opposite ends of said side flanges and hinge mechanism connected with said flanges for supporting the door from the receptacle.

815,285. GRAVITY-CHUTE. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed May 25, 1905. Renewed Feb. 5, 1906. Serial No. 299,513.



Claim.—1. In a dumping-vehicle, the combination with the longitudinal center sill thereof and a saddle-piece mounted thereon, of structural supporting-frames hung respectively on opposite sides of said saddle-piece and braced against the opposite sides of said center sill, and inclined discharging-chutes supported upon said framework.

2. In a dumping-vehicle, the combination with the longitudinal center sill thereof and a saddle-piece mounted thereon, of structural supporting-frames hung respectively on opposite sides of said saddle-piece and braced against the opposite sides of said center sill, an inclined discharging-chute supported on said frames having respectively inner sections pivoted to said frame and outer sections fixed thereto.

3. In a dumping-vehicle, the combination with the longitudinal center sill thereof, of a saddle-piece mounted thereon, inclined sheet-metal chutes located on opposite sides of the sill and connected at their upper convergent ends with the said saddle-piece and transverse struts secured respectively to said center sill and the free ends of said chutes.

4. In a dumping-vehicle, the combination with the longitudinal center sill thereof and a saddle-piece mounted thereon, of inclined chutes located respectively on opposite sides of the sill and connected with said saddle-piece, transverse struts bracing said chutes from the sill and stays depending from the saddle to reinforce said transverse struts.

5. In a dumping-vehicle, a longitudinal center sill, a saddle-piece mounted thereon, inclined chutes located respectively on opposite sides of the sill, and transverse struts bracing said chutes from the sill, in combination with a V-shape bracing member respectively having one leg serving as a stay for its adjacent strut and the other extending between said strut and an adjacent portion of the chute.

6. In a dumping-vehicle, a longitudinal center sill, a saddle-piece mounted thereon, inclined chutes located respectively on opposite sides of the sill and transverse struts bracing said chutes from the sill, in combination with bracing members between the struts and said supports formed of angle-bars bent into a V shape and connected at their apices with said struts, with one leg serving as a stay for its adjacent strut and the other as a supporting-brace for the chute-support.

7. In a dumping-vehicle, a longitudinal center sill and a saddle-piece mounted thereon, in combination with inclined discharging-chutes located respectively on opposite sides of the sill, connecting

members joining the upper ends of said chutes with the saddle-piece and transverse struts bracing said chutes from the said center sill.

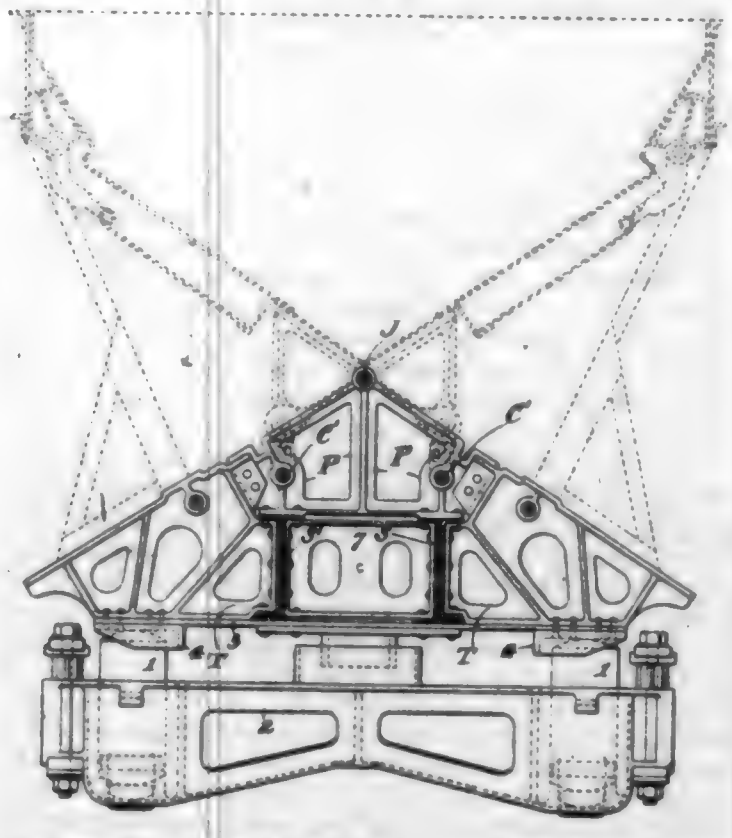
8. In a dumping-vehicle, a longitudinal center sill, a saddle-piece supported thereon, inclined discharging-chutes located respectively on opposite sides of the sill and transverse struts bracing said chutes from said sill, in combination with tension members connecting the upper convergent ends of said chutes to the saddle-piece and pivoted chute-sections, adapted to serve as valves, carried by said members.

9. In a dumping-vehicle, an outer discharging-chute composed of a plurality of flanged plates, united to form a unitary structure, in combination with means for supporting the same from the center sill of the vehicle comprising tension members and transverse struts respectively secured to the flanges of said plates.

10. In a dumping-vehicle a longitudinal center sill, a saddle-piece thereon and an inclined discharging-chute composed of a plurality of flanged plates united to form a unitary structure, in combination with a sheet-metal connecting member secured to said saddle-piece and to both sides of the upper ends of the contiguous flanges of said plates, and means for supporting the outer end of said chute.

11. In a dumping-vehicle, a longitudinal center sill, a saddle-piece thereon and an outer inclined discharging-chute composed of a plurality of flanged plates, in combination with a folded sheet-metal tension member secured to the flanges of said plates and movable chute-sections mounted on said members and pivoted to the depending flanges thereof.

815,286. BODY-BOLSTER FOR VEHICLES. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed June 7, 1905. Serial No. 264,091.



Claim.—1. In a vehicle having a center sill, a body-bolster formed of sections surrounding and secured to said center sill, in combination with bearing-seats at the opposite ends of said bolster adapted to transmit the entire weight transmitted therethrough to the side bearings of a truck.

2. In a vehicle having a center sill, a body-bolster comprised of parallel bolster members surrounding said sill and provided with a tension-plate uniting the same, in combination with bearing-seats at the opposite ends of said members adapted to transmit the entire weight transmitted therethrough to the side bearings of a truck.

3. In a vehicle having a center sill, a body-bolster comprising parallel bolster members respectively formed of sections built around the sill, a tie-plate uniting said members and serving as a tension-piece respectively for each of them, bearing-seats at the opposite ends of said body-bolster adapted to transmit the entire weight transmitted therethrough to the side bearings of a truck, and a swivel member located between the bearing-seats.

4. In a dumping-vehicle having a center sill, a body-bolster comprising bolster members surrounding and secured to said sill, a tie-plate extending underneath the sill and fastened to the lower margins of said members, bearing-seats at the opposite ends of the tie-plate adapted to transmit the entire weight transmitted through said body-bolster to the side bearings of a truck and a swivel member mounted centrally thereon.

5. In a dumping-vehicle having a center sill, a body-bolster of substantially triangular shape surrounding and secured to the same, and provided with bearing-seats at its opposite lower apices in or below the horizontal level of said sill, adapted to transmit to the side bearings of a truck the entire weight transmitted through said bolster.

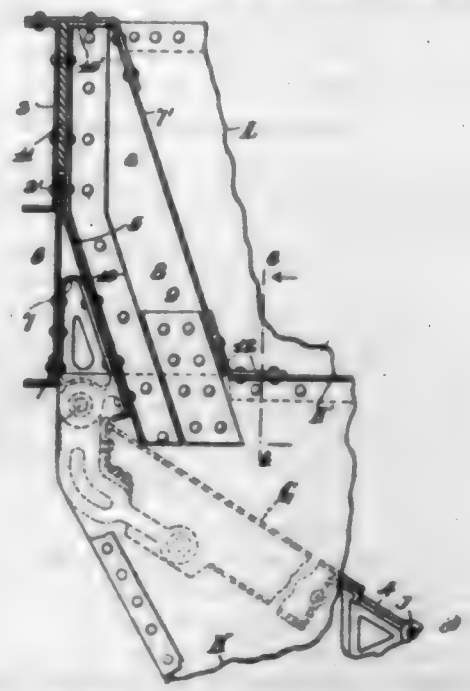
6. In a dumping-vehicle having a center sill, a body-bolster comprised of parallel bolster members of substantially triangular shape, respectively formed of sections surrounding said sill, a tension-plate for the sections uniting said members beneath the sill and bearing-seats adapted to transmit to side bearings of a truck the entire strain transmitted through said members.

7. In a dumping-vehicle having a center sill, a plurality of bolster members formed respectively of saddle-sections mounted on top of the sill and inverted-bracket sections secured to the saddle-sections and the sill, in combination with tension members uniting opposite brackets and bearing-seats on opposite sides of the sill adapted to rest on the side bearings of a truck.

8. A dumping-vehicle having a center sill formed of parallel beams, a plurality of bolster members straddling said center sill and provided with bearing-seats on opposite sides thereof adapted to transmit the entire weight transmitted through said bolster members to the opposite side bearing of a truck, in combination with a straining-piece between said parallel beams and a tension-plate joining the opposite ends of said members.

9. A dumping-vehicle having a center sill, a plurality of bolster members therefor formed respectively of saddle-sections superposed on said sill and provided with alined shaft-journals, spacing means between said saddle-sections and inverted-bracket sections hung from said saddle-sections on opposite sides of the sill and secured thereto, in combination with tension-plates joining said bracket-sections and provided with end bearings and an intermediate swivel member.

815,287. VEHICLE GIRDER AND BULKHEAD. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed June 7, 1905. Serial No. 264,092.



Claim.—1. A dumping-vehicle having its sides respectively composed of three main longitudinal truss members, the uppermost thereof constituting a top chord with respect to the other two and the innermost of the remaining two members constituting a top chord with respect to the other, in combination with spacing means interposed between said two lower members, and bottom dumping-valves for the vehicle pivotally supported on said spacing means.

2. A dumping-vehicle having sides respectively composed of a longitudinal trussed girder arranged to offer greatest resistance to vertical strains and with its upper portion constituting a side wall of the vehicle, in combination with a longitudinal inclined plate disposed inboard of said girder and constituting an adjacent side wall of the vehicle, spacing means interposed between said plate and the lower portion of said trussed girder and dumping-valves for the vehicle pivotally supported on said means.

3. A dumping-vehicle having its side girder composed of upper and lower longitudinal truss members and an inner longitudinal truss member, in combination with spacer-struts interposed between

said inner member and the lower member, hanger-stays depending from said upper truss member and connected with said lower member in the region of its points of connection with said spacer-struts, and pivoted dumping-valves supported from said spacer-struts.

4. A dumping-vehicle having its side girder composed of an upper truss member constituting an upper side wall of the vehicle, a longitudinal plate secured to the lower margin of said member, constituting an adjacent side wall of the vehicle and hanger-stays depending from said upper member, in combination with spacers interposed between said stays and said plate and pivoted dumping-valves supported by said spacers.

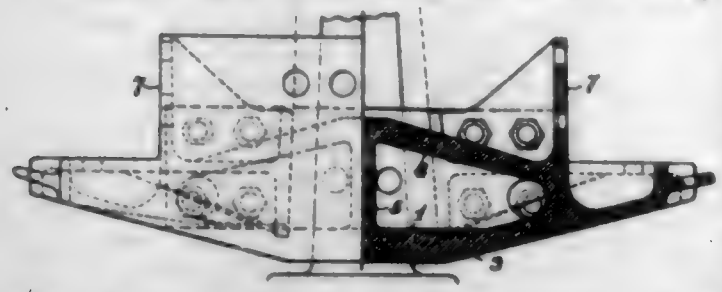
5. A dumping-vehicle having a side girder composed of an upper truss member and an inclined plate secured thereto constituting a side wall of the vehicle, and hanger-stays depending from said member outboard of said plate, in combination with spacers interposed between said hanger-stays and the plate and dumping-valves pivoted directly to said spacers.

6. A dumping-vehicle having a side girder composed of a longitudinal channel-bar constituting an upper side wall of the vehicle, an inclined longitudinal plate secured to the lower margin of said bar, hanger-stays also secured to said bar outboard of the plate, and spacer-struts secured between the hanger-stays and plate, in combination with an angle-bar secured to the ends of said stays and dumping-valves directly pivoted to said spacer-struts.

7. A dumping-vehicle, having end bulkheads and side girders supported by their ends thereon, bottom dumping-valves pivotally connected with the lower margins of said side girders and convergent downwardly, in combination with an intermediate bulkhead below said girders, gusset-sheets disposed between said girders and the intermediate bulkhead flush with the plane of the latter, and angle-irons secured in the angles on opposite sides of said sheets, said angle-irons overlapping the bulkhead and secured to the same and the side girders.

8. A dumping-vehicle, having end bulkheads and side girders supported by their ends thereon, inclined side walls on said side girders, bottom dumping-valves pivotally mounted at the lower margins of said inclined walls and convergent downwardly, in combination with an intermediate bulkhead below said inclined walls, gusset-sheets disposed flush with the plane of said intermediate bulkhead for connecting the same with said side girders, and angle-irons secured in the angles on opposite sides of said sheets and overlapping and secured to said intermediate bulkhead.

815,288. **BUFFER FOR RAILWAY-VEHICLES.** JOHN M. GOODWIN, Mount Vernon, N. Y. Filed June 7, 1905. Serial No. 264,093.



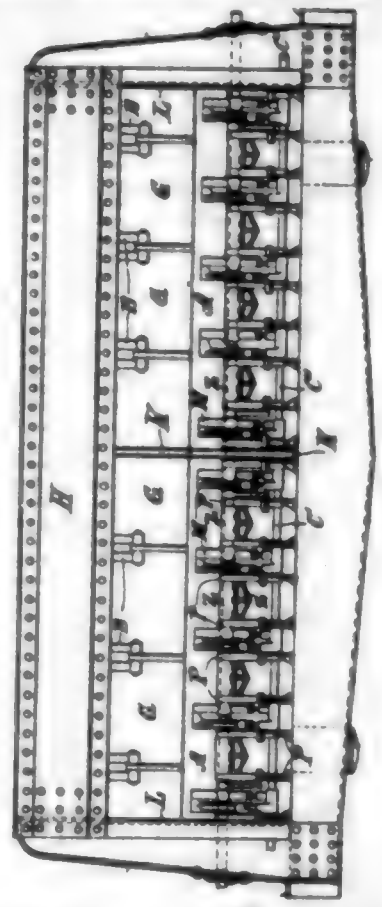
Claim.—1. A buffer comprising a hollow body member adapted to receive the impact of colliding vehicles, and formed with its front and rear walls convergent from the center toward the ends, and means for securing same to the end of a vehicle.

2. A buffer comprising a hollow body member adapted to receive the impact of colliding vehicles, and formed with its front and rear walls convergent from the center toward the ends, and with an interior web disposed between said walls in the direction of the colliding strains, and means for securing said hollow member to the frame of a vehicle.

3. A buffer comprising a body member adapted to receive the impact of colliding vehicles and formed with its front and rear walls convergent from the center toward the ends, portions depending from said member forming an intermediate coupler-space and flanges projecting rearwardly from the ends of said member and said portions, forming a means of attachment therefor to the frame of a vehicle, in combination with a carrier-plate secured to the said depending portions and a coupler borne by said plate.

815,289. **VEHICLE-FRAME CONSTRUCTION.** JOHN M. GOODWIN, Mount Vernon, N. Y. Filed Aug. 2, 1905. Serial No. 272,307.

Claim.—1. A cargo-carrying vehicle having bottom dumping-valves and comprising two upper side girders and a lower central sill, respectively forming the top and bottom chords of a girder-truss, in combination with upright center and end bulkheads for the vehicle supporting the girders from the sill and serving as post members for said truss, and rigid angle-braces between said sill and the end bulkheads for maintaining the latter in fixed upright position.



2. A cargo-carrying vehicle having bottom dumping-valves and a central sill provided with two separated points of support, upright bulkheads located on said sill outside of said points and side girders carried by said bulkheads, said girders constituting the means of support for said valves, in combination with a central post member on the sill, constituting an intermediate support for the side girders, and angle-braces for the end bulkheads to maintain them in fixed upright position with respect to the sill.

3. A cargo-carrying vehicle having its floor formed of bottom dumping-valves, and comprised of two upper side girders and a lower center sill, respectively forming the top and bottom chords of a girder-truss, in combination with vertical end and intermediate bulkheads serving as post members to support said girders from the sill, means for rigidly reinforcing the end bulkheads in vertical position and means for supporting the sill at two points intermediate of the end bulkheads.

4. A cargo-carrying vehicle having bottom dumping-valves and formed of two side girders constituting the margins of the cargo-receptacle from which the dumping-valves are pivotally suspended, a center sill extending beyond the ends of the receptacle and provided with means to support the free ends of said bottom valves, upright bulkheads for the receptacle supporting the ends of side girders thereof from the center sill, in combination with angle-braces between said bulkheads and the ends of the sill to preserve said bulkheads in upright position and means for supporting the sill at points intermediate of the bulkheads.

5. A cargo-carrying vehicle having a center sill, a plurality of saddle-pieces secured thereto, and dumping-valves supported by said pieces, in combination with spacing-struts interposed between said saddle-pieces to form a continuous compression member reinforcing said sill against vertical flexure.

6. A cargo-carrying vehicle having two side girders, and dumping-valves pivoted thereto, a center sill for the vehicle, a plurality of shaft-standards secured thereon, in combination with a shaft journaled in said standards and provided with means to support the ends of said valves, and spacing-struts interposed between said shaft-standards to form a continuous compression member reinforcing said sill against vertical flexure.

7. A cargo-carrying vehicle having bottom dumping-valves and a frame upon which said valves are pivoted comprising two upper side girders, a lower central sill, and upright bulkheads, said bulkheads serving as post members to support the girders from the sill at three or more points and converting said frame into a girder-

truss with two upper separated chords, in combination with shaft-standards secured to said sill between bulkheads, a longitudinal shaft journaled in said standards, valve-supporting brackets on said shaft and spacing-struts between standards, the brackets, standards and struts serving as a compression member to reinforce the center sill.

8. A cargo-carrying vehicle having botttom dumping-valves and a frame upon which said valves are pivoted comprising two top chords or side girders, a single bottom chord or center sill and upright bulkheads serving as post members to support the girders from the sill, the said sill being formed of one or more flanged beams extending beyond the ends of the cargo-receptacle, in combination with reinforcing angle-braces located outside of the receptacle and secured to a vertical web of said sill and also to the end bulkheads thereof, respectively, to preserve the latter rigidly in upright position.

9. A cargo-carrying vehicle having bottom dumping-valves and a girder-frame to which said valves are pivotally connected, comprising two top chords or side girders, a single bottom chord or center sill, and upright bulkheads formed of sheet metal and serving to support the girders from the sill at the ends of the vehicle and at an intermediate point, in combination with reinforcing end braces secured in the angles between the end bulkheads and the sill, and means for supporting said sill at points intermediate of the end bulkheads.

10. In a dumping-vehicle, a cargo-carrying receptacle comprising two side girders and a center sill, extending beyond the ends of said receptacle, sheet-metal bulkheads forming the ends of the receptacle and supporting the side girders thereof from the sill, angle-braces outside of the receptacle and secured between the bulkheads and sill to preserve them in fixed upright position thereon and dumping-valves forming the bottom floor of the receptacle located between the sill and the said side girders.

11. An end bulkhead for cargo-carrying vehicles formed of a plurality of united sheet-metal sections and flanges on opposite margins of one of said sections, extended vertically below the bulkhead and adapted to be secured to the center sill of the vehicle.

12. A sectional end bulkhead for cargo-carrying vehicles, formed of two side sections having inboard flanges, an intermediate section having side flanges secured to said inboard flanges respectively and adapted for connection with the sill of the vehicle.

13. In a cargo-carrying vehicle having a center sill and dumping-valves, an end bulkhead supported on said sill and comprised of united sections, one of said sections being formed with vertical flanges overlapping the sides of the center sill and rigidly connected thereto.

815,290. STRAINER FOR FILTERS. JAMES B. GREER, Pittsburg, Pa., assignor to Greer Filter Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 26, 1904. Serial No. 206,464.



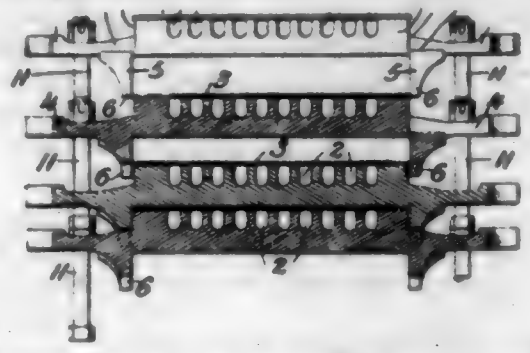
Claim.—1. The combination with a filtering-bed composed of granular material, of a strainer embedded in said material and comprising a series of superposed separated rings and an imperforate dome-shaped head forming a hollow chamber, said rings being supported at their inner edges so as to form continuous spaces between the rings at their outer edges, and a water connection at the bottom of the strainer and opposite the head, substantially as described.

2. The combination with a filtering-bed composed of granular material, of a strainer embedded in said material and comprising a series of superposed separated rings and interior ribs for supporting the rings at their inner edges so as to form continuous spaces between the rings at their outer edges, and a solid or imperforate head, substantially as described.

815,291. PRESS-BOX. LOUIS W. HASKELL and ERWIN W. THOMPSON, New York, N. Y. Filed July 22, 1905. Serial No. 270,845.

Claim.—1. In a press-box for an oil-press of the multiple-box type, a main part having longitudinal lateral sections of less thickness, said sections having downwardly-projecting guides near the ends, and having also on their upper surfaces thinned-out portions near the ends, so that two boxes may telescope and the guides on the one enter the recesses above the thinned-out portions on the other.

2. In a press-box for oil-presses of the multiple type, a main portion having a grating and designed to carry the mat and having its longitudinal sides practically parallel, said sides having lateral sections of reduced thickness, which sections have corner depressions above and corner-guides below, all arranged to permit the telescoping of two contiguous boxes and the entry of the guides on the one into the depressions on the other.



3. In a one-piece press-box for multiple presses, a main portion having a grating and parallel sides, said sides having integral sections of reduced thickness, and provided with flanges below, which afford inner opposing vertical faces, having a somewhat smaller distance from each other than the parallel sides of the main portion, said box having corner depressions above and projecting guides below, whereby two adjacent boxes are always kept in telescope with each other to prevent displacement of the mat, substantially as described.

815,292. SUPPORTING MEANS FOR METALLIC LATHS. MARCELLUS HUDSON, Chicago, Ill., assignor to Frederic Voss, Chicago, Ill. Filed July 30, 1904. Serial No. 218,855.



Claim.—1. A metallic fastener of the class described, comprising a bar, a centrally-disposed neck extending from one edge thereof, and a head on the outer end of said neck provided with shoulders directed longitudinally of the bar.

2. A fastener of the class described comprising a straight bar, a laterally-offset head connected integrally therewith near its center and shoulders on opposite sides of said head at a distance from the bar.

3. A fastener of the class described comprising a straight bar, a laterally-directed non-resilient stem thereon intermediate its ends, a head on said stem and rearwardly-directed shoulders on the head.

4. As an article of manufacture, a sheet-metal bar, a laterally-directed neck or stem on the edge thereof and oppositely-disposed projections or shoulders on each side of said stem extending approximately parallel with the bar.

5. A metallic stud of the class described, having flat faces one of which is provided with a plurality of slots therethrough and fastening means comprising a bar, a laterally-disposed head and a narrow stem connecting said head and bar and adapted to extend through said slots.

6. A metallic stud, comprising a sheet or strip of metal bent to afford parallel flanges each having arranged at intervals throughout its length a plurality of slots and a fastener comprising a bar having a transversely-directed flat head thereon adapted to be inserted through said slots and a stem connecting the head with the bar of a width to permit the fastener being turned in the slot in which engaged.

7. A stud for the purpose specified comprising a sheet of metal bent to afford parallel flanges connected at corresponding edges by an integral web, closely-arranged elongated apertures in said flanges and a fastener comprising a bar and a head each adapted to engage on one of the sides of said flanges and a narrow neck connecting the same and adapted to permit the head and bar to be turned transversely of the slot.

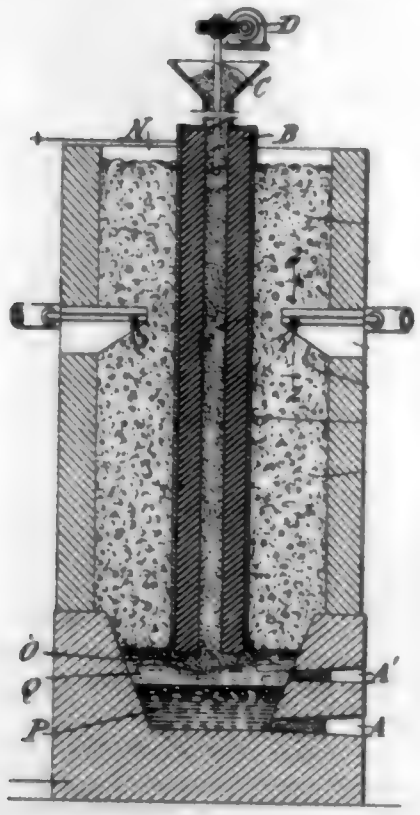
8. A stud comprising a strip or sheet of metal bent to afford parallel flanges and an integral connecting-web uniting corresponding edges thereof, a longitudinal outwardly-turned bead at the middle of said web, said flanges and bead having longitudinally-extended elongated apertures therethrough at close intervals in the length of the stud and adapted to receive fastening means for metallic laths or the like whereby said stud is capable of affording a support for laths on either side of the same or on the bead.

9. The combination with a metallic stud having elongated slots therein of metallic lath secured against the stud fastening means therefor comprising a shouldered head adapted to engage the edges of said slots, a transverse bar and a short integral neck connecting

the same, and adapted, when the head is inserted through the mesh and the slot, to be turned at an angle with the stud and rigidly binding the lath between the bar and stud.

10. In a device of the class described the combination with a metallic stud having a plurality of elongated apertures therein, fastening means adapted to engage in said apertures comprising a back bar, a neck centrally disposed thereon and a plurality of rearwardly-directed shoulders on said neck adapted to engage the margins of said apertures and lock the fastening means to the stud.

815,293. APPARATUS FOR SMELTING IRON ORE. PAUL L. T. HÉROULT, La Praz, France, assignor to Société Electro-Metallurgique Française, Progas, Isère, France, a Corporation of France. Original application filed June 14, 1905, Serial No. 265,174. Divided and this application filed Sept. 7, 1905. Serial No. 277,456.



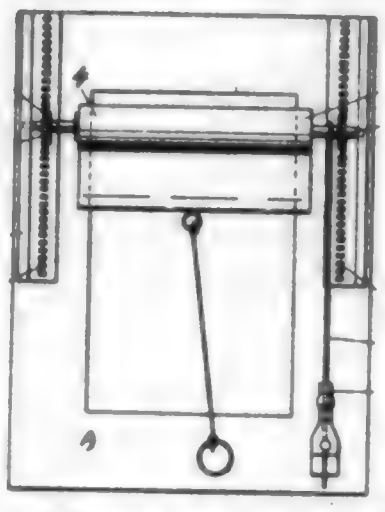
Claim.—1. A furnace for smelting iron or similar ores, having provisions for admitting the introduction of the ore at the top, and for the protection of the carbon from the carbon dioxid generated in the smelting operation, whereby a mixture of carbon monoxid and carbon dioxid is formed and rises through the mass, and having also provisions for introducing oxygen at a point above the point of formation of the carbon monoxid to convert the carbon monoxid rising through the charge into carbon dioxid and increase the heating effect in the furnace.

2. A furnace for smelting iron or similar ores, having provisions for introducing the ore at the top for the protection of the carbon from the carbon dioxid generated in the smelting operation, and provided also with means for supplying the necessary heat by means of the electric current, and having also provisions for introducing oxygen at a point above the point of formation of the carbon monoxid to convert the carbon monoxid rising through the charge into carbon dioxid and increase the heating effect in the furnace.

3. A furnace for smelting iron or similar ores, having provisions for admitting the introduction of the ore at the top, and for the protection of the carbon from the carbon dioxid generated in the smelting operation, and having nozzles projecting within its walls at a point above the point of formation of the carbon monoxid, and means for introducing oxygen through said nozzles to convert the carbon monoxid rising through the charge into carbon dioxid so as to increase the heating effect in the furnace.

4. A furnace for smelting iron or similar ores, having provisions for introducing the ore at the top and for the protection of the carbon from the carbon dioxid generated in the smelting operation, and provided also with means for supplying the necessary heat by means of the electric current, nozzles projecting within the walls of the furnace, and means for introducing oxygen through said nozzles to convert the carbon monoxid rising through the charge into carbon dioxid to increase the heating effect of the furnace.

815,294. WINDOW-SHADE AND ROLLER ADJUSTMENT. ALEXANDER HOLMES, Eureka, Cal. Filed Feb. 14, 1905. Serial No. 245,565.



Claim.—1. A window-shade attachment having in combination a shade-roller, a shaft extending therethrough and having toothed wheels at the ends, racks upon the window-casing engaged by said wheels said racks having flanges by which the wheels are maintained in contact therewith, and said roller comprising telescopic members whereby it is adjustable for different widths of light-openings, a rod having one end bent to clasp the shaft and to allow the latter to turn freely within it, ratchet-teeth on the rod and a spring-pressed pawl adapted to engage the ratchet-teeth and thereby hold the roller in its adjusted position.

2. In a shade-roller adjustment, a roller-shaft having toothed wheels fixed upon its ends to turn in unison, parallel racks with which the teeth engage, a guided slidable bar with notches formed upon it, and with the upper end of which the wheel-shaft is turnably connected, and a spring-pressed pawl engaging the notches of the bar and holding it and the roller at any point of adjustment.

815,295. WHEEL. BENJAMIN HOLT, Stockton, Cal. Filed Dec. 13, 1904. Serial No. 236,699.



Claim.—1. In a wheel of the class described the combination with a suitable hub, spokes, fellies, and tire, of the rim or felly arranged on the inner surface of said tire and clamped into position by the plates 2 and bolts 4, and the blocks 15, having the hole 16, arranged beneath one end of the plates 2 all arranged and operating substantially as shown and described.

2. In a wheel of the class described the combination with a suitable hub, spokes, fellies, and tire, of the plates 2 having the lip 8, arranged one end on the felly and the other end resting on the blocks 15, the said blocks 15 having the hole 16, and the bolt 4, inserted in the hole 16 and having the nut 7 adapted to impinge upon the plate 2 all arranged substantially as shown and described.

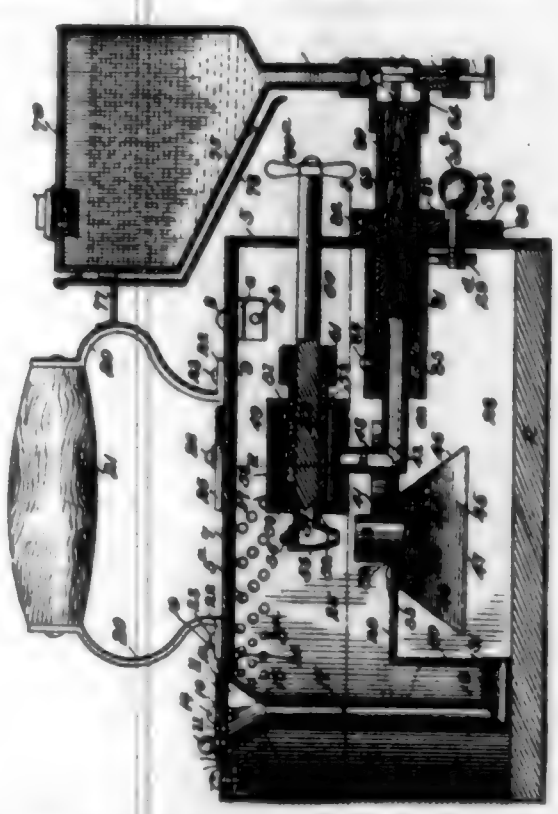
815,296. SAD-IRON. FREDERICK W. KELLERMAN, Weymouth, Mass. Filed Sept. 9, 1904. Serial No. 223,870.

Claim.—1. A sad-iron comprising a closed forwardly-tapered hollow body having air-openings in the forward portions of its sides, and similar openings in the rear wall thereof, means dividing the body into a main chamber and a lower combustion-chamber, a vapor-generator in the main chamber, means independent of the iron for supplying the generator with a vaporizable fluid, a burner and a starting-pan, having movable relation with said generator, and means by which vapor is delivered to the burner from the generator.

2. A sad-iron, comprising a hollow body, a forwardly and rearwardly slidable horizontal partition dividing the body into a main chamber and a combustion-chamber, a vapor-generator in the main chamber, means for supplying the generator with a vaporizable fluid, a burner in the combustion-chamber, a starting-pan on said partition, means by which vapor is delivered to the burner from the generator, and an exit-flue for the products of combustion from the combustion-chamber, located in said main chamber.

3. A sad-iron, comprising a hollow body, means for dividing the interior of the body into an upper and forward main chamber and a combustion-chamber, a vaper-generator in the main chamber, a

burner in the combustion-chamber, means for supplying a vaporizable fluid to the generator, a nozzle for delivering vapor from the generator to the burner, said body having a top plate formed with a series of openings therein above the forward part of the main chamber, and means for carrying off the products of combustion comprising a vertical flue located in the forward part of the main chamber, having communication with said openings at its upper extremity, and with the combustion-chamber at its lower extremity.



4. A sad-iron, comprising a hollow body, means for dividing the interior of the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, a burner in the combustion-chamber, a nozzle for delivering vapor from the generator to the burner, said body having a top plate formed with a series of openings therein above the forward chamber, means for carrying off the products of combustion comprising a vertical flue located in the forward chamber, having communication with said openings at its upper extremity, and with the combustion-chamber at its lower extremity, the top plate being also provided with a rotary valve-plate having openings therein adapted to register with the openings in the said top plate.

5. A sad-iron, constructed of a body comprising a bottom, side walls, having converging portions united at the forward ends thereof, a rear wall uniting the rearward ends of the side walls, and a top plate, means for dividing the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, a burner in the combustion-chamber, means for supplying a vaporizable fluid to the generator, means by which vapor is delivered to the burner from the generator, and a flue located in the forward part of the main chamber, having communication with the combustion-chamber, the rear walls and said converging portions of the side walls each having a series of openings therein leading to the main chamber.

6. A sad-iron, comprising a hollow body, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its forward edge, and dividing the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, means for supplying the generator with a vaporizable fluid, a starting-pan on the partition, a burner supported on the under side of the partition, means by which vapor is delivered to the burner from the generator, and an exit-flue for the products of combustion leading from the combustion-chamber, and located in the forward part of the main chamber.

7. A sad-iron comprising a hollow body having opposite ledges, a forwardly and rearwardly slidable horizontal partition moving on said ledges and dividing the body into an upper and forward main chamber, and a combustion-chamber, a vapor-generator in the upper chamber, means for supplying the generator with a vaporizable fluid, a starting-pan on the partition, a burner in the combustion-chamber, means whereby to deliver vapor from the generator to the burner, and an exhaust-pipe for the products of combustion from the combustion-chamber located in said forward part of the main chamber.

8. A sad-iron, comprising a hollow body, a forwardly and rearwardly slidable partition having a pendent flange at its forward edge, and dividing the body into a main upper and forward chamber and a combustion-chamber, said partition having a longitudinal slot therein, a vapor-generator in the upper part of the main chamber, means for supplying the generator with a vaporizable fluid, a starting-pan on the partition, a burner on the under side of the partition, having a communicating tube extending upwardly therethrough, a nozzle to deliver vapor to said tube from the generator, and a flue in the forward part of the main chamber leading from the combustion-chamber.

9. A sad-iron, comprising a hollow body, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its forward edge, and dividing the body into an upper and forward main chamber and a combustion-chamber, said partition having a longitudinal slot therein, a starting-pan on the upper side of the partition at the inner extremity of the slot, a vapor-generator in the upper part of the main chamber, means for supplying the generator with a vaporizable fluid, a burner supported on the under side of the partition and having a communicating tube extending upwardly therethrough, a nozzle for delivering vapor to said tube from the generator, and a flue in the forward part of the main chamber leading from the combustion-chamber.

10. A sad-iron, comprising a hollow body, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its forward edge and dividing the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, a tank for a vaporizable fluid, means for supplying such fluid to the generator from the tank, a burner, a starting-pan on the partition, means by which vapor is delivered to the burner from the generator, means for regulating the fluid-supply to the generator, means for regulating the vapor delivery to the burner, and an exit-flue for the products of combustion, leading from the combustion-chamber and located in the forward part of the main chamber.

11. A sad-iron comprising a hollow body having a top plate, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its end dividing the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper chamber, means for supplying the generator with a vaporizable fluid, a burner in the combustion-chamber, a starting-pan on the partition, means whereby to deliver vapor from the generator to the burner, and a flue located in the forward part of the main chamber having a branch in communication with the combustion-chamber, said flue being secured at its upper end to the under side of the top plate and the latter having a valve-controlled opening communicating with the flue.

12. A sad-iron, comprising a hollow body having a top plate, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its forward edge and dividing the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, means for supplying the generator with a vaporizable fluid, a starting-pan on the partition, a burner in the combustion-chamber, and means by which vapor is delivered to the burner from the generator, said top plate having a valve-closed opening for the introduction of a torch to ignite the fluid contained in the starting-pan.

13. A sad-iron, comprising a hollow body having forwardly-converging side walls and a rear wall, a forwardly and rearwardly slidable horizontal partition having a pendent flange at its forward edge and dividing the interior of the body into an upper and forward main chamber and a combustion-chamber, a vapor-generator in the upper part of the main chamber, means for supplying the generator with a vaporizable fluid, a burner in the combustion-chamber, a starting-pan on the partition, means by which vapor is delivered to the burner from the generator and an exit-flue for the products of combustion from the combustion-chamber, located in the forward chamber, the said side walls having openings in the upper parts of the converging portions thereof, and the rear wall having openings leading to the combustion-chamber, said wall being provided with hinged doors closed thereagainst before the openings last named, and provided with flanges to cause them to set outwardly from the wall.

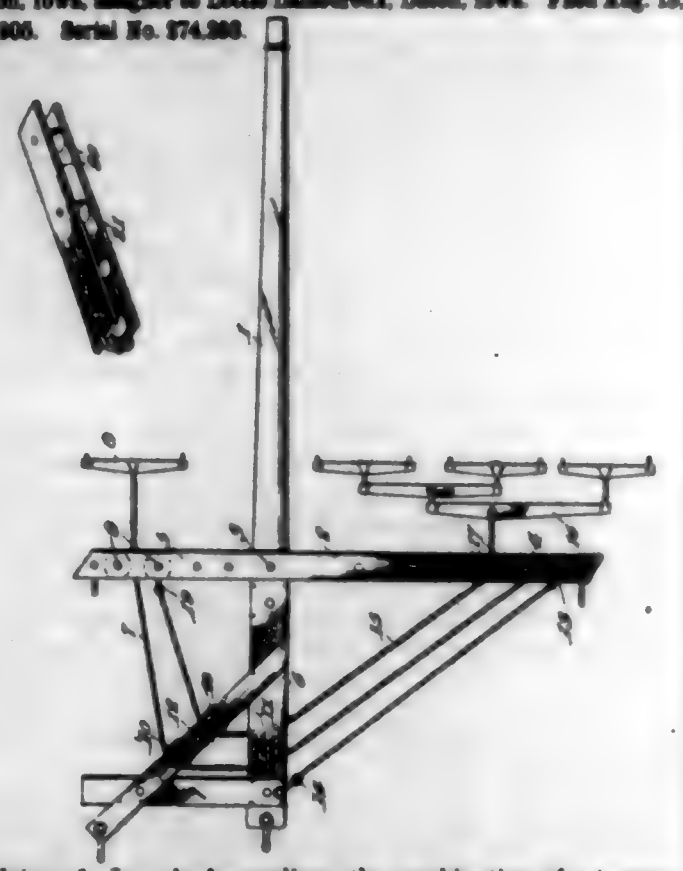
815,297. PROCESS FOR APPLYING POWDER TO PATTERNS. FRANZ DANNEBAUM, AUGUST KEMPER, and ERNST UTZE, Berlin, Germany. Filed June 29, 1905. Serial No. 267,619.

Claim.—1. The herein-described improvement in the art of treating patterns which consists in mixing with a suitable anhydrous

liquid a powder capable of generating a gas on contact with water and spraying the mixture on the patterns, substantially as described.

2. The herein-described improvement in the art of treating patterns which consists in mixing with petroleum a powder capable of generating a gas on contact with water, and spraying the mixture on the patterns, substantially as described.

815,298. DRAFT-EQUALIZER. THEODORE O. LAMOUREUX, Luton, Iowa, assignor to Lottie Lamoureux, Luton, Iowa. Filed Aug. 15, 1905. Serial No. 274,393.

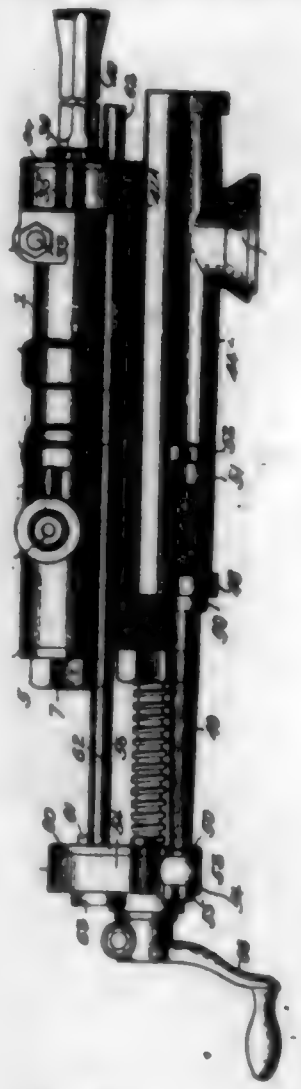


Claim.—1. In a draft-equalizer, the combination of a tongue, an equalizing-lever having a long arm and a short arm, a member extending longitudinally along the tongue in the rear of the equalizing-lever, said member being detachably connected to the tongue and formed of spaced members having a guide member mounted between them, an obliquely-disposed bracket rigidly secured to and projecting from said member, said bracket being formed of spaced parts having a guide member mounted between them, a cable connected to the single horse and passing through guide members on the short arm of the lever, a second cable connected to the plurality of horses on the opposite side of the tongue and passing through guide members on the long arm of the lever, said cables passing around the guide members on the obliquely-disposed bracket and longitudinal member and having their ends rigidly fastened.

2. In a draft-equalizer, the combination of a tongue, an equalizing-lever having a long arm and a short arm, a longitudinal member extending along the tongue in the rear of the equalizing-lever and formed of spaced parts having a guide member mounted between them, an obliquely-disposed bracket projecting from the longitudinal member and also formed of spaced parts having guide members mounted between them, a brace member for the obliquely-disposed bracket, a cable connected to the single horse and passing through guide members on the short arm of the lever, the bracket, the longitudinal member, the long arm of the lever, and having its extremity secured to the tongue, and a second cable connected to the plurality of horses on the opposite side of the tongue and passing through guide members on the long arm of the lever and the bracket, the end of the second cable being secured to the short arm of the lever.

3. In a draft-equalizer the combination of a lever pivoted upon the tongue and having a long arm and a short arm, an attachment secured to the tongue in the rear of said lever, said attachment being triangular in shape, each side of the triangular attachment comprising two spaced parts having guide members mounted between them, one of the sides extending along the tongue while the other sides project outwardly on the same side of the tongue as the short arm of the lever, a cable connected to the single horse and passing through guideways on the short arm of the lever and the outwardly-projecting portion of the attachment, said cable then passing around a pulley on the long arm of the lever and having its extremity secured to the tongue, a second cable attached to the plurality of horses on the opposite side of the tongue and passing through guide members on the long arm of the lever and the attachment, and having its end secured to the short arm of the lever.

815,299. ROCK-DRILL. JOHN G. LEYNER, Denver, Colo. Original application filed June 24, 1904, Serial No. 213,982. Divided and this application filed Aug. 1, 1905. Serial No. 272,175.



Claim.—1. In a rock-drilling engine, a cylinder, a supporting-shell in which said cylinder is mounted, a piston-hammer reciprocally mounted in said cylinder, a drill-bit loosely supported in said cylinder, in the reciprocal path of said piston-hammer, a polygonal surface on said drill-bit, a gear loosely mounted on said drill-bit and rotatably journaled in said cylinder, a gear in mesh with said drill-bit gear, a rod slidably keyed to said gear, a feed-screw operatively connected to said cylinder and shell, and means including gearing connected to said feed-screw and said rod for simultaneously rotating said rod and feed-screw.

2. In a rock-drilling engine, a cylinder, a supporting-shell in which said cylinder is slidably mounted, a piston-hammer, reciprocally mounted in said cylinder, a drill-bit supported in said cylinder in the reciprocal path of said piston-hammer, a gear rotatably mounted in said cylinder and provided with a polygonal-shaped axial aperture, surrounding the entrance to said drill-bit, a polygonal-shaped surface on said drill-bit adapted to register loosely in the aperture in said gear, a second gear rotatably journaled in said cylinder and arranged in operative mesh with said drill-bit's gear, a rod slidingly keyed to said second gear, a feed-screw operatively connected to said cylinder and shell, and means including gearing, connected with said feed-screw and said rod whereby rotation of said feed-screw effects rotation of said drill-bit.

3. In a rock-drilling engine, an operative cylinder and hammer-piston and a supporting-casing, a feed-screw operatively connected to said cylinder and casing to feed said cylinder therein, a drill-bit in said cylinder, a rod mounted in said cylinder, a keyway in said rod, a gear surrounding said drill-bit, a second gear in mesh with said drill-bit's gear, a feather-key secured to said second gear and projecting loosely into said keyway of said rod, and means including a gearing arranged between said feed-screw and rod, whereby rotation of said feed-screw effects rotation of said rod and drill-bit.

4. In a rock-drilling engine, a cylinder, a rock-cutting drill-bit, a supporting-shell, a motive-fluid-controlled hammer-piston for

striking said drill-bit, and a feed-screw arranged to feed said cylinder in said shell, a gear on said feed-screw, a second gear in mesh with the gear on said feed-screw, a rod secured at one end to said second gear, and suitable connections between the opposite end of said rod and drill-bit whereby rotation of said feed-screw and rod effects rotation of said drill-bit.

5. In a rock-drill, the combination of a cylinder arranged to support a drill-bit, a piston-hammer reciprocally mounted in said cylinder to strike said drill-bit, a supporting-shell in which said cylinder is slidably mounted, a feed-screw rotatably mounted in said shell and threadedly connected to said cylinder, a gear mounted on said drill-bit, a gear on said feed-screw, a second gear rotatably supported by said shell, and in mesh with said feed-screw's gear, a rod secured at one end to said second gear, and extending to the forward end of said shell, and a gear slidably feathered to said rod and in operative mesh with said drill-bit's gear, whereby rotation of said feed-screw effects rotation of said dill-bit.

6. In a rock-drill, the combination of a cylinder, a drill-bit supported by said cylinder, a piston-hammer reciprocally mounted in said cylinder to strike said drill-bit, and a supporting-shell in which said cylinder is slidably mounted and provided with a rearwardly-extending portion adapted to rotatably support a feed-screw and its operative crank, a gear on said drill-bit, a second drill-bit gear rotatably mounted in said cylinder in mesh with said drill-bit's gear, and arranged to impart rotative movement to said drill-bit when it is rotated, an axial aperture in said second gear, a feather-key in said aperture, a feed-screw rotatably mounted in said shell and threaded to said cylinder, a gear rotatably seated in the rearwardly-extending portion of said shell and mounted on said feed-screw, a second gear rotatably seated in said rearwardly-extending portion of said shell and arranged in rotative mesh with the gear on said feed-screw, a rod secured at one end to said second-named gear, and extending to the forward end of said shell loosely through said drill-bit gear, and a keyway in said rod into which said feather-key of said second drill-bit gear extends loosely, as set forth.

7. In a rock-drilling engine, the combination of a cylinder, a piston-hammer, a drill-bit having a gear housed in said cylinder and mounted loosely on said drill-bit, with a supporting-shell in which the said cylinder is slidably mounted, a feed-screw threaded to said cylinder and rotatably mounted in said shell, a gear housed in said shell and secured to said feed-screw, a rod rotatably mounted at one end in said shell and rotatably mounted at its opposite end in said cylinder, a gear housed in said shell and secured at one end of said rod, arranged in mesh with the gear on said feed-screw, and a gear housed in said cylinder, in mesh with said drill-bit gear, and feathered slidably on said rod, substantially as described.

8. In a rock-drilling engine, the combination of a cylinder, a piston-hammer, a drill-holding chuck, a drill-bit-rotating gear, a drill-bit removably and loosely mounted in said chuck loosely inserted within said gear, and a second gear rotatably mounted in said cylinder in mesh with said drill-bit-rotating gear, a rod extending loosely through said second-named gear, a keyway in said rod, a key feathered to said second-named gear to slide in said keyway, a supporting-shell in which said cylinder is slidingly mounted, a feed-screw rotatably mounted in said shell and threaded to said cylinder, and means connected with said feed-screw for rotating said rod, substantially as described.

9. In a rock-drilling engine, the combination with a cylinder, a piston-hammer, and a drill-bit, of a supporting-shell in which the said cylinder is slidably mounted, a bearing-block secured to said shell, a feed-screw provided with a gear rotatably mounted in said bearing-block, a nut threaded to said feed-screw and secured to said cylinder, a rod rotatably mounted in said bearing-block at one end and rotatably and slidably mounted in said cylinder, a gear secured to said rod, in mesh with the gear on said feed-screw, and means connected with said rod and said drill-bit whereby rotation of said feed-screw effects rotation of said drill-bit.

10. In a rock-drill, a cylinder having a piston-hammer and a revoluble drill-chuck, a support upon which said cylinder is slidably mounted, a feed-screw in engagement with said cylinder and support, chuck-rotating means eccentrically mounted with respect to said feed-screw and geared thereto, and means whereby rotation of said feed-screw effects rotation of said chuck, substantially as described.

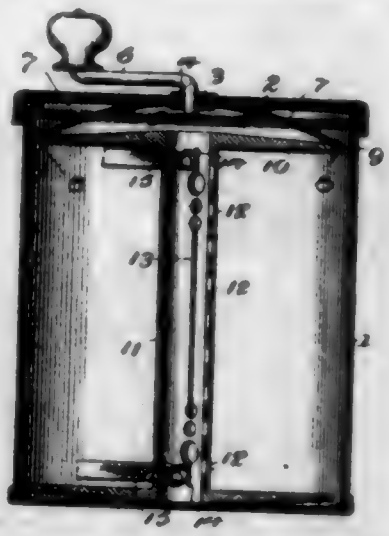
11. In a rock-drill, a cylinder having a piston-hammer and a revoluble drill-chuck, a support upon which said cylinder is slidably mounted, a feed-screw in engagement with said cylinder and support, a rod extending longitudinally of said cylinder and geared to said feed-screw, and means whereby rotation of said feed-screw effects rotation of said chuck, substantially as described.

12. In a rock-drill, a cylinder having a piston-hammer and a revoluble drill-chuck, a support upon which said cylinder is slidably mounted, a feed-screw in engagement with said cylinder and support, a rod longitudinally slidable with respect to said feed-screw and geared thereto, and means whereby rotation of said feed-screw effects rotation of said chuck, substantially as described.

13. In a rock-drill, a cylinder having a piston-hammer, a support upon which the cylinder is mounted, a drill-bit, feeding means in engagement with said cylinder and support, longitudinally-slidable means eccentrically mounted with respect to said feeding means for rotating said drill-bit, and gearing whereby rotation of said feeding means effects rotation of said drill-bit, substantially as described.

14. In a rock-drill, a cylinder having a piston-hammer, a support upon which the cylinder is mounted, a drill-bit, feeding means in engagement with said cylinder and support, a longitudinally-slidable rod eccentrically mounted with respect to said feeding means for rotating said drill-bit, and gearing whereby rotation of said feeding means effects rotation of said drill-bit, substantially as described.

815,800. **FILM-DEVELOPING MACHINE.** ALBERT V. LINDQUIST, Alexandria, Minn. Filed Apr. 27, 1904. Renewed Nov. 28, 1905.



Claim.—1. A spool of suitable material to withstand the action of chemicals employed in developing photographic films, said spool having a hollow perforated body portion, said body portion being provided with a longitudinal slot or other means carried by said body portion to engage the end of the strip of paper accompanying the film; a pair of braids connected to said spool and adapted to be wound thereon simultaneously with the winding of the paper and film whereby the braids will be disposed at the edges of the film to hold the latter isolated from other parts, the said spool having extended flanges for the exclusion of light; a carriage coöperating with the ends of the spool and adapted to carry the film-cartridge that a film may be unwound therefrom upon said spool, in combination with a suitable receptacle adapted to receive the said spool and the film carried thereon and suitable means to connect it with the lid of said receptacle that the spool may be rotated within the solution contained in said receptacle, all combined substantially as specified and for the purpose set forth.

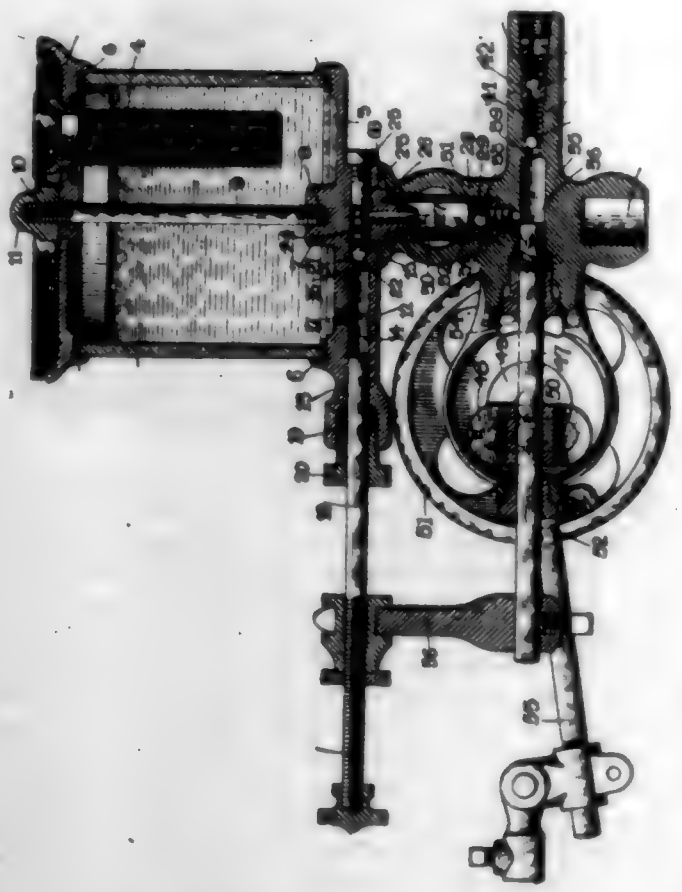
2. The herein-described film-developing machine, comprising a suitable receptacle having a removable closure at one end, a spool having a hollow body portion and end sections 10, adapted to enter said receptacle, means carried by said closure adapted to engage said spool whereby the same may be rotated, braid members secured to said body portion at each end thereof adjacent to the inner face of said end sections, adapted to be wound upon the spool-body simultaneously with the winding thereon of the sensitized film whereby a channel will be formed between each successive winding of the film through which the developing fluid may flow and come in contact with the film, all substantially as set forth.

3. In a film-developing machine, the combination with a film-receiving spool having a hollow body portion and a longitudinal slot in said body portion adapted to engage the end of the film and cause it to wind thereon, of a carriage comprising the end sections 16 and plates 17, inwardly-directed trunnions 18 carried by said end sections and adapted to receive a film-carrying cartridge, and spring-arms extending from said end sections having inwardly-directed extensions adapted to enter the bore of said body portion and dispose the cartridge in proper juxtaposition to deliver said film to said spool, substantially as set forth.

4. In a film-developing machine, the combination with a film-carrying spool having a hollow body portion and braids secured thereto, of a frame adapted to carry a film-cartridge and dispose the film in position to be wound upon said spool, arms adapted to removably secure said frame to said braids and dispose the same at a proper tension between each successive winding of the film upon the body portion of said spool, substantially as set forth.

5. The herein-described film-developing machine, comprising a suitable receptacle having a removable closure, a spool having a hollow body portion and end sections, adapted to be received by said receptacle, said body portion having a longitudinal slot to receive the free end of the film and also having openings for the passage of the developing solution, means to engage and rotate said spool, braid members secured to said body portions adjacent to the end sections of said spool, and means to dispose said braid members at a proper tension between each successive winding of the film upon said body portion whereby a space will be left between each successive winding of the film through which the developing fluid may flow and come in contact with the sensitized surface of the film, all substantially as set forth.

815,801. **FORCE-FEED LUBRICATOR.** CHARLES W. MANSEL, Buffalo, N. Y., assignor to Mansel Brothers, Buffalo, N. Y. Filed Mar. 16, 1904. Serial No. 198,405.



Claim.—1. In a device of the class described, a cup to contain lubricant, a sight-glass, a plurality of feed mechanisms including a plurality of pistons, one of said feed mechanisms being arranged between the cup and sight-glass to draw the lubricant from the cup and force it into the sight-glass, and another being arranged between the sight-glass and the element to be lubricated to draw the lubricant from the sight-glass and force it to said element.

2. In a device of the class described, an oil-cup, a sight-glass, a plurality of feed mechanisms including a plurality of pistons connected to reciprocate simultaneously and one of said oil-feed mechanisms being arranged between the oil-cup and sight-glass and another between the sight-glass and the part to be lubricated.

3. In a device of the class described, an oil-cup, a sight-glass, two horizontal feed mechanisms arranged one above the other, and one located between the oil-cup and sight-glass and another between the sight-glass and the part to be lubricated and means for operating said feed mechanisms.

4. In a device of the class described, an oil-cup, a frame upon which said oil-cup is mounted, a sight-glass in said frame beneath the oil-cup and a plurality of force-feed mechanisms, one being arranged between the oil-cup and sight-glass to feed oil from the oil-cup to the sight-glass and another beneath the sight-glass to feed oil from the sight-glass to the part requiring lubrication.

5. In a device of the class described, an oil-cup, a frame upon which the oil-cup is mounted, a sight-glass in said frame beneath the oil-cup and a plurality of force-feed mechanisms, one being arranged between the oil-cup and sight-glass, and another beneath the sight-glass; said feed mechanisms having differing feeding capacity.

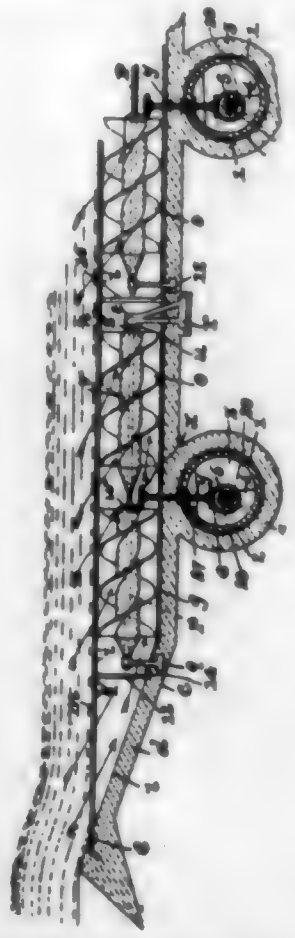
6. In a device of the class described, an oil-cup, a frame upon which the oil-cup is mounted, a sight-glass in said frame beneath the oil-cup and a plurality of force-feed mechanisms, one being arranged between the oil-cup and sight-glass, and another beneath the sight-glass; the lower feed mechanism having a greater feeding capacity than the upper feed mechanism.

7. In a device of the class described, an oil-cup, a sight-glass, a plurality of feed mechanisms, one arranged between the oil-cup and sight-glass and another arranged beneath the sight-glass and a plurality of valves, one being located between the upper feed mechanism and the sight-glass and another between the sight-glass and lower feed mechanism.

8. In a device of the class described, a cup to contain lubricant, a sight-glass and a plurality of force-feed mechanisms, one being arranged between the cup and sight-glass, and another between the sight-glass and the part to be lubricated; said mechanisms having differing feeding capacity.

9. In a device of the class described, a cup to contain lubricant, a sight-glass, and a plurality of force-feed mechanisms, one being arranged between the cup and sight-glass, and another between the sight-glass and the part to be lubricated and having a greater feeding capacity than the first-mentioned feed mechanism.

815,802. **CURRENT-MOTOR.** FREDERICK B. MARVIN, Paterson, N. J. Filed Nov. 22, 1904. Serial No. 233,787.



Claim.—1. The combination, with a watercourse structure having longitudinal and transverse spaces, of a rotary device adapted to be operated by the flowing body of water in said structure and located in the longitudinal space, power-transmitting means operatively connected to said device and having a portion thereof traversing said structure and located in said transverse space and below the horizontal plane of said device, and means for supporting said rotary device and the power-transmitting means, substantially as described.

2. The combination, with a watercourse structure, of a rotary device adapted to be operated by the flowing body of water in said structure, power-transmitting means operatively connected to said

device and having a portion thereof traversing said structure and located below the horizontal plane of said device, means for supporting said rotary device and the power-transmitting means, and a perforate wall or partition extending over said device, substantially as described.

3. The combination, with a watercourse structure having a depression formed therein and a transverse space beneath said depression, of a rotary device located in said depression and adapted to be operated by the flowing body of water in said structure, power-transmitting means operatively connected to said device and located in said transverse space, and means for supporting said rotary device and the power-transmitting means, substantially as described.

4. The combination, with a watercourse structure having a depression in its bed, of a rotary device adapted to be operated by the flowing body of water in said structure and located in said depression, power-transmitting means operatively connected to said device and located below the surface of said structure, and a perforate wall or partition disposed substantially in the plane of the surface of said structure over said depression, substantially as described.

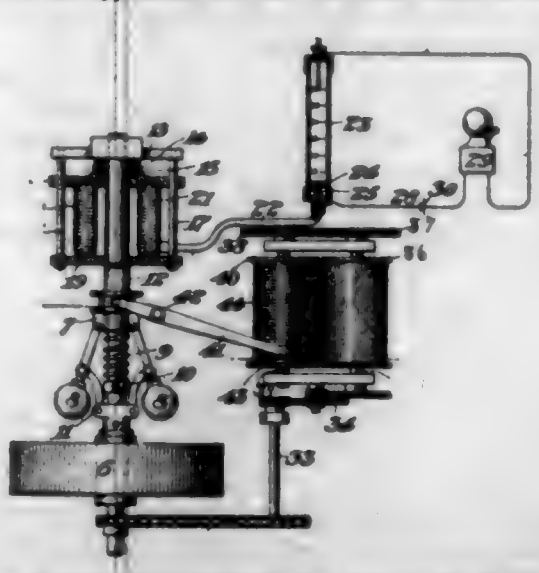
5. The combination of a watercourse structure having an open flume or channel therein depressed below the surface thereof and a transverse space beneath said flume or channel, a rotary device adapted to be operated by the flowing body of water and located in said flume, power-transmitting means operatively connected to said device and located in said transverse space and means for supporting said device and the power-transmitting means, substantially as described.

6. The combination of a watercourse structure having a series of longitudinally-extending open flumes or channels therein arranged side by side and depressed below the surface thereof, rotary devices arranged in said flumes and adapted to be operated by the flowing body of water, power-transmitting means operatively connected to said devices and located below the horizontal plane thereof, and means for supporting said devices and the power-transmitting means, substantially as described.

7. The combination of a watercourse structure comprising an artificial bottom having a series of flumes, rotary devices adapted to be operated by the flowing body of water and located in said flumes, gratings covering said flumes, power-transmitting mechanism operatively connected to said devices, and means for supporting said devices and the power-transmitting means, substantially as described.

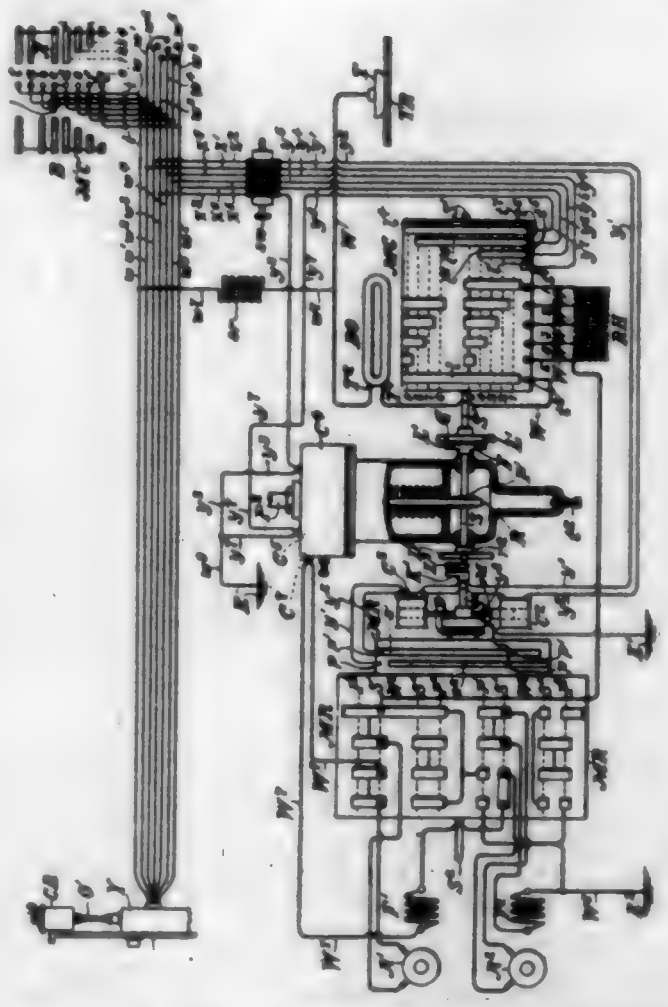
8. The combination of a watercourse structure having an open flume therein depressed below the surface thereof, a plurality of rotary devices adapted to be operated by the flowing body of water and located in said flume, a grating structure arranged over said devices, power-transmitting mechanism operatively connected to said devices, and means, guided in said grating structure, for cutting off any one of said devices from the action of the flowing body of water in said structure, substantially as described.

815,303. RECORDING APPARATUS FOR MOTOR-VEHICLES. DAVID MASON, New York, N. Y., assignor to John A. Woods, New York, N. Y. Original application filed Aug. 25, 1903, Serial No. 170,481. Divided and this application filed Nov. 21, 1903. Serial No. 183,054.



Claim.—In a speed-recording device, the combination of a driving-shaft, a collar fixed thereon, a second collar slidably mounted on the shaft, arms pivotally connected to the slidable collar and each carrying a governor-ball at its free end, links connecting the fixed collar and said arms, a collar adjustably mounted on said shaft between the fixed and movable collars, a set-screw to maintain the adjustable collar in position, an expansive spring on the driving-shaft, and abutting the movable and adjustable collars, a sleeve slidably mounted on the shaft and engaged by said first-mentioned slidable sleeve and having an annular groove, intergeared feed and take-up rolls carrying a record-sheet, a counter-shaft parallel to the driving-shaft and geared to one of said rolls, chain-gearing for transmitting motion from the driving-shaft to the counter-shaft, a lever fulcrumed at a point intermediate its ends, said fulcrum being between the driving-shaft and said rolls, one end of said lever being provided with a pin disposed in the aforementioned groove, the other end of said lever carrying a marking device arranged to traverse the record-sheet.

815,304. SYSTEM OF ELECTRIC-MOTOR CONTROL. CHARLES A. MUDGE, New York, N. Y. Original application filed Mar. 3, 1905, Serial No. 248,131. Divided and this application filed June 27, 1905. Serial No. 267,204.



Claim.—1. In a system of motor control fluid means operatively connected with current-controlling devices; in combination with independent inlet and exhaust valves therefor and independent electromagnetic means for operating said valves, whereby said fluid means is operated through successive steps by the continued application of a fluid medium, substantially as described.

2. In a system of motor control fluid means operatively connected with current-controlling devices; in combination with independent inlet and exhaust valves therefor and independent electromagnetic means for operating said valves; together with a master-controller provided with indicating means, the fluid means being advanced by the continued application of a fluid medium, substantially as described.

3. In a system of motor control fluid means operatively connected with current-controlling devices, said fluid means embracing a piston, a cylinder and independent electrically-controlled valves therefor, the arrangement being such that the piston is advanced by the continued application of a fluid medium, substantially as described.

4. In a system of motor control pneumatic means operatively connected to current-controlling devices, said means embracing a piston, and independently-operated valves for advancing the piston through the continued application of a fluid medium; in combination with a master-controller provided with indicating means, substantially as described.

5. In a system of motor control pneumatic means operatively connected with current-controlling devices; in combination with

electromagnetic control-valves therefor, and circuit connections whereby the speed at which the pneumatic means operates is made dependent upon the motor-current, and the movement of the operative parts of the pneumatic means is made continuous by the application of a fluid medium, substantially as described.

6. In a system of motor control pneumatic means operatively connected with current-controlling devices; in combination with electrically-operated valves independently controlled for stopping and retaining said controlling devices in different positions, the operative parts of the pneumatic means being advanced by the continued application of a pneumatic medium, substantially as described.

7. In a system of motor control a master-controller, a main pneumatic operating device and electrical connections therefor, whereby the operating device is continuously advanced through successive steps by the application of a pneumatic medium made dependent upon the motor-current; in combination with current-controlling devices operatively connected to the main operating device, and means at the master-controller for indicating the different steps, substantially as described.

8. In a system of motor control a main operating device, current-controlling means mechanically connected thereto, a master-controller electrically connected thereto, and circuits and circuit connections between the motors and the main operating device, whereby the movable parts of said main operating device are advanced at a rate made dependent upon the motor-current through successive steps by the continued application of a pneumatic medium, said master-controller being provided with means for indicating any definite step, substantially as described.

9. In a system of motor control a controller; a pneumatic main operating device therefor provided with electromagnetic means of control embracing two circuits one of which is included in the motor-circuit proper and embraces an electromagnetically-controlled valve, whereby the motor-current is kept practically constant at starting, substantially as described.

10. In a system of motor control a controller; a main operating device provided with pneumatic means for advancing it through successive steps; in combination with additional means embracing two electric circuits so related that the effects produced by one of said circuits tend to neutralize those of the other circuit, thereby maintaining the current-neutralizing circuit within a predetermined value, substantially as described.

11. In a system of motor control a main operating device pneumatically operated and current-controlling devices connected thereto, the said main operating device embracing an electrically-controlled valve which operates in such a manner that the current-controlling devices tend to keep the motor-current constant during the starting of the motors as well as to prevent said current from exceeding a predetermined value during the operation of the motors; the electrically-controlled valve being operated by the combined influences of the motor-current, or a part thereof, and an independent current thereto, substantially as described.

12. In a system of motor control a controller; pneumatic operating means therefor; in combination with two independent controlling-circuits including an electromagnetically-controlled valve adapted to operate in such manner that the motor-current is maintained practically constant during starting, substantially as described.

13. In a system of motor control a controller; pneumatic operating means therefor; in combination with two independent controlling-circuits therefor, one of which is included in the motor-circuit and both of which include an electromagnetic controlling-valve, the arrangement being such that the combined current effects of said circuits maintain the motor-current within a fixed value during the operation of the motors, substantially as described.

14. In a system of motor control a controller and pneumatic operating means therefor; in combination with valves and controlling-electromagnets therefor; together with circuits and circuit connections whereby the normal speed of the operating means is automatically increased or decreased by the operation of the said parts when the motor-current is below or above a definite value, substantially as described.

15. In a system of motor control a main controller; a main pneumatic operating device connected thereto; a master-controller provided with means for indicating the various steps; in combination with circuits and circuit connections between all of said parts whereby the main operating device and the main controller are advanced continuously, step by step, and the movements thereof indicated at the master-controller, substantially as described.

16. In a system of motor control for electric-railway cars a series of control-circuits on each car and interconnecting contacts and conductors whereby the control-circuits of one car may be connected to the corresponding circuits of another car; a portable master-controller adapted to be utilized on any car; in combination with electric motors and current-controlling devices on one or more cars, said devices being operated by a single pneumatic operating device located on each car and advanced through successive steps at a speed depending upon the motor-current by the continued application of a pneumatic medium and electrically controlled by the master-controller from any of the said cars, substantially as described.

17. In a system of motor control for electric-railway cars coupled together to form a train, control-circuits on each car and interconnecting contacts and conductors whereby the control-circuits on one car may be connected with those of the adjoining car; in combination with electric motors on one or more cars, a single pneumatic operating device operated on each car and advanced through successive steps at a speed depending upon the motor-current by the continued application of a pneumatic medium, said operating device being connected to current-controlling devices together with a portable master-controller adapted to be used on any car in the train, said master-controller being so connected to the current-controlling devices and the pneumatically-operating device through the control-circuits that its controls and indicates at all times the combinations of the motors, substantially as described.

18. A master-controller embracing means whereby the forward or reverse connections and the running combinations of the motors it controls are made through the operation of a single handle; in combination with electromagnetic means embracing a part of the master-controller and operating so that the motors receive current only after the said forward or reverse connections have been made, substantially as described.

19. In a system of motor control a motor-circuit combiner, a main controller, and a portable master-controller embracing electromagnetic means for so governing the operation of the motor-circuit combiner and the main controller that the latter cannot be operated until the former is in a position giving either forward or reverse connections of the motors, substantially as described.

20. In a system of motor control a master-controller embracing a magnet adapted to attract a contact-finger away from its contact-strip and to thus interrupt a circuit controlling the operation of a main controller, said circuit remaining interrupted until a motor-circuit combiner has operated to give the forward or reverse connections of the motors, thereby making it impossible for the motors to receive current before they have been properly connected, substantially as described.

21. A portable master-controller embracing a single contact-cylinder operated by a single handle through which the forward, reverse and running combinations of the motor or motors it controls are made, said controller being so arranged that it cannot be removed from its seat without first interrupting all circuit connections through it, substantially as described.

22. A portable master-controller embracing electromagnetic means, circuits and circuit connections such that it is impossible for the motors controlled to receive current before they are interconnected for a forward or reverse rotation, and means at the master-controller for indicating the same.

23. In a system of motor control for electric-railway cars a portable master-controller adapted to be connected at different points in a control-circuit extending throughout the cars, one or more of which is supplied with electric motors and suitable controlling apparatus; said apparatus being operated by a single fluid-operating device located on each motor-car and controlled by electric means through the master-controller, substantially as described.

24. In a system of motor control a controller connected with pneumatic means for operating it; in combination with regulating means and circuits and circuit connections whereby said pneumatic means operates more rapidly when the motor-current falls below a predetermined value and operates slower, or stops entirely, when the motor-current exceeds this value, substantially as described.

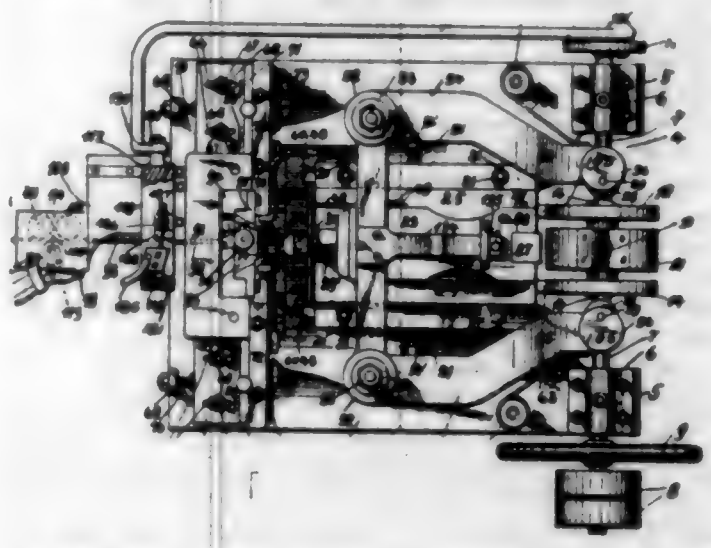
25. Two or more electric motors and a main resistance therefor; in combination with electrically-controlled pneumatic means for effecting various relations between the motors and the resistance; together with means for interrupting the motor-circuit, said pneumatic means being so constructed that its movable part will advance at increased speed during the intervals that the motor-circuit is interrupted, substantially as described.

26. In a system of motor control pneumatic means for operating

the motor-controlling apparatus; in combination with electromagnetic means for so controlling the operation of said pneumatic means that the speed of operation is inversely proportional to the motor-current, substantially as described.

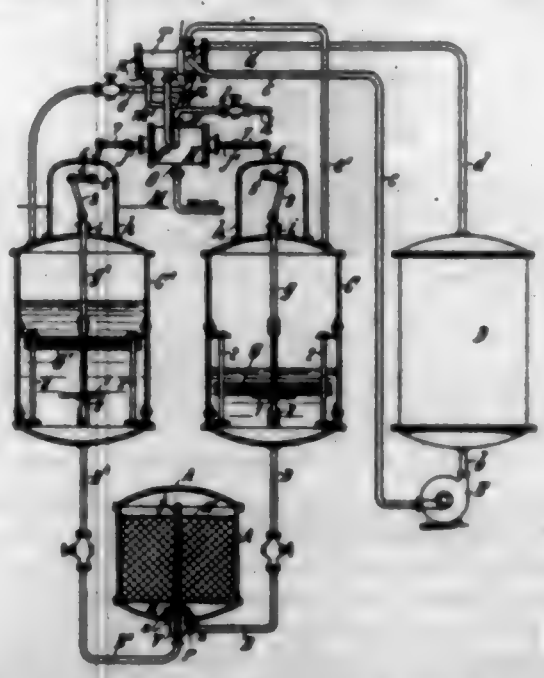
27. In a system of motor control, a main controller; a pneumatic operating device connected thereto and provided with an exhaust-valve adapted to be operated by a single control-magnet included in the control-circuit, the arrangement being such that if the current-flow through said magnet be interrupted at any time during the operation of the motors the controlling apparatus will be automatically turned to its "off" or open-circuit position by said pneumatic device, substantially as described.

815,305. NAIL-MAKING MACHINE. JULIUS K. NEUBAUER, Rankin, Pa., assignor to R. Schwartz, Rankin, Pa., and I. Schwartz, McKees Rocks, Pa. Filed Aug. 15, 1904. Serial No. 220,792.



Claim.—The combination in an organized nail-making machine, of gripping means, a reciprocating plunger, a header carried by said plunger and having a concavity in its head and a slot leading into said concavity, with an ejector seated in said slot and adapted to slide in the same and eject a nail from the head of the plunger on the return movement of the plunger, and means operable by the return movement of the plunger for effecting the sliding movement of the ejector in the slot.

815,306. APPARATUS FOR TREATING TEXTILE FABRICS. OTTO OBERMAIER, Lambrecht, Germany. Filed July 20, 1905. Serial No. 270,572.



Claim.—1. An apparatus for the treatment of textile materials, which consists of one or more keirs and two liquid-supply tanks, each provided with a float and adapted to contain a gaseous medium under different pressure, in combination with a gas-tank, a pump connected thereto for energizing the flow and means for reversing and controlling the flow.

2. In an apparatus for treating textile materials, a keir with two perforated diaphragms, two liquid-supply tanks, a pot underneath the keir and connected to one of the supply-tanks and opening into the bottom of keir below the lower diaphragm and a stand-pipe rising through the pot to the upper part of the keir and opening into the same above the upper diaphragm and also connected to the other liquid-supply tank.

3. An apparatus for treating textile material, comprising one or more keirs, two liquid-supply tanks containing floats and adapted to contain a gaseous medium under different pressure, a reversing-valve for regulating the flow of the gas, a pump for energizing the flow and an intermediate valve connected to and operated by the floats of the supply-tanks substantially as shown and described.

4. An apparatus for treating textile materials, comprising one or more keirs, two liquid-supply tanks having floats with a rod from each float extending up through an opening in the top of the tank, a hermetically-closed dome extending over the tops of the tanks, a horizontal rock-shaft extending through the dome and having one crank-arm connected to the rod of the float within the dome and an external crank-arm and a valve operated by the same.

5. In an apparatus for treating textile materials, one or more keirs, a pump, two liquid-supply tanks having floats, an intermediate valve operated by the floats and a reversing-valve with loosely-sliding piston and stop projections, said reversing-valve being operated through the intermediate valve and serving to permit a complete movement of the floats, as described.

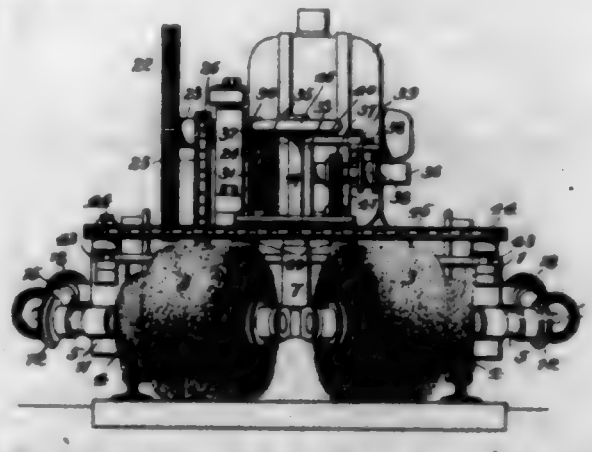
6. In an apparatus for the treatment of textile materials, one or more keirs, two supply-tanks with floats, a pump, slide-valves operated by the floats for reversing the flow of liquids and gas, said slide-valves being constructed in the form of three parallel pistons spaced apart but rigidly connected together by two reversely-inclined partition-walls, and having an inclosing case with four-way openings for inlets and outlets.

7. An apparatus for the treatment of textile material consisting of a series of keirs, two liquid-supply tanks, a pump with connecting pipes and valves, a single pot in common to and connecting a plurality of keirs and consisting of two chambers, one chamber being connected to one supply-tank and the other to the other supply-tank, and an individual pot arranged in the bottom of each keir and having an outlet into the bottom of its keir and a stand-pipe opening into the top, said individual pot and stand-pipe being respectively connected to the two chambers of the common or multiple pot.

815,307. WALL DECORATION. THEODORE F. ODELL, Nyack, N. Y. Filed May 18, 1905. Serial No. 261,084.

Claim.—The method herein described of making a wall-covering which consists in pasting a facing of fabric and a backing of paper together and then treating the same with linseed-oil and paraffin.

815,308. ROTARY FENDER AND CLEANER FOR SURFACE RAILWAYS. WILLIAM H. PERRY, Concord, N. H. Filed Oct. 5, 1905. Serial No. 281,431.



Claim.—1. In a cleaner for surface railways, and in combination, cleaning means for the road-bed between the rails of the surface railway, additional cleaning means coacting directly with the rails of the surface railway and in substantial alinement with the first-named cleaning means, and means for simultaneously raising and lowering both sets of cleaning means.

2. In a cleaner for surface railways, and in combination, a truck-frame, a driving element mounted thereon, cleaning means for the surface of the railway between the rails, additional means coacting more directly with the rails and rotating about coincident axis said additional means being of less diameter than the main cleaning means.

and driving mechanism interposed between said driving element and the cleaning means for imparting a rotary movement to the latter.

3. In a cleaner for surface railways, and in combination, a truck-frame, guide-casings at the end thereof, a driving element associated with the truck-frame, cleaning mechanism coacting with the surface of the road-bed between the rails and with the rails, said mechanism including a shaft, gearing interposed between the shaft and said driving element on the truck-frame, and bearing-blocks for the shaft adjustably mounted in said guide-casings.

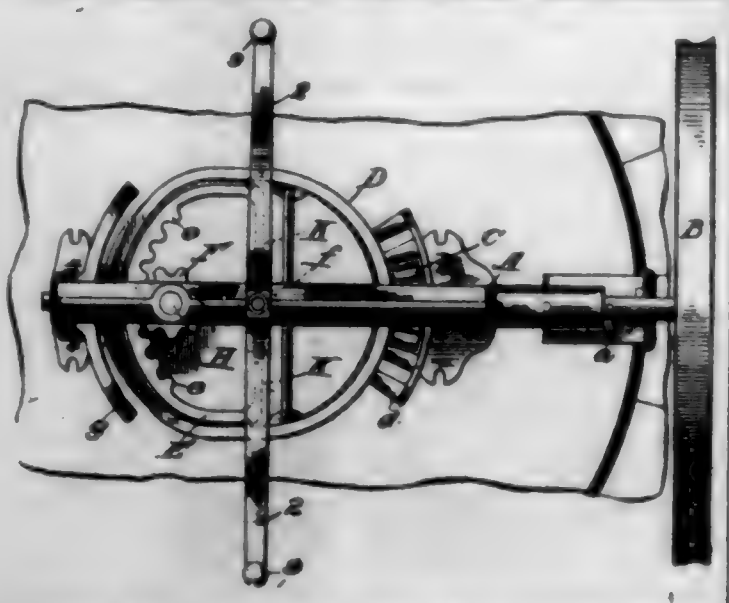
4. In a cleaner for surface railways, and in combination, a truck-frame having guide-casings at the end thereof, a driving element associated with the truck, cleaning mechanism coacting with the surface of the road-bed between the rails and with the rails, said mechanism including a shaft, gearing interposed between the shaft and said driving element on the truck, bearing-blocks for the shaft adjustably mounted in said guide-casings, and means for raising and lowering said blocks in the guide-casings, including a hand-operated wheel, pillars or shafts coacting with the blocks and carrying sprocket-wheels at their upper ends, a staff carrying the hand-wheel, a sprocket-wheel on the lower end thereof, and a sprocket-chain passing about the latter sprocket-wheel and the sprocket-wheel on said shafts or pillars.

5. In a cleaner for surface railways, and in combination, a truck-frame, a driving element associated therewith, cleaning mechanism rotated from said driving element through interposed gearing, and means for raising and lowering the cleaning mechanism including rotatable vertically-disposed shafts, sprocket-wheels mounted thereon, a hand-wheel, a staff supported in the truck-frame carrying the same, a sprocket-wheel on the staff, a sprocket-chain passing about and coacting with said sprocket-wheels, and guide-rollers for said chain mounted on opposite sides and closely adjacent to the sprocket-wheel on the staff, substantially as described.

6. A self-contained cleaner for surface railways comprising a truck-frame, supporting-wheels therefor, a motor mounted on the frame, blocks vertically movable in the frame, a second frame supported from the blocks, brushes journaled in the second frame and drive mechanism interposed between the motor and the brushes.

7. A self-contained cleaner for surface railways comprising a truck-frame, supporting-wheels therefor, a motor mounted on the frame, blocks vertically movable in the frame, a second frame supported from the blocks, brushes journaled in the second frame, drive mechanism interposed between the motor-brushes and means for simultaneously shifting the blocks.

815,309. MECHANICAL MOVEMENT. ADOLPH PLAGMAN, Davenport, Iowa, assignor to White Lily Washer Company, Davenport, Iowa, a Corporation of Iowa. Filed Nov. 3, 1905. Serial No. 285,772.



Claim.—1. In a mechanical movement the combination with a continuously-revolving shaft, segmental gear disposed in substantially the same plane as and operatively connected to said shaft, a rotary reciprocal shaft engaged thereby, and devices removably connected to said segmental gear for actuating said movement.

2. In a mechanical movement the combination with a continuously-revolving shaft, segmental gear disposed in substantially the same plane as and operatively connected to said shaft, a rotary reciprocal shaft engaged thereby, and devices connected to said segmental gear for actuating said movement.

3. In a mechanical movement the combination with a continuously-revolving shaft, a rotary reciprocal shaft, a segmental gear engaging said rotary reciprocal shaft, and a rocking yoke having a segmental rack engaged by said continuously-revolving shaft, of devices removably connected to said gear for actuating said movement.

4. In a mechanical movement the combination of a continuously-revolving shaft, a rotary reciprocal shaft, rotary reciprocal means for operatively connecting said shafts, and a handle pivoted at one end concentric to the axis of said means and provided with an arm which is removably connected to said means for actuating said movement.

5. In a mechanical movement the combination of a continuously-revolving shaft, a rotary reciprocal shaft, means for operatively connecting said shafts, and a pair of handles extending in opposite direction from a common boss that has projecting arms and is removably connected to said means for actuating said movement.

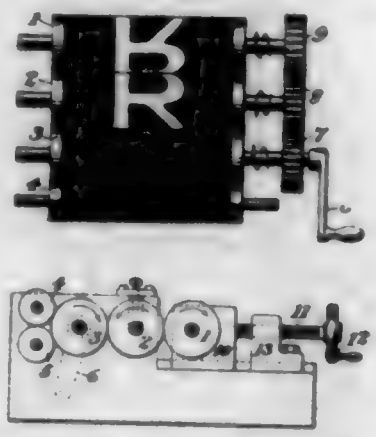
6. In a mechanical movement the combination with a continuously-revolving shaft, a segmental gear operatively connected thereto and a rotary reciprocal shaft arranged at right angles to and engaged by said segmental gear, of a handle one end of which is pivoted in alinement with said segmental gear, and which handle has an arm projecting from its pivoted end adapted to engage said segmental gear to actuate said movement.

7. In a mechanical movement the combination with a continuously-revolving shaft, segmental gear operatively connected thereto, a rotary reciprocal shaft engaged thereby, and a pair of handles extending in opposite directions from a common boss which is pivoted in alinement with the axis of said segmental gear, and is provided with projecting arms that engage and are removably connected to said segmental gear for actuating said movement.

8. In a mechanical movement the combination with a continuously-revolving shaft, a rotary reciprocal shaft, a segmental gear engaging said shaft, and a rocking yoke having a segmental rack engaged by said continuously-revolving shaft, of a handle pivoted at one end in alinement with the axis of said segmental gear having an arm and removably connected to said gear for actuating said movement.

9. In a mechanical movement the combination with a continuously-revolving shaft, a rotary reciprocal shaft, a segmental gear engaging said shaft, and a rocking yoke having a segmental rack engaged by said continuously-revolving shaft, of a pair of handles extending in opposite direction from a common boss which is pivoted in alinement with the axis of said segmental gear and is provided with projecting arms that engage and are removably connected to said gear for actuating said movement.

815,310. PHOTOMECHANICAL PRINTING. HENRY L. RECKARD, New York, N. Y., assignor to Albert Henry Walker, trustee, New York, N. Y. Filed June 16, 1905. Serial No. 265,475.



Claim.—1. The following process of photomechanical printing: making a roller, having a sensitive gelatin coat; exposing that sensitive gelatin roller to light, through a partly-translucent and partly-opaque flexible sheet, bent upon the periphery of the roller; developing that exposed gelatin roller by bathing it in water, and thereby swelling some parts of its surface into more or less relief, while leaving other parts of its surface in more or less depression; drying that developed gelatin roller in air; applying glycerin solution to the relief-surfaces of that developed gelatin roller; applying ink to the depressed surfaces of that gelatin roller; transferring ink from the depressed surfaces of that gelatin roller, to the surface of a metal roller or plate; etching away the naked surfaces of that metal roller or plate; applying ink or color to that metal roller or plate; and transferring ink or color from that roller or plate, to whatever fabric, paper or

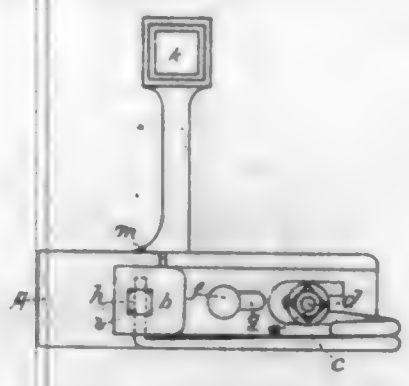
other material constitutes the base of the print which results from the process; all substantially as described.

2. The following process in photomechanical printing: making a roller, having a sensitive gelatin coat; exposing that sensitive gelatin roller to light through a partly-translucent and partly-opaque flexible sheet, bent upon the periphery of the roller; developing that exposed gelatin roller by bathing it in water, and thereby swelling some parts of its surface into more or less relief, while leaving other parts of its surface in more or less depression; drying that developed gelatin roller in air; applying glycerin solution to the relief-surfaces of that developed gelatin roller; applying ink to the depressed surfaces of that gelatin roller; transferring ink from the depressed surfaces of that gelatin roller, to the surface of a metal roller or plate; and etching away the naked surfaces of that metal roller or plate; all substantially as described.

3. The following process in photomechanical printing: making a roller, having a sensitive gelatin coat; exposing that sensitive gelatin roller to light through a partly-translucent and partly-opaque flexible sheet, bent upon the periphery of the roller; developing that exposed gelatin roller by bathing it in water, and thereby swelling some parts of its surface into more or less relief, while leaving other parts of its surface in more or less depression; drying that developed gelatin roller in air; applying glycerin solution to the relief-surfaces of that developed gelatin roller; applying ink to the depressed surfaces of that gelatin roller; and transferring ink from the depressed surfaces of that gelatin roller, to a solid surface of metal or stone; all substantially as described.

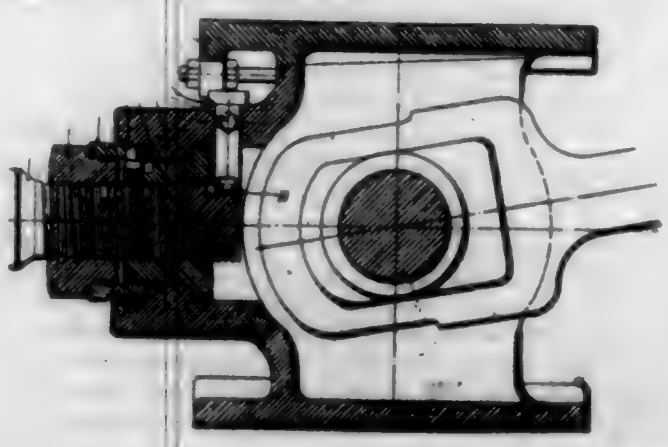
4. The following process in photomechanical printing: making a roller, having a sensitive gelatin coat; exposing that sensitive gelatin roller to light through a partly-translucent and partly-opaque flexible sheet, bent upon the periphery of the roller; developing that exposed gelatin roller by bathing it in water, and thereby swelling some parts of its surface into more or less relief, while leaving other parts of its surface in more or less depression; and drying that developed gelatin roller in air; all substantially as described.

815,311. HORSESHOE HEEL AND TOE CALK SPLITTING MACHINE. JOHN G. RIEPP, London, Wis., assignor of one-third to Theo. E. Wiedenbeck and one-third to Chas. W. Dobelin, Madison, Wis. Filed Nov. 6, 1903. Serial No. 180,118.



Claim.—In a horseshoe heel and toe calk splitting machine in combination with a base-plate, A, hardy-socket, *k*, relief-block, *m*, and cold-chisel, *h*, the bracket, *b*, adjustably arranged to regulate the distance, from the relief-block, to the cold-chisel, substantially as set forth.

815,312. ADJUSTABLE PISTON-ROD AND CROSS-HEAD CONNECTION. CARL G. SPRADO, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Sept. 14, 1905. Serial No. 278,395.



Claim.—1. A rod, a member connected thereto and an adjusting device between said rod and member comprising an element engaging said rod, locking means and an actuator for said element.

2. A rod, a member connected thereto and an adjusting device between said rod and member comprising a threaded element mounted on said rod, locking means and an actuator for said element.

3. A rod, a member connected thereto and a positive-adjusting device between said rod and member comprising an element engaging said rod, means to control said element, and a second element to lock said means.

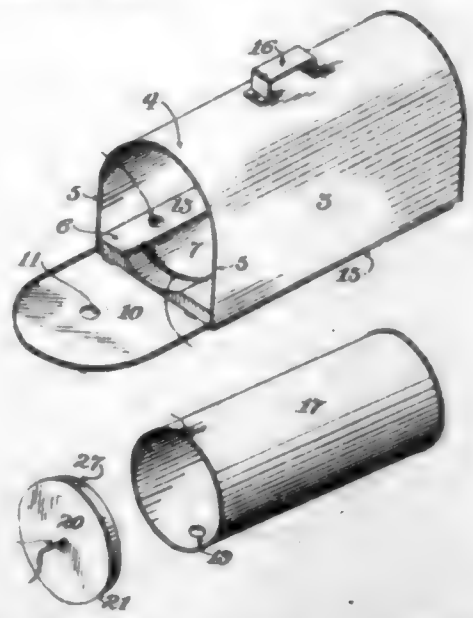
4. A non-rotatable rod, a member reciprocated thereby and an adjusting device between said rod and member comprising an element engaging said rod, and means to control said element.

5. A non-rotatable rod, a member reciprocated thereby and an adjusting device between said rod and member comprising an element engaging said rod, means to control said element, and a second element to lock said means.

6. A rod, a member connected thereto, a pin to hold said rod from rotation and a positive adjusting device between said rod and member comprising an element engaging said rod, and means to control said element.

7. A rod, a member connected thereto, a pin to hold said rod from rotation and a positive adjusting device between said rod and member comprising a threaded element mounted on the rod and abutting said pin, means to control said element, and a second element to lock said means.

815,313. PORTABLE STERILIZING APPARATUS. WILLIAM W. SWEENEY, Los Angeles, Cal., assignor to Pacific Surgical Manufacturing Company, Los Angeles, Cal., a Corporation of California. Filed Feb. 13, 1905. Serial No. 245,387.



Claim.—1. In a sterilizing apparatus means forming a steam-space, a sterilizing-cylinder therein having an opening for steam, and means for moving the cylinder bodily and shutting the steam-opening.

2. In a sterilizing apparatus means forming a steam-space, a sterilizing-cylinder therein having steam inlet and outlet orifices, and means for moving the cylinder bodily to close one orifice and open another.

3. In a sterilizing apparatus means forming a steam-space, a sterilizing-cylinder revoluble therein and having steam inlet and outlet orifices, and means for rotating the cylinder to close one orifice and open another.

4. In a sterilizing apparatus means forming a steam-space, a sterilizing-cylinder therein having an opening for steam, and means for moving the cylinder bodily and shutting the steam-opening, and a water-tank under said means.

5. In a sterilizing apparatus means forming a steam-space, a sterilizing-cylinder therein having an opening for steam, and means for moving the cylinder bodily and shutting the steam-opening, a water-tank under said means, the cylinder being of a size adapted to fit into the tank, and the tank and cylinder combined being of a size adapted to fit within said means.

6. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough.

7. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, and a removable cover for the sterilizing-cylinder.

8. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, the shell having an outlet-orifice for steam, and the end of the sterilizing-cylinder having an outlet-orifice adapted to register therewith.

9. In a sterilizing-apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, the shell having an outlet-orifice diametrically opposite the concave trough, and the sterilizing-cylinder having a steam-outlet orifice diametrically opposite the inlet-orifices.

10. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, a water-tank having an inside trough near its upper edge, and a flange on the bottom of the shell fitting in a trough in a tank.

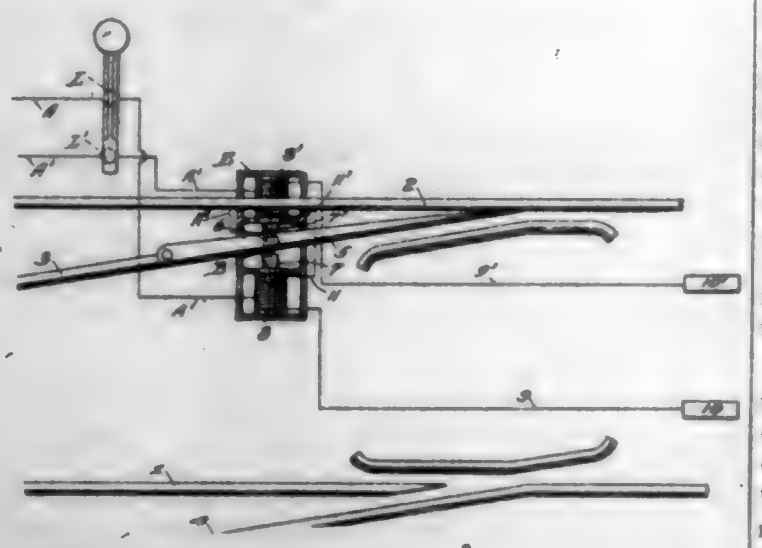
11. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, a water-tank having an inside trough near its upper edge, and a flange on the bottom fitting in the trough in the tank, the bottom of the shell having steam-inlet orifices in its bottom on both sides of the concave trough.

12. In a sterilizing apparatus a shell the bottom of which has a concave trough, a sterilizing-cylinder resting in the trough and having steam-inlet orifices adapted to be shut when over the trough and to be opened when away from the trough, a cover hinged to the front of the shell and having a slot therein, and a crank attached to the sterilizing-cylinder and projecting through the slot.

13. In a sterilizing apparatus a shell, a sterilizing-cylinder therein, a removable cover for the sterilizing-cylinder, and having a rib engaging an indentation in the shell, and cylinder-operating means attached to the cover.

14. In a sterilizing apparatus a shell, a sterilizing-cylinder therein, a door hinged to the shell and having a slot, a removable cover for the sterilizing-cylinder, and having means coacting with means on the cylinder for providing exact positioning of the cover, and a crank on the cover projecting through the slot in the hinged door.

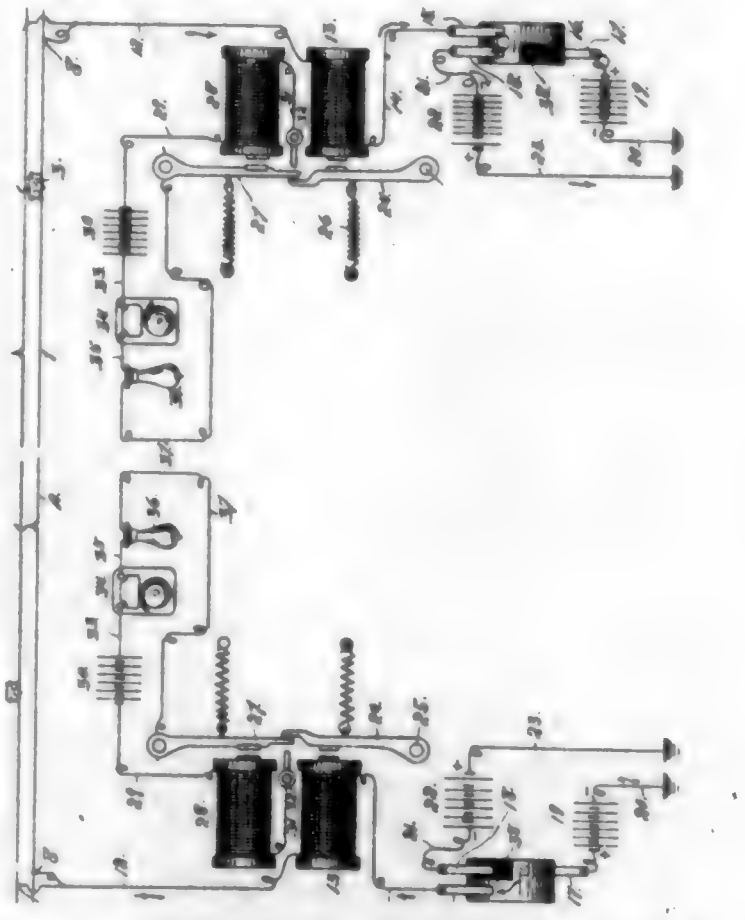
815,314. RAILWAY-SWITCH. GUY M. THOMPSON, Seattle, Wash., assignor of one-fourth to Charles S. Follett, Seattle, Wash. Filed Aug. 3, 1905. Serial No. 272,509.



Claim.—1. In a railway-switch, the combination with two electromagnetic switch-moving mechanisms normally in incomplete circuits and two supplemental electric circuits, of a contact-maker for each electromagnetic circuit, said contact-maker severally comprised of a bar formed of two pivotally-connected parts, a brush carried on the lower of said parts, two helical springs interposed between lateral arms provided on the respective said bar parts and tending to maintain them in axial alinement with each other, a helical spring acting to elevate said contact-maker, a removable pressure-plate adapted to operatively engage said bar, and a bracket-support for the bar provided with a socket for the reception of the upper end of the bar and a stud provided on said pressure-plate.

2. In an electrically-operated switch, the combination with the track-rails and a tongue having a depending bar, of two contact-plates positioned at some distance from the switch and respectively forming the terminals of two incomplete electric circuits, an electromagnet included in each such circuit and disposed at opposite sides of said bar, an insulated rod extending through the lower end of said depending bar and forming a terminal of two other electric circuits having their other terminals respectively disposed upon opposite sides of said rod, incandescent lamps included in the last-named circuits, and means carried by a car whereby either of said electromagnets may be predeterminately engaged to accomplish a movement of said switch-tongue and simultaneously light the corresponding of said lamps.

815,315. RAILWAY ELECTRIC SIGNALING APPARATUS. BENJAMIN F. WOODING, Denver, Colo. Filed Nov. 10, 1904. Serial No. 232,104.



Claim.—1. In electrical signaling apparatus for railways, the combination of a pair of overhead wires or conductors arranged in sections or blocks, the extremities of the sections of one conductor being arranged intermediate the extremities of the sections of the other conductor, inclined roller-contacts mounted on the train and engaging the said conductors respectively, the contacts being connected to form a continuous conductor, a normally open local circuit mounted on the train, signaling mechanism included in the circuit, a source of current for the main circuit, and a magnet in the main circuit, the local circuit having a movable part actuated by the magnet to close the local circuit for the purpose set forth.

2. In electrical signaling apparatus for railways, the combination of overhead conductors divided into sections or blocks, a local circuit mounted on the train, signaling mechanism included in said circuit, inclined roller-contacts mounted on the train and engaging the overhead conductors, and suitable connections between the roller-contacts and the local circuit for closing the latter and operating the signaling mechanism, substantially as described.

3. The combination of a pair of overhead conductors divided into sections or blocks, a normally open circuit mounted on the train, signaling mechanism located in said circuit, a source of current mounted on the train, a magnet connected with the current source, and inclined roller-contacts mounted exteriorly on the train and engaging the external conductors, for closing the main circuit through the magnet when two trains are in the same block or section, the

local circuit having a part acted on by the magnet to close the said circuit, substantially as described.

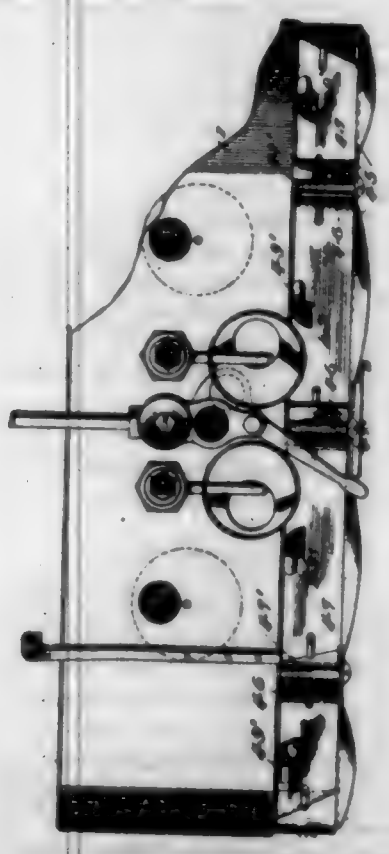
4. The combination of overhead conductors divided into blocks or sections whose divisions are alternately arranged, external roller-contacts mounted on the train and engaging said conductors, the said contacts occupying an inclined position and being of sufficient length to maintain a perfect electrical contact with the conductors regardless of the swaying of the train, a doubled source of current mounted on the train and electrically connected with the contacts, the two members of the current source having their opposite poles grounded, a pole-changer connected with the two members of the current source, a magnet located in the main circuit and provided with a pivoted arm forming its armature, a normally open local circuit, and signaling mechanism located in said circuit, the open circuit having a movable part acted on by the arm of the magnet of the main circuit, for closing the local circuit, substantially as described.

5. In electrical signaling mechanism for railways, the combination of overhead conductors arranged in blocks or sections, inclined roller-contacts mounted on the train and engaging said conductors, a main circuit mounted on the train and connected with the said roller-contacts, a magnet in said circuit, a movable part acted on by the magnet when the main circuit is closed, a normally open local circuit, the signaling mechanism located in said circuit, a magnet also forming a part of said circuit, an armature located in suitable proximity to said magnet and also forming a part of the local circuit, the pivoted arm of the one magnet acting on the armature of the other magnet to close the local circuit when the main-circuit magnet is energized, substantially as described.

6. In electrical signaling apparatus for railways, the combination of an overhead conductor, a local circuit mounted on the train, signaling mechanism included in said circuit, an inclined roller-contact mounted on the train and engaging the overhead conductor, the said contact being cylindrical whereby the conductor is free to change its position thereon as circumstances may require, and suitable connections between the roller-contact and the local circuit for closing the latter, substantially as described.

7. In electrical signaling apparatus for railways, the combination of a conductor, a local circuit mounted on the train, signaling mechanism included in said circuit, an inclined roller-contact mounted on the train and engaging the conductor, the said contact being cylindrical whereby the conductor is free to change its position thereon as circumstances may require, and suitable connections between the roller-contact and the local circuit for closing the latter, substantially as described.

815,316. DRAFT-REGULATOR FOR HYDROCARBON-BURNERS. FRED B. YOUNGS, San Francisco, Cal. Original application filed Aug. 22, 1903, Serial No. 170,332. Divided and this application filed Oct. 12, 1903. Serial No. 176,767.



Claim.—1. In combination with a hydrocarbon-burner, of swinging doors surrounding the lower end of said burner and adapted to be held closed by an outward draft from within the burner and adapted to be opened by pressure from the outside.

2. The combination with a hydrocarbon-burner, of means for admitting a rush of air to the burner from one or all of the sides and preventing a rush of air from within the burner.

3. The combination with a hydrocarbon-burner, of a casing below said burner, and means carried by the casing for admitting a rush of air to the burner from one and all sides of said casing, and preventing a rush of air outward from within the casing.

4. The combination with a hydrocarbon-burner, of a casing surrounding the lower edge of said burner, doors surrounding the casing, and adapted to allow a rush of air to the burner from one and all sides of the casing, and preventing a rush of air outward from within the casing.

5. The combination with a burner, of downwardly-extending members carried by the lower edge of said burner, a plate carried by the lower end of said members, and inwardly-swinging doors pivoted between said members and closing the space between the burner and the plate.

6. The combination with a burner, of downwardly-extending members carried by said burner, a plate carried by the lower end of said members, doors pivoted between said members and closing the space between the burner and the plate, and means for preventing the said doors from swinging outwardly.

7. The combination with a burner, of downwardly-extending members carried by said burner, a plate carried by the lower end of said members doors pivotally mounted between said members, and normally held in an oblique position, weights carried by the doors for counterbalancing the weight of the doors, said doors adapted to be swung inwardly only.

8. The combination with a burner, of inwardly-swinging doors surrounding the lower portion of the burner, and means whereby the doors of one or all sides may be opened by the outside atmosphere, or one or all of the doors may be closed by the inside pressure, or the doors on one side may be opened by outside atmosphere and closed by inside pressure, or vice versa.

9. The combination with a burner fitted with vertically-arranged air-flues extending therethrough, of downwardly-extending members carried by the bottom of said burner, a bottom plate carried by said members, doors pivoted between said downwardly-extending members, and means whereby the doors are opened by the air from the outside and closed by the air from the inside.

10. The combination with a burner, of obliquely-arranged swinging doors normally held in an oblique and closed position, an outwardly-extending flexible arm carried by said door, and adapted to be rolled and forming a weight for counterbalancing the door, and said door adapted to be swung inwardly and open by the outside pressure, and adapted to be held closed by the inside pressure.

11. The combination with a burner, of downwardly-extending V-shaped members carried by the burner, a bottom plate supported by the lower end of said V-shaped members, doors pivotally supported between said V-shaped members and normally held in an oblique closed position and adapted to be opened by the outside pressure and closed by inside pressure.

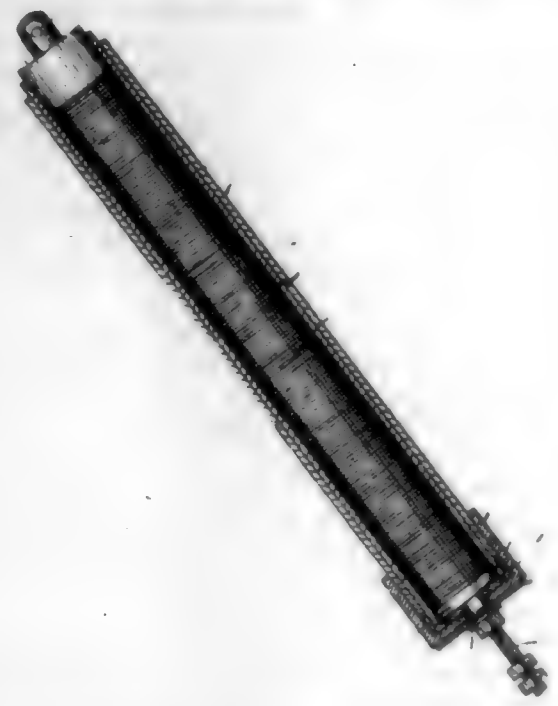
12. The combination with a burner, downwardly-extending V-shaped members carried by the burner, a bottom plate supported by the lower end of said V-shaped members, of obliquely-arranged doors pivoted between said V-shaped members and normally held in an oblique and closed position, an outwardly-extending flexible arm carried by each door and adapted to be rolled and forming a weight for counterbalancing the door, and said door adapted to be swung inwardly and opened by the outside pressure and adapted to be held closed by the inside pressure.

13. The combination with a burner, of normally inwardly inclined swinging doors surrounding the lower portion of said burner, and adapted to be opened inwardly by air-pressure from the outside or held closed by air-pressure from the inside.

14. The combination with a burner, of obliquely-arranged swinging doors normally held in an oblique and closed position, outwardly-extending adjustable arms carried by said doors, and said doors adapted to be swung inward and opened by the outside pressure and adapted to be held closed by the inside pressure.

815,317. RESISTANCE DEVICE FOR ELECTRIC-CURRENT CONTROLLERS. LYNDE BRADLEY, Milwaukee, Wis., assignor of one-half to Stanton Allen, Milwaukee, Wis. Filed July 28, 1902. Serial No. 117,236.

Claim.—1. The combination with a compressible resistance medium of carbonaceous material in the form of plates, of a container inclosing the plates, and a gas-retaining closing means therefor to prevent oxidation of said plates.



2. The combination of a resistance medium of carbonaceous material in the form of plates, a container inclosing the plates, a gas-retaining closing means therefor to prevent oxidation of said plates, and means for subjecting the plates to pressure to produce variable conductivity of the plates.

3. The combination of a variable-resistance medium of carbonaceous material in the form of plates, a container inclosing the plates, and gas-retaining means for excluding air from said container, whereby oxidation of the plates is prevented.

4. The combination of a resistance medium of carbonaceous material in the form of compressible plates, a container inclosing the plates, means for closing the ends of the container, the closing means at one end being immovable and adapted to retain an air-excluding gas for preventing oxidation of the plates, and the closing means at the other end being movable inwardly and outwardly in order to produce variable resistance of the plates.

5. In a resistance device for electric-current controllers, the combination of an outer tubular casing, a resistance medium within the tubular casing, a coupling connected to one end of the tubular casing and having an outwardly-extending tubular projection, a block within the tubular casing and adapted to bear against and compress the resistance medium, said block provided with an outwardly-extending stem, a tube within the outwardly-extending tubular projection of the coupling and surrounding the outwardly-extending stem of the block, and means for forming a substantially air-tight joint at the other end of the tubular casing.

6. In a resistance device for electric-current controllers, the combination of an outer tubular casing, a resistance medium within the tubular casing, a coupling connected to one end of the tubular casing and having an outwardly-extending tubular projection, a block within the tubular casing and adapted to bear against and compress the resistance medium, said block provided with an outwardly-extending stem, a tube within the outwardly-extending tubular projection of the coupling and surrounding the outwardly-extending stem of the block, said tube having a laterally-extending flange at its outer end, a nut turning on threads formed on the outwardly-extending tubular projection of the coupling and provided at its outer end with a lateral inwardly-extending flange adapted to be brought against the flange of the tube which is surrounded by the tubular projection of the coupling, and means for forming a substantially air-tight joint at the other end of the tubular casing.

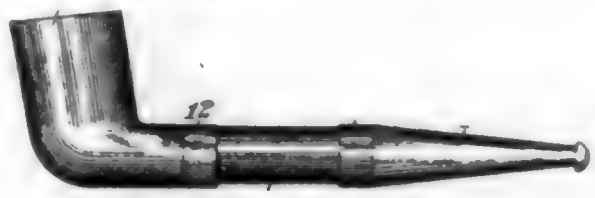
7. In a resistance device for electric-current controllers, the combination of a tube, a resistance medium within the tube, means for forming a substantially air-tight joint at one of the ends of the tube, and two blocks placed together within the opposite end of the tube and closely fitting but movable in said end of the tube, the inner block bearing against the resistance medium, and the said blocks forming a substantially air-tight joint at said end of the tube.

8. In a resistance device for electric-current controllers, the combination of an outer tubular casing, a resistance medium within the tubular casing, a socket at one end of the tubular casing, a block in the bottom of the socket and upon which the resistance medium bears, an outer socket inclosing the inner socket and connected to the outer tubular casing, a coupling connected to the other end of the tubular casing and having an outwardly-extending tubular projection, a block within this end of the tubular casing and adapted to bear against and compress the resistance medium, said block provided with an outwardly-extending stem, and a tube within the outwardly-extending tubular projection of the coupling, and surrounding the outwardly-extending stem of the block.

9. The combination of a resistance medium of carbonaceous material, a container inclosing the carbonaceous material, means for forming a substantially air-tight joint at one of the ends of the container, and a block movable inwardly and outwardly in the opposite end of the container and against the carbonaceous material at that end of the container, the two opposite substantially air-tight joints of the container preventing oxidation of the carbonaceous material, and said block adapted when moved inwardly toward the carbonaceous material to produce variable conductivity of said carbonaceous material.

10. The combination of a resistance medium, a container inclosing said resistance medium, an insulating-tube in the container and surrounding the resistance medium, a socket into which the inner insulating-tube extends, a block in the bottom of the socket and closely fitting the upright wall of said socket, and upon which block the resistance medium bears, an outer socket inclosing the inner socket and connected to the outer container, and means for forming a substantially air-tight joint at the opposite end of the container, the two opposite substantially air-tight joints of said container preventing oxidation of the resistance medium.

815,318. PIPE. CHARLES E. ONGLEY, New York, N. Y. Filed Apr. 4, 1905. Serial No. 253,752.



Claim.—1. A pipe provided with a stem having an open circuitous smoke-channel in its exterior and a surrounding casing of elastic material forming the outer wall of said channel, substantially as described.

2. A stem for pipes provided with a circuitous smoke-channel in its exterior and a removable surrounding casing of elastic material forming the outer wall of said channel, substantially as described.

3. A stem for pipes having a screw-threaded bore in each end, an open circuitous smoke-channel in its exterior surface, holes connecting said bores with the ends of the smoke-channel and a removable surrounding casing of elastic material forming the outer wall of said channel, substantially as described.

4. A pipe comprising a stem having a screw-threaded bore in each end, an open circuitous smoke-channel in its exterior circumference, holes connecting said bores with the ends of said smoke-channel, a bowl having a screw-threaded projection engaging the bore in one end of the stem, a mouthpiece having a screw-threaded projection engaging the bore at the other end of the stem and a removable surrounding casing of elastic material forming the outer wall of said channel, substantially as described.

5. A stem for pipes provided with an open circuitous smoke-channel in its exterior and a removable surrounding casing of elastic material forming the outer wall of said channel, substantially as described.

815,319. TIRE-CASE. HOWARD R. TEEL, Medford, Mass. Continuation of application Serial No. 286,138, filed Nov. 6, 1905. This application filed Jan. 6, 1906. Serial No. 294,859.

Claim.—1. A tire-case, having a main portion to fit over the tread and sides of the tire, a supplemental portion at one edge of said main portion and of sufficient width to extend across to the opposite side of the case to cover the rim portion of the tire, and a retaining device at the opposite edge only of said supplemental portion adapted to engage the other side of the main portion at the side of the case to hold the case in position about a tire, substantially as described.

2. A tire-case, having a main portion to fit over the tread and

sides of the tire, a flap extending beyond the edge of said main portion to project across and cover the rim portion of the tire, and a retaining-hoop for the outer edge of said flap.



3. A tire-case, having a main portion to fit over the tread and sides of the tire, a flap along each edge of said main portion, and a retaining-hoop connected with the outer edge of each flap, substantially as described.

4. A tire-case, having overlapping portions adapted to extend across the tire from one side to the other, retaining-hoops connected with the edges of said overlapping portions, and means for connecting together the opposite ends of each hoop, substantially as described.

5. A tire-case, the main portion of which is adapted to be fitted over the body of the tire, said case being extended at the edge to form a flap, a pocket formed along the outer edge of said flap, a hoop contained in said pocket, and means for maintaining said hoop distended to fasten the flap in position.

6. A tire-case, having a main portion adapted to fit over the tread and sides of the tire, a supplemental portion to cover the rim portion of the tire, a retaining-hoop connected with the outer edge of said supplemental portion, and means for uniting the ends of said hoop to keep the hoop distended, substantially as described.

7. A tire-case, having a main portion to fit over the tread and sides of the tire, a flap extending beyond the edge of said main portion to project across and cover the rim portion of the tire, a retaining-hoop secured to the outer edge of said flap, and a ball and socket connected with the ends of said hoop, respectively.

8. A tire-case, having a main portion to fit over the tread and sides of the tire, a flap extending beyond the edge of said main portion to project across and cover the rim portion of the tire, a retaining-hoop secured to the outer edge of said flap, a ball and socket screw-threaded on the ends of said hoop, respectively, and finger-pieces connected with said ball and socket.

9. A tire-case, having a main portion to fit over the tread and sides of the tire, a supplemental portion at one edge of the main portion to cover the rim portion of the tire and overlapping the opposite side of the main portion, and a water-shed connected with the main portion in position to cover and protect the overlapping edge of said supplemental portion.

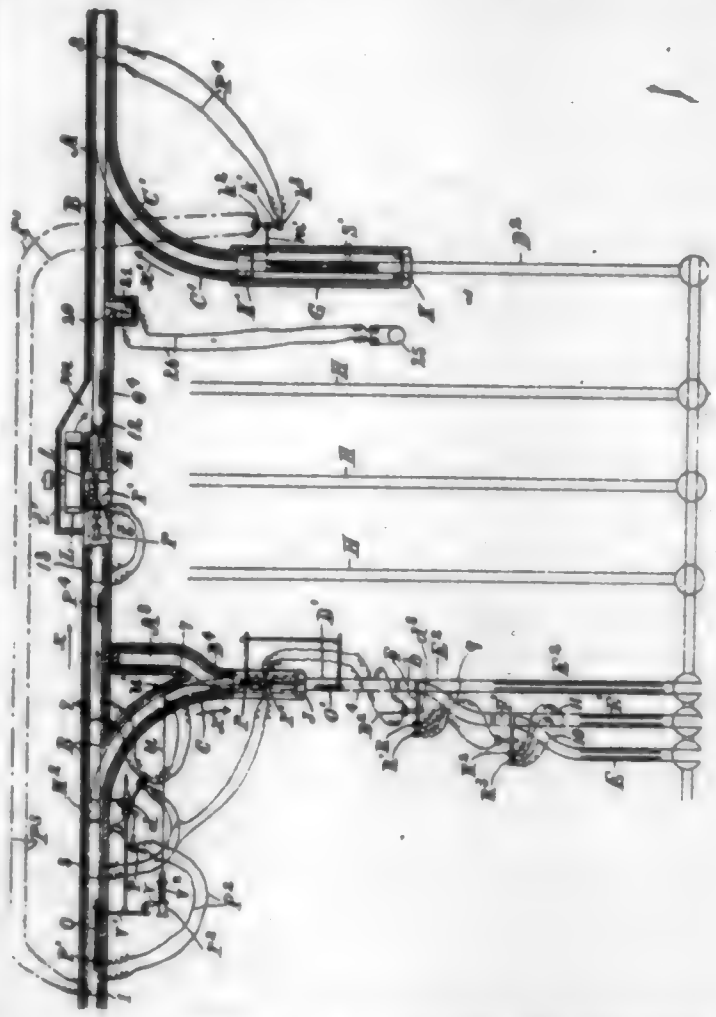
815,320. SAFEGUARD FOR AUTOMATIC RAILWAYS. BENJAMIN F. CARPENTER, Roselle Park, N. J. Filed May 12, 1904. Renewed July 7, 1905. Serial No. 263,735.

Claim.—1. The combination, with the railway-track and a movable appliance, as a switch or gate, of two shifter devices operated automatically for shifting such appliance, and means actuated by the moving car for separately initiating the movement of such shifter devices, whereby the operation of either shifter device serves to move the said appliance.

2. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, and a "danger-section" upon the track including such appliance, of two shifter devices operated automatically for shifting such appliance, and means actuated by the moving car when upon such "danger-section" for separately initiating the movement of the shifter devices, as and for the purpose set forth.

3. The combination, with the railway-track and a movable appliance, as a switch or gate, of two shifter devices for moving such appliance, said devices being operated by independent motor agencies, and means actuated by the moving car for separately initiating the movement of such shifter devices, whereby the shifter devices are preserved from simultaneous disability.

4. The combination, with the railway-track and a movable appliance, as a switch or gate, of a shifter-bar connected with such appliance, two shifter devices connected to the said bar, and means actuated by the moving car for separately initiating the movement of such shifter devices, whereby either device may operate the bar to shift the appliance as desired.



5. The combination, with the railway-track and a movable appliance, as a switch or gate, of a shifter-bar connected with such appliance, two shifter devices, as pneumatic pistons and cylinders arranged in tandem upon such bar, and means actuated by the moving car for separately initiating the movement of such shifter devices, whereby either device may operate the bar to shift the appliance as desired.

6. The combination, with the railway-track and a movable appliance, as a switch or gate, of two shifter devices operated automatically for shifting such appliance, mechanical means, as a pull-rod and tread-lever actuated by the moving car, for initiating the movement of one of the shifter devices, and electrical means, as a magnet, circuit, and contact operated by the car for initiating the movement of the other shifter device.

7. The combination, with the railway-track and a movable appliance, as a switch or gate, of two shifter devices comprising each a pneumatic cylinder with piston attached to the said appliance, air-valves for supplying the cylinders, and means actuated by the moving car for separately actuating the said air-valves, whereby either piston operates to shift the moving appliance.

8. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, and a "danger-section" upon the track including such appliance, of two shifter devices operated automatically for shifting such appliance, means actuated by the moving car when upon such "danger-section" for separately initiating the movement of such shifting devices, and means actuated by the car upon its passage from such "danger-section" to reverse the operation of such shifter devices, whereby the car is safeguarded while on such "danger-section."

9. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, and a "danger-section" upon the track including such appliance, of two shifter devices operated automatically for shifting such appliance, means actuated by the moving car when upon such "danger-section" for separately initiating the movement of such shifter devices, means for locking the shifter devices after moving the said appliance, and means actuated by the car upon its passage from such "danger-section" to unlock the shifter devices and reverse the operation of such devices, whereby the car is safeguarded while on such "danger-section."

10. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, and a "danger-section" upon the track including such appliance, of a shifter-bar connected with such appliance, two shifter devices connected to the said bar, means actuated by the moving car when upon such "danger-section" for separately initiating the movement of such shifter devices, means for locking the shifter-bar after moving the said appliance, and means actuated by the car upon its passage from such "danger-section" to unlock the shifter-bar and reverse the operation of the shifter devices, whereby the car is safeguarded while on such "danger-section."

11. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, of a shifter-bar connected with such appliance, a pneumatic cylinder and piston for moving such shifter-bar and appliance, a cylinder-valve for supplying such cylinder, an auxiliary pneumatic cylinder with auxiliary piston having its rod coupled by an extended connection to such cylinder-valve, and an auxiliary valve for supplying the auxiliary pneumatic cylinder, with means actuated by the moving car for opening said auxiliary valve, whereby the motion initiated by the car may be conveyed for a great distance by the energy of the auxiliary pneumatic piston.

12. The combination, with the railway-track and a movable appliance, as a switch or gate thereon, of a shifter-bar connected with such appliance, two pneumatic shifter-cylinders with pistons connected to such shifter-bar, separate air-valves for supplying the two shifter-cylinders, an auxiliary pneumatic cylinder with auxiliary piston having its rod coupled by an extended connection to one of such cylinder-valves, an auxiliary valve for the auxiliary cylinder, means actuated by the moving car for opening said auxiliary valve, and electrical means actuated separately by the moving car for operating the valve of the other shifter-cylinder, whereby the failure of either cylinder-valve does not prevent the shifter from operation.

13. In an automatic railway, the combination, with the main track and an open station adjacent thereto, of a branch track leading therein, several station-tracks connected with the branch track by rail-switches, and means actuated by a car when directed upon each of the station-tracks to automatically shift the switch of such station-track and direct any succeeding car to a different station-track.

14. In an automatic railway, the combination, with the main track and an open station adjacent thereto, of a branch track leading therein, several station-tracks connected with the branch track by rail-switches, an electrically-insulated "danger-section" embracing each of said switches, means actuated by the car when directed upon each of the station-tracks to safeguard or lock the switch from displacement while on the "danger-section," and means actuated by the car upon leaving each "danger-section" to automatically shift the switch of such station-track, to direct any succeeding car upon a different station-track.

15. In an automatic railway, the combination, with the main track and an open station adjacent thereto, of a branch track leading therein, several station-tracks connected with the branch track by rail-switches, an electrically-insulated "danger-section" embracing each of said switches, means operated by the entering cars for shifting the several switches and automatically directing the cars in succession to the different station-tracks, and electric mechanism actuated by each car, as it enters the "danger-section" of any station-track, for locking the switch to such station-track and safeguarding such car and switch until the car be removed from such "danger section."

16. In an automatic railway, the combination, with a given section of the track-rails termed an "arrester-section," of an arrester comprising brake-bars held normally raised adjacent to the track-rails and inclined downwardly at the receiving end, a car-body having brake-shoes parallel with the track to engage such brake-bars, and means for lowering the brake-bars when the car is brought to rest.

17. In an automatic railway, the combination, with a main track and an open station adjacent thereto, and a branch track employed for receiving or despatching cars, of brake-bars upon the branch track held retractably adjacent to the track-rails to arrest the car by friction, a car-body having brake-shoes to engage such brake-bars, and means for retracting the brake-bars when the car is brought to rest, to permit the removal of the car from the arrester.

18. In an automatic railway, the combination, with the arrester track-section and a car-body having brake-shoes on the bottom parallel with the track, of brake-bars located adjacent to the track-rails and inclined downwardly at the receiving end and having a spring and connections for holding the brake-bars normally raised in the path of the brake-shoes, and means actuated at the pleasure of the operator for lowering the brake-bars in opposition to the spring.

19. In an automatic railway, the combination, with the arrester track-section and a car-body having brake-shoes on the bottom parallel with the track, of brake-bars located adjacent to the track-rails and inclined downwardly at the receiving end, means for holding the brake-bars normally raised in the path of the brake-shoes, a hand-lever actuated at the pleasure of the operator with means for lowering the brake-bars in opposition to the spring, a lock for the brake-bars when thus lowered, and a trip actuated by the car upon leaving the arrester, to release the brake-bars and reset them for operation.

20. In an automatic railway, the combination, with the arrester track-section and a car-body having brake-shoes on the bottom parallel with the track, of brake-shoes located adjacent to the track-rails and inclined downwardly at the receiving end and having a spring and connections for holding the brake-bars normally raised in the path of the brake-shoes, means actuated at the pleasure of the operator for lowering the brake-bars in opposition to the spring, and means actuated by the car when moved from such arrester track-section to remove the opposition to the spring and permit the brake-bars to rise again in the path of the brake-shoes.

21. In an automatic railway, the combination, with downwardly-inclined track-rails, of an arrester comprising brake-bars sustained retractably adjacent to the track-rails, a car-body with brake-shoes adapted to engage the brake-bars, and a bolt for holding the brake-bars normally raised to retain the car upon such arrester-section at the pleasure of the operator.

22. In an automatic railway, the combination, with a main track and an open station adjacent thereto, of a downwardly-inclined despatching-section for despatching cars to the main track, an arrester in such despatching-section comprising brake-bars sustained retractably adjacent to the track-rails, a bolt for holding the brake-bars normally raised, and means actuated by a main-line car (passing upon the main track) for automatically retracting the bolt to discharge the car from the despatching-section after the passage of such main-line car.

23. In an automatic railway, the combination, with a main track and an open station adjacent thereto, with a "danger-section" in the main track adjacent to such station, of a branch track having downwardly-inclined despatching-section for despatching cars to the main track, an arrester held retractably in the path of the cars upon such discharging-section, a bolt for holding the arrester in operative position, electric means adapted respectively to project and retract the said bolt, and connections operated respectively by cars entering and leaving the "danger-section," to project and retract the bolt, and thus hold the arrester in an operative position to arrest any car upon the despatch-section, until such "danger-section" be clear.

24. In an automatic railway, the combination, with the main tunnel and track and an inclined branch tunnel and branch track for despatching cars into the main tunnel, of a gate at the outer end of the branch tunnel and a gate within the branch tunnel forming a despatching-section between said gates, cylinders with pneumatic pistons for opening said gates independently, and hand-valves for admitting air to such cylinders for opening the gates at pleasure.

25. In an automatic railway, the combination, with the main tunnel and track and an inclined branch tunnel and branch track for despatching cars into the main tunnel, of gates upon the branch tunnel inclosing a discharging-section, an arrester located between the gates, means for holding the arrester in the path of the car to retain the car in such section, means for operating the gates independently, and means for releasing the arrester and discharging the car from such section.

26. In an automatic railway, the combination, with the main track and an open station adjacent thereto, of a branch track leading therein, several station-tracks connected with the branch track by rail-switches, a car-arrester upon each of the said station-tracks, and means actuated by a car, when directed upon each station-track, to automatically shift the switch from such station-track and direct the succeeding car to a different station-track.

27. In an automatic railway, the combination, with the main track and an open station adjacent thereto, of a branch track leading therein, several station-tracks connected therewith by rail-switches, the retractable car-arrester located in said station-tracks, means for holding such arrester normally projected in the path of the car, means actuated by a car when directed upon each station-track to automatically shift the switch from such station-track and direct the succeeding car to a different station-track, and means for retracting the arrester when the car is brought to rest on such station-track.

28. In an automatic railway, the combination, with the pneumatic tunnel having a gate therein, and an air-passage in the wall of the tunnel upon opposite sides of the gate, of an air-plunger inserted in such passage, a gate-lifter adapted to start the opening of the gate, and a connection from the air-plunger adapted to press such gate-lifter normally against the gate when closed, to partly or wholly balance the pressure of the air therein.

29. In an automatic railway, the combination, with the pneumatic tunnel having a gate therein with air-pressure upon one side and suction upon the opposite side, of a diaphragm located in the wall of the tunnel upon the suction side, a passage leading from the outer side of the diaphragm to the pressure side of the gate, a sliding bolt fitted to press upon the suction side of the gate, and connections from the diaphragm for pressing the bolt normally toward the gate when the diaphragm is pressed toward the tunnel.

30. The combination, with a tunnel having track-rails to carry wheeled cars, of the accelerator comprising a blower with connections for drawing air from and supplying it to the tunnel at adjacent points, and a back-pressure valve or gate held normally closed in the tunnel between said points by the action of the blower, and opened only for the passage of cars.

31. In an automatic railway, the accelerator for the air-current, consisting of a blower having its inlet and outlet connected with the tunnel at adjacent points, and a gate in the tunnel between such inlet and outlet, with mechanism operated by a car approaching the gate to automatically open such gate.

32. In an automatic railway, the accelerator for the air-current, consisting of a blower having its inlet and outlet connected with the tunnel at adjacent points, and a gate in the tunnel between such inlet and outlet, a "danger-section" upon the track including such gate, and means actuated by the car on entering and leaving such "danger-section," respectively, for opening and closing the said gate.

33. In an automatic railway, the accelerator for the air-current, consisting of a blower having its inlet and outlet connected with the tunnel at adjacent points, and a gate in the tunnel between such inlet and outlet, two shifter devices for opening the said gate, said devices being operated by separate motor agencies, a "danger-section" upon the track including such gate, and means actuated by the moving car for separately initiating the movement of such shifter devices upon entering the "danger-section," whereby the disability of one shifter does not disable the gate.

34. In an automatic railway, the accelerator for the air-current, consisting of a blower having its inlet and outlet connected with the tunnel at adjacent points, and a gate in the tunnel between such inlet and outlet, a "danger-section" upon the track including such gate, a gate-shifter with means actuated by the moving car when entering such "danger-signal" for automatically moving the shifter, means for locking the shifter when the gate is opened, and means actuated by the car upon its passage from such "danger-section" to unlock the shifter and close the gate.

35. In an automatic railway, the combination, with the tunnel or pneumatic tube having track-rails to carry wheeled cars, of a safety car-pocket at the side of the same, the branch track in such pocket connected with the track in the tunnel, and a spring switch-tongue adapted to deflect into the car-pocket all cars moving in the tunnel toward such pocket.

36. In an automatic railway, the combination, with a tunnel or pneumatic tube having track-rails laid upon an ascending grade to carry wheeled cars, of a branch track having its switch-point extended up the grade and extended by the side of the tunnel, and a car-pocket formed about such branch track, such switch-point having a light spring to permit the passage of cars ascending the grade, and adapted to deflect into the pocket any cars moving backwardly on the grade.

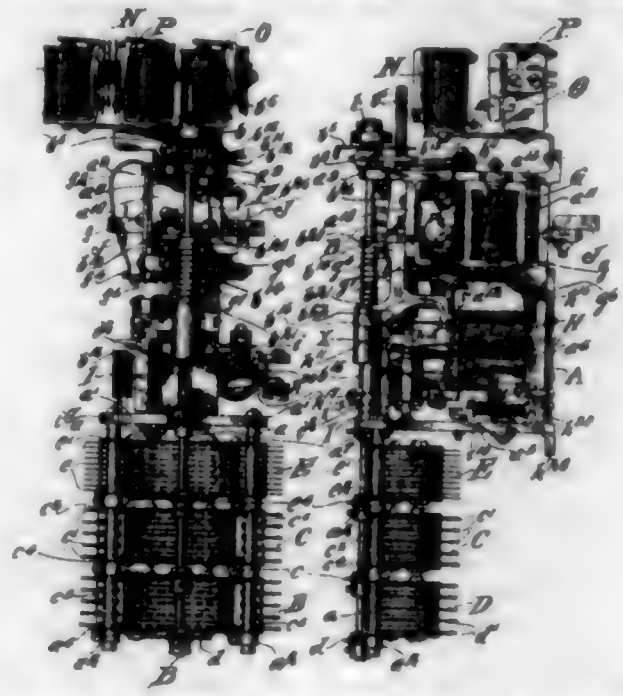
37. In an automatic railway, the combination, with a tunnel or pneumatic tube having track-rails to carry wheeled cars, of a safety car-pocket at the side of the same, the branch track in such pocket connected with the track in the tunnel, and a spring switch-tongue adapted to deflect into the car-pocket all cars moving in the tunnel toward such pocket, and the car-pocket having an arrester adapted to make a frictional engagement with the car to bring the same to rest in the pocket.

38. In an automatic railway, the combination, with the pneumatic tunnel having track-rails to carry wheeled cars, of the current-indicator comprising an air-vane arranged in the path of the air-current, a spring to resist the air-pressure and draw the air-vane backwardly, and means connected with the air-vane for actuating an alarm when the vane is drawn by the spring from its normal position upon the diminution of the air-current.

39. In an automatic railway, the combination, with the pneumatic tunnel having track-rails to carry wheeled cars, of the current-indicator comprising an open recess in the side of the tunnel, an air-vane pivoted therein to stand normally in the path of the air-current, a spring to resist the air-pressure and draw the air-vane out of the current, and an electric circuit and alarm actuated thereby, with means connected to the air-vane for closing the circuit when the pressure diminishes and the spring moves the vane from its normal position.

815,321. AUTOMATIC TELEPHONE SELECTOR-SWITCH.

ALEXANDER E. KEITH, JOHN ERICKSON, and CHARLES J. ERICKSON, Chicago, Ill., assignors to Automatic Electric Company, Chicago, Ill., a Corporation of Illinois. Filed May 2, 1905. Serial No. 258,509.



Claim.—1. An automatic switching-machine for telephone systems, comprising a cast frame of non-magnetic metal, a rotatable and endwise-movable switch-shaft supported in bearings on said frame, wipers on said shaft, bank-contacts adapted to be engaged by said wipers, electromagnetically-actuated step-by-step mechanism for giving the shaft an endwise step-by-step movement, similarly-actuated mechanism for giving the shaft a rotary step-by-step motion, locking-dogs, a "release-magnet" for operating said locking-dogs, a "side switch," a "private magnet" for operating said "side switch," and spring means for restoring the shaft to its normal position when released from an operative position, said frame being formed with lower portions a' for supporting the said bank-contacts, and with horizontal portions a^8, a^{12}, a^{13}, and with vertical front and rear portions a^{10}, a^9, the electromagnet for actuating the shaft endwise being mounted upon the portion a^{13} of the frame, the said release-magnet being mounted upon the said vertical frame portion a^{10}, said side switch having contacts secured by a bracket i^{10} to the horizontal frame portion a^8, the horizontal frame portion a^{13} connecting the said front and rear vertical portions a^{10} and a^9, and the said private magnet and electromagnet for rotating the shaft being secured at their rear ends to the said vertical frame portion a^6, substantially as shown and described.

2. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts adapted to be operated by said shaft, a ratchet device for giving the shaft an endwise step-by-step motion, an electromagnet for actuating said ratchet device, another ratchet device for giving the shaft a step-by-step rotary motion, a second magnet for actuating said last-mentioned ratchet device, each magnet being provided with a vibratory armature, and also with a flat adjustable spring for keeping the armature normally retracted, and a tension-regulating member for each spring, each tension-regulating member consisting of a T-shaped piece having its head adapted to engage the end of its allotted spring and having its stem portion threaded and suitably supported in a screw-threaded socket, whereby the rotation of either tension-regulating member in its threaded socket will change or vary the tension of its allotted armature-spring and each spring having its end provided with means for locking its allotted tension-regulating device against turning.

3. An automatic switching-machine for telephone systems, comprising an endwise-movable switch-shaft, switch-contacts adapted to be operated by said shaft, a ratchet device for giving said shaft a

step-by-step endwise movement, an armature for actuating said step-by-step device, an electromagnet for actuating said armature, a flat spring having one end secured to the said armature and its other end notched, the axes of the said shaft and magnet being parallel, and a tension-regulating member having a head adapted to lockingly engage the notch in the end of said spring, so as to prevent said member from turning, and the member having also a threaded stem suitably supported in a threaded socket, said spring being arranged to engage the outer surface of said head and thereby tending to keep the armature normally retracted, and whereby the tension of said spring may be changed or varied by rotating said tension-regulating member and thereby causing the latter to move either way in a direction parallel with the shaft and magnet.

4. An automatic switching-machine for telephone systems, comprising a rotatable switch-shaft, switch-contacts operated by said shaft, a ratchet device for giving said shaft a step-by-step rotary motion, an armature for actuating said ratchet device, an electromagnet for actuating said armature, the said shaft and magnet being at right angles to each other, a flat spring having one end secured to said armature and its other end notched, a tension-regulating member having a head adapted to lockingly engage said notch, so as to prevent said member from turning, and the member having also a threaded stem suitably supported in a threaded socket, said spring thereby tending to keep the said armature normally retracted, and whereby the tension of said spring may be changed or varied by rotating said tension-regulating member and thereby causing the latter to move either way in a direction at right angles to both the magnet and the shaft.

5. An automatic switching-machine for telephone systems, comprising an electromagnet, an armature for said magnet, a flat spring having one end portion secured to said armature and the other end notched, and a T-shaped tension-regulating member having a head adapted to engage said notch, so as to prevent said member from turning, and having a threaded stem suitably supported in a threaded socket, the said spring thereby being adapted to keep the said armature normally retracted, whereby the tension of said spring may be changed or varied by rotating said tension-regulating member and thereby causing the latter to move either way in a direction parallel with its threaded stem.

6. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, "vertical ratchet-teeth" on said shaft, "rotary ratchet-teeth" on said shaft, electromagnetically-actuated "vertical" and "rotary" pawls for respectively engaging the "vertical" and "rotary" ratchet-teeth, a pair of locking-dogs rigidly connected together and held normally out of engagement with the said "vertical" and "rotary" ratchet-teeth, means whereby the actuation of the "vertical pawl" automatically releases said dogs, and a flat spring having its upper end secured in place by a screw and its lower end slidingly disposed upon the outer surface of the locking-dog which engages the "vertical ratchet-teeth," whereby both dogs are forced into engagement with their respective ratchet-teeth when the same are automatically released as stated.

7. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a "rotary magnet," an armature for said magnet, a "rotary pawl" carried by said armature and adapted to engage said teeth, and a pair of guides for directing said pawl into and out of engagement with said teeth, together with a spring carried by the said armature and pawl and tending to keep the latter pressed against the end of one guide, the guide for throwing the pawl out of engagement with the teeth and subject to the tension of said spring consisting of an adjustable screw having its end adapted to engage the said pawl, and having its screw-threaded body portion suitably adjustably supported and locked in place by a lock-nut.

8. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a "rotary magnet," an armature for said magnet, a "rotary pawl" carried by said armature and adapted to engage said teeth, and a pair of guides for directing said pawl into and out of engagement with said teeth, the guide for forcing the pawl into engagement with the teeth consisting of a plate having a lug adapted to engage the said pawl and thereby positively stop the rotation of the shaft, and having a rotatable adjusting-screw by which it can be adjusted relatively to the pawl and shaft.

9. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a "rotary magnet," an armature for said magnet, a "rotary pawl" carried by said armature and adapted to engage said teeth, and a pair of guides directing said pawl into and out of engagement with said teeth, the guide for forcing the pawl into engagement with the teeth consisting of a slotted plate adjustably held in place by a clamping-screw passing through its slot into the support on which the plate is mounted, said plate being provided with a rotatable adjusting-screw having a flange adapted to suitably engage the plate for the purpose of changing the relation of the guide to the pawl when the screw is rotated.

10. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a magnet, an armature for said magnet, a pawl carried by said armature and adapted to engage said teeth, guides for directing said pawl into and out of engagement with the teeth, and a "side switch," the guide for forcing the pawl into engagement with the said teeth consisting of an adjustably-mounted plate having a lug adapted to engage the said pawl, and also having another lug adapted to act as a stop for limiting the final movement of the said "side switch," together with means for adjusting said plate.

11. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, electromagnetically-actuated devices for giving said shaft a step-by-step vertical movement, and also a step-by-step rotary motion, wipers on said shaft, and a plurality of banks of contacts arranged to be engaged by said wipers, said banks being mounted on supporting-rods and separated from each other and clamped in place by split rings applied to said rods and each provided with a lug adapted to engage and hold a portion of one of the said banks.

12. An automatic switching-machine for telephone systems, comprising a pair of rods, a bank of contacts mounted on said rods, and a pair of split rings or collars a^3 applied to said rods and each provided with a lug a^4 adapted to engage and hold the bottom portion of said bank, together with a switch-shaft provided with means for coöperating with said bank of contacts in establishing any one of a number of possible connections, and means for operating the said shaft.

13. An automatic switching-machine for telephone systems, comprising a frame of non-magnetic metal, a pair of rods having their upper ends secured to the lower portion of said frame, three banks of contacts strung on said rods and arranged one above the other, the upper bank being the so-called "private bank," and the other two banks containing contacts for closing the "line-circuits," together with a switch-shaft provided with wipers adapted to coöperate with said banks of contacts, means for operating said shaft, and split collars applied to said rods and arranged to support and separate the banks from each other, each collar being provided with means for engaging and holding the bottom portion of one of the banks, whereby the said banks can be separately adjusted upon said rods.

14. An automatic switching-machine for telephone systems, comprising a plurality of banks of contacts, adjustable separating and holding devices between said banks, together with switch-arms adapted to coöperate with said contacts in making connections, each bank being held in place and adjustable independently of the others.

15. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, a "side switch" and means for operating the same, "rotary ratchet-teeth" on the shaft, an electromagnetically-actuated pawl for engaging said "rotary teeth," ratchet mechanism for giving the shaft a vertical step-by-step movement, and an adjustably-mounted member having one portion adapted to act as a stop for limiting the movement of said "side switch," and having another portion adapted to act as a guide for the said pawl.

16. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a "rotary magnet," an armature for said magnet, a "rotary pawl" carried by said armature and adapted to engage said teeth, and a pair of guides for directing said pawl into and out of engagement with said teeth, the guide for forcing the pawl into engagement with

the teeth consisting of a slotted plate adjustably held in place by a clamping-screw passing through its slot into the support on which the plate is mounted, said plate being provided with a rotatable adjusting-screw having a flange adapted to suitably engage the plate for the purpose of changing the relation of the guide to the pawl when the screw is rotated, the said switching-machine comprising also a pair of "line-relays," and means whereby the relays may be employed by a calling subscriber for controlling the operation of the said machine.

17. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, means for giving the shaft an endwise step-by-step movement, "rotary ratchet-teeth" on the shaft, a magnet, an armature for said magnet, a pawl carried by said armature and adapted to engage said teeth, guides for directing said pawl into and out of engagement with the teeth, and a "side switch," the guide for forcing the pawl into engagement with the said teeth consisting of an adjustably-mounted plate having a lug adapted to engage the said pawl, and also having another lug adapted to act as a stop for limiting the final movement of the said "side switch," together with means for adjusting said plate, the said switching-machine having also a line-circuit and a pair of bridged "line-relays" and means whereby the same may be employed by a calling subscriber for controlling the operation of the said machine.

18. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, electromagnetically-actuated devices for giving said shaft a step-by-step vertical movement, and also a step-by-step rotary motion, wipers on said shaft, and a plurality of banks of contacts arranged to be engaged by said wipers, said banks being mounted on supporting-rods and separated from each other and clamped in place by split rings applied to said rods and each provided with a lug adapted to engage and hold a portion of one of the said banks, the said switching-machine comprising also a pair of "line-relays," and means whereby the relays may be employed by a calling subscriber for controlling the operation of the said machine.

19. An automatic switching-machine for telephone systems, comprising a pair of rods, a bank of contacts mounted on said rods, and a pair of split rings or collars a^2 applied to said rods and each provided with a lug a^3 adapted to engage and hold the bottom portion of said bank, together with a switch-shaft provided with means for coöperating with said bank of contacts in establishing any one of a number of possible connections, and means for operating the said shaft, the said switching-machine comprising also a pair of "line-relays," and means whereby the relays may be employed by a calling subscriber for controlling the operation of the said machine.

20. An automatic switching-machine for telephone systems, comprising a frame of non-magnetic metal, a pair of rods having their upper ends secured to the lower portion of said frame, three banks of contacts strung on said rods and arranged one above the other, the upper bank being the so-called "private bank," and the other two banks containing contacts for closing the "line-circuits," together with a switch-shaft provided with wipers adapted to coöperate with said banks of contacts, means for operating said shaft, and split collars applied to said rods and arranged to support and separate the banks from each other, each collar being provided with means for engaging and holding the bottom portion of one of the banks, whereby the said bank can be separately adjusted upon said rods, the said switching-machine comprising also a pair of "line-relays," and means whereby the relays may be employed by a calling subscriber for controlling the operation of the said machine.

21. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, a "side switch" and means for operating the same, "rotary ratchet-teeth" on the shaft, an electromagnetically-actuated pawl for engaging said "rotary teeth," ratchet mechanism for giving the shaft a vertical step-by-step movement, and an adjustably-mounted member having one portion adapted to act as a stop for limiting the movement of said "side switch" and having another portion adapted to act as a guide for the said pawl, the said switching-machine comprising also a pair of "line-relays," and means whereby the relays may be employed by a calling subscriber for controlling the operation of the said machine.

22. An automatic switching-machine for telephone systems, comprising a rotatable and endwise-movable switch-shaft, switch-contacts operated by said shaft, a "side switch" and means for operating the same, "rotary ratchet-teeth" on the shaft, an electromagnetically-actuated pawl for engaging said "rotary teeth," ratchet mechanism for giving the shaft a vertical step-by-step movement, and an adjustably-mounted member having one portion adapted to act as a stop for limiting the movement of said "side switch," and having another portion adapted to act as a guide for the said pawl, said switching-machine comprising also a "release-magnet" and means whereby its energization and deenergization effects a release and restoration of the machine to normal position.

815,322. ART OF TELEPHONY. DANIEL M. TERRELL, Charleston, S. C. Original application filed July 22, 1904, Serial No. 217,846. Divided and this application filed Aug. 2, 1905. Serial No. 272,875.



Claim.—1. The step in the art of the electrical transmission and reproduction of sound which consists in making the terminal transmitter circuit or circuits wholly or partially resonant for the essential frequencies to be transmitted, thereby increasing the efficiency of transformation, and the energy transferred to the secondary circuit, substantially as set forth.

2. The step in the art of the electrical transmission of sound which consists in attuning the terminal or transmitter circuit for the essential current frequencies to be transmitted, thereby increasing the primary current and the ratio of transformation and the energy transferred to the line, substantially as set forth.

3. The step in the art of the electrical transmission and reproduction of sound which consists in adjusting the electrical constants of the terminal or transmitter circuits to a condition of resonance and consonance for the essential current frequencies to be transmitted, thereby increasing the efficiency of transformation, and the energy transferred to the main line, and the intensity of the sound reproduced, substantially as set forth.

4. The step in the art of the electrical transmission and reproduction of sound which consists in making the terminal primary and secondary circuits wholly or partially consonant for the essential frequencies to be transmitted, thereby increasing the efficiency of transformation and transmission, and reproduction, substantially as set forth.

5. The step in the art of the electrical transmission and reproduction of sound-waves which consists in adjusting the constants of resistance, inductance and capacity of the primary circuit or circuits, so as to decrease the primary impedance and increase the primary current, thereby increasing the ratio of transformation, the potential of the secondary and the intensity of the transmitted sound-waves, substantially as set forth.

6. The step in the art of the electrical transmission and reproduction of sound, or voice, waves which consists in increasing the ratio of transformation and the line-potential by electrical consonance, while reducing the terminal impedance to incoming sound

or voice waves, and thereby increasing the line-current and the sensitiveness of the receiver and the efficiency of reproduction, substantially as set forth.

7. In the art of the electrical transmission and reproduction of sound, the method of producing resonance in the transmitter circuit or circuits, which consists in placing the primary coil in a derived circuit, properly tuned as to inductance and capacity, between points of variable potential due to variations in the resistance of the transmitter-electrodes, whereby the capacity is charged and discharged through the said primary coil with increase and decrease of resistance in the transmitter, substantially as set forth.

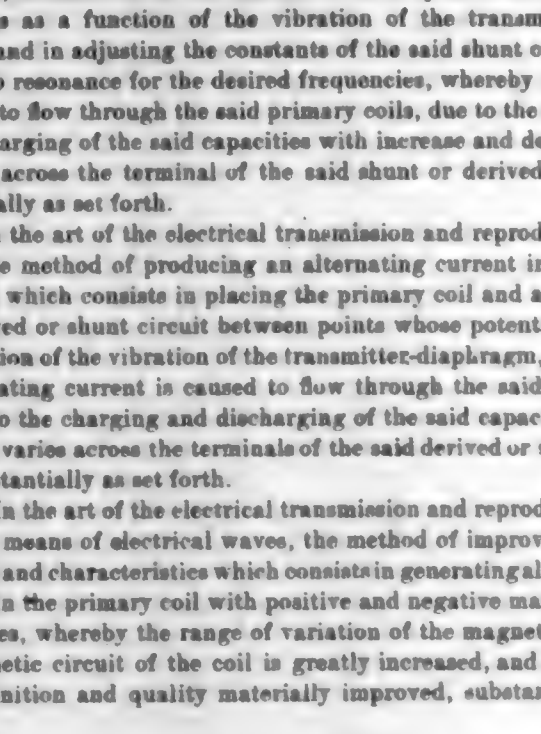
8. In the art of the electrical transmission and reproduction of sound, the method of tuning for the essential voice or sound frequencies, which consists in placing the primary coils, in series with capacities, in shunt or derived circuits between points whose potential varies as a function of the vibration of the transmitter-diaphragm, and in adjusting the constants of the said shunt or derived circuits to resonance for the desired frequencies, whereby a current is caused to flow through the said primary coils, due to the charging and discharging of the said capacities with increase and decrease of potential across the terminal of the said shunt or derived circuits, substantially as set forth.

9. In the art of the electrical transmission and reproduction of sound, the method of producing an alternating current in the primary coil which consists in placing the primary coil and a capacity in a derived or shunt circuit between points whose potential varies as a function of the vibration of the transmitter-diaphragm, whereby an alternating current is caused to flow through the said primary coil due to the charging and discharging of the said capacity as the potential varies across the terminals of the said derived or shunt circuit, substantially as set forth.

10. In the art of the electrical transmission and reproduction of sound by means of electrical waves, the method of improving wave definition and characteristics which consists in generating alternating currents in the primary coil with positive and negative maxima and zero values, whereby the range of variation of the magnetic flux in the magnetic circuit of the coil is greatly increased, and the wave form, definition and quality materially improved, substantially as set forth.

REISSUES.

12,462. DRAWING-PRESS. PAUL M. H. LANGE, Toledo, Ohio, assignor to The Toledo Machine and Tool Company, Toledo, Ohio, a Corporation of Ohio. Filed Dec. 30, 1905. Serial No. 294,025. Original No. 801,896, dated Oct. 17, 1905.



Claim.—1. In a drawing-press, the combination with a frame having a die-block, of a driving-shaft, journaled in the frame, a pair of rock-shafts journaled parallel with the driving-shaft, a pair of inner rock-arms on each rock-shaft, connecting-rods pivoted to the inner rock-arms, a pair of cross-heads pivoted to opposite connecting-rods, a blank-holder adjustably secured to the cross-heads, an inner crank on the driving-shaft, a connecting-rod pivoted to the inner crank, a plunger movably mounted in the blank-holder, and pivoted to the connecting-rod, an outer crank on the outer end of the driving-shaft, leading the inner crank, a connecting-rod 12 pivoted to the outer crank, an upper link-arm pivoted to the frame by one end and extending inwardly and pivoted to the connecting-rod 12 at the other, an extension-link pivoted at one end to the lower end of the connecting-rod 12, a lower link-arm pivoted to the frame oppositely to the upper link-arm, and extending inwardly and pivoted to the lower end of the extension-link, a pair of link-bars pivoted at their lower ends to the extension-link between the upper and lower link-arms, a pair of bell-cranks pivoted at their angles to the frame, said bell-cranks having inner short arms pivoted to the upper ends respectively of the link-bars, outer rock-arms on the ends of the rock-shafts extending oppositely to the inner rock-arms, connecting-rods 20 pivotally connecting the outer rock-arms with the outer ends of the outer arms of the bell-cranks, and means to drive the shaft.

2. In a drawing-press, the combination of a blank-holder, a pair of oppositely-disposed bell-crank levers, a second pair of oppositely-disposed bell-crank levers, means connecting one arm of each of one pair of levers with an arm of one lever of the other pair and means to rock the said levers.

3. In a drawing-press, the combination of a blank-holder a reciprocating member, means to reciprocate said member, a pair of oppositely-disposed bell-crank levers, and a second pair of oppositely-disposed bell-crank levers, means connecting said member with one of the pairs of levers, and means connecting one arm of each lever of one pair with an arm of one lever of the other pair, and means to connect one of the pairs of levers with the blank-holder.

4. In a drawing-press, the combination with a blank-holder, of a crank, a member reciprocally movable by said crank, bell-crank levers having connection with said member, a second pair of bell-crank levers, connections between the corresponding arms of each pair of bell-crank levers and means for connecting the second pair of levers and the blank-holder.

5. In a drawing-press, the combination with the blank-holder, of a crank, a member movable by the crank, a bell-crank lever having an arm in connection with the said member, a second bell-crank lever, means connecting the free arm of the first lever with an arm of the second lever, and connection between the other arm of the second lever and blank-holder, whereby a pause of the blank-holder is occasioned during a portion of the revolution of the crank.

6. In a press of the class described, a blank-holder, a crank, a member having connection with said crank whereby a reciprocal movement is imparted thereto, pivotal arms guiding the movement of the said member, a pair of oppositely-disposed bell-crank levers each having an arm in connection with the said member, a second pair of bell-crank levers having one arm in connection with the free arm of the corresponding lever of the other pair and the other arm in connection with the blank-holder, whereby a pause of the blank-holder is occasioned during a portion of each revolution of the crank.

7. In a drawing-press, a blank-holder, a crank, a reciprocal member movable by said crank, a lever having link connections with said member, a second lever having one arm in link connection with the first lever and the other arm in link connection with the blank-holder.

8. In a drawing-press, a blank-holder, a crank, a reciprocal member movable by said crank, a lever oscillated by the movement of said member, a shaft having a crank-arm thereon, toggle connections between said shaft and blank-holder, and link connection between the crank-arm on said shaft and said lever whereby as oscillation is imparted to the lever the toggles are straightened to lower the blank-holder.

9. In a drawing-press, a blank-holder, a main crank-shaft and pitman, a member reciprocally movable by the pitman, oppositely-disposed bell-crank levers each having independent pivotal link connection with said member, oppositely-disposed auxiliary crank-shafts, toggles connecting each of said latter shafts with the blank-holder, and link connection between the crank of the auxiliary shaft and the associated bell-crank levers.

10. In a press of the class described, the combination with the blank-holder and punch, of a double crank-shaft, a connection between one crank and the punch, a reciprocatory member, a connection between the other crank and said member, a bell-crank lever having connection with said member, an auxiliary crank-shaft, having link connection with said bell-crank lever, and toggle connection between the auxiliary shaft and the blank-holder, whereby to

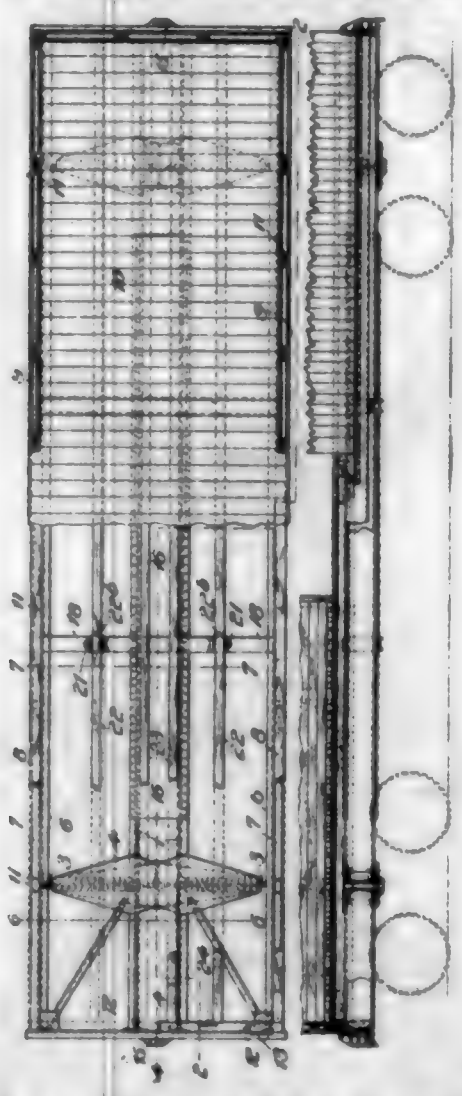
cause a pause of the blank-holder during a portion of the revolution of the main crank-shaft.

11. The combination with the blank-holder and punch, of a shaft having two cranks of different lengths, a pitman connecting the longer crank and punch, a reciprocal member receiving its movement from the shorter crank, oppositely-disposed bell-crank levers each having one arm in link connection with said member, a second set of oppositely-disposed bell-crank levers each having one arm in link connection with the corresponding bell-lever of the first set and its other arm in link connection with the blank-holder.

12. The combination with the blank-holder, of a crank, oppositely-disposed bell-crank levers, a second pair of oppositely-disposed bell-crank levers having one arm in link connection with the blank-holder and the other arm in link connection with the levers of the first-mentioned set correspondingly positioned, and means movable by a revolution of said crank for imparting oscillation to the first-mentioned levers whereby to cause a pause of the blank-holder during a portion of the revolution of the crank.

13. The combination with the blank-holder, of a crank, a bell-crank lever, means for imparting an oscillatory movement to said lever from a turning of said crank, a shaft, toggle connection between said shaft and blank-holder, and means for imparting an oscillatory movement to said shaft from the movement of said bell-lever, whereby the blank-holder is caused to have a reciprocatory movement and to pause at the limit of its downstroke during a portion of the revolution of the crank.

12,463. **UNDERFRAMING FOR BOX-CARS.** GEORGE I. KING, Middletown, Pa., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Feb. 12, 1906. Serial No. 300,804. Original No. 678,573, dated July 16, 1901.



Claim.—1. In an underframing for cars, the combination with body-bolsters and the center sill, of a side sill attached to the ends of the body-bolsters, a truss-frame intermediate the body-bolsters for supporting the side sill from the center sill, said truss-frame comprising a tension member in the form of a flat plate or bar, and a compression member in the form of a commercially-rolled bar; substantially as described.

2. In an underframing for cars, the combination with the body-bolsters, of a center sill extending from bolster to bolster, said center sill being capable of carrying the entire weight of the car and its contained load, a side sill attached to the ends of the bolsters, and a truss-frame supported by the center sill intermediate the bolsters, said truss-frame supporting the side sill at its extremity and comprising a flat-plate tension member attached to the under side of the side sill and the top of the center sill, and a commercially-rolled compression member attached to the under side of the side and center sills; substantially as described.

3. In an underframing for cars, the combination with body-bolsters, of side-sill members attached to the ends of said bolsters, a center sill, and trussed frames of the character described for supporting said side sills intermediate the bolsters; substantially as described.

4. In an underframing for cars, the combination with body-bolsters, of side-sill members attached to the ends thereof, center sills supported by said bolsters, truss-frames for supporting the side-sill members intermediate the bolsters, and intermediate sills which are likewise supported by said truss-frames intermediate the bolsters; substantially as described.

5. In an underframing for cars, the combination with the center and side sills, of a metallic end sill projecting thereabove, and a wooden nailing-strip abutting against the upwardly-projecting edge of the metallic end sill; substantially as described.

6. In an underframing for cars, the combination with draft and side sills, of a metallic end sill whose upper edge projects above the same, and a wooden nailing-strip supported by the side and draft sills and abutting against the upwardly-projecting edge of the end sill, said wooden nailing-strip extending above said end sill to form a nailing-base for the end wall of the car; substantially as described.

7. In an underframing for cars, the combination with the bolsters, of a side-sill member, an angle secured to said side-sill member below its upper edge, and a wooden sill supported by said angle and resting against the upper edge of the side-sill member; substantially as described.

8. In an underframing for cars, the combination with a side-sill member in the form of a channel 6, an angle 7 riveted to said channel at a point below the upper edge thereof, a wooden sill 8 supported by said angle and resting against the upper edge of the channel, and means for securing said sill 8 in position; substantially as described.

9. In an underframing for cars, the combination with body-bolsters, of a center sill and side sills attached to said bolsters, a plate 18 attached to the upper edge of the center sill and to the lower edge of the side sill, and a plate 19 attached to the lower edge of the center sill and to the plate 18 at a point intermediate the center and side sills, said plate 19 extending only to the plate 18; substantially as described.

10. In an underframing for cars, the combination with the body-bolsters, of center and side sills attached to said bolsters, a plate 18 having its ends attached to the lower faces of the side sills, the middle portion of said plate extending up over the center sill, plates 19 riveted to the lower portion of the center sill and to the plates 18 at points between the center and side sills, and a tie-bar 20 extending from side sill to side sill, said tie-bar passing under the center sill; substantially as described.

11. In an underframing for cars, the combination with the bolsters, of center and side sills attached to said bolsters, and truss-frames for supporting the side sills at points intermediate the bolsters, said truss-frames comprising a plate 18, plates 19, a channel 20, and tie-plates 22*; substantially as described.

12. In an underframing for cars, the combination with the center and side sills, of a plate 18 extending from the upper edge of the center sill to the lower edge of the side sill and riveted to each, a saddle carried by said plate for affording a seat for an intermediate sill, and a plate 19 riveted to the lower edge of the center sill and to the plate 18 at a point approximately beneath the saddle; substantially as described.

13. In an underframing for cars, the combination with a center sill, of a side sill, an intermediate sill, and a compound truss-frame lying in a transverse plane for supporting said side and intermediate sills; substantially as described.

14. In an underframing for cars, the combination with the body-bolsters, of the box-girder center sill supported thereby, channel side sills attached to the ends of the body-bolsters, plates 18 riveted to the bottom flanges of the side sills and extending over the box-girder center sill, a bar 20 riveted to the bottom flanges of the channel side sills and extending under the box-girder center sill, plates 19 riveted to the lower edges of the box-girder center sill and to the plate 18 at points intermediate the center and side sills, saddles carried by the plate 18 approximately over the points of attachment of the plates 19 thereto, all of said parts being made of suitable metal, and wooden intermediate sills supported by said saddles; substantially as described.

15. The combination with a channel forming the main member of an end sill whose lower edge is notched or recessed to receive the shank of a coupler, of a casting riveted to said channel for strengthening the same around the notched portion, said casting accommodating the bottom flanges of the channel on each side of the notch and projecting forwardly to serve as a buffer; substantially as described.

16. The combination with a channel-bar forming the main member of an end sill which is notched in its lower edge to accommodate the shank of the draw-bar, a casting riveted to said channel and provided with webs for strengthening the same, said casting having a notch or recess to accommodate the shank of the draw-bar, and a carry-arm removably secured to said casting; substantially as described.

17. The combination with a center sill, of a wooden sill 22 and plates 18 and 19 forming a truss-frame for supporting the sill 22, the vertical axis of the sill 22 meeting the line of intersection of the plates 18 and 19; substantially as described.

18. In a car, the combination with body-bolsters, of a center sill supported thereby, and transversely-arranged truss-frames on the center sill intermediate the body-bolsters for supporting the sides of the car; substantially as described.

19. In a car, the combination with body-bolsters, of a center sill supported thereby, and laterally-extending truss-frames on each side of the center sill, said truss-frames being in approximately the same transverse plane, for supporting the sides of the car; substantially as described.

20. In a car, the combination with body-bolsters, of a center sill supported thereby, and truss members secured to the upper and lower edges of the center sill and extending laterally in converging lines for supporting the sides of the car; substantially as described.

DESIGNS.

37,887. BADGE-BUTTON. VAUGHN M. ELLIS, Seattle, Wash. Filed Feb. 10, 1906. Serial No. 300,543. Term of patent 3½ years.



Claim.—The ornamental design for a badge-button, as shown.

37,888. BADGE OR SIMILAR ARTICLE. JOHN B. GOODWIN, Baltimore, Md. Filed Feb. 7, 1906. Serial No. 299,372. Term of patent 14 years.



Claim.—The ornamental design for a badge or similar article, as shown.

37,889. PLATE OR DISH. ADELAIDE ALSOP ROBINEAU, Syracuse, N. Y., assignor to The Onondaga Pottery Company, Syracuse, N. Y., a Corporation of New York. Filed Oct. 11, 1905. Serial No. 282,948. Term of patent 7 years.



Claim.—The ornamental design for a plate or dish, as shown.

37,890. PLATE OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 30, 1906. Serial No. 298,716. Term of patent 7 years.



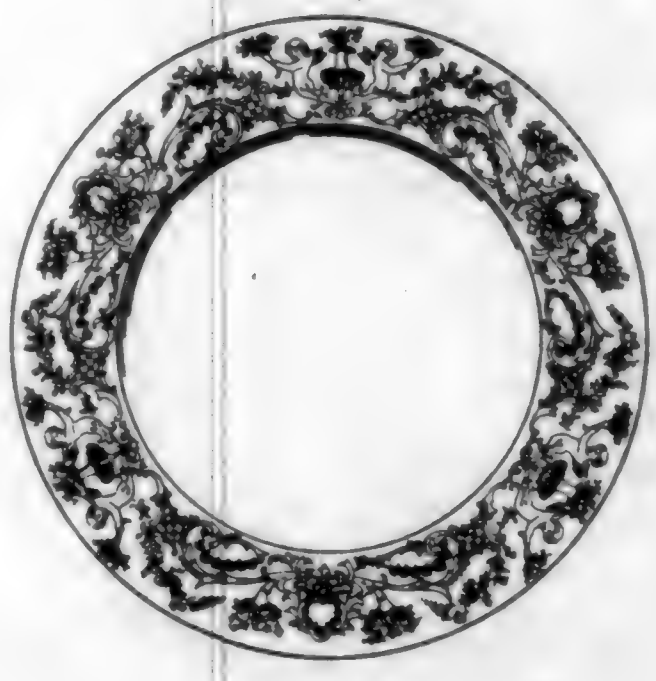
Claim.—The ornamental design for a plate or similar article substantially as shown.

37,891. PLATE OR SIMILAR ARTICLE. CHARLES J. AHRENFELDT, New York, N. Y. Filed Jan. 30, 1906. Serial No. 298,717. Term of patent 7 years.



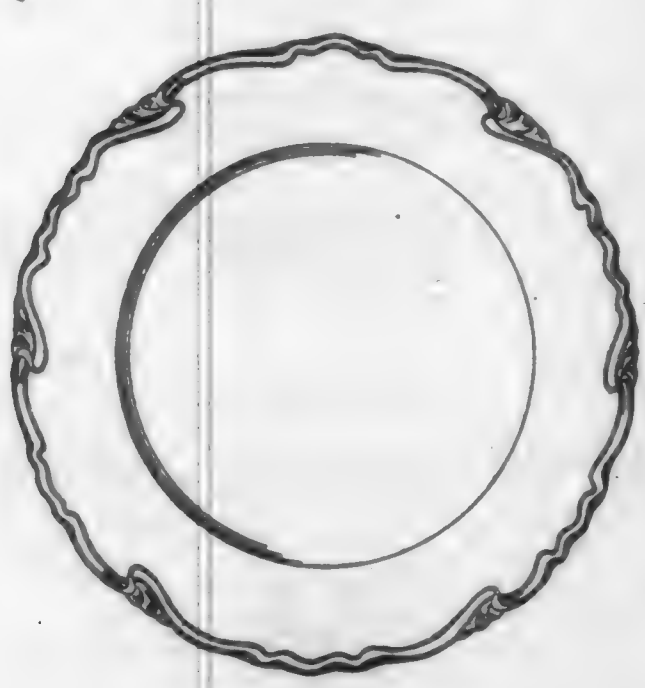
Claim.—The ornamental design for a plate or similar article substantially as shown.

37,892. PLATE OR SIMILAR ARTICLE. CHARLES J. ARENFELDT, New York, N. Y. Filed Jan. 30, 1906. Serial No. 296,718. Term of patent 7 years.



Claim.—The ornamental design for a plate or similar article substantially as shown.

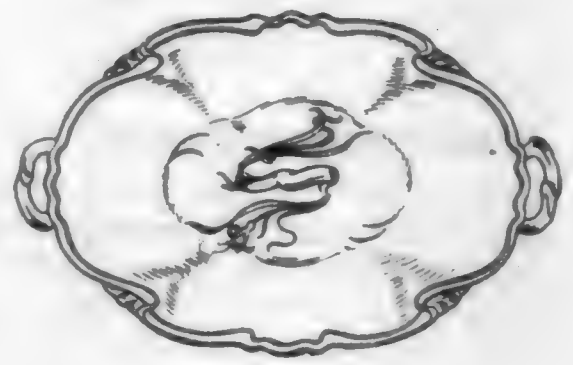
37,893. PLATE OR SIMILAR ARTICLE. CHARLES J. ARENFELDT, New York, N. Y. Filed Jan. 30, 1906. Serial No. 296,719. Term of patent 7 years.



Claim.—The ornamental design for a plate or similar article substantially as shown.

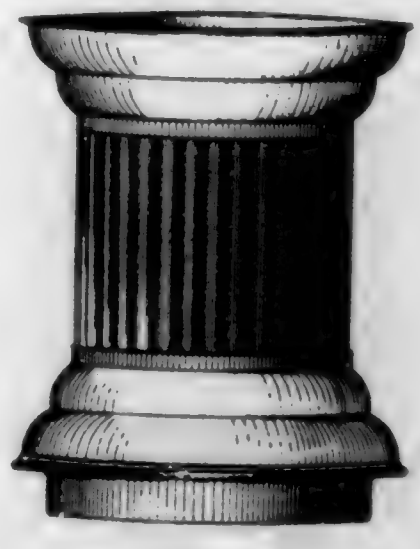
37,894. COVERED DISH OR SIMILAR ARTICLE. CHARLES J. ARENFELDT, New York, N. Y. Filed Jan. 30, 1906. Serial No. 296,720. Term of patent 7 years.





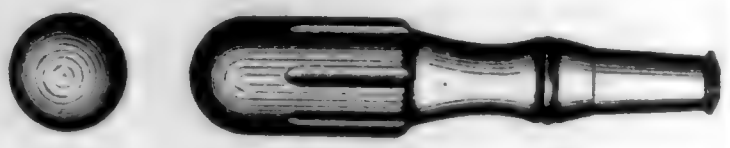
Claim.—The ornamental design for a covered dish or similar article as shown.

37,895. ARC-LAMP HOUSING. ALVIN HAUSOLD, Allegheny, Pa., assignor to Keystone Electric and Manufacturing Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Jan. 12, 1906. Serial No. 295,823. Term of patent 14 years.



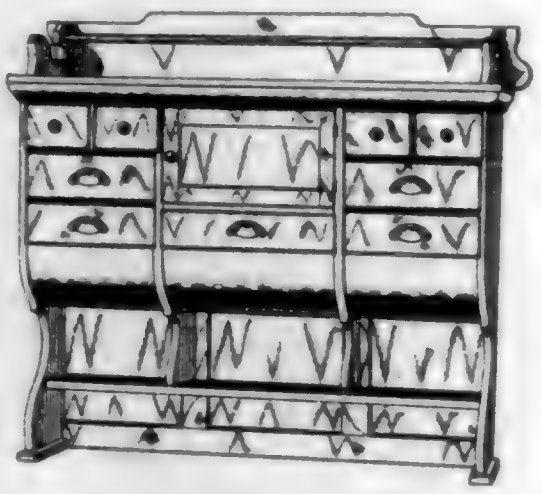
Claim.—The ornamental design for an arc-lamp housing, as shown.

37,896. TOOL-HANDLE. George E. Woon, Plantsville, Conn., assignor to Stanley Rule and Level Company, New Britain, Conn., a Corporation of Connecticut. Filed July 29, 1905. Serial No. 271,859. Term of patent 14 years.



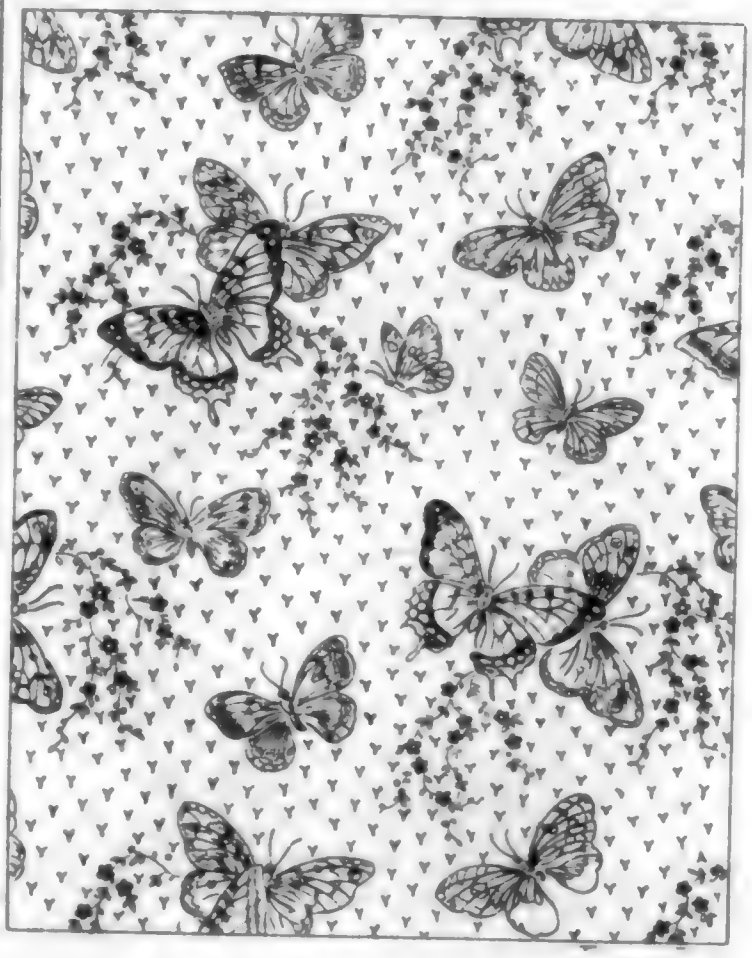
Claim.—The ornamental design for a tool-handle as shown.

37,897. KITCHEN-CABINET TOP. William C. Horner, Indianapolis, Ind., assignor to Charles P. McDougall, Indianapolis, Ind. Filed Oct. 7, 1905. Serial No. 281,860. Term of patent 14 years.



Claim.—The ornamental design for a kitchen-cabinet top as shown.

37,898. PRINTED TEXTILE FABRIC. Edward B. Vanderbeaw, Brooklyn, N. Y. Filed Dec. 28, 1905. Serial No. 293,680. Term of patent 7 years.



Claim.—The ornamental design for a printed textile fabric as shown.

TRADE-MARKS

PUBLISHED MARCH 13, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 76. WHISKY. RECORDS & GOLDSBOROUGH, Baltimore, Md. Filed Apr. 1, 1905. Used ten years.

MELROSE

The arbitrary word "MELROSE."

SER. No. 247. WHISKY. W. H. JONES AND CO., Boston, Mass. Filed Apr. 3, 1905. Used ten years.

BLACKSTONE

The word "BLACKSTONE."

SER. No. 414. ALE. THE ROBERT SMITH ALE BREWING CO., Philadelphia, Pa. Filed Apr. 5, 1905. Used ten years.



The words, letters, and figures "ROBERT SMITH'S INDIA PALE ALE BREWERY ESTABLISHED IN PHILADELPHIA, A. D. 1774." and the representation of the head of a tiger.

SER. No. 676. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill. Filed Apr. 7, 1905. Used ten years.



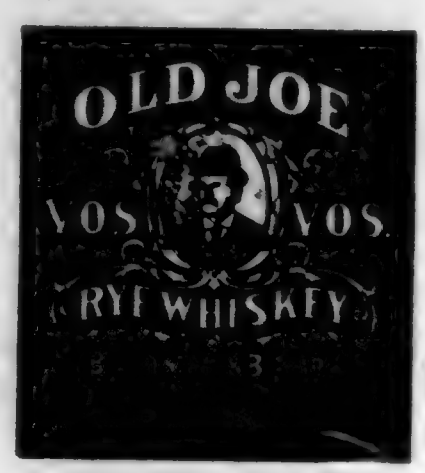
The representation of a clover-leaf with the words "FOX RIVER BUTTER CO." arranged above the same, the words "CLOVER HILL BRAND" below the representation, and the words and representation inclosed by a circular border.

SER. No. 778. WATERPROOF SHEETINGS. THE STORK COMPANY, Boston, Mass. Filed Apr. 8, 1905.



Two storks holding in their beaks a piece of fabric on which appears the word "STORK," associated with a fleur-de-lis.

SER. No. 848. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga. Filed Apr. 4, 1905.



The words "OLD JOE," accompanied by the pictorial representation of Joseph Groeschel and the words "RYE WHISKEY" inclosed within an ornamental scroll and by the letters "V. O. S." "V. O. S.," the monogram "B & B," and the words and character "BLUTHENTHAL & BICKART SOLE PROPRIETORS. ATLANTA AND CINCINNATI."

SER. No. 1,002. MEN'S AND BOYS' STIFF, SOFT, AND STRAW HATS. FREEMAN BROTHERS, New York, N. Y. Filed Apr. 10, 1905.



A coat of arms comprising a quartered shield having thereon the representation of a harp, three fleurs-de-lis, a lion rampant, and three horizontal leopards, and surmounted by a mailed hand grasping a pennant, with an eagle and a lion rampant supporting the shield, and rays radiating from the shield. Below the shield is the word "DE LUXE" on a scroll, and the whole associated with the word "DAWSON."

SER. No. 1,106. BAKING-SODA EITHER ALONE OR MIXED WITH A POWDERED ACID, AS IS COMMON TO FORM A BAKING-POWDER. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed Apr. 11, 1905.



The representation of the head of a bulldog inclosed in an annular strap.

SER. No. 1,291. LEATHER BOOTS AND SHOES. STRONG & GARFIELD CO., East Weymouth, Mass. Filed Apr. 12, 1905.



The letters "E Z" inclosed in an oblong figure.

SER. No. 1,579. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905. Used ten years.

NATIONAL
ARROWS

The words "NATIONAL ARROWS."

SER. No. 1,708. CHEWING AND SMOKING TOBACCO. HOFFMAN AND CO., Red Hook, N. Y. Filed Apr. 15, 1905.



A rectangular panel containing in its upper portion a bracket bearing the word, character, and abbreviation "HOFFMAN & CO." and to which is attached a hook upon which is suspended a bucket bearing on its top the words and letters "RED HOOK N. Y." and upon its side the words "EXTRA CHEWING TOBACCO," the bucket being suspended between ornamental segments, which appear in the lower opposite corners of the rectangular panel.

SER. No. 1,777. RAZORS. CHALLENGE CUTLERY CORPORATION, Bridgeport, Conn. Filed Apr. 15, 1905. Used ten years.

Hamburg
HOLLOW GROUND

The words "HAMBURG HOLLOW GROUND" and the representation of a plurality of interlocked chain-links.

SER. No. 1,783. POCKET-KNIVES. WESTBROOK & HILGER, LIMITED, New York, N. Y. Filed Apr. 15, 1905. Used ten years.

WESTERN
CUTLERY CO
GERMANY

The words and abbreviation "WESTERN CUTLERY Co GERMANY."

SER. No. 1,864. PORT-WINE. SAMUEL STREET & Co., New York, N. Y. Filed Apr. 17, 1905.



A. Ferreira & Co.

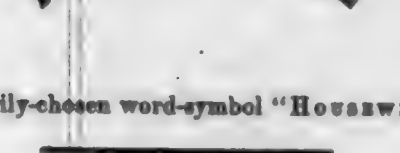
The representation of a crude ox-cart upon which is held a large barrel. The cart is drawn by two oxen or steers, and a native teamster is sitting on the back platform of the cart and holding in his hand a pole, the described matter being associated with the name "A. FERREIRA & Co."

SER. No. 2,035. SEMIBITUMINOUS COAL USED FOR WELDING AND FORGING IRON AND STEEL. LILLY COAL Co., Altoona, Pa. Filed Apr. 17, 1905.



The representation of a keystone with the words "KEYSTONE SMITHING COAL" printed across the same.

SER. No. 2,482. LINEN PIECE GOODS AND PIECE GOODS CONTAINING BOTH LINEN AND COTTON. GEORGE C. RICES, New York, N. Y. Filed Apr. 20, 1905.



The arbitrarily-chosen word-symbol "HOUSEWIFE."

SER. No. 3,140. GLOVES FOR ATHLETIC SPORTS. P. GOLDSMITH'S SONS, Cincinnati, Ohio. Filed Apr 26, 1905.



The representation of a Maltese cross inclosed in a circle, and associated with the said mark is the name "GOLDSMITH" appearing within the cross.

SER. No. 3,142. WHISKY. W. SCHREIBER W. W. & L. Co., St. Louis, Mo. Filed Apr. 26, 1905. Used ten years.

905

The number "905."

SER. No. 3,166. COUGH MIXTURE. COUGH CHECKER MANUFACTURING Co., Newburgh, N. Y. Filed Apr. 26, 1905.



The words "COUGH CHECKERS" and the representation of two playing-checkers.

SER. No. 3,364. TWINE. FULTON BAG & COTTON MILLS, Atlanta, Ga. Filed Apr. 28, 1905.

EAGLE

The word "EAGLE."

SER. No. 3,447. HAIR-TONIC. BENJAMIN F. MINER, Montague, Mass. Filed Apr. 26, 1905. Used ten years.

EVAROSA

The word "EVAROSA."

SER. No. 3,448. REMEDY FOR INFLAMMATION. BENJAMIN F. MINER, Montague, Mass. Filed Apr. 26, 1905. Used ten years.

TOILETINE

The word "TOILETINE."

SER. No. 3,685. BITTERS. AARON P. ORDWAY, New York, N. Y. Filed Apr. 29, 1905. Used ten years.

Ser. No. 3,685.

DR. KAUFMANN'S SULPHUR BITTERS

The expression "DR. KAUFMANN'S SULPHUR BITTERS," having a shield bearing the monogram "A P O" between the words "DR. KAUFMANN'S" and "SULPHUR BITTERS."

Ser. No. 3,696. WORM MEDICINES. BENJAMIN S. FAHNESTOCK, Pittsburg, Pa. Filed Apr. 27, 1905. Used ten years.



A rectangular panel on which is a representation of a female figure seated beside a table on which are dishes and holding an infant in her lap, in the act of giving medicine thereto, with a female child standing at one side holding a bottle and a male child standing at the opposite side, and the name "B. L. FAHNESTOCK'S" and a portrait of B. L. Fahnestock, deceased, with stamp-like representations at each side of the portrait, the portrait and said representations being surrounded by scroll and floral ornamentation.

Ser. No. 3,724. WHISKY. L. KAHN & Co., Cleveland, Ohio. Filed May 1, 1905.

DRIVING CLUB

The words "DRIVING CLUB."

Ser. No. 3,852. CALICOES. AMERICAN PRINTING COMPANY, Fall River, Mass. Filed May 1, 1905. Used ten years.

Ser. No. 3,852.

AMERICAN

The word "AMERICAN."

Ser. No. 3,965. SPICES AND MUSTARD. R. R. DURKEE & Co., New York, N. Y. Filed May 3, 1905.



The representation of two ostriches and an egg, one of the ostriches being represented as standing and the other in a sitting position.

Ser. No. 4,001. LAUNDRY STARCH. NEW ORLEANS COTTON CO LTD., New Orleans, La. Filed May 2, 1905.



The representation of a rabbit in a squatting position and upon an ornamental panel.

Ser. No. 4,053. CARBON-PAPER. DE-FI MANUFACTURING CO., New York, N. Y. Filed May 2, 1905.

"DE-FI"

The arbitrary quoted hyphenated word "DE-FI."

Ser. No. 4,396. TABLES, CHAIRS, CABINETS, COUCHES, HAT-RACKS, DESKS, STANDS, PLATE-RACKS, SEATS, BOOKCASES, AND WOODEN CLOCK AND MIRROR FRAMES. THE OSCAR ONKEN CO., Cincinnati, Ohio. Filed May 5, 1905.

Shop of the Crafters at Cincinnati

The words "SHOP OF THE CRAFTERS AT CINCINNATI" and the representation of a suspended lantern from which rays of light radiate.

SER. NO. 4,414. MEDICINE FOR POULTRY. FRANK LEE, Newport News, Va. Filed May 5, 1905.

CHICKICURA

The word "CHICKICURA."

SER. NO. 4,825. PATENT, ENAMEL, AND FANCY-COLORED LEATHER FOR THE SHOE, CARRIAGE, UPHOLSTERY, HARNESS, AND HORSE-COLLAR TRADE. HENRY LANG COMPANY, Newark, N. J. Filed May 9, 1905.



The representation of a cow standing erect and in the center of a circle, within which and at the top and bottom thereof, respectively, are the words "AMERICAN" and "STANDARD."

SER. NO. 4,901. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va. Filed May 10, 1905.



The representation of a nude figure of a child holding in its right hand a ladle and holding above its head in its left hand a bar of bearing metal, together with the representation of an open box containing bearing metal, said box containing the words "FRICTIONLESS BEARING METAL" on one side and "SOL" on the other side, while the bar of bearing metal held in the left hand of the child contains the word "FRICTIONLESS."

SER. NO. 4,908. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va. Filed May 10, 1905.

SUBURBAN

The word-symbol "SUBURBAN."

SER. NO. 4,909. BEARING METAL. FRICTIONLESS METAL COMPANY, Richmond, Va. Filed May 10, 1905.



The representation of a man holding a bar of metal above his head, upon which bar of metal is the word "FRICTIONLESS."

SER. NO. 5,001. MICROBE-KILLER. IDA RADAM, New York, N. Y. Filed May 10, 1905.



A white rectangular panel surrounded by a rectangular red border in which are delineated figures of an approximately cylindrical form representing a species of bacteria or microbes many times magnified. Within the border are two vertically-disposed lines between which is the representation of a shield, and upon the shield is depicted a skeleton and a man wielding a club as if striking the skeleton, the club bearing the words "MICROBE KILLER." Upon the shield also appears the representation of a broken scythe. The words "WM RADAM'S MICROBE KILLER" appear upon the upper portion of the shield, and above the shield is a ring. Within the border and above the shield and vertical lines appear the words "WM RADAM'S MICROBE KILLER." and also the words "GERM, BACTERIA OR FUNGUS DESTROYER."

SER. NO. 5,099. APPARATUS FOR ADMINISTERING MAGNETIC CURRENTS TO INVALIDS. JOHN W. STEEVES, Baltimore, Md. Filed May 11, 1905.

VORTEXIA.

The word "VORTEXIA."

SER. NO. 5,169. RUBBER PACKING. GORMAN RUBBER COMPANY, San Francisco, Cal. Filed May 11, 1905.



The figure of a black person seated upon a section of spiral packing and holding in one hand a spear. Above the figure is the word "AMAZON," and the words "SPIRAL" and "PACKING" appear, respectively, at the left and right of the figure.

SER. No. 5,245. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905. Used ten years.

PRESCOTT

The word "PRESCOTT," which appears above a foliate scroll.

SER. No. 5,250. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905.

GUARDIAN

The arbitrarily-selected word "GUARDIAN."

SER. No. 5,471. STEEL BARS, RODS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. PARK STEEL COMPANY, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

"CALUMET"

The word "CALUMET" inclosed in quotation-marks.

SER. No. 5,472. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. PARK STEEL COMPANY, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

ATLAS

The word "ATLAS."

SER. No. 5,502. STEEL BARS, RODS, BLOOMS, BILLETS PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905.

J

A representation of a diamond-shaped figure in outline and inclosing the character "J."

SER. No. 5,518. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, BLOCKS, STRIPS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

MOHAWK

The word "MOHAWK."

SER. No. 5,644. WHEAT-FLOUR. THE HUNGARIAN MILLING & ELEVATOR CO., Denver, Colo. Filed May 15, 1905.

HARVEST QUEEN

The words "HARVEST QUEEN."

SER. No. 5,825. NEEDLES OF ALL KINDS. THÜRINGISCHE NADEL & STAHLWAAREN FABRIK WOLFF, KNIPPENBERG & CO., ACTIEN GESELLSCHAFT, Ichtershausen, Germany. Filed May 16, 1905.



The representation of an eagle-head, associated with the words "WOLFF & KNIPPENBERG" inclosed within a circular eight-pointed shaded border.

SER. No. 5,896. FRUIT-JUICE BEVERAGE. RUSSELL M. HUGHES, Louisville, Ky. Filed May 17, 1905.

Joy

The word "JOY."

SER. No. 5,987. ANTIFRICTION AND BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass. Filed May 18, 1905.

SER. No. 5,937.

HARDY'S

O.K.

The word and letters "HARDY'S O. K."

SER. No. 5,940. ANTIFRICTION AND BEARING METALS. WILLIAM A. HARDY & SON'S Co., Fitchburg, Mass. Filed May 18, 1905.

HARDY -SS.

The word "HARDY" printed vertically with a hyphen and the letters "S S." at right angles thereof.

SER. No. 6,102. COATS, PANTS, AND OVERALLS. SYRACUSE DRY GOODS Co., Syracuse, N. Y. Filed May 19, 1905.

The Empire

The words "THE EMPIRE."

SER. No. 6,178. BEER. WESTERN BREWERY Co., Belleville, Ill. Filed May 20, 1905.



The letters and numeral "A A 1" disposed upon a seal on a plain ground extending across the central portion of the seal, and above and below said plain ground are segmental-shaped grounds in colors, the words "WESTERN BREWERY CO. BELLEVILLE ILL." being arranged in concentric circles on the seal.

SER. No. 6,184. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me. Filed May 20, 1905. Used ten years.

RED JACKET

The word-symbol "RED JACKET."

SER. No. 6,185. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me. Filed May 20, 1905. Used ten years.

MACHIAS BAY

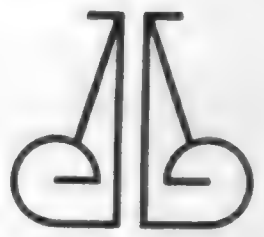
The word-symbol "MACHIAS BAY."

SER. No. 6,187. CANNED LOBSTERS. BURNHAM & MORRILL COMPANY, Portland, Me. Filed May 20, 1905. Used ten years.

DE LA REINE

The word-symbol "DE LA REINE."

SER. No. 6,220. METALLIC RIMS FOR VEHICLE-WHEELS. THE CLINCHER AUTOMOBILE TIRE MANUFACTURERS' ASSOCIATION, Akron, Ohio. Filed May 22, 1905.



A conventional representation of a bifurcated section of a clencher-rim for a wagon-wheel and a bifurcated monogram of the letters "A T M A."

SER. No. 6,285. WHISKY. THE STAR DISTILLERY Co., Cincinnati, Ohio. Filed May 22, 1905.

OAKDALE

The word "OAKDALE."

SER. No. 6,396. SHOULDER-BRACES, CHEST-EXPANDERS, AND SUSPENDERS. KNICKERBOCKER BRACE Co., Easton, Pa. Filed May 23, 1905.

KNICKERBOCKER

The word "KNICKERBOCKER."

SER. No. 6,422. LITHIA-SPRING WATER. LONDONDERRY LITHIA SPRING WATER COMPANY, Nashua, N. H. Filed May 25, 1905.

SER. No. 6,422.



An equilateral triangle bearing a monogram of the letters "L S W" and the words "LONDONDERRY LITHIA," and inclosed in concentrically-arranged triangular-shaped borders upon which appear the name of the applicant, "LONDONDERRY LITHIA SPRING WATER CO.," and the place of doing business "NASHUA, N. H. U. S. A.," and the words "LAY ON SIDE IN A COOL PLACE." SEE THAT THE CORK IS BRANDED "LONDONDERRY LITHIA."

SER. No. 6,440. BOOK OF DIRECTIONS FOR TECHNICAL INSTRUCTIONS. THE LODGE AND SHIPLEY MACHINE TOOL COMPANY, Cincinnati, Ohio. Filed May 24, 1905.

More Lathe Work with Fewer Lathes

The motto or legend "MORE LATHE WORK WITH FEWER LATHES."

SER. No. 6,488. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

SHENANDOAH

The word "SHENANDOAH."

SER. No. 6,552. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa. Filed May 25, 1905.



The rectangular label having marginal border-lines and bearing the words "CRYSTAL A CONFECTIONS," extending lengthwise of the label; and in the upper left-hand corner a disk of contrasting color bearing a fancy letter "A" with a band across the upper part of the disk and letter bearing the word "CRYSTAL."

SER. No. 6,554. LAXATIVES. BRISTOL-MYERS COMPANY, Brooklyn, N. Y. Filed May 25, 1905. Used ten years.

SER. No. 6,554.



The words "CLINTON CASCARA ACTIVE," the representation of an oblong panel forming a background for said words, and a representation of a circular piece partly superimposed upon the panel and bearing the letters "C P Co" arranged as a monogram.

SER. No. 6,821. CANDIES, CHOCOLATES, LICORICE CONFECTIONS, CANDIED FRUITS, GLACÉ FRUITS, AND BONBONS. C. POYET, Inc., New York, N. Y. Filed May 27, 1905.

GLOBE

The word "GLOBE."

SER. No. 6,830. ELASTIC STOCKINGS. POMEROY COMPANY, New York, N. Y. Filed May 27, 1905.



The representation of a boy seated in a chair and pulling on a stocking and the phrase "IT PULLS ON LIKE A BOOT."

SER. No. 6,900. WATER-PUMPS. F. B. MYERS & BROTHER, Ashland, Ohio. Filed May 29, 1905.

BULLDOZER

The word "BULLDOZER."

SER. No. 6,926. PLASTER. GLENCOE LIME & CEMENT COMPANY, St. Louis, Mo. Filed May 29, 1905. Used ten years.



The representation of a star and the words "WHITE STAR PLASTER," the words "WHITE STAR" appearing above the star and the word "PLASTER" beneath it. Beneath the word "PLASTER." an oblong panel is shown.

SER. No. 7,026. WHEAT-FLOUR. R. U. KEVIL & SONS, Princeton, Ky. Filed May 29, 1905.



The word "ARISTOCRAT" on a band spanning a circular design, the border of which contains a wreath of clover-leaves and the characters "196 LBS." Within the border also appear the words "PRINCETON ROLLER MILLS KEVIL'S FLOUR" and ornamental scrollwork.

SER. No. 7,061. FLOUR. THE ALLIANCE MILLING COMPANY, Denton, Tex. Filed May 29, 1905.

PEACE MAKER

The words "PEACE MAKER."

SER. No. 7,065. CEREAL FOOD PREPARED BY APPLICANT FOR INFANTS, INVALIDS, DYSPEPTICS, AND CONVALESCENTS. EMERALD MANUFACTURING CO., Superior, Wis. Filed May 30, 1905.

Emerald

The word "EMERALD."

SER. No. 7,071. TOILET-PAPER. ARCHIE F. BAIRD, Boston, Mass. Filed May 31, 1905.

RED CROSS

The word-symbol "RED CROSS" printed in red.

SER. No. 7,118. SPECIALLY-PREPARED RAWHIDE. THE NEW PROCESS RAW HIDE CO., Syracuse, N. Y. Filed May 31, 1905.



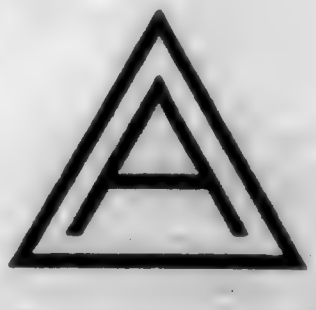
The representation of a pair of wings, associated with the initials "N. P. R. H." and the abbreviation "Co."

SER. No. 7,181. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 1, 1905. Used ten years.

THE BEST

The words "THE BEST."

SER. No. 7,380. CIGARS. AMERICAN CIGAR COMPANY, New York, N. Y. Filed June 3, 1905.



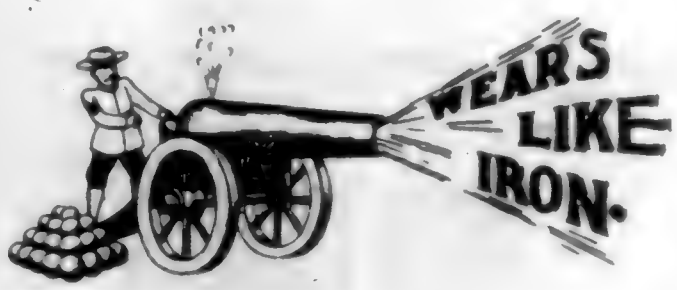
A capital letter "A" inclosed in a triangular-shaped figure

SER. No. 7,510. SILK DRESS GOODS. WM. H. ROE, New York, N. Y. Filed June 5, 1905.

RO-E-NA

The hyphenated word "Ro-E-NA."

SER. No. 7,538. HOUSE-PAINTS. PIERLEY PAINT & GLASS CO., St. Joseph, Mo. Filed June 6, 1905.



The representation of a cannon, the representation of a man firing the cannon, and the words "WEARS LIKE IRON" in the smoke at the mouth of the cannon. There is a representation of a pile of cannon-balls to one side of the cannon.

SER. No. 7,558. CLAMS, CLAM-JUICE, AND CLAM-CHOWDER. BURNHAM & MORRILL COMPANY, Portland, Me. Filed June 6, 1905. Used ten years.

SCARBORO BEACH

The words or word-symbol "SCARBORO BEACH."

SER. No. 7,607. CORNMEAL. THOMAS P. DAVIE, Rio Vista, Va. Filed June 7, 1905.



The representation of a tub containing ears of corn, associated with the words "DAVIE'S OLE-FASHUN METHOD UNBOLTED WATER GROUND CORN MEAL."

SER. No. 7,623. REMEDY FOR BALDNESS AND FALLING OFF OF THE HAIR. WILLIAM P. WARD, New York, N. Y. Filed June 8, 1905. Used ten years.

SER. No. 7,628.



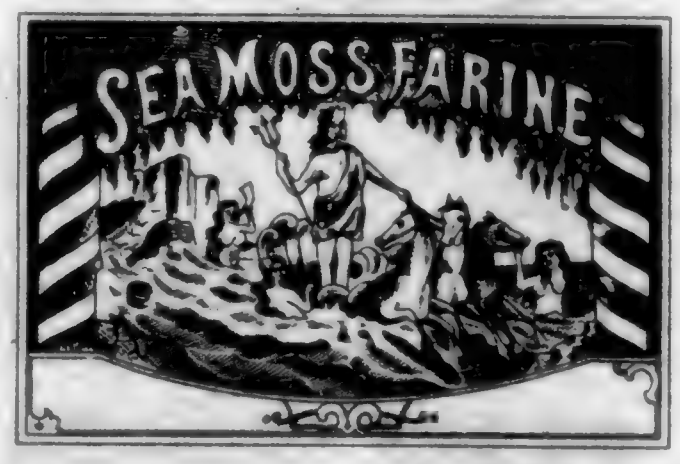
The words "LYON'S KATHAIRON FOR THE HAIR" inclosed in a frame or border of scrollwork, leaves, and flowers.

SER. No. 7,624. BALM FOR BEAUTIFYING THE COMPLEXION. WILLIAM P. WARD, New York, N. Y. Filed June 8, 1905. Used ten years.



The words "HAGAN'S MAGNOLIA BALM" and the representation of a magnolia blossom and leaves.

SER. No. 7,625. PUDDINGS AND CUSTARDS. WILLIAM P. WARD, New York, N. Y. Filed June 8, 1905. Used ten years.



The representation of a sea scene, wherein Neptune stands erect in a shell drawn by horses and mermaids, with a background of cliffs against which the sea dashes, with an arch of hanging moss

above the words "SEA MOSS FARINE" thereon, with a panel beneath the representation having side and central scrollwork.

SER. No. 7,728. BITUMINOUS PAVEMENTS AND COMPOSITIONS OR CEMENTS FOR MAKING THE SAME. WARREN BROTHERS COMPANY, Boston, Mass. Filed June 9, 1905.

BITROCK

The word "BITROCK."

SER. No. 7,784. ANODYNES. LLOYD BROTHERS, Cincinnati, Ohio. Filed June 9, 1905.

LIBRADOL

The word "LIBRADOL."

SER. No. 7,847. LEATHER BOOTS AND SHOES. GEO. E. KEITH COMPANY, Brockton, Mass. Filed June 10, 1905.

High Life

The words "HIGH LIFE."

SER. No. 7,851. GELATIN. MICHIGAN CARBON WORKS, Detroit, Mich. Filed June 10, 1905. Used ten years.

KEYSTONE SILVER WHITE

The words "KEYSTONE SILVER WHITE."

SER. No. 7,882. CANDIES, CHOCOLATES, LICORICE CONFECTIONS, CANDIED FRUITS, GLACÉ FRUITS, AND BONBONS. C. POYET, Inc., New York, N. Y. Filed June 10, 1905.



The representation of a globe having the name "C. POYET" thereon in script.

SER. No. 7,945. LAXATIVES. W. S. JOHNSON & SON, Henderson, Ky. Filed June 12, 1905.

LITTLE BROWNIES

The words "LITTLE BROWNIES."

SER. No. 7,946. LAXATIVES. W. S. JOHNSON & SON, Henderson, Ky. Filed June 12, 1905. Used ten years.

LITTLE
BROWN
LIVER
TABLETS.

The words "LITTLE BROWN LIVER TABLETS."

SER. No. 7,953. CIGARS. JOSEPH WEINBERG, Dayton, Ohio. Filed June 12, 1905.



The representation of a scale-balance in equipoise and a monogram of the letters "J W," all inclosed in two concentric circles with the words "SCALE OF JUSTICE" appearing at the top between the two circles.

SER. No. 7,971. STOVES AND FURNACES FOR HEATING BUILDINGS. THE FIEBRICH HEATING COMPANY, Akron, Ohio. Filed June 12, 1905.

ATHANOR HEATERS

The words "ATHANOR HEATERS."

SER. No. 7,972. AIR-HEATING FURNACES FOR BUILDINGS. MAY AND FIEBRICH, Akron, Ohio. Filed June 12, 1905. Used ten years.

AKRON AIR BLAST

The words "AKRON AIR BLAST."

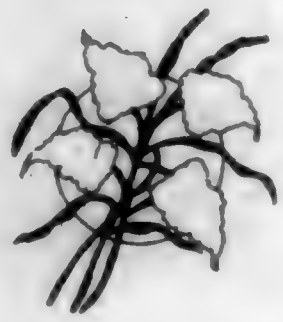
SER. No. 8,043. CONDIMENTAL FOODS FOR HORSES, CATTLE, SWINE, AND OTHER STOCK. THE DAVID S. FOUTS CO., Baltimore, Md. Filed June 13, 1905.



The representation of a shield bearing the word "FOUTS," which appears upon an oblique panel on the shield, and the representation of a cow and the head of a horse, the whole being inclosed within a circular border, the upper part of which is formed of a heavy band extending partly around said border.

SER. No. 8,240. FLAVORING EXTRACTS. ULLMANN DREIFUS & CO., Cincinnati, Ohio. Filed June 15, 1905.

GOLDEN ROD



The words "GOLDEN ROD," associated with the representation of a sprig of golden-rod appearing on top of and across the representation of a disk.

SER. No. 8,262. ROOT-CANAL FILLING. WILLIAM H. LEAK, Watertown, N. Y. Filed June 15, 1905.

AMOBILIS

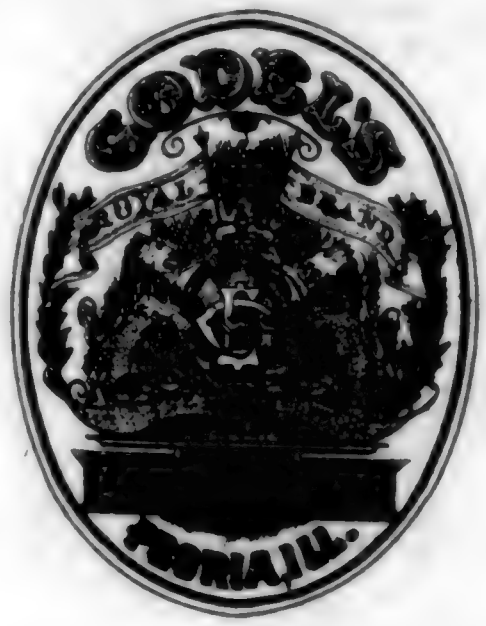
The word "AMOBILIS."

SER. No. 8,367. MEDICINE FOR THE CURE OF CONSTIPATION AND BOWEL AND STOMACH AILMENTS. FREDERICK MULLER, Jr., Hoboken, N. J. Filed June 16, 1905. Used ten years.



The representation of the leaf of a castor-oil plant and the words "MULLER'S CASTOR OIL TABULES" thereon.

SER. No. 8,306. HAMS, SHOULDERS, AND BACON. E. GODEL AND SONS, Peoria, Ill. Filed June 16, 1905.



An oval-shaped panel surmounted by a crown over which extend standards bearing banners on which are printed, respectively, the words "ROYAL BRAND." On the panel is the monogram "E G & S." Below the panel are streamers on which are rampant lions. Above the words "ROYAL BRAND" is the name "GODEL'S," there being a space below the panel upon which the name of the goods is printed, below which are the words "PEORIA, ILL." Branches of evergreen extend upwardly from the streamers, the whole being inclosed in an oval border.

SER. No. 8,384. SELF-RAISING FLOUR. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn. Filed June 17, 1905. Used ten years.

PANKAKO

The word "PANKAKO."

SER. No. 8,385. BREAKFAST-FOOD AND FARINA MADE FROM WHEAT. SLEEPY EYE MILLING COMPANY, Sleepy Eye, Minn. Filed June 17, 1905. Used ten years.

GOLDENHARVEST

The words "GOLDEN HARVEST."

SER. No. 8,475. MEDICINAL OIL FOR EXTERNAL USE. CHARLES WALTER SMITH, Warren, Pa. Filed May 9, 1905.

WANO

The word "WANO."

SER. No. 8,487. OLIVES. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 19, 1905.

SER. No. 8,487.

Premier

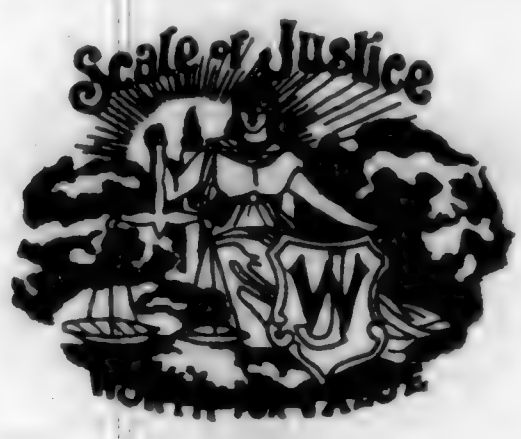
The word "PREMIER."

SER. No. 8,495. CANNED VEGETABLES AND FRUITS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 19, 1905.

Premier

The word "PREMIER."

SER. No. 8,529. CIGARS. JOSEPH WEINBERG, Dayton, Ohio. Filed June 19, 1905.



The words "SCALE OF JUSTICE," associated with a picture of a female in sitting posture with eyes blindfolded. One hand of the figure holds an evenly-balanced scale, one pan of which contains the picture of a cigar and the other pan of which contains a weight with "5¢" appearing above it. The other hand of the figure supports a shield upon which appear the letters "W J" in monogram. Below the figure appear the words "WORTH FOR VALUE."

SER. No. 8,544. STOVES AND FURNACES. P. & L. KAHN & BROS., Hamilton, Ohio. Filed June 19, 1905.

ESTATE

The word "ESTATE."

SER. No. 8,596. PURIFYING-PUMPS, OTHERWISE KNOWN AS BUCKET OR CHAIN PUMPS. ST. JOSEPH PUMP CO., St. Joseph, Mo. Filed June 20, 1905. Used ten years.

PERFECTION

The word-symbol "PERFECTION."

SER. No. 8,790. BELTING. THE AKRON BELTING COMPANY, Akron, Ohio. Filed June 22, 1905.

IDEAL

The word "IDEAL."

SER. No. 8,808. RAZORS AND POCKET-KNIVES. ALBERT L. SILBERSTEIN, New York, N. Y. Filed June 22, 1905.

CARBO

The word "CARBO," associated with the representation of flashes of lightning.

SER. No. 9,008. SUMAC, GAMBIER, OAK, AND HEMLOCK EXTRACTS. GEORGE H. LEONARD & CO., Boston, Mass. Filed June 24, 1905. Used ten years.



A five-pointed star and a crescent.

SER. No. 9,056. BEER AND LAGER-BEER. HARVARD BREWING CO., Lowell, Mass. Filed June 26, 1905.



The representation of a seal having serrated edges with a flag thereon, a letter "H" on the flag, and the word "HARVARD" in small letters on the seal under the flag.

SER. No. 9,170. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa. Filed June 27, 1905. Used ten years.

STANDARD

The arbitrary word "STANDARD."

SER. No. 9,220. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed June 27, 1905. Used ten years.

SER. No. 9,220.

ELF

The word "ELF."

SER. No. 9,316. DRIED FRUITS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed June 28, 1905.

premier

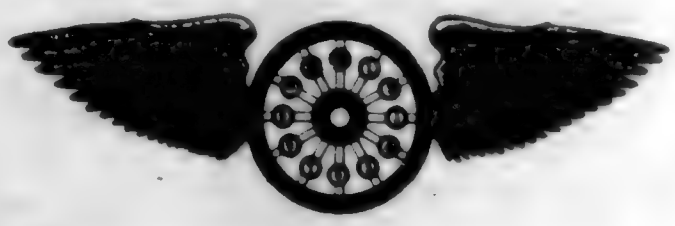
The word "PREMIER."

SER. No. 9,366. INCANDESCENT ELECTRIC LAMPS AND FITTINGS OF ORDINARY METAL FOR THE SAME. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England. Filed June 28, 1905.

EDISWAN

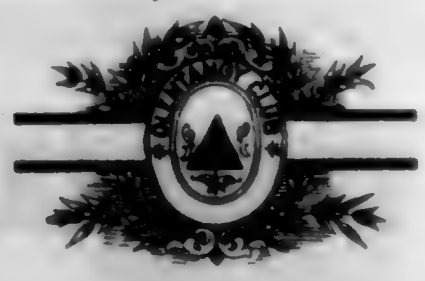
The word "EDISWAN."

SER. No. 9,390. CLOCK-MOVEMENTS. SCHLENKER & KIENZLE, Schwenningen, Germany. Filed June 29, 1905. Used ten years.



A representation of a wheel having twelve spokes, each of which spokes bears a number inclosed in a circle, such numbers running consecutively from "1" to "12," inclusive. At each side of said wheel is an extended wing.

SER. No. 9,440. WHISKY. LANG, SCHENCK & CO., Columbus, Ohio. Filed June 30, 1905.



The words "OLENTANGY CLUB" between the circumferences of two ovals, the inner one of which contains a triangle and the outer oval wreathed in branches of leaves and berries with a panel extending from each side.

SER. No. 9,536. MEDICINE FOR INDIGESTION. STERLING REMEDY COMPANY, Kramer, Ind. Filed June 30, 1905.

Japoneta

The word "JAPONETA" and a bar bearing the words "DIGEST WHAT YOU EAT," with an exclamation point after the said words.

SER. No. 9,538. MONTHLY MAGAZINE. WILLIAM GEORGE BRUCE, Milwaukee, Wis. Filed June 30, 1905.

THE AMERICAN School Board Journal

The words "THE AMERICAN SCHOOL BOARD JOURNAL."

SER. No. 9,543. SYRUP. GRIGGS, COOPER & CO., St. Paul, Minn. Filed July 1, 1905.

KING CORN

The words "KING CORN."

SER. No. 9,582. SILK BRAIDS AND MOHAIR BRAIDS. WILLIAM SKINNER MANUFACTURING CO., Holyoke and Boston, Mass.; New York, N. Y.; Chicago, Ill., and Philadelphia, Pa. Filed July 1, 1905. Used ten years.



The representation of the bust of an Indian, the Indian presenting a three-quarter face view and having a headdress of feathers and a necklace, the representation of a strap extending over one of the shoulders and resting on a pad on said shoulder.

SER. No. 9,584. TONIC FOR THE REGULATION OF THE ALIMENTARY ORGANS. BRAND BROTHERS COMPANY, Chicago, Ill. Filed July 1, 1905.



A spray of a tree or bush having thereon leaves, berries, and flowers across which extend oblique panels bearing the words "STUTTGARTER MAGEN BITTER," and the word "FEINSTER" appearing above said panels, while below said panels is a shield-like figure flanked by scrolls and bearing thereon a shield on which appears the monogram "B B C" and a hand holding an inverted cornucopia from which fruit is falling, the whole being inclosed within a border.

SER. No. 9,604. LAXATIVES. INLAND CHEMICAL CO., Indianapolis, Ind. Filed July 1, 1905.

Maple-ine

The hyphenated word "MAPLE-INE."

SER. No. 9,643. CANNED LOBSTER. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed July 3, 1905.

Wkynot

The arbitrary word "WKYNOT."

SER. No. 9,656. MORRENS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 3, 1905.



The words "IMPERIAL MORRENS," associated with a draped crown.

SER. No. 9,729. LEDGERS. THE RICHMOND & BACKUS CO., Detroit, Mich. Filed July 3, 1905.

"Are-and-be"

The phrase "ARE-AND-BE" inclosed in quotation-marks.

SER. No. 9,745. METAL-POLISH. JAMES B. HILL, Los Angeles, Cal. Filed July 3, 1905.

Metallife

The words "METAL LIFE."

SER. No. 9,808. BLEACHED, UNBLEACHED, PRINTED, AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 6, 1905.

The Eddystone Mfg. Co.
Sole Manufacturers.

The words "THE EDDYSTONE MFG. CO. SOLE MANUFACTURERS." in the facsimile handwriting of William Simpson, the founder of the company.

SER. No. 9,855. DISINFECTANTS, ANTISEPTICS, AND GERMICIDES. THE GEO. F. REDDARD COMPANY, San Francisco, Cal. Filed July 6, 1905.



The word "PUROZONE" printed in Roman capitals inside the outlines of a rectangular figure, having in the background a representation of the sun partly concealed by a body of water.

SER. No. 9,861. PHOSPHATIC FERTILIZERS, INCLUDING GROUND BONE, BONE-MEAL, BONE-FLOUR, GROUND PHOSPHATIC FERTILIZERS, SAID SPECIFIC VARIETIES BEING SOMETIMES SOLD ALONE AND IN SOME CASES TREATED WITH ACID MIXED WITH AMMONIACAL PRODUCTS, POTASH, AND OTHER FERTILIZING MATERIALS. THE AMERICAN AGRICULTURAL CHEMICAL CO., New York, N. Y. Filed July 6, 1905.



The representation of an ox-head surrounded by two concentric circles between which appears the word "AMERICUS."

SER. No. 9,863. LAUNDRY AND TOILET SOAP. GRAND UNION TEA CO., Brooklyn, N. Y. Filed July 7, 1905.



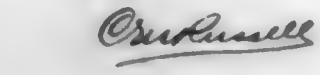
The representation of a triangle upon a red disk within a circular border of blue. Around the sides of the triangle the words "GRAND UNION COMPANY" appear, while within the triangle the letter "T" appears, with the letters "E" and "A" on either side thereof, the "E" and "A" being smaller than the "T."

SER. No. 9,866. BAKING-POWDER. GRAND UNION TEA CO., Brooklyn, N. Y. Filed July 7, 1905.



The representation of a triangle upon a red disk within a circular blue border. Around the sides of the triangle the words "GRAND UNION COMPANY" appear, while within the triangle a capital "T," with the letter "E" on one side and "A" on the other appear, the letters "E" and "A" being smaller than the "T."

SER. No. 9,898. HORSE-NAILS. STANDARD HORSE NAIL COMPANY, New Brighton, Pa. Filed July 7, 1905.



The facsimile signature of C. M. Russell.

SER. No. 9,933. MEDICINE FOR HORSES, CATTLE, AND POULTRY. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania. Filed July 8, 1905.



The representation of a running bull with a man grasping its horns as if attempting to stop the bull, a dog, and a man's hat being shown in the foreground.

SER. No. 9,941. DISPENSING-CABINETS. ALBANY PERFORATED WRAPPING PAPER CO., Albany, N. Y. Filed July 8, 1905.



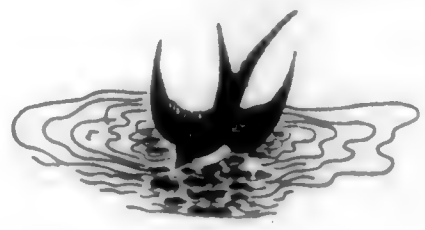
The arbitrary word "ONLIWON." The word "THE" appears in the first letter, "O."

SER. No. 9,984. SKIN PREPARATION OF SPECIALLY-PREPARED COMPOSITION USED AS A FOOT-POWDER. RICE, STEARNS & CO., Hanford, Cal. Filed July 10, 1905.

KISMET

The word "KISMET."

SER. No. 10,056. REMEDY FOR DROPSY. ELIZABETH HENKE, Stanley, Wis. Filed July 11, 1905.



The representation of a swallow in the act of dipping into a body of water.

SER. No. 10,250. SPECIFIC FOR THE TREATMENT OF WHOOPING-COUGH. THE KROTO PHARMACEUTICAL COMPANY, Albany, N. Y. Filed July 13, 1905.

KROTO

The word "KROTO."

SER. No. 10,367. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 15, 1905.



OXFORD

The word "OXFORD," associated with the representation of a fanciful female head.

SER. No. 10,371. INSULATED WIRE AND ADHESIVE TAPES COMMONLY USED FOR INSULATING. NEW YORK INSULATED WIRE COMPANY, New York, N. Y. Filed July 15, 1905.



A central disk surrounded by concentric circular bands, all of contrasting colors, with the words "WHITE CORE" upon the intermediate band, the words "INSULATED WIRE" on the outer band.

and the word "GRIMSHAW" half in light on the outer band and half in dark on the inner band.

SER. No. 10,609. PRINTING-PAPER. DULL & COLLINS CO., Philadelphia, Pa. Filed July 20, 1905.

QUAKER FINISH

The words "QUAKER FINISH."

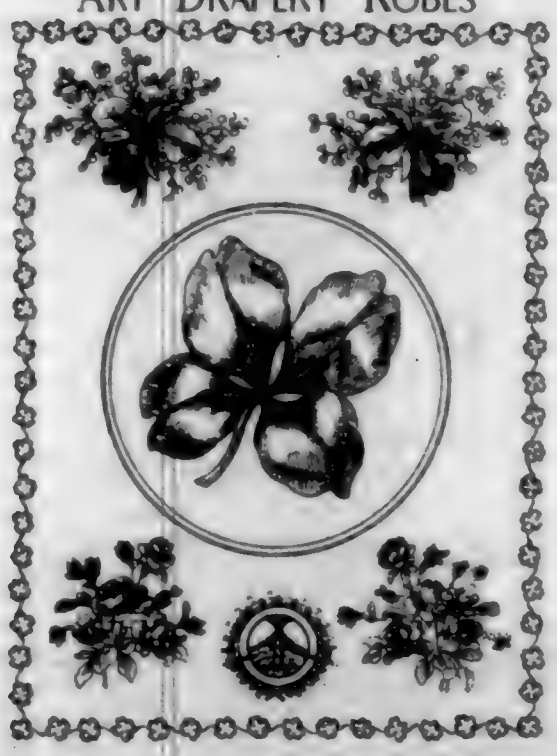
SER. No. 10,610. WHISKY. GUS. SIMON, Cincinnati, Ohio. Filed July 20, 1905.

Hilson

The letters and characters "HILSON" printed or impressed in a fanciful type and ornamented with a fanciful scroll design intertwined among the letters and characters.

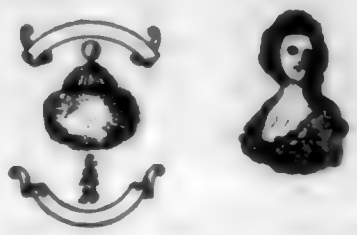
SER. No. 10,649. ART DRAPERY-ROBES. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 21, 1905.

¼ ELYSIAN
ART DRAPERY ROBES



The representation of a four-leaf clover on a circular field of white centrally arranged on a light-green square having in the respective corners representations of flowers and below the circular field a representation of a lighthouse surrounded by circles with stars above and branches crossed below, the whole surrounded by a border of four-leaf clovers and associated with the words "¼ ELYSIAN ART DRAPERY ROBES."

SER. No. 10,664. POWDERED PAPER, BEING A PREPARATION FOR THE SKIN OR TOILET USE. ANNIE SARAH BUTLER, London, England. Filed July 21, 1905.



The bust picture of a lady in evening dress, together with the representation of a powder-puff. Above and below the representation of the powder-puff is a band or garter, and between the representation of the powder-puff and the lower band or garter is a vertical line of Chinese characters representing the name of the applicant, "ANNIE S. BUTLER."

SER. No. 10,668. LIQUID PREPARATION FOR THE COMPLEXION TO BE USED EXTERNALLY. MAY SHOOR, Weehawken Heights, N. J. Filed July 21, 1905.

CHARM-OF-YOUTH



The words "CHARM OF YOUTH" appearing above a portrait of the applicant.

SER. No. 10,793. GREASE-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed July 26, 1905. Used ten years.

MARINE

The word "MARINE."

SER. No. 10,798. BLOW-OFF VALVES. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio. Filed July 26, 1905.

DURO

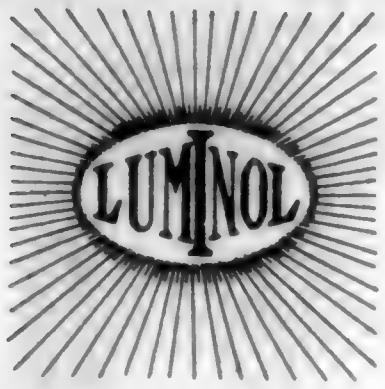
The word "DURO."

SER. No. 10,831. RAZORS. ALEXIS WITTE, New York, N. Y. Filed July 26, 1905. Used ten years.

A1.

The letter and figure "A1." surrounded by a circle.

SER. No. 10,829. BURNING FLUIDS FOR USE IN LAMPS. GENERAL SAFETY MANTLE LIGHT CO., New York, N. Y. Filed July 26, 1905.



The fanciful word "LUMINOL" contained within an aureole.

SER. No. 10,859. CYLINDER AND VALVE OIL. J. D. STREETT & COMPANY, St. Louis, Mo. Filed July 13, 1905.

RUBY

The word "RUBY."

SER. No. 11,097. TEA. THE DOLAN MERCANTILE CO., Atchison, Kans. Filed Aug. 1, 1905.



The word "ELK," associated with the representation of an elk-head.

SER. No. 11,099. COFFEE. THE DOLAN MERCANTILE CO., Atchison, Kans. Filed Aug. 1, 1905.



The word "ELK," associated with the representation of an elk-head.

SER. No. 11,101. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Aug. 1, 1905. Used ten years.

PERFECT BRAND

The arbitrarily-selected word "PERFECT," associated with the word "BRAND."

SER. No. 11,100. RICE. THE DOLAN MERCANTILE CO., Atchison, Kans. Filed Aug. 1, 1905.



The words "SUN FLOWER" and the representation of a sunflower.

SER. No. 11,263. TOOTHACHE-WAX. OSCAR F. LEONHARDT, Baltimore, Md. Filed Aug. 4, 1905.



The representation of a three-prong molar tooth having printed thereon the words "'BEST' TOOTHACHE WAX STOPS PAIN," the word "BEST" being inclosed in quotation-marks.

SER. No. 11,326. GINGER-ALE. STANDARD BOTTLING & EXTRACT CO., Boston, Mass. Filed Aug. 7, 1905.



The word-symbol "WHITE HOUSE," used in connection with the picture-symbol of the White House at Washington.

SER. No. 11,427. WHITE WINE IN BOTTLES. COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA, Bilbao, Spain. Filed Aug. 8, 1905.



A representation of a rectangular panel having thereon the words "RIOJA BLANCO COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA BILBAO ALMACENES EN HARO," a striped shield, the outer stripes being red and the central stripe yellow, crossed by a diagonal band in silver having thereon the letters "C. V. N. E.," one corner of the panel being folded over and bearing the words "FUNDADA EN 1879."

SER. No. 11,428. CLARET IN BOTTLES. COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA, Bilbao, Spain. Filed Aug. 8, 1905.



A representation of a rectangular panel having thereon the words "RIOJA CLARETE COMPAÑIA VINICOLA DEL NORTE DE ESPAÑA BILBAO ALMACENES EN HARO," a striped shield, the outer stripes being red and the central stripe yellow, crossed by a diagonal band in silver having thereon the letters "C. V. N. E.," one corner of the panel being folded over and bearing the words "FUNDADA EN 1879."

SER. No. 11,610. WHISKY. THE GOTTSCHALK CO., Baltimore, Md. Filed Aug. 12, 1905.

POINTER

The word "POINTER."

SER. No. 11,692. KNIT JACKETS AND SWEATERS. STEPHENSON & Co., Woodbine, N. J. Filed Aug. 16, 1905.

Little Admiral

The words "LITTLE ADMIRAL."

SER. No. 11,718. ILLUMINATING-PETROLEUM. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed June 26, 1905.



The representation of a cock.

SER. No. 11,807. HORNS FOR MOTOR-VEHICLES. ALBERT H. PUNER, New York, N. Y. Filed Aug. 12, 1905.

SIGNAL

The representation of an arrow and the word "SIGNAL," the shaft of the arrow extending through the word.

SER. No. 11,827. STEEL AXES AND HATCHETS. HENRY KEIDEL, Baltimore, Md. Filed Aug. 19, 1905.



The words and letters "THE EAGLE AXE" upon a ribbon-like scroll beneath which is the figure of an eagle with an ax in his talons and the representation of a ribbon in his bill upon which is the word "UNEXCELLED."

SER. No. 11,830. CANNED FRUITS. SCHWABACHER BROS & CO., INC., Seattle, Wash. Filed Aug. 21, 1905.

QUAIL BRAND

The words "QUAIL BRAND."

SER. No. 11,831. CANNED FRUITS AND VEGETABLES. SCHWABACHER BROS & CO. INC. Seattle, Wash. Filed Aug. 21, 1905.

SILVER SHIELD BRAND

The representation of a bordered silver shield upon which the words "SILVER SHIELD BRAND" appear.

SER. No. 11,865. KNITTED UNDERWEAR. CHARLES E. SMITH, Reading, Pa. Filed Aug. 21, 1905.

Cottonette Mills

The words "COTTONETTE MILLS."

SER. No. 12,021. CARPET-SWEEPERS. STREATOR METAL STAMPING Co., Streator, Ill. Filed Aug. 26, 1905.

Sanitaire

The word "SANITAIRE."

SER. No. 12,084. FOOD FOR POULTRY AND PIGEONS. CAMPBELL, MORRELL & Co., Passaic, N. J. Filed Aug. 30, 1905.

SER. No. 12,084.

C.M.& CO'S EUREKA POULTRY AND PIGEON FOODS.

The letters, abbreviation, character, and words "C. M. & Co's EUREKA POULTRY AND PIGEON FOODS.," the word "EUREKA" being arranged upon a band surmounted by the head of a rooster with streamers extending therefrom held in the beaks of pigeons.

SER. No. 12,108. GRAIN-BINDING HARVESTERS, CORN-HARVESTERS, RICE-HARVESTERS, MOWERS AND REAPERS, AS WELL AS EXTRA AND REPAIR PARTS AND PIECES FOR SUCH APPARATUS. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill. Filed Aug. 31, 1905.

Jones

A facsimile of the autograph of the surname of William H. Jones, one of the vice-presidents of the said International Harvester Co. of America.

SER. No. 12,118. GIN. J. & A. PRIBERO, Cincinnati, Ohio. Filed Aug. 31, 1905.



The word "ELK," associated or in combination with the head of an elk.

SER. No. 12,236. GENERAL AND NERVE TONICS AND NUTRIENTS AND REMEDIES FOR THE TREATMENT OF GENITO-URINARY DISORDERS. LEVI J. KNEER, Philadelphia, Pa. Filed Sept. 5, 1905.

Lee's Vigor-Workers
FOR WEAK MEN

The words "LEE'S VIGOR-WORKERS FOR WEAK MEN."

SER. No. 12,152. PREPARATION FOR THE CURE OF ANEMIA, CHLOROSIS, AND FOR A GENERAL TONIC AND RECONSTRUCTIVE. DR. A. GUDE & CO., G. M. B. H., Leipsic, Germany. Filed Sept. 1, 1905. Used ten years.



The arbitrarily-coined and fanciful words "PEPTO-MANGAN," the name "GUDE" inclosed in quotation-marks and all arranged on a panel on a rectangular background.

SER. No. 12,243. DRY PASTE. CROWN OIL & WAX COMPANY, Wilmington, Del., and Baltimore, Md. Filed Sept. 5, 1905. Used ten years.

ANCHOR

The word "ANCHOR."

SER. No. 12,354. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Sept. 7, 1905.

ROYAL

The word "ROYAL."

SER. No. 12,413. REMEDIES FOR THE CURE OF CORNS, BUNIONS, CHILBLAINS, CALLUSES, FROSTBITES, AND FOR TENDER, ACHING, SWOLLEN, TIRED, SWEATING, AND SMARTING FEET. JOHN BELLAMY STARKEY, San Diego, Cal. Filed Sept. 9, 1905.



The representation of the soles of two feet with a laughing face on each inclosed in a fancy border, associated with the word "LIQUID-EES."

SER. No. 12,495. VELVETS. A. L. DREYFUS & CO., New York, N. Y. Filed Sept. 12, 1905.



The words "PREMIER VELVET," the word "PREMIER" being surrounded by ornamental leafwork and the word "VELVET" appearing on an ornamental panel.

SER. No. 12,541. JOURNAL-BEARINGS. CHAPMAN DOUBLE BALL BEARING CO. OF AMERICA, New York, N. Y. Filed Sept. 12, 1905.



A group of spheres or balls, one of which is smaller than two others, with the smaller sphere between the larger ones, in connection with a representation of clouds and light-rays directed on the spheres.

SER. No. 12,638. MAGAZINE. CHARLES D. STEURER, New York, N. Y. Filed Sept. 15, 1905. Used ten years.



The words "THE AMERICAN BANK REPORTER" arranged as shown in the accompanying drawing, viz: between the circumference of two outer and one inner circle.

SER. No. 12,646. SUSPENDERS. PIONEER SUSPENDER COMPANY, Philadelphia, Pa. Filed Sept. 15, 1905.

PIONEER

The word "PIONEER."

SER. No. 12,955. HAIR-DYES. ALEXANDER CRISTADORO, New York, N. Y. Filed Sept. 25, 1905. Used ten years.



The representation of an eagle with outspread wings carrying in his talons a branch of foliage and a scroll bearing the word "EXCELSIOR," together with a series of stars arranged in a segmental line about the figure.

SER. No. 12,958. REMEDY FOR MALARIA, CHILLS AND FEVER, LIVER COMPLAINT, CONSTIPATION, INDIGESTION, SOUR STOMACH, AND DISEASES CAUSED BY A BAD OR DISEASED CONDITION OF THE DIGESTIVE ORGANS. SANFORD J. DALSELL, Beaumont, Tex. Filed Sept. 25, 1905.

SER. No. 12,958.

UTAKA

The word "UTAKA."

SER. No. 12,971. FLAVORING EXTRACTS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed Sept. 25, 1905.

NABOB

The word "NABOB."

SER. No. 12,977. PREPARED CEREAL BREAKFAST-FOODS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y. Filed Sept. 25, 1905.

premier

The word "PREMIER."

SER. No. 13,042. BLACK GRAHAM BREAD. HARRIS HIRSCHMAN Baltimore, Md. Filed Sept. 26, 1905.



A design of a bound sheaf of wheat with the name "HIRSCHMAN" at the top of said design printed in English and the name "HIRSCHMAN" at the bottom thereof printed in Hebrew and on the right side of said design of wheat the number "107," while on the left the word "ALBEMARLE" appears.

SER. No. 13,053. COTTON THREAD. THE CLARK MILE-END SPOOL COTTON CO., East Newark, N. J. Filed Sept. 27, 1905.

CORONA

The word "CORONA."

SER. No. 13,071. CHEMICAL COMPOUND TO BE PUT INTO CERTAIN LIQUIDS TO ERADICATE THE DANGER OF EXPLOSIONS FROM SAME, SUCH AS GASOLENE, NAPHTHA, BENZENE, PETROLEUM, AND OILS OF THAT NATURE. BARRETT-WHITE COMPANY, Springfield, Ohio. Filed Sept. 27, 1905.

BARITE

The word "BARITE."

Ser. No. 13,177. SKIN PREPARATION OR SPECIAL PREPARED COMPOSITION USED AS A FOOT-POWDER. Eugene E. Ambrose, Denver, Colo. Filed Sept. 30, 1905.

EXUDO

The fanciful word "Exudo."

Ser. No. 13,192. FISH-HOOKS. Henry Milward & Sons, Limited, Redditch, England. Filed Oct. 2, 1905. Used ten years.



The representation of a fish.

Ser. No. 13,197. NEEDLES FOR HAND AND MACHINE SEWING. Henry Milward & Sons, Limited, Redditch, England. Filed Oct. 2, 1905. Used ten years.



The figure of a mailed arm holding in the hand a falchion supported upon an heraldic wreath.

Ser. No. 13,208. GINGER-SNAPS. Pennsylvania Baking Company, Scranton, Pa. Filed Oct. 2, 1905.



A conventional representation of a keystone bearing the word "Keystone," associated with the name and address of the applicant.

Ser. No. 13,246. WIRE, SHEET, ROD, TUBE, ANGLE, CHANNEL, AND MOLDING COMPOSED OF COPPER, BRASS, BRONZE, AND GERMAN SILVER. U. T. Hungerford Brass & Copper Co., New York, N. Y. Filed Oct. 3, 1905.



The representation of a star having the words "Star Brand" thereon.

Ser. No. 13,247. ELBOWS, COUPLINGS, UNIONS, RETURN-BENDS, PLUGS, CROSSES, BRANCHES, OFFSETS, REDUCERS, CAPS, BUSHINGS, AND TEES. U. T. Hungerford Brass & Copper Co., New York, N. Y. Filed Oct. 3, 1905.



The representation of a star having the words "Star Brand" thereon.

Ser. No. 13,306. COTTON FABRIC HAVING AN OLD IRISH-LINEN FINISH. Burton Bros & Co., New York, N. Y. Filed Oct. 5, 1905.

AUTO

The arbitrarily-selected word "Auto."

Ser. No. 13,351. BOOKS ON SALESMANSHIP. The National School of Salesmanship, Minneapolis, Minn. Filed Oct. 5, 1905.



The representation of a horseshoe having thereon the letters "M M W R C" and the letters "N S S" within the horseshoe and suspended by a chain from the center.

Ser. No. 13,404. SILK PIECE GOODS. Passavant & Co., New York, N. Y. Filed Oct. 7, 1905.



The word "SERICA" printed in fancy letters crossing the representation of a branch of a tree or bush containing leaves. Above the word "SERICA" is the representation of a butterfly with spread wings, and below the word is the representation of another butterfly on one of the leaves. The whole is inclosed by a border-line.

SER. No. 13,474. SILK NETS FOR THE HAIR. A. HERBERT WOOLLEY & Co., Nottingham, England. Filed Oct. 10, 1905.



The representation of a heart on which appears the word "EROS."

SER. No. 13,489. RUBBER ERASERS. BERNARD FABER, New York, N. Y. Filed Oct. 11, 1905.



The representation of a circumferential band of yellow or gold color contrasting with a darker color on each side thereof and produced upon a metallic band or holder.

SER. No. 13,538. BEVERAGES PREPARED FROM FRUIT-JUICES AND FRUIT-JUICES FOR THE PREPARATION OF BEVERAGES, INCLUDING CONCENTRATED EXTRACTS AND ESSENCES FOR DILUTION WITH MINERAL WATER OR THE LIKE, ALSO CARBONATED, AERATED, AND STILL-FRUIT EXTRACTS, ESSENCES, JUICES, AND SYRUPS, APPLE-JUICE OR NON-ALCOHOLIC CIDER, GRAPE-JUICES AND UNFERMENTED WINES, AND NON-ALCOHOLIC CHAMPAGNE. SUNLIT FRUIT COMPANY, San Francisco, Cal. Filed Oct. 12, 1905.

SUNLIT

The arbitrary word "SUNLIT."

SER. No. 13,544. PISTON WELL-PUMPS. RED JACKET MANUFACTURING COMPANY, Davenport, Iowa. Filed Oct. 13, 1905.



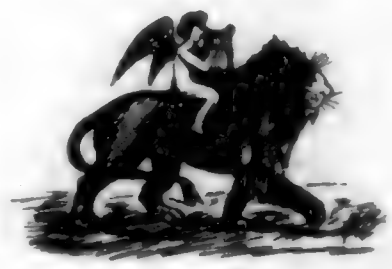
The words "RED JACKET" arranged below the representation of the head of the Indian chief known as "Red Jacket" attired in native costume and having the words "RED JACKET (SA-GO-YE-WAT-HA)" arranged in a curve above the head, the words "CHIEF OF THE SENECAS" on opposite sides of the said head, and the words "CHIEF OF PUMPS." below the same, the whole being inclosed within an oval border that is provided with a series of ornamental scrolls.

SER. No. 13,624. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

ROYAL

The word "ROYAL."

SER. No. 13,815. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY B. FRANKENBERG COMPANY, New York, N. Y. Filed Oct. 21, 1905.



A representation of a winged cupid seated astride a lion and in the act of playing a lyre.

SER. No. 13,816. WOOLEN, WORSTED, AND MOHAIR YARNS. HENRY B. FRANKENBERG COMPANY, New York, N. Y. Filed Oct. 21, 1905.

UTOPIA

The arbitrary word "UTOPIA."

SER. No. 13,817. LINENS, LINEN PIECE GOODS, LINEN LAWNS, LINEN SHEETS, PILLOW AND BOLSTER CASES, LINEN DOILIES, CENTERPIECES AND SCARFS, DAMASKS, TOWELS AND TOWELINGS, AND EMBROIDERED LINENS. ANTON WEDL, New York, N. Y. Filed Oct. 21, 1905.

AWNYC

The arbitrary word-symbol "AWNYC."

SER. No. 13,818. COTTON PIECE GOODS, LAWNS, MUSLINS, AND ORGANDIES, TERRY GOODS, COTTON CLOTH AND COTTON NAPKINS, AND EMBROIDERED COTTON GOODS. ANTON WEDL, New York, N. Y. Filed Oct. 21, 1905.

AWNYC

The arbitrary word-symbol "AWNYC."

SER. No. 13,961. REFRIGERATORS. THE LORILLARD REFRIGERATOR CO., New York, N. Y. Filed Oct. 26, 1905. Used ten years.

SER. No. 13,961.

THE ALLEGRETTI REFRIGERATOR

The words "THE ALLEGRETTI REFRIGERATOR."

SER. No. 13,977. LOCK-WASHERS AND NUT-LOCKS. THE NATIONAL LOCK WASHER COMPANY, Newark, N. J. Filed Oct. 27, 1905. Used ten years.

National

The word "NATIONAL."

SER. No. 14,082. WOMEN'S, MISSES', AND CHILDREN'S OUTER SKIRTS. M. GOLDMAN & Co., New York, N. Y., and Cleveland, Ohio. Filed Oct. 28, 1905.

GOLD QUALITY

The words "GOLD QUALITY" upon an oval-shaped background.

SER. No. 14,153. CARPET-WARPS. JAMES E. REYNOLDS, New York, N. Y. Filed Nov. 1, 1905.

EUREKA

The word "EUREKA."

SER. No. 14,140. WHEAT-FLOUR. WESTERN FLOUR MILLS CO., Davenport, Iowa. Filed Oct. 31, 1905.

CREAM of WHEAT

The words "CREAM OF WHEAT," together with the representation of a sheaf of wheat on a dark background.

SER. No. 14,344. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Nov. 4, 1905.



The representation of a circular casement at which appears the representation of the head, neck, and shoulders of a tiger, the fore paws of which animal rest upon the casement.

SER. No. 14,361. INSECT-POWDER. GILPIN, LANGDON & COMPANY, INCORPORATED, Baltimore, Md. Filed Nov. 6, 1905.



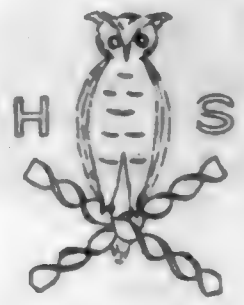
The words "BLACK FLAG" and the representation of a black flag bearing the letters "I. P."

SER. No. 14,404. CORSETS. BIRDSEY & SOMERS, New York, N. Y. Filed Nov. 8, 1905.

CZARINA

The word "CZARINA."

SER. No. 14,468. COAL AND ROCK DRILLS, MACHINES FOR DRILLING COAL AND ROCK, AND PARTS THEREOF. HOWELLS MINING DRILL CO., Plymouth, Pa. Filed Nov. 9, 1905.



The representation of an owl perched upon two crossed auger-bits. On one side of the representation of the owl appears the letter "H" and on the other side the letter "S."

SER. No. 14,495. LIQUID ANTISEPTIC AND DISINFECTANT. CARRIE V. DONNAN, Washington, D. C. Filed Nov. 11, 1905.

ASEPTOS

The word "ASEPTOS."

SER. No. 14,575. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

PARAGON

The word "PARAGON."

SER. No. 14,576. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

RELIANCE

The word "RELIANCE."

SER. No. 14,577. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

ARROW

The word "ARROW."

SER. No. 14,578. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

VICI

The word "VICI."

SER. No. 14,579. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

AJAX

The word "AJAX."

SER. No. 14,580. RUBBER-CEMENT. MONTGOMERY BROS INC., Philadelphia, Pa. Filed Nov. 13, 1905.

ANCHOR

The word "ANCHOR."

SER. No. 14,611. MINERAL COMPOUND FOR CLEANING BRASS AND OTHER METALS. HARRY A. LAWTON, Cleveland, Ohio. Filed Nov. 14, 1905.

Mineral Moss

The words "MINERAL MOSS."

SER. No. 14,640. REMEDIES FOR THE RELIEF AND CURE OF COUGHS, COLDS, HOARSENESS, CROUP, ASTHMA, INFLUENZA, BRONCHITIS, AND PULMONARY DISEASES. MAX GEBAUER, New York, N. Y. Filed Nov. 15, 1905.



The representation of a bell with an eagle perched thereon and an oval-shaped shield rising from the body of the eagle, the whole appearing upon a vertical panel-like background with ornamental side borders. Associated with said representation are the words "GEBAUER'S BELLEVUE COUGH MIXTURE," and across the bell is the word "VIEW."

SER. No. 14,646. BURGLAR-ALARMS. THE NORFOLK NOVELTY CORPORATION, Norfolk, Va. Filed Nov. 15, 1905.

20th CENTURY

The words "20TH CENTURY."

SER. No. 14,782. LATHES. VANDUZE CHURCHILL COMPANY, New York, N. Y. Filed Nov. 16, 1905.



A Maltese cross, having the letters "V C" in the center.

SER. No. 14,759. MACHINERY-PACKING. CHARLES A. DANIEL, Philadelphia, Pa. Filed Nov. 17, 1905.



The representation of a shield, a representation of a piece of steam-packing inclosed within said shield and marked with the three letters "P. P. P.," and my facsimile signature extending across the piece of packing. Inside the border of the shield are lines following the contour of the upper and side portions of the same, said side lines terminating in curls, while the upper lines are joined by straight lines with the points of the shield.

SER. No. 14,781. ABSORBENT PAINTS OR STAINS. THE BAUMANN-KLAGE CO., Chicago, Ill. Filed Nov. 18, 1905.



The representation of a bunch of shingles placed on a board pedestal, the pedestal having inscribed thereon the words "WOOD EMBALMO."

SER. No. 14,840. METALLIC WATER-COLORS. GERSTENDORFER BROS., New York, N. Y. Filed Nov. 20, 1905. Used ten years.



The representation of a star and the word "STAR."

SER. No. 14,846. TOILET SOAP. THE CINCINNATI SOAP COMPANY, Cincinnati, Ohio. Filed Nov. 20, 1905.

TOYLAND

The word "TOYLAND."

SER. No. 14,859. BROADCAST SEEDING-MACHINES. PEORIA DRILL AND SEEDER CO., Peoria, Ill. Filed Nov. 20, 1905. Used ten years.

PEORIA

The word "PEORIA."

SER. No. 14,879. SPECTACLES AND EYEGLASSES AND THEIR MOUNTINGS AND PARTS. STEVENS AND COMPANY, Providence, R. I. Filed Nov. 21, 1905.

S Q

The letters "S Q."

SER. No. 14,891. WHISKY. W. P. SQUIRE & CO., Lawrenceburg, Ind. Filed Nov. 21, 1905. Used ten years.



The outline of a shield or tabard, the words "ROCK CASTLE" on a horizontal panel extending across the middle of said shield, and the word "MILLS" upon the shield below said panel.

SER. No. 14,911. OLIVES. ATKERSAN & TUFFLEY, North San Diego, Cal. Filed Nov. 23, 1905.

SER. No. 14,911.



The words "OLD MISSION" on a scroll-like panel with a beaded border appearing on and partly covering a landscape consisting of an old mission building in the background beneath an azure and white sky, an uncultivated grassy area in the middle distance, and three palm-trees in the foreground in front of an old stone wall.

SER. No. 14,914. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, assignor to Continental Color and Chemical Co. Corporation of New York, New York, N. Y. Filed Nov. 22, 1905. Used ten years.

INDOINE

The word "INDOINE."

SER. No. 14,915. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, assignor to Continental Color and Chemical Co. Corporation of New York, New York, N. Y. Filed Nov. 22, 1905. Used ten years.

OXAMINE

The word "OXAMINE."

SER. No. 14,916. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, assignor to Continental Color and Chemical Co. Corporation of New York, New York, N. Y. Filed Nov. 22, 1905. Used ten years.

THIAZINE

The word "THIAZINE."

SER. No. 14,917. DYESTUFF. KUTTROFF, PICKHARDT & COMPANY, assignor to Continental Color and Chemical Co. Corporation of New York, New York, N. Y. Filed Nov. 22, 1905. Used ten years.

NILE

The word "NILE."

SER. No. 14,968. BELT-FASTENERS. GREENE TWEED & Co., New York, N. Y. Filed Nov. 24, 1905. Used ten years.

EMPIRE

The word "EMPIRE."

SER. No. 14,983. WHEAT-FLOUR. WACO MILL & ELEVATOR COMPANY, Waco, TEX. Filed Nov. 24, 1905.



The word "FERNDELL" and four sprigs of fern-leaves.

SER. No. 14,969. BELT-FASTENERS. GREENE TWEED & Co., New York, N. Y. Filed Nov. 24, 1905. Used ten years.



The representation of a star.

SER. No. 14,976. BAGS FOR BONNETS AND HATS OR OTHER WEARING ARTICLES AND ARTICLES FOR DECORATION OR ORNAMENTATION. SAMUEL NUSBAUM, Albany, N. Y. Filed Nov. 25, 1905.

SATCHEL-LET

The word-symbol "SATCHEL-LET."

SER. No. 14,986. LEATHER BOOTS AND SHOES. SMITH-BIBBOON SHOE COMPANY, Lynchburg, Va. Filed Nov. 25, 1905.

WAR EAGLE

The words "WAR EAGLE."

SER. No. 15,018. ROTARY WASHING-MACHINES. BENSON-BRANNER MANUFACTURING COMPANY, St. Louis, Mo. Filed Nov. 27, 1905.

SNOWEWHITE

The words "SNOW" and "WHITE," separated by the capital letter "E."

SER. No. 15,022. WHEAT-FLOUR. LEENDERTZ & VAN DER HELD, Rotterdam, Holland. Filed Nov. 27, 1905.

PATRIA

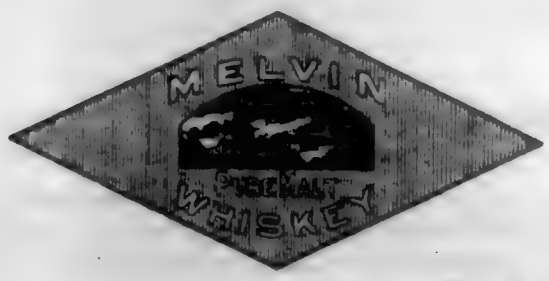
The word "PATRIA."

SER. No. 15,049. SHIPS' LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England. Filed Nov. 28, 1905.

T.W

The representation of an anchor, the letters "T" and "W," and a period interposed between said letters.

SER. No. 15,066. MALT WHISKY. SIMON BIRNBAUM & BRO., St. Joseph, Mo. Filed Nov. 29, 1905.



A diamond-shaped parallelogram printed in red and having in its center a pictorial representation of a distilling plant. Above the picture is the word "MELVIN," and below the picture are the words "PURE MALT WHISKEY."

SER. No. 15,082. HAY-CARRIERS. F. E. MYERS & BRO., Ashland, Ohio. Filed Nov. 29, 1905. Used ten years.

MYERS

The word "MYERS."

SER. No. 15,128. LAGER-BEER. HUDSON COUNTY CONSUMERS BREWING CO., West Hoboken, N. J. Filed Dec. 1, 1905.



A circular band or border bearing the words "HUDSON COUNTY CONSUMERS BREW'G CO. WEST HOBOKEN: N. J." and inclosing the representation of a four-leaf clover.

SER. No. 15,088. SARSAPARILLA. LANMAN & KEMP, New York, N. Y. Filed Nov. 30, 1905.



The representation of a phenix surrounded by rays and a landscape below the phenix in which is represented the figure of an Indian, mountains, trees, and a plain, the entire landscape being surrounded by a rectangular fanciful border. The word "BRISTOL'S" and the words "ESTABLISHED IN 1832" appear above the phenix, the words "THE ONLY TRUE EXTRACT" appear on the scroll, and the word "SARSAPARILLA" is produced below the scroll. Below the word "SARSAPARILLA" an ornamental panel is seen bearing the words "LANMAN & KEMP SOLE AGENTS, NEW YORK." all the above matter being contained within a border of rosette figures of linear type and connecting-scrolls.

SER. No. 15,129. LAGER-BEER. THE CONSUMERS PARK BREWING CO., New York, N. Y. Filed Dec. 1, 1905.



The representation of an irregular triangular figure composed of three individual diamond-shaped figures arranged with adjacent points or apices touching surmounted by a scroll bearing the words "IN TRINITATE ROBUR," the described matter being inclosed within a circular border or band bearing the words "THE CONSUMERS PARK BREWING CO. BROOKLYN, N. Y."

SER. No. 15,277. RIBBONS. SMITH & KAUFMANN, New York, N. Y. Filed Dec. 6, 1905.

Merrie Christmas.

The words "MERRIE CHRISTMAS."

SER. No. 15,515. TRUNKS, VALISES, SATCHELS, DRESS-SUIT CASES, WARDROBE-TRUNKS, AND PARTS OF SAME. P. C. MURPHY TRUNK COMPANY, St. Louis, Mo. Filed Dec. 19, 1905.



The representation of a star and crescent, the star shown upon a stippled background and partly inclosed by the crescent.

SER. No. 15,838. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.

Advance Brand UNSWEETENED MILK

The arbitrarily-selected word "ADVANCE," associated with the word "BRAND" and the words "UNSWEETENED MILK."

SER. No. 15,839. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.



The representation of a cut stone or jewel with divergent rays and the word "JEWEL" associated with the word "BRAND" and on an oval panel the words "CONDENSED MILK," the whole partially inclosed in scrollwork.

SER. No. 15,840. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.



The representation of a flying dove and the word "PALOMA," associated with the words "CONDENSED MILK."

SER. No. 15,841. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.



The words "NATIONS PRIDE," associated with the representation of a completely-equipped battleship under full headway and the words "CONDENSED MILK."

SER. No. 15,842. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.



The representation of a white top with the word "BRAND" thereon in the center of a dark background inclosed in scrollwork and the words "WHITE TOP," associated with the words "CONDENSED MILK."

SER. No. 15,848. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed Jan. 3, 1906.



The representation of a Rob Roy shield between two thistle branches, with a sword resting horizontally across the back of the shield, and the words "ROB ROY," associated with the words "CONDENSED MILK."

SER. No. 15,927. LAGER-BEER. CHRISTIAN FEIGENSPAN, A CORPORATION, Newark, N. J. Filed Jan. 5, 1906.

P.O.N.

The letters "P. O. N."

SER. No. 16,007. WINE. W. H. JOHNS & Co., Boston, Mass. Filed Jan. 4, 1906. Used ten years.

RUTHVEN

The word "RUTHVEN."

SER. No. 16,140. FOODS FOR LIVE STOCK AND OTHER ANIMALS. FRED H. ERB, Jr., Lafayette, Ind. Filed Jan. 12, 1906.



The representation of a hunter holding a gun, and dogs in the act of retrieving, all in the foreground, with a landscape forming the background.

SER. No. 16,221. STEEL AND PLATED PENS. C. HOWARD HUNT PEN CO., Camden, N. J. Filed Jan. 16, 1906.

"A PEN IS ONLY AS GOOD AS ITS POINT"

The phrase "A PEN IS ONLY AS GOOD AS ITS POINT," which is shown inclosed in quotation-marks.

SER. No. 16,543. COMPOUND FOR TREATING WASTE MATERIALS CONTAINING CARBON TO RENDER THEM COMBUSTIBLE. THE COALITE COMPANY, Boston, Mass. Filed Jan. 26, 1906.

COALITE

The word "COALITE."

SER. No. 16,567. CANDY. WALTER BROWNLEY, Washington, D. C. Filed Jan. 27, 1906.

Brownley's

The name "BROWNLEY'S" printed in script in the distinctive manner shown in the drawing.

SER. No. 16,641. LEATHER BOOTS AND SHOES. CROWELL-MASON SHOE CO., Indianapolis, Ind. Filed Jan. 31, 1906.

0-SO

The words or letters "0-SO."

SER. No. 16,689. ELASTIC HOSIERY. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 2, 1906. Used ten years.

J. P.

The letters "J. P."

SER. No. 16,712. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn. Filed Feb. 3, 1906.

GOLD HUNTER

The words "GOLD HUNTER."

SER. No. 16,715. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn. Filed Feb. 3, 1906.

MAJESTIC

The word "MAJESTIC."

SER. No. 16,716. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn. Filed Feb. 3, 1906.

ALLISTA

The word "ALLISTA."

SER. No. 16,747. BROOMS. AMERICAN BROOM & BRUSH CO., Amsterdam, N. Y. Filed Feb. 5, 1906.



The representation of a padlock, upon which appears the word "SECURE," and a chain having one end attached to the hasp of the

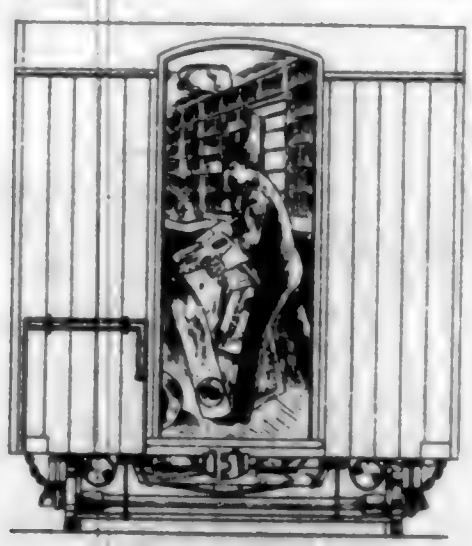
padlock and its other end attached to a disk partially overlying a sheaf of grain tied with a ribbon. Upon the disk are the letters and characters "A B & B Co."

SER. No. 16,778. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa. Filed Feb. 6, 1906.



The representation of the side of a mail-pouch, a lock thereon bearing the letters and abbreviation "H. C. Co.," and the representation of a shipping tag or label, said tag or label bearing the inscription "FROM HERSHEY CHOCOLATE CO. HERSHEY, PA. TO YOU."

SER. No. 16,774. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa. Filed Feb. 6, 1906.



The representation of the end of a railroad mail-car having the door thereof open and showing a man within said car holding a mail-pouch.

SER. No. 16,783. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed Feb. 6, 1906.



A fanciful design comprising a shield presenting a blue field upon which is arranged three fleurs-de-lis in triangular form, the shield being surmounted by a crown and partially surrounded by a laurel wreath, the shield being further flanked by white flags bearing fleurs-de-lis and draped to a common point below the shield, the staffs of the flags being extended outwardly from the upper corners of the shield and each having a tassel suspended therefrom. The flagstaff on either side of the shield is tipped with a spear, while the other staffs are tipped with fleur-de-lis. Across the lower ends of the flags a panel appears bearing the word "CATINAT."

SER. No. 16,775. SWEETENED CHOCOLATE AND CANDY OF ALL KINDS. MILTON S. HERSHEY, Derry Church, Pa. Filed Feb. 6, 1906.

The representation of a mail-car having an opening in one side thereof.

SER. No. 16,795. HARMONICAS. NATIONAL MUSICAL STRING CO., New Brunswick, N. J. Filed Feb. 6, 1906.

BELL BRAND

The words "BELL BRAND."

SER. No. 16,828. WRAPPING CORD AND TWINE. HUBBS & CORNING CO., Baltimore, Md. Filed Feb. 8, 1906.



The representation of an oriole bird resting on the limb of a tree.

SER. No. 16,829. TOILET-PAPERS. HUBBS & CORBINS CO., Baltimore, Md. Filed Feb. 8, 1906.



The word "ORIOLE," associated with the pictorial representation of an oriole bird resting on the limb of a tree.

SER. No. 16,832. PACKING GAGES AND CUTTERS. DEMAREST AND CARVER, New York, N. Y. Filed Feb. 8, 1906.

EXACTO

The word "EXACTO."

SER. No. 16,865. LIQUID POLISH FOR WOOD AND METALS. WILLIAM J. BUSBEY, Albany, N. Y. Filed Feb. 9, 1906.

SAFEALL

The word "SAFEALL."

SER. No. 16,873. CIGARS. CHARLES B. PERKINS, Boston, Mass. Filed Feb. 9, 1906.

El Vivero

The arbitrarily-selected words "EL VIVERO."

SER. No. 16,892. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed Feb. 10, 1906.

3 FEEDS FOR ONE CENT

The numeral and words "3 FEEDS FOR ONE CENT."

SER. No. 16,904. PIANOS. JEWETT PIANO CO., Leominster, Mass. Filed Feb. 10, 1906. Used ten years.

Jewett

The word "JEWETT."

SER. No. 16,907. WATCH-MOVEMENTS. BYRON L. STRASBURGER, New York, N. Y. Filed Feb. 10, 1906.

RIW.C?

The letters "R. I. W. Co."

SER. No. 16,908. CUSHION FINGER-KEYS. MUSSON SUPPLY COMPANY, New York, N. Y. Filed Feb. 10, 1906.



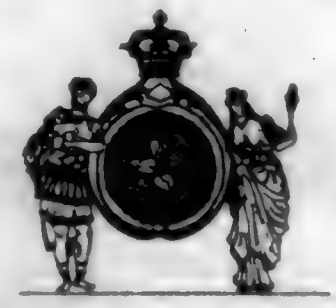
The representation of a cross and key, and associated therewith are the words "THE KEY WITH THE CROSS."

SER. No. 16,915. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAREY-CASUAS TOBACCO COMPANY, New York, N. Y. Filed Feb. 12, 1906.

ALOMINO

The word "ALOMINO."

SER. No. 16,916. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAREY-CASUAS TOBACCO COMPANY. New York, N. Y. Filed Feb. 12, 1906.



The representations of a man and woman in Grecian costume standing on either side of a seal having thereon a representation of a tobacco-plant, there being above the seal a representation of a crown.

SER. No. 16,950. SMOKING AND CHEWING TOBACCO. GILBERT, SON & CO., Murray, Ky. Filed Feb. 12, 1906. Used ten years.

Cumberland
River

Twist.

The words "CUMBERLAND RIVER TWIST."

SER. No. 16,963. INCUBATORS AND BROODERS. MARION W. SAVAGE, Minneapolis, Minn. Filed Feb. 12, 1906.



The representation of a jewel with lines radiating therefrom and the words "THE JEWEL HOT AIR INCUBATOR."

SER. No. 16,971. WIRE CLOTHS AND SCREENS. THE W. S. TYLER COMPANY, Cleveland, Ohio. Filed Feb. 13, 1906. Used ten years.

TYLER

The word "TYLER."

SER. No. 16,984. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D. Filed Feb. 13, 1906.



A heart-shaped figure formed of outer and inner lines with numerous small heart-shaped figures in the space between the lines.

SER. No. 16,985. WHEAT-FLOUR. PHOENIX FLOUR MILL, Evansville, Ind. Filed Feb. 13, 1906.

GOLD DUST

The words "GOLD DUST."

SER. No. 16,988. DAVENPORT BEDS. THE C. J. KIEDEL BEDDING COMPANY, St. Louis, Mo. Filed Feb. 13, 1906.

SER. No. 16,988.

SOMERSAULTIC

The word "SOMERSAULTIC."

SER. No. 16,993. SHOVELS, SPADES, AND SCOOPS. THE AVERY STAMPING COMPANY, Cleveland, Ohio. Filed Feb. 14, 1906.

TROPIC

The word "TROPIC."

SER. No. 16,994. SHOVELS, SCOOPS, AND SPADES. THE AVERY STAMPING COMPANY, Cleveland, Ohio. Filed Feb. 14, 1906.

BUCKEYE

The word "BUCKEYE."

SER. No. 16,999. ELECTRIC LAMPS OF ALL KINDS. KÖRTING & MATHIESEN ACTIENGESELLSCHAFT, Leutzsch, Germany. Filed Feb. 14, 1906.



The word "EXCELLO" arranged within a toothed wheel.

SER. No. 17,001. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 14, 1906.



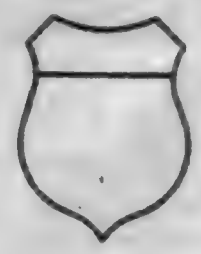
The pictorial representation of a shield with the word "UNION" thereon.

SER. No. 17,018. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 14, 1906.

CLARENCE

The word "CLARENCE."

SER. No. 17,016. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 14, 1906.



The pictorial representation of a shield.

SER. No. 17,021. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Feb. 14, 1906. Used ten years.

PEERLESS

The arbitrary word-symbol "PEERLESS."

SER. No. 17,036. CORDS, LINES, TWINES, AND ROPES. SILVER LAKE COMPANY, Boston, Mass. Filed Feb. 15, 1906. Used ten years.

C

The letter "C" printed in red.

SER. No. 17,037. CORDS, LINES, TWINES, AND ROPES. SILVER LAKE COMPANY, Boston, Mass. Filed Feb. 15, 1906. Used ten years.

A

The letter "A" printed in red.

SER. No. 17,041. BAKING-PANS. THE EDWARD KATZINGER COMPANY, Chicago, Ill. Filed Feb. 15, 1906.

NUTRO

The arbitrary word "NUTRO."

SER. No. 17,049. SEEDING-MACHINES. AMERICAN SEEDING MACHINE COMPANY, Jersey City, N. J.; Springfield, Ohio; Richmond, Ind.; Louisville, Ky., and Shortsville and Macedon, N. Y. Filed Feb. 15, 1906.

SUCCESS

The word "SUCCESS," the upper portions of the letters composing the word being red and the lower portions of the letters being black in color.

SER. No. 17,057. SUSPENSORY BANDAGES AND TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906.

JELCO

The word "JELCO."

SER. No. 17,095. CRACKERS. CRAYLAND & LENHART, Brownsville, Pa. Filed Feb. 16, 1906. Used ten years.

Brownsville

The word "BROWNSVILLE."

PRINTED LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED MARCH 13, 1906.

50,323. LARYNGOSCOPES. WILLIAM BOEKEL AND COMPANY, Philadelphia, Pa.

The letter "B" inclosed in a circle.

Filed April 27, 1905. Serial No. 3,318. PUBLISHED JANUARY 16, 1906.

50,324. CANDLE-LAMPS. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England.

The words "BURGLAR'S HORROR." Used ten years.

Filed June 5, 1905. Serial No. 7,435. PUBLISHED JANUARY 16, 1906.

50,325. PAPER-FASTENERS. GENERAL SPECIALTY COMPANY, Philadelphia, Pa.

The representation of a tadpole and the word "TADPOLE."

Filed August 11, 1905. Serial No. 11,557. PUBLISHED JANUARY 16 1906.

50,326. DEVICES FOR USE IN APPLYING ELECTRICITY. JOHN WILSON GIBBS, New York, N. Y.

The word "ELECTRICURA."

Filed May 5, 1905. Serial No. 4,389. PUBLISHED JANUARY 16, 1906.

50,327. GARMENT-SUPPORTER CLASPS. HIRSH BROTHERS, New York, N. Y.

The representation of a hand, the word "THE," and the letter "E" upon the palm of the hand.

Filed August 21, 1905. Serial No. 11,839. PUBLISHED JANUARY 16, 1906.

50,328. SOLID-GOLD BADGES. IRONS & RUSSELL, Providence, R. I.

A monogram composed of the capital letters "C F I."

Filed June 7, 1905. Serial No. 7,563. PUBLISHED JANUARY 16, 1906.

50,329. BOOTS AND SHOES OF LEATHER AND OF LEATHER AND CLOTH. A. E. LITTLE & COMPANY, Lynn, Mass.

The word "AUTO," shown as inclosed between two horizontal dashes and associated with the words "THE" and "SHOE."

Filed September 11, 1905. Serial No. 12,693. PUBLISHED JANUARY 16, 1906.

50,330. LAMP GLASSES AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa.

The word "SANDOW" inclosed in a diamond-shaped figure. Used ten years.

Filed May 18, 1905. Serial No. 6,007. PUBLISHED JANUARY 16, 1906.

50,331. NEWSPAPER. MANUFACTURERS' RECORD PUBLISHING COMPANY, Baltimore, Md.

The words "SOUTHERN FARM MAGAZINE."

Filed December 12, 1905. Serial No. 15,352. PUBLISHED JANUARY 16 1906.

50,332. HAT-FASTENERS. JOHN C. MORRISON, New York, N. Y.

The words "THE BLESSING HAT FASTENER."

Filed December 8, 1905. Serial No. 15,272. PUBLISHED JANUARY 16, 1906.

50,333. MAGAZINE. MUNICIPAL ENGINEERING COMPANY, Indianapolis, Ind.

The words MUNICIPAL ENGINEERING."

Filed December 13, 1905. Serial No. 15,382. PUBLISHED JANUARY 16, 1906.

50,334. SOLID AND LIQUID SOAPS. EDWARD A. OLDS, New York, N. Y.

The word-symbol "PACKER'S." Used ten years.

Filed April 17, 1905. Serial No. 1,849. PUBLISHED JANUARY 16, 1906.

50,335. WINE. PLEASANT VALLEY WINE CO., Rheims, N. Y.

The words "GREAT WESTERN."

Filed May 12, 1905. Serial No. 5,374. PUBLISHED JANUARY 16, 1906.

50,336. HORSESHOES AND HORSESHOE-CALKS. ROWE PATENT SQUARE SHOULDER SHOE CALK CO., Hartford, Conn.

The representation of a horseshoe having four square-shouldered horseshoe-calks and three square-shouldered horseshoe-calks arranged within the horseshoe. Used ten years.

Filed April 11, 1905. Serial No. 1,122. PUBLISHED JANUARY 16, 1906.

50,337. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The words "KID FITTING." Used ten years.

Filed June 3, 1905. Serial No. 7,324. PUBLISHED JANUARY 16, 1906.

50,338. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The words "ROYAL WORCESTER." Used ten years.

Filed June 3, 1905. Serial No. 7,325. PUBLISHED JANUARY 16, 1906.

50,339. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The words "BON TON." Used ten years.

Filed June 3, 1905. Serial No. 7,328. PUBLISHED JANUARY 16, 1906.

50,340. CORSETS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The word "DOWAGER."

Filed June 3, 1905. Serial No. 7,329. PUBLISHED JANUARY 16, 1906.

50,341. CORSET STEELS AND CLASPS. ROYAL WORCESTER CORSET CO., Worcester, Mass.

The word "WILDFIRE." Used ten years.

Filed June 3, 1905. Serial No. 7,330. PUBLISHED JANUARY 16, 1906.

50,342. BRUSHES. JIRO SAKABE, New York, N. Y.

The letters "K M T," separated from each other by straight lines and arranged one above the other within a bordered shield-shaped figure.

Filed December 9, 1905. Serial No. 15,304. PUBLISHED JANUARY 16, 1906.

50,343. LEATHER BOOTS AND SHOES. JNO. J. SCHULTEM AND CO., Louisville, Ky.

The words "THE BEN HUR SHOE" and the representation of a man driving two horses attached to a chariot and running at full speed.

Filed August 22, 1905. Serial No. 11,917. PUBLISHED JANUARY 16, 1906.

50,344. STOVES, RANGES, AND FURNACES AND PARTS THEREOF. SCRANTON STOVE WORKS, Scranton, Pa.

The rim of a cog-wheel surrounding the representation of the Western Hemisphere. Extending across the center of the cog-wheel and hemisphere is a sectional representation of a grate-bar upon which is the word "DOCKASH."

Filed May 5, 1905. Serial No. 4,332. PUBLISHED JANUARY 16, 1906.

50,345. SHEET AND PICTURE GLASS. SEMON BACHE & COMPANY, New York, N. Y.

The representation of a heart.

Filed May 29, 1905. Serial No. 6,947. PUBLISHED JANUARY 16, 1906.

50,346. AUTOGRAPHIC REGISTERS. THE CARTER-CRUME CO., LIMITED, Niagara Falls, N. Y.

The word "INVINCIBLE." Used ten years.

Filed May 15, 1905. Serial No. 5,706. PUBLISHED JANUARY 16, 1906.

50,347. AIR-CUSHIONING HEEL-PADS AND INSOLES FOR BOOTS AND SHOES. THE COMFORT HEEL CUSHION COMPANY, Philadelphia, Pa.

The word "AIREZE."

Filed July 26, 1905. Serial No. 10,969. PUBLISHED JANUARY 16, 1906.

50,348. MONTHLY PERIODICAL. THE FAMILY DOCTOR PUBLISHING CO., New York, N. Y.

The words "THE FAMILY DOCTOR."

Filed December 11, 1905. Serial No. 15,341. PUBLISHED JANUARY 16, 1906.

50,349. CHILDREN'S UNDERWAISTS. THE H. & W. COMPANY, Newark, N. J.

The arbitrary word or designation "PANSY."

Filed August 11, 1905. Serial No. 11,554. PUBLISHED JANUARY 16, 1906.

50,350. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "CIRCUS."

Filed April 15, 1905. Serial No. 1,600. PUBLISHED JANUARY 16, 1906.

50,351. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The words "HUSTLING JOE."

Filed April 15, 1905. Serial No. 1,602. PUBLISHED JANUARY 16, 1906.

50,352. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "LITTLE-DUKE."

Filed April 15, 1905. Serial No. 1,610. PUBLISHED JANUARY 16, 1906.

50,353. GUNS, RIFLES, PISTOLS, REVOLVERS, AND PARTS THEREOF. THE WEBLEY & SCOTT REVOLVER & ARMS CO. LD., Birmingham, England.

The representation of a bullet in longitudinal section surmounted by a pair of wings.

Filed May 19, 1905. Serial No. 6,086. PUBLISHED JANUARY 16, 1906.

50,354.. WITHDRAWN.

50,355. LEATHER BOOTS AND SHOES. UPHAM BROS. CO., Stoughton, Mass.

A conventional representation of a hub of a wheel, from which radiate spokes, between which are arranged the letters "B E S P O K E."

Filed June 16, 1905. Serial No. 8,311. PUBLISHED JANUARY 16, 1906.

50,356. WHISKY. WEISS EICHOLD LIQUOR CO., Mobile, Ala.

The words "A BIG HIT." Used ten years.

Filed May 13, 1905. Serial No. 5,546. PUBLISHED JANUARY 16, 1906.

50,357. IMITATION LEATHER. FRANK W. WHITCHER, Boston, Mass.

The word "KEDSTOK."

Filed December 8, 1905. Serial No. 15,261. PUBLISHED JANUARY 16, 1906.

50,358. WALL PAINT OR COATING. ALABASTINE COMPANY, Grand Rapids, Mich.

A Greek cross, the outer ends of the arms of which cross are united by a circle. The word "ALABASTINE" is duplicated on the horizontal and upright arms of said cross, the letters of the vertically-extending word being arranged horizontally and being vertically alined and the third letter "A" being common to both words.

Filed December 8, 1905. Serial No. 15,280. PUBLISHED JANUARY 16 1906.

50,359. MEDICINAL PREPARATIONS FOR DISEASES OF THE BLOOD, BRAIN, AND NERVES. HARRY G. BALLOU, Rhyolite, Nev.

The words "ORIENTAL PEARLS."

Filed August 7, 1905. Serial No. 11,384. PUBLISHED JANUARY 16, 1906.

50,360. READY TAR AND FELT ROOFING. BARRETT MANUFACTURING COMPANY, New York, N. Y.

The representation of an iron glove coupled with the word "GAUNTLET." Used ten years.

Filed December 8, 1905. Serial No. 15,285. PUBLISHED JANUARY 16, 1906.

50,361. CASTOR-OIL IN THE FORM OF PELLETS. LIZA ROBERT BLACKBURN, Dayton, Ohio.

The words "VICTORY CASTOR OIL PILLS," together with an oblong rectangular frame, through the central portion of which the words "CASTOR OIL PILLS" extend.

Filed July 31, 1905. Serial No. 11,046. PUBLISHED JANUARY 16, 1906.

50,362. WHISKY. LOUIS BUSH, Washington, D. C.

The words "GREY FRIAR" and the representation of a friar in a garb of gray in the foreground of a scene comprising a lawn, a walk, and trees, the same representing a courtyard of a monastery, the whole being inclosed within an oval border.

Filed August 2, 1905. Serial No. 11,143. PUBLISHED JANUARY 16, 1906.

50,363. REMEDY FOR COLIC, CHOLERA, DIARRHEA, AND LIKE COMPLAINTS. CHAMBERLAIN MEDICINE CO., Des Moines, Iowa.

The phrase "CHAMBERLAIN'S COLIC CHOLERA AND DIARRHŒA REMEDY." Used ten years.

Filed July 1, 1905. Serial No. 9,570. PUBLISHED JANUARY 16, 1906.

50,364. PERFUMERY. COLGATE & CO., New York, N. Y.

The word "KNICKERBOCKER."

Filed October 27, 1905. Serial No. 13,978. PUBLISHED JANUARY 16, 1906.

50,365. REMEDY FOR CHILLS, FEVER AND AGUE, AND MALARIAL DISEASES. DR. DECKER MEDICINE CO., Paterson, N. J.

The words "SHAKE NO MORE."

Filed June 3, 1905. Serial No. 7,347. PUBLISHED JANUARY 16, 1906.

50,366. TOILET-PINS. DIECKERHOFF RAFFLOER & CO., New York, N. Y.

The words "QUEEN'S OWN."

Filed May 6, 1905. Serial No. 4,578. PUBLISHED JANUARY 16, 1906.

50,367. PREPARATION FOR THE FACE AND SKIN. CLARENCE D. EVANS, Healdsburg, Cal.

The word "ARABALENE."

Filed October 24, 1905. Serial No. 13,899. PUBLISHED JANUARY 16, 1906.

50,368. REMEDIES FOR PULMONARY DISEASES. FISCHER CHEMICAL IMPORTING CO., New York, N. Y.

The word "EOSOT."

Filed August 2, 1905. Serial No. 11,119. PUBLISHED JANUARY 16, 1906.

50,369. CANNED FRUITS AND VEGETABLES. GEORGE FRANK, San Jose, Cal.

The word "SUNLIGHT."

Filed July 27, 1905. Serial No. 10,884. PUBLISHED JANUARY 16, 1906.

50,370. CANNED MEATS. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The arbitrary word "EMPRESS."

Filed June 27, 1905. Serial No. 9,170. PUBLISHED JANUARY 16, 1906.

50,371. WHISKY. FREIBERG, MEYER & CO., Cincinnati, Ohio.

The words "KENTUCKY PLUME" and the monogram "F M & Co" on a dark circular background. Used ten years.

Filed May 25, 1905. Serial No. 6,585. PUBLISHED JANUARY 16, 1906.

50,372. INHALERS AND RESPIRATORS. MILTON D. GOOD, Kansas City, Mo., assignor to U-tah-na Co., Kansas City, Mo.

The hyphenated word "U-TAH-NA."

Filed June 27, 1905. Serial No. 9,205. PUBLISHED NOVEMBER 28, 1905.

50,373. BELT-FASTENERS. GREENE, TWEED & Co., New York, N. Y.

The words "BLAKE'S BELT STUD." Used ten years.

Filed November 24, 1905. Serial No. 14,970. PUBLISHED JANUARY 9, 1906.

50,374. WHISKY. MARCUS HARRIS, Cincinnati, Ohio.

The word "CADILLAC."

Filed June 26, 1905. Serial No. 9,123. PUBLISHED OCTOBER 31, 1905.

50,375. OILS USED IN MAKING PERFUME. HEINE & Co., New York, N. Y.

The word "JASMINDOL."

Filed August 2, 1905. Serial No. 11,121. PUBLISHED JANUARY 16, 1906.

50,376. REMEDY FOR THE CURE OF LIVER COMPLAINTS, CONSTIPATION, AND BILIOUSNESS. J. JUNGMANN, New York, N. Y.

The word "CASCAROMAS."

Filed July 21, 1905. Serial No. 10,645. PUBLISHED JANUARY 16, 1906.

50,377. SILK DRESS MATERIAL. JOHN GOODWIN COMPANY, New York, N. Y.

The compound word "JIU-JITSU."

Filed July 15, 1905. Serial No. 10,390. PUBLISHED JANUARY 16, 1906.

50,378. TOOTH-PASTE. JOHNSON & JOHNSON, New Brunswick, N. J.

The word "ZONWEISS." Used ten years.

Filed October 28, 1905. Serial No. 14,012. PUBLISHED JANUARY 16, 1906.

50,379. STOVE-POLISHES AND STOVE-VARNISHES. JOHN M. WOLF COMPANY, Brooklyn, N. Y.

The words "STOVE REPAIRS," appearing on a blue band.

Filed June 9, 1905. Serial No. 7,774. PUBLISHED JANUARY 16, 1906.

50,380. COMPOUND FOR CURING BLOOD AND SKIN DISEASES. CHARLES B. KNOX, Johnstown, N. Y.

The word "SPIM."

Filed June 7, 1905. Serial No. 7,581. PUBLISHED JANUARY 16, 1906.

50,381. RIBBON, RIBBON-BOWS, AND GALLOON-BINDINGS. MARY B. MARTINE, New York, N. Y.

A monogram composed of the letters "M B M" inclosed by two concentric oval lines, between which appear the number and words "365 DAYS IN ADVANCE OF ALL COMPETITORS."

Filed May 31, 1905. Serial No. 7,117. PUBLISHED JANUARY 16, 1906.

50,382. HEADACHE SPECIFIC PUT UP IN TABULAR FORM. MIGRANOSE IMPORTING Co., Philadelphia, Pa.

The word "MIGRANOSE."

Filed October 11, 1905. Serial No. 13,503. PUBLISHED JANUARY 16, 1906.

50,383. BORAX SOAP. PACIFIC COAST BORAX COMPANY, San Francisco, Cal.

The word-symbol "20-MULE-TEAM."

Filed December 2, 1905. Serial No. 15,139. PUBLISHED JANUARY 16, 1906.

50,384. CERTAIN NAMED JEWELRY. PARKS BROS. & ROGERS, Providence, R. I.

The representation of a four-leaf clover having upon the petals respectively the letters and character "P B & R."

Filed May 12, 1905. Serial No. 5,293. PUBLISHED JANUARY 16, 1906.

50,385. SAUCES AND RELISHES. RED SNAPPER SAUCE Co., Memphis, Tenn.

The words "RED SNAPPER" and the representation of a fish known as "red snapper."

Filed June 29, 1905. Serial No. 9,397. PUBLISHED JANUARY 16, 1906.

50,386. PNEUMATICALLY-ACTUATED PIANOFORTES. ROTH & ENGELHARDT, New York, N. Y.

The word "HARMONIST."

Filed July 28, 1905. Serial No. 10,968. PUBLISHED JANUARY 16 1906.

50,387. ARTIFICIAL, PORTLAND, AND HYDRAULIC CEMENT. ROUND TOP CEMENT COMPANY, Bloomfield, N. J.

The words "ROUND TOP." Used ten years.

Filed June 10, 1905. Serial No. 7,860. PUBLISHED JANUARY 16, 1906.

50,388. WORSTED YARNS. S. B. & B. W. FLEISHER, INCORPORATED, Philadelphia, Pa.

The representation of an annular-shaped figure, a bar projected from one side of the interior of said figure across and beyond the opposite portion of the same, and segments of circles within said figure respectively above and below the adjacent portion of the bar. On the bar is the name "FLEISHER'S," the initial letter "F" of which forms the commencement of said bar. Used ten years.

Filed June 12, 1905. Serial No. 7,966. PUBLISHED JANUARY 16, 1906.

50,389. LEAD. SELBY SMELTING AND LEAD COMPANY, San Francisco, Cal.

The word "SELBY." Used ten years.

Filed June 22, 1905. Serial No. 8,752. PUBLISHED JANUARY 16, 1906.

50,390. DRIED, SMOKED, PICKLED, AND CANNED FISH. WILLIAM T. SHUTE, Gloucester, Mass.

The words "OCEAN PEARL." Used ten years.

Filed July 21, 1905. Serial No. 10,667. PUBLISHED JANUARY 16, 1906.

50,391. WOVEN COTTON GOODS. STARK MILLS, Manchester, N. H. and Boston, Mass.

The representation of a five-pointed star having a circular central portion of a contrasting color, upon which appears the letter "K."

Filed May 27, 1905. Serial No. 6,813. PUBLISHED OCTOBER 17, 1905.

50,392. CIGARETTES AND CIGARETTE-TOBACCO. HENRY PHILIP STRAUSE, New York, N. Y.

The word "LATTARD," associated with a panel, the latter being surrounded by scrolls, and mounted upon one corner of the panel obliquely upward from the word "Lattard" is the representation of a mythical bird. Below the bird and to the right of the panel is an arboreal ornament apparently supporting the bird.

Filed September 6, 1905. Serial No. 12,279. PUBLISHED JANUARY 16, 1906.

50,393. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa.

The title "BLANC ILLUSION."

Filed October 13, 1905. Serial No. 13,564. PUBLISHED JANUARY 16, 1906.

50,394. GERMICIDAL AND ANTISEPTIC LIQUID. FRANK R. TYLER, Staunton, Va.

The word-symbol "PROPHYTOL."

Filed June 28, 1905. Serial No. 9,360. PUBLISHED JANUARY 16, 1906.

50,395. CIGARS. THE BANNER CIGAR M'F'G. Co., Detroit, Mich.

A lion rampant above a banner with the words "ROYAL BANNER" prominently displayed thereon, associated with a corner of a house, showing a portion of the wall and a tile roof, the wall bearing a sign "MANUFACTURED BY THE BANNER CIGAR M'F'G CO. DETROIT, MICH." The banner and lion are fastened to the corner of the house by a metal scroll; also, a fanciful flag behind the lion and the banner, said flag having the upper corner next the flagstaff of blue with white castles displayed thereon, the remainder of the flag consisting of a red field with double narrow yellow horizontal stripes thereon

Filed September 9, 1905. Serial No. 12,403. PUBLISHED JANUARY 16, 1906.

50,396. CEREAL PASTE GOODS. THE JOHN B. CANEPA COMPANY, Chicago, Ill.

The words "RED CROSS."

Filed September 5, 1905. Serial No. 12,212. PUBLISHED OCTOBER 10, 1905.

50,397. WHISKY. THE PEN-MAR DISTILLING Co., Waynesboro, Pa.

The hyphenated word "PEN-MAR," associated with a fanciful shield design inclosing a quill pen running through the word

"MAR." A small star is shown in the left upper corner of the shield. Used ten years.

Filed August 10, 1905. Serial No. 11,474. PUBLISHED JANUARY 16, 1906.

50,398. TANNING EXTRACT. THE STAMFORD MANUFACTURING COMPANY, New York, N. Y.

The word "CORONAX" inclosed in a diamond-shaped figure.

Filed October 19, 1905. Serial No. 13,748. PUBLISHED JANUARY 16, 1906.

50 399. WHISKY. THE WINAND DISTILLING COMPANY OF BALTIMORE COUNTY, Pikesville, Md.

The representation of a barrel-head surrounded by a wreath with bowed ends fastened by a ribbon in the form of a bow from which scrolls extend laterally. On the head of the barrel appear the words and abbreviations "PIKESVILLE PURE RYE WHISKEY, THE WINAND DISTILLING CO, DISTILLERS. PIKESVILLE, MD."

Filed August 23, 1905. Serial No. 11,938. PUBLISHED JANUARY 16, 1906.

50,400. HANDCUFFS AND LEG-IRONS. TOWER & LYON Co., New York, N. Y.

The words "TOWER'S DOUBLE LOCK." Used ten years.

Filed June 15, 1905. Serial No. 8,175. PUBLISHED JANUARY 16, 1906.

50,401. MEDICATED FOOD FOR HORSES, CATTLE, SHEEP, AND HOGS. THE UNITED STATES FOOD CO., Pleasant City, Ohio.

The letters "U. S." on a curved panel of contrasted color inclosed within a larger rectangular main panel, which latter also incloses at its top and bottom two oblong panels and an octagonal panel underneath the said curved panel, a barnyard scene with a watering-trough and animals in the foreground and a barn in the background being illustrated in the octagonal panel, there being also shown on opposite sides of the octagonal panel, respectively the representation of the head of a sheep and the head of a hog and in the upper corners, respectively, of the main panel the representation of a bull and a horse, and the inclosed panels and said representations being partially surrounded by efflorescent borders.

Filed June 12, 1905. Serial No. 7,965. PUBLISHED JANUARY 16, 1906.

50,402. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.

The words "SILVER PLUME" and the representation of a plume or feather.

Filed August 2, 1905. Serial No. 11,175. PUBLISHED NOVEMBER 14, 1905.

50,403. STEAM PUMPING-ENGINES AND STEAM-PUMPS. WHEELER CONDENSER & ENGINEERING CO., New York, N. Y.

The word "WHEELER." Used ten years.

Filed September 9, 1905. Serial No. 12,405. PUBLISHED JANUARY 16, 1906.

50,404. LIQUID PREPARATION FOR SCALP AND HAIR. FRANK P. WHETZEL, Garrett, Ind.

The hyphenated word "DER-MO-TINE" and the representation of a winged hare inclosed in a circular border.

Filed July 20, 1905. Serial No. 10,625. PUBLISHED JANUARY 16, 1906.

50,405. CEREAL COFFEE. WHITMAN GROCERY COMPANY, Orange, Mass.

The word "MALTA-COFFEENA."

Filed June 15, 1905. Serial No. 8,174. PUBLISHED JANUARY 16, 1906.

50,406. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass.

The representation of a sea-gull with extended wings and carrying a fish in its beak, associated with the words "SEA GULL."

Filed September 8, 1905. Serial No. 12,389. PUBLISHED JANUARY 16, 1906.

50,407. ALE. C. H. EVANS & SONS, Hudson, N. Y.

The words "EVANS' ALE." Used ten years.

Filed October 25, 1905. Serial No. 13,947. PUBLISHED JANUARY 16, 1906.

50,408. LAMPS. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England.

The word "CRICKLITE." Used ten years.

Filed June 5, 1905. Serial No. 7,434. PUBLISHED JANUARY 16, 1906.

50,409. CIGARS. CUESTA, REY & Co., West Tampa, Fla.

The representation of a youthful female figure with a low-cut yellow vest and yellow underskirt and red girdle and skirt, with green dotted veil depending from one shoulder to the waist, the figure standing upon a blue globe studded with gold stars and holding above its head with both hands a cigar-box marked "CUESTA, REY & Co.," with a background consisting of a river scene, including a steamer, bridge, and hotel with grounds, and a blue shield in the sky on the right side and Cuesta, Rey & Co.s' factory, with trolley-cars and a red shield in the sky, on the left side, together with four gold medals and a circular seal marked "CUESTA, REY & Co., TAMPA, FLA.," all associated with the words "LA UNICA."

Filed October 4, 1905. Serial No. 13,270. PUBLISHED JANUARY 16, 1906.

50,410. POTTERY, EARTHENWARE, AND CHINA. DOULTON & Co. LIMITED, London, England.

The word "DOULTON." Used ten years.

Filed June 1, 1905. Serial No. 7,157. PUBLISHED JANUARY 16, 1906.

50,411. POTTERY, EARTHENWARE, AND CHINA. DOULTON & Co. LIMITED, London, England.

The representation of a lion standing on a crown with a crown on his head, associated with the words "ROYAL DOULTON ENGLAND" arranged in the form of a circle within which is a monogram of the letters "D D D D."

Filed June 1, 1905. Serial No. 7,158. PUBLISHED JANUARY 16 1906.

50,412. BITTERS. MILTON L. EPPSTEIN, Fort Worth, Tex.

The word "HEIDELBERG," associated with a representation of an oval panel within which appear the figures of a man and a woman sitting on clouds, with the rays of the sun forming a background, the right arm of the woman being extended toward the man and with a goblet grasped in the hand of each. Used ten years.

Filed June 24, 1905. Serial No. 8,942. PUBLISHED JANUARY 16, 1906.

50,413. CHOCOLATES. WILLIAM L. GANSERT, Rock Island, Ill.

The word "AJAX."

Filed June 15, 1905. Serial No. 8,276. PUBLISHED JANUARY 16, 1906.

50,414. GELATINOUS ELASTIC CAPSULES. HANCE BROS. & WHITE, Philadelphia, Pa.

The word "SOLULES."

Filed May 9, 1905. Serial No. 4,904. PUBLISHED JANUARY 16, 1906.

50,415. WHISKY. KAHN BROS., New York, N. Y.

The words "SOCIAL CLUB," below which is a representation of a tallyho party. The picture is inclosed in an oval outline.

Filed May 29, 1905. Serial No. 7,020. PUBLISHED JANUARY 16, 1906.

50,416. LIQUID EXTRACT OF SMOKE FOR PRESERVING MEATS. E. KRAUSER & BROTHER, Milton, Pa.

The representation of a suspended string of hams with a man in the act of applying a liquid to the hams with a brush with one hand and having a bucket in his other hand.

Filed May 9, 1905. Serial No. 4,830. PUBLISHED JANUARY 16, 1906.

50,417. CLOTHES-PINS. JOHN H. MCBRIDE, Des Moines, Iowa.

An irregular trefoil or triple-loop clothes-pin, in each lobe of which appears a monogram of the letters "J H B."

Filed August 12, 1905. Serial No. 11,618. PUBLISHED JANUARY 16, 1906.

50,418. WHISKY. I. MICHELSON & BROS., Cincinnati, Ohio.

The words "BONANZA KING" and the fanciful bust picture of a man inclosed in an oval.

Filed May 24, 1905. Serial No. 6,521. PUBLISHED JANUARY 16, 1906.

50,419. LAUNDRY STARCH. NEW YORK GLUCOSE CO., New York, N. Y.

The representation of an elephant's head with a circular band about the same.

Filed July 6, 1905. Serial No. 9,333. PUBLISHED JANUARY 16, 1906.

50,420. WINE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "FORTUNA," above which is the representation of a shield upon which is the monogram "P J B L Co," and on either side of shield is a cluster of grape-vine and leaves and three bunches of grapes.

Filed June 21, 1905. Serial No. 8,636. PUBLISHED JANUARY 16, 1906.

50,421. BAKING-POWDER. PRICE BAKING POWDER COMPANY, Chicago, Ill.

The representation of a bunch of grapes resting upon a cornucopia held by a hand. Used ten years.

Filed August 12, 1905. Serial No. 11,572. PUBLISHED JANUARY 16, 1906.

50,422. BUTTER MADE FROM NUTS. CHARLES G. PURDY, New York, N. Y.

The letters "S O V O S" arranged in the form of a Greek cross, inclosed in a circle, and spelling the word "Sovos" when read in any direction—from the right or left, up or down.

Filed June 14, 1905. Serial No. 8,552. PUBLISHED JANUARY 16, 1906.

50,423. ASPHALT ROOFING. STOWELL MANUFACTURING COMPANY, Jersey City, N. J.

The word "EAGLE," in combination with the emblematic device of a soaring eagle.

Filed December 9, 1905. Serial No. 15,292. PUBLISHED JANUARY 16, 1906.

50,424. ASPHALT ROOFING. STOWELL MANUFACTURING COMPANY, Jersey City, N. J.

Two concentric circles, in the outer one of which are the words "MONARCH ROOFING," and in the inner circle is a lion's head. Between the jaws of the lion there is a roll upon which are inscribed the words "MONARCH ROOFING. STOWELL," the rest of corporate name being invisible.

Filed December 9, 1905. Serial No. 15,293. PUBLISHED JANUARY 16, 1906.

50,425. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.

The word "SUNOL."

Filed May 10, 1905. Serial No. 4,869. PUBLISHED AUGUST 1, 1905.

50,426. ELECTRIC TIME-SWITCHES. THE CRESCENT ELECTRICAL & MANUFACTURING COMPANY, Valparaiso, Ind.

The word "CRESCENT."

Filed December 12, 1905. Serial No. 15,359. PUBLISHED JANUARY 16, 1906.

50,427. SOIL-PIPES, FITTINGS, AND CONNECTIONS THEREFOR. THE CROWN PIPE AND FOUNDRY CO., Jackson, Ohio.

The word "CROWN."

Filed July 14, 1905. Serial No. 10,329. PUBLISHED JANUARY 16, 1906.

50,428. WHISKY. THE I. TRAGER CO., Cincinnati, Ohio.

The word "DEERFIELD." Used ten years.

Filed May 24, 1905. Serial No. 6,481. PUBLISHED JANUARY 16, 1906.

50,429. REMEDIES FOR CERTAIN NAMED DISEASES. THE KAHAMA CHEMICAL CO., St. Louis, Mo.

The word "KAHAMA."

Filed April 28, 1905. Serial No. 3,465. PUBLISHED JANUARY 16, 1906.

50,430. PREPARED FATTY, OLEAGINOUS, OR UNCTUOUS FOOD SUBSTANCES. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The representation of the head of a bovine partially inclosed by a wreath of sprigs and blossoms. Used ten years.

Filed August 2, 1905. Serial No. 11,165. PUBLISHED JANUARY 16, 1906.

50,431. LEATHER BOOTS AND SHOES. UPHAM BROS CO., Stoughton, Mass.

A shield divided into three panels, one extending transversely across the top thereof, in which is the word "UPHAM," there being a hammer and an awl crossed and disposed on the dividing-line of the two other panels, the shield being surmounted by a shoe.

Filed June 16, 1905. Serial No. 8,310. PUBLISHED JANUARY 16, 1906.

50,432. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.

The words "BLUEFIELD'S CHOICE," associated with the representation of a banana-tree with bananas thereon, the tree rising from a ground showing tropical plants thereon.

Filed November 16, 1905. Serial No. 14,707. PUBLISHED JANUARY 16, 1906.

50,433. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y

The words "THE ORIGINAL AMERICAN," associated with the representation of crossed bows and arrows.

Filed November 16, 1905. Serial No. 14,710. PUBLISHED JANUARY 16, 1906.

50,434. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.

The word "AUTOMOBILE," associated with the representation of an automobile containing a male and a female person.

Filed November 17, 1905. Serial No. 14,746. PUBLISHED JANUARY 16, 1906.

50,435. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.

The word "HURRICANE," associated with the representation of a sailing vessel in a stormy sea.

Filed November 17, 1905. Serial No. 14,747. PUBLISHED JANUARY 16, 1906.

50,436. SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y.

The words "MERRY MUSLIN," associated with the representation of three jolly gnomes.

Filed November 17, 1905. Serial No. 14,751. PUBLISHED JANUARY 16, 1906.

50,437. WHISKY. WRIGHT & TAYLOR, Louisville, Ky.

The word "DUNMORE." Used ten years.

Filed May 22, 1905. Serial No. 6,233. PUBLISHED JANUARY 16, 1906.

LABELS

REGISTERED MARCH 13, 1906.

12,701.—*Title:* "OUR NATIONAL FRIEND." (For Cigars.) KOELLE-MUELLER LABEL CO., St. Louis, Mo. Filed January 31, 1906.

12,702.—*Title:* "MITT." (For Smoking-Tobacco.) SCHROEDER, KLEINE GROCER CO., Dubuque, Iowa. Filed February 13, 1906.

12,703.—*Title:* "HIAWATHA." (For Natural Lithia-Spring Water.) LOUIS M. PARK, Minneapolis, Minn. Filed February 12, 1906.

12,704.—*Title:* "KOLA MINT." (For Kola Mint.) THE LIQUID CARBONIC COMPANY, Chicago, Ill. Filed February 9, 1906.

12,705.—*Title:* "HEIDELBERG." (For Beer.) HOME BREWING COMPANY, St. Louis, Mo. Filed February 12, 1906.

12,706.—*Title:* "JACK-KNIFE RYE." (For Whisky.) LOUIS DUBETZ, Chicago, Ill. Filed February 12, 1906.

12,707.—*Title:* "MARIGOLD BREAKFAST SYRUP." (For Syrup.) CARGILL-WIGHT CO., Columbus, Ga. Filed February 15, 1906.

12,708.—*Title:* "SULPHOSOL, A LIFE PRESERVER." (For Soluble Sulfur.) EMPIRE SOLUBLE SULPHUR CORPORATION, New York, N. Y. Filed February 9, 1906.

12,709.—*Title:* "WILT'S HAIR RESTORER." (For Hair-Restorer.) E. G. BARCKHOFF & CO., Pittsburg, Pa. Filed February 2, 1906.

12,710.—*Title:* "THE INDIANAPOLIS WHIP." (For Whips.) MARTIN REHFUSS, Jr., Indianapolis, Ind. Filed February 12, 1906.

12,711.—*Title:* "THE CLINCHER CURTAIN FASTENER." (For Curtain-Fasteners.) A GRAND RAPIDS NOVELTY MANUFACTURING COMPANY, Grand Rapids, Mich. Filed February 13, 1906.

PRINTS

REGISTERED MARCH 13, 1906.

1,592.—*Title:* "FASHIONS OF THE SPRING SEASON 1906." (For Men's Spring Apparel.) DAVID ADLER & SONS CLOTHING CO., Milwaukee, Wis. Filed February 10, 1906.

1,593.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed February 14, 1906.

1,594.—*Title:* "AUGUST FLOWER." (For Medicine.) G. G. GREEN, Woodbury, N. J. Filed January 18, 1906.

1,595.—*Title:* "FLICK'S ANTISEPTIC CATARRH SALVE." (For a Salve.) FREDERICK L. FLICK, Brooklyn, N. Y. Filed February 12, 1906.

1,596.—*Title:* "PRINTS FOR PLAYING CARDS." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., New York, N. Y. Filed February 15, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE MARBURG, JR.

Decided December 14, 1905.

ABANDONMENT OF APPLICATION—UNAVOIDABLE DELAY.

Where the year for taking action expired September 2, 1905, and it appears that on August 17, 1905, the inventor, who was abroad, mailed a letter of instructions to the attorney, which letter was mislaid and was not again called to the attorney's attention until October 26, at which time it was found that the instructions were incomplete and further communication with the inventor was necessary, and no amendment of the application was filed until November 18, 1905, *Held* that the delay was not unavoidable.

ON PETITION.

ELASTIC-FLUID MOTOR.

Mr. Henry Connett for the applicant.

ALLEN, *Commissioner:*

This is a petition for a ruling that the above-entitled application is not abandoned, notwithstanding a delay of more than one year in responding to the last Office action.

On September 2, 1904, some of the claims in the case were rejected, and no response was received until November 18, 1905. In excuse for the delay the attorney has filed an affidavit stating that the inventor was abroad and that on August 17 he mailed to the attorney instructions to proceed with the case. The attorney supposes that the instructions were received at his office on August 30; but the letter was mislaid and was not again called to the attorney's attention until October 26. The instructions contained therein were then found to be insufficient, and after further correspondence with the inventor the amendment of November 18 was filed.

It does not appear from this showing that the delay since the Office action of September 2, 1904, was unavoidable, and therefore the petition is denied.

DUNBAR *v.* SCHELLENGER.

Decided December 22, 1905.

1. INTERFERENCE—SUSPENSION—ESTOPPEL.

An interference will not be suspended for the purpose of considering the question of estoppel against one party where dissolution of the interference would apparently leave the way clear to the allowance of a patent to another party who may not be the first inventor.

2. SAME—SAME—CONSIDERATION OF EX PARTE RIGHTS.

Where all of the evidence is before the Office upon which to base a final determination upon priority, such final determination should in general be reached before consideration of *ex parte* rights is undertaken.

ON REFERENCE.

TELEPHONE SYSTEM.

Messrs. Jones & Addington and *Mr. R. L. Ames* for Dunbar.

Mr. Charles A. Brown for *Schellenger.*

ALLEN, *Commissioner:*

The Examiner of Interferences called attention to the fact that in his opinion the party Schellenger is not entitled to make the claim of the issue in view of his conduct and admissions in another interference in which he has been involved.

It appears that the testimony in this interference has been taken and filed, and upon consideration thereof the Examiner of Interferences has rendered judgment of priority in favor of Schellenger. In other words, the Examiner has concluded that Dunbar is not the first inventor and that Schellenger is estopped from making the claims because of his admissions in the other interference.

It seems very clear that the present interference should not be suspended for the purpose of considering the question of estoppel against Schellenger, since to dissolve the interference now upon that ground would apparently leave the way clear to the allowance of a patent to Dunbar for the invention in issue. Since all of the evidence is before the Office upon which to base a final determination upon the question whether Dunbar is the first inventor, such final determination should be reached before considering Schellenger's *ex parte* rights. The bar of prior invention as against Dunbar is just as important as is the bar of estoppel against Schellenger, and there seems to be no good reason for stopping investigation of the question of priority to consider the question of estoppel. On the contrary, it is very clear that priority should be first determined, since to dissolve the interference on the ground of estoppel would prevent the determination of the question of priority and might result in the issue of a patent to a party who is not in reality the first inventor.

The case is remanded for further proceedings relating to priority of invention.

EX PARTE SPERRY.

Decided December 22, 1905.

ABANDONMENT OF APPLICATION—RESPONSIVE ACTION.

Where an applicant took advantage of a technical error in the citation of one of numerous references to delay his reply for two years and then made reply only to a portion of the Examiner's action, *Held* that the action was not such as the condition of the case required, and the same is abandoned.

ON PETITION.

APPARATUS FOR MIXING LIQUIDS AND GASES.

Mr. Eugene A. Byrnes for the applicant.

LABELS

REGISTERED MARCH 13, 1906.

12,701.—*Title:* "OUR NATIONAL FRIEND." (For Cigars.) KOELLE-MUELLER LABEL CO., St. Louis, Mo. Filed January 31, 1906.

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Where the year for taking action expired September 2, 1905, and it appears that on August 17, 1905, the inventor, who was abroad, mailed a letter of instructions to the attorney, which letter was mislaid and was not again called to the attorney's attention until October 26, at which time it was found that the instructions were incomplete and further communication with the inventor was necessary, and no amendment of the application was filed until November 18, 1905, *Held* that the delay was not unavoidable.

ON PETITION.

ELASTIC-FLUID MOTOR.

Mr. Henry Connett for the applicant.

ALLEN, *Commissioner:*

This is a petition for a ruling that the above-entitled application is not abandoned, notwithstanding a delay of more than one year in responding to the last Office action.

On September 2, 1904, some of the claims in the case were rejected, and no response was received until November 18, 1905. In excuse for the delay the attorney has filed an affidavit stating that the inventor was abroad and that on August 17 he mailed to the attorney instructions to proceed with the case. The attorney supposes that the instructions were received at his office on August 30; but the letter was mislaid and was not again called to the attorney's attention until October 26. The instructions contained therein were then found to be insufficient, and after further correspondence with the inventor the amendment of November 18 was filed.

It does not appear from this showing that the delay since the Office action of September 2, 1904, was unavoidable, and therefore the petition is denied.

DUNBAR *v.* SCHELLENGER.

Decided December 22, 1905.

1. INTERFERENCE—SUSPENSION—ESTOPPEL.

An interference will not be suspended for the purpose of considering the question of estoppel against one party where dissolution of the interference would apparently leave the way clear to the allowance of a patent to another party who may not be the first inventor.

2. SAME—SAME—CONSIDERATION OF EX PARTE RIGHTS.

Where all of the evidence is before the Office upon which to base a final determination upon priority, such final determination should in general be reached before consideration of *ex parte* rights is undertaken.

ON REFERENCE.

TELEPHONE SYSTEM.

Messrs. Jones & Addington and *Mr. R. L. Ames* for Dunbar.

Mr. Charles A. Brown for *Schellenger.*

ALLEN, *Commissioner:*

The Examiner of Interferences called attention to the fact that in his opinion the party Schellenger is not entitled to make the claim of the issue in view of his conduct and admissions in another interference in which he has been involved.

It appears that the testimony in this interference has been taken and filed, and upon consideration thereof the Examiner of Interferences has rendered judgment of priority in favor of Schellenger. In other words, the Examiner has concluded that Dunbar is not the first inventor and that Schellenger is estopped from making the claims because of his admissions in the other interference.

It seems very clear that the present interference should not be suspended for the purpose of considering the question of estoppel against Schellenger, since to dissolve the interference now upon that ground would apparently leave the way clear to the allowance of a patent to Dunbar for the invention in issue. Since all of the evidence is before the Office upon which to base a final determination upon the question whether Dunbar is the first inventor, such final determination should be reached before considering Schellenger's *ex parte* rights. The bar of prior invention as against Dunbar is just as important as is the bar of estoppel against Schellenger, and there seems to be no good reason for stopping investigation of the question of priority to consider the question of estoppel. On the contrary, it is very clear that priority should be first determined, since to dissolve the interference on the ground of estoppel would prevent the determination of the question of priority and might result in the issue of a patent to a party who is not in reality the first inventor.

The case is remanded for further proceedings relating to priority of invention.

EX PARTE SPERRY.

Decided December 22, 1905.

ABANDONMENT OF APPLICATION—RESPONSIVE ACTION.

Where an applicant took advantage of a technical error in the citation of one of numerous references to delay his reply for two years and then made reply only to a portion of the Examiner's action, *Held* that the action was not such as the condition of the case required, and the same is abandoned.

ON PETITION.

APPARATUS FOR MIXING LIQUIDS AND GASES.

Mr. Eugene A. Byrnes for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner holding that the above-entitled application is abandoned.

It appears that on April 16, 1902, the Examiner wrote a letter treating each of the twenty-three claims in the case, and on April 16, 1903, the applicant filed a communication saying that there was an error in the data given for an English patent cited as a reference against two claims. No amendment or argument was made; but it was said:

A suitable amendment will be made as soon as the citation is corrected.

The Examiner corrected the citation on May 9, 1903, and no action was taken by the applicant until May 9, 1904, when he presented an amendment canceling two claims and making an argument as to claims 3 to 14. No reference whatever was made to claims 15 to 23. The Examiner held that this action was insufficient and on May 31, 1904, notified the applicant that the application was abandoned. The applicant asked reconsideration, and on November 3, 1904, was again notified that the case was abandoned. On November 3, 1905, this petition was filed.

This record shows that three years and a half elapsed after the Examiner's action in which no effort whatever was made to meet or avoid his rejection of nine claims in the application. The applicant took advantage of the technical error in the citation of a single one of the numerous references to delay his reply for two years, and then made reply only to a portion of the Examiner's action. There was no reason why a full reply as to all claims now in the case could not have been made within the first year. The applicant's uniform delay until the last day of the year allowed by law indicates an intention to prolong the prosecution of the application and rebuts any argument that the action of May 9, 1904, was intended to advance the case. That action was clearly not such as the condition of the case required.

The petition is denied.

IN RE THE NEW YORK WOVEN WIRE MATTRESS COMPANY.

Decided January 3, 1906.

1. REISSUE APPLICATION—SHOWING NECESSARY TO OBTAIN COPIES.

The reasons for preserving original applications and caveats in secrecy do not exist in reissue applications, as the reissue applicant has no secret invention to be concealed from the public, and therefore the same character of showing is not required to warrant furnishing copies.

2. SAME—REFERRED TO IN PATENT IN SUIT—COPIES.

Where suit has been brought against a party and the record of the patent in suit contains a reference to a reissue application which makes it necessary to see the application in order to understand the views of the patentee and the Office in the patent case, *Held* that the party is entitled to obtain copies of the file and contents of the reissue application.

IN the matter of the petition of The New York Woven Wire Mattress Company for leave to inspect and obtain copies of application for reissue of patent of Adrian de Piniec Mallet, No. 641,542.

Messrs. Meyers, Cushman & Rea for The New York Woven Wire Mattress Company.

Mr. Francis H. Richards for A. de Piniec Mallet. (*Mr. Chester A. Wood* of counsel.)

ALLEN, *Commissioner:*

This is a petition for a copy of a reissue application referred to in the record of Patent No. 712,718.

The petitioner alleges that suit for infringement has been brought against it on the patent above cited and that in preparing its defense to that suit it is desired to inspect the reissue application filed by the patentee and referred to in the arguments which led to the allowance of the patent. The reissue application referred to relates to Patent No. 641,542, granted to the same inventor as the patent in suit.

All of the reasons for preserving original applications and caveats in secrecy do not exist in reissue applications, and therefore the same character of showing is not required to warrant furnishing copies. A reissue applicant has no secret invention to be concealed from the public, since he has necessarily disclosed it in his patent. All that can be concealed in a reissue case is the procedure and new claims made.

Since suit has been brought against the petitioner and the record of the patent in suit contains a reference to the reissue application, which makes it necessary to see the application in order to understand thoroughly the views of the patentee and the Office in the patented case, it must be held that the petitioner is entitled to obtain copies of the file and contents of the reissue application.

The petition is granted.

EX PARTE SCHMITT AND TANODY.

Decided January 4, 1906.

ABANDONED APPLICATION—INSUFFICIENT RESPONSE.

Where an applicant presented an amendment cancelling two of his six rejected claims and substituted others therefor and no action whatever was taken as to the remaining claims, *Held*, that the action was insufficient to save the case from abandonment.

ON PETITION.

STOPPERS.

Mr. J. R. Littell for the applicants.

ALLEN, *Commissioner:*

This is a petition from the Examiner's ruling that the above-entitled application is abandoned.

It appears that the Examiner rejected the six claims in the case on August 29, 1904, and on August 23, 1905, the applicants presented an amendment canceling two claims and substituting two new claims. No action whatever was taken as to the remaining four claims, and there was not even a request for reconsideration. Upon the authority of *Ex parte Alton* (113 O. G., 1968,) the Examiner held the action insufficient to save the case from abandonment.

The petitioners urge that the Examiner's action should be overruled because he did not state his reasons for rejection with sufficient fullness in his letter of August 29, 1904, but it is very clear that there is no force in this contention, since the applicants did not ask for any explanation in connection with their amendment of August 23, 1905. If the Examiner's action was insufficient to enable the applicants to respond intelligently, a request for an explanation would have been a proper action in the case; but since no such request was made, it is not clear what bearing the alleged insufficiency in the Examiner's action has upon the question now at issue. The applicants' action was clearly

insufficient if it was intended to call for a more detailed explanation by the Examiner, since it contains no hint that such explanation was desired.

If the applicants' amendment had been entered and acted upon, it is very clear that no advance whatever would have been made as to four of the six claims originally presented. After such action the applicants might have canceled two more claims and substituted two others, still making no advance whatever as to two of the original claims. Such piecemeal action is contrary to the spirit and the letter of the rules and the statutes and is not to be permitted. An action to save a case from abandonment must be such proper action as the condition of the case requires.

The petition is denied.

EX PARTE WOODS.

Decided January 4, 1906.

1. ABANDONMENT OF APPLICATION—RESPONSIVE ACTION.

Where after a certain action by the Examiner, the applicant's amendment purporting to be in response to a prior action by the Examiner and not in fact responsive to the last action of the Examiner, and where the applicant was notified that said amendment was not so responsive and failed to take responsive action within the year from the Examiner's action, *Held* that the application was abandoned.

2. SAME—NOTICE OF OFFICE ACTION—FAILURE TO RESPOND NOT EXCUSED.

Held that failure to receive an Office action will not excuse failure to respond where the applicant received notice of said action and took no steps to secure a copy thereof.

ON PETITION.

ORE-PULVERIZING APPARATUS.

Messrs. Wright, Brown & Quinby for the applicant.

ALLEN, *Commissioner:*

This is a petition from the Examiner's action refusing to enter and consider an amendment filed July 6, 1905, on the ground that the application was abandoned.

It appears that a letter was written by the Examiner on August 12, 1903, and that an amendment in response was received May 6, 1904. On June 13, 1904, the Examiner acted upon the case as amended, and on August 10, 1904, an amendment was received. That amendment purported to be "in response to Office letter of August 3, 1903," and since it made no response to the action of June 13, 1904, the Examiner took no action upon it, save to notify the applicant that it was not responsive "to the last Office action dated June 13, 1904." The applicant took no further action until July 6, 1905, when the amendment here under consideration was filed. He said therein:

> The Office action dated June 15, 1904, "referred to in the Office" letter of August 24, 1904, has not been received.

The amendment of August 10, 1904, was admittedly not responsive to the Office action of June 13, 1904, and therefore it was not of such a character as to save the case from abandonment. The applicant by inference offers the excuse that he did not receive the Office letter dated June 13, 1904, but it is to be noted that he was informed on August 24, 1904, that such a letter had been written, and he apparently made no effort to secure a copy or discover its contents. There is, furthermore, no affidavit in the record to the effect that the letter was not received.

The case is abandoned and the petition is denied.

LOTTRIDGE v. EUSTICE.

Decided January 4, 1906.

1. INTERFERENCE—PRELIMINARY STATEMENT BY ASSIGNEE.

Where an applicant has taken no action in his case and has not filed a preliminary statement and the time for filing statements has expired, a statement filed within the time fixed by the assignee of an undivided part interest whose assignment is of record in this Office will be accepted.

2. SAME—PROSECUTION BY ASSIGNEE.

Where the assignee of an undivided interest of an invention makes an affidavit that he is unable to obtain any information from an applicant and the record shows that the applicant has taken no action in the interference and has filed no preliminary statement, the assignee will be allowed to prosecute the interference.

ON PETITION.

PACKING-MACHINE.

Messrs. Chappell & Earl for Lottridge.

Mr. Monroe M. Cady for Eustice.

Messrs. Chappell & Earl for the petitioner.

ALLEN, *Commissioner:*

This is a petition by Frank R. Sleeper that he be permitted to file a preliminary statement and prosecute this interference on behalf of Lottridge as assignee of two-thirds interest.

An assignment recorded in this Office shows that Sleeper has two-thirds interest in Lottridge's application and invention, and he makes affidavit that he is unable to obtain any information from Lottridge and believes that he does not intend to prosecute the interference. The record shows that Lottridge has taken no action in the case and has not filed a preliminary statement, although the time for filing statements has expired. Sleeper filed his proposed statement within the time fixed.

The circumstances are such as to warrant permitting Sleeper to prosecute the interference, and therefore the petition is granted.

SCOTT v. SOUTHGATE.

Decided January 4, 1906.

INTERFERENCE—BURDEN OF PROOF.

The question of shifting the burden of proof is a matter within the jurisdiction of the Examiner of Interferences and not the Primary Examiner, and there is no appeal from his decision prior to final judgment. (*Raulet and Nicholson* v. *Adams*, 114 O. G., 1827.)

APPEAL on motion.

DELIVERY MECHANISM.

Messrs. Beeken & Spaulding and *Mr. F. B. Brock* for Scott.

Messrs. Southgate & Southgate for Southgate.

ALLEN, *Commissioner:*

This is an appeal by Scott from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner his motion for a dissolution of the interference.

The motion alleges irregularity in the declaration, and it appears, therefore, that the supposed irregularity consisted in erroneously placing the burden of proof upon Scott as to some or all of the issues. Scott contends that he should be made the senior party as to all counts, because of the fact that his first application involved was filed on the same day as Southgate's application and because of its smaller serial number should be regarded as first filed.

The question of shifting the burden of proof is a matter

within the jurisdiction of the Examiner of Interferences and not the Primary Examiner, and there is no appeal from his decision prior to final judgment. (*Raulet and Nicholson* v. *Adams*, 114 O. G., 1827.)

The Examiner was right in refusing to transmit the motion, and therefore his decision is affirmed.

JOHN WAGNER & SONS *v.* THIXTON, MILLETT & CO.

Decided January 4, 1906.

1. TRADE-MARKS—OPPOSITION—FEE ESSENTIAL TO DATE.

The fee constitutes a necessary part of the notice of opposition, since it is required to be paid on filing such notice. An effective date cannot be given to an opposition earlier than that upon which the fee was paid.

2. SAME—OPPOSITION FILED TOO LATE.

The Office has no authority to extend in any case the period allowed by law for oppositions, and where the fee was paid more than thirty days after publication *Held* that the opposition came too late to be entitled to consideration.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR WHISKY.

Messrs. Wiedersheim & Fairbanks for Wagner & Sons.
Mr. Arthur E. Wallace for Thixton, Millett & Co.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Interferences dismissing from consideration certain papers filed by John Wagner & Sons in opposition to the registration of a trade-mark by Thixton, Millett & Co.

It appears that the applicants' mark was published in the OFFICIAL GAZETTE on September 5, 1905, in accordance with section 6 of the act of February 20, 1905. On October 3, 1905, the appellants filed certain papers opposing registration of the mark published, and on October 9, 1905, they paid to this Office a fee of ten dollars as the fee required by law in cases of opposition. The Examiner held that the effective date of the opposition must be taken as the date when the fee was paid, and as this was more than thirty days after publication the opposition came too late to be entitled to consideration.

Section 6, after providing for publication of marks, says:

> Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered. * * * If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for.

Section 14 of the law includes the following:

> That the following shall be the rates for trade-mark fees:
> * * * * * * * *
> On filing notice of opposition to the registration of a trade-mark, ten dollars.

It is clear that the fee constitutes a necessary part of the notice of opposition, since it is required to be paid "on filing" such notice. The statute is explicit in terms, and there can be no doubt as to the intent. To hold that the intent was different from that clearly expressed in the law would be contrary to fundamental rules of construction and would cause hopeless confusion. If the fee is not to be paid "on filing," when is it to be paid? Can the one opposing secure delay in registration by merely filing in this Office papers and thereafter make up his mind whether or not it is advisable to go to the expense of paying the fee? If so, how long can he wait?

These questions answer themselves, since it is clear, both on principle and according to the terms of the statute, that the one opposing has no standing whatever before this Office until he has paid the fee fixed by statute.

This Office has no authority to extend in any case the period allowed by law for oppositions, and since the opposition here was made too late the Examiner was right in dismissing it.

The decision of the Examiner of Interferences is affirmed.

EX PARTE THE J. C. HIRSCHMAN COMPANY.

Decided January 31, 1906.

TRADE-MARKS—IMMATERIAL VARIATIONS.

Where the trade-mark as a whole seems to be a mere imitation of Ostermoor's, made with immaterial variations, and the differences are clearly not such as would avoid confusion between the marks by purchasers, the mark should not be registered.

ON APPEAL.

TRADE-MARK FOR MATTRESSES.

Messrs. Minturn & Woerner and *Mr. Ernest W. Bradford* for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register a mark described as follows:

> The trade-mark consists of the representation of a felt mattress with part of the lining and cover removed to expose the felt layers, the exposed layers being spread apart, and the baby represented as lying upon the finished portion of the mattress, all inclosed in border-line comprising a straight horizontal base, with an arched top with ogee portions connecting the top with the case.

The ground of refusal is that this mark so nearly resembles a registered mark as to confuse the public and deceive purchasers. The registered mark is that of Ostermoor & Company, No. 34,063, January 23, 1900.

The registered mark does not include the border-line or the baby, but includes everything else referred to in the appellant's above-quoted description of its mark. The mattress with the exposed layers spread apart is undoubtedly the most prominent feature of the appellant's mark as shown, and is strikingly like the mattress with exposed layers constituting the registered mark.

The appellant says that since the mark is to be used upon mattresses a picture of a mattress is not trade-mark subject-matter and is to be disregarded in considering its mark. It urges that the baby and the border-line constitute its trade-mark, and that therefore the registered mark is no anticipation.

An examination of the case shows that the picture of the mattress is an integral part of the mark and is inseparable from the other features. The appellant describes it as a part of the mark, and it clearly is a part of it. The mark as a whole seems to be a mere imitation of Ostermoor's mark with immaterial variations. The differences are clearly not such as would avoid confusion between the marks by purchasers.

The decision of the Examiner of Trade-Marks is right and is affirmed.

EX PARTE PARAGON MALT EXTRACT COMPANY.

Decided January 31, 1906.

TRADE-MARKS—DESCRIPTIVE MARK REFUSED—PEERLESS.

The word "Peerless" refused registration as a trade-mark on the ground that it is descriptive.

ON APPEAL.

TRADE-MARK FOR MALT EXTRACT.

Messrs. Mason, Fenwick & Lawrence for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Peerless" as a trade-mark for malt extract.

The ground of refusal is that the word is descriptive. The word "Peerless" is undoubtedly an ordinary descriptive word which any one has a right to use in any case where it is properly descriptive and not deceptive. The word conveys the idea that the article to which it is applied is of superior quality and is unequaled. It is not capable of exclusive appropriation as a trade-mark by any individual. (*Ex parte Peerless Carbon Black Company*, 81 O. G., 803.)

The decision of the Examiner of Trade-Marks refusing registration is affirmed.

GABRIELSON *v.* FELBEL.

Decided February 23, 1906.

INTERFERENCE—ABANDONMENT OF INVENTION—RULE 125.

Held that the only abandonment which can be accepted under Rule 125 is an unequivocal, unconditional, unlimited declaration of abandonment of the invention which forms the subject-matter of the issue of the interference under consideration.

ON REFERENCE.

TYPE-WRITING MACHINE.

Messrs. Foster, Freeman & Watson for Gabrielson.

Mr. Jacob Felbel for himself. (*Mr. W. W. Dodge* of counsel.)

ALLEN, *Commissioner:*

This case comes before me upon the question of an abandonment filed by the applicant Gabrielson and the assignee of his interest, the L. C. Smith & Brothers Typewriter Company, under Rule 125. Objection is made by the attorney for the party Felbel that the abandonment proposed to be filed is not the net and unequivocal declaration of abandonment contemplated by Rule 125. He also objects to the execution of the instrument, urging that the authority of L. C. Smith, president of the L. C. Smith & Brothers Typewriter Company, does not appear.

Rule 125 provides that after an interference is finally declared—

> it will not, except as herein otherwise provided, be determined without judgment of priority founded either upon the testimony, or upon a written concession of priority by one of the parties, signed by the inventor himself (and by the assignee, if any) or upon a written declaration of abandonment of the invention.

The document at present under consideration contains clauses stating how the abandonment is to be understood and what it is not to be considered, and the execution by the assignee company is a concurrence in the declaration of abandonment "for the reasons and under the conditions mentioned therein."

I am of the opinion that this abandonment cannot be accepted for the purposes of Rule 125 and that an unequivocal, unconditional, unlimited declaration of abandonment of the invention which forms the subject-matter of the issue of the present interference is the only abandonment which can be filed under this rule.

This Office must refuse to give effect to the proposed instrument of abandonment, and it is so ordered.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE HAWLEY.

Decided December 5, 1905.

1. PATENTABILITY—COMBINATION IN WHICH ONE ELEMENT IS NOVEL.

Where it was old in a time-recording mechanism to provide a revolving drum operated by clockwork, a record-sheet to be wound thereon as the drum revolved, and a marking-point which made a mark on the record-sheet when placed in contact therewith, and it was also old to make a record on a lampblacked surface by the removal of a portion of such surface by means of a coacting stylus, it does not involve invention to use in a time-recording mechanism a record-sheet having a removable surface in combination with a stylus which removes a portion of said surface, although the record-sheet itself may be novel.

2. SAME—SUBSTITUTION OF NEW ELEMENT IN OLD COMBINATION.

The substitution for an old element in a combination of an element performing a similar function, but constructed in a different way, does not render the combination itself patentable where there is no resultant change in the operation. In such a case, although the substituted element may be superior, the invention lies in the element and not in the combination.

Mr. Arthur E. Parsons and *Mr. Geo. W. Hey* for the appellants.

Mr. J. M. Coit for the Commissioner of Patents.

SHEPARD, *J.:*

This is an appeal from a decision rejecting nine of the claims of an application for patent.

The application contained seventy-eight claims when filed, some of which were stricken out by amendment, and about fifty of them were finally allowed.

Pending the proceedings in the Patent Office, Hawley filed a divisional application for the record-sheet that has been included in, and claimed in this application, as an article of manufacture, and patent was issued thereon August 6, 1901, No. 680,145.

The following nine claims of this application were finally rejected:

1. In a time-recorder, the combination of two members, one comprising a support provided with a removable surface, and the other being provided with means for removing a portion of said surface and thereby forming a record, means for moving one of said members relatively to the other when the members are in their position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of the said members and thereby causing the record to represent an interval of time, substantially as and for the purpose described.

2. In a time-recorder, the combination with means for receiving records, said means having a surface removable from an underlying surface; of two members, one comprising a support for said means, and the other a marker provided with means for removing a portion of the first-mentioned surface from the underlying surface and thereby forming a record, means for moving one of said members relatively to the other when the members are in their position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of said members and thereby causing the record to represent an interval of time, substantially as and for the purpose described.

3. In a time-recorder, the combination of two members, one comprising a support provided with an exposed surface removable from an underlying surface, and the other comprising a marker provided with means for moving a portion of the exposed surface from the underlying surface and thereby forming a record, means for moving one of said members relatively to the other when the members are in their position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of said members and thereby causing the record to represent an interval of time, substantially as and for the purpose specified.

4. In a time-recorder, the combination of two members, one comprising a support provided with an exposed surface and an underlying surface from which the exposed surface is removable, and the other comprising a marker provided with means for scraping a portion of the exposed surface from the underlying surface and thereby forming a record, means for moving one of said members relatively to the other when the members are in their position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of said members and thereby causing the record to represent an interval of time, substantially as and for the purpose set forth.

5. In a time-recorder, the combination of a support for a record-sheet provided with a surface removable from an underlying surface, a marker provided with means for removing a portion of the first-mentioned surface from the underlying surface and thereby displaying said underlying surface and forming a record, means for moving one of the foregoing parts relatively to the other when said parts are in the position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of said foregoing parts and thereby causing the record to represent an interval of time, substantially as and for the purpose described.

6. In a time-recorder, the combination of a support for a record-sheet provided with a surface removable from an underlying surface, a marker provided with means for scraping a portion of the

first-mentioned surface from the underlying surface and thereby displaying said underlying surface and forming a record, means for moving one of the foregoing parts relatively to the other when said parts are in the position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of said foregoing parts and thereby causing the record to represent an interval of time, substantially as and for the purpose specified.

7. In a time-recorder, the combination of a support for a record-sheet provided with a surface removable from an underlying surface, said surface being non-removable by handling, a marker provided with means for moving a portion of the first-mentioned surface from the underlying surface and thereby displaying said underlying surface and forming a record, means for moving one of the foregoing parts relatively to the other when said parts are in the position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving one of the said foregoing parts and thereby causing the record to represent an interval of time, substantially as and for the purpose set forth.

8. In a time-recorder, the combination of a movable support for a record-receiving means having a surface removable from an underlying surface, a marker provided with means for removing a portion of the first-mentioned surface of the record-receiving means from the underlying surface thereof and thereby displaying said underlying surface and forming a record, means for moving the support relatively to the marker when the support and the marker are in the position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving the support and thereby causing the record to represent an interval of time, substantially as and for the purpose described.

9. In a time-recorder, the combination of a frame having a transparent portion, a movable support for a record-receiving means having an exposed surface removable from an underlying surface and also having characters representing intervals of time, said support being arranged in alinement with the transparent portion of the frame successively alining said characters therewith, a marker provided with means for removing a portion of the exposed surface of the record-receiving means from the underlying surface thereof and thereby displaying said underlying surface and forming a record, means for moving the support relatively to the marker when the support and the marker are in the position assumed during the formation of the record, and time mechanism for governing the operation of the means for moving the support and thereby causing the record to represent an interval of time, substantially as and for the purpose specified.

All of these claims but 3, 4 and 7 have been abandoned, and to them the argument for appellant has been directed. His chief concern is for No. 7, which specifically mentions the record-sheet with a surface non-removable by handling. The references upon which the nine claims were rejected are: Newman, November 2, 1897, No. 592,880; Hawley, (Record-sheet,) August 6, 1901, No. 680,145; *Ganot's Elements of Physics*, Ed. 1883, Figure 250, paragraph 287.

The ordinary operation of automatic time-recorders, as illustrated in Newman's patent, is well stated in the decision of Primary Examiner Newton as follows:

In the art of workman's time-recorders it is quite common to make a permanent record on a sheet of paper movable by clock work the time of entrance and departure of workmen from their work. The usual way, as shown for example in Newman, is to attach a sheet of paper to a clock-operated drum, the rulings on the sheet of paper corresponding to the hours and minutes indicated by the clock, and when the workman enters the building, he makes a permanent record of the time of entrance either by punching the hour and minute on the sheet of paper, or as in the Newman case, and the case of the present applicant, by placing the marking-point in a position to make a mark on the paper as the drum is revolved at a uniform rate of speed by the clockwork. The marking-point makes a mark on said drum until the workman leaves the building, and as he departs therefrom, he separates the marking-point and the drum and stops the mark. Newman makes his mark on his ruled paper by means of a carbon-sheet surrounding the paper and his marking-point 51; pressing on the carbon-sheet causes a mark to be made on his ruled paper.

In Hawley's device, his specially prepared recording-sheet is attached to a similar revolving drum, and the record is made by a marking-point, or cutting-stylus which removes a portion of its outer layer when operated. In brief, the former operates through pressure of the marking-point upon interposed carbon-paper; the latter through cutting or scraping off a portion of the recording-surface.

As said by the Commissioner—

it is old to provide a recording-surface so arranged that the record is made by removing a portion of the outer surface from the revolving drum.

His reference to Ganot shows a figure which is described as follows:

Round the cylinder is wrapped a sheet of paper covered with a thin layer of lampblack. The apparatus is used by bringing the prepared paper into contact with the point of the style, and then setting the cylinder in motion round its axis.

In that device the style records a mark or traces a line by removing a part of the lampblack. Grant that paper coated with lampblack is not a commercial article, and that it might not be used successfully for a time-recorder for commercial purposes, because the coating is liable to be removed or injured in the necessary handling; still it is old in the art to make a record by removing a portion of the recording-surface with a style adapted for cutting or scraping. It is obvious that Newman's device could be adapted to the use of such a record-sheet, and that its operation would be the same as appellant's with his special recording-surface. The resulting record would be effected in the same way notwithstanding its liability to injury or obliteration in subsequent handling. The mechanism would operate in the same way as appellant's, and the stylus would cut or scrape its record in a like manner upon any kind of sheet having a removable surface-coating. Conceding the superiority of appellant's record in respect of the matter of permanency, it is nevertheless plain that the advantage is solely attributable to the character of his novel record-sheet. His invention lies in that and not in his combination. (*In re McNeill*, 20 App., D. C., 294, 297.) In that case the subject of the rejected application was the combination of a trimmer and a stitch-forming mechanism. The applicant claimed the attainment of a new function by reason of the fact that the stitch-forming mechanism was novel. It was held, affirming the decision of the Commissioner, that as it had been shown to be old to combine a trimmer with a stitch-forming mechanism, it did not constitute invention to combine a trimmer with another stitch-forming mechanism, whether the latter was new or old. Each acted in its own appointed way, performing its function in the combination irrespective of the other, as is the case here.

Finding no error in the decision appealed from it will be affirmed; and this decision and the proceedings in this court will be certified to the Commissioner of Patents as required by law. It is so ordered. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	.....	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	.....	.....
Arizona Territory	3	.....	New Jersey	32	9
Arkansas	2	1	New Mexico Ter't'y	1	.....
California	22	6	New York	115	39
Colorado	11	1	North Carolina	6	.....
Connecticut	17	6	North Dakota	4	.....
Delaware	2	.....	Ohio	53	12
District of Columbia	3	.....	Oklahoma Territ'y	1	.....
Florida	.....	.....	Oregon	3	.....
Georgia	2	2	Pennsylvania	59	13
Hawaii Territory	.....	.....	Philippine Islands	.....	.....
Idaho	.....	.....	Rhode Island	3	1
Illinois	33	12	South Carolina	1	1
Indian Territory	1	.....	South Dakota	2	.....
Indiana	18	5	Tennessee	4	1
Iowa	11	1	Texas	6	1
Kansas	3	2	Utah	1	.....
Kentucky	8	4	Vermont	5	.....
Louisiana	1	2	Virginia	5	.....
Maine	4	1	Washington	7	1
Maryland	8	4	West Virginia	1	3
Massachusetts	35	11	Wisconsin	8	2
Michigan	17	6	Wyoming	.....	.....
Minnesota	7	4	U. S. Army	1	.....
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	3	.....	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	1	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	6	.....	Persia	.....	.....
Cape Colony	1	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	2	.....
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	13	3	Sweden	1	.....
France	9	2	Switzerland	2	.....
Germany	20	.....	Transvaal, South Africa	5	.....
India	.....	.....	Victoria	.....	.....
Ireland	1	.....	Western Australia	.....	.....
Italy	1	.....			
Japan	.....	.....	Total to citizens of foreign countries	66	5
Java	.....	.....			
Mexico	.....	.....			

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., February 7, 1906.

John H. Thompson & Company, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Charles H. Montanye, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to John H. Thompson & Company, of Detroit, Mich., and the notice of said declaration mailed by the Patent Office in the usual manner to the said John H. Thompson & Company having been returned undelivered, notice is hereby given to the said John H. Thompson & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 5, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 13, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
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148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 1	Oct. 23	667
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Feb. 28	Jan. 30	194
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Feb. 27	Dec. 26	341
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 27	Oct. 19	588
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Feb. 27	Sept. 2	691
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Feb. 27	July 18	354
	Under one month.			
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 24	July 6	780
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 23	Jan. 16	224
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Feb. 23	Dec. 12	249
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 21	Jan. 26	325
332	X. Carriages and Wagons	Feb. 21	Oct. 20	912
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Feb. 21	Sept. 28	642
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 20	Jan. 8	492
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Feb. 19	Oct. 20	670
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 19	Aug. 21	780
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Feb. 17	Jan. 24	340
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 15	Dec. 1	429

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 15	Nov. 6	310
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 14	Dec. 15	449
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 14	Sept. 9	749
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 13	Feb. 7	346
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 13	Aug. 25	602
	Between one and two months.			
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 9	Nov. 21	551
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Feb. 7	Nov. 15	368
327	XVIII. Steam-Engineering, etc	Feb. 3	Nov. 24	422
109	XVI. Telegraphy and Telephony.	Feb. 2	Dec. 12	339
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Jan. 26	July 6	1073
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 22	Oct. 21	311
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 19	Dec. 28	484
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 18	Nov. 11	459
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Jan. 13	Sept. 2	593
	Between two and three months.			
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Jan. 12	Sept. 15	750
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 8	June 7	1004
	Between three and four months.			
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Dec. 5	Oct. 26	535

Total number of applications awaiting action 19,192

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks	Feb. 6	Jan. 22	2490
	Under fifteen days.			
	Designs	Mar. 8	Feb. 16	52
	Labels and Prints	Mar. 9	Mar. 8	28

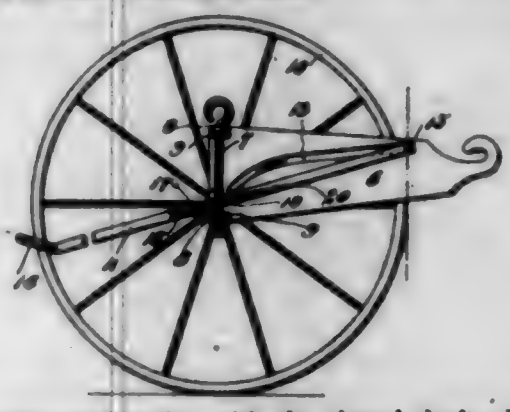
Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

PATENTS

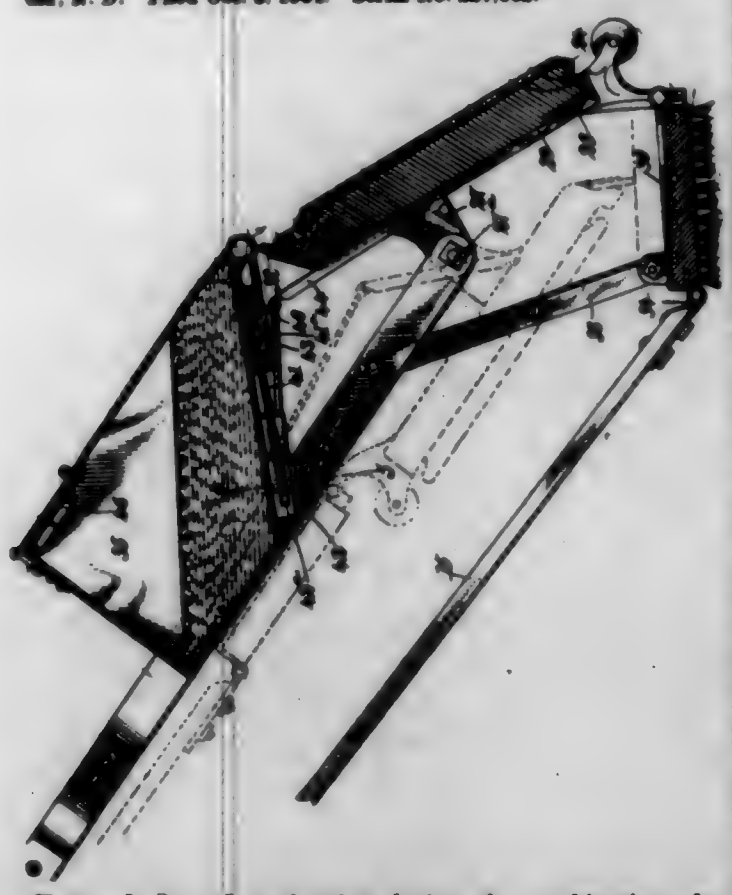
GRANTED MARCH 20, 1906.

815,823. CULTIVATOR. FLOYD L. ARMSTRONG, Auburn, Nebr. Filed Dec. 22, 1905. Serial No. 293,104.



Claim.—The combination with the slotted draft-plate of a tongueless cultivator, and the coupling-pin thereof, of a shoe slidably mounted at its front end in the slot of the draft-plate, and a spring-clasp carried by the shoe and engageable with the coupling-pin.

815,824. SCRUBBING DEVICE. HALLDOR E. H. ARMANN, Garder, N. D. Filed Oct. 8, 1904. Serial No. 227,902.



Claim.—1. In a floor-cleaning device, the combination of a water-tank, a mop pivotally mounted with respect thereto, a valve on the tank, a slidable pin connected with the valve, a rod connected with said pin, and a connection between the rod and mop whereby the valve is operated by the swinging of the mop.

2. In a floor-cleaning device, the combination with a water-tank, of a mop pivotally mounted with respect to the tank, and means connected with the mop for controlling the discharge of water from the tank.

3. In a floor-cleaning device, the combination of a mop, a scraper mounted on the mop, a brush movably mounted with respect to the mop, a water-tank mounted adjacent to the mop, and means for causing the tank to discharge water upon the mop.

4. In a scrubbing device, the combination of a handle, a mop movably connected therewith, and a brush pivotally mounted with respect to the mop and handle.

5. In a scrubbing device, the combination of a handle, a mop movably connected therewith, a brush pivotally mounted with respect to the mop and handle, a scraper on the mop, and a rod pivotally connected with the brush and slidably connected with the handle.

6. In a scrubbing device, the combination of a handle, a mop pivotally connected therewith, a brush pivotally connected with the mop, and a rod pivotally connected with the brush at one end and slidably connected with the handle at the other, whereby the brush and mop may be set at different angles to each other and to the handle.

7. In a scrubbing device, the combination of a mop, a brush, a handle, means for movably connecting the mop with the handle near the end of the latter, means for movably connecting the mop with the brush, and a link movably connecting the brush with the handle.

8. In a scrubbing device, the combination of a mop, a brush, a handle, means for connecting the mop with the handle near the end of the latter, means for connecting one side of the mop with one side of the brush, a link connecting the other side of the brush with a point on the handle above that at which the mop is connected thereto, a rod connected with the brush at the last-mentioned side thereof, a slide mounted upon the handle and connected with said rod, and means for securing the slide at different points on the handle.

9. In a scrubbing device, the combination of a handle, a mop movably connected therewith, a brush movably connected with the mop and handle, and a water-tank mounted on the handle, said tank having a discharge-opening and means for closing said opening.

10. In a scrubbing device, the combination of a handle, a mop movably connected therewith, a brush movably connected with the mop and handle, and a water-tank mounted on the handle, said tank having a discharge-opening and means for closing said opening; said means comprising a valve and connections between the valve and mop.

11. In a scrubbing device, the combination of a mop, a brush, a handle, means for connecting the mop to the handle, means for connecting the mop with the brush, a link connecting the brush and handle, a water-tank mounted on the handle and provided with a discharge-opening, a valve for closing said opening, and means for operating the valve; said means being connected with said mop.

12. In a scrubbing device, the combination of a handle, a mop pivotally connected therewith, a brush pivotally connected with the mop, a rod pivotally connected with the brush at one end and slidably connected with the handle at the other, whereby the brush and mop may be set at different angles to each other and to the handle, a water-tank mounted on the handle and provided with a discharge-opening, and means for closing said discharge-opening when the mop is moved into a certain position with respect to the handle.

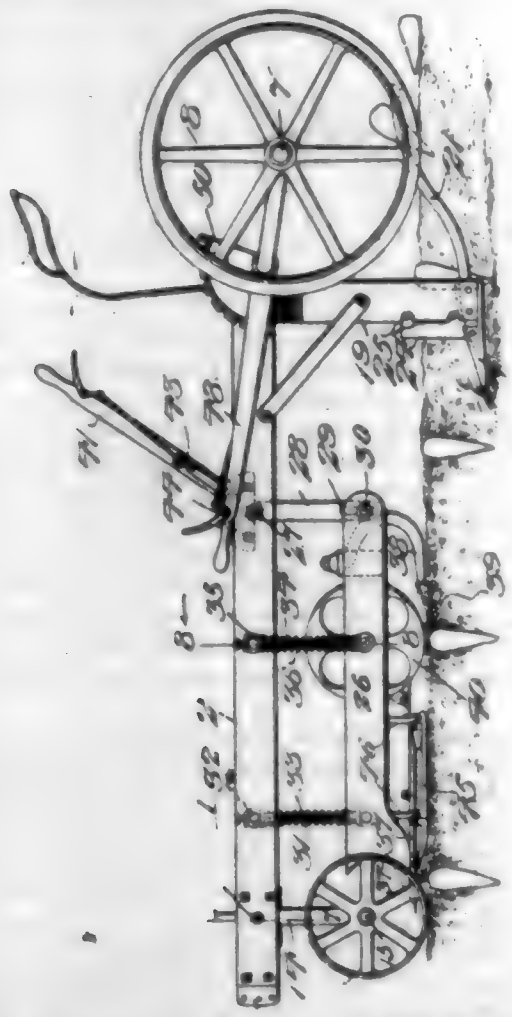
815,825. BEET-HARVESTER. JAMES W. ARTHUR, Denver, Colo., assignor to The Arthur Beet Harvester and Implement Co., a Corporation of Colorado. Filed Feb. 17, 1905. Serial No. 246,114.

Claim.—1. In a beet-harvester, a main frame, an auxiliary frame operatively connected therewith and provided with a conveyer-trough, a foliage-cutter carried by the auxiliary frame and communicating with said trough, and a topping device carried by the auxiliary frame in rear of the foliage-cutter.

2. In a beet-harvester, a main frame, a carrier yieldably suspended therefrom, a foliage-cutter carried by and movable with the carrier, a topping device fixed upon the carrier in rear of the foliage-cutter, and a roller operatively connected with the carrier and designed to travel over the ground-surface for automatically adjusting the topping device relative to the latter.

3. In a beet-harvester, a main frame, a carrier operatively con-

nected therewith, a foliage-cutter sustained by the carrier, and a vertically-adjustable shoe pivotally connected in rear of the cutter and operatively connected with the carrier.



4. In a beet-harvester, a main frame, a carrier-frame yieldably suspended therefrom, a foliage-cutter sustained by the carrier-frame, a topping device also sustained by the carrier in rear of the foliage-cutter, means for raising and lowering the carrier-frame, and beet-lifting devices sustained in rear of the carrier-frame.

5. In a beet-harvester, a main frame, an auxiliary frame, hangers pivotally connected with one of the frames and having sliding connection with the other, springs on said hangers for pressing the auxiliary frame yieldably downward to its work, a foliage-cutter carried by the auxiliary frame and a topping device also carried by said frame in rear of the foliage-cutter.

6. In a beet-harvester, a main frame, an auxiliary frame, hangers pivoted to one of said frames and having sliding connection with the other, springs on said hangers for pressing the auxiliary frame yieldably downward to its work, foliage-cutting and beet-topping devices carried by the auxiliary frame, and a roller journaled in the latter for travel over the ground to automatically adjust said devices relative to the latter.

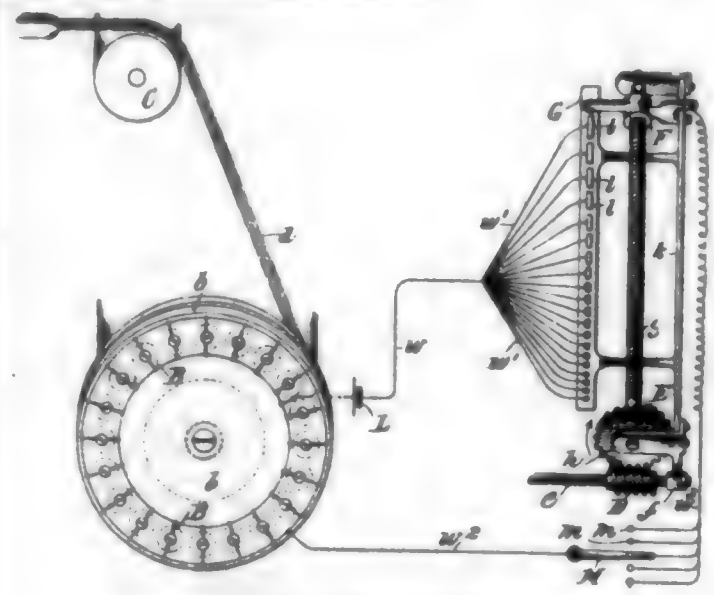
7. In a beet-harvester, a main frame, an auxiliary frame, hangers pivotally connected with one of said frames and having sliding connection with the other, springs operatively connected for pressing the auxiliary frame yieldably downward to its work, foliage-cutting and topping devices carried by and movable with the auxiliary frame and a member operatively connected with said frame and adapted to travel over the ground-surface for automatically adjusting the topping devices relatively to the latter.

8. In a beet-harvester, a main frame, a carrier operatively connected therewith, a foliage-cutter sustained by the carrier, a vertically-adjustable shoe pivotally connected in rear of the cutter, and a link pivoted to the shoe and adjustably connected with the carrier.

9. In a beet-harvester, a main frame, a carrier operatively connected therewith, a foliage-cutter sustained by the carrier, a vertically-adjustable shoe pivotally connected in rear of the cutter and adapted to bear on the ground-surface, and links pivotally connected with the shoe and having slot-and-bolt connection with the carrier.

815,326. ELECTROMAGNETIC BEAM-TENSION REGULATOR. Daniel Bacon, New York, N. Y. Filed May 10, 1905. Serial No. 259,681.

Claim.—An electromagnetic beam-tension regulator which consists of an electromagnetic drag adapted to retard the unwinding of the beam, when energized and a compensating mechanism adapted to energize said drag with an electric current automatically decreasing during the unwinding of the beam.



815,327. SHANK-PIECE FOR BOOTS AND SHOES. William H. Baynard, Boston, Mass., assignor to A. E. Little & Company, Lynn, Mass., a Firm. Filed Aug. 12, 1905. Serial No. 273,870.



Claim.—1. A shoe-shank consisting of an elongated metallic strip centrally folded upon itself to bring the folded portions in contact with each other and having one of said folded portions molded to present a transversely-convex arch support and stiffener.

2. A shoe-shank consisting of an elongated strip of steel folded upon itself to bring the folded portions into parallelism and curved in the direction of its length, one of said folds being molded to present an elongated, transversely-convex arch-support.

3. A shoe-shank consisting of a strip of resilient metal folded upon itself centrally between its ends and having one of the folded portions bent to present an external, elongated and transversely-convex projection, the adjacent faces of the folded portions contacting.

4. A shoe-shank consisting of a strip of spring-steel folded upon itself, one of the folded portions being molded to present an external transversely-convex, elongated projection, leaving a flat adjacent portion at the end of the strip for attachment to the heel of a shoe.

5. In a boot or shoe, a resilient shank-piece consisting of a strip of metal folded upon itself and having the uppermost portion molded for a portion of its length to present a transversely-convex arch-support adjacent the inner sole, the shank-piece at its rear end beyond said molded portion being extended between the heel and the inner sole and secured in position.

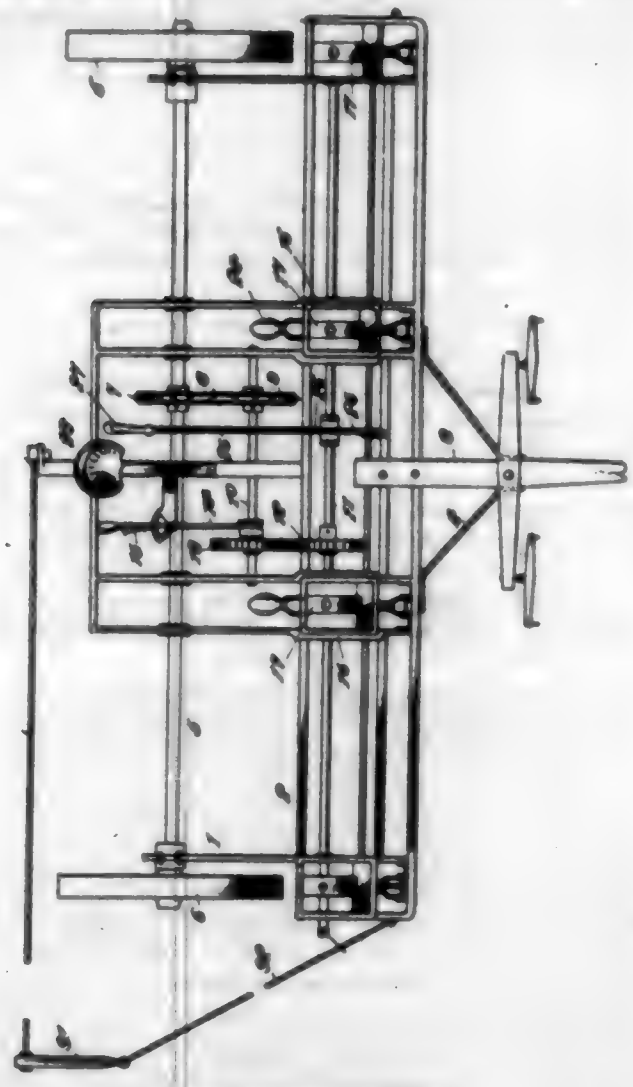
6. In a boot or shoe, a shank-piece consisting of a strip of resilient metal folded upon itself at the center and having a transversely-convex, elongated arch-support formed on the upper portion to sustain the inner sole at the arch, said shank-piece having a flattened rear end interposed between the inner sole and the heel and fixedly secured thereat.

815,328. PLANTER. Gilbert C. Brinnon and Ole A. Nelson, Homestead, N. D. Filed Sept. 12, 1905. Serial No. 278,130.

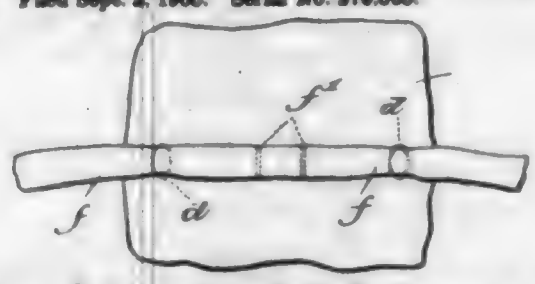
Claim.—1. In a planter, the combination of an operating-shaft having an end portion extended and made angular for reception of an adjusting-tool, seed-dropping mechanism in coöperative relation with said operating-shaft to be actuated thereby, an axle mounted to rotate and adapted to have the driving power applied thereto, a shaft 10 intermediate of said axle and operating-shaft, gearing connecting the axle with said shaft 10, and further gearing connecting the shaft 10 with the operating-shaft and relatively shiftable parts to admit of throwing the operating-shaft into or out of gear at will.

2. In a planter, the combination of a main frame, seed-dropping mechanism carried thereby, an axle loosely mounted in said frame and adapted to have the driving power applied thereto, means for transmitting motion from said axle to the seed-dropping mechanism and including relatively shiftable elements to admit of throwing the seed-dropping mechanism into and out of gear, runners forming furrow-openers, means loosely connecting said runners with the main frame, means for adjusting said runners, said adjusting means

being mounted upon the main frame, and weighted coverers loosely connected to the runners and track in the wake thereof, the said operating-shaft having an end portion extended and constructed to receive an adjusting-tool.



815,329. WEARING-APPAREL. Hannah B. Brown, Magnolia, Mass. Filed Sept. 2, 1905. Serial No. 276,855.



Claim.—1. In wearing-apparel, a pair of corsets or stays, and downholding means attached to the back of and independent of the fastening devices thereof adapted to coöperate with a flexible band secured to the back of a shirt-waist on the inside thereof, to retain the back of the shirt-waist in position.

2. In wearing-apparel, a pair of corsets or stays, and downholding rings attached thereto at the back and adapted to receive the free ends of a flexible band secured to the back of a shirt-waist, whereby when the band is drawn taut the back of the shirt-waist will be held down in position.

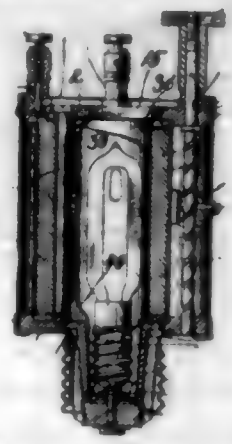
3. In wearing-apparel, a shirt-waist having a flexible band attached to its back on the inside, the free ends of the band being adapted to be tied about the waist of the wearer, a pair of corsets or stays, and rings secured to the halves thereof at the back, to receive the ends of the flexible band, whereby the back of the shirt-waist may be drawn down to place and held.

815,330. LAMP-RHEOSTAT. Thomas J. Bull, New York, N. Y. Filed June 15, 1903. Serial No. 161,430.

Claim.—1. The combination in a rheostat of a resistance-coil and an incandescent lamp located within said coil and adapted to be connected in series therewith.

2. The combination in a rheostat of a resistance-coil, an incandescent lamp located within said coil and adapted to be connected in series therewith, and means for varying the effective length of the resistance-coil.

3. The combination in a rheostat of a high-resistance coil, an incandescent lamp, means whereby the circuit through the device may be caused to include both the coil and the lamp in series or to include the coil only, substantially as described.



4. The combination in a rheostat of a resistance-coil, an incandescent lamp located within said coil and adapted to be connected in series therewith, and a support for said lamp and coil including a part adapted to be secured in an incandescent-lamp socket and having pole-pieces adapted to connect the device with the lamp-circuit.

5. The combination in a rheostat of a resistance-coil, a hollow cylindrical support for said coil, and a lamp located within said cylinder and adapted to be connected in series with said coil.

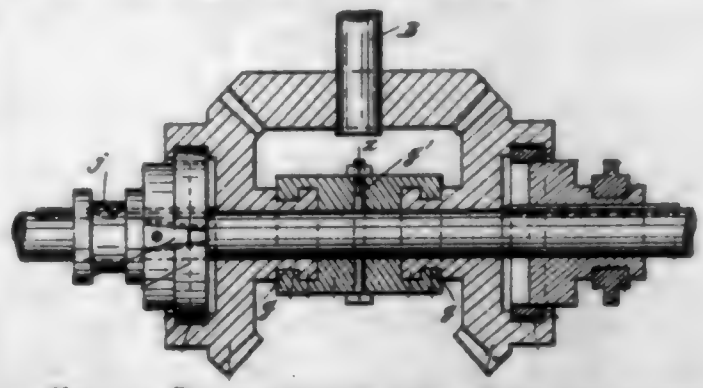
6. The combination in a rheostat of a resistance-coil, a hollow cylindrical support for said coil, and an incandescent lamp located within said cylinder and adapted to be connected in series with said coil, and frame-pieces between which said cylinder is secured, said frame-pieces having openings communicating with the interior of said cylinder.

7. The combination in a rheostat of a resistance-coil, a hollow cylindrical support for said coil, frame-pieces between which said cylindrical support is secured, means on one side of said cylinder for adjusting the effective length of said coil, said cylinder being eccentrically arranged with relation to the frame-pieces whereby space is provided for the said adjusting means.

8. The combination in a rheostat of a resistance-coil, a hollow cylindrical support for said coil, and an incandescent lamp located within said cylinder and adapted to be connected in series with said coil, and frame-pieces between which said cylinder is secured, said frame-pieces having openings communicating with the interior of said cylinder and a perforated casing inclosing said parts.

9. The combination in a rheostat of a resistance-coil, a hollow cylindrical support for said coil, an incandescent lamp located within said cylinder and adapted to be connected in series with said coil, and frame-pieces between which said cylinder is secured, said frame-pieces having openings communicating with the interior of said cylinder, and one of said frame-pieces having a part adapted to be secured in an incandescent-lamp socket and having contact-pieces adapted to connect the device with the lamp-circuit.

815,331. REVERSING-GEAR. Thomas H. Butler, Baltimore, Md. Filed Mar. 10, 1905. Serial No. 249,411.



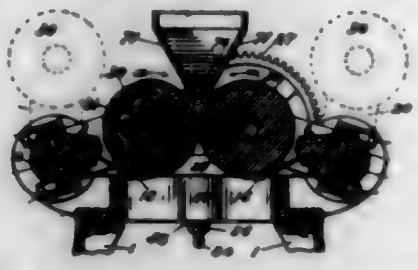
Claim.—1. The combination, with a shaft, and two wheels mounted loosely thereon and provided with hubs having circumferential grooves; of a block secured to the said shaft between the said wheels and provided with projections which engage with the said grooves, and clutches for connecting the said wheels alternately with the said shaft.

2. The combination, with a shaft, and two wheels mounted loosely thereon and provided with hubs having circumferential grooves; of a block formed of two longitudinal halves and provided with projections which engage with the said grooves, and a pin which passes through the said block and shaft.

3. The combination, with a shaft, and two wheels mounted loosely thereon and provided with hubs having circumferential grooves; of a block formed of sections and having projections which engage with the said grooves, means for securing the said block-sections to the said shaft, and clutch mechanism for connecting the said wheels alternately with the said shaft.

4. The combination, with a shaft, and two wheels mounted loosely thereon and provided with clutch members and hubs having circumferential grooves; of a block secured to the said shaft and provided with projections which engage with the said grooves, slidable clutch members splined to the said shaft and provided with circumferential grooves, collars arranged in the grooves of the said clutch members, operating-arms pivoted to the said collars, said arms being formed of longitudinal arm-sections, and an operating-bar connecting together the adjacent end portions of the said arms.

815,332. CRUSHING-ROLLS. ALBERT C. CALKINS, Los Angeles, Cal. Filed Aug. 26, 1902. Serial No. 121,128.



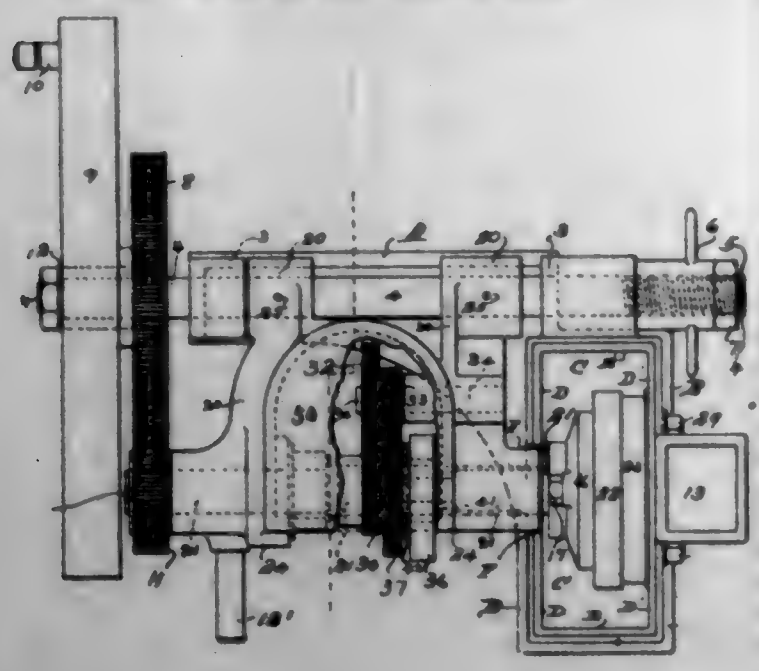
Claim.—1. In ore-crushing machines, yokes provided with bearings in the ends of the frame, the crushing-rolls journaled in the open ends of said yokes, scrapers secured to the bearings, the equalizing-bars resting upon roll ends of the yokes, and tension devices attached to said frame and removably secured to the said bars, whereby an equal elevation of the rolls is maintained during the operation of crushing.

2. In ore-crushing machines, a frame, yokes having bearings and pivoted in the ends of the frame, a crushing-roll journaled in the open end of each of said yokes, equalizing-bars provided with slots therein, and spring tension devices attached to said frame and removably fastened to each of said bars.

3. In ore-crushing machines, a frame, a driving-shaft, a driven shaft, means for revolving the shafts, a bearing in opposite ends of the frame for the driving-shafts, an eccentric sleeve secured on each of the driving-shafts, a yoke provided with a bearing upon each of the sleeves, each of the yokes having a crushing-roll in the open end thereof, equalizing-bars upon the roll ends of the yokes, and spring tension devices for retaining the crushing-rolls at an equal elevation relative to the frame.

4. In ore-crushing machines, horizontally-disposed yokes provided with bearings in the ends of the frame, the crushing-rolls journaled in the free ends of the said yokes, equalizing-bars resting upon the roll end of the yokes and tension devices attached to said frame and secured to the said bars, whereby desired tension is attained.

815,333. GRINDING-MACHINE. ALBERT C. CALKINS, Los Angeles, Cal. Filed Sept. 26, 1904. Serial No. 226,030.



Claim.—1. A grinding-machine comprising a stationary disk and means for supporting the same, a longitudinally-adjustable oscillating rocker arm and a support therefor, a driven shaft having a disk secured upon one end thereof and means for revolving the said shaft upon the opposite end, a cam operated upon said driven shaft and a roller for contacting with said cam and for varying the revolution of said movable disk at every point relative to the stationary disk.

2. A machine provided with a shaft and driving-gear thereon, a rocker frame or arm on said shaft, a driving-shaft in said rocker-frame carrying a gear meshing with the first-mentioned gear, a disk carried by the driven shaft, a stationary disk, said parts being so constructed that the rotary disk can be swung into inoperative position without disengaging the parts.

3. A machine provided with a frame having a casing and bearings, a shaft journaled in said bearings, driving devices carried upon said shaft, a driven shaft mounted in said frame and having devices in engagement with the first-mentioned devices, a stationary disk mounted in said casing, a rotary disk carried by said driven shaft, a counter-shaft, gears connecting the counter and driven shafts, a sleeve, the driven shaft geared to the counter-shaft, an eccentric on said sleeve and a roller in engagement with said eccentric.

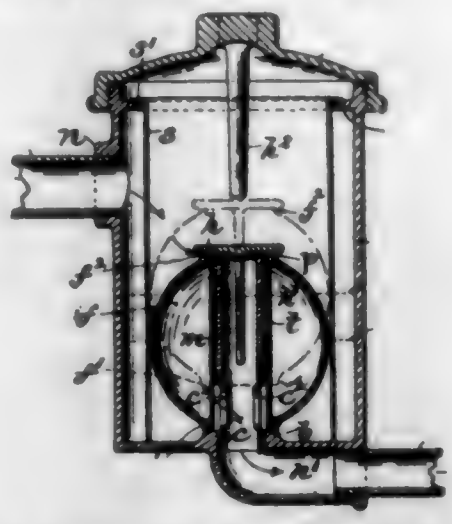
815,334. FIRE-EXIT DOOR. DANIEL CARROLL, Columbus, Ohio. Filed Jan. 20, 1904. Serial No. 191,236.



Claim.—1. In a fire-exit door, the combination with a door-frame, an outer door hinged therein, an inner door hinged to the outer door, of a sliding locking-bolt carried by the outer door, a bracket supported from the outer door, a lever pivoted in the bracket having one end in contact with the bolt and the other end bearing against the inner door, and means for connecting the doors.

2. In a fire-exit door, the combination with a door-frame and an outer door hinged therein so as to lie flush with the outer side of the door-frame, of an inner door completely filling and lying flush with the inner side of the door-frame and supported from the outer door so as to provide a substantial space therebetween, the said inner door being hinged to the outer door so as to swing in the full half of a circle out of the door-frame with the outer door and in the same horizontal plane, and locking means for the outer door, operated by the inner door, arranged in the space between the doors.

815,335. AUTOMATIC STEAM AND WATER TRAP FOR STEAM-HEATING SYSTEMS. THOMAS F. DEXTER, Providence, R. I. Filed May 11, 1905. Serial No. 259,968.



Claim.—1. In a trap of the class described having a closed casing provided with suitably-disposed inlet-passages, and an outlet or discharge passage located in the base of the casing, the combination therewith of a suitably-guided vertically-movable interior float member normally seated on said base and surrounding said outlet-passage, the said float having a vertically-arranged opening therethrough communicating with the said outlet, and a suitably-supported vertically-movable valve disposed at the top of the float and forming between the adjacent surfaces thereof a small normally open passage for the inflow of air from the chamber via the float into the discharge-outlet, arranged whereby water accumulating in the trap causes the float to rise and close said air-passage and at the same

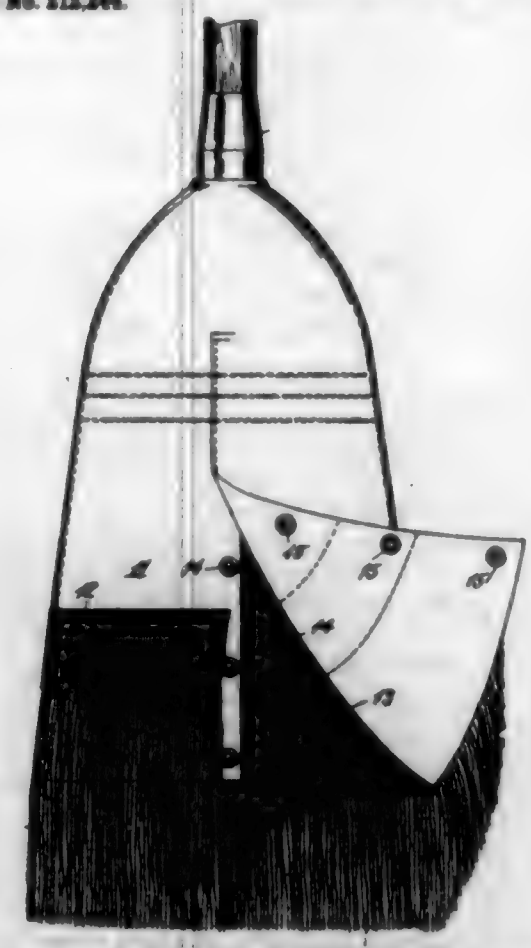
time uncovers the bottom seat to permit the water to freely escape into the discharge-outlet.

3. The improved trap substantially as described, the same comprising a closed casing having inlet and outlet openings, an interior vertically-arranged apertured central tube mounted in the base of the casing and in open communication at the bottom with said outlet, a movable valve located at the upper end of the tube, a vertically-movable float surrounding the tube and normally seated on said base, a normally open narrow passage *p* formed between the adjacent surfaces of the upper end of the float and said valve and communicating with the discharge-passage, and a screen interposed between the side walls of the casing and the exterior of the float, substantially as described.

3. The improved steam and water trap A, the same consisting of the chambered casing *a*, cap *a'* secured thereto, inlet and discharge openings, the latter being formed in the base of the casing, and a removable screen *s*, in combination with the vertical tube *c* closed at its upper end and being in direct communication at the bottom with said discharge-opening, lateral apertures c^3 in said tube, a metallic float *f* surrounding the tube and normally seated on said base, a guided valve *h* normally resting upon the top of tube *c* and forming between it and the float a passage *p* communicating with the discharge-opening, and a stop for limiting the vertical movement of the float and valve members, all constructed, arranged and adapted for operation, substantially as herein described and for the purpose set forth.

4. In a trap provided with an inlet-passage, a continuously-open discharge-outlet in its base and a suitably-supported valve located in the interior of the trap, the combination therewith of a guided normally stationary float having an opening therethrough and interposed between said base and valve and forming a small opening at the top between the valve and float, which opening is automatically closed by the rising float when sufficient water accumulates in the trap, thereby at the same time uncovering the bottom or discharge outlet for the free escape of the said water.

815,836. **MOP.** JOHN F. DOEBLER, Jr., Hartford, Conn., assignor to himself and Sidney E. Clarke, Hartford, Conn. Filed June 13, 1904. Serial No. 212,244.



Claim.—In combination with a broom and its handle, an envelop-like body open at both ends to receive and compress the broom-head, one of the faces of the body having a slit, the edges of which overlap, a portion of the overlapping edges being permanently secured one to the other, means for holding the free edges overlapping, a fringed strip arranged around the body at a point above an open end, the opening at the opposite end of the body being of such size as to permit the passage of the broom-handle only and a reinforce-strip around the last-named opening.

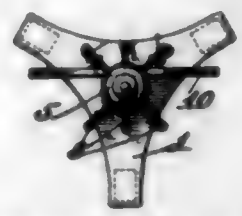
815,837. **MAGAZINE FOR HOLDING TOILET-PAPER.** LEMARUS T. ELLIS, La Port, Col. Filed June 28, 1905. Serial No. 267,459.



Claim.—1. A magazine for holding toilet-paper comprising a rectangular case provided with a vertical longitudinal opening in the face thereof; a follower adapted to chamber therein and having in the front part thereof a recess for the passage of the finger.

2. The herein-described toilet-paper magazine comprising a rectangular casingA having a lid B thereon; a vertical slit A' in the face thereof in combination with the follower C having a recess C' in the front part thereof.

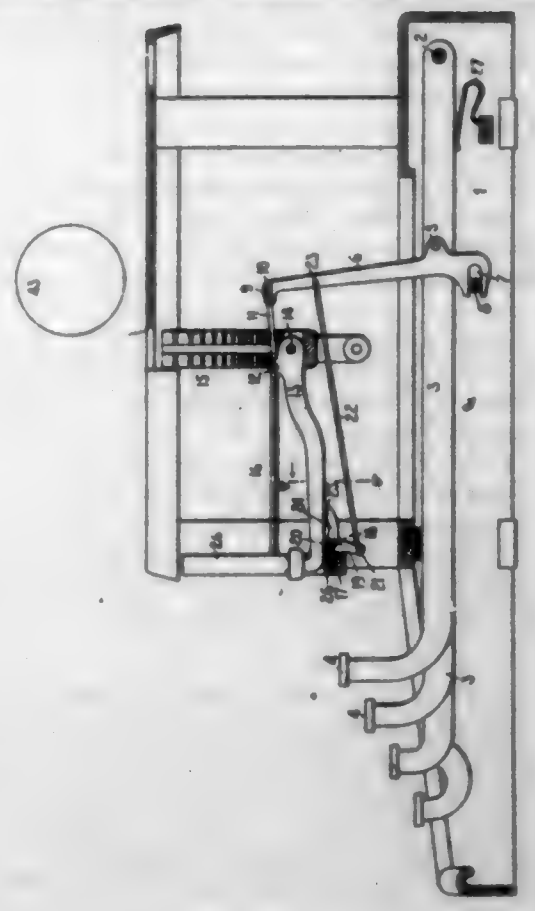
815,838. **CLOTHES-HANGER.** EDWARD A. FARISH, St. Louis, Mo., and EDWARD W. MCCLURE, Quincy, Ill. Filed Feb. 20, 1905. Serial No. 246,476.



Claim.—1. In a clothes-hanger, the combination with a suitable base having a seat, of blocks secured to said base and on each side of said seat, a standard having a slot in its end, a pin passing through said blocks and through said standard whereby a pivotal connection is provided between the base and the standard, said pivotal connection permitting sliding engagement between the parts, and shoulders carried by the standard for engagement with the blocks to hold the standard rigid with relation to the base; substantially as described.

2. A clothes-hanger comprising a base having a seat in its upper face, blocks arranged on opposite sides of the seat, a post having its lower end inserted in the seat and snugly fitting between the blocks, said lower end being slotted, a pin in the blocks and projecting through said slot, shoulders formed on said post and coöperating with the upper faces of the blocks, and a coat-hanger carried by said post; substantially as described.

815,839. **TYPE-WRITING MACHINE.** JACOB FRIEDL, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Feb. 11, 1903. Serial No. 142,930.



Claim.—1. In a type-writing machine, the combination of a pivoted type-bar, and actuating means to coöperate with opposite end portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point.

2. In a type-writing machine, the combination of a pivoted type-bar, and actuating means to coöperate successively with opposite end portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point.

3. In a type-writing machine, the combination of a type-bar, and actuating means to coöperate with the free end portion of the type-bar at the beginning of the printing stroke.

4. In a type-writing machine, the combination of a pivoted type-bar, actuating means to coöperate with the pivoted end portion of the type-bar, and other actuating means to coöperate with the free end portion of the type-bar at the beginning of the printing stroke.

5. In a type-writing machine, the combination of a pivoted type-bar, actuating means to coöperate with the pivoted end portion of the type-bar, other actuating means to coöperate with the free end portion of the type-bar at the beginning of the printing stroke, and means to produce a successive operation on the type-bar of said actuating means.

6. In a type-writing machine, the combination of a pivoted type-bar, a finger-key, and two actuating devices controlled by said key to operate successively on different portions of the type-bar during a key depression in imparting to the type-bar a continuous movement terminating with the action of the type at the printing-point.

7. In a type-writing machine, the combination of a pivoted type-bar, a finger-key, and actuating means to coöperate with the free end portion of the type-bar to lift it only at the beginning of the depression of the key.

8. In a type-writing machine, the combination of a pivoted type-bar, a finger-key, actuating means to coöperate with the free end portion of the type-bar to lift it at the beginning of the depression of the key, and means controlled by the same key to complete the movement of the type-bar.

9. In a type-writing machine, the combination of a pivoted type-bar, and separate sets of type-bar-actuating means to coöperate with different portions of the bar between the pivot and free end thereof in imparting to the type-bar a continuous movement terminating with the action of the type at the printing-point.

10. In a type-writing machine, the combination of a pivoted type-bar, and a type-bar-actuating device to coöperate with the type-bar between its ends at the beginning of the printing stroke, the type-bar being also movable independently of said actuating device.

11. In a type-writing machine, the combination of a type-bar, a lifting device to coöperate with the type-bar between its ends, and other actuating means to move the type-bar after the lifting device ceases to act on it.

12. In a type-writing machine, the combination of a type-bar, a lifting device to coöperate with the type-bar between its ends, other actuating means to move the type-bar after the lifting device ceases to act on it, and a single finger-key to move said lifting device and said other actuating means.

13. In a type-writing machine, the combination of a pivoted type-bar, a plurality of actuating devices to coöperate directly with different portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point, and intermediate connections between said actuating devices.

14. In a type-writing machine, the combination of a pivoted type-bar, a plurality of actuating devices to coöperate directly with different portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point, intermediate connections between said actuating devices, and a finger-key to control said actuating devices.

15. In a type-writing machine, the combination of a pivoted type-bar, a plurality of actuating devices to coöperate directly with different portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point, and a key-lever to which said actuating devices are connected.

16. In a type-writing machine, the combination of a pivoted type-bar, a plurality of actuating devices to coöperate directly with different portions of the type-bar in imparting to it a continuous swinging movement terminating with the action of the type at the printing-point, and a key-lever to which said actuating devices are connected and by which they are successively operated.

17. In a type-writing machine, the combination of a pivoted type-bar, a lever disconnected from the type-bar and movable in contact therewith to lift it at the beginning of the printing stroke, and means to actuate said lever.

18. In a type-writing machine, the combination of a pivoted type-bar, a lever disconnected from the type-bar and movable in contact therewith to lift it at the beginning of the printing stroke, means to actuate said lever, and means besides the lever to complete the printing movement of the type-bar.

19. In a type-writing machine, the combination of a pivoted type-bar, a lever disconnected from and movable in contact with the type-bar to lift it at the beginning of the printing stroke, actuating means connected to the type-bar and to said lever, and a finger-key to actuate said lever-actuating means.

20. In a type-writing machine, the combination of a pivoted type-bar, a lever disconnected from and movable in contact with the type-bar to actuate it at the begining of the printing stroke, other means connected to the type-bar to actuate it, and intermediate connections between said lever and other actuating means to control the movement of one by a movement of the other.

21. In a type-writing machine, the combination of a pivoted type-bar, a key-lever, a sublever controlled thereby and operatively connected to the type-bar, and a separate actuating device controlled by the key-lever to act on the type-bar at the beginning of the printing stroke.

22. In a type-writing machine, the combination of a pivoted type-bar, a finger-key, and a bell-crank disconnected from the type-bar and movable in contact therewith to move the type-bar at the beginning of a depression of the finger-key.

23. In a type-writing machine, the combination of a type-bar, a finger-key, and a bell-crank disconnected from the type-bar and movable in contact therewith to move the type-bar at the beginning of a depression of the finger-key, the type-bar being movable independently of the bell-crank during the latter portion of the key depression.

24. In a type-writing machine, the combination of a type-bar, a finger-key, a bell-crank disconnected from the type-bar and movable in contact therewith to move the type-bar at the beginning of a depression of the finger-key, the type-bar being movable independently of the bell-crank during the latter portion of the key depression, and other means controlled by said key to actuate the type-bar during the latter part of the key depression.

25. In a type-writing machine, the combination of a type-bar, a key-lever, and a type-bar-actuating bell-crank operatively connected with the key-lever and disconnected from the type-bar and movable in contact therewith near the type-carrying end of the type-bar at the beginning of the printing stroke.

26. In a type-writing machine, the combination of a series of type-bars, a series of key-levers, a series of sublevers controlled by said key-levers and operatively connected to the type-bars, and another series of type-bar-actuating devices separately connected to said sublevers.

27. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever controlled by said key-lever and operatively connected to the type-bar, a bell-crank disconnected from said type-bar and movable in contact therewith, and an intermediate connection between said sublever and bell-crank.

28. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever controlled by said key-lever and operatively connected to the type-bar, a bell-crank disconnected from said type-bar and movable in contact therewith near the free end of the type-bar, and a link between said sublever and bell-crank.

29. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, two levers to coöperate with different portions of the type-bar to actuate it, and means to actuate said levers.

30. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, two levers to coöperate with different portions of the type-bar to actuate it, means to actuate said levers, and means to move the type-bar with one of said levers before it is moved by the other.

31. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, two relatively movable devices to actuate said type-bar, a single finger-key to actuate both of said devices, and means to move the bar with one of said devices before it is moved by the other.

32. In a type-writing machine, the combination of a type-bar, a

finger-key, means connected to the finger-key and to the type-bar to actuate the type-bar, a device disconnected from the type-bar and controlled by the finger-key to actuate the type-bar, and means to move the type-bar with said device before it is moved by the first-mentioned actuating means.

33. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, a finger-key, two type-bar-actuating levers, and means to move the type-bar with one of said levers before it is moved by the other.

34. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, means to coöperate with different portions of the type-bar in actuating it, and lost-motion instrumentalities between the type-bar and its actuating means.

35. In a type-writing machine, the combination of a pivoted type-bar movable on its pivotal axis from its normal to its printing position, an actuating-lever therefor, a lost-motion connection between said actuating-lever and one portion of said type-bar, and an independent device to coöperate with another portion of said bar to actuate it.

36. In a type-writing machine, the combination of a pivoted type-bar movable on its pivotal axis from its normal to its printing position, a key-lever, a separate sublever operated by said key-lever, and a lost-motion connection between said sublever and said type-bar.

37. In a type-writing machine, the combination of a pivoted type-bar movable on its pivotal axis from its normal to its printing position, two actuating-levers to coöperate therewith, one connected thereto by a lost-motion connection and the other disconnected from the type-bar and movable in contact therewith, and means to actuate said levers.

38. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever, and two independent sets of operative connections between said sublever and type-bar.

39. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever, and two independent sets of connections between said sublever and type-bar operative successively on said type-bar at different portions thereof.

40. In a type-writing machine, the combination of a pivoted type-bar, a key-lever therefor, a sublever controlled by said key-lever, and two independent sets of connections between said sublever and type-bar operative successively on said type-bar at different portions thereof, one near the free end of the type-bar and the other near the pivot thereof.

41. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, a key-lever therefor, and operative actuating connections between the key-lever and type-bar to coöperate with different portions of the type-bar, one near the pivoted end thereof and the other near its free end.

42. In a type-writing machine, the combination of a pivoted type-bar movable upward and backward on its pivotal axis from its normal to its printing position, a key-lever therefor, and actuating connections between the key-lever and type-bar to coöperate with different portions of the type-bar, one near the pivoted end thereof and the other near its free end, and to successively operate on the type-bar to move it to the printing position.

43. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever controlled thereby, a connection between said type-bar and sublever, and a device movable independently of said connection to actuate the type-bar before it can be actuated by said connection.

44. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever controlled thereby, a connection between said type-bar and sublever, and a device movable independently of said connection to actuate the type-bar before it can be actuated by said connection, said device being connected to and actuated by the sublever.

45. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever controlled thereby, a connection between the sublever and type-bar to afford a limited movement of the sublever independently of the type-bar, and a lever disconnected from the type-bar and connected to the sublever and movable thereby in contact with the type-bar to operate the type-bar.

46. In a type-writing machine, the combination of a type-bar, a key-lever therefor, type-bar-actuating means controlled by said key-lever, and a bell-crank controlled by said key-lever to move the type-bar before it is moved by said actuating means.

47. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever pivoted thereto and fulcrumed on a fulcrum-bar, a connection between the sublever and type-bar that allows a limited movement of the sublever independently of the type-bar, and a separate lever that is actuated by the key-lever to move the type-bar.

48. In a type-writing machine, the combination of a type-bar, a key-lever, a sublever pivoted thereto and fulcrumed on a fulcrum-bar, a connection between the sublever and type-bar that allows a limited movement of the sublever independently of the type-bar, and a separate lever disconnected from the type-bar and movable with the key-lever and in contact with the type-bar to actuate the type-bar at the beginning of the stroke of the key-lever.

49. In a type-writing machine, the combination of a type-bar, means to coöperate with the type-bar near the free end thereof to start the type-bar, and other means to complete the printing movement of the bar.

50. In a front-strike type-writing machine, the combination of a type-bar, a finger-key therefor, and an actuating device controlled by said key and disconnected from the type-bar and normally resting against the type-bar.

51. In a front-strike type-writing machine, the combination of a type-bar movable on a fixed axis from its normal to its printing position, a lever on which said type-bar normally rests, and means to actuate the lever to operate the type-bar.

52. In a front-strike type-writing machine, the combination of a type-bar, an actuating device disconnected from the type-bar and normally resting against it and adapted to actuate it, a key for said actuating device, and separate means controlled by said key to operate the type-bar.

53. In a front-strike type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever and connected to said bar, and a separate actuating-lever, against which the type-bar normally rests, to coöperate with the free end portion of the type-bar to actuate it, and means to connect said actuating-lever to the key-lever.

54. In a front-strike type-writing machine, the combination of a series of segmentally-arranged type-bars, a series of key-levers therefor, connections between each type-bar and its associated key-lever to actuate the bar, and a series of actuating devices, one device for each type-bar, resting normally against the type-bars, and means to connect each of said actuating devices with its associated key-lever.

55. In a front-strike type-writing machine, the combination of a series of segmentally-arranged type-bars, a series of key-levers therefor, lost-motion connections between each type-bar and its associated key-lever to actuate the bar, and a series of actuating devices, one device for each type-bar, resting normally against the type-bars and forming means to start the type-bars, and means to connect each of said actuating devices with its associated key-lever.

56. In a front-strike type-writing machine, the combination of a series of segmentally-arranged type-bars, a series of key-levers therefor, a series of sublevers connected to said key-levers and type-bars, a series of separate actuating-levers, one for each type-bar, disconnected from and resting normally against the type-bars, and connections between each sublever and its associated actuating-lever.

57. In a front-strike type-writing machine, the combination of a series of segmentally-arranged type-bars, a series of key-levers therefor, a series of sublevers connected to said key-levers and type-bars by lost-motion connections, a series of separate actuating-levers, one for each type-bar, disconnected from the type-bars and resting normally against them near their free ends, and connections between each sublever and its associated actuating-lever.

58. In a type-writing machine, the combination of a series of type-bars and a series of rebound-reducing devices each adapted to intercept a returning type-bar and then move with it in the direction of the movement of the bar back to normal position.

59. In a type-writing machine, the combination of a type-bar and a key-controlled movable abutment adapted to intercept the return movement of the type-bar and move back with it in the general direction of the movement of the type-bar and thus reduce its rebound.

60. In a type-writing machine, the combination of a type-bar, a key therefor, an antirebounding device independent of the type-bar and movable in the same direction as the type-bar, and means controlled by the key for moving said antirebounding device.

61. In a type-writing machine, the combination of a type-bar, an antirebounding device to receive the impact of the type-bar in its return movement and against which device the type-bar normally rests, and means for automatically moving the said device with the

type-bar back to the normal position and in the general direction of the movement of type-bar during the return movement of the latter.

62. In a type-writing machine, the combination of a type-bar, means for actuating the type-bar, and an independent lever acting in the path of the type-bar during the return movement thereof to limit the rebound of the type-bar.

63. In a type-writing machine, the combination of a type-bar, means for actuating the type-bar, an independent lever acting in the path of the type-bar during the return movement thereof to limit the rebound of the type-bar, and means controlled by the type-bar-actuating means for moving said independent lever.

64. In a type-writing machine, the combination of a type-bar, and a lever to receive the impact thereof during the return movement of the type-bar, the lever being movable in the same direction as the type-bar during its return movement.

65. In a type-writing machine, the combination of a type-bar, and a lever to receive the impact thereof during the return movement of the type-bar, the lever being movable in the same direction as the type-bar during its movements to and from the printing position.

66. In a type-writing machine, the combination of a type-bar, a type-bar-antirebounding lever, with which the type-bar makes contact near its free end during the return movement thereof, a key-lever for the type-bar, and connections between said key-lever and said type-bar-antirebounding lever.

67. In a type-writing machine, the combination of a type-bar, a finger-key therefor, a lost-motion connection between said type-bar and key and operable at the first portion of the key depression, and an antirebounding device controlled by the finger-key to take the impact of the type-bar during the return movement of the bar.

68. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever and connected to the type-bar by a lost-motion connection that is operable at the first portion of the depression of said key-lever, an antirebounding device to receive the impact of the type-bar, and means connected to the sublever to actuate said antirebounding device.

69. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever and connected to the type-bar by a lost-motion connection, an antirebounding-lever to receive the impact of the type-bar, and means controlled by the key-lever to subject said antirebounding-lever to the impact of the type-bar and move it with the type-bar during a return of the bar to its normal position.

70. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever and connected to the type-bar by a lost-motion connection, an antirebounding bell-crank to receive the impact of the type-bar in its return movement, and a link connecting said bell-crank and sublever.

71. In a type-writing machine, the combination of a type-bar, a key-lever therefor, a sublever controlled by said key-lever and connected to the type-bar by a lost-motion connection, an antirebounding bell-crank to take the impact of the type-bar in its return movement, and a link connecting said bell-crank and sublever and constituting a means to transmit the force of said impact to the sublever.

72. In a type-writing machine, the combination of a series of type-bars, a series of finger-keys therefor, a series of antirebounding-levers to take the impact of the type-bars in their backward movements, there being one lever for each type-bar, and means controlled by each of said finger-keys for moving the associated antirebounding-lever with the type-bar in its backward movement and in the general direction of movement of the type-bar.

73. In a type-writing machine, the combination with a type-bar of a combined starting and antirebounding device to act on the type-bar near its free end, and additional means for actuating the type-bar.

74. In a type-writing machine, the combination with a type-bar of a positively-actuated combined starting and antirebounding device to act on the type-bar near its free end, and additional means for actuating the type-bar.

75. In a type-writing machine, the combination of a type-bar, a key-lever, a combined starting and antirebounding device to act on the type-bar near its free end, a positively-acting connection between the key-lever and said device, and additional means for actuating the type-bar.

76. In a type-writing machine, the combination with a type-bar, of a starting device, said device constituting also a rest for the type-bar, and additional means for actuating the type-bar.

77. In a type-writing machine, the combination with a type-bar, of a starting device, said device being adjacent to the free end of the type-bar and constituting also a rest for the type-bar, and additional means for actuating the type-bar.

78. In a type-writing machine, the combination with a type-bar, of a type-bar rest movable to start the bar in its printing movement, and additional means to continue the movement of the type-bar.

79. In a type-writing machine, the combination with a type-bar, of a type-bar rest adjacent to the free end of the type-bar, said rest being movable to start the bar in its printing movement, and additional means to continue the movement of the type-bar.

80. In a type-writing machine, the combination with type-bars, of segmentally-arranged starting devices to start the type-bars, and other means to coact with said starting devices in imparting to the type-bars continuous swinging movements terminating with the action of the type at the printing-point.

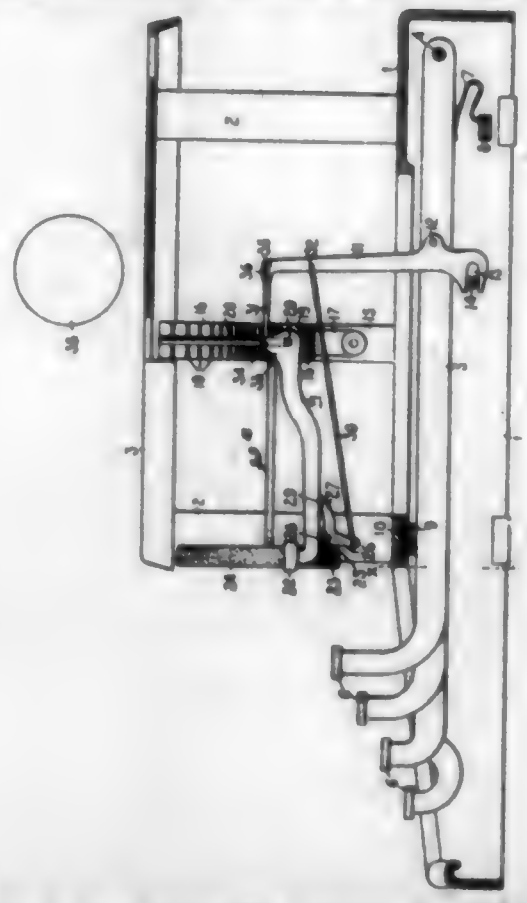
81. In a type-writing machine, the combination with type-bars, of segmentally-arranged starting devices to act on the type-bars near their free ends when the type-bars are in and near their normal positions.

82. In a type-writing machine, the combination of segmentally-arranged pivoted type-bars movable upward and backward to their printing positions, a supporting-segment adjacent to the free ends of the type-bars when they are in their normal positions, and starting devices mounted on said segment to act on the type-bars.

83. In a type-writing machine, the combination of segmentally-arranged pivoted type-bars movable upward and backward to their printing positions, a supporting-segment adjacent to the free ends of the type-bars when they are in their normal positions, and starting devices pivotally mounted on the segment to act on the type-bars.

84. In a type-writing machine, the combination of segmentally-arranged pivoted type-bars movable upward and backward to their printing positions, a supporting-segment comprising ears or hangers adjacent to the free ends of the type-bars when they are in their normal positions, and starting devices pivotally mounted on said ears or hangers to act on the type-bars.

815,840. TYPE-WRITING MACHINE. JACOB FELBEL, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 24, 1903. Serial No. 166,842.



Claim.—1. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a lever, a device to start the type-bar on its printing movement, and another device to continue the printing movement of the type-bar, said devices being separately connected with said lever, and said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

2. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a lever, a device to start the type-bar on its printing movement, and a link pivotally connected to the type-bar and operative to continue the printing movement

thereof, the starting device and link being separately connected with said lever, and said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

3. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a lever, and a link pivotally connected to the type-bar and lever and operative by the lever to move the common pivot of the type-bar and link into alinement with the pivot of the type-bar and the common pivot of the link and lever before the completion of the printing movement of the type-bar.

4. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a lever, a link pivotally connected to the type-bar and lever and operative by the lever to move the common pivot of the type-bar and link into alinement with the pivot of the type-bar and the common pivot of the link and lever before the completion of the printing movement of the type-bar, and a connection between the starting device and said lever.

5. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a link pivotally connected to the type-bar, a lever, a lost-motion connection securing the link to the lever, means to actuate the lever to move the common pivot of the type-bar and link into alinement with the lost-motion connection and the pivot of the type-bar, before the completion of the printing movement of the type-bar, and a connection between the starting device and said lever.

6. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a starting device to push the type-bar from its normal position, said device being arranged to act on the type-bar between the printing end and pivot of the type-bar, and another device operative to pull the type-bar from the starting device toward its printing position, said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

7. In a type-writing machine, the combination of a pivoted type-bar, an actuating mechanism comprising a key-lever, a device to start the type-bar on its printing movement, and another device to continue the printing movement of the type-bar, said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement, and said key-lever being operative on the type-bar at the end of its printing movement to instantly retract the type-bar.

8. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a lever, a link pivotally connected to the type-bar and lever and operative by the lever to move the common pivot of the type-bar and link into alinement with the pivot of the type-bar and the common pivot of the link and lever, before the completion of the printing movement of the type-bar, and a link connecting the starting device with said lever.

9. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a link pivotally connected to the type-bar, a lever, a lost-motion connection securing the link to the lever, means to actuate the lever to move the common pivot of the type-bar and link into alinement with the lost-motion connection and the pivot of the type-bar, before the completion of the printing movement of the type-bar, and a link connecting the starting device with said lever.

10. In a type-writing machine, the combination of a set of pivoted type-bars, and actuating mechanism comprising a system of levers, a set of devices operative on the type-bars respectively to start the type-bars on their printing movements, and a set of other devices operative on the type-bars respectively to continue the printing movements of the type-bars, said sets of devices being separately connected with said levers, and said mechanism including means to render each type-bar further movable by its momentum to complete its printing movement.

11. In a type-writing machine, the combination of a set of pivoted type-bars, and actuating mechanism comprising key-levers, devices operative on the type-bars respectively to start the type-bars on their printing movements, and other devices operative on the type-bars respectively to continue the printing movements of the type-bars, said mechanism including means to render each type-bar further movable by its momentum to complete its printing movement, and said key-levers being operative on the type-bars at the end of their printing movements to instantly retract the type-bars.

12. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a lever, and a connecting device pivotally secured to the type-bar and lever and operative to move the common pivot of the type-bar and connecting device into alinement with that of the connecting device and lever.

13. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, another device pivotally connected to the type-bar, the axis of the common pivot of this device and type-bar being in a plane that both contains the pivotal axis of the type bar and forms right angles or almost right angles with a plane also containing said pivotal axis and cutting the type of the type-bar, and means to actuate the latter device to continue the printing movement of the type-bar.

14. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a lever extending above the key-levers and movable backward and forward at its upper end, and a link pivotally connected to the type-bar and lever, the axis of the common pivot of the link and type-bar being in a plane that both contains the pivotal axis of the type-bar and forms right angles or almost right angles with a plane also containing said pivotal axis and cutting the type of the type-bar.

15. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, a key-lever, a sublever mounted on and extending upward from the key-lever behind the type-bar and movable backward and forward at its upper end, and a link pivotally connected to the type-bar above the pivotal axis thereof and to the sublever, the axis of the common pivot of the link and type-bar being in a plane that both contains the pivotal axis of the type-bar and forms right angles or almost right angles with a plane also containing said pivotal axis and cutting the type of the type-bar.

16. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever, and a device pivotally connected to the sublever and to the type-bar and operative to actuate the type-bar, the pivot connecting said device with the type-bar being movable into alinement with the other pivot of said device and the pivot of the type-bar.

17. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever, a link pivotally connected to the sublever and to the type-bar and operative by the sublever to move the common pivot of the type-bar and link into alinement with the pivot of the type-bar and the common pivot of the link and sublever, before the completion of the printing movement of the type-bar.

18. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever, and a device connecting the sublever with the type-bar and operative to actuate the type-bar in its printing movement, said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement, and being operative on the type-bar at the end of its printing movement to instantly retract the type-bar.

19. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever and extending upward therefrom back of the pivoted end of the type-bar, and a link pivoted at its rear end to the sublever and at its front end to the type-bar, the front pivot of said link being movable into alinement with the rear pivot of the link and the pivot of the type-bar.

20. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever and extending upward therefrom, back of the pivoted end of the type-bar, a link pivotally connected to the upper end of the sublever and to the type-bar and operative by the sublever to move the common pivot of the type-bar and link into alinement with the pivot of the type-bar and the common pivot of the link and sublever, before the completion of the printing movement of the type-bar.

21. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever and extending upward therefrom back of the pivoted end of the type-bar, and a device connecting the upper end of the sublever with the type-bar and operative to actuate the type-bar in its printing movement, said mechanism including means to render the type-bar further movable

by its momentum to complete its printing movement, and being operative on the type-bar at the end of its printing movement to instantly retract the type-bar.

22. In a front-strike type-writing machine, the combination with the platen, of a type-bar having a pivot as 20 and a crank-arm as 33, a key-lever, a sublever operatively connected to said key-lever, and a link pivoted at 34 to the crank-arm 33 and pivotally connected at 35 to the sublever; the combination and arrangement being such that the pivots 20, 34 and 35 are all adapted to come into alinement before the type strikes the platen.

23. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a lever, a starting device connected with said lever and operative thereby to start the type-bar on its printing movement and another device separately connected with said lever and operative thereby to continue the printing movement of the type-bar, said mechanism also comprising means to render the type-bar further movable by its momentum to complete its printing movement.

24. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, said device being arranged to act on the type-bar between the printing end and pivot of the type-bar, and another device to continue the printing movement of the type-bar, said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

25. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever, a starting device operative on the type-bar between the printing end and pivot of the type-bar, a connection extending from the sublever to the starting device, and a device pivotally connected to the sublever and to the type-bar and operative to continue the printing movement of the type-bar, one of the pivotal connections of this device being a lost-motion connection, and said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

815,341. COMBINED BELT TIGHTENER AND FASTENER.

AUSTIN FLEEGER, Chicora, Pa. Filed Oct. 21, 1905. Serial No. 283,782.



Claim.—1. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with a guide and means for holding and releasing said ends, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, the belt end thus connected passing around the guide on the coupling, substantially as described.

2. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with guides around which the belt ends pass, and with eccentric gripping-rollers coöperating with said guides, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

3. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with guide-rollers around which the belt ends pass, and with coöperating eccentric gripping-rollers, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

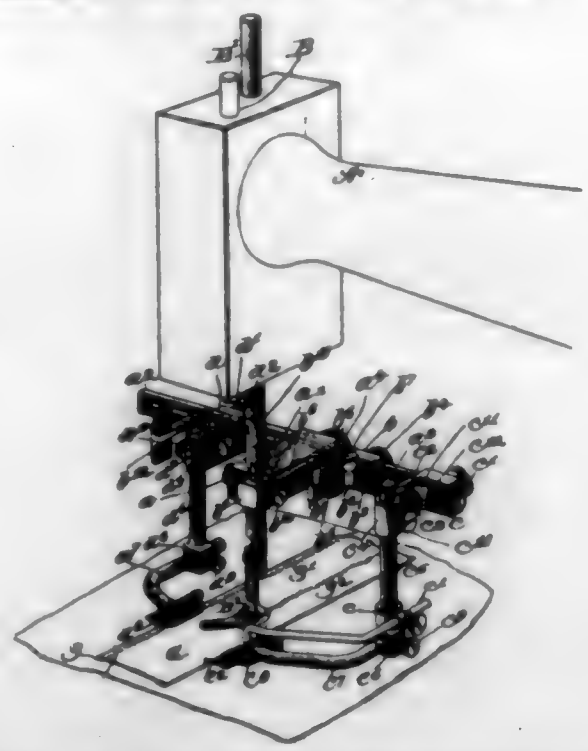
4. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising two hinged members, each having a guide around which the corresponding belt end passes, and means for gripping said belt end, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

5. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising two hinged members, each provided with a guide-roller around which the corresponding belt end passes, and a coöperating eccentric gripping-roller, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

6. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising guides around which the corresponding belt ends pass, means for gripping said belt ends, and means for holding the surplus end portions of the belt, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

815,342. GUIDE FOR SEWING-MACHINES.

BENJAMIN FLEIGEL, Boston, Mass. Filed Oct. 31, 1904. Serial No. 230,626.



Claim.—1. A sewing-machine attachment comprising a gage-support located above the work-support and provided at one side of the line of action of the needle with a pivoted sleeve, a rod extended through said sleeve made adjustable vertically therein, means to confine said rod in its adjusted position, a gage having its shank inserted

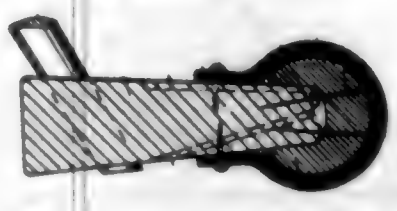
through a hole in said rod, and means coacting with the shank of the gage to provide for its adjustment in said rod.

2. A sewing-machine attachment comprising a gage-support located above the work-support and provided at one side of the line of action of the needle with a plurality of pivoted sleeves, a plurality of gages having their shanks extended through said sleeves and vertically adjustable therein, the shank of one of said gages having thereon an adjustable block and an auxiliary presser-foot having its shank adjustably mounted in said block.

3. In a sewing-machine gage, a block adapted to be carried by a presser-bar, a plurality of supports adjustably connected with said block and extending in opposite direction therefrom, a block adjustably connected with each of said supports, each block having jointed thereto a guide, either or both of which may be readily moved from their inoperative into their operative positions, and vice versa.

4. A sewing-machine gage comprising a gage-support located above the work-support and provided with a plurality of adjustable sleeves, each sleeve having pivotally connected therewith an arm, each arm having adjustably connected with it a gage so that said gage may be adjusted in said arm to be adapted to thickness of material to pass under the gage, either of said gages being adapted to be turned down from its inoperative into its operative position, and means to retain said gages in either their operative or inoperative positions.

815,343. SCRUBBER. GEORGE H. GARNET, Allentown, Pa. Filed Mar. 21, 1905. Serial No. 251,262.



Claim.—1. In a scrubber, the combination, with a narrow block, of a U-shaped strip of absorbent material inclosing the bottom edge of the said block and having wedge-shaped side portions which are secured against the sides of the said block, and a bag of textile material having a rounded lower portion which incloses the said absorbent material and having its upper side portions also secured to the sides of the said block.

2. In a scrubber, the combination, with a block provided with a longitudinal groove in its bottom and passages extending upwardly therefrom, of a strip of absorbent material secured over the bottom of the said block, and a bag of textile material secured over the said absorbent material and the lower part of the block without obstructing the said passages.

815,344. SEAL FOR BOTTLES. GEORGE H. GILLETTE, New York, N. Y., assignor to The Crown Cork & Seal Company, Baltimore, Md., a Corporation of Maryland. Filed Apr. 26, 1905. Serial No. 257,348.



Claim.—1. A sealing medium for bottle-caps and the like, consisting of a packing material in ring form and a ring of non-corrosive material attached to the inner edge of the packing, said packing material projecting from the ring to bear on the bottle-lip, substantially as described.

2. A sealing medium for bottle-caps, consisting of a packing-ring and a carrying-ring within the packing-ring, having upper and lower flanges clamping the said packing-ring between them, said packing material projecting between the flanges to bear on the bottle-lip, substantially as described.

3. In combination with a bottle and a bottle-cap, a sealing medium consisting of a packing-ring and a carrying-ring extending around the inner edge of the packing-ring, said carrying-ring resting on the bottle and preventing contact between the liquid and the packing, which latter projects from the carrying-ring and bears on the bottle-lip, substantially as described.

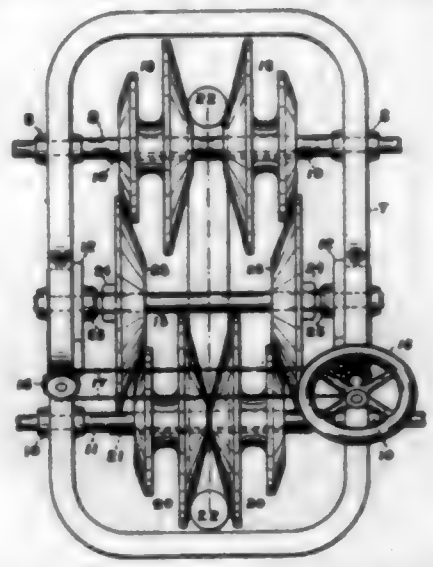
4. In combination, a bottle, a packing-ring to rest on the lip thereof, a carrying-ring extending around the inner edge of the packing-ring and having upper and lower flanges clamping the packing between them and a bottle-cap extending over the sealing medium and locked to the exterior of the bottle, the said packing extending from between the flanges and bearing on the bottle-lip, substantially as described.

5. In combination the bottle, a bottle-cap locked to the exterior thereof, a sealing medium consisting of a packing-ring to rest on the lip of the bottle, a carrying-ring extending around the inner edge of the packing-ring and resting on the bottle and a collet on the inner side of the cap against which the carrying-ring presses, substantially as described.

6. A sealing medium for bottle-caps and the like, consisting of a packing material in ring form and a carrying-ring attached to the inner edge of the packing material, leaving the packing material exposed to bear on the bottle-lip.

7. A closure for bottles comprising an outer member to be locked to the bottle, a second member in the form of a ring and a permanently-attached gasket projecting from said ring to bear on the bottle-lip, substantially as described.

815,345. SPEED-VARYING MECHANISM. GULOW A. GULOWSEN, Huguenot Park, N. Y. Filed July 13, 1905. Serial No. 269,518.



Claim.—1. In a speed-varying mechanism, in combination, driving and driven shafts, on each an expansible pulley, a belt connecting the pulleys; a pair of wheels approximately cone-shaped, the sides of which are in contact with the backs or hubs of the movable elements of both pulleys, said wheels being movable laterally to vary the lengthwise distances between each pair of the pulley elements.

2. In a speed-varying mechanism in combination, driving and driven shafts, on each an expansible pulley, a belt connecting the pulleys; a pair of wheels with adjacent concave sides in contact with convex hubs on the lengthwise-movable elements of the expansible pulleys; a shaft for said wheels, with means for their endwise adjustment; bearings for said shafts, adjustable equal distances simultaneously, to maintain the shaft parallel to the pulley-shafts, in a lateral direction and obliquely, relative to the plane of the pulley-shafts; and suitable means for said adjustment.

815,346. PNEUMATIC TIRE. ROBERT A. HARRIS, Tucson, Ariz. Filed Sept. 24, 1904. Serial No. 225,817.

Claim.—1. The combination with a wheel-rim, of a supplemental rim formed with grooves, tire-flanges having grooves therein registering with the grooves in the supplemental rim, a split ring in each pair of registering grooves, each split ring having lateral projections on its ends, cylindrical elements having cam-grooves therein to receive the lateral projections of said split rings, and means for rotating and locking said cylindrical elements.

2. The combination with a wheel-rim, of a supplemental rim formed with grooves and slots, angular tire-flanges formed with slots, and having grooves therein registering with the grooves in the supplemental rim, a split ring in each pair of registering grooves, each split ring having lateral projections on its ends, cylindrical elements having cam-grooves therein to receive the lateral projections on the split rings, each of said cylindrical elements having a removable handle, sliding locking members on the wheel-rim to lock the cylindrical elements, and brackets upon the wheel-rim fitting into the slots of the supplemental rim and angular tire-flanges.

3. The combination with a wheel-rim, of a supplemental rim formed with grooves and inclined faces, tire-flanges fitted upon said

by its momentum to complete its printing movement, and being operative on the type-bar at the end of its printing movement to instantly retract the type-bar.

23. In a front-strike type-writing machine, the combination with the platen, of a type-bar having a pivot as 20 and a crank-arm as 33, a key-lever, a sublever operatively connected to said key-lever, and a link pivoted at 34 to the crank-arm 33 and pivotally connected at 35 to the sublever; the combination and arrangement being such that the pivots 20, 34 and 35 are all adapted to come into alinement before the type strikes the platen.

23. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a lever, a starting device connected with said lever and operative thereby to start the type-bar on its printing movement and another device separately connected with said lever and operative thereby to continue the printing movement of the type-bar, said mechanism also comprising means to render the type-bar further movable by its momentum to complete its printing movement.

24. In a type-writing machine, the combination of a pivoted type-bar, and actuating mechanism comprising a device to start the type-bar on its printing movement, said device being arranged to act on the type-bar between the printing end and pivot of the type-bar, and another device to continue the printing movement of the type-bar, said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

25. In a type-writing machine, the combination of a front-strike pivoted type-bar, and actuating mechanism comprising a key-lever, a sublever operatively connected with the key-lever, a starting device operative on the type-bar between the printing end and pivot of the type-bar, a connection extending from the sublever to the starting device, and a device pivotally connected to the sublever and to the type-bar and operative to continue the printing movement of the type-bar, one of the pivotal connections of this device being a lost-motion connection, and said mechanism including means to render the type-bar further movable by its momentum to complete its printing movement.

815,341. COMBINED BELT TIGHTENER AND FASTENER.

AUSTIN FLEBBER, Chicora, Pa. Filed Oct. 21, 1905. Serial No. 283,752.



Claim.—1. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with a guide and means for holding and releasing said ends, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, the belt end thus connected passing around the guide on the coupling, substantially as described.

2. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with guides around which the belt ends pass, and with eccentric gripping-rollers coöperating with said guides, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

3. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling being provided with guide-rollers around which the belt ends pass, and with coöperating eccentric gripping-rollers, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

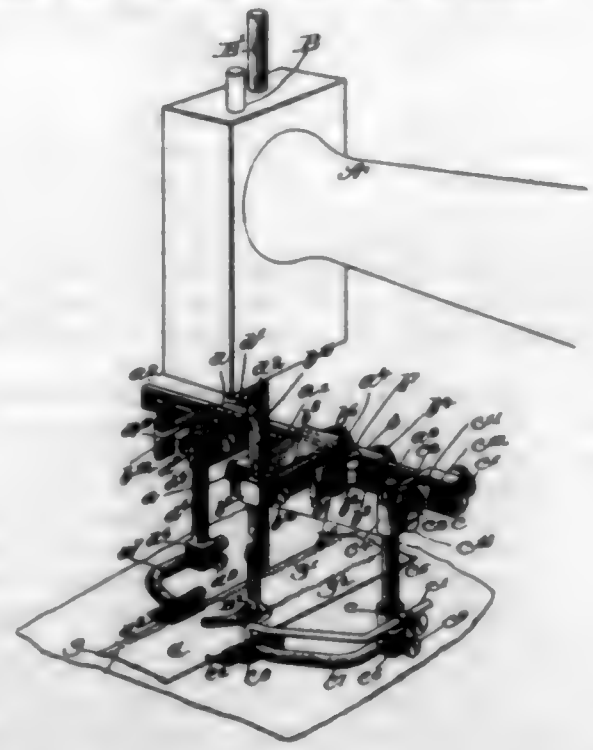
4. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising two hinged members, each having a guide around which the corresponding belt end passes, and means for gripping said belt end, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

5. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising two hinged members, each provided with a guide-roller around which the corresponding belt end passes, and a coöperating eccentric gripping-roller, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

6. Driving and driven pulleys, a belt, and a coupling connecting the ends of the belt and forming a belt-fastener which unites said ends when the belt is in use, said coupling comprising guides around which the corresponding belt ends pass, means for gripping said belt ends, and means for holding the surplus end portions of the belt, in combination with a rope or other flexible connection, a guiding-pulley around which said rope passes, and means for connecting one end of said rope to the driving-pulley and the other end of said rope to the adjacent end of the belt, substantially as described.

815,342. GUIDE FOR SEWING-MACHINES.

BENJAMIN FLEIGEL, Boston, Mass. Filed Oct. 31, 1904. Serial No. 230,626.



Claim.—1. A sewing-machine attachment comprising a gage-support located above the work-support and provided at one side of the line of action of the needle with a pivoted sleeve, a rod extended through said sleeve made adjustable vertically therein, means to confine said rod in its adjusted position, a gage having its shank inserted

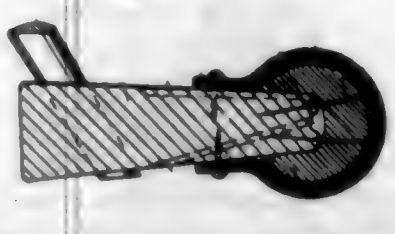
through a hole in said rod, and means coacting with the shank of the gage to provide for its adjustment in said rod.

2. A sewing-machine attachment comprising a gage-support located above the work-support and provided at one side of the line of action of the needle with a plurality of pivoted sleeves, a plurality of gages having their shanks extended through said sleeves and vertically adjustable therein, the shank of one of said gages having thereon an adjustable block and an auxiliary presser-foot having its shank adjustably mounted in said block.

3. In a sewing-machine gage, a block adapted to be carried by a presser-bar, a plurality of supports adjustably connected with said block and extending in opposite direction therefrom, a block adjustably connected with each of said supports, each block having jointed thereto a guide, either or both of which may be readily moved from their inoperative into their operative positions, and vice versa.

4. A sewing-machine gage comprising a gage-support located above the work-support and provided with a plurality of adjustable sleeves, each sleeve having pivotally connected therewith an arm, each arm having adjustably connected with it a gage so that said gage may be adjusted in said arm to be adapted to thickness of material to pass under the gage, either of said gages being adapted to be turned down from its inoperative into its operative position, and means to retain said gages in either their operative or inoperative positions.

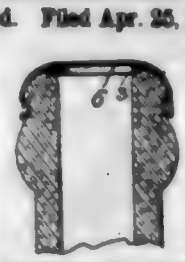
815,343. SCRUBBER. George H. Garret, Allentown, Pa. Filed Mar. 21, 1905. Serial No. 251,268.



Claim.—1. In a scrubber, the combination, with a narrow block, of a U-shaped strip of absorbent material inclosing the bottom edge of the said block and having wedge-shaped side portions which are secured against the sides of the said block, and a bag of textile material having a rounded lower portion which incloses the said absorbent material and having its upper side portions also secured to the sides of the said block.

2. In a scrubber, the combination, with a block provided with a longitudinal groove in its bottom and passages extending upwardly therefrom, of a strip of absorbent material secured over the bottom of the said block, and a bag of textile material secured over the said absorbent material and the lower part of the block without obstructing the said passages.

815,344. SEAL FOR BOTTLES. George H. Gillette, New York, N. Y., assignor to The Crown Cork & Seal Company, Baltimore, Md., a Corporation of Maryland. Filed Apr. 25, 1905. Serial No. 257,348.



Claim.—1. A sealing medium for bottle-caps and the like, consisting of a packing material in ring form and a ring of non-corrosive material attached to the inner edge of the packing, said packing material projecting from the ring to bear on the bottle-lip, substantially as described.

2. A sealing medium for bottle-caps, consisting of a packing-ring and a carrying-ring within the packing-ring, having upper and lower flanges clamping the said packing-ring between them, said packing material projecting between the flanges to bear on the bottle-lip, substantially as described.

3. In combination with a bottle and a bottle-cap, a sealing medium consisting of a packing-ring and a carrying-ring extending around the inner edge of the packing-ring, said carrying-ring resting on the bottle and preventing contact between the liquid and the packing, which latter projects from the carrying-ring and bears on the bottle-lip, substantially as described.

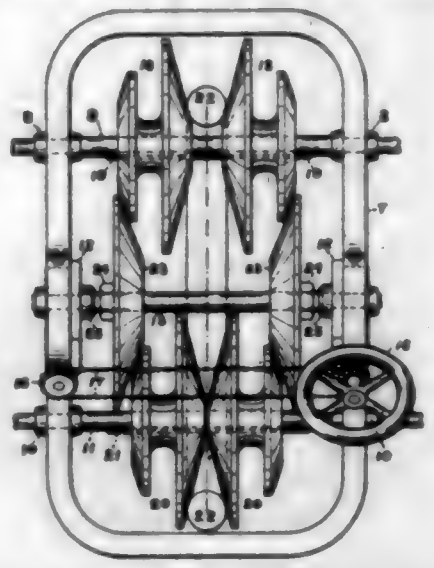
4. In combination, a bottle, a packing-ring to rest on the lip thereof, a carrying-ring extending around the inner edge of the packing-ring and having upper and lower flanges clamping the packing between them and a bottle-cap extending over the sealing medium and locked to the exterior of the bottle, the said packing extending from between the flanges and bearing on the bottle-lip, substantially as described.

5. In combination the bottle, a bottle-cap locked to the exterior thereof, a sealing medium consisting of a packing-ring to rest on the lip of the bottle, a carrying-ring extending around the inner edge of the packing-ring and resting on the bottle and a collet on the inner side of the cap against which the carrying-ring presses, substantially as described.

6. A sealing medium for bottle-caps and the like, consisting of a packing material in ring form and a carrying-ring attached to the inner edge of the packing material, leaving the packing material exposed to bear on the bottle-lip.

7. A closure for bottles comprising an outer member to be locked to the bottle, a second member in the form of a ring and a permanently-attached gasket projecting from said ring to bear on the bottle-lip, substantially as described.

815,345. SPEED-VARYING MECHANISM. Gulow A. Gulowsen, Huguenot Park, N. Y. Filed July 13, 1905. Serial No. 269,519.



Claim.—1. In a speed-varying mechanism, in combination, driving and driven shafts, on each an expansible pulley, a belt connecting the pulleys; a pair of wheels approximately cone-shaped, the sides of which are in contact with the backs or hubs of the movable elements of both pulleys, said wheels being movable laterally to vary the lengthwise distances between each pair of the pulley elements.

2. In a speed-varying mechanism in combination, driving and driven shafts, on each an expansible pulley, a belt connecting the pulleys; a pair of wheels with adjacent concave sides in contact with convex hubs on the lengthwise-movable elements of the expansible pulleys; a shaft for said wheels, with means for their endwise adjustment; bearings for said shafts, adjustable equal distances simultaneously, to maintain the shaft parallel to the pulley-shafts, in a lateral direction and obliquely, relative to the plane of the pulley-shafts; and suitable means for said adjustment.

815,346. PNEUMATIC TIRE. Robert A. Harris, Tucson, Ariz. Filed Sept. 24, 1904. Serial No. 225,817.

Claim.—1. The combination with a wheel-rim, of a supplemental rim formed with grooves, tire-flanges having grooves therein registering with the grooves in the supplemental rim, a split ring in each pair of registering grooves, each split ring having lateral projections on its ends, cylindrical elements having cam-grooves therein to receive the lateral projections of said split rings, and means for rotating and locking said cylindrical elements.

2. The combination with a wheel-rim, of a supplemental rim formed with grooves and slots, angular tire-flanges formed with slots, and having grooves therein registering with the grooves in the supplemental rim, a split ring in each pair of registering grooves, each split ring having lateral projections on its ends, cylindrical elements having cam-grooves therein to receive the lateral projections on the split rings, each of said cylindrical elements having a removable handle, sliding locking members on the wheel-rim to lock the cylindrical elements, and brackets upon the wheel-rim fitting into the slots of the supplemental rim and angular tire-flanges.

3. The combination with a wheel-rim, of a supplemental rim formed with grooves and inclined faces, tire-flanges fitted upon said

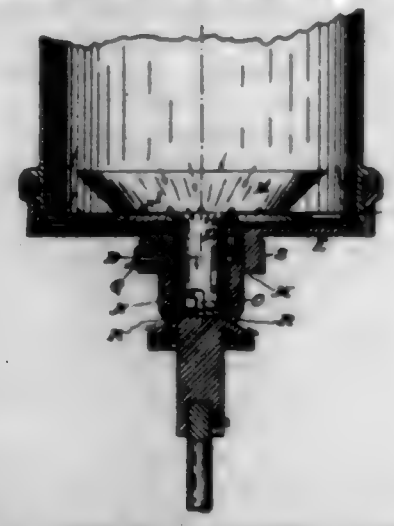
inclined faces, and having grooves therein registering with the grooves of the supplemental rim, a split ring in each pair of registering grooves, each split ring having lateral projections on its ends, cylindrical elements having cam-grooves therein to receive the lateral projections on the split rings, means for rotating and locking said cylindrical elements, a tire-case having its ends fitted between the tire-flanges, said ends having internal enlargements, and a locking-ring located between the ends of said case, said locking-ring having wings fitted over the internal enlargements of the case.



4. The combination with a wheel-rim, of a tire supported thereby, means interiorly of the tire to lock the same to the rim, and guard-strips interposed between the rim and the tire, said guard-strips being secured to the rim, and roughened on their faces adjacent the tire.

5. The combination with a wheel-rim, of a tire thereon, and a locking-ring for securing the tire in position, said locking-ring having an air-chamber approximately elliptical in cross-section and being thickened on one side of said air-chamber for the purposes specified.

815,847. BOWL FOR CENTRIFUGAL CREAM-SEPARATORS. WILLIAM C. HARTMANN, Lansing, Mich., assignor to Omega Separator Company, Lansing, Mich. Filed Sept. 27, 1904. Serial No. 228,940.

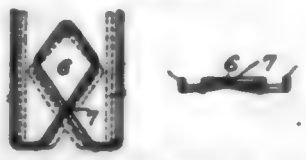


Claim.—1. In combination a rotatable separator-bowl, a bottom removably attached to said bowl, and having on its lower surface a projection containing a central cavity and two outlets, one communicating with the upper surface of said bottom near the center, the other, with said central cavity, a false bottom extending completely across beneath the chamber in the body of the bowl and provided with a conical diaphragm attached to its upper surface, with a tube passing through said false bottom and fitting the central cavity formed in the bottom of the bowl, substantially as described.

2. In combination, a rotatable separator-bowl, a bottom removably attached to said bowl, and having on its lower surface a projection containing a central cavity and two outlets, one communicating with the upper surface of said bottom near the center, the other with said central cavity, a false bottom extending completely across beneath the chamber in the body of the bowl, and provided with a conical diaphragm attached to its upper surface, and a tube passing through said false bottom and fitting the central cavity formed in the bottom of the bowl, with a regulating-screw fitted into one of said outlets, substantially as described.

3. In combination, a rotatable separator-bowl, a bottom removably attached to said bowl, and having on its lower surface a projection containing a central cavity and two outlets, one communicating with the upper surface of said bottom near the center, the other with said central cavity, a false bottom extending completely across beneath the chamber in the body of the bowl and provided with a conical diaphragm attached to its upper surface, a tube passing through said false bottom and fitting the central cavity formed in the bottom of the bowl, and means for securing said false bottom in position in the bowl, with a regulating-screw fitted into one of said outlets, substantially as described.

815,848. PAPER-CLIP. HAROLD B. HAWKINS, Kansas City, Mo. Filed Mar. 2, 1905. Serial No. 248,030.



Claim.—1. A paper-clip consisting of a pair of longitudinal clamping members having downturned rear ends and humps located between said rear ends and the forward terminals of said members, transverse members communicating with said rear ends, and another clamping member arranged in the form of a loop having crossed terminals communicating with the inner ends of the transverse members.

2. A paper-clip consisting of a pair of longitudinal clamping members having upturned forward ends and downturned rear ends, transverse members communicating with said rear ends, and a diamond-shaped loop having two crossed ends communicating with the inner terminals of the transverse members.

3. A paper-clip comprising a pair of parallel clamping members having upturned forward ends, downturned rear ends, and humps located between said forward and rear ends; transverse members communicating with the rear ends of said clamping members, and another clamping member arranged in the form of a loop having crossed terminals communicating with the inner ends of the transverse portions.

815,849. BLANK. GEORGE W. HENNE, Cleveland, Ohio, assignor to The Automatic Stamping Machine Company, Phœnix, Ariz., a Corporation of Arizona. Filed Sept. 9, 1904. Serial No. 223,905.



Claim.—A circular blank formed with a circular bead having a concave outer face.

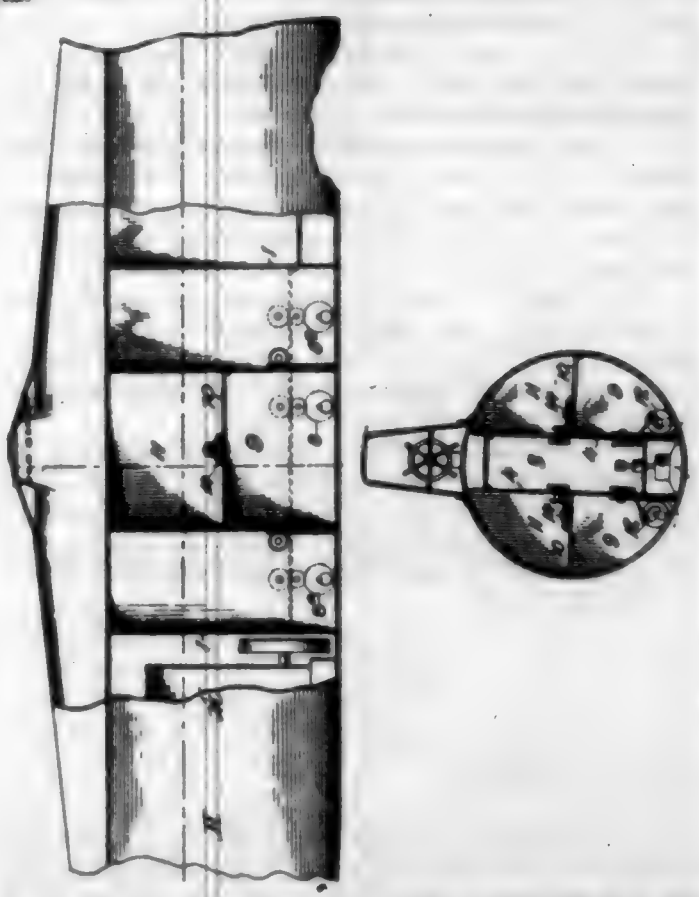
815,850. SUBMARINE BOAT. JOHN P. HOLLAND, Newark, N. J. Filed Sept. 24, 1904. Serial No. 225,305.

Claim.—1. A submarine boat, having all of its water-ballast tanks and liquid-fuel tanks grouped symmetrically about the center of buoyancy of the boat, such tank-space extending from top to bottom and from side to side of the hull of the boat, and having a fore-and-aft gangway extending through said tank-space.

2. A submarine boat, having all of its water-ballast and fuel-tank space included between two parallel transverse, vertical bulkheads in the boat and extending to the hull thereof above, below and at both sides, and said bulkheads, disposed respectively at equal distances forward and after the boat's center of buoyancy, and having fore-and-aft bulkheads between the transverse bulkheads and extending from top to bottom of the hull, said fore-and-aft bulkheads forming the sides of a fore-and-aft gangway through the tank-space.

3. A submarine boat, having two transverse bulkheads 1, 1,

disposed at equal distances, respectively forward of and aft the boat's center of buoyance and extending to the top, bottom and sides of the hull of the boat, two parallel, upright, fore-and-aft bulkheads 4, 4, extending from one of said transverse bulkheads to the other, forming thus a gangway 3 opening out at 2 through the transverse bulkheads, and the space inclosed between said transverse bulkheads partitioned to form all the water-ballast and liquid-fuel tanks of the boat, such tank-space occupying about one-sixth of the boat's entire length.



4. A submarine boat, having grouped symmetrically about its center of buoyancy a receiving-tank 7, four ballast-tanks 13 which extend from the bottom to the top of the boat, and tanks 9 and 11, the tanks 11 being superposed on the respective tanks 9, each pair of such tanks being disposed between two of the tanks 13 at that side and extending from top to bottom of the boat.

5. A submarine boat, having about one-seventh of the entire length of the boat at the middle of the latter inclosed to form a tank-space, said space being divided into a gangway 3, a tank 7 under the floor of the gangway, two lower middle tanks 9, two upper middle tanks 11, four tanks 13, all grouped symmetrically about the center of buoyancy of the boat, and means for controlling the flow of liquid to and between the tanks.

815,351. **STOPPER.** WILLIAM I. KAMER, Seattle, Wash. Filed May 16, 1905. Serial No. 260,720.

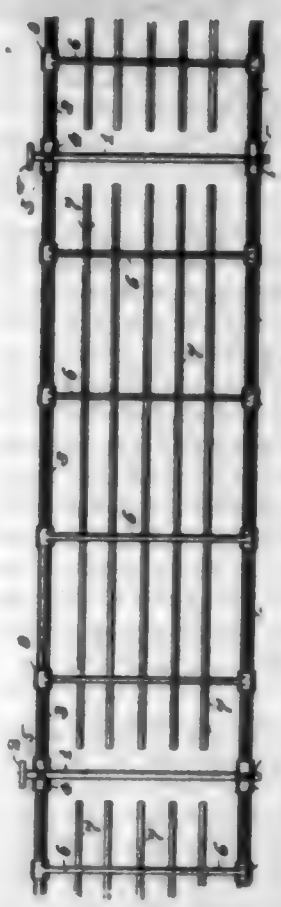


Claim.—1. A stopper of the type set forth consisting of a flexible body portion formed on one of its faces with a boss, and a bolt projecting through said boss, the portion of the bolt below said boss being unthreaded.

2. A stopper of the type set forth having a flexible body portion formed on one of its faces with a boss, a bolt projecting through said boss and being formed with a threaded portion, and a nut on said threaded portion, the portion of the bolt below said threaded portion being unthreaded, substantially as and for the purpose specified.

3. A device of the type set forth which serves as a combined stopper and means for removing obstructions from the outlet-pipe of a sink or the like, consisting of a disk having a flexible outer portion, in combination with a sink having an outlet, means connected to the central portion of the stopper for causing the same to be alternately raised and lowered, said stopper being arranged over the outlet of the sink and having its outer portion engaging the bottom of the sink about said outlet thereof, said outer portion of the stopper being extended, whereby it will not be disengaged from the bottom of the sink while said central portion is being raised and lowered, and guide means depending from the lower face of said stopper, for the purpose specified.

815,352. **CAR-RACK.** HERBERT E. KELLER, New York, N. Y. Filed Sept. 18, 1905. Serial No. 278,364.



Claim.—1. In continuous car-racks, brackets, rack members and fastening-sleeves, each sleeve engaging the ends of a plurality of said members and securing means to simultaneously secure said members to the corresponding bracket.

2. In continuous car-racks, brackets, integral body members and split fastening-sleeves, each engaging the adjacent ends of a plurality of said body members to simultaneously and detachably secure said members to said brackets.

3. In car-racks, brackets, a rack member, split sleeves engaging the ends of said member and securing means engaging said sleeves to detachably secure said sleeves and rack member to said brackets.

4. In car-racks, brackets, a rack member, split sleeves engaging the ends of said member and securing-bolts in line with the ends of said member to detachably secure said member to said brackets.

5. In continuous car-racks, brackets, rack members, and sleeves, each sleeve engaging the adjacent ends of a plurality of said members and securing means in line with said ends to detachably secure said members to said brackets.

6. In continuous car-racks, brackets, rack members, split fastening-sleeves, each engaging the adjacent ends of a plurality of said members, and securing means passing transversely through said sleeves in line with said ends to simultaneously and detachably secure said members to said brackets.

7. In continuous car-racks, brackets, rack members, fastening members engaging the adjacent ends of a plurality of said rack members and securing means passing transversely through said fastening members in line with said ends to simultaneously and detachably secure said rack members to said brackets.

8. In continuous car-racks, brackets, rack members and fastening members, each engaging the adjacent ends of a plurality of said rack members to simultaneously and detachably secure said rack members to said brackets.

9. In car-racks, brackets, rack members, fastening-sleeves engaging the ends of said members and securing means passing transversely through said sleeves in line with said ends to detachably secure said members to said brackets.

10. In car-racks, brackets, a rack member, split sleeves engaging the ends of said member and transverse securing-bolts in line with the ends of said member to detachably secure said sleeves and member to said brackets.

11. In car-racks, brackets, a rack member and split sleeves upon said brackets and engaging the ends of said member to detachably secure the said member to said brackets.

815,353. ARTICLE-HOLDING MEANS. DORA KING, Tamaroa, Ill. Filed Dec. 18, 1904. Serial No. 237,559.

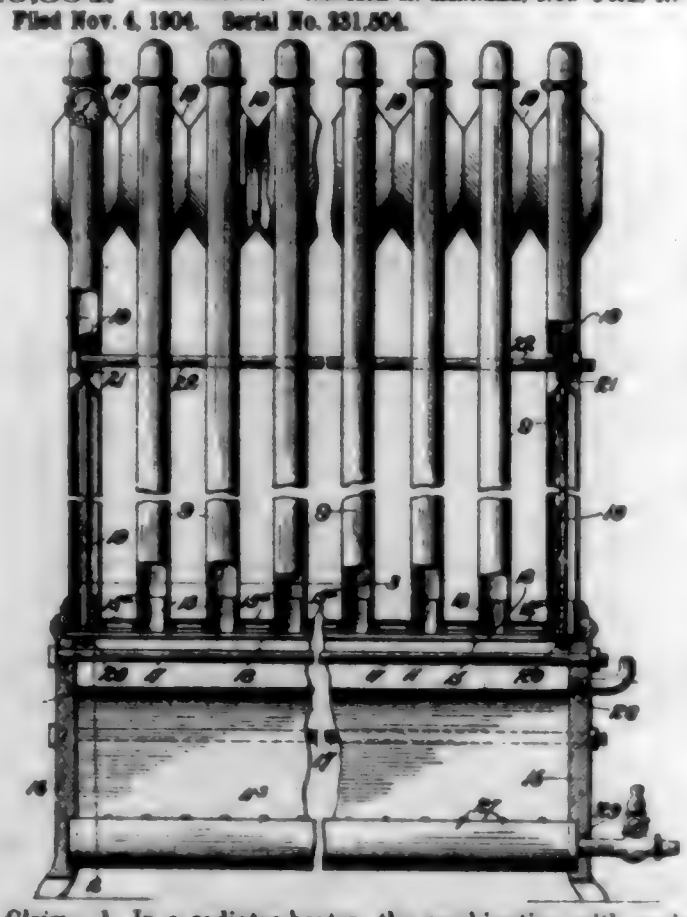


Claim.—1. An article-holding device comprising a support including a portion having a keyhole-slot, a swinging pin, and a device for operating the pin, said device extending through the slot and having an enlargement that passes through the larger portion of the slot and is of too great size to pass through the smaller portion thereof.

2. An article-holding device comprising a casing having a keyhole-slot, a rock-shaft journaled in the casing, a holding-pin carried by the shaft and projecting from the casing, a stem slidably passing through the keyhole-slot and having a crank connection with the slot, and an enlargement on the pin arranged to pass through the larger portion of the keyhole-slot and engage the inner and outer faces of the casing to hold the rock-shaft in different positions.

3. An article-holding device comprising a casing having slots in its rear wall and keyhole-slots in its opposite side walls, spaced rock-shafts journaled within the casing and having pins projecting through the rear-wall slots, stems having pivotal crank connections with the rock-shafts and extending through the keyhole-slots, and enlargements carried by the pins and movable into and out of the casing through said keyhole-slots, in combination with an article carried by the casing.

815,354. RADIATOR. WILLIAM R. KENNAR, New York, N. Y. Filed Nov. 4, 1904. Serial No. 231,504.



Claim.—1. In a radiator-heater, the combination with a plurality of alined radiating units, of a generator having its bottom, top, front and rear walls formed of sheet metal into an upper chamber, opening at its top into the lower ends of all the units and an elongated lower reduced portion, cast-metal end walls for the generator, having legs formed thereon, and tie-rods connecting the cast-metal end walls.

2. In a radiator, the combination with a plurality of units, of a chamber connecting the units, a bar within the chamber, and tie-rods within the units and secured to the bar to hold the units and the chamber together.

3. In a radiator, the combination with the units, of a chamber, flanged sleeves connecting the units and the chamber, a bar fitted within the chamber, tie-rods fitted within the units and holding the units and chamber together.

4. In a radiator, the combination with the units, of a chamber, sleeves provided with troughed flanges and connecting the units and chamber, a bar positioned within the chamber and bearing against the sleeves, and tie-rods positioned within the units and engaging the bar.

5. In a radiator, the combination with a plurality of units, of a chamber connecting the units, means tying opposed walls of the units, and tie-rods supported within the units by said tying means.

6. In a radiator, the combination with a plurality of units, of a chamber connecting the units, thimbles connecting opposed walls of the units, tie-rods supported from the thimbles within the units, and a bar positioned within the chamber and having the tie-rods secured thereto.

7. In a radiator, the combination with a plurality of units, of a chamber, flanged sleeves fitted through the chamber and into the units, thimbles connecting opposed walls of the units, a bar positioned within the chamber and bearing against the sleeves, and tie-rods connecting the thimbles and the bar.

8. In a radiator, the combination with a chamber provided with openings, of inwardly-extending flanges surrounding the openings, radiating units fitted within the openings and bearing against the flanges, and sleeves provided with troughed flanges embracing the flanges on the chamber and the ends of the units.

9. In a radiator, the combination with a plurality of units, of a chamber connecting the ends of the units, thimbles struck up from opposed walls of the units, tie-rods extending through alined thimbles, a bar positioned within the chamber and tie-rods connecting the bar and the thimbles.

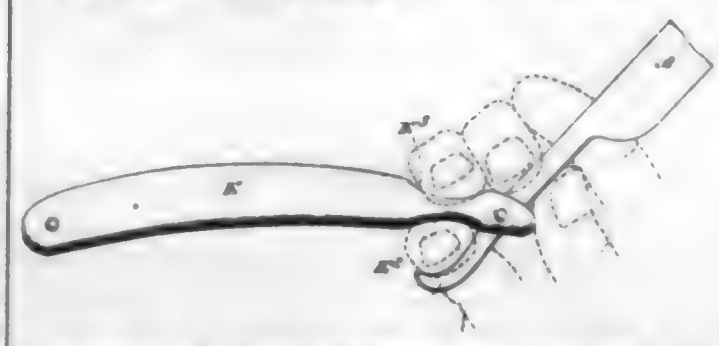
10. In a radiator-heater, the combination with the alined vertical radiating units, of a generating-chamber connected to the same and having the bottom, front and rear walls bent from a single sheet of metal to form an enlarged upper portion and a reduced elongated lower portion, and an asbestos covering for one of the walls of the reduced lower portion.

11. In a radiator-heater, the combination with the radiating units, of a generating-chamber positioned below and connected to the same and having its bottom, front and rear walls bent from a single sheet of metal to form an enlarged upper portion and a reduced lower portion and cast-metal legs forming the end walls of the generating-chamber.

12. In a radiator-heater, the combination with the radiating units; of a generating-chamber having its top, bottom, front and rear walls bent from a single sheet of metal to form an upper enlarged portion and a lower reduced portion, the edges of the metal being united by bending the upper edge upwardly to form a trough and the lower edge downwardly into the trough; cast-metal legs forming the end walls of the chamber; and a burner playing upon the lower reduced portion of the generating-chamber.

13. In a radiator-heater the combination with the radiator units, of a generating-chamber having its top, bottom, front and rear walls bent from a single sheet of metal, the edges of the metal being united by bending the upper edge upwardly to form a trough and the lower edge downwardly into the trough.

815,355. RAZOR. GEORGE W. KOHN, Little Valley, N. Y. Filed May 19, 1905. Serial No. 261,176.



Claim.—1. A razor comprising converging handle members provided with oppositely-curved finger-rests and a blade pivoted between said handle members at the point where they are widest apart.

2. A razor comprising converging handle members provided with oppositely-curved finger-rests, and a blade pivoted between said handle members, the back of said blade being of the same width throughout its entire length.

3. A razor comprising a blade the back of which is of the same width throughout its length, converging handle members between which said blade is pivoted, washers for maintaining said handle members out of contact with the butt of said blade, said handle members being provided with oppositely-curved finger-rests.

4. A razor comprising a blade and converging handle members to which said blade is pivoted, said handle members being provided, in the neighborhood of the pivot, with notches adapted to form finger-rests.

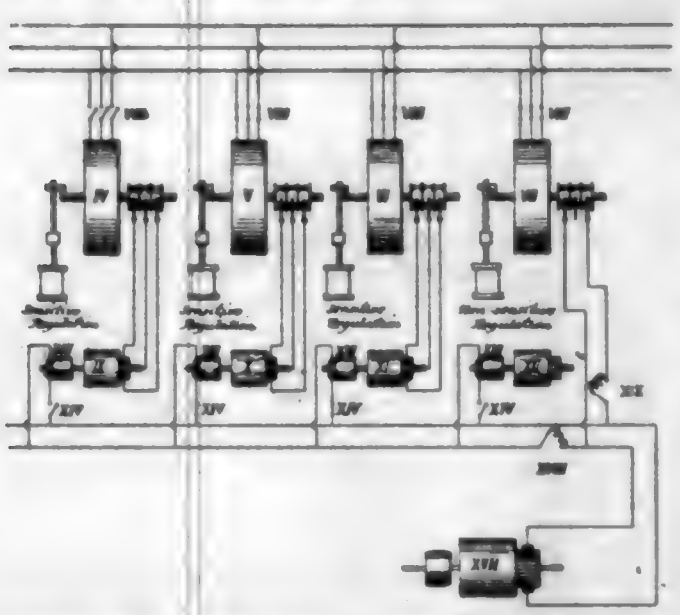
5. A razor comprising a blade and converging handle members to which said blade is pivoted, said handle members being provided in their upper and lower faces, adjacent to the pivot, with oppositely-curved notches adapted to form finger-rests.

6. A razor comprising a blade having a butt or tang with a concave finger-rest, and converging handle members to which said blade is pivoted, said handle members being provided on their lower faces, adjacent to the pivot, with concave notches arranged to face the finger-rest of the blade when the blade is open.

815,856. SYSTEM OF EXCITATION FOR INDUCTION-MACHINES.

MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric and Manufacturing Company, a Corporation of Pennsylvania.

Filed Jan. 26, 1903. Serial No. 140,933.



Claim.—1. The combination of a source of multiphase current, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the several branches of the multiphase circuit and having its field traversed by a periodically-varying flux, substantially as described.

2. The combination of a source of multiphase current, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the several branches of the multiphase circuit and having its field traversed by a variable flux of the frequency of the multiphase current, substantially as described.

3. The combination of an asynchronous machine having multiphase secondary circuits, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the several branches of the multiphase secondary circuits and having its field traversed by a variable flux of the frequency of the secondary currents, substantially as described.

4. The combination of a source of alternating current, and a phase-regulating dynamo-generator of the direct-current type having its armature electrically connected to said source, and provided with armature-windings to generate a magnetic field flux of the frequency of the alternating current for producing the regulating electromotive forces, substantially as described.

5. The combination of an asynchronous machine, a phase-regulating dynamo-generator of the direct-current type having its armature electrically connected to the asynchronous secondary and provided with armature-windings to cause a magnetic field flux of the same frequency as those of the secondary currents for producing the regulating electromotive forces, substantially as described.

6. The combination of a source of multiphase current, a dynamo-generator of the direct-current type having dephased brushes connected to the mulitphase circuit and having an armature-winding producing fluxes to impress a leading or lagging electromotive force on the multiphase circuit, substantially as described.

7. The combination of an asynchronous machine, a dynamo-generator of the direct-current type having dephased brushes connected to the asynchronous secondary circuits and having an armature-winding producing fluxes to impress leading electromotive forces on the secondary circuits, substantially as described.

8. The combination of an asynchronous generator, a dynamo-generator of the direct-current type having dephased brushes connected to the asynchronous secondary circuits and having an armature-winding producing fluxes to impress leading electromotive forces on the secondary circuits, substantially as described.

9. The combination of a source of multiphase current, and a phase-regulating dynamo-generator of the direct-current type having a set of dephased armature-windings and a corresponding set of dephased brushes connected to the multiphase circuits, substantially as described.

10. The combination of a source of multiphase current, and a phase-regulating dynamo-generator of the direct-current type having a set of dephased brushes connected to the multiphase circuits and a corresponding set of armature-windings acting to produce field fluxes to generate regulating electromotive forces between the brushes upon rotation of the armature, substantially as described.

11. The combination of a source of multiphase current, and a phase-regulating dynamo-generator of the direct-current type having a set of dephased brushes connected to the multiphase circuits and corresponding set of armature-windings acting to produce field fluxes to generate regulating electromotive forces between the brushes upon rotation of the armature, the frequency of the rotation of the armature being large in comparison with the frequency of the multiphase currents, substantially as described.

12. The combination of an asynchronous machine, and a phase-regulating dynamo-generator of the direct-current type having a set of dephased brushes connected to the multiphase secondary circuits of the asynchronous machine and a corresponding set of armature-windings acting to produce field fluxes to generate regulating electromotive forces between the brushes upon rotation of the armature, substantially as described.

13. A phase-regulating dynamo-generator of the direct-current type having a number of dephased brushes and a corresponding number of dephased armature-circuits connected thereto, substantially as described.

14. A phase-regulating dynamo-generator of the direct-current type having three dephased brushes and three dephased armature-windings connected thereto, substantially as described.

15. The combination of a source of triphase currents, and a phase-regulating dynamo-generator of the direct-current type having three dephased brushes connected to the triphase circuit and having six groups of armature-windings, the several conductors in any group being traversed by currents of the same value, and the totality of groups acting to generate field fluxes which give rise to regulating electromotive forces upon rotation of the armature.

16. The combination of a source of triphase current, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the several branches of the triphase circuit and having its field traversed by a variable flux of the frequency of the triphase current, substantially as described.

17. The combination of an asynchronous machine having triphase secondary circuits, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the three branches of the secondary circuits and having its field traversed by a variable flux of the frequency of the secondary currents, substantially as described.

18. The combination of a source of triphase currents, and a dynamo-generator of the direct-current type having dephased brushes connected to the triphase circuit and having an armature-winding producing fluxes to impress a leading or lagging electromotive force on the triphase circuit, substantially as described.

19. The combination of a source of triphase currents, and a phase-regulating dynamo-generator of the direct-current type having its armature connected to the several branches of the triphase circuit and having its field traversed by a periodically-varying flux, substantially as described.

20. The combination of an asynchronous machine comprising a primary and a secondary member and a device constituting an apparent negative, ohmic resistance added to one of its members, whereby the slip or frequency drop is diminished, substantially as described.

21. The combination of an asynchronous machine comprising a primary and a secondary member and, added to one of its members, a source of alternating electromotive force of the frequency of the current existing in that member but in opposition to the voltage inserted by that current, whereby the slip or frequency drop is diminished, substantially as described.

22. The combination of an asynchronous machine having a primary and a secondary member, and a device added to the secondary member which constitutes an apparent, negative ohmic resistance equal to the secondary resistance, whereby the asynchronous machine may be operated as such at constant synchronous speed, substantially as described.

23. The combination of a source of alternating current and a dynamo-generator of the direct-current type having its brushes connected thereto and having a series field-winding generating a flux

at right angles to the brush to which it is connected to produce the effect of a negative resistance, substantially as described.

24. The combination of an asynchronous machine, and a dynamo-generator of the direct-current type having its brushes connected to the secondary circuits and having one or more series field-windings to generate a flux or fluxes at right angles to the brush or brushes to which they are connected to produce the effect of a negative resistance, substantially as described.

25. The combination of a source of triphase current, and a dynamo-generator of the direct-current type having three dephased brushes, and a series field-winding for each brush generating a flux at right angles to the brush to produce the effect of a negative resistance, substantially as described.

26. The combination of an asynchronous generator, and a synchronous generator electrically connected thereto and driven to have a greater drop in speed under increasing load than that of the asynchronous machine, substantially as described.

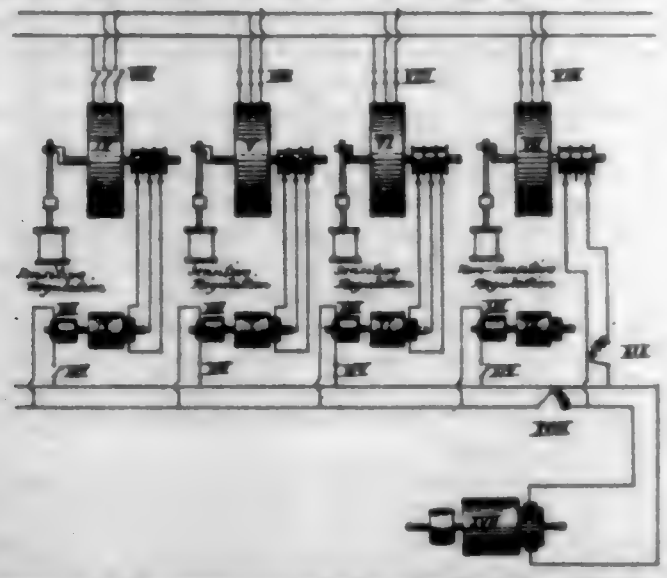
27. The combination of an asynchronous generator, a source of power for driving it having a sensitive speed-regulator, a synchronous generator electrically connected to the asynchronous generator, and a source of power for driving it having a less sensitive speed-regulator than that first mentioned, substantially as described.

28. The combination of a synchronous generator, one or more asynchronous generators electrically connected therewith, a phase-regulating exciter connected to each asynchronous generator, and a common source of power for driving the several exciters, substantially as described.

29. The combination of a synchronous generator, one or more asynchronous generators electrically connected therewith having a lesser drop in speed under increasing load, a phase-regulating exciter connected to each asynchronous generator, and a common regulable source of power for driving the several exciters, whereby the sum of the wattless currents flowing in the generator system may be rendered zero, substantially as described.

30. The combination of an asynchronous machine and a device constituting an apparent negative, ohmic resistance added to its secondary member, whereby the slip or frequency drop is diminished, substantially as described.

815,357. **PROCESS OF EXCITATION FOR INDUCTION-MACHINES.** MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Original application filed Jan. 26, 1903, Serial No. 140,933. Divided and this application filed Feb. 5, 1904. Serial No. 192,226.



Claim.—1. The process of producing the effect of an added negative resistance in one member of an asynchronous machine by impressing thereon an electromotive force of the frequency of the current in that member but of a phase in opposition to the voltage inserted by such current, substantially as described.

2. The process of producing the effect of an added negative resistance in any secondary circuit of an asynchronous machine by impressing thereon an electromotive force of the frequency of the current therein but of a phase in opposition to the voltage inserted by such current, substantially as described.

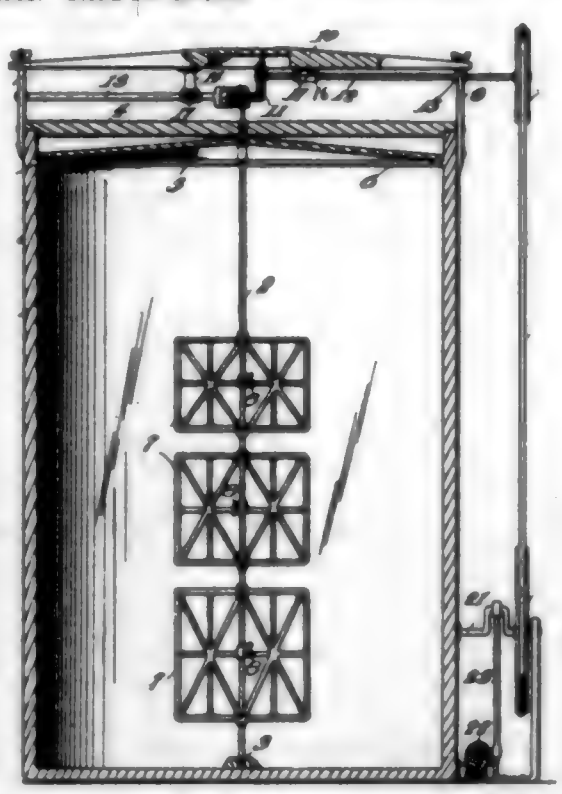
3. The process of producing the effect of an added negative resistance in the secondary circuit of an asynchronous generator by impressing thereon an electromotive force of the frequency of the current therein but of a phase in opposition to the voltage inserted by such current, substantially as described.

4. The process of producing the effect of an added negative resistance in the multiphase secondary circuits of an asynchronous machine by impressing on each circuit an electromotive force of the frequency of the current therein but of a phase in opposition to the voltage inserted by such current substantially as described.

5. The process of regulating the action of a synchronous generator electrically connected to an asynchronous generator, which consists in causing the synchronous generator to have a greater drop in speed under increase of load than the asynchronous generator, substantially as described.

6. The process of running a synchronous generator electrically connected to several asynchronous generators, each having their secondary circuits connected to an exciter for supplying wattless current, which consists in simultaneously varying the speed of the several exciters to make the sum of the wattless currents passing between the synchronous and asynchronous generators zero, substantially as described.

815,358. **CHURN.** CLYDE W. LOWERY, Centerville, Ala. Filed Aug. 30, 1905. Serial No. 276,403.



Claim.—The combination of a churn-body, upright members projecting from approximately diametrically opposite points on the top thereof, a removable cross-piece connecting said upright members, a guide member connected to one of the upright members and provided with a bearing within which the dasher-rod rotates, a hook projecting from the cross-piece and serving as a support for the guide member, a shaft passing through the opposite upright member, a second hook projecting from a cross-piece and serving as a support for the shaft, intermeshing gearing connecting the shaft and the dasher-rod, and means whereby the shaft can be rotated by a treadle mechanism.

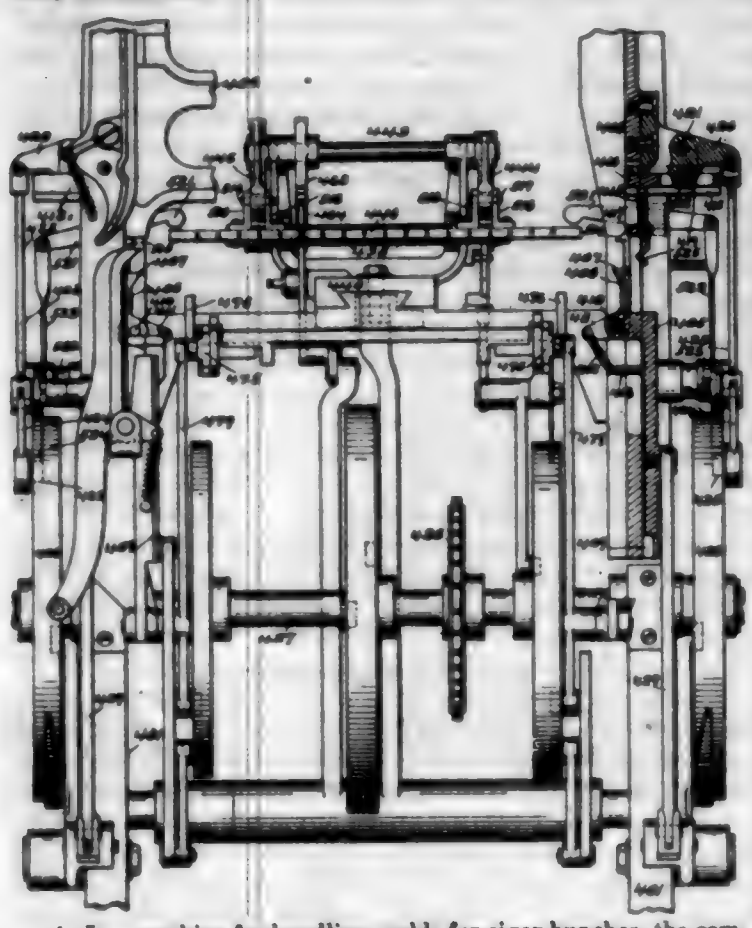
815,359. **MACHINE FOR HANDLING CIGAR BUNCHES.** WILLIAM S. LUCKETT, East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 14, 1904. Serial No. 203,137.

Claim.—1. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of mold-opening means, said means operating to separate the parts of the mold on one side at one end of the bunches in advance of the separation on the other side, substantially as described.

2. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of mold-opening means arranged to engage the mold to one side of its longitudinal center, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.

3. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches, of mold-opening means arranged to engage the mold on both sides of its longitudinal center, the opening means on one side of said center being brought into operation before the open-

ing means on the other side, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.



4. In a machine for handling molds for cigar bunches, the combination with means for holding in positions a two-part mold for containing a plurality of bunches the parts of the mold being unconnected, of projections for engaging one part of the mold, and means whereby said projections are caused to separate the parts of the mold on the side nearest one end of the bunches in advance of the separation on the other side, substantially as described.

5. In a machine for handling molds for cigar bunches, the combination with means for holding a two-part mold for containing a plurality of bunches, of a pair of projections at one end of the mold, a pair of projections at the other end of the mold, the corresponding projections of each pair engaging on opposite sides of the longitudinal center of the mold, and actuating means for said projections, the projections on one side of the said center being arranged to come into operation before the projections on the other side of said center, substantially as described.

6. In a machine for handling molds for cigar bunches, the combination with supports for one part of a two-part mold, of means for actuating the supports to engage this part, devices for engaging the other part of the mold, on each side of its longitudinal center, and means for effecting a relative movement between the supports and said engaging devices, the engaging devices on one side of the longitudinal center of the mold being arranged to come into operation before the engaging devices on the other side of the longitudinal center, whereby the parts of the mold are separated on one side prior to their separation on the other side, substantially as described.

7. In a machine for handling molds for cigar bunches, the combination with a pair of slides having supporting projections which engage the lower side of one part of a two-part mold, of two pairs of separating projections arranged to engage the other part of said mold on each side of its longitudinal center, the operating-faces of the separating projections on one side of the longitudinal center being arranged nearer to the surface of the part of the mold which they engage than the faces of the projections on the other side of the center, and means for effecting a relative movement between the supporting and separating projections, substantially as described.

8. In a machine for handling molds for cigar bunches, the combination with supports having projections which engage the lower face of one part of a two-part mold, of an abutment for supporting the other part, two pairs of projections arranged to engage this part of the mold, projection of said pairs being arranged to engage on opposite sides of the longitudinal center of the mold and the projections on one side of said center having their operating-faces farther from the abutment than the faces of the other projections, and means for effecting a relative movement between the supporting projections and the abutment and its coöperating projections, substantially as described.

9. In a machine for handling molds for cigar bunches, the combination with a pair of supports arranged to engage the lower face of the upper part of a two-part mold, of an abutment for supporting the lower part of said mold, two pairs of projections arranged to engage said lower part of the mold on opposite sides of the longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the longitudinal center, means for moving the abutment and its coöperating projections away from and toward the projections which hold the other part of the mold to open and close the mold, and bunch-removing means, substantially as described.

10. In a machine for handling molds for cigar bunches, the combination with a pair of supports arranged to engage the lower face of the upper part of a two-part mold, of an abutment for supporting the lower part of said mold, two pairs of projections arranged to engage said lower part of the mold on opposite sides of the longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the longitudinal center, means for moving the abutment and its coöperating projections away from and toward the projections which hold the other part of the mold to open and close the mold, bunch-removing means, and means for discharging the mold, substantially as described.

11. In a machine for handling molds for cigar bunches, the combination with a pair of slides having projections to engage one of the parts of a two-part mold, of operating means for the slides, an abutment having two pairs of projections arranged to engage the other part of a two-part mold on each side of its longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the center, means for moving the abutment and its projections away from and toward the part of the mold held by the projections on the slides to open and close the mold, substantially as described.

12. In a machine for handling molds for cigar bunches, the combination with a pair of slides having projections to engage one of the parts of a two-part mold, of operating means for the slides, an abutment having two pairs of projections arranged to engage the other part of said mold on each side of its longitudinal center, the projections on one side of the longitudinal center having their operating-faces farther from the abutment than the operating-faces of the projections on the other side of the center, means for moving the abutment and its projections away from and toward the part of the mold held by the projections on the slides to open and close the mold, and bunch-removing means, substantially as described.

13. In a machine for handling molds for cigar bunches, the combination with means for sustaining a stack of two-part molds in position, of means for separating and removing from the stack the lowest mold, and holding devices operating on the lower part of the mold above the lowest mold.

14. In a machine for handling molds for cigar bunches, the combination with means for sustaining a stack of two-part molds in position, means for opening and closing the molds successively, bunch-removing means, and means for removing the lowest mold from the stack, and holding devices operating on the lower part of the mold above the lowest mold.

15. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage the lower part of the lowest mold, a set of upper engaging devices engaging the upper part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and holding devices acting on the lower part of the mold above the lowest mold.

16. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage the lower part of the lowest mold, a set of upper engaging devices engaging the upper part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and frictional holding devices carried by the upper engaging devices acting on the lower part of the mold above the lowest mold.

17. In a machine for handling cigar-molds, the combination with means for supporting a stack of two-part molds in position, of a set of lower engaging devices operating to engage the lowest part of the lowest mold, a set of upper engaging devices engaging the upper

part of the lowest mold, means for separating these sets of devices to open the lowest mold, bunch-removing means, means for causing the upper engaging devices to engage the mold above the lowest mold, mold-removing means, and holding-springs carried by the upper engaging devices acting on the lower part of the mold above the lowest mold.

18. In a machine for handling molds for cigar bunches, the combination with a pair of slides, said slides being provided with projections for engaging the upper part of a two-part mold, of an abutment provided with projections for engaging the lower part of said mold, supplementary holding-springs carried by the slides and arranged to engage the lower part of the mold, means for actuating the slides, means for actuating the abutment and its projections to open and close the mold, bunch-removing means, and means for discharging the mold, substantially as described.

19. The combination with a mold, of bunch-impaling means, and means for effecting a relative movement between the mold and the impaling means to break that end of the bunch into which the impaling means is inserted out of the mold before the other end, substantially as described.

20. The combination with a mold, of bunch-impaling means, and means for operating said impaling means to break that end of the bunch into which the impaling means is inserted out of the mold before the other end, substantially as described.

21. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling devices, means whereby the impaling devices are caused to impale the bunches, and means for effecting a relative movement between the impaling devices and the mold to break that end of the bunch into which the impaling devices are inserted out of the mold before the other end, substantially as described.

22. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling devices, means whereby the impaling devices are caused to impale the bunches, means for effecting a relative movement between the impaling devices and the mold to break that end of the bunch into which the impaling devices are inserted out of the mold before the other end, and means whereby the delivery of the bunches is effected, substantially as described.

23. In a machine for handling molds for cigar bunches, the combination with mold-supporting means, of a plurality of bunch-impaling pins, means for supporting the pins, carrying means for the pins and their supporting means, means for causing the pins to impale the bunches, and means for giving the pins and their supporting means a movement with respect to their carrying means to break that end of the bunch into which the impaling-pins are inserted out of the mold before the other end, substantially as described.

24. In a machine for handling molds for cigar bunches, the combination with a mold-support, of a plurality of bunch-impaling means, a bar in which said pins are mounted, carrying means for the bar, means whereby the pins are caused to impale the bunches, and means for giving the bar and pins a movement independent of their carrying means to break that end of the bunch into which the pins are inserted out of the mold before the other end, substantially as described.

25. In a machine for handling molds for cigar bunches, the combination with a mold-support, of a plurality of impaling-pins, a bar in which the pins are mounted, carrier-arms for the bar, means whereby the pins are caused to impale the bunches, means for giving the bar and pins a movement independent of the carrier-arms to break that end of the bunch into which the pins are inserted out of the mold before the other end, and means for operating the arms to deliver the bunches, substantially as described.

26. In a machine for handling molds for cigar bunches, the combination with supporting, opening and closing means for a mold, of a plurality of impaling-pins, a bar in which said pins are mounted, carrying means for the bar, means whereby the pins are caused to impale the bunches, and means for giving the bar and pins a movement independent of their carrying means to break that end of the bunch into which the pins are inserted out of the mold before the other end, substantially as described.

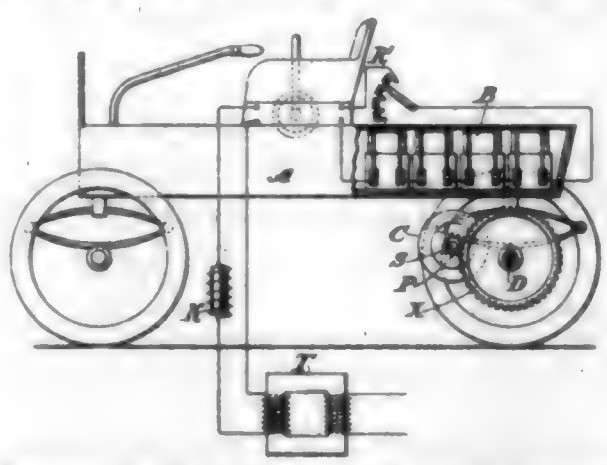
27. In a machine for handling molds for cigar bunches, the combination with supporting, opening and closing means for a mold, of a plurality of impaling-pins, a bar in which the pins are mounted, carrier-arms for the bar, means whereby the pins are caused to impale the bunches, means for giving the bar and pins a movement independent of the carrier-arms to break that end of the bunch into which the pins are inserted out of the mold before the other end, and means for operating the arms to deliver the bunches, substantially as described.

28. In a machine for handling molds for cigar bunches, the combination with means for supporting, opening and closing a mold, of a plurality of impaling-pins, a bar on which the pins are carried, a support for the bar, said support being constructed to provide a guide in which the bar moves, means for causing the bunches in the mold to be impaled by the pins, an actuator for causing the bar to move in its guide, and means for operating the bar-support to bring the bunches into delivery position, substantially as described.

29. In a machine for handling molds for cigar bunches, the combination with means for supporting, opening and closing a mold, of a plurality of impaling-pins, a bar in which said pins are mounted, a support for the bar, said support being constructed to provide a guide in which the bar may move, an actuator for moving the bar in the guide in one direction, springs for returning the bar, and means for operating the support to bring the bunches into delivery position, substantially as described.

30. In a machine for handling molds for cigar bunches, the combination with means for supporting, opening and closing a mold, of a plurality of bunch-impaling pins, a bar on which the pins are mounted, a support comprising a pair of slotted arms, an actuator for moving the bar in the slots, springs for returning the bar, a carriage on which the arms are mounted, means whereby the pins are caused to impale the bunches, and means for operating the arms to bring the bunches into delivery position, substantially as described.

815,360. DEVICE FOR RECHARGING THE STORAGE BATTERIES OF AUTOMOBILES. LAMAR LYNDON, New York, N. Y. Filed May 4, 1904. Renewed Mar. 23, 1905. Serial No. 261,596.



Claim.—1. In an electrically-propelled motor road-vehicle, the combination of a dynamo-electrical machine mounted on the vehicle and having a commutator and independent collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, substantially as shown and described.

2. In an electrically-propelled motor road-vehicle, the combination of a dynamo-electrical machine mounted on the vehicle and having a commutator, and independent current-collecting devices, a storage-battery adapted to furnish the total propelling-current also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said machine to operate the same for propelling the vehicle, or from said battery to said machine to operate the same without load, or alternating current may be supplied to said machine through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, substantially as shown and described.

3. In an electrically-propelled vehicle, the combination of a dynamo-electric machine mounted on the vehicle and having a commutator and current-collecting devices, driving connections between the same and the drive-wheels of the vehicle, means to disconnect said driving connections, a storage battery also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, substantially as shown and described.

4. In an electrically-propelled motor road-vehicle, the combi-

nation of a dynamo-electrical machine mounted on the vehicle and having a commutator and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, and a resistance included in the circuit to regulate the current delivered to the battery, substantially as shown and described.

5. In an electrically-propelled vehicle, the combination of a dynamo-electric machine mounted on the vehicle and having a commutator and current-collecting devices, driving connections between the same and the drive-wheels of the vehicle, means to disconnect said driving connections, a storage battery also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, and a resistance included in the circuit to regulate the current delivered to the battery, substantially as shown and described.

6. In an electrically-propelled motor road-vehicle, the combination of a dynamo-electric machine mounted on the vehicle, and having a commutator and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, and a step-down transformer included in the alternating-current circuit to regulate the voltage of the current delivered to the apparatus, substantially as shown and described.

7. In an electrically-propelled vehicle, the combination of a dynamo-electric machine mounted on the vehicle and having a commutator and current-collecting devices, driving connections between the same and the drive-wheels of the vehicle, means to disconnect said driving connections, a storage battery also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices and being there rectified and changed to direct current at the commutator be supplied from said machine, to the battery to recharge the same, and a step-down transformer included in the alternating-current circuit to regulate the voltage of the current delivered to the apparatus, substantially as shown and described.

8. In an electrically-propelled motor road-vehicle, the combination of a dynamo-electric machine mounted on the vehicle and having a commutator and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said machine to operate the same, or alternating current may be delivered to said machine through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said machine to the battery to recharge the same, and a step-down transformer included in the alternating-current circuit to regulate the voltage of the current delivered to the apparatus, said transformer comprising an iron core and a winding thereon, said winding being connected at its terminals with the supply-mains and at intermediate points with the delivery-mains, substantially as shown and described.

9. In an electrically-propelled motor road-vehicle, the combination of a series motor mounted on the vehicle and having independent current-collecting devices in addition to the commutator, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said motor to operate the same, or alternating current may be delivered to said motor through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said motor to the battery to recharge the same, substantially as shown and described.

10. In an electrically-propelled motor road-vehicle, the combination of a series motor mounted on the vehicle and having a commutator, and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said motor to operate the same for propelling the vehicle, or from said battery to said motor to operate the same without load, or alternating current may be supplied to said motor through said current-collecting devices when the vehicle is at rest and being thereby rectified and changed to direct current at the commutator be supplied from said motor to the battery to recharge the same, substantially as shown and described.

11. In an electrically-propelled vehicle, the combination of a series motor mounted on the vehicle and having a commutator and current-collecting devices, driving connections between the same and the drive-wheels of the vehicle, means to disconnect said driving connections, a storage battery also mounted on the vehicle, and connections whereby at will current may be supplied from said battery to said motor to operate the same, or alternating current may be delivered to said motor through said current-collecting devices and being there rectified and changed to direct current at the commutator be supplied from said motor to the battery to recharge the same, substantially as shown and described.

12. In an electrically-propelled motor road-vehicle, the combination of a series motor mounted on the vehicle and having a commutator and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said motor to operate the same, or alternating current may be delivered to said motor through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator, supplied from said motor to the battery to recharge the same, and a resistance included in the circuit to regulate the current delivered to the battery, substantially as shown and described.

13. In an electrically-propelled motor road-vehicle, the combination of a series motor mounted on the vehicle and having a commutator and independent current-collecting devices, a storage battery adapted to furnish the total propelling-current also mounted on the vehicle, connections whereby at will current may be supplied from said battery to said motor to operate the same, or alternating current may be delivered to said motor through said current-collecting devices when the vehicle is at rest and being there rectified and changed to direct current at the commutator be supplied from said motor to the battery to recharge the same, and a step-down transformer included in the alternating-current circuit to regulate the voltage of the current delivered to the apparatus, substantially as shown and described.

14. In an electrically-propelled vehicle, the combination with a dynamo-electrical machine mounted on the vehicle and having a commutator and independent current-collecting devices and a plurality of groups of field-coils, a storage battery also mounted on the vehicle, and connections whereby said groups of field-coils may be thrown into parallel to give a low resistance and high magnetizing power for operation of the machine as a series driving-motor, or into series to give a high resistance to enable the machine to operate as a shunt-wound rotary converter, substantially as described.

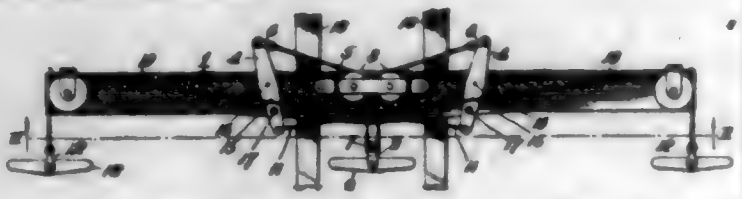
15. In an electrically-propelled vehicle, the combination with a dynamo-electrical machine mounted on the vehicle and having a commutator and independent current-collecting devices and a plurality of groups of field-windings, a storage battery also mounted on the vehicle, an auxiliary controller and connections whereby the several coils of each of said groups of field-coils may be connected in parallel or in series, and a main controller and connections from said auxiliary controller whereby the relations of the groups of field-coils to each other and to said other devices may be changed, substantially as described.

16. In an electrically-propelled vehicle, the combination with a dynamo-electrical machine mounted on the vehicle and having a commutator and independent current-controlling devices and a plurality of groups of field-coils, a storage battery also mounted on the vehicle, connections whereby said groups of field-coils may be thrown into parallel for operation of the machine as a series driving-motor or into series for operation of the machine as a shunt-wound rotary converter, a charging-plug, and a switch and connections whereby alternating current may be delivered to the machine when operating as a shunt-wound rotary converter, substantially as described.

815,361. DRAFT-EQUALIZER. GEORGE MARSHALL and JOHN COX, Tarkio, Mo. Filed June 13, 1903. Serial No. 265,112.

Claim.—1. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between

said levers, a flexible connection between said hitching device and one end of each lever, and suitably guided so as to maintain a position for swinging said levers or being moved endwise by the latter, a pair of hitching devices forward of the bar and at opposite sides of the first-named hitching device, and connections suitably guided between said last-named hitching device and said levers, at the opposite sides of their pivotal points from their connection with the first-named hitching device.



2. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between said levers, a flexible connection between said hitching device and one end of each lever, and suitably guided so as to maintain a position for swinging said levers or being moved endwise by the latter, a pair of hitching devices forward of the bar and at opposite sides of the first-named hitching device, connections suitably guided between said last-named hitching device and said levers at the opposite sides of their pivotal points from their connection with the first-named hitching device, and means for eliminating side draft.

3. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between said levers, a flexible connection between said hitching device and one end of each lever, and suitably guided so as to maintain a position for swinging said levers or being moved endwise by the latter, a pair of hitching devices forward of the bar and at opposite sides of the first-named hitching device, connections suitably guided between said last-named hitching device and said levers at the opposite sides of their pivotal points from their connection with the first-named hitching device, and a side-draft attachment comprising a connection between the connections attached to the last-named hitching device, and an oblique connection between the last-named connection and the bar outward of one of the outer hitching devices.

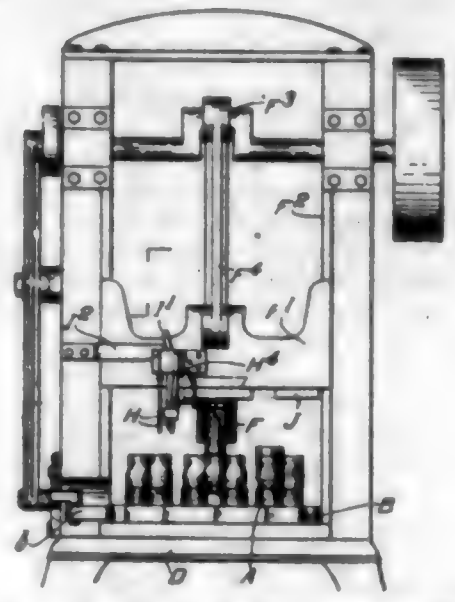
4. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between said levers, a doubled flexible connection having a sliding engagement with said hitching device at its looped end and its rear ends attached to said levers rearward of their pivotal points, guides for said flexible connections between said levers, guides mounted on the bar outward of the levers, flexible connections engaging said guides and each connected at its rear end to the front end of the most remote lever, and hitching devices attached to the front ends of said last-named flexible connections.

5. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between said levers, a doubled flexible connection having a sliding engagement with said hitching device at its looped end and at its rear ends attached to said levers rearward of their pivotal points, guide-sheaves mounted on the bar at opposite sides of and engaging said flexible connections, and guide-sheaves mounted on the bar outward of said levers, flexible connections engaging said guide-sheaves and each connected at its rear end to the front end of the most remote lever, and hitching devices attached to the front ends of said last-named flexible connections.

6. A draft-evener, comprising a bar, a pair of levers mounted on said bar, a hitching device forward of the bar and between said levers, a doubled flexible connection having a sliding engagement with said hitching device at its looped end and at its rear ends attached to said levers rearward of their pivotal points, guide-sheaves mounted on the bar at opposite sides of and engaging said flexible connections, guide-sheaves mounted on the bar outward of said levers, flexible connections engaging said guide-sheaves and each connected at its rear end to the front end of the most remote lever, hitching devices attached to the front ends of said last-named flexible connections, a transversely-extending bar connecting the last-named flexible connection forward of the first-named bar, and a connection between said connecting-bar and the first-named bar, the point of union of the latter being outward of the contiguous guide-sheave.

7. The combination with an evener comprising a bar provided with hitching devices in front of and flexibly connected to said bar, a transverse connection between and movable laterally of the machine with said hitching device, and an obliquely-extending connection between said connecting-bar and the first-named bar, the point of connection of said obliquely-extending connection with the first-named bar being outward of the contiguous hitching device.

815,362. MACHINE FOR SHAPING TUBULAR ARTICLES. Norman Marshall, Newton, Mass. Filed June 27, 1903. Serial No. 163,295.



Claim.—1. A machine for shaping tubular articles having in combination a die-post and a die-sleeve for shaping the article, an ejector mechanism, and means for moving one of said die members into position to receive the blank, then into position to coöperate with the other die member and then into position to coöperate with the ejector mechanism, substantially as described.

2. A machine for shaping tubular articles having in combination a traveling die-post, a die-sleeve for coöperating therewith to shape the articles, an ejector mechanism, and means for moving the die-post into position to coöperate with the die-sleeve and then into position to coöperate with the ejector mechanism, substantially as described.

3. A machine for shaping tubular articles having in combination, a carrier, a series of die members on said carrier, a die member to which the die members on the carrier are successively presented by the carrier, said coöperating die members comprising a die-sleeve and die-post, and an ejector mechanism to which the die members on the carrier are successively presented, substantially as described.

4. A machine for shaping tubular articles having in combination, a carrier, a die-sleeve to which the posts are successively presented by the carrier, and an ejector mechanism to which the posts are successively presented, substantially as described.

5. A machine for shaping tubular articles having in combination, a carrier, a series of die-posts thereon, a reciprocating die-sleeve, and a stripper-post extending through said sleeve, substantially as described.

6. A machine for shaping tubular articles having in combination, a carrier, a series of die-posts thereon, a reciprocating die-sleeve, a fixed stripper-post extending through said sleeve, and an ejector mechanism, substantially as described.

7. The combination of a reciprocating die-sleeve, a fixed stripper-post extending through said sleeve, a die-post movable into and out of line with the die-sleeve and stripper-post, substantially as described.

8. The combination with a die-post of a series of ejector-fingers for engaging and removing the shaped article therefrom, substantially as described.

9. The combination with a die-post of a reciprocating ejector provided with a series of spring-fingers for engaging and removing the shaped articles, substantially as described.

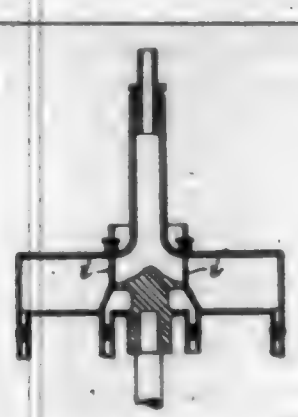
10. The combination with a die-post, of a series of ejector-fingers for engaging and removing the shaped article therefrom, and means for discharging the article from said fingers, substantially as described.

11. The combination with a die-post, of a reciprocating ejector provided with a series of spring-fingers for engaging and removing the shaped article, and a discharger operated by the movement of the ejector for disengaging the article from said fingers, substantially as described.

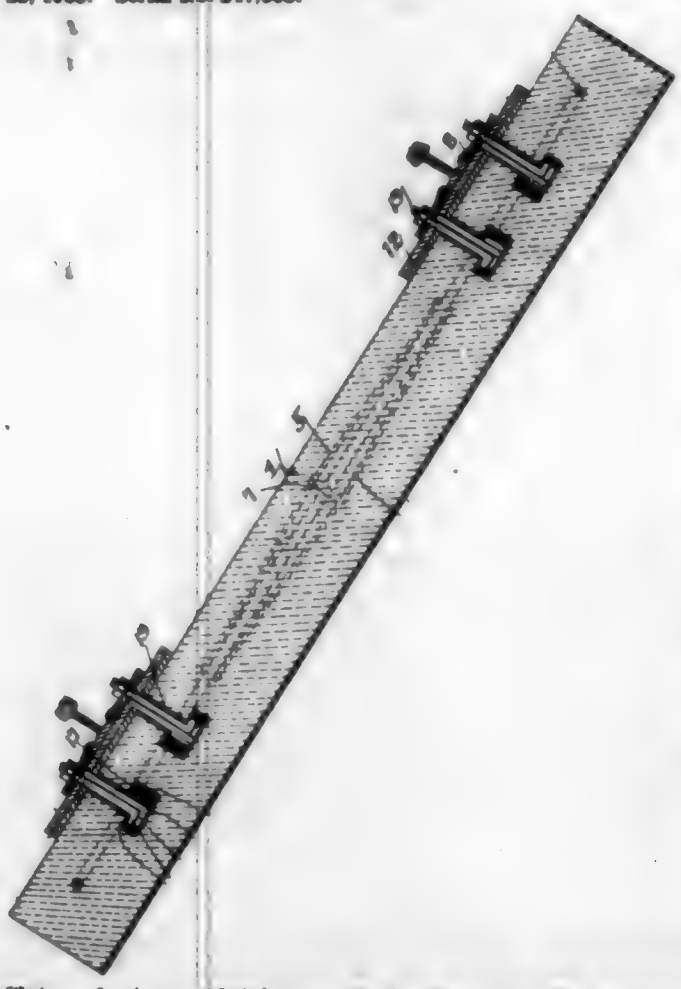
815,363. CENTRIFUGAL MACHINE. Gustav ter Meer, Hanover, Germany. Filed Feb. 10, 1905. Serial No. 245,015.

Claim.—A centrifugal machine provided with a drum, a strainer, a centered inlet-pipe having a series of inlet-openings, and an annular valve surrounding said pipe and adapted to simultaneously close said openings, substantially as specified.

815,363.



815,364. RAIL-TIE. FRANK H. MICHELS, Boston, Mass. Filed Feb. 23, 1905. Serial No. 247,005.



Claim.—1. An artificial-stone tie having a binding member embedded therein, said binding member comprising a longitudinal bar and end engaging portions, and a brace attached to the bar and comprising opposite upper and lower trusses and spacing members between the trusses and bar.

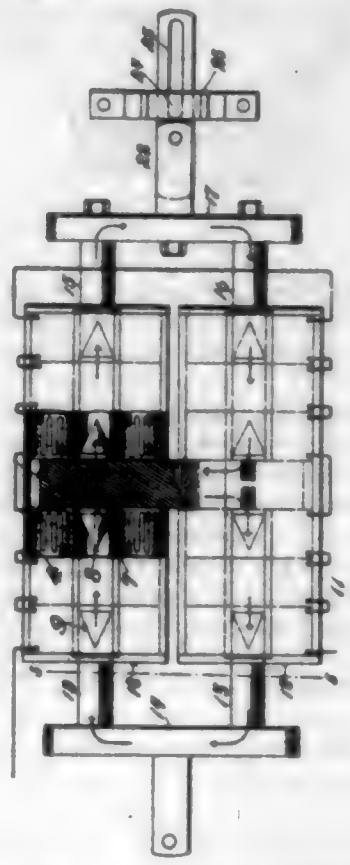
2. An artificial-stone tie having a binding member embedded therein and comprising a pair of spaced parallel bars and end portions connecting said bars, a trace upon each of the bars adjacent the longitudinal center of the tie, said brace comprising upper and lower trusses attached to the bar, and spacing-blocks between the trusses and bar.

3. A tie provided with a socket having a pair of shoulders disposed at comparatively different elevations, a rail seated upon the tie, a plate arranged beneath the rail and fastening means for the rail and plate including a bolt having an angular portion adapted for engaging with either of said shoulders, and a wedge entered into the socket in contact with the bolt for maintaining said angular portion and shoulder in engagement.

815,365. ELECTROMAGNET. ERNEST H. MILLER, Lancaster, Pa., assignor of one-third to John W. Holman and one-third to Charles V. Rote, Lancaster, Pa. Filed Nov. 26, 1904. Serial No. 234,433.

Claim.—1. A solenoid for power purposes, comprising a tubular spool of non-magnetic material, a magnetic plug midway of said spool, a plurality of coil-sections wound on said spool and connected in series, and movable cores entering said spool, said plug and cores having coöperating projections and recesses.

2. An electromotive power device, comprising two solenoids side by side, each having a plurality of coil-sections connected in series, and adjacent ends of the windings on said solenoids being connected, movable cores entering the opposite ends of said solenoids, and yokes connecting adjacent cores.



3. An electromotive power device, comprising two solenoids side by side, each having a plurality of coil-sections connected in series, and adjacent ends of the windings on said solenoids being connected, magnetic plugs midway of said solenoids, movable cores entering the opposite ends of said solenoids, and yokes rigidly connecting adjacent cores.

4. The combination with two solenoids arranged side by side, of a bridge of magnetic material arranged midway thereof and movable cores yoked together entering the opposite ends thereof.

5. The combination with two solenoids arranged side by side and each composed of a plurality of coil-sections connected in series, of a magnetic bridge interposed between the middle sections, and movable cores yoked together entering the opposite ends of said solenoids.

6. The combination with two solenoids arranged side by side and each composed of a plurality of coil-sections connected in series, the windings on the two solenoids being also connected in series, of a magnetic bridge interposed between the middle coil-sections, and movable cores entering the ends of said solenoids and connected by rigid yokes, said bridge and cores having coöperating projections and recesses.

7. The combination with two solenoids arranged side by side and connected in series, of movable cores entering the opposite ends thereof, a yoke at each end of the solenoids to which said cores are connected, and a guide for each yoke.

8. The combination with two solenoids arranged side by side and connected in series, of movable cores entering the ends thereof, a yoke at each end to which said cores are connected, a bifurcated slotted bar fastened to each yoke, and a stud engaging with said slot.

9. The combination with two solenoids arranged side by side, of a magnetic bridge arranged intermediate the ends of each solenoid, and connected movable cores entering opposite ends of said solenoids.

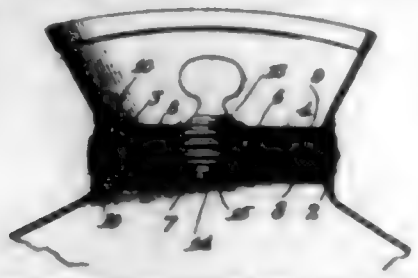
10. The combination with two solenoids arranged side by side, each composed of a plurality of coil-sections connected in series, of a magnetic bridge interposed between the middle coil-sections, and connected movable cores entering opposite ends of said solenoids.

11. The combination of two solenoids arranged side by side, each comprising a tubular spool of non-magnetic material, a plurality of removable coil-sections wound thereon side by side and connected in series, and movable cores entering the opposite ends of said spools.

815,366. WATER BAG OR BOTTLE. THOMAS W. MILLER, Akron, Ohio. Filed Nov. 10, 1905. Serial No. 286,763.

Claim.—1. A water bag or bottle embodying a flexible rubber body portion, a rubber partial closure for the neck of the same, a flexible rubber funnel-shaped top formed integral with said partial

closure, and means for permanently uniting said partial closure and bag or bottle neck.



2. A water bag or bottle embodying a flexible rubber body portion, a rubber partial closure for the neck of the same, and an unyielding stopper-receiving thimble permanently located in said partial closure.

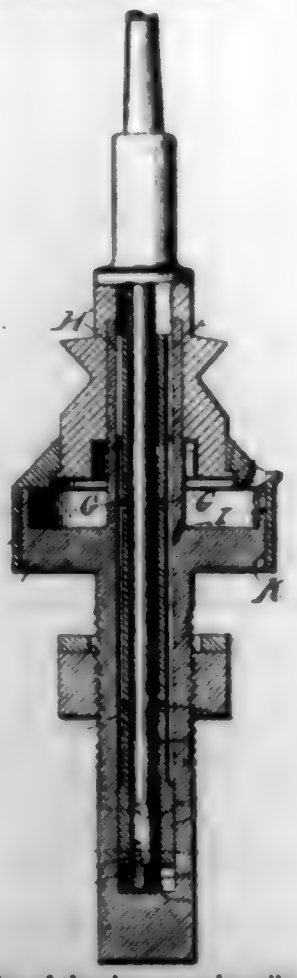
3. A water bag or bottle embodying a flexible rubber body portion, a rubber partial closure for the neck of the same, and an unyielding stopper-receiving thimble permanently located in said partial closure and terminating flush with the upper and under sides of said partial closure.

4. A water bag or bottle embodying a flexible rubber body portion having a contracted neck termination in an annular bead, a rubber partial closure formed with an annular depression receiving said bead, a flexible rubber funnel formed integral with said partial closure, and a strip of friction fabric covering and retaining said bead in position.

5. A water bag or bottle embodying a flexible rubber body portion having a contracted neck terminating in an annular bead, a rubber partial closure formed with an annular depression receiving said bead, a flexible rubber funnel formed integral with said partial closure, a strip of friction fabric covering and retaining said bead in position, and a finishing-strip covering said friction fabric.

6. A water bag or bottle embodying a flexible rubber body portion having a contracted neck terminating in an annular bead, a rubber partial closure formed with an annular depression receiving said bead, a flexible rubber funnel formed integral with said partial closure, a strip of friction fabric covering and retaining said bead in position, a wire wrapping around said friction fabric, and a finishing-strip covering said friction fabric and wire wrapping.

815,367. SPINNING-SPINDLE. ROBERT MORRIS, Winthrop, Me. Filed May 29, 1905. Serial No. 262,900.



Claim.—In a device of the character described, a bolster-casing, a bolster therein, said bolster being reduced in diameter intermediate its ends, and being provided with oppositely-disposed apertures near the end of its reduced portion, longitudinal grooves formed through the upper normal portion of the bolster, a sectional step threaded within the bolster, a spindle mounted in the bolster and bearing on the step, an oil-cup formed on the casing, a whirl on the spindle, said whirl embracing the upper portion of the bolster-casing, a flange formed on the lower edge of the whirl, a cap threaded on the oil-cup, said cap being provided with an inner annular shoulder engaging the flange of the whirl, said cap being provided with an orifice communicating with the oil-cup, said orifice being arranged to one side of the shoulder and terminating beneath the flange of the whirl when the device is assembled, and means passing through the bolster-casing engaging the bolster to hold the bolster against rotation within the casing.

815,368. CRUTCH. ALONZO C. MORSE, Shelby, Ohio. Filed June 21, 1905. Serial No. 266,231.

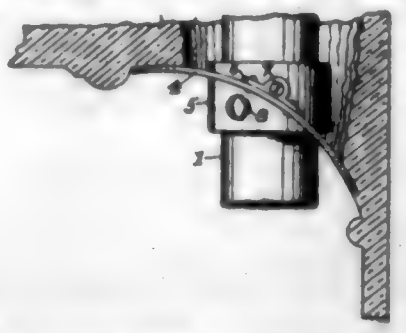
Claim.—1. In a crutch composed entirely of metallic tubing, a curved arm-piece of D-shaped tubing with its flat side down, side members composed of D-shaped tubing with their flat sides in, suitably joined to the arm-piece and brought together at their lower ends, a tubular cross-bar united at its ends to the side members and a tubular lower end piece having a socket at its upper end to receive the contacting lower ends of the side members, all the parts being suitably joined by brazing or otherwise, substantially as set forth.

2. In a crutch composed of metallic tubing a curved arm-piece of D-shaped tubing with its flat side down, side members composed of D-shaped tubing and arranged with their flat sides in, apertures in the lower flat side of the arm-piece corresponding to the shape of the side members which pass through said apertures and abut against inner surface of the top of the arm-piece, substantially as set forth.

3. In a crutch a tubular metallic arm-piece, side members composed of D-shaped metallic tubing arranged with their flat sides in and suitably joined to the arm-piece, a tubular cross-bar having projecting plugs at its ends and apertures in the flat sides of the side members to receive the projecting ends of said plugs, substantially as set forth.

4. In a crutch, a tubular metallic arm-piece, side members composed of D-shaped metallic tubing arranged with their flat sides in and suitably connected to the arm-piece and a cross-bar connecting the side members below the arm-piece, the lower ends of the side members being brought together with their flat sides in contact and a tubular end piece socketing the contacting lower ends of the side bars and forming the lower end of the crutch, substantially as set forth.

815,369. CEILING-PLATE. EDWARD A. MUNRO and ARTHUR B. MUNRO, New York, N. Y. Filed Feb. 1, 1905. Serial No. 243,707.



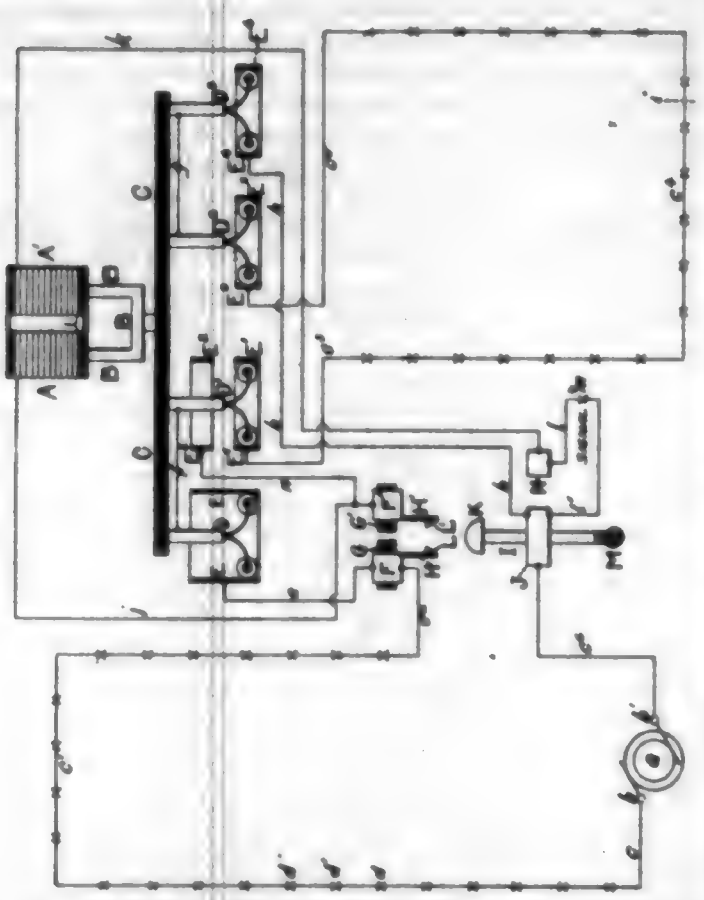
Claim.—1. In a ceiling-plate, the combination of a collar adapted to be secured about a pipe and a flexible plate pivotally attached to said collar, the pivots being so located that the angle between the plate and the collar may be varied by the movement of either with respect to the other about said pivots.

2. In a ceiling-plate provided with an opening adapted to receive a pipe, the combination of a divided collar adapted to be secured about said pipe, and a divided plate pivotally attached to said collar, the pivots being so located that the angle between the plate and the collar may be varied by the movement of either with respect to the other about said pivots, substantially as described.

815,370. SAFETY EQUIPMENT FOR SERIES ELECTRICAL DISTRIBUTION SYSTEMS. FREDERICK J. MURRAHN and ALBERT B. SHREVE, Mount Vernon, N. Y. Filed May 2, 1904. Serial No. 206,980.

Claim.—1. In a series system of electrical distribution, the combination of an electric generator, a main line in circuit therewith, a cut-out in circuit with said main line, means, in an open circuit with

said generator for automatically actuating said cut-out in the event of a rupture at any point of that portion of the circuit having the rupture, and a three-pole manually-operative switch for short-circuiting said means, and for closing the circuit of the main line extending from said electric generator.



2. In a system of electrical distribution, the combination of an electric generator, circuit-loops, translating devices arranged in series with one another in said loops, all of said loops being in a normally closed series circuit with said generator, and means both for making any loop dead upon the rupture thereof, and for maintaining alive the other loops, said means consisting of an electromagnetic circuit-controller in conjunction with a spark-gap device adjusted to transmit a current to said controller when said rupture occurs.

3. In a series system of electrical distribution, the combination of an electric generator, two or more main-line loops in series circuit with said generator, contact-terminals normally in series circuit with said loops and generator, and automatic means for electrically separating said contact-terminals from one loop consisting of an electromagnetic cut-out and a spark-gap device governing said cut-out, and adjusted to be operative by the electromotive force of the current in the main line during a rupture.

4. In a system of electrical distribution, the combination of an electric generator, circuit-loops, translating devices arranged in series with one another, in said loops, all of said loops being in a normally closed series circuit with said generator, means both for making any loop dead upon the rupture thereof, and for maintaining alive the other loops, said means consisting of a spark-gap device for transmitting a momentary current upon the occurrence of said rupture, a magnet in series with said device, and cut-outs controlled by said magnet for interrupting both terminals of the ruptured loop.

5. In a system of electrical distribution, the combination of an electric generator, circuit-loops, translating devices arranged in series with one another, in said loops, all of said loops being in a normally closed series circuit with said generator, means both for making any loop dead upon the rupture thereof, and for maintaining alive the other loops, said means consisting of a spark-gap device for transmitting a momentary current upon the occurrence of said rupture, a magnet in series with said device, cut-outs controlled by said magnet for interrupting both terminals of the ruptured loop, and means controlled by said magnet for short-circuiting said device.

6. In a series system of electrical distribution, the combination of an electric generator, two or more main-line loops in series circuit with said generator, contact-terminals normally in series circuit with said generator, contact-terminals normally in series circuit with said loops and generator, automatic means for electrically separating said contact-terminals from the main-line terminals, consisting of an electromagnetic cut-out, and a spark-gap device governing said cut-out, and adjusted to be operative by the electromotive force of the current in the main line during a rupture, and a circuit-closer controlled by the magnet of said magnetic cut-out for maintaining a current through said magnet after the operation of said spark device.

7. In a series system of electrical distribution, the combination of an electric generator, a main line having loops in series circuit with the generator and each other, contact-terminals normally in series circuit with said loops and generator, automatic means for electrically separating said contact-terminals from said main-line terminals upon the rupture of one of the loops at any point therein, for protecting life and property along said main line from the possibility of injury by a current from said generator, said means consisting of an electromagnetic cut-out, and a spark-gap device governing said cut-out, and adjusted to be operative by the electromotive force of the current in the main line, during said rupture, a circuit-closer controlled by the magnet of said magnetic cut-out for maintaining a current through said magnet after the operation of said spark device, and a manual switch for short-circuiting said magnet and for closing the main line.

8. In a series system of electrical distribution the combination of an electromagnet, a movable core therefor, a bar of insulating material attached to the core, contact devices D, D′, D^2, D^3, carried by said insulating material, four corresponding contacts E, E′, E^2, E^3, for said devices, metal binding-posts F, and F′, carbon rods G, and G′, respectively fitting in the posts, and adjustable to form between their adjacent ends a spark-gap that can be bridged by the electromotive force of the current in the main line, spring-clips H, and H′, in electrical connection respectively with the terminals F and F′, a metal rod I, binding-post J, acting as a guide for the rod I, which clips together with said rod and post form a three-pole switch, an electric generator having terminals, to which are connected the line-wires c and c^6 of a series circuit c, c', to c^6, translating devices, in said circuit which is normally closed through the generator, the line-wire c, the translating devices, contact devices E, D, D′, E′, to a portion of the main-line circuit c^3, c^4, c^5, contact devices E^3, D^2, D^3, E^4, and back to the generator, the air-gap being bridged upon the rupture of the line c^3, c^4, c^5, and the said magnet being thereby included in circuit, for operating its core and thereby short-circuiting and stopping the arc between the carbon rods G, and G′, and raising the contact devices D′, D^2, out of contact with the devices E′, and E^2, for cutting out both poles of the line c^3, c^4, c^5, from the generator, the circuits and contacts being so arranged that said magnet is cut out of circuit with the generator only upon the closing of the three-pole switch, a contact E^3, in the path of the contact D′, for serving the purpose of short-circuiting the rods G, and G′, when the magnet is energized for raising said contact devices, and a conductor f, for connecting the pair of contact devices D, and D′, to form an electric connection between the devices D, and D′, when the latter device touches the contact E^3.

9. In a system of electrical distribution, the combination of an electric generator, circuit-loops, translating devices arranged in series with one another in each loop, all of said loops being in a normally closed series circuit with said generator, and means both for making any loop dead only upon the rupture thereof, and for maintaining alive the other loops.

10. In a system of electrical distribution, the combination of an electric generator, circuit-loops in a normally closed series circuit with said generator, translating devices in series circuit in said loops, means for making any loop dead only upon the rupture thereof and for maintaining the other loops alive, and a solely manual device for making said ruptured loop alive again.

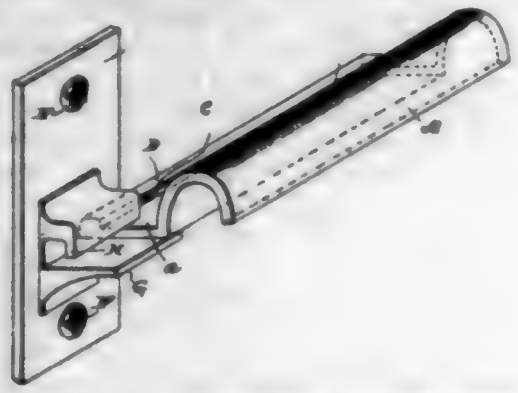
11. In a system of electrical distribution, the combination of an electric generator, circuit-loops in series with said generator and with each other, translating devices arranged in series circuit in said loops, means for making any loop dead only upon rupture thereof, and simultaneously making the rest of the loops alive, and means for invariably maintaining said dead loop dead during all the time that the break in the loop exists and until the same is repaired and both poles of the loop are included in circuit with said generator.

12. In a system of electrical distribution, the combination of an electric generator, translating devices in series circuit therewith, means actuated by the electromotive force produced by the rupture of the series circuit, for cutting off the circuit from both poles of said generator, means for holding said circuit so cut off, and a manual device for connecting said circuit again to the respective poles of said generator.

815,371. DOOR-HANGER. PHILIP A. MYERS, Ashland, Ohio, assignor to F. B. Myers & Bro., Ashland, Ohio, a Copartnership. Filed Apr. 14, 1904. Serial No. 203,076.

Claim.—1. In a door-hanger, a track structure comprising a

relatively broad tread portion of arched form, and a continuous flat supporting-flange extending laterally therefrom, in combination with supporting-brackets, each comprising two parallel arms adapted to receive and hold between them the flat supporting-flange of the track structure, one of said arms being provided with a projection to engage the track structure and prevent its lateral separation from the bracket, substantially as described.

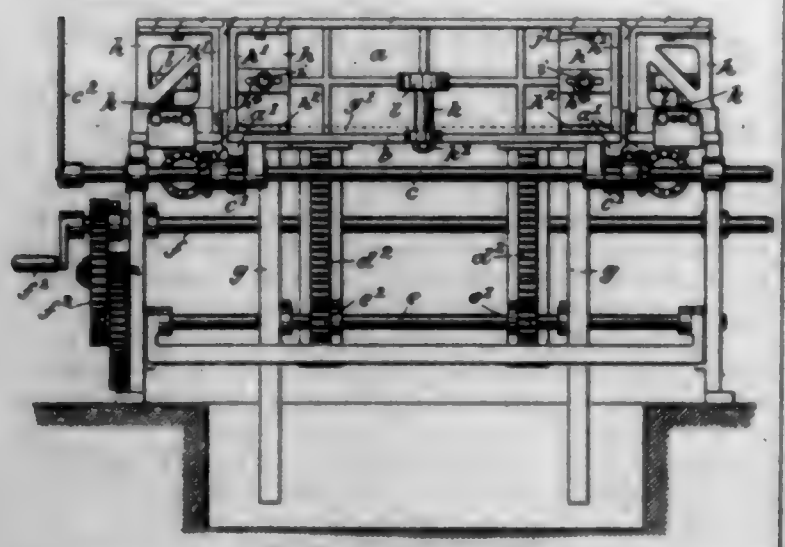


2. In a door-hanger, a track comprising a relatively broad tread portion or track proper, and a continuous flat portion or supporting-flange extending laterally therefrom and provided with a bead on its upper surface at the margin thereof, in combination with supporting-brackets, each comprising a flat arm extending under the supporting-flange of the track and a hooked arm engaging the bead thereof, substantially as described.

3. In a door-hanger, a track composed of a plurality of sections, each having a tread portion or track proper and a lateral engaging portion, said sections being alined so that their meeting ends abut, in combination with supporting-brackets located at the ends of the track and at the meeting ends of the sections, each supporting-bracket being provided with means for engaging the lateral engaging portion of the track, so as to prevent lateral movement thereof, and the end brackets being provided with end walls to prevent separation of the track-sections by longitudinal movement, the track-sections and brackets being free from fastening or connecting devices so as to be readily separable when the brackets are disconnected from their support, substantially as described.

4. In a door-hanger, a track composed of a plurality of sections, each having a tread portion and a flat lateral extension or supporting-flange, in combination with a supporting-bracket comprising two parallel arms adapted to receive and hold between them the flat supporting-flange of the track proper, one of said arms being provided with a projection to engage the track structure and prevent its lateral separation from the bracket, and end brackets similarly engaging the ends of the track-sections and provided with end walls to close the ends of the track and prevent separation by longitudinal movement of the track-sections, said end brackets also serving as stops for the hanger-pulleys, substantially as described.

815,372. MACHINE FOR MOLDING ARTIFICIAL STONE. NOYES F. PALMER, New York, N. Y. Filed Nov. 7, 1905. Serial No. 286,196.

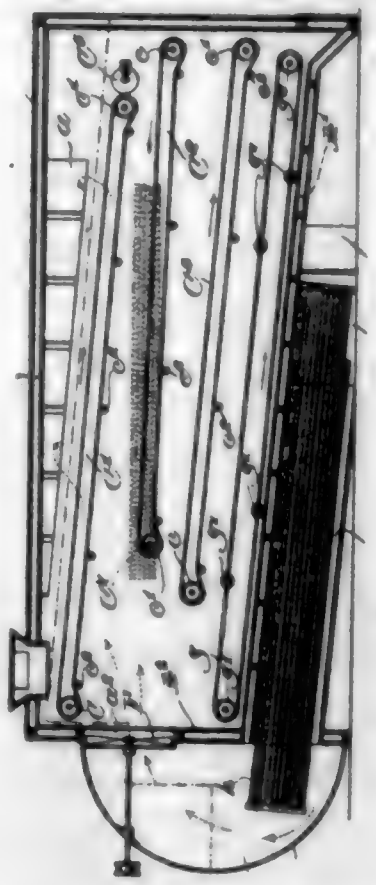


Claim.—1. In a machine for molding artificial stone, a mold having slidable sides, combined with a pair of brackets each having two upright sides, a top plate and a bottom plate, means for securing said brackets to one of the mold sides, and a shelf supported upon the brackets, substantially as specified.

2. In a machine for molding artificial stone, a mold having slidable sides and a bottom plate projecting beyond such sides, combined with brackets projecting outwardly from the sides and having a beveled lower edge, and with shelves supported on the brackets, substantially as specified.

3. In a machine for molding artificial stone, a mold having slidable sides and a slotted bottom plate projecting beyond such sides, combined with posts adjustably secured to the slotted bottom plate, and with cams that are rotatable on the posts and are adapted to engage the sides, substantially as specified.

815,373. APPARATUS FOR DRYING STARCH, &c. ELMER E. PERKINS, Melrose, Mass. Filed Dec. 9, 1904. Serial No. 236,132.



Claim.—1. In a continuous-action drying apparatus, an elongated closed chamber having an outlet near its top, an endless traveling conveyer below the outlet to sustain within and move longitudinally through the chamber the material to be treated, a heater exterior to the chamber, means to draw dry air from the heater and force it in a substantially horizontal blast into the chamber at or near the feed end of the conveyer, to take up moisture from the material thereon and pass through the outlet, and means to continuously condense the moisture in and cool the air passing therethrough, the dry cold air being returned to the heater and reheated to be again withdrawn therefrom and forced into the chamber.

2. In a continuous-action drying apparatus, an elongated closed chamber having an outlet near its top, a condensing-compartment, communicating with the outlet, a heater beneath the chamber and connected with the condensing-compartment, means to convey the material from one to the other end of the chamber, and means to draw dry cold air from the condensing-compartment into and through the heater and to force it in a substantially horizontal blast into the chamber adjacent the feed end of the conveying means, to take up moisture from the material thereon and pass through the outlet into the condensing-compartment, wherein the contained moisture is condensed to dry the air prior to its reentrance to the heater.

3. In a continuous-action drying apparatus, an elongated closed chamber having an outlet near its top, a traveling conveyer below the outlet to sustain within the chamber the material to be treated and to carry it back and forth in the chamber and discharge it at the end opposite that in which it is fed, and means to alternately heat and cool, externally to the chamber, a continuous current of air directed upon the material at the inlet end of the chamber, the hot, incoming air taking up moisture from the material and passing through the outlet to be cooled, such cooling condensing the contained moisture prior to reheating of the air and its reintroduction to the chamber, the action of the air-current upon the material diminishing as the latter approaches the discharge end of the chamber.

4. In a continuous-action drying apparatus, an elongated closed

chamber having an outlet near its top, a condensing-compartment communicating with the outlet, a heater outside the chamber and connected with the condensing-compartment, a plurality of endless traveling conveyers within the chamber one below the other, to convey material through the chamber, the material being discharged from an upper conveyer to the one next below it and thereby caused to traverse the chamber several times before its discharge, and a fan at one end of the chamber to direct the hot, dry air from the heater upon the material on the conveyers, to take up moisture from such material and then pass through the outlet to be cooled and the contained moisture condensed prior to reheating of such dry cold air in the heater and its reintroduction to the chamber.

5. In an apparatus of the class described, an elongated, closed chamber having a long outlet near its top, an external cold compartment communicating with the outlet and having a condenser therein, an endless traveling conveyer in the chamber below and extending the length of the outlet, a hot compartment beneath the chamber and provided with heating-coils, the inlet of said compartment communicating with the cold compartment below the condenser, and means to draw hot dry air from the hot compartment and continuously force it into the chamber at the end of the conveyer, to act upon the material thereon and pass thence through the long outlet to the cold compartment, the condenser therein condensing the contained moisture in the air, the dried and cooled air thereafter returning to the hot compartment to be again forced into the chamber.

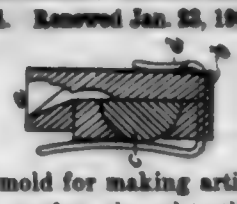
6. In apparatus of the class described, an elongated, closed chamber having an outlet near its top, a traveling conveyer to carry material through the chamber, a condensing-compartment at the side of the chamber, and communicating therewith through the outlet, a heater extended longitudinally beneath the chamber, and connected with the bottom of the said compartment, a conduit connecting the outlet of the heater with the adjacent end wall of the chamber, and a fan in the conduit, to draw dry, cold air from the condensing-compartment through the heater and direct the hot, dry air in a substantially horizontal blast into and lengthwise of the chamber to take up moisture from the moving material on the endless conveyer, the moisture-laden air passing thence upward through the outlet to the condensing-compartment to be again used.

7. In apparatus of the class described, a closed chamber having an outlet near its top, means to continuously move material to be treated through the chamber from one to the other end thereof, means to heat rapidly a current of air, means to circulate the same through the chamber to act upon the material to be dried, the heating means being located outside the chamber, means to cool and dry the air acting upon such material, the air cooling and drying means communicating with the chamber through the outlet, the hot dry air taking up moisture from the material and passing through the outlet to be cooled and thereby have its contained moisture condensed prior to reheating of such air.

8. In a continuous-drying apparatus, an elongated, closed chamber having an outlet near its top and a floor inclined in the direction of the length of the chamber, a heater beneath the floor, a cold compartment outside the chamber and communicating therewith by the outlet and also communicating with the heater at a distance from said outlet, means to draw hot, dry air from the heater and force it into one end of the chamber, to take up moisture from the material therein and pass through the outlet to the cold compartment, cooling of the air therein condensing its contained moisture, the cooled, dry air returning to the heater to be reheated, a plurality of endless conveyers arranged one above the other in and moving lengthwise of the chamber in opposite directions, to support the material on their upper runs and traverse it back and forth in the chamber from the feed to the discharge end thereof, and means to automatically brush the material falling onto the floor to the discharge end of the chamber.

9. In a continuous-drying apparatus, an elongated, closed chamber having an outlet near its top, a heater exterior to the chamber, means located at one end of the chamber, to draw heated dry air from the heater and circulate it through the chamber to act upon the material to be dried, and take up moisture therefrom, the moisture-laden air passing through the outlet, a cooling-compartment into which the outlet opens, to cool the air and condense the moisture therein, said compartment at its opposite end communicating with the heater, to convey the cooled dry air thereto to be reheated, and a plurality of endless conveyers arranged one above the other in and moving lengthwise of the chamber in opposite directions, to support the material on their upper runs and traverse it back and forth through the chamber, the material being turned over and loosened as it drops from one conveyer to the next one below it.

815,374. TOOTH-MOLD. EVELYN FIELDEPORT, London, England. Filed Nov. 10, 1904. Renewed Jan. 23, 1906. Serial No. 297,449.



Claim.—1. In a mold for making artificial teeth a detachable inset having the inner surface shaped to the contour of the lingual surfaces of said teeth, the other portions of said mold having the remaining contours of said teeth entirely formed in them, all said parts rigidly and detachably connected.

2. In a mold for making artificial teeth, a gate-piece integral with a portion of the teeth-matrices, festoons between said matrices and integral with the gate-piece, a face-piece integral with the front portions of the said teeth-matrices, a raised buttress on said face-piece adapted to act as the frame, a detachable absorbent inset adjacent to and forming the lingual side of the said teeth-matrices and means for retaining the separate pieces in the operative position.

3. In a mold for making artificial teeth, a metallic gate-piece having a series of depressions, said depressions forming portions of teeth-matrices, raised portions (festoons) integral with said gate-piece and separating said matrices, a gate-piece integral with a portion of the teeth-matrices, festoons between said matrices and integral with the gate-piece, a face-piece integral with the front portions of the said teeth-matrices, a raised buttress on said face-piece adapted to act as the frame, a detachable absorbent inset adjacent to and forming the lingual side of the said teeth-matrices, perforated swinging blocks pivotally attached to the said face-piece and clips on said block adapted to hold the parts of the mold together.

4. In a dental mold for making artificial molars and bicuspids, a metallic gate-piece having a series of depressions forming the rear part of the teeth-matrices, festoons integral with said gate-piece and separating said matrices, a face-piece integral with the front portions of the teeth-matrices. festoons between said matrices integral with the face-piece, a raised buttress on said face-piece adapted to act as the frame, the absorbent inset *c* adjacent to and forming part of the lingual side of said teeth-matrices, a detachable buttress adjustable between the face-piece and the inset, tooth-crown matrices on said buttress, and means for retaining the separate pieces in the operative position.

5. In a mold for making artificial teeth, the metal gate-piece *a* adapted to form a portion of the teeth-matrices, the face-piece *b* adapted to form another portion of the teeth-matrices, the absorbent inset *c* and the swinging buttresses *c* on said face-piece provided with clips *d*.

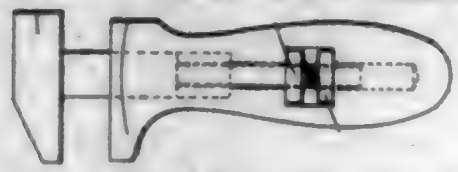
815,375. NON-REFILLABLE BOTTLE. LEWIS PRIMEAUX, Philadelphia, Pa., assignor, by direct and mesne assignments, of two-thirds to Charles A. Blumhard and August Fertig, Philadelphia, Pa. Filed Mar. 25, 1904. Serial No. 200,011.



Claim.—1. In combination with a bottle having a neck portion, a valve-seat in the neck portion, and a collar above the valve-seat, a semispherical valve adapted to rest in the seat and having a recess formed in its upper face, said recess being grooved, and the valve having a plurality of intersecting grooves formed in its exterior, spherical face, the said valve being adapted to work between the seat and the collar.

2. The combination with a bottle-neck, having a valve-seat and an integral collar above said seat, of a valve arranged upon the seat, and having an apertured cross-piece below the valve-seat, the upper portion of said valve having a recess, said recess being crossed by grooves as set forth.

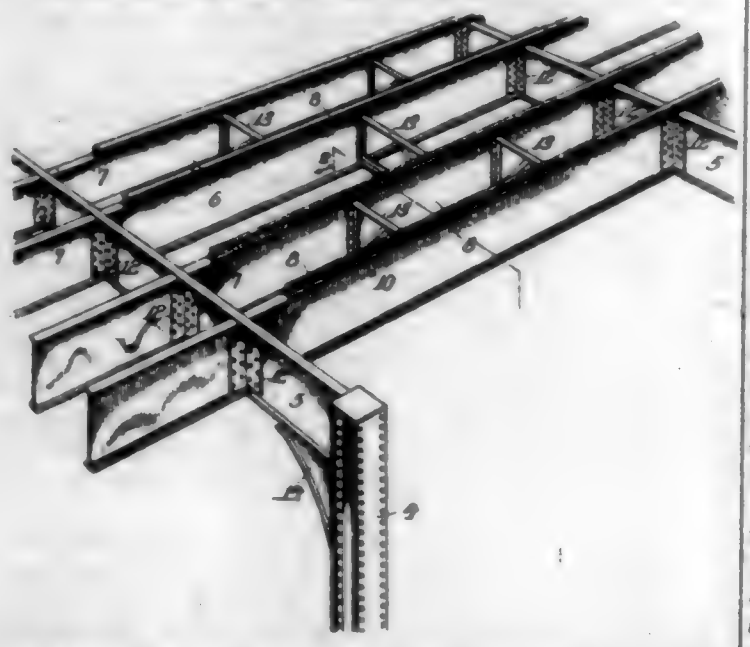
815,376. ADJUSTABLE GRIPPING-TOOL. Walter Punt, Johannesburg, Transvaal. Filed Oct. 27, 1905. Serial No. 284,731.



Claim.—1. In an adjustable gripping-tool, the combination of one member carrying a screwed spindle, another member having a recess therein and two nuts in the recess engaging with the screwed spindle and capable of individual engagement with the top and bottom respectively of the recess.

2. In an adjustable gripping-tool, the combination of one jaw carrying a screwed spindle, a second jaw, a handle attached to the second jaw and having a recess, two nuts engaging the spindle and disposed in the recess so that for adjusting purposes the two nuts are turned together while they are capable of relative movement to lock the tool in its adjusted position.

815,377. ELEVATED RAILWAY. William M. Reed, Chicago, Ill. Filed Dec. 4, 1905. Serial No. 290,190.

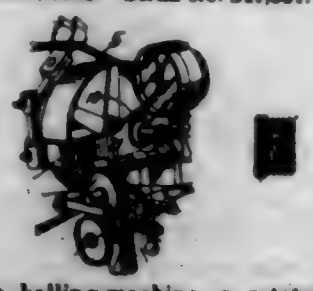


Claim.—1. In an elevated railway, the combination of a supporting structure comprising columns, cross-beams and longitudinal metal girders of uniform height with and supported by said cross-beams, and track-rails seated directly on said longitudinal girders, substantially as shown and described.

2. In an elevated railway, the combination of a supporting structure comprising columns, cross-beams, longitudinal metal girders of uniform height with the tops of said cross-beams, means adapted to give lateral stiffness to said girders, and track-rails seated on said longitudinal girders, substantially as shown and described.

3. In an elevated railway, the combination of a supporting structure comprising supporting-columns, cross-beams, longitudinal metal girders of uniform height with said supporting cross-beams, means adapted to give lateral stiffness to said girders, and track-rails seated directly on said longitudinal metal girders, and means for securing the track-rails to said girders, substantially as shown and described.

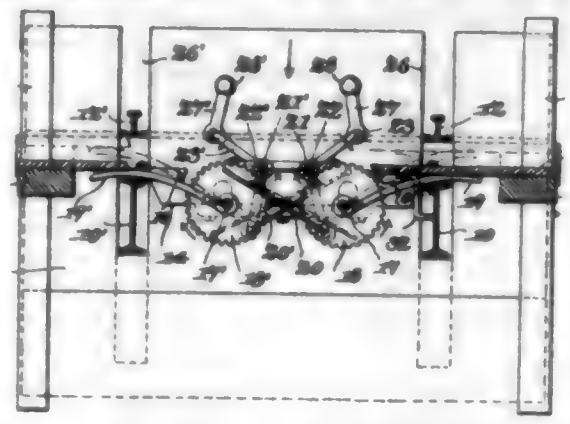
815,378. BALLING-MACHINE. Alonzo H. Rhoades, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Mar. 1, 1905. Serial No. 247,887.



Claim.—1. In a balling-machine, a rotatable pulley around which the yarn-chain passes, and mechanism operatively connected with and driven by the pulley, said mechanism including a scroll and a coöperating finger, and a speed-reducing connection including a change-gear and pinion between the pulley and the scroll.

2. In a balling-machine, a driven roll, a rotatable pulley around which the yarn-chain passes to the roll to be wound thereupon, a pulley-shaft, a gear and a worm fast on said shaft and rotatable with the pulley, a measuring-clock having a pinion in mesh with and continuously driven by said gear, a separate scroll and coöperating finger, adapted to cause the stoppage of the roll independently of said clock, and speed-reducing transmitting-gearing intermediate the scroll and said worm and actuated thereby, said scroll and clock being continuously and separately driven by the rotation of the pulley.

815,379. CATTLE-GUARD. Fred O. Richter and Gustav A. Richter, Buckholts, Tex. Filed Aug. 31, 1905. Serial No. 276,633.



Claim.—1. The combination with a railway-track, of a depressible platform disposed beneath the same, laterally-extending arms engaging the platform and a vertically-slidable gate operatively connected with the arms and movable to operative position when the platform is depressed.

2. The combination with a railway-track, of a depressible platform disposed beneath the same, shafts extending longitudinally of the track, laterally-projecting arms secured to the shafts and bearing against the bottom of the platform, and a vertically-slidable gate operatively connected with the shafts and movable to operative position when the platform is depressed.

3. The combination with a railway-track, of a depressible platform, shafts disposed beneath the platform and provided with gear-wheels, links connecting said gear-wheels, laterally-extending arms secured to the shafts and bearing against the bottom of the platform, a vertically-slidable gate, and pinions meshing with the gear-wheels and operatively connected with the gate for moving the latter to operative position when the platform is depressed.

4. The combination with a railway-track, of a depressible platform, shafts extending longitudinally of the track and provided with gear-wheels, laterally-extending arms secured to the shafts and adapted to bear against the bottom of the platform, pinions meshing with the gear-wheels, a vertically-slidable gate, and crank-arms carried by the pinions and pivotally connected with the gate for moving the latter to operative position when the platform is depressed.

5. The combination with a railway-track, of supporting-beams extending longitudinally of the track, transverse braces connecting the longitudinal beams, shafts journaled in the braces and provided with gear-wheels, a depressible platform, laterally-extending arms secured to the shafts and bearing against the bottom of the platform, a vertically-slidable gate, links pivoted to one side of the gate, and pinions meshing with the gear-wheels and provided with crank-arms the ends of which are pivotally connected to the links for moving the gate to operative position when the platform is depressed.

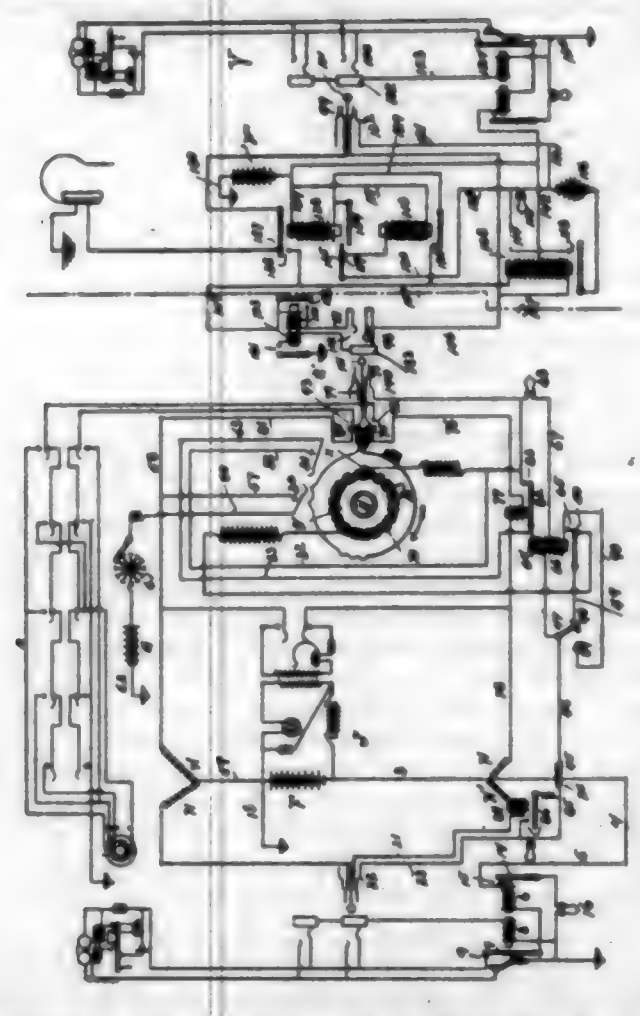
6. The combination with a railway-track, of the cross-ties some of which are provided with recesses, a depressible platform disposed between the cross-ties, and a vertically-slidable gate operatively connected with the platform and movable to operative position when the latter is depressed, the upward movement of the platform being limited by engagement with the walls of said recesses.

7. In a cattle-guard, a vertically-sliding gate, angularly-movable arms connected with and to move the gate, shafts rotatably mounted, gears connecting the shafts and arms and whereby a rotary movement of the shafts moves the arms, levers rigidly mounted upon the shafts, and a platform so mounted upon the levers that a weight thereon rotatably moves the shaft.

8. The combination with a railway-gate, of shafts extending longitudinally of the track and provided with spaced gear-wheels connected by diagonally-disposed links, laterally-extending arms secured to the shafts, a depressible platform supported by said arms, and a vertically-slidable gate operatively connected to the gate and movable to operative position when the platform is depressed.

9. The combination with a railway-track, of the cross-ties, vertical guides secured to the ends of one of the cross-ties, a gate mounted for vertical movement between said guides, a depressible platform, shafts extended longitudinally of the track and provided with spaced gear-wheels connected by diagonal braces, arms extending laterally from the shafts and bearing against the bottom of the platform, and pinions meshing with the gear-wheels and provided with crank-arms operatively connected with the gate for moving the latter to operative position when the platform is depressed.

815,380. **TELEPHONIC APPARATUS.** JOHN G. ROBERTS, Detroit, Mich., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 26, 1900. Renewed Sept. 19, 1902. Serial No. 124,062.



Claim.—1. In combination with the ringing apparatus of a telephone-substation, a ringing device located at the central station, consisting of a continuously-revolving shaft, an armature revolving therewith capable of movement longitudinally in the line of the shaft, a circular electromagnet concentrically embracing the shaft, but elastically attached to a fixed portion of the sustaining-frame, electrical means for energizing said electromagnet for the purpose of bringing the armature in contact therewith, whereby said armature compels a partial rotation of the electromagnet, means attached to the periphery of the electromagnet whereby a series of ringing contacts are made to actuate the ringing mechanism at the substation, an electromagnetic means for automatically discontinuing the circuit energizing the electromagnet whereby the armature is released therefrom and the electromagnet returns automatically to its original position by virtue of the resiliency of its elastic connections, substantially as described.

2. In combination with the ringing apparatus of a telephone-substation, a ringing device located at the central station, consisting of a continuously-revolving shaft, an armature revolving therewith capable of movement longitudinally in the line of the shaft, a circular electromagnet concentrically embracing the shaft, elastic connections between the electromagnet and a fixed portion of the sustaining-frame, electrical means for energizing said electromagnet for the purpose of bringing the armature in contact therewith, whereby said armature compels a partial rotation of the electromagnet, means attached to the periphery of the electromagnet whereby a series of ringing contacts are made to actuate the ringing mechanism at the substation, an electromeans for automatically discontinuing the circuit energizing the electromagnet whereby the armature is released therefrom and the electromagnet returns automatically to its original position by virtue of the resiliency of its elastic connections, and means whereby said electromagnet is energized by the closing of a circuit when the calling-plug is inserted in the calling-jack, substantially as described.

3. In combination with the ringing apparatus of a telephone-substation, a ringing device having a sustaining-frame located at the central station, consisting of a continuously-revolving shaft, an armature revolving therewith capable of movement longitudinally in the line of the shaft, a circular electromagnet concentrically embracing the shaft, elastic connections between the electromagnet and a fixed portion of the sustaining-frame, electrical means for energizing said electromagnet for the purpose of bringing the armature in contact therewith, whereby said armature compels a partial rotation of the electromagnet, means attached to the periphery of the electromagnet for making a series of ringing contacts to actuate the ringing mechanism at the substation, an electromeans for automatically discontinuing the circuit energizing the electromagnet whereby the armature is released therefrom and the electromagnet returns automatically to its original position by virtue of the resiliency of its elastic connections, and means for energizing said electromagnet when the calling-plug is inserted in the calling-jack, and a "don't-answer" signal whereby, after a specified interval, the calling subscriber is notified that the called subscriber has not answered, substantially as described.

4. In an electrosignaling apparatus for a central station of a telephone system, the combination of a continuously-revolving shaft, a series of electromagnets one for each operator's set arranged concentrically upon said shaft, a framework with sustaining-brackets each having appropriate bearings for said electromagnets, a spring connection between each of said magnets and each of said brackets, means for holding said electromagnets in a normal or reposing position against the tension of the spring, a series of rotating armatures corresponding to said electromagnets, each of which is in close proximity to each of said magnets, said armatures being concentrically attached to said shaft and rotating therewith, but capable of longitudinal movement thereon, elastic means to resist such movement, a source of electricity, means for completing a circuit from said source through the coils of each of said electromagnets respectively, by the completion of a conversational circuit, whereby the said electromagnet is caused to revolve due to the contact of said armature, ringing mechanism and circuits actuated by said revolving electromagnet, and means for automatically restoring each of said electromagnets respectively to their original position, substantially as described.

5. In combination with a continuously-revolving shaft, a fixed framework, an electromagnet a coil-spring to rotatably attach said magnet to said fixed framework, means for retaining the magnet in a normal position, electrical circuits adapted to energize the coil of said electromagnet and a disk armature connected to rotate with said shaft, spring mechanism thereon for normally holding it away from the electromagnet, and adapted to be overcome by the attraction of the magnet for the armature, whereby the armature would compel the electromagnet to rotate so long as the two were in contact, a stop fixed to said rotating magnet to limit its rotation and a series of contacts actuated by said stop, whereby the circuit by which said electromagnet is locked to the armature is broken, thereby automatically releasing the armature from the eletromagnet, substantially as described.

6. In combination with the ringing apparatus of a telephone-station, a ringing device consisting of a continuously-revolving shaft and a stationary frame, an annular relay concentric therewith consisting of two parts one part rotating normally with the shaft and a spring to normally attach the other part to the stationary framework to permit rotary motion, means for energizing the electromagnet of said relay whereby the two parts are magnetically attracted and rotate in unison while said electromagnet is energized, substantially as described.

7. In a telephone system, subscribers' lines, an operator's connective device, a ringing-generator, and means to connect said generator to said device comprising in part a rotatable shaft, a circular magnet or relay comprising two parts, one a disk armature and the other a core or shell having a coil wound thereon, one of said parts being mounted to rotate with the shaft, and the other mounted to rotate independently of the shaft, and a coil-spring having one end connected with said latter part.

8. In a telephone system, subscribers' lines, an operator's cord-circuit, a ringing-generator, and means to connect said generator to said cord-circuit coinprising in part a rotatable shaft, a circular magnet comprising a disk armature mounted to rotate therewith, and a circular shell or core having a magnet-coil wound thereon, a support

on which said core is rotatably mounted, and a spring yieldingly connecting said core with said support.

9. In a telephone system, subscribers' lines, an operator's cord-circuit, a ringing-generator, and means to connect said generator to said cord-circuit comprising in part a rotatable shaft, an armature and a magnet core or shell through which said shaft passes, the said armature being mounted to rotate with said shaft and being longitudinally movable thereon, and the said shell being supported independent of said shaft, a coil-spring surrounding the shaft and within the shell and having an end connected with the shell and another with the support.

10. In a telephone central-office ringing apparatus, the combination with framework, of a cylindrical rotatable part therein, contacts on said framework near the said cylinder, means to effect its rotation in both directions, projections on said cylinder to operate said contacts as it rotates in one direction, and means for preventing such operation when the cylinder rotates in the reverse direction.

11. In a telephone central-office ringing apparatus the combination, of a cylinder mounted to rotate forward and backward therein, pins, lugs or projections extending from said cylinder, contacts mounted on the frame in the path of said pins, lugs or projections, and means for drawing in said pins, lugs or projections in the backward rotation of the cylinder so that the contacts are not then operated.

12. In a telephone central-office ringing apparatus, a rotatable element having a pin or plunger in its periphery, a longitudinal plunger coacting with said peripheral plunger to project the same beyond its normal position, a spring to force said plunger back into the cylinder, means to press on said longitudinal plunger to project the other, and contacts located within operating distance of said projected plunger.

13. In a telephone central-office ringing apparatus, a rotatable element having a series of plungers radially movable in its periphery, longitudinal plungers adapted to project beyond the face of said cylinder and coacting with the other plungers to force the same outward, springs to hold the latter plungers inward, contacts mounted in the path of said projected peripheral plungers, and means to simultaneously press upon and release all the longitudinal plungers.

14. In a telephone central-office ringing apparatus, a rotatable shaft, a cylindrical element adapted to rotate independently of said shaft, a circular disk rotatably secured to said shaft but longitudinally movable, contacts located near the periphery of said cylinder, plungers radially movable in the periphery of said cylinder, longitudinal plungers projecting from the end or face of said cylinder and coöperating with the other plungers to force them outward, and means to force said disk against said cylinder to rotate the same and operate the plungers.

15. In a telephone central-office ringing apparatus, a rotatable shaft, a circular relay or magnet comprising a disk armature rotatably secured to said shaft and longitudinally movable, a concentric magnet core or shell rotatable independent of said shaft and having a coil wound thereon, a spring connecting said shell with the framework, plungers movable in the periphery of said shell, longitudinal plungers coacting with the other plungers to force the same outward, means to force them inward and the longitudinal plungers back, contacts mounted in the path of the projected peripheral plungers, and means to close a circuit through said coil to draw up the armature, project the plungers and rotate the cylinder against the tension of the said spring and when said circuit is broken to release the armature and draw in the plungers so as not to operate the contacts on the backward rotation of the magnet-cylinder.

16. In a telephone-exchange, the combination with line-circuits, of operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, a time-limit apparatus, and a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time.

17. In a telephone-exchange, the combination with line-circuits, of operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, and a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time.

18. In a telephone-exchange the combination with line-circuits, of operator's connective means to interconnect said circuits in pairs, and a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, and an operator's disconnecting-signal automatically operated by said time-limit apparatus after a predetermined time.

19. In a telephone-exchange, the combination with line-circuits, of operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, and a "don't-answer" and operator's disconnecting-signal automatically operated by said time-limit apparatus after a predetermined time.

20. In a telephone-exchange, the combination with line-circuits, operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, a time-limit apparatus, a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device operative after a predetermined time to cut off said calling device and said time-limit apparatus.

21. In a telephone-exchange, the combination with line-circuits, operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device also operative after a predetermined time to cut off said calling device and said time-limit apparatus.

22. In a telephone-exchange, the combination with line-circuits, operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, an operator's disconnecting-signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device also operative after a predetermined time to cut off said calling device and said time-limit apparatus.

23. In a telephone-exchange, the combination of line-circuits, operator's connective means to interconnect said circuits in pairs, a periodic calling device introduced into one of said circuits by the act of connecting said means thereto, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, a "don't-answer" and an operator's disconnecting signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device operative during said predetermined time to cut off said calling device and said time-limit apparatus.

24. In a telephone system, the combination with a telephone-line, of a periodic calling device connected with the line in the act of establishing a connection therewith, a time-limit apparatus, a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device adapted to be operated by the response of the subscriber to cut off the calling device.

25. The combination with telephone-lines, of a periodic calling device connected with one of the lines in the act of establishing a connection therewith, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, a "don't-answer" signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device adapted to be operated by the response of the called subscriber to cut off said calling device and time-limit apparatus.

26. The combination with telephone-lines united for conversational purposes, of a periodic calling device connected with one of said lines in the act of making the connection, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, an operator's disconnecting-signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device operated by the response of the called subscriber to cut off said calling device and said time-limit apparatus.

27. The combination with subscribers' lines, of a periodic calling device introduced into one of said lines in the act of making a connection therewith, an automatic time-limit apparatus for cutting off said calling device after a predetermined time, a "don't-answer" signal and an operator's disconnecting-signal automatically operated by said time-limit apparatus after a predetermined time, and an automatic cut-off device operative by the response of the subscriber to cut off said calling device and said time-limit apparatus.

28. The combination with a telephone-line, of an operator's cord-circuit having a connecting-plug attached thereto, an intermittent periodic ringing device adapted to be connected with the line

upon the establishment of a connection and to always send out ringing-current immediately upon the insertion of the plug, and means to disconnect the said device upon the response of the called subscriber.

29. The combination with a telephone-line, of an operator's connecting-plug, an intermittent periodic ringing device adapted to be connected with the line by the act of inserting the plug, each intermission in the ringing being followed by a greater number of short rings than in the previous period, means to cause the device to immediately send out ringing-current upon the insertion of the plug, and means operated by the response of the called subscriber to disconnect and restore the device to normal position.

30. The combination with an operator's cord-circuit, a trunk-line and a subscriber's line, of a ringing device associated with the cord-circuit, and means for automatically connecting the device with the cord-circuit to signal the subscriber upon the connection of the cord-circuit with the trunk and the trunk with the line, substantially as described.

31. The combination with a cord-circuit, of a trunk-line with which said circuit is connected, a subscriber's line, a ringing device associated with the cord-circuit, and means to automatically connect the same with the cord-circuit upon the connection of the trunk with the subscriber's line and to automatically render the same inoperative upon the response of the subscriber.

32. The combination with a cord-circuit, a trunk-line with which the cord-circuit is connected, and a subscriber's line, of a ringing device and a disconnecting-signal associated with said cord-circuit, and means for automatically operating said device upon the connection of the trunk-line with the subscriber's line and to automatically disconnect the same upon the response of the subscriber, said disconnecting-signal being thereafter under the control of the subscriber.

33. The combination with subscribers' lines terminating at different offices, a cord connector at one office, and a trunk-line extending between the offices, of supervisory signals and a ringing device associated with the cord connector, means for automatically connecting said device with the cord connector upon connecting said connector with the trunk-line and the latter with the called-subscriber's line, and further means for thereafter controlling the said supervisory signals from the substations, whereby the operator at the cord connector has complete supervision of the connection.

34. The combination with a calling and called telephone-line and a cord-circuit at a central office for uniting them, of an automatic ringing device at the central office for sending signaling-current over the called line, a "don't-answer" signal, a switch for connecting the same with the calling line, an automatic time-limit apparatus set in operation simultaneously with the automatic ringing device, and means controlled by said time-limit apparatus for actuating said switch, whereby the calling party is automatically notified when the called station has been signaled a given time, substantially as described.

35. The combination with a calling and a called telephone-line, of an automatic ringing device at the central office for sending signaling-current over the called line, a "don't-answer" signal, a switch for connecting the same with the calling line, an automatic time-limit device set in operation simultaneously with the automatic ringing device, and means controlled by said time-limit device for actuating said switch, whereby the calling party is automatically notified when the called station has been signaled a given time, substantially as described.

36. The combination with a calling and a called telephone-line and means at a central office for uniting them, of an automatic ringing device at the central office for signaling the called station, a "don't-answer" signal, a switch for disconnecting the ringing-current from the called line and applying the said signal to the calling line, and an automatic time-limit device for bringing about the operation of said switch, whereby ringing-current is automatically applied to the called line for a given time and then stopped and a signal transmitted to the calling station, substantially as set forth.

37. The combination with a calling and a called line, and a cord-circuit at a central office for uniting them, of a source of ringing-current and a ringing device at the central office for connecting the same with the called line, means controlled through the agency of a switch at the called station for automatically disconnecting the ringing-current, an automatic time-limit device set in operation when ringing-current is applied to the called line, a "don't-answer" signal, and a switch for connecting the same with the calling line controlled by said time-limit device, whereby the called party is automatically signaled for a definite time, and upon his failure to respond, a report to that effect is automatically made to the calling party, substantially as described.

38. The combination with a calling and a called line, of a source of ringing-current and an automatic ringing device at the central office for connecting the same with the called line, means controlled through the agency of a switch at the called station for disconnecting the ringing-current, an automatic time-limit device set in operation when the ringing-current is applied to the called line, a "don't-answer" signal, and a switch for connecting the same with the calling line controlled by said time-limit device, whereby the called party is automatically signaled for a definite time and, upon his failure to respond, a report to that effect is automatically made to the calling party, substantially as described.

39. The combination with a telephone-line extending to a central office and means for there connecting it with a second or called line, of an automatic ringing device and means for connecting the same with the called line to signal the called party, means at the central office under the electrical control of the called party for disconnecting the ringing device from the line, a "don't-answer" signal and a switch for applying the same to the first-mentioned or called line, and an automatic time-limit device for operating said switch and for disconnecting the ringing device, substantially as described.

40. The combination with a calling and a called telephone-line and means at a central office for uniting them, of a source of ringing-current and means for automatically applying the same to the called line, means at the central office under the electrical control of a switch at the called station for disconnecting the source of ringing-current, a "don't-answer" signal and an automatic switch for applying the same to the calling line, an automatic interrupter for intermittently disconnecting the ringing-current from the called line, and an automatic time-limit device to disconnect said source of ringing-current and for controlling said automatic switch, whereby the called party is automatically signaled for a given time, and a signal then transmitted to the calling party indicating that there has been no response, substantially as set forth.

41. The combination with a calling and a called telephone-line and means at a central office for uniting them, of a source of ringing-current and an automatic ringing device for applying the same to the called line, means controlled through the agency of a switch at the called station for disconnecting the source of ringing-current, a source of current connected with the calling line, means at the substation of the calling line for determining the flow of current therein, and a "don't-answer" signal, and an automatic time-limit apparatus for disconnecting said ringing-current from the called line and applying the "don't-answer" signal to the calling line, substantially as described.

42. The combination with a calling and a called telephone-line and means at a central office for uniting them, of a source of ringing-current and means for automatically applying the same to the called line, means at the central office under the electrical control of a switch at the called station for stopping the flow of ringing-current, a "don't-answer" signal, a switch for applying the same to the calling line and disconnecting the ringing-current from the called line, an instrument in the calling line responsive to the "don't-answer" signal, a rotatable cam for actuating the switch last mentioned, a device for intermittently interrupting the flow of ringing-current in the called line, and an electromagnetic device for controlling the rotation of the aforesaid cam, substantially as described.

43. In a telephone system, the combination with a calling line and a called line, of means at a central office to interconnect them for conversational purposes, a periodic calling device adapted to be connected with the called line, a time-limit apparatus to cut off said ringing device after a predetermined time, and a "don't-answer" signal also controlled by said time-limit apparatus to notify the calling party of the failure of the called party to respond after said predetermined time, substantially as described.

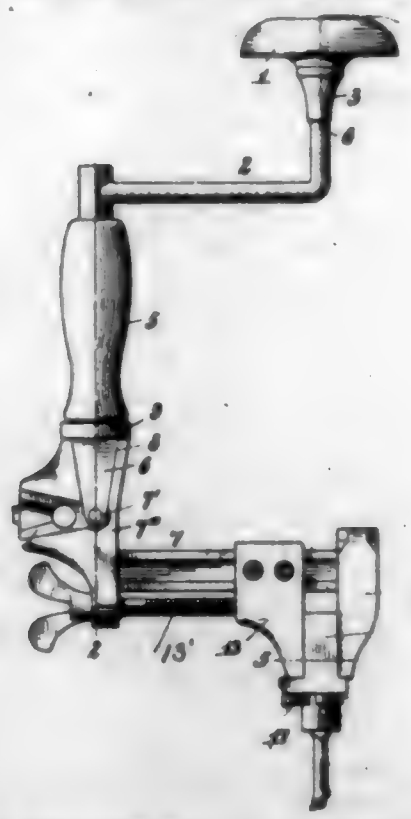
44. In a telephone system, the combination with a calling line and a called line, of means at a central office to interconnect them for conversational purposes, an automatic ringing device for the called line, a time-limit apparatus, and a "don't-answer" signal, said time-limit apparatus being adapted to cut off said ringing device after a predetermined time and to connect the "don't-answer" signal to the calling line to notify the calling party of the failure of the called party to respond.

45. The combination with a calling and a called telephone-line and a cord-circuit to unite them, of a central battery connected with the cord-circuit and supervisory signals associated with each end of the said circuit, an automatic ringing device connected with the cord-circuit, by the act of connecting the said circuit with the called line, a relay to disconnect said device controlled by current from

said battery flowing in the called line, said current-flow being determined by the position of the telephone switch-hook at the called substation, an automatic time-limit apparatus to cut off said ringing device in case the called party does not respond within a given time, and an "answer-back" mechanism adapted to be connected with said cord-circuit by said time device to notify the calling subscriber of the failure of the called party to respond, substantially as described.

46. In a telephone system, the combination with a cord-circuit and a trunk-circuit adapted to connect subscribers' lines for conversation, of an automatic ringing outfit associated with the cord-circuit and operative when a connection is made with the line to send ringing-current through the trunk to the called-subscribers' stations, and means for automatically cutting off said outfit, substantially as described.

815,381. COMBINATION-TOOL. PETER L. ROBERTSON, Canfield, Canada. Filed Apr. 24, 1905. Serial No. 257,128.



Claim.—1. The combination in a tool, of a shank having thereon a fixed and a movable jaw, of an adjustable handle having a tapered head, recesses in the shank to receive said head, a projection located adjacent each of said recesses, a locking-annulus on the handle having an eccentric groove therein adapted to receive said projections for locking the handle in adjusted position.

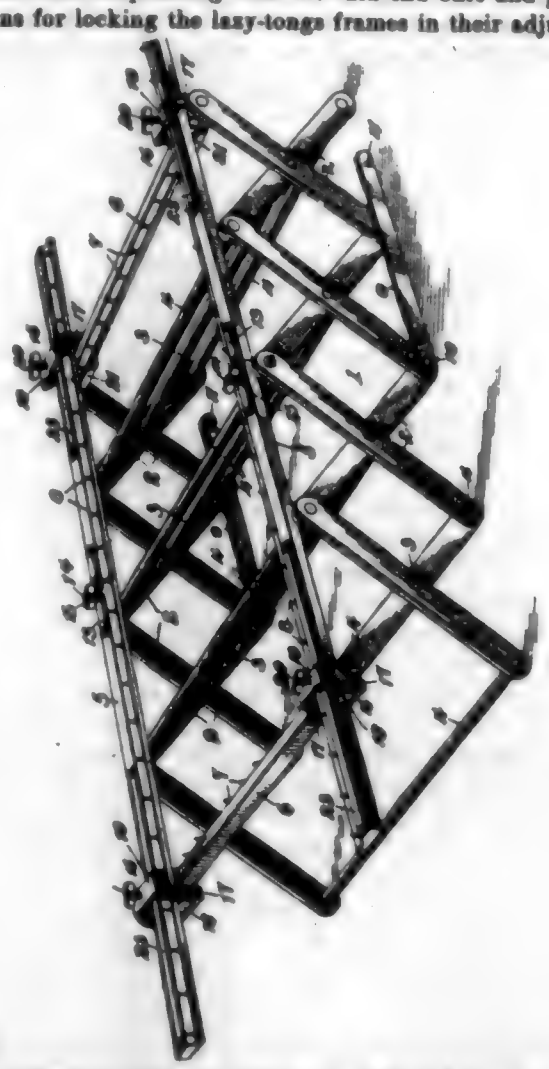
2. In a tool of the class described, the combination with a tool-shank formed with a head, recesses formed in said head, projections adjacent said recesses, of a handle formed with a tapered head adapted to engage one of the recesses, a locking-annulus on the handle having an eccentric groove therein adapted to engage the projections on the head and secure the handle at adjusted angles to the shank.

3. In a tool of the class described, the combination with the tool-shank formed with a head, tapered recesses in said head, projections adjacent said recesses, of a rod having a handle thereon and an enlarged lower portion, the tapered head on the end of said rod adapted to engage one of the tapered recesses, the locking-annulus on the enlarged portion of the rod having an eccentric groove therein adapted to engage one of the projections on the head of the shank to lock the handle at an angle or parallel to said shank.

4. In a combination-tool, the combination with the tool-shank formed with a head, tapered recesses in said head, projections adjacent said recesses, of a rod having a handle thereon and an enlarged lower portion, the tapered head on the end of said rod adapted to engage one of the tapered recesses, the stud passing through said head and the tool-shank, the locking-annulus mounted on the enlarged portion of the rod having an eccentric groove therein adapted to engage one of the projections on the head of the shank to lock the handle at an angle or parallel to the tool-shank.

815,382. COMBINED CURTAIN-STRETCHER AND CLOTHES-DRIER. WILLIAM M. RUHL, Greensburg, Pa. Filed Mar. 25, 1904. Serial No. 199,904.

Claim.—1. A combined curtain-stretcher and clothes-drier, comprising opposite parallel lazy-tongs frames, transverse clothes-supporting bars connecting the lazy-tongs frames at the ends of the bars or members thereof, said lazy-tongs frames forming the sides of the combined curtain-stretcher and clothes-drier and arranged to be placed upon the floor or other supporting-surface either in a horizontal or vertical position, and bars carried by the lazy-tongs frames and movable toward and from each other by the adjustment of the same and provided with curtain-engaging devices, and curtain-engaging side bars coöperating with the said end bars and provided with means for locking the lazy-tongs frames in their adjustment.



2. A combined curtain-stretcher and clothes-drier, comprising opposite lazy-tongs frames, transverse clothes-supporting bars connecting the lazy-tongs frames at the center and ends of the bars or members thereof, said frames forming the sides of the combined curtain-stretcher and clothes-drier and being placed upon the floor or other supporting-surface either in a horizontal or vertical position, transversely-disposed curtain-engaging bars connecting the lazy-tongs frames and carried by the same in their adjustment, curtain-engaging side bars coöperating with the said curtain-engaging bars and arranged longitudinally of the lazy-tongs frames, and means for clamping the curtain-engaging bars, whereby the lazy-tongs frames are secured in their adjustment.

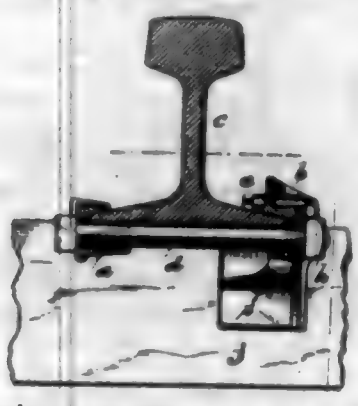
3. A device of the class described, comprising an extensible clothes-drier provided with opposite curtain-engaging bars movable toward and from each other by the adjustment of the clothes-drier, detachable curtain-engaging bars supported by the clothes-drier and provided between their ends with means for engaging the clothes-drier at an intermediate point, and means for clamping the detachable bars to the clothes-drier beyond the said engaging means for securing both the detachable curtain-engaging bars and the clothes-drier rigidly in their adjusted positions.

815,388. RAIL-ANCHOR. JOHN M. SCOTT, Racine, Wis. Filed Dec. 30, 1905. Serial No. 293,733.

Claim.—1. A rail-anchor comprising a recessed jaw adapted to be clamped on a rail-flange and having a transverse opening cutting the recess for the rail-flange, and a wedge fitting said opening and having one or more longitudinal teeth adapted to bite into the rail-flange, substantially as described.

2. A rail-anchor comprising a recessed jaw adapted to be clamped on a rail-flange and having a transverse cylindrical opening cutting the recess for the rail-flange, and a semicylindrical wedge fitted and adapted to turn in said opening and formed on one side with a teeth which is adapted to bite into the rail-flange, and thrust

on the rail tending to turn said wedge and to increase its bite on the rail-flange, substantially as described.



3. A rail-anchor comprising a pair of jaws and a connecting-bolt for clamping them on a rail-base, one of said jaws having a recess for the rail-base, a transverse bolt-hole below said recess, and a transverse cylindrical opening cutting said recess adjacent to the bolt-hole, and a semicylindrical wedge fitted and adapted to turn in said opening and having a notch in its larger end arranged to engage with a nut on the adjacent end of the bolt and a longitudinal tooth on one side adapted to bite into the rail-base, substantially as described.

4. A rail-anchor comprising a recessed jaw adapted to be clamped on a rail-base flange and having a transverse cylindrical opening cutting said recess, and a semicylindrical wedge fitted and adapted to turn in said opening and formed on one side with longitudinal teeth which are adapted to bite into the rail-base flange, substantially as described.

5. In a rail-anchor the combination of a pair of recessed jaws, a bolt connecting said jaws and adapted to clamp them upon the base-flanges of a rail, one of the jaws having a transverse bolt-hole, and a transverse cylindrical opening cutting the recess for the rail-base flange adjacent to the bolt-hole, and a semicylindrical wedge fitted to turn in said opening and having longitudinal teeth on one side to bite into said flange and a notch or recess in the larger end arranged to engage with a nut on the adjacent end of the bolt, to hold the wedge in place and prevent the nut from turning, substantially as described.

6. A rail-anchor comprising a jaw recessed to receive and fit over a rail-base flange and having a vertical socket intersecting the recess for said flange and an angular key inserted in said socket and adapted to bite into the edge of the rail-flange, substantially as described.

7. A rail-anchor comprising a jaw recessed to receive and fit over a rail-base flange and having a vertical socket and a transverse opening each cutting the recess for said base-flange, an angular key fitted in said socket and adapted to bite into the edge of the rail-flange, and a toothed wedge fitted in said opening and adapted to bite into the top of the base-flange, substantially as described.

815,384. STATIC DISCHARGER AND LIGHTNING-ARRESTER. HENRY M. SHAW, East Orange, N. J., assignor to Francis H. Shaw, East Orange, N. J. Filed Feb. 8, 1905. Serial No. 244,094.

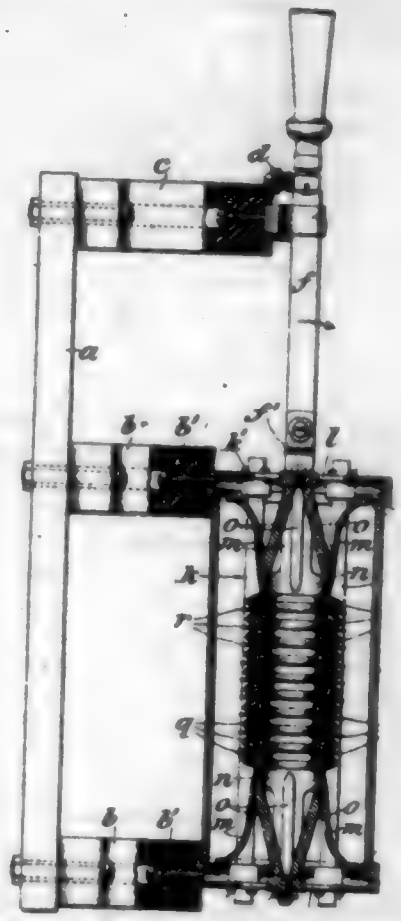
Claim.—1. In a lightning-arrester and static discharger, the combination of a hollow composite body composed of alternating conductors and insulators and apertured conducting-heads between which said composite body is held, whereby air may freely circulate through said composite body, substantially as described.

2. In a lightning-arrester and static discharger, the combination of a hollow composite body composed of alternating ring-like conducting-bodies and ring-like insulators, and apertured conducting-heads between which said composite body is held, substantially as described.

3. In a lightning-arrester and static discharger, the combination of a hollow, composite body composed of alternating conducting-rings and insulators, said conducting-rings having an ovoid section and conducting-heads between which said composite body is secured, substantially as described.

4. In a lightning-arrester and static discharger, the combination of a hollow composite body composed of alternating conductors and insulators, conducting-heads between which said composite body is secured and an insulating-casing surrounding said composite body and also held between said heads, substantially as described.

5. In a lightning-arrester and static discharger, the combination of a hollow composite body, composed of alternating conducting bodies and insulators, heads between which said composite body is held and rods holding said heads together and preventing lateral displacement of the members of said composite body, substantially as described.



6. In a lightning-arrester and static discharger, the combination of a hollow, composite body, composed of alternating conductors and insulators, conducting-heads between which said composite body is held, rods holding said heads together against said composite body, and an insulating-casing also held between said heads, substantially as described.

7. In a lightning-arrester and static discharger, the combination of a composite body composed of alternating ring-like conductors and ring-like insulators affording a free passage through said body, apertured heads between which said composite body is held and an insulating-casing surrounding said body and held between said heads, substantially as described.

8. In a lightning-arrester and static discharger, the combination of a composite body composed of alternating ring-like conductors and ring-like insulators, apertured heads between which said composite body is held, insulating-rods holding said heads together against the composite body and preventing lateral displacement of the members thereof and an insulating-casing held between said heads, substantially as described.

9. A ring-like conducting-body for a lightning-arrester and static discharger substantially ovoid in cross-section.

10. A ring-like conducting-body for a lightning-arrester and static discharger formed of carbonized material and substantially ovoid in cross-section.

11. In a lightning-arrester and static discharger, the combination of a series of alternating conductors and insulators and conducting-heads, said conductors being substantially ovoid in cross-section, substantially as described.

12. In a lightning-arrester and static discharger, the combination of a series of conductors and insulators and conducting-heads, said conductors being ring-like in form and substantially ovoid in cross-section, substantially as described.

815,385. BRIDLE-BIT. HERMANN A. SIEVERT, U. S. Army. Filed Jan. 3, 1905. Serial No. 239,304.

Claim.—1. A bridle-bit, comprising side pieces or branches, a curb-strap connecting the upper ends of said side pieces or branches, and a connection between the lower ends of said side pieces or branches, in combination with a snaffle member having a universal-joint connection at its ends with the side pieces or branches and intersecting the plane of swinging motion of the latter for the purpose of limiting forward movement of the lower portion of said side pieces or branches.

2. A bridle-bit, comprising a pair of side pieces or branches having rearwardly-projecting perforated ears, and a snaffle member

having its outer ends terminating in loops which loosely interlock with said perforated ears.



3. A bridle-bit, comprising a pair of side pieces or branches having rearwardly-projecting perforated ears, and a snaffle member comprising a pair of sections terminating at their inner ends in loosely-interlocked loops and at their outer ends in loops loosely interlocked with the perforated ears of the side pieces or branches and adapted to positively limit forward swinging movement of the lower portions of said side pieces or branches.

4. A bridle-bit, comprising a pair of side pieces or branches having rearwardly-projecting ears, a snaffle member, comprising a pair of sections terminating at their inner ends in loosely-interlocked loops and at their outer ends in loops loosely interlocked with the perforated ears of the side pieces or branches and adapted to positively limit forward swinging movement of the lower portions of said side pieces or branches, and rings extending through the snaffle-sections.

5. A bridle-bit, comprising a pair of side pieces or branches having rearwardly-projecting ears, a snaffle member, comprising a pair of sections terminating at their inner ends in loosely-interlocked loops and at their outer ends in loops loosely interlocked with the perforated ears of the side pieces or branches and adapted to positively limit forward swinging movement of the lower portions of said side pieces or branches, rings extending through the snaffle-sections, and a curb-strap connection attached to the upper ends of said side pieces or branches and extending through said rings.

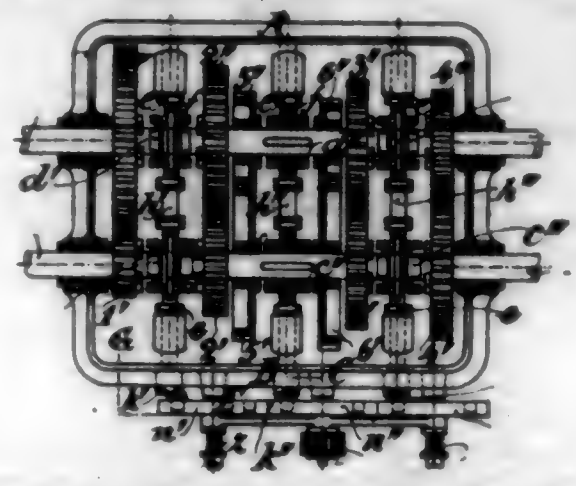
6. A bridle-bit, consisting of a pair of side pieces or branches, a yoke pivotally connecting the lower ends of the side pieces or branches, a curb-strap connecting the upper ends of the side pieces or branches, and a snaffle member having a universal-joint connection at its ends with the side pieces or branches and intersecting the path of movement of the latter to limit the forward swing of their lower portions.

7. A bridle-bit, comprising a pair of side pieces or branches having their upper ends curved rearward and terminating in eyes, and their lower ends terminating in loops and having other loops projecting rearwardly, above their lower ends, a yoke pivotally connecting the lower loops of said side pieces or branches, a curb-strap interlocked with the eyes of said side pieces or branches, a snaffle member having universal-joint connections at its ends with said side pieces or branches below and forward of their eyes, and rings extending through said snaffle member.

815,386. CHANGE-SPEED GEARING. Eugen Sollek, Basel, and Friedrich Hottinger, Berne, Switzerland. Filed Apr. 20, 1904. Serial No. 205,614.

Claim.—1. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, and a series of clutch-operating cranks engaging in said cam-grooves, substantially as set forth.

2. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, and means for moving the rotatable disks axially on their spindles to cause the disengagement and reëngagement of the cranks in the cam-grooves when it is desired to change from one speed to another, substantially as set forth.



3. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cams engaging in said cam-grooves, a pedal-operated shaft provided with engaging means for axially shifting the rotatable disks on their spindles and crank-holding lugs, attached to said shaft, substantially as set forth.

4. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be free of both, and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, and a series of clutch-operating cranks engaging in said cam-grooves, substantially as set forth.

5. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be clear of both, and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, and means for moving the rotatable disks axially on their spindles to cause the disengagement and reëngagement of the cranks in the cam-grooves when it is desired to change from one speed to another, substantially as set forth.

6. In change-speed gearing a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts, and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be free of both, and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, a pedal-operated shaft provided with engaging means for axially shifting the rotatable disks on their spindles, and crank-holding lugs attached to said shaft, substantially as set forth.

7. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts, and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly pro-

jecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, and means for rotating the cam-disks to cause the cams to operate the cranks consecutively whereby during a complete revolution of the cam-disks all the cranks, and therefore all the clutches, are operated in turn substantially as set forth.

8. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts, and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft, and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be free of both and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, and means for rotating the cam-disks to cause the cams to operate the cranks consecutively whereby during a complete revolution of the cam-disks all the cranks, and therefore all the clutches, are operated in turn, substantially as set forth.

9. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, the clutches on one shaft having long projections and the clutches of the other shaft having shorter projections, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, and a series of clutch-operating cranks engaging in said cam-grooves, substantially as set forth.

10. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheels on either side of it or to be free of both and the corresponding clutches on the driving and driven shafts being adapted for operation together, the clutches on one shaft having long projections and the clutches of the other shaft having shorter projections, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks and a series of clutch-operating cranks engaging in said cam-grooves, substantially as set forth.

11. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, and a series of clutch-operating cranks engaging in pairs with each cam-groove to operate both of them at different times, substantially as set forth.

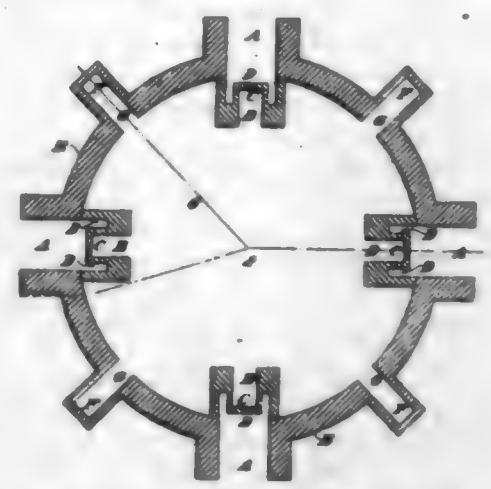
12. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in pairs with each cam-groove to operate both of them at different times, and means for rotating the cam-disks to cause the cams to operate the cranks consecutively whereby during a complete revolution of the cam-disks all the cranks, and therefore all the coupling-clutches are operated in turn, substantially as set forth.

13. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be free of both and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, and a series of clutch-operating cranks engaging in pairs with each cam-groove to operate both of them at different times, substantially as set forth.

14. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted on said shafts and engaging together in pairs, a corresponding series of coupling-clutches arranged between each pair of gear-wheels on each shaft, and longitudinally adjustable on the said shaft, each coupling-clutch being adapted to be engaged with the gear-wheel on either side of it or to be free of both and the corresponding clutches on the driving and driven shafts being adapted for operation together, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in pairs with each cam-groove to operate both of them at different times, and means for rotating the cam-disks to cause the cams to operate the cranks consecutively whereby during a complete revolution of the cam-disks all the cranks, and therefore all the coupling-clutches, are operated in turn substantially as set forth.

15. In change-speed gearing, a driving and a driven shaft, a plurality of gear-wheels mounted loosely on said shafts and engaging together in pairs, a corresponding series of pairs of coupling-clutches longitudinally adjustable on both shafts, rotatable disks geared together and each provided with a partly-concentric and partly projecting and reëntering cam-groove with the projecting and reëntering parts arranged in a different part of the groove relatively to the other disks, a series of clutch-operating cranks engaging in said cam-grooves, a gear-wheel on the shaft of one of the cam-disks and a toothed segment engaging therewith, a hand-lever therefor and a notched sector for said hand-lever substantially as set forth.

815,387. KILN. ROBERT W. STEWART, Findlay, Ohio. Filed Dec. 2, 1905. Serial No. 289,990.



Claim.—1. In a kiln, a chimney having separate and distinct compartments, to wit: a compartment leading from the furnace to the interior of the kiln, and a compartment communicating with the interior of the kiln near the bottom thereof and discharging back into the interior of the kiln.

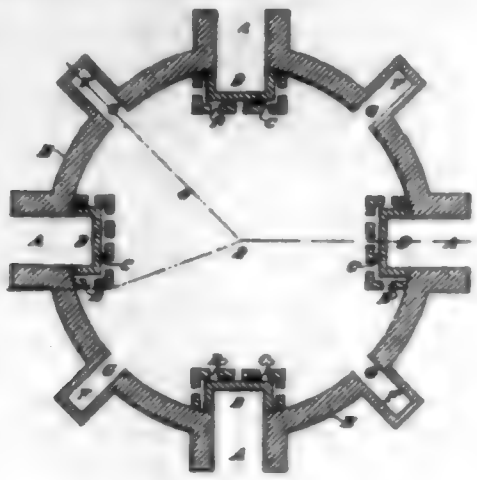
2. In a kiln, a chimney having a main or fire flue that takes air from the exterior of the kiln, and a supplemental flue adjacent to the main flue the air therein being heated by the wall of the main flue, said supplemental flue communicating at its upper and lower ends with the interior of the kiln.

3. In a kiln, a chimney having a main or fire flue that takes air from the exterior of the kiln, and a supplemental flue within the main flue and surrounded by said main flue, said supplemental flue communicating at its upper and lower ends with the interior of the kiln.

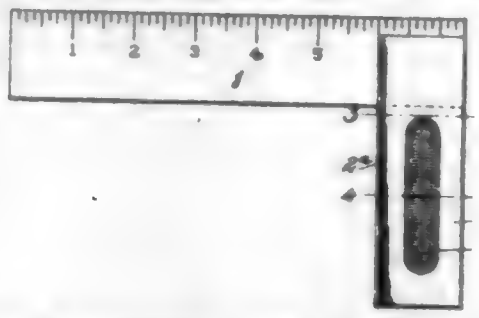
815,388. KILN. ROBERT W. STEWART, Findlay, Ohio. Filed Dec. 4, 1905. Serial No. 290,148.

Claim.—1. In a kiln, a chimney having a main or fire flue that takes air from the exterior of the kiln, and a supplemental flue adjacent to and surrounding three sides of the main flue the air therein being heated by the wall of the main flue, said supplemental flue communicating at its upper and lower ends with the interior of the kiln.

2. In a kiln, a chimney having a main or fire flue that takes air from the exterior of the kiln and discharges into the interior of the kiln, and a supplemental flue surrounding three sides of the main flue, said supplemental flue communicating at its upper and lower ends with the interior of the kiln.



815,389. TRY-SQUARE. Justus A. Traut, New Britain, Conn., assignor to Stanley Rule & Level Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 11, 1906. Serial No. 295,546.



Claim.—1. In a try-square, a blade, a back or handle portion comprising a face and cheek members, said face and cheek members being formed integrally from a single piece of metal, the face being slotted to receive the blade, the metal at the side edges of said face being folded back upon itself, and then projected rearwardly to hold the blade and form a grip portion.

2. In a try-square, a blade, a back or handle portion comprising a face and cheek members, said face and cheek members being formed integrally from a single piece of metal, the face being slotted to receive the blade, the metal at the side edges of said face being folded back upon itself and then projected rearwardly to hold the blade and form a grip portion, and a filler-piece occupying the space between said cheek-pieces.

3. In a try-square, a blade, a back or handle portion comprising a face and cheek members, said face and cheek members being formed integrally from a single piece of metal, the face being slotted to receive the blade, the metal at the side edges of said face being folded back upon itself and then projecting rearwardly to hold the blade and form a grip portion, said cheek portions being perforated to form a finger-grip.

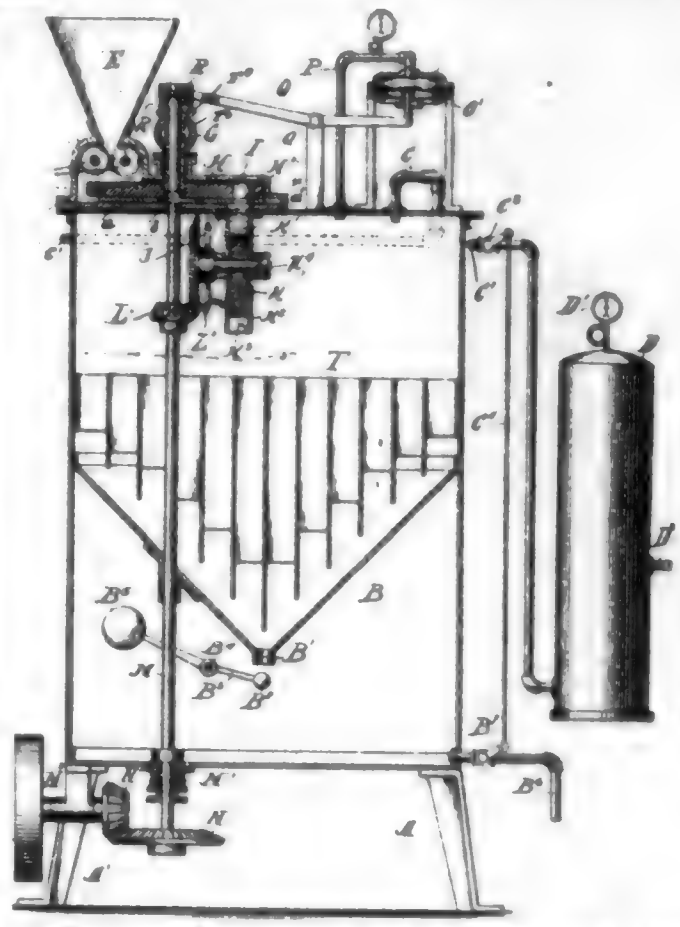
815,390. ACETYLENE-GENERATOR. John W. Vaughn, Norton Heights, Conn. Filed Nov. 25, 1904. Serial No. 234,109.

Claim.—1. In an acetylene-generator, the combination with a water-receptacle and a carbid-receptacle, of carbid-crushing means beneath the carbid-receptacle, a carbid-feeding device, and means for operating the carbid-crushing devices and feeding devices from a common shaft, substantially as set forth.

2. In an acetylene-generator, the combination with a water-receptacle and a carbid-receptacle, of carbid-crushing means beneath the receptacle, a carbid-feeding device, and means for operating the carbid-crushing devices and feeding devices from a common shaft, and pressure-operating devices for throwing said carbid-pulverizing and carbid-feeding devices out of gear with the motor-driven parts, substantially as set forth.

3. In an acetylene-generator, the combination with a water-receptacle and a carbid-receptacle, and means for feeding the carbid into the water, and a series of plates located on edge in the generator, substantially as set forth.

4. In an acetylene-generator, the combination with a water-receptacle and a carbid-receptacle, feeding devices for feeding the carbid into the water-receptacle, and a series of plates located on edge in the generator, and intersecting each other, substantially as set forth.

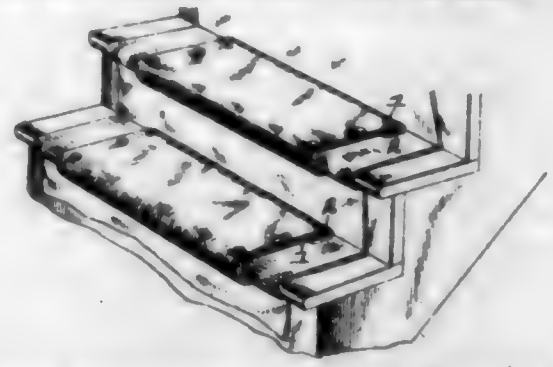


5. In an acetylene-generator, the combination with a carbid-hopper, a rotating feed-plate beneath the hopper and having a slot, a reciprocating plate beneath the rotating plate and also having a slot, a fixed plate on which the reciprocating plate rests, which latter plate also has a slot, and means for rotating the rotating plate and reciprocating the reciprocating plate so as to cause the slots in the rotating plate, reciprocating plate and fixed plate to register, and to be brought out of register alternately, substantially as set forth.

6. In an acetylene-generator, the combination with a carbid-hopper, of a feed device beneath the hopper, a casing beneath the feed device, a wheel rotating in said casing and having pockets, an outlet-neck at the bottom of the casing, and a plate having one edge in contact with the rim of the wheel having pockets, and means for moving said plate inward and outward so as to always keep its one edge in contact with the rim part of the pocketed wheel, substantially as set forth.

7. In an acetylene-generator, the combination with a carbid-hopper, and a feed device, of a casing into which the feed device can drop the carbid, a wheel mounted to rotate in said casing and having pockets in its rim, and a plate forming a seal with said pocketed wheel and means for operating the said seal-plate, substantially as set forth.

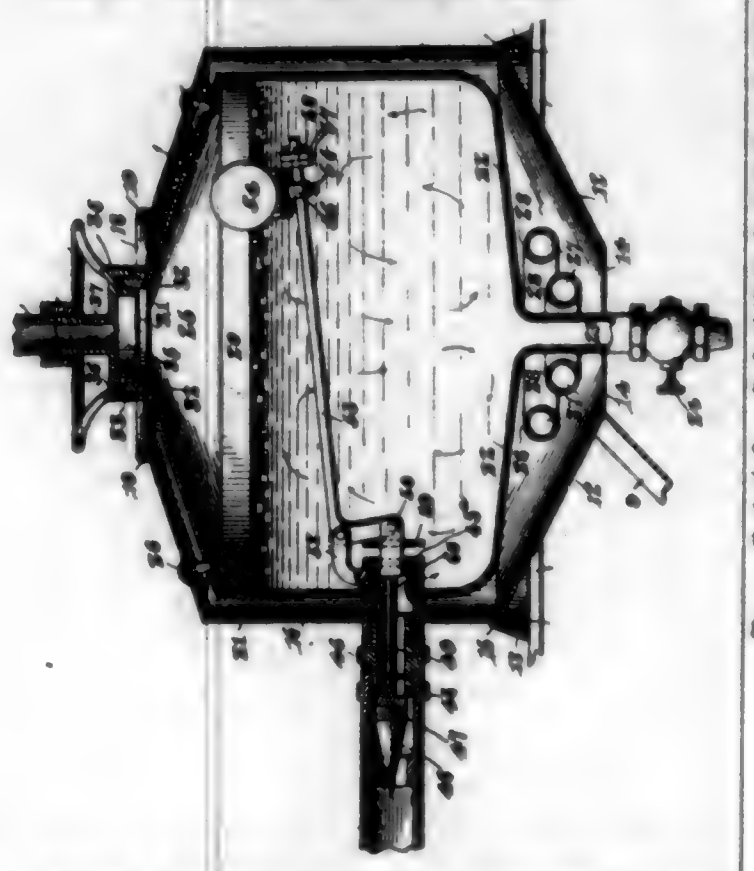
815,391. STAIR-CARPET HOLDER. Henry Weberock, Marietta, Ohio. Filed Apr. 27, 1904. Serial No. 205,156.



Claim.—A carpet-protector comprising a frame formed of a pair of spaced perforated side bars provided with depending spring-loops, the ends of which are bent to form inverted-V-shaped terminals, a cross-bar connecting said terminals, a similar bar secured to the opposite ends of the side bars, a flexible covering secured to the rear cross-bar at the top of the frame and having its forward end folded over the spring-loop and seated in the inverted-V-shaped terminals of the side bars, the end of said covering being interposed between the adjacent cross-bar and said terminals, a stiffening-strip interposed between the frame and flexible covering, a pad resting on the stiffening-strip,

and fastening devices passing through the perforations in the side bars and engaging the pad, covering and stiffening strip for securing the several parts together.

815,392. DISTILLING APPARATUS. GEORGE F. WEBER, St. Louis, Mo. Filed Jan. 27, 1904. Serial No. 190,332.



Claim.—1. In distilling apparatus, the combination with a reservoir, of a condenser-tank, a water-inlet pipe connecting the lower portion of the reservoir and the lower portion of the condenser-tank, a water-outlet pipe connecting the upper portion of the reservoir and the upper portion of the condenser-tank, a steam-generator, a steam-pipe extending from the generator to the condenser-pipe, and a water-supply pipe extending from the outlet-pipe between the condenser-tank and reservoir to the steam-generator.

2. In distilling apparatus, the combination with a reservoir, of a condenser-tank, a water-inlet pipe connecting the bottom of the reservoir and the bottom of the condenser-tank, a water-outlet pipe connecting the top of the reservoir and the top of the condenser-tank, a steam-generator, a steam-pipe extending from the generator to the condenser-tank, a water-supply pipe extending from the outlet-pipe between the condenser-tank and reservoir to the lower portion of the steam-generator, and means located within the generator for controlling the supply of water through the supply-pipe to the same.

3. In distilling apparatus, a steam-generator comprising a receptacle having a bottom and means for supplying water to the receptacle, said means including a discharge-orifice that extends downwardly at an inclination to the bottom, said orifice thus projecting the water downwardly upon and at an inclination to the bottom of the receptacle, and means for drawing off the water from the lower portion of the receptacle.

4. In distilling apparatus, a steam-generator comprising a cylindrical receptacle having a bottom, and means for supplying water to the receptacle, said means including a discharge-nozzle having an orifice that projects the water laterally and at a downward inclination into the same to effect the gyratory movement of the body of water contained in said receptacle, and means for drawing off the water from the receptacle.

5. In distilling apparatus, a steam-generator comprising a cylindrical receptacle having a bottom provided with a centrally-disposed sediment-trap, a draw-off valve in the trap, and means for supplying water to the receptacle, said means including a nozzle provided with a discharge-orifice that inclines downwardly toward the bottom and projects the water downwardly and at an inclination to said bottom to effect a gyratory movement of the water over the bottom about the sediment-trap.

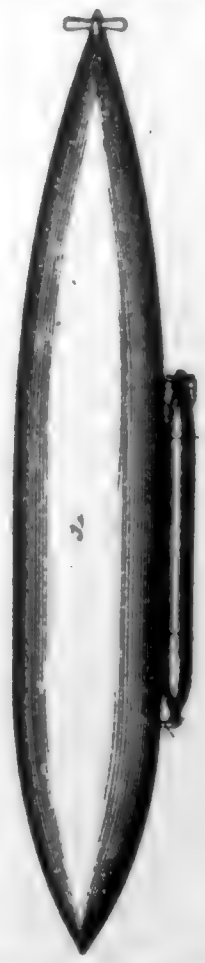
6. In distilling apparatus, a steam-generator comprising a receptacle, means for heating the receptacle, a water-supply pipe communicating therewith and having a valve-seat, a valve opening against the pressure of the water, said valve having one end coacting with the valve-seat and its opposite end opposed to the flow of the water, said opposite end being tapered, a stem connected with the valve, and a float located within the receptacle and connected with the stem.

7. In distilling apparatus, a generator comprising a receptacle, means for heating the same, a water-supply pipe having a horizontally-disposed nozzle arranged therein and provided with an offset discharge-orifice, a valve arranged within the pipe and having a stem projecting from the end of the nozzle, a bell-crank lever pivoted at its elbow within the receptacle, one arm of the lever being connected to the valve-stem, and a float attached to the other arm.

8. In distilling apparatus, a cylindrical receptacle having a top provided with a hand-opening, a threaded boss surrounding the opening, a cap screwed upon the boss and having an annular flange fitting within the same, packing interposed between the outer wall of the cap and the flange, said cap being provided with an upstanding nipple, a steam-pipe detachably secured to the nipple, a water-supply pipe communicating with the interior of the receptacle, a valve controlling the same, and float mechanism arranged within the receptacle and connected with the valve, said mechanism being accessible and removable through the hand-opening of the receptacle.

9. In distilling apparatus, the combination with a generator comprising a receptacle having a downwardly-inclined bottom provided with a valved sediment-discharge, of means for delivering water to the receptacle, said means including a nozzle that directs the water downwardly toward and at an inclination to the bottom.

815,393. TORPEDO CONVEYING AND LAUNCHING APPARATUS. THOMAS H. WHELESS, New York, N. Y. Filed Oct. 8, 1903. Serial No. 176,291.



Claim.—1. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, means for turning on the motive power of said torpedo and for releasing same from said hull, with a coil-spring under compression for ejecting the torpedo from its bearings when released, substantially as described.

2. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, and hand-operated mechanism for turning on the motive power of said torpedo and for releasing said torpedo from said hull, with a coil-spring under compression for ejecting the torpedo from its bearings when released, substantially as described.

3. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, means for turning on the motive power of said torpedo and for releasing the torpedo from said hull, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

4. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, and hand-operated mechanism for turning on the motive power of said torpedo and for releasing said torpedo from said hull, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

5. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, with a guard-arm protecting the nose of the torpedo, means for turning on the motive power of said torpedo, for raising said guard-arm, and for releasing the torpedo from said hull, with a coil-spring under compression for ejecting the torpedo from its bearings when released, substantially as described.

6. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, with a guard-arm protecting the nose of the torpedo, hand-operated mechanism for turning on the motive power of said torpedo, for raising said guard-arm, and for releasing said torpedo from said hull, with a coil-spring under compression for ejecting the torpedo from its bearings when raised, substantially as described.

7. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, with a guard-arm protecting the nose of the torpedo, means for turning on the motive power of said torpedo, for raising said guard-arm, and for releasing same from said hull, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

8. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, with a guard-arm protecting the nose of the torpedo, and hand-operated mechanism for turning on the motive power of said torpedo, for raising said guard-arm, and for releasing said torpedo from said hull, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

9. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a starting-pin for starting the motive power of said torpedo, a latch for holding said torpedo in place beneath said hull, and means for first moving said starting-pin and then withdrawing said latch, with means for ejecting the torpedo from its engagement with said hull when released, substantially as described.

10. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a starting-pin for starting the motive power of said torpedo, a latch for holding said torpedo in place beneath said hull, and means for first moving said starting-pin and then withdrawing said latch, with a spring under compression, with means operated thereby for ejecting the torpedo from its engagement with said hull when released, substantially as described.

11. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a series of levers operated by hand, with mechanism operated thereby for starting the motive power of said torpedo and for releasing the torpedo from said hull, with a spring under compression for ejecting the torpedo from its bearings when released, substantially as described.

12. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a series of levers with mechanism operated thereby, for turning on the motive power of said torpedo and for releasing said torpedo from said hull, a coil-spring under compression, and means operated thereby, for ejecting the torpedo from its bearings when released, substantially as described.

13. The combination with a boat or other vessel, of an automobile torpedo provided with attaching-arms detachably connected to the exterior of the hull of the boat beneath the water, a latch engaging one of said arms, means for starting the motive power of said torpedo, and means for releasing said latch, substantially as described.

14. The combination with a boat or other vessel, of an automobile torpedo provided with attaching-arms detachably connected to the exterior of the hull of the boat beneath the water, a latch engaging one of said arms, means for starting the motive power of said torpedo, means for releasing said latch, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

15. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

16. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

17. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for turning on the motive power of said torpedo and releasing same from said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

18. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water provided with recesses therein, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums and ropes for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

19. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from said recess when desired, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

20. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums and ropes operated from within said vessel for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from said recess when desired, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

21. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedoes and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

22. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from said recess when desired, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

23. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, a spring un-

der compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

24. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from said recess when desired, means for turning on the motive power of said torpedo and releasing same from said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

25. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water provided with recesses therein, an automobile torpedo, provided with attaching-arms adapted to engage in said recesses, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

26. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water provided with recesses therein, an automobile torpedo, provided with attaching-arms adapted to engage in said recesses, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

27. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water provided with recesses therein, an automobile torpedo, provided with attaching-arms pivoted thereto and adapted to engage in said recesses, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, substantially as described.

28. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water provided with recesses therein, an automobile torpedo, provided with attaching-arms pivoted thereto and adapted to engage in said recesses, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

29. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, provided with recesses therein, an automobile torpedo, provided with attaching-arms adapted to engage in said recesses, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for turning on the motive power of said torpedo and releasing same from said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

30. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, projecting arms and a latch for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means operated from within said vessel for turning on the motive power of said torpedo, with means for releasing said latch and ejecting the torpedo from said beam, substantially as described.

31. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, projecting arms and a latch for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from its recess in the hull, when desired, and means operated from within said vessel for turning on the motive power of said torpedo, with means for releasing said latch and ejecting the torpedo from said beam, substantially as described.

32. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, projecting arms and a latch for attaching said automobile torpedo to said beam, drums mounted in the vessel, with ropes wound on said drums and connected to said beam for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means operated from within said vessel for turning on the motive power of said torpedo, with means for releasing said latch and ejecting the torpedo from said beam, substantially as described.

33. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, projecting arms and a latch for attaching said automobile torpedo to said beam, drums mounted in the vessel, with ropes wound on said drums and connected to said beam for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for ejecting said beam from its recess in the hull, when desired, and means operated from within said vessel for turning on the motive power of said torpedo, with means for releasing said latch and ejecting the torpedo from said beam, substantially as described.

34. The combination with a boat or other vessel, of an automobile torpedo provided with attaching-arms pivoted thereto, said arms being detachably connected to the exterior of the hull of the boat beneath the water, a latch engaging one of said arms, means for starting the motive power of said torpedo, and means for releasing said latch, substantially as described.

35. The combination with a boat or other vessel, of an automobile torpedo provided with attaching-arms pivoted thereto, said arms being detachably connected to the exterior of the hull of the boat beneath the water, a latch engaging one of said arms, means for starting the motive power of said torpedo, means for releasing said latch, a spring under compression, and means operated thereby for ejecting the torpedo from its bearings when released, substantially as described.

36. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a hand-lever and mechanism operated thereby for turning on the motive power of said torpedo and for releasing said torpedo from said hull, with independent spring-operated mechanism for ejecting the torpedo from its bearings when released, substantially as described.

37. The combination with a boat or other vessel, of an automobile torpedo, means for detachably connecting said torpedo to the exterior of the hull of said boat or vessel beneath the water-line, a hand-lever mounted within the boat or vessel, and mechanism operated thereby for first turning on the motive power to said torpedo, and then releasing the torpedo, with independent means for ejecting said torpedo from its engagement with said hull when released, substantially as described.

38. The combination with a boat or other vessel, of an automobile torpedo detachably connected to the exterior of the hull thereof beneath the water, a guard-arm pivoted to said boat or vessel and normally projecting in front of the nose of said torpedo, a hand-lever and mechanism operated thereby for turning on the motive power of said torpedo and for releasing said torpedo from said hull, and also for raising said guard-arm, with independent spring-operated mechanism for ejecting the torpedo from its bearings when released, substantially as described.

39. The combination with a boat or other vessel, of an automobile torpedo, means for detachably connecting said torpedo to the exterior of the hull of said boat or vessel beneath the water-line, a guard-arm pivoted to said boat or vessel and normally projecting in front of the nose of said torpedo, a hand-lever mounted within the boat or vessel, and mechanism operated thereby for first turning on the motive power to said torpedo, and then releasing the torpedo, and also for raising said guard-arm, with independent means for ejecting said torpedo from its engagement with said hull when released, substantially as described.

40. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, a guard-arm pivoted to said hull in front of said recess, of a beam adapted to float in water provided with recesses therein, an automoblie torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, and means for turning on the motive power of said torpedo and releasing same from said beam, and also raising said guard-arm, with means for ejecting said torpedo from engagement with said beam, substantially as described.

41. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, a guard-arm pivoted to said hull in front of said recess, of

a beam adapted to float in water, provided with recesses therein, an automobile torpedo, means for attaching said automobile torpedo to said beam, means for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means for turning on the motive power of said torpedo and releasing same from said beam, and also raising said guard-arm, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

42. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means automatically operated by unwinding said ropes for ejecting said beam from its bearings, and means for turning on the motive power of said torpedoes and releasing same from said beam, substantially as described.

43. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam for drawing said beam with said torpedo attached to its recess in the hull of the vessel, cogged sectors, push-pins operated thereby, a shaft and gearing for rotating said drums, and gearing connecting said shaft to said sector for automatically operating said push-pins, and means for turning on the motive power of said torpedoes and releasing same from said beam, substantially as described.

44. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water; an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means automatically operated by unwinding said ropes for ejecting said beam from its bearings, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

45. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, cogged sectors, push-pins operated thereby, a shaft and gearing for rotating said drums, and gearing connecting said shaft to said sector for automatically operating said push-pins, and means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, substantially as described.

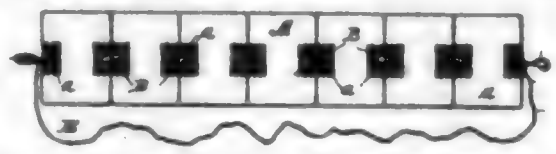
46. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means automatically operated by unwinding said ropes for ejecting said beam from its bearings, means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

47. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, cogged sectors, push-pins operated thereby, a shaft and gearing for rotating said drums, and gearing connecting said shaft to said sector for automatically operating said push-pins, means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

48. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, means automatically operated by unwinding said ropes for ejecting said beam from its bearings, means for ejecting said beam from said recesses when desired, means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

49. In an apparatus for conveying and launching torpedoes, the combination with a vessel provided with a recess in its hull beneath the water, of a beam adapted to float in water, an automobile torpedo, means for attaching said automobile torpedo to said beam, drums mounted in said vessel, ropes wound on said drums and connected to said beam, for drawing said beam with said torpedo attached to its recess in the hull of the vessel, cogged sectors, push-pins operated thereby, a shaft and gearing for rotating said drums, and gearing connecting said shaft to said sector for automatically operating said push-pins, means for ejecting said beam from said recesses when desired, means for turning on the motive power of said torpedo and releasing same from said beam, with means for ejecting said torpedo from engagement with said beam, a spring under compression, and means operated thereby for ejecting said torpedo from engagement with said beam, substantially as described.

815,394. LIFE-PRESERVER. MALCOLM WHITMAN, Shelby, Ohio. Filed June 21, 1905. Serial No. 266,284.



Claim.—1. In a life-preserver, the combination of closed metallic vessels, springs flexibly connecting said vessels in series and adapted to draw them together with chambers in said vessels in which the springs are secured and housed, substantially as set forth.

2. In a life-preserver the combination of closed metallic vessels, springs flexibly connecting said vessels in series and adapted to draw them together with means for limiting the extensibility of the springs.

3. In a life-preserver the combination of closed metallic vessels, springs flexibly connecting said vessels in series and adapted to draw them together with means whereby the vessels will separate equidistantly when the springs are extended.

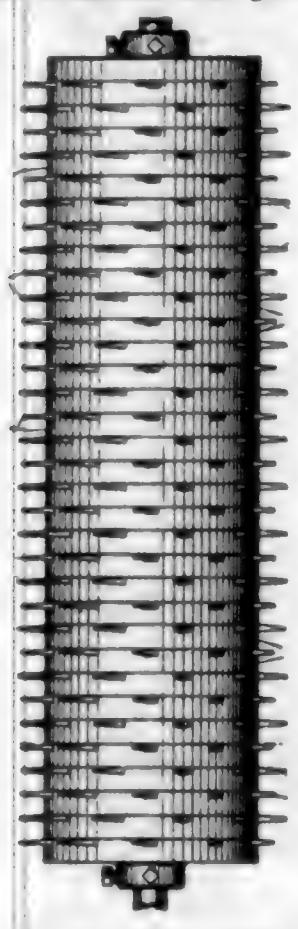
4 In a life-preserver the combination of closed metallic vessels, springs flexibly connecting the vessels in series and adapted to draw them together while admitting of their separation when the springs are extended with means for connecting the end vessels together when the series is bent to circular form, substantially as described.

5. In a life-preserver the combination of closed metallic vessels having tubular chambers formed therein, spiral springs lying in said chambers and flexibly uniting the vessels in series with a tendency to draw them together, means for connecting said springs to each of the vessels with means for limiting the extension of the springs and means for connecting the ends of the device when the series of vessels is bent to circular form, substantially as set forth.

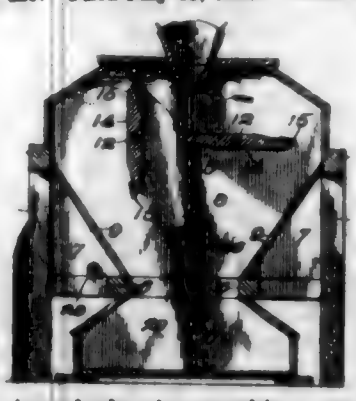
815,395. WORKER-CYLINDER FOR MACHINES FOR PULLING, TEARING, &c., COP-WASTE, &c. HENRY A. WILLIAMS, Wollaston, Mass. Filed Apr. 25, 1905. Serial No. 257,366.

Claim.—1. In a cylinder of the character described, the combination with the core, of a series of removable rings mounted thereupon and keyed thereto, and forming the exterior of said cylinder, said rings being provided with radial grooves in their side faces, removable picker-teeth placed between said rings and within the radial grooves of the same, and means for locking said teeth in place within said radial grooves, consisting of an annular bead or projection formed on one face of each ring and adapted to fit within an annular groove in the opposing face of the adjoining ring, said annular bead entering a notch in each of the teeth lying within the radial grooves of the ring to which they are applied.

2. In a cylinder of the character described, the combination with a cylindrical core, of a series of removable rings mounted thereupon and keyed thereto, and provided with radial grooves in their side faces and with an annular bead or projection on one side and an annular groove on the opposite side, the two end rings being interiorly threaded and screwed upon the correspondingly-threaded ends of the core, removable picker-teeth placed within the radial grooves of said rings and each provided with a notch to receive the annular bead or projection of the adjoining ring, whereby said teeth are securely locked in place within said radial grooves.



815,396. SACK-CLEANING MACHINE. FREDRICK J. WOLFF, Kansas City, Mo. Filed July 18, 1905. Serial No. 270,239.

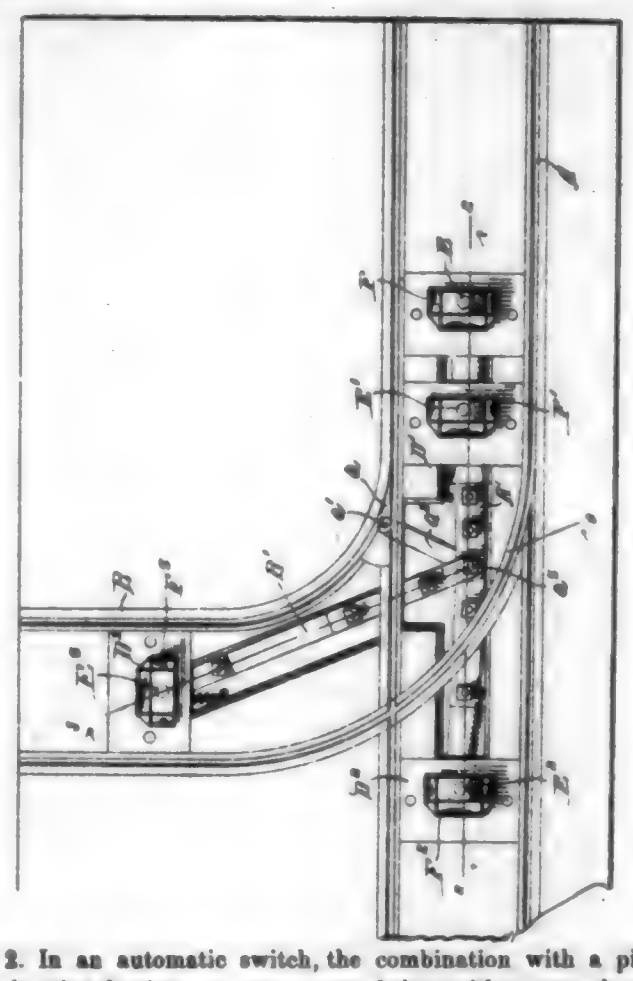


Claim.—1. A sack-cleaning machine comprising a casing, a hopper in the top of the casing to permit the entrance of a sack into the casing, longitudinal shafts within the casing on opposite sides of the vertical plane of the hopper, rigid beater-plates secured longitudinally upon the said shafts, flexible strips secured upon the sides and projecting slightly beyond the longitudinal edges of said beater-plates to impinge against the suspended sack, and means for rotating the said shafts.

3. A sack-cleaning machine comprising a casing having downwardly-converging sides and an opening in its rear end, a hopper in the top of the casing provided with means for suspending a sack, a pair of longitudinal shafts journaled in the casing, intermeshing gears on the rear ends of said shafts, a driving-pulley on the front end of one of said shafts, rigid beater-plates secured longitudinally on said shafts and arranged to project through the vertical plane of the hopper, a third shaft mounted longitudinally in the hopper below the intergeared shafts and driven from one of said shafts, a fan on the rear end of said shaft, and a fan-casing inclosing the fan and extending over the opening in the rear end of the main casing-

815,397. AUTOMATIC SWITCH. CLARENCE F. ADAMS, Camden, N. J. Filed Dec. 4, 1905. Serial No. 290,153.

Claim.—1. In an automatic switch, the combination with a pivoted switch-point having an arm connected therewith for turning said switch-point, a bar for each of the joining tracks, extending longitudinally of the same, each bar being pivotally connected with said arm, vertically-disposed shafts and cams for operating said bars, each of said shafts being provided above the surface of the ground with a turning-block adapted to be engaged by an approaching car, substantially as described.

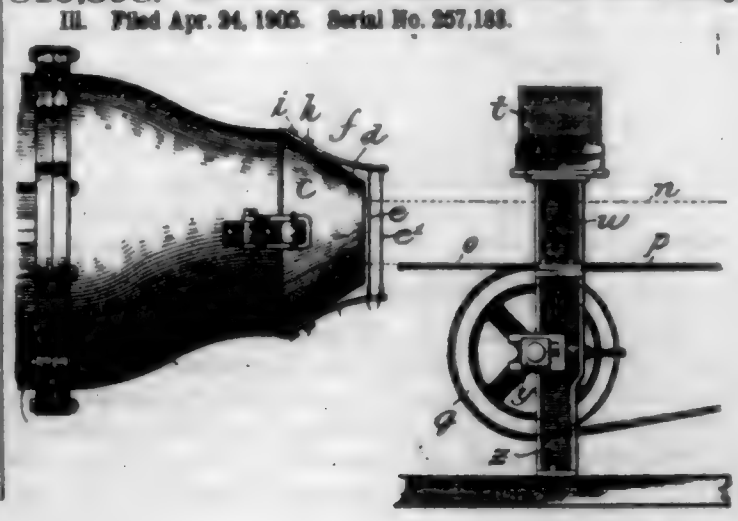


2. In an automatic switch, the combination with a pivoted switch-point, having an arm connected therewith to turn the same, means for turning the said point including parts beneath the ground and parts above the ground, a water-tight box beneath the ground inclosing the said arm of the switch-point and all other parts beneath the ground, and a stratum of oil within said box, substantially as described.

3. In an automatic switch, the combination with a pivoted switch-point having an arm connected with said point to turn the same, sliding bars connected with said arm provided with slots, vertical shafts extending through said slots and provided with arms or cams, said bars being provided with blocks to engage said cams, said shafts above the ground being provided with means adapted to be engaged by an approaching car to turn said shafts, substantially as described.

4. In an automatic switch, the combination with a pivoted switch-point, of an arm connected therewith for turning the same, of sliding bars for operating said arm, a set of devices for operating the switch when one track is normally open and another set of devices for operating the switch when the other track is normally open, substantially as described.

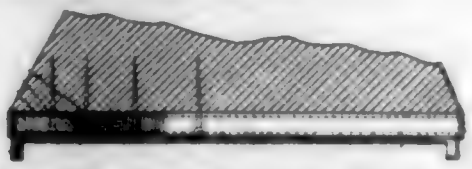
815,398. CLAY-WORKING MACHINE. FRANK ALSP, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,183.



Claim.—1. In a machine of the class described, the combination of a shell forming a receptacle for containing clay to be operated upon, a nozzle connected with such receptacle and provided with a die or molding-surface portion for molding a column of clay and permitting such column of clay to emerge from the mouth of such nozzle, a cutter extending across the outside of the mouth of the nozzle for cutting such column of clay into a plurality of columns, and means for separating the adjacent sides of such columns of clay.

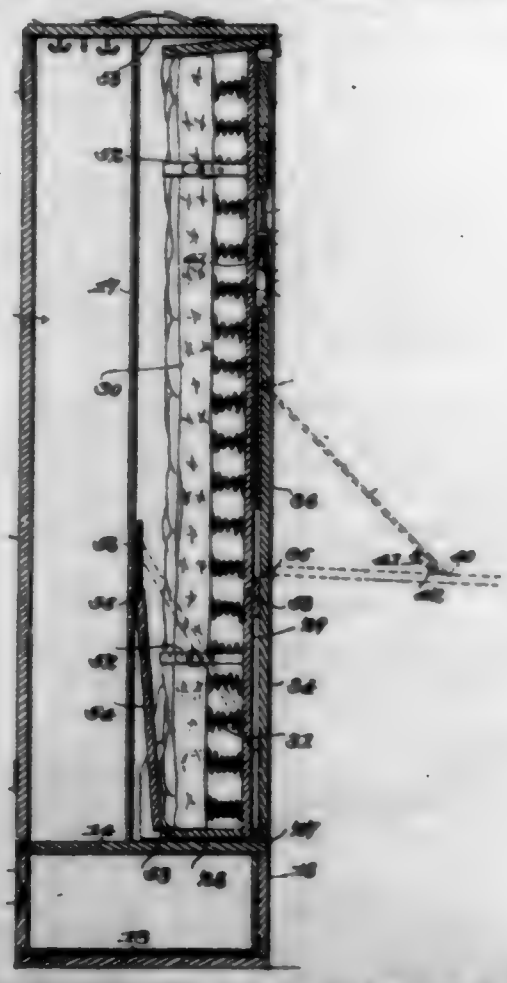
2. In a machine of the class described, the combination of a shell forming a receptacle for containing clay to be operated upon, a nozzle connected with such receptacle and provided with a die or molding-surface portion for molding a column of clay and permitting such column of clay to emerge from the mouth of such nozzle, a cutter extending across the outside of the mouth of the nozzle and molding-surface for cutting such column of clay into a plurality of columns, means for separating the adjacent sides of such columns of clay, and means for sanding the adjacent sides of such columns of clay.

815,399. **HORSESHOE.** AUGUST ANDERSON, Birmingham, Ala. Filed Oct. 18, 1905. Serial No. 283,290.



Claim.—The herein-described horseshoe comprising a body of channel form in cross-section, having nail-holes in its top wall, a pad arranged in and extending throughout the length of the channel of said body, and held against lateral movement by the body, a wear-plate resting in the channel of the body, below the pad, whereby it is also held against lateral movement, and depending from the body and having calks, and nails extending through and connecting the wear-plate, pad and body and arranged to attach the horseshoe as a whole to a horse's hoof in such manner as to permit of movement of the wear-plate with respect to the body.

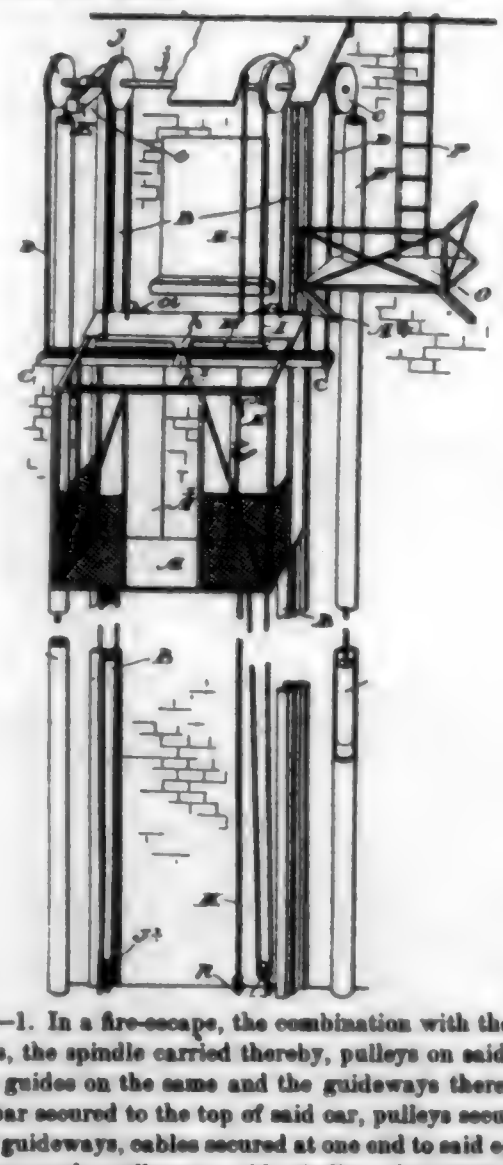
815,400. **COMBINED FOLDING BED AND CABINET.** WILLIAM H. BLOSS, New Paris, Ohio. Filed Sept. 21, 1905. Serial No. 279,514.



Claim.—1. In a device of the class described, an inclosing casing, a bed-frame foldable within said casing and provided with stop members, a foot-support swinging from said bed-frame and foldable within the same and provided with brace supporting members and stop members, brace-rods swinging from said bed-frame and terminating in hooks for detachable engagement with said brace supporting members when the foot-support is extended, said brace-rod adapted to bear against the stop members upon the foot-support and beneath the stop member of the bed-frame when the foot-support is in closed position.

2. In a device of the class described, a bed-frame mounted for swinging into vertical position, stop-hooks extending from said bed-frame and yieldably supported in operative position, a foot-support swinging from said bed-frame and foldable within the same and provided with brace supporting members and stop members, brace-rods swinging from said bed-frame and terminating in hooks for detachably engaging said brace supporting members when the foot-support is extended, said brace-rods adapted to bear against the stop members upon the foot-support and beneath the yieldable hooks on the bed-frame when the foot-support is in closed position.

815,401. **FIRE-ESCAPE.** JOSEPH A. BERCKON, Toronto, Canada, assignor of one-fourth to John Cartan, Toronto, Canada. Filed Mar. 24, 1905. Serial No. 251,833.



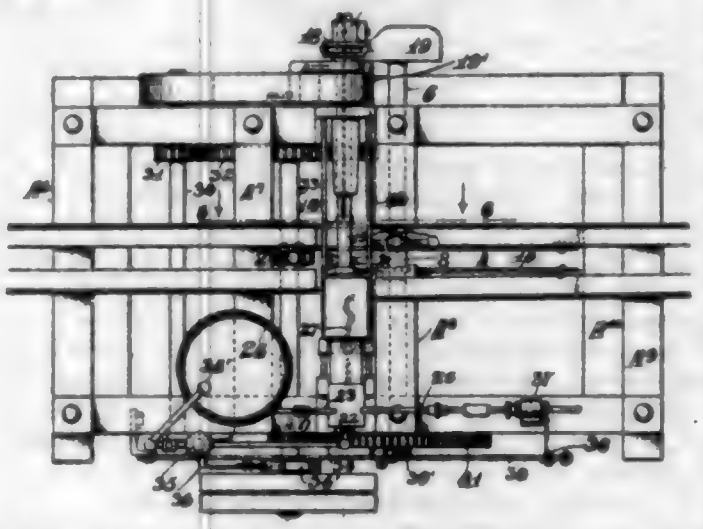
Claim.—1. In a fire-escape, the combination with the supporting-brackets, the spindle carried thereby, pulleys on said spindles, the car, the guides on the same and the guideways therefor, of an equalizing-bar secured to the top of said car, pulleys secured at the base of said guideways, cables secured at one end to said equalizing-bar, passing over the pulleys on said spindle and at the base of said guideways and secured at its other end to the bottom of said car, counterweights for said car, and a rope passing through said car for controlling the movement of the same, substantially as described.

2. In a fire-escape, the combination with the supporting-brackets, the spindle carried thereby, pulleys on said spindles, the car, the guides on the same and the guideways therefor, of an equalizing-bar secured to the top of said car, pulleys secured at the base of said guideways, cables secured at one end to said equalizing-bar, passing over the pulleys on said spindle and at the base of said guideways and secured at its other end to the bottom of said car, counterweights for said car, a brake-wheel on said spindle, a brake-shoe therefor, a rope passing through said car and secured at one end to said brake-shoe and at the other end at the base of said guideways and means within said car for operating said brake, substantially as described.

3. In a fire-escape, the combination with the supporting-brackets, the spindle carried thereby, the pulleys mounted on the spindle, the car and cables for suspending said car from said pulleys, of a brake on said spindles, a rope passing through the car and having one end secured to said brake, a bracket mounted in said car and having arms extending on each side of said rope and a cam-lever carried by said arms and adapted to engage said rope, substantially as described.

4. In a fire-escape, the combination with the supporting-brackets, the spindle carried thereby, the pulleys mounted on the spindle, the car and cables for suspending said car from said pulleys, of a brake on said spindles, a rope passing through the car and having one end secured to said brake, two brackets mounted one above the other in said car and inclosing said rope, pulleys journaled in said brackets, a lever pivoted to one of said brackets, and a roller secured to one end of said lever and adapted to engage said rope and force the same against the said pulleys, substantially as described.

815,402. CAN-LINING MACHINE. CHARLES S. BUCKLIN, Baltimore, Md., assignor to The National Canning & Manufacturing Company, a Corporation of New Jersey. Filed Dec. 7, 1904. Serial No. 235,812.



Claim.—1. A can-lining machine, comprising a support for a can and a spraying device adapted for intermittent operation, in combination with transferring mechanism for bringing said spraying device and can into operative relation and means controlled by the machine for operating the spraying device.

2. A can-lining machine, comprising a support for a can and a spraying device adapted for intermittent operation, transferring mechanism coöperating with said support to bring said spraying device and can into operative relation with each other, in combination with gearing for producing relative rotation between said can and said device and a pressure-controlling apparatus for the latter device actuated by said gearing so as to be in operation during the period of such rotation.

3. In a can-lining machine, a slideway adapted to support a can, a spray-head disposed at one end of said slideway in position to project within the can, and can-transferring means reciprocating substantially parallel with said slideway for presenting a can thereon to the action of said spray-head.

4. In a can-lining machine, a slideway adapted to support a can, a spray-head disposed at the end of said slideway in position to project within the can, and rotating can-transferring means movable parallel with said slideway to present the can to the action of said spray-head, said rotating means being yieldingly impelled in the direction toward said spray-head.

5. In a can-lining machine, a slideway adapted to support a can, a spray-head disposed at the end of said slideway in position to project into the interior of the can, can-transferring means coöperating with said slideway to present the can to the action of said spray-head, said means comprising a reciprocating pusher-shaft, gearing for actuating the same positively in one direction and a yielding force for actuating it in the other direction.

6. In a can-lining machine, a spray-head, a source of fluid-pressure for said spray-head and means for controlling the application of such pressure thereto, in combination with a reciprocating element for presenting a can to the said spray-head, so that the can surrounds or envelops said spray-head, a shaft common to said pressure-controlling means and said reciprocating element, and imparting motion thereto, and eccentric devices on said shaft for producing an application of fluid-pressure to the spraying device during the presentment of the can to said spray-head.

7. In a can-lining machine, a spraying device, a source of fluid-pressure for said device and means controlling the application of such pressure thereto, in combination with a reciprocating and rotating can-transferring shaft for presenting a can to said spraying device and rotating it around the same, a gear-wheel splined to said shaft by which it is rotated, and a cam-shaft provided with a cam actuating said pressure-controlling means and gearing connected with said cam-shaft for reciprocating said can-transferring shaft, the said parts being so arranged as to cause the spraying device to be in operation while the can surrounds it.

8. In a can-lining machine, a spraying device, a source of fluid-pressure for said device and connections comprising a valve between said device and source, a slideway adapted to support a can, and can-transferring means coöperating therewith to present a can to the action of said spraying device so that the can surrounds or envelope said spray-head, in combination with a cam-shaft and cams thereon for conjointly operating said valve and can-transferring means.

9. In a can-lining machine, a slideway comprised of parallel rods adapted to support a can, a spraying device attached to said rods and adapted to project within a can borne thereby, and means for presenting a can to the action of said spraying device.

10. In a can-lining machine, a slideway for a can and a spray-head disposed at one end of said slideway in position to project within a can, in combination with a reciprocating pusher-shaft for presenting a can to said spray-head and a can-retractor traveling on said slideway.

11. In a can-lining machine, a slideway for a can and a spray-head so disposed as to project within a can thereon, a reciprocating pusher-shaft for presenting a can to the said spray-head and a can-retractor traveling on said slideway in unison with said shaft, the distance between said shaft and retractor being greater than the length of the can.

12. In a can-lining machine, a can-transferring means comprised of a reciprocating and rotating pusher-shaft adapted to engage the can and a can-retractor reciprocating in unison with said pusher-shaft and also engaging the can, in combination with a spray-head adapted to project within the interior of said can.

13. In a can-lining machine, a slideway for a can comprised of parallel rods, a spray-head disposed thereon to project within a can, and provided with a rotatable can abutment, in combination with a rotating can-transferring means for moving a can along said slideway against the abutment, and rotating the can while it surrounds the spray-head.

14. In a can-lining machine, a slideway for a can comprised of parallel rods, a spray-head disposed thereon to project within the can and a journal-seat secured to said rods, in combination with a rotating shaft in said journal-seat extending substantially parallel with said rods and means for reciprocating and rotating said shaft within its journal-seat.

15. In a can-lining machine, a spraying device emitting a spray of liquid lining material in a fixed plane throughout an arc of substantially one hundred and eighty degrees, can-transferring means for presenting a can to the action of said spraying device, so that the can surrounds and envelops said spray-head, and gearing whereby said can is rotated in said position.

16. In a can-lining machine, a can feed and escape mechanism coöperating therewith to periodically discharge a can therefrom, a slideway transverse to said feed receiving said discharged cans, a spraying device at one end of said slideway and a reciprocating pusher-shaft at the other, in combination with a cam-shaft actuating said escape mechanism, spraying device and pusher-shaft.

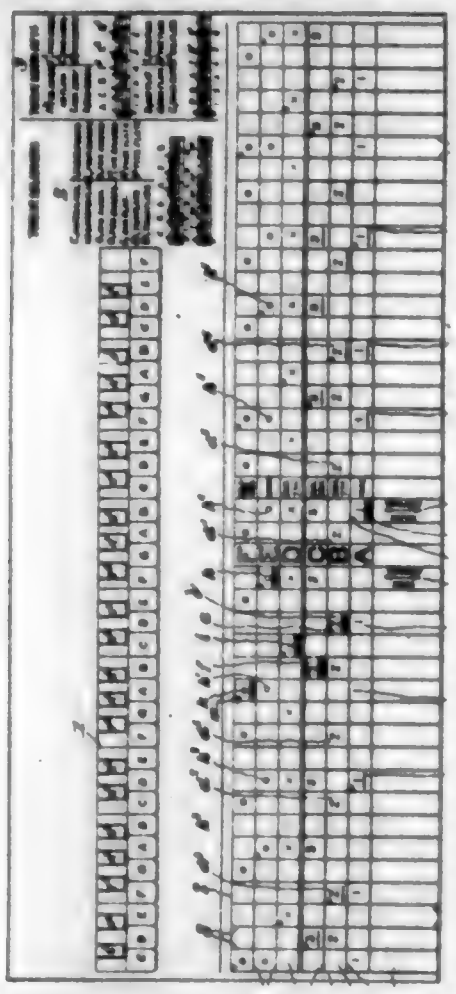
17. In a can-lining machine, a can-feed, a slideway transverse thereto and receiving cans from said feed, a spray-head at one end of said slideway and can-transferring means for sliding a can along said slideway to a position surrounding said spray-head, in combination with a retractor for withdrawing the cans, an ejector for said slideway for removing the can therefrom and a delivery-chute receiving said can from the ejector.

18. In a can-lining machine, a spraying device, a support for a can and means for bringing said spraying device and can into operative relation with the can surrounding said device, a source of fluid-pressure for said spraying device and a reservoir for the liquid to be sprayed, in combination with agitating means coöperating with said reservoir to keep said liquid in motion.

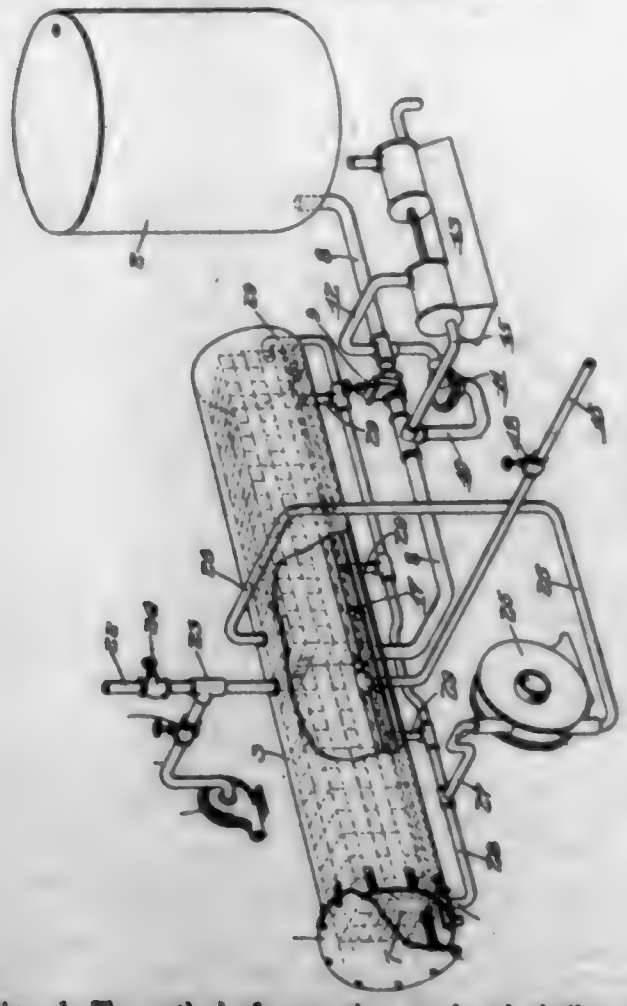
815,403. MUSICAL TRANSPOSITION-CHART. ROSCOE C. BURTON, Tarrytown, N. Y. Filed Oct. 6, 1904. Serial No. 227,413.

Claim.—A musical chart divided into upper and lower sections, the upper section being provided with the representation of a miniature keyboard lettered in accordance with the musical nomenclature, and a table of key-signatures expressed graphically and verbally, the lower section of the chart being divided into a series of vertical columns extending to the bottom of the chart and intersected by two transverse sets of three columns each, a tonic-index provided at the lower edge of the chart substantially midway of its ends, the members of one set of transverse columns being provided at opposite sides

of the tonic-index with chord-symbols disposed at major intervals, and the other set of transverse columns having chord-symbols disposed at minor intervals, the successive sets of major-chord symbols being disposed at tonic, dominant seventh, and subdominant intervals, and the successive sets of minor-chord symbols being disposed at diminished seventh, minor and relative minor intervals.



815,404. METHOD OF PRESERVING WOOD. JOSEPH B. CARR, Chicago, Ill. Filed Feb. 6, 1905. Serial No. 244,467.



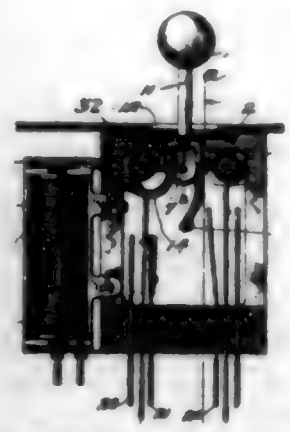
Claim.—1. The method of preserving wood and similar material by the use of a mixture of different preservative fluids, which consists in submerging the wood in a mixture of said preservative fluids in a closed receptacle, subjecting said preservative fluids to and maintaining them under pressure until the wood is impregnated, and in circulating the said mixture in the tank while said mixture is maintained under pressure and during said impregnating process to cause the thorough and constant mixture of said fluids during said treatment.

2. The method of preserving wood and similar material by the use of a mixture of preservative fluids of different specific gravity, which consists in submerging the wood in a mixture of said fluids in a closed receptacle, subjecting said preservative fluids to and maintaining them under pressure until the wood is impregnated, and in circulating the said mixture in the tank while said mixture is maintained under pressure and during said impregnating process to cause the thorough and constant mixture of said fluids during said treatment.

3. The preservative method, which consists in submerging the material to be treated in a mixture of chlorid-of-zinc solution and creosote in a closed receptacle, subjecting said mixture to and maintaining it under pressure in said receptacle until the material to be treated is impregnated, and agitating the said mixture in said receptacle while under pressure to keep the said fluids thoroughly mixed and prevent the settling of the heavier during the treatment.

4. The method of preserving wood and similar material by use of a mixture of preservative fluids of different specific gravity, which consists in placing the wood in a receptacle, closing said receptacle and filling the same with the fluid mixture, applying and maintaining pressure to said fluid mixture in said closed receptacle and simultaneously circulating the fluid contents while said fluid contents are maintained under fluid-pressure and during the impregnating process, and then forcing the preservative fluid by air-pressure back out of said closed receptacle and back into a reservoir, substantially as described.

815,405. AUTOMATIC RINGING AND LISTENING KEY. ALBERT CARLSEN, Chicago, Ill., assignor to American Electric Telephone Company, Chicago, Ill., a Corporation. Filed June 20, 1901. Serial No. 65,240.



Claim.—1. In an operator's key, the combination with a top plate having a slot therein, side frame-plates depending therefrom, a frame pivoted between said side plates and having a key-lever projecting through the slot, switch-springs and terminals mounted between said plates and adapted to be operated by said frame when thrown to one side or the other, an electromagnet also mounted on said frame-plates, an arm secured to said frame and extending toward the magnet, an armature for the magnet having a catch adapted to engage said arm when the lever is turned to one side.

2. In an operator's key, the combination with a top plate, depending side plates, a key-lever pivoted between said plates and having a handle portion projecting above the top plate, an arm carried by said lever beneath the plate, a magnet supported beneath the top plate, and an armature therefor having means to lock said arm when desired.

3. In an operator's key, the combination with a top plate, of side plates depending therefrom, a key-lever pivoted between said plates, spring contacts or terminals secured in duplicate sets between said plates and in operative relation to the said key-lever, a locking-arm on said lever extending between the duplicate springs of one set, a magnet mounted on said frame and having an armature, said armature having a locking-arm coöperating with the arm on the lever to lock said lever.

4. In an operator's key, the combination with a top plate, of side plates depending therefrom, a key-lever pivoted between said plates, spring contacts or terminals secured in duplicate sets between said plates and in operative relation to the said key-lever, a circuit-closing arm and a locking-arm carried by said lever, terminals on the one side to be engaged by said arm to close the circuit thereacross, a

magnet on the other side having an armature provided with a catch to engage said locking-arm.

5. The combination of ringing switch-springs, listening switch-springs, a single key for operating said springs, an electromagnet adapted to be controlled by said key, and an armature for said magnet adapted to hold the key in a shifted position while attracted by the magnet, there being suitable provisions whereby the key and the electromagnetically-operated locking means swing or oscillate about separate or non-coincident axes, said axes being parallel.

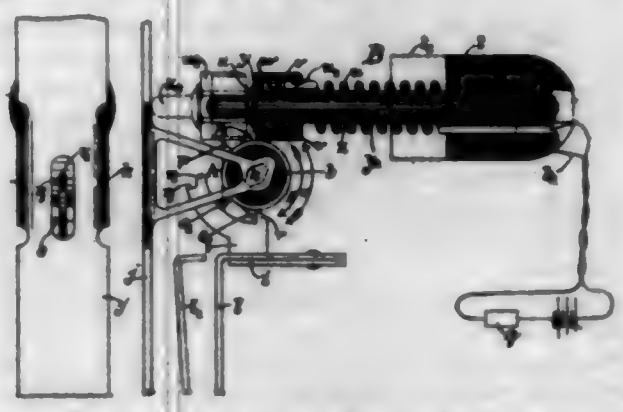
6. In an operator's key, the combination with a top plate, of side plates depending therefrom, a key-lever pivoted between said plates, spring contacts or terminals secured in duplicate sets between said plates and in operative relation to the said key-lever, a locking-arm on said lever extending between the duplicate springs of one set, a magnet mounted on said frame and having an armature, said armature having a locking-arm coöperating with the arm on the lever to lock said lever, there being suitable provisions whereby the key-lever and the electromagnetically-operated locking means swing or oscillate about separate or non-coincident axes, said axes being parallel.

7. In an operator's key, the combination with a top plate, of side plates depending therefrom, a key-lever pivoted between said plates, spring contacts or terminals secured in duplicate sets between said plates and in operative relation to the said key-lever, a locking-arm, terminals on the one side to be engaged by said arm to close the circuit thereacross, a magnet on the other side having an armature provided with a catch to engage said locking-arm, there being suitable provisions whereby the key-lever and the electromagnetically-operated locking means swing or oscillate about separate or non-coincident axes, said axes being parallel.

8. The combination of ringing switch-springs, listening switch-springs, a key for operating said springs, an electromagnetic device adapted to be controlled by said key, and adapted when energized to retain said key in a shifted position, there being suitable provisions whereby the key and the electromagnetically-operated locking means swing or oscillate about separate or non-coincident axes, said axes being parallel.

9. The combination of a plurality of spring-switches adapted to be employed for controlling a plurality of circuits, a single key for controlling all of said spring-switches, and an electromagnetic device adapted to be controlled by said key, and adapted when energized to retain said key in one of the latter's shifted positions, there being suitable provisions whereby the key and the electromagnetically-operated locking means swing or oscillate about separate or non-coincident axes, said axes being parallel.

815,408. AUTOMATIC ELECTRICAL SELF-SOLDERING RESET FOR THERMAL PROTECTORS. FRANK B. COOK, Chicago, Ill. Filed Apr. 27, 1905. Serial No. 257,660.



Claim.—1. In apparatus of the class specified, a thermal protector normally held against operation by heat-susceptible material, means for operating the protector when the heat-susceptible material is softened, and means for supplying the protector with current for resoftening the heat-susceptible material and resetting the arts of the protector to their normal position for another operation.

2. In apparatus of the class specified, parts held together by a solder-joint, means for producing relative movement of the parts when the device operates, and means for supplying the device with current to unsolder the joint and set the parts back to their normal relative position for another operation.

3. An electrical controller comprising thermally-operable securing means releasable on a change in electrical-circuit conditions, and means whereby the device is automatically reset from an inoperative to an operative position preparatory for another operation, on a second change in electrical-circuit conditions.

4. A thermal protector, means for disarranging the parts thereof upon abnormal electrical conditions therein, means for supplying current to the device, and means for rearranging the said parts for another operation when the heating effect of the said current is sufficient.

5. A thermal protector the parts of which have been disarranged by the operation of the device, and means for supplying current for heating the protector and rearranging the parts for another operation.

6. An electrical-circuit protector comprising solder-controlled devices for protecting the circuit on the passage of an unduly strong current, means for supplying current for reheating the device to reset same for another operation, and means for rearranging the parts for resoldering.

7. A thermal protector the parts of which have been disarranged by the operation of the device, mechanical means for rearranging the parts for another operation, and means for supplying current to permit of the rearranging.

8. A device operable upon abnormal current conditions, electrical means for heating the device for resetting and means for resetting the device for operation.

9. A device operable upon abnormal current conditions, and means adapted to apply current thereto for heating the device and to reset same for another operation.

10. An electrical-circuit protector comprising movable parts, a solder-joint normally securing the said parts in position, thermal means for releasing the solder-joint, means for moving the movable parts, means for supplying current for re-releasing the solder-joint after operation, and means for resetting the parts to operative position where they are automatically resoldered.

11. An electrically-operable device comprising a solder-joint, means for unsoldering the latter after it has cooled after operation, and means for rearranging the parts for another operation, in which position they are secured by the cooling of the solder.

12. An electrical-circuit protector comprising means operable upon an excess of current, means for supplying heat to the device after operation, and means for resetting the device for another operation when thus heated.

13. An electrothermal device of the character described, a solder-joint in the device, means for operating the device when the solder is softened, the cooling of the solder-joint placing the device in an inoperative condition, means for now supplying current for softening the solder, and means for resetting the device to operative position while the solder is softened, in which position it is held by the cooling of the latter.

14. An electrothermal device operable upon abnormal current conditions, and electromechanical means for reheating the device and resetting same from an inoperative to an operative position.

15. A thermally-operable electric-circuit controller, and means coöperating therewith for re-releasing and resetting in reset operative position a portion thereof released upon operation.

16. A device operable upon abnormal current conditions, and means coöperating therewith to apply current thereto after operation for heating the device, and to reset same for another operation when heated.

17. A thermal protector comprising a stationary axis and a rotary portion held to the axis by heat-susceptible material and carrying heat-producing means; in combination with an electrical resetting-tool therefor comprising a spindle, a sleeve of insulation placed upon the spindle, a coil-spring encircling the said sleeve, and a plunger carried by the said sleeve and adapted to be actuated by the said spring.

18. An electrical-circuit protector comprising a solder-joint, and an electromechanical device coöperating therewith after operation to re-release and reset to operative position parts released upon operation.

19. A thermal protector comprising a stationary axis, a rotary portion held to the axis by heat-susceptible material, heat-producing means carried by the rotary portion, and engaging devices on the rotary portion; in combination with a resetting-tool for the protector, comprising a spindle, a coil-spring and plunger carried by the spindle and insulated therefrom, the said spring being arranged to actuate the plunger, and a handle portion; the said tool being adapted to engage a said engaging device and close a circuit through the protector to soften the heat-susceptible material, and to reset the protector to operative position, substantially as described.

20. In an electrical-circuit protector, the combination of cementing material, means for softening said material on the passage of an unduly strong current, a movable part normally held against

movement by said cementing material, means for moving said part when same is released by the passage of an unduly strong current, means for applying current for resoftening the cementing material after same has hardened after operation, and means for moving said movable part into position for another operation where it is automatically recemented by the cooling of the cementing material.

21. A rotary heat-cartridge, means for operating same, and a tool for closing a circuit of a source of electricity through the protector to heat same, and for resetting the protector for another operation when thus heated.

22. A heat-cartridge comprising a rotary detent, heat-susceptible material normally holding the detent from operating, heat-producing means for softening the heat-susceptible material, means to engage the detent to operate same when the heat-susceptible material is softened, the cooling of the latter after operation securing the detent in a new position, means to engage the detent to reset same to operative position when the heat-susceptible material is again softened, means for closing a resetting-current through the device to soften the heat-susceptible material, means for automatically opening the circuit through the device after the detent has been reset, and means for holding the detent in the proper position while the heat-susceptible material cools.

23. An electrical-circuit protector comprising an operable portion and a solder-joint normally holding the operable portion against operation, in combination with a tool adapted to be applied thereto after operation to close a circuit through the protector to reheat same and automatically reset same to operative position where it is secured by the solder-joint becoming cool.

24. The combination with a thermal protector of the class specified, of a resetting-tool comprising means for closing a circuit through the protector and spring means for automatically resetting the protector after the said circuit has been closed a sufficient length of time.

25. In apparatus of the class specified, the combination of heat-producing means, a rotary detent normally held against rotation by heat-susceptible material, circuit-controlling means adapted to turn the rotary detent when the heat-susceptible material is softened, means to be applied to the rotary detent after operation to apply current thereto to resoften the heat-susceptible material, and means to automatically turn the rotary detent back to normal position.

26. A tool for resetting thermal protectors of the character described, comprising mechanism to be applied to the protector to close a circuit through same for heating, spring means for automatically resetting the protector after same is heated, and means for opening the said circuit after the protector is reset.

27. A tool for resetting thermal protectors of the character described, comprising mechanism to be applied to the protector to close a circuit through same for heating, spring means for automatically resetting the protector after same is heated, and means for opening the said circuit after the protector is reset, the tool being constructed to hold the protector in reset position while cooling.

28. The combination of an electrical circuit protector operable upon abnormal current conditions, and a resetting-tool for the protector, to be applied thereto after operation, comprising means for closing an electric circuit through the protector to heat same, and means for reversely operating the protector to reset same for a subsequent operation.

29. The combination of an electrical-circuit protector operable upon abnormal current conditions, and a resetting-tool for the protector, to be applied thereto after operation, comprising means for closing an electric circuit through the protector to heat same, and spring-controlled means for resetting the protector for another operation.

30. The combination of a thermal protector operable under abnormal current conditions, and a device to be applied thereto after operation to test the protector and in testing it to reset same for another operation.

31. A resetting-tool for thermal protectors, comprising a metallic spindle with a shoulder thereon, an insulating-sleeve carried by the spindle, a metallic plunger loosely placed upon the said sleeve and insulated from the said spindle, an insulating-ring covering a portion of the external surface of the plunger, a coil-spring encircling the insulating-sleeve and attached to the metallic plunger, an insulating-handle secured to one end of the spindle and forming a bearing for the coil-spring and a source of electricity and an electrical instrument in circuit with the spindle, coil-spring and plunger.

32. A rotary heat-cartridge provided with engaging devices and normally secured in operative position by heat-susceptible material, spring means for supporting the protector, spring means for engaging an engaging device to operate the protector under abnormal current conditions, a tool provided with a spring-actuated member adapted to engage an engaging device to reset the heat-cartridge to operative position when the heat-susceptible material is softened, a spindle adapted to be moved into contact with the first-mentioned spring, means to close a circuit through the heat-cartridge to heat same for resetting, the said movement of the spindle placing the said spring-actuated member under stress of its actuating-spring, a source of electricity in circuit with the said spindle and spring-actuated member, and a suitable handle for the tool, the latter, when used to reset the heat-cartridge, first having its spring-actuated member engaged with an engaging device of the cartridge, then having its spring-actuated member placed under tension of its actuating-spring and thereby closing the resetting-current through the cartridge, then resetting the heat-cartridge to operative position when the heat-susceptible material is sufficiently softened, then breaking the circuit through the cartridge to allow the heat-susceptible material to cool, and holding the cartridge in position while cooling.

33. The combination of a rotary heat-cartridge operable under abnormal current conditions, and a device to be applied thereto after operation to test the protector and in testing it to reset same for another operation.

34. The combination of a thermal protector operable under abnormal current conditions, and an electromechanical device to be applied thereto after operation to test the electrical condition of the protector and in testing it to reset same for another operation.

35. The combination of a thermal protector of the class specified, and a tool to be applied thereto after operation to ascertain the condition of same and simultaneously reset same for another operation, the said tool comprising means for closing a circuit through the protector to heat same, and spring means for resetting the protector when heated.

36. An electrothermal device of the character described normally held against operation by heat-susceptible material, and means to be applied thereto after operation to reversely operate same and thereby reset same for another operation.

37. An electrothermal device of the character described, normally held against operation by heat-susceptible material, and means for operating same after it has cooled after operation, to reset same for another operation.

38. Electrical protective apparatus operable under abnormal electrical conditions, means for supplying heat thereto after operation to condition same for resetting, and means for resetting the apparatus for another operation when thus heated.

39. Electrical protective apparatus operable under abnormal electrical conditions therein, a solder-joint in the apparatus normally holding same against operation, means for applying heat to the solder after the apparatus has operated to prepare the solder to resecure the apparatus in operative position, and means for resetting the apparatus for another operation while the solder is in condition to secure same in such operative position.

40. Electrical protective apparatus operable under abnormal electrical conditions therein, a solder-joint in the apparatus normally holding same against operation, and means for applying electricity to the apparatus after operation to cause same to heat the solder and soften same, if in good condition, as a test on the apparatus.

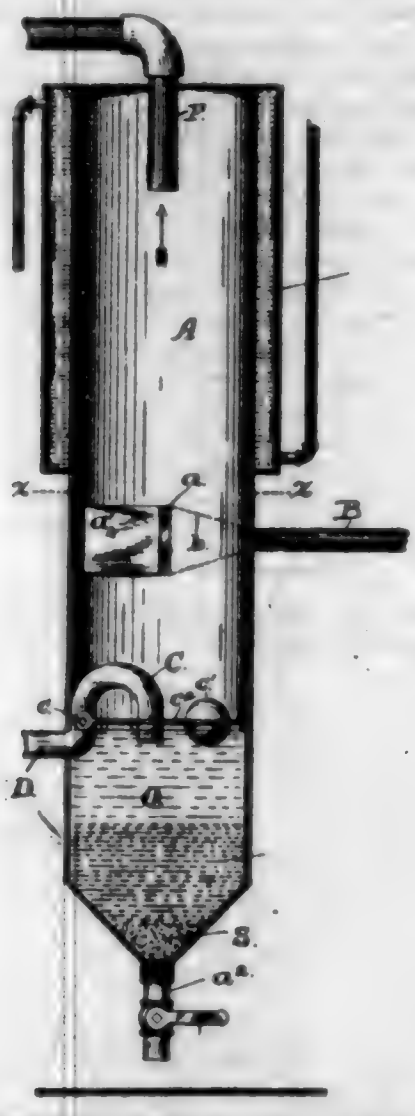
815,407. SEPARATOR FOR GAS, OIL, WATER, AND SAND. AUGUSTUS S. COOPER, Berkeley, Cal. Filed June 14, 1905. Serial No. 265,148.

Claim.—1. A separator for gas, oil, water and sand, comprising a cylinder, a means for delivering the material into its side tangentially to its circumference, to impart a rotary motion to said material, whereby its constituents are separated, an exit for the gas at the top of the cylinder, an exit for the sand and water at the bottom of the cylinder, and an intervening exit for the oil automatically controllable by the level of said oil.

2. A separator for gas, oil, water and sand, comprising a vessel, means for imparting to the material fed to it a rotary motion to separate its constituents according to their specific gravities, an exit for the gas at the top of the cylinder, an exit for the sand and water at the bottom of the cylinder, and an intervening exit for the oil, automatically controllable by the level of said oil.

3. A separator for gas, oil, water and sand, comprising a vessel, means for imparting to the material fed to it a rotary motion to separate its constituents according to their specific gravities, an exit at the top for the gas, an exit at the bottom for the sand and water, an intervening exit for the oil, a cock controlling said last-named exit, and a float connected with the cock to open and close it according to the level of the oil.

4. A separator for gas, oil, water and sand, comprising a cylinder, a means for delivering material into its side tangentially to its circumference, to impart a rotary motion to said material, whereby its constituents are separated, an exit for the gas at the top of the cylinder, an exit for the sand and water at the bottom of the cylinder, and an intervening exit for the oil, automatically controllable by the level of said oil, by means of a cock operated by a float in said liquid constituent.



815,408. SHREDDER-FEEDER. GEORGE W. CRANE, Vincennes, Ind. Filed June 5, 1905. Serial No. 263,861.

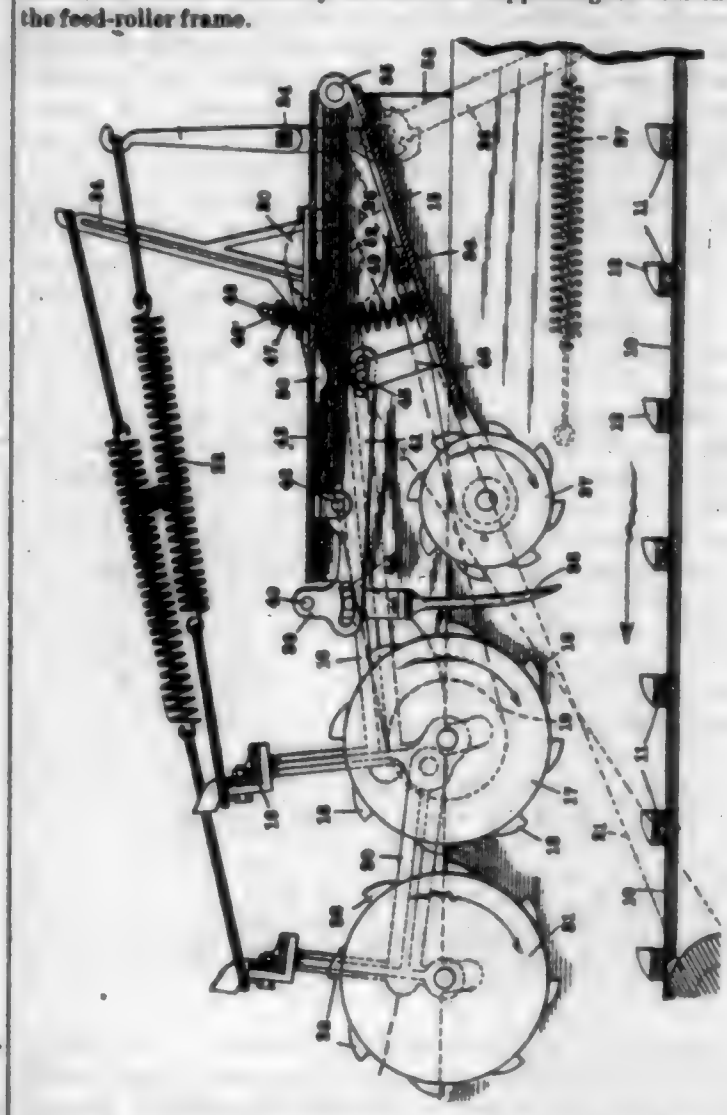
Claim.—1. In a feeder, the combination, with a feeding-carrier, of a deflector-board arranged over said carrier and movable toward and from the same, a stop-rake also mounted over the carrier to the rear of the deflector, and intermediate connections between said stop-rake and said deflector-board whereby movement of the deflector-board from the carrier will move the stop-rake toward the carrier.

2. In a feeder, the combination, with a feeding-carrier, of a deflector-board arranged over said carrier and movable toward and from the same, a stop-rake arranged to the rear of said deflector-board over the carrier, a lever supporting said stop-rake at one end and connected at its other end to the deflector-board whereby movement of the deflector-board from the carrier will produce movement of the stop-rake toward the carrier and vice versa.

3. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover to the rear of the deflector, and intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa.

4. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover, intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa, bearing-brackets carried by said cover, a feed-roller frame pivoted in said bearing-brackets, a feed-roller carried by said frame, and a yielding support for said feed-roller frame carried by the cover.

5. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover, intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa, bearing-brackets carried by the cover and having pivot-receiving notches formed in said brackets and open at the rear, a feed-roller frame having pivot-pins adapted to be received in the notches of the bearing-brackets, a feed-roller carried by said frame, and means carried by the cover for supporting the rear end of the feed-roller frame.



6. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover, intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa, bearing-brackets carried by the cover and having pivot-receiving notches formed in said brackets and open at the rear, a feed-roller frame having pivot-pins adapted to be received in the notches of the bearing-brackets, a shaft journaled on the cover, an arm carried by said shaft, a connection between said arm and the rear end of the feed-roller frame, a second arm carried by said shaft opposite the first-mentioned arm, and a spring supporting said second arm, substantially as and for the purpose set forth.

7. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover, intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa, bearing-brackets carried by said cover, a feed-roller frame pivoted in said bearing-brackets, a feed-roller carried by said frame, a yielding support for said feed-roller frame carried by the cover, a shaft journaled on the cover, an arm carried by said shaft, a connection between said arm and the rear end of the feed-roller frame, a second arm caried by said shaft opposite the first-mentioned arm, and a spring supporting said second arm, substantially as and for the purpose set forth.

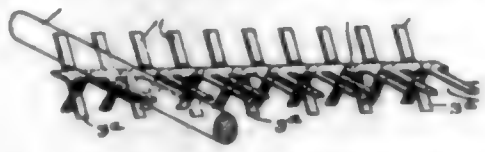
8. In a feeder, the combination, with a feeding-carrier, of a deflector-board arranged over said carrier and movable toward and

from said carrier, a stop-rake arranged to the rear of said deflector-board and also movable toward and from the carrier, intermediate connections between the deflector-board and the stop-rake whereby movement of the deflector-board from the carrier will produce movement of the stop-rake toward the carrier and vice versa, and a spring for normally supporting a portion of the weight of the deflector-board.

9. In a feeder, the combination, with a feeding-carrier and its supporting-frame, of a cover-board adapted to rest upon suitable supports over said carrier, a deflector-board hinged to said cover and projecting rearward and downward toward the carrier, a stop-rake carried by said cover, intermediate connections between said deflector-board and the stop-rake whereby movement of the deflector-board away from the carrier will move the stop-rake toward the carrier and vice versa, bearing-brackets carried by said cover, a feed-roller frame pivoted in said bearing-brackets, a yielding support for said feed-roller frame carried by the cover, a shaft journaled on the cover, an arm carried by said shaft, a connection between said arm and the rear end of the feed-roller frame, a second arm carried by said shaft opposite the first-mentioned arm, a spring supporting said second arm, and a spring arranged to supplement the weight of the deflector-board when it has been deflected through a portion of its movement from the carrier, substantially as and for the purpose set forth.

10. In a feeder, the combination, with a feeding-carrier, of a deflector-board arranged over said carrier and movable toward and from said carrier, a stop-rake arranged to the rear of said deflector-board and also movable toward and from the carrier, intermediate connections between the deflector-board and the stop-rake whereby movement of the deflector-board from the carrier will produce movement of the stop-rake toward the carrier and vice-versa, a spring for normally supporting a portion of the weight of the deflector-board, and a spring arranged to supplement the weight of the deflector-board when it has been deflected through a portion of its movement from the carrier.

815,409. CONCRETE AND METAL STRUCTURE. ROBERT A. CUMMINGS, Beaver, Pa. Filed Oct. 1, 1904. Serial No. 226,821.



Claim.—1. A member for spacing and supporting bars in metal and concrete work, comprising a metal plate having tongues or projections formed on its side edges and separated by interdental spaces, some of its tongues on both edges being bent in one direction and adapted to contact with the centering or casing, and others of said tongues being bent in the opposite direction and serving to space apart reinforcing-bars extending transversely of said member.

2. A member for spacing and supporting bars in metal and concrete work, comprising a sheet-metal strip having tongues or projections formed on its side edges, some of said tongues on both edges being bent in one direction and adapted to contact with the centering or casing, and others of said tongues being bent in another direction and serving to space apart reinforcing-bars extending transversely of said member.

3. A spacing and supporting member for metal and concrete reinforced work, comprising a metal strip having projecting tongues formed on its side edges, said tongues alternating on the two edges, and some on both edges being bent in one direction and others in another direction.

4. In concrete and metal structures, the combination of a member having fingers projecting at an angle to its body and in opposite directions, and metallic members extending transversely of said member held by the fingers projecting in one direction, the fingers projecting in the opposite direction serving to contact with the centering or casing.

5. In concrete and metal structures, the combination of metallic reinforcing members, spacing-pieces comprising metallic strips having projections on the edges, some being bent in one direction to space and support the reinforcing members and others being bent in the opposite direction to contact with the centering or casing, and concrete enveloping and embedding said reinforcing and spacing members.

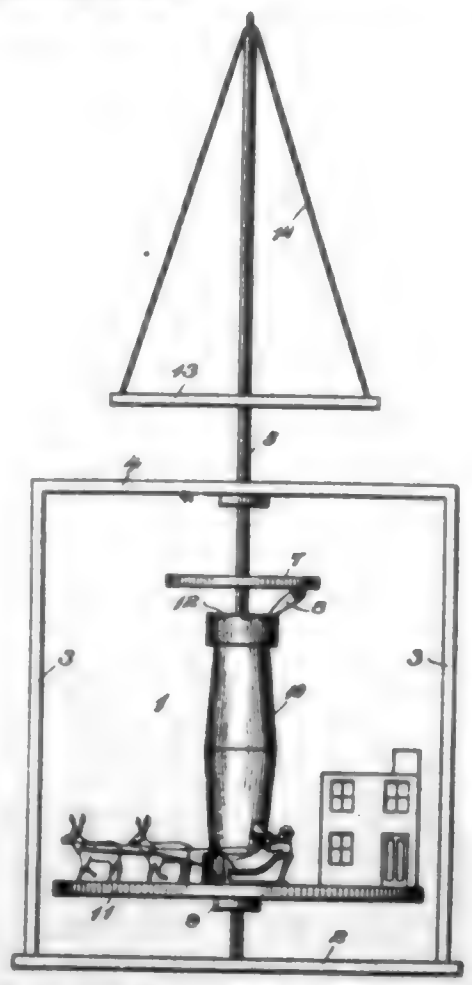
6. In concrete and metal structures, the combination of metallic reinforcing members, a spacing member comprising a sheet-metal strip provided with projections or tongues on its side edges and arranged alternately, some of said projections being bent in one direction to space apart the reinforcing members and others being bent in the opposite direction to contact with the centering or casing, and concrete or the like enveloping and embedding said reinforcing and spacing members.

7. In metal and concrete structures, the combination of metallic reinforcing members, metallic spacing members having on their side edges fingers or projections, some of which are bent in one direction around one metallic member and others of which are bent in the opposite direction, and concrete or the like enveloping and embedding said reinforcing and spacing members.

8. In metal and concrete structures, the combination of metallic reinforcing members, a spacing member comprising a metal body provided on its edges with projections, some of which are bent in one direction and around a reinforcing member, and others of which are bent in the opposite direction and serve to space apart others of the reinforcing members, and concrete and the like enveloping and embedding said reinforcing and spacing members.

9. In metal and concrete structures, the combination of metallic reinforcing members, a spacing member comprising a metal body provided on its edges with projections, some of which are bent in one direction and around one of the reinforcing members, and others of which are bent in the opposite direction and serve to space apart others of the reinforcing members, said projections being alternately arranged on the two side edges of said strip, and concrete or the like enveloping and embedding said reinforcing and spacing members.

815,410. TOY. ZENAS A. CURTIS, Channing, Tex. Filed Mar. 30, 1905. Serial No. 253,825.



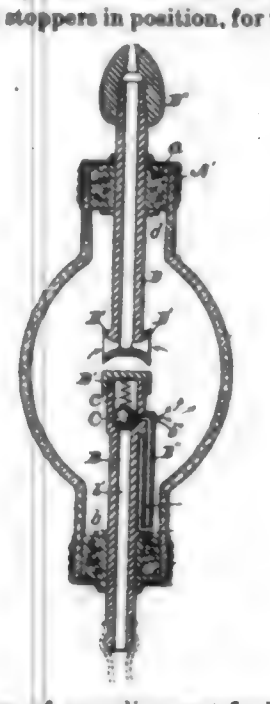
Claim.—1. In a toy, the combination of a rotatable platform, a rotatable shaft, a cord on said shaft, a bar connected to said cord and carried on said shaft, a series of ratchet-teeth associated with said rotatable platform, and a pawl connected to and rotated by said shaft to engage said ratchet-teeth to rotate said platform, substantially as described.

2. In a toy, the combination of a rotatable platform, a rotatable shaft, a cord carried on said shaft arranged to rotate said shaft in both directions a bar carried on said shaft and connected to said cord and means for transmitting the rotation of said shaft to said rotatable platform to cause said platform to rotate in one direction, substantially as described.

815,411. ATOMIZER OR NEBULIZER. FRANK C. DORRENT, Kalamazoo, Mich., assignor to National Vaporizer Company, Kalamazoo, Mich. Filed Sept. 14, 1904. Serial No. 224,403.

Claim.—1. The combination of a medicament-flask open at each

end, having outwardly-expanding threaded necks; tapered stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube having inlet-ports formed longitudinally through laterally-projecting flaring arms thereon, carried by the other of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.



2. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube, having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube, having inlet-ports formed longitudinally through laterally-projecting flaring arms thereon, carried by the other of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

3. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube, having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube, having inlet-ports formed longitudinally through laterally-projecting flaring arms thereon, carried by the other of said stoppers; and flanges on said tubes engaging the inner ends of said stoppers, for the purpose specified.

4. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; and a delivery-tube having inlet-ports formed longitudinally through laterally-projecting flaring arms thereon, carried by the other of said stoppers; for the purpose specified.

5. The combination of a medicament-flask open at each end having threaded necks; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; flanges on said tubes engaging the inner ends of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

6. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; and threaded caps for retaining said stoppers in position, for the purpose specified.

7. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; flanges on said tubes engaging the inner ends of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

8. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

9. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; and flanges on said tubes engaging the inner ends of said stoppers, for the purpose specified.

10. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and a medicament-trap for said delivery-tube, for the purpose specified.

11. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and flanges on said tubes engaging the inner ends of said stoppers, for the purpose specified.

12. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having an air-passage and a medicament-passage, carried by one of said stoppers; and a delivery-tube carried by the other of said stoppers, for the purpose specified.

13. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; flanges on said atomizing and delivery tubes engaging the inner ends of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

14. The combination of a medicament-flask open at each end having threaded necks; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; flanges on said atomizing and delivery tubes engaging the inner ends of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

15. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; and threaded caps for retaining said stoppers in position, for the purpose specified.

16. The combination of a medicament-flask open at each end, having threaded necks; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and threaded caps for retaining said stoppers in position, for the purpose specified.

17. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; a medicament-trap for said delivery-tube; and flanges on said atomizing and delivery tubes engaging the inner ends of said stoppers, for the purpose specified.

18. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and flanges on said atomizing and delivery tubes engaging the inner ends of said stoppers, for the purpose specified.

19. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having air and medicament passages carried by one of said stoppers; a delivery-tube carried by the other of said stoppers; and a medicament-trap for said delivery-tube, for the purpose specified.

20. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube having air and medicament passages carried by one of said stoppers; and a delivery-tube carried by the other of said stoppers, for the purpose specified.

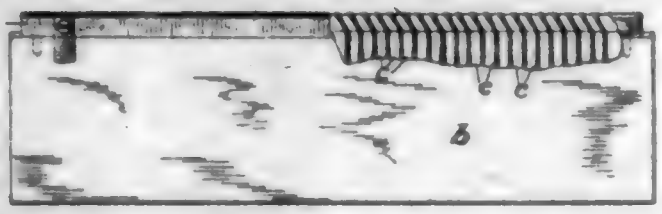
21. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube arranged through one of said stoppers; a delivery-tube arranged through the other of said stoppers; flanges on said tubes engaging the inner ends of said stoppers; and caps having central openings through which said tubes project, for retaining said stoppers in position, for the purpose specified.

22. The combination of a medicament-flask open at each end; stoppers therefor; an atomizing-tube arranged through one of said stoppers; a delivery-tube arranged through the other of said stoppers; and caps having central openings through which said tubes project, for retaining said stoppers in position, for the purpose specified.

815,412. DETACHABLE KEY-CHANGER FOR PNEUMATIC PIANO-PLAYERS. ELLSWORTH E. FLORA, Chicago, Ill. Filed May 8, 1903. Serial No. 155,782.

Claim.—1. In a device of the class described, the combination of a main portion provided with air-channels extending therethrough and to the operative mechanisms, and a detachable tracker-board provided with air-channels therethrough, the outlet ends of which coincide with one set of such channels in the main portion while the

inlet ends are arranged opposite or above another set of air-channels in the main portion, substantially as described.



2. In a device of the class described, the combination of a main portion provided with air-channels extending therethrough and a detachable tracker-board provided with inclined channels extending therethrough having outlet ends communicating with the air-channels of the main portion, and inlet ends arranged coincident with channels in the main portion adjacent to those with which the outlet ends communicate, substantially as described.

3. In a device of the class described, the combination of a main portion provided with air-channels extending therethrough, and a detachable tracker-board detachably and reversibly secured thereto provided with air-channels extending therethrough at an incline, the outlet ends of which coincide with one set of channels in the main board while the inlet ends are arranged opposite the air-channels in the main portion adjacent to those with which the outlet ends coincide, substantially as described.

4. In a device of the class described, the combination of a main portion provided with air-channels extending therethrough, a detachable tracker-board detachably and reversibly secured thereto provided with air-channels extending therethrough at an incline, the outlet ends of which coincide with one set of channels in the main board while the inlet ends are arranged opposite the air-channels in the main portion next adjacent to those with which the outlet ends coincide, and pin-and-spring mechanism for detachably and reversibly securing the detachable tracker-board to the main portion, substantially as described.

5. In combination with a tracker-board of a mechanical musical instrument, a supplemental removable tracker-board.

6. In combination with a tracker-board of a mechanical musical instrument, a removable superposed tracker-board.

7. In combination with a tracker-board of a mechanical musical instrument, a second removable registering tracker-board.

8. In combination with a tracker-board of a mechanical musical instrument, a removable tracker-board, and means for securing said parts together.

9. A mechanical musical instrument provided with two coacting tracker-boards, one fixed and the other removable.

10. A mechanical musical instrument provided with two coacting tracker-boards, one fixed and the other removable, and the removable board adjustable on the fixed board.

11. In an automatic playing attachment for musical instruments, the combination of a permanent tracker-bar, a detachable tracker-bar, and means for securing the detachable tracker-bar to the permanent tracker-bar.

815,413. SEED-PLANTER. JOHN L. FLOYD, Ashpole, N. C. Filed Jan. 17, 1906. Serial No. 296,515.

Claim.—1. A planting attachment for plows including a trapezoidal carrying-frame adapted to receive the plow-beam between its forwardly-divergent top and bottom members.

2. A planting attachment for plows including a carrying-frame having forwardly-divergent top and bottom members spaced and connected by side straps near their front and rear ends.

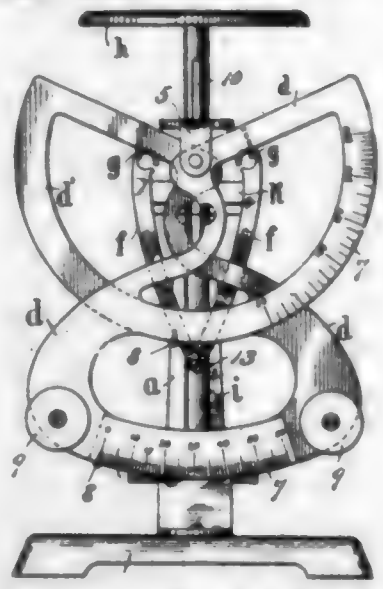
3. A planting attachment for plows including a carrying-frame having divergent top and bottom members connected and spaced apart by side straps and adapted to receive a plow-beam between them, a seedbox or hopper secured upon the frame and having a reciprocatory seed-slide, a ground-engaging wheel journaled upon the frame and having a wrist-pin, and a pitman connecting the wrist-pin with the seed-slide.

4. The combination with a plow, of a carrying-frame loosely supported upon the plow-beam and having one end free for vibration in a vertical plane, a ground-engaging wheel journaled upon the vibratory end of the frame, a hopper secured upon the opposite end of the frame and having a seed-slide, and means for transmitting motion from the ground-wheel to the seed-slide.

5. In a seed-planting attachment for plows, a carrying-frame comprising divergent top and bottom beams and side straps spacing and connecting said beams, an intermediate connecting-strap, a seedbox or hopper connected with said strap, auxiliary braces connecting the seedbox with the frame, a reciprocatory slide in the seedbox, a shaft journaled in the forward end of the bottom beam of the frame, a ground-engaging wheel upon said shaft, a wrist-pin upon said wheel, and a pitman connecting the wrist-pin with the seed-slide.



815,414. WEIGHING-SCALE. PAUL FROST, Berlin, Germany. Filed Aug. 7, 1905. Serial No. 273,120.



Claim.—1. In a weighing-scale, the combination with a vertically-movable post and scale-pan on the upper end of said post, of a pair of weighted levers, a pivot common to both of them, means to operatively connect the post and levers, the axis of said post intersecting the pivot-pin below the scale-pan.

2. In a weighing-scale, the combination with a scale-pan and a vertically-movable post supporting the same, said post having a longitudinal slot therein, of a pivot-pin passing through the slot, weighted lever-arms mounted on the pin, and links connecting the post and lever-arms, substantially as described.

3. In a weighing-scale, the combination with a base, a standard having an upper overhanging portion with a depending end, a scale-pan and a post supporting it having a longitudinal slot therein, of a pair of weighted Z-shaped lever-arms, a pivot-pin common to both of them mounted in the standard and depending end and passing through the slot, links connecting the post and lever-arms, a scale on one of the arms and an index or pointer on the other, substantially as described.

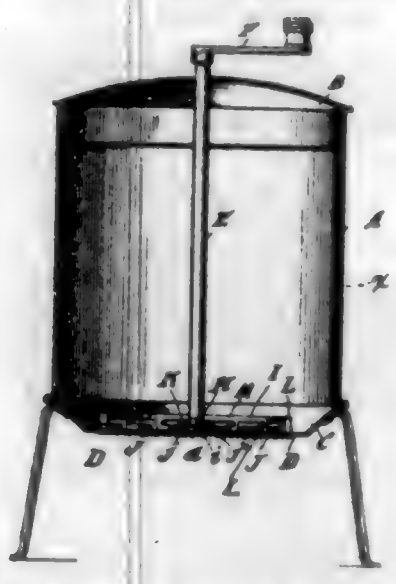
4. In a weighing-scale, the combination with a base and standard, of a scale-pan and movable post therefor having a longitudinal

slot, arms pivoted to the standard and post to maintain the post vertical during its movement, a pivot-pin mounted in the standard, weighted lever-arms pivoted on the pin, and links connecting the post and lever-arms, substantially as and for the purposes set forth.

5. In a weighing-scale, the combination with a standard, of a vertically-movable post, a scale-pan supported thereby, a pivot-pin mounted in the standard, yokes *c* mounted on the pin, scale-levers connected to the yokes and also mounted on the pin, and links connecting the levers and post, substantially as described.

6. In a weighing-scale, the combination with a sheet-metal base and sheet-metal standard overhanging the base, of a pivot-pin mounted in the standard and overhanging portion, a scale-pan, a vertically-movable slotted post to support the pan, said pin passing through the slot, sheet-metal arms pivoted to the standard and post, sheet-metal yokes *c* having erforations therein and mounted on the pin, Z-shaped, weighted lever-arms pivoted on the pin, each connected to a yoke, and sheet-metal links having hook ends that engage the perforations in the yokes and whose opposite ends are pivoted to the post, substantially as described.

815,415. **FLOUR-SIFTER.** WILLIAM G. GADUE, Burlington, Vt., assignor to Gadue Dustless Flour Sifter Company, Burlington, Vt., a Corporation of Vermont. Filed July 26, 1905. Serial No. 271,346.



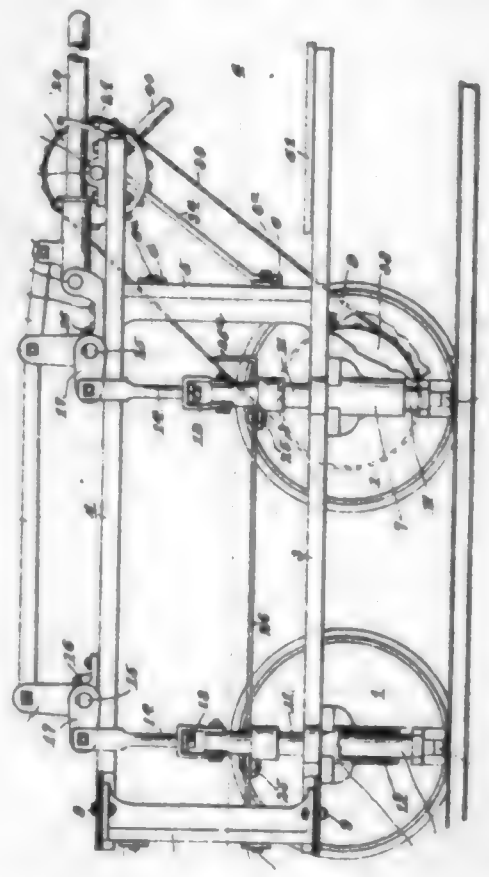
Claim.—1. A receptacle having at the bottom a screen and at the top a removable guide through which the agitator-shaft loosely passes and by which it is laterally supported, in combination with the agitator of a diameter greater than the screen, composed of curved spokes with upturned ends and a rim supported in elevated position thereon, and a vertical actuating-shaft, at its upper end loosely passing up through the removable guide for furnishing it lateral support, as aforesaid, and at its lower end resting upon, carried by, and loosely connected to, the agitator only, substantially as and for the purposes hereinbefore set forth.

2. A receptacle composed of a body, and a pan-like member closing the lower end of said body, having flaring sides, and a bottom consisting of a screen and an annular band or ledge surrounding the screen, in combination with an agitator of a diameter nearly that of the bottom of the pan-like member, consisting of curved spokes with upturned ends, and a rim supported in elevated position on said ends, a vertical shaft carried and supported by, and loosely attached to, the agitator only, and a removable guide at the top of the can through which the upper portion of the shaft passes and by which it is laterally supported, substantially as and for the purposes hereinbefore set forth.

3. The sifter herein described, comprising the receptacle-body A, the cover B, pan-like bottom C, D, with screen applied to the central opening therein, the agitator, consisting of curved spokes which extend outwardly beyond the screen-surface and overlap the band or ledge D, and a rim supported in elevated position on the upturned ends of said spokes, and the shaft E carried by and connected to the agitator only and passing up loosely through the cover, substantially as and for the purposes hereinbefore set forth.

815,416. **ELEVATING-TRUCK.** STEPHEN A. GARLAND, Knoxville, Tenn. Filed Dec. 5, 1904. Serial No. 235,493.

Claim.—1. A truck containing horizontally opposite horizontally-shiftable arms supported on upright axes located at opposite sides of the middle longitudinal upright plane of the truck, and mechanism for simultaneously lifting said arms, substantially as described.



2. A truck containing supporting-wheels, a frame, horizontally opposite horizontally-shiftable arms supported on upright axes located at opposite sides of the middle longitudinal upright plane of the truck, and mechanism for simultaneously lifting said arms, substantially as described.

3. A truck comprising a frame, supporting-wheels, upright rotary and reciprocatory shafts at each side of said frame, and horizontal supporting-arms supported by said shafts, substantially as described.

4. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, and mechanism for lifting and horizontally shifting said arms, substantially as described.

5. A truck containing a frame, supporting-wheels located within said frame, horizontally opposite horizontally-shiftable arms supported on upright axes located at opposite sides of the middle longitudinal upright plane of the truck, and mechanism for simultaneously lifting said arms, substantially as described.

6. A truck comprising a frame, supporting-wheels located within said frame, upright rotary and reciprocatory shafts at each side of said frame, and horizontal supporting-arms supported by said shafts, substantially as described.

7. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, rock-shafts, swivel connections between the arms of said rock-shafts, and said upright shafts and a handle in operative relation with said rock-shafts, substantially as described.

8. A truck comprising a frame, supporting-wheels located within said frame, upright reciprocatory and rotary shafts at each side of said frame, supporting-arms extending laterally from said shafts, rock-shafts, swivel connections joining the arms of said rock-shafts and said upright shafts, and a handle in operative relation with said rock-shafts, substantially as described.

9. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, rock-shafts, swivel connections between the arms of said rock-shafts and said upright shafts, a handle in operative relation with said rock-shafts, and mechanism for turning said uprights shafts, substantially as described.

10. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, rock-shafts, swivel connections between the arms of said rock-shafts and said upright shafts, a handle in operat ve relation with said rock-shafts, crank-arms on said upright shafts, and bars connecting said crank-arms, substantially as described.

11. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, rock-shafts, swivel connections between the arms of said rock-shafts and said upright shafts, a handle in operative relation with said rock-shafts, crank-arms on said upright shafts, bars connecting said crank-arms, and mechanism for joining said bars, substantially as described.

12. A truck comprising a frame, supporting-wheels located within said frame, upright reciprocatory and rotary shafts at each side of said frame, horizontal arms supported by said shafts, rock-shafts, swivel connections joining the arms of said rock-shafts and said upright shafts, a handle in operative relation with said rock-shafts, and mechanism for turning said upright shafts, substantially as described.

13. A truck comprising a frame, supporting-wheels located within said frame, upright reciprocatory and rotary shafts at each side of said frame, horizontal arms supported by said shafts, rock-shafts, swivel connections joining the arms of said rock-shafts and said upright shafts, a handle in operative relation with said rock-shafts, crank-arms on said upright shafts, and bars connecting said crank-arms, substantially as described.

14. A truck comprising a frame, supporting-wheels located within said frame, upright reciprocatory and rotary shafts at each side of said frame, horizontal arms supported by said shafts, rock-shafts, swivel connections joining the arms of said rock-shafts and said upright shafts, a handle in operative relation with said rock-shafts, crank-arms on said upright shafts, bars connecting said crank-arms, and mechanism joining said bars, substantially as described.

15. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, mechanism for lifting said shafts, and crank-arms extending laterally from said upright shafts, substantially as described.

16. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, mechanism for lifting said shafts, crank-arms extending laterally from said upright shafts, and bars connecting said crank-arms, substantially as described.

17. A truck comprising supporting-wheels, a frame, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms extending laterally from said shafts, mechanism for lifting said shafts, crank-arms extending laterally from said upright shafts, bars connecting said crank-arms, and mechanism joining said bars, substantially as described.

18. A truck comprising a frame, bearing-blocks, 7, applied to said frame, supporting-wheels, axles extending through said supporting-wheels into said bearing-blocks, upright shafts journaled slidably and rotatably in said blocks, horizontal supporting-arms secured to said shafts, and mechanism for lifting and turning said shafts, substantially as described.

19. A truck comprising a frame, bearing-blocks, 7, applied to said frame, supporting-wheels, axles extending through said supporting-wheels into said bearing-blocks, upright shafts journaled slidably and rotatably in said blocks, horizontal supporting-arms secured to said shafts, rock-shafts having arms coupled to said upright shafts by swivel connections, and a handle in operative relation with said rock-shafts, substantially as described.

20. In a truck, the combination with a frame consisting of lower side rails, upper side rails, corner-posts, and end bars, of supporting-wheels, and horizontally opposite horizontally-shiftable arms supported on upright axes located at opposite sides of the middle longitudinal upright plane of the truck, and mechanism for simultaneously lifting said arms, substantially as described.

21. In a truck, the combination with a frame consisting of lower side rails, upper side rails, corner-posts, and end bars, of supporting-wheels, upright reciprocatory and rotary shafts at each side of the truck, supporting-arms applied to said shafts, and mechanism for lifting said shafts, substantially as described.

22. In a truck, the combination with a frame consisting of lower side rails, upper side rails, corner-posts, and end bars, of supporting-wheels located within said frame, upright rotary and reciprocatory shafts at each side of said frame, and horizontal arms supported by said shafts, substantially as described.

23. A truck comprising supporting-wheels, wheel-axles, a frame, liftable and horizontally-shiftable supporting-arms at each side of the truck, a rotary shaft and hand-crank supported upon one end of said frame, and gearing connecting said shaft and one of the wheel-axles, substantially as described.

815,417. FILTER. HARLESTON C. GREMER, New York, N. Y., executrix of George W. Gremer, deceased. Filed June 26, 1905. Serial No. 267,322.

Claim.—1. A filter, consisting of a porous body of an alloy of iron and hydrogen, as set forth.

2. A filter, consisting of a rigid, porous plate or tube of an alloy of iron and hydrogen, as set forth.

3. A filter, consisting of a porous, coherent body of agglomerated particles of an alloy of iron and hydrogen, as set forth.

815,418. INSULATOR FOR ELECTRIC APPARATUS. HARLESTON C. GREMER, New York, N. Y., executrix of George W. Gremer, deceased. Filed June 26, 1905. Serial No. 267,323. (Specimens.)

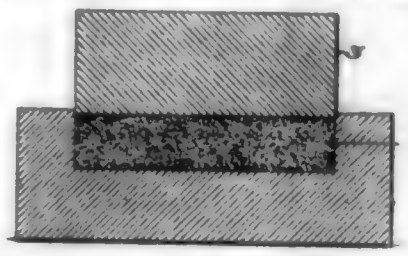
Claim.—1. An electric insulator or high-resistance body, consisting of an alloy of iron and hydrogen, as set forth.

2. An electric insulator or high-resistance body, consisting of particles of an alloy of iron and hydrogen fritted into a coherent mass, as set forth.

3. An electric insulator or high-resistance body, consisting of a mixture of an alloy of iron and hydrogen and a material of higher specific resistance than said alloy, as set forth.

4. An electric insulator or high-resistance body, consisting of a mixture of an alloy of iron and hydrogen and fire-clay, as set forth.

815,419. PRODUCTION OF ARTICLES OF ALLOY OF IRON AND HYDROGEN AGGLOMERATED IN STRONG COHERENT BODIES. HARLESTON C. GREMER, New York, N. Y., executrix of George W. Gremer, deceased. Filed July 7, 1905. Serial No. 268,749.

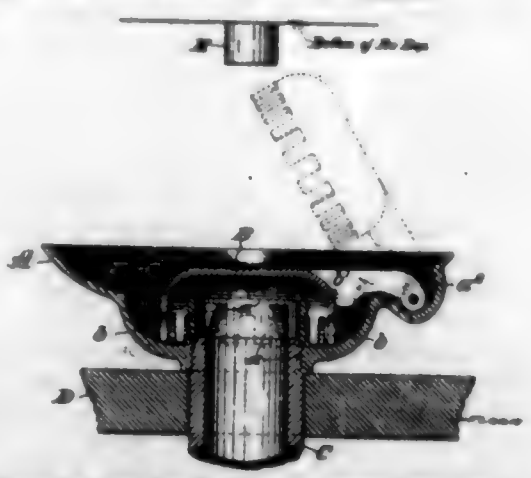


Claim.—1. An article consisting of particles of an alloy of iron and hydrogen, compressed and agglomerated into a strong coherent body, as set forth.

2. The process of producing articles of an alloy of iron and hydrogen, consisting in compressing the powdered alloy into a body, and heating the body to a temperature sufficient to cause the component particles to frit or partially fuse together, as set forth.

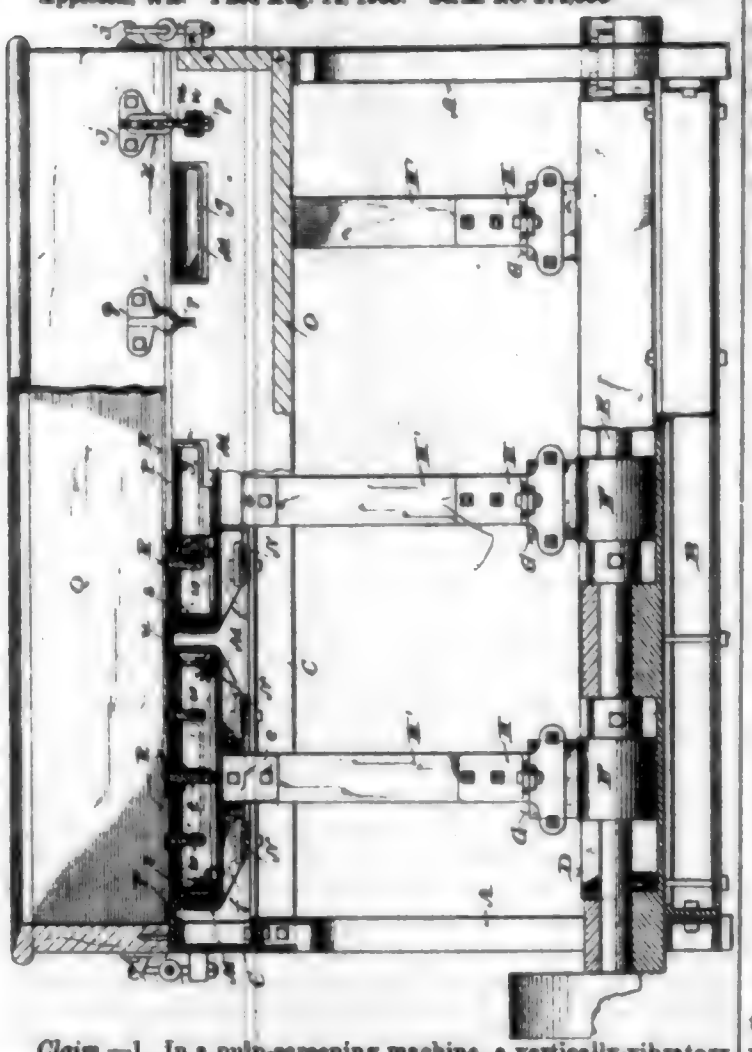
3. The process of producing articles of an alloy of iron and hydrogen, consisting in dampening the powdered alloy and compressing it into a body, and heating the body to a temperature sufficient to cause the component particles to frit or partially fuse together, as set forth.

815,420. TRAP FOR LIQUIDS. AUGUST GOLDSTEIN, Cleveland, Ohio. Filed Nov. 9, 1904. Serial No. 231,983.



Claim.—In a trap for liquids, the combination of an open receptacle provided with a central opening; an upwardly-projecting imperforate rim of a height less than that of the outer wall of said receptacle and surrounding said opening; an inverted-cup-shaped cap having its rim intersected by a series of openings, such latter rim resting on the bottom of said receptacle and inclosing said projecting imperforate rim; a seat formed in the outer wall of said receptacle; and an arm formed integral with said cap and pivoted in said seat, such arm being adapted to engage with the upper side of said seat before said cap is raised over its center of gravity.

815,421. **PULP-SCREENING MACHINE.** EDWARD W. GOODRICH, Appleton, Wis., assignor of one-half to Appleton Machine Company, Appleton, Wis. Filed Aug. 14, 1905. Serial No. 274,066



Claim.—1. In a pulp-screening machine, a vertically-vibratory pan provided with one or more outlets, and a screen-frame having an endless flange depending into the pan.

2. In a pulp-screening machine, a vertically-vibratory pan having an inner endless bottom flange and provided with one or more outlets, and a screen-frame having an endless flange depending into the pan adjacent to the bottom flange of same.

3. In a pulp-screening machine, a vertically-vibratory pan provided with one or more spouts at a suitable elevation above its bottom, and a screen-frame having an endless flange depending into the pan below the spout or spouts of same.

4. In a pulp-screening machine, a vertically-vibratory pan having an inner endless flange on its bottom, and provided with one or more spouts at a suitable elevation above said bottom, and a screen-frame having an endless flange depending into the pan below the spout or spouts of same adjacent to the bottom flange of said pan.

5. In a pulp-screening machine, a vertically-vibratory pan provided with one or more spouts at a suitable elevation above its bottom, each spout having inner side grooves for the engagement of a weir; and a screen-frame having an endless flange depending into the pan below the spout or spouts of same.

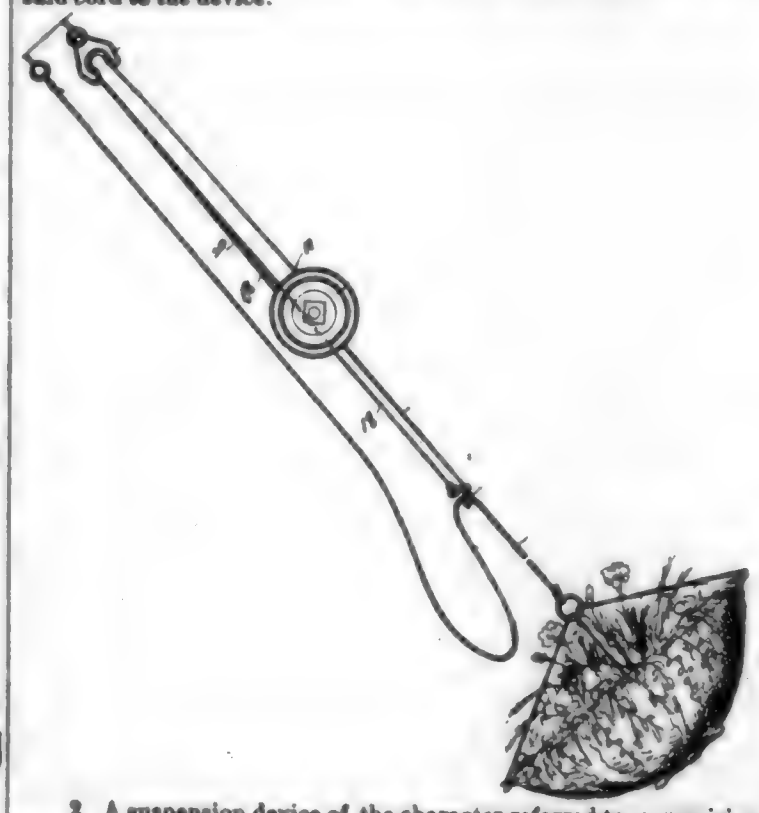
6. In a pulp-screening machine, a plurality of vertically-vibratory pans each provided with one or more spouts at a suitable elevation above its bottom and a screen-frame having a plurality of endless flanges each of which depends into a pan below the spout or spouts of same.

7. In a pulp-screening machine a plurality of vertically-vibratory pans each provided with one or more spouts at a suitable elevation above its bottom and having an inner endless flange on said bottom, and a screen-frame having a plurality of endless flanges each of which depends into a pan below the spout or spouts of same adjacent to the bottom flange thereof.

8. In a pulp-screening machine, a plurality of vertically-vibratory pans each provided with one or more spouts at a suitable elevation above its bottom, each spout having inner side grooves for the engagement of a weir; and a screen-frame having a plurality of endless flanges each of which depends into a pan below the spout or spouts of same.

815,422. **ADJUSTABLE SUSPENSION DEVICE.** FRED L. GREGORY, Chicago, Ill., assignor to Innovate Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 7, 1904. Serial No. 231,817.

Claim.—1. A suspension device of the character referred to, comprising two main members adjustably secured together and adapted to be adjusted in rotative angular relation to each other, a pair of guide-passages formed to extend through said device at angularly-separated points, an eccentric friction member within said device arranged to project across a direct line extending between said guide-passages, a suspension-cord adapted to pass through the guide-passages of said device and means for attaching one end of said cord to the device.



2. A suspension device of the character referred to, comprising two main members fitting together face to face, and a securing device extending through or connecting said parts at their central portions whereby they are adapted to be adjusted in rotative angular relation to each other, a chamber formed between said parts, guide-passages leading into said chamber at angularly-separated points, an eccentric friction member upon one of said parts projecting within said chamber, a suspension-cord adapted to pass through the guide-passages of said device and means for attaching one end of said cord to the device.

3. A suspension device of the character referred to, comprising two circular main members adapted to fit together face to face and having concentric interfitting parts, a clamping-bolt extending through the center of said members and adjustably holding the latter together, a cavity formed between the meeting faces of said members, a friction-boss within said cavity located eccentrically of the axis of said securing-bolt, guide-passages leading into and out of said chamber at opposite sides of the latter, and means for attaching one end of a suspension-cord to the suspension device.

4. A suspension device of the character referred to, comprising two disk-like circular main members, one provided with a peripheral flange and the other with a corresponding groove to receive the edge of said flange whereby a cavity is formed between the proximate faces of said members, a clamping-bolt extending through the center of and uniting said members, a hollow eccentric boss upon the interior of one of said members and surrounding said bolt, stop devices arranged to limit the extent of rotation of one member relatively to the other about said bolt, guide-passages formed through said peripheral flange to communicate with the interior of the device at approximately diametrically opposite points, and a third passage or aperture formed through said peripheral flange for the reception of one end of a suspension-cord.

5. In combination with a suspension device, provided with an indirect passage therethrough, and a suspension-cord extending through said passage and frictionally held therein, of an auxiliary cord attached to the suspension device extending over an overhead support and thence downward to a point of access, whereby the frictional tension on the main cord may be lessened by force applied to the auxiliary cord.

6. In combination with a suspension device of the general character described, provided with a suspension-cord attached to the device, extending thence over an overhead support, thence downwardly through an indirect passage in the suspension device and to a weight supported by the cord, of an auxiliary cord attached to said suspension device, extending thence over an overhead support and down-

wardly to a point of access, said auxiliary cord being arranged to exert a direct lift upon the suspension device when a downward pull is exerted upon its depending end as and for the purpose set forth.

7. A suspension device of the character described, comprising two main members adjustably secured together and adapted to be adjusted in rotative angular relation to each other, a pair of guide-passages formed to extend through said device and angularly displaced a definite and fixed amount, an eccentric friction member within said device arranged to project across a direct line extending between said guide-passages, a suspension-cord adapted to pass through the guide-passages of said device, and means for attaching one end of said cord to the device, substantially as described.

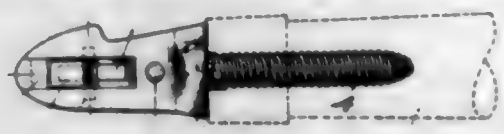
8. A suspension device of the character described, comprising two main members, rotatively adjustable one upon the other, a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to one of said members and adjustable by relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, and a suspension-cord adapted to pass through said guide-passages, substantially as described.

9. A suspension device of the character described, comprising two main members, rotatively adjustable one upon the other, a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to one of said members and adjustable by relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, a suspension-cord adapted to pass through said guide-passages, and means for attaching one end of said cord to the device, substantially as described.

10. A suspension device of the character described, comprising two main members rotatively adjustable one upon the other, one of said members having a pair of guide-passages formed to extend through said device, an eccentric friction member fixed to the other of said main members and adjustable by the relative movement of said main members one upon the other to extend more or less into the path through said guide-passages, and a suspension-cord adapted to pass through said guide-passages, substantially as described.

11. In combination with a suspension device of the character described, provided with a suspension-cord attached to the device, an overhead support, said suspension-cord passing over said overhead support, and thence downwardly through an indirect passage in the suspension device and to a weight supported by the cord, of an auxiliary cord attached to said suspension device extending thence over said overhead support, and downwardly to a point of access, said auxiliary cord being arranged to exert a direct lift upon the suspension device when a downward pull is exerted upon its depending end, as for the purpose set forth.

815,423. TRACE-HOLDER. Robert B. Gruwell and August Wieber, Miles City, Mont. Filed Aug. 31, 1905. Serial No. 276,547.

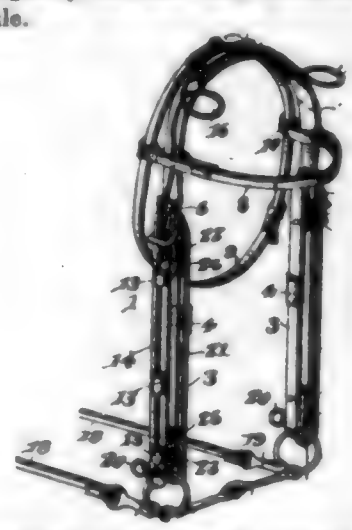


Claim.—In a device of the kind described, the combination with a pair of members having interlocking engagement at their outer ends and rigidly secured at their inner ends, of an angular lock-piece working in a recess of one of said members and having trunnions mounted in seats formed in said members and irremovably held thereby when the two members are secured together, substantially as described.

815,424. BRIDLE. Martin J. Halliburton, Portageville, Mo., assignor of one-half to Henry G. Illig, Portageville, Mo. Filed Nov. 17, 1904. Serial No. 233,139.

Claim.—1. The combination with a bridle, and reins detachably connected with the bit of the bridle, of hitching and leading cords operable independently of the bit and loosely mounted on the sides of the bridle, said hitching and leading cords being provided at the top of the bridle with ear-engaging portions and having lower portions arranged to be connected with the lines when the latter are detached from the bit of the bridle.

2. The combination with a bridle provided at opposite sides with guides, and reins detachably connected with the bit of the bridle, of an independent hitching and leading device consisting of flexible connections arranged in the said guides and movable independently of the sides of the bridle, the upper portions of the flexible connections being arranged to be looped around the ears of an animal, and the lower portions of the flexible connections being arranged to be engaged by the reins when the latter are detached from the bit of the bridle.



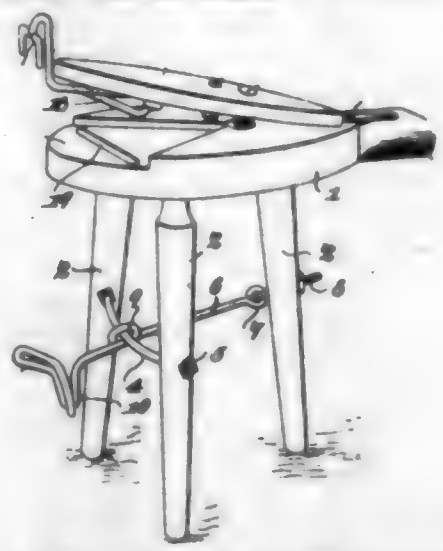
3. The combination with a bridle provided at opposite sides with guides, and reins detachably connected with the bit of the bridle, of independently-operable hitching and leading cords arranged in the guides of the bridle and movable on the same independently of the sides thereof, said cords being provided at their lower ends with rings located adjacent to the bit of the bridle and adapted to be connected with the reins, whereby the pressure is transferred from the mouth of an animal to its ears.

4. The combination of a bridle provided at opposite sides with flexible loops, upper and lower casings arranged within the loops and provided with guide-pulleys, said casings being extended beyond the pulleys and secured to the loops, cords arranged on the pulleys and secured at one end to the extended portions of the adjacent casings, and attaching means arranged at the other end of the cords.

5. The combination of a headstall, a central loop projecting from the top of the headstall and extended to form a pair of guides, a brow-band secured to the headstall and extended at opposite sides to form loops, a throat-latch arranged in the said loops, guides mounted on the lower portions of the headstall, and cords arranged in the said guides and adapted to be looped around the ears of an animal.

6. The combination of a headstall, side straps spaced apart and connected in the form of elongated loops and provided at the top with buckles securing the side straps to the headstall, a bit having rings linked into the lower ends of the loops and adapted to receive the driving-reins, upper and lower pulleys mounted in the loops, and cords, each connected at one end to the lower portion of its loop and extending to and over the top pulley and passing downward under the lower pulley and provided with a ring located at the back of the loop and adapted to receive the driving-reins.

815,425. MILKING-STOOL. Merrill T. Hamilton, Newport, Vt. Filed Nov. 8, 1905. Serial No. 286,390.



Claim.—1. A milking-stool provided with upper and lower pail-holding devices to engage the top and bottom of the pail, one of these members being movable vertically and controlled by the weight of the user to clamp the pail between the two holding members.

2. A milking-stool provided with a spring-supported supplemental seat, and upper and lower pail-holding members, one of which is movable vertically and controlled by the depression of the supplemental seat.

3. A milking-stool provided with a spring-supported supple-

mental seat, a lower pail-holder carried by the stool, and an upper pail-holder carried by the supplemental seat.

4. A milking-stool provided with a spring-pressed supplemental seat, and a pail-holder controlled by the supplemental seat, said pail-holder capable of being shifted laterally independently of the seat.

5. A leg-supported milking-stool having a lower pail-holder carried by the legs thereof, a yieldably-supported supplemental seat, and an upper pail-holder carried by the supplemental seat.

6. A milking-stool having a lower pail-holder, a yieldably-supported supplemental seat, and an upper pail-holder carried by the supplemental seat, the two pail-holders capable of being shifted laterally independently of the seat.

7. A leg-supported milking-stool having a cross-bar connecting adjacent legs, a swinging arm connected to one of the other legs and slidably supported upon the cross-bar, the outer free end of the arm being provided with a pail-engaging element, a yieldably-supported supplemental seat, and a swinging pail-holder carried thereby.

8. A milking-stool having a lower pail-holder, a yieldably-supported supplemental seat, and an upper pail-holder carried by the under side of the supplemental seat.

9. A milking-stool having a main seat, a supplemental seat, and a pail-holder carried by the under side of the supplemental seat, the main seat being recessed to receive the pail holder.

10. A milking-stool having a yieldably-supported supplemental seat, and a pail-holder carried by the under side of the supplemental seat, one of the seats of the stool being recessed to receive the pail-holder when the supplemental seat is depressed.

815,426. BANDAGE. VIRGINIA E. HARDER, Beaumont, TEX. Filed May 9, 1905. Serial No. 259,516.



Claim.—The herein-described appliance for preventing the formation of a double chin and consisting of a piece of elastic material 1, shaped to fit the chin and the front portion of the neck of the wearer, a reinforcing strip or binding 2 secured around the outer edge of the appliance, tabs 5 secured at the opposite rear and upper edges of the same, head-strings secured to the tabs 5 and binding 2 at the upper edge of the appliance, and neck-strings secured to the tabs 5 and binding 2 at the opposite rear edges of the same, the piece of elastic material being normally of the shape of a normal chin and neck, substantially as described.

815,427. BILL-FILE FOR BILLS, RECEIPTS, AND THE LIKE. EDWIN L. HENDERSON, Pleasant Ridge, Ohio, assignor to The Kemper-Thomas Company, Norwood, Ohio, a Corporation of New Jersey. Filed Nov. 20, 1905. Serial No. 288,251.

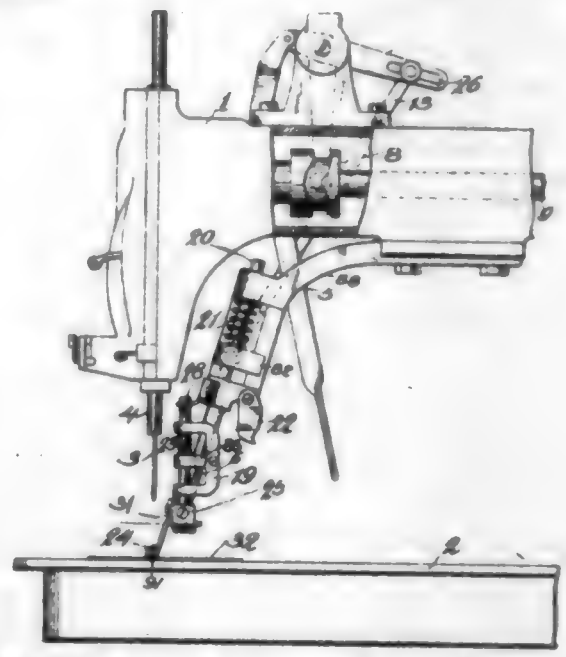


Claim.—1. As a new article of manufacture, a bill-hook, comprising a card, a wire body portion bent in a plane parallel with the card to form a brace, with means for securing said portion rotatably to the card, and a hook portion normally lying in the same plane with the body portion, and adapted to be turned on itself at right angles to the card, when rotated to extend below the card.

2. As a new article of manufacture, a bill-hook, comprising a card, a wire body portion bent in a plane parallel with the card to form a brace, an eyelet for securing said portion rotatably to the card, and a hook portion normally lying in the same plane with the body portion, and adapted to be turned on itself at right angles to the card, when rotated to extend below the card.

3. As a new article of manufacture, a bill-hook, comprising a card, a wire body portion formed into a flat coil parallel with the card, an eyelet for securing said coil rotatably to the card, and a hook portion normally lying in the same plane with the body portion, and adapted to be turned on itself at right angles to the card when rotated to extend below the card.

815,428. TRIMMER AND BINDER FOR SEWING-MACHINES. JOSEPH HIGGINS, New York, N. Y. Filed June 3, 1904. Serial No. 210,927.



Claim.—1. In a sewing-machine the combination of a knife, means for operating the said knife, a binder for directing a binding material and having a guard for the said knife located between the said binder and the said knife, whereby a binding material may be directed to the goods while they are being sewed and trimmed.

2. In a sewing-machine the combination of a knife, means for operating the said knife, an overhanging arm, a binder for directing a binding material supported by the said overhanging arm and having a fin-guard for the said knife to prevent it from cutting the material.

3. In a sewing-machine the combination of a knife a means for causing the said knife to operate, and an adjustable means for changing the said knife from an under trimmer to a straight trimmer.

4. In a sewing-machine the combination of a knife, a means for causing the said knife to operate an adjustable means for changing the said knife from an under trimmer to a straight trimmer, a guard for the said knife.

5. In a sewing-machine the combination of a knife, a means for causing the said knife to operate and an adjustable means for changing the said knife from an under trimmer to a straight trimmer, an adjustable guard for the said knife.

6. In a sewing-machine the combination of a vertically-moving rod a knife attached to the said rod, a means for causing the said rod to operate and an adjustable means for changing the said knife from an under trimmer to a straight trimmer.

7. In a sewing-machine the combination of a knife-block, means for moving the said knife-block, a knife pivotally connected to the said block and means for adjusting the said knife from an under cutter to a straight cutter.

8. In a sewing-machine the combination of a knife-block means for moving the said knife-block, a knife pivotally connected to the said block and means for adjusting the said knife from an under cutter to a straight cutter, a guard for the said knife.

9. In a sewing-machine the combination of a knife, a means for causing the said knife to operate an adjustable means for changing the said knife from an under trimmer to a straight trimmer, an overhanging arm, a binder supported on the said overhanging arm, and having a fin for guiding the said knife.

10. In a sewing-machine the combination of a knife, a means for causing the said knife to operate an adjustable means for changing the said knife from an under trimmer to a straight trimmer, a binder having a fin for guiding the said knife.

11. In a sewing-machine the combination of a knife-bar, a knife, means for operating the said knife, a knife-block for carrying

the said knife and having a curved slot for adjusting the said knife, and a means for coöperating with the said slot for securing the said knife to the said block in its adjusted position so as to change it from an under trimmer to a straight trimmer.

12. In a sewing-machine the combination of a throat-bar having an opening adapted to receive a needle, an under-cutting knife whose edge is adapted to strike the said bar at the side of the said needle, means for operating the said knife.

13. In a sewing-machine the combination of a throat-plate, an under-cutting knife whose edge is adapted to strike the edge of the said plate, the said throat-plate having a throat located substantially opposite the center of the said knife, means for operating the said knife.

14. In a sewing-machine the combination of a throat-bar having a throat for the needle and a vertical cutting side located along the side of the said throat, an under-cutting knife adapted to act along the side of the said throat.

15. In a sewing-machine the combination of a knife-bar, a crank for operating the said bar, a cam for moving the said crank and having an adjusting and locking pins, a shaft through which the said adjusting-pin is passed and against which the locking-pins press.

16. In a sewing-machine the combination of a throat-plate having a throat, a knife adapted to cut at an acute angle to the surface of said plate, a vertical cutting-surface located at the edge and side of the said throat.

17. In a sewing machine the combination of an under-cutting knife, a throat-bar having a throat, and cutting-surface, the said cutting-surface being located in close proximity to, and the center of the said cutting-surface being located substantially opposite the said throat.

18. In a sewing-machine the combination of a needle and a knife, means for operating the said needle and knife, an overhanging arm, a binder supported on the said overhanging arm and having one end located at the side of the said knife and in close proximity to the said needle, a fin located between the said needle and the said knife.

19. In a sewing-machine the combination of a needle and a knife, means for operating the said needle and the said knife, an overhanging arm, a binder supported on the said overhanging arm and located at the side of the said knife and having one end located in close proximity to the said needle, a fin located between the said knife and the said needle, a throat-plate having a throat and vertical cutting-surface located side by side.

20. In a sewing-machine the combination of an overhanging arm, a knife, a needle and a binder supported by the said overhanging arm, means for operating the said knife and the said needle, the said needle being located in close proximity to the side of the said knife, the said binder being located at the side of the said knife, and one end of the said binder being located in close proximity to the said needle, a fin, the said binder and the needle being located on one side of the said fin and the knife located on the other side of the said fin.

21. In a sewing-machine the combination of an overhanging arm, a knife, a needle and a binder supported by the said overhanging arm, a spring-pressed fin located between the binder and the said knife, means for operating the said needle and the said knife.

22. In a sewing-machine the combination of an overhanging arm, a knife and a needle supported by the said overhanging arm, a spring-controlled binder supported by the said arm and in proximity to the said knife and the said needle, means for operating the said needle and the said knife.

23. In a sewing-machine the combination of a needle and a knife, means for operating the said needle and the knife, an overhanging arm, a binder supported by the said overhanging arm, a fin located between the said binder and the said knife.

24. In a sewing-machine the combination of a throat-bar having a throat and a cutting edge located at the side of the said throat, a needle, a knife located at an acute angle to the surface of the throat-bar, a fin located between the said knife and the said needle, means for operating the said needle and the said knife.

25. In a sewing-machine the combination of a throat-bar having a throat and a vertical cutting-surface located at the side of the said throat, a needle, a knife located at an acute angle to the surface of the throat-bar, a fin located between the said knife and the said needle, means for operating the said needle and the said knife.

26. In a sewing-machine the combination of an overhanging arm, a binder supported by the said overhanging arm, a needle and a throat-plate, a knife located at an acute angle to the said throat-plate, a fin located between the said binder and the said knife, means for operating the said needle and the said knife.

27. In a sewing-machine the combination of an overhanging arm, a binder supported on the overhanging arm, a needle and a throat-plate, a knife located at an acute angle to the surface of the said throat-plate and adapted to cut underneath the said binder and at the side of and in close proximity to the said needle, means for operating the said needle and the said knife.

28. In a sewing-machine the combination of a throat-bar having a vertical throat, a needle, an under-cutting knife whose edge is adapted to strike the said bar in the direction of and at the side and in close proximity to the said needle, means for operating the said knife and the said needle.

29. In a sewing-machine the combination of a throat-bar having a throat, an under-cutting knife having elasticity whose edge is adapted to strike the said bar at the side and to move vertically along the side of the said throat, means for operating the said knife.

30. In a sewing-machine the combination of a knife, a needle located at the side of the said knife, means for operating the said knife and the said needle, a binder, the delivering end of the said binder located at the side of the said knife and in close proximity to the said needle.

31. In a sewing-machine the combination of a knife and a needle, means for operating the said knife and the said needle, a spring-pressed binder having one end located in close proximity to the needle and at one side of the said knife whereby a binding material may be directed to one of two pieces of fabric, while the said piece of fabric and the binding material are being sewed together and the other piece of fabric is being trimmed.

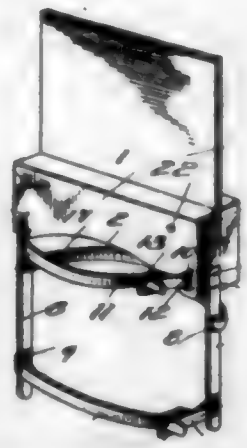
32. In a sewing-machine the combination of an overhanging arm, a knife and a needle, a spring-pressed binder supported on the said overhanging arm and having one end located in close proximity to the needle and on one side of the said knife whereby a binding material may be directed to one of two pieces of fabric, while the said piece of fabric and the binding material are being sewed together and the other piece of fabric is being trimmed.

33. In a sewing-machine the combination of a throat-bar having a throat and a cutting edge located at the side of the said throat, an under-cutting knife having elasticity whose edge is adapted to strike the said bar at the side and in the direction of the throat, means for operating the said knife.

34. In a sewing-machine the combination of a throat-bar having a vertical throat and a surface located at the side of the said throat and in close proximity thereto, an under-cutting knife having elasticity whose edge is adapted to strike the said surface at the side of and in the direction of the throat, means for operating the said knife.

35. In a sewing-machine the combination of a throat-bar having a throat, a vertical cutting-surface located at the side of and in close proximity to the said throat, an under-cutting knife having elasticity whose edge is adapted to strike the said surface at the side of and in the direction of the throat, a means for operating the said knife.

815,429. **MILKING-SHIELD.** John W. Hughes, Rogers, Ark. Filed Aug. 8, 1905. Serial No. 273,296.

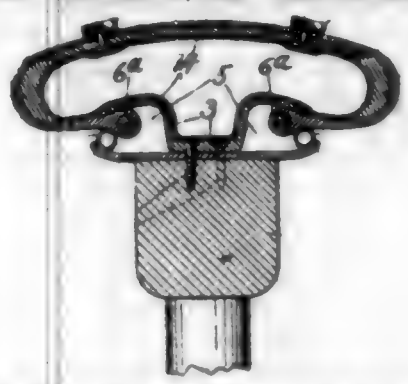


Claim.—1. A head-protector comprising a saddle-block having a concaved underface for engagement upon the shoulder of the wearer, said block having a groove in its upper face, an arm depending from each end of the block, each arm having alining slots, a waist-strap secured in the lowermost alining perforations in said arms, a side strap secured in the uppermost slots of said arms, a neck-strap secured to one of the side faces of the aforesaid block, a shoulder-strap secured to the other side face of the block, and a shield fitted in the aforesaid groove in the top of the block.

2. A head-protector comprising a saddle-block for engagement

with the shoulder of the wearer, a neck-strap secured to said block, an arm depending from each end of the block, straps connected to said arms, a shoulder-strap secured to the outer face of the block, and a shield secured to the upper face of the block.

815,430. PNEUMATIC-TIRED WHEEL. THOMAS B. JEFFERY, Kenosha, Wis. Filed Nov. 21, 1904. Serial No. 233,686.



Claim.—1. In a vehicle-wheel, in combination with the felly, a rim encompassing the same having laterally-opening recesses; a flexible tire-casing having its lateral edges enlarged and entered in said recesses respectively; retaining devices also entered in the recesses, said recesses being narrowed at their mouths, and the sum of the thickness of the enlarged edges of the casing and of the retaining devices in each recess being greater than the width of the mouth of the latter, said recesses being extended back from their mouths with capacity to accommodate the thickened edges, the latter being adapted to be passed back into the recesses to bring a thinner portion of the casing to the mouth, the mouth being wide enough to admit the retaining device uncompressed while accommodating said thinner portion.

2. In a vehicle-wheel, in combination with the rim having laterally-opening recesses enlarged back of their mouths, a flexible tire-casing having its edges thickened and entered in such recesses; a ring encompassing the wheel in each recess between the mouth thereof and the thickened edge of the casing therein, the thickness of such ring added to that of the thickened edge of the casing being more than the width of the mouth, said thickened edges being adapted to be withdrawn into the recesses to bring a thinner portion of the casing to the mouth the mouth being wide enough to admit the ring uncompressed while accommodating said thinner portion.

3. In a vehicle-wheel in combination with the rim having lateral recesses, a flexible tire-casing having thickened or reinforced edges entered in the recesses, and a retainer consisting of a spiral coil of wire lodged in each recess, the axis of the coil being circumferential with respect to the wheel.

4. In a vehicle-wheel in combination with the rim having laterally-opening recesses, a tire-casing having its edges thickened or reinforced and entered in said recesses; a retainer consisting of a spiral coil of wire lodged in the recesses, the coil having its axis circumferential with respect to the wheel and its diameter plus the thickness of the tire-casing back of the thickened or reinforced edge substantially equal to the width of the mouth.

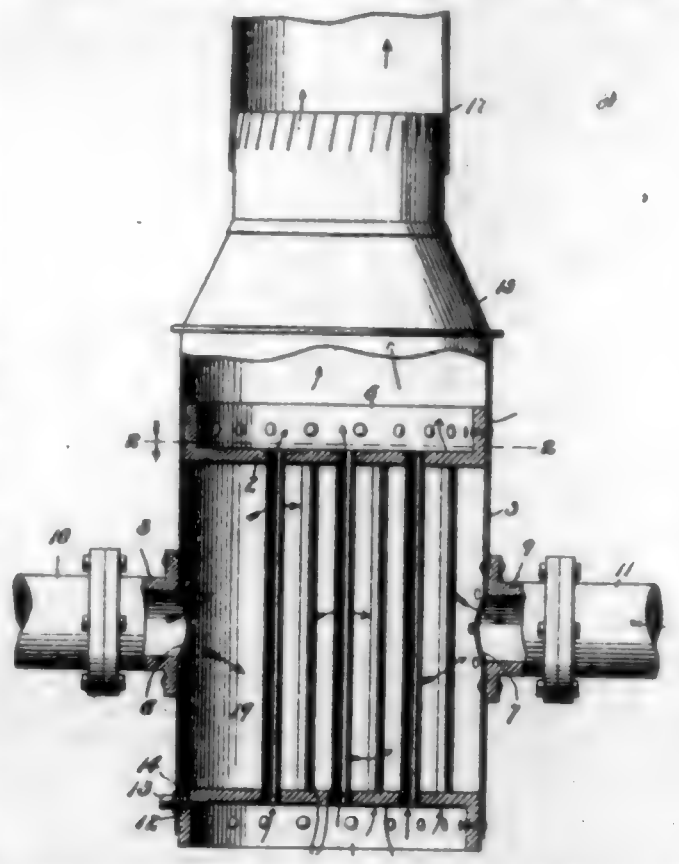
5. In a vehicle-wheel in combination with the rim having laterally-opening recesses which are enlarged back of their mouths; a flexible tire-casing having its edges thickened and entered in said recesses and a retainer consisting of a spiral coil of wire lodged in each recess with its axis circumferential with respect to the wheel, the sum of the diameter of the spiral and the thickness of the thickened edge of the casing being more than the width of the mouth.

6. In a vehicle-wheel, a flexible tire-casing provided with reinforcements approximately crescent-shaped in cross-section at positions which form the sides of the tire when it is on the wheel permanently united to the casing within the same, such reinforcements having their exterior convex surface curved about a radius materially less than that of a circle to which the casing inflated the maximum cross-area would correspond for holding the casing flat or oblong in cross-section under inflation.

7. In a vehicle-wheel in combination with a rim having laterally-opening recesses narrowed at the mouth; a flexible tire-casing having thickened edges entered in said recesses respectively, and retainers in the recesses preventing the escape of such edges through the narrowed mouth, the casing being provided with reinforcements approximately crescent-shaped in cross-section at positions which form the sides of the tire when it is on the wheel, such reinforcements being permanently united to the casing within the same for holding the latter flat or oblong in cross-section under inflation.

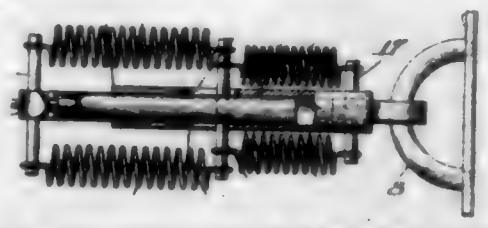
8. In a vehicle-wheel in combination with the rim, a flexible tire-casing engaged at its lateral edges with the rim; reinforcements permanently united to the casing at a position corresponding to the opposite sides of the tire when the latter is in operative position on the wheel, such reinforcements being conformed in cross-section to a cross-sectionally flat or oblong form of the tire.

815,431. CONDENSER AND FEED-WATER HEATER. JOHN JERLIN, Spokane, Wash. Filed Sept. 14, 1905. Serial No. 278,470.



Claim.—A device of the class described including a pair of flanged heads, a shell connected exteriorly therewith, terminating short of the extremities of the flanges and having diametrically opposite inlet and exit openings, and conducting-tubes connecting the heads said tubes being spaced from the inlet-opening; in combination with grooved head-plates engaging the flanges of the heads, abutting upon the edges of the shell, and having apertures for the reception of conducting-pipes directed against the portions of the heads unprovided with conducting-tubes.

815,432. TEMPORARY DOOR-RETAINER AND THE LIKE. GILBERT B. JOHNSON, Chicago, Ill. Filed Jan. 23, 1905. Serial No. 242,309.



Claim.—1. In a device of the kind described, a retaining member arranged to temporarily connect a movable door or the like with a fixed part, in combination with disengaging means carried by said member, means for yieldingly maintaining said members in operative position, whereby pressure on said door will automatically disengage the same and permit it to open.

2. A device of the kind described, comprising a member provided with a resilient latch, in combination with a coöperating part arranged to be loosely engaged by said latch, whereby when one of said members is secured to a comparatively fixed part and the other to a movable part the two will be resiliently engaged and may be readily disengaged by pressure upon the movable part.

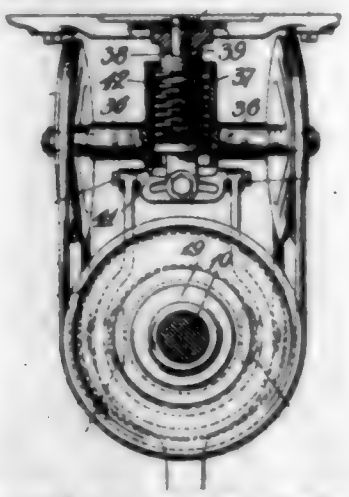
3. In a device of the kind described, a member comprising a bar telescopically arranged within a tube carried by a standard or base and carrying a latch, in combination with resilient means arranged to retain the latch in its normal position, substantially as described.

4. A device of the kind described, comprising a tube, a bar telescopically carried by said tube and provided with a latch member, a slot-and-pin connection between the bar and the tube permitting a

limited relative longitudinal movement between the two, in combination with resilient connections between the latch and the slot-pin and resilient connections also between said pin and a point near the rear of the tube, substantially as and for the purpose set forth.

5. A device of the kind described, comprising the combination of a bar provided with means for attaching the same in position, with a base-piece adapted to be attached in position, provided with a pivotally-supported resilient latch member coöperating with said bar and automatically releasable therefrom on pressure in opposition to said resilient means.

815,433. REVERSIBLE DRIVING MECHANISM. MOSES C. JOHNSON, Hartford, Conn., assignor to The Carlyle Johnson Machine Company, Hartford, Conn., a Corporation of Ohio. Filed Oct. 7, 1904. Serial No. 227,610.



Claim.—1. In combination with a shaft, driving-pulleys mounted thereon, a stem arranged above the shaft, a hub on the stem, said hub having a rotary and a longitudinal movement on the stem, idlers carried by the hub, a belt passing around the idlers and the pulleys on the shaft, and tension means carried by the hub.

2. In combination with a shaft, driving-pulleys mounted thereon, a stem arranged above the shaft, a hub on the stem, said hub having a rotary and a longitudinal movement on the stem, idlers carried by the hub, a belt passing around the idlers and the pulleys on the shaft, and a spring within the hub arranged to create tension for the belt.

3. In combination with a shaft, driving-pulleys mounted thereon, a stem above the shaft, a flange on the stem, a hub on the stem contacting with the flange, idlers carried by the stem, a belt passing around the idlers and the pulleys on the shaft, and a spring embracing the stem and interposed between an end of the hub and the flange of the stem.

815,434. VENTILATOR. MORTIMER KINSEY, Newark, N. J., assignor to John B. Heim, Newark, N. J. Filed May 10, 1905. Serial No. 259,790.



Claim.—1. In a ventilator of the character described, a casing having closed ends and a pair of oppositely-disposed inlet-openings, and an exit-opening, the ends of said casing being inclined toward the outlet-opening, and the inlet-openings being opposite and at an angle to said inclined ends whereby to deflect the air inwardly, and a movable deflector in said casing intermediate said inlet-openings.

2. In a ventilator of the character described, a casing having closed ends an inlet-opening at each end, and an exit-opening, the end walls of said casing being inclined toward the exit-opening, and the inlet-openings being opposite and at an angle to said inclined end walls.

3. In a ventilator of the character described, a supporting-frame a casing secured to one side of said frame, said casing having an exit-opening, a balanced deflector mounted within the casing, and oppositely-disposed box-like inlets mounted upon the other side of the frame and communicating therethrough with the interior of the casing.

4. In a ventilator of the character described, a supporting-frame, a casing secured to one side of said frame, said casing having closed ends and also having an exit-opening, a balanced deflector mounted within the casing, and oppositely-disposed box-like inlets mounted upon the other side of the frame and communicating therethrough with the interior of the casing, the end walls of the casing directly opposite the inlets being inclined toward the exit-opening of said casing.

5. In a ventilator of the character described, a casing having closed ends and a pair of oppositely-disposed inlet-openings, and an exit-opening, the ends of said casing being inclined toward the outlet-opening, and the inlet-openings being opposite and at an angle to said inclined ends whereby to deflect the air inwardly, and a movable balanced deflector in said casing intermediate said inlet-openings.

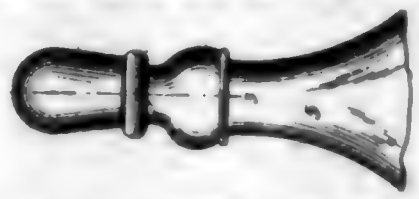
6. In a ventilator of the character described, a casing having a pair of box-like inlets, arranged at an angle to the major axis of the casing and facing in opposite directions toward the ends of the ventilator, and an exit-opening, and a movable deflector in said casing intermediate said inlet-openings.

7. In a ventilator of the character described, a supporting-frame, a casing secured to one side of said frame, said casing having an exit-opening, a movable deflector mounted within the casing, and oppositely-disposed box-like inlets mounted upon the other side of the frame and communicating therethrough with the interior of the casing, the ends of said box-like inlets facing in opposite directions toward the ends of the ventilator.

8. In a ventilator of the character described, a supporting-frame, a casing secured to one side of said frame, said casing having closed ends and also having an exit-opening, a movable deflector mounted within the casing, and oppositely-disposed box-like inlets mounted upon the other side of the frame and communicating therethrough with the interior of the casing, the end walls of the casing directly opposite the inlets being inclined toward the exit-opening of said casing, and the ends of said box-like inlets facing in opposite directions toward the ends of the ventilator.

9. In a ventilator of the character described, a supporting-frame, a casing secured to one side of said frame, said casing having an exit-opening, a movable deflector mounted within the casing, and oppositely-disposed box-like inlets mounted upon the other side of the frame and communicating therethrough with the interior of the casing.

815,435. NIPPLE FOR NURSING-BOTTLES. MARY B. KNAUFF, Avalon, Pa. Filed Oct. 25, 1905. Serial No. 284,201.



Claim.—1. The combination with a nipple for nursing-bottles, of a coiled air-tube which lies entirely within said nipple in a horizontal plane, one end of said tube being open to the atmosphere and the other end of said tube opening into the interior of the nipple.

2. A nipple for nursing-bottles having a tube located and lying entirely therein, one end of said tube being open to the atmosphere and the other end of said tube being open to the interior of the nipple and a check-valve on the latter end of said tube.

3. A nipple for nursing-bottles having a coiled air-tube lying entirely therein, one end of said tube being open to the atmosphere and the other end of said tube being open to the interior of the nipple, the coils of said tube being attached to each other in such manner that said tube will retain its coiled shape when the nipple is turned wrong side out.

4. A nipple for nursing-bottles having an annular recess formed therein, a coiled air-tube lying in said recess and a valve formed on the end of said tube.

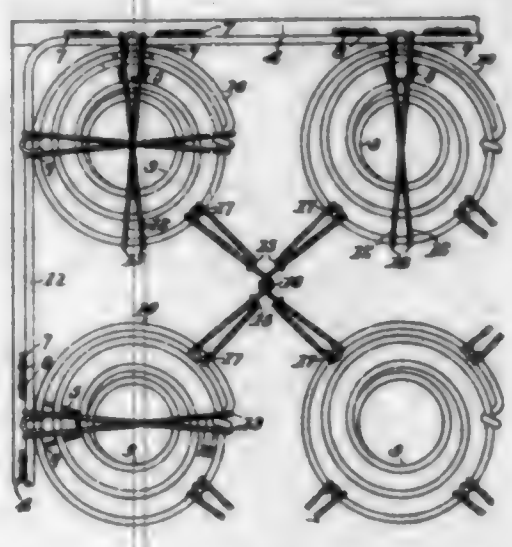
5. A nipple for nursing-bottles, having an annular recess formed therein and a coiled air-tube which lies in said recess, one end of said tube being open to the atmosphere and the other end of said tube being open to the interior of the nipple.

6. A nipple for nursing-bottles having an annular recess formed therein, a coiled air-tube lying in said recess, one end of said tube being open to the atmosphere and the other end of said tube being open to the interior of said nipple, a valve formed upon the latter end of said tube and the coils of said tube being attached to each other substantially as described.

815,436. SPRING EDGE-SUPPORTING HOOK. AUGUSTUS T. KNORTH and SIMON P. DANNER, Middletown, Conn. Filed June 21, 1905. Serial No. 266,330.

Claim.—1. In a device of the class described a plurality of coil-springs with their bases secured in a common plane, an edge bar connecting the center sides of the top whirls of the outer row of springs,

a fastening composed of wire folded upon itself and with the loop of the fold wound about the edge bar and the spring and passing between the side wires and the single ends of the fastening wound about the spring-coil opposite the edge bar.



2. In a device of the class described a plurality of coil-springs with their bases secured in a common plane, a pair of coacting fastenings to hold the several springs properly spaced relative to each other and each composed of a wire folded at the middle and each end again folded upon itself and with the folds wound about the coils of the springs and passing between the side wires and the middle fold of fastening wound about the middle fold of the other.

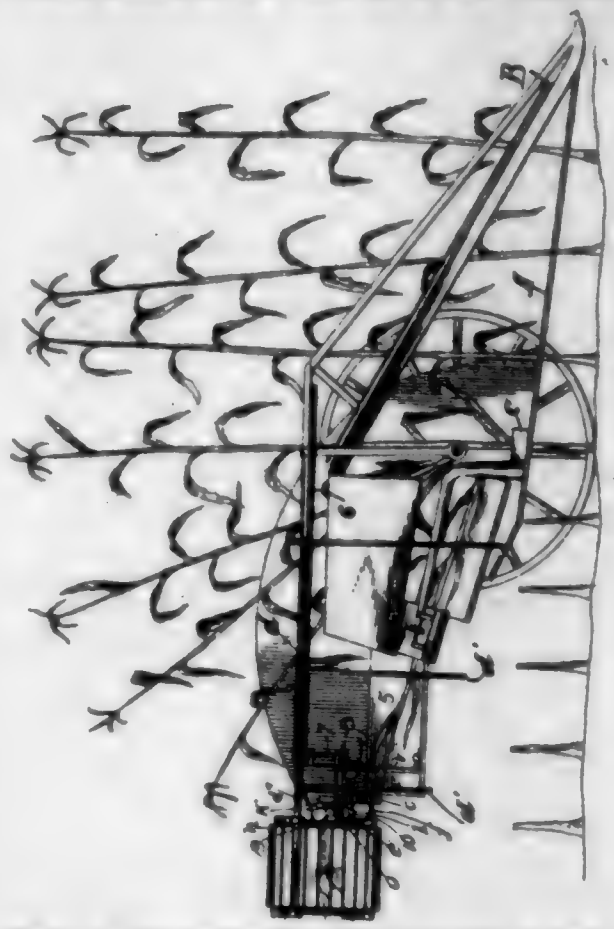
3. A device of the class described, comprising a frame, a plurality of coil-springs, with their bases secured to the frame, an edge bar connecting the outer sides of the top whirl of the outer row of springs, a fastening composed of wire folded upon itself and with the loop of the fold wound about the edge bar and the spring and passing between the side wires and the single ends of the fastening wound about the spring-coil opposite the edge bar, and a fastening composed of wire folded upon itself and with the loop of the fold wound about a coil of the outer-spring below the bar and passing between the side wires and with the single ends pivotally secured to the frame.

4. A device of the class described, comprising a frame, a plurality of coil-springs with their bases secured to the frame, an edge bar connecting the outer sides of the top whirls of the outer row of springs, a fastening composed of wire folded upon itself and with the loop of the fold wound about the edge bar and the spring and passing between the side wires and the single ends of the fastening wound about the spring-coil opposite the edge bar, and a pair of coacting fastenings to hold the several springs properly spaced and each composed of a wire folded at the middle and each end again folded upon itself and with the folds wound about the coils of the springs and passing between the side wires and the middle fold of one fastening wound about the middle fold of the other.

5. A device of the class described, comprising a frame, a plurality of coil-springs with their bases secured to the frame, a pair of coacting fastenings to hold the several springs properly spaced and each composed of a wire folded at the middle and each end again folded upon itself and with the folds wound about the coils of the springs and passing between the side wires and the middle fold of one fastening wound about the middle fold of the other, and a fastening composed of wire folded upon itself and with the loop of the fold wound about a coil of the outer spring below the top whirl and passing between the side wires and with the single ends pivotally secured to the frame.

6. A device of the class described, comprising a frame, a plurality of coil-springs with their bases secured to the frame, a pair of coacting fastenings to hold the several springs properly spaced and each composed of a wire folded at the middle and each end again folded upon itself and with the folds wound about the coils of the springs and passing between the side wires and the middle fold of one fastening wound about the middle fold of the other, an edge bar connecting the outer sides of the top whirls of the outer row of springs, a fastening composed of wire folded upon itself and with the loop of the fold wound about the edge bar and the spring and passing between the side wires and the single ends of the fastening wound about the spring-coil opposite the edge bar, and a fastening composed of wire folded upon itself and with the loop of the fold wound about a coil of the outer spring below the bar and passing between the side wires and with the single ends pivotally secured to the frame.

815,437. TOPPING ATTACHMENT FOR HARVESTERS. LEVI J. KNOX, Nowata, Ind. Ter. Filed Apr. 12, 1905. Serial No. 255,205.



Claim.—1. The combination with a harvester, including a cutting mechanism and a vertically-disposed downwardly-slanted board arranged to receive grain upon its upper edge from the cutting mechanism, of a pair of spaced fingers disposed adjacent to the guide and in position to receive therebetween grain passing downwardly over the guide, a knife arranged to traverse the space between the fingers, and means for operating the knife, said fingers and knife being movable toward and away from the grain-receiving board.

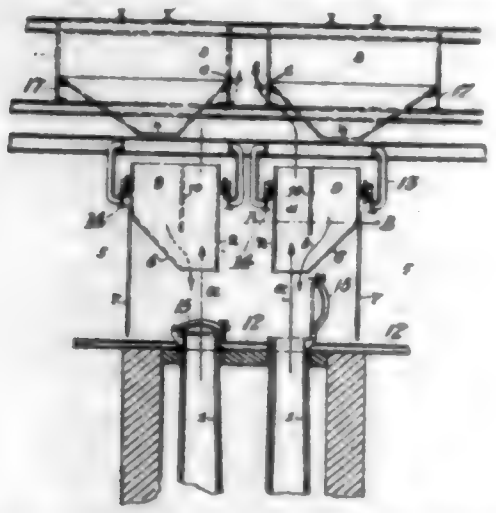
2. The combination with a downwardly-slanting grain-guide, of spaced fingers arranged to receive therebetween grain passing over the guide, a knife arranged to traverse the space between the fingers, means for operating the knife, a carrier located at the opposite side of the fingers from the guide and arranged to receive portions of grain cut by the knife, said fingers, knife and carrier, being movable toward and away from the guide, and means for operating the carrier.

3. The combination with a harvester including a grain-carrier and a guide arranged for the reception of grain from the carrier and adapted for the passage of said grain downwardly thereover, of a frame connected with the carrier, a shaft revolubly connected in the frame, connections between said shaft and the operative mechanism of the harvester for operation of the former by the latter, a gear carried by the shaft and slidable thereon, brackets slidably mounted upon the shaft, a cutter-bar connected with certain of said brackets, said cutter-bar being adapted to receive grain passing downwardly over the guide, a gear mounted upon one of the brackets and meshing with the first-named gear, connections between the second-named gear and the cutter-bar for operation of the latter, a carrier connected with the brackets for movement therewith and disposed to receive matter from the cutter-bar and connections between the carrier and the shaft for operation of the former by the latter said brackets and first-named gear being movable toward and away from the guide.

815,438. RETORT-CHARGING APPARATUS. ERNST KÖRTING, Mariendorf, near Berlin, Germany, assignor to The Firm of Dessauer Vertical-Ofen Gesellschaft M. B. H., Berlin, Germany. Filed Dec. 2, 1904. Serial No. 235,194.

Claim.—1. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any retort in a row, of a vertical partition-wall dividing said traveling hopper into two compartments, of which the one is parallelopipedal and permits the gases from the opened retort to vertically escape, and the other compartment serves as a hopper proper and communicates below with the first compartment, means for dropping coal into the other compartment, so that it falls into the retort, and a protecting-plate secured on the outside of the other compartment and reach-

ing down so near the top surface of the oven, whereby the laborer is protected from the gases escaping from the opened retort.



2. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any retort in a row, of a vertical partition-wall dividing said traveling hopper into two compartments, of which the one is parallelopipedal and permits the gases from the opened retort to vertically escape, and the other compartment, serves as a hopper proper and communicates below with the parallelopipedal compartment, a protecting-plate secured on the outside of the other compartment of said traveling hopper and reaching down to near the top surface of the oven, a plurality of stationary hoppers above the path of said traveling hopper and having their bottom openings in the vertical cross-planes of the several retorts and in the vertical longitudinal central plane of the other compartment of said traveling hopper, and a plurality of spaces or openings on one side of said plurality of stationary hoppers in the vertical cross-planes of the several retorts and serving as chimneys for the gases passing through the parallelopipedal compartment of the traveling hopper.

3. The combination with a gas-producing apparatus with two parallel rows of vertical gas-retorts, of two traveling hoppers adapted to be moved over either retort of both rows, each traveling hopper being divided by a vertical partition-wall into two compartments, of which the one is parallelopipedal and permits the gases from the opened respective retort to vertically escape and the other compartment serves as a hopper proper and communicates below with the parallelopipedal compartment, a protecting-plate secured on the outside of the other compartment of each of said two traveling hoppers, two parallel rows of stationary hoppers above the paths of said two traveling hoppers and having their bottom openings in the vertical cross-planes of the several retorts in both rows and the vertical longitudinal central planes of the other compartments of said two traveling hoppers, and a plurality of spaces or openings between said two parallel rows of stationary hoppers and serving as chimneys for the gases escaping from the parallelopipedal compartments of both traveling hoppers.

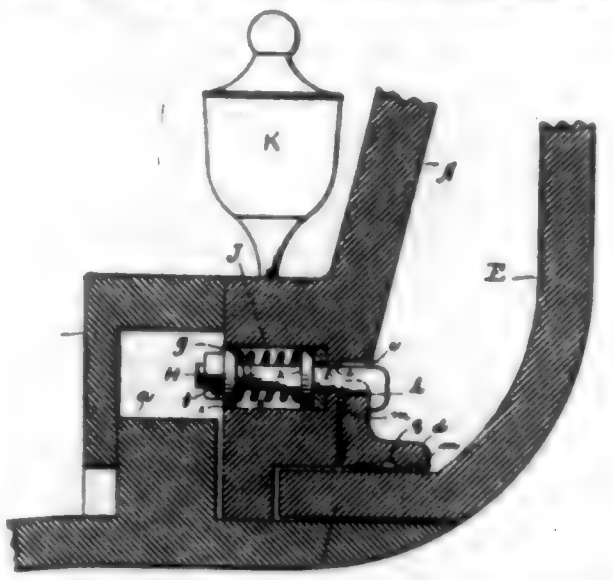
4. In an apparatus for charging vertical gas-retorts, the combination with a traveling hopper adapted to be moved over any one of several retorts, of a vertical partition-wall dividing said traveling hopper into two compartments of which one permits the gases from an open retort to vertically escape and the other compartment serves as a hopper proper and communicates at the bottom with the first compartment, and means for feeding material into the latter compartment.

5. A charging-hopper having an opening at its bottom through which the contents of the hopper may be discharged, and a partition forming a vertical compartment over said opening, and a second compartment at one side of the aforesaid compartment, the two said compartments communicating at their lower ends, substantially as described.

6. The combination with a retort, of a charging-hopper above said retort having an opening in its bottom through which the contents of the hopper may be discharged, said opening being vertically over said retort, a partition forming a vertical compartment over said opening and a second compartment at one side of the aforesaid compartment, the two said compartments communicating at their lower ends, substantially as described.

815,439. CENTRIFUGAL PUMP. FERDINAND W. KROGH and CARL A. KROGH, San Francisco, Cal. Filed Sept. 1, 1903. Serial No. 171,502.

Claim.—1. In the class of machinery described, a movable packing-ring secured to the stationary part and having faces engaging seats on said stationary and moving parts and provided with means for preventing leakage of water between said faces and seats.



2. In the class of machinery described, the combination with a stationary part and a moving part, of a movable packing-ring having faces engaging seats on said stationary and moving parts, spring-pressed means for securing said ring to said stationary part, and means for preventing leakage of water between said faces and seats.

3. In the class of machinery described, the combination with a stationary part having an opening, and a moving part in said stationary part, of a packing-ring having faces engaging said stationary and moving parts, a bolt extending through said opening and engaged with said ring, means tending to force said bolt in one direction, and packing means contiguous to said bolt.

4. In the class of machinery described, the combination with a stationary part having an opening, and a moving part in said stationary part, of a packing-ring having faces engaging said stationary and moving parts, a bolt extending through said opening and engaged with said ring, means for holding said bolt against axial movement, a spring on said bolt, tending to press the same and the packing-ring in one direction, a tension-adjusting means for said spring, and a packing on said bolt, for the purposes specified.

5. In the class of machinery described, a stationary and a moving part a movable packing-ring secured to the stationary part, and having a face engaging a seat on the moving part and provided with means for preventing leakage of water between said face and seat, in combination with means for lubricating said face of the ring.

6. In the class of machinery described, the combination with a stationary and a movable part, of a packing-ring secured to the stationary part and having a water-tight face engaging a seat on the moving part, said packing-ring also having an oil-conduit open upon said face, and means through which said conduit is supplied with oil.

7. In a centrifugal pump, the combination with a casing having shoulders, and an impeller rotating in said casing, of packing-rings engaging said impeller and provided with adjustable means for connecting them to said casing, comprising bolts extending through said shoulders and engaging said rings, a spring on each bolt, and washers at the ends of said spring.

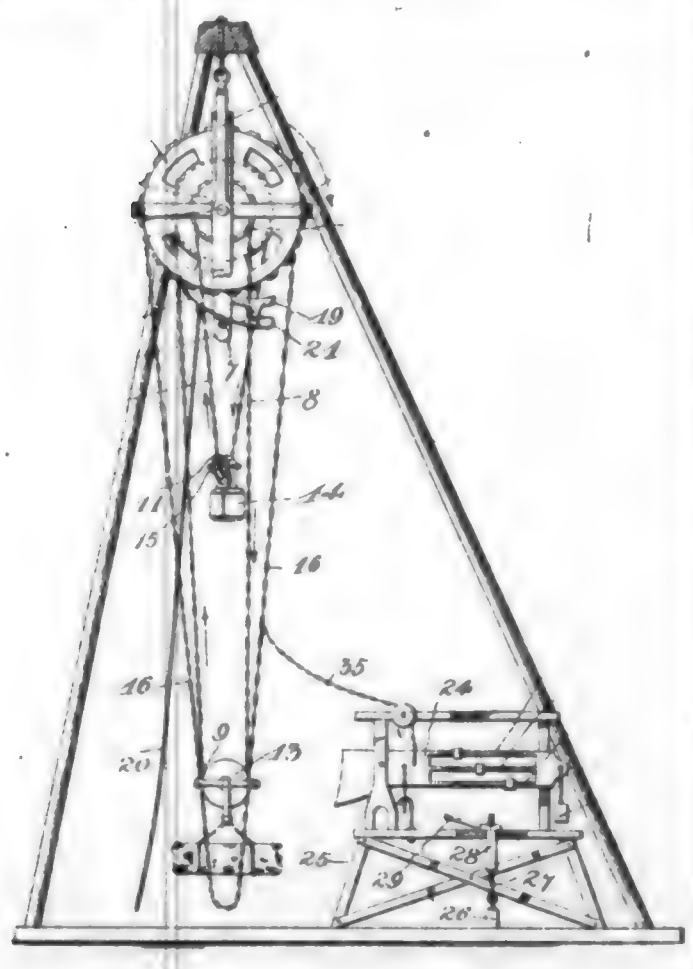
8. In a centrifugal pump, the combination with a casing having shoulders, and an impeller in said casing, of packing-rings engaging said impeller and provided with adjustable means for connecting them to said casing, said adjustable means comprising bolts extending through said shoulders and connected to said rings, springs on said bolts, washers at the ends of said springs, nuts at the outer ends of said bolts, and a packing on each bolt, interposed between the inner washer and the contiguous shoulder.

815,440. HOISTING APPARATUS. RUDOLPH H. KRUEGER, Spencer, S. D. Filed June 20, 1905. Serial No. 267,627.

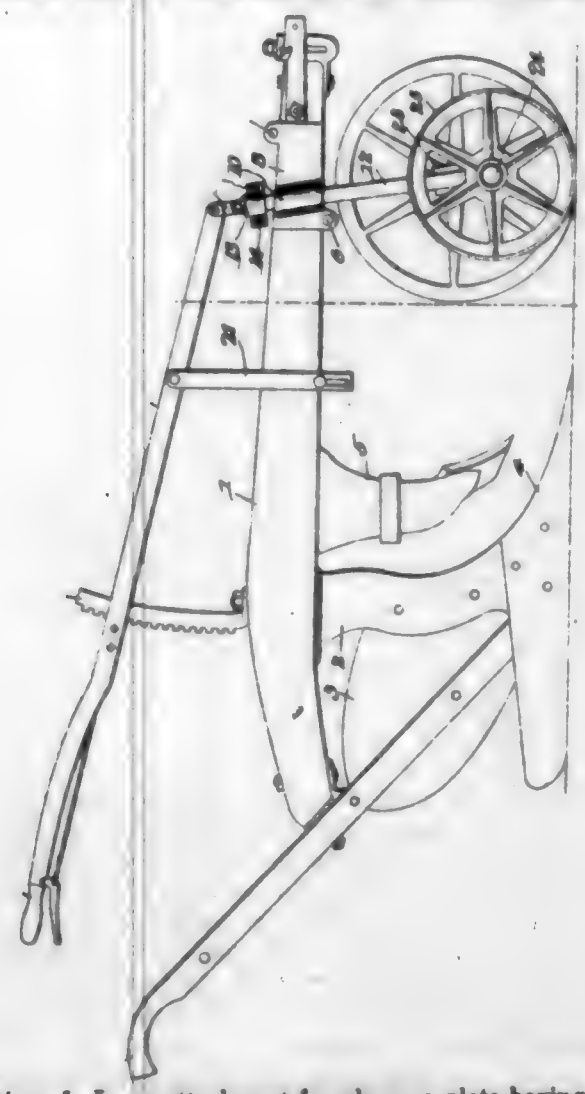
Claim.—1. Hoisting apparatus comprising a differential pulley, operating-tackle therefor, a pawl to engage a member of the differential pulley, and a brake-shoe carried by the said pawl, serving by its weight to normally engage the frame with the differential pulley and applied by the pawl to the differential pulley when the pawl is disengaged therefrom.

2. Hoisting apparatus comprising a differential pulley, operating-tackle therefor, a pawl to engage a member of the differential pulley, a brake-shoe pivotally mounted on the pawl, serving by its

weight to normally engage the pawl with the differential pulley and applied by the pawl to the differential pulley when the pawl is disengaged therefrom, and a spring carried by the pawl and bearing against the brake-shoe, to facilitate the application of the latter to the differential pulley.



815,441. PLOW ATTACHMENT. LUTHER B. LANDIS and WILLIAM S. MYERS, York, Pa. Filed Aug. 24, 1905. Serial No. 275,621.



Claim.—1. In an attachment for plows, a plate having an inclined box or bearing, a shaft supported for partial rotation and for slidable movement in said bearing, means for effecting vertical adjustment of the shaft, and means for securing the latter against rotation.

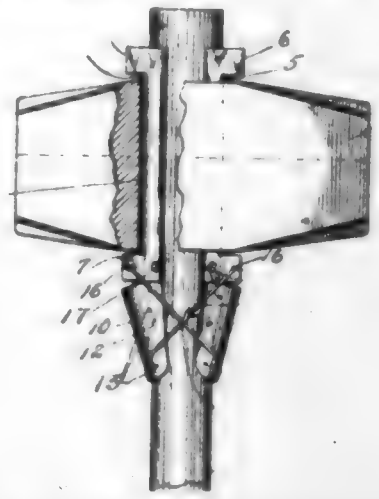
2. A plow attachment including inclined supports or bearings, shafts slidable and rotatable in said bearings, lever means for adjusting one of said shafts, means for securing the lever-adjusted shaft against rotation, a land-wheel carried by said shaft and a furrow-wheel carried by the freely-movable shaft.

3. A plow attachment including a gage-wheel, an approximately vertical supporting-shaft for said wheel adjustable in the direction of its length, a clamping member adjustable about the axis of said shaft, an adjusting-lever, and a link connection between said lever and the clamping member.

4. A gage-wheel supported for rotation, a supporting-shaft for the bearing of said wheel, a clamping device including serrated half-boxes adjustably engaging the shaft and having upwardly-extending lugs, an adjusting-lever, and a link connecting the latter with the lugs of the clamping device.

5. A box or bearing, a shaft slidable and rotatable in said bearing, a gage-wheel supported for rotation by said shaft, clamping-boxes engaging the upper end of said shaft and having lugs engaging the upper extremity of the shaft, an adjusting-lever, and a link connecting the lever with the lugs of the clamping-boxes.

815,442. HAMMER. ABEL M. LAYTON, Pueblo, Colo. Filed July 6, 1905. Serial No. 268,489.



Claim.—The combination with a hammer-head having an eye, of a handle disposed in said eye, keys disposed in the eye at opposite sides of the handle and having terminal enlargements lying respectively above and below the head, the lower enlargements being transversely perforated, plates secured to opposite sides of the handle below the keys and provided with transverse perforations, and tie-wires which engage through the perforation of a key and that of a diagonally opposite plate.

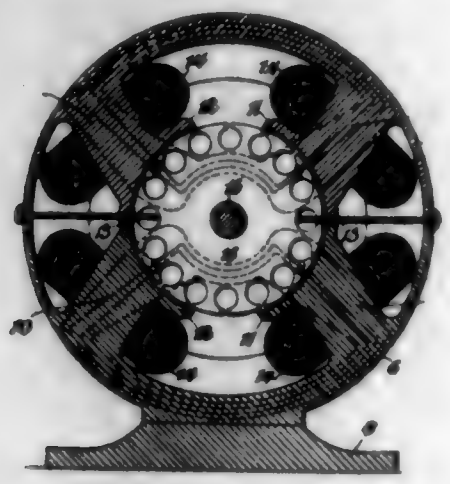
815,443. PIPE, CIGAR, OR CIGARETTE HOLDER. BENJAMIN A. LEVETT, New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,063.



Claim.—1. In a pipe, cigar or cigarette holder, the combination with the stem and mouthpiece and bowl-piece sections, of couplings connecting the three together, and disks clamped between the stem and mouthpiece and bowl-piece respectively, the said stem having a tortuous passage extending therethrough, the ends of the stem being notched adjacent to the disks, so that they form a portion of the walls of the passages, the said disks being made of absorbent material.

2. In a pipe, cigar or cigarette holder, the combination with the stem and mouthpiece and bowl-piece sections, of couplings arranged in the center line of the stem for securing the parts together, each of such couplings being so constructed and arranged as to surround a portion of the smoke-passage, the said passage being tortuous and formed of sections extending several times through the stem, and disks clamped between the ends of the stem and mouthpiece and bowl-piece sections, the ends of the stem between the sections being notched so that the disk will form a portion of the walls through the passage.

815,444. MOTOR. FRANK B. LEWIS, Troy, Ohio, assignor of one-half to W. Edgar Johnson, Troy, Ohio. Filed June 15, 1905. Serial No. 265,443.



Claim.—1. A motor comprising a sectional casing, opposite field-poles, each pole comprising a plurality of independent cores and heads, the heads of each pole being disposed in close relation but being entirely separate and said cores being respectively carried by different sections of the casing, a separate winding for each core of each pole, and an armature coöperating with the heads.

2. A motor comprising a sectional casing, opposite field-poles, each of said poles comprising a plurality of convergently-disposed cores carried respectively by the different sections of the casing and having enlarged heads at their inner ends, the heads of each pole having their opposed portions located directly adjacent each other but entirely independent and slightly spaced apart, a separate coil surrounding each core, and an armature rotating between the opposite field-poles.

3. A motor comprising a two-part sectional casing, opposite salient poles carried by the casing, each of said poles consisting of a plurality of separate convergently-disposed cores having independent spaced but coacting heads, each casing-section having cores of the opposite poles, the distance between the unlike cores carried by the same section being greater than the distance between the like cores carried by the different sections, a separate coil surrounding each core, and an armature coöperating with and located between the heads of the poles.

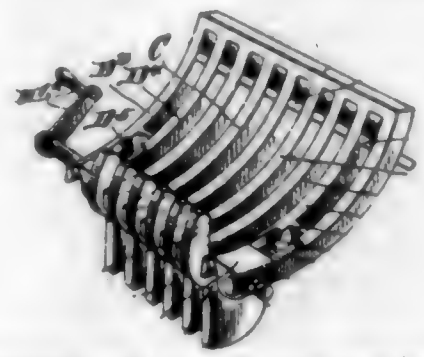
4. In a motor, the combination with opposite field-poles, each of said poles comprising a plurality of convergently-disposed cores having independent spaced heads, the cores of the different poles converging toward different spaced points, of an armature coöperating with the different poles and having its axis of rotation located between said points of convergence.

5. In a motor, the combination with opposite field-poles, each of said poles comprising a plurality of convergently-disposed cores, the cores of the different poles converging toward spaced points and having independent heads at their inner ends, said heads being provided with concentrically-disposed inner surfaces, of an armature rotating between the different poles and having its axis of rotation located between the points of convergence of the cores.

6. In a motor, the combination with a two-part casing, of opposite field-poles carried by the casing, each pole comprising a plurality of convergently-disposed cores, the cores of the different sets converging toward spaced points, heads located at the inner ends of the various cores and having concentrically-disposed inner surfaces, the heads of each pole being separate from each other, each of said casing-sections having cores of the opposite poles, the distance between the unlike cores carried by the same section being greater than the distance between the like poles carried by the different sections and the heads of said like poles being slightly separated, a separate coil surrounding each core, and an armature journaled in the casing and coöperating with the concentric faces of the heads, the axis of rotation of the armature being disposed between the points of convergence of the cores and in the same plane therewith.

815,445. STOVE-GRATE. JOHN LOFTUS, Albany, N. Y., assignor of one-half to Peter Kinnear, Albany, N. Y. Filed Mar. 15, 1905. Serial No. 250,242.

Claim.—1. In combination with a grate, bearing-blocks mounted thereon near the front of the grate and adapted to have a slight play, a rock-shaft mounted in said blocks, a series of members secured to said shaft, the lower ends of which are sector-shaped, and their other ends formed into arms, said members being mounted between the bars of the grate, and adapted as the shaft is rocked to cause the clinkers and ashes to be loosened from the grate, as set forth.

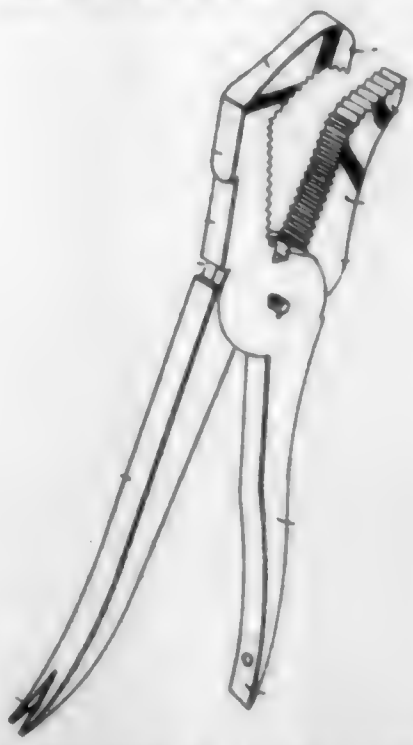


2. In combination with a grate, bearing-blocks mounted thereon near the front of the grate and adapted to have a slight play, a rock-shaft mounted in said blocks, a series of members secured to said shaft, the lower ends of which are sector-shaped, and their other ends formed with arms, said members being mounted between the bars of the grate and adapted as the shaft is rocked to cause the clinkers and ashes to be loosened from the grate, an abutment-plate to limit the inner throw of said arms, and a notched plate spacing and bracing the grate-bars, as set forth.

3. In combination with a grate, bearing-blocks mounted thereon and adapted to have a slight play, a rock-shaft mounted in said blocks, a series of members secured to said shaft, the lower ends of which are sector-shaped, and their other ends formed into arms, said members being mounted between the bars of the grate and adapted as the shaft is rocked to cause the clinkers and ashes to be loosened from the grate, and a notched bar spacing and bracing the grate-bars, as set forth.

4. In combination with a grate, means for supporting the same, bearing-blocks provided with apertures and having beveled edges adapted to have a play upon the bars of the grate, a rock-shaft mounted in the apertures in said bearing-blocks, a series of members secured to said shaft between the grate-bars, and having their lower ends sector-shaped, and their opposite ends upwardly turned, as set forth.

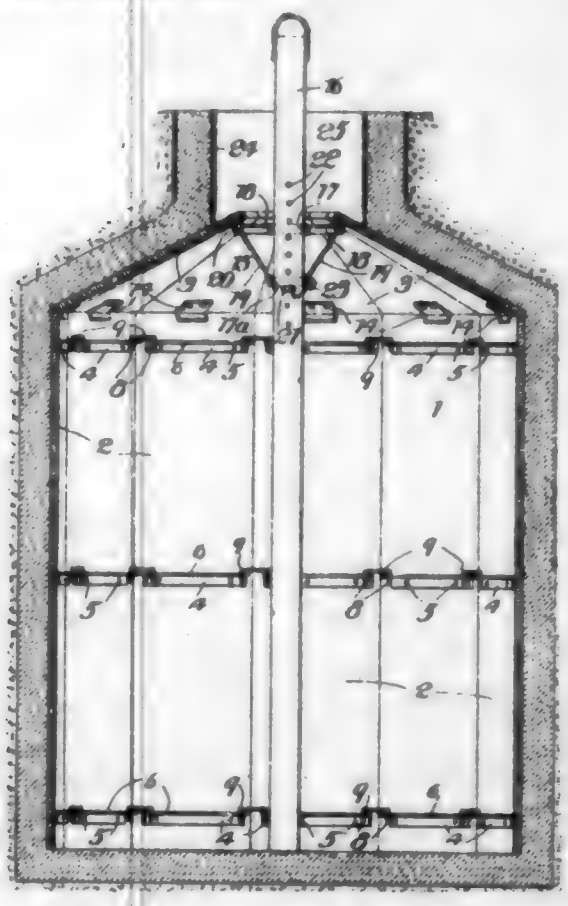
815,446. WRENCH. WILLIAM C. LOTT, North Chicago, Ill. Filed Apr. 4, 1905. Serial No. 253,325.



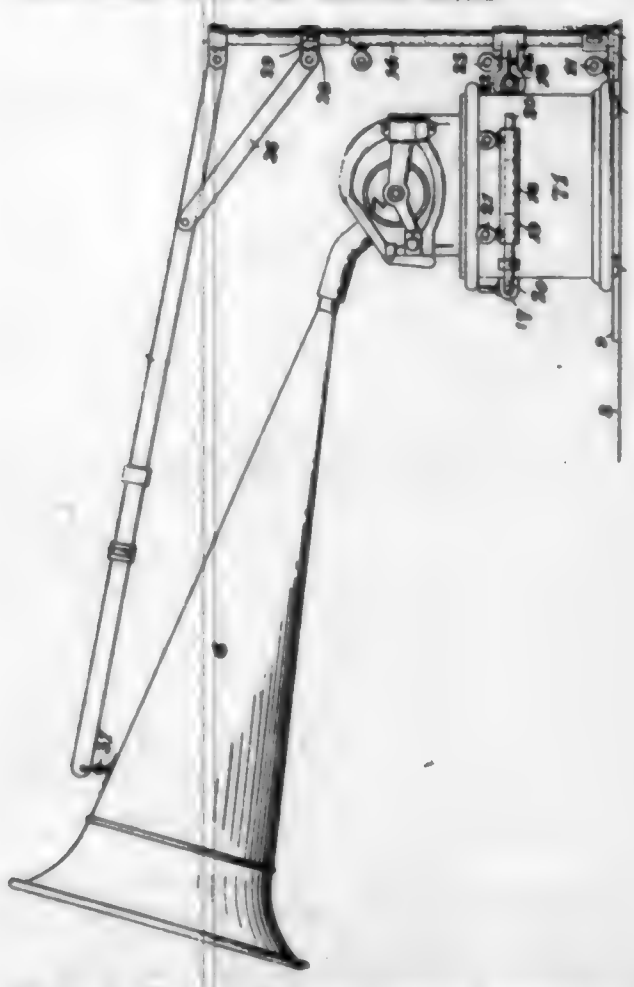
Claim.—A tool of the class described comprising a pair of pivotally-connected members, the corresponding short terminals of which are formed into jaws straight for a portion of their length and thence deflected laterally by angular offsets, and one of the jaws terminating in a downturned offset, the opposed faces of the straight portions of the jaws being serrated and the like faces of the angularly-disposed portions being serrated on concentric curved lines, and the sides of the angularly-disposed portions being inclined in opposite directions, at 9 and 10.

815,447. CISTERN-MOLD. WILLIAM H. LUCAS, Newark, Ohio. Filed Oct. 30, 1905. Serial No. 285,207.

Claim.—The herein-described mold comprising a plurality of side sections having their adjacent edges beveled and in contact, angle-metal cleats secured transversely on said sections, on the inner sides thereof, and having openings near their ends, and substantially inverted-U-shaped clips having their arms engaged with the openings in said cleats and connecting the cleats together and thereby serving to secure said side sections together, one of said side sections having an adjustable plate on its outer side, near one edge, to bear against the opposing edge of the next adjacent side section and cover the space between them.



815,448. HORN-SUPPORT. ALBERT S. MARTIN, East Orange, N. J. Filed Nov. 19, 1904. Serial No. 233,472.



Claim.—1. The improved horn-support, comprising a base-piece adapted to lie beneath the bottom of the box or case, a frame adapted to inclose the said box, a clip fixed upon said frame, a post extending upward from said base-piece through said clip and a horizontally-extending bar supported by said post and adapted to support the large end of the horn, substantially as set forth.

2. The improved horn-support, comprising a base-piece adapted to lie beneath the bottom of the box or case, a sectional frame adapted to inclose the said box, a clip fixed upon said frame, a post extending upward from said base-piece through said clip, and a horizontally-extending bar supported by said post and adapted to support the large end of the horn, substantially as set forth.

3. The improved horn-support, comprising a base-piece adapted to lie beneath the bottom of the box or case, a frame adapted to inclose said box, a clip detachably secured to said frame, a post extending upward from said base-piece through said clip, and a horizontally-extending bar supported by said post and adapted to support the large end of the horn, substantially as set forth.

4. The improved horn-support, comprising a base-piece adapted to lie beneath the bottom of the box or case, a socket at its upper side, a frame adapted to inclose the said box, a clip fixed upon said frame, a post extending upward from said socket through said clip, and a horizontally-extending bar supported by said post and adapted to support the large end of the horn, substantially as set forth.

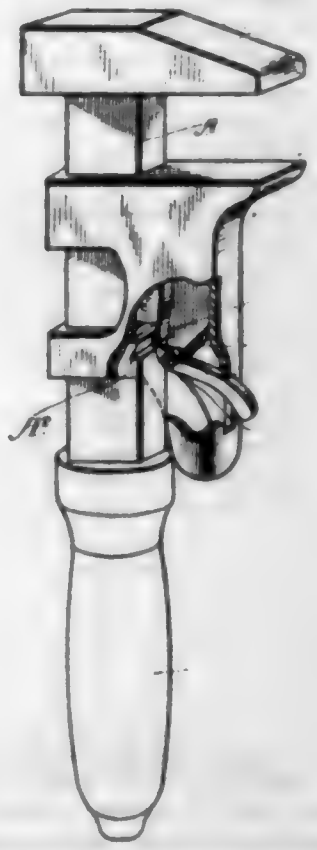
5. The improved horn-support, comprising a base-piece adapted to lie beneath the bottom of the box or case, a frame comprising tubular sections and angular sections set within said tubular sections and together adapted to inclose the said box, a clip fixed upon said frame, a post exending upward from said base-piece through said clip, and a horizontally-extending bar supported by said post and adapted to support the large end of the horn, substantially as set forth.

6. The combination with a post and means supported thereby to support the horn, of a frame to engage the box or case, and a clip with means adapted to fix said clip to the frame and means to fix said clip to the post, substantially as set forth.

7. The improved horn-stand, comprising a base-piece having a socket adjustably seated thereon, a post, means for fixing said post to said socket, a clip on said post above said socket for fixing said post to the case, a frame detachably secured to the case and adapted to be engaged by said clip, and means supported on said post for supporting the horn, substantially as set forth.

8. The improved horn-stand, comprising a base-piece having a socket adjustably seated thereon, a post, means for fixing said post to said socket, a clip adjustably fixed on said post above said socket and a frame having sections in telescopically-adjustable relation to engage the box or case, and means supported on said post for supporting the horn, substantially as set forth.

815,449. MONKEY-WRENCH. ALONZO T. MARTIN, Niagara Falls, Canada. Filed Oct. 16, 1905. Serial No. 283,023.

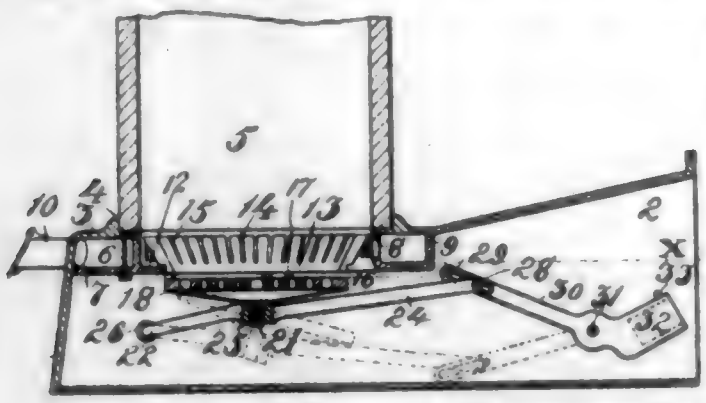


Claim.—1. In a wrench, the combination with the stationary jaw and shank having the teeth on the side of the shank in which the jaw is located, of the movable jaw through openings in which the shank extends having a front hollow portion, a block located in said

hollow portion and provided with corresponding teeth to engage the teeth in the shank and a spring connected to the block and designed to normally press the same against the shank, and a lever designed to engage with the end of the spring underneath the block and designed to release the teeth of the block from the teeth of the shank by the inner pressure of the outer end of the lever as and for the purpose specified.

2. In a wrench, in combination the shank provided with a stationary jaw and edge teeth, the hollow movable jaw through openings in which the shank extends provided with an inner web having an arc-shaped bottom edge, the block provided with teeth designed to engage with the teeth in the shank, and having an arc-shaped recess into which the arc-shaped edge of the web extends, a substantially elliptical spring secured at one end to the block and having a projecting free end beyond the block, the said spring being bent into a compressed state within the hollow movable jaw, offset at the bottom and provided with a pivotal eye and the lever pivoted in the eye and having the inner end extending inwardly of the free edge of the spring and the outer end extending through a slot in the movable jaw as and for the purpose specified.

815,450. GRATE. Rudolf A. May, Akron, Ohio. Filed July 20, 1905. Serial No. 270,543.



Claim.—1. In a stove or furnace, a rotary grate comprising in combination an annular member, means connected with the ash-pit of the device to temporarily sustain said member, a central portion for said grate suitably sustained to permit its being raised and lowered, means to raise and lower said central portion, said annular member being adapted to be sustained in operative position by said central portion when said central portion is raised.

2. In a stove or furnace, a rotary grate comprising in combination an annular member, lugs depending from the under face thereof, means connected with the ash-pit of the device to temporarily sustain said member, a central portion for said grate, members on said central portion adapted to engage said lugs, means to sustain said central portion so as to permit its being raised and lowered, said annular member being adapted to be sustained in its operative position by said central portion, when said central portion is raised.

3. In a stove or furnace, a rotary grate comprising in combination an annular member, depending members on the under face of said member, means connected with the ash-pit of the device to temporarily sustain said member, a central portion for said grate, members on said central portion adapted to engage the depending members of said annular portion, means to sustain said central portion so as to permit its being raised and lowered, said annular member being adapted to be supported in its operative position by said central portion when said central portion is raised.

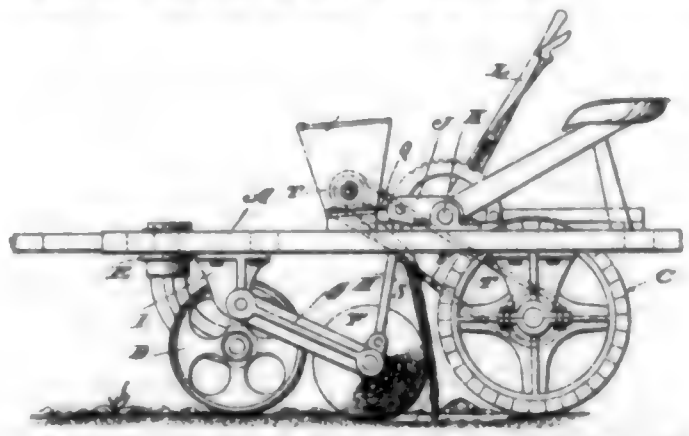
4. In a stove or furnace, a rotary grate comprising in combination an annular member, depending members on the under face of said member, means connected with the ash-pit of the device to temporarily sustain said member, a central portion for said grate, members on said central portion adapted to engage said depending members, means to sustain said central portion to permit its being raised and lowered, said annular member being adapted to be supported in its operative position by said central portion when said central portion is raised, and means to rotate the two parts of said grate in unison when said annular member is sustained on said central portion.

5. In a stove or furnace, a rotary grate comprising in combination an annular member, depending members on said member, a central portion for said grate, members on said central portion adapted to engage said depending members, means to raise and lower said central portion, said annular member being adapted to be supported in its operative position by said central portion when said central portion is raised, and means connected with the ash-pit of the device to temporarily sustain said annular member when said central portion is lowered.

6. In a grate, the combination of a central portion capable of horizontal rotation, means to rotate said central portion, means to suitably sustain said central portion to permit it to be raised or lowered, an annular member, means to temporarily sustain said annular member, said annular member being adapted to be supported in its operative position on said central portion when said central portion is raised.

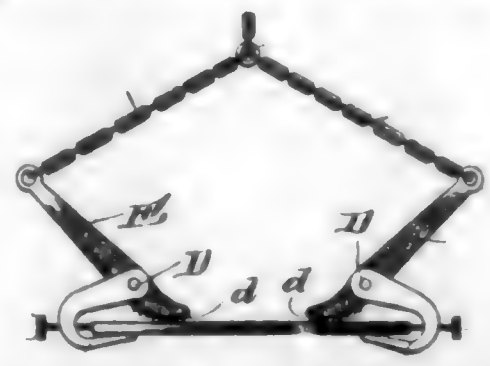
7. In a rotary grate, the combination of a central portion capable of horizontal rotation, means to sustain said central portion to permit its being raised or lowered, an annular member arranged to be supported by said central portion when said central portion is raised, means on said central portion, and means on said annular member adapted to interlock when said central portion is raised and said annular member is supported on said central member, and means to sustain said annular member when said central portion is lowered from engagement therewith.

815,451. ROLLER SEEDING-MACHINE. James T. Mayhew, Chino, Cal. Filed July 25, 1905. Serial No. 271,228.



Claim.—In a roller seeding-machine, the combination with a main frame, hopper and roller, of toggle-bars G pivotally supported upon the frame, a shaft carried thereby, drill-making disks carried by the shaft, supporting-bars pivotally connected with the toggle-bars, a shaft K and levers J secured to the shaft and to which the supporting-bars are pivotally connected and a regulating-lever L for regulating the shaft K, and positively raising and lowering the drill-making disks, and spouts leading from the hopper for discharging grain behind the disks.

815,452. DEVICE FOR LIFTING HEAVY METALLIC PLATES. Moses Maynard, Hancock, Mich. Filed Sept. 21, 1905. Serial No. 279,529.

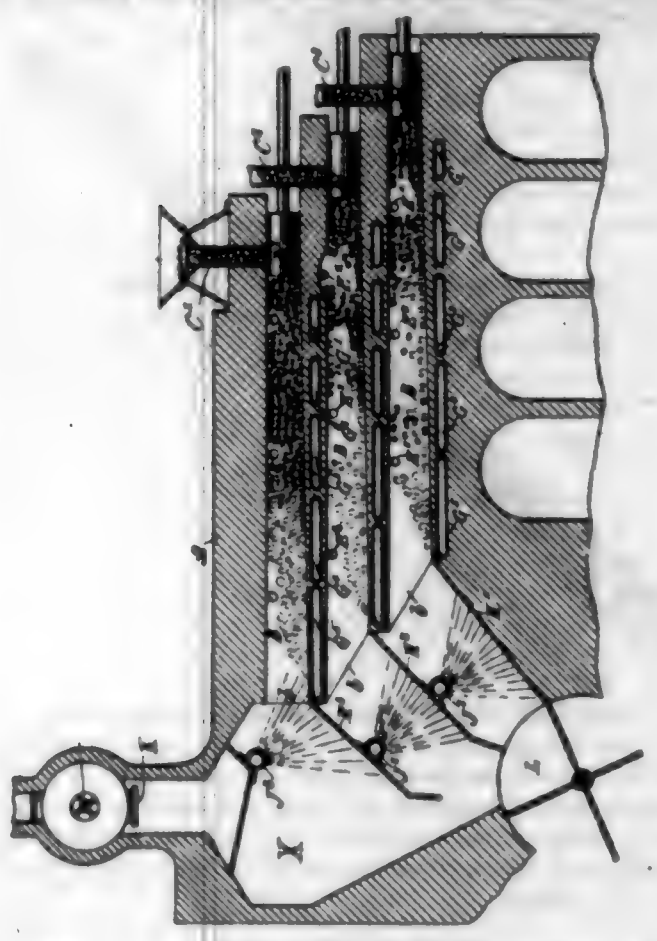


Claim.—1. An apparatus for holding plates, comprising hooks adapted to engage the opposite edges of a plate, a set-screw carried by each hook, levers pivoted to said hooks and adapted to hold said screws against the edges of the plate, as set forth.

2. An apparatus for holding heavy metallic plates, comprising hooks having flattened portions adapted to receive the opposite edges of a plate, set-screws passing through said hooks and adapted to engage the edges of the plate, and levers pivoted one to each of said hooks, and having teeth upon their plate-engaging portions designed to hold the set-screws against the edges of the plate, as set forth.

3. An apparatus for holding heavy metallic plates, comprising hooks having flattened portions adapted to receive the opposite edges of a plate, set-screws passing through said hooks and adapted to engage the edges of the plate, a lever pivotally connected to each of said hooks, the under edge of each lever near one end being convexed and provided with spurs designed to engage a plate and hold the inner end of the set-screw against the edge thereof, and cables connecting the outer ends of said levers, as set forth.

815,453. PROCESS OF COKING. GEORGE S. MERRILL, Peace Dale, R. I. Filed Dec. 12, 1903. Serial No. 184,559.



Claim.—1. The process of coking, which comprises the subjecting of a substantially horizontal layer of coal to successive degrees of heat, regulating said degrees of heat independently of each other, so that the different gases in the coal will be given off at determined points, and collecting said gases as they are given off.

2. The process of coking which comprises the subjecting of a substantially horizontal layer of coal to successive degrees of heat, regulating said degrees of heat independently of each other, so that the different gases in the coal will be given off at determined points, subjecting said layer to a spray of water, and withdrawing by suction the steam so generated.

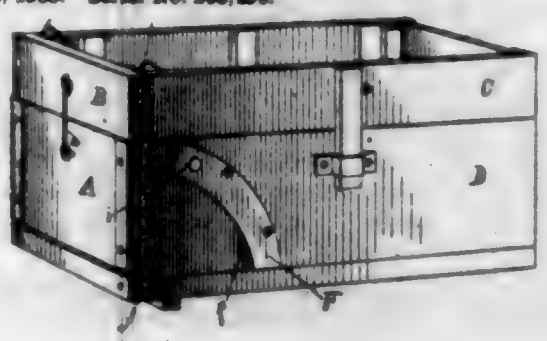
3. The process of coking which comprises the subjecting of a moving layer of coal which is at all points of its travel inclosed from contact with the atmosphere, to successive degrees of heat, drawing off the gases in the order in which they are produced, subjecting the moving layer to a spray of water and removing by suction the steam so generated and any air which may be present, substantially as described.

4. The process of coking which consists in inclosing a horizontal moving layer of heated coal, withdrawing at determined places the gases as they are given off, and withdrawing at a different place by suction any air which may gain access to said inclosed coal, substantially as described.

5. The process of coking which comprises the subjecting of a moving layer of coal to successive degrees of heat and regulating said degrees of heat independently of each other, so that the different gases in the coal will be given off at determined points.

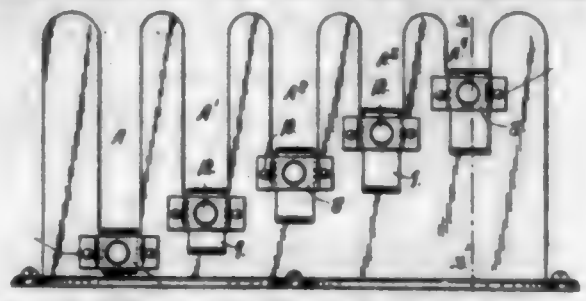
6. The process of coking which comprises the subjecting of a moving mass of coal to successive degrees of heat, regulating said degrees of heat independently of each other, so that the different gases in the coal will be given off at determined points, subjecting said mass to a spray of water, and withdrawing by suction the steam so generated.

815,454. END-GATE. FRANCIS M. MILLER, Neutral, Kans. Filed July 6, 1905. Serial No. 268,436.



Claim.—1. The combination of an end-gate with a wagon-bed, the end-gate being held in place when closed, as shown in Fig. 1, by means of the pin *j*, engaged with the projection on the lower edge of the rigid, steel or sheet-iron plate E, and the engagement of the projecting pin *i*, of the spring-steel plate F, with the hole *g* in the rigid, steel or sheet-iron plate E, substantially as shown in Fig. 1.

815,455. SKIRT-MARKER. HELENA E. MOUR and GEORGE H. COOPER, Denver, Colo. Filed Oct. 24, 1905. Serial No. 284,157.



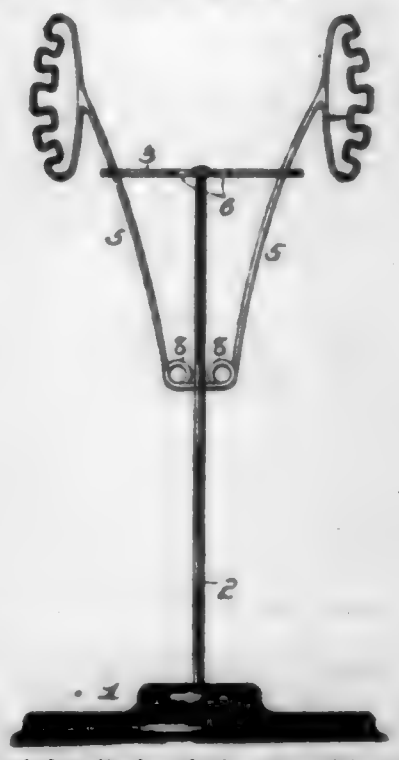
Claim.—1. A skirt-marker comprising a rack having a series of recesses of varying depth, each being adapted to receive the lower edge of the skirt when folded, and a marking device located at the bottom of each recess and arranged to mark the skirt on the folding-line, substantially as described.

2. A skirt-marker comprising a rack having a number of recesses of varying depth, the device being provided with a chalk-holder at the bottom of each recess, the said holder consisting of a plate secured to the rack and bent outwardly to make room for the piece of chalk, a set-screw threaded in the plate, and a follower in which the inner extremity of the set-screw is journaled.

3. A skirt-marker comprising a base, a vertically-disposed rack provided with a number of recesses open at the top, the said recesses being of varying depth, a marking device for each recess, and suitable means located adjacent the bottom of each recess for holding the marking device in place.

4. A skirt-marker comprising a device provided with a recess adapted to receive the lower edge of the skirt when folded, and means for holding a piece of chalk in such position at the bottom of the recess as to mark the folding-line of the skirt as the latter passes through the recess, said means consisting of a plate secured to the rack and bent outwardly to make room for the piece of chalk, a set-screw threaded in the plate, and a follower in which the inner extremity of the set-screw is journaled.

815,456. HAT-DISPLAY STAND. HENRY J. MONTGOMERY, Silver Creek, N. Y., assignor of one-half to Nelson Briggs, Silver Creek, N. Y. Filed May 29, 1905. Serial No. 262,896.



Claim.—1. A hat-display device comprising two spring-arms and upright frames at the upper ends of said spring-arms, each of said upright frames having their outer portions corrugated, forming a series of upright outwardly-projecting lugs.

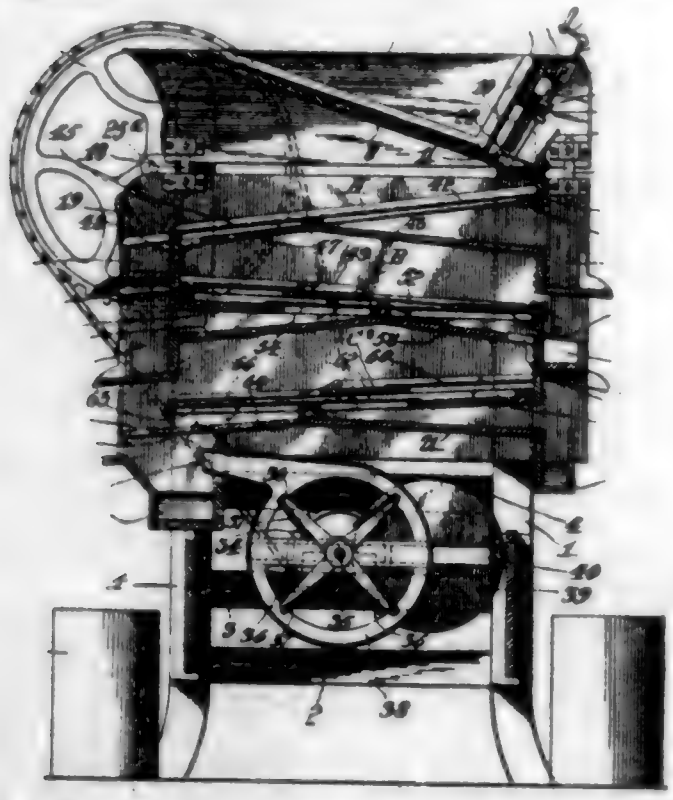
2. A hat-displaying device comprising a standard, two spring-arms projecting upwardly and outwardly therefrom, and an upright

frame at the upper end of each spring-arm, each of said frames having its outer portion corrugated, forming a series of upright outwardly-projecting lugs.

3. A hat-displaying device, comprising a standa.., a cross-bar fixed thereto and having alined elongated slots, spring-arms secured to the standard and passing freely through the slots of the cross-bar and upright frames at the free ends of the spring-arms, each upright frame having its outer port'on corrugated, forming a series of upright outwardly-projecting lugs.

4. A hat-display device comprising two spring-arms, and a vertically-disposed corrugated frame at the free end of each spring-arm.

815,457. GRAIN CLEANING AND SEPARATING MACHINE. Philip Moon, Brandon, Canada. Filed Dec. 3, 1904. Serial No. 235,382.



Claim.—1. In a machine of the character described, a supporting-frame, a hopper mounted thereon, a reciprocatory screen-casing supported by said hopper, a series of oppositely-inclined platforms in different planes within said casing, an upper screen-frame, a fine screen and a coarse screen in said frame, a lower screen-frame in said casing, a plurality of coarse screens, and a finer screen, in said lower frame, and a flexible apron connected with said frame between said coarse screens.

2. In a machine of the character described, a reciprocatory screen-casing, oppositely-inclined platforms in said casing, an upper screen-frame, a coarse and a fine screen in said frame, a plurality of screen-frames at lower planes in said casing, coarse screens in such frames at different planes therein, a finer screen in each of such frames in substantially the plane of one of said coarse screens, and flexible aprons connected with said frames between such coarse screens.

815,458. COMBINED CANE AND WHIP. John R. Morris, Jewell, Kans. Filed Feb. 18, 1904. Renewed June 26, 1905. Serial No. 267,077.

Claim.—1. A combined cane and whip comprising a tubular handle, a whip-section insertible in the handle, a spring for forcing the whip-section to the extended position, a member slidably mounted on the handle, means by which the spring may be compressed when the said member is moved to the proper position on the handle, and means for releasably retaining the spring in the compressed position.

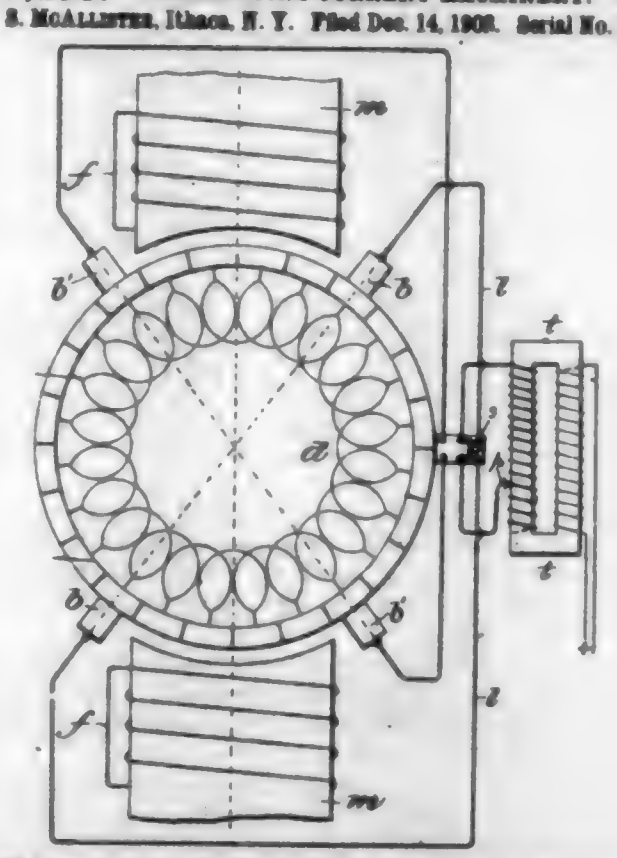
2. A combined cane and whip comprising a tubular handle-section, a whip-section insertible in the handle-section, a spring for forcing the whip-section to the extended position, means for retaining the whip-section in the said position, a member slidably mounted on the handle-section, means by which the spring may be compressed when the said member is properly moved, and means for releasably retaining the spring compressed.

3. A combined whip and cane comprising a tubular handle-section, a whip-section insertible in the handle-section, a spring for forcing the whip-section into the extended position, a sleeve slidably mounted on the handle-section, means by which the spring may be compressed when the sleeve is properly moved, and means for releasably holding the spring compressed.



4. A combined cane and whip comprising a tubular handle-section, a whip-section insertible in the handle-section, a follower longitudinally movable in the handle-section and adapted to support the whip-section, a longitudinally-movable member on the handle, means by which the follower may be retracted in one direction when the said member is properly moved, and a spring for moving the follower in the opposite direction.

815,459. ALTERNATING-CURRENT MACHINERY. Addams S. McAllister, Ithaca, N. Y. Filed Dec. 14, 1903. Serial No. 185,060.



Claim.—1. A single-phase alternating-current generator made up of a plurality of field-core sections; a plurality of field-coils one on each section and each coil closed upon itself and free from connection with the others of said coils; and an electric circuit including a rotor provided with a commutator; a plurality of sets of brushes adapted to contact with said commutator; lead-wires; and a switch for connecting at will either of said sets of brushes with said lead-wires.

2. A single-phase alternating-current generator made up of a plurality of field-magnets each provided with a winding each closed upon itself; and an electric circuit comprising a rotor provided with a commutator; a plurality of sets of brushes adapted to contact with said commutator; a transformer; and a switch adapted to bring either set of said brushes into electrical connection with said transformer at will.

3. A single-phase alternating-current machine made up of field-magnets having windings closed upon themselves; and an electric

circuit including a rotor provided with a commutator; a plurality of sets of brushes adapted to contact with said commutator; and a reversing device by which current may be led to said rotor from said lead-wires or led from said rotor to said lead-wires, as desired.

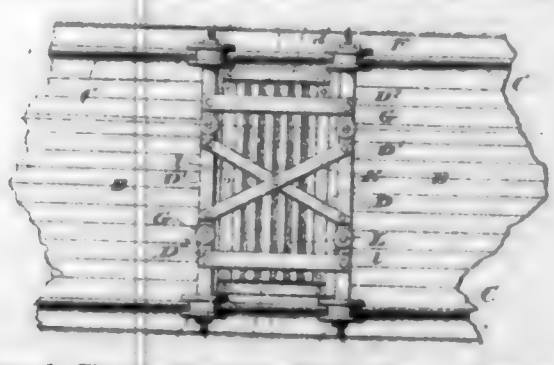
4. A variable-magnetism alternating-current machine made up of a plurality of field-core sections the cross-section of which is just sufficient to accommodate the flux at starting, said flux decreasing with increase of speed; field-coils on said sections and closed upon themselves; and an electric circuit including a rotor provided with a commutator; brushes adapted to contact with said commutator; and lead-wires connected to said brushes.

5. A single-phase variable-magnetism alternating-current machine made up of a plurality of field-core sections; field-coils upon said sections, said coils being closed each upon itself and free from connection with any outside source of current; a rotor provided with a commutator; brushes adapted to contact with said commutator; lead-wires which connect said brushes to a source of alternating single-phase current; the relation of the parts of the structure being determined by making the core-sections of a cross-section just sufficient to accommodate the flux at starting, which flux decreases with increase of speed.

6. A single-phase variable-magnetism alternating-current machine comprising field-core sections; field-windings upon said core-sections, said windings being closed each upon itself and free from connection with any outside source of current; a source of single-phase alternating current; a rotor provided with a commutator; a plurality of sets of brushes which electrically connect said commutator with said source, one set of brushes being active while the other is inactive; and means for bringing said rotor to rest from any speed whatever, said means comprising a device for disconnecting one set of said brushes from said source and connecting the other set of brushes to said source to reverse the direction of the torque and change the action of the machine from that of a motor to that of a generator while the rotor comes gradually to rest.

7. A single-phase variable-magnetism alternating-current machine comprising a plurality of field-core sections; field-windings upon said core-sections each winding being closed upon itself and free from connection with any outside source of current, a source of alternating single-phase current; a rotor provided with a commutator; means for driving said rotor to any speed, said means comprising a set of brushes and a device for connecting them with said source; means for bringing said rotor to rest from any speed whatever, and changing the action of said rotor from that of a motor to that of a generator, said last-named means comprising a second set of brushes capable of connection with said source by said device to reverse the torque acting upon said rotor; said device being arranged to disconnect one set of said brushes when it connects the other set of said brushes.

815,460. LEVEL-SURFACING MACHINE. ROBERT MCCOY, New York, N. Y. Filed Aug. 2, 1904. Serial No. 219,260.



Claim.—1. The combination with an alley bed or support having oppositely-disposed longitudinally-extended cut-out portions constituting gutters, of a pair of spaced rails detachably mounted in said gutters, a carriage adapted for longitudinal travel relative to the alley, rollers for the carriage arranged to engage the rails, and said rails having bottom-supporting portions of the same size and shape as said gutters whereby the former are held in place.

2. The combination with an alley bed or support having oppositely-disposed longitudinally-extended concave cut-out portions constituting gutters, of a pair of rails mounted in said gutters but unattached thereto; a carriage adapted for longitudinal travel along said alley and having antifriction devices for engaging the rails, and said rails having convex bottom portions shaped to snugly rest in the concave gutters, whereby the latter constitutes the only retaining means therefor.

3. In a machine of the character described, the combination with a carriage, of a surfacing device having outwardly-projecting portions, inverted-Z-shaped bars connected with said projecting portions, and vertically-adjustable means on the carriage for adjustably supporting said surfacing device including bolts engaging apertures in the upper angles of said Z-shaped bars.

4. In a machine of the character described, the combination with a carriage, of a scraper, leveler and polisher, adapted to be interchangeably mounted thereon, and each of which having outwardly-projecting portions and inverted-Z-shaped bars connected at their lower angle with said projecting portions, and vertically-adjustable means on the carriage for adjustably supporting either said scraper, leveler or polisher, said means including bolts engaging apertures in the upper angles of said Z-shaped bars.

5. In a machine of the character described, the combination of a pair of spaced rails, a carriage having antifriction devices adjustably mounted for travel thereon, shafts for said antifriction devices, a surfacing device, angle-bars connected to said surfacing device, and means for adjustably mounting the surfacing device on said shafts including bolts engaging apertures in said angle-bars.

6. In a machine of the character described, the combination with a carriage of a leveling device mounted thereon, said leveling device comprising a supporting member having a series of longitudinally-extending thin flat blades thereon, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades, including a plate having a series of longitudinally-extended slots through which pass the blades.

7. In a machine of the character described, the combination with a carriage, of a leveling device mounted thereon, said leveling device comprising an elongated supporting member having a series of thin flat longitudinally-extending blades thereon, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades including a plate having a series of longitudinally-extended slots through which pass the respective blades, and adjusting-screws connected respectively with said plate and support.

8. In a machine of the character described, the combination with a carriage, of a leveling device, means for detachably mounting said leveling device upon said carriage, said leveling device comprising a supporting member having a series of rows of longitudinally-extending thin flat blades of resilient material, and means connected with the support and engaging each of said blades for simultaneously adjusting the resiliency thereof, including a plate having slots through which pass said blades.

9. In a machine of the character described, the combination with a carriage of a leveling device having outwardly-projecting portions, inverted-Z-shaped bars connected at their lower angles with said projecting portions, vertically-adjustable means on the carriage for adjustably supporting said surfacing device, including bolts engaging apertures in the upper angles of said Z-shaped bars, and said leveling device comprising a series of resilient blades.

10. In a machine of the character described, the combination with a carriage, of a leveling device having outwardly-projecting portions, inverted-Z-shaped bars connected at their lower angles with said projecting portions, vertically-adjustable means on the carriage for adjustably supporting said surfacing device, including bolts engaging apertures in the upper angles of said Z-shaped bars, and said leveling device comprising a series of thin flat resilient blades and means for regulating the resiliency thereof.

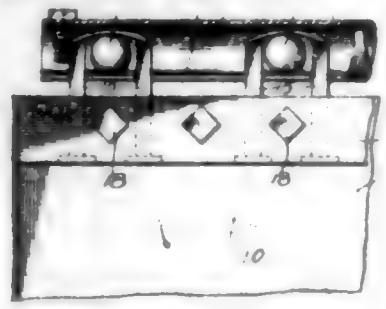
11 In a machine of the character described, the combination with a carriage, of a leveling device mounted thereon, vertically-adjustable means on the carriage for said leveling device, and said leveling device comprising an elongated supporting member having a series of thin flat blades extending longitudinally thereof, said blades being of a springy character, and means connected with the support for regulating the resiliency of said blades including a plate having a series of longitudinally-extended slots through which pass the respective blades, and adjusting-screws connected respectively with said plate and support.

815,461. CAR-DOOR HANGER. FRED B. MCELVAIN, Allendale, Mo. Filed Aug. 26, 1904. Serial No. 223,253.

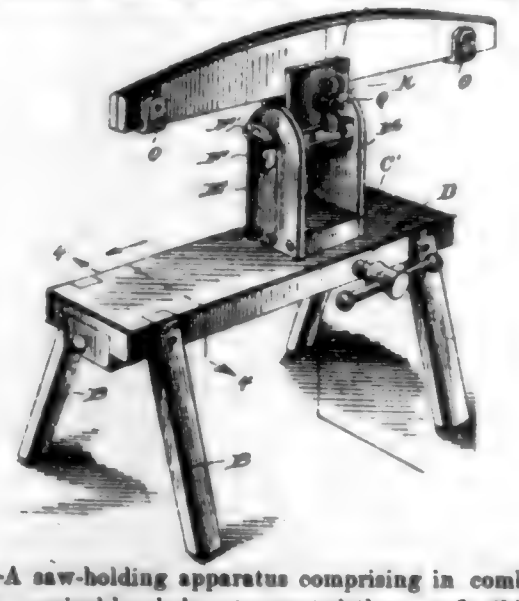
Claim.—1. A door-hanger, comprising a tubing supported above the doors and provided with a slot in its under surface, staples secured to the top of each door and arranged for projection through the slots of the tubing, the bows and shanks of the staples being of flat material with the sides of the bows turned at angles to the plane of the flat sides of the shanks; and balls arranged between the flat sides of the bows and the tubing.

2. A door-hanger, comprising a tubing supported above the

door and provided with a slot; a pair of staples secured to the door and arranged to project through the slot into the tubing, the bows of the staples having their under surface concaved; and a ball arranged between the bow of each staple and the tubing, whereby the door may be slidably supported within said tube.



815,462. APPARATUS FOR HOLDING SAWS. JOHN MCLEAN, Manistique, Mich. Filed Aug. 23, 1905. Serial No. 274,135.



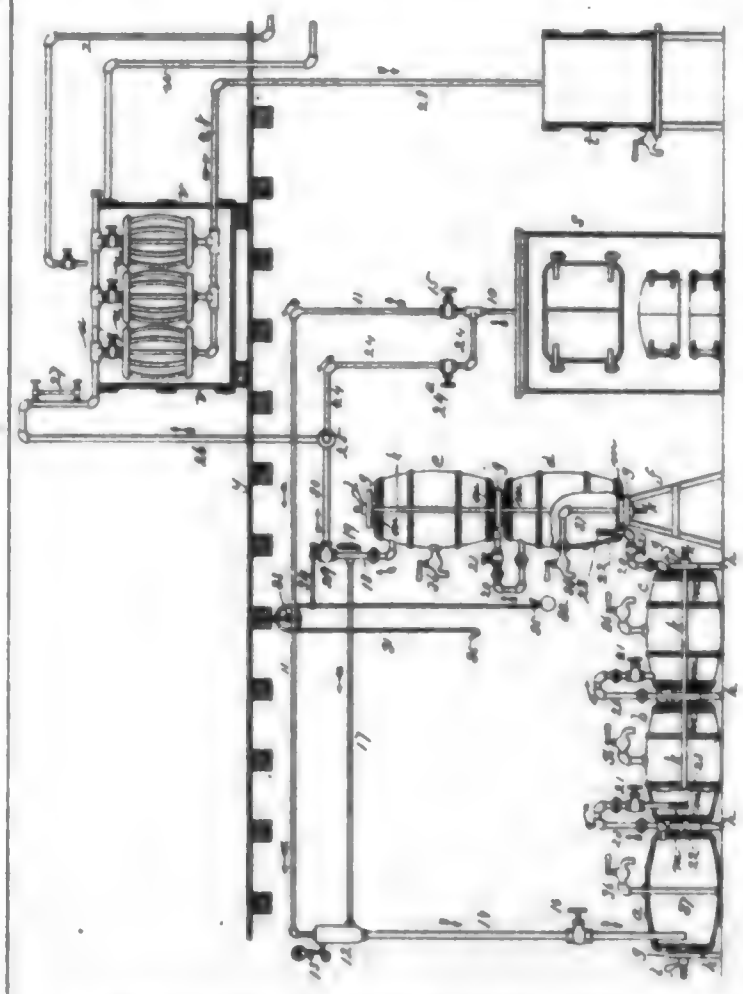
Claim.—A saw-holding apparatus comprising in combination with a bench, a swivel-headed post mounted thereon, flexible plates secured to two of the opposite faces of the head of said post, the lower ends of said plates flush with the lower face of said head, a headed screw passing through registering apertures in said plates adjacent to their upper free ends, a block longitudinally apertured and mounted upon said screw, a winged nut upon the threaded end of the screw adapted to bear against the outer face of one of said plates, the plates K having contracted portions upon their lower ends secured in slots in said block, clamping members secured to the plates K, and means for holding the same in clamping relation, as set forth.

815,463. APPARATUS FOR RECOVERING WASTE ALCOHOL FROM LIQUOR CASKS AND BARRELS. THOMAS H. NAUGHTON, Boston, Mass., assignor, by mesne assignments, of one-half to Mary A. Naughton, Boston, Mass., and one-half to Michael Dunn, Springfield, Mass. Filed Jan. 11, 1906. Serial No. 240,555.

Claim.—1. In an apparatus for the purpose specified, a steam-generator; tubular connections between the barrels or casks; a tubular connection between the generator and the first barrel or cask to be treated; a steam-injector in said tubular connection between the generator and the first barrel; and tubular connections between said injector and the last barrel, substantially as set forth.

2. In an apparatus for the purpose specified, a steam-generator; tubular connections between the barrels or casks; a tubular connection between the generator and the first barrel or cask to be treated; a condensing apparatus; tubular connections between the last barrel and the condensing apparatus; a tubular connection between the main steam-supply and the connections between the last barrel and the condensing apparatus; and a steam-injector in said tubular connections between the steam-supply and the connections between the last barrel and the condensing apparatus; substantially as described.

3. In an apparatus for the purpose specified, a steam-generator; tubular connections between the barrels or casks; a tubular connection between the generator and the first barrel or cask to be treated; a condensing apparatus; tubular connections between the last barrel and the condensing apparatus; a tubular connection between the main steam-supply and the connections between the last barrel and the condensing apparatus; a steam-injector in the tubular connection between the generator and the first barrel; a tubular connection between the said injector and the tubular connection leading from the last barrel; and a steam-injector in said tubular connection between the steam-supply and the connection between the last barrel and an the condensing apparatus, substantially as described.



4. In an apparatus for the purpose specified, a steam-generator; tubular connections between the barrels or casks; the tubular connections 10, 11 and 14 between the generator and the first barrel, tubular connections 10, 24, 26, 30 and 18 between the generator and the last barrel; the tubular connection 17 between the pipes 18 and 14; steam-injectors between the pipes 14 and 17 and the pipes 24 and 26; a condensing apparatus connected with the pipe 26; a blow-off cock connected with the pipes 18 and 30; and an automatic regulator connected with said blow-off cock, substantially as described.

5. In an apparatus of the character described, in combination with a plurality of barrels arranged end to end, head-blocks comprising cross-bars *g* and suitable supports, elastic pneumatic cushions secured to said cross-bars between them and the barrel-heads, and mechanism for connecting the head-blocks and forcing them against the barrel-heads, for the purpose described.

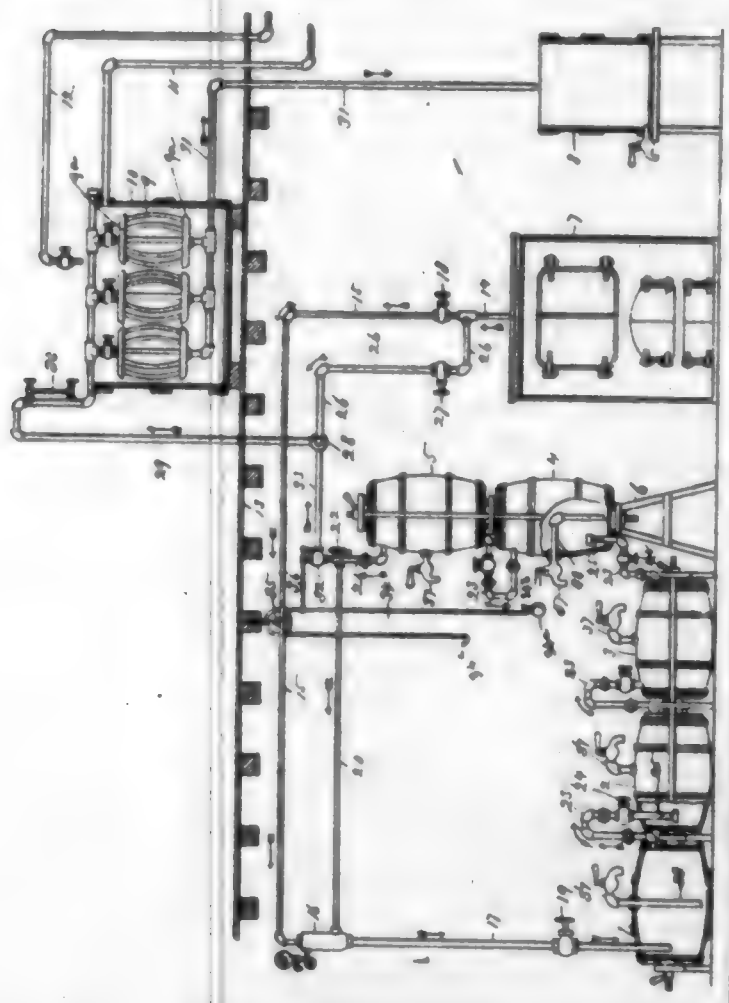
6. In an apparatus of the character described, in combination with a plurality of barrels arranged end to end, head-blocks comprising cross-bars *g* and suitable supports, elastic pneumatic ring-shaped cushions, mechanism for securing said cushions to the head-blocks between them and the central portions of the barrel-heads, and mechanism for connecting the head-blocks and forcing them against the barrel-heads, for the purpose set forth.

7. In an apparatus of the character described, in combination with a plurality of barrels arranged end to end, head-blocks comprising cross-bars *g* and suitable supports, elastic pneumatic ring-shaped cushions, mechanism for securing said cushions to the head-blocks between them and the central portions of the barrel-heads, rods *k* extending through the head-blocks near their opposite ends on opposite sides of the barrels, and mechanism intermediate of said rods and the head-blocks at the opposite ends of the line of barrels for forcing said head-blocks against the barrel-heads, for the purpose described.

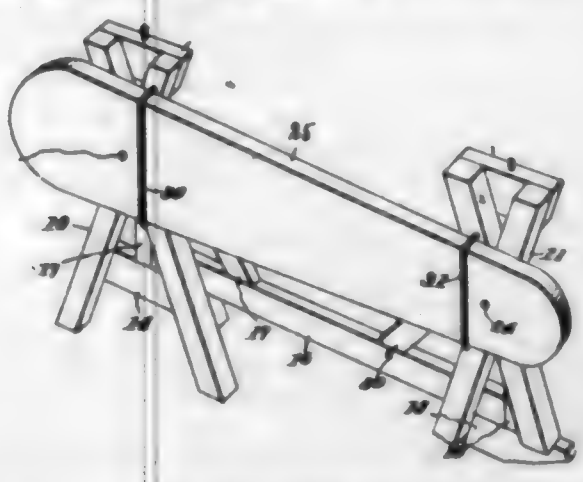
815,464. PROCESS FOR RECOVERING WASTE ALCOHOL FROM LIQUOR CASKS AND BARRELS. THOMAS H. NAUGHTON, Boston, Mass., assignor, by mesne assignments, of one-half to Mary A. Naughton, Boston, Mass., and one-half to Michael Dunn, Springfield, Mass. Filed June 5, 1905. Serial No. 263,730.

Claim.—The herein-described method of recovering waste alcohol from a series of practically empty liquor casks or barrels, which consists in introducing a heated medium into a series of connected casks or barrels, drawing by means of a short-circuited circulation

the contents of the barrels through the last barrel and vaporizing them and at the same time forcing the heating medium through the series of barrels beginning with the first barrel, and condensing the products thus removed from the series of barrels through the last barrel, substantially as described.



815,465. IRONING-TABLE. THOMAS L. NELMS, Spartanburg, S. C., assignor of one-half to James F. Page, Spartanburg, S. C. Filed June 9, 1905. Serial No. 264,451.

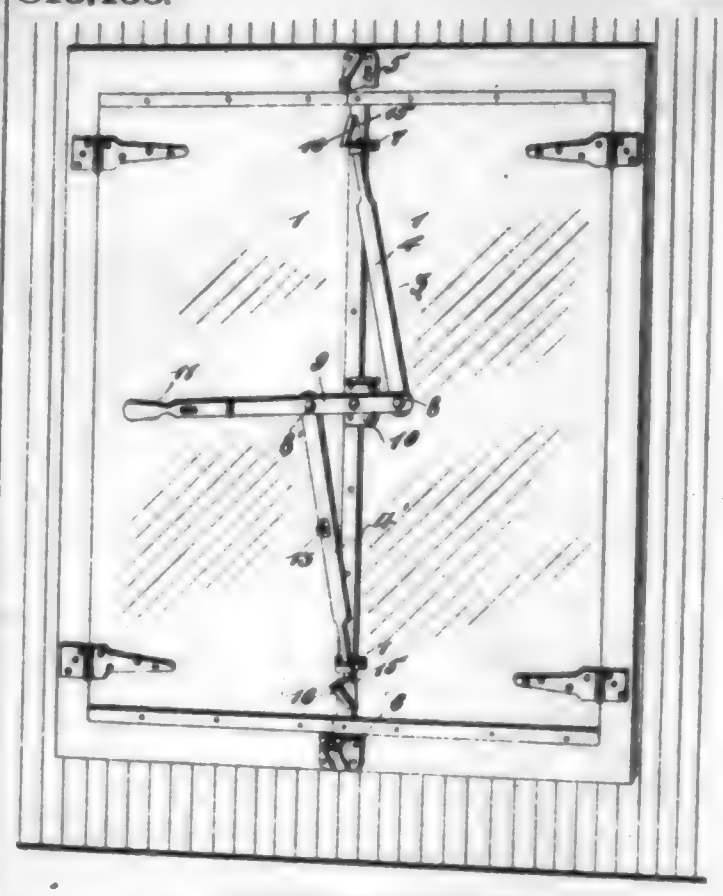


Claim.—In an ironing-table, a longitudinally-extending-bracket, end standards swinging from said bracket and having vertically-extending loops upon the outer faces, means for detachably locking said end standards from movement upon said bracket, and an ironing-board adapted to be supported upon said standards when the same are in unfolded position and to be thrust through said loops when the standards are in folded position.

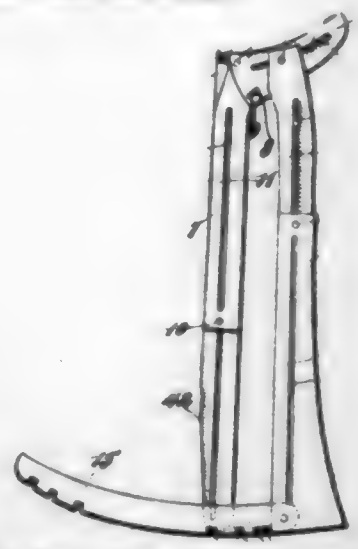
815,466. DOOR-FASTENER. JOHN L. PHILLIPS, Rochester, N. Y. Filed Aug. 7, 1905. Serial No. 273,160.

Claim.—A fastening device of the character described comprising hollow triangular keepers secured at opposite points upon a door-frame, antifriction-rollers mounted to rotate in said keepers, a pair of bolts mounted to slide and engage said keepers, said bolts each having a laterally-extending wedge-shaped enlargement conforming in shape to the interior contour of the keepers, and a lever connected to the said bolts for simultaneously extending them, substantially as described.

815,466.



815,467. DRESS-CHART. HARRY N. PLANT, Biddeford, Me. Filed Sept. 5, 1905. Serial No. 277,129.



Claim.—An adjustable dress-chart comprising a skirt-piece consisting of front and rear strips formed of upper and lower adjustably-connected sections, an upper segmental templet adjustably connected to the upper sections of said front and rear strips, a lower segmental templet pivotally connected to the lower end of said front strip, said templet having formed therein radially-disposed notches, a button or stud connected to the lower end of said rear strip with which the notches in said templet are adapted to be engaged, substantially as described.

815,468. BALLISTIC GUN. FRANCIS I. DU PONT, Wilmington, Del., assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Nov. 4, 1905. Serial No. 285,815.

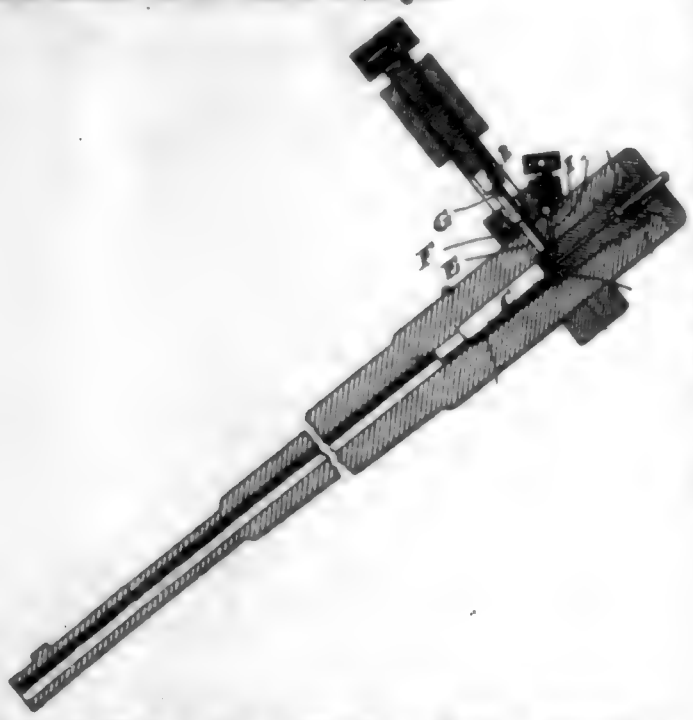
Claim.—1. An improved ballistic gun comprising a chamber containing oil between the cartridge-head and the breech when closed, a piston in operative communication with said chamber and a pressure-indicating device operated by said piston.

2. An improved ballistic gun comprising a chamber between the cartridge-head and the breech when closed, a piston in operative communication with said chamber and pressure-indicating device operated by said piston.

3. An improved ballistic gun comprising a chamber containing oil between the cartridge-head and the breech when closed, a piston in operative communication with said chamber and a pressure-indicating device operated by said piston, and a passage controlled by a valve connecting said chamber and the exterior of the gun.

4. An improved ballistic gun comprising a chamber between

the cartridge-head and the breech when closed, a piston in operative communication with said chamber and pressure-indicating device operated by said piston, and a passage controlled by a valve connecting said chamber and the exterior of the gun.



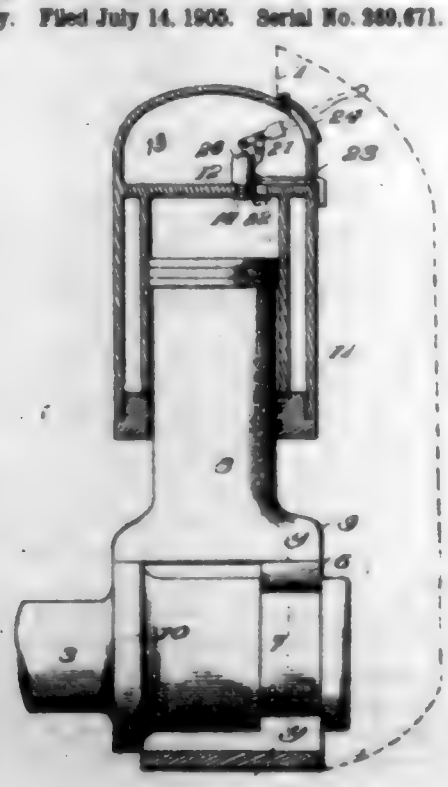
5. In a ballistic gun, in combination, a chamber adapted to receive the cartridge, a breech adapted to close the end of said gun, a chamber adapted to receive oil between the cartridge-chamber and the inner end of the breech, a piston in connection with said oil-chamber and a measuring device operated by said piston.

6. In a ballistic gun in combination, a chamber adapted to receive the cartridge, a breech adapted to close the end of said gun, a chamber adapted to receive oil between the cartridge-chamber and the inner end of the breech, a piston in connection with said oil-chamber and a compression or shortening cylinder operated by said piston.

7. In a ballistic gun, in combination, a chamber adapted to receive the cartridge, a breech adapted to close the end of said gun, a chamber adapted to receive oil between the cartridge-chamber and the inner end of the breech, a piston in connection with said oil-chamber and a measuring device operated by said piston, a passage from said oil-chamber to the exterior of the gun and a valve controlling said passage.

8. In a ballistic gun, in combination, a chamber adapted to receive the cartridge, a breech adapted to close the end of said gun, a chamber adapted to receive oil between the cartridge-chamber and the inner end of the breech, a piston in connection with said oil-chamber and a compression or shortening cylinder operated by said piston, a passage from said oil-chamber to the exterior of the gun and a valve controlling said passage.

815,469. **JOURNAL-BEARING.** COMMODORE V. RANDOLPH, Paducah, Ky. Filed July 14, 1905. Serial No. 269,671.

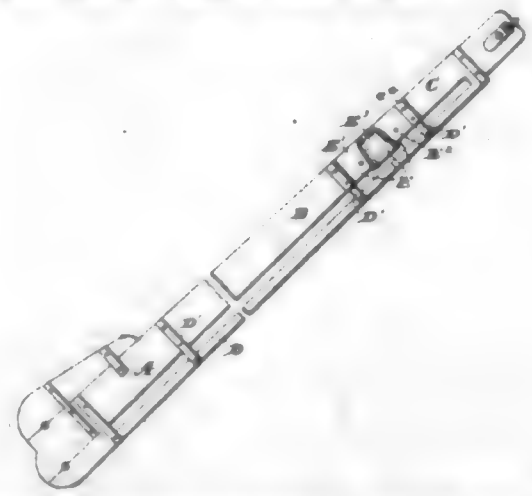


Claim.—1. In combination a hanger, a journal mounted therein, a journal member or bearing rotatable about an axis at an angle to the axis of rotation of the journal, said journal member or bearing having rotative connection at opposite sides of its center of axis with the journal aforesaid.

2. In combination, an axle, a truck, a journal-box on said truck, a compensating journal member mounted in the journal-box to support the truck on the axle, and rotatable about an axis at an angle to the axis of rotation of the axle, the journal member being in contact at one side of its axial center with the axle, and an antifriction-roller interposed between the axle and the journal member and disposed in contact with the latter at one side of its center of axis.

3. In combination, a hanger, a journal mounted therein, a roller located upon the journal to sustain the load and having its axis parallel therewith, and a bearing mounted upon the roller and adapted to turn about a vertical axis and move by contact of said roller therewith when the parts are in motion.

815,470. **ELEVATOR-COUPLING.** GEORGE B. READ, Bloomington, Ill. Filed Mar. 27, 1905. Serial No. 252,389.



Claim.—1. An elevator comprising a plurality of sections, engaging members at the adjacent ends of said sections, and a detachable coupling member bridging said sections and provided with engaging means interlocking with the engaging means on said sections, said coupling member serving when in its operative position to draw the sections together to form substantially a single rigid conveyer.

2. A portable elevator comprising a plurality of sections, each provided with a guide-box suspended therefrom to support the lower run of a conveyer, and coupling members having interlocking engagement with the adjacent ends of the sections and the guide-boxes and serving when in their operative position to draw said sections and guide-boxes tightly together to form substantially a single rigid conveyer.

3. An elevator comprising a plurality of sections, a pair of plates secured to the ends of said sections, the adjacent ends of said plates being provided with diverging grooved portions, and a coupling member provided with flanges interlocking with the grooved portions of said plates, said coupling member serving when in its operative position to draw the sections tightly together to form substantially a single rigid conveyer.

4. An elevator comprising a plurality of sections, a pair of plates detachably secured to said sections and provided at their adjacent ends with diverging grooved portions, and a coupling member bridging said sections and provided with diverging tongues interlocking with the grooves of said plates, said coupling member serving when in its operative position to draw said sections tightly together until the adjacent ends thereof abut, to form substantially a single rigid conveyer.

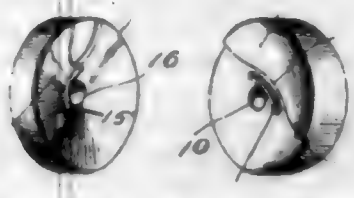
5. An elevator comprising a plurality of sections, straps secured to the sides of said sections, plates secured to the sides of said sections and provided with pockets adapted to embrace said straps and means for coupling the adjacent ends of the plates on the adjacent sections.

6. An elevator comprising a plurality of sections, straps secured to the sides of said sections, plates secured to the sides of said sections and provided with pockets adapted to embrace said straps, and a wedge connection between the adjacent ends of the plates on the adjacent sections.

7. A sectional conveyer comprising a plurality of conveyer-sections, each having a guideway secured thereto for the support of the lower run of a conveyer, and coupling members coupling said sections and serving when in their operative position to draw the adja-

cent ends of the conveyer-sections and guide-boxes tightly together to form a substantially rigid conveyer.

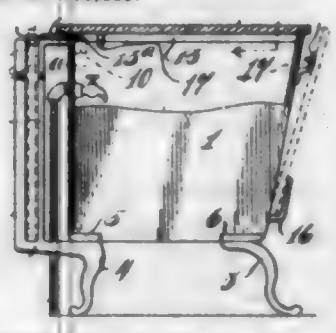
815,471. INSULATOR. GEORGE L. RICKS, Yuma, Ariz. Filed Mar. 8, 1905. Serial No. 249,026.



Claim.—1. A device of the class described comprising a base member having a central passage and having a convex surface, said member having a projection formed upon its convex surface at one side thereof and extending to the edges of the member, said projection having a wall extending at an angle to the surface of the member, said member having a second projection between its first projection and its central passage, the two projections lying in spaced relation, the second projection terminating short of the edges of the member, and a cap member having a concave surface for the reception of the convex surface of the base member thereagainst, said concave surface of the cap member being cut away to receive the projections of the base member, the wall of the cut-away portion of the cap member lying in spaced relation to the portions of the wall of the projection of the base member which extend beyond the second projection of said member to form a wire-receiving passage communicating with the space between the projections of the base member, said cap member having a passage alining with that of the base member, and an attaching device engaged in the alining passages.

2. In an insulator, the combination with a base member having spaced projections upon its upper surface following the same general direction, one of said projections extending oppositely beyond the other, of a cap member disposed upon the base member and having a cut-away portion to receive its projections, the wall of the uncut-away portion of the cap member lying in spaced relation to the longer projection to form wire-receiving passages communicating with the space between the projections, said wall being pocketed to receive the shorter projection, and means for holding the two members against separation.

815,472. WASHTUB. MAX ROBIN, New York, N. Y. Filed Apr. 19, 1905. Serial No. 256,419.



Claim.—1. A washtub comprising an open receptacle, a cover therefor, said cover being adapted for removal from said receptacle, upstanding posts at the rear of said receptacle and exteriorly thereof, and means carried by said upstanding posts for receiving said cover when removed from said receptacle.

2. An improved washtub comprising an open receptacle, front legs for said receptacle, rear legs for said receptacle having formed integral therewith upstanding posts, a detachable cover for said tub, and means whereby said upstanding posts may receive and hold said cover when detached from said tub.

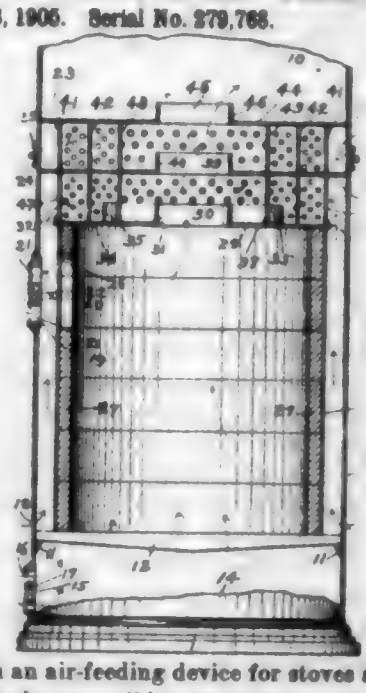
3. An improved washtub comprising an open receptacle, front and rear legs for said receptacle, upstanding posts integral with said rear legs and free from said receptacle, a detachable cover for said receptacle, means for retaining said cover in place upon said receptacle, and means whereby said upstanding posts may receive and hold said cover when detached from the tub and free from the rear wall thereof.

4. A washtub comprising an open receptacle, an apron flush with the top of the back wall of said receptacle and extending rearwardly to an extent which brings its rearward edge beyond the fluid-supply pipes for said receptacle, front legs for said receptacle, rear legs for said receptacle, having integral therewith a channel, said channel being in alinement with the rear edge of said apron, a detachable cover for said receptacle adapted to be moved backward over the rear edge of said apron and into said channel when said receptacle is to be used, and means for retaining said cover in place upon said receptacle when the latter is out of use.

5. A washtub comprising an open receptacle, an apron flush with the top of the back wall of said receptacle and extending rearwardly beyond the fluid-supply pipes for said receptacle, front and rear legs for said receptacle, the rear legs having integral therewith a channel, said channel being in alinement with the rear edge of said apron, a detachable cover for said receptacle adapted to be moved backward over the rear edge of said apron and into said channel, said cover being provided with battens upon its under side adapted to retain it upon said receptacle when in position thereupon.

6. A washtub comprising an open receptacle, an apron flush with the top of the back wall of the receptacle and extending rearwardly beyond the fluid-supply pipes for said receptacle, front and rear legs for said receptacle, the rear legs having integral therewith upstanding posts, a detachable cover for said receptacle adapted to be moved backward and down upon said rear legs, said upstanding posts adapted to prevent said cover from falling backward, and means carried by said rear legs adapted to prevent said cover from falling forward.

815,473. AIR-FEEDING DEVICE. WILLIAM SAGER, Chicago, Ill. Filed Sept. 23, 1905. Serial No. 279,768.

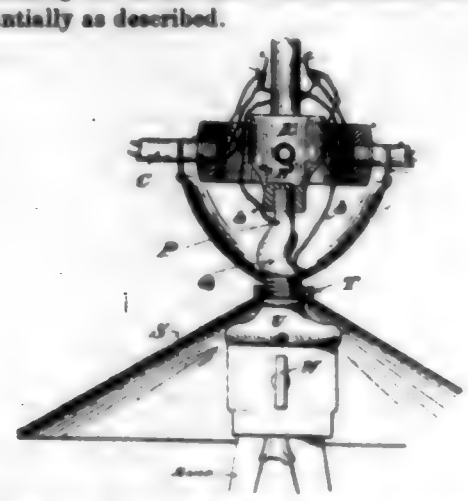


Claim.—1. In an air-feeding device for stoves and the like, the combination of a jacket or wall having in its lower portion openings for the admisson of air, of a grate horizontally mounted in the lower portion of the jacket or wall, a drum located within the jacket at a distance therefrom and resting at its lower end on said grate, a plate located on the top of the drum and having a central opening and a number of openings between said central opening and the outer edge of the plate, upwardly-extending flanges around the intermediate openings, a series of bands located on the upper surface of said plate and having openings for the passage of air, an intermediate plate located on the top of said bands and provided with a central opening, a series of bands located on the upper surface of the intermediate plate and having perforations for the passage of air, and a top plate located on the top of the bands on the intermediate plate and having a central opening, substantially as described.

2. In an air-feeding device for stoves and the like, the combination with an inner drum, of a jacket surrounding the same at a distance therefrom and provided in its upper and lower portions with openings for the admission of air, a plate located on the upper end of the drum and having a central opening and a number of openings provided with upwardly-extending flanges located between said central opening and the edge of the plate, a series of perforated bands located on the upper surface of said plate at distances apart, an intermediate plate located on the upper edge of said band and having a central opening, a series of perforated bands located on the upper surface of the intermediate plate at distances apart and a top plate located on the upper edge of said bands and having a central opening, the intermediate plate and top plate being extended to the inner surface of the jacket and embracing the openings in the upper portion thereof, substantially as described.

815,474. ATTACHMENT FOR ELECTRIC CHANDELIERS. JULIUS C. SCHAEFER, Peoria, Ill. Filed Jan. 30, 1906. Serial No. 243,444.

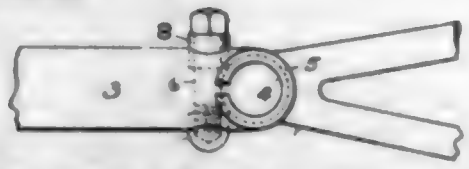
Claim.—1. In an electric fixture, a pipe suspended from the ceiling, a central member carried by said pipe, a series of pipes radiating from said member for carrying electric wires to the lamps on the extremities of said pipes, and an attachment for the said central member comprising a stem screwed into the bottom thereof, said stem having a threaded lower extremity for receiving an electric lamp, the stem having an opening therein at its side above the said threaded extremity the same extending down through the said threaded extremity for carrying wires to the lamp carried thereon and a member for concealing the stem, above the threaded extremity, from view; substantially as described.



2. In an electric fixture, a pipe suspended from the ceiling, a central member carried thereby, a series of radiating pipes connected into the member, each carrying an electric lamp and having wires extending through said pipes to said lamps, and a suspended stem secured in the bottom of said central member, the same having a threaded lower extremity, the stem above the threaded extremity having an enlargement curved outward and recessed, and a passage in the enlargement extending downward through the said threaded extremity for passage of electric wires therethrough to the lamp and a member for concealing the stem from view as described.

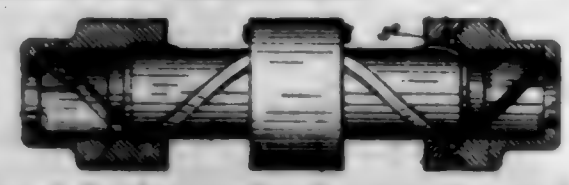
3. The combination with a pipe suspended from the ceiling, of a solid stem suspended therefrom and having a threaded lower end for receiving an electric lamp, there being an enlargement on the stem just above said lower threaded end at one side only of said stem as shown, there being a recess in the enlargement beneath the upper stem portion, there also being a hole in the enlargement within the recess beneath the said stem portion, said hole extending down through the threaded lower end for permitting entrance of the electric wires into the electric lamps secured thereon as described.

815,475. SADDLE-POST. WILLIAM G. SCHAEFFER, Reading, Pa., assignor to William F. Remppis, Reading, Pa. Filed Aug. 19, 1905. Serial No. 274,953.



Claim.—In a seat-post pinch-binder, a seat-mast tube, a slotted collar located in the top of said tube, a flange formed on said collar adapted to rest against the top edge of said tube, a square-headed screw entering the top rail of the frame immediately in front of said tube, a nut and a movable block on said screw said nut and block capable of being moved by the turning of said screw and adapted to contact with the outer surface of said slotted collar and cause it to firmly grasp the seat-post.

815,476. HOSE-COUPLING. AUGUST SCHAFFER, Columbus, Ohio. Filed June 16, 1905. Serial No. 265,380.



Claim.—1. In a hose-coupling, the combination with the parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other and means for locking the parts when closed.

2. In a hose-coupling, the combination with parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch and having seats for packing, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other, packing between the male and female members, and means for locking the parts when closed.

3. In a hose-coupling, the combination with the parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch and having seats for packing, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other, a packing carried by the male member to close upon the seat therefor in the female member and means for locking the parts when closed.

4. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other, and means whereby the male member remains attached to one of the female members after the other female member is detached.

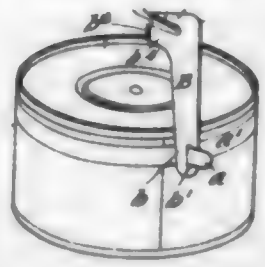
5. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other, and means for attaching the male member to one of the female members so as to prevent its loss, comprising a pin on the male member to run in a thread on the female member and a separable device on the female member to afford a stop for said pin.

6. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, and a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other and an automatically-operated latching device to latch the female to male member when the parts are closed.

7. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and having a central shoulder or projection, and a locking device for the parts seated in said shoulder or projection comprising a spring-actuated bolt adapted to engage the female member when it is closed on the male member.

8. In a hose-coupling, the combination with parts to be coupled, of collars or female members fixed to said parts and one of which has a thread of steep pitch, a rotative male member connected with said collars and provided with a thread of a pitch corresponding to the pitch of the threaded female member whereby the coupling may be effected by moving the female members in a direct line toward each other upon the male member and means for locking the parts in coupling position.

815,477. CAN-OPENER. LEE C. SHARP, Omaha, Nebr., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 30, 1905. Serial No. 280,744.

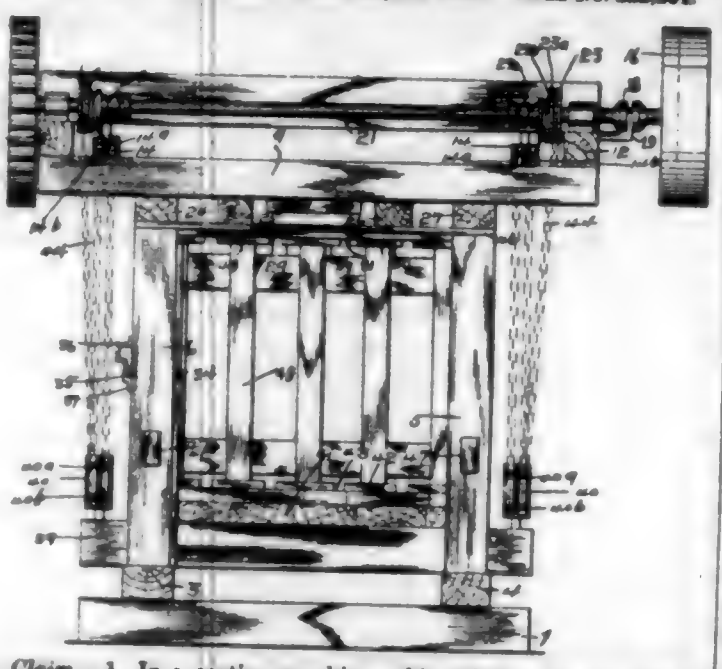


Claim.—1. The sheet-steel combined can-opener and key herein shown and described, and comprising a handle or shank portion *b*, furnished with a tongue-receiving slot *b'* at one end, and provided at its other end with a diagonal slot forming two forks, the outer of which is furnished with a cutting edge, a sharp point and rounded heel, and the inner of which fork is provided with an angle-flange to serve as a fulcrum, substantially as specified.

2. A sheet-steel combined can-opener and key provided with a slot at one end to engage a tearing-strip tongue, and furnished at its other end with two forks separated by a diagonal slot, the outer fork having a cutting edge and the inner fork serving as a fulcrum to engage the can, and cause the cutting edge on the other fork to be drawn across the stock as the device is given a rocking and forward movement, substantially as specified.

3. A combination can-opener consisting of one piece of sheet-steel, provided at one end with a slot to engage a tearing-strip tongue, and provided at its other end with a narrow diagonally-slotted cutting edge terminating in a point adapted to be easily forced through the sheet metal of the can, said opener being fulcrumed and disposed to operate at right angles to the can and by a slight rocking and forward movement to sever the tin, substantially as specified.

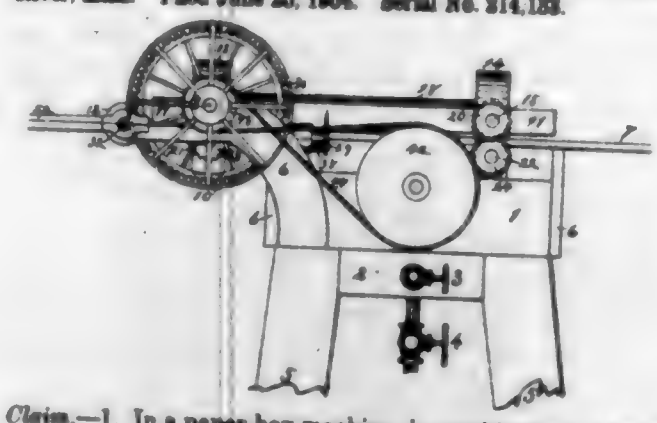
815,478. FIBER-CRATING MACHINE. ARTHUR M. SERAKLEY, Stockton, Cal., assignor to Hercules Manufacturing Company, Stockton, Cal., a Corporation. Filed Aug. 26, 1904. Serial No. 222,204.



Claim.—1. In a crating-machine a hinged door in one side of said machine, the inner edge of said door extending a trifle within the body of said machine, a catch on one of the beams of said machine on the same side as is said door, said catch being formed of a large and reduced portion, and a bar fastened to said door and resting in said catch, as specified.

2. In a crating-machine the combination of a suitable framework, an adjustable flooring between said framework, a roofing between said framework, and sharp pins projecting downwardly from said roofing and adapted to receive crate-slats, as set forth.

815,479. PASTEBOARD-BENDING MACHINE. IRVING L. SHELDON, Fall River, Mass., assignor of one-half to James Marshall, Fall River, Mass. Filed June 25, 1904. Serial No. 214,123.



Claim.—1. In a paper-box machine, in combination, a frame, a tank supported by said frame, an operating-table supported above said tank, means for moving a sheet of pasteboard along said table, means for serrating the edge of said sheet at predetermined distances, means for coating the serrated sections with adhesive matter, and means for bending said sections at right angles to the sheet-surface, substantially as described and shown.

2. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, means for moving a sheet of pasteboard along said table, means for scoring a bending-line on the lower side of said pasteboard sheet, means for dividing the edge of said sheet into sections abutting on said bending-line, and means for bending said sections at right angles to the plane of said sheet, substantially as described and shown.

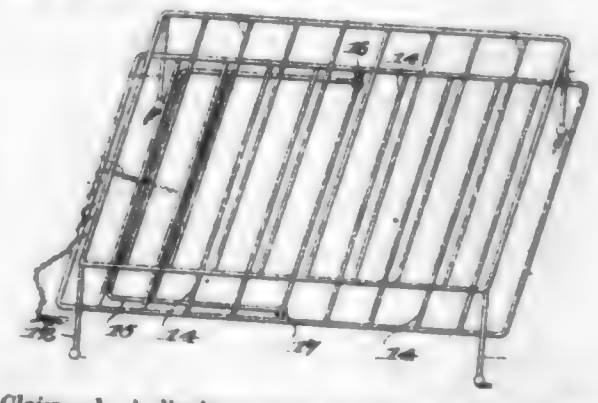
3. In a paper-box machine, in combination, a frame, an operating-table supported thereby, means for feeding a sheet of paper with its edge adjacent the edge of the table, a driving-shaft mounted on said table, means to rotate said shaft, a second shaft at right angles thereto and parallel with the edge of the table, bevel-gears connecting said shafts, a cutter-head on said second shaft, a revolving cutter-blade on said cutter-head, a fixed blade on said table cooperating with the revolving blade, means for applying adhesive to the edge of said sheet, and means for bending the gummed edge at right angles to the body of the sheet substantially as described and shown.

4. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank supported by said frame below said table for containing liquid adhesive matter, a wheel operating in said tank adapted to raise the adhesive matter to the level of the operating-table, means for moving a pasteboard sheet along said table, a cutter-head for dividing the edge of said sheet into sections, and a roller arranged above said wheel adapted to press one side of said sections upon the adhesive matter raised by said wheel, substantially as described and shown.

5. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a subsidiary frame overhanging the edge of said table, friction and scoring wheels supported by said frame and arranged in pairs to register with each other at the level of said operating-table, means for operating said wheels to move a sheet of pasteboard along said table, in combination with a cutting mechanism dividing the edge of said sheet into sections, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

6. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank for containing adhesive matter supported by said frame below said operating-table, means for moving a sheet of pasteboard along said table, means for dividing the edge of said sheet into sections at predetermined distances, a wheel adapted to take adhesive matter from said tank, a roller for pressing said sections against said wheel, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

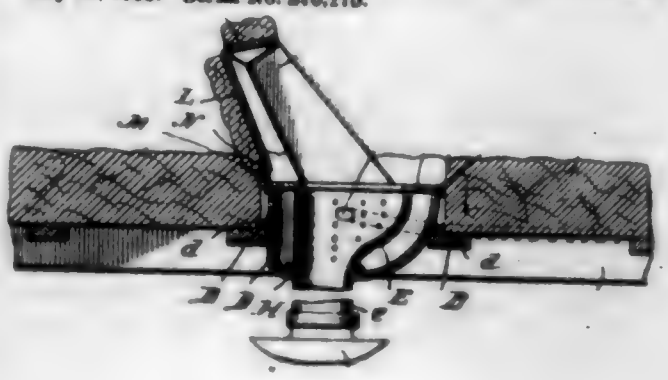
815,480. DISPLAY-RACK. CARL D. SILVEN, Jennings, La. Filed July 20, 1905. Serial No. 270,551.



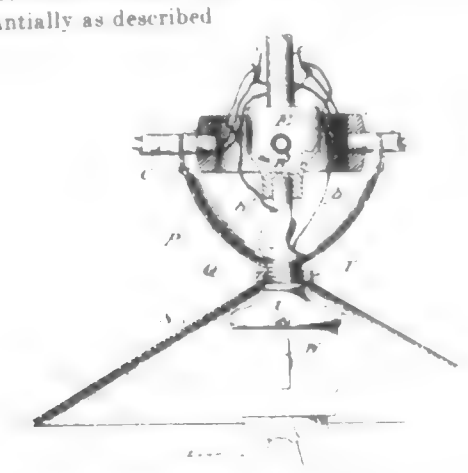
Claim.—1. A display-rack comprising an upper frame formed with spaced bars, standards depending from said upper frame, a lower frame connected to said standards intermediately thereof and extending beyond the upper frame at the ends and formed with spaced bars arranged opposite the spaces between the bars of the upper frame, and a brace pivoted to the lower frame for tilting both frames.

2. A display-rack comprising an upper frame formed with spaced bars, standards depending from said upper frame, a lower frame connected to said standards intermediately thereof and formed with spaced bars arranged opposite the spaces between the bars of the upper frame, a brace member swinging from said lower frame, and a flexible connecting means adjustably disposed between said lower frame and the free end of said brace member.

815,481. BED ATTACHMENT. NAN E. SMITH, Dowell, Tex. Filed July 18, 1905. Serial No. 270,175.



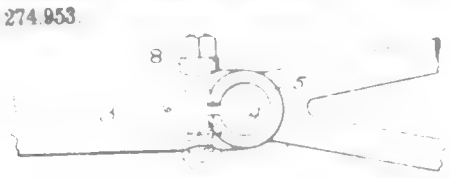
Claim.—1. In an electric fixture, a pipe suspended from the ceiling, a central member carried by said pipe, a series of pipes radiating from said member for carrying electric wires to the lamps on the extremities of said pipes, and an attachment for the said central member comprising a stem screwed into the bottom thereof, said stem having a threaded lower extremity for receiving an electric lamp, the stem having an opening therein at its side above the said threaded extremity the same extending down through the said threaded extremity for carrying wires to the lamp carried thereon and a member for concealing the stem, above the threaded extremity, from view, substantially as described



2. In an electric fixture, a pipe suspended from the ceiling, a central member carried thereby, a series of radiating pipes connected into the member, each carrying an electric lamp and having wires extending through said pipes to said lamps, and a suspended stem secured in the bottom of said central member, the same having a threaded lower extremity, the stem above the threaded extremity having an enlargement curved outward and recessed, and a passage in the enlargement extending downward through the said threaded extremity for passage of electric wires therethrough to the lamp and a member for concealing the stem from view as described

3. The combination with a pipe suspended from the ceiling, of a solid stem suspended therefrom and having a threaded lower end for receiving an electric lamp, there being an enlargement on the stem just above said lower threaded end at one side only of said stem as shown, there being a recess in the enlargement beneath the upper stem portion, there also being a hole in the enlargement within the recess beneath the said stem portion, said hole extending down through the threaded lower end for permitting entrance of the electric wires into the electric lamps secured thereon as described.

815,475. SADDLE-POST. WILLIAM G. SCHAEFFER, Reading, Pa., assignor to William F. Remppis, Reading, Pa. Filed Aug. 19, 1905. Serial No. 274,953.



Claim.—In a seat-post pinch-binder, a seat-mast tube, a slotted collar located in the top of said tube, a flange formed on said collar adapted to rest against the top edge of said tube, a square-headed screw entering the top rail of the frame immediately in front of said tube, a nut and a movable block on said screw said nut and block capable of being moved by the turning of said screw and adapted to contact with the outer surface of said slotted collar and cause it to firmly grasp the seat-post.

815,476. HOSE-COUPLING. AUGUST SCHAFFER, Columbus, Ohio. Filed June 28, 1905. Serial No. 267,380.



Claim.—1. In a hose-coupling, the combination with the parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other and means for locking the parts when closed.

2. In a hose-coupling, the combination with parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch and having seats for packing, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other, packing between the male and female members, and means for locking the parts when closed.

3. In a hose-coupling, the combination with the parts to be coupled, of collars or female members fixed to said parts and threaded with a steep pitch and having seats for packing, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members in a direct line toward each other, a packing carried by the male member to close upon the seat therefor in the female member and means for locking the parts when closed.

4. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other, and means whereby the male member remains attached to one of the female members after the other female member is detached.

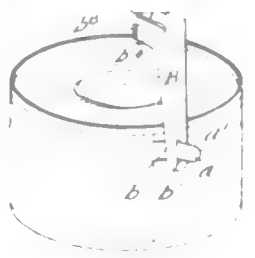
5. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other, and means for attaching the male member to one of the female members so as to prevent its loss, comprising a pin on the male member to run in a thread on the female member and a separable device on the female member to afford a stop for said pin.

6. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, and a rotative male member correspondingly threaded and engaging said female members adapted to be rotated by drawing the collars or female members toward each other and an automatically-operated latching device to latch the female to male member when the parts are closed.

7. In a hose-coupling, the combination with parts to be coupled, of collars or female members threaded with a steep pitch, a rotative male member correspondingly threaded and having a central shoulder or projection, and a locking device for the parts seated in said shoulder or projection comprising a spring-actuated bolt adapted to engage the female member when it is closed on the male member.

8. In a hose-coupling, the combination with parts to be coupled, of collars or female members fixed to said parts and one of which has a thread of steep pitch, a rotative male member connected with said collars and provided with a thread of a pitch corresponding to the pitch of the threaded female member whereby the coupling may be effected by moving the female members in a direct line toward each other upon the male member and means for locking the parts in coupling position.

815,477. CAN-OPENER. LEE C. SHARP, Omaha, Nebr., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 30, 1905. Serial No. 280,744.

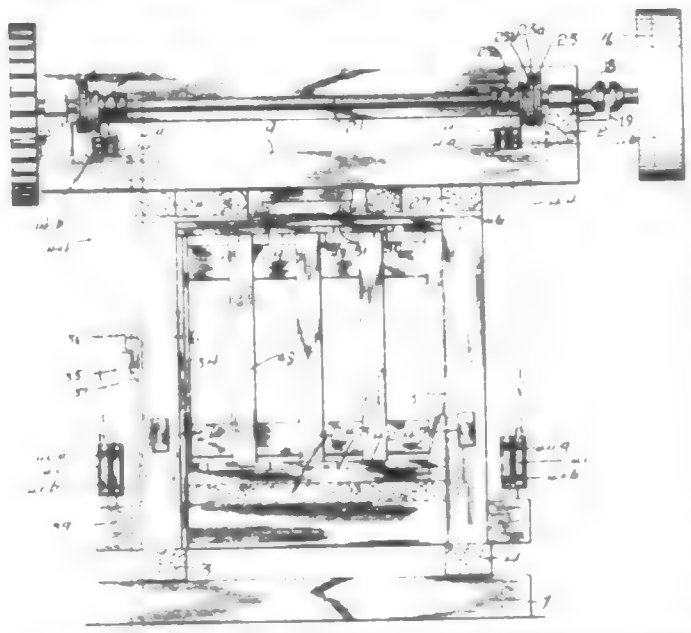


Claim.—1. The sheet-steel combined can-opener and key herein shown and described, and comprising a handle or shank portion *b*, furnished with a tongue-receiving slot *b'* at one end, and provided at its other end with a diagonal slot forming two forks, the outer of which is furnished with a cutting edge, a sharp point and rounded heel, and the inner of which fork is provided with an angle-flange to serve as a fulcrum, substantially as specified.

2. A sheet-steel combined can-opener and key provided with a slot at one end to engage a tearing-strip tongue, and furnished at its other end with two forks separated by a diagonal slot, the outer fork having a cutting edge and the inner fork serving as a fulcrum to engage the can, and cause the cutting edge on the other fork to be drawn across the stock as the device is given a rocking and forward movement, substantially as specified.

3. A combination can-opener consisting of one piece of sheet-steel, provided at one end with a slot to engage a tearing-strip tongue, and provided at its other end with a narrow diagonally-slotted cutting edge terminating in a point adapted to be easily forced through the sheet metal of the can, said opener being fulcrumed and disposed to operate at right angles to the can and by a slight rocking and forward movement to sever the tin, substantially as specified.

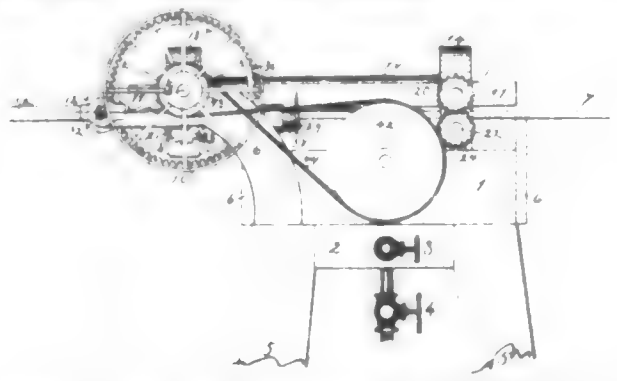
815,478. FIBER-CRATING MACHINE. ARTHUR M. SHEARLEY, Stockton, Cal., assignor to Hercules Manufacturing Company, Stockton, Cal., a Corporation. Filed Aug. 26, 1904. Serial No. 222,204.



Claim.—1. In a crating-machine a hinged door in one side of said machine the inner edge of said door extending a trifle within the body of said machine, a catch on one of the beams of said machine on the same side as is said door, said catch being formed of a large and reduced portion, and a bar fastened to said door and resting in said catch, as specified.

2. In a crating-machine the combination of a suitable framework, an adjustable flooring between said framework, a roofing between said framework, and sharp pins projecting downwardly from said roofing and adapted to receive crate-slats, as set forth.

815,479. PASTEBOARD-BENDING MACHINE. IRVING L. SHELDON, Fall River, Mass., assignor of one-half to James Marshall, Fall River, Mass. Filed June 25, 1904. Serial No. 214,133.



Claim.—1. In a paper-box machine, in combination, a frame, a tank supported by said frame, an operating-table supported above said tank, means for moving a sheet of pasteboard along said table, means for serrating the edge of said sheet at predetermined distances, means for coating the serrated sections with adhesive matter, and means for bending said sections at right angles to the sheet-surface, substantially as described and shown.

2. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, means for moving a sheet of pasteboard along said table, means for scoring a bending-line on the lower side of said pasteboard sheet, means for dividing the edge of said sheet into sections abutting on said bending-line, and means for bending said sections at right angles to the plane of said sheet, substantially as described and shown.

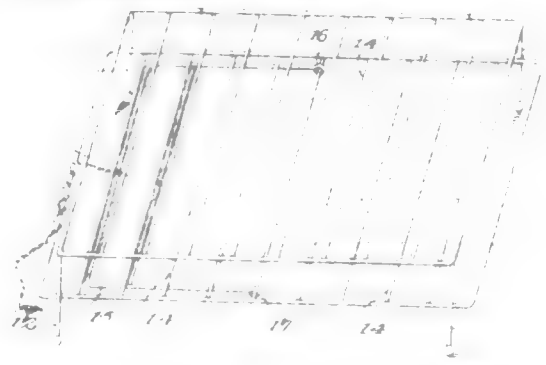
3. In a paper-box machine, in combination, a frame, an operating-table supported thereby, means for feeding a sheet of paper with its edge adjacent the edge of the table, a driving-shaft mounted on said table, means to rotate said shaft, a second shaft at right angles thereto and parallel with the edge of the table, bevel-gears connecting said shafts, a cutter-head on said second shaft, a revolving cutter-blade on said cutter-head, a fixed blade on said table cooperating with the revolving blade, means for applying adhesive to the edge of said sheet, and means for bending the gummed edge at right angles to the body of the sheet substantially as described and shown.

4. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank supported by said frame below said table for containing liquid adhesive matter, a wheel operating in said tank adapted to raise the adhesive matter to the level of the operating-table, means for moving a pasteboard sheet along said table, a cutter-head for dividing the edge of said sheet into sections, and a roller arranged above said wheel adapted to press one side of said sections upon the adhesive matter raised by said wheel, substantially as described and shown.

5. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a subsidiary frame overhanging the edge of said table, friction and scoring wheels supported by said frame and arranged in pairs to register with each other at the level of said operating-table, means for operating said wheels to move a sheet of pasteboard along said table, in combination with a cutting mechanism dividing the edge of said sheet into sections, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

6. In a paper-box machine, in combination, a frame, an operating-table supported by said frame, a tank for containing adhesive matter supported by said frame below said operating-table, means for moving a sheet of pasteboard along said table, means for dividing the edge of said sheet into sections at predetermined distances, a wheel adapted to take adhesive matter from said tank, a roller for pressing said sections against said wheel, and a flanging mechanism adapted to turn said sections at right angles to the body of said sheet, substantially as described and shown.

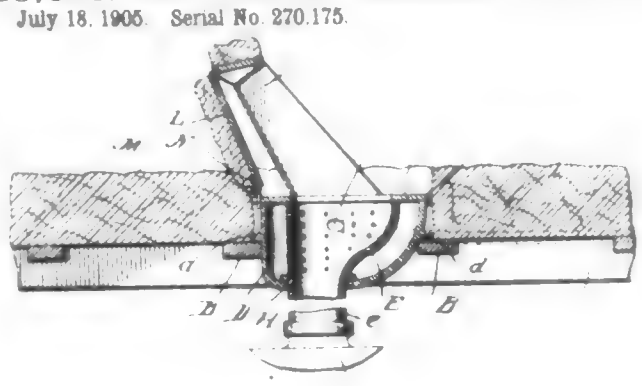
815,480. DISPLAY-RACK. CARL D. SILVEN, Jennings, La. Filed July 20, 1905. Serial No. 270,551.



Claim.—1. A display-rack comprising an upper frame formed with spaced bars, standards depending from said upper frame, a lower frame connected to said standards intermediately thereof and extending beyond the upper frame at the ends and formed with spaced bars arranged opposite the spaces between the bars of the upper frame, and a brace pivoted to the lower frame for tilting both frames.

2. A display-rack comprising an upper frame formed with spaced bars, standards depending from said upper frame, a lower frame connected to said standards intermediately thereof and formed with spaced bars arranged opposite the spaces between the bars of the upper frame, a brace member swinging from said lower frame, and a flexible connecting means adjustably disposed between said lower frame and the free end of said brace member.

815,481. BED ATTACHMENT. NAN E. SMITH, Dowell, Tex. Filed July 18, 1905. Serial No. 270,175.



Claim.—1. The combination with a mattress having an opening therein, of a vessel in said opening having a perforated wall, a deodorizer-holder surrounding said perforated wall; and a lid for the aforesaid vessel.

2. The combination with a mattress having an opening therein; of a vessel in said opening; and a lid hinged to the vessel, said lid comprising sections which are hinged together.

815,182. ROTARY ENGINE. NORMAN R. SMITH, Seattle, Wash., assignor to Seattle Rotary Engine Company, Seattle, Wash., a Corporation of Washington. Filed Mar. 28, 1905. Serial No. 252,584.



Claim.—1. A rotary engine comprising a casing, a carrier rotatable therein, and pressure parts mounted in said carrier and being rigidly secured to pivoted means, said casing being formed to alternately move said pressure parts into and out of the carrier during rotation of said carrier.

2. A rotary engine comprising a casing, a carrier rotatable therein, spaced-apart pressure parts rigidly secured to means pivoted to the carrier, and moving in unison alternately into and out of the carrier, said pressure parts having their outer ends continually engaging the inner face of the casing.

3. A rotary engine comprising a casing, a carrier rotatable therein, swing-frames mounted in said carrier, and pressure parts rigidly connected to said frames and having their outer ends continually engaging the inner face of said casing, said casing having its inner face so shaped as to cause said pressure parts to move alternately into and out of the carrier.

4. A rotary engine comprising a casing, a carrier rotatable therein, opposite swing-frames mounted in said carrier, pressure parts secured to the ends of said frames, and means whereby said pressure parts are moved into and out of the carrier during rotation thereof.

5. A rotary engine comprising a casing, a carrier rotatable therein, a plurality of pairs of pressure parts connected to pivoted means and being slidably mounted in said carrier and having their outer ends engaging the inner face of the casing, said casing having its inner face shaped to cause alternate inward and outward movement of said pressure parts.

6. A rotary engine comprising a casing, a carrier rotatable therein, said carrier being formed with opposite curved ways extending through the periphery of the carrier, pressure parts slidably mounted in said ways, swing-frames mounted in said carrier, each of said swing-frames having two of said pressure parts rigidly connected therewith, and said casing being formed to cause swinging movement of said frames.

7. A rotary engine comprising a casing, a rotatable carrier therein, said carrier being formed with diametrically opposite cut-out portions extending inwardly from one side face of the carrier, a removable plate secured to the last-named side of the carrier, swing-frames mounted in said cut-out portion and being journaled in said carrier and removable plate, pressure parts rigidly connected to said swing-frames at their opposite ends and being continually in engagement with the inner face of said casing, and said casing having its inner face shaped to cause inward and outward movement of said pressure parts during rotation of the carrier.

8. A rotary engine comprising a casing, a carrier rotatable therein, and opposite pairs of pressure parts mounted in said carrier and being rigidly secured to swinging means.

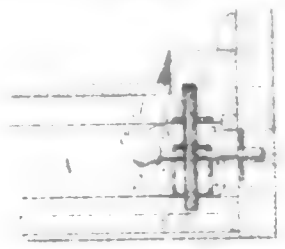
9. A rotary engine comprising a casing, a carrier rotatable therein, a plurality of eccentrically-pivoted pressure parts said pressure parts being connected and swinging in common arcs during movement of the carrier.

10. A rotary engine comprising a casing formed with ingress ports, a carrier rotatable therein, pressure parts slidably mounted in the carrier, said pressure parts having their outer ends continually engaging the inner face of the casing, and said carrier being formed on its sides and on opposite sides of the pressure parts with steam-channels adapted to register with the ingress-ports of the casing during movement of said carrier, the steam-channels on one side of said pressure parts being closer to the periphery of the carrier than those channels on the opposite side.

11. A rotary engine comprising a casing formed with opposite abutments and having its heads formed with ingress-ports arranged on opposite sides of said abutments, a carrier rotatable in said casing, and pressure parts movably mounted in said carrier, said carrier being formed with channels extending inwardly from its opposite sides and adapted for registration with the respective ports of the casing, and steam-ducts leading therefrom to opposite sides of said pressure parts.

12. A rotary engine comprising a casing, a carrier rotatable therein, and opposite pairs of pressure parts mounted in said carrier, each pair of pressure parts connected to means swinging eccentrically to the carrier and having their outer ends continually engaging the inner face of the casing, said inner face of the casing being so shaped as to cause alternate inward and outward movement of the respective pressure parts.

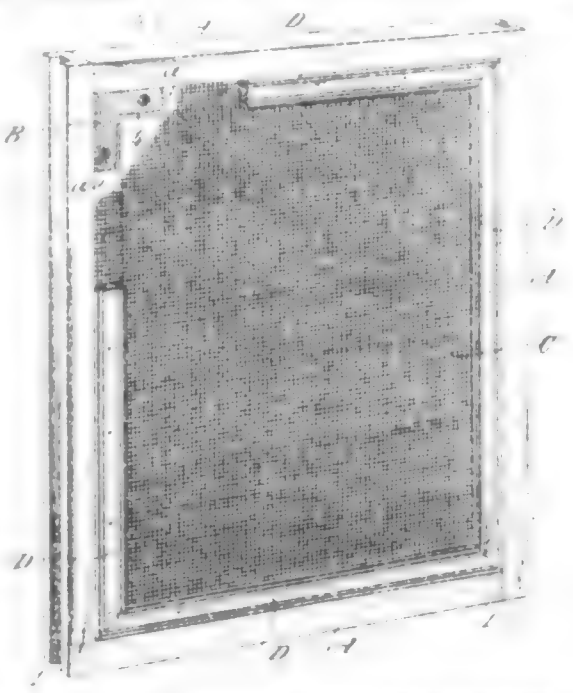
815,183. SASH-FASTENER. CHARLES H. SNEARER, Cleveland, Ohio. Filed Sept. 18, 1905. Serial No. 278,965.



Claim.—1. In window-sash locks, a holder having a slot lengthwise of its front and openings at its rear opposite the ends of said slot and having openings at its ends on the same plane as said slot, in combination with a controlled bolt through said end openings and a main bolt through said slot and slidably confined in a hole through said controlled bolt.

2. In sash-locks, a holder having openings through its ends and sides at right angles to each other, a controlled bolt through said side openings and a main bolt extending through said front to rear openings and bodily through said controlled bolt and slidably confined therein, in combination with a window-casing and window-sashes therein, and said casing and one of said sashes having holes adapted to be engaged by said bolts.

815,184. WINDOW AND DOOR SCREEN. HENRY E. SCUTHWORTH, Colchester, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Jan. 15, 1906. Serial No. 296,086.



Claim.—1. In combination, a screen-frame composed of frame bars formed on one face along the inner edge with rabbets and with longitudinal kerfs extending into the body of the bars from, and at substantially right angles to, the bottom of the rabbets; corner-irons

located in said rabbets at the meeting ends of adjoining bars to which they are secured and provided on their limbs with flanges which project at right angles from the body of the irons and enter and are seated in the kerfs in the frame-bars; wire-cloth the edges of which are received in the rabbets in the frame; and moldings covering the corner-irons and edges of the wire-cloth, and secured to the bars, substantially as and for the purposes hereinbefore set forth.

2. In a screen-frame, two frame-bars formed with rabbets *a* and kerfs *a'*, in combination with a corner-iron of V form located in the rabbeted portions of the meeting ends of said rails, and secured by one of its limbs to each rail, and flanges *b* on the limbs of the iron which enter and are seated in the kerfs *a'* of the frame-bars, substantially as and for the purposes hereinbefore set forth.

815,485. JOINTED SHAFT. JOHN K STEWART, Chicago, Ill. Filed Jan. 16, 1905. Serial No. 241,403.



Claim.—1. In a jointed shaft, in combination with the casing-sections hinged together at their proximate ends, the shaft-sections in the casing-sections respectively, composed of a plurality of pieces, one piece at each end being a bearing-piece journaled in the casing-sections and protruding therefrom, said pieces being flexibly jointed to each other near the journal-bearing of an end piece within the casing-section.

2. In a jointed shaft, in combination with the casing-sections hinged together at their proximate ends, the shaft-sections in the casing-sections respectively composed of three pieces, one piece at each end being a bearing-piece journaled in the casing-sections and protruding therefrom, and the intermediate piece having universal-joint connection with the end pieces near the bearings.

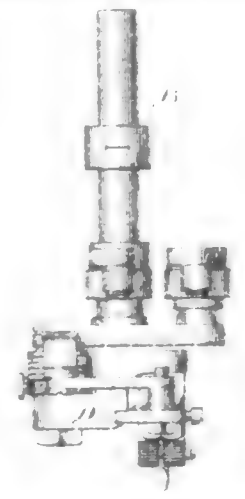
3. In a jointed shaft, in combination with the casing-sections hinged together at their proximate ends, the shaft-sections in the casing-sections respectively consisting of three pieces, the two end pieces being journaled in the bearings in the casing-sections and protruding therefrom respectively, the intermediate piece being connected to the other two pieces, the joint connecting said intermediate piece with each end piece being formed by an end slot in one of the connected pieces and a corresponding end tenon in the other piece, and a pivot-pin connecting the two, the tenon having slight lateral play in the slot, and the pivot-pin having slight play longitudinally with respect to the shaft in one of the two connected pieces.

4. In a jointed shaft, power-communicating device, a fixed element of the jointed casing; a shaft element journaled and longitudinally stopped therein; a fixed bearing in which such casing element is journaled, the casing element having limited range of longitudinal movement in the bearing; a power-transmitting wheel having a hollow hub or quill by which it is journaled, the initial shaft element of the jointed shaft being intruded into said hollow quill for support thereon, and means on the quill and shaft respectively adapted to be engaged and disengaged by longitudinal movement of the shaft element.

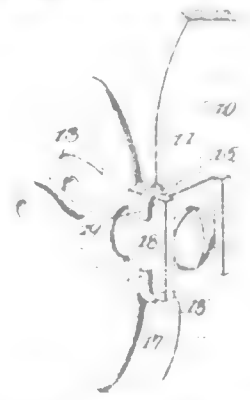
815,486. KNIFE-CARRYING MECHANISM FOR SOLE-CUTTING MACHINES. ALLISON M STICKNEY, Medford, Mass., assignor to Wellman Sole Cutting Machine Company, Portland, Me., a Corporation of Maine. Filed Feb. 20, 1905. Serial No. 246,503.

Claim.—1. In a knife-carrying mechanism for sole-cutting machines the combination of a knife-carrier; a blade-holder; and parallel links connecting the knife-carrier and blade-holder to guide the blade in its movements with relation to the carrier.

2. In a knife-carrying mechanism for sole-cutting machines the combination of a knife-carrier; a blade-holder; and parallel links connecting the knife-carrier and blade-holder to guide and support the blade in its movement with relation to the carrier.



815,487. EYEGLASS-FITTING. GEORGE A STILES, Somerville, Mass. Filed June 30, 1905. Serial No. 267,830.



Claim.—1. In an eyeglass-frame, a spring, a nose-guard arm, a stud arranged to receive the spring and arm, a securing-screw extending through the spring and arm and into said stud, and a wedging member that is locked by the screw between the spring, the arm and the stud.

2. In an eyeglass-frame, a recessed stud, a spring, and a nose-guard arm, each having one edge beveled to form an angular recess, a wedging member confined in said recess and engaging one of the walls of the stud-recess, and a securing-screw extending through the spring and arm and into the stud.

3. In an eyeglass-frame, a stud having a recess, one of the walls of which is notched, a spring, and a nose-guard arm having beveled or inclined edges arranged to form an angular recess, a wedging member disposed within the recess and bent to extend through said notch, and a securing-screw for holding the parts in position.

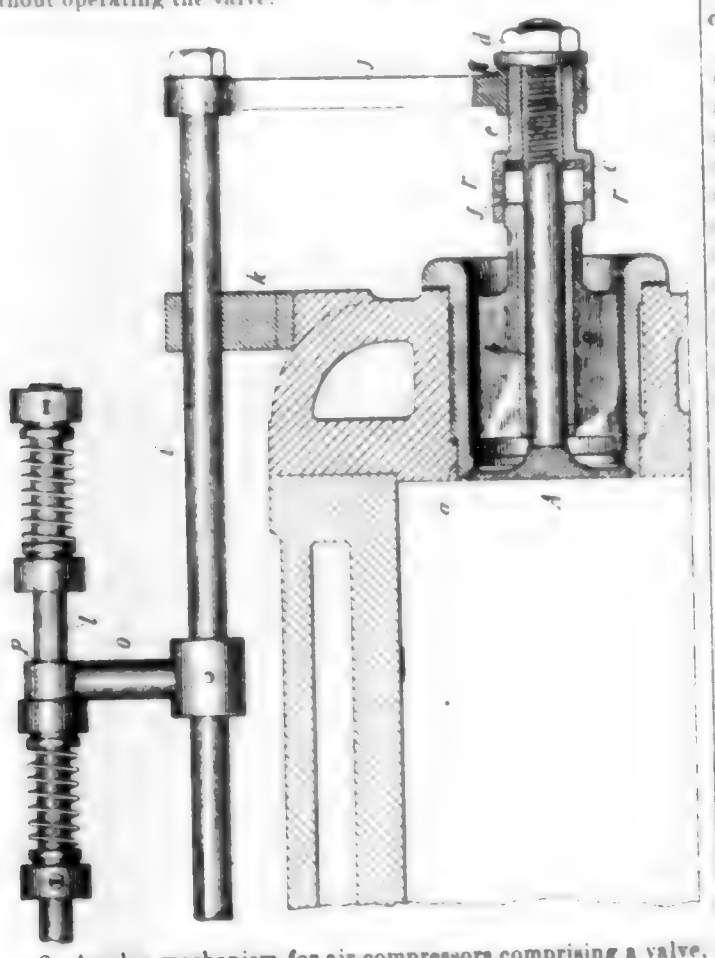
4. The combination in an eyeglass-frame, of a stud member having a box at one end, the outer wall of the box having an opening for the passage of a screw-head, and one of the side walls of the box being provided with notches, a spring, and a nose-guard arm, each having one edge beveled to form an angular recess, a wedging member disposed within the recess and having its opposite ends bent to fit within the notches of said wall, and a securing-screw extending through the spring and arm and into the stud.

5. In a device of the class specified, the combination with a stud having a recessed end and provided with a threaded opening, of frame members fitted within said recessed end, a locking-screw passing through openings in said members and extending into said threaded opening in the stud, and a wedging device acting on said member and serving as the screw is turned home to force the walls of the openings in said members against the screw and lock the latter.

815,488. VALVE FOR AIR-COMPRESSORS. THOMAS E STURTEVANT, Dover, N. J., assignor to McKiernan Drill Company, Dover, N. J. Filed Apr. 9, 1903. Serial No. 151,849.

Claim.—1. A valve mechanism for air-compressors comprising a valve, a valve-stem, and a valve-stem journal, said valve provided with air-cushioning means for retarding the opening thereof, comprising a cylindrical sleeve on the valve-stem and a coöperating abutment on the valve-stem journal, a tappet or operating-rod, a connecting-rod having a yielding connection with the operating-rod and an

operative connection between said connecting-rod and valve-stem, whereby the connecting-rod has a free movement in one direction without operating the valve.



2. A valve mechanism for air-compressors comprising a valve, a valve-stem, and a valve-stem journal, said valve provided with air-cushioning means for retarding the opening thereof, comprising a cylindrical sleeve on the valve-stem and a coöperating abutment on the valve-stem journal, a tappet or operating-rod, a connecting-rod, a link or arm on said connecting-rod having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, and a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

3. A valve mechanism for air-compressors comprising a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut a lock-nut on the end of said valve-stem, and an operating sleeve or rod sliding on said neck for operating said valve-stem and means for operating said sleeve.

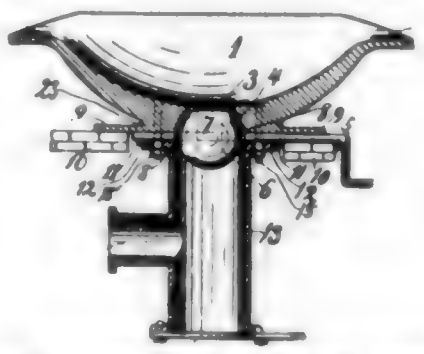
4. A valve mechanism for air-compressors comprising a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut, a lock-nut on the end of said valve-stem, an operating sleeve or rod sliding on said neck for operating said valve-stem and means for operating said sleeve, and perforations communicating with said cushion-chamber for the gradual escapement of air confined therein.

5. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod having a yielding connection with the operating-rod, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut, a lock-nut on the end of said valve-stem, and an operative connection between said connecting-rod and said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

6. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod, a link on said connecting-rod and having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having a reduced portion or neck and an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a lock-nut on the end of said valve-stem, and a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

7. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod, a link on said connecting-rod and having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having a reduced portion or neck, and an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a lock-nut on the end of said valve-stem, a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve, and a series of perforations in said cushion-chamber for the partial escapement of air confined therein.

815,489. COMBINED FIRE-POT AND TWYER-IRON. Charles O. Swenson, Minneapolis, Minn. Filed July 10, 1905. Serial No. 269,023.



Claim.—1. The combination with a fire-pot having a central-blast opening and a cavity or concave in the lower part thereof, of a horizontally-arranged rock-shaft and a substantially centrally perforated blast-regulating piece mounted on the shaft in said concave in such a manner that an opening for side blast is formed between the valve and the fire-pot, said valve being of a substantially globular form with a flat face at its normally upper side.

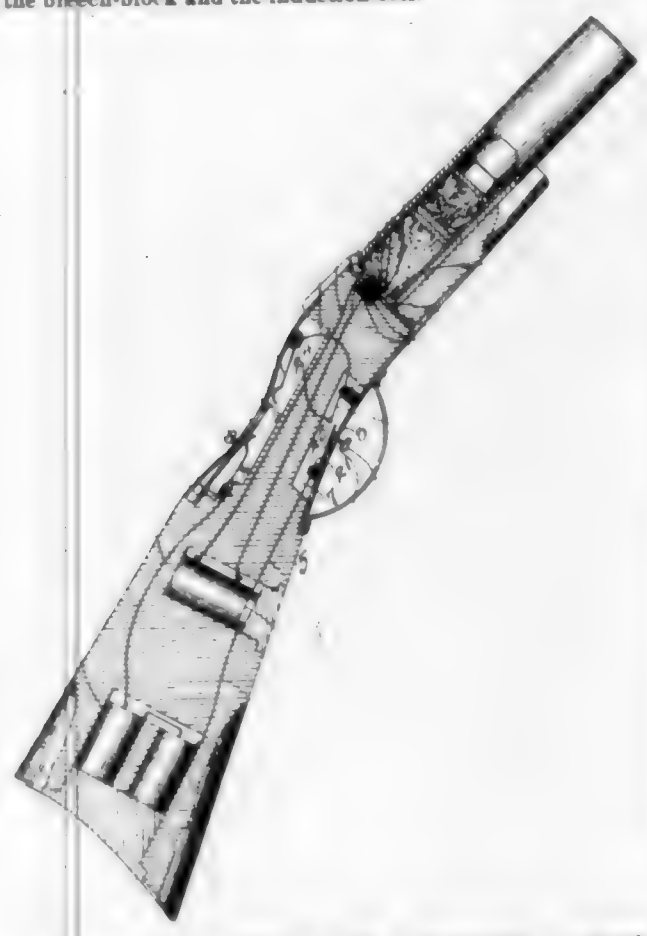
2. The combination with the vertical tube 13 having the side inlet 14 and means for closing its bottom end, of the upper flange 12 formed on said tube and having oppositely-disposed quadrantal slots and the grooves 18, a rock-shaft in said grooves and a perforated valve-piece or blast-regulator on the shaft, a fire-pot having in its upper edge diametrically opposite depressions and in its bottom bolts extending down through said slots and being provided with nuts below the flange 12, said fire-pot also having a central opening directly over the blast-regulator and a flange adapted to rest upon the hearth of a forge and hold the tube 13 suspended in an opening therein

3. The combination with the vertical tube 13 having the side inlet 14 and means for closing its bottom end, of the upper flange 12 formed on said tube and having oppositely-disposed quadrantal slots and the grooves 18, a rock-shaft in said grooves and a perforated valve-piece or blast-regulator on the shaft, a fire-pot having in its upper edge diametrically opposite depressions and in its bottom bolts extending down through said slots and being provided with nuts below the flange 12, said fire-pot also having a central opening directly over the blast-regulator and a flange adapted to rest upon the hearth of a forge and hold the tube 13 suspended in an opening therein, said fire-pot also having at its bottom side guards engaging the flange 12 to help hold the tube in central position.

815,490. ELECTRICAL GUN. Martin E. Thomas, Batavia, Iowa, assignor of one-half to Frank Fishel, Batavia, N. Y. Filed Nov. 1, 1905. Serial No. 285,418.

Claim.—1. In a gun, the combination with a stock having a chamber therewithin and having a longitudinal slot in its upper portion communicating with the chamber, of contact-plates disposed at opposite ends of the slot, a plate slidably mounted for movement into and out of position to contact with both of the first-named plates simultaneously, a shank secured to the slidable plate and extending outwardly through the slot, means for holding the sliding plate yieldably out of operative position, a make-and-break, electrical connections between one of the stationary plates and a member of the make-and-break, a battery, electrical connections between said battery

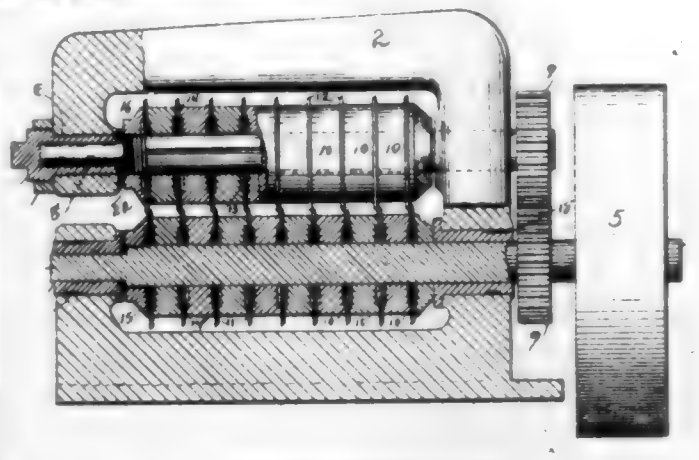
and the other of the stationary plates, an induction-coil carried by the stock, electrical connections between said coil and the battery, electrical connections between said coil and the other member of the make-and-break, means for operating the make-and-break, a metallic breech-block for the gun, an insulating-body in the breech-block, a contact-piece in the insulating-body and extending through the forward face of the breech-block, electrical connections between the contact-piece and the induction-coil, and electrical connections between the breech-block and the induction-coil.



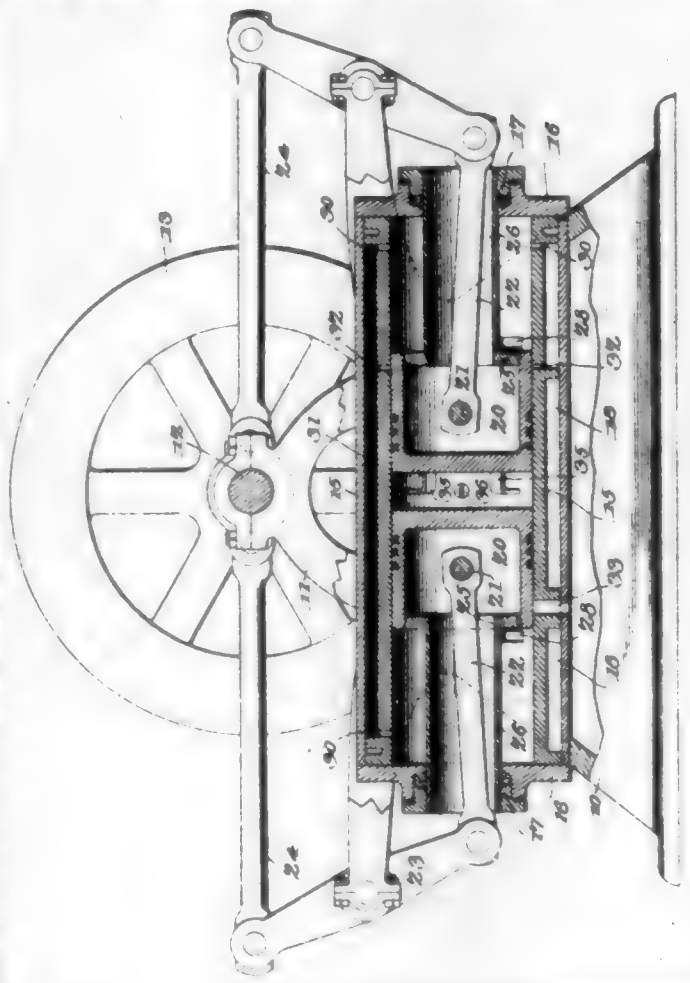
2. In a gun, the combination with a stock having a chamber therewithin and having a longitudinal slot in its upper portion communicating with the chamber, of contact-plates disposed at opposite ends of the slot, a plate slidably mounted for movement into and out of position to contact with both of the first-named plates simultaneously, a shank secured to the slidable plate and extending outwardly through the slot, means for holding the sliding plate yieldably out of operative position, a make-and-break, electrical connections between one of the stationary plates and a member of the make-and-break, a battery, electrical connections between said battery and the other of the stationary plates, an induction-coil carried by the stock, electrical connections between said coil and the battery, electrical connections between said coil and the other member of the make-and-break, means for operating the make-and-break, a metallic breech-block for the gun, an insulating-body in the breech-block, a contact-piece in the insulating-body extending through the forward face of the breech-block, electrical connections between the contact-piece and the induction-coil, electrical connections between the breech-block and the induction-coil, a cartridge disposed against the breech-block, said cartridge including a metallic heel-piece contacting the breech-block, and having a passage formed therethrough communicating with the interior of the shell, an insulating-core in the passage, an electrode in the insulating-core, said electrode contacting the contact-piece and extending into the shell, and a second electrode disposed with one end in the shell and in spaced relation to the first-named electrode, said second electrode being electrically connected with the heel-piece.

815,491. **CARPET-CUTTING MACHINE.** WILLIAM H. TSCHANTZ, Orrville, Ohio, assignor to The Cyclone Drill Company, Orrville, Ohio, a Corporation of Ohio. Filed Aug. 22, 1905. Serial No. 275,220.

Claim.—In a carpet-cutting machine, the combination of a base and an upward-extending arm, upper and lower shafts journaled in the base and arm respectively, one of the shafts mounted in eccentric bearings or boxes, said shafts provided with spaced cutting-disks, collars located between the cutting-disks, and the cutting-disks of the different shafts located out of alinement or at an angle to each other, a longitudinal adjustable nut located upon the upper shaft and said upper shaft journaled in the adjustable nut, means for holding the adjustable nut in fixed adjustment, and means for imparting rotary motion to the disk-shafts, and guard-plates, substantially as and for the purpose specified.

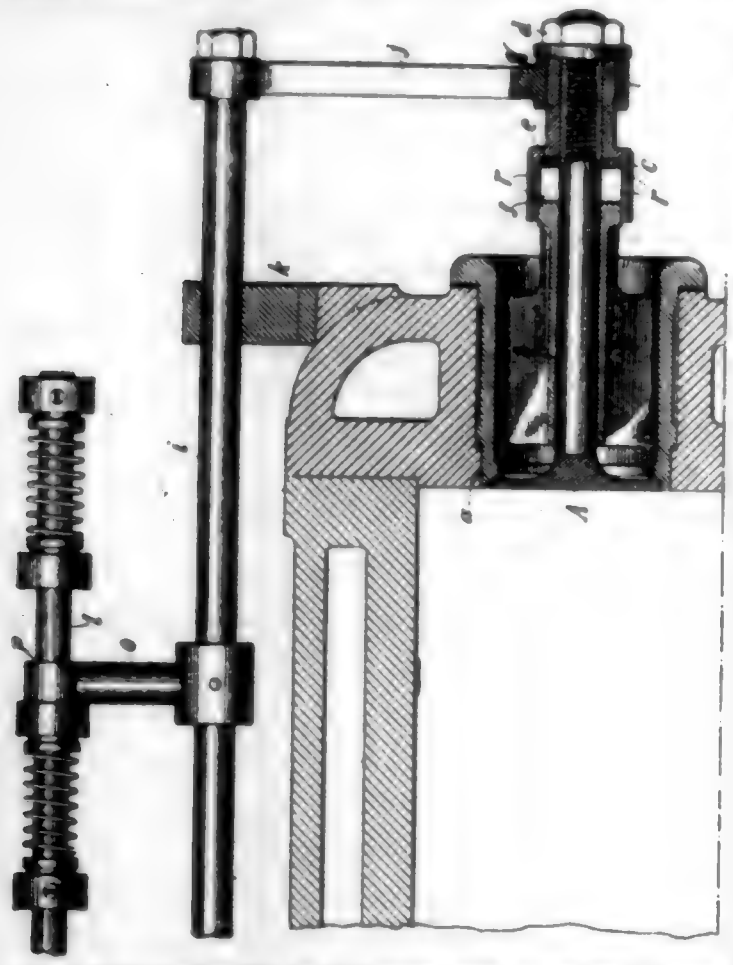


815,492. **INTERNAL-COMBUSTION ENGINE.** FRANCIS M. UHLER, Lincoln, Nebr., assignor of one-half to George W. Davis, Lincoln, Nebr. Filed Dec. 23, 1904. Serial No. 238,142.



Claim.—The combination in an internal-combustion engine, of a frame, a crank-shaft journaled in said frame, a cylinder arranged below the shaft, said cylinder having heads at its opposite ends, stuffing-boxes carried by the heads, a pair of pistons arranged in said cylinder and movable in opposite directions, respectively, tubes connected to the outer faces of the pistons and leading through said stuffing-boxes, the cylinder being thus divided into a central explosion-chamber and end pumping-chambers, inlets through which the explosive mixture may pass to the end pumping-chambers when the pistons are at the limit of instroke, ports leading from said pumping-chambers and connected to a port that is placed in communication with the central explosion-chamber, when the pistons are at the limit of outstroke, one of the pistons controlling the inlet-port, and an exhaust-port leading from the combustion-chamber and controlled by the opposite piston, the ports being disposed, respectively, at opposite ends of said explosion-chamber, connecting-rods leading from the pistons through the tubular portions thereof, brackets extending outward from the frame to points beyond the ends of the cylinder, levers pivoted on said brackets, the lower arms of said levers being connected to the rods, and upper rods extending from the upper arms of said levers to the crank-shaft.

operative connection between said connecting-rod and valve-stem, whereby the connecting-rod has a free movement in one direction without operating the valve.



2. A valve mechanism for air-compressors comprising a valve, a valve-stem, and a valve-stem journal, said valve provided with air-cushioning means for retarding the opening thereof, comprising a cylindrical sleeve on the valve-stem and a coöperating abutment on the valve-stem journal, a tappet or operating-rod, a connecting-rod, a link or arm on said connecting-rod having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, and a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

3. A valve mechanism for air-compressors comprising a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut a lock-nut on the end of said valve-stem, and an operating sleeve or rod sliding on said neck for operating said valve-stem and means for operating said sleeve.

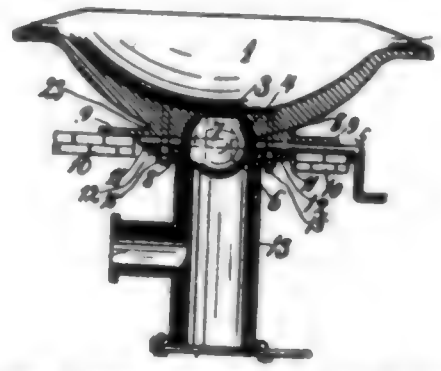
4. A valve mechanism for air-compressors comprising a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut, a lock-nut on the end of said valve-stem, an operating sleeve or rod sliding on said neck for operating said valve-stem and means for operating said sleeve, and perforations communicating with said cushion-chamber for the gradual escapement of air confined therein.

5. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod having a yielding connection with the operating-rod, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a reduced portion or neck on said sleeve-nut, a lock-nut on the end of said valve-stem, and an operative connection between said connecting-rod and said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

6. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod, a link on said connecting-rod and having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having a reduced portion or neck and an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a lock-nut on the end of said valve-stem, and a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve.

7. A valve mechanism for air-compressors comprising a tappet or operating-rod, a connecting-rod, a link on said connecting-rod and having a sliding connection with said operating-rod, cushioning-springs on said operating-rod upon opposite sides of said link connection, an inlet-valve having a valve-seat, a valve-stem, a valve-stem journal, a sleeve-nut on said stem having a reduced portion or neck, and an enlarged recessed portion which coöperates with the head of the valve-stem journal to form a cushion-chamber, a lock-nut on the end of said valve-stem, a second arm rigidly secured to said connecting-rod and having a sliding connection with said valve-stem whereby the connecting-rod has a free movement in one direction without operating the valve, and a series of perforations in said cushion-chamber for the partial escapement of air confined therein.

815,489. COMBINED FIRE-POT AND TWYER-IRON. CHARLES O. SWENSON, Minneapolis, Minn. Filed July 10, 1905. Serial No. 269,023.



Claim.—1. The combination with a fire-pot having a central-blast opening and a cavity or concave in the lower part thereof, of a horizontally-arranged rock-shaft and a substantially centrally perforated blast-regulating piece mounted on the shaft in said concave in such a manner that an opening for side blast is formed between the valve and the fire-pot, said valve being of a substantially globular form with a flat face at its normally upper side.

2. The combination with the vertical tube 13 having the side inlet 14 and means for closing its bottom end, of the upper flange 12 formed on said tube and having oppositely-disposed quadrantal slots and the grooves 18, a rock-shaft in said grooves and a perforated valve-piece or blast-regulator on the shaft, a fire-pot having in its upper edge diametrically opposite depressions and in its bottom bolts extending down through said slots and being provided with nuts below the flange 12, said fire-pot also having a central opening directly over the blast-regulator and a flange adapted to rest upon the hearth of a forge and hold the tube 13 suspended in an opening therein.

3. The combination with the vertical tube 13 having the side inlet 14 and means for closing its bottom end, of the upper flange 12 formed on said tube and having oppositely-disposed quadrantal slots and the grooves 18, a rock-shaft in said grooves and a perforated valve-piece or blast-regulator on the shaft, a fire-pot having in its upper edge diametrically opposite depressions and in its bottom bolts extending down through said slots and being provided with nuts below the flange 12, said fire-pot also having a central opening directly over the blast-regulator and a flange adapted to rest upon the hearth of a forge and hold the tube 13 suspended in an opening therein, said fire-pot also having at its bottom side guards engaging the flange 12 to help hold the tube in central position.

815,490. ELECTRICAL GUN. MARTIN E. THOMAS, Batavia, Iowa, assignor of one-half to Frank Fiebel, Batavia, N. Y. Filed Nov. 1, 1905. Serial No. 285,413.

Claim.—1. In a gun, the combination with a stock having a chamber therewithin and having a longitudinal slot in its upper portion communicating with the chamber, of contact-plates disposed at opposite ends of the slot, a plate slidably mounted for movement into and out of position to contact with both of the first-named plates simultaneously, a shank secured to the slidable plate and extending outwardly through the slot, means for holding the sliding plate yieldably out of operative position, a make-and-break, electrical connections between one of the stationary plates and a member of the make-and-break, a battery, electrical connections between said battery

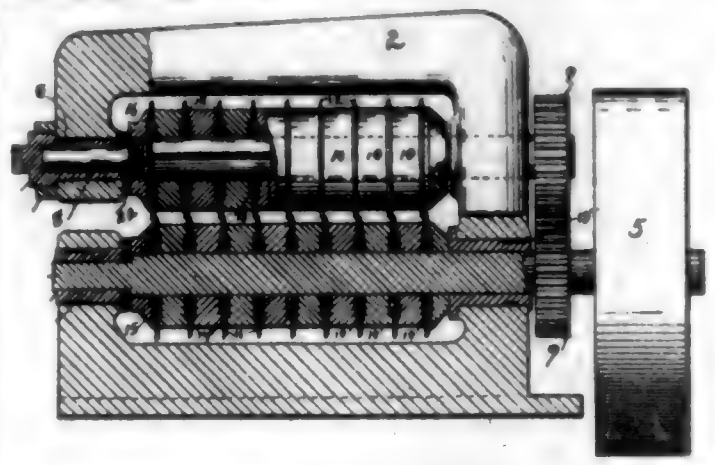
and the other of the stationary plates, an induction-coil carried by the stock, electrical connections between said coil and the battery, electrical connections between said coil and the other member of the make-and-break, means for operating the make-and-break, a metallic breech-block for the gun, an insulating-body in the breech-block, a contact-piece in the insulating-body and extending through the forward face of the breech-block, electrical connections between the contact-piece and the induction-coil, and electrical connections between the breech-block and the induction-coil.



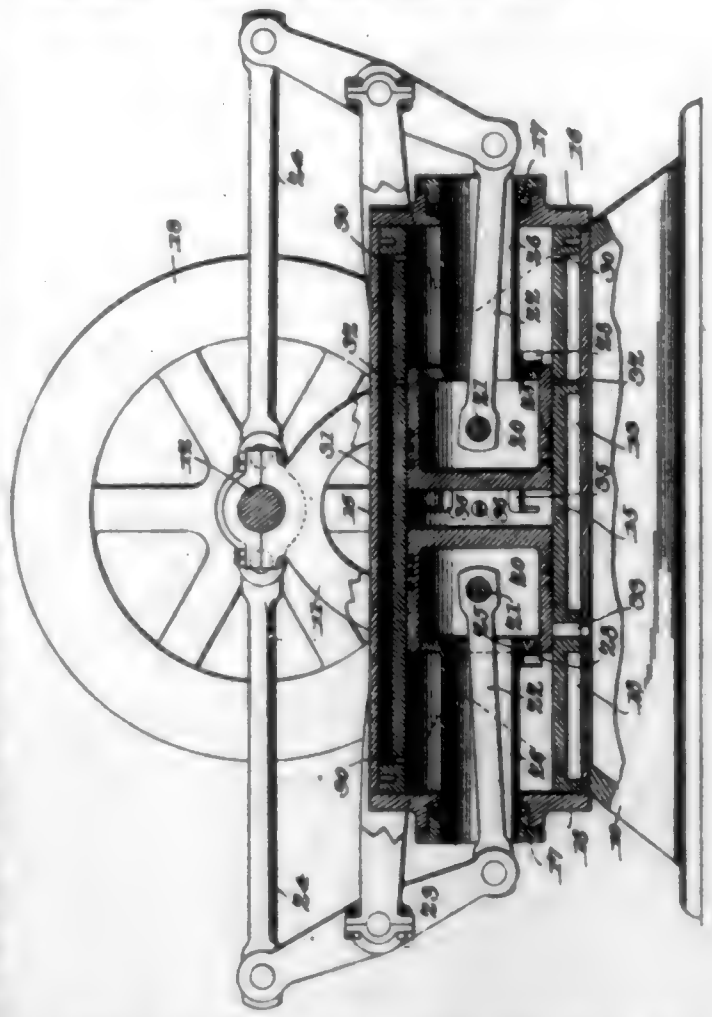
2. In a gun, the combination with a stock having a chamber therewithin and having a longitudinal slot in its upper portion communicating with the chamber, of contact-plates disposed at opposite ends of the slot, a plate slidably mounted for movement into and out of position to contact with both of the first-named plates simultaneously, a shank secured to the slidable plate and extending outwardly through the slot, means for holding the sliding plate yieldably out of operative position, a make-and-break, electrical connections between one of the stationary plates and a member of the make-and-break, a battery, electrical connections between said battery and the other of the stationary plates, an induction-coil carried by the stock, electrical connections between said coil and the battery, electrical connections between said coil and the other member of the make-and-break, means for operating the make-and-break, a metallic breech-block for the gun, an insulating-body in the breech-block, a contact-piece in the insulating-body extending through the forward face of the breech-block, electrical connections between the contact-piece and the induction-coil, electrical connections between the breech-block and the induction-coil, a cartridge disposed against the breech-block, said cartridge including a metallic heel-piece contacting the breech-block, and having a passage formed therethrough communicating with the interior of the shell, an insulating-core in the passage, an electrode in the insulating-core, said electrode contacting the contact-piece and extending into the shell, and a second electrode disposed with one end in the shell and in spaced relation to the first-named electrode, said second electrode being electrically connected with the heel-piece.

815,491. CARPET-CUTTING MACHINE. WILLIAM H. TSCHANTZ, Orrville, Ohio, assignor to The Cyclone Drill Company, Orrville, Ohio, a Corporation of Ohio. Filed Aug. 22, 1905. Serial No. 275,220.

Claim.—In a carpet-cutting machine, the combination of a base and an upward-extending arm, upper and lower shafts journaled in the base and arm respectively, one of the shafts mounted in eccentric bearings or boxes, said shafts provided with spaced cutting-disks, collars located between the cutting-disks, and the cutting-disks of the different shafts located out of alinement or at an angle to each other, a longitudinal adjustable nut located upon the upper shaft and said upper shaft journaled in the adjustable nut, means for holding the adjustable nut in fixed adjustment, and means for imparting rotary motion to the disk-shafts, and guard-plates, substantially as and for the purpose specified.

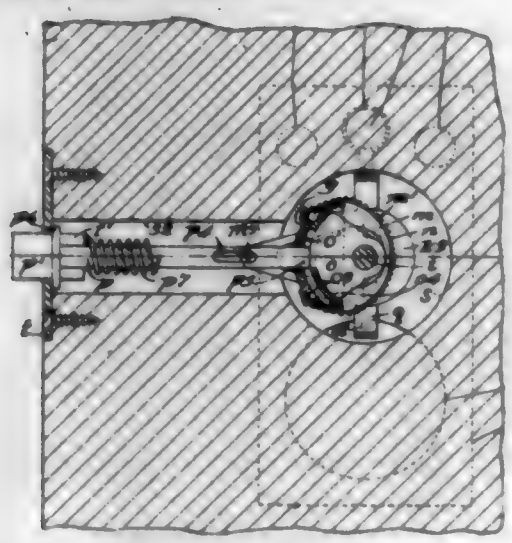


815,492. INTERNAL-COMBUSTION ENGINE. FRANCIS M. UHLER, Lincoln, Nebr., assignor of one-half to George W. Davis, Lincoln, Nebr. Filed Dec. 23, 1904. Serial No. 238,142.



Claim.—The combination in an internal-combustion engine, of a frame, a crank-shaft journaled in said frame, a cylinder arranged below the shaft, said cylinder having heads at its opposite ends, stuffing-boxes carried by the heads, a pair of pistons arranged in said cylinder and movable in opposite directions, respectively, tubes connected to the outer faces of the pistons and leading through said stuffing-boxes, the cylinder being thus divided into a central explosion-chamber and end pumping-chambers, inlets through which the explosive mixture may pass to the end pumping-chambers when the pistons are at the limit of instroke, ports leading from said pumping-chambers and connected to a port that is placed in communication with the central explosion-chamber, when the pistons are at the limit of outstroke, one of the pistons controlling the inlet-port, and an exhaust-port leading from the combustion-chamber and controlled by the opposite piston, the ports being disposed, respectively, at opposite ends of said explosion-chamber, connecting-rods leading from the pistons through the tubular portions thereof, brackets extending outward from the frame to points beyond the ends of the cylinder, levers pivoted on said brackets, the lower arms of said levers being connected to the rods, and upper rods extending from the upper arms of said levers to the crank-shaft.

815,493. LATCH. ARTHUR B. VANER, Uitenhage, Cape Colony. Filed Jan. 12, 1905. Serial No. 240,677.



Claim.—1. A latch, comprising a spring-operated bolt provided with an inclined head, a spindle, a sleeve secured to said spindle and provided with upwardly and downwardly directed horns, a spring-operated plate provided with a recess in which said horns operate a pin on said plate normally in engagement with said bolt, and means for removing said pin and said bolt out of engagement with each other substantially as shown and described.

2. A latch, comprising a spring-operated bolt provided with an inclined head, and with a slot adjacent to the opposite end thereof, a spindle, upwardly and downwardly directed horns secured to said spindle, a plate provided with a recess in which said horns operate, a pin on said plate normally engaging the slot in said bolt, a spring externally secured and bearing against said plate, and means for removing said pin out of engagement with said bolt substantially as shown and described.

3. A latch for doors or similar purposes, comprising a plate on each side of said door, a spindle rotatable therein, upwardly and downwardly directed horns secured to said spindle, an inwardly-directed slotted member secured to one of said plates, a supplemental plate slidable on said spindle and in the slot of said inwardly-directed member, a spring-operated bolt provided with an inclined head and with a slot adjacent to the inner end thereof, a pin on said supplemental plate, normally entering said slot in said bolt, a spring forcing said supplemental plate outwardly, and means for moving said bolt out of engagement with said supplemental plate, substantially as shown and described.

4. A latch, comprising a spring-operated bolt provided with an inclined head, and a slot adjacent to the inner end thereof, a spindle provided with upwardly and downwardly directed lugs, a plate in operative connection with said lugs and with said bolt, a yoke-shaped plate, a supplemental plate engaging the ends of said yoke-shaped plate, a segmental drum provided with an irregular slot in which said bolt operates, said supplemental plate being provided with a pin in operative connection with said segmental drum, and devices for holding said yoke-shaped plate in any one of a plurality of positions, substantially as shown and described.

5. In a latch of the class described, a bolt, a segmental drum provided with a slot therein and passing therethrough and in which said bolt operates, said slot comprising two vertical portions in different vertical planes and an inclined portion joining said vertical portions, and the lower end of said slot being closed by a plate to the rear thereof and devices for operating said bolt, substantially as shown and described.

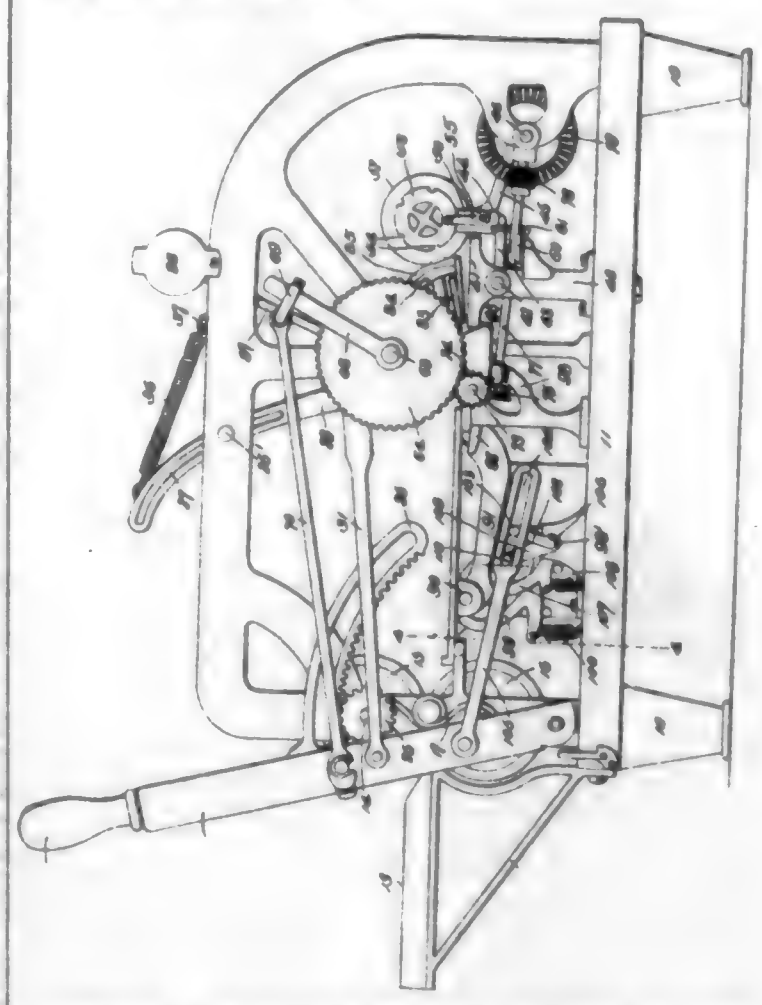
6. In a latch of the class described, a spindle, a bolt, a plate provided with a segmental member and a groove therein, the other end of said plate being inclined and a pin mounted therein and adapted to engage said bolt, said plate being also provided with a recess in one side thereof and devices connected with said spindle and said plate for moving the latter, substantially as shown and described.

7. In a latch of the class described, a bolt, a spindle provided with upwardly and downwardly directed horns, a plate provided at one end, with a segmental head having a groove therein, and the other end of said plate being tapered, a pin in the tapered end of said plate and adapted to engage said bolt, said plate being also provided with a recess in one side thereof in which said horns normally rest and a spring externally secured and resting in said groove, substantially as shown and described.

8. In a latch of the class described, a yoke-shaped plate composed of spring metal, a supplemental plate provided with openings engaging the ends of said yoke-shaped plate and a face-plate provided with a plurality of recesses engaging the ends of said yoke-shaped plate, substantially as shown and described.

9. In a latch of the class described, a bolt, a spindle, a face-plate provided with a plutality of recesses on the inner side thereof and with an inwardly-directed segmental member, said segmental member being provided with a horizontal slot in which said bolt operates and said horizontal slot being intersected by a vertical slot, a plate in said vertcial slot normally in engagement with said bolt and in operative connection with said spindle substantially as shown and described.

815,494. ENVELOP SEALING AND STAMPING MACHINE. JOHN T. VANNESS and HARRY R. O'BRIAN, Oxford, Ohio. Filed July 31, 1905. Serial No. 271,994.



Claim.—1. In mechanism of the class described, the combination with a pair of feed-rollers, one of which is hollow and is provided with an absorbent section for moistening the flap of an envelop passing between the rollers, a table or support for the reception of the envelop, and a roller movable over the table to fold and seal a moistened flap.

2. In mechanism of the class described, a pair of feed-rollers, one of which is hollow and is arranged to contain a liquid, a portion of the periphery of the roller being formed of absorbent material, a perforated plate for holding the absorbent material in position, a support on which the moistened envelop is delivered, and means for folding and pressing the moistened flap against the body of the envelop.

3. In mechanism of the class described, the combination with a tiltable table, of means for feeding an envelop to the table, and for moistening the flap thereof during its passage, means coacting with the table for folding and sealing the flap, and means for tilting said table to effect the discharge of the envelop by gravity.

4. In mechanism of the class described, the combination with an envelop-support, of a stamp-applying member, a stamp-carrier, means for detaching single stamps from a sheet, means for feeding the detached stamps to the stamp-applying member, and means for moistening the gummed surface of the detached stamps during such feeding movement.

5. In mechanism of the class described, a stamp-applying member, means for severing single stamps from a sheet, means for feeding single detached stamps from the severing-point to the stamp-applying member, and means for moistening such detached stamps during the feeding movement.

6. In mechanism of the class described, the combination with a stamp-carrier, of a table over which the stamps are fed, said table

having a recess provided with a cutting edge, a stamp-detacher movable into said recess to detach single stamps, a belt onto which the stamps are fed, a stamp-applying device to which the stamps are fed by the belt, and means for moistening said stamps during the feeding movement.

7. In mechanism of the class described, the combination with a stamp-carrier, of a table over which the stamps are fed, said table having a recess provided with a cutting edge, a stamp-deatcher movable into the recess to detach single stamps, a belt onto which the stamps are fed, a hollow moistening-roller arranged above the belt and serving to engage the stamps, and a stamp-applying device to which the stamps are fed from the belt.

8. In mechanism of the class described, a table having a recess, means for feeding an unsealed envelop to the table, means for moistening the flap of the envelop, a stamp-applying member movable through the recess of the table to apply a stamp to the lower front face of the envelop, means for feeding a stamp to the stamp-applying member, and a pressure member coacting with the stamp-applying member, and the table, to affix the stamp and to seal the flap.

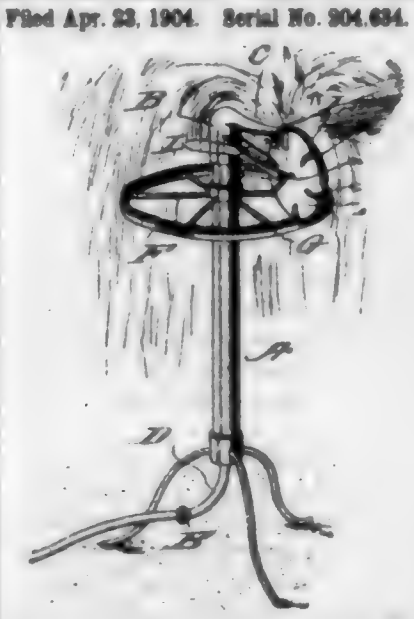
9. In an envelop-sealing and stamp-applying machine, a supporting-table, means for feeding envelops to the table and for moistening the same, means for detaching single stamps, means for moistening the detached stamps, means for conveying the stamps to a position under the envelop, and simultaneously-acting means for presenting the stamps against the lower face of the envelop, and pressing down the moistened flap of the upper face of the envelop.

10. In an envelop-sealing and stamp-applying machine, a recessed table, means for feeding envelops onto the table, and for moistening the envelop-flap, a pressure-roller movable over the envelop to press down the moistened flap, a stamp-applying member arranged under the table in alinement with the recess, means for detaching single stamps, means for conveying the detached stamps to the stamp-applying member, means for moistening the detached stamps, and means for actuating the applying member during the movement of the envelop-pressing roller.

11. In a machine of the class described, a stamp-carrier, means for moving the same, a pivotally-mounted stamp-detacher for cutting single stamps from the sheet, a yieldably-mounted clamping member carried by the stamp-detacher and arranged to engage with the sheet of stamps around the edge of the stamp to be detached.

12. In a machine of the class described, a stamp-carrying roller, and a helically-grooved shaft for moving said roller in the direction of its length, a stamp-detaching device for severing successive stamps oof a row, and means for releasing the roller from the shaft to permit its readjustment to initial position after all of the stamps of a row have been used.

815,495. LAWN-SPRINKLER. OSCAR P. WAGGENER, Klamath Falls, Oreg. Filed Apr. 23, 1904. Serial No. 204,634.



Claim.—1. A lawn-sprinkler, having a supporting-standard, a hollow head swiveled thereto from which a nozzle projects laterally, a bucket or paddle wheel rotatably supported by said head, and a horizontal toothed ring on the standard operatively engaged with said bucket or paddle wheel.

2. In a lawn-sprinkler having a supporting-standard carrying a pipe for water, a hollow head swiveled to said standard and water-pipe, a nozzle projecting from said hollow head, a bucket or paddle wheel supported by said head and having a peripheral spiral flange, and a horizontal toothed ring on the standard operatively engaged with said bucket or paddle wheel.

3. A lawn-sprinkler having a supporting-standard, a hollow head swiveled to said standard from which hollow head a nozzle projects laterally, a bucket or paddle wheel supported on said head and movable therewith, and a toothed ring on the standard in direct engagement with said bucket or paddle wheel.

4. A lawn-sprinkler having a supporting-standard carrying a pipe for water, a hollow head with a projecting nozzle opening thereinto swiveled to said standard and water-pipe the latter also opening into said head, a bucket or paddle wheel carried by said hollow head in operative relation to the outlet of said nozzle, said bucket or paddle wheel having a spiral peripheral flange, and a fixed toothed ring in engagement with said spiral flange.

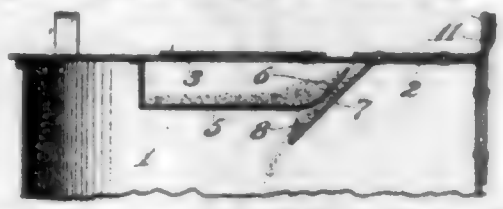
5. A lawn-sprinkler having a fixed toothed ring, a bucket or paddle wheel having a spiral peripheral flange in direct engagement with said toothed ring, and a hollow head having a single nozzle and supporting said bucket or paddle wheel, said nozzle being in such relation to said bucket or paddle wheel that a portion of the water issuing therefrom operates said bucket or paddle wheel.

6. In a lawn-sprinkler, a bucket or paddle wheel having a spiral peripheral flange, a fixed toothed ring in engagement with said spiral flange, and a rotatable head having arms in which said bucket or paddle wheel revolves and a nozzle projecting from said head toward said bucket or paddle wheel.

7. In a lawn-sprinkler, a bucket or paddle wheel having a spiral peripheral flange, a fixed toothed ring in engagement with said spiral flange, and a head from which a nozzle projects supporting said bucket or paddle wheel and adapted to be turned on an axis at a right angle to that of said bucket or paddle wheel by the rotation of said paddle-wheel.

8. A lawn-sprinkler having a bucket or paddle wheel adapted to be rotated by a jet of water, a nozzle therefor having an outlet-opening and a slit on one side extending backwardly from said outlet-opening through which slit the water for rotating said bucket or paddle wheel escapes.

815,496. SANITARY GARBAGE-CAN. GUSTAVUS WANGENHEIM, Los Angeles, Cal. Filed Sept. 15, 1905. Serial No. 278,687.



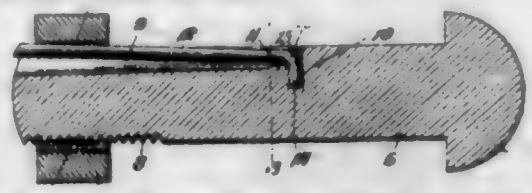
Claim.—1. A garbage-can provided with a removable lid having an opening in the top thereof, a closure for the opening, a receptacle underneath the opening, said receptacle provided at the upper edge of its wall next the hinge of the can, with an outlet, an apron across the outlet to form a trap to catch a portion of the contents of the receptacle and thereby dam the outlet when the lid is swung up, and to discharge said portion of the contents when the lid is lowered to cover the can.

2. A garbage-can provided with two upwardly-extending eyes, a lid having prongs extending through such eyes and bent upwardly, a receptacle fastened to the under side of the lid and having an outlet at the rear end, and an apron rearwardly of the outlet, to catch a portion of the contents of the receptacle when the lid is swung up, and to discharge such portion when the lid is turned down.

3. A lid having a receptacle provided with an outlet opposite the front edge of the lid, and a chute from such outlet to receive material therefrom when the lid is raised and to discharge the same below the lid when the lid is lowered.

4. A lid, a receptacle on the lid, provided with a rearwardly-sloping wall with an outlet at the upper part thereof and a chute behind the outlet sloping therefrom downwardly and forwardly to discharge therebeneath.

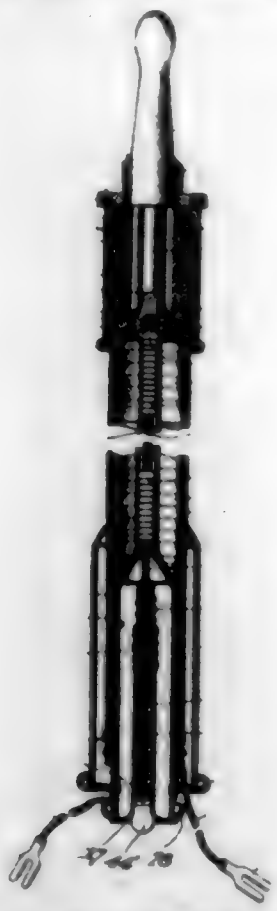
815,497. NUT-LOCK. HENRY P. WATSON, Louisville, Ky. Filed Apr. 29, 1905. Serial No. 258,075.



Claim.—In a device of the class described, a threaded shank having a longitudinal slot in one side for the reception of a dog, a socket deeper than the slot and located at the inner end thereof, and a bearing-lug located in the slot and separating the socket and slot,

said lug being located directly at one side of the socket, terminating short of the outer face of the shank, and having a rounded outer bearing-face, in combination with a spring locking-dog located longitudinally in the slot and having its inner end bent around the lug, which constitutes a fulcrum for the dog, said end bearing against the lug and being seated in the socket for holding the dog against longitudinal movement in the slot, said dog furthermore having its outer side projecting beyond the shank, and means extending over the inner end of the dog and likewise over the bearing-lug and the portion of the dog engaged therewith to hold said dog in the seat and in engagement with the lug, and a nut threaded on the shank and having recesses in its inner side, said dog being yieldingly projected into the recesses and thereby holding the nut against turning in one direction on the shank.

815,498. ELECTRIC CONDUCTOR. Welby D. Weir, Winnsboro, Tex. Filed Feb. 15, 1905. Serial No. 245,742.



Claim—1. A flexible conductor comprising a flexible supporting element, a plurality of contact members carried by the supporting element, and means for regulating the tension of the latter to thereby compress the contact members and maintaining the same in constant engagement with each other.

2. A flexible conductor formed of a plurality of overlapping contact members, an adjustable sleeve carried by the conductor, and a spring disposed within the sleeve for maintaining said members in electrical contact with each other.

3. A flexible conductor formed of an inner and an outer series of contact members, and means for maintaining the members of each series in electrical contact with each other.

4. A flexible conductor formed of a plurality of rings disposed in electrical contact with each other, and a series of rings surrounding the first-named rings and arranged concentric therewith.

5. A flexible conductor formed of an inner and an outer series of contact members, means for maintaining the members of each series in electrical contact with each other, and an insulating material separating the two sets of contact members.

6. A conductor comprising a flexible supporting element, a series of overlapping contact members carried by the supporting element, a second series of members surrounding the first series, and an insulating-sheathing covering the latter.

7. A flexible conductor formed of an inner and an outer series of overlapping contact members, an insulating material separating the two, and a covering for the outer series of members.

8. A conductor comprising a flexible supporting element, a series of overlapping contact members carried by the supporting element, a second series of contact members surrounding the first series and spaced from the latter, and means for regulating the tension of the supporting element to thereby compress said members.

9. A flexible conductor formed of a plurality of overlapping rings having their side walls tapered and arranged in electrical contact with each other, said conductor being provided with oppositely-disposed contact-terminals.

10. A flexible conductor comprising a contact-plug provided with a terminal socket, a supporting member having one end thereof seated in said socket, and a plurality of overlapping rings carried by the supporting member and arranged in electrical contact with each other.

11. A conductor comprising a central flexible supporting element, a plurality of overlapping conical rings carried by the cord and arranged in electrical contact with each other, means for adjusting the tension of the supporting element to compress the rings, a second series of rings surrounding the first series and arranged concentric therewith, and a casing covering the second series of rings.

12. A flexible conductor formed of a series of members arranged in electrical contact with each other, a second series of members surrounding the first series and arranged concentric therewith, and a switch-plug having electrical connection with each set of members.

13. A flexible conductor formed of an inner series of substantially annular members arranged in electrical contact with each other, an outer series of members surrounding the inner series, a switch-plug having electrical connection with each set of members, an insulating material separating the two series of members, and a casing carried by the plug and covering the outer series of said members.

14. A flexible conductor comprising a switch-plug, a cord or chain secured to the plug, a series of overlapping contact members carried by the cord, a second series of contact members surrounding the first series, means for adjusting the tension of the cord or chain to compress said members, an insulating material separating the two sets of members, and a casing covering the outer series of members and carried by the switch-plug.

15. A flexible conductor comprising a switch-plug provided with a terminal socket, a cap seated in said socket, a cord one end of which is disposed within the cap, a series of contact members carried by the cord, a second series of contact members surrounding the first series and having electrical connection with the switch-plug, an insulating material separating the two series of contact members, and a covering for the outer series of said contact members.

16. A flexible conductor provided with a terminal housing and formed of a series of overlapping members having electrical contact with each other, and means arranged within the housing for maintaining said rings in position.

17. A conductor provided at one end with a housing and at the other with a switch-plug, a flexible supporting element extending longitudinally of the conductor and having one end thereof secured to the switch-plug, a threaded sleeve arranged within the housing and supporting the opposite end of the flexible element, a series of contact members carried by the latter, a spring carried by the threaded sleeve for compressing said contact members, and a second series of contact members surrounding the first series and electrically connected with the switch-plug.

18. A conductor provided at one end with a housing and at the other with a switch-plug, a flexible supporting element extending longitudinally of the conductor and having one end thereof connected to the switch-plug, a series of substantially annular contact members carried by the supporting element, a pair of telescopic threaded sleeves arranged within the housing, blocks slidably mounted in the threaded sleeves and adapted to engage the opposite end of the supporting element, a spring carried by the latter and engaging said blocks, and a second series of contact members surrounding the first series and electrically connected with the switch-plug.

19. A flexible conductor formed of a series of overlapping contact members, a second series of overlapping contact members surrounding the first series and arranged concentric therewith, a conducting-strip having electrical connection with one set of contact members, and a switch-plug having electrical connection with the second set of contact members.

20. A flexible conductor formed of a series of overlapping members arranged in electrical contact with each other, a second series of overlapping members surrounding the first series, a terminal forming one end of the conductor and having electrical connection with both sets of contact members, and a plug-tip carried by the opposite end of the conductor and also electrically connected with both sets of contact members.

21. A conductor formed of a plurality of contacting members, and means tending to normally shorten said conductor and maintain the members in constant engagement with each other.

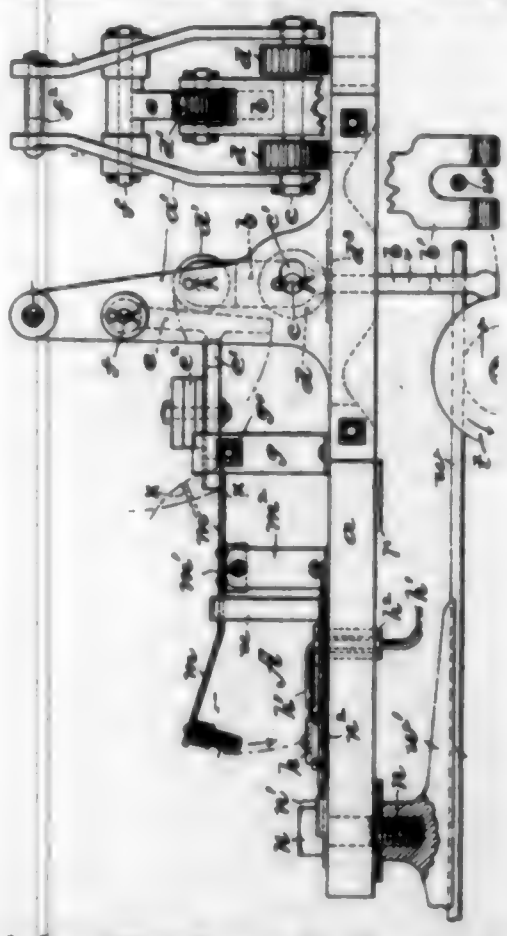
22. A conductor formed of a plurality of contacting members, means for exerting pressure on said members in the direction of the length of the conductor, and means for varying the pressure exerted on said members.

23. A conductor formed of a plurality of overlapping contacting members, and means tending to normally shorten said conductor and maintain the members in constant engagement with each other.

24. A conductor formed of a plurality of sets of contact members, means for exerting pressure on each set of contact members in the direction of the length of the conductor, and means for varying the pressure exerted on said members.

25. A conductor formed of an inner and an outer set of contact members each set comprising a plurality of overlapping members, and means tending to shorten the conductor and maintain the members of each set in engagement with each other.

815,499. AUTOMATIC OVERHEAD-TROLLEY CONTACT DEVICE FOR OPERATING ELECTRIC SIGNALS. BERCHER D. WHITCOMB, Shawomet Beach, R. I., assignor of one-half to George M. Bronson, Providence, R. I. Filed Nov. 20, 1905. Serial No. 288,111.



Claim.—1. In an automatic overhead-trolley contact device for operating electric signals, the combination with a normally non-energized or open fixed contact adapted to be connected with a signal located at a distance, of an electrically-energized self-closing movable contact member, self-setting holding means coöperating with said movable contact member for keeping the latter normally disengaged from said fixed contact, and a trolley wheel or member movable with an electrically-propelled car, arranged whereby the said movable contact member is released and the signal-circuit thereby energized or closed upon the engagement of the trolley-wheel with said holding means.

2. In a device of the character described, the combination of a tilting self-dropping contact-lever *m* adapted to be continuously energized, a suitably-connected normally open fixed contact arranged to be made operative by the engagement therewith of said contact-lever, a swinging weighted member *c* for keeping said lever normally disengaged from the fixed contact, and an operating-arm *b* in engagement with and arranged to actuate said member *c* to release the contact-lever, the lower portion of the arm *b* when in use being located in the path of and adapted to be engaged by the trolley-wheel of an electric car, substantially as described.

3. In a device of the character described, the combination with the base of the device and side frames provided with oppositely-disposed elongated bearings, of an axle journaled in said bearings, rolls mounted on the axle and supported by said base, and an operating-arm also mounted on said axle and extending downwardly through the base to freely receive a trolley-wire, substantially as described.

4. In a device of the character described, the combination with the suitably-mounted self-dropping coöperating levers or members, *b* and *c*, adapted to be actuated by the trolley-wheel of an electrically-propelled car, of an electrically-energized tilting contact-arm *m* arranged to be kept normally elevated by said members, and a fixed contact adapted to be connected with a signal device made automatically operative by means of the current passing through the said fixed contact from said arm *m* when the latter is released from the member *c*, substantially as described.

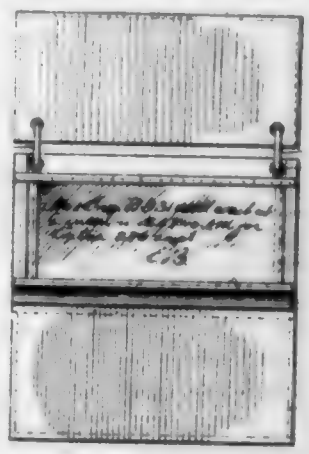
5. In a device of the character described, the combination of a swinging continuously-energized or live contact member *m*, a normally inactive fixed contact and connection arranged to conduct an electric current to a signal device, and means for keeping said member *m* normally disengaged from said fixed contact, constructed and arranged whereby when in use upon releasing the member *m* it automatically engages and energizes said fixed contact member and connection, for the purpose hereinbefore set forth.

6. In a device of the character described, having a fixed contact adapted to be connected with a signal device, and a movable contact member *m* capable of being continuously energized, the combination therewith of self-setting holding means in normal engagement with the said movable contact member, arranged whereby the latter is adapted to automatically engage and energize the fixed contact member upon being released from said holding means.

7. In a device of the character described, the combination of a normally non-energized fixed contact, an electrically-charged movable contact member, means for holding said movable member normally disengaged from the fixed one, and a trolley-wheel adapted when traveling in one direction to engage and actuate said holding means thereby releasing the said movable contact member to engage and energize the fixed member; said holding means remaining inoperative or idle when the wheel is traveling in the reverse or opposite direction, substantially as described.

8. In a device of the character described, provided with a fixed contact capable of being energized, a movable contact member, and a holding device arranged to keep said movable contact-member normally disengaged from the fixed member, in combination with an electrically-charged trolley-wire supporting the above-named parts and at the same time energizing said movable contact member, a conductor *h'* connected with said fixed contact adapted to be connected with a signal device, and a traveling trolley-wheel adapted to engage and actuate said holding device thereby freeing the movable contact member, the latter automatically dropping onto and energizing said fellow or fixed contact member and the conductor *h'*, substantially as described.

815,500. TRAIN-ORDER-HOLDING DEVICE. ALVA E. WILLIAMS, Aurora, Nebr. Filed Mar. 1, 1905. Serial No. 248,186.



Claim.—1. In a device of the character described, the combination of reversible holder-frames, each of said frames comprising an apertured sheet constituting a back, and a spring-pressed sheet, constituting a front, secured to the lower portion of said back, and means positioned within the apertured portions of said sheets for securing the holder-frames together.

2. In a device of the character described, the combination of reversible, connected holder-frames, one of said holder-frames provided with a movable flap, and each of said frames comprising a back, a transparent sheet secured to said back, and resilient means for normally holding said sheet in substantially a parallel position with said back.

3. In a device of the character described, the combination of a plurality of reversible holder-frames, a flap constituting a cover secured to one of said frames, each of said frames comprising a back, metallic eyelets secured to said back, a transparent sheet secured to

said back near its lowest end, reinforcing means secured to the edges of said sheet, parallel springs secured to said sheet and back, and means engaging the eyelets of said backs for securing said holder-frames together.

4. In a device of the character described, the combination of a plurality of detachable and reversible holder-frames, a flap constituting a cover secured to one of said holder-frames, each of said holder-frames comprising an apertured back, a front secured to said back comprising a transparent sheet, said sheet secured to the back throughout one of its longitudinal edges, reinforcing means secured to the edges of said transparent sheet, parallel springs secured to said back and inclosed by said reinforcing means, and looped means engaging the apertured portion of each of said holder-frames for securing the same in a folded position.

5. In a device of the character described, the combination of reversible holders, means connecting said holders, each of said holders comprising a back, separate springs fixedly secured at one end to said back, and transparent means positioned between said springs.

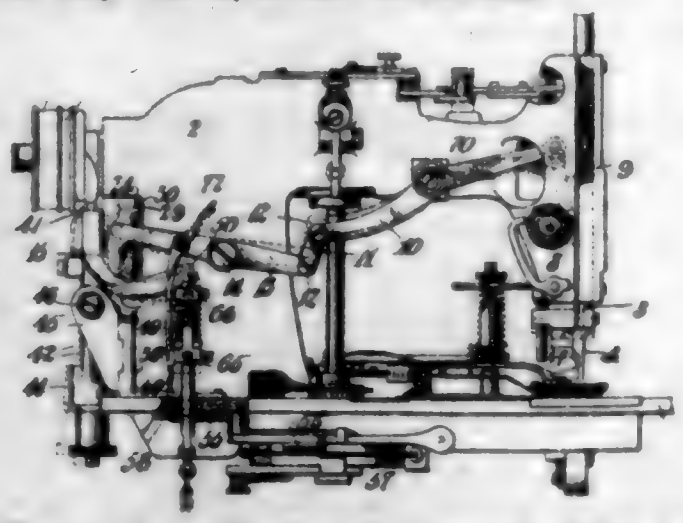
6. In a device of the character described, the combination of movable holders, means connecting said holders, each of said holders comprising a back and clamping means fixedly secured at one end to said back, and a flap secured to one of said holders adapted to be folded in a substantially parallel position to said holder.

7. In a device of the character described, the combination of reversible holders, means connecting said holders, each holder comprising a back and a flexible front, and a flap secured to one of said holders.

8. In a device of the character described, the combination with reversible holders, means for connecting said holders, each of said holders comprising a back and clamping means fixedly secured to said back, and a flap secured to one of said holders.

9. In a device of the character described, the combination of reversible holders, means for connecting said holders, each of said holders comprising a back and a flexible front, said back and front fixedly secured together throughout one of their edges, and a flap constituting a cover secured to one of said holders and adapted to overlap a portion of said holders.

815,501. BUTTONHOLE-CUTTING DEVICE FOR SEWING-MACHINES. EDWARD B. ALLEN, Elizabeth, N. J., assignor to The Singer Manufacturing Company, Elizabeth, N. J., a Corporation of New Jersey. Filed May 13, 1905. Serial No. 260,221.



Claim.—1. The combination with a buttonhole-stitching machine comprising suitable stitch-forming mechanism, of a buttonhole-cutting device adapted to receive a two-stage cutting movement in one and the same direction, manually-actuated means for imparting to said cutting device the first stage of the cutting movement, and automatically-acting means independent of the stitch-forming mechanism for communicating the final stage of the cutting movement.

2. The combination with a buttonhole-stitching machine, of a two-stage buttonhole-cutting mechanism comprising a cutter-bar, an automatically-acting actuator therefor, means including a coupling device for connecting said cutter-bar with said actuator, and manually-actuated means for first imparting to said cutter-bar the first stage of its cutting movement and then bringing into operative relation the interengaging parts of the coupling device to effect the automatic production of the final stage of the cutting movement.

3. The combination with a buttonhole-stitching machine, of a stop-motion, cutting mechanism, an actuator therefor, a coupling device for temporarily connecting said cutting mechanism with its actuator, and common manually-controlled operating means having independent connections with said cutting mechanism, and stop-motion adapted to successively effect the coupling of said cutting mechanism with its actuator and the starting of the machine.

4. In a buttonhole-sewing machine, the combination with stitching mechanism, cutter mechanism including a tilting lever, an actuator operative continuously while the stitching mechanism is in operation, a coupling device intermediate the cutting mechanism and its actuator of which the initial coupling position of one member is controlled by said tilting lever, manually-operative means for tilting said lever to bring the component members of the coupling device into operative relation, and means for automatically disengaging said members after a cutting operation.

5. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion, cutter mechanism operative independently of said stop-motion, an actuator therefor, a coupling device intermediate said cutter mechanism and its actuator, common manually-operative means for bringing the component members of said coupling device into operative relation and subsequently actuating the stop-motion to set the machine in operation, and means for automatically disengaging said members of the coupling device.

6. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion including a vibrating stop-lever, cutter mechanism operative independently of said stop-motion and including a tilting lever, an actuator therefor continuously operative while the stitching mechanism is in action, a coupling device intermediate said cutter mechanism and its actuator and having one of its component members movable into its initial coupling position by said tilting lever, and common manually-operative means connected independently with said tilting lever and said stop-lever for first tilting the former to bring the coupling members into operative relation and then actuate said stop-motion.

7. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion, cutter mechanism operative independently of said stop-motion, an actuator therefor, a coupling device intermediate said cutter mechanism and its actuator and having one of its component members movable into its initial coupling position by a member of said cutter mechanism, and common manually-operative means yieldingly connected with said cutter mechanism and positively connected with said stop-motion for first bringing the component members of said coupling device into operative relation and then actuating the stop-motion to set the machine in operation.

8. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion, cutter mechanism operative independently of said stop-motion, an actuator therefor, a coupling device intermediate said cutter mechanism and its actuator and having one of its component members movable into its initial coupling position by a member of said cutting mechanism, common manually-operative means having a detachable yielding connection with said cutter mechanism and a positive connection with said stop-motion for first bringing the component members of said coupling device into operative relation and then actuating the stop-motion to set the machine in operation, and a device acting automatically to disengage said yielding connection of the manually-operative means from said cutter mechanism.

9. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion including a vibrating stop-lever having a lateral arm, cutter mechanism including a tilting lever, an actuator therefor continuously operative while the stitching mechanism is in action, a coupling device intermediate said cutter mechanism and its actuator and having one of its component members movable into its initial coupling position by said tilting lever, and common operative means comprising a positive connection with said stop-motion and a yielding connection with said tilting lever for actuating the same successively to couple the cutter mechanism and actuator and thereafter set the machine in operation.

10. In a buttonhole-sewing machine, the combination with stitching mechanism, a stop-motion, cutter mechanism operative independently of said stop-motion, an actuator therefor, a coupling device intermediate said cutter mechanism and its actuator and having one of its component members movable into its initial coupling position by a member of said cutter mechanism, common manually-operative means having a detachable yielding connection with said cutter mechanism and a positive connection with said stop-motion for first bringing the component members of said coupling device into operative relation and then actuating the stop-motion to set the machine in operation, and a device acting automatically to disengage said yielding connection of the manually-operative means from said cutter mechanism, means being provided whereby said disengagement may be manually effected.

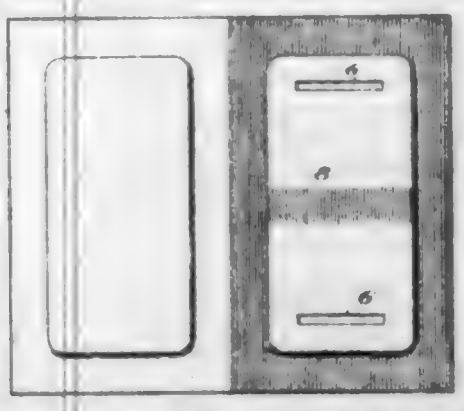
11. In a buttonhole-sewing machine, the combination with stitching mechanism, a reciprocating actuator continuously operative while the stitching mechanism is in action, a coupling-lever carried by said actuator, cutter mechanism including a tilting lever carrying a coupling member adapted for engagement with said coupling-lever but maintained normally out of operative relation therewith, and means for manually moving said tilting lever to impart to the cutter mechanism an initial stage of a cutting operation and to bring the coacting coupling parts into coupling relation whereby a final stage of the cutting operation may be effected.

12. In a buttonhole-sewing machine, the combination with stitching mechanism, and cutter mechanism including a cutter-bar mounted for endwise operative movement only, and independent means for actuating said cutter mechanism to impart to said cutter-bar two separate stages of its full stroke in the same direction.

13. In a buttonhole-sewing machine, the combination with stitching mechanism, and cutter mechanism including a cutter-bar carrying a suitable knife and mounted for endwise operative movement only, manually-operative means for actuating said cutter mechanism to impart an initial stage of its movement in one direction, and automatically-acting means also actuating said cutter mechanism to impart to said cutter-bar a final stage of movement in the same direction.

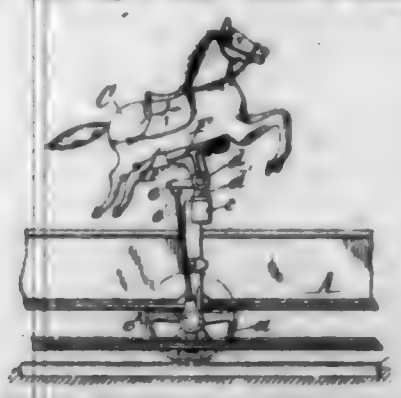
14. In a buttonhole-sewing machine, the combination with stitching mechanism, and cutter mechanism including a cutter-bar carrying a suitable knife and mounted for endwise movement only, manually and automatically acting means for successively actuating said cutter mechanism to impart to said cutter-bar two stages of movement in the same direction, devices being provided whereby each of said means is disconnected from said cutter mechanism while the other is acting upon the same.

815,502. COIN-HOLDING CARD. JULIAN C. ANDERSON, Richmond, Va., assignor to The Duplex Envelope and Printing Company, Inc., Richmond, Va., a Corporation of Virginia. Filed May 17, 1905. Serial No. 260,847.



Claim.—A coin-carrier of stiff paper, square form and folded in two equal parts, one part provided with an adhesive substance around its edges including the edge at which the fold is made forming thereby a continuous united border inclosing a space, one of said folded parts having one or more openings adapted for the insertion of a coin, and both folded parts having an embossed or raised surface standing toward each other and bounded by said adhesive border thereby giving each fold the same stiffness and clamping function upon the coin.

815,503. RIDING-GALLERY. JAMES W. ARMITAGE, North Tonawanda, N. Y., assignor to Armitage-Herschell Company, North Tonawanda, N. Y. Filed Aug. 17, 1904. Serial No. 221,016.



Claim —1. The combination with a seat or device, and a support for the same, of attaching means for said device comprising parts secured to said device and to said support and having interlocking portions which are engaged and disengaged by sliding one of said parts on the other part, and a latch slidably mounted on one of said parts and releasably engaging said other part to hold the parts from disengagement, substantially as set forth.

2. The combination with a seat or device, and a support for the same, of attaching means for said device and support comprising parts secured to said device and to said support, one of said parts having a wedge-shaped socket and said other part having a wedge-shaped projection slidably engaging in said socket, and a latch releasably connecting said parts to hold said wedge-shaped projection from sliding out of said wedge-shaped socket, substantially as set forth.

3. The combination with a seat or device, and a support for the same, of attaching means for said device and support comprising parts secured to said device and to said support, one of said parts having a wedge-shaped undercut socket, and said other part having a wedge-shaped flanged projection slidably engaging in said socket, and a movable spring-pressed latch releasably connecting said parts to hold said projection from sliding out of said socket, substantially as set forth.

4. The combination with a seat or device, and a support for the same, of attaching means for said device and support comprising parts secured to said device and to said support, one of said parts having a wedge-shaped horizontal socket, and said other part having a wedge-shaped projection adapted to slide horizontally into and out of said socket, and means which act to force said wedge-shaped projection lengthwise into said socket, substantially as set forth.

5. The combination with a figure or seat, and a support for the same, of an attaching device for said figure or seat comprising a part secured to the figure or seat and a part secured to the support, one of said parts having a wedge-shaped projection which detachably engages in a correspondingly-shaped groove in the other part, and a spring-pressed latch pivotally connected to one of said parts and adapted to releasably engage a hook on the other part, substantially as set forth.

6. The combination with a figure or seat, and a support for the same, of an attaching device for said figure or seat comprising a part secured to the figure or seat and having a wedge-shaped groove, and a part secured to said support and having a wedge-shaped projection which detachably engages in said groove, a swinging latch slidably connected to said first-mentioned part and engaging a hook on said other part, and a spring confined in a pocket on the first-mentioned part for holding said latch in releasable engagement with said hook, substantially as set forth.

815,504. TOY CAR. FRANK V. BARTLETT, Detroit, Mich. Filed July 17, 1905. Serial No. 270,033.



Claim.—1. In a toy vehicle a single piece of sheet metal forming the floor and platform of the vehicle and having portions bent up to form the sides and platform-railings, portions turned down to form the pedestals and steps, and portions bent out to form the couplings, substantially as described.

2. In a toy vehicle the combination with a single piece of sheet metal forming the floor and platform of the vehicle and having portions bent up to form the sides and railings, portions bent out to form couplings, and portions turned down to form steps and pedestals, of wheels journaled in said pedestals and a roof secured to said sides, for the purpose described.

3. In a toy vehicle a single piece of metal forming the floor and platforms of the vehicle and having portions bent down to form steps, portions bent up to form sides and railings and the ends of the sides bent to form the ends of the vehicle, for the purpose described.

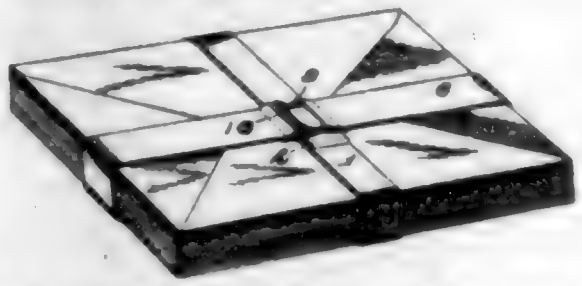
4. In a toy vehicle a single piece of metal forming floor and platform and having portions bent up to form sides and having portions of the floor slitted and turned down to form pedestals alined with said sides, for the purpose described.

5. In a toy vehicle a single piece of metal forming floor and platforms and having portions bent up to form sides and railings, portions slitted and bent to form couplings and steps, and portions slitted and turned down to form pedestals, for the purpose described.

6. In a toy vehicle the combination with a single piece of sheet metal forming floor and platforms and having portions bent up to form sides and railings and portions slitted and turned down from the floors to form pedestals, of a convex roof stamped from a single piece of metal and secured to said sides and having windows struck up therefrom, for the purpose described.

7. In a toy vehicle the combination with a single piece of sheet metal forming floor, sides and pedestals, of a convex roof secured to said sides, said roof having slits therein and one edge of said slits struck up to form windows, for the purpose described.

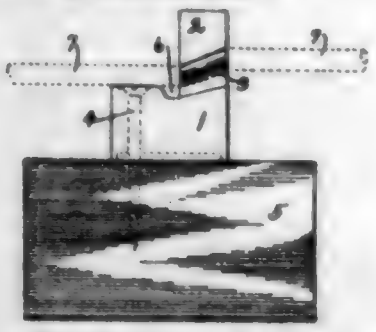
815,505. PACKET-HOLDER. FRANK B. BLACKER, Brentwood, N. Y. Filed May 1, 1905. Serial No. 258,311.



Claim.—1. A device of the character described comprising two elastic bands disposed at right angles to each other, a double loop slidably connecting the bands at one of their points of intersection, one end of one of the bands being permanently connected to the other band at the other point of intersection, and means for detachably securing said end to the other end of the same band.

2. A device of the character described comprising an endless band, another band disposed at right angles thereto, both of said bands being formed of elastic material, a double loop slidably connecting the two bands at one of their points of intersection, one end of one of the bands being permanently connected to the other band at the other point of intersection, a loop connected to the secured end and having a cross-bar thereon, and an engaging loop extending from the free end and adapted to project into the first-mentioned loop and engage its cross-bar to hold the ends together.

815,506. INSULATOR. HERBERT S. BLYNT, Steubenville, Ohio. Filed Jan. 7, 1904. Serial No. 188,090.



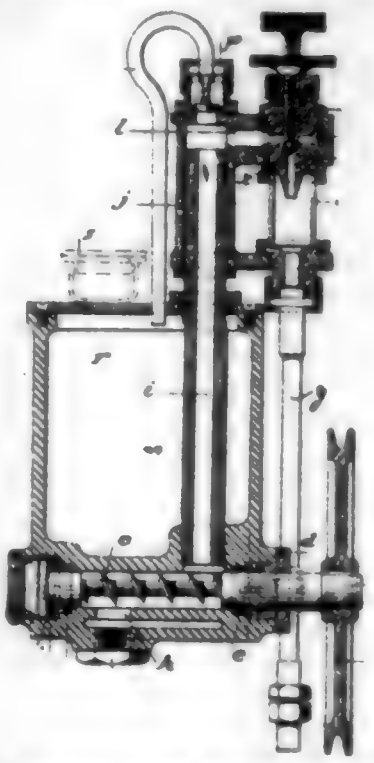
Claim.—An insulator constructed of a single piece of material and comprising a body portion, a lug projecting vertically from a portion of the body portion, said lug being formed with a tapered recess inclining downwardly toward the body portion, the upper and lower edges of the respective ends of said recess being sharpened, said body portion being formed with a groove adjacent the lower end of said recess whereby to facilitate the insertion of the wire in the recess.

815,507. FOLDING CHAIR. WILLIAM A. BRADLEY, Chesterton, Ind. Filed Nov. 17, 1904. Serial No. 233,232.



Claim.—In a folding chair, the combination of two sets of cross pivoted legs, each set of legs consisting of parallel members, a pair of cross pivoted braces connecting the parallel members of each set, each member of said cross-braces pivotally connected to one of the parallel members at one end and having slot-and-pin connections with one of the said parallel members at the other end, a second pair of braces connecting the said parallel members of each set, said second pair of braces having pivotal connection with the parallel members at one end and having interlocking and pivotal engagement with each other at the other end.

815,508. MECHANICAL LUBRICATOR. MAURICE BRIET, Paris, France. Filed Jan. 12, 1904. Serial No. 188,726.



Claim.—1. In a mechanical lubricator an oil-reservoir, a cylinder near the bottom of the same, and in communication therewith an Archimedean screw revolubly journaled in said cylinder and driven by the machine, a stand-pipe *i* and a support *j* carried thereby at its upper end, a delivery-nozzle screwed into said support *j*, a needle-valve adapted to open and close said nozzle, an oil-pipe *y* leading to the parts to be lubricated and a glass tube *w* inserted between said nozzle and said oil-pipe, substantially as described.

2. In a mechanical lubricator an oil-reservoir, a cylinder near the bottom of the same, and in communication therewith, an Archimedean screw revolubly journaled in said cylinder and driven by the machine, a stand-pipe *i* and a support *j* carried thereby at its upper end, a pressure-valve *p* in said support above the stand-pipe *i* and an overflow-pipe *q* for the excess of oil, a delivery-nozzle screwed into said support *j*, a needle-valve adapted to open and close said nozzle an oil-pipe *y* leading to the parts to be lubricated and a glass tube *w* inserted between said nozzle and said oil-pipe substantially as described.

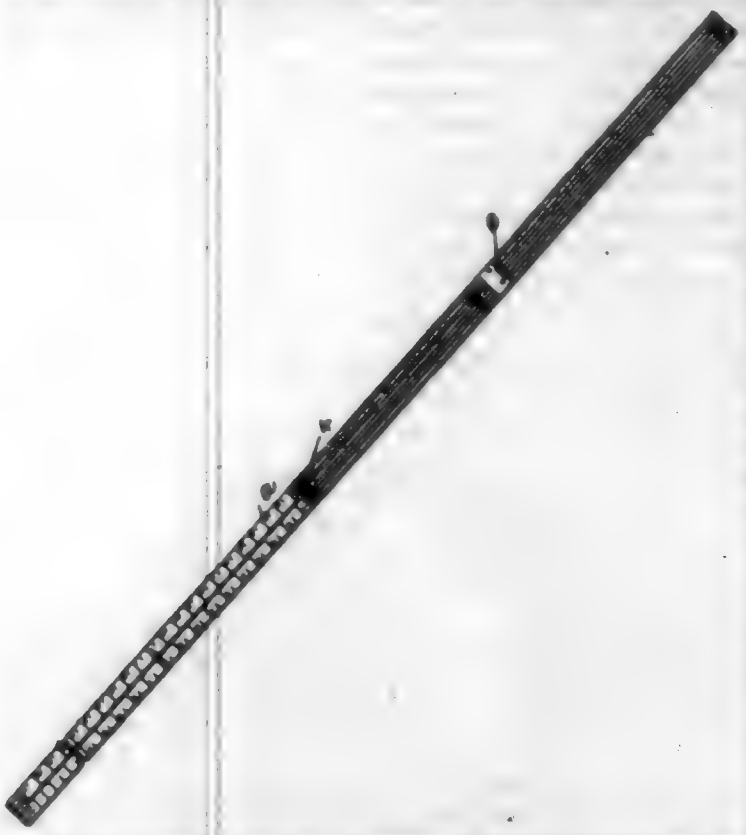
3. In a mechanical lubricator an oil-reservoir, a cylinder near the bottom of the same, and in communication therewith, an Archimedean screw revolubly journaled in said cylinder and driven by the machine, a stand-pipe *i* and a support *j* carried thereby at its upper end, a number of delivery-nozzles, screwed into vertical openings of the support and comprising annular grooves *n*, said support having longitudinal channels *k* between the individual nozzles in communication with the stand-pipe *i* by said annular grooves and a channel *l*, needle-valves adapted to open and close said nozzles, oil-pipes *y* leading to the parts to be lubricated and glass tubes *w* inserted between said nozzles and said oil-pipes substantially as described.

815,509. MEASURING INSTRUMENT. EUGENE W. CAMPAGNA, Randolph, Mass. Filed July 16, 1904. Serial No. 216,797.

Claim.—1. A measuring instrument comprising two parts movable with relation to each other, one of said parts having an indication-mark, and the other carrying a plurality of scales corresponding to different pitches of roof, each scale being so marked that the distance from any graduation-mark thereon to the end of the scale is the amount which a rafter for a roof of the pitch corresponding to said scale is longer than the run of said rafter, in a building one-half the width of which is equal to the number of said graduation.

2. A measuring instrument comprising two parts movable with relation to each other, one of said parts having an indication-mark and the other carrying a plurality of scales corresponding to different pitches of roof, each scale being so marked that the distance from any graduation-mark thereon to the end of the scale is the difference between the length of a rafter for a roof of a pitch corresponding to said scale in a building one-half the width of which is measured by the number of said graduation, and one-half the width of said building, combined with a third part movable with relation to the other two parts, said third part having scales thereon for giving the length of the hip-rafter.

3. A measuring instrument comprising three parts slidable with relation to each other, the outer or upper part being provided with an indication-mark, the intermediate part having on its face over which the outer or upper part moves one or more scales, each being so marked that the distance between any graduation-mark thereon and the end of the scale is the difference between a known measurement and a desired measurement when the known and desired measurements have a definite relation to each other, said intermediate part also having an indication-mark, and the face of the inner or third part being provided with one or more scales, each marked similarly to the scales on the intermediate part but adapted for giving a different measurement from those on the intermediate part.



4. A measuring instrument comprising two parts movable with relation to each other, the face of one of said parts being scaled in feet and inches, an indication-mark carried by said part, the face of the other part carrying a plurality of scales corresponding to different pitches of roof, each scale being divided into divisions each of which is subdivided into twelfths, said divisions being so arranged that the distance from any graduation-mark on any scale to the end of the scale is the difference between the length of a rafter for a roof of a pitch corresponding to said scale in a building one-half the width of which is measured by the number of said graduation and one-half the width of said building.

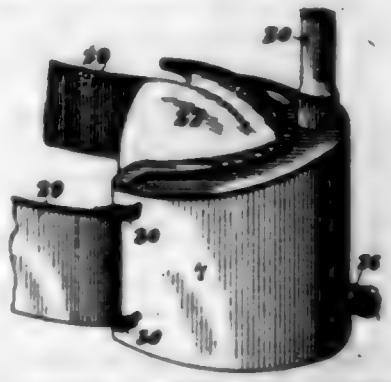
5. A measuring instrument comprising two parts movable with relation to each other, one of said parts having scales in feet and inches and an indication-mark, and the other part carrying a plurality of scales corresponding to different pitches of roof, the main graduations on each of said latter scales being subdivided into twelve subdivisions and each of said scales being so marked that the distance from any graduation on any scale to the end of said scale is the difference between the length of a rafter for a roof of a pitch corresponding to said scale in a building one-half the width of which is measured by the number of said graduation and one-half the width of said building.

6. A measuring instrument comprising three parts slidable one on the other, one part having an indication-mark, the second and third parts each having marked thereon a plurality of scales corresponding to the different pitches of roof, each scale on the second part being so marked that the distance from any graduation-mark thereon to the end of the scale is the difference between the length of a common rafter for a roof of a pitch corresponding to said scale in a building one-half the width of which is measured by the length of the scale and one-half the width of the building, and each scale on the third part being so marked that the distance from any graduation-mark thereon to the end of the scale is the difference in length between a hip-rafter and a common rafter for a roof of a pitch corresponding to said scale in a building one-half the width of which is measured by said graduation.

7. A measuring instrument comprising three parts superposed one on the other and each part slidable with relation to the others, the top part having its exposed face marked to indicate feet and inches, and its end constructed to constitute an indication-mark, the intermediate part having on its face over which the top part moves a plurality of scales corresponding to different pitches of roof, each scale being so marked that the distance between any graduation-mark thereon to the end of the scale is the difference between the length of a common rafter of a roof of a pitch corresponding to said scale in a building one-half the width of which is indicated by the said graduation-mark and the run of said rafters, the end of said intermediate part constituting an indication-mark for the scales on the third part, and the face of the third part with which the intermediate part contacts being provided with a plurality of scales, each so marked that the distance from any graduation-mark thereon to the end of the scale is the difference in length between a hip-rafter and a common rafter for a roof of a pitch corresponding to said scale in a building one-half of the width of which is indicated by said graduation.

8. A measuring instrument comprising three parts slidable with relation to each other, the outer or upper part being provided with an indication-mark, the intermediate part having on its face over which the outer or upper part moves a plurality of scales corresponding to different pitches of roof, each scale being so marked that the distance between any graduation-mark thereon and the end of the scale is the difference between the run and the length of a common rafter in a roof of a pitch corresponding to said scale in a building, one-half the width of which is indicated by the number of said graduation-mark, said intermediate part having also an indication-mark, and the face of the inner or third part being provided with a plurality of scales, each so marked that the distance from any graduation-mark thereon to the end of the scale is the difference in length between a hip-rafter and a common rafter for a roof of a pitch corresponding to said scale in a building, one-half of the width of which is indicated by said graduation.

815,510. INHALER. RAYMOND C. COBURN, Upper Sandusky, Ohio. Filed June 14, 1904. Serial No. 212,555.



Claim.—1. An inhaler including an extensible cup formed of substantially inflexible walls, and having an open rear side to receive a patient's face, and edges which fit against the same.

2. An inhaler including an extensible cup comprising substantially inflexible walls, and provided with a rear open side to receive a patient's face, said cup also having a valved air-outlet and a gas-inlet.

3. An inhaler including an extensible cup comprising relatively adjustable face-covering sections said inhaler being provided with a face-receiving opening located partially in each section.

4. An inhaler including an extensible cup comprising telescoped face-covering sections, said inhaler being provided with a face-receiving opening located partially in each section.

5. An inhaler including an extensible cup comprising slidably-associated telescoped face-covering sections, said cup being provided with a valved air-outlet and a gas-inlet and a face-receiving opening located partially in each section.

6. An inhaler including an extensible cup comprising slidably-associated face-covering sections, and means for holding the same against their sliding movements.

7. An inhaler including an extensible cup comprising slidably-associated sections, and a clamping-bolt carried by one section and slidably engaging the other section, said clamping-bolt constituting means for holding the sections against relative movement.

8. An inhaler including an extensible cup comprising slidably-associated telescoped sections, one of said sections having a slot, and a clamping-bolt carried by the other section and slidably engaging in the slot, said clamping-bolt constituting means for holding the sections against relative movement.

9. An inhaler including an extensible cup comprising slidably-associated telescoped sections, the inner of said sections being provided with a slot, a cap element secured to the inner section and covering the slot, a clamping-bolt passing through the slot and having a

head at its inner end located within the cup element, and an exposed thumb-nut threaded on the bolt.

10. An inhaler including a cup having an open face-receiving side and comprising tapering slidably-telescoped sections, one of said sections having a nose-receiving recess, the other having a lip-receiving recess.

11. An inhaler including a cup having an open face-receiving side and comprising slidably-associated sections, one of said sections having a nose-receiving recess, and a yielding cap covering the same.

12. An inhaler including a cup having an open face-receiving side, said cup tapering toward its opposite side and comprising slidably-telescoped sections, one of said sections having a top provided with a nose-receiving recess, the other of said sections having a bottom provided with a lip-receiving recess.

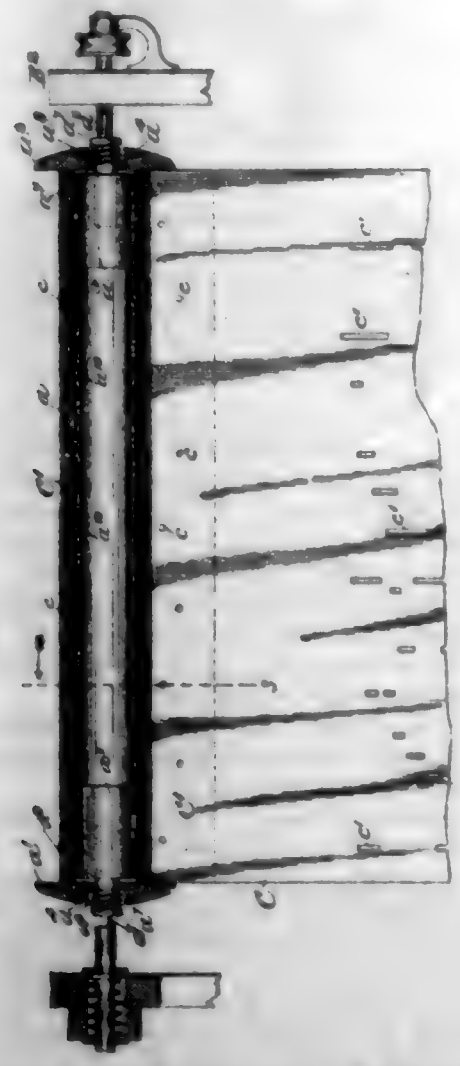
13. An inhaler including a cup comprising relatively adjustable sections, one of said sections having a valved air-outlet, the other having a gas-inlet.

14. An inhaler including a cup comprising slidably-telescoped sections, one of said sections having a top provided with a nose-receiving recess and a gas-inlet nipple, the other of said sections having a bottom provided with an outlet-nipple, and an outwardly-opening valve located therein.

15. An inhaler including a face-covering cup having a top, a bottom and a front wall defining a nose-receiving interior, a valved air-outlet in said bottom of the cup communicating with the lower portion of the interior and beneath a patient's nose placed therein, and a gas-inlet connected to the top and communicating with the upper portion of the nose-receiving interior.

16. An inhaler including a face-covering cup having a top, a bottom and a front wall defining a nose-receiving interior, a nipple depending from the bottom and having an air-outlet passage communicating with the nose-receiving interior, said passage being disposed beneath a patient's nose placed in said interior, an outwardly-opening valve in the nipple controlling the passage, and a gas-inlet nipple connected to the top of the cup in opposing relation to the outlet and communicating with the upper portion of the said interior.

815,511. COMPENSATING SPOOL. FRANK B. COLE, Boston, Mass. Filed July 18, 1904. Serial No. 216,971.

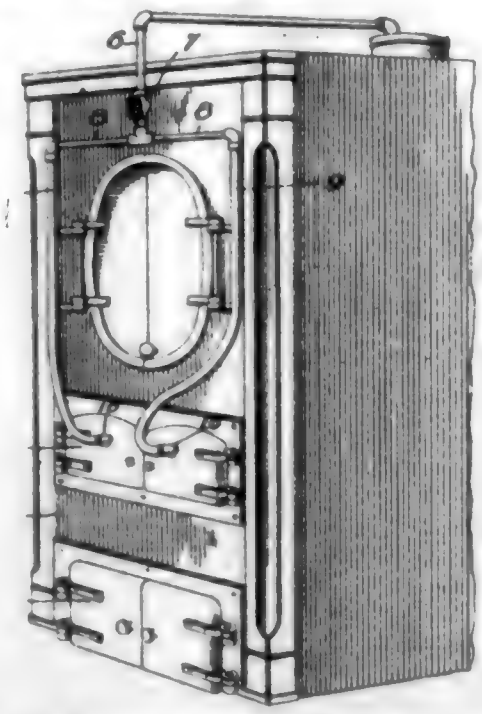


Claim.—1. A spool of the character specified having a main spindle, adjustable flanges under tension upon either end thereof, and in combination with said main spindle, paper wound around the same to form an auxiliary spindle slightly wider than said main spindle, and around which the perforated music-sheet is wound, which auxiliary spindle bears against said flanges and with coils sufficient in number to withstand the tension thereof when the perforated music-sheet has been unwound in the operation of the spool, substantially as and for the purposes set forth.

2. A spool of the character specified having a spindle, adjustable flanges under tension upon either end thereof, and in combination with said spindle, a music-sheet slightly wider than said main spindle, a portion of which sheet is wound around said main spindle to form an auxiliary spindle with the edges thereof bearing against said flanges and with coils sufficient in number to withstand the tension thereof when the playing portion of the sheet has become unwound in the operation of the spool and which auxiliary spindle or portion of said sheet remains on said main spindle when the playing portion of said sheet has become unwound in the operation of the spool, substantially as and for the purposes set forth.

3. A spool of the character specified having an adjustable flange and mounting therefor, a stop on said mounting for limiting the adjustment of said flange, and a spring on said mounting between said stop and flange, which spring extends into a recess on said flange to bear against a shoulder inside the same and which recess is made larger than said stop, substantially as described.

815,512. FUEL-ECONOMIZER. WILLIAM B. COLE, Norfolk, Va. Filed Sept. 1, 1904. Serial No. 223,015.



Claim.—1. In combination with the front of a steam-boiler furnace, and the steam-drum of a boiler, the rearwardly-recessed fire-door 4, hinged to said front, and the inner plate 4*, of said door having flanges on its top and sides, a steam-pipe to lead steam forward of said door, a valve thereon, a flexible pipe leading from the steam-pipe to the fire-door, and an injector intermediate of the boiler and the fire-door, substantially as described.

2. In combination with the front of a steam-boiler furnace, and the steam-drum of a boiler, the fire-door 4, hinged to said front, a steam-pipe to lead steam toward said front, a valve thereon, a flexible connection leading from the steam-pipe to the fire-door, and an injector intermediate of the valve and the fire-door 4, said door consisting of a plate flanged inwardly all around and the inner plate 4* having flanges on the top and sides but a flangeless bottom, substantially as shown and described.

815,513. PORTABLE WALL. HUGH B. COPELAND, Denver, Colo. Filed Feb. 27, 1905. Serial No. 247,437.



Claim.—1. In a portable wall, the combination with a suitable stationary support, of sectional pieces or slabs provided with openings therethrough registering with openings formed in the support, a fastening device passed through the registering openings of the

slab and the support, the slab being recessed surrounding the opening for the fastening device, and a concealing-plate inserted in the recess and covering the extremity of the fastening device but not connected therewith, substantially as described.

2. The combination with a stationary support provided with an opening, a slab provided with a vertically-elongated opening, a fastening device passed through the opening in the slab and the opening in the stationary support, the opening in the latter being of a size to fit the fastening device, the slab being recessed around the outer extremity of the fastening-device opening, and a concealing-plate secured in said recess and covering the opening of the fastening device.

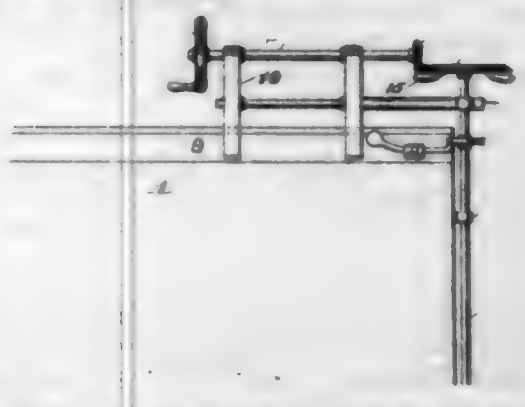
3. In a portable wall, the combination with a suitable stationary support provided with an opening, a slab provided with an elongated opening, a fastening device passed through the openings in the slab and the support, the opening in the support being adapted to fit the fastening device, the slab being provided with an exterior recess surrounding the opening for the fastening device, a washer surrounding the fastening device and forming a seat for the head of the latter, a plate located in the recess adjacent to the head of the fastening device, and another plate located in the recess of the slab and suitably secured in place, substantially as described.

4. The combination of a stationary support provided with an opening, a slab also provided with an opening, a bolt passed through the openings of the two members, a nut applied to its inner extremity for holding the bolt in place, the slab being recessed around the bolt-hole, a washer having a sleeve portion entering the bolt-hole and engaged by the bolt, a plate placed in the recess of the slab and concealing the head of the bolt, and another plate placed in the recess and concealing the first-named plate, the plates being secured in place, substantially as described.

5. A portable wall comprising stationary fastening parts, slabs provided with interlocking adjacent edges, the slabs being provided with openings passing therethrough, and exterior recesses formed therein surrounding the openings, fastening devices passed through the openings in the slabs and the stationary parts, and concealing devices placed in the recesses for concealing the fastening devices, substantially as described.

6. A slab or tile having a recess formed part way therethrough and provided with a hole extending from the bottom of the recess through the tile, a fastening device passed through the hole, and a device fitted into the said recess and concealing the fastening device exteriorly, the concealing device being distinct from the fastening device and suitably held in place.

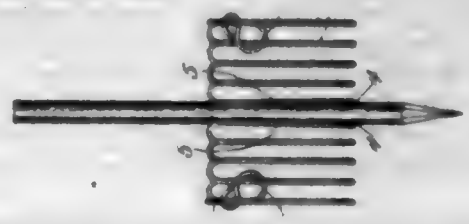
815,514. BRAKE. ALBERT L. CRAVER, Linwood, N. C. Filed Dec. 12, 1905. Serial No. 291,446.



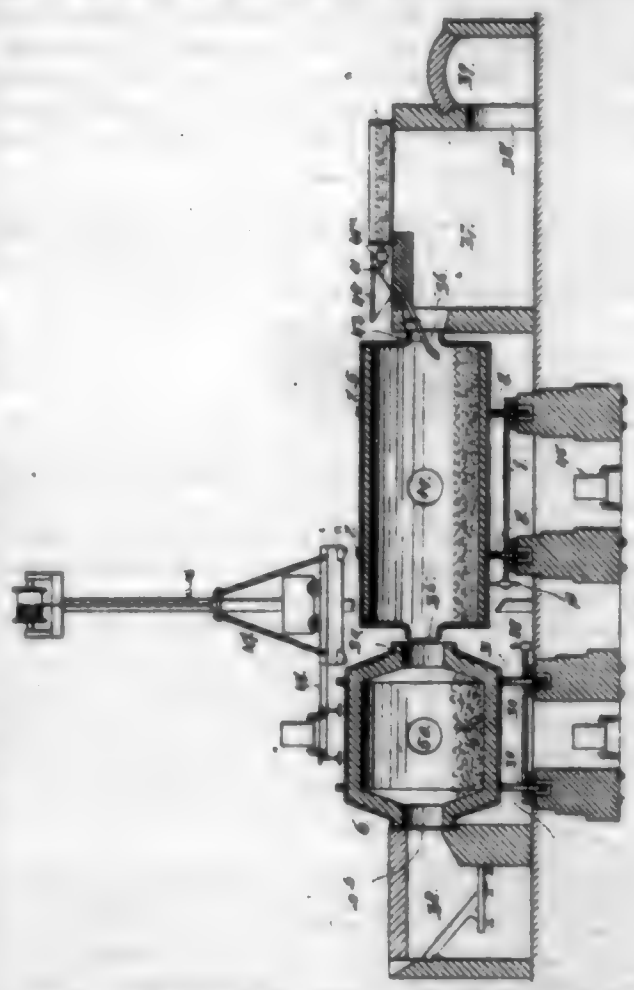
Claim.—The combination with a car having standards thereon and a horizontal shaft mounted upon the standards and extending longitudinally of the car, said shaft having a hand-wheel at one end and a gear at its other end; of a brace-rod rigidly connecting the standards and projecting beyond one end of the car, a rotatable rod journaled within the brace-rod, a gear secured at one end of the rotatable rod and meshing with the first-mentioned gear, gripe radiating from the gear on the rotatable rod and constituting a hand-wheel, a ratchet-wheel secured to the rotatable rod, and overlapping the top of the car, a bracket secured to the car-top, and a weighted lever pivoted within the bracket and normally engaging and locking the ratchet-wheel, said lever being adapted to be operated by the foot.

815,515. PENCIL-HOLDER. ERNEST M. CYPHERS, Greenville, Mich. Filed May 16, 1905. Serial No. 260,716.

Claim.—A device of the character described consisting of a single length of spring-wire bent to produce parallel members, said members being folded along the longitudinal center of the device to form parallel-connected series of members, and spring-clips integral with the ends of the wire.



815,516. APPARATUS FOR CONVERTING ZINC-SULFATE SOLUTION INTO ZINC OXID. CHAUNCEY B. DEWEY, Denver, Colo., assignor to The American Zinc and Chemical Company, Denver, Colo. Filed Jan. 24, 1905. Serial No. 242,570.



Claim.—1. In an apparatus for converting zinc sulfate into zinc oxid, the combination of two independently-revoluble axially-alined chambers arranged in suitable proximity to each other and having adjacent open extremities, means for delivering heat to one chamber at its extremity remote from the other chamber, means for delivering the zinc-sulfate solution to the chamber remote from the heat-generating means, and means exterior to the chambers for transferring the contents of the last-named chamber to its companion chamber, substantially as described.

2. The combination with a suitable source of heat, of a calcining-chamber mounted to rotate and having open ends, one end being adjacent the source of heat, an evaporating-chamber also mounted to rotate and having open ends, one end of the evaporating-chamber being adjacent the open end of the calcining-chamber remote from the source of heat, means for delivering zinc-sulfate solution to the extremity of the evaporating-chamber remote from the calcining-chamber, and means exterior to both chambers for transferring the contents of the evaporating-chamber to the calcining-chamber, substantially as described.

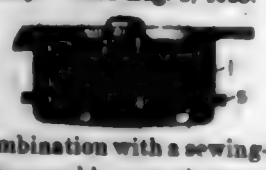
3. The combination with a suitable source of heat, of a calcining-chamber mounted to rotate and having open extremities, one of which is adjacent the source of heat, an evaporating-chamber arranged in axial alinement with the calcining-chamber, the evaporating-chamber having open ends and also mounted to rotate, suitable means for imparting rotary movement to the two chambers, and means exterior to both chambers for transferring the contents of the evaporating-chamber to the calcining-chamber.

4. The combination with a fire-box or source of heat, an open-ended calcining-chamber mounted to rotate and having one extremity adjacent the source of heat, an open-ended evaporating-chamber

also mounted to rotate and having one of its ends as close to the calcining-chamber as is consistent with independent movement, means exterior to both chambers for transferring the contents of the evaporating-chamber to the calcining-chamber, a dust-chamber located at the extremity of the evaporating-chamber remote from the calcining-chamber, suitable means for delivering the material to be treated, to the extremity of the evaporating-chamber remote from the calcining-chamber, and suitable means for imparting rotary movement to the two chambers independently of each other, substantially as described.

5. The combination of two independently-revoluble horizontally-arranged and axially-alined open-ended chambers mounted in suitable proximity to each other, one of the chambers being a calcining-chamber and the other an evaporating-chamber, means for delivering heat to the calcining-chamber at the extremity remote from the evaporating-chamber, means for delivering the material to be treated, to the extremity of the evaporating-chamber remote from the calcining-chamber, means for imparting rotary movement to the two chambers, and means for transferring the contents of the evaporating-chamber to the calcining-chamber, including upper and lower tracks and an elevator for elevating the material from the plane of one track to the plane of the other track, substantially as described.

815,517. SEWING-MACHINE THREAD-CASE. PHILIP DIEHL, Elizabeth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed Aug. 3, 1905. Serial No. 272,469.



Claim.—1. The combination with a sewing-machine thread-case, of a bobbin, an axially-movable engaging member for said bobbin constructed and adapted to assume different operative relations therewith whereby it is caused to engage the said bobbin for locking it in and ejecting it from operative position within the thread-case, and means for giving said member its axial movements.

2. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an inwardly-yielding and axially-movable locking device housed within said hollow post and normally engaging the outer end of said bobbin, and means for yieldingly pressing said locking device into normal locking relation with said bobbin but permitting it to enter the hub of the latter and frictionally engage the same.

3. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an axially-movable tubular sleeve housed within said post and having a split and externally-flanged outer end normally engaging the outer end of said bobbin and adapted for frictional engagement with the inner wall of its tubular hub, and a spring for pressing said sleeve into outer operative relation with said bobbin.

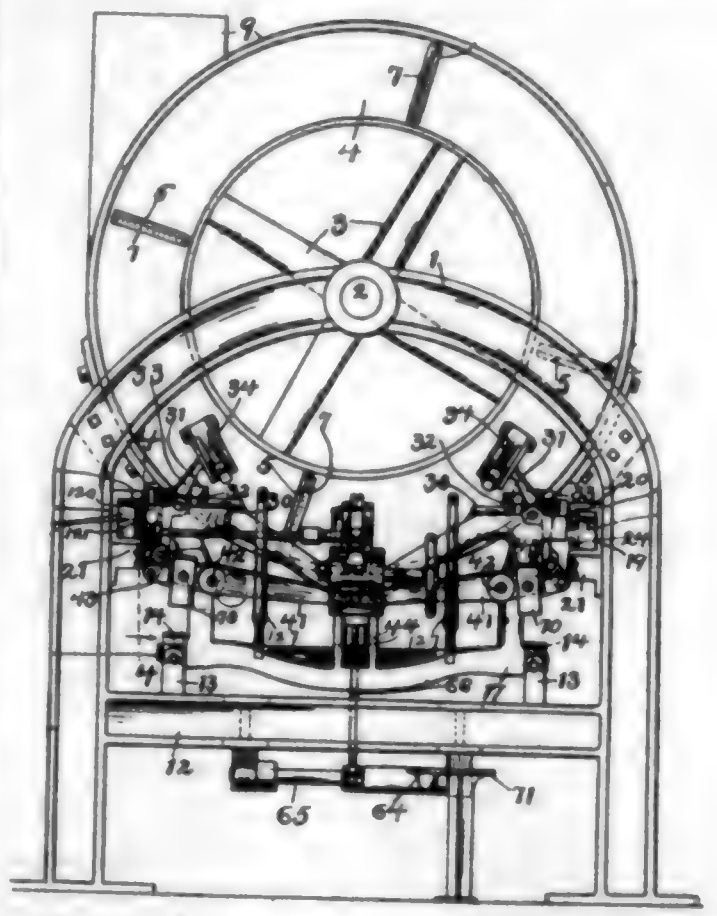
4. The combination with a sewing-machine thread-case provided with a central hollow bobbin-supporting post, of a bobbin having a tubular hub fitted to said post, an axially-movable tubular sleeve housed within said post and having a split and externally-flanged outer end normally engaging the outer end of said bobbin and adapted for frictional engagement with the inner wall of its tubular hub, a spring for pressing said sleeve into outer operative relation with said bobbin, and a button adapted to engage the outer flanged end of said sleeve and having a shank extended through the same and terminating in a shouldered stud with the head in normal contact with the bottom of the thread-case to limit the outward movement of said button under the action of said spring.

815,518. STAVE-JOINTER. LOUIS F. DIETZ, Buffalo, N. Y., assignor to The Peter Gerlach Company. Filed May 1, 1903. Serial No. 155,151.

Claim.—1. In a stave-jointer, a cutter, a stave-carrying frame, means for bending the stave, and means located centrally of the stave at each edge thereof for gaging the width of the stave and controlling according to its adjustment the bend to be given by the bending means.

2. In a stave-jointer, a cutter, a stave-carrying frame, means for bending the stave, and means located centrally of the stave at each edge thereof for gaging the width of the stave and controlling according to its adjustment for different widths of staves the amount of bend to be given by the bending means.

3. In a stave-jointer, a cutter, a stave-carrying frame, an adjustable center rest, means for bending the stave upon said center rest, gages for gaging the width of the stave located centrally of the stave at each edge thereof, said gages controlling according to their adjustment to the width of the stave the bend to be given to the stave by said stave-bending means.



4. In a stave-jointer, stave-supporting means for supporting the stave near its ends, front and back gages for the stave located centrally thereof, and stave-bending mechanism controlled by the adjustment of the gages.

5. In a stave-jointer, stave-supporting mechanism for supporting the stave near its ends, movable front and back gages for the stave located centrally of the same, one of said gages being automatic, and stave-bending mechanism controlled by the adjustment of the gages.

6. In a stave-jointer, stave-supporting means for supporting the stave near its ends, gages for the front and back of the stave located centrally thereof, and a center supporting-rest for the stave operatively connected to one of said gages whereby when said gages embrace the stave the center rest is placed in appropriate operative position.

7. In a stave-jointer, a center rest for the stave, front and back gages located centrally of the stave for gaging the width thereof, means for bending the stave, and means for automatically determining the amount of bend proportionate to the distance between the gages.

8. In a stave-jointer, the combination of a stationary frame, a cutter-head mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, seats formed on said stave-carrying frame for receiving the ends of the stave and corrugations formed on said seats, substantially as described and for the purpose set forth.

9. In a stave-jointer the combination of a stationary frame, a cutter-head mounted on said stationary frame, a stave-carrying frame journaled in said statipnary frame, a rest formed on said stave-carrying frame, a shaft journaled in said rest, a hooked arm keyed on said shaft and arranged to project above said rest when in its highest position, a spring secured to said arm and arranged to normally hold said arm below the level of said rest, a shaft journaled in said rest below the first-mentioned shaft, a depending finger formed on the end of said shaft, a lug mounted on the stationary frame in the path of said depending finger and means for operatively connecting the first-mentioned shaft with the last-mentioned shaft so that the rotation of the last-mentioned shaft will cause a rotation of the first-mentioned shaft.

10. In a stave-jointer the combination of a stationary frame, a cutter-head mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a rest formed on said stave-carrying frame, a shaft journaled in said rest, a hooked arm keyed

on said shaft, a box hinged to said rest, a rod pivotally secured at one end to said hooked arm and having its other end extending into said box, a coil-spring secured on the end of said rod within said box, a shaft journaled in said rest below the first-mentioned shaft, a depending finger formed on the end of said shaft, a lug mounted on said stationary frame in the path of said finger and means for operatively connecting said first-mentioned shaft to said last-mentioned shaft so that the rotation of the last-mentioned shaft will cause a rotation of the first-mentioned shaft.

11. In a stave-jointer, the combination of a stationary frame, a cutter-head mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a rest formed on said stave-carrying frame, a shaft journaled in said rest, a hooked arm keyed on said shaft and arranged to project above said rest when in its highest position, a spring secured to said arm and arranged to normally hold said arm below the level of said rest, a shaft journaled in said rest below the first-mentioned shaft, means for operatively connecting the first-mentioned shaft with the last-mentioned shaft, a socket formed in the end of the last-mentioned shaft, a rod secured at one end in said socket and having its other end bent down to form a depending finger, and a lug formed on said stationary frame in the path of said finger, substantially as described and for the purpose set forth.

12. In a stave-jointer, the combination of a stationary frame, a cutter-head mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a rest formed on said stave-carrying frame, a stop hinged to said rest, means for holding said stop below the level of said rest, means for raising said stop, a lug arranged on the stationary frame and adapted to come into contact with and operate the said raising means and means for adjusting said lug.

13. In a stave-jointer, the combination of a stationary frame, a cutter-head arranged on said stationary frame, a stave-carrying frame, rests formed on said stave-carrying frame, and clamping-jaws supported above said rests and arranged to be brought into contact with the ends of the staves so as to clamp the ends of the staves on said rests, each of said jaws comprising a frame, rollers mounted in said frame and a curved plate movably supported in said frame and arranged so that its upper surface is in contact with said rollers.

14. In a stave-jointer, the combination of a stationary frame, a cutter-head arranged on said stationary frame, a stave-carrying frame, rests formed in said stave-carrying frame, and clamping-jaws supported above said rests and arranged to be brought into contact with the ends of a stave so as to clamp the stave on said seats each of said clamping-jaws comprising a frame, rollers mounted in said frame, a link pivotally secured in said frame, a plate hinged to the lower end of said link and arranged so that its upper surface is in contact with said rollers, stops formed in said frame at each side of said link, and a spring secured to said link and abutting against one of said stops so as to normal y hold the said link against the other of said stops, substantially as described and for the purpose set forth.

15. In a stave-jointer the combination of a stationary frame, a cutter-head arranged on said stationary frame, a stave-carrying frame and clamping-jaws for clamping the stave on said stave-carrying frame, each of said clamping-jaws comprising a frame, rollers mounted in said frame, a plate movably supported in said frame and arranged to come in contact with the stave and pressed into engagement therewith through said rollers while capable of moving transversely of said stave on said rollers and means for limiting the movement of said plate.

16. In a stave-jointer the combination of a stationary frame, a cutter mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a bell-crank lever mounted at each end of said stave-carrying frame, a clamping-jaw mounted on the upper end of each bell-crank lever, a straight lever mounted on each side of stave-carrying frame, links connecting the short arms of the straight levers with the lower arms of the bell-crank levers, a vertical guideway formed at the center of said stave-carrying frame and arranged to receive the ends of the long arms of the said straight levers, slots formed in the ends of said levers, blocks slidably mounted in said slots, a pin arranged in said blocks, plates secured to said pin, ribs formed in said vertical guideway, lugs formed on said plates and arranged to engage said ribs, a pin extending between said plates below the first-mentioned pin and having a spherical enlargement formed at its center a pedal operatively mounted in the lower part of said frame, and a pitman having a socket formed in its upper end adapted to receive the said enlargement of said last-mentioned pin, substantially as described.

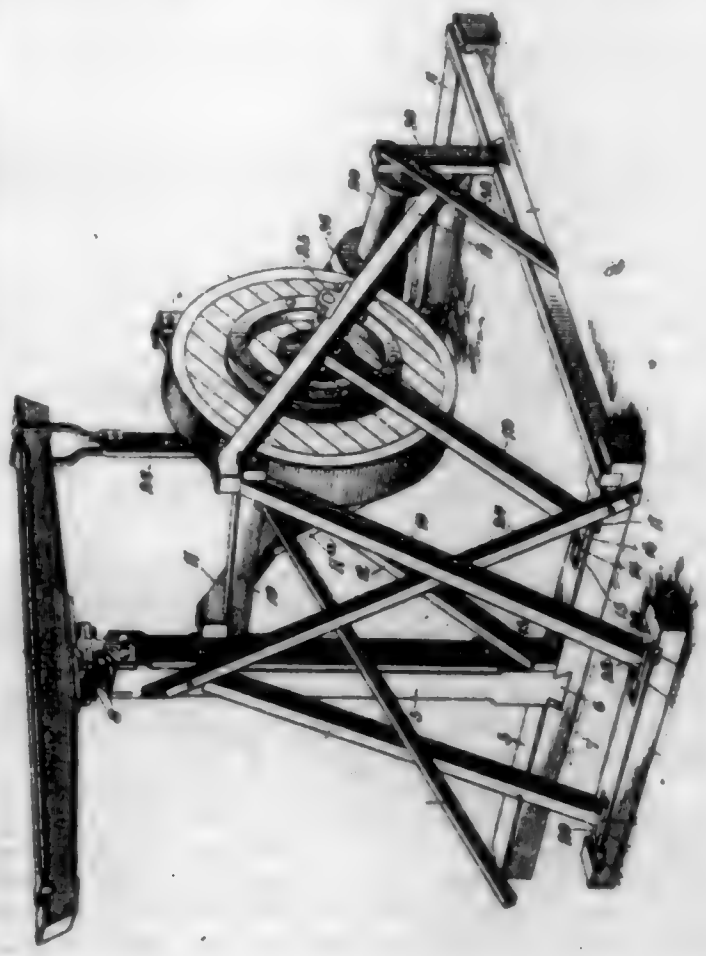
17. In a stave-jointer, the combination of a stationary frame, a cutter mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, bell-crank levers mounted on said stave-carrying frame, a clamping-jaw mounted on the upper end of each bell-crank lever, a vertical guideway formed at the center of said stave-carrying frame, straight levers pivoted at each side of said stationary frame and having their longer arms extending into the said vertical guideway, slots formed in the ends of the long arms of said straight levers, blocks slidably arranged in said slots, a pin journaled in said blocks, a plate secured to each end of said pin, a pin arrangd between said plates below said first-mentioned pin and having, a spherical enlargement formed at its center, a pitman having a socket formed in its end and arranged to receive said spherical enlargement of said pin, links connecting the short arms of said straight levers with the respective bell-crank levers and counterbalancing-weights mounted on said short arms of said straight levers.

18. In a stave-jointer, the combination of a stationary frame, a cutter mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a stop arranged on said stave-carrying frame for limiting the movement of the stave toward the cutter while being adjusted on the stave-carrying frame, means for raising said stop to its operative position when the stave-carrying frame is swung back to a predetermined position from the cutter and means arranged to be brought into contact with said frame so as to arrest the movement of said frame before it reaches the said predetermined position.

19. In a stave-jointer the combination of a stationary frame, a cutter mounted on said stationary frame, a stave-carrying frame journaled in said stationary frame, a stop arranged on said stave-carrying frame for limiting the movement of the stave toward the cutter while being adjusted on the stave-carrying frame, means arranged to form an operative connection with said stop for raising said stop to its operative position when the stave-carrying frame is swung back to a predetermined position from the cutter, a stop arranged to limit the movement of the stave-carrying frame away from the cutter-head, a sleeve arranged on said stop and means for sliding said sleeve on said stop so that it will project beyond the end of the said stop toward the stave-carrying frame.

20. In a stave-jointer, and in combination with means for bending a stave, a retracting-stop mounted centrally at the rear edge of the stave, and a central gage-plate carried by the bending means and adapted to contact with the front edge of the stave to indicate the requisite bend of the stave prior to jointing.

815,519. OIL-WELL RIG. LEWIS H. ERICSON and SAMUEL P. KRETSINGER, De Young, Pa. Filed May 9, 1905. Serial No. 259,583.



Claim.—1. In a well-rig, the combination with spaced mudsills, of a samson-post mounted on one of the sills, a walking-beam located on the post, a girder connecting the post and the other sill, a drive-wheel journaled on the girder, and a brace connecting the lower end of the samson-post and the portion of the girder adjacent to the drive-wheel.

2. In a well-rig, the combination with spaced mudsills, of a samson-post mounted on one of the sills, a walking-beam pivotally supported on the samson-post, spaced downwardly-inclined girders having a connection with the post between its ends, a band-wheel journaled to and between the girders, and downwardly-inclined braces connected respectively to the intermediate portions of the girders, one of said braces being connected to the sill that carries the samson-post.

3. In a well-rig, the combination with a base-frame, of a samson-post mounted thereon, a walking-beam mounted on the upper end of the samson-post, a cross-bar secured to the post below the mounting for the walking-beam, downwardly-inclined girders secured to the cross-bar and the base-frame, and a drive-wheel journaled on the girders and connected to the walking-beam.

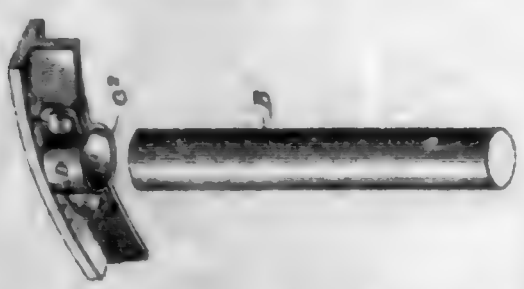
4. In a well-rig, the combination with spaced mudsills, of a samson-post mounted on one of the mudsills, a cross-bar secured to the post, downwardly-inclined girders connected to the cross-bar and to the other mudsill, braces between the girders, the post, and the sill therefor, and a drive-wheel journaled on the girders.

5. In a well-rig, the combination with spaced mudsills, of a nose-sill spaced therefrom, a samson-post mounted on one of the mudsills, a cross-bar secured to the samson-post, girders connecting the cross-bar and the other mudsill, a drive-wheel journaled on the girders, and braces between the nose-sill, the cross-bar, and the samson-post.

6. In a well-rig, the combination with spaced mudsills, of a stringer connecting the same, a samson-post mounted on one of the mudsills, girders having a connection with the samson-post and also connected to the other mudsill, a drive-wheel journaled on the girders, a jack-post mounted on the stringer, a lever journaled on one of the girders and a sand-reel journaled at one end in the jack-post and at its other end in the lever, said reel being movable into and out of coaction with the drive-wheel.

7. In a well-rig, the combination with spaced mudsills, of a nose-sill located at one side of the same, a samson-post mounted on the mudsill that is adjacent to the nose-sill, a cross-bar secured to the samson-post, downwardly-inclined girders secured to the cross-bar and to the other mudsill, braces for the girders, braces for the cross-bar and samson-post connected to the nose-sill, a drive-wheel journaled on the girders, a walking-beam pivoted on the samson-post, a connection between the driving-wheel and walking-beam, a stringer connecting the mudsills, a jack-post mounted on the stringer, a lever pivotally supported on one of the girders, means for actuating the lever, and a sand-reel journaled in the lever and in the jack-post and movable into and out of coaction with the drive-wheel.

815,520. WHEEL. HENRY L. FERRIS, Harvard, Ill., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill., a Corporation of Illinois. Filed Feb. 7, 1905. Serial No. 244,540.

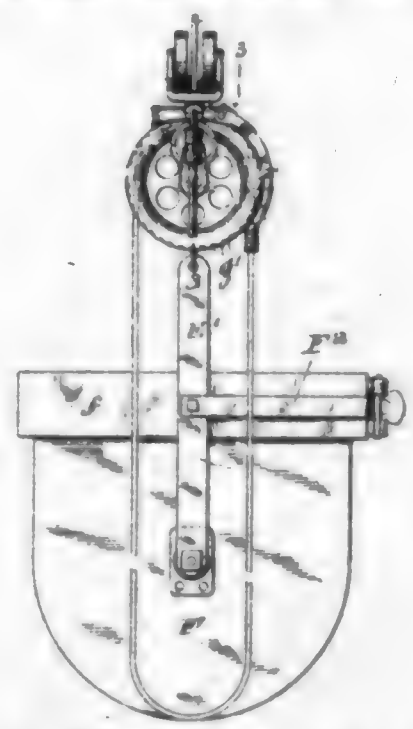


Claim.—1. In a device of the class described, the combination with a hub having a plurality of radial cavities, of a plurality of radial spokes, the inner ends of which are inserted in said cavities, a tire, T-shaped in cross-section and having a tread, and an inwardly-extending central rib, yokes formed in said rib, and a plurality of yoke-shaped plates riveted to said rib and with the yokes therein embracing the outer ends of the spokes.

2. In a device of the class described, the combination with a hub having a plurality of radial cylindrical cavities, of a plurality of radial cylindrical spokes, the inner ends of which are inserted in said cavities, a tire T-shaped in cross-section and having a cylindrical tread, and an inwardly-extending central rib, semicylindrical yokes formed in said inwardly-extending rib, and a plurality of yoke-shaped plates riveted to said rib, and with the yokes therein embracing the outer ends of the spokes.

3. In a device of the class described, the combination with a hub having a plurality of radial cavities, of a plurality of radial spokes, the inner ends of which are inserted in said cavities, a tire T-shaped in cross-section and having a suitable tread, and an inwardly-extending central rib, yokes on one side of said rib, and a plurality of yoke-shaped plates riveted to said rib and with the yokes embracing the outer ends of the spokes.

815,521. FEED AND LITTER CARRIER. HENRY L. FERRIS, Harvard, Ill., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill., a Corporation of Illinois. Filed Apr. 12, 1905. Serial No. 255,180.



Claim.—1. In a device of the class described, the combination with a track and rolling supports thereon, of suitable winding devices arranged to receive a flexible connection, vertical bars connected with said winding means by a flexible connection, a carrier journaled between said vertical bars, transverse straps secured to and extending forward from said vertical bars and a longitudinal member connecting the ends of said transverse straps and arranged to limit its swing in one direction.

2. In a device of the class described, the combination with a track and rolling supports thereon, of suitable winding devices arranged to receive a flexible connection, vertical bars connected with said winding means by a flexible connection, a carrier journaled between said vertical bars, transverse straps secured to and extending forward from said vertical bars, a longitudinal member connecting the ends of said transverse straps and lying substantially in the plane of the upper portion of said carrier and arranged to limit its swing in one direction.

3. In a device of the class described, the combination with a track and rolling supports thereon, of suitable winding devices arranged to receive a flexible connection, vertical bars connected with said winding means by a flexible connection, a carrier journaled between said vertical bars, transverse straps extending forward from said vertical bars, a longitudinal member connecting the ends of said transverse straps and lying substantially in the plane of the upper portion of said carrier and arranged to limit its swing in one direction, and mutually-engaging devices on the carrier and said longitudinal member for locking the carrier in place.

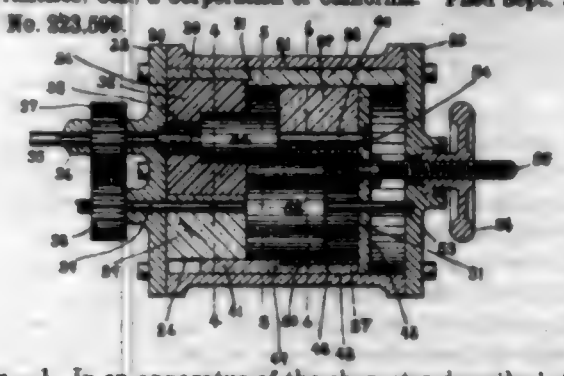
4. In a device of the class described, the combination with a track and suitable rolling supports, of a shaft secured to the supports, a carrier connected to the shaft, a pulley loose on the shaft, a pinion secured to the pulley, a crank secured to the shaft and bearing a pinion secured against rotation and in mesh with said first pinion.

5. In a device of the class described, the combination with a track and suitable rolling supports, of a shaft carried by said supports, a carrier carried by the shaft, a pulley running loose on said shaft, a pinion secured to said pulley, a crank secured to said shaft, a second shaft passed through the end of said crank and bearing a pinion in mesh with said first pinion, a second crank pivoted to the rolling support, and a sliding sleeve on said second crank engaging the end of said second shaft to prevent its rotation.

6. In a device of the class described, the combination with a carrier, shaft and means of connection between the shaft and carrier, of a grooved pulley, a rope running over the pulley, means of connection between the pulley and shaft, ratchet-teeth cut in one flange of the pulley, a rope-guide through which the rope passes pivoted eccentrically with respect to the journal of said pulley and a locking-tooth on said guide adapted to engage said ratchet-teeth.

7. In a device of the class described, the combination with a carrier, a shaft, and means of connection between the shaft and carrier, of a grooved pulley arranged to rotate the shaft, a rope running over the pulley, and means operated by the rope for locking the carrier in any position.

815,522. ROTARY PUMP AND MOTOR. HERBERT M. FRASER, Yonkers, N. Y., assignor to Fraser Hydraulic Compensator Company, San Francisco, Cal., a Corporation of California. Filed Sept. 7, 1904. Serial No. 223,598.



Claim.—1. In an apparatus of the character described, the impellers, and the parallel shafts for said impellers, combined with a rotary envelop having an opening to receive more or less of one of said impellers, a rotary envelop having an opening to receive more or less of the other one of said impellers, and means for effecting the exposure to a greater or less extent of the inner ends of said impellers and of placing said ends of said impellers into coöperative relation to each other; substantially as set forth.

2. In an apparatus of the character described, the impellers, and the parallel shafts for said impellers, combined with a frame having an opening therein, a rotary envelop fitting said opening in said frame and containing an opening to receive more or less of one of said impellers, a movable frame containing an opening, a rotary envelop fitting the opening in said movable frame and having an opening in it to receive more or less of the other one of said impellers, means connecting said movable frame to the shaft of the impeller of the first-mentioned frame, and means for moving said movable frame toward and from the other frame, whereby one of said impellers may be more or less forced into or withdrawn from its rotary envelop and the envelop carried by said movable frame is caused to more or less conceal or expose its impeller and the adjacent ends of said impellers are brought into coöperative relation to each other; substantially as set forth.

3. In an apparatus of the character described, the impellers, and the parallel shafts for said impellers, combined with a stationary frame having an opening therein, a rotary envelop fitting said opening in said frame and containing an opening to receive more or less of one of said impellers, a movable frame containing an opening, a rotary envelop fitting the opening in said movable frame and having an opening in it to receive more or less of the other of said impellers, means connecting said movable frame to the shaft of the impeller of the stationary frame, and means for moving said movable frame toward and from said stationary frame, whereby one of said impellers may be more or less forced into or withdrawn from its rotary envelop and the envelop carried by said movable frame is caused to more or less conceal or expose its impeller and the adjacent ends of said impellers are brought into coöperative relation to each other; substantially as set forth.

4. In an apparatus of the character described, the impellers, and the parallel shafts for said impellers, combined with a frame 26 having the longitudinal semicircular portion 28 and transverse portion 29 containing the opening 30 and having guide-shoulders 44, the rotary envelop within said opening 30 and containing an opening to receive one of said impellers, the frame 27 having the longitudinal semicircular portion 41 and transverse portion 42 containing the opening 48 and having the guide-shoulders 46, the rotary envelop within said opening 48 and having an opening 51 to receive the other one of said impellers, means connecting said frame 27 with the shaft of the impeller of the frame 26, and means for moving said frame 27 toward and from said frame 26, whereby one of said impellers may be more or less forced into or withdrawn from the envelop of the frame 26 and the envelop carried by said frame 27 may be caused to more or less conceal or expose its impeller and the adjacent ends of said impellers brought into coöperative relation to each other, the edges of the longitudinal portion 41 of the frame 27 guiding on the shoulders 44 of the frame 26 and the shoulders 46 of the frame 27 being adapted to guide on the edges of the longitudinal portion 28 of the frame 26; substantially as set forth.

815,523. CUSHION-TIRE. FRANK G. FRESCH, Philadelphia, Pa. Filed Dec. 30, 1904. Serial No. 238,944.



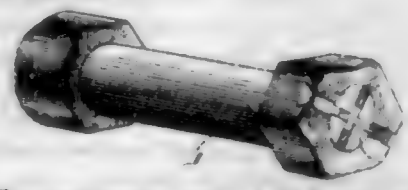
Claim.—1. A tire comprising an outer ring, a rim having flanges connected therewith for engaging said outer ring, cushioning mechanism for supporting said outer ring, in combination with a wheel having a rim and flanges for engaging said first rim thereto, substantially as specified.

2. A tire comprising an outer ring, an inner ring having flanges for engaging said outer ring and a rim for holding said inner ring, a wheel having a rim provided with flanges for engaging the rim of said inner ring, and cushioning members between said rings, substantially as specified.

3. A tire comprising a solid outer ring, a solid inner ring having embracing means engaging said outer ring in reciprocating relation thereto, and cushioning mechanism disposed between said rings, in combination with a wheel having a rim to which said inner ring is engaged, substantially as specified.

4. A tire comprising a solid outer ring, a solid inner ring to which said outer ring is engaged in reciprocating relation, and cushioning mechanism by which said outer ring is flexibly supported by said inner ring, in combination with a wheel having a rim provided with embracing means for engaging said inner ring thereto, substantially as specified.

815,524. NUT-LOCK. JOSEPH B. GLENN, Doty, Wash. Filed July 24, 1905. Serial No. 271,047.

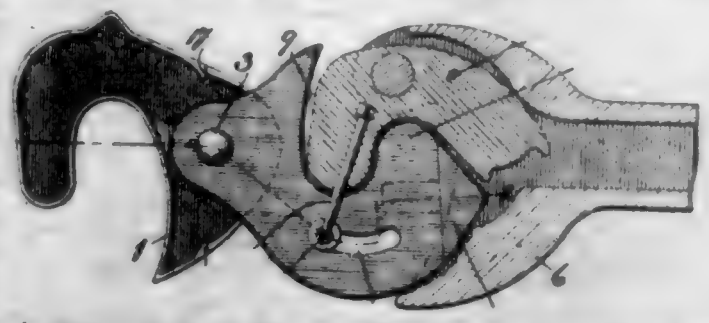


Claim.—1. The combination with a bolt having grooves in one end; of a nut having a transversely-extending dovetail groove in one face, and a locking-strip detachably mounted within the groove in the nut and comprising a head and an extension thereof having lateral projecting arms, said arms and extension being adapted to be seated in the grooves in the bolt.

2. The combination with a bolt having intersecting grooves in one end; of a nut having a dovetail groove in one face adapted to register with either of the bolt-grooves, and a locking-strip detachably seated within the groove in the nut and engaging the walls of said groove, said strip comprising a head having a lug thereon, an extension, and laterally-projecting arms on the extension.

3. The combination with a nut having a transversely-extending dovetail groove in one face thereof; a locking-strip detachably mounted within and engaging the walls of the groove, said strip comprising a head having a projecting portion thereon, an extension and laterally-projecting arms on the extension and a bolt having a groove in one end adapted to receive the locking-strip.

815,525. CAR-COUPLING. WILLIAM W. GORDON, Washington, D. C. Filed Nov. 24, 1905. Serial No. 289,466.



Claim.—1. An auxiliary coupling means comprising two coupling sections or heads, each of which is provided with a coupling-hook adapted to engage with the respective coupling-knuckles of adjacent cars, said coupling-sections being pivotally connected to-

gether and one of said sections being provided with a detachable portion or head-piece adapted to enter within the horizontal slot of a draw-head.

2. An auxiliary coupling means comprising a coupling section or head adapted to be engaged by the hook portion of a coupling-knuckle and having a threaded aperture, and a detachable portion or head-piece having a threaded shank engaging within said threaded aperture.

3. An auxiliary coupling means comprising two coupling sections or heads and a pivot-bolt pivotally connecting said sections together, one of said sections being adapted to be engaged by the hook portion of a coupling-knuckle, and being provided with a detachable portion or head-piece for the purpose specified.

4. An auxiliary coupling means comprising two coupling sections or heads, each of which is provided with a coupling-hook adapted to engage with the respective coupling-knuckles of adjacent cars, said coupling-sections being pivotally connected together, and a support carried by one of said coupling-sections and constructed to engage over the upper face of its respective coupling-knuckle for the purpose specified.

5. An auxiliary coupling means comprising a coupling section or head adapted to be engaged by the hook portion of a coupling-knuckle, and a vertically-adjustable support carried by said coupling-section and constructed to engage over the upper face of said coupling-knuckle for the purpose specified.

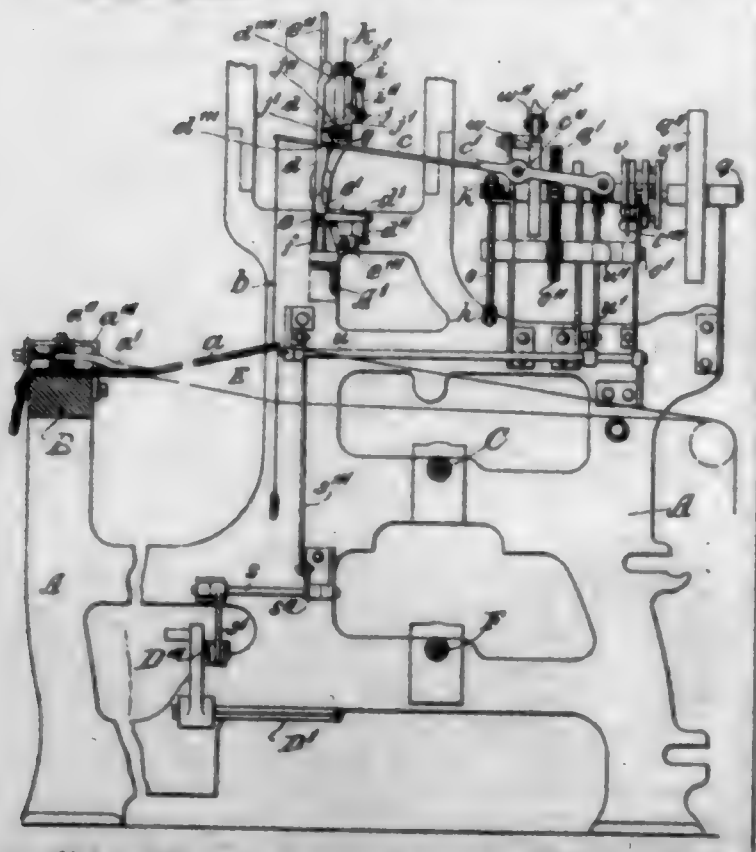
6. An auxiliary coupling means comprising a coupling section or head adapted to be engaged by the hook portion of a coupling-knuckle, and a support carried by said coupling-section and comprising a rod having its upper end bent so as to engage over the upper face of said coupling-knuckle, for the purpose specified.

7. An auxiliary coupling means comprising a coupling section or head adapted to be engaged by the hook portion of a coupling-knuckle, and a support carried by said coupling-section and comprising a vertically-adjustable rod having its upper end bent so as to engage over the upper face of said coupling-knuckle, for the purpose specified.

8. An auxiliary coupling means comprising a coupling section or head, a support consisting of a rod having a threaded portion and a bent-over portion, and means engaging with the threaded portion of the rod and adapted to lock the same in adjusted position.

9. An auxiliary coupling means comprising two coupling sections or heads, a pivot-bolt pivotally connecting said sections together, and shoulders on one of said sections adapted to abut against the other section for the purpose specified.

815,526. LOOM FOR WEAVING PILE FABRICS. WILLIAM C. GRAY and WILLIAM MCKENZIE, Ayr, Scotland. Filed Jan. 23, 1905. Serial No. 242,223.



Claim.—1. In looms for weaving pile fabrics, the combination of pile-wires such as *a* for elevating or raising the weft into loops, pivotally-mounted wires *c*, an endless chain caused to travel in the same direction as the shuttle by means controlled by the picking mechanism, or by separate chain-pulleys and levers, said chain having projecting surfaces thereon to raise the wires *c* and therefore the pile-wires singly in succession from side to side of the loom, catches such as *d* pivotally mounted in a rising-and-falling frame, and pivotally-mounted fingers *j'* connected with the jacquard-needles or parts acted upon by the pattern-surface to determine the disengagement of the wires *c* with the catches *d* according to the pattern or design being woven, all arranged and acting in the manner and for the purposes substantially as herein set forth.

2. In a loom, the combination with means for determining the release of the pile-wires *c* prior to the insertion of each pick to allow them to occupy a position in readiness to elevate the weft-thread and for raising said pile-wires to form loops of weft in the fabric, of the chain *h*, for controlling the action of the pile-wires, and means described for traversing the chain *h* in the same direction as that in which the shuttle has last been thrown, substantially as herein shown and described and for purposes specified.

3. In a loom, the combination of mechanism substantially as shown and described for forming pile-loops successively from one side of the loom to the other, and means for automatically stopping the loom after each passage of the shuttle until the whole series of pile-loops have been successively formed across the width of the fabric, substantially as described.

4. In a loom for weaving pile fabrics, the combination of pile-wires extending in the direction of the warp, means for inserting a weft-thread above certain of said pile-wires, and devices for thereafter raising said pile-wires to draw weft-thread from the weft-inserting means in the formation of the pile-loops.

5. In a loom for weaving pile fabrics, the combination of pile-wires extending in the direction of the warps, means for inserting a weft-thread above certain of said pile-wires, and devices for thereafter raising said pile-wires successively from one side of the loom to the other to draw weft-thread from the weft-inserting means in the formation of the pile-loops.

6. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires, means for maintaining selected wires in a raised position and permitting others, which are to form the pile-loops, to be in depressed position, means for inserting a weft-thread above the depressed wires, and devices for thereafter raising the depressed wires to draw weft-thread from the weft-inserting means in the formation of pile-loops.

7. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires, means for laying a weft-thread above certain of said wires, devices for raising said pile-wires to draw weft from the weft-inserting means, and devices for stopping and starting the loom automatically after each insertion of the weft.

8. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires means for laying a weft-thread above certain of said wires, devices for automatically stopping and starting the loom after each insertion of the weft, means for successively raising the pile-wires from one to the other side of the loom to draw weft from the weft-inserting means in the formation of the pile-loops while the loom is stopped.

9. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires, means for picking a shuttle across the loom, devices and means for operating the same in the direction of the last shuttle movement for successively raising the pile-wires from one side of the loom to the other in the formation of the pile-loops.

10. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires, means for picking a shuttle across the loom, and a chain having a portion movable in the direction of the shuttle for raising the pile-wires in the formation of the pile-loops.

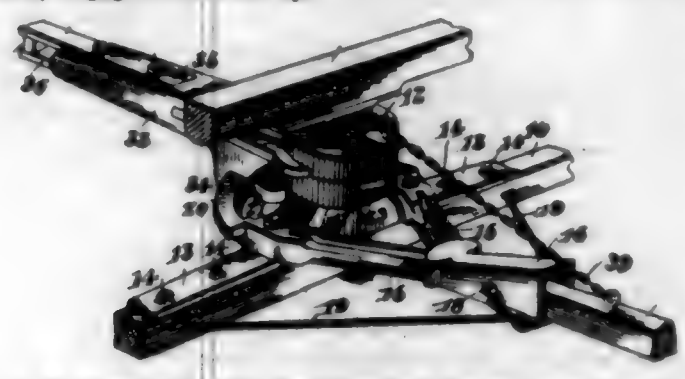
11. In a loom for weaving pile fabrics, the combination of longitudinal pile-wires, means for picking a shuttle across the loom, and a chain having a portion movable in the direction of the shuttle for raising the pile-wires in the formation of the pile-loops, and means for automatically stopping and starting the loom after each pick.

815,527. VEHICLE RUNNING-GEAR. JAMES H. GRAHAM, North Hudson, Wis. Filed May 6, 1905. Serial No. 259,177.

Claim.—1. In a coupling of the class described, revolubly-associated members, one of said members having an annular wall, the other having an interlocking engagement with the inner face of the wall and an interlocking engagement with the outer face of the wall, said engagements being respectively located at different sides of the axis of rotation of the members.

2. In a coupling of the class described, revolubly-associated

members, one of said members having an annular wall provided with an outstanding lip on its outer face and at one side of the axis of rotation of the members, said wall also having an inwardly-extending lip on its inner face and on a different side of said axis of rotation, the other member carrying projections located on opposite sides of the annular wall and on different sides of the axis of rotation of the members, said projections having offset portions that respectively and movably engage beneath the lips.



3. In a coupling of the class described, the combination with a base member having an upstanding annular wall provided on its inner face with inset lips, the ends of which are spaced apart, said wall also having an outstanding lip located on the portion between the ends of the inset lips, a cap member revolubly fitted upon the base member and having depending portions that are located within and engage beneath the inset lips, said cap member also having a depending portion located between the ends of the first-mentioned portion and engaging beneath the outstanding lip of the base member.

4. In a coupling of the class described, the combination with pivotally-associated coupling members, of a bolster located upon the members, and a pivot carried by the bolster and having an engagement with said members.

5. In a coupling of the class described, the combination with a base member, of a cap member pivotally associated with the base member and having an opening therethrough, a bolster located upon the cap member, and a pivot carried by the bolster, said pivot passing through the opening in the cap member and having an engagement with the base member.

6. In a coupling of the class described, the combination with a base member having a seat, of a cap member pivotally associated with the base member and having an opening therethrough that alines with the seat of the base member, a bolster located upon the cap member, and a pivot carried by the bolster, said pivot passing through the opening in the cap member and engaging in the seat of the base member.

7. In a coupling of the class described, the combination with a base member having a seat, of a cap member pivotally associated with the base member and having an opening therethrough that alines with the seat of the base member and is provided with offset portions, a bolster located upon the cap member, and a depending pivot carried by the bolster and passing through the opening in the cap member, said pivot having outstanding retaining-lugs which pass through the offset portions of said opening and are normally disposed out of alinement therewith.

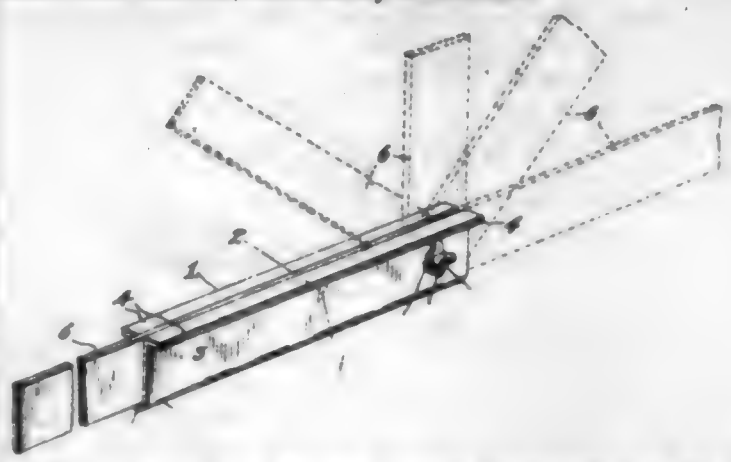
8. In a coupling of the class described, the combination with upper and lower pivotally-associated members, of a rearwardly-tapering boxing attached to the lower member and having an open front end, a tongue having its rear end located in the boxing, a transverse pivot extending through the boxing and tongue, and a flexible connection between the upper member and the tongue in advance of the boxing.

9. In a coupling of the class described, the combination with pivotally-associated coupling members, of a bolster, and a pivot fixed to the bolster and rotatably associated with the members, said pivot being rotatable with the bolster and with respect to both of the members.

815,528. COMBINED SQUARE AND BEVEL. ARTHUR HAAG, New York, N. Y. Filed July 20, 1905. Serial No. 270,526.

Claim.—1. A combination square and bevel comprising a body having a longitudinally-extending recess, a pivot-opening and an aperture in one face adjacent to said pivot-opening, a blade formed with a pivot-opening and recesses arranged radially around said opening and adapted to aline with said aperture in the body, a pivot passed through said pivot-opening in the body and blade, a lug upon said pivot adapted to extend through said aperture in the body and to enter one of said recesses in the blade, and a clamping device upon said pivot, substantially as described.

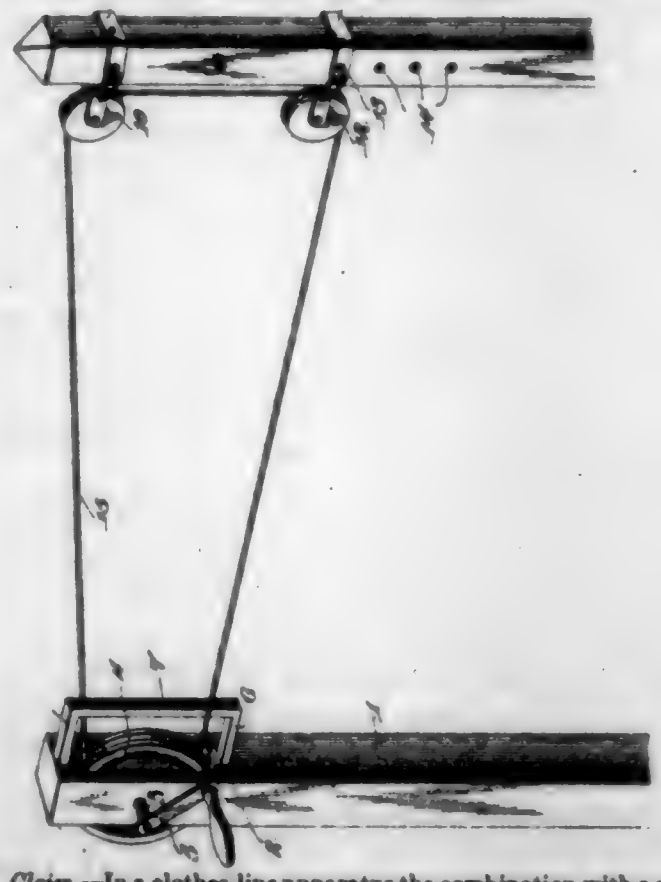
2. A combination square and bevel comprising a body having a longitudinally-extending recess, a pivot-opening and an aperture in one face adjacent to said pivot-opening, a blade formed with a pivot-opening and recesses arranged radially around said opening and adapted to aline with said aperture in the body, a tubular pivot extending through said alining pivot-openings in the body and blade, a screw-bolt extending through said tubular pivot, a lug apertured to receive said bolt and having a projection adapted to pass through the aperture in said body and to enter one of the recesses in said blade, a spring for forcing said lug outwardly and a clamping-nut upon the outer end of said bolt, substantially as described.



3. A device of the character described, comprising a hollow U-shaped body formed from a piece of sheet metal by bending it centrally and longitudinally upon itself to form parallel sides and by bending its sides longitudinally in opposite directions to form right-angular flanges, and a foldable blade mounted between the parallel sides of said body.

4. A folding square and bevel comprising a hollow U-shaped body formed from a piece of metal by bending it to form parallel sides and right-angularly-projecting flanges extending longitudinally along said sides, said sides being formed with alining pivot-openings, and one being formed with an aperture adjacent to its pivot-opening, a foldable blade formed with a pivot-opening and a series of recesses arranged around said opening, a tubular pivot passed through the pivot-openings in said body and blade, a screw-bolt passed through said tubular pivot, a locking-lug upon said bolt and formed with a projection adapted to project through the aperture in said body and into one of the recesses in said blade, a spring upon said bolt between said lug and said pivot, and a clamping-nut upon the outer end of said bolt, substantially as described.

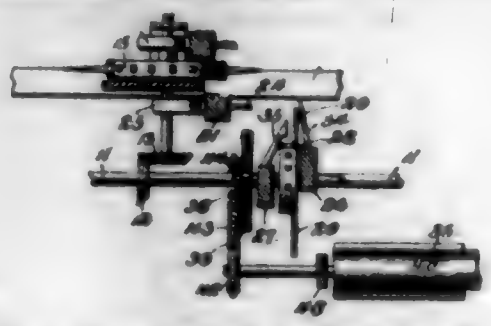
815,529. CLOTHES-LINE SUPPORT. JOHN H. HARTLEY, White-oak, Mo. Filed July 18, 1905. Serial No. 270,206.



Claim.—In a clothes-line apparatus the combination with a post having fixed and adjustable pulleys connected thereto, one above

the other; of an apertured main post, a grooved wheel rotatably mounted within the aperture, arms extending from the post, a guide-strip connecting the arms and in front of and alining with the operating-wheel, and an endless line mounted upon the pulleys and wound upon the wheel, the opposite portions of the line being disposed at opposite sides of the guide-strip.

815,580. CORN-HARVESTER. MELVIN D. HATCH, Lincoln, Nebr. Filed Apr. 8, 1905. Serial No. 254,554.



Claim.—1. In a machine of the class described, the combination with reciprocatable picking devices to engage the ears of corn, and means for causing the picking devices to alternately engage the corn, of cutting mechanism coöperating with the picking devices to remove the ears from the stalks.

2. In a machine of the class described, the combination with a frame having a passage for the stalks of corn, of cutting mechanism located at the inner side of the passage, corn-butters located at the outer side of the passage, means for carrying the corn-butters alternately in engagement with the corn, and independently-movable feed mechanism coöperating with the corn-butters.

3. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, cutting mechanism located at the inner side of the passage, corn-butters located at the outer side of the passage and extending longitudinally thereof, and independently-movable feed mechanism also located at the outer side of the passage and extending longitudinally of and coöperating with the corn-butters.

4. In a machine of the class described, the combination with cutting mechanism, of spaced reciprocatable corn-butters also spaced laterally from the cutting mechanism to provide an intervening passage for the stalks of corn and arranged one above the other, and endless feeding mechanism operating in the space between the corn-butters and coöperating with the same.

5. In a machine of the class described, the combination with cutting mechanism, of spaced reciprocatable corn-butters also spaced laterally from the cutting mechanism to provide a passage for the stalks of corn and arranged one above the other, shafts provided with means for carrying the corn-butters alternately in engagement with the corn, and endless feed mechanism also mounted on the said shafts and operating in the space between the corn-butters and coöperating with the same.

6. In a machine of the class described, the combination with means for removing the ears of corn from their stalks, of corn-butters, means for carrying the same alternately in engagement with the corn, and independently-movable feed mechanism coöperating with the corn-butters.

7. In a machine of the class described, the combination with means for separating ears of corn from their stalks, of spaced corn-butters, and feed mechanism operating between the corn-butters.

8. In a machine of the class described, the combination with means for separating ears of corn from their stalks, of spaced reciprocatable corn-butters, and endless feed mechaniam operating between the corn-butters.

9. In a machine of the class described, the combination with means for separating the ears of corn from their stalks, of reciprocatable corn-butters, means for causing the corn-butters to alternately engage the corn, and feed mechanism movable independently of and operating in conjunction with the corn-butters.

10. In a machine of the class described, the combination with means for separating ears of corn from their stalks, of spaced corn-butters, means for operating the corn-butters for causing the same to alternately engage the corn, and endless feed mechanism operating in the space between the corn-butters.

11. In a machine of the class described, the combination with shafts, of eccentrics arranged in pairs on the shafts and extending in opposite directions therefrom, corn-butters consisting of bars connected with and operated by the eccentrics, sprocket-wheels also mounted on the shafts between the eccentrics, and a sprocket-chain arranged on the sprocket-wheels and provided with means for feeding the corn.

12. In a machine of the class described, the combination with picking devices, and cutting mechanism coöperating therewith to remove the ears from the stalks, of corn-butters spaced laterally from the picking devices and the cutting mechanism to provide a passage for the stalks of corn, and arranged above the said picking devices and the cutting mechanism in position to throw the corn toward the same.

13. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, reciprocatable picking devices located at the inner side of the passage, means for causing the picking devices to alternately engage the corn, and independently-operable cutting mechanism also located at the inner side of the passage.

14. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, cutting mechanism located at the inner side of the passage, a pair of reciprocatable corn-butters located at the outer side of the passage, shafts provided with means for actuating the corn-butters, and endless feed mechanism mounted on the said shafts.

15. In a machine of the class described, the combination of movable picking devices, means for causing the picking devices to alternately engage the corn, and an endless cutter coöperating with the picking devices.

16. In a machine of the class described, the combination of reciprocatable picking devices arranged in spaced relation, means for causing the picking devices to alternately engage the corn, and a cutter operating between the picking devices.

17. In a machine of the class described, the combination of movable picking devices arranged in spaced relation, means for causing the picking devices to alternately engage the corn, and an endless cutter operating in the space between the picking devices.

18. In a machine of the class described, the combination with spaced reciprocatable picking devices, of cutting mechanism operating in the space between the picking devices to remove the ears from the stalks.

19. In a machine of the class described, the combination of reciprocatable picking devices consisting of toothed blades, means for causing the picking devices to alternately engage the corn, and an endless cutting device provided at intervals with blades.

20. In a machine of the class described, the combination of reciprocatable picking devices arranged in spaced relation and provided with converging teeth, means for causing the picking devices to alternately engage the corn, and a cutting device operating between the teeth.

21. In a machine of the class described, the combination of reciprocatable picking devices arranged in spaced relation and provided with converging teeth, means for causing the picking devices to alternately engage the corn, and an endless cutter located between the picking devices and provided at intervals with blades operating between the converging teeth.

22. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, a pair of reciprocatable picking devices located at the inner side of the passage, shafts provided with means for carrying the picking devices alternately in engagement with the corn, and an endless cutting device also mounted on the said shafts.

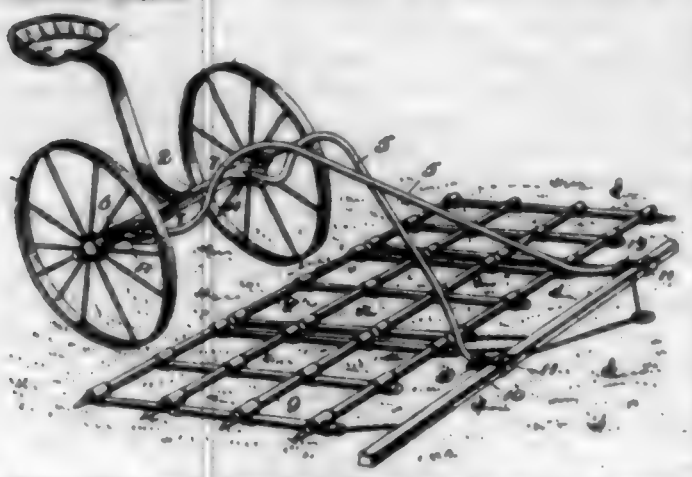
23. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, reciprocatable corn-butters located at the outer side of the passage, means for reciprocating the corn-butters and for moving the same laterally of the said passage to alternately carry the corn-butters in and out of engagement with the corn, independently-movable feed mechanism coöperating with the corn-butters, reciprocatable corn-pickers located at the inner side of the passage, means for alternately carrying the corn-pickers in engagement with the corn, and an independently-movable cutter coöperating with the corn-pickers.

24. In a machine of the class described, the combination of a frame having a passage for the stalks of corn, reciprocatable corn-butters located at the outer side of the passage, shafts provided with means for carrying the corn-butters alternately in engagement with the corn, endless feed mechanism also mounted on the said shafts, reciprocatable corn-pickers located at the inner side of the passage, shafts provided with means for carrying the corn-pickers alternately in engagement with the corn, and an endless cutter coöperating with the corn-pickers and mounted on the shafts of the same.

25. In a machine of the class described, the combination of picking devices, cutting mechanism to pick and remove the ears from the stalks, and corn-butters spaced laterally from the picking

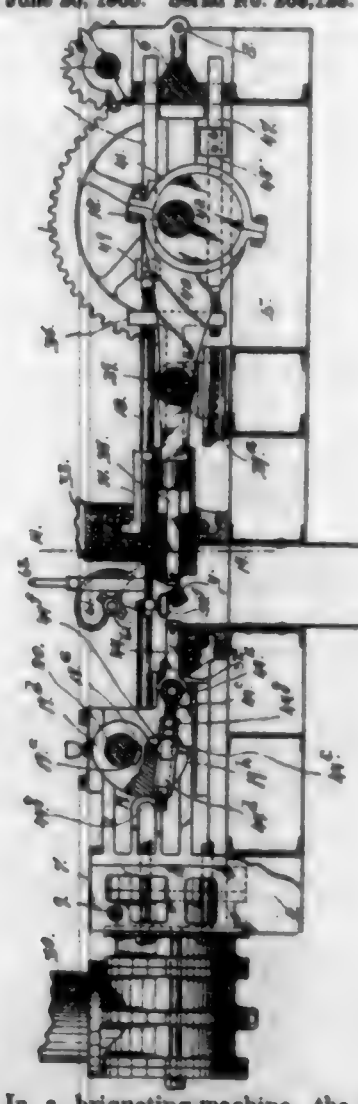
devices and the cutting mechanism to provide a passage for the stalks of corn, said corn-butters being arranged to operate in planes perpendicular to the planes in which the picking devices and the cutting mechanism operate.

815,531. RIDING ATTACHMENT FOR HARROWS. STEPHEN R. HILL, Battle Creek, Nebr. Filed Dec. 4, 1903. Renewed Aug. 13, 1904. Serial No. 220,626.



Claim.—The herein-described riding attachment for harrows, comprising suitable carrying-wheels and axle therefor; forwardly-projecting ears carried by each end of said axle, in combination with suitable tongue-sections curved upward at their middle portions and having upon their rear ends apertured extensions pivotally connected to said ears and also having fingers lying upon the upper side of said ears whereby the carrying-axle will be held against rotation and thereby support a seat in proper position.

815,532. BRIQUETING-MACHINE. RICHARD C. HILLS, Denver, Colo. Filed June 30, 1905. Serial No. 268,128.



Claim.—1. In a briqueting-machine, the combination of a mold-box composed of a movable member and a stationary coöperating member, a reciprocating ram entering the movable member, and a yieldingly-supported relief-plunger entering the stationary member and coöperating with the ram, substantially as described.

2. The combination of a mold-box, comprising a movable member and a coöperating stationary member, a ram entering the movable member, a relief-plunger entering the stationary member, and means for imparting reciprocating motion to the ram and the movable mold-box member.

3. In a machine of the class described, the combination with a suitable case, of a mold-box provided with a movable mold member arranged to slide in the case, a plunger arranged to enter the mold from the front, and means for operating the plunger and the movable mold-box member, the arrangement being such that the movement of the mold-box member is uniformly more rapid than that of the plunger.

4. In a machine of the class described, the combination with a suitable frame having a case, a mold having a member movable in the case, a plunger arranged to enter the mold from the front, a shaft provided with an eccentric with which the plunger is connected in operative relation, a frame connected with the movable mold-box member and provided with front and rear tappets, cams mounted on the eccentric-shaft and arranged to engage the front and rear tappets respectively, for imparting a relatively rapid reciprocating movement to the movable mold member, and a relief-plunger entering the mold from the rear, substantially as described.

5. In a multiple-mold briquet-machine, the combination with a suitable frame, of a mold-case extending transversely across the machine, of molds provided with movable mold members slidable in said case, driving-plungers entering the mold from the front, a shaft provided with eccentrics with which the driving-plungers are connected in operative relation, frames provided with front and rear tappets, said frames being connected with the movable mold-box members, and cams mounted on the eccentric-shaft and adapted to respectively engage the front and rear tappets for imparting a reciprocating movement to the movable mold-box members.

6. The combination with a suitable frame having a mold-case extending transversely thereacross, molds having members slidable in said case, said molds being open at the front and rear, resistance-plungers entering said molds from the rear and having a limited movement as described, driving-plungers entering said molds from the front, a shaft having eccentrics with which the driving-plungers are connected, frames connected with the movable mold-box members and provided with front and rear tappets, and two sets of cams mounted on the eccentric shaft, one set acting on the front tappets to impart movement to the movable mold-box member in one direction, and the other set acting on the rear tappets to impart movement in the opposite direction.

7. The combination with a suitable frame, and a mold-case extending transversely across the same intermediate its extremities, of molds mounted in the mold-case, each mold having a member slidable in said case, the said molds being open at the front and rear, driving-plungers arranged to enter the molds from the front, resistance-plungers entering the molds from the rear, a hydraulic resistance-cylinder, and a piston therein suitably connected with all of the resistance-plungers for the purpose set forth.

8. The combination with a suitable frame and a mold-case extending transversely across the same intermediate its extremities, of molds mounted in the mold-case each mold having a member slidable in said case, the said molds being open at the front and rear, driving-plungers arranged to enter the molds from the front, a shaft having eccentrics with which the driving-plungers are connected, resistance-plungers entering the molds from the rear, relief-heads with which the resistance-plungers are connected, a hydraulic resistance-cylinder, a piston therein, and an operative connection between the cylinder-piston and the relief-heads, whereby the latter act on the piston successively, and means operated from the eccentric shaft for actuating the movable mold-box members, substantially as described.

9. In a briqueting-machine, the combination with a suitable frame and a mold-case mounted thereon, of molds open at both ends and provided with movable mold members, dividing-plungers entering said molds in front, resistance-plungers entering said molds from the rear, a shaft journaled in the frame, relief-heads mounted on said shaft, each relief-head being connected with the shaft to actuate the latter independently and without moving the other heads, the resistance-plungers being connected with the relief-heads, a hydraulic resistance-cylinder, a piston therein, a rack mounted on the piston-stem, and a cogged segment fast on the relief-shaft and engaging the rack of the piston-stem.

10. The combination with a suitable frame and a stationary mold-case, of molds located in said case, each mold having a movable member, driving-plungers entering the molds from the front, a driving-shaft, connections between said shaft and the driving-plungers and movable mold members, whereby the said plungers and mold members are reciprocated, the movement of the mold members being more rapid than the movement of the plungers, resistance-

plungers entering the molds from the rear, relief-heads connected with said plungers, a relief-shaft upon which the heads are mounted, a hydraulic cylinder, a piston therein, and a suitable connection between the piston and the relief-head shaft.

11. The combination with a stationary mold-case, of molds located therein, each mold having a movable member, driving-plungers entering the molds from the front, a driving-shaft, connections between said shaft and the driving-plungers and movable mold members, whereby the said plungers and mold members are reciprocated, the movement of the mold members being uniformly more rapid than the movement of the plungers.

12. The combination with a mold-case, of molds supported by said case each mold having one movable member, driving-plungers entering the molds from the front, a driving-shaft, connections between said shafts and the driving-plungers and movable mold members whereby the said plungers and mold members are reciprocated, resistance-plungers entering the molds from the rear, relief-heads respectively connected with said plungers, a relief-shaft upon which said heads are mounted, a hydraulic cylinder, a piston therein, and a suitable operative connection between the piston and th relief-shaft.

13. The combination with a frame and a mold-case, of mold-boxes located in said case, each box having a member slidable in the case, driving-plungers entering the mold-boxes from the front, means for reciprocating the driving-plungers and movable mold-box members, relief-plungers entering the mold-boxes from the rear, relief-heads respectively engaging the relief-plungers and relief-shaft upon which said heads are mounted, a hydraulic cylinder, a piston therein, and a suitable operative connection between the relief-shaft and said piston, substantially as described.

14. In a briquet-machine, the combination with a suitable frame, of a mold mounted on the frame open at the front and rear and having a movable member, a driving-plunger arranged to enter the mold at one extremity, a resistance-plunger arranged to enter the mold at the opposite extremity, a briquet-extractor mounted on the movable mold member, the latter being provided with an opening through which the extractor projects downwardly, whereby as the movable mold member moves forwardly, the extractor is brought into contact with the briquet to release and eject the same, substantially as described.

15. The combination with a suitable frame, of a mold mounted on the frame and open at the front and rear, said mold having a movable member, a driving-plunger arranged to enter the mold at one extremity, a resistance-plunger arranged to enter the mold at the opposite extremity, an extractor device mounted on the rear extremity of the movable mold member, the latter having an opening through which the extractor projects downwardly to engage with the briquet to be extracted as the movable mold member moves forwardly, the extractor device being provided with a roller, and a stationary actuating device mounted on the frame and adapted to engage the roller of the extractor device whereby the latter is moved downwardly at the point where the briquet is to be discharged.

16. In a briquet-machine, the combination with a suitable frame, of a mold mounted on the frame and open at the front and rear, said mold having a movable mold member, a driving-plunger arranged to enter the mold at one extremity, a resistance-plunger arranged to enter the mold at the opposite extremity, a spring-supported extractor device mounted on the rear extremity of the movable mold member, a stationary bar mounted on the frame, an antifrictional roller mounted on the extractor device and adapted to engage said bar which is provided with an inclined face, whereby as the movable mold member moves forwardly, the roller of the extractor device engages said inclined face, which forces the extractor device downwardly to eject the briquet, substantially as described.

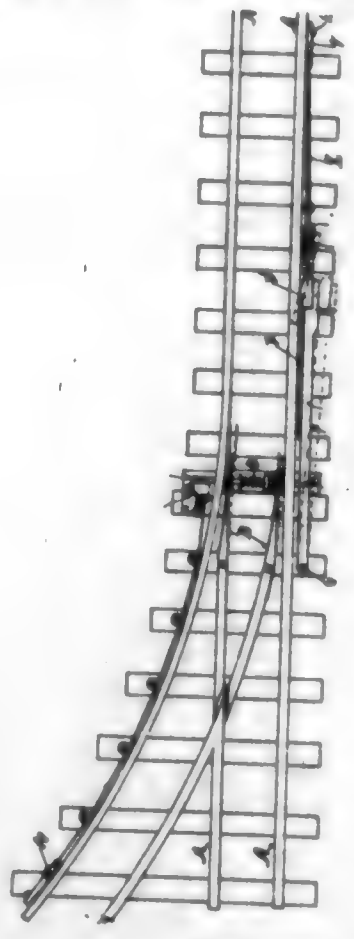
17. In a briquet-machine, the combination with a mold-case, of a mold having a member slidable in said case, a driving-plunger entering the mold from the front, a hopper mounted on the mold-case and communicating with the feed-space with which the movable mold member is provided when the latter is properly adjusted, and a stirring device mounted on the slidable mold member, and entering the hopper, the said stirring device moving with the slidable mold member, for the purpose set forth.

18. The combination with a stationary mold-case, a mold-box located in said case and having a movable mold member, a driving-plunger engaging said mold-box from the front, a coöperating resistance-plunger engaging the mold-box from the rear, the movable mold member having a feed-space communicating with the chamber of the mold-box, a vertically-movable feed-plunger mounted on the frame, and suitable means for actuating the same whereby as the feed-space of said movable member reaches the proper position, the said plunger descends and causes the briquet material to enter the mold-box chamber in front of the plunger.

19. The combination with a suitable frame and mold-case, of a mold-box located in said case and having a movable mold member, means for reciprocating said member, the movable mold member having a feed-space, a hopper mounted on the mold-case and arranged to discharge into the feed-space of the movable mold member when the latter is in the proper position, a horizontally-reciprocating driving-plunger entering the mold-box from the front, a relief-plunger entering the mold-box from the rear, a vertically-movable feed-plunger adapted to enter the feed-space of the vertically-movable mold member when the latter is in the proper position, said feed-plunger being provided with an antifrictional roller, suitable guides for the feed-plunger, a cam mounted on the frame, and means for actuating the cam whereby the feed-plunger engages the roller and raises the plunger at predetermined intervals, substantially as described.

20. In a briquet-machine, the combination with a suitable frame, of a movable mold-box member provided with a feed-space, a hopper for supplying material to said space, means for reciprocating the moving mold-box member, and a vertically-adjustable gage-plate suitably mounted on the frame and projecting into the feed-space of the movable mold-box member for the purpose set forth.

815,533. RAILWAY SWITCH MECHANISM. FRANK K. HOFFMAN, Dunkirk, N. Y. Filed Dec. 8, 1905. Serial No. 290,909.



Claim.—1. In a railway switch mechanism the combination of, a switch-tongue, a sliding bar for operating the same, spring mechanism adapted to retain said tongue in a closed position, a switch-operating lever connected with and adapted to operate said sliding bar, an upturned end on said operating-lever adapted to be engaged and operated by a switch-operating device on a railway-car, a spring latch mechanism adapted to lock the switch mechanism in an open position, and lever-and-link mechanism adapted to release the spring latch mechanism, substantially as described.

2. In a railway switch mechanism the combination of a switch-tongue, a sliding bar for operating the same, an operating-lever pivoted beside the railway-track rail connected, and adapted to operate said sliding bar, an offset at the free end of said lever, a supplementary bar pivoted to said lever, the free end thereof being upturned behind the offset end of said lever and adapted to contact with a switch-operating device on a car, and a spring adapted to press said supplementary bar upward, substantially as described.

3. In a railway switch mechanism the combination of, a switch-tongue, a sliding bar for operating the same, an operating-lever pivoted beside the railway-track rail connected to and adapted to operate said sliding bar, an offset at the free end of said lever, a supple-

mentary bar pivoted to said lever the free end thereof being upturned behind the offset on said lever, and adapted to contact with a switch-operating device on a railway-car, a spring adapted to press said supplementary bar upward, a spring latch mechanism adapted to engage said supplemental bar when the same is pressed downward and retain it in a downward position, and lever-and-link mechanism adapted to operate said spring latch mechanism and release said supplemental bar, substantially as set forth.

4. In a railway switch mechanism the combination of a switch-tongue, a sliding bar for operating the same, spring mechanism to retain the tongue in a closed position, a lever connected with and adapted to operate said sliding bar, a shoulder on said lever, a supplemental bar pivoted to said lever and having the free end thereof upturned behind the shoulder on said lever, a spring adapted to press said supplemental bar upward, spring latch mechanism adapted to engage said supplemental bar and retain it when the same is pressed downward, lever-and-link mechanism adapted to operate said spring-latch to release said supplemental bar, a spring-latch adapted to retain the switch mechanism in an open position until released, lever-and-link mechanism adapted to operate said latch to release the switch mechanism, a switch-operating device on a railway-car adapted when lowered to contact with the upturned end of the supplemental bar and operate said lever, and means to raise and lower said switch-operating device, substantially as set forth.

815,534. TOOTHPICK AND METHOD OF FORMING THE SAME. HENRY S. HOPPER, Norfolk, Va. Filed June 20, 1905. Serial No. 267,498.



Claim.—1. A toothpick comprising a splint severed from an annular growth of fiber, and having its point tapered to one surface of said growth.

2. A toothpick comprising a splint severed from an annular growth of fiber of varying tenacity in different portions of its thickness, the point of the pick being tapered toward one face of the annular growth.

3. A toothpick comprising a splint, radially severed from an annular growth of fiber, and having its point tapered from the inner to the outer face of said growth.

4. A toothpick comprising a splint, radially severed from a tubular reed and tapered toward the outer surface of the reed to form a point.

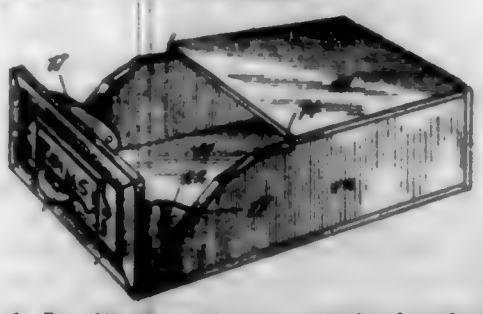
5. A toothpick comprising a splint, severed from an annular growth of fiber, the texture of which is of varying toughness, the point of the pick being tapered outwardly toward the tougher surface of the fiber.

6. The process of forming toothpicks, consisting in first beveling a tube formed from an annular growth of fiber, to sharpen the edge of the end thereof, and in then radially severing said tube into splints.

7. The process of forming a toothpick, consisting in first cutting a tube of suitable length from an annular growth of fiber, and then beveling the end of said tube from the inner to the outer face thereof to form a sharpened edge, and in then severing the tube radially into splints.

8. The process of forming toothpicks which consists in cutting reeds to form short tubes, severed between the knots, and in then beveling the edge of said tubes to form a sharpened edge and then radially severing the same into separate splints.

815,585. FILING-CASE. EDWARD B. ILLIG, New York, N. Y. Filed Feb. 14, 1905. Serial No. 245,640.



Claim.—1. In a filing-case, bottom, side, back and top members, the latter being shorter than the bottom member and the front ends of the side members being cut to form short vertical walls at the front of said top member, and a hinged front movable to an open position against said vertical walls and in a position in horizontal alinement with the top member.

2. In a filing-case, bottom, side, back and top members, a movable front, and hinge members connecting the front to the side members, one of said hinge members having a rib or corrugation constituting a holding device for frictional engagement with one of the side members.

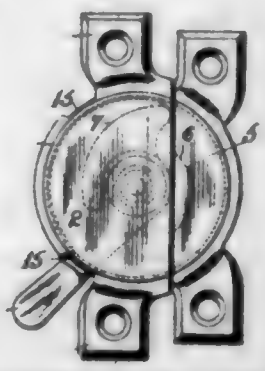
815,586. GAS-BURNER. PETER KELLER, Chicago, Ill. Filed July 20, 1905. Serial No. 270,482.



Claim.—1. In a device of the character described, the combination of a lower member having a central upwardly-extended nipple provided with a gas-discharge opening in its top and adapted for location in the gas-passage of a gas-burner or the like and a cap having a top portion and a pendent edge flange of greater diameter than said nipple, the top portion of the cap being adapted to rest on the nipple and said edge flange of the cap being spaced from the sides of the nipple and having its lower edge adapted to stand out of contact with the lower member in such position of the cap and said top portion of the cap having vents adapted for communication with the gas-discharge opening of the nipple and leading outwardly into said space between the edge flange of the cap and said nipple.

2. In a device of the character described, the combination of a gas-burner or the like having a gas-passage, a screen extended across said passage, a lower member having a pendent edge flange engaged in the gas-passage of the burner below said screen and having a central upwardly-extended nipple of less diameter than the gas-passage and provided with a gas-discharge opening in its top and a cap having a top portion and a pendent edge flange, the top portion of the cap being adapted to rest on the nipple and said pendent edge flange being extended around the sides of the nipple and spaced therefrom and also from the walls of the gas-passage with its lower edge elevated out of contact with the said lower member to permit free flow of gas between the parts, the top portion of the cap being corrugated to produce on its under side radial vents or channels leading from the gas-discharge opening of the nipple to the space between the nipple and the edge flange of the cap when said cap is lowered, the parts of said top portion between the corrugations forming depressions on the upper surface of the cap adapted, when the cap is raised, to permit flow of gas over the top of the cap to the interstices of said screen.

815,587. SASH-FASTENER. AMOS KNEPPER, Reading, Pa., assignor of one-half to Henry Focht, Reading, Pa. Filed Dec. 15, 1905. Serial No. 291,818.



Claim.—1. In a sash-fastener the combination with the strike, of a case having spread-apart fastening-ears and a single horizontal uniting-plate therefor forming a cover and provided with a locking-rim, a headed pivot-post depending rigidly from said plate and adapted to serve as a central support therefor upon the sash, and a locking-lever pivoted upon said post below said top plate and having an integrally-formed handle projected beyond said rim, substantially as set forth.

2. In a sash-fastener the combination with the strike, of a case having a top plate provided with a locking-rim and a headed pivot-post depending therefrom and adapted to serve as a central support therefor upon the sash, a strike-engaging lever pivoted upon said post below said top plate and having an integrally-formed handle projected beyond said rim, and an annular spring-recess, and a coiled spring seated upon the pivot-post head and within said recess, substantially as set forth.

815,588. BUCKLE. Edwin J. Kraffert, Somerville, Mass., assignor of three-sixteenths to Frederic F. Raymond, 2d, Newton, Mass. Filed Mar. 10, 1904. Serial No. 196,576.



Claim.—1. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot and adjacent strap-bar in line with the slot and strap-bar of said passive member, whereby said passive member and guard may be held by a single strap and thereby be connected at one end only thereof and said tongue enter freely between said passive member and guard when the members are combined.

2. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot registering with the slot in said passive member and a strap-bar adjacent to its said slot, which strap-bar makes integral connection with the strap-bar of said passive member, whereby said passive member and guard are permanently connected at one end only thereof so as to be retained by a single strap and also spaced apart so that said tongue may enter freely between said passive member and guard, substantially as shown and described.

3. A buckle of the character specified having an active member provided with a tongue, a passive member with which said tongue of the active member is adapted to engage, said passive member having also a slot and adjacent strap-bar, a guard for said tongue when making interlocking engagement with said passive member, said guard comprising a plate beneath said passive member and spaced therefrom, said guard having also a slot and adjacent strap-bar in line with the slot and strap-bar of said passive member, whereby said passive member and guard may be held by a single strap and said tongue enter freely between said passive member and guard when the members are combined, and which passive member and guard have also edges turned to interlock with one another, whereby said members may be retained in proper longitudinal alinement.

4. A member of a buckle having a thumb portion, a tongue turned down throughout its entire length from the edge of said portion, and arms extending from said thumb portion and angularly arranged with respect to said tongue for supportnig a strap-bar, and a strap-bar.

5. A member of a buckle comprising a thumb portion, arms extending therefrom for supporting a strap-bar on the ends thereof, and between said arms, a curved tongue turned down from the edge of said thumb portion, and located throughout its entire length on a line of curvature substantially equally distant from the ends of said arms.

6. A member of a buckle comprising a thumb portion, a tongue turned down from the edge thereof, arms extending from said thumb portion, and a sleeve carried by said arms and forming a strap-bar.

7. A member of a buckle comprising a thumb portion, a tongue turned down to project from the edge thereof, arms extending from the edge of said thumb portion alongside said tongue on either side thereof, and a strap-bar carried by said arms.

8. A member of a buckle comprising a thumb portion, a tongue attached thereto and projecting angularly therefrom, said tongue projecting in a direction directly away and outwardly from the thumb portion, arms also extending from said thumb portion, and a strap-bar.

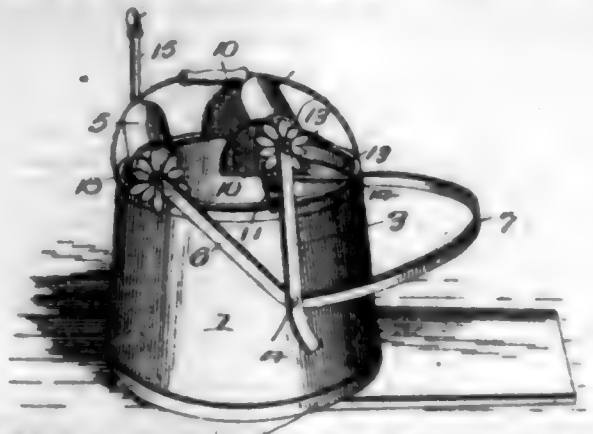
9. A member of a buckle comprising a thumb portion, a tongue projecting from the edge thereof, and arms also extending from the edge of said thumb portion alongside said tongue on either side thereof for supporting a strap-bar and a strap-bar carried by said arms.

10. A member of a buckle having a thumb portion, a tongue turned down from the edge thereof, arms extending from said thumb portion on either side of said tongue, the projecting ends of which arms turn inwardly for supporting a strap-bar.

11. A member of a buckle comprising a thumb portion, a tongue struck down from the edge thereof, arms extending also from said thumb portion, the ends of which arms turn inwardly for supporting a strap-bar, and a sleeve forming said strap-bar arranged on the inturned ends of said arms.

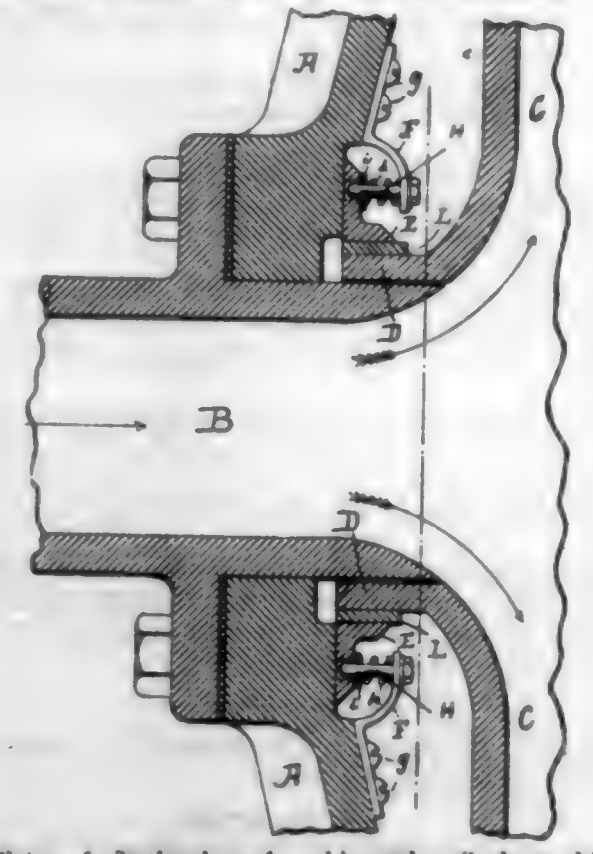
12. A blank from which is formed a member of a buckle, the same comprising a portion forming the thumb portion of said member, a portion forming a tongue projecting from the edge of said thumb portion, a portion forming arms for supporting a strap-bar, and a portion forming said strap-bar arranged on the ends of said arms.

815,589. MOP-WRINGER. Stephen Kraiwik, Manitowoc, Wis. Filed Nov. 3, 1904. Serial No. 231,260.



Claim.—A mop-wringer comprising a receptacle, a cross-bar thereon, parallel guides projecting across and mounted upon the bar, a stationary roller mounted between the guides, a pedal fulcrumed on the receptacle, supporting-levers extending therefrom, a movable roller journaled in said levers and adapted to move between but out of contact with the guides, operating means connected to said roller and means for transmitting motion from said roller to the first-mentioned roller when both rollers are between the guides, the guides extending above the center of the pass between the rollers when the rollers are therebetween.

815,540. CENTRIFUGAL PUMP. Ferdinand W. Kroog, San Francisco, Cal. Filed Apr. 6, 1904. Serial No. 201,886.



Claim.—1. In the class of machinery described a packing-ring to prevent leakage between the stationary and moving parts, consisting of a ring having suitable shape; brackets secured to said stationary part and provided with springs by which said ring is pressed to said stationary part, said springs being placed between said brackets and the ring.

2. In the class of machinery described a packing-ring of approximately L shape to prevent leakage between the stationary and moving parts in combination with a spring-bracket attached to the stationary part to press said ring against said part.

3. In the class of machinery described, a packing-ring to pre-

vent leakage between the stationary and moving parts, consisting of a ring having a right-angle shape; holes bored upon said ring; brackets secured to the stationary part and provided with pins by which said ring is secured to said stationary part, said pins being smaller in diameter than the diameter of the holes upon the ring, washers on said pins and springs around said pins between the washer and the brackets.

4. In the class of machinery described, a packing-ring of approximately L shape to prevent leakage between the stationary and moving parts in combination with a bracket attached to the stationary part, a bolt tapped into said bracket and extending into holes or sockets in the ring, said holes or sockets being of larger diameter than the bolt, a washer on the bolt and spiral springs between the washer and the bracket, to press the ring into packing contact with the stationary part.

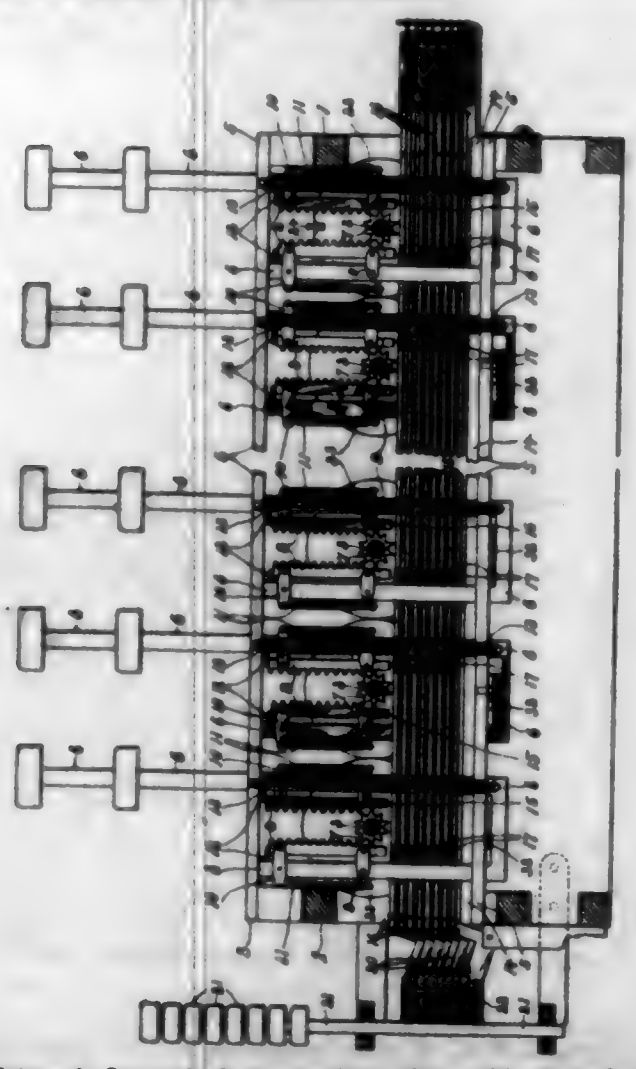
815,541. NUT-LOCK. FRANKLIN T. LEATHERMAN, Whiting, Ind., assignor of one-half to Charles B. Greenwald, Whiting, Ind. Filed Apr. 17, 1905. Serial No. 256,006.



Claim.—1. A nut-lock comprising a body having slots in opposite sides thereof extending throughout the width of the body, said slots being open at their ends and parallel with one face of the nut, controlling-ribs disposed within the open ends of the slots, and said body having slots in one face thereof connecting with the first-mentioned slots, all of said slots opening into the threaded passage within the nut.

2. A nut-lock comprising a body having slots in opposite sides thereof extending throughout the width of the body, said slots having open ends and being parallel with one face of the nut, and slots in one face of the nut connecting with the first-mentioned slots at the centers thereof, all of said slots opening into the threaded passage within the nut.

815,542. CALCULATING-MACHINE. JUDAH L. LEVIN, Detroit, Mich. Filed Dec. 1, 1904. Serial No. 235,083.



Claim.—1. In a calculating-machine, the combination of a series of indicators mounted on shafts journaled in the casing and provided with numbered spaces, means carried by the shafts for transmitting motion from one to the other of said indicators, two series of vertically-movable operating-keys to turn the indicators in opposite directions, a series of keys each representing a digit, a series of superposed sliding plates supported in the casing adjacent to the operating-keys and attached to the digit-keys to be moved thereby to correspondingly limit the movement of all of the operating-keys and means for returning said plates.

2. In a calculating-machine, the combination with a casing, of a series of shafts mounted in said casing, an indicator on each shaft, a pinion on each shaft, means for transmitting motion from one to the other of said shafts, a series of operating-keys, rack-bars connected to said keys to engage the pinions and turn the shafts, a series of superimposed longitudinally-movable plates having notches opposite the rack-bars to allow the same to pass therethrough, and a series of digit-keys connected to said plates to move the same longitudinally.

3. In a calculating-machine, the combination with a casing, of a series of shafts mounted on said casing, indicators on said shafts, means connecting said shafts to transmit motion from one to the other, pinions on said shafts, rack-bars to engage the pinions, a series of vertically-movable key-bars, links pivoted to said key-bars and to the racks, stops to limit the movement in one direction of the racks relative to the key-bars, and springs to normally hold the racks against the stops.

4. In a calculating-machine, the combination with a casing, of a series of shafts mounted on said casing, a series of indicating wheels on said shafts, means for transmitting motion from one shaft to another, pinions on said shafts, a series of vertically-movable key-bars, racks extending parallel to the key-bars, links pivoted at one end to the key-bars and at their opposite ends to the racks, stop-pins on the key-bars to engage the ends of the racks when the links are extended at right angles to the key-bar, and springs to normally hold the racks against the stop-pins.

5. In a calculating-machine, the combination with a casing, of a series of shafts supported by the casing, indicator-wheels on said shafts, means for transmitting motion from one shaft to another, pinions on the shafts, rack-bars for said pinions, a series of key-bars each vertically supported by the casing at a short distance from each pinion, links pivoted intermediate their ends to the key-bars and connected at one end and pivotally attached to the upper ends of the racks at their opposite ends with a space between the racks and bars, links pivoted at their ends to the key-bars and to the lower ends of the racks, stop-pins on the key-bars to engage the upper ends of the racks when the links are in horizontal position, and springs attached at one end to the connected ends of the upper links and at their opposite ends to the key-bars.

6. In a calculating-machine, the combination with a series of shafts and means for turning the same; of a loose and a fixed disk on each shaft the loose disk on one shaft being adapted to receive motion from the fixed disk on the next adjacent shaft to the right, and means for locking the loose to the fixed disk on each shaft, moved by the operation of the means for turning the shaft, to disconnect the same.

7. In a calculating-machine, the combination with a series of shafts and means for turning the same; of a loose disk on each shaft provided with a series of notches in its periphery, a disk fixed on each shaft adjacent to the loose disk and provided with a tooth, said disks being so arranged that the fixed disk on each shaft will engage and turn the loose disk on the adjacent shaft at the left, and means for normally locking the loose disk on each shaft to the fixed disk thereon to transmit motion thereto, and adapted to be actuated by the movement of the means for turning the shafts, to unlock the loose disk on the shaft.

8. In a calculating-machine, the combination with a series of shafts and means for turning the same; of a disk fixed on each shaft, a tooth on each fixed disk, a loose disk on each shaft provided with scallops in its periphery to fit the periphery of the fixed disk on the adjacent shaft and notches at the meeting-points of the scallops to receive the tooth on said fixed disk, a ratchet-and-pawl connection between said fixed and loose disks on each shaft and means for locking the loose disk on each shaft to the fixed disk thereon.

9. In a calculating-machine, the combination with a series of shafts, indicators on said shafts and means for turning said shafts; of a disk fixed on each shaft, a tooth on each fixed disk, a loose disk on each shaft having notches in its periphery to receive the tooth on the fixed disk on the adjacent shaft to the right, a fixed ratchet on each shaft between the disks thereon, a pawl pivoted to each loose disk, a movable pin carried by each loose disk to engage and hold the pawl in engagement with the ratchet, and means for moving the pins to release the pawls, actuated by the means for turning the shafts.

10. In a calculating-machine, the combination with a supporting-casing, of a series of shafts mounted on said casing, an indicator on each shaft, vertically-movable keys guided on the casing, means

for turning the shafts carried by the keys, a disk fixed on each shaft, a tooth on each fixed disk, a loose disk on each shaft having a series of scallops in its periphery and notches at the meeting-points of the scallops, a fixed ratchet between said disks on each shaft, a pawl pivoted to each loose disk to engage the ratchet, a sleeve on each shaft, a pin carried by each sleeve and adapted to project through an opening in the loose disks and engage the pawls to lock the same in engagement with their ratchets, operating-bars supported by the casing and engaging said sleeves to move the same by the movement of said keys.

11. In a calculating-machine, the combination with a supporting-casing, of a series of shafts mounted on said casing, an indicator on each shaft, vertically-movable key-bars guided in the casing and each provided with an incline at its lower end, pinions secured on the shafts, racks carried by the key-bars to engage and turn the pinions, a disk fixed on each shaft provided with a tooth on its periphery, a loose disk on each shaft having scallops in its periphery to fit the periphery of the fixed disk on the adjacent shaft, and provided with notches at the meeting-points of said scallops, a fixed ratchet between the disks on each shaft, a pawl on each loose disk, a sleeve on each shaft having a groove, a pin carried by each sleeve adapted to project through an opening in the loose disk and engage the pawl, operating-bars extending beneath each shaft and supported on the casing in engagement with the inclines on the key-bars, a fork carried by each operating-bar to engage the grooves in the sleeves, and springs engaging the bars to hold the same in contact with the inclines.

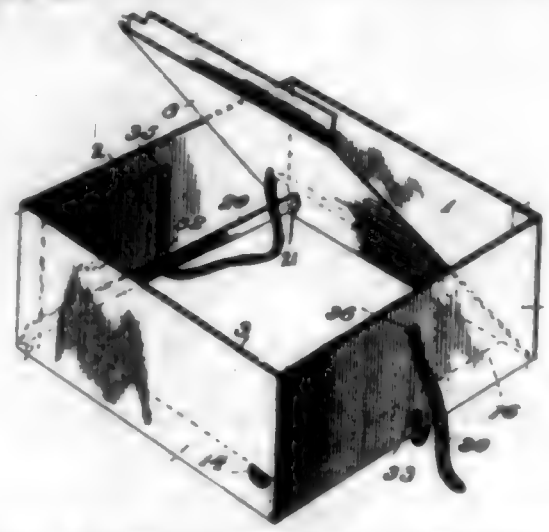
12. In a calculating-machine, the combination with a supporting-casing, of a series of shafts mounted on said casing, an indicator-wheel secured on each shaft, pinions secured to each shaft, supporting-bars on the casing near the top and bottom thereof and provided with guide-openings, two parallel rows of key-bars guided vertically in said openings, springs to hold said key-bars in their raised positions, rack-bars to engage the pinions, links pivotally attached to the key-bars and to the racks to support the racks, a stop-pin on each key-bar to engage the racks, springs to normally hold the racks in engagement with the stops, laterally-extending lugs on the lower ends of the racks, a series of superimposed longitudinally-movable plates supported on the lower guide-bars between the rows of operating key-bars and provided with notches opposite the lugs on the racks, bell-cranks pivoted on the frame and attached to one end of said plates, springs attached to the opposite ends of said plates, a series of digit-keys to turn the bell-cranks, a disk fixed on each shaft and having a tooth, a loose disk on each shaft having scallops and notches in its periphery, a ratchet-wheel on each shaft between the disks, a pawl on each loose disk to engage the ratchet, means for engaging and locking the pawl, a sleeve on each shaft carrying said means, and operating-bars engaging and moved by the inclines on the key-bars to move said sleeves.

13. In a calculating-machine, the combination with a supporting-casing, of a series of shafts in said casing, indicator-wheels and pinions carried by said shafts, vertically-guided key-bars in said casing, springs to hold said key-bars in their normal position, rack-bars to engage said pinions, links to pivotally support the racks upon the key-bars, a stop on each key-bar to engage the racks, means for normally holding the racks in engagement with the stops, lugs on the racks, a series of superimposed movable plates supported on the casing provided with notches adapted to register with the lugs on the racks, levers attached to one end of said plates, springs attached to said plates, a series of digit-keys to rock the levers, a fast and a loose disk on each shaft adapted to respectively coöperate with the loose and fast disks of the adjacent shafts, a ratchet-wheel on each shaft, a pawl on each loose disk to engage the ratchet, a sleeve on each shaft, means for engaging and locking the pawl carried by said sleeve and operating-bars moved by the key-bars for actuating said means.

815,543. MILLINERY-BOX. CARL A. LEVY, St. Louis, Mo., assignor to Isse Seligstein, St. Louis, Mo. Filed Jan. 25, 1905. Serial No. 242,022.

Claim.—1. In a collapsible box, folding sides, a bottom formed in one piece with one of said sides and filling the space between the sides when the box is open and folding against one of the sides when the box is collapsed, flaps projecting from the remaining sides and forming a support for the free edges of said bottom, one of the flaps being secured to the bottom and two of the flaps being secured to each other on the line on which they fold, and locking means between one of the free edges of the bottom and one of the sides of the box.

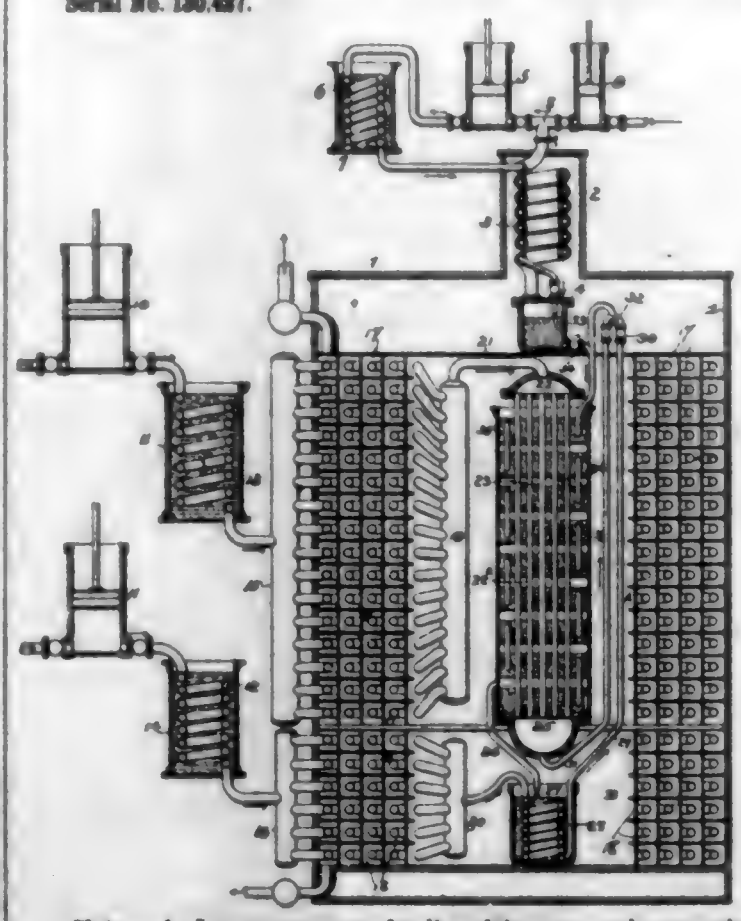
2. In a collapsible box, folding sides, a bottom projecting from one of said sides and filling the space between the sides when the box is open, and flaps projecting from the remaining sides and forming a support for the free edges of said bottom, two of said flaps folding on a diagonal line, and when open, resting in the same plane and thus forming a brace.



3. In a collapsible box, folding sides, a bottom projecting from one of said sides and filling the space between the sides when the box is open, and flaps projecting from the remaining sides, and forming a support for the free edges of said bottom, two of said flaps folding on a diagonal line and, when open, resting in the same plane and thus forming a brace, and the end of one of said flaps backing against one of the sides.

4. A collapsible box, comprising two blanks, each blank forming two of the sides of the box, said blanks being secured together; one of the blanks having a bottom projecting from one of its side portions and a flap projecting from the other side portion, and flap projecting from each of the side portions of the other blank; the said bottom and one of the flaps being glued together on a diagonal line, and the flaps of the other blank being glued together on a diagonal line; and the box when collapsed having the sides folding together with the bottom and flaps located between the sides and with the bottom uncreased, substantially as described.

815,544. APPARATUS FOR LIQUEFYING GAS AND SEPARATING ITS ELEMENTS. CARL LINDE, Munich, Germany, assignor of one-third to Charles P. Brush, Cleveland, Ohio. Filed Nov. 7, 1903. Serial No. 180,427.

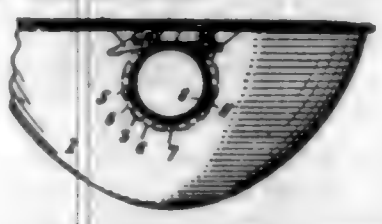


Claim.—1. In an apparatus for liquefying gas and separating its constituent parts, the combination with a distilling-chamber, of a vessel into which the less volatile liquefied gas from the distilling-chamber flows, a counter-current apparatus surrounding said vessel and having an outlet for the products of evaporation of the distilled liquid in said vessel, a similar counter-current apparatus around the

distilling-chamber having an outlet for the products of evaporation therefrom, pipes for conveying compressed gas from the counter-current apparatus through the liquid in the distilling-chamber and vessel to boil the same and condense or liquefy the gas, and means for conveying said liquefied gas in both pipes into the distilling-chamber.

2. In an apparatus for liquefying gas and separating its constituent parts, the combination with a distilling-chamber, of a vessel into which the less volatile liquefied gas from the distilling-chamber flows, a counter-current apparatus surrounding said vessel and having an outlet for the products of evaporation of the distilled liquid in said vessel, a similar counter-current apparatus around the distilling-chamber having an outlet for the products of evaporation therefrom, pipes for conveying compressed gas from the counter-current apparatus through the liquid in the distilling-chamber and vessel to boil the same and condense or liquefy the gas, and means for conveying said liquefied gas in both pipes into the distilling-chamber, and means for supplying liquefied gas to the distilling-chamber to make up for loss of cold.

815,545. SHADE-HOLDER. ALBERT S. MARTEN, East Orange, and CHARLES J. RICHMORE, Newark, N. J., assignors to The Tea Tray Company, of Newark, New Jersey, a Corporation of New Jersey. Filed Feb. 1, 1904. Serial No. 191,461.



Claim.—1. A shade-holder having a curved resilient band adapted to extend partially around a lamp-socket, a lever fulcrumed upon one end of said band to swing in the plane of said band, and a link having one end connected to said lever at a point eccentric to its fulcrum and the other end adjustably connected to the end of said band not having said lever.

2. A shade-holder having a curved resilient band adapted to extend partially around a lamp-socket, one end of said band being bent outward and perforated, a lever fulcrumed upon the other end of said band to swing in the plane thereof, and a link having one end connected to said lever at a point eccentric to its fulcrum and its other end threaded and extending loosely through the said perforated end of the band, and a nut on said threaded end.

3. A shade-holder having a curved resilient band adapted to extend partially around a lamp-socket, one end of said band having lateral ears bent upwardly outward and the other end being bent upwardly outward at its extremity and perforated, a lever pivoted between said ears, and a link extending from a point of said lever eccentric to its fulcrum to the said perforated end of the band and being adjustably secured there.

4. A shade-holder having a body portion providing a curved resilient band adapted to receive a lamp-socket, a lever pivoted upon one end of said band to swing in the plane thereof, and a link extending from the other end of the band to a point of said lever eccentric to its pivot and being laterally bent to pass said pivot and lie nearer to the band than does said pivot when the lever is closed against the band.

5. A shade-holder comprising a curved resilient body portion adapted to extend partially around a lamp-socket, arms projecting radially outward from said band and being adapted to engage a shade, extension-arms adapted to be removably attached to said arms and being adapted to engage a shade, and means for connecting the ends of said band and clamping the same around a lamp-socket.

6. The combination with a shade-holder having radial arms bent at their ends to form shade-grasping fingers, each of said arms being longitudinally slotted at its bent end and having between said end and the body portion of the holder a keyhole-slot arranged with its large end next said body portion, of extension-arms each being adapted at its outer end to engage a shade and having at its other end a tongue adapted to pass through the said end slot of an arm and at the end of said tongue a head to engage said keyhole-slot.

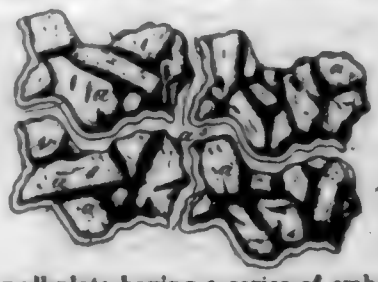
815,546. ADJUSTABLE SEAT FOR ELECTRIC-CAR MOTORMEN. OSAL B. MEYERS, Denver, Colo. Filed July 6, 1905. Serial No. 268,579.

Claim.—1. The combination in an adjustable bracket-seat for motormen, of an upright, rigid metal post or rod, a horizontal metal rod or tubing connected by an eye with the upper extremity of said upright post and having its opposite end bent downward at a right angle for a short distance, the said horizontal rod bearing an adjustable saddle near said angle and in front thereof, a metal collar surrounding said angular projection and regulated by means of a set-screw, said collar extending to one side and terminating in an eye which is connected with an obliquely-hanging brace-rod terminating in a hook, the opposite end of said brace-rod terminating in a rubber-cushioned fork bearing against the lower extremity of said upright supporting-post, and a chain connecting said brace-rod with said horizontal rod near said upright post and adapted to regulate said device in conjunction with said metal collar and said obliquely-hanging and connecting brace-rod, substantially as described.



2. In an adjustable bracket-framed seat the combination of a perpendicular rigid post, a horizontal rod, one end of which connects with the upper end of the said perpendicular post by a loosely-fitting eye, the opposite end of said horizontal rod being bent downward at a right angle and extending a short distance, the said horizontal rod bearing upon its upper side an adjustable saddle near to and in front of said angle, a metal collar surrounding said angular projection and regulated by means of a set-screw and extended and terminating upon one side in an eye connected with an obliquely-hanging brace-rod by a hook which terminates one of its ends, the opposite end of said brace-rod terminating in a rubber-cushioned fork which bears against said perpendicular post near its base, a chain connecting said brace-rod with said horizontal rod near the ends of each and adjacent to said perpendicular posts, said chain being adapted to regulate said rods in conjunction with said metal collar, substantially as specified.

815,547. WALL-COVERING. HERBERT L. MEMMORE, New York, N. Y. Filed Feb. 17, 1905. Serial No. 246,004.



Claim.—A wall-plate having a series of embossed ornaments, intervening clefts that traverse the surface of the plate, and an irregular outline formed by the outer clefts of the bordering relief ornaments, opposite edges of the plate forming complements to each other, substantially as specified.

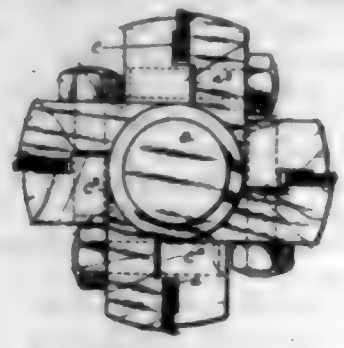
815,548. PROCESS OF PRODUCING AROMATIC ALCOHOLS AND THEIR DERIVATIVES. CHARLES MEYLER, Munich, Germany. Filed Nov. 2, 1904. Serial No. 231,140.

Claim.—Process for the production of aromatic alcohols and their ethers, which consists in exposing the aromatic esters in a dissolving agent, capable of conducting the electric current in the cathode-space of an electrolytic apparatus in using for the cathode a material of a specially-high cathodic tension, then neutralizing the cathode liquid, then separating the reaction product and finally distilling, substantially as described.

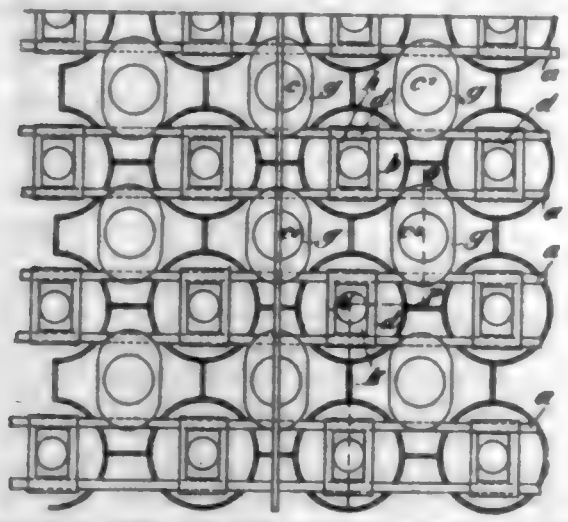
815,549. CUTTER-HEAD. ARTHUR W. NELSON, Chicago, Ill. Filed Oct. 8, 1904. Serial No. 227,733.

Claim.—A cutter-head comprising a head-stock, knives radially disposed thereon, guideways in the head-stock perpendicular to the knives, and clamps having sliding engagement with the guideways, bearing against the knives.

815,549.



815,550. REMOVABLE WALL AND CEILING COVERING. Joseph O. Parkinson, Ramet, Yvoz, Val St. Lambert, Belgium. Filed Nov. 19, 1904. Serial No. 233,106.



Claim.—1. A ceiling or wall covering comprising a suitable back frame having screw-threads, a plurality of plates or tiles of cross-like form with entrant arc boundaries, and a plurality of circular plates or tiles screwed to the back frame and securing the cross arc plates or tiles in position.

2. A ceiling or wall covering comprising a suitable back frame having screw-threads, a plurality of plates or tiles of cross-like form with entrant arc boundaries, and a plurality of circular plates or tiles screwed to the back frame and securing the cross arc plates or tiles in position, the cross and circular tiles or plates being provided with coacting tongues and grooves of circular or segmental form.

3. An improved covering for walls or ceilings, consisting of a suitable frame composed of parallel bars and two series of plates or tiles, one of which series is adapted to be engaged with the bars of a said frame by means of a flange, lugs formed at the free end of a concentric trunk thereon, and the other of which is adapted by means of a concentric screwed shank to be fixed to nuts slidably carried by said bars, the two series of plates or tiles being formed with grooves and tongues so that they engage with each other.

815,551. BARGE AND OTHER LIKE VESSEL. John M. Pearson, Bellevue, Pa., assignor to Pearson Manufacturing Company, Allegheny, Pa., a Corporation of Pennsylvania. Filed Feb. 15, 1905. Serial No. 245,685.

Claim.—1. A barge having a hollow metallic head-log at each end thereof, said head-log being formed of an outer plate and inner bar connected together by bars.

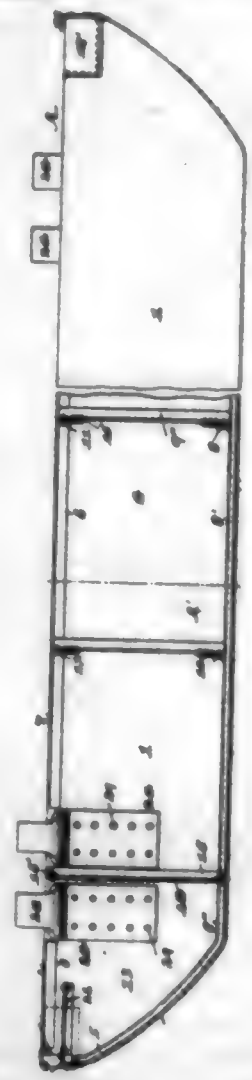
2. A barge having a hollow metallic head-log at each end thereof, said head-log being formed of an outer plate and an inner channel-bar and being connected together by an angle-bar at the upper end and a Z-bar at the lower end.

3. A barge having a hollow metallic head-log at each end and between the sides thereof, said head-log being formed of an outer plate and an inner bar connected together by bars, bars secured to said sides, and a platform connected to the said inner bar and to said side bars.

4. A barge having a hollow metallic head-log at each end and between the sides thereof, said head-log being formed of an outer plate and an inner bar connected together by bars, bars secured to said sides, a cross-bar extending across and secured to said side bars, and a platform connected to said inner bar, side bars and cross-bar.

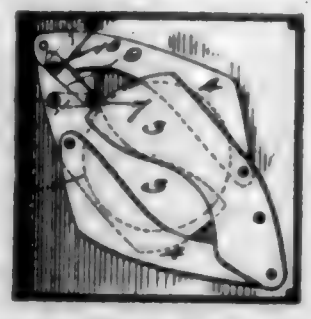
5. A barge having a hollow metallic head-log at each end and between the sides thereof, said head-log being formed on an outer plate and an inner bar or plate connected together and said outer bar being bent around the sides of said barge to form corner-bands.

6. In a metallic barge, the combination with the bottom and sides, of a series of bars extending longitudinally of and secured to said bottom, cross-bars extending across the upper end of said barge and secured to said sides, vertical bars connected to said cross-bars, and a series of bars extending across said barge and connected to said first-named bars and said vertical bars to raise and support the same above said bottom.



7. In a metallic barge, the combination with the bottom and sides, of a series of Z-bars extending longitudinally of and secured to said bottom, cross-bars extending across the upper end of said barge and secured to said sides, vertical bars connected to said cross-bars by gusset-plates, and a series of angle-bars extending across said barge and connected to said Z-bars and to said vertical bars by gusset-plates to raise and support said angle-bars above said bottom.

815,552. PHOTOGRAPHIC SHUTTER. Henry B. Perry, Sheldon, Iowa. Filed Jan. 10, 1905. Renewed Jan. 19, 1906. Serial No 296,781.

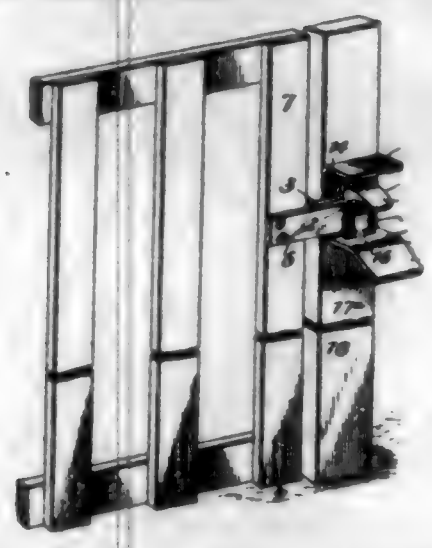


Claim.—1. In a photographic shutter, the combination with a casing, of a pair of main shutter-wings pivotally mounted in said casing, a pair of supplemental wings pivotally connecting said main wings, a pneumatic cylinder, having a reciprocating piston, a lever pivotally connected to one of said main wings, a laterally-projecting pin formed on said lever and adapted to project through a curved slot in said casing, an arm connecting said pin and said piston whereby said wings are pneumatically operated, and means whereby the movement of the wings is controlled to make an instantaneous or a time exposure, substantially as described.

2. In a photographic shutter, the combination with a casing, of a pair of main shutter-wings pivotally mounted in said casing, a pair of supplemental wings pivotally connecting said main wings, a pneumatic cylinder having a reciprocating piston, a lever pivotally connected to one of said main wings, a laterally-projecting pin formed

on said lever and adapted to project through a curved slot in said casing, an arm connecting said pin and said piston whereby said wings are pneumatically operated, guide-links pivotally connected to each end of said lever and a stop-arm pivotally mounted on said casing whereby the same may be swung into the path of movement of the pin on said lever to limit the movement of the same thereby controlling the movement of said wings, substantially as described.

815,553. LATCH. JOHN W. PETTIJOHN, Montesano, Wash. Filed May 9, 1905. Serial No. 259,542.



Claim.—1. A latch of the class described, comprising a vertically-slidable bolt, means for mounting the same, and a keeper having a lower projecting bolt-receiving portion and provided also with an upper projecting guard or shield extending outwardly above the top of the bolt.

2. A latch of the class described, comprising a vertically-movable bolt, a guide or support for the same consisting of a strip of metal doubled to form a bolt-receiving loop and having its terminals extended from one end of the loop to form attaching portions, means for retaining the bolt in the loop, and a keeper arranged to be engaged by the bolt.

3. A latch of the class described, comprising a vertically-movable bolt, and a keeper composed of an intermediate attaching portion, a top projecting guard, and a lower substantially V-shaped portion projecting outward and having the outer portion of its upper side inclined and provided at the inner portion with a bolt-receiving opening.

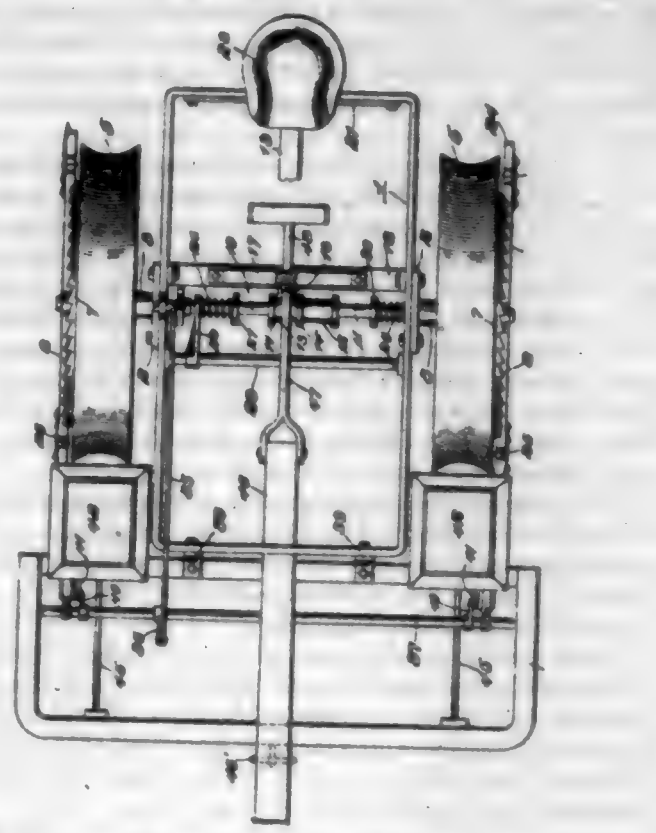
4. A latch of the class described, comprising a casing having a horizontal loop, a bolt slidably mounted in the loop and provided at the top with an outwardly-projecting grip, and a keeper composed of an intermediate attaching portion, an outwardly-extending top guard, and a substantially V-shaped lower portion projecting outward from the intermediate portion and provided with a bolt-receiving opening.

815,554. PLANTER. ORVILLE PHILLIPS, Braymer, Mo. Filed Oct. 26, 1905. Serial No. 284,322.

Claim.—1. In a planter, the combination with a frame, laterally-extending sleeves secured to the frame, and wheels rotatably mounted upon said sleeves; of alining, telescoping shafts slidably mounted within the sleeves, a marking-arm secured to each shaft, a toothed ring secured to and rotatable with each of the wheels, resilient means upon the shafts for holding the marking-arms normally in engagement with the toothed rings, and mechanism for simultaneously moving the shafts and the marking-arms in opposite directions.

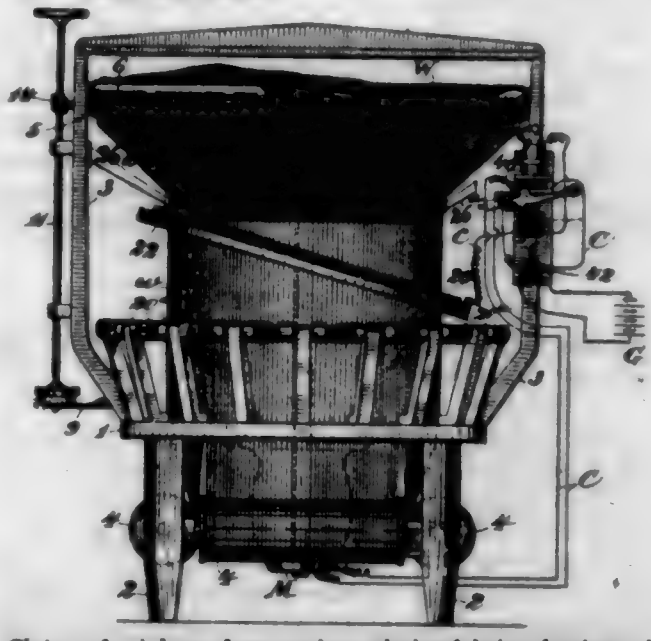
2. In a planter the combination with a frame and wheels supporting the same; of toothed rings secured to said wheels, alining shafts slidably mounted within the frame and wheels and telescoped at their adjoining ends, marking-arms secured to the shafts, means on said shafts for holding the arms normally in engagement with the rings, arms engaging the shafts and adapted to slide them in opposite directions, and a treadle interposed between and adapted to spread apart said arms to simultaneously actuate the shafts.

3. In a planter the combination with a frame and wheels supporting the same; of toothed rings secured to said wheels, alining shafts slidably mounted within the frame and wheels and telescoped at their adjoining ends, marking-arms secured to the shafts, means on said shafts for holding the arms normally in engagement with the rings, arms engaging the shafts and adapted to slide them in opposite directions, a treadle interposed between and adapted to spread apart said arms to simultaneously actuate the shafts, and dropping mechanism actuated by the rotation of the arms.



4. In a planter the combination with a frame and wheels supporting the same; of toothed rings secured to said wheels, alining shafts slidably mounted within the frame and wheels and telescoped at their adjoining ends, marking-arms secured to the shafts, means on said shafts for holding the arms normally in engagement with the rings, arms engaging the shafts and adapted to slide them in opposite directions, a treadle interposed between and adapted to spread apart said arms to simultaneously actuate the shafts, dropping mechanism actuated by the rotation of the arms, and means operated by the treadle for raising the dropping mechanism simultaneously with the sliding of the shafts.

815,555. LOOM FOR WEAVING TUBULAR FABRICS. GEORGE A. PICKUP, Brooklyn, N. Y. Filed July 29, 1903. Renewed Aug. 19, 1905. Serial No. 274,961.



Claim.—1. A loom for weaving tubular fabrics, having a horizontal bed with apertures, arranged in a circle, for the upright warp-threads, warp-beams below said bed, an upright main shaft concentric with the warps, means for driving said shaft, means above for taking up the cloth, a circular former and spreader for the tubular fabric, radially-disposed heddles, means between the main shaft and the heddles for operating the latter, a circular reed above the heddles, radial arms provided with means for imparting a positive gyratory movement to said reed, and shuttle-carriers on the said arms.

2. A loom for weaving tubular fabrics, having means for carrying upright tubular warps, radially-disposed heddles for forming successive sheds in the warps, means for operating said heddles, an upright rotating shaft in the axis of the tubular warps, means below

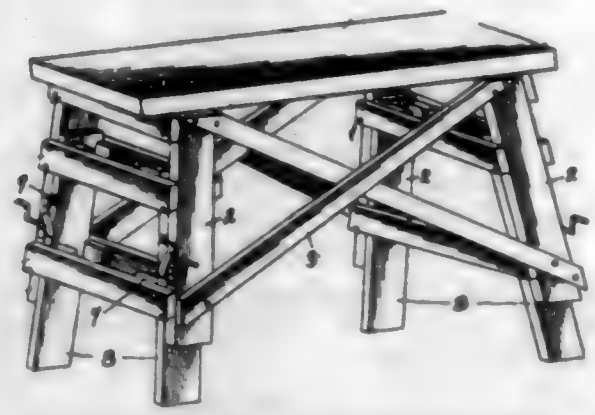
the heddles for carrying the warps, a cloth-roll and sand-roll above, means driven from the main shaft for imparting an intermittent rotary motion to the cloth-roll, a circular former and spreader for the woven fabric, a circular, gyrating reed above the heddles and having on it a race for the shuttles, means for carrying and imparting a positive motion to said reed, and means for driving the shuttles about said race.

3. A loom for weaving tubular fabrics, having a horizontal bed with apertures in it for the upright warp-threads, warp-beams below said bed, an upright, main shaft concentric with the warps, means for driving said shaft, a cloth-roll and sand-roll above, means driven from the main shaft for imparting an intermittent rotary motion to the cloth-roll, a circular former and spreader for the tubular fabric, radially-disposed heddles, a cam on the main shaft and intermediate mechanisms for operating the heddles, a circular reed above the heddles, radial arms, with rollers, on the main shaft, for imparting a gyratory motion to the reed as the shaft rotates, shuttle-carriers on said arms, and shuttles, mounted on said reed.

4. A loom for weaving tubular fabrics, having an upright shaft, a circular reed, and arms 23 and 24 mounted radially on said shaft and engaging said reed, the two arms 23 being disposed one below and one above the level of the arms 24 so as to impart a gyratory movement to the non-rotating reed.

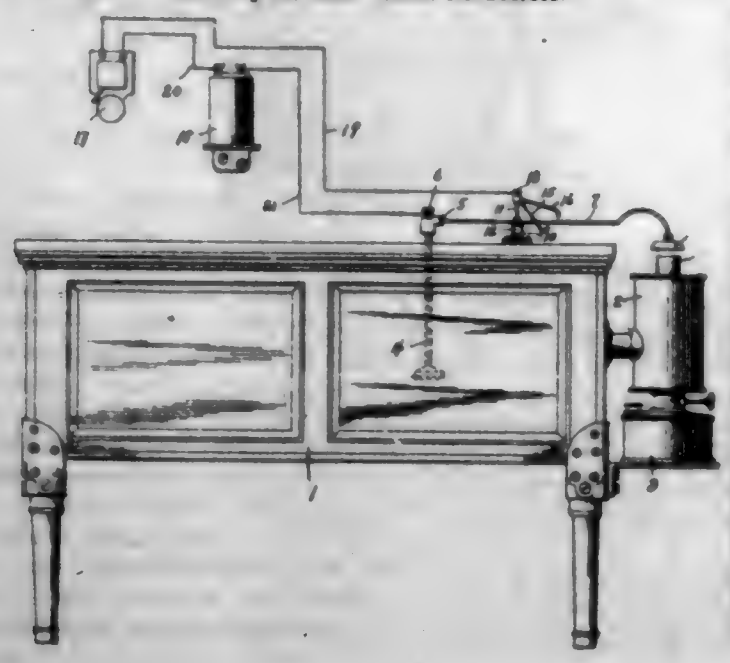
5. A loom for weaving tubular fabrics, having a circular reed with a raceway on its upper face for the shuttle, a shuttle having rollers 31 on its inner face, a rotating upright shaft disposed in the center of said reed, and a shuttle-carrier on said shaft provided with loosely-rotating toothed wheels 28* which engage the rollers 31 on the shuttle for driving.

815,556. BENCH. LEMUEL L. POPLIN, Rocky Mount, N. C. Filed Aug. 11, 1905. Serial No. 273,803.



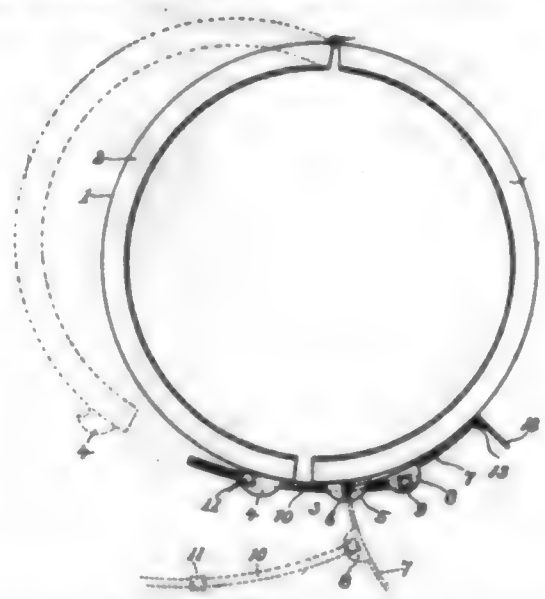
Claim.—A bench comprising a top, supporting-legs rigidly secured thereto, extensions for said legs having notches on their outer edges, lateral braces having guide-blocks secured thereto, said braces being secured to said legs, the said legs, braces and guide-blocks forming guideways for said extensions, and spring-tongues adapted to engage said notches, said tongues being operated by shafts with radial projections, substantially as described.

815,557. ALARM FOR INCUBATORS. FAY T. PORTER, Morristown, Ind. Filed May 29, 1905. Serial No. 261,485.



Claim.—In a device of the character described, the combination with a damper-arm of an electric circuit, a signal located in said circuit and a circuit-closing device comprising a rod capable of vertical adjustment and provided with a plurality of L-shaped contact-arms, one of said arms being adapted to engage the damper-arm when the latter is depressed, the other contact-arm being adapted to engage said damper-arm when the latter is raised.

815,558. CLAMPING-BAND. LEO A. ROGERS, Detroit, Mich. Filed Apr. 17, 1905. Serial No. 256,158.



Claim.—1. The combination of a circular clamping-band, a lever pivotally attached at one end to one end of said band, and means pivotally attached to said lever and adapted to be engaged with and disengaged from the opposite end of said band.

2. The combination of a circular clamping-band, a lever pivotally attached at one end to one end of said band, and means for engaging the opposite end of said band and pivotally connected to said lever, adapted to be adjusted to bring its point of engagement with the band nearer the pivoted point of the lever.

3. The combination with a circular clamping-band, of a lever pivotally attached at one end to one end of said band, a connecting-rod pivotally attached to said lever, and means adjustable on said rod engaging the opposite end of the band.

4. The combination with a circular clamping-band, of a hook on one end of said band, a lever pivotally attached to the opposite end of said band, means attached to the lever for engaging the hook, and a spring-catch on the band to engage the lever and hold the same in its operative position.

5. The combination with a circular clamping-band, of parallel hooks on one end of said band, a lever pivotally attached at one end to the opposite end of said band, a connecting-rod pivotally attached at one end to said lever and screw-threaded at its opposite end, and a cross-bar having a screw-threaded opening to receive the screw-threaded end of the rod adapted to engage the said hooks.

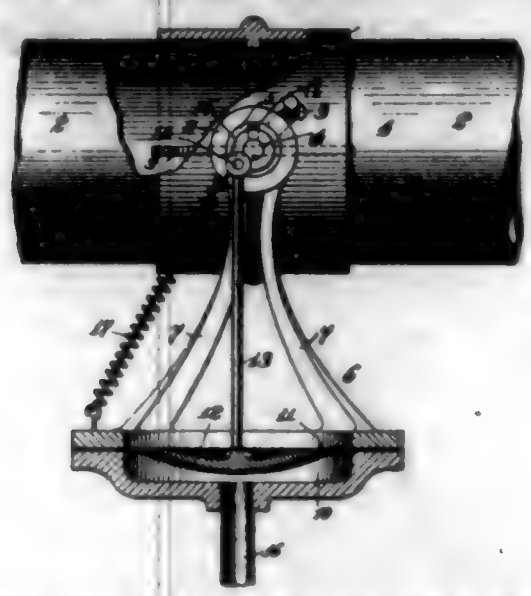
6. The combination with a circular clamping-band, of hooks on one end of said band, ears on the opposite end of said band, a lever pivoted at one end to said ears, a connecting-rod pivoted at on end to the lever intermediate the ends thereof and adapted to engage the hooks at its opposite end and to engage the band intermediate its ends to turn the lever on its pivot, and a spring-catch on the band to engage and hold the lever.

7. The combination with a circular clamping-band formed of sheet metal, of parallel hooks formed at one end of said band, parallel ears formed at the opposite end of said band and each provided with an opening, a lever provided with laterally-projecting trunnions to engage the openings in said ears, a connecting-rod pivotally attached to the lever at one end, a cross-bar adjustably secured to the rod to engage the hooks, and a spring-catch to engage the free end of the lever.

8. The combination of a circular clamping-band made in halves and formed of sheet metal with inwardly-inclined edge flanges, means pivotally connecting the ends of said halves at one side, hooks formed on one end of said band, ears on the opposite end of said band, a lever provided with laterally-projecting trunnions engaging openings in the ears, ears on the lever intermediate its ends, a connecting-rod screw-threaded at one end and provided with a T-head at its opposite end to engage openings in the ears on the lever, a cross-bar having a screw-threaded opening to receive the screw-

threaded end of the connecting-rod and adapted to engage the hooks, and a spring-catch on the band having a projection to engage the lever.

815,559. DAMPER-OPERATING MOTOR. OLAF SAUGSTAD, Plainfield, N. J., assignor to William B. Wadsworth, Plainfield, N. J. Filed May 27, 1905. Serial No. 262,611.



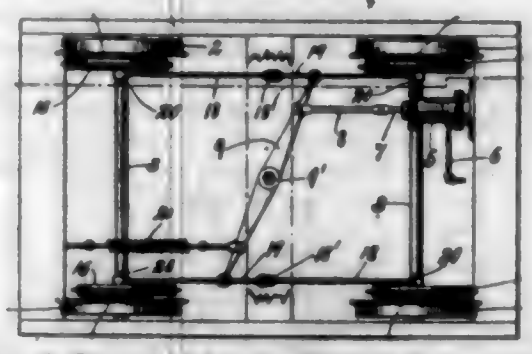
Claim.—1. In a device of the character described, the combination with a pivoted damper and means for supporting same, of a motor for operating said damper suspended from said supporting means concentrically with the axis of said damper.

2. In a device of the character described, the combination with a pivoted damper and a crank-arm secured thereto, of means for supporting said damper, and a motor for operating said damper suspended from said supporting means concentrically with the axis of said damper, said motor directly connected with the said crank-arm.

3. In a device of the character described, the combination with a pipe-collar and a damper pivoted thereto, said pipe-collar having a hub concentric with the pivot of said damper, of a fluid-pressure motor provided with a movable wall, suspended from said hub, a crank-arm connected with the damper, and a direct connection between said crank-arm and the movable wall of said fluid-pressure motor.

4. In a device of the character described, the combination with a pipe-collar 1, a damper 3, a spindle 4 therefor and a crank-arm 15 secured to said spindle, said collar having a hub 5 concentric with said spindle 4, of a motor suspended from said hub 5, said motor including a diaphragm-chamber 10, a diaphragm 11, a follower 12, and a follower-arm 13, said follower-arm directly connected to said crank-arm 15 by a pivot 14, substantially as specified.

815,560. CAR-SWITCHING MECHANISM. HARRY R. SHARP, Rockville, Conn., assignor of one-half to George Ulrich, Hartford, Conn. Filed July 19, 1905. Serial No. 270,356.



Claim.—1. In car-switching mechanism, the combination, with a truck, and with axles and their wheels carried by said truck, of eccentrics mounted on the wheels; means for simultaneously actuating the eccentrics; a track; a branch track; a frog; and means actuated by the eccentrics for engaging the frog and switching the truck from one track to another.

2. In car-switching mechanism, the combination, with a truck and its wheels, of eccentrics, one carried by each wheel; rings, each having a ribbed portion, actuated by the eccentrics; and means for simultaneously shifting said eccentrics.

3. The combination, with a truck, and with its axles and wheels, of eccentrics mounted for movement on the wheels; rings, each having a flange for engaging a frog, actuated by said eccentrics; and means for simultaneously shifting the eccentrics.

4. The combination, with a truck, its axles and wheels, of eccentrics; rings actuated by said eccentrics; a pivoted lever; connections between said lever and the eccentrics; rings actuated by the eccentrics, and having circumferentially-disposed ribs; and means for actuating the pivoted lever.

5. The combination, with a truck, its axles, and wheels; of an eccentric mounted for movement on each wheel; a ring having a rib on its periphery surrounding each eccentric; means for holding the eccentrics in place on the wheels; devices for actuating the eccentrics; a cylinder; and means for connecting the piston-rod of said cylinder to an element of the eccentric-actuating devices.

6. In car-switching mechanism, the combination, with a car-wheel, of an eccentric mounted for rotation thereon; and a ring having a circumferential rib actuated by said eccentric.

7. In car-switching mechanism, the combination, with a car-wheel, of eccentric-rings mounted for movement on said wheel; and a ring having a peripheral rib, and surrounding said eccentric-rings.

8. In car-switching mechanism, the combination, with a car-wheel having a rabbeted portion, of a sectional eccentric mounted for movement around said rabbeted portion; means for securing said sectional eccentric in position; and a ring fitted over said sectional eccentric, and having a peripheral rib.

9. In car-switching mechanism, the combination, with a car-wheel having a rabbeted portion, of a sectional eccentric mounted for movement around said rabbeted portion; means for securing said sectional eccentric in position; a ring fitted over said sectional eccentric, and having a peripheral rib; and means for actuating said sectional eccentric.

10. A car-wheel combined with an eccentric mounted for movement thereon, and having a peripheral groove; a ring surrounding said eccentric, and having a tongue fitting said peripheral groove on its inner side, and a circumferential rib on its periphery.

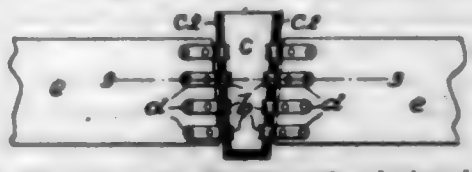
11. A car-wheel having a rabbeted portion combined with an eccentric fitted over said rabbeted portion; a disk for securing said eccentric in place; and a ring having a peripheral rib, said ring being fitted over the eccentric.

12. The combination, with main and branch tracks, of a stationary frog located at the juncture of said tracks; a truck; axles and wheels carried by the truck; and movable devices carried by the wheels for engaging the frog and switching the truck.

13. The combination, with a truck, and its axles and wheels, of eccentrics movably mounted on the wheels; rings surrounding the eccentrics, and each having a circumferential rib; means for simultaneously shifting the eccentrics in one direction; and means for returning said eccentrics to normal positions.

14. The combination, with a truck, and its axles and wheels, of eccentrics, one movable adjacent to each wheel; rings operated by the eccentrics, and each having a peripheral rib; a pivoted lever; means connecting said lever with the eccentrics; and a pneumatic cylinder, the rod of which is connected to said lever.

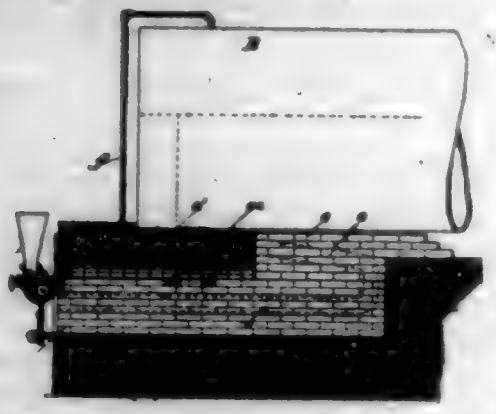
815,561. FASTENING DEVICE. WILLIAM P. SMITHER, Crystal-rum, N. Y. Filed Sept. 13, 1905. Serial No. 278,218.



Claim.—1. The herein-described fastening devices designed for connecting the ends or edges of flexible articles consisting of keepers secured to said ends or edges, said keepers being of small transverse dimensions and flat on their inner sides and outwardly curved on their outer sides, and being provided with slots or openings parallel with and flush with their inner sides, and a flexible strip or tongue provided with thickened or beaded edges adapted to be drawn through said keepers, the said strip or tongue being tapered from one end to the other, substantially as shown and described.

2. The herein-described fastening devices designed for connecting the ends or edges of flexible articles, consisting of keepers secured to said ends or edges, said keepers being composed of a narrow strip of metal folded transversely and being of small transverse dimensions and flat on their inner sides and outwardly curved on their outer sides, and being provided with openings parallel with and flush with their inner sides at the end thereof, and a flexible strip or tongue the edges of which are thickened on the outer side thereof and adapted to be drawn through said keepers, said strip or tongue being tapered from one end to the other, substantially as shown and described.

815,582. PIPE-FUEL FURNACE. FRANK H. SPEAR, Los Angeles, Cal. Filed Sept. 12, 1901. Serial No. 75,139.



Claim.—1. A pulverulent-fuel-feeding furnace, having a retort-like combustion-chamber, an arched crown extending part way through said chamber and provided with a plurality of transverse openings at its inner end only, an air-supply chamber located above said arched crown and communicating with said openings, and a bridge-wall beyond the end of said arched crown for directing the products of combustion toward the inner end of said arched crown and causing a supply of air to be drawn through the transverse openings in said crown into contact with the products of combustion, whereby the crown is protected at that point only subjected to the highest degree of heat of the products of combustion.

2. A pulverulent-fuel-feeding furnace, having a retort-like combustion-chamber, an arch or crown extending part way through said chamber, an air-supply chamber arranged above said arch or crown and in open communication with the combustion-chamber above the inner edge of said arch or crown, a plurality of transverse openings in said arch or crown at its inner end only and communicating with said air-supply chamber and said combustion-chamber, and a bridge-wall beyond the end of said arch or crown for directing the products of combustion toward the inner end of the arch or crown and causing a supply of air to be drawn through the open end and said transverse openings of the arch or crown into contact with said products of combustion, whereby the inner edge and under surface of the inner end only of the arch or crown is protected from the intense heat of the products of combustion.

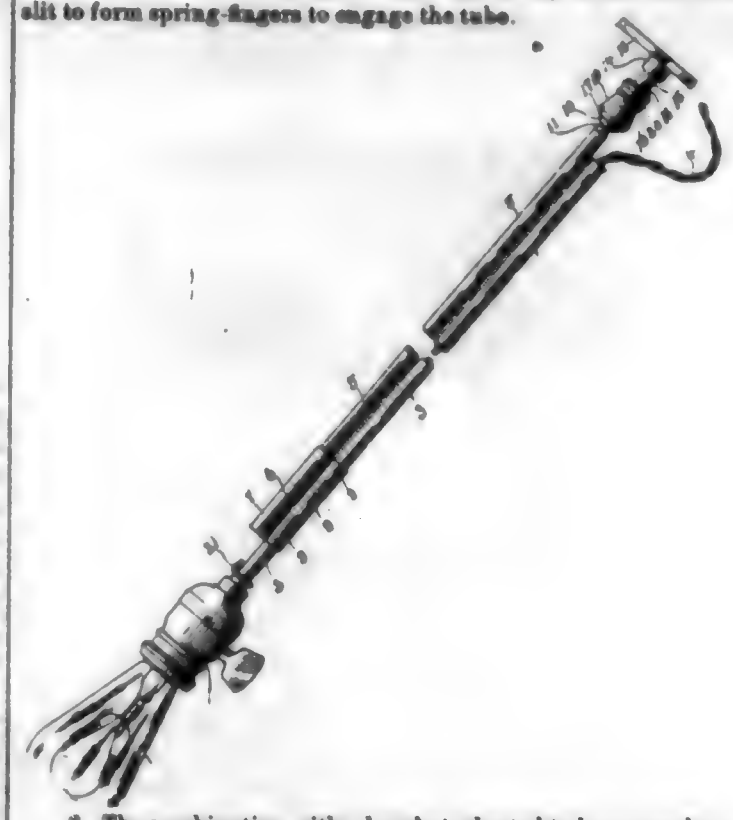
3. A pulverulent-fuel-feeding furnace, having a retort-like combustion-chamber, an arch or crown extending part way through said chamber, an air-supply chamber arranged above said arch or crown and in open communication with the combustion-chamber above the inner edge of said arch or crown, a plurality of transverse openings in said arch or crown at its inner end only and communicating with said air-supply chamber and said combustion-chamber, means for supplying air to said air-supply chamber, and a bridge-wall beyond the end of said arch or crown for directing the products of combustion toward the inner end of the arch or crown and causing a supply of air to be drawn through the open end and said transverse openings of the arch or crown into contact with said products of combustion, whereby the inner edge and under surface of the inner end only of the arch or crown is protected from the intense heat of the products of combustion.

4. A pulverulent-fuel-feeding furnace having a retort-like combustion-chamber, an arched crown extending part way through said chamber, means for delivering a supply of pulverulent-fuel particles at the entrance end of said combustion-chamber and to cause their travel along the same, a bridge-wall at the rear of said chamber to cause the upward deflection of said fuel particles, means beyond said bridge-wall to cause said fuel particles to assume a substantially horizontal line of travel, and means for supplying steam to said combustion-chamber beyond said arch toward said bridge-wall and in the same general direction as the direction of travel of said fuel particles and products of combustion.

5. In a fuel-burning apparatus the combination with a pulverulent-fuel-feeding device of a combustion-chamber having an arched crown extending part way through said chamber, a hot-air-supply chamber above said arched crown, a bridge-wall in said combustion-chamber beyond said arch, and a steam-supply pipe leading through said air-chamber for supplying heated air and steam to said combustion-chamber beyond said arch and in a direction toward said bridge-wall.

815,583. ADJUSTABLE LAMP-SUPPORT. JOHN H. STEVENSON, Ann Arbor, Mich. Filed May 4, 1905. Serial No. 258,754.

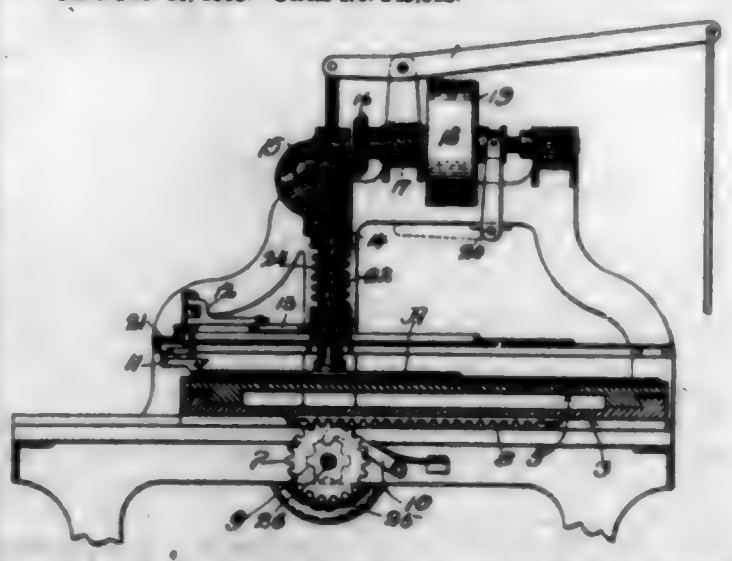
Claim.—1. The combination with a bracket adapted to be secured to a wall or other support, of a rod attached at one end to said bracket, a tube extending parallel with said rod, and a clamp consisting of a tubular member secured to the rod and slitted longitudinally inward from each end and cut transversely at the end of each slit to form spring-fingers to engage the tube.



2. The combination with a bracket adapted to be secured to any suitable support, of a supporting-rod, a ball on one end of said rod, a socket on the bracket slitted inward from its open end to form flexible members and externally screw-threaded, a clamping-sleeve formed with a flaring end to engage the flexible members and internally screw-threaded to engage the screw-thread on the socket member, a clamp secured to the opposite end of said rod and a tube adjustable longitudinally in said clamp.

3. The combination with a bracket adapted to be secured to any support, of a supporting-rod having a reduced and screw-threaded end, a ball having a screw-threaded socket to receive said end on the rod, a socket member consisting of a screw-threaded shank portion secured to the bracket and a socket portion to receive the ball slitted longitudinally inward from the open end of the socket to form flexible clamping members, an internally-screw-threaded clamping-sleeve engaging the screw-threaded portion of the shank and formed with a flaring end adapted to embrace and engage the flexible members near their outer ends, a clamp secured to the end of the rod and consisting of a tubular member formed with spring-fingers, a tube movable longitudinally in said tubular member and engaged by the fingers, a lamp-socket secured to one end of said tube, and conductors extending through said tube to the lamp-socket.

815,584. MACHINE FOR CUTTING BLANKS WITH BEVELED EDGES. ALLISON M. STICKNEY, Medford, Mass., assignor to Wellman Sole Cutting Machine Company, Portland, Me., a Corporation of Maine. Filed Feb. 16, 1905. Serial No. 245,812.

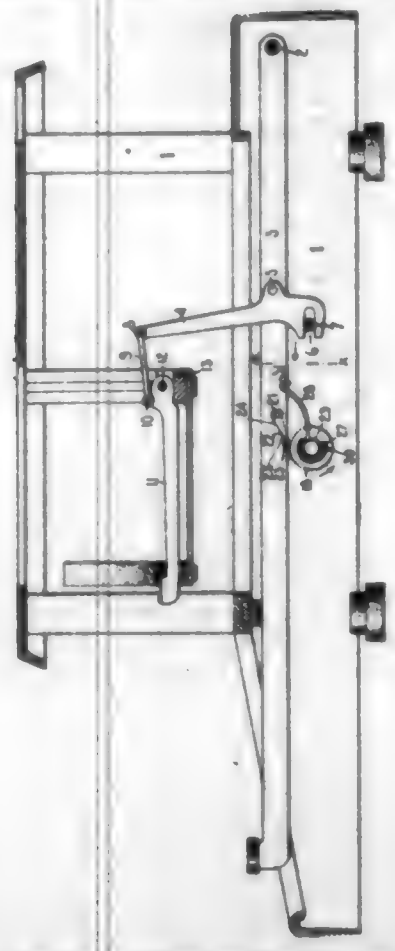


Claim.—1. The improved machine above described comprising a sinuous form; a stock-holder between which and the form the stock is clamped; cutting mechanism cooperating with the form, and

means to feed the stock-holder lengthwise of the first cut produced by the cutting mechanism to cause the second cut to cross the first.

2. The improved machine above described comprising a sinuous form with beveled edges; a stock-holder between which and the form the stock is clamped; cutting mechanism coöperating with the form; means to feed the stock-holder lengthwise of the first cut produced by the cutting mechanism to cause the second cut to cross the first, and means to feed the stock-holder crosswise of the cuts to present a fresh portion of the stock to the cutting mechanism.

815,585. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 4, 1903. Serial No. 168,246.



Claim.—1. In a type-writing machine, the combination of type-actions, a hollow or tubular rock-shaft, means for turning said rock-shaft, and a plurality of springs seated in said hollow shaft and each connected to said shaft and to an element of a type-action.

2. In a type-writing machine, the combination of type-actions, a hollow or tubular adjustable carrier, and a series of springs, each having a coil or loop contained in said hollow carrier and each connected to said carrier and to an element of a type-action.

3. In a type-writing machine, the combination of type-actions, a hollow shaft, means for turning said shaft and a series of springs, each having a coil or loop contained in said hollow shaft and each having one end connected thereto and the other end connected to an element of a type-action.

4. In a type-writing machine, the combination of type-actions, a hollow shaft that has a longitudinal slot therein, means for adjusting said shaft, and a series of springs each of which has a coil or loop that is seated in said hollow shaft and with one end of each spring connected to the shaft and the other end projecting through the longitudinal slot therein and connecting with an element of a type-action.

5. In a type-writing machine, the combination of type-actions, an adjustable carrier that has an open longitudinal slot therein with regularly-spaced notches or recesses in one wall of said slot, and a series of springs each of which has one end seated in a notch or recess in the carrier and the other end projecting through the longitudinal slot and connecting with an element of a type-action.

6. In a type-writing machine, the combination of type-actions, a hollow shaft that has an open longitudinal slot therein with regularly-spaced notches or recesses in one wall thereof, means for turning said shaft and for retaining it in the position to which it is turned, and a series of springs, each of which has a coil or loop that is contained within the shaft, one end of each spring being seated in a notch in the shaft and the other end projecting through the longitudinal slot therein and connecting with an element of a type-action.

7. In a type-writing machine, the combination of a hollow carrier which extends from side to side of the machine and is adapted to turn in bearings therein, a finger-piece which is connected to the carrier and extends outside of the frame of the machine, means for retaining the carrier in its adjusted position, and a series of springs each of which is provided with a coil or loop that is contained in the hollow carrier and has one end connected to said carrier, whereby an adjustment of the carrier will effect a simultaneous adjustment of the tension of all of said springs.

8. In a type-writing machine, the combination of a hollow rock-shaft which extends from side to side of the machine and is adapted to turn in bearings therein, said shaft having a longitudinal slot therein with a series of notches in one wall of said slot, a finger-piece which is connected to the shaft and extends outside of the frame of the machine, means for retaining the shaft in its adjusted position, and a series of springs each of which is provided with a coil or loop that is contained in the hollow shaft and has one end seated in a notch therein whereas the other end extends through the slot in the shaft, whereby an adjustment of the shaft will effect a simultaneous adjustment of the tension of all of said springs.

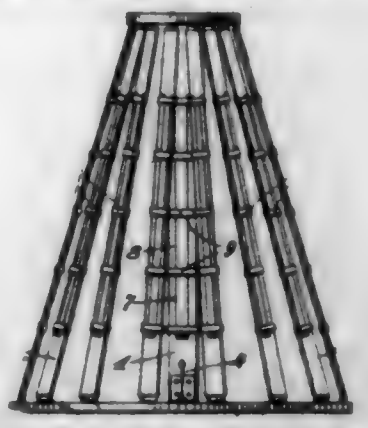
9. In a type-writing machine, the combination of a series of key-levers, a hollow adjustable carrier that extends transversely thereof, and a series of key-lever-restoring springs, each spring having a coil that is seated within said carrier, and one end of each spring being connected to the carrier whereas the opposite end is connected to a key-lever.

10. In a type-writing machine, the combination of a series of key-levers, a shaft that extends transversely of said key-levers and projects beyond the frame of the machine where it is provided with a finger-piece for turning it, a ratchet-wheel secured to the shaft, a coöperating pawl carried by a fixed portion of the machine, and a series of springs, each connected to a key-lever and to said shaft.

11. In a type-writing machine, the combination of a series of key-levers, a hollow shaft extending transversely of the key-levers and seated to turn in bearings in the frame of the machine, means connected to said shaft for turning it, a ratchet-wheel for said shaft, a pawl that coöperates with said ratchet-wheel, and a series of springs, each provided with a coil or loop that is contained within said hollow shaft and each spring being connected at one end to a key-lever and at the opposite end to said shaft.

12. In a type-writing machine, the combination of a series of key-levers, a hollow shaft extending transversely of the key-levers and seated to turn in bearings in the frame of the machine and having a longitudinal slot therein with a series of recesses in one wall of said slot, means connected to said shaft and extending beyond the frame of the machine for turning the shaft in its bearings, a ratchet-wheel for said shaft, a pawl that coöperates with said ratchet-wheel, and a series of springs, each provided with a coil or loop that is contained within said hollow shaft and each spring having one end seated in one of said recesses and the opposite end connected to a key-lever.

815,566. DISPLAY-FORM. WALTER S. STILLMAN, New Brighton, N. Y. Filed Apr. 10, 1905. Serial No. 254,870.



Claim.—1. A display-form of the character described comprising a supporting-bar, plates or boards hingedly connected to the opposite ends of the same, and slats having a swiveled connection at their opposite ends with said plates, substantially as described.

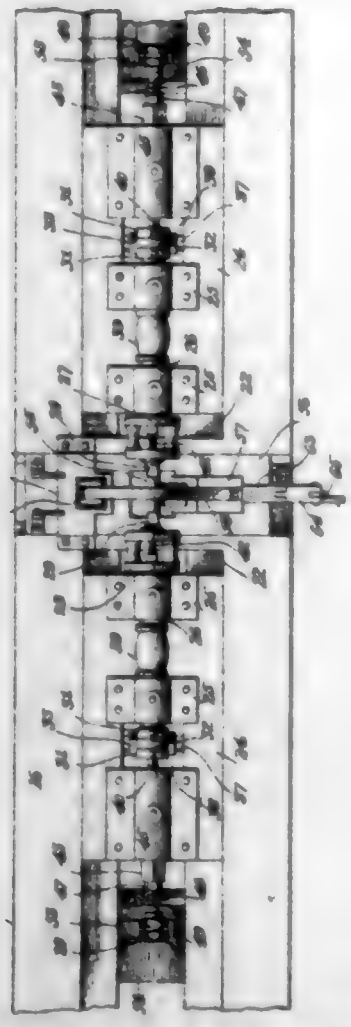
2. A display-form of the character described comprising an adjustable supporting-bar, plates or boards hingedly connected thereto to fold upwardly in line therewith or downwardly at right angles thereto, adjustable slats connected to said upper and lower boards or plates, and means whereby said slats are hingedly and pivotally connected to said boards, substantially as described.

3. A display-form of the character described comprising an ad-

justable supporting-bar, upper and lower plates or boards hingedly connected thereto to fold upwardly in line therewith or downwardly at right angles thereto, adjustable slats connected to said upper and lower boards or plates, bails hingedly connected to the upper and lower ends of said slats and pivotally connected to said top and bottom boards whereby when the latter are folded upwardly said slats will assume a position to facilitate the folding of the boards, substantially as described.

4. A display-form of the character described comprising a supporting-standard formed of a bifurcated, apertured lower section and an upper section having a reduced portion to enter the bifurcated portion of the lower section, said reduced section having a series of apertures to aline with the aperture in said bifurcated section, a pin to enter said alined apertures to hold said sections in adjusted positions, rings or bands to slidably hold said sections together, semicircular top and bottom plates hingedly connected to the upper and lower ends of said standard, said upper board being smaller than the lower board, slats having a swiveled connection at their opposite ends with said upper and lower boards, each of said slats being formed of a lower bifurcated section and an upper section having a reduced end to enter said bifurcated lower section and rings or bands to slidably hold said sections together, substantially as described.

815,567. MACHINE FOR TURNING AND BORING ARTICLES, SUCH AS SPOOLS, &c. HOMER K. STOCKWELL, Onaway, Mich., assignor to Lewis T. Kline, Alpena, Mich. Filed Feb. 21, 1905. Serial No. 246,715.



Claim.—1. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to the boring-bit, and to rotate it during the boring advance of the bit and a reciprocating cutter, which advances to the blank during its rotation.

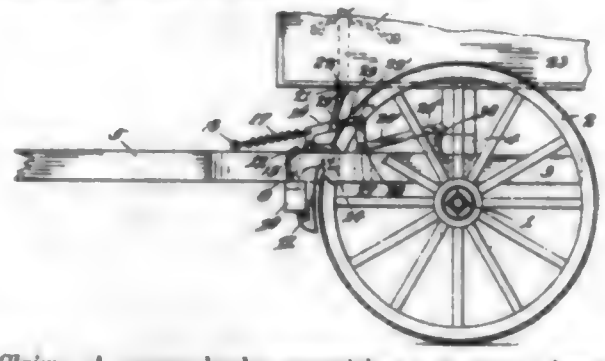
2. The combination with a feed-hopper and an escapement for discharging the blanks singly, of a reciprocating means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to the boring-bit, and to rotate it during the boring advance of the bit, and a reciprocating cutter which advances to the blank during its rotation.

3. The combination with a blank-feed, of a reciprocating slide having means for gripping a blank and conveying it to a point in line with a non-rotating boring-bit, said bit and means for advancing the same to center and then bore the blank and rotating gripping devices concentric with said bit, and means for advancing them to grip the work, subsequently to the boring-bit, and to rotate it during the boring advance of the bit and a reciprocating cutter which advances to the blank during its rotation.

4. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with two non-rotating boring-bits, said bits and means for advancing the same to center and then bore the blank, and rotating gripping devices concentric with said bits, and means for advancing them to grip the work subsequently to the boring-bit, and to rotate it during the boring advance of the bits, and a reciprocating cutter which advances to the blank during its rotation.

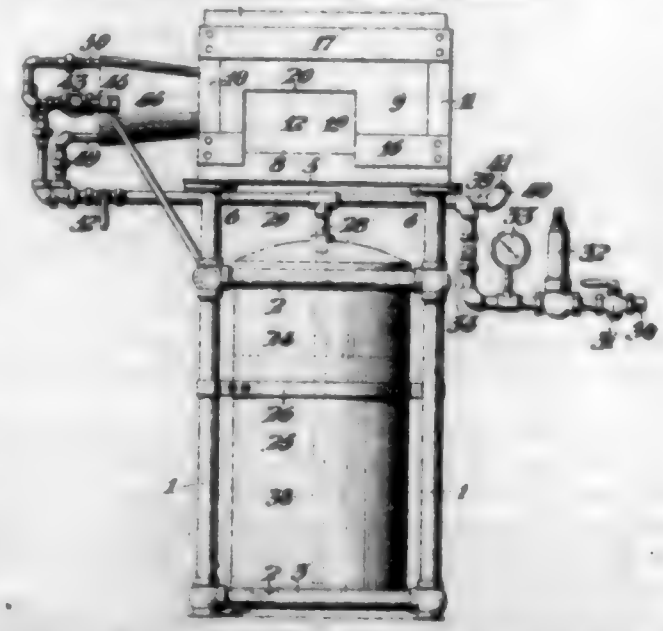
5. The combination with a blank-feed, of a reciprocating means for gripping a blank and conveying it to a point in line with two non-rotating boring-bits, said bits and means for advancing the same, first simultaneously an equal distance to center the blank, and then alternately to bore the blank, and rotating gripping devices concentric with said bits, and means for advancing them to grip the work subsequently to the boring-bits and to rotate it during the boring advance of the bits, and a reciprocating cutter which advances to the blank during its rotation.

815,568. WAGON-BRAKE. JAMES L. THOMAS, Winlock, Wash. Filed Jan. 19, 1905. Serial No. 241,720.



Claim.—A wagon-brake comprising a tongue, a beam rigidly secured to said tongue, brake-shoes rigidly connected to said beam, slotted boxes provided with apertures secured to the wagon-hounds, a bar slidable with the said tongue and projecting interiorly of the said boxes, a locking-bar provided with hooked ends adapted to enter said apertures, a spring tending to withdraw the said hooked ends from the apertures, and means actuated by manual power for seating said hooked ends of the locking-bar in their respective said apertures.

815,569. ANNEALING APPARATUS. JOSEPH J. TYNAN, Philadelphia, Pa. Filed June 18, 1903. Serial No. 161,956.



Claim.—1. In an annealing apparatus, the combination with a casing comprising a chamber for the articles to be annealed, provided with a blast-inlet; a frame comprising vertical columns supporting said casing; a hydrocarbon-burner supported in registry with said inlet by connection with said frame; a localizer arranged to concentrate the flame of said burner, comprising a tubular conical body seated in said inlet surrounding said burner and supported by

connection with said frame; a tortuous duct in the wall of said localizer; a receptacle for hydrocarbon supported beneath said casing within said frame, and provided with pneumatic pressure; conduits arranged to convey hydrocarbon from said receptacle to said burner; conduits arranged to convey compressed air from said receptacle to said duct and through the latter to said burner; and valves in said conduits arranged to control the pressure of delivery of said hydrocarbon and of said air, substantially as set forth.

2. In an annealing apparatus, the combination with a casing comprising a chamber for the articles to be annealed, provided with a blast-inlet; a frame comprising vertical columns supporting said casing; a hydrocarbon-burner supported in registry with said inlet by connection with said frame; a localizer arranged to concentrate the flame of said burner, comprising a tubular conical body seated in said inlet, surrounding said burner and supported by connection with said frame; a spiral duct in the wall of said localizer; a receptacle for hydrocarbon supported beneath said casing within said frame and provided with an inlet for hydrocarbon and an inlet for pneumatic pressure; a pressure-regulator between said pressure-inlet and the source of compressed air; conduits arranged to convey hydrocarbon from said receptacle to said burner; conduits arranged to convey compressed air from said receptacle to said duct and through the latter to said burner; and valves in said conduits arranged to control the pressure of delivery of said hydrocarbon and of said air, substantially as set forth.

3. In an annealing apparatus, the combination with a frame comprising a table; of a casing of refractory material mounted upon said table and comprising a chamber for the articles to be annealed, provided with a blast-inlet, a work-inlet and an outlet for products of combustion; a hydrocarbon-burner supported by said frame in registry with said blast-inlet and comprising a mixing-nozzle; an oil-port in said nozzle; an air-port in said nozzle; a receptacle secured within said frame beneath said casing and arranged to contain oil and compressed air together; a localizer, supported by said frame, surrounding said burner in registry with said blast-inlet and inclosing a tortuous duct; conduits connecting said receptacle and said nozzle, arranged to convey oil from said receptacle to said oil-port; conduits connecting said receptacle and said nozzle, arranged to convey compressed air from said receptacle to said air-port through said duct in said localizer; and means to coöperatively control the pressure of oil and air from said conduits, substantially as set forth.

4. In an annealing apparatus, the combination with a hydrocarbon-burner; of a receptacle for oil; an air-pressure-supply pipe; a branch from said supply-pipe leading to said receptacle; a branch from said air-pressure-supply pipe leading to said burner; means to control the air-pressure to said burner, independently of the pressure to said receptacle; and, means to preheat the air supplied through said branch pipe, before it reaches the burner, substantially as set forth.

5. In an annealing apparatus, the combination with a hydrocarbon-burner; of a receptacle arranged to contain oil and air together, the former being beneath the latter; an air-pressure-supply pipe; a branch from said supply-pipe leading to said receptacle; a branch from said air-pressure-supply pipe leading to said burner; means to control the air-pressure to said burner, independently of the pressure to said receptacle; and, means to preheat the air supplied through said branch pipe, before it reaches the burner, substantially as set forth.

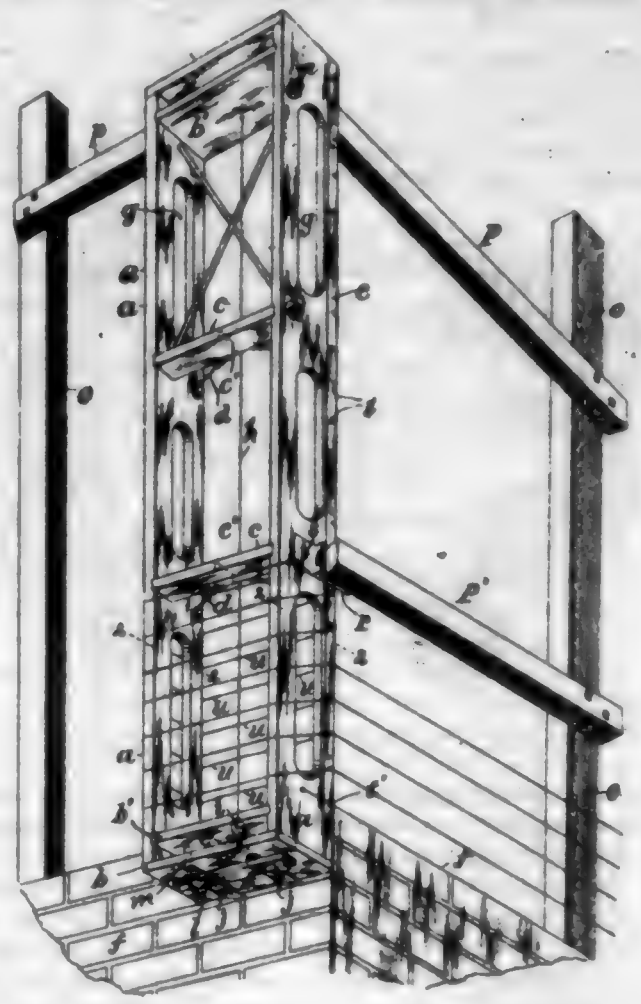
6. In an annealing apparatus, the combination with a frame; of a casing of refractory material supported by said frame; a hydrocarbon-burner supported by said frame in operative relation with said casing; a receptacle for oil supported by said frame; an air-pressure-supply pipe; a branch from said supply-pipe leading to said receptacle; a branch from said supply-pipe leading to said burner; means to control the air-pressure to said burner independently of the pressure to said receptacle; and, means to heat the air supplied to the burner before it reaches the latter, substantially as set forth.

815,570. OPEN DOUBLE PLUMB-RULE. AARON VREELAND, Singac, N. J. Filed Apr. 13, 1905. Serial No. 255,269.

Claim.—1. A box plumb-rule having edges to contact with the brickwork and open upon the side next the brickwork, to permit the laying of bricks and striking the joints adjacent to the rule.

2. A box plumb-rule made wholly open upon the side next the brickwork and beveled upon the inner corners, and the outer sides next such corners furnished with metallic strips to contact with the brickwork.

3. A box plumb-rule made wholly open upon the side next the brickwork, and of skeleton form upon the opposite side to permit the laying of bricks in the wall from the outer side of the plumb-rule.



4. A box plumb-rule made wholly open upon the side next the brickwork, and of skeleton form upon the opposite side to permit the laying of bricks from the outer side of the plumb-rule, and the casings at the opposite edges of the plumb-rule having slots for sighting the plumb-line.

5. A box plumb-rule made wholly open upon the side next the brickwork, and of skeleton form upon the opposite side to permit the laying of bricks from the outer side of the plumb-rule, the side casings being strongly connected at the ends, and also connected intermediate to their ends by cross-bars at the outer side, and diagonal braces from such cross-bars to the inner edges of the casings.

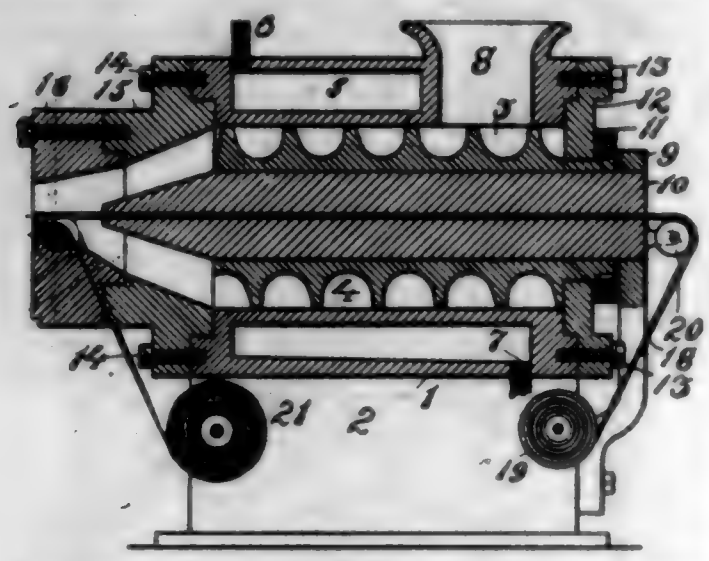
6. A box plumb-rule provided with the side casings *a* having edges to contact with the brickwork, and open upon the side next the brickwork to permit the laying of the bricks and striking of the joints between the casings, the side casings having marks to indicate the levels of the several courses, and a wire wrapped around the box encircling said side casings at the said marks, to guide the laying of a plurality of courses.

7. The combination, with the box-plumb-rule having the side casings *a* connected at their opposite ends by cross-plates *b* and intermediate braces or brace-bars, the casings having edges to contact with the brickwork and open next the brickwork to permit the laying of bricks and striking of the joints between the casings, of the wedges *j* driven into the joints of the brickwork, and the clamp-bar *l* attached to the base of the plumb-rule by bolts *m*, with means for pinching the said wedges against the said clamp-bar to support the plumb-rule thereon, substantially as herein set forth.

8. A box plumb-rule provided with the side casings *a* having edges to contact with the brickwork, and open upon the side next the brickwork to permit the laying of the bricks and striking of the joints between the casings, the side casings having marks to indicate the levels of the several courses, a wire wrapped around the box encircling said casings at the said marks to guide the laying of the plurality of courses, in combination with the portable guide-line stand having the uprights *v* with base *y* adapted to set movably upon the top of the wall and sustain a load for holding the stand in place, and the uprights *v* having a series of holes with pins to support guide-lines level with the marks upon the plumb-rule, substantially as herein set forth.

815,571. MACHINE FOR MAKING CONTINUOUSLY-FORMED ARTICLES FROM PLASTIC MATERIAL. JOHN K. WILLIAMS, Akron, Ohio. Filed Aug. 31, 1905. Serial No. 276,541.

Claim.—1. A machine of the class described comprising an inclosing casing provided with an opening therein, a revoluble feeding-screw in said opening, a perforated mandrel arranged to pass through said opening in said screw, means whereby plastic material may be fed to said screw, a die suitably sustained in position with respect to said screw and mandrel, means to conduct a stiffening device or its equivalent through said mandrel whereby it will be incorporated in the material issuing from said die, and means to cover a portion of the material issuing from said die with fabric or its equivalent.

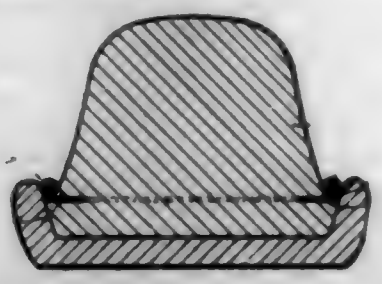


2. The combination in a machine of the class described provided with a revoluble feeding-screw therein, of means to permit the feeding of material to said screw, a die-carrying head in said casing, a die provided with a suitably-conformed opening attached to said die-carrying head, a perforated mandrel in said casing arranged to pass through said screw, means to convey a continuously-formed stiffening device through said mandrel to the opening in said die, and means to convey to said opening a continuously-formed strip of fabric or its equivalent.

3. In a machine of the class designated, the combination with a hollow casing having a feed-opening at one end, of a feed-screw in said casing, a forming-die situated adjacent the discharge end of said screw, a friction-reducing member mounted in said die to form a portion of the normal outlines of the die-opening, and means to feed a continuously-formed stiffening device through said die whereby the same will become incorporated with the material fed through said die by said feed-screw.

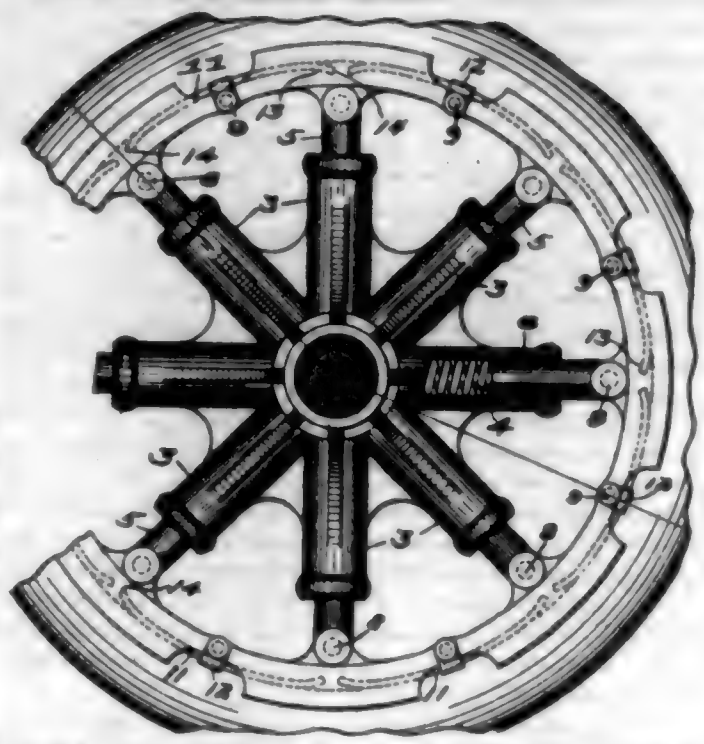
4. A machine of the class designated, comprising a hollow casing provided with a feed-opening, a feed-screw mounted for rotation in said casing, a forming-die suitably mounted to receive and shape the material fed thereto by said screw, means to feed stiffening means through said die, whereby the same will become incorporated with the material issuing from said die, and means to cover a portion of said material with fabric.

815,572. VEHICLE-TIRE. John K. Williams, Akron, Ohio. Filed Sept. 5, 1905. Serial No. 277,024.



Claim.—The combination in a vehicle-tire adapted to seat in a channeled rim, formed of elastic material and provided with a tread portion and integral side shoulders of sufficient width to permit the seating thereon of tire-retaining means, tire-retaining means consisting of circumferentially-arranged bands mounted on said shoulders in a state of tension, and a continuously-formed stiffening device embedded in the body of said tire of sufficient width to extend between the sides of said tire at such a point in the body thereof that the outer side edges will be exposed and form the bottom of the shoulders along said tire-body, said stiffening means being formed of a continuous strip of metal provided with a series of regularly-recurring openings, so shaped that the strips of metal existing between said openings will extend obliquely through the tire-body.

815,573. VEHICLE-WHEEL. Charles C. Wilson, Dayton, Ohio. Filed Nov. 1, 1905. Serial No. 285,267.



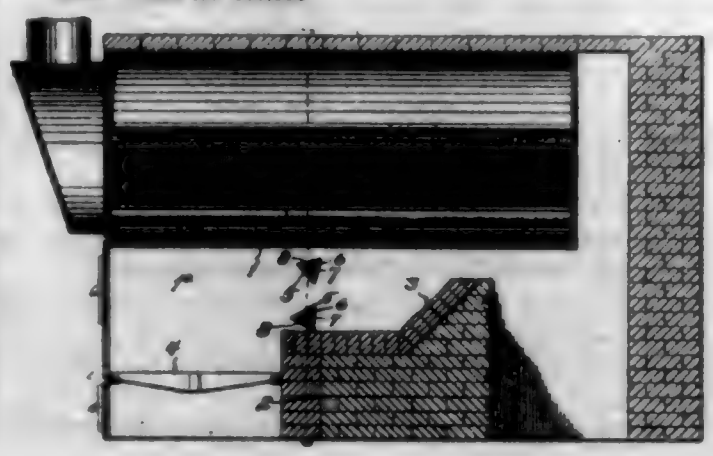
Claim.—1. In a vehicle-wheel, a series of rim-segments hinged at their adjacent ends, a series of plunger-spokes pivotally connected to said rim-segments, a series of tubular spokes projected from a hub, springs inclosed within said tubular spokes and against which the plunger-spokes bear, a series of leaf-springs lying within the rim-segments and suitably secured therein, and a tire placed against said leaf-springs and within the rim-segments, substantially as set forth.

2. In a vehicle-wheel, a hub provided with a series of tubular spokes having stuffing-boxes as described, a series of springs located within said tubular spokes, a series of plunger-spokes passing through the stuffing-boxes in said tubular spokes and engaging the springs therein, a series of rim-segments hinged at their adjacent ends and connected with the plunger-spokes, and leaf-springs seated within said rim-segments and projected over the hinged ends of said rim-segments, substantially as set forth.

3. In a vehicle-wheel, a hub having a series of tubular spokes provided with stuffing-boxes, a series of coil-springs mounted within said tubular spokes, plunger-spokes projected through the stuffing-boxes and movable against the springs within the tubular spokes, a series of rim-segments pivotally connected to the plunger-spokes, said rim-segments having their adjacent ends hinged, and a series of leaf-springs placed within said rim-segments and connected to said rim-segments at the hinges which connect the ends of said rim-segments, substantially as set forth.

4. In a vehicle-wheel, a hub having a series of tubular spokes provided with stuffing-boxes, a series of springs located within said tubular spokes, plunger-spokes projected through said stuffing-boxes and engaging said springs, a series of rim-segments arranged in a circle, the adjacent ends of said rim-segments being hinged and each alternate hinge forming a connection with one of the plunger-spokes, and a series of leaf-springs placed within said rim-segments and projecting over each alternate hinge connecting the ends of said rim-segments, and means for suitably securing said leaf-springs in position, substantially as set forth.

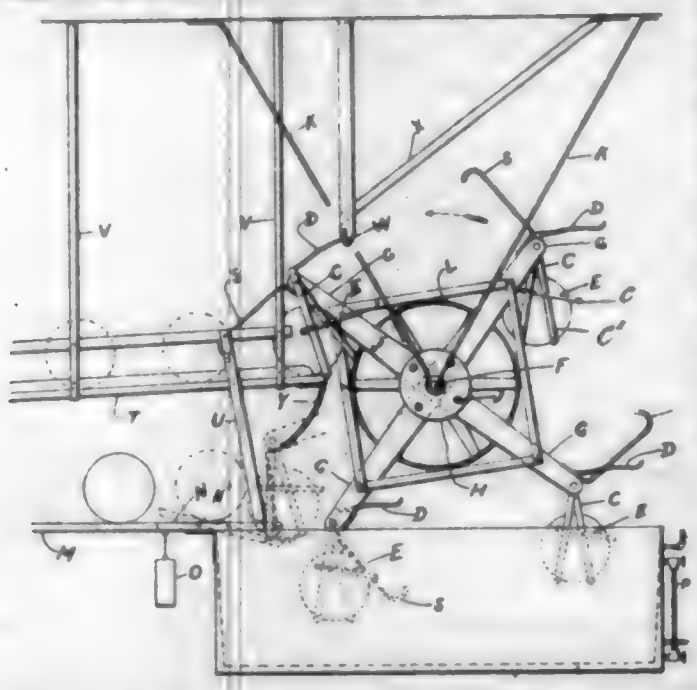
815,574. SMOKE-CONSUMER. John Wilson, Springfield, Ohio, assignor of one-half to A. C. Russell, Springfield, Ohio. Filed June 23, 1905. Serial No. 266,568.



Claim.—1. In a smoke-consumer, the combination with a boiler-furnace, the fire-box thereof and a bridge-wall provided with an inclined hot plate, of one or more devices disposed between the fire-box and the bridge-wall and arranged at an angle to the bridge-wall for ejecting steam and gas thereon, and means for supplying steam, oil and air to the said device.

2. In a smoke-consumer, the combination with a boiler-furnace having a bridge-wall provided with an inclined hot plate, of an angular ejector having a flat face disposed at an angle to the bridge-wall and adapted to eject steam and gas thereon, and means for supplying steam and gas to the ejector comprising steam-supply means, a mixing-coupling having an air-opening and connected with the steam-supply means, means for delivering oil to the coupling, and means for conveying the products introduced into the coupling to the ejector.

815,575. ROTARY CHEESE-PARAFFINING MACHINE. ORVILLE O. ARMER, Cuba, N. Y. Filed Apr. 3, 1905. Serial No. 253,739.



Claim.—1. An apparatus of the character described comprising a revoluble carrier, a series of freely-swinging baskets mounted thereon, a suitable bath, and means whereby said baskets will receive the articles and carry them through said bath and automatically deposit them upon a receiving-table or the like.

2. An apparatus of the character described comprising a revoluble carrier, a freely-swinging basket carried thereby, a suitable bath through which said basket is designed to pass, a receiving chute or runway, and means for automatically tilting the basket after it has emerged from the bath whereby to discharge its contents upon said runway.

3. An apparatus of the character described comprising a series of revoluble swinging baskets, a suitable bath, and means whereby said baskets will automatically receive the articles one at a time and carry them through said bath and finally deposit them successively upon a receiving-table or the like.

4. An apparatus of the character described comprising a series of revoluble freely-swinging baskets, means for automatically depositing the articles in the successive baskets, and means whereby said baskets will deposit their articles successively onto a receiving-table or the like.

5. An apparatus of the character described comprising a revoluble carrier, a suitable bath, a supply-chute adjacent said bath, a receiving-runway above said bath, and means whereby said carrier will automatically receive the articles from said chute, carry them through the bath and finally deposit them upon said runway.

6. An apparatus of the character described comprising a revoluble carrier provided with a series of freely-swinging baskets, a suitable bath through which said baskets are designed to successively pass, and means for automatically tilting said baskets to allow them to deposit their contents upon a runway or the like.

7. An apparatus of the character described comprising a revoluble carrier including a series of swinging baskets, a suitable bath through which said baskets are designed to successively pass, a runway adjacent said carrier, a stationary abutment, and an arm on said abutment whereby to tilt the basket for the purpose set forth.

8. An apparatus of the character described comprising a freely-swinging revoluble basket, a suitable bath through which said basket is designed to pass, means for supplying the basket with the article to be acted upon by the bath, and means for automatically tilting the basket after it has emerged from the bath whereby to discharge its contents.

9. An apparatus of the character described comprising a revoluble carrier including a swinging basket, a suitable bath through which said basket is designed to pass, a tilting platform arranged in the path of said basket, and an arm secured to the carrier and designed to tilt said platform whereby to allow the article thereon to enter the basket.

10. An apparatus of the character described comprising a revoluble carrier including a freely-swinging basket, a suitable bath through which said basket is designed to pass, a tilting platform for the articles, the forward end of said platform lying within the path of said basket, and a depressing device supported on the carrier and designed to tilt the outer end of said platform when the basket is adjacent thereto as and for the purpose set forth.

11. An apparatus of the character described comprising a revoluble carrier including a swinging basket, a suitable bath through which said basket is designed to pass, an arm rigidly secured to said basket and extending rearwardly therefrom at one side, and a pin W projecting laterally into the path of said arm and designed to engage the latter to tilt the basket, as and for the purpose set forth.

12. An apparatus of the character described comprising a revoluble shaft, two sets of radial arms secured thereon, swinging baskets freely suspended from the outer ends of said arms, a suitable bath through which said baskets are designed to successively pass, a supply-chute adjacent the path of said baskets, a receiving-runway or the like above said chute, and means whereby the baskets will automatically receive the articles one basket at a time and will pass them successively through the bath and automatically deposit them upon said runway.

13. An apparatus of the character described comprising a revoluble carrier including a swinging basket, a bath through which said basket is designed to pass, a supply-chute having an end adjacent the path described by said basket, a runway above said chute, means for tilting the basket rearwardly adjacent the ends of said runway, whereby to discharge the contents of the basket onto the same, and guides extending from said runway and designed to prevent the free swinging of the basket as it passes to the said chute.

14. An apparatus of the character described comprising a revoluble carrier, a swinging basket embodied therein, a bath through which said basket is designed to pass, a supply device having an end adjacent the path described by said basket, a runway above said chute means for tilting the basket rearwardly adjacent the end of said runway whereby to discharge the contents of the basket onto the same, the parts being so arranged that the lower front edge of the basket will engage with the end of said runway when the basket is tilted, and a guide extending downwardly from the edge of the runway and designed to direct the basket toward the supply device.

15. In an apparatus of the character described, a basket comprising pivoted U-shaped bars, a guard for the rear of the basket, and an adjustable connection between said guard and said bars.

16. In an apparatus of the character described, a basket comprising U-shaped bars pivotally connected together at their ends, a horizontally-extending guard secured to one of said bars and provided with a series of recesses or the like, and one or more pins secured to the other bar and designed to be received in said recess for the purpose set forth.

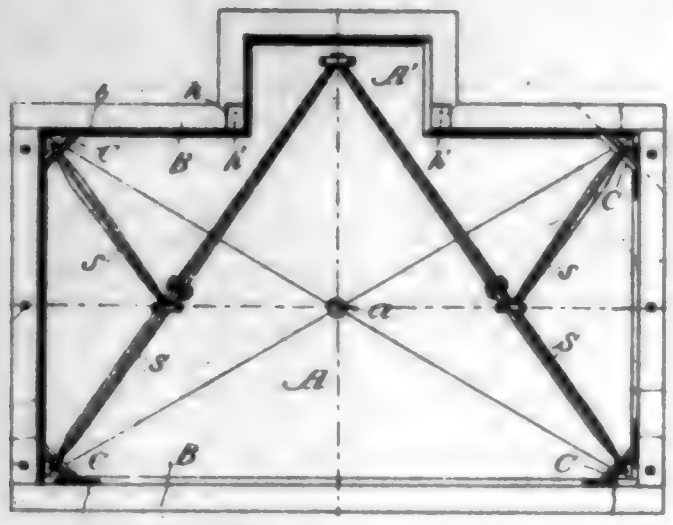
815,576. CONCRETE FOUNDATION FOR SCALES. GEORGE H. BINGHAM, Lincoln, Nebr. Filed Aug. 15, 1905. Serial No. 274,330.

Claim.—1. A timberless foundation for wagon-scales composed of a base-plate, side and end walls surrounding the edges of the base-plate and formed integrally therewith and inclosing the scale mechanism on all sides and beneath, and scale-lever supports anchored and supported by the adjacent walls at each corner of the foundation and below the top thereof, substantially as described.

2. A timberless scale-foundation comprising concrete side and end walls inclosing the scale-platform on all sides, said walls having pockets in them at the corners of the foundation, bolts anchored in the walls and projecting into the pockets, and scale-supporting beams supported in said pockets and fastened to said bolts, substantially as and for the purpose described.

3. A timberless foundation for wagon-scales consisting of side and end walls inclosing the scale-platform and formed of concrete, said walls having pockets in their inner faces near the corners, diagonally-arranged bars supported in said pockets, bolts anchored in the

walls and securing the bars in the pockets, scale-levers hung from said bars, and a scale-platform mounted on said levers, and substantially flush with the tops of the walls, substantially as described.



4. A timberless scale-foundation for wagon-scales comprising a base-plate and side and end walls rising from the edges of said base-plate to the level of the upper surface of the scale-platform, and inclosing the scale-platform on all sides and underneath, said side and end walls having pockets, bolts anchored in the walls and projecting into the pockets, and scale-supporting beam-irons supported in said pockets and fastened to said bolts, substantially as and for the purpose described.

5. A timberless foundation for scales consisting of a base-plate and side walls inclosing and rising from the edges of the base-plate, all formed of concrete, said side walls having pockets in their inner faces near the corners, diagonally-arranged metal bars supported in said pockets, bolts anchored in the walls and securing the bars in the pockets, scale-levers hung from said bars, and a scale-platform mounted on said levers, and substantially flush with the tops of the side walls, substantially as described.

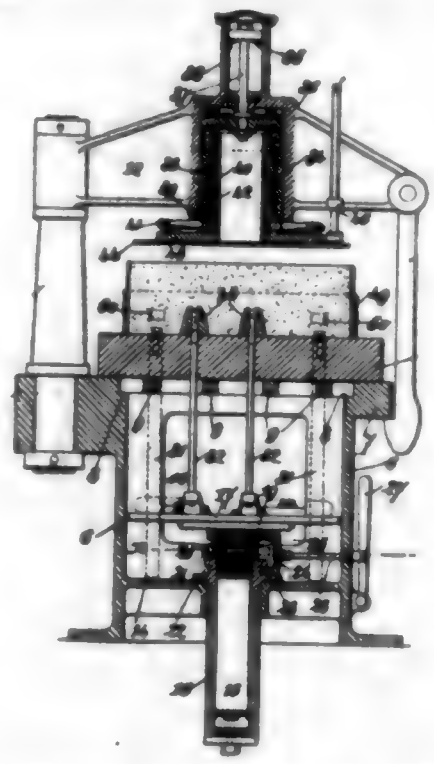
6. The herein-described concrete foundation for wagon-scales comprising a base-plate underlying the entire scale, and having a lateral extension underlying the computing-platform, side and end walls surrounding the base-plate, said walls having pockets adjacent the corners of the main scale-platform chamber, and diagonally-arranged metal bars having their ends secured in said pockets, the base-plate and walls being formed of concrete and molded *in situ*, with scale-levers hung from said bars, and a scale-platform supported on said levers, substantially as and for the purpose described.

7. The herein-described foundation for wagon-scales comprising a base-plate underlying the entire scale, and having a lateral extension underlying the computing-platform, side and end walls surrounding the base-plate and extension, and supported on the edges of the base-plate, said side walls having pockets adjacent the corners of the main scale-platform chamber, bolts embedded in the walls and projecting into said pockets; with diagonally-arranged metal bars having their ends resting in said pockets and fastened to said bolts, scale-levers hung from said bars, a scale-platform supported on said levers about flush with the upper edges of the walls, and wearing-plates fastened to the upper edges of the end walls, substantially as and for the purpose described.

815,577. HYDRAULIC MOLDING-PRESS. PHILIBERT BONVILLAIN, Paris, France. Filed June 1, 1904. Serial No. 210,746.

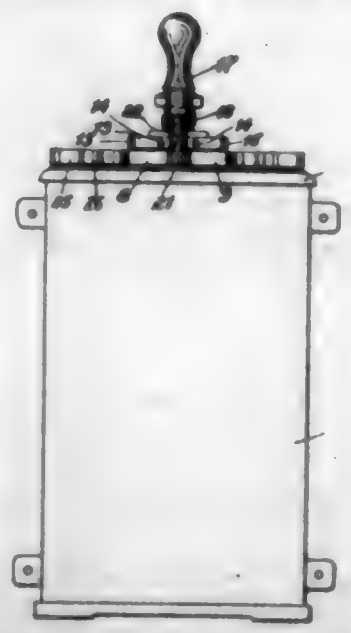
Claim.—1. In a hydraulic molding-press, the combination with a frame forming a table at its upper part, of an upper turning cross-head mounted upon a column carried by the frame, a cylinder secured to said cross-head, a piston in the said cylinder, screw-sockets on the interior of the piston, a pressure-plate fixed upon the inner socket, a rod fixed upon one of said sockets and guided in a cavity of the cross-head, a cylinder formed with the first-named cylinder and located above and in line with it, a piston in the said second cylinder, a rod connecting this piston to the piston of the main cylinder, a hook jointed to the extremity of the turning cross-head, a lower plate carrying the means for removing the mold, and means for causing the said plate to ascend and descend, substantially as described and for the purpose specified.

2. In a hydraulic molding-press, the combination with the frame forming a table at its upper part, of an upper turning cross-head mounted upon a column carried by the frame, a cylinder connected with the said cross-head, a piston in the said cylinder, screw-sockets on the interior of the piston, a pressure-plate fixed upon the inner socket, a rod fixed upon one of said sockets and guided in a cavity of the cross-head, a cylinder formed with the first-named cylinder and located above and in line with it, a piston in the said second cylinder, a rod uniting this piston to the piston of the main cylinder, a hook jointed to the extremity of the turning cross-head, a lower plate carrying the means for removing the mold, a piston carrying the said lower plate, a cylinder for accommodating said piston, a screw-nut upon this piston, an adjustable collar screwed upon the said nut, a divided collar jointed upon the frame and having the upper and lower parts embracing the said collar, and an operating-lever connected with said collar, substantially as described and for the purpose specified.



3. In a molding-machine, the combination with a frame forming a table at its upper part, of a cylinder fixed upon this frame, a piston located in the said cylinder, a plate fixed on the upper part of said piston, rods placed upon the said plate, bolts upon the said plate, supports secured by these bolts, and rods seated in these supports and having adjustable heads, substantially as above described and for the purpose specified.

815,578. CONTROLLER-OPERATING MEANS. ARTHUR J. BROWN, Norwood, Ohio, assignor to The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed July 11, 1904. Serial No. 216,023.



Claim.—1. In combination, a shaft, a notched plate, pivoted dogs engaging said notched plate to hold the shaft in any desired position, an operating-handle, a yielding connection between the handle and shaft, and means for tripping a dog when the handle has been moved into the desired position in either direction to permit the shaft to rotate into a position corresponding to the position of said handle under the influence of said yielding means.

2. In combination, a controller-shaft, an arm fastened to said

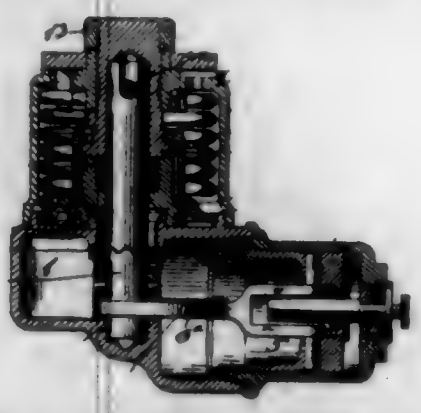
shaft and carrying pivoted locking-dogs, a notched plate with which said dogs engage, a handle loosely mounted on said shaft, but yieldingly connected therewith, and means for tripping said dogs when the handle reaches the next position in advance to permit the shaft to rotate under the action of said yielding means into said advance position.

3. In combination, a controller-shaft, a notched plate having notches spaced at irregular distances apart, said notches corresponding to certain positions of the controller, a pivoted dog engaging said notched plate to hold the shaft in any desired position, an operating-handle, a spring connecting said handle with the shaft, and means for tripping said dog just as the handle reaches a predetermined advance position independent of the distance apart of the notches corresponding to the controller positions to permit the shaft to move into said advance position.

4. In a controller, a shaft, an operating-handle, a spring connecting said shaft and handle, a pivoted dog engaging notches corresponding to the controller positions, to hold the shaft in a certain position until the handle has been moved into the next advance position independent of the distance apart of said positions, and means for tripping said dog when the handle reaches the advance position to permit the shaft to move into said advance position under the influence of said spring.

5. In combination, a controller-shaft, an operating-handle, a spring connecting said shaft and handle, a notched plate having the height of the projections between notches proportional to the throw of the shaft between operating positions, a pivoted dog engaging said notched plate to hold the shaft in any desired position, and means for tripping said dog just as the handle reaches an advance position to permit the shaft to move into said advance position.

815,579. DOOR-CHECK. NATHAN W. CRANDALL, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 5, 1904. Serial No. 227,197.



Claim.—1. In an apparatus of the character described, a spindle, a checking-piston eccentrically connected thereto a checking-cylinder, spring-actuated mechanism for said spindle, comprising an intermediate dog detachably secured to said spindle, a lower dog supported by said intermediate dog and coacting therewith, an upper dog supported by said intermediate dog and coacting therewith, a spring connecting said upper and lower dogs, stop mechanism to engage said upper and lower dogs and check the simultaneous rotation of said dogs in the same direction and a lever-arm connected to said intermediate dog.

2. In an apparatus of the character described, a case having a closed liquid-chamber, a cylinder communicating therewith, a piston therein, a spindle having bearings in said case, an eccentric connection between said piston and spindle, a double-acting spring, indirect means of connection between said spring and said spindle, a lever-arm indirectly connected with said spindle and a removable shield for said spring said shield being independent of said case.

3. In an apparatus of the character described, a case having a closed liquid-chamber, a piston therein, a spindle having bearings in said case, a connection between said piston and spindle, a spring, means of connection between said spring and said spindle, a lever-arm indirectly connected with said spindle and with said spring, and a shield for said spring independent of said case and connected directly to and carried by one of the movable parts of the spring-controlled mechanism.

4. In a device of the character described, a main case, a spindle, bearings therefor, a piston connected to said spindle, an intermediate dog carried by said spindle, a lever-arm connected thereto, an upper and a lower dog rotatably mounted upon said intermediate dog, a spring connecting said upper and lower dogs, stop mechanism for said upper and lower dogs, and a shoulder on said intermediate dog engaged on opposite sides by said upper and lower dogs respectively.

5. In a device of the character described, a main case, a spindle, a piston connected to said spindle, an intermediate dog carried by said spindle, a lever-arm connected thereto, an upper and a lower dog rotatably mounted upon said intermediate dog, a spring connecting said upper and lower dogs, stop mechanism for said upper and lower dogs, a shoulder on said intermediate dog engaged on opposite sides by the upper and lower dogs and means of adjustment between said spring and one of said last-mentioned dogs.

6. In a device of the character described, a main case, a spindle, bearings therefor, a piston connected to said spindle, an intermediate dog carried by said spindle, a lever-arm connected thereto, an upper and a lower dog rotatably mounted upon said intermediate dog, a spring connecting said upper and lower dogs, stop mechanism for said last-mentioned dogs, a shoulder on said intermediate dog engaged on opposite sides by the upper and lower dogs, means of adjustment for said spring, said means comprising an adjustable sleeve carried by one of the dogs.

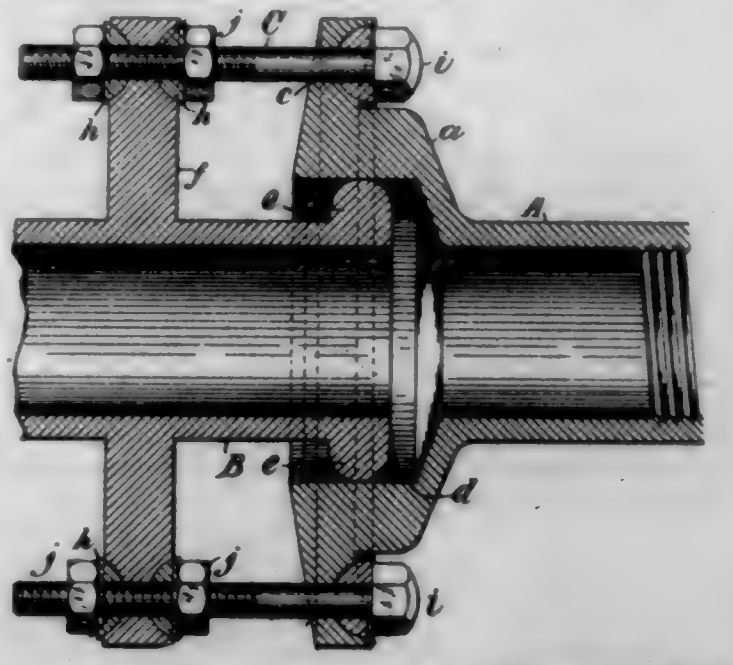
7. In a device of the character described, a main case, a spindle supported therein, a piston, means of connection between said piston and said spindle, bearings for said spindle above and below said piston connection, an annular air-chamber around said spindle below the upper bearing, a radially-corrugated antifriction-washer between said spindle and said annular air-chamber said corrugations forming backflow-ports, a lever-arm and means for detachably securing said lever-arm to said spindle above the uppermost of said bearings.

815,580. RAIL FOR RAILWAYS AND TRAMWAYS. SAMUEL W. DALZELL, Glasgow, Scotland. Filed Nov. 14, 1905. Serial No. 287,236.



Claim.—A railway or tramway rail composed of longitudinal sections superposed one upon another, an upper one of said sections and a section next below it being provided the one with a tongue and the other with a groove adapted to fit the tongue, the said tongue and groove being normally dovetail or undercut in cross-section whereby an upper section may be sprung into locking engagement with a lower section by a movement directly toward the lower section.

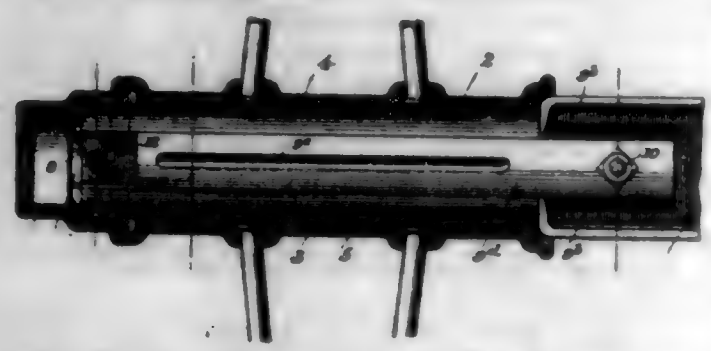
815,581. UNION FOR PIPES. MARK DEAN, East Orange, N. J. Filed Sept. 10, 1904. Serial No. 223,980.



Claim.—An adjustable union for pipes which consists of two portions of pipe, one of which has a hub with a cylindrical recess, and the other of which is provided with a convex flange adapted to be forced into said recess and to make a tight joint therewith at any

point of the interior and at a variable angle thereto and means substantially as described whereby the length of said union may be varied by drawing said flange into said recess to various distances without interfering with the tightness of the joint.

815,582. AXLE. EMIL RIEFFLET, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Sept. 8, 1905. Serial No. 277,787.



Claim.—1. In combination with a metallic bearing-spindle comprising a web and integral rounded flanges with longitudinal spaces between the flanges and the web, independent filling-blocks of fibrous material extending, one at each side of the web in the longitudinal space between the flanges and the web, said blocks having their outer surfaces formed to constitute a continuation of the bearing-surface of the flanges, and means for maintaining said blocks fixedly in place.

2. In combination with a metallic axle-body comprising a web and integral longitudinal flanges, a wheel-bearing spindle forming an integral continuation of the body, and comprising a web and curved flanges constituting the wheel supporting and bearing surface, and independent filling-blocks of wood, seated on opposite sides of the web respectively, in the longitudinal space between the flanges and web, said blocks having their outer surface curved to form a continuation of the bearing-surface of the flanges, and a fastening device securing the inner ends of the filling-blocks fixedly to the web of the body portion.

3. In combination with a metallic axle-body of I form in cross-section, an integral bearing-spindle comprising oppositely-disposed curved flanges constituting the bearing-surface of the spindle, and a central web connecting said flanges, filling-blocks of fibrous material seated in the longitudinal spaces at the opposite sides of the web, and having their inner ends terminating beyond the inner ends of the spindle, said filling-blocks having an inner flat side bearing against the side of the web, upper and lower curved surfaces bearing against the inner faces of the flanges, and outer curved sides forming a continuation of the bearing-surface of the flanges, and a fastening device securing the inner end of the blocks firmly to the web of the axle-body.

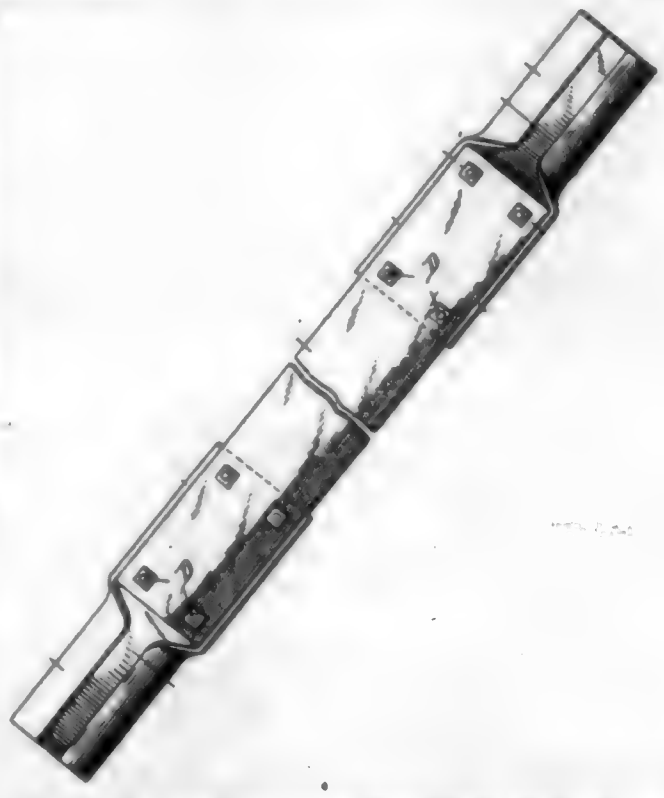
4. In combination with a metallic axle-spindle comprising rounded flanges and a connecting-web with longitudinal spaces between the inner faces of said flanges and the web, independent fibrous filling-blocks extending in said spaces and having their outer sides formed exteriorly to constitute continuations of the bearing-surface of the flanges, and means for securing said blocks fixedly in place.

5. In combination with an axle-spindle comprising rounded flanges, with a space between the edges of the flanges, a wheel mounted on the spindle, a confining-cap applied to the end of the spindle and formed with an inwardly-extending shoulder fitting between the edges of the flanges, and a fastening device securing the cap to the spindle.

6. In combination with an axle-spindle comprising rounded flanges oppositely disposed, with spaces on opposite sides of the spindle, between the edges of the flanges, a wheel applied to said spindle, a confining-cap on the end of the spindle, shoulders on the inner surface of the cap at opposite sides, extending between the edges of the flanges, and a fastening-pin extending through the cap-shoulders and spindle, and serving to fasten the cap on the spindle.

815,583. AXLE. EMIL RIEFFLET, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Oct. 30, 1905. Serial No. 285,124.

Claim.—1. In an axle, the combination with a main body portion, of an end section provided with longitudinal flanges and a connecting-web, and shaped to constitute a wheel-spindle, the end of the body portion being seated against and secured to the web of the end section, with the flanges of the latter bearing along the edges of the body portion.

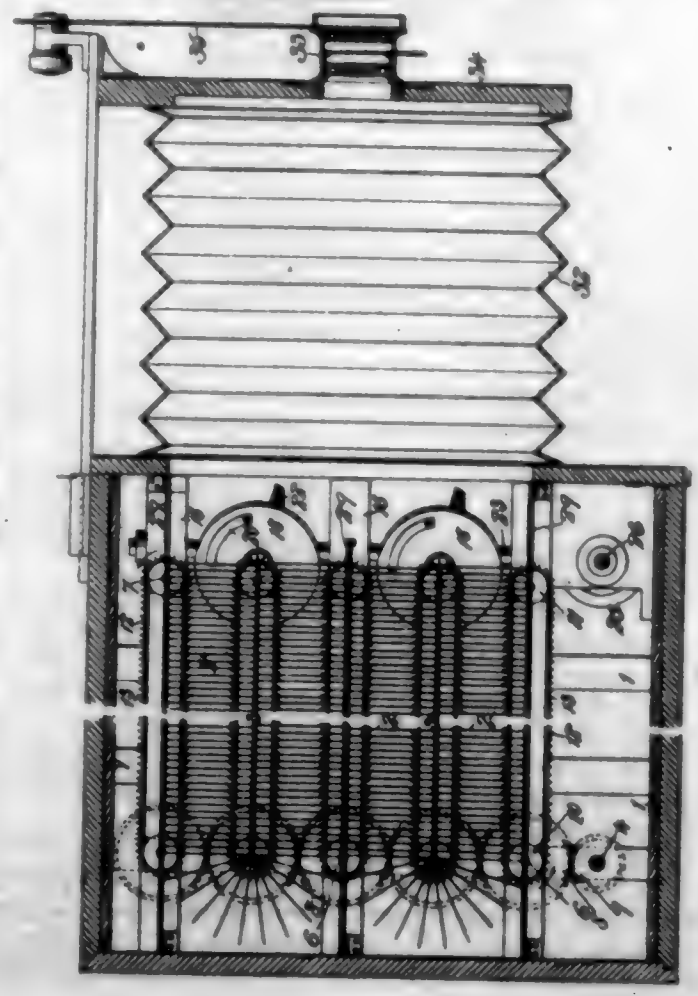


2. An axle comprising a main body portion having its end slotted, and an end section having longitudinal flanges and a connecting-web, the said web being seated and secured in the slot in the body portion, with the ends of the latter fitting between the longitudinal flanges of the end section.

3. In an axle and in combination with an end section shaped at its extremity to form a wheel-spindle and formed in its sides with open longitudinal channels, a main body portion having its ends shaped to fit in said channels, and means for fastening said parts rigidly together.

4. A composite axle comprising a main wooden body portion and metallic flanged end sections shaped at their outer extremities to constitute wheel-spindles, the flanges of said end sections bearing against the edges of the body portion, and suitable fastening devices for securing said end sections fixedly to the body portion.

815,584. CAMERA. HIRAM A. FARRAND, New York, N. Y. Filed Oct. 6, 1904. Serial No. 227,380.



Claim.—1. An apparatus having a series of cards provided with sensitized fronts and backs and means for successively moving the cards into an exposure-plane, reversing the cards and moving them out of the plane.

2. An apparatus having a series of cards provided with sensitized fronts and backs, means for successively moving the cards into an exposure-plane, reversing the cards and moving them out of the plane and means for accelerating the reversing movement of the cards.

3. An apparatus having a plurality of separate sensitized flat surfaces forming a continuous common exposure-plane and means for moving the surfaces into and out of the said exposure-plane.

4. An apparatus having a plurality of series of flat sensitized surfaces the corresponding surfaces of the several series forming a continuous common exposure-plane and means for moving the corresponding surfaces of the different series into and out of the said exposure-plane.

5. An apparatus having a plurality of series of cards provided with sensitized surfaces the corresponding cards of the several series forming a continuous common exposure-plane and means for moving the corresponding cards of the different series into and out of the said exposure-plane.

6. An apparatus having a plurality of series of cards provided with sensitized surfaces and means for simultaneously moving corresponding cards of the several series into an exposure-plane, reversing them and moving them out of said plane.

7. An apparatus having a plurality of series of cards provided with front and back sensitized surfaces and means for moving corresponding cards of the different series into an exposure-plane, reversing the cards and moving them out of the said plane.

8. An apparatus having a plurality of series of cards provided with sensitized surfaces, means for simultaneously moving corresponding cards of the several series into an exposure-plane, reversing the cards and moving them out of said plane, and means for accelerating the reversing movement of the cards.

9. An apparatus having an endless band, a plurality of cards permanently secured thereto provided with sensitized surfaces and a separate belt having teeth engaging the cards for moving them successively into and out of an exposure-plane.

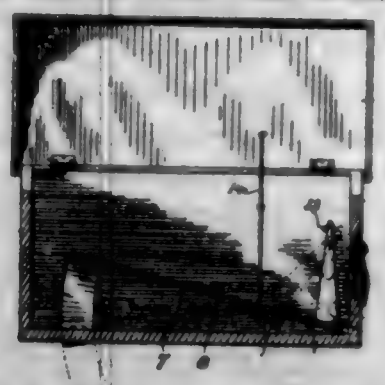
10. An apparatus having a plurality of endless bands each having a series of cards permanently secured thereto and provided with sensitized surfaces and a plurality of separate belts having teeth engaging the cards for moving them successively into and out of an exposure-plane.

11. An apparatus having a plurality of series of cards provided with sensitized surfaces, means for simultaneously moving corresponding cards of the several series into and out of an exposure-plane and guide-bars extending to the said plane for supporting the cards during their forward movement.

12. In a camera obscura, the combination with a lens, of a plurality of series of cards provided with sensitized surfaces and means for simultaneously moving corresponding cards into and out of the focal plane of the lens.

815,585. RURAL MAIL-BOX.

CHARLES F. FARRAR, Howell, Mich., assignor to Eben L. Harrington, Glens Falls, N. Y., and Julia A. Farrar, Howell, Mich. Filed Nov. 4, 1905. Serial No. 285,807.



Claim.—1. The combination with a mail-box, of a movable cover for said box, a door in said box for the insertion of mail, an indicator adapted to be released by the movement of the door to permit the indicator to move to its display position, and means connecting the cover and indicator to move the indicator from its display position when the cover is moved.

2. The combination with a mail-box, of a hinged cover for said box, a door in said box for the insertion of mail, a gravity-indicator adapted to be released by the opening of said door, and means connecting the cover and said indicator to raise the indicator when the cover is raised.

3. The combination with a mail-box, of a door in said box, a pivoted indicator, means for locking the indicator in one position adapted to be engaged and operated by the door to release the indicator when said door is opened.

4. The combination with a mail-box, having a slot, an indicator within said box adapted to be projected through the slot, a door in said box adapted when opened to release the indicator to permit the same to be projected, a cover hinged to the box, and means within the box connecting the cover and indicator to retract the indicator when the cover is raised.

5. The combination with a mail-box, of a gravity-indicator pivoted intermediate its ends, a door in said box, and a gravity-latch adapted to engage the indicator at one side of its pivot to hold the same in its raised position, and adapted to be engaged and moved by said door to release the indicator.

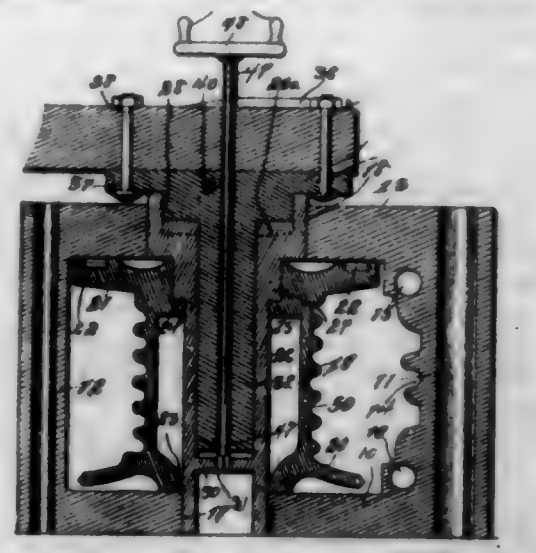
6. The combination with a mail-box, of a cover hinged to said box, a rod pivoted intermediate its ends, an indicator carried by said rod at its opposite end, a gravity-latch to engage the indicator at one side of its pivot and hold the same raised, a door to close an opening in the box adapted to engage and operate the latch, and means attached at one end to the indicator at the opposite side of its pivot and at its opposite end to the cover to raise the indicator when the cover is lifted.

7. The combination of a mail-box having a slot, a cover hinged to the box, a rod pivoted intermediate its ends within the box, an indicator on one end of said rod adapted to project through the slot in the box, means attached at one end to the rod between the indicator and the pivot of the rod and at its opposite end to the cover, a door to close an opening in the box, a gravity-latch pivoted to the wall of the box adjacent to said door to engage the end of the rod at the opposite side of its pivot and adapted to be engaged by said door when the same is opened.

8. The combination of a mail-box having a slot in its bottom and an opening in one end, a cover hinged to said box, a rod pivoted intermediate its ends within the box and forming a long end at one side of its pivot and a short end at the opposite side, an indicator on the long end of said rod to project through said slot, a cord secured at one end to the rod between its pivot and the indicator, a door operating by gravity to close said opening in the end of the box, and a gravity-latch pivoted to the wall of the box adjacent to said door to be engaged and turned thereby and to engage the short end of the rod and hold the indicator raised.

815,586. STUMP-PULLER.

BERNARD A. FULLER and MILES BATEMAN, Centerville, Iowa. Filed Oct. 27, 1905. Serial No. 285,237.



Claim.—1. In a stump-puller, a frame, a spool therein formed with an angular hole in its upper portion, a tubular center post formed with an angular portion removably mounted in said angular hole whereby said center post is clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post.

2. In a stump-puller, a frame, a spool therein and formed with an angular hole in its upper portion, a center post journaled in the frame and formed with an angular portion removably mounted in said angular hole, whereby the center post is clutched to the spool, and also formed with a clutch-seat in its upper end, a sweep-post formed with a clutch member removably mounted in said clutch-seat, whereby the sweep-post is clutched to the center post, and man-

ually-actuated cam devices for raising the clutch member from the clutch-seat and thereby disengaging the sweep-post from the center post.

3. In a stump-puller, a frame, a spool therein, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post, which means comprise a rock-shaft in the sweep-post, cams on said rock-shaft adapted to engage said frame and a handle on one of said cams.

4. In a stump-puller, a frame, a spool therein, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post, which means comprise a rock-shaft in the sweep-post, cams on said rock-shaft formed with flat side faces adapted to engage said frame and a handle on one of said cams.

5. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, and means for disengaging the sweep-post from the center post.

6. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, means for disengaging the sweep-post from the center post, a rod mounted through said sweep-post, and means for connecting said rod to the center post whereby the center post and spool may be rotated independent of the sweep-post.

7. In a stump-puller, a frame, a spool therein, a ratchet-flange on said spool, ratchet-dogs on said frame and adapted to engage said ratchet-flange at diametrically opposite points, pins removably mounted in said frame and adapted to engage and sustain said dogs in elevated positions at times, a tubular center post clutched to said spool, a tubular sweep-post clutched to the center post, means for disengaging the sweep-post from the center post, a rod mounted through said sweep-post, a manually-operated wheel on said rod, and means for connecting said rod to the center post whereby the center post and spool may be rotated independent of the sweep-post.

8. In a stump-puller, a frame comprising a base, standards and top plate integrally connected, one of said standards formed with a groove at the center of its inner face, a tubular center post journaled in and extending through the central portion of said base and top plates, a spool mounted within said frame and surrounding said center post, clutch connections between said spool and center post, a sweep-post mounted within said center post, clutch connections between said center post and sweep-post, ratchet-and-dog connections between said top plate and spool, and manually-operated cam devices on the sweep-post and adapted to engage said top plate, whereby said sweep-post may be raised and disengaged from the center post.

9. In a stump-puller, a frame comprising a base, standards and top plate integrally connected, one of said standards formed with a groove at the center of its inner face and holes at its ends, a tubular center post journaled in and extending through the central portion of the base and top plates, a spool mounted within said frame and surrounding said center post, said spool formed with an angular cavity, the center post formed with an angular portion fitting said angular cavity, a sweep-post mounted within said center post, said center post formed with a circular cavity and clutch-seats within said cavity, said sweep-post formed with a circular hub fitting said circular cavity and clutch-lugs fitting said clutch-seats, ratchet-and-dog connections between said top plate and spool, and means for raising and lowering said sweep-post in respect of said center post.

10. In a stump-puller, a frame, a tubular center post journaled therein, a drum-spool mounted on and clutched to said center post, ratchet-and-dog connections between said spool and frame, a tubular sweep-post mounted for longitudinal adjustment in and clutched to said center post, manually-actuated cam devices composed of a rock-shaft in said sweep-post, cams on said rock-shaft and a handle on one of said cams, for raising and unclutching said sweep-post, and manually-actuated rotating devices for rotating the center post and spool conjunctively independent of the sweep-post.

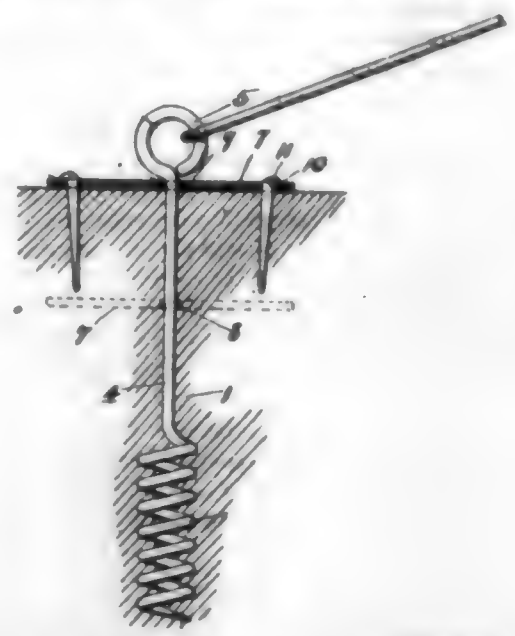
11. In a stump-puller, a frame, a tubular center post journaled therein, a drum-spool mounted on and clutched to said center post, suspensible ratchet-and-dog connections between said spool and frame, comprising a ratchet-flange on the spool, dogs pivoted in the frame, and pins adapted to engage with and support said dogs, a tubular sweep-post mounted for longitudinal adjustment in and clutched to said center post, manually-actuated cam devices composed of a rock-shaft in the sweep-post, cams on said rock-shaft, and a handle on one of said cams, for raising and unclutching said sweep-post, and manually-actuated rotating devices for rotating the center post and spool conjunctively in either direction independent of the sweep-post.

815,587. SASH-CORD FASTENER. HENRY HAUSER, Chicago, Ill. Filed Mar. 20, 1905. Serial No. 252,210.



Claim.—A rope-clamp consisting of stamped sheet metal in the form of an elongated U the ends thereof being semicylindrical in form and thereby adapted to partly encircle the end of a rope, each of said ends having an inward-projecting tooth; and a ring encircling said clamp below said cylindrical ends and being adapted to be moved upon said clamp between the band and said cylindrical ends, substantially as described and for the purposes specified.

815,588. ANCHOR. OLIVER HILL, Princeton, and CHRISTIAN ROCKE, Lincoln, Nebr. Filed June 3, 1905. Serial No. 263,671.

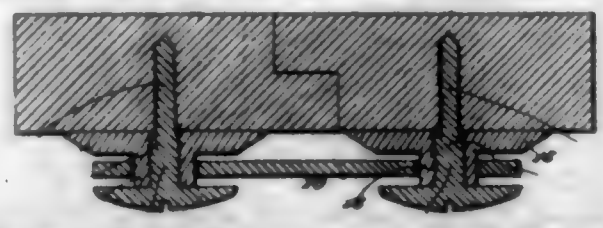


Claim.—1. An anchor comprising a head having an eye designed to receive a guy-wire and a shank integral with said head and eye, and terminating in a screw, an inflexible flat rigid plate made in one piece and provided with an aperture through which the screw and shank portions of said anchor are passed, said head contacting with the plate, and means independent of said plate for securing it to the ground, substantially as described.

2. An anchor provided with a head having an eye with notches and a plate for preventing the lateral movement of said anchor, substantially as described.

3. An anchor provided with a head having an eye with notches for preventing a guy or other wire from moving around said eye, substantially as described.

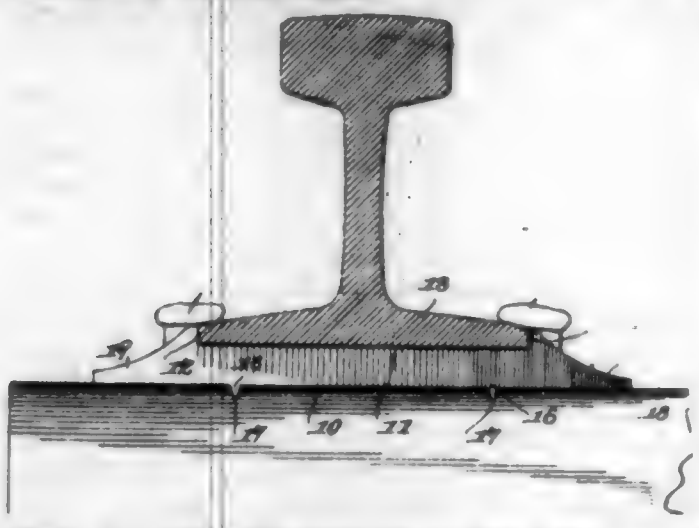
815,589. SHUTTER-FASTENER. JACOB T. JOHNSON, Philadelphia, Pa. Filed July 17, 1905. Serial No. 270,085.



Claim.—1. In a latch-fastener for shutters and the like, a disk having a centrally-disposed stud projecting from one face thereof and provided with a smooth circular outer face, and with a centrally-disposed threaded opening that extends, also, through the disk, a screw having a threaded portion extending through said opening and arranged to enter the material to which said fastening is to be secured, the screw having an enlarged head which abuts against the outer end of the stud.

2. In a latch-fastening for shutters and the like, a disk provided with a centrally-disposed stud having a smooth circular periphery and provided with a centrally-disposed threaded opening, a screw having a threaded portion extending through said opening and provided with an enlarged head that abuts against the outer end of the stud, that portion of the screw extending beyond the disk being reduced in diameter and provided with threads for engaging the material to which the fastening is to be secured.

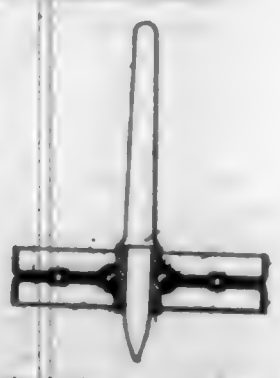
815,590. RAILROAD-TIE PLATE. WILLIAM B. JOHNSON, Gallup, N. Mex., assignor of one-half to Erastus Pinney, Gallup, N. Mex. Filed Sept. 19, 1905. Serial No. 279,194.



Claim.—1. A railway-tie plate having a relatively thick central portion and relatively thin side portions and with spaced ribs for bearing against the sides of the rail and disposed at the juncture of the thicker central portion and the thinner side portions, and tie-engaging ribs beneath the thicker portion and between said rail-engaging ribs.

2. A railway-tie plate having a relatively thick central portion and relatively thin side portions and with spaced ribs for bearing against the sides of the rail and disposed at the juncture of the thicker central portion and the thinner side portions, and with tie-engaging ribs beneath said thicker portion and between said rail-engaging ribs, and spike-apertures through said plate and rail-engaging ribs and extending into the body of the plate between said ribs.

815,591. SPINNING-TOP. EDWARD T. JONES, Minneapolis, Minn. Filed Dec. 5, 1905. Serial No. 290,377.



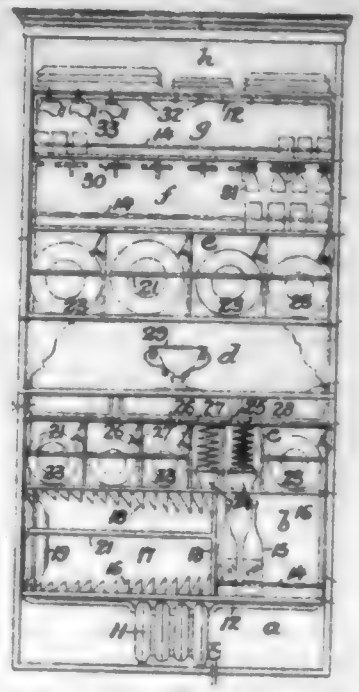
Claim.—1. A spinning-top, comprising a wheel-like body, a spindle, and a ball-race and balls connecting the body to the spindle.

2. A spinning-top, comprising a body formed of upper and lower disks secured together and oppositely flanged to form outer rims and oppositely flared around an axial opening to form a ball-race, balls in such race, and a spindle rotatably secured in place by the balls.

3. A spinning-top, comprising a body formed of upper and lower disks secured together, a ball-race formed around an axial opening, balls therein, and a spindle provided with a groove in which the balls engage, whereby the spindle is secured in place and the body permitted to rotate thereon.

815,592. CABINET. CHARLES A. KARLSON, New York, N. Y. Filed Sept. 13, 1905. Serial No. 278,238.

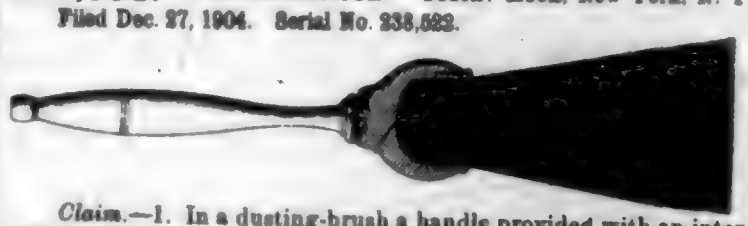
Claim.—1. A cabinet having a compartment provided at its lower end with upwardly-extending wedge-shaped ribs and at its upper end with downwardly-extending wedge-shaped projections, said compartments being formed in its ends with upwardly-extending curved grooves widened at their upper ends, and a bar extending across the front of said compartment and being slidably mounted at its ends in said grooves.



2. A cabinet having a plurality of dish-holding compartments, each of said compartments having a hinged board adapted to bear against the edges of the dishes to hold the same against displacement, and means for pressing said board yieldingly against the dishes.

3. A cabinet having a plurality of dish-holding compartments, a sliding bar mounted in each of said compartments, a board hinged in each of said compartments and adapted to bear against the edges of the plates, and a coil-spring contacting with each of said boards.

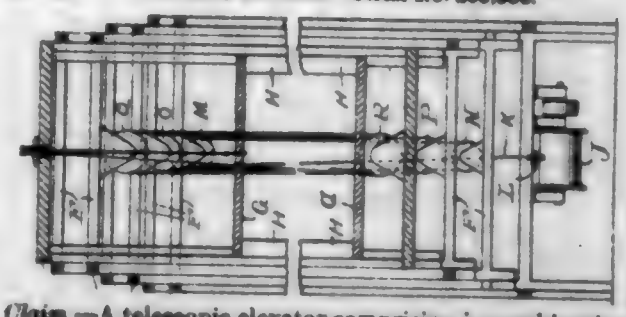
815,593. DUSTING-BRUSH. GUSTAV KOCH, New York, N. Y. Filed Dec. 27, 1904. Serial No. 238,523.



Claim.—1. In a dusting-brush a handle provided with an internally-screw-threaded socket, a brush composed of filaments doubled and fastened together at the center transversely by a band to form a head, which is inserted in the socket of the handle, and a screw-threaded ring passed over the brush and screwed into the socket to clamp the filaments together circumferentially and fasten the head of the brush in the socket, substantially as specified.

2. A dusting-brush made from a bunch of filaments doubled and secured together at the middle by means of a metallic band which clasps the same, the doubled end with the metallic band forming a head, in combination with a handle having a socket into which the head of the brush is inserted, and means for fastening the said head in the socket, substantially as specified.

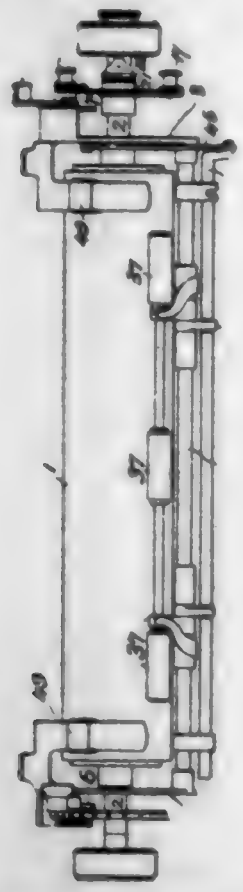
815,594. TELESCOPIC ELEVATOR. JANKO KOVAČEVIĆ, Allegheny, Pa. Filed May 18, 1904. Serial No. 208,536.



Claim.—A telescopic elevator comprising in combination a plurality of rectangular frames disposed one within the other and movable telescopically relatively to each other, the outer frames each comprising four L-shaped corner members connected with each other by means of cross-bars, and the innermost member comprising four rectangular corner-posts connected by means of cross-bars, each outer set of corner-posts constituting guides for the next succeeding inner set of corner-posts, a rectangular platform disposed at the upper end of each of said outer rectangular frames, and being relatively so

proportioned that each upper platform is smaller and fits within the next succeeding lower platform, pulleys mounted at the upper and lower ends of each outer frame at opposite sides thereof and disposed so that their planes of rotation are inclined slightly to the planes of the sides of said telescopic frames on which they are disposed and in such relation that the grooves of the upper pulleys of each lower member are in vertical alinement at one point with one point in the grooves of the lower pulleys of the next adjacent inner frame, said pulleys of succeeding inner frames being successively of larger diameter, a windlass carried by the lower and outermost frame, cables connected at one end with said windlass and at their other ends with said innermost frame, and trained over said pulleys successively between their ends, substantially as described.

815,595. TYPE-WRITING MACHINE. EDWARD F. KUHATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed July 27, 1904. Serial No. 218,396.



Claim.—1. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of fixed arresting means upon the platen-frame, and means revoluble with the platen and coöperating with said fixed arresting means, for arresting both forward and backward revolutions of the platen; said revoluble arresting means comprising two stop members, whereof one is adjustable about the platen-axis and independently of the platen.

2. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack concentric with the platen, a stop adjustable along said rack, means coöperating with said stop for arresting the revolution of the platen in one direction, and means for arresting the revolution of the platen in the opposite direction.

3. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack revoluble concentrically with the platen, a stop adjustable along said rack independently of the platen; said stop and rack being revoluble together with the platen; and a fixed device upon the platen-frame for engaging said stop to arrest the revolution of the platen in one direction.

4. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack revoluble concentrically with the platen, a stop adjustable along said rack independently of the platen; said stop and rack being revoluble together with the platen; a fixed device upon the platen-frame for engaging said stop to arrest the revolution of the platen in one direction, and means between the platen-frame and the platen for arresting the movement of the platen in the opposite direction.

5. In a type-writing machine, the combination with a revoluble platen provided with an axle, a line-space wheel, and a platen-frame, of a stop-arm revoluble upon the platen-axle independently of the platen, means for causing said stop-arm and platen to revolve together, and a stop upon the platen-frame for engagement with said stop-arm to arrest the platen.

6. In a type-writing machine, the combination with a revoluble platen provided with an axle, a line-space wheel, and a platen-frame, of a stop-arm revoluble about the platen-axis independently of the platen, means for causing said stop-arm and platen to revolve together, a stop upon the platen-frame for engagement with said stop-arm to arrest the platen revolution in one direction, and means, including a separate stop also revoluble with the platen, for arresting the revolution of the platen in the opposite direction.

7. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of two stops revoluble with the platen, and a fixed device upon the platen-frame in the path of said stops for arresting both the forward and backward revolutions of the platen.

8. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of coöperating devices, one upon the platen-frame and the other revoluble together with the platen, for arresting the platen in both its forward and backward revolutions; one of said coöperating devices being adjustable concentrically with and independently of the platen.

9. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of coöperating devices, one of which comprises forward and back stops which are relatively adjustable; one of said coöperating devices being mounted upon the platen-frame and the other being revoluble together with the platen, for arresting the platen in both its forward and backward revolutions, through arcs whose length is determined by the relative adjustment of said forward and back stops; one of said coöperating devices being adjustable concentrically with and independently of the platen.

10. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of coöperating devices, one of which is fixed upon the platen-frame, and the other of which comprises forward and back stops relatively adjustable and also revoluble together with the platen, for arresting the platen in both backward and forward revolutions thereof.

11. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a stop upon the platen-frame, and forward and back stops revoluble together with the platen, said forward and back stops being adjustable independently of the platen and independently of each other.

12. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a stop upon the platen-frame, a circular rack mounted so that it may revolve with the platen, said rack being also revoluble independently of the platen, and forward and back stops carried by said rack; at least one of said forward and back stops being adjustable along the rack.

13. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of relatively adjustable stops for arresting both forward and backward revolutions of the platen: at least one of said stops being normally inoperative by said platen but capable of rotation therewith; and a manually-operable device being provided for both rotating the platen and connecting to the latter said normally inoperative stop, for limiting the extent of rotation of the platen by said manually-operable device.

14. In a type-writing machine, the combination with a revoluble platen, of a manually-operable device mounted to turn about the platen-axis; means for enabling said manually-operable device, to turn said platen either forwardly or backwardly at will; and means, including a stop which is adjustable about the platen-axis, for limiting positively the forward and back strokes of said manually-operable device; said limiting means being effective to arrest the platen only when the latter is rotated by means of said manually-operable device, and the platen being normally rotatable in either direction at will to an unlimited extent.

15. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of a circular rack concentric with the platen, a stop adjustable along said rack for arresting the revolution of the platen in one direction, a stop for arresting the revolution of the platen in the opposite direction, the platen being normally free to rotate in either direction independently of said stops, and a manually-operable device capable of rotating the platen either forward or backward at will and also capable of rendering said stops effective to arrest the platen.

16. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of a circular rack revoluble concentrically with the platen; a stop adjustable along said rack independently of the platen; said stop and rack being

revoluble together with the platen; a fixed device upon the platen-frame for engaging said stop to arrest the platen; and a manually-operable device capable of effecting operative connection between said rack and said platen and of rotating the latter.

17. In a type-writing machine, the combination with a platen and a platen-frame, of a circular rack revoluble concentrically with the platen; a stop adjustable along said rack; a relatively fixed device for engaging said stop to arrest the platen; a manually-operable device rotatable concentrically with the platen and capable of effecting operative connection between said rack and said platen and of rotating the latter either forwardly or backwardly; and arresting means to coöperate with said arresting device for limiting the rotation of the platen and rack in both directions.

18. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of two stops revoluble with the platen, fixed arresting means upon the platen-frame in the path of said stops for arresting the forward and backward revolutions of the platen, the platen being normally revoluble in either direction at will independently of said arresting means, and a finger-wheel mounted concentrically with the platen and capable of rotating the platen in either direction through an arc limited by said stops and arresting means; means being provided whereby the length of such arc may be varied.

19. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a finger-wheel capable of rotating the platen in either direction, and coöperating devices, one of which is fixed upon the platen-frame, and the other of which comprises forward and back stops relatively adjustable and also revoluble together with said finger-wheel and platen, for arresting said wheel and platen in both backward and forward revolutions thereof; said platen being normally rotatable in either direction at will independently of said arresting devices, and said finger-wheel controlling the action of the latter.

20. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a stop upon the platen-frame, forward and back stops revoluble together with the platen, said forward and back stops being adjustable independently of the platen and relatively to each other, and said platen being normally rotatable in either direction at will independently of said arresting devices, and a manually-operable device capable of rotating the platen either forwardly or backwardly at will and limited in its platen-rotating movements by said stops.

21. A revoluble type-writer platen provided at each end with a hand-wheel, one of said hand-wheels forming part of a manually-operable contrivance, and adjustable devices for mechanically limiting the forward and backward movements of said manually-operable contrivance, the construction being such that the platen may, by said manually-operable contrivance, be alternately set forward and back such a number of line-spaces as may be predetermined by the setting of said adjustable devices, and the other of said hand-wheels being capable of revolving the platen in either direction at will to an unlimited extent between such alternate movements and independently of said manually-operable contrivance.

22. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, a stop adjustable along said rack, a coöperative fixed stop upon the platen-frame, a finger-wheel or lever for rotating the platen, and a clutch between said finger-wheel and said circular rack; said clutch being normally released.

23. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, stops upon said rack for limiting its rotation in both directions, at least one of said stops being adjustable along the rack, a coöperative stop member upon the platen-frame, a finger-wheel for rotating the platen, and a normally released clutch between said circular rack and said finger-wheel and rendered effective by a platen-rotating movement of the latter.

24. In a type-writing machine, the combination of a platen, a finger-wheel for rotating the same, normally ineffective stops for limiting the rotation backward and forward of said finger-wheel and platen, and means called into action by turning said finger-wheel, for rendering said stops effective.

25. In a type-writing machine, the combination of a platen, a platen-frame, a finger-wheel for rotating the platen, a stop member revoluble with the platen, a coöperative stop member upon the platen-frame, said platen being normally revoluble to an unlimited extent independently of said stop members, and means called into action by turning said finger-wheel in either direction, for rendering said stops effective to limit the forward and backward rotation of finger-wheel and platen.

26. In a type-writing machine, the combination with a platen and a platen-frame, of a stop member upon the platen-frame, a coöperative stop member upon the platen and adjustable independently of the platen, a clutch member upon said platen stop member, a finger-wheel connected to the platen, and a clutch member normally released but engageable with the first-mentioned clutch member by means of a turning movement of said finger-wheel in either direction.

27. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle journaled in the platen-frame, a stop member upon the platen-axle and revoluble thereon independently of the platen, a clutch member fixed to said stop member, a finger-wheel loose upon said platen-axle, a clutch-collar loose upon said axle and engageable with said clutch member but normally released therefrom, means for splining said clutch-collar to said axle, said collar having a double-cam engagement with said finger-wheel, so that by turning the latter either forwardly or backwardly the collar is cammed into engagement with the first-mentioned clutch member, the construction and arrangement being such that further pressure upon the finger-wheel is effective to rotate the platen, and a coöperative stop upon the platen-frame.

28. In a type-writing machine, the combination with a platen, a platen-frame, and line-spacing mechanism, of a stop member mounted for rotation concentrically with the platen and stationary during the operation of the platen by the line-spacing mechanism, a finger-wheel, a clutch between said finger-wheel and said stop member, said clutch being normally released and being rendered effective by rotation of said finger-wheel in either direction, and said finger-wheel being also effective to rotate the platen when clutched to said stop member, and a coöperative stop member upon the platen-frame; said stop members being capable of limiting both the forward and backward movements of the platen and finger-wheel.

29. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle mounted in the platen-frame, a circular rack loose upon said axle and having a stop fixed thereon, a stop adjustable along said rack, a clutch member fixed to said rack, a clutch-collar splined upon said axle, a spring holding said clutch member and said clutch-collar apart, a finger-wheel loose upon said axle, one of said finger-wheel and collar elements having a V-tooth and the other having a corresponding V-notch, means for preventing axial movement of said finger-wheel, and a fixed stop upon the platen-frame to coöperate with said stops.

30. In a type-writing machine, the combination with a platen of a stop member, a finger-wheel, a normally disengaged clutch controlled by said finger-wheel, and a coöperative fixed stop member.

31. In a type-writing machine, the combination with a platen and line-spacing mechanism, of a member movable forward and backward upon the platen-axis, relatively adjustable stops for limiting the forward and backward movements of said member; the platen being normally capable of forward or backward rotation to an unlimited extent independently of said member; and means for operatively connecting said member at will to the platen, so as to mechanically limit the extent of forward or backward rotation of the platen.

32. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, and a device connectible at will to the platen and rotatable therewith and constructed to coöperate with said stop member for mechanically limiting the forward and backward rotation of the platen; a part being included which is adjustable concentrically with the platen for the purpose of varying the extent of the platen movement.

33. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, and a stop member connectible at will to the platen for rotation therewith and constructed to coöperate with the stop member upon the platen-frame for mechanically limiting the rotation of the platen in forward and backward direction; one of said stop members comprising a circular rack and a stop adjustable therealong.

34. In a type-writing machine, the combination with a platen, a platen-frame, and a stop upon the latter, of a member capable of oscillation about the platen-axis within limits determined by said stop, a manually-operable device, and means for enabling a single stroke of the latter both to connect said oscillatory member to the platen and to effect rotation of the latter forwardly or backwardly.

35. In a type-writing machine, the combination with a platen and a platen-frame, of a member capable of mechanically-limited oscillation and connectible to the platen at will for mechanically limiting the extent of forward or backward rotation of the latter, and means for holding said oscillatory member stationary at either end of its oscillation.

36. In a type-writing machine, the combination with a platen and platen-frame, of a stop member upon the platen-frame, a device connectible at will to the platen and rotatable therewith, means for enabling said platen-frame stop member to positively arrest said rotatable device when rotating in either forward or backward direction, and yielding means normally holding said rotatable device stationary at either end of its rotation.

37. In a type-writing machine, the combination with a platen and platen-frame, of a stop member revoluble about the platen-axis, the platen being normally revoluble independently of said stop member, a finger-wheel upon the platen-axis capable of rotating said stop member and said platen together in either direction, and means for both arresting said stop member when rotating either forwardly or backwardly and holding the stop member in its arrested position.

38. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted for rotation about the platen-axis and connectible to the platen at will, two stops mounted upon said rack, one stop being adjustable along the rack, yielding detents carried by said stops, and a stop fixed upon the platen-frame in the paths of said stops for positively arresting said circular rack and platen; said platen-frame stop being engageable by said yielding detents for holding said circular rack stationary.

39. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted for rotation about the platen-axis and connectible to the platen at will, two stops mounted upon said rack, one stop being adjustable along the rack, a stop member upon the platen-frame in the paths of said stops for positively arresting the circular rack and platen; and yielding means between the platen-frame and the rack-stops for detaining the rack when arrested.

40. In a type-writing machine, the combination with a platen and platen-frame, of a stop member mounted for revolution about the platen-axis, a finger-wheel, a clutch normally released between said stop member and said finger-wheel, means for enabling a movement of the finger-wheel to operate the clutch, means for also locking the clutch members together, and a stop member upon the platen-frame.

41. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a normally-released clutch mechanism capable of rotating the platen in either direction, stops for limiting the movement of said clutch and platen in each direction, and means for permanently locking the clutch members together.

42. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism therefor, of a finger-whee , a normally released clutch controlled by said finger-wheel and capable of rotating the platen in either direction, means independent of the finger-wheel for permanently locking the clutch members in closed relation, and stops for limiting the rotation of the clutch and platen in each direction; at least one of said stops being adjustable.

43. In a type-writing machine, the combination with a platen and platen-frame, of a circular rack mounted concentrically with the platen and revolubly adjustable independently of the platen, stops upon said rack for limiting its rotation in both directions, at least one of said stops being adjustable along the rack, a coöperative stop member upon the platen-frame, a finger-wheel for rotating the platen, a normally released clutch between said circular rack and said finger-wheel and rendered effective by a platen-rotating movement of the latter, and means for permanently locking the clutch members together.

44. In a type-writing machine, the combination with a platen and a platen-frame, of a platen-axle mounted in the platen-frame, a circular rack loose upon said axle and having stops thereon, one of said stops being adjustable along said rack, a clutch member fixed to said rack, a clutch-collar splined upon said axle, a spring holding said clutch member and said clutch-collar apart, a finger-wheel loose upon said axle; one of said finger-wheel and collar elements having a V-tooth and the other having a corresponding V-notch; a screw upon the tip of said platen-axle for locking the clutch-collar into permanent engagement with said clutch member; a retaining screw or device for said screw; and a fixed stop upon the platen-frame to cooperate with said stops.

45. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of a stop upon the platen-frame, and means connectible at will to the platen and coöperating with said stop, for arresting the forward and backward revolutions of the platen; said stop being movable at will out of working position.

46. In a type-writing machine, the combination with a revoluble platen and line-spacing mechanism, of a platen-frame, and stops for arresting both forward and backward revolution of the platen; one of said stops being movable out of working position, so that one stop may pass by the other during the revolution of the platen, so as to render the stop mechanism ineffective.

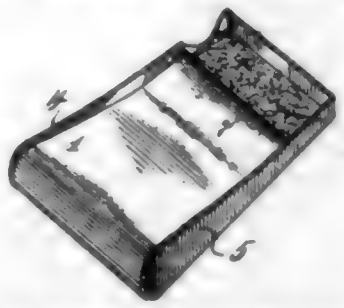
47. In a type-writing machine, the combination with a revoluble platen, a line-space wheel, and a platen-frame, of a circular rack revoluble concentrically with the platen, a stop adjustable along said rack independently of the platen; said stop and rack being revoluble together with the platen; and a fixed device upon the platen-frame for engaging the stop to arrest the revolution of the platen, in each direction; said fixed device being mounted so that it may be moved out of working position at will.

48. In a type-writing machine, the combination with a revoluble platen, line-spacing mechanism, and a platen-frame, of two stops revoluble with the platen, a device upon the platen-frame in the path of said stops for arresting both forward and backward revolutions of the platen, and means for effecting such relative movement of said arresting device and said stops as to prevent their coöperation.

49. In a type-writing machine, the combination with a revoluble platen, of a platen-frame, a stop thereon, normally ineffective stops for arresting the forward and backward revolutions of the platen, and a finger-wheel capable of turning the platen in either direction and simultaneously rendering said stops effective; said platen-frame stop being mounted so that it may be moved out of working position at will.

50. In a type-writing machine, the combination with a platen and platen-frame, of a stop member mounted for revolution about the platen-axis, a finger-wheel, a normally released clutch between said stop member and said finger-wheel, means for enabling a movement of the finger-wheel either forwardly or backwardly to close the clutch and rotate the platen, means for permanently locking the clutch members together, and a coöperative stop mounted upon the platen-frame but movable out of working position at will.

815,596. SELF-STRIKING MATCH-BOX. MARTINUS LARSEN, New York, N. Y. Filed Dec. 13, 1905. Serial No. 291,502.



Claim.—1. A self-striking match-box having a back, a front of lesser length resiliently held toward said back, an unobstructed space for matches between said front and back, igniting means on the back adjacent to the free end of said front, and the back at its free end being turned up, substantially as described.

2. A self-striking match-box having a back with a turned-over end and a front of lesser length resiliently held toward said back and a strip of striking material adjacent to the upper edge of said front, said back having a depression formed therein to act as a retaining means for the striking material.

3. A self-striking match-box having a back with a turned-over end and a front of lesser length resiliently held toward said back and a strip of striking material adjacent to the upper edge of said front, said back having a slotted opening, depressed from the surface, through which the striking material may be inserted and by which it may be retained after insertion.

4. A self-striking match-box formed from a single blank of sheet metal and having when formed into shape a back having a turned-over end, a front formed as a continuation of said back but of lesser length and bent over from said back on a curve of more than a half-circle, the end of said cover being formed flat and parallel to the back, sides bent up from the back, at least one side being cut out adjacent to the turned-over end of the back, the back having a slotted opening slightly depressed below the plane of the back and a piece of striking material held in place between the upturned end and the slightly-depressed slot.

815,597. HACKSAW. WILLIAM E. LAWRENCE, Brooklyn, N. Y. Filed Jan. 10, 1905. Serial No. 240,494.

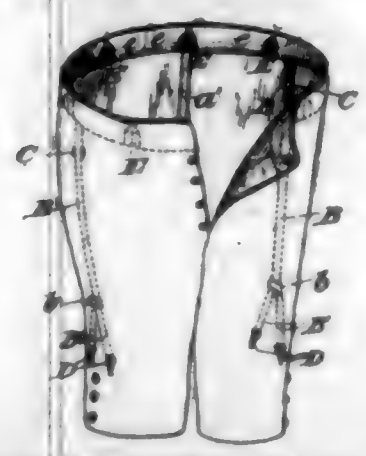
Claim.—1. A saw frame or holder having opposite parallel side members provided at their ends, and at one side thereof with keepers

having transverse slots and rotatable devices mounted in said keepers and provided with pins which pass through said slots and with which a saw is adapted to be connected, the plane of the saw when in position being parallel with that of said side members of the frame, substantially as shown and described.



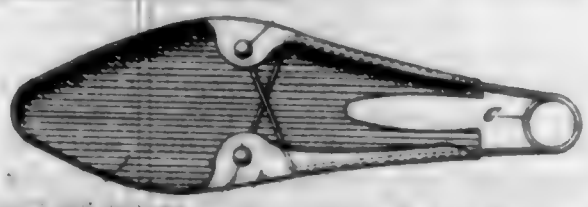
2. A saw-frame of the class described, said frame being provided with parallel side members, said side members being provided at their ends with keepers having transverse slots, and rotatable devices mounted in said keepers and provided with pins which pass through said slots, the axis of said rotatable devices being at one side of and parallel with the plane of the side members of the frame, substantially as shown and described.

815,598. **TROUSERS.** MYRA J. LIEBERMAN, New York, N. Y. Filed Oct. 19, 1903. Serial No. 177,557.



Claim.—The combination with a pair of knee-pants having an interior waistband A, stitched to the top edge thereof, of stocking-suspending mediums comprising upper depending stripe B, each formed of elastic webbing folded upon itself to form a loop, the end of the rear member of each loop being secured between the material of the pants and the waistband by the stitches securing said band, clasps C adjustable on each of said rear members and to which the ends of front members are connected, rings *b* suspended by said loops, lower elastic webs or strips suspended from each ring, each lower web having its ends diverging and stocking-engaging devices D secured to the ends of the last-mentioned elastic webs, substantially as described.

815,599. **FILLER FOR BOOTS AND SHOES.** ALFRED LEWIS, Kettering, England, assignor to Mobbs and Lewis, Limited, Carrington Foundry, Kettering, England, a Corporation of Great Britain. Filed Apr. 8, 1904. Serial No. 201,859.

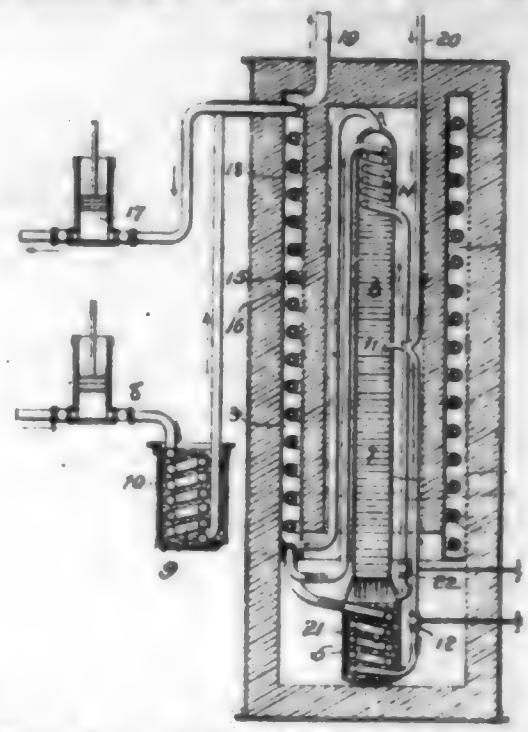


Claim.—A collapsible and expansible filler for boots and shoes consisting of hollow-shaped elastic foot and waist portions and a spring attached to the sides of the foot portion in advance of the waist portion and extended rearwardly along the inner sides of the more-contracted waist portion, forming a side support for the waist portion and thence rearwardly beyond the waist portion to form a handle, the said spring being so formed that end pressure on the rear end of the spring in the longitudinal direction of the filler will be transmitted to the point where the spring connects with the opposite sides of the foot portion in a direction to force the said sides of the foot portion outwardly.

815,600. **PROCESS OF PRODUCING METALLIC OR LUSTROUS COLORS FOR PRINTING ON FABRICS.** LEON LILIENFELD, Vienna, Austria-Hungary. Filed Aug. 12, 1903. Serial No. 119,430.

Claim.—The process of producing metallic or lustrous colors for printing on fabrics and the like which consists in mixing together a resinous substance and a vegetable-juice substance, combining with said mixture a mixture comprising wood-oil and a resinous substance, and then adding to the mixture thus formed the pigment, substantially as described.

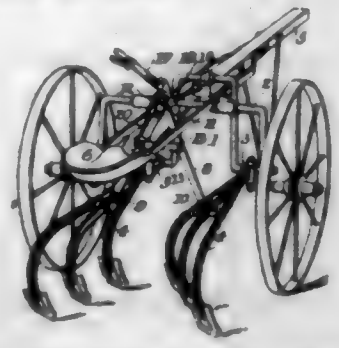
815,601. **APPARATUS FOR PRODUCING PURE NITROGEN.** CARL LINDE, Munich, Germany, assignor of one-third to Charles P. Brush, Cleveland, Ohio. Filed Oct. 22, 1903. Serial No. 178,162.



Claim.—1. In an apparatus for producing pure nitrogen, the combination of a rectifying-column, a liquefied gas-chamber at the bottom thereof, a nozzle discharging liquefied gas into said column between its ends, means for carrying off the nitrogen at the top of said column, a pipe communicating with the liquid-chamber at the bottom of the column, and coiling in the upper portion of said column and means for drawing a quantity of said liquid through the coil, whereby it is vaporized therein *in vacuo* and a corresponding quantity of the gas in said column liquefied by its contact with the metal walls of said coil.

2. In an apparatus for producing pure nitrogen, the combination with a gas-compressor, a coil through which the gas is forced, means for cooling the coil and a counter-current chamber into which the cooled gas is conveyed, of a rectifying-column, a chamber for liquefied gas at the lower end of said column, a coil therein in which the gas from the counter-current chamber is liquefied and evaporates a corresponding quantity of liquid in the liquid-chamber the vapor from which ascends through the column, a pipe connecting the last-mentioned coil with the column to direct the liquid into the column between the ends of the latter, a pipe-coil in the upper end of the column connected with the liquid-chamber, a suction-pump to draw the liquid from the liquid-chamber to the coil in the column to be vaporized therein and liquefy ascending vapor or gas in the column, and means for conveying the gas escaping from the top of the column through the counter-current chamber.

815,602. **CULTIVATOR-YOKE.** ALEXUS C. LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed Dec. 8, 1905. Serial No. 290,923.



Claim.—1. A connecting-yoke for cultivator-beams, comprising two relatively movable connected members adapted to be operatively connected with the beams, a longitudinally-extending adjusting-lever sustained by one of the members, a connection between said lever and the other member, and means carried by the lever for locking the members in fixed relations, said locking means being independent of the connection between the lever and said other member.

2. In combination with the beams, a connecting-yoke therefor comprising two relatively movable connected members operatively joined with the beams, an adjusting-lever sustained wholly by one of

said members and extending longitudinally therefrom rearward, a connection between the lever and the other member, and a locking device carried by the lever and adapted to hold the members of the arch in fixed relations, said locking device being independent of the connection of the lever with said other member.

3. In combination with the beams, a yoke operatively connected therewith, and comprising two relatively movable connected members, an adjusting-lever carried wholly by one of the members and extending rearward longitudinally, a link connection between the lever and the other member, and a locking device carried by the lever for locking the members in fixed relation, said locking device being independent of said link connection.

4. A connecting-yoke comprising two relatively movable connected members adapted to be operatively connected with the beam, in combination with an adjusting-lever sustained by one of the members, a slide on said member, a jointed connection between the slide and the lever, and a jointed connection between the slide and the other member.

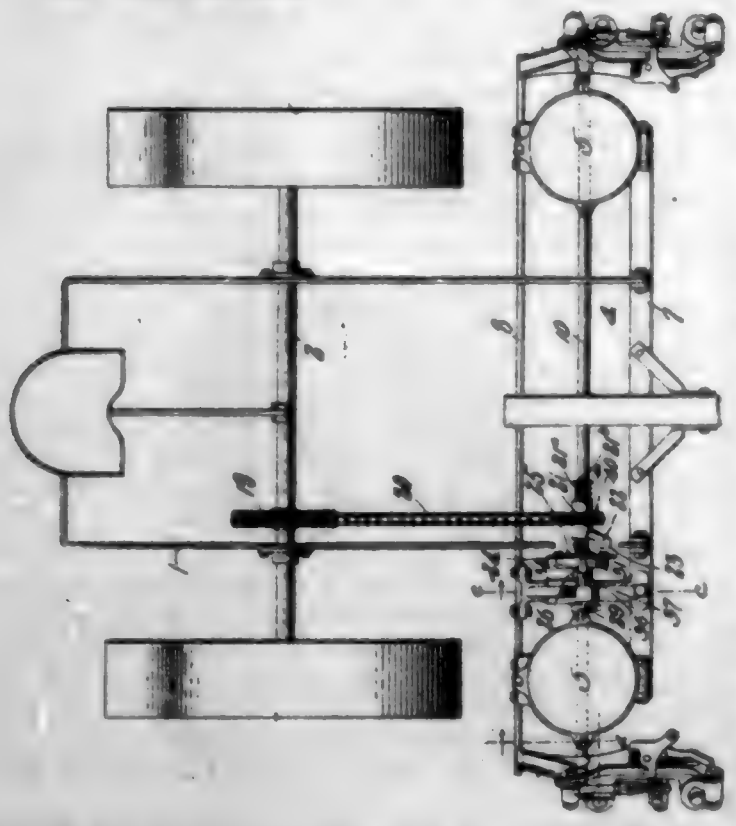
5. A connecting-yoke for cultivator-beams adapted to be operatively connected therewith comprising two relatively movable members jointed together and adapted for angular adjustment, in combination with a slide on one of said members, a link jointed at one end to the slide and at its other end to the other member, and means for adjusting said slide.

6. A connecting-yoke comprising two relatively movable connected members, in combination with an adjusting-lever sustained by one of said members, a slide also mounted on said member, a link joining the lever to the slide, and a second link pivoted to the slide and to the other member.

7. A connecting-yoke, comprising two relatively movable connected members, a segment-plate fixed to one of said members and extending forwardly, a lever pivoted to said plate and provided with means for locking it in different positions, and operative connections between said lever and the other member independent of the locking means.

8. A connecting-yoke for cultivator-beams comprising two relatively movable members jointed together at their upper ends, and adapted to be operatively connected at their lower ends with the beams, a segment-plate fixed to the upper end of one of said members and extending longitudinally rearward and formed with locking-teeth, an adjusting-lever pivoted to the side of said segment-plate and extending longitudinally rearward, a locking-dog carried by the lever and adapted to coöperate with the teeth, a slide mounted on the member carrying the segment-plate, a link connecting the lever with said slide, and a second link connecting the slide with the other member.

815,608. CORN-PLANTER. ALEXUS C. LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed Jan. 9, 1906. Serial No. 295,573.



Claim.—1. In combination with seed-delivering mechanism, a seed-shaft for operating the same, said shaft adapted to be rocked, connections between the seed-shaft and ground-wheels for rotating said shaft, a clutch mechanism included in said connections and adapted to be engaged by the rocking motion of the shaft, a check-row mechanism, and connections between the check-row mechanism and seed-shaft, independent of the clutch mechanism, for rocking the shaft to connect the clutch.

2. In combination with seed-delivering mechanism, a seed-shaft for operating the same, said shaft adapted to be rocked to a limited extent without operating the seed-delivering mechanism, connections between the seed-shaft and ground-wheels for operating the shaft to actuate the seed-delivering mechanism, a clutch mechanism included in said connections and adapted to be engaged by the rocking motion of the shaft, and means for rocking the shaft to connect the clutch mechanism.

3. In combination with the seed-shaft, a check-row mechanism, operative connections between the two for rocking the seed-shaft, a driven clutch member rotatable with and slidable on the seed-shaft and adapted, when the shaft is rocked, to be slid thereon, a driving clutch member loose on the shaft, means for operating the same from the ground-wheels, a seed-delivering mechanism, and connections between the same and the seed-shaft formed to permit the shaft to be rocked without affecting the delivering mechanism.

4. In combination with the seed-shaft adapted to be rocked, a check-row mechanism operating to rock the shaft, a clutch member rotatable with and movable along the seed-shaft, means controlled by the rocking motion of the shaft for moving said clutch member along the same, a second clutch member loose on the shaft, means for driving the same from the ground-wheels, a seed-delivering mechanism, and suitable connections between the same and the seed-shaft.

5. In combination with seed-delivering mechanism, a seed-shaft adapted to operate the same, connections between the ground-wheels and the shaft including a clutch mechanism, means for connecting the clutch mechanism by a rocking motion of the shaft, a check-fork, an arm thereon, and an arm on the seed-shaft adapted to be engaged by the check-fork arm when the check-fork is rocked, and acting when so engaged to rock the seed-shaft.

6. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, a sleeve fixed on said shaft, a driven clutch member having a sliding engagement with said sleeve and rotatable with it, a driving clutch member mounted loosely on the seed-shaft and adapted when engaged with the driven member, to impart motion to the same, means for imparting a constant rotation to the driving clutch member, means for rocking the shaft, and means controlled by the rocking motion of the shaft, for sliding the driven clutch member relatively to the sleeve and into engagement with the driving member.

7. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, a check-row mechanism including a check-fork, means controlled by the throw of the fork for rocking the shaft, a sleeve fixed to said shaft, and formed with a longitudinal slot, a driven clutch member slidable on the shaft and provided with a finger engaging loosely in said slot, means controlled by the rocking motion of the shaft for sliding the clutch member along the same while engaged with the sleeve, a driving clutch member loose on the shaft, and means for imparting motion to said member from the ground-wheels.

8. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, means for rocking the seed-shaft, a driven clutch member slidable on and movable with the shaft, said clutch member comprising a wheel provided on its face with teeth, a driving clutch member consisting of a sprocket-wheel loose on the shaft and formed with a driving-tooth adapted to engage between the teeth on the other member, means for driving said sprocket-wheel from the ground-wheels, and means controlled by the rocking motion of the seed-shaft for moving the driven clutch member along the shaft and into engagement with the driving member.

9. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, means for rocking said shaft, a sleeve fixed to the shaft and formed with inclined slots, a clutch member slidable on the shaft and provided with inclined fingers engaging in the slots, a second clutch member loose on the shaft, means for driving the second clutch member from the ground-wheels, and means, controlled by the rocking motion of the shaft, for sliding the first-mentioned clutch member along the same.

10. In combination with a seed-delivering mechanism, a seed-shaft operatively connected therewith, a driven clutch member rotatable with and slidable on the shaft, and provided in its face with sockets or depressions arranged at different distances from the axis of rotation of the member, relatively fixed devices adapted to be

seated in said depressions, a driving clutch member loose on the shaft, means for imparting motion to the driving member, and means for rocking the shaft to move the driven member relatively to the fixed devices; whereby said driven member will be moved along the shaft and into engagement with the driving member.

11. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, a driven clutch member rotatable with and slidable on the shaft, and provided on its face with concentric tracks having each a depression or socket, disposed at diametrically opposite points, relatively fixed rollers adapted to be seated in said sockets, a driving clutch member loose on the shaft, means for driving the same, and means for rocking the shaft to move the driven member relatively to the rollers and unseat the latter.

12. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, a driving clutch member mounted loosely on the shaft and yieldable longitudinally thereon, means for imparting motion to said clutch member, a driven clutch member slidable on the shaft, and means for sliding said driven member into engagement with the driving member.

13. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith, a driving clutch member comprising a sprocket-wheel mounted loosely on the shaft, a driving-tooth carried by the wheel, a spring encircling the shaft and bearing against said wheel, a stop on the shaft against which the wheel bears under the influence of the spring, means for imparting motion to said wheel, a driven clutch member movable along the shaft to and from the other member, and formed with teeth between which the driving-tooth is adapted to be engaged, and means for moving said driven member to and from the driving member.

14. In combination with seed-delivering mechanism, a seed-shaft, driving connections between the shaft and delivering mechanism for operating the latter when the shaft is rotated, said driving connections being constructed to permit the shaft to be rocked to a limited extent without operating the delivering mechanism, means for rocking the shaft, and means controlled by its rocking motion for initiating the rotary motion of the shaft.

15. In combination with seed-delivering mechanism including a gear-ring, a seed-shaft, a pinion fixed to the seed-shaft and formed with a mutilated portion and adapted to mesh with the gear-ring, and means for rotating the shaft.

16. In combination with seed-delivering mechanism including a horizontal driving gear-ring, a seed-shaft, means for driving said shaft, a vertically-arranged bevel-pinion fixed to the shaft and adapted to mesh with the gear-ring, said pinion being formed with a mutilated or plain surface; whereby the pinion may be turned to a limited extent without imparting motion to the gear-ring.

17. In combination with seed-delivering mechanism, including a gear ring or plate, a seed-shaft, a pinion fixed to said shaft and formed with a mutilated portion adapted to permit the shaft to be rocked without operating the gear-ring, driving connections between the ground-wheels and seed-shaft, said connections including a clutch mechanism, means for rocking the shaft, and means controlled by said rocking motion to engage the clutch mechanism.

18. In combination with a seed-hopper, a seed-plate formed with seed-cells arranged in sets separated by a continuous surface, a seed tube or shank into which said plate discharges, and means for driving the plate.

19. In combination with a seed-hopper, a seed-plate formed with seed-cells arranged in sets separated by a continuous or blank surface, a seed tube or shank having a receiving-opening into which the seed are discharged by the plate, means for moving a blank surface and one set of cells over said opening, and means for arresting the motion of the plate after said cells have passed the opening.

20. In combination with a seed-hopper, a seed-plate formed with seed-cells arranged in sets separated by a blank surface, a seed tube or shank provided with a receiving-opening, a valve in said tube, means for operating the seed-plate to periodically pass a blank portion and set of cells over the receiving-opening, and means for opening the valve in the shank while the blank space is passing over the receiving-opening.

21. In combination with a seed-hopper, a seed-plate formed with seed-cells arranged in sets separated by a blank surface, a seed-tube having a receiving-opening, a valve in said tube, means for operating the seed-plate to periodically pass a blank surface and a set of cells over the receiving-opening, means for opening the valve in the shank while the blank space is passing over the receiving-opening, and means for closing said valve while the cells are passing over said opening.

22. In combination with a seed-hopper, a seed-plate formed with seed-cells arranged in sets, a seed-tube having a receiving-opening, a gear-ring carrying the seed-plate and mutilated at points corresponding to the sets of cells, a seed-shaft, a bevel-pinion fixed to the shaft and formed relatively to the gear-ring to cause a single set of cells to pass over the receiving-opening in the tube during each revolution of the shaft, said pinion being formed with a mutilated portion cooperating with that on the gear-ring, and means for driving the shaft.

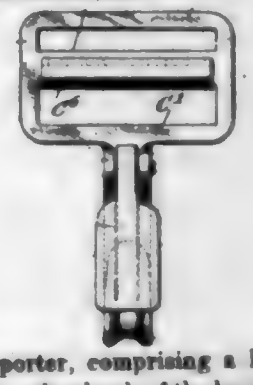
23. In combination with a seed-hopper, a seed-plate formed with cells arranged in sets separated by a blank surface, a seed tube or shank provided with a receiving-opening for the seed discharged by the cells, a gear-ring carrying said plate and formed with mutilated portions corresponding to the sets of cells, a seed-shaft, a bevel-pinion thereon formed with a mutilated portion adapted to coöperate with those on the gear-ring to permit the shaft to be rocked without engaging the ring, said parts being formed relatively to cause the seed-plate to make a partial turn for each complete revolution of the shaft, a driving connection between the ground-wheels and shaft, a clutch mechanism included in said connection and adapted to be thrown in gear by the rocking motion of the shaft, and means for rocking the shaft to connect the gear.

24. In combination with seed-delivering mechanism, a seed tube or shank, a valve therein, a seed-shaft operatively connected with the delivering mechanism, means for rotating said shaft periodically to discharge a charge of seed into the shank, and an arm on the seed-shaft in position to engage the valve and operate the same once at every revolution of the shaft.

25. In combination with seed-delivering mechanism, a seed-shaft operatively connected therewith and adapted to be rocked without operating the delivering mechanism, a seed-tube, a valve therein, connections from the ground-wheels to the seed-shaft including a clutch mechanism, means controlled by the rocking motion of the shaft for connecting the clutch mechanism, means for rocking the shaft, and an arm on the shaft adapted when the latter is operated from the ground-wheels, to open the valve, said arm and valve being formed relatively to permit a limited motion of the shaft before the valve is operated.

26. As a new article of manufacture, a seed-ring for seed-planters formed in its peripheral edge with groups of seed-cells separated by a blank surface.

815,604. SUPPORTER. SARAH LIPKOWITZ, New York, N. Y. Filed July 25, 1905. Serial No. 271,164.



Claim.—1. A supporter, comprising a hook for engagement with an eyelet or the like, the shank of the hook being provided with lugs and a spring struck up therefrom, a tongue pivoted between the lugs of the shank, said tongue having a heel engaged by the spring and side flanges at its free end between which fits the end of the hook, and a loop integral with the shank of the hook, said loop being provided with a middle bar approximately U shape in cross-section to form clamping-jaws, one of which is provided with teeth.

2. A supporter, comprising a hook for engaging an eyelet or the like, the shank of the hook being provided with lugs and a spring struck up therefrom, a tongue pivoted between the lugs of the shank and having flanges at its free end between which fits the end of the hook, said tongue being provided with a heel at its pivoted end engaged by the said spring to be held either in a closed or open position, and a loop projecting from the shank of the hook.

815,605. ELECTRICAL-CONNECTOR FOR ELECTRIC LAMPS. HERBERT A. LOWE, North Plainfield, N. J. Filed Jan. 31, 1905. Serial No. 243,089.

Claim.—1. An electrical connector comprising a metallic shell upon which is mounted a pair of penetrating contact-points, one projecting laterally outward from the body of the shell and in immediate union therewith, and the other being mounted on but insulated from said shell and projecting outwardly in the opposite direction.

2. An electrical connector for insulated electrical conductors

comprising a conducting-shell carrying a pair of penetrating-points projecting outwardly therefrom in opposite directions, one of said points being mounted upon the side of the shell in electrical connection therewith, and the other being insulated from the shell, but in electrical connection with a conductor passing axially through the same.



3. An electrical connector for insulated electrical conductors, consisting of a metallic shell forming the sleeve-terminal of an incandescent electric lamp, and provided with two penetrating contacting-points, projecting laterally outward in opposite directions, one being directly attached to the side of the shell and in electrical union therewith, and the other insulated from the shell, but electrically connected with the opposite terminal of the lamp.

4. In a connector for insulated conductors, a metallic shell forming the sleeve-terminal of an incandescent electric lamp and having a pair of penetrating-points projecting outwardly from it in opposite directions, one being attached to the side of the shell and in electrical union therewith, and the other being insulated from the shell as and for the purpose described.

5. A means for forming electrical connections between a pair of insulated conductors and an electric lamp consisting of a metallic shell encircling the base of the lamp and provided with contacting penetrating-points projecting laterally in opposite directions outwardly from opposite sides of said shell, one of said points being insulated therefrom, and connections between said point and one of the terminals of the lamp.

6. A connector for insulated electric conductors, consisting of a metallic shell upon which are mounted two penetrating-points projecting from the sides of the shell outwardly in opposite directions.

7. An incandescent electric lamp having a base provided with a conducting-sleeve connected to one of the leading-in wires and furnished with a penetrating-point attached to the side of the sleeve in electrical union therewith and projecting laterally outward therefrom as and for the purpose described.

8. An incandescent electric lamp having a base provided with a metallic sleeve and a laterally-projecting penetrating-point directly attached to the outer side wall of said sleeve, and in electrical connection therewith.

9. In an electrical connector for insulated conductors, a pair of penetrating-points projecting in opposite directions from a suitable base, combined with an insulating-sleeve adapted to press the conductors against said points.

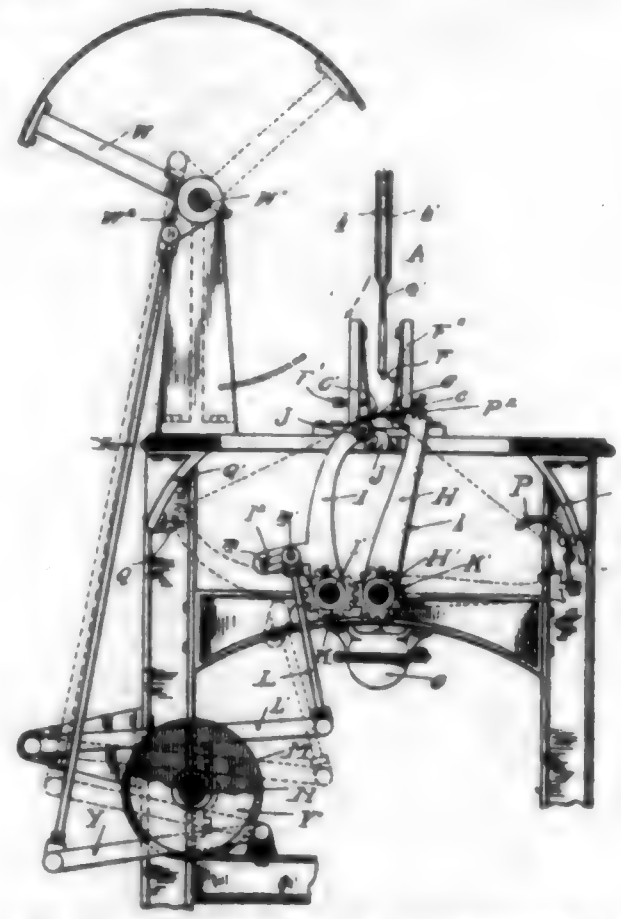
10. In an electrical connector for insulated electric conductors, the combination with a pair of penetrating-points projecting in opposite directions from a suitable base, a bisected sleeve for said base and means for clamping said sleeve upon the base as and for the purpose described.

815,606. MACHINE FOR STRINGING BAGS. James L. Lowe and John O. Hibbard, Detroit, Mich. Filed May 26, 1904. Serial No. 209,971.

Claim.—1. In a bag-stringing machine, the combination with a reciprocatory stringing-needle of a threading-needle adapted to be inserted through the eye of said stringing-needle, means for engaging the end of the string threaded through said eye and for drawing a suitable length thereof, and means for withdrawing the threading-needle and severing the length of string therefrom.

2. In a bag-stringing machine, the combination with a reciprocatory stringing-needle of a threading-needle carrying the end of a supply of string and adapted to be inserted through the eye of said stringing-needle, means for seizing the end of the string passed through said eye and drawing a suitable length thereof through said eye, and means for simultaneously withdrawing said threading-needle and retracting the same to draw therefrom a suitable length of string on the opposite side of said stringing-needle, and means for severing the drawn length of string so as to leave the end of the supply in engagement with said threading-needle.

3. In a bag-stringing machine, the combination with a pair of parallel reciprocatory stringing-needles of a threading-needle engaging with the end of a supply of string adapted to be inserted through the eyes of both of said stringing-needles, means for engaging the end of the string inserted through said eyes and for drawing a suitable length thereof, and means for withdrawing said threading-needle and for severing a length of string therefrom leaving the supply still in engagement therewith.



4. In a bag-stringing machine the combination with a reciprocatory stringing-needle of a threading-needle having engaged therewith the end of a supply of string and adapted for insertion through the eye of said stringing-needle a grabber comprising a spring-clamp, a reciprocatory arm therefor, operating means for the arm, means for opening said clamp when adjacent to said stringing-needle to receive the end of the string carried by said threading-needle and for closing the clamp upon the initial movement of said reciprocatory arm whereby a suitable length of string is drawn through the eye of said stringing-needle, and means for again opening said clamp at the end of the outward movement of said grabber to release said drawn string.

5. In a bag-stringing machine, the combination with a reciprocatory stringing-needle of a threading-needle engaged with the end of a supply of string and adapted for insertion through the eye of said stringing-needle, a grabber comprising a reciprocatory member carrying the disks *j* and *j'* and a spring for drawing said disks together, the lugs J' and Q at opposite ends of the movement of said grabber whereby the clamp is opened to receive the string from said threading-needle and to disengage therefrom after the drawing of a length thereof.

6. In a bag-stringing machine, the combination with a reciprocatory stringing-needle of the swinging arms H and I on opposite sides of said stringing-needle, the threading-needle G, carried by the arm H, the string-seizing clamp carried by the arm I, means for reciprocating said arms H and I oppositely to first thread the string through the eye of said stringing-needle and then draw a length of string through said eye and from said threading-needle, and means for severing the drawn length.

7. In a bag-stringing machine, the combination with a reciprocatory stringing-needle of a pair of oppositely-moving members arranged to travel in a path transverse to the plane of movement of said stringing-needle, a threading-needle carried by one of said members and adapted for insertion through the eye of said stringing-needle, a grabber carried by the other member adapted to seize and draw a length of string from the threading-needle, and means for adjusting the amplitude of movement of said members to vary the length of string drawn.

8. In a bag-stringing machine the combination with a reciprocatory stringing-needle of a periodically-swinging arm moving in a plane transverse to the plane of movement of said stringing-needle, a threading-needle carried by said arm adapted for insertion through the eye of said stringing-needle and a guide through which a string is passed to said threading-needle located near the axis of said swinging arm, whereby the said arm may be moved without disengaging the string from said needle.

9. In a bag-stringing machine, the combination with a recipro-

catory stringing-needle of a threading-needle adapted for insertion through the eye of said stringing-needle, and means for drawing variable lengths of string from said threading-needle.

10. In a bag-stringing machine the combination with a reciprocatory stringing-needle of a guide over which two plies of cloth are drawn arranged in relation to the path of said needle, so that the point thereof will pierce the outer ply, said needle having associated means coöperating with the guide to deflect the inserted point and thereby separate the two plies.

11. In a bag-stringing machine, the combination of a reciprocatory stringing-needle, and means whereby the needle will pierce the outer of two plies of cloth at an angle and will travel tangentially over the inner ply without piercing the same, including a curved guide over which the two plies of cloth are drawn.

12. The combination with a reciprocatory stringing-needle of a frame over which the bag is drawn having a rounded guide-bar at one edge, said bar being in such relation to the path of said needle and the needle being so formed as to permit the latter to angularly pierce the outer ply and pass tangentially over the inner ply, and adjustable means for guiding the point of said needle in piercing.

13. The combination with a frame over which the bag is drawn of a reciprocatory stringing-needle having a beveled point adapted to pierce the outer ply of said bag, the angle of said bevel being such as to cause the said point to pass tangentially over the inner ply and to be laterally deflected by said frame to separate said plies.

14. In a bag-stringing machine, a reciprocatory stringing-needle having its forward portion of triangular cross-section and tapering, one side thereof having the bevel *g* to form the point *f*, in combination with a rounded guide over which two plies of the bag are drawn arranged in relation to the path of said needle so that the outer ply will be pierced and said beveled face will pass tangentially over the inner ply and deflect the point of the needle laterally.

15. The combination with a bag-stringing needle and a frame for holding the bag during the stringing operation of means for automatically removing said bag from said holder, simultaneously reversing the same.

16. The combination with a stringing-needle of a U-shaped frame over which the bag is drawn during the stringing operation, the end of said frame being bifurcated and a blade adapted to be inserted between the furcations of said frame to simultaneously withdraw the bag therefrom and reverse it.

17. In a bag-stringing machine, the combination with a reciprocatory stringing-needle, of a threading-needle adapted to thread said stringing-needle, means for engaging the end of the string after insertion through the needle-eye, and means for severing the string from the threaded needle.

18. In a bag-stringing machine, the combination with a reciprocatory stringing-needle, of a threading-needle carrying the end of a supply of string, and adapted to be inserted through the eye of said stringing-needle, means for seizing the end of the string passed through said eye and drawing a suitable length thereof through said eye, and means for simultaneously withdrawing said threading-needle and retracting the same to draw therefrom a suitable length of string on the opposite side of said stringing-needle.

19. In a bag-stringing machine, the combination with a pair of parallel reciprocatory stringing-needles, of a threading-needle engaging with the end of a supply of string adapted to be inserted through the eyes of both of said stringing-needles.

20. In a bag-stringing machine, the combination with a reciprocatory stringing-needle, of a threading-needle having engaged therewith the end of a supply of string and adapted to thread said stringing-needle, and a grabber adapted to engage the thread and withdraw a suitable length, comprising a spring-clamp a reciprocatory arm therefor.

21. In a bag-stringing machine, the combination with a reciprocatory stringing-needle, of a threading-needle having engaged therewith the end of a supply of string and adapted to thread said stringing-needle, a grabber adapted to engage the thread and withdraw a suitable length, comprising a spring-clamp and a reciprocatory arm therefor, and means for opening and closing the clamp.

22. The combination of a bag-holding frame, of a bag-stringing machine, having a bifurcated portion upon which the bottom of the bag is drawn, means for stringing the bag, and a blade adapted to be passed between the furcations of said frame to disengage the bag therefrom and simultaneously turn the bag, after said stringing operation.

23. The combination of a substantially U-shaped frame having a bifurcated end portion, said frame being adapted to receive the bag, means for stringing the bag, and a member adapted for insertion between the furcations of said frame to draw the bag therefrom and simultaneously reverse it, after said stringing operation.

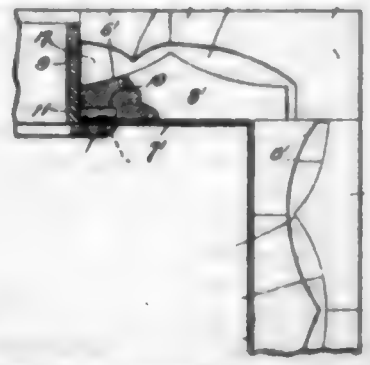
24. The combination of a U-shaped frame having a bifurcated end portion, and adapted to have the reversed bag drawn thereon, means for stringing the bag while held by said frame, a rock-arm, and a segmental blade carried by said rock-arm adapted in its movement to pass between the furcations of said frame to simultaneously draw off said bag and reverse the same after said stringing operation.

25. The combination with a U-shaped frame adapted to support the bag-blank, and means operatively associated with said support for stringing the bag, said support having a bifurcated end portion with beveled corners, and a blade adapted to pass between the furcations of said frame between the beveled portions thereof to draw off and reverse the bag, leaving the corners tucked, said blade being operable after said stringing operation.

26. The combination with a bag-holder comprising a U-shaped frame adapted to support a bag, means associated with said support for stringing the bag, said frame having a bifurcated end portion, and a blade adapted to pass between the furcations of said frame to remove and turn the bag, and means for springing the sides of said frame toward each other during the movement of said blade to permit the ready disengagement of said bag, said blade being operable after said stringing operations.

27. In a bag-machine, the combination with a reciprocatory stringing-needle, means for threading the needle and for clamping the threaded string, said means including oppositely-disposed intergear swinging arms.

815,607. **BUILDING-BLOCK.** CHRISTIAN LUGABILL, Bluffton, Ohio. Filed July 12, 1905. Serial No. 269,388.



Claim.—A wall formed of a plurality of blocks some of which are provided with lateral projections having their longitudinal edges inclined from the apex of the projections to the opposite ends of the blocks, said blocks being arranged in superposed courses with their ends at one section of the wall disposed in vertical alinement to permit the insertion of a window-frame, and half-blocks arranged alternately on opposite sides of the wall at said window-frame and spaced from the curved edges of the adjacent blocks on the opposite side of the wall to form a vertical recess for the passage of the window-sash weight.

815,608. **PELLET-COATING MACHINE.** JOSEPH MARSH, Sigourney, Iowa. Filed Sept. 25, 1905. Serial No. 279,008.



Claim.—1. A pellet-coating machine having a perforated table, plugs removably disposed within the perforations, and needles carried by the plugs.

2. A pellet-coating machine having a perforated table plugs removably disposed within the perforations, and needles carried by the plugs and in parallelism.

3. In a pellet-coating machine, needle-tubes, needles disposed within the tubes, and means to move the tubes longitudinally relative to the needles.

4. In a pellet-coating machine, needle-tubes, needles disposed within and their points extending without the tubes, and means to move the tubes over the points.

5. A pellet-coating machine comprising a table, needles carried upon the table and in parallelism, tubes embracing the needles, and means to move the tubes longitudinally relative to the needles.

6. A pellet-coating machine comprising, a table, needles carried by the table and in parallelism, tubes embracing the needles and carried by a plate, and means to separate the plate and table.

7. A pellet-coating machine comprising, a table, needles carried by the table and in parallelism, tubes embracing the needles and carried by a plate and with the points of the needles extending without the tubes, and means to move the tubes to cover the needle-points.

8. A pellet-coating machine comprising, a table provided with spaced perpendicular needles, a plate provided with tubes spaced and proportioned to embrace the needles with the impaling-points extended without the ends of the tubes and means to separate the plate and table and to move the tubes over the points.

9. A pellet-coating machine comprising a perforated table, plugs disposed in the perforations, needles carried by the plugs, and a stripper for the needles.

10. A pellet-coating machine comprising, a perforated table, removable plugs disposed in the perforations, needles carried by and removable with the plugs and parallel with each other, and a stripper for the needles.

11. A pellet-coating machine comprising, a table provided with spaced and interchangeable needles, tubes disposed upon the needles and means to move the tubes simultaneously.

12. A pellet-coating machine comprising a perforated table, plugs disposed in the perforations, needles carried by the plugs, tubes disposed upon the needles, and means to move the tubes simultaneously.

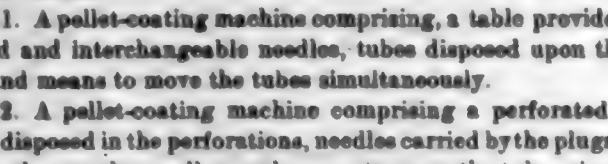
13. A pellet-coating machine comprising, a perforated table removable plugs disposed in the perforations, needles carried by and removable with the plugs, tubes disposed upon the needles, and means to move the tubes simultaneously.

14. A pellet-coating machine comprising, a table provided with spaced and interchangeable needles, a plate provided with tubes spaced to embrace the needles and with the points of the needles extending beyond the tubes, means to hold the plates and table in yieldable juxtaposition, and means to separate the plate and table and move the tubes over the points of the needles.

15. A pellet-coating machine comprising a perforated table, plugs disposed in the perforations, spaced and parallel needles carried by the plugs, a plate provided with tubes spaced to embrace the needles and with the points of the needles extending beyond the tubes, means to hold the plate and table in yieldable juxtaposition, and means to separate the plate and table and move the tubes over the points of the needles.

16. A pellet-coating machine comprising, a perforated table, movable plugs disposed in the perforations, needles carried by and removable with the plugs and disposed in parallelism, a plate provided with tubes spaced to embrace the needles and with the point of the needles extending beyond the tubes, means to hold the plate and table in yieldable juxtaposition, and means to separate the plate and table and move the tubes over the points of the needles.

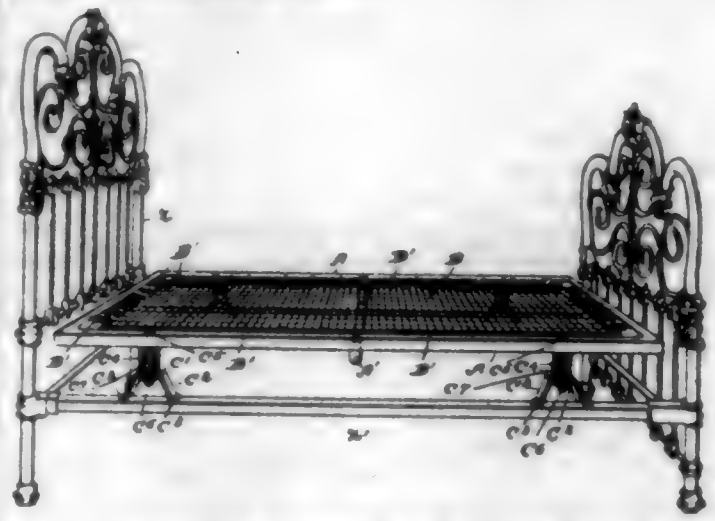
815,609. DETACHABLE STOCK FOR REVOLVERS. Daniel B. Martin, Gettysburg, Ohio. Filed Oct. 2, 1905. Serial No. 280,960.



Claim.—An attachment for revolvers consisting of a band having a standard depending therefrom and with diverging rods extending from the lower end of the standard and connected at their rear ends by a substantially vertical bar, a concaved plate within said band for bearing upon the hand-grip portion of a revolver at one side, a concaved plate within said band for bearing upon the hand-grip portion from the opposite side, and a set-screw operating through said band and bearing upon said last-mentioned plate.

815,610. MATTRESS. Francis Martin, San Francisco, Cal., assignor to Buffer Spring Mattress Company, a Corporation of California. Filed Mar. 18, 1905. Serial No. 250,707.

Claim.—1. A device of the character described comprising a frame, an inflexible mattress resiliently supported within said frame, guides rigidly secured to said frame, truss-like supports provided with depending split legs engaging the rail of the bed, springs interposed between said trusses and frame, and means for removably securing said guides to said trusses.

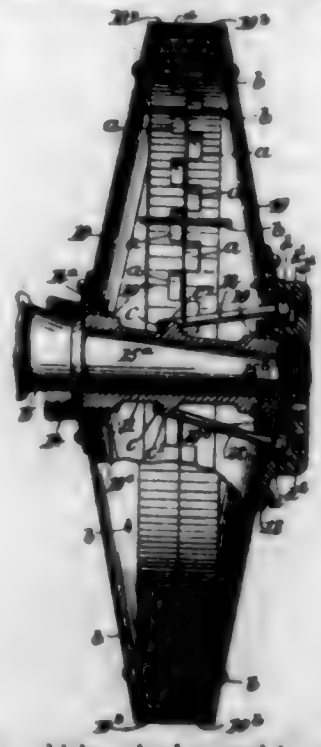


2. A device of the character described comprising a frame, an inflexible mattress resiliently supported within said frame by coil-springs, trusses supported by the rail of the bed to support said frame, said trusses being provided with openings, and depending split legs engaging said rail-guides rigidly secured to said frame and adapted to pass through the openings in said trusses, springs interposed between said trusses and said frame, and nuts on the ends of said guides for removably securing said frame to said trusses.

3. A device of the character described comprising a frame, an inflexible mattress resiliently supported within said frame by coil-springs, guides rigidly secured to said frame, supports having depending split legs resting on the rail of the bed, said supports being provided with openings to receive said guides, springs interposed between said supports and frame, and nuts upon the ends of said guides to removably secure them in the openings in said supports.

4. A device of the character described comprising a frame, an inflexible mattress resiliently supported within said frame by coil-springs, supports for said frame, each support consisting of a horizontal portion having an opening formed therein and two legs each having a split portion adapted to rest upon the rail of the bed, guides rigidly secured to said frame and adapted to pass through the openings in said supports, springs interposed between said supports and said frame, and nuts upon the ends of said guides to removably secure said frame to said supports.

815,611. VEHICLE-WHEEL. Rolland F. Martindale, Memphis, Tenn. Filed Oct. 3, 1905. Serial No. 281,106.



Claim.—1. A vehicle-wheel comprising two circular dished body-sections and provided with peripheral flanges, means for securing said flanges together to form a wheel-rim, inwardly-turned circular flanges around central apertures in the half-sections of the wheel, one of said apertures being of greater diameter than the other, a conical hub fitting into the central apertures, and bolts engaging the hub and the section having the smaller aperture for securing the hub thereto.

2. A vehicle-wheel comprising two dished body-sections of plate metal, each having an inturned peripheral flange, means for securing the peripheral flanges together to form a wheel-rim, inwardly-turned circular flanges around central apertures in each of the half-sections, a thimble-like hub fitting into the circular flanges, spaced lugs on the peripheral surface of the hub, bolts having hooks for engaging the lugs and traversing one of said sections, and nuts engaging the bolts for securing the hub to the section.

3. A vehicle-wheel comprising two circular dished body-sections having their concave sides adjacent, means for securing the peripheries of the body-sections together to form a rim, each of said sections having a central aperture, a thimble-like hub fitted into the central apertures, and means engaging the hub and one of said sections for securing the hub thereto.

4. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned circular flange on the periphery of each half-section, tongues formed on the free edges of said flanges and offset therefrom, whereby to override the adjacent flange on the other section, the tongues of the half-sections being interlocked to join the flanges to form a wheel-rim, a thimble-like hub, and means for securing said hub in central openings in the half-sections.

5. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the circular periphery of each half-section, tongues formed on the free edges of the peripheral flanges and offset therefrom, whereby to override the flange on the other section, the tongues of said flanges being interlocked forming a continuous wheel-rim that is true on the exterior surface, clamping-bolts passing through the half-sections near their peripheries, and secured by their ends therein, each half-section having a circular central opening and an inturned peripheral flange thereat, a thimble-like hub fitted into the flanges, and means for securing the hub therein.

6. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the periphery of each half-section, tongues formed on the free edges of said circular flanges, said tongues having interlocking engagement, clamping-bolts passed through perforations in the half-sections near the peripheral flanges and secured by their ends therein, each half-section having a central circular opening therein, an inwardly-bent flange encircling each opening, a coniform thimble which serves as a spindle-box and fitted into the bores of the flanges, tie-bolts engaged by one end of each with the thimble, and at the other end passing through the other half-section, and nuts on the outer threaded ends of the tie-bolts.

7. A vehicle-wheel, comprising two dished plate-metal half-sections, means for providing a circular rim on the edges of the half-sections, each half-section being centrally apertured, a circular flange turned inwardly at the edge of each aperture, a thimble fitted into said flanges and having lugs thereon, a plurality of tie-bolts having hooks on one end of each bolt which engage the lugs, the opposite ends of the tie-bolts that are threaded extending through perforations in the half-sections, and nuts on said projected ends that by adjustment draw upon the thimble for holding it secured.

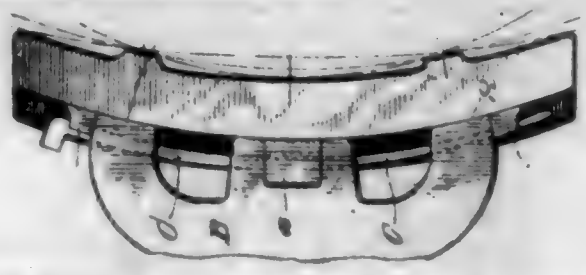
8. A vehicle-wheel comprising two dished plate-metal half-sections, an inwardly-turned flange on the periphery of each half-section, interlocking tongues formed on the inner edges of the flanges, clamping-bolts holding the half-sections together near their peripheries, each half-section having a central aperture, the aperture in the normally inner half-section of the wheel-body being larger than that in the other half-section, an inwardly-turned flange on the edge of each aperture, a reinforcing-band shrunk on each of said flanges, a thimble forming a spindle-box having a coniform body and closely fitted into the bores of the reinforcing-flanges, said thimble having spaced lugs thereon, tie-bolts having hooks on one end and threads on the opposite end, said hooks engaging the lugs and the threaded ends extending through perforations in the half-sections, nuts on said extended ends, a hub-plate secured on the outer half-section, having recesses therein which receive the nuts and hold them from turning, and a mud-guard on the other half-section, secured concentric with the bore of the thimble.

815,612. BRAKE-SHOE. WILLIAM G. MENZEL, Fond du Lac, Wis., assignor of one-half to Charles W. Booth, Milwaukee, Wis. Filed June 26, 1905. Serial No. 267,064.

Claim.—1. A brake-shoe having two ribs or projections on its face or friction-surface one between the center and each end thereof.

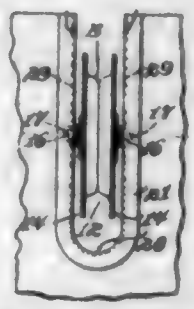
2. A brake-shoe having two ribs or projections on its face or friction-surface so located that the power exerted in applying the brakes will be exerted directly through them.

3. A brake-shoe having two ribs or projections on its face or friction-surface one located substantially in line with each brake-head bearing on the back of the shoe.



4. A brake-shoe the face or friction-surface of which is a curve of mean radius, said shoe having two ribs or projections on its face or friction-surface one located substantially in line with each brake-head bearing on the back of the shoe.

815,613. PULLEY DEVICE. GORDON MERRITT, Ridgewood, N. J. Filed Apr. 13, 1905. Serial No. 255,871.



Claim.—1. The combination of a pulley-wheel, and a frame rotatably supporting the wheel, the frame comprising two side members, and a connecting end member, the side members being provided with retaining means extending throughout their length.

2. The combination of a pulley-wheel, and an integral resilient frame rotatably supporting the wheel, the frame comprising two side members and a connecting end member, the side members being provided with retaining means extending throughout their length.

3. The combination of a pulley-wheel, and a substantially U-shaped frame rotatably supporting the wheel, the frame having flanges extending outwardly from both side edges of the side portions of the frame throughout their length.

4. The combination of a pulley-wheel, and a substantially U-shaped frame rotatably supporting the wheel, the sides of the frame being curved in section in opposite directions.

5. The combination of a pulley-wheel, and an integral resilient frame of sheet metal rotatably supporting the wheel, the frame comprising two side members and a connecting end member, the side members being provided with retaining means extending substantially throughout their length, the pulley-wheel comprising two similar parts of sheet metal secured together, the parts having the central portion conoidally indented from opposite directions to constitute bearing portions for the wheel, and the frame also provided with indented projections oppositely disposed to coöperate with said indented portions of the wheel to constitute a journaled support for the wheel.

815,614. EXTRACTION OF PRECIOUS METALS FROM ZINC ORES. AUGUST R. MEYER, Kansas City, Mo.; Emma J. Meyer, executrix of said August R. Meyer, deceased, assignor to The United Zinc & Chemical Company, Kansas City, Mo., a Corporation of New Jersey. Filed July 22, 1905. Serial No. 270,809.

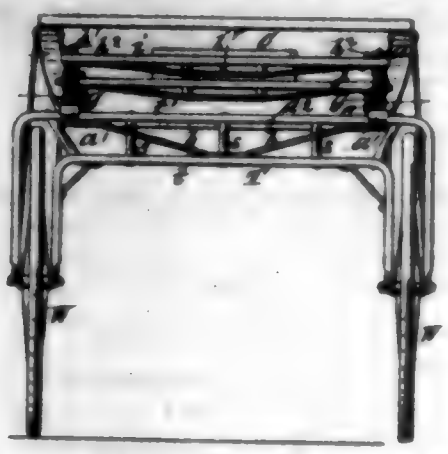
Claim.—1. The within-described process of recovering zinc and precious metals from zinc ores, the same consisting in forming an intimate mixture of comminuted ore and copper, and heating the mass to sublimate the zinc and form a matte or regulus containing the precious metal and the copper, and then separating the matte or regulus containing the precious metal from the residue, and condensing the zinc fumes, substantially as set forth.

2. In the process of recovering precious metals from zinc ores, mixing together the comminuted ore and metallic copper, and heating the mass to sublimate the zinc and form a metallic regulus or matte containing the precious metal, substantially as set forth.

815,615. SULKY. HENRY J. MILLER, Goshen, N. Y. Filed Apr. 18, 1905. Serial No. 256,234.

Claim.—1. In a vehicle of the character described, the combination with the wheels and shafts, of a wheel-truss interposed between

laid wheels and shafts and formed of a lower bridge-bar and an upper bridge-bar united by stays and braces, upon and between the lower end of which bridge-bars the wheels are journaled, and a floating cross-bar for supporting a seat, said floating bridge-bar being disconnected from the shafts and entirely spring-supported.



2. In a vehicle of the character designated, the combination with the wheels and shafts, of a wheel-truss interposed between said wheels and shafts, and formed of a lower and an upper bridge-bar united by stays and braces, the ends of the upper bridge-bar being formed to extend over the wheels to form outer bearings therefor, and a floating cross-bar for supporting a seat for the purpose described said floating cross-bar being disconnected from the shafts and entirely spring-supported.

3. In a vehicle of the character designated, a wheel-truss, wheels journaled directly in the ends thereof, a floating cross-bar for supporting a seat and shafts attached to the said wheel-truss for the purpose described said floating cross-bar being disconnected from the shafts and entirely spring-supported.

4. In a vehicle of the character designated, a wheel-truss the ends of which straddle wheels journaled therein, said wheels a floating cross-bar for supporting a seat, and shafts attached to said wheel-truss, for the purpose described said floating cross-bar being disconnected from the shafts and entirely spring-supported.

5. In a vehicle of the character designated, a wheel-truss formed of an upper and a lower bridge-bar united by stays and braces a floating cross-bar for supporting a seat, wheels journaled upon and between the adjoining ends of said bridge-bars, and shafts attached to said truss for the purpose described said floating cross-bar being disconnected from the shafts and entirely spring-supported.

6. In a vehicle of the character designated, a wheel-truss formed of an upper bridge-bar and a lower bridge-bar united by transverse stays and diagonal braces floating cross-bar for supporting a seat, wheels journaled between the ends of said bridge-bars, and shafts connected with the said wheel-truss for the purpose described said floating cross-bar being disconnected from the shafts and entirely spring-supported.

7. In a vehicle of the character designated, a seat resting upon a plurality of compressible coil-springs mounted upon stationary parts of the frame and means for preserving the alinement of said springs and a floating cross-bar supported on said springs for the purpose described.

8. In a vehicle of the character designated, a seat resting upon a plurality of compressible coil-springs mounted upon stationary parts of the frame and means for supporting said springs laterally and a floating cross-bar supported on said springs for the purpose described.

9. In a vehicle of the character designated, a seat a floating trussed cross-bar supporting a seat and resting upon a plurality of compressible coiled springs, said springs, and centralizing and supporting guides attached to stationary parts of the vehicle and extending through the said springs and through the said cross-bar for the purpose described.

10. In a vehicle of the character designated, a seat secured to a cross-bar resting upon two compressible coiled springs, mounted upon stationary parts of the framework, said springs, and a truss-brace secured to the under side of said cross-bar between the said springs, for the purpose described.

11. In a vehicle of the character designated, a seat secured to two trussed cross-bars resting upon compressible coiled springs in different planes mounted upon stationary parts of the frame, and means for sustaining said springs and said cross-bars against lateral displacement for the purpose described.

12. In a vehicle of the character designated, the combination of a wheel-truss between the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss a seat, a plurality of compressible coil-springs mounted upon the said shafts, and means for sustaining the said springs laterally in position for the purpose set forth.

13. In a vehicle of the character designated, the combination of a wheel-truss between the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss a seat, a plurality of compressible coiled springs mounted upon cross-bars rigidly secured to said shafts, and means upon said cross-bars for sustaining the said springs laterally in position for the purpose described.

14. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss and formed with extensions beyond the rear of said truss, a cross-bar rigidly secured to said shafts, two compressible coiled springs on said cross-bar, a compressible coil-spring on each rear extension of the shafts, and a seat supported by said springs for the purpose described.

15. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss and formed with extensions beyond the rear of said truss a cross-bar rigidly secured to said shafts, two compressible coiled springs on said cross-bar, a compressible coil-spring on each rear extension of the shafts, means for preventing lateral displacement of each and all of said four springs, and a seat supported by said springs for the purpose described.

16. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to the said wheel-truss and formed with extensions beyond the rear of said truss, compressible coiled springs in front of the said wheel-truss, compressible coiled springs supported upon the shafts at the rear of said wheel-truss, and a seat supported by said springs for the purpose described.

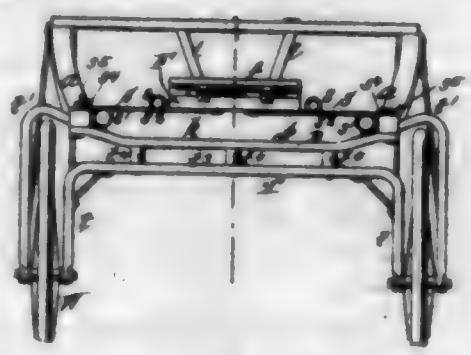
17. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to the said wheel-truss and formed with extensions beyond the rear of said truss, compressible coiled springs in front of the said wheel-truss, compressible coiled springs supported upon the shafts at the rear of said wheel-truss, means for preventing the lateral displacement of each and all of said four springs and a seat supported by said springs for the purpose described.

18. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss, a plurality of compressible coiled springs supported by said shafts floating trussed cross-bars, and a seat supported on said springs for the purpose described.

19. In a vehicle of the character designated, the combination of a wheel-truss to the ends of which the wheels are journaled, said wheels, shafts attached to said wheel-truss, a plurality of compressible coiled springs supported by said shafts, means for sustaining said springs against lateral displacement and a seat supported on said springs for the purpose described.

20. In a vehicle of the character designated, a wheel-truss, trussed floating cross-bars, and a seat resting upon a plurality of compressible coil-springs mounted upon stationary parts of the frame and upon which said cross-bars rest for the purpose described.

815,616. SULKY. HENRY J. MILLER, Goshen, N. Y. Filed July 3, 1905. Serial No. 268,042.



Claim.—1. In a vehicle of the character designated, a floating seat and seat-bar supported by suspender-springs secured to and between the thills, for the purpose described, each suspender-spring being formed with a loop adjacent to the floating seat-bar, and with a loop adjacent to the thill to which it is attached.

2. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills, said suspender-springs being each formed of wire with a loop adja-

cent to the seat and with a loop adjacent to the thill to which it is attached for the purpose described.

3. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills, each suspender-spring being formed of wire with a loop adjacent to the seat and with a loop adjacent to the thill to which it is attached, and a wheel-truss formed with an upper bridge-bar the central portion of which is depressed to accommodate the floating seat, for the purpose described.

4. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills, each suspender-spring being formed of wire with a loop adjacent to the seat and with a loop adjacent to the thill to which it is attached, and a wheel-truss formed with an upper bridge-bar the central portion of which is depressed below the peripheral line of the wheels to accommodate the floating seat, for the purpose described.

5. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured at their outer ends to rigid parts of the vehicle-frame, each suspender-spring being formed of wire with a loop adjacent to the seat and a loop adjacent to the rigid part of the vehicle-frame to which it is attached, for the purpose described.

6. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured at their outer ends to rigid parts of the vehicle-frame, each suspender-spring being formed of wire with a loop adjacent to the seat and a loop adjacent to the rigid part of the frame to which it is attached, the loops being formed on opposite sides of the main portion of the spring, with their planes substantially parallel thereto for the purpose described.

7. In a vehicle of the character designated, a floating seat and seat-bar supported by suspender-springs secured at their outer ends to rigid parts of the vehicle-frame, each suspender-spring consisting of a length of wire formed with two loops, said loops extending on opposite sides of the main body of the spring with their planes substantially parallel thereto for the purpose described.

8. In a vehicle of the character designated, a floating seat and seat-bar supported by suspender-springs secured to and between the thills, and a cross-brace secured to and extending between the thills parallel with and in proximity to the suspender-springs and floating seat-bar, for the purpose described.

9. In a vehicle of the character designated, a floating seat and seat-bar supported by suspender-springs secured to and between the thills, and a cross-brace secured to and extending between the thills parallel with and in proximity to the suspender-springs and floating seat-bar, said cross-brace being depressed centrally, to accommodate the floating seat-bar for the purpose described.

10. In a vehicle of the character designated, a floating seat and seat-bar supported by suspender-springs secured to and between the thills, a cross-brace secured to and extending between the thills parallel with and in proximity to the suspender-springs and floating seat-bar, said cross-brace being depressed centrally and a wheel-truss formed with an upper bridge-bar the central portion of which is also depressed, for the purpose of accommodating the floating seat-bar and seat for the purpose described.

11. In a vehicle of the character designated, a wheel-truss formed with an upper bridge-bar the central portion of which is depressed below the peripheral line of the wheels, a floating seat and seat-bar supported by suspender-springs secured to and between the thills, and a cross-brace secured to and extending between the thills parallel with and in proximity to the suspender-springs and floating seat-bar, said cross-brace being depressed centrally to substantially the same level as the central portion of the upper bridge-bar of the truss, for the purpose described.

12. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills, each suspender-spring being formed of wire with a loop adjacent to the floating seat and with a loop adjacent to the thill to which it is attached, and a cross-brace secured to and extending between the thills parallel with and in proximity to the said suspender-springs and floating seat, for the purpose described.

13. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills each suspender-spring being formed of wire with a loop adjacent to the floating seat and with a loop adjacent to the thill to which it is attached, and a cross-brace secured to and extending between the thills parallel with and in proximity to the said suspender-springs and floating seat, said cross-bar being depressed centrally, to accommodate the floating seat for the purpose described.

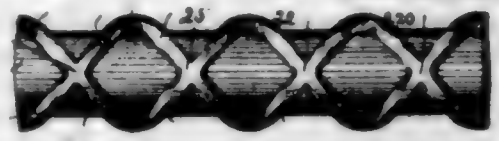
14. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured to and between the thills, each suspender-spring being formed of wire with a loop adjacent to the floating seat and with a loop adjacent to the thill to which it is attached, a cross-brace secured to and extending between the thills parallel with and in proximity to the said suspender-springs and floating seat, said cross-brace being depressed centrally and a wheel-truss formed with an upper bridge-bar the central portion of which is also depressed to accommodate the floating seat for the purpose described.

15. In a vehicle of the character designated, a wheel-truss formed with an upper bridge-bar the central portion of which is depressed below the peripheral line of the wheels, a floating seat suspended upon springs secured to and between thills, each suspender-spring being formed of wire with a loop adjacent to the floating seat and with a loop adjacent to the thill to which it is attached, and a cross-brace secured to and extending between the thills parallel with and in proximity to the suspender-springs and floating seat, said cross-brace being depressed centrally to substantially the same level as the central portion of the upper bridge-bar of the truss for the purpose described.

16. In a vehicle of the character designated, a floating seat supported by suspender-springs secured at their outer ends to rigid parts of the vehicle-frame, each suspender-spring consisting of a length of wire formed with two loops, said loops extending on opposite sides of the main body of the spring with their planes substantially parallel thereto for the purpose described.

17. In a vehicle of the character designated, a floating seat supported upon suspender-springs secured at their outer ends to rigid parts of the vehicle-frame, each suspender-spring consisting of a wire formed with two loops interposed, at different points in its length, between the said floating seat and the said rigid support on the vehicle-frame for the purpose described.

815,617. MATERIAL OF CONSTRUCTION. WILLIAM MUEHR, New York, N. Y. Filed Oct. 13, 1904. Serial No. 228,348.



Claim.—1. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs extending diagonally around the body in one direction and another of said ribs extending diagonally around the body in an opposite direction and intersecting the first rib.

2. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs extending diagonally around the body in one direction and a plurality of said ribs extending around the body in an opposite direction and intersecting the first rib.

3. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, a plurality of said ribs extending diagonally around the body in one direction and a plurality of said ribs extending diagonally around the body in an opposite direction and intersecting the first-named plurality of ribs.

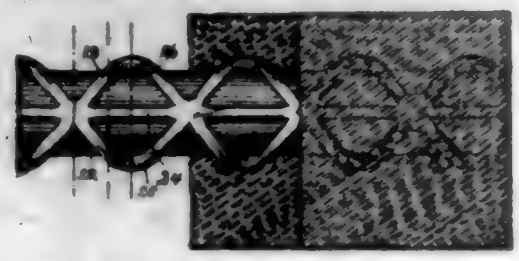
4. A bar adapted to be used as a core to be embedded in concrete, comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs extending diagonally around the body in one direction and another of said ribs extending diagonally around the body in an opposite direction and intersecting the first rib, the transverse section at the intersection of the ribs being increased to produce along the whole bar a substantially uniform cross-section.

5. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs extending diagonally around the body in one direction and a plurality of said ribs extending diagonally around the body in an opposite direction and intersecting the first rib, the transverse section at the intersection of the ribs being increased to produce along the whole bar a substantially uniform cross-section.

6. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of

the body, a plurality of said ribs extending diagonally around the body in one direction and a plurality of said ribs extending diagonally around the body in an opposite direction and intersecting the first-named plurality of ribs, the transverse section at the intersection of the ribs being increased to produce along the whole bar a substantially uniform cross-section.

815,618. MATERIALS OF CONSTRUCTION. William Mueser, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,578.



Claim.—1. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs being substantially parallel with the longitudinal axis of the body, another rib extending diagonally around the body in one direction and another rib extending diagonally around the body in the opposite direction and intersecting the other ribs.

2. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs being substantially parallel with the longitudinal axis of the body, another rib extending diagonally around the body in one direction and a plurality of ribs extending diagonally around the body in the opposite direction and intersecting the other ribs.

3. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs being substantially parallel with the longitudinal axis of the body, a plurality of ribs extending diagonally around the body in one direction and a plurality of ribs extending diagonally around the body in the opposite direction and intersecting the other ribs.

4. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel with the longitudinal axis of the body, another rib extending diagonally around the body in one direction and another rib extending diagonally around the body in the opposite direction and intersecting the other ribs.

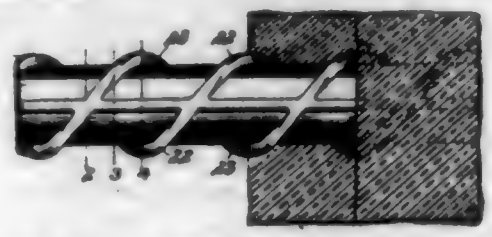
5. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel with the longitudinal axis of the body, another rib extending diagonally around the body in one direction and a plurality of ribs extending diagonally around the body in the opposite direction and intersecting the other ribs.

6. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, a plurality of ribs being substantially parallel with the longitudinal axis of the body, a plurality of ribs extending diagonally around the body in one direction and a plurality of ribs extending diagonally around the body in the opposite direction and intersecting the other ribs.

7. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, one of said ribs being substantially parallel with the longitudinal axis of the body, and others of said ribs extending diagonally around the body and intersecting each other and the longitudinal rib, the transverse section at the intersections of the ribs being increased to produce along the whole bar a uniform section throughout its length.

8. A bar adapted to be used as a core to be embedded in concrete comprising a regularly-formed central body provided with external projecting ribs extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel with the longitudinal axis of the body, and others of said ribs extending diagonally around the body and intersecting each other and the longitudinal ribs, the transverse section of the ribs being increased to produce along the whole bar a uniform section throughout its length.

815,619. CONCRETE-STEEL CONSTRUCTION. William Mueser, New York, N. Y. Original application filed Apr. 20, 1905, Serial No. 256,578. Divided and this application filed June 23, 1905. Serial No. 266,624.



Claim.—1. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the bar, one of said ribs being substantially parallel to the longitudinal axis of the body, and a plurality of said ribs extending continuously around the body diagonally in the same direction and in parallel lines.

2. A bar adapted to be used as a core to be embedded in a concrete envelop, comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the bar, one of said ribs being substantially parallel to the longitudinal axis of the body, and a plurality of said ribs extending continuously around the body diagonally in parallel lines and intersecting said longitudinal rib.

3. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, and a plurality of said ribs extending continuously around the body diagonally in parallel lines and intersecting said longitudinal ribs, the ribs being slightly enlarged in transverse section at the points of intersection in order to maintain a uniform cross-sectional area throughout the bar.

4. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel to the longitudinal axis of the body, and another plurality extending continuously around the body diagonally in parallel lines.

5. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel to the longitudinal axis of the body, and another plurality extending continuously around the body diagonally in parallel lines and intersecting said plurality of longitudinal ribs.

6. A bar adapted to be used as a core to be embedded in a concrete envelop, comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel to the longitudinal axis of the body, and another plurality extending continuously around the body diagonally in parallel lines and intersecting said plurality of longitudinal ribs, the ribs being slightly enlarged in transverse section at the points of intersection, in order to maintain a uniform cross-sectional area throughout the bar.

7. A bar adapted to be used as a core to be embedded in a concrete envelop, comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section, extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, and a plurality of said ribs extending continuously around the body parallel to each other and diagonally to the longitudinal axis of the body.

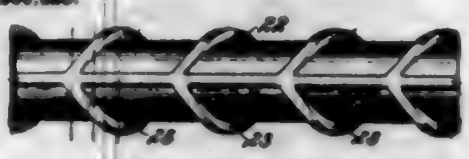
8. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs, extending a substantial part of the length of the body, one of said ribs being substantially parallel

to the longitudinal axis of the body, and another of said ribs extending diagonally and continuously around the body in the same direction, and intersecting the longitudinal rib.

9. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs, extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, and another of said ribs extending spirally around the body in the same direction and intersecting the longitudinal rib.

10. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs, extending a substantial part of the length of the body, a plurality of said ribs being substantially parallel to the longitudinal axis of the body, and another of said ribs extending diagonally and continuously around the body and intersecting the longitudinal ribs.

815,620. CONCRETE-STEEL CONSTRUCTION. WILLIAM MUENZER, New York, N. Y. Original application filed Apr. 20, 1905, Serial No. 256,579. Divided and this application filed June 22, 1905. Serial No. 266,625.



Claim.—1. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section, one of said ribs being substantially parallel to the longitudinal axis of the body, and extending a substantail part of the length of the body, and another rib beginning in said longitudinal rib and extending diagonally therefrom at least half-way around the body, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

2. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section, one of said ribs being substantially parallel to the longitudinal axis of the body, and extending a substantial part of the length of the body, and a plurality of others beginning in said longitudinal rib, and extending diagonally therefrom at least half-way around the body, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

3. A bar adapted to be used as a core to be embedded in a concrete envelop, comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section, a plurality of said ribs being substantially parallel to the longitudinal axis of the body, and extending a substantial part of the length of the body, and another rib diagonal thereto and beginning in one and terminating in another of said longitudinal ribs, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

4. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section, a plurality of said ribs being substantially parallel to the longitudinal axis of the body and extending a substantial part of the length of the bar, and a plurality of others diagonal thereto and beginning in one and terminating in another of said longitudinal ribs, the whole structure being of uniform cross-sectional area throughout the length of the rib.

5. A bar adapted to be used as a core to be embedded in a concrete envelop, comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, and a plurality of others beginning at and extending diagonally in different directions from opposite sides of said longitudinal rib, the whole stucture being of uniform cross-sectional area throughout the length of the ribs.

6. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body, provided with external projecting ribs of uniform cross-section, a plurality of said ribs being substantially parallel to the longitudinal axis of the body and extending a substantial part of the length of the bar, and a plurality of others, beginning at, and extending diagonally in different directions from opposite sides of one of said longitudinal ribs and terminating in another of said longitudinal ribs, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

7. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, another rib beginning at and extending diagonally from said longitudinal rib on one side, and a third rib beginning at and extending diagonally in a different direction from said longitudinal rib on the opposite side thereof, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

8. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, one of said ribs being substantially parallel to the longitudinal axis of the body, a plurality of said ribs extending diagonally from one side of said longitudinal rib, and another plurality of said ribs extending diagonally from the opposite side of said longitudinal rib, the two pluralities of ribs beginning in the longitudinal rib and extending in different directions, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

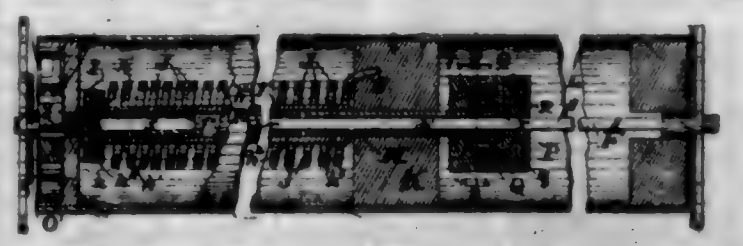
9. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, one of which is arranged substantially parallel to the longitudinal axis of the body, and a plurality of others partially encircling the body diagonally in different directions and beginning in said longitudinal rib, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

10. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body, and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, a plurality of which are arranged substantially parallel to the longitudinal axis of the body and a plurality of others, encircling the body diagonally in different directions, and beginning in one of, and terminating in another of said longitudinal ribs, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

11. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs of uniform cross-section extending a substantial part of the length of the body, one of which is arranged substantially parallel to the longitudinal axis of the body, and a plurality of others, each encircling the body diagonally in different directions half-way round and beginning in said longitudinal rib, the whole structure being of uniform cross-sectional area throughout the length of the body.

12. A bar adapted to be used as a core to be embedded in a concrete envelop comprising a regularly-formed central body and provided with external projecting ribs, of uniform cross-section, two of which are arranged on opposite sides of and substantially parallel to the longitudinal axis of the body, and extend a substantial part of the length of the bar, and a plurality of others extending diagonally at least half-way round the body in different directions, and beginning in one and terminating in the other of said longitudinal ribs, the whole structure being of uniform cross-sectional area throughout the length of the ribs.

815,621. WINDOW-SHADE FIXTURE. JOHN M. MURDOCK, Chicago, Ill., assignor to Herbert K. Townsend, Chicago, Ill. Filed Sept. 16, 1904. Serial No. 224,715.



Claim.—1. In a fixture provided with a curtain-roller, a rotatable shaft extending through the roller, cog-wheels secured to the shaft to turn therewith, tracks with which the cog-wheels engage to rotate as the shaft is moved longitudinally along the tracks, means to maintain the cog-wheels in engagement with the tracks and means to prevent rotation of the shaft; substantially as described.

2. In a curtain-fixture provided with a spring-roller, a rotatable

shaft extending through the spring-roller, tracks, casings attached to the tracks to move longitudinally thereon, cog-wheels in the casings, such cog-wheels secured to the shaft to turn therewith and placed in the casings to engage with the tracks and rotate as the shaft is moved longitudinally, means to automatically secure the shaft to prevent rotation thereof, and means to raise and lower the casing at one end of the rotatable shaft; substantially as described.

3. In a curtain-fixture, tracks, casings movably mounted on the respective tracks, cog-wheels in the casings; a non-rotatable tube secured to one of the casings, a rotatable shaft journaled in the casings and extending through the non-rotatable tube, the cog-wheels secured to the shaft to turn therewith, means to connect the shaft and the non-rotatable tube, to prevent rotation of the shaft, and means to raise and lower the casing to which the non-rotatable tube is secured; substantially as described.

4. In a curtain-fixture provided with a spring-roller, tracks, casings mounted on the tracks to move longitudinally thereover, cog-wheels in the casings, a tube non-rotatably attached to one of the casings, a rotatable shaft journaled in the casings, such shaft extending through the tube and through the spring-roller, and such cog-wheels placed in the casing and secured to the shaft to turn therewith and to engage with the tracks and rotate as the casings are moved on the tracks, a recess extending longitudinally of the tube on the end thereof, a collar mounted on the tube adjacent to the recess, such collar attached to the shaft to turn therewith, dogs on the collar to engage with the recess on the tube, and means to raise and lower the casing to which the tube is non-rotatably attached; substantially as described.

5. In a curtain-fixture provided with a spring-roller, a rotatable shaft extending through the spring-roller, tracks, casings attached to the tracks to move longitudinally thereon, cog-wheels in the casings, such cog-wheels secured to the shaft to turn therewith and placed in the casings to engage with the tracks and rotate as the shaft is moved longitudinally, a collar secured to the shaft to turn therewith, pawls on such collar, a tube non-rotatably secured to one of the casings, such tube provided with a recess, as by means of a rigidly-secured recessed collar thereon, at the end thereof adjacent to the collar which is provided with pawls with which recess the pawls on the collar may engage, and means to raise and lower the casing to which the tube is attached; substantially as described.

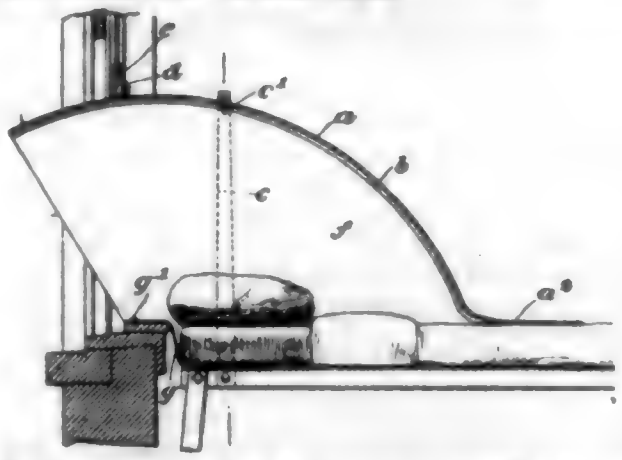
6. In a curtain-fixture the combination of tracks, casings movably attached to the tracks, a hub provided with fingers on one of the casings, a tube provided with a slot at one end thereof, in which slot the fingers on the hub extends, such tube provided with recesses thereon, as by means of a rigidly-secured recessed collar thereon, a rotatable shaft journaled in the casings and extending through the casings and through the tube, cog-wheels in the casings such cog-wheels attached to the shaft to turn therewith and to engage with the tracks, a collar on the shaft secured to turn therewith, dogs on the collar arranged to engage with the recess in the rigidly-secured collar on the tube, a cylindrical shell, collars rotatably mounted on the tube adjacent to the ends thereof, such collars fitting in the cylindrical shell to turn therewith, dogs on one of such collars arranged to engage with the recess in the rigidly-secured collar on the tube, a collar on the rotatable shaft attached to turn therewith, dogs on such collar arranged to engage with the recess in the rigidly-secured collar on the tube, a spiral spring, attached at one end thereof, to the tube as by means of the hub I and at the other end thereof attached to the shell and means tor aise and lower one of the casings; substantially as described.

7. In a curtain-fixture, the combination of tracks, casings movably attached to the tracks, a hub provided with fingers on one of the casings, a tube provided with a slot at one end thereof, in which slot the fingers on the hub extend, a collar rigidly secured to such tube such collar provided with a recess therein, a rotatable shaft journaled in the casings and extending through the casings and through the tube, cog-wheels in the casings such cog-wheels attached to the shaft to turn therewith and to engage with the tracks, a collar on the shaft secured to turn therewith, dogs on the collar arranged to engage with the recess in the rigidly-secured collar on the tube, a cylindrical shell, collars rotatably mounted on the tube adjacent to the ends thereof, such collars fitting in the cylindrical shell to turn therewith, dogs on one of such collars arranged to engage with the recess in the rigidly-secured collar on the tube, a collar on the rotatable shaft attached to turn therewith, dogs on such collar arranged to engage with the remaining recess on the tube, a spiral spring, means to attach one end thereof to the tube and means to attach the other end thereof to the shell, a pulley and a flexible connection, one end whereof is attached to one of the casings, such flexible connection extending upward to and over the pulley and down; substantially as described.

8. In a curtain-fixture provided with a spring-roller, a rotatable shaft extending through the spring-roller, tracks, casings attached to the tracks, to move longitudinally thereon, cog-wheels in the casings, such cog-wheels secured to the shaft to turn therewith and placed in the casings to engage with the tracks and rotate as the shaft is moved longitudinally, a dog in one of the casings, a spring in such casing arranged to yieldingly hold one end of the dog in the path of the teeth of the cog-wheel, a flexible connection attached to the dog in the casing and a guide for the flexible connection, such flexible connection extending upward and over the guide; substantially as described.

9. In a curtain-fixture, tracks, casings movably mounted on the respective tracks, cog-wheels in the casings, a non-rotatable three-part tube secured to one of the casings, a rotatable three-part shaft journaled in the casings, and extending through the non-rotatable tube, one of the parts of the shaft longitudinally movable in the part adjacent thereto, the cog-wheels secured to the shaft to turn therewith, means to connect the shaft and the non-rotatable tube, to prevent rotation of the shaft, and means to raise and lower the casing to which the non-rotatable tube is secured; substantially as described.

815,822. WINDOW-TENT. WHARTON B. MCLAUGHLIN, New York, N. Y., assignor of one-half to Louis N. Ball, New York, N. Y. Filed Nov. 25, 1904. Serial No. 234,209.



Claim.—1. A shield having means for mounting it in a window, and projecting in opposite directions from the window when secured in place therein.

2. A window-shield having means for supporting it in a window and portions projecting in opposite directions from the window, the portion projecting inwardly being closed except for a space adapted to fit and to be closed by a bed or cot.

3. A window-shield having means for connecting it with a window and preventing air from passing between its outside surfaces and the window, and also having flaps extending inwardly from the window, said flaps being constructed and adapted to engage a bed or the like and to prevent the passage of air between them and the bed.

4. A shield having means near its top for mounting it in a window or the like, and having a side of limp, pliable material sloping downwardly from said top; said sloping side being longitudinally divided and provided with means for removably fastening the parts thereof together

5. A shield having means near its top for mounting it in a window or the like, a side sloping downwardly from said top, opposite side flaps and means for preventing the entrance of air within the device from the room in which it is located.

6. A shield having means near its top for mounting it in a window or the like, and having a side extending inwardly from the window when secured in place therein, and side flaps; and a front strip at the bottom extending across the window-sill, said side flaps and front strip having flaps adapted to be tucked into a bed or the like.

7. A shield having means for mounting it in a window or like opening in a wall, said shield projecting inwardly and also projecting outwardly from the window, the outwardly-projecting portion being open and the inwardly-projecting portion being adapted to be closed by a bed or the like.

8. A shield having means for mounting it in a window or like opening in the wall of a room, said shield projecting into the room and also projecting outwardly from the window or the like, the shield being open as to its outer side and adapted to be closed by a bed as to its inner side, said shield having means for connecting it with a bed.

9. A shield or tent having means for mounting it in a window or like opening and having a portion projecting inwardly, said in-

wardly-projecting portion being adapted to be closed on its inner side by a bed or the like, said shield having means for connecting it with a bed.

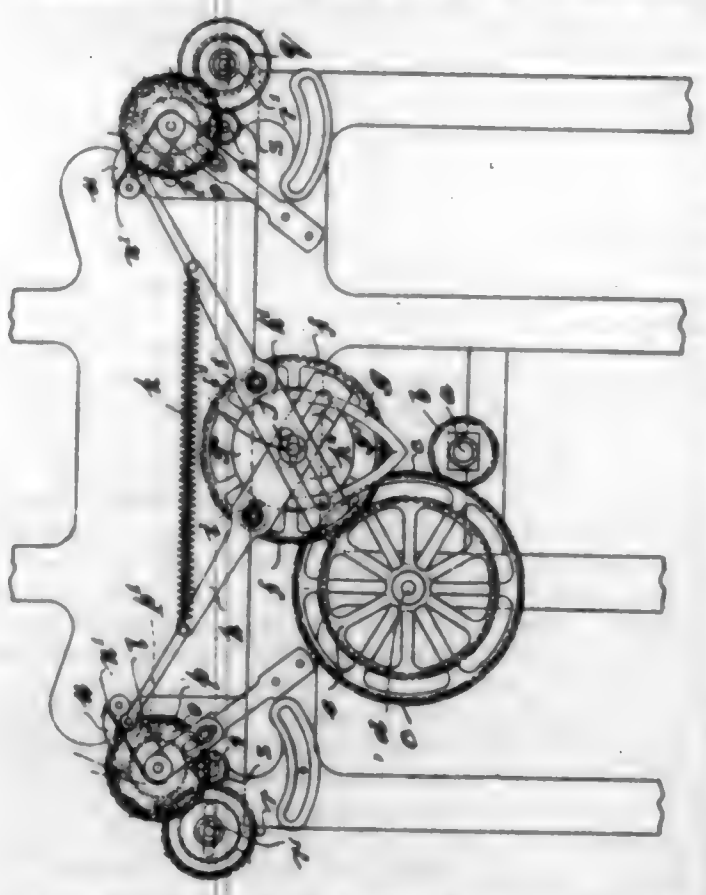
10. A shield or tent adapted to be secured in a window and open as to one side which is exposed to the open air, said shield or tent being closed on all sides within the window.

11. The combination with a bed, of a shield or tent therefor, said shield or tent having all sides adjacent to the bed closed to prevent the passage of air therethrough, but having an opening in one side exposed to the open air.

12. A shield or hood adapted to be connected with a bed or the like and provided with an opening in one side, means for supporting the shield with said opening exposed to the open air and with the main portion of the shield located over the head of the bed, the said shield having means for closing the inner portion of the shield around the adjacent portion of the bed thereby preventing the entrance of air within the shield from all points except through said opening.

13. A shield or hood adapted to be connected with a bed or the like being open as to one side, means for supporting the shield with said open side exposed to the open air and with the main portion of the shield located over the head of the bed, the shield having means for closing the inner portion thereof around the adjacent portion of the bed thereby providing means for preventing the entrance of air within the shield from all points except through the said opening, the shield also having a sloping upper side or top for facilitating the escape of air warmed by the breath of the occupant or by contact of the air adjacent to the bed, the heated air within the shield upon rising into contact with said sloping side, passing upwardly along the said side to the opening.

815,623. SPINNING YARN FROM FLAX, COTTON, &c. ADAM McMERRIN, Dough, Ireland. Filed Mar. 21, 1904. Serial No. 199,101.



Claim.—1. The combination in a spinning-frame of a retaining-roller, means for driving the roller at the ordinary speed and means for periodically accelerating the speed of the roller so as to form lumps or spots in the yarn.

2. The combination, in a spinning-frame, of a retaining-roller, a ratchet-wheel for driving the roller, a pawl gearing with the ratchet, a lever carrying the pawl, an arm connected with the lever and having a slot at its end which works on a pin, a roller secured to the arm, a cam acting on the roller, and toothed gearing for rotating the cam, said toothed gearing being operated from the cylinder-axle of the machine, substantially as described.

3. The combination, in a spinning-frame, of a retaining-roller, a free wheel on the axle of the roller, a ratchet-wheel on the axle of the roller, pawls on the free wheel, means for driving the free wheel, a second ratchet-wheel for driving the roller, a pawl gearing with the ratchet-wheel, a lever carrying the pawl, an arm connected with the lever, means for moving the arm forward intermittently and means for retracting the arm after each forward movement, substantially as described.

4. The combination in a spinning-frame, of two retaining-rollers, free wheel and ratchet mechanism for driving the rollers, ratchet-wheels for driving the rollers, pawls gearing with the ratchet-wheels, rocking levers carrying the pawls, slotted arms connected with the levers, a pin fixed to the frame of the machine and projecting through the slots, a cam for operating both arms, a spring acting on both arms, and means for driving the cam, substantially as described.

5. A drafting device for spinning-machines comprising a pair of coacting retaining-rollers and a pair of coacting drawing-rollers between which the material to be drawn is passed, mechanism for constantly driving the respective pairs of rollers at unequal rates of speed, and auxiliary means for intermittently accelerating the speed of the retaining-rollers.

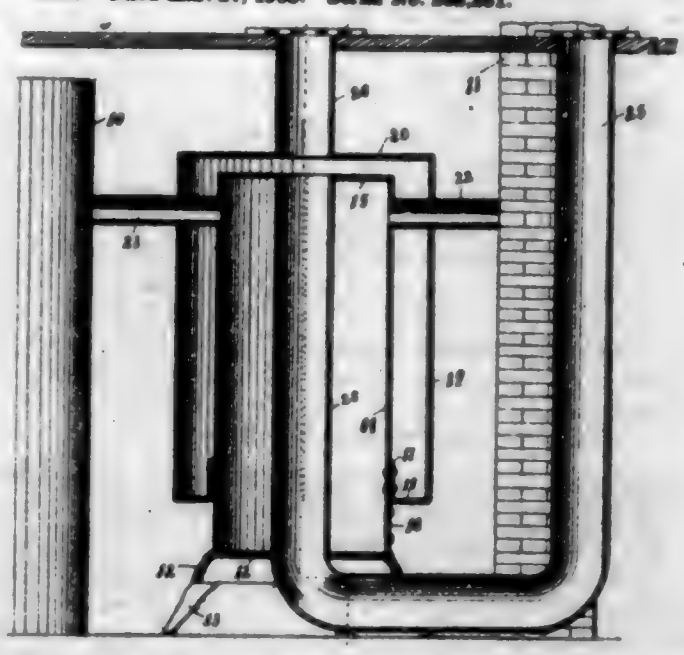
6. A drafting device for spinning-machines comprising a pair of coacting retaining-rollers and a pair of coacting drawing-rollers between which the material to be drawn is passed, mechanism for constantly driving the respective pairs of rollers at unequal rates of speed, and auxiliary means for intermittently changing the speed of one pair of rollers.

7. A drafting device for spinning-machines comprising a pair of coacting retaining-rollers and a pair of coacting drawing-rollers between which the material to be drawn is passed, one of said retaining-rollers having two ratchet-wheels rigidly mounted, and a gear-pinion loosely mounted, ratchet-pawls connecting said pinion and one of said ratchet-wheels, means for constantly driving said gear-pinion, and means engaging the other ratchet-wheel for intermittently accelerating the speed of said retaining-rollers.

8. A drafting device for spinning-machines comprising a pair of coacting retaining-rollers and a pair of coacting drawing-rollers between which the material to be drawn is passed, means for constantly driving one of said retaining-rollers at a given speed, and means for intermittently increasing the speed thereof.

9. A drafting device for spinning-machines comprising a pair of coacting retaining-rollers and a pair of coacting drawing-rollers between which the material to be drawn is passed, one of said retaining-rollers having two ratchet-wheels rigidly mounted and a pinion loosely mounted, ratchet-pawls connecting said pinion and one of said ratchet-wheels, means for constantly driving said pinion, a rocking arm carrying a spring-pressed pawl adapted for engagement with the other ratchet-wheel, and cam-actuated mechanism for rocking said arm to intermittently accelerate the speed of said retaining-rollers.

815,624. HOT-AIR DRUM. WILLIAM A. NORTON, Marshalltown, Iowa. Filed Mar. 27, 1905. Serial No. 252,251.



Claim.—In a heating-drum, the combination of a base, a sheet-metal cylinder on the base having a closed top, a jacket surrounding the sheet-metal cylinder, spaced apart from its sides and top and extending to a point near the lower end of the cylinder, a door for providing access to the cylinder below the jacket, deflector-plates on the interior of the cylinder extending from the top to a point near its lower end, a pipe passed through the jacket and into the interior of the cylinder at its top substantially at right angles to the deflector-plates, a second pipe passed through the jacket and into the top of

the cylinder diametrically opposite from the first, a cold-air-supply pipe extending downwardly and then upwardly through the base of the cylinder and also through the top of the cylinder and a hot-air-discharge pipe communicating with the interior of the jacket at a point in line with the discharge end of the cold-air-supply pipe.

815,625. FEEDING DEVICE FOR POULTRY. HERBERT P. NOTTAGE, Goshen, Mass. Filed Aug. 1, 1905. Serial No. 272,153.



Claim.—1. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets, each leading to the trough and provided with a screen.

2. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets, each leading to the trough, and provided with a screen.

3. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets, each leading to the trough, and provided with a screen of wire-gauze.

4. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein, one or more feed-outlets, each leading to the trough and provided with a screen of open-work, said trough having a covering of open-work.

5. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein, one or more feed-outlets, each leading to the trough, and provided with a screen of open-work, said trough having a covering of open-work, and being divided into compartments corresponding to said feed-outlets.

6. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets each leading to the trough and provided with a screen of open-work, said reservoir having means for facilitating the gravitation of the feed toward said feed-outlets, and said trough having a covering of open-work.

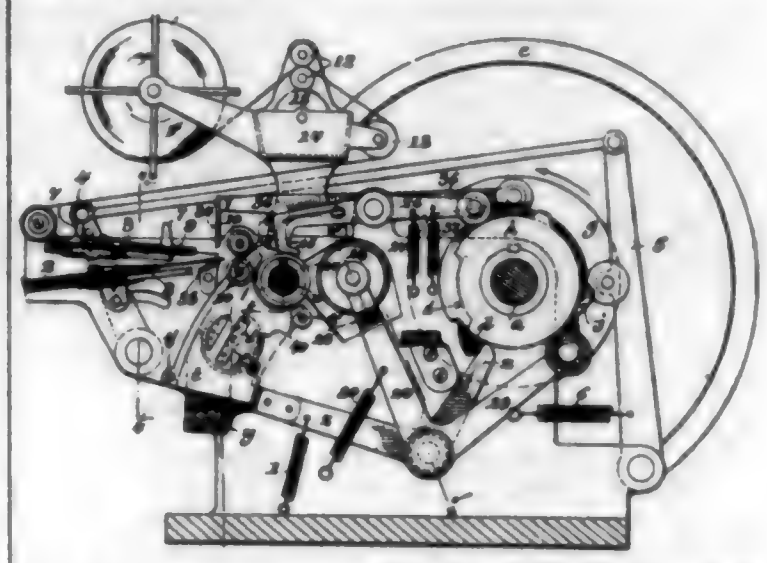
7. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets, each leading to the trough and provided with a screen of open-work, said reservoir having therein a bottom inclined downwardly from the side thereof opposite to the said first-mentioned side.

8. A feeding device for poultry, comprising a feed-reservoir and a trough, the latter projecting from one side of the reservoir, and said side having therein one or more feed-outlets, each leading to the trough and provided with a screen of open-work, said trough being provided at the upper edges thereof, with inwardly-projecting beveled extensions.

815,626. PAPER-BOX-MAKING MACHINE. ALBIN OESTERMANN, Hanover, Germany, assignor to George Weinhagen, Milwaukee, Wis. Filed Nov. 18, 1901. Serial No. 82,669.

Claim.—1. In a paper-box-making machine the combination of axially-movable clamping-heads for holding end blanks, means for feeding end blanks one at a time between said heads, means for closing said heads against an end blank, a rotary body-former, adjacent to one of said heads, means for feeding body-blanks to said former into position to be joined to the end blanks, and means for feeding a covering-strip to and forming it over and uniting the body and end blanks, substantially as described.

2. In a paper-box-making machine the combination of rotary clamping-heads for holding end blanks, a rotary former for shaping body-blanks and holding them in position to be united to end blanks held by said heads, means for catching and holding the advance ends of the body-blanks to said former, and means for wrapping a covering-strip around and thereby uniting the body and end blanks, substantially as described.



3. In a paper-box-forming machine the combination of rotary and axially-movable clamping-heads for holding end blanks, a rotary and axially-movable body-former arranged coaxially with said heads, means for feeding blanks to the machine, means for closing said heads upon the bottom-blanks and moving them together up to the body-former, means for wrapping a covering-strip around and thereby uniting the body and end blanks, means for turning the edge of the covering-strip over the edge of the body-blank when the former is withdrawn therefrom, and means for withdrawing the former from the box formed thereon during the preceding operation and then thrusting it back to fold the inturned edge of the covering-strip into the open end of the box, substantially as described.

4. In a paper-box-making machine in combination with a rotary body-former and means for feeding in body-blanks, means for gripping the end of a body-blank comprising a reciprocating presser-foot having its movement in a plane in which the axis of said rotary body-former lies, and means for reciprocating said presser-foot consisting of a non-rotating sleeve moving over the axis of said former, and means for actuating said sleeve, substantially as and for the purposes set forth.

5. In a paper-box-making machine the combination of rotary and axially-movable clamping-heads, a rotary and axially-movable former arranged coaxially with and next to one of said heads, a rotary and axially-movable presser-head arranged coaxially with and next to the other clamping-head and recessed to receive the same, means for feeding end blanks to the clamping-heads, means for feeding body-blanks to said former, means for closing the clamping-heads on the end blanks and moving them together toward the former, means for wrapping a covering-strip around adjoining body and end blanks, means for turning the edges of said strip over the edges of the body and end blanks and means for moving said former axially outward and inward to fold one inturned edge of said strip into the open end of the box, and means for moving the presser-head axially inward to press the other inturned edge of said strip against the end blank, substantially as described.

6. In a paper-box-making machine the combination of a rotary and axially-movable body-former, means for feeding body-blanks and a covering-strip to said former, means for turning one edge of the covering-strip inward over one edge of a body-blank, and means for moving the former axially at the proper time to fold the inturned edge of the covering-strip inside of the body-blank, substantially as described.

7. In a paper-box-making machine the combination of axially-movable rotary clamping-heads, a rotary and axially-movable body-forming sleeve coaxial with said heads, springs tending to separate said heads, cams arranged to move said heads toward each other, a cam arranged to move said sleeve axially, means for feeding bottom or end blanks one at a time between said heads, and means for wrapping body-blanks around said sleeve and joining them to bottom or end blanks held between said heads, substantially as described.

8. In a paper-box-making machine the combination of axially-movable rotary clamping-heads, means for turning said heads and moving them toward and from each other, a bottom or end blank holder parallel with the axis of said heads and terminating in a transverse guideway, a pusher adapted to transfer said blanks one at a time through said guideway from said holder to the clamping-heads, and means for forming box-bodies and attaching them to the bottom

or end blanks while they are held between said heads, substantially as described.

9. In a paper-box-making machine, the combination of axially-movable rotary clamping-heads, means for turning said heads and moving them axially, a bottom or end blank holder parallel with the axis of said heads and terminating in a transverse guideway, a reciprocating pusher arranged to move back and forth through said guideway past the adjacent end of said holder, a cam for operating said pusher, means for forming box-bodies on one side of and next to a bottom or end blank held between said heads, and means for wrapping a covering-strip around adjoining body and bottom or end blanks and turning the covering-strip over the edges of the bottom or end blanks, substantially as described.

10. In a paper-box-making machine the combination of two rotary and axially-movable shafts arranged in line with each other and provided at their inner ends with clamping-heads, cams engaging the outer ends of said shafts, springs tending to separate said heads and hold the outer ends of said shafts in engagement with said cams, sleeves loosely fitted upon and turning with said shafts, one of said sleeves being provided with a recessed or flanged head which is adapted to receive the adjacent clamping-head, cams arranged to move said sleeves axially upon said shafts, means for feeding bottom or end blanks one at a time between said clamping-heads, means for wrapping body-blanks around one of said sleeves and joining the same to bottom or end blanks held between said clamping-heads, and means for rotating said clamping-heads, substantially as described.

11. In a paper-box-making machine, the combination with a rotary body-former and means for feeding body-blanks to said former, a presser-foot in rotation with said former and pivoted to reciprocate in a plane of the axis of said former, means for reciprocating said presser-foot, and means for forcing the end of a body-blank into contact with said presser-foot, substantially as described.

12. In a paper-box-making machine the combination of a rotary body-former provided with a yielding pin normally projecting from one side thereof, and means for feeding body-blanks to said former, of a presser-foot, means for forcing said presser-foot against the advance ends of the body-blanks as they pass between said foot and the pin on said former, and means for retracting said pin from the box-bodies to permit their removal from said former, substantially as described.

13. In a paper-box-making machine the combination of rotary and axially-movable clamping-heads, means for feeding bottom or end blanks one at a time between said heads, a rotary body-former arranged adjacent to and concentric with one of said heads, means for feeding body-blanks and a covering-strip to said former, and a presser-wheel adapted to press the covering-strip against the body-blanks on the body-former and around the edges of adjoining bottom or end blanks held between the clamping-heads, substantially as described.

14. In a paper-box-making machine the combination with rotary clamping-heads and a body-former arranged to hold end and body blanks in the proper relation to each other, of a presser-wheel having a peripheral groove at one end and an axially-yielding flange next to said groove for pressing a covering-strip against the body-blanks and around the projecting edges of adjoining bottom or end blanks means for feeding end blanks one at a time between said clamping-heads, and means for feeding body-blanks and a covering-strip to said body-former, substantially as described.

15. In a paper-box-making machine the combination with rotary clamping-heads and body-former, of means for feeding bottom or end blanks one at a time between said clamping-heads, means for feeding body-blanks to and wrapping them around said former next to bottom or end blanks held between said clamps, and a yielding presser-wheel adapted to press a covering-strip against adjoining body and bottom or end blanks, substantially as described.

16. In a paper-box-making machine the combination with rotary clamping-heads and a rotary body-former adjacent to one of said heads, of an axially-movable recessed presser-head adjacent to and concentric with the other clamping-head, and a grooved presser-wheel adapted to press a covering-strip against adjoining body and bottom or end blanks and to turn one edge of said strip inwardly over the edges of the bottom or end blanks, substantially as described.

17. In a paper-box-making machine the combination with rotary clamping-heads, an axially-movable rotary body-former adjacent to one of said heads, and means for wrapping a covering-strip around adjoining body and bottom or end blanks, of a part movable transversely to the axis of the body-former and adapted to turn the covering-strip inward over the open edges of the body-blanks when the rotary former is withdrawn therefrom, and means for moving said former toward the clamping-heads to fold the inturned edges of the covering-strip inside of the boxes, substantially as described.

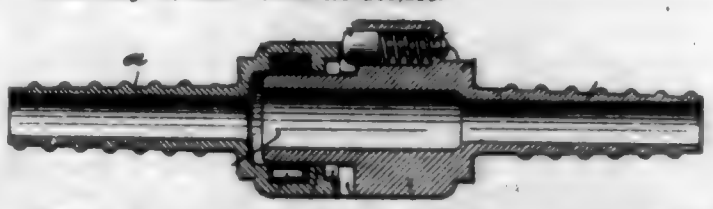
18. In a paper-box-making machine the combination with a rotary body-former of reciprocating slides for feeding body-blanks and a covering-strip to said former, and means for holding said body-blanks and covering-strip against said former while they are wrapped around the same, substantially as described.

19. In a paper-box-making machine the combination with a rotary body-former, of reciprocating slides for feeding body-blanks and a covering-strip to said former, means for holding said blanks and strip against said former while they are wrapped around the same, and a cutter for severing the covering-strip, substantially as described.

20. In a paper-box-making machine the combination with a rotary body-former, of reciprocating slides for feeding body-blanks and a covering-strip to said former, means for holding said blanks and strip against said former as they are wrapped around it, and a rocker-arm for actuating said slides, having a lost-motion connection with one of them whereby it is adapted to move the body-blanks forward in advance of the covering-strip, substantially as described.

21. In a paper-box-making machine the combination with a rotary former, of reciprocating slides for feeding pasteboard blanks and a covering-strip to said former, means for holding said blanks and covering-strip against said former as they are wrapped around it, a reel for holding the covering-strip, means for applying paste to one side of said strip, and a cutter for severing said strip at the proper points, substantially as described.

815,627. HOSE-COUPLING. SAMUEL OLDHAM, Philadelphia, Pa. Filed July 11, 1905. Serial No. 269,186.



Claim.—In a hose-coupling, a female member provided with alternate recesses and segmental flanges upon its abutting rim, a male member provided with a tubular extension arranged to enter and to turn in said female member, a series of wings formed on the tubular extension and arranged to interlock with said segmental flanges, a box-shaped extension formed upon the periphery of the male member and extending peripherally beyond the recessed rim of the female member, and a headed pin sliding in said box-shaped extension and projecting under spring tension therefrom to enter a recess of the rim of the female member and the head of said pin extending peripherally beyond said rim.

815,628. SECONDARY BATTERY. EMIL L. OPPERMANN, London, England, assignor to The X Electric Accumulator Company, Limited, London, England. Filed Apr. 11, 1905. Serial No. 255,007.

Claim.—1. A composite material for secondary electric battery-plates, consisting of active paste containing finely-subdivided filaments of material destructible by the electrolytic action of battery liquid, said filaments not exceeding one-sixteenth of an inch in length.

2. A composite material for secondary electric battery-plates, consisting of an active paste containing hairs not exceeding one-sixteenth of an inch in length.

3. A secondary-battery plate having an applied active paste containing short hairs not exceeding one-sixteenth of an inch in length.

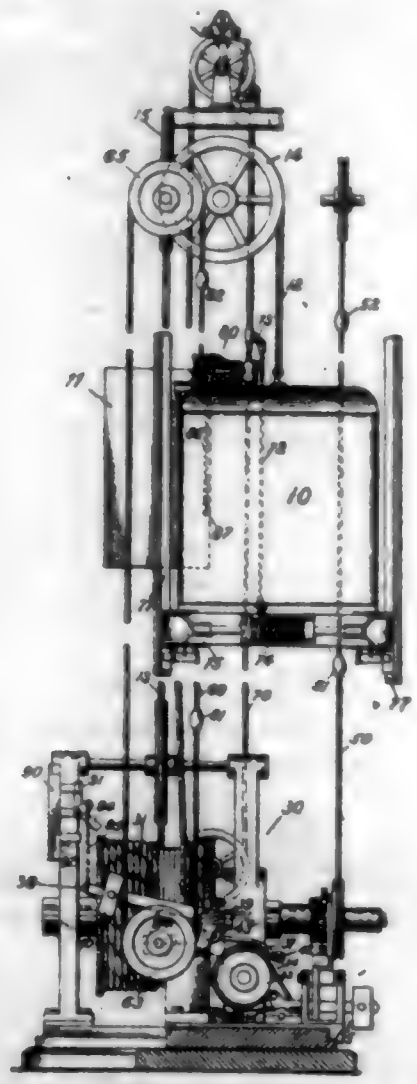
4. A secondary-battery plate having an applied active paste containing finely-subdivided filaments of material destructible by the electrolytic action of the battery liquid, said filaments not exceeding one-sixteenth of an inch in length.

815,629. EMERGENCY-BRAKE FOR ELEVATORS. NORTON P. OTIS and AUGUST SUNDH, Yonkers, N. Y., assignors to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed Jan. 15, 1903. Serial No. 139,222.

Claim.—1. The combination with a hoisting apparatus, of a car, a brake on the hoisting apparatus, means for applying said brake, and additional independent means arranged to be controlled from said car for operating said brake.

2. The combination with a hoisting apparatus, of a car, a brake

on the hoisting apparatus, means for operating said brake, additional independent means for operating said brake from the car, and means for actuating said additional brake-operating means to apply said brake automatically when the car reaches the desired limits of travel.



3. The combination with a hoisting apparatus, of a car, a brake on the hoisting apparatus, means for operating said brake, and additional independent means for applying said brake, means comprising a handle in the car for controlling said additional means, whereby the brake may be applied at will.

4. The combination with a hoisting apparatus, of a car, a brake, means for applying said brake, automatic means for controlling said applying means, and additional independent means for operating said brake from the car or automatically if the car runs beyond the desired limits of its travel.

5. An electric elevator comprising a motor, a switch for said motor, a brake, means for operating said brake, and additional independent means for operating said brake and opening said switch from the car or automatically if the car goes beyond the desired limits of its travel.

6. An electric elevator comprising an electric motor, a main-line switch for said motor, resistance in circuit with the armature of said motor, a brake, means for operating said brake, and additional independent means for operating said brake, opening said switch and short-circuiting the motor-armature through said resistance, said additional means being arranged to be operated from the car or automatically if the car runs beyond the desired limits of its travel.

7. An electric elevator comprising a car, an electric motor, a main-line switch for said motor, a brake, means for applying said brake, automatic means controlling the applying means to stop the car substantially at the limits of its travel, and additional independent means for opening said main-line switch and operating said brake, said additional means being arranged to be controlled from the car or automatically if the car runs beyond the limits of its travel.

8. An electric elevator comprising an electric motor, a main-line switch for said motor, a resistance in a normally open circuit with the armature of said motor, a brake, means for applying said brake to stop the car, means for controlling said brake-applying means, automatic means for operating said controlling means when the car reaches the limits of its travel, additional independent means for applying said brake and substantially at the same time opening said main-line switch, and short-circuiting the motor-armature through said resistance, means arranged to be actuated from the car for controlling said additional brake-applying means, and means for automatically actuating said last-named controlling means if the car runs beyond the limits of its travel.

9. The combination with hoisting apparatus, of a car, a brake, means for automatically operating said brake to stop the car at predetermined points at the ends of its travel, and additional means for applying said brake comprising a weighted lever, means comprising an emergency-brake rope for releasing said weighted lever to apply the additional braking means, said rope being arranged to be operated from the car or automatically by the car itself if it runs beyond said predetermined points.

10. An electric elevator comprising an electric circuit arranged to be connected to a source of electrical supply, a brake, means for operating said brake, and additional independent means for operating said brake and interrupting said circuit.

11. In combination, an electric elevator comprising electric circuits arranged to be connected to a source of electrical supply, a brake, means for operating same, and additional means for operating said brake, interrupting the circuit to the source of electrical supply and short-circuiting the motor-armature.

12. An electric elevator comprising a brake, means for applying said brake, a car, means for controlling said brake-applying means from said car, an electric motor, circuits for the same, an additional brake, and means for automatically interrupting a circuit to the motor, short-circuiting the motor-armature and operating said additional brake if the car should go beyond the limits of its desired travel.

13. The combination with a hoisting apparatus, of a car, a safety device on said car, a brake, means for applying said brake, means arranged to be operated from the car for controlling said brake-applying means, means for automatically operating said controlling means if the car runs beyond its desired limits of travel, and additional means for operating said controlling means if the safety device on the car is brought into action.

14. An elevator apparatus comprising in combination a car with a safety device, hoisting apparatus, a brake for the same, means for operating said brake, additional independent means comprising a weighted lever for applying said brake, means for holding said lever out of its brake-applying position, means comprising an emergency-brake rope for releasing said holding means to apply the brake, means for locking said rope to the car so that the latter may move the rope to cause the brake to be applied, manual means for operating said locking means, and automatic means arranged to be actuated when the safety device acts for operating said locking means.

15. An elevator apparatus comprising a car combined with hoisting apparatus, a brake, means comprising a weighted lever for applying said brake, means for normally holding said lever out of its brake-applying position, means comprising a rope for releasing said holding means and causing said brake to be applied, means for locking said rope to the car so as to travel therewith and actuate said releasing means, manual means for operating said locking means, a safety device on the car, means actuated by the safety device when in operation for automatically operating said locking means, and additional means for operating the releasing-rope if the car runs beyond its limits of travel.

16. An electric elevator comprising a car provided with a safety device, a brake, means for operating same, electromechanical means for hoisting the car, a circuit and main switch for the same, additional independent means for applying said brake and opening the said main switch to interrupt the circuit to said electromechanical means, means for controlling the application of said additional brake-applying means and releasing the same from the car, means for actuating said controlling means to stop the car if the car runs beyond its desired limits of travel, and further means for actuating said controlling means to stop the car when the said safety device is brought into operation.

17. An electric elevator comprising hoisting apparatus including an electric motor, a circuit and main switch for said motor, a resistance in a normally open circuit with the armature of said motor, a brake for said hoisting apparatus, means for operating said brake, a car, a safety device on said car, additional means for applying said brake and substantially at the same time opening said main switch and short-circuiting the motor-armature through said resistance, means for controlling and actuating said brake-applying means for respectively applying and releasing the same from the car, means for automatically actuating said controlling means if the car goes beyond the desired limits of its travel, and means actuated by said safety device when brought into action for automatically actuating

said controlling means to release said additional brake-applying means and stop the car.

18. An electric elevator comprising a car with a safety device, hoisting apparatus, an electric motor for operating said hoisting apparatus, a circuit and main switch for said motor, a resistance, a brake on said hoisting apparatus, means for operating said brake, automatic means for applying said brake when the car reaches the desired limits of its travel, additional independent means for applying said brake, opening said switch to interrupt the circuit to the motor, and short-circuiting the motor-armature through said resistance, means for controlling the application of said brake from the car, automatic means for operating said controlling means when the car runs beyond the desired limits of travel, and additional means for automatically operating said controlling means to apply the brake and stop the car, said additional means being arranged to be actuated when the safety device is brought into action.

19. An elevator, comprising a car, a brake, means for applying said brake, means for controlling from the car in case of emergency the application of said brake, automatic means for operating said controlling means if the car runs beyond the limits of its travel, and additional means for automatically operating said controlling means when the safety device acts.

20. An elevator comprising a car with a safety device, a brake and means for operating said brake to stop the car automatically at the desired limits of its travel, an additional brake, means for operating said brake from the car, means for automatically actuating part of said brake-operating means to cause another part to apply said additional brake and stop the car if the car runs beyond the limits of its travel, and additional means for actuating the first-named part of said additional brake-operating means when the said safety device is brought into action.

21. An electric elevator comprising a car with a safety device, a brake, means for operating same, an electric motor, a circuit and main switch for said motor, an additional brake, means for applying same, means for controlling the application of said brake from the car and substantially at the same time opening said switch to interrupt the circuit to said motor, automatic means for operating said controlling means if the car runs beyond the limits of its travel, and additional means for automatically operating said controlling means, said additional means being controlled by the said safety device.

22. An electric elevator comprising a car with a safety device, a brake, means for operating same, an electric motor, a circuit and main switch for said motor, an additional brake, means for applying same, means for controlling the application of said brake from the car and substantially at the same time opening said switch to interrupt the circuit to said motor and short-circuiting the motor-armature, automatic means for operating said controlling means if the car runs beyond the limits of its travel, and additional means for automatically operating said controlling means, said additional means being controlled by the said safety device.

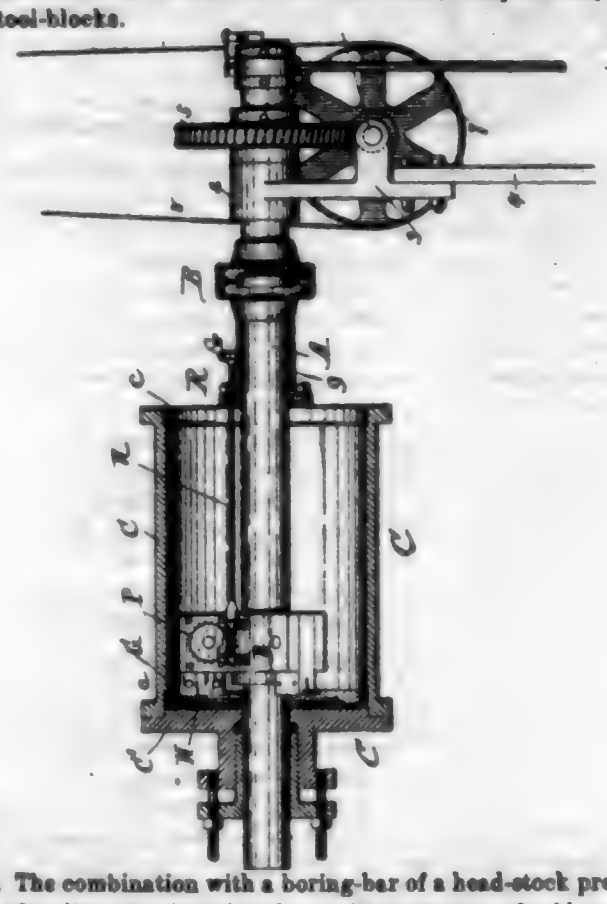
23. An electric elevator comprising a car with a safety device, a brake, means for operating said brake, an electric motor, a circuit for said motor, additional independent means for operating said brake and interrupting the circuit to said motor, and means for actuating part of said additional brake-operating means from the safety device to cause the application of the brake when the safety device is brought into action.

24. The combination with an elevator-car, hoisting apparatus therefor, an electric motor for operating said hoisting apparatus, a brake, means for applying said brake, means for controlling said brake-applying means from the car, an additional brake coacting with said first-named brake, means for operating said additional brake from the car or automatically if the car should run beyond the limits of its desired travel, and means coacting with said additional brake-operating means for interrupting the circuit to the motor upon the application of said additional brake.

815,630. TOOL-CARRIER FOR BORING-BARS. CHARLES F. OWEN, Chicago, Ill. Filed Dec. 15, 1902. Serial No. 135,206.

Claim.—1. The combination with a boring-bar, of a head-stock provided with a plurality of tools, an independently-shiftable tool-block for one of said tools, and manually-controllable means mounted on said head-stock for positively advancing and retracting said tool-block both toward and from the work to enable the tool carried thereby to be shifted back and forth between the tool-bar and the work, independently of the other tools mounted on the head-stock.

2. The combination with a boring-bar, of a head-stock provided with a plurality of radial arms, each of said arms being furnished with a tool, a tool-block mounted on one of said arms and movable at right angles to the tool-bar, and manually-controllable gearing mounted upon the outside of the arm carrying said tool-block, said gearing being connected with the tool-block of one only of said tools, and serving to positively advance and retract the tool-block to which it is connected both toward and from the work, independently of the other tool-blocks.



3. The combination with a boring-bar of a head-stock provided with a plurality of tools and tool-carrying arms, one of said arms being bifurcated, a tool-block mounted in said bifurcated arm and arranged to reciprocate at right angles to the boring-bar, a tool carried by said tool-block and movable independently of the other tools, a shaft extending through said bifurcated arm and through said block and provided with an eccentric for shifting said block, and gearing at one end of said shaft and on the outside of said arm whereby said tool-block may be advanced and retracted to shift its tool independently of other tools carried by the head-stock.

4. The combination with a boring-bar, of a head-stock or tool-carrier provided with a plurality of tools, a tool-block for one of said tools mounted upon said head-stock and movable independently of the other tools carried by the head-stock and back and forth at right angles to the boring-bar, a shaft extending at right angles to said tool-block provided with means whereby it may shift said tool-block back and forth and gearing at the outer end of said shaft whereby said shaft may be turned.

5. The combination with a boring-bar, of a head-stock or tool-carrier provided with a tool-block mounted thereon, an eccentric for engaging said tool-block whereby it may be advanced and retracted toward and from its work, a shaft for turning said eccentric and a worm wheel and shaft for operating said eccentric-shaft.

6. The combination with a boring-bar, of a head-stock or tool-carrier provided with a tool-block mounted thereon, suitable means for guiding said tool-block, an eccentric for shifting said tool-block back and forth, a shaft for operating said eccentric, a worm-wheel on said shaft and a worm-shaft engaging said worm-wheel and provided with a polygonal end portion adapted to be engaged by a wrench.

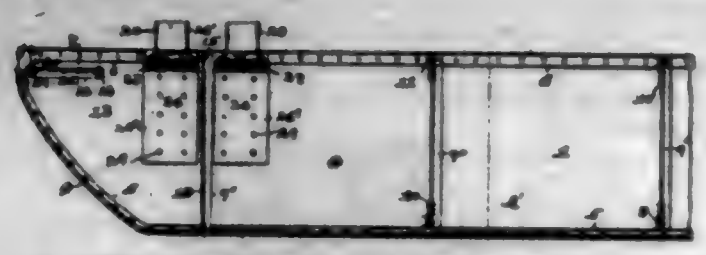
7. The combination with a boring-bar, of a head-stock or tool-carrier having parallel arms, a tool-block mounted between said parallel arms and having an opening provided with an eccentric-block, an eccentric set within said block, a shaft for actuating said eccentric and suitable worm-gearing connected to said eccentric-shaft and whereby said tool-block may be advanced and retracted toward and from its work.

815,631. BARGE. JOHN M. PEARSON, Bellevue, Pa., assignor to Pearson Manufacturing Company, Allegheny, Pa., a Corporation of Pennsylvania. Filed Oct. 19, 1904. Serial No. 229,082.

Claim.—1. A timber-head for barges and other like vessels formed from sheet metal and bent to shape to form an upper rectangular section and a lower flat securing-section.

2. A timber-head for barges and other like vessels formed of two sections or sheets of metal and flanges on said sections to form a

hollow upper rectangular section and said sections having a lower flat securing portion.



3. A timber-head for barges and other like vessels formed from two sections or sheets of metal and flanges on said sections adapted to overlap each other to form a hollow upper rectangular section and said sections having a lower flat securing portion.

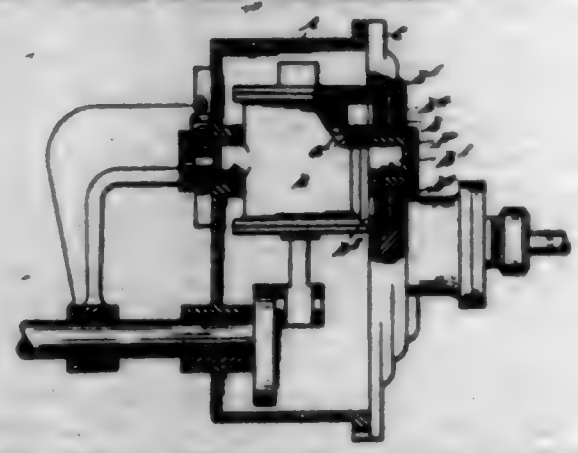
4. A timber-head for barges and other like vessels formed from two sections or sheets of metal, and having flanges on said sections adapted to overlap and be riveted to each other to form a hollow upper rectangular section and said sections having a lower flat securing portion.

5. A timber-head for barges and other like vessels formed from two sections or sheets of metal and having flanges on said sections to form a hollow upper rectangular section, and said sections having a lower flat securing portion for being secured to each other and to the sides of said barge.

6. A timber-head for barges and other like vessels formed from two sections of sheet metal and having flanges on said sections adapted to overlap and be riveted to each other to form a hollow rectangular section, and said sections having a lower flat securing portion for being secured to each other and to the sides of said barge.

7. A timber-head for barges and other like vessels formed from two sections or sheets of metal and having flanges on said sections adapted to overlap each other to form a hollow upper rectangular section, and said sections having a lower flat securing portion for being secured to each other and to the sides of said barge.

815,632. OSCILLATING ENGINE. James L. Pilling, Bucyrus, Ohio, assignor to Pilling Air Engine Company, Detroit, Mich., a Corporation. Filed Feb. 27, 1905. Serial No. 247,495.

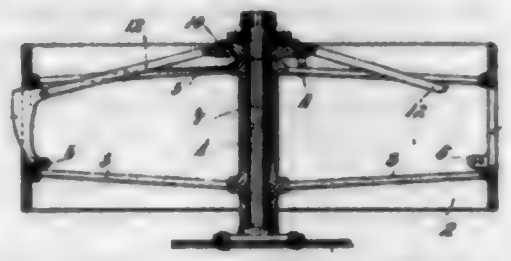


Claim.—1. In an oscillating engine, a support, a cylinder pivoted to said support, said support consisting of a stationary and removable part, the stationary part being provided with suitable passages adapted to form portions of the conduits leading to the ports, the removable part being provided with a finished surface and ports opening therethrough, and with suitable passages adapted to form portions of the conduits leading to the ports, said stationary and removable parts being adapted to be rigidly united with a tight joint with their respective passages communicating to form continuous conduit-passages.

2. In an oscillating engine, a support, a cylinder pivoted to said support, said support consisting of a stationary part having passages therein and provided with a cylindrical cavity, and a removable cylindrical part adapted to fit into said cavity forming a tight joint and being held rigidly therein, said removable part being provided with passages opening at the periphery of the removable part adapted to communicate with the passages in the stationary part to form continuous conduit-passages, said removable part being provided with a finished outer surface, and ports opening therethrough.

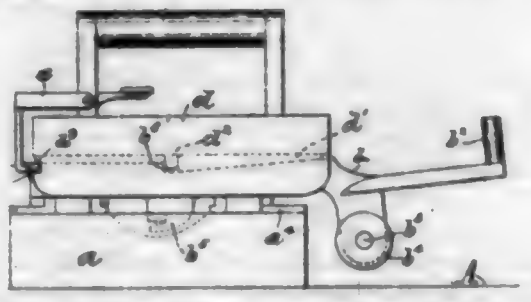
3. In an oscillating engine, a support, a cylinder pivoted to said support, said support consisting of a stationary part having passages therein, said stationary part being provided with a cylindrical cavity, and a removable cylindrical part adapted to fit into said cavity forming a tight joint and being held rigidly therein, said removable part being provided with passages opening at its periphery and adapted to communicate with the passages in the stationary part and with the finished outer surface and ports opening therethrough, the cylinder being pivoted to said removable part and provided with ports adapted to register with the ports in the same.

815,633. TRACTION-WHEEL. Edmund F. Piper, Fargo, N. D. Filed Apr. 20, 1905. Serial No. 256,607.



Claim.—A traction-wheel having a plurality of pivoted mud-flanges arranged to work through the rim thereof, an eccentric at the axis of said wheel, means for anchoring said eccentric in different positions circumferentially with respect to the wheel, an eccentric-strap on said eccentric having a lug engageable with one of the wheel-spokes, whereby it is caused to rotate with the wheel, but is free to vibrate transversely with respect to the axis thereof, and links connecting said eccentric strap to the free ends of said mud-flanges, substantially as described.

815,634. SAD-IRON. James L. Poalk, Wyncote, Pa. Filed Nov. 21, 1904. Serial No. 233,637.



Claim.—1. In a device of the character described, a sad-iron and a weight therefor in combination with means connecting the weight and iron, said weight arranged to slide on said connecting means in one direction to be superposed upon the iron and in the opposite direction to tilt said iron from the work.

2. In a device of the character described, a sad-iron, a lever adapted to be locked to said iron and a weighted holder arranged to slide upon said lever, said holder increasing the weight of the iron in one position upon the lever, and tilting said lever and iron in its other position upon the lever to thereby elevate the iron from the work.

3. In a device of the character described, a sad-iron having a recess and a bar spanning said recess, a lever having a catch adapted to engage said bar, said lever arranged to rock upon said iron, a fulcrum arranged on said lever beyond the iron, and a weighted holder arranged to slide on said lever, and adapted in one position to depress the lever upon the iron and in the other position to rock the lever on its fulcrum to thereby elevate the iron from the work.

4. In a device of the character described, a sad-iron, a lever detachably engaging said iron and projecting in one direction beyond said iron, and a weight arranged to slide longitudinally upon said lever in one direction to be superposed upon the iron and in an opposite direction to tilt said iron.

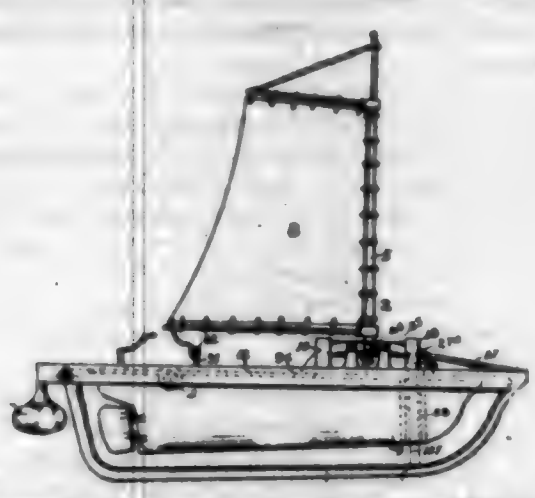
5. In a device of the character described, a sad-iron, a lever detachably engaging said iron and projecting in one direction beyond said iron, a weighted holder arranged to slide in one direction upon said lever to tilt the iron and in the other direction to be superposed on said iron and means for locking said holder to said lever when the holder is superposed on the iron.

6. In a device of the character described, a sad-iron, a lever detachably engaging said iron and having one end projecting beyond said iron, an extension formed upon said projecting end, and a weighted holder arranged to slide upon said lever and to be turned thereon to rest upon said extension to thereby tilt the lever and elevate the iron from the work.

815,635. NAVIGABLE VESSEL. James P. Pool, New York, N. Y. Filed Sept. 23, 1904. Serial No. 225,571.

Claim.—1. A vessel of the character described, comprising a sail-

carrying member and a load-carrying member connected together and capable of relative movement and operative connections extending between said sail-carrying member and said load-carrying member to cause movement of one of said members by the other of said members relative to the latter member under pressure upon the sail-carrying member.



2. A vessel of the character described, comprising a sail-carrying member and a load-carrying member connected together and capable of relative movement, said load-carrying member being adapted to rest upon the supporting medium, and operative connections extending between said sail-carrying member and said load-carrying member and arranged to transmit pressure from the sail-carrying member to the load-carrying member to relatively move said members, the said sail-carrying member comprising a movably-mounted mast and sail.

3. A vessel of the character described, comprising a load-carrying member adapted to rest upon the supporting medium, a sail carrying member pivotally connected with the load-carrying member and provided with a movably-mounted mast and sail; and operative connections extending between said mast and sail and said load-carrying member to cause pivotal movement of said load-carrying member relative to said sail-carrying member.

4. A vessel of the character described, comprising a load-carrying member, a sail-carrying member operatively connected with said load-carrying member and capable of movement with relation to said load-carrying member, said sail-carrying member comprising a movably-mounted sail and mast, and operative connections extending between the said sail and mast and said load-carrying member to cause movement of said load-carrying member by said sail-carrying member relative to said sail-carrying member.

5. A vessel of the character described, comprising a sail-carrying member, a load-carrying member connected with said sail-carrying member and capable of movement with relation thereto, said sail-carrying member comprising a movably-mounted mast and sail; and operative connections extending between said sail-carrying member and said load-carrying member whereby movement of said mast and sail causes movement of said load-carrying member relative to said sail-carrying member.

6. A vessel of the character described, comprising a load-carrying member consisting of a hull, a sail-carrying member consisting of a frame pivotally connected with said hull and provided with a portion extending transversely above said hull, a mast pivotally carried by the said frame above said hull, and operative connections extending between said mast and said hull.

7. A vessel of the character described, comprising a load-carrying member, consisting of a hull; and a sail-carrying member comprising a frame pivotally connected with said hull and provided with a portion extending transversely of and above said hull, a mast pivotally carried by said frame above said hull, and a transverse bar connected with said mast and arranged to bear alternately at its opposite ends at opposite sides of said hull.

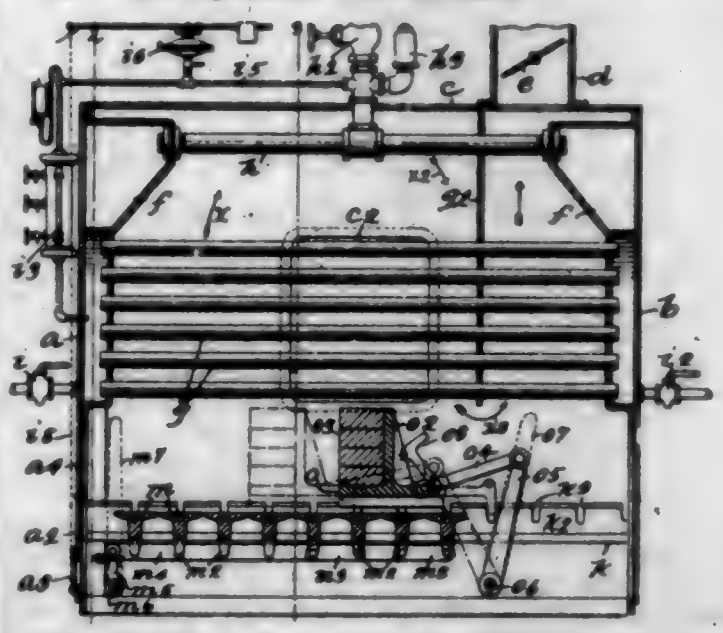
8. A vessel of the character described, comprising a load-carrying member, consisting of a hull; and a sail-carrying member comprising a frame pivotally connected with said hull and provided with a transverse portion extending above said hull, a bar extending transversely above said hull and carried pivotally by said frame, a mast fixed to said bar, and a separate lever pivotally connected with said frame at each side of said hull, said bar projecting at its opposite ends into connection respectively with said levers, whereby in the oscillation of said mast the ends of said bar and said levers are caused to bear upon said hull alternately at opposite sides of the same.

9. A vessel of the character described comprising a load-carrying member, consisting of a hull; and a sail-carrying member, comprising a frame pivotally connected with said hull at the rearward portion of the same and provided with side members extending longitudinally of said hull and with transverse portions extending above the forward portion of said hull, a transverse bar pivotally supported by and between said transverse portions of said frame and arranged to bear at its opposite end portions alternately upon said hull, two levers arranged at each side of said hull and in engagement with one end portion of said transverse bar, and a mast affixed to said transverse bar, whereby the oscillation of said mast causes two of said levers to be depressed upon said hull through the agency of one end portion of said transverse bar and causes the other end of said transverse bar to bear upon said hull.

10. In a vessel of the character described, a load-carrying member, consisting of a hull; and a sail-carrying member operatively connected with said hull at the rearward portion of the same and comprising longitudinal side portions, a transverse member extending above said hull, and a lower longitudinal member connected with the rearward portion of said side portions and extending beneath and forward of said hull into connection with said transverse member.

11. In a vessel of the character described, a load-carrying member, consisting of a hull; and a sail-carrying member comprising a frame pivotally connected with said hull at the rearward portion of the same and comprising longitudinal side portions, a transverse portion extending above said hull, and a lower portion extending longitudinally beneath and forward of said hull and connected with the rearward portion of said side portions and with said transverse portion, said lower portion being also connected with said transverse portion by a vertical portion xtending upwardly through said hull.

815,636. BOILER AND FURNACE. EDWIN POLLEY, New York, N. Y. Filed Aug. 12, 1905. Serial No. 273,883.



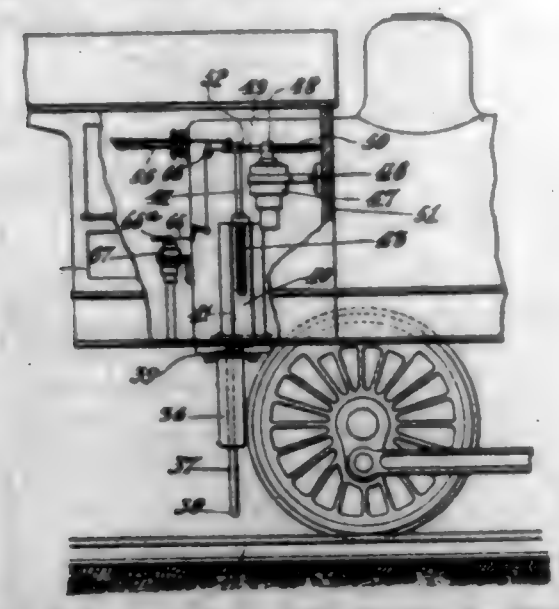
Claim.—1. In a steam-generating apparatus, a furnace-casing having a front door, side bars movable longitudinally in the opposite sides of the furnace-casing and outwardly through the front door, grate-bars mounted loosely between said side bars and pivotally supported thereby and detachable therefrom and divided into separate sets, one set of said grate-bars being detachably connected with longitudinally-arranged link members, and the other set of said bars being also detachably connected with other longitudinally-arranged link members, devices on the outer side of the furnace-casing in operative connection with said link members for operating the separate sets of grate-bars separately, a longitudinally-movable bridge mounted on the side bars, and means for moving said bridge longitudinally of said bars over the grate-bars, substantially as shown and described.

2. In a steam-generating apparatus, a furnace-casing having a front door, side bars movable longitudinally in the opposite sides of the furnace-casing and outwardly through the front door, grate-bars mounted loosely between said side bars and pivotally supported thereby and detachable therefrom and divided into separate sets, one set of said grate-bars being detachably connected with longitudinally-arranged link members, and the other set of said bars being also detachably connected with other longitudinally-arranged link members, devices on the outer side of the furnace-casing in operative connection with said link members for operating the separate sets of grate-bars separately, a longitudinally-movable bridge mounted on the side bars, and means for moving said bridge longitudinally of said bars over the grate-bars, and for locking the same in any desired position, substantially as shown and described.

3. In a steam-generating apparatus, a furnace-casing provided with longitudinally-arranged side bars movable outwardly through a front door, a plurality of grate-bars divided into sets and pivotally supported between said side bars and detachable therefrom, each set of said grate-bars being connected with link members, devices mounted on the outer side of the furnace-casing and in operative connection with the separate link members for agitating the separate sets of grate-bars separately, a bridge movable over said side bars and grate-bars longitudinally of the furnace-casing, means for moving said bridge, and devices for locking said bridge in the desired position, substantially as shown and described.

4. In a steam-generating apparatus, a furnace-casing provided with longitudinally-arranged side bars movable outwardly through a front door, a plurality of grate-bars divided into sets and pivotally supported between said side bars and detachable therefrom, each set of said grate-bars being connected with link members; devices mounted on the outer side of the furnace-casing and in operative connection with the separate link members for agitating the separate sets of grate-bars separately, a bridge movable over said side bars and grate-bars longitudinally of the furnace-casing, means for moving said bridge, and devices for locking said bridge in the desired position, said furnace-casing being also provided in the opposite sides thereof with doors and with a transverse partition movable longitudinally of said casing, substantially as shown and described.

815,687. TRAIN-STOPPING MEANS. ERNEST RENAUD, Montreal, Canada. Filed July 15, 1905. Serial No. 269,780.



Claim.—1. In an apparatus of the character described, a supporting-vehicle, a vertical bearing carried thereby, a rockable rod in said bearing, lateral extensions at the ends of said rod, a weight supported by one of said extensions, a weight-stem, an operating-arm in normal engagement with said weight-stem, a spring connected with said arm and with said vehicle, a throttle-lever, means for connecting said operating-arm with said throttle-lever, and means for actuating said rockable arm.

2. In a device of the character described, a vehicle, a vertical bearing carried thereby, a rockable rod held in said bearing, there being lateral extensions at the ends of said rod, a weight supported by one of said extensions, a weight-stem, an operating-arm adapted to engage with said weight-stem, a spring connecting said arm with said vehicle, a brake-lever, and a cable connecting said operating-arm and said brake-lever.

3. In a device of the character described, a cab, a bearing, a vertically-disposed rockable rod in said bearing, lateral extensions at the ends of said rod, actuating means supported by one of said extensions, a stem extending upwardly from said actuating means, an operating-arm, means thereon for engaging said stem, a spring connecting said arm with said cab, a throttle-lever, and means for actuating said rockable rod.

4. In a device of the character described, a cab, a bearing, a vertically-disposed rockable rod in said bearing, lateral extensions at the ends of said rod, actuating means supported by one of said extensions, a stem extending upwardly from said actuating means, an operating-arm, means thereon for engaging said stem, a spring connecting said arm with said cab, a throttle-lever, a reciprocatory rod, a ground-casing in which said reciprocatory rod is supported, and means for actuating said reciprocatory rod to actuate said rockable rod.

5. In a device of the character described, a throttle-lever, a brake-lever, an operating-arm, connections between said operating-arm and said levers, a spring connected with said arm and with a fixed member, said spring tending normally to actuate said levers, a vertically-disposed rockable rod, lateral extensions on the ends of said rod, a weight supported by one of said extensions, and a clip on said operating-arm adapted to normally lock said arm in engagement with said weight.

6. In a device of the character described, a cab, a vertical bearing, a rockable rod in said bearing, there being lateral extensions on said rod, a weight supported by one of said extensions, a weight-stem projecting upwardly from said weight, an operating-arm, means for locking said arm normally in engagement with said stem, a spring connected with said arm and with said cab, a throttle-lever, means for connecting said operating-arm with said throttle-lever, a ground-casing, and a reciprocatory rod adapted to be projected therefrom into the line of travel of one of the extensions on said rockable rod.

7. In a device of the character described, a cab, a vertical bearing, a rockable rod supported therein, there being lateral extensions on the ends of said rod, a weight supported by one of said lateral extensions, a weight-stem extending upwardly from said weight, an operating-arm in normal engagement with said stem, a stub-shaft upon which said arm is mounted, a beveled gear on said stub-shaft, a plunger-casing, a crank-shaft in said plunger-casing, a gear on said shaft in mesh with said first-mentioned gear, a plunger-pocket having perforated walls, a plunger on said shaft, and means for actuating said rockable rod.

8. In a device of the character described, a cab, a vertical bearing, a rockable rod having lateral extensions at its ends, a weight supported by one of said extensions, a weight-stem, an operating-arm in normal engagement with said stem, means for actuating said operating-arm upon disengagement from said stem, a throttle-lever, means for connecting the operating-arm with said throttle-lever, and means for actuating said rockable rod.

9. In a device of the character described, a cab, a vertical bearing, a rockable rod having lateral extensions at its ends, a weight supported by one of said extensions, a stem extending upwardly from said weight, an operating-arm in normal engagement with said stem, means for actuating said operating-arm when disengaged from said stem, a throttle-lever, a brake-lever, means for connecting the operating-arm with said levers, in combination with a ground-casing, a reciprocatory rod adapted to project from said ground-casing, and means for actuating said rod.

10. In a device of the character described, a cab, a vertically-disposed bearing carried thereby, a vertical rod mounted in said bearing, there being lateral extensions at the ends of said rod, a weight supported by the upper lateral extension, a throttle-lever, means for actuating said throttle-lever, a ground-casing, a reciprocatory rod adapted to project from said ground-casing, and means for actuating said reciprocatory rod.

11. In a device of the character described, a cab, a vertical bearing, a rockable rod mounted in said bearing, there being lateral extensions on the ends of said rod, a weight supported by one of said lateral extensions, a weight-stem, an operating-arm, means for locking said arm to said weight-stem, a plunger-casing having a plunger-pocket, a plunger reciprocatory of said plunger-pocket, means for connecting said operating-arm with said plunger, and means for rocking said rockable rod.

12. In a device of the character described, a cab, a vertical bearing, a rockable rod having lateral extensions at its ends, a weight supported by one of said extensions, an operating-arm normally locked in position by said weight, means for actuating said operating-arm when disengaged from said weight, a throttle-lever, means for connecting said operating-arm with said throttle-lever, and means for actuating said rod.

13. In a device of the character described, a cab, a vertical bearing a rockable rod having lateral extensions at its ends, a weight supported by one of said extensions, a weight-stem projecting upwardly therefrom, an operating-arm in normal engagement with said weight-stem, means for actuating said operating-arm when disengaged from said weight-stem, a throttle-lever, a brake-lever, means for connecting the operating-arm with said levers, and means for limiting the speed of movement of said operating-arm.

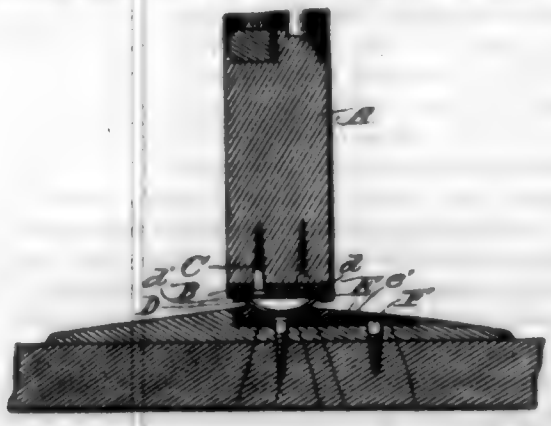
14. In a device of the character described, a cab, a vertical bearing, a rockable rod mounted in said bearing, there being horizontal extensions at the ends of said rod, a weight supported by one of said extensions, an operating-arm in normal engagement with said weight, means for actuating said operating-arm, a throttle-lever,

means for connecting the operating-arm with said throttle-lever, a plunger-casing, a crank-shaft therein, means for actuating said shaft upon movement of said operating-lever, a perforated plunger-pocket, a plunger reciprocatory therein, and a link connecting said plunger with said crank-shaft, in combination with means for actuating said vertical rod.

15. In a device of the character described, a cab, a rockable rod carried thereby, a weight normally supported in an elevated position by said rockable rod, an operating-lever, a throttle-lever, means connecting said operating-lever and said throttle-lever, a spring connecting said operating-lever with said cab, a plunger-casing having a perforated plunger-well, a plunger reciprocatory in said well, a crank-shaft on which said plunger is carried, and means for actuating said crank-shaft from said operating-arm.

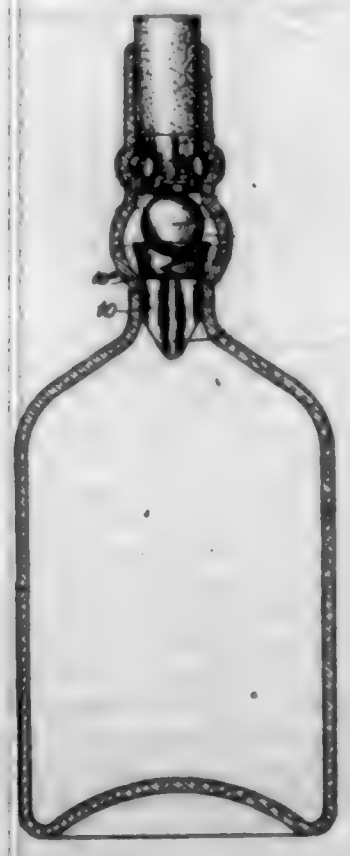
16. In a device adapted to actuate a throttle-lever in a locomotive, an operating-arm, connections between said operating-arm and said throttle-lever, a casing, a stub-shaft on said casing on which said arm is mounted, a gear on said stub-shaft, a crank-shaft in said casing, a gear thereon in mesh with said first-mentioned gear, a plunger-pocket forming a portion of said casing, a plunger reciprocatory in said pocket, and a link connecting said plunger with said crank-shaft.

815,638. SCREEN-DOOR FASTENING. ANDREW SANDBERG, Anaconda, Mont. Filed Nov. 15, 1905. Serial No. 288,071.



Claim.—In a screen-door fastening, the combination of a retainer-plate provided with a concavity and adapted to be fastened to the door-frame; with a spring member comprising a plate adapted to be fastened to the door and a bowed spring secured at one end to the plate its opposite end being free to flatten in rubbing contact with said plate and adapted to spring into and out of the concavity thereof, substantially as described.

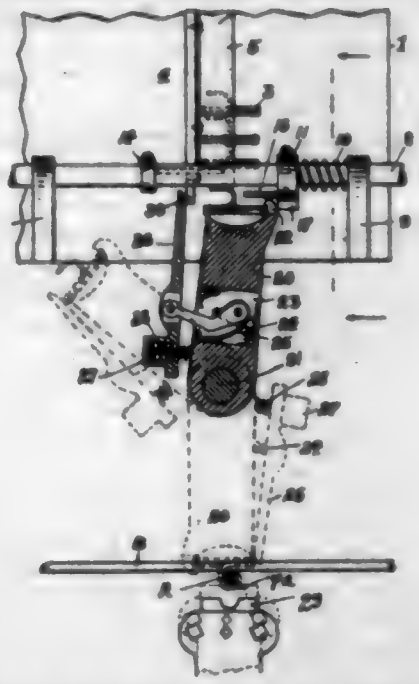
815,639. NON-REFILLABLE BOTTLE. AUGUST SCHENCK, Chicago, Ill., assignor of one-third to Margaret Fallon, Johanna Siegler, and Charles Cornacker, Chicago, Ill. Filed Apr. 27, 1905. Serial No. 257,630.



Claim.—1. In a non-refillable bottle, the combination of a bottle having a contracted throat forming a seating-face and terminating in a neck, the latter opening into a throat, a valve member adapted to seat against the seating-face, a closing-plug adapted to be locked into the bottle-throat, a ball between the closing-plug and the valve member, two rows of separated ribs around the lower end of the plug having their ends overlapping to guard against tampering with the valve member and ball, and rows of straight ribs extending at right angles thereto and adapted to abut against the inner wall of the bottle-throat to position the plug in place and provide spaces for the outflow of the liquid, substantially as described.

2. In a non-refillable bottle, the combination of a bottle, a valve member adapted to close the outlet for the bottle, and a closing-plug adapted to be locked into the throat of the bottle above the valve member and provided with two rows of separated ribs around the lower end of the plug, having their ends overlapping to guard against tampering with the valve member, and rows of straight ribs extending at right angles thereto and adapted to abut against the inner wall of the bottle-neck to position the plug in place and provide spaces for the outflow of liquid, substantially as described.

815,640. WIRE-FENCE MACHINE. GEORGE W. SCHOCK, South Bend, Ind. Filed June 26, 1905. Serial No. 267,042.



Claim.—1. In a wire-fence machine, the combination of a hopper for the wire ties, a feeding mechanism for successively releasing the ties from the hopper, and a swinging delivery device for receiving the ties from the hopper and positioning them on the wires.

2. In a wire-fence machine, the combination of a hopper for the wire ties, a feeding mechanism for successively releasing the ties from the hopper, and a swinging delivering device operating the feeding mechanism to release the ties and position the ties on the wires.

3. In a wire-fence machine, the combination of a hopper for the wire ties, a feeding mechanism for successively releasing the ties from the hopper, and a delivering device operating the feeding mechanism to release the ties from the hopper and having means to grip the tie and position it upon the wires.

4. In a wire-fence machine, the combination of a feeding mechanism for successively feeding the wire ties, and a delivering device operating to release the tie from the feeding mechanism and position it upon the wires.

5. In a wire-fence machine, the combination of a feeding mechanism for successively feeding the wire ties, and a swinging delivery member operating the feeding mechanism, adapted to receive the wire ties and position them on the wires, and a gripping-finger carried by said swinging member and having a slidable and pivotal connection therewith, and a die to clench the tie to the wires, substantially as specified.

6. In a wire-fence machine, the combination of a feeding mechanism, and a delivery device operating the feeding mechanism to deposit the tie on the delivery device and having means for gripping the tie and positioning it upon wires, and a die for clenching the tie to the wires, while held by the delivery device, whereby the delivering device serves as an anvil when the die operates upon the tie.

7. A wire-fence machine embodying a hopper for the wire ties, an endwise-movable rod having tie-supporting fingers carried there-

by and arranged in different vertical planes upon opposite sides of the hopper, whereby the ties are successively fed, and a swinging tie delivering and positioning device operating the endwise-movable rod to release a tie from the hopper, and a die for clenching the tie to the wires.

8. A wire-fence machine embodying a hopper for the wire ties, an endwise-movable rod, means carried by said rod and arranged to successively discharge the ties from the hopper, a spring to hold the rod in one position, and a swinging tie-delivering device having its free end disposed within the path of the endwise-movable rod and arranged to shift the latter to release a tie, and a die for clenching the tie to the wires.

9. A wire-fence machine embodying a hopper for the wire ties, means for successively feeding the ties, and a swinging delivering member for positioning the tie upon the wires having a gripping-finger pivoted thereto with its free end normally held pressed toward the free end of said swinging delivering member, a die for clenching the tie to the wires, said delivering member serving as an anvil for the die, and a lug projecting from the bottom of the hopper within the path of the free end of the gripping-finger, substantially as and for the purpose set forth.

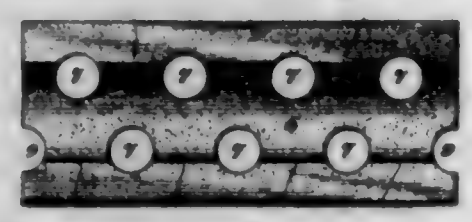
10. In a wire-fence machine, the combination with a feeding mechanism substantially as described, of a swinging delivering device having a gripping-claw adapted for engagement with the wire tie, a gripping-finger, an arm pivoted at one end to the gripping-finger and at its other end to the swinging delivering device, a spring secured to said arm to hold the free end of the gripping-finger normally projected beyond the free end of the delivering device, and a die for clenching the tie to the wire, the said delivering device acting as an anvil for said die during the clenching action, substantially as described.

11. A wire-fence machine embodying a hopper for the wire ties, means for successively feeding the ties from the hopper comprising tie-supporting fingers arranged in different vertical planes upon opposite sides of the hopper and shiftable transversely thereof, and a swinging tie delivering and positioning device operating the tie-feeding means and adapted to receive the tie from the hopper.

12. In a wire-fence machine, the combination with a feeding mechanism, of means for receiving the tie from the mechanism and positioning it upon wires, comprising a swinging member having a gripping-finger pivoted thereto, substantially as specified.

13. In a wire-fence machine, the combination with a feeding mechanism, of means for receiving the tie from the feeding mechanism and positioning it upon wires, comprising a swinging member, and a gripping-finger, a connection between the gripping-finger and the swinging member comprising an arm pivoted at opposite ends to the finger and to the member, and a spring operating upon said arm to hold the free end of the gripping-finger normally projected within the path of the clip, substantially as specified.

815,641. BUILDING-BLOCK. DAVID A. SCHOENEMAN, George, Iowa. Filed July 20, 1905. Serial No. 270,567.

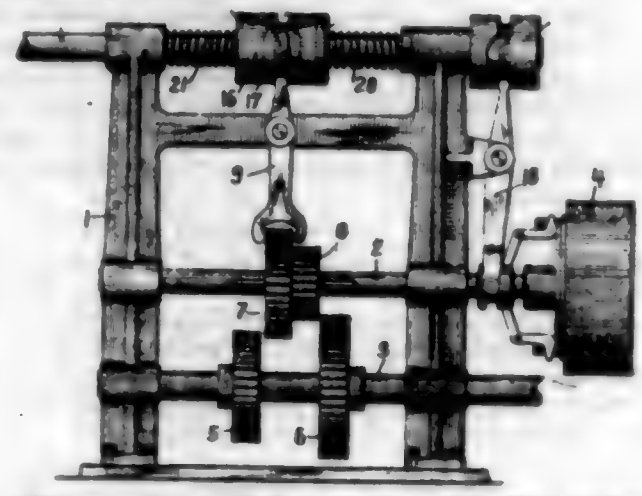


Claim.—1. In a building-block, a body having an intermediate longitudinal channel terminating short of the sides thereof, leaving thicker portions on its opposite sides, and a plurality of rows of transverse passage-ways extending through the thicker portions of the body on opposite sides of the longitudinal channel.

2. In a building-block, a body having an intermediate longitudinal central channel terminating short of the sides thereof, leaving thicker portions on its opposite sides and a plurality of rows of transverse openings extending through the thicker portions of the body on opposite sides of the longitudinal channel, said openings being disposed in staggered relation and communicating with the opposite side portions of the channel, and said openings furthermore being of less diameter than the web portions of the body that are formed between them.

3. A building-block, comprising a body having a longitudinal channel in one side extending from end to end thereof, but of less width than the body, leaving thicker portions on its opposite sides, said body also having transverse channels in its ends and in the thicker portions, which channels are provided with open sides, being arranged to coöperate with similar channels in adjoining blocks.

815,642. SPEED-CHANGER. WILLARD T. SEARS, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Sept. 28, 1905. Serial No. 280,587.



Claim.—1. In a speed-changer, the combination, substantially as set forth, of a first toothed member, a shaft, a sliding toothed member mounted on the shaft and adapted to move to and from engagement with the first toothed member, a cam, means for turning the cam, a lever connecting the cam and sliding member whereby the turning of the cam shifts the sliding member, and a spring coacting with the cam and lever to permit the sliding member to rest while the cam is turning and tending to move the sliding member to position of engagement with the first toothed member.

2. In a speed-changer, the combination, substantially as set forth, of a first toothed member, a shaft, a sliding toothed member mounted on the shaft and adapted to move to and from engagement with the first toothed member, a cam, means for turning the cam, a lever connecting the cam and sliding member whereby the turning of the cam shifts the sliding member, a spring coacting with the cam and lever to permit the sliding member to rest while the cam is turning and tending to move the sliding member to active position, and a cam member upon said cam arranged to operate upon said lever independent of the action of the spring, whereby the turning of the cam results in the positive throwing of the sliding member out of engagement with the first toothed member.

3. In a speed-changer, the combination, substantially as set forth, of a shaft, a sliding toothed member, a shifter for moving the sliding toothed member, a lobed cam for operating the shifter, means for moving the cam, and springs engaging the cam and holding its lobes in normal position and adapted to yield and permit the retreat of the lobes.

4. In a speed-changer, the combination, substantially as set forth, of a shaft, a sliding toothed member, a shifter for moving the sliding toothed member, a lobed cam for operating the shifter, means for moving the cam, springs engaging the cam and holding its lobes in normal position and adapted to yield and permit the retreat of the lobes, a friction-clutch upon the shaft, a shifter for actuating the clutch, a cam for operating the shifter of the clutch, and means connecting said two cams to cause them to move in unison.

5. In a speed-changer, the combination, substantially as set forth, of a shaft, a sliding toothed member, a shifter for moving the sliding toothed member, a lobed cam for operating the shifter, means for moving the cam, and springs holding the cam-lobes yieldingly to normal position.

6. In a speed-changer, the combination, substantially as set forth, of a shaft, a sliding toothed member, a shifter for moving the sliding toothed member, a lobed cam for operating the shifter, a rotary adjusting-shaft carrying said cam, and springs engaging said cam and serving to yieldingly hold its lobes to normal position.

7. In a speed-changer, the combination, substantially as set forth, of a driving-shaft, a sliding toothed member, a shifter for moving the sliding toothed member, a lobed cam for operating the shifter, a rotary adjusting-shaft carrying said cam, springs engaging said cam and serving to yieldingly hold its lobes to normal position, a friction-clutch on the driving-shaft, a shifter for the clutch, and a cam on said adjusting-shaft for operating said clutch-shifter.

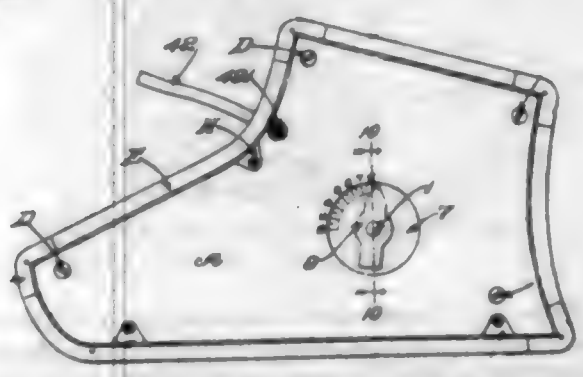
8. In a speed-changer, the combination, substantially as set forth, of a shaft, a toothed sliding member, a shifter for moving the sliding toothed member, an adjusting-shaft, a circumferentially-grooved cam-body on said shaft, tongues sliding in said cam-body

and carrying lobes forming portions of the walls of said groove, and springs holding said tongues yieldingly to normal position.

9. In a speed-changer, the combination, substantially as set forth, of a driving-shaft, a sliding toothed member, a shifter for moving the sliding toothed member, an adjusting-shaft, a circumferentially-grooved cam-body on said adjusting-shaft, tongues sliding in said cam-body and carrying lobes forming portions of the walls of said groove, springs holding said tongues yieldingly to normal position, a friction-clutch on the driving-shaft, a shifter for the clutch, and a cam on said adjusting-shaft for operating the clutch-shifter.

10. In a speed-changer, the combination, substantially as set forth, of a sliding toothed member, a shifting device for shifting said member positively in one direction, and a spring in the shifting device for elastically shifting said member in the opposite direction.

815,648. IMPLEMENT FOR CUTTING LEATHER AND THE LIKE. EDWARD R. SHAW, Lynn, Mass. Filed Jan. 9, 1905. Serial No. 240,183.



Claim.—1. An implement of the character described, comprising a bed-plate, movable edge pieces surrounding the said bed-plate, and actuating means for the said movable edge pieces.

2. An implement of the character described, comprising a bed-plate of a shape substantially like that of the piece of leather to be cut, movable edge pieces surrounding the said bed-plate and actuating means therefor.

3. An implement of the character described, comprising a bed-plate of a shape substantially like that of the pieces of leather to be cut, movable edge pieces and corner-pieces surrounding the said bed-plate and actuating means therefor.

4. An implement of the character described comprising a bed-plate side and corner pieces of proper contour outside of the said bed-plate and movable toward and away from it to give the pattern the desired size, and actuating means operating upon the said corner-pieces to move them to their various positions.

5. An implement of the character described comprising a bed-plate, side and corner pieces of proper contour outside of the said bed-plate and movable toward or away from it to give the pattern the desired size, guiding means connecting the said side and corner pieces, and actuating means for the said side and corner pieces.

6. In an implement of the character described, the combination with a bed-plate, edge and corner pieces of proper contour surrounding the said bed-plate and movable in relation thereto, of actuating means for the said edge and corner pieces comprising a crank-piece, connecting-rods pivotally connected at one end to the said edge and corner pieces, and at the other end to the said crank-piece.

7. In an implement of the character described, the combination with a bed-plate, edge and corner pieces of proper contour surrounding the said bed-plate and movable in relation thereto, of actuating means for the said edge and corner pieces comprising a crank-piece, connecting-rods pivotally connected at one end to the said edge and corner pieces, and at the other end to the said crank-piece, and adjusting means for the said connecting-rods.

8. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods for the said edge pieces, guiding-posts pivotally mounted on the said bed-plate for the said connecting-rods, and actuating means for the said connecting-rods.

9. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods for the said edge pieces, guiding-posts pivotally mounted on the said bed-plate and provided with holes in which the said connecting-rods slide, and actuating means for the said connecting-rods.

10. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods for the said edge pieces, guiding means for the said connecting-rods, and a crank-piece actuating the said connecting-rods.

11. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods hinged to the said edge pieces, guiding means for the said connecting-rods, and a crank-piece pivotally mounted on the said bed-plate and actuating the said connecting-rods.

12. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods hinged to the said edge pieces, a crank-piece actuating the said connecting-rods, and a size-indicating finger, moving in unison with the said crank-piece.

13. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods hinged to the said edge pieces, a crank-piece actuating the said connecting-rods, a pivot therefor, and a size-indicating finger fast on the said pivot and movable therewith.

14. An implement of the character described comprising a bed-plate, edge pieces of proper contour, connecting-rods hinged to the said edge pieces, adjusting means for adjusting the length of the said connecting-rods, and a crank-piece actuating the said connecting-rods.

15. An implement of the character described comprising an adjustable pattern, and cutting mechanism movable with the said pattern for adjustment therewith, and independently of the said pattern to perform the cutting operation.

16. An implement of the character described comprising a pattern, and flexible knives following the edge contour of the said pattern and movable independently of the said pattern to perform the cutting operation.

17. An implement of the character described comprising an adjustable pattern and flexible knives following the edge contour of the said pattern and movable independently of the said pattern to perform the cutting operation.

18. An implement of the character described comprising a bed-plate movable edge pieces of proper contour movable toward or away from the said bed-plate to form a pattern of the desired size and flexible knives following the contour of the said movable edge pieces and movable independently of the said pattern to perform the cutting operation.

19. An implement of the character described comprising a bed-plate movable edge pieces of proper contour movable toward or away from the said bed-plate to form a pattern of the desired size and flexible knives following the contour of the said movable edge pieces and movable independently of the said pattern to perform the cutting operation, said flexible knives being mounted on the said edge pieces and movable therewith.

20. An implement of the character described, comprising a bed-plate, edge pieces of proper contour movable toward or away from the said bed-plate to form a pattern of the desired size, and flexible knives following the contour of the said edge pieces, and arranged in pairs for the upper and lower faces of the implement.

21. An implement of the character described, comprising a bed-plate, edge pieces of proper contour outside of the said bed-plate and movable toward or away from the said bed-plate to form a pattern of the desired size and flexible knives following the contour of the said edge pieces and arranged in pairs each pair comprising two overlapping knives.

22. The cutting mechanism for an implement of the character described comprising a pair of flexible knives, guiding and supporting means for the said knives, and operating means imparting an endwise movement to the said knives during the cutting operation.

23. The cutting mechanism for an implement of the character described comprising a pair of flexible knives, swinging links supporting said knives, racks fast to each of said knives, and a sliding connection between the said racks.

24. The cutting mechanism for an implement of the character described comprising a pair of flexible knives, swinging links supporting said knives, racks fast to each of said knives, a sliding connection between the said racks, and operating means for said knives imparting an endwise movement thereto.

25. The cutting mechanism for an implement of the character described comprising a pair of flexible knives, guiding and supporting means for the said knives, a rack fast to each of said knives, and a sector of a gear engaging the said rack and operating means for the said sector.

26. The cutting mechanism for an implement of the character described comprising a pair of flexible knives, guiding and supporting means for the said knives, a rack fast to each of said knives, a sector of a gear engaging the said rack and a fluid-pressure-operated cylinder piston-rod and intermediate connections operating the said sector.

27. The cutting mechanism for a reversible implement of the character described, comprising two pairs of knives, one for rights and one for lefts, racks for each of the said knives a sector of a gear pivoted between the pairs of racks, and caused by gravity to engage the lower rack whenever the implement is turned over and operating means for the said sector.

28. The cutting mechanism for an implement of the character described, comprising a pair of flexible knives, guiding and supporting means for the said knives, operating means imparting endwise movement to the said knives in one direction during the cutting operation, and retracting means as a spring for the said knives.

29. The cutting implement comprising cutting mechanism operated by a fluid-pressure-actuated piston and cylinder, a cutter connecting-rod provided with a shoulder, a slidable connection on the said connecting-rod and engaged by the said shoulder, a pricker-pin, a cam-surface engaging the head of said pricker-pin, and a connecting-rod between the said slidable connection and the said cam-surface whereby the said cam-surface is moved during a portion only of the stroke of the cutter connecting-rod.

30. The cutting implement comprising flexible edge knives prickers, fluid-pressure-actuated operating means for the said edge knives, and prickers, and a control-valve controlling the supply of fluid-pressure to the operating means for the edge knives and prickers.

31. The reversible cutting implement comprising a pair of bed-plates, edge pieces of proper contour movable toward or away from the said bed-plates to form a pattern of the desired size, and flexible knives following the edge contour of the said pattern, arranged in sets on the top and bottom sides of the said implement.

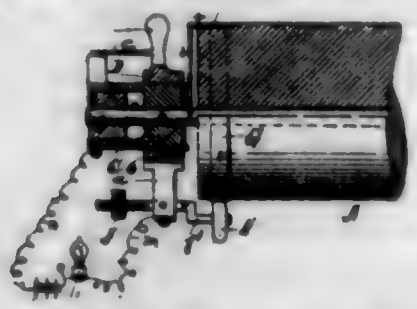
32. The implement of the character described comprising an adjustable pattern, flexible knives carried on the edge of said pattern and antifriction-bearings for the said flexible knives.

33. An implement of the character described, comprising an adjustable pattern, flexible knives following the edge contour of the said pattern, pricking mechanism, and center-marking mechanism.

34. An implement of the character described, comprising a pattern, flexible knives, following the edge contour of the said pattern, guiding and supporting means, and fluid-pressure-operated actuating means for the said knives.

815,644. ADJUSTABLE LINE-PREDETERMINING DEVICE FOR TYPE-WRITERS.

Christopher A. Sera, Philadelphia, Pa., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 21, 1904. Serial No. 209,074.



Claim.—1. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a device adjustable about the platen-axis, a part pivoted upon said adjustable device and running upon the platen or paper thereon, means coöperating with said pivoted part to make a signal when said pivoted part runs off from the paper, and a scale and index, one upon the platen-frame and the other upon said adjustable part for indicating the extent of bottom margin upon the written sheet.

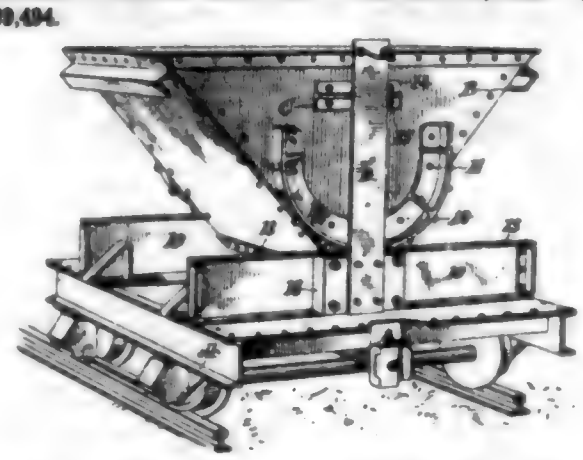
2. In a type-writing machine, the combination with a platen and a frame in which it is journaled, of a device adjustable concentrically with the platen and having at its lower end a pivoted finger or part for running upon the platen, and at its upper end a handle and index, means coöperating with said finger to indicate when it runs off from the paper, and a scale upon the platen-frame to coöperate with said index.

3. In a type-writing machine, the combination with a platen and a frame in which the platen is journaled, of a device adjustable about the platen-axis, a finger pivoted upon said device and running upon the platen or the paper thereon, and included in an electrical circuit, a signal also included in said circuit, a contact-strip also included in said circuit and encircling the platen so as to be engageable by said finger, an index upon said adjustable device, and a scale upon the platen-frame.

4. In a type-writing machine, the combination with a platen and a frame in which the platen is journaled, of a device adjustable about the platen-axis, a finger pivoted upon said device and running upon the platen or the paper thereon, and included in an electrical circuit, a signal also included in said circuit, a contact-strip also included in said circuit and encircling the platen so as to be engageable by said finger, an index upon said adjustable device, and a scale upon the platen-frame, a counterweight for said finger, and an antifriction-roll mounted upon said finger to run upon said contact-strip.

815,645. LATCH DEVICE FOR DUMPING STRUCTURES.

Charles F. Seeley, Globe, Ariz. Filed Nov. 28, 1905. Serial No. 289,494.



Claim.—1. A car-platform, a dumping-body carried thereby, a keeper secured to one member, and provided with a recess and having its surface inclined in opposite directions from the end portions of said recess, and a spring latch-bar attached to the coöperating member and arranged normally for locking engagement with the recess of the keeper.

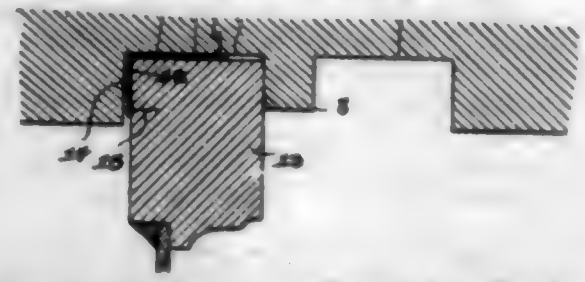
2. The combination with the platform of a car and a body mounted to rock thereon, of a latch device consisting of a keeper attached to one side of the body, extending outward therefrom and provided with a recess in its outer edge, and a latch-bar of spring material secured at one end to the platform, the other end portion of the latch-bar being free and normally fitted in the recess in the keeper.

3. The combination with a car-platform and a rocking body mounted to rock thereon, of a latch device consisting of a keeper T-shaped in cross-section, which keeper is secured to one side of the body, the outer edge of its web member being provided with a recess and having its surface inclined in opposite directions from the end portions of the said recess, and a latch consisting of a spring-bar secured at its lower end to the platform, being otherwise free, the upper portion of which latch-bar normally fits in the recess of the said keeper, and a handle at the upper end of the bar.

4. A platform, a dumping-body mounted to rock thereon, a keeper secured to one member and provided with a recess in its outer edge, the surface of the keeper being inclined in opposite directions from the end portions of said recess, and a latch-bar of spring material attached to the coöperating member and normally engaging the recess in the keeper, the said dumping-body being adapted to rock in either direction when the latch-bar is disengaged from the keeper, the latch-bar automatically seating itself in the recess of the keeper when the body is restored to its normal position.

815,646. WEATHER-STRIP.

Michael M. Shellabergh, De Kalb, Ill. Filed Aug. 28, 1905. Serial No. 276,068.



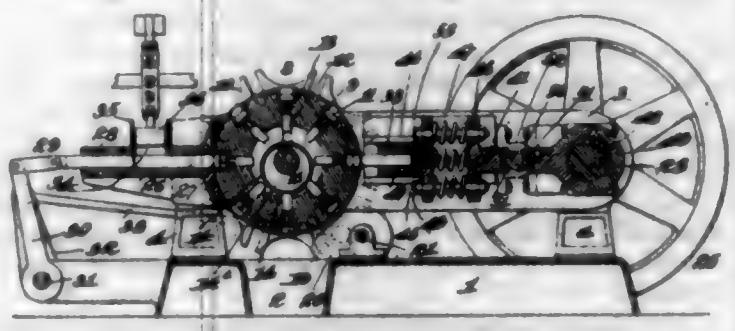
Claim.—1. A weather-strip comprising a bearing-strip secured along one edge to the window-casing and having a longitudinal fulcrum-rib adapted to bear against the latter and on its opposite longitudinal edge a lip adapted to overlap one face of the sash, in combination with a guiding and sealing device secured to the same face of the sash and having a narrow groove receiving said lip, substantially as described.

2. A weather-strip comprising a transversely-elastic metal strip secured along one edge to the window-casing, said strip having a longitudinal fulcrum-rib pressed therein adapted to bear against the casing, and, on its opposite longitudinal edge, an integral lip adapted to overlap one face of the sash, in combination with a guiding and sealing device comprising a metal strip bent double on its longitudinal median line, said last-named strip being secured to a face of the sash adjacent to its closed edge and receiving between its sides the lip of said bearing-strip, substantially as described.

3. A weather-strip comprising a transversely-elastic bearing-strip secured along one edge to the bottom of the casing-groove, and having on its opposite longitudinal edge a lip adapted to overlap one face of the sash, in combination with a guiding and sealing strip adapted to be secured to the face of the sash and to engage said lip, substantially as described.

4. A weather-strip comprising a transversely-elastic metal bearing-strip secured along one edge to the bottom of the casing-groove, said strip having a fulcrum-rib adapted to bear against the bottom of the casing-groove and, on its opposite longitudinal edge, a lip to overlap one face of the sash, in combination with a guiding and sealing device comprising a metal strip bent double on its longitudinal median line, said last-named strip being secured to a face of the sash adjacent to its closed edge and receiving between its sides the lip of said bearing-strip, substantially as described.

815,647. **BRIQUETING-MACHINE.** WILLIAM SIMPKIN, Orange, N. J. Filed Apr. 30, 1903. Serial No. 155,069.



Claim.—1. In a briqueting-machine, the combination with an intermittently-movable mold-wheel of an eccentric-shaft, an eccentric thereon, a spring-block connected to said eccentric, a plunger coöperating with the mold a star-wheel carried by the mold-wheel, a driving-shaft, a crank on the driving-shaft, a pin on said crank coöperating with said star-wheel, an elastic connection between said plunger and spring-block, and means for adjusting the plunger with respect to the spring-block and a guide-bar carried by said spring-block for supporting the plunger, substantially as set forth.

2. In a briqueting-machine, the combination with a mold-wheel, of an eccentric-shaft, an eccentric thereon, a spring-block connected to said eccentric, a plunger coöperating with the mold, an elastic connection between said plunger and spring-block, and a guide-bar carried by said spring-block for supporting said plunger, substantially as set forth.

3. In a briqueting-machine, the combination with a mold-wheel, of an eccentric-shaft, an eccentric on said shaft, a spring-block, a guide-bar connected to said spring-block, a plunger mounted in said guide-bar, an elastic connection between said plunger and spring-block, stationary guides for supporting the spring-block and guide-bar, and removable gibs for maintaining said spring-block and guide-bar on said guides, substantially as set forth.

4. In a briqueting-machine, the combination with a mold-wheel, of a spring-block, means for reciprocating the same, a guide-bar connected to said spring-block, a plurality of plungers in said guide-bar, and independent elastic connections between each of said plungers and the spring-block, substantially as set forth.

5. In a briqueting-machine, the combination with a mold-wheel, of a spring-block, means for reciprocating the same, a guide-bar connected to said spring-block, a plurality of plungers in said guide-bar, independent elastic connections between each of said plungers and the spring-block, and means for independently adjusting said plungers with respect to the spring-block, substantially as set forth.

6. In a briqueting-machine, the combination with a mold-wheel, of an eccentric-shaft, an eccentric on said shaft, a spring-block, a plunger connected to said spring-block, a compression-pin between said eccentric and spring-block, and eyeblocks between said eccentric and spring-block, substantially as set forth.

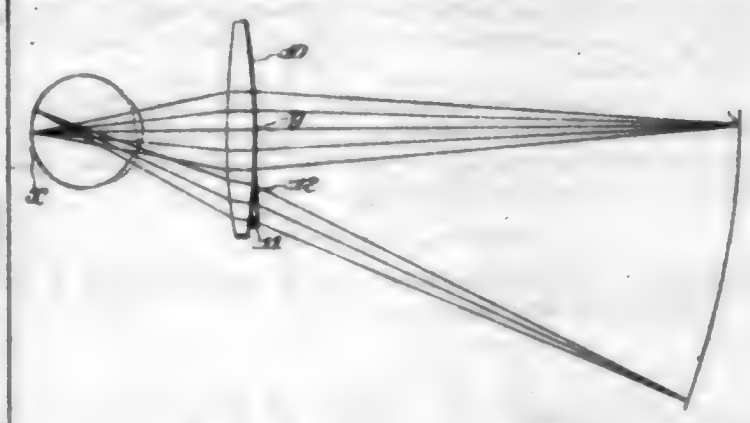
7. In a briqueting-machine, the combination with a mold-wheel, of an eccentric-shaft, an eccentric on said shaft, a spring-block, a plunger connected to said spring-block, a compression-pin between said eccentric and spring-block, eyeblocks between said eccentric and spring-block, and bushings on the eccentric and spring-block engaging said compression-pin, substantially as set forth.

8. In a briqueting-machine, the combination with mold-wheel carrying a plurality of radial molds, an ejecting-cup in each mold, and a plunger for compressing the material in each mold, of a cylinder mounted in the interior of the mold-wheel and revoluble therewith and engaging on its periphery with means for operating the ejecting-cups, substantially as set forth.

9. In a briqueting-machine, the combination with a mold-wheel carrying a plurality of radial molds, an ejecting-cup in each mold, and a plunger for compressing the material in each mold, of a cylinder mounted on stationary eccentrics within the mold-wheel and revoluble with the same for operating the ejecting-cups, substantially as set forth.

10. In a briqueting-machine, the combination with a mold-wheel carrying a plurality of radial molds, an ejecting-cup in each mold, and a plunger for compressing the material in each mold, of a cylinder mounted on stationary eccentrics within the mold-wheel, a radial slot in the interior of said mold-wheel, and a lug projecting from the cylinder engaging said radial slot, substantially as set forth.

815,648. **EYEGLASS-LENS.** SYLVESTER SLAGLE, State College, Pa. Filed Apr. 26, 1905. Serial No. 257,480.



Claim.—1. In eyeglasses or spectacles of the class described, an auxiliary lens carried by each main lens, the focal distance through that portion of the glasses which includes the auxiliary lens being the same as the focal distance through the main lens.

2. In eyeglasses or spectacles of the class described, an auxiliary lens carried by each main lens, and of varying thickness to correct the prismatic effect of the main lens, the focal distance through that portion of the glasses which includes the auxiliary lens being the same as the focal distance through the main lens.

3. In eyeglasses or spectacles of the class described, an auxiliary lens carried by each main lens and varying in thickness in a diametrical plane extending from one edge of the lens to the other, such diametrical plane being arranged on a line radiating from the optical center of the main lens, the focal distance through that portion of the glasses which includes the auxiliary lens being the same as the focal distance through the main lens.

4. In eyeglasses or spectacles of the class described, auxiliary lenses carried one by each of the main lenses and having their optical centers or axes nearer to each other than the optical centers or axes of the main lenses, said auxiliary lenses being graduated in thickness in diametrical planes extending from edge to edge of such auxiliary lenses, the diametrical planes being disposed on lines radiating from the optical centers of the main lenses, and the focal distance through that portion of the glasses which includes the auxiliary lenses being the same as the focal distance through the main lenses.

5. In eyeglasses or spectacles of the class described, an auxiliary lens substantially of half-meniscus form secured to the outer face of each main lens, the focal distance through that portion of the glasses which includes the auxiliary lens being the same as the focal distance through the main lens.

6. In eyeglasses or spectacles of the class described, an auxiliary lens approximately of half-meniscus form and secured to the outer face of each main lens, the thicker edge of the half-meniscus being so arranged with respect to the optical center of said main lens as to correct prismatic effects, the focal distance through that portion of the glasses which includes the auxiliary lens being the same as the focal distance through the main lens.

7. In eyeglasses or spectacles of the class described, distance and reading lenses of uniform focal distance, the optical centers of

the auxiliary lenses being closer together than the optical centers of the distance-lenses.

815,649. PUTTING-MAT. EVERETT SMITH, Schenectady, N. Y. Filed Apr. 15, 1905. Serial No. 255,705.



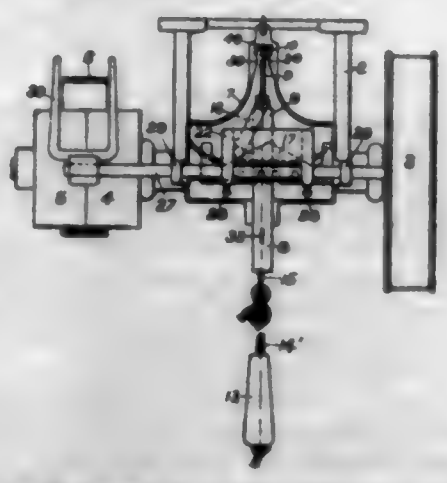
Claim.—1. As an article of manufacture, a putting-mat having one or more inclined planes, and an object-receiving trap of gradually-increasing diameter from top to bottom.

2. As an article of manufacture, a putting-mat of molded asbestos or other suitable material, having one or more inclined planes, and an object-receiving trap gradually increasing in diameter from top to bottom, substantially as shown and described.

3. A putting-mat of flexible, resilient material having an orifice located therein, the top portion of said orifice having a thin, yielding striking-surface, and inclined planes leading from the base of the mat to the orifice.

4. As a new article of manufacture, a putting-mat of flexible, resilient material having a part of its upper surface flat, an orifice located in said flat portion, and inclined planes leading from the base of the mat to the orifice and flat portion.

815,650. SHIFTING DEVICE. EDWIN C. SMITH, Providence, R. I. Filed Nov. 17, 1904. Serial No. 233,178.



Claim.—1. The combination with a slidable member and a pawl mounted thereon, of a cam to deflect the pawl, and a second slidable member engaged and moved by the pawl in its deflection.

2. The combination with a belt-shipper and rod therefor, of a slide secured to said rod, a pawl to move the slide, and means to actuate the pawl including a cam to effect its deflection, a slide to carry the pawl, and a handle to move the slide.

3. The combination with a belt-shipper and rod therefor, of a slide, a pawl to move the slide, and a cam to initiate a deflection of the pawl and later to be shifted by it, and means to move the pawl.

4. The combination with a belt-shipper 30 and shipper-rod 27, of the shipper-slide 22 having posts 31 and 32, and recesses 34 and 35, a cam having posts 24 and 26, and recesses 36 and 37, a slide 8, having a projection 33 to engage either the recesses 34 and 36 or 35 and 37, and a pawl coacting with the slide 8 and the cam 17 to shift the shipper-slide 22 in the manner described.

5. The combination of a movable member adapted to move initially in a straight line in one direction, and a second member supported to move in a straight line in a different direction, with means separate from and independent of the second member whereby the first is deflected from its initial direction of movement to actuate the second member.

6. The combination with a movable member adapted to move initially in a straight line in one direction and a second member to be reciprocated between extremes, and on a straight path of different direction from that of the initial movement of the first member, of means separate from the second member, to deflect the movement of the first from its initial path, to engage and move the second member reciprocally as described.

7. The combination with a movable member adapted to move initially in one direction, of means to first deflect it laterally from its initial direction, and means to combine with the lateral deflection a movement the reverse of the initial movement, as described, to secure the maximum deflection of the said member with a minimum of movement in the direction of its initial motion.

8. The combination with a movable member adapted to move initially in one direction, of a second member supported to move in a different direction, and means to so deflect the first member from the direction of its initial motion that it first moves the second member, and before completing the movement of said member, causes the deflecting means to be shifted in its position.

9. The combination with a member adapted to have a definite extent of movement and a member to cause such movement, of one means to move the second member to partially accomplish the movement of the first, and other means to complete the said movement.

10. The combination with a member adapted to have a definite extent of movement, of a pawl to move said member, means to direct the pawl to partially accomplish said movement, and other means to direct the pawl to complete it.

11. The combination with one member adapted to have a back-and-forth movement and second movable member capable of an initial motion in a direction different from that of the first member, of means separate from each member for so deflecting the motion of the second that it acts in the line of motion of the first, but in alternately-opposite directions to impart to it its back-and-forth movement.

12. The combination with a belt-shipper and rod therefor, of a shipper-slide upon the rod, a second slide and handle therefor, a pawl mounted on the second slide and adapted to engage the shipper-slide, a cam to deflect the pawl and cause such engagement, a track to extend the deflection of the pawl, and means to lock the shipper-slide in its extremes of movement.

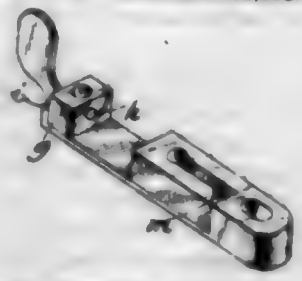
13. The combination with a movable member and a second member movable thereon, of a third member acted on and moved by the second and a fourth member to determine the direction of action of the second.

14. The combination with a movable member and a second member movable thereon, of a third member acted on by the second and reciprocated by it within a certain range of movement, a fourth member to determine the direction of action of the second, and means to lock the third member at either extreme of its range so that it may not move except upon the movement of the first member.

15. The combination with a movable member and a second member movable thereon, of a third member acted on by the second and reciprocated by it within a certain range of movement, a fourth member to determine the direction of action of the second, and means to lock the third and fourth in position so they may not move except upon the movement of the first member.

16. The combination with a belt-shipper and rod therefor, of a shipper-slide upon the rod, a second slide and handle therefor, a cam, a pawl mounted upon the second slide and adapted to first engage the cam, then engage and shift the shipper-slide causing, toward the end of movement of the shipper-slide, the shifting of said cam, a track to impart to the pawl a further movement to extend its range of action, and means to lock the shipper-slide and cam when they are shifted.

815,651. ASSEMBLER-SLIDE BRAKE. LEE F. SMYTH, Buffalo, N. Y. Filed Mar. 30, 1905. Serial No. 253,231.



Claim.—1. A brake having a shoe or gripping member adapted to engage one side of a part to be restrained, a block or shoe provided with a plurality of gripping edges adapted to engage the opposite side of said part, and means for securing said block in different positions, substantially as set forth.

2. A brake having a shoe or gripping member adapted to engage one side of a part to be restrained, a reversible block or shoe provided on different portions thereof with gripping edges adapted

to engage the opposite side of said part, and means for securing said shoe in place, substantially as set forth.

3. A brake comprising a body having a shoe or gripping member adapted to engage one side of a part to be restrained, a block or shoe having a plurality of gripping-surfaces adapted to engage the opposite side of said part, a fastening member for said block passing through the same, and a stop for preventing turning of said block on its fastening means, substantially as set forth.

4. A brake comprising a body provided with a stop-flange, a block or shoe abutting against said flange and having a plurality of gripping edges adapted to engage one side of a part to be retained, fastening means for said block, and a second gripping member also mounted on the brake-body and adapted to engage the opposite side of said part, substantially as set forth.

5. A brake comprising a body having a shoe or gripping member adapted to engage one side of a part to be restrained, a block or shoe having a plurality of gripping edges adapted to engage the opposite side of said part and provided with screw-holes passing through different sides of the block, and a fastening-screw adapted to pass through either of said holes into the brake-body, substantially as set forth.

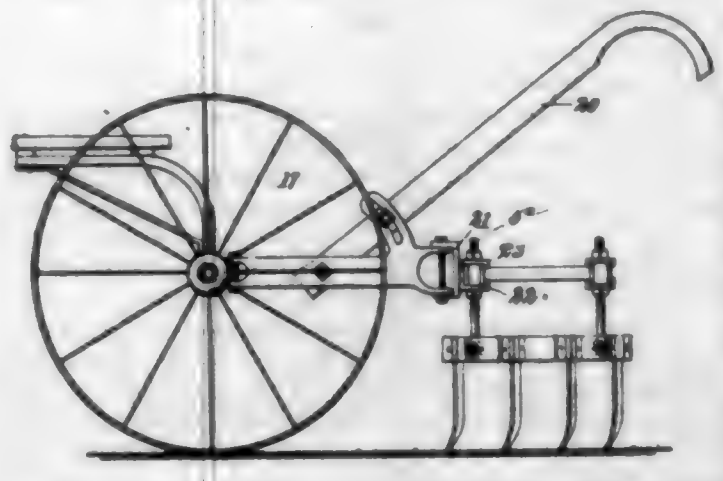
6. A brake comprising a body having a shoe or gripping member adapted to engage one side of a part to be restrained, a block adjustable relatively to said shoe and having a plurality of gripping edges adapted to engage the opposite side of said part, and means for securing said block in different positions, substantially as set forth.

7. A brake comprising a body having a longitudinal slot, spaced shoes or blocks mounted on the body and adapted to engage opposite sides of a part to be restrained, one of said blocks being reversible and having a longitudinal slot and provided on opposite sides with stop-lugs either of which is adapted to engage the slot of the brake-body, and a fastening member passing through the slot of the reversible block into the brake-body, substantially as set forth.

8. An assembler-slide brake carrying spaced gripping shoes or blocks and provided at its upper end with a forwardly-extending finger-piece, substantially as set forth.

9. An assembler-slide brake, comprising a body having gripping edges, a bracket having a longitudinal slot and a finger-piece, a set-screw passing through said slot and a spring connecting said body with the bracket, substantially as set forth.

815,652. BEET-CULTIVATOR. OLE SORENSON, Fowler, Colo. Filed Sept. 5, 1905. Serial No. 277,001.



Claim.—1. In a cultivator in combination, a pair of transverse beams, hoe-bars, saddle-plates slidably mounted upon the upper and lower sides of said beams and supporting said hoe-bars, and means for clamping said beams between said saddle-plates in different positions.

2. In a cultivator in combination, a pair of transverse beams comprising parallel bars with openings formed therebetween, bolts passing upwardly through said openings, saddle-plates through which said bolts pass and slidably mounted on the upper and lower sides of said beams, nuts carried on said bolts and seating against said saddle-plates, and inclined hoe-bars attached to said bolts.

3. In a cultivator in combination, a pair of transverse beams, a pair of inclined hoe-bars having a hinged connection therebetween, saddle-plates adapted to clamp to said beams and supporting said hoe-bars, said hoe-bars being disposed at the sides of the said main bars, and saddle-plates attached to said beams and supporting said side hoe-bars.

815,653. ALKYLAMINOACETOPYROCATECHOL AND PROCESS OF MAKING SAME. FRIEDRICH STOLL, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Aug. 31, 1904. Serial No. 223,536.

Claim.—1. The process herein described for the manufacture of alkylaminoacetopyrocatechol, which consists in substituting for the halogen of chloroacetopyrocatechol the radical of a primary aliphatic amin by allowing the chloroacetopyrocatechol to digest with primary aliphatic amins.

2. The process herein described for the manufacture of alkylaminoacetopyrocatechol, which consists in substituting for the halogen of chloroacetopyrocatechol the radical of a primary aliphatic amin by gently heating the chloroacetopyrocatechol with primary aliphatic amins.

3. As new products, the alkylaminoacetopyrocatechols, being white crystalline compounds, very little soluble in water, alcohol and ether, melting at a high temperature with decomposition, forming with hydrochloric acid salts readily soluble in water, crystallizing from alcohol, the aqueous solution of the salt yielding with ferric chlorid an emerald-green coloration; ammonia precipitating from the solution the aminoketone.

815,654. BOTTLE-LOCKING DEVICE. EDWARD F. STROBEL, Pittsburg, Pa. Filed June 13, 1905. Serial No. 265,093.



Claim.—1. A contrivance of the character described, comprising an adjustable clamp effective to engage the top edge of the bottle or jar, and a locking dog or lever fulcrumed upon said clamp, and a notched fixture, said lever or dog having one arm effective for engagement with a notch of said fixture.

2. A contrivance of the character described, comprising a vertically-sliding primary clamp member effective to engage the jar or bottle at its upper edge, a spring-cushioned supplemental clamp arranged in said clamp, for engagement with the top or cover of the jar or bottle, and means for securing said primary clamp, with said supplemental clamp, in locked position.

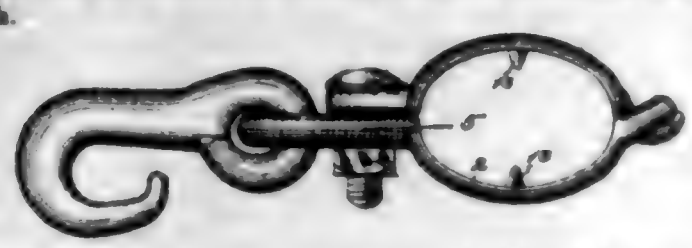
3. A contrivance of the character described, comprising a primary clamp effective for engagement with the upper edge of the bottle, a supplemental clamp yieldingly cushioned within said primary clamp, a right-angled dog or lever connected to said supplemental clamp and fulcrumed upon said primary member, and a notched plate, said dog or lever having one end adapted to be locked into engagement with said notched plate.

4. A contrivance of the character described, comprising a sliding primary clamp member for engagement with the bottle at its upper edge, a spring-cushioned supplemental clamp member within said primary clamp member, a notched plate, a right-angled dog connected to said supplemental clamp member, and fulcrumed upon said primary clamp member and effective to engage said notched plate, and an unlocking device effective to engage said lever and retract it from the notches of said plate.

815,655 DRAFT CONNECTION FOR VEHICLES. ADA T. STUTSON, Columbus, Ohio. Filed Apr. 19, 1906. Serial No. 312,405.

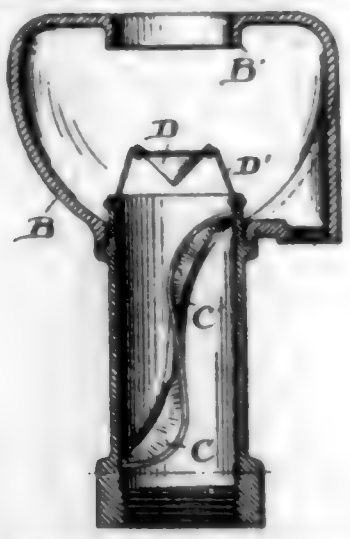
Claim.—1. In a device of the character described, a pair of cast members pivotally connected at one end and provided at the opposite end with integral ears formed with registering openings, means passed through the openings for securing the ears together, an eye-piece formed integral with one of the ears, and a hook directly en-

gaged with the eyepiece and having a universal connection therewith.



2. A device of the character described embodying a pair of arcuate members, one member formed with a loop and the other member formed with a tongue adapted to engage in the loop to form a hinged connection between the members when they are assembled, the free ends of the members being provided with perforations adapted to receive a fastening device for securing the members together, one of the free ends of the members being extended and formed with an eyepiece, and a hook having universal engagement with the eyepiece.

815,656. SEPARATING DEVICE. Denton K. Swartwout, Cleveland, Ohio. Filed Apr. 4, 1905. Serial No. 253,906.



Claim.—1. A separating device comprising a conducting-tube having securely attached therein sigmoidal webs so placed that their edges approximate each other toward the center of the tube in such manner as to leave a narrow open slit therebetween.

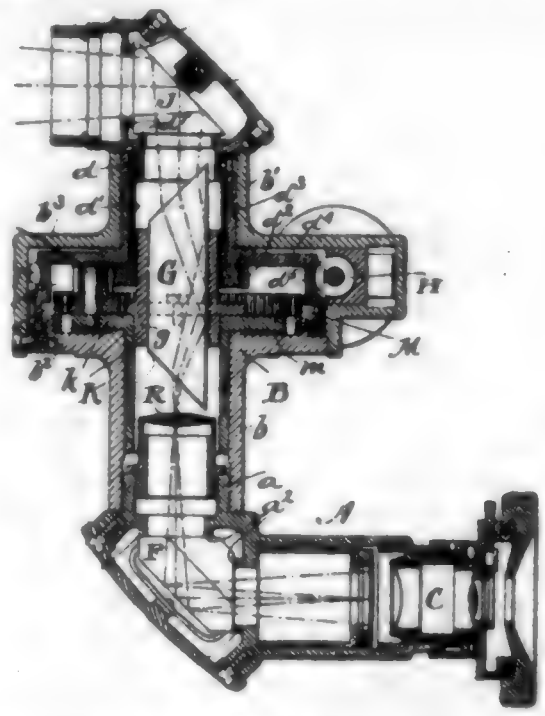
2. A separating device comprising a conducting-tube having securely attached to the inner walls thereof webs so placed that their edges approximate each other toward the center of the tube in such manner as to leave a narrow slit therebetween, and a deflector secured above to the outlet of the tube.

3. A separating device consisting of a tube having webs secured in grooves therein, said webs being curved in reverse directions and so arranged as to produce a gyratory motion in the vapors passing therethrough, a deflector at the end of the tube adapted to give the vapors a horizontal direction of movement, a bowl-shaped cap surrounding the end of the tube and the deflector and provided with an opening in practical alinement with the deflector and the outlet for the tube.

4. A separating device comprising a tube provided with webs secured to the side thereof and approaching each other at the center, a conical deflector secured above the end of the tube, and a cap also secured to the end of the tube and surrounding the deflector and provided with side walls which curve upwardly and outwardly to an end wall which returns inwardly and is provided at its central portion with an outlet-orifice surrounded by an internally-directed flange.

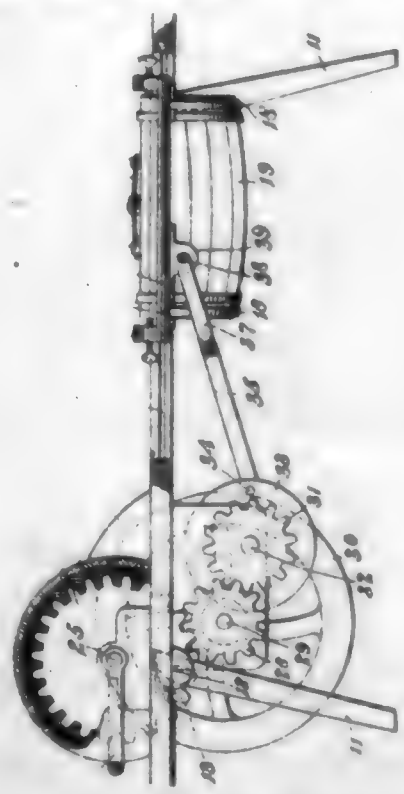
815,657. PANORAMA-SIGHT. Ambrose Swasey, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Apr. 12, 1905. Serial No. 255,189.

Claim.—1. The combination of a vertical tubular member B, a horizontal tubular member A secured to its lower end, a reflector F at the junction of said tubular members, a tubular member d^3 rotatably mounted in the upper end of the member B, a horizontal tubular member D secured to the projecting upper end of the rotatable member d^3, a reflector J at the junction of said tubular members, a prism-carrier rotatably mounted in the member B, and a prism G secured therein, with a concentric internal gear fixed to member B, a concentric external gear fixed to the member d^3, a double pinion N rotatably mounted on a vertical axis carried by the prism-carrier and parallel with the axis of the member B, the said double prism N having its larger part in mesh with said internal gear and its smaller part in mesh with said external gear, and means for turning the member d^3 relative to the member B.



2. The combination of a vertical tubular member having an enlarged box between its ends, a telescopic objective lens secured in said vertical member, a horizontal tubular member secured to the lower end of said vertical tube and containing the telescopic eyepiece, and a reflecting-prism in the outer angle where said two members join, with a horizontal tubular member upon the upper end of the vertical member and having a depending tube which is rotatably mounted in the vertical member and has an external gear on its lower end, a fixed internal gear in said box, the two connected by a planet-gear which revolves the prism-carrier mounted in the vertical tube at half the angular speed of the upper horizontal member, a reflecting and refracting prism carried thereby, a flange rigid with said carrier and projecting into said box, a vertical spindle secured to said flange, a double pinion mounted upon said spindle and engaging with the internal and external gears herein mentioned.

815,658. CHURN. William F. Talbert, Funkstown, Md. Filed Dec. 30, 1905. Serial No. 293,961.

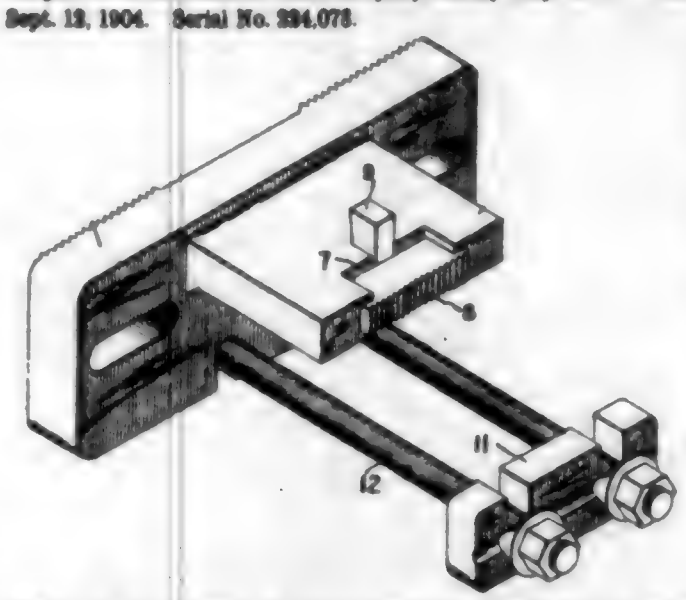


Claim.—1. The combination with a butter-working table having an opening therein and mechanism supported by the table; of a frame slidably mounted in the opening, stirrups carried thereby, means operated by the mechanism for reciprocating the frame, a receptacle carried by the stirrups, and means upon the frame for clamping upon opposite portions of the receptacle.

2. The combination with a butter-working table having an opening therein and mechanism upon the table; of a frame adapted to be reciprocated by said mechanism, a receptacle detachably supported in the frame, and a collapsible spider detachably mounted in the receptacle.

3. In a churn, the combination with a butter-working table having an opening therein; of a barrel-like receptacle adapted to reciprocate within the opening and having a flat face provided with an inlet and a collapsible spider insertible through the inlet and detachably secured within the receptacle.

815,659. LATHE-DRIVER. DANIEL H. TRAS, New Haven, Conn., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Sept. 12, 1904. Serial No. 224,076.



Claim.—1. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

2. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

3. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the flange and project through the wheel and engage its inner surface and clamp the wheel against the block.

4. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of a flange arranged to be rigidly secured to the face-plate of the lathe, an arm projecting rigidly from the flange toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, mechanism carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, studs projecting from the flange through the wheel, and a clamp-bar at the outer ends of the studs to engage the inner face of the wheel.

5. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel, a block carried by the arm and adapted for movement to and from the wheel, a tapering key carried by the arm for forcibly adjusting the block away from the face-plate and against the face of the wheel, and clamping mechanism to be carried by the face-plate and project through the wheel and engage its inner surface and clamp the wheel against the block.

6. In a driver for use in turning wheels fast on their axle while supported on lathe-centers, the combination, substantially as set forth, of an arm arranged to be secured rigidly to the face-plate of the lathe and to project toward the wheel and having a recess presenting toward the wheel, a block carried in said recess and movable therein to and from the wheel, a tapering key carried by the arm to the rear of the block for forcibly adjusting the block away from the face-plate and against the face of the wheel, studs projecting rigidly from the face-plate through the wheel, and a clamp-bar disposed at the outer ends of the studs and arranged to engage the inner face of the wheel.

7. In driving devices for use in turning tired wheels fast on their axle while supported between the centers of a driving-wheel lathe, the combination, substantially as set forth, of a plurality of driving-blocks having serrated faces in contact with the outer faces of the tires, and means for forcing the blocks toward the wheels so as to embed the teeth of the blocks into the metal of the faces of the tires.

815,660. FRUIT-PICKER. CHARLES L. UTHUS, Harvard, Ill. Filed June 8, 1905. Serial No. 264,510.



Claim.—1. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a receptacle suspended from said frame, blocks slidable in the guideways, a cutting-blade carried by one of the blocks, and means to simultaneously move the blocks toward and away from each other to cause said blade to sever the stems of fruit underneath which said receptacle is placed.

2. In a fruit-picker, a receptacle, blocks disposed for movement in longitudinal alinement above said receptacle, one of said blocks having a cutting-blade, and means for simultaneously moving said blocks toward and away from each other.

3. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame and with a depression in said frame between said guideways, a receptacle suspended from said frame and with a depression corresponding to the depression in said frame, blocks slidable in said guideways, a cutting-blade carried by one of the blocks, and means for simultaneously moving the blocks toward and away from each other.

4. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a handle having outwardly and upwardly extending arms connected respectively to said guideways and forming the supporting-frame thereto, blocks slidable in said guideways, a cutting-blade carried by one of the blocks, and means for simultaneously moving the blocks toward and away from each other.

5. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a handle having outwardly and upwardly extending arms connected

respectively to said guideways and forming the supporting-frame thereto, an outwardly-curving bar connecting the guide members at the other side, blocks slidable in said guideways, a cutting-blade carried by one of the blocks, and means for simultaneously moving the blocks toward and away from each other.

6. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a receptacle suspended from said frame, blocks slidable in said guideways, a cutting-blade carried by one of the blocks, springs connected to maintain said blocks yieldably in withdrawn position, and means for simultaneously moving said blocks into engagement.

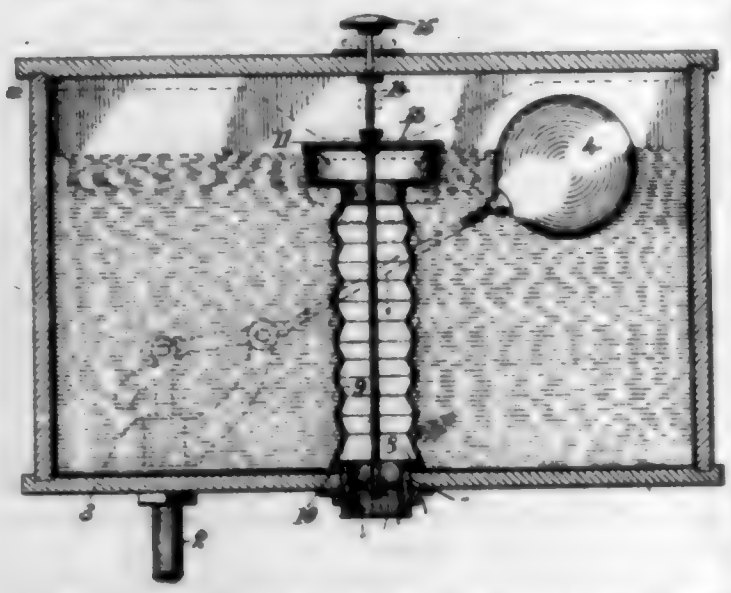
7. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a receptacle suspended from said frame, blocks slidable in said guideways, a cutting-blade carried by one of the blocks springs connected to maintain said blocks yieldably in withdrawn position, guard-straps connected to said guide members and bearing over said blocks, and means for simultaneously moving said blocks into engagement.

8. In a fruit-picker, a supporting-frame having guideways spaced apart and disposed in alinement longitudinally of the frame, a receptacle suspended from said frame, a handle connected to said frame, hollow blocks slidably arranged in said guideways with their open sides presented to the same, a cutting-blade carried by one of the blocks, springs within said blocks and connected at one end to the blocks and at the other end to the guideways, and draw-cords connected respectively to said blocks and leading inwardly therefrom and thence to a point on said handle convenient to the hand of the operator.

9. A fruit-picker comprising a handle, spaced guideways carried by the handle and disposed transversely thereof, slides working in the guideways, a cutting-blade carried by one of the slides, and means to move the slides toward and away from one another.

10. A fruit-picker comprising a handle, a pair of spaced guideways carried by the handle transversely of the same and offset at one side of said handle, a receptacle hung from the guideways and open throughout its top, slides working in the guideways, a cutting-blade carried by one of the slides, and means for moving the slides toward and away from one another.

815,661. **CLOSET-TANK.** WILLIAM C. A. VIERING, Jr., Salt Lake City, Utah. Filed Nov. 23, 1904. Serial No. 234,533.



Claim.—1. The combination with a closet-tank having an inlet and an outlet, of a valve for said outlet, comprising a collapsible tube surrounding the outlet at one end, a cup upon the upper end of the tube adapted to float, and an adjustable stop for preventing the cup from rising above a certain level.

2. The combination with a closet-tank having an inlet and an outlet, of a valve for said outlet comprising a collapsible receptacle secured around the outlet at one end, an open-top cup mounted at the other end of the receptacle and adapted to float, and means for forcing the cup below the surface of the water in the tank; said means comprising a stop adapted to engage with said cup, a movable rod upon which said stop is mounted, and means for moving the rod.

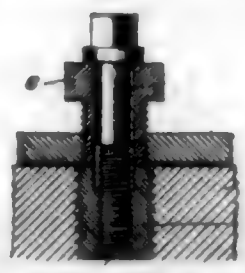
3. A flush-valve comprising a collapsible tube having one end secured in a stationary position, an open-top cup mounted at the other end of said tube and adapted to float, and means for forcing the cup toward the stationary end of the tube; said means comprising a stop adapted to engage the cup, a rod on which said stop is mounted, and means for moving the rod.

4. A flush-valve comprising a collapsible tube having one end secured in a stationary position, a cup mounted at the other end of said tube, a movable rod passing into the tube, a stop adjustably mounted on said rod and adapted to engage the cup, and means for moving the rod.

5. A flush-valve comprising a bushing having a flange upon its inner end, a collapsible tube secured beneath said flange and surrounding the latter, said tube being provided with an integral cup-shaped open upper end, and an adjustable stop adapted to extend across and engage the upper edges of said cup.

6. A flush-valve comprising a bushing having a flange upon its inner end, said bushing having a spider upon the inside thereof, a collapsible tube secured beneath said flange and surrounding it, said tube being provided with an open-top cup integrally mounted upon its end, a hollow rod passing through and guided by said spider, said rod being provided with a screw-threaded portion and with a push-button, and a bar adjustably secured upon the threaded portion of said rod and adapted to engage the upper edges of said cup for limiting the height to which the cup can be floated by water.

815,662. **ADJUSTING DEVICE FOR PRINTING-BLOCKS.** WILLIAM H. WALDRON, New Brunswick, N. J., assignor to The John Waldron Company, New Brunswick, N. J. Filed Sept. 11, 1905. Serial No. 277,902.



Claim.—1. The combination of a printing-block, a plate for supporting it, and a plurality of means for securing the block to the plate, said means being located at intervals along the plate, and each having means for moving the block both toward and from the plate and securing it in an adjusted position.

2. The combination with a printing-block for linoleum-printing machines, of a plate for supporting the block, and a series of connections between the plate and block, located at intervals along the adjacent surfaces of the plate and block each of said connections comprising means for forcing the block both toward and from the plate and thus adjusting the distance between the block and plate.

3. The combination of a printing-block, a plate for supporting it, a screw adjustably mounted on the block, and means adjustably mounted on the plate for bearing against the screw and limiting its motion toward the block.

4. The combination of a printing-block, a nut or bushing mounted thereon, a supporting-plate, an adjustable element mounted on the plate, and a bolt having means for bearing against the rear surface of the said element and adapted to engage the nut or bushing in the block to provide an adjustable connection between the block and plate.

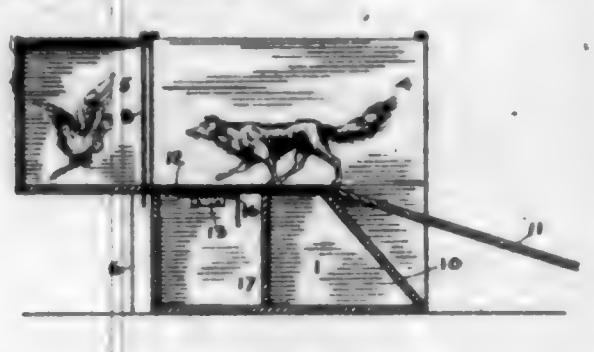
5. The combination of a printing-block for linoleum-printing machines, a nut mounted therein and provided with screw-threads, a plate, a hollow screw adjustably mounted on said plate and projecting through it to the surface adjacent to the surface of the block, and a bolt having a collar engaging said screw and a screw-threaded portion engaging the screw-threaded opening of the nut for locking the parts together.

6. A fastening device for a printing-block, comprising a nut having a screw-threaded opening, a hollow screw adapted to bear on the nut, and a bolt passing through the hollow screw and engaging said screw-threaded opening and the opposite end of the screw.

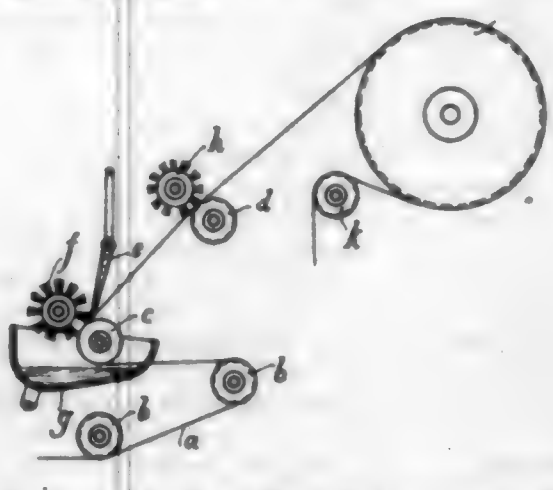
815,663. **ANIMAL-TRAP.** JOSEPH WALKER and BRAINARD M. FREDERICK, San Francisco, Cal. Filed Aug. 28, 1905. Serial No. 276,021.

Claim.—In a device of the character described, the combination of a box, one side of which is continued upward to form a guide-wall, a second guide-wall on the top of the box, said walls forming a passage-way, a bait-box opposite the end of said passage-way, posts upon which said bait-box is supported, means for securing said bait against the ends of the side walls, said bait-box having a grating on

the side opposite the passage, and a door at the opposite side, the top of the cage or box underneath said passage being cut away, a sloping approach in said passage, a trap at the end of said passage next the bait-box, said trap being hinged at the side next the side of the box forming the guide-wall, and a spring normally pressing upward said trap, substantially as described.



815,664. METHOD AND APPARATUS FOR COATING BANDS OF FABRIC. FRITZ C. WICKEL, Nuremberg, Germany. Filed Oct. 3, 1905. Serial No. 281,135.



Claim.—1. The method of producing a powder-coated fabric, which consists in applying to the fabric the desired powder, scrubbing the fabric to remove the loosely-adherent particles, removing the surplus water, heating, and allowing to cool.

2. The method of producing a powder-coated fabric, which consists in applying to the fabric the desired powder in a vehicle insoluble in water, scrubbing the fabric to remove the loosely-adherent particles of powder, removing the surplus water, heating, and allowing to cool.

3. The method of producing a powder-coated fabric, which consists in applying to the fabric a coating of metallic powder in a resinous vehicle, wet-scrubbing the fabric to remove the loosely-adherent particles, removing the surplus water, heating sufficiently to dry the fabric and soften the resin, and allowing to cool.

4. In a machine for carrying out the method described the combination of a water-feed nozzle a plurality of feed and brushing rollers, and a heating-roller in such mutual arrangement and succession that the band of paper or material in passing between a first guide-roller and its respective brushing-roller is freed by water falling from above between them from any excess of metallic powder, and on passing between a second guide-roller and a second brushing-roller belonging thereto, freed from the major part of the adherent water, and then by traveling over the heating-roller the drying and heating of the paper or material band is completed substantially as described.

5. In an apparatus for producing a powder-coated fabric, the combination, with rolls carrying the initially-coated fabric, of means for wet-scrubbing the coated surface of the fabric, means for removing the surplus water after scrubbing, and means for heating the fabric.

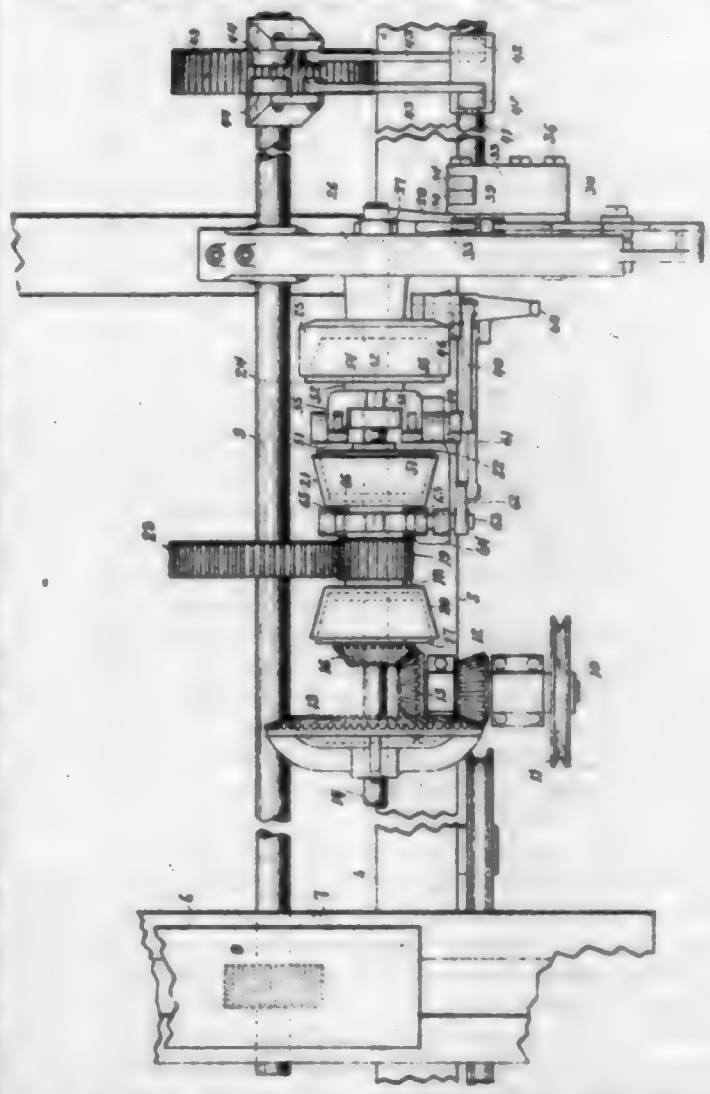
6. In an apparatus for producing a powder-coated fabric, the combination, with rolls carrying the initially-coated fabric, of a scrubbing-brush arranged closely adjacent to one of the carrying-rolls and bearing upon the coated surface of the fabric, means for supplying water to the fabric surface adjacent to the point of contact with the scrubbing-brush, means for removing the surplus water from the fabric after leaving the scrubbing-brush, and means for heating the fabric.

7. In an apparatus for producing a powder-coated fabric, the combination, with rolls carrying the initially-coated fabric, of a rotary scrubbing-brush arranged closely adjacent to one of the carrying-rolls and bearing upon the coated surface of the fabric, a water-jet for supplying water to the fabric surface adjacent to the point of contact with the scrubbing-brush, rotary means for removing the surplus water from the fabric after leaving the scrubbing-brush, and means for heating the fabric.

8. In an apparatus for producing a powder-coated fabric, the combination, with rolls carrying the initially-coated fabric, of a rotary scrubbing-brush arranged closely adjacent to one of the carrying-rolls and bearing upon the coated surface of the fabric, a water-jet having a width substantially equal to that of the fabric and supplying water to the coated surface of the fabric at the point of contact with the scrubbing-brush, a rotary brush for removing the surplus water from the fabric after leaving the scrubbing-brush, and a heated drum for heating the fabric.

9. In an apparatus for producing a powder-coated fabric, the combination, with rolls carrying the initially-coated fabric, of a rotary scrubbing-brush arranged closely adjacent to one of the carrying-rolls and bearing upon the coated surface of the fabric, a water-jet having a width substantially equal to that of the fabric for supplying water to the coated surface closely adjacent to the point of contact with the scrubbing-brush, a second rotary brush arranged closely adjacent to another of the carrying-rolls and bearing upon the wet surface of the fabric to remove the surplus water therefrom, and an internally-heated drum arranged to receive the fabric and heat the same.

815,665. SAWMILL SET-WORKS. THEODORE S. WILKIN, Milwaukee, Wis. Filed Nov. 18, 1903. Serial No. 181,572.



Claim.—1. In sawmill set-works, the combination of a main shaft, a set-shaft, a rock-shaft, mechanism between the main shaft and the rock-shaft, means for throwing said mechanism into operation so as to convert the rotation of the main shaft into locking movement of the rock-shaft, and means for automatically throwing said mechanism out of operation after the main shaft has been rotated to a certain extent, in order to stop the rocking movement of the rock-shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

2. In sawmill set-works, the combination of a main shaft, a set-shaft, a rock-shaft, lever-controlled mechanism between the main shaft and the rock-shaft so constructed that when said lever is given an initial turn in one direction the said mechanism is thrown into operation so as to convert the rotation of the main shaft into a rocking movement of the rock-shaft, and means for automatically throwing

said mechanism out of operation, after the main shaft has been rotated to a certain extent, in order to stop the rocking movement of the rock-shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

3. In sawmill set-works, the combination of a main shaft, a set-shaft, a crank loosely mounted on the main shaft, clutch mechanism for clutching the crank to the main shaft, means for operating said clutch mechanism for effecting the clutching of the crank to the main shaft, mechanism constructed to automatically stop the crank and unclutch the same from the main shaft, after said crank has revolved a certain distance, a rock-shaft, a connection between the rock-shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

4. In sawmill set-works, the combination of a main shaft, a set-shaft, a crank loosely mounted on the main shaft, clutch mechanism for clutching the crank to the main shaft, means for operating said clutch mechanism for effecting the clutching of the crank to the main shaft, mechanism constructed to automatically stop the crank on the dead-center and unclutch the same from the main shaft, after said crank has revolved a certain distance, a rock-shaft, a connection between the rock-shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

5. In sawmill set-works, the combination of a main shaft, a crank loosely mounted on the main shaft, an operating-lever, clutch mechanism controlled by said lever and adapted when an initial movement is given to the lever for clutching the crank to the main shaft, mechanism carried by the lever and constructed to automatically stop the crank and unclutch the same from the main shaft, after said crank has revolved a certain distance, a rock-shaft, a connection between said rock-shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

6. In sawmill set-works, the combination of a main shaft, fast and loose clutches carried by said shaft, the loose clutch being provided with a crank, means for throwing said clutches into engagement, mechanism for automatically throwing the clutches out of engagement after the crank has revolved a certain distance, a rock-shaft, a connection between said shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

7. In a sawmill set-works, the combination of a main shaft, fast and loose clutches carried by said main shaft, the loose clutch being provided with a crank, a lever engaging one of the clutches, and adapted when turned in one direction to bring the clutches into engagement, mechanism constructed to automatically move the clutches out of engagement, after the crank has revolved a certain distance, a rock-shaft, a connection between said shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

8. In sawmill set-works, the combination of a main shaft, clutches carried by said shaft, one of said clutches being loose on the shaft, and the other clutch rotatable with but movable longitudinally on the shaft, and the loose clutch being provided with a crank, a lever engaging the slidable clutch, and adapted when turned in one direction to bring the clutches into engagement, coöperating means on the loose clutch and on the lever, and adapted to automatically move the two clutches out of engagement, after the crank has revolved a certain distance, a rock-shaft, a connection between said shaft and the crank of the main shaft, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

9. In sawmill set-works, the combination of a main shaft, fast and loose clutches carried by said shaft, the fast clutch being longitudinally movable on the shaft, and the loose clutch having a recess on one face, and also provided with a crank, a lever engaging the longitudinally-movable clutch, and provided with a projection normally engaging the recess of the loose clutch, said lever when given an initial turn in one direction adapted to move the clutches into engagement and cause the projection to withdraw from the recess and bear against the face of the loose clutch and thereby hold said clutch in engagement with the fast clutch until the main shaft has rotated the required distance to bring the recess again into registration and engagement with the projection of the lever, whereby the rotation of the crank is automatically stopped, a rock-shaft, a connection between said shaft and the crank of the loose clutch, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking movement of the rock-shaft into a rotary motion of the set-shaft.

10. In sawmill set-works, the combination of a main shaft, fast and loose clutches carried by said shaft, the fast clutch being longitudinally slidable on the shaft, and the loose clutch having a recess on one face and also provided with a crank, a lever engaging the longitudinally-slidable clutch, and provided with a roller projection normally engaging the recess of the loose clutch, said lever when given an initial turn in one direction adapted to throw the clutches into engagement and cause the roller projection to withdraw from the recess and bear against the face of the loose clutch and thereby hold the same in engagement with the fixed clutch until the main shaft has rotated the required distance to bring the recess again into registration and engagement with the roller projection of the lever, whereby the rotation of the crank is automatically stopped, a rock-shaft, a connection between said shaft and the crank of the loose clutch, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking motion of the rock-shaft into a rotary motion of the set-shaft.

11. In sawmill set-works, the combination of a main shaft, fast and loose clutches carried by said shaft, the fast clutch being longitudinally slidable on the shaft, and the loose clutch having a recess on one face, and also provided with a crank, a lever engaging the longitudinally-slidable clutch and provided with a projection normally engaging the recess of the loose clutch, said lever when given an initial turn in one direction adapted to move the clutches into engagement and cause the projection to withdraw from the recess and bear against the face of the loose clutch and thereby hold the two clutches in engagement until the main shaft has rotated the required distance to bring the recess again into registration and engagement with the projection of the lever, whereby the rotation of the crank is automatically stopped, stop mechanism between the loose clutch and the lever and adapted for preventing the projection of the lever from riding out of the recess after said projection is brought into registration and engagement with said projection, a rock-shaft, a connection between said rock-shaft and the crank of the loose clutch, and mechanism between the rock-shaft and the set-shaft and adapted for converting the rocking motion of the rock-shaft into a rotary motion of the set-shaft.

12. In a sawmill set-works, the combination of a main shaft, means for driving the main shaft, a set-shaft, knees operated by the set-shaft, variable-speed-transmitting mechanism, means for connecting and disconnecting the variable-speed-transmitting mechanism to the main shaft, said variable-speed-transmitting mechanism when connected to the main shaft adapted to have the rotation of the main shaft imparted thereto, means, when the variable-speed-transmitting mechanism is disconnected from the main shaft, for rotating said mechanism independently of and at a relatively faster rate of speed than the speed of rotation imparted thereto by the main shaft, and a connection between the variable-speed-transmitting mechanism and the set-shaft for transferring the respective fast and slow rotations of said variable-speed-transmitting mechanism to the set-shaft, in order to produce by the slow rotation, a slow advance movement of the knees, and to produce by the reverse fast rotation a fast return movement of the knees.

13. In a sawmill set-works, the combination of a main shaft, means for driving the main shaft, a set-shaft, variable-speed-transmitting mechanism, a lever, a connection between the lever and the variable-speed-transmitting mechanism, whereby when the lever is operated in one direction, the variable-speed-transmitting mechanism is connected to the main shaft, and when the lever is operated in the opposite direction the variable-speed-transmitting mechanism is disconnected from the main shaft, the said variable-speed-transmitting mechanism when connected to the main shaft adapted to have the rotation of the main shaft imparted thereto, means, when the variable-speed-transmitting mechanism is disconnected from the main shaft, for rotating said mechanism independently of and at a relatively faster rate of speed than the speed of rotation imparted thereto by the main shaft, and a connection between the variable-speed-transmitting mechanism and the set-shaft for transferring the respective fast and slow rotations of said variable-speed-transmitting mechanism to the set-shaft, in order to produce by the slow rotation a slow advance movement of the knees, and to produce by the reverse fast rotation a fast return movement of the knees.

14. In sawmill set-works, the combination of a main shaft,

means for rotating the same at a relatively slow rate of speed, a set-shaft, knees operated by said set-shaft, variable-speed-transmitting mechanism mounted on the main shaft, means for clutching and unclutching the variable-speed-transmitting mechanism to the main shaft, said mechanism when clutched to the main shaft having the slow rotation of the main shaft imparted thereto, mechanism adapted for rotating the variable-speed-transmitting mechanism rapidly when said mechanism is unclutched from the main shaft, and a connection between the variable-speed-transmitting mechanism and the set-shaft for transferring the respective slow and fast rotations of said variable-speed-transmitting mechanism to the set-shaft, in order to produce by the slow rotation a slow advance movement of the knees, and to produce by the reverse fast rotation a fast return movement of the knees.

15. In sawmill set-works, the combination of a main shaft, means for driving the same at a relatively slow speed, a set-shaft knees operated thereby, variable-speed-transmitting mechanism, means for rotating said variable-speed-transmitting mechanism from the main shaft so as to partake of the relatively slow speed of said main shaft, means for rotating said set-shaft-operating mechanism independently of the main shaft and at a quicker speed of rotation, and a connection between the variable-speed-transmitting mechanism and the set-shaft for transferring the respective slow and fast rotations of said variable-speed-transmitting mechanism to the set-shaft, in order to produce by the slow rotation a slow advance movement of the knees, and to produce by the reverse fast rotation a fast return movement of the knees.

16. In sawmill set-works, the combination of a main shaft, means for driving the same, a rock-shaft, a set-shaft, knees operated by the set-shaft, a connection between the main shaft and the rock-shaft, means for throwing said connection into operation, said means being so constructed that when thrown into operation the rotary motion of the main shaft is converted into a rocking motion of the rock-shaft, means for throwing said connection out of operation so as to prevent the rotation of the main shaft from imparting a rocking motion to the rock-shaft, a connection between the rock-shaft and the set-shaft for converting the rocking motion of the rock-shaft into a rotary motion of the set-shaft, set-shaft-operating mechanism for rotating the set-shaft when the driving connection between the main shaft and the rock-shaft is out of operation, said set-shaft-operating mechanism when operated in one direction causing a slow rotation of the set-shaft in order to cause a slow advance of the knees, and when operated in the opposite direction causing a rapid return movement of the knees.

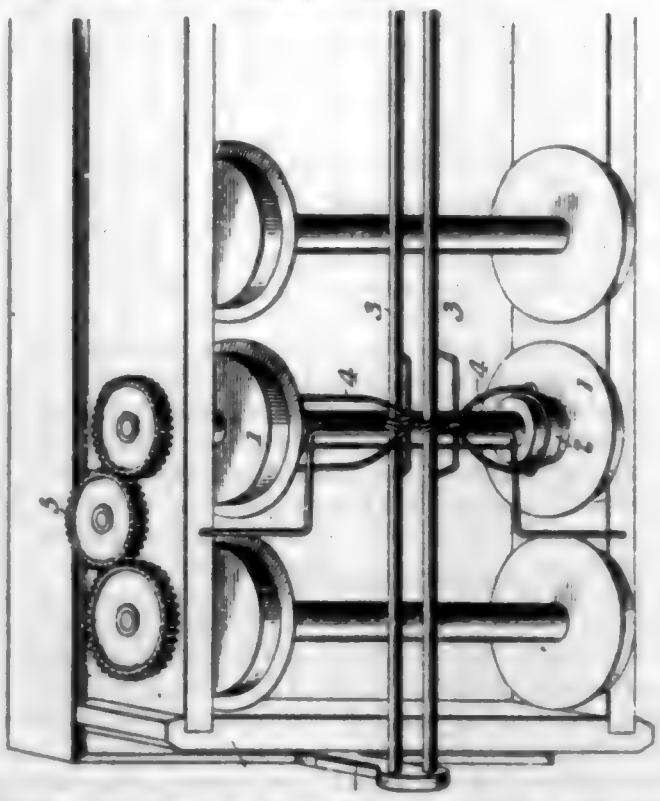
17. A sawmill set-works, the combination of a driving-shaft having two pinions thereon, a main shaft having a gear and a pinion thereon, the pinion being loose on the main shaft and the gear being fast on said main shaft, and said gear and pinion being engaged respectively by the pinions of the driving-shaft, a clutch member rigid with the loose pinion of the main shaft, another clutch member fast on the main shaft, a sleeve loosely surrounding the main shaft, said sleeve provided at opposite ends with clutch members adapted to be brought into engagement with either of the other clutch members, and said sleeve provided intermediate of its clutch members, with a toothed gear, means for sliding the sleeve longitudinally on the main shaft, and a set-shaft provided with a toothed wheel in mesh with the toothed gear of the sleeve.

18. In sawmill set-works, the combination of a main shaft, a crank on the main shaft, a rock-shaft, a set-shaft, mechanism between the rock-shaft and the set-shaft for converting the rocking movement of the rock-shaft into a rotary movement of the set-shaft, a crank on the rock-shaft, a regulating-lever, a connection between the lever and the cranks of the rock-shaft and of the main shaft respectively, said connection consisting of a knuckle-joint comprising arms pivoted together at their inner ends, and the outer end of one pivotally connected to the lever, and the outer end of the other pivotally connected to the crank of the rock-shaft, radial bars pivoted together, and one of said bars having its other end pivoted to a fixed point, and the other bar pivoted at its other end to the pivot of the knuckle-joint, and a link connected at one end to the pivot of the radial bars and at its other end to the crank for the main shaft.

19. In sawmill set-works, the combination of a fixed part provided with a segmental slot, a main shaft, a rock-shaft, a crank on the rock-shaft, a crank on the main shaft, a set-shaft, mechanism between the rock-shaft and the set-shaft for converting the rocking movement of the rock-shaft into a rotary movement of the set-shaft, a regulating-lever, a connection between the regulating-lever and the cranks of the rock-shaft and of the main shaft, respectively, said connection consisting of a knuckle-joint comprising arms pivoted together at their inner ends and the outer end of one pivotally connected to the lever, the pivot connection working in the segmental slot of the fixed part, and the outer end of the other pivotally connected to the crank of the rock-shaft, radial bars pivoted together, and one of said bars having its other end pivoted to a fixed point, and the other bar pivoted at its other end to the pivot of the angle-joint, and a link pivotally connected at one end to the pivot of the radial bars and at its other end to the crank of the main shaft.

20. In sawmill set-works, the combination of a frame provided with a segmental slot, a main shaft, a crank on the main shaft, a set-shaft, mechanism between the rock-shaft and the set-shaft for converting the rocking motion of the rock-shaft into a rotary motion of the set-shaft, a regulating-lever, a connection between the regulating-lever and the cranks of the rock-shaft and of the main shaft, respectively, said connection consisting of a knuckle-joint comprising arms pivoted together at their inner ends and the outer end of one pivotally connected to the lever and the outer end of the other pivotally connected to the crank of the rock-shaft, radial bars pivoted together, the pivot working in the segmental slot of the frame, and one of said bars having its other end pivoted to a fixed point, and the other bar pivoted at its other end to the pivot of the angle-joint, and a link pivotally connected at one end to the pivot of the radial bars and at its other end to the crank of the main shaft.

815,666. STATIONARY SWITCH AND ADJUSTABLE CAR-WHEEL FOR USE THEREON. ALVIN T. WISCHELL, Albion, Mich. Filed Nov. 9, 1904. Serial No. 232,058.



Claim.—1. Centrally-located sliding car-wheels mounted on their axle and adapted, when slid inward, to engage the third or auxiliary tread rail or rails, substantially as indicated and described.

2. Car switching or transferring mechanism comprising the third or auxiliary tread rail or rails, the centrally-located sliding car-wheels mounted on said axle and a set of three gear-wheels, one mounted on the main car-wheels axle, one on the axle of the sliding car-wheels and one centrally located on the axle between these two extreme gear-wheels which engage each other, substantially as described.

815,667. TOY. WILLIAM D. WISNER, Lancaster, Pa., assignor of one-half to David C. Souders, Lancaster, Pa. Filed Mar. 17, 1905. Serial No. 250,636.

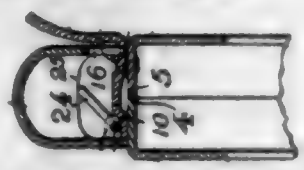


Claim.—1. A toy of the class described comprising a handle member having a wheel mounted for rotation at one end thereof, a cylinder secured to said handle and having one end thereof open and its opposite end provided with a whistle, a rod pivotally connected with the wheel and having its free end disposed within the cylinder, a concaved plate attached near the free end of said rod, a second con-

caved plate slidably mounted on the rod and spaced from the first-named plate, a flexible disk interposed between said plates and engaging the interior walls of the cylinder, and means carried by the rod for retaining the plates in engagement with said disk.

2. A toy of the class described comprising a handle member having a wheel mounted for rotation at one end thereof, a cylinder connected to said handle member and having one end thereof open and its opposite end provided with a whistle, a rod pivotally connected to said wheel and having its free end disposed within said cylinder and terminating in a loop, a concaved plate attached near the free end of the rod, a second concaved plate slidably mounted on said rod and spaced from the first-named plate, a flexible disk interposed between said concaved plates and bearing upon the interior walls of the cylinder, and a wedge-shaped key engaging said loop and slidable plate for retaining said plates and flexible disk upon the rod.

815,668. BAG-FASTENER. Ernst E. Witte, Newark, N. J., assignor to The J. E. Mergott Company, a Corporation of New Jersey. Filed Mar. 31, 1904. Serial No. 200,255.



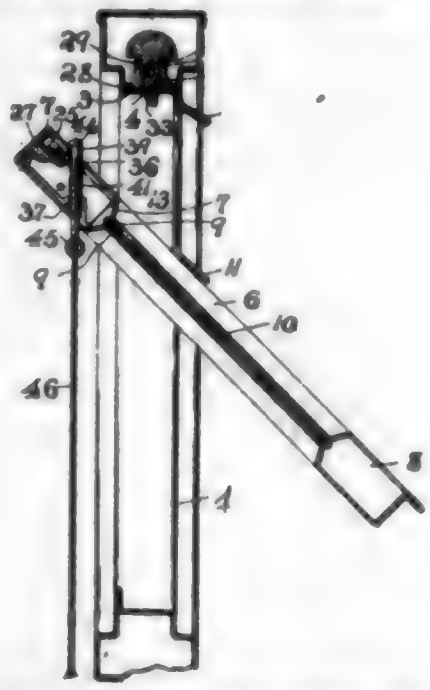
Claim.—1. In a bag-fastener for a frame having hinged frame-sections, said fastener comprising a chambered casing adapted to be secured to one of said frame-sections, and said casing having an opening in its front side and said casing being also provided with openings 13 in its opposite side, a catch-plate and lugs on said catch-plate, said lugs extending rearwardly from one of the longitudinal edges of the said catch-plate and projecting into and being adapted to oscillate in the open portions 13, a finger-piece extending into and through the opening in the front of the casing and in an upward direction in front of the casing to provide a closure to the said opening, a spring, and a holding means connected with the other frame-section for engagement with said catch-plate, substantially as and for the purposes set forth.

2. In a bag-fastener for a frame having hinged frame-sections, said fastener comprising a chambered casing adapted to be secured to one of said frame-sections, and said casing having an opening in its front side and said casing being also provided with openings 13 in its opposite side, a catch-plate and lugs on said catch-plate, said lugs extending rearwardly from one of the longitudinal edges of the said catch-plate and projecting into and being adapted to oscillate in the open portions 13, a finger-piece extending into and through the opening in the front of the casing and in an upward direction in front of the casing to provide a closure to the said opening, a spring arranged upon the face of said catch-plate, said spring being provided with right-angled members, one of which lies upon said catch-plate and the other member resting against the inner surface of said casing, substantially as and for the purposes set forth.

3. In a bag-fastener for a frame having hinged frame-sections, said fastener comprising a chambered casing adapted to be secured to one of said frame-sections, and said casing having an opening in its front side and said casing being also provided with openings 13 in its opposite side, a catch-plate and lugs on said catch-plate, said lugs extending rearwardly from one of the longitudinal edges of the said catch-plate and projecting into and being adapted to oscillate in the open portions 13, a finger-piece extending into and through the opening in the front of the casing and in an upward direction in front of the casing to provide a closure to the said opening, a spring arranged upon the face of said catch-plate, said spring being provided with right-angled members, one of which lies upon said catch-plate and the other member resting against the inner surface of said casing, and means for securing said spring to said catch-plate, consisting of clamping-lugs integral with the said catch-plate and clamped around said spring, substantially as and for the purposes set forth.

815,669. LOCK AND GRAVITY-BOLT FOR WINDOWS. Augustus H. Woodruff, Irvington, N. J., assignor of one-half to Frank F. Smith, Newark, N. J. Original application filed May 12, 1905, Serial No. 260,149. Divided and this application filed Sept. 7, 1905. Serial No. 277,201.

Claim.—1. The combination, with a metallic or other suitable frame having a hollow portion, and a fixture, as a window, door, or the like, pivotally swung in said frame, said fixture also having a hollow part, of a gravity-bolt in the hollow portion of the frame, and mechanism in the hollow part of the fixture for lifting said gravity-bolt, consisting of a pivoted latch, and a tube provided with a projection in engagement with a part of said latch, a rod in said tube having a nut at one end, and a flexible connection at the other end of said rod, substantially as and for the purposes set forth.



2. The combination, with a metallic or other suitable frame and fixture, as a window, door, or the like, pivotally connected with said frame, of means for holding said fixture in an open position, in said frame, comprising a rod extending through said frame, a nut upon the free end of said rod, and a rain-shield upon said frame beneath which said nut is located, substantially as and for the purposes set forth.

3. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow parts, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture, substantially as and for the purposes set forth.

4. The combination, with a metallic or other suitable frame and fixture, as a window, door, or the like, pivotally connected with said frame, of means for opening said fixture, comprising a rod extending through said frame, and a nut upon the one free end of said rod in engagement with one side of said fixture, and a pull device connected with the opposite end of said bolt, substantially as and for the purposes set forth.

5. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture, substantially as and for the purposes set forth.

6. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, and a nut upon the free end of said rod, substantially as and for the purposes set forth.

7. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of an actuating means movably arranged in said guiding portions, a holding means in the hollow part of the frame having a portion normally in holding engagement with the said pivoted fixture, and a pivoted latch adapted to be operated by the move-

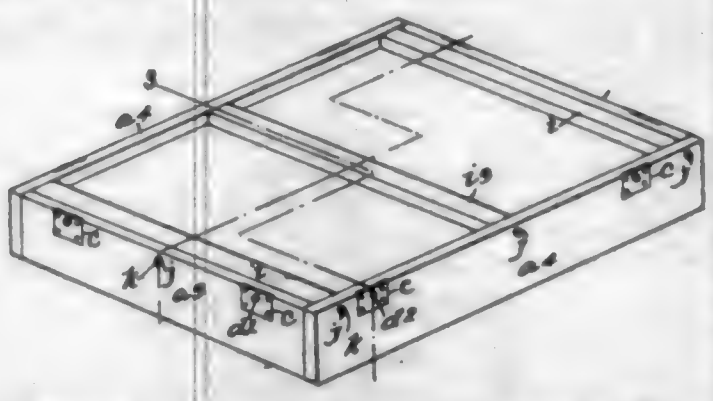
ment of said actuating means for releasing said holding means from its engagement with said pivoted fixture, substantially as and for the purposes set forth.

8. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture being provided with a hollow part provided with a vertical guide 29, and a gravity-bolt movable vertically in said guide, said bolt having a portion normally in holding engagement with said pivoted fixture, means connected with said guide and bolt for limiting the movement of said hollow part of said fixture, and means adapted to be operated by the movement of said actuating means for releasing said bolt from its engagement with said pivoted fixture, substantially as and for the purposes set forth.

9. The combination, with a hollow metallic or other suitable frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture being provided with a hollow part provided with a vertical guide 29, and a gravity-bolt movable vertically in said guide, said bolt having a portion normally in holding engagement with said pivoted fixture, means connected with said bolt, an actuating means movably arranged in the hollow part of said fixture, and a pivoted latch adapted to be operated by the movement of said actuating means for releasing said holding means from its engagement with said pivoted fixture, substantially as and for the purposes set forth.

10. The combination, with a frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said frame having a bolt-receiving portion, and said frame having a rod-receiving portion, a bolt in said bolt-receiving portion, a rod movably arranged in said rod-receiving portion, and means connected with said rod for actuating said bolt, substantially as and for the purposes set forth.

815,670. KNOCKDOWN BOX. James Adams, Phillipsburg, N. J. Filed June 5, 1906. Serial No. 320,732.



Claim.—1. A box or crate of the knockdown class, said box or crate comprising a solid box-shaped bottom portion open at the top and the side and end parts of which are of equal height, and side and end members adapted to be placed on the tops of the side and end members of the bottom portion and to be detachably connected therewith and forming in connection with the bottom portion a complete box or crate, the devices for connecting the side and end members with the side and end parts of the box-shaped bottom portion being located on and secured to the outer sides of said members and said parts, and means for closing the top of the box or crate formed by said side and end members, substantially as shown and described.

2. A box or crate of the knockdown class, said box or crate comprising a solid box-shaped bottom portion open at the top and the side and end parts of which are of equal height, and side and end members adapted to be placed on the tops of the side and end members of the bottom portion and to be detachably connected therewith and forming in connection with the bottom portion a complete box or crate, the devices for connecting the side and end members with the side and end parts of the box-shaped bottom portion being located on and secured to the outer sides of said members and said parts, and means for closing the top of the box or crate formed by said side and end members, the longitudinal and transverse inside dimensions of the box-shaped bottom portions being the same as the longitudinal and transverse dimensions of the side members, substantially as shown and described.

3. A box or crate of the knockdown class, said box or crate comprising a solid box-shaped bottom portion open at the top and the side and end parts of which are of equal height, and side and end members adapted to be placed on the tops of the side and end members of the bottom portion and to be detachably connected therewith and forming in connection with the bottom portion a complete box or crate, the devices for connecting the side and end members with the side and end parts of the box-shaped bottom portion being located on and secured to the outer sides of said members and said parts, and means for closing the top of the box or crate formed by said side and end members, the longitudinal and transverse inside dimensions of the box-shaped bottom portion being the same as the longitudinal and transverse dimensions of the side members, and the depth of said box-shaped bottom portion being greater than that of the combined thickness of the side and end members, substantially as shown and described.

4. A box or crate of the knockdown class, said box or crate comprising a solid box-shaped bottom portion open at the top and the side and end parts of which are of equal height, and side and end members adapted to be placed on the tops of the side and end parts of the bottom portion and to be detachably connected therewith and forming in connection with the bottom portion a complete box or crate, the devices for connecting the side and end members with the side and end parts of the box-shaped bottom portion being located on and secured to the outer sides of said members and said parts, and means for closing the top of the box or crate formed by said side and end members, comprising a board member adapted to fit in the top of the box or crate and means for holding said member in the top of said box or crate, substantially as shown and described.

5. In a box or crate of the knockdown class, a box-shaped bottom or base portion the side and end parts of which are of equal height, and supplemental side and end members placed on and detachably connected with the side and end parts of the box-shaped base portion, the side and end parts of the box-shaped base portion being provided with plates which are secured in the outer sides thereof and within which are recesses, and said supplemental side and end members being provided on their outer sides with corresponding plates having ogee hooks adapted to be inserted into said recesses through said holes, substantially as shown and described.

6. In a box or crate of the knockdown class, a box-shaped bottom or base portion the side and end parts of which are of equal height, and supplemental side and end members placed on and detachably connected with the side and end parts of the box-shaped base portion, the side and end parts of the box-shaped base portion being provided with plates which are secured in the outer sides thereof and within which are recesses, and said supplemental side and end members being provided on their outer sides with corresponding plates having ogee hooks adapted to be inserted into said recesses through said holes, the depth of the box-shaped base portion being greater than the combined thickness of the supplemental end and side members, and said box or crate being also provided with a cover adapted to fit in the top thereof, and means for securing said cover in position, substantially as shown and described.

815,671. PROCESS OF PRODUCING MULTICOLORED DYE EFFECTS IN WOOLEN FABRICS, &c. Max Becke, Höchst-on-the-Main, Germany. Filed Feb. 14, 1902. Serial No. 94,055.

Claim.—1. The process herein described of producing multicolored effects in woolen and mixed fabrics, which consists in treating animal hair with a tanning substance and a metallic salt, then working it with untreated fiber into spun goods or woven fabrics, and then dyeing the goods thus obtained with ordinary wool dyestuffs in an acid-bath, substantially as set forth.

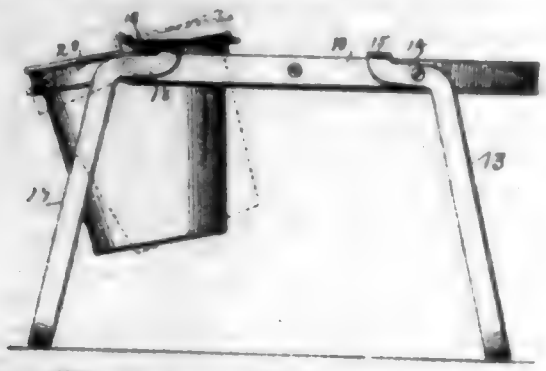
2. The herein-described process of producing multicolored effects in woolen and mixed fabrics, which consists in dyeing animal hair with woolen dyestuffs fast to milling and acid, then treating with a tanning substance and metallic salt so as to render it dye-resistant, working it then with untreated fiber into spun goods or woven fabrics, and then dyeing said goods or fabrics with acid dyestuffs, substantially as set forth.

3. Woolen goods or woven fabrics having multicolored dye effects, and consisting of a mixture of treated woolen fibers, rendered dye-resistant by tanning substances and metallic salts, and of untreated fibers, said treated and untreated fibers being dyed in different colors, substantially as set forth.

815,672. FOLDABLE MILKING-STOOL AND PAIL-HOLDER. Joseph E. Bebee, Harlan, Iowa. Filed July 28, 1905. Serial No. 272,123.

Claim.—1. A foldable milking-stool, consisting of a metal frame, a seat fixed in the frame, a second frame pivoted to the rear end portion of the first-named frame and a third frame pivoted to the front end portion of the first-mentioned frame and means to retain the second and third frames in upright positions.

2. A foldable milking-stool, consisting of a metal frame, a seat fixed in the frame, a second frame pivoted to the rear end portion of the first-named frame and a third frame pivoted to the front end portion of the first-mentioned frame and means to retain the second and third frames in upright positions and a milk-pail holder adjustably connected with the front end of the seat.



3. In a milking-stool and pail-holder, a metal frame, a seat fixed in the frame, notched in side portions of the seat, a second frame having elbow-shaped extensions at its parallel top ends terminating in hooks adapted to enter the notches in the seat.

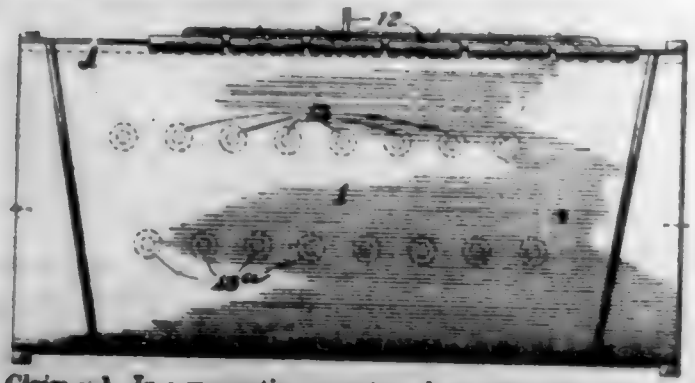
4. In a milking-stool and pail-holder, a metal frame, a seat fitted and fixed in the frame, notches in the top and side portions of the seat, a second frame elbow-shaped at its top ends terminating in hooks adapted to enter the notches in the seat, and a third frame having elbow-shaped extensions terminating in clasps to engage the first-mentioned frame pivotally connected, as shown and described.

5. In a milking-stool and pail-holder, a three-sided frame, a seat fitted and fixed in the frame, notches in the top and side portions of the seat, a second frame having elbow-shaped extensions at its top ends terminating in hooks adapted to enter the notches in the seat, a third frame having elbow-shaped extensions terminating in clasps, pivotally connected and a pail-holder adjustably connected with the front end of the first-mentioned frame, for the purposes stated.

6. In a milking-stool and pail-holder, a three-sided frame, a seat connected with the closed end of the frame, notches in the top and side portions of the seat, a second three-sided frame having elbow-shaped extensions at the ends of the frame terminating in hooks adapted to enter the notches in the seat, a third frame having elbow-shaped extensions terminating in clasps, pivotally connected and a milk-pail holder of circular form pivotally connected with the open end of the first-mentioned frame, for the purposes stated.

7. A milking-stool and pail-holder, comprising a three-sided frame, a seat fixed in the frame, notches in the top and side portions of the seat, a second frame elbow-shaped at the top of its parallel ends, a third frame elbow-shaped at its parallel top ends, pivotally connected and a milk-pail clasp of circular form pivotally connected with a forked frame and the forked frame adjustably connected with the seat, arranged and combined to operate in the manner set forth for the purposes stated.

815,673. CONCENTRATOR. QUINCY BENT, Lebanon, Pa. Filed Apr. 14, 1904. Serial No. 203,164.



Claim.—1. In a magnetic separator, the combination of a support for the material to be treated, a magnet, means for imparting reciprocatory movement to said magnet, means for demagnetizing said magnet at or near the end of its stroke in one direction, and means tending to carry off the material deposited on the support in a direction transverse to that of the movement of said magnet, whereby the magnetizable particles of material deposited on said support are caused to be transported across said support partially by being carried by said magnet in its forward stroke, and partially by momentum after being released therefrom, substantially as set forth.

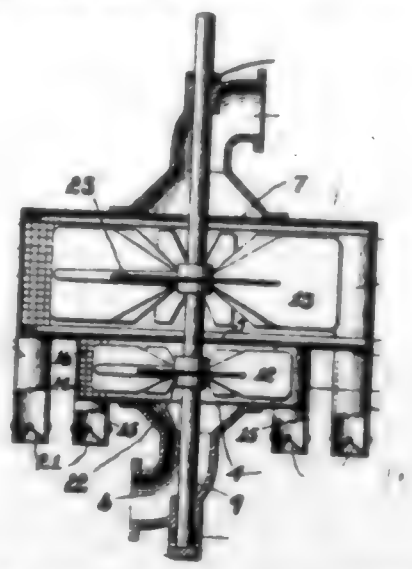
2. In a magnetic separator, the combination of a support for the material to be treated, a magnet adjacent thereto, a second magnet below the first magnet and in advance of the latter, means for imparting simultaneous reciprocations thereto, means for simultaneously demagnetizing said magnets at or near the end of their stroke in one direction, together with means tending to carry off material deposited upon said support in a direction transverse to that of the movement of said magnets, substantially as set forth.

3. In an ore-separating apparatus, the combination of a suitable table, a series of electromagnets, means for imparting simultaneously thereto reciprocatory movements, means for demagnetization of said magnets at or near the end of their stroke in one direction and means tending to carry off the material deposited on the table in a direction transverse to that of the movement of said magnets, whereby the magnetizable particles of material deposited on said table are caused to be transported across said table by a succession of impulses, substantially as set forth.

4 In an ore-separating apparatus, the combination of a table, a series of electromagnets adjacent to the surface thereof, means for imparting simultaneous reciprocations thereto, a second series of similar magnets below the first series and alternating with the latter, and means for simultaneously demagnetizing said series of magnets at or near the end of their stroke or movement in one direction, substantially as and for the purpose set forth.

5. In an ore-separating apparatus, the combination of an inclined table, a series of electromagnets movable therewith, means for imparting lengthwise reciprocatory movements to said table, and means for demagnetizing said magnets at or near the end of the stroke in one direction thereof, together with means for causing water to flow transversely over and upon the top of said table, the construction being such that the magnetizable particles of material deposited on said table will be transported across the latter athwart the water by a step-by-step movement, partly by influence of said magnets and partly by momentum, substantially as set forth.

815,674. GAS-PURIFIER. QUINCY BENT, Lebanon, Pa. Filed June 23, 1904. Serial No. 213,814.



Claim.—1. In an apparatus of the character recited, the combination of the casing, the chamber therein having the central contracted inlet and outlet openings and the peripheral openings, the screens in the latter, the rotatable shaft extending through said chamber, and the fan within the latter mounted on said shaft, substantially as set forth.

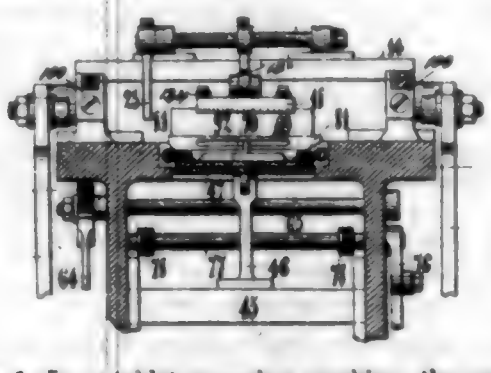
2. In an apparatus of the character recited, the combination of the casing, the chamber therein having the central contracted inlet and outlet openings, and the peripheral openings, the screens in the latter, the rotatable shaft extending through said chamber, the fan within the latter and mounted on said shaft and the deflecting-disk within said chamber and carried by said shaft, substantially as set forth.

3. In an apparatus of the character recited, the combination of the casing, the two superposed chambers therein one being of greater diameter than the other, each having the peripheral openings, the rotatable shaft substantially concentric with and extending through said chambers, and the fans within the latter respectively and mounted on said shaft, the fan within the upper of said chambers being of greater diameter than the other, there being a central contracted inlet-opening into the first chamber, a similar opening between the first and second chambers and a similar outlet-opening from the latter chamber, substantially as set forth.

4. In an apparatus of the character recited, the combination of the casing, the chamber therein having the central contracted inlet and outlet openings, the rotatable shaft extending through said chamber, the fan within the latter and mounted on said shaft, said chamber having also the peripheral vertical openings extending the height of said chamber and the pipes communicating with said peripheral openings respectively, and the valve within said pipes, substantially as set forth.

815,675. MACHINE FOR WRAPPING CHOCOLATE TABLETS OR SIMILAR ARTICLES.

AUGUSTE BLANC, St. Croix, Switzerland, assignor to La Société Savy Jeanjean et Cie., Paris, France. Filed Feb. 7, 1905. Serial No. 244,606.



Claim.—1. In a tablet-wrapping machine, the combination, with the wrapping devices, of a carriage movable toward and away from the same and upon which the tablets are stored, and means for successively depositing the tablets in coöperative relation with said wrapping devices.

2. In a tablet-wrapping machine, the combination, with the wrapping mechanism, and the wrapper-feeding mechanism, of a reciprocating carriage to successively carry the wrappers from said feeding mechanism to said wrapping mechanism while moving in one direction, a tablet-holder on said carriage in which the tablets are stored, and means for successively depositing the tablets in cooperative relation with the wrapping mechanism during the movement of the carriage in a direction opposite to that first mentioned.

3. In a tablet-wrapping machine, a bed, wrapping devices thereon, a laterally-reciprocating carriage slidable on said bed over said devices, means on said carriage for holding a plurality of tablets, and means for successively removing the tablets from said holding means and depositing the same in coöperative relation with said wrapping devices.

4. In a tablet-wrapping machine, wrapping devices, wrapper-feeding devices, a carriage movable between said wrapping and feeding devices, wrapper-gripping means on said carriage, means on said carriage for holding a pile of tablets, and means for successively transferring the tablets from said holding means to said wrapping devices.

5. The combination, with the wrapping devices and wrapper-feeding devices, of a carriage movable between said devices, means on said carriage for holding a pile of tablets, means also on the carriage for holding a single tablet, and means for successively transferring the tablets from the former to the latter means.

6. The combination, with the wrapping devices and wrapper-feeding devices, of a carriage movable between said devices, means on said carriage to hold a plurality of tablets, means also on the carriage to hold a single tablet, and means mounted independently of said carriage for successively transferring the tablets from the former to the latter means.

7. The combination, with the wrapping devices and the wrapper-feeding devices, of a horizontally-reciprocating wrapper-delivering-carriage movable between said devices, means on said carriage to hold a pile of tablets, means also on the carriage for holding a single tablet, a vertically-reciprocating device for successively extracting the tablets from said first-named means and transferring the same to said last-named means, and means for dumping said means to hold a single tablet.

8. In a tablet-wrapping machine, wrapping devices, a carriage for supporting a pile of tablets and for delivering the wrappers to said wrapping devices, a tablet-carrier on said carriage, means for extracting one tablet at a time from the pile on said carriage and for delivering the same to said carrier, and means for emptying the carrier when adjacent said wrapping devices.

9. In a tablet-wrapping machine, a bed, wrapping devices arranged thereon, a reciprocating carriage guided on said bed above said devices and provided with means for holding a pile of tablets, a carrier on said carriage, means for delivering one tablet at a time from said holding means to said carrier, and means for dumping said carrier when directly above said wrapping devices.

10. The combination, with the wrapping devices, of a reciprocating carriage for delivering the wrappers to said devices, means on said carriage for holding a pile of tablets, a carrier on said carriage, a reciprocating plate for extracting said tablets one by one from the pile in which they are stored on said carriage and for pushing each into said carrier, and means for dumping the latter.

11. In a tablet-wrapping machine, wrapping devices, a horizontally-reciprocating wrapper-delivering carriage movable over said devices, means on said carriage for holding a pile of tablets, a carrier mounted upon the under portion of said carriage, means for successively extracting the tablets from said holding means and pushing the same upwardly into said carrier, and means for dumping the latter when above said wrapping devices.

12. In a tablet-wrapping machine, the combination, with the wrapping devices, of a carriage movable toward and away from the same, guides on said carriage for holding a pile of tablets, a carrier on said carriage for holding a single tablet, a plate for extracting a single tablet from said guides and for pushing the same into said carrier, and means for dumping the latter when adjacent said wrapping devices.

13. In a wrapping-machine such as described, the combination, with the carriage, of the guides thereon for holding a pile of tablets, and a reciprocating plate movable upwardly beneath said guides and operable to extract the lowermost tablet in the pile.

14. In a machine such as described, the combination of a bed, a carriage reciprocating thereon, guides on said carriage for holding a pile of tablets, and a horizontal plate guided vertically in said bed and operable to extract the lowermost tablet in the pile.

15. In a machine such as described, the combination of a bed, wrapping devices thereon, a horizontally-reciprocating carriage on said bed, guides on said carriage for holding a pile of tablets, a tablet-carrier on said bed for carrying a single tablet to said wrapping devices, a vertically-reciprocating plate, and means for actuating said plate so as to extract a tablet from the pile in said guides and deliver the same to said carrier.

16. In a wrapping-machine of the type set forth, a bed, a carriage slidable thereon, a tablet-carrier mounted on said carriage and provided with a movable side member, a device for actuating said member, and a stop on said bed for actuating said device.

17. In a machine for wrapping tablets, in combination, a bed, wrapping devices thereon, a reciprocating carriage on said bed above said devices, guides on said carriage for holding a pile of tablets, a carrier on said carriage having an open bottom and embodying a tablet-clamping plate, a horizontal plate guided vertically in said bed, means for actuating said plate so as to extract the lowermost tablet from the pile on said carriage and to push the same upwardly into said carrier, and means for actuating said tablet-clamping plate when said carrier is above said wrapping devices.

18. In a tablet-wrapping machine, in combination, a bed, a wrapper-supporting device at one end thereof, a wrapper-feeding device associated with said supporting device, wrapping devices on said bed, a reciprocating carriage on said bed, a gripper device on said carriage for delivering the wrappers from said feeding device to said wrapping devices, means on said carriage for retaining a pile of tablets, and means for depositing said tablets, one by one, upon the wrappers delivered by the gripping device to said wrapping devices.

19. In a tablet-wrapping machine, the combination of a bed, a wrapper-feeding device at one end thereof, wrapping devices on said bed, a reciprocating carriage on said bed and movable over said wrapping devices in the direction of said wrapper-feeding device, means on said carriage for successively depositing the wrappers adjacent the wrapping devices, a device on said carriage for holding a pile of tablets, a tablet-carrier on said carriage, means for successively delivering the tablets from said holding device to said carrier, and means for dumping the latter when adjacent said wrapping devices.

20. In a tablet-wrapping machine, means to clamp a tablet, means to grip a wrapper, and a single means for normally maintaining said two means in clamping and gripping position respectively.

21. In a tablet-wrapping machine, means to clamp a tablet, means to grip a wrapper, and a single means for releasing said two means.

22. In a tablet-wrapping machine, means to clamp a tablet, means to grip a wrapper, and a connection between said two means whereby both are opened and closed simultaneously.

23. In a tablet-wrapping machine, a tablet-carrier having a

movable side member, a wrapper-gripping device operable by said member, and means for operating said member.

24. The combination, with a tablet-carrier having the rocking plate associated therewith, of the gripping device operable by said plate, and the means for rocking said plate.

25. The combination, with a carriage, of a carrier thereon having a movable tablet-clamping member, a wrapper-gripping device one element of which is carried by said member, and means controlled by the movement of said carriage for operating said member.

26. The combination, with the wrapping devices, and the wrapper-feeding devices, of a carriage movable between said devices, a tablet-carrier on said carriage, a wrapper-gripping device also mounted on the carriage, and a single means for opening said carrier and said gripping device.

27. The combination, with the wrapping devices, and the wrapper-feeding devices, of a carriage movable between said devices, a tablet-carrier on said carriage, a wrapper-gripping device also mounted on said carriage, and a spring for normally maintaining both said carrier and gripping device in closed position.

28. The combination, with the wrapper-feeding device and the wrapping devices, of a carriage movable between the same, a tablet-carrier on said carriage, a wrapper-carrying device also mounted on said carriage, and means for connecting said wrapper-carrying device with said tablet-carrier so that both are simultaneously open and closed.

29. The combination, with the wrapper-feeding devices and the wrapping devices, of a carriage movable between the same and upon which the tablets are stored, a tablet-carrier on said carriage, a wrapper-carrying device on said carriage, means for connecting said wrapper-carrying device with said tablet-carrier so that both are simultaneously opened and closed, means for opening and closing said devices at either end of the reciprocating movement of the carriage, and means for pushing a tablet into said carrier while the same is open.

30. The combination, with the wrapping devices, of a carriage movable over the same, a device on said carriage for holding a pile of tablets, a normally closed carrier on said carriage for holding a single tablet, means for momentarily opening said carrier, means for extracting a tablet from the pile on said carriage and pushing the same into said carrier when the same is open, and means for reopening said carrier when above said wrapping devices.

31. A machine such as described including in its construction wrapping devices, a reciprocating carriage movable over the same, wrapper-feeding devices at one side of said wrapping device and in the path of said carriage, a wrapper-gripping device on said carriage, means on said carriage for holding a plurality of tablets, means for actuating said gripping device so as to transfer a wrapper from said wrapper-feeding device to said wrapping devices while the carriage is moving in one direction, and means for transferring a single tablet from said holder to said wrapping devices during the movement of said carriage in the opposite direction.

32. In a wrapping-machine such as described, the combination of a bed having an opening therein, a wrapper-plate movable in said opening, means for laying a wrapper-sheet over said opening, means for depositing a tablet upon such wrapper, wrapping devices embodying oppositely-disposed folder-bars, means for partially actuating one of said folder-bars so as to push said tablet and wrapper down upon said plate, means for then actuating the other folder-bar, and means for completing the folding movement of said first-named folder-bar.

33. In a tablet-wrapping machine a reciprocating slide-plate, a folder-bar, and a spring connecting said instrumentalities.

34. In a tablet-wrapping machine, a reciprocating slide-plate, a folder-bar in advance of said plate and movable in the same plane, and a resilient connection between said bar and plate.

35. In a tablet-wrapping machine, a bed, a wrapper-plate, means for laying the wrapper on said plate, means for depositing the tablet on the wrapper, horizontally-reciprocating slide-plates on said bed at either side of said wrapper-plate, resiliently-mounted folder-bars carried by said slide-plates, and means for reciprocating the latter.

36. In a tablet-wrapping machine, a folder-bar, and fold-retaining means associated therewith.

37. The combination, with the folder-bar 69, of the fold-retaining bar 70 in connection therewith.

38. In a tablet-wrapping machine, a reciprocatory folder-bar, a rod movable transversely therethrough, and a fold-retaining bar carried by said rod.

39. In a tablet-wrapping machine, a reciprocatory folder-bar having a longitudinally-extending seat, a rod slidable transversely through said folder-bar, and a fold-retaining bar carried by said rod and adapted to fit in said seat.

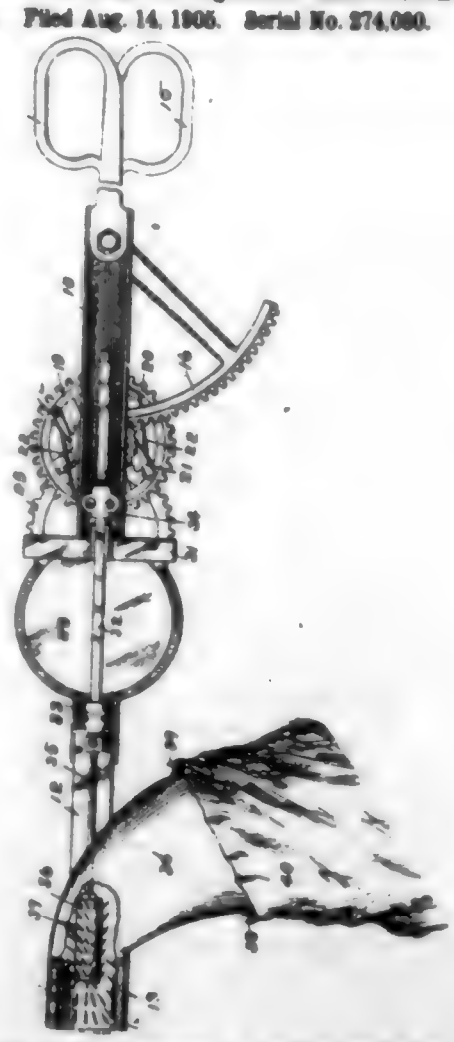
40. In a tablet-wrapping machine, the combination, with the wrapper-plate, of the folder-bars at either side thereof, means for successively actuating said bars, and means associated with the bar which is last actuated for holding down the part of the wrapper folded thereby after said bar has completed its wrapping movement.

41. In a tablet-wrapping machine, the combination, with the wrapper-plate, of the folder-bars at either side thereof, means for successively actuating said folder-bars, a fold-retaining bar associated with one of said folder-bars, and means for retracting said fold-retaining bar.

42. The combination, with the folder-bar 69, of the rod 70× movable transversely therethrough, the fold-retaining bar 70 carried at one end of said rod, and the retracting-bar 71 carried at the opposite end thereof.

43. The combination, with the wrapping devices embodying the folder-bar 69 and the fold-retaining bar 70, of the retracting-bar 71, provided with pins 72², the reciprocating gripping device, and the claws or hooks 72 on said device for engaging said pins and thereby retracting said fold-retaining bar.

815,676. COTTON-PICKER. LEWIS BLOUNT, Athens, Ga., assignor of one-third to Charles Bruce Young and one-third to Lewis Blount, Jr., Augusta, Ga. Filed Aug. 14, 1905. Serial No. 274,080.



Claim.—1. In a cotton-picker, a toothed cylinder, a toothed piston for picking cotton and drawing it into the cylinder where the cotton is retained by the teeth in the cylinder against outward movement as the piston moves outwardly, means for supporting the cylinder and piston in operative relation to each other, and means for reciprocating the piston.

2. In a cotton-picker, a cylinder, a piston, a head on the piston, teeth on the piston-head, means for reciprocating the piston in such a way that the piston-head will be moved to a point outside of and drawn through the cylinder, and a tube connected with the cylinder.

3. In a cotton-picker, a cylinder, a piston, a head on the piston, teeth on the piston-head, means for reciprocating the piston in such a way that the piston-head will be moved to a point outside of and drawn through the cylinder, a tube connected with the cylinder, and a bag detachably connected with the tube.

4. In a cotton-picker, a cylinder, teeth on the interior of the cylinder, a piston carrying a head, teeth on the piston-head designed to operate between the teeth of the cylinder and to extend outside of the cylinder as it is reciprocated, and means for reciprocating the piston.

5. In a cotton-picker, a cylinder, teeth on the interior of the cylinder, a piston carrying a head, teeth on the piston-head designed to operate between the teeth of the cylinder and to extend outside of the cylinder as it is reciprocated, means for reciprocating the piston, and a tube attached to and communicating with the cylinder.

6. In a cotton-picker, a cylinder, teeth on the interior of the cylinder, a piston carrying a head, teeth on the piston-head designed to operate between the teeth of the cylinder and to extend outside of the cylinder as it is reciprocated, means for reciprocating the piston, a tube attached to and communicating with the cylinder, and a bag secured to the free end of the tube.

7. In a cotton-picker, a cylinder, teeth on the interior of the cylinder, a piston carrying a head, teeth on the piston-head designed to operate between the teeth of the cylinder and to extend outside of the cylinder as it is reciprocated, and means for continuously reciprocating the piston.

8. In a cotton-picker, a frame, a cylinder-support secured to the frame, a cylinder secured to the cylinder-support, a series of teeth on the interior of the cylinder and extending inwardly and toward the frame, a piston having a toothed head, designed to operate through the cylinder and outside of the same, and means for operating the piston.

9. In a cotton-picker, a frame, a cylinder-support secured to the frame, a cylinder secured to the cylinder-support, a series of teeth on the interior of the cylinder and extending inwardly and toward the frame, a piston having a toothed head, designed to operate through the cylinder and outside of the same, means for operating the piston, a tube secured to the cylinder, and a bag detachably connected therewith.

10. In a cotton-picker, a frame, a cylinder-support secured to the frame, a cylinder secured to the cylinder-support, a series of teeth on the interior of the cylinder and extending inwardly and toward the frame, a piston having a head at one end of it, teeth extending outwardly from the head toward the rod of the piston, the teeth of the piston-head designed to operate between the teeth of the cylinder as the piston-head passes through the cylinder, and means for reciprocating the piston continuously, for the purposes stated.

11. In a cotton-picker, a frame, a cylinder-support secured to the frame, a cylinder secured to the cylinder-support, a series of teeth on the interior of the cylinder and extending inwardly and toward the frame, a piston having a head at one end of it, teeth extending outwardly from the head and toward the rod of the piston, the teeth of the piston-head designed to operate between the teeth of the cylinder as the piston-head passes through the cylinder, means for reciprocating the piston continuously, and a tube attached to and communicating with the cylinder.

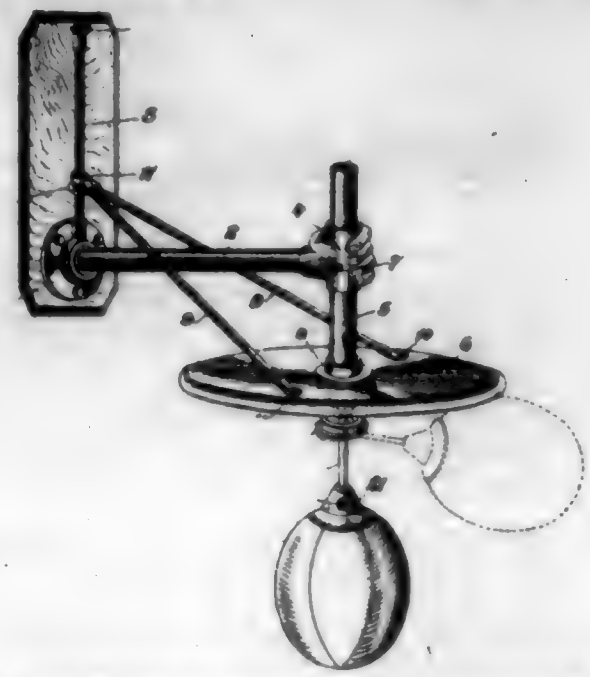
12. In a cotton-picker, a frame, a cylinder-support secured to the frame, a cylinder secured to the cylinder-support, a series of teeth on the interior of the cylinder and extending inwardly and toward the frame, a piston having a head at one end of it, teeth extending outwardly from the head and toward the rod of the piston, the teeth of the piston-head designed to operate between the teeth of the cylinder as the piston-head passes through the cylinder, means for reciprocating the piston continuously, a tube attached to and communicating with the cylinder, and a bag or other receptacle detachably connected with the free end of the tube.

815,677. PUNCHING-BAG APPARATUS. WILLIAM J. BRYON, Jr., New York, N. Y. Filed July 24, 1903. Serial No. 166,234.

Claim.—1. A punching-bag apparatus, comprising a supporting-bracket having a horizontally-arranged arm, a rebounding device having a vertically-adjustable connection with said bracket-arm, and a stay-rod connected at one end with the rebounding device and at its opposite end having a vertically-adjustable connection with the supporting-bracket.

2. A punching-bag apparatus, comprising a supporting-bracket having a horizontally-arranged arm provided with a vertically-arranged sleeve adjacent to one end thereof, a rebounding device having a stem slidably supported in said sleeve, a stay-rod connected at one end with the rebounding device and at its opposite end with the supporting-bracket, and means for holding the rebounding device in a stationary adjusted position relative to the said bracket-arm.

3. A punching-bag apparatus, comprising a supporting-bracket having a horizontally-arranged arm, a rebounding device having a vertically-adjustable connection with said bracket-arm, two stay-rods connected at one end with the rebounding device adjacent to the opposite sides thereof and at their other end having a vertically-adjustable connection with the supporting-bracket, and means for holding the rebounding device in a stationary adjusted position relative to the said bracket-arm.



4. A punching-bag apparatus, comprising a supporting-bracket having two arms, one of which is horizontal and the other vertical, a rebounding device having a vertically-sliding connection with the said horizontal bracket-arm, a sleeve or collar having a sliding connection with the said vertical bracket-arm, stay-rods connected at one end with the said sliding sleeve or collar and at their opposite end with the rebounding device, and means for holding the rebounding device in a stationary adjusted position relative to its supporting bracket-arm, for the purpose set forth.

5. A punching-bag apparatus, comprising a rebounding device, a head having a vertically-adjustable connection with said rebounding device and projecting at one end below the same, and a punching-bag connected with said head through the medium of a flexible connection, the said connection being attached to the head whereby the same length of connection between the bag and the head will be maintained during any adjustment of the latter.

6. A punching-bag apparatus, comprising a rebounding device having a tubular stem, a head adjustably supported within said tubular stem and projecting at one end below the rebounding device, the said head being vertically adjustable relatively to the latter, and a bag connected with said head through the medium of a flexible connection.

7. A punching-bag apparatus, comprising a rebounding device, a bag suspended below said rebounding device through the medium of a flexible connection, and a yieldingly-supported device arranged in a position in the path of movement of the said flexible bag connection to be engaged thereby subsequent to the initial swing-off of the bag and prior to its contact with the rebounding device, for the purpose set forth.

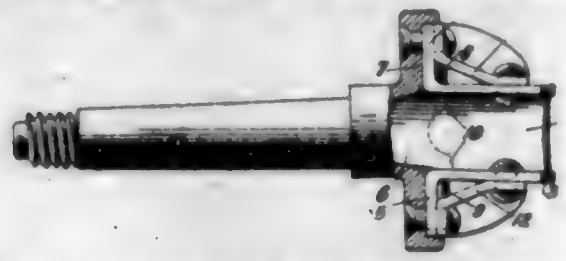
8. A punching-bag apparatus, comprising a rebounding device, a punching-bag suspended below said rebounding device through the medium of a flexible connection, and a spring arranged in a position in the path of movement of the said flexible bag connection to be engaged thereby during the swing of the bag, for the purpose set forth.

9. A punching-bag apparatus, comprising a rebounding device, a punching-bag suspended below said rebounding device through the medium of a flexible connection, said flexible connection comprising a core-piece and an outer stiffening sheath or cover, and a device arranged in a position in the path of movement of the said flexible bag connection to be engaged thereby during the swing of the bag, for the purpose set forth.

10. A punching-bag apparatus, comprising a supporting-bracket having a horizontally-arranged arm, a rebounding device having a vertically-adjustable connection with said bracket-arm, a stay-rod connected at its opposite ends with the rebounding device and with a support respectively, the connection at one end of the rod being adjustable, and means for holding the rebounding device in stationary adjusted position relative to the said bracket-arm.

11. A punching-bag apparatus, comprising a rebounding device having a tubular stem, a punching-bag suspended below said rebounding device through the medium of a flexible connection the upper end of which extends into the said tubular stem, and means longitudinally adjustable relative to said stem having the said upper end of the flexible bag connection connected therewith.

815,678. METALLIC AXLE. HUGH M. BUTLER, Kirkstall Forge, near Leeds, England. Filed June 30, 1905. Serial No. 267,533.



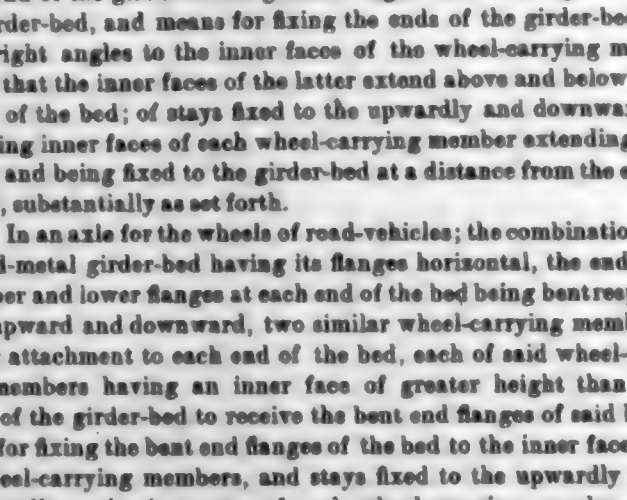
Claim.—1. In an axle for the wheels of road-vehicles; the combination with a rolled-metal girder-bed having its flanges horizontal, and a wheel-carrying member fixed to each end of said bed, the inner end parts of said members adjacent to the bed ends extending upward and downward above and below the upper and lower flanges of said bed; of stays connecting the said extending parts of the wheel-carrying members to the rolled-metal girder-bed, substantially as set forth.

2. In an axle for the wheels of road-vehicles; the combination with a rolled-metal girder-bed having its flanges horizontal, two wheel-carrying members each having an inner face for attachment to the end of the girder-bed of greater height than the height of the said girder-bed, and means for fixing the ends of the girder-bed at about right angles to the inner faces of the wheel-carrying members so that the inner faces of the latter extend above and below the flanges of the bed; of stays fixed to the upwardly and downwardly projecting inner faces of each wheel-carrying member extending inwardly and being fixed to the girder-bed at a distance from the ends thereof, substantially as set forth.

3. In an axle for the wheels of road-vehicles; the combination of a rolled-metal girder-bed having its flanges horizontal, the ends of the upper and lower flanges at each end of the bed being bent respectively upward and downward, two similar wheel-carrying members one for attachment to each end of the bed, each of said wheel-carrying members having an inner face of greater height than the height of the girder-bed to receive the bent end flanges of said bed, means for fixing the bent end flanges of the bed to the inner faces of the wheel-carrying members, and stays fixed to the upwardly and downwardly projecting parts of each wheel-carrying member, extending inwardly, and being fixed to the girder-bed at a distance from the ends thereof, substantially as set forth.

4. In an axle for the wheels of road-vehicles; the combination of a rolled-metal girder-bed having its flanges horizontal, the ends of the upper and lower flanges at each end of the bed being divided from the web and bent respectively upward and downward, two similar wheel-carrying members one for attachment to each end of the bed, each of the said wheel-carrying members having an inner face of greater height than the height of the girder-bed in order to receive the bent end flanges of said bed, and recesses to receive the projecting ends of the web, means for fixing the bent end flanges of the bed to the inner faces of the wheel-carrying members, and stays extending inwardly from the upwardly and downwardly projecting inner faces of each wheel-carrying member to the girder-bed at a distance from the ends thereof, substantially as set forth.

815,679. CONCENTRATOR. HARRY H. CAMPBELL, Stockton, Pa. Filed Apr. 14, 1904. Serial No. 203,188.



Claim.—1. In an ore-separator, the combination of a suitable support for the material to be treated, a row of electromagnets adjacent said support, means for imparting reciprocatory movement to said magnets in a direction transverse to the line thereof, means for causing said support to move in a direction transverse to the line of said magnets, means for demagnetizing said magnets during the forward stroke and for magnetizing the same during the return stroke, and means tending to carry said material over and upon said support in a direction substantially parallel with the line of said magnets, substantially as and for the purpose set forth.

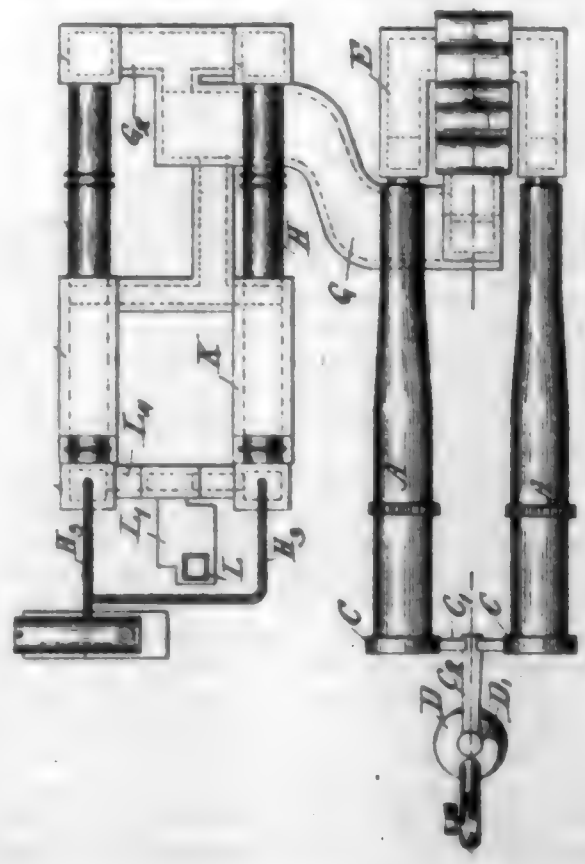
2. In an ore-separator, the combination of the slidable table, means for imparting reciprocatory motion thereto, means for imparting a sudden bump or jolt thereto at the end of its forward stroke, a series of electromagnets adjacent to said table in a line substantially at right angles to the line of reciprocation of the latter, means for effecting reciprocations of said magnets reverse to those of said table, means for magnetizing said magnets at the end of their forward stroke, and demagnetizing the same at the end of their return stroke; together with means tending to advance the ore particles upon said table in lines transverse to the direction of reciprocation of said table and magnets, substantially as and for the purpose set forth.

3. In an ore-separator, the combination of the inclined slidable table, the series of electromagnets adjacent thereto in the line of the incline of said table, means for imparting a reciprocatory motion to said table, means for causing a sudden bump or jolt of the latter at the end of its forward reciprocation, means for effecting reciprocations of said series of magnets reverse to those of the table, and means for magnetizing said magnets at the end of their forward stroke and demagnetizing the same at the end of their return stroke, substantially as and for the purpose set forth.

4. In an ore-separator, the combination of a support for the material to be treated, means tending to move said material transversely over and upon said support, means for causing said support to move longitudinally, an electromagnet adjacent said support, means for imparting reciprocatory movement to said magnet in a direction at an angle to the direction of travel of the material across said support induced by said first-mentioned means, together with means for demagnetizing said magnet during its forward stroke and for magnetizing the same during the return stroke.

5. In an ore-separator, the combination of a support for the material to be treated, means tending to move said material transversely over and upon said support, means for causing said support to move longitudinally, a series of electromagnets adjacent said support and extending in a transverse direction relative thereto, means for imparting reciprocatory movement to said series of magnets in a direction at an angle to the direction of travel of the material across said support induced by said first-mentioned means, together with means for demagnetizing said magnets during their forward stroke and for magnetizing the same during the return stroke.

815,680. APPARATUS FOR MAKING CEMENT. ROLLA C. CARPENTER, Ithaca, N. Y. Filed Oct. 17, 1903. Serial No. 177,647.



Claim.—1. In cement apparatus, a rotary kiln, a clinker-cooler adjacent said kiln, means to convey the clinker from said kiln to said cooler, a supply-fan to force air into said clinker-cooler to be heated therein and to force said air into said kiln, a boiler mounted adjacent said kiln, means to conduct the kiln-gases through said boiler, a rotary drier, a drier-furnace to heat said drier and means to conduct the gases from said furnace around said drier and then through the same and means to conduct kiln-gases from said boiler through said drier.

2. In cement apparatus, a rotary kiln, means to heat air from the klinker from said kiln and to force said heated air into said kiln to support combustion therein, means to heat said kiln, a boiler mounted adjacent said kiln to receive the kiln-gases therefrom, a rotary drier provided with a drier-furnace and means to conduct the kiln-gases from said boiler through said drier.

3. In cement apparatus, a rotary kiln, a clinker-cooler mounted adjacent said kiln, means to force air through said clinker-cooler and into said kiln, means to heat said kiln, a rotary drier mounted adjacent said kiln, a drier-furnace for said drier and means to conduct the kiln-gases from said kiln through said drier.

4. In cement apparatus, a rotary kiln, a clinker-cooler adjacent said kiln to receive clinker therefrom, means to force air through said clinker-cooler and into said kiln, means to heat said kiln, a boiler adjacent said kiln to receive kiln-gases therefrom, a drier adjacent said boiler, a drier-furnace for said drier, means to direct gases from said drier-furnace through said drier and means to conduct the kiln-gases from said boiler through said drier.

5. In cement apparatus, a rotary kiln a clinker-cooler adjacent said kiln, means to force air through said clinker-cooler and into said kiln, means to heat said kiln, a boiler and a drier adjacent said kiln and means to direct kiln-gases through said boiler and drier.

6. In cement apparatus, a rotary kiln, means to heat said kiln, a rotary drier, a drier-furnace, means to direct the heated gases from said drier-furnace around said drier and then through the same, means to direct the kiln-gases through said drier and means to regulate the movement of said gases.

7. In cement apparatus, a rotary kiln, a rotary drier provided with a drier-furnace adjacent said kiln, means to direct the gases from said drier-furnace through said drier, means to direct the kiln-gases through said drier and means to regulate the movement of said gases.

8. In cement apparatus, a rotary kiln, means to heat said kiln, a drier, a drier-furnace, means to direct the gases from said drier-furnace through said drier, means to direct the kiln-gases through said drier and means to regulate the movement of said gases.

9. In cement apparatus, a rotary kiln, means to heat said kiln, a drier, a drier-furnace, means to direct the gases from said drier-furnace through said drier, and means to direct the kiln-gases through said drier.

10. In cement apparatus, a kiln, a rotary drier, a drier-furnace, means to direct the gases from said drier-furnace around and through said drier and passages connected with said kiln to direct kiln-gases through said drier.

11. In cement apparatus, a cement-heater to heat substantially liquid cement by heated vapors, a drier to receive said cement from said heater, a drier-furnace and means to direct the gases from said drier-furnace through said drier.

12. In cement apparatus, a cement-heater having heating-tubes to heat by means of heated vapors substantially liquid cement passing through said tubes, and a drier to receive said cement from said heater.

13. In cement apparatus, a rotary kiln, a multiple burner to supply fuel to said kiln, a clinker-cooler adjacent said kiln, an inclosed chain conveyer to supply clinker to said cooler from said kiln and a fan to force air through said cooler and conveyer into said kiln.

14. In cement apparatus, a rotary kiln, a casing inclosing the mouth of said kiln, a burner to heat said kiln, a clinker-chute connected to said casing, a clinker-cooler mounted adjacent said chute, a conveyer working in a closed casing to convey clinker from said clinker-chute to the top of said clinker-cooler, and a supply-fan connected to said cooler to force heated air into said kiln to supply combustion therein.

15. In cement apparatus, a cement-kiln, a burner to heat said kiln, a clinker-cooler, inclosed means to convey cement-clinker from said kiln to said cooler, means to force air for combustion into said cooler and thence into said kiln, a water-tube boiler mounted adjacent said kiln, an auxiliary furnace for said boiler and means to convey the kiln-gases through said boiler.

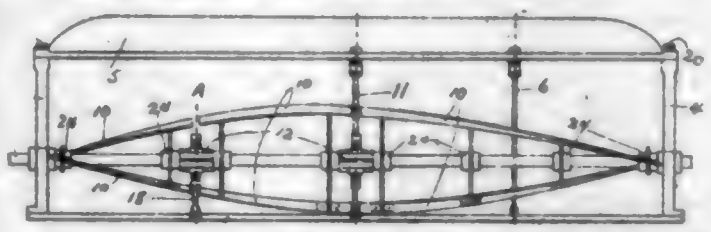
16. In cement apparatus, a rotary kiln, a burner to heat said kiln, inclosed means to receive the clinker from the mouth of said kiln and to cool the same, a fan to force air into said means to heat said air before it enters said kiln, a boiler mounted adjacent said kiln and means to pass the kiln-gases through said boiler.

17. In cement apparatus, a kiln, means to heat said kiln, a casing inclosing the mouth of said kiln, a clinker-chute connected to said casing, a clinker-cooler mounted adjacent said kiln, a tower connected to said clinker-cooler provided with staggered slides, means to admit air to said clinker-cooler adjacent said tower and an inclosed conveyer to carry clinker from said clinker-chute to the top of said tower.

18. In cement apparatus, a rotary kiln, means to heat said kiln, a clinker-cooler adjacent said kiln, an inclosed chain conveyer to supply clinker to said cooler from said kiln and means to cause a circulation of air through said cooler and conveyer into said kiln.

19. In cement apparatus, a cement-heater having heating-tubes to heat by means of heated vapors substantially liquid cement passing through said tubes and a rotary cylinder to receive said cement from said heater.

815,681. MOWING-MACHINE. RAY G. COATES, Pasadena, Cal. Filed Mar. 14, 1904. Serial No. 198,166.



Claim.—1. In the cutting mechanism of a mowing-machine the combination of a knife, a rotary cutter coöperating with said knife, end supports for the shaft of said rotary cutter, and a support for said shaft on said knife intermediate between said end supports, for the purpose described.

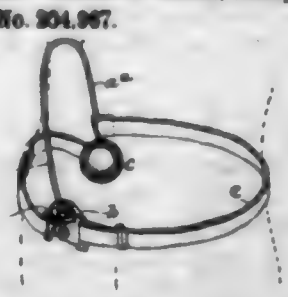
2. In the cutting mechanism of a mowing-machine the combination of a knife, a rotary cutter coöperating with said knife, end supports for the shaft of said rotary cutter, a support for said shaft on said knife intermediate between said end supports, and means of adjusting said shaft as regards said knife at said intermediate support, substantially as described.

3. In the cutting mechanism of a mowing-machine the combination of a knife, a rotary cutter coöperating with said knife, a reinforcing-bar for said knife located above said knife and clear of the path of revolution of said cutter and approximately in the plane of least stiffness of said knife, a member, curved to clear the path of revolution of said cutter, adapted to locally support said knife from said bar at a point intermediate between the ends of said knife, and means of adjusting said knife to said bar at said member, in substance as described.

4. In the cutting mechanism of a mowing-machine the combination of a knife, a rotary cutter coöperating with said knife, a reinforcing-bar for said knife located above said knife and clear of the path of revolution of said cutter, a member intermediate between the ends of said knife connecting said knife and said bar, a supporting-bearing on said member for the shaft of said rotary cutter, and means of adjustment between said knife and said bar at said member, in substance as described.

5. In the cutting mechanism of a mowing-machine the combination of a knife, a rotary cutter coöperating with said knife, a reinforcing-bar for said knife located above said knife and clear of the path of revolution of said cutter, a member intermediate between the ends of said knife connecting said knife and said bar, a bearing on said member for the shaft of said cutter, and means of adjustment between said knife and said bearing at said member, in substance as described.

815,682. TRUSS. ALFRED C. COOKE, Rockyhill, Conn. Filed Apr. 26, 1904. Serial No. 204,967.

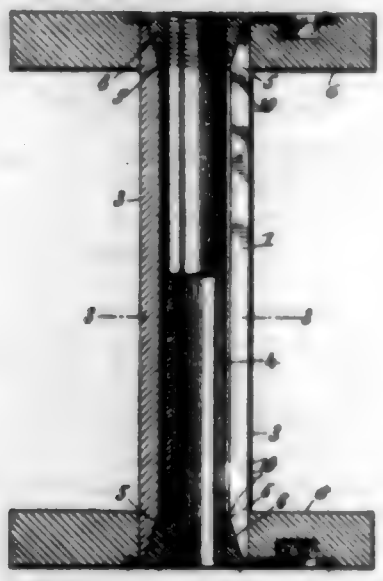


Claim.—1. The herein-described improved truss-pad comprising a bulb made of expansible material, a plate located within said

bulb against one side thereof, a filling-orifice through the wall of said bulb and said plate, the orifice in said plate being interiorly threaded, a spring valve for said orifice and a screw engaging the threads in said orifice said screw sealing said orifice outside the spring-valve and being so formed as to be adapted to secure the pad to a truss-frame.

2. In a truss, the combination of a body member, a stud pierced at one end to receive the body member a set-screw passing through the stud and bearing against the body member, a leaf adjustably mounted on the said stud, a set-screw passing through the leaf and engaging the stud and a pad attached to said leaf.

815,683. BOBBIN. Charles C. Cost, Bismarck, N. D. Filed Apr. 26, 1905. Serial No. 257,492.



Claim.—1. A bobbin comprising a body formed of a plurality of longitudinal segmental sections heads having circular openings to receive the segmental sections, means on the heads for clamping the sections against the inner walls of the openings, and a connection between the heads within the body.

2. A bobbin comprising a body formed of a plurality of longitudinal segmental sections each beveled outwardly on its inner surface for a suitable distance from each end, a core for the sections having its end portions threaded, and heads at the ends of the body, each provided with a hollow threaded cone screwing upon one of said end portions of the core and engaging the beveled surfaces of said segmental sections.

3. A bobbin comprising a body formed of a plurality of longitudinal segmental sections each beveled outwardly on its inner surface for a suitable distance from each end, a tubular core for the sections having its end portions externally threaded, and heads at the ends of the body each having flush with the outer surface thereof a metal plate provided with a threaded cone screwing upon one of said end portions of the core and engaging the beveled surfaces of said segmental sections

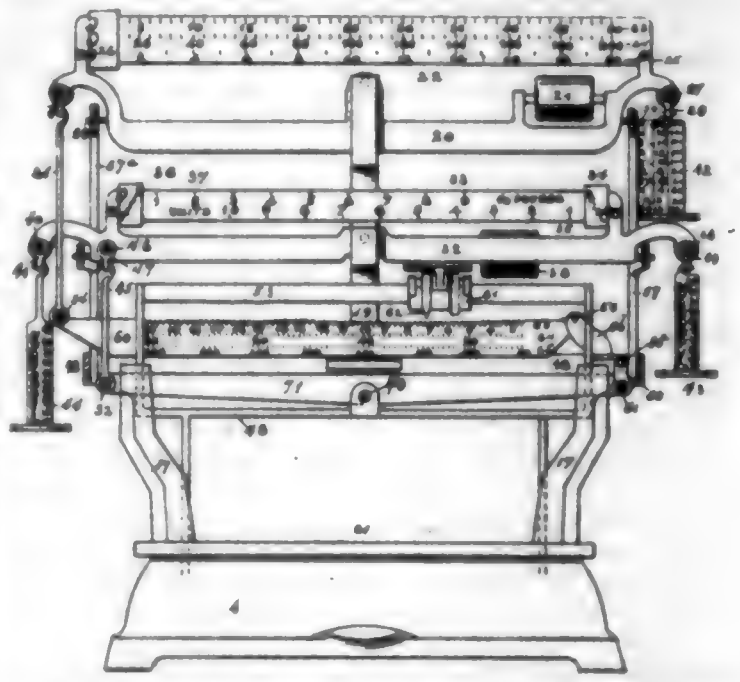
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815,684. COMPUTING-SCALE. John W. Culker, Cleveland, Ohio. Filed Nov. 23, 1904. Serial No. 234,099.

Claim.—1. In a computing-scale, a rectangularly-pivoted weight-supporting-lever system, a vertically-supported frame flexibly connected with the outer pivots of said lever system, a graduated price-bar fulcrumed at one end outside of and extending across and within said vertical frame, a weighing-beam flexibly connected to said price-bar at its free end, and a means of positively connecting said price-bar and vertical frame at any point between the ends of said price-bar as shown and described.

2. In a computing-scale a weight-supporting-lever system having its outer pivots in practically rectangular alinement with its fulcrum-pivots, a practically-rectangular steelyard-frame vertically supported upon the outer pivots of said lever system, and a horizontal equal-notched track-bar as its upper member; a graduated price-bar fulcrumed at its one end outside of and extending across and within said vertical frame parallel to and notched coincident with said track-bar, an inverted scale weighing-beam connected to and operating in unison with said vertical frame, a computing-beam flexibly connected with the before-named price-bar within but independent of said vertical frame, and a means of transmitting the movement of the said frame at a fixed point of its track-bar to a fixed point upon said price-bar as shown and described.

3. In a computing-scale having a horizontally-positioned equal-notched track-bar member between its weight-supporting levers and its weighing-beam and moving in unison therewith, a graduated and notched price-bar fulcrumed at one end beyond said track-bar member, its notched body extending parallel to and in register with said track-bar member, and its free end connected with a superposed value-beam and normally independent of said track-bar member, and a movable knife-edge connection upon the track-bar member adapted to be positively locked at any point thereon and positively contacted in any desired notch upon said price-bar, as shown and described.



4. In a computing-scale, weight-supporting levers connected with a weighing-beam having a horizontally-positioned vertically-movable notched track-bar, positively operated by the weighing mechanism, a notched price-bar parallel with and below said track-bar, fulcrumed at its one end, and connected at its other end to a computing-beam beyond the said track-bar, and normally independent thereof, and a carriage having a journaled handle linked in opposite directions to two vertically-movable frames whereof one is knife-edged exteriorly to be impinged within the notches of the price-bar, and one is fitted to lock within the notches of the track-bar when said journaled handle is depressed as shown and described.

5. In a scale having weight-supporting levers connected with a superposed beam, a horizontally-positioned vertically-movable equal-notched bar member moving in unison with the weighing mechanism, and a value-beam having a price-bar suspended below and notched in register with said horizontal bar member and in normal balance independent thereof, a carriage comprising a body fitted about and adapted to be moved longitudinally upon said horizontal bar members, a handle journaled upon said body and oppositely linked to two vertically-movable frames, slidably seated within said body, one of said frames being fitted exteriorly as a knife-edge fulcrum to seat within the notches of the price-bar and the other to fit within the notches of the horizontal bar member simultaneously by the depression of the handle, and to be simultaneously released by its elevation as shown and described.

6. In a computing-scale, a value-beam having a pivotally-suspended price-bar graduated and notched in equal spaces from its fulcrum toward its suspending pivot and in normal independent balance, a horizontally-positioned vertically-movable member of the weighing mechanism above and having its lower edge notched in register with the upper edge of said price-bar, weight-supporting levers and indicating-beam connected with said horizontal bar member in normal balance and a means of transmitting the movement of the one bar to the other bar without lost motion or change of leverage as shown and described.

7. In a computing-scale, a weighing-beam having an inverted scale representing units of quantity and decimal subdivisions thereof, a horizontal track-bar member of the steelyard connection between said beam and the weight-supporting levers, a computing-beam having a pivotally-suspended graduated and notched price-bar parallel with and below said track-bar member, and provided with a scale coöperating with its notches based upon sixty pounds at a given price and indicating multiples and submultiples of said price, a coöperating scale upon the value-beam, and a knife-edge fulcrum adapted to be locked at any point upon said track-bar member and to connect with said price-bar, whereby the movement of the value-

beam may be transmitted to the weighing-beam and scale-levers as shown and described.

8. In a computing-scale an equal spaced graduated and notched price-bar fulcrumed on the scale-frame, a scale of values registering with said graduations, a superposed value-beam flexibly connected to and having a graduated scale coöperating with the price-bar scale, a poise adapted to indicate upon the value-beam, a reversely-numbered weighing-beam connected with the scale-levers, a poise adapted to indicate upon said beam and a means of transmitting the movement of the value-beam to the weighing mechanism, or of the weighing-beam to the value-determining beam as shown and described.

9. In a computing-scale, an equal spaced and notched price-bar supported at its one end upon the scale-frame and at its other end suspended from a value-beam superposed on said frame and provided with a scale of numbers based upon an arbitrary valuation of the scale-unit, a corresponding scale upon the value-beam, a poise on said value-beam adapted to indicate upon said scale, a pendant upon said value-beam having a vertical column of values corresponding with the arbitrary scale of the value-beam and adapted to indicate the value of loose weights placed thereon, and a means of connecting the before-named price-bar with the weighing mechanism as shown and described.

10. In a computing-scale, a weighing mechanism having a horizontally-positioned vertically-moving notched member, an inverted scale weighing-beam, a computing mechanism having a price-ba notched in register with the horizontal member of the weighing mechanism and provided with a scale coöperating with the inverted weighing-scale and registering with the before-named notches, a value-beam having a scale coöperating with the said price-bar scale, and a poise adapted to indicate on said value-beam, a point-pendant having a vertical column of figures indicating increments of said value-scale, weights adapted to indicate upon said vertical column and means of transmitting the motion of the computing to the weighing mechanism or vice versa as shown and described.

11. In a scale of the described class, a computing-beam having a flexibly-suspended price-bar fulcrumed parallel therewith upon the scale-frame and in normal balance independently of the weighing mechanism, corresponding price-scales on the price-bar and value-scales on the computing-beam, a horizontally-positioned vertically-movable member of the weighing mechanism parallel with said price-bar and a means, on said horizontal member, of connecting it with said price-bar in exact relationship as shown and described.

12. In a scale as described, a weighing-beam provided with two parallel scales of equal divisions, one reading from the load toward the point, subdivided into spaces indicating fractions of weight, and fitted with a poise adapted to indicate thereon the weight placed upon the load-carrier or platform; the other scale subdivided into decimal submultiples, reading from the point toward the load, and fitted with a poise adapted to indicate thereon the number of units or things given as one factor in a problem, a computing mechanism adapted to coöperate with said weighing-beam and a means of transmitting motion from the computing-beam to the weighing-beam or from the weighing-beam to the computing-beam as shown and described.

13. A scale comprising a normally balanced weighing mechanism adapted to indicate weights placed upon its weight-receiver, or weights or numbers not placed thereon, an independently-balanced computing mechanism, adapted to indicate values at various prices or multiples, and a means for connecting and disconnecting the two mechanisms as shown and described.

14. In a scale having a computing mechanism independently balanced and adapted to be connected, at various multiples of leverage, with the weighing mechanism; a horizontally-positioned bar interposed between and connected with the weight-supporting levers and weight-indicating beam and positively moved in a vertical line by said weighing mechanism and provided with a longitudinally-movable, vertically-adjustable positively-lockable fulcrum for connecting the two mechanisms, as shown and described.

15. A scale having a normally balanced weighing mechanism with a beam fitted with proper scales and poises adapted to indicate the amount of load upon its weight-receiver, and also to indicate and exemplify a load not upon the weight-receiver, an independently-balanced computing mechanism having a price-bar provided with a plurality of price series of different multiples, and a beam provided with a plurality of value-scales corresponding with the price series of the price-bar, a poise adapted to indicate on each of the several differential scales, and a means of connecting the weighing mechanism to the computing mechanism at any desired price or multiple of leverage as shown and described.

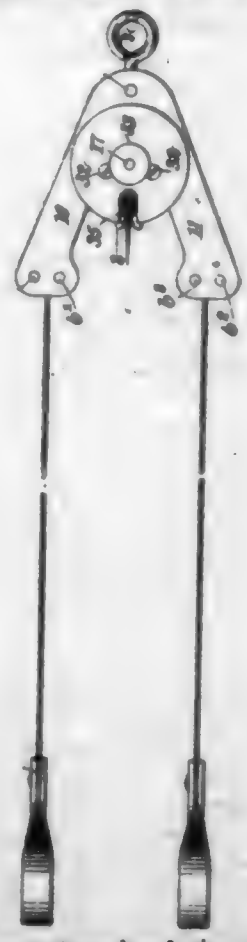
16. In a scale as described, a normally balanced weighing mechanism having a beam spaced and marked in two oppositely-increasing scales with poises, whereof one indicates the amount of a load upon the platform, and the other represents a load thereon, oppositely-placed "point" counterpart pendants on said beam to increase its capacity, an independently-balanced computing mechanism comprising a horizontal fulcrumed price-bar having a plurality of price series of different multiples, a value-beam having a plurality of value-scales, corresponding with said price-bar, and a poise adapted to indicate upon each of said value-scales, a "point pendant" having a plurality of vertical scales in correspondence with said price series and value-scales, weights adapted to indicate upon said pendant, a horizontally-positioned bar member of said weighing mechanism parallel with the before-named price-bar, and a fulcrum adapted to be moved longitudinally thereon and to be depressed into contact with said price-bar as shown and described.

17. In a computing-scale, a weighing mechanism with a normally balanced beam having reversely-positioned weighing-scales and poises, and oppositely-suspended point-loops, and an independently-balanced computing mechanism comprising a value-beam and a price-bar suspended therefrom provided with two or more price and value scales adapted to correspond each with the other and to be indicated upon by a poise upon the value-scales, and by a fulcrum upon the price-scales and an attachable and detachable pendant-poise adjusted to indicate a weight or value equal to the total beam capacity of either weighing or computing beam, and adapted to receive additional loose weights as shown and described.

18. In a scale the combination with the inverted scale-beam thereof, a pendant-poise adapted to hang from a reversely-placed point-loop upon and to indicate the total capacity of said beam, and having vertical columns of figures corresponding with the scales on said beam, whereby the amount of loose weights placed thereon, inclusive of said pendant, is indicated upon said pendant as shown and described.

19. In a scale, a base, a rectangularly-pivoted load-supporting horizontally-positioned lever fulcrumed within the base, a horizontally-positioned shelf-lever fulcrumed above and transverse the base, a vertical frame surrounding said shelf-lever, and pivotally supported thereby, a weighing-beam superposed above and connected to the free end of said shelf-lever, and flexible connections between the opposite lower ends of said vertical frame and the opposite outer pivots of said load-supporting lever, as shown and described.

815,685. STROPPING-MACHINE. JAMES R. CURLEY, New York, N. Y. Filed Aug. 24, 1905. Serial No. 275,604.



Claim.—1. In a razor-stropping device, a frame, a shaft mounted to revolve in the frame, razor-retaining devices mounted to revolve on the frame, connections between said retaining devices and

said shaft, imparting to said retaining devices a rotary reciprocating motion, and guide-rollers arranged in pairs in advance of the shaft and at points beyond its sides, one roller of a pair being convexed and the other roller concaved.

2. In a razor-stropping device, a frame, guide-rollers arranged in pairs and mounted in the frame in advance of and at each side of the shaft, razor-retaining devices mounted to turn on the frame, gearing between the ends of the shaft and the razor-retaining devices, whereby to give the latter rotary reciprocating movement, and a razor-strop which is passed to frictional engagement with the shaft and between and in frictional engagement with the pairs of guide-rollers, whereupon by alternately moving the ends of the strop back and forth the shaft is alternately turned to one side or the other.

3. In a razor-stropping machine, guide-rollers for the strop in substantially close relation, one roller being convexed and the other roller correspondingly concaved to impart a bulge or belly to the strop passing between them.

4. In a razor-stropping machine, a frame, guide-rollers for the strop mounted in the said frame in substantially close relation, one roller being convexed and the other correspondingly concaved, one roller being capable of movement to and from the other, and a tension device for the latter roller, normally forcing it toward its mating roller.

5. In a razor-stropping machine, a frame, opposing pairs of guide-rollers, a pivot for a razor located at the lower portion of the frame, a razor-retaining device mounted to revolve at the upper portion of the frame, a strop which is passed between the rollers of the said pairs of guide-rollers, and means whereby upon moving the strop backward and forward a pivotal reciprocating motion is imparted to the razor.

6. In a razor-stropping device, a frame, a shaft journaled in the said frame, gears carried by the said shaft at the top and at the bottom, idle gears carried by the frame, meshing with those on the shaft, disks loosely mounted on the shaft at the top and at the bottom over the upper and the lower gears, the disks being provided with segmental openings having teeth to mesh with the idle gears, a pivot for a razor carried by the lower disk, gripping devices for the tang of the razor carried by the upper disk, and a strop passed in frictional engagement with the said shaft, whereby to rotate the same.

7. In a razor-stropping device, a frame, a shaft journaled on the said frame, gears carried by said shaft at the top and at the bottom, idle gears carried by the frame, meshing with those on the shaft, disks loosely mounted on the shaft at the top and at the bottom over the upper and the lower gears, the disks being provided with segmental openings having teeth to mesh with the idle gears, a pivot for a razor carried by the lower disk, gripping devices for the tang of the razor carried by the upper disk, a strop passed in frictional engagement with the said shaft, whereby to rotate the same, and guide-rollers arranged in pairs, located in front of and to the sides of the said shaft, one guide-roller of a pair being convexed and the other concaved, the said strop passing between the said guide-rollers.

8. In a razor-stropping machine, a rotatable retainer for a razor, comprising a chambered circular member having a vertical slot extending from top to bottom, and a peripheral opening connecting with the slot, opposing jaws pivotally mounted in the said chamber, having heads which extend out through the peripheral slot at the vertical slot in said member, the heads of the jaws having projections at their inner faces, and a tension device normally separating the inner ends of the said jaws.

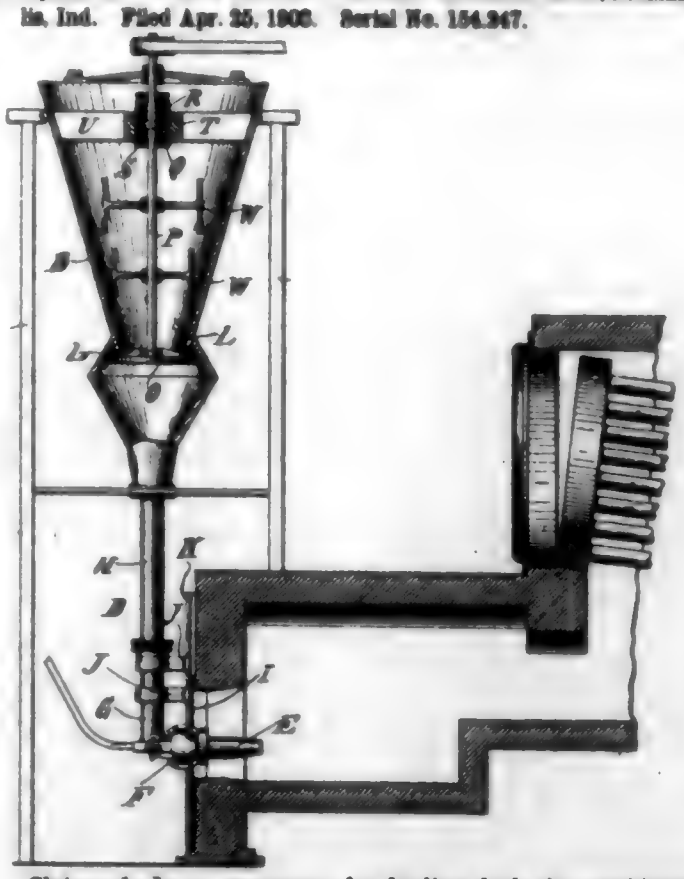
9. In a razor-stropping machine, a frame, a shaft mounted in the frame, razor-retaining devices rotated by the said shaft, a strop which imparts movement to the said shaft, being in frictional engagement therewith, and a cushion-spring carried by the said shaft, which limits the action of the razor relative to the strop when in the retaining device, preventing the edge of the razor engaging the strop when the strop is traveling in the wrong direction or is on its return stroke.

10. In a razor-stropping device, a frame, a shaft mounted to revolve therein, guides arranged in pairs in front of and beyond the sides of the said shaft, a disk loosely mounted on the shaft at its bottom portion, a socket device carried by the said disk, a second disk loosely mounted on the upper portion of the shaft, the said upper disk being provided with a chamber and with a vertical and a circumferential slot, which slots cross each other, jaws pivoted in the chamber of the upper disk, which jaws are provided with heads extending out through the circumferential opening in the said upper disk beneath the vertical opening therein, the heads of which jaws have their inner faces curved and are provided at their inner marginal edges with opposing offset portions, and means for imparting a rotary reciprocating movement simultaneously to both disks by the rotation of the said shaft, and a strop in frictional engagement with the pairs of guides and with the said shaft, said strop being free at its ends, whereby when a razor is to be stropped it is made to engage the socket member of the lower disk and the tang of the razor is pressed between the said jaws, which are tension-controlled at their rear ends, the razor being thus held locked in position and can be removed only by drawing the razor vertically from the device.

11. In a razor-stropping machine, a frame, an oscillating member at one end of the frame and provided with means for retaining one end of a razor, an oscillating member at the opposite end of the frame and slotted to receive the tang of the razor-blade, and jaws carried by the last-named member and having projections on their inner faces.

12. In a razor-stropping machine, a frame, an oscillating member at one end of the frame and provided with a pin, a chambered oscillating member at the other end of the frame and provided with a radial slot, and pivoted and spring-pressed jaws mounted in the chambered member and having projections on their inner faces.

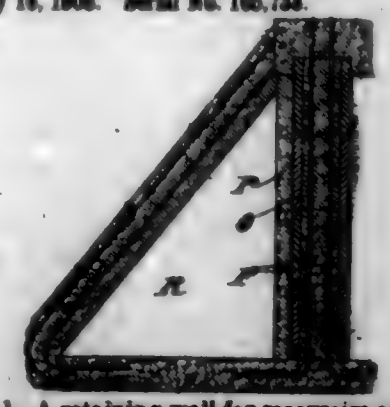
815,686. **FUEL-FEEDING DEVICE.** LEWIS K. DAVIS, Indianapolis, Ind. Filed Apr. 25, 1903. Serial No. 154,247.



Claim.—1. In an apparatus for feeding fuel, the combination with a hopper, of a revoluble disk forming the bottom thereof, knives within the hopper and in proximity to said disk, means for adjusting said disk, and an agitator within the hopper, for substantially the purposes set forth.

2. In an apparatus for feeding fuel, the combination with a hopper, of a revoluble disk forming the bottom thereof, knives within the hopper and in proximity to said disk, means for adjusting said disk, and an agitator within the hopper connected to be operated and adjusted with the disk, for substantially the purposes set forth.

815,687. **RETAINING-WALL FOR RESERVOIRS.** LEWIS K. DAVIS, Indianapolis, Ind., assignor to Grace P. Davis, Indianapolis, Ind. Filed July 16, 1903. Serial No. 165,738.



Claim.—1. A retaining-wall for reservoirs and other uses, comprising hollow bricks or tiles arranged in the form of hollow squares

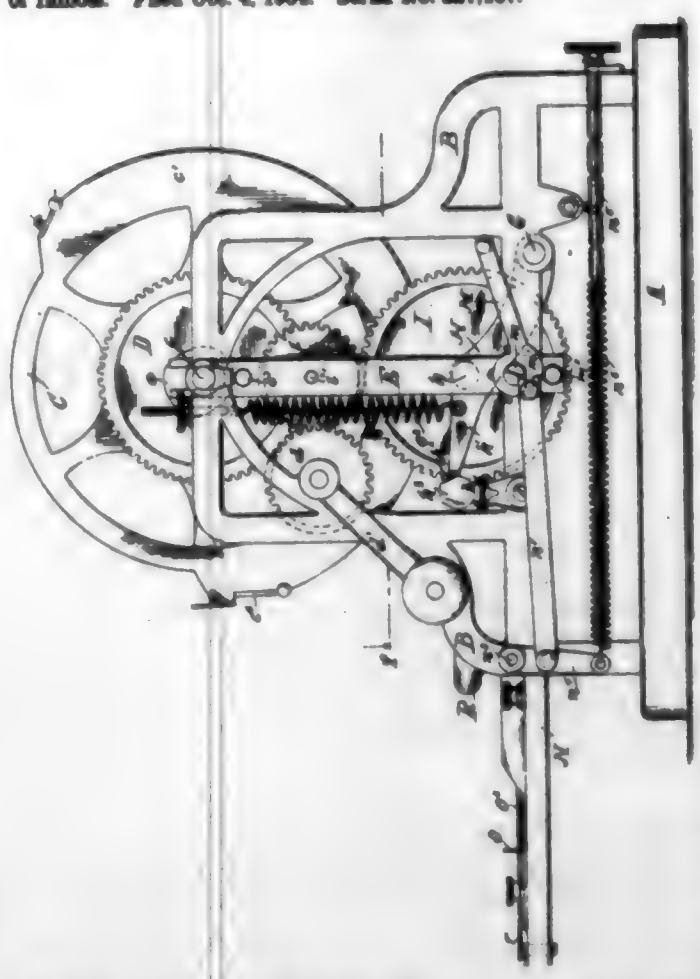
with the apertures in the bricks in vertical direction, strengthening-rods extending through said apertures, and a bituminous filler around said rods in the hollow bricks and in the hollow squares, for substantially the purposes set forth.

2. A retaining-wall for reservoirs and other uses, comprising hollow bricks or tiles arranged with their apertures in a vertical direction, and filled with a bituminous filler, and a concrete bracing for said wall forming a strut connected to the wall at one portion with an open space between the strut and the side of the wall, for substantially the purposes set forth.

815,688. BOTTLE ATTACHMENT. WILLIAM A. DAVIS, Manitou, Colo. Filed June 3, 1905. Serial No. 263,537.

Claim.—A securing wire or band for attaching a closure device to a bottle, provided with two sets of eyes on opposite sides of the bottle, one eye of each set adapted to receive the ends of a closure device the other eye of each set adapted to receive the ends of a handle.

815,689. DUPLICATING APPARATUS. ALBERT B. DICK, Chicago, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 4, 1904. Serial No. 227,167.



Claim.—1. In duplicating apparatus, the combination with a drum and means for supporting and operating the same, of a subjacent pressure-roller mounted upon a shaft movable relatively to said drum, brackets loosely carried by said shaft and supporting a feeder, an extension formed on one of said brackets, and a latch carried by a moving part of the apparatus and adapted to coact with said extension, substantially as set forth.

2. In duplicating apparatus, the combination with a drum and means for supporting and operating the same, of a subjacent pressure-roller, a movable feed-board adapted to receive a sheet-pile, paper-stops having substantially vertical edges terminating in proximity to the end of said feed-board, and lips extending over the edge of said feed-board and means for yieldingly pressing a sheet-pile on said feed-board into engagement with said lips, substantially as set forth.

3. In duplicating apparatus, the combination with a frame and a drum carried thereby, of a rock-shaft journaled in said frame and having arms, means for automatically moving said arms upon the operation of said drum, said means including a pinion, a shaft journaled at one end in a bearing carried by said pinion and at the other end in one of said arms, a pressure-roller carried by said shaft, a feeder mounted in brackets carried by said shaft, and a latch mechanism between said pinion and one of said brackets, substantially as set forth.

4. In duplicating apparatus, the combination with a frame and a drum carried thereby, of a subjacent pressure-roller movable relatively to said drum, a feeder operating around said pressure-roller, a pinion, a latch mechanism between said pinion and said feeder, and connections whereby said pinion may be operated upon the application of power to said drum, substantially as set forth.

5. In duplicating apparatus, the combination with a frame and a drum supported thereby, of a rock-shaft carried by said frame and having projecting arms, a pressure-roller and feeder carried by said arms, and a vertically-oscillating bar connected with one of said arms and means for transmitting to said bar movement applied to said drum, substantially as set forth.

6. In duplicating apparatus, the combination with a frame and a drum supported thereby, of a rock-shaft carried by said frame and having projecting arms, a pressure-roller and feeder supported thereby, said feeder operating around said pressure-roller, a cyclometer, and a connection between the shaft thereof and one of the projecting arms carried by said rock-shaft, substantially as set forth.

7. In duplicating apparatus, the combination with a frame, a drum supported thereby, and a pressure-roller and feeder underlying said drum, of an adjustable feed-board and means for applying yielding pressure thereto, and facings of elastic material in the surface of said feed-board, one of said facings directly underlying said pressure-roller and feeder and the other being rearward thereof, substantially as set forth.

8. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board having a facing of elastic material, means coacting with a sheet-pile on said feed-board to feed a sheet therefrom, and a pressure-bar adapted to overlie and bear upon said sheet-pile at the point of location of such facing, substantially as set forth.

9. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar and a sliding weight carried by arms connected with said bar, substantially as set forth.

10. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device connected with said feed-board and adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar and an adjustable weight, substantially as set forth.

11. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar, arms extending therefrom, and a weight carried by and adjustable upon said arms, substantially as set forth.

12. In duplicating apparatus, the combination with a drum and a subjacent pressure-roller, of an adjustable feed-board adapted to receive a sheet-pile, means for spring-pressing the rearward end of said feed-board upwardly, and a paper-stop having a lip adapted to limit the movement of said feed-board or the sheet-pile thereon toward said pressure-roller, substantially as set forth.

13. In duplicating apparatus, the combination with a frame, a drum supported therein, and an underlying pressure-roller, of an adjustable feed-board whose forward end underlies said pressure-roller, means for spring-pressing the rearward end of said feed-board upwardly, paper-stops carried by said frame and terminating in substantially vertical portions adjacent to the end of said feed-board, and lips formed on said paper-stops and overlying the edge of said feed-board or of a sheet-pile placed thereon, substantially as set forth.

815,690. PLUMB, LEVEL, AND INCLINOMETER. WILLOW A. DIRCK, Vancouver, Wash. Filed Nov. 23, 1905. Serial No. 288,787.

Claim.—1. The combination with a base-plate, a scale-plate pivoted near one end on the base-plate and having a partly-circular-edged opening therein, and also having a scale graduation partly around the circular-edged opening, of a tube-carrier plate pivoted upon the scale-plate, and a bubble-tube mounted upon the tube-carrier plate.

2. The combination with a base-plate having sloped end walls, and an aperture therein, of a scale-plate pivoted near one end on the base-plate having a partly-circular-edged opening therein and an an-

said shaft, imparting to said retaining devices a rotary reciprocating motion, and guide-rollers arranged in pairs in advance of the shaft and at points beyond its sides, one roller of a pair being convexed and the other roller concaved.

2. In a razor-stropping device, a frame, guide-rollers arranged in pairs and mounted in the frame in advance of and at each side of the shaft, razor-retaining devices mounted to turn on the frame, gearing between the ends of the shaft and the razor-retaining devices, whereby to give the latter rotary reciprocating movement, and a razor-strop which is passed to frictional engagement with the shaft and between and in frictional engagement with the pairs of guide-rollers, whereupon by alternately moving the ends of the strop back and forth the shaft is alternately turned to one side or the other.

3. In a razor-stropping machine, guide-rollers for the strop in substantially close relation, one roller being convexed and the other roller correspondingly concaved to impart a bulge or belly to the strop passing between them.

4. In a razor-stropping machine, a frame, guide-rollers for the strop mounted in the said frame in substantially close relation, one roller being convexed and the other correspondingly concaved, one roller being capable of movement to and from the other, and a tension device for the latter roller, normally forcing it toward its mating roller.

5. In a razor-stropping machine, a frame, opposing pairs of guide-rollers, a pivot for a razor located at the lower portion of the frame, a razor-retaining device mounted to revolve at the upper portion of the frame, a strop which is passed between the rollers of the said pairs of guide-rollers, and means whereby upon moving the strop backward and forward a pivotal reciprocating motion is imparted to the razor.

6. In a razor-stropping device, a frame, a shaft journaled in the said frame, gears carried by the said shaft at the top and at the bottom, idle gears carried by the frame, meshing with those on the shaft, disks loosely mounted on the shaft at the top and at the bottom over the upper and the lower gears, the disks being provided with segmental openings having teeth to mesh with the idle gears, a pivot for a razor carried by the lower disk, gripping devices for the tang of the razor carried by the upper disk, and a strop passed in frictional engagement with the said shaft, whereby to rotate the same.

7. In a razor-stropping device, a frame, a shaft journaled on the said frame, gears carried by said shaft at the top and at the bottom, idle gears carried by the frame, meshing with those on the shaft, disks loosely mounted on the shaft at the top and at the bottom over the upper and the lower gears, the disks being provided with segmental openings having teeth to mesh with the idle gears, a pivot for a razor carried by the lower disk, gripping devices for the tang of the razor carried by the upper disk, a strop passed in frictional engagement with the said shaft, whereby to rotate the same, and guide-rollers arranged in pairs, located in front of and to the sides of the said shaft, one guide-roller of a pair being convexed and the other concaved, the said strop passing between the said guide-rollers.

8. In a razor-stropping machine, a rotatable retainer for a razor, comprising a chambered circular member having a vertical slot extending from top to bottom, and a peripheral opening connecting with the slot, opposing jaws pivotally mounted in the said chamber, having heads which extend out through the peripheral slot at the vertical slot in said member, the heads of the jaws having projections at their inner faces, and a tension device normally separating the inner ends of the said jaws.

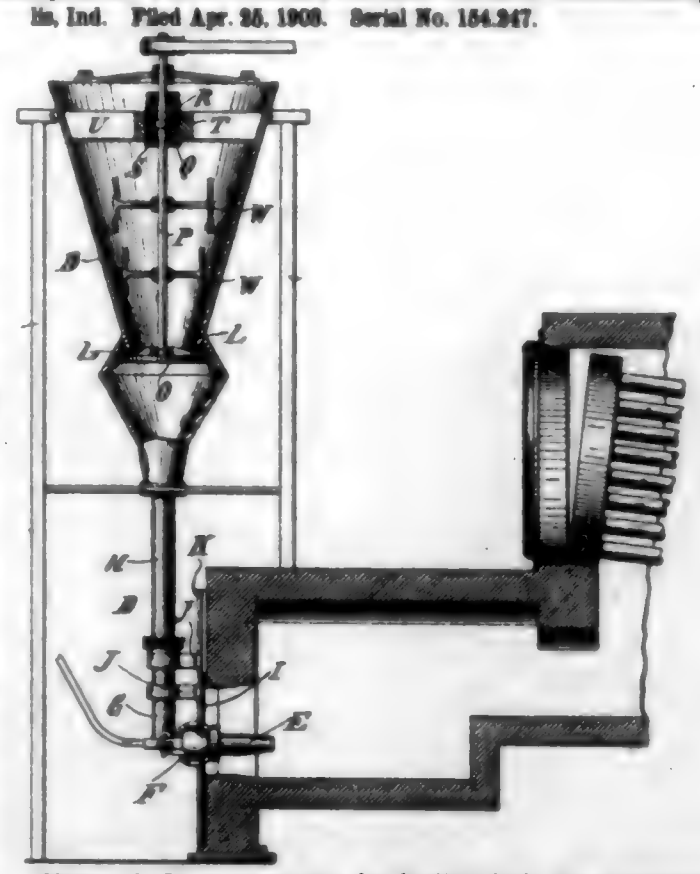
9. In a razor-stropping machine, a frame, a shaft mounted in the frame, razor-retaining devices rotated by the said shaft, a strop which imparts movement to the said shaft, being in frictional engagement therewith, and a cushion-spring carried by the said shaft, which limits the action of the razor relative to the strop when in the retaining device, preventing the edge of the razor engaging the strop when the strop is traveling in the wrong direction or is on its return stroke.

10. In a razor-stropping device, a frame, a shaft mounted to revolve therein, guides arranged in pairs in front of and beyond the sides of the said shaft, a disk loosely mounted on the shaft at its bottom portion, a socket device carried by the said disk, a second disk loosely mounted on the upper portion of the shaft, the said upper disk being provided with a chamber and with a vertical and a circumferential slot, which slots cross each other, jaws pivoted in the chamber of the upper disk, which jaws are provided with heads extending out through the circumferential opening in the said upper disk beneath the vertical opening therein, the heads of which jaws have their inner faces curved and are provided at their inner marginal edges with opposing offset portions, and means for imparting a rotary reciprocating movement simultaneously to both disks by the rotation of the said shaft, and a strop in frictional engagement with the pairs of guides and with the said shaft, said strop being free at its ends, whereby when a razor is to be stropped it is made to engage the socket member of the lower disk and the tang of the razor is pressed between the said jaws, which are tension-controlled at their rear ends, the razor being thus held locked in position and can be removed only by drawing the razor vertically from the device.

11. In a razor-stropping machine, a frame, an oscillating member at one end of the frame and provided with means for retaining one end of a razor, an oscillating member at the opposite end of the frame and slotted to receive the tang of the razor-blade, and jaws carried by the last-named member and having projections on their inner faces.

12. In a razor-stropping machine, a frame, an oscillating member at one end of the frame and provided with a pin, a chambered oscillating member at the other end of the frame and provided with a radial slot, and pivoted and spring-pressed jaws mounted in the chambered member and having projections on their inner faces.

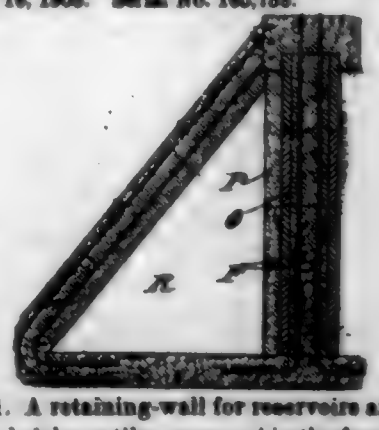
815,686. FUEL-FEEDING DEVICE. LEWIS K. DAVIS, Indianapolis, Ind. Filed Apr. 25, 1903. Serial No. 154,247.



Claim.—1. In an apparatus for feeding fuel, the combination with a hopper, of a revoluble disk forming the bottom thereof, knives within the hopper and in proximity to said disk, means for adjusting said disk, and an agitator within the hopper, for substantially the purposes set forth.

2. In an apparatus for feeding fuel, the combination with a hopper, of a revoluble disk forming the bottom thereof, knives within the hopper and in proximity to said disk, means for adjusting said disk, and an agitator within the hopper connected to be operated and adjusted with the disk, for substantially the purposes set forth.

815,687. RETAINING-WALL FOR RESERVOIRS. LEWIS K. DAVIS, Indianapolis, Ind., assignor to Grace P. Davis, Indianapolis, Ind. Filed July 16, 1903. Serial No. 165,733.

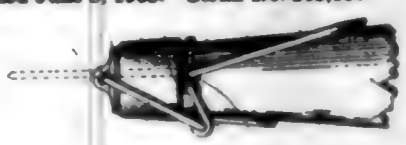


Claim.—1. A retaining-wall for reservoirs and other uses, comprising hollow bricks or tiles arranged in the form of hollow squares

with the apertures in the bricks in vertical direction, strengthening-rods extending through said apertures, and a bituminous filler around said rods in the hollow bricks and in the hollow squares, for substantially the purposes set forth.

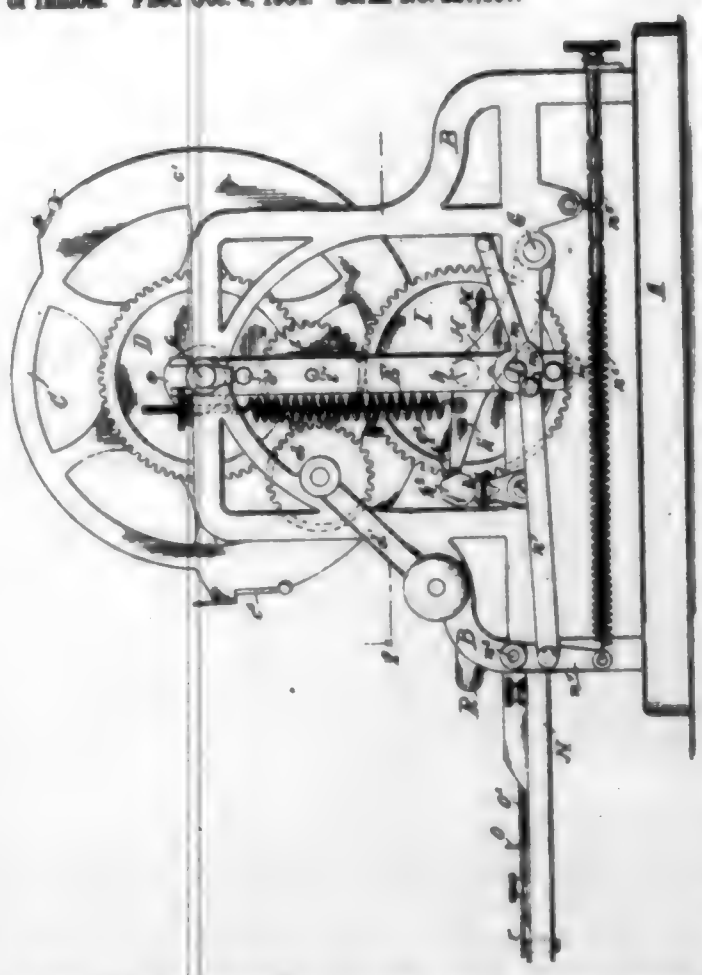
2. A retaining-wall for reservoirs and other uses, comprising hollow bricks or tiles arranged with their apertures in a vertical direction, and filled with a bituminous filler, and a concrete bracing for said wall forming a strut connected to the wall at one portion with an open space between the strut and the side of the wall, for substantially the purposes set forth.

815,688. BOTTLE ATTACHMENT. WILLIAM A. DAVIS, Manitou, Colo. Filed June 3, 1905. Serial No. 262,537.



Claim.—A securing wire or band for attaching a closure device to a bottle, provided with two sets of eyes on opposite sides of the bottle, one eye of each set adapted to receive the ends of a closure device the other eye of each set adapted to receive the ends of a handle.

815,689. DUPLICATING APPARATUS. ALBERT B. DICK, Chicago, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 4, 1904. Serial No. 227,167.



Claim.—1. In duplicating apparatus, the combination with a drum and means for supporting and operating the same, of a subjacent pressure-roller mounted upon a shaft movable relatively to said drum, brackets loosely carried by said shaft and supporting a feeder, an extension formed on one of said brackets, and a latch carried by a moving part of the apparatus and adapted to coact with said extension, substantially as set forth.

2. In duplicating apparatus, the combination with a drum and means for supporting and operating the same, of a subjacent pressure-roller, a movable feed-board adapted to receive a sheet-pile, paper-stops having substantially vertical edges terminating in proximity to the end of said feed-board, and lips extending over the edge of said feed-board and means for yieldingly pressing a sheet-pile on said feed-board into engagement with said lips, substantially as set forth.

3. In duplicating apparatus, the combination with a frame and a drum carried thereby, of a rock-shaft journaled in said frame and having arms, means for automatically moving said arms upon the operation of said drum, said means including a pinion, a shaft journaled at one end in a bearing carried by said pinion and at the other end in one of said arms, a pressure-roller carried by said shaft, a feeder mounted in brackets carried by said shaft, and a latch mechanism between said pinion and one of said brackets, substantially as set forth.

4. In duplicating apparatus, the combination with a frame and a drum carried thereby, of a subjacent pressure-roller movable relatively to said drum, a feeder operating around said pressure-roller, a pinion, a latch mechanism between said pinion and said feeder, and connections whereby said pinion may be operated upon the application of power to said drum, substantially as set forth.

5. In duplicating apparatus, the combination with a frame and a drum supported thereby, of a rock-shaft carried by said frame and having projecting arms, a pressure-roller and feeder carried by said arms, and a vertically-oscillating bar connected with one of said arms and means for transmitting to said bar movement applied to said drum, substantially as set forth.

6. In duplicating apparatus, the combination with a frame and a drum supported thereby, of a rock-shaft carried by said frame and having projecting arms, a pressure-roller and feeder supported thereby, said feeder operating around said pressure-roller, a cyclometer, and a connection between the shaft thereof and one of the projecting arms carried by said rock-shaft, substantially as set forth.

7. In duplicating apparatus, the combination with a frame, a drum supported thereby, and a pressure-roller and feeder underlying said drum, of an adjustable feed-board and means for applying yielding pressure thereto, and facings of elastic material in the surface of said feed-board, one of said facings directly underlying said pressure-roller and feeder and the other being rearward thereof, substantially as set forth.

8. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board having a facing of elastic material, means coacting with a sheet-pile on said feed-board to feed a sheet therefrom, and a pressure-bar adapted to overlie and bear upon said sheet-pile at the point of location of such facing, substantially as set forth.

9. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar and a sliding weight carried by arms connected with said bar, substantially as set forth.

10. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device connected with said feed-board and adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar and an adjustable weight, substantially as set forth.

11. In duplicating apparatus, the combination with a frame, a drum supported thereby, and an underlying pressure-roller, of a feed-board, and an adjustable pressure device adapted to coact with a sheet-pile placed thereon, said device comprising an adjustable pressure-bar, arms extending therefrom, and a weight carried by and adjustable upon said arms, substantially as set forth.

12. In duplicating apparatus, the combination with a drum and a subjacent pressure-roller, of an adjustable feed-board adapted to receive a sheet-pile, means for spring-pressing the rearward end of said feed-board upwardly, and a paper-stop having a lip adapted to limit the movement of said feed-board or the sheet-pile thereon toward said pressure-roller, substantially as set forth.

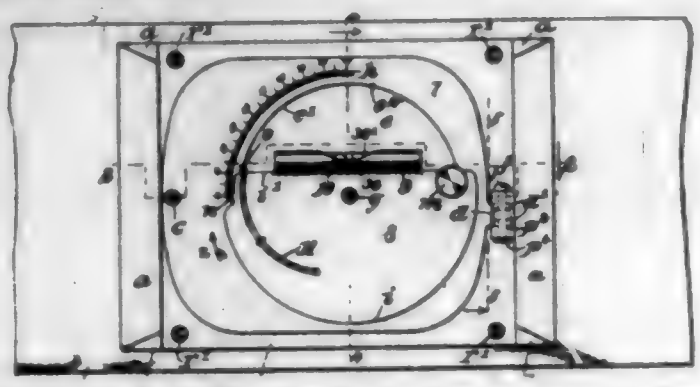
13. In duplicating apparatus, the combination with a frame, a drum supported therein, and an underlying pressure-roller, of an adjustable feed-board whose forward end underlies said pressure-roller, means for spring-pressing the rearward end of said feed-board upwardly, paper-stops carried by said frame and terminating in substantially vertical portions adjacent to the end of said feed-board, and lips formed on said paper-stops and overlying the edge of said feed-board or of a sheet-pile placed thereon, substantially as set forth.

815,690. PLUMB, LEVEL, AND INCLINOMETER. WILLOW A. DERICK, Vancouver, Wash. Filed Nov. 23, 1905. Serial No. 288,757.

Claim.—1. The combination with a base-plate, a scale-plate pivoted near one end on the base-plate and having a partly-circular-edged opening therein, and also having a scale graduation partly around the circular-edged opening, of a tube-carrier plate pivoted upon the scale-plate, and a bubble-tube mounted upon the tube-carrier plate.

2. The combination with a base-plate having sloped end walls, and an aperture therein, of a scale-plate pivoted near one end on the base-plate having a partly-circular-edged opening therein and an an-

gular wing, and also having a scale graduation partly around the circular-edged opening, of a tube-carrying plate pivoted on the angular wing of the scale-plate, a tubular casing on the carrying-plate, a bubble-tube held in the casing, and an index-finger indicating on the scale graduation.



3. The combination with a base-plate having an aperture therein, of an oblong scale-plate pivoted near one end on the base-plate over the aperture, an adjusting means connected with the opposite end of the scale-plate, said scale-plate having a partly-circular-edged opening therein and an angular wing, and also having a scale graduation partly around the circular-edged opening, of a tube-carrying plate pivoted on the angular wing of the scale-plate, a tubular casing mounted on the carrying-plate, and a bubble-tube held in the casing.

4. The combination with a base-plate having a curved-edged aperture therein, of an oblong scale-plate pivoted near one end on the base-plate over the aperture, an adjusting means connected with the opposite end of the base-plate and scale-plate, said scale-plate having a partly-circular-edged opening therein and a wing, and also having a scale graduation partly around the circular-edged opening, a tube-carrying plate pivoted upon the wing of the scale-plate, a tubular casing mounted on the carrying-plate, a bubble-tube in the casing, and an adjustable clamp carried by the tube-carrying plate and engaging the curved edge of the aperture in the base-plate.

5. The combination with a base-plate having a curved-edged aperture therein, of an oblong scale-plate pivoted near one end on the base-plate over the aperture, an adjusting device connecting the base-plate with the opposite end of the scale-plate, said scale-plate having a partly-circular-edged opening therein and a wing, and also having a scale graduation partly around the circular-edged opening, a tube-carrying plate pivoted upon the wing of the scale-plate, a tubular casing mounted upon said carrying-plate, a bubble-tube in the casing, a resilient clamping means carried by the tube-carrying plate and engaging the curved edge of the aperture in the base-plate, and a resilient detent-arm mounted upon the tube-carrying plate and having a toe on its free end that may engage in notches formed in said curved edge of the aperture in the base-plate.

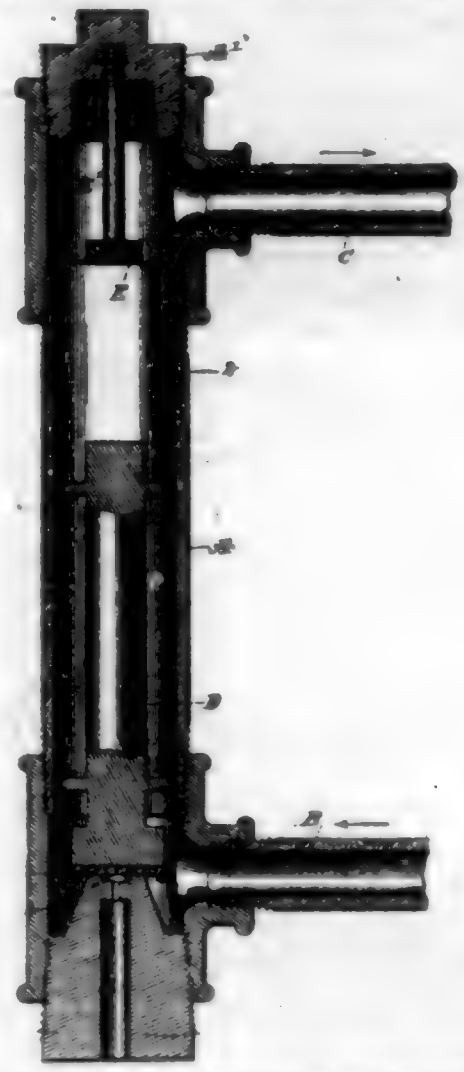
6. The combination with a level-stock having a straight-edge, of an instrument for indicating plumb-level and inclined planes, comprising a circularly-apertured base-plate securable on the level-stock and having inclined transverse end walls thereon, a scale-plate pivoted near one end on the base-plate, an adjusting device connecting the opposite end of the scale-plate with the base-plate, said scale-plate having scale graduations arranged on a curve, a tube-carrying plate pivoted on the scale-plate and adapted to indicate on the scale graduations, a bubble-tube carried by said carrying-plate, and a resilient detent-arm mounted upon the tube-carrying plate and having a toe on its free end, which may engage in notches formed in the curved defining edge of the aperture in the base-plate.

815,691. AUTOMATIC FEED DEVICE. Edward J. Ericsson, San Francisco, Cal. Filed June 30, 1905. Serial No. 267,748.

Claim.—1. An automatic governing device comprising a casing having an inlet connected with a fluid-pressure supply, an outlet connected with a faucet, and a controlled outlet, a piston in the said casing, and means whereby the said piston may control the controlled outlet.

2. An automatic governing device comprising a cylinder having an inlet connected with a water-pressure supply, and an outlet connected with a fixture such as a faucet, a piston slidable in the said cylinder intermediate the said inlet and the said outlet, and means controlled by the said piston for feeding water to the device to be controlled.

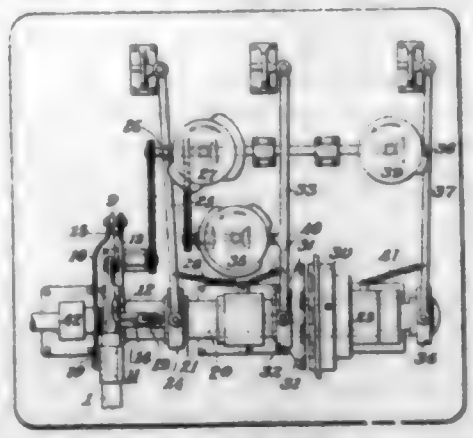
3. An automatic governing device comprising a cylinder having an inlet connected with a water-pressure supply, and an outlet connected with a fixture such as a faucet, a piston slidable in the said cylinder intermediate the said inlet and the said outlet, and means controlled by the said piston for feeding water from the said inlet by way of the said cylinder to the device to be controlled.



4. An automatic governing device comprising a cylinder having an inlet connected with a water-pressure supply, and an outlet connected with a fixture such as a faucet, a piston slidable in the said cylinder intermediate the said inlet and the said outlet, a valve moving with the said piston, and a valve-seat normally closed by the said valve and leading to the device to be controlled.

5. An automatic governing device comprising a cylinder having an inlet connected with a water-pressure supply, and an outlet connected with a fixture such as a faucet, a piston slidable in the said cylinder intermediate the said inlet and the said outlet, a valve moving with the said piston, and a valve-seat normally closed by the said valve and leading to the device to be controlled, the said valve-seat being adjacent to the said inlet to allow water to flow from the inlet by way of the cylinder through the said seat at the time the piston is raised.

815,692. WINDING MECHANISM. Frank Feltrack and Georg Lieckfeld, Hanover, Germany, assignors to Georg Weinhagen, Milwaukee, Wis. Filed Oct. 23, 1901. Serial No. 79,743.

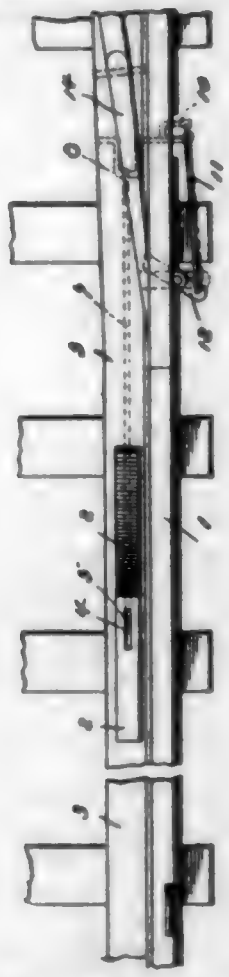


Claim.—1. In a winding mechanism for box-making or other machines the combination of a rotary shaft on the end of which the material is wound, a pair of reciprocatory feed-cheeks to advance the end of the strip of material over the end of the shaft, a sleeve in which said shaft is axially movable and having a finger pivoted therein, a nose extending from said finger, a groove in the shaft in which said nose lies, a spring to normally hold the said finger up off the shaft end, the said groove being so located that its end forces the fin-

ger down on the shaft when the sleeve is advanced thereon substantially as described.

2. In a mechanism of the class specified, the combination of means for advancing the strip of material a step toward and over the end of the rotary shaft, a pivoted finger adapted to clamp the said material end to the end of the shaft a sleeve longitudinally movable on said shaft to carry said finger and means in connection with said finger to move it down onto the strip end when the said sleeve is moved along the shaft and to retain it down until the winding operation has been completed substantially as described.

815,698. SWITCH. EMANUEL FIELDS, Allegheny, Pa. Filed Aug. 11, 1905. Serial No. 273,767.



Claim.—1. In a device of the character described, a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, means for connecting the crank with the rail, a slidably-mounted cam-plate adapted to be engaged by a car-wheel, a rod or pitman pivotally connecting the cam-plate and the crank whereby the crank is operated to raise or lower the rail, and means for holding the rail in elevated position.

2. In a device of the character described, a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, an arm connecting the crank with the rail, a slidably-mounted cam-plate adapted to be engaged by a car-wheel and thereby operated, a rod or pitman pivotally connecting the cam-plate and the crank whereby the crank is operated to raise the rail, a pivotally-mounted arm having one end adapted to extend under the rail, and means connecting the crank and the arm whereby when the rail is raised the arm is thrown thereunder to hold it in elevated position.

3. In a device of the character described, a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, an arm connecting the crank with the rail whereby the rail is raised or lowered, a cam-block mounted on a suitable support and having a longitudinal slot therein, an angle-iron having its upper arm traveling in the slot, a rod or pitman connecting the crank with the angle-iron, and means connected with a railway-car and engaging the angle-iron whereby the same is caused to travel in the slot and thereby operate the rod or pitman.

4. In a device of the character described, a railway-car, a switch-controlling mechanism comprising an arm having one end pivotally mounted on the car, a spring-controlled rod connected with the arm near its free end, and a sleeve within which said rod is adapted to travel, in combination, with a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, a rod connecting the crank with the rail, a slidably-mounted cam-plate adapted to be engaged by the wheels on the car, a rod or pitman pivotally connecting the cam-plate and the crank whereby the crank is operated to raise or lower the rail, and means for holding the rail in elevated position.

5. In a device of the character described, a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, an arm pivotally connecting the crank with the rail, a block mounted on a suitable support and having a cam-surface, said block being also provided with a longitudinal slot in the cam-surface, an angle-iron having its upper arm traveling in the slot, means for pivotally connecting the crank with the angle-iron whereby, when horizontal motion is imparted thereto, the crank is raised or lowered thereby raising or lowering the rail, a horizontally and pivotally mounted arm, and a rod connecting the crank and one end of the arm whereby the other end of the arm is thrown under the rail when elevated to hold the same in elevated position.

6. In a device of the character described, a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, an arm pivotally connecting the crank with the rail whereby the rail is raised or lowered, a block mounted on a suitable support, said block having a cam-surface and a longitudinal slot, an angle-iron having its upper arm traveling in the slot, a rod or pitman connecting the crank with the angle-iron and whereby when horizontal motion is imparted to the angle-iron the crank is raised or lowered thereby raising or lowering the rail, a horizontally and pivotally mounted arm, and a rod connecting the crank and the arm whereby the other end of the arm may be thrown into and out of position under the rail when the crank is raised or lowered.

7. In a device of the character described, the combination, with a railway-track, of a pivotally-mounted switch-rail, a crank journaled in a suitable support beneath the rail, an arm pivotally connecting the crank with the rail whereby the rail is raised or lowered, a slidably-mounted cam-plate having its upper end projecting through a slot in one of the rails of the track and adapted to be engaged by the car-wheels whereby motion is imparted thereto, a rod or pitman pivotally connecting the cam-plate and the crank whereby the crank is raised or lowered thereby raising or lowering the rail, a pivotally-mounted arm having one end adapted to extend under the rail when the same is raised, and a rod connecting the crank and the other end of the arm whereby said arm is thrown into and out of position under the rail.

8. In a device of the character described, the combination, with a railway-track, of a pivotally-mounted switch-rail resting in a depression adjacent to one of the rails of said track and having its free end adapted to engage the track-rail, a crank journaled in a suitable support beneath the switch-rail, an arm pivotally connecting the crank with the switch-rail whereby it is raised or lowered, a block mounted on a suitable support and having a cam-surface, said block being also provided with a vertical longitudinal slot, an angle-iron having its upper arm traveling in the slot, means for pivotally connecting the crank with the angle-iron whereby when horizontal motion is imparted to the angle-iron the crank is raised or lowered thereby raising or lowering the switch-rail, a cam-plate slidably mounted in a slot in the track-rail and having its upper end projecting above the top of said rail, a rod or pitman pivotally connecting the cam-plate and the crank whereby when the cam-plate is depressed by a car-wheel the crank is raised thereby raising the switch-rail, a horizontally and pivotally mounted arm having one end adapted to extend under the switch-rail when the same is raised to hold it in elevated position, and a rod connecting the crank and the other end of the arm whereby said arm is actuated.

9. In a device of the character described, the combination, with a railway-track, of a pivotally-mounted switch-rail resting in a depression adjacent to one of the rails of said track and having its free end beveled and adapted to engage said track-rail, a cam-plate slidably mounted in a slot in the track-rail and having its upper end projecting above the top of the rail, a wedge slidably mounted adjacent to the free end of the switch-rail, and a pivotal connection between the cam-plate and the wedge whereby horizontal motion is imparted to the wedge to force it under the switch-rail thereby raising the same.

10. In a device of the character described, the combination, with a railway-track, of a pivotally-mounted switch-rail resting in a depression adjacent to one of the rails of said track and having its free end beveled and adapted to engage the track-rail, a block mounted on a suitable support adjacent to the track-rail and provided with a cam-surface and a longitudinal vertical slot therein, an angle-iron, the upper arm of which is adapted to travel in said slot, a wedge slidably mounted adjacent to the free end of the switch-rail, and means pivotally connecting the wedge with the angle-iron whereby when horizontal motion is imparted to the angle-iron the

wedge is forced under the switch-rail thereby raising the same, or is pulled from beneath the rail thereby allowing the rail to descend.

815,694. PIPE-WRENCH. FRED FISHER, Ironton, Mo., assignor to Joseph Madlinger, Ironton, Mo. Filed Oct. 12, 1905. Serial No. 282,406.

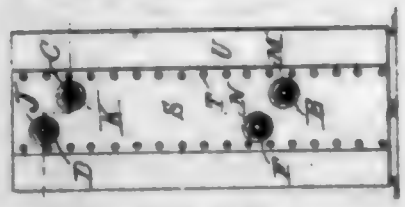


Claim.—1. A wrench consisting of a handle having at one end integral bifurcations provided with ratchet-teeth surfaces, a cross-bar connecting said bifurcations together, jaws pivoted to said handle and having ratchet-teeth surfaces, a link pivoted at one end between said jaws and having ratchet-teeth adapted to engage said cross-bar.

2. A wrench consisting of a handle having at one end integral bifurcations provided with ratchet-teeth surfaces and being curved along their longitudinal axes, a cross-bar connecting said bifurcations together, jaws pivoted to said handle and having ratchet-teeth surfaces and being curved along their longitudinal axes, a link pivoted at one end between said jaws and having ratchet-teeth adapted to engage said cross-bar and being curved along its longitudinal axis.

3. A wrench consisting of a handle having at one end integral bifurcations provided with ratchet-teeth surfaces, said bifurcations having their extreme ends bent at an angle to their longitudinal axes, a cross-bar attached to said bifurcations under the bent ends thereof, jaws pivoted to said handle, and having ratchet-teeth surfaces, a link pivoted at one end between said jaws and having ratchet-teeth adapted to engage said cross-bar.

815,695. HEATER. EDWARD R. GOLD, New York, N. Y. Filed July 18, 1904. Serial No. 216,909.



Claim.—1. A heater comprising in combination a casing, and a coil extending continuously substantially from top to bottom within said casing, the upper and lower ends of said coil being passed through the upper and lower portions of a side of said casing respectively, said casing having a longitudinal section through which the ends of the coil pass and which is formed separately from the remainder, said coil being entirely supported by said separately-formed section, and said entire coil with said section attached thereto being adapted for insertion into place or removal by an endwise movement thereof with respect to the casing.

2. A heater comprising in combination a casing, and a coil extending continuously substantially from top to bottom within said casing, the upper and lower ends of said coil being continuous without joints inside the casing and being passed through the upper and lower portions of said casing respectively, said casing fitting substantially around said coil and having a vertical joint through which said ends pass, the entire coil being adapted for insertion into place or removal by an endwise movement thereof with respect to the casing.

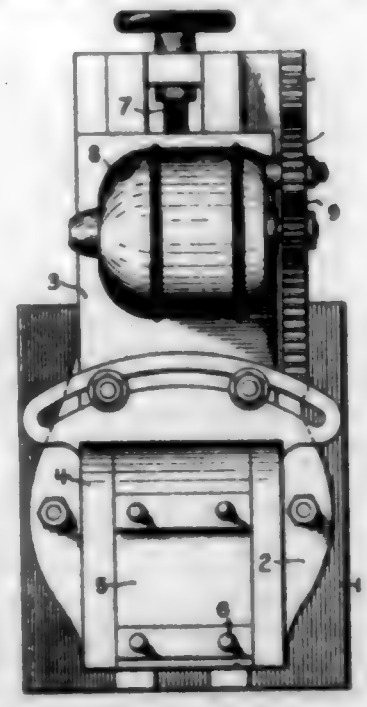
3. A heater comprising in combinaton a casing, and a coil in said casing made of two pipes one within the other, said coil having an end passing through a suitable aperture in said casing with the smaller pipe projecting out of and beyond the end of the larger, and said casing having a vertical joint through which said end passes, whereby the projecting ends of said coil are unlimited in length by said casing, and said casing fitting substantially closely around said coil and having a smooth inner face, the entire coil being adapted for insertion into place or removal by an endwise movement thereof with respect to the casing.

4. A heater comprising in combination a casing comprising a body portion U forming nearly a complete circumference and having a pair of vertical edges, a separately-formed narrow section S joining said edges, and a coil in said casing having its ends passing through said section S, said casing fitting substantially closely around said coil and having a smooth inner face, whereby said coil and attached section may be introduced into place by an endwise movement relatively to said body portion.

5. A heater comprising in combination a casing comprising a body portion U having a pair of vertical edges, a separately-formed section S joining said edges, and a coil in said casing made of two pipes Q and D, the latter within the former, said coil having an end passing through said section S with the pipe D projecting out of and beyond the end of the pipe R, whereby the projecting ends of said coil are unlimited in length by the casing and said casing fitting substantially closely around said coil and having a smooth inner face, whereby said coil and attached section may be introduced into place by an endwise movement relatively to said body portion.

6. A heater comprising in combination a casing and a coil extending continuously substantially from top to bottom within said casing, the upper and lower ends of the coil being passed through the upper and lower portions of said casing respectively, and said casing having a vertical section through which said ends pass, said section and coil adapted to be inserted in place or removed by an endwise movement thereof with respect to the casing.

815,696. COUNTERBALANCE DEVICE. WILLIAM J. HAGMAN, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed May 26, 1905. Serial No. 262,442.

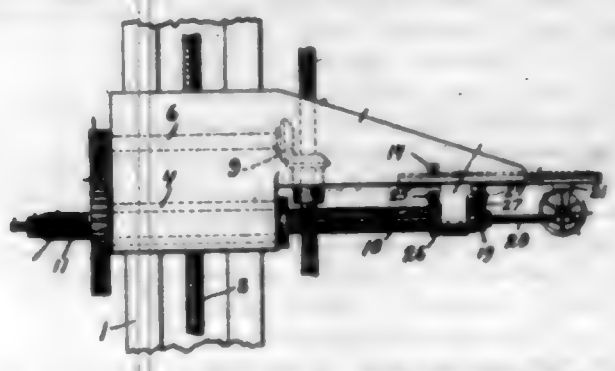


Claim.—A substantially vertical guideway, a heavy machine part mounted for vertical adjustment therein, hand-operable mechanism for vertically adjusting said machine part and holding it in adjusted position, an electric motor, and a connection between said motor and machine part whereby the energy of the motor tends to assist the hand-operable mechanism in elevating said machine part.

815,697. MACHINE FOR DRILLING, BORING, MILLING, &c. WILLIAM J. HAGMAN, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Aug. 19, 1905. Serial No. 274,541.

Claim.—1. In a machine of the class described, the combina-

tion, substantially as set forth, of a main tool-carrying spindle, mechanism for rotating it, a secondary tool-carrying spindle disposed axially within the main spindle, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, and mechanism for disconnecting the gearing transmitting motion between the two spindles.



2. In a machine of the class described, the combination, substantially as set forth, of a main tool-carrying spindle, mechanism for rotating it and for adjusting it longitudinally, a secondary tool-carrying spindle disposed axially within the main spindle, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, and mechanism for disconnecting the gearing transmitting motion between the two spindles.

3. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it, a secondary spindle disposed axially within the main spindle, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, mechanism for disconnecting the gearing transmitting motion between the two spindles, and a feeding device connected with both the spindles for moving them longitudinally in unison.

4. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it, a secondary spindle disposed axially within the main spindle, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, mechanism for disconnecting the gearing transmitting motion between the two spindles, and means for retiring the active end of the secondary spindle to within the main spindle.

5. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it, a secondary spindle disposed axially within the main spindle, thrust members coacting with the two spindles to cause them to move together longitudinally, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, and a longitudinally-adjustable feeding-piece to shift the spindles endwise.

6. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it, a secondary spindle disposed axially within the main spindle, thrust members coacting with the two spindles to cause them to move together longitudinally, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, a longitudinally-adjustable feeding-piece to shift the spindles endwise, and mechanism for disconnecting the gearing transmitting motion between the two spindles.

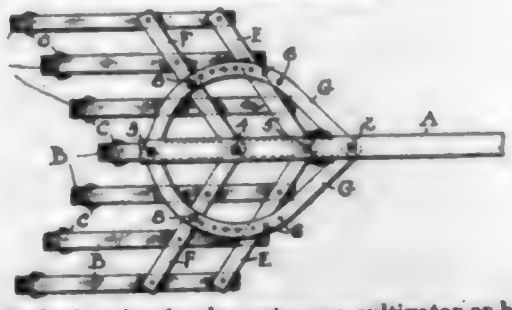
7. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it, a secondary spindle disposed axially within the main spindle, thrust members coacting with the two spindles to cause them to move together longitudinally, gearing connecting the main spindle with the secondary spindle to cause the turning of the former to turn the latter at higher rate, a longitudinally-adjustable feeding-piece to shift the spindles endwise, and mechanism for disconnecting said gearing and for shifting the secondary spindle endwise relative to the main spindle.

8. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it and for feeding it endwise, a secondary spindle disposed axially within the main spindle, a bushing separately secured to the forward end of the main spindle and forming a bearing for the secondary spindle, a thrust member carried by the secondary spindle and engaging the rear end of the main spindle, lock-nuts at the forward end of the secondary spindle to form thrust members at the forward end of the main spindle, a pinion upon the rear end of the secondary spindle, a gear near the rear end of the main spindle and having transmitting connection with said pinion, and mechanism for throwing said pinion out of operation.

9. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it and for feeding it endwise, a secondary spindle disposed axially within the main spindle, a bushing separately secured to the forward end of the main spindle and forming a bearing for the secondary spindle, a thrust member carried by the secondary spindle and engaging the rear end of the main spindle, lock-nuts at the forward end of the secondary spindle to form thrust members at the forward end of the main spindle, a pinion upon the rear end of the secondary spindle, a gear near the rear end of the main spindle and having transmitting connection with said pinion, a rack disposed in line with the secondary spindle and swiveled to its rear end, and a pinion engaging said rack and serving to shift the secondary spindle rearward relative to the main spindle and throw its actuating-pinion out of action and retire the forward end of the secondary spindle to within the main spindle.

10. In a machine of the class described, the combination, substantially as set forth, of a main spindle, mechanism for rotating it and for feeding it endwise, a secondary spindle disposed axially within the main spindle, a bushing separably secured to the forward end of the main spindle and forming a bearing for the secondary spindle, a thrust member carried by the secondary spindle and engaging the rear end of the main spindle, lock-nuts at the forward end of the secondary spindle to form thrust members at the forward end of the main spindle, a pinion upon the rear end of the secondary spindle, a gear near the rear end of the main spindle and having transmitting connection with said pinion, a rack disposed in line with the secondary spindle and swiveled to its rear end, a rack in line with the spindle and swiveled to the rear end of the secondary spindle, a bracket engaged by said rack and moving longitudinally in unison with the main spindle, and a pinion mounted in said bracket and engaging said rack and serving to shift the secondary spindle endwise relative to the main spindle.

815,698. FARMING IMPLEMENT. ELIAS HAIMAN, Cleveland, Ohio. Filed Oct. 2, 1905. Serial No. 280,883.



Claim.—1. In farming implements, as a cultivator or harrow, a central beam, laterally-curved braces on opposite sides of said beam rigidly fixed thereto at both ends and having each a series of perforations in its outer curved portion, in combination with a pair of parallel tooth-bars on each side of said beam, transverse carrying-bars in pairs pivoted to said beam on each side and having said tooth-bars pivotally connected therewith, and means to adjustably lock said carrying-bars with the corresponding curved brace through the said perforations therein.

2. In an implement, as a cultivator or harrow, a rigid frame comprising a central beam and substantially segmental-shaped braces G fixed to said beam at their ends and provided with a series of holes 6 in their outer curved portions, in combination with the parallel carrying-bars E and F, one of said bars at each side adapted to be adjustably locked on the corresponding brace G, and parallel tooth-bars B on each side pivotally attached to both the carrying-bars E and F, respectively, whereby the parallel relations of said several bars B, E and F are maintained through all adjustments and said bars are rigidly fixed in all adjusted positions.

3. In a cultivator, a central beam and parallel tooth-bars, pivotal conections transvereely between said beam and bars, and segments for adjusting said bars in respect to said beam and for fixing the beams rigidly in any adjusted position.

815,699. METHOD OF MANUFACTURING CUTLERY. ERNST HANNEPAPE, Solingen, near Foche, Germany. Filed Nov. 4, 1901. Serial No. 34,491.

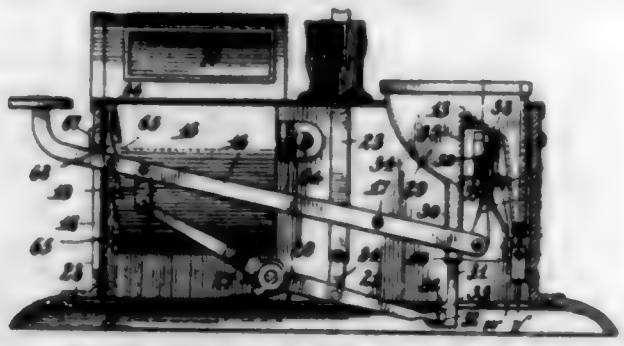
Claim.—1. The method of finishing cutlery without grinding, which consists in producing a keen edge by cold-swaging and then hardening and polishing.

2. The method of finishing cutlery without grinding, which consists in reducing the work-pieces by successive steps to the general form of the desired product, producing a keen edge by cold-swaging in highly-finished steel swages, and then hardening and polishing.

3. The method of working rough cutlery-blades, consisting in removing the scale from the rough blades; removing the excess of material at the cutting edge of the same; swaging them in a cold state in steel swages, removing the fin produced by said swaging; removing the bur resulting from removing said fin; swaging the thus-treated work-pieces in highly-polished steel swages; and hardening and polishing them, substantially as, and for the purpose described.

815,700. COMBINED CIGAR-CLIPPER AND MATCH-SAFE.

ROBERT O. HAMMOND, Buffalo, N. Y. Filed Mar. 20, 1905. Serial No. 251,063.



Claim.—1. The combination with the casing, of a cigar-clipping device, a match-safe comprising a receptacle and a leg or tube connected by a passage with said receptacle, a lifter adapted to elevate one match at a time and deposit the same in said leg, delivering mechanism adapted to eject the match from said tube, an operating-lever, operative connection between the latter and said delivering mechanism, a rock-shaft operatively connected with said operating-lever, and operative connections between the cigar-clipping device and said rock-shaft, and between the latter and said lifter.

2. The combination with the casing, of a cigar-clipping device, a match-safe comprising a receptacle and a leg or tube connected by a passage with said receptacle, a lifter adapted to elevate one match at a time and deposit the same in said leg, delivering mechanism adapted to eject the match from said tube, an operating-lever, operative connection between the latter and said delivering mechanism, a rock-shaft having oppositely-directed arms, a link connecting one of said arms with the operating-lever, and a link connecting the other of said arms with the clipping device, said last-mentioned arm having connection with the said lifter.

3. The combination with the casing, a match-safe, and a cigar-clipping device, of a longitudinal operating-lever, a transverse rock-shaft having opposite arms, a link connecting one of said arms with the operating-lever, a link connection between the other of said arms and the clipping device, a transversely-movable match-deliverer acting to deliver one match at a time from the match-safe, and operative connection between said deliverer and the operating-lever.

4. The combination with the casing, of a cigar-clipping device, an operating-lever pivoted between its ends, a rock-shaft having oppositely-directed radial arms, a link between the operating-lever and one of said arms, a spring surrounding said rock-shaft and having one end thereof connected to the other of said arms and its other end held to the casing, and a link connecting the last-mentioned arm with the said clipping device.

5. The combination with the casing, of cigar-clipping device, a match-safe comprising a receptacle and a receiving-leg connected with the upper end of said receptacle, a lifter adapted to elevate one match at a time from said receptacle and deposit the same in said receiving-leg, an operating-lever, a rock-shaft, an arm extending from said rock-shaft, a link connecting said arm with the operating-lever, a pair of arms extending from said rock-shaft and having their outer ends connected to said lifter, a link connecting one of the pair of arms with the cigar-clipping device, and match-delivering mechanism operatively connected with the operating-lever and adapted to eject the matches from said receiving-leg.

6. The combination with a casing, of a match-safe comprising a receptacle having a depending tube and a receiving-leg connected with the upper end of said receptacle by a passage having an inclined bottom, a lifter in said tube having a pair of lugs at its lower end, match-delivering mechanism, an operating-lever connected with said delivering mechanism, a rock-shaft having a pair of arms arranged with their outer ends between the lugs on the lifter, and operative connection between said rock-shaft and the operating-lever.

7. The combination with a casing, of a match-safe, a match-delivering device, a longitudinally-disposed operating-lever, operative connection between said delivering device and said operating-lever comprising a transverse lever pivoted between its ends, a link connecting one end of said transverse lever with the operating-lever, a bell-crank lever, a link connecting the opposite end of said transverse lever with one end of the bell-crank lever, and a link connecting the delivering device with the other end of said bell-crank lever.

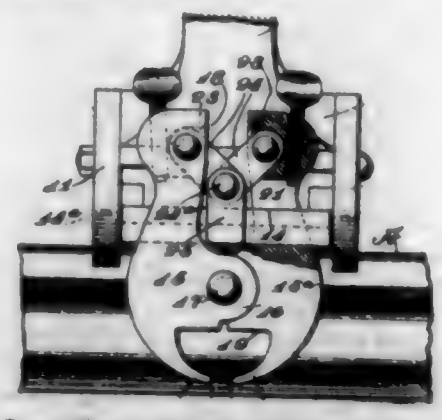
8. In a combined cigar-clipper and match-safe, the combination of a match-safe comprising a match-receptacle and a match-receiving tube, mechanism for delivering a single match into said receiving-tube, mechanism for ejecting the matches from said match-receiving tube, cigar-clipping mechanism, an operating-lever, a rock-shaft connected with said operating-lever, operative connection between said rock-shaft and said clipping mechanism, operative connection between said match-delivering mechanism and the rock-shaft, and operative connection between the match-ejecting mechanism and said operating-lever.

9. The combination with the casing, of a cigar-clipping device, a match-safe comprising a receptacle and a receiving-leg connected with the upper end of said receptacle, a lifter having two lateral flanges and adapted to elevate one match at a time from said receptacle and deposit the same in said receiving-leg, an operating-lever, a rock-shaft, an arm extending from said rock-shaft, a link connecting said arm with the operating-lever, a pair of arms extending from said rock-shaft and having their outer ends rounded and fitting between the flanges of said lifter, a link connecting one of the pair of arms with the cigar-clipping device, and match-delivering mechanism operatively connected with the operating-lever and adapted to eject the matches from said receiving-leg.

10. A match-safe comprising a match-receptacle and a match-receiving leg connected with the upper end of said receptacle, a lifter adapted to elevate one match at a time from said receptacle and deposit it in said receiving-leg, an operating-lever, a rock-shaft, an arm extending from said rock-shaft and connected to said lifter, a lever fulcrumed between its ends, a link connecting one end of said last-mentioned lever with the operating-lever, a bell-crank lever, a link connecting one arm of said bell-crank lever with the lever fulcrumed between its ends, delivering mechanism for ejecting the match deposited in said match-receiving leg, and a link connecting the other arm of said bell-crank lever with said delivering mechanism.

815,701. SPIKE-PULLER.

THOMAS W. HARBER, Dudenville, Mo. Filed Sept. 11, 1905. Serial No. 277,910.



Claim.—1. In a spike-puller, a handle-section having cheek projections, a spindle mounted in the said projections, jaws pivoted together and having vertical movement on the said spindle, and a toggle connection between the upper portion of the said jaws and the spindle.

2. A spike-puller, consisting of a handle having forwardly-extending cheek-pieces, a spindle mounted in said cheek-pieces, polygonal in cross-section, jaws pivoted together and having vertical slots above their pivots through which the said spindle loosely passes, said jaws having vertical movement on the spindle, means for limiting the movement of the jaws on the spindle, and a toggle connection between the upper portion of the said jaws and the said spindle.

3. In a spike-puller, a handle-section having forwardly-extending cheek-pieces, a spindle pivoted in the said cheek-pieces, polygonal in cross-section, jaws having opposing gripping-fingers at their lower portions, knuckles above the said fingers and pivoted together, and a space intervening between their inner faces above the knuckles, each jaw being provided with a vertical slot through which the spindle loosely passes, an upwardly-extending yoke attached to the said spindle, and links pivotally connected to the upper portions of the said jaws and to the said yoke.

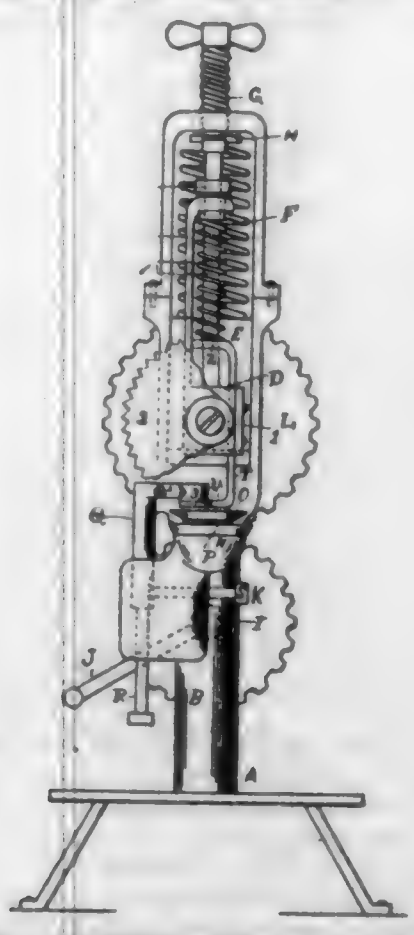
4. In a spike-puller, a handle-section having forwardly-extending cheek-pieces, a spindle pivoted in the said cheek-pieces, polygonal in cross-section, jaws having opposing gripping-fingers at their lower portions, pivotally-connected knuckles above the said fingers and a space intervening between their innerfaces above the knuckles, each jaw being provided with a vertical slot through which the spindle loosely passes, an upwardly-extending yoke attached to said spindle and links pivotally connected to the upper portions of said jaws and to said yoke, adjusting-screws passed through the upper portions of the jaws into the slots therein, the inner ends of the adjusting-screws having a position above the said spindle, and means for removably connecting the cheek-pieces of the handle-section with the handle of said section.

5. A spike-puller, comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which loosely extends the spindle, and a toggle connection between the shanks of the jaws and spindle.

6. A spike-puller, comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which the spindle loosely extends, the shanks of the jaws being recessed on their inner faces near the ends thereof, a yoke secured to the spindle at about its center of length, and links pivoted in the recesses of the jaw-shanks and to the said yoke.

7. A spike-puller comprising a handle having an angular foot and cheek-pieces projecting beyond the foot, a spindle mounted in the cheek-pieces, jaws pivoted together and having slotted shanks through which the spindle loosely passes, links having one end pivotally connected with the spindle and their other ends pivoted to the shanks of the jaws, and adjusting-screws passing through the shanks of the jaws into the slots thereof.

815,702. SKIVING-MACHINE. LORENZO P. HAWKINS, Portland, Me. Filed Mar. 7, 1904. Serial No. 196,811.



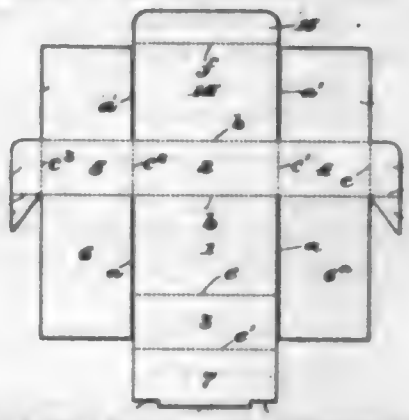
Claim.—In a welt-skiving machine, a work-support, a knife-carrier comprising a vertical rotary supporting-post and a horizontal knife-carrying arm, means for supporting said knife-carrier, a knife adjustably secured to said arm and means for feeding the work over said work-support.

815,703. BRIDLE. CHARLES HAY-HAY, Red Lodge, Mont. Filed July 11, 1905. Serial No. 269,218.

Claim.—In a bridle, the combination with a crown-piece comprising a single strap doubled near its center to form a loop at one end of the two-ply crown-piece, one ply thereof being return-folded near its free end and forming a loop, a buckle in the loop, the free end of the other ply engaging the buckle, rings having disks spaced apart from the faces thereof in the loops, cheek-bands connected with the rings, bridle-bit-ring connections on the lower end of the cheek-bands, a strap having a buckle connected to the center of the crown-piece, blinders connected to the cheek-bands, a brace-strap connected with the blinders, a face-strap connected with the cheek-bands below the blinders, the upper ends of the brace-strap and face-strap engaging the buckle on the strap connected with the crown-piece.



815,704. FOLDING BOX. MORRIS HIRSCH, New York, N. Y. Filed Oct. 28, 1904. Serial No. 230,387.



Claim.—1. A folding box comprising a bottom, two side folds, end folds integral with one side fold, bottom flaps on the end folds, and a side flap integral with the other side fold, said side flap being substantially equal in width to said side fold and having a free edge which has locking engagement with the bottom flaps for holding the parts of the box without the employment of separate fastenings.

2. A folding box comprising a bottom, two side folds, end folds integral with one side fold, corner-flaps on the end folds, bottom flaps also provided on the end folds, and a side flap integral with the other side fold and foldable upon the corner-flaps and said side fold, said side flap being substantially equal in width to the side fold and one edge of said side flap being free and having locking engagement with the bottom flap for holding the parts of the box without the employment of separate fastenings.

3. A folding box, comprising a bottom, two side folds, end folds integral with one side fold, bottom flaps on the end folds, and a side flap integral with, and foldable upon, the other side fold, said side flap being unconfined on one side edge and said edge being provided with notches, said edge between the notches having locking engagement with said bottom flaps.

4. A folding box provided with side and end folds, bottom flaps on the end folds, a locking side flap foldable upon one side fold, and a double tuck-flap on each end fold, one part of each tuck-flap lapping the box-bottom and the other part fitting between the side flap and the side fold which is overlapped by said side flap.

5. A folding box provided with side folds, a bottom, end folds, a side flap foldable upon one of the side folds, and a double corner-flap on each end fold; one part of the corner-flap being foldable at an angle to the other part of said corner-flap, whereby the respective parts of each corner-flap are adapted to overlap the box-bottom and to lie between a side flap and the complemental side fold.

6. A folding box provided with a bottom, two side folds, end folds integral with one side fold, a side flap integral with the other side fold and foldable upon the same, bottom flaps integral with the end folds and adapted to be locked by said side flap, and a double corner-flap also provided on each end flap, each corner-flap being foldable into engagement with a side and the bottom of the box.

7. A folding box provided with side folds, a bottom, a side flap foldable on one of the side folds, end folds integral with the other side fold, bottom flaps on the end folds, and double corner-flaps connected to each of the end folds, each corner-flap having one part ex-

tending beyond the other part and said extending part being foldable at an angle to the other part.

8. A folding box provided with a bottom, side folds, end folds integral with one side fold, bottom flaps on the end folds, a side flap on the other side fold, and a double corner-flap integral with each end fold; one part of each double corner-flap being foldable over the bottom and the other part being insertible between the side flap and the corresponding side fold.

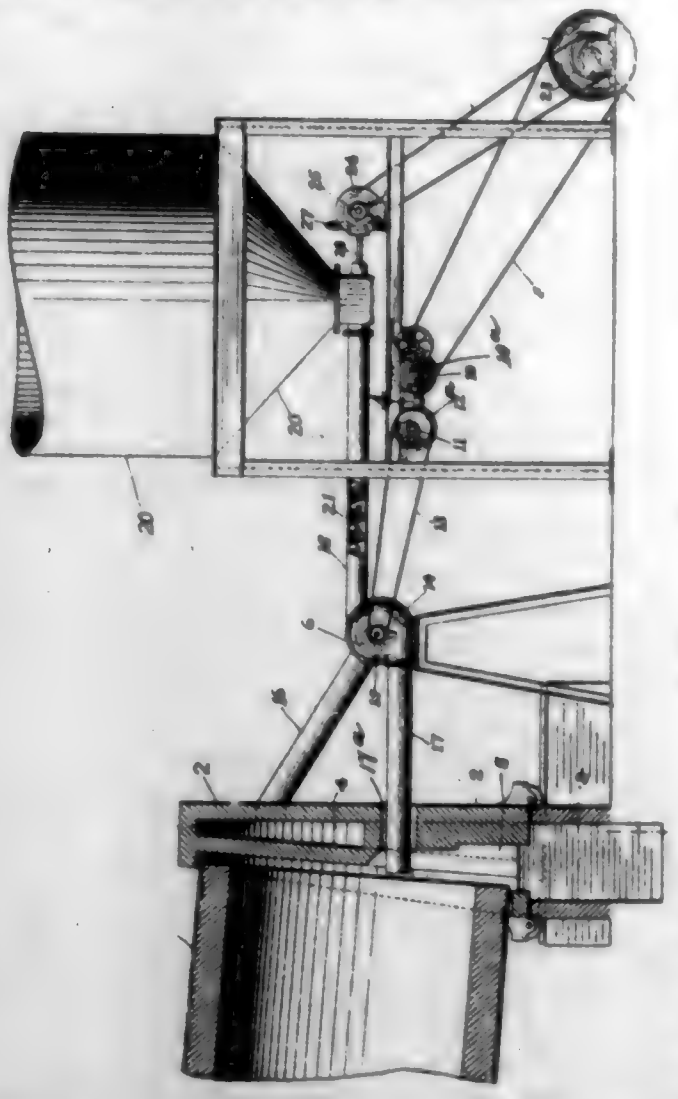
9. A knockdown folding box having a bottom, side and end folds, bottom flaps on the end folds, and corner-flaps also provided on the end folds and adapted to be thrust between the bottom and said bottom flaps.

10. A folding box provided on one of its walls with a side flap, which is adapted to lie within said box, a slit in said side wall of the box, a top having at its free edge a flap adapted to be thrust into the box and to lie alongside of the side flap, and a tuck-flap within said top flap, and foldable on the same crease-line as said top flap, said tuck-flap being adapted to be thrust through said slit and into the space between said side flap and the wall of the box.

11. A box-blank scored and cut to produce a bottom, side folds, end folds each having on one edge a bottom flap and on another edge a corner-flap, a bottom tuck-flap extending from each corner-flap, and a side flap on one of the side folds.

12. A box-blank scored and cut substantially as described and comprising a bottom, side and end folds, the end folds being continuous with one side fold, bottom flaps on one edge of the respective end folds, a double corner-flap on each end fold, one part of each corner-flap extending alongside of one bottom flap, and a member adapted to be infolded, extending from the other side fold.

815,705. **ROTARY CEMENT-KILN.** HARRY HITSEL, Alpha, N. J., assignor to Alpha Portland Cement Company, Alpha, N. J., a Corporation of New Jersey. Filed Oct. 31, 1904. Serial No. 230,774.



Claim.—1. The combination with the rotary kiln, the clinker-pit, the hood having the chamber communicating with said clinker-pit, the blower, the pipe leading from said hood-chamber into said blower, the exit-pipe leading from the blower through said hood into the kiln, and means for supplying a continuous uniform quantity of pulverized fuel into said blower, substantially as set forth.

2. The combination with the rotary kiln, the clinker-pit, the hood having the chamber communicating with said clinker-pit, the blower, the pipe leading from said hood-chamber into said blower, the exit-pipe leading from the blower through said hood into the kiln, and means for supplying a continuous, uniform quantity of pulverized fuel into said first-mentioned pipe, substantially as set forth.

3. The combination with the rotary kiln, of the hood having the air-chamber therein, the blower, the pipe leading from said hood-chamber into said blower, the exit-pipe leading from the blower through said hood into the kiln, and means for supplying a uniform, continuous quantity of pulverized fuel into said blower, substantially as set forth.

4. The combination with the rotary kiln, of the hood having the air-chamber therein, the blower, the pipe leading from said hood-chamber into said blower, the exit-pipe leading from the blower through said hood into the kiln, the pipe communicating with said blower and with a source of fuel-supply, the rotary screw conveyer within the last-mentioned pipe, together with means for regulating the speed of said screw conveyer, and means for regulating the speed of said blower, substantially as set forth.

5. The combination with the rotary kiln, of the hood having the air-chamber therein, the blower, the pipe leading from said hood-chamber into said blower, the exit-pipe leading from said blower through said hood into the kiln, means for supplying a uniform continuous quantity of pulverized fuel into said blower, together with means for regulating the speed of said blower, and means for varying the quantity of pulverized fuel supplied to the latter, substantially as set forth.

815,706. **HOISTING AND CONVEYING APPARATUS.** CHARLES J. HORSEM, New York, N. Y. Filed May 13, 1905. Serial No. 260,243.



Claim.—1. A hoisting and conveying device, comprising a pair of blocks located at a distance from each other and adapted to be connected by an inclined cable, the upper of said blocks being provided with a lateral projection having an inclined curved upper surface, and a carriage movable from one block to the other and adapted to be supported on said inclined surface.

2. A hoisting and conveying device comprising an inclined cable, a block at each end thereof, a carriage movable along the cable, a second cable having an end secured to the carriage and passing over one of said blocks, a pulley connected to the second cable below the carriage, means for allowing the pulley to move with the second cable, means for connecting the pulley with and mounting it on the carriage, means for automatically securing the carriage to each block when it comes in contact therewith, and a curved inclined surface on the upper block adapted to receive the carriage and support it.

3. A hoisting and conveying device comprising an inclined cable, a block at each end thereof, a carriage movable along the cable, a second cable having an end secured to the carriage and passing through one of said blocks, a pulley mounted on the second cable below the carriage, means operable by gravity for securing the pulley

to the carriage, means on the upper block for receiving and supporting the carriage, and means for automatically disengaging the carriage from the upper block when the pulley is drawn up by the second cable into engagement with the carriage.

4. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon, resilient means for suspending said arm from the carriage, said arm being provided with a slot and with a surface in the slot by means of which a load is adapted to be supported, means for moving the arm to such a position as to disengage a load from said supporting-surface, and means for holding the arm in such position.

5. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon, resilient means for suspending said arm from the carriage, said arm being provided with a slot and with a surface in the slot by means of which a load is adapted to be supported, means for moving the arm to such a position as to disengage a load from said supporting-surface, means for holding the arm in such position, said last-named means being yieldable, and means on the arm for causing the latter to swing into position for supporting the load when the load is brought into contact with it from below.

6. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon and capable of vertical movement, means for yieldingly supporting said arm from the carriage, said arm being provided with a slot having a surface adapted to support a load, and two cam-surfaces located below the first-mentioned surface and converging toward each other at a point below the first-mentioned surface and to one side thereof.

7. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon, resilient means for suspending said arm from the carriage, said arm being provided with a slot and with a surface in the slot by means of which a load is adapted to be supported, and means for moving the arm to such a position as to disengage a load from said supporting-surface, said arm being also provided with two cam-surfaces located below the first-mentioned surface, converging toward each other to a point at one side of the first-mentioned surface, and the slot being provided with cam-guiding surfaces above the first-mentioned surface.

8. A hoisting and conveying device, comprising a movably-supported arm, said arm being provided with a slot for receiving a load-supporting device, the arm having cam-guiding surfaces located adjacent to said slot and cam-surfaces located below the guiding-surfaces, and a movable bar connected with the arm and adapted to move the arm when the bar engages the stop.

9. A hoisting and conveying device, comprising a movably-supported arm, said arm being provided with a slot for receiving a load-supporting device, said slot having a surface for supporting said load-supporting device, a pair of cam-surfaces located above said first-mentioned surface, said arm also having a pair of cam-surfaces located below the first-mentioned surface and extending to one side thereof in a downward direction, and a movable bar connected with said arm and adapted to move the arm when the bar engages a stop.

10. A hoisting and conveying device, comprising a movably-supported arm, said arm being provided with a slot for receiving a load-supporting device, said slot having a surface for supporting said load-supporting device, a pair of cam-surfaces located above said first-mentioned surface, said arm also having a pair of cam-surfaces located below the first-mentioned surface and extending to one side thereof in a downward direction, a movable bar connected with said arm and adapted to move the latter, and yielding means for holding the arm in its extreme positions.

11. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon and adapted to support a load, a pair of blocks against which the carriage is adapted to move, a catch on the carriage adapted to be operated by the load when the latter is brought into engagement with the arm, said catch being adapted to hold the carriage in contact with one of said blocks and to support said arm, means for swinging said arm on the carriage, and means on said catch for holding the arm in its extreme positions.

12. A hoisting and conveying device, comprising a carriage, an arm pivotally mounted thereon, said arm being provided with a pin, and a lever for locking the carriage in stationary position, said lever having two depressions in which said pin is adapted to engage for holding the arm in its extreme positions.

13. A hoisting and conveying device comprising a carriage, an arm pivotally mounted thereon and capable of vertical motion, said arm being provided with a pin, a lever for locking the carriage in stationary position, said lever having a slot provided with two depressions in which said pin is adapted to engage, resilient means for holding said arm in elevated position, means for supporting the load, and means on the arm for engaging said load-supporting means.

815,707. CONVEYER FOR PIE-MAKING MACHINES. JOSEPH C. HUTCHESON, Philadelphia, Pa. Filed Sept. 30, 1905. Serial No. 280,722.



Claim.—1. A conveyer comprising parallel supporting-cables, an endless series of brackets, plate-holders adapted to the brackets and means interposed between the brackets and plate-holders for locking the latter in position.

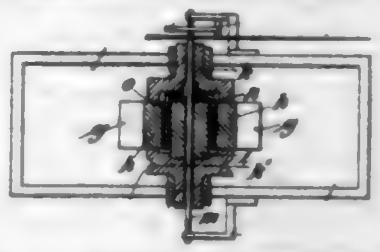
2. A device of the character specified comprising parallel supporting-chains adapted to sprocket-wheels, brackets connected to the links of the chain and provided with openings to receive plate-holders, the plate-holders and means for removably securing the plate-holders to the brackets, substantially as specified.

3. A conveyer for pie-machines, comprising side chains adapted to sprocket-wheels, brackets adjustably secured thereto, and plate-holders removably secured to the brackets, substantially as specified.

4. A conveyer for pie-machines, comprising sprocket-chains, sprocket-wheels adapted to said chains, brackets interposed between the sprocket-chains and adjustably connected to the links thereof and plate-holders removably secured to the brackets substantially as specified.

5. A conveyer for pie-machines and the like, comprising sprocket-chains, sprocket-wheels adapted thereto, brackets interposed between the sprocket-chains provided with openings to receive plate-holders, and inclines to hold the same in position and plate-holders provided with depending lugs adapted to engage the inclines of the brackets, substantially as specified.

815,708. SPEED-INDICATOR. GUSTAV IHLE, Berlin, Germany, assignor to Max Steinberg, Charlottenburg, near Berlin, Germany, and Max Tritter, Berlin, Germany. Filed May 13, 1905. Serial No. 260,205.



Claim.—1. In a speed-indicator, the combination of magnets mounted upon trunnions, means for rotating said magnets upon said trunnions, an armature disposed within the field of said magnets, and indicating mechanism connected with said armature.

2. In a speed-indicator, the combination of magnets mounted upon trunnions and provided with pole-pieces, an armature disposed intermediate of said pole-pieces and adapted to have eddy-currents set up therein, a spindle connected with said armature for supporting the same, said spindle extending through said trunnions of said magnets, bearings for supporting said spindle, indicating mechanism connected with said spindle, and means for rotating said magnets.

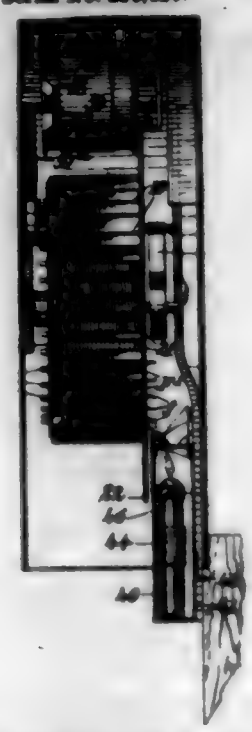
3. In a speed-indicator, the combination of an indicating member rotating around an axis, magnets free to rotate around the same axis, said magnets producing a field, a hollow metallic member mounted within said field and connected with said indicating member, said hollow metallic member being inclosed for the greater part of its periphery by said magnets, and an iron core extending into said hollow metallic member for the purpose of facilitating the formation of eddy-currents therein.

4. In a speed-indicator, the combination of magnets provided with means whereby they may be rotated, said magnets producing a field, a hollow metallic member disposed within said field and inclosed for the greater part of its periphery by the poles of the magnets, trunnions for supporting said magnets, said trunnions being provided with axial passages, and a spindle revolubly mounted within said axial passages and connected with said hollow metallic member for supporting the same.

5. In a speed-indicator, the combination of means for producing a magnetic field, a magnetic member mounted within said magnetic field and coacting therewith for the purpose of increasing the mag-

netic flux, a hollow metallic member encircling said magnetic member and disposed within said magnetic field, bearings for enabling said hollow metallic member to rotate, and an indicating-needle connected with said member for exhibiting the movements thereof.

815,709. ALARM. Harold Irwin, Hawkes Bay, New Zealand. Filed Dec. 9, 1904. Serial No. 236,127.



Claim.—1. The combination with a wheel provided with holders adapted to receive fire-crackers, of means for rotating the wheel, an escapement coöperating with said wheel, means for operating the escapement, and a holder having flame-producing means situated in proximity to the wheel for coöperation with the fire-crackers.

2. The combination with a wheel provided with holders adapted to receive fire-crackers, of means for rotating the wheel, an escapement coöperating with said wheel, clockwork operating upon the escapement, and a holder having flame-producing means situated in proximity to the wheel for coöperation with the fire-crackers.

3. The combination with a wheel provided with holders adapted to separably receive fire-crackers and having a wall at one end of said holders provided with openings through which the fire-cracker fuses may pass, of an ignition device situated outside the wall and adjacent to the opening.

4. The combination with a movable support provided with a holder, of engaging means situated at one end of the holder, and a spring situated at the opposite end.

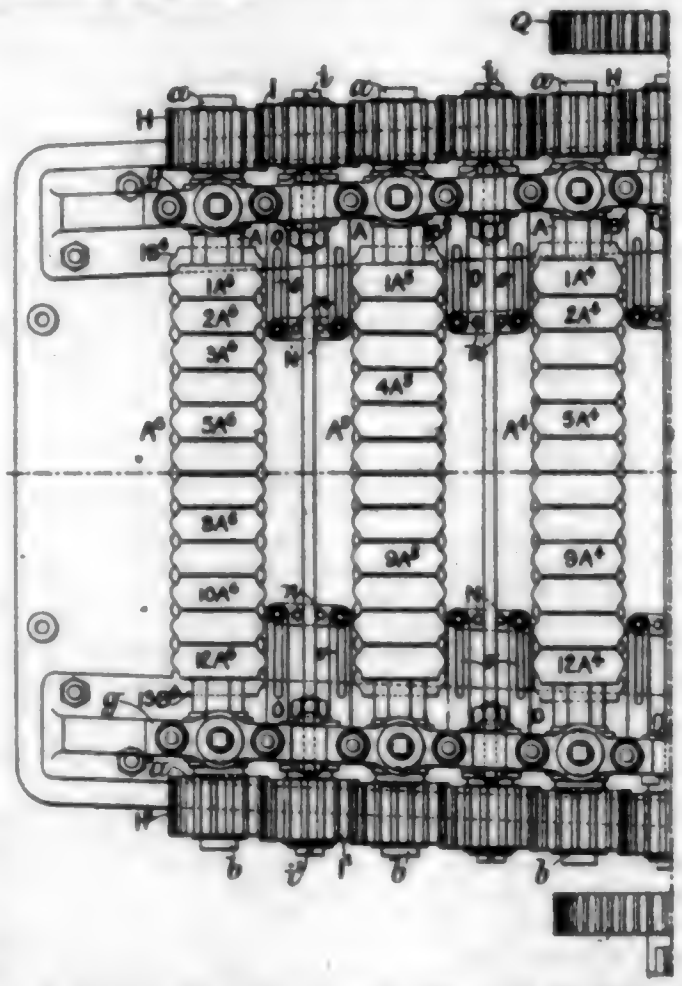
5. The combination with a support for an explosive, of an ignition device comprising a box provided with an opening and a holder having flame-producing means situated beneath and at one side of the opening.

6. The combination with a support for an explosive, of an ignition device comprising a box provided with an opening above which is a wall inclined toward the support, and a holder having flame-producing means situated beneath and at one side of the opening.

815,710. CORRUGATING-MACHINE. Geoffrey B. Johnson, London, England. Filed July 27, 1905. Serial No. 271,457.

Claim.—1. A machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal, consisting essentially in the combination with successive pairs of roll-arbors all positively rotated at the same angular velocity, of a plurality of independent roll-sections carried by and rotatable with each of said arbors and separated from one another by a yielding medium, each roll-section comprising a circumferential salient portion adapted to match with the conversely-shaped surfaces of the coacting sections of the other roll of the pair, the width of the roll-sections diminishing progressively in successive pairs of rolls and the contours of the roll-sections varying progressively for successive pairs of rolls but the maximum diameters of all the roll-sections being equal while the minimum diameters progressively diminish for successive pairs of rolls, whereof the axes are set progressively closer together, substantially as specified.

2. In a machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal, the combination with successive pairs of roll-arbors, of a plurality of independent roll-sections carried by and rotatable with each of said arbors, the widths of the roll-sections diminishing progressively in successive pairs of rolls and a single section in one member of each pair of rolls being fixed on its arbor while the remaining sections are arranged to slide but not to turn on their arbors; springs interposed between the adjacent sections of each roll, successive springs in a roll being of progressively-diminishing strength reckoning from the fixed roll-section to the sections farthest therefrom on either side; and stops on the roll-arbors adapted to limit the distances from said fixed roll-section to which the other roll-sections are forced by the springs, said distances diminishing progressively in successive pairs of rolls in accordance with the progressive diminution in the widths of the roll-sections, substantially as specified.



3. In a machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal, consisting essentially of pairs of roll-arbors positively rotated and series of independent roll-sections carried thereby and rotatable therewith, each roll-section comprising a circumferential salient portion adapted to match with the conversely-shaped surfaces of the coacting sections of the other roll of the pair, the contours of the roll-sections varying progressively for successive pairs of rolls, but the maximum diameters of all the roll-sections being equal while the minimum diameters progressively diminish for successive pairs of rolls; the combination of bearing-blocks for the journals of said arbors, guides for said bearing-blocks disposed perpendicularly to the plane in which the sheet of metal is fed between the rolls, means for applying regulable elastic pressure to the bearing-blocks of the upper arbor of each pair, and distance-blocks interposed between the upper and lower bearing-blocks of each pair of arbors, adapted to maintain between the axes of each pair of arbors a minimum distance progressively diminishing for successive pairs in accordance with the progressive diminution in the minimum diameter of the sections of successive pairs of rolls and to maintain between the surfaces of the upper and lower members of each pair of rolls a minimum distance greater than the thickness of the sheet of metal under treatment, substantially as specified.

4. A machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal consisting essentially of successive pairs of shaping-rolls constituted by roll-arbors all positively rotated at the same angular velocity and a plurality of independent roll-sections mounted on and rotatable with each of said arbors and separated from one another by a yielding medium, each roll-section comprising a circumferential salient portion adapted to match with the conversely-shaped surfaces of the coacting sections of the other roll of a pair, the contours of the roll-sections varying progressively for successive pairs of rolls, and the widths of the roll-sections diminishing progressively in successive pairs of rolls; in combination with pairs of lateral guide-rollers for the edges of the sheet of metal

under treatment, mounted to rotate intermediate of successive pairs of shaping-rolls on axes at right angles to those of the shaping-rolls, the guide-rollers of successive pairs being set at progressively-diminishing distances apart in accordance with the progressively-diminishing width of the sheet of metal in its passage through the machine, substantially as specified.

5. A machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal and for bending said sheet longitudinally of the corrugations when produced, consisting essentially in the combination with successive pairs of corrugating-rolls of successive pairs of bending-rolls adapted to receive the sheet of metal from the corrugating-rolls, and means for enabling the axes of the bending-rolls to be adjusted in a direction perpendicular to the plane wherein the sheet of metal is fed between the corrugating-rolls; the corrugating-rolls being constituted essentially by the combination with arbors in pairs all positively rotated at the same angular velocity, of series of independent roll-sections carried by and rotatable with each of said arbors and separated from one another by a yielding medium, and all having the same maximum diameter; and the bending-rolls being constituted by the combination with arbors in pairs all positively rotated at the same angular velocity as those of the corrugating-rolls, of a plurality of independent roll-sections carried by and rotatable with each of said arbors, all the roll-sections having the same maximum diameter as the sections of the corrugating-rolls and a single section in one member of each pair of rolls being fixed on its arbor while the remaining sections are arranged to slide but not to turn on their arbors, springs interposed between the adjacent roll-sections and between the extreme sections of each roll and abutments fixed toward the ends of the roll-arbors, successive springs in a roll being of progressively-increasing strength reckoning from the fixed roll-section to said abutments, and stops on each roll-arbor adapted to limit the approach toward the fixed roll-section of the other roll-sections of a pair under the pressure of the springs, substantially as specified.

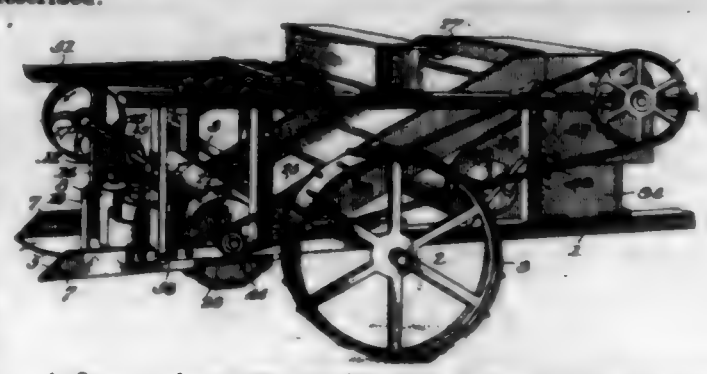
6. In a machine for producing a plurality of longitudinally-extending corrugations in a sheet of metal and for bending said sheet longitudinally of the corrugations when produced, consisting essentially of successive pairs of corrugating-rolls positively rotated, successive pairs of bending-rolls adapted to receive the sheet of metal from the corrugating-rolls, and means for enabling the axes of the bending-rolls to be adjusted in a direction perpendicular to the plane wherein the sheet of metal is fed between the corrugating-rolls; the combination of bearing-blocks for the journals of the arbors of the bending-rolls, guides for said bearing-blocks disposed normally to the plane in which the sheet of metal is fed between the rolls, means for applying elastic pressure to the bearing-blocks of the upper roll of each pair, distance-blocks interposed between the upper and lower bearing-blocks of each pair of rolls, gear-wheels fast on the arbors of the upper and lower series of bending-rolls at the opposite ends thereof respectively, idle wheels intermediate between and gearing with the gear-wheels of the adjacent rolls of each series, blocks for supporting the axes of said idle wheels, guides for said blocks disposed normally to the plane in which the sheet of metal is fed between the rolls, means for adjusting in their respective guides the position of said blocks and that of the bearing-blocks for the arbors of the lower series of bending-rolls, and means for causing an arbor of the upper and of the lower series of bending-rolls to be positively rotated, substantially as specified.

815,711. PEA-HARVESTING MACHINE. WILLIAM A. JOHNSON, Mount Vernon, Ga. Filed Aug. 24, 1905. Serial No. 275,622.

Claim.—1. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, said throat being closed at its rear end, and a pair of upright feed-rolls located at opposite sides of said throat, the rolls being provided with teeth and having cutting-knives at their lower ends arranged to sweep across the throat from opposite sides thereof, the knives of one roll alternating with the knives of the other roll, substantially as described.

2. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, said throat being closed at its rear end, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom, and disks secured to the lower ends of said rolls and provided with cutting-knives arranged to sweep across the throat from opposite sides thereof, the knives of one roll alternating with the knives of the other roll, substantially as described.

3. In a pea-harvesting machine, the gatherer having converging walls and a throat at the rear thereof, said throat being closed at its rear end, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and having flanges at their lower ends extending beyond the circumference thereof, and cutting-knives secured to said flanges and arranged to sweep across the throat from opposite sides thereof, the knives of one roll alternating with the knives of the other roll, substantially as described.



4. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, said throat being closed at its rear end, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and having at their lower ends cutting-knives arranged to sweep across the throat from opposite sides thereof, the knives of one roll alternating with the knives of the other roll, and strippers located at the rear of said feed-rolls and arranged to strip the vines from the teeth and knives of the feed-rolls, substantially as described.

5. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and having at their lower ends cutting-knives arranged to sweep across the throat on opposite sides thereof, and shields located about said feed-rolls and having their rear portion deflected inwardly toward the rolls at the rear thereof, said deflected portions being formed with slots for the passage of the teeth of the feed-rolls and serving as strippers therefor, substantially as described.

6. In a pea-harvesting machine, the gatherer having converging walls and a throat at the rear thereof, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and having at their lower ends cutting-knives arranged to sweep across the throat from opposite sides thereof, the knives of one roll alternating with the knives of the other roll, miter-gears connected with the upper ends of said feed-rolls, and a counter shaft having miter-gears meshing with the miter-gears of the feed-rolls for rotating said rolls, substantially as described.

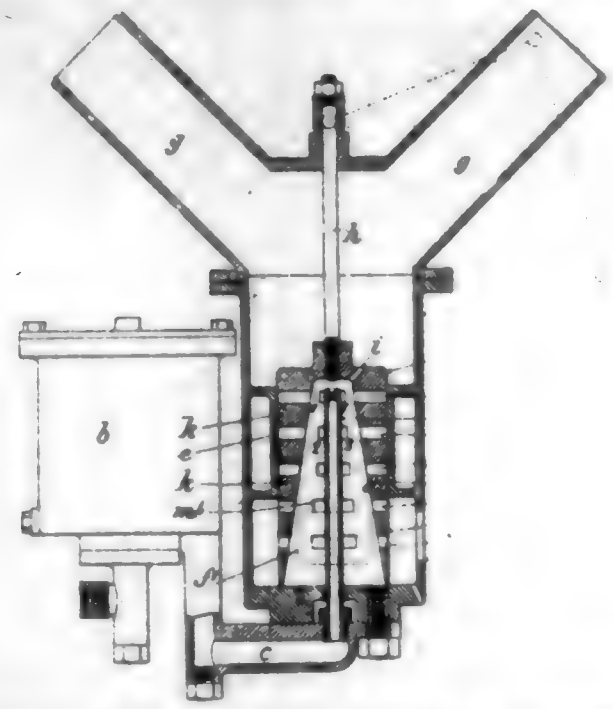
7. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and cutting-knives arranged to sweep across the throat from opposite sides thereof, a toothed threshing-cylinder located to the rear of and in proximity to said feed-rolls, and a stripper located between said threshing-cylinder and feed-rolls to strip vines from the teeth of the feed-rolls and direct them into position to be caught by the teeth of the threshing-cylinder, substantially as described.

8. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and cutting-knives arranged to sweep across the throat from opposite sides thereof, a toothed threshing-cylinder located to the rear of and in proximity to the feed-rolls to have its teeth engage with vines fed thereto by the feed-rolls, a beater-cylinder, a carrier for transferring vines from the threshing-cylinder to the beater-cylinder, means for transmitting power from a drive-wheel of the machine to the beater-cylinder, means transmitting power from said cylinder to the threshing-cylinder, and means for transmitting power from the threshing-cylinder to the feed-roll, substantially as described.

9. In a pea-harvesting machine, a gatherer having converging walls and a throat at the rear thereof, a pair of upright feed-rolls located at opposite sides of said throat and provided with teeth projecting therefrom and cutting-knives arranged to sweep across the throat from opposite sides thereof, a toothed threshing-cylinder located to the rear of and in proximity to the feed-rolls to have its teeth grasp the vines fed thereto by the feed-rolls, a beater-cylinder, a carrier for transferring vines from the threshing-cylinder to the beater-cylinder, a box or chamber containing a concave screen located under the beater-cylinder, a fan having a discharge-mouth opening

into said box or chamber beneath said screen, and a train of gearing for transmitting power from the drive-wheel of the machine to the carrier, beater-cylinder, threshing-cylinder, feed-rolls, and fan, substantially as described.

815,712. CARBURETER FOR EXPLOSIVE-ENGINES. JOHN H. JOHNSTON, Paris, France. Filed June 24, 1905. Serial No. 266,783.



Claim.—1. In a carbureter, the combination of a spray-pipe, of a hollow piston around the spray-pipe, having an inner wall conical in shape and lateral apertures, of a ring surrounding a portion of the length of the piston, and of means for adjusting or regulating the position of the piston with respect to the spray-pipe and the said ring.

2. In a carbureter, the combination of a spray-pipe, of a hollow piston around the spray-pipe, having an inner wall of conical shape and lateral apertures, the said apertures being arranged in several crowns separated by solid portions; of a ring surrounding a portion of the length of the piston; and of means for regulating or setting the position of the piston with respect to the spray-pipe and to the said ring.

3. A carbureter having an outer casing, a liquid-fuel nozzle discharging thereinto, and a regulating member adjustable in the casing and inclosing the nozzle, said member having a conical interior form and openings through its sides, the adjustment of the regulating member serving to cover or uncover one or more of said openings, whereby to regulate the movement of the carbureted air through the carbureter.

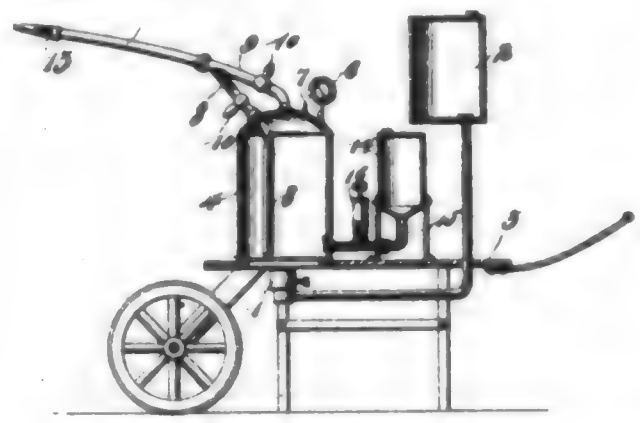
4. A carbureter having an outer casing with inlet and outlet openings respectively adjacent to its end portions, a liquid-fuel nozzle projecting into the casing, said casing having an enlarged interior above the fuel-nozzle adjacent to the discharge-opening, and a regulating member movable in the casing and surrounding the nozzle, said regulating member having openings therein at different points along its length, whereby the position of the member in the outer casing determines the amount of air permitted to flow through the carbureter.

5. A carbureter having an outer casing with inlet and outlet openings respectively adjacent to its end portions, a liquid-fuel nozzle projecting into the casing, said casing having an enlarged interior above the fuel-nozzle adjacent to the discharge-opening, and a regulating member movable in the casing and surrounding the nozzle, said regulating member having openings therein at different points along its length, whereby the position of the member in the outer casing determines the amount of air permitted to flow through the carbureter, and the regulating member having tapered or converging interior walls, for the purpose specified.

815,713. SPRAYING DEVICE. HIRAM L. JOSLIN, Eureka Springs, Ark. Filed Aug. 28, 1905. Serial No. 276,110.

Claim.—1. In a spraying device, the combination with a heating apparatus, of a main tank adapted to be placed on said heating device, a valved water-discharge pipe and a valved steam-discharge pipe arranged in said tank, an auxiliary tank connected to said main tank, and means whereby the liquid in said auxiliary tank is pumped into said main tank, substantially as described.

2. In a spraying device, the combination with a heating apparatus, of a main tank adapted to be placed on said heating device, a valved water-discharge pipe and a valved steam-discharge pipe arranged in said tank, said pipes being connected beyond said valves, a single discharge-pipe adapted to be joined with said connected pipes, a discharge-nozzle arranged on said single discharge-pipe, an auxiliary tank connected to said main tank, and a pump whereby the liquid in said auxiliary tank may be forced into said main tank, substantially as described.



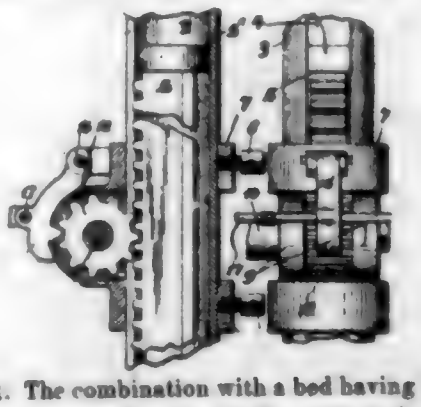
3. In a spraying device, the combination with a wheeled truck, of a heating apparatus arranged thereon, a tank adapted to be placed on said heating apparatus, a water-discharge pipe arranged in said tank and extending to near the bottom of the same, a steam-discharge pipe connected with the upper end of said tank, valves arranged in said pipes, means whereby the latter are joined to form one pipe, a flexible discharge-pipe connected to said joined pipes, a nozzle arranged on said flexible pipe, a water-glass, a steam-gage and a safety-valve arranged on said main tank, an auxiliary tank, connected to said main tank, and a pump whereby the liquid in said auxiliary tank is forced into said main tank, substantially as described.

815,714. HAT-GUARD. CHARLES E. KRATOR, Brooklyn, N. Y., assignor of one-half to Dunlap and Company, New York, N. Y., a Corporation of New York. Filed Sept. 6, 1905. Serial No. 277,273.



Claim.—In combination with a hat, a hat-guard comprising a bar having a plurality of holes therein and a cord attached at one end to the hat and at the other end to said bar, said cord passing freely through a hole near the center of the bar, then through a hole near one end of the bar and attached to the other end of the bar to form an unattached loop between the ends of said bar to be passed around the crown of the hat.

815,715. INVALID BED, COT, AND TABLE. ANTON KRUGER, Allegheny, Pa. Filed Oct. 31, 1905. Serial No. 285,294.

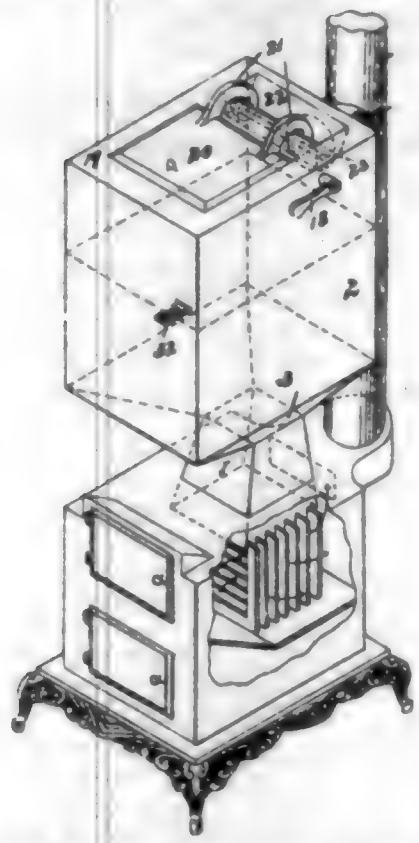


Claim.—1. The combination with a bed having hollow or tubular posts, of a rack extending into each post, a casing adjustably secured to each post and connected together by rods and side rails, an elevating mechanism mounted in each casing and engaging said racks, means to lock said elevating mechanism in a fixed position, substantially as described.

2. The combination with a bed having hollow or tubular posts, said post having vertically-disposed slots formed therein, of racks extending upwardly within said posts and adapted to support said bed, elevating mechanism carried by each post and engaging said rack, said elevating mechanism being adjustable on the post, means

to operate said elevating mechanism, means to lock said mechanism in a fixed position, substantially as described.

815,716. SEALED MAGAZINE FOR STOVES. SAMUEL C. LAUTNER, Detroit, Mich. Filed Aug. 8, 1903. Serial No. 168,768.



Claim.—1. In combination with a magazine for stoves, a plurality of covers lying in different planes, a sealing-trough in which the flanges of one cover engage, and means connected with one of said covers whereby upon the actuation thereof the inadvertent seating of the other is prevented, substantially as described.

2. In combination with a magazine for stoves, a cover, a sealing-trough in which the flanges of the cover engage when the same is closed, an extension-hopper, and mechanism whereby the cover may be moved and the extension hopper dropped into position contemporaneously, substantially as described.

3. In combination with a magazine for stoves, an inlet-conduit, a cover for said inlet-conduit, means for shifting the cover to open the conduit, an extension-conduit, and means for placing the extension-conduit in position to form a continuation of the conduit, substantially as described.

4. In combination with a magazine for stoves, a chamber located thereabove containing a cover to said magazine and mechanism for moving said cover, and an extension-hopper and mechanism for moving the extension-hopper, substantially as described.

5. In combination with the magazine of a stove, a sealing-chamber, a sealing-cover in said chamber, means for operating said sealing-cover, a covered hopper leading into said sealing-chamber, and an extension-hopper forming a continuation of the first-mentioned hopper, substantially as described.

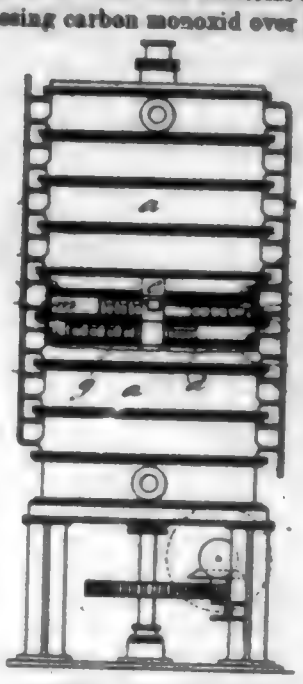
815,717. PROCESS OF TREATING NICKEL ORES. CARL LANGER, Ynspenllwch, Clydach, England, assignor to The Mond Nickel Company, Limited, Westminster, England. Filed July 8, 1905. Serial No. 268,859.

Claim.—1. A process for volatilizing nickel in the form of nickel carbonyl, which consists in passing carbon monoxid over finely-divided nickel and keeping the temperature of the said nickel at between 40° and 50° centigrade.

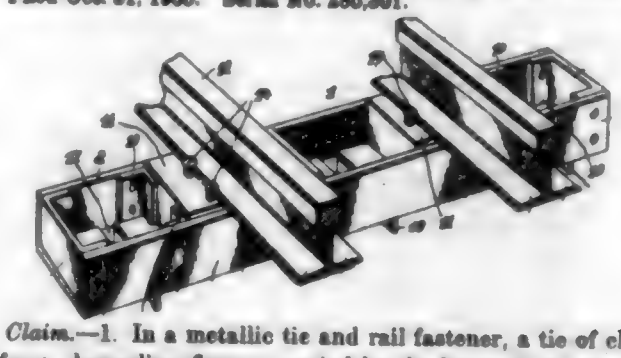
2. A process for volatilizing nickel in the form of nickel carbonyl, which consists in passing carbon monoxid over material containing finely-divided nickel and keeping the temperature of the said material at between 40° and 50° centigrade.

3. A process for volatilizing nickel in the form of nickel carbonyl, which consists in passing finely-divided nickel over passages, passing through the passages a fluid adapted to keep the temperature of the said nickel at between 40° and 50° centigrade and passing carbon monoxid over the said nickel.

4. A process for volatilizing nickel in the form of nickel carbonyl, which consists in passing material containing finely-divided nickel over passages, passing through the passages a fluid adapted to keep the temperature of the said material at between 40° and 50° centigrade and passing carbon monoxid over the same material.



815,718. METALLIC TIE. BENJAMIN A. LEES, Pittsburg, Pa. Filed Oct. 31, 1905. Serial No. 285,201.



Claim.—1. In a metallic tie and rail fastener, a tie of channel-bar form, depending flanges carried by the base of said tie, blocks seated in the tie, angle-cleats secured to the inner faces of the channel-bar and against which cleats the outer ends of the blocks abut, means to secure rails to said blocks, and bolts passing transversely through the channel-bar and blocks to secure the latter in the channel-bar.

2. In a metallic tie and rail fastener, the combination of a channel-bar, depending flanges carried by the bottom of said bar, cleats mounted within said bar, blocks engaging said cleats, means to secure rails to said blocks, and bolts passing through said bar and through said blocks to secure said blocks within said bar, substantially as described.

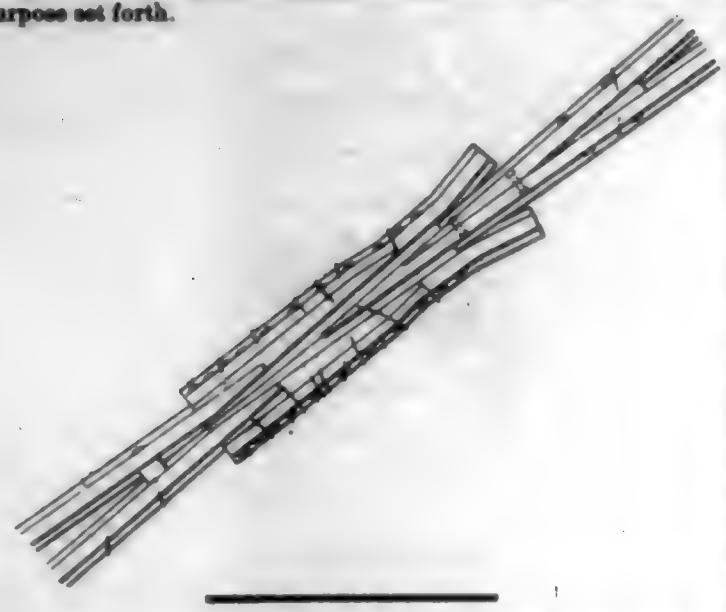
3. In a metallic tie and rail fastener, the combination of a channel-bar, blocks secured in said bar, fasteners mounted upon said blocks and adapted to retain rails thereon, vertical bolts passing through said fasteners and into said blocks to hold said fasteners in engagement with said blocks, substantially as described.

815,719. RAILWAY-FROG. JAMES E. LEWIS, Steelton, Pa., assignor to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed July 20, 1905. Serial No. 270,456.

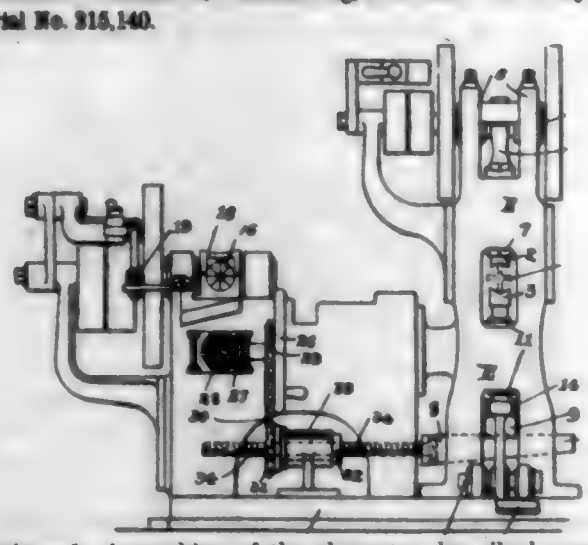
Claim.—1. In a railroad-frog, the combination of the frog-point, the wing-rails having the inner sides of their heads cut away from a point back of the frog-point to the forward end of said rails, the hard-metal bearing-pieces inserted in the space formed by cutting away said rail-heads and having the lateral offsets at their free ends, and the track-rails having the beveled ends fitted to said offsets, the inner side of each of said wing-rails, bearing-pieces and beveled end of said track-rails forming a continuous gage-line, substantially as and for the purpose set forth.

2. In a railroad-frog, the combination of the frog-point, the wing-rails, having the inner sides of their heads cut away from a point back of said frog-point, to the forward end of said rails, the hard-metal bearing-pieces inserted in the space formed by cutting away said rail-heads, and having the lateral offsets at their free ends, the track-rails having the beveled ends fitted to said offsets; the inner side of said wing-rails to the rear of said bearing-pieces, the inner side of the latter, and the inner side of the beveled end of said track-rails, forming a continuous line; and the upper surface of said bearing-pieces being upwardly inclined from a point opposite to and in a

plane below the top of said track-rails to a point opposite to and in a plane above that of the frog-point, and then gradually descending to the plane of the top of said frog-point, substantially as and for the purpose set forth.



815,720. MECHANISM FOR SHARPENING ROCK-DRILLS. WILLIAM P. LIGHTBODY, Johannesburg, Transvaal. Filed July 2, 1904. Serial No. 215,140.



Claim.—1. A machine of the character described comprising oppositely-arranged swaging-dies, means for reciprocating one of said dies, means for adjusting the other die relatively to said reciprocating die, an adjustable drill-carrier, means for controlling said die-adjusting means, said controlling means being operatively connected to the drill-carrier, whereby movement of the latter is imparted to the former, and means interposed between said adjustable die and said die-adjusting means to move said die independently of said adjusting means.

2. A machine of the character described comprising an upper reciprocating die, a lower normally stationary die, an adjustable block for said latter die, a base upon which said block is free to reciprocate, an adjustable drill-carrier mounted independently of said base, means for adjusting said drill-carrier, and independent means for reciprocating said adjusting-block on its base, said block-reciprocating means being operatively connected with said drill-carrier-adjusting means, whereby said parts are adjusted in unison.

3. A machine of the character described comprising an upper reciprocating die, a lower normally stationary die, an adjustable block for said latter die, a base upon which said block is free to reciprocate, an adjustable drill-carrier mounted independently of said base, a hand-wheel for adjusting said drill-carrier, and independent means for reciprocating said block on its base, said means being operatively connected to said hand-wheel, whereby said block and said drill-carrier may be adjusted in unison.

4. A machine of the character described comprising an upper reciprocating die, a lower normally stationary die, an adjusting-wedge for the latter die, a feed-screw for said wedge, an adjustable drill-carrier, connections between said drill-carrier and feed-screw, whereby movement of the former is imparted to said screw.

5. A machine of the character described comprising an upper reciprocating die, a lower normally stationary die, an adjusting-wedge for the latter die, an adjustable drill-carrier, connections between said carrier and wedge, whereby movement of said carrier is simultaneously imparted to said wedge, and means independent of said adjusting means and interposed between the latter and said lower die for placing said lower die into operative position.

6. A machine of the character described comprising an upper reciprocating die, a lower normally stationary die, an adjusting-wedge for the latter die, an adjustable drill-carrier mounted independently of said wedge, and arranged at right angles to the latter, and means for simultaneously adjusting said drill-carrier and wedge.

815,721. FOUNTAIN-PEN. WILLIAM C. LUTHER, Newark, N. J. Filed Sept. 7, 1905. Serial No. 277,202.



Claim.—1. In a self-filling fountain-pen, a tubular holder, said holder having an opening in its side, a flexible ink-receiving reservoir in said holder, a presser-bar in said holder having an oscillatory motion between the outer face of said reservoir and the opening in said holder, and means connected with said holder for preventing lateral as well as longitudinal movements of the presser-bar, consisting of a plug having a diametrically-disposed channel, and a tongue on said presser-bar extending into said channel and provided with offsets bearing upon the edge portions of said plug contiguous to the said channel, substantially as and for the purposes set forth.

2. In a self-filling fountain-pen, the combination, with a tubular holder, provided in its side with an opening, of an end cap detachably connected with said holder, a flexible ink-receiving reservoir in said holder, a presser-bar in said holder between the outer surface of said reservoir and the opening in said holder, and means on said end cap adapted to be inserted in the opening of said holder for producing an oscillatory motion of the presser-bar and a compression of said reservoir, and means connected with said holder for preventing lateral as well as longitudinal movements of the presser-bar, consisting of a plug having a diametrically-disposed channel, and a tongue on said presser-bar extending into said channel and provided with offsets bearing upon the edge portions of said plug contiguous to the said channel, substantially as and for the purposes set forth.

3. The herein-described fountain-pen comprising a tubular body having an opening in its side, for the reception of a compressing means, a flexible ink-receiving reservoir in said holder, a plug in said holder provided with a diametrically-extending channel, a presser-bar arranged between the outer surface of said reservoir and the opening in said holder, and a tongue on said presser-bar extending into the channel of said plug, substantially as and for the purposes set forth.

4. The herein-described fountain-pen comprising a tubular body having an opening in its side for the reception of a compressing means, a flexible ink-receiving reservoir in said holder, a plug in said holder provided with a diametrically-extending channel, a presser-bar arranged between the outer surface of said reservoir and the opening in said holder, and a tongue on said presser-bar extending into the channel of said plug, and means for preventing lateral movement of said presser-bar, comprising offsets on opposite sides of said tongue in engagement with the edge portions contiguous to the channel in said plug, substantially as and for the purposes set forth.

5. The herein-described fountain-pen comprising a tubular body having an opening in its side for the reception of a compressing means, a flexible ink-receiving reservoir in said holder, a plug in said holder provided with a diametrically-extending channel, a presser-bar arranged between the outer surface of said reservoir and the opening in said holder, and a tongue on said presser-bar extending into the channel of said plug, and means for preventing lateral movement of said presser-bar, comprising offsets on opposite sides of said tongue in engagement with the edge portions contiguous to the channel in said plug, said presser-bar being further provided with a hole, and a pin secured at its ends to said holder and extending through the hole in said presser-bar to prevent longitudinal movement of said presser-bar, substantially as and for the purposes set forth.

815,722. MEANS FOR FILTERING STREAMS AND THE LIKE. TIMOTHY LYDON, New York, N. Y. Filed Oct. 17, 1905. Serial No. 283,140.

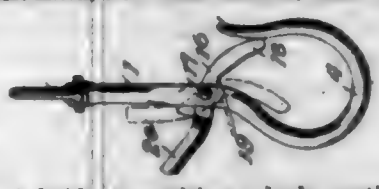
Claim.—1. Means for clarifying the water of running streams and the like, comprising one or more supplemental dams obliquely disposed across the stream, and drain-pipes arranged beyond each of said supplemental dams, said drain-pipes being provided in their upper sides with apertures and being arranged to discharge at a point some distance from the stream in a lateral direction.

2. Means for clarifying the water of running streams or the like, comprising a main dam and a supplemental dam arranged at the rear

thereof and obliquely disposed across the stream and a drain-pipe at the bottom of the stream beyond said supplemental dam, said drain-pipe having a lateral discharge-outlet extending through the bank of the stream.



815,723. HOOK FOR SUCKER-ROD ELEVATORS. JAMES MAHONEY, Mount Alton, Pa. Filed Nov. 17, 1905. Serial No. 287,838.



Claim.—1. A hook, comprising a body portion having a long shank, an eye swiveled to the upper end thereof, and the shank having an elongated opening therethrough in which is intermediately pivoted the tongue having a weighted upper end.

2. A hook, comprising a body portion having a long shank, an eye swiveled to the upper end thereof, said shank having an elongated opening therethrough and in which is intermediately pivoted an S-shaped tongue in a line with the upper end of the hook, and said tongue having a weighted upper end.

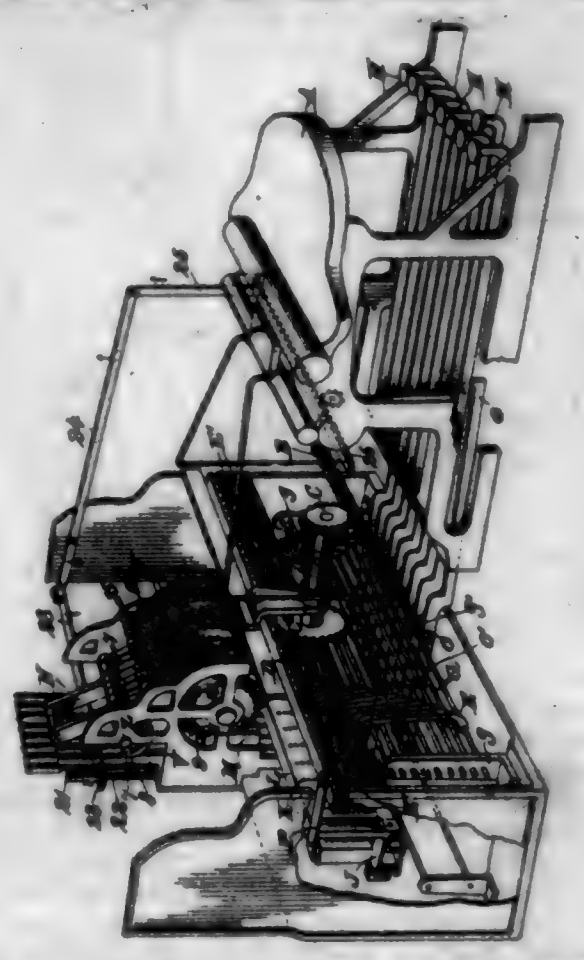
3. A hook comprising a body portion having a long shank, an eye swiveled to the upper end thereof, said shank having an elongated obliquely-arranged opening therethrough, and an intermediately-pivoted S-shaped tongue in a line with the upper end of the hook, and said tongue having its upper end weighted.

4. A hook, comprising a body portion having a long shank, an eye swiveled to the upper end thereof, said shank having an elongated obliquely-arranged opening therethrough, and an intermediately-pivoted S-shaped tongue within said opening in a line with the upper end of the hook, and said tongue having a notch below the pivotal point to allow the hook to swing downward in a vertical line, and a weighted upper end.

815,724. ADDING DEVICE FOR TYPE-WRITING MACHINES. CLARENCE R. MARTINEAU, Albany, N. Y., assignor to Typewriter Adding Machine Company, a Corporation of New York. Filed Dec. 3, 1903. Serial No. 183,651.

Claim.—1. In an adding device adapted to be attached to a type-writing machine, a carriage; a means for connecting said carriage with the carriage of the type-writing machine, whereby the carriage will be caused to move in the opposite direction to the movement of the carriage of the type-writing machine; a series of wheels; a series of racks adapted to engage with said wheels, respectively; a lever; a pin; a means for causing said pin to be placed in the path of one of said racks by the operation of the type-writing machine, substantially as described.

2. In an adding device for type-writing machine, the combination of a carriage; a means for connecting said carriage with the carriage of the type-writing machine, whereby the carriage of the adding device will be removed in a direction opposite to that of the type-writing-machine carriage; a series of adding-wheels; a series of racks arranged to engage said wheels, respectively; a series of pins; a means for causing one or more of said pins to project in the pathway of the racks, aforesaid, whereby the movement of rotation of said adding-wheels will be limited; a lever attached to and adapted to operate the racks, substantially as described.

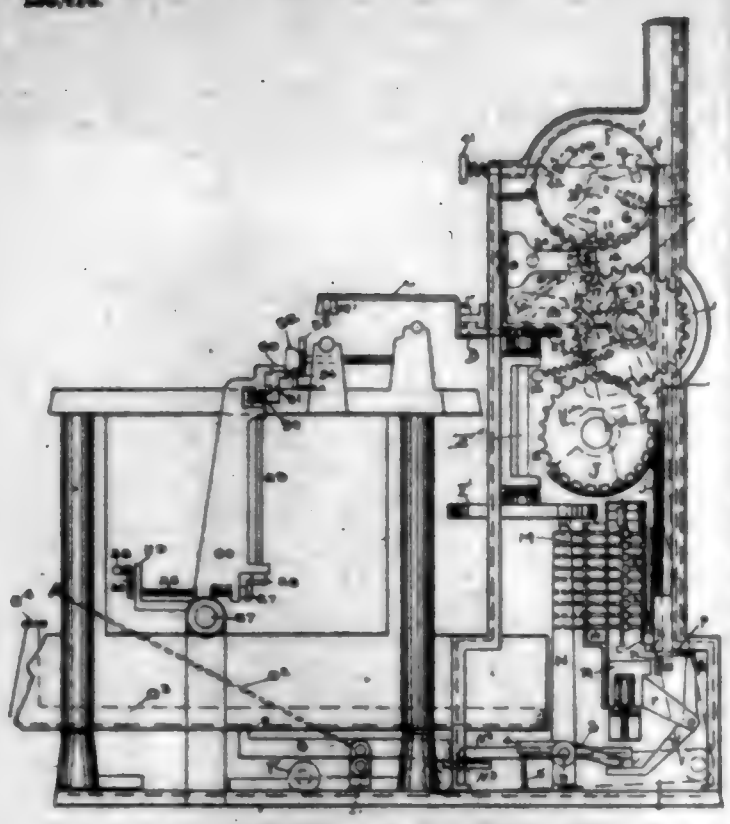


3. In an adding device adapted to be attached to a type-writing machine; a carriage; a means for connecting said carriage with the carriage of the type-writing machine, whereby the carriage will be caused to move in the opposite direction to the movement of the carriage of the type-writing machine; a series of wheels; a series of racks adapted to operate said wheels, respectively; a series of lifts placed on the faces of said wheels, respectively, adjacent to the zero-point indicated on the periphery of the wheels; a series latches adapted to engage said lifts, respectively; a bell-crank lever; a means for operating said bell-crank lever by said latch; a pawl connected with said bell-crank lever adapted to engage one of said wheels whereby the carry is made; a lever; a series of pins; a means for causing one of said pins to be placed in position to limit the movement of said racks by the operation of the type-writing machine, substantially as described.

4. In an adding device adapted to be attached to a type-writing machine; a carriage; a means for connecting said carriage with the carriage of the type-writing machine, whereby the carriage will be caused to move in the opposite direction to the movement of the carriage of the type-writing machine; a series of adding-wheels; a series of racks adapted to operate said wheels, respectively; a carry device placed in connection with said wheels, respectively, consisting of a lift attached to the face of each wheel adjacent to its zero point; a latch; a pin; a bell-crank lever and a pawl; a lever; a means for limiting the movement of said racks by the operating of the type-writing machine, substantially as described.

5. In an adding device adapted to be attached to a type-writing machine; a carriage; a means for connecting said carriage with the carriage of a type-writing machine, whereby the carriage will be caused to move in the opposite direction to the movement of the carriage of the type-writing machine; a series of adding-wheels; a series of racks adapted to operate said wheels, respectively; a tabulating device consisting of a series of columnating-rods; a lever; an arm connected with said lever adapted to engage with the rack of the carriage of the type-writing machine; a bar connected with said lever placed in such a position that by the depression of either of the columnating-rods the type-writer-carriage rack will be raised, causing the carriage of the adding-machine to move until stopped by said columnating-rod.

815,725. MECHANICAL ADDING DEVICE. Clarence R. Martineau, Albany, N. Y., assignor to Typewriter Adding Machine Company, a Corporation of New York. Filed Mar. 31, 1903. Serial No. 150,414.



Claim —1. A type-writing machine, an adding device adapted to be connected therewith, consisting of a carriage; a means for connecting said carriage with the carriage of said type-writing machine; a means for causing the carriage of the adding device to move in a direction opposite to that of the carriage of the type-writing machine; a series of pins carried by the carriage of said adding device; a series of adding-wheels; a series of racks; a means for causing a partial revolution of said adding-wheels by the movement of said racks, respectively; a series of pins arranged to be operated upon by the pins in said carriage respectively, whereby they are placed in position to determine the amount of the revolution of the said adding-wheels, respectively; a means for imparting motion to said racks, substantially as described.

2. The combination of a type-writing machine and an adding device, said adding device consisting of a series of adding-wheels; a series of racks; a means for causing a partial revolution of said wheels by the movement of said racks, respectively; a series of pins arranged to be placed in the path of the movement of said racks, respectively; a carriage provided with means for acting upon said pins, respectively; a means for connecting said carriage with the carriage of said type-writing machine; a means for setting said racks in motion, substantially as described.

3. The combination of a type-writing machine and an adding device; said adding device comprising a series of adding-wheels; each of said adding-wheels provided on its periphery with the numerals zero to nine inclusive; with a means when said wheels are revolved, respectively, to zero for causing the next adjacent wheel to the left to be moved one numeral, making the "carry," a series of racks; a means for causing a partial revolution of said wheels by the movement of said racks, respectively; a series of pins arranged to be placed in the path of the movement of said racks, respectively; a carriage provided with means for acting upon said pins, respectively; a means for connecting said carriage with the carriage of said type-writing machine; a means for setting said racks in motion, substantially as described.

4. The combination of the type-writing machine and an adding-machine device; said adding device comprising a series of adding-wheels; a series of racks; a means for causing a partial revolution of said wheels by the movement of said racks, respectively; each of said adding-wheels provided on its periphery with the numerals zero to nine, inclusive; with a means when said wheels are revolved, respectively, to zero for causing the next adjacent wheel to the left to be moved one numeral, making the "carry;" a series of pins adapted to be projected within the path of the movement of said racks, respectively; a means connected with the carriage of said type-writing machine for operating said pins with a means for imparting motion to said racks, substantially as described.

5. The combination of a type-writing machine and an adding device; said adding device consisting of a series of adding-wheels; each of said adding-wheels provided on its periphery with the numerals zero to nine inclusive; with a means when said wheels are revolved, respectively, to zero for causing the next adjacent wheel to the left to be moved one numeral thereof, making the "carry;" a series of racks; a means for imparting motion thereto whereby said wheels will be revolved, respectively; a means for arresting the movement of said racks, respectively; a carriage provided with a means for putting in operation the means for arresting the movement of said racks; a means for connecting said carriage to the carriage of said type-writing machine, substantially as described.

6. In an adding device; a series of adding-wheels, each of which is provided on its periphery with the numerals from zero to nine inclusive; each of said wheels provided with a means for engaging with the rack; a series of racks arranged to cause a partial revolution of each of said wheels, respectively; a lever, by the movement of which said racks and adding-wheels are set in motion; a series of trips adapted to engage with the said wheels, respectively; a series of latches arranged to hold said trips out of the engagement with said wheels, respectively; a means for causing said latches to lock with said trips; a means on said wheels for disengaging said latch from said trip when the wheel is revolved past zero thereon and causing said trip to engage the wheel next adjoining the one which operates said latch; a means for imparting motion through said trips to the wheel with which it engages sufficient to move said wheel one numeral, thus making the "carry;" a means for preventing movement of the trip after its engagement with the adjoining wheel to make the "carry" until the reverse movement of said lever liberates said trip, substantially as described.

7. In an adding device, a series of adding-wheels, each of said wheels provided with a series of divisions on its periphery, each of said divisions numbered from zero to nine, inclusive; a means for imparting motion to said wheels, respectively, each of said wheel provided with a series of lifts, the said lift arranged adjacent to the zero position of each of said divisions; a series of trips; a lip arranged on each of said trips; a pawl carried by each of said trips; a series of latches; a projection on each of said latches adapted to engage with each of said lips, respectively; said pawls adapted to engage with the periphery of said wheels; each of said latches arranged to project within the pathway of said lifts, respectively, so adjusted and connected up that when one of the lifts engages with the latch, the projection thereon will be removed from contact with the lip of the trip; a shaft flattened along part of its contour for causing the trip to move after said disengagement; said pawl and said trip by said movement brought in contact with the periphery of the next adjacent wheel and cause said wheel to revolve one division thereof; with a means for returning said trip to engagement with said latch and the connection of the projection thereon with said lip, substantially as described.

8. The combination of a type-writing machine and an adding device, with a series of levers adapted to engage with some of the key-levers of the type-writing machine; a series of drivers adapted to engage with said first-mentioned levers; a series of pins mounted in the carriage of the adding device arranged to be operated upon by said drivers, respectively; a series of pins adapted to project within the pathway of the racks, respectively; a series of racks; a series of adding-wheels; a means for imparting motion to said adding-wheels by the movement of said racks, substantially as described.

9. The combination of a type-writing machine with a series of levers; a means for mounting said levers beneath the key-levers of the type-writing machine; with a means for moving each of said levers upon its support in such a manner as to disengage the connection between the lever and the key-lever; a series of drivers operated by the movement of said levers, respectively; a carriage; a means for connecting the carriage with the cariage of a type-writing machine; a series of pins mounted on said carriage; each of said drivers adapted to engage with said pins, respectively; a series of racks; a series of adding-wheels; a means for carrying motion to said adding-wheels by the movement of said racks, respectively; with a means for limiting the movement of said racks by the operation of said drivers on said pins in said carriage; with a means for imparting movement to said racks, substantially as described.

10. The combination of a type-writing machine; a series of levers pivoted beneath the key-levers operating the figures on the type-writing machine, respectively; a series of drivers operated by the action of said first-mentioned levers; a means for limiting the movement of a series of racks by the operation of said drivers; a series of adding-wheels; a series of racks; a means for causing a partial revolution of said adding-wheels by the movement of said racks, respectively; a means for setting said racks in motion, substantially as described.

11. The combination of a typo-writing machine; a series of levers placed beneath and engaged with the key-levers operating the figures of the type-writing machine; a series of drivers operated by said first-mentioned levers; a series of racks; a series of adding-wheels; a means for causing a partial revolution of said wheels by the movement of said racks, respectively; a series of retaining-pins for holding said racks; a rocking lever, by the movement of which said racks may be released; a means attached to said driver for operating said rocking lever, substantially as described.

12. In a combined type-writing machine and adding device; a series of pins carried by the carriage of the type-writer, near one end thereof; a rocking frame; a carriage-wheel; a projection on said rocking frame adapted to engage with said carriage and lift the same from connection with the carriage-wheel; a rack carrying a finger mounted in said frame; a means for moving said rack in a horizontal plane; with a means for tilting said frame in such a manner as to bring said finger within the pathway of the movement of said pins on the carriage, substantially as described.

13. In a combined type-writing machine and adding device; a series of pins carried by the rack of the type-writing-machine carriage; a frame suitably mounted; projection on said frame arranged to pass under the carriage of the type-writing machine when said frame is tilted; a rack mounted in said frame; a finger carried by said rack; a pinion engaging with said rack carried by a spindle; a means for operating said pinion in such a manner as to move said rack in a horizontal plane; an indicating device arranged in connection with said spindle, by means of which the extent of the movement of the finger on said rack may be determined by the position given to said indicator; a means for tilting said frame and rack in such a manner as to bring said finger in the path of the movement of said pins in the type-writing-machine carriage-rack, substantially as described.

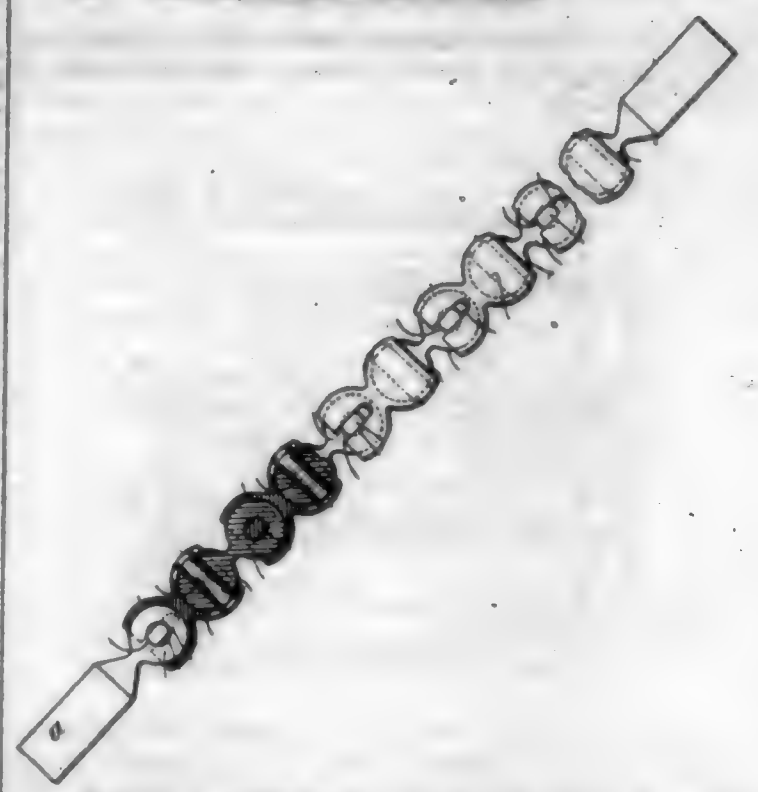
14. In a combined type-writing machine and adding device; a frame; suitably-mounted projection on said frame, arranged to extend beneath the rack of the carriage of thetype-writing machine when said frame is tilted; a rack mounted in said frame; a finger carried by said rack; a pinion meshing with said rack; a spindle carrying said pinion; beveled gear carried by said pinion; pinion carrying a beveled gear meshing with that on first-mentioned pinion; indicating-arm attached to said last-mentioned spindle; block provided with openings through which said finger may project; a series of projections arranged on the end of the rack of the type-writer carriage; a means for tilting said frame bringing the projections thereon beneath the rack of the type-writer carriage and said finger through one of the openings in said block within the path of one of the projections on said type-writer carriage-rack, substantially as described.

15. In a combined type-writing machine and adding device; a base-plate; a series of adjustable feet, each foot provided with a socket within which the foot of the type-writing machine may enter; a bolt passing through said socket, within a slot in the plate, by the adjustment of which bolt the position of the socket may be altered to correspond to the position of the foot on the type-writing machine, substantially as described.

16. In a combined type-writing machine and adding device; a series of adding-wheels carrying along their peripheries suitable divisions, on each of which is placed a numeral extending from zero to nine, inclusive; a series of racks; a means for imparting a rotary movement to said wheels by the movement of said racks, respectively; a means for limiting the movement of each of said racks to correspond to the extent of the rotation necessary to be given to the adding-wheels to cause the adding-wheels to move a number of spaces, corresponding to the number desired by the operator; a lever; suitable connection between said lever and said racks by means of which the operation of said lever will tend to lift said racks until they are arrested in their movement by said limiting means; said means for limiting the movement of said racks being put in operation by the movement of the keys of the type-writing machine, substantially as described.

17. In a combined type-writing machine and adding device; a type-writer-machine carriage; a carriage for the adding device; a means for connecting the two; adding-device carriage provided with a series of pins; a means for causing said pins to be operated upon by the movement of the keys carrying the numerals of the type-writing machine; a series of pins with which the pins of said carriage engage, respectively, and by means of which they are projected within the path of the series of racks; a series of racks; a series of adding-wheels; a means for imparting rotary motion to said adding-wheels by the movement of said racks, respectively; a series of retaining-pins for holding said racks in their normal position; a means connected with said carriage of returning to their normal position said retaining-pins and also a means for returning to their normal position, after the movement of the racks, any of the pins which may have been projected within the path of said racks, substantially as described.

815,726. FLEXIBLE SHAFT. CHARLES F. C. MEHLIS, New York, N. Y. Filed May 22, 1905. Serial No. 261,422.



Claim.—1. A flexible shaft, consisting of spheres in integral pairs and sockets in integral pairs, the sockets receiving the spheres, axial pins passing through the spheres and engaging the sockets, and shaft-end terminations also connected with the said spheres and sockets.

2. A flexible shaft, consisting of spheres in integral pairs and sockets in integral pairs, the sockets receiving the spheres, axial pins passing through the spheres and having reduced ends with flat opposite faces, the sockets having slots receiving the reduced ends of the axial pins, and shaft-end terminations connected respectively to the spheres and sockets.

3. A flexible shaft, consisting of connected spheres in integral pairs and connected sockets in integral pairs, the sockets receiving the spheres and comprising about two hundred and fifty degrees of the circle in order to effectively engage the spheres, said sockets in pairs being circumferentially and centrally reduced and having slots at opposite sides from their edges inward, axial pins passing through the spheres and having reduced ends received in the slots of the sockets, and shaft-end terminations connected with the spheres and sockets.

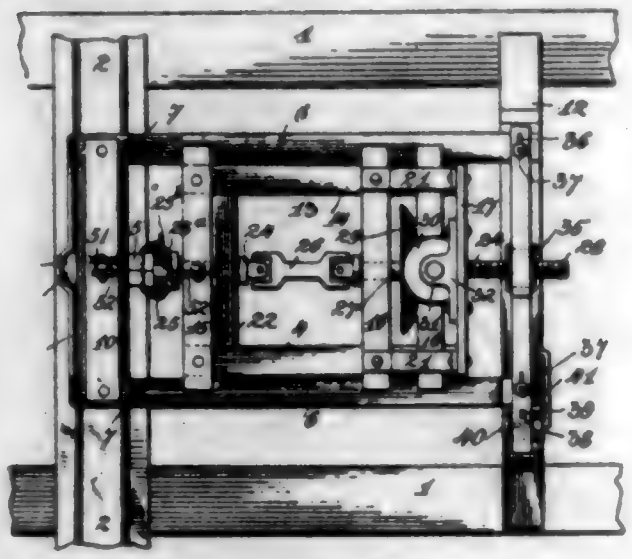
4. A flexible shaft, consisting of connected spheres in pairs and connected sockets in pairs, the sockets receiving the spheres and comprising about two hundred and fifty degrees of the circle in order to effectively engage the spheres, said sockets in pairs being circumferentially and centrally reduced and having slots at opposite sides from their edges inward, axial pins passing through the spheres and having reduced ends with flattened faces, said reduced ends being received in the slots of the sockets with their flat faces bearing against the edges of the slots, and shaft-end terminations connecting with the sockets and spheres.

5. A flexible shaft, consisting of connected spheres in pairs and connected sockets in pairs, the sockets receiving the spheres and comprising about two hundred and fifty degrees of the circle in order to effectively engage the spheres, said sockets in pairs being circumferentially and centrally reduced and having slots at opposite sides from their edges inward, axial-pins passing through the spheres the pins through adjacent spheres being at right angles to one another, the planes of the slots of the sockets being also at right angles to one another in each pair of sockets, the axial pins having reduced ends passing into the slots of the sockets, and shaft-end terminations connecting with the spheres and sockets.

6. A flexible shaft, consisting of connected spheres in pairs and connected sockets in pairs, the sockets receiving the spheres and comprising about two hundred and fifty degrees of the circle in order to effectively engage the spheres, said sockets in pairs being circumferentially and centrally reduced and having slots at opposite sides

from their edges inward, axial pins passing through the spheres the pins through adjacent spheres being at right angles to one another, the planes of the slots of the sockets being also at right angles to one another in each pair of sockets, the axial pins having reduced ends passing into the slots of the sockets, said reduced ends having flat opposite faces bearing against the edges of the slots, and shaft-end terminations connecting with the spheres and sockets.

815,727. **RAILWAY-TRACK MACHINE.** Simon P. Mickey, Monarat, and Charles W. Caldwell, Galax, Va. Filed Apr. 13, 1905. Serial No. 255,432.



Claim.—1. In a track-machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a driven shaft mounted in said movable frame, a wrench-head carried by said shaft, means whereby said driven shaft is turned to cause said wrench-head to screw or unscrew a nut, and a two-part nut whereby said wrench-head is adapted to be automatically moved toward and from said nut when the latter is being screwed on or off a bolt, substantially as described.

2. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a wrench-head on one end of said shaft, a drive-shaft geared to said flexible driven shaft to turn the same, and a two-part nut engaging the threaded opposite end of said flexible shaft to automatically feed said wrench-head forwardly or backwardly when screwing a nut on or off a bolt, substantially as described.

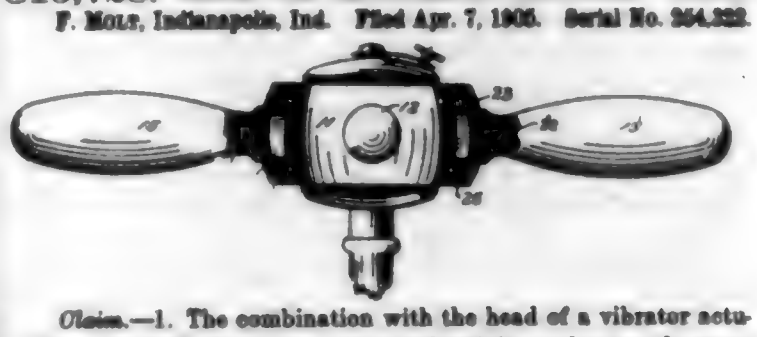
3. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a head on one end of said shaft, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, and a two-part nut engaging the threaded end of the driven shaft whereby upon the turning of said driven shaft in one direction or the other the same will be automatically fed forwardly or rearwardly, substantially as described.

4. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a head on one end of said shaft the opposite end of said shaft being threaded, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, clamping-bars mounted on said stationary frame, and a sectional nut carried by said bars and adapted to normally engage the threads on the end of said driven shaft, whereby upon turning said shaft in one direction or the other the same will be fed forwardly or rearwardly, substantially as described.

5. In a railway-track machine, the combination with a stationary frame adapted to engage a track-rail of a movable frame, slidably mounted on said stationary frame, a lever pivoted on said stationary frame, a link connected to said lever and to said movable frame whereby the latter may be manually adjusted on said stationary frame, a driven shaft mounted in said movable frame, a head carried by said shaft, means whereby said driven shaft is turned to cause said head to rotate, and a two-part nut whereby said head is adapted to be automatically moved in the direction of said nut when the latter is being screwed on or off a bolt, substantially as described

6. In a railway-track machine, the combination with a stationary frame, of a movable frame slidably mounted on said stationary frame, means whereby said movable frame is adjusted, a flexible driven shaft mounted in said movable frame, a wrench-head on one end of said shaft the opposite end of said shaft being threaded, a bevel-gear fixed on said shaft, a vertically-disposed drive-shaft mounted on said movable frame, a bevel-pinion fixed on the lower end of the same and adapted to engage the bevel-gear on said driven shaft, a crank-handle arranged on the upper end of said drive-shaft, clamping-bars mounted on said stationary frame, a sectional nut, one part of which is secured to each of said clamping-bars, and cam-lugs and a lever whereby said bars are shifted to bring the parts of said nut into and out of engagement with the threaded end of the driven shaft, substantially as described.

815,728. **MEANS FOR CONTROLLING VIBRATORS.** William F. Mole, Indianapolis, Ind. Filed Apr. 7, 1905. Serial No. 254,322.



Claim.—1. The combination with the head of a vibrator actuated by a flexible shaft, of an extended weight, and means for movably securing said weight to said head.

2. The combination with the head of a vibrator actuated by a flexible shaft, of plates secured together on said head, an outwardly-extending balancing-weight movably secured to said weights.

3. The combination with the head of a vibrator actuated by a flexible shaft, of a pair of plates clamped on said head and outwardly-extending balancing-weights removably secured to said plates.

4. The combination of the head of a vibrator actuated by a flexible shaft, said head having in it an arcuate groove, and an outwardly-extending weight movably secured in said groove.

5. The combination with the head of a vibrator actuated by a flexible shaft, of plates secured to said head with an arcuate groove in them, a weight, and means secured to said weight, that is slidable in said groove.

6. The combination with the head of a vibrator actuated by a flexible shaft, of two pairs of semicircular plates, means for clamping said pairs of plates together on said head, each pair of plates having a longitudinal groove therein, a screw extending outward from said groove with a nut movable within said groove, and weights threaded and screwed upon said screws for securing said weights adjustably to said plates.

815,729. **TRANSFORMER.** Walter S. Moody, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 13, 1901. Serial No. 85,737.

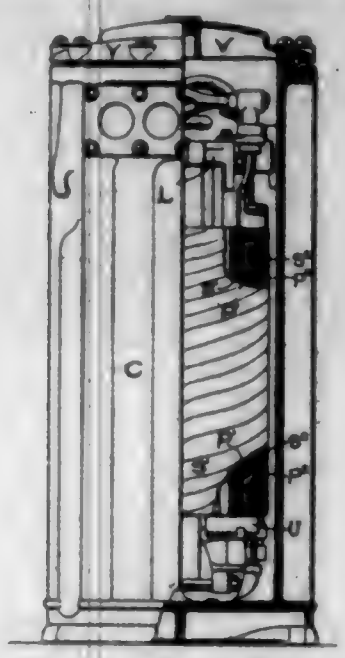
Claim.—1. In a transformer, the combination with the core, of a winding comprising a high and a low potential coil and arranged on the core, and a second winding also comprising a high and a low potential coil, said second winding being arranged outside the first, and separated therefrom by a cooling and insulating space.

2. In a transformer, the combination with the core, of a winding comprising a low and a high potential coil, said winding being arranged on the core and separated therefrom by a cooling and insulating space; and a second winding also comprising a low and a high potential coil, said second winding being arranged outside the first and concentric therewith.

3. In a transformer, the combination with the core, of a cylindrical winding comprising a low and a high potential coil, said winding being arranged on the core and separated therefrom by a cooling and insulating space; and a second cylindrical winding also comprising a high and a low potential coil, said second winding being arranged outside the first, and separated therefrom by a cooling and insulating space.

4. In a transformer, the combination with the core, of a cylindrical winding comprising a high and a low potential coil, said winding being arranged on the core; and a second cylindrical winding

also comprising a high and a low potential coil, said second winding being arranged outside the first and concentric therewith.



5. In a transformer, the combination with the core, of high and low potential windings consisting of cylindrical coils arranged one outside the other, one of the windings being subdivided into mechanically separate adjacent coils separated by an annular cooling and insulating space.

6. In a transformer, the combination with the core, of high and low potential windings consisting of cylindrical coils arranged one outside the other, the high-potential winding being subdivided into two separate coils which are separated by an annular cooling and insulating space.

7. In a transformer, the combination with the core, of a cylindrical low-potential coil arranged on the core, a cylindrical high-potential coil surrounding said low-potential coil, a second cylindrical high-potential coil surrounding the first high-potential coil and separated therefrom by a cooling and insulating space; and a second cylindrical low-potential coil surrounding the second high-potential coil.

8. In a transformer, the combination with the core, of a cylindrical low-potential coil separated from the core by a cooling and insulating space, a cylindrical high-potential coil surrounding said secondary, a second cylindrical high-potential coil surrounding the first high-potential coil and separated therefrom by a cooling and insulating space; and a second low-potential coil surrounding said second high-potential coil.

9. In a transformer, the combination with the core, of a cylindrical winding mounted thereon and consisting of two cylindrical coils each composed of one or more edge-wound conducting-strips, said coils fitting one within the other to provide a single structure, and a second cylindrical winding constructed like the first, and separated therefrom by a cooling and insulating space.

10. In a transformer, the combination with the core, of a cylindrical winding mounted thereon consisting of an inside low-potential and an outside high-potential coil, each coil consisting of one or more edge-wound conducting-strips; and a second cylindrical winding surrounding the first and separated therefrom by a cooling and insulating space, said second winding consisting of an inside high-potential coil and an outside low-potential coil, each of which consists of one or more edge-wound conducting-strips.

11. In a core-type transformer, the combination with the core constituting a single magnetic circuit, of cylindrical windings disposed on different parts of said core, each winding comprising a low-potential coil and a high-potential coil; and other cylindrical windings also comprising each a low-potential coil and a high-potential coil, and arranged respectively outside the first windings.

12. In a core-type transformer, the combination with the core constituting a single magnetic circuit, of cylindrical windings disposed on different parts of said core, each winding comprising an inside low-potential coil and an outside high-potential coil; and other cylindrical windings comprising each an inside high-potential coil and an outside low-potential coil, and arranged respectively outside the first windings, the two high-potential coils of each set of cylindrical windings being separated by a cooling and insulating space.

13. A transformer-winding which comprises a cylindrical coil consisting of an edge-wound flat strip, an insulation covering for the exterior of the coil, and a second coil consisting of a flat strip wound edgewise over said insulation and forming therewith a unitary structure.

14. In a transformer, the combination with the core, of a cylindrical low-potential winding arranged next the core and consisting of one or more edge-wound flat strips, and a cylindrical high-potential winding consisting of one or more flat strips tightly wound edgewise over said secondary winding and forming therewith a unitary structure.

15. In a transformer, the combination with the core, of a winding comprising a cylindrical coil consisting of a single edge-wound strip, and a coöperating winding comprising a cylindrical coil consisting of a plurality of interconnected edge-wound strips.

16. In a transformer, the combination with the core, of a cylindrical low-potential winding arranged nearest the core, a cylindrical high-potential winding arranged outside of and concentric with said low-potential winding, the high-potential winding being divided into two coils separated by an annular space; and a low-potential winding arranged outside of and concentric with the high-potential winding.

17. A cylindrical coil composed of a plurality of insulated conducting-strips arranged side by side in a bunch and wound on edge.

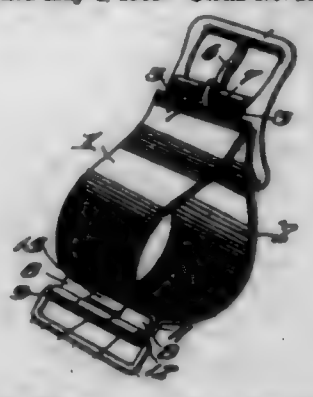
18. In a stationary induction apparatus, the combination with the core, of a winding subdivided by an intermediate annular space, and a second winding divided into coils located inside and outside the first winding.

19. A coil for stationary induction apparatus which comprises one or more conducting-strips wound on edge, and a continuous insulating-helix comprising a series of split rings arranged end to end.

20. A plurality of insulated strip conductors arranged side by side and wound on edge so as to form a coil.

21. A plurality of strip conductors arranged side by side and wound into a coil, insulation between the strips, and heavier insulation between the turns of the coil.

815,780. SHAFT TUG OR SUPPORT. JAMES O'CONNELL, Mount Sterling, Ky. Filed May 4, 1905. Serial No. 258,832.



Claim.—1. A shaft tug or support comprising shaft-embracing members, a combined hinge-pin and strap-loop connecting said members pivotally at their lower ends, a supporting-buckle connected to the upper ends of one of said members, and means for detachably connecting the upper ends of said members.

2. A shaft tug or support comprising oppositely-arranged shaft-embracing members, a combined hinge-pin and strap-loop connecting the lower ends of said members, means on the hinged ends of said members for limiting the pivotal movement of the outer member, a supporting-buckle connected pivotally to the upper end of the inner member, and means for detachably coupling the upper ends of said members together.

3. A shaft tug or support comprising shaft-embracing members pivotally connected at their lower ends, one of said members being provided at its upper end with sleeves or knuckles, a buckle having the cross-bar thereof engaged by said knuckles, and hooks on the upper end of the other member adapted to engage over said knuckles, substantially as and for the purpose described.

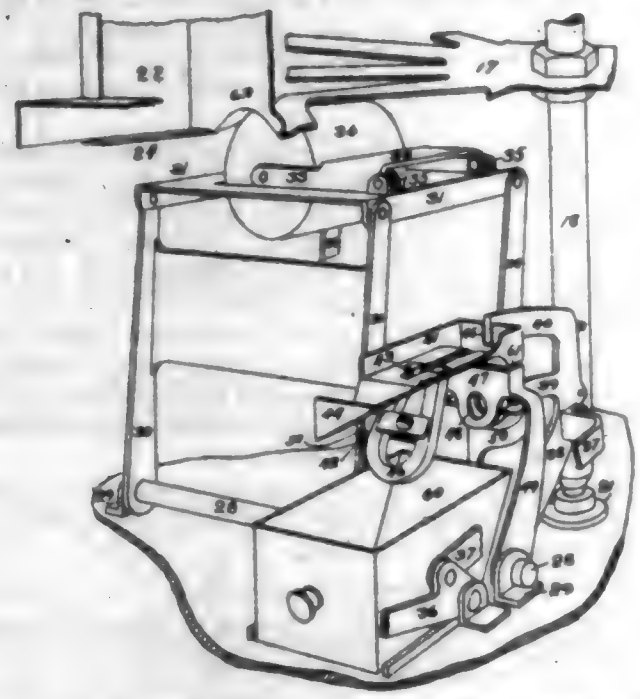
4. A shaft tug or support comprising shaft-embracing members pivotally connected at their lower ends, a supporting-buckle having the tongue-bar pivotally connected to the upper end of one of said members, and hooks on the upper end of the other member adapted to snap over the tongue-bar of the buckle on opposite sides of the tongue, substantially as described.

5. A shaft tug or support comprising shaft-embracing members pivotally connected at their lower ends, sleeves or knuckles on the upper end of one of said members, a buckle having a tongue-bar located intermediate its ends and passing through said knuckles, and hooks on the upper end of the other tug member adapted to em-

brace said knuckles on opposite sides of the buckle-tongue, the buckle acting as a lever for holding the hooked end of the outer member in coupled engagement with the inner member, substantially as described.

6. A shaft tug or support comprising shaft-embracing members pivotally connected at their lower ends and having a hooked and separable engagement at their upper ends, and a supporting-buckle connected pivotally to the upper end of one of said members and serving as a means for holding the said upper ends of the members in interlocked engagement.

815,731. VENDING-MACHINE. John B. Packard, Los Angeles, Cal., assignor to Multi-Vending Company, Pierre, S. D., a Corporation of South Dakota. Filed Apr. 22, 1905. Serial No. 256,268.



Claim.—1. A vending-machine provided with a revoluble commodity-carrier and a spring-actuated combined centering and discharging device therefor, substantially as described.

2. A vending-machine provided with a commodity-carrier, an actuating-lever, a rocking shaft, arms carried thereby, and a carriage attached to said arms, a frame mounted in said carriage and a discharging device in such frame, substantially as described.

3. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage on which the ejector is mounted, and a swinging support for the carriage, substantially as described.

4. In a vending-machine provided with a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage, a pivoted frame on the carriage and supporting the ejector and a swinging support for the carriage, substantially as described.

5. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage on which the ejector is horizontally and yieldably mounted, and a swinging vertical support for the carriage, substantially as described.

6. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage on which the ejector is yieldably mounted, swinging arms one for each corner of the carriage and pivotally connected at their upper ends to the carriage, and means for oscillating the swinging arms to advance and recede the ejector, substantially as described.

7. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage on which the ejector is yieldably mounted, swinging arms one for each corner of the carriage and pivotally connected at their upper ends to the carriage, a rock-shaft on which two of the swinging arms are fixedly mounted, and means for rocking the shaft, substantially as described.

8. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a carriage on which the ejector is yieldably mounted, swinging arms one for each corner of the carriage and pivotally connected at their upper ends to the carriage, a rock-shaft on which two of the swinging arms are fixedly mounted, an actuating-lever for rocking the shaft and a locking and releasing mechanism for the shaft, substantially as described.

9. In a vending-machine, a revoluble commodity-carrier, an ejector located in coöperative relation to the carrier for discharging packages from the carrier, a pivotally-supported frame carrying the ejector, and a swinging support for the frame, substantially as described.

10. In a vending-machine, the combination of a revoluble vertical goods-carrier, and a delivery mechanism having an ejector-roller located at its top and beneath the revoluble vertical goods-carrier, substantially as described.

11. A vending-machine provided with a casing composed of a separable front section, a separable cover and a separable back, all of the separable sections interlocking one with the other and when in position held in place when the back is secured in position, substantially as described.

12. A vending-machine provided with a casing composed of a plurality of separable parts each whereof slidably engages the other, and a support engaging the top and when locked thereto retaining the other portions in position, substantially as described.

13. A vending-machine having a casing provided with guideways, a movable portion of the casing having guides to enter said guideways, a top having a flange to engage said parts, and a support to be locked to said top to retain the other portions in position, substantially as described.

14. In a vending-machine provided with a casing having body portions constructed to slidably engage each other, a sliding cover engaging the body portions, a support engaging with the body portions and adapted to be locked to the cover and retain the several parts of the casing in position, substantially as described.

15. In a vending-machine, a casing consisting of a fixed base-section having at its rear side upwardly-extending strips, a removable front section, means for interlocking the front section at its rear end with the strips of the base-section, a cover-section, and means for interlocking the cover-section with the strips of the base-section and the front section, substantially as described.

16. In a vending-machine, a casing consisting of a fixed base-section having at its rear side upwardly-extending strips, a removable front section, means for interlocking the front section at its rear end with the strips of the base-section, a cover-section, means for interlocking the cover-section with the strips of the base-section and the front section, and a sliding backing adapted to interlock with the cover, substantially as described.

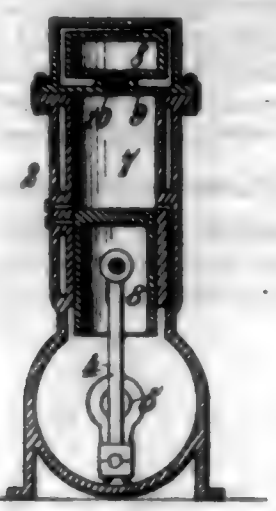
17. In a vending-machine, a casing consisting of a fixed base-section having at its rear on each side upwardly-extending strips, each strip having a vertical groove on its interior, a removable front section having at the rear of each side wall thereof a vertical bar to enter and engage with the vertical groove of the adjacent strip of the base-section, an outwardly-projecting flange at the upper end of the front section and the strips of the base-section, and a cover having around its periphery a groove to receive the flange of the front section and of the strips of the base-section, for interlocking the parts when the cover is in place, substantially as described.

18. In a vending-machine, a casing consisting of a fixed base-section having at its rear on each side upwardly-extending strips, each strip having a vertical groove on its interior, a removable front section having at the rear of each side wall thereof a vertical bar to enter and engage with the vertical groove of the adjacent strip of the base-section, an outwardly-projecting flange at the upper end of the front section and the strips of the base-section, and a cover having around its periphery a groove to receive the flange of the front section and of the strips of the base-section, and having at its rear side a hole for interlocking the parts when the cover is in place, a sliding backing, grooves at the rear edges of the strips of the base-section and receiving the sliding backing and a hasp carried by the sliding back and passing through the hole at the rear of the cover for locking the cover in place, substantially as described.

815,732. REVERSING MECHANISM FOR ENGINES. Harry L. Pare, Yonkers, and Charles B. Lucke, New York, N. Y. Filed Dec. 9, 1904. Serial No. 236,145.

Claim.—1. An engine having a cylinder, a piston arranged to operate in said cylinder, the latter having a charge-receiving space, and means operable at the will of an attendant for decreasing the effective area of said charge-receiving space, thereby interposing a resistance, greater than the normal one, to the piston when the latter reaches a predetermined point on its inward stroke, for causing a re-

versal of the motion of the piston, said means being constructed to be automatically returned to normal relation when reversal takes place thereby for restoring the charge-receiving space to its original relation.



2. An engine having a cylinder, a piston arranged to operate in said cylinder, the latter having a charge-receiving space, into which the normal charge is drawn by the piston, and means to divide the normal charge of motive substance in the charge-receiving space into a plurality of separated bodies, to secure a resistance by only one of them to the full inward stroke of the piston when the same reaches a predetermined point on said stroke, said means being constructed to be automatically returned to normal relation when reversal takes place thereby permitting the said separated bodies to commingle.

3. An engine including a cylinder having a plurality of chambers, a passage connecting said chambers and constituting the sole means of communication between the same, a piston arranged to draw a charge of compressible fluid into said space and to compress the same in one of said chambers, a valve in said passage, adapted, when open, to put the chambers into communication, to cause them to present collectively a normal charge-receiving space and mechanism arranged to cause the closing of the valve after the piston has crossed the dead-center on the outstroke thereof to reverse the piston and for subsequently and automatically opening said valve when reversal takes place to put the two chambers into communication.

4. An engine including a cylinder having a plurality of chambers, a passage connecting said chambers and constituting the sole means of communication between the same, a piston arranged to draw a charge of compressible fluid into said space and to compress the same in one of said chambers, a valve in said passage, adapted, when open, to put the chambers into communication, to cause them to present collectively a normal charge-receiving space and mechanism arranged for operation by a movable part of the engine for causing the closure of the valve to put the two chambers out of communication after the piston has crossed the dead-center on the outstroke thereof to reverse said piston and for subsequently automatically opening said valve after reversal takes place to put the two chambers in communication.

5. An engine including a cylinder having a plurality of chambers, a passage connecting said chambers and constituting the sole means of communication between the same, a piston arranged to draw a charge of expansible fluid into said space and to compress the same in one of said chambers, a valve in said passage, adapted, when open, to put the chambers into communication, to cause them to present collectively a normal charge-receiving space, a valve-actuating rod having a turning movement to open and close the valve, and means arranged to operate against the said rod after the piston has crossed the outer dead-center to close the valve and secure a reversal in motion of the piston and for subsequently automatically opening the valve on the reversal of motion of the piston.

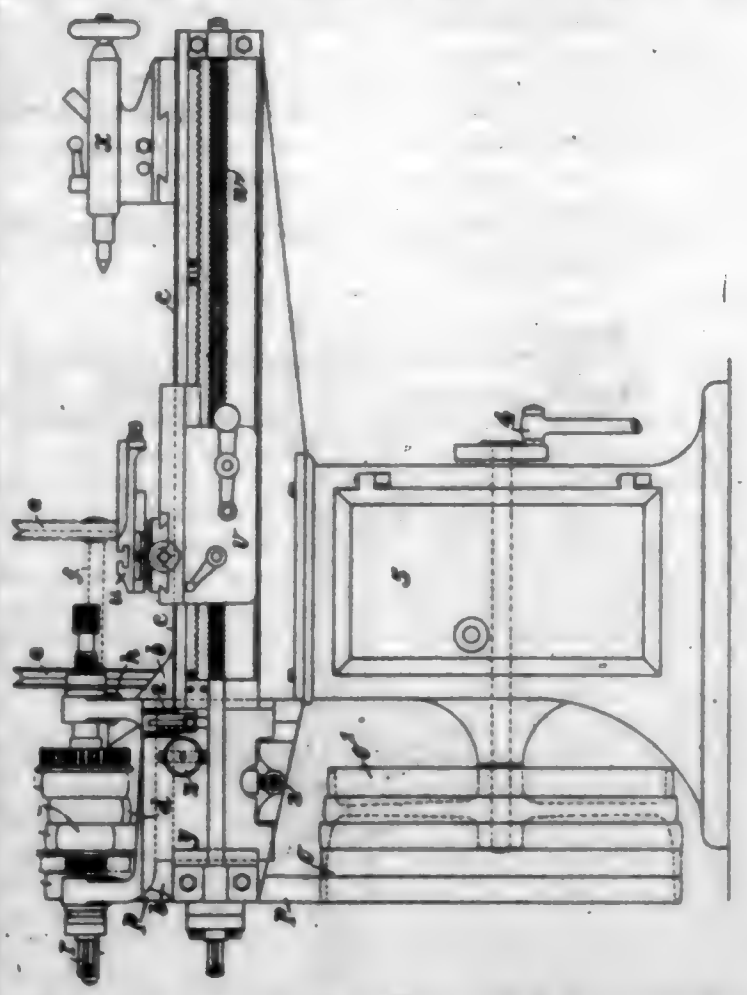
6. An engine including a cylinder, having a plurality of communicating chambers presenting together a charge-receiving space, a piston arranged to draw a charge of expansible fluid into said space and to compress the same in one of said chambers, a valve between the chambers, a rod mounted for endwise and turning movement and operatively connected with the valve and serving, when turned, either to open or close the valve, a combined push and torsional spring acting against the rod, a base-piece connected with the rod, having a raised portion and a toe, the framing of the machine having a recess to normally receive said raised portion, and a fly-wheel connected with the piston and provided with a notch to receive the toe.

7. A cylinder and its piston, the cylinder having a working space for the piston, and a chamber in communication with said working space, and into which a body of gaseous fluid is compressed by the piston, a valve operable at the will of an attendant for shutting off communication between said chamber and the working space, whereby when the piston moves inward it will be caused to be reversed at a predetermined point, and automatic mechanism for actuating the valve after the reversal of the piston to put said chamber and working space into communication.

8. A cylinder and its piston, the cylinder having a working space for the piston, and a chamber in communication with said working space and into which a body of gaseous fluid is compressed by the piston, a valve normally open to permit the charging, by the piston into the chamber and the working space, of a normal charge, said valve being operable at the will of an attendant for shutting off communication between the chamber and the working space to cause the reversal of the piston during its inward stroke, and automatically-operative means for causing the opening movement of the valve on the reversal of the piston, to put the chamber and working space into communication and permit the gaseous fluid in the former to pass into the latter.

9. A cylinder having a working space and a clearance-space communicating with said working space, a piston to traverse the working space and to compress a predetermined charge in the clearance-space, a valve controlling communication between the working space and the clearance-space, and mechanism to secure the closing of the valve at the will of an attendant, said mechanism being constructed automatically when reversal takes place to bring about an opening of the valve and the communication of the working space and clearance-space.

815,733. LATHE. JOSEPH J. PEALING and JAMES D. HARRISON, Liverpool, England. Filed Sept. 3, 1904. Serial No. 223,273.

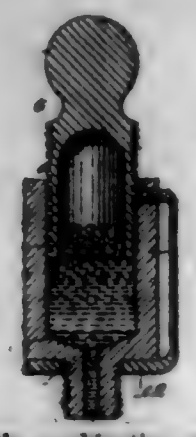


Claim.—In means for the purpose specified, the combination with the lathe-bed, a traveling carriage thereon, means for moving said carriage axially of the bed, and brackets on the bed, of a telescopic counter-shaft rotatable in said brackets and having its axis parallel with the axis of the lathe-bed; a driving-pulley on the elongating member of the counter-shaft and capable of being set opposite to the carriage on the bed, and means for securing together the members of the counter-shaft when the adjustment has been effected.

815,734. GREASE-CUP. THOMAS E. PETERS, Moberly, Mo. Filed Nov. 23, 1905. Serial No. 288,815.

Claim.—1. A grease-cup comprising a shell, a hollow plunger fitting within the shell, and provided with a rack, and a plate-spring carried by the shell and having a prong projecting into the rack to control the movement of the plunger.

2. In a grease-cup the combination, with a shell having a screw-stem through which grease is fed, of a plunger fitting within the shell and having a circular rack formed by a series of ribs and grooves, and a spring-prong operated through the shell to engage the rack.

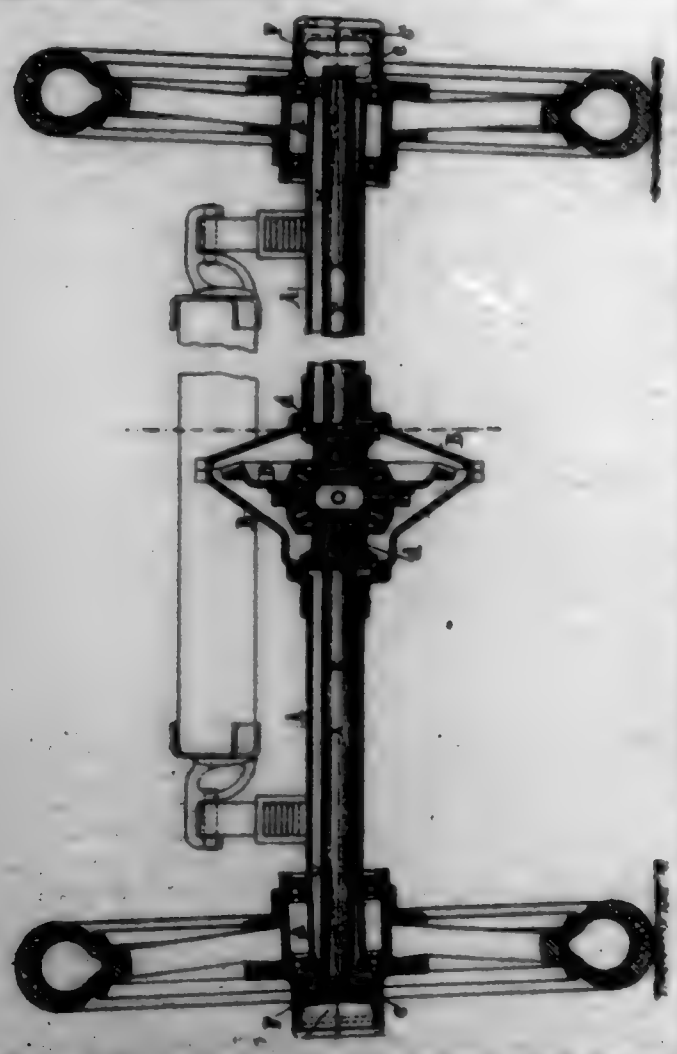


3. In a grease-cup the combination, with a shell having a stem through which grease is fed, of a plunger closing the shell and adapted to contain grease, a circular rack on the plunger, and a spring-controlled prong projecting into the path of the plunger to engage the rack.

4. In a grease-cup the combination, with a shell having a screw-stem through which grease is forced, of a slidable plunger having a grease-receptacle and provided with an external rack, and a plate-spring carried by the shell and having a prong projecting into the path of the rack to control the movement of the plunger.

5. In a grease-cup the combination, with a shell having a suitable screw-stem through which grease is forced, of a plunger slidable in the shell and having a head projecting above the shell, a series of parallel ribs encircling the plunger and intervened by grooves to form a rack, and a spring having a plate fitting the screw-stem to fix it and a prong on the free end of the spring adapted to work through the shell in mesh with the rack.

815,735. AUTOMOBILE. François Pilain, Lyon, France. Filed Aug. 15, 1905. Serial No. 274,319.



Claim.—A live-axle having flared or splayed wheels for automobile vehicles, in which the outer tubular body or bridge is slanted or inclined at its two extremities forming two parts which make a slight angle with the main body of the bridge and upon which are mounted the road-wheels, the axes of which are thus slightly oblique relatively to the axis of the axle, the live-axle proper located in the tubular bridge extending horizontally for the whole of the length of the latter to beyond its extremities without making contact with the bridge and without bearing-rings, being connected only at one end to the differential and at the other to the road-wheels, the connection with these latter being effected by means of any suitable jointed device transmitting power from the horizontal axis of the axle to the wheels which are mounted obliquely relatively to the said horizontal axis and in such a manner as to drive the road-wheels through their outer caps.

815,736. COMBINATION STEP AND EXTENSION LADDER. Poul C. Plaetsen, Indianapolis, Ind., assignor of two-thirds to John Milton Moore, Cromwell, Ind. Filed Mar. 26, 1906. Serial No. 307,804.



Claim.—1. A step and extension ladder including a step part provided at the top thereof with a pair of oppositely-disposed guided latches movable transversely thereto, a ladder-prop pivoted to the step part and swinging within range of the pair of latches to be latched thereby to the step part to form a continuous ladder in connection therewith.

2. A step and extension ladder including a step part provided at the top thereof with a pair of oppositely-disposed guided latches either movable toward the other and each provided with an abutment having an inclined guide extending from the outer end thereof, a ladder-prop pivoted to the step part and swinging within range of the pair of latches so as to engage the inclined guides thereof and to be latched by the abutments of the latches to form a continuous ladder in connection with the step part.

3. A step and extension ladder comprising a step part provided at the top thereof with a pair of oppositely-disposed pivoted latches movable in a horizontal plane, a ladder-prop pivoted to the step part and swinging within range of the pair of latches to be latched thereby to the step part to form a continuous ladder in connection therewith.

4. A step and extension ladder comprising a step part provided at the top thereof with a pair of movable latches having each a pair of opposing abutments, one abutment of each pair provided with an inclined guide extending from the outer end thereof, a ladder-prop pivoted to the step part and having side pieces each fitting between a pair of the abutments of the latches.

5. A step and extension ladder comprising a step part having side pieces and a top platform, supports attached to the side pieces and the platform of the step part and supporting pivots and studs extending through the platform, latches movable on the platform and connected pivotally to the pivots and guided by the studs of the supports and having each a pair of opposing abutments, a ladder-prop having side pieces pivoted to the side pieces of the step part and each fitting between a pair of abutments of the latches.

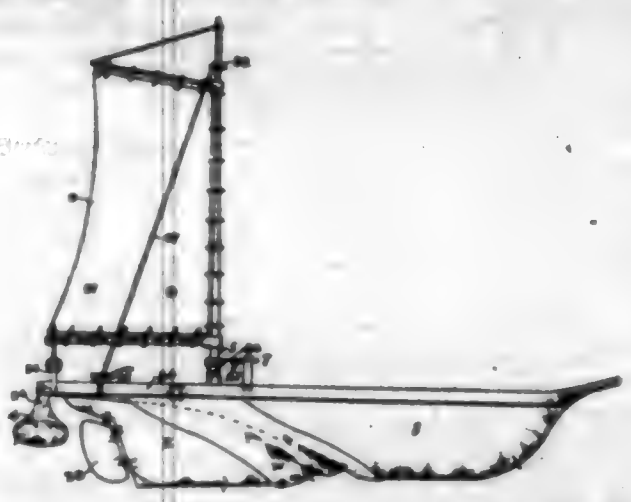
6. A step and extension ladder comprising a step part having side pieces, supports attached to the side pieces of the step part, a ladder-prop having side pieces pivoted to the side pieces of the step part and having notches in the upper ends thereof, and prop-latches supported by the supports for engaging the side pieces of the prop part in the notches thereof.

7. A step and extension ladder comprising a step part having side pieces and a platform, supports attached to the side pieces and the platform of the step part and provided with pivoting-thimbles extending through the side pieces, a ladder-prop part, and pivot-pins extending through the pivoting-thimbles of the supports and also through parts of the prop part.

8. A step and extension ladder comprising a step part having side pieces and a platform, a pair of oppositely-disposed guided latches mounted on the platform and movable one toward the other one, a ladder-prop pivoted to the step part and swinging within range of the pair of latches to be latched thereby to the step part to form a continuous ladder in connection with the step part, and an extension-section connected adjustably to the ladder-prop.

9. A step and extension ladder comprising a step part provided at the top thereof with a pair of oppositely-disposed guided latches movable oppositely one to the other, a ladder-prop pivoted to the step part capable of swinging within range of the pair of latches to be latched thereby to the step part to form a continuous ladder in connection therewith, and a pair of gravity prop-latches coöperating with the tops of the step part and the ladder-prop to prevent the swinging of the ladder-prop.

815,737. NAVIGABLE VESSEL. JAMES P. POOL, New York, N. Y. Filed Sept. 23, 1905. Serial No. 279,573.



Claim.—1. A vessel of the character described, comprising a sail-carrying member and a load-carrying member adapted to rest upon the water and connected together, and operative connections extending between said sail-carrying member and said load-carrying member.

2. A vessel of the character described, comprising a sail-carrying member, a load-carrying member connected with said sail-carrying member and movable with relation thereto, said sail-carrying member and said load-carrying member being adapted to rest upon the water, and operative connections extending between said sail-carrying member and said load-carrying member and arranged to transmit pressure from the sail-carrying member to the load-carrying member to relatively move said members.

3. A vessel of the character described, comprising a sail-carrying member provided with a loosely-mounted sail and mast, a load-carrying member connected with said sail-carrying member and capable of movement relative thereto, and an operative connection extending between said mast and said load-carrying member, said sail-carrying member and said load-carrying member being adapted to rest upon the water.

4. A vessel of the character described, comprising a sail-carrying member provided with a loosely-mounted sail and mast, a load-carrying member pivotally connected with said sail-carrying member, and an operative connection extending between said mast and said load-carrying member, said sail-carrying member and said load-carrying member being adapted to rest upon the water.

5. A vessel of the character described, comprising a sail-carrying member provided with a loosely-mounted sail and mast, a load-carrying member arranged forwardly of the sail-carrying member and pivotally connected with the same, and an operative connection extending between said mast and said load-carrying member, said sail-carrying member and said load-carrying member being adapted to rest upon the water.

6. In a vessel of the character described, a sail-carrying member, and a counterweighted load-carrying member pivotally connected with the sail-carrying member, said members being adapted to rest upon the water.

7. In a vessel of the character described, a sail-carrying member and a load-carrying member pivotally connected with the sail-carrying member and provided with a counterweight, said members being adapted to rest upon the water with said counterweight in submerged position.

8. In a vessel of the character described, a sail-carrying member, a load-carrying member pivotally connected with the sail-carrying member and arranged forwardly thereof, and a counterweight rigidly connected with the load-carrying member and arranged rearwardly of said sail-carrying member, said members being adapted to rest upon the water.

9. In a vessel of the character described, a sail-carrying member, a load-carrying member pivotally connected with the sail-carrying member and arranged forwardly thereof, and a counterweight rigidly connected with the load-carrying member and arranged rearwardly of said sail-carrying member, said members being adapted to rest upon the water, with said counterweight in submerged position.

10. In a vessel of the character described, a sail-carrying member consisting of an elongated hull, and a load-carrying member consisting of a separate hull pivotally connected with the hull of the sail-carrying member and arranged forwardly of the sail-carrying member.

11. In a vessel of the character described, a sail-carrying member consisting of an elongated hull, and a counterweighted load-carrying member consisting of a hull pivotally connected with the hull of said sail-carrying member and arranged forwardly of said sail-carrying member.

12. A vessel of the character described, comprising a sail-carrying member provided with a mast and sail mounted for oscillation laterally, a load-carrying member arranged forwardly of the sail-carrying member and pivotally connected with the latter, and an operative connection extending between said mast and the load-carrying member whereby oscillation of said mast causes depression of said load-carrying member relative to said sail-carrying member; said members being adapted to resting upon the water.

13. In a vessel of the character described comprising a sail-carrying member consisting of a hull provided with a mast a sail mounted to oscillate laterally, a load-carrying member arranged forwardly of the sail-carrying member and consisting of a hull pivotally connected with the hull of the sail-carrying member, and an operative connection between the said mast and said hull of said load-carrying member consisting of a transverse bar fixed to said mast and arranged to bear at its ends upon said hull of said load-carrying member.

14. A vessel of the character described comprising a sail-carrying member, consisting of a hull, a load-carrying member arranged forwardly of said sail-carrying member and consisting of a hull pivotally connected with the hull of said load-carrying member, said hull of said sail-carrying member being provided with a mast and sail arranged to oscillate laterally, and an operative connection extending between said mast and said load-carrying member consisting of a stay connected with said mast and connected with said sail-carrying member rearwardly of the point of pivotal connection of said sail-carrying member and said load-carrying member.

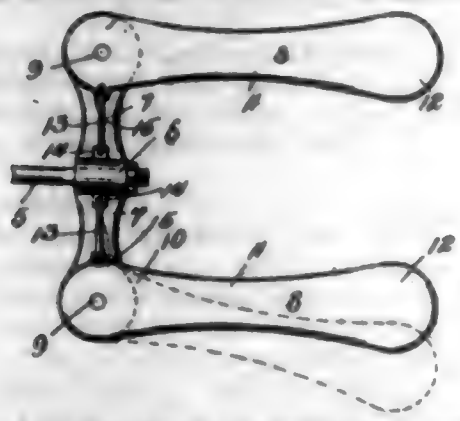
15. A vessel of the character described, comprising a sail-carrying member consisting of a hull provided with a mast and sail mounted for oscillation laterally, a load-carrying member consisting of a hull arranged forwardly of said sail-carrying member and a frame rigidly connected therewith and extending rearwardly of said sail-carrying member, said hull and said frame of said load-carrying member being pivotally connected with the hull of said sail-carrying member in the transverse section of the latter in which said mast is mounted, a transverse bar connected with said mast and arranged to bear at its ends upon said hull of said load-carrying member forwardly of said point of pivotal connection, and a stay connected with said mast and connected with said frame rearwardly of said point of pivotal connection.

16. A vessel of the character described, comprising a sail-carrying member consisting of a hull provided with a mast and sail mounted for oscillation laterally, a load-carrying member consisting of a hull arranged forwardly of said sail-carrying member and a frame rigidly connected therewith and extending rearwardly of said sail-carrying member, said hull and said frame of said load-carrying member being pivotally connected with the hull of said sail-carrying member in the transverse section of the latter in which said mast is mounted, a transverse bar connected with said mast and arranged to bear at its ends upon said hull of said load-carrying member forwardly of said point of pivotal connection, a stay connected with said mast and connected with said frame rearwardly of said point of pivotal connection, and a counterweight connected with said frame rearwardly of said sail-carrying member and depending in submerged position.

17. A vessel of the character described, comprising a sail-carrying member consisting of a hull provided with a mast and sail mounted for oscillation laterally, a load-carrying member consisting of a hull arranged forwardly of said sail-carrying member and a frame rigidly connected therewith and extending rearwardly of said sail-carrying member, said hull and said frame of said load-carrying member being pivotally connected with the hull of said sail-carrying member in the transverse section of the latter in which said mast is mounted, a transverse bar connected with said mast and arranged to bear at its ends upon said hull of said load-carrying member forwardly of said point of pivotal connection, and a stay connected with

said mast and connected with said frame rearwardly of said point of pivotal connection, said sail being connected with said frame rearwardly of said point of pivotal connection.

815,738. **PROPELLER FOR BOATS.** HENRY B. PROCTOR, Chicago, Ill. Filed Dec. 5, 1904. Serial No. 235,571.



Claim.—1. A propeller for boats comprising a support, blades projecting rearwardly from the support, each blade having a relatively thin elastic mid-portion, and a weighted portion in rear of said mid-portion.

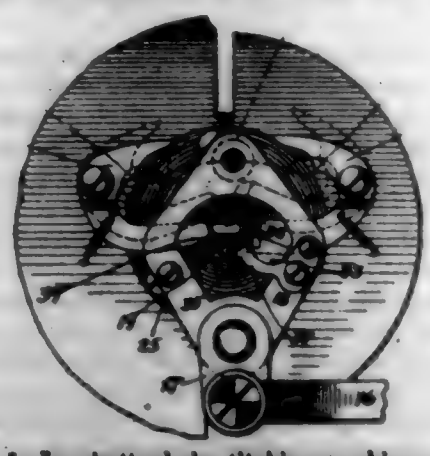
2. A propeller for a boat comprising a support, and blades projecting rearwardly from said support, each of said blades comprising a relatively narrow, thin mid-portion of elastic material and a relatively rigid and heavy portion in rear of said mid-portion.

3. A propeller for boats comprising a support, and a plurality of blades projecting rearwardly from said support, each of said blades comprising an elastic, relatively thin portion 11, and a relatively wide, rigid, heavy portion 12.

4. In combination with a propeller-shaft, a propeller comprising a support having radial arms, laterally-flexible blades extending rearward from said arms and presenting their edges toward the axial line of the shaft, said blades being pivoted to said arms for edgewise oscillation, and yielding means for normally retaining said blades in substantial parallelism yieldable to permit their edgewise movement in divergent positions.

5. A propeller for boats, comprising a support, including arms 7 7, blades secured to the extremity of said arms and projecting rearwardly from the support, each of said blades comprising a relatively elastic, thin mid-portion and a weighted portion in rear of said mid-portion, and each of said blades being pivoted to its arm 7 for edgewise movement, and springs 13 normally maintaining said blades in approximately parallel positions and yieldable to permit said blades to move edgewise to divergent position.

815,739. **CORD-STITCH-BUTTONHOLE MACHINE.** ALBERT PRUVER, New York, N. Y. Filed June 1, 1905. Serial No. 263,233.



Claim.—1. In a buttonhole-stitching machine, a needle for carrying the top silk, means for operating the needle, a button having an opening for the passage of the needle and a passage for the gimp adjacent thereto, means for guiding a bottom silk beneath the button, means for guiding gimp to the passage in the button, and mechanism coöperating with the top and bottom silks for forming a knot directly beneath the center line of the gimp.

2. In a buttonhole-stitching machine, means for carrying the top and bottom silks, a pair of spreaders for normally coöperating with the top and bottom silks respectively, mechanism for operating said spreaders and throwing the spreader which coöperates with the bottom silk a greater distance than the spreader which coöperates with the top silk.

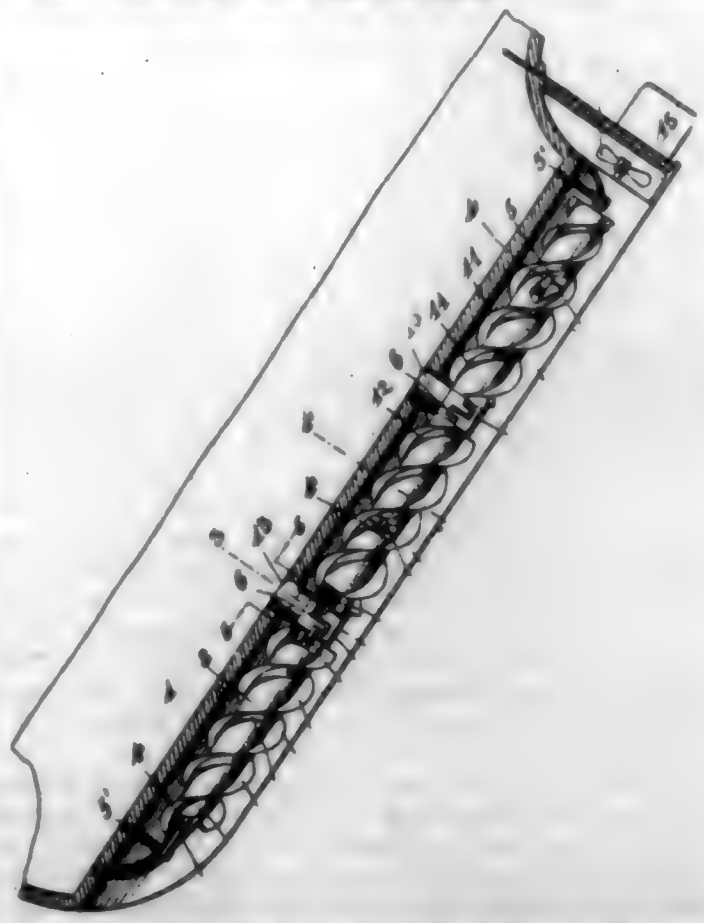
3. In a buttonhole-stitching machine, means for carrying the top and bottom silks, a button having a passage for the gimp and a point of delivery for the gimp arranged to press the gimp against the material being operated upon, a pair of spreaders for normally coöperating with the top and bottom silks respectively, mechanism for operating said spreaders and throwing the spreader which coöperates with the bottom silk a greater distance than the spreader which coöperates with the top silk.

4. In a buttonhole-stitching machine, means for carrying the top and bottom silks, a pair of spreaders for normally coöperating with the top and bottom silks respectively, mechanism for operating said spreaders and throwing the spreader which coöperates with the bottom silk a greater distance than the spreader which coöperates with the top silk, and a button having a passage for the needle and silks and a passage for the gimp located to deliver the gimp touching the inner side of the needle on its outer stroke.

5. In a buttonhole-stitching machine, a needle for carrying the top silk, means for operating the needle, a button having an opening for the passage of the needle and an opening for the passage of the gimp adjacent thereto, an oscillatory frame, a long looper mounted thereon for carrying the bottom silk and the loop of the top silk, a short looper mounted on said frame for coöperating with the top silk, a pair of spreaders operated by said frame, one of said spreaders having a hook coöperating with the bottom silk and having a guard portion extending beyond the hook for pushing back the loop of the top silk onto the long looper, the other spreader having a hook for coöperating with the top silk.

6. In a buttonhole-stitching machine, a needle for carrying the top silk, means for operating the needle, a button having an opening for the passage of the needle, and an opening for the passage of the gimp adjacent thereto, an oscillatory frame, a long looper mounted thereon for carrying the bottom silk and the loop of the top silk, a short looper mounted on said frame for coöperating with the top silk, a pair of spreaders operated by said frame, one of said spreaders having a hook coöperating with the bottom silk and having a guard portion extending beyond the hook for pushing back the loop of the top silk onto the long looper, the other spreader having a hook for coöperating with the top silk, the two spreaders being so proportioned that the hook of the spreader which coöperates with the bottom silk has a substantially greater throw than the hook of the spreader which coöperates with the top silk for the purpose described.

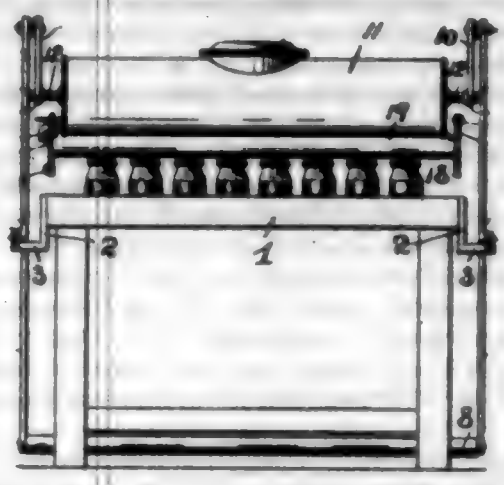
815,740. **SCREW-PROPELLER.** ELMER K. PURVIS, Manchester, Iowa. Filed Dec. 8, 1904. Serial No. 236,030.



Claim.—A vessel having a longitudinal channel in the bottom, bearings in said channel, a shaft in said channel journaled in said bearings and having cranks at points intermediate its ends, tubular casings on said shaft, separated and spaced at the cranks and having

their ends on opposite sides of the cranks closed, spiral propeller-blades on said casings, wells extending through and projecting from the bottom of the vessel, and casings at the bottoms of the wells, communicating therewith, receiving the opposing ends of the tubular shaft-casings and incasing the cranks.

815,741. BOTTLE-FILLING APPARATUS. CHARLES F. REIFFHARDT, Newark, N. J. Filed Sept. 22, 1905. Serial No. 279,570.



Claim.—1. In an apparatus for filling receptacles with liquid, a receiving-tank or container, and a filler connected with said tank, said filler comprising an outer fixed tube and an inner tube movably arranged in said outer tube, said inner tube being divided into separated liquid-receiving compartments, substantially as and for the purposes set forth.

2. In an apparatus for filling receptacles with liquid, a receiving-tank or container, and a filler connected with said tank, said filler comprising an outer fixed tube and an inner tube movably arranged in said outer tube, said inner tube being divided into separated liquid-receiving compartments, said fixed and movable tube being provided with inlet-openings and outlet-openings, said inlet-openings being closed when said outlet-openings are open, and vice versa, substantially as and for the purposes set forth.

3. In an apparatus for filling receptacles with liquid, a receiving-tank or container, a filler connected with said tank, removable end plugs connected with said filler, and partition-disks removably arranged in said filler, said disks dividing the filler into separated receiving-compartments, substantially as and for the purposes set forth.

4. In an apparatus for filling receptacles with liquids, a receiving-tank or container, a filler connected with said tank, removable end plugs connected with said filler, and partition-disks removably arranged in said filler, said disks dividing the filler into separated receiving-compartments, said filler having a series of inlet-openings and outlet-openings, said inlet-openings being closed when the outlets are open, and vice versa, substantially as and for the purposes set forth.

5. In an apparatus for filling receptacles with liquid, a receiving-tank or container, and a filler connected with said tank, said filler comprising an outer fixed tube and an inner tube movably arranged in said outer tube, removable end plugs connected with said filler, and partition-disks removably arranged in said filler, said disks dividing the filler into separated receiving-compartments, substantially as and for the purposes set forth.

6. In an apparatus for filling receptacles with liquid, a receiving-tank or container, and a filler connected with said tank, said filler comprising an outer fixed tube and an inner tube movably arranged in said outer tube, removable end plugs connected with said filler, and partition-disks removably arranged in said filler, said disks dividing the filler into separated receiving-compartments, said fixed and movable tubes being provided with inlet-openings and outlet-openings, said inlet-openings being closed when said outlet-openings are open, and vice versa, substantially as and for the purpose set forth.

7. In an apparatus for filling receptacles with liquid, a filler comprising an outer and an inner tube, said inner tube being movable within said outer tube, said outer and inner tubes having a series of outlet-openings and inlet-openings, said inlet-openings being closed when the outlet-openings are open, and vice versa, substantially as and for the purposes set forth.

8. In an apparatus for filling receptacles with liquid, a filler comprising an outer and an inner tube, said inner tube being movable within said outer tube, said inner tube being subdivided into receiving-compartments, all of the same size and each adapted to receive a predetermined quantity of liquid corresponding to the size of the individual receptacles which are to be filled, substantially as and for the purposes set forth.

9. In an apparatus for filling receptacles with liquid, a filler comprising an outer and an inner tube, said inner tube being movable within said outer tube, said inner tube being subdivided into receiving-compartments, all of the same size and each adapted to receive a predetermined quantity of liquid corresponding to the size of the individual receptacles which are to be filled, said outer and inner tubes having a series of outlet-openings and inlet-openings, said inlet-openings being closed when the outlet-openings are open, and vice versa, substantially as and for the purposes set forth.

10. In an apparatus for filling receptacles with liquid, a filler comprising an outer and an inner tube, said inner tube being movable within said outer tube, said inner tube having removable end plugs, and partition-disks removably arranged in said inner tube, said disks dividing said inner tube into receiving-compartments, all of the same size and each adapted to receive a predetermined quantity of liquid corresponding to the size of the individual receptacles which are to be filled, substantially as and for the purposes set forth.

11. In an apparatus for filling receptacles with liquid, a filler comprising an outer and an inner tube, said inner tube being movable within said outer tube, said inner tube having removable end plugs, and partition-disks removably arranged in said inner tube, said disks dividing said inner tube into receiving-compartments, all of the same size and each adapted to receive a predetermined quantity of liquid corresponding to the size of the individual receptacles which are to be filled, said outer and inner tubes having a series of outlet-openings and inlet-openings, said inlet-openings being closed when the outlet-openings are open, and vice versa, substantially as and for the purposes set forth.

12. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a receiving-tank or container and filler supported above said bench or table, and means for moving said tank or container and filler back and forth above the said bench or table, means for moving said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and filler, substantially as and for the purposes set forth.

13. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a framework movably connected with said bench or table, a receiving-tank or container pivotally supported in said framework, and a filler connected with said tank or container, substantially as and for the purposes set forth.

14. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a framework movably connected with said bench or table, a receiving-tank or container pivotally supported in said framework, and a filler connected with said tank or container, means for moving said framework, said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and filler, substantially as and for the purposes set forth.

15. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework, provided with rollers movable upon said rails, a receiving-tank or container supported in said framework, and a filler connected with said tank or container, means for moving said framework, said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and filler, substantially as and for the purposes set forth.

16. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework comprising a pair of side bars, rollers on said side bars movable upon said rails, a lower connecting-rod between said side bars, a swing-arm pivotally connected with the upper portion of each side bar, a receiving-tank or container pivotally supported between said swing-arms, and a filler connected with said tank or container, substantially as and for the purposes set forth.

17. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework comprising a pair of side bars, rollers on said side bars movable upon said rails, a lower connecting-rod between said side bars, a swing-arm pivotally connected with the upper portion of each side bar, a receiving-tank or container pivotally supported between said swing-arms, and a filler connected with said tank or container, means for moving said framework, said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and filler, substantially as and for the purposes set forth.

18. In an apparatus for filling receptacles with liquid, the com-

bination, with a bench or table, of a receiving-tank or container supported above said bench or table, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is open, substantially as and for the purposes set forth.

19. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a receiving-tank or container supported above said bench or table, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is open, and means for moving said tank or container and fillers back and forth above said bench or table, substantially as and for the purposes set forth.

20. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a receiving-tank or container supported above said bench or table, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is open, and means for moving said tank or container and fillers back and forth above said bench or table, means for moving said tank or container and fillers beyond an end of the bench or table, and means for lowering said tank or container and fillers, substantially as and for the purposes set forth.

21. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a framework movably connected with said bench or table, a receiving-tank or container pivotally supported in said framework, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is opened, substantially as and for the purposes set forth.

22. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of a framework movably connected with said bench or table, a receiving-tank or container pivotally supported in said framework, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is opened, means for moving said framework, said tank or container and fillers beyond an end of the bench or table, and means for lowering said tank or container and fillers, substantially as and for the purposes set forth.

23. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework provided with rollers movable upon said rails, a receiving-tank or container supported in said framework, a pair of fillers connected with said framework, a means of communication between said tank or container and said fillers, and means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is opened, substantially as and for the purposes set forth.

24. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework provided with rollers movable upon said rails, a receiving-tank or container supported in said framework, a pair of fillers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is opened, means for moving said framework, said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and fillers, substantially as and for the purposes set forth.

25. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework comprising a pair of side bars, rollers on said side bars movable upon said rails, a lower connecting-rod between said side bars, a swing-arm pivotally connected with the upper portion of each side bar, a receiving-tank or container pivotally supported between said swing-arms, a pair of rollers connected with said tank or container, a means of communication between said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is open, substantially as and for the purposes set forth.

26. In an apparatus for filling receptacles with liquid, the combination, with a bench or table, of rails at the sides of said bench or table, a framework comprising a pair of side bars, rollers on said side bars movable upon said rails, a lower connecting-rod between said side bars, a swing-arm pivotally connected with the upper portion of each side bar, a receiving-tank or container pivotally supported between said swing-arms, a pair of fillers connected with said tank or container and said fillers, means for simultaneously actuating both fillers, whereby the means of communication between one filler and said tank or container is closed, while the means of communication between the other filler and said tank or container is open, means for moving said framework, said tank or container and filler beyond an end of the bench or table, and means for lowering said tank or container and filler, substantially as and for the purposes set forth.

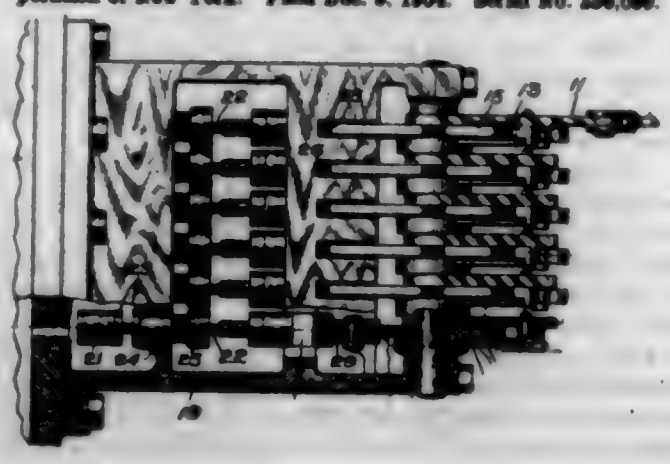
27. In an apparatus for filling receptacles with liquid, the combination, with a receiving-tank or container, of a pair of fillers connected with said tank or container, each filler comprising a fixed outer tube and an inner tube rotatively arranged in said outer tube, said outer and inner tubes being provided with inlet-openings and outlet-openings, and means for simultaneously actuating both of said inner tubes of the respective fillers, substantially as and for the purposes set forth.

28. In an apparatus for filling receptacles with liquid, the combination, with a receiving-tank or container, of a pair of fillers, connected with said tank or container, each filler comprising a fixed outer tube and an inner tube rotatively arranged in said outer tube, said outer and inner tubes being provided with inlet-openings and outlet-openings, and means for simultaneously actuating both of said inner tubes of the respective fillers, consisting of a lever connected with each inner tube and a connecting-link between said levers, substantially as and for the purposes set forth.

29. In an apparatus for filling receptacles with liquid, the combination, with a receiving-tank or container, of a pair of fillers connected with said tank or container, each filler comprising a fixed outer tube and an inner tube rotatively arranged in said outer tube, said outer and inner tubes being provided with inlet-openings and outlet-openings, removable end plugs in the ends of the respective inner tubes, and means connected with said end plugs for simultaneously actuating both of said inner tubes of the respective fillers, substantially as and for the purposes set forth.

30. In an apparatus for filling receptacles with liquid, the combination, with a receiving-tank or container, of a pair of fillers connected with said tank or container, each filler comprising a fixed outer tube and an inner tube rotatively arranged in said outer tube, said outer and inner tubes being provided with inlet-openings and outlet-openings, removable end plugs in the ends of the respective inner tubes, and means connected with said end plugs for simultaneously actuating both of said inner tubes of the respective fillers, consisting of a lever connected with each end plug and a connecting-link between said levers, substantially as and for the purposes set forth.

815,742. **GOVERNING MECHANISM FOR TURBINES.** RICHARD H. RICE, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Dec. 9, 1904. Serial No. 236,060.



Claim.—1. In a governing mechanism for turbines, the combination of a valve which has an open and a closed position but no intermediate, a motor which has a to-and-fro movement and by a single stroke in one direction opens the valve and by a reverse stroke closes it, a governor, and a means controlled by the governor for connecting and disconnecting the motor and valve.

2. In a governing mechanism for turbines, the combination of a valve which has an open and a closed position but no intermediate, an actuator for the valve, a motor which has a continuous to-and-fro movement, a speed-responsive device, and a means controlled by said device for connecting and disconnecting the motor and valve-actuator.

3. In a governing mechanism for a turbine, the combination of a device responsive to load changes, a valve having an open and a closed position but no intermediate, a constantly-moving motor, and a means under the control of the load-responsive device which causes the said motor to positively move the valve either to its open or closed position.

4. In a governing mechanism for a turbine, the combination of a device responsive to load changes, a valve which has an open and closed position but no intermediate, an actuator therefor, a motor or driving means which moves to and fro with respect to the actuator and by a single stroke in one direction opens the valve and by a reverse stroke closes it, and a means under the control of the load-responsive device, which connects and disconnects the actuator and motor as the load changes.

5. In a governing mechanism for turbines, the combination of a driving means which has a definite stroke to and fro over a given distance, a valve, an actuator for the valve, a length of movement of which corresponds to that of the driving means, and a governor-controlled means which connects and disconnects the driving means and actuator as the load on the turbine varies.

6. In a governing mechanism, the combination of a valve, a valve-actuator, a lever, pivotally-supported dogs carried by the lever arranged to engage the actuator, a governor, and means actuated by the governor for permitting the dogs to transmit motion from the lever to the actuator.

7. In a governing mechanism for turbines, the combination of a plurality of valves, motors for actuating the valves which have a to-and-fro movement, a governor common to the motors, and a means for each motor, that is under the control of the governor, for connecting and disconnecting the valves and motors in a predetermined manner as the load on the turbine changes.

8. In a governing mechanism for turbines, the combination of a plurality of valves, motors for actuating the valves, a speed-governor common to the motors, and means under the control of the governor for connecting the valves with the motors or permitting the latter to move without moving the valves, the said means being differently adjusted or arranged so that the valves will operate successively both in opening and closing.

9. In a governing mechanism for turbines, the combination of a valve, a cam-plate for moving the valve, a motor for actuating it, a motor which moves to and fro, dogs on the motor adapted to engage the cam-plate, a shield-plate for controlling the engagement of the dogs with the cam-plate, and a governor for moving the shield-plate.

10. In a governing mechanism, for turbines, the combination of a plurality of valves, a plurality of cam-plates for actuating the valves, motors for moving the cam-plates, dogs on the motors adapted to engage the cam-plates, shield-plates controlling the action of the dogs on the cam-plate, and a governor which controls the movements of the shield-plates.

11. In a governing mechanism for turbines, the combination of a valve-chest, a valve therein, a cross-head for the valve, a cam-plate acting through the cross-head to move the valve, a motor having a to-and-fro movement, dogs actuated by the motor which are adapted to engage the cam-plate, and a governor-controlling device which determines which dog or either of them shall engage the cam-plate.

12. In a governing mechanism for turbines, the combination of a valve-chest, a valve therein, a motor having a continuous to-and-fro movement, a dog for opening the valve which is moved by the motor, a second dog also moved by the motor for closing the valve, and a governor-controlled means which in one position permits one dog to move the valve, in another position permits another dog to move the valve, and when in a neutral position permits both dogs to act alternately upon the valve.

13. In a governing mechanism for turbines, the combination of a plurality of valves, a plurality of continuously-acting motors which derive their motion from the same source, dogs moved by the motors to open or close the valves, and a governor-controlled means which engages the dogs and permits them to open all of the valves or to close them, or to keep part of them open and the remainder closed.

14. In a governing mechanism for turbines, the combination of a plurality of valves, a plurality of continuously-operating motors for actuating the valves, a yielding medium included between each valve and its motor for compensating purposes, and a governor-controlled means for connecting and disconnecting the motors from the valves.

15. In a governing mechanism for turbines, the combination of a valve, a cam-plate mounted to turn about an axis for actuating the valve, a lever mounted to turn about the same axis, means on the lever for transmitting motion to the cam-plate, and a shield-plate also mounted to turn about the same axis to control the action of the dogs.

16. In a governing mechanism for turbines the combination of a plurality of valves, with a steam-lever, cam-plate and shield-plate for each valve, and a governor which moves all of the shield-plates.

17. In a governing mechanism for turbines, the combination of a plurality of valves, with a steam-lever, cam-plate and shield-plate for each valve, a shaft which is common to said levers and plates, and a governor which moves all of the shield-plates.

18. In a governing mechanism for turbines, the combination of a valve-chest, a plurality of valves, an extension on the chest, a cross-head for each valve guided by the extension, an individual actuator for each valve that is carried by the extension, and a governor-controlled means for regulating the action of the motors, that is also carried by the extension.

19. In a governing mechanism for turbines, the combination of a valve, an actuator therefor which has a to-and-fro movement and is driven by the turbine itself, pivotally-supported dogs interposed between the valve and actuator for transmitting motion from the actuator to the valve, a governor, and a means under the control of the governor for connecting and disconnecting the valve and actuator through the intermediary of the pivoted dogs.

20. In a governing mechanism for turbines, the combination of a plurality of valves, an actuator for each valve, a driving connection from the turbine imparting to-and-fro movements to the actuator, and a governor-controlled device which connects and disconnects the valves and actuators without interfering with the to-and-fro motion of the latter.

21. In a governing mechanism for turbines, the combination of a plurality of valves, a separate actuator for each valve, that has a continuous to-and-fro movement, a driving connection between the turbine-shaft and the actuators that is in operation at all times and a governor-controlled device for each valve that renders its actuator operative or inoperative to meet the conditions of service.

22. In a governing mechanism for turbines, the combination of a plurality of valves, actuating mechanism for the valves which is continuously moved to and fro, and a governor-controlled means which connects and disconnects the valves and the actuating mechanism to meet the requirements for motive fluid.

23. In a governing mechanism for turbines, the combination of a valve, a cam for moving the valve, a lock for holding the cam in definite positions, an actuator which is continuously in operation, and a means for connecting and disconnecting the cam and actuator.

24. In a governing mechanism for turbines, the combination of a valve, a pivoted cam for moving the valve, a lock for holding the cam in definite positions, a cross-head for the valve, and an actuator for the cam.

25. In a governing mechanism for turbines, the combination of a valve, a shaft mounted at right angles to the axis of the valve, a cam mounted thereon for moving the valve toward and away from the spindle, an actuator, dogs on the actuator for rocking the cam in one direction or the other, and a governor which determines which, if either, of the dogs shall operate.

26. In a governing mechanism, the combination of a valve, a shaft, a cam mounted thereon for rocking movement, a notch formed in the cam to act as a lock, a detent-lever adapted for engagement with the notch, and a governor controlling the action of the cam.

27. In a governing mechanism, the combination of a valve, a cross-head mounted on the valve-stem, a rocking cam for moving the valve through the cross-head, and a lock for the cam carried by the cross-head.

28. In a governing mechanism, the combination of a valve-chest, a plurality of valves mounted therein, actuators for the valves mounted on a shaft, a detachable support for the spindle mounted on the valve-chest, and means for imparting motion to the actuators.

29. In a governing mechanism, the combination of a plurality of valves mounted in a chest, an actuator for each valve, a shaft upon which the actuators are mounted, a bracket for carrying the shaft

which is mounted on the valve-chest, and a yielding medium between each valve and its actuator.

30. In a governing mechanism, the combination of a plurality of valves mounted in a chest, an actuator for each valve, a shaft upon which the actuators are mounted, a bracket for carrying the shaft which is mounted on the valve-chest, a cross-head for each valve, and locks carried by the cross-heads for holding the actuators in predetermined positions.

31. In a governing mechanism, the combination of a valve-chest, a valve mounted therein, an actuator for the valve, a bracket supporting the actuator which is carried by the valve-chest, and a cross-head for the valve working in guides on the valve-chest.

32. In a governing mechanism for turbines, the combination of a plurality of valves, an actuator therefor which has a to-and-fro movement, a speed-reducing connection between the turbine-shaft and the actuator, a speed-responsive device, a means for controlling the action of the actuators, a connection between the speed-responsive device and said means, and a spring for counterbalancing the weight of the connection and changing the speed of the turbine.

33. In a governing mechanism for turbines, the combination of a speed-reducing gearing, a crank operated thereby, an actuator which is given a to-and-fro motion by the crank, a valve opened and closed by the actuator, a governor, and a means under the control of the governor for causing the actuator to engage or be disengaged from the valve.

34. In a governing mechanism for turbines, the combination of a shaft, a steam-lever mounted thereon, a lever for rocking the shaft, a cam-plate loosely mounted on the shaft, and a shield-plate also loosely mounted on the shaft.

35. In a governing mechanism for turbines, the combination of a shaft, a steam-lever mounted thereon, a means for rocking the shaft, a cam-plate loosely mounted on the shaft, spring-pressed dogs carried by the steam-lever for actuating the cam-plate, and a means for controlling the action of the dogs.

36. In a governing mechanism for turbines, the combination of an admission-valve, a rock-shaft for opening and closing it, means for connecting and disconnecting the valve and rock-shaft, a crank driven by the turbine, and a connecting-rod between the rock-shaft and crank.

37. In a governing mechanism for turbines, the combination of a plurality of admission-valves, a motor, actuators for transmitting motion from the motor to the valves, a governor-controlled means for rendering the actuators operative or inoperative with respect to the valves, and a device for cutting a valve out of service in case of trouble without disturbing the action of the remaining valves and their actuating mechanism.

38. An elastic-fluid turbine operating by stages to abstract energy from the motive fluid, in combination with a valve controlling the admission of motive fluid to the first stage, a valve controlling the admission of fluid to a subsequent stage, a constantly-operating motor for opening and closing the admission and stage valves, a governor, and a means under the control of the governor for positively connecting and disconnecting the valves and motor.

39. An elastic-fluid turbine operating by stages to abstract the energy from the motive fluid, in combination with a valve controlling the admission of motive fluid to the first stage, a valve controlling the admission of fluid to a subsequent stage, a motor having a constant to-and-fro movement for opening and closing the admission and stage valves, a means intermediate the motor and valves for positively transmitting motion from the former to the latter, a speed-governor, and a device actuated by the governor for rendering the means active or inactive.

40. An elastic-fluid turbine, in combination with a plurality of valves controlling the admission of motive fluid to the first stage, a plurality of valves controlling the passage of motive fluid from one stage to the next, a constantly-running motor which operates the valves, a separate means for positively connecting each valve to the motor when it is desired to move it, a governor, and a device under the control of the governor, which determines the operative relation between the motor and the connecting means of the valves of different stages.

41. An elastic-fluid turbine, in combination with a plurality of valves controlling the admission of motive fluid to the first stage, and also to a succeeding stage or stages, a reciprocating motor which moves the valves, actuating-dogs for each valve that derive their motion from the motor, a governor, and a shield-plate for each of the valves which controls the operation of the dogs.

42. A turbine which is divided into two or more stages, in combination with a valve for each stage controlling the admission of motive fluid thereto, a steam-lever for each valve, a motor for actuating all of the levers for opening and closing the valves, a speed-responsive device, and a shield-plate for controlling the action of each said means which is moved by the speed-responsive device.

43. A multistage turbine, in combination with a valve mechanism for two or more stages, a motor for actuating the valve mechanism of the first stage, a connecting-rod for transmitting motion from one valve mechanism to the other, a means for regulating the action of the motor on each valve mechanism, a governor connected to the first-stage means, and a connecting-rod between the said first-stage means and the next.

44. In an elastic-fluid turbine operating by stages, the combination of a plurality of successively-operating valves for each stage, that control the admission of motive fluid thereto, a rock-shaft for operating the valves of each stage, a connecting-rod for transmitting motion from the turbine-shaft to one of the rock-shafts, and means sensitive to speed changes for connecting or disconnecting the rock-shafts and valves, to meet the demand for motive fluid.

45. In a governing mechanism for turbines, the combination of a governor, a valve located in a given position on the turbine, a second valve located in a different position, means for actuating the valves, and a shield-plate for controlling each valve which is connected to and moved by the governor.

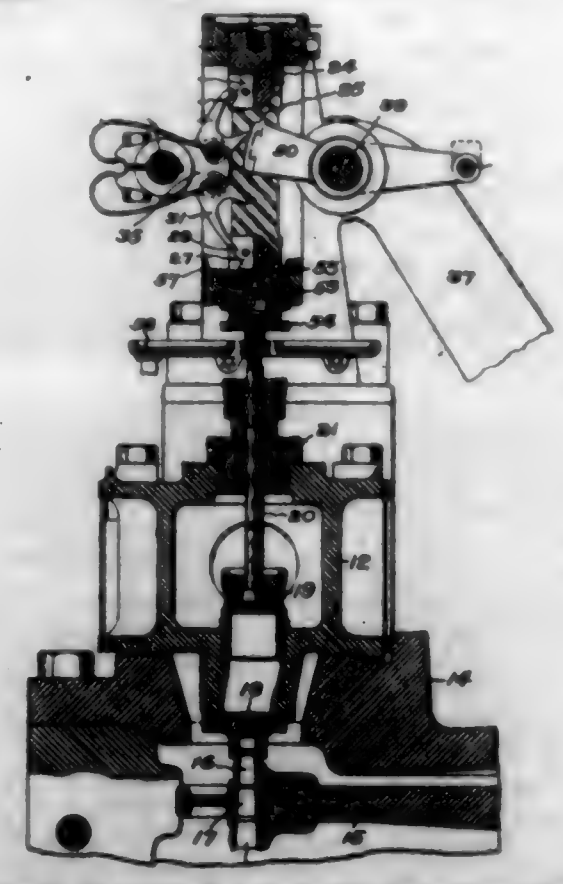
46. In a governing mechanism for turbines, the combination of a governor, a valve located in a given position on the turbine, a second valve located in a different position, means for actuating the valves, a device actuated by the governor for controlling one valve, a second device also actuated by the governor for controlling another valve, and a motion-reversing means included in the second device.

47. In a governing mechanism for turbines, the combination of a governor, sets of counterpart valves located in different positions for controlling the turbine, actuators for the valves, separate means for regulating the action of the actuators, which are controlled by the governor, and a reversing device included in one of the said means.

48. In a governing mechanism, the combination of a valve, an actuator therefor which is constantly in motion, a driving and speed-reducing connection between the shaft of the engine being governed and the actuator, which comprises a gear driven by the shaft, a driven gear meshing with the first, a shaft for the driven gear, a worm thereon, a worm-wheel, a crank driven by the worm-wheel and connected to the actuator, and a device responding to load changes for controlling the effect of the actuator on the valve.

815,743. GOVERNING MECHANISM FOR TURBINES.

RICHARD H. RICE, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 1, 1905. Serial No. 276,067.



Claim.—1. In a governing mechanism for turbines, the combination of a valve having an open and a closed position but no inter-

mediate, a motor which is constantly in motion for opening and closing the valve, independent dogs which engage the valve and transmit motion from the motor to the valve, and a governor for causing the proper action of the dogs with respect to the valve.

2. In a governing mechanism for turbines, the combination of a plurality of valves, a motor common to the valves that has a constant to-and-fro motion, dogs carried by the motor which engage each of the valves and open and close them, a means for each valve that determines the action of the dogs thereon, and a governor for controlling the said means.

3. In a governing mechanism for turbines, the combination of a plurality of valves, stems therefor, an actuator for each valve that is continually moving to and fro, dogs carried by each actuator, one of which opens the valve and the other closes it, a shield for regulating the action of each pair of dogs, the shields being arranged to normally cause successive operation of the dogs and valves, and a governor that controls all of the shields.

4. In a governing mechanism for turbines, the combination of a valve, a stem therefor containing a slot, an actuator which enters the slot and opens or closes the valve, and a device responsive to load changes which also enters the slot and controls the effect of the actuator on the stem.

5. In a governing mechanism for turbines, the combination of a valve, a slotted stem therefor, an actuator, dogs carried by the actuator which enters the slot and open or close the valve as load conditions demand, and a shield that also enters the slot and controls the action of the dogs on the stem.

6. In a governing mechanism for turbines, the combination of a valve, a stem therefor, a rocking lever, dogs carried by the lever, one of which engages with the stem and opens the valve while the other closes it, and a governor for determining which dog shall be in service.

7. In a governing mechanism for turbines, the combination of a valve, a cut-away stem therefor, a rocking lever, dogs carried by the lever and extending into the cut-away portion of the stem, the dogs acting directly on the stem to open or close the valve, and a shield-plate that also enters the cut-away portion and controls the action of the dogs.

8. In a governing mechanism for turbines, the combination of a plurality of valves, an actuator for each valve, devices for controlling the effects of the actuators on the valves, a support which is common to actuators and is located on one side of the plane of the valves, a support which is common to the controlling devices and is located on the opposite side of the plane of the valves, and a governor which regulates the action of the devices and is itself responsive to changes in load.

9. In a governing mechanism for turbines, the combination of a valve having a stem, an actuator for the valve that is located on one side of the stem, a pivot for the actuator located on the other side, and a device for controlling the action of the actuator, the axes of the pivot and the controlling device coinciding.

10. In a governing mechanism for turbines, the combination of a plurality of valves, stem therefor, actuators for the valves located on one side of the stems, a frame that carriers the actuators and is pivotally supported on the opposite side of the stems, devices for causing the actuators to normally act on the valves successively, which are located on the side of the stems opposite the actuators, and a speed-responsive device which moves the controlling devices.

11. In a governing mechanism for turbines, the combination of a valve, a cut-away stem therefor, an actuator for the valve that enters the cut-away portion, and a device that also enters the cut-away portion for controlling the action of the actuator on the valve, the said actuator and device being so constructed and arranged that they can be moved out of the cut-away portion when it is desired to remove the valve-stem.

12. In a governing mechanism for turbines, the combination of a valve having a cut-away stem, an actuating and controlling device therefor which extend toward each other and coöperate within said cut-away portion, and supports for the actuator and device about which they can be moved to withdraw them from said cut-away portion when it is desirable to remove the valve-stem.

13. In a governing mechanism for turbines, the combination of a valve, a slotted stem therefor, an actuator and controlling device which coöperate within the slot to move the valve, and guides for the stem located on each side of the actuator and controlling device.

14. In a governing mechanism for turbines, the combination of a valve, a divided stem therefor, a spring interposed between the parts to insure proper seating of the valve, a moving support, dogs carried by the support which engage and move the stem, and a shield for controlling the action of the dogs.

15. In a governing mechanism for turbines, the combination of a plurality of valves, a chest containing the valves, a frame mounted on the chest and containing guides for the valve-stems, an actuator for each valve, a pivotally-supported frame which carries all of the actuators, and shield-plates for controlling the actuators that are also carried by the frame.

16. In a governing mechanism for turbines, the combination of a valve, a cylindrical stem for the valve having a cut-away portion, a means for preventing the stem from turning, a dog for opening the valve, a dog for closing it, and a shield for governing the action of the dogs.

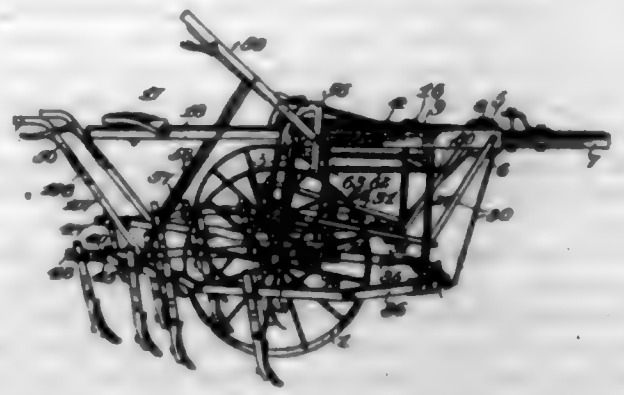
17. In a governing mechanism for turbines, the combination of a plurality of valves, stems therefor, a frame through which the stems extend, trays formed in the frame for supplying lubricant to stems, a receptacle which collects the lubricant after it acts on the stems, and actuators for opening and closing the valves.

18. In a governing mechanism for turbines, the combination of a valve, a stem therefor, a cross-head that is detachably secured to the stem, a slot therein, an actuator that extends into and moves in the slot for opening and closing the valve, and means for controlling the effective action of the actuator.

19. In a governing mechanism for turbines, the combination of a valve controlling the passage of fluid through the turbine, an actuator therefor which is constantly in motion, a spiral gear mounted on the shaft of the turbine, a driven gear meshing therewith, a shaft for the driven gear which revolves slower than the turbine-shaft, a worm thereon, a worm-wheel, a crank driven by the said wheel and connected to the actuator, a housing for the gearing carried by a bearing of the turbine and situated in line with the valve, a speed-governor, and a device moved by the governor which controls the action of the actuator on the valve.

20. In a governing mechanism for turbines, the combination of valve-chests located on opposite sides of the machine, valves in the chests, actuators for the valves pivotally supported on the chests, means for connecting and disconnecting the valves and actuators in response to load changes, a gear mounted on the turbine-shaft at a point between the valve-chests, a second gear meshing with the first for reducing the speed, other gearing driven by said second gear for further reducing the speed which is connected to the actuators, and a support for the driven gears located at a point between the valve-chests.

815,744. AGRICULTURAL IMPLEMENT. WILLIAM H. RICH, Rochester, N. Y. Filed July 20, 1904. Serial No. 217,412.



Claim.—1. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of standards on the frame in front of the wheels, gang-frames surrounding the latter comprising relatively adjustable side pieces and means for adjusting said gang-frames relatively to each other on the standards and tools mounted on said frames.

2. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of standards on the frame having horizontally-extending ends projecting in front of the wheels, clips thereon adjustable laterally relatively to each other, gang-frames surrounding the wheels having relatively adjustable side pieces, clips on the ends of the standards attached to the gang-frames and tools on the latter.

3. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of standards on the frame having horizontally-extending ends, clips thereon adjustable laterally relatively to each other and gang-frames pivoted to the clips, each of said frames comprising relatively adjustable side pieces, tools thereon and an adjustable connection between said frames for swinging them relatively toward and from each other.

4. In an agricultural implement, the combination with a carriage-frame embodying wheels, draft appliances thereon and depending standards having laterally-extending ends, of clips journaled on said ends, gang-frames comprising side pieces surrounding the wheels and journaled on the clips and means for adjusting said gangs relatively.

5. In an agricultural implement, the combination with a carriage-frame embodying wheels, draft appliances thereon and depending standards having laterally-extending ends, of clips journaled on said ends having rearwardly-extending lips, gang-frames surrounding the wheels and journaled on said lips and means for adjusting said gangs.

6. In an agricultural implement, the combination with a carriage embodying a frame having wheels thereon and draft appliances, of a standard on the frame having a horizontally-extending end, a gang-frame having a bar extending in rear of the end of the standard, and a clip embracing the latter and extending over the bar and pivotally connected thereto.

7. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported above them and draft appliances, of gang-frames arranged beneath the carriage-frame at each side thereof, each frame comprising relatively adjustable side pieces surrounding the wheels, and pivotally connected to the frame, arms pivotally attached at their lower ends to the gang-frames and extending upwardly into proximity with the carriage-frame, means for operating the arms to swing said frames relatively and tools carried on the latter.

8. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame and extending in front of the wheels, of gang-frames composed of inner and outer side pieces extending around the wheels, said side pieces being adjustable relatively to each other at their forward ends, clips for connecting said frames to the standards and tools carried on the frames.

9. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame having laterally-extending ends projecting in front of the wheels, of gang-frames composed of inner and outer side pieces connected at their rear ends and adjustable relatively to each other at their forward ends, clips journaled on the ends of the standards and connected to the forward ends of said frames and tools carried on the latter.

10. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame having laterally-extending ends projecting in front of the wheels, of gang-frames composed of inner and outer side pieces yieldingly connected at their rear ends and adjustable relatively to each other at their forward ends, clips journaled on the ends of the standards and adjustable longitudinally thereon, means for securing the clips in adjusted position, rearwardly-extending gang-frames attached to the clips and tools carried on said frames.

11. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame, of gang-frames composed of inner and outer side pieces surrounding wheels, pivotal connections between the rear ends of the side pieces and means at their forward ends for adjusting them relatively to each other to vary the width of the gang-frames, tools carried by said frames and devices for connecting them to the standards.

12. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame, of a gang-frame composed of separate inner and outer side pieces surrounding wheels, a clip yieldingly connecting said pieces at their rear ends and means for adjusting their forward ends relatively to each other, tools carried on said frame and a device for connecting the latter to the standard.

13. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances and standards on the frame, of a gang-frame composed of separate relatively adjustable inner and outer side pieces provided with a plurality of offsets or steps pivotally connected at their rear ends, one of said pieces being provided with an end extending rearwardly of the other piece, tools having shanks secured to said steps and to said rearwardly-extending end and a device connecting the frame to the standard.

14. In an agricultural implement, the combination with a carriage embodying wheels, a frame having uprights, axles carried thereon and supported in the wheels and draft appliances attached to the frame, of swinging gang-frames arranged beneath the sides of the frame, lever-arms journaled in an inclined position on the uprights and attached to the gang-frames and tools carried on said frames.

15. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon having uprights and draft appliances attached to the frame, of swinging gang-frames carrying tools arranged beneath the sides of the frame, foot-levers attached to the gang-frames and journals supporting the levers in an inclined position on the uprights.

16. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon having uprights and draft appliances attached to the frame, of swinging gang-frames arranged beneath the sides of the frame, brackets on the uprights, curved levers surrounding the uprights and supported on the brackets, connections between said levers and their respective frames and tools carried on the latter.

17. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon having uprights at the sides thereof and draft appliances, of swinging gang-frames arranged beneath the sides of the frame, brackets on the outer sides of the uprights and arms extending around the latter and pivoted on the brackets, adjustable connections between the gang-frames and the proximate ends of the arms, foot-rests on the other ends of the arms and tools carried on the frames.

18. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of gang-frames attached to the carriage having tools thereon, brackets on the frames and rearwardly-extending handles pivotally connected to the brackets and latches on the handles, coöperating with the ends of the brackets for locking them in operative position.

19. The combination with a support, of a seat thereon having an open recess extending substantially in a vertical direction, of a tool having a shank provided with a flattened end extended lengthwise of said seat, clamping-plates fitting opposite sides of said end and a device for clamping said plates and shank to the seat.

20. The combination with a support and a seat thereon, having a semicircular recess, of a tool having a shank provided with a flattened end extending edgewise from the bottom of said recess, segmental clamping-plates fitting opposite sides of said end and adapted to fit the recess in the seat and a U-shaped bolt clamping said plates and shank to the seat.

21. The combination with a support, of a seat thereon having a recess and a tool having a shank provided with a flattened end disposed edgewise in the seat, of segmental clamping-plates fitting the sides of said end and a U-shaped bolt clamping said plates and tool in the recess in the seat and securing the latter on the support.

22. A tool for agricultural implements comprising a body of flat metal bent into a spiral form, one end of which forms a shank and the other being stiffened by being bent into a U shape, said portion lying in a plane extending transversely of the body and a removable shoe attached to said end.

23. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of a gang-frame movably supported on the carriage-frame having tools thereon, a lever pivoted on the carriage-frame, a lifting-rod connected to the lever and coöperating with the gang-frame and a spring contracted by the movement of lever in one direction and operating extensibly to move it in a direction to raise the gang-frame.

24. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon and draft appliances, of a gang-frame movably supported on the carriage-frame having tools thereon, a lever pivoted on the carriage, a lifting-rod attached to the lever at one side of its pivot and coöperating with the gang-frame, a spring compressed by the movement of the lever in one direction and operating extensibly on the lever at the other side of its pivot to move it in a direction to raise the gang-frame and a spring bearing on the gang-frame and operated by the lifting-rod to yieldingly move the gang-frame downwardly.

25. In an agricultural implement, the combination with a carriage embodying wheels and a frame having draft appliances thereon, of gang-frames composed of relatively adjustable side pieces surrounding the wheels, connections between the gang-frames and the carriage-frame located in front of the wheels, said connections being adjustable relatively toward and from each other independently of the wheels and tools carried by the gang-frames.

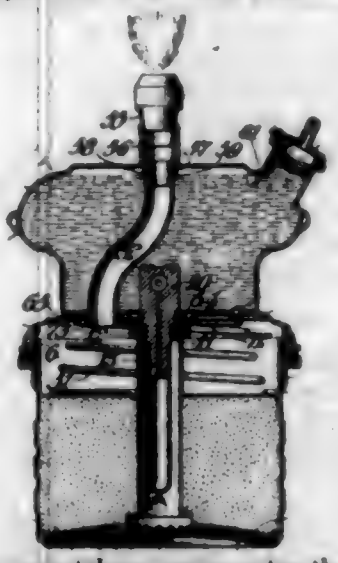
26. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported above them and draft appliances, of gang-frames arranged beneath the carriage-frame at

each side thereof surrounding the wheels and pivotally connected to the carriage-frame, and means connected to said frames for swinging them relatively and tools carried on the frames.

27. In an agricultural implement, the combination with a carriage embodying wheels, a frame supported thereon having draft appliances, of gang-frames composed of inner and outer side pieces surrounding the wheels, pivotal connections between the rear ends of the side pieces and means at their forward ends for adjusting them relatively to each other, to vary the width of the gang-frames, tools carried by said frames and devices pivotally connecting them to the carriage-frame.

28. In a tool for agricultural implements, comprising a spirally-shaped body portion constructed of flat metal having one end forming an attaching-shank and its opposite end provided with a working point and flattened in a U shape above the point, said portion extending in a direction transversely of the body.

815,745. ACETYLENE-GAS GENERATOR. EDWIN M. ROSENBLUTH, Philadelphia, Pa. Filed Nov. 11, 1901. Serial No. 81,814.



Claim.—1. In an acetylene-gas generator, the combination with a carbid-chamber provided with a water-inlet and a gas-outlet; of a water-chamber provided with a water-outlet in its wall surrounded by a neck, in integral relation with said wall; a gas-conduit extending through said water-chamber and surrounded by a neck extended from the wall thereof; said water-chamber necks being respectively entered in said water-inlet and gas-outlet in the carbid-chamber wall; bosses struck up from the metal forming the wall of said carbid-chamber; and means whereby said water-chamber is fixed to said carbid-chamber, upon said bosses, with an air-space surrounding said necks and limited by the extent of said bosses, substantially as set forth.

2. In an acetylene-gas generator, the combination with a carbid-chamber; of a water-chamber above said carbid-chamber; a water-inlet tube extending from said water-chamber, within said carbid-chamber; a water-column in said carbid-chamber, in registry with said tube; and a water-feeder at the bottom of said column, consisting of an annular flange extending adjacent to the bottom of said carbid-chamber and comprising a series of radial ducts, substantially as set forth.

3. In an acetylene-gas generator, the combination with a carbid-chamber; of a water-chamber above said carbid-chamber; a water-inlet tube extending from said water-chamber to said carbid-chamber; a water-column in said carbid-chamber, in registry with said tube; and a foraminous flange secured to the bottom of said column, extending radially, adjacent to the floor of the carbid-chamber, and comprising a series of radial ducts, substantially as set forth.

4. In an acetylene-gas generator, the combination with a carbid-chamber; of a water-chamber above said carbid-chamber; a water-inlet tube depending from said water-chamber to said carbid-chamber; a water-column separable from said carbid-chamber, but mounted within said chamber, in registry with said tube; a flange at the bottom of said column extending radially, adjacent to the floor of the carbid-chamber; and, a wick between said foraminous flange and the floor of the carbid-chamber, substantially as set forth.

5. In an acetylene-gas generator, the combination with a carbid-chamber; of a removable lid for said chamber; a separable water-column within said carbid-chamber; a water-inlet tube in said lid, arranged to seat on the top of said water-column; and a foraminous flange secured to the bottom of said water-column and extending radially, adjacent to the floor of the carbid-chamber, substantially as set forth.

6. In an acetylene-gas generator, the combination with a carbid-chamber; of a removable lid for said chamber; a water-chamber fixed upon said lid; a separable water-column within said carbid-chamber; an annular flange extending radially from the bottom of said column, adjacent to the floor of said carbid-chamber; and, a water-inlet tube extending from said water-chamber through said carbid-chamber lid, arranged to seat on the top of said water-column, substantially as set forth.

7. In an acetylene-gas generator, the combination with a carbid-chamber; of a removable lid for said chamber; a water-chamber fixed upon said lid; a detached water-column within said carbid-chamber; an annular flange extending radially from the bottom of said column, adjacent to the floor of said carbid-chamber; a water-inlet tube, extending from said water-chamber through said carbid-chamber lid, and provided with a resilient packing-ring to engage the top of said water-column, substantially as set forth.

8. In an acetylene-gas generator, the combination with a carbid-chamber and a water-chamber, formed of sheet metal; of necks extending from the wall of one of said chambers in integral relation therewith, and in registry with openings in the other of said chambers; a water-inlet tube seated in one of said necks; a gas-conduit seated in the other of said necks and extending through said water-chamber; and means to retain said two chambers in fixed relation, with an air-space between them surrounding said necks, substantially as set forth.

9. In an acetylene-gas generator, the combination with a carbid-chamber and a water-chamber formed of sheet metal; of necks extending from the wall of one of said chambers in integral relation therewith, and in registry with openings in the other of said chambers; a water-inlet tube seated in one of said necks; a gas-conduit seated in the other of said necks and extending through said water-chamber; bosses struck up from the metal forming the wall of one of said chambers; and means to retain said two chambers in fixed relation with an air-space between them, surrounding said necks and limited by the extent of said bosses, substantially as set forth.

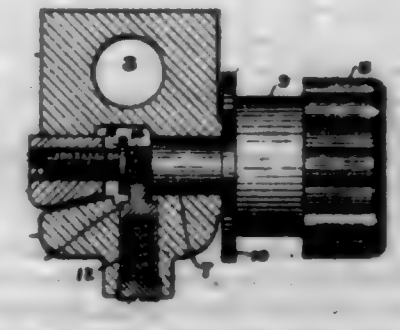
10. In an acetylene-gas generator, the combination with a carbid-chamber having a lid provided with integral bosses and two apertures; of a water-chamber above said carbid-chamber secured to said bosses, whereby an air-space is left between said chambers; the bottom wall of said water-chamber being provided with two apertures surrounded by integral flanges entered through apertures in the carbid-chamber, substantially as set forth.

11. In an acetylene-gas generator, the combination with a carbid-chamber having a lid provided with integral radial bosses and two apertures; of a water-chamber above said carbid-chamber secured to said bosses, whereby an air-space is left between said chambers; the bottom wall of said water-chamber being provided with two apertures surrounded by integral flanges entered through apertures in the carbid-chamber, substantially as set forth.

12. In an acetylene-gas generator, the combination with a casing arranged to contain carbid; of a plate at one end of said casing provided with radial channels; means arranged to cover the normally open sides of said channels when in operative position; and, means to supply water in concentric relation with said channels, substantially as set forth.

13. In an acetylene-gas generator, the combination with a casing arranged to contain carbid; of a plate at one end of said casing provided with radial channels; a porous pad arranged to cover the normally open sides of said channels when in operative position; and, means to supply water in concentric relation with said channels, substantially as set forth.

816,746. FUSE-CLAMPING TERMINAL. ARTHUR C. SAVAGE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 30, 1904. Serial No. 217,234.



Claim.—1. The combination with a fuse-box of insulation, of two clamping-terminals, each comprising a block of metal having

jaws, a wedge coöperating therewith, an operating device for said wedge extending to the outside of the box, and locking means for said operating device.

2. A clamping-terminal for a fuse, comprising a metal block provided with jaws, a wedge entering between said jaws, a screw engaging with said wedge and having a smooth shank rotatable in a bearing in said block, a shoulder on said screw, and a projection carried by the block adapted to engage said shoulder.

3. A clamping-terminal for a fuse, comprising a metal block provided with jaws, a wedge entering between said jaws, a screw engaging with said wedge and having a smooth shank rotatable in a bearing in said block, and a detent engaging with said screw.

4. A clamping-terminal for a fuse, comprising a metal block provided with jaws, a wedge entering between said jaws, a screw engaging with said wedge and having a smooth shank rotatable in a bearing in said block, flattened faces on said screw, and a spring-plunger engaging with said faces.

5. A clamping-terminal for a fuse, comprising a metal block provided with jaws and a socket, a wedge coöperating with said jaws and constituting a nut, a screw meshing with said nut and having a collar and flattened faces, a plunger in said socket, and a spring urging the head of said plunger into engagement with said faces behind said collar.

815,747. CORSET AND ABDOMINAL SUPPORTER. Frank Schmitt, Philadelphia, Pa. Filed Apr. 14, 1905. Serial No. 255,513.



Claim.—1. In a device of the character described, two semicircular breast-frames, pockets removably secured to said breast-frames and extending outward therefrom, an adjustable band, in the outer ends of which the breast-frames are swiveled, an elastic belt extending around the wearer and connected at each end to the adjustable band, a belt adapted to pass around the waist of the wearer, and means for supporting the adjustable band and breast-pockets, as and for the purpose specified.

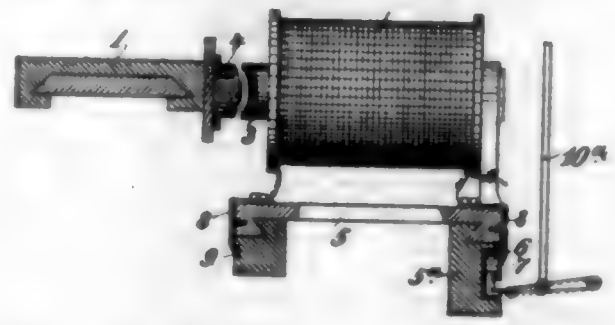
2. In a device of the character described, two semicircular frames, pockets or breast-supports removably secured to said frames, an adjustable band consisting of two strips overlapping one another, the semicircular frames pivoted one in the outer end of each strip, a block arranged at the center of the adjustable band, means connected with the said block for holding the two strips of the band in position, an elastic band passing around the body of the wearer and removably connected at each end to the adjustable band, a belt adapted to pass around the waist of the wearer, an attachment removably secured to said belt, a screw-threaded rod extending upward from the attachment and connected thereto by a universal joint, a tubular support threaded upon said rod, a circular stud extending downward from the block and swiveled in the upper end of the tubular support, a flexible cord removably connected to the device and passing around the neck of the wearer, as and for the purpose specified.

3. In a device of the character described, two semicircular frames, pockets or breast-supports adapted to be removably attached to said frames, a flexible connector consisting of two strips overlapping one another, the frames pivoted in the outer end of said strips, a block arranged in the center of the connector and provided with means for securing the two strips together, an elastic band passing around the body and adapted to be removably connected to the ends of the connector, a belt passing around the waist of the person, two buttons or headed studs secured to the belt, a fork adapted to straddle the shanks of the button from above, a screw-threaded rod extending upward from said fork and connected thereto by a universal joint, a tubular support threaded upon said rod, a stud extending downward from the block and swiveled in the upper end of said support, and means for suspending the device from the neck of the wearer, as specified.

4. In a device of the character described, two semicircular breast-frames, pockets removably secured to said breast-frames and extending outward therefrom, an adjustable band in the outer ends of which the breast-frames are swiveled, an elastic belt extending around the wearer and connected at each end to the adjustable band, a belt adapted to pass around the waist of the wearer, means for supporting the adjustable band and breast-pockets, an abdominal supporter suspended at the forward end from the waistband and also at the rearward end from the waistband, as specified.

5. In a device of the character described, two breast-supports, an adjustable band connecting said breast-supports together, a belt extending around the wearer and connected at each end to the adjustable band, a belt passing around the waist of the wearer, an adjustable support between the adjustable band and the belt, a flexible cord or band passing around the neck of the wearer and connected to the adjustable band, an abdominal supporter consisting of a disk shaped to conform to the abdomen, a strap extending upward from the disk and removably secured to the belt provided with slots formed through the same, a strap passing through said slots and extending around the hips of the wearer, and means for supporting said strap at the rear from the belt, as specified.

815,748. ELECTROMAGNETIC DEVICE FOR DISTRIBUTING-MACHINES. Otto G. C. Schmitt, Frankfort-on-the-Main, Germany, assignor to The Firm of Wagner & Brand, Frankfort-on-the-Main, Germany. Filed May 20, 1904. Serial No. 208,793.



Claim.—1. An electromagnetic selection device for use in mechanically-operated distributing apparatus consisting of an electromagnet which is continuously caused by mechanical means to move to and fro upon a slide, and a distributing part which is likewise movable to and fro along a slide, and is provided with a spring-pressed armature, being attracted or suddenly released by the core of the electromagnet when this latter is energized or the magnetizing-current is interrupted.

2. In the electromagnetic selection device for use in mechanically-operated distributing apparatus, the combination with the electromagnet movable to and fro upon a slide, and the distributing part which is likewise movable to and fro along a slide, of movable contact-pieces placed at intervals along the path of the electromagnet, a current-collector fixed to the electromagnet-carriage and adapted to make sliding contact with said contact-pieces and keys connected to the respective contact-pieces.

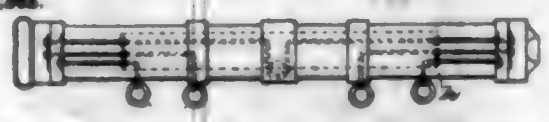
3. In the electromagnetic selection device for use in mechanically-operated distributing apparatus, the combination with the electromagnet movable to and fro upon a slide, and the distributing part which is likewise movable to and fro along a slide, of a galley containing the matter to be distributed and having mounted on it the armature of the electromagnet.

4. In the electromagnetic selection device for use in mechanically-operated distributing apparatus, the combination with the electromagnet movable to and fro upon a slide, a distributing part which is likewise movable to and fro along a slide, and a galley for containing a line of type to be distributed, of key-controlled electromagnetically-operated devices for effecting the transfer of a line of type to the galley, said devices comprising a slide which normally closes a delivery-aperture in the locking-frame containing the matter to be distributed and is adapted to be opened by the action of an electromagnet, and of a pusher adapted to be operated by another

electromagnet so as to cause the line of type to be distributed to pass through said aperture into the galley.

5. In the electromagnetic selection device for use in mechanically-operated distributing apparatus, the combination with the electromagnet movable to and fro upon a slide, a distributing part which is likewise movable to and fro along a slide, with a set of keys adapted to effect the delivery of individual types from the distributing-galley to the respective type-chutes comprised in a range appropriated to one alphabet, of a shift-key common to all the keys of the set and adapted to cause the actuation of said keys to effect the delivery of types to the respective type-chutes comprised in a range appropriated to another alphabet.

815,749. SKIRT SUPPORT AND LIFTER. THOMAS SCHÜLLBORN, Neustadt-on-the-Hardt, Germany. Filed Sept. 20, 1904. Serial No. 225,263.



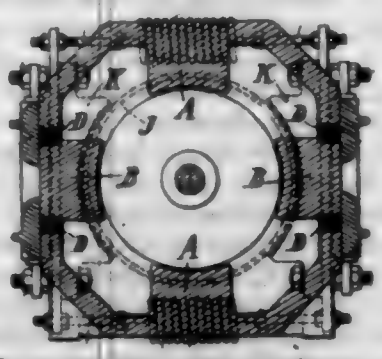
Claim.—1. The combination of a dress-belt with a device for lifting and holding up a woman's gown, the said belt being provided with a passage in which there are passed cords over devices permitting their gliding over the same, one end of the said cords being secured to a clamp or buckle sliding on the said belt, both the cord and the sliding piece moving with each other, while the other ends of the said cords are suspended from the belt behind the gown and are provided with means to fasten them to corresponding contrivances secured to the garment, substantially as described.

2. The combination of a dress-belt with a device for raising and holding up a woman's gown, the said belt being provided with a passage in which there are passed cords over devices permitting their gliding over the same, one end of each cord being secured to a sliding clamp or buckle permitting a movement of each cord with each buckle independent from the other cords and buckles, while the other ends of the said cords are suspended from the belt behind the gown and are provided with means to fasten them to corresponding contrivances secured to the garment, substantially as described.

3. The combination of a dress-belt with a device for raising and holding up a wowan's gown, the said belt being provided with a passage in which there are passed cords over devices permitting their gliding over the same, one end of the said cords being secured to a clamp or buckle sliding on the said belt, both the cords and the sliding pieces moving with each other, a common sliding buckle being provided for each group of such cords permitting a simultaneous movement and pulling of each group, while the other ends of the said cords are suspending from the belt behind the gown and are provided with means to fasten them to corresponding contrivances secured to the garment, substantially as described.

4. The combination of a dress-belt with a device for raising and holding up a woman's gown as hereinabove described and comprising a plurality of cords having attaching devices on one end and buckles at the other end, the outside of the said belt being provided with elevations upon which the aforesaid sliding buckles will rest in their movement and be retained, by the resistance of the said elevations, in a desired position, substantially as described.

815,750. BRAKING MECHANISM FOR ELECTRIC MOTORS. WILLIAM H. SCOTT, Norwich, England. Filed Mar. 27, 1905. Serial No. 252,414.



Claim.—1. In combination with a brake-operating means for electric motors, a motor comprising a magnetic frame having a yoke, and pole-pieces adapted to keep off the brake while the motor is running, said pole-pieces being magnetically spaced from the yoke, and a movable magnetic plate bridging the space and connected with the brake-operating means.

2. In combination with a brake-operating means for electric motors, a motor comprising a magnetic frame having a yoke, and pole-pieces adapted to keep off the brake while the motor is running, said yoke and pole-pieces being connected by non-magnetic material, and a movable magnetic plate bridging the said non-magnetic material and connected with the brake.

815,751. SUPPORTING-SLAB FOR PLASTER. FRANK A. SEIFERT, St. Louis, Mo. Filed Feb. 16, 1905. Serial No. 245,521.

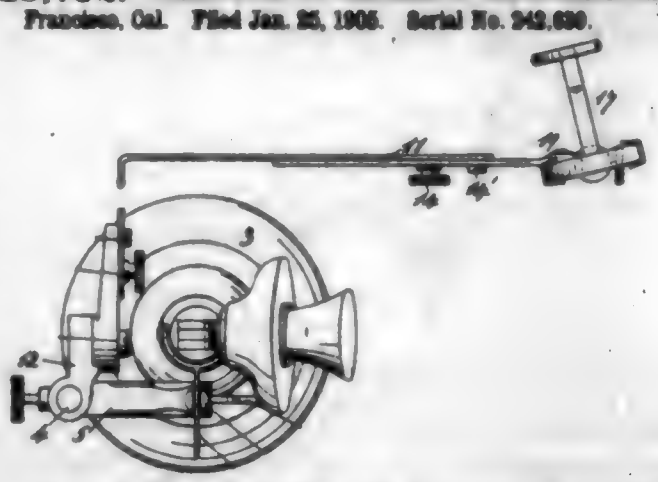


Claim.—1. A supporting-slab for plaster formed of inexpansible material and provided with a plurality of longitudinally-extending keyways and strengthening-ribs extending across said keyways.

2. A supporting-slab for plaster formed with a plurality of parallel undercut keyways, said keyways being all inclined in the same direction and being widest at their outlet.

3. A supporting-slab for plaster formed of plaster-of-paris and fibrous material and having a wire-netting embedded therein, and having a plurality of parallel undercut keyways formed in the face thereof, said keyways being all inclined in the same direction and being widest at their outlet.

815,752. TELEPHONE ATTACHMENT. JOSEPH SILVERMAN, San Francisco, Cal. Filed Jan. 25, 1905. Serial No. 242,630.



Claim.—1. The combination with the receiver and mouthpiece of a telephone, of a holding device for the receiver said device comprising a stand having a vertical standard, a carriage supported on the standard and having a portion extending from one side, an arm lying in a plane at one side of the standard and having its inner end bent at right angles and pivotally secured to the extended portion of the carriage, and a swiveled clasp on the outer end of the arm adapted to support the telephone-receiver.

2. The combination with the receiver and mouthpiece of a telephone, of a holding device for the receiver said device comprising a stand and a vertical standard supported thereon, a carriage adjustably secured to the standard and having one portion extended and provided with stops, an arm pivoted to said extended portion of the carriage and extending crosswise of the holder and thence bent to extend substantially parallel with the longitudinal axis of the telephone-mouthpiece, said crosswise-extending portion of the arm being horizontally slidable relative to the carriage and said other portion of said arm being formed of sections slidable one relative to the other, and a means on the outer end of the arm for supporting the telephone-receiver, said stops limiting the movement of the arm in either direction beyond the horizontal.

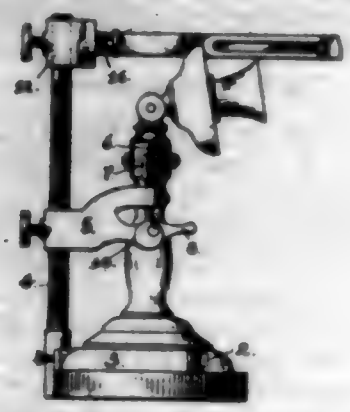
815,753. TELEPHONE ATTACHMENT. JOSEPH SILVERMAN, San Francisco, Cal. Original application filed Jan. 25, 1905, Serial No. 242,630. Divided and this application filed Nov. 22, 1905. Serial No. 288,708.

Claim.—1. The combination with a telephone of an attachment therefor having means for holding down the hook, said means including an adjustable arm carrying a vertically-reciprocating part to embrace the hook, a spring on said arm operating on the hook in opposition to its tendency to lift, and means for reciprocating said part in opposition to said spring.

2. The combination with a telephone of means for holding down the hook comprising a vertically-reciprocating rest for the hook, a support for said rest and means including a pivoted cam-finger for reciprocating said rest.

3. The combination with a telephone and the hook thereof, of a

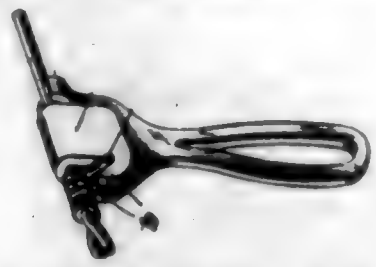
stand for the telephone, a vertical standard supported on the stand, a part adjustable on said standard, and means on said part including an oscillating cam for operating the telephone-hook.



4. The combination with a telephone and the hook thereof, of a vertical standard, a part adjustable on said standard, means normally acting to hold the hook down, and means including a cam-finger to lift the hook.

5. The combination with a telephone-hook, of a spring to hold the hook down and means acting in opposition to the spring to lift the hook, said lifting means including a pivoted cam member.

815,754. WIRE-SPLICER. DAVID C. SMITH, New York, N. Y. Filed Aug. 15, 1904. Serial No. 220,837.



Claim.—1. A wire-splicer comprising a shank having a return-bend or hook for holding or grasping the dormant wire, a lateral shoulder at one side thereof for engaging the wire to be wound, and a rigid seat or abutment for the dormant wire at its side opposite said shoulder adapted to hold said wire seated in the bend of the hook during a joining operation.

2. A wire-splicer comprising a shank having a return-bend or hook for holding or grasping the dormant wire, a shoulder at one side of said bend for engaging the wire to be wound, and a hook at the opposite side of said bend separated from the main hook or bend and opening in a reverse direction, whereby the tool can be applied to the dormant wire by holding it longitudinally of said wire, receiving the wire between the hooks, then turning the tool to seat the wire in both hooks.

3. A tool for use in splicing or joining wires, the same comprising a shank having oppositely-opening hooks side by side and extending in reverse directions, said hooks being of suitable depth and width and separated by a suitable space to admit and hold a plurality of wires one upon another and thus serve as a clamp.

4. A wire-splicer comprising a shank having a hook for holding or seating the dormant wire therein, means at one side of said hook for engaging and coiling the wire to be wound, and a rigid non-movable stop for preventing the dormant wire from leaving the hook.

5. A wire-splicer comprising a shank having a hook for holding the dormant wire, a coiling device at one side of said hook for engaging the wire to be wound, and a stop or seat for the dormant wire at the opposite side of said hook and separated therefrom and opposed to the seat in the bend of the hook.

6. A wire-splicer comprising a shank having a hook for holding or grasping the dormant wire, a coiling shoulder or device at one side of the hook, and a rigid seat for the dormant wire opposed to the seat in the bend of the hook.

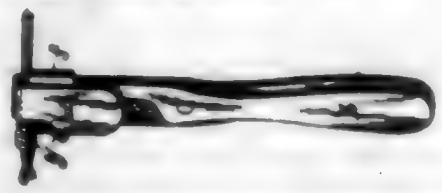
7. A wire-splicer comprising a shank having a return-bend or hook for grasping the dormant wire, a coiling shoulder or device at one side of said hook, and a secondary hook at the opposite side opposed to the main hook.

8. A wire-splicer comprising a shank of flat metal formed with a return-bend or hook for grasping the dormant wire, one or both members of said hook having at one side thereof a coiling shoulder or notch for engaging the wire to be wound, and said shank having at the opposite side of said hook an opposed secondary hook separated from the main hook and extending in a reverse direction.

9. A wire-splicer comprising in an integral implement a shank having a return-bend or hook for holding the dormant wire, a lateral coiling device for engaging the wire to be wound, and means for holding the dormant wire firmly seated in the bend of the hook.

10. A wire-splicer comprising a handle having a hook or bend for holding or grasping the dormant wire; and means preventing direct seating of said wire therein and providing a passage whereby the wire can be seated only by applying the implement thereto at an angle to its correct working position, with the hook or bend arranged longitudinally of said wire, and then turning the implement to working position to seat said wire in the hook or bend; and having a coiling device for engaging and coiling the wire to be wound.

815,755. WIRE-SPLICER. DAVID C. SMITH, New York, N. Y. Filed Aug. 15, 1904. Serial No. 220,838.



Claim.—1. A wire-splicer comprising a shank having a return-bend or hook for holding or seating the dormant wire therein, a lateral shoulder or projection for engaging the wire to be coiled or wound around the dormant wire, and means for opposing the strain exerted upon the dormant wire by the coiling operation and holding the dormant wire firmly seated in the hook.

2. A wire-splicer comprising a shank having a hook for holding or seating the dormant wire therein, a lateral shoulder or projection for engaging the wire to be coiled or wound around the dormant wire, and a movable stop adapted to be opposed to the seat in the hook to form an abutment for holding the dormant wire seated within the hook.

3. A wire-splicer comprising two pivoted members, one of which has a return-bend or hook for holding or seating the dormant wire therein, while the other moves in or between the inner faces of said hook when the members are closed together and forms a stop for locking the dormant wire in the bend of the hook, one of said members having a shoulder or hook for engaging and coiling the wire to be wound.

4. A wire-splicer comprising two pivoted members, one of which has a return-bend or hook for holding or seating the dormant wire therein, with a lateral shoulder or shoulders at one side of said hook for engaging and coiling the wire to be wound, while the other member is adapted to move within the hook and form a stop or abutment for the dormant wire to hold it in place.

5. A wire-splicer comprising two pivoted members, one of which has a hook for holding or seating the dormant wire therein, with a lateral shoulder or shoulders at one side of said hook for engaging and coiling the wire to be wound, while the other member is adapted to move into said hook at its opposite side, to form a stop or abutment to hold the wire in place, and one of said members having a flange, stop or shoulder adapted to limit relative movement of the two members.

6. A wire-splicer comprising a shank having a return-bend or hook for holding or grasping the dormant wire, and a shorter member pivoted to said shank on an axis transverse to the hook or bend and adapted to move within the bend to form a stop or opposed seat for locking the dormant wire in place therein.

7. A tool for use in manipulating wire comprising two pivoted members one of which has a return-bend or hook overlying the other which is shorter to provide a wire-space in the hook and adapted to move into and out of said hook for locking the wire or wires therein and permitting insertion or withdrawal thereof.

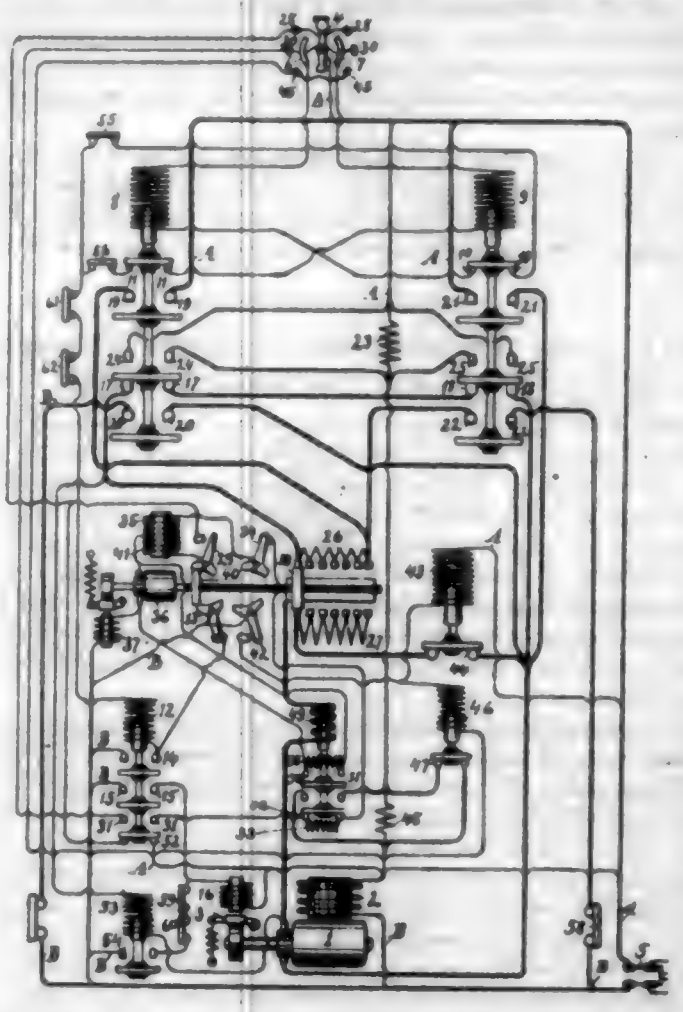
8. A wire-splicer comprising a shank having a hook for grasping or holding the dormant wire, a lateral coiling device, and a movable stop adapted to be brought into a position opposed to the seat in the hook and form a rigid seat for the dormant wire.

9. A wire-splicer comprising a shank having a return-bend or hook, provided with a lateral coiling device, and having a movable stop adapted to close the entrance to the hook for holding the dormant wire seated therein during the coiling operation.

815,756. SYSTEM OF ELECTRICAL CONTROL. FRANK J. SPRAGUE, New York, N. Y., assignor to Sprague Electric Company, a Corporation of New Jersey. Filed Sept. 28, 1896. Serial No. 681,627.

Claim.—1. The combination of a source of supply, a motor, a

controller mechanism therefor embracing a resistance connected in circuit with the armature of the motor and a resistance connected in series with the field of the motor, an operator's switch for actuating the controller mechanism provided with a plurality of contacts, means for connecting the motor to the source of supply and for actuating the controller mechanism for reducing the resistance in circuit with the armature of the motor by closing the operator's switch at one of its contacts, and means for actuating the controller mechanism for decreasing the field strength of the motor by closing the operator's switch at another of its contacts, substantially as described.



2. The combination of a motor, a source of supply, means for connecting the motor to the source of supply, a shunt around the motor, a controller for the motor, and means for opening the shunt when the controller is brought to a predetermined position, substantially as described.

3. The combination of a motor, a source of supply, means for connecting the motor to the source of supply, a shunt around the motor, a controller for the motor, means for varying the resistance of the shunt when the controller is operated, and means for opening the shunt when the controller is brought to a predetermined position, substantially as described.

4. The combination of a motor, a source of supply, a main circuit for connecting the motor to the source of supply, a shunt around the motor when so connected, a controller for the motor, and means for varying the resistance in the main circuit and in the shunt oppositely in the operation of the controller, substantially as described.

5. The combination of a motor, a source of supply, a main circuit for connecting the motor to the source of supply, a shunt around the motor when so connected, a controller for the motor, means for varying the resistance in the main circuit and in the shunt oppositely, and means for opening the shunt when a predetermined resistance has been cut out of the main circuit and a predetermined resistance brought into the shunt, substantially as described.

6. The combination of a motor, a motor-circuit, a controller for the motor, means for operating the controller, means for opening the motor-circuit independently of the controller, and means for restoring the controller to initial position independently of the said controller operating means, substantially as described.

7. The combination of a motor, a motor-circuit, a controller for the motor, an operator's switch in circuit for operating the controller, means for opening the motor-circuit independently of the controller, means for restoring the controller to initial position independently of the operator's switch, and a cut-out switch connected with the controller and closed in certain positions thereof, which, when it is closed, restores control of the controller to the operator's switch, substantially as described.

8. The combination of a motor, controller mechanism therefor, a cut-out switch arranged to be opened when the controller mechanism is moved from initial position, and a bridging contact for closing the circuit around the cut-out switch, the said contact being arranged to be opened automatically when the circuit is opened, substantially as described.

9. The combination of a motor, controller mechanism therefor, a cut-out switch arranged to be opened when the controller mechanism is moved from initial position, a bridging contact for closing the circuit around the cut-out switch, the said contact being arranged to be opened automatically when the circuit is opened, and means for restoring the controller to initial position and closing the cut-out switch, substantially as described.

10. The combination of a motor, controller mechanism therefor, an operator's switch for operating the controller mechanism, a cut-out switch arranged to be opened when the controller mechanism is moved from initial position, a bridging contact for closing the circuit around the cut-out switch, the said contact being arranged to be opened automatically when the circuit is opened, thus taking control from the operator's switch, and means for restoring the controller to initial position and closing the cut-out switch independently of the operator's switch, thus restoring control to the operator's switch, substantially as described.

11. The combination of a translating device, a controller therefor, an electrical pilot mechanism for operating the controller, a main circuit in which the translating device is connected, and means dependent on the strength of the current in the main circuit for arresting the controller by short-circuiting the circuit of the pilot mechanism, substantially as described.

12. The combination of a translating device, a controller therefor, a pilot-motor for moving the controller, a main circuit in which the translating device is connected, and means dependent on the strength of the current in the main circuit for arresting the movement of the controller by short-circuiting the armature of the pilot-motor, substantially as described.

13. The combination of a motor, a controller therefor, a main circuit in which the motor-armature and controller are connected, means for operating the controller, and means dependent on the strength of the current in the main circuit for arresting the movement of the controller, and increasing the strength of the field of the motor, substantially as described.

14. The combination of a motor, a controller therefor, an operator's switch, means connected therewith for operating the controller, a brake for the motor, means connected with the operator's switch for operating the brake, and means independent of the operator's switch for restoring the controller to initial position and for holding the brake off while the motor is slowing down, substantially as described.

15. The combination of a motor, a controller therefor, an operator's switch, means connected therewith for operating the controller, a throttle which varies the operation of the controller independently of the operator's switch, means for restoring the controller to initial position independently of the operator's switch, and means for holding the brake off from the motor while it is slowing down, substantially as described.

16. The combination of a motor, a motor-circuit, a controller for the motor, means for operating the controller, means for opening the motor-circuit independently of the said controller-operating means, a brake for the motor, means for operating the brake in conjunction with the controller, and means for holding off the brake while the motor is slowing down, substantially as described.

17. The combination of a motor, a controller therefor, a cut-out switch which is closed in certain positions of the controller, an operator's switch, a brake for the motor, means for operating the controller and the brake from the operator's switch, means for opening the circuit independently of the controller, and means for closing the cut-out switch to restore control to the operator's switch, substantially as described.

18. The combination of a motor, a controller therefor, an operator's switch, and means connected therewith for operating the controller, a brake for the motor, means connected with the operator's switch for operating the brake, means independent of the operator's switch for restoring the controller to initial position, and means for holding the brake off with current generated by the motor, while the motor is slowing down, substantially as described.

19. The combination of a motor, a controller therefor, an operator's switch, and means connected therewith for operating the controller, a throttle which arrests the operation of the controller independently of the operator's switch, means for restoring the controller

to initial position independently of the operator's switch, and means for holding the brake off with current generated by the motor, while it is slowing down, substantially as described.

20. The combination of a motor, a motor-circuit, a controller for the motor, means for operating the controller, means for opening the motor-circuit independently of the said controller-operating means, a brake for the motor, means for operating the brake in conjunction with the controller, and means for holding the brake off with current generated by the motor, while the motor is slowing down, substantially as described.

21. The combination of an electric motor with means for disconnecting the armature from its source of supply and simultaneously putting it in short circuit to act as a generator, and automatic means for applying a friction-brake when the generator action becomes weak, substantially as described.

22. The combination of an electric motor, with controlling devices for simultaneously disconnecting the armature of the motor from its source of supply and putting it in short circuit to act as a generator, and automatic means for applying a friction-brake when the generator action becomes weak, substantially as described.

23. A combined magnetic and friction brake for electric motors, comprising means for disconnecting the motor-armature from the source of supply and putting it in short circuit to act as a generator, and a magnetic controlling device for releasing the friction-brake when the current in the short circuit slackens to a low value, substantially as described.

24. The combination in an electrical system, of a motor, means for reversing the connection of the motor with the source of supply, means for closing a short circuit around the motor to cause it to act as a generator, and a magnetic controlling device for releasing the friction-brake when the current in said short circuit declines to a low value, substantially as described.

25. The combination in an electrical system, of a motor, means for reversing the connection of the motor with the source of supply, means operative irrespective of the direction of the motor connection with the source of supply for closing a short circuit around the armature thereof, and for causing it to act as a generator, and a magnetic controlling device for releasing the friction-brake when the current in said short circuit declines to a low value, substantially as described.

26. The combination in an electrical system, of a motor, circuit connections for putting the motor on short circuit to act as a generator, means operative at will for establishing the said connections, and a magnetic controlling device for releasing the friction-brake when the current in the short circuit declines to a low value, substantially as described.

27. The combination in an electrical system, of a motor, a source of supply therefor, controlling means for creating a short circuit around the motor to cause it to act as a generator, and a magnetic controlling device for releasing the friction-brake when the current in the short circuit declines to a low value, substantially as described.

28. The combination of a source of current-supply, a motor, controller mechanism therefor, embracing a controller, pilot mechanism for the controller, a set of contacts for controlling the pilot mechanism so arranged that the circuit of the pilot mechanism is automatically interrupted after the controller has reached its extreme running position, an operator's switch having a plurality of contacts, means for bringing the controller to said extreme running position by closing at one of the contacts of the operator's switch, and means for subsequently giving the controller mechanism a different speed relation with the motor by closing at another of the contacts of the operator's switch.

29. In combination with a member to be moved, a manually-controlled switch for controlling the operation of said member electrically, and a second manually-controlled switch for controlling the operation of said member electrically through a contact controlled by the first switch.

30. In combination with a member to be moved, a plurality of switches including a manually-operated switch for controlling the operation of said member electrically and independently of each other, the control-circuit of one of said switches being controlled by the other switch.

31. In combination, a motor, a plurality of switches each of which controls the operation of said motor in like direction or directions, and means associated with one of said switches for governing the control-circuit of another of said switches.

32. In combination, a motor, a plurality of switches each of which controls the operation of said motor in like direction or directions, and a contact arranged in the control-circuit of one of said switches and controlled by another of said switches.

33. In combination, a motor, a plurality of switches each of which independently controls the operation of said motor in like direction or directions, and a contact arranged in the control-circuit of one switch and controlled by another switch.

34. In combination, a motor, and a pair of switches for controlling the operation of said motor, each of which switches controls said motor for forward and reverse operation through a contact controlled by the other switch.

35. In combination, a motor, a pair of switches for controlling the operation thereof in like direction or directions independently of each other, and a contact in the control-circuit of one of said switches arranged to be closed when the other switch is in its inoperative position.

36. In combination, a motor, a pair of switches for controlling the operation thereof in like direction or directions independently of each other, and a contact in the control-circuit of each of said switches arranged to be closed when the other switch is in its inoperative position.

815,757. DEVICE FOR STRAIGHTENING AND LEVELING RAILS. HAROLD M. STARK, Fort Wayne, Ind. Filed Apr. 19, 1905. Serial No. 256,470.



Claim.—1. In a device for straightening rails, a clevis comprising a pair of links hinged directly together at their upper ends, a pin designed to be inserted through the lower ends of both of said links, and means for supporting said clevis on a rail, substantially as described.

2. In a device for straightening rails, a clevis comprising a link bent over at its upper end, a link hinged directly to said end and a pin designed to be inserted through the lower ends of both of said links, substantially as described.

3. In a device for straightening rails, a clevis comprising a link terminating in an eye at each end and its upper end bent over and extended downward, a link terminating in an eye at each end and the eye at its upper end hinged directly to the eye at the upper end of the first-mentioned link and at an angle thereto, and a pin designed to be inserted through the eyes at the lower ends of both of said links, substantially as described.

4. In a device for straightening rails, a clevis comprising links hinged directly together and having eyes at their upper ends at an angle to each other, eyes at their lower ends parallel to each other and a pin designed to be passed through and engage the eyes on the lower ends of said links, substantially as described.

815,758. SCREW-HOLDING SCREW-DRIVER. LABOY S. STARRETT, Athol, Mass., assignor to The L. S. Starrett Co., Athol, Mass., a Corporation of Massachusetts. Filed Sept. 14, 1904. Serial No. 224,366.



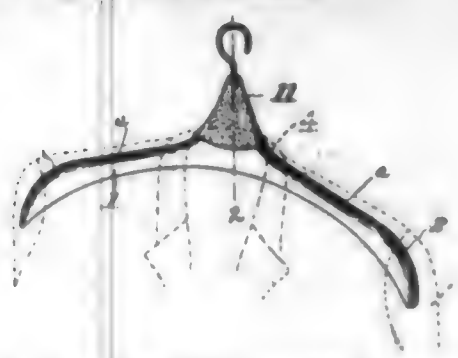
Claim.—1. In a screw-driver, the spindle with terminal bit, in combination with a pair of elastic fingers 13 connected by a neck 14 fitting adjustably on the spindle, such fingers at their free ends lying normally parallel with the spindle and having inwardly-turned tips, and being formed near said neck with convex bows 15, the extremities of which, when compressed, bear on the spindle and open said tips, substantially as set forth.

2. In a screw-driver, the spindle with terminal bit, in combination with a pair of elastic fingers connected by a cylindrical neck integral with said fingers and severed longitudinally along one side, such fingers having straight forward portions with inward-turned tips, a supporting-ring encircling them centrally, and convex bows between said ring and neck, said bows bearing terminally on the spindle and serving, when compressed thereon, to spread or open out the free ends of the fingers, substantially as set forth.

3. In a screw-driver, the hollow barrel provided internally with a frictional device and fixed socket-piece, to respectively secure the spindle frictionally to and for rotation with the barrel, in combination with a spindle removable from said parts and with a pair of elastic fingers mounted thereon, such fingers having free ends normally parallel to the spindle, and convex bows the extremities of which bear upon the spindle, the tips of said fingers being adapted to be opened by compression of the bows, substantially as set forth.

4. In a screw-driver, the spindle with a terminal bit, in combination with a pair of oppositely-disposed elastic fingers slidably mounted on the spindle, such fingers having at their outer ends inwardly-turned tips, and their inward portions being formed with integral convex bows, the extremities of which when compressed bear on the interposed spindle as a fulcrum, to open said tips, substantially as set forth.

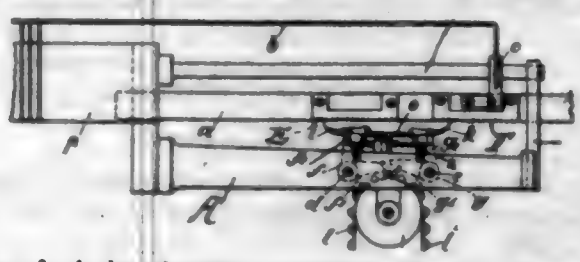
815,759. COAT-HANGER. JACOB M. STERN, Washington, D. C. Filed Sept. 29, 1905. Serial No. 280,602.



Claim.—1. A garment-hanger comprising a body provided with a projection intermediate its ends, and a suspending-hook secured to the body, the sides of the projection flaring downwardly from substantially a point to receive the neck of the garment below the apex of the projection and hold the said neck out of engagement with said hook, the ends of the body upon opposite sides of the projection having their upper faces directed downwardly upon substantially straight lines for coöperation with said projection to hold the garment in contact with said upper face portions throughout their lengths.

2. A garment-hanger, comprising a body provided with a projection intermediate its ends, and a suspending-hook secured to the body, the sides of the projection flaring downwardly from substantially a point to receive the neck of the garment and hold the latter out of engagement with the suspending-hook, the ends of the body upon opposite sides of the projection being directed downwardly upon substantially straight lines for coöperation with said projection to hold the garment in contact with said upper face portions throughout their lengths, and a covering fitted over the projection.

815,760. LAMB KNITTING-MACHINE. HEINRICH STOLL, Jr., Reutlingen, Germany. Filed Jan. 8, 1903. Serial No. 138,239.



Claim.—1. A thread-guide, a carrier-bar therefor, having oppositely-facing racks, pawls for engaging said racks, and a pattern-chain controlling the movement of the pawls.

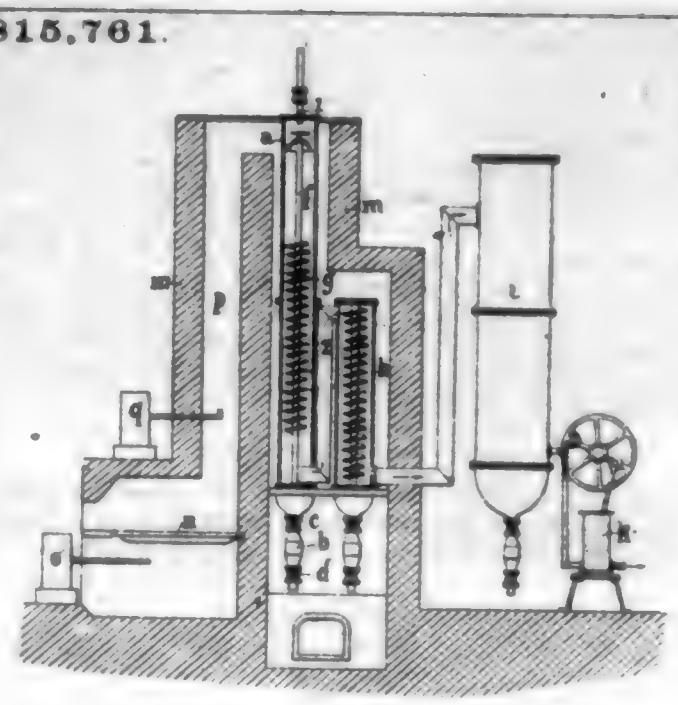
2. In a Lamb knitting-machine the combination with a pattern-chain of a thread-guide-shifting bar arranged at right angles thereto with means for reciprocating the same in the direction of its length, comprising bell-crank levers supported on suitable shafts, one arm of said bell-crank levers being adapted to engage the pattern-chain and the other arm having pawls adapted to engage the teeth on the sliding block, said teeth being arranged as shown, substantially as described.

815,761. GLYCERIN-STILL. CHARLES SUDRE, Paris, France. Filed Dec. 30, 1903. Serial No. 137,127.

Claim.—1. An apparatus for the purpose described comprising a vertical column, a stationary internal helix therein, a connected purifying-column at the side, a stationary helix in said purifying-column, and a suction-pump and condenser connected to said purifying-column, substantially as described.

2. An apparatus for the purpose described comprising a vertical column having a chamber at the bottom, a stationary internal helix therein, a smaller purifying-column at the side having its lower end connected to the top of the first column, a stationary helix in said purifying-column, and a suction-pump and condenser connected to said purifying-column, substantially as described.

815,761.



815,762. RAIL-JOINT. NICHOLAS SUMIC, Allegheny, Pa. Filed July 6, 1905. Serial No. 268,584.

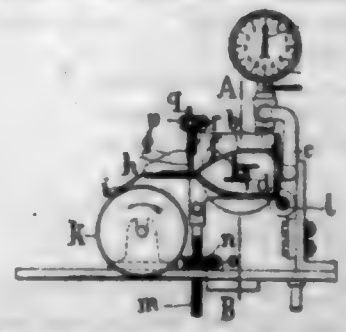


Claim.—1. In a rail-joint, the combination with two sections of rails, of fish-bars, base-plates carried by said fish-bars, the base-plate of one of said fish-bars having a central raised portion and relatively depressed side portions, the base-plate of the other of said fish-bars having a central countersunk portion and side portions elevated relatively to the central portion, said base-plates being adapted to interlock one within the other, means to secure said fish-bars together upon a suitable road-bed, substantially as described.

2. Fish-bars of the character described, consisting of web portions having outwardly-extending base portions and inwardly-extending base-plates carried by said base portions, one of said base-plates having a central raised portion and relatively countersunk side portions formed therein and the other of said base-plates having a central depressed portion and relatively raised side portions, the said base-plates being adapted to interlock with one another, substantially as described.

3. A rail-joint comprising two fish-bars, one of said fish-bars having a base-plate with a central raised portion and relatively depressed side portions, said raised central portion having a projecting tongue and said depressed side portions having tongues, the other of said fish-bars having a base-plate with a depressed central portion adapted to receive the tongue on the central portion of the first-named fish-bar, substantially as described.

815,763. APPARATUS FOR SUPPLYING COLORING MATERIAL IN PAPER-MAKING MACHINES FOR THE MANUFACTURE OF ONE-SIDE-COLORED, CLOUDED-COLORED, AND MARBLED PAPERS. CLEMENS TITTEL, Josefsthal, near Laibach, Austria-Hungary. Filed Oct. 25, 1905. Serial No. 284,371.



Claim.—1. In an apparatus of the class described, an adjustable trough having a spout, means for supplying color solution to said trough, a flexible distributing member connected to said spout, a squeezing-roller mounted directly under the said trough and adapted to contact with said distributing member, an agitating means for throwing the solution in a uniform manner, and a perforated cover mounted in the trough through which the color solution discharges.

2. In an apparatus of the class described, a tipping trough having a spout and sluice, a rotatable roller having vanes forming an agitator and distributer, a cover mounted in said trough and having a plurality of perforations for evenly distributing the substance contained in the trough, means for supplying the substance to the trough, and a squeezing-roller arranged directly under the said spout.

3. In an apparatus of the class described, a tipping trough having a spout and sluice, means for supplying color solution to said trough, a flexible distributing-apron connected to the outer end of said spout, a squeezing-roller in contact with the said apron, means for tipping the said trough, a rotatable member having vanes for uniformly distributing the solution contained in the trough, and a perforated cover for the trough.

815,764. ELECTRIC PLUG CONNECTION. Julius C. Tournier, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 11, 1904. Serial No. 216,999.

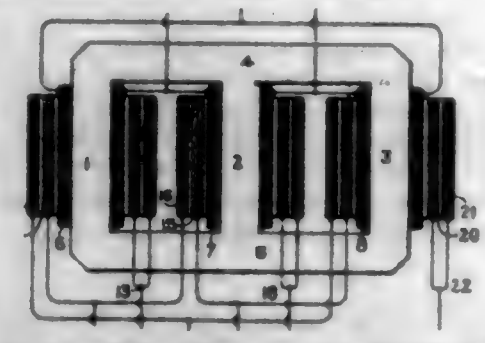


Claim.—1. An electric connecting-plug having a body of insulation, a metallic screw-threaded sleeve surrounding said body and having an internal flange overlapping the end of said body, and an insulating-washer smaller in diameter than said sleeve placed against the end of said body and clamping said flange thereto.

2. The combination with an insulating-body having a cylindrical end portion, of a screw-threaded metallic sleeve inclosing said end portion and having an internal flange at one end abutting against the end of said body, a washer of insulation smaller in diameter than said sleeve, and a longitudinal bolt holding said washer against said flange.

3. In an electric connecting-plug, the combination with a body of insulation, of an external metallic screw-threaded flanged sleeve forming one terminal, a central bolt forming the other terminal and having a head, and a washer of insulation smaller in diameter than said sleeve held by said head against the flange on the sleeve and clamping it against the end of the plug.

815,765. ELECTRIC TRANSFORMER. Matthew O. Troy, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 20, 1904. Serial No. 229,210.



Claim.—1. A multiphase transformer having its magnetic circuits combined in a single structure, and a plurality of secondary coils for each phase, said coils being arranged to supply a three-wire system without unbalancing of voltages by unbalanced loads.

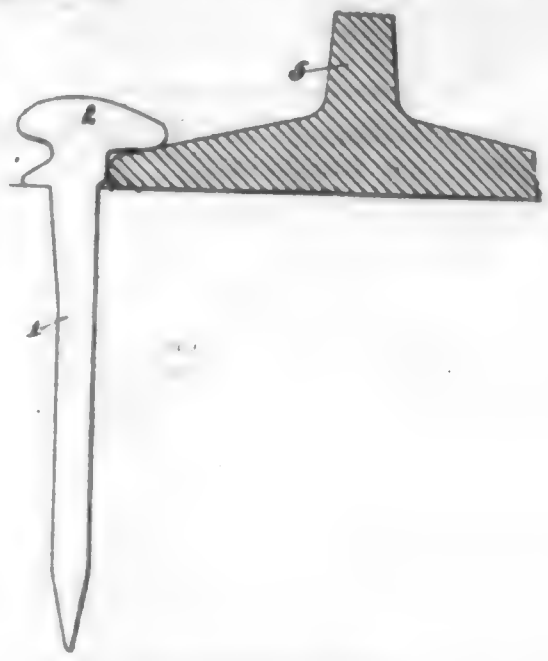
2. A multiphase transformer having its magnetic circuits combined in a single structure, and a plurality of secondary windings for each phase, each of said windings being in substantially the same inductive relation to the corresponding primary winding.

3. A multiphase transformer having its magnetic circuits combined in a single structure, a plurality of secondary windings for each phase, each of said windings having substantially the same inductive relation to the corresponding primary winding, and a multiple conductor system fed by said windings.

4. A multiphase transformer having its magnetic circuits in a single structure, a plurality of secondary windings for each phase, a three-wire system supplied by the secondaries of a given phase, and connections between the secondaries such that balanced voltages are maintained on the three-wire system with balanced or unbalanced loads.

815,766. RAILWAY-SPIKE. David L. Vaughan, Haddonfield, N. J. Filed Feb. 16, 1905. Serial No. 245,822.

Claim.—A railway-spike having the offset immediately below the head, the length of which offset is less than the distance from the under side of said head to the base of a rail, substantially as and for the purpose recited.



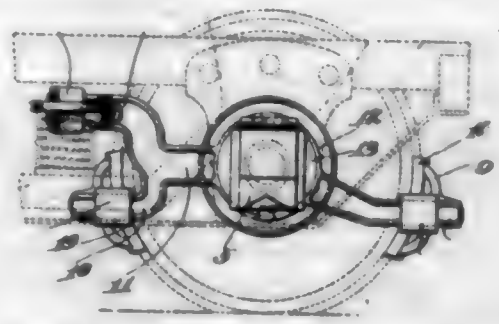
815,767. ADJUSTABLE HAME-CLIP. Furman B. Vorce, Fresno, Cal. Filed Oct. 12, 1905. Serial No. 282,449.



Claim.—1. A blank for a hame-clip comprising a perforated plate of bendable sheet metal of suitable length and width having two spaced tongues at one end and three tongues at the other all struck from the plate, said tongues having perforations corresponding with the perforations in the plate

2. The combination with a hame of a shiftable mounting therefor, comprising a bendable metal plate having foldable tongues at its opposite ends, the tongues at one end bent to form axially-alined separated eyes, a tug-bolt passing through said eyes, said eye-forming tongues embraced by tongues on the opposite end of the plate, clamp-bolts passing through perforations in the tongues and plate and to one side of the hame to cause the clip to grip the hame, and a breast-strap ring retained by another of the said tongues on the plate.

815,768. CAR-BRAKE. William S. Washburn, Brockton, and Edward S. Hills, Boston, Mass. Filed Jan. 16, 1905. Serial No. 241,249.



Claim.—1. In a car-brake, a brake-supporting lever pivotally mounted on an axle-box, and a plurality of brakes sustained by said lever.

2. In a car-brake, a pivotally-mounted brake-supporting lever, and a plurality of brakes sustained by said lever, said brakes being arranged to act on the same car-wheel.

3. In a car-brake, an axle-box having an annular bearing-surface, a brake-supporting lever provided intermediate its ends with a circular bearing to engage the bearing-surface of the axle-box, and a plurality of brakes sustained by said lever.

4. In a car-brake, an axle-box having an annular bearing-surface, a brake-supporting lever provided intermediate its ends with a circular bearing to engage the bearing-surface of the axle-box, and a plurality of brakes sustained by said lever, said brakes being adapted to act on the same car-wheel.

5. In a car-brake, an axle-box having an annular bearing-surface, a brake-supporting lever provided intermediate its ends with a circular bearing or fulcrum portion to engage the bearing-surface of the axle-box and a plurality of brake-supporting arms extending from said bearing or fulcrum portion in opposite directions, and a brake supported by each arm.

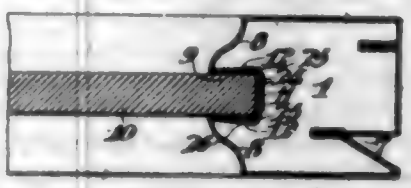
6. A brake-supporting lever for a car-brake provided intermediate of its ends with a circular bearing adapted to engage an annular bearing-flange on the axle-box, said lever having a plurality of brake-supporting arms projecting from said circular bearing.

7. A brake-supporting lever for a car-brake provided intermediate of its ends with a circular bearing adapted to engage an annular bearing-flange on the axle-box, said lever having a plurality of brake-supporting arms projecting from said circular bearing on opposite sides thereof.

8. A brake-supporting lever for a car-brake shaped to present intermediate of its ends a curved bearing to engage and turn about a bearing on an axle-box and provided with a plurality of brake-supporting arms.

9. A brake-supporting lever for a car-brake shaped to present intermediate its ends a curved bearing to engage and turn about a bearing on an axle-box and provided with a plurality of oppositely-extending brake-supporting arms.

815,769. **SHEET-METAL WINDOW-SASH.** JOHN W. WATKINS, Philadelphia, Pa. Filed June 14, 1904. Serial No. 212,452.



Claim.—1. In a sheet-metal window-sash, a muntin comprising two bent and interlocked pieces of sheet metal, one piece of sheet metal forming all of the muntin upon one side of the pane-grooves and another piece forming all of the muntin on the other side of the pane-grooves, and the two being interlocked by the clenching of the portions which project between the panes, to form the bottoms of the grooves, substantially as set forth.

2. In a sheet-metal window-sash a member comprising a pane-groove having undercut straight sides and ogee-curved surfaces outwardly adjacent to said straight sides of the groove, whereby upon the straightening of said surfaces under the influence of heat, the grip of the edges of the groove upon the pane is increased, substantially as set forth.

3. In a sheet-metal window-sash a muntin having pane-grooves comprising flat bottoms and undercut straight sides spaced to snugly embrace a pane of glass; an ogee-curved surface upon the muntin outwardly adjacent to the sides of the grooves whereby upon the straightening of said surface under the influence of heat the grip of the edges of the groove upon the pane is increased, substantially as set forth.

4. In a sheet-metal window-sash, the combination of a muntin provided at the rail-abutting end with vertical projecting flaps formed by extension of the side walls of the grooves of the muntin; and a rail provided with vertical companion slots at both interior corners of the pane-groove for the reception of the flaps projecting from the muntin; whereby the muntin may be united to the rail by the clenching of the flaps within the rail, substantially as set forth.

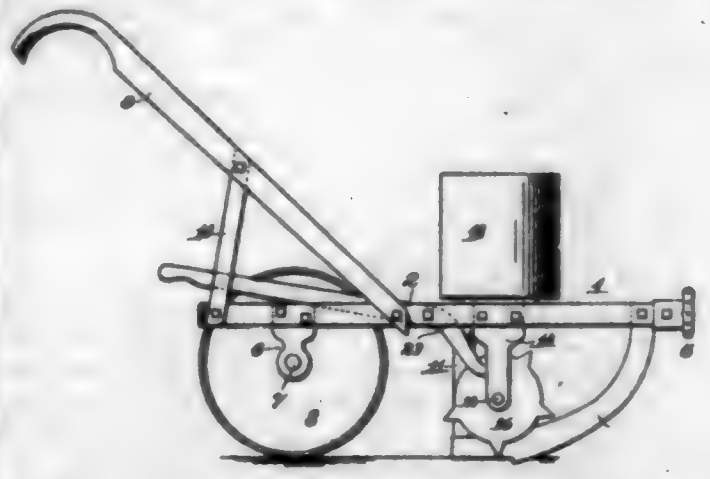
815,770. **MAIL-BOX.** WILLIAM E. WESTON and GEORGE WESTON, Kansas City, Mo. Filed Jan. 6, 1905. Serial No. 239,946.



Claim.—1. In a mail-box of the character described rectangular in configuration, comprising sides, bottom and top, a front end and a rear end, a door in the front end and a signaling-flap adjustably mounted to the rear end, cross-beams supporting the bottom of the box, a helical spring secured to one of the cross-beams at one end, a chain communicating from the helical spring to the inside of the door at the front end of the box adapted to close the door when open; substantially as described.

2. In a mail-box of the character described comprising a body portion rectangular in configuration, a front end and a rear end, a door in the front end and an adjustable flap mounted to the rear end, a tube passing through and engaging the front end and the rear end of the box, a chain secured to the flap at the rear end passing through the tube to the front end; substantially as described.

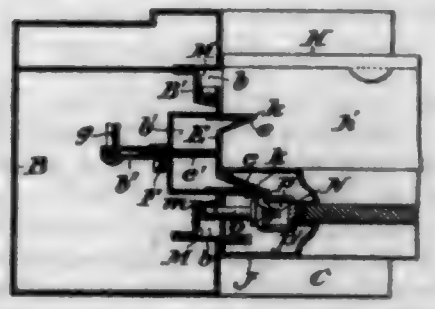
815,771. **PLANTER.** PHYLANDER C. WHITE, Memphis, Tenn., assignor of one-half to William S. Brian, Memphis, Tenn. Filed Aug. 20, 1905. Serial No. 276,190.



Claim.—1. The herein-described planter comprising the frame having the depending standards near its front and rear ends, the covering-wheel having its bearings in the rear standards, the hopper secured on the frame above the front standards and having the revoluble seed-dropping element, the vertical shaft to which said seed-dropping element is attached, the gear shiftable on said vertical shaft, the lever to shift said gear and having its fulcrum on the said frame, the furrow-opening runner having its front end attached to the front end of the frame and provided at its rear end with the seed-tube, the shaft having its bearings in the front standards and provided with the gear for engagement with and disengagement by the shiftable gear, and the pulverizing-disks on said shaft and opposite and proximate to the discharge end of the seed-tube.

2. A planter having pulverizing-disks, a shaft to which said disks are attached, a gear-wheel on said shaft, a revoluble seed-dropping element, a vertical shaft depending therefrom, a shiftable gear on said vertical shaft, and a lever, carried by the planter and connected to the shiftable gear, to move the latter into or out of engagement with the gear on the disk-shaft.

815,772. **AUTOMATIC FIREPROOF WINDOW.** ELEAZAR T. WILKINSON, Philadelphia, Pa. Filed Mar. 13, 1905. Serial No. 249,704.



Claim.—1. In a metallic window the combination of sashes fitted at their sides with projecting shoes; pivotal connection between said shoes and sashes; runways formed in the facings of the jamb and receiving the shoes; and a telescopic slideway movable within said facing between the runways but forming no part thereof, which slideway when projected engages the sashes and when retracted is wholly free therefrom, substantially as described.

2. In an automatically-closing non-combustible window, the combination of the jamb having runways formed thereon, and also a collapsible slideway telescoping therein; sashes fitted with project-

ing shoes entering the runways; pivotal connection between said shoes and the sashes; an overweight for the upper sash, and an underweight for the lower sash; grooves in the sides of the sashes which are engaged by the collapsible slideway when projected and freed from it when retracted; means for causing the shoes to normally exert pressure effective to maintain their sashes in open position; and a fusible plug by the melting of which under the influence of undue heat said effective pressure upon the shoes is released, and the sash is allowed to automatically close, substantially as described.

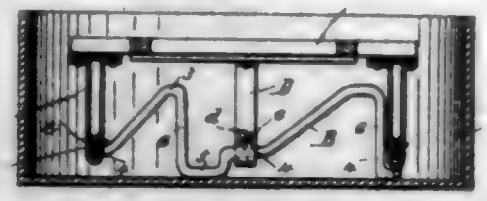
3. A metallic window-sash, having a rail formed of sheet-metal pieces, the inside and outside pieces having a space between their edges for the insertion of the pane; in combination with an edge piece which is united to the other two only by the interfolding of their edges, and held in place by flaps bent out from the side pieces, whereby it is capable of being slid endwise out of the sash for the purpose of removing or inserting a pane, substantially as described.

4. In a sheet-metal window, a jamb with a weight-space; a seat occupying a median position in the facing of the jamb, having sides and back which completely separate it from the weight-space; two sashes; and a single telescopic slideway fitting said seat and capable of projection therefrom; said slideway when projected engaging both of the sashes, and when retracted not entering the weight-space, substantially as described.

5. The combination with revolving window-sashes, of a duplex telescopic wind-stop and guideway-strip located in a central vertical groove of the face of each window-frame stile and having a rib for each sash respectively, said sashes respectively grooved for coaction therewith, and means for telescopically adjusting the stops, substantially as described.

6. The combination with revolving window-sashes, of frame-stiles having a central vertical stop-groove, duplex telescopic wind-stop and guideway-strips located in said grooves and having a rib along each edge of the face, and sash-stiles having a groove in the face coacting with the ribs of the guideway-strip respectively, said grooves being in the edges of said faces contiguous to the plane of the center of the guideway-strips substantially as described.

815,773. COOLING APPARATUS. MATT L. WOLFE, Miamisburg, Ohio. Filed Aug. 26, 1905. Serial No. 275,965.



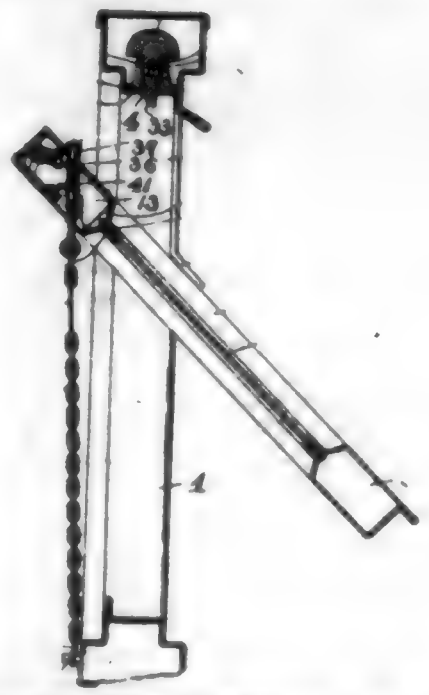
Claim.—1. In cooling apparatus, the combination, with a tank, of inclined tracks formed of bars provided with stops and supported above the bottom of the said tank, a platform, loop-shaped brackets secured to the said platform and passing under the said bars, and engaging with the said stops and rollers, journaled in the said brackets and resting on the said bars.

2. In cooling apparatus, the combination, with a tank, of inclined tracks formed of bars having stops and horizontal portions at their ends and feet which rest on the tank bottom and support the said horizontal portions above the tank bottom, a platform, loop-shaped brackets secured to the said platform and passing under the said bars, and engaging with the said stops and rollers journaled in the said brackets and resting on the said bars.

815,774. GRAVITY-BOLT AND FUSIBLE CONNECTION FOR METALLIC FRAMES AND WINDOWS THEREFOR. AUGUSTUS H. WOODBURY, Irvington, N. J., assignor of one-half to Frank P. Smith, Newark, N. J. Filed May 12, 1905. Serial No. 260,149.

Claim.—1. The combination, with a metallic frame and a fixture, as a window, door, or the like, adapted to oscillate in said frame, said fixture being provided with an upper hollow portion, of a locking mechanism in said hollow portion, a slidably-arranged rod extending across said hollow portion, said rod having its respective ends projecting from the opposite sides of said fixture, a fusible nut on one of said projecting ends of the rod, and a flexible connection upon the other projecting end of said rod for actuating said locking means, substantially as and for the purposes set forth.

2. The combination, with a metallic frame and a fixture, as a window, door, or the like, adapted to oscillate in said frame, said fixture being provided with an upper hollow portion, of a locking mechanism in said hollow portion, a slidably-arranged rod extending across said hollow portion, said rod having its respective ends projecting from the opposite sides of said fixture, a fusible nut on one of said projecting ends of the rod, a flexible connection upon the other projecting ends of said rod for actuating said locking means, and a second fusible device in said flexible connection, substantially as and for the purposes set forth.



3. The combination, with a metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, of means for holding said fixture in an open position in said frame, comprising a rod extending through said frame, said rod having a screw portion, a screw-threaded ring thereon, a nut-shaped member slipped over said screw-threaded ring, and a layer of fusible metal between said screw-threaded ring and said nut-shaped member, substantially as and for the purposes set forth.

4. The combination, with a metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, of a flexible connection upon the one side of said frame and fixture for holding said fixture in an open position in said frame, a fusible device in said flexible connection, and a second fusible device arranged against the opposite and outer side of said fixture for automatically closing said fixture when either of said fusible devices is melted, substantially as and for the purposes set forth.

5. The combination, with a metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, of a flexible connection upon the one side of said frame and fixture for holding said fixture in an open position in said frame, a fusible device in said flexible connection, and a second fusible device comprising a rod extending laterally through said fixture from the front to the rear or outer side of the same, and a fusible nut upon the free end of said rod which extends from said rear or outer side of the fixture, all arranged substantially as and for the purposes set forth.

6. The combination, with a metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, of a flexible connection upon the one side of said frame and fixture for holding said fixture in an open position in said frame, a fusible device in said flexible connection, and a second fusible device comprising a rod extending laterally through said fixture, from the front to the rear or outer side of the same, said rod having a screw portion which extends from said rear or outer side of the fixture, a screw-threaded ring thereon, a nut-shaped member slipped over said screw-threaded ring, and a layer of fusible metal between said screw-threaded ring and said nut-shaped member, substantially as and for the purposes set forth.

7. The combination, with a hollow metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, and a fusible device for automatically closing said fixture when said fusible device is melted, substantially as and for the purposes set forth.

8. The combination, with a hollow metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame,

said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, and a fusible nut upon the free end of said rod for automatically closing said fixture when said fusible nut is displaced, substantially as and for the purposes set forth.

9. The combination, with a hollow metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part, provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, said rod having a screw portion, a screw-threaded ring thereon, a nut-shaped member slipped over said screw-threaded layer, and a ring of fusible metal between said screw-threaded ring and said nut-shaped member, substantially as and for the purposes set forth.

10. The combination, with a hollow frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, a holding-nut upon the upper end of said rod, and a fusible nut upon the upper end of said rod, and a flexible connection secured to the lower end of said rod, substantially as and for the purposes set forth.

11. The combinations, with a hollow frame, and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, a holding-nut upon the upper end of said rod, and a flexible connection secured to the lower end of said rod, and a fusible device in said flexible connection, substantially as and for the purposes set forth.

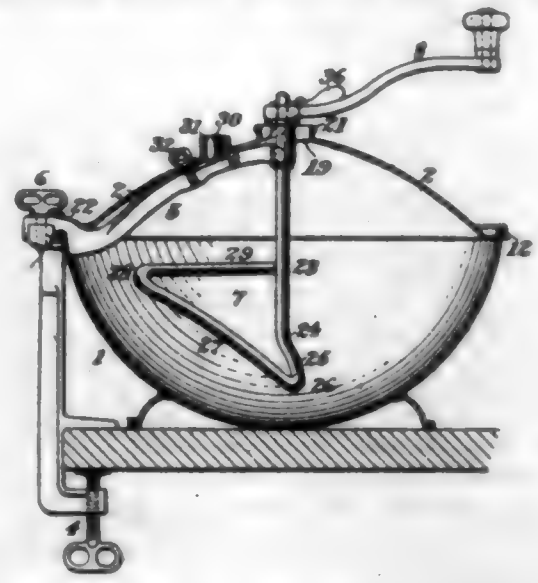
12. The combination, with a hollow frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, a flexible connection secured to the lower end of said rod, a fusible device in said flexible connection, a screw portion upon the upper end of said rod, and a fusible nut on said screw portion for automatically closing said fixture when said nut is displaced, substantially as and for the purposes set forth.

13. The combination, with a hollow frame and a fixture, as a window, door, or the like, pivotally connected with said frame, said fixture having a hollow part provided with guiding portions, of a tube movably arranged in said guiding portions, a latch in said hollow part, means connected with said tube for actuating said latch, a gravity-bolt in said hollow frame, and means connected with said tube for actuating said latch and raising the said bolt from holding engagement with the pivoted fixture and holding said fixture in an open position in said frame, comprising a rod extending through said tube, a flexible connection secured to the lower end of said rod, a fusible device in said flexible connection, a screw portion upon the upper end of said rod, and a fusible nut on said screw portion for automatically closing said fixture when said nut is displaced, said nut comprising a screw-threaded layer, a nut-shaped member, and a ring of fusible metal between said screw-threaded ring and said nut-shaped member, substantially as and for the purposes set forth.

14. The combination, with a metallic frame and a fixture, as a window, door, or the like, pivotally connected with said frame, of means for holding said fixture in an open position, comprising a rod extending laterally through the said fixture and having its end portions projecting from the opposite sides of the fixture, a flexible fastening connection attached to one of the said projecting ends of the rod, a fusible nut upon the opposite projecting end of said rod, and a rain-shield upon the said frame, beneath which the said nut is located when the fixture is closed, substantially as and for the purposes set forth.

15. The combination, with a metallic frame and a fixture, as a window, door, or the like, adapted to oscillate in said frame, said fixture being provided with an upper hollow portion and having guiding members in its opposite sides, one of said guiding members being located higher than the other member, a rod slidably and removably arranged in said guiding members, said rod extending angularly across said hollow portion of the fixture and having its opposite ends extending from the opposite sides of said fixture, a retaining means of a fusible metal upon the upper projecting end of said rod, and a fixture-actuating means attached to the lower projecting end of said rod, substantially as and for the purposes set forth.

815,775. DOUGH MIXER AND KNEADER. OLIVER D. WOODRUFF, Southington, Conn. Filed July 21, 1905. Serial No. 270,636.

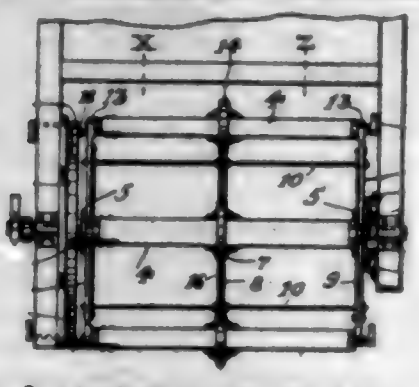


Claim.—1. A dough mixer and kneader, consisting of the combination of a concave pan; a vertical standard; a radial bracket, removably clamped at its outer end to the top of that standard, with a segment of the edge of the pan rigidly held between them, and provided at its inner end with a bearing; and a rotor, consisting of a loop, having the vertical axial reach 23; and the upper horizontal reach 29, below the plane of the edge of the pan; and the inclined reach 27, lower than the reach 29, and rearward thereof; and the lower reach 25, lower than the reach 27, and more nearly horizontal than it; those reaches being connected by the bends 24, 26, and 28; and that rotor having a vertical shank turning in the bearing at the inner end of the radial bracket, and being turned by a crank fixed to that shank; all substantially as described.

2. A dough mixer and kneader, consisting of the combination of a concave pan; a vertical standard; a radial bracket, removably clamped at its outer end to the top of that standard, with a segment of the edge of the pan rigidly held between them, and provided at its inner end with a bearing, and having its inner part detachably connected with its outer part; and a rotor, consisting of a loop, having the vertical axial reach 23; and the upper horizontal reach 29, below the plane of the edge of the pan; and the inclined reach 27, lower than the reach 29, and rearward thereof; and the lower reach 25, lower than the reach 27, and more nearly horizontal than it; those reaches being connected by the bends 24, 26, and 28; and that rotor having a vertical shank turning in the bearing at the inner end of the radial bracket, and being turned by a crank fixed to that shank; all substantially as described.

3. In a dough mixer and kneader; a rotor consisting of a loop, having the vertical axial reach 23; and the upper horizontal reach 29, below the plane of the edge of the pan; and the inclined reach 27, lower than the reach 29, and rearward thereof; and the lower reach 25, lower than the reach 27, and more nearly horizontal than it; those reaches being connected with the bends 24, 26, and 28; and that rotor having a vertical shank, adapted to turn in an axial bearing above the loop; all substantially as described.

815,776. **FEATHERING PADDLE-WHEEL.** Edwin A. Young, Mitchell, S. D. Filed Aug. 21, 1905. Serial No. 275,023.



Claim.—1. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of guiding devices for controlling the feathering movements of the paddles in their descent, tripping devices for starting the feathering movements for the ascent and guiding devices for directing the further edgewise movements of the paddles, substantially as set forth.

2. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of guiding devices for causing the paddles to enter and rise from the water edgewise and for turning them flatwise and so maintaining them during their working movements, and tripping devices for returning them to edgewise position at the end of their working movements, substantially as set forth.

3. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of guide-rollers and wipers carried by the paddles, guides with which the rollers engage to cause the paddles to enter the water edgewise, turn to flatwise working positions and emerge edgewise, and a trip with which the wipers engage to turn the paddles from flatwise positions at the end of their working movements, substantially as set forth.

4. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of guide-rollers on the outer edges of the paddles at one end of the wheel and wipers on the axes of the paddles at the other end of the wheel, guides with which the rollers engage to cause the paddles to enter the water edgewise, turn to flatwise working positions and emerge edgewise, and a trip with which the wipers engage to turn the paddles from flatwise positions at the end of their working movements, substantially as set forth.

5. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of guide-rollers on the outer edges of the paddles at one end of the wheel and wipers on the axes of the paddles at the other end of the wheel, a fixed oval-shaped guide and at its opposite sides upper and lower gravitating guide members with which the rollers successively engage to cause the paddles to enter the water edgewise, turn to flatwise working positions and emerge edgewise, and a trip with which the wipers engage to turn the paddles from flatwise positions at the end of their working movements, substantially as set forth.

6. In a feathering paddle-wheel, the combination with a shaft and a series of axially-pivoted paddles revolved thereby, of radial arms providing bearings for the paddle-axes, supports for intermediate portions of the paddles consisting of guide-rings within which the paddles turn on roller-bearings, and radial arms connected to the shaft for carrying the guide-rings, substantially as set forth.

815,777. **BURNER FOR INCANDESCENT GAS-LIGHTING.** David Anderson, Westcliff-on-Sea, England. Filed Jan. 24, 1905. Serial No. 242,574.



Claim.—1. An attachment for incandescent gas-lighting, comprising supporting and supported members, and radial helical springs engaging said members and sustaining the supported member, at least one of said engagements being adjustable, substantially as described.

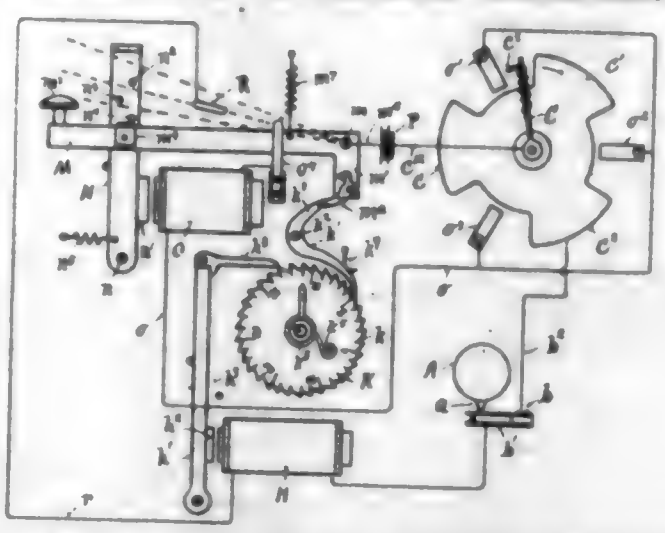
2. An attachment for incandescent gas-lighting, comprising supporting and supported members, and radial helical springs adjustably engaging both of said members, substantially as described.

3. An attachment for incandescent gas-lighting, comprising supporting and supported members, radial helical springs adjustably engaging one at least of said members and sustaining the supported member, and a burner-head carried by the supported member, substantially as described.

4. An attachment for incandescent gas-lighting, comprising supporting and supported members, and radial helical springs sustaining the supported member, the end helices positively engaging said members, substantially as described.

5. An attachment for incandescent gas-lighting, comprising supporting and supported members, and radial helical springs sustaining the supported member, the end helices adjustably engaging one at least of said members, substantially as described.

815,778. **ELECTRICAL SPEED-INDICATOR.** Robert Anderson, Cincinnati, Ohio. Filed Feb. 16, 1905. Serial No. 245,836.



Claim.—1. In a speed-indicator for rotating shafts the combination of an electrical circuit, a switch adapted to be actuated by the rotation of the shaft to make and break the circuit by the revolution thereof, an indicator in the circuit to register each time it is completed, a chronometer with a moving hand interposed in the circuit, one end of the circuit broken by the chronometer being connected to the hand thereof and a contact-piece in the path of the hand and connected to the other broken end of the circuit.

2. In a speed-indicator for rotating shafts the combination of an electrical circuit, a switch adapted to be actuated by the rotation of the shaft to make and break the circuit by the revolution thereof, an indicator in the circuit to register each time the circuit is completed, a chronometer with a moving hand interposed in the circuit, one end of the circuit broken by the chronometer being connected to the hand thereof, a contact-piece in the path of the hand connected to the other broken end of the circuit, and a switch for making and breaking the circuit adapted to be actuated by the operator.

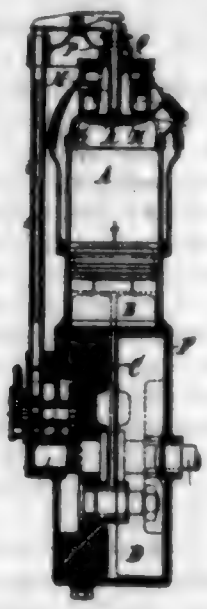
3. In a speed-indicator for rotating shafts the combination of an electrical circuit, a switch adapted to be actuated by the rotation of the shaft to make and break the circuit by each revolution thereof, an indicator and a chronometer with a moving hand interposed in the circuit, one end of the circuit being broken by the chronometer being connected to the hand thereof and a series of contact-pieces regularly placed in the path of the hand and connected to the other broken end of the circuit.

4. In a speed-indicator for rotating shafts the combination of an electrical circuit, a switch adapted to be opened and closed by the revolution of the shaft, a bell interposed in the circuit, a chronometer with a moving hand interposed in the circuit, one of the broken ends of the circuit being coupled to the hand of the chronometer and a contact-piece in the path of the hand and connected to the other broken end of the circuit and a switch to be operated by the operator to make and break the circuit.

5. In a speed-indicator for a revolving shaft the combination of an electrical circuit, a switch consisting of a post and a spring standing normally out of contact with the post interposed in the circuit, a tooth upon the shaft for carrying the spring into contact with the

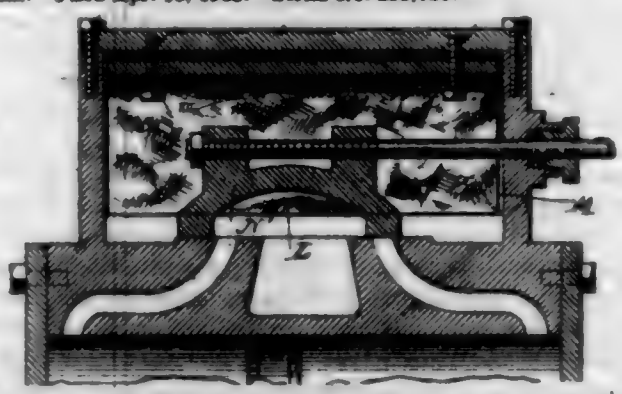
post, a chronometer with a moving hand interposed in the circuit, one end of the broken circuit being connected to the hand of the chronometer, a contact-piece in the path of the hand connected to the other broken end of the circuit, and an indicator for indicating each time the circuit is completed.

815,779. VALVE-GEAR FOR EXPLOSION-ENGINES. LOUIS P. A. A. BAILLEUL, Paris, France. Filed Sept. 27, 1904. Serial No. 226,173.



Claim.—Valve-gear for explosion-engine, comprising inlet and exhaust valves, said valves being superposed and having a common seat, a sleeve for the exhaust-valve concentric with the stem of the inlet-valve, and means for working these valves whereby at the induction-stroke the inlet-valve opens alone and the gas enters through the interior f the sleeve of the exhaust-valve, which at the time remains closed to the exhaust, and at the exhaust-stroke the two valves, held one against the other, move together, thereupon exposing the exhaust-outlet.

815,780. HEAT-SCREEN FOR STEAM-CHESTS. DONA C. BAILLY, Real, Minn., assignor of one-half to Samuel H. Barry, Fenton, Minn. Filed Apr. 15, 1905. Serial No. 255,729.



Claim.—1. The combination of a steam-chest, a cover for the chest, a heat-screen for the cover comprising a core of wood, sheets of asbestos on each face of the core, sheets of canvas covering the asbestos, a sheet of fiber covering the internal face of the internal sheet of canvas, and provided with depending portions, a perforated metallic sheet upon the face of the sheet of fiber and within the depending portions, and screw-threaded bolts for securing the heat-screen to the steam-chest cover.

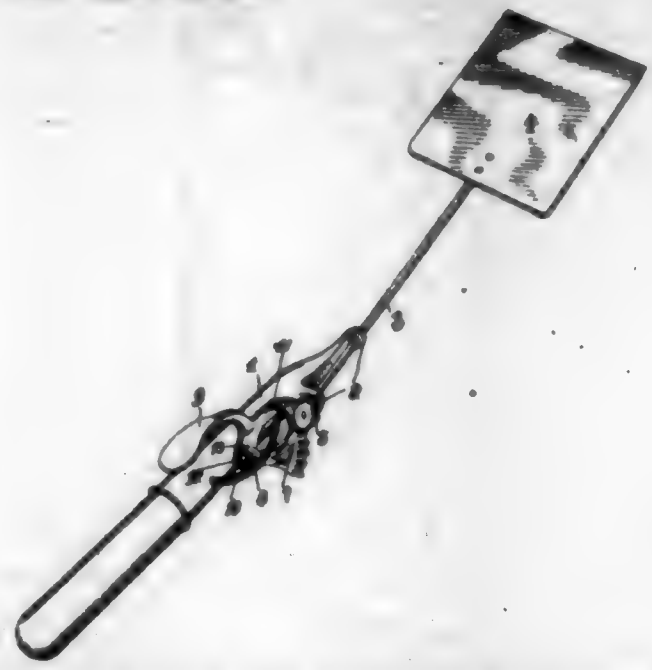
2. The combination of the steam-chest, a cover for the chest, a heat-screen for the cover comprising a core of wood, alternate sheets of asbestos and canvas on either face of the core, a sheet of fiber on the internal sheet of canvas and provided with depending portions, a perforated metallic sheet on the sheet of fiber and within the depending portions, and means to secure the screen to the steam-chest cover.

3. The combination of a steam-chest, a cover therefor, a heat-screen for said cover comprising a core of wood, alternate sheets of asbestos and canvas on either face of the core, a perforated metallic sheet on the internal face of the heat-screen, and means for securing the screen to the cover.

4. The combination of a steam-chest, a cover therefor, a heat-screen for the cover comprising a core of wood, sheets of non-heat-conducting material on either face of the core, and means for securing the screen to the cover.

5. The combination with a steam-chest, of a cover therefor, a heat-screen for the cover comprising a core of wood provided with sheets of non-heat-conducting material on its face, and means for securing the screen to the cover.

815,781. CAKE-TURNER. CHARLES BANKS, Pittsburg, Pa., assignor of one-half to Hermann Lohse, Pittsburg, Pa. Filed June 19, 1905. Serial No. 265,332.



Claim.—In a device of the character described, a handle member, a shaft journaled in said handle member, a cake-turner carried by said shaft, a pinion carried by said shaft, a sector pivoted on the handle member, and having teeth on one side engaging the teeth of said pinion, a thumb-piece carried by said sector, a grooved boss carried on the sector-pivot, and a coiled spring attached at one end to the handle member and at the other end to said sector, said coiled spring passing around said grooved boss.

815,782. WINDOW-CLEANER. HUGH BEATTY, Pittsburg, Pa. Filed Apr. 20, 1905. Serial No. 256,646.



Claim.—1. An apparatus for cleaning windows, comprising guide-strips attached to the window-sash, vertically-movable slides arranged between the sash and said strips, weights arranged in the sash and connected to said slides, a horizontally-disposed bar carried by said slides; a plurality of bearings mounted on said bar, a weighted lever pivotally mounted in each bearing, a scraper carried by said levers and cords connected to said scraper and extending through holes into the bar of the window-sash.

2. In an apparatus for cleaning windows, the combination with balanced slides mounted to move vertically on the window-frame, a bar carried by said slides and extending across the window, a counterweighted scraper pivotally mounted on said bar and a cord connected to said scraper and extending downwardly in front of the window to the bottom thereof, and through holes in the window-sash.

815,783. SIGNAL BOX OR PACKAGE. JAY W. BECHERER, Brooklyn, N. Y., assignor to Coston Signal Company, a Corporation of New York. Filed Apr. 27, 1905. Serial No. 257,794.

Claim.—1. In a compartment-box the combination with a sustaining-casing having a top, recesses in its ends, side walls connected to the edges of the top, and a bottom plate connected with the lower ends of the side walls, of tubular compartments seated on the bottom plate and in the recesses in the top, with the edges of the side walls connected to said compartments, and closures for the ends of said compartments.

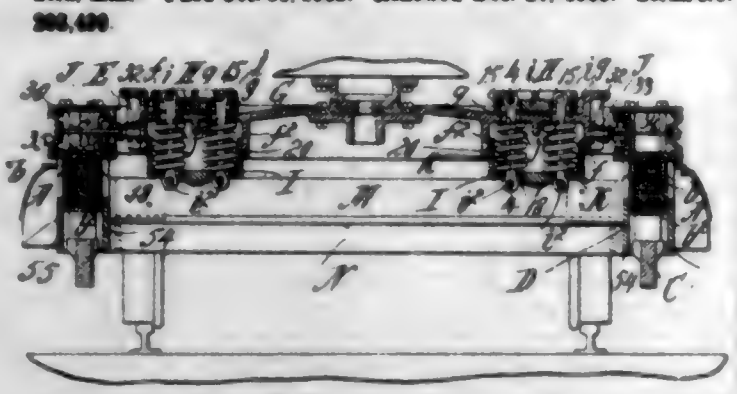
2. In a compartment-box the combination with a sustaining-casing having a top formed with an opening therethrough, and having recesses in its ends, side walls connected with the top, and a bottom plate connected with the lower ends of the side walls and ex-

tending at its ends beyond said walls, of two tubular compartments seated respectively on the projecting ends of the bottom plate and in the recesses in the top, the side walls being connected to said tubular compartments along the sides of the same, and an intermediate tubular compartment extending through the opening in the top and within the side walls between the end compartments, and closures for the upper ends of said tubular compartments.



3. In a compartment-box the combination of a flat sustaining-casing provided with side walls, a plurality of independent tubular bodies arranged side by side between the said walls of the casing with the outer edges of the casing secured along the sides of the two tubular end bodies, leaving the outer sides of said tubular bodies exposed, and closures for said tubular bodies.

815,784. RAILWAY-CAR TRUCK. SUMNER A. BEMIS, Springfield, Mass. Filed Oct. 31, 1903. Renewed Dec. 27, 1905. Serial No. 292,490.



Claim.—1. In a truck, in combination with the car-wheel axles and journal-boxes, and a truck-frame supported on said journal-boxes, and car-supporting appliances independent of said truck-frame, comprising longitudinally-ranging bars, the extremities of which are supported by the journal-boxes, a car-supporting bolster, and springs yieldingly sustaining said bolster, above said bars, said bolster-sustaining springs being primarily supported by said bars.

2. In a truck, in combination, the car-wheel axles and journal-boxes, and a truck-frame supported on said journal-boxes, and car-supporting appliances independent of said truck-frame, comprising longitudinally-ranging bars, the extremities of which are supported by the journal-boxes, a car-supporting bolster, and springs yieldingly sustaining said bolster, above said bars, said bolster-sustaining springs being primarily supported by said bars, and said bolster having a vertically-guided engagement with the truck-frame.

3. In a truck, the combination with the car-wheel axles, and their journal-boxes, and a truck-frame supported on said journal-boxes, of car-supporting appliances independent of said truck-frame, comprising longitudinally-ranging bars the extremities of which are supported by the journal-boxes, a transversely-arranged transom-bolster, and springs sustained by said bars and yieldingly supporting the transom-bolster, and a swing-bolster, sustained by the transom-bolster, and arranged for a movement endwise of itself, relatively to the transom-bolster.

4. In a railway-car truck, in combination, the car-wheel axles and their journal-boxes, and a truck-frame, comprising opposite side members, and transverse uniting means, end portions of said side members being of yoke or jaw form embracing the journal-boxes, and opposite inwardly and outwardly disposed pairs of spiral springs, resting on the tops of the journal-boxes and supporting said yoke-formed side frames; and car-supporting appliances, independent of the truck-frame, comprising longitudinally-ranging bars, having lowered intermediate portions, the extremities of which are supported on the journal-boxes between the pairs of truck-frame-supporting springs, a car-supporting bolster and springs yieldingly sustaining said bolster above said bars, said bolster-sustaining springs being supported by said intermediate lowered portions of the bars.

5. In a railway-car truck, in combination, the car-wheel axles and their journal-boxes, and a truck-frame, comprising opposite hollow longitudinally-ranging side members, and transverse uniting means, end portions of said side members being of yoke form embracing the journal-boxes, and opposite inwardly and outwardly disposed pairs of spiral springs resting on the tops of the journal-boxes and supporting said yoke-formed side frames; and car-supporting appliances, independent of the truck-frame, comprising longitudinally-ranging bars, having lowered intermediate portions and the extremities thereof being located within said hollow side members, supported on the journal-boxes between the pairs of truck-frame-supporting springs, a car-supporting bolster, and springs yieldingly sustaining said bolster, above said bars, said bolster-sustaining springs being supported by said intermediate lowered portions of the bars.

6. In a railway-car truck, in combination, the car-wheel axles and their journal-boxes, and a truck-frame, comprising opposite side members, and transverse uniting means, end portions of said side members being of yoke form embracing and receiving support from the journal-boxes and the middle portions of each truck-frame side member being constructed with a vertical bolster-guide; and car-supporting appliances, independent of the truck-frame, comprising longitudinally-ranging bars, having lowered intermediate portions, the extremities of which are supported on the journal-boxes between the pairs of truck-frame-supporting springs, a centrally and transversely arranged car-supporting bolster, the extremities of which have vertically-guided engagements in said truck-frame-bolster guides, and springs yieldingly sustaining said bolster, above said bars, said bolster-sustaining springs being supported by said intermediate lowered portions of the bars.

7. In a railway-car truck, in combination the car-wheel axles and their journal-boxes, and a truck-frame comprising opposite side members, and transverse uniting means, end portions of said side members being of yoke form embracing the journal-boxes, and the middle portions of said side members having upwardly-opening jaws, and opposite inwardly and outwardly disposed pairs of spiral springs, resting on the tops of the journal-boxes and supporting said yoke-formed side frames; and car-supporting appliances, independent of the truck-frame, comprising longitudinally-ranging bars, having lowered intermediate portions, the extremities of which are supported on the journal-boxes between the pairs of truck-frame-supporting springs, a centrally and transversely arranged bolster, the extremities of which engage in said jaws, and springs on said intermediate lowered portions of said bars, and yieldingly supporting the jaw-engaged bolster.

8. In a truck, the combination with the car-wheel axles, and their journal-boxes, and a truck-frame supported on said journal-boxes, of car-supporting appliances independent of said truck-frame, comprising longitudinally-ranging bars, the extremities of which are supported by the journal-boxes, a transversely-arranged transom-bolster, and springs sustained by said bars and yieldingly supporting the transom-bolster, and a swing-bolster spring sustained by and capable of a vertically-yielding movement relatively to the transom-bolster.

9. In a truck, the combination with the car-wheel axles, and their journal-boxes, and a truck-frame supported on said journal-boxes, of car-supporting appliances independent of said truck-frame, comprising longitudinally-ranging bars, the extremities of which are supported by the journal-boxes, a transversely-arranged transom-bolster, and springs sustained by said bars and yieldingly supporting the transom-bolster, and a swing-bolster spring sustained by, and capable of a vertically-yielding movement relatively to, the transom-bolster, and also arranged for a movement endwise of itself relatively to the transom-bolster.

10. A railway-car truck having a transom-bolster across its middle portion, comprising parallel separated side members, and end pieces between and uniting the extremities of said side members, and a swing-bolster located in the space between said side members and

having its ends adjacent but separated from said uniting end pieces, spring-sustained by the transom-bolster and supporting the swing-bolster for vertically-yielding movements, and springs between the ends of the swing-bolster and said transom-bolster end pieces.

11. A railway-car truck having the transom-bolster comprising parallel separated side members, and end pieces between and uniting the extremities thereof, saddle-blocks supported upon end portions of the transom-bolster, and depending bars having supporting engagements with said carrier-blocks depending therebelow within the space between the transom-bolster side members and arranged for swinging movements relatively to the carrier-block, and sustaining from their lower portions swing-bolster-supporting springs, and a swing-bolster disposed in the space between the transom-bolster side members and resting on said springs.

12. In a railway-car truck, the combination with the journal-box-supported equalizing-bars, and a journal-box-supported truck-frame independent thereof, of a transom-bolster comprising parallel separated side members spring-supported by and above said equalizing-bars, and guided for vertical movement by and relatively to said independent truck-frame, and a car-supporting swing-bolster located in the space between said side members and spring-supported by the transom-bolster.

13. In a railway-car truck, the combination with the journal-box-supported equalizing-bars, and a journal-box-supported truck-frame independent thereof, of a transom-bolster comprising parallel separated side members, and end pieces between and uniting the extremities of said side members, spring-supported by and above said equalizing-bars, and guided for vertical movement by and relatively to said independent truck-frame, and a swing-bolster located in the space between said side members and having its ends adjacent but separated from said uniting end pieces, spring-sustained by the transom-bolster and supporting the swing-bolster for vertically-yielding movements, and springs between the ends of the swing-bolster and said transom-bolster end pieces.

14. In a railway-car truck having the transom-bolster comprising parallel separated side members, and end pieces between and uniting the extremities thereof, saddle-blocks supported upon end portions of the transom-bolster, and depending bars having supporting engagements with said carrier-blocks depending therebelow within the space between the transom-bolster side members and arranged for swinging movements relatively to the saddle-blocks, and having carrier-blocks at their lower portions with spiral springs vertically mounted on said carrier-blocks, and a swing-bolster, disposed in the space between the transom-bolster side members and resting on said carrier-block-supported springs.

15. In a railway-car truck, a journal-box-supported truck-frame, having at the middle portions of its side members upwardly-opening jaws, combined with a transom-bolster having the end portions thereof engaged within said jaws and guided thereat for vertical movements, and supporting means for said transom-bolster, independent of said truck-frame.

16. In a railway-car truck, a journal-box-supported truck-frame, having at the middle portions of its side members upwardly-opening jaws, combined with a transom-bolster having the end portions thereof engaged within said jaws and guided thereat for vertical movements, and restrained by such engagements against movements in the line of its own length relatively to said truck-frame, and supporting means for said transom-bolster, independent of said truck-frame comprising springs on which the end portions of the bolster rest.

17. In a railway-car truck, the combination with the truck-frame side members having the upwardly-opening jaw, the opposite vertical edges of which have inwardly-opening vertical ways, of the transom-bolster having its extremities located within said jaw-opening, and having the oppositely-arranged projections 58 58 engaging in said ways, and spring-supporting means for the transom-bolster.

18. In a railway-car truck, the truck-frame, sustained by the journal-boxes and constructed with oppositely-ranging side bars having a space therebetween combined with the equalizing-bars C independent of the truck-frame, springs above and sustained by the equalizing-bars, the transom-bolster sustained by said springs and having engagements for vertically-guided movements with the truck-frame side members, said equalizing-bars and bolster-supporting springs having their locations in the space between the parallel separated bars of the truck-frame side members.

19. In a truck, a journal-box-supported truck-frame having hollow side members, the equalizing-bars independently supported by the journal-boxes, and supporting above their middle portions, bolster-supporting springs, which springs and said equalizing-bars are arranged within the truck-frame side members, the transom-bolster resting on said springs and constructed with an aperture opening vertically therethrough, the swing-bolster located in said aperture, and in suspension for endwise swinging movement relatively to and spring-sustained by the transom-bolster.

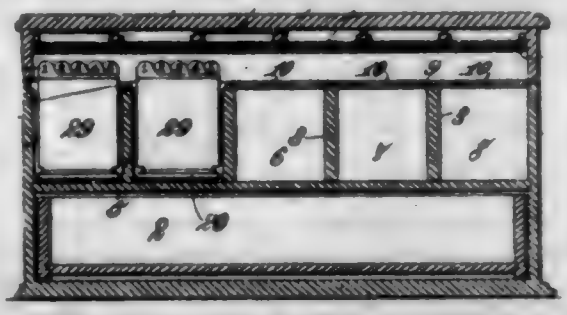
20. In a railway-car truck, in combination, the journal-boxes, the longitudinally-ranging equalizing-bars supported thereby, the truck-frame independently supported by the journal-boxes, the transom-bolster, spring-supported by the equalizing-bars, guided at their end portions vertically by and relatively to the independent truck-frame, and said bolster comprising opposite side members having saddle-blocks supported thereon inside of the truck-frame side members, depending bars supported for swinging movements relatively to the saddle-block, a lower carrier-block sustained by said bars and supporting one or more springs, and a swing-bolster disposed within the separated members of said transverse support and having the end portion thereof supported by said springs.

21. In a railway-car truck, in combination, the journal-boxes, the longitudinally-ranging equalizing-bars supported thereby, the truck-frame independently supported by the journal-boxes, the transom-bolster, spring-supported by the equalizing-bars, guided at their end portions vertically by and relatively to the independent truck-frame, and said bolster comprising opposite side members having saddle-blocks supported thereon inside of the truck-frame side members, depending bars supported for swinging movements relatively to the saddle-blocks and sustaining lower carrier-blocks having bolster-springs, a swing-bolster located between the separated members of said transverse support resting on the bolster-springs, and springs between the end walls of the transverse support and the ends of the swing-bolster.

22. In a railway-car truck, in combination, the journal-boxes, the longitudinally-ranging equalizing-bars supported thereby, the truck-frame independently supported by the journal-boxes, the transom-bolster, spring-supported by the equalizing-bars, guided at their end portions vertically by and relatively to the independent truck-frame, and said bolster comprising opposite side members having saddle-blocks supported thereon inside of the truck-frame side members, and extending across from one to the other, of the opposite transom-bolster members, and each saddle-block having a vertical hole therethrough and a horizontal channel intersecting the hole, a vertical bar depending through the hole in each saddle-block and having a horizontal cross-bar at its upper end lying in said channel and having a horizontal bar at its lower end, of lower carrier-blocks having vertical holes therethrough and supported on the lower horizontal members of said depending bar, bolster-springs mounted on said lower carrying-blocks and the swing-bolster resting on said springs.

23. In a railway-car truck, in combination, the journal-box-supported equalizing-bars, the independent journal-box-supported truck-frame, the transom-bolster, spring-supported by and above the equalizing-bars and having guiding engagements with said truck-frame, the saddle-blocks mounted on the transom-bolster having the depending bars having swing-supported engagements with the saddle-blocks, and depending therebelow, the carrying-blocks supported by and at lower portions of, said depending bars having upstanding members 20 20, springs supported upon and extending above the carrying-blocks, and the swing-bolster supported on said springs and having depending separated walls f f^5 with which the carrying-block upstanding members 20 20 have guiding engagements.

815,785. CREDIT-ACCOUNTING APPLIANCE. JOSEPH J. BENNETT, Lisbon, Ohio. Filed Sept. 13, 1905. Serial No. 278,206.



Claim.—1. Credit-accounting appliances comprising a receptacle provided with a covering, a card-index carried by the cover, a removable flat base mounted in said receptacle, and a series of bill holders or racks designated to associate with said card-index, hinged to the base and bodily removable with the base from the receptacle.

2. Credit-accounting appliances comprising a receptacle having a cover and a series of compartments, certain of which are provided

with covers, a card-index carried by the cover, a removable flat base mounted in one of said compartments, and a series of bill holders or racks designated to associate with said index, hinged to the base and bodily removable with the base from the said compartment.

3. Credit-accounting appliances comprising a receptacle provided with a cover, an index carried by the cover, a sheet of transparent material suitably connected to the cover and adapted to protect the index, a removable base mounted in said receptacle, and a series of bill holders or racks designated to associate with said index, hinged to the base and bodily removable with the base from the receptacle.

4. Credit-accounting appliances comprising the combination with a detached flat base, of means for receiving accounts connected with the base, said means consisting of a series of bill holders or racks, each consisting of a body portion having side flanges forming pockets, a combined supporting and retaining arm having its lower end extending at right angles and connected to the body portion, and a transversely-extending eye at the lower end of the body portion, combined with means engaging in the eye for hinging the holder to the base.

5. Credit-accounting appliances comprising the combination with a detached flat base, of means for receiving accounts connected with the base, said means consisting of a series of bill holders or racks, each consisting of a body portion having side flanges forming pockets, a combined supporting and retaining arm having its lower end extending at right angles and connected to the body portion, and a transversely-extending eye at the lower end of the body portion, combined with means engaging in the eye for permanently hinging the holder to the base.

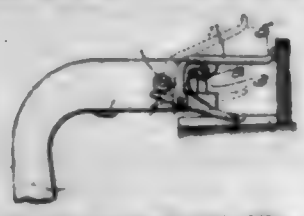
6. Credit-accounting appliances comprising a receptacle provided with a cover and a compartment, a pair of end rests in said compartment, means to constitute an index carried by the cover, a removable flat detached base mounted in said compartment, and a series of bill holders or racks designated to associate with said index, hinged to the base and bodily removable with the base from said compartment.

7. Credit-accounting appliances comprising a receptacle provided with a cover and a compartment, a pair of end rests in said compartment, means to constitute an index carried by the cover, a removable flat detached base mounted in said compartment, a series of bill holders or racks designated to associate with said index, hinged to the base and bodily removable with the base from said compartment, and means connected with the cover for protecting the index and to permit of access being had to the index.

8. Credit-accounting appliances comprising a receptacle having a cover and a series of compartments arranged therein, covers for certain of said compartments, a pair of end rests in each of said compartments, and means to constitute an index carried by the receptacle-cover, a detached removable flat base mounted in each of two or more of said compartments, and a series of bill holders or racks hinged to each of the said bases and bodily removable with their respective bases from said compartment, each of said bill holders or racks of each series of bill holders or racks suitably designated to associate with said index.

9. Credit-accounting appliances comprising a receptacle provided with a cover, a card-index carried by the cover, a removable base mounted in said receptacle, and a series of bill holders or racks designated to associate with said card-index, connected to the base and bodily removable with the base from the receptacle.

815,786. THREAD-PARTING MECHANISM FOR LOOMS. OMAR BENSON, New Bedford, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 31, 1905. Serial No. 271,925.



Claim.—1. In a loom provided with filling-replenishing mechanism, a shuttle-feeler having a notch in its end, a device on the feeler to part the old filling end when the latter enters the notch, and means to insure the entrance of such filling end into the notch in position to be acted upon by the parting device.

2. In an automatic filling-replenishing loom, an instrumentality to part the old filling end, and means to automatically insure the positioning of the filling end to be acted upon by said instrumentality.

3. In an automatic filling-replenishing loom, a shuttle-feeler movable into operative position prior to filling change, a device mounted on the feeler and movable therewith into position to act upon and part the old filling end, and means also mounted on the feeler to engage and automatically position the filling end to insure action thereupon by the parting device.

4. In an automatic filling-replenishing loom, a shuttle-feeler movable into operative position prior to filling change, a device mounted on the feeler and movable therewith into position to act upon and part the old filling end, and means to extend under and lift the filling end into proper position to be acted upon by the parting device.

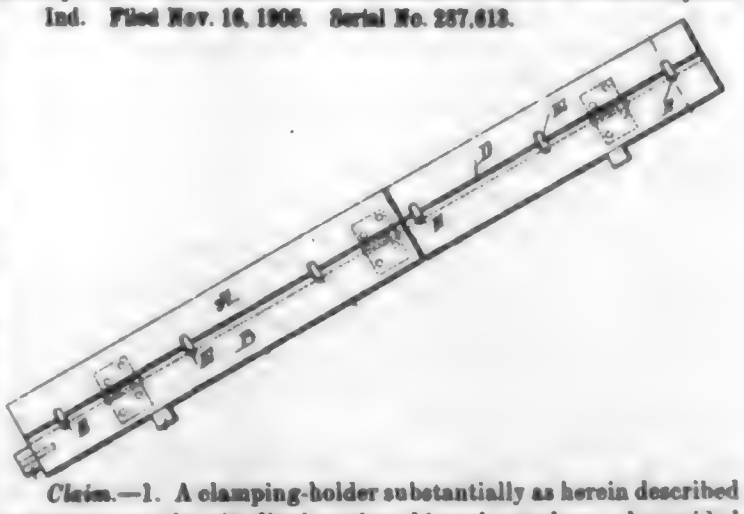
5. In an automatic filling-replenishing loom, a shuttle-feeler movable into operative position prior to filling change, a device mounted on the feeler and movable therewith into position to act upon and part the old filling end, a finger angularly movable on the feeler and adapted to extend under the filling end, and means to swing the finger upward to lift the filling end into position to insure action thereon by the parting device.

6. In a loom provided with mechanism to automatically replenish the running filling prior to complete exhaustion thereof, a shuttle-feeler, a parting device to part the old filling end near the shuttle, and an automatically-operated finger on the feeler to pass under and lift the filling end and thereby insure the coöperation therewith of the parting device.

7. In a loom provided with automatic filling-replenishing mechanism, a shuttle-feeler, an instrumentality bodily movable therewith into position to part the old filling end upon filling replenishment, a positioning-finger to engage and lift the filling end into position to be parted, and an actuator for the finger operated by engagement with a part on the lay.

8. In an automatic filling-replenishing loom, an instrumentality bodily movable upon replenishment of filling into position to act upon and part the old filling end near the shuttle, and means to automatically insure the positioning of the filling end to be acted upon by said instrumentality.

815,787. HOLDER FOR STAPLES, &c. JOHN A. BLAKE, Lafayette, Ind. Filed Nov. 16, 1905. Serial No. 287,613.



Claim.—1. A clamping-holder substantially as herein described comprising two longitudinal sections hinged together and provided along their meeting faces with a groove forming a seat for one edge of the spacing device and also provided in said meeting edges with sockets for a staple, handles pivoted to one of the sections and arranged to be turned across the joint between the sections to lock the latter in closed position, and side and end bars forming gages for use in applying the holder to a mold-box, one of the sections being provided above the groove with a shoulder forming a seat for the spacing device, substantially as set forth.

2. A holder for use substantially as described, comprising longitudinal sections jointed together and provided along their meeting edges with a groove forming a seat for a spacing device, and also with sockets for staples, substantially as set forth.

3. A holder comprising longitudinal sections hinged together at one edge and provided along their meeting faces at their opposite edges with a seat for a spacing device, and having above said seat a shoulder for limiting the insertion of said spacing device in the holder, substantially as set forth.

4. A holder comprising longitudinal sections hinged together at one edge and provided along their meeting edges at their opposite face with a groove forming a seat for a spacing device and also provided across said groove with sockets for staples, substantially as set forth.

5. The combination in a holder substantially as described, of the longitudinal sections adapted to clamp devices between them at one edge and hinged together at their other edges and provided with

handles pivoted to one of the sections and arranged to be turned across the joint between the same to lock the same in closed position, substantially as set forth.

6. A holder comprising longitudinal sections hinged together and adapted to be opened to receive devices between them and to be closed to clamp said devices, and provided with depending bars forming gages for use in applying the holder to a mold-box, substantially as set forth.

7. A holder consisting of two sections hinged together and provided along their meeting edges in one face with seats for a spacing device and for staples, and means for holding the sections in position to clamp said staples and spacing device, substantially as set forth.

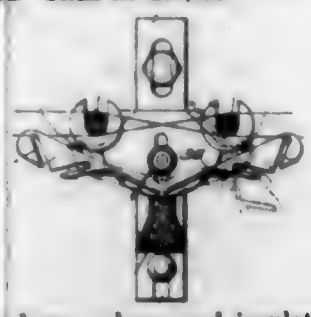
815,788. **FENCE-POST.** JOHN A. BLAKE, Wolcott, Ind. Filed Dec. 27, 1905. Serial No. 293,454.



Claim.—1. The improved fence-post herein described, comprising the body, the reinforcing-wires extending longitudinally therein, the brackets transversely within the body and having notches forming seats for the reinforcing-wires, the spacer embedded at its inner edge within the body and extending at its outer edge beyond the face thereof and having its outer edge provided with seats to receive fencing-wires, and staples fitting at their inner ends around the inner edge of the spacer and having their arms extending thence forwardly on opposite sides of the spacer and projecting outwardly beyond the outer edge thereof and adapted to secure fence-wires, all substantially as and for the purposes set forth.

2. A concrete fence-post comprising a body, brackets arranged transversely within the body and notched in their outer edges forming seats for the longitudinal reinforcing-wires, said notches opening generally in the same direction, whereby the reinforcing-wires may rest therein by gravity, and the said reinforcing-wires, substantially as set forth.

815,789. **ELECTRICAL WARP STOP-MOTION.** RICHARD BOARDMAN, Tiverton, R. I., and WILLIAM H. SHARPLES, Fall River, Mass. Filed May 14, 1904. Serial No. 207,996.



Claim.—1. In a loom, a lease-rod insulated from the loom-frame, said rod forming one terminal of an electric circuit which includes loom-stopping mechanism, a circuit-closer-supporting rod beneath the lease-rod, said supporting-rod also being in said circuit, and a plurality of circuit-closers pivotally mounted on said rod, each circuit-closer having an open slot in which a warp-thread is received, and an extension which is adapted to be brought into contact with the lease-rod when said circuit-closer assumes its abnormal position by the breaking of the warp-thread.

2. In a loom, a lease-rod insulated from the loom-frame, a controlling-circuit including a loom-stopping mechanism, said lease-rod forming one terminal of said circuit, a rod extending across the loom beneath said lease-rod, said rod being in said circuit, and a plurality of circuit-closers pivotally mounted on the rod, each circuit-closer being held in normal position by a warp-thread and having an extension which is adapted to contact with the lease-rod when the circuit-closer swings into abnormal position.

3. In a loom, a lease-rod insulated from the loom-frame, said rod forming one terminal of an electric circuit which includes loom-stopping mechanism, a circuit-closer-supporting rod beneath the lease-rod, said supporting-rod also being in said circuit, and a plurality of circuit-closers pivotally mounted on said rod, each circuit-closer having an open slot in which a warp-thread is received, and an extension which is adapted to be brought into contact with the lease-rod when said circuit-closer assumes its abnormal position by the breaking of the warp-thread, said extension being of such a length that it projects above the warp-threads and thus acts as an indicator whenever the circuit-closer is in abnormal position.

4. In a loom, a lease-rod insulated from the loom-frame, a controlling-circuit including a loom-stopping mechanism, said lease-rod forming one terminal of said circuit, a rod extending across the loom beneath said lease-rod, said rod being in said circuit, and a plurality of circuit-closers pivotally mounted on the rod, each circuit-closer being held in normal position by a warp-thread and having an extension which is adapted to contact with the lease-rod when the circuit-closer swings into abnormal position, said extension being of such a length that it projects above the warp-threads and thus acts as an indicator whenever the circuit-closer is in abnormal position.

5. In a warp stop-motion, a contact-rod insulated from the loom-frame and located in the plane of the warp-threads, said rod forming one terminal of a controlling-circuit, and a plurality of circuit-closers beneath said rod and warp-threads, each circuit-closer being held in normal position by a warp-thread and having an extension to engage the contact-rod when in abnormal position, said extension being of a length to project above the warp-threads when the circuit-closer is in such position.

6. In an electric warp stop-motion, a contact-rod insulated from the loom-frame and supported in the plane of the warp, said contact-rod forming a terminal of a controlling-circuit, a supporting-rod beneath the contact-rod, said supporting-rod also being in said circuit, a plurality of circuit-closers beneath the warp-threads and pivotally mounted on said supporting-rod, each circuit-closer being held in normal position by a warp-thread and having an extension which is brought into engagement with the contact-rod when the circuit-closer is in abnormal position, such extension being of a length to project above the warp-threads and therefore act as an indicator when the circuit-closer is in said abnormal position.

7. In a loom, a pair of brackets supported by and insulated from the loom-frame, said brackets having open slots, lease-rods removably supported in said open slots, said lease-rods dividing the warp-threads into two levels and forming terminals of a controlling-circuit including loom-stopping mechanism, supporting-rods extending across the frame beneath the warps, circuit-closers pivotally mounted on said supporting-rods and coacting with the lease-rod to close the circuit and thus stop the loom whenever a warp-thread breaks.

8. A circuit-closer for electric warp stop-motions, said closer having at one end an open inclined slot leading from one side thereof, an indicating extension at the other end, and an oppositely-inclined slot between said extension and first-named slot.

9. A circuit-closer for electric warp stop-motions, said circuit-closer having at one end an open inclined slot to receive a warp-thread, an indicating extension at the other end, and a supporting-rod-receiving slot between the thread-receiving slot and extension.

10. A circuit-closer for electric warp stop-motions having two diverging open slots leading from the same side of the circuit-closer and an extension at one end.

11. In an electric warp stop-motion, a contact-rod insulated from the loom-frame and forming the terminal of a controlling-circuit, a plurality of circuit-closers coöperating with said rod, each circuit-closer having at one end an open thread-receiving slot, and a supporting-rod-receiving slot, a supporting-rod beneath the contact-rod and on which said circuit-closers are pivotally supported, and guard-rods above the circuit-closers to prevent the latter from being thrown off from their supporting-rod.

12. In an electric warp stop-motion for looms, a bracket adapted to be secured to the loom-frame at each side thereof, a supporting-rod extending across the loom and supported by said brackets, a lease-rod also supported by said brackets but insulated therefrom, said lease-rod being above the supporting-rod and forming one terminal of a controlling-circuit, and a plurality of circuit-closers pivotally mounted on the supporting-rod beneath the warps, said circuit-closers coacting with the lease-rod to close the circuit when the warp-thread breaks.

13. In an electric warp stop-motion for looms, a bracket adapted to be secured to the loom-frame at each side thereof, a supporting-rod extending across the loom and supported by said brackets, a lease-rod removably supported by said brackets but insulated therefrom, said lease-rod being above the supporting-rod and forming one terminal of a controlling-circuit, and a plurality of circuit-closers pivotally mounted on the supporting-rod beneath the warps, said circuit-closers coacting with the lease-rod to close the circuit when the warp-thread breaks.

14. In an electric warp stop-motion for looms, a bracket adapted to be secured to the loom-frame at each side thereof, a supporting-rod extending across the loom and supported by said brackets, a lease-rod-supporting bracket adjustably secured to but insulated from each of said first-named brackets, lease-rods supported by the

lease-rod-supporting brackets, said lease-rods forming the terminals of a controlling-circuit, and a plurality of circuit-closers pivotally mounted on the supporting-rods and coacting with the lease-rods to close the circuit when any warp-thread breaks.

15. In a loom, a lease-rod insulated from the loom-frame and forming one terminal of an electric circuit which includes loom-stopping mechanism, a pivotally-mounted circuit-closer beneath the lease-rod, said circuit-closer being in said circuit and supported in normal position out of contact with the lease-rod by a warp-thread.

16. In a loom, a loom-frame, a lease-rod supported thereby but insulated therefrom, an electric circuit including said lease-rod, loom-stopping mechanism operated by the closing of said circuit, and a circuit-closer held in normal position out of contact with the lease-rod by a warp-thread.

17. In a loom, a pair of lease-rods insulated from the loom-frame and forming one terminal of an electric circuit which includes loom-stopping mechanism, a plurality of pivotally-mounted circuit-closers beneath each lease-rod, said circuit-closers being in said circuit and supported on the lower plane of the warp-thread outside of the lease-rods.

18. In a loom, a loom-frame, a pair of lease-rods supported thereby but insulated therefrom, an electric circuit including said lease-rods, loom-stopping mechanism operated by the closing of said circuit, and a plurality of circuit-closers beneath each lease-rod and held out of contact therewith by the warp-threads, the point of suspension of said circuit-closers being outside of the lease-rods.

19. In a loom, a pair of metallic lease-rods supported by but insulated from the loom-frame and forming one terminal of an electric circuit, said lease-rods dividing the warp-threads in two planes or levels, and a plurality of circuit-closers beneath each lease-rod, each circuit-closer having an open slot in which a warp-thread is received, said circuit-closers being supported on the lower plane of warp-threads at points outside of the lease-rod.

20. In a loom, a lease-rod insulated from the loom-frame and forming one terminal of an electric circuit which includes loom-stopping mechanism, a pivotally-mounted circuit-closer beneath said lease-rod and supported in normal position by a warp-thread, said lease-rod being flattened whereby when the circuit-closer drops into abnormal position, it engages the flattened portion of said rod.

21. In a loom, a contact-rod insulated from the loom-frame and forming the terminal of a controlling-circuit, a supporting-rod beneath the contact-rod, a plurality of circuit-closers pivotallymounted on said supporting-rod, guard-rods, and means to support the supporting-rods and guard-rods intermediate their ends.

22. In an electric warp stop-motion for looms, a bracket adapted to be secured to the loom-frame at each side thereof, a supporting-rod extending across the loom and supported by said brackets, a lease-rod also supported by said brackets but insulated therefrom, said lease-rod forming one terminal of a controlling-circuit, a plurality of circuit-closers pivotally mounted on the supporting-rod, a brace extending between said brackets and arms carried by the brace and sustaining the supporting-rod intermediate its ends.

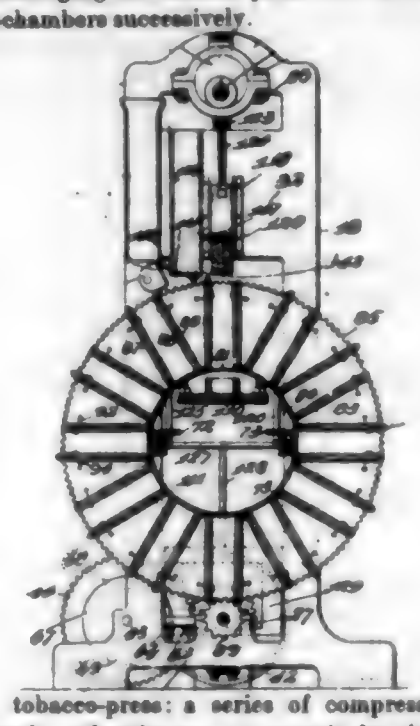
23. In a loom, a lease-rod insulated from the loom-frame, a circuit-closer normally held out of contact from said lease-rod by a warp-thread, a controlling-circuit including said lease-rod and circuit-closer combined with a loom-stopping mechanism comprising a bracket secured to the loom-frame, a tappet pivotally mounted to said bracket adjacent the shipper-lever, and a magnet also carried by said bracket, said magnet being in said circuit and when energized throwing the tappet from its inoperative to its operative position, and a hunter carried by the lay to strike the tappet when it is in its operative position.

815,790. TOBACCO-PRESS. FRANK A. BOWKER, St. Louis, Mo. Filed Jan. 16, 1905. Serial No. 241,279.

Claim.—1. In a tobacco-press, a drum formed with opposite webs having gear-teeth on their peripheries, and walls between said webs forming a plurality of radial compression-chambers adapted to retain the compressed tobacco blocks, and means for moving said drum step by step.

2. In a tobacco-press, a drum formed with opposite webs having gear-teeth on their peripheries and walls between said webs forming a series of radial compression-chambers, means for moving the compression-chambers step by step, and means for inserting and compressing the block and discharging a previously-formed block at each step.

3. In a tobacco-press: a drum rotatably mounted and having a central opening longitudinally of its axis; and having a series of compression-chambers arranged radially; means for inserting the tobacco plugs into the outer ends of the compression-chambers; and means for discharging the tobacco plugs from the inner ends of the compression-chambers successively.



4. In a tobacco-press: a series of compression-chambers; a magazine for the soft tobacco; a reservoir for the parting-plates; parting-plates in the reservoir; a reciprocating plunger; means for feeding the soft tobacco plugs to the compression-chambers successively; means for feeding the parting-plates to the compression-chambers; means for operating the plunger in the compression chambers; and means for discharging the compressed tobacco and parting-plates from the compression-chambers.

5. In a tobacco-press: a drum having a central opening longitudinally of its axis and rotatably mounted; and having compression-chambers arranged radially; said chambers being open at their outer and inner ends; a plunger mounted and operated to pass into said compression-chambers successively; a discharging-table mounted in opposition to the plunger; means for operating the drum step by step to move the compression-chambers successively; means for feeding tobacco to the compression-chambers; and means for feeding parting-plates to the compression-chambers.

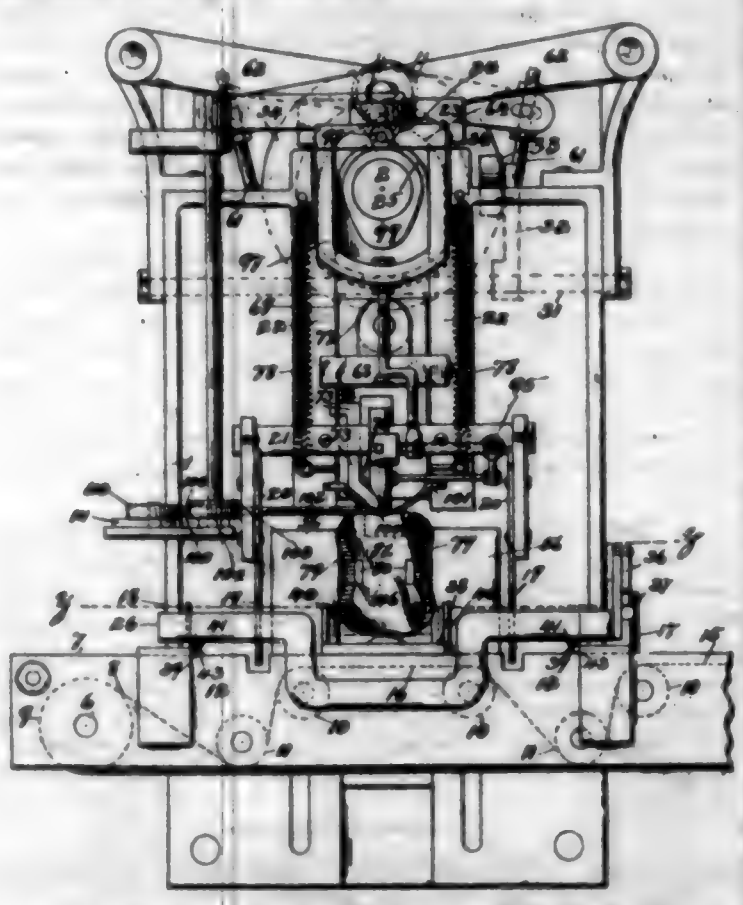
6. In a tobacco-press: a drum having a central opening longitudinally of its axis and rotatably mounted and having compression-chambers arranged radially; said chambers being open at their outer and inner ends; and said chambers being adapted to receive and retain a plurality of tobacco plugs under compression; a plunger mounted and operated to pass into said compression-chambers successively; a discharging-table mounted in opposition to the plunger; means for operating the drum step by step to move the compression-chambers successively into opposition to the plunger; means for feeding the tobacco to the compression-chamber; and means for feeding parting-plates to the compression-chamber; so that a new plug of tobacco will be inserted into the compression-chamber and the oldest plug discharged at each operation of the plunger.

7. In a tobacco-press: a drum having a central opening longitudinally of its axis and rotatably mounted; and having compression-chambers arranged radially; said chambers being open at their outer and inner ends; a series of blocks for initially filling said compression-chambers; a plunger mounted and operated to pass into the compression-chambers successively; a discharging-table mounted in opposition to the plunger; and means for operating the drum step by step to move the compression-chambers successively into opposition to the plunger; means for feeding tobacco to the compression-chamber; and means for feeding parting-plates to the compression-chamber; so that as the compression-chambers are filled with tobacco, the blocks of wood are discharged and so that as the machine continues to operate, a new plug of tobacco is placed in the compression-chamber and the oldest plug discharged at each operation of the plunger.

815,791. MACHINE FOR MAKING CAN-BODIES. JULIUS BRENSINGER, New York, N. Y., assignor to Max Ams Machine Company, New York, N. Y., a Corporation of New York. Filed Oct. 14, 1903. Serial No. 177,286.

Claim.—1. A machine for making can-bodies having a mechanism for overlapping the end portions of a blank flat one upon the other, a locking-punch for locking said end portions together with unbent continuous side edges and flat outer surface, substantially as described.

2. In a machine for making can-bodies, in combination with a mechanism for overlapping the end portions of the body flat one upon the other, a punch extending parallel to the end edges and short of the side edges for forming interlocking projections in the end portions, whereby said end portions are locked together flat one upon the other with unbent side edges, substantially as described.



3. A machine for making can-bodies, having a forming-horn, in combination with successively-operating blank-folding and end-overlapping wings, a lock-forming punch operative between the end edges of the blank, and means to operate said punch while the end portions are held lapped one upon the other to lock the same together with unbent side edges, substantially as described.

4. A machine for making can-bodies, having a forming-horn, in combination with successively-operating blank-bending wings, a vertically-reciprocating punch, said punch having a toothed die, and a coöperating die in said horn, substantially as described.

5. A machine for making can-bodies, having in combination with a forming mechanism, a lock-forming punch, provided with a toothed die, and a stripper on said punch, substantially as described.

6. A machine for making can-bodies, having a forming mechanism, in combination with a lock-forming punch, a stripping-plate slidably mounted on said punch, and yielding pressure means bearing on said stripping-plate, and means to vertically reciprocate said punch, substantially as described.

7. A machine for making can-bodies, having in combination a forming mechanism, means for overlapping the end portions of the body flat one upon the other, a punch operating between the end edges for locking the end portions together in flat lapped parallel arrangement with unbent side edges, and a soldering mechanism for the lap-joint, substantially as described.

8. A machine for making can-bodies, having in combination a forming-horn, means for forming the can-body on said horn, a toothed punch operating between the end edges of the lapped portions to lock said portions together with unbent side edges, a soldering mechanism, and a body-shifting plunger, substantially as described.

9. A machine for forming can-bodies, having a forming-horn, in combination with a lapped-end-bending mechanism, a locking mechanism consisting of a vertically-reciprocating toothed punch whereby the ends of the can-body are locked without bending the edges, a soldering mechanism, and a plunger for shifting the locked can to the soldering mechanism, substantially as described.

10. A machine for making can-bodies, having a blank-feeding mechanism, in combination with a body-forming mechanism, comprising means for lapping the ends flat, one upon the other, a transferring mechanism between the feeding and forming mechanisms, means for locking the ends in said lapped position with continuous side edges whereby only two thicknesses are formed at the junction of the body, a soldering mechanism, and a means for shifting said locked can-body to said soldering mechanism, substantially as described.

11. A machine for making can-bodies, having a main shaft, in connection with a lapped-end body-forming mechanism, a lock-forming piercing-punch, operating between the end edges of the lapped-end portions, cams on said main shaft for successively operating said mechanisms, and a soldering mechanism, substantially as described.

12. A machine for making can-bodies, having a blank-feeding mechanism, consisting of an endless conveyer, rolls for operating said conveyer, in combination with a feed-receptacle through which said conveyer passes, a blank-stop, and means to release said blank-stop, substantially as described.

13. A machine for making can-bodies, having a blank-feeding conveyer-belt, a series of upper and a series of lower rollers for said belt, whereby the belt will be carried below the feeding-level at intervals, and a lifting mechanism operating in the spaces at said intervals to raise the blank from and above the conveyer, substantially as described.

14. A machine for making can-bodies, having a blank-receptacle, a blank-feeding conveyer-belt, leading from said receptacle and transversely to the forming-block, in combination with a blank-lifting mechanism, and a pusher for moving the blank from the lifter to the forming-block, substantially as described.

15. A machine for making can-bodies, having in combination a horizontally-traveling conveyer-belt, vertically-reciprocating lifter-arms, and a sliding pusher-frame operating transversely to the belt, substantially as described.

16. A machine for making can-bodies, having a conveyer-belt, in combination with lifter-arms movable in interrupted spaces in the belt, a horizontally-sliding pusher-frame, a main shaft, and cams on said shaft for vertically raising said lifter-arms, and sliding said frame, substantially as described.

17. A machine for making can-bodies, having a forming-block, means for positioning a blank in front of said block, a horizontally-sliding frame adapted to push said blank from said positioning means to said block, arms on said frame adapted to contact with the blank to move it in one direction, and plunger-fingers also carried by the frame to move the blank in the opposite direction, in combination with an actuating rocking lever for the frame, a main shaft, and a cam on said main shaft which operates said lever, substantially as described.

18. A machine for making can-bodies, having a forming-block, means for positioning a blank in front of said block, a horizontally-sliding frame adapted to push said blank from said positioning means to said block, arms on said frame adapted to contact with a blank to move it in one direction and plunger-fingers also carried by the frame to move it in the opposite direction, in combination with actuating rocking levers for the frame, a main shaft, a cam on said main shaft for rocking said levers and sliding the frame in one direction, and a spring for sliding the frame in the other direction, substantially as described.

19. A machine for making can-bodies having a fixed forming-horn, in combination with a vertically-movable presser-block below said horn, a blank-feeding belt extending parallel with the width of said block, means to feed a single blank at a time by said belt, vertically-movable arms for lifting said blank from said belt, and a horizontal, reciprocating pusher-frame for pushing said blank from said lifting-arms to said block, substantially as described.

20. A machine for making can-bodies, having a forming-horn, in combination with pivotally-swinging blank-bending wings, vertically-sliding blocks separate from said wings, said blocks provided with studs, said wings adapted to bear on said studs, a vertically-moving rod for each sliding block, a rocking mechanism for each rod, separate, successively-operated rollers for each rocking mechanism, and means for operating said rollers, substantially as described.

21. A machine for making can-bodies, having a forming-horn, in combination with successively-actuated blank-bending wings, each operated by an adjustable roller bearing upon a cam common to both rollers, said rollers having their centers out of line, substantially as described.

22. A machine for making can-bodies, having a forming-horn, in combination with blank-bending wings, independent successively-actuated rollers for said wings, connections between each roller and its wing, and a cam common to both rollers for actuating the same, a toothed punch for locking the flat lapped ends of the can-body and a cam for actuating said punch, and means for successively operating said wing-cam and punch-cam, substantially as described.

23. A machine for making can-bodies, having a forming-horn, in combination with a presser-block, a reciprocating sliding pusher-frame, operated in one direction to move a blank to said block, means for operating said pusher-frame, a can-body-shifting plunger,

said plunger connected to said pusher-frame, and operated in the opposite direction to shift a can on said horn by the return movement of said frame, substantially as described.

24. A machine for making can-bodies, having blank-bending wings, in combination with fixed horizontal blank-supporting lugs alined with and independent of said wings and vertical stops for the blank at the edges of the lugs, substantially as described.

25. A machine for making can-bodies, having blank-bending wings provided with recesses and guide-lugs at each end on each side thereof, substantially as described.

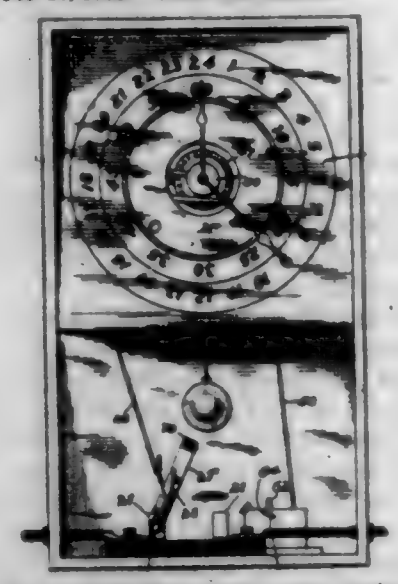
26. A machine for making can-bodies, having a soldering mechanism provided with a plurality of soldering-irons, means to positively reciprocate one of said irons vertically, the remainder of said irons being loosely hung, in combination with means for feeding a strip of solder under said reciprocating iron, substantially as described.

27. A heater for soldering-irons having a housing for the iron, a hollow conduit-support, an opening into the housing from said conduit-support, and said conduit-support being suitably connected to a suitable source of fuel-supply, substantially as described.

28. A machine for making can-bodies having a solder-feed mechanism consisting of a feed-roller and a pressure-roller, a rocking frame, a solder-guide tube carried by said frame, a ratchet-wheel on said feed-roller, a ratchet on said frame, and a cam for actuating said frame, whereby, when the frame is rocked in one direction the solder will be advanced by the roller and when rocked in the opposite direction the tube will be withdrawn to expose a portion of the solder, substantially as described.

29. A machine for making can-bodies, having in combination a blank-feeding mechanism, a blank-lifting mechanism, a pushing mechanism, a mechanism for forming a can-body with lapped ends, and flat, unbent edges, a lock-forming punch to lock said body in such form, a can-body-shifting mechanism, and a soldering mechanism, substantially as described.

815,792. **ELECTRIC TIME-SWITCH.** MILTON T. CAMPBELL, Indianapolis, Ind., assignor of one-half to John C. Ertel, Indianapolis, Ind. Filed Oct. 17, 1905. Serial No. 283,117.



Claim.—1. The combination, with a time-train, of a motor independent of the time-train, means for normally restraining said motor, means controlled by the time-train for releasing said motor, an electric switch, a spring for normally urging said switch to closed position, a second stronger spring for urging said switch to open position, means operated by the motor for placing said second spring in potential condition, means for retaining the switch in closed position against the potential of the second spring, and means controlled by the time-train for withdrawing said retaining means.

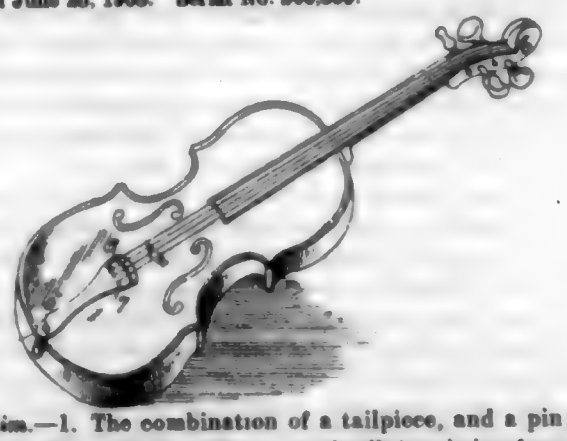
2. The combination, with a time-train, of an independent motor, means for normally restraining said motor, an electric switch, means for normally urging said switch to closed position, stronger means for urging said switch to open position, means operated by the motor for placing said stronger means in potential condition, means for engaging and holding the switch in closed position against the potential of said stronger means, means carried by the time-train and adjustable relatively thereto for withdrawing the restraining means of the motor, and means also carried by the time-train and adjustable relatively thereto for withdrawing the switch-restraining means.

3. The combination, with a time-train and an independent motor, of means for normally restraining said motor, a disk carried by a rotatable part of the time-train and angularly adjustable thereon, means carried by said disk for intermittently engaging and withdrawing the motor-restraining means, a switch, a spring for normally urging said switch to closed position, a stronger spring for urging said switch to open position, a cam carried by the motor, intermediate connections between said cam and said stronger spring whereby movement of the cam will first place the spring in non-potential condition, and thereafter place said spring in potential condition, means for engaging and holding the switch in closed position against the potential of the said stronger spring, a second disk carried by the time-train and angularly adjustable relatively thereto, means for engaging and retracting the switch-holding means, and means carried by said second disk for intermittently operating said engaging and retracting means.

4. In a switch-operating mechanism, a switch-retaining catch consisting of the main body, a switch-engaging catch movably mounted therein, a lever movably mounted adjacent said catch, a pawl carried by said lever, and a pin-and-slot engagement between said pawl and main body, whereby movement of the lever in one direction will swing the pawl into engagement with the catch, and the movement of the lever in the opposite direction will first cause withdrawal of the catch and subsequent withdrawal of the pawl from the catch.

5. The combination, with the time-train, of an independent motor, means for normally restraining said motor, an electric switch, means for normally urging said switch to closed position, a stronger means for urging said switch to open position, means operated by the motor for placing said stronger means in potential condition, means for engaging and holding the switch in closed position against the potential of said stronger means, means carried by the time-train for withdrawing the restraining means of the motor, and means also carried by the time-train for withdrawing the switch-restraining means.

815,793. **VIOLIN-TAILPIECE.** BERT CATHER, Lebanon, Oreg. Filed June 23, 1905. Serial No. 266,599.



Claim.—1. The combination of a tailpiece, and a pin passing transversely through the tailpiece, said tailpiece being formed with a passage leading from one end thereof around the pin and through which the flexible member is passed by means of which it is secured to the tail-pin.

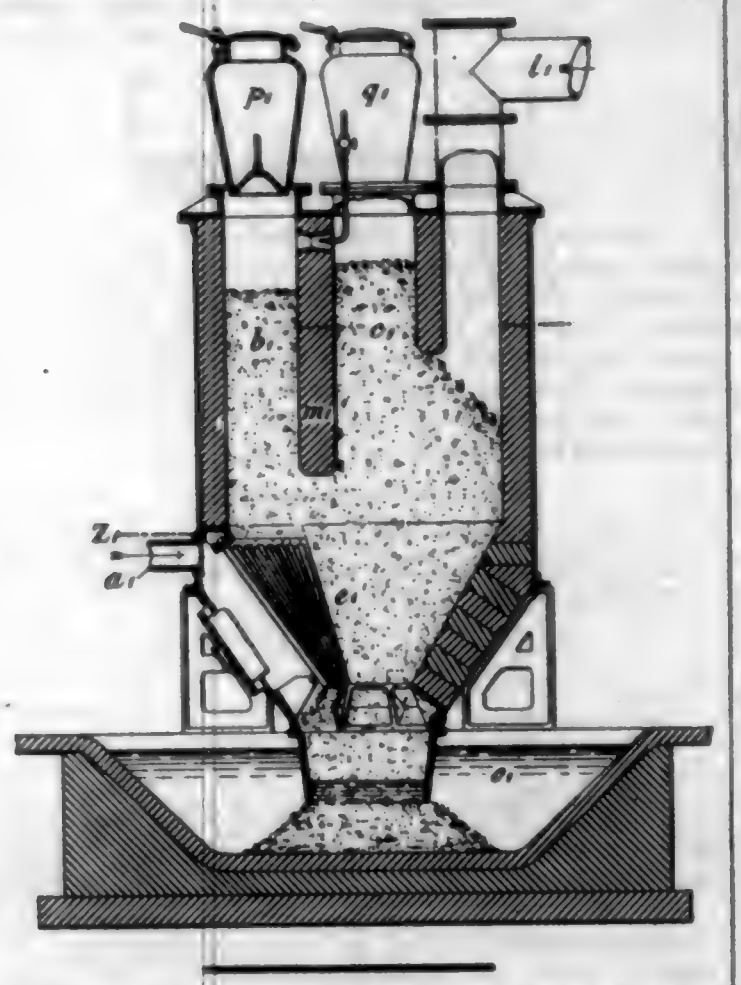
2. The combination of a tailpiece the under side of which is provided with a notch or depression having communication with longitudinal passages leading to the end of the tailpiece, and a metal pin placed between the two passages and adapted to receive and distribute the strain transmitted by the flexible member attaching the tailpiece to the tail-pin.

815,794. **GAS-PRODUCER.** ALBERTO CERASOLI, Rome, Italy. Filed Apr. 22, 1904. Serial No. 204,433.

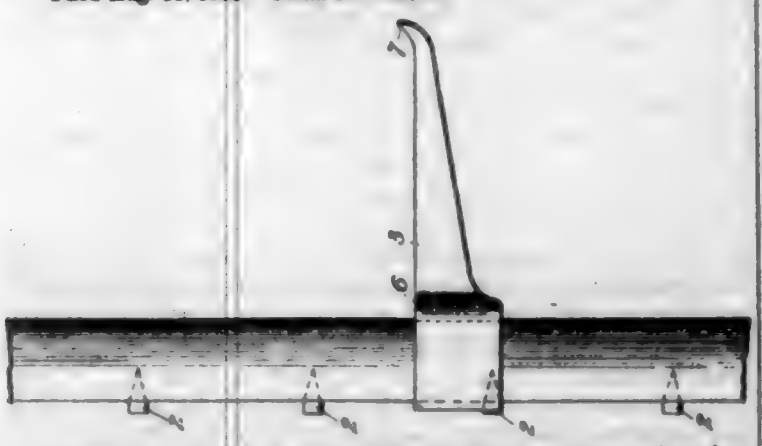
Claim.—1. A gas-producer having a slanting grate in the lower part thereof and the upper part of which is divided into several compartments of different depth by hanging partitions parallel or quasi parallel to the slanting grate, two or more adjoining compartments being provided with hoppers on the top to charge them with fuel so that a portion of this fuel is delivered by gravitation direct onto the grate and in the body of the producer and so that the fuel is distilled by coming into direct contact with the hot gases, and the other of said compartments forming a gas-outlet chamber, and a gas-outlet pipe communicating with said gas-outlet compartment, substantially as set forth

2. A gas-producer having a slanting grate in the lower part thereof and the upper part of which is divided into several compartments of different depth by hanging partitions parallel or quasi parallel to the slanting grate, two adjoining compartments being provided with hoppers on the top to keep them charged with fuel and

also with one or several injectors or their equivalents, fixed in the partitions dividing these two compartments for circulating the products of the distillation taking place in these compartments inside the producer and forcing them through the hot zone of combustion, and the other of said compartments forming a gas-outlet chamber, and a gas-outlet pipe communicating with said gas-outlet compartment, substantially as set forth.



815,795. STILT. HAMLINE J. CHAMBERS, Council Bluffs, Iowa. Filed Aug. 11, 1905. Serial No. 273,737.



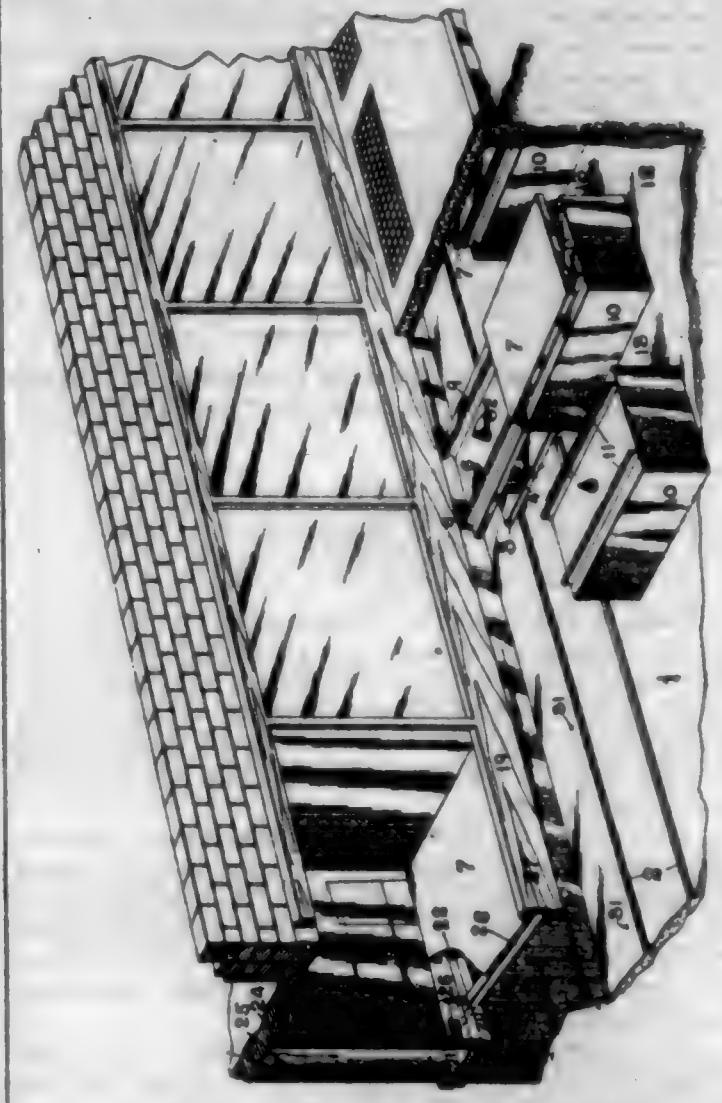
Claim.—1. A stilt comprising a staff having a series of projections arranged in spaced relation and longitudinally thereof, and a foot-rest provided with an eye at one end adapted to embrace the staff, said eye having a notch formed at its lower outer edge for engagement with the aforesaid projections and having a transverse groove upon its opposite side whereby the foot-rest may be moved above and below one of said projections when turned upon the staff.

2. A stilt comprising a staff having a series of projections, and a foot-rest provided with an eye to embrace the staff, said eye having a notch formed therein for engagement with the aforesaid projections and also having a groove whereby the foot-rest may be moved above and below the projections when turned upon the staff.

3. A stilt comprising a staff having a series of projections thereon, and a foot-rest provided with an eye for loose fit upon the staff whereby it may be revolved upon the latter, the eye having a notch formed therein for engagement with one of said projections with a groove formed therein opposite the said notch to permit of movement of the foot-rest over the projections when the rest is turned to present the groove of its eye in alinement with the projections.

4. A stilt comprising a staff having a projection thereon, and a foot-rest having an eye at one end provided with a notch for engagement with said projection to prevent accidental turning of the foot-rest upon the staff, the said eye having a groove arranged transversely thereof and opposite the said notch to aline the groove and projection to permit movement of the foot-rest beneath said projection.

815,796. APPARATUS FOR DRESSING WINDOWS. FRED CONRATH, St. Louis, Mo. Filed Mar. 17, 1905. Serial No. 250,654.



Claim.—1. The combination with a building having a plurality of show-windows and a basement below the show-windows, removable floors for thewindows, a hoisting-truck, tracks for the hoisting-truck, and means adjacent the tracks for interlocking engagement with a part of the truck when the truck is immediately below any one of the several windows; substantially as described.

2. The combination with a show-window, of a removable floor for said window, a truck having a vertically-movable platform to move the removable floor into and out of engagement with the window, and transverse beams having means for engagement with recesses in the lower portion of said window to hold the floor in place; substantially as described.

3. The combination with a show-window, of a removable floor therefor, a receiving-platform out of line with and below the window, a track below the window, and a truck movable over the track and having transverse guides to aline with the receiving-platform, said guides having vertical movement for removing the floor from the window to the platform; substantially as described.

4. The combination with a show-window, of a removable floor therefor, a receiving-platform below the window, a track below the window, and a truck on the track, said truck having transverse guides for lowering the floor from the window whereby it may be transferred to the platform, and means for hoisting the floor into operative position with the window; substantially as described.

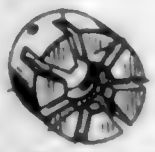
5. The combination with a show-window, of a removable floor therefor, a track beneath the floor, a truck movable on the track, means for temporarily holding the truck in rigid alinement with the floor, and a hoisting apparatus carried by the truck; substantially as described.

6. A building including a series of windows, parallel walls in rear of the window forming a passage-way, separately-arranged removable floors for the windows, means for lowering the floors independently of each other, a truck carrying said lowering means, means for temporarily holding the truck rigid beneath any one of the floors, a track over which the truck may move, and means for retaining the floors in proper positions with relation to the windows; substantially as described.

7. The combination with a building having a plurality of show-windows and a basement therebeneath, removable floors for said windows, a truck having a vertically-movable platform for coöperation with the floors to move them into and out of position, transverse tracks on said vertically-movable platform, a truck-supporting track over which the truck may move to aline with any of the windows, platforms arranged beside the truck-supporting track, and rails on the last-mentioned platform to aline with those on the vertically-movable platform; substantially as described.

8. The combination with a building having a show-window, of a removable floor for the window, a truck having a vertically-movable platform to temporarily receive the removable floor, a track over which the truck may move, means for temporarily holding the truck in rigid alinement with the removable floor, and a platform adjacent to the truck to temporarily receive the removable floor from the truck-platform; substantially as described.

815,797. UMBRELLA. EDWARD W. CRAFT, Dalton, Mass., assignor of one-half to Russell L. Parks, Russell, Mass. Filed July 3, 1905. Serial No. 268,225.



Claim.—1. In an umbrella, the combination with a stick, of a collar encircling and secured to the stick and having at its inner portion a recess opening to the surface of such inner wall which adjoins the stick, and having a radial slot intersecting said recess, and a cover-supporting rib having a head located in said internal recess and having its portion adjacent said head free for swinging movements through the slot.

2. In an umbrella, the combination with a stick, of a sleeve encircling and slidable along the stick and having at its inner portion a recess opening to the surface of such inner wall which adjoins the stick, and having a radial slot intersecting said recess, and a cover-distending rib having a head located in said internal recess and having its portion adjacent said head free for swinging movements through the slot.

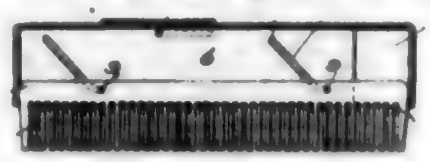
3. In an umbrella, the combination with a stick, of a collar encircling and secured to the stick, and a sleeve encircling and slidable along the stick, and said collar and sleeve each having at its inner portion a recess opening to the surface of such inner wall which adjoins the stick, and having a radial slot intersecting said recess, and cover-supporting and cover-distending ribs having heads located in said internal recesses of the collar and the sleeve, and having their portions adjacent their heads free for swinging movements through said slots.

4. In an umbrella the combination with a stick, of a collar encircling and secured to the stick, and a sleeve encircling and sliding along the stick, and said collar and sleeve each being provided with an annular groove or channel within its inner wall which adjoins the stick, and formed with a series of radial slots therethrough which intersect the groove, a series of cover-supporting ribs and a series of distending-ribs having heads located in the internal annular channels of the collar and sleeve, and having portions thereof adjacent such heads free for swinging movements through said slots, the ribs of the one series being pivotally connected to those of the other series.

5. In an umbrella, the combination with the stick, the collar affixed thereto and the sleeve slidable thereon, said sleeve and collar each having an inwardly-opening annular channel, and having a series of radial slots formed through the circular wall of said channel and through one of the walls which is angular thereto, of the cover-supporting ribs, and the distending-rib pivoted to the intermediate portions of said cover-ribs, and said ribs having, respectively at their upper and lower ends, heads which engage in said channels, while the necked portions of the ribs adjacent said heads are free for their swinging movements, relatively to the collar and sleeve, through said radial slots.

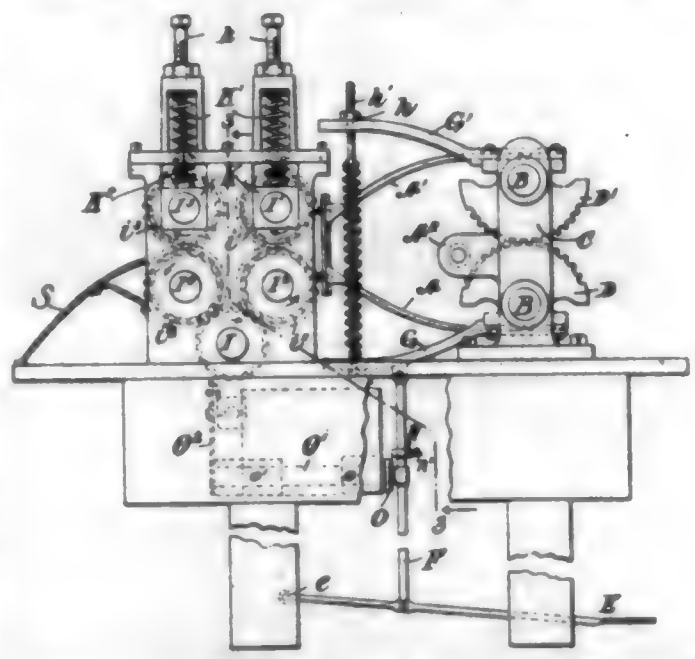
6. In an umbrella the combination with the stick, the collar affixed thereto and the sleeve slidable thereon, said sleeve and collar each having an inwardly-opening annular channel, and having a series of radial slots formed through the circular wall of said channel and through one of the walls which is angular thereto, of the cover-ribs, and the distending-rib formed of thin metal cross-sectionally of U shape and provided, respectively at their upper and lower ends with studs having enlarged outer-end spherical heads, and also smaller inner-end enlargements, said studs and enlargements being disposed within the end portions of the channel-shaped ribs, which portions are contracted and flattened about the stud-shanks and in shouldered relations to the said inner enlargements, the said spherical heads engaging in said channels while the contracted portions of the ribs adjacent said heads have extensions through, and free movements within, said radial slots.

815,798. COMBINED COMB CASE AND CLEANER. AUSTIN O. CRAVER, Providence, R. I. Filed May 4, 1905. Serial No. 258,836.



Claim.—A device of the class described comprising a case formed with a longitudinally-arranged slot, a comb slidably mounted within the case, comb-actuating means mounted within the case and connected with the comb, a thumb-piece engaging the case, a pin projecting from said thumb-piece and engaging the comb-actuating means within the case, said pin operating within the slot formed in the case, the thumb-piece serving to cover said slot at all times, whereby to exclude foreign matter from the case.

815,799. MACHINE FOR DECORTICATING MANILA FIBER AND LIKE SUBSTANCES. CAROLUS B. DAILEY, Brooklyn, N. Y. Filed Sept. 2, 1905. Serial No. 276,980.



Claim.—1. A machine for decorticating manila fiber and the like, comprising movable jaws, means for opening and closing said jaws, knives carried by the jaws, rollers for drawing the fiber between the knives, and means for simultaneously opening the jaws and stopping the rollers.

2. A machine for decorticating manila fiber and the like, comprising knife-carrying jaws, means for opening and closing said jaws, and rollers for drawing the material between the knives, in combination with a clutch mechanism and means for simultaneously opening the jaws and operating the clutch to stop the rollers.

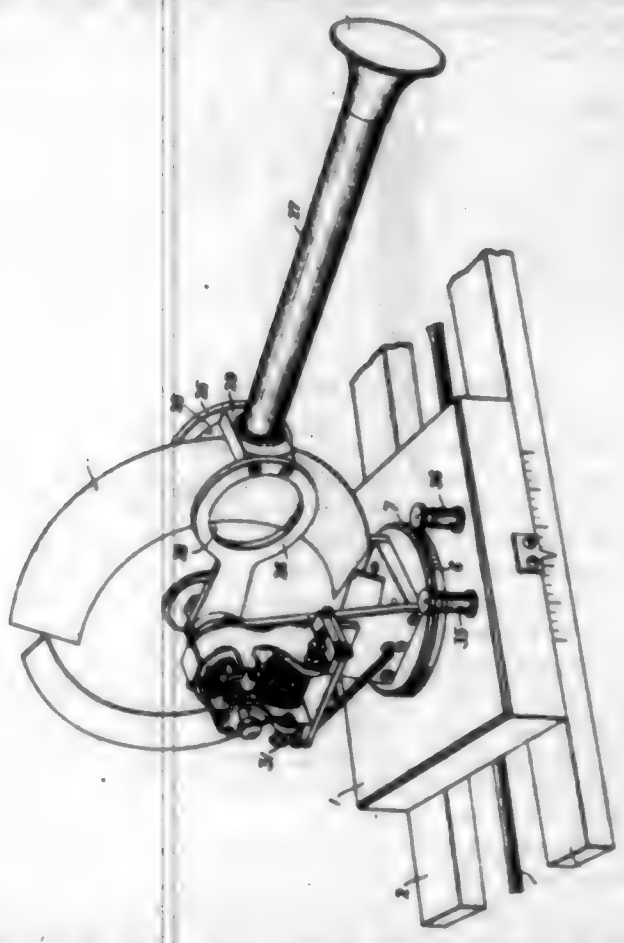
3. A machine for decorticating manila fiber and the like, comprising knife-carrying jaws, and rollers for pulling the material between the knives, the latter extending in a substantially straight line across the machine but at an angle to the axes of the rollers.

4. A machine for decorticating manila fiber and the like, comprising knife-carrying jaws and spring means to draw said jaws together, a foot-lever and means to move both jaws away from each other against the action of the spring means, and rollers to draw the fiber between the knives.

5. A machine for decorticating manila fiber and the like, comprising pivoted knife-carrying jaws, gear connections for the two jaws, spring means to tend to draw the jaws together, a foot-lever and connections to separate the two jaws, and rollers to draw the fiber between the knives.

6. A machine for decorticating manila fiber and the like, comprising knife-carrying jaws and spring means for holding said jaws together, a foot-lever and connections to separate the jaws against the action of the spring means, and rollers to draw the fiber between the knives, the latter extending in a substantially straight line across the machine, but at an angle to the axes of the rollers.

815,800. FLICKER-PHOTOMETER. JOHN T DEMPSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 22, 1904. Serial No. 221,066.



Claim.—1. A flicker-photometer having a plurality of movable light-reflecting surfaces, and means for successively viewing said reflecting-surfaces.

2. A flicker-photometer having a rotatable member, a plurality of light-reflecting surfaces carried thereby, and means for successively viewing said reflecting-surfaces.

3. A flicker-photometer having an eyepiece, a plurality of light-reflecting surfaces for reflecting light from different sources to said eyepiece, and means for successively moving said surfaces to positions equidistant from said eyepiece.

4. In a flicker-photometer, a rotatable disk having frusto-conical reflecting-surfaces the elements of which make an angle of forty-five degrees with the axis of rotation of the disk.

5. A flicker-photometer having a rotatable disk, means for rotating said disk, reflector-surfaces on said disk to reflect light from two different sources, means for reversing said disk to interchange the reflecting-surfaces with respect to the lights, and means for viewing said reflecting-surfaces.

6. A flicker-photometer having a rotatable disk, reflector-surfaces on said disk to reflect light from two different sources, standards for supporting said disk, a sight-tube supported from said standards, and means whereby said standards may be rotated through one hundred and eighty degrees to interchange the reflector-surfaces with respect to the light sources.

7. A flicker-photometer having a rotatable disk, reflector-surfaces on said disk to reflect light from two different sources, standards for supporting said disk a sight-tube supported from said standards, means whereby said standards may be rotated through one hundred and eighty degrees to interchange the reflector-surfaces with respect to the light sources, and means for rotating the sight-tube through a vertical angle of one hundred and eighty degrees.

8. In a flicker-photometer, a rotatable disk having two reflecting-surfaces on its periphery, each of said surfaces covering substantially half the periphery of the disk and being of substantially uniform width.

9. A flicker-photometer having a base-block, standards pivotally mounted on said block, a rotatable disk carried by said standards, means for rotating said disk, and an eyepiece for viewing said disk.

10. A flicker-photometer having a base-block, standard mounted on said block, a rotatable disk supported by said standards, said disk having angularly-disposed reflecting-surfaces on its periphery, means for rotating said disk, and an eyepiece for viewing said disk.

11. A flicker-photometer having a base-block, standards mounted on said block, a rotatable disk supported by said standards, said disk having a central web and frusto-conical reflecting-surfaces on the periphery of the web, means for rotating said disk, and an eyepiece for viewing said disk.

12. A flicker-photometer having a plurality of light-reflecting surfaces, means for rotating said reflecting-surfaces, and means for successively viewing said surfaces while in motion.

13. A flicker-photometer having a plurality of light-reflecting surfaces, means for continuously moving said surface, at equal speeds, and means for successively viewing said surfaces while in motion.

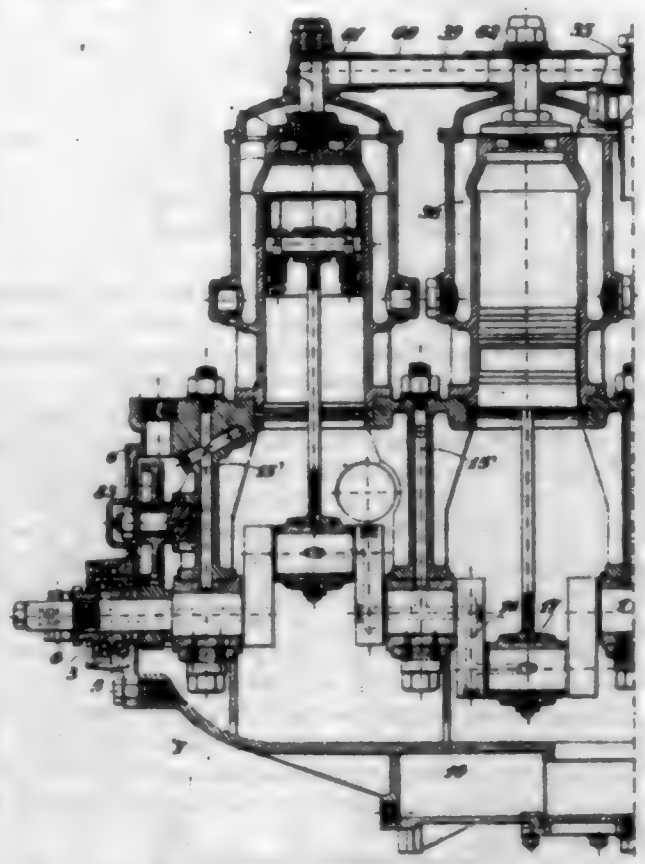
815,801. BUILDING MATERIAL. CHARLES M. DEPEW and HOLLIS E. MCCOY, San Francisco, Cal., assignors to Pumice Stone Construction Company, San Francisco, Cal. Filed Feb. 10, 1905. Serial No. 245,123.

Claim.—1. A building material consisting of pumice of volcanic origin and substantially of nut size and containing silica, alumina, iron oxid and alkalies in substantially the proportions described, scoria crushed to about the consistency of ordinary sand and containing about twenty-seven per cent. of alumina, and Portland cement.

2. A building material consisting of volcanic pumice of nut size and containing about twenty per cent. of alumina; scoria crushed to about the consistency of ordinary sand and containing about twenty-seven per cent. alumina and which when ground is of dark color, does not dust or powder, and has sharp edges and angular surfaces; and Portland cement.

3. A building material consisting of volcanic pumice of nut size containing silica and alumina in substantially the proportions described; scoria crushed to about the consistency of ordinary sand and containing silica and alumina in about the proportions specified, and Portland cement.

815,802. INTERNAL-COMBUSTION ENGINE. ALBERT DE DION and GEORGES BOUTON, Puteaux, France. Filed Mar. 15, 1905. Serial No. 250,230.



Claim.—1. A multiple-cylinder internal-combustion engine, comprising the combination with a plurality of cylinders, each provided with a suction-valve, of a hood inclosing said valve, a pair of pillars arranged in operative relation with respect to each of said hoods, a cross-bar mounted upon each pair of pillars and engaging each of the hoods, means for securing the cross-bar in position, conduits for establishing communication between the hoods, and a common supply-pipe for said conduits.

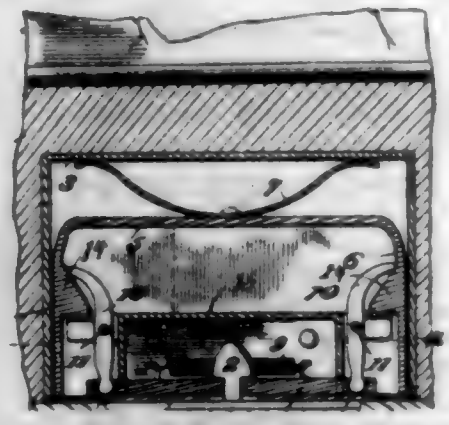
2. A multiple-cylinder internal-combustion engine, comprising the combination with a plurality of cylinders, each provided with a suction-valve, of a hood inclosing each of said valves, certain of said hoods provided with a pair of tubular extensions and the other of said hoods provided with a single tubular extension, a pair of pillars

arranged in operative relation with respect to each of said hoods, a cross-bar mounted upon each pair of pillars and engaging each of the hoods, means for securing the cross-bar in position, conduits connected to said tubular extension for establishing communication between the hoods, and a common supply-pipe for said conduits.

3. A multiple-cylinder internal-combustion engine, comprising the combination with a plurality of cylinders, each provided with a suction-valve, of a hood inclosing each of said valves, certain of said hoods provided with a pair of tubular extensions and the other of said hoods provided with a single tubular extension, a pair of pillars arranged in operative relation with respect to each of said hoods, a cross-bar mounted upon each pair of pillars and engaging each of the hoods, means for securing the cross-bar in position, conduits connected to said tubular extension for establishing communication between the hoods, a common supply-pipe for said conduits, a pair of half-collars for connecting said supply-pipe to said conduits, a screw securing the half-collars in position, and a stirrup bearing against one of said collars and through which the said screw passes.

4. A multiple-cylinder internal-combustion engine, comprising the combination with a plurality of cylinders, each provided with a suction and an outlet valve, of a hood inclosing each of said suction-valves, a pair of pillars arranged in operative relation with respect to each of said hoods, a cross-bar mounted upon each pair of pillars and engaging each of the hoods, means for securing the cross-bar in position, means for suitably operating the suction-valve, conduits for supplying a cooling medium to each of the said cylinders, conduits for establishing communication between the hoods, and a common supply-pipe for said last-mentioned conduits.

815,803. SASH-LOCK. William A. Douglas, Utica, N. Y. Filed Mar. 20, 1905. Serial No. 251,061.



Claims.—1. In a sash-lock, the combination of a handle having angularly-extending end members, movable catches, and connections comprising levers arranged between the end members of the handle and operably connecting the catches therewith.

2. In a sash-lock, the combination of a casing, a handle arranged therein and provided with downwardly-extending vertical end portions, levers arranged in the casing in the space between the end portions of the handles having their upper ends curved toward the end portions of the handle, the end portions of the handle having cams projected from the inner sides thereof to engage the upper curved portion of the levers to impart pivotal movement to said levers, catches slidably mounted in the casing and engaged by the lower end portions of the levers, and a fixed catch adapted to be engaged upon opposite sides by the movable catches.

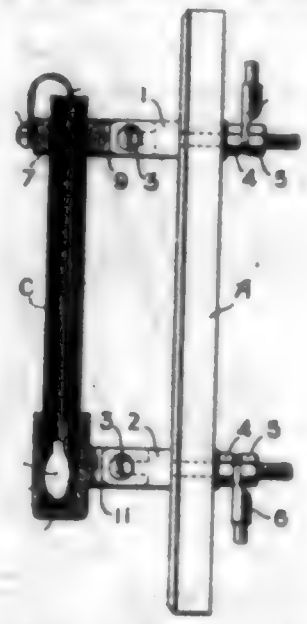
3. In a sash-lock, the combination of a casing, a handle mounted therein, and embodying angularly-extending end members, levers arranged between said end members, catches movable with said levers, and a fixed catch adapted for operable connection with the catches of said levers.

815,804. THERMAL CUT-OUT. Charles E. Eveleth, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 4, 1903. Serial No. 168,147.

Claim.—1. The combination with an electric conductor between parts of which an arc is liable to form, of means controlled by the arc for delivering a stream of fluid in the direction of said conductor, and means for confining said stream in intimate association with said arc.

2. The combination with an electric conductor between parts of which an arc is liable to form, of an inclosing wall closely surrounding said conductor, and means controlled by the arc for discharging a stream of fluid through the space inclosed by said wall.

3. The combination with an electric conductor between parts of which an arc is liable to form, of an inclosing wall surrounding said conductor, and means located at one end of said wall for confining gases in such manner that they may be liberated by the arc and discharged through the space inclosed by said wall.



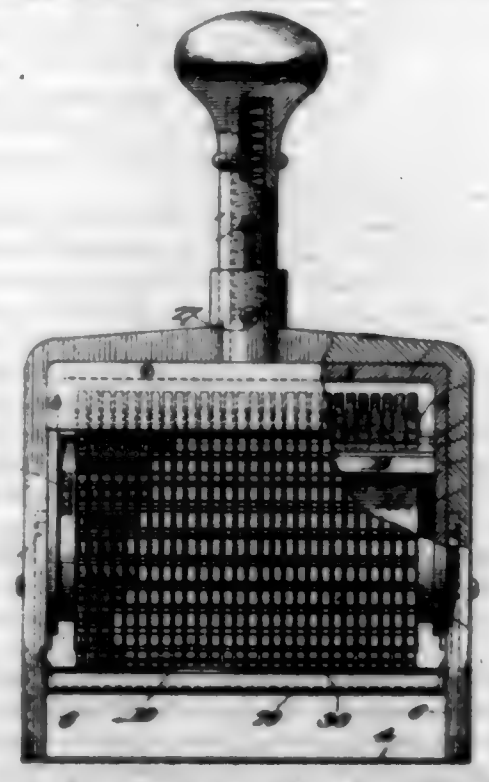
4. The combination of an electric conductor between parts of which an arc is liable to form, an inclosing wall surrounding said conductor, and a charge of blast-producing material located at one end of said wall and adapted to be set off by the arc and discharged through the space inclosed by said wall in intimate association with the arc.

5. The combination of an electric conductor between parts of which an arc is liable to form, an inclosing wall surrounding said conductor and closed at one end, and a charge of blast-producing material located in said closed end of the wall and adapted to be set off by the arc and discharged through the space inclosed by said wall in intimate association with the arc.

6. The combination of an electric conductor between parts of which an arc is liable to form, a cup-shaped terminal to which said conductor is connected, a tube of insulating material surrounding said conductor and engaging at one end with said terminal, and a reservoir for compressed gas detachably located in said cup-shaped terminal and adapted to be opened by the arc.

7. The combination of a metallic terminal provided with a cup-shaped recess, a fusible conductor, a capsule charged with compressed gas located in said recess and engaging one end of said conductor, and a tube surrounding said conductor and screwed into the mouth of said recess to abut at its end against said capsule.

815,805. STAMPING-MACHINE. Irvine Eyre, Wilmington, Del. Filed July 29, 1905. Serial No. 271,861.



Claim.—1. In a stamping-machine, in combination, a main frame having a tubular guide, a reciprocatory yoke provided with

the printing elements and having a longitudinally-slotted tubular plunger or handle portion slidable through said guide, a coiled spring within said tubular plunger, and a removable pin forming an abutment for said spring, said pin passed removably through said guide and through the slots of said plunger and having opposite end heads, one of which is adjustable, whereby the pin can be tightened to lock the plunger against reciprocation through the guide.

2. In combination, a main frame having a tubular guide provided with diametrically opposite holes, a reciprocatory yoke provided with printing elements and having a tubular plunger or handle portion slidable through said guide, said plunger having diametrically opposite longitudinal slots registering with said holes, a coiled spring within said plunger, a removable pin passed diametrically through said plunger and extending into said holes and forming an abutment for said spring, said pin having an end head for locking engagement with said plunger.

3. In combination, a main frame having a tubular guide having diametrically opposite radial holes, a reciprocatory yoke provided with printing elements and having a tubular plunger or handle portion slidable through said guide and formed with diametrically opposite longitudinal slots registering with said holes, a coiled spring within said plunger, and a diametrically adjustable removable pin passed diametrically through said plunger and forming an abutment for said spring, said pin having a head at one end arranged in one of said holes, the opposite end of said pin being threaded and provided with an adjustable head located in the other hole, said plunger having depressions at opposite portions of one of said slots with which one of said heads is adapted to have locking engagement.

4. In a stamping-machine, in combination, a main frame, a reciprocatory yoke having recessed end heads, a series of approximately similar type-disks carried by said yoke and arranged side by side between said heads and on one axis, each disk being independently turnable in either direction and having peripheral printing characters, and a universal spring-pressed locking-bar for and arranged within said disks and between and carried by said heads and provided with supporting-springs in said recesses, substantially as described.

5. In combination, a main frame, a reciprocatory yoke having end heads, a horizontal tube extending between and fixed to said heads and formed with a longitudinal slot, a series of type-disks confined and independently turnable on said tube and having depressions around their central openings, and a spring-pressed universal locking-bar between said end heads and arranged longitudinally of said tube and within said slot and normally in locking engagement with a depression of each type-disk.

6. In combination, a main frame, a yoke provided with a fixed barrel, a series of independently-rotatable type-disks loosely mounted on said barrel and having central openings receiving the same, each disk having a series of oppositely-beveled notches around its central opening and provided with printing characters around its periphery, and a spring-pressed universal locking-bar arranged longitudinally within said barrel and having a single oppositely-beveled locking edge in locking engagement with a notch of each disk.

7. In a stamping-machine, in combination, a yoke, a series of parallel type-disks having central openings and all mounted on the same axis and independently rotatable in either direction and having printing characters arranged on their peripheries, and a concealed spring-pressed universal locking-bar arranged longitudinally within said openings of the disks and constantly held pressed outwardly to and in locking engagement with all of said disks, substantially as described.

8. In a stamping-machine, in combination, a yoke, a series of parallel type-disks all mounted on the same axis and independently rotatable in either direction, each disk having a central opening and a series of notches around said opening, each notch having similarly-inclined walls, and a spring-pressed radially-movable universal locking-bar arranged longitudinally of said series of disks and within the same and having an oppositely beveled or inclined locking edge in locking engagement with a notch of each disk, whereby any disk can be turned in either direction, substantially as described.

9. In combination, a main frame, a reciprocatory yoke mounted therein, a fixed tube carried by said yoke, a series of independent disks loosely mounted and confined to turn on said tube, each disk having a central opening to receive said tube and having type representing the letters of the alphabet arranged around its periphery, and a universal spring-pressed locking-bar arranged longitudinally within said tube and series of disks and carried by said yoke independently of said tube and disks and yieldingly holding said disks against accidental turning and in set position, whereby the disks can be independently turned by the fingers in either direction.

10. In a stamping-machine, in combination, a main frame, a reciprocatory yoke therein having end heads, a longitudinally-slotted tube between said end heads, means removably securing said tube to said end heads, a series of type-disks removably mounted on said tube and confined between said heads and having notches arranged around their central openings, and a universal locking-bar arranged within said tube and disks and between and supported by said end heads and provided with springs yieldingly holding the bar into engagement with the notched edges of the disks, said bar being removably arranged within the tube and disks.

11. In combination, a main frame, a reciprocatory yoke having end heads provided at their inner faces with bosses, a horizontal tube secured between and abutting against said bosses, a series of type-disks loosely mounted on said tube and between said bosses, and a spring device yieldingly holding said disks against accidental turning and in set position, said device being supported by said end heads and independently of said tube and the disks, substantially as described.

12. In combination, a main frame, a reciprocatory yoke having end heads, a tube secured to and between said heads and having a longitudinal slot, said end heads having recesses at the ends of said slot, a series of type-disks mounted on said tube and having notches around their central openings, a universal locking-bar arranged in said slot and extending into said recesses and arranged to engage a notch of each disk, and springs yieldingly pressing said bar outwardly, substantially as described.

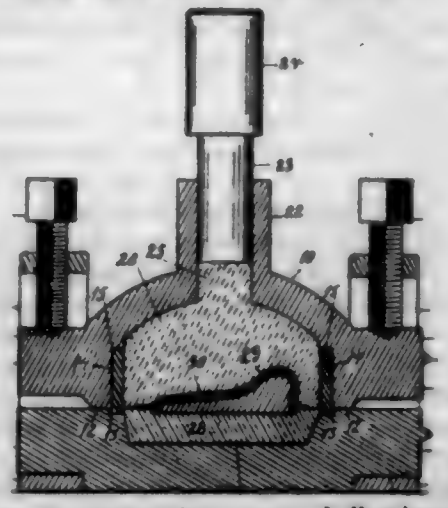
815,806. REGULATOR. ALBERT W. FRANCIS, Beaver Falls, Pa., assignor of one-half to Edward C. Rebenke, Beaver Falls, Pa. Filed June 30, 1905. Serial No. 267,231.



Claim.—1. A gas-regulator of the character described consisting of a casing having a contracted end, said casing having a compartment formed therein, terminating in said contracted end, said end having an opening formed therein, a perforated partition mounted in said end, a member adjustably secured in said casing, and having a screw-threaded recess, the end of said member having apertures formed therein, a standard carried by said member and extending upwardly into said compartment, a plate mounted upon said standard, a pin carried by said plate and extending through said partition into the opening of said casing, a spring surrounding said pin between said partition and said plate, substantially as described.

2. A gas-regulator of the character described consisting of a casing having an opening formed therein, said casing having a compartment formed therein, a perforated partition mounted in said compartment, a plate carried within said compartment, a pin carried by said plate and extending upwardly through said partition into said opening, means to normally hold said pin out of said opening, substantially as described.

815,807. DENTAL-PLATE SWAGE. GRANT B. FREEBORN, Belfast, N. Y. Filed May 1, 1905. Serial No. 258,177.

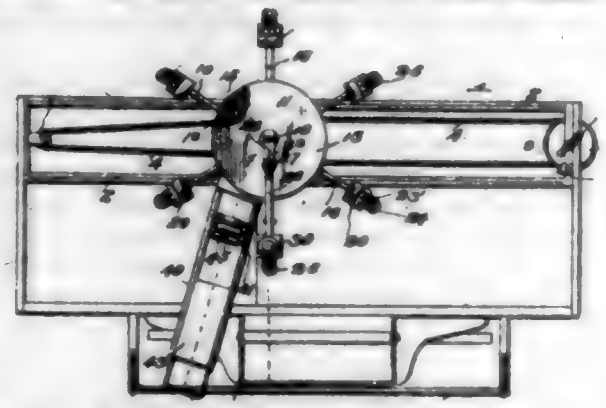


Claim.—1. In a dental-plate swage, a hollow base formed in two parts, a cup-shaped lower portion having a resinous compound adapted to support the die, a cup-shaped upper portion having a yielding wax compound therein and provided with a tubular opening, a plunger operable in said opening, lugs on said portions and screw-clamps

to engage said lugs and unite said portions, and a ring within said base to protect the joint between said portions.

2. A dental-plate swage consisting of, a lower portion 11 having the cup-shaped opening 27 on its upper side and the lugs 17 thereon, the upper portion 10 having the conical opening 26 on its under side and lugs 16 thereon, a tubular extension 22 in said upper portion, a plunger 23 operable in said tubular portion, screw-clamps 18 engaging said lugs to hold the parts together, ring 14 having seats within said parts adjacent the joint between said portions to prevent leakage, a die 28 supported upon a resinous compound in opening 27, a rubber covering 29 for the plate and a yieldable wax compound in opening 26, substantially as and for the purpose specified.

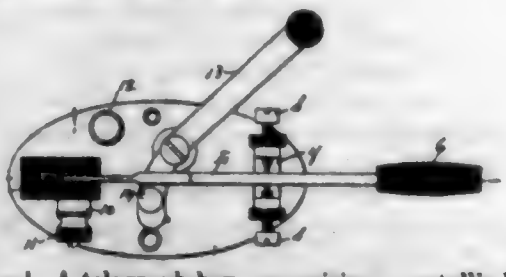
815,808. SIGN-PRINTER AND STENCIL-CUTTER. DANIEL GRANER, Chicago, Ill. Filed June 1, 1905. Serial No. 263,266.



Claim.—1. In a machine of the class described, the combination of a supporting-frame, a carriage slidably mounted on said frame, direction-pulleys mounted on said frame on opposite sides of the carriage, one of said pulleys having a ratchet device, means whereby said pulley may be turned, a pawl to engage the ratchet device, and an endless belt secured to the carriage and engaging the said pulleys, substantially as described.

2. In a device of the character described, the combination of a swinging arm having a reduced outer portion, an impression-block of polygonal form in cross-section, slidably and rotatably mounted upon said reduced portions and having different characters upon its side faces, the inner end of said block being formed with a series of recesses corresponding in number to the number of side faces upon said block, a stop upon said arm, and a spring for holding said stop normally in engagement with one of said recesses.

815,809. TELEGRAPH-KEY. JOHN J. GEEGAN, Newark, N. J. Filed Jan. 28, 1905. Serial No. 243,062.



Claim.—1. A telegraph-key, comprising a metallic base-plate, a spring key-lever adapted to move horizontally, mounted at one end of the plate and above it, and insulated from it, and contact-points adjacent to the key-lever.

2. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, a spring key-lever having an integral end mounted in said block and free of contact with the plate, and a contact-point in electrical connection with said plate.

3. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, a single-piece spring key-lever adapted to move horizontally, and permanently attached at one end to the block and free of contact with the plate, a contact-point in electrical connection with said base, and a pair of binding-posts, one for the key-lever and one for the base.

4. A telegraph-key, comprising a metallic base-plate, a slotted block of insulation upon it, an integral key-lever supported at one point only, comprising an unyielding portion and an elastic portion, said key-lever secured in the slot of the insulation-block in a plane at right angles to the base, and a contact in electrical connection with said base.

5. A telegraph-key, comprising a metallic base-plate, a spring key-lever mounted at one end of the plate and above it, and insulated from it, and contact-points adjacent to the key-lever, in combination with a pivoted switch-lever between the plate and key-lever and independent of either contact-point, having an enlarged end adapted to be inserted between the plate and key-lever.

6. A telegraph-key, comprising a metallic base-plate, a slotted block of insulation upon it, an integral key-lever, comprising an unyielding portion and an elastic portion, said key-lever secured in the slot of the insulated block in a plane at right angles to the base, and a contact in electrical connection with said base, in combination with a pivoted switch-lever independent of either contact-point between the plate and key-lever, having an enlarged end adapted to be inserted between the plate and key-lever.

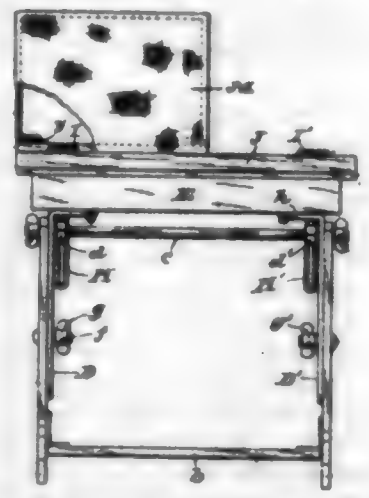
7. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, a single-piece spring key-lever adapted to move horizontally and having but one point of support.

8. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, a single-piece spring key-lever adapted to move horizontally, and permanently attached at one point only and to said block of insulation.

9. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, a single-piece spring key-lever attached to said block of insulation, said key adapted to move horizontally and free from said base.

10. A telegraph-key, comprising a metallic base-plate, a block of insulation secured thereto, and a single-piece spring key-lever attached to said block of insulation, said key having but one point of support, in combination with a switch-lever independent of either contact-point adapted to be inserted between the plate and the key-lever.

815,810. ADJUSTABLE ARTIST'S DESK AND EASEL. JOHN GOLDSWORTHY and EMELIA M. GOLDSWORTHY, Indianapolis, Ind. Filed Apr. 6, 1905. Serial No. 254,184.



Claim.—1. An artist's desk and easel combined including a desk-body with a fixed rear top part, brackets secured to the under side of the rear top part, a lid provided at the rear edge thereof with hinge members, and props pivoted to the hinge members and attached adjustably to the brackets.

2. An artist's desk and easel combined including a desk-body, a lid provided at the rear edge thereof with hinge members, props having slots therein and pivoted to the hinge members, brackets secured to the inner side of the desk-body and provided with bolts extending through the slots of the props, and thumb-nuts on the bolts and engaging the props.

3. An artist's desk and easel combined including a pair of pillars, a pair of extension-pieces having slots therein and provided with lateral branches at the tops thereof, devices securing the extension-pieces adjustably to the pillars, a desk-body secured fixedly to the lateral branches and provided in the interior thereof with fixed brackets, a lid provided at the rear edge thereof with hinge members, and props pivoted to the hinge members and attached adjustably to the brackets.

4. An artist's desk and easel combined including a pair of vertically-adjustable pillars with bases and having each a pair of lateral branches at the top thereof, a desk-body secured fixedly to the lateral branches of the pillars and having a rear top part provided at the under side thereof with a pair of fixed brackets having binding devices, a lid provided at the rear edge thereof with a pair of hinge members fixed thereto, and a pair of props pivoted to the hinge members and attached adjustably to the brackets by the binding devices thereof.

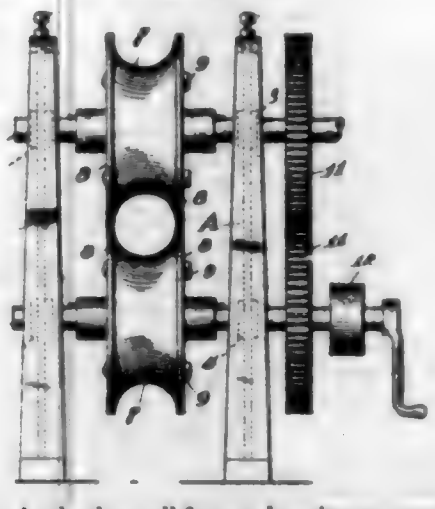
5. An artist's desk and easel combined including a stand, a

desk-body secured to the stand and comprising a rear top part in which is a groove and also sockets adjacent to the groove for supporting a copy-holder, a pair of brackets secured to the under side of the rear top part and provided with binding devices, a lid provided at the rear edge thereof with a pair of hinge members fixed thereto, and a pair of props pivoted to the hinge members and attached adjustably to the brackets by the binding devices thereof.

6. In an artist's desk and easel combined, the combination with a desk-body having a rear top part, and a lid, of a pair of brackets secured to the under side of the rear top part of the desk-body and having securing-bolts provided with thumb-nuts, a pair of hinge parts secured to the rear edge of the lid, and a pair of props pivoted to the hinge parts and having slots therein receiving the securing-bolts of the brackets, the props being engaged by the thumb-nuts of the securing-bolts.

7. In an artist's desk and easel combined, the combination of a pair of pillars with bases and having each a pair of bolt-holes therein, a pair of extension-pieces having each a slot therein and provided at the top thereof with a pair of lateral branches, a rod extending through the slots of both of the extension-pieces and also through one of the bolt-holes in each one of the pillars, thumb-nuts on the ends of the rod engaging the pillars, a pair of nuts on the rod opposed to the thumb-nuts at the inner sides of the extension-pieces, a pair of binding-bolts each extending through the other one of the bolt-holes of either pillar and also through the slot of the adjacent extension-piece, a desk-body secured to the lateral branches of the extension-pieces and having a trough extending across the front of the bottom thereof, the body having also a rear top part having a pair of brackets secured to the under side thereof, a lid provided with a pair of hinge members at the rear edge thereof, and a pair of props pivoted to the hinge members and attached adjustably to the pair of brackets.

815,811. CANDY-SPINNER. WILLIAM H. GOODMAN, Knoxville, Tenn., assignor of one-third to Hu. Woodward, Knoxville, Tenn. Filed July 11, 1905. Serial No. 269,237.



Claim.—1. A wheel or roll for candy-spinners comprising a center of elastic yielding material to which the candy will not adhere, and ends for laterally supporting the elastic center.

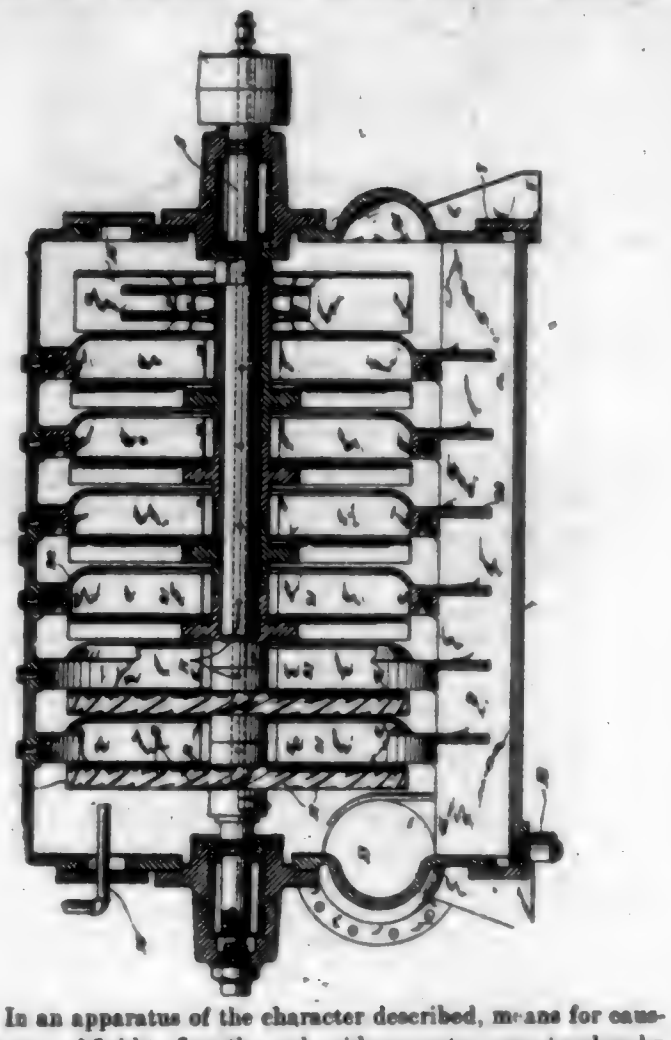
2. The combination with a frame, journal-boxes, shafts journaled therein, and tension means, of wheels or rolls secured to the shafts, the centers of the wheels or rolls composed of elastic yielding material circumferentially grooved.

3. The combination with a suitable frame, shafts journaled therein, and rollers secured to the shafts, the centers of said rollers composed of partly or slightly vulcanized rubber circumferentially grooved, and end plates or disks secured thereto, and mounted on the shafts.

4. The combination with a suitable frame, shafts journaled therein and rollers secured to the shafts, said rollers composed of circumferentially-grooved centers of partly or slightly vulcanized rubber to which candy will not adhere, end plates or disks, said disks or centers secured together and springs to regulate the pressure on the shafts of the rolls, and set-screws for regulating the tension of the springs.

815,812. GAS-PURIFYING APPARATUS. ALEXANDER M. GOW, Edgewood Park, Pa., assignor to George Westinghouse, Pittsburg, Pa. Filed Aug. 1, 1904. Serial No. 218,976.

Claim.—1. In an apparatus of the character described, means for causing a stream of fluid to flow through the apparatus, rotatable members whereby the fluid stream is cut transversely of its axis and the recrement therein retarded in its travel, and recrement channeled receptacles rotatable with said members for receiving recrement retarded by said members and delivering it beyond the stream-path.



2. In an apparatus of the character described, means for causing a stream of fluid to flow through said apparatus, agents whereby said fluid is intimately mixed with a fluid of greater specific gravity, rotatable members whereby the fluid stream is cut transversely of its axis and the recrement therein retarded in its travel, and recrement channeled receptacles rotatable with said members for receiving recrement retarded by said members and delivering it beyond the stream-path.

3. In an apparatus of the character described, means for causing a stream of fluid to flow through said apparatus, stationary washing-surfaces disposed in the stream-path, rotatable members whereby the fluid stream is cut transversely of its axis and the recrement therein retarded in its travel and recrement channeled receptacles rotatable with said members for receiving recrement retarded by said members and delivering it beyond the stream-path.

4. In an apparatus of the character described, means for causing a stream of fluid to flow through said apparatus, recrement-ways located out of stream-path, agents for wetting the recrement contained in the fluid stream, rotatable members whereby the fluid stream is cut transversely of its axis and the recrement therein retarded in its travel, and recrement channeled receptacles rotatable with said members for receiving recrement retarded by said members and delivering it to said recrement-ways.

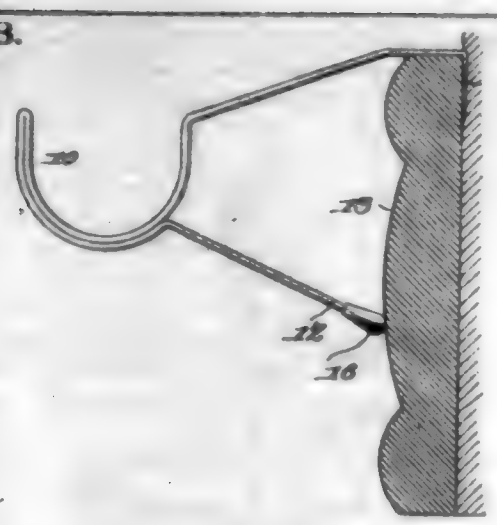
5. In an apparatus of the character described, means for causing a stream of gas to flow through the apparatus, and rotatable recrement-receptacles for cutting the gas stream transversely of its axis and centrifugally forcing the recrement collected, beyond the gas stream.

6. In a recrement-separator, a plurality of compartments formed by annular, inwardly-projecting fluid-directors, a rotatable shaft located centrally of said directors and carrying a fluid-propeller in each of said compartments, and recrement-receptacles carried by said propellers.

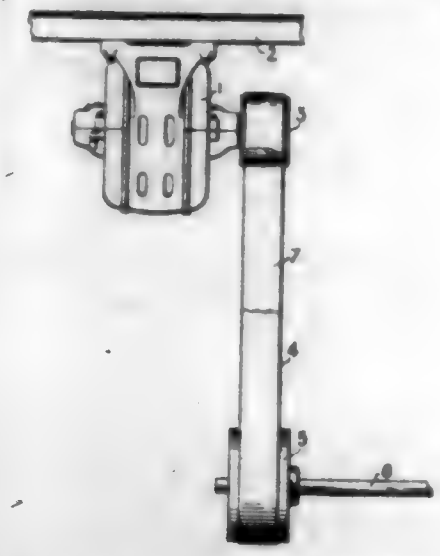
815,813. BRACKET-HOOK. ERNEST A. GRAHAM, Bar Harbor, Me., assignor of one-third to Frank M. Graham and one-third to Lizzie H. Ford, Bar Harbor, Me. Filed Apr. 22, 1905. Serial No. 257,919.

Claim.—A bracket device of the class described consisting of a bar folded centrally and bent into a pole-supporting loop at the fold and with the arms diverging with the terminal of one arm bent downwardly and flattened for entering between the plastering and the support and the terminal of the other arm extended for bearing upon the support at a lower point.

815,813.



815,814. MEANS FOR PREVENTING ACCUMULATION OF STATIC ELECTRICITY UPON BELTING. CHARLES M. GREEN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Feb. 5, 1903. Serial No. 142,014.

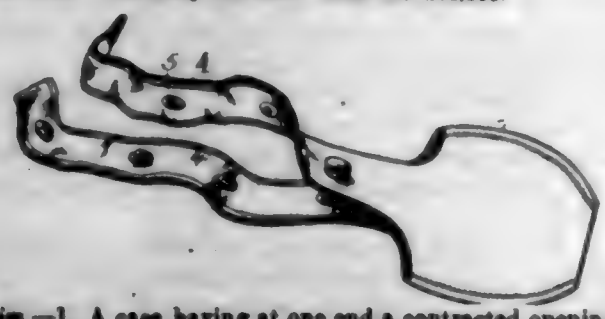


Claim.—1. A belt, and means for rendering its working surface conductive of electricity, comprising a layer of graphite applied to said working surface.

2. In combination, a belt, a pulley engaging said belt, and means for making the surfaces of said pulley and said belt conductive of electricity in order to prevent the accumulation of static electricity upon said surfaces.

3. In combination, a pair of metallic pulleys, a leather belt connecting the same, and means for preventing the accumulation of static electricity upon said belt comprising a coating of graphite applied to the working surface of said belt.

815,815. NURSING-BOTTLE HOLDER. MARY E. GREGORY, Norwalk, Conn. Filed July 26, 1905. Serial No. 271,266.



Claim.—1. A case having at one end a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case and located on opposite sides thereof, and complementary fastening means located at intervals along said straps.

2. A case having a contracted opening at one end for the reception of the neck of a bottle, straps extending from the opposite end of the case and located on opposite sides thereof, and stud and socket fasteners located at intervals along said straps.

3. A case having at one end a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case and located at opposite sides thereof, means for securing the straps together at a point to secure a bottle within the case, and means for securing a strap to an object.

4. A case having a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case and located on opposite sides thereof, and stud and socket fasteners disposed at intervals along said straps, one of said fasteners being located in position to secure a bottle within the case.

5. A case having at one end a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case, and fastening means located at intervals along said straps.

6. A case having at one end a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case, and stud and socket fasteners located at intervals along said straps.

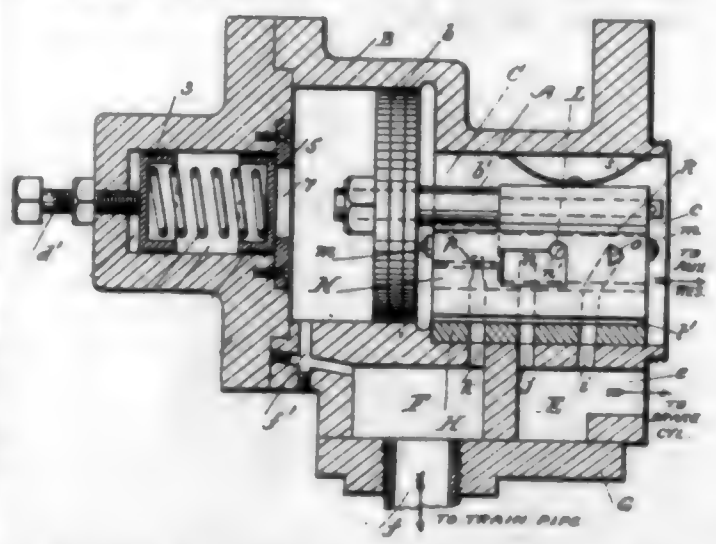
7. A case having at one end a contracted opening for the reception of the neck of a bottle, straps extending from the opposite end of the case, and fastening means including stud and socket fasteners for securing said case to an object.

8. A case having a contracted opening for the reception of the neck of a bottle, straps projecting from the opposite end of said case and having fastening means for securing a bottle within the case, and fastening means for securing the case to an object.

9. A case having a contracted opening for the reception of the neck of a bottle, straps secured at the opposite end of the case and at opposite sides thereof, stud and socket fasteners for closing this end of the case to retain a bottle therein, and means for securing the case to an object.

10. A case having a contracted opening for the reception of the neck of a bottle, straps projecting from the opposite end of the case and from opposite sides thereof, stud and socket fasteners on said straps for closing this end of the case to hold a bottle therein, and stud and socket fasteners for securing the case to an object.

815,816. AIR-BRAKE VALVE. WINFIELD O. GUNCKEL, Terre Haute, Ind., assignor of one-half to Peter M. Staff, Terre Haute, Ind. Filed July 12, 1905. Serial No. 269,414.



Claim.—1. In an air-brake valve, the combination, with a casing provided with a cylinder and a valve-chamber, one end of the said cylinder having a train-pipe connection and the other end of the said cylinder and the said chamber having an auxiliary reservoir connection; of a V-shaped auxiliary slide-valve slidable in a channel in the said valve-chamber, a main valve slidable in the channel of the said auxiliary valve and operatively connected with it, and a piston slidable in the said cylinder and connected with the said main valve, the said casing and valves being provided with ports and passages for placing the brake-cylinder in communication with the atmosphere, the auxiliary reservoir and the train-pipe.

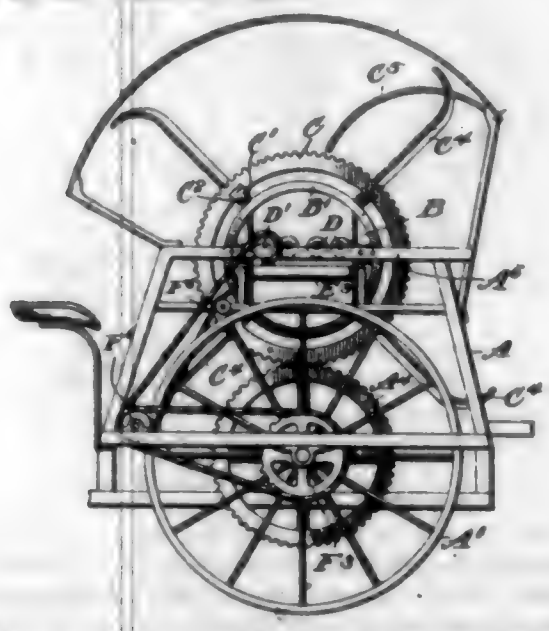
2. In an air-brake valve, the combination, with a casing provided with a cylinder and a valve-chamber, of a removable valve-seat secured in the said chamber and provided with an angular channel, a V-shaped auxiliary slide-valve slidable in the said channel, a main valve slidable in the channel of the said auxiliary valve, and a piston slidable in the said cylinder and connected with the said main valve, the said valve-seat and valves being provided with ports and passages in duplicate in their side portions for distributing the compressed air.

3. In an air-brake valve, the combination, with a casing provided with a cylinder and a valve-chamber, one end of the said cylinder having a train-pipe connection and the other end of the cylinder and the said chamber having an auxiliary-reservoir connection; of a V-shaped valve slidable in a channel in the said chamber, a second valve slidable in the channel of the aforesaid valve, and a piston slidable in the said cylinder and operatively connected with the said

valves, the said casing and valves being provided with ports and passages for distributing the compressed air.

4. In an air-brake valve, the combination, with a cylinder, a valve for distributing the compressed air, and a piston slidable in the said cylinder and operatively connected with the said valve; of a cylinder-cover provided with a spring-chamber, a buffer-spring for arresting the movement of the said piston, plates in the said spring-chamber at the ends of the said spring, a retaining-piece secured to the said cover for one of the said plates to bear against, and an adjusting-screw engaging with the end wall of the said chamber and bearing against the other said plate.

815,817. CORN PICKER AND HUSKER. CHARLES B. HANCOCK, Marion, Ind., assignor of one-half to C. Roe Hall, Palestine, Tex. Filed June 14, 1905. Serial No. 265,266.



Claim.—1. In a device of the class described, a frame, picker-arms rotatably mounted thereon, a receptacle disposed within the arc of rotation of said arms and a husking device arranged within said receptacle to receive material discharged from said arms.

2. In a device of the class described a frame, picker-arms rotatably mounted thereon, a receptacle disposed within the arc of rotation of said arms, a husking device arranged within said receptacle to receive material discharged from said arms, and a husk-conveyer arranged within the receptacle and beneath said device to discharge therefrom.

3. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, and a husking device within said drum.

4. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, husking-rolls within said drum, and a conveyer beneath said rolls and discharging at one end of said drum.

5. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, husking-rolls within said drum, and a reticulated conveying-apron disposed longitudinally beneath said rolls.

6. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, husking-rolls within said drum, a reticulated conveying-apron disposed longitudinally beneath said rolls, and stripping-fingers supported by the frame intermediate of the picker-arms, and extended toward the open portion of said drum.

7. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, husking-rolls within said drum, a reticulated conveying-apron disposed longitudinally beneath said rolls, stripping-fingers supported by the frame intermediate of the picker-arms, a traction-wheel and shaft, a driving-gear upon said shaft, a counter-shaft geared to said driving-gear, and means extending from the counter-shaft to rotate said picker-arms.

8. In a device of the class described, a frame, a drum mounted thereon and having an open portion, picker-arms mounted to rotate around the drum to discharge into the open portion of said drum, husking-rolls within said drum, a reticulated conveying-apron disposed longitudinally beneath said rolls, stripping-fingers supported by the frame intermediate of the picker-arms, a traction-wheel and shaft, a driving-gear upon said shaft, a counter-shaft geared to said driving-gear, means extending from the counter-shaft to rotate said picker-arms, a driving connection from said counter-shaft to the husking-rolls, and a gearing extending from the husking-rolls to the conveyer beneath the same.

9. In a device of the class described, a frame, a drum supported thereon and provided with an opening at its top, an annular frame having a roller-bearing upon said drum and a gear upon its outer periphery, and picker-arms carried by said annular frame.

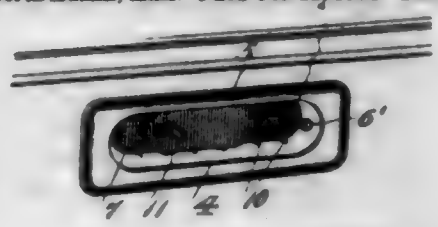
10. In a device of the class described, a frame, a receptacle mounted thereon provided at its opposite ends with annular tracks or ways, a body portion connecting these tracks or ways, an annular frame having rollers mounted upon said tracks, and picker-arms carried by said annular frame.

11. In a device of the class described, a frame, a receptacle mounted thereon provided at its opposite ends with annular tracks or ways, a body portion connecting these tracks or ways, annular frames having rollers mounted upon said tracks, picker-arms carried by said annular frames, a cross-bar extending between the annular frames at opposite ends of the body, picker-arms secured to said bar and spaced from each other, and stripping-fingers supported by a frame disposed intermediate of said arms.

12. In a device of the class described, a frame, a traction-wheel mounted therein, a counter-shaft parallel with the shaft of the traction-wheel, a driving-gear upon the traction-wheel shaft for transmitting power to the counter-shaft, a receptacle mounted upon the frame, husking-rolls within said receptacle, a driving connection extending from the counter-shaft to one of said rolls, a rotatable frame provided with picker-arms and mounted upon said receptacle to travel around the same, a gear for driving said rotatable frame loosely mounted upon the shaft of the traction-wheel, and a driving connection from the counter-shaft to said frame-gear.

13. In a device of the class described, a frame, a traction-wheel mounted therein, a counter-shaft parallel with the shaft of the traction-wheel, a driving-gear upon the traction-wheel shaft for transmitting power to the counter-shaft, a receptacle provided with husking-rolls, a driving connection extending from the counter-shaft to one of said rolls, a rotatable frame provided with picker-arms and mounted upon said receptacle to travel around the same, a gear for driving said rotatable frame loosely mounted upon the shaft of the traction-wheel, a driving connection from the counter-shaft to said frame-gear, intermediate gears carried by the shafts of said rolls, a conveyer disposed beneath the rolls, and a driving connection extending from the shaft of one roll to a driving-roll for said conveyer.

815,818. WINDOW-SASH VENTILATOR. FRANK L. HARGREAVES, North Adams, Mass. Filed Oct. 23, 1904. Serial No. 229,662.

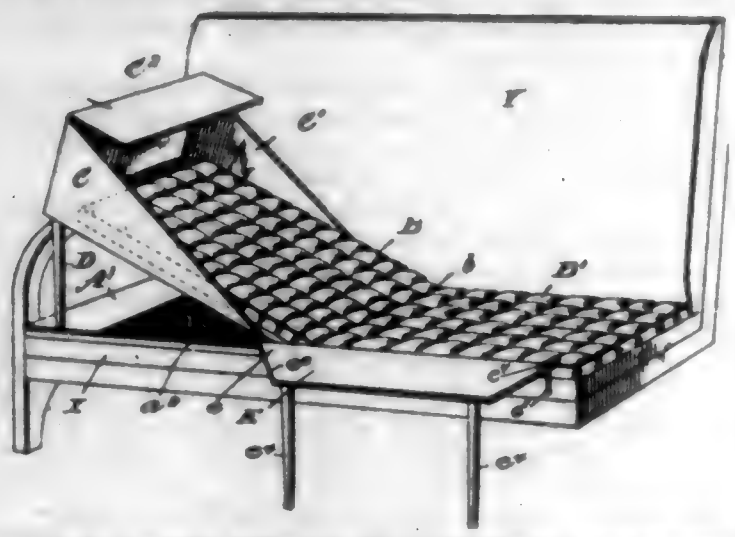


Claim.—In a window-sash and ventilator, the combination with the bottom rail of a sash, said rail having a transverse opening and a longitudinal recess in its inner face communicating adjacent one of its ends with said opening, of an oblong casing occupying said recess, acting as a sash-lift and having a back wall formed adjacent one of its ends with an opening registering with the opening in the rail, and being formed adjacent to the said wall with longitudinal series of inpunched projections, and a closure-plate between said wall and projections to control the opening in said wall, said plate having a finger-piece projecting inwardly therefrom and arranged wholly within the casing.

815,819. TRAVELER'S GRIP-COT. ELIZABETH C. HARLLEE, Raleigh, N. C. Filed Jan. 31, 1905. Serial No. 243,513.

Claim.—1. In a portable folding cot, the combination with a body portion comprising foldable sections hinged together, of draft-guards mounted upon one of said sections to protect the user and hinged to fold between the sections when collapsed, substantially as described.

2. In a portable folding cot, the combination of a body portion comprising foldable sections hinged together, a draft-guard hinged at each side of one of said sections, another guard hinged at the end of the same section, and means for fastening said guards in their operative positions, substantially as described.



3. In a portable folding cot, the combination of a body portion comprising a head and a foot section hinged together, a draft-guard hinged at each side of said head-section and each having a height sloping from the cot end, and a third guard hinged across the end of the head-section to coöperate with the side guards, substantially as described.

4. In a portable folding cot, the combination of a body portion comprising a head and a foot section hinged together, a draft-guard hinged at each side of said head-section, and a third guard hinged across the end of said head-section and having a member projecting over the adjacent portion of the cot-section, substantially as described.

5. In a portable folding cot, the combination with a body portion comprising a head and a foot section hinged together and capable of assuming partly and fully unfolded positions of use, of a lateral limb-rest loosely hinged to one of said sections to extend in the same direction in both of the relative positions of use of said sections.

6. In a portable folding cot, the combination with a body portion comprising a head and a foot section hinged together and capable of assuming partly and fully unfolded positions of use, of a lateral limb-rest loosely hinged to said foot-section adjacent the hinge to extend in the same direction in both of the relative positions of use of said sections.

7. In a portable folding cot, the combination of a body portion comprising a head and a foot section hinged together, and a laterally-extending limb-rest loosely hinged to said foot-section adjacent the connecting-hinge of the sections, and a detachable connection for said limb-rest to said foot-section adjacent the lower end thereof, substantially as described.

8. A portable folding cot comprising two sections hinged together, end and intermediate folding legs for said cot, the legs being arranged to support both sections when the parts are in their fully-unfolded position and two of the end legs to form a prop between the sections when said sections are only partly unfolded, substantially as described.

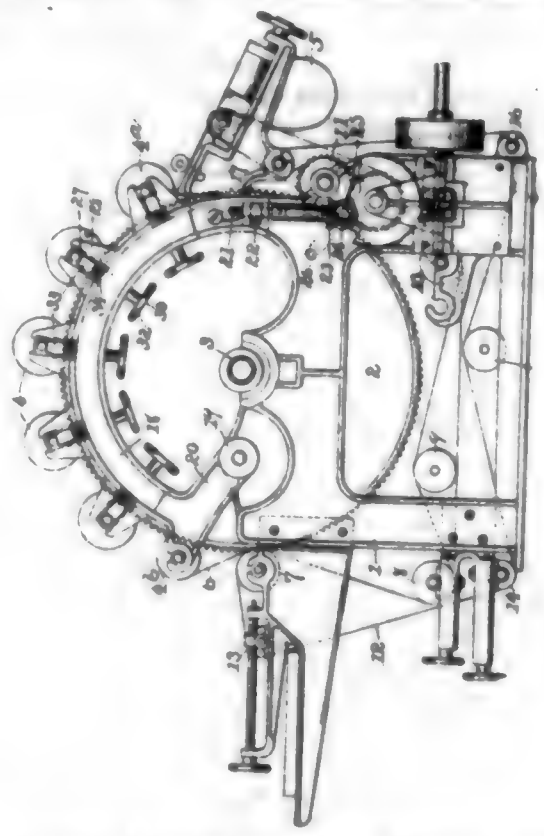
9. In a portable folding cot, the combination of a body portion comprising a head and foot section hinged together, and a laterally-extending limb-rest hinged to one of said sections near the hinge of the sections, said limb-rest having a sheared-off portion adjacent the hinge, substantially as described.

10. In a portable folding cot, the combination of a body portion comprising a head and a foot section hinged together, draft-guards mounted upon said head-section to protect the user and hinged to fold between the sections, and a laterally-extending limb-rest foldably and loosely hinged to one of said sections, substantially as described.

11. In a portable folding cot, the combination of a body portion comprising a head and a foot section hinged together, draft-guards mounted upon said head-section to protect the user and hinged to fold between the sections, a laterally-extending limb-rest foldably and loosely hinged to one of said sections, and a foot extension-rest detachably connected to the end of said foot-section, substantially as described.

815,820. MANGLE. GEORGE HATCH, South Windham, Conn. Filed May 2, 1904. Serial No. 205,696.

Claim.—1. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder and bearing a series of rolls, supported in contact with the surface of the cylinder, and means for swinging said frame to carry the rolls supported thereon away from the surface of the cylinder and for holding the frame in said position with the rolls out of contact with the cylinder.



2. In a mangle, in combination with a cylinder, a pivoted frame arched about a portion of said cylinder, a series of rolls mounted in said frame, an apron-supporting roll mounted adjacent to said cylinder and supporting an apron, and means for swinging said frame to remove the rolls, including the apron-supporting roll and the apron thereon, from contact with said cylinder.

3. In a mangle, in combination with a supporting-frame, a cylinder mounted on the frame, a swinging frame pivoted to the cylinder-supporting frame, a series of rolls mounted on the swinging frame and including a roll acting as a support for an apron, and means for swinging said frame to carry all of said rolls away from the surface of said cylinder.

4. In a mangle, in combination with a frame, a cylinder mounted on the frame, a roll-supporting frame arched about the cylinder and pivoted at one end to the machine-frame, a series of rolls mounted in the swinging frame, and means for raising one end of the swinging frame to carry all of said rolls out of contact with the surface of the cylinder and for holding the frame in said position.

5. In combination in a mangle, a frame, a cylinder mounted on the frame, a swinging frame having an offset at one end pivotally secured to the frame supporting the cylinder, a series of rolls mounted in the swinging frame and including an apron-supporting roll, and means for raising the swinging frame at its end opposite the pivot and retaining it in its raised position.

6. In a mangle, in combination with a supporting-frame, a cylinder mounted on the frame, a swinging frame arched over a portion of the cylinder and having offset portions each provided with a bearing for a pivot, pivots for securing the frame to the cylinder-supporting frame, a series of rolls supported by the swinging frame in contact with the cylinder, and means for swinging said frame to carry the rolls away from the cylinder and for retaining the frame in said position.

7. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder, and bearing a series of rolls supported in contact with the surface of the cylinder, means for forcing the rolls toward the cylinder, means for limiting the movement of the rolls in the frame toward the cylinder in a swinging movement of said frame and means for swinging said frame to carry the rolls supported thereon away from the surface of the cylinder.

8. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder and bearing a series of rolls, guides for the ends of said rolls, slidable end supports therefor in the frame, means for forcing the rolls toward the cylinder, plates for limiting the movement of the rolls toward said cylinder, and means for swinging said frame to carry the rolls supported thereon away from the surface of the cylinder.

9. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder, a series of rolls mounted in said frame, one of said rolls supporting an apron and the other rolls being movable in the frame toward the cylinder, means for moving said rolls toward the cylinder, means for limiting the movement of said rolls in the frame toward the cylinder, and means for swinging the frame to carry the rolls away from the surface of the cylinder including the apron-supporting roll and the apron out of contact with said cylinder.

10. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder and bearing a series of rolls supported in contact with the surface of the cylinder, means borne on said frame for forcing the rolls toward the surface of the cylinder, means borne on the frame for adjusting the degree of pressure of the rolls upon the cylinder, and means for swinging said frame to carry the rolls supported thereon away from the surface of a cylinder.

11. In a mangle, in combination with a cylinder, a pivoted frame arched over a portion of the cylinder, and bearing a series of rolls supported in contact with the surface of the cylinder, one of said rolls being located at a point on the arch located on the opposite side of a vertically-extended line through the pivot from that on which the raised ends of the arch are located whereby in the swinging movement of the frame said roll is carried downward to move the apron out of contact with said cylinder, and means for swinging the frame to carry the rolls supported thereon away from the surface of the cylinder.

12. In a mangle, in combination with a cylinder, a pivoted frame arching over a portion of the cylinder and having an inwardly-extending offset portion in which said pivot is located, a series of rolls supported by said frame in contact with the surface of the cylinder, an apron-supporting roll located on the outer surface of the frame opposite the offset portion bearing the pivot, and at a point near a plane passing through the horizontal center of the cylinder and supporting an apron, and means for swinging said frame to carry the rolls supported thereon away from the surface of the cylinder including the apron-supporting roll and the apron out of contact with said cylinder.

815,821. **EXPLOSIVE COMPOUND.** LELIA E. HATHAWAY, Wellsboro, Pa., administratrix of George M. Hathaway, deceased, assignor to Hathamite Company, Wellsboro, Pa. Filed Nov. 27, 1903. Renewed Aug. 19, 1905. Serial No. 274,962.

Claim.—1. An explosive containing an oxidizing agent, paraffin, benzene, and dinitrophenol.

2. An explosive containing an oxidizing agent, paraffin, benzene, dinitrophenol, and collodion.

3. An explosive containing an oxidizing agent, paraffin, benzene, dinitrophenol, collodion, and carbon.

4. An explosive containing a metallic nitrate, dinitrophenol, collodion, carbon, and a hydrocarbon.

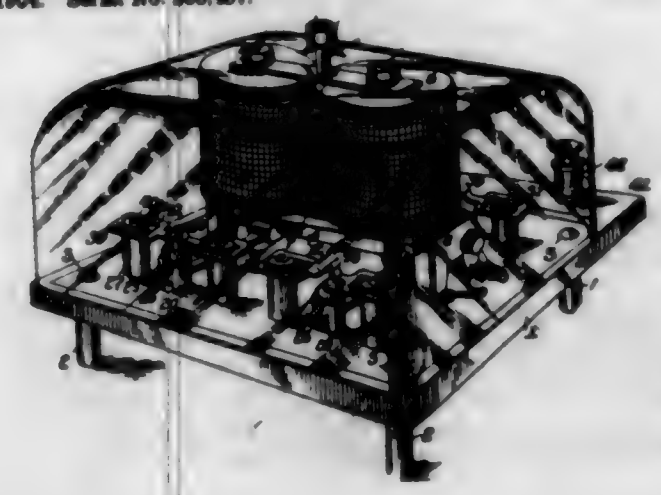
5. An explosive containing a metallic nitrate, dinitrophenol, collodion, pulverized wood-charcoal, and a hydrocarbon.

6. An explosive containing a metallic nitrate, dinitrophenol, collodion, carbon, and paraffin.

7. An explosive containing barium nitrate, paraffin, dinitrophenol, carbon, and paraffin-oil.

8. An explosive containing barium nitrate, paraffin, dinitrophenol, collodion, pulverized wood-charcoal, and paraffin-oil.

815,822. **RELAY.** REINHOLD HERMAN, Crafton, Pa., assignor to General Electric Company, a Corporation of New York. Filed Mar. 28, 1904. Serial No. 200,457.



Claim.—1. In a relay, a magnet-winding, a pivoted lever, an armature carried by said lever and adapted to be attracted by said magnet-winding, a wedge-shaped insulated contact-block carried at the end of said lever, a pair of binding-posts, and a pair of spring-contacts carried by said posts and adapted to be bridged by said block.

2. In a relay, a magnet-winding, a pivoted lever, an armature carried by said lever and adapted to be attracted by said magnet-winding, a wedge-shaped insulated carbon contact-block carried at the end of said lever, and a pair of spring contact-plates adapted to be bridged by said block.

3. In a relay, a magnet-winding, a pivoted lever, an armature carried by said lever and adapted to be attracted by said magnet-winding, a wedge-shaped insulated contact-block carried at the end of said lever, a pair of binding-posts opposite said end of said lever, and a pair of spring-plates carried by said posts and extending into the path of movement of said block, the ends of said plates being bent to engage the wedge-faces of said block.

4. In a relay, a pivoted lever provided at its end with a split-ring sleeve, an insulating-collar carried within said sleeve, a contact-block having a wedge-shaped head supported within said collar, and stationary spring-contacts adapted to be bridged by said block.

5. In a relay, a pivoted lever provided at its end with a split-ring sleeve, an insulating-collar carried within said sleeve, a contact-block having a shank surrounded by and supported in said collar and an enlarged wedge-shaped head, and stationary spring-contacts adapted to be bridged by said block.

6. In a relay, a magnet-winding, a lever pivoted intermediate its ends, an armature carried by said lever adapted to be attracted by said magnet-winding, contact-blocks carried at each end of said lever, and a pair of spring-contacts opposite each contact-block and adapted to be bridged thereby.

7. In a relay, a magnet-winding, a lever pivoted intermediate its length, an armature carried by said lever and adapted to be attracted by said magnet-winding, contact-blocks carried at opposite ends of said lever, and a pair of spring-contacts opposite each end of said lever and adapted to be bridged alternately by said blocks when opposite ends of said lever are raised.

8. In a relay, a magnet-winding, a lever pivoted intermediate its length, an armature carried by said lever and adapted to be attracted by said magnet-winding, wedge-shaped contact-blocks carried at opposite ends of said lever, and a pair of spring-plates supported opposite each end of said lever and extending into the path of movement of said blocks, the ends of said plates being bent to engage the wedge-faces of said blocks.

9. In a relay, a pair of spring-contacts, each formed as a rectangular plate, the interior of the rectangle being cut away, and having a tongue projecting inwardly from one side of the rectangle to engage a support and a second tongue projecting outwardly from the opposite side of the rectangle toward the other contact, and a magnetically-actuated contact-block adapted to bridge said outwardly-projecting tongues.

10. In a relay, a pair of spring-contacts, each formed as a rectangular plate, the interior of the rectangle being cut away, and having a slotted tongue projecting inwardly from one side of the rectangle to engage a support and a second tongue projecting outwardly from the opposite side of the rectangle toward the other contact, the adjacent ends of said outwardly-projecting tongues being bent at an angle to the plane of the contacts, and a wedge-shaped magnetically-actuated contact-block adapted to engage the bent ends of said tongues.

11. In a relay, a pair of spring-contacts each having a projecting tongue extending toward the other, spring-clips carried at the ends of said tongues, and a magnetically-actuated contact-block adapted to engage both spring-clips and to press them against said tongues.

12. In a relay, a pair of spring-contacts, each having a projecting tongue extending toward the other and bent at the end at an angle to the plane of the contacts, spring-clips carried at the ends of said tongues, and a wedge-shaped magnetically-actuated contact-block adapted to engage said spring-clips and to press them against the ends of said tongues.

13. In a relay, a pair of spring-contacts, each having a projecting tongue extending toward the other, platinum spring-clips carried at the ends of said tongues, and a magnetically-actuated carbon contact-block adapted to engage both of said spring-clips and to press them against said tongues.

14. In a relay, an insulating-base, a supporting-bridge secured thereto, a magnet supported on said bridge and having its axis at right angles to said base, an armature pivoted beneath said bridge,

and an insulating-cover engaging said base and secured to the outer end of the magnet-core.

15. In a relay, an insulating-base, a supporting-bridge secured thereto, a magnet supported on said bridge and having its axis at right angles to said base, an armature pivoted beneath said bridge, an insulating-cover engaging said base, and clamping means extending through the center of said cover and engaging the magnet-core.

16. A relay comprising a base, electromagnets mounted upon said base, an armature mounted beneath said electromagnets, insulated contact-blocks carried by said armature, a plurality of binding-posts mounted upon said base, contact-springs carried by said posts, said contact-springs being arranged to be engaged by some insulated blocks and disengaged by others when said electromagnets are energized, an insulated cover adapted to rest upon said base, and means for securing the said cover to the top of the electromagnets, substantially as described.

17. In a relay, the combination of a base, electromagnets mounted thereon, a central pivoted armature-lever, an armature carried on said lever, an insulated contact-block mounted on each end of said lever, a pair of contact-springs mounted on a pair of binding-posts at each end of said lever, said springs being disposed above the contact-blocks at each end of the lever whereby when the lever is elevated by the energizing of the magnet, one of the contact-blocks will be thrown upwardly between two of the springs, while the contact-block at the opposite end of the lever will be thrown downwardly from between the springs at that end.

18. In a relay of the character described, the combination of an electromagnet, a plurality of binding-posts arranged in pairs, a spring-tongue carried by each binding-post, a pivoted armature, and insulated contact-blocks carried by said armature and so disposed thereon that at one position of the armature one of said contact-blocks will engage the springs of one pair of binding-posts and at another position of the armature another of said contact-blocks will engage the springs of another pair of said binding-posts.

19. In a relay, the combination of an electromagnet, an armature, and means controlled by said armature for closing two independent circuits at one movement of the armature and simultaneously opening a third independent circuit.

20. In a relay, the combination of an electromagnet, an armature, and means carried by the armature for completing an electric circuit at one movement of the armature and at the same movement of the armature breaking an independent circuit at two points.

21. The combination of an electromagnet, and armature, an electric circuit including a battery and a motor and means carried by said armature whereby as the said electromagnet is energized and deenergized the said circuit will be broken and made on both sides of said battery.

22. In a relay of the character described, the combination with an electromagnet, an armature, binding-posts arranged in pairs, contact-springs carried by said posts, and a plurality of insulated contact-blocks carried by said armature, said blocks having beveled heads and each block being adapted to simultaneously engage both springs of one pair of binding-posts.

23. In a relay of the character described, the combination with an electrically-actuated armature, of a plurality of insulated contact-blocks carried by said armature, a plurality of binding-posts, contact-springs carried by said posts, said contact-blocks having beveled heads and adapted to simultaneously engage two of said springs whereby a circuit will be closed, substantially as described.

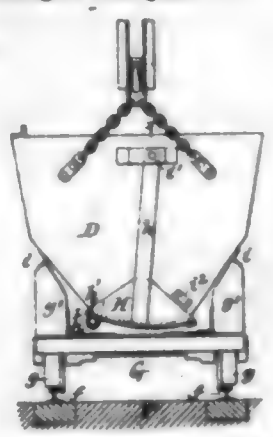
24. In a relay of the character described, the combination with an electrically-operated armature, of a plurality of binding-posts, contact-springs carried by said posts, and a plurality of insulated contact-blocks carried by said armature and adapted to be engaged by said contact-springs whereby when said insulated blocks are interposed between said springs a circuit will be closed.

815,823. **HOISTING-BUCKET.** Frederic V. Hetzel and Ferdinand F. Wagoner, Philadelphia, Pa., assignors to The Link Belt Engineering Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 19, 1905. Serial No. 256,507.

Claim.—1. The combination of a bucket having an open bottom, with an undercut gate pivoted to the bucket and closing the opening in the bottom.

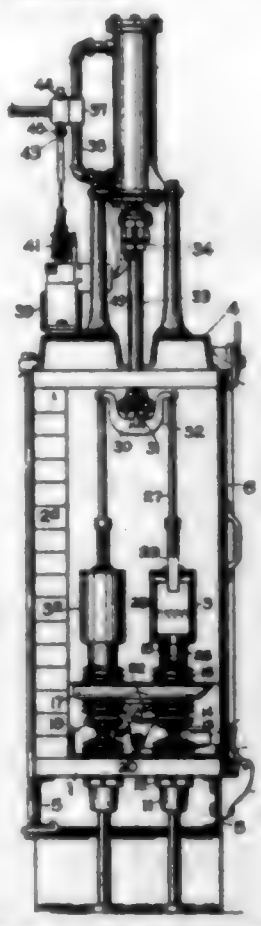
2. The combination of a bucket having an opening in the bottom, an undercut gate pivoted to the bucket, at one side of the center, and a stop on the bucket to limit the movement of the gate.

3. The combination of a bucket having an opening in the bottom, a gate having arms pivoted to the bucket at a point off the center, a stop to limit the closing of the bucket, and a weight on the gate aiding in the closing of said gate.



4. The combination of a bucket having an opening in the bottom, an undercut gate pivoted to the bucket and arranged to close the opening, a stop on the bucket to limit the movement of the gate, and a projection on the gate so arranged that when the bucket has been elevated to the discharge-point the projection will strike a cam and cause the gate to open.

815,824. **HIGH-POTENTIAL SWITCH OR CIRCUIT-BREAKER.** Edward M. Hewlett, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 7, 1900. Renewed Nov. 3, 1904. Serial No. 231,204.



Claim.—1. A high-potential switch, comprising an insulating-support, a fireproof cell inclosing the terminals, a cap mounted on the top of the cell, and a motor to operate the switch mounted on the cap.

2. A high-potential switch, comprising an insulating-support, a fireproof cell inclosing double-pole terminals and a bridging contact for said terminals, a cap mounted on top of the cell, and a motor to operate the switch mounted on the cap.

3. A high-potential switch having fixed and movable contacts, terminals therefor, and means for mechanically withdrawing said contacts from their terminals to render said contacts dead.

4. A high-potential switch having multipolar terminal contacts, and means for disengaging the active or engaging portion of the contacts from the terminals to render them dead.

5. A high-potential switch having a fixed terminal mounted on an insulating-base, a detachable contact-tip for the fixed terminal, a movable contact-piece mechanically connected to the tip but insulated therefrom, a coöperating movable contact, and means for rendering both said movable contact and movable contact-piece dead and removing them from the other parts of the switch.

6. A high-potential switch provided with a fixed terminal

mounted on an insulating-support, a movable contact-piece for said terminal, mounted on an independent insulator, and means for separating the two insulators.

7. A high-potential switch provided with double-pole fixed terminals mounted on an insulating-support, coöperating double-pole contact-pieces normally forming terminal extensions mounted on a frame common to both and insulated therefrom, and means for shifting the frame to separate the contact-pieces from the circuit-terminals.

8. A high-potential switch provided with a fixed terminal mounted on an insulating-support, a removable contact-piece for said terminal, mounted on an independent insulator, and a lever mounted on a fixed part of the switch for separating the two insulators.

9. A high-potential switch provided with a fixed hollow insulator, a terminal supported therein, and a coöperating movable insulator containing a detachable contact-piece for said terminal.

10. A high-potential switch provided with a fixed terminal supported by an insulator, a coöperating movable contact-piece for said terminal mounted on an independent insulator, and a laminated yielding contact at the joint.

11. A high-potential switch provided with an insulated fixed terminal, a movable contact-piece on an independent insulating-support forming an extension of said terminal when the circuit is closed, and a plurality of laminated contact-arms to effect good contact at the joint.

12. A fixed contact-terminal for a switch, comprising a hollow insulator secured in a supporting-frame between its ends, a metal rod having its lower end housed within the insulator and its upper end connected with a contact above the insulator.

13. A high-potential switch provided with a hollow insulator, a fixed terminal extending through the insulator, a movable contact-piece for the terminal supported in an independent insulator, a yoke on the movable insulator, and a crank for raising the yoke, said crank being adapted for disconnection from the yoke.

14. A high-potential switch comprising double-pole fixed terminals, a movable bridge to engage the same in an oil-bath, and a shunt-contact outside of the oil, of greater current-carrying capacity, adapted to open before the oil-submerged contact.

15. A multipolar high-potential switch comprising a plurality of fireproof insulated cells for different poles, and a removable door for the cells.

16. A high-potential switch, comprising multipolar fixed terminals, a movable bridging contact, all inclosed in a fireproof cell, an operating connection extending through the cell-cover, and means for rendering the contacts dead and permitting withdrawal from the cell.

17. A high-potential switch, comprising a plurality of pairs of separable contacts, a small oil-chamber around each pair of contacts, fireproof insulated cells separating different poles, and a fluid-pressure motor for joining or separating the contacts.

18. A high-potential switch, comprising separable contacts, a fluid-pressure motor controlling their junction or separation, a valve for reversing the motor, and an electromagnet in a control-circuit leading away from the switch for controlling the valve.

19. A high-potential switch, comprising separable contacts, a fluid-pressure motor controlling their junction or separation, a valve for controlling the motor, an electromagnet controlling the valve, a control-circuit for the magnet, and a resistance cut into the control-circuit after the valve has operated.

20. A high-potential switch, comprising separable contacts, a fluid-pressure motor controlling their junction or separation, a valve controlling the fluid-pressure, an electromagnet to operate the valve, a resistance cut into the control-circuit by the operation of the switch, and a lever controlling the resistance having two movable fulcrums, one being yielding to reduce damage from impact.

21. A high-potential switch, comprising separable contacts, a fluid-pressure motor controlling their junction or separation, a valve controlling the fluid-pressure, an electromagnet to operate the valve, a resistance cut into the control-circuit by the operation of the magnet, a lever controlling a normal short circuit for the resistance having one end in line for engagement by the magnet-armature, the other end linked to the short-circuiting contact, and two fulcrums, one rigid and separable, and the other elastic and permanently connected to the lever.

22. A high-potential switch comprising separable contacts, a fluid-pressure piston controlling their junction or separation, a latch to hold the switch open, and a release device governed by the application of fluid-pressure to operate the latch.

23. A high-potential switch comprising fixed and movable contacts, a fireproof cell inclosing said contacts, and a motor for operating the switch mounted on the exterior of said cell.

24. A high-potential switch having a fixed pole mounted on an insulating-base, a removable contact therefor, means for disconnecting the removable contact, without dismounting the same, to render it dead, and a coöperating movable pole to make and break the circuit.

25. A high-potential switch having a fixed pole mounted on an insulating-base, a movable contact therefor, a detachable movable pole, and means for disconnecting the contact of the fixed pole to render dead the coöperating switch-contacts.

26. A high-potential switch comprising separable contacts, a fluid-pressure piston controlling their junction and separation, and pneumatically-controlled means for holding the switch open when pressure tending to open the switch is removed from said piston.

27. A high-potential switch comprising fixed contacts submerged in oil, one or more coöperating vertically-movable bridging contacts, a fluid-pressure piston for actuating said bridging contacts, and pneumatically-released means for holding the switch open when pressure tending to open the switch is removed from said piston.

28. A high-potential switch comprising fixed contacts submerged in oil, one or more coöperating vertically-movable bridging contacts, a fluid-pressure piston for actuating said contacts, and mechanical means for holding the switch open when pressure tending to open the switch is removed from said piston, said means being rendered inoperative when fluid-pressure is admitted to the piston to close the switch.

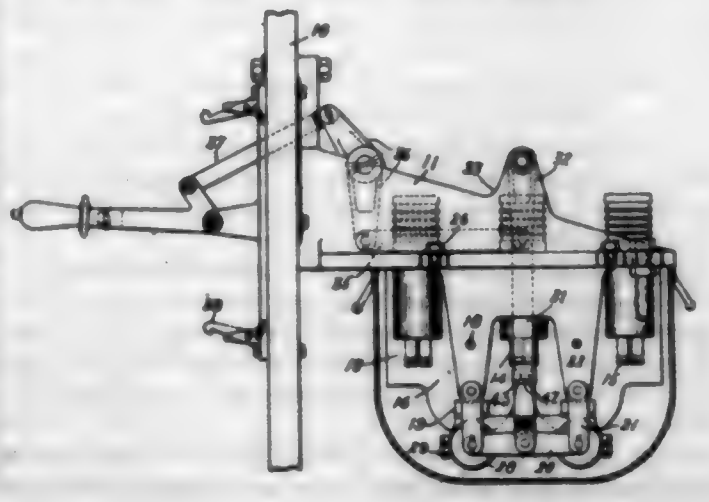
29. A high-potential switch comprising fixed contacts submerged in oil, coöperating movable contacts, a horizontal supporting member to which said movable contacts are connected, means for preventing the formation of an arc between the fixed contacts, an operating-cylinder located above said member, a piston in said cylinder operatively connected to said member, and pneumatically-controlled means for engaging said member to hold the switch in its open position.

30. A high-potential switch comprising fixed contacts submerged in oil, coöperating movable contacts, a horizontal supporting member to which said movable contacts are connected, a separate oil-chamber for each of said contacts, an operating-cylinder located above said chambers, a piston in said cylinder operatively connected to said member, and pneumatically-controlled means for engaging said member to hold the switch in its open position.

31. A high-potential switch comprising fixed contacts submerged in oil, coöperating movable contacts, a horizontal member to which said movable contacts are connected, means for preventing the formation of an arc between the fixed contacts, an operating-cylinder located above said member, a piston in said cylinder operatively connected to said member, and latching means located adjacent to said cylinder and operative to engage said member to hold the switch in open position.

32. A high-potential switch, comprising fixed contacts submerged in oil, coöperating movable contacts, a horizontal supporting member to which said movable contacts are connected, means for preventing the formation of an arc between the fixed contacts, an operating-cylinder located above said member, a piston in said cylinder operatively connected to said member, and a mechanical means for holding the switch open rendered ineffective when fluid-pressure is admitted to the piston to close the switch.

815,825. **ELECTRIC SWITCH.** EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 27, 1904. Serial No. 218,344.



Claim.—1. A double-throw electric switch having its movable element swung from a suitable support, operating means acting to draw said element toward said support to rock it into its closed positions, and directive means associated therewith for positively starting said element in a direction corresponding to the direction of movement of the operating means.

2. A double-throw electric switch having its movable element swung from a horizontal support, operating means acting to draw said element upward, and means associated therewith for giving a lateral direction to said movement corresponding to the direction of movement of the operating means.

3. A double-throw electric switch having its movable element swung from a suitable support, an operating-crank mounted adjacent thereto, a link connecting said crank and movable element and operative to draw said element toward said support into either of its closed positions, and means for giving a transverse movement to said element corresponding to the initial movement of the crank.

4. A double-throw electric switch having its movable element swung from a suitable support, an operating-crank mounted adjacent thereto, a link connecting said crank and movable element and operating to draw said element toward said support into either of its closed positions, and means comprising a temporary fulcrum for giving a transverse movement to said element corresponding to the initial movement of the crank.

5. A double-throw electric switch having its movable element swung from a suitable support, a link connected with said element and arranged to draw it toward said support to close the switch, a temporary fulcrum for the link, and means for slightly rocking said link about its fulcrum so as to give direction to the movement of the movable switch element.

6. A double-throw electric switch having its movable element supported by links, an operating-lever, an operating-link connected to said element and actuated by said lever to draw said element in the direction of said links, and means for rocking said element off "dead-center" to insure a switch movement in correspondence with the movement of the operating-lever.

7. A double-throw electric switch having its movable element supported by links, an operating-lever, an operating-link connected to said element and actuated by said lever to draw said element against the thrust of said links, a temporary fulcrum for said operating-link, and means actuated by the operating-lever to rock said operating-link about its fulcrum to carry the movable element off "dead-center" to one side or the other according to the direction of movement of the operating-lever.

8. A double-throw electric switch, comprising a horizontally-disposed support, fixed contacts projecting from the under side thereof, movable contacts hung from said support and free to swing in opposite directions into circuit-closing positions, one or more operating-cranks located above said movable contacts, an operating-lever for rocking said cranks, one or more links connecting said cranks and said movable contacts, lugs on said links, and fixed lugs located so as to be engaged by the lugs on said links at the beginning of the closing movement and thereby rock the movable contacts in a direction corresponding with the movement of the operating-lever.

9. A double-throw electric switch, comprising a suitable support, fixed contacts thereon, a swinging frame hung by links from said support, coöperating contacts carried thereby, and means for swinging said frame into either switch-closing position.

10. A double-throw electric switch, comprising a horizontally-disposed supporting-plate, fixed contacts thereon, a swinging frame hung by links from said plate, coöperating contacts carried thereby, and means for swinging said frame so as to bring said contacts into either circuit-closing position.

11. A double-throw electric switch, comprising a horizontal support, the fixed contacts projecting therefrom, and coöperating contacts hung by links from said support so as to swing into engagement with the center and either of the extreme fixed contacts.

12. An electric switch, comprising a horizontally-disposed support, fixed contacts depending from the under side thereof, a horizontal frame carrying coöperating contacts, link connections between said frame and said support, and means for swinging said frame so as to close the switch.

13. An electric switch comprising a horizontal support, fixed contacts depending from the under side thereof, a horizontal frame hung from said support, coöperating contacts carried thereby, means for swinging said frame and contacts into circuit-closing position, and an oil-receptacle secured to said support and completely surrounding the switch-contacts.

14. An electric switch, comprising a suitable supporting-plate, a plurality of sets of fixed contacts thereon, a swinging frame carried by said plate, a plurality of parallel bridging contacts mounted thereon and suitably insulated from each other and said frame, and means for swinging said frame and contacts into circuit-closing position.

15. An electric switch, comprising a suitable supporting-plate, a plurality of sets of fixed contacts thereon, a rectangular swinging frame carried by said plate and comprising side members and transverse connecting-rods, a plurality of parallel bridging contacts strung upon said rods and extend parallel to said members, and suitably insulated from each other and said rods, and means for swinging said frame and contacts into circuit-closing position.

16. In an electric switch, the combination with a suitably-supported oil-can, of fixed contacts projecting downward therein, coöperating movable contacts located below said fixed contacts and movable on a short radius into engagement therewith, and operating devices extending out of the can for shifting the movable contacts.

17. In an electric switch, the combination with a suitably-supported oil-can, of fixed contacts projecting downward therein, coöperating movable contacts swinging on a short radius about a center or centers located below said fixed contacts into and out of engagement therewith, and operating device for shifting said movable contacts.

18. In an electric switch, the combination with a suitably-supported oil-can, of fixed contacts projecting downward therein, fixed supports extending downward therein beyond the fixed contacts, coöperating movable contacts hung by short links from the lower ends of said supports, and means for swinging said contacts into and out of engagement with the fixed contacts.

19. A double-throw electric switch comprising a suitable support, a movable element, supporting-links by which said element is swung from said support, means for pulling on said element in the direction of said links, and means for imparting a definite directional movement to said element.

20. An electric switch comprising a movable element free to move to a plurality of closed positions, means for exerting a pull on said element in substantially the same direction for all closing movements of said element and means for directing said closing movements in accordance with the operation of said pulling means.

21. An electric switch comprising a movable element free to move to a plurality of closed positions, means for exerting a pull on said element in substantially the same direction for all closing movements of said element, said means having in addition certain movements transverse to the general direction of said pull, and means responsive to said additional movements to give direction to the closing movements of said element.

815,826. TRAIN-CONTROL SYSTEM. GEORGE H. HILL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 30, 1904. Serial No. 221,475.

Claim.—1. In a system of train control, a train wire or wires, a control-circuit on each of a plurality of cars normally connected to said train wire or wires, and means controlled from a single point upon the train for simultaneously breaking the connection between said train wire or wires and said circuits.

2. In a system of train control, a train wire or wires, a control-circuit on each of a plurality of cars, a master-controller for energizing said train wire or wires and said circuits, and means for simultaneously interrupting the connections between said train wire or wires and said circuits.

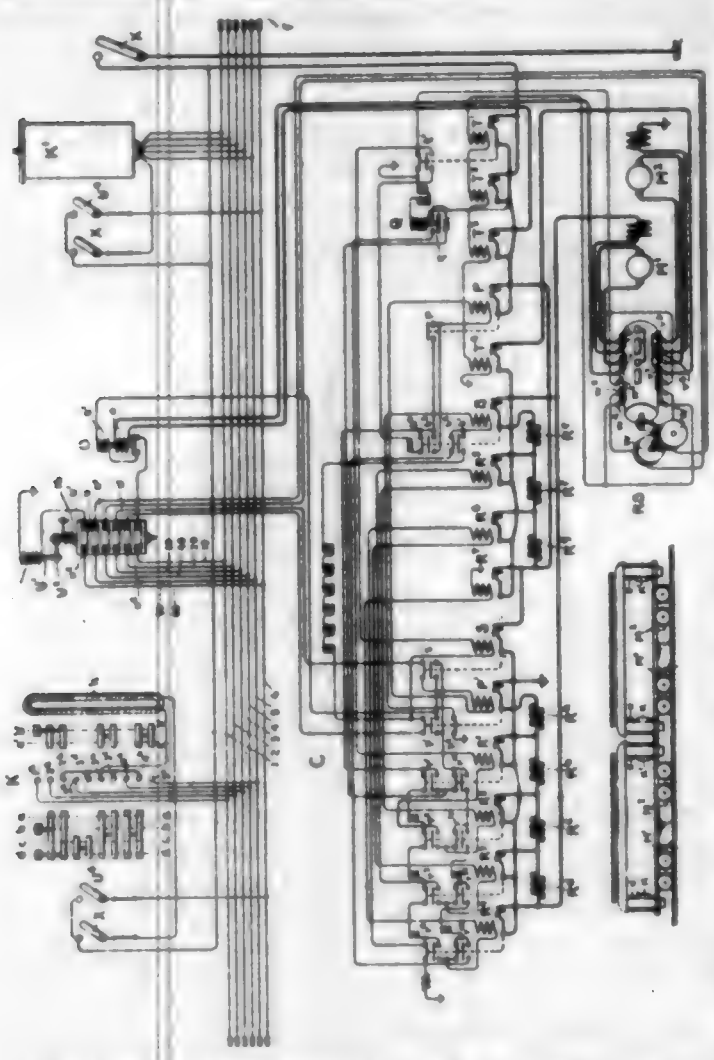
3. In a system of train control, a train wire or wires, a control-circuit on each of a plurality of cars, a master-controller for connecting said train wire or wires and said circuits to a source of current-supply, and means controlled from a single point on the train for simultaneously interrupting the connections between said train wire or wires and said circuits.

4. In a system of train control, a train wire or wires, a control-circuit on each of a plurality of cars normally connected to said train-wire, a master-controller for energizing said train wire or wires and said circuits, and means controlled from a single point on the train for disconnecting said circuits from said train wire or wires.

5. In a system of motor control, a plurality of motors or groups of motors, a control-circuit for each of said motors, or groups of motors, a master-controller, electrical connections between said master-controller and each of said control-circuits, and means independent of the master-controller for simultaneously interrupting the connections between said master-controller and said control-circuits.

6. In a system of train control, a train wire or wires, a control-circuit on each of a plurality of cars, a master-controller, a switch

between each control-circuit and said train wire or wires, and means for simultaneously opening all of said switches.



7. In a system of train control, a train wire or wires, a control-circuit upon each of a plurality of cars, a master-controller, an electromagnetic switch between each of said control-circuits and said train wire or wires, and means located at a single point on the train for energizing said switches.

8. In a system of train control, a train wire or wires, a control-circuit upon each of a plurality of cars and connected to said train wire or wires, a master-controller for energizing and deënergizing said train wire or wires and said control-circuits, and additional means for simultaneously deënergizing said control-circuits.

9. In a system of train control, a train wire or wires, a control-circuit upon each of a plurality of cars and connected to said wire or wires, a master-controller for energizing and deënergizing said control-circuits, and additional means controlled from a single point to the train for deënergizing said control-circuits.

10. In a system of control, a plurality of motors or groups of motors, motor-controlling devices for each of said motors or groups of motors, a master controlling device, and means for rendering said master controlling device inoperative as to said motor-controlling devices whenever the corresponding motors or groups of motors are deënergized.

11. In a system of control, a plurality of motors or groups of motors, independent circuits for said motors, local controlling devices for said motors or groups of motors, a source of current-supply, a master-controller for connecting said controlling devices to said source of current-supply, and means for rendering said controlling devices inoperative whenever the corresponding motor-circuits are deënergized.

12. In a system of motor control, a plurality of motors or groups of motors and circuits therefor, a speed-controlling device for each of said motors or groups of motors, a master-controller, controlling-circuits for said speed-controlling devices connected in parallel to said master-controller, and means for rendering said controlling-circuits inoperative whenever the corresponding motor-circuit is interrupted.

13. In a system of motor control, a source of current-supply, a motor-circuit connected thereto, a speed-controlling device for said motor, a control-circuit for said speed-controlling device, and means for rendering said control-circuit inoperative whenever said motor-circuit is deënergized.

14. In a system of motor control, a plurality of motors or groups of motors, separate speed-controlling devices therefor, separate control-circuits for said speed-controlling devices, a master-controller, and means for interrupting said control-circuits whenever the corresponding motor-circuits are interrupted.

15. In a system of control, a plurality of motors or groups of motors, a speed-controlling device for each motor or group of motors, actuating-circuits for said speed-controlling devices, a source of current-supply, a master-controller for connecting said actuating-circuits to said source of current-supply, and means for interrupting said actuating-circuits whenever the corresponding motors or groups of motors are deënergized.

16. In a system of control, a plurality of motors or groups of motors, a speed-controlling device for each motor or group of motors, maintaining-circuits for said speed-controlling devices, a source of current-supply, a master-controller for connecting said maintaining-circuits to said source of current-supply, and means for interrupting said maintaining-circuits whenever the corresponding motors or groups of motors are deënergized.

17. In a system of control, a plurality of motors or groups of motors, a speed-controlling device for each motor or group of motors, actuating and maintaining circuits for said speed-controlling devices, a source of current-supply, a master-controller for connecting said actuating and maintaining circuits to said source of current-supply, and means for interrupting said actuating and maintaining circuits whenever the corresponding motors or groups of motors are deënergized.

18. In a system of control, a plurality of motors or groups of motors, speed-controlling devices for each of said motors or groups of motors, normally open switches governing said speed-controlling devices, actuating-circuits for said switches, a master-controller for connecting said actuating-circuits to a source of current-supply, and a switch in each of said actuating-circuits arranged to be closed by current in the corresponding motor or group of motors.

19. In a system of control, a plurality of motors or groups of motors, speed-controlling devices for each of said motors or groups of motors, normally open switches governing said speed-controlling devices, maintaining-circuits for said switches, a master-controller for connecting said maintaining-circuits to a source of current-supply, and a switch in each of said actuating-circuits arranged to be closed by current in the corresponding motor or group of motors.

20. In a system of motor control, a plurality of motors or groups of motors, and circuits therefor, a resistance for one of said motors or groups of motors, a controlling-circuit for said resistance, and means for rendering said controlling-circuit inoperative whenever the corresponding motor-circuit is interrupted.

21. In a system of motor control, a source of current-supply, a motor-circuit connected thereto, a resistance for said motor, a control-circuit for said resistance, and means for rendering said control-circuit inoperative whenever said motor-circuit is deënergized.

22. In a system of motor control, a plurality of motors or groups of motors, separate resistances therefor, separate control-circuits for eliminating said resistance from the respective motor-circuits, a master-controller, and means for interrupting the control-circuits when the corresponding motor-circuits are interrupted.

23. In a system of motor control, a plurality of motors or groups of motors, a resistance for each motor or groups of motors, a control-circuit for each of said resistances, separate circuit connections between the source of current-supply and each motor or groups of motors, and means for interrupting the said control-circuits when the corresponding circuit connections to the source of current-supply are interrupted.

24. In a system of motor control, a motor-circuit, a source of current-supply, a resistance for said motor-circuit, a control-circuit for said resistance, and means for rendering said control-circuit inoperative whenever the current in the motor-circuit is interrupted.

25. In a system of motor control, a plurality of motors or groups of motors, a separate connection to the source of current-supply for each motor or groups of motors, resistances for said motors, independent control-circuits for each of said resistances, a master-controller for controlling the supply of current to said control-circuits, and means operative upon the interruption of current to any one of said motors or groups of motors for rendering the corresponding control-circuit inoperative.

26. In a system of motor control, a motor-circuit, a series of resistance-sections together with a series of contacts for introducing the resistance-sections in and eliminating them from the motor-circuit, a control-circuit including means for causing automatic progression of said resistance-governing contacts, and means for rendering said control-circuits inoperative when no current is flowing in the motor-circuit.

27. In a system of motor control, a motor-circuit, a resistance, a control-circuit for cutting said resistance out of the motor-circuit, a

source of current-supply, and means for interrupting the control-circuit when said source of current-supply is deenergized.

28. In a system of motor control, a motor or groups of motors on each of a plurality of cars, resistances for each motor or groups of motors, a motor-controller on each car including controlling-circuits for connecting the motors of that car to the corresponding current-collecting device and for varying the amount of resistance in the motor-circuit, a normally open switch in each resistance-controlling circuit for rendering it inoperative, and means controlled by the respective motor-currents for closing said switches.

29. In a system of train control, a motor or groups of motors on each of a plurality of cars, resistances for said motors, local control-circuits on each car including circuits for connecting the motor or motors of each car to the corresponding current-collecting device and control-circuits for said resistances, train-lines connecting the several control-circuits, a master-controller for controlling the supply of current to said train-lines, and means controlled by the motor-currents for rendering corresponding resistance-control circuits operative.

30. An electromagnetic switch, comprising an electromagnet, fixed contact members arranged on opposite sides and between the ends thereof, coöperating movable contact members, and operative connections between said movable contact members and the core of the electromagnet, one of said connections including a resilient section, whereby the opening of one of said contacts is delayed.

31. An electromagnetic switch comprising an electromagnet, fixed contacts arranged on opposite sides and between the ends thereof, coöperating movable contact members on one side of the electromagnet arranged in pairs, and operative connections between said movable contact members and the core of the electromagnet including resilient spacing devices within each pair of movable contact members.

32. A contact member comprising a rod, a plurality of contacts arranged in pairs loosely mounted thereon, and insulated therefrom, stops for limiting the separating movement of the contacts of each pair, and a spring between the contacts of each pair for holding them against said stops.

33. A contact member comprising a rod, a pair of metallic disks provided with hubs of insulating material, said rod passing loosely through the hub of the disks, stops on the rod for limiting the movement of the disks away from each other, and a spring between the hubs of the disks, whereby the disks are normally held in parallelism against said stops but are enabled to move out of parallelism and toward each other.

34. An electromagnetic switch comprising an electromagnet, fixed main and auxiliary contact members, a movable contact member carried by the core of the electromagnet, a rod upon which are yieldingly mounted a series of contacts arranged in pairs and adapted to coöperate with said fixed auxiliary contact members, a pivotally-supported lever connected to the core of the electromagnet, and an operative connection between said lever and said rod.

35. An electromagnetic switch comprising an electromagnet, a main contact member operatively connected to the core thereof, an auxiliary contact member comprising a rod, a plurality of contacts arranged in pairs loosely mounted thereon and insulated therefrom, together with means for yieldingly positioning the contacts upon said rod, an operative connection between said rod and the core of the electromagnet, and fixed main and auxiliary contact members.

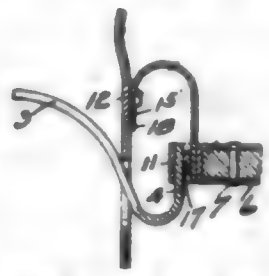
36. An electromagnetic switch comprising an electromagnet, a main contact member operatively connected therewith, an auxiliary contact member comprising a rod, a plurality of contacts yieldingly mounted thereon and insulated therefrom, a lever pivoted to said electromagnet, an operative connection between said lever and said rod, and fixed main and auxiliary contact members.

37. An electromagnetic switch, comprising an electromagnet, a movable main contact yieldingly supported and pivoted to said electromagnet, an auxiliary movable contact member comprising a rod, a series of contacts yieldingly mounted thereon and insulated therefrom, a pivoted lever pivotally connected to said electromagnet, an operative connection between said lever and said rod, and fixed main and movable contact members.

38. An electromagnetic switch comprising an electromagnet, a movable main contact member operatively related thereto, a movable auxiliary contact member comprising a rod, a series of contacts yieldingly mounted thereon and insulated therefrom, an operative connection between said rod and said electromagnet, and fixed main and auxiliary contact members, the arrangement of the parts being such that the opening of some of auxiliary contacts is delayed until after the main contact has been opened.

39. An electromagnetic switch comprising an electromagnet, a movable main contact member operatively related thereto, an auxiliary movable contact member comprising a rod, a series of contacts yieldingly mounted thereon and insulated therefrom, an operative connection between said rod and electromagnet, and fixed main and auxiliary contact members, the arrangement of parts being such that certain of said auxiliary contacts are closed previously to the opening of certain other contacts.

815,827. COMBINED EYEGLASS AND SPECTACLE MOUNTING. CHARLES A. HOFFMAN, Minneapolis, Minn. Filed Nov. 14, 1904. Serial No. 232,575.



Claim.—1. A mounting for eyeglasses and spectacles having a bridge disposed obliquely with respect to the plane of the lens and provided with forwardly-turned ends, rearwardly-extending nose-guards having forwardly-projecting finger-pieces, springs provided on said guards and having outwardly and rearwardly turned ends, and means for securing the ends of said bridge and said springs to the lenses, substantially as described.

2. A mounting for eyeglasses and spectacles having a spring-bridge provided with forwardly-turned parallel ends, rearwardly-extending nose-guards arranged to straddle the bridge and having forwardly-projecting finger-pieces, springs secured at one end to said guards in front of the bridge and having outwardly and rearwardly turned ends, and means for securing the ends of said bridge and springs to the lenses, substantially as described.

3. A spectacle-mounting comprising a bridge obliquely disposed with respect to the plane of the lens and having forwardly-turned ends, rearwardly-extending nose-guards arranged to straddle the bridge, springs secured at one end to said nose-guards and having outwardly and rearwardly turned opposite ends, lens-clamps wherein the ends of said bridge and springs are horizontally adjustable toward or from the plane of the lens, substantially as described.

4. A combined eyeglass and spectacle mounting comprising a bridge having forwardly-turned ends, lens-clamps secured on the lens and having horizontal sockets to receive the ends of said bridge, rearwardly-extending nose-guards having springs secured at one end thereto and outwardly and rearwardly turned and fitting within said sockets, and keys or wedges also fitting said sockets and securing the ends of said bridge and springs therein and permitting the adjustment of said bridge and nose-guards toward or from the plane of the lens, substantially as described.

5. A spectacle-mounting comprising a bridge having forwardly-turned parallel ends, lens-clamps secured to the lens and having horizontal sockets to receive the ends of said bridge, rearwardly-extending nose-guards arranged to straddle the bridge, springs secured to said guards in front of the bridge and outwardly and rearwardly turned therefrom and having ends fitting within the sockets in said lens-clamps, and means adjustably securing the ends of said bridge and said springs in said clamps and allowing them to be adjusted toward or from the plane of the lens, substantially as described.

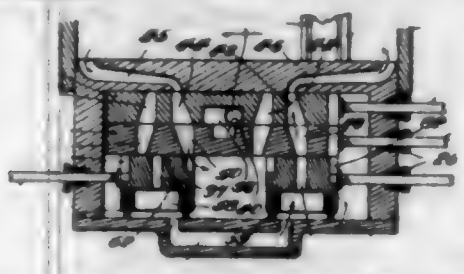
6. In a mounting for glasses, a lens-clamp comprising a plate 5, having straps 6 that are folded toward one another to straddle the lens, lugs 9 adapted to be pressed down upon the edge of the lens, and straps 10 that are folded in toward each other and have ends 11 bent substantially at right angles to the straps 10 and secured together, substantially as described.

7. In a mounting, the combination, with a nose-guard having bearing-points at one end and a finger-piece at the other, and an intermediate slot and flexible lugs, of a spring having a lip at one end to enter said slot and adapted to bear on said guard near said slot and be secured thereto by folding said lugs toward each other and securing them together, substantially as described.

815,828. STEAM-ENGINE VALVE. DANIEL J. HOUSTON, Crescent, Okla. Filed Aug. 11, 1905. Serial No. 273,779.

Claim.—1. A steam-valve, comprising a chest, two sliding valves within the chest, each having four ports at all times communicating, the outside ports at one end serving as inlet-ports and the

inside ports at the opposite end serving as exhaust-ports when the engine is running in one direction, and the outer ports serving as exhaust-ports and the inside ports serving as inlet-ports when running in the opposite direction, means for moving said valves back and forth, blocks within the chest between the valves and steam-inlet passages, and having steam-passages therethrough, exhaust-passages therein, the block at one end allowing the steam to pass therethrough to the ports in one end of the sliding valves, and the block at the opposite end closing the inlet-ports and having the exhaust-passages in communication with the ports in the opposite end of the sliding valves and allowing the exhaust to pass to the space surrounding the blocks.



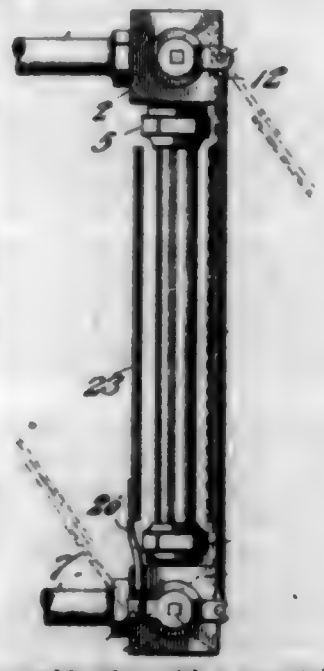
2. A steam-valve, comprising a chest, sliding valves within the chest, and having ports at all times communicating with each other, and sliding steam-supply blocks adjusted at places within the chest between the valves and the lid of the chest, and means for simultaneously moving said blocks in opposite direction.

3. A steam-valve, comprising a chest, sliding valves within the chest and having ports at all times communicating with each other, and sliding steam-supply blocks having ports therein, the inner end of said ports adapted to communicate with the ports of the valve, and the outer end of said port at all times in direct communication with an inlet supply-pipe, whereby the steam passes directly through the blocks and valves without entering the chest around the blocks and valves, thus reducing the resistance of the movement of the valves and blocks.

4. The combination with an engine, a chest in communication with the cylinder, two sliding valves within the chest and having ports at all times in communication with each other, steam-supply blocks within the chest bearing against the outer sliding valves and having ports extending therethrough and adapted to cut off the steam from the ports in the valves, and circular packing-rings carried by the blocks and surrounding the inlet-ports and bearing against the inner face of the chest.

5. The combination with an engine-cylinder, a piston within the cylinder, a steam-chest in communication therewith, two sliding valves within the chest and at all times held in their relative position in respect to the piston, whereby the cylinder takes steam at the same time under all conditions, and sliding blocks for controlling the supply of steam to the sliding valves.

815,829. GAGE. ALFRED HOLT, California, Pa. Filed Apr. 27, 1905. Serial No. 257,721.

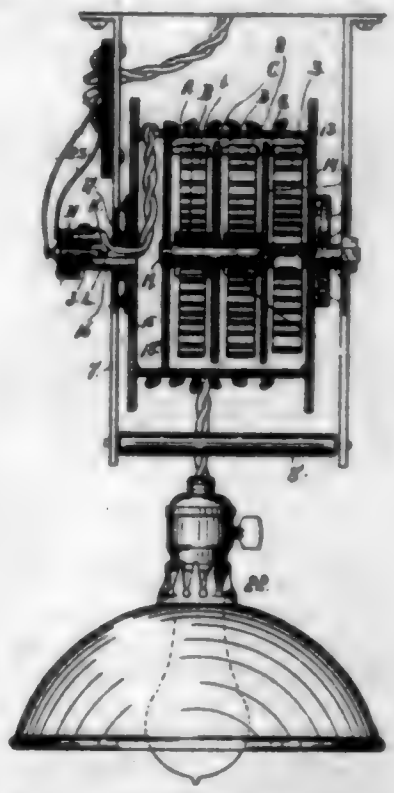


Claim.—1. The combination with a gage-tube, and valves for controlling communication between the same and a generator, of pressure plates or wings disposed adjacent to the tube and connected with the valves for closing said valves when the tube is shattered or bursts.

2. The combination with a gage-tube and valves controlling communication between the same and a generator, of rocker-arms connected to the valves, a connection between said rocker-arms to cause them to move in unison, pressure plates or wings disposed on opposite sides of the gage-tube, and operating connections between said plates or wings and the rocker-arms.

3. The combination with a gage-tube, and valves for controlling communication between the same and a generator, of rocker-arms connected to the valves, a connection between the rocker-arms to cause their movement in unison, and means operated directly by pressure from the fluid escaping from the tube for automatically actuating said arms when the tube is shattered or bursts, substantially as described.

815,830. ADJUSTABLE ELECTROLIER. ALTON HOPKINS, Denver, Colo. Filed Mar. 24, 1905. Serial No. 251,899.



Claim.—1. In an adjustable electrolier, the combination with a stationary support, a drum revoluble thereon, spring mechanism connected with the drum and consisting of a number of coil-spring members occupying parallel planes, the inner extremity of one outside spring being connected with the stationary support, and the outer extremity of the other end spring connected with the drum, disks having hubs revolubly mounted on the support, the inner extremities of all the springs except the first-named end spring being respectively connected with the hubs of the said disks, and the outer extremities of all the springs except the other end spring, respectively connected with the disks at points suitably distant from the hubs, internal circuit-conductors wound on the drum, external circuit-conductors, electrodes connected with the internal circuit-conductors and revoluble with the drum, and stationary contacts connecting the electrodes with the external circuit-conductors.

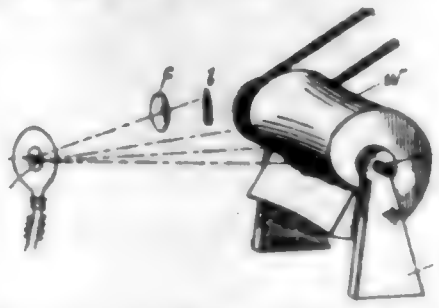
2. The combination with a stationary support, conductors forming the internal circuit, and conductors forming the external circuit, of an axle fast in the stationary support, a drum journaled on the axle, coil-spring mechanism comprising a number of individual coil-springs occupying parallel planes, the inner extremity of one end spring being connected with the axle, the outer extremity of the other end spring being connected with the drum, hubs journaled on the axle and provided with parts extending outwardly therefrom, the inner extremities of all the springs except the first-named end spring being connected with the said hubs, and the outer extremities of all the springs except the other-end spring being connected with the parts extending outwardly from the hubs, the conductors of the internal circuit being mounted on the drum, and suitable connections between the internal and external circuits, substantially as described.

3. In an adjustable electrolier, the combination with a stationary support provided with an axle, a spring-held drum journaled on the axle and provided with a hollow journal engaging the stationary support in line with the axle, internal circuit-conductors wound on the drum, the latter being provided with an opening through which the said conductors may pass to allow them to leave the drum through

a hollow journal of the latter, an external circuit, electrodes mounted on the hollow journal with which the internal circuit-conductors are connected, both electrodes being located on the same side of the drum and one being surrounded by the other, and stationary contacts connecting the said electrodes with the external circuit-conductors, substantially as described.

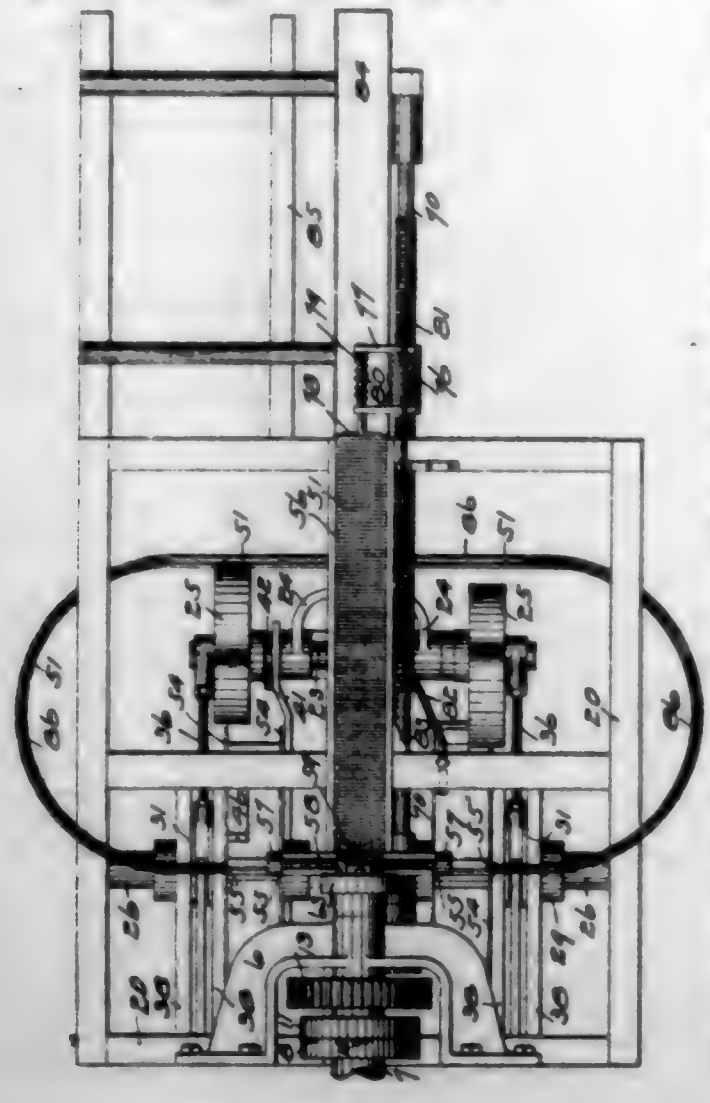
4. In a device of the class described, the combination with a suitable stationary support, an axle mounted on said support whereby it is locked against rotation, a ratchet fast on the axle, a drum journaled on the axle and provided with a hollow journal engaging the stationary support in line with the axle, pawls carried by the drum and engaging the ratchet on the axle, a spring connection between the drum and the axle, internal circuit-conductors wound on the drum, the latter being provided with an opening to allow the said conductors to pass inwardly and through the hollow axle of the drum, electrodes mounted on the hollow journal and with which the internal circuit-conductors are connected, external circuit-conductors and contacts connecting the electrodes of the internal circuit with the external circuit-conductors, substantially as described.

815,831. APPARATUS FOR OBSERVING THE OSCILLATIONS OF LIGHT-BEAMS. Andreas W. Hornauer, Charlottenburg, Germany. Filed May 13, 1904. Serial No. 207,807.



Claim.—In an apparatus for observing the oscillations of light-beams, the combination with an oscillatable mirror reflecting the beam, of a cylindrical body revolving at a right angle to the plane of oscillation, said body having cross-sections which are different from circles concentric with the axis of rotation, as and for the purpose set forth.

815,832. ADDRESSING-MACHINE. Adelbert B. Hunkins, Austin, Minn. Filed Dec. 9, 1904. Serial No. 236,060.



Claim.—1. The combination, with a roll over which a web of paper passes, of type-carriers operating to impress addresses upon the paper as it passes over said surface, and mechanism arranged to operate said carriers to print a certain number of addresses in a given time or double that number in the same time, substantially as described.

2. The combination, with a roll over which a web of paper passes, of type-carriers operating alternately and intermittently to impress addresses upon the paper as it passes over said roll, means for operating both of said carriers step by step or one of them independently of the other, substantially as described.

3. The combination, with a roll over which a web of printed paper passes, of type-carriers operating to impress addresses upon the paper as it passes over the roll, means for operating said carriers, and a feed device arranged to deliver type to said carriers alternately.

4. The combination, with a roll over which a web of paper passes, of two revolving type-carriers provided on their peripheries with transversely-arranged type-holders having open ends, means for intermittently operating said carriers, and a feed mechanism disposed between said carriers and arranged to deliver type to their holders alternately, substantially as described.

5. The combination, with two revolving type-carriers provided on their peripheries with transversely-arranged type-holders having open ends, of a reciprocating pusher-block arranged between said carriers, a feed-plate mounted on said block, a galley, and means for feeding the type-slugs into the path of said feed-plate, substantially as described.

6. In an addressing-machine, the combination, with revolving type-carriers and means for temporarily operating the same, of type-holders transversely arranged on the periphery of said carriers and having open ends, a sliding pusher-block provided between said carriers, a drive-shaft operatively connected therewith, a feed-plate adjustably mounted on the lower end of said block, and a galley arranged to deliver type into the path of said feed-plate, substantially as described.

7. The combination, with two revolving type-carriers having an intermittent step-by-step movement and provided at intervals on their peripheries with transversely-arranged type-holders having open ends, of a feed-galley provided between said carriers, guideways leading from the discharge end of said galley to said holders, and means operating between said carriers for alternately feeding type to said holders, substantially as described.

8. The combination, in an addressing-machine, with revolving type-carriers provided on their peripheries with transverse type-holders having open ends, of a reciprocating feed device operating between said carriers to alternately feed the type to said holders, means for imparting an intermittent step-by-step movement to said carriers, and means for locking them during their stationary periods.

9. The combination, with a revolving type-carrier having peripheral type-holders and blocks with concave faces, of means for operating said carrier step by step, and a cam-disk arranged to engage said blocks during the stationary periods of said carrier, for the purpose specified.

10. The combination, with a revolving type-carrier having peripheral type-holders, of a continuously-operating shaft, a connecting-rod thereon, a loosely-mounted arm connected to said rod and having a ratchet connection with said carrier to intermittently operate the same, and means for tripping said ratchet mechanism to release said arm and allow said carrier to remain stationary at predetermined intervals, substantially as described.

11. The combination, with a revolving type-carrier having peripheral type-holders, a continuously-operating mechanism, a ratchet and dog for temporarily locking said type-carrier and said continuously-moving mechanism together, and an oscillating tripping-arm provided in the path of said dog to disengage it from said ratchet and release said carrier at predetermined intervals, substantially as described.

12. In an addressing-machine, a revolving type-carrier having a peripheral type-holder provided with a transverse groove open at each end to allow the insertion and discharge of a type, and a plate mounted on the periphery of said holder and overhanging said groove to enter a longitudinal groove or depression in the type, substantially as described.

13. The combination, with a carrier provided with peripheral type-holders open at each end extending transversely of said carrier in a plane substantially parallel with the radius of said holder, of stationary guard-plates provided on each side of said carrier to prevent the premature endwise movement of the type in said holders, and said plates having guideways through which said type is inserted and discharged from said holder, substantially as described.

14. In an addressing-machine, the combination, with a revolving intermittently-operating type-carrier provided on its periphery with transverse type-holders having open ends, of means for feeding type into one end of said holders, each type entering a holder ejecting the preceding one through the opposite end of the holder, a substantially semi-circular way having open ends, its receiving end coinciding with the discharge end of a holder during the stationary period of the carrier, and a storage-galley provided at the discharge end of said curved way.

15. In an addressing-machine, the combination, with two revolving intermittently-operating type-carriers provided on their peripheries with transverse type-holders having open ends, of a feed device operating to feed type endwise into said holders, each type as it enters a holder ejecting the preceding one through the open discharge end of the holder, and substantially semicircular guideways having open ends arranged with their receiving ends to receive the type discharged from said holders, a storage-galley between the open discharge ends of said ways, and a kicker device operating in said galley between said ways, substantially as described.

16. In an addressing-machine, the combination, with a revolving intermittently-operating type-carrier provided on its periphery with transverse type-holders having open ends, of means for feeding type into one end of said holders, each type as it enters a holder ejecting the preceding one, a storage-galley and a typeway arranged to receive the type from the discharge ends of said holders during the stationary periods of said carrier and deliver them in a reverse position to said storage-galley, substantially as described.

17. In an addressing-machine, the combination with a revolving intermittently-operating type-carrier provided with peripheral type-holders, of means for feeding type to said holders, a storage-galley and a substantially semicircular guideway having its receiving end arranged to receive type from said holders and its discharge end arranged to deliver the type with their ends reversed to said storage-galley, substantially as described.

18. The combination, with an impression-surface over which a web of printed paper passes from the printing-press cylinders to the folding mechanism, of type-carriers provided with peripheral type-holders operating to impress addresses upon the paper as it passes over said surface, mechanism for moving said carriers intermittently the addresses being impressed on the paper while the carriers are in motion, mechanism for filling said type-holders with type during the stationary periods of said carriers and one of said carriers performing its printing operation while another is receiving and discharging type, substantially as described.

19. The combination, with an impression-surface over which a web of paper passes, of type-carriers operating to impress addresses upon the paper as it passes over said surface, and mechanism arranged to operate said carriers to print a certain number of addresses in a given time or double that number in the same time according to the number of papers running on the press during that time without altering the speed of said carriers.

20. The combination, with an impression-surface over which a web of paper passes, of type-carriers operating to impress addresses upon the paper as it passes over said surface, and a feed device arranged to deliver type to said carriers alternately.

21. The combination, with an impression-surface over which a web of paper passes, of type-carriers operating intermittently to impress addresses upon the paper as it passes over said surface, means for alternately operating said carriers, and a feed device arranged to deliver type to said carriers during their stationary periods, substantially as described.

22. The combination, with an impression-surface over which a web of paper passes, of type-carriers operating to impress addresses upon the paper as it passes over said surface, a feed device operating between said carriers and arranged to deliver type to said carriers, and means for operating said carriers step by step, substantially as described.

23. The combination, in an addressing-machine, with a revolving type-carrier provided with a series of type-holders, of a feed device operating to deliver type to said holders and discharge the same therefrom, a curved way arranged to receive type from said holders, each type pushing the preceding one ahead of it through said way and the type being reversed in passing from one end of said way to the other, a storage-galley, and a kicker device provided in connection with said galley.

24. The combination, in an addressing-machine, with revolving type-carriers provided with type-holders, of a feed device operating between said carriers to deliver type to said holders, means for imparting a step-by-step movement to said carriers, and means for locking them during their stationary periods.

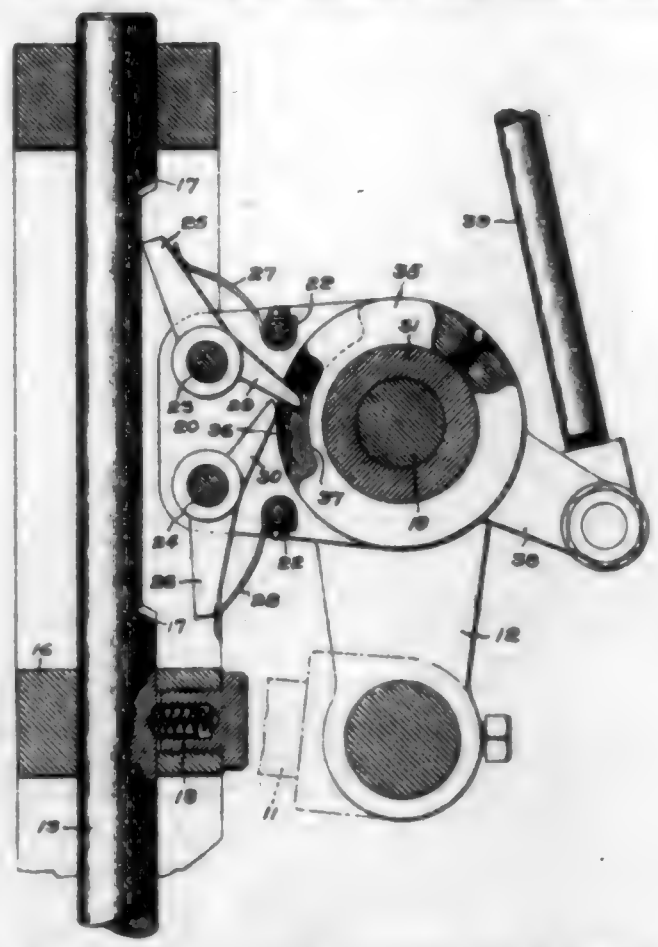
25. The combination, with an impression-surface over which a web of paper passes, of type-carriers operating to impress addresses upon the paper as it passes over said surface, a feed device operating between said carriers and arranged to deliver type to said carriers, each type as it is delivered to a carrier ejecting the preceding type.

26. The combination, with revolving type-carriers, of type-holders mounted thereon, a feed device operating between said carriers and comprising a reciprocating support and a feed-plate adjustably mounted thereon, and a galley having its discharge end in the path of said feed-plate.

27. The combination, with the revolving intermittently-operating type-carriers provided with type-holders, of a reciprocating feed device operating between said carriers to deliver type to said holders, said feed device comprising a pusher-block and an adjustable feed-plate having a centrally-arranged vertical rib to engage and advance the type with each movement of said block, substantially as described.

28. The combination, with an impression-surface over which a web of printed paper passes from the printing-press cylinders, of a type-carrier provided with type-holders operating to impress addresses upon the paper as it passes over said surface, mechanism for moving said carrier intermittently means engaging the periphery of said carrier to lock it during its stationary periods, the addresses being impressed on the paper while the carrier is in motion, and mechanism for filling said type-holders with type during the stationary periods of said carrier, substantially as described.

815,883. GOVERNING MECHANISM FOR TURBINES. DANIEL HURLEY, Providence, R. I., assignor to General Electric Company, a Corporation of New York. Filed Sept. 1, 1905. Serial No. 276,669.



Claim.—1. In a governing mechanism, the combination of a valve, a stem for the valve, a lever situated at one side of the stem, dogs mounted thereon which engage the stem, and actuate the valve, a pivot for the lever situated on the same side of the stem as the dogs, and a shield responsive to load changes for controlling the effective action of the dogs.

2. In a governing mechanism, the combination of a valve, a stem for the valve, a lever situated wholly on one side of the stem, dogs mounted thereon which engage the stem and actuate the valve, tailpieces for the dogs, a shield which coöperates with the tailpieces to control the effective action of the dogs, and a load-responsive device for moving the shield.

3. In a governing mechanism, the combination of a valve, a stem for the valve, a lever having a constant to-and-fro motion, dogs mounted thereon which engage the stem and actuate the valve, tailpieces for the dogs, a shield, depressions in the shield the walls of which act on the tails of the dogs and control their action, and a

shaft-governor for changing the relative positions of the tails and depressions.

4. In a governing mechanism, the combination of a valve, a stem for the valve, a steam-lever situated wholly on one side of the stem, a pivot for the lever also situated on the same side of the stem and extending at right angles thereto, a valve-opening and a valve-closing dog mounted on the lever, tailpieces for the dogs, a shield for governing the effective action of the dogs on the valve, depressions into which the tails of the dogs enter as the lever is moved from one position to the other, and a speed-responsive device for moving the shield.

5. In a governing mechanism, the combination of a plurality of regulating-valves, steam-levers for the valves situated wholly on one side thereof, a pivot common to the levers and situated on the same side of the valves, dogs mounted on the end of the levers adjacent to the stems, shields for controlling the action of the dogs which are also mounted on the same side of the valves, the said shields being set to give successive action of the dogs on the valves, and a shaft-governor for shifting the position of the dogs as the load changes.

6. In a governing mechanism, the combination of a valve, a pivoted steam-lever, dogs mounted on the lever for opening and closing the valve by a pulling action, and a speed-responsive device that determines which dog shall act on the valve.

7. In a governing mechanism, the combination of a plurality of valves, pivoted steam-levers which open and close the valves by a pulling action, shields that determine which dog or dogs shall act on the valve or valves, and a load-responsive device that moves the shields.

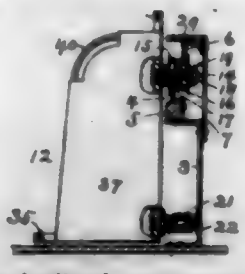
8. In a governing mechanism, the combination of an unbalanced valve which is held against its seat by fluid-pressure, a lever for opening and closing it, a motor for constantly keeping the lever moving to and fro, a governor for controlling the action of the lever on the valve, and a spring-pressed plunger which engages the valve-stem and holds the valve open when released by the lever.

9. In a governing mechanism, the combination of a regulating-valve, a stem therefor, a lever which has a constant to-and-fro motion, a dog carried by the lever for moving the valve, a shield located in the valve-stem for determining the effective action of the dog on the valve, and a load-responsive device for actuating the shield.

10. In a governing mechanism, the combination of a regulating-valve, a stem therefor having shoulders thereon and containing a longitudinal opening, a steam-lever which has a constant to-and-fro motion, dogs carried by the lever and arranged for engagement with the shoulders, a shield for controlling the effective action of the dogs, which is located in the longitudinal opening in the valve-stem, and a speed-responsive device which actuates the shields.

11. In a governing mechanism, the combination of a plurality of regulating-valves, perforated stems therefor, steam-levers which have a constant to-and-fro motion for opening and closing the valves, shields that are located in the stems for controlling the effective action of the levers on the valves, and a speed-responsive device that causes the shields to act on the dogs in a manner to produce successive movements of the valves.

815,834. INDIVIDUAL CAR-LIFT. CHARLES G. HUTCHINSON, Philadelphia, Pa., assignor of three-fifths to James W. Rowland, Orrin D. Bleakley, and Chas. W. Mackey, Franklin, Pa. Filed Jan. 17, 1905. Serial No. 241,436.



Claim.—1. In an inclined passenger-car lift, the combination of an endless conveyer-chain, cars pivoted to said chain and hung to one side thereof, means for maintaining the cars suspended lateral to the said chain, and an endless guide-chain to which each of the said cars is connected for the purpose specified, substantially as described.

2. The combination in an inclined passenger-car lift, of an endless conveyer-chain, cars pivoted thereto and hung to one side thereof, an endless guide-chain to which each of the said cars is connected, sprocket-wheels located and adapted to engage and actuate said chains, and means for maintaining the said cars suspended at one side of said conveyer-chain, substantially as described.

3. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on said guideway, cars pivoted to said chain and hung to one side thereof, an endless guide-chain to which each of the said cars is connected, a caster-wheel mounted on each of said cars, and a fixed guide engaged by the caster-wheels, as set forth.

4. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on said guideway, cars pivoted to said chain and hung to one side thereof, an endless guide-chain to which each of the said cars is connected, sprocket-wheels located and adapted to engage and actuate said chains, a caster-wheel mounted on each of the said cars, and a fixed guide engaged by the caster-wheels, as set forth.

5. A passenger-lift car comprising a car-floor, a car back and two sides extending up only to a height adequate to protect the person, a hand-grasp on the forward side, a single wheel-mounting transverse axle secured to the upper part of the said car back for the purpose of laterally and pivotally suspending the said car, and a connecting member secured to the lower part of said car back and adapted to connect the car to an endless guide-chain, as set forth.

6. A passenger-lift car adapted to travel both horizontally and up and down an incline and to be occupied by a passenger in a standing position, said car having an open front and top and comprising a car-floor, a car back and two sides extending up only to a height adequate to protect the person, a hand-grasp on the forward side, a single wheel-mounting transverse axle secured to the upper part of the said car back for the purpose of laterally and pivotally suspending the said car, and a connecting member secured to the lower part of said car back and adapted to connect the car to an endless guide-chain, as set forth.

7. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on said guideway, cars, said cars being pivotally suspended from said chain, an endless guide-chain to which each of the said cars is connected, and sprocket-wheels adapted and arranged to engage and actuate said chains, substantially as described.

8. In an inclined passenger-car lift the combination of an endless conveyer-chain, an endless series of cars pivotally suspended therefrom, and an endless guide-chain to which each of the said cars is connected, substantially as described.

9. In an inclined passenger-car lift, the combination of an endless conveyer-chain, an endless series of cars pivotally suspended therefrom, an endless guide-chain to which each of the said cars is connected, and sprocket-wheels arranged to engage and actuate said chains, substantially as described.

10. In an inclined passenger-lift, the combination of an endless conveyer-chain, cars pivoted thereto and hung to one side thereof, a guide for maintaining the cars suspended at one side of said chain, and an endless guide-chain to which each of the said cars is secured to guide and keep the cars in an upright position, substantially as described.

11. In an inclined passenger-lift, the combination of an endless conveyer-chain, an endless series of cars pivotally suspended therefrom and hung to one side thereof, each car having a floor and three sides extending up therefrom to a height adequate for the protection of the person, a hand-grasp secured to the forward side of each car, means for maintaining the said cars suspended at one side of said conveyer-chain, and means for connecting the lower part of the said cars to guide them to travel in an upright position, substantially as described.

12. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on the said guideway, cars pivotally suspended from the conveyer-chain, and an endless guide-chain located below said conveyer-chain and to which each of the said cars is connected, as set forth.

13. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on the said guideway, cars pivotally suspended from the conveyer-chain, each car being suspended by a transverse axle located on the upper part of the car-back, and an endless guide-chain located below said conveyer-chain and to which each of the said cars is connected, as set forth.

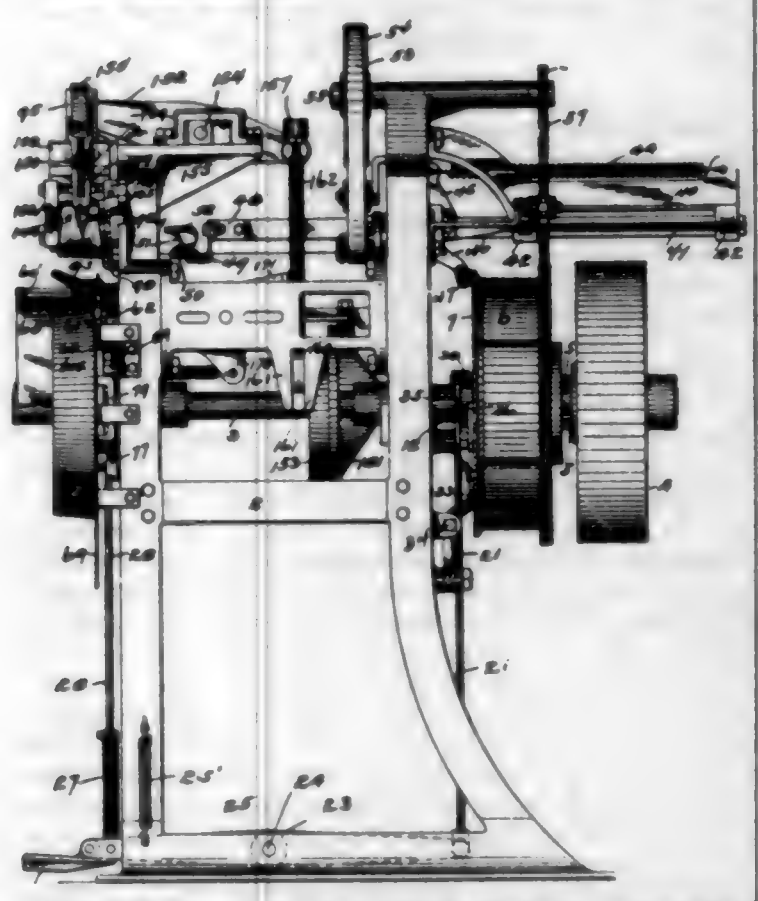
14. A passenger-lift provided with an endless guideway having inclined and horizontal portions, an endless conveyer-chain mounted to travel on the said guideway, cars pivotally suspended from said conveyer-chain, each car being suspended by a transverse axle located on the upper part of the car back, and an endless guide-chain each car being connected to said chain by a pivot located on the lower part of the car back, as set forth.

15. An element of an inclined passenger-car lift, consisting of an open-top open-front car provided with a floor for a passenger to stand upon, a car back and two sides extending up only to a height adequate to protect the person, a hand-grasp located on the forward side of the car, a single transverse axle secured to the upper part of said car back and adapted to engage a conveyer-chain and mounting-wheel so that the car will hang at one side of said chain, and a connecting member secured to the lower part of said car back and adapted to connect the car to a caster-wheel and to an endless guide-chain, as set forth.

815,835. MACHINE FOR SIZING BARREL-HOOPS AND SECURING THE ENDS THEREOF.

JOHN G. IVERSON, Minneapolis, Minn., assignor to Charles B. Cottrell, Minneapolis, Minn.

Filed May 4, 1904. Serial No. 206,296.



Claim.—1. The combination, with the pivoted hoop-expanding spring-plates, of the pivoted levers for operating said plates, and the rotatable cam engaging said levers.

2. The combination, with the anvil-block, of the hoop-expanding spring-plates, the pivoted levers for operating said plates, and the rotatable cam engaging said levers.

3. The combination, with the spring-expanding-plates, of the pivoted levers 71 and 73 engaging said plates, the shaft, and the cam 70 upon said shaft for operating said levers.

4. The combination, with the anvil, of the spring-expanding-plates pivotally mounted upon opposite sides of said anvil and arranged to overlap each other, the pivoted levers engaging said plates and the operating-cam for engaging and moving said levers.

5. The combination, with the anvil 60, of the spring expanding-plates 63 and 64 pivotally mounted at the sides of said anvil and the pivoted gage 85 arranged above said anvil.

6. The combination, with the anvil and the hoop-expander, of the stops 67 and 85 for the ends of the hoop.

7. The combination, with the anvil, of the pivoted spring expander-plates, one of said plates being provided with the stop or shoulder 67.

8. The combination, with the anvil and the hoop-expander, of the hoop-clamp consisting of the pointed bars arranged to engage the hoop with a yielding pressure.

9. The combination, with the anvil and the hoop-expander, of the plunger arranged above said anvil and provided with the pointed bars arranged to engage the hoop placed upon said anvil.

10. The combination, with the anvil and the hoop-expander, of the plunger arranged above said anvil, and of the hoop-clamp consisting of three bars pointed at their lower ends, the outer bars having their points outturned, for the purpose set forth.

11. The combination, with the anvil and hoop-expander, of three plungers arranged above said anvil, the central plunger being provided with a hoop-clamp and each of the other plungers being provided with a staple forming and setting mechanism.

12. The combination, with means for clamping the overlapped ends of the hoop, of means for feeding the wire, means for cutting the wire diagonally, means for forming a staple from the wire with the beveled or inclined surfaces at the ends of the wire at the outer sides of the staple-legs, means for bending said staple about the overlapped ends of the hoop, and means for inserting the ends of the staple in the hoop.

13. The combination, with means for clamping the overlapped ends of a hoop, of a wire-feed, a cutter for severing a suitable length of wire with an inclined or diagonal cut, means for forming bends in the ends of the wire with the inclined faces of the ends of the wire outward, means for bending the severed length of wire over the overlapped ends of the hoop, and means for embedding the bent ends of the wire in the hoop.

14. The combination, with means for clamping the overlapped ends of a hoop, of a suitable wire-feed, a wire-cutter, and a three-part plunger, the central part of which is provided with a pivoted head, for the purpose set forth.

15. The combination, with means for clamping the overlapped ends of a hoop, of a suitable wire-feed, a three-part plunger, the outer part of said plunger being provided with the shoulder 127 and with the spring-controlled bar 132 having the shoulder 128, for the purpose set forth.

16. The combination, with means for clamping the overlapped ends of a hoop, of a suitable wire-feed, a wire-cutter, and a three-part plunger having forming shoulders or dies arranged upon yielding supports.

17. The combination, with means for clamping the overlapped ends of a hoop, of a suitable wire-feed, a wire-cutter, and a three-part plunger, the central part of which is provided with a pivoted head, and the other parts with yielding forming shoulders or dies.

18. The combination, with means for clamping the overlapped ends of a hoop, and means for forming a staple with its legs at opposite sides of said hoop, of the pivotally-supported guide-plate, the pivotally-supported clencher-plates, and means for operating said plates, for the purpose set forth.

19. The combination, with means for clamping the overlapped ends of a hoop, of a pivotally-supported staple-guide, means for feeding a wire and forming a staple therefrom with its legs upon opposite sides of said staple-guide, and means for embedding the ends of the staple in the hoop.

20. The combination, with means for clamping the overlapped ends of a hoop, of a wire-feed, a cutter for severing a suitable length of wire, means for forming bends in the ends of the wire, means for bending the severed lengths of wire about the overlapped ends of the hoop, means for embedding the bent ends of the wire in the hoop, and a pivotally-supported guide-plate for guiding the wire while it is being bent around the hoop.

21. The combination, with means for clamping the overlapped ends of the hoop, of the wire-feed, the plunger for forming bends in the ends of the wire and bending the same around the hoop, the clencher-plates for embedding the bent ends of the wire in the hoop, a pivotally-supported guide-plate for guiding the wire while being bent around the hoop, and means for operating said plunger and clencher-plates.

22. The combination, with the clencher-plates, of the pivotally-supported guide-plate 185, and the cams for moving said guide-plate.

23. The combination, with the clencher-plates and the swinging arms to which said plates are pivoted, said arms being provided with suitable cams, of the pivoted guide-plate 185 adapted to be engaged by said cams, for the purpose set forth.

24. The combination, with the clencher-plates, of the central pivoted guide 185 and the hinged side guides 186, and the cams for controlling said guides, for the purpose set forth.

25. The combination, with the clencher-plates and means for operating the same, of a hinged guide-plate 186 and the cam for operating said guide-plate, for the purpose set forth.

815,836. VAPOR ELECTRIC APPARATUS.

ALEXANDER M. JACKSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York.

Filed May 31, 1904. Renewed Jan. 29, 1906. Serial No. 298,444.

Claim.—1. In a vapor electric apparatus, the combination of an exhausted envelop provided with a condensing-chamber, electrodes therefor, and a shield protecting one of the electrodes from the vapor progressing toward the condensing-chamber.

2. In a vapor electric apparatus, the combination of an ex-

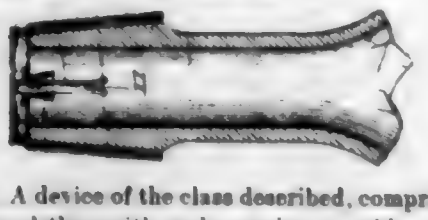
hausted tube surmounted by a condensing-chamber, and a shielded electrode arranged where the tube opens into the condensing-chamber.



3. The combination of an envelop or container provided with a condensing-chamber, a vaporizable electrode, and a shielded electrode located in the path taken by vapor passing to said condensing-chamber.

4. The combination of an envelop or container having a tube provided with an enlargement, a shield or hood closed at one end and having its other end located in the mouth of the tube, and an electrode inside of said shield or hood.

815,837. BOTTLE-CAP. Charles H. Johnson, Buffalo, N. Y. Filed May 6, 1905. Serial No. 259,209.



Claim.—1. A device of the class described, comprising a collar, a screen combined therewith and carrying a guide, and a closure having a shank movable in the guide.

2. A device of the class described, comprising a collar, a screen combined therewith, a guide positioned centrally of the screen, and a closure having a shank movable in the guide.

3. A device of the class described, comprising a collar, a screen combined therewith, a combined guide and stop secured to the screen, and a closure having a shank movable in the guide and stop.

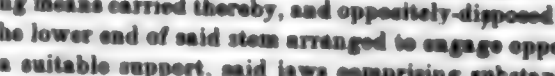
4. A device of the class described, comprising a collar provided near one end with a seat, a screen secured to the seat, a guide secured centrally to the screen, and a closure having a stem freely movable within the guide.

5. A device of the class described, comprising a collar, a screen secured near one end thereof, a guide secured to the screen, and a closure having a shank loosely movable in the guide and provided with means for limiting its outward movement.

6. A device of the class described, comprising a collar, a screen combined therewith, a disk secured centrally of the screen and having an approximately cone-shaped extension, and a closure having a stem movable within the disk and provided with terminal abutments to limit the movement of the stem.

815,838. HOLDER FOR BANNERS AND THE LIKE. Lumia G. Johnson, Portland, Oreg. Filed Sept. 7, 1905. Serial No. 277,437.

Claim.—1. In a holder of the character described, a stem, article-holding means carried thereby, and oppositely-disposed movable jaws at the lower end of said stem arranged to engage opposite surfaces of a suitable support, said jaws comprising substantially U-shaped frames having engaging portions on the respective arms thereof, and means carried by the frames arranged to coöperate with complementary engaging portions on the respective frames to hold the same in closed position.



2. In a holder of the character described, a stem, article-holding means carried thereby, and oppositely-movable jaws at the lower end of said stem arranged to engage opposite surfaces of a suitable support, said jaws comprising substantially U-shaped frames, the respective arms of which have spaced recessed portions, and means carried by the frames and arranged to coöperate with complementary recessed portions on the respective arms to hold the jaws in closed position.

3. In a holder of the character described, a stem, article-holding means carried thereby and oppositely-disposed movable jaws at the lower end of said stem arranged to engage opposite surfaces of a suitable support, said jaws comprising wire frames of substantially U-shaped formation, the respective arms of which being bent to form spaced recessed portions, and rings carried by the frames and arranged to engage complementary recessed portions on the respective arms to hold the jaws in closed position.

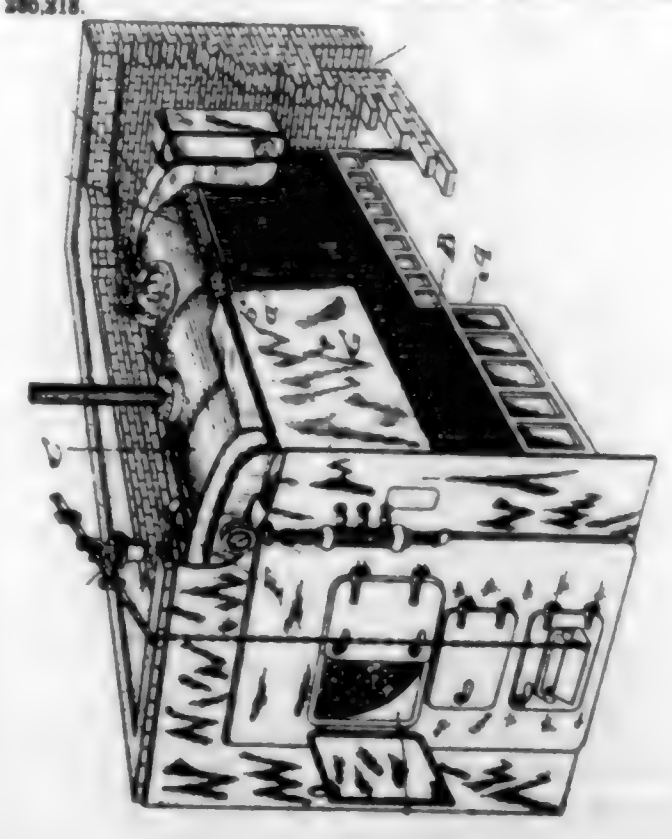
4. In a holder of the character described, oppositely-disposed movable jaws arranged to engage opposite surfaces of a suitable support, the said jaws comprising substantially U-shaped frames of bendable material, the respective arms of which are inwardly bent at their upper ends and intertwisted to form a resilient connection and a stem portion, and article-holding means on said stem portion.

5. In a holder of the character described, oppositely-disposed movable jaws arranged to engage opposite surfaces of a suitable support, the said jaws comprising substantially U-shaped frames of bendable material, the respective arms of which are intertwisted to form a resilient connection, and a stem portion.

6. In a holder of the character described oppositely-disposed movable jaws arranged to engage opposite surfaces of a suitable support, said jaws comprising substantially U-shaped frames of bendable material, the respective arms of which are intertwisted to form a resilient connection and an elongated stem portion, one of said arms being offset to constitute a hook-support.

7. In a holder of the character described, oppositely-disposed, movable jaws arranged to engage opposite surfaces of a suitable support, the said jaws comprising substantially U-shaped frames of bendable material, the respective arms of which are intertwisted to form a resilient connection and a stem portion, and means carried by the frame to hold the jaws in closed position.

815,839. HEATING APPARATUS. Wilbur G. Jones and Joseph W. Johnson, Toronto, Canada. Filed June 14, 1905. Serial No. 265,218.



Claim.—1. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for the same, a longitudinal radiator arranged at the side of the furnace and boiler and spaced therefrom, means for conducting the hot gases from the boiler to the front end of said radiator, a flue connecting the rear end of the radiator with the exit for the gases, and an air-chamber in which the boiler, furnace and radiator are arranged, substantially as set forth.

2. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for said boiler, an air-chamber in which the boiler and furnace are arranged, longitudinal radiators arranged in said air-chamber on opposite sides of the boiler and furnace and separated from the boiler and furnace by air-passages, means for conducting the products of combustion from the front end of the return-flue to the front ends of said radiators, and means for discharging the products of combustion from the rear ends of said radiators, substantially as set forth.

3. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for said boiler, an air-chamber in which the boiler and furnace are arranged, longitudinal radiators arranged in said air-chamber on opposite sides of the boiler and furnace and separated from the boiler and furnace by air-passages, a smoke-box at the front of the boiler communicating with the front end of said return-flue, a transverse front flue receiving the gases from the smoke-box and conducting the same to the front ends of the radiators, and means for discharging the gases from the rear ends of the radiators, substantially as set forth.

4. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for said boiler, an air-chamber in which the boiler and furnace are arranged, longitudinal radiators arranged in said air-chamber on opposite sides of the boiler and furnace and separated from the boiler and furnace by air-passages, a smoke-box at the front of the boiler communicating with the front end of said return-flue, a transverse front flue receiving the gases from the smoke-box and conducting the same to the front ends of the radiators, and a transverse rear flue which communicates with the rear ends of the radiators and through which the gases escape therefrom, substantially as set forth.

5. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for the same having metallic side walls which extend to the upper portion of the boiler, an air-chamber in which the boiler and furnace are arranged, longitudinal radiators arranged in said air-chamber opposite the upper portions of said boiler and said metallic furnace-walls and separated therefrom by an air-passage, means for conducting the products of combustion from the front end of the reurn-flue to the front ends of said radiators, and means for discharging the products of combustion from the rear ends of said radiators, substantially as set forth.

6. The combination of an air-chamber, a horizontal boiler and furnace arranged therein, and a radiator arranged lengthwise at the side of the furnace and boiler and separated therefrom by an air-passage, said radiator having a continuous inner wall which is composed of an upright lower portion which is arranged opposite the furnace, and an upper, inwardly-overhanging portion which projects toward the upper portion of the boiler, and means for conducting the products of combustion from the boiler to the radiator, substantially as set forth.

7. The combination of an air-chamber, a boiler and furnace arranged therein, the boiler having its top portion exposed above the side walls of the furnace, and longitudinal radiators arranged on opposite sides of the furnace and boiler and separated from the side walls of the furnace and from the boiler by air-passages, said radiators having upright inner walls whose top portions extend inwardly beyond the lower portions and toward the top portion of the boiler, substantially as set forth.

8. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for the same, a longitudinal radiator arranged at the side of the furnace and boiler, means for conducting the hot gases from the boiler to the front end of said radiator, a flue connecting the rear end of the radiator with the exit for the gases and communicating by a direct draft-opening with the furnace, and a damper controlling said opening, substantially as set forth.

9. The combination of a horizontal boiler having a return-flue for the passage of the products of combustion fom the rear to the front, a furnace for the same, longitudinal radiators arranged on opposite sides of the furnace and boiler, means for conducting the hot gases from the boiler to the front ends of said radiators, a transverse flue connecting the rear ends of the radiators with the exit for the gases and communicating by a direct opening with the furnace, and a damper controlling said opening, substantially as set forth.

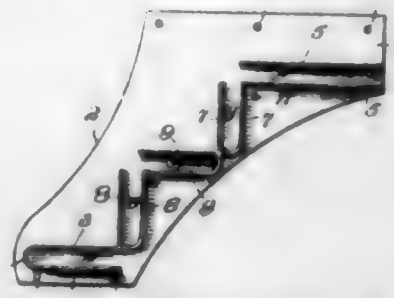
10. The combination of an air-chamber, a horizontal boiler arranged therein, a radiator arranged lengthwise at the side of the boiler and separated therefrom by an air-passage, said radiator having the inlet for the products of combustion arranged at the top at one end of the radiator and the outlet at the bottom at the opposite end, and means for conducting the products of combustion from the boiler to said inlet, substantially as set forth.

11. The combination of an air-chamber, a horizontal boiler having a return-flue for the passage of the products of combustion from the rear to the front, a furnace for the same, longitudinal radiators arranged on opposite sides of the boiler and furnace, a transverse front flue connecting the front end of the boiler with the front ends of the radiators at the top thereof, and a transverse rear flue connected with the rear ends of the radiators at the bottom thereof and communicating with the exit for the products of combustion, substantially as set forth.

12. The combination of an air-chamber, a horizontal return-flue boiler arranged in the same, a furnace for the boiler, a stationary smoke-box which is secured to the furnace and with which the front end of the boiler is slidably connected, and longitudinal radiators arranged in said air-chamber on opposite sides of the boiler and furnace and spaced therefrom, said radiators receiving the products of combustion from said smoke-box, substantially as set forth.

13. The combination of an air-chamber, a horizontal return-flue boiler having longitudinal side flanges, a furnace having side walls upon which said flanges rest and on which said flanges are capable of lengthwise movement, a stationary smoke-box which is secured to the furnace and with which the front end of the boiler is slidably connected, and longitudinal radiators arranged in said air-chamber on opposite sides of the boiler and furnace and spaced therefrom, said radiators receiving the products of combustion from said smoke-box, substantially as set forth.

815,840. STAIR. JAMES M. KNAUS, Sedalia, Mo. Filed Oct. 18, 1905. Serial No. 283,304.



Claim.—1. A device of the character described, comprising a plate provided with parallel, vertical, and horizontal flanges, said flanges producing vertical and horizontal grooves or pockets, the vertical grooves closed at their lower ends, and said vertical and horizontal grooves open at one end.

2. A device of the character described, comprising a plate provided with horizontal and vertical flanges, the vertical flanges integrally connected at their lower ends.

3. A device of the class described, comprising a metallic plate provided with a flanged edge, said plate provided with apertures, a plurality of parallel, vertical flanges, and a plurality of parallel, horizontal flanges formed upon said plate, the lower, horizontal flanges integrally connected at their front end, the vertical flanges integrally connected at their lower end.

4. As a new article of manufacture, a stair side plate formed from a blank sheet of metal provided with laterally-extending, sets of parallel flanges producing a "stepped" lift and tread-supporting means.

5. A device of the class described, comprising a plate provided with a set of flanges integral at one of their ends, said flanges constituting a groove or pocket.

6. A stair-plate provided with a set of flanges constituting a groove or pocket within which a tread or riser may be positioned.

7. A device of the character described, comprising a plate provided with sets of horizontal and vertical flanges, the vertical flanges in each set integrally connected at their lower ends.

8. A device of the character described, comprising a plate pro-

vided with a set of vertical flanges, the flanges in said set integrally connected at their lower ends, and tread-supporting means formed upon said plate.

9. A device of the character described, comprising a plate provided with horizontal and vertical flanges, said flanges extending at right angles from said plate, and flanges formed upon said plate and positioned parallel to said first-mentioned flanges.

815,841. SULKY-SEAT. CHARLES C. LAPHAM, New York, N. Y. Filed Sept. 6, 1904. Serial No. 223,367.



Claim.—1. A sulky provided with a seat arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, to produce a desirable balance of forces, substantially as described.

2. A sulky provided with a seat arranged to be slidably moved by the occupant by the movement of his body, when the sulky is in motion, to produce a desirable balance of forces, substantially as described.

3. A sulky provided with a seat arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, means whereby the seat is prevented from returning after each successive movement, substantially as described.

4. A sulky provided with a seat, slidably mounted and arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, means whereby the seat is prevented from returning after each successive forward movement, substantially as described

5. A sulky provided with a movable seat mounted on guides or slides arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, means including a rack and detent for holding the seat in a desired position, substantially as described.

6. A sulky provided with a slidable seat, provided with a cushion of yielding material, the seat arranged so as to be moved by the occupant by the movement of his body, when the sulky is in motion, substantially as described.

7. A sulky provided with a slidable seat, provided with a cushion of yielding material, the seat arranged so as to be moved by the occupant by the movement of his body, when the sulky is is motion, and means for preventing the return of the seat, substantially as described.

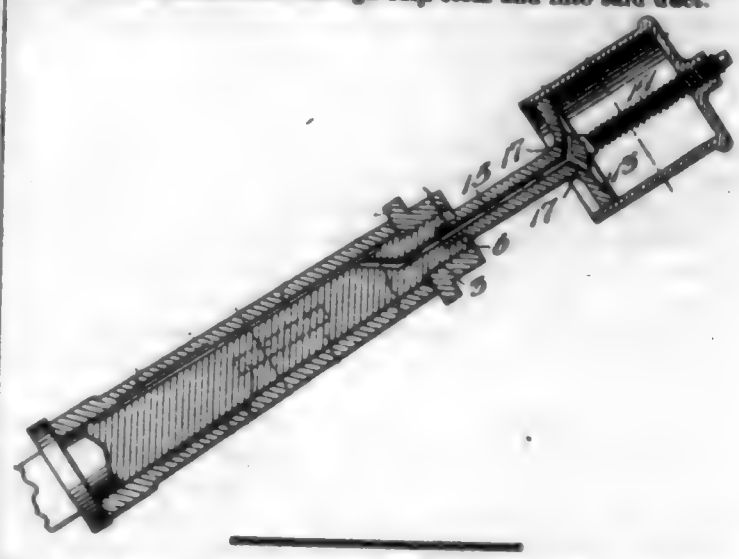
8. A sulky provided with a seat slidably mounted, arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, adjustable means for limiting the extent of the sliding movement, substantially as described.

9. A sulky provided with a seat slidably mounted, arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, adjustable means consisting of collars for limiting the extent of the sliding movement, substantially as described.

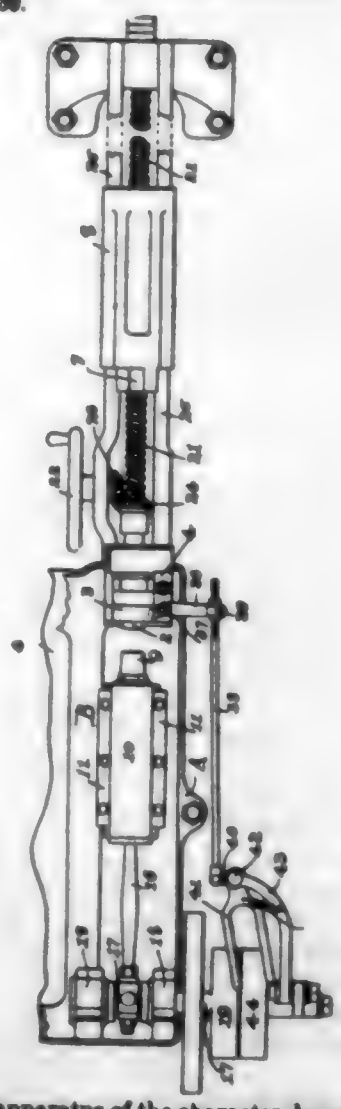
10. A sulky provided with a seat slidably mounted, arranged to be moved by the occupant by the movement of his body, when the sulky is in motion, adjustable means for limiting the extent of the sliding movement, means for retaining the seat in a desired position, substantially as described.

815,842. AXLE-LUBRICATOR. EUGENE LE FEVER, Rosendale, N. Y. Filed July 23, 1905. Serial No. 271,702.

Claim.—A lubricator comprising a casing, a piston provided at one side with a threaded shank upon which the casing is revolubly mounted and upon its opposite side with a feed-stem adapted to be attached to the axle and brought into communication with said duct, the piston having passages communicating with the stem and interior of the casing, whereby when the casing is adjusted the lubricant will be forced therefrom through said stem and into said duct.



815,843. MECHANISM FOR SHARPENING ROCK-DRILLS. WILLIAM P. LIGHTBODY, Johannesburg, Transvaal. Filed July 3, 1904. Serial No. 215,139.



Claim.—1. An apparatus of the character described comprising a dolly, an operating device therefor, means for supporting a drill, and means for automatically controlling said operating device, said means including the drill-support.

2. An apparatus of the character described comprising a yieldingly-mounted dolly, means for operating the same, and means for automatically controlling said operating means, said controlling means being connected with said dolly.

3. An apparatus of the character described comprising a dolly, a reciprocating yielding bearing therefor, means for operating said dolly, and a controller for said operating means, said controller being in engagement with said bearing.

4. An apparatus of the character described comprising a dolly, a reciprocating bearing therefor, means for operating said dolly said means including a power-shaft having fast and loose pulleys thereon, and a belt-shifter adjacent said pulleys and operatively connected with said bearing.

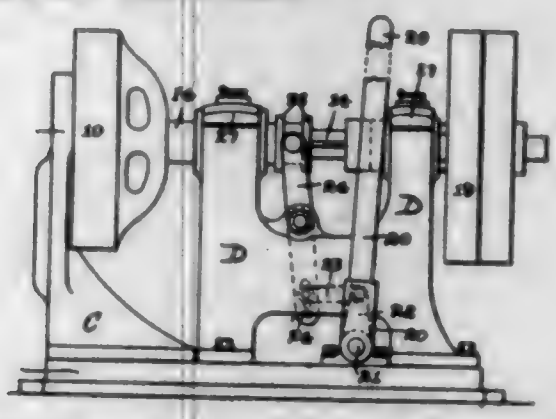
5. An apparatus of the character described comprising a dolly,

a spring-pressed yielding bearing therefor, a hammer adapted to strike said dolly, and means connected with said dolly-bearing for automatically controlling the operation of said hammer.

6. An apparatus of the character described comprising a dolly, a spring-pressed yielding bearing therefor, a hammer adapted to strike said dolly, means for reciprocating said hammer, and a controller for said reciprocating means, said controller being in engagement with said dolly-bearing.

7. An apparatus of the character described comprising a yieldable bearing, a dolly mounted therein and having an enlarged head forming a shoulder engaging said bearing, means for operating said dolly, and a controller for said operating means, said controller being in engagement with said bearing.

815,844. MECHANISM FOR SHAPING AND SWAGING ROCK-DRILLS. WILLIAM P. LIGHTBODY, Johannesburg, Transvaal. Filed July 2, 1904. Serial No. 215,141.



Claim.—1. A machine of the character described comprising a stationary support, a plurality of radially-arranged swaging devices carried thereby, a rotary shaft, a cam-ring carried thereby and encircling said swaging devices, said ring being provided with longitudinally-inclined cam-plates, means for holding the outer ends of said swaging devices normally in contact with said ring, means for reciprocating said shaft and ring, and means for rotating said shaft and ring, whereby said swaging devices are operated.

2. A machine of the character described comprising a stationary support, a plurality of radially-arranged swaging devices carried thereby, a rotary shaft, a cam-ring carried thereby and encircling said swaging devices, said ring being provided with cam-plates, means for holding the outer ends of said swaging devices normally in contact with said ring, a lever connected to said shaft, means for operating said lever, whereby said shaft and ring are reciprocated, and means for rotating said shaft and ring, whereby said swaging devices are operated.

3. A machine of the character described comprising a stationary support, a plurality of radially-arranged swaging devices carried thereby, a rotary shaft, a cam-ring carried thereby and encircling said swaging devices, said ring being provided with cam-plates, means for holding the outer ends of said swaging devices normally in contact with said ring, a lever connected to said shaft, a rock-shaft, connections between said lever and rock-shaft, an operating-lever for said rock-shaft, and means for rotating said shaft and ring, whereby said swaging devices are operated.

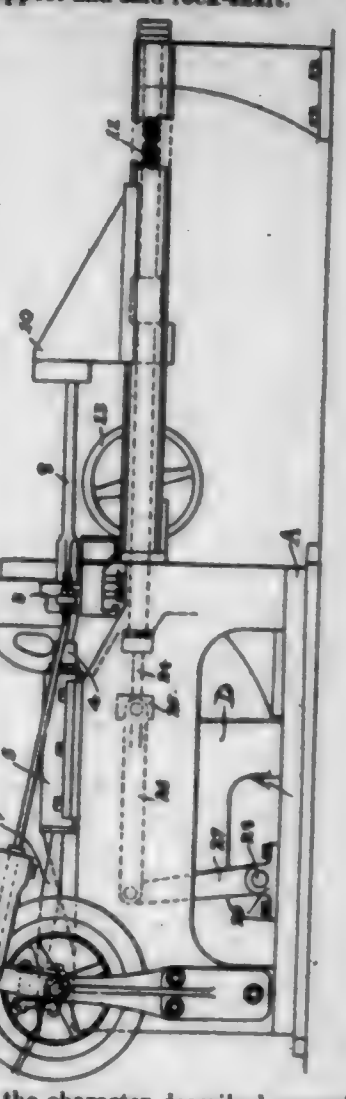
815,845. MECHANISM FOR SHAPING AND SWAGING ROCK-DRILLS. WILLIAM P. LIGHTBODY, Johannesburg, Transvaal. Filed July 2, 1904. Serial No. 215,142.

Claim.—1. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring for operating the same, means for reciprocating said ring, an adjustable drill-support, and connections between said drill-support and said reciprocating means, whereby the latter is controlled by the adjustment of the former.

2. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring for operating the same, a yielding device for reciprocating said ring, an adjustable drill-support, and connections between said drill-support and said yielding device, whereby the latter is controlled by the former.

3. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring surrounding the same, a lever adapted to reciprocate said ring, a cushion for said lever, an adjustable drill-support, and connections between said drill-support and said lever, whereby the latter is controlled by the former.

4. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring for operating the same, a rock-shaft having an arm, a casing mounted on said arm, a lever adapted to reciprocate said ring, a spring in said casing bearing against said lever, an adjustable drill-support, and connections between said drill-support and said rock-shaft.



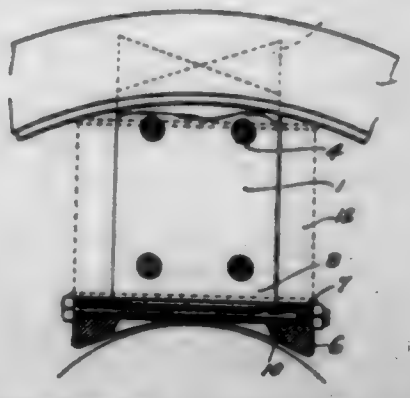
5. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring surrounding the same, a rock-shaft, a lever operated thereby and adapted to reciprocate said cam-ring, an adjustable drill-support, and connections between the drill-support and said rock-shaft.

6. A machine of the character described comprising radially-arranged swaging devices, a rotatable cam-ring surrounding the same, a rock-shaft, a lever operated thereby and adapted to reciprocate said ring, a drill-support, an adjusting-shaft therefor, and connections between said shaft and said rock-shaft.

815,846. FILTERING MATERIAL. OSWALD LÖFFLER and WILHELM WEIDLE, Vienna, Austria-Hungary. Filed Mar. 28, 1905. Serial No. 252,601.

Claim.—A filtering material consisting of finely-pulverized asbestos, chalk, fossil-meal and syenite mixed with water, the mixture being pressed into molds and burned.

815,847. DYNAMO-ELECTRIC MACHINE. JOHN P. MALLETT, Madison, Wis., assignor to Northern Electrical Manufacturing Company, a Corporation of Wisconsin. Filed May 21, 1904. Serial No. 209,000.



Claim.—1. In combination, a pole-piece having grooves formed in opposite sides of its armature end, pole-tip pieces formed of mate-

rial of different magnetic permeability from the pole-piece entering said grooves, slots or passages being formed in the armature end of said pole-piece, and bolts for securing said pieces together passing through said passages.

2. In combination, a laminated pole-piece having grooves formed in opposite sides adjacent its armature end, pole-tip pieces entering said grooves, some of the laminæ being shortened to form passages in the armature end of the pole-pieces, and bolts for securing said pieces together located in said passages.

3. In combination, a laminated pole-piece, some of the laminæ of which are shortened to form passages in the armature end of said pole-piece, and cast-metal pole-tip pieces secured to the pole-piece by bolts extending through said passages.

4. In combination, a field ring or yoke, a laminated pole-piece permanently secured thereto, some of the laminæ composing the pole-pieces being shortened to form a passage in the armature end of said pole-piece, and coil-retaining pole-tip pieces secured to said pole-piece by a bolt extending through said passage.

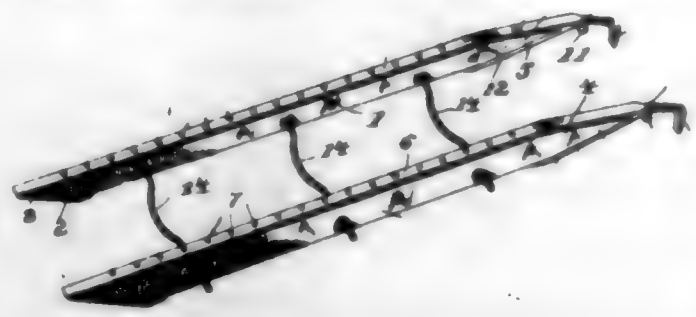
5. In combination, a laminated pole-piece, some of the laminæ of which are shortened to form a passage adjacent the armature end of said pole-piece, and a coil-retaining device secured to said pole-piece by a securing device extending through said passage.

6. In combination, a pole-piece the body of which is formed of laminæ, some of which are shortened to form a passage adjacent the armature end of the pole-piece, and a pole-tip piece secured to said pole-piece by a bolt located in said passage.

7. In combination, a pole-piece having slots or passages formed at its armature end extending transversely to the armature-axis, pole-tip pieces, and means located in said slots or passages for securing said pole-tip pieces to the pole-piece.

8. In combination, a pole-piece having grooves or slots formed in its armature end extending transversely to the armature-axis, a coil-retaining device, and securing means therefor entering said grooves or slots.

815,848. SKID. Joseph C. Marks, Birmingham, Ala. Filed June 3, 1905. Serial No. 263,857.



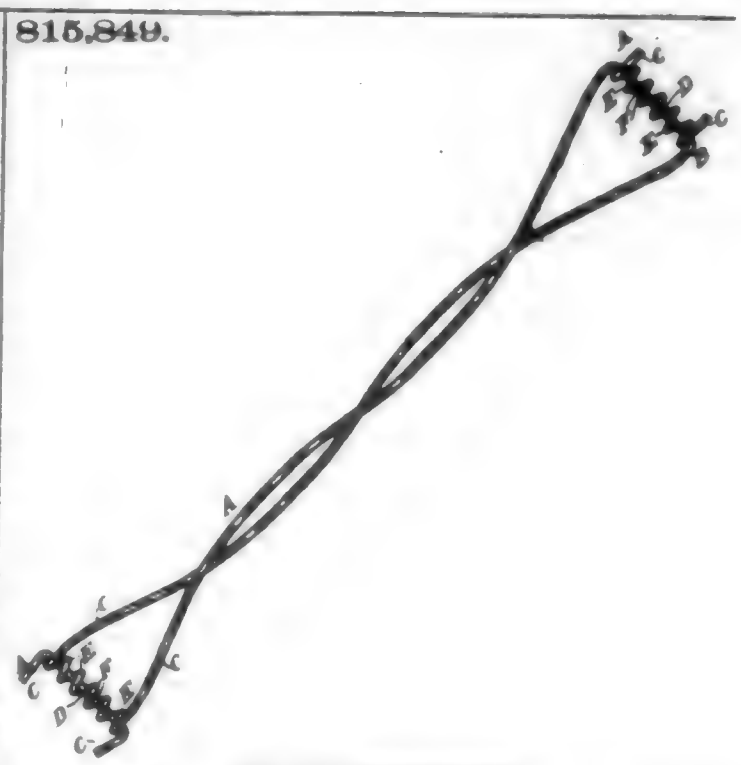
Claim.—1. A skid comprising two oppositely-disposed members, suitably spaced apart and secured together, said members being provided with metallic strips with their upper ends extended beyond the main skid members and provided with hooks for the purpose set forth, and lugs below said hooks, whereby the skid is prevented from moving upward when in use, the said strips being also provided with a series of short spurs or studs suitably spaced apart and adapted to be engaged by the barrel or other object being elevated, to prevent the same from slipping, all substantially as and for the purpose set forth.

2. A skid comprising two oppositely-disposed main members suitably spaced apart, and so held together that the main members may be adjusted laterally to vary the width of the skid, each skid member being provided with a series of short spurs or studs, extending throughout the greater part of their length, and hooks at the upper end of the skid members and lugs below said hooks, all substantially as and for the purpose set forth.

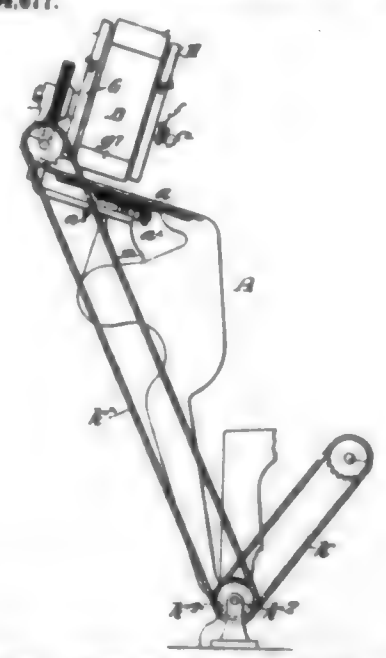
815,849. WIRE-CHAIN LINK. Columbus M. Martin, Forest City, N. C. Filed May 24, 1904. Serial No. 209,966. (Model.)

Claim.—A chain link formed of wire links, each link consisting of a single wire comprising a transverse portion, D, two longitudinal members, C, C, terminating in two spiral coils, E, E, directed toward each other on an axis parallel to the transverse portion, D, of said link and fitting closely around the transverse portion, D, of the adjacent link, the ends of said wire being opposite each other in the same spiral line, and said longitudinal members, C, C, being separated at their ends and loosely twisted upon each other between their ends, substantially as described.

815,849.



815,850. INK-DISTRIBUTING DEVICE FOR PRINTING-PRESSES. Richard Marx, Philadelphia, Pa. Filed June 10, 1905. Serial No. 264,677.



Claim.—1. The combination with the inking-plate and main inking-rollers of a printing-press, of an auxiliary roller and mechanism for periodically moving said auxiliary roller into contact with and across the plate in a line transverse to the line of motion of the main rollers, substantially as described.

2. The combination with the inking-plate of a printing-press, of an ink-fountain, a structure having an ink-receiving surface and two rollers, with means for operating one of the rollers to cause it to transfer ink from the fountain to said surface, and means for causing the other roller to transfer ink from the surface to the inking-plate, substantially as described.

3. The combination with the inking-plate of a printing-press, of a drum, an ink-fountain, and two rollers movable upon said drum, with means for operating one roller to cause it to transfer ink from the fountain to the surface of the drum, and means for operating the second roller to cause it to transfer ink from the drum to the inking-plate without directly receiving ink from the fountain, substantially as described.

4. The combination with the plate and inking-rollers of a printing-press, of a drum supported adjacent to said plate, an ink-fountain, two rollers, means for moving the rollers upon the drum, means for causing one roller to transfer ink from the fountian to the drum, and means for causing the second roller to transfer ink from the drum to the plate, said latter roller being movable upon the plate in a line substantially at right angles to the line of motion of the inking-rollers of the press, substantially as described.

5. The combination with the plate of a printing-press, of a drum supported adjacent thereto and having a portion of its surface plane, a frame having two rollers, means for revolving the frame with the rollers in engagement with the drum, an ink-fountain within

the drum, means for maintaining one of the rollers in contact either with the cylindrical or with the plane portion of the drum-surface during the revolution of the frame, and means for preventing the other roller from engaging said plane portion of the drum-surface, substantially as described.

6. An inking attachment for printing-presses consisting of a drum having a portion of its surface plane, two rollers revoluble upon the drum, an inking-fountain within the drum having a feed-roller projecting through the plane portion of the surface thereof, with means for preventing one of the rollers from engaging said roller while leaving it free to engage the cylindrical surface of the drum, and means for causing said second roller to engage the fountain-roller at each revolution, substantially as described.

7. The combination with the inking-plate of a printing-press, of a drum supported above the same, a plane portion adjacent to said plate, an inking-fountain having its feed-roller projecting through said plane surface, and two rollers having means whereby they are revolved in contact with the surface of the drum, with means for causing one of the rollers to engage only the cylindrical surface of the drum and the surface of the plate, and means for causing the second roller to engage the fountain-roller and the cylindrical surface of the drum without engaging the plate, substantially as described.

8. The combination with the plate of a printing-press, of a structure having a curved surface, an inking-fountain, two rollers supported to engage said curved surface, means for causing one of the rollers to receive ink from the fountain and deliver it to the curved inking-surface, and means for moving the other roller so that it engages said curved surface and the inking-plate of the press without directly receiving ink from the fountain, substantially as described.

9. The combination with the inking-plate of a printing-press, of a segmental drum structure, an inking-fountain within the same having its roller adjacent to the plane surface of said structure, two rollers revoluble about the axis of the structure, means for turning said rollers about the drum, a carriage for one of the rollers having springs whereby said roller is prevented from leaving the surface of the drum, there being supporting means for the second roller whereby it is prevented from engaging the ink-roller of the fountain, substantially as described.

10. In an inking attachment for a printing-press including a segmental drum structure, a revolving frame therefor, two rollers carried by said frame, one of said rollers having supporting-arms hinged to the frame and the other having a carriage and springs tending to move said carriage toward the surface of the drum structure, with an ink-fountain within the structure, and a roller therefor placed to be engaged by but one of the frame-carried rollers, substantially as described.

11. An inking attachment for a printing-press including a structure having a surface for the reception of ink, two rollers rotatable about said structure and in engagement with the surface thereof, means for moving said rollers so that they make a complete rotation about the structure, a frame for supporting said rollers, said frame including a hinged arm carrying one roller, a spring tending to turn said arm on its pivot, a stop for the arm, and a fountain for supplying ink to one of the rollers, substantially as described.

12. An inking attachment for a printing-press including a segmental drum structure independent of and detachable from the structure of the press, a roller mounted to engage the surface of said structure, an inking-fountain within the structure having its feed-roller placed to be engaged by said first roller, and means for adjusting the position of said fountain to vary the amount of ink supplied, substantially as described.

13. An inking attachment for a printing-press including a drum structure independent of and detachable from the structure of the press, an ink-fountain within said structure having its feed-roller projecting through the surface of the structure, a roller mounted to engage the surface of the structure for transferring ink from the fountain to said surface, said fountain being pivotally mounted and having means whereby it may be swung on its pivot to vary the amount of projection of its roller, substantially as described.

14. An inking attachment for a printing-press including a drum structure, an ink-fountain within said structure having its roller projecting through the surface of the structure, a roller mounted to engage the surface of the structure for transferring ink from the fountain to said surface, said fountain being pivotally mounted and having an eccentric, a strap for the eccentric connected to said fountain, with means for turning the eccentric to swing the fountain on its pivot and vary the projection of its roller, substantially as described.

15. An inking attachment for a printing-press including a segmental drum structure, an inking-fountain having its roller projecting through the plane surface of said structure, a distributing-disk placed to form a part of the plane surface of the structure, means for turning said disk, and a roller for transferring ink from the fountain to the disk and to the curved surface of the drum structure, substantially as described.

16. An inking attachment for a printing-press including a segmental drum structure, an inking-fountain having its roller projecting through the plane surface of said structure, a distributing-disk placed to form a part of the plane surface of the structure, means for turning said disk, and a roller for transferring ink from the fountain-roller and the disk to the curved surface of the drum structure, and a second roller for transferring ink from said curved surface to the plate of a printing-press, substantially as described.

17. An inking attachment for a printing-press consisting of a supporting structure, a spindle carried thereby, a drum fixed to said spindle, a frame mounted to revolve upon the spindle, means for turning the frame, rollers carried by the frame in engagement with the surface of the drum structure, with an ink-fountain, and means for preventing one of the rollers from directly receiving ink from said fountain, substantially as described.

18. An inking attachment for a printing-press including a supporting structure, a drum carried thereby, a revoluble frame adjacent to the drum structure, rollers carried thereby in engagement with the surface of said drum, said drum having a plane portion provided with a revoluble disk, means whereby said disk is turned by the revoluble frame, an inking-fountain, and two rollers carried by the revoluble frame, one of the same having means whereby as the frame is revolved it is maintained in engagement with either the plane or the curved portion of the surface of the drum structure, and the other having means whereby it is prevented from engaging said plane surface, substantially as described

19. The combination with a printing-press having an ink-plate, of a source of ink, a fixed drum constituting an ink-receiving structure, and means for transferring the ink from said source to said drum and then to the plate, with means for adjustably supporting the drum adjacent to said plate, substantially as described.

20. The combination with a printing-press having an ink-plate and a bracket, of a fixed drum, an ink-fountain, and a plurality of rollers for transferring ink from the fountain to the drum and to the plate, all carried by said bracket, with means for adjusting the position of said apparatus upon the bracket to vary its distance above the plate, substantially as described.

21. The combination with a printing-press having an oscillatory member carrying an ink-plate, an ink-receiving structure, an ink-fountain, and rollers constructed to transfer ink from the fountain to said structure and from the structure to the plate all carried by said member, a driven shaft operatively connected to the rollers and having a sprocket-wheel, a driving-shaft supported in the line of the axis of oscillation of said member and also having a sprocket-wheel, with a sprocket-chain connecting said two sprocket-wheels, substantially as described.

22. An inking attachment for a printing-press including a structure detachable from and independent of the press structure, the same having a surface for the reception of ink, means for supplying ink from a source of the same to said surface, and other means capable of making complete rotations about said structure for delivering ink therefrom to the plate of a press, substantially as described.

815,851. REFINING HYDROMETALLURGICAL PRODUCTS CONTAINING PRECIOUS METALS. CHARLES W. MERRILL, Alameda, Cal. Filed Feb. 2, 1903. Serial No. 141,590.

Claim.—The improvement in refining finely-divided hydrometallurgical products which consists in mixing the material with litharge, adding to said material or the mixture a soluble lead salt, reducing the litharge and soluble lead salt to metallic lead by heat, replenishing the material periodically to provide fresh accretions of lead, and finally cupeling the lead off from the precious metals.

815,852. CONVEYER. THOMAS S. MILLER, South Orange, and JOSEPH H. DICKINSON, Montclair, N. J. Filed Feb. 28, 1904. Serial No. 196,784.

Claim—1. In a conveying device, in combination, a carriage, a load-pulling rope extending over a guide on the carriage, a load-receptacle, traversing means, an outhaul-rope and a grip actuated by said outhaul-rope and adapted to engage the load-pulling rope to draw it outwardly; said grip being secured at a point beyond the load-receptacle.

2. In a conveying device, in combination, a carriage, a load-

pulling rope extending over the guide on the carriage, a load-receptacle, traversing means, an outhaul-rope, and an extension of said load-pulling rope engaging said outhaul-rope beyond said load-receptacle.



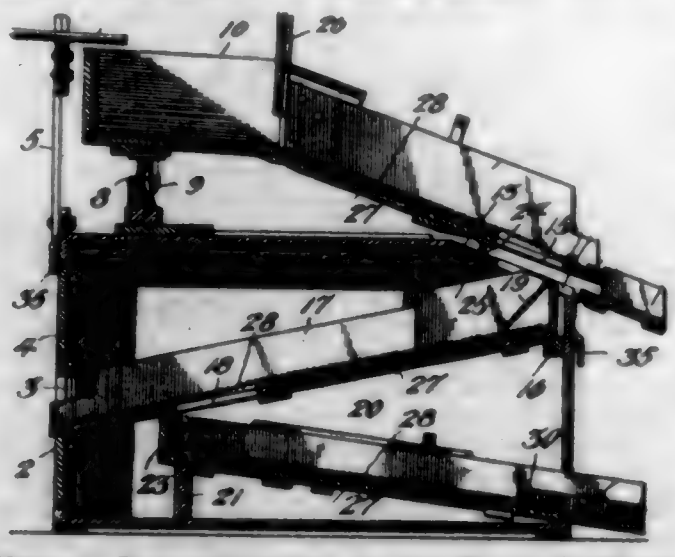
3. In a conveying device, in combination, a carriage, a load-pulling rope extending over the guide on the carriage, a load-receptacle, traversing means, an outhaul-rope, and an extension of said load-pulling rope engaging said outhaul-rope beyond said guide.

4. In a conveying device, in combination, a carriage, a load-pulling rope extending over a guide on the carriage, traversing means, an outhaul-rope, an anchorage with which said outhaul-rope is connected and an extension of the load-pulling rope with which said outhaul-rope is detachably connected.

5. In a conveying device, in combination, a load-pulling rope, a carriage, carriage-traversing means, an outhaul-rope, an anchorage with which said outhaul-rope is connected by a sheave, an actuator for said outhaul-rope and an extension from said load-pulling rope with which said outhaul-rope is detachably connected.

6. In a conveying device, in combination, a carriage, a load-pulling rope extending over a guide on the carriage, an extension of said load-pulling rope extending side by side with the same over said guide, traversing means and an outhaul-rope engaging said extension.

815,853. ORE-WASHING MACHINE. Alfred S. Mitchell, Oakland, Cal. Filed Nov. 12, 1904. Serial No. 232,540.

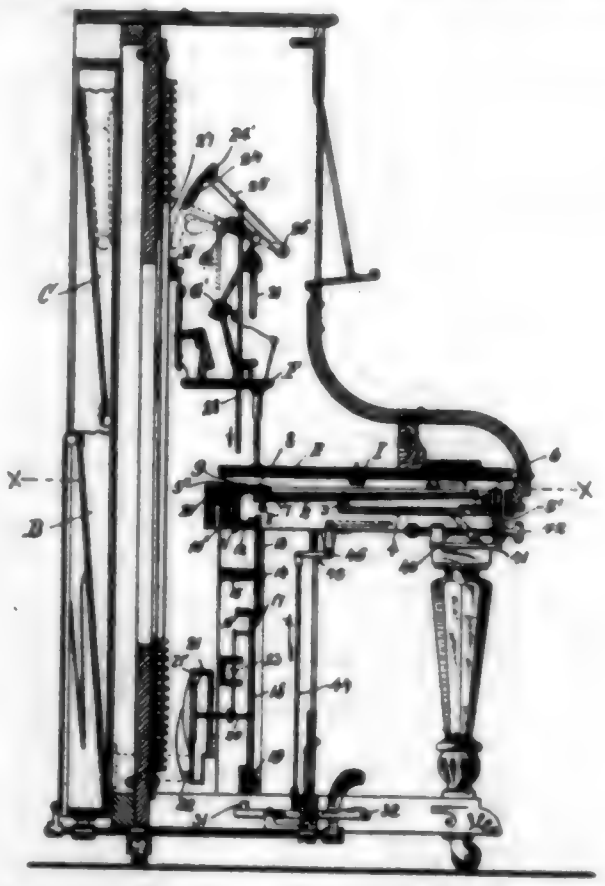


Claim.—1. In an ore-separator, an upwardly-curved guideway, a pivoted receiving-trough having wheels arranged for travel on the guideway, a second trough arranged beneath the receiving-trough and adapted to receive material from the latter, a supplemental screen arranged in the second trough and onto which material from the receiving-trough is delivered, and means within the troughs for retarding the passage of material therethrough.

2. In an ore-separator, an upper receiving-trough pivoted for rotation, an upwardly-curved track sustained beneath the receiving end of the trough, wheels carried by the trough for travel on the track, means for delivering water into the trough, means for retarding the passage of material through the latter, and an underlying trough to receive material from the receiving-trough.

815,854. MUSICAL INSTRUMENT. Evert V. Moller, Chicago, Ill. Filed Jan. 23, 1905. Serial No. 242,201.

Claim.—1. The combination, with a piano, of an organ-action including a set of levers, one beneath each key of the piano, said organ-action arranged within the piano-case so as not to interfere with the usual tone-producing qualities of the piano, said arrangement including the disposition of the organ-bellows and wind-chest back of the piano-strings and the disposition of the organ-reeds and sound-board in the lower part of the piano-case; a series of compound levers interposed between the organ-levers 2 and reed-valves of the organ-action, said compound levers arranged below the horizontal plane of the keys and organ-levers and in the front part of the case; means for raising and lowering the organ-levers into and out of operative contact with the piano-keys, and means for muting the piano-strings.



2. The combination, within a piano-case, of a complete organ-action and a complete piano-action, the former having an independent set of levers and the latter having a keyboard; said levers and keyboard being relatively adjustable into coöperative contact; said organ-action having its bellows and wind-chest disposed in the rear of said case behind the piano-strings, and having its reeds and sound-board disposed in the lower part of said case; said organ-action including a system of compound levers which substantially parallel the piano-strings below the horizontal plane of the keys, whereby the organ-action is accessible from the lower front of the case while the piano-strings are left unobstructed and accessible at the upper front of the case, and means for muting the piano-action.

3. The combination, within a piano-case, of a complete organ-action and a complete piano-action, the former having a lever arranged below each key of the piano-keyboard, said levers and keyboard being relatively adjustable into coöperative contact to play the piano and organ in concert, with means for muting the piano-strings; said organ-action having its bellows disposed in the rear portion of said case and behind the piano-strings and having its reeds disposed in the lower front portion of the case in front of the piano-strings; said organ-action including a system of substantially parallel compound levers for transmitting the movements of the organ-levers to the reed-valves; said system of compound levers including the elbow-levers 8 having thereon the adjustable contact-screws 12 for varying the extent of movements imparted to the reed-valves by the keys.

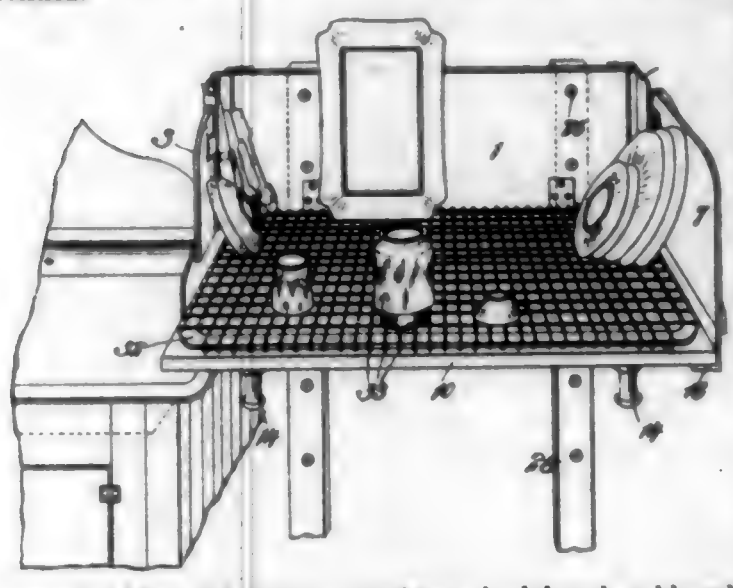
4. The combination, of a complete organ-action and a complete piano-action, with a case common to both, said actions having, respectively, a set of levers and a keyboard which are relatively adjustable into coöperative contact; means for muting the piano-strings; said organ-action having its bellows disposed in the rear of the piano-strings and its reeds disposed in front of the lower ends of the piano-strings; said organ-action including compound levers 13, 18 and 8, the latter provided with adjustable contacts 12 and the organ-levers provided with adjustment-screws 8', for the purpose set forth.

815,855. DISH-DRAINER. William A. McAdams, New York, N. Y. Filed July 11, 1903. Serial No. 165,090.

Claim.—1. A folding dish-drainer comprising a back board, a bottom board hinged thereto and a tray located on the bottom board when the bottom board is unfolded and between the bottom board and back board when the bottom board is folded.

2. A folding dish-drainer comprising a back board, end boards hinged to swing horizontally into and out of their folded position and

a bottom board hinged to swing vertically into and out of its folded position.



3. A folding dish-drainer comprising a back board, end boards hinged to swing horizontally into and out of their folded position, a bottom board hinged to swing vertically into and out of its folded position and a tray located on the bottom board when the bottom board is unfolded and between the bottom board and back board when the bottom board is folded.

4. A dish-drainer comprising a back board, a bottom board and end boards and a removable tray.

5. A folding dish-drainer comprising a back board, a bottom board and its tray arranged to fold up against the back board and end boards arranged to fold against the bottom board when in its folded position.

6. A folding dish-drainer comprising a back board, a bottom board and its tray fitted to be folded up against the back board, end boards fitted to be folded against the bottom board when the bottom board is in its folded position and spring-catches for yieldingly holding the parts in their folded position.

7. A dish-drainer comprising a back board, end brackets thereon, a bottom board and its tray fitted to fold up into the plane of the brackets and end boards hinged to the brackets fitted to fold against the bottom board when the bottom board is in its folded position.

8. A dish-drainer comprising a back board and a bottom board hinged to swing vertically, the said bottom board being provided with a water-drainage channel formed to receive the water from the surface of the bottom board and convey it away when the bottom board is in its various positions.

9. A dish-drainer comprising a back board, a bottom board hinged thereto to swing vertically and end boards hinged to swing horizontally, the said end boards serving to support the bottom board in an inwardly and downwardly inclined position when the bottom board and end boards are unfolded.

10. A dish-drainer comprising a back board, a bottom board hinged thereto, said bottom board having a channel therein arranged to receive the water from the surface of the bottom board irrespective of the position of the bottom board and a drainage-cup located in position to receive the water from the channel at one end of the bottom board and also irrespective of the position of the bottom board.

11. A dish-drainer comprising a back board, a bottom board and its tray hinged to swing vertically into and out of its folded position and a support for the back board.

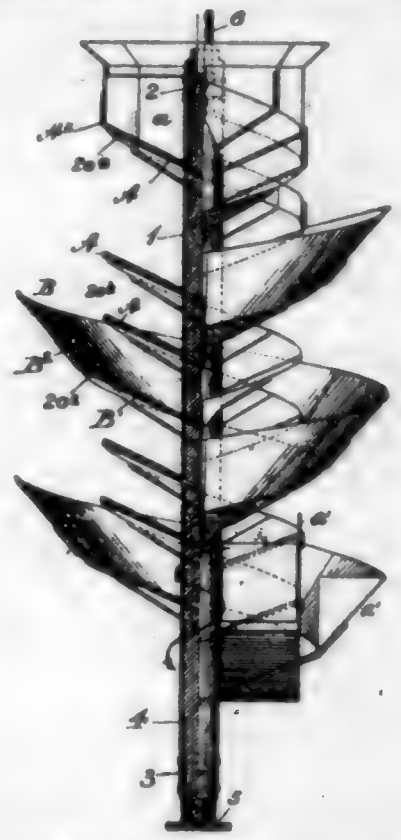
12. A dish-drainer comprising a back board, a bottom board and its tray hinged to swing into and out of folded position and a removable support for the back board.

13. A dish-drainer comprising a back board, a bottom board and its tray and a channel-bracket at one end of the back board for partially supporting knives, forks, spoons and the like with their lower ends resting upon the tray.

815,856. SPIRAL SEPARATOR. FRANK NICHTER, Scranton, Pa. Filed Mar. 17, 1905. Serial No. 250,651.

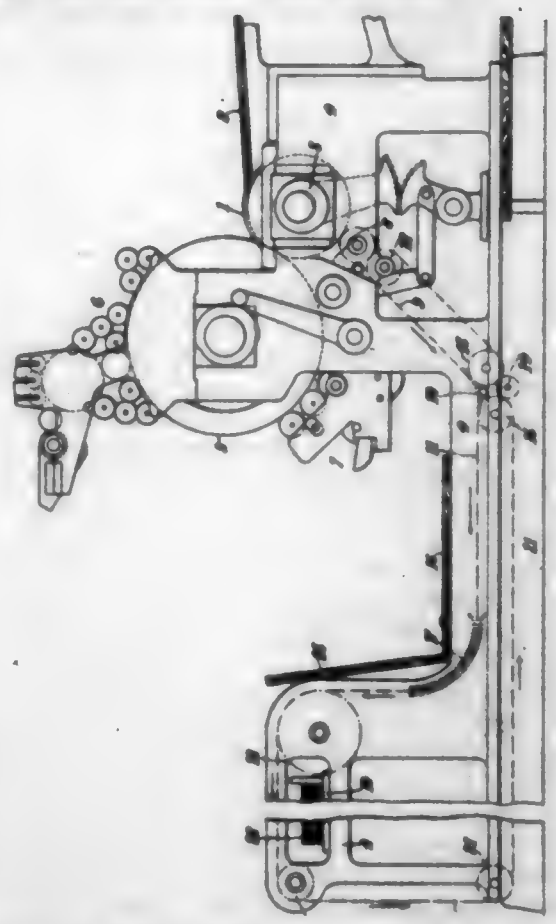
Claim.—1. A rotary vertical shaft; in combination with a spiral way or floor having a steep pitch toward the shaft supported by the same; and means for rotating the said shaft in the direction in which the coal gravitates; and mechanism for changing, at any desired moment, the degree of speed at which the shaft and its equipments are rotated, to suit the character or condition of the coal, slate, or other substances operated upon.

2. A rotary vertical shaft; in combination with a spiral way or floor supported thereby; means for rotating the shaft and its equipments in the direction in which the coal gravitates; a catch-pan having downwardly and inwardly inclined ways or floors, and having an inwardly-inclined wall extending outside of said spiral ways; a spiral way for the catch-pan intermediate of the spiral ways first mentioned; and mechanism for changing the degree of speed at which the shaft and its equipments are rotated to suit the character or condition of the coal and slate or other substances being operated upon.



3. The combination, for separating coal and cognate substances, of a rotary vertical shaft; a spiral way supported thereby; a catch-pan with steeply-inclined peripheral walls; a spiral floor for each catch-pan; means for actuating the several operative parts; and means for changing, at any desired moment, the degree of speed at which the several parts are operated.

815,857. PRINTING-MACHINE. THOMAS M. NORTH, London, England, assignor to Linotype and Machinery Limited, London, England. Filed June 22, 1905. Serial No. 266,610.



Claim.—1. In a printing-machine, the combination of a form-cylinder, a feed-board and delivery-board at respectively opposite

sides of the said cylinder, and a stand for the printer, between the form-cylinder and delivery-board.

2. In a printing-machine, the combination of a form-cylinder, a feed-board and delivery-board at respectively opposite sides of the said cylinder, a stand for the printer, between the form-cylinder and delivery-board, and sheet-delivery mechanism adapted to deliver the printed sheets, printed side up, onto the delivery-board.

3. In a printing-machine, the combination of coöperating form and impression cylinders, a delivery-board, a stand for the printer, between the delivery-board and the form and impression cylinders, and sheet-delivery mechanism adapted to conduct the printed sheets from the impression-cylinder, beneath the stand, and deliver them, printed side up, on the delivery-board.

4. In a printing-machine, the combination of an impression-cylinder, a delivery-board, a stand for the printer between the impression-cylinder and delivery-board, and sheet-delivery mechanism adapted to conduct the printed sheets from the impression-cylinder beneath the stand and deliver them printed side up on the delivery-board.

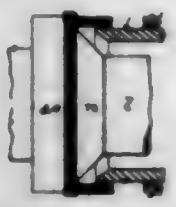
5. In a printing-machine, the combination of a form-cylinder, a delivery-board and a stand for the printer between the said cylinder and board, the respective heights of the cylinder. board and stand being such that when the printer is stationed on the stand he can, without shifting his position, readily inspect the form and the printed sheets.

6. In a printing-machine. the combination of a form-cylinder, a feed-board and delivery-board at respectively opposite sides of the said cylinder, a stand for the printer, between the form-cylinder and delivery-board, and sheet-delivery mechanism adapted to conduct the printed sheets beneath the stand, and deliver them, printed side up, on the delivery-board.

7. In a printing-machine, the combination of coöperating form and impression cylinders, a feed-board and delivery-board at respectively opposite sides of the said cylinders, a stand for the printer, between the delivery-board and the cylinders, and sheet-delivery mechanism adapted to conduct the printed sheets from the cylinders, beneath the stand, and deliver them, printed side up, on the delivery-board.

8. In a printing-machine the combination of coöperating form and impression cylinders, a delivery-board, a stand for the printer, between the delivery-board and the form and impression cylinders, sheet-carriers adapted to conduct the printed sheets from the form-cylinder to below the stand, and delivery devices adapted to take the sheets from the carrier-tapes, conduct them below the stand and raise them above, and drop them onto, the delivery-board.

815,858. PROCESS FOR THE MANUFACTURE OF PAPER BOXES. ALBIN OESTERREICH, Hanover, Germany, assignor, by mesne assignments, to Fred M. Burt, Buffalo, N. Y. Filed May 23, 1904. Serial No. 210,283.



Claim.—1. The herein-described process for making cylindrical paper-box bodies, comprising the winding up of a body-blank, winding an adhesive covering-strip of greater width than said body-blank onto the same, turning by a single operation one edge of said covering-strip over one edge of said blank, turning by a single operation the other edge of said covering-strip over the other edge of said body-blank, forcing the last-named edge of said covering-strip within and pasting it on said body-blank, then truing said body-blank with the covering-strip attached thereto to a predetermined gage while the gum on said covering-strip is green and the parts are in a yielding condition.

2. The herein-described process for making cylindrical paper-box bodies, comprising the winding up of a body-blank, winding an adhesive covering-strip of greater width than said body-blank onto the same, turning by a single operation one edge of said covering-strip over one edge of said blank, turning by a single operation the other edge of said covering-strip over the other edge of said blank, forcing the last-named edge of said covering-strips within and pasting it on said body-blank, then truing said body-blank with the covering-strip attached thereto to a predetermined gage while the gum on said covering-strip is green and the parts are in a yielding condition, and fixing said body to gage by the inturn of said covering-strip and gluing or gumming the same to the inner surface of said body-blank.

3. The herein-described process for making cylindrical paper boxes, comprising the winding up of a body-blank with one edge thereof abutting against the surface of an end-blank, simultaneously winding on an adhesive covering-strip of greater width than the said body-blank plus the thickness of the end-blank, turning by a single operation one edge of said covering-strip over the end-blank and securing the same to the outer surface of said end-blank, turning by a single operation the other edge of said covering-strip over the open end of said body, forcing the last-named edge of said covering-strips within and pasting it on said body-blank, then truing said body with the covering-strip in place on said body to a predetermined gage while the gum on said covering-strip is green and the parts are in a yielding condition.

4. The herein-described process for making cylindrical paper boxes, comprising the winding up of a body-blank with one edge thereof abutting against the surface of an end-blank, simultaneously winding on an adhesive covering-strip of greater width than the said body-blank plus the thickness of the end-blank, turning by a single operation one edge of said covering-strip over the end-blank and securing the same to the outer surface of said end-blank, turning by a single operation the other edge of said covering-strip over the open end of said body, forcing the last-named edge of said covering-strip within and pasting it on said body-blank, then truing said body with the covering-strip in place on said body to a predetermined gage while the gum on said covering-strip is green and the parts are in a yielding condition, and fixing said body to gage by the inturn of said covering-strip and gluing or gumming the same to the inner surface of said body.

5. The herein-described process for making cylindrical paper-box bodies, comprising the winding up of a body-blank over a mandrel and simultaneously winding upon said body-blank an adhesive covering-strip of greater width than said blank, removing the said blank with said covering-strip wound thereon from said mandrel, turning by a single operation the edge of said covering-strip over the edge of said body-blank, and then replacing said box-body on said mandrel to bring the same to gage and at the same time turning in and securing said inturned edge on the inner surface of said body-blank to fix the said box-body to the gage determined by said mandrel.

6. The herein-described process for making cylindrical paper boxes, comprising the winding up of a body-blank over a mandrel with one edge thereof abutting against the face of an end-blank, simultaneously winding upon said body-blank an adhesive covering-strip of greater width than said body-blank plus the thickness of said end-blank, turning by a single operation the edge of said covering-strip over the face of said end-blank and securing the same thereto, removing said blank thus secured at one end to said end-piece from said mandrel, turning by a single operation the edge of said covering-strip over the open end of said body-blank, and then replacing the box-body on said mandrel to bring the same to gage while the gum on said covering-strip is green and the parts are in a yielding condition, and at the same time turning in and securing said inturned edge to the inner surface of said body-blank to fix the said box-body to the gage determined by said mandrel.

815,859. RETINASCOPE. AUGUST L. PALM, Upland, Cal. Filed Nov. 13, 1905. Serial No. 282,021.



Claim.—1. A device of the class described comprising a curved reflector having a peep-opening, a back piece secured to the reflector and provided with an objective opening, and a lamp arranged upon the inner face of the back piece for directing light to the inner curved face of the reflector.

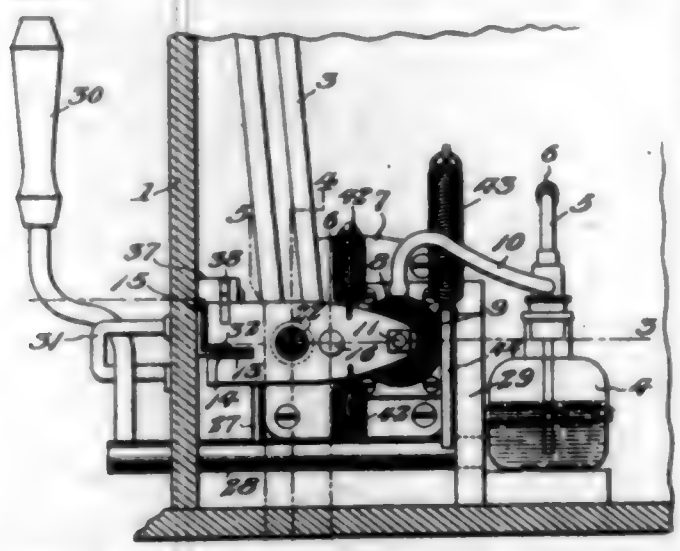
2. A device of the class described comprising a substantially semispherical reflector having a peep-opening, a back piece attached to the reflector and serving in conjunction therewith to form a chamber, said back piece being provided with an objective opening, and a lamp arranged in the chamber for directing light-rays against the inner face of the reflector.

3. A device of the class described comprising a reflector having an inner continuously-curved reflecting-face, a back piece secured to the reflector and serving in conjunction therewith to form a cham-

ber, said reflector being provided with a peep-opening and the back piece having an objective opening, and a lamp arranged in the reflector for directing light-rays to the curved face of the reflector.

4. A device of the class described comprising a reflector having a continuously-curved inner reflecting-face, a back piece attached to the reflector and serving in conjunction therewith to form a chamber, said back piece having an inner concaved face and an objective opening and the reflector being provided with a peep-opening, and a plurality of lamps attached to the concaved face of the back piece around the objective opening.

815,860. COIN-CONTROLLED DISPENSING APPARATUS. FRANK T. PERCY, Rochester, N. Y. Filed Nov. 1, 1904. Serial No. 230,956.



Claim.—1. In a coin-controlled dispensing apparatus, the combination of an air-compressor, a head for operating the same, said head having an opening therein, a plunger normally movable through said opening, operating means connected with the plunger, means for positioning a coin between the plunger and opening in the head, a rack-bar carried by and movable with the plunger, a suitably-supported pawl adapted to engage said rack-bar to lock the head against retraction and permit the plunger to have independent retractive movement to release the coin, a spring-retracted trip member, an operating connection between the pawl and trip member, a projection upon the plunger adapted to operate said trip member, and springs for retracting the plunger and head.

2. In a coin-controlled vending apparatus, the combination of a compressor-cylinder, a piston operating in said cylinder, an intermediately-guided head connected at one end to said piston and provided at its opposite end with an opening and a guide-slot, a plunger normally movable through said opening and arranged parallel with the cylinder, springs for retracting the head and plunger, means for positioning a coin between the plunger and opening in the head, latch mechanism coöperating with that end of the head in which the opening is formed to lock the head against retraction and permit the plunger to have independent retractive movement to release the coin, a spring-retracted trip member controlling said latch mechanism, said trip member being independent of but operatively connected to the latch mechanism, and a projection upon the plunger adapted to operate said trip member.

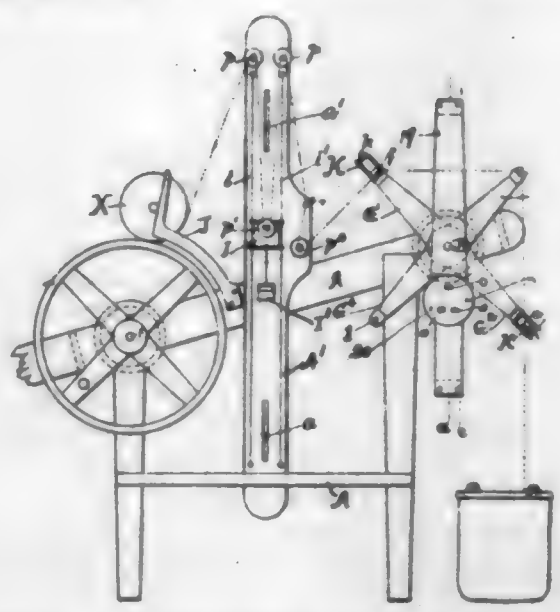
3. In a coin-controlled dispensing apparatus, the combination of a casing, a guide-bracket carried by the casing, a supporting-bracket also carried by the casing, an air-compressor carried by said bracket, a head provided with a central guide member movable in the guide-bracket and attached at one end to the operating member of the air-compressor and guided at its opposite end by said guide-bracket, said head being provided between the guide-bracket and its intermediate guide member with an opening, a plunger carried by the supporting-bracket and normally movable through said opening, springs for retracting the head and plunger, means for positioning a coin between the plunger and opening in the head, a latch element carried by the head, a second latch element arranged in juxtaposition to the guide-bracket and adapted to engage the first-named latch member to lock the head against retraction and permit the plunger to have independent retractive movement to release the coin, a trip member carried by the guide-bracket and controlling the latter-named latch member, and a projection upon the plunger adapted to operate said trip member.

4. In a coin-controlled vending apparatus, the combination of an air-compressor, a head for operating the same, said head being formed with an opening therein, a plunger normally movable through said opening, means for positioning a coin between the plunger and opening in the head, means for retracting the head and plunger, co-operating latch elements for locking the head in projected position to permit the plunger to have independent retractive movement to release the coin, a spring-strip operatively connected to one of said latch elements, and a projection on the plunger movable upon the outward movement of the plunger without engaging said strip and adapted upon its return movement to depress said strip and actuate the latch element to release the head.

5. In a coin-controlled vending apparatus, the combination of an air-compressor, a head for operating the same, said head having an opening therein, a plunger normally movable through said opening, means for retracting the head and plunger, means for positioning a coin between the plunger and opening in the head, a rack-bar carried by the head, a pivoted pawl to engage said bar and lock the head in projected position to permit the plunger to have independent retractive movement to release the coin, a spring-strip having a bent end connected to said pawl, and an arm carried by the plunger adapted in the outward movement of the plunger to clear said bent end of the spring-strip and upon its return movement to engage and depress the same and swing the pawl out of engagement with the rack-bar, thereby permitting the head to be retracted, substantially as described.

6. In a coin-controlled dispensing apparatus, the combination of an air-compressor, a head for operating the same, said head having an opening therein, a plunger normally movable through said opening, operating means connected with the plunger, means for positioning a coin between the plunger and opening in the head to connect the same for movement, springs for independently retracting the head and the plunger and its operating means, a rack-bar carried by and movable with the plunger, a pivoted pawl adapted to engage said rack-bar to lock the head against retraction and permit the plunger to have independent retractive movement to release the coin, a supporting-bracket a spring-plate carried by said bracket and having an enlarged upwardly-bent trip portion, a connection between said trip portion and the pawl to retract said pawl when said trip portion is depressed, and an arm on the plunger guided by said bracket, said arm being adapted on the outward movement of the plunger to pass under said trip portion and upon its return movement to ride over and depress said trip portion to tilt and retract the pawl, substantially as described.

815,861. MACHINE FOR MEASURING, COUNTING, AND CUTTING OFF FABRIC. WILLIAM C. PERRY, Charlestown, R. I., assignor of one-fourth to George P. Clark, Hopkinton, R. I. Filed Aug. 3, 1904. Serial No. 219,371.



Claim.—1. The combination of means for measuring fabric, means for cutting the measured fabric into predetermined lengths, means for automatically registering the units of measurement of said fabric, means for automatically registering the linear length of fabric operated upon, means for feeding the fabric through the machine, means for regulating the tension on the fabric during its feed, means for maintaining uniformity of speed in the feeding mechanism with each other and with driving means for operating the whole.

2. The combination with a rotatable measuring-arm having a longitudinally-adjustable end, of pivoted clamping means, mounted upon said end, and arranged to be clamped automatically upon the fabric at a predetermined point in the revolution of said arm, and to be automatically released at another predetermined point in the revo-

lution of said arm, means for actuating said clamping means, and means for rotating said arm.

3. The combination with a rotatable arm provided with a stationary end piece adapted to serve as one side of a shear, a pivoted blade arranged and adapted to constitute the movable half of such shear, said blade lying normally out of contact with said stationary part, means for moving said blade into cutting contact with said stationary side, and means for rotating said arm.

4. The combination of arms arranged diametrically opposite each other for synchronous rotation, pivoted clamping means carried on the end of each arm, means for actuating such clamping means on each half-revolution of said arm, a cutting-blade pivoted upon the end of each arm, means for actuating said cutting-blades at predetermined points in the revolution of said arm, and means for rotating said arm.

5. The combination of a revoluble wheel W, provided with peripheral serially-numbered teeth, a spring-controlled actuating-pawl W′ normally held out of engagement with said teeth, means for causing said pawl to engage with said teeth successively, a spring-controlled holding-dog 6 normally held in engagement with the teeth of said wheel, means carried by said wheel for causing the disengagement of said dog at a predetermined point in the revolution of said wheel, other means carried by said wheel for causing said dog to reengage said teeth on the reverse movement of said wheel, and means for causing reverse movement of said wheel.

6. The combination of the revoluble toothed wheel W, the arm 2 carried by said wheel and having the offset pawl 3, the spring-controlled rod 9, the crank-shaft 10 provided with an arm 11, operatively connected with said rod, and a slidable bolt 8, and with means for revolving said wheel.

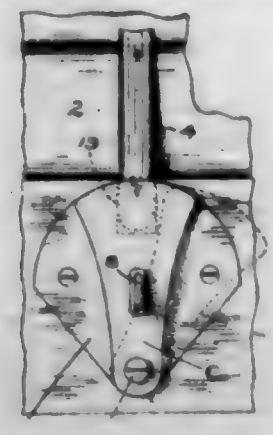
7. The combination of a revoluble wheel W, means for rotating said wheel in one direction, other means for reversing the movement of said wheel, an arm W^3 carried by said wheel and projecting beyond the perimeter thereof, a pivoted spring-controlled holding-dog 6, a pivoted holding-latch 5, and a spring 7 having a weakened central cross-section and adapted by the engagement of its free end with said arm W^3 to prevent rebound of the wheel W, and to yield, on the direct revolution of said wheel to release said arm W^3.

8. The combination of the cone-pulleys C, C′, the belt *c*, and means for driving the same, the carriage H, slidable upon ways H′, H^2, H^4, H^5, carrying the guide-rolls, *d*′, *d*, the pawls d^6, d^3, slidable on said ways, the shipping-rods, d^9, d^8, pivoted on said pawls, adjustable stops s^3, s^5, s^6, *s*′, the endless chain d^4, the pulley d^7, the sprocket-wheel, d^{10}, operatively connected with the shaft of the cone-pulley C, the weighted carriage I, arranged for vertical movement in either direction to actuate the rods d^9, d^8, and means for supporting the whole.

9. The combination with the frame of a machine for measuring fabric of an adjustable arm, N, provided with friction-pins, *n*, *n*, *n*, at near its lower end, adapted to maintain tension on the fabric in its feed movement, and with a laterally-adjustable guiding-arm, *n*′, at its upper end, a set-screw, n^2, adapted to bind said guiding-arm in its adjusted position, and a bolt, as n^3, adapted to normally hold said arm, N, rigid, and to be temporarily slackened to permit said arm, N, to be moved pivotally thereon for purposes of adjustment.

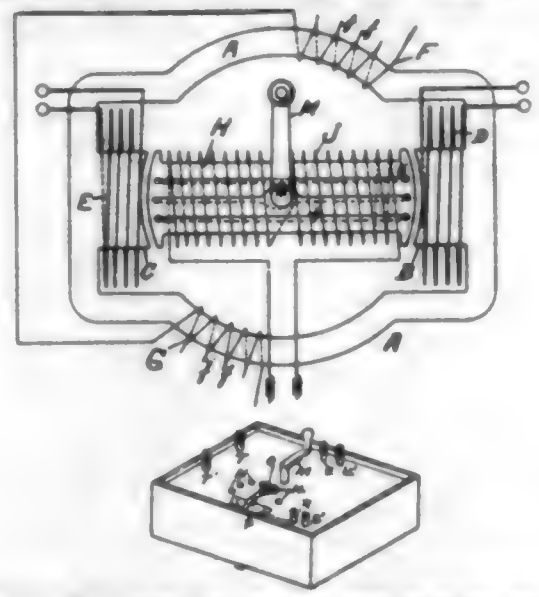
10. In a machine for measuring fabric the combination of a standard, A′, flange-pulleys, *p*, *p*, mounted on said standard, guides, *i*, *i*′, mounted on said standard parallel with the same and with each other, and a weighted carriage, I, slidable on said guides, and carrying a flange-pulley *p*′, adapted to engage with a loop of fabric between the pulleys, *p*, *p*, and by its sliding movement to maintain a uniform strain on the fabric during its passage through the machine.

815,862. SWIVEL FOR WINDOW-BLIND SHUTTERS. Benjamin H. Phillipps, Fitchburg, Mass. Filed Feb. 15, 1905. Serial No. 245,768.



Claim.—In a blind, provided with a recessed rail and a plurality of slats movably secured in the blind, the combination of a slat-bar pivotally connected to the slats, one end of the slat-bar being reduced in size and receivable in the recess in the rail and a button movably secured to the rail and adapted to cover and uncover the recess in the rail to lock and release the slat-bar, the edge of the button taking beneath the shouldered portion formed by reducing the end of the slat-bar.

815,863. VARIABLE-VOLTAGE ELECTRIC TRANSFORMER FOR CAUTERY AND DIAGNOSTIC WORK. Earl H. Rollinson, Albany, N. Y. Filed July 18, 1905. Serial No. 270,303.



Claim.—1. In a variable-voltage cautery-transformer; a laminated iron core; two separately-disposed secondary windings on said core; polar projections on said core; windings on said polar projections; a primary core mounted to rotate between said secondary windings and between said polar projections; windings on said primary core, substantially as described.

2. In a variable-voltage cautery-transformer, a core substantially annular in form, made up of laminations of iron; polar projections located opposite each other on said core; secondary windings on said polar projections; terminals with which said windings are connected; secondary windings on said core separated from each other and from the winding on said polar projections; primary core mounted to rotate within said secondary core; electric supply-windings on said primary core; a series of wires extending lengthwise of the primary core through the same from one side to the other; a means for rotating said core, substantially as described.

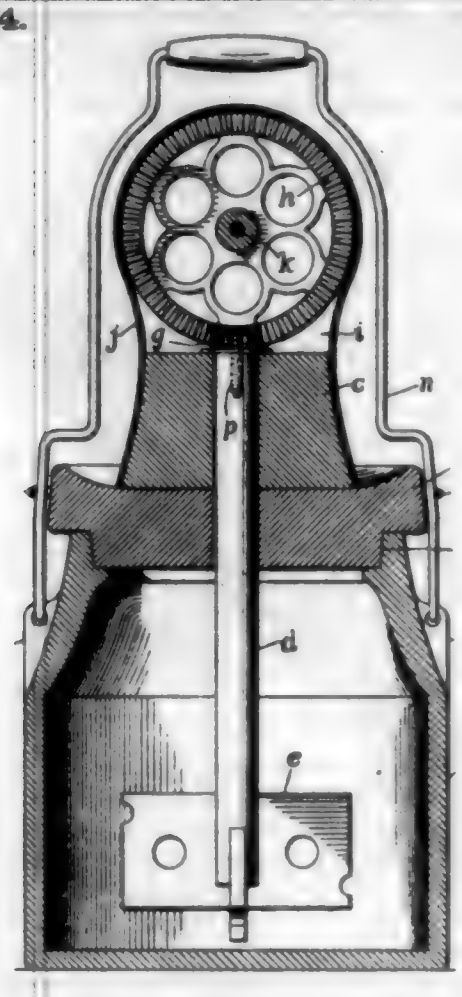
3. In a variable-voltage cautery-transformer; a secondary core, substantially annular in form; a primary core mounted to rotate within the secondary core; internal polar projections on the secondary core; heavy current secondary windings placed on said polar projections; separated secondary windings on said secondary core; primary windings on said primary core; a series of wires extending at right angles to the said primary wires on said primary core; substantially as described.

4. A variable-voltage cautery-transformer provided with secondary and primary cores; the secondary windings being of different terminal voltage; the heavy current secondary windings being placed about internal polar projections on said secondary core; the light diagnostic winding placed on a portion of the secondary core other than the polar projections; primary windings on the primary core; with short-circuited turns placed thereon, substantially at right angles to the primary windings to reduce the induction of the secondary windings in the intermediate positions of the primary core, substantially as described.

815,864. CHURNING ATTACHMENT. Isaac B. Rosenthal, Philadelphia, Pa. Filed June 28, 1904. Serial No. 214,477.

Claim.—A churning attachment consisting of a non-metallic base-piece adapted to rest upon and close the mouth of the jar, and having upon its upper surface a narrow transverse block of substantial height, a shaft journaled in and extending through said block and base-piece and having a churning device upon its lower end and a pinion on its upper end above the block, side cheeks *i i* carried by the sides of said block and forming housings, a driving-shaft journaled in said housings, a gear carried by said shaft and engaging said pinion, and a casing carried by said block and housings and inclosing the driving-shaft, gear and pinion.

815,864.



5. In a device for comparing luminous areas, the combination with a box having a projector on its front, and means for adjustably supporting a light, of a ventilator comprising a row of holes in the wall of the box, an external screen having holes not registering with those in the box, and internal overlapping baffle-plates.

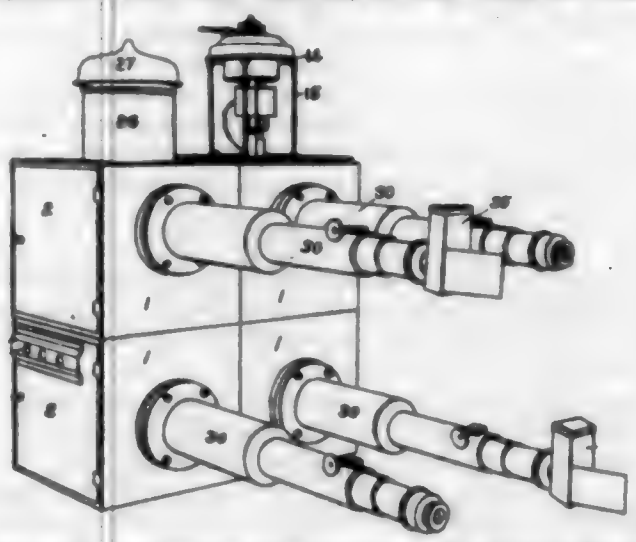
6. In a device for comparing luminous areas, the combination with a box having a projector on its front, and an opening in its top, of a slide on the top of the box containing an opening, an arc-lamp supported on said slide and depending into the box, and a ventilator concentric with the opening in the slide.

7. In a device for comparing luminous areas, the combination with a box having a projector on its front and an opening in its top, of a slide covering said opening and containing an opening itself, an annular base-plate concentric with said slide-opening, posts on said plate and an annular lamp-support on said posts.

8. In a device for comparing luminous areas, the combination with a box having a projector on its front and an opening in its top, of a slide covering said opening, an annular plate concentric with said slide-opening and extending partly over the same, a short tube having a flange secured to the under side of the slide and containing a number of holes, a flange secured to the lower end of said tube, and an arc-lamp supported on said plate and depending through said tube.

9. In a device for comparing luminous areas, the combination with a plurality of compartments each having a projector rigidly mounted on its front, the axes of said projectors being non-convergent, of means in one compartment for supporting an arc-lamp, means in another compartment for supporting an incandescent lamp, and means in another compartment for supporting a gas-burner device.

815,865. DEVICE FOR COMPARING LUMINOUS AREAS. WALTER D'A. RYAN, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 28, 1904. Serial No. 218,518.



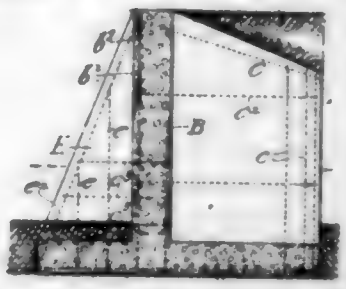
Claim.—1. An instrument for comparing the relative effects of different sources of light, comprising a separate compartment for each light and a projector extending therefrom, said projectors permanently fixed with their axes non-convergent, and the light source in each compartment being of a different kind from those in the other compartments.

2. An instrument for comparing the relative effects of different sources of light, comprising a separate compartment for each light, permanently-fixed non-convergent projectors extending therefrom, a shutter on said projector, and means for adjusting the position of the light in each compartment the light source in each compartment being of a different kind from those in the other compartments.

3. An instrument for comparing the relative effects of different sources of light, comprising a separate compartment for each light, permanently-fixed non-convergent projectors extending from the front of the same, a slide movable back and forth in each compartment, and a light source mounted on said slide, said light sources being of different kinds.

4. An instrument for comparing the relative effects of different sources of light, comprising a separate compartment for each light, permanently-fixed non-convergent projectors extending from the front of the same, a slide in each compartment for supporting the light, and ventilators at the lower and upper parts of each compartment the light source in each compartment being of a different kind from those in the other compartments.

815,866. RETAINING-WALL OR THE LIKE. EDSON M. SOOFIELD, Philadelphia, Pa. Filed Feb. 20, 1905. Serial No. 246,530.



Claim.—1. A concrete wall including a main vertical portion, a base portion, and a buttress for the main portion resting upon said base portion, longitudinal and vertical reinforcing-bars in the main portion and in the base portion, vertically-extending bars in the buttress, with a series of U-shaped bars extending in the buttress and entering the main portion of the wall, said latter bars being placed to transmit strain from said vertical bars in the buttress to the main vertical portion of the wall, substantially as described.

2. A concrete-wall construction including a main vertical portion, buttresses extending from both faces of said wall, upwardly-extending reinforcing-bars in said buttresses, and series of U-shaped bars operatively connected to said vertical bars and extending into the main-wall structure, substantially as described.

3. A concrete-wall structure including a main vertical portion, a buttress therefor, substantially U-shaped reinforcing-bars extending through the buttress and into said main-wall structure, the free ends of said reinforcing-bars being hooked, and vertical reinforcing-bars engaged by said hooked portions of the U-shaped bars, substantially as described.

4. A concrete-wall structure including a main vertical portion, a base, a buttress or buttresses for said vertical portion, reinforcing-bars extending horizontally through the base, vertical reinforcing-bars extending in the main-wall structure, and substantially U-shaped bars in the buttress hooked to engage the vertical bars, said vertical bars being hooked to engage the bars in the base portion, substantially as described.

815,867. ADVERTISING DEVICE. HENRY B. SEAMAN, New York, N. Y., assignor to The Gray Lithograph Company, a Corporation of New York. Filed June 8, 1905. Serial No. 264,341.

Claim.—1. In an advertising device, comprising sections, a hinged structure integrally connecting said sections, and means for securing said sections in an abutting fixed position, and thereby spacing a part of said hinged structure from the sections.

2. An advertising device, comprising abutting sections, each section provided with locking-tongues, and a hinged structure con-

necting said sections, said hinged structure comprising wings and a body portion.



3. An advertising device, comprising an upper and a lower section, said upper section provided with locking-tongues, said lower section provided with coacting locking-tongues, a hinged structure connecting said sections, said hinged structure comprising wings and a sign-carrying body portion, said hinged structure adapted to be positioned from said sections, when the coacting locking-tongues are in their fixed position for firmly securing the sections together in an abutting position, for spacing the sign from the sections.

4. A device of the character described, comprising upper and lower sections, means for securing said sections in an abutting position, and a word or symbol carrying portion formed integral with said sections and extending parallel thereof when said sections are secured in an abutting position.

5. A device of the character described, comprising sections, means for securing said sections in an engaging position, word or symbol carrying means integral with said sections and spaced therefrom when said sections are secured in an engaging position.

6. An advertising device formed from a single sheet and provided with upper and lower engaging sections, and word or symbol carrying means formed between said sections and capable of being spaced therefrom when said sections are in an engaging position.

7. An advertising device, comprising upper and lower, vertical sections, means for securing said sections together for producing a flat background, and a hinged structure integral with said sections and adapted to have a part thereof spaced from said sections when the sections are in their engaging position.

8. An advertising device formed from a single sheet of material, said device provided with sections adapted to be secured together for producing a flat background, a wing secured to each of said sections, and a body portion secured to said wings and capable of being spaced in substantially a parallel position to said sections when said sections are secured together.

9. An advertising device, comprising sections, means for securing said sections together for producing a substantially flat back, a wing secured to each of said sections, and a body portion carried by the outer ends of said wings and adapted to be spaced from said back when its sections are secured together.

815,868. DEVICE FOR TRANSPORTING PASSENGERS FROM CARS. Filer S. Sax, Gem, Kans. Filed July 14, 1905. Serial No. 269,703.

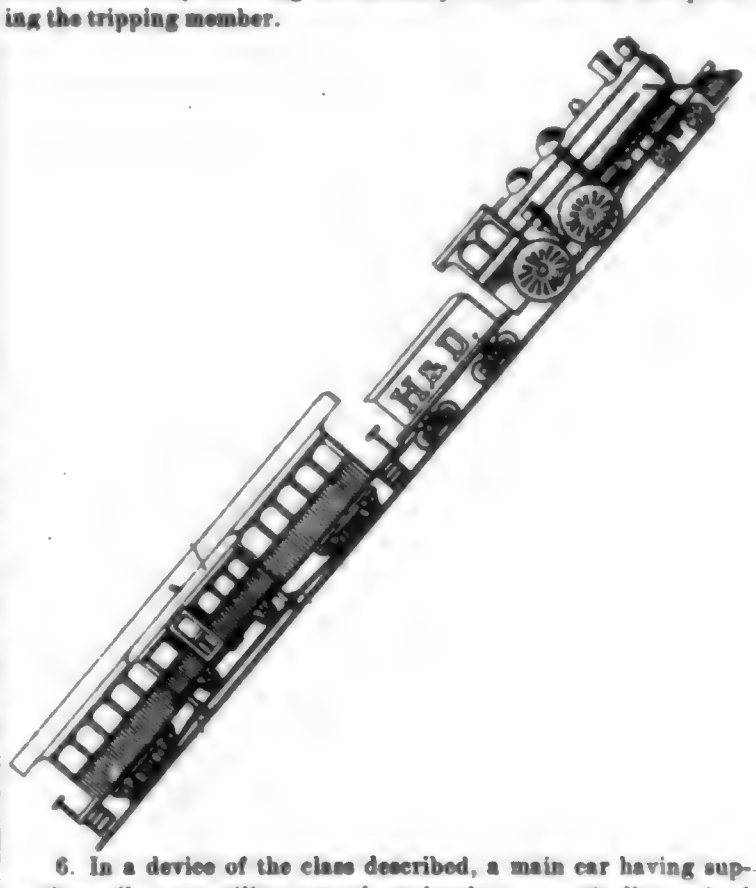
Claim.—1. In a device of the class described, a main car, an auxiliary car, an engaging member carried by one of the cars, clamping members carried by the other car for engagement with said member, and means for automatically operating the clamping member to release the engaging member at a predetermined point.

2. In a device of the class described, a main car, an auxiliary car, an engaging member carried by one of said cars, a pair of spring clamping members adapted for automatic engagement with the first-named member, and means for automatically operating the clamping members to release the engaging member.

3. In a device of the class described, a main car, an auxiliary car, an engaging member carried by one of said cars, a pair of coöperating clamping-jaws carried by the other car for engagement with said member and a tripping member carried by one of the cars and automatically operable to actuate the jaws for releasing the member.

4. In a device of the class described, a main car, an auxiliary car, a rigid engaging member carried by one of said cars, spring clamping members carried by the other car for automatic engagement with said member, a tripping member, and means for operating the tripping member to automatically actuate the clamping-jaws for releasing the engaging member.

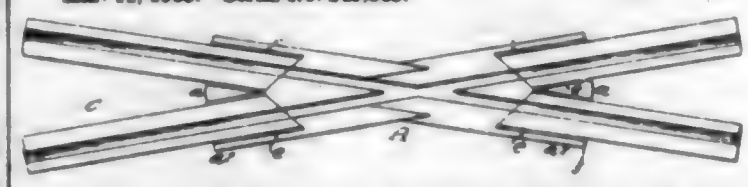
5. In a device of the class described, a main car having supporting-rails, an auxiliary car adapted to be automatically received upon said rails, interengaging devices for retaining the auxiliary car in position, a tripping member designed to act upon said devices for automatically releasing the auxiliary car, and means for operating the tripping member.



6. In a device of the class described, a main car having supporting-rails, an auxiliary car adapted to be automatically received upon said rail, interengaging devices for retaining the auxiliary car in position, a tripping member designed to act upon said devices for releasing the auxiliary car, and a track member for automatically operating the tripping member at a predetermined point.

7. In a device of the class described, a main car having a support, an auxiliary car adapted to be automatically received upon said support, a pair of spring clamping-jaws carried by one of the cars, an arm carried by the other car for engagement with the jaws to retain the auxiliary car in place, a tripping member having a cam-head to enter between the jaws for releasing the arm, and a track member designed to automatically operate the tripping member.

815,869. RAILWAY-TRACK STRUCTURE. George Shoemaker, Philadelphia, Pa., assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 11, 1905. Serial No. 249,563.



Claim.—1. A railway-track structure having two arms at one end, said arms being spaced apart to receive a rail and the securing metal, the space being open at top and bottom, substantially as described.

2. A railway-track structure having two arms at one end said arms being spaced apart to receive a rail and the securing metal, the space being open at top and bottom, the inner walls of the arms having cavities therein for the securing metal, substantially as described.

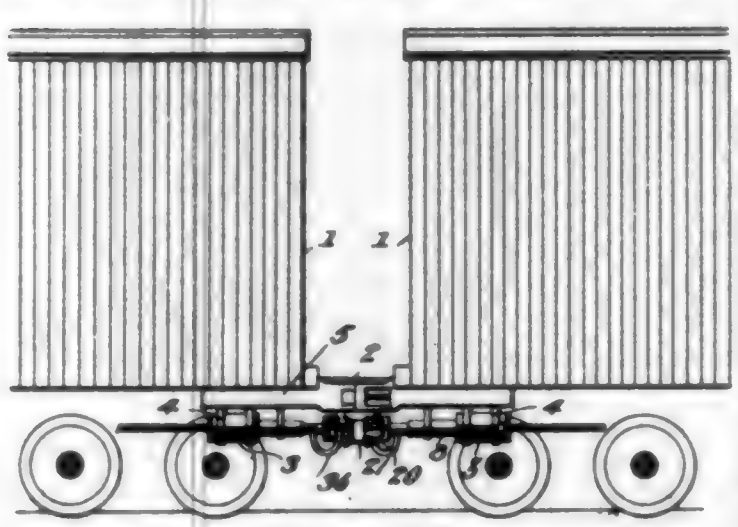
3. The combination of a railway-track structure having two arms at one end, a rail mounted in the space between the arms and securing metal filling the space between the inner walls of the arms and the rail, the base of the structure and the base of the rail being on the same plane, substantially as described.

4. The combination of a railway-track structure having two arms at one end, a rail mounted in the space between the arms and securing metal filling the space between the inner walls of the arms and the rail, the base of the structure and the base of the rail being on the same plane, the inner walls of the arms having cavities therein and the end portions of the rails being perforated, substantially as described.

5. The combination of a railway-track structure such as a frog, having three arms projecting from each end with a rail mounted in each space formed by the arms, and securing metal filling the space

between the rails and the arms, the spaces between the arms being open at top and bottom, substantially as described.

815,870. AUTOMATIC AIR-BRAKE COUPLING. VACLAV SIMECEK, Flatonia, Tex. Filed June 14, 1905. Serial No. 265,262.



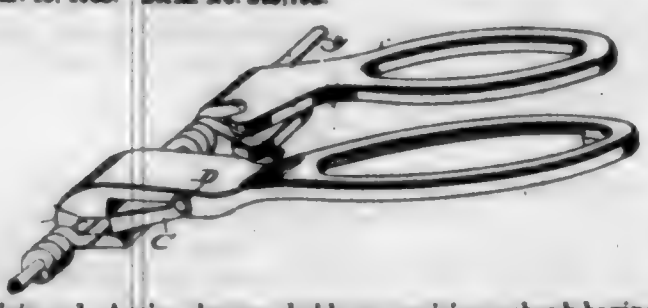
Claim.—1. A hose-coupling comprising a cylinder, a stem horizontally movable in the cylinder, and a coupling-head supported at the outer end of the stem and adapted for independent and lateral movement with relation thereto, said head having guide-flanges arranged in reverse relative order to and adapted to coöperate with flanges on the fellow coupling-head.

2. A hose-coupling comprising a cylinder in open communication with the train-line, a stem movably connected with the cylinder, said stem being formed with an air-channel normally out of communication with the cylinder, a coupling-head supported by the stem and adapted for independent and lateral movement with relation thereto, said head when connected with its fellow coupling operating to move the stem inward to establish communication with the cylinder.

3. A hose-coupling comprising a cylinder in communication with the train-line, a stem movably connected with the cylinder, and formed with a longitudinal air-channel, said channel being normally out of communication with said cylinder, a coupling-head provided with guiding members for coöperation with the fellow head, said head being carried at the outer end of the stem and connected for independent and lateral movement with relation thereto and a gasket carried by the head and supported by said guiding members.

4. A hose-coupling comprising a cylinder in communication with the train-line, a stem movably connected with the cylinder, a head carried by the stems and adapted for independent and lateral movement, a guide-plate projecting forwardly from one side edge of the head, guiding-fingers projecting forwardly from the upper and lower edges of the head, said upper and lower edges being formed with recesses, and a gasket secured to the head and engaging said guide-fingers.

815,871. WIRE-CLAMP. DATUS C. SMITH, New York, N. Y. Filed Mar. 13, 1905. Serial No. 249,782.



Claim.—1. A wire clamp or holder comprising a shank having a return-bend or hook providing a transverse seat or socket adapted for holding a plurality of wires arranged side by side therein, and a movable stop adapted to close the seat or socket when substantially filled with the wires so as to prevent dislodgment thereof and adapted to be displaced to allow insertion or detachment of the wires.

2. A wire clamp or holder comprising a shank having a broad return-bend or hook adapted for holding substantial lengths of wires arranged approximately parallel in the hook and transversely thereof, the space in said hook being of sufficient depth to admit a plurality of wires one after another but so contracted as to prevent the wires from passing one another therein, and a back-stop or abutment for holding the wires firmly seated in the hook.

3. A wire clamp or holder comprising a shank having a transverse socket or seat adapted for holding substantial lengths of a plurality of wires arranged side by side therein, and a movable stop associated with said seat adapted to close the entrance thereto for holding the wires firmly seated and in substantial alinement therein and adapted to be displaced to allow insertion or withdrawal of the wires, the strain or pressure of the wires being exerted on the stop transversely of the direction of its movement, whereby in holding the tool the operator's hand is relieved of the strain of clamping the wires together.

4. A wire clamp or holder comprising a shank having a return-bend or hook adapted for holding substantially parallel or in alinement a plurality of wires arranged side by side in the hook and transversely thereof, and having a stop adapted to close the mouth of said hook for holding the wires against dislodgment and movable away from the mouth of the hook to allow insertion and withdrawal of the wires.

5. A wire clamp or holder comprising a handle or shank having a hook for holding wires and a pivoted tongue whose end is adapted to rock to and away from the mouth or entrance of the hook to allow seating or withdrawal of the wires and to confine them against dislodgment in the hook, the said tongue being removed from the mouth of the hook when displaced and arranged longitudinally of the hook when serving as a stop or abutment for the wires.

6. A wire clamp or holder comprising a broad shank having a transverse socket or seat of suitable depth and width to hold substantial lengths of two wires arranged together side by side, and a hinged or pivoted member having an abutment adapted to confront said socket for holding the wires therein and adapted to rock away from the mouth of said socket to permit insertion and withdrawal of the wires.

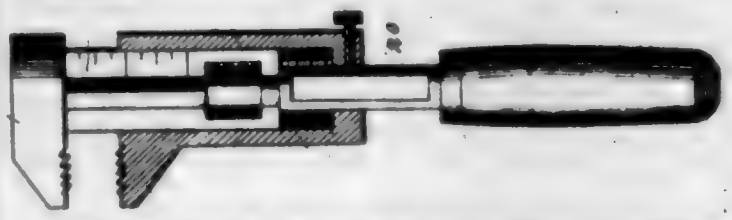
7. A wire clamp or holder comprising a handle or shank having a return-bend or hook for holding wires arranged lengthwise together, and a hinged tongue having a grooved free end adapted to close the entrance to the hook and adapted to rock away to allow the insertion or withdrawal of the wires.

8. A wire clamp or holder comprising a handle having a wide hook or bend adapted for hooking over the wires and holding them side by side therein, and an automatically-closing stop adapted to hold the wires substantially parallel and against dislodgment from the hook.

9. A wire clamp or holder comprising a shank having a bend or hook providing a seat for wires arranged transversely thereto, and a hinged or pivoted abutment opposing said seat and adapted to rock to and away from the mouth of said seat, the pivot of said abutment being approximately in line with the pressure of the wires on said abutment.

10. A wire clamp or holder comprising a shank having a bend or hook with a seat therein for wires arranged transversely thereto, and a longitudinally-disposed hinged or pivoted tongue whose free end opposes said seat and is adapted to rock to and away from the mouth thereof, said free end of the tongue constituting an abutment for confining the wires in said seat.

815,872. WRENCH. JED A. SMITH, Ligonier, Pa., assignor of one-half to Robert S. Bleak, Ligonier, Pa. Filed Dec. 27, 1904. Serial No. 238,347.

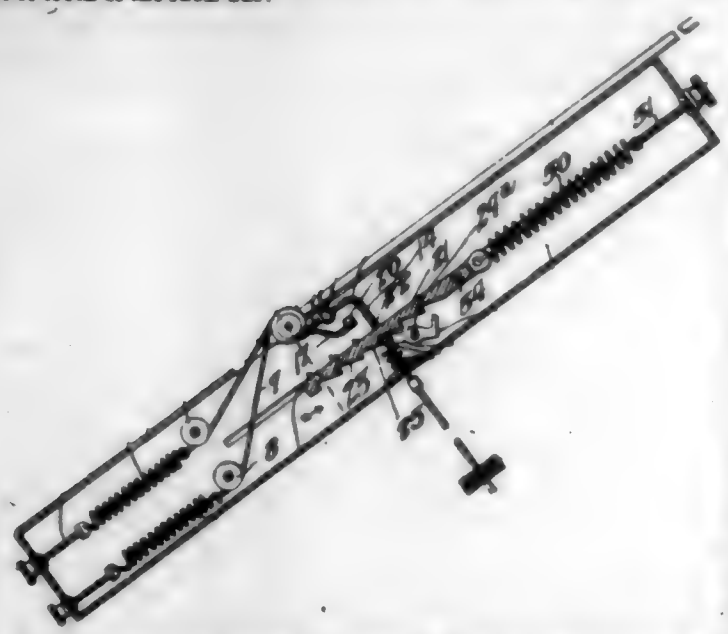


Claim.—In a wrench, a jaw having a shank provided with a pair of spaced engaging arms having terminal inturned fingers, a relatively movable jaw having an internally-threaded sleeve adapted to receive the shank, and a rotary shaft having a head disposed between and engaged by the arms within the sleeve, said head being provided with threads adapted for engagement or non-engagement with the threads in the sleeve.

815,878. MUSIC-LEAF TURNER. THOMAS STEVENTON, Bridgeport, Conn. Filed Aug. 19, 1905. Serial No. 274,552.

Claim.—1. In a music-leaf turner, the combination of a frame or casing, a longitudinally-movable spring-actuated rack-bar arranged therein, said bar being provided with opposite sets of teeth, a series of spring-actuated leaf-turning arms, each of said arms having a grooved head provided with a locking-shoulder, pivoted spring-ac-

tuated detents adapted to engage said locking-shoulders and one of the sets of teeth of the rack-bar, actuating-springs, flexible connections between said actuating-springs and the grooved heads of the turning-arms, and a spring-actuated feed-pawl to engage the other set of teeth of the rack-bar.



2. In a music-leaf turner, the combination of a frame or casing, a longitudinally-movable rack-bar arranged therein and provided with opposite sets of rack-teeth, a series of spring-actuated detents coöperating with one of said sets of teeth, a series of leaf-turning arms having grooved heads provided with locking-shoulders to cooperate with said detents, a spring for actuating the rack-bar, arm-actuating springs, means for regulating the action of said springs, flexible connections between the arm-actuating springs and the grooved heads, and a spring-actuated feed-pawl coöperating with the other set of rack-teeth of the rack-bar, substantially as described.

3. In a music-leaf turner, the combination of a frame or casing having a guideway, a rack-bar slidably mounted in said guideway and provided with a finger-piece for retracting the same and the opposite sets of rack-teeth, a spring for moving the bar in one direction, leaf-turning arms provided with grooved pivoted heads, each having a locking-shoulder, a series of spring-actuated bell-cranked detents adapted to engage said locking-shoulders and one of the sets of teeth of the rack-bar, contractile springs operatively connected with the rack-bar and heads of the turning-arms, and a spring-actuated feed-pawl coacting with the other set of teeth of the rack-bar.

4. In a music-leaf turner, the combination of a frame or casing, a longitudinally-movable holding and releasing device arranged therein, said device being formed upon its opposite sides with sets of rack-teeth, a contractile spring for sliding said device in one direction, a releasing device coöperating with one of said sets of rack-teeth and controlling the action of said spring, a series of spring-actuated detents arranged in parallel relation and coöperating with the other set of rack-teeth, pivoted leaf-turning arms adapted to be held in inoperative position by said detents and released by the retraction thereof, and contractile springs for swinging said arms.

5. In a music-leaf turner, the combination of a frame or casing, a rack-bar slidably mounted therein, a releasing device for controlling the action of the rack-bar, a series of spring-actuated detents adapted to be successively released by said bar, leaf-turning arms normally held retracted by said detents, contractile springs operatively connected with the rack-bar and arms, and adjusting devices arranged upon the casing for regulating the action of said springs.

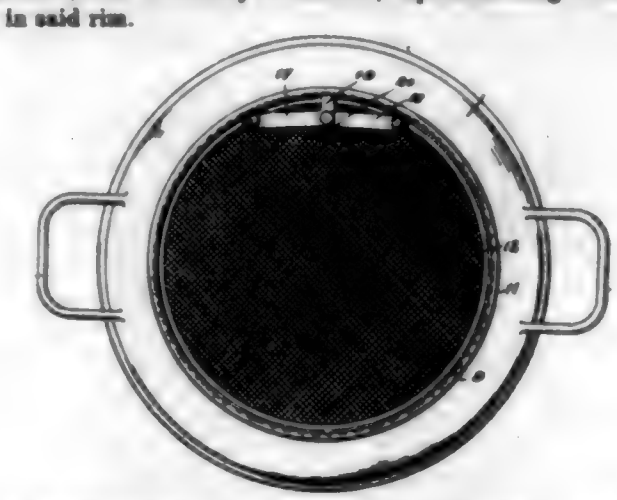
815,874. STRAINER. Maurice Stransky, New York, N. Y. Filed July 28, 1905. Serial No. 271,594.

Claim.—1. In combination, a vessel, a separate and removable bottom therefor, a suitable top on one side of said bottom, a ring on the other side thereof, and means for expanding said ring and retaining the same in its expanded condition.

2. In combination, a vessel having a bottom opening, an annular groove at said opening, a perforate bottom within and removable from said groove, a normally contracted, expansible ring which when expanded and with said bottom substantially fills said groove, and means for retaining said ring in its expanded condition.

3. In combination, a vessel having an open bottom, a rim at the opening, a perforate disk fitting within said rim, a stop on one side of said disk, an open ring on the other side thereof, and means for expanding and locking said ring.

4. In combination, a vessel having an open bottom, an outwardly-tapering rim at the opening, a perforate disk of slightly-greater diameter than the smallest diameter of said rim fitting within said rim, and a normally contracted, expansible ring to lock said disk in said rim.



5. In combination, a vessel having an open bottom, a rim at the opening, a circular groove in said rim, a perforate disk within and normally removable from said groove, an open ring with said disk substantially filling said groove, and means for expanding and locking said ring.

6. In combination, a vessel having an open bottom, an outwardly-tapering rim at the opening, a circular groove at the inner edge of said rim, a perforate disk within and removable from said groove, an open ring with said disk substantially filling said groove, and means for expanding and locking said ring.

815,875. PROCESS OF DEEP ETCHING OF ZINC BY ELECTROLYSIS. Otto C. Strecker, Darmstadt, and Hans H. Strecker, Mainz, Germany. Filed May 26, 1904. Serial No. 209,977.

Claim.—1. The herein-described electrolytic process of deeply etching zinc which consists in exposing a zinc plate as an anode to an electric current of at least two amperes per square decimeter of the active surface while submerged in a bath of zinc-salt, substantially as described.

2. The herein-described electrolytic process of deeply etching zinc which consists in providing said zinc with a print or transfer, sprinkling it with asphaltum dust and then exposing said zinc plate as an anode to an electric current of at least two amperes per square decimeter of the active surface, while submerged in a bath of zinc-salt, substantially as described.

3. The herein-described electrolytic process of deeply etching zinc which consists in exposing a zinc plate as an anode to an electric current while submerged in a salt solution and removing the surface-layer, washing the plate during transferring and then exposing it as an anode to an electric current of at least two amperes per square decimeter of the active surface while submerged in a bath of zinc-salt, substantially as described.

4. Process for deep etching of zinc by electrolysis for the purpose of printing impressions therefrom, which process consists in preparing a zinc cylinder, and exposing it as anode to a current of at least two amperes per square decimeter of the surface facing the cathode, in a bath of a suitable zinc-salt, thereby separating the zinc at the cathode, substantially as described

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815,876. PROCESS OF PREPARING FIBERS. Bertrand S. Summers, Port Huron, Mich., assignor to The Summers Fiber Company, Chicago, Ill., a Corporation of West Virginia. Continuation of application Serial No. 233,001, filed Dec. 22, 1904. This application filed Mar. 6, 1905. Serial No. 248,608.

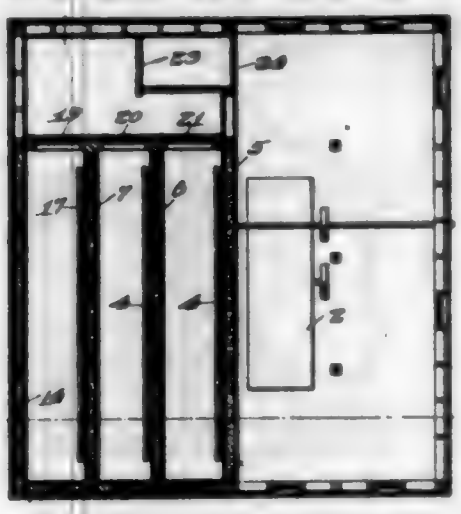
Claim.—1. The herein-described process of preparing vegetable fibers, which consists in subjecting the same to prolonged artificial refrigeration and then breaking and separating the wood therefrom while in refrigerated condition.

2. The herein-described process of preparing vegetable fibers, which consists in subjecting the same to prolonged artificial refrigeration and then passing the same through a cleaning-machine while in refrigerated condition.

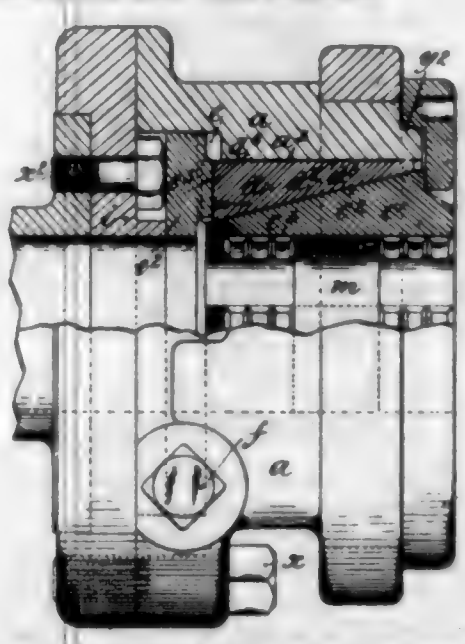
3. The herein-described process of preparing vegetable fibers, which consists in subjecting the same to prolonged artificial refrigeration, then adding moisture, and finally passing the same through a cleaning-machine while in refrigerated condition.

4. The herein-described process of preparing vegetable fibers,

which consists in first subjecting the same to prolonged refrigeration in an artificially-cooled inclosure and then removing the same therefrom and passing the same while in refrigerated condition through a cleaning-machine located in an atmosphere of higher temperature, substantially as and for the purpose described.

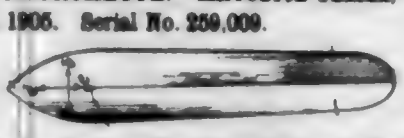


815,877. LATHE-CHUCK. GEORGE B. TAYLOR, Birmingham, England. Filed Jan. 30, 1905. Serial No. 243,372.



Claim.—In a chuck for a lathe or similar machine, the combination of a hollow cylindrical body having rectangular-shaped slots or recesses arranged parallel to and radially with respect to the chuck-axis, gripping-jaws radially slidable in the slots or recesses and having outer inclined edges, wedges disposed in the outer portions of the slots or recesses and having inner inclined edges engaging the inclined edges of the jaws, and a rotatable ring having cam projections thereon held in contact with the ends of the wedges.

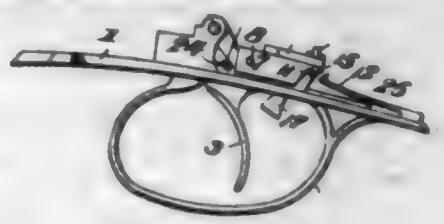
815,878. FOURCHETTE. HIPPOLYTE TEXIER, Watchung, N. J. Filed May 5, 1905. Serial No. 259,009.



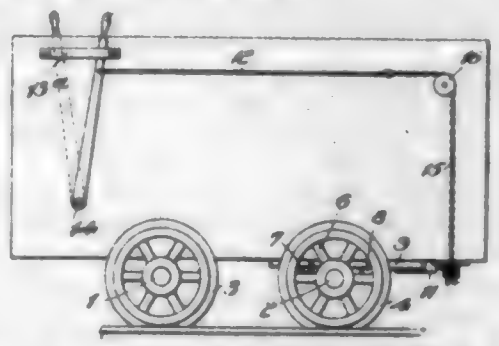
Claim.—The herein-described fourchette made of a single piece fashioned to form two similar parallel members and a point uniting them, and a rounded notch between said members and said point, the length of the latter between said notch and its outer end being equal to that of the space between the back and palm of the glove at the bases of the fingers, and, hence, providing material integral with the fourchette to dispense with the use of a quirk or gusset, the said notch serving to increase the length of the seam at the angle between the bases of the fingers at the palm, to avoid straining of the seam when the fingers are open.

815,879. GUN-LOCK. THEODORE M. THOMSEN, Philadelphia, Pa. Filed Sept. 21, 1905. Serial No. 279,495.

Claim.—A trigger-plate, a trigger mounted thereon, a catch-plate mounted to slide on the trigger, a shifting device provided with a cam-surface, a lever adapted to operate the shifting device and provided with a cam-surface, a spring adapted to engage the lever, and a spring for throwing the catch-plate back into normal position after each operation, substantially as described.



815,880. CAR-BRAKE. EDWARD G. TILLMAN, Thayer, W. Va. Filed June 7, 1905. Serial No. 264,137.



Claim.—1. In a car-brake, the combination with the car-frame, an axle mounted in said frame, and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car and having cam-slots therein, of sprag-bars arranged transversely of the car and having their outer ends adapted to engage with said car-wheels, and the slide-blocks secured to the inner ends of said sprag-bars fitted into said cam-slots in said swinging bar and adapted to be actuated by the walls of said slots to effect a longitudinal movement of said sprag-bars, substantially as set forth.

2. In a brake of the class described, the combination with the car-frame, the car-axle, and the wheels thereon, of the swinging bar pivotally mounted on the car-bottom and having a slot therein, the sprag-bar arranged transversely of the car-frame, and the slide-block carried by said sprag and adapted to be engaged by the walls of said slot to move the sprag longitudinally, substantially as set forth.

3. In a brake of the class described, the combination with a car-frame, the axle mounted in the frame and the wheels thereon, of the sprag-bars arranged transversely of the car-frame and adapted to have their outer ends engage with the said wheels, and having slide-blocks carried by their inner ends, and a swinging bar pivotally mounted on the car-bottom and having cam-slots therein, the slots of which are adapted to engage with the slide-blocks on the sprag-bars to move the bars longitudinally, substantially as set forth.

4. In a brake of the class described, the combination with the car-frame, an axle mounted on the frame and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car and having a cam-slot therein, the sprag-bar mounted transversely of the car and having its outer end adapted to engage with one of said car-wheels, the guides for said bar adapted to hold it in parallelism with the said axle, and the slide-block carried by the inner end of said sprag-bar and fitted into said cam-slot in the swinging bar and adapted to be actuated by the walls thereof, substantially as set forth.

5. In a car-brake, the combination of the car-frame, an axle mounted therein and the supporting-wheels of the axle, of the swinging bar pivotally connected to the bottom of the car on an axis in the vertical plane of the axis of said axle, and having cam-slots arranged at either side of said pivotal connection, the sprag-bars arranged transversely of the car at either side thereof and on opposite sides of said axle and adapted to have their outer ends engage with the adjacent supporting-wheel, and the slide-blocks secured to the inner ends of said sprag-bars and each fitted into one of said slots in said swinging bar and adapted to be actuated by the walls thereof, substantially as set forth.

6. In a car-brake, the combination with a truck-frame, an axle therefor and supporting-wheels for the axle, of the sprag-bars arranged transversely of the truck-frame, a swinging bar, and cam-like connections between said sprag-bars and said swinging bar, each adapted to reciprocate one of the sprag-bars in a straight line into and out of engagement with one of said supporting-wheels, as said swinging bar is oscillated.

7. In a car-brake, the combination with a car-frame, an axle thereon and supporting-wheels on the axle, of the longitudinally-reciprocatable sprag-bars, each adapted to be thrown into and out of

engagement with one of said supporting-wheels, a swinging bar, and cam connections between said swinging bar and said sprag-bars adapted to impart straight-line motion to the sprag-bars as the swinging bar is oscillated.

815,881. **PROCESS FOR THE REDUCTION OF ORES.** CLINTON P. TOWNSEND, Washington, D. C., assignor to Elmer A. Sperry, Brooklyn, N. Y. Filed Apr. 12, 1902. Serial No. 102,563.

Claim:—1. The herein-described method of reducing sulfid ores, which consists in supporting the ore in a body of fused electrolyte which is substantially inert toward the ore, and passing an electric current to said ore as cathode.

2. The herein-described method of reducing galena, which consists in supporting the galena in a body of fused electrolyte which is substantially inert toward the galena, and passing an electric current to said galena as cathode.

3. The herein-described method of reducing sulfid ores, which consists in supporting the ore in a body of fused haloid salt, and passing an electric current to said ore as cathode.

4. The herein-described method of reducing galena, which consists in supporting the galena in a body of fused haloid salt, and passing an electric current to said galena as cathode.

5. The herein-described method for the reduction of ores, which consists in floating the ore upon a body of molten metal under a fused electrolyte and reducing the ore by the passage of a current.

6. The herein-described method for the reduction of ores, which consists in floating the ore upon a body of molten metal, under a fused electrolyte, connecting such ore as the cathode, and reducing the ore by the passage of a current.

7. The herein-described method for the reduction of ores, which consists in floating the ore upon a body of the metal which forms the base of the ore, under a fused electrolyte, and reducing it by the passage of a current.

8. The herein-described method for the reduction of ores, which consists in floating the ore upon a body of the metal which forms the base of the ore, under a fused electrolyte, connecting such ore as the cathode, and reducing it by the passage of a current.

9. The herein-described process of reducing lead ores, which consists in floating the ore upon a body of molten metal, under a fused electrolyte, connecting such ore as the cathode, and passing an electric current through the bath.

10. The herein-described method of reducing ores, which consists in floating the ore upon a body of molten lead under a fused electrolyte, and reducing such ore by the passage of an electric current.

11. The herein-described method of reducing ore, which consists in floating the ore upon a body of molten lead, under a fused electrolyte, connecting such ore as the cathode, and passing an electric current through the bath.

12. The herein-described method of reducing lead sulfid, which consists in floating the sulfid upon a body of molten lead under a fused electrolyte, connecting such sulfid as the cathode, and passing an electric current through the bath.

13. The herein-described method of reducing ores, which consists in floating the ore upon a body of molten metal, under a fused electrolyte, and reducing the ore by passing a current through the bath from superposed anodes.

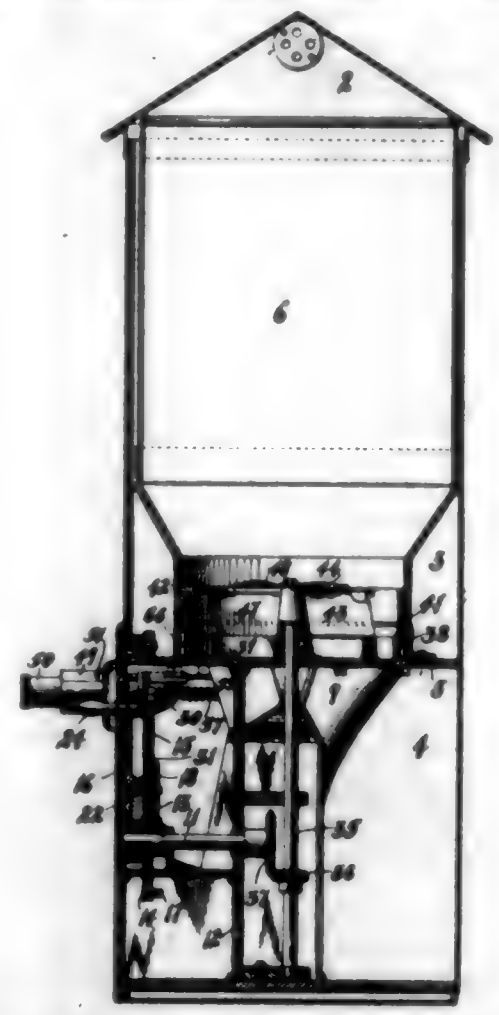
14. The process of decomposing lead sulfid which consists in electrolytically separating lead therefrom by bringing said sulfid into contact with a cathode, in a fused electrolyte in which lead sulfid is substantially insoluble.

15. The process of decomposing lead sulfid which consists in electrolytically separating lead therefrom by bringing said sulfid into contact with a cathode, in a fused electrolyte, mainly of sodium chlorid.

815,882. **VENDING-MACHINE.** FRANK W. TUCKER, Milford, Conn. Filed July 1, 1903. Serial No. 163,886.

Claim.—1. In a vending-machine, a reservoir for the articles, a delivery-chute, an intermediate partition having an opening therein communicating with the reservoir and chute, a rotary delivery-wheel having measuring-pockets therein arranged to convey the articles from the reservoir to the opening in the partition and thereby to the delivery-chute, a casing for inclosing a portion of the delivery-wheel and a yielding guard hinged to the casing for preventing the articles from falling through the opening in the partition from the compartment in the wheel which is exposed to the reservoir.

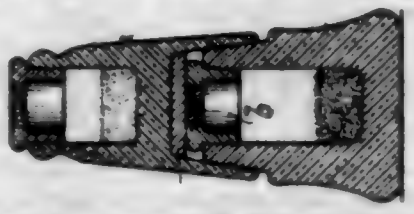
2. In a vending-machine, a reservoir for the articles, a delivery-chute, an intermediate partition having an opening therethrough communicating with the chute and reservoir, a delivery-wheel having measuring-pockets therein for conveying the articles from the reservoir to the chute, a casing inclosing the portion of the wheel over the opening in the partition and a yielding plate depending from the casing in position to retain the articles to be vended within their compartment beneath the casing until the compartment has been brought into alinement with the opening in the partition.



3. In a vending-machine, a reservoir for the articles, a delivery-chute, an intermediate partition having an opening therethrough communicating with the chute and reservoir, a delivery-wheel having measuring-pockets therein for conveying the articles from the reservoir to the delivery-chute, a casing inclosing a portion of the wheel, a yielding guard at one side of the opening and an article-retaining plate at the other side of the opening for preventing the unintentional delivery of articles from the wheel into the delivery-chute.

4. In a vending-machine, a reservoir for the articles, a delivery-chute, an intermediate partition having an opening therethrough communicating with the chute and reservoir, a delivery-wheel having measuring-pockets therein for conveying the articles from the reservoir to the chute, a casing inclosing a portion of the wheel, a yielding guard, an article-retaining plate and a yielding article-dividing plate carried by the casing for insuring the accurate delivery of the articles from the reservoir to the chute.

815,883. **CONDIMENT-HOLDER.** SAMUEL M. VAN BLARCOM, New York, N. Y. Filed Oct. 4, 1905. Serial No. 281,296.



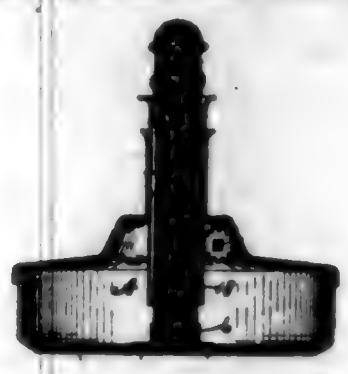
Claim.—1. A damp-proof salt-shaker having a perforated top and a condiment-holder having a recessed bottom adapted to sit over and releasably engage the neck or upper portion of said shaker and form a cap for closing the same.

2. A damp-proof salt-shaker and condiment-holder, said holder being made to cover or nest the shaker, and being provided at its bottom with a washer or the like to cover the salt-shaker and prevent salt from escaping or being shaken out while the holder is in place.

3. A salt-shaker having a perforated top and combined with a condiment-holder having a bottom portion formed to receive said top snugly and to close the perforations thereof.

4. A salt-shaker having a perforated top and combined with a condiment-holder having a bottom portion formed to receive said top snugly and to rest upon the upper surface thereof and thereby close the perforations therein.

815,884. ALCOHOL LAMP. ALONZO A. WARNER, New Britain, Conn., assignor to Landers, Frary & Clark, New Britain, Conn., a Corporation. Filed July 12, 1905. Serial No. 269,285.



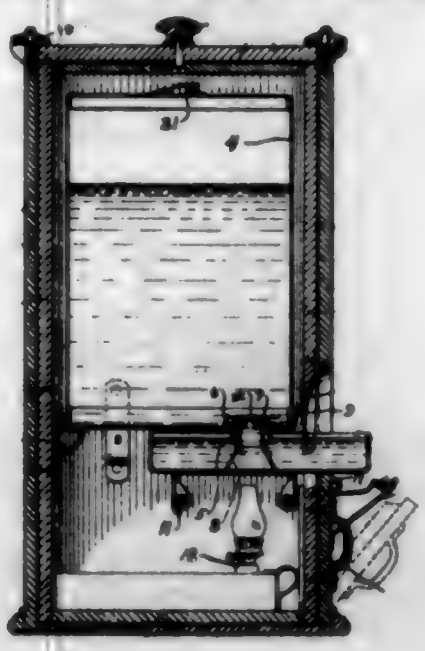
Claim.—1. In a vapor-lamp, the combination of a font with a wick-tube having a flanged upper end, and a plurality of peripheral beads each with a series of perforations, the said perforations in the upper one of the said beads being slightly above the greatest diameter of the said bead, and a shutter having a relative longitudinal movement with the tube and its inner diameter of a size to pass over and closely fit the said upper bead so as to substantially close the space between the wick-tube and the shutter.

2. In a vapor-lamp, the combination of a font with a wick-tube having an imperforate upper end and a series of fine perforations below the said upper end, and a tubular shutter having a flanged upper end with jet-recesses formed therein, the said wick-tube and shutter having a relative longitudinal movement for covering and uncovering the said perforations, and also having provision for gas to flow upwardly from the said perforations through the said shutter and out at the jet-recesses for burning at the said recesses when the shutter extinguishes the flame at the said perforations.

3. In a vapor-lamp, the combination of a font with a wick-tube having an imperforate upper end, a stop-flange at the said upper end, and a hollow peripheral bead with fine perforations therein at a point below the said flange, and a shutter movable longitudinally relatively to the said wick-tube and having a body for covering and uncovering the said bead, and a flanged upper end with jet-recesses formed therein, the said flanged upper end being arranged to close against the flange of the said wick-tube.

4. In a vapor-lamp, the combination of a font with a wick-tube having a flanged upper end and a peripheral bead provided with a series of jet-perforations, and a shutter having a relative longitudinal movement with the tube and its inner diameter of a size to pass over the said bead to extinguish the flame thereat, and jet-openings at the upper end of the said tube and shutter which remain open when the shutter is fully closed; the inclosing walls of the said jet-openings being formed partly by the said wick-tube and partly by the said shutter.

815,885. DRINKING-FOUNTAIN FOR FOWLS. JOHN H. WHALEN, Canton, Ohio. Filed Oct. 9, 1905. Serial No. 282,010.

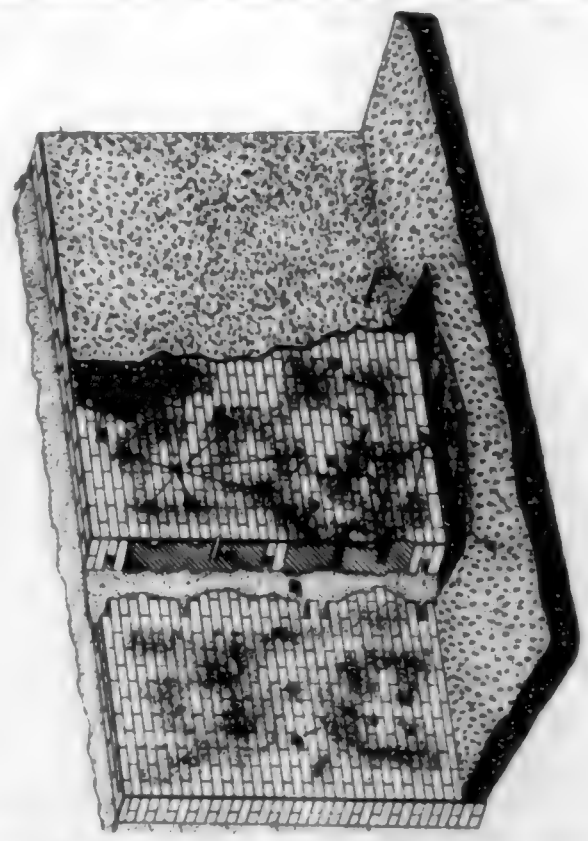


Claim.—1. In a drinking-fountain for fowls, the combination of a casing or box a water-receptacle formed of a size less than the inner dimensions of the casing or box, said receptacle provided at its normal or lower end with an extended tube, a pipe located within the tube and provided with a valve and a funnel, a drinking-pan located below the normal position of the water-receptacle and the water-pan extended beyond the front of the casing or box and means for supporting the water-receptacle and drinking-pan, substantially as and for the purpose specified.

2. In a drinking-fountain for fowls, the combination of a casing, paper lining for said casing, a water-receptacle held in elevation in said casing, a drinking-pan located below the water-receptacle, a movable pipe passing through the lower portion of the water-receptacle having a funnel upon one end, and a tube extended below the bottom of the water-receptacle and into the drinking-pan, substantially as and for the purpose specified.

3. In a drinking-fountain of the class described, the combination of a casing a water-receptacle located therein, said water-receptacle provided with a short tube, a pipe located within the short tube and provided with a valve, passages formed in the tube and means for elevating the tube and valve, and a drinking-pan, an opening formed in the casing above the drinking-pan, and a curved plate secured to the casing and extended below the normal water-line of the drinking-pan, substantially as and for the purpose specified.

815,886. PROCESS OF AFFIXING PLASTICS. EDWARD J. WIBLOW, Chicago, Ill. Filed May 15, 1905. Serial No. 260,469.



Claim.—1. The method of affixing plastic compositions to wet walls, comprising as successive steps, the tapping of the wall within supersaturated areas so as to drain same, and when sufficiently dry, the affixing of the composition.

2. The method of affixing plastic impervious coatings to the inner face of subterranean coring walls, comprising the boring of holes in appropriate positions in a wall whereby it will be rapidly drained, the inserting of drain-pipes in certain of such borings, the applying of the coating to the drained wall around the protruding drain-pipes, and the removal of the latter and the closure of the orifices by a completion of the plastering.

3. In a method of securely affixing a setting waterproof composition to water-soaked walls, the drying of a wall to the requisite degree by making a plurality of holes or channels in a part or parts of said wall, connecting thereto drainage-tubes, then applying the adherent composition to such dried wall and maintaining the drainage during the setting of said composition.

4. A method of waterproofing permeable walls comprising a tapping of such wall at the points of greatest flow, allowing the accumulated water to escape through such tappings, providing carry-away pipes for such tappings as continue to run, connecting other tappings thereto by means of countersunk conducting-passages, plastering over the prepared wall-surface, removing the protruding drainage-pipes and plastering over the mouths of the tappings.

5. The method of affixing impervious plastic compositions to the inner faces of wet walls, comprising as successive steps the tapping of the wall within the wetted zones so as to drain the same and, when sufficiently dry, the affixing of the impervious composition.

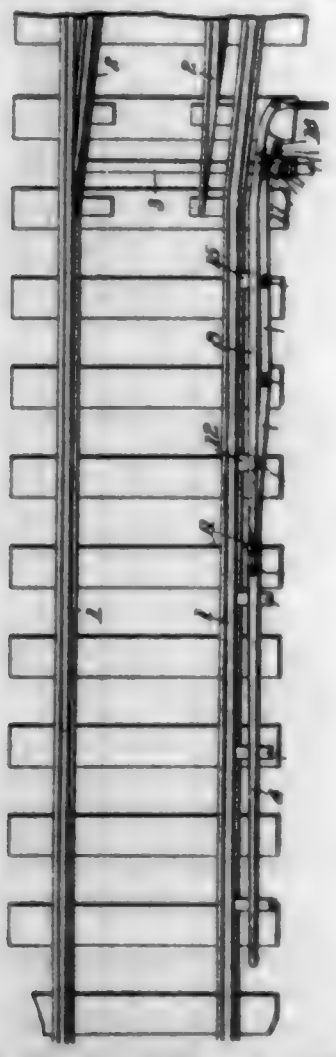
6. The method of affixing plastic, impervious compositions to the inner face of oozing subterranean walls, comprising as successive steps, the tapping of the walls within supersaturated areas so as to drain same, the affixing of the composition when said wall becomes sufficiently dry, and the sealing of said tappings after the setting of the composition.

7. The method of affixing plastic, impervious coatings to the inner face of subterranean, oozing walls, comprising the boring of holes in appropriate positions in a wall, whereby it will be rapidly drained, the inserting of drain-pipes in certain of such borings, the applying of the coating to the drained wall around the protruding drain-pipes, the removal of the latter after the permanent setting of the coating, and the closure of the holes by a completion of the plastering.

8. In a method of securely affixing a setting waterproof composition to the inner face of water-soaked subterranean walls, the drying of a wall to the requisite degree by making a plurality of holes or channels in a part or parts of said wall, connecting thereto drainage-tubes, then applying the adherent composition to such dried wall and maintaining the drainage during the setting of said composition.

9. A method of waterproofing the inner face of permeable subterranean walls comprising a tapping of such walls at the points of greatest flow, allowing the accumulated water to escape through such tappings providing carry-away pipes for such tappings as continue to run, connecting other tappings thereto by means of countersunk conducting-passages, plastering over the prepared wall-surface, removing the protruding drainage-pipes and plastering over the mouths of the tappings.

815,887. AUTOMATIC RAILWAY-SWITCH. URBAN A. WOODBURY, Burlington, Vt. Filed June 21, 1905. Serial No. 266,343.



Claim.—1. In a railway-switch, the combination with the switch-rod thereof, of a bar pivoted to the track and arranged to be actuated by a train, a normally rigid connection between said bar and switch-rod, and means arranged to be actuated by a train coming off the siding to break said connection when it is not desired to have the switch automatically closed.

2. In a railway-switch, the combination with the switch-rod thereof, of a bar pivoted to the track and arranged to be actuated by a train, means connecting said bar and switch-rod so that the actuation of the former by a train will move the latter to close the switch, said means constructed and arranged to permit manual shifting of the switch-rod without moving said bar, and means arranged to be actuated by a train coming off the siding to break said rigid connection when it is not desired to have the switch automatically closed.

3. In a railway-switch, the combination with the switch-rod thereof, of a bar movably mounted adjacent to the track and arranged to be actuated by a train, normally rigid connections between said bar and switch-rod whereby actuation of said bar by a train will move said switch-rod to close the switch, a second bar mounted adjacent to the track and arranged to be actuated by a train coming in the opposite direction and a connection between said second bar and said normally rigid connection whereby the latter is broken by the actuation of said second bar by a train.

4. In a railway-switch, the combination with the switch-rod thereof, of a sleeve slidably mounted upon said switch-rod, means to limit the movement of said sleeve on said switch-rod in one direction, a lever pivotally mounted upon said sleeve, a bar pivoted adjacent to the track and arranged to be actuated by a train, connections between said bar and lever, whereby the actuation of said bar acts through said lever to move the switch-rod to close the switch and means to swing said lever so as to, in effect, break the connection between said bar and switch-rod when it is not desired to have the switch automatically closed.

5. In a railway-switch, the combination with the switch-rod thereof, of a bar movably mounted adjacent to the track and arranged to be actuated by a train approaching the open switch, a pivoted member which in one position acts as a rigid connection between said bar and switch-rod, means to manually swing said member so that the said rigid connection is broken, a second bar movably mounted adjacent to the track and arranged to be actuated by a train coming off the siding, and a connection between said second bar and said member, whereby actuation of the former by a train running off the siding swings said member on its pivot and breaks the rigid connection between said first-mentioned bar and the switch-rod.

6. In a railway-switch, the combination with the switch-rod thereof, of means mounted adjacent to the track and arranged to be actuated by a train, connections between said means and switch-rod whereby the latter is automatically moved to close the switch, said means constructed and arranged to permit manual shifting of the switch-rod without moving said means or connections, and means adapted to be actuated by a train running off the siding to render said connections inoperative.

7. In a railway-switch, the combination with the switch-rod thereof, of a sleeve slidably mounted upon said rod, means to limit the movement of said sleeve on said rod in one direction, a bell-crank pivotally mounted upon said sleeve, a spring tending to keep said lever with one arm approximately parallel with said rod, a bar movably mounted adjacent to the track and arranged to be actuated by a train, a lever pivoted adjacent to the track and having pin-and-slot connections at its ends with said bar and bell-crank respectively, a second bar movably mounted adjacent to the track and arranged to be actuated by a train running off the siding, said second bar having a pin-and-slot connection with the other arm of said bell-crank lever, and a rod connected to said second bar for manual actuation of the same.

815,888. AUTOMATIC RAILWAY-SWITCH. URBAN A. WOODBURY, Burlington, Vt. Filed Oct. 10, 1905. Serial No. 282,065.

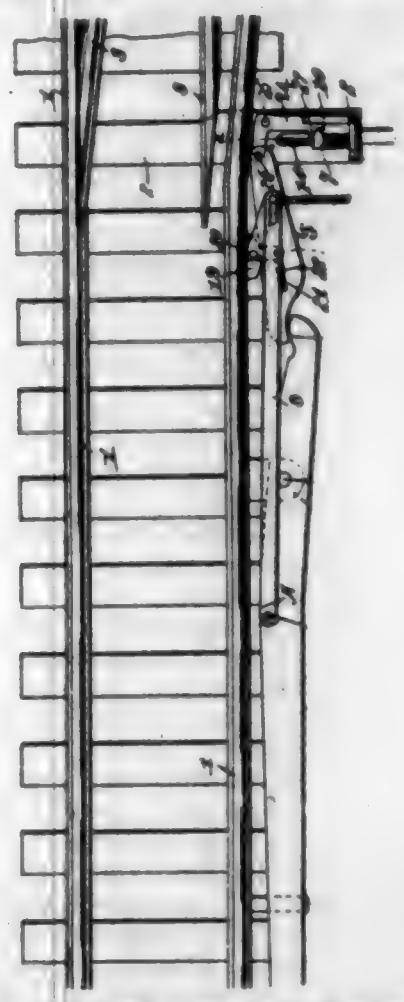
Claim.—1. In a railway-switch, the combination with means adapted to be actuated by a train running toward the point of the switch to close the latter, of means adapted to be actuated by a train running through the switch off the siding to prevent the operation of the closing means.

2. In a railway-switch, the combination with a bar horizontally mounted adjacent to one of the main-line rails and adapted to be actuated by mechanism carried by a train, of a switch-rod, connections between said bar and rod, whereby actuation of said bar by train will normally close the switch, and means also operable by a train to render said connections inoperative to close the switch.

3. In a railway-switch, the combination with a bar horizontally mounted adjacent to one of the main-line rails and adapted to be actuated by mechanism carried by a train, of a switch-rod, a lever connected to said rod and adapted to be actuated by said bar to close the switch, and means to change the position of the fulcrum of said lever to render it inoperative to close the switch when actuated by said bar.

4. In a railway-switch, the combination with the switch-bar thereof, of a switch-stand rod, means on said bar to normally connect the same rigidly to said rod, means on the latter tending to move said

bar relatively to said rod to close the switch, means adapted to be actuated by a train to break the connection between said bar and rod, and means adapted to be actuated by a train running off the siding to prevent the operation of said train-actuated means.



5. In a railway-switch, the combination of a switch-bar and a switch-stand rod normally rigidly connected together, a lever adapted to be actuated by a train approaching the switch toward the point thereof, a second lever adapted to be actuated by said first lever, means connected with said second lever to break the connection between said bar and rod, and means connected with said second lever to prevent its breaking the said connection when a train is to run onto the siding or when a train is running off the siding onto the main line.

6. In a railway, the combination of a lever pivoted adjacent to the main line, a bell-crank lever also pivoted adjacent thereto, a second lever pivoted on one arm of said bell-crank lever and adapted to be actuated by said first-mentioned lever, a rod connected to the other arm of said bell-crank lever whereby the latter may be rendered inoperative by said first-mentioned lever, a switch-bar and a switch-stand rod, means connected to said second lever and carried by said bar to normally connect said bar and rod rigidly together, a spring to move said bar relatively to said rod to close the switch when said second lever breaks the connection between them, and means adapted to be actuated by a train running through the switch from the heel to prevent said second lever from breaking the connection between said bar and rod.

815,889. TELEPHONE-TRANSMITTER. ERNEST E. YAXLEY, Chicago, Ill., assignor to Monarch Telephone Manufacturing Co. of Chicago, Ill., a Corporation of Illinois. Filed Sept. 26, 1905. Serial No. 280,158.



Claim.—1. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode moved by the speaking-diaphragm, the said subdivided material having access to the electrode moved by the speaking-diaphragm through the aperture in the diaphragm forming a part of said chamber.

2. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode moved by the speaking-diaphragm, the said subdivided material having access to the electrode moved by the speaking-diaphragm through the aperture in the diaphragm forming a part of said chamber, and a spring device for holding the electrode actuated by the speaking-diaphragm in engagement with the said apertured diaphragm.

3. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode moved by the speaking-diaphragm, the said subdivided material having access to the electrode moved by the speaking-diaphragm through the aperture in the diaphragm forming a part of said chamber, and an additional resilient diaphragm serving to maintain the electrode moved by the speaking-diaphragm in engagement with the said apertured diaphragm.

4. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of said electrode moved by the speaking-diaphragm, the said subdivided material having access to the electrode moved by the speaking-diaphragm through the aperture in the diaphragm forming a part of said chamber.

5. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber.

6. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, and a spring device for holding the companion electrode in engagement with the said apertured diaphragm.

7. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, and an additional resilient diaphragm serving to maintain the companion electrode in engagement with the said apertured diaphragm.

8. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a companion electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of said companion electrode, the said subdivided material having access to the companion electrode through the aperture in the diaphragm forming a part of said chamber.

9. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm

engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm.

10. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, and a spring device for holding the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm.

11. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, and an additional resilient diaphragm serving to maintain the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm.

12. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a companion electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of said companion electrode, the said subdivided material having access to the companion electrode through the aperture in the diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm.

13. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a spring device for maintaining the electrode actuated by the speaking-diaphragm in engagement with said apertured diaphragm associated therewith.

14. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, a spring device for holding the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a spring device for maintaining the electrode actuated by the speaking-diaphragm in engagement with said apertured diaphragm associated therewith.

15. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, an additional resilient diaphragm serving to maintain the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a spring device for maintaining the electrode actuated by the speaking-diaphragm in engagement with said apertured diaphragm associated therewith.

16. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a companion electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of said companion electrode, the said subdivided material having access to the companion electrode through the aperture in the diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a spring device for maintaining the electrode actuated by the speaking-diaphragm in engagement with said apertured diaphragm associated therewith.

17. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a diaphragm carrying the electrode actuated by the speaking-diaphragm and serving to maintain this electrode in contact with the said apertured diaphragm associated therewith.

18. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, a spring device for holding the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a diaphragm carrying the electrode actuated by the speaking-diaphragm and serving to maintain this electrode in contact with the said apertured diaphragm associated therewith.

19. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including an apertured resilient diaphragm engaging the inner face of the electrode companion to the electrode moved by the speaking-diaphragm, the said subdivided material having access to said companion electrode through the aperture in the diaphragm forming a part of said chamber, an additional resilient diaphragm serving to maintain the companion electrode in engagement with the said apertured diaphragm, said chamber being also provided with an apertured diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a diaphragm carrying the electrode actuated by the speaking-diaphragm and serving to maintain this electrode in contact with the said apertured diaphragm associated therewith.

20. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a companion electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of said companion electrode, the said subdivided material having access to the companion electrode through the aperture in the

diaphragm forming a part of said chamber, said chamber being also provided with an apertured resilient diaphragm engaging the face of the electrode actuated by the speaking-diaphragm, the subdivided material having access to this electrode through the aperture in said latter apertured diaphragm, and a diaphragm carrying the electrode actuated by the speaking-diaphragm and serving to maintain this electrode in contact with the said apertured diaphragm associated therewith.

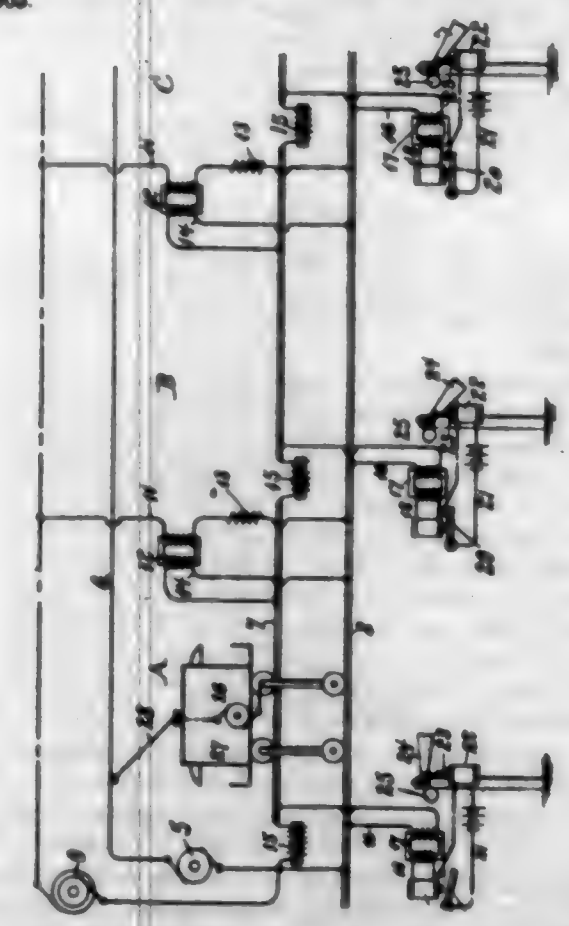
21. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber, and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including thin apertured resilient diaphragms lying close to the planes of the inner faces to said electrodes, said subdivided material having access to the electrodes through the apertures in the diaphragm.

22. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber, and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including thin apertured resilient diaphragms engaging the electrodes and lying close to the planes of the inner faces of said electrodes, said subdivided material having access to the electrodes through the apertures in the diaphragms.

23. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a second electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of and engaging said electrode moved by the speaking-diaphragm, the said subdivided material having access to the electrode moved by the speaking-diaphragm through the aperture in the diaphragm forming a part of said chamber.

24. A telephone-transmitter including a speaking-diaphragm, an electrode actuated thereby, a companion electrode, a chamber and subdivided material within said chamber interposed between and in contact with said electrodes, said chamber including a thin apertured resilient diaphragm lying close to the plane of the inner face of and engaging said companion electrode, the said subdivided material having access to the companion electrode through the aperture in the diaphragm forming a part of said chamber.

815,880. ELECTRIC SIGNALING SYSTEM. SAMUEL M. YOUNG, New York, N. Y. Original application filed Feb. 21, 1903. Serial No. 144,548. Divided and this application filed Oct. 18, 1904. Serial No. 228,963.



Claim.—1. A signaling system comprising a source of power-current, a source of alternating current, a distributing-circuit having the traffic-rails divided into blocks and in which each of the traffic-rails separately and independently serves as a return-path to the sources of current, motor-vehicles actuated by one current, signaling devices actuated by the other current, and means controlled by the movements of the motor-vehicles for controlling the movements of the signaling devices.

2. A signaling system comprising a source of power-current, a source of alternating current, conductors leading therefrom comprising independent outgoing conductors and separate and independent return-conductors to the sources of current, motor-vehicles actuated from one current, signaling devices actuated from the other current, and means carried by the moving vehicles adapted to deënergize the signaling devices.

3. A signaling system comprising a source of power-current, a source of alternating current, conductors leading from said sources of current comprising independent outgoing conductors and separate and independent return-conductors to the sources of current, transformers having their primaries connected across the outgoing conductor from the source of alternating current and a return-conductor, and signaling devices controlled by the current from the secondaries of said transformers.

4. A signaling system comprising a source of power-current, a source of alternating current, a system of conductors formed in part by the traffic-rails and divided into blocks, means whereby the power-current will flow over each of said traffic-rails as separate and independent return-conductors to the sources of current, means for creating an alternating difference of potential between the rails of each block, signaling devices in each block normally in the "clear" position through the influence of said alternating difference of potential, and motor-vehicles actuated by the power-current and provided with means for short-circuiting the signaling devices of the blocks when motor-vehicles move into the blocks.

5. A signaling system comprising, a source of power-current, a source of alternating current, a distributing system involving the employment of both traffic-rails as separate and independent return-conductors to the sources of current, transformers energized by said alternating current, signaling devices energized by said transformers, motor-vehicles, and devices carried by said motor-vehicles for shunting the current from the transformers around the signaling devices.

6. A signaling system comprising a source of power-current, a source of alternating current, a working circuit wherein each of the traffic-rails form separate and independent return-paths to the source of current, motor-vehicles in said working circuit energized by the power-current, signaling devices in said working circuit energized by the alternating current, and means carried by the motor-vehicles for shunting the alternating current around certain of the signaling devices.

7. A signaling system comprising a source of power-current, a source of alternating current, a working circuit wherein each of the traffic-rails separately and independently form return-paths to the sources of current, motor-vehicles energized by the power-current, transformers energized by the alternating current, and relay devices energized by the current from the transformers.

8. A signaling system comprising a source of power-current, a source of alternating current, a working circuit wherein each of the traffic-rails separately and independently form return-paths to the sources of current and over which rails both currents are transmitted, motor devices actuated by the power-current, signaling devices actuated by the alternating current, and means for differentiating the power and alternating currents between the devices adapted to be actuated by them.

9. A signaling system comprising a source of power-current, a source of alternating current, a working circuit wherein each of the traffic-rails form separate and independent return-paths to the sources of current and over which both currents are transmitted, current-transforming devices having their primaries connected across the terminals of the source of alternating current and their secondaries across block-sections of the traffic-rails, relays connected across the block-sections of the traffic-rails, and means for preventing the power-current flowing in the traffic-rails from flowing through said relays.

10. A signaling system comprising a source of power-current, a source of alternating current, a distributing system comprising an outgoing feeder over which a power-current is flowing, a feeder over which an alternating current is flowing, traffic-rails divided into independent block-sections and serving as separate and independent return-paths for both currents, means for creating a difference of potential between the traffic-rails of each block-section, a relay in each block-section normally energized by such difference of potential, and motor-vehicles carrying means adapted to short-circuit the relay of a section when the motor-vehicle moves into a section.

11. A signaling system comprising a working circuit divided into a series of independent sections each section formed in part by the traffic-rails and each of said traffic-rails serving as separate and independent return-paths to the sources of current, a power-current in said working circuit, an alternating current impressed upon said working circuit, a motor-vehicle actuated by said power-current, and signaling devices energized by said alternating current, said motor-vehicle carrying means for shunting said alternating current around the signaling devices of a section when a car enters a section.

12. In a signaling system, the combination of a source of power-current, a source of alternating current, a distributing-circuit involving the employment of the traffic-rails as separate and independent paths to the sources of current and such traffic-rails divided into block-sections, transformers having their primaries energized by the alternating current and their secondaries connected across the traffic-rails of a block.

13. A signaling system comprising two sources of electric energy differing in character, a distributing-circuit over which both currents are transmitted and formed in part by the traffic-rails of the system, said traffic-rails divided into blocks and adapted to separately and independently form return-paths to the sources of energy, motor-vehicles upon said railway actuated by one of said currents, signaling devices normally energized by the other of said currents, and means carried by the motor-vehicles for short-circuiting the signaling devices of a block as the vehicle moves into a block.

14. A signaling system comprising two sources of energy differing in character, a working circuit divided into a series of independent sections, each of said sections formed in part by a continuous rail and a divided rail, which rails separately and independently form return-paths for the currents employed in operating the railway, a motor-vehicle operated by one of said currents, and signaling devices actuated by the other of said currents, said motor-vehicle carrying means for shunting the current employed to actuate the signaling device of a section when a car moves into a section.

15. A signaling system comprising two sources of current differing in character, a working circuit divided into a series of independent sections and of which the traffic-rails form a part and serve as separate and independent return-paths to the sources of energy, means in said sections for differentiating said transmitted currents between a motor-vehicle and a signaling device, and means carried by the motor-vehicle for short-circuiting the signaling device when a motor-vehicle moves into a section.

16. A signaling system comprising two sources of current differing in character, a working circuit divided into sections and of which the traffic-rails form separate and independent return-paths to the sources of energy, reactance devices in the track-sections adapted to permit the flow of current from one source but to cut down the flow of current from the other source, motor-vehicles operated by the current from one source, signaling devices in each section operated by the current from the other source, and means carried by the motor-vehicle for short-circuiting the signaling devices when a motor-vehicle moves into a section.

17. A signaling system in which the traffic-rails serve as separate and independent return-paths for the power and signal currents to the sources of energy.

18. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, means for limiting the difference of potential excited in a block-section to that section, a signaling device in each block-section, and means controlled by the movements of the cars, which will control the movements of the signaling devices.

19. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections having one rail continuous and the other separated into insulated lengths and with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, inductance-bonds located to limit the difference of potential excited in a block-section to that section, a signaling device in each block-section, and means controlled by the movements of the cars, which will control the movements of the signaling devices.

20. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, an induction device interposed between the source of signaling-current and the rails of each block-section for exciting an alternating difference of potential between said rails, reactance devices for limiting the difference of potential excited in a block-section to that section, a signaling device in each block-section, and means controlled by the movement of the cars, which will control the movements of the signaling devices.

21. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, means for limiting the difference of potential excited in a block-section to that section, a signaling device in each block-section, and an induction device interposed between the rails and the signaling device adapted to be controlled by the movements of the cars and which will control the movements of the signaling devices.

22. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, means interposed between the blocks which will freely permit the passage of the whole power-current back to the source of power-current but limit the difference of potential between the rails of a block-section to that section, a signaling device in each block-section, and means controlled by the movements of the cars, which will control the movements of the signaling devices.

23. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, means interposed between the blocks which will freely permit the passage of the whole power-current back to the source of power-current, but limit the difference of potential between the rails of adjacent block-sections to the sections which at the time are unoccupied, a signaling device in each block-section, and means controlled by the movements of the cars, which will control the movements of the signaling devices.

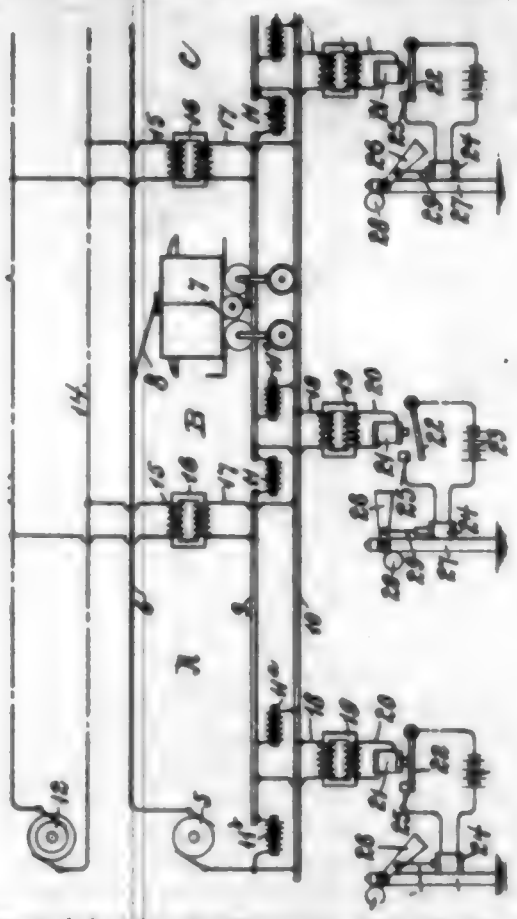
24. A system of automatic signaling comprising a source of power-current, a source of alternating signaling-current, a trackway divided into block-sections with each rail arranged to serve as a separate and independent return-path for the power-current, means for exciting an alternating difference of potential between the rails of each block-section, means which will permit the free passage of the power-current, but present high impedance to the passage of the alternating current from block-section to block-section, a signaling device in each block-section, and means controlled by the movements of the cars, which will control the movements of the signaling devices.

815,891. **ELECTRIC SIGNALING SYSTEM.** SAMUEL M. YOUNG, New York, N. Y. Original application filed Apr. 25, 1903, Serial No. 154,275. Divided and this application filed Oct. 18, 1904. Serial No. 228,934.

Claim.—1. A system of electrical distribution and signaling for railways, comprising two sources of electrical energy delivering currents differing in character, a system of conductors for the current from one of said sources comprising an outgoing feeder-conductor and two return-conductors, one of said last-named conductors formed from a continuous rail and the other from a divided rail and reactance-bonds, and a system of conductors for the current from the other source comprising two continuous conductors electrically insulated from the current derived from the source of energy to which they are not connected, motor-cars operated from one source of energy, and signaling devices operated from the other source of energy, and adapted to be controlled by the movement of the motor-cars.

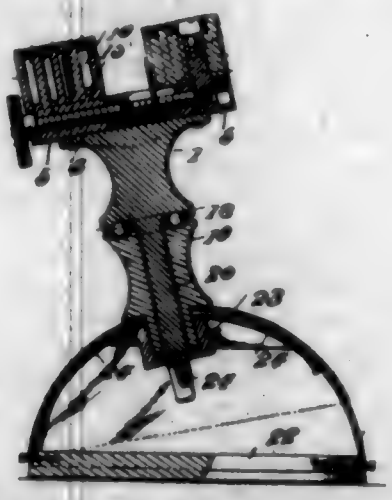
2. A system of electrical distribution and signaling for railways, comprising two sources of electrical energy delivering currents differing in character, a system of conductors from each of said sources of energy, one of said systems of conductors electrically insulated from the current traversing the second system of conductors, and the second system of conductors having impressed upon its return-legs an alternating current, motor-cars driven from the second source of electricity, and signaling devices energized from the first source of electricity and adapted to be controlled by the movement of the motor-cars.

3. A system of electrical distribution and signaling for railways, comprising two sources of electrical energy delivering currents different in character, a system of conductors from each of said sources of energy, one of said systems of conductors electrically insulated from the current traversing the second system of conductors, and the second system of conductors having impressed upon its return-legs a current different in character from that derived from the second source of electricity, motor-cars driven from the second source of electricity and signaling devices energized from the first source of electricity and adapted to be controlled by the movements of the motor-cars.



4. A system of electrical distribution and signaling for railways, comprising two sources of electrical energy delivering currents different in character, an independent system of conductors from each of said sources of energy, one of said systems of conductors comprising an outgoing feeder and two return-paths, one of said return-paths formed of a continuous rail and the other of a divided rail with interposed reactance-bonds, transformers having their primaries connected across one source of electrical energy and their secondaries across the rails, transformers having their primaries connected across the rails and their secondaries across relay devices, and signaling devices controlled by the relays.

815,892. ENGRAVER'S TOOL. THADDEUS ACKLEY, Warren, Ohio, assignor of one-half to William Douglas Ackley, Warren, Ohio. Filed Apr. 26, 1905. Serial No. 257,520.



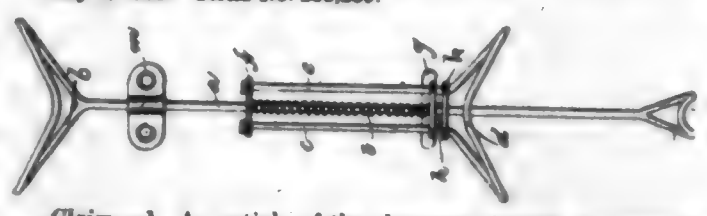
Claim.—1. An engraver's tool comprising a table having a guideway in its top, blocks having lugs fitting in said guideway, one block being pivotally mounted on its lug, a screw-rod engaging both lugs, and means carried by said pivotally-mounted block and normally held in said guideway for preventing said block from turning accidentally.

2. An engraver's tool comprising a table having a guideway in its top, blocks having lugs fitted in said guideway, one block being pivotally mounted on its lug, a screw-rod engaging both lugs, and a flat plate pivotally secured to the right face of said pivot-block having a central portion depending into said guideway.

3. An engraver's tool formed with a plurality of openings in its top, a plurality of pins designed to be accommodated by said openings, a spring mechanism for securing said pins in said openings by frictional engagement, whereby pins of uniform length may be adjusted to project to relatively different extents from said top, for the purpose set forth.

4. In an engraver's tool, the combination with the head having a depending rod, and a post through which said rod is passed and on which said head is mounted, bearings being provided between said head and post, of a base comprising two hemispheroidal members, one forming a socket and the other convex for accommodation by said socket, a nut on said post for securing the latter to said socket, such convex member being open at its top, and a spring-plate movable with said post and socket and having frictional engagement with the inner face of said convex member.

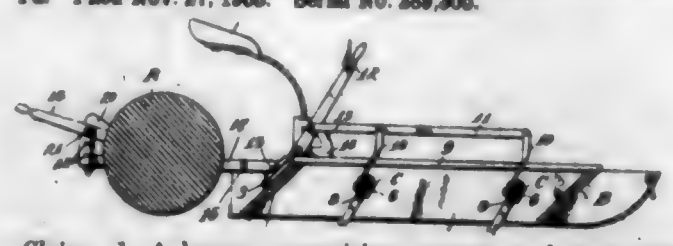
815,893. HAT-HOLDER. CHARLES I. ADAMS, Bath, and CHARLES O. CLARK, Ealing, England; said Adams assignor to said Clark. Filed May 1, 1905. Serial No. 258,259.



Claim.—1. An article of the character described comprising a rod provided with a fixed hat-clip, in combination with a second hat-clip composed of a single piece of wire bent to form a loop and terminating in elongated parallel arms, cross-pieces, connecting said parallel arms, and slidably mounted on said rod, an abutment on said rod, a spring coiled around said rod, engaging said abutment and the inner cross-piece of said second hat-clip to normally draw the latter inwardly, and means for securing said rod to a wall or similar support, substantially as described.

2. An article of the character described, comprising a supporting-rod terminating in inwardly-bent hooks, one of said hooks adapted to form a clip member of a hat-support and the other hook to form a hanger for a garment, in combination with a second hat-clip member interposed between said hooks, means normally tending to draw said second clip member toward said first clip member, and means for securing said rod to a wall or similar support, substantially as described.

815,894. HARROW. JOSEPH C. AGEY and FRANK G. AGEY, Indiana, Pa. Filed Nov. 27, 1905. Serial No. 289,305.



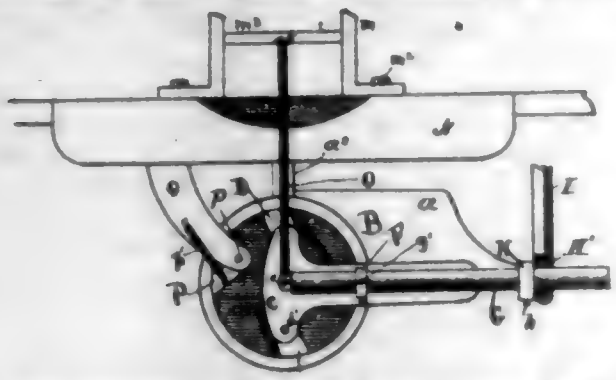
Claim.—1. A harrow comprising runners and cross-pieces, cross-bars journaled in the runners, teeth secured to the cross-bars, means connecting the cross-bars to adjust them to any position, arms secured to the runners, levers connected to the arms, a roller journaled to the levers, and means for regulating the adjustment of the roller.

2. A harrow comprising runners and cross-pieces, cross-bars journaled in the runners, teeth secured to the cross-bars, means connecting the cross-bars to adjust them to any position, arms secured to the runners, levers connected to the arms, a roller journaled to the levers, means for regulatig the adjustment of the roller, a draft-bar, and means connected with the draft-bar for connecting it to the harrow.

815,895. INTERMITTENT GRIP DEVICE. ERNST H. AHLANDER, Chicago, Ill., assignor, by direct and mesne assignments, to The Thomas Wrigley Company, a Corporation of Illinois. Filed Oct. 4, 1902. Serial No. 125,894.

Claim.—1. In an intermittent grip device, the combination of a disk having a peripheral rim on one side face, a vibratable arm loosely mounted adjacent to the rim-face of the disk, a pair of dogs carried by the vibratable arm and entered into the recess of and engaging

with the interior face of the peripheral rim of the disk in one direction of movement of the vibratable arm and disengaged from the interior face of the rim of the disk in the opposite direction of movement of the vibratable arm, a head in adjustable engagement with the vibratable arm, and a rising and falling rod carrying the head and oscillating the vibratable arm for engaging and disengaging the pawls and intermittently revolving the disk, substantially as described.



2. In an intermittent grip device, the combination of a disk having on one side face a peripheral rim, a vibratable arm loosely mounted on the shaft adjacent to the rim-face of the disk, a pair of dogs carried by the vibratable arm and entered into the recess of and engaging with the peripheral rim of the disk in one direction of movement and disengaged from the rim of the disk in the opposite direction of movement, a stop-dog engaging and holding the disk against a return movement, a head engaging the vibratable arm, and a rising and falling rod carrying the head and oscillating the vibratable arm for intermittently revolving the disk, substantially as described.

3. In an intermittent grip device, the combination of a shaft, a disk fixed on the shaft and having a peripheral rim on one side face, a vibratable arm loosely mounted on the shaft, a pair of dogs carried by the vibratable arm and engaging with the interior face of the peripheral rim of the disk in one direction of movement and disengaged from the interior face of the peripheral rim of the disk in the opposite direction of movement, a head engaging the vibratable arm, a rising and falling rod carrying the head, a rocking arm in which the rising and falling rod is mounted, and means for rocking the arm, substantially as described.

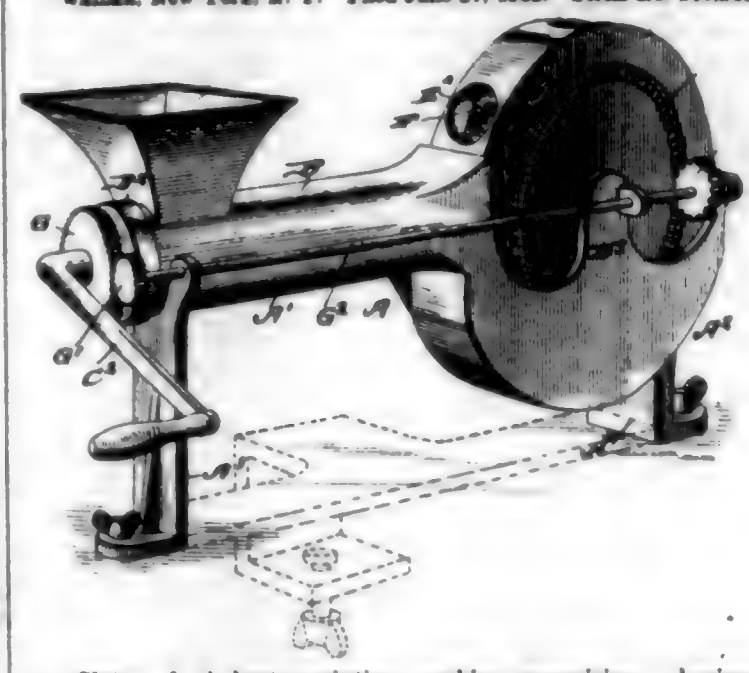
4. In an intermittent grip device, the combination of a shaft, a disk fixed on the shaft, a vibratable arm loosely mounted on the shaft, a pair of dogs carried by the vibratable arm and engaging the disk in one direction of movement and disengaged from the disk in the opposite direction of movement, a head engaging the vibratable arm, a rising and falling rod carrying the head, a rocking arm in which the rising and falling rod is mounted, a pitman or rod, a cam engaged with the pitman or rod, and a revoluble shaft carrying the cam, substantially as described.

5. In an intermittent grip device, the combination of a shaft, a disk fixed on the shaft, a vibratable arm loosely mounted on the shaft, a pair of dogs carried by the vibratable arm and engaging the disk in one direction of movement and disengaged from the disk in the opposite direction of movement, a head engaging the vibratable arm, a rising and falling rod carrying the head, a rocking arm in which the rising and falling rod is mounted, a pitman or rod connected with the rocking arm, a roller on the pitman or rod, a cam engaging with the roller, and a revoluble shaft carrying the cam, and means for returning the pitman or rod, substantially as described.

6. In an intermittent grip device, the combination of a shaft, a disk fixed on the shaft, a vibratable arm loosely mounted on the shaft, a pair of dogs carried by the vibratable arm and engaging the disk in one direction of movement and disengaged from the disk in the opposite direction of movement, a head engaging the vibratable arm, a rising and falling rod carrying the head, a rocking arm in which the rising and falling rod is mounted, a pitman or rod connected with the rocking arm, a roller on the pitman or rod, a cam engaging with the roller, a revoluble shaft carrying the cam, and a spring for returning the pitman or rod, substantially as described.

7. In an intermittent grip device, the combination of a shaft, a disk fixed on the shaft, a vibratable arm loosely mounted on the shaft, a pair of dogs carried by the vibratable arm and engaging the disk in one direction of movement and disengaged from the disk in the opposite direction of movement, a head engaging the vibratable arm, a rising and falling rod carrying the head, a rocking arm in which the rising and falling rod is mounted, a pitman or rod connected with the rocking arm, a roller on the pitman or rod, a cam engaging with the roller, a revoluble shaft carrying the cam, a spring connected at one end with the pitman or rod and having a fixed connection at its other end, and a spring connected at one end with the rising and falling rod and having a fixed connection at its other end, substantially as described.

815,896. BUTTER-PAT-PRINTING MACHINE. Henry G. Arbweiler, New York, N. Y. Filed June 27, 1905. Serial No. 267,248.



Claim.—1. A butter-printing machine comprising a horizontally-arranged cylinder, a feed-screw arranged in said cylinder, a hopper carried by one end of the cylinder, a trough adapted to contain a liquid carried by the opposite end of the cylinder, a rotatable mold-wheel journaled in the sides of said trough and extending into the liquid and forming an end for the cylinder, and means for rotating the feed-screw and the mold-wheel simultaneously.

2. In a machine of the kind described, the combination with a casing, comprising a semicylindrical portion and a semicircular trough portion, a semicylindrical top hinged to the semicylindrical portion of the casing, which with the latter form a complete cylinder, of a cap held upon the end of the cylinder, a conveyer-screw operating within the cylinder, said conveyer-screw having a shaft portion which extends through the said cap, a wheel mounted to revolve within the said trough-section of the casing, said wheel having a series of molds in its periphery, plungers operating within the molds, means for projecting the plungers through the molds and also means for conveying motion from the conveyer to the wheel.

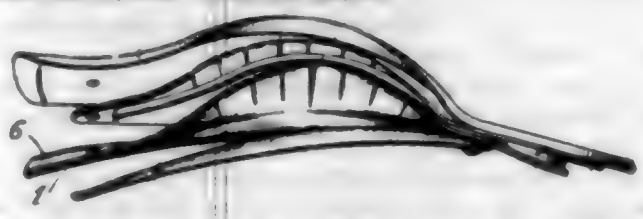
3. In a machine of the kind described, the combination with a casing, comprising a semicylindrical portion and a semicircular-shape trough portion, of a semicylindrical cap hinged to the semicylindrical portion of the casing, and forming when folded upon the same, a complete cylinder, the said semicircular-shape trough portion having a lateral extension forming a hopper which communicates with the trough portion through perforations formed in the latter, the said trough portion also having a stub-bolt projecting therefrom, a mold-wheel loosely mounted upon the bolt, a cam fixedly held upon the bolt, plungers carried by the wheel and operating in the molds, said plungers having rods projecting therefrom whose inner ends contact with the cam, a conveyer-screw mounted in the cylinder, a gear carried by the conveyer-screw, a shaft journaled upon the casing and having a pinion meshing the said gear, said shaft also having a second gear which meshes a rack-section upon the side of the wheel, and a crank for operating the conveyer.

4. A machine of the kind described, comprising a casing, one end of which is formed with a semicylindrical section, and its opposite end with a semicircular trough-section, the said trough-section having a lateral projection upon one side, which forms a hopper, and a bolt projecting inwardly from its opposite side, a semicylindrical section hinged to the semicylindrical portion of the casing, a hopper formed upon the said section, a cap arranged upon the ends of the said semicylindrical portion and section, to hold the sections together to provide a cylinder, a conveyer arranged within the cylinder and having a shaft portion projecting through the cap, a gear mounted upon the shaft, a wheel mounted upon the bolt within the trough, said wheel having its periphery contacting with the open end of the cylinder, said wheel having a series of depressions in its periphery forming molds, plungers operating in the molds, an eccentric cam held upon the said bolt, rods projecting from the plungers and having antifriction-rollers at their free ends which engage the cam, springs surrounding each plunger-rod for normally holding the plungers in the inner ends of the molds and the rollers in engagement with the cam, a shaft journaled upon the side of the casing and having a

pinion meshing the gear carried by the conveyer, a second pinion meshing a rack-section formed in the wheel, and a crank-handle carried by the conveyer-shaft, all for the purpose specified.

5. In a machine of the kind described, the combination with a casing, comprising a cylindrical section, and a semicircular trough-section, the latter having a hopper upon one side thereof, adapted for the reception of ice, and which communicates with the trough-section, of a mold-wheel journaled within the trough-section, the periphery of said wheel extending down into the trough portion of the said section, a conveyer operating in the cylindrical portion, and means connecting the conveyer and mold-wheel and imparting motion to the latter when the conveyer is operated.

815,897. **ARCH-PROP.** JAMES W. ARROWSMITH, Morristown, N. J. Filed Mar. 22, 1905. Serial No. 251,504.



Claim.—1. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate secured to the upper face of the main plate and having a heel portion and a cushion of resilient material between the heel portion of the auxiliary plate and the heel portion of the main plate, substantially as described.

2. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate secured at its forward end to the upper face of the main plate and having a heel portion and a cushion of resilient material between the heel portion of the auxiliary plate and the heel portion of the main plate substantially as described.

3. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate of resilient metal secured to the upper face of the main plate and having a heel portion, and a cushion of resilient material between the heel portion of the auxiliary plate and the heel portion of the main plate, substantially as described.

4. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate secured to the upper face of the main plate and having a heel portion and a cushion of resilient material secured to the under side of the heel portion of the auxiliary plate and resting on but not secured to the heel portion of the main plate, substantially as described.

5. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate secured to the upper face of the main plate and having a heel portion, a cushion of resilient material between the heel portion of the auxiliary plate and the heel portion of the main plate and a covering of non-metallic material curved to fit the upper face of the main plate and overlying the auxiliary plate and main plate substantially as described.

6. In an arch-prop or instep-support the combination of a main plate curved to fit the arch of the instep having one side upturned to fit the side curve of the instep and having a heel portion, an auxiliary plate above the main plate and having a heel portion extending over the heel portion of the main plate, a cushion of resilient material between the heel portion of the auxiliary plate and the heel portion of the main plate, a covering of non-metallic material curved to fit the upper face of the main plate and overlying the main plate and auxiliary plate, and a fastening device passing through the covering, auxiliary plate and main plate and securing them together substantially as described.

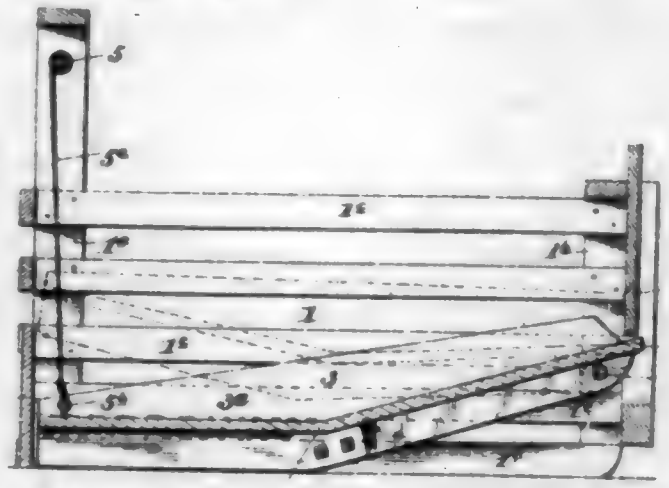
7. In an arch-prop or instep-support, the combination of a main plate curved to fit the arch of the instep and having one side upturned to fit the side of the instep, of an auxiliary plate also curved to fit the arch of the instep and secured to the upper face of the main plate, and a cushion interposed between a portion of the auxiliary plate and the main plate substantially as described.

8. In an arch-prop or instep-support the combination of a relatively rigid main plate shaped to fit the curve of the instep, a relatively yielding auxiliary plate also shaped to fit the arch of the instep secured on the upper face of the main plate and one or more cushions between portions of the auxiliary plate and the main plate, substantially as described.

9. In an arch-prop or instep-support the combination of a relatively rigid main plate shaped to fit the curve of the instep, a relatively yielding auxiliary plate also shaped to fit the arch of the instep secured on the upper face of the main plate and one or more cushions between portions of the auxiliary plate and the main plate and a covering of non-metallic material overlying the auxiliary plate, substantially as described.

10. In an arch-prop or instep-support the combination of a main plate shaped to fit the arch of the instep and provided on its side with resilient tongues, an auxiliary plate of resilient material also shaped to fit the arch of the instep and provided on its side with resilient tongues, and a cushion between the resilient tongues of the auxiliary plate and main plate, substantially as described.

815,898. **STOCK-LOADER.** EDGAR ARTHUR, Bethany, Mo., assignor of one-half to Willis C. Arthur, Bethany, Mo. Filed Oct. 17, 1905. Serial No. 283,176.

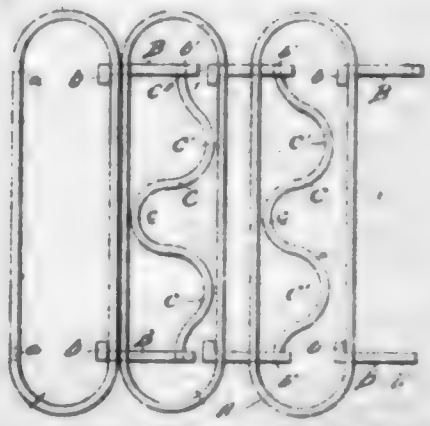


Claim.—1. A contrivance of the character described, comprising a pen equipped with a pivoted platform or gangway, having its bottom sloping from the ends centrally means for adjusting and suspending said platform or gangway.

2. A contrivance of the character described, employing a pen equipped with a pivoted platform or gangway having its bottom sloping from the ends centrally, and means for vertically adjusting said gangway.

3. A contrivance of the character described, comprising a pen equipped with a pivoted platform having its bottom sloping from its ends centrally, means for vertically adjusting and suspending said platform, said pen also having at its entrance end a gate effective for access directly from the ground-surface, and a gate or door effective for delivery or egress from the upper part or end of the pen.

815,899. **BRACELET.** ANTHONY H. BLISS, North Attleboro, Mass. Filed Jan. 5, 1906. Serial No. 294,729.


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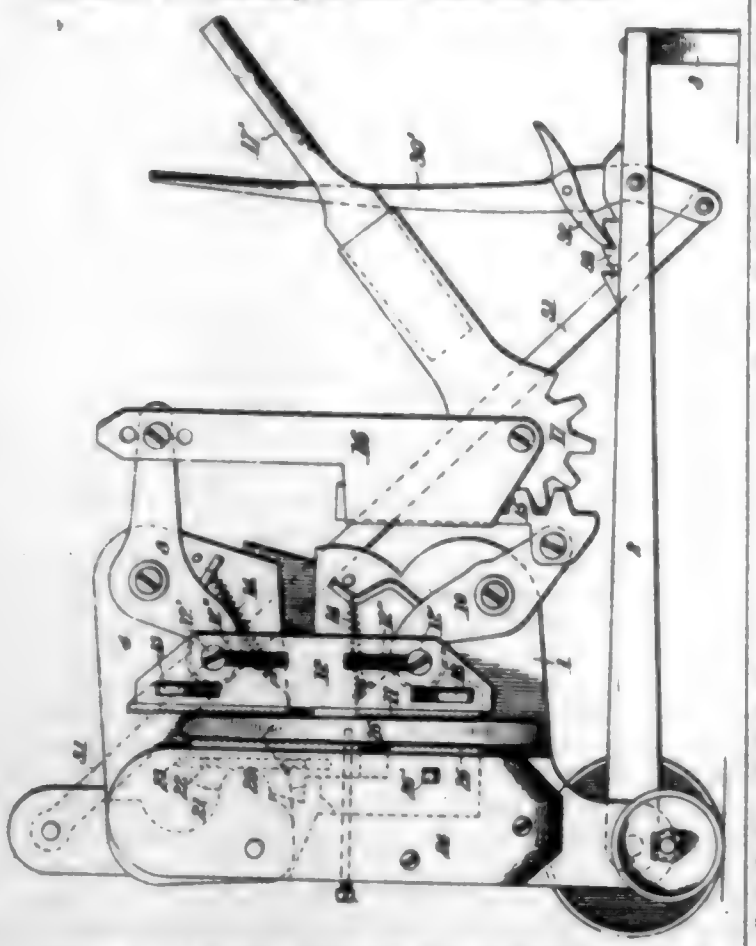
last-named link member disposed between the ends of said fingers and supported between its ends.

3. In a device of the class described, the combination of adjacent link members, a pair of fingers attached to each link member and entering the next adjacent link member an arched spring within said last-named member and centrally supported therein, the ends of said spring engaging the ends of said fingers to hold them yieldingly within said last-named member.

4. In a device of the class described, the combination of adjacent hollow link members, a pair of connecting-fingers having a slidable engagement with the same, a head on one end of the fingers to prevent their withdrawal from one member and a centrally-supported spring uniting the other ends of the fingers in the adjacent link member.

5. In a device of the class described, the combination of adjacent link members, a pair of fingers attached to each link member and entering the next adjacent link member, a spring connecting the ends of said fingers therein, consisting of a supported central loop and a side bow on each side thereof between said central loop and the ends of the fingers.

815,800. TIRE-SHRINKING MACHINE. DON O. BRACKETT, Forest City, N. C. Filed Aug. 30, 1904. Serial No. 221,485.



Claim.—1. A machine of the character described, comprising a support, a swinging arm pivoted thereto, intermediately-pivoted levers mounted one upon the free end of said arm and the other upon the support, gripe pivotally attached to the inner ends of said levers, a stationary grip carried by the support and disposed opposite to one of said pivoted gripe, a sliding grip mounted upon said support and disposed opposite to the other of said pivoted gripe, an operative connection between said sliding grip and the swinging arm, and means connected with the outer ends of said intermediately-pivoted levers for effecting the movement of the pivoted gripe and swinging arm.

2. A machine of the character described, comprising a support, a swinging arm pivoted thereto, intermediately-pivoted levers mounted one upon the free end of said arm and the other upon the support, gripe pivotally attached to the inner ends of said levers, a stationary grip carried by the support and disposed opposite to one of said pivoted gripe, a sliding grip mounted upon said support and disposed opposite to the other of said pivoted gripe, an operative connection between said sliding grip and the swinging arm, means connected with the outer ends of said intermediately-pivoted levers for effecting the movement of the pivoted gripe and swinging arm, and a gage arranged between the pairs of gripe against which the tire is placed.

3. A machine of the character described comprising a support, a swinging arm carried thereby, intermediately-pivoted levers mounted one on the free end of said arm and the other upon the support, gripe pivotally attached to the inner ends of said levers, an operative connection between said gripe, a sliding grip carried by the support and disposed opposite to one of the pivoted gripe, a stationary grip carried by the support and disposed opposite to the other of said pivoted gripe, an operative connection between said sliding grip and the swinging arm, and means connected with the outer ends of said intermediately-pivoted levers for effecting the movement of the pivoted gripe and swinging arm.

4. A machine of the character described comprising a support, a swinging arm carried thereby, intermediately-pivoted levers mounted one on the free end of said arm and the other upon the support, gripe pivotally attached to the inner ends of said levers, a plate having a sliding and pivotal connection with said levers and a sliding connection with the gripe, a sliding grip mounted on the support and disposed opposite to one of said pivoted gripe, a stationary grip carried by the support and disposed opposite to the other of said pivoted gripe, an operative connection between said sliding grip and the swinging arm, and means connected with the outer ends of said intermediately-pivoted levers for effecting the movement of the pivoted gripe and swinging arm.

5. A machine of the character described comprising a support, a swinging arm carried thereby, intermediately-pivoted levers mounted one on the free end of said arm, and the other upon the support, gripe pivotally attached to the inner ends of said levers, a plate having a sliding and pivotal connection with said levers and provided with slots, a sliding grip mounted on the support and disposed opposite to one of said pivoted gripe, projections carried by the gripe working in said slots, a stationary grip carried by the support and disposed opposite to the other of said pivoted gripe, an operative connection between said sliding grip and the swinging arm, and means connected with the outer ends of said intermediately-pivoted levers for effecting the movement of the pivoted gripe and swinging arm.

815,801. NURSERY TREE-DIGGER. CHRISTIAN BROSEY, Medway, Ohio, administrator of David Poigly, deceased. Filed Oct. 4, 1905. Serial No. 281,337.



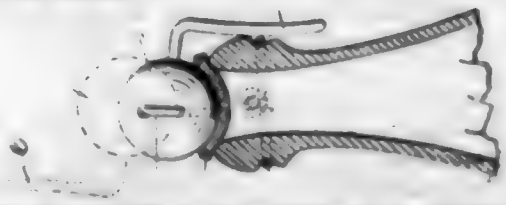
Claim.—1. In a tree-digger, the cutter-blade having a rhomboid vertical portion inclined forward and downward provided with an inward perforated securing-flange at its upper end, and with an outward horizontal portion of trapezoid form extending the entire breadth of the vertical portion, substantially as specified.

2. In a tree-digger, the combination with a beam, and a front supporting and guide wheel, of the straight and oblique handles, a cutter-blade having a right-angle outward-extending horizontal cutter portion, and detachably connected thereto an inclined lifter-plate, substantially as specified.

3. In a tree-digger, the combination with the beam and handles, of a cutter-blade having a broad vertical cutter portion, and a broad horizontal cutter portion, a lifter-plate, an inclined bearing secured to said plate, and means for attaching said bearing to said horizontal cutter portion, substantially as specified.

4. In a tree-digger, the combination with a cutter having rhomboid vertical cutting portion and at its lower end a horizontal cutting portion, of a detachable inclined lifter-plate on said horizontal cutting portion, substantially as specified.

815,802. SEALING DEVICE FOR BOTTLES. OLOF W. CARDELL and SVEN T. BERGSTRÖM, Gothenburg, Sweden. Filed June 8, 1905. Serial No. 264,359.

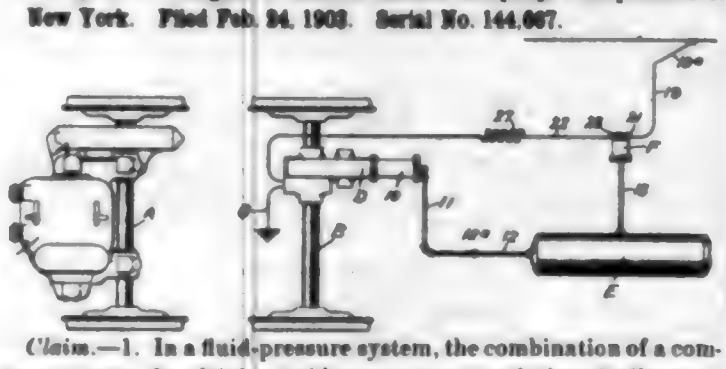


Claim.—1. A bottle-seal consisting of a spherical body and means for securing said body to the bottle-neck, said body being eccentrically pivoted on said means.

2. A bottle-seal consisting of a disk adapted to be placed on the bottle-mouth, a spherical body adapted to press on said disk, and

means for connecting said body to the bottle-neck, the said body being eccentrically pivoted to said means.

815,903. **FLUID-PRESSURE SYSTEM.** FRANK R. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 24, 1903. Serial No. 144,067.



Claim.—1. In a fluid-pressure system, the combination of a compressor, means for driving said compressor, and electrically-operated means responsive to variations of pressure in the system to connect and disconnect said compressor and driving means.

2. In a fluid-pressure system, the combination of a compressor, means for driving said compressor, electrically-actuated means for connecting and disconnecting said compressor and driving means, and means responsive to variations of pressure in the system for controlling the action of said electrically-actuated means.

3. In a fluid-pressure system, the combination of a compressor, means for driving said compressor, an electrically-actuated clutch for connecting and disconnecting said compressor and driving means, and means responsive to variations of pressure in the system for controlling the action of said clutch.

4. In a fluid-pressure system, the combination of a compressor, means for driving said compressor, a magnetic clutch for throwing said compressor into and out of gear with said driving means, and a governor responsive to variations of pressure in the system for opening and closing the circuit for said clutch.

5. In a fluid-pressure system, the combination of a car-axle, a compressor mounted thereon and adapted to be driven thereby, a magnetic clutch for throwing said compressor into and out of gear with said axle, a circuit for said clutch, and a governor connected in said system to operate upon a variation of fluid-pressure in said system and provided with means for opening and closing said circuit.

6. In a fluid-pressure system, the combination of a car-axle, a compressor geared to said car-axle and adapted to be driven thereby, and electrical means for throwing said compressor into and out of gear with said axle.

7. In a fluid-pressure system, the combination of a magnetic clutch, an electric circuit therefor, and means responsive to variations of pressure in the system to open and close said circuit.

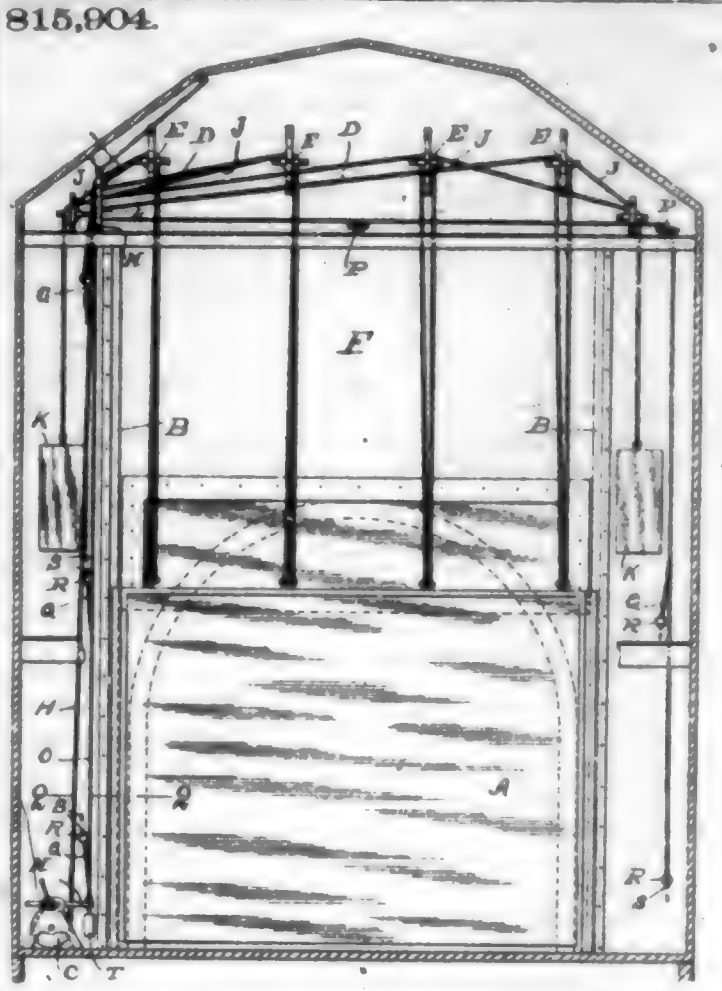
8. In a fluid-pressure system, the combination of a car-axle, a compressor, gearing including a magnetic clutch for driving said compressor from said axle, an electric circuit for said clutch, and a casing inclosing said gearing and the movable parts of said compressor.

9. The combination of a motor, a pump, mechanism connecting said two elements including a clutch having means whereby it is electrically operated, said mechanism being constructed to permit said motor to run continuously, an electric switch in the circuit of the clutch-operating device, and mechanism operated by variations in the condition of the fluid treated by the pump for opening and closing said switch and thereby throwing the clutch into and out of action, substantially as described.

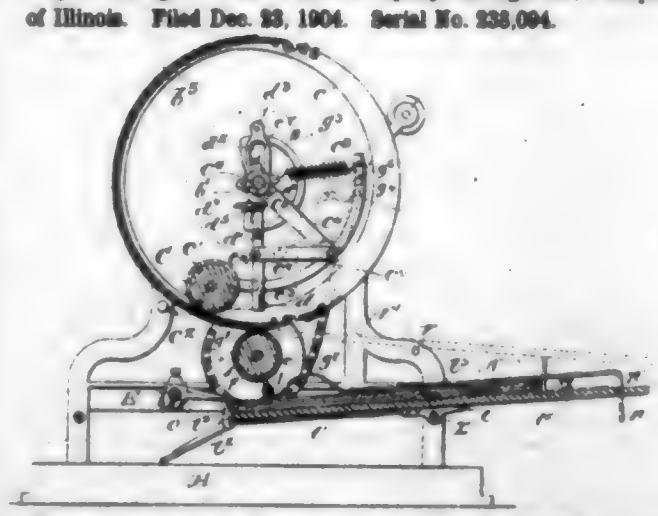
815,904. **MEANS FOR HANGING AND OPERATING THEATER-CURTAINS.** JAMES E. CRANNON, Chicago, Ill. Filed Feb. 29, 1904. Serial No. 194,847.

Claim.—The herein-described means for operating theater-curtains comprising a windlass, cables connecting same with the curtain, counterweights connected with said curtains, locking means on said windlass, and releasing means connected with said locking means comprising a cable, a weight carried thereby and adapted to engage said releasing means to operate same when said cable is drawn in one direction, branch cords or cables connected with said cable and extending to various points in the building, devices secured to the walls of the building adapted to coact with devices secured to the free ends of said branch cords or cables for holding same at one limit of their movement, each of said branch cables being adapted when drawn in one direction to raise said weight to release said windlass, substantially as described.

815,904.



815,905. **DUPLICATING APPARATUS.** EDWIN A. COX, London, England, assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 23, 1904. Serial No. 238,094.



Claim.—1. In duplicating apparatus, the combination with a drum and a pressure-roller, of a rotary sheet-feeder in juxtaposition to said roller, operating around the same and supported from the shaft thereof, said sheet-feeder comprising a rod having a covering of elastic material such as rubber, substantially as set forth.

2. In duplicating apparatus, the combination with a drum and a pressure-roller having a shaft, of collars carried by said shaft, and a sheet-feeder carried by said collars and comprising a rod having a covering of elastic material such as rubber, substantially as set forth.

3. In duplicating apparatus, the combination with a drum, of a shaft below said drum and means for transmitting motion thereto, a pressure-roller mounted upon said shaft, a sheet-feeder loosely carried by said shaft and comprising a rod having a covering of elastic material such as rubber, and a clutch between said sheet-feeder and said shaft, substantially as set forth.

4. In duplicating apparatus, the combination with a drum and a roller, of a feed-board, a rock-shaft for supporting the same, means for actuating said shaft, and a pivoted paper-guide coacting with said feed-board, substantially as set forth.

5. In duplicating apparatus, the combination with a drum and pressure-roller, of an adjustable feed-board and a paper-guide coacting therewith, and means for simultaneously throwing said feed-board and said pressure-roller to operative or inoperative position, substantially as set forth.

6. In duplicating apparatus, the combination with a drum and pressure-roller, of mechanism for automatically feeding successive sheets between said drum and roller, and means for throwing said

mechanism out of operative relation and for manually feeding sheets between said drum and roller, said means including a feed-board and mechanism for supporting the same in different positions relatively to said drum and pressure-roller, substantially as set forth.

7. In duplicating apparatus, the combination with a drum and roller, of means for automatically feeding sheets between said drum and roller, and mechanism for throwing such automatic feed out of operative condition, a feed-board and means for supporting the same in one position when said automatic feed is in operative condition and in another position to adapt the same for the manual feeding of sheets between said drum and roller, substantially as set forth.

8. In duplicating apparatus, the combination with a drum and roller, of means in juxtaposition to said roller for automatically feeding sheets between the same, and a feed-board for supporting such sheets, the same having a facing of elastic material such as rubber, directly underlying said roller, substantially as set forth.

9. In duplicating apparatus, the combination with a drum and roller, of means in juxtaposition to said roller for automatically feeding sheets between the same, and a feed-board for supporting such sheets, the same having a facing of elastic material such as rubber arranged directly below said automatic feeding means and underlying said roller, substantially as set forth.

815,903. GARMENT-SUPPORTER. DAVID H. CROSIER, Cleveland, Ohio. Filed Apr. 13, 1905. Serial No. 255,430.

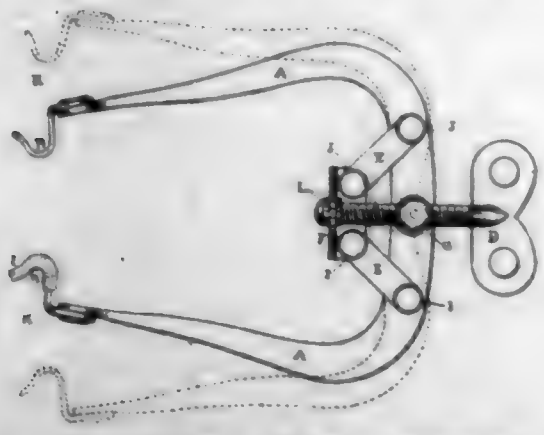


Claim.—1. The combination in a garment-supporter, of a metallic backing-piece having a vertical slot in its lower extremity closed at the lower end, recurved edges for said plate approaching one another in front of said backing-piece, but separated to form a vertical opening broader than said before-mentioned slot, and a flexible plate having its outer edges inclosed between said backing-piece and the recurved edges of the same, and provided with a vertical cut in the center, substantially as described.

2. The combination in a garment-supporter, of a backing-piece provided with a vertical slot, integral recurved edges for said plate separated in front by a wider opening than said slot, and a flexible plate inserted underneath said recurved edges, and provided with a central cut, whereby a portion of a garment may be inserted transversely through said slot, cut and opening from the rear, but cannot be withdrawn in the same direction, substantially as described.

3. In a garment-supporter, a backing-piece provided with a vertical slot, recurved edges for said backing-piece extending in front of the sides of the said backing-piece, and separated in front by an opening wider than said slot, a flexible plate secured underneath said recurved edges and provided with a vertical cut, said flexible plate being of approximately the same thickness as the said slot, substantially as described.

815,907. DENTAL EXPANDER OR DILATOR. CLEVELAND G. DAVIS, Manistee, Mich. Filed Mar. 27, 1905. Serial No. 252,349.



Claim.—1. The combination with the expansible bow, of the teeth or gums engaging hooks pivoted to the ends of the bows, and rubber tubing covering the hooks.

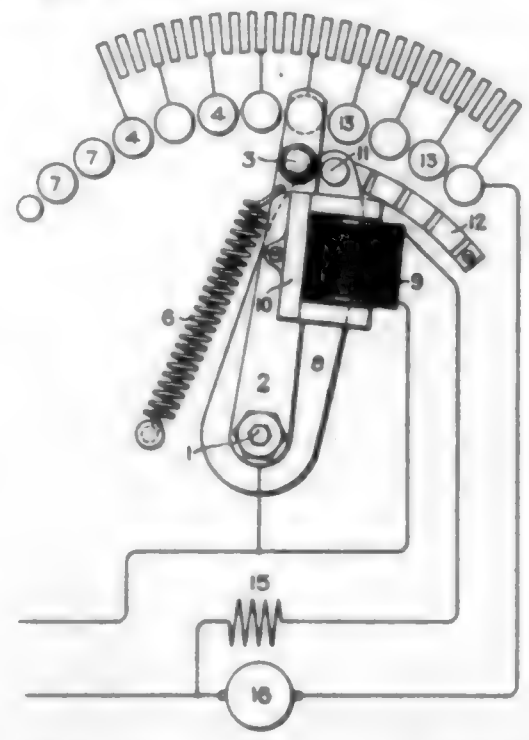
2. The combination with the expansible bow, of the teeth or gums engaging hooks pivoted on the free ends of the bow and a lip rest and dilator frictionally engaging the base of the hooks.

3. The combination with an expansible bow, of hooks pivoted on the free ends of the bows and consisting of an angular base-plate having two upturned ends, the horizontal part of the base-plate being pivoted to the ends of the bows.

4. A lip dilator and support consisting of a cross-bar spoon-like lip-support extending from each side thereof, and legs and a plate depending from said cross-bar.

5. The combination with the expansible and contractible bows and screw for controlling the same, of teeth-hooks pivoted on the ends of the bows, said hooks consisting of an angular plate with two upturned ends, the horizontal part of the angular hook-plate being pivoted on the ends of the bows.

815,908. RHEOSTAT FOR STARTING AND CONTROLLING ELECTRIC MOTORS. WHITTERTON J. DAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 14, 1904. Serial No. 224,384.



Claim.—1. The combination with a rheostat switch-lever, of a no-voltage release-magnet, and means for adjusting said magnet to several points in the path of said lever.

2. The combination with a rheostat switch-lever, of starting and controlling resistances, a no-voltage release-magnet, and means for shifting said magnet to various points along the controlling resistances.

3. The combination with a rheostat of a pivoted arm, a no-voltage release-magnet thereon, and a switch-lever movable thereto to vary the resistance.

4. The combination with a rheostat of a pivoted arm, a no-voltage release-magnet mounted thereon, and a switch-lever pivoted concentrically with said arm and movable toward said magnet to vary the resistance.

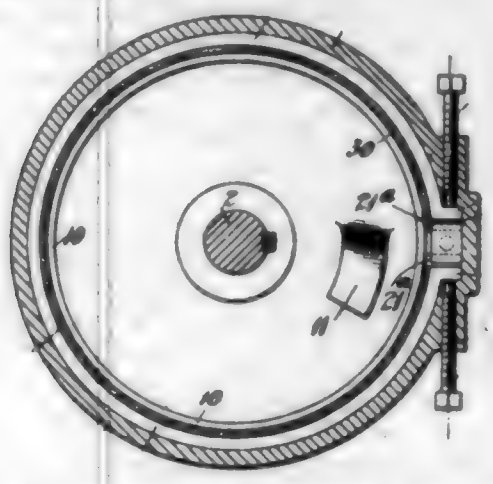
5. The combination with a motor starting and controlling rheostat of a pivoted arm, a no-voltage release-magnet mounted thereon, and a switch-lever movable to said magnet in one direction for starting, said lever and arm being movable together in the same direction for controlling.

6. The combination with a rheostat switch-lever, of starting and controlling resistances connected with contacts arranged concentric with the point of said lever, an arm pivoted concentric with said contacts, a no-voltage release-magnet mounted on said arm, and means for retaining said arm at any one of the controlling-contacts.

7. The combination with a rheostat switch-lever, of starting and controlling resistances over which said lever is movable, an arm movable past the controlling resistances, a no-voltage release-magnet on said arm, a keeper therefor on the lever, and a spring to return the lever to zero.

8. The combination with a spring-returned rheostat switch-lever, of starting and controlling resistances over which said lever is movable, an arm movable past the controlling resistances, a catch on the arm, a notched quadrant cooperating therewith, a no-voltage release-magnet on said arm, and a keeper therefor on the lever.

815,909. **FRICTION-CLUTCH.** TALBOT C. DEXTER, Pearl River, N. Y. Filed Aug. 29, 1905. Serial No. 276,286.



Claim.—1. A friction-clutch comprising a friction-wheel, a split friction-band encircling the friction-wheel, a wedge supported between the ends of the split band, and means engaging the ends of the band in opposition to the wedge.

2. A friction-clutch comprising a friction-wheel, a split friction-band encircling the friction-wheel, a wedge supported between the ends of the split band, means for adjusting the wedge for expanding the band and for allowing the contraction of the band, and adjustable means engaging the ends of the split band in opposition to the wedge for contracting the band and securing the ends of the band against the wedge.

3. A friction-clutch, comprising a friction-wheel, a split friction-band encircling the friction-wheel and formed with lugs or flanges at its ends, an adjustable wedge supported between the said lugs or flanges and means engaging said lugs or flanges in opposition to the wedge.

4. A friction-clutch, comprising a friction-wheel, a drum encircling the friction-wheel, a split friction-band inclosed between the wheel and drum, a wedge supported between the ends of the said split band, means for adjusting said wedge, and means engaging the ends of the split band in opposition to the wedge.

5. A friction-clutch, comprising a driven member, a driving member encircling the driven member, a split friction-band inclosed between the driven and driving members, said split band having radially-projecting lugs or flanges at its ends, a wedge movably supported between the said lugs or flanges, means for adjusting said wedge transversely of said lugs or flanges, and adjustable means engaging said lugs or flanges to hold them in contact with the wedge.

6. A friction-clutch, comprising a friction-wheel, a drum surrounding said wheel, a split friction-band interposed between the wheel and drum and provided with outwardly-projecting lugs or flanges, inclined inwardly-presented faces formed upon said lugs or flanges, a wedge-shaped block supported between the lugs or flanges in engagement with said inclined faces, means for adjusting said block, and means for confining the lugs or flanges in engagement with the block.

7. A friction-clutch, comprising a friction-wheel, a drum surrounding said wheel, a split friction-band interposed between the wheel and drum and provided with lugs or flanges projecting approximately radial to the friction-wheel, the inwardly-presented faces of said lugs or flanges being inclined transversely thereof, a wedge-shaped block supported between the lugs or flanges in engagement with said inclined faces, means for adjusting said block transversely of the lugs or flanges, and means for confining the lugs or flanges in engagement with the block.

8. A friction-clutch, comprising a friction-wheel, a drum surrounding said wheel, a split friction-band interposed between the wheel and drum and provided with outwardly-projecting lugs or flanges, a wedge-shaped block between the lugs or flanges and movable bodily transversely thereof, means for adjusting said block, and means for confining the lugs or flanges in engagement with the block.

9. A slip friction-clutch, comprising a friction-wheel, an oscillatory driving-drum encircling the friction-wheel, a split friction-band inclosed between the wheel and drum, a wedge supported between the ends of the split band, means for adjusting the wedge, means engaging the ends of the split band in opposition to the wedge, and means for operating the drum.

10. A slip friction-clutch, comprising a driven friction-wheel, an oscillatory driving-drum encircling the friction-wheel, a split friction-band inclosed between the wheel and drum and provided with radially-projecting lugs or flanges at its ends, a wedge movably supported between said lugs or flanges, means for adjusting said wedge, adjustable means engaging said lugs or flanges in opposition to said wedge, and operating means for oscillating the drum.

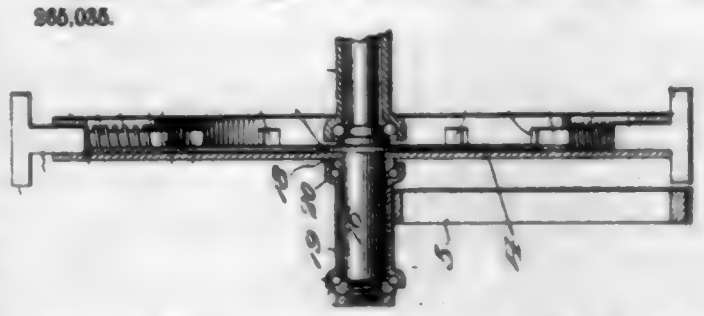
11. A slip friction-clutch comprising a driven friction-wheel, a driving-drum surrounding said wheel and formed with a radial recess or pocket, a split friction-band interposed between the wheel and drum and formed with lugs or flanges which project into said recess or pocket of the drum, a wedge-shaped block supported between said lugs or flanges, a screw for adjusting the said block, screws seated in the drum and engaging the outer faces of said lugs or flanges in opposition to the said wedge, and operating means including a rotary crank and a pitman for oscillating said driving-drum.

12. A friction-clutch comprising a wheel-shaped member, a drum-shaped member surrounding the wheel-shaped member, a split friction-band within the drum formed with outwardly-projecting lugs or flanges, friction material interposed between the split band and the wheel-shaped member, a wedge-shaped block, supported between the adjacent faces of said lugs or flanges, a screw for adjusting said block, and screws seated in the drum and engaging the outer faces of said lugs or flanges.

13. A friction-clutch, comprising a friction-wheel, a drum surrounding the friction-wheel and formed with a radial recess or pocket, a split friction-band within the drum formed with outwardly-projecting lugs or flanges, which rest in said recess or pocket, a wedge-shaped block supported in said recess or pocket between the adjacent faces of said lugs or flanges, a screw for adjusting said block, and tangential screws seated in the drum and projecting into said recess or pocket in engagement with the outer faces of said lugs or flanges.

14. A friction-clutch, comprising a friction-wheel, a concentric drum surrounding the friction-wheel, and formed with a radial recess or pocket, a split friction-band within the drum formed with outwardly-projecting lugs or flanges which rest in said recess or pocket, a wedge-shaped block supported in said recess or pocket between the adjacent faces of said lugs or flanges, a screw-bolt projecting from the wedge-block parallel with the axis of the friction-wheel for adjusting said block, a nut threaded upon said bolt and engaging the drum, and screw-bolts seated in the friction-drum and engaging the outer faces of said lugs or flanges.

815,910. **AUTOMOBILE SLEIGHING ATTACHMENT.** CHRISTOPHER C. DOLAN, Lockport, N. Y. Filed June 13, 1905. Serial No. 265,035.



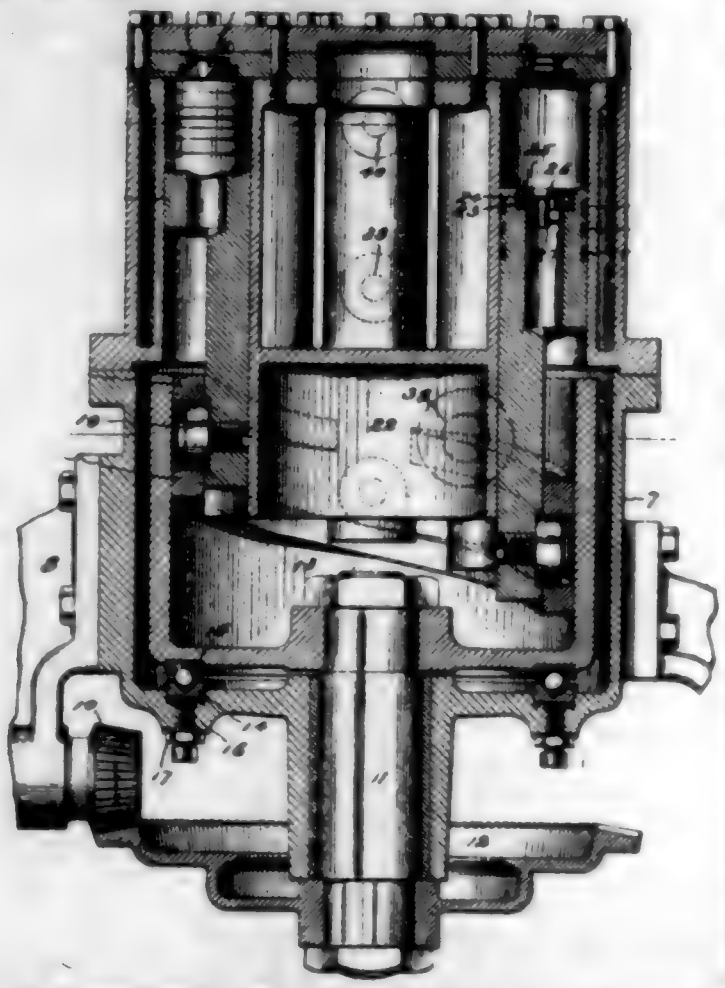
Claim.—1. The combination with a vehicle and its axle, of a propelling-wheel fixed upon and for rotation with the axle, said wheel being provided with a horizontal flange having guide-openings, a bearing-ring attaching to the wheel at a point beyond the flange, spaced members interposed between the bearing-ring and wheel and constituting guides, yieldable surface-engaging members having shanks arranged in the guides and movable through the openings in the flange, and springs for maintaining the engaging members in normal projected condition, said members being extended laterally beyond their shanks for contact with the periphery of the wheel to limit their inward movement.

2. The combination with a vehicle and its axle, of a propelling member fixed upon the latter and provided with surface-engaging members, a sleeve provided on the propelling member, a runner having a hub rotatively mounted on the sleeve and antifriction members interposed between the hub and sleeve.

815,911. **AMMONIA-PUMP.** ARTHUR H. EDDY, Windsor, Conn. Filed May 4, 1904. Serial No. 206,288.

Claim.—1. A pump having a tight case containing concentrically-arranged cylinders, each cylinder having an inlet-opening at one end and an outlet-opening at the other end, a rotatable cam located near one end of and inclosed in the case, the axis of the cam extending parallel with the axes of the cylinders, means for rotating

the cam, pistons with fluid-passages through them located in the cylinders and adapted to be positively reciprocated by the rotation of the cam, valves controlling the passages through the pistons carried by the pistons and valves controlling the openings at one end of the cylinders held by the case, substantially as specified.



2. A pump having a case, a rotatable cam in the case, means for rotating the cam, pistons located in cylinders in the case and adapted to be positively reciprocated by the rotation of the cam, inlet-valves carried by the pistons, discharge-valves held by the case, and a cooling-chamber surrounding the cylinders in the case, substantially as specified.

3. A pump having a case, a rotatable cam in the case, means for rotating the cam, a ball-ring at the bottom of the case, balls located between the ring and the cam, pistons located in cylinders in the case and adapted to be positively reciprocated by the rotation of the cam, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

4. A pump having a case, a rotatable cam in the case, means for rotating the cam, a ball-ring at the bottom of the case, means for adjusting the ball-ring axially of the cam, balls located between the ring and the cam, pistons located in cylinders in the case and adapted to be positively reciprocated by the rotation of the cam, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

5. A pump having a case, a rotatable cam in the case, means for rotating the cam, pistons located in the cylinders in the case and having shanks that are adapted to be reciprocated by but held against rotation by the cam, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

6. A pump having a case, a rotatable cam in the case, means for rotating the cam, pistons located in cylinders in the case and adapted to be reciprocated by the rotation of the cam, a flat inlet-valve seat in each piston, a flat disk carried by each piston and adapted to open from and close against the inlet-valve seat, and opposite each piston a flat discharge-valve seat and a flat valve-disk adapted to open from and close against the flat discharge-valve seat, substantially as specified.

7. A pump having a cam-case, a rotatable cam in the cam-case, means for rotating the cam, a piston-case secured to the cam-case, pistons located in cylinders in the piston-case and adapted to be reciprocated by the rotation of the cam, inlet-valves carried by the pistons, a valve-plate secured to the piston-case, discharge-valves located in openings in the valve-plate and a head-plate secured to the valve-plate, substantially as specified.

8. A pump having a cam-case, a rotatable cam in the cam-case, an arbor extending from the cam through the bottom of the cam-case, a gear on the arbor below the cam-case, a pulley and gear for driving the cam-gear, a piston-case secured to the cam-case, pistons located in the cylinders in the piston-case and adapted to be reciprocated by the rotation of the cam, inlet-valves carried by the pistons, a valve-plate secured to the piston-case, discharge-valves located in openings in the valve plate, and a head secured to the valve-plate, substantially as specified.

9. A pump having a cam-case, a rotatable cam in the cam-case, means for rotating the cam, a piston-case having a hub that fits the interior of the rotatable cam, pistons located in cylinders in the piston-case, the shanks of said pistons on the inside fitting grooves in the hub and on the outside fitting the interior of the cam and having rollers engaged by the cam, inlet-valves carried by the pistons, a valve-plate secured to the piston-case, discharge-valves located in openings in the valve-plate, and a head-plate secured to the valve-plate, substantially as specified.

10. A pump having a cam-case, a bearing at the bottom of the cam-case, an arbor extending through the bearing, a gear attached to the lower end of the arbor outside of the cam-case, a cylindrical cam attached to the upper end of the arbor inside of the cam-case, a piston-case secured to the cam-case and containing cylinders, pistons located in the cylinders and adapted to be reciprocated by the rotation of the cam, inlet-valves carried by the pistons, a valve-plate secured to the piston-case, discharge-valves located in openings in the valve-plate, and a head secured to the valve-plate, substantially as specified.

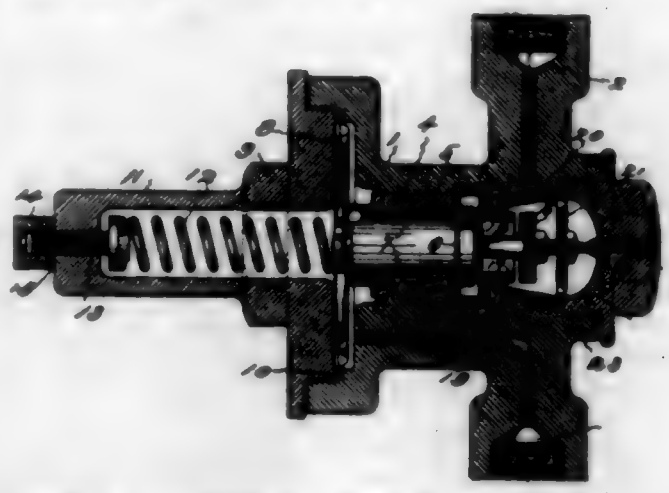
11. A pump having a case, a rotatable cylinder in the case, cams secured to the interior of the rotatable cylinder, pistons located in cylinders in the case and provided with rolls engaging the cams, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

12. A pump having a case, a rotatable cam in the case, means for rotating the cam, pistons having cylindrical heads and semicylindrical shanks located in cylinders in the case, rolls mounted on the piston-shanks and adapted to engage the cam, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

13. A pump having a case, a rotatable cylinder in the case, means for rotating the cylinder, cam-ribs secured to the interior of the rotatable cylinder, pistons located in cylinders in the case, the shanks of the pistons having rolls lying between the cam-ribs and having their outer faces fitting the interior walls of the cam-ribs, inlet-valves carried by the pistons, and discharge-valves held by the case, substantially as specified.

14. A pump having a tight case containing concentrically-arranged cylinders, a rotatable cam located near one end of and inclosed in the case, the axis of the cam extending parallel with the axes of the cylinders, means for rotating the cam, pistons with fluid-passages through them arranged in the cylinders in the case at one side of the cam and adapted to be positively reciprocated by the rotation of the cam, valves controlling the passages through the pistons carried by the pistons, and valves controlling openings from the cylinders held by the case, substantially as specified.

815,912. EXPANSION-VALVE. ARTHUR H. EDDY, Windsor, Conn. Filed July 19, 1905. Serial No. 270,349.

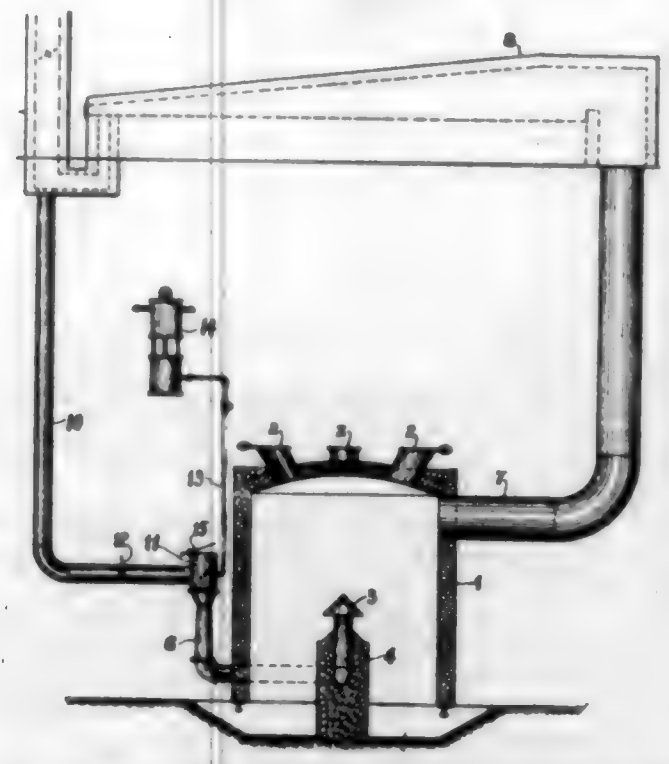


Claim.—1. An expansion-valve having a body with an inlet, an outlet and a valve-seat between the inlet and outlet, a plunger located on the outlet side of the valve-seat, a valve located on the inlet side of the valve-seat and connected with the plunger, a diaphragm on the outlet side of the valve-seat and connected with the plunger, and a diaphragm on the inlet side of the valve-seat and connected with the plunger, substantially as specified.

2. An expansion-valve having a body with an inlet, an outlet and a valve-seat between the inlet and outlet, a plunger located on the outlet side of the valve-seat between the seat and the outlet, a valve located on the inlet side of the valve-seat and connected with the plunger, and a diaphragm on the outlet side of the valve-seat and connected with the plunger, substantially as specified.

3. An expansion-valve having a body with an inlet, an outlet and a central chamber, a valve-seat inserted into the chamber, a plunger movable in the body on the outlet side of the valve-seat, a valve movable in the body on the inlet side of the valve-seat and connected with the plunger, a small diaphragm on the inlet side of the seat and connected with the valve, a large diaphragm on the outlet side of the seat and connected with the plunger, a cap holding the large diaphragm in place, and a plug holding the small diaphragm in place, substantially as specified.

815,913. GAS-PRODUCER. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Original application filed May 11, 1905, Serial No. 259,935. Divided and this application filed July 1, 1905. Serial No. 267,990.



Claim.—1. In a gas-producing plant, the combination of a gas-producer, a source of products of combustion, a pipe connection from the source to the producer and an interposed collar in said pipe connection carrying an air-jet nozzle and having valve-controlled communication with the atmosphere.

2. In a gas-producing plant, the combination of a gas-producer, a source of products of combustion, a pipe connection from the source to the producer having a valved inlet open to the atmosphere and an air-injector in said pipe connection between the inlet and the producer.

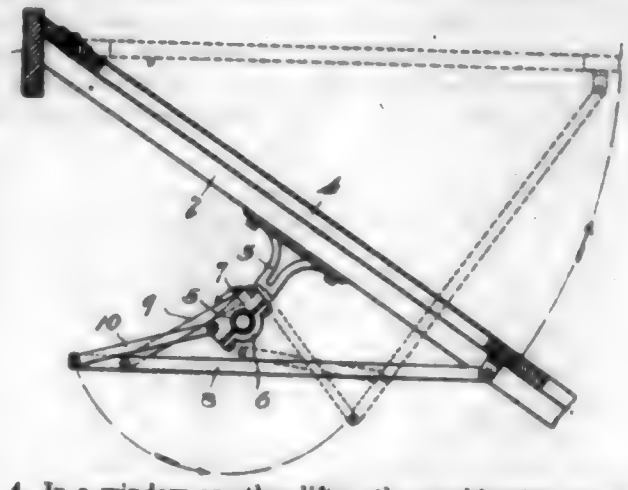
3. In a gas-producing plant, the combination of a gas-producer, a fuel-burning furnace provided with a waste-gas outlet, a pipe connection from the outlet to the producer having a valved inlet-pipe open to the atmosphere, and an air-injector in said pipe connection between the inlet and the producer.

815,914. WINDOW-LIFTER. NEWTON R. EVANS, Richmond, Ind., assignor to John A. Evans, Richmond, Ind. Filed Mar. 17, 1905. Serial No. 250,583.

Claim.—1. In a window or other lifter, the combination of a rotatable fulcrum or carrying block, a pair of links pivoted at different points to the block, and a connecting-arm to which the links are pivoted at one side of its center, the said arm being pivoted at a point on the other side of its center to the object to be lifted.

2. In a window or other lifter, the combination of an operating-shaft, a cap-sleeve, a fulcrum or carrying block having a projecting rib, a pair of links pivoted at different points on the rib and a connecting-arm to which the links are pivoted at different points.

3. In a window or other lifter, the combination of operating-arms and links and a separable attaching device comprising a ribbed power-block, a sleeve-cap, and an operating-shaft upon which they are journaled.

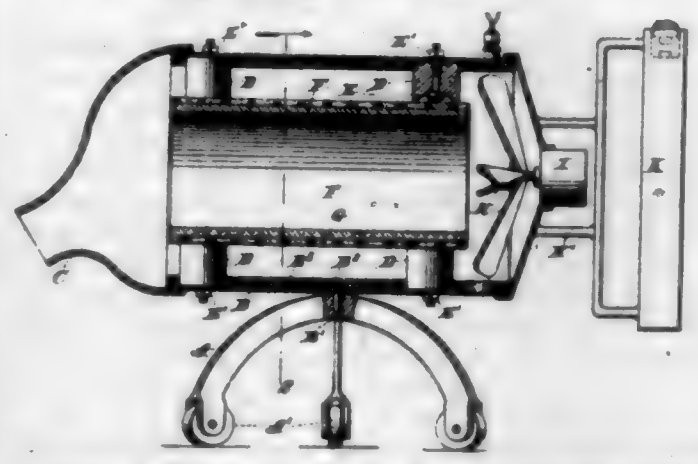


4. In a window or other lifter, the combination of operating means, a rotatable fulcrum or carrying block, and means comprising a connecting-arm and two shorter arms or links, the two shorter arms or links being pivoted to a connecting-arm at one side of its center, the said arm being pivoted at a point on the other side of its center to the object to be lifted.

5. In a window or other lifter, the combination of operating means a carrying or rotatable fulcrum-block and means comprising a connecting-arm and two shorter links or arms, the shorter links being pivoted to opposite sides of the carrying or fulcrum block at different points, and also pivoted to opposite sides of a connecting-arm at one side of its center, the said arm being pivoted at a point on the other side of its center to the object to be lifted.

6. In a window or other lifter, the combination with a connecting-arm and a rotatable fulcrum or carrying block, of two links pivoted to the fulcrum-block and a connecting-arm, and operating upon the connecting-arm, one of the links exerting a pushing action upon the arm while the other link exerts a pull upon the arm the said connecting-arm being pivoted to the object to be lifted and to the two links at points on opposite sides of its center.

815,915. HOT-BLAST APPARATUS. JOSEPH FALLER, New York, N. Y. Filed July 10, 1905. Serial No. 268,940.



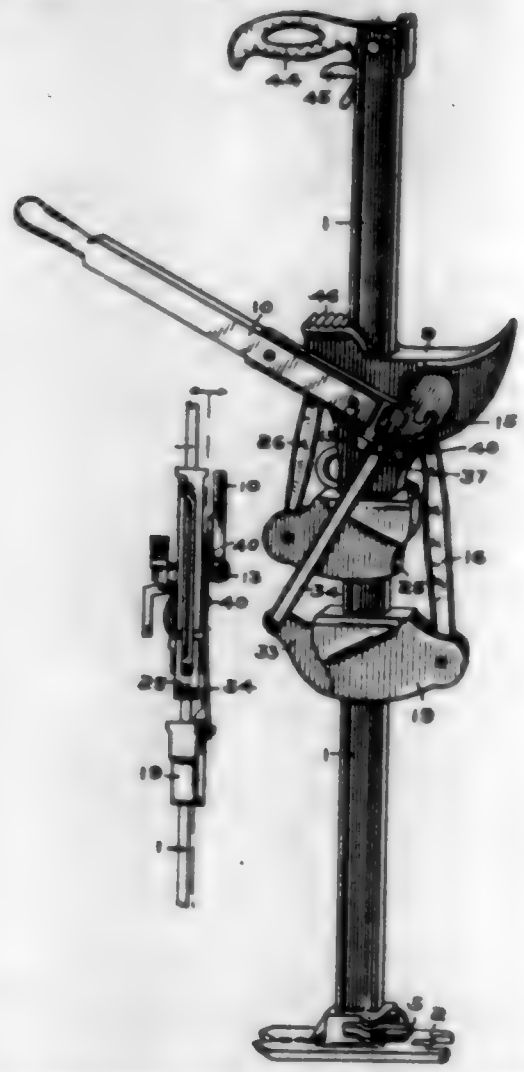
Claim.—1. The combination of an electric heater, a heating-circuit, a motor-circuit in parallel with the heating-circuit, a motor in the motor-circuit, a casing inclosing the heater and provided with a nozzle, a blower driven by said motor and arranged to force air in contact with the heater and out through said nozzle, and switches for independently controlling the heating-circuit and the motor-circuit.

2. The combination of an electric heater, means for passing air in contact with said heater, a heater-circuit, a thermometer-circuit in parallel with the heater-circuit, and a fuse included both in the thermometer-circuit and in the heater-circuit to interrupt the flow of current to the heater when a certain temperature is reached.

815,916. COMBINATION-TOOL. FRANK E. FOOR, Indianapolis, Ind. Filed Nov. 21, 1905. Serial No. 288,360.

Claim.—1. In a tool of the class described, the combination of a main bar, an elevating-head movably mounted upon said bar said head having two parallel plates between which the bar is located said plates having opposite perforations to receive the journal-pin of a hand-lever and said plates having arcuate slots concentric with the said perforations, a hand-lever having a journal-pin for insertion through the perforations of the head, said pin having lateral lugs to

prevent withdrawal of the pin from the head except in a certain elevation of the lever, a pair of runners movably mounted upon said bar below the head, a pitman connecting the head with one of the said runners, a bite member in the opposite end of said runner to engages aid bar, a second pitman on the opposite side of the bar from the first pitman connecting the lever with an end of the second runner, and a bite member in the opposite end of the second runner to engage said bar.



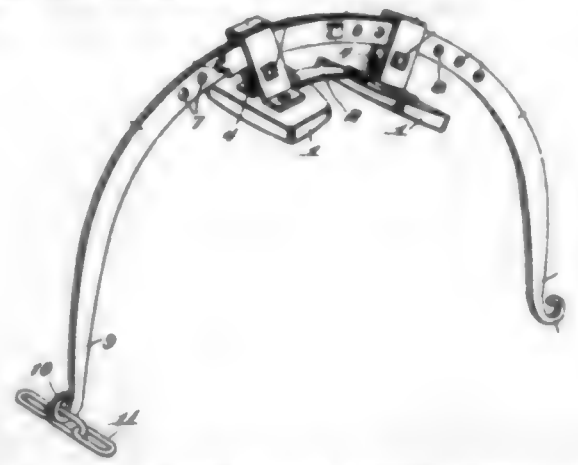
2. In a combination-tool of the class described, the combination of a main bar, an elevating-head having two parallel plates between which the bar is placed said plates having perforations opposite each other and arcuate slots concentric with said perforations, a hand-lever having a journal-pin to enter the perforations of said head and a second pin to enter the arcuate slots, a pair of runners movably mounted upon said bar below the head, a pitman connecting the head with one of said runners, a bite member in the opposite end of said runner to engage said bar, a second pitman on the opposite side of the bar from the first pitman connecting the lever with an end of the second runner, a bite member in the opposite end of the second runner to engage said bar, and a sliding wedge resting upon the middle runner between said runner and a projecting portion of the elevating-head and adapted by being pressed between the head and runner to press that end of the runner having the bite member away from the head.

3. In a tool of the class described, the combination of a main bar, an elevating-head movably mounted upon said bar, a pair of runners movably mounted one below the other and both below the head, on said bar, a lever pivotally connected with the head, a pitman connecting the lower runner with the lever, a second pitman connecting the middle runner with the head said pitmen being on opposite sides of the bar, bite members in the ends of the runners opposite the ends of attachment with the runners of their respective pitmen and means connecting the lower runner with the lever whereby said runner can be disengaged from the bar by manipulating the lever.

4. In a tool of the class described, the combination of a main bar, an elevating-head movably mounted upon said bar, a pair of runners movably mounted one below the other on said bar below the head, a lever pivotally connected with the head, a pitman connecting the lower runner with the lever, a second pitman connecting the middle runner with the head, said pitmen being on opposite sides of the bar, bite members in the ends of the runners opposite their respective pitmen, means connecting the lower runner with said lever whereby said runner can be disengaged from the bar by a manipulation of the lever, and means also by the manipulation of said lever for disengaging said connecting means.

5. In a tool of the class described, a bar, a head mounted on the bar and adjustable longitudinally thereof, a lever pivotally mounted on the side of the head, a pair of runners mounted below the head on the bar, one below the other, a pitman connecting the lower runner with said lever, a second pitman on the opposite side of the bar from the first, connecting the second or middle runner with the head, a spring-bar pivoted at its lower end to the opposite end of the lower runner from its pitman and extending up between the said lever and head, said bar having its upper portion bent outwardly and terminating with a rounded head, a concave notch on the inner side of the lever to engage the rounded end of the spring-bar, and a wedge carried by the lower part of the lever to press the spring-bar out of engagement with the concave notch at certain positions of the lever.

815,917. HARNESS-SADDLE. James W. Gardner, Jarratt, Va., assignor to L. L. Pond and W. T. Pond, Pinopolis, Va. Filed Sept. 6, 1905. Serial No. 277,184.



Claim.—1. The combination with a harness-saddle; of brackets secured thereto and a longitudinally-extensible rigid yoke movably mounted within and extending through the brackets and a dapted to engage the traces of harness.

2. The combination with a harness-saddle having brackets thereon; of a longitudinally-extensible rigid yoke projecting through the brackets and adapted to engage the traces of the harness.

3. The combination with a harness-saddle having brackets thereon; of a longitudinally-extensible rigid yoke slidably mounted within and extending through the brackets and adapted to engage the traces of the harness, and means for rigidly securing the yoke in extended position.

4. The combination with a harness-saddle having brackets thereon; of a rigid yoke mounted within the brackets and adapted to engage the traces of a harness, said yoke comprising oppositely-disposed, similaf members adjustably connected to extend or shorten the yoke, and means for securing said sections in adjusted position.

5. The combination with a harness-saddle having brackets thereon; of a yoke mounted within the brackets and adapted to engage the traces of a harness, said yoke comprising oppositely-disposed similar apertured members having overlapping ends, means upon said ends for engaging the opposite members, and a clamping device for securing the members together.

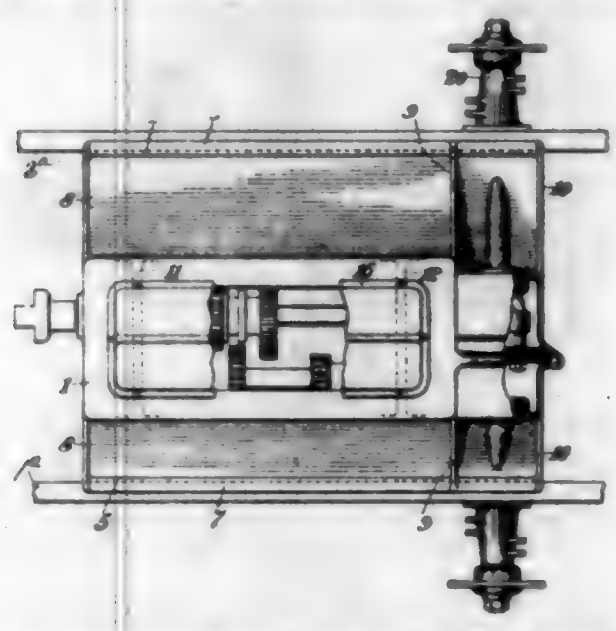
815,918. FRAME FOR MOTOR-PROPELLED VEHICLES. George H. Jones, Philadelphia, Pa. Filed July 14, 1905. Serial No. 269,609.

Claim.—1. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, and ribs connecting the side of the central casing, the side plates and bottom plates, substantially as described.

2. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, ribs connecting the sides of the central casing, the side plates and bottom plates, and sprocket-shaft casings extending downwardly from the bottom portions, substantially as described.

3. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower

edges of the side plates, ribs connecting the sides of the central casing, the side plates and bottom portions, sprocket-shaft casings extending downwardly from the bottom portions, and a removable cap forming the top of said central casing, substantially as described.



4. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, sprocket-shaft casings extending downwardly from the bottom portions, and a removable cap forming the top of the central casing, substantially as described.

5. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, ribs connecting the sides of the central casing, the side plates and bottom portions, sprocket-shaft casings extending downwardly from the bottom portions, and sprocket-hangers secured to the outer ends of said sprocket-shaft casings, substantially as described.

6. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates and bottom portions, sprocket-shaft casings extending downwardly from the bottom portions, sprocket-hangers secured to the outer ends of said sprocket-shaft casings and a removable cap forming the top of the central casing, substantially as described.

7. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates having flanges, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, ribs connecting the sides of the central casing, the side plates and bottom plates, and sprocket-shaft casings extending downwardly from the bottom portions, substantially as described.

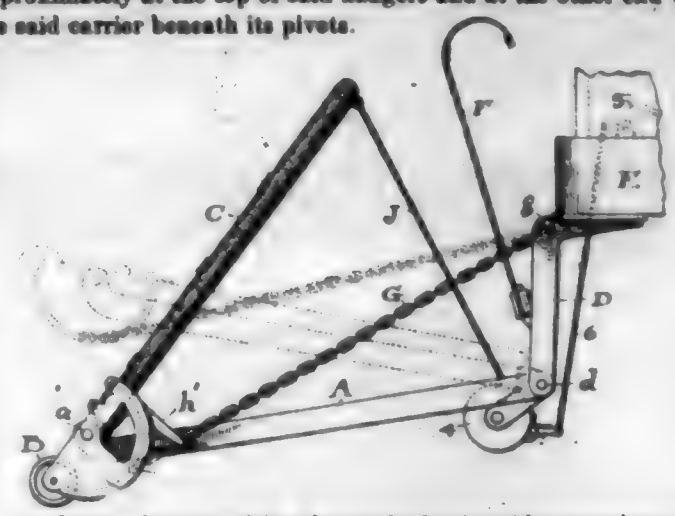
8. In a motor-propelled vehicle, an integral frame comprising a central gear-casing having a bottom, sides and ends, side plates having flanges, bottom portions connecting the bottom of the gear-casing with the lower edges of the side plates, ribs connecting the sides of the central casing, the side plates and bottom portions, sprocket-shaft casings extending downwardly from the bottom portions, and sprocket-hangers secured to the outer ends of said sprocket-shaft casings, substantially as described.

815,919. FENDER FOR MOTOR-CARS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 216,721.

Claim.—1. In car-fenders, a carrier and side braces on which said carrier is pivoted, and flexible supports for both carrier and braces connected with the carrier, whereby the carrier and associated parts are bodily raised to a higher level when the carrier is tilted.

2. In car-fenders, a mechanism having side braces and hangers on which said braces are pivoted, a carrier pivoted at its lower portion on the outer ends of said side braces, and flexible supports engaged with said carrier on a plane beneath its pivots and fixed at their opposite ends on a plane above the pivots for said side braces.

3. In car-fenders, a fender comprising a tilting carrier, a brace-frame on the front of which said carrier is pivoted, hangers supporting said brace-frame and flexible supports for the said parts engaged approximately at the top of said hangers and at the other end with the said carrier beneath its pivots.

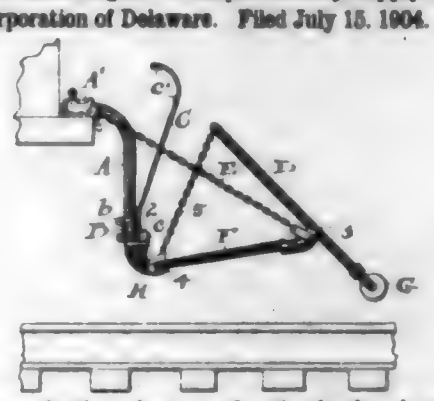


4. The fender comprising the carrier having side extensions at its lower portion and brace-bars on which said extensions are pivoted, and supporting-chains for said parts engaged with said extensions and hangers to which said brace-bars and said flexible supports are connected in different planes one above the other.

5. In car-fenders, a carrier having laterally and downwardly extending brackets at its front, supporting-chains engaged with said brackets outside said carrier-frame, a set of hangers from the car-body and brace-bars from the lower portion of said hangers on which said carrier is pivoted.

6. In car-fenders, suitable forwardly-projecting braces and a carrier pivoted on the front portion of said braces, supporting-chains engaged with said carrier at its sides beneath its pivots on said braces, means to limit the forward tilting of the carrier, and means to hold said carrier in a reversed position and with its front in a plane above its rear portion.

815,920. SEPARABLE FENDER FOR MOTOR-CARS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 216,722.



Claim.—1. In car-fenders, hangers for the fenders having right-angled ends, in combination with sockets constructed to be attached to the car and adapted to have the said hangers detachably fastened therein, substantially as described.

2. In car-fenders, separate and detachable hangers provided each with an adjustable support at its lower end and a spring-fender frame removably seated upon posts on the said supports, substantially as described.

3. In car-fenders, a set of hangers having tapered posts vertically upon their front portions, and a spring-fender frame having correspondingly-tapered sockets seated upon said posts, substantially as described.

4. In car-fenders, a pair of hangers having forwardly-extending portions at their bottom provided with seats open from the top, a supporting-frame for the carrier resting in said seats and hooks to engage over said frame and seats, substantially as described.

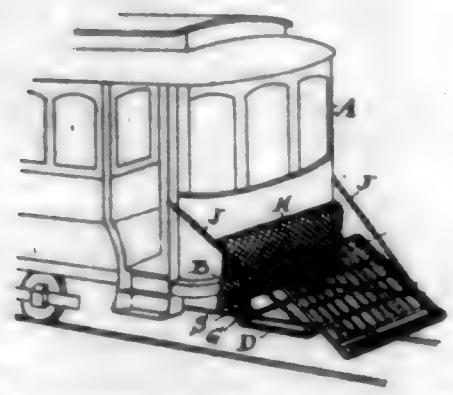
5. In car-fenders, a set of hangers having seats at their lower portion, a supporting-frame for the carrier resting in said seats from above, and hooks engaged over said frame upon its seats having forward projections extending beneath said frame, whereby said hooks are engaged automatically and held in locking position, substantially as described.

6. In car-fenders, a car and a set of hangers detachably supported at their upper ends upon the car, a frame-support removably clamped upon the lower end of each hanger and having a seat for a frame and a projection forward from said seat, a frame resting upon said seats and hooks engaging over said frame at its seats and provided with forward extensions at its lower portion beneath said frame, substantially as described.

7. In car-fenders, a set of hangers and supports adjustably secured upon said hangers, said supports provided with tapered posts

at their front and top, in combination with a spring-fender having sockets tapered to seat over said posts and adjustably secured upon said frame, substantially as described.

815,921. SPRING-BUFFER FOR CAR-FENDERS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 216,736.



Claim.—1. In car-fenders, a new article of manufacture consisting of a buffer-frame and springs fixed to the bottom of said frame and constructed to be removably engaged upon supports.

2. In car-fenders, a buffer constructed to stand across the front of a car, hangers to support the same, and springs supporting said buffer from said hangers.

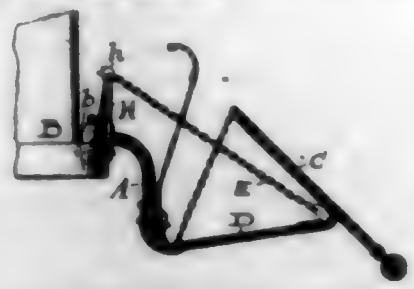
3. In car-fenders, supports adapted to be connected with a car, a buffer-frame and springs fixed thereto and removably seated upon the said supports.

4. In car-fenders, suitable hangers provided with brackets at their lower ends, a buffer-frame and supporting-springs for said frame engaged on said hangers.

5. In car-fenders, a set of hangers and bracket-supports adjustably clamped thereon, in combination with a buffer-frame and spring-supports therefor seated on the sides of said brackets.

6. In car-fenders, suitable hangers and brackets adjustably clamped thereon and provided with seats at their sides, in combination with a buffer-frame and supports therefor engaged on said seats.

815,922. CHAIN-BRACKET FOR CAR-FENDERS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Renewed Aug. 18, 1905. Serial No. 274,809.



Claim.—1. In fender mechanism for cars, a bracket having an open slot through the same, in combination with a fender-frame and a flexible support for the front of the fender engaged with said frame at one end and detachably engaged in the said slot at the other end, substantially as described.

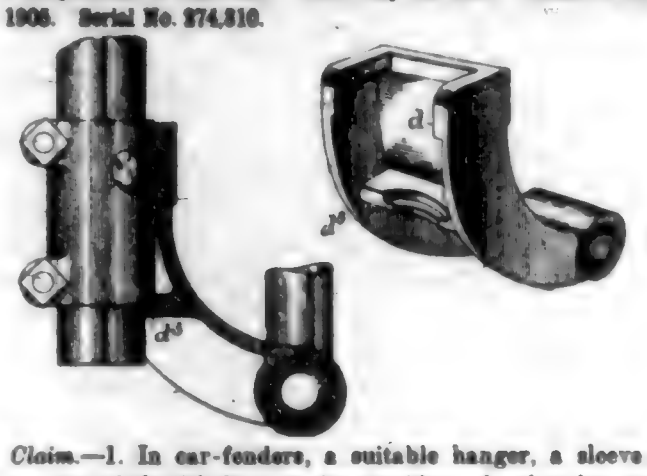
2. As a new article of manufacture, a bracket for supporting a fender-carrying chain, the same having a substantially cup-shaped head with an open slot front to rear in said head, substantially as described.

3. In car-fender mechanism, a bracket for supporting a car-fender, the same constructed to be permanently fixed on a car-body and having a head with a cavity open to the rearward and a slot front to rear through the top of said head, substantially as described.

4. A car and brackets fixed thereon having each a slot across its free end, in combination with a fender-carrier, a frame on which said carrier is pivoted, and chains from the front of said frame engaged in the slots of said brackets, substantially as described.

5. In car-fenders, a car, hangers thereon, a frame pivoted on said hangers and a carrier pivoted on said frame, in combination with brackets on the said car provided each with an open slot, and flexible connections for the front of said frame constructed to lock in said slots at intervals, substantially as described.

815,923. DETACHABLE CAR-FENDER. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Renewed Aug. 18, 1905. Serial No. 274,810.



Claim.—1. In car-fenders, a suitable hanger, a sleeve fixed thereon provided with lugs on its outside and a bracket-support hooked upon said lugs from the front, substantially as described.

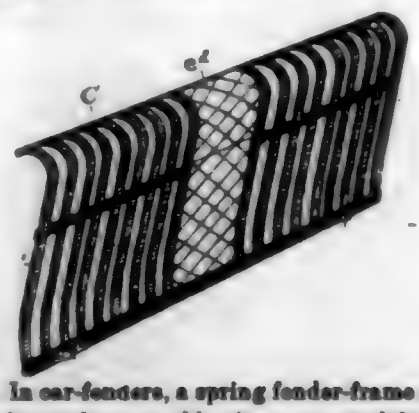
2. In car-fenders, a suitable hanger and a sleeve adjustably clamped thereon and having lateral projections, in combination with a bracket having hooks engaged upon said projections, inward projections on a plane substantially with the lower portion of said sleeve, substantially as described.

3. In car-fenders, a tubular hanger and a sleeve clamped thereon having projections laterally upon its outside, in combination with a bracket-support suspended upon said projections and provided with a horizontal bearing to engage beneath the said sleeve, substantially as described.

4. In car-fenders, a suitable hanger and lugs thereon laterally at its lower portion, in combination with a bracket hooked over said lugs and having a substantially barrel-shaped bearing transversely in its lower portion, and a fender-supporting frame engaged through said bearing, substantially as described.

5. In car-fenders, a hanger to support the fender on the car and a sleeve adjustably supported in the lower portion of said hanger having lateral lugs to support the fender, substantially as described.

815,924. CAR-FENDER SPRING. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Renewed Aug. 18, 1905. Serial No. 274,811.



Claim.—1. In car-fenders, a spring fender-frame constructed to stand across the front of a car and having open-mesh fabric at its middle and springs at each side thereof, substantially as described.

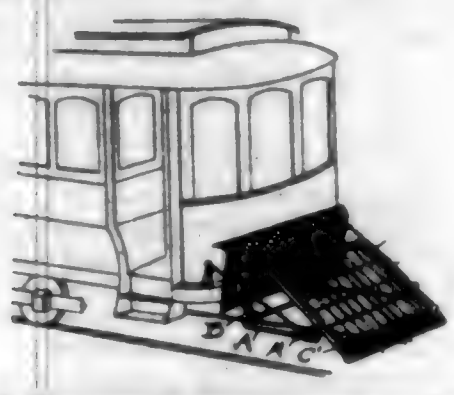
2. In car-fenders, a spring fender-frame adapted to stand across the front of a car-body and having springs inward along both end portions thereof and open-mesh fabric at its middle between said series of springs and engaged with the adjacent slats thereof, substantially as described.

3. In fenders for cars, a car and hangers thereon, a tilting carrier and a frame supporting the carrier from said hangers, a flexible connection to limit the tilting of the carrier and a support to prevent the said flexible connection from trailing when the carrier is folded, substantially as described.

4. The car and a headlight thereon, in combination with supports at the front of the car, a spring fender-frame resting upon said supports and having a middle portion opposite said headlight covered with an open mesh, whereby the headlight is protected when the spring-fender is thrown back and light is unobstructed, substantially as described.

815,925. FENDER-CARRIER. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 15, 1904. Serial No. 217,829.

Claim.—1. In car-fenders, a knockdown carrier consisting of an outer frame comprising a removable front portion, an inner frame and means separably connecting said frames.



2. In car-fenders, a carrier comprising an outer frame consisting of a plurality of separable parts, and an inner frame complete in itself and separable therefrom.

3. In car-fenders, a carrier consisting of an outer frame composed of a single piece at its rear and sides, a separate front crosspiece and separate corner connections uniting the sides and front of said frame secured to said outer frame.

4. In car-fenders, a knockdown carrier comprising an outer frame of tubular portions and right-angled corner connections therefor, and an inner frame and clamps separably connecting the same with said outer frame.

5 In a car-fender, a knockdown carrier consisting of a sectional outer frame having clamping corner connections and supporting-trunnions at its sides, an inner woven frame and spring-clamps connecting said inner frame with the outer frame.

6. In car-fenders, a supporting-frame and removable brackets on the front ends of said frame having right-angled upward projections, in combination with a carrier pivoted on said projections.

7. In car-fenders, a pivoted supporting-frame comprising a tubular portion constituting the rear and sides of the frame and two-part brackets clasped on the ends thereof and a tie-rod connecting said brackets, in combination with a carrier pivoted on said brackets.

8. A tubular carrier-frame having cast-metal connections uniting the sides and front of said frame and said connections provided with extensions at their front to carry a cushioning member, in combination with an inner frame and spring clamping-jaws locking the same on the said outer frame.

815,926. AUTOMATIC CAR-FENDER. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 18, 1904. Serial No. 217,030.



Claim.—1. In car-fenders, a suitable support and a carrier adapted to tilt thereon, a tripping device at the front of said carrier and positive mechanism between said parts constructed to move said device into a guarding position across the front and top of the carrier when the carrier drops at its rear, said mechanism comprising means to tilt the said tripping device on its pivots.

2. In car-fenders, a carrier and a tripping device at its front and a support on which said parts are separately pivoted, and automatic mechanism for actuating said device having its controlling member rigid with said carrier, substantially as described.

3. In car-fenders, a carrier and a tripping device and a support on which said parts are pivoted, a toothed segment on the side of the carrier and a toothed sector on said tripping device engaging said segment, whereby the tripping device is rotated by the carrier, substantially as described.

4. In car-fenders, a pivoted carrier and a spring-buffer behind the same, in combination with a pivoted tripping device in front of said carrier and means to rotate said device on its pivots comprising toothed parts meshing with each other, substantially as described.

5. In car-fenders, a pivoted carrier and segments on the sides thereof, a tripping device pivoted beneath the pivots of said carrier and having sectors in mesh with said segments, and stops to limit the drop of said tripping device, substantially as described.

815,927. TUBULAR CAR-FENDER. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 18, 1904. Serial No. 217,031.



Claim.—1. In car-fenders, a fender-carrier comprising an outer frame and a combined inner frame and mesh thereon removably supported on said outer frame at its upper and lower edges, said outer frame having a detachable bar across its lower portion.

2. In car-fenders, a carrier consisting of an outer tubular frame and an inner frame and woven body provided with hooks connecting the said inner frame with the outer frame.

3. In car-fenders, a carrier consisting of an outer frame and a body within the same, and hooks on said body engaged upon said outer frame, said hooks having threaded shanks for adjustment, substantially as described.

4. In car-fenders, a carrier consisting of an outer frame, and body within the same, hooks on the upper and lower edges of said body engaged on said frame, and separate means for engaging each of said hooks, substantially as described.

5. The carrier for a car-fender consisting of a tubular outer frame, a body-frame of channel-iron and hooks thereon engaged on said outer frame, said hooks having threaded shanks, and yokes through which said shanks are engaged and the hooks are tightened for service, substantially as described.

6. A carrier for a car-fender comprising an outer frame, an inner frame removably supported on said outer frame and a body portion consisting of interlaced slats separately engaged upon and removed from the said inner frame, substantially as described.

7. In carriers for car-fenders, a carrier having a channel-iron frame and interlaced slats removably engaged at their ends in said frame, substantially as described.

8. A carrier for car-fenders consisting of a channel-iron frame, slats running crosswise of each other and bent at their ends for engagement in said frame, and fastening-pieces for said ends engaged with said frame, substantially as described.

9. A carrier for car-fenders having a frame, interlaced straps stretched across said frame and constructed to be separately removed, and bars resting across the ends of said slats and locking them in place, said bars being provided with fastening-bolts and the said slats having bent ends overlapped by said bars, substantially as described.

10. In car-fenders, a carrier-frame formed of metallic tubing and provided with a separate removable cross portion at its front and supports for the ends of said cross portion engaged in the ends of the sides of said frame, said frame and supports being separately locked together, whereby any damaged part may be removed and the others used, substantially as described.

11. A carrier for car-fenders having an outer supporting-frame, sleeves provided with outside trunnions adjustably secured on said frame and supports engaged by said trunnions on which the carrier is pivoted, substantially as described.

12. The carrier-supporting frame and the carrier, supports for the carrier detachably secured on the sides of said frame and lateral projections on the carrier engaged in said supports, substantially as described.

13. In car-fenders a supporting-frame for the carrier, the carrier pivoted at its sides upon the sides of the said frame, and a catch for the carrier pivotally supported at the rear and side of said frame, said catch having a forwardly-projecting portion in front of its point of engagement, substantially as described.

14. In car-fenders, a carrier and a frame on which the carrier is pivotally supported, and brackets for supporting said frame constructed to afford limited rotation of the frame therein and provided

with rearwardly-projecting pin-shaped portions adapted to be socketed on the car, substantially as described.

15. In car-fenders, a car and supports thereon having inclined sockets, in combination with a carrier-frame and supports for said frame of substantially pin shape engaged in said sockets, whereby the said frame is made readily attachable and detachable, substantially as described.

16. A car-body and detachable supports thereon for a car-fender, in combination with a supporting-frame, brackets in which said frame is rotatively supported and said brackets constructed to be removably engaged on said detachable supports, and a carrier pivoted in said supporting-frame, substantially as described.

17. In safety attachments for cars, a car and brackets on the bottom and front of the car, said brackets constructed at different elevations to support a car-fender and a fender-carrier, respectively, substantially as described.

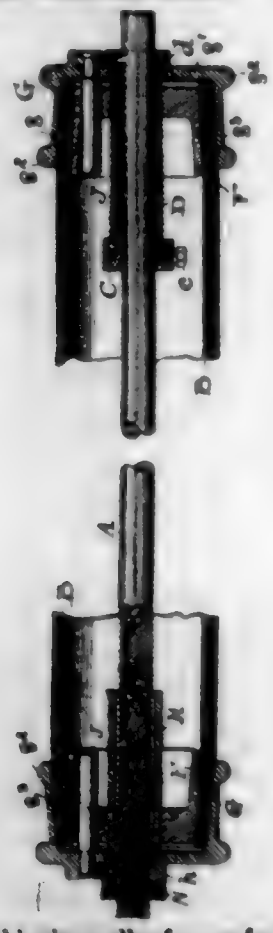
18. In safety attachments for cars, a car and supports thereon provided with vertically-disposed pins for a car-fender and inclined sockets to support a carrier, in combination with fender and carrier, substantially as described.

19. In car-fenders, a pivotally-supported carrier and a catch therefor having a hook adapted to engage over the frame of the carrier and a projection at its bottom extending forward of the hook in position to be struck by the carrier when the hook is tilted back, whereby the hook is thrown over the carrier and caused to lock the same, substantially as described.

20. In car-fenders, a tilting carrier, in combination with a pivoted catch, said catch having a hook and a front projection in advance of the hook provided with a shoulder a^4 to confine the carrier in the catch, substantially as described.

21. The combination of the catch and the support on which the catch is pivoted, the said catch having a hook and a forwardly-extending portion a in advance of the hook, substantially as described.

815,928. CUSHIONING-ROLLER FOR CAR-FENDERS. BENJAMIN LEV, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo., a Corporation of Delaware. Filed July 18, 1904. Renewed Aug. 18, 1905. Serial No. 274,312.



Claim.—1. A cushioning-roller for car-fenders, having substantially cup-shaped heads and tapered collars to engage within the roller-tube and lock the ends of the tube in said heads, substantially as described.

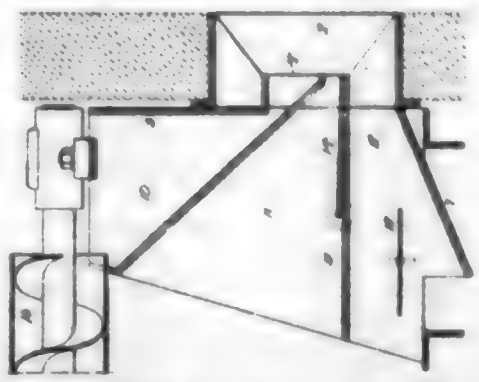
2. A cushioning-roller for car-fenders, comprising a central shaft and a flexible tube, heads inclosing the ends of the tube and tapered collars within the tubes pressing the ends thereof against said heads, substantially as described.

3. In car-fenders, a cushioning-roller comprising a flexible tube, a substantially cup-shaped head at each end within which the ends of the tube are confined, tapered collars pressing the ends of the tube against said heads, and sleeves on said shaft having threaded engagement with said collars, substantially as described.

4. A cushioning-roller for car-fenders comprising a shaft and an externally-threaded sleeve on each end thereof, a tapered collar threaded on each of said sleeves and substantially cup-shaped heads at each end for confining the ends of the roller-tube and rotarily connected with said collars, substantially as described.

5. The central shaft and the externally-threaded sleeves thereon, one of said sleeves having threaded engagement with the shaft, and both sleeves provided with heads at their outer ends, confining-heads for the ends of the roller-tube, collars engaged on the threads of said sleeves and fixed rotarily to said heads, and the roller-tube locked between the interior of said heads and the exterior of said collars, the said shaft being provided with a fixed stop for the inner end of one of said sleeves, substantially as described.

815,929. PULVERIZED-FUEL BURNER FOR FURNACES. CHARLES A. MATCHAM, Allentown, Pa. Filed May 3, 1905. Serial No. 258,683.



Claim.—1. The combination, in a pulverized-fuel burner for furnaces, of a fuel-supply nozzle arranged to discharge the pulverized fuel into the furnace at or over the furnace-wall through which the fuel passes to the furnace, said nozzle having fuel and air supply passages, and having its walls vertically and laterally remote from the boundaries of the fuel-supply mouth, whereby said walls exercise no direct confining or contracting influence upon the expanding volume of fuel issuing from said mouth, substantially as specified.

2. The combination in a pulverized-fuel burner for furnaces, of a fuel-supply nozzle arranged to discharge the pulverized fuel into the furnace at or near the furnace-wall through which the fuel passes to the furnace, whereby the pulverized fuel is free to expand immediately upon issuance from said nozzle, and air-passages flanking said nozzle and discharging air-currents into the furnace in close proximity to the discharge of the fuel-nozzle so that the currents of air from the said passages meet the fuel immediately upon its issuance from its nozzle, and one or more air-passages arranged to discharge currents of air into the fuel as it leaves the nozzle and in the same direction as the first-mentioned air-currents, substantially as specified.

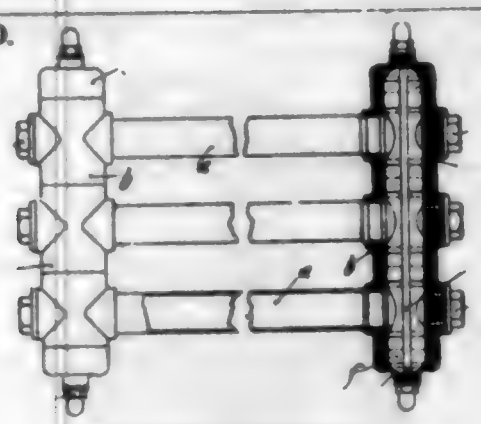
3. The combination, in a pulverized-fuel burner for furnaces, of a neck fitted into an opening in the furnace-wall, a pulverized-fuel supply-passage having its mouth terminating in said neck from which mouth the pulverized fuel is free to expand, and superposed air-passages below said fuel-supply mouth, said upper passage supplying air in lesser volume but with greater force than the lower passage, substantially as specified.

4. The combination in a pulverized-fuel burner for furnaces, of a neck fitted into an opening in the furnace-wall, a pulverized-fuel supply-nozzle having its discharge end terminating in said neck and from which the pulverized fuel is free to expand as it issues from the nozzle, air-passages flanking said nozzle and arranged to discharge air-currents into the furnace in proximity to the discharge of the fuel-nozzle so that the currents of air meet the fuel immediately upon its issuance from said nozzle, and one or more air-passages arranged to discharge currents of air into the fuel as it leaves the nozzle and in the same direction as the first-mentioned air-currents, substantially as specified.

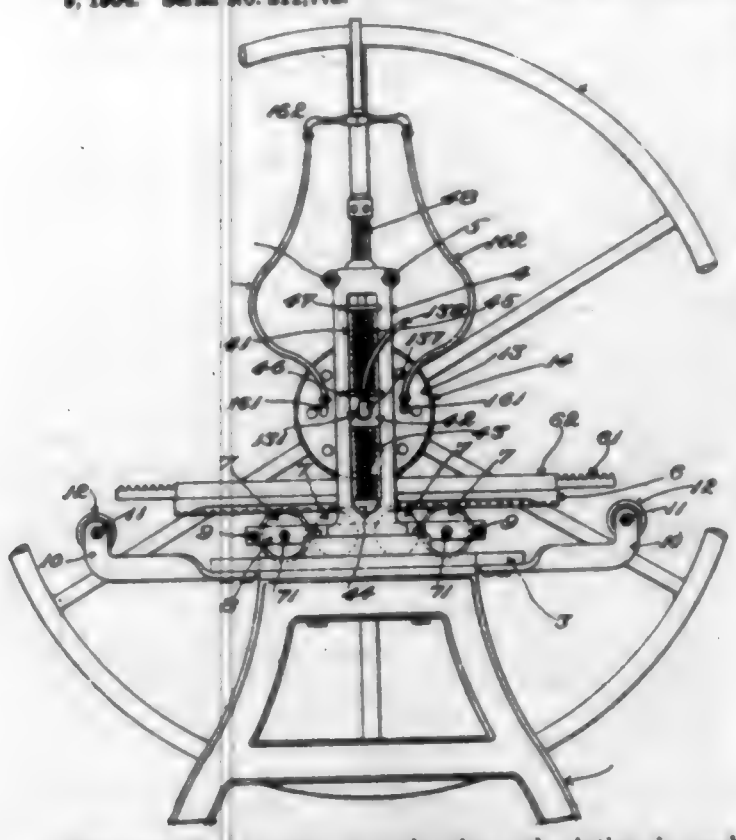
815,930. PACKING FOR WATER-TUBE BOILERS. GUSTAV F. MILLER and JEAN KRONER, Frankfort-on-the-Main, Germany. Filed Dec. 2, 1904. Renewed Feb. 27, 1906. Serial No. 303,908.

Claim.—Packing or stuffing for the chambers of water-tube boilers, whose chambers are formed by cylindrical head-pieces joined together, the joints between the different head-pieces being covered by cylindrical rings of soft metal on the inside of the head-pieces, substantially as and for the purpose set forth.

815,930.



815,931. **MACHINE FOR EMBOSSING AND PRINTING UPON LEATHER, SILK, &c.** GEORGE MOORE, Boston, Mass. Filed June 9, 1904. Serial No. 211,772.



Claim.—1. In a machine for embossing and printing, in combination, the cylinder having the gear, the springs tending to press the said cylinder toward the platen, the reciprocatory platen, and the vertically-yielding rack in operative engagement with the said gear and accommodating itself to the position assumed by the cylinder.

2. In a machine for embossing and printing, in combination, the cylinder having the gear, the platen having the rack in operative engagement with the said gear, the split band having the embossing or printing surface, and means to secure the said band upon the periphery of the cylinder.

3. In a machine for embossing and printing, in combination, the cylinder having the gear, the platen having the rack in operative engagement with the said gear, the split band having the embossing or printing surface, and means to connect together the ends of the said band.

4. In a machine for embossing and printing, in combination, the cylinder having the gear, the platen having the rack in operative engagement with the said gear, and also having work-holder gages, and a work-holder to receive and support a band or sheet of material to be embossed or printed.

5. In a machine for embossing and printing, in combination, the cylinder having the gear, the split ring or jacket having the embossing or printing surface and mounted upon the said cylinder, the platen having the yielding rack in operative engagement with the said gear, and also having work-holder gages, and a work-holder to receive and support a band or sheet of material to be embossed or printed.

6. In a machine for embossing and printing, in combination, the cylinder, the ring or jacket removably applied to the said cylinder and having the embossing or printing surface, means to support said cylinder arranged to leave a clear space at one end of the same for the application and removal of the ring or jacket, and the platen.

7. In a machine for embossing and printing, in combination, the cylinder, the split embossing or printing ring or jacket, a supporting-framework having a standard separated from an end of said cylinder by a clear space corresponding with the width of the ring or jacket to facilitate the application and removal of the latter, and the platen.

8. In a machine for embossing and printing, in combination, the cylinder, the split embossing or printing ring or jacket, a supporting-framework having a standard separated from an end of said cylinder by a clear space corresponding with the width of the ring or jacket to facilitate the application and removal of the latter, the platen, and the vertically-yielding rack in operative engagement with said gear.

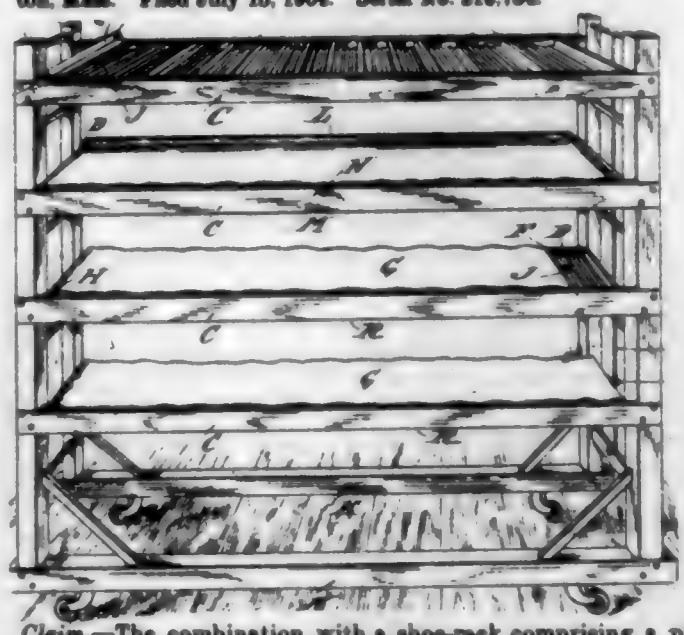
9. In a machine for embossing and printing, in combination, the cylinder, the springs tending to press the said cylinder toward the platen, the split embossing or printing ring or jacket, a supporting-framework having a standard separated from an end of said cylinder by a clear space corresponding with the width of the ring or jacket to facilitate the application and removal of the latter, the platen, and the vertically-yielding rack in operative engagement with said gear.

10. In a machine for embossing and printing, in combination, the cylinder having a gear, a burner inside said cylinder, the platen having the rack in operative engagement with said gear, a work-support applied to the said platen, and an embossing ring or jacket applied to the cylinder.

11. In a machine for embossing and printing, in combination, the cylinder having a gear, a hollow shaft for said cylinder having supply connections for fuel and also having burner-outlets within the length of the cylinder, the platen in operative connection with said gear, and a removable embossing ring or jacket applied to the cylinder.

12. In a machine for embossing and printing, in combination, the cylinder, the embossing ring or jacket, the hollow cylinder-shaft having fuel-supply connections and also having burner-outlets within the length of the cylinder, one or more supplemental burners within the cylinder, and the platen.

815,932. **COVERING FOR SHOE-RACKS.** PETER J. PORTER, Boston, Mass. Filed July 15, 1904. Serial No. 216,754.



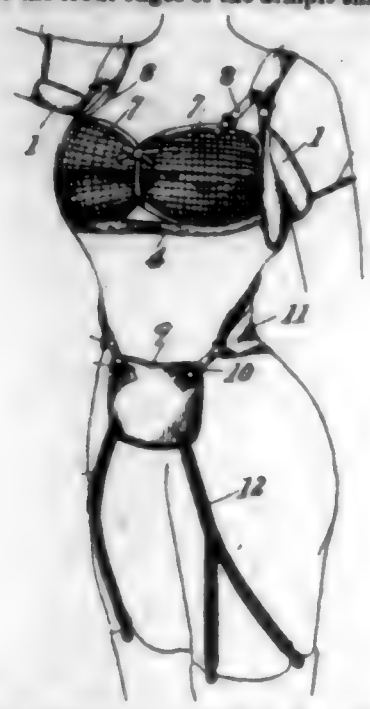
Claim.—The combination with a shoe-rack comprising a plurality of grated shelves or boxes, of covering members for said shelves adapted respectively to be extended above and supported by each shelf, whereby articles supported by each of said covered shelves will rest upon said covering member and be protected thereby from contact with the shelf means mounted on the perimeters of said shelves automatically to retract, and to carry, said members, in retracted position, and means to secure the free ends of said members when at various degrees of extension.

815,933. **GARMENT.** LAURA REED, Fremont, Nebr. Filed Nov. 12, 1904. Serial No. 232,450.

Claim.—1. A garment comprising a stiffened back-supporting member, shoulder-braces secured to the upper portion thereof, armpit-shields secured at the front and back portions thereof to the said shoulder-braces, elastic bands connecting the lower back portion of the armpit-shields to the stiffened back portion, bust-supporters secured at either side thereof to the said armpit-shields, a belt member secured to the lower end portion of the back-supporting member, an abdominal supporter secured to the said belt member and hose-supporters secured to the said abdominal supporter.

2. A garment comprising a stiffened back-supporting member,

means for supporting said member about the body, armpit-shields connected to the upper portion thereof, shoulder-straps connected therewith and adapted to secure the same in position, and bust-supporters secured to the front edges of the armpit-shields.



3. A garment comprising a stiffened back-supporting member, shoulder-straps connected therewith at the upper portion thereof, armpit-shields secured at their front and rear portions to the said shoulder-straps, bust-supporters secured to the said shoulder-straps and to the front edges of the armpit-shields, straps connecting the back-supporting member with the rear portion of the armpit-shields, a belt secured to the lower portion of the back-supporting member and an abdominal supporter secured to the said belt.

815,934. SHOE-POLISHING OUTFIT. GEORGE H. ROGERS, Birmingham, Ala. Filed Oct. 12, 1904. Serial No. 228,180.



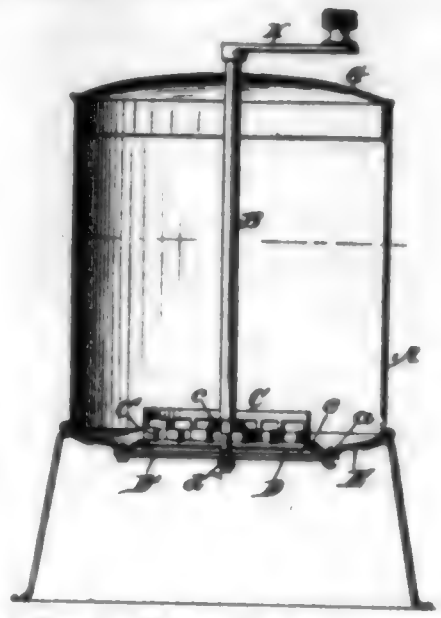
Claim.—In an outfit of the kind described, the combination of a shell which contains the material to be used and has one of its ends provided with a discharge-opening while the other end is closed with a cap fitted to be free to slide into said shell, a holder adapted to receive the shell with its perforated end alined with the open end of the holder, a cap to close this open end and to hold the inserted shell in place, the same being also perforated and in register with the perforation in the end of the shell, a dauber provided on the outside of this cap and expelling mechanism in the holder and on the other side of the inserted shell so as to be capable of acting against the sliding cap of the same, such mechanism being accessible from the outside for manipulation to expel the contents of the shell.

REISSUES.

12,484. DUSTLESS FLOUR-CAN AND FLOUR-HOLDER. WILLIAM G. GADUE, Burlington, Vt., assignor, by direct and mesne assignments, to Gadue Dustless Flour Sifter Company, Burlington, Vt., a Corporation of Vermont. Filed Feb. 1, 1906. Serial No. 300,094. Original No. 785,545, dated Mar. 21, 1905.

Claim.—1. A can having a dished bottom with a central opening therein, a screen closing said opening, that portion of the bottom bordering the screen being slightly raised above the surface of the latter, in combination with an agitator consisting of curved spokes which extend outwardly beyond the screen and take their bearing upon the slightly-raised border surrounding the same, and a rim supported in elevated position upon the upturned ends of said spokes, and actuating means for said agitator, substantially as and for the purposes hereinbefore set forth.

2. The agitator consisting of a rim, and curved spokes, provided with upturned ends which support said rim, in combination with the can, the sieve or screen in the bottom of the can and an actuating-shaft loosely attached to said agitator substantially as and for the purposes hereinbefore set forth.



3. The agitator consisting of the curved spokes C′ provided with upturned ends, and the rim C supported on said upturned ends, and broken away at c′ on opposite sides of the agitator, substantially as and for the purposes hereinbefore set forth.

4. The can A provided with a bottom having a slightly-raised border *e* encircling an opening therein, a gutter *a* surrounding said border and a screen applied to said opening, in combination with the agitator consisting of the spokes C′ extending outwardly beyond the screen and upon the border *e*, and the rim C supported upon the upturned ends of said spokes, and means for actuating said agitator substantially as and for the purposes set forth.

DESIGNS.

37,899. LAPEL-BUTTON. EDWIN GERHARDT, Cincinnati, Ohio. Filed Jan. 26, 1906. Serial No. 296,072. Term of patent 3½ years.



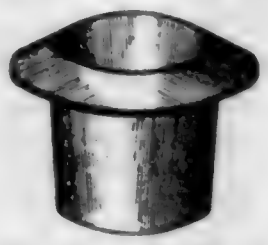
Claim.—The ornamental design for a lapel-button, as shown.

37,900. MOUNT FOR SILVERWARE. BENNET MEYERS, Taunton, Mass., assignor to Reed & Barton Corporation, a Corporation of Massachusetts. Filed Jan. 29, 1906. Serial No. 296,545. Term of patent 14 years.



Claim.—The ornamental design for a mount for silverware as shown.

37,901. CONDIMENT-CONTAINER. FRANK B. BURLEY, Chicago, Ill. Filed Jan. 13, 1906. Serial No. 295,979. Term of patent 7 years.



Claim.—The ornamental design for a condiment-container as shown.

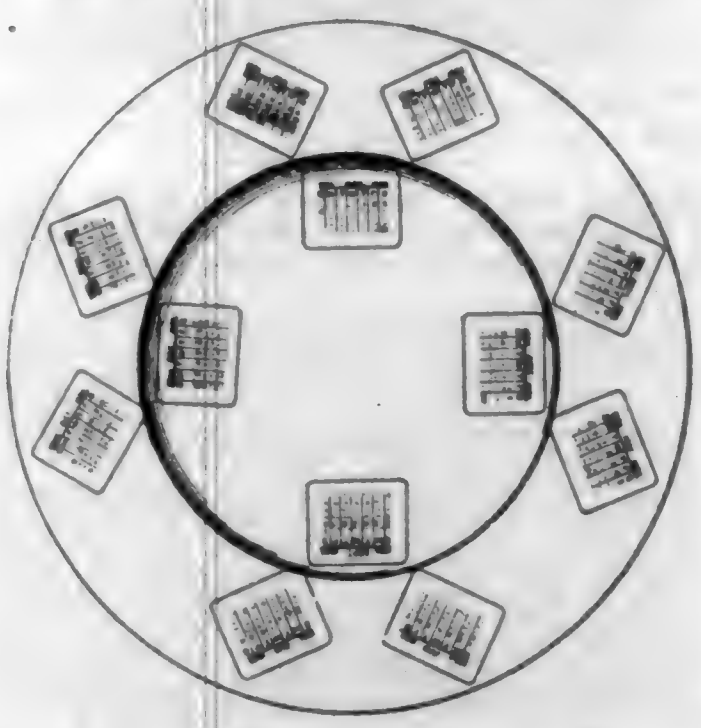
37,902. WOODEN MUG. RALPH P. BROOKER, Cornwall-on-the-Hudson, N. Y., assignor to Barton & Spooner, Cornwall-on-the-Hudson, N. Y., a Firm. Filed Feb. 10, 1906. Serial No. 300,542. Term of patent 7 years.

37,902.



Claim.—The ornamental design for a wooden mug as shown.

37,903. PLATE. EDWARD J. OWEN, Minerva, Ohio, assignor to Owen China Company, Minerva, Ohio, a Corporation of Delaware. Filed Oct. 26, 1905. Serial No. 284,580. Term of patent 7 years.



Claim.—The ornamental design for a plate, as shown.

37,904. PLATE OR SIMILAR DISH. ARTHUR S. HIGGINS, New York, N. Y. Filed Feb. 16, 1906. Serial No. 301,503. Term of patent 7 years.



Claim.—The ornamental design for a plate or a similar dish, as shown.

37,905. GRAPE-FRUIT HOLDER. FRANK B. BURLEY, Chicago, Ill. Filed Mar. 13, 1905. Serial No. 249,961. Term of patent 14 years.



Claim.—The ornamental design for a grape-fruit holder, as shown.

37,906. BOTTLE. ALFRED ANDERSEN, Minneapolis, Minn. Filed Feb. 16, 1906. Serial No. 301,505. Term of patent 14 years.



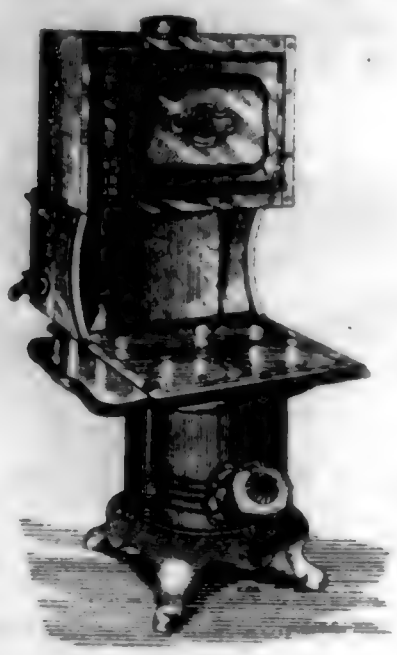
Claim.—The ornamental design for a bottle, as shown.

37,907. WATER RECEPTACLE OR BOTTLE. ISAIAH NEWELL, Haverhill, Mass. Filed Feb. 8, 1906. Serial No. 300,186. Term of patent 14 years.



Claim.—The ornamental design for a water receptacle or bottle, as shown.

37,908. COOKING-STOVE. BARNET C. COLE, Chicago, Ill. Filed Feb. 3, 1906. Serial No. 299,573. Term of patent 7 years.



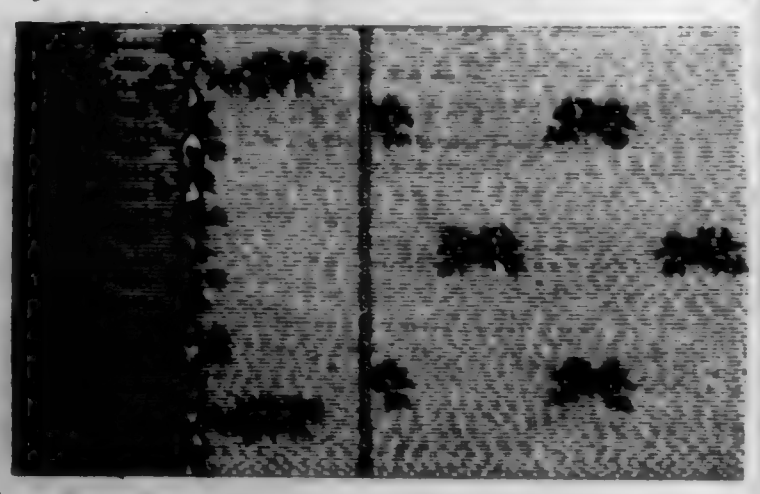
Claim.—The ornamental design for a cooking-stove, as shown.

37,909. CURTAIN. ELMORE F. BOURKE, Denver, Colo. Filed Jan. 8, 1906. Serial No. 295,157. Term of patent 14 years.



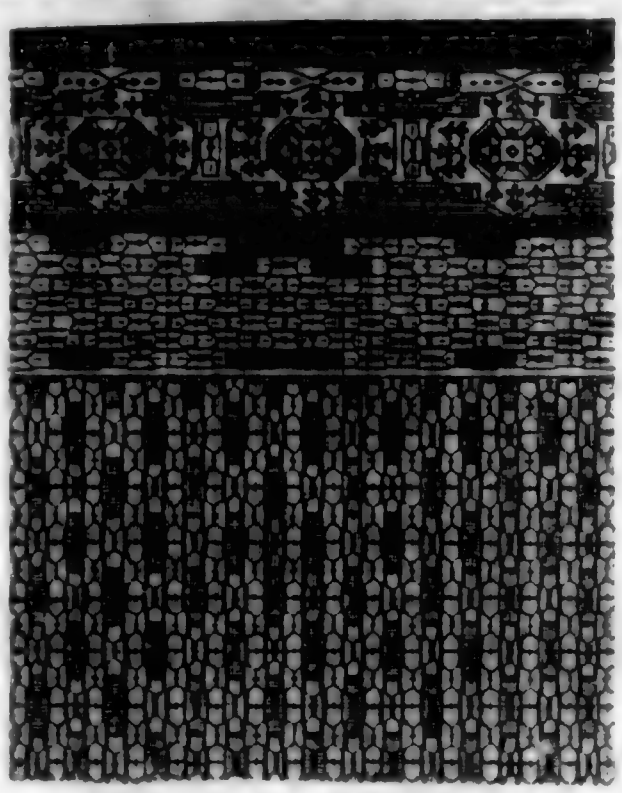
Claim.—The ornamental design for a curtain as shown.

37,910. CARPET. ARTHUR M. ROSS, New York, N. Y., assignor to W. & J. Sloane, New York, N. Y., a Corporation of New York. Filed Jan. 8, 1906. Serial No. 295,155. Term of patent 7 years.



Claim.—The ornamental design for a carpet substantially as shown.

37,911. CARPET. WINTHROP L. JACOBS, Rutherford, N. J., assignor to W. & J. Sloane, New York, N. Y., a Corporation of New York. Filed Jan. 8, 1906. Serial No. 295,156. Term of patent 7 years.



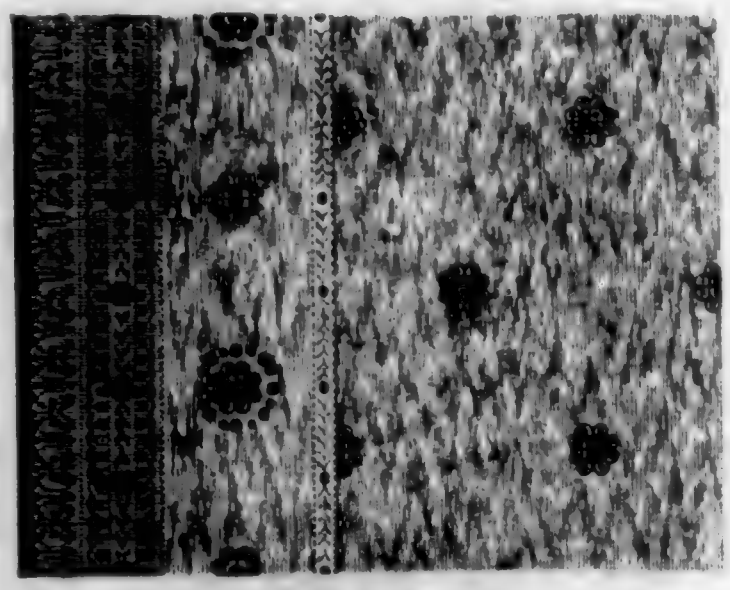
Claim.—The ornamental design for a carpet substantially as shown.

37,912. CARPET. JOHN S. MCNAB, New York, N. Y., assignor to W. & J. Sloane, New York, N. Y., a Corporation of New York. Filed Jan. 8, 1906. Serial No. 295,158. Term of patent 7 years.



Claim.—The ornamental design for a carpet substantially as shown.

37,913. CARPET. JOHN S. MCNAB, New York, N. Y., assignor to W. & J. Sloane, New York, N. Y., a Corporation of New York. Filed Jan. 8, 1906. Serial No. 295,159. Term of patent 7 years.



Claim.—The ornamental design for a carpet substantially as shown.

TRADE-MARKS

PUBLISHED MARCH 20, 1906

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 41. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Apr. 1, 1905. Used ten years.

HOUSEKEEPERS

The designation "HOUSEKEEPER'S."

SER. No. 42. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Apr. 1, 1905. Used ten years.

White Star

The designation "WHITE STAR."

SER. No. 48. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Apr. 1, 1905.

Michigan Family

The designation "MICHIGAN FAMILY."

SER. No. 52. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Apr. 1, 1905. Used ten years.

NAVY BLUE

The designation "NAVY BLUE."

SER. No. 251. WHISKY. W. H. JONES AND CO., Boston, Mass. Filed Apr. 3, 1905.

HOLIDAY

The word "HOLIDAY."

SER. No. 542. WATER-TUBE BOILERS. THE AULTMAN & TAYLOR MACHINERY COMPANY, Mansfield, Ohio. Filed Apr. 6, 1905. Used ten years.

CAHALL SAFETY BOILER

The word "CAHALL," followed by the descriptive words "SAFETY BOILER."

SER. No. 1,182. WOOLEN OR WORSTED FABRICS. BOTANY WORSTED MILLS, Passaic, N. J. Filed Apr. 11, 1906.



The representation of a female figure seated at a spinning-wheel surrounded by a wreath, and the head of a deer and a bee, each arranged in a wreath, together with the representation of a cross and the letters "B W M P" arranged in the arms thereof inclosed in two concentric ornamental borders, between which appear the words "BOTANY WORSTED MILLS, PASSAIC, N. J." and two stars.

SER. No. 1,498. MEDICINES IN PILL FORM. WILLIAM R. WARNER & Co., Philadelphia, Pa. Filed Apr. 14, 1906. Used ten years.

PARVULES

The arbitrary word "PARVULES."

SER. No. 1,697. OLIVE-OIL AND SALAD-OIL FOR TABLE USE AND COOKING. GEORGE LUEDERS & Co., New York, N. Y.; Chicago, Ill., and San Francisco, Cal. Filed Apr. 15, 1906. Used ten years.

de Luxe

The words "DE LUXE."

SER. No. 1,698. VANILLIN AND CUMARIN. GEORGE LUEDERS & Co., New York, N. Y., Chicago, Ill., and San Francisco, Cal. Filed Apr. 15, 1906.

VERA

The word "VERA."

SER. No. 2,002. BLOOD-PURIFIER AND LIVER-TONIC. AUGUSTUS A. KLEINSCHMIDT, St. Louis, Mo. Filed Apr. 17, 1906.



The word "LIVERBASE" and the facsimile signature of "A. A. KLEINSCHMIDT" printed across the word.

SER. No. 2,082. REMEDY FOR THE TREATMENT AND PREVENTION OF DISEASES PECULIAR TO WOMEN. JOHN M. OLDFIELD, Philadelphia, Pa. Filed Apr. 17, 1906.



A panel containing the trunks of two trees, entwined about which and connected together at the top and about the upper central portion of the panel are two grape-vines with clusters of grapes suspended therefrom, associated with the words "WILD GRAPE."

SER. No. 2,126. ROASTED COFFEE IN CANS OR OTHER PACKAGES. IMPORTERS COFFEE COMPANY, Duluth, Minn. Filed Apr. 18, 1906.



The words "KING ARTHUR," with the pictorial representation of a knight mounted upon a horse and carrying a banner upon which is the representation of a crown.

SER. No. 2,183. GLOVES. ABRAHAM & STRAUS, New York, N. Y. Filed Apr. 18, 1906.

Marquise

The word "MARQUISE."

SER. No. 2,252. RYE AND BOURBON AND ALL KINDS OF WHISKIES. S. C. HERBST IMPORTING Co., Milwaukee, Wis. Filed Apr. 19, 1906.

Chancellor Club

The words "CHANCELLOR CLUB."

SER. No. 2,385. WHISKY. PHILIP FREILER, Elgin, Ill. Filed Apr. 20, 1906. Used ten years.



The words and figures "FREILER'S 1883 FINE OLD LITTLE JOE NELSON CO. KY. SOUR MASH WHISKEY" inclosed in an ornamental circular border with the words "FREILER'S SOUR MASH WHISKEY" arranged in circular form inside of said border, and an ornament consisting of two crossed heads of corn above the words "SOUR MASH WHISKEY."

SER. No. 2,397. CHAMPAGNE OR SPARKLING WINE. AMERICAN WINE CO., St. Louis, Mo. Filed Apr. 20, 1905.



The representation of a six-pointed star in solid color upon a black circular background or disk, which in turn is surrounded by a circular white border, said star bearing the words "COOK'S IMPERIAL."

SER. No. 2,548. PREPARATIONS, AS PILLS, POWDERS, AND POTIONS, FOR THE TREATMENT OF HEADACHES, COUGHS, CONSTIPATION, CONSUMPTION, PNEUMONIA, AND CATARRHAL AFFECTIONS. HENRY A. BLAIR, San Antonio, Tex. Filed Apr. 21, 1905.



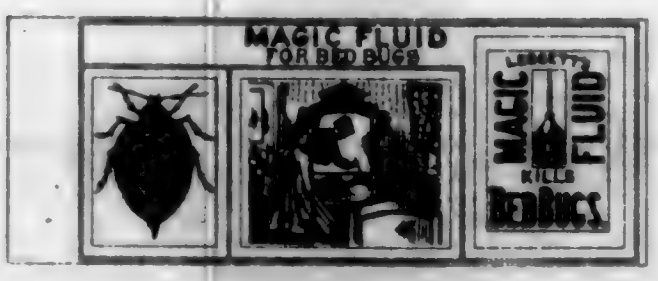
The words "KYEZOR'S CHIMNEY SWEEPER," associated with a band of red and a band of green.

SER. No. 2,733. CANNED LOBSTERS. JOHN GILLIAN, New York, N. Y. Filed Apr. 28, 1905.



The word "DAISY" and the representation of a daisy and a lobster and a landscape.

SER. No. 2,812. INSECTICIDES. LIGGETT & BROTHER, New York, N. Y. Filed Apr. 24, 1905. Used ten years.



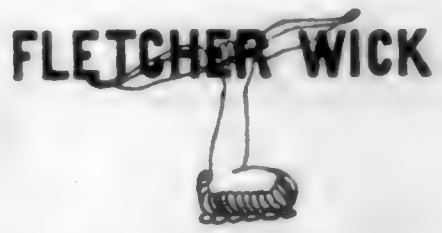
The representation of a woman applying a liquid upon a bedstead, the representation of a bedbug arranged at the left thereof, and the representation of an oil-can surrounded by the words "LIGGETT'S MAGIC FLUID KILLS BED BUGS." arranged at the right thereof, each of said representations being surrounded by a rectangular border and the whole being inclosed by a rectangular border, within which are the words "MAGIC FLUID FOR BED BUGS," arranged immediately above the middle representation.

SER. No. 2,869. CHEESE, ESPECIALLY CREAM-CHEESE. A. F. MACLAREN IMPERIAL CHEESE CO., LIMITED, Toronto, Canada. Filed Apr. 24, 1905.



The representation of an Indian paddling in a canoe, a body of water having several water-lilies in the foreground, two points of land in the background running out into the water, the point of land to the right having on it woods and two tepees or wigwams and the one to the left being wooded. Associated with the above appear the word "CANADA" above, and the words "CREAM" and "CHEESE" to the left and right respectively.

SER. No. 2,885. LAMP AND CANDLE WICKS. FLETCHER MANUFACTURING COMPANY, Providence, R. I. Filed Apr. 24, 1905.



The representation of an arm extending upward from a heraldic scroll and holding a bow, associated with the words "FLETCHER WICK."

SER. No. 2,901. LAGER-BEER AND BOTTLED BEER. TERRE HAUTE BREWING CO., Terre Haute, Ind. Filed Apr. 24, 1905.



The representation of a cornucopia ornamented with barley-heads and hop-blossoms and an eagle poised thereon and the words "TERRE HAUTE BEER" spanning said representation, the body of the eagle resting in the letter "U" of the word "HAUTE" and all inclosed in concentric circles.

SER. No. 2,924. ENAMELED LEATHER. BARNET LEATHER CO., New York, N. Y. Filed Apr. 24, 1905.

PYROX

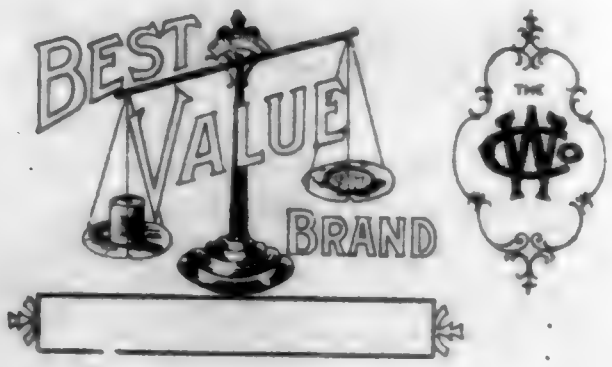
The word "PYROX."

SER. No. 2,936. CANNED FRUITS. CALIFORNIA CANNERIES CO., San Francisco, Cal. Filed Apr. 24, 1905.



The representation of a bear in an upright position with fore paws engaging a can of applicant's goods and a landscape and small bears in the background in different positions and each holding a can.

SER. No. 3,044. COFFEE. THE WEIDEMAN CO., Cleveland, Ohio, Chicago, Ill., and New York, N. Y. Filed Apr. 26, 1905. Used ten years.



The representation of a pair of scales showing a can balanced by a coin and the words "BEST VALUE BRAND," and a monogram of the letter and abbreviation "W Co," the word "THE" above, the word "THE" and the monogram inclosed in ornamental scrollwork with a panel beneath the scales.

SER. No. 3,052. WHISKY. D. SACHS AND SONS, Louisville, Ky. Filed Apr. 26, 1905. Used ten years.

Cape May

The words "CAPE MAY."

SER. No. 3,356. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga. Filed Apr. 24, 1905. Used ten years.

KENTUCKY BLUE BLOOD

The words "KENTUCKY BLUE BLOOD."

SER. No. 3,654. FARM-WAGONS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky. Filed Apr. 20, 1905. Used ten years.

"KENTUCKY"

A rectangular panel of solid color bearing the word "KENTUCKY" in block letters in contrasting colors, said word being inclosed in quotation-marks.

SER. No. 3,655. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

Olympia

The word "OLYMPIA."

SER. No. 3,656. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

Invincible

The word "INVINCIBLE."

SER. No. 3,657. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

MID-SUMMER

The word "MID-SUMMER."

SER. No. 3,658. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

Beauty

The word "BEAUTY."

SER. No. 3,659. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

FEATHER WEIGHT

The words "FEATHER WEIGHT."

SER. No. 3,661. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

The Gem

The words "THE GEM."

SER. No. 3,664. HOSE-SUPPORTERS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

BUSTER BROWN

The words "BUSTER BROWN."

SER. No. 3,665. HOSE-SUPPORTERS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 20, 1905.

HOOKON

The word "HOOKON."

SER. No. 3,982. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 2, 1905. Used ten years.

97

The number "97."

SER. No. 4,100. NON-ALCOHOLIC FOOD DRINKS WHICH ARE PRODUCED FROM A CEREAL. POSTUM CEREAL CO., LIMITED, Battle Creek, Mich. Filed May 8, 1905.

POSTUM CEREAL

The words "POSTUM CEREAL," together with two red disks, each bearing the words "IT MAKES RED BLOOD."

SER. No. 4,147. SHEET-METAL VESSELS FOR DOMESTIC OR HOUSEHOLD PURPOSES. ROCHESTER NOVELTY TINWARE CO., Rochester, N. Y. Filed May 3, 1905.



The word "KENNEPOSTIX" on a scroll upon a diamond-shaped panel surrounded by a correspondingly-shaped border.

SER. No. 4,253. LUBRICATING-GREASE. ADAM COOK'S SONS, New York, N. Y. Filed May 4, 1905.

ALPHA

The arbitrarily-selected word "ALPHA."

SER. No. 4,303. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

No. 26

The abbreviation and numerals "No. 26."

SER. No. 4,310. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

№ 37

The abbreviation and number "No. 37."

SER. No. 4,313. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905.

No. 351

The abbreviation and number "No. 351."

SER. No. 4,317. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

№ 220

The abbreviation and number "No. 220."

SER. No. 4,327. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

No. 19

The abbreviation and number "No. 19."

SER. No. 4,329. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

№ 44A

The abbreviation and number "No. 444."

SER. No. 4,888. STEAM, GAS, OIL, AND WATER PIPES, FITTINGS, AND CONNECTIONS THEREFOR. MCNAB & HARLIN MANUFACTURING COMPANY, New York, N. Y. Filed May 5, 1905.

MH

The letters "M H," one leg of the "M" and of the "H" being identical.

SER. No. 4,492. WHISKY. LOUIS LASARUS, Lynchburg, Va. Filed May 6, 1905.



The representation of a cat attired in full-dress costume, playing the fiddle.

SER. No. 4,646. CANNED, BOTTLED, AND PRESERVED FRUITS AND VEGETABLES. WILSON GROCERY COMPANY, Peoria, Ill. Filed May 8, 1905.

PROGRESS

The word "PROGRESS."

SER. No. 4,738. LAGER-BEER. THE JOHN F. WIEMER & SON'S BREWING CO. OF BALTIMORE CITY, Baltimore, Md. Filed May 8, 1905.



A shield-like figure from behind which extend hop leaves and blossoms and barley-heads and upon which appears a monogram of the letters "J F W," across which a band or scroll appears bearing the character and word "& Sons," and the representation of the hooped end of a beer-keg, which extends slightly beyond one side of the shield.

SER. No. 4,797. FIREPROOF STARCH. PRICE FIREPROOFING COMPANY, Poughkeepsie, N. Y. Filed May 9, 1905.

Fire-Foe

The hyphenated word "FIRE-FOE."

SER. No. 4,891. CHEMICAL PREPARATIONS FOR THE TREATMENT OF MALARIAL FEVERS AND DISEASES CHARACTERIZED BY INTESTINAL FERMENTATION AND IN ANEMIAS AND CACHEXIÆ. MCKESSON & ROBBINS, New York, N. Y. Filed May 10, 1905.

GUAIAQUIN

The word "GUAIAQUIN."

SER. No. 4,982. DENIMS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.



The representation of a pair of sheep, one of the sheep being in a standing position and the other in a reclining position, the animals being represented partly in side view and each sheep having its head partly turned.

SER. No. 5,008. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 11, 1905. Used ten years.



A design wherein at the bottom to the right of a scroll the side view of a seated mermaid is shown. Her hair is blown outward over the top of her head, and she gazes into a mirror held in her right hand. On the left side in corresponding position is shown a bearded merman blowing a shell-like horn, which he holds to his mouth with his right hand, while in his left he holds a trident. Between the figures a light scroll of curves surrounding the numerals "42" appears upon a dark background terminating in a point. On either side of said dark-pointed background is a light band curving from the top toward the figures below, and outside such bands are conventional scrolls. At the top a star fish appears, and just below is a horizontal panel surrounded by scrolls.

SER. No. 5,135. LAGER-BEER. C. SCHMIDT AND SONS BREWING COMPANY, Philadelphia, Pa. Filed May 11, 1905. Used ten years.



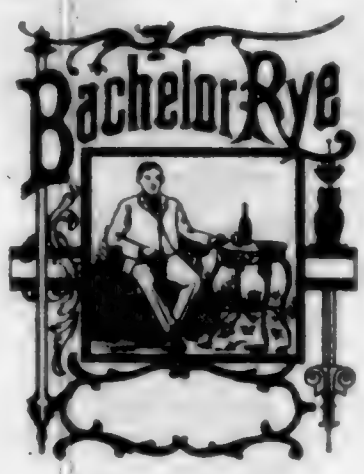
The word "PILSNER" and the representation of a heraldic shield having thereon a monogram of the letters and character "S & S," a rampant lion, the cap of Mercury, the scales of justice, and an eagle with a scroll in its bill and partly inclosed in a wreath of grain and hops tied with a ribbon and surmounted by a heraldic roll and the head of an eagle with a streamer in its bill and appearing on a circular disk with a background of grain, hop-leaves, and scrolls.

SER. No. 5,231. BLUE DENIMS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1906.



The representation of a swimming fish.

SER. No. 5,536. WHISKY. ISAAC MERKEL & SONS, Plattsburg, N. Y. Filed May 13, 1906.



A portrait of Aaron Merkel seated in an arm-chair at a table, on which are a bottle of whisky and a glass, inclosed in a rectangular frame, and associated with the words "BACHELOR RYE," and ornamental scrollwork on each side of the picture and an ornamental panel beneath, with an owl on the right side of the picture and a Chinese dragon above the words "BACHELOR RYE."

SER. No. 5,573. ASPHALT. HUGH HUNTINGTON & SON, Cleveland, Ohio. Filed May 12, 1906.



The representation of a shield upon which appear the name and words "HUGH HUNTINGTON SHIELD BRAND."

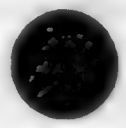
SER. No. 5,612. PREPARED CEREAL FOOD. THE AMERICAN CEREAL COMPANY, Akron, Ohio, Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1906.

SER. No. 5,612.

Apikezo

The word "APIKEZO."

SER. No. 5,617. PHOTOGRAPHIC PAPER AND FILMS. SOCIÉTÉ ANONYME "LUNA," Lausanne, Switzerland. Filed May 15, 1906.



The representation of a black disk, in which are drawn in white lines a crescent with human face, three stars in front of said human face, and the letters and character "V & C" crossing the said disk and crescent, the said black disk being moreover surrounded by a series of white pearls.

SER. No. 5,680. POCKET-KNIVES. CARL F. BOKER, New York, N. Y. Filed May 15, 1906. Used ten years.



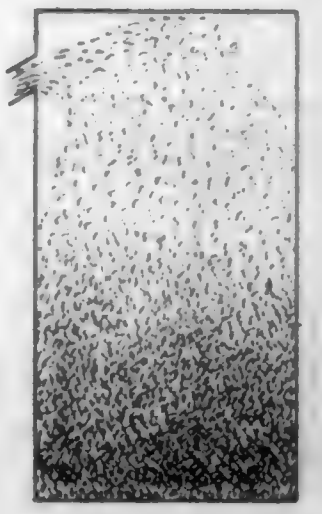
The word "TRENTON" arranged on a diamond-shaped figure.

SER. No. 5,686. ANTISEPTIC OR DISINFECTING CHEMICAL COMPOUND. HANCE BROS & WHITE, Philadelphia, Pa. Filed May 15, 1906. Used ten years.

Phénoline

The word "PHÉNOLINE."

SER. No. 5,834. MATTRESSES. CHARLES W. WHITE, Waco, Tex. Filed May 16, 1906.



The word-symbols "WHITE'S COTTODOWN" beneath a picture representing falling particles of fiber. The picture is inclosed in a rectangular frame, and the falling particles are represented as entering in a stream at one side and near the top of the frame.

SER. No. 6,055. FIRE-BRICKS FOR LINING STOVES AND FURNACES. STEPHEN D. HORTON, Peekskill, N. Y. Filed May 18, 1905.



The representation of a crescent formed with a double outline with two bars dividing the inclosed space in three parts, a triangular figure appearing in the central part.

SER. No. 6,244. PREPARATION FOR CLEANING CLOTHES, COLORED KID GLOVES, CARPETS, AND WASHING HAIR. THEODORE JOSEPH, St. Louis, Mo. Filed May 22, 1905.



Queen Washer,

The words "QUEEN WASHER" and the pictorial representation of a beautiful woman, said woman being shown attired in décolleté costume wearing a crown from which is suspended a veil. Around her neck is a jeweled necklace and from her ears hang pendent ear-rings.

SER. No. 6,526. WHISKY. ALBERT LIPMAN, Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

Cyrus Field

The words "CYRUS FIELD."

SER. No. 6,575. GIN. THE WM. BERGENTHAL CO., Milwaukee, Wis. Filed May 25, 1905.



The word "PALMETTO" and the representation of a palmetto-tree.

SER. No. 7,183. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 1, 1905.

DAISIES

The word "DAISIES."

SER. No. 7,025. TELEPHONE TRANSMITTERS AND RECEIVERS. ERICSSON TELEPHONE COMPANY, New York, N. Y. Filed May 29, 1905.

ECHOPHONE

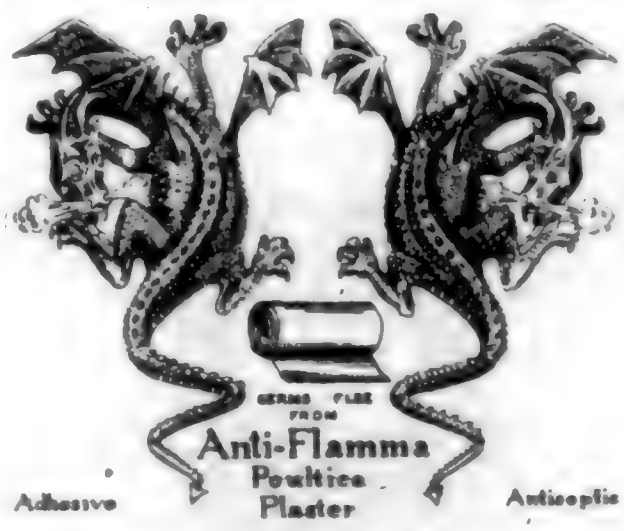
The word "ECHOPHONE."

SER. No. 7,516. MEN'S COATS AND TROUSERS. EDWIN M. GOLDSMITH, Philadelphia, Pa. Filed June 6, 1905.

KEEP-KOOL

The hyphenated word "KEEP-KOOL."

SER. No. 7,560. ANTISEPTIC ADHESIVE POULTICE-PLASTER. BAYLES DISTRIBUTING CO., Kansas City, Mo. Filed June 6, 1905.



The representation of two rampant dragons with a roll of plaster arranged between them and the words "GERMS FLEE FROM ANTI-FLAMMA POULTICE PLASTER ADHESIVE ANTISEPTIC."

SER. No. 7,670. WHISKY. THE MONTICELLO DISTILLING COMPANY, Baltimore, Md. Filed June 8, 1905. Used ten years.

MONTICELLO

The word "MONTICELLO."

SER. No. 7,795. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignee to Rice and Hutchins incorporated, a Corporation of Maine. Filed June 10, 1905.



The pictorial representation of a man and a woman dressed in outing costume and walking together.

SER. No. 7,814. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



The representation of a completely-equipped battleship under full headway and above the whole the arbitrarily-selected word "DEFIANCE."

SER. No. 7,817. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



The arbitrarily-selected word "MOOSEHEAD," associated with the representation of an antlered head of a bull-moose with a background of mountains, trees, and a lake.

SER. No. 7,818. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



The arbitrarily-selected word "SUPERB."

SER. No. 7,819. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



The arbitrarily-selected word "BUTTERCUP," associated with the picture or representation of three full-blown buttercup-blossoms, together with leaves, stems, and buds.

SER. No. 7,821. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



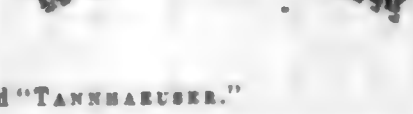
The arbitrarily-selected word "DAIRY," associated with the word "BRAND," and the representation of a landscape with a cow in the foreground.

SER. No. 7,822. CONDENSED MILK. BORDEN'S CONDENSED MILK CO., Jersey City, N. J., and New York, N. Y. Filed June 10, 1906. Used ten years.



The representation of three thistle-blossoms with leaves and stems, while above the whole is the arbitrarily-selected word "THISTLE," associated with the word "BRAND."

SER. No. 7,873. BEER. THE BERGNER & ENGEL BREWING CO., Philadelphia, Pa. Filed June 10, 1906. Used ten years.



The word "TANNHAEUSER."

SER. No. 8,020. GLOVES. JACOB ADLER & CO., New York, N. Y. Filed June 13, 1906. Used ten years.



The word "ADLERS," associated with a fanciful design consisting of a printed rosette and a fanciful arrow-like design upon each side thereof beneath said word.

SER. No. 8,091. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y. Filed June 14, 1906. Used ten years.

Alizarine Black 4 B

The words "ALIZARINE BLACK 4 B."

SER. No. 8,130. STEAM-HEATERS, HOT-WATER HEATERS AND HOT-AIR HEATERS. HART & CROUSE CO., Utica, N. Y. Filed June 14, 1906.

ROYAL

The word "ROYAL."

SER. No. 8,232. WHISKY. GOODHART-HARTMAN CO., Chicago, Ill. Filed June 15, 1906. Used ten years

Ser. No. 8,282.



The word "CLEARBROOK," below which is a picture of a man in the costume of a court-herald of the middle ages holding in his left hand a trumpet upon which he is blowing and from which hangs a banner bearing the monogram "G H Co" inclosed in a fanciful scrollwork-frame.

Ser. No. 8,348. LIQUID ANTISEPTIC FOR INTERNAL AND EXTERNAL USES. Voigt & Co., Chattanooga, Tenn. Filed June 16, 1905.

BOROLINE

The word "BOROLINE."

Ser. No. 8,614. TANNED HEAVY LEATHERS. S. H. FRANK & Co., San Francisco, Cal. Filed June 20, 1905. Used ten years.

OAKWOOD

The word "OAKWOOD."

Ser. No. 8,633. ROCK AND RYE. P. J. BOWLIN LIQUOR Co., St. Paul, Minn. Filed June 21, 1905.



The word "ANCHOR," through which and extending below is the representation of a fouled anchor.

Ser. No. 8,769. PETROLEUM LUBRICATING-OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa. Filed June 22, 1905.

ESKIMO

The word "ESKIMO."

Ser. No. 8,877. BAKING-POWDER. E. M. CHASE Co., Nebraska City, Nebr. Filed June 21, 1905.



The words "THE CHASE," together with a pictorial representation of a chase, including riders mounted on horses leaping a fence and following hounds; also, the words "PROVEN" and "PURITY" on scroll-like panels projecting on opposite sides of the picture.

Ser. No. 8,767. PETROLEUM LUBRICATING-OILS. GULF REFINING COMPANY, Port Arthur, Tex., and Pittsburg, Pa. Filed June 22, 1905.



The representation of an Indian chieftain's head inclosed within two concentric circles and having a headdress of feathers and one ear-ring.

Ser. No. 8,878. WHISKY. JOHN MILLING CRAMPTON, Augusta, Ga. Filed June 24, 1905.

Diodora

The word "DIODORA."

Ser. No. 8,959. WHISKY. MORRIS-POWERS MERC Co., Kansas City, Mo. Filed June 24, 1905.

Palmetto

The word "PALMETTO."

Ser. No. 9,033. WHISKY. HILBERT MERCANTILE Co., San Francisco, Cal. Filed June 26, 1905.

SER. No. 9,033.

HB

The letters "H B."

SER. No. 9,055. BEER AND LAGER-BEER. HARVARD BREWING CO., Lowell, Mass. Filed June 26, 1905.

Harvard

The word-symbol "HARVARD" in fancy script lettering, the final stroke of the letter "D" extending beneath a portion of the remaining letters of the word.

SER. No. 9,059. RYE WHISKY. GILLIAMS, JONES & CO., Philadelphia, Pa. Filed June 26, 1905. Used ten years.



A broken ornamental circular border, within which appear the words "PLEASANT VALLEY FINE RYE WHISKEY" and the words "GILLIAMS, JONES & CO., PHILADELPHIA" and in the center the representation of a water-horse.

SER. No. 9,095. BLEACHED COTTON GOODS. FALL RIVER BLEACHERY, Fall River, Mass. Filed June 26, 1905.



A diamond-shaped figure with labyrinthic ornamentation at the four corners inclosing the words "GUARANTEED PURE FINISH. ABSOLUTELY FREE FROM MINERAL SUBSTANCES." Above the figure the word and figures "ESTABLISHED 1872" appear, while below the figure the words "FALL RIVER BLEACHERY" and a facsimile of the signature of "SPENCER BORDEN TREAT." appear.

SER. No. 9,129. CATSUP-SPICE. S. C. SMITH & CO., Cleveland, Ohio. Filed June 26, 1905.

La Mere OLD HOME



The words "LA MERE OLD HOME" and the picture of a tomato, back of which appears the representation of a tomato-vine and leaves.

SER. No. 9,367. INCANDESCENT ELECTRIC LAMPS. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England. Filed June 23, 1905.

"THE EDISON-SWAN"

The word "THE" and the hyphenated words "EDISON-SWAN" in capital letters inclosed within quotation-marks, the usual straight lines of said letters being somewhat curved, each letter consisting of a dark part with a shading on the right hand and below the lower portion of the letter, all of said letters having their tops inclined toward the left.

SER. No. 9,368. INCANDESCENT ELECTRIC LAMPS AND ELECTRIC-LIGHTING APPARATUS. THE EDISON AND SWAN UNITED ELECTRIC LIGHT COMPANY LIMITED, London, England. Filed June 23, 1905.



The representation of an electric incandescent lamp having arranged in a circular manner within the outline of the bulb and conforming to said outline the words "THE SWAN UNITED ELECTRIC LIGHT CO. LD.".

SER. No. 9,437. WHISKY. LANG, SCHENCK & CO., Columbus, Ohio. Filed June 20, 1905.



The words "THREE-BUNNIE" above a design inclosed in a double circle showing three rabbits arranged so that their heads converge to a common center. Below this design and on either side are three heads of grain.

SER. No. 9,447. CENTRIFUGAL SEPARATORS IN WHICH A LIQUID IS ONE OF THE COMPONENT PARTS OF THE MATERIAL TREATED. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed June 30, 1905. Used ten years.

SER. No. 9,447.

DE
LAVAL

The word "DE LAVAL."

SER. No. 9,537. WEEKLY MAGAZINE. THE ENGINEERING & MINING JOURNAL, INCORPORATED, New York, N. Y. Filed June 30, 1905.

THE ENGINEERING AND
MINING JOURNAL

The words "THE ENGINEERING AND MINING JOURNAL."

SER. No. 9,647. CANNED FRUITS AND VEGETABLES. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed July 3, 1905.

Whynot

The word "WHYNOT."

SER. No. 9,768. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.

MEPHISTO

The word "MEPHISTO."

SER. No. 9,769. EXTRACT OF MALT AND HOPS. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.

Malt-Nutrine

The hyphenated word "MALT-NUTRINE."

SER. No. 9,781. EXTRACT MADE FROM MALT AND HOPS. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.

Ino

The word "INO."

SER. No. 9,794. CANNED FRUITS AND VEGETABLES. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

RICHELIEU

The arbitrarily-selected word "RICHELIEU."

SER. No. 9,837. EVAPORATED MILK AND CREAM. THE FALK MERCANTILE CO. LTD., Boise, Idaho. Filed July 6, 1905.

Silverwreath
F M C

The representation of an inverted wreath of laurel-leaves having a bow of ribbon tied thereto, said wreath being associated with the letters "F. M. Co." and the word "SILVERWREATH."

SER. No. 9,858. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed June 26, 1905.

牌 雞
COCK BRAND

The words "COCK BRAND" and the Chinese equivalents thereof.

SER. No. 9,926. PRINTED AND DYED TEXTILE FABRICS. THE KEYSTONE MANUFACTURING CO., Keystone and Philadelphia, Pa. Filed July 8, 1905. Used ten years.

BRANDENBURG CLOTH

The words "BRANDENBURG CLOTH."

SER. No. 9,931. HERB BITTERS. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania. Filed July 8, 1905. Used ten years.



The words "MIEHLER'S HERB BITTERS" and the representation of a sea scene inclosed in an ornamental border of scrolls, leaves, and flowers and showing the rising sun in the background, an anchor in the foreground, and a cable wound around the shank of the anchor.

SER. No. 10,111. PARTICULARLY FINE GRADE OF PLUG-TOBACCO. RYAN-HAMPTON TOBACCO CO., Newburg, Ind. Filed July 11, 1905.



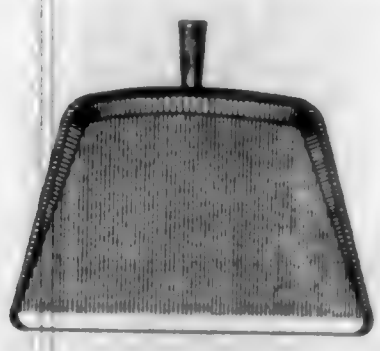
The words "GOOD GRAVY" arranged one above the other, the middle letters of each being elongated, all in a circular figure.

SER. No. 10,122. REMEDY FOR THE CURE OF ST. VITUS' DANCE OR CHOREA. SUSANNA W. MACKRELL, Asbury Park, N. J. Filed July 11, 1905. Used ten years.



The words "ST. VITUS' REMEDY," inclosed by a border of the shape shown.

SER. No. 10,199. DUST-PANS. THE CENTRAL STAMPING COMPANY, New York, N. Y. Filed July 12, 1905. Used ten years.



The representation of a dust-pan having a stripe or section upon the upper surface along the extreme forward edge thereof, presenting the color of the metal of which the edge is made or a close approximation thereto and contrasting in color with the color of the main portion or body of the pan.

SER. No. 10,201. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 12, 1905. Used ten years.



The word "BULL."

SER. No. 10,204. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905.



The designation "BLUE CLOUD."

SER. No. 10,205. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.



The designation "SILVER CLOUD."

SER. No. 10,209. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.



The word "CLAIRETTE."

SER. No. 10,211. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.



The designation "KRISS KRINGLE."

SER. No. 10,213. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.



The designation "PLYMOUTH ROCK."

SER. No. 10,216. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.



The word "JEWEL."

SER. No. 10,222. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905.



The word "PRUDENTIAL."

SER. No. 10,218. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

CHICAGO FAMILY

The brand "CHICAGO FAMILY."

SER. No. 10,221. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

GREEN SEAL

The words "GREEN SEAL."

SER. No. 10,224. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

RAINBOW

The word "RAINBOW."

SER. No. 10,225. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

DANDY

The word "DANDY."

SER. No. 10,226. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

FAIRY

The word "FAIRY."

SER. No. 10,228. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

OLD TIME

The words "OLD TIME."

SER. No. 10,229. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

TOM, DICK & HARRY

The designation "TOM, DICK, & HARRY."

SER. No. 10,230. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

RABBIT FOOT

The words "RABBIT FOOT."

SER. No. 10,231. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905.

SUNNY MONDAY

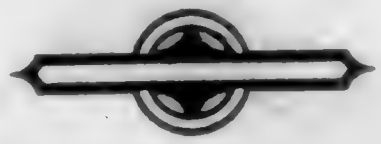
The designation "SUNNY MONDAY."

SER. No. 10,234. PREPARED FATTY, OLEAGINOUS, OR UNCTUOUS FOOD SUBSTANCES. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

COTTOLENE

The coined word "COTTOLENE."

SER. No. 10,271. HYDRAULIC PUMPS. UNITED IRON WORKS, Oakland, Cal. Filed July 13, 1905.



A horizontal open bar with convergent pointed ends and with similar points extending upwardly and downwardly from the central portion. Concentric rings inclose the central portion, the inner ring contacting with the central points.

SER. No. 10,379. WHISKY. OWEN J. CARPENTER, Covington, Ky. Filed July 15, 1905.

OLD DEXTER



The words "OLD DEXTER," beneath which is a representation of several men at work at some casks inclosed in a rectangular outline.

SER. No. 10,456. LIME AND PLASTER. ROCK PLASTER CO., OF NEW YORK & NEW JERSEY, New York, N. Y. Filed July 17, 1905.



The words "RIVERSIDE BRAND," the words being divided by a scene comprising a castle with battlemented towers upon a natural-rock foundation in the foreground of a marine scene, the words and design being surrounded by a border having a circular central portion inclosing the design and laterally-extending arms inclosing the words "RIVERSIDE BRAND."

SER. No. 10,459. BOOK AND COVER PAPER. PENINSULAR PAPER CO., Ypsilanti, Mich. Filed July 17, 1905.



The representation of a shield mounted by a crown and a monogram of the letters "P P C" appearing on the shield.

SER. No. 10,775. PORCELAIN WARE OF ALL KINDS. ADOLF HANANN, Dresden, Germany. Filed July 25, 1905.



Dresden

The representation of an electoral hat, accompanied by and arranged over the word "DRESDEN."

SER. No. 10,855. BREAKFAST-FOOD, ROLLED OATS, AND OATMEAL. THE AMERICAN CEREAL COMPANY, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed July 28, 1905.



VICTOR OATS

The words "VICTOR OATS" and the representation of a stag's head.

SER. No. 11,083. METAL-POLISHES. CHAS RATH, Philadelphia, Pa. Filed July 31, 1905.

IMPERIAL

The word "IMPERIAL."

SER. No. 11,181. WHISKY. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn. Filed Aug. 2, 1905.

WAYSIDE INN

The words "WAYSIDE INN."

SER. No. 11,230. PIE-FILLINGS. HUBERT C. GUTCHESS, Port Byron, N. Y. Filed Aug. 3, 1905.

IMPERIAL

The word "IMPERIAL."

SER. No. 11,422. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 8, 1905. Used ten years.



The words "MANUEL GARCIA" arranged within the upper band of two bands united by heart-shaped figures forming together a fancy double ellipse, the word "ALONSO" in the center of such double ellipse and the word "HABANA" arranged within the lower band.

SER. No. 11,533. CORSETS AND CORSET-WAISTS. THE H & W COMPANY, Newark, N. J. Filed Aug. 11, 1905. Used ten years.

H&W

The letters and character "H & W."

SER. No. 11,566. LEATHER BOOTS AND SHOES. A. PRIESMEYER SHOE CO., Jefferson City, Mo. Filed Aug. 12, 1905.

YOUNG AMERICA

The words "YOUNG AMERICA."

SER. No. 11,571. BAKING-POWDER. PRICE BAKING POWDER COMPANY, Chicago, Ill. Filed Aug. 12, 1905. Used ten years.



The representation of a blue circular disk surrounded by a gold border composed of a wreath of leaves inclosing a collocation of printed matter. The printed matter reads "HIGHEST MEDAL AWARDED DR. PRICE'S CREAM BAKING POWDER WORLD'S COLUMBIAN EXPOSITION."

SER. No. 11,613. WHISKY. MARYLAND DISTILLING CO., Baltimore, Md. Filed Aug. 12, 1905. Used ten years.

CALVERT

The word "CALVERT."

SER. No. 11,622. COPPER INGOTS, COPPER-INGOT BARS, COPPER CAKES, AND COPPER-WIRE BARS. BALTIMORE COPPER SMELTING & ROLLING CO., Baltimore, Md. Filed Aug. 10, 1905.



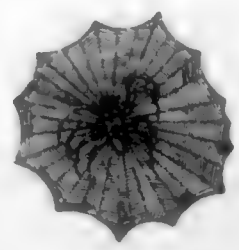
The letters "B. E. R" arranged horizontally within a circle with periods after the letters "B." and "E." Above the letters are the letters and character "B. C. S. & R. Co." and below the word "BALTIMORE." Connected to the circle at the bottom is a panel within which are the letters "U. S. A."

SER. No. 11,646. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLMES & COMPANY, Boston, Mass. Filed Aug. 14, 1905. Used ten years.



The words "OUR DAISY," together with the representation of a girl holding out a daisy and seated on the ground among a field of daisies, a boy lying on the ground, and a dog between them.

SER. No. 11,691. POCKET-KNIVES. GRAEF & SCHMIDT, New York, N. Y. Filed Aug. 16, 1905.



The representation of a spider's web with a spider thereupon.

SER. No. 11,753. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LIMITED, Birmingham, England. Filed Aug. 18, 1905. Used ten years.

HARPOON

The word "HARPOON."

SER. No. 11,755. SHIP-LOGS. THOMAS WALKER & SON LTD., Birmingham, England. Filed Aug. 18, 1905. Used ten years.

SER. No. 11,755.

WALKER'S
SHIP-LOG
A 2

The words "WALKER'S SHIP-LOG A2."

SER. No. 11,756. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON LTD., Birmingham, England. Filed Aug. 18, 1905. Used ten years.

CHERUB

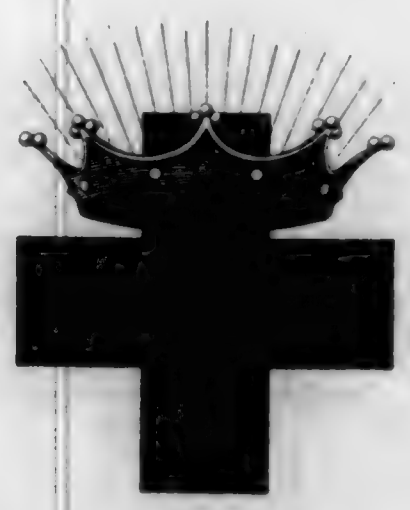
The word "CHERUB."

SER. No. 11,771. HAIR-VIGOR AND DANDRUFF CURE. JERRIE B. WALL, Ardmore, Ind. Ter., St. Louis, Mo., and San Francisco, Cal. Filed Aug. 18, 1905.



The words "TRUMPET HAIR VIGOR AND DANDRUFF CURE" and the representation of a trumpet, the words "AND DANDRUFF CURE" appearing on a scroll beneath the trumpet.

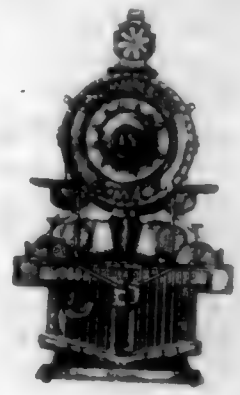
SER. No. 11,791. BEEF EXTRACTS AND BEEF, IRON, AND WINE. LIEBIG EXTRACT COMPANY, New York, N. Y. Filed Aug. 19, 1905.



The representation of a combined red crown and red Greek cross arranged as shown in the accompanying facsimile.

SER. No. 11,804. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y. Filed Aug. 19, 1905.

SER. No. 11,804.



The representation of the front of a locomotive. The words "KNOWLEDGE IS POWER" appear on the front of the locomotive.

SER. No. 11,806. EDUCATIONAL BOOKS FOR RAILWAY EMPLOYEES. THE RAILWAY EDUCATIONAL ASSOCIATION, New York, N. Y. Filed Aug. 19, 1905.



A star radiating from a circle inside of which a view of a locomotive is illustrated. The words "KNOWLEDGE IS POWER" appear on the front of the locomotive, and the words "RAILROADS NEED EDUCATED MEN" appear on the circle from which the points of the star radiate.

SER. No. 11,955. PREPARED SHEET-FELT ROOFING. ASBESTOS MANUFACTURING AND ROOFING CO., St. Louis, Mo. Filed Aug. 24, 1905.

Mica-Noid

The hyphenated word "MICA-NOID."

SER. No. 12,072. WHISKY. THE GOTTSCHALK CO., Baltimore, Md. Filed Aug. 29, 1905.

BLUEBIRD

The words "BLUE BIRD."

SER. No. 11,982. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK. New York, N. Y. Filed Aug. 24, 1905.



A representation of a Maltese cross inclosed in a circle with the words "RECLAIMED MATCHLESS RUBBER" upon the cross.

SER. No. 12,038. READY TAR-AND-FELT ROOFING. BARRETT MANUFACTURING COMPANY. New York, N. Y. Filed Aug. 26, 1905. Used ten years.



The words "BLACK DIAMOND."

SER. No. 12,140. WEEKLY PERIODICAL. WILLIAM J. JOHNSTON, New York, N. Y. Filed Sept. 1, 1905.

MINING MAGAZINE

The words "MINING MAGAZINE."

SER. No. 12,164. CLOCKS. YEAR CLOCK COMPANY, Mount Vernon, N. Y. Filed Sept. 2, 1905.

YEAR-CLOCK-CO
NEW Y YORK

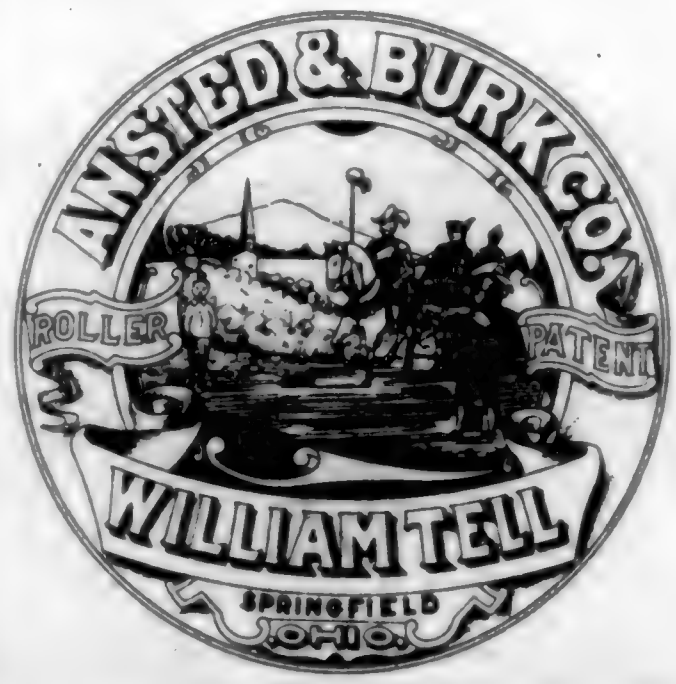
The capital letter "Y" flanked on its respective sides by the words "NEW" and "YORK" and having above the same the words and abbreviation "YEAR-CLOCK-CO."

SER. No. 12,166. WHEAT-FLOUR. THE HIGGINSVILLE MILLING COMPANY. Higginsville, Mo. Filed Sept. 2, 1905.



The representation of a peacock and the word "PEACOCK," which are accompanied by the words "CITY ROLLER MILLS HIGHEST PATENT HIGGINSVILLE MILLING CO. HIGGINSVILLE, MO.," and surrounded by a fancy border.

SER. No. 12,168. WHEAT-FLOUR. THE ANSTED & BURK COMPANY, Springfield, Ohio. Filed Sept. 2, 1905.



The words "WILLIAM TELL" and the representation of the traditional William Tell, with his bow and arrow, shooting the apple off the head of his son, which is shown upon a background showing mounted figures, a church, and water, the whole being surrounded by an annular border having in the upper part thereof the name

"ANSTED & BURR CO." and below the words "WILLIAM TELL," upon a scroll, the words "SPRINGFIELD OHIO." and upon the respective sides of the field the words "ROLLER" and "PATENT" in scroll-shaped figures.

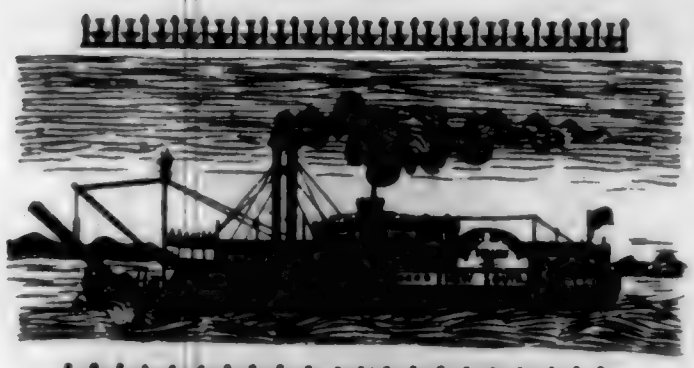
SER. NO. 12,170. WHEAT-FLOUR. WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed Sept. 2, 1905.

GIANT POWDER

The words "GIANT POWDER."

SER. NO. 12,191. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2, 1905.

SWEET SPRINGS MILLING CO



NEW SOUTH

SWEET SPRINGS, MO.

The representation of a river steamboat, associated with the words "NEW SOUTH," accompanied by the words and abbreviations "SWEET SPRINGS MILLING CO SWEET SPRINGS, MO."

SER. NO. 12,387. EYELETS FOR SHOES. MANUFACTURE FRANÇAISE D'OEILLETS MÉTALLIQUES, (ANCIENNE MAISON G. BAG), Paris, France. Filed Sept. 8, 1905.



A lion passant standing upon a bar or chevron and with the upraised dexter fore paw resting upon or supporting a scroll or scroll-shaped shield of appreciable thickness. The scroll bears the representation of a four-oared galley with three sails sailing counter. The device is inclosed in concentric circles, the outer a heavy and the inner a light one. Above the device concentric interiorly with the circle is a scroll of semicircular extent bearing the figures and words "ŒILLETS RENFORCÉS" and below the bar or chevron and parallel therewith the letters "No."

SER. NO. 12,192. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2, 1905.

SWEET SPRINGS MILLING CO.

HIGH

PATENT

SWEET SPRINGS, MO.

The representation of the capital letter "C" inclosing the words "HIGH PATENT" and bearing upon the upper arm the words and abbreviation "SWEET SPRINGS MILLING CO." and upon the lower arm the words and abbreviation "SWEET SPRINGS, MO."

SER. NO. 12,195. WHEAT-FLOUR. GEO. T. EVANS & SON, Indianapolis, Ind. Filed Sept. 2, 1905.

FANCY PATENT

OSOFINE

EVANS

ROOSIER FLOUR MILLS
INDIANAPOLIS, IND.

OSOFINE

FROM SELECTED HARD WHEAT

GEO. T. EVANS & SON,
INDIANAPOLIS.

The words "EVANS' OSOFINE FLOUR" arranged on a figure representing a flour-sack, the words "OSOFINE" and "FLOUR" separated by the picture of a bunch of asters. Below the word "FLOUR" are the words "HOOSIER FLOUR MILLS' INDIANAPOLIS, IND." The whole insurrounded by the words "OSOFINE" on either side, "FANCY PATENT" above, and "FROM SELECTED HARD WHEAT" and "GEO. T. EVANS & SON, INDIANAPOLIS." below.

SER. NO. 12,370. VERMICIDE. CYRUS LAWALL'S SON & CO., Easton, Pa. Filed Sept. 8, 1905.

KILMITOL

The word "KILMITOL."

SER. NO. 12,426. PREPARATIONS FOR COLORING BUTTER. WELLS & RICHARDSON COMPANY, Burlington, Vt. Filed Sept. 9, 1905.



The representation of a dandelion flower and plant substantially as shown.

SER. NO. 12,446. WOVEN CARPETS AND RUGS. BIGELOW CARPET COMPANY, Boston, Mass. Filed Sept. 11, 1905. Used ten years.

MIDDLESEX

The word "MIDDLESEX."

SER. NO. 12,470. RIBBONS. BAMBERG & RIEGER, New York, N. Y. Filed Sept. 11, 1905.



Two concentric circles having between them the words "INDIAN BRAND." Within the inner circle is a representation of the head of an Indian.

SER. NO. 12,486. WAGONS, CARTS, DRAYS, AND TRUCKS USED IN THE CONVEYANCE OF FARM PRODUCTS, FUEL, MERCHANDISE, MACHINERY, AND BUILDING MATERIAL. AUBURN WAGON CO., Martinsburg, W. Va. Filed Sept. 12, 1905. Used ten years.

SER. NO. 12,486.



An ornamental ribbon arranged in front of a bundle of wheat, said ribbon bearing the words "THE AUBURN MARTINSBURG, W. VA."

SER. NO. 12,509. MIXED PAINTS. JOHN W. MASURY & SON, Brooklyn, N. Y. Filed Sept. 13, 1905. Used ten years.

MASURY'S

The word "MASURY'S."

SER. NO. 12,553. NERVINE, SEDATIVE, FEBRIFUGE, LAXATIVE, AND DIURETIC IN LIQUID, GRANULAR, OR TABLET FORM PUT UP IN BOTTLES, CAPSULES, OR OTHER IMPERVIOUS PACKAGES. CHELF CHEMICAL CO., Richmond, Va. Filed Sept. 14, 1905.

CHELF'S CELERY-CAFFEIN COMP.

The words and abbreviation "CHELF'S CELERY-CAFFEIN COMP."

SER. NO. 12,658. REMEDIES FOR BLOAT IN ANIMALS. PRATT FOOD CO., Philadelphia, Pa. Filed Sept. 15, 1905.



The representation of a red seal having thereon a blue segment and disk with the word "PRATT'S" on the segment, the word "BLOAT" on the seal, and the word "CURE" on the disk.

SER. NO. 12,663. WHISKY. [illegible] H. [illegible]ARTS, Plymouth, Pa. Filed Sept. 15, 1905. Used ten years.

Pine Creek

The words "PINE CREEK."

SER. No. 12,780. STEEL FOR TOOLS, DIES, DRILLS, ROLLS, AND GEARS. THE CARPENTER STEEL COMPANY, Reading, Pa. Filed Sept. 18, 1905. Used ten years.



The letter "C" above a representation of the earth and inclosing the side view of an eagle and a representation of a shield depending from the talon of the eagle.

SER. No. 12,795. CANNED PINEAPPLES. PAUL TAYLOR BROWN CO., New York, N. Y. Filed Sept. 18, 1905.

Southern Cross

The words "SOUTHERN CROSS."

SER. No. 12,796. TONICS AND REMEDIES FOR DYSPEPSIA AND STOMACH AND INTESTINAL DISORDERS. VICTOR E. BECK. New York, N. Y. Filed Sept. 20, 1905.



The word "RONUMA," the same appearing upon an escutcheon-like shield and a scroll appearing above and below the said word.

SER. No. 12,839. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa. Filed Sept. 21, 1905.



The representation of a distillery, above which arranged in a curved line are the following words and numerals: "GIBSONTON MILLS ON THE MONONGAHELA RIVER, ERECTED 1856," and below which are the words, character, and abbreviation "JOHN GIBSON'S SON & CO'S.," and beneath which is a horizontal panel composed of parallel lines beneath which are the words "RYE WHISKEY."

SER. No. 12,940. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, of Porto Rico. Filed Sept. 23, 1905.

SER. No. 12,940.



A representation of a tobacco-plant with a cigar underneath, all inclosed in a conventionalized trefoil, the base being rounded.

SER. No. 12,962. BURNERS FOR ACETYLENE AND OTHER GASES. CRESCENT BURNER MANUFACTURING CO., New York, N. Y. Filed Sept. 25, 1905.



The word "CRESCENT" upon a representation of a crescent-shaped figure.

SER. No. 13,096. GERMICIDE DISINFECTANT. THE ALBO CHEMICAL CO., Cincinnati, Ohio. Filed Sept. 28, 1905.



The words "SUNLIGHT DIP" on the rays of the sun.

SER. No. 13,581. SILVER-PLATED HOLLOW WARE, FLAT WARE, AND TABLEWARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,341. CANNED FRUITS AND VEGETABLES. PLATT & COMPANY, Baltimore, Md. Filed Oct. 5, 1905.



The words "BALTIMORE ORIOLE BRAND," associated with the representation of an oriole perched upon a branch of a tree.

SER. No. 13,582. POCKET-KNIVES, TABLE-KNIVES, BUTCHER-KNIVES, STICKING-KNIVES, SKINNING-KNIVES, PARING-KNIVES, CARVING-KNIVES, RAZORS, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,584. HARNESSES, SADDLES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,585. TELEPHONES AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,620. WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

HOUSEHOLD

The word "HOUSEHOLD."

SER. No. 13,770. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C. Filed Oct. 19, 1905.

ROSEMARY

The word "ROSEMARY."

SER. No. 13,779. WHISKY. JAMES M. CARROLL, Torrington, Conn. Filed Oct. 20, 1905.



A pictorial representation of the birthplace of John Brown inclosed in a border having thereon the words BIRTH PLACE OF JOHN BROWN HERO OF HARPERS FERRY BORN IN TORRINGTON, CONN. MAY 9TH 1800."

SER. No. 13,825. AXES, HATCHETS, AND ADZES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905.



The word "RED CHIEFTAIN" and the representation of an Indian camp showing an Indian in the foreground with a scalp and tomahawk in his hands.

SER. No. 13,838. SEWING-MACHINES AND SEWING-MACHINE PARTS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,840. HARNESSES, SADDLES, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,841. POCKET-KNIVES, TABLE-KNIVES, BUTCHER-KNIVES, STICKING-KNIVES, SKINNING-KNIVES, PARING-KNIVES, CARVING-KNIVES, RAZORS, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,842. SILVER-PLATED HOLLOW WARE, FLAT WARE, AND TABLEWARE. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,872. WHISKY. FRED S. SCHERER, Utica, N. Y. Filed Oct. 23, 1905.

XXXX
T K
F S

A monogram of the letters "F S S," inclosed in an ornamental border, the letters "T K," with a circle at each end and between the same, and four "X's."

SER. No. 13,873. WHISKY. FRED. S. SCHERER, Utica, N. Y. Filed Oct. 23, 1905.

Old Nip

The words "OLD NIP," with scrollwork on either side thereof, associated with the picture of an old man holding a glass of whisky in his right hand, inclosed in an ornamental border with scrollwork.

SER. No. 13,920. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO., New York, N. Y. Filed Oct. 25, 1905. Used ten years.

DR TOWNSEND'S SARSAPARILLA

The words "DR. TOWNSEND'S SARSAPARILLA."

SER. No. 13,921. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO. New York, N. Y. Filed Oct. 25, 1905.

S. P Townsend

The facsimile signature "S. P TOWNSEND."

SER. No. 13,922. EXTRACT OF SARSAPARILLA. NOSTRAND TRADING CO., New York, N. Y. Filed Oct. 25, 1905.



An allegorical representation showing the bust of Dr. S. P. Townsend inclosed in a frame held in the hands of an angel, with the figure of a woman whose hand points toward said bust and female figures below gazing upwardly, together with the representation of a building.

SER. No. 13,963. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y. Filed Oct. 26, 1905.

RECLAIMED
D
RUBBER

The representation of a Maltese cross inclosing the capital letter "D" and the words "RECLAIMED RUBBER."

SER. NO. 13,986. ILLUMINATING-OIL. WEST INDIA OIL COMPANY, New York, N. Y. Filed Oct. 21, 1905.



A representation of Columbus in association with the words "LUZ SUPERIOR."

SER. NO. 14,015. PAD CONTAINING A SUBSTANCE WHICH CLEANSES AND FURNISHES A POLISH TO THE BOTTOM OF A FLAT-IRON. THE GREENER MANUFACTURING COMPANY, Cincinnati, Ohio. Filed Oct. 28, 1905.



The representation of a piece of cloth suspended from a clothesline, and upon the cloth appears the hyphenated word "IRON-SLICK," together with the representation in perspective of a substantially square figure bearing the hyphenated word "IRON-SLICK" on two of its edges, a part of the word "IRON-SLICK" appearing on the distant edge being hidden by the representation of a flat-iron resting upon this perspective of a substantially square figure.

SER. NO. 14,023. SPRING PAPER-CLIPS. RING PAPER CLIP COMPANY, Providence, R. I. Filed Oct. 28, 1905.

RINKLIP

The word "RINKLIP."

SER. NO. 14,152. CARPET-WARPS. JAMES E. REYNOLDS & CO., New York, N. Y. Filed Nov. 1, 1905. Used ten years.



The word "PEERLESS" arranged above a trotting race-track scene and the whole inclosed by a rectangular border with ornamental corners.

SER. NO. 14,162. RECLAIMED RUBBER. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y. Filed Nov. 1, 1905.



The representation of a Maltese cross with the words "RECLAIMED PEERLESS RUBBER" arranged within the cross, the whole inclosed in a circle.

SER. NO. 14,201. PLASTER-OF-PARIS, CALCINED PLASTER, FINISHING-PLASTER, AND CASTING-PLASTER. CLIFFORD L. MILLER & CO., New York, N. Y. Filed Nov. 2, 1905.

APEX

The word "APEX."

SER. NO. 14,206. POLISH FOR STOVES AND STOVEPIPES, RANGES, FURNACES, BOILERS, AND ENGINES. AMOS L. PRESCOTT, New York, N. Y. Filed Nov. 2, 1905.



A dark rectangular panel with rounded corners upon which appears the arbitrarily-selected word "VULCANOL," associated with the words "BETTER THAN STOVE POLISH."

SER. No. 14,209. CORSETS. KORS BROS., New York, N. Y. Filed Nov. 2, 1905.

CELLCLOTH

The word "CELLCLOTH."

SER. No. 14,232. OILSTONES, WATER-STONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa. Filed Nov. 3, 1905.



The word "IDEAL" and the representation of the ideal flower appearing on the representation of a keystone superimposed on a serrated seal.

SER. No. 14,314. MINERAL WATER. THE APOLLINARIS COMPANY, LIMITED, London, England. Filed Nov. 4, 1905. Used ten years.



The words "THE QUEEN OF TABLE WATERS," surrounded by an ornamental border.

SER. No. 14,403. CORSETS. BIRDSEY & SOMERS, New York, N. Y. Filed Nov. 8, 1905.

F.P.

The arbitrarily-selected letters "F. P."

SER. No. 14,438. CORSETS. BIRDSEY & SOMERS, New York, N. Y. Filed Nov. 9, 1905.

ARMORSIDE

The word "ARMORSIDE."

SER. No. 14,440. CORSETS. BIRDSEY & SOMERS, New York, N. Y. Filed Nov. 9, 1905.

A TO Z

The letters and word "A TO Z."

SER. No. 14,459. COFFEE. N. LANDON BURCHELL, Washington, D. C. Filed Nov. 9, 1905. Used ten years.

BOUQUET

The word "BOUQUET."

SER. No. 14,477. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Nov. 10, 1905. Used ten years.



The words "AMERICAN SILVER PLATE CO." disposed around a circle inclosing the word "QUADRUPLE."

SER. No. 14,496. HAIR-DRESSING. CARRIE V. DORMAN, Washington, D. C. Filed Nov. 11, 1905. Used ten years.

JATAMANSI

The word "JATAMANSI."

SER. No. 14,515. CANNED TOMATOES, CORN, BEANS, ASPARAGUS, BEETS, PEAS, PUMPKIN, SPINACH, SUCCOTASH, AND SQUASH. LEWIS DEGROOT & SON, New York, N. Y. Filed Nov. 11, 1905. Used ten years.

HEALTH BRAND

The words "HEALTH BRAND."

SER. No. 14,666. SILVER-POLISH IN LIQUID, POWDER, OR PASTE FORM. GORHAM MFG. CO., Providence, R. I. Filed Nov. 15, 1905. Used ten years.

GORHAM
SILVER
POLISH

The words "Gorham Silver Polish."

Ser. No. 14,725. FIRE-EXTINGUISHER IN POWDERED FORM. The Nevermyss Fire Extinguisher Company, Middletown, N. Y. Filed Nov. 16, 1905.



A circular panel bearing scrollwork and a flaming torch partially covered by a winged shield, and the whole associated with the words "The Nevermyss Fire Extinguisher."

Ser. No. 14,765. MALT EXTRACTS. M K Goetz Brewing Co, St. Joseph, Mo. Filed Nov. 17, 1905. Used ten years.



The word "Goetz."

Ser. No. 14,839. ENGINE-GOVERNORS. The Pickering Governor Company, Portland, Conn. Filed Nov. 20, 1905. Used ten years.



The word "Pickering."

Ser. No. 14,843. SILK LININGS AND DRESS-SILKS. Goetz Silk Manufacturing Company, Holyoke, Mass. Filed Nov. 20, 1905.



A square outline within which is a four-pointed star, each point of said star intersecting an angle of said square. Upon the star is a circle within which is a ring, across the face of which ring is a bar running from left to right upon which are the words "Guaranteed Pure Dye." Within said ring and above said bar is the name "Goetz" and within said ring and below said bar the word "Silks."

Ser. No. 14,856. LEATHER BOOTS AND SHOES. Thomas F. Peirce & Son, Providence, R. I. Filed Nov. 20, 1905.

Ser. No. 14,856.



A conventional form or figure somewhat resembling a fleur-de-lis, with the letters "T. F. P. & Son" on said figure, a panel horizontally crossing the figure below the middle portion, said panel containing the following "Established 1836."

Ser. No. 14,867. COATS, VESTS, PANTALOONS, OVERCOATS, AND MEN'S AND BOYS' SUITS. Perry & Co., Philadelphia, Pa. Filed Nov. 21, 1905.

N. B. T.

The letters "N. B. T.," each followed by a period.

Ser. No. 14,884. PACKAGES OF COTTON-BATTING OF VARIOUS SIZES AND WEIGHTS PREPARED FOR THE MARKET AND FOR TRADE AND COMMERCE. William Lowenthal, Cohoes, N. Y. Filed Nov. 21, 1905.

"DAISY"

The word "Daisy" in quotation-marks.

Ser. No. 14,910. OLIVE-OIL. Akerman & Tuffley, North San Diego, Cal. Filed Nov. 22, 1905.



The words "Old Mission" and a pictorial representation of an old mission building set in a landscape showing an uncultivated area of grass and semitropical undergrowth in the middle distance and two tall palm-trees in the foreground.

Ser. No. 14,928. HERMETICALLY-SEALED CANNED FRUITS AND VEGETABLES. Milliken, Tomlinson Co., Portland, Me. Filed Nov. 23, 1905.

SUPERBA

The word "Superba."

Ser. No. 14,956. WOOLEN CLOTH. Talbot Mills, Billerica, Mass. Filed Nov. 24, 1905.

SER. No. 14,956.



The letter "T" in fanciful type resting upon a base-piece, a sheep's head at the right of the letter and partially imposed thereon, in the top or crossing of the "T" the words "TALBOT MILLS," and below the crossing at the left of the "T" the abbreviation "ESTAB." and on the right thereof "1857."

SER. No. 14,972. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga. Filed Nov. 25, 1905.

ALPINE SNOW

The words "ALPINE SNOW."

SER. No. 14,973. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga. Filed Nov. 25, 1905.

WHITE SATIN

The words "WHITE SATIN."

SER. No. 14,974. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga. Filed Nov. 25, 1905.

VICI

The word "VICI."

SER. No. 14,975. WHEAT-FLOUR. BARRETT, DENTON & LYNN COMPANY, Dalton, Ga. Filed Nov. 25, 1905.

ACME

The word-symbol "ACME."

SER. No. 14,996. ORANGES, LEMONS, GRAPE-FRUIT, TANGERINES, AND MANDARINS. RUSSELL & COMPANY, Fort Ogden, Fla., and New York, N. Y. Filed Nov. 25, 1905.



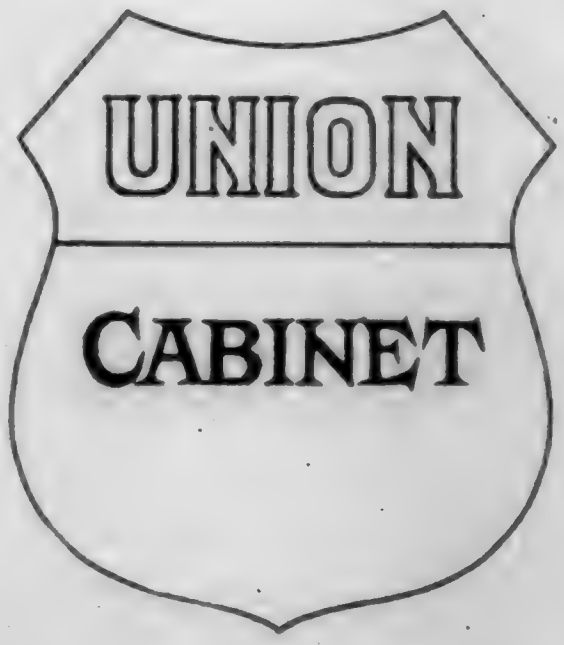
An outline of the State of Florida having thereon the words "FLORIDA SUNNY SOUTH FARMS FORT OGDEN," appearing on a circular field surrounded by radiating tongues of flame and the words "SUNNY SOUTH FARMS."

SER. No. 15,036. CASTOR-OIL CONFECTION. CASTOR OIL TABLET CO., New York, N. Y. Filed Nov. 28, 1905.



The letters "C" and "O" arranged upon an oval-shaped tablet. Within the letter "C" is the word "ASTOR," and within the letter "O" is the word "VAL." Upon the edge of the tablet, in plain block letters, appear the words "THE ONLY CASTOR OIL CONFECTION."

SER. No. 15,102. GLUE. AMERICAN GLUE CO., Boston, Mass. Filed Dec. 1, 1905.



The representation of a shield, the word "UNION" in the upper portion of the shield and the word "CABINET" just below, a line dividing the face of the shield into two unequal areas.

SER. No. 15,051. BEER. N. BENJAMIN SON INC., Brooklyn, N. Y. Filed Nov. 28, 1905.



The portrait of Benjamin Benjamin, secretary of N. Benjamin Son, Inc.

SER. No. 15,103. GLUE. AMERICAN GLUE CO., Boston, Mass. Filed Dec. 1, 1905.

UNION

COLLE

EXTRA

The representation of a shield, the word "UNION" in the upper portion of the shield, a line dividing the shield into two unequal areas, the words "COLLE" and "EXTRA," arranged substantially on the perimeter of a circle, being shown in the lower and larger area.

SER. No. 15,105. GELATIN. AMERICAN GLUE CO., Boston, Mass. Filed Dec. 1, 1905.

UNION

GRADE

The representation of a shield divided by a horizontal line into an upper field bearing the word "UNION" and a lower field on which the word "GRADE" appears.

SER. No. 15,133. POCKET-KNIVES, TABLE-KNIVES, BUTCHER-KNIVES, STICKING-KNIVES, SKINNING-KNIVES, PARING-KNIVES, CARVING-KNIVES, AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Dec. 1, 1905.

BLACK DIAMOND

The words "BLACK DIAMOND."

SER. No. 15,163. OLIVE-OIL. ROBERT HILL, New York, N. Y. Filed Dec. 4, 1905.



The representation of an olive orchard with the figure of a woman in the background supporting a basket on her head. The entire view is inclosed in a rectangular border composed of thick outer lines and light inner lines, said inner lines having rounded corners.

SER. No. 15,164. OLIVE-OIL. ROBERT HILL, New York, N. Y. Filed Dec. 4, 1905.



The representation of the sun bearing on its face the features of a man surrounded by an irregular radiance and by diverging rays. Above the representation of the sun appear the words "OLIO D'OLIVA SOPRAFFINO." Beneath appears a transverse panel bearing the words "FRATELLI BORELLI E Co" and below this the words "LUCCA ITALY," the whole being inclosed in a border with rounded corners.

SER. No. 15,165. OLIVE-OIL. ROBERT HILL, New York, N. Y. Filed Dec. 4, 1905.



The representation of an Italian gentleman wearing a plumed hat and a cloak and holding in both hands his drawn sword, associated with a monogram of the letters "T F," inclosed in concentric circles. Above appear the words "OLIO D'OLIVA SOPRAFFINO" and upon a ribbon the words "TEODORO FAGILLA" and below this the words "LIVORNO, ITALY." the whole being surrounded by a border.

SER. No. 15,186. FISHING-RODS. THE HORTON MANUFACTURING COMPANY, Bristol, Conn. Filed Dec. 4, 1905.

RAINBOW

The word "RAINBOW."

SER. No. 15,222. SHAMPOO AND SCALP-CLEANSING PREPARATIONS. LOUISE HAUCK, New York, N. Y. Filed Dec. 5, 1905.

POTULA

The word "POTULA."

SER. No. 15,223. POLISHING AND CLEANSING PREPARATIONS. LOUISE HAUCK, New York, N. Y. Filed Dec. 5, 1905.

SER. No. 15,223.

ULAKA

The word "ULAKA."

SER. No. 15,234. MONTHLY MAGAZINES. THE WORLD TODAY COMPANY, Chicago, Ill. Filed Dec. 6, 1905.

THE WORLD TO-DAY

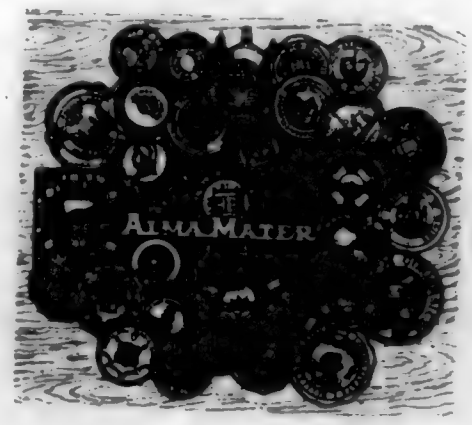
The words "THE WORLD TO-DAY."

SER. No. 15,236. SILVER-PLATED FLAT WARE AND HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Dec. 6, 1905.

ROGERS

The word "ROGERS" flanked on either side by the representation of an anchor.

SER. No. 15,344. CIGARETTES. GEORGE H. G. WING, Boston, Mass. Filed Dec. 11, 1905.



A pictorial representation of overlapping college-emblems, associated with the words "ALMA MATER," written across the central portion thereof.

SER. No. 15,467. WHEAT-FLOUR. THE ISAAC HARTER MILLING COMPANY, Toledo, Ohio. Filed Dec. 16, 1905. Used ten years.

HARTER'S

The word "HARTER'S."

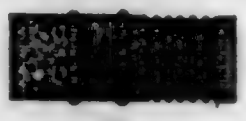
SER. No. 15,649. TOILET-PAPER. THOMAS F. SPRIGG, Baltimore, Md. Filed Dec. 26, 1905.

SER. No. 15,649.

JUMBO
WITCH HAZEL
TOILET PAPER
Thoroughly Medicated
EXPRESSLY PREPARED AND FOR FINE DRUGGISTS' TRADE.

The word "JUMBO," in connection with the representation of a witch-hazel plant, and the words "WITCH HAZEL" "TOILET PAPER" "THOROUGHLY MEDICATED" and "EXPRESSLY PREPARED, AND FOR FINE DRUGGISTS' TRADE."

SER. No. 15,729. METALLIC TIPS FOR LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y. Filed Dec. 28, 1905.



A circumferential band of red color contrasting with a yellow or gold color on each side thereof and produced on a lead-pencil tip.

SER. No. 15,803. EXTERNAL REMEDY FOR ANIMALS. ALBERT B YOUNG, Buffalo, N. Y. Filed Jan. 2, 1906.



The representation of a barn of the hip-roof type with a silo in rear of the same.

SER. No. 15,804. EXTERNAL REMEDY FOR ANIMALS. ALBERT B YOUNG, Buffalo, N. Y. Filed Jan. 2, 1906.

Sozo-nux

The hyphenated word "SOZO-NUX."

SER. No. 15,886. CURE FOR RHEUMATISM. JAMES L. SHEDLEY, New York, N. Y. Filed Jan. 3, 1906.

VOLCANA

The word "VOLCANA."

SER. No. 15,846. LIQUID MAGNESIA PREPARATION. THE CHAS H PHILLIPS CHEMICAL CO., New York, N. Y. Filed Jan. 3, 1906. Used ten years.



The monogram containing the letters of the word "PHILLIPS," said monogram being on a shield, which is surrounded by a buckled strap.

SER. No. 15,847. CURE OR SPECIFIC FOR NEURALGIA. EDWARD B. WHITE, Lancaster, Ohio. Filed Jan. 3, 1906.



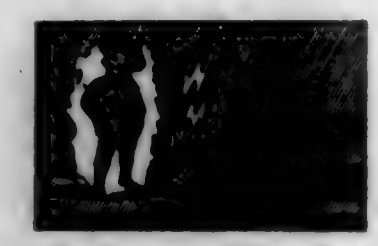
A representation of a knife, through the central portion of the blade of which extend the letters forming the word "NEURALGIA." The word "NEURAL" appears in relatively small type on the lower portion of the blade below the parts of the letters forming the word "NEURALGIA," which are presented as extending above the upper side of the blade.

SER. No. 15,890. INTERNAL REMEDY FOR HEADACHE. CHARLES B. HUDON, Manchester, N. H. Filed Jan. 4, 1906.

MIKADO

The arbitrary word "MIKADO."

SER. No. 16,025. COUGH-DROPS. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio. Filed Jan. 8, 1906.



The words "WEE MACGREGOR" and the picture of a small boy, all on a background of the Macgregor plaid.

SER. No. 16,125. CANNED LOBSTER AND CANNED MACKEREL. HARTLEY C. BAXTER, Brunswick, Me. Filed Jan. 11, 1906. Used ten years.

PREFERRED STOCK

The word-symbol "PREFERRED STOCK."

SER. No. 16,416. ROASTED COFFEES. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Filed Jan. 22, 1906.



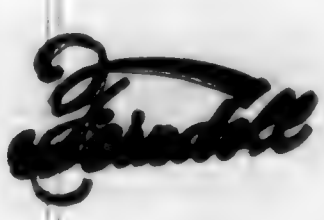
The word "QUAIL" and the picture of a quail standing on a log and surrounded by an ornamental-framework border.

SER. No. 16,473. COFFEE. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 24, 1906.



The arbitrarily-selected word "FERNDELL."

SER. No. 16,474. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 24, 1906.



The arbitrarily-selected word "FERNDELL."

SER. No. 16,489. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Jan. 25, 1906.

AUTOBIKE

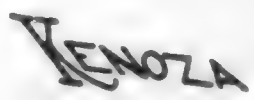
The word "AUTOBIKE."

SER. No. 16,670. WALL-PAPERS. BARCK WALL PAPER CO., New York, N. Y. Filed Feb. 1, 1906.

"MURALIA"

The word "MURALIA" within quotation-marks.

SER. No. 16,898. LEATHER BOOTS AND SHOES. NATHANIEL M. NELSON, Haverhill, Mass. Filed Feb. 10, 1906.



The word "KENOZA."

SER. No. 16,959. UNMANUFACTURED STEEL, INCLUDING STEEL BLANKS, SHAPES, RODS, BILLETS, AND SHEETS. GEORGE NASH, New York, N. Y. Filed Feb. 12, 1906.

SOLAR

The word "SOLAR."

SER. No. 16,992. SIDEWALK AND ICE SCRAPERS. THE AVERY STAMPING COMPANY, Cleveland, Ohio. Filed Feb. 14, 1906.

KLONDIKE

The word "KLONDIKE."

SER. No. 17,024. INSULATED WIRES. PHILLIPS INSULATED WIRE CO., Pawtucket, R. I. Filed Feb. 14, 1906



The word "PARAC" on a background inclosed in concentric circles.

SER. No. 17,058. SUSPENSORY BANDAGES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

SYRACUSE

The word "SYRACUSE."

SER. No. 17,059. ADHESIVE PLASTER. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

AMERICAN

The word "AMERICAN."

SER. No. 17,067. TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

LEE'S

The word "LEE'S."

SER. No. 17,068. TRUSSES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa. Filed Feb. 16, 1906. Used ten years.

CHAMPION

The word "CHAMPION."

SER. No. 17,084. SHOT. SELBY SMELTING & LEAD COMPANY, San Francisco, Cal. Filed Feb. 16, 1906. Used ten years.

Selby

The word "SELBY."

SER. No. 17,085. SOLDER, BABBITT, OR OTHER ANTIFRICTION METAL. SELBY SMELTING & LEAD COMPANY, San Francisco, Cal. Filed Feb. 16, 1906. Used ten years.

SELBY

The word "SELBY."

SER. No. 17,086. LEAD TRAPS AND BENDS. SELBY SMELTING AND LEAD COMPANY, San Francisco, Cal. Filed Feb. 16, 1906. Used ten years.

SELBY

The word "SELBY."

SER. No. 17,092. RANGE-BOILERS. HAYES MFG. CO., Paterson, N. J. Filed Feb. 16, 1906. Used ten years.

WILHELMI

The word "WILHELMI."

SER. No. 17,102. KNIT GOODS IN THE PIECE. FRENCH & WARD, New York, N. Y., and West Stoughton, Mass. Filed Feb. 16, 1906.

Krinkledown

The word "KRINKLEDOWN."

SER. No. 17,108. INSULATING AND SHEATHING PAPER AND CLOTH. J. A. & W. BIRD & CO., Boston, Mass. Filed Feb. 16, 1906.

IBEX

The word "IBEX."

SER. No. 17,126. SPIRAL, SECTIONAL RING, FLAX, AND SHEET PACKING. SPECK, MARSHALL & CO., Pittsburg, Pa. Filed Feb. 17, 1906.

GEM

The word "GEM."

SER. No. 17,127. RUBBER HOSE. SPECK, MARSHALL & CO., Pittsburg, Pa. Filed Feb. 17, 1906.

ANVIL

The word "ANVIL."

SER. No. 17,128. RUBBER BELTING. SPECK, MARSHALL & CO., Pittsburg, Pa. Filed Feb. 17, 1906.

INVINCIBLE

The word "INVINCIBLE."

SER. No. 17,137. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed Feb. 17, 1906. Used ten years.

SUPERIOR

The word "SUPERIOR."

SER. No. 17,188. RINGS. WARREN & WILLIAMS, Providence, R. I. Filed Feb. 17, 1906.



The monogram "W W" and the character "&" arranged just above the center of the monogram.

SER. No. 17,165. CULINARY UTENSILS MADE OF COPPER WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Feb. 19, 1906. Used ten years.



The representation of a Maltese cross and the word "LISK" in the middle of the cross.

SER. No. 17,166. CIRCUIT-CONTROLLERS OR SWITCHES. ALBERT & J M ANDERSON MANUFACTURING COMPANY, Boston, Mass. Filed Feb. 19, 1906.



The letter "A" inclosed within a circle.

SER. No. 17,172. LANTERN-BURNERS. R E DIETZ COMPANY, New York, N. Y. Filed Feb. 19, 1906. Used ten years.

CONVEX

The word "CONVEX."

SER. No. 17,173. HEATING-FURNACES AND BOILERS. MONROE FOUNDRY & FURNACE CO., Monroe, Mich. Filed Feb. 19, 1906. Used ten years.

FLORAL CITY

The words "FLORAL CITY."

SER. No. 17,201. SCISSORS. ADOLPH KASTOR & BROS., New York, N. Y. Filed Feb. 20, 1906.

SER. No. 17,201.



A representation of a four-leaf clover.

SER. No. 17,202. SHEEPSKINS HAVING A SPECIAL FINISH. RICHARD YOUNG COMPANY, New York, N. Y. Filed Feb. 20, 1906.



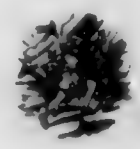
The words "CAPT. KIDD," associated with which is the representation of a man holding two pistols, a sailing vessel in the distance, and the words "RICHARD YOUNG CO. NEW YORK AND BOSTON."

SER. No. 17,218. SEWING-MACHINE NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn. Filed Feb. 21, 1906. Used ten years.

EXCELSIOR

The word "EXCELSIOR."

SER. No. 17,220. SEWING-MACHINE NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn. Filed Feb. 21, 1906.



The representation of a man ascending the side of a mountain and carrying a banner upon which is inscribed the word "EXCELSIOR."

Ser. No. 17,281. CARBONS FOR ELECTRICAL PURPOSES. Hugo Reisenegg, New York, N. Y. Filed Feb. 21, 1906.

EXCELLO

The word "Excello."

Ser. No. 17,278. PUDDINGS. Aristotle Tsakona, San Francisco, Cal. Filed Feb. 22, 1906.

HELIOS

The word "Helios."

Ser. No. 17,280. TOOTH-BRUSHES. Florence Manufacturing Company, Northampton, Mass. Filed Feb. 22, 1906.

Ser. No. 17,280.

(2)

The numeral "2" inclosed in a circle.

Ser. No. 17,399. FOOD FOR CATS AND KITTENS. William W. French, Gloucester and Boston, Mass. Filed Feb. 23, 1906.



The name "Kitty-Kake" and the representation of a domestic cat seated upon a cushion.

Sackett & Wilhelms Lithographing & Printing Co.
New York

TRADE-MARKS

REGISTERED MARCH 20, 1906.

50,438. CENTRIFUGAL CREAM-SEPARATORS. AMERICAN SEPARATOR CO., Bainbridge, N. Y.
The word "AMERICAN." Used ten years.
Filed December 8, 1905. Serial No. 15,279. PUBLISHED JANUARY 9, 1906.

50,439. COFFEE. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Il
The word "DRINKSOME."
Filed October 4, 1905. Serial No. 13,274. PUBLISHED JANUARY 23, 1906.

50,440. WAX. JUSTIN E. CHANDLER, Brockton, Mass.
The representation of a rooster crowing and the words "COCK OF THE WALK," inclosed in parentheses, below the picture.
Filed December 11, 1905. Serial No. 15,345. PUBLISHED JANUARY 23, 1906.

50,441. CERTAIN CANDIES. GEORGE ZIEGLER CO., Milwaukee, Wis.
The representation of an eight-pointed figure resembling a star, between the points of which appear the letters constituting the word "PEERLESS," and having centrally located thereon a monogram formed of the letters and abbreviation "G Z Co."
Filed May 1, 1905. Serial No. 3,886. PUBLISHED SEPTEMBER 26, 1905.

50,442. CANNED FRUITS AND VEGETABLES. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md.
The representation of a bull's head. Used ten years.
Filed May 29, 1905. Serial No. 7,056. PUBLISHED JANUARY 23, 1906.

50,443. CAR-COUPLINGS, CAR-BUFFERS, AND DRAFT-GEARS AND PARTS THEREOF. GOULD COUPLER CO., New York, N. Y.
The word "GOULD." Used ten years.
Filed May 24, 1905. Serial No. 6,540. PUBLISHED JANUARY 23, 1906.

50,444. CORNMEAL. GULFPORT GROCERY COMPANY, Gulfport, Miss.
The word "POLKADOT."
Filed August 3, 1905. Serial No. 11,237. PUBLISHED JANUARY 23, 1906.

50,445. MOLASSES. N. W. TAUSSIG CO., New York, N. Y.
The representation of an ornamental circle surrounded by the words, characters, and abbreviations "E & P SALAZAR & Co. PONCE, P. R." in a circle. Used ten years.
Filed May 15, 1905. Serial No. 5,026. PUBLISHED JANUARY 23, 1906.

50,446. COFFEE. NEW ORLEANS COFFEE CO., LTD., New Orleans, La.
The word "CHIEF" and the bust of an Indian chief with full plume head-dress.
Filed May 2, 1905. Serial No. 4,009. PUBLISHED JANUARY 23, 1906.

50,447. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn.
The words and numeral "INTERNATIONAL STOCK FOOD. 3 FEEDS FOR ONE CENT," a monogram of the letters "M W S," with the pictorial representation of the head of a horse, a pig, a sheep, a steer, a farm scene, and stock-train. Used ten years.
Filed June 5, 1905. Serial No. 7,450. PUBLISHED JANUARY 23, 1906.

50,448. SPICES. A. SCHILLING & COMPANY, San Francisco, Cal.
A monogram composed of the letters "S B."
Filed June 27, 1905. Serial No. 9,293. PUBLISHED JANUARY 23, 1906.

50,449. CIGARS. ABRAHAM SIEGEL, New York, N. Y. Assignor to Waldorf-Astoria Segar Co., of New York, N. Y., a corporation of New York.
The words "LA MAGNITA."
Filed April 6, 1905. Serial No. 487. PUBLISHED NOVEMBER 14, 1905.

50,450. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn.
The monogram "C H N Co" formed of a horseshoe and nails. Used ten years.
Filed June 5, 1905. Serial No. 7,429. PUBLISHED JANUARY 23, 1906.

50,451. MUCILAGE, PASTE, AND ADHESIVE CEMENTS. THE CARTER'S INK COMPANY, Boston, Mass. and New York, N. Y.
The word "CARTER'S." Used ten years.
Filed May 26, 1905. Serial No. 6,703. PUBLISHED JANUARY 23, 1906.

50,452. GROUND SPICES. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
The words "GOLDEN RULE" and the representation of a shield bearing stars, a scroll, a d a monogram of the letters "C W S Co."
Filed June 3, 1905. Serial No. 7,362. PUBLISHED JANUARY 23, 1906.

50,453. GREASE-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
The word "IDEAL." Used ten years.
Filed July 26, 1905. Serial No. 10,795. PUBLISHED JANUARY 23, 1906.

50,454. CORNMEAL. THREEFOOT BROS. & Co., Meridian, Miss.
The words "RED ROSE," associated with the representation of a rose.
Filed December 4, 1905. Serial No. 15,187. PUBLISHED JANUARY 23, 1906.

50,455. COFFEE. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill.
The word "ARBUCKLES." Used ten years.
Filed September 23, 1905. Serial No. 12,939. PUBLISHED JANUARY 23 1906.

50,456. LUBRICATING-GREASE. BEERWALD & LEVIN, New York, N. Y.
A panel printed in red, upon which are printed in black the capital letters "B." and "L." with the word "AND" in small black letters arranged between them. Placed after each capital letter is a period. The panel is of the shape of two irregular hexagons that are joined at one end.
Filed November 29, 1905. Serial No. 15,059. PUBLISHED JANUARY 23, 1906.

50,457. INSTRUMENT FOR MEASURING THE CAPACITY OF THE LUNGS. CLINTON H. BIRD, New Haven, Conn.
The word "PLEUROMETER."
Filed August 30, 1905. Serial No. 12,089. PUBLISHED JANUARY 23, 1906.

50,458. SCISSORS. CARL F. BOKER, New York, N. Y.
The representation of a razor. Used ten years.
Filed September 14, 1905. Serial No. 12,549. PUBLISHED JANUARY 23, 1906.

50,459. BOILER-TUBE CLEANERS OR SCRAPERS. A. W. CHESTERTON & Co., Boston, Mass.

The word "INGALLS." Used ten years.

Filed September 18, 1905. Serial No. 12,742. PUBLISHED JANUARY 23, 1906.

50,460. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The words "POLICE-POSITIVE."

Filed August 1, 1905. Serial No. 11,095. PUBLISHED JANUARY 23, 1906.

50,461. RESPIRATORS. HARVEY S. COVER, South Bend, Ind.

The likeness of applicant wearing a respirator. It further consists of the signature of the applicant beneath his likeness.

Filed June 8, 1905. Serial No. 7,647. PUBLISHED JANUARY 23, 1906.

50,462. ELECTRIC-CONDUIT FITTINGS. CROUSE-HINDS COMPANY, Syracuse, N. Y.

The representation of a diamond.

Filed December 26, 1905. Serial No. 15,646. PUBLISHED JANUARY 23, 1906.

50,463. ELECTRIC-CONDUIT FITTINGS. CROUSE-HINDS COMPANY, Syracuse, N. Y.

The word "CONDULET."

Filed December 26, 1905. Serial No. 15,647. PUBLISHED JANUARY 23, 1906.

50,464. ROASTED COFFEE. FORT SMITH COMMISSION COMPANY, Fort Smith, Ark.

The words "OLD FORT."

Filed September 26, 1905. Serial No. 13,019. PUBLISHED JANUARY 23, 1906.

50,465. POWDERED PREPARATION FOR CLEANING PRECIOUS METALS. JERE B. HALDEMAN, St. Louis, Mo.

A representation of the lower segment of a watch's face showing the seconds-hand at the mark indicating sixty seconds or one minute. Over this are the words "ONE MINUTE" and beneath the words "SILVER CLEANER."

Filed November 28, 1905. Serial No. 15,055. PUBLISHED JANUARY 23, 1906.

50,466. LUBRICATING OILS AND GREASE. FRANK B. HOWER, Buffalo, N. Y.

The word "DUPLEX." Used ten years.

Filed June 10, 1905. Serial No. 7,886. PUBLISHED JANUARY 23, 1906.

50,467. HARVESTERS AND EXTRA AND REPAIR PARTS AND PIECES THEREFOR. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill.

A facsimile of the autograph of the surname of James Deering, one of the vice-presidents of the said International Harvester Company of America.

Filed August 31, 1905. Serial No. 12,110. PUBLISHED JANUARY 23, 1906.

50,468. HARVESTERS AND REPAIR PARTS AND PIECES THEREFOR. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill.

A facsimile of the autograph of the surname of Cyrus H. McCormick, president of the said International Harvester Co. of America.

Filed August 31, 1905. Serial No. 12,111. PUBLISHED JANUARY 23, 1906.

50,469. FLAVORING EXTRACTS. JOSEPH BURNETT CO., Boston, Mass.

The word "BURNETT'S." Used ten years.

Filed September 14, 1905. Serial No. 12,552. PUBLISHED JANUARY 23, 1906.

50,470. TOOTH-BRUSHES. CHARLES LOONEN, Paris, France.

The words "RED CROSS" and the representation of a red Greek cross.

Filed May 18, 1905. Serial No. 6,045. PUBLISHED DECEMBER 5, 1905.

50,471. PREPARATIONS FOR CLEANING ENAMELED AND PORCELAIN WARE. WILLIAM COURTNEY MCKINNEY, New Brighton, Pa., assignor to the Porcela Company, of Pittsburg, Pa., a corporation of Pennsylvania.

The word "PORCELA."

Filed December 18, 1905. Serial No. 15,478. PUBLISHED JANUARY 23, 1906.

50,472. ANTIFRICTION METALS. MERCHANT & EVANS Co., Camden, N. J.

The words "IRIDIUM ANTI-FRICTION METAL." Used ten years.

Filed August 8, 1905. Serial No. 11,427. PUBLISHED JANUARY 23, 1906.

50,473. COFFEE-BERRY, EITHER WHOLE OR GROUND MILLIKEN, TOMLINSON CO., Portland, Me.

The words "GOLDEN ROD."

Filed June 26, 1905. Serial No. 9,061. PUBLISHED JANUARY 23, 1906.

50,474. COFFEE-GRINDERS. NATIONAL SPECIALTY MANUFACTURING COMPANY, Philadelphia, Pa.

The word "NATIONAL." Used ten years.

Filed April 24, 1905. Serial No. 2,900. PUBLISHED JANUARY 23, 1906.

50,475. LOZENGES. NEW ENGLAND CONFECTIONERY CO., Boston, Mass.

The word "PEERLESS." Used ten years.

Filed May 15, 1905. Serial No. 5,718. PUBLISHED NOVEMBER 21, 1905.

50,476. WHEAT-FLOUR. PITTSBURGH MILLING CO., Allegheny, Pa.

The word "CAMBRIA." Used ten years.

Filed April 24, 1905. Serial No. 2,847. PUBLISHED JANUARY 23, 1906.

50,477. COFFEE. A. SCHILLING & COMPANY, San Francisco, Cal.

The monogram "S B."

Filed June 27, 1905. Serial No. 9,286. PUBLISHED JANUARY 23, 1906.

50,478. BAKING-POWDER, BICARBONATE OF SODA, AND CREAM OF TARTAR. A. SCHILLING & COMPANY, San Francisco, Cal.

The words "SCHILLING'S BEST." Used ten years.

Filed June 27, 1905. Serial No. 9,291. PUBLISHED JANUARY 23, 1906.

50,479. WHEAT-FLOUR. THE BURRUS MILL & ELEVATOR COMPANY, Fort Worth, Tex.

The words "LIGHT CRUST."

Filed October 31, 1905. Serial No. 14,141. PUBLISHED JANUARY 23, 1906.

50,480. WHEAT-FLOUR. THE COLES COMPANY, Middletown, Conn.

The word "FORTUNE."

Filed October 14, 1905. Serial No. 13,600. PUBLISHED JANUARY 23, 1906.

50,481. AXES, HATCHETS, AND ADZES. THE COLLINS COMPANY, Collinsville, Conn.

The word "LEGITIMUS."

Filed April 4, 1905. Serial No. 376. PUBLISHED JANUARY 23, 1906.

50,482. CORNMEAL, BOTH BOLTED AND GRANULATED. THE DIAMOND ELEVATOR & MILLING COMPANY, Minneapolis, Minn.

The word "CUT" appearing on a diamond-shaped figure printed in red. Used ten years.

Filed September 14, 1905. Serial No. 12,595. PUBLISHED JANUARY 23, 1906.

50,483. BUTTER. THE FOX RIVER BUTTER COMPANY, Aurora, Ill.

A circle inclosing the words "FOX RIVER BUTTER CO.," and the words "CLOVER HILL BUTTER" arranged on a scroll extending in an arc with its ends joining the circle, and the words "AURORA, ILL." below the scroll.

Filed April 7, 1905. Serial No. 677. PUBLISHED JANUARY 23 1906.

50,484. FERTILIZERS. THE INDEPENDENT PACKERS FERTILIZER CO., Columbus, Ohio.

An elliptical figure having a round panel at each end, the panel at the left end containing the pictorial representation of the head of a hog and the panel at the right-hand end containing the pictorial representation of the head of a sheep. In the upper central portion of the figure the pictorial representation of the head of a steer is shown in the round panel partially surrounded by a wreath. A fancy border surrounds the figure, which has a black back-

ground, on which the words "THE INDEPENDENT PACKERS FERTILIZER CO. COLUMBUS, OHIO" appear in white letters.

Filed December 1, 1905. Serial No. 15,132. PUBLISHED JANUARY 23, 1906.

50,485. BUTTER. THE J. P. BADEN PRODUCE CO., Winfield, Kans.

The word "BERNICE."

Filed July 18, 1905. Serial No. 15,523. PUBLISHED JANUARY 23, 1906.

50,486. GAS AND GASOLENE ENGINES. THE OTTO GAS ENGINE WORKS, Philadelphia, Pa.

A shield with a scroll which runs diagonally across its face, starting in the lower left-hand corner, and on which is inscribed the name "OTTO."

Filed June 13, 1905. Serial No. 8,038. PUBLISHED JANUARY 23, 1906.

50,487. SOAP. THE SUMMIT CITY SOAP WORKS, Fort Wayne, Ind.

The arbitrary word-symbol "RUB-NO-MORE."

Filed April 17, 1905. Serial No. 1,960. PUBLISHED JANUARY 23, 1906.

50,488. WASHING-POWDER. THE SUMMIT CITY SOAP WORKS, Fort Wayne, Ind.

The word-symbol "RUB-NO-MORE" arranged above a picture of an elephant dressed as a washerwoman with a hood upon its head, seated on a stool, holding a baby elephant over a tub, and spouting water over it with its trunk.

Filed April 17, 1905. Serial No. 1,961. PUBLISHED JANUARY 23, 1906.

50,489. SODA-WATER SYRUP AND A DRINK MADE FROM SUCH SYRUP. THE WILEY MANUFACTURING CO., Atlanta, Ga.

The hyphenated word "KOLA-ADE."

Filed August 28, 1905. Serial No. 12,052. PUBLISHED JANUARY 23, 1906.

50,490. PAINTS. TOCH BROTHERS, New York, N. Y.

The words "BOAT KOAT."

Filed December 15, 1905. Serial No. 15,437. PUBLISHED JANUARY 23, 1906.

50,491. HENS' EGGS. G. M. WATTLES & SON, Buffalo, N. Y.

The words "RED HEN EGGS," associated with the representation of three hens arranged in a row and a panel bearing the words, letters, and character "RED HEN EGGS G. M. WATTLES AND SON."

Filed December 13, 1905. Serial No. 15,384. PUBLISHED JANUARY 23, 1906.

50,492. TONIC BEVERAGES AND EXTRACTS FOR MAKING THE SAME. WHARTON CHEMICAL CO., Nashville, Tenn.

The fanciful word "DIGESTOL," in which the loop of the initial letter "D" incloses the other letters of the word.

Filed September 15, 1905. Serial No. 12,634. PUBLISHED JANUARY 23, 1906.

50,493. CRANBERRIES. JOSEPH J. WHITE, New Lisbon, N. J.

The word "STAR," the representation of a star, and a circular-shaped background for said representation.

Filed September 14, 1905. Serial No. 12,573. PUBLISHED JANUARY 23, 1906.

50,494. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass.

The pictorial representation of a pair of connected moose-antlers carrying a ribbon-like scroll whose ends are wrapped around the upper prongs of the antlers, associated with the word "MOOSE-ABEC."

Filed September 8, 1905. Serial No. 12,391. PUBLISHED JANUARY 23, 1906.

50,495. POWDERED STOVE-POLISH. X-RAY STOVE POLISH CO., New York, N. Y.

The representation of a stove with dancing devils on top and the words "X-RAY STOVE POLISH" on the side.

Filed May 8, 1905. Serial No. 4,648. PUBLISHED JANUARY 23, 1906.

50,496. WHISKY. BREDE-LANG CO., Dubuque, Iowa.

The word "FOUNDATION."

Filed April 27, 1905. Serial No. 3,317. PUBLISHED AUGUST 8, 1905.

50,497. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.

The words "OXY DIAMINE BLACK." Used ten years.

Filed June 14, 1905. Serial No. 8,085. PUBLISHED JANUARY 23, 1906.

50,498. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England.

The word "FAIRY." Used ten years.

Filed June 5, 1905. Serial No. 7,431. PUBLISHED JANUARY 23, 1906.

50,499. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England.

The words "FAIRY" and "PYRAMID."

Filed June 5, 1905. Serial No. 7,432. PUBLISHED JANUARY 23, 1906.

50,500. SHORT THICK CANDLES. CLARKE'S-PYRAMID AND FAIRY LIGHT COMPANY, LIMITED, London, England.

The word "PYRAMID." Used ten years.

Filed June 5, 1905. Serial No. 7,433. PUBLISHED JANUARY 23, 1906.

50,501. PINS, EARRINGS, AND STUDS. DONLEY & CO., Providence, R. I.

The representation of a bird in the act of flying and carrying in his bill a pennant on which are the letters "D & Co."

Filed April 10, 1905. Serial No. 994. PUBLISHED JANUARY 23, 1906.

50,502. NERVE-ELIXER. ELISABETH DORT, Buffalo, N. Y.

The representation of a chemist's mortar arranged above a monogram formed from the initials "E D" and associated with a buckled band or streamer arranged above the mortar, a wreath arranged below the monogram, and beans and stars arranged between the band or streamer and the mortar and monogram. Used ten years.

Filed June 13, 1905. Serial No. 8,017. PUBLISHED JANUARY 23, 1906.

50,503. SOAP. DUNWOODY BROS. SOAP COMPANY, Denver, Colo.

The words "WATER WHITE" followed by the word "SOAP," so as to read "WATER WHITE SOAP," the "W" being sufficiently large to form the initial letter of both words "WATER" and "WHITE," associated with the script-written firm-name "DUNWOODY BROS.," said name ending in a paraph.

Filed May 1, 1905. Serial No. 3,867. PUBLISHED JANUARY 23, 1906.

50,504. BITUMINOUS AND ANTHRACITE COAL. ECONOMY FUEL CO., Montgomery, W. Va., and Cincinnati, Ohio.

The word "LINGO" inclosed in quotation-marks.

Filed May 22, 1905. Serial No. 6,322. PUBLISHED JANUARY 23, 1906.

50,505. BITUMINOUS AND ANTHRACITE COAL. ECONOMY FUEL CO., Montgomery, W. Va., and Cincinnati, Ohio.

The word "ECONOMY" inclosed in quotation-marks.

Filed May 22, 1905. Serial No. 6,323. PUBLISHED JANUARY 23, 1906.

50,506. INSOLES. ELECTRIC APPLIANCE CO., Burlington, Kans.

The pictorial representation of a foot upon an insole having overlapping disks thereon and the representation of a ring at the heel end of the insole. Used ten years.

Filed May 9, 1905. Serial No. 4,828. PUBLISHED JANUARY 23, 1906.

50,507. WHISKY. PHILIP FREILER, Elgin, Ill.

The words "KENTUCKY QUEEN." Used ten years.

Filed April 20, 1905. Serial No. 2,333. PUBLISHED JANUARY 23, 1906.

50,508. HATS. GAGE BROTHERS & COMPANY, Chicago, Ill.

The representation of a shield having thereupon a monogram comprising the letters, character, and abbreviation "G B & Co" surrounded by a fanciful scroll design, and a scroll beneath the same having thereupon the words "OUR MARK."

Filed May 15, 1905. Serial No. 5,635. PUBLISHED JANUARY 23, 1906.

50,509. RYE WHISKY. GILLIAMS, JONES & CO., Philadelphia, Pa.

The letters "G J," character "&," and abbreviation "Co" arranged as a monogram, associated with the word "INSLEE" in-

closed by an ornamental oblong panel centrally disposed, and of the words "RYE WHISKEY" and "GILLIAMS, JONES & CO.," and the whole included within a field surrounded by an ornamental border consisting of inverted cones.

Filed June 9, 1905. Serial No. 7,765. PUBLISHED JANUARY 23, 1906.

50,510. WHISKY. DAVID GREEN, Kansas City, Mo.

The word "FAIRBROOK," below which is a country scene showing a brook spanned by a wooden bridge, a farm-house, and trees. Inclosing this is a scroll outline design, on either side of which is a small landscape. Used ten years.

Filed June 24, 1905. Serial No. 8,874. PUBLISHED JANUARY 23, 1906.

50,511. SHEETINGS AND DRILLINGS. GRENDEL MILLS, Greenwood, S. C.

The representation of two fighting Chinamen with shields and clubs inclosed within an ornamental border.

Filed May 10, 1905. Serial No. 4,928. PUBLISHED JANUARY 23, 1906.

50,512. OUTING-SHIRTS FOR MEN AND WOMEN. GUTTERMAN BROS., St. Paul, Minn.

The representation of a horseshoe with the word "SUMMIT" in scroll diagonally across face of same, associated with the words "TOWN AND COUNTRY."

Filed June 16, 1905. Serial No. 8,329. PUBLISHED JANUARY 23, 1906.

50,513. UNDERSHIRTS AND DRAWERS FOR MEN AND WOMEN. HEILMANN, LOTH & GUTMAN, New York, N. Y.

The representation of a dumb-bell.

Filed May 2, 1905. Serial No. 4,234. PUBLISHED JANUARY 23, 1906.

50,514. CORSET BONES OR STAYS. JULIUS JANOWITZ, New York, N. Y.

The word "WALOHN."

Filed April 6, 1905. Serial No. 645. PUBLISHED JANUARY 23, 1906.

50,515. ANTISEPTICS. LLOYD BROTHERS, Cincinnati, Ohio.

The word "ECHAFOLTA."

Filed June 2, 1905. Serial No. 7,251. PUBLISHED JANUARY 23, 1906.

50,516. ESCHAROTICS. LLOYD BROTHERS, Cincinnati, Ohio.

The word "ESCATOL." Used ten years.

Filed June 2, 1905. Serial No. 7,252. PUBLISHED JANUARY 23, 1906.

50,517. PHARMACEUTICAL PREPARATION. LLOYD BROTHERS, Cincinnati, Ohio.

The word "DYNAMYNE." Used ten years.

Filed June 2, 1905. Serial No. 7,253. PUBLISHED JANUARY 23, 1906.

50,518. PHARMACEUTICAL PREPARATION. LLOYD BROTHERS, Cincinnati, Ohio.

The words "LLOYD'S HYDRASTIS." Used ten years.

Filed June 2, 1905. Serial No. 7,255. PUBLISHED JANUARY 23, 1906.

50,519. ANTISEPTICS OR GERMICIDES. LLOYD BROTHERS, Cincinnati, Ohio.

The word "METHYNOL." Used ten years.

Filed June 2, 1905. Serial No. 7,257. PUBLISHED JANUARY 23, 1906.

50,520. WHISKY. HENRY R. MYERS, Covington, Ky.

The word "FULTON." Used ten years.

Filed June 8, 1905. Serial No. 7,697. PUBLISHED JANUARY 23, 1906.

50,521. MICROBE-KILLER. IDA RADAM, New York, N. Y.

The representation of a shield bearing the words "WM. RADAM'S MICROBE KILLER," and depicted upon the shield are a skeleton and a man wielding a club as if striking the skeleton. A broken scythe rests at the feet of the skeleton. The words "MICROBE KILLER" appear upon the club. Above the shield is a ring.

Filed May 10, 1905. Serial No. 5,002. PUBLISHED JANUARY 23, 1906.

50,522. LEATHER BOOTS, SHOES, AND SLIPPERS. RIDDGE KALMBACH LOGIE & CO. LT'D, Grand Rapids, Mich.

The letters, character, and abbreviation "R. K. L. & Co." on a red ground having the form of an irregular polygon having five sides, together with two right angles and three obtuse angles.

Filed April 10, 1905. Serial No. 1,014. PUBLISHED JANUARY 23, 1906.

50,523. ALE. S. BOLTON'S SONS, Troy, N. Y.

The words "HOME BREWED." Used ten years.

Filed April 28, 1905. Serial No. 3,494. PUBLISHED JANUARY 23 1906.

50,524. WHISKY. SHORTELL & TIMMINS, Boston, Mass.

A monogram composed of the letters and character "S & T" inclosed in an ornamental circle and surrounded by scrollwork and ornamental panels, in connection with which are the words "KEENE'S ROCK MALT" arranged above said monograms.

Filed April 3, 1905. Serial No. 283. PUBLISHED JANUARY 23, 1906.

50,525. TEA AND COFFEE POTS AND COFFEE-URNS. SILVER & COMPANY, New York, N. Y.

The name "MARION HARLAND."

Filed April 14, 1905. Serial No. 1,462. PUBLISHED JUNE 27, 1905.

50,526. LINIMENT. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill.

The words "FORNI'S HEIL-OEL." Used ten years.

Filed May 29, 1905. Serial No. 6,933. PUBLISHED JANUARY 23, 1906.

50,527. PREPARATION FOR THE TREATMENT OF DISEASES OF THE STOMACH AND BOWELS. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill.

The words "FORNI'S MAGEN-STÄRKER." Used ten years.

Filed May 29, 1905. Serial No. 6,934. PUBLISHED JANUARY 23, 1906.

50,528. WHISKY. THE HOFFHEIMER BROS. CO., Cincinnati, Ohio.

The word "HOMESTEAD."

Filed May 11, 1905. Serial No. 5,147. PUBLISHED SEPTEMBER 12, 1905.

50,529. MEDICINAL AND TOILET OIL FOR SKIN DISEASES. THE ILLINOIS LABORATORIES, Chicago, Ill.

The word "NATURO."

Filed May 26, 1905. Serial No. 6,704. PUBLISHED JANUARY 23, 1906.

50,530. GARDEN, FLOWER, AND FIELD SEEDS. THE LIVINGSTON SEED CO., Columbus, Ohio.

The representation of a seal having a circular center, superimposed upon which is a diamond-shaped figure having thereon panels containing the words "LIVINGSTON'S TRUE BLUE SEEDS" and "THE LIVINGSTON SEED CO. COLUMBUS OHIO."

Filed May 11, 1905. Serial No. 5,218. PUBLISHED JANUARY 23, 1906.

50,531. GERMICIDES. THE RHUMA-SULPHUR CO., St. Louis, Mo.

The pictorial representation of the devil standing erect with arms extended and with flames around his feet and legs, in connection with the words "LITTELL'S LIQUID SULPHUR."

Filed May 11, 1905. Serial No. 5,109. PUBLISHED JANUARY 23, 1906.

50,532. MEDICINAL PREPARATION FOR THE CURE OF RHEUMATISM. LOUIS ADLER, Reading, Pa.

The word "CROLO."

Filed August 21, 1905. Serial No. 11,856. PUBLISHED JANUARY 23, 1906.

50,533. ANTIPYRETICS. AMMO PHENIN CHEMICAL COMPANY, St. Louis, Mo.

The words "AMMO PHENIN."

Filed July 6, 1905. Serial No. 9,847. PUBLISHED JANUARY 23, 1906.

50,534. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y.

The signature of John Reuter, M. D., arranged within a rectangular border within which are the words "NENHUM SERÁ GENUINO SEM A RUBRICA DE NEW YORK," and in another rectangular border are the words "A SINGULAR FRAGRANCIA DO SABONETE DE REUTER E O SEU MARAVILHOSO PODER DE LIMPARE AFORMOSEAR A PELLE, AMACIAR E ACLARAR AS MAOS, SÃO AS CAUSAS DA SUA REPUTAÇÃO E CONSUMO UNIVERSAES," and the words "SABONETE DE REUTER, NEW YORK, PREÇO 25 CENTAVOS" appearing in a third rectangular border. In the fourth rectangular border are the words "O MELHOR SABONETE PARA A CUTIS.

O MELHOR SABONETE PARA O TOILETTE E PARA O BANHO. O MELHOR SABONETE PARA BARBEAR E PARA LIMPAR A CABECA. O MELHOR SABONETE PARA O USO DAS CRIANCAS. DELICIOSAMENTE PERFUMADO E REFRESCADOR." At the outer side of the third rectangular border are circular lines in which the words "NEW YORK" appear.

Filed December 12, 1905. Serial No. 15,353. PUBLISHED JANUARY 23 1906.

50,535. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y.

The signature of John Reuter, M. D., arranged within a rectangular border within which are the words "NO SE CONSIDERA GENUINO SI NO LLEVA LA FIRMA DE—NEW YORK." In another rectangular border are the words "LA FRAGANCIA EXQUISITA DEL JABON DE REUTER, Y SU EFECTO MARAVILLOSO PARA LIMPIAR Y EMBELLECER EL CUTIS, Y SUAVIZAR Y BLANQUEAR LAS MANOS, LE HAN DADO UNA REPUTACIÓN UNIVERSAL, HACIENDO AL MISMO TIEMPO QUE SE VENDA EN EL MUNDO ENTERO," and the words "JABON DE REUTER, NEW YORK, PRECIO 25 CENTAVOS" appearing in a third rectangular border, while in the fourth rectangular border are the words "EL MEJOR JABON PARA LA TEZ EL MEJOR JABON PARA EL TOCADOR Y BAÑO. EL MEJOR JABON PARA AFEITARSE Y LIMPIAR LA CABEZA. DELICIOSAMENTE PERFUMADO Y REFRESCANTE." At the outer side of the third rectangular border are circular lines in which the words "NEW YORK" appear.

Filed December 12, 1905. Serial No. 15,354. PUBLISHED JANUARY 23, 1906.

50,536. TOILET SOAP. D. R. BRADLEY & SON, New York, N. Y.

The word "WOODLAND."

Filed December 13, 1905. Serial No. 15,373. PUBLISHED JANUARY 23, 1906.

50,537. DRESS-LININGS. MONTE W. BURD, Louisville, Ky.

The word "VICTORIA," associated with a portrait of the late Queen Victoria, the portrait being within an oval frame and the whole appearing upon a solid background.

Filed August 9, 1905. Serial No. 11,449. PUBLISHED JANUARY 23, 1906.

50,538. FILES AND RASPS. CARVER FILE COMPANY, Philadelphia, Pa.

The Greek capital letter "Δ," containing the representation of a file upright and associated with the word "DELTA."

Filed October 26, 1905. Serial No. 13,900. PUBLISHED NOVEMBER 28, 1905.

50,539. WHISKY. DALLEMAND & COMPANY, Chicago, Ill.

A monogram composed of the letter, character, and abbreviation "D & Co." inclosed in concentric circles.

Filed May 16, 1905. Serial No. 5,841. PUBLISHED DECEMBER 26, 1905.

50,540. BANJO-HEADS AND DRUMHEADS. DUPLEX MANUFACTURING COMPANY, St. Louis, Mo.

The pictorial representation of a kangaroo carrying its young, associated with the facsimile signature of Jos. Reitz and the word "KANGAROO." Used ten years.

Filed August 28, 1905. Serial No. 12,061. PUBLISHED JANUARY 23, 1906.

50,541. LOTION USED IN THE TREATMENT OF HERNIA. JOSEPH FANDREY, Los Angeles, Cal.

The portrait of applicant.

Filed July 10, 1905. Serial No. 9,989. PUBLISHED JANUARY 23, 1906.

50,542. REMEDIES FOR PULMONARY DISEASES. FISCHER CHEMICAL IMPORTING CO., New York, N. Y.

The word "GEOSOT."

Filed August 2, 1905. Serial No. 11,118. PUBLISHED JANUARY 23, 1906.

50,543. MEDICAL COMPOUND. M. M. FOY, St. Louis, Mo.

The word "VASCULIN."

Filed August 4, 1905. Serial No. 11,257. PUBLISHED JANUARY 23, 1906.

50,544. COTTON PIECE GOODS. GILBERT MANUFACTURING COMPANY, New York, N. Y.

The word "SILKGLOW."

Filed July 11, 1905. Serial No. 10,083. PUBLISHED JANUARY 23, 1906.

50,545. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. D. GRUEN & SONS, Cincinnati, Ohio.

The word "PRECISION." Used ten years.

Filed July 17, 1905. Serial No. 10,448. PUBLISHED JANUARY 23, 1906.

50,546. COTTON DUCK. HOGANSVILLE MANUFACTURING COMPANY, Hogansville, Ga.

The words "YELLOW JACKET."

Filed August 2, 1905. Serial No. 11,144. PUBLISHED JANUARY 23, 1906.

50,547. TENNIS-SHOES. HOOD RUBBER CO., Boston, Mass.

The word "GREYHOUND" and the illustration of a greyhound.

Filed August 26, 1905. Serial No. 12,103. PUBLISHED JANUARY 23, 1906.

50,548. CERTAIN NAMED MEDICINES. HORACE OLIVER HURLEY, Louisville, Ky.

The hyphenated word "DIAST-IRON."

Filed June 26, 1905. Serial No. 9,046. PUBLISHED JANUARY 23, 1906.

50,549. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.

The representation of a Chinese student with four Chinese characters "JO-GEN-KIU-DAI."

Filed July 13, 1905. Serial No. 10,244. PUBLISHED JANUARY 23, 1906.

50,550. WRITING-PAPER. LOUIS A. LEHMAIER, New York, N. Y.

The words "FULTON LINEN LEDGER." Used ten years.

Filed December 14, 1905. Serial No. 15,410. PUBLISHED JANUARY 23, 1906.

50,551. BOOTS AND SHOES MADE OF LEATHER. M. A. PACKARD COMPANY, Brockton, Mass.

The word "PACKARD." Used ten years.

Filed September 22, 1905. Serial No. 12,919. PUBLISHED JANUARY 23, 1906.

50,552. WHISKY. ANGELO MYERS, Philadelphia, Pa.

The words "OLD BARREL."

Filed July 15, 1905. Serial No. 10,354. PUBLISHED NOVEMBER 7, 1905.

50,553. CASTOR-OIL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

A disk of a red color having a serrated edge and the words and abbreviations "RED SEAL CASTOR OIL CO. ST. LOUIS." Used ten years.

Filed November 8, 1905. Serial No. 14,414. PUBLISHED JANUARY 23, 1906.

50,554. APRICOT BRANDY. NUYENS & CIE., Bordeaux, France.

A monogram of the letter, character, and abbreviation "N & Co." on an ornamental scroll panel, the words "MAISON FONDÉE EN 1802 FINE CHAMPAGNE APRICOT BRANDY," and the facsimile signature "NUYENS & CIE."

Filed August 8, 1905. Serial No. 11,440. PUBLISHED JANUARY 23, 1906.

50,555. BORAX SOAP. PACIFIC COAST BORAX COMPANY, San Francisco, Cal.

The representation of a wagon drawn by a number of mules.

Filed December 2, 1905. Serial No. 15,138. PUBLISHED JANUARY 23, 1906.

50,556. DENTAL CHAIRS. RITTER DENTAL MFG. CO., Rochester, N. Y.

The word "IMPERIAL."

Filed July 15, 1905. Serial No. 10,359. PUBLISHED JANUARY 23, 1906.

50,557. DENTAL CHAIRS. RITTER DENTAL MFG. CO., Rochester, N. Y.

The word "FAVORITE."

Filed July 15, 1905. Serial No. 10,361. PUBLISHED JANUARY 23, 1906.

50,558. WHISKY. STRAUS BROTHERS COMPANY, Chicago, Ill.

The word "ROANHORSE."

Filed September 15, 1905. Serial No. 12,660. PUBLISHED JANUARY 23, 1906.

50,559. CUT GLASS AND ENGRAVED GLASS. T. G. HAWKES & COMPANY, Corning, N. Y.

The word "GRAVIC."

Filed June 12, 1905. Serial No. 7,941. PUBLISHED JANUARY 23, 1906.

50,560. ANTISEPTIC REFRIGERANTS FOR WOUNDS. G. H. TICHENOR, M. D., New Orleans, La.

The representation of a battle scene wherein several individuals are shown advancing in conflict, of whom one is in the act of firing, another carries a battle-flag, another is in the act of falling, another lies prostrate on the ground, and two others are advancing.

Filed August 10, 1905. Serial No. 11,496. PUBLISHED JANUARY 23, 1906.

50,561. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The word "SABELETTE."

Filed June 30, 1905. Serial No. 9,493. PUBLISHED JANUARY 23, 1906.

50,562. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A rectangular border embracing a cross-hatch background upon which is a longitudinal panel having curved projections near its center, associated with the words "DE LAINE FINISH." Used ten years.

Filed July 6, 1905. Serial No. 9,806. PUBLISHED JANUARY 23, 1906.

50,563. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a lighthouse surrounded by water on which appears the representation of a steamboat, associated with the words, abbreviations, and character "EDDYSTONE WM. SIMPSON & SONS. PRINTED BY THE EDDYSTONE MANUFACTURING CO. PHILADELPHIA." Used ten years.

Filed July 19, 1905. Serial No. 10,551. PUBLISHED JANUARY 23, 1906.

50,564. INSTEP-SUPPORTER OR ARCH-PROP. THE GEORGE G. LONDON MANUFACTURING COMPANY, Lynn, Mass.

The words "PLANTAR SPRING" grouped about a center scroll and all underlined by a heavy flourish, which flourish is an elaboration of the final "g" in the word "SPRING."

Filed June 26, 1905. Serial No. 9,019. PUBLISHED JANUARY 23, 1906.

50,565. COUGH CURE. THE KICKAPOO INDIAN MEDICINE CO., Clintonville, Conn.

The word "KICKAPOO."

Filed April 10, 1905. Serial No. 970. PUBLISHED JANUARY 23, 1906.

50,566. SOAP. THE SUMMIT CITY SOAP WORKS, Fort Wayne, Ind.

The representation of an elephant washing a baby elephant, associated with the hyphenated words "RUB-NO-MORE" and "CARBO-NAPTHO," all being inclosed in an ornamental rectangular border, in each side of which appear the words "RUB-NO-MORE SOAP."

Filed September 19, 1905. Serial No. 12,781. PUBLISHED JANUARY 23, 1906.

50,567. BITUMINOUS COAL. WAR EAGLE FUEL COMPANY, War Eagle, W. Va.

A representation of the Indian chief War Eagle standing upon a block of coal and grasping a hatchet in one hand.

Filed July 3, 1905. Serial No. 9,802. PUBLISHED JANUARY 23, 1906.

50,568. MAGAZINE PERIODICAL. ADVANCE PUBLISHING CO., Chicago, Ill.

The words "THE ADVANCE."

Filed October 27, 1905. Serial No. 13,976. PUBLISHED JANUARY 23, 1906.

50,569. POWDER FOR USE IN MAKING ICE-CREAM AND ICES. WILLIAM A. COLLINS, Philadelphia, Pa.

The word "VELVOUETTE," associated with the representation of a woman in the act of eating ice-cream.

Filed June 3, 1905. Serial No. 7,302. PUBLISHED JANUARY 23, 1906.

50,570. STOCKINGS. COLUMBIA HOSIERY CO., New York N. Y.

The words "WINONA MILLS." Used ten years.

Filed August 30, 1905. Serial No. 12,095. PUBLISHED JANUARY 23, 1906.

50,571. COUGH-DROPS. DAVIES, ROSE & CO., LTD, Boston, Mass.

The words "PINE-ELMS."

Filed November 3, 1905. Serial No. 14,242. PUBLISHED JANUARY 23, 1906.

50,572. ACETYLENE-LAMPS AND GENERATORS. ALBERT H. FUNKE, New York, N. Y.

The word "CRESCENT."

Filed August 19, 1905. Serial No. 11,809. PUBLISHED JANUARY 23, 1906.

50,573. HAIR-RESTORERS. BENJAMIN T. GOLDMAN, St. Paul, Minn.

A conventional representation of a woman's head having long hair flowing loosely, gray on one side and dark on the other.

Filed July 27, 1905. Serial No. 10,909. PUBLISHED JANUARY 23, 1906.

50,574. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.

The representation of two flower-vases with peonies.

Filed August 15, 1905. Serial No. 11,716. PUBLISHED JANUARY 23, 1906.

50,575. HEADACHE REMEDY. LEWIS PHARMACAL CO., Baltimore, Md.

The word "PHIL."

Filed October 10, 1905. Serial No. 13,468. PUBLISHED JANUARY 23, 1906.

50,576. MEDICINE FOR CERTAIN NAMED DISEASES. PAUL BROS. MEDICINE CO., Alton, Ill.

The representation of half of a globe bearing the words "MALI'RI-A TABLETS" and the portraits of Arthur W. Paul and Edward C. Paul on opposite sides of the globe.

Filed November 6, 1905. Serial No. 14,363. PUBLISHED JANUARY 23, 1906.

50,577. LOOSE-LEAF BINDERS. SIEBER & TRUSSELL MFG. CO., St. Louis, Mo.

The word "UNIMATIC" upon a scroll supported on a band bearing the name "SIEBER & TRUSSELL MFG. CO." and a complementary scroll upon the opposite side of the band bearing the words "LOOSE LEAF BOOK," the term "ST. LOUIS, U. S. A." appearing between the band and the last-named scroll.

Filed July 31, 1905. Serial No. 11,037. PUBLISHED JANUARY 23, 1906.

50,578. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of a factory on the bank of a body or stream of water with a wooded hill or hills in the background, associated with the words, abbreviation, and character "WM. SIMPSON & SONS PHILADELPHIA," the whole being inclosed within an ornamental border.

Filed August 24, 1905. Serial No. 11,963. PUBLISHED JANUARY 23, 1906.

50,579. SCARFS. WILLIAM TREVOR, New York, N. Y.

The word "MOTOR."

Filed October 21, 1905. Serial No. 13,812. PUBLISHED JANUARY 23, 1906.

LABELS

REGISTERED MARCH 20, 1906.

12,712.—*Title:* "WAVENLOCK." (For Hair-Tonic.) FRANK H. MCGUIRE, Detroit, Mich. Filed February 16, 1906.

12,713.—*Title:* "CUPIDINE." (For a Lotion.) C. R. WILSON, Louisville, Ky. Filed January 10, 1906.

12,714.—*Title:* "RED STAR." (For Massage-Cream.) RED STAR MASSAGE CREAM Co., St. Louis, Mo. Filed January 12, 1906.

12,715.—*Title:* "LADY ALICE." (For Perfumery.) JENNINGS MANUFACTURING Co., Grand Rapids, Mich. Filed December 21, 1905.

12,716.—*Title:* "GARRISON'S CROUP SALVE." (For Salve.) JANE GARRISON, Atlantic City, N. J. Filed September 8, 1904.

12,717.—*Title:* "BIG TWO, OR THE GREAT WESTERN CHOLERA AND CRAMP CURE." (For Medicine.) THOMAS H. LE DANE, Hagerstown, Md. Filed February 3, 1906.

12,718.—*Title:* "WORDS ARE FLOWERS FRUITS ARE FACTS TEXAS POST OAK." (For Medicine.) J MACK MAHON, Dayton, Ohio. Filed February 19, 1906.

12,719.—*Title:* "RED SEAL." (For Beer.) ST. LOUIS BREWING ASSOCIATION, St. Louis, Mo. Filed February 19, 1906.

12,720.—*Title:* "ROBT. HAMILTON OLD TOM GIN." (For Gin.) D. HOLEMAN & COMPANY, Spokane, Wash. Filed February 19, 1906.

12,721.—*Title:* "VAN EMDEN GROUND CHOCOLATE." (For Chocolate.) VAN EMDEN COCOA Co., San Francisco, Cal. Filed February 19, 1906.

12,722.—*Title:* "THE HIBERNIA." (For Handkerchiefs.) THE ACHESON HARDEN COMPANY, Passaic, N. J. Filed February 12, 1906.

12,723.—*Title:* "THE OLD TIME IRISH LINEN HDKFS." (For Handkerchiefs.) THE ACHESON HARDEN COMPANY Passaic, N. J. Filed February 12, 1906.

12,724.—*Title:* "THE NEW LINENE HANDKERCHIEFS." (For Handkerchiefs.) THE ACHESON HARDEN COMPANY, Passaic, N. J. Filed February 12, 1906.

12,725.—*Title:* "THE COMPACTUM HANDKERCHIEF." (For Handkerchiefs.) THE ACHESON HARDEN COMPANY, Passaic, N. J. Filed February 12, 1906.

12,726.—*Title:* "THE NEW CHEMICAL FELT." (For a Felt for Polishing Gold and Silver.) MORGAN C. PRITCHARD, Warrensburg, N. Y. Filed February 20, 1906.

PRINTS

REGISTERED MARCH 20, 1906.

1,597.—*Title:* "IMPERIAL HAT ADS 1906." (For Hats.) SAMUEL MUNDHEIM Co., Brooklyn, N. Y. Filed February 7, 1906.

1,598.—*Title:* "BELDING'S YARDWIDE GUARANTEED SATIN." (For Satin.) BELDING BROS. & Co., New York, N. Y. Filed February 20, 1906.

1,599.—*Title:* "ADLER'S YOUNG MEN'S SUMMER STYLES." (For Men's Summer Apparel.) DAVID ADLER & SONS CLOTHING Co., Milwaukee, Wis. Filed February 16, 1906.

1,600.—*Title:* "UNCLE JOHN." (For Confectionery.) D. AUERBACH & SONS, New York, N. Y. Filed January 8, 1906.

1,601.—*Title:* "(NEXT MORNING.) BROMO-SELTZER." (For Bromo-Seltzer.) EMERSON DRUG COMPANY, Baltimore, Md. Filed February 19, 1906.

1,602.—*Title:* "DESIGN FOR CARD BOX." (For Playing-Cards.) WILLIS W. RUSSELL CARD Co., Milltown, N. J., and New York, N. Y. Filed February 16, 1906.

1,603.—*Title:* "CHIEF KOKOMO." (For Rubber Tires.) KOKOMO RUBBER COMPANY, Kokomo, Ind. Filed February 17, 1906.

1,604.—*Title:* "OLDSMOBILE MODEL B—STRAIGHT DASH." (For an Automobile.) THE SHAW-TORREY Co., Grand Rapids, Mich. Filed February 19, 1906.

1,605.—*Title:* "OLDSMOBILE MODEL L." (For an Automobile.) THE SHAW-TORREY Co., Grand Rapids, Mich. Filed February 19, 1906.

1,606.—*Title:* "OLDSMOBILE MODEL S." (For Automobiles.) THE SHAW-TORREY Co., Grand Rapids, Mich. Filed February 19, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE ENGEL.

Decided January 4, 1906.

DRAWINGS—CANCELLATION OF FIGURES.

Whether certain figures should remain in the drawing depends upon the question whether the state of the art is such as to render it necessary to limit the claims to the form of the device shown in the other figures.

ON PETITION.

PICTURE-MOUNTING DEVICE.

Messrs. Burton & Burton for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner requiring the cancellation of Figures 2 and 5 of the drawing and all description thereof.

The Examiner's requirement is based upon his conclusion that none of the claims covers the construction disclosed in Figs. 2 and 5 and that therefore those figures are superfluous and confusing. The applicant, on the other hand, strenuously contends that the claims cover Figs. 2 and 5, as well as the other figures, and calls attention to statements in the specification which lend force to his argument that the terms used in the claims apply to the disputed construction.

Since the claims are to be construed with reference to the specification and to the applicant's understanding and intent in using the particular terms which appear in the claims, it must be held that there is sufficient warrant for retaining Figs. 2 and 5. Their retention, however, is of course dependent upon the question whether the state of the art is such as to render it necessary to limit the claims to the form of the device shown in figures other than Figs. 2 and 5.

The petition is granted.

EX PARTE HOLZER.

Decided January 4, 1906.

STRIKING FROM RECORD GENERAL STATEMENTS BY EXAMINER.

Held that a general statement that claims are "manifestly" unpatentable in view of the prior art, where the Examiner subsequently cited a reference and rejected the claims, does not cast a cloud upon or express a doubt as to the validity of the allowed claims and should not be canceled from the record.

ON PETITION.

CENTRIFUGAL SEPARATORS.

Mr. B. Singer for the applicant.

ALLEN, *Commissioner:*

This is a petition that a portion of the Examiner's letter of October 26, 1905, be canceled from the record.

In the part of the letter referred to the Examiner stated that certain claims were so broad that they were "manifestly" unpatentable in view of the prior art. Such a general statement without some reference to the disclosure in the prior art would not have been proper; but it appears that the Examiner subsequently cited a reference and rejected the claims. It does not appear that he has cast a cloud upon or expressed a doubt as to the validity of claims allowed by him.

Another portion of the letter objected to refers to the applicant's failure to point out wherein the amendment avoided the references previously cited. Whether or not the circumstances of the case were such that the Examiner's criticism was justified, it is not believed that a cancellation of his letter is necessary or proper. It constitutes a proper part of the record and should remain in the case. The petition is denied.

EX PARTE KREJCI.

Decided January 4, 1906.

ABANDONED APPLICATION—INSUFFICIENT ACTION.

A mere request for reconsideration without giving any reasons therefor, especially where a party has abandoned all hope or expectation of securing a patent, is not sufficient to save an application from abandonment.

ON PETITION.

NAIL-TONGS.

Mr. Geo. W. Sues for the applicant.

ALLEN, *Commissioner:*

This is a petition from the Examiner's action holding that the above-entitled application is abandoned.

It appears that on November 7, 1904, the Examiner rejected the claim, and on November 6, 1905, the applicant filed a letter merely asking reconsideration, but giving no reasons therefor. In accordance with the express provisions of Rule 69 the Examiner refused to reconsider the case and notified the applicant that the case was abandoned.

The petitioner's explanation of his failure to point out supposed errors in the Examiner's action is as follows:

> Now as a matter of fact, the applicant found no error or errors in the Examiner's action. The references on inspection are found so close that the Examiner was fully justified in citing them, and holding that the change as shown by applicant did not involve invention.

It is very clear that with this view of the case the applicant should not have burdened this Office either with the request for reconsideration or with this petition. He had abandoned all hope or expectation of securing a patent upon his application and had abandoned all real effort to secure one.

It is clear that the application is abandoned, and therefore the petition is denied.

EX PARTE SUTTON, STEELE, AND STEELE.

Decided January 4, 1906.

1. CLAIMS—FAILURE TO MAKE UNDER RULE 109.

The purpose of Rule 109 is clearly to avoid a second interference, and where a party fails to take advantage of that rule he loses the right to contest the question of priority as to the claims made by his opponent.

2. SAME—SAME—MADE BY NEWLY-APPEARING PARTY.

Where a party fails to make claims under Rule 109 which are made by his opponent in the interference, *Held* that he is estopped from thereafter making the claims, notwithstanding that there is a newly-appearing party before the Office making them.

ON PETITION.

PROCESS OF SEPARATING SUBSTANCES OF DIFFERENT DIELECTRIC CAPACITIES.

Mr. E. B. Stocking for the applicants.

ALLEN, *Commissioner:*

This is a petition from the Examiner's action refusing to admit an amendment filed September 26, 1905.

It appears that the amendment was filed during the progress of an interference and after this case had been before the Examiners-in-Chief on *ex parte* appeal. Some of the claims embodied in the amendment were made by the other party to the interference, and the Examiner suggests that this applicant should have had them added to the issue of that interference by motion under Rule 109, if he wished to make them. It is said that two of the claims relate to subject-matter previously adjudged patentable; but the Examiner says that no sufficient reason has been advanced for the failure to make them before the final action and appeal.

The record shows that judgment was rendered in the interference in favor of this applicant, and it is said on behalf of the applicant that he is not inserting the proposed claims for the purpose of securing a second interference with his previous opponent, Gahl, but for the purpose of securing an interference with another party. It would seem, however, that a second interference with Gahl would be a necessary consequence of admitting the claims if they are patentably different from the issue of the previous interference. Since they were copied from Gahl's case, it is difficult to see how a second interference could be avoided.

The purpose of Rule 109 is clearly to avoid a second interference, and where a party fails to take advantage of that rule he loses the right to contest the question of priority as to the claims made by his opponent. The fact that there is still another party making the claims is not of consequence.

While it is true, as urged in argument, that this Office does not wish a technicality to stand in the way of the determination upon the merits of the rival claims of applicants, it is also true that certain rules of procedure must be made and enforced. While such rules may appear to work a hardship in a particular case, they are necessary in order to prevent still greater hardship in many cases. The confusion which would necessarily result from the failure to enforce general rules of procedure, such as Rule 109, overbalances the alleged hardship of a particular case.

The Examiner was right in refusing to admit the amendment, and therefore the petition is denied.

FELBEL *v.* AGUILAR.

Decided January 10, 1906.

1. REISSUE—BROADER CLAIMS—LACHES.

A valid reissue patent with an enlarged claim cannot be obtained upon an application filed nearly three and one-half years after the issue of the original patent when, so far as has been shown, such application might have been made as soon as the original patent could have been received and read or at any time thereafter during the two years in which the courts have held that reissues with enlarged claims should ordinarily be applied for.

2. SAME—EXCUSE FOR DELAY INSUFFICIENT.

An affidavit setting forth the inventor's inability to procure an attorney and unfamiliarity with the English language is insufficient to account for a delay of nearly three and one-half years in applying for a reissue, especially where the prosecution of the original application and the character of the claims obtained in the patent show that the inventor was sufficiently familiar with the language and with the law to read the patent and determine that the combination of parts to which the new claims of the reissue application are drawn was not claimed in the patent.

APPEALS on motion.

AUTOMATIC TYPE-WRITING MACHINE.

Mr. Jacob Felbel pro se.

Messrs. Foster, Freeman & Watson for Aguilar.

ALLEN, *Commissioner:*

This case is before me upon an appeal by Felbel from the decision of the Primary Examiner denying his motions to dissolve the interference and to shift the burden of proof and upon appeals by both Felbel and Aguilar from the decision of the Examiners-in-Chief affirming in part and overruling in part the refusal of the Primary Examiner to dissolve the interference.

The appeals by Felbel allege non-interference in fact and irregularity in declaration, together with grounds involving the right of Aguilar to make the claims in issue and the patentability of the claims to Aguilar in the application in interference. Nothing which may be properly considered under the heads of non-interference in fact and irregularity in declaration has been pointed out by Felbel, and no reason for dissolving the interference on either of these grounds is found. The distinction which must be observed between grounds of non-interference in fact and irregularity in declaration on the one hand and grounds involving the right to make claims and the patentability of claims to parties on the other hand has been pointed out in other cases and need not be repeated here. (*Blackmore* v. *Hall* and *Townsend* v. *Copeland* v. *Robinson*, 119 O. G. 2523.) The remaining grounds alleged in Felbel's appeals are those denying the merits of his opponent's application. No appeal lies from the decisions of the Primary Examiner and Examiners-in-Chief affirming the rights of Aguilar as to such grounds. (Rule 124.)

Aguilar's appeal is from the decision of the Examiners-in-Chief against him, which, as finally expressed, stated:

> As to the question whether Aguilar has been guilty of laches, *i. e.*, the inexcusable delay in asserting a right, which is the real question involved in the twelfth ground of the motion, the undersigned are agreed that Aguilar is guilty and that his reissue patent would, if granted, be void.

This decision is signed by two members of the tribunal. The third member dissented. Aguilar's patent issued on January 2, 1900. His application for reissue was filed on June 20, 1903. Comparison of the reissue application with the patent shows that reissue is sought to enlarge and extend the claim of the patent. The Court of Appeals of the District of Columbia in the case *in re Starkey*, (C. D.,

1903, 607; 104 O. G., 2150,) after citing the long line of decisions upon the subject, stated:

> We must now regard the law as well settled by the Supreme Court of the United States, that, after the lapse of two years after the issue of a patent, a reissue which seeks to enlarge the claims of the original patent will not be granted, or if granted will be held invalid, unless special circumstances are shown to excuse the delay.

In the present case Aguilar delayed more than three years and five months after the issue of his patent before filing his application for reissue. In the oath filed with the reissue application no specific attempt is made to account for this delay. The only circumstances recited there which might bear upon the question are, first, that the applicant when the original application was prepared and prosecuted was unable to employ an attorney, and, second, that he was at that time unfamiliar with the technical terms of the English language. A supplemental affidavit was filed in the reissue application upon August 4, 1903. This affidavit is not in the file and apparently has been lost. The attorney for Aguilar has filed a substitute for the missing paper supported by his own affidavit that the inventor is not immediately accessible and that the substitute paper is a true copy of the supplemental affidavit which has been lost. It appears from the copy filed that the supplemental affidavit reaffirmed the statements of the oath filed with the reissue application concerning inability to procure an attorney and unfamiliarity with the English language and alleged that the inventor did not fully understand the patent laws and rules of practice and supposed when the patent issued that it contained claims covering all features of which he was the first and original inventor. This affidavit also alleged, it appears, that Aguilar remained under this impression and had no information to the contrary and that he had not consulted with any patent attorney or expert prior to June 1, 1903, shortly after which the reissue application was filed.

The above is the entire showing which has been made in excuse of delay. It is, in my opinion, insufficient. The prosecution of the original application and the character of the claims obtained in the patent show that Aguilar was sufficeintly familiar with the language and with the law to read the patent and determine that the combination of parts to which the new claims of the reissue application are drawn was not claimed in the patent. The combinations now sought are so distinct from the combinations claimed in the patent that in the absence of evidence to the contrary the failure to present the reissue claims in the original application must be attributed to negligence or to belief upon the part of Aguilar that the combinations to which these claims are drawn formed no material part of his invention. In either event he cannot, under the law stated in the case *in re Starkey, supra*, obtain a valid reissue patent with an enlarged claim upon an application filed nearly three and one-half years after the issue of the original patent when, so far as has been shown, such application might have been made as soon as the original patent could have been received and read or at any time thereafter during the two years in which the courts have held that reissues with enlarged claims should ordinarily be applied for.

The appeals of Felbel are dismissed.

The decision of the Examiners-in-Chief, from which Aguilar's appeal is taken, affirming the holding of the Primary Examiner that the claims in interference are not patentable to Aguilar by reissue is affirmed.

FAGAN *v.* GRAYBILL.

Decided January 5, 1906.

1. INTERFERENCE—MOTION FOR DISSOLUTION BASED ON CERTIFIED COPIES.

Where Fagan files a certified copy of those parts of his application which are supposed to relate to the subject-matter of the interference and a motion for dissolution is based on said copy denying Fagan's right to make the claims, *Held* that it will be assumed that the certified copy includes everything pertinent to the subject-matter in issue.

2. SAME—MOTION FOR DISSOLUTION.

The Examiner may upon a motion for dissolution of an interference wherein one party has filed a certified copy determine whether or not it is necessary for the other party to see other parts or the whole of the original application.

3. CERTIFIED COPIES UNDER RULE 105.

Where a rejected claim is included in a certified copy under Rule 105, *Held* that all actions relative thereto should be included in the copy.

APPEAL on motion.

MACHINE FOR FLANGING GLASS TUBES.

Messrs. Thurston & Bates for Fagan.

Messrs. Foster, Freeman & Watson for Graybill.

ALLEN, *Commissioner:*

This is an appeal by Fagan from the decision of the Examiner of Interferences transmitting to the Primary Examiner for determination a motion by Graybill for dissolution and a motion to amend under Rule 109.

It appears that Fagan has filed a certified copy of those parts of his application which are supposed to relate to the subject-matter of the interference. (Rule 105.)

The party Graybill has no information as to the contents of Fagan's application except as disclosed in this copy, and therefore his motions are necessarily based upon the copy. His motion for dissolution is to the effect that the issue of the interference is not disclosed in the copy and that therefore Fagan has no right to make the claims of the issue. In his motion to amend under Rule 109 he has presented a claim appearing in Fagan's copy.

On behalf of Fagan it is urged that even if it should be found that the copy does not disclose the issue it would be improper to dissolve the interference, since the original application contains a complete disclosure. He argues that such conclusion of insufficiency would merely warrant furnishing other parts of the application. In regard to the motion under Rule 109 he alleges that the proposed claim stands rejected in his application, although he admits that the copy furnished by him does not show that fact.

This Office cannot undertake to say in advance whether or not Fagan's original application discloses the invention, nor can it undertake to say what action upon the motions will be justified when the facts shown by the record are considered. It must be held, however, that the motion for dissolution is in proper form and alleges proper grounds. This Office must assume, as does Graybill, that the certified copy includes everything pertinent relating to the subject-matter in issue.

Graybill is entitled to raise the question based upon the copy that Fagan has no right to make the claims. It may be that there is other evidence of his right; but if so a dissolution of the interference can be avoided only by furnishing that evidence.

The Examiner may, upon the motion for dissolution, consider the original application and determine whether or not it is necessary for Graybill to see other parts or the whole of it.

In regard to the motion to amend this Office cannot base a refusal to transmit the motion upon facts not accessible to the moving party. If the proposed claim has been rejected, the actions relating to that matter should be included in the copy accessible to Graybill. Rule 109 does not refer to rejected or unpatentable claims; but a party cannot be refused consideration of a claim unless the record shows that it has been rejected.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

FOWLER v. BOYCE.

Decided February 6, 1906.

1. INTERFERENCE—PRIORITY—APPEAL—CLAIMS FINALLY REJECTED UNDER RULE 132—STANDING IN COURT.

Where a party to an interference did not appeal from the adverse decision of the Examiners-in-Chief upon priority, so that under Rule 132 of the Patent Office the claims which were involved in that interference stand finally rejected, *Held* that such party has no standing before the court in the interference as to those claims.

2. SAME—PRIORITY.

Where Fowler is limited by his preliminary statement to a disclosure and reduction to practice subsequent to Boyce's record date, *Held* that priority should be awarded to Boyce.

Mr. C. A. Brown and *Mr. H. A. Seymour* for the appellant.

Mr. Philip Mauro, Mr. S. T. Cameron, Mr. Reeve Lewis, and *Mr. W. W. Swan* for the appellee.

DUELL, *J.*:

This appeal is taken from the decision of the Commissioner of Patents awarding priority to Charles L. Boyce.

The issue is set forth in the following counts:

1. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a high-resistance circuit controlled by the cord connecting apparatus, a line-signal jointly controlled by said line and cut-off relays, a supervisory signal included in said high-resistance circuit, and means whereby the deënergization of said line-relay causes a decrease in the resistance of the circuit through said supervisory signal.

2. In a telephone-exchange system, the combination with a telephone-line extending from a substation to an exchange, of a line-relay at the exchange, a source of current adapted to be closed through said line-relay through the agency of substation apparatus, cord connecting apparatus for connecting said line with another for conversation, a cut-off relay included in a circuit controlled by the cord connecting apparatus, a resistance in said circuit, a line-signal jointly controlled by said line and cut-off relays, a supervisory signal included in the circuit controlled by the cord connecting apparatus, and means whereby the deënergization of said line-relay closes a low-resistance shunt-circuit about said resistance.

There was no appearance for appellant when the case was called for argument and no brief was filed on his behalf. In accordance with the provisions of the rules of the court counsel for the appellee opened the record and prayed for an affirmance.

An examination of the record and the brief filed on behalf of the appellee discloses that the interference was originally declared with three parties. The third party, Temple and Goodrum, did not appeal from the adverse decision of the Examiners-in-Chief, so that under rule 132 of the Patent Office their claims which were involved in the interference stand finally rejected, and consequently they have no standing in this court. The Examiner of Interferences awarded priority to Temple and Goodrum. His decision was reversed by the Examiners-in-Chief, who awarded priority to Boyce, and their decision was affirmed by the Commissioner. On this appeal Boyce stands on his record date, which is March 7, 1902, which makes it unnecessary for us to examine the proofs adduced on his behalf. Fowler's application was filed July 18, 1902, and it is therefore necessary in order for him to prevail to show an earlier conception, disclosure and actual reduction to practice, or an earlier conception and disclosure, followed by diligence in an actual reduction of his invention to practice prior to March 7, 1902.

The Examiner of Interferences has clearly defined the invention in controversy and pointed out its novel features. He says:

In the invention at issue, as well as in certain telephone systems of well-known construction, the apparatus at the substation is so arranged that current is produced in the line during the use of the telephone. A relay is provided in connection with the line and is responsive to current in it. When a subscriber initiates a call this line-relay attracts an armature and closes a circuit at the exchange containing a small incandescent lamp. The lighting of this lamp calls the attention of the operator. Upon the desired connection being made a circuit containing a supervisory lamp and a second relay is closed. This second relay, becoming energized, attracts its armature, thereby opening the circuit containing the line-signal lamp, causing it to be extinguished. In the invention, as disclosed, the novel feature consists in providing said second relay with high-resistance winding which prevents the illumination of the supervisory lamp until by the subscriber returning his receiver to its hook, the line-relay becomes deënergized and allows its armature to fall back, thereby closing a low-resistance shunt-circuit about said high-resistance relay. The supervisory lamp then becomes illuminated, indicating to the operator a signal for disconnection.

As between Boyce and Fowler the three tribunals of the Patent Office are agreed in finding priority in favor of Boyce. In the consideration of Temple and Goodrum's case the Examiner of Interferences and the Examiners-in-Chief have passed upon, and differed in their conclusions, as to whether the execution of the oath accompanying an application is, in the absence of any proof other than the paper itself, sufficient evidence to prove the fact of conception by an inventor at that date. Any views we might express on the subject would be mere dictum, and not being necessary, or, under the circumstances of this case warranted, we refrain from expressing any opinion.

We have examined the record but see no reason why we should express an opinion as to whether Fowler has overcome Boyce's record date.

In his preliminary statement Fowler claimed no earlier date of disclosure or reduction to practice than May 1, 1902, nearly two months after Boyce's constructive reduction to practice. After the preliminary statements were opened and his adversary's dates known to him he moved to amend his preliminary statement by setting up dates of disclosure and actual reduction to practice earlier than claimed by either of his adversaries. His motion was denied. Notwithstanding the denial of the motion testimony was given relative to alleged earlier dates than those set up in his preliminary statement. Some of this testimony was received without objection, and by the tribunals of the Patent Office has been considered and held not sufficient to overcome Boyce's record date. Such practice is very irregular, and, as the Commissioner well says:

If proofs can be submitted wholly inconsistent with the dates alleged in preliminary statements, the rules might as well be abrogated which require the filing of statements before the records are opened to the inspection of the parties interested.

Interferences are burdensome enough upon the parties involved therein, and upon the tribunals called upon to decide them, where the testimony offered conforms to the preliminary statements. Although we have examined the

record we see no good reason for extending our conclusion beyond the only pertinent question, which is whether Fowler has, by any admissible and relevant testimony, shown that Boyce is not entitled to an award of priority. Fowler is limited by his preliminary statement to a disclosure and reduction to practice to a date subsequent to Boyce's record date. He has not shown that Boyce is not entitled to that date. (*Hammond* v. *Basch*, 24 App. D. C., and cases there cited.)

It follows that the Commissioner of Patents rightfully awarded priority to Boyce and his decision is therefore affirmed.

The clerk of the court will certify this opinion, and the proceedings in this court in the premises, to the Commissioner of Patents according to law. Affirmed.

Court of Appeals of the District of Columbia.

FOWLER *v.* DYSON.

Decided February 6, 1906.

INTERFERENCE—PRIORITY.

Held that Fowler, who is the first to conceive and disclose, but is the later to reduce to practice, has failed to show diligence and that priority should be awarded to Dyson.

Mr. C. A. Brown and *Mr. H. A. Seymour* for the appellant.

DUELL, *J.*:

The appellant comes here with the adverse decisions of the three Patent Office tribunals. This notwithstanding the fact that the appellee has taken no testimony, relying upon his record date. No one appeared for him on the hearing of the case nor was any brief filed on his behalf.

Fowler being the junior party, the burden is upon him to show conception and disclosure of the invention in controversy earlier than Dyson's filing date, which is February 21, 1902, and either a reduction to practice prior to that date, or due diligence in respect thereto at the date of the constructive reduction to practice by Dyson.

The issue of the interference is:

1. In a telephone system, the combination of a subscriber's line, a substation-switch for closing the line-circuit, a central source of current-supply connected with the line, a spring-jack connected with the line, a cord-circuit having a plug adapted for insertion in said jack, a relay arranged to be energized when the line-circuit is closed, a line-lamp having a normally open local circuit including said source of current-supply and a suitable resistance, the local circuit for said line-lamp being closed when the said relay is energized, the said resistance being adapted to permit the passage of only sufficient current to light the said line-lamp, a supervisory lamp located in one of the strands of said cord-circuit, the said supervisory lamp being in parallel with the line-lamp when the plug is inserted in the jack, the supervisory lamp thereby operating to shunt out the line-lamp when the plug is inserted in the jack, a normally closed shunt around said resistance, said shunt being opened when the line-circuit is closed and the relay energized, and said shunt being closed when the line-circuit is opened by said switch, and a suitable resistance located in said shunt.

2. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's station to an exchange and terminating thereat in a line-jack, of cord connecting apparatus for uniting this telephone-line with another for conversation, a relay at the exchange operable from the substation, line and clearing-out lamps, parallel conductors including the lamps, a source of current for the line-relay and for the lamps, a resistance interposed between the parallel conductors containing the lamps and their source of current, means whereby the cord-circuit will complete the parallel branch containing the clearing-out lamp when connection is being established with the line, the armature of the relay serving to close the parallel branch containing the line-lamp when attracted, and means controlled by the armature when unattracted for reducing the resistance in circuit with the clearing-out lamp.

3. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's station to an exchange and terminating thereat in a line-jack, a cord connecting apparatus for uniting this telephone-line with another for conversation, a relay at the exchange operable from the substation, line and clearing-out lamps, parallel conductors including the lamps, a source of current for the line-relay and for the lamps, a resistance interposed between the parallel conductors containing the lamps and their source of current, a second resistance included in a branch parallel to the conductor containing the first resistance, this branch being closed by the armature of the relay when unattracted, and means whereby the cord-circuit will include the clearing-out lamp in circuit when connection is being established with the line, the armature of the relay serving to include the line-lamp in circuit when attracted.

The general invention is the same as that of a companion interference between various parties of which only two, Fowler and McBerty, continued the contest to this tribunal. The testimony taken in that interference was stipulated into this interference, so far as applicable. We have examined the testimony offered therein on behalf of Fowler, and as we have reviewed that evidence in that proceeding, and arrived at the conclusion that Fowler cannot be given any earlier date of reduction to practice than the date of filing his application, July 18, 1902, and that though he is entitled to a conception as of August 12, 1901, he failed to show the diligence required of one who though first to conceive and disclose is the later to reduce to practice, the same finding must be made in this case. It follows that the decision of the Commissioner of Patents awarding priority of invention to Alfred H. Dyson, the senior party, was correct and it is therefore affirmed.

The proceedings in the case in this court will be certified by the clerk to the Commissioner of Patents, as required by law. Affirmed.

Court of Appeals of the District of Columbia.

FOWLER *v.* MCBERTY.

Decided February 6, 1906.

1. INTERFERENCE—PRELIMINARY STATEMENT—PROOF OF DATES EARLIER THAN THOSE GIVEN.

Where a party has been refused permission to put back his dates as set out in his preliminary statement after seeing his adversary's dates, any attempt to prove the earlier dates is contrary to the rules of the Patent Office and to the general rules applicable to pleading in courts of law.

2. TESTIMONY—TESTIMONY REGARDING DATES EARLIER THAN ALLEGED IN PRELIMINARY STATEMENT DISREGARDED.

Where a party in order to prevail depends upon earlier dates than those alleged in his preliminary statement and permission to amend the statement to set out said earlier dates has been refused, *Held* that testimony relating to such earlier dates must be disregarded.

3. INTERFERENCE—REDUCTION TO PRACTICE—DILIGENCE.

Where Fowler conceived and disclosed in August and was the last to reduce to practice, *Held* that McBerty, who was the first to conceive and who reduced to practice in the following January, was reasonably diligent.

Mr. C. A. Brown and *Mr. H. A. Seymour* for the appellant.

Mr. Geo. P. Barton and *Mr. De Witt C. Tanner* for the appellee.

DUELL, *J.*:

This is an appeal by Samuel B. Fowler from a decision of the Commissioner of Patents awarding priority of invention to Frank R. McBerty.

The invention relates to telephone systems and is one of a series in which various parties were originally involved, and in which various features of the general invention were set forth in the various issues of the interferences.

Of the four parties McBerty was the senior and Fowler the junior. The intermediate parties, Dyson and Boyce, took no testimony, and both being restricted to their record dates could not prevail, and therefore the contest has been between Fowler and McBerty.

The subject-matter of this controversy is limited to

which of the two is entitled to an award of priority of invention of the following issue:

1. In a telephone central exchange system, the combination with the line-relay having front and back armature-contacts; a supervisory signal associated with a switch-cord and a switch-plug thereof; and a local circuit containing said signal; of a resistance device associated with said local circuit to govern the strength of current therein and thereby to determine the display or non-display of said signal; and a short-circuit or shunt round said resistance device leading through the back armature-contacts of said line-relay and adapted to be closed when said relay is unexcited, and opened when the same is excited, whereby the display of said supervisory signal is made dependent upon the attraction or retraction of the armature of said line-relay.

2. The combination of a normally open signal-circuit, a normally closed shunt in said circuit, means in said circuit for supplying current, a normally open line-circuit including said source of current, and a relay included in said line-circuit and adapted when energized to open said shunt when the signal-circuit is closed, so as to prevent the display of said signal, said relay when deënergized being adapted to close said shunt, so as to cause the display of said signal.

3. The combination of a subscriber's line, a subscriber's switch, a line-relay, a suitable source of current for supplying current to the line through said relay, a normally open circuit including said source of current, a supervisory signal in said open circuit, a suitable resistance in said circuit, and a normally closed shunt in said normally open circuit extending around said resistance, said shunt being controlled by said line-relay, whereby the closing of said subscriber's switch opens said shunt, so as to prevent the display of said supervisory signal when the normally open circuit is closed, and whereby the opening of said subscriber's switch operates to close said shunt, so as to cause a display of said supervisory signal when the said normally open circuit is closed.

In further explanation we quote from the decision of the Examiner of Interferences. He says:

The invention at issue relates to telephone-exchange systems employing small incandescent lamps as signals. In a well-known form, when the subscriber takes the receiver from its hook to initiate a call, a local circuit containing a relay is closed, which relay attracts its armature and thereby closes a circuit containing a small incandescent lamp. The glowing of this signal-lamp indicates at the exchange that a connection is desired. A second lamp, the supervisory signal, is included in a shunt-circuit about the line-lamp. This shunt-circuit is normally open, but when closed by central making the desired connection, the current is not sufficient to illumine both lamps and hence the illumination of the line-signal lamp ceases and the supervisory lamp remains dark. When at the end of the conversation the subscriber replaces his receiver on its hook, the line-relay becoming deënergized allows its armature to fall back and thereby breaks the circuit containing the line-lamp. Sufficient current then flows through the supervisory lamp to cause its illumination, and the glowing of this lamp indicates that the conversation is at an end.

In the above-described system there is a slight increase of the current in the supervisory lamp when a subscriber hangs up his receiver, this increase being due merely to the opening of the branch containing the line-signal. The novel feature of the issue of this interference consists in still further increasing the current flowing through the supervisory lamp by shunting a resistance out or diminishing the resistance of the circuit of said lamp.

All of the Patent Office tribunals have agreed in according to McBerty a conception of the invention in controversy as early as May 29, 1901. This is based upon the "Wallace Sketch" and test, and the testimony relating to them. While there was no oral argument for Fowler we have carefully read the voluminous brief filed on his behalf. Nearly twenty pages of this brief are taken up with an interesting consideration of this Wallace sketch and test. We do not think that the argument proves that the sketch and test, and the testimony relating thereto, fail to disclose the subject-matter of the issues of this interference. In our opinion it does disclose the invention. We would in no event be justified in overruling the finding of the three Patent Office tribunals that the sketch, the test, and testimony in reference to them, prove a disclosure. Such a ruling would be contrary to the long and now well settled practice of this court. It is not necessary to a decision of the controversy that we should pass upon the question whether the tests made by Wallace constituted a reduction to practice as insisted by counsel for McBerty. Giving Mr. McBerty a conception and disclosure as of May 29, 1901, and a constructive reduction to practice on January 24, 1902, Fowler's testimony has been examined to determine whether he has overcome these dates.

There is much in Fowler's case to warrant the criticisms that have been passed upon it. It is a suspicious circumstance when a party to an interference, after seeing that his adversary's dates, set out in his preliminary statement, overcome his, seeks to put back his own dates as set out in his preliminary statement. When the Patent Office has refused to allow him to file an amended statement any attempt to prove the earlier dates is contrary to the rules of the Patent Office, and to the general rules applicable to pleading in courts of law. Such testimony must be disregarded. Fowler pursued this course and naturally even his testimony, which is within the allegations of his preliminary statement, is very closely scrutinized. Under all the circumstances we do not see that any earlier date of conception and disclosure can be given Fowler than that of August 12, 1901, which is the date of his "Exhibit Drawing No. 2." As stated by the Examiners-in-Chief that is "the first and only documentary or physical evidence of the apparatus devised by Fowler." The witnesses called to corroborate the alleged earlier disclosures and acts done by Fowler are either not familiar with the system in question, or not electrical engineers, or do not testify clearly upon the questions inquired of. The testimony offered on behalf of Fowler fails to convince us beyond a reasonable doubt that he ever reduced the invention to practice prior to filing his application for his patent. We can only give him the benefit of a constructive reduction to practice as of July 18, 1902. He was therefore the last to conceive and disclose and the last to reduce to practice. It would serve no good purpose to set forth in detail the proven facts, nor to specifically point out the weakness in Fowler's chain of proof. The Examiner of Interferences has elaborated all this. There is nothing in this case out of the ordinary to warrant us in reversing the concurrent decisions of the Patent Office on questions of fact.

The question of McBerty's alleged laches is not important. Under the findings of fact he was not required to be diligent, if at all, until Fowler's disclosure of August, 1901. By January 24, 1902, he had filed his application for patent. Due diligence is reasonable diligence. Had Fowler after his conception and disclosure in August, and before McBerty had constructively reduced to practice, proceeded to and obtained a reduction to practice, then Fowler might urge this point with more force. McBerty, if we are correct in our findings of fact, took about eight months after disclosure to reduce to practice. Fowler took eleven months. The many cases cited by appellant in his brief upon the question of an inventor withholding his invention from the public and a want of diligence are not, in view of the facts of the present case, applicable thereto.

The Commissioner of Patents rightfully awarded priority of invention to the senior party, Frank R. McBerty, and accordingly we affirm his decision.

The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents as required by law. Affirmed.

Disclaimer.

11,913.—Reissue. *Guglielmo Marconi*, London, England. TRANSMITTING ELECTRICAL IMPULSES AND SIGNALS AND APPARATUS THEREFOR. Patent dated June 4, 1901. Disclaimer filed March 10, 1906, by the assignee, *Marconi Wireless Telegraph Co.*

Enters its disclaimer—

"To said first claim.

"The first claim is as follows:

"1. In an apparatus for communicating electrical signals by means of a producer of Hertz oscillations, and a signaling instrument, the combination, in the receiver, of an imperfect electrical contact, a circuit through the contact, and a receiving instrument operated by the influence of such oscillations on said contact, substantially as and for the purpose described."

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 4. TUESDAY, MARCH 27, 1906. PRICE—$5 per year.

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Designs	17	No. 37,914 to No. 37,930, inclusive.
Trade-Marks	224	No. 50,580 to No. 50,803, inclusive.
Labels	16	No. 12,727 to No. 12,742, inclusive.
Prints	8	No. 1,607 to No. 1,614, inclusive.
Reissues	4	No. 12,465 to No. 12,468, inclusive.
Total issue	886	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	2	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	3	.....
Arizona Territory	.....	.....	New Jersey	23	8
Arkansas	9	1	New Mexico Ter't'y	.....	.....
California	21	7	New York	117	68
Colorado	5	.....	North Carolina	3	1
Connecticut	18	5	North Dakota	1	.....
Delaware	1	.....	Ohio	38	11
District of Columbia	9	1	Oklahoma Territ'y	.....	.....
Florida	1	1	Oregon	3	1
Georgia	2	4	Pennsylvania	63	41
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	.....	Rhode Island	9	2
Illinois	57	15	South Carolina	1	.....
Indian Territory	1	.....	South Dakota	2	.....
Indiana	18	4	Tennessee	11	.....
Iowa	9	2	Texas	9	2
Kansas	4	.....	Utah	1	.....
Kentucky	7	4	Vermont	4	.....
Louisiana	1	2	Virginia	1	2
Maine	3	1	Washington	3	1
Maryland	9	5	West Virginia	4	2
Massachusetts	31	28	Wisconsin	15	5
Michigan	19	4	Wyoming	1	.....
Minnesota	13	5	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	15	8			
Montana	1	.....	Total to citizens of the United States	530	243
Nebraska	5	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	.....	.....	Netherlands	.....	.....
Argentina	.....	.....	Newfoundland	1	.....
Austria-Hungary	3	.....	New South Wales	1	.....
Belgium	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	8	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	1	.....	South Australia	1	.....
Ecuador	.....	.....	Spain	1	.....
England	14	1	Sweden	.....	.....
France	5	.....	Switzerland	.....	2
Germany	14	2	Transvaal, South Africa	1	.....
Haiti	1	.....	Victoria	.....	.....
Ireland	1	.....	Western Australia	.....	.....
Italy	1	.....			
Japan	.....	.....	Total to citizens of foreign countries	54	5
Java	.....	.....			
Mexico	1	.....			

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 15 1906.

The Office has been advised by the Secretary of the Interior that William H. Maloney, of Spokane, Wash., was disbarred February 6, 1906, from practicing before the Department for any Bureau thereof.

C. M. IRELAN,
Chief Clerk.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 15, 1906.

This Office has been advised by the Secretary of the Interior that Department order dated November 6, 1905, disbarring Robert McKinstry, of Detroit, Mich., from practice before the Department and its Bureaus, was revoked March 8, 1906.

C. M. IRELAN,
Chief Clerk.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 5, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 20, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
278	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 13	Feb. 1	278
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 9	Jan. 16	413
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 7	Feb. 23	237
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Mar. 7	Dec. 26	252
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 7	Oct. 27	665
332	X. Carriages and Wagons.....	Mar. 7	Oct. 24	907
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 6	Feb. 10	219
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 6	Dec. 26	326
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 6	July 27	375
	Under one month.			
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 5	Nov. 27	314
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 3	Feb. 7	356
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 3	Sept. 2	718
123	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Feb. 28	Sept. 23	673
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Feb. 28	July 17	752
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Feb. 27	Jan. 16	228
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Feb. 27	Nov. 1	583
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Feb. 26	Oct. 20	670
143	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Feb. 26	July 6	1120
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Feb. 23	Jan. 26	313
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Feb. 23	Dec. 18	433
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Feb. 23	Dec. 9	437
207	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 23	Nov. 21	267

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Feb. 21	Jan. 11	528
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 21	Sept. 15	728
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 20	Sept. 5	632
	Between one and two months.			
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Feb. 19	Nov. 20	361
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 16	Feb. 16	374
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Feb. 16	Aug. 21	784
327	XVIII. Steam-Engineering, etc ...	Feb. 10	Nov. 24	414
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 9	Nov. 13	577
109	XVI. Telegraphy and Telephony..	Feb. 2	Dec. 19	344
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Jan. 29	Dec. 28	520
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 29	Oct. 21	325
	Between two and three months.			
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 18	Nov. 11	492
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Jan. 15	Sept. 12	604
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 15	June 20	1039
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Jan. 13	Sept. 26	783
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Jan. 12	Oct. 26	547

Total number of applications awaiting action 19,613

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks.....	Feb. 17	Feb. 1	2260
	Under fifteen days.			
	Designs.....	Mar. 12	Feb. 23	53
	Labels and Prints.....	Mar. 10	Mar. 8	42

Renewal of Forfeited Cases.

A petition for the renewal of a forfeited application need not be signed by the inventor or assignee, but may be signed by the attorney.

A power of attorney in the original application authorizing an attorney to transact all business in the Patent Office in connection with the application construed to be of sufficient scope to include the signing of a petition for renewal and the subsequent prosecution of the application. (*Ex parte Apgar*, 101 O. G., 1899.)

PATENTS

GRANTED MARCH 27, 1906.

815,935. TOY BANK. CHARLES A. BAILEY, Cromwell, Conn., assignor to The National Novelty Corporation, Westfield, N. Y., a Corporation of New York. Filed Apr. 10, 1905. Serial No. 254,685.



Claim.—1. In a toy bank, a receptacle the top of which forms an inclined plane, a slidable member on said plane and rests for the support of a coin adjacent to a slot in the plane, and in the path of movement of said member.

2. In a toy bank, a receptacle, an inclined plane having a coin-slot, coin-rests adjacent to the slot, one of the rests being movable, and a slidable member mounted on the plane and arranged to engage a coin supported by the rests.

3. In a toy bank, an inclined plane having a coin-slot, a pivotally-mounted coin-rest adjacent thereto, a slidable member, mounted on the plane and movable over the coin-rest, and a slide-arresting member movable to operative position by downward movement of the coin-rest.

4. In a toy bank, an inclined plane having a coin-slot, a pivoted lever, a coin-rest carried thereby and arranged adjacent to the slot, a slidable member mounted on the plane and movable over the coin-rest, and a two-armed lever pivoted below the plane, one arm being engaged by the coin-rest-carrying lever, and the other being movable into the path of the slidable member.

5. In a toy bank, an inclined plane having a coin-slot, a slidable member, and means operable by engagement of the member with the coin for arresting movement of said member.

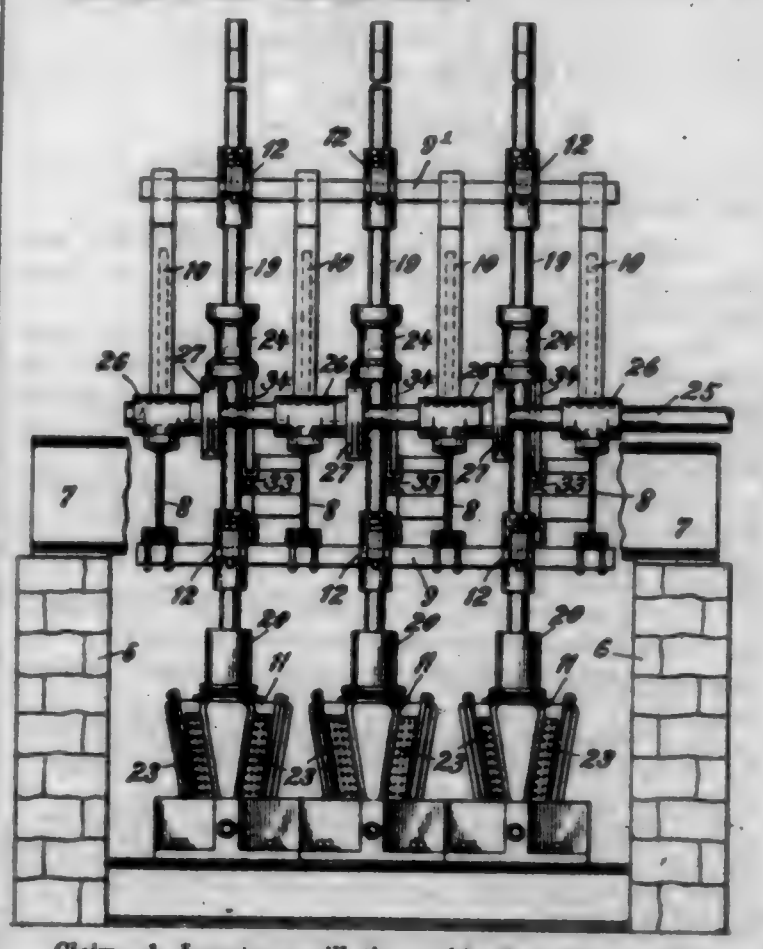
6. In a toy bank, a movable coin-engaging member, and means operable by engagement of the coin with said member for arresting its movement.

7. In a toy bank, an inclined plane having a coin-slot, a slidable member guided by the plane, a pivotally-mounted figure carried by the member, and means operable by the engagement of said member with a coin for arresting movement of the member, the acquired momentum of the figure causing further movement of the latter.

8. In a toy bank, a receptacle, an inclined plane forming the top of said receptacle and provided with a coin-slot, a lever pivoted within the receptacle and having at one end a coin-rest and a movable finger, and provided at the opposite end with a counterweight, a spindle journaled in the walls of the receptacle and provided with a plurality of flat faces, a spring engaging therewith, an arm projecting from the spindle and arranged to be engaged by the finger, and a second hooked arm carried by the spindle and movable through a slot at the lower portion of the plane and a movable member slidably mounted on said inclined plane, substantially as described.

9. In a toy bank, a receptacle the top of which is arranged at an angle to the horizontal, a pivoted plate movable to a position in alinement with the top and forming in connection therewith an inclined plane, means for locking the plate in position and a coin-engaging member slidably mounted on said inclined plane.

815,936. STAMP-MILL. MARTIN P. BOSS, San Francisco, Cal. Filed Jan. 14, 1903. Serial No. 139,007.



Claim.—1. In a stamp-mill, the combination with a guide-girth of rectangular cross-section having reduced cylindrical portions shaped to provide parallel flats, of guides mounted on such reduced portions, and clamp-bolts securing said guides.

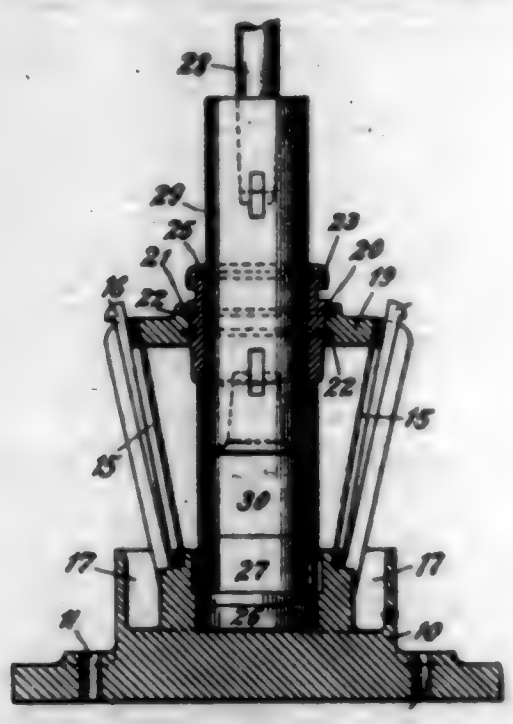
2. In a stamp-mill, the combination of a longitudinal girder, supporting-pillars therefor, situated entirely independent of the mortar-boxes of said mill, a series of parallel sills connected at one end to said girder, means for supporting the opposite end of the sills, guide-girths connecting said sills, guides on said guide-girths, a series of mortar-boxes arranged in line, a series of stamps movable in said guides, and means mounted on said sills for reciprocating the stamps.

3. In a stamp-mill, the combination of a series of rectangular mortars with diagonals in alinement having their screen-openings arranged at an angle to the cam-shaft, a series of sills located above said mortars and entirely independent of said mortars, a series of stamps adapted to reciprocate midway between said sills, guide-

girths connecting said sills at top and bottom, guides on said guide-girths, in which the stamps reciprocate, tappets on said stamps, a cam-shaft mounted on said sills parallel with the guide-girths, and cams on said shaft located under the tappets on the stamps.

4. In a stamp-battery, the combination of a suitably-supported I-beam platform, elevated with respect to the mortars, and made up of two longitudinal girders and a series of transverse ones, any two of which carry the mountings of one stamp arranged as follows—cam-shaft carried by top flange, lower guide-girth attached to bottom flange, upper guide-girth supported by framing from the platform, guides on each girth, and a stamp-stem reciprocating therein.

815,937. STAMP-MILL. MARTIN P. ROSS, San Francisco, Cal. Filed Jan. 14, 1903. Renewed Jan. 13, 1905. Serial No. 240,962.



Claim.—1. A mortar comprising a supporting-base, a body portion, a top portion provided with a tapered opening, and a taper packing-sleeve in said opening.

2. A mortar comprising a body portion, columns formed integrally of said body portion and projecting vertically upward therefrom, removable screens between said columns, and a removable cover carried by said columns and having a tapered opening therein, and a packing-sleeve in the opening in said cover.

3. A mortar comprising a supporting-base, columns projecting upwardly and outwardly from said base, screens between said columns, a removable cover carried by said column, and a tapered packing-sleeve carried by said cover.

4. A mortar comprising a supporting-base, a body portion, a top portion provided with a tapered opening, and a packing-sleeve tapered externally and having a bore of uniform diameter throughout.

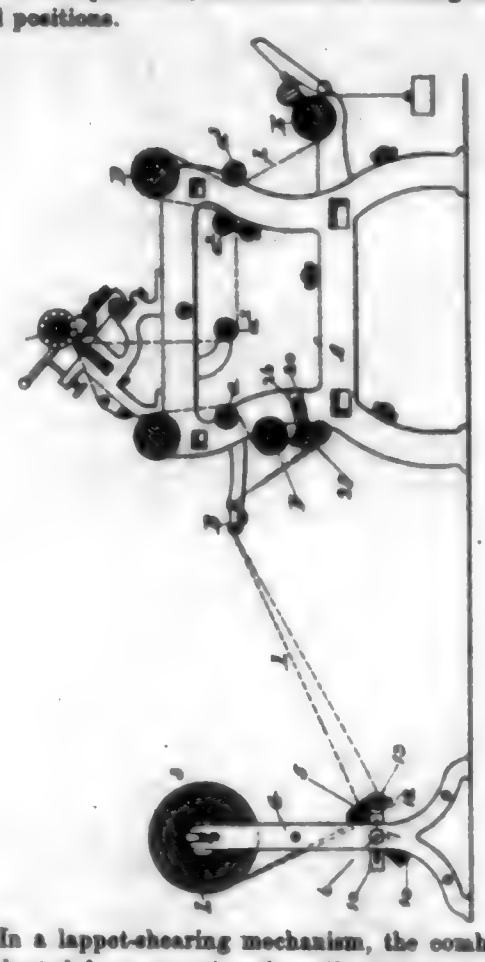
5. A mortar comprising a supporting-base, a body portion, a top portion provided with a tapered opening, a taper packing-sleeve in said opening and packing-rings encircling the sleeve.

6. A mortar comprising a supporting-base, a body portion, a top portion provided with a tapered opening, a taper packing-sleeve in said opening, and packing-rings arranged internally and externally of said sleeve.

815,938. LAPPET-SHEARING MACHINERY. WILLIAM C. BRADLEY, Woonsocket, R. I., assignor to Curtis & Marble Machine Company, Worcester, Mass., a Corporation of Massachusetts. Filed July 13, 1905. Serial No. 269,502.

Claim.—1. A mechanism for the purpose set forth, comprising a portable stand having bearing-recesses for receiving and supporting the axles of a cloth-roll, a skewing-roll mounted in connection with said stand, means for adjusting said skewing-roll to different degrees of angularity in relation to a line through the centers of its attaching-points, and means for adjusting the plane of such angularity in relation to the central vertical plane of the stand.

2. In lappet-shearing machinery, the combination, with the shearing-machine, of a cloth-roll-supporting stand, a skewing-roll mounted on the frame of said stand with journal-supporting means that affords adjustment of the respective roll-journal bearings forward or backward relatively to the central line of the stand, and to higher or lower positions, and means for securing the parts at their adjusted positions.



3. In a lappet-shearing mechanism, the combination, with a stand adapted for supporting the roll of fabric for delivery to the shearing-machine; of a guide-roll, journal-bearings therefor pivotally mounted upon swiveling supports, clamping means connecting said supports with the stand, said parts adapted to afford adjustment of the guide-roll axis radially toward or from a predetermined center point, and also in a circular arc around said center point at any distance therefrom within the limit of the radial adjustment.

4. In mechanism for the purpose set forth, the combination, of the stand having means for the support of a cloth-roll thereon, adjustable arms attached to said stand by pivotal connection to have oscillative adjustment, means for clamping said arms rigidly to the stand, a skewing-roll, and journal-bearings for said skewing-roll having compound swiveling connection with said adjustable arms.

5. In combination with a shearing-machine, a portable stand having bearings or recesses for supporting a cloth-roll thereon, endwise-adjustable arms connected with said stand by pivotal connection to afford longitudinal and oscillative adjustments of the arm, a skewing-roll, journal-bearing boxes for said skewing-roll, compound swivel devices connecting said bearing-boxes to the respective arms, and means for clamping the arms rigidly at position as adjusted.

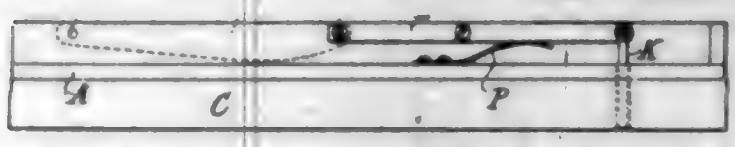
6. In a mechanism of the character described, the combination, with the shearing mechanism, the supporting-frame, front tension-guide, and friction-roll; of a skewing-roll disposed at the front of the shearing-machine frame between said front tension-guide and friction-roll, and means for supporting and adjusting said skewing-roll to different degrees of angularity in relation to the friction-roll, or the front tension-guide.

7. In a mechanism of the character described, in combination with the shearing mechanism, front tension-guide rods or rolls, and the friction-roll; a skewing-roll disposed between said front tension-guide and friction-roll, swiveled bearings for said skew-roll carried by longitudinally and oscillative independently adjusting arms, and means for clamping said arms in connection with the shearing-machine frame, a portable cloth-roll-supporting stand provided with a skewing-roll mounted in said stand, independently-adjustable bearing-supports for said skewing-roll comprising longitudinally-adjusting arms pivotally connected to the stand-frame, and compound swiveling bearing-boxes on said arms, a center pivot or connecting-stud, and a nut for clamping each of the respective adjusting-arms at position as adjusted.

815,939. SHUTTLE-BOX. DANIEL J. CAREY, New York, N. Y., assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Feb. 6, 1904. Renewed Aug. 29, 1905. Serial No. 276,228.

Claim.—1. The combination in a shuttle-box front of a cam on

the inner face thereof in position to be moved by an actuator on the shuttle, an operating device, and means on the outer face of said front adapted to be engaged by said cam and to move said operating device.



2. In a shuttle-box front, a member adapted to be lifted by an actuator on the shutttle, and adapted to bear down upon the shuttle, in combination with an operating device connected with said member, and adapted to be moved thereby.

3. In a shuttle-box, a striker-operating pivoted cam mounted in position to be engaged by an actuator on the shuttle and adapted to permit such actuator to pass beyond it after such engagement, in combination with a striking mechanism, and a connection between such mechanism and said cam.

4. In a shuttle-box, a striker-operating pivoted cam E having a portion G projecting into the path of an actuator on the shuttle, the pivotal point of the cam being sufficiently off the line of movement of the actuator to permit the latter to pass beyond the projecting portion G in combination with an operating device, and a connection between said cam and said operating device, whereby the latter is moved.

5. In a shuttle-box, a striker-operating pivoted cam E having a projecting portion G near its free end in combination with an operating device, and a connection between said cam and said operating device, whereby the latter is moved.

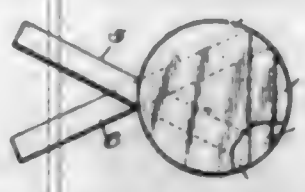
6. In a shuttle-box, a member pivoted at one end and in position to be engaged by an actuator on the shuttle to move its free end, a striker, and a lever transmitting the movement of the free end of said member to said striker.

7. A shuttle-box front having on its inner face a member in position to be moved by an actuator on the shuttle, and having on its outer face a motion-transmitting means, said motion-transmitting means and said member being connected together over the upper edge of the box-front in combination with an operating device, and a connection between such device and said motion-transmitting means.

8. In a shuttle-box, a member E on the inner face of the box-front, pivoted at one end and having a portion G projecting into the path of an actuator on the shuttle, a lever on the outer face of the box-front, and a pin connecting said lever with the free end of said member and extending over the upper edge of the box-front in combination with an operating device connected with said lever and adapted to be moved thereby.

9. In a shuttle-box, an operating device, a member adapted to operate said device mounted in position to be engaged by an actuator on the shuttle when the latter is moving in either direction, and a connection between said device and said member adapted to transmit motion to the former.

815,940. STOPPER FOR BOTTLES, &c. JAMES P. CRANE, Chicago, Ill. Filed Dec. 17, 1904. Renewed Feb. 17, 1906. Serial No. 301,636.



Claim.—1. As a new and useful article of manufacture a stopper comprising in combination a disk, and a flexible strip looped upon said disk and with its free ends passing upwardly around one edge thereof.

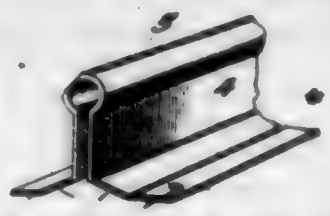
2. As a new and useful article of manufacture, a stopper comprising in combination a disk and a strip, which strip intermediate its ends is secured to and extends across the disk at a point between the edge and axis of the disk, and passes thence upwardly around the edge of the disk.

3. As a new and useful article of manufacture a stopper comprising in combination a disk, a strip crossing itself on the under side of said disk and passing upwardly around the edge thereof with the free extremities forming an extracting-tab.

4. As a new and useful article of manufacture a stopper comprising in combination a disk, a flexible strip extending across the top of the disk on one side and thence in duplex strips under and across the bottom of the disk to the opposite edge and thence upwardly around the edge of the disk.

5. As a new and useful article of manufacture a stopper comprising in combination a disk, and a ribbon having its intermediate part extending across the top of the disk at one side of the center thereof, with its extremities passed under the disk and toward each other and continuing beyond the edge of the disk to form extracting-tabs.

815,941. WEATHER-STRIP. FREDERICK Y. DAWSON, Washington, D. C. Filed Apr. 6, 1905. Serial No. 254,100.



Claim.—1. In combination with a frame and a grooved sliding sash, a weather-strip comprising a horizontal member provided with securing means, an inclined spring member, a groove-closing portion consisting of parallel spaced walls connected by a curved portion, one of said walls being connected to said inclined spring member and the other being free, the whole of said groove-closing portion capable of lateral movement when pressure is exerted on the spring-inclined member.

2. A weather-strip having a horizontal member provided with securing means, an inclined spring member, a groove-closing portion consisting of parallel spaced walls connected by a curved portion, one of said walls being connected with said spring-inclined member and the other being free.

3. A weather-strip having a horizontal member provided with securing means, an inclined spring member, a groove-closing portion consisting of parallel spaced walls connected by a curved portion, one of said walls being connected to said spring-inclined member and the other being free and provided with an inclined spring portion.

815,942. METHOD OF ABSORBING GASES OR VAPORS AND THE PRODUCTION OF HIGH VACUUMS. JAMES DEWAR, Cambridge, England. Filed Apr. 25, 1905. Serial No. 257,252.



Claim.—1. A method of absorbing gases or vapors by exposing to the gas charcoal cooled to a temperature comparable with that at which the gas to be absorbed boils, substantially as described.

2. The production of high vacua by cooling to a temperature comparable with that at which the gas to be removed boils, a mass of charcoal within the space to be exhausted or in a vessel in communication therewith, substantially as described.

915,943. SIMULTANEOUS LOCKING OF DOORS OF RAILWAY-CARRIAGES. NATHAN DEWHURST, JOHN W. MOORE, and ROBERT T. GRIFFITHS, Accrington, England. Filed Apr. 17, 1905. Serial No. 256,045.

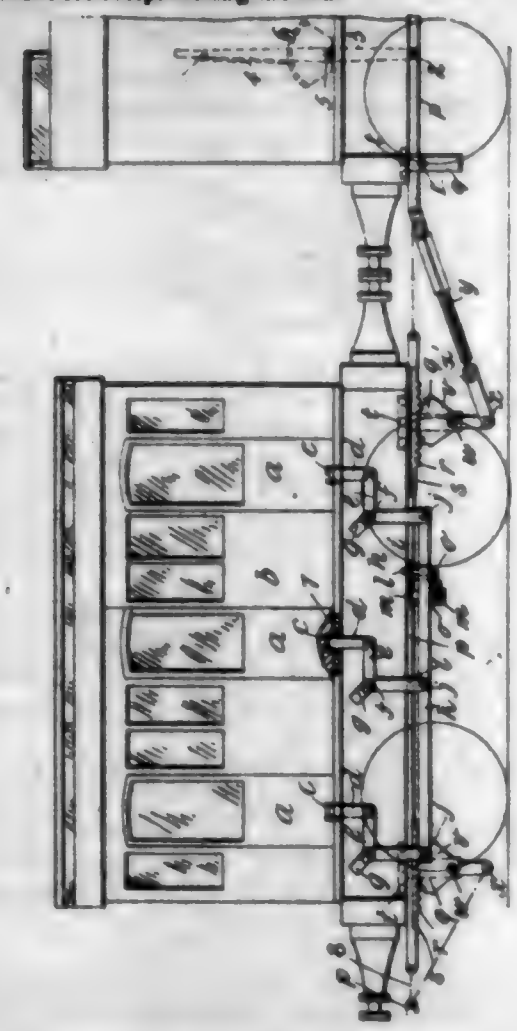
Claim.—1. In combination with a car having a plurality of doors on either side, a rod movable longitudinally of the car, bell-levers pivoted to the car, latches on one end of the levers engaging the door, bars connecting the opposite end of the levers, a connection between the bar and rod, and means for reciprocating the rod.

2. In combination with a car having a plurality of doors on either side, a rod movable longitudinally of the car, bell-levers pivoted to the car, latches on one end of the lever engaging the door, bars connecting the opposite end of the levers, levers pivoted intermediate their length to the car, an end of each lever being pivotally secured to a bar, the opposite end of the lever having pivotal connection with the rod and means for reciprocating the rod.

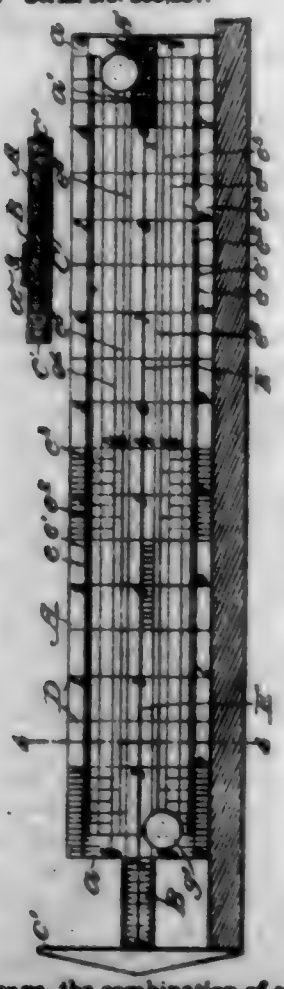
3. In combination with a car having a plurality of doors on either side, a rod movable longtudinally of the car, bell-levers pivoted to the car, latches on one end of the lever engaging the door, bars connecting the opposite end of the levers, levers pivoted intermediate their length to the car, a pin movably held by each bar, a lever pivotally held by the pin, the opposite end of the lever having pivotal connections with the rod, and means for reciprocating the rod.

4. In combination with a car having a plurality of doors on either side, a rod movable longitudinally of the car, bell-levers pivoted to the car, latches on one end of the levers engaging the door,

bars connecting the opposite end of the levers, levers pivoted intermediate their length to the car, an end of each lever being pivotally secured to a bar, the opposite end of the lever being pivotally attached to an end of a link, the opposite end of the link being pivoted to the rod, and means for reciprocating the rod.



815,944. RULE OR GAGE. RALFORD W. DOUGLAS, Spokane, Wash. Filed Apr. 13, 1905. Serial No. 255,257.



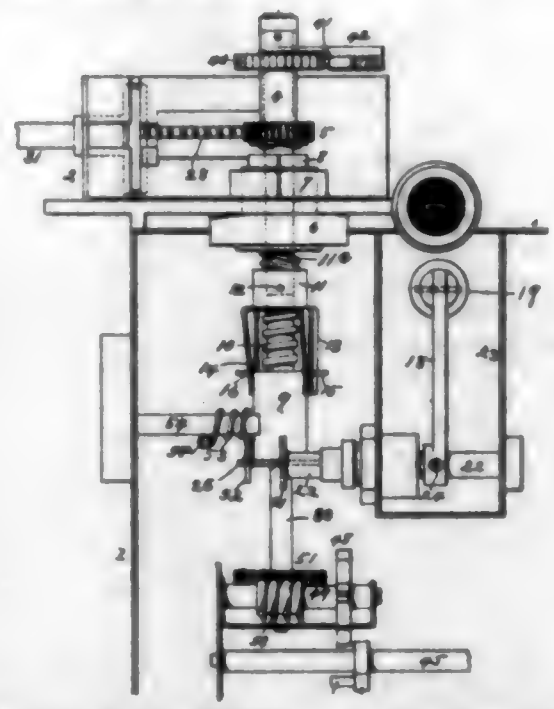
Claim.—1. In a gage, the combination of a body provided with suitable scores and a longitudinal groove, a slide fitted in said groove and scored correspondingly with the transverse score of the body; a T-head attached to the outer end of said slide and projecting beyond both edges of the slide and also below the lower face thereof, and means for locking the slide, substantially as described.

2. In a gage, the combination of a body having longitudinal scores for gaging the set of cutters and transverse scores indicating inches and fractions thereof, and a longitudinal groove; with a slide fitted in said groove, a head on one end of the slide projecting beyond both edges of the body and also below the under surface thereof, said slide being also scaled, and means whereby the slide may be locked in any adjusted position, substantially as specified.

3. In a gage, the combination of the body provided with scores and having a longitudinal groove, a slide fitted in said groove, a T-head attached to the outer end of said slide and adjustable thereby relative to the body of said head, and projecting beyond both edges of the slide and also below the lower face thereof, and means for locking the slide, substantially as described.

4. A cutter-setting gage provided with a longitudinal groove, a central longitudinal score E, and differently-spaced scores e, e', e^2, e^3, e^4, e^5 and e^6, on each side of the central score, and transverse scores indicating linear measure; with a head at one end of the body projecting beyond both edges of the body and also below the under surface thereof, substantially as described.

815,945. COIN ATTACHMENT FOR PREPAYMENT-METERS. JOHN DOYLE and CHARLES F. AVERILL, New York, N. Y. Filed Mar. 31, 1903. Serial No. 150,268.



Claim.—1. In a coin attachment for meters, the combination with means for controlling energy, of a shaft, a hub rigidly mounted on said shaft to rotate therewith, a threaded shaft in longitudinal alinement with said first-named shaft and rotatable independently thereof, a nut on said threaded shaft provided with a projection, an arm on the hub having a slot to receive said projection and means operable by the movement of the nut to actuate the energy-controlling means.

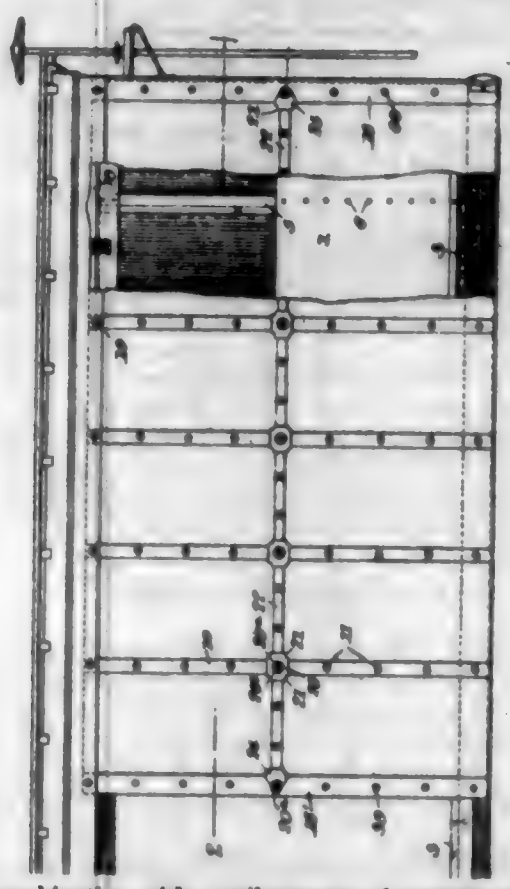
2. In a coin attachment for meters, the combination with mechanism operating to cut off a flow of energy at a predetermined point, and including a rotatable shaft, a pinion mounted thereon, means to permit the pinions to rotate independently of the shaft in one direction and to cause them to rotate together in the opposite direction, a reciprocatory rack-bar engaging the pinion and having a depending projection, a sliding pusher carrying a bottomless coin-pocket, to receive a coin which engages the rack-bar on the inward movement of the pusher to move the rack-bar in one direction, a plate beneath the coin-pocket to maintain the coin in the pocket and in engagement with the rack-bar, a support for the bar, an extension on the plate engaging the support and having a slot, a set-screw engaging the slot and the support whereby the plate is adjustable to determine the release of the coin from the pocket, and a loop on the pocket adapted to engage the projection on the rack-bar on the outward movement of the pusher whereby the pinion is rotated to set the controlling means for operation.

815,946. CAR CONSTRUCTION. ROBERT L. ETTENSEN, Washington, D. C. Filed June 6, 1905. Serial No. 263,991.

Claim.—1. The combination with a car, of a metallic sheathing having curved edge flanges, and cleats having curved beads to engage the flanges.

2. The combination with a car, of metallic sheathing having

curved edge flanges, and cleats having channels bounded by curved beads with which the flanges engage.



3. The combination with a railway-car, of metallic sheathing having curved edge flanges, and cleats having channels and curved beads with which the flanges engage, the channels being of greater depth than the height of the flanges, thereby to permit the same to yield to climatic changes and to vibration.

4. The combination with a car, of cleats provided with channels, and sheathing having curved marginal flanges loosely disposed within the channels.

5. In a railway-car, the combination with posts, of a lining secured to the inner sides thereof, cleats secured to the outer sides and provided with channels, and sheathing having curved marginal flanges to engage the channels.

6. In a railway-car, the combination with the lining, of Z-posts, cleats secured to the posts and provided with channels, and sheathing having marginal flanges to engage the channels.

7. In a railway-car, the combination with posts, of cleats secured thereto and provided with channels, sheathing having marginal flanges to engage the channels, sockets secured intermediate of the ends of the cleats, and horizontally-disposed cleats having their terminals in engagement with the sockets.

815,947. BRACKET. ALAN R. FERGUSON, New York, N. Y. Filed Dec. 31, 1904. Serial No. 239,126.



Claim.—1. A joint comprising ball and socket members and a clamping-bolt maintaining the parts in proper working position, said bolt forming an axis for the ball to turn upon, one part of said ball having movement independently of another part thereof.

2. A joint comprising ball and socket members and a clamping-bolt maintaining the parts in proper working position, said bolt forming an axis for the ball to turn upon, one part of said ball having rotary movement independently of another part thereof.

3. A joint comprising a socket member and a ball formed of several parts, located in said socket member for movement as a whole in one direction, one part having movement independently of the other in another direction.

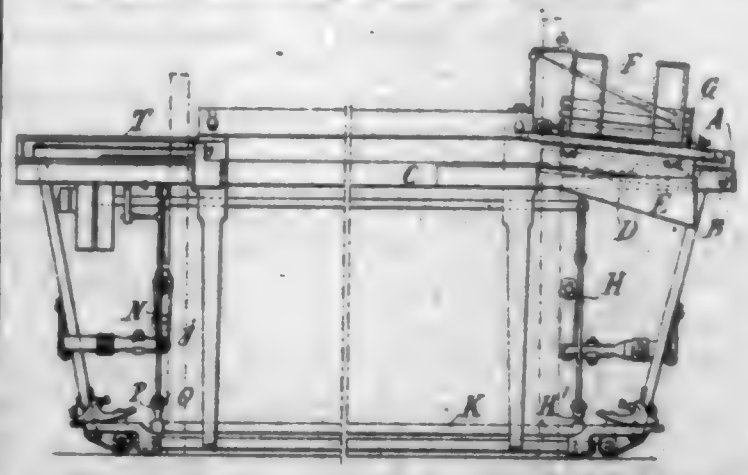
4. In a device of the character described, the combination of two members, one having a socket and the other a ball comprising several parts, and means for clamping said parts and sockets together, such means being arranged to limit the movement of one of said parts except upon the clamping means as an axis, another of said parts being movable independent of the clamping means.

5. In a device of the character described, the combination of two members, one member comprising a pair of concaved jaws, a ball member comprising several parts, a clamping member passed through one of said ball parts and secured in said jaws, the ball as a whole turning on said clamping member, an arm radially secured to one of the ball parts, said latter part being rotatable in said jaws with relation to the ball part engaging the clamping member.

6. The combination of an arm, a clamping member composed of a pair of concaved jaws, a ball comprising a pair of spherical segments, one of such segments being secured to said arm, a clamping-bolt projecting through another of said segments and into the jaws, upon which bolt said segment turns as an axis, the ball-segment secured to the arm being rotatable independent of said other segment engaging the bolt.

7. A ball-and-socket joint comprising a socket member and a ball composed of several parts, and clamped in the socket by a bolt passing through one of said ball parts and into the socket member, the ball as a whole being rotatable upon said bolt as an axis, one of said ball parts not engaged by the bolt being movable independent of said part.

815,948. AUTOMATIC FILLING-REPLENISHING MECHANISM FOR LOOMS. NORBERT FORRESTER, New York, N. Y., assignor, by mesne assignments, of two-fifths to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Jan. 8, 1903. Renewed Aug. 29, 1905. Serial No. 276,321.



Claim.—1. In a loom, a device for automatically exchanging the shuttles, comprising in combination with the lay a shuttle-box on one side thereof and fixed thereto and on the other side of the lay a pivotally-arranged shuttle-box, a receptacle for holding a supply of full shuttles, an adjustable auxiliary box for catching the exhausted shuttle to be exchanged, mechanism for moving said pivoted shuttle-box toward and from the supply-receptacle and means for transmitting the movement of the lay to said mechanism to move said shuttle-box in one of said directions synchronously with the movement of the lay.

2. In a loom, a device for automatically exchanging the shuttles, comprising in combination with the lay a shuttle-box on one side thereof and fixed thereto and on the other side of a lay a pivotally-arranged shuttle-box, a receptacle for holding a supply of full shuttles, an adjustable auxiliary box for catching the exhausted shuttle to be exchanged, mechanism for conveying the shuttle-box pivoted to the lay toward the supply-receptacle to receive a new shuttle and for moving said auxiliary box into the operative position of said movable shuttle-box, in order to catch the exhausted shuttle coming out of the shuttle-box fixed to the lay, and means for transmitting the movement of the lay to said mechanism to operate the same upon exhaustion of the thread of the working shuttle to a predetermined extent.

3. In a loom, a device for automatically exchanging the shuttles, comprising in combination with the lay a shuttle-box on one side thereof and fixed thereto and on the other side of the lay a pivotally-arranged shuttle-box, a receptacle for holding a supply of full shuttles, an adjustable auxiliary box for catching the exhausted shuttle to be exchanged, mechanism for conveying the shuttle-box pivoted to the lay toward the supply-receptacle to receive a new shuttle and for moving said auxiliary box into the operative position of said movable shuttle-box, in order to catch the exhausted shuttle coming out of the shuttle-box fixed to the lay, an actuator carried by the lay and arranged to transmit the movement of the lay to said mechanism.

said actuator being normally in inoperative position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to cause a movement of said actuator to operative position.

4. In a loom, a device for automatically exchanging the shuttles, comprising in combination with the lay a shuttle-box on one side thereof and fixed thereto and on the other side of the lay a pivotally-arranged shuttle-box, a receptacle for holding a supply of full shuttles, an adjustable auxiliary box for catching the exhausted shuttle to be exchanged, mechanism for conveying the shuttle-box pivoted to the lay toward the supply-receptacle to receive a new shuttle and for moving said auxiliary box into the operative position of said movable shuttle-box, in order to catch the exhausted shuttle coming out of the shuttle-box fixed to the lay, a restorer carried by the lay for causing the restoration of said mechanism to its normal position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to cause a movement of said restorer to inoperative position.

5. In an automatic filling-replenishing mechanism for looms, the combination of an actuator carried by the lay adapted to transmit the movement of the lay to said mechanism to operate the same by said movement, a spring holding said actuator normally in inoperative position, and a detector carried by the shuttle and adapted on exhaustion of the thread to a predetermined extent to move and hold said actuator in operative position, said spring returning said actuator to its normal inoperative position upon its release from said detector.

6. In an automatic filling-replenishing mechanism for looms, the combination of means for actuating the mechanism, a restorer carried by the lay for causing the restoration of said mechanism to its normal position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to cause a movement of said restorer to inoperative position.

7. In an automatic filling-replenishing mechanism for looms, the combination of an actuator carried by the lay for actuating the mechanism and normally in inoperative position, a restorer carried by the lay for causing the restoration of the mechanism to its normal position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to cause a movement of said actuator to operative position and of said restorer to inoperative position.

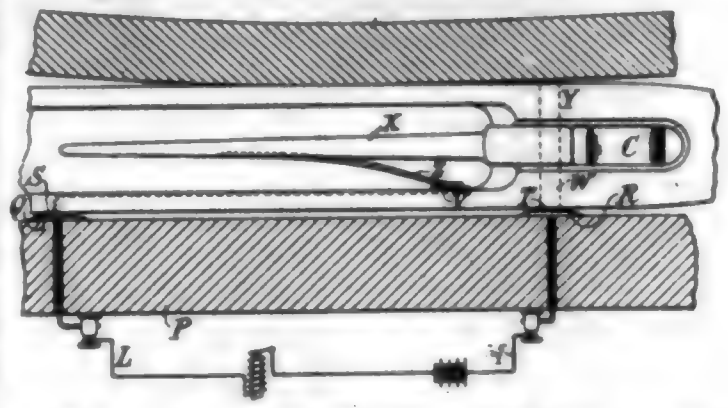
8. In an automatic filling-replenishing mechanism for looms, the combination of an actuator carried by the lay and normally in inoperative position, a restorer carried by the lay and normally in operative position, a slide in the path of said actuator when the latter is in its operative position, a pawl arranged to engage said slide and hold it in the position to which it is moved by said actuator, means for withdrawing said pawl when said restorer is in its operative position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to cause a movement of said actuator to said operative position, and of said restorer to said inoperative position.

9. In an automatic filling-replenishing mechanism for looms, the combination of an actuator carried by the lay for actuating the mechanism and normally in inoperative position, a restorer carried by the lay for causing the restoration of the mechanism to its normal position, said actuator and restorer being connected to each other so that when one is in its operative position the other is in its inoperative position, and vice versa, a spring for maintaining said restorer in its normal position, and a detector carried by the shuttle adapted on exhaustion of the thread of the shuttle to a predetermined extent to move said actuator to operative position.

10. In an automatic filling-replenishing mechanism for looms, the combination of an actuating-pin extending through the bottom of the shuttle-box, a restoring-pin extending through the bottom of the shuttle-box and connected by a lever to said actuating-pin, means operated on exhaustion of the thread of the shuttle to a predetermined extent to project said actuating-pin downward and said restoring-pin upward, means for normally holding said restoring-pin downward and said actuating-pin upward, means in the path of said actuating-pin when it is down for actuating the filling-replenishing mechanism, means for retaining the same in replenishing position, and means in the path of said restoring-pin when it is down for releasing said retaining means to permit the restoration of the parts to their normal position.

11. In an automatic filling-replenishing mechanism for looms, the combination of means for actuating the mechanism, a restorer carried by the lay for causing the restoration of the mechanism to its normal position, said restorer being normally in operative position, an arm in position to be struck by said restorer to cause the restoration of the mechanism, and means operated upon the restoration of the mechanism for withdrawing said arm out of position for being struck by said restorer.

815,949. **SHUTTLE FOR WEFT-REPLENISHING MECHANISMS.** NORBERT FORESTER, New York, N. Y., assignor, by mesne assignments, of two-fifths to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed June 5, 1905. Renewed Aug. 29, 1905. Serial No. 276,223.



Claim.—1. The combination with a shuttle-body, of a pair of terminals on the outside thereof, one connected to the shuttle-spindle, an inside terminal the contact-point of which is located at the inner side of the shuttle-wall and which is connected to the other outside terminal, and means for connecting the shuttle-spindle with the inside terminal on exhaustion of the shuttle-thread to a predetermined extent.

2. The combination with a shuttle-body having a pivoted spindle, of a pair of terminals on the outside thereof, one connected to the shaft of the spindle, an inside terminal the contact-point of which is located at the inner side of the shuttle-wall and which is connected to the other outside terminal, and means for establishing a connection between the inside terminal and the spindle automatically on exhaustion of the shuttle-thread to a predetermined extent.

3. The combination with a shuttle-body having a pivoted spindle, of a pair of terminals on the outside thereof, one connected to the shaft of the spindle, an inside terminal the contact-point of which is located at the inner side of the shuttle-wall and which is connected to the other outside terminal, and a spring-terminal on the outside of the spindle and connected thereto and adapted to be released and to make connection with the inside terminal on exhaustion of the shuttle-thread to a predetermined extent.

4. The combination with a shuttle, of a shuttle-box, terminals on the outside of the shuttle and on the shuttle-box adapted to make connection with each other when the shuttle is in the box, one of said outside shuttle-terminals being connected to an inside shuttle-terminal, and the other outside shuttle-terminal to the shuttle-spindle, and a spring Z attached at one end to the shuttle-spindle, adapted to be surrounded and held inward by thread on the spindle and when released to spring out and contact with said inside terminal.

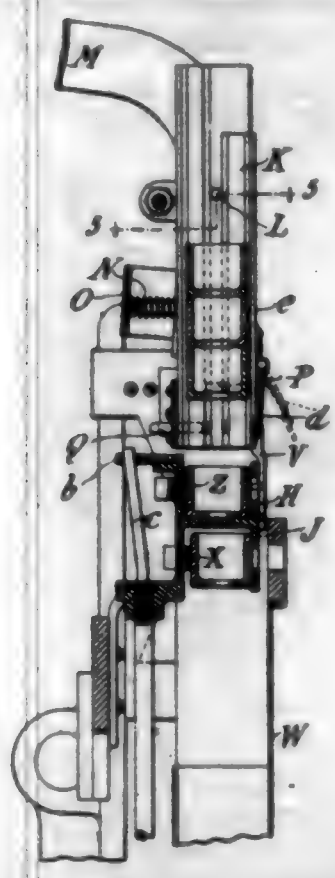
5. The combination with a shuttle-body of a pair of terminals S and T on the outside thereof, said terminal T being electrically connected to the shuttle-spindle, an inside terminal V on the inner side of the shuttle-wall and electrically connected to the terminal S, and means for connecting the shuttle-spindle to the inside terminal V on exhaustion of the shuttle-thread to a predetermined extent.

815,950. **SHUTTLE-BOX.** NORBERT FORESTER, DANIEL J. CAREY, and WILLIAM A. FOSTER, New York, N. Y.; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Oct. 12, 1903. Renewed Aug. 29, 1905. Serial No. 276,224.



Claim.—In combination, a shuttle-box front A having a closed slot H, a slide E having an intermediate portion guided in said slot and having at its inner side an enlarged head wider than said slot, said head being in position to be struck and moved by a suitable device carried by a shuttle, a lever N on the outside of the box-front and having a slot P, a pin O carried on the outside of the slide and engaging said slot to move said lever vertically as the slide moves horizontally, and a striker K moved from an inoperative and to an operative position by said lever.

815,951. **WEFT-REPLENISHING LOOM.** NORBERT FORRSTER, DANIEL J. CAREY, and WILLIAM A. FOSTER, New York, N. Y.; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Oct. 15, 1903. Renewed Aug. 29, 1905. Serial No. 276,285.



Claim.—1. In an automatic weft-replenishing mechanism for looms, the combination of a magazine for carrying full shuttles and supported independently of the lay, a transferring device carried by said magazine, a shuttle-box displaceable from its running position to a position for receiving a shuttle directly from said magazine, said transferring device normally disengaged from the box and being in position to be engaged and operated by the box when the latter is displaced from its running position.

2. In an automatic weft-replenishing mechanism for looms, the combination of a fixed support and a magazine movably mounted therein and normally unconnected with the lay, a spring pressing said magazine yieldingly forward, a shuttle-box carried by the lay and displaceable from its running position to a position for receiving a shuttle from said magazine, and adapted in such position to directly engage said magazine and press it backward, whereby said shuttle-box and spring cause the magazine to partake of a part of the movement of the lay in each direction during the transfer of the shuttle.

3. In an automatic weft-replenishing mechanism for looms, in combination, a movable magazine, a spring pressing said magazine yieldingly forward, an escapement at the lower end of said magazine, a spring pressing said escapement yieldingly forward relatively to said magazine, a shuttle-box carried by the lay and normally swinging below said magazine and escapement and adapted to be raised when the thread is exhausted to a position to engage said escapement and press the same back against said magazine, the further movement of the shuttle-box carrying the magazine with it to the end of its stroke and the magazine-spring carrying the magazine with the shuttle-box during the beginning of its reverse stroke.

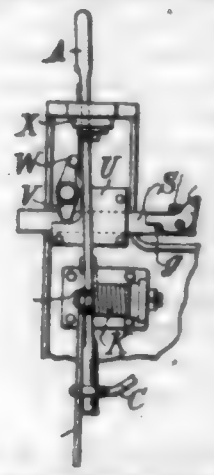
4. In an automatic weft-replenishing mechanism for looms, in combination, a magazine pivotally supported near its upper end, a spring pressing said magazine yieldingly forward, a sliding escapement at the lower end of said magazine and pressed yieldingly forward relatively to said magazine, a shuttle-box carried by the lay and normally swinging below said magazine and escapement and adapted to be raised when the thread is exhausted to a position to engage said escapement and press the same back against said magazine, the further movement of the shuttle-box carrying the magazine with it to the end of its stroke and the magazine-spring carrying the magazine with the shuttle-box during the beginning of its reverse stroke.

5. In an automatic weft-replenishing mechanism for looms, the combination of an auxiliary box for receiving the exhausted shuttle, said box being open at the bottom and having a swell for holding a shuttle as it is shot therein, and means for subsequently withdrawing said swell and thus dropping said shuttle through the open bottom of the box.

6. In an automatic weft-replenishing mechanism for looms, the combination of a magazine supported independently of the lay, means for moving the shuttle-box into register with said magazine and transferring a new weft-supply thereto, and means carried by said magazine for engaging and holding the new weft-supply in the box as the latter moves out of register with the magazine.

7. In an automatic weft-replenishing mechanism for looms, the combination of a magazine supported independently of the lay, means for moving the shuttle-box into register with said magazine and transferring a new weft-supply thereto, and a finger d pivotally carried at the front of the magazine for forcing and holding the new weft-supply in the box as the latter moves out of register with the magazine.

815,952. **FILLING STOP-MOTION FOR LOOMS.** NORBERT FORRSTER, DANIEL J. CAREY, and WILLIAM A. FOSTER, New York, N. Y.; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Dec. 11, 1903. Renewed Aug. 29, 1905. Serial No. 276,286.



Claim.—1. In a loom, in combination, a shuttle-box carrying a striker adapted to be projected when the thread in the shuttle is nearly exhausted, a slide S mounted on the loom-frame and in the path of said striker when projected, a lever V pivotally carried on the loom-frame and engaged by said slide, and means set in operation by said lever for stopping the loom.

2. In a loom, in combination, a shuttle-box carrying a striker adapted to be projected when the thread in the shuttle is nearly exhausted, a lever controlling the connection of the loom with the source of power and spring-pressed toward the disconnecting position, holding means for holding said lever in the connecting position, a slide S mounted on the loom-frame and in the path of said striker when projected, a lever V pivotally carried on the loom-frame, engaged by said slide, and engaging said controlling-lever for moving it free of said holding means.

3. In a loom, in combination, a shuttle-box carrying a striker adapted to be projected when the thread in the shuttle is nearly exhausted, and a device adapted to be engaged and pushed forward bodily in the line of movement of said striker when engaged by the latter in a forward movement, and to be forced out of the line of movement of said striker when engaged by the latter in a backward movement.

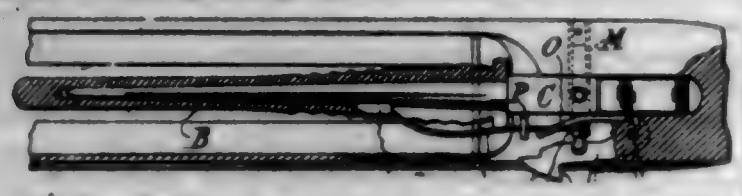
4. In a loom, in combination, a shuttle-box carrying a striker adapted to be projected when the thread in the shuttle is nearly exhausted, and a slide adapted to be pushed forward by said striker in a forward movement of the latter, said slide carrying a contact device which upon receiving the impact of said striker in its forward movement transmits the same to said slide, and which upon receiving the impact of said striker in its rearward movement yields to permit the passage of said striker without transmitting its impact to the slide.

815,953. **SHUTTLE.** NORBERT FORRSTER, DANIEL J. CAREY, and WILLIAM A. FOSTER, New York, N. Y.; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed Dec. 11, 1903. Renewed Aug. 29, 1905. Serial No. 276,287.

Claim.—1. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling device, and an arm movable with the shuttle-spindle and pivotally connected with said device to permit the turning up of the spindle.

2. In a shuttle having a vertically-swinging spindle, in combi-

nation, a swinging mechanism-controlling lever, and an arm movable with the shuttle-spindle and pivotally connected to said lever to permit the turning up of the spindle.



3. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling device, and a spring-arm connected at one end to the shuttle-spindle and pivotally connected at the other end to said device to permit the turning up of the spindle.

4. In a shuttle having a vertically-swinging spindle, in combination, a swinging mechanism-controlling lever, and a spring-arm connected at one end to the shuttle-spindle and pivotally connected at the other end to said lever to permit the turning up of the spindle.

5. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling device, an arm movable with the shuttle-spindle and pivotally connected with said device to permit the turning up of the spindle, and means engaging said arm for moving said device to its inoperative position automatically on the turning up of the spindle.

6. In a shuttle having a vertically-swinging spindle, in combination, a horizontally-swinging mechanism-controlling lever D, an arm J pivotally connected to said lever and movable with said spindle, and a cam in the path of said arm and arranged to force the same inward as said spindle is turned up.

7. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling device, a key N on said spindle, and an arm pivotally connected to said mechanism-controlling device and movable with the shuttle-spindle.

8. In a shuttle, in combination, a swinging mechanism-controlling lever and an arm connected to said lever and controlled by the thread in the shuttle to swing said lever to its inoperative and to its operative positions.

9. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling lever pivoted separately from the spindle, and means for swinging said device to its inoperative position automatically on the turning up of the spindle.

10. In a shuttle having a vertically-swinging spindle, in combination, a mechanism-controlling lever pivoted separately from the spindle, and means connected to said lever and controlled by the thread in the shuttle to swing said lever to its inoperative and to its operative positions.

11. In a shuttle, a mechanism-controlling device carried near one end of the shuttle and having a projecting portion with an abrupt shoulder in the direction of said end of the shuttle and tapering in the opposite direction.

12. In a shuttle, a pivoted mechanism-controlling lever having a projecting portion abruptly shouldered on the side toward the pivotal point and tapered on the side away from the pivotal point.

13. In a shuttle, a mechanism-controlling device mounted at one side of the shuttle-spindle and having a projecting portion with an abrupt shoulder on one side and tapered on the opposite side.

14. In a shuttle, in combination, a swinging mechanism-controlling lever and a reciprocating pin connected thereto.

815,954. BOTTLE-STOPPER. HENRY K. GILBERT, Niagara Falls, N. Y., assignor of one-third to Franklin J. Robinson, Hyattsville, Md. Filed June 21, 1905. Serial No. 266,365.



Claim.—1. A bottle-stopper comprising a stopper portion and an integral skirt portion of rubber, with a square shoulder at the junction of the stopper portion and the skirt.

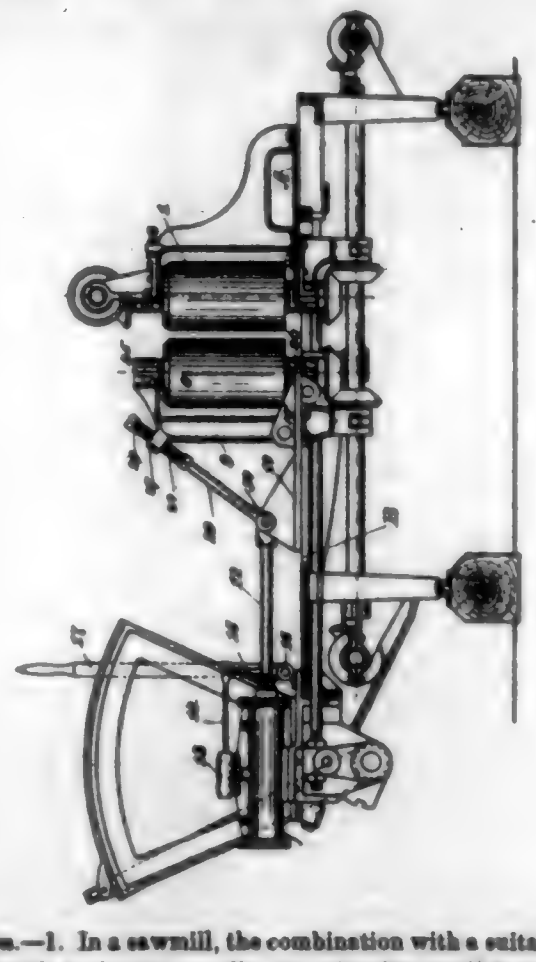
2. A bottle-stopper of elastic material comprising in a single piece a stopper portion and a skirt with a square shoulder at the junction of the stopper portion and skirt exteriorly and interiorly.

3. A self-sealing bottle-stopper of elastic material comprising a stopper portion and a skirt, and means for expanding the stopper portion.

4. A self-sealing bottle-stopper of elastic material comprising a stopper portion with an interiorly-threaded socket and a skirt, and a screw-threaded expanding device adapted to engage in said socket to expand the stopper portion.

5. A self-sealing bottle-stopper of flexible material embodying in one piece a stopper portion and a skirt with a square shoulder at the junction thereof, and an expanding device adapted to engage in said stopper portion to expand the same.

815,955. BAND-RESAW. JOHN L. GRAHAM, Hazlewood, Mich. Filed Dec. 31, 1904. Serial No. 239,229.



Claim.—1. In a sawmill, the combination with a suitable frame provided with feed or gage rolls, of a plurality of sliding tables located opposite the feed-rolls, a bracket pivotally secured at one end to each of the sliding tables, a journal-bearing stationarily mounted in the upper free end of the bracket, a pressure-roller, the lower end of which is pivotally secured to the table, and the upper end of which is received in the journal-bearing, an obliquely-disposed rod, one end of which loosely engages the upper end of the bracket, cushion members on the rod bearing against the bracket to yieldingly retain the latter and its pressure-roll in approximately vertical position, the opposite end of the rod being pivotally secured to the table, and means for effecting the independent reciprocation of the tables relative to each other.

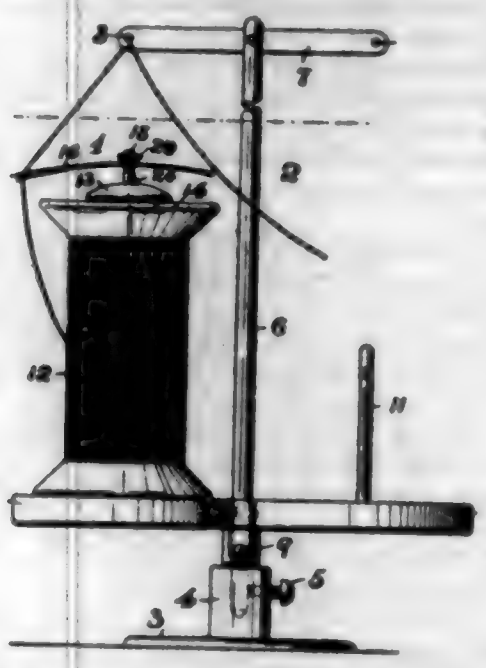
2. In a sawing-machine, the combination with a suitable frame, and feed-rolls or gage-rolls, mounted thereon, of a plurality of independent relatively movable tables slidingly mounted on the frame opposite the feed-rolls, a pivotally-mounted yieldingly-supported pressure-roll carried by each table, a separate fluid-operated means connected to each table for moving individual tables separately from the rest, a valve mechanism for each fluid-operated means, said mechanism comprising a valve and valve-rod, individual rock-shafts to which the valve-rods are connected, the rock-shafts leading to a common point and a separate lever for each rock-shaft, the levers grouped closely together.

815,956. COMBINED WEIGHT AND FLIER FOR SPOOL-HOLDERS. ADAM H. GROEL, Orange, N. J., assignor to The Spool Cotton Company, a Corporation of New Jersey. Filed Mar. 13, 1905. Serial No. 249,829.

Claim.—1. A combined spool weight and flier, comprising a body having a base adapted to be placed upon the end of a spool of thread or the like, a stud extending downwardly from said base so as to be inserted into the tubular portion of the spool, a receiving-socket extending upwardly from the top of said base, a post rotatively arranged in said socket, and a flier-arm extending from said post, substantially as and for the purposes set forth.

2. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-

socket upon said body, a post rotatively arranged in said socket, said post being provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and means on said flier-arm with which the free end portion of the thread may be brought in guiding engagement, substantially as and for the purposes set forth.



3. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-socket upon said body, a post rotatively arranged in said socket, said post being provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

4. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-socket upon said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, a flier-arm extending from said post, and means on said flier-arm with which the free end portion of the thread may be brought in guiding engagement, substantially as and for the purposes set forth.

5. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-socket upon said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, a flier-arm extending from said post, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

6. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-socket upon said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, said post being also provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and means on said flier-arm with which the free end portion of the thread may be brought in guiding engagement, substantially as and for the purposes set forth.

7. A combined spool weight and flier, comprising a body provided with means for retaining said body in position, a receiving-socket upon said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, said post being also provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

8. A combined spool weight and flier, comprising a body having a flat base, a stud extending from said base for retaining said body in position, a receiving-socket upon the upper portion of said body, a post rotatively arranged in said socket, said post being provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

9. A combined spool weight and flier, comprising a body having a flat base, a stud extending from said base for retaining said body in position, a receiving-socket upon the upper portion of said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, a flier-arm extending from said post, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

10. A combined spool weight and flier, comprising a body having a flat base, a stud extending from said base for retaining said body in position, a receiving-socket upon the upper portion of said body, a post rotatively arranged in said socket, said post having an annular groove, a pin in said socket having a portion in supporting engagement with the groove of said post, said post being also provided with a laterally-extending receiving-duct, and a screw-threaded part, a flier-arm movably arranged in said duct, a nut on said screw-threaded part for securing said flier-arm in a fixed position after adjustment, and a receiving-eye on said flier-arm through which the free end portion of the thread may be passed, substantially as and for the purposes set forth.

815,957. SHEET-METAL DISPLAY CAN OR BOX. ERNST M. HALLBAUER, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 25, 1905. Serial No. 279,906.



Claim.—1. In a sheet-metal display-can, the combination with a front plate having a display-opening therein and an integral countersunk portion forming a recess on the outside thereof to receive a removable sheet-metal sign-plate, of a removable inside-fitting glass plate, a fixed guide engaging the lower edge of the glass plate, and movable glass-plate holders pivoted to the countersunk portion of the front plate and provided each with a lateral shoulder and depending lip to overhang and engage the upper edge of the glass plate, the countersunk portion of the front plate being provided with integral keeper-lips engaging the holders, and a removable external sign-plate fitting in the recess formed by the countersunk portion of the front plate, and means for removably securing the sign-plate in place, substantially as specified.

2. In a sheet-metal display-can, the combination with a front plate having a display-opening therein and a countersunk portion above the display-opening forming a seat for an externally-fitting sign-plate, of a removable inside-fitting glass plate and movable holders for the glass plate pivoted to said countersunk portion of the front plate, and keepers on the countersunk portion of the front plate engaging said holders, substantially as specified.

3. In a sheet-metal display-can, the combination with a front plate having a display-opening therein and a countersunk portion above the display-opening forming a seat for an externally-fitting sign-plate, of a removable inside-fitting glass plate and movable holders for the glass plate pivoted to said countersunk portion of the front plate, keepers on the countersunk portion of the front plate engaging said holders, said keepers being integral with the front plate, substantially as specified.

4. In a sheet-metal display-can, the combination with a front plate having a display opening therein and a countersunk portion above the display-opening forming a seat for an externally-fitting sign-plate, of a removable inside-fitting glass plate and movable holders for the glass plate pivoted to said countersunk portion of the front plate, and keepers on the countersunk portion of the front plate engaging said holders, each of said pivotal holders having a longitudinally-extending rib, substantially as specified.

5. In a sheet-metal display-can, the combination with a front plate having a display-opening therein and a countersunk portion above the display-opening forming a seat for an externally-fitting sign-plate, of a removable inside-fitting glass plate and movable

holders for the glass plate pivoted to said countersunk portion of the front plate, and keepers on the countersunk portion of the front plate engaging said holders, each of said holders having a laterally-extending shoulder overhanging the upper edge of the glass plate, substantially as specified.

6. In a sheet-metal display-can, the combination with a front plate having a display-opening therein and a countersunk portion above the display-opening forming a seat for an externally-fitting sign-plate, of a removable inside-fitting glass plate and movable holders for the glass plate pivoted to said countersunk portion of the front plate, and keepers on the countersunk portion of the front plate engaging said holders, each of said holders having a laterally-extending shoulder overhanging the upper edge of the glass plate, and a depending lip engaging the inside face of the glass plate, substantially as specified.

7. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, and a countersunk portion above the display-opening forming a seat to receive an externally-fitting removable sign-plate, of a removable inside-fitting glass plate, and a movable holder for the glass plate pivoted to said countersunk portion of the front plate, and a keeper on the front plate engaging said holder, substantially as specified.

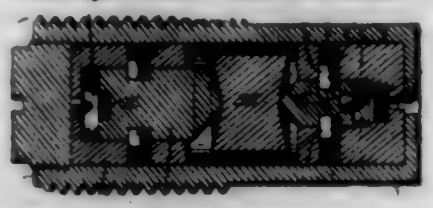
8. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, and a countersunk portion above the display-opening forming a seat to receive an externally-fitting removable sign-plate, of a removable inside-fitting glass plate, and a movable holder for the glass plate pivoted to said countersunk portion of the front plate, and a keeper on the front plate engaging said holder, said keeper being integral with the front plate, substantially as specified.

9. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, and a countersunk portion above the display-opening forming a seat to receive an externally-fitting removable sign-plate, of a removable inside-fitting glass plate, and a movable holder for the glass plate pivoted to said countersunk portion of the front plate, and a keeper on the front plate engaging said holder, said holder having a longitudinally-extending rib, a laterally-projecting shoulder and a depending lip, substantially as specified.

10. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, and a countersunk portion above the display-opening forming a seat to receive an externally-fitting removable sign-plate, of a removable inside-fitting glass plate, and a movable holder for the glass plate pivoted to said countersunk portion of the front plate, and a keeper on the front plate engaging said holder, said holder having a laterally-projecting shoulder and a depending lip engaging the upper edge of the glass plate, substantially as specified.

11. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, of a removable inside-fitting glass plate, a fixed guide engaging the lower edge of the glass plate, and a movable holder pivoted to the front plate above the glass-plate opening therein, and provided with a longitudinal rib and a lateral shoulder and depending lip engaging the upper edge of the glass plate, substantially as specified.

815,958. PERCUSSION-FUSE. Joseph W. Harriman, Washington, D. C. Filed Apr. 7, 1905. Serial No. 254,342.



Claim.—1. In a fuse, the combination of a firing device, automatically-unlocked means for restraining said device from firing movement, a hammer, and means for transmitting the blow of the hammer to the firing device interposed between them and at all times continuing in contact with the firing device, under varying distances between the same and the hammer.

2. In a fuse, the combination of a firing device, automatically-unlocked means for restraining said device from firing movement, and a hammer means for moving and retaining said firing device after being released, to prevent relocking thereof interposed between the firing device and said hammer.

3. In a fuse, the combination of a firing device, automatically-unlocked means for restraining said device from firing movement, a hammer and means for moving and retaining said firing device after being released to prevent relocking thereof, consisting of a loose block interposed between the firing device and said hammer.

4. In a fuse, the combination of a firing device, automatically-unlocked means for restraining it from movement, a hammer mounted for movement only in the direction in which said firing device is movable, and a part interposed between the hammer and the firing device, of varying thickness, in the direction in which the same are movable, and movable crosswise of such direction.

5. In a fuse, the combination of a firing device, automatically-unlocked means for restraining it from movement, a hammer mounted for movement only in the direction in which said firing device is movable, and a part interposed between the hammer and the firing device having an inclined surface to coöperate with a like surface on one of said parts, and movable crosswise of the direction of their movement.

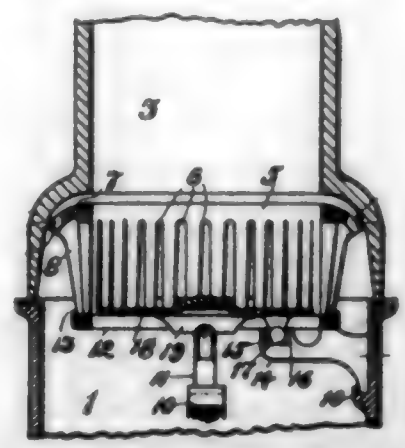
6. In a fuse, the combination of a casing, a firing device movable axially of the casing, automatically-released locking means for said firing device, a hammer movable only axially in the casing, and a part interposed between the hammer and the firing device having an inclined surface to engage a like surface on the hammer, and movable crosswise of the casing-axis.

7. In a fuse, the combination of a firing device, an automatically-unlocked holding means therefor, a hammer movable only in the direction of which said firing device is movable, and a part interposed between said device and said hammer, having inclined surfaces to coact with similar surfaces on each of said parts, and movable crosswise of the direction of movement thereof.

8. In a fuse, the combination of a firing device, automatically-unlocked means for restraining it from movement, a hammer for said firing device, and means for producing an explosion to subject the hammer to pressure to supplement its weight to operate the firing device.

9. In a fuse, the combination of a firing device, automatically-unlocked means for restraining said device from movement, a hammer, automatically-unlocked means for restraining it from movement, and means for producing an explosion to subject the hammer to pressure to operate the firing device.

815,959. FIRE-POT. Robert M. Hinman, Akron, Ohio. Filed Jan. 18, 1906. Serial No. 241,626.



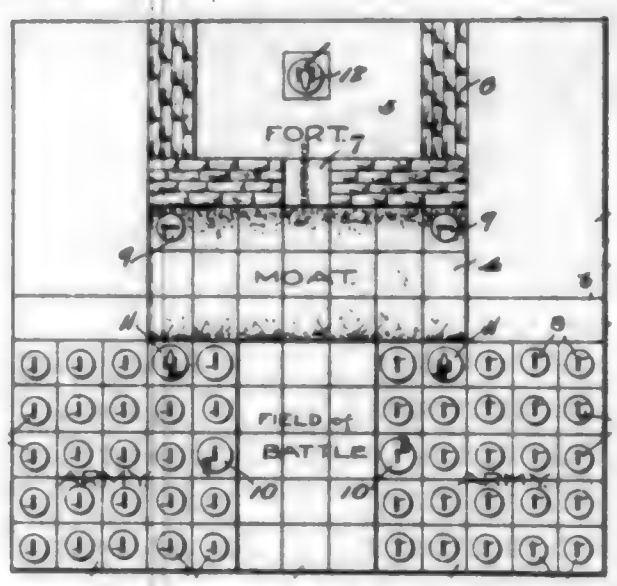
Claim.—1. In a device of the class described, the combination of an ash-pit, a fire-pot suitably supported thereon, a removable slotted lining for said fire-pot and an annular device for supporting said lining, said fire-pot being provided on its inner face with means for supporting said lining, said ash-pit being provided with means for supporting said annular device, and said lining being formed to be temporarily supported by the fire-pot or to be permanently supported upon the annular device and out of contact with the fire-pot.

2. In a device of the class described, the combination of an ash-pit, a fire-pot suitably supported thereby, a removable lining for said fire-pot and a device for supporting said lining, said fire-pot being provided with means for supporting the lining, said ash-pit being provided with means for supporting said device, said lining being formed to be temporarily supported by the fire-pot, or to be permanently supported by said device out of contact with the fire-pot.

815,960. GAME-BOARD. Sarah E. Kuhn, Washington, D. C. Filed Dec. 11, 1905. Serial No. 291,306.

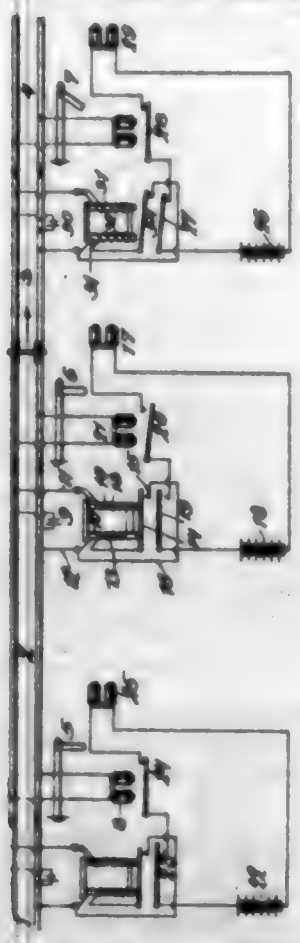
Claim.—1. A game-board of the class described provided on its playing-surface with diametrically opposite spaced checkered station-fields representing positions for movable game-pieces, a common checkered field lying between and adjoining said station-fields, a

checkered obstruction-field arranged across and adjoining one end of the said common field, and an objective field arranged at one side and adjoining the obstruction-field and including a single square representing an entrance thereto.



2. In a game of the class described, the combination of the game-board having on its playing-surface diametrically opposite checkered fields, a common checkered battle-field between the station-fields, a checkered obstruction-field arranged across one end of the battle-field and overlapping the contiguous corners of the station-fields, and an uncheckered objective field representing a fort and including a single square representing an entrance from the obstruction-field; movable game-pieces arranged for movement on the station-fields and movable into the field of battle and across the obstruction-field, and single game-pieces movable entirely within the obstruction-field.

815,961. ELECTRICAL DEVICE AND CIRCUIT. WILLIAM H. LANE, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed June 2, 1905. Serial No. 263,429.



Claim.—1. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil.

2. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, said circuit-changer being controlled by said magnet-coils.

3. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, the movement of said circuit-changer to the position which excludes one coil being initiated when both of said coils are energized in multiple.

4. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil; and a circuit-controller operated by said magnet-coils.

5. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil; and a circuit-controller operated by said magnet-coils and arranged to be moved from its pick-up position to its hold-up position when both of said coils are energized in multiple and arranged to be held up when one of said coils is excluded.

6. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, said circuit-changer being controlled by said magnet-coils; and a circuit-controller operated by said magnet-coils.

7. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, said circuit-changer being controlled by said magnet-coils; and a circuit-controller operated by said magnet-coils and arranged to be moved from its pick-up position to its hold-up position when both of said coils are energized in multiple and arranged to be held up when one of said coils is excluded.

8. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, the movement of said circuit-changer to the position which excludes one coil being initiated when both of said coils are energized in multiple; and a circuit-controller operated by said magnet-coils.

9. The combination of two magnet-coils in multiple; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil, and when in its other position it connects said coil in multiple with the other coil, the movement of said circuit-changer to the position which excludes one coil being initiated when both of said coils are energized in multiple; and a circuit-controller operated by said magnet-coils and arranged to be moved from its pick-up position to its hold-up position when both of said coils are energized in multiple and arranged to be held up when one of said coils is excluded.

10. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil and when it is in its other position it connects said coil in multiple with the other coil.

11. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil and when it is in its other position it connects said coil in multiple with the other coil, said circuit-changer being controlled by said magnet-coils.

12. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil and when it is in its other position it connects said coil in multiple with the other coil; and a circuit-controller operated by said magnet-coils.

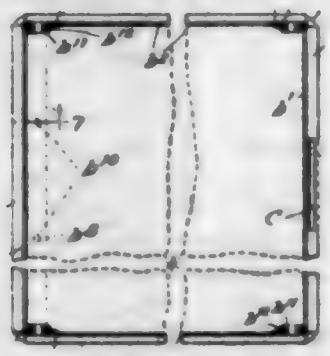
13. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil and when it is in its other position it connects said coil in multiple with the other coil; and a circuit-controller operated by said magnet-coils.

14. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coil and when it is in its other position it connects said coil in multiple with the other coil, the movement of said circuit-changer to the

position which excludes one coil being initiated when both of said coils are energized in multiple; and a circuit-controller operated by said magnet-coils.

15. The combination of a magnet having two multiple coils on the same core; with a circuit-changer connected with one of said coils and so arranged that when it is in one position it excludes said coils and when it is in its other position it connects said coil in multiple with the other coil, the movement of said circuit-changer to the position which excludes one coil being initiated when both of said coils are energized in multiple; and a circuit-controller operated by said magnet-coils and arranged to be moved from its pick-up position to its hold-up position when both of said coils are energized in multiple and arranged to be held up when one of said coils is excluded.

815,962. HINGED COVER FOR SQUARE OR RECTANGULAR SHEET-METAL CANS OR BOXES. BERNARD H. LARKIN, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 3, 1904. Serial No. 226,939.



Claim.—1. A square or rectangular sheet-metal display can or box, provided with a hinged cover, having a top portion and three integral sides, and a front side of separate metal secured to the top of the cover by interengaging folds or flanges and a series of locking points or projections, said front side and back side of the cover having right-angle lips overlapping the adjacent sides of the cover and secured together by integral hollow burs or eyelets on said lips extending through the adjacent sides of the cover and upset or clenched down, substantially as specified.

2. A square or rectangular sheet-metal display can or box, provided with a hinged cover, having a top portion and three integral sides, and a front side of separate metal secured to the top of the cover by interengaging folds or flanges and a series of locking points or projections, said front side and back side of the cover having right-angle lips overlapping the adjacent sides of the cover and secured together by integral hollow burs or eyelets on said lips extending through the adjacent sides of the cover, said adjacent sides of the cover having recesses or countersinks to receive said overlapping lips, substantially as specified.

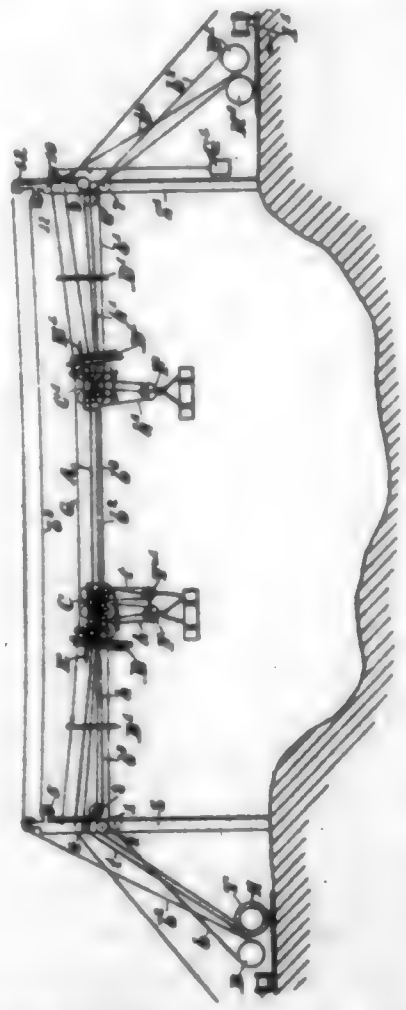
3. A display can or box cover having three integral depending sides and a front side of a separate piece, interengaging folds or flanges uniting said separate front side with the cover, said separate front side having integral external overlapping right-angle lips at the corners covering the end edges of the sides overlapped thereby, said integral overlapping lips on said separate front side having integral hollow burs extending through the adjacent sides and upset or clenched to secure said separate front side to the adjacent depending sides of the cover, and said adjacent integral sides of the cover having countersinks or recesses to receive said right-angle overlapping lips on said separate piece front side, substantially as specified.

4. A sheet-metal cover for cans or boxes, having three integral depending sides and a front side of separate metal, interengaging folds or flanges uniting said separate front side with the cover, said interengaging flanges or folds having a series of locking points or depressions, substantially as specified.

5. A sheet-metal cover for cans or boxes, having depending sides furnished with external overlapping right-angle lips at the corners covering the end edges of the sides overlapped thereby, and provided with upset, hollow integral burs uniting said overlapping lips with the adjacent sides, said adjacent sides having countersinks or recesses to receive said lips, substantially as specified.

815,963. CONVEYING APPARATUS. CHARLES H. LOCKER, Lemont, Ill., assignor to Lidgerwood Manufacturing Company, a Corporation of New York. Filed June 22, 1901. Serial No. 66,280.

Claim.—1. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting and traversing mechanisms for each carriage, a hoisting-rope carrier for the hoisting-rope of each of said carriages and a single button-rope supporting the carriers of both hoisting-ropes.



2. As an article of manufacture a rope-carrier containing, in combination, members for engaging, respectively, two carriage traction-ropes, a hoisting-rope, the supporting-cable, a button-rope and the carriage-horn.

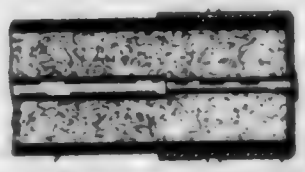
3. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanisms for each carriage, an outhaul traction-rope for each carriage, a hoisting-rope carrier for each hoisting-rope and means of engagement on each carrier with both outhaul traction-ropes.

4. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanism for each carriage and two endless traction-ropes each affixed to one carriage and forming a running engagement with the other carriage.

5. In a cableway, in combination, a single trackway, two carriages thereon, separate hoisting mechanisms for each carriage, a separate carrier for each hoisting-rope and two endless traction-ropes each affixed to one carriage and forming a running engagement with the other carriage and with said hoisting-rope carriers.

6. In a cableway, in combination, a single trackway, two carriages thereon, a separate hoisting-rope carrier cooperating with each carriage and a single button-rope forming a running engagement with all of said carriers and carriages.

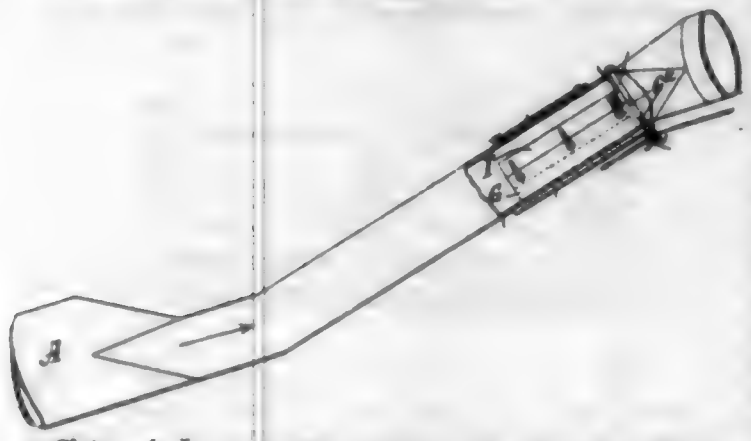
815,964. ELECTRIC FUSE. BENJAMIN S. LUTHER, Boston, Mass., assignor to Chase-Shawmut Company, Newburyport, Mass., a Corporation of Maine. Filed Apr. 24, 1905. Serial No. 257,119.



Claim.—1. In an electric fuse, a cylindrical shell or case, an end cap thereon having integral portions thereof with approximately parallel sides and chisel-pointed ends cut and projected inward into the material of the shell or case, substantially as described.

2. In an electric fuse, a cylindrical shell or case, an end cap thereon having integrally-formed spurs projected inward into the material of the shell or case, and extended obliquely in a direction toward the outer end thereof, substantially as described.

815,965. **PNEUMATIC CONVEYING APPARATUS.** ARTHUR C. LYNCH, Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, New York, N. Y., a Corporation of Connecticut. Filed Aug. 7, 1905. Serial No. 272,968.



Claim.—1. In pneumatic apparatus for conveying shavings, &c., a main conduit having a conduit-section with a floor inclined to the direction of travel in said main conduit and branch passages leading from the upper end thereof, in combination with a movable deflecting-partition of less height than said conduit-section, located nearer the said inclined floor than to the top of the conduit-section, so as to provide a space for the passage of air above said partition, and adapted to determine the relative deliveries of shavings into said branch passages.

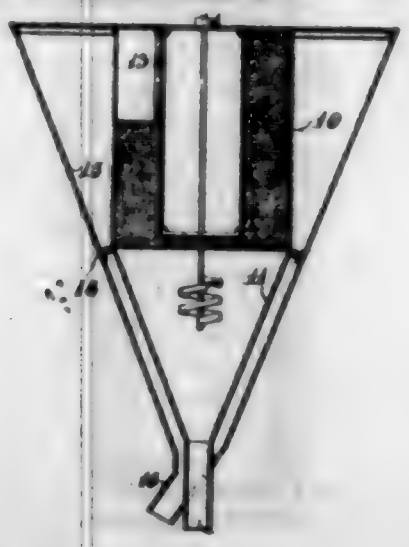
2. In pneumatic apparatus for conveying shavings, &c., a main conduit having a conduit-section with a floor upwardly inclined with respect to said main conduit and branch passages leading from the upper end thereof, in combination with a dividing-valve of less height than said section, pivoted at the junction of the branch passages to swing over and in proximity to said inclined floor, whereby an open space is left above the valve for the passage of air into said branch passages.

3. In pneumatic apparatus for conveying shavings, &c., a conduit-section of sheet metal provided with a floor inclined inwardly to the general travel of said shavings, the said floor being reinforced by an exterior stiffening member, in combination with branch passages leading from the upper end of said floor and a dividing-valve adapted to ride over said reinforced floor and being of less height than said section, to provide a space above said valve for the passage of air into the said branch passages.

4. In pneumatic apparatus for conveying shavings, &c., a main conduit having a section with an upwardly-inclined floor and branch passages leading therefrom, in combination with a dividing-valve for determining the relative deliveries into said branch passages and means for adjusting the vertical height of said valve to regulate the relative quantities of air passing into said branch passages.

5. In pneumatic apparatus for conveying shavings, &c., a main conduit having a conduit-section provided with an inclined floor and branch passages leading therefrom, in combination with a dividing-valve for determining the relative deliveries into said branch passages pivoted to ride upon said inclined floor, and an extension-plate adjustably secured to said valve for regulating the relative quantities of air delivered into said branch passages.

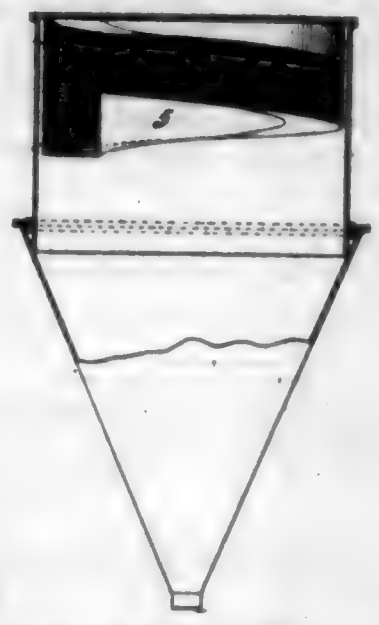
815,966. **DUST COLLECTOR AND SEPARATOR.** ARTHUR C. LYNCH, Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 17, 1904. Serial No. 224,793.



Claim.—1. A dust-collector comprising a tapering separating-chamber with provisions for giving the air introduced therein a gyratory motion, a central spout for the escape of purified air at the larger end and a discharge-opening at the smaller end of said chamber, in combination with a longitudinally-adjustable rod held in said spout and a spiral air-conveyer borne by said rod directing a portion of the whirling air of said chamber outwardly through the discharge-opening.

2. A dust-collector comprising an inner separating-chamber in which the air introduced therein forms a vortex, a perforated wall bounding said chamber, said chamber being also provided with an escape for purified air and a discharge-opening, a rod in said chamber and an air-conveyer mounted on said rod in combination with an imperforate wall surrounding said inner separating-chamber forming an exterior chamber for the separated particles and spaced from said perforated wall by an annular space to provide a normally open and constricted exit between said exterior chamber and its discharge-opening.

815,967. **DUST-COLLECTOR AND LIKE APPARATUS.** ARTHUR C. LYNCH, Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 17, 1904. Serial No. 224,795.



Claim.—1. A dust-separator comprising a casing to receive the finer particles, a pipe passing through said casing and formed with a spiral convolution therein, the said pipe having its outer curved wall perforated but being otherwise isolated from the interior of said casing, whereby the finer particles are sifted through said perforated wall and the coarser particles are carried on through the pipe out of the separator, in combination with a receptacle for said finer particles provided with a restricted outlet.

2. A dust-separator comprising a casing, a pipe passing through said casing, formed with a convolution therein and having its outer curved wall perforated but being otherwise isolated from the interior of the casing, in combination with partitions supporting said pipe from the top of the casing and preventing accumulation of dust on said pipe.

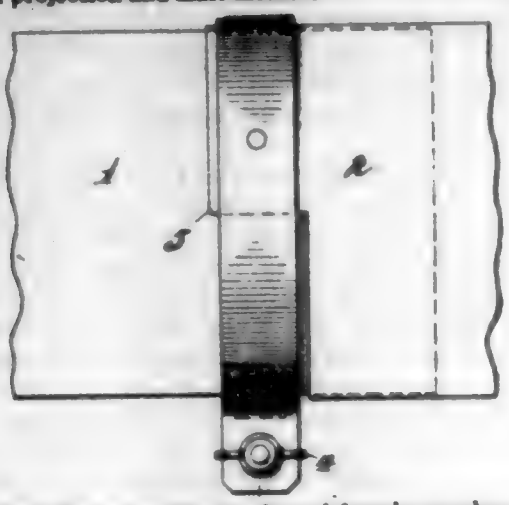
3. A dust-separator comprising a casing, a pipe passing through said casing, formed with a convolution therein and having its outer curved wall formed by perforated walls of successively larger-sized apertures, but being otherwise isolated from the interior of the casing, in combination with a vertical partition dividing said interior into compartments to receive different grades of siftings from said perforated walls, and restricted outlets for said siftings formed in each chamber.

4. A dust-separator comprising a casing, a pipe passing therethrough and formed with a complete spiral convolution therein whereby the inlet and outlet of said pipe are on the same side of the casing and a perforated outer curved wall for said pipe, in combination with a by-pass directly from the inlet to the outlet whereby the dust-laden air may be prevented from passing through said convolution of the pipe.

815,968. **SEPARABLE PIPE-JOINT.** ARTHUR C. LYNCH, Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 17, 1904. Serial No. 224,794.

Claim.—1. A pipe-joint comprising male and female members,

a recess formed in the end of the female member to leave an integral projection overlapping the male member, and a binding-strap embracing said projection and male member.

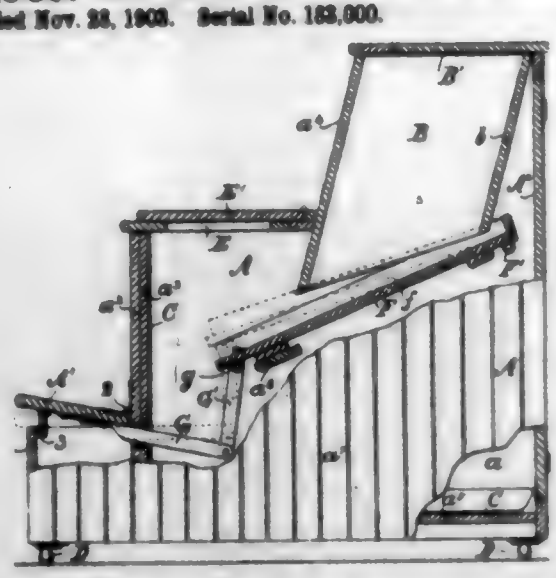


2. A pipe-joint comprising male and female members, a recess formed in the end of the female member to leave an integral projection thereon overlapping the male member, a binding-strap attached to said projection embracing the male member and means for tightening the said strap.

3. A pipe-joint comprising male and female members, a projection on said female member formed by recessing the end of the same and a binding-strap embracing said projection and the male member and unconnected with said female member on the side of the joint opposite to said projection, whereby said strap will skew under the tendency of the members to separate.

4. A pipe-joint comprising male and female members, a projection formed substantially half-way around the end of said female member and a binding-strap reversibly attached to said projection, said attachment consisting of an aperture in one part and a pin on the other engaging the same.

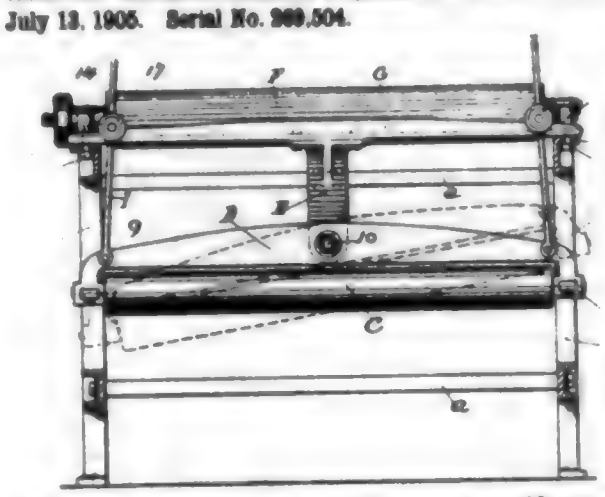
815,969. DRY CLOSET. THOMAS MACFARLANE, Ottawa, Canada. Filed Nov. 28, 1903. Serial No. 183,600.



Claim.—1. In a dry closet, the combination of a receptacle partly formed of a step, a seat and a raised rear portion, a hopper for an absorbent in the upper portion of the rear part, sloping forward and forming the sloping back to the seat, a hinged lid at the top of said hopper, a door at the rear of the receptacle giving access to the interior, a perforated hinged seat with hinged lid or cover adjacent to the sloping front of the raised rear part, a sloping tray extending with its raised end under the hopper and with its lower end partly under the seat, pivotal supports secured to the raised rear end of said tray and a fixed support under the lower forward end, a tread to the step hinged to the riser of the seat, bars secured to said tread and extending toward the front edge of said tray and links connecting said bars pivotally with the forward end of said tray, substantially as set forth.

2. In a dry closet, the combination with a suitable receptacle providing a seat and access to its interior, of a sloping tray pivoted at its higher and rear end to suitable supports and resting with its forward lower end free on a fixed support and extending from the rear of the receptacle partly under the seat, a step in front of the seat, a tread upon said step hinged to the seat-riser, levers secured to the under side of said tread and projecting toward said tray and links pivotally connected to said levers and said tray, so as to raise the latter when the tread of the step is depressed, substantially as set forth.

815,970. ADJUSTABLE GUIDING MECHANISM FOR SKEWING BRIDGE-THREADED FABRICS. EDWIN T. MARBLE and EDWIN H. MARBLE, Worcester, Mass., assignors to Curtis & Marble Machine Co., Worcester, Mass., a Corporation of Massachusetts. Filed July 13, 1905. Serial No. 269,504.



Claim.—1. A mechanism for the purpose specified, comprising a standing frame, transversely-disposed parallel guides arranged thereon, a fabric-guiding roll having its journals mounted in a yoke, a hanger on which said yoke is pivotally supported to have swivel or tilting movement in a vertical plane, a bridge bar or rail carrying said hanger, having its ends supported on the frame, and adapted for horizontal adjustment at either end thereof.

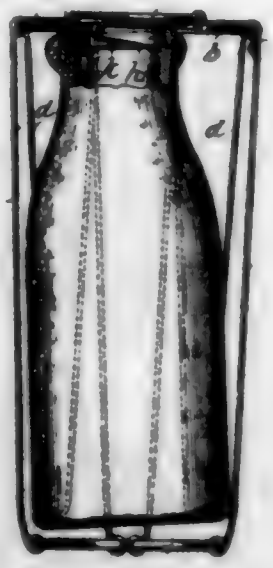
2. In a mechanism for the purpose specified, the combination, with a standing frame, and front and rear parallel guiding devices; of an intermediately-disposed skewing-roll, a swiveling yoke carrying the bearings of said skewing-roll, and tiltingly adjustable in a vertical plane, means for supporting said yoke carried upon the frame and having facility for the adjustment thereof horizontally to various degrees of inclination in relation to the parallel guide devices.

3. In combination, with the stand provided with parallel front and rear guiding devices, and an intermediate horizontally-adjustable member, means for independently adjusting each end thereof, a vertically-tiltable yoke pivotally suspended from said member, a guide-roll mounted therein, and means for securing said yoke at the various positions of its tilting adjustment.

4. In a guiding mechanism for the purpose set forth, a supporting stand or frame, a vertically-swinging pivoted yoke having bearings at its respective ends, the skew-roll mounted in said bearings, and devices for securing said yoke at different positions of oblique adjustment; in combination, with means for supporting the yoke, said means being adjustable horizontally to angular positions upon the stand or frame, and devices for retaining the same at adjusted position.

5. In a fabric-skewing-guide mechanism of the character specified, the stand or frame, an overhead rail having a central hanger, the yoke pivotally supported thereon, and provided with roll-journal bearings, the skew-guiding roll journaled in said yoke, an adjusting brace-rod connected to said yoke and extending to said overhead rail, and a clamping device thereon for securing the brace-rod to said rail, substantially as set forth.

815,971. COMBINED BOTTLE HOLDER AND OPENER. JAMES T. MULVANEY and CHARLES F. KELLER, Chicago, Ill. Filed Oct. 17, 1905. Serial No. 283,176.



Claim.—1. A bottle-holder, comprising upper and lower rings, uprights connecting the rings, and springs extending from one of the rings to a point intermediate the rings, whereby a bottle may be retained in the holder out of contact therewith.

2. A bottle-holder having a casing for receiving a bottle, and springs attached to the casing for holding the bottle away from the casing.

3. A bottle-holder having a casing for receiving a bottle, and inturned resilient loops for holding the bottle normally above the bottom of the casing.

4. A bottle-holder comprising upper and lower rings of wire, wire uprights connected to the rings and spacing them apart and forming a casing for the bottle, and depending resilient loops attached to the casing bent inwardly toward the center of the holder.

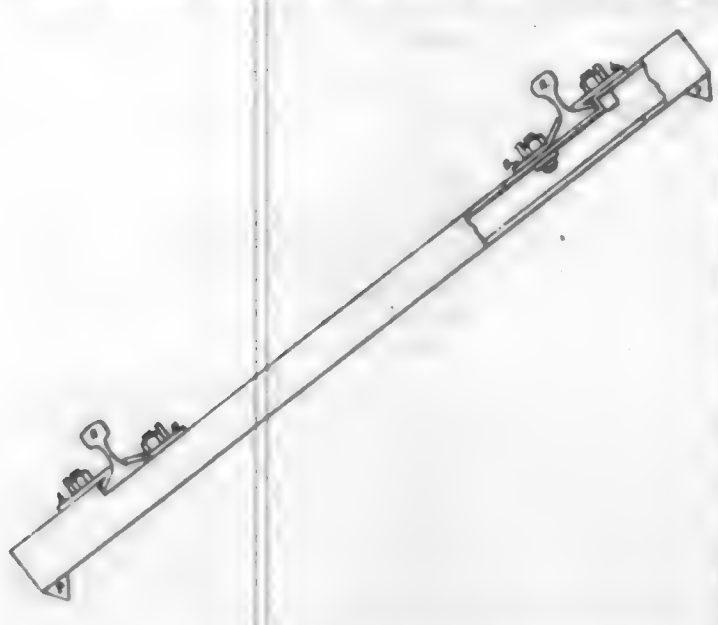
5. A bottle-holder, comprising a casing having resilient bottle-holding means attached thereto, and a cover provided with a catch hinged to the casing.

6. A combined bottle holder and opener, comprising a casing, a cover provided with a catch hinged to the casing, and an opening device fixed to the inside of the cover.

7. A combined bottle holder and opener, comprising a casing, a cover hinged thereto, and a pointed resilient hook attached to the inside of the cover.

815,972. SHEET-STEEL RAILROAD TIE AND RAIL BRACE.

FRANK MCCUNE, Pittsburg, Pa. Filed Dec. 7, 1905. Serial No. 290,813.



Claim.—1. A sheet-steel railroad tie and rail brace in combination with nut-locks formed by making two parallel slots extending from the outer end of the clamps or rail-fasteners, so that the section of the clamps between these slots may be turned up against the nut, thus preventing it from turning; substantially as set forth.

2. A sheet-steel railroad tie and rail brace, together with suitable clamps, in combination with washers having a rectangular hole punched through the center, the process of punching forming two lugs on each washer, extending at right angles to the surface of the tie, forming a lock for the head of the bolt, and a stiffener for the top of the tie, substantially as set forth.

815,973. STEAM-TURBINE PACKING.

ROBERT A. MCKEE, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Nov. 21, 1904. Serial No. 233,633.

Claim.—1. In a turbine, a hard collar integral with the rotor, and a soft grooved circumferential coacting strip on the stator.

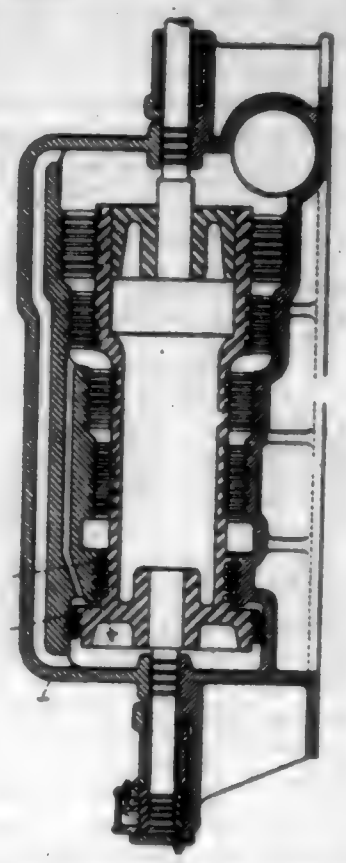
2. In a turbine, a collar on the rotor having its side face in a plane at right angles to the axis, and a relatively softer grooved circumferential strip on the stator with the part beyond the groove in coaction with the side face of the rotor-collar.

3. In a turbine, a collar on the rotor having a side face in a plane at right angles to the axis, and a relatively softer grooved circumferential sectional strip on the stator with the part beyond the groove in coaction with the side face of the rotor-collar.

4. In a turbine, a packing including a strip quadrilateral in cross-section, and grooved, and a hard means coacting with the grooved face of the strip.

5. In a turbine, a packing including a strip rectangular in cross-section, and grooved and means in which said strip is caulked.

6. In a turbine, a packing including a strip having a bearing portion and a groove, and means in which the strip is caulked, the groove forming a shoulder on which to calk.

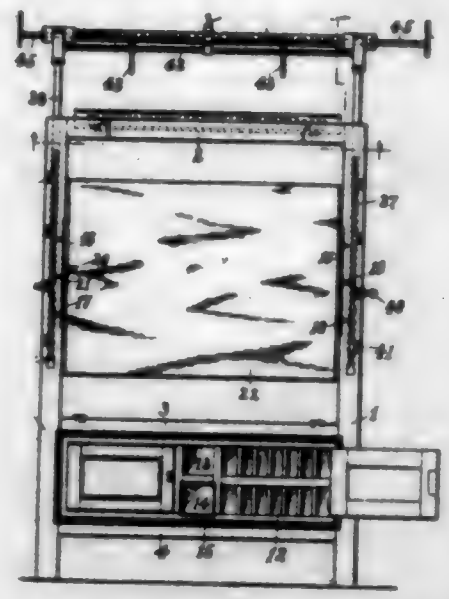


7. As an article of manufacture, an arcuate packing-strip rectangular in cross-section and of soft material grooved on its plane side.

8. A grooved calking-strip rectangular in cross-section.

815,974. BLACKBOARD-TRESTLE WITH ADJUSTABLE MAP-DISPLAYER AND ROLL-SUPPORT.

MATHIAS NACKEN, Würselen, near Aix-la-Chapelle, Germany. Filed Apr. 18, 1905. Serial No. 256,316.



Claim.—1. A blackboard-trestle, comprising in combination braced side posts, longitudinal guide-slots therein, a map-displayer, slide-bars of said map-displayer movably held in said guide-slots, means for securing the map-displayer to the side posts at different heights, a cross-head uniting the free ends of said slide-bars, draw-bars held by said cross-head and provided with hooked arms, an auxiliary hooked arm loosely mounted on said cross-head, a rod beneath said cross-head to sustain said auxiliary arm in two different positions, hooks slidingly arranged upon said rod, extensions on said hooks pressing against said cross-head to prevent said hooks from rotating, and foldable roll-supports secured to the rear of the trestle for supporting rolled-up maps.

2. In a blackboard-trestle of the kind described, in combination, braced side posts, T-shaped guide-slots therein opening in the face of said side posts, a map-displayer, slide-bars of said map-displayer movably arranged in said guide-slots, a tubular cross-head uniting the free ends of said slide-bars, rotary handles on the lower ends of said slide-bars for securing the map-displayer to the side posts at different heights, draw-bars of rectangular cross-section

held by said tubular cross-head and provided with supporting-arms of unequal lengths, an auxiliary arm rotatorily and slidingly mounted on said tubular cross-head, a rod beneath said cross-head to sustain said auxiliary arm in its working position and to keep it out of the way when the cross-bars of both draw-bars are simultaneously employed, hooks slidingly arranged on said rod, extensions on said hooks bearing against said cross-head to prevent said hooks from rotating, and foldable roll-supports secured to the rear of the trestle for supporting rolled-up maps when not in actual use.

815,975. SPECTACLES. Harry Newbold, London, England. Filed Nov. 26, 1904. Serial No. 234,333.

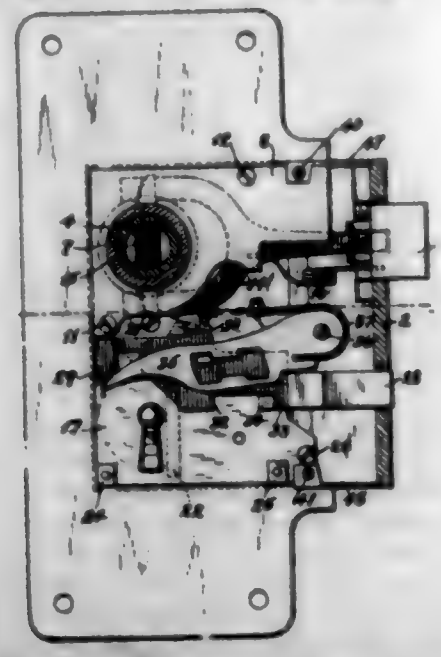


Claim.—1. In a device of the class described, the combination with a pin constructed to pass through the lens, said pin being provided with notches, a stirrup embracing the edge of the lens and provided with loops constructed to engage with said notches in said pin and an adjusting-screw passing through said stirrup and bearing against the edge of the lens whereby said stirrup may be forced to tightly grip said pin, substantially as described.

2. In a device of the class described, the combination with a pin constructed to pass through the lens, said pin being provided with notches, a stirrup embracing the edge of the lens and provided with loops constructed to engage with said notches in said pin, an adjusting-screw passing through said stirrup and bearing against the edge of the lens whereby said stirrup may be forced to tightly grip said pin and means for securing the bridge and side bars to said stirrup, substantially as described.

3. In a device of the class described, the combination with a pin constructed to pass through the lens, said pin being provided with notches, a stirrup embracing the edge of the lens and provided with loops constructed to engage with said notches in said pin, an adjusting-screw passing through said stirrup and bearing against the edge of the lens whereby said stirrup may be forced to tightly grip said pin, and an eye on said stirrup, substantially as and for the purpose described.

815,976. LOCK AND LATCH MECHANISM. Byron Phelps, Seattle, Wash. Filed Feb. 16, 1904. Serial No. 193,522.



Claim.—1. In a lock and latch mechanism, a frame comprising an outer side plate, a face-plate secured thereto, an inner side plate adjustable relatively to the outer side plate, a latch-bolt, knobs, knob-actuated means for operating said latch-bolt, a locking-bolt independent of said latch-bolt, separate inner and outer lock-plates secured in said frame, a tumbler coacting with said locking-bolt, said inner and outer lock-plates having keyhole-openings for access to said tumbler independent of said knobs.

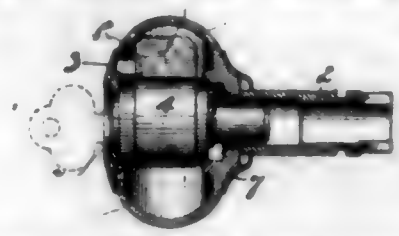
2. A lock and latch mechanism comprising inner and outer side plates, a face-plate, an outer lock-plate removably secured to the outer side plate, an inner lock-plate removably mounted, a bolt having a bar operating between said plates, a tumbler coacting with said bar, said inner and outer lock-plates having keyholes for access to said tumbler.

3. A lock and latch mechanism comprising inner and outer side plates, a face-plate, a tubular bearing supported in said side plates, a knob-shank mounted therein, latch mechanism, operative connection between said latch mechanism and said knob-spindle, a removable inner plate for said latch mechanism, an inner lock-plate, an outer lock-plate, removable means for securing said lock-plates to the outer side plate, and a locking-bolt with operating mechanism mounted between said lock-plates independent of said latch mechanism.

4. In a lock and latch mechanism, a frame adapted to extend around the edge of a door, a latch-bolt, means for operating the same, an independent locking-bolt, key-operated means for operating said locking-bolt, inner lock and latch plates and a removable cover for the top, back and bottom of said operating mechanism inside said frame.

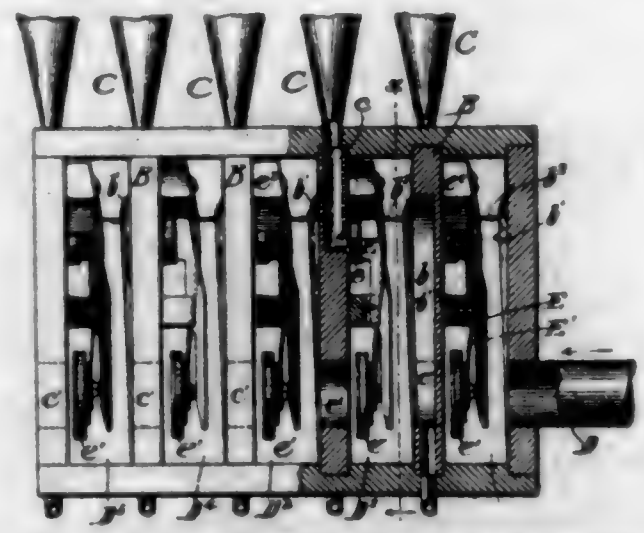
5. In a lock and latch mechanism, the combination of inner and outer side plates, a face-plate rigidly carried by one side plate, a pivoted latch-bolt extensible through an opening in the face-plate, knobs projecting from said side plates, operative means of connection between said knobs and said latch-bolt, a longitudinally-movable locking-bolt extensible through said face-plate, means for guiding said locking-bolt, a tumbler for said locking-bolt for holding it in its extended or retracted position, one of said side plates having a keyhole-opening for access to said tumbler.

815,977. KNOB FOR LOCKS AND LATCHES. Byron Phelps, Seattle, Wash. Filed Mar. 3, 1905. Serial No. 248,176.



Claim.—In a knob, a knob-body having a seamless grip portion, an opening in the outer end of said knob-body of sufficient size to admit of the introduction and removal of a lock, said opening being of substantially less diameter than the greatest diameter of the knob, a cover-plate for said opening, a bearing in said plate for said lock in combination with a lock and means accessible at the inner end of the knob only for securing said cover-plate in place and holding it against rotation independently of the knob.

815,978. SOLO ATTACHMENT FOR MUSICAL INSTRUMENTS. Frank A. Pilcher, Marietta, Ohio, assignor of two-thirds to Frederick S. Brauer and Samuel S. Porter, Marietta, Ohio. Filed Apr. 7, 1904. Serial No. 201,955.



Claim.—1. A solo attachment for musical instruments comprising a wind-chest transversely divided into separate chambers, each chamber communicating through a passage with the next succeeding one, a sounding device adapted to be supplied with air from each chamber, levers, a valve on said levers in each chamber for said sounding device, another valve in each chamber controlling said passage to the next chamber, a pneumatic externally exposed to air-pressure in each chamber and internally communicating with a controlling device, together with a flexible connection between the pneu-

matic and the lever in each chamber, such that when the lever is operated the sounding-device valve is opened and the air-passage valve is closed to cut off the supply from succeeding chambers, substantially as described.

2. A solo attachment for musical instruments, comprising a casing, apertured partitions dividing the same into separate compartments, valved apertures connecting said compartments to the different sounding devices, a source of air-supply, a conduit leading from said source and to an end compartment of said casing, pneumatically-released means in each compartment and adapted to be actuated by the air-pressure in said compartment to open the valved aperture to the corresponding sounding device and to simultaneously close the aperture in the partition cutting off air-supply to all succeeding compartments, whereby only the highest or lowest note of any chord can be sounded.

3. A solo attachment for musical instruments, comprising a casing, partitions dividing the same into separate compartments, said partitions having apertures connecting said compartments to the different sounding devices and to each compartment, valves controlling said apertures, a source of air-supply, a wind-trunk adapted to be connected thereto and communicating with each of said compartments, a wind-conduit also connected to said source and communicating with an end compartment of said casing, and means within each compartment adapted and arranged to be actuated by the air-pressure in said compartments to open the sounding-device valves and to simultaneously close the compartment-connecting valves, whereby when said wind-trunk is connected to the air-supply chords can be played, but when the air is supplied through said wind-conduit only, but one note at a time can be played.

4. A solo attachment for musical instruments, comprising a wind-chest divided into compartments provided with communicating passages, sounding devices connected to said compartments, one of the end compartments being connected with a source of air-supply, pneumatics in each compartment exposed to be operated externally by the air-pressure therein and connected internally to controlling devices, levers in said compartments connected to said pneumatics and valves controlled by said levers, one adapted to open the connection between that compartment and its sounding device and the other to close the communicating passage to the next succeeding compartment when the controlling device is operated, whereby only the highest or lowest note of a chord can be sounded.

5. In a solo attachment for musical instruments, a wind-chest provided at one end thereof with a conduit connected to a source of air-supply and means within said chest arranged to be actuated by the air-pressure therein to control the escape of the air from said chest to the sounding devices and to simultaneously cut off the air-supply from all but one of said sounding devices, and a spring to automatically return said means to normal position.

6. In a solo attachment for musical instruments, a wind-chest provided with two air-conduits leading from any suitable source of air-supply, one of said conduits entering said chest at one end thereof and the other entering at the opposite end thereof, pneumatics in said chest arranged to be actuated by the air-pressure therein to control the passage of the air to the sounding devices from either of said conduits, and to simultaneously limit the passage of the air from said end conduit to the end note high or low of any chord played.

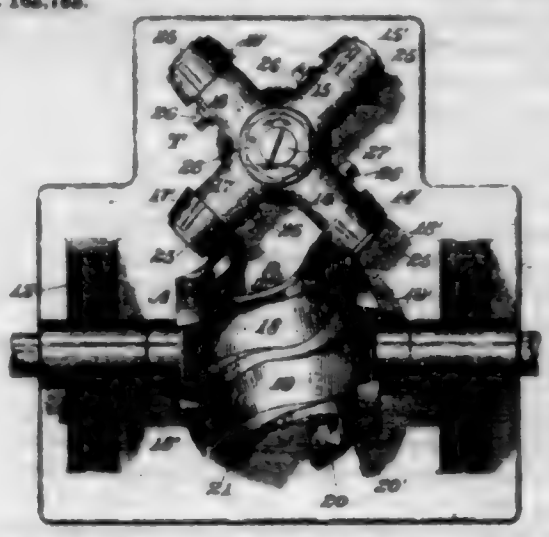
7. In a solo attachment for musical instruments, a wind-chest provided with two air-conduits leading from any suitable source of air-supply, one of said conduits entering said chest at one end thereof and means within said chest arranged to be actuated by the air-pressure therein to limit the admission of the air coming from said end conduit to a single note, whereby the supply through the other conduit is cut off, solo-playing can be performed.

8. A solo attachment for musical instruments, comprising a wind-chest separated by apertured partitions into compartments connected to the different sounding devices, means in said compartments, arranged to be actuated by the pressure therein, to admit air to the sounding devices and to simultaneously close the apertures in the partitions.

9. A solo attachment for musical instruments, comprising a wind-chest separated by apertured partitions into compartments connected to the different sounding devices, a pneumatic in each of said compartments, a lever arranged to be operated by said pneumatic carrying at one end a valve to control the passage of air to the sounding device and at the other end a valve to control the passage of air through the aperture in the partition whereby when air is admitted to the sounding device, the passage to the next succeeding compartment will be closed.

10. A musical instrument comprising a wind-chest separated by apertured partitions into compartments connected to the different sounding devices, means in said compartments, controlling the apertures in said partition and arranged to be actuated by the pressure therein, to admit air to the sounding devices.

815,979. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 25, 1900. Renewed June 22, 1903. Serial No. 162,782.



Claim.—1. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a plurality of successively-effective arm-engaging working faces, and also having arm-engaging stop-faces effective alternately with said working faces.

2. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a plurality of successively-effective arm-engaging working faces, and also having arm-engaging stop-faces effective reciprocally with said working faces.

3. The combination, with a driven member movable at varying velocities and having a series of more than two arms, of a driving member having a pair of successively-effective working faces for engaging, respectively, a pair of arms to rotate said driven member through a predetermined arc, and then one of said arms for rotating said member through a further predetermined arc.

4. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a pair of successively-effective working faces for engaging, respectively, a pair of arms to rotate said driven member through a predetermined arc, and also having a pair of arm-engaging stop-faces for engaging a pair of arms and reciprocally effective with said working faces.

5. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a pair of successively-effective working faces for engaging, respectively, a pair of adjacent arms to rotate said driven member through a predetermined arc, and also having a pair of arm-engaging stop-faces for engaging a pair of adjacent arms and reciprocally effective with said working faces.

6. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a working face for engaging one of said arms to rotate said driven member through a predetermined arc, and also having a stop-face for engaging another arm, said arms being engaged at opposite sides by said faces when approaching the idle period of the driven member for controlling the movement of the latter.

7. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a spiral working face for engaging one of said arms to rotate said driven member through a predetermined arc, and also having a stop-face for engaging another arm, said arms being engaged at opposite sides by said faces when approaching the idle period of the driven member for controlling the movement of the latter.

8. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having parallel spiral working faces for engaging said arms to rotate said driven member through a predetermined arc, and also having a stop-face for engaging another arm, said arms being engaged at opposite sides by said faces when approaching the idle period of the driven member for controlling the movement of the latter.

9. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having

grooves adapted for engaging said arms to actuate said driven member during its movement period and having a pair of stop-faces formed by continuations of the walls of said grooves and adapted for engaging a pair of adjacent arms of said driven member during its idle period.

10. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having parallel peripheral grooves adapted for engaging said arms to actuate said driven member during its movement period, and having a pair of stop-faces formed by continuations of the walls of said groove and adapted for engaging a pair of adjacent arms of said driven member during its idle period.

11. The combination, with a driven member movable at varying velocities and having a series of arms, of a driving member having a pair of spiral grooves adapted for engaging said arms to actuate said driven member during its movement period, and having a pair of parallel peripheral stop-faces formed by continuations of the walls of said grooves and adapted for engaging a pair of adjacent arms of said driven member during its idle period.

12. The combination with a driven member having a plurality of arms, of a rotatable driving member having a pair of spirally arranged working faces adapted to engage one of said arms and also having stop-faces at opposite ends of said working faces adapted to engage with a plurality of said arms during the inoperative period of the working face.

13. A device for converting continuous into intermittent motion, the same comprising in combination, a driven member having a series of reaction-faces, and a driver having a working face with which alternately one and then a pair of said reaction-faces engage and which working face for at least a portion of its length is inclined to the direction of motion of the reaction-face.

14. A device for converting continuous into intermittent motion, the same comprising in combination, a driven member having a series of reaction-faces, and a driver having a working face with which alternately one and two of said reaction-faces engages and which working face has portions extending in different directions with reference to the direction of motion of the reaction-face.

15. A device for converting continuous into intermittent motion, the same comprising in combination, a driven member having oppositely-facing reaction-faces, and a driver having opposed working faces with which one and two of said reaction-faces alternately engage, and each of which working faces has only a portion of its length inclined to the direction of motion of the reaction-faces.

16. A device for converting continuous into intermittent motion, the same comprising in combination, a driven member having oppositely-facing reaction-faces, and a driver having opposed working faces with which said reaction-faces engage and each of which working faces has at least a portion of its length inclined to the direction of motion of the reaction-faces, one of said working faces terminating at one end in a locking-face and the other said working face terminating in a locking-face at the relatively opposite end.

17. A device for converting continuous into intermittent motion, the same comprising in combination, a rotary driven member having a plurality of arms, and a rotary driver having a helical groove whose side walls constitute working faces coöperative first with one arm and then with another, said driver also having opposed locking-faces coöperative with a pair of arms upon the disengagement of an arm from said groove.

18. A device for converting continuous into intermittent motion, the same comprising in combination, a rotary driven member having a plurality of arms, and a rotary driver having a helical groove whose side walls constitute working faces coöperative first with one arm and then with another, said driver also having opposed locking-faces extending around the driver in its plane of rotation and coöperative with a pair of arms upon the disengagement of an arm from said groove.

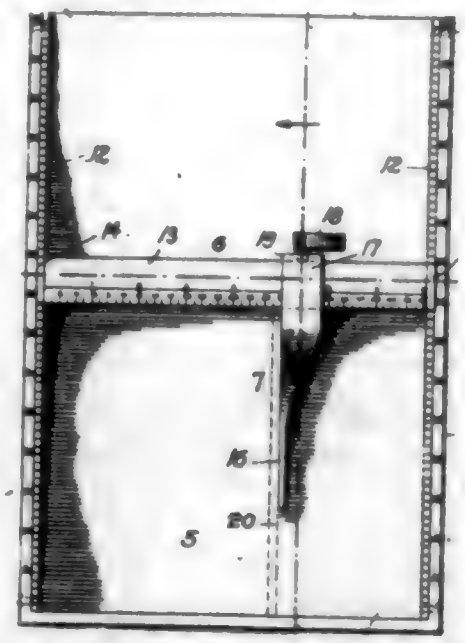
19. A device for converting continuous into intermittent motion, the same comprising in combination, a rotary driven member having a plurality of arms, and a rotary driver having a helical groove whose side walls constitute working faces coöperative first with one arm and then with another, said driver also having opposed locking-faces extending around the driver in its plane of rotation and coöperative with a pair of arms upon the disengagement of an arm from said groove, and one of the locking-faces at one point extending axially to thereby shift the driven member and bring the next following arm into said groove.

20. A device for converting continuous into intermittent motion, the same comprising in combination a rotary driven member having a plurality of arms, and a rotary driver having a plurality of helical grooves whose side walls constitute working faces coöperative those of one groove after those of another with consecutive arms, said driver also having opposed locking-faces coöperative with a pair of arms upon the disengagement of an arm from the last groove of the plurality thereof.

21. The combination with a driven member movable at varying velocities and having more than two arms, of a driving member having a pair of successively-effective working faces for engaging respectively two consecutive arms to rotate said driven member through a predetermined arc, and a working face for engaging one of said arms for moving the same through a further portion of said arc.

22. The combination with a driven member movable at varying velocities and having more than two arms, of a driving member having a plurality of successively-effective working faces for engaging respectively consecutive arms to rotate said driven member through a predetermined arc, and other faces for engaging another arm of said series for moving said member through a further predetermined arc.

815,980. PRINTER'S GALLEY. JOSEPH P. RIVETT, Denver, Colo. Filed Dec. 22, 1904. Serial No. 238,772.



Claim.—1. A printer's galley comprising in combination, a plate having head and side ledges, the latter being provided with identical correspondingly-arranged graduated scales, upwardly-facing racks extending along said ledges, and a bar extending transversely between said racks, its ends being provided with inverted teeth, adapted to simultaneously engage the teeth of said racks.

2. A printer's galley comprising in combination, a plate having head and side ledges, a laterally-movable, graduated bar, transversely extending between said side ledges, means for holding said bar at any predetermined point, a straight-edge movably mounted on said bar, in parallel relation to said side ledges, and means for securing said straight-edge at any perdetermined point.

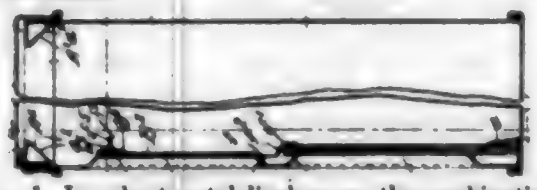
3. A printer's galley comprising in combination, a plate having head and side ledges, racks extending along the latter, a bar transversely extending between said racks, its ends being provided with teeth, adapted to simultaneously engage the teeth on said racks, a straight-edge movably mounted on said bar at right angles thereto, and means for holding said straight-edge at any predetermined point.

4. A printer's galley comprising in combination, a plate having head and side ledges, a laterally-movable bar, transversely extending between said side ledges, means for holding said bar at any predetermined point, a straight-edge having a saddle extremity adapted to straddle said bar, and a set-screw in said extremity adapted to engage said bar.

5. A printer's galley comprising in combination, a plate having head and side ledges, racks extending along the latter, a bar transversely extending between said racks, its ends being provided with teeth adapted to simultaneously engage the teeth on said racks, a straight-edge having a saddle extremity adapted to straddle said bar, and a set-screw in said extremity adapted to engage said bar.

6. A printer's galley comprising a plate having head and side ledges, the latter being provided with correspondingly-arranged graduations, racks extending along said graduated ledges, a graduated bar extending between said racks, its ends having teeth adapted to simultaneously engage the teeth in said racks, and a movable straight-edge mounted on said bar at right angles thereto and having means adapted to secure it at any predetermined point.

815,981. **SHEET-METAL DISPLAY-CAN.** FRANK RUDOLPH and WILLIAM A. GEIGER, Chicago, Ill., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 29, 1905. Serial No. 280,504.



Claim.—1. In a sheet-metal display-can, the combination with a brass or burnishable-metal front plate having a display-opening in its lower portion, and a countersink in its upper portion to form an external seat for a sign-plate, of a removable inside-fitting glass plate, and a removable outside-fitting sign-plate having integral holding devices for holding said glass plate and itself removably in place, substantially as specified.

2. In a display-can, the combination with the front plate having a display-opening therein, of a removable inside-fitting glass plate, and a removable outside-fitting sign-plate having an integral tongue thereon engaging the upper edge of the glass plate to hold it in place, substantially as specified.

3. In a display-can, the combination with the front plate, having a display-opening therein, of a removable inside-fitting glass plate, and a removable outside-fitting sign-plate having an integral tongue thereon engaging the upper edge of the glass plate to hold it in place, said removable sign-plate being furnished with an integral spring-acting tongue projecting through a slot in the front plate to hold the sign-plate in place, substantially as specified.

4. In a display-can, the combination with the front plate having a display-opening therein, a removable inside-fitting glass plate, and a removable outside-fitting sign-plate provided with a holder for the glass plate, substantially as specified.

5. In a display-can, the combination with the front plate having a display-opening therein, a removable inside-fitting glass plate, and a removable outside-fitting sign-plate provided with a holder for the glass plate, said sign-plate being also provided at its upper portion with a holder for itself, substantially as specified.

6. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, of an inside-fitting removable glass plate, and an outside-fitting removable sign-plate provided with a tongue furnished with a plate-holding lip, substantially as specified.

7. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, of an inside-fitting removable glass plate, and an outside-fitting removable sign-plate provided with a tongue furnished with a plate-holding lip and also with a shoulder overhanging the upper edge of the glass plate, substantially as specified.

8. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, of an inside-fitting removable glass plate, and an outside-fitting removable sign-plate provided with a tongue furnished with a plate-holding lip, said sign-plate also having a spring-acting tongue furnished with a locking-shoulder to hold said sign-plate in place, substantially as specified.

9. In a sheet-metal display-can, the combination with a front plate having a display-opening therein, of an inside-fitting removable glass plate, and an outside-fitting removable sign-plate provided with a tongue furnished with a plate-holding lip and also with a shoulder overhanging the upper edge of the glass plate, said sign-plate also having a spring-acting tongue furnished with a locking-shoulder to hold said sign-plate in place, substantially as specified.

10. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, and a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, substantially as specified.

11. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, said front plate having a slot through the same at the base of the angle-flange surrounding the countersunk portion of the front plate for said tongue to project through, substantially as specified.

12. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, and a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, said removable sign-plate having at its upper edge an integral spring-acting sign-plate-holding tongue provided with a locking shoulder or hump, substantially as specified.

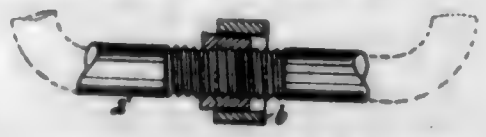
13. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, and a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, said removable sign-plate having at its upper edge an integral spring-acting sign-plate-holding tongue provided with a locking shoulder or hump, and the front plate having a supplemental countersunk portion to receive the base or folded portion of said sign-plate-holding tongue, substantially as specified.

14. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, and a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, said front plate having a slot through the same at the base of the angle-flange surrounding the countersunk portion of the front plate for said tongue to project through, said removable sign-plate having at its upper edge an integral spring-acting sign-plate-holding tongue provided with a locking shoulder or hump, substantially as specified.

15. In a sheet-metal display-can, the combination with a front plate having a display-opening therein surrounded by an inturned angle-flange and provided with a countersunk portion surrounded by an integral angle-flange, of a removable inside-fitting glass plate, a fixed guide engaging the lower end of the glass plate, and a removable outside-fitting sign-plate provided with an integral tongue having an integral glass-holding lip or extension engaging the upper end of the glass plate, said front plate having a slot through the same at the base of the angle-flange surrounding the countersunk portion of the front plate for said tongue to project through, and the front plate having a supplemental countersunk portion to receive the base or folded portion of said sign-plate-holding tongue, substantially as specified.

16. In a display-can, the combination with the front plate having a countersink to form a seat for a removable external-fitting sign-plate, of a removable external-fitting sign-plate furnished with an integral tongue at its lower end projecting through a slot in the front plate and an integral spring-acting tongue furnished with a locking hump or shoulder and projecting through the slot in the front plate at the upper part of the countersink portion thereof, substantially as specified.

815,982. **NUT.** MAX SCHUBERT and OTTO RECHNITZ, Cottbus, Germany. Filed Oct. 19, 1903. Serial No. 177,627.

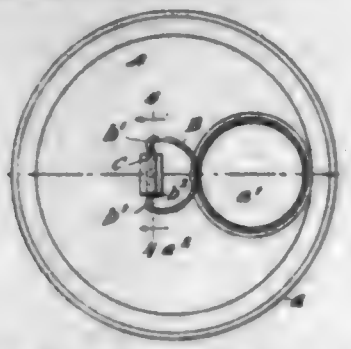


Claim.—1. A nut formed by a mantle in the shape of a nut with shells or plates provided with threads placed inside of this mantle, the conical parts of said thread being fixed by a set-screw in the mantle of the nut, substantially as set forth.

2. A nut formed by a mantle in the shape of a nut with shells or plates provided with threads, placed inside of this mantle, said mantle being divided and so constructed that it is adapted to be stretched by the expansion of the thread-shells and thus held fast, substantially as and for the purpose set forth.

815,988. **HANDLED HEAD FOR SHEET-METAL CANS.** CHARLES SHERMAN, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 2, 1905. Serial No. 281,931.

Claim.—1. The combination, with a can-head, of a hinge-strap and a wire handle pivotally secured to the can-head by said hinge-strap, and provided with downward bends or projections on each side of the hinge-strap serving by engagement with the upper surface of the can-head to hold the wire handle snugly and flat against the can-head, substantially as specified.

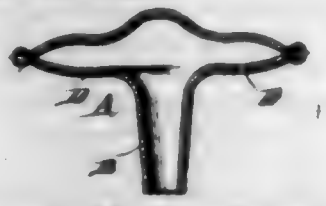


2. The combination with a can-head, of a hinge-strap and a wire handle pivotally secured to said can-head by said hinge-strap, said wire handle being provided with laterally-offset pivot portions and with downward bends or projections to engage the surface of the can-head and hold the wire handle snugly in its turned-down position, substantially as specified.

3. The combination of a can-head, with a wire handle pivotally secured to the can-head and provided with a downward bend or projection engaging the can-head when the handle turns on its pivot from its flat or turned-down position on the can-head, substantially as specified.

4. The combination of a can-head, with a wire handle pivotally secured to the can-head and provided with a downward bend or projection engaging the can-head when the handle turns on its pivot from its flat or turned-down position on the can-head, the straight or pivot portion being laterally offset, substantially as specified.

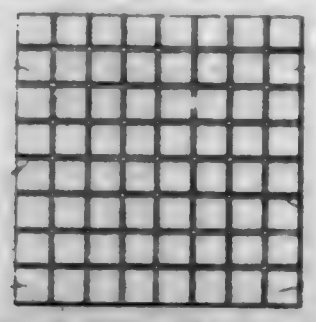
815,984. DROPPER. GERTRUDE SPENCER, New York, N. Y. Filed Sept. 2, 1905. Serial No. 276,885.



Claim.—1. As a new article of manufacture, a dropper for liquids, constructed in one piece, comprising a bulb having a neck adapted to be inserted in the neck of a bottle, and two tapering nozzles, one at each side of said bulb, the nozzles having contracted portions in the rear of their orifices, for substantially the purposes set forth.

2. As a new article of manufacture, a dropper for liquids, constructed in one piece, comprising a bulb having a neck adapted to be inserted in the neck of a bottle, a tapering nozzle at the side of said bulb, said bulb having venting means at its other side, the nozzle having a contracted portion in the rear of its orifice, for substantially the purposes set forth.

815,985. METHOD OF MAKING ARMOR-PLATE. JOSEPH STRAUSS, Washington, D. C. Filed Mar. 31, 1905. Serial No. 253,187.



Claim.—1. The method of making armor-plate, which consists in electrically welding two metal plate-form members of different degrees of hardness.

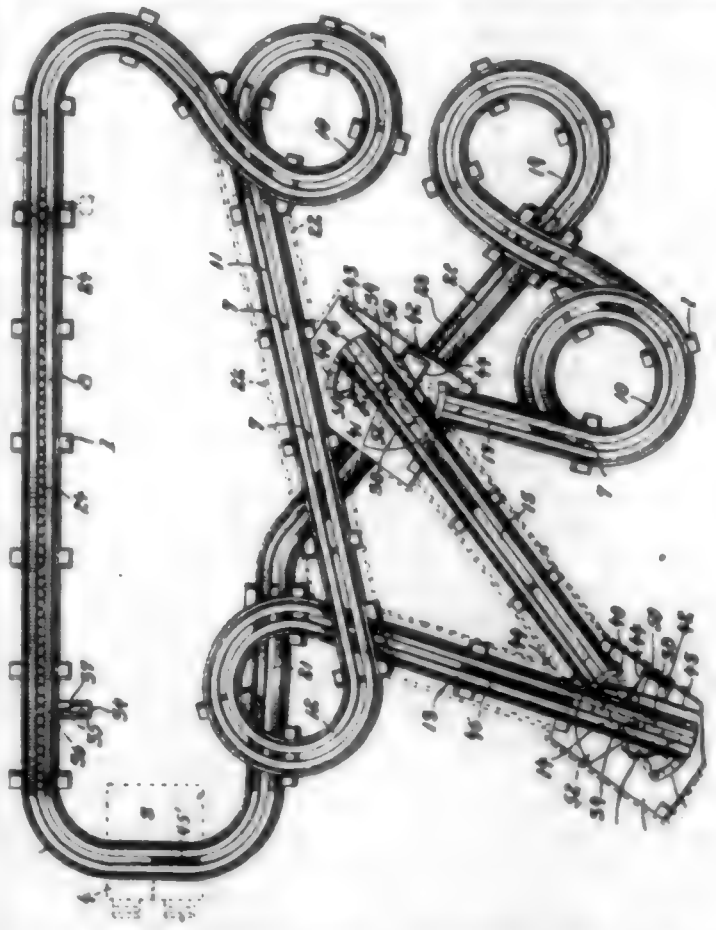
2. The method of making armor-plate, which consists in electrically welding tough-steel and hard-steel plate-form members.

3. The method of making armor-plate, which consists in electrically welding to a tough body-plate a plurality of small plates.

4. The method of electrically welding small and large plates, which consists in localizing the current where the two plates abut, so that the area of the surface of the large plate, subjected to the action of the current, shall not be substantially greater than the area of the abutting surface of the small plate.

5. The method of electrically welding small and large plates which consists in dividing the surface of the large plate, to which the small plates are to be welded, by channels or grooves, placing the small plates on the large plate so that a small plate will be circumscribed by the grooves or channels and then passing a current through the abutting surface of the plates.

815,986. PLEASURE-RAILWAY. WILLIAM P. TAYLOR and JAMES L. HOARD, McKeesport, Pa. Filed Dec. 28, 1905. Serial No. 293,695.



Claim.—1. A gravity-railway comprising a main track on which cars are adapted to travel in a forward direction, a track-section on which the cars are adapted to travel in a rearward direction, movable track-sections for switching the cars, and braking means carried by the first-mentioned track-section to prevent passage of the cars thereon during the operation of the switch-sections, said braking means being automatically operated in the movement of the switch-sections.

2. In a gravity-railway, the combination, with a track on which cars are adapted to travel in a forward direction, and a separate track on which the cars will gravitate in a rearward direction, of switch-sections for transferring the cars from one track to the other, braking means carried by one of the tracks to prevent passage of the cars during the operation of the switch-sections, and stop-blocks carried by the switch-sections to provide abutments transverse the track-rails when the switch-sections are out of alinement therewith.

3. A gravity-railway comprising a main track on which cars are adapted to travel in a forward direction, a track-section on which the cars are adapted to travel in a rearward direction, movable track-sections for switching the cars from one track-section to the other, braking means to prevent passage of the cars on one of the track-sections during the operation of the switch-sections, said braking means being operated in the movement of the switch-sections, a series of loops in the track-sections, and a main incline for the return of the cars to the starting-point.

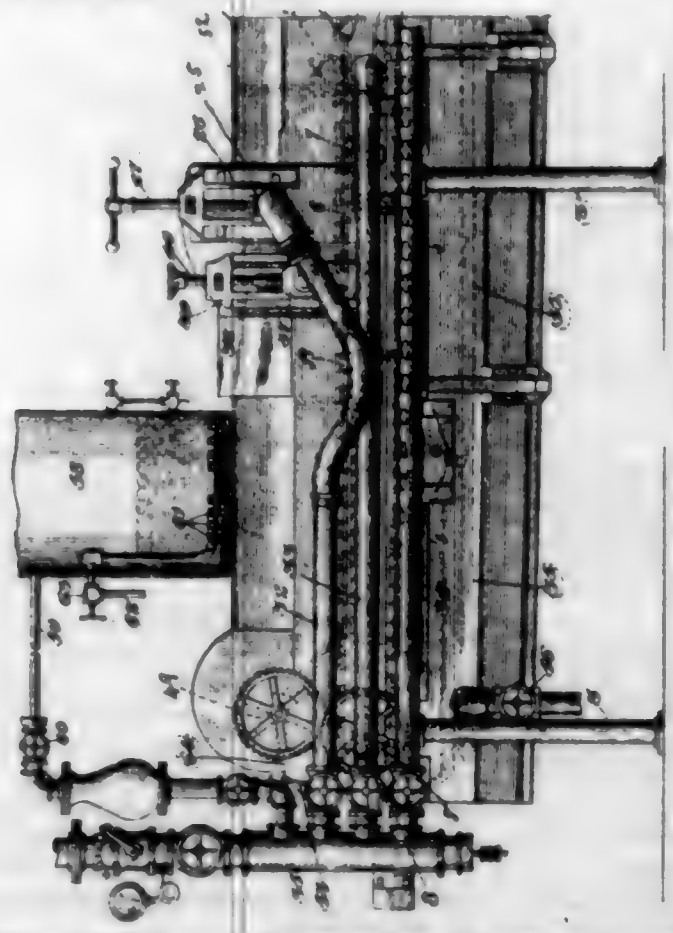
4. A gravity-railway comprising a main track, a track-section on which the cars are adapted for travel in a direction opposite to that on the main track, switch-sections for transferring the cars from the main track to the track-section, and braking means carried by the main track to prevent passage of the cars thereon during operation of the switch-sections, said braking means being automatically operated in the movement of the switch-sections.

5. A gravity-railway comprising a main track, a track-section on which the cars are adapted for travel in a direction opposite to that on the main track, switch-sections for transferring the cars

from the main track to the track-section, braking means carried by the main track to prevent passage of the cars thereon during operation of the switch-sections, and stop-blocks carried by the switch-sections to provide abutments transverse the track-rails when the switch-sections are out of alinement therewith.

6. A gravity-railway comprising a track-section including a main incline, a series of loops, and a series of intermediate straight sections, a car adapted to travel on said track in the forward direction, one of the sections of the track being adapted to direct the travel of the car in a rearward direction, a continuously-moving chain arranged adjacent the main incline of the track, a series of hooks carried on said chain and projecting above the plane of the track, and a hook member carried on the car-body and adapted to be engaged by the hooks on the chain.

815,987. CARPET CLEANING AND DISINFECTING MACHINE. EUGENE A. THOMAS, Chicago, Ill. Filed Nov. 2, 1903. Serial No. 179,456.



Claim.—1. In a carpet-cleaning machine, the combination with cleaning intrumentalities, of a carrier on which the article to be cleaned is supported, means to impart movement to said carrier, and means for detachably and yieldingly connecting said article to be cleaned to said carrier, substantially as described.

2. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, means to impart movement to said carrier, and means for removably securing the article to be cleaned to said carrier, said means comprising a spring-link, means for detachably securing one end of said link to the article to be cleaned and the opposite end to said carrier, substantially as described.

3. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a traveling carrier having an upper and lower lap on which the article to be cleaned is supported, means to impart movement to said carrier and means to maintain the article to be cleaned flat upon said carrier and to prevent sagging thereof away from the lower lap of said carrier, said means consisting of flexible cords extending longitudinally of the carrier substantially as described.

4. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, and means to impart movement to said carrier, a revolubly-mounted drum, cords attached to said drum at one end and to said carrier at the other ends, and means controlled by the movement of said carrier for rotating said drum, substantially as described.

5. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, and means to impart movement to said carrier, of a revoluble drum, cords secured thereto at one end and yieldingly connected to said carrier at their opposite ends, and means controlled by the movement of the carrier for rotating said drum, substantially as described.

6. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, and means to impart movement to said carrier, said cleaning instrumentalities comprising a jet pivotally mounted at the side of the carrier at an elevation to just clear the upper article-holding surface of said carrier and adapted to be swung to a position transversely of the carrier and also to one side substantially parallel to the same so that it will be out of the way, substantially as described.

7. In a carpet-cleaning machine, the combination with cleaning instrumentalities, of a carrier on which the article to be cleaned is supported and means to impart movement to said carrier, said cleaning instrumentalities comprising jets above and below said carrier, a brush revolubly mounted above said carrier at the front side of said jets, said brush and the jet above said carrier being adjustable toward and from said carrier, and means for so adjusting said brush and jet, substantially as described.

8. In a carpet-cleaning apparatus the combination with the cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, and means to impart movement to said carrier, of a casing which incloses said carrier and cleaning instrumentalities, confining the dust and preventing its being diffused through the air, and means for projecting a spray of water into the casing to precipitate and wash down the dust and dirt expelled by the cleaning instrumentalities, substantially as described.

9. In a carpet-cleaning machine, the combination with the cleaning instrumentalities, of a carrier on which the article to be cleaned is supported, and means to impart movement to said carrier, of a casing which incloses said carrier and cleaning instrumentalities provided with a discharge-opening, the bottom of said casing declining toward said discharge-opening, and a spray-pipe for discharging sprays of water into said casing, substantially as described.

10. In a carpet-cleaning machine, the combination with the cleaning instrumentalities, of a traveling carrier on which the article to be cleaned is supported, having an upper lap and a lower lap, and means for imparting movement to said carrier, of a casing which incloses said carrier and cleaning instrumentalities provided with an outlet-opening, the bottom of said casing declining toward said outlet-opening, a spray-pipe for discharging sprays of water into said casing beneath said carrier, and means to prevent the article to be cleaned from sagging away from said lower lap into the sprays, substantially as described.

11. In a carpet-cleaning machine, the combination with a carrier and means for actuating the same, of an air-jet, comprising a tubular chamber and a lateral extension therefrom, provided with a discharge-opening at its edge, washers inserted between the sides of said discharge-opening, and means to contract said discharge-opening, slides at the ends of said jets, guides or ways in which said slides are movably secured, and means to adjust said jet toward and from said carrier, substantially as described.

12. In a carpet-cleaning machine the combination with a carrier, cleaning instrumentalities and means for actuating the same, of a casing with trough-shaped bottom, inclined from front to rear end thereof and provided with an outlet-opening at this bottom end, a system of water-pipes with perforations adapted to spray water under the carrier, said outlet-opening at the rear or lower end of said casing being connected by a pipe with sewer or other drainage pipe, substantially as, and for the purpose described.

13. In a carpet-cleaning machine, the combination with cleaning instrumentalities embodying air-jet devices and the means for actuating the same, of a tank containing a disinfectant in solution, a perforated steam-pipe in the bottom of the tank adapted to be connected with a source of steam-supply, and means connected to vapor-space of the tank for discharging the steam impregnated with the disinfectant upon the carpet or other article through the air-jets, substantially as, and for the purpose described.

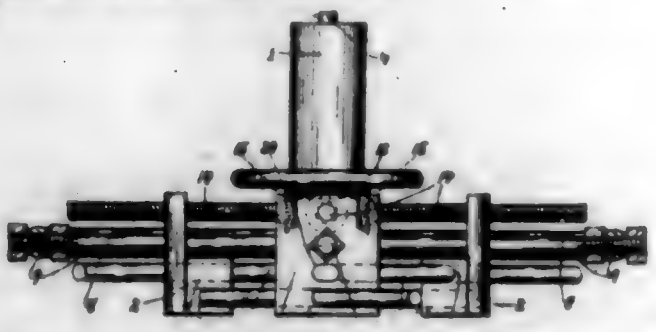
14. In a carpet-cleaning machine, the combination of a casing having a trough-shaped bottom inclining rearwardly, a carrier in the casing and means for operating the carrier, liquid-spraying means in the casing, an outlet-pipe connected to the lower rear end of the trough, an exhaust device having its intake connected to the rear end of the casing and its exhaust end connected to said outlet-pipe, for the purposes set forth.

15. In a carpet-cleaning machine, the combination with a casing, a traveling carrier therein and means for attaching the carpet to the carrier, means to impart movement to the carrier, an air-jet pipe pivotally supported at one side of the casing and adapted to swing in to

just clear the upper carpet-holding surface of the carrier, said pipe being provided with numerous outlet-holes along its upper side, and means for supplying fluid under pressure to said pipe.

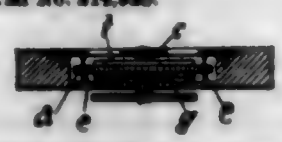
16. In a carpet-cleaning machine, the combination with spraying devices, cleaning instrumentalities, and means for actuating the same, of a casing contracted at its rear end and having a rearwardly-inclined trough formed in its bottom, an exhaust-fan having its inlet connected with said contracted rear end and provided with an exhaust extension, a water-discharge pipe extended from the lower rear end of the trough part of said casing and connected to said exhaust extension beyond the fan, substantially as and for the purpose described.

815,988. MEANS FOR PREVENTING DIFFERENTIAL MOVEMENT OF CLAMPING-JAWS. FRANK VAN ANDEL, Syracuse, N. Y. Filed Oct. 26, 1903. Serial No. 178,470.



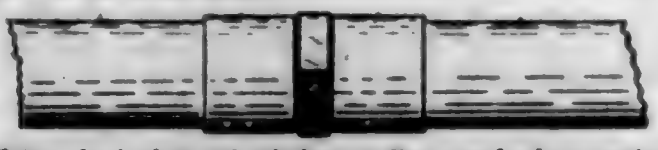
Claim.—The combination of clamping members movable toward and from each other, each having an opening parallel to its direction of movement, also each having an additional opening arranged at an angle to the first-mentioned opening, a central body having rods extending radially therefrom and arranged in and slidably fitted to the first-mentioned openings, and rods connecting the clamping members for transmitting the movement of one of said members to the others to prevent differential movement of the members, each rod being fixed to one of the clamping members and arranged in and slidably fitted to the second-mentioned opening of the clamping member adjacent to that to which said rod is fixed, substantially as and for the purpose set forth.

815,989. WATCH. ALBIN WAGNER, Oberplanitz, Germany. Filed July 1, 1904. Serial No. 214,935.



Claim.—In a device of the character described, the combination with angular winding-up wheel *a* having grooves *d* on both sides thereof, a spring *f* for operating said wheel and inclosed therein, and means projecting from the casing and engaging with said grooves for guiding said wheel, substantially as shown and described.

815,990. HOSE-COUPLING. WILFRED B. WARD, Richmond, Ind., assignor of one-half to William C. Ferguson, Richmond, Ind. Filed July 22, 1904. Serial No. 217,611.



Claim.—1. An integral tubular coupling-core for hose-sections having externally the form of two reversed cones terminating in cylindrical extensions and connected by an intervening prismatic annular flange or shoulder of greater diameter than the bases of said cones, these cones and their cylindrical extensions being screw-threaded in opposite directions to each other substantially as set forth.

2. A pair of hose-sections provided with terminal protecting and binding ferrules open at the end, in combination with a tubular coupling-core screw-threaded from near its middle in opposite directions, consisting of two reversed cones, their extensions and intermediate means for facilitating the turning of the said core substantially as set forth.

815,991. TROLLEY-POLE. ARMIUS S. WEAVER, Sodus, N. Y. Filed Jan. 7, 1905. Serial No. 239,880.

Claim.—1. In a trolley-pole, the combination with a base, a supporting-section pivoted thereon and a contact-section journaled on the supporting-section, of a spring supported on the base and a lever attached to the spring and connections between it and the contact-section for operating the latter in one direction.



2. In a trolley-pole, the combination with a base, a supporting-section pivoted thereon at its lower end and a contact-section journaled at its outer end, of a spring supported on the base, a lever pivoted to the base and having one of its ends connected to the spring and a connection between the other end of said lever and the contact-section.

3. In a trolley-pole, the combination with a pivoted tubular supporting-section split at the end to form side arms and a similar split contact-section having arms pivoted on those of the supporting-section and means for moving the outer end of the supporting-section upwardly and also operating the contact-section upwardly on its pivot.

4. In a trolley-pole, the combination with a pivoted supporting-section composed of a tube having a bifurcated end forming parallel arms and a contact-section having similar arms, of pivoted connections between said arms, a pin secured between the arms on the contact-section and means connected to said pin for revolving said section in one direction on its pivot.

5. In a trolley-pole, the combination with a base, a supporting-section and a contact-section pivoted thereto, of a journal on the base carrying the supporting-section, a lever also carried on the journal, a spring attached to the lever and connections between the latter and the contact member for revolving the latter upon its pivot and operating the supporting-section in one direction on its journals.

6. In a trolley-pole, the combination with a base having a spring mounted thereon, a hinged supporting-section and a contact-section pivoted thereon, of a pivoted lever arranged in alinement with the supporting-section, having one arm connected to the spring and the other connected to the contact-section.

7. In a trolley-pole, the combination with a base, a supporting-section pivoted thereon and a contact-section journaled on the supporting-section, of a pivoted lever having one end connected to the contact-section, rods connected to the other end of the lever, guides movably supporting the rods on the base and a spring located between the rods and operating them in one direction.

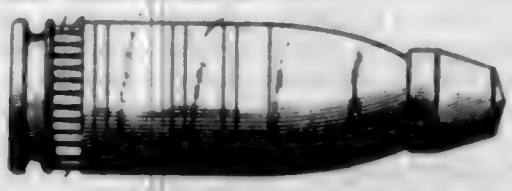
8. In a trolley-pole, the combination with a base, a supporting-section and a contact-section pivoted thereon, of a lever having one arm connected to the contact-section, a guide on the base, a movable member thereon, a spring operating said member in one direction, and connections between the latter and the other arm of the lever.

9. In a trolley-pole, the combination with a base, a supporting-section and a contact-section pivoted thereon, of a lever located in alinement with the supporting-section having one arm connected to the contact-section, a guide on the base and a movable member thereon, a spring operating the member in one direction and adjustable rods connecting said member with the other arm of the lever.

10. In a trolley-pole, the combination with a base, a supporting-section pivoted thereon and a contact-section journaled on the supporting-section, of a spring supported on the base, a lever attached to the spring, connections between it and the contact-section for operating both sections upon their pivots and a stop for limiting the movement of the supporting-section in one direction.

11. In a trolley-pole, the combination with a base, a supporting-section pivoted thereon and a contact-section journaled on the supporting-section, of a spring supported on the base, a lever attached to the spring, connections between it and the contact-section for operating both sections upon their pivots and a stop formed by an extension on the supporting-section adapted to engage the base to limit the movement of said supporting-section in one direction

815,992. PROJECTILE AND ITS BAND. CHARLES VAN CISE WHEELER and ALEXANDER G. MCKENNA, Pittsburg, Pa., assignors to Firth Sterling Steel Company, a Corporation of Pennsylvania. Filed Aug. 1, 1904. Serial No. 219,061.



Claim.—1. A bar adapted to form a band for a rifle-projectile having an undercut band-score, said bar having its lower face formed with a single transverse curve or concavity extending approximately across its entire surface, and a cross-section not less than that of said score.

2. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having a transversely-incurved lower face, the contour width of which is approximately equal to that of the bottom of said score.

3. A bar adapted to form a band for a rifle-projectile having an undercut band-score, said bar having its lower face formed with a single transverse curve or concavity extending approximately across its entire surface, its outer face having a corresponding single out-curve or convexity, and a cross-section not less than that of said score.

4. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having a transversely-incurved lower face, the contour width of which is approximately equal to that of the bottom of said score, a correspondingly-outcurved upper face and a cross-section not less than that of said score.

5. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having its lower face transversely curved substantially throughout its entire surface, parallel side faces and a cross-section not less than that of said score.

6. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having a transversely-incurved lower face, the contour width of which is approximately equal to that of the bottom of said score, parallel side faces and a cross-section not less than that of said score.

7. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having its lower face transversely curved substantially throughout its entire surface and beveled overlapping ends.

8. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having a transversely-incurved lower face, the contour width of which is approximately equal to that of the bottom of said score and beveled overlapping ends.

9. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having its lower face transversely curved substantially throughout its entire surface and meeting ends cut at an angle both vertical and horizontal with its transverse plane.

10. A bar, adapted to form a band for a rifle-projectile having an undercut band-score, said bar having a transversely-incurved lower face, the contour width of which is approximately equal to that of the bottom of said score and meeting ends cut at an angle both vertical and horizontal with its transverse plane.

11. A rotating band for a projectile adapted for use in rifled ordnance having its ends meeting at an angle with the axis of a projectile and with the rifling-groove of the gun.

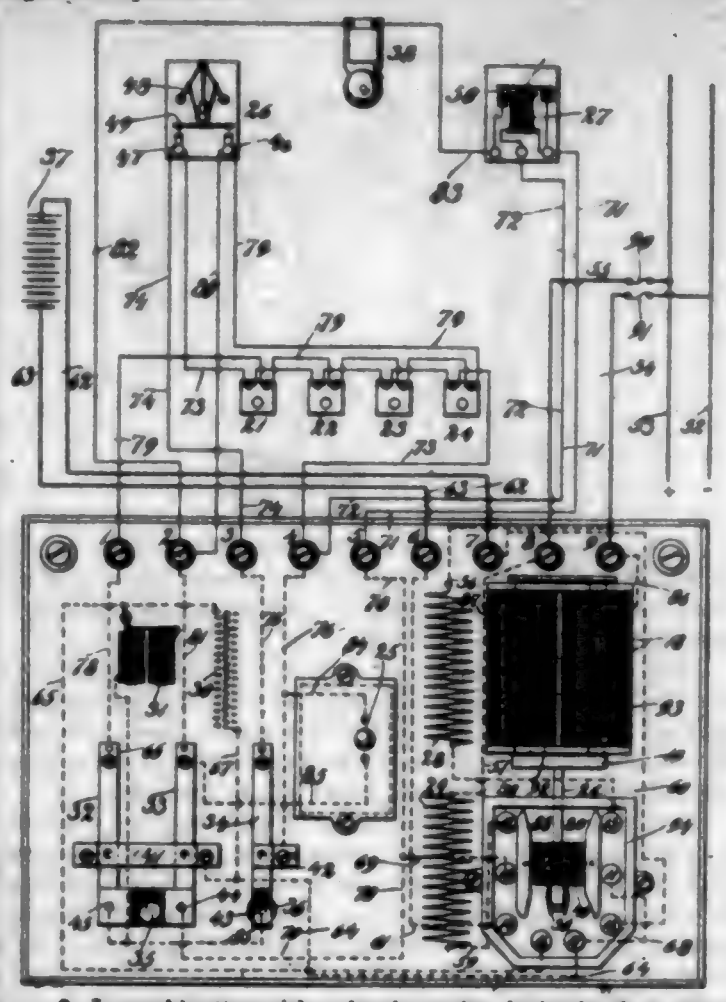
12. A rifle-projectile having a band-score and band therein, said band having overlapped ends, the overlap being in the direction of rotation.

13. A rifle-projectile, having a band-score and band therein, said band having overlapped ends, the overlap being along a line or plane that is greatly oblique to the line of rifling.

14. A rifle-projectile having a band-score and band therein, said band having overlapped ends, the overlap being along a line or plane greatly oblique to the line of rifling and also being in the direction of rotation.

815,993. TRANSFER-SWITCH FOR TESTING CIRCUITS. JOHN S. WHITAKER, Portsmouth, N. H., and HARRY P. WOOD, Brooklyn, N. Y., assignors to Consolidated Engine Stop Company, New York, N. Y., a Corporation of Connecticut. Filed July 24, 1905. Serial No. 270,956.

Claim.—1. An electric circuit, two sources of electrical supply therefor, means for normally selecting and supplying one such source and automatic means operative upon the failure of said normal supply, adapted to connect the other supply, one of said sources being of high and one of low potential, resistance, and means for cutting out the resistance by the automatic means when the change is made from high to low potential.



2. In combination with a circuit, testing device for the same and test-responding signal, two sources of current-supply, an automatic switch, a resistance in the path of the responding signal, contacts for the switch adapted to supply current from one source through the resistance in one position, and from the other source with the resistance shunted in the other.

3. In combination with at least two distinct circuits comprising independent sources of current-supply, an automatic switch having an electromagnetic operating means, an armature therefor, one or more switch-blades operated thereby, one or more supply-posts controlled by said blades, two or more posts, at least one of which is connected to one source of current, and at least another of which is connected with another source, said blade adapted to contact with a post of one of said sources and with the supply-post at one time.

4. An automatic switch having an electromagnetic operating means, an armature therefor, one or more switch-blades operated thereby, one or more supply-posts controlled by said blades, two or more posts, at least one of which is connected to one source of current, and at least another of which is connected with another source said blade adapted to contact with a post of one of said sources and with the supply-post at one time, in combination with one or more shunt-posts and a resistance connected therewith, the blade of the switch adapted to contact therewith in one of its positions.

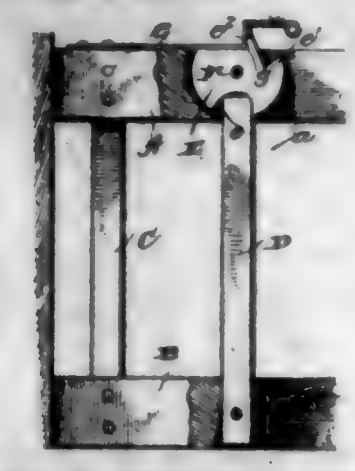
5. In combination with at least two distinct circuits comprising independent sources of current-supply, an automatic switch for changing from one circuit to another circuit upon failure of the first, comprising an electromagnetic operating device, an armature-operated switch therefor, three pairs of contacts, one pair for one circuit, one pair for the other circuit and one pair connected to the circuit to be supplied.

6. An automatic switch for changing from one circuit to another circuit upon failure of the first, comprising an electromagnetic operating device, an armature-operated switch therefor, three pairs of contacts, one pair for one circuit, one pair for the other circuit and one pair connected to the circuit to be supplied, in combination with an additional pair of cut-out contacts.

815,994. STANCHION. WILLIAM J. WILLIAMS, Jr., and ANDREW EDGAR, Caledonia, N. Y. Filed Aug. 28, 1905. Serial No. 276,456.

Claim.—1. In a stanchion, the combination of a pivoted bar, a pivoted catch having a recess that is adapted to be engaged by the upper end of said bar, and means for locking said catch both when said bar is open and when it is closed.

2. In a stanchion, the combination of a pivoted bar, a pivoted catch having a recess that is adapted to be engaged by the upper end of said bar, and means for locking said catch either in the open or in the closed position of said bar, said means consisting of teeth on said catch and a part for engaging said teeth.



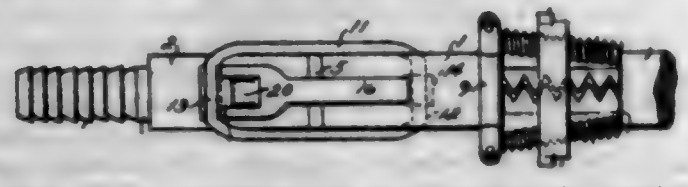
3. In a stanchion, the combination of a movable bar, a pivoted catch having a recess that is adapted to be engaged by the upper end of said bar, said catch having teeth formed thereon, and a shouldered spring adapted to engage said teeth.

4. In a stanchion, the combination of a movable bar, a pivoted catch having a recess adapted to engage the free end of said bar, said catch having radially-disposed teeth, a surface between said teeth that is substantially at right angles to one of said teeth, and a spring adapted to rest upon said surface and to engage said teeth.

5. In a stanchion, the combination of a movable bar, a pivoted catch having a recess adapted to engage the free end of said bar, said catch having radially-disposed teeth, a surface between said teeth that is substantially at right angles to one of said teeth, and a spring having an angular bend that is adapted to bear upon said teeth and surface.

6. In a stanchion, the combination of a movable bar, a pivoted catch having a recess adapted to engage the free end of said bar, said catch having radially-disposed teeth, a surface between said teeth that is substantially at right angles to one of said teeth, and a spring having an angular bend that is adapted to bear upon said teeth and surface, said spring having a handle by which it may be raised.

815,995. HOSE-COUPLING. JAMES WILLIAMSON and HUGH O'BRIEN, Chicago, Ill. Filed Mar. 15, 1905. Serial No. 250,274.



Claim.—1. In a coupling of the class described, the combination of a thimble for entering one end of a hose; a plurality of pivotally-connected jaws mounted on said thimble and adapted to lie longitudinally of the thimble and against the exterior surface of the hose, said jaws having inner concave surfaces fitting the hose and having their longitudinal side edges formed to interlap with each other; and means for forcing said jaws inwardly for clamping the hose against the thimble, substantially as described.

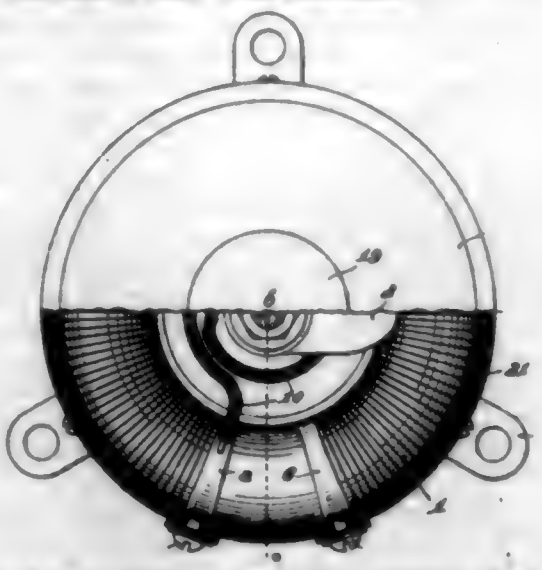
2. In a coupling of the class described, the combination of a thimble for entering one end of a hose; a plurality of pivotally-connected jaws mounted on said thimble and adapted to lie longitudinally of the thimble and against the exterior surface of the hose, said jaws having inner concave surfaces fitting the hose and having their longitudinal side edges formed to interlap with each other, and each of said jaws being wedge-shaped in longitudinal section; and a collar surrounding said jaws and adapted to force the same inwardly for clamping the hose against the thimble, substantially as described.

3. In a coupling of the class described, the combination of a thimble for entering one end of a hose; a plurality of pivotally-connected jaws mounted on said thimble and adapted to lie longitudinally of the thimble and against the exterior surface of the hose, said jaws having inner concave surfaces fitting the hose and having their longitudinal side edges formed to interlap with each other, and each of said jaws being wedge-shaped in longitudinal section; and a collar surrounding said jaws and having threaded engagement therewith, whereby said collar when rotated in one direction will move toward the thicker end of said jaws and force said jaw inwardly for clamping the hose against the thimble, substantially as described.

4. In a coupling of the class described, the combination of a thimble for entering one end of a hose; a ring-shaped member loosely mounted on said thimble and having thereon a plurality of pairs of radially-disposed lugs; a plurality of jaws each respectively pivoted to one of said pairs of lugs and adapted to lie longitudinally of the thimble and against the exterior surface of the hose, said jaws having inner concave surfaces fitting the hose and having their longitudinal side edges formed to interlap with each other, said jaws being wedge-shaped in longitudinal section and thicker toward their pivoted ends, and having a threaded outer surface and a collar fitting around said jaws and having a threaded interior surface adapted to coact with the threads on said jaws for forcing said jaws inwardly to clamp the hose against said nipple, substantially as described.

5. In a coupling of the class described, the combination of a pair of thimbles having separable interlocking endwise engagement with each other, and each having a part adapted to enter the end of a hose; each of said thimbles having mounted thereon a plurality of pivotally-connected jaws adapted to lie longitudinally of such thimble and against the exterior surface of the hose, said jaws having inner concave surfaces fitting the hose and having their longitudinal side edges formed to interlap with each other; and means for forcing said jaws inwardly for clamping the hose against the thimbles, substantially as described.

815,996. RHEOSTAT. CHARLES WIRT, Germantown, Pa., assignor to The Wirt Electric Company Incorporated, a Corporation of Delaware. Filed Jan. 10, 1905. Serial No. 240,391.



Claim.—1. In a rheostat, a removable resistance element composed of a helical coil of wire bent into a circular form and having a core of plastic material which has the property of becoming hard.

2. In a rheostat, a removable resistance element composed of a helical coil of wire bent into a circular form and having a core of plastic material which has the property of becoming hard, and terminals in electrical connection therewith.

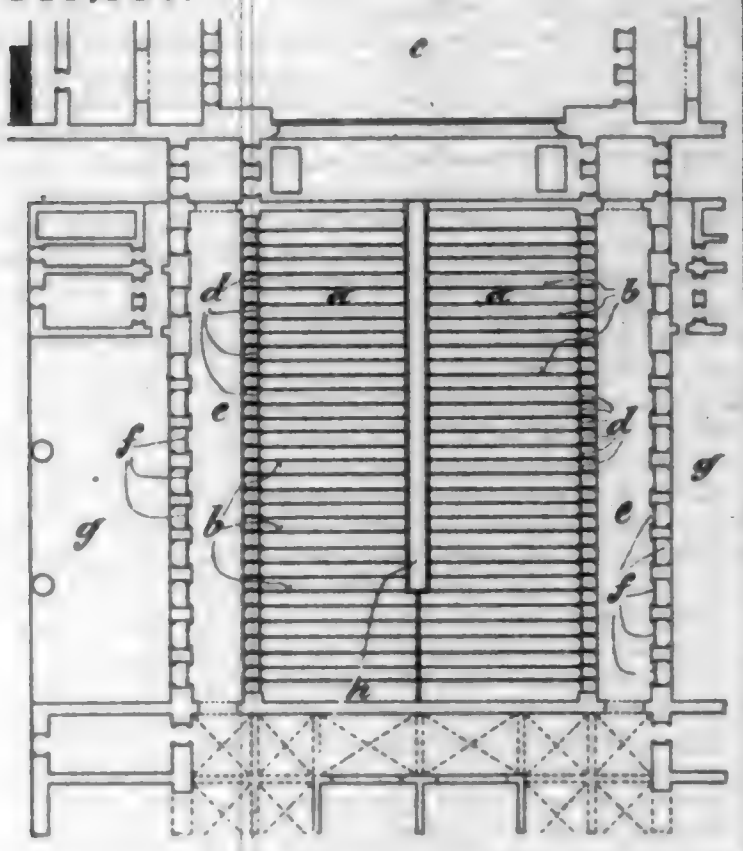
3. In a rheostat, the combination of a casing, a removable resistance element composed of a helical coil of wire bent into a circular form and having a core of plastic material, which has the property of becoming hard, and a manually-operated switch adapted to sweep the inner periphery of said resistance element.

4. In a rheostat, the combination of a casing, a removable resistance element adapted to fit said casing and composed of a helical coil of wire bent into a circular form and having a core of plastic material which has the property of becoming hard, terminals secured to said resistance element and binding-posts projecting through the casing into said terminals.

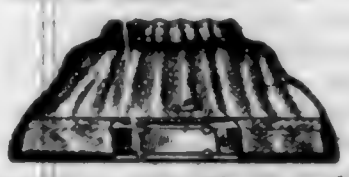
815,997. MEANS FOR QUICKLY EMPTYING CROWDED THEATERS, &c. LUDWIG WITTENBERG, Breslau, Germany. Filed Mar. 3, 1904. Serial No. 196,226.

Claim.—Means for quickly emptying crowded theaters and the like, comprising fireproof partition-walls of a height to allow an unobstructed view of the stage but prevent climbing over, separating the individual rows of seats into non-communicating compartments, a swing-door for each such compartment leading to the foyer, swing-doors leading from the foyer to the street, means for securing the said swing-doors in the closed and opened position, comprising a door-case recessed to receive the door-wing, when open, spring-buttons sunk into the said door-case and adapted to engage a corresponding recess in the front edge of the door-wing, and handles on said doors flush with the surface thereof, substantially as set forth.

815,997.



815,998. WRISTLET. WILLIAM E. WOLFF, New York, N. Y. Filed Aug. 22, 1905. Serial No. 275,294.

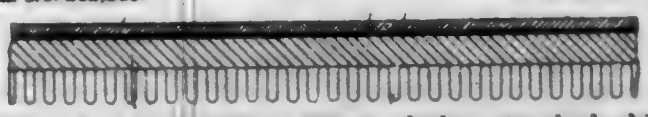


Claim.—1. A wristlet provided with means which render it contractile at or near one end and means which render it expansile at or near the other end.

2. A wristlet which is provided with contractile means at or near one end and an expansile spring at or near the other end.

3. A wristlet which is hemmed at each end and has an annular elastic band in the hem at one end and an expansile spring in the hem at the other end.

815,999. MANUFACTURE OF STEREOTYPES AND THE LIKE. ROBERT C. ANSAND, South Shields, England. Filed Oct. 10, 1905. Serial No. 282,210.



Claim.—1. A flong having a facing, a body part and a backing of cellular paper, substantially as described.

2. A flong having a facing-paper, a body part means for preventing the passage of moisture from the facing through the body of the flong and a backing of cellular paper.

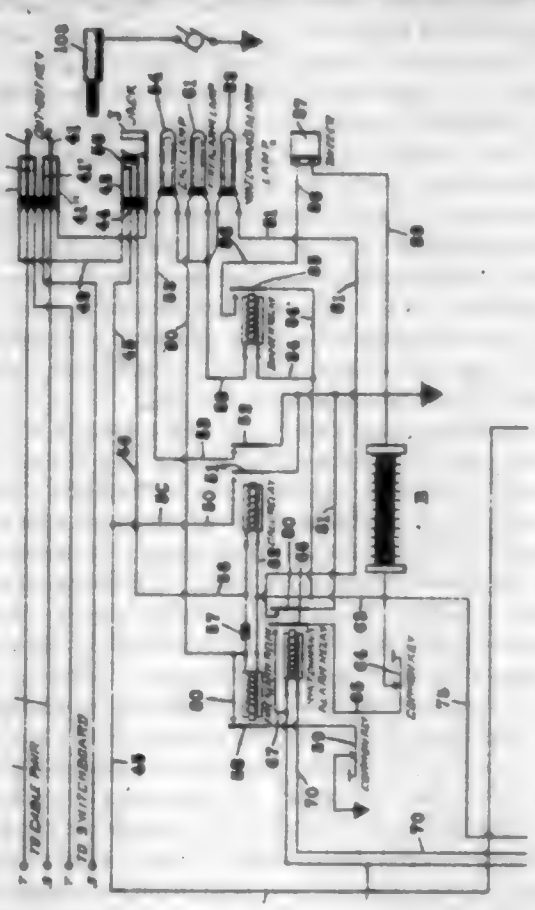
3. A flong having a facing-paper, a body part of unsized paper waterproofing means interposed between said facing-paper and body part, a backing of mechanically-produced cellular paper, substantially as described.

4. A flong having a facing-paper, a body part of unsized paper, a waterproof cement fixing said facing-paper and body part, a backing of mechanically-produced cellular paper substantially as described.

5. A flong having a facing of tissue-paper, a body part of unsized paper pasted to the facing-paper by a paste having unvulcanized rubber added thereto, a backing of mechanically-produced cellular paper.

816,000. COMBINED TELEPHONE AND WATCHMAN'S ALARM SYSTEM. JOHN J. DERBY, Indianapolis, Ind., assignor to The Indianapolis Watchman Clock Company, Indianapolis, Ind., a Corporation of Indiana. Filed Jan. 3, 1905. Serial No. 239,423.

Claim.—1. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's recording means normally electrically connected to said service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.



2. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means normally electrically connected to said service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

3. The combination, with an electrical-energy telephone, its service-circuit, and switchboard connections, of a watchman's reporting means normally electrically connected to said service-circuit, an alarm-signal at central, central means for receiving and independently recording the operation of a plurality of watchman's reporting means, means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

4. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means normally electrically connected to said service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing normal operation of the alarm-signal.

5. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means normally electrically connected with said service-circuit; a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

6. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit; a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-

alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

7. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording means and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, and resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, substantially as and for the purpose set forth.

8. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a central-reply indicator at the reporting means, and means controlled from central to operate said indicator, substantially as and for the purpose set forth.

9. The combination, with an electrical-energy telephone, its service-circuit, and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting part, the said watchman's reporting means, and means for reversing the connections between the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

10. The combination, with an electrical-energy telephone, its service-circuit, and switchboard connections of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording means and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means, and a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth.

11. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, central means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means normally connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, and means under control of the watchman's reporting means for operating said fire-alarm signal.

12. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

13. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, a central-recording means for receiving and independently recording reports for a plurality of service-circuits, means controlled by said central-recording means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

14. The combination, with a plurality of electrical-energy telephones, their service-circuits and switchboard connections, of a plurality of watchman's reporting means one electrically connected to each of said service-circuits, a plurality of alarm-signals at central one for each service-circuit, a central recorder having a plurality of recording means each connected electrically to one of the service-circuits, means controlled by said central recorder for intermittently automatically operating the alarm-signals, and means controlled by each watchman's reporting means for preventing the normal automatic operation of the corresponding central alarm-signal.

15. The combination, with a plurality of electrical-energy telephones, their service-circuits and switchboard connections, of a plurality of watchman's reporting means each electrically connected to one of said service-circuits, a plurality of alarm-signals at central one for each service-circuit, a central recorder provided with a plurality of recording mechanisms one for each service-circuit for independently recording the operation of the reporting means of its service-circuit, means controlled by the central recorder for automatically intermittently operating the alarm-signals, and means controlled by each watchman's reporting means for preventing the normal operation of the corresponding alarm-signal.

16. The combination, with a central-energy telephone system, of a watchman's alarm-signal electrically connected with said system, a watchman's reporting means electrically connected to a service-circuit of said system said reporting means comprising an independent source of electrical energy of a characteristic different from that of the telephone system electrically connected with the said service-circuits.

17. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's recording means electrically connected to said service-circuit and comprising an independent source of electrical energy, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means controlled by the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

18. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

19. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy, a central-recording means electrically connected to said service-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing normal operation of the alarm-signal.

20. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's report-

ing means electrically connected with said service-circuit and comprising an independent source of electrical energy, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically and intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

21. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit, and comprising an independent source of electrical energy, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

22. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently contacting parts, and also of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a watchman's reporting mechanism comprising an independent source of electrical energy electrically connected to the service-circuit, substantially as and for the purpose set forth.

23. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, a central-reply indicator at the reporting means, means controlled from central to operate said indicator, and a watchman's reporting mechanism comprising an independent source of electrical energy electrically connected to the service-circuit, substantially as and for the purpose set forth.

24. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, the said watchman's reporting means comprising an independent source of electrical energy, and means for reversing the connections between the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

25. The combination, with an electrical-energy telephone, its service-circuit, and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means comprising an independent source of electrical energy, a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth.

26. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

27. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, a central-recording means for receiving and independently recording reports from a plurality of service-circuits, means controlled by said central-recording means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

28. The combination, with an electrical-energy telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

29. The combination, with a telephone, its service-circuit and switchboard connections, of a watchman's recording means electrically connected to said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

30. The combination, with a telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

31. The combination, with a telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the

watchman's reporting means for preventing normal operation of the alarm-signal.

32. The combination, with a telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically and intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

33. The combination, with a telephone, its service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

34. The combination, with a telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

35. The combination, with a telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, a central-reply indicator at the reporting means, means controlled from central to operate said indicator, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

36. The combination, with a telephone, its service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, the said watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, and means for reversing the connections between the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

37. The combination, with a telephone, its service-circuit, and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth.

38. The combination, with a telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

39. The combination, with a telephone, its service-circuit and switchboard connections, of a central watchman's alarm-signal, a central-recording means for receiving and independently recording reports from a plurality of service-circuits, means controlled by said central-recording means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

40. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's recording means electrically connected to said service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

41. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central -recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

42. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, an alarm-signal at central, central means for receiving and independently recording the operation of a plurality of watchman's reporting means, means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

43. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, a central-recording means electrically connected to said serv-

ice-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing normal operation of the alarm-signal.

44. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit; a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

45. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit; a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

46. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm, a call-relay controlling a separable connection in circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, and resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, substantially as and for the purpose set forth.

47. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a central-reply indicator at the reporting means, and means controlled from central to operate said indicator substantially as and for the purpose set forth.

48. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, the said watchman's reporting means, and means for reversing the connections between the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

49. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, the said watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, the said fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, the said call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means, and a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth.

50. The combination, with a central-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, central means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, and means under control of the watchman's reporting means for operating said fire-alarm signal.

51. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

52. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, a central-recording means for receiving and independently recording reports from a plurality of service-circuits, means controlled by said central-recording means for automatically intermittenly operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

53. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

54. The combination, with a plurality of electrical-energy telephones, their complete metallic service-circuits and switchboard connections, of a plurality of watchman's reporting means, one electrically connected to each of said service-circuits, a plurality of alarm-signals at central one for each service-circuit, a central recorder having a plurality of recording means each connected electrically to one of the service-circuits, means controlled by said central recorder for intermittently automatically operating the alarm-signals, and means controlled by each watchman's reporting means for preventing the normal automatic operation of the corresponding central alarm-signal.

55. The combination, with a plurality of electrical-energy telephones, their complete metallic service-circuits and switchboard connections, of a plurality of watchman's reporting means each electrically connected to one of said service-circuits, a plurality of alarm-signals at central one for each service-circuit, a central recorder provided with a plurality of recording mechanisms one for each service-circuit for independently recording the operation of the reporting means of its service-circuit, means for automatically intermit-

tantly operating the alarm-signals, and means controlled by each watchman's reporting means for preventing the normal operation of the corresponding alarm-signal.

56. The combination, with a central-energy complete metallic telephone-service system, of a watchman's alarm-signal electrically connected with said system, a watchman's reporting means electrically connected to a service-circuit of said system, said reporting means comprising an independent source of electrical energy electrically connected with the said service-circuit of a different electrical characteristic.

57. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's recording means electrically connected to said service-circuit and comprising an independent source of electrical energy, having a characteristic difference from the electrical energy of the service-circuit, a central recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

58. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

59. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing normal operation of the alarm-signal.

60. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically and intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

61. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections of a watchman's reporting means electrically connected with said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

62. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

63. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, a central-reply indicator at the reporting means, means controlled from central to operate said indicator, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

64. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm-signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part o the aforesaid intermittently-contacting parts, the said watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, and means for reversing the connections bteween the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

65. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, the said watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, the said fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, the said call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth

66. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal,

means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

67. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, a central recording means for receiving and independently recording reports from a plurality of service-circuits, means controlled by said central-recording means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

68. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

69. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's recording means electrically connected to said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

70. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal and its controlling-circuit, means forming part of the central-recording means for intermittently operating the alarm-signal through its controlling-circuit, and means controlled by the watchman's reporting means for preventing the normal operation of the alarm-signal.

71. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected to said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central-recording means electrically connected to said service-circuit, an alarm-signal, means controlled by the central-recording means for automatically intermittently operating the alarm-signal, and means controlled by the watchman's reporting means for preventing normal operation of the alarm-signal.

72. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; and electrical connections between said several parts whereby said recording means may automatically and intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal.

73. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a watchman's reporting means electrically connected with said service-circuit, and comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a central apparatus consisting of a recording means, a watchman's alarm-signal, and a fire-alarm signal; electrical connections between said several parts whereby said recording means may automatically intermittently operate the watchman's alarm-signal, and the watchman's reporting means may serve to either prevent a given automatic operation of the watchman's alarm-signal or to operate the fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

74. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

75. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the circuit of the call-signal, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, and also of a separable connection controlled by a watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, a central-reply indicator at the reporting means, means controlled from central to operate said indicator, and a watchman's reporting mechanism comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit electrically connected to the service-circuit, substantially as and for the purpose set forth.

76. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-signal, a fire-alarm signal, a call-signal, a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, electrical connections between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, said circuit also consisting in part of a separable connection controlled by the watchman's reporting means, resetting means for said recording means provided with an electrical circuit consisting in part of the aforesaid intermittently-contacting parts, the said watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, and means for reversing the connections between the watchman's reporting means and the service-circuit, substantially as and for the purpose set forth.

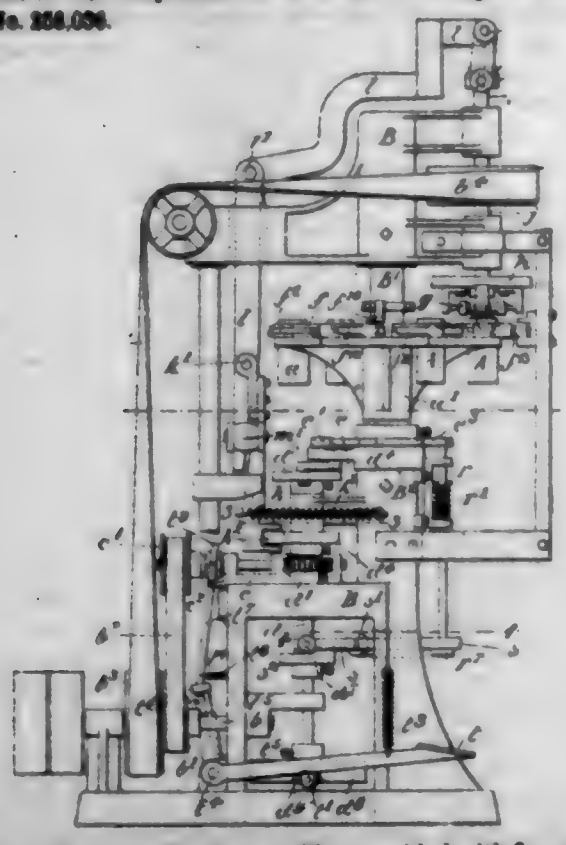
77. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central apparatus consisting of a watchman's alarm-relay controlling a separable connection in the circuit of the watchman's alarm-signal, the said watchman's alarm-signal, a fire-alarm relay controlling a separable connection in the circuit of the fire-alarm signal, the said fire-alarm signal, a call-relay controlling a separable connection in the call-signal circuit, the said call-signal, electrical connections

between the fire-alarm relay, the call-relay, and the service-circuit, a central-recording apparatus consisting of recording means electrically connected with the service-circuit, and an electrical circuit between the central-recording apparatus and the watchman's alarm-relay, said circuit consisting in part of separable intermittently-contacting parts, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit, a signal arranged at the reporting means, an electric circuit therefor to central, and means at central for controlling said circuit, substantially as and for the purpose set forth.

78. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, means under the control of the reporting means for preventing a particular automatic action of the watchman's alarm-signal, a central fire-alarm signal, means under control of the watchman's reporting means for operating said fire-alarm signal, a central-reply indicator at the reporting means, and means controlled from central to operate said indicator.

79. The combination, with an electrical-energy telephone, its complete metallic service-circuit and switchboard connections, of a central watchman's alarm-signal, a central-recording means for receiving and independently recording reports from a plurality of service-circuits, means controlled by said central-recording means for automatically intermittently operating said watchman's alarm-signal, a watchman's reporting means comprising an independent source of electrical energy having a characteristic difference from the electrical energy of the service-circuit connected to the service-circuit, a central fire-alarm signal, means controlled from the watchman's reporting means for operating the central fire-alarm signal, and means controlled from the watchman's reporting means for preventing a particular automatic operation of the watchman's alarm-signal.

816,001. CAP-FLANGING MACHINE. JULIUS BRENINGER, Mount Vernon, N. Y., assignor to The Max Arms Machine Co., Mount Vernon, N. Y., a Corporation of New York. Filed Apr. 29, 1905. Serial No. 258,036.



Claim.—1. A cap-flanging machine provided with flanging-rollers, and means for suspending a bottle by its head beneath said rollers, substantially as specified.

2. A cap-flanging machine provided with flanging-rollers, means for suspending a bottle by its head beneath said rollers, and means for imparting intermittent movement to the suspending means, substantially as specified.

3. A cap-flanging machine provided with a head, flanging-rollers carried thereby, means for imparting a rotatory and vertical movement to the head, and means for suspending a bottle beneath the head, substantially as specified.

4. A cap-flanging machine provided with a head, flanging-rollers carried thereby, means for imparting a rotatory and vertical movement to the head, a chuck centered between the rollers, and means for suspending a bottle beneath the head, substantially as specified.

5. A cap-flanging machine provided with a spring-influenced chuck, a head independently rotatable from said chuck, flanging-rollers carried by the head, and means for suspending a bottle beneath the head, substantially as specified.

6. A cap-flanging machine provided with a cam, an elbow-lever actuated thereby, an interposed yielding connection, a rotatable and axially-movable shaft operatively connected to the elbow-lever, flanging-rollers operatively connected to the shaft, and means for suspending a bottle by its head beneath said rollers, substantially as specified.

7. A cap-flanging machine provided with flanging-rollers, an intermittently-rotatable feed-table, and means for suspending bottles from said table substantially as specified.

8. A cap-flanging machine provided with flanging-rollers, an intermittently-rotatable feed-table, means for locking the table during its periods of rest, and means for suspending bottles from said table, substantially as specified.

9. A cap-flanging machine provided with flanging-rollers, a notched feed-table, and a movable jaw hinged to said table, substantially as specified.

10. A cap-flanging machine provided with flanging-rollers, a notched feed-table, a movable jaw hinged thereto, and a catch for closing the jaw, substantially as specified.

11. A cap-flanging machine provided with flanging-rollers, a notched feed-table, a movable jaw hinged thereto, a pair of keepers on the jaw, and a catch adapted to successively engage the keepers, substantially as specified.

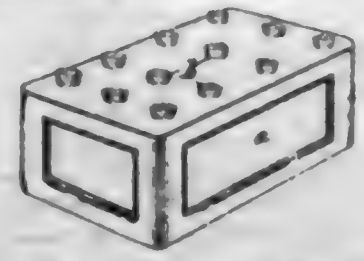
12. A cap-flanging machine provided with flanging-rollers, a notched feed-table, a movable jaw hinged thereto, a roller for closing the jaw, a pair of keepers on the jaw, and a catch adapted to successively engage the keepers, substantially as specified.

13. A cap-flanging machine provided with flanging-rollers, a notched feed-table, a movable spring-influenced jaw hinged thereto, a keeper on the jaw, a catch having a tailpiece and adapted to engage the keeper, and a roller adapted to engage the tailpiece, substantially as specified.

14. A cap-flanging machine provided with flanging-rollers, a notched feed-table, a clamp secured thereto, and buffers secured to the clamp, substantially as specified.

15. A cap-flanging machine provided with an intermittently-rotatable feed-table, a clamp for suspending a bottle therefrom, a rotatable and vertically-movable head above the table, flanging-rollers journaled in the head, and a chuck centered between the rollers, substantially as specified.

816,002. BRUSH-SOAP. HOMER A. BURT, Detroit, Mich. Filed Sept. 18, 1905. Serial No. 278,595.



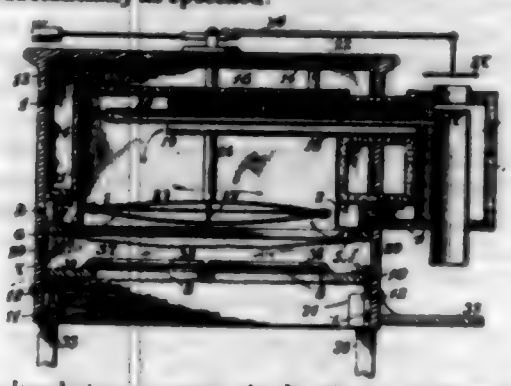
Claim.—1. As an article of manufacture a cake of soap having in combination therewith a plate located intermediate the sides of the cake, and brush fiber passed through and held in place by said plate, said fiber extending laterally in opposite directions from said plate to the exterior surfaces of opposite sides of the cake.

2. In combination a plate provided with tufts of brush fiber extending therethrough, and the spaces between the tufts of brush fiber on opposite sides of the plate filled with hard soap, forming a combined brush-soap, the soap completely embedding the plate therewithin.

816,003. INCUBATOR. JOHN R. CHAMBERS, Shelbyville, Ind. Filed Nov. 6, 1905. Serial No. 286,055.

Claim.—1. In an incubator, a support for eggs, a yielding foraminous fabric above said support at a suitable distance to contact with the eggs borne thereon, means above said fabric for heating it, and means for maintaining it at a uniform regulated temperature, whereby the eggs may be incubated by positive contact with a superposed warm flexible surface, substantially as specified.

2. In an incubator, a foraminous support for eggs, a yielding diaphragm above said support, adapted to come in contact with the eggs borne thereon, an air-chamber above said diaphragm, of which the latter forms the bottom, means for heating the air in said chamber, and means for maintaining said air at a uniform regulated temperature; substantially as specified.



3. In an incubator, an upper air-chamber, a yielding diaphragm forming the bottom of said chamber, means for heating the air in said chamber, means for maintaining said air at a uniform regulated temperature, a lower chamber beneath said diaphragm, a floor in said lower chamber carrying removable egg-trays, at a height suitable to hold the eggs in contact with said diaphragm, and means to admit fresh air among the eggs on said trays, said air being separated from the air in the upper chamber by said diaphragm, substantially as specified.

4. In an incubator, an upper air-chamber, a yielding diaphragm forming the bottom of said chamber, means for heating the air in said chamber, means for maintaining said air at a uniform regulated temperature, a lower chamber beneath said diaphragm, and a floor in said lower chamber carrying removable foraminous egg-trays, said floor being foraminous, and provided with means for adjusting the height thereof relatively to said diaphragm, substantially as specified.

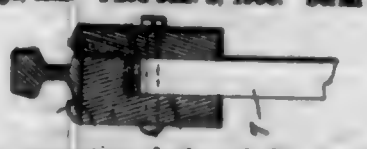
5. In an incubator, an upper air-chamber, a yielding diaphragm forming the bottom of said chamber, means for heating the air in said chamber, means for maintaining said air at a uniform regulated temperature, a lower chamber beneath said diaphragm, and a floor in said lower chamber, carrying removable foraminous trays in its central area, leaving a marginal space adjacent to said trays, as a runway for newly-hatched chicks, substantially as specified.

6. In an incubator, an upper air-chamber, closed on its top and sides with refractory non-heat-conductive covering, an outer casing for said chamber, with an intervening dead-air space, an air-duct all around the bottom of said chamber, with perforations therein, a diaphragm of yielding material, forming the bottom of said chamber and below the air-duct, means for maintaining the air above the diaphragm at a uniform regulated temperature, means beneath said diaphragm for sustaining eggs in contact with the warmed surface thereof, and means for admitting air at atmospheric temperature among said eggs, separated from the heated air of the upper chamber by said diaphragm, substantially as specified.

7. In an incubator, an air-chamber, a yielding diaphragm forming the bottom of said chamber, means for maintaining the air in said chamber at a uniform regulated temperature, an air-duct all around the bottom of said chamber, above said diaphragm, perforations in said air-duct, said air-duct communicating with the upper part of the chamber, and means for heating the air beyond the air-duct, whereby a circulation of warmed air is set up and maintained through said chamber and air-duct, passing over the diaphragm, substantially as specified.

8. In an incubator, an upper chamber, a lower chamber, a yielding diaphragm between said chambers, forming the floor of said upper chamber, a means for warming said diaphragm, above the same, a means for maintaining said diaphragm at a uniform and regulated temperature, an egg-support in said lower chamber, and means for admitting unwarmed air beneath said diaphragm, substantially as specified.

816,004. SUPPORTING DEVICE FOR RAILWAY-TRACKS. JAMES T. COCHRAN, Sylacauga, Ala., assignor of one-half to Edward Cochran, Sylacauga, Ala. Filed Jan. 2, 1906. Serial No. 294,105.



Claim.—1. In a supporting device of the class set forth, the combination of a head composed of two members, one of which has a socket opening out through the bottom and one side thereof and an upper inwardly-projecting flange and the other forming a closure for said socket and also having an inwardly-projecting flange at its upper extremity, a post removably mounted in the socket, and securing means for the two members.

2. In a supporting device of the class set forth, the combination of a head composed of two members, one of which has a socket therein opening through the lower end and inner side thereof and the other forming a closure for the inner portion of said socket, both members having inwardly-projecting flanges at their upper extremities, separate pieces inserted in the socket and bearing against the upper end of the latter, a post removably disposed in the socket, and transversely-extending pairs of connecting-bolts inserted through both members on opposite sides of the socket.

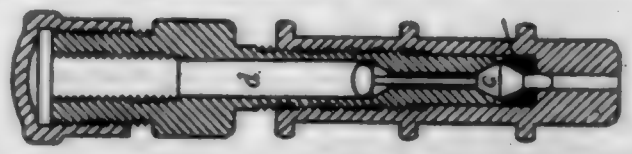
816,005. BURGLAR-ALARM. JOHN A. DILLEN, Clearfield, Pa. Filed Apr. 3, 1905. Serial No. 253,516.



Claim.—1. In a device of the character described, the combination of a barrel, a removable sleeve threaded entirely into each end of said barrel, one of said sleeves constituting a cartridge-support, a firing-pin positioned within said barrel, an integral extension carried by said firing-pin and extending through one of the sleeves, yielding means carried by the extension of said firing-pin, a trigger carried by said firing-pin, means formed upon said barrel and capable of holding said trigger in a cocked position, a tripping device for said trigger, said tripping device comprising a revoluble shaft provided with a squared end, a latch fixedly secured near the opposite end of said shaft, a stop for limiting movement of said shaft and latch, and means for causing movement of said shaft.

2. In a device of the character described, the combination of a barrel, a firing-pin mounted in said barrel, a trigger carried by said firing-pin, means for securing said pin in a cocked position, a tripping device for said trigger, said tripping device comprising a curved or angular bracket, a revoluble shaft journaled at one end in said bracket, the opposite end of said shaft provided with a squared portion, a latch fixedly secured to said shaft, contiguous to said bracket, integral parallel lugs projecting inwardly from said bracket and constituting stops for limiting movement of said latch and shaft, and means for causing movement of said shaft.

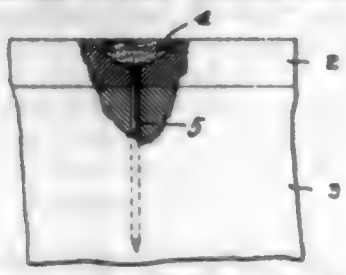
816,006. TIRE-VALVE. CHARLES H. DURYEA, Reading, Pa. Filed Apr. 3, 1905. Serial No. 253,679.



Claim.—A valve-body having an air-passage therethrough with its outer end enlarged, forming an interior shoulder, the outer portion of said passage being interiorly threaded, a valve-seat resting on said shoulder and having passage therethrough, a check-holder having exterior threads engaging the interior threads of the body, and having a passage in line with the passage in the inner end of said body, and an enlarged passage outward therefrom, a check having a double conical body with stem depending through the valve-seat into the air-passage in the inner end of the body beyond said shoul-

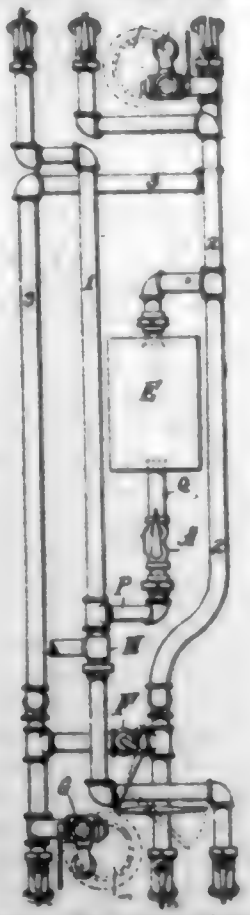
der and a stem extended in the opposite direction into the enlarged bore of the check and having a head movable therein and closing the communication between the large and small bore of the check, and a cap detachably secured to the outer end of said check-holder.

816,007. MEANS FOR SEALING BOXES, &c. ALFRED FERSCHL, Chicago, Ill. Filed Mar. 18, 1905. Serial No. 250,761.



Claim.—The combination, with the part 3 of a box or package, of the part 2 provided with a countersunk opening having recesses or indentations in its wall above the bottom and below the top of said opening, a suitable fastening device passing through the part 2 into the part 3 and having a head lying at the bottom of said opening, and suitable sealing material arranged in said opening to cover the head of the fastening and engaging the recesses or indentations in its wall above said head and below the top of the part 2, substantially as described.

816,008. APPARATUS FOR OPERATING DUMPING-VEHICLES BY FLUID-PRESSURE. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed Aug. 2, 1905. Serial No. 272,306.



Claim.—1. In a system of operating dumping-vehicles by fluid-pressure, the combination of a train-line source of fluid-pressure, a storage-reservoir adapted to be supplied therefrom, and a valve connecting said source and reservoir provided with restricted and unrestricted ports and means for manually adjusting said valve to allow the fluid of the source to pass through either of said ports to said reservoir.

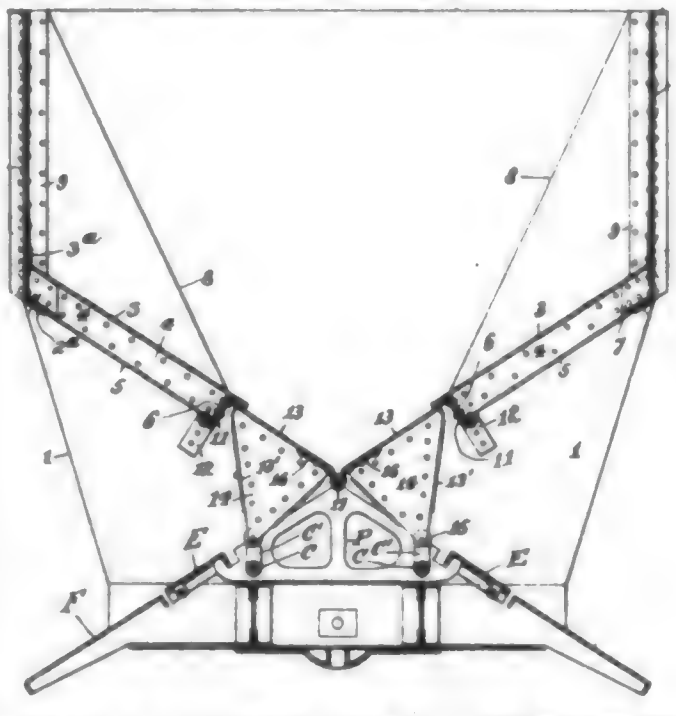
2. In a system of operating dumping-vehicles by fluid-pressure, the combination of a train-line source of fluid-pressure, a fluid-storage reservoir adapted to be supplied from said source, and a valve connecting said source and reservoir provided with means of adjustment to allow a restricted or an unrestricted passage of fluid from the source to the reservoir and a check-valve contained in said valve arranged to prevent backflow therethrough.

3. In a system of operating dumping-vehicles by fluid-pressure, the combination of a train-line source of fluid-pressure, a storage-reservoir adapted to be supplied from said source and a valve connecting the same thereto, said valve comprising a check-valve for preventing backflow therethrough and means of adjustment to open and close a restricted passage from the source into said reservoir.

4. In a system of operating dumping-vehicles by fluid-pressure, the combination of an automatic air-brake system having a train-line source of air-pressure, with a storage-reservoir and a valve connecting the same with said train-line source, said valve comprising in a unitary structure a restricted port, an unrestricted port, means for closing either one or both of the same and a check-valve for preventing backflow through said ports.

5. In a system of operating dumping-vehicles by fluid-pressure, the combination of an automatic air-brake system having a train-line source of air-pressure, with a storage-reservoir and a valve connecting the same with said train-line source, said valve being comprised of a valve-casing having a valve-plug seat, restricted and unrestricted ports leading from said seat, a check-valve under which said ports open and the plug for said seat adapted to close one or both of said ports.

816,009. DUMPING-VEHICLE. JOHN M. GOODWIN, Mount Vernon, N. Y. Filed Jan. 4, 1906. Serial No. 294,521.



Claim.—1. In a dumping-vehicle, the combination with the end bulkheads and side walls, of a fixed floor formed of a plurality of flanged sections, united by their flanges in planes transverse to the vehicle, and floor-supporting gusset-sheets secured to said sections between the proximate flanges thereof.

2. In a dumping-vehicle having a longitudinal center dumping-valve, the combination of a side wall and a floor adjacent thereto formed of a plurality of flanged sheet-metal sections, united by their flanges, transverse gusset-sheets supported by said side wall and secured to said sections between the proximate flanges thereof.

3. In a dumping-vehicle, a cargo-receptacle having a dumping-valve at the center and a fixed floor adjacent to one of the side walls thereof, formed of a plurality of sheet-metal sections having downwardly-bent side flanges, in combination with a plurality of transverse gusset-sheets hung from said side wall and secured between proximate flanges of said sections, below the floor-surface.

4. In a dumping-vehicle having a longitudinal discharge-opening, a fixed floor adjacent said opening and parallel therewith, said floor being composed of a plurality of flanged sheet-metal sections, united by their flanges, in combination with a side wall of the vehicle and a plurality of gusset-sheets, approximately equal in width to the width of the fixed floor, supported by said side wall and secured to the said floor between the proximate flanges of the said united sections.

5. In a dumping-vehicle having end bulkheads, side walls and a longitudinal discharge-opening, a fixed floor located adjacent to and parallel with a side wall and formed of a plurality of flanged sheet-metal sections, united by their flanges, in combination with gusset-sheets hung from said side walls and secured to the sections between their proximate flanges, and a longitudinal beam located beneath the inboard ends of said sections and supported at its ends by said end bulkheads.

6. In a dumping-vehicle having a discharge-opening extending the inside length of the vehicle, a fixed floor located adjacent to said opening and formed of a number of sheet-metal sections, each of said sections consisting of a body portion and downturned side flanges of less length than the body portion, in combination with a longitudinally-disposed Z-beam located beneath the inboard ends of said sections, adapted to support the body portions of said sections upon one

of its flanges and the side flanges of said sections upon the other of its flanges, and means at the ends of the vehicle for supporting said Z-beam.

7. In a dumping-vehicle having a longitudinal discharge-opening, a fixed floor located adjacent thereto and formed of a plurality of flanged sheet-metal sections, each of said sections consisting of a body portion and downturned side flanges of less length than the body portion, in combination with a side wall of the vehicle, gusset-sheets supported thereby and secured to the fixed floor-sections between the proximate flanges thereof, a longitudinal beam secured to the inboard ends of said side flanges and having an inturned flange located beneath the overhanging ends of the body portions of said sections, and means for supporting said beam.

8. In a dumping-vehicle, a hopper-bottom cargo-receptacle having its bottom formed of inner movable and outer fixed floors, said fixed floors being formed of sections of sheet metal provided with side flanges, and united by said flanges, in combination with triangular gusset-sheets interposed in the seams or joints between the proximate side flanges of the sections and supported by the adjacent side wall of the receptacle.

9. In a dumping-vehicle, a side wall and a fixed floor adjacent thereto, said floor being formed of sheet-metal sections having downturned side flanges, in combination with upturned outboard flanges on said sections secured to said side wall and a flange on the side wall turned inwardly under the said side flanges of the sections.

10. In a dumping-vehicle having a hopper-bottom, a fixed floor composed of flanged sheet-metal sections united by their flanges in planes transverse to the vehicle, a longitudinal beam forming a support for the inboard ends of said sections and having a flange turned toward the discharge-opening, in combination with a pivoted dumping-valve adapted to be supported with its free margin beneath the said flange of the beam.

11. In a dumping-vehicle, the combination of fixed outer floors formed of flanged sheet-metal sections, united by their flanges, and a beam supporting the inboard ends of said sections, with a center dumping-valve formed of a sheet-metal blank with downturned ends and means for engaging said ends to support the valve in closed position.

12. In a dumping-vehicle, a center dumping-valve, formed of a body portion of sheet metal and downturned end flanges of triangular shape, means for pivoting said body portion to the vehicle and means for supporting said downturned end flanges to hold the valve in closed position.

13. In a dumping-vehicle, a center dumping-valve formed of a number of sheet-metal blanks, each having downturned ends and said ends being secured together, in combination with bearing-rollers carried by said ends, and detent means for supporting said rollers.

14. In a dumping-vehicle, a center dumping-valve formed of a number of sheet-metal blanks each having downturned ends and said ends being located respectively adjacent, in combination with rollers secured between the proximate ends, and detent means for supporting said rollers and the valves in closed position.

816,010. **TRUCK-BOLSTER.** JOHN M. GOODWIN, Mount Vernon, N. Y. Filed Jan. 4, 1906. Serial No. 294,522.

Claim.—1. A truck-bolster composed of side sections fastened together at a distance from each other, in combination with means filling the space between the central portions of said side sections and provided with an aperture adapted to receive the king-pin.

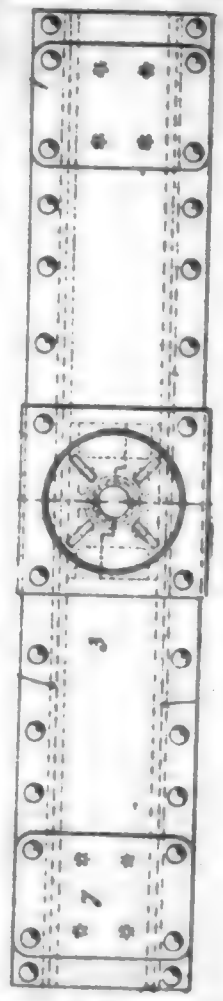
2. A truck-bolster comprised of longitudinal sections fastened together at a distance from each other and a filling-piece carried by the central part of one of said sections, projecting into the space between the same and provided with an aperture adapted to receive the king-pin.

3. A truck-bolster composed of longitudinal sections fastened together at a distance from each other so as to provide a space between them, in combination with projections mounted on the interior faces of said sections adapted to interlock with each other and providing an aperture to receive the king-pin.

4. A truck-bolster composed of upright side sections, a top and a bottom binding-plate secured respectively to said sections, in combination with projections mounted on the interior faces of said sections adapted to interlock with each other and provide a support for the king-pin.

5. A truck-bolster formed of side sections and binding-plates united together to form a box-like beam, projections on the opposite interior sides of said beam adapted to interlock and provide a strut member between the top and bottom binding-plates.

6. A truck-bolster formed of side sections and binding-plates united together to form a box-like beam, in combination with projections on the opposite interior sides of said beam of suitable vertical dimension to fill the distance between the top and bottom walls thereof, and provided with means for receiving the king-pin.



7. A truck-bolster formed of upright side sections and binding-plates securing the same together with a space between them, in combination with a filler-block secured in the space between said sections and a bearing-plate on the top binding-plate, the said block and bearing-plate being perforated to receive the king-pin.

8. A truck-bolster formed of upright side sections and top and bottom binding-plates, a filler-block secured in the space between said sections and recessed to receive the king-pin, in combination with a bearing-plate on the top binding-plate and an annular boss on said bearing-plate adapted to project through an opening in the top binding-plate and have engagement with said filler-block.

9. A truck-bolster formed of upright side sections fastened together with a space between them, in combination with projections on the interior faces of said side sections formed respectively with complementary rabbet-surfaces adapted to interlock and provided respectively with vertical grooves forming a king-pin aperture.

10. A truck-bolster formed of longitudinal sections fastened together at a distance from each other and provided respectively with interior projections which interlock, said projections together forming an apertured king-pin support, in combination with transverse bolts passing through said projections from the exterior of the sections.

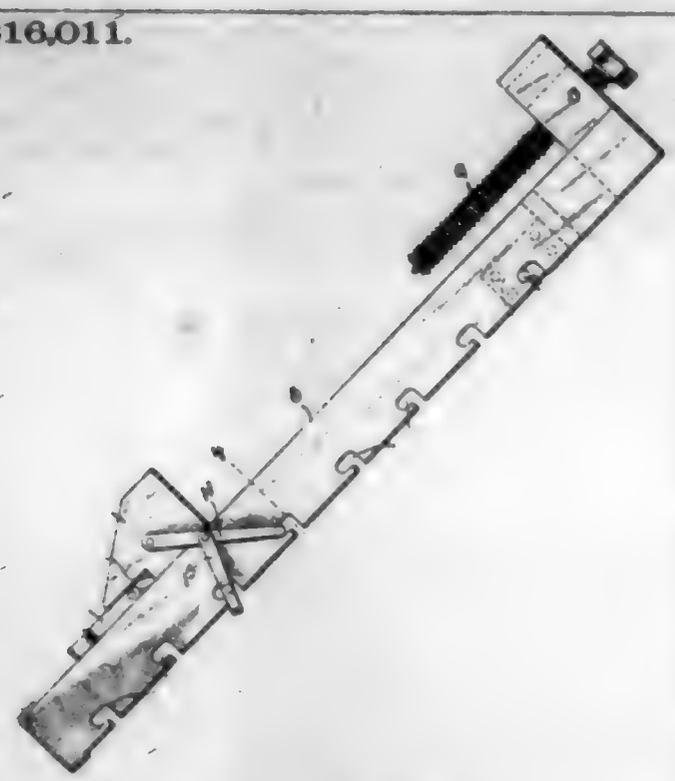
11. A truck-bolster formed of upright side sections and top and bottom binding-plates securing the same together, in combination with column-guides on the ends of said sections and interior interlocking projections at their central portions forming a king-pin support.

12. A truck-bolster formed of upright side sections and top and bottom binding-plates securing the same together, in combination with interior projections formed on the side sections and adapted to fill the space between the top and bottom plates at their central portions, and a bearing-seat on the top binding-plate adapted to receive the pressure of the load and transmit the same to said projections.

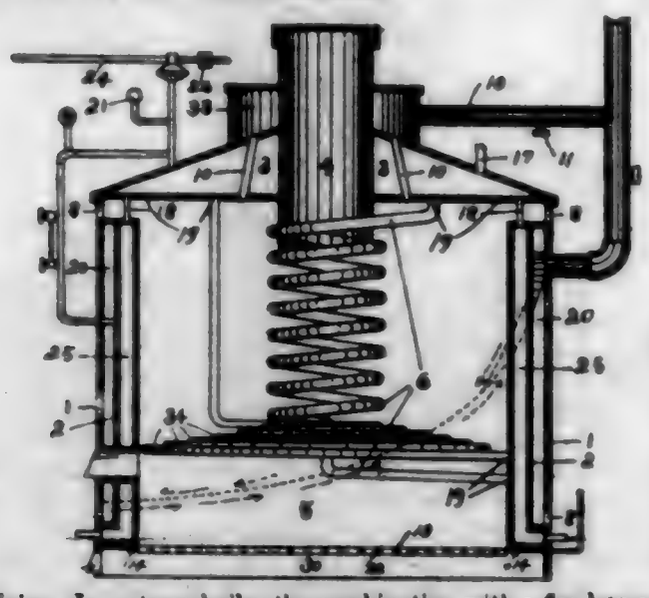
816,011. **WOODWORKING-CLAMP.** CARL GUSTAVSON, Chicago, Ill. Filed Nov. 14, 1905. Serial No. 287,293.

Claim.—A clamp comprising a beam formed of notched side pieces and a notched extensible middle piece therebetween having lugs engageable in the notches of the side pieces, a head-block mounted on the side pieces, and an adjustable foot-block having a latch engageable in the notches on said pieces.

816,011.



816,012. STEAM-BOILER. Stephen H. Hale, St. Joseph, Mo. Filed Jan. 30, 1905. Serial No. 243,431.



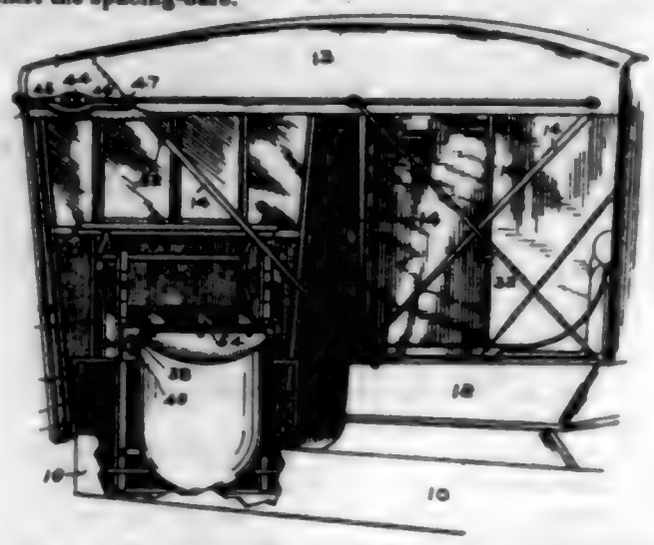
Claim.—In a steam-boiler the combination with a fire-box and magazine, of double cylinders spaced apart said space forming a water-chamber, a jacket spaced from the outer cylinder said space forming a chamber for passage of flame and smoke from the fire-box, a steam-dome said magazine being in the center thereof, the coils with tubes of decreasing circumference from top to bottom and extending from said dome downward around said magazine and below through said fire-box into the water-cylinder, the bottom coil also also connected with said dome and spread at its base above the fire-box to connection with said water-cylinder and fire-draft partition encircling the water-cylinder, substantially as shown and described.

816,013. STORM-SHIELD FOR VEHICLES. Matthew R. Hull, Connersville, Ind., assignor to The Rex Buggy Company, Connersville, Ind., a Corporation of Indiana. Filed Sept. 8, 1905. Serial No. 277,608.

Claim.—1. A storm-shield attachment for top-vehicles comprising a covered frame extending from the dash to the vehicle-top and approximately the same width as the top, means for securing the lower part of the frame to the vehicle, tightening-rods having turnbuckles in their lengths for securing the top of the frame to the vehicle-top, a flexible apron fastened to the top of the frame and overlapping the valance of the vehicle-top and means for removably securing the apron to the vehicle-top.

2. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for securing the frame to the front of the vehicle-bed, tightening-rods having turnbuckles in their lengths for securing the top of the frame at a fixed position in front of the vehicle-top, a flexible apron fastened in a fixed manner to the top of the frame and adapted to extend to and overlap the valance of the vehicle-top, and straps at the corners of the apron to secure the apron to the bows of the vehicle-top.

3. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for supporting and securing the lower end of the frame, spacing-bars between the top of the frame and the top of the vehicle and tightening-rods having turnbuckles in their lengths to draw the frame firmly against the spacing-bars.



4. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, means for supporting and securing the lower end of the frame, spacing-bars between the top of the frame and the top of the vehicle, tightening-rods having turnbuckles to draw the frame firmly against the spacing-bars and a flexible apron secured in a fixed manner to the top of the frame and extending to and overlapping the valance of the vehicle-top and means for removably securing the apron to the vehicle-top.

5. The combination with a top-vehicle of a storm-shield comprising a front frame covered to exclude rain and wind, said frame having posts which extend below the top of and in front of the vehicle-dash when the shield is in place, standards opposite said posts on the inside of the vehicle bed and dash resting upon the bottom of the bed, metal straps secured to the posts and having rearwardly-bent top ends, said ends being fastened to said standards and means for drawing the standards toward their respective posts to form clamps for fastening the shield to the body of the vehicle.

6. The combination with a top-vehicle of a storm-shield comprising a front frame having a rain and wind proof cover, vertical posts forming a part of said frame adapted to be placed outside of the dash and extend below the top of the dash, standards resting on the bottom of the vehicle-bed on the inside of the bed at the front end of the latter, metal straps bolted to the posts having their top ends bent back in curves and fastened to the standards and eyebolts through the eyes of which the said straps pass, the stems of the bolts being passed through the standards, and nuts on the bolts outside of the standards.

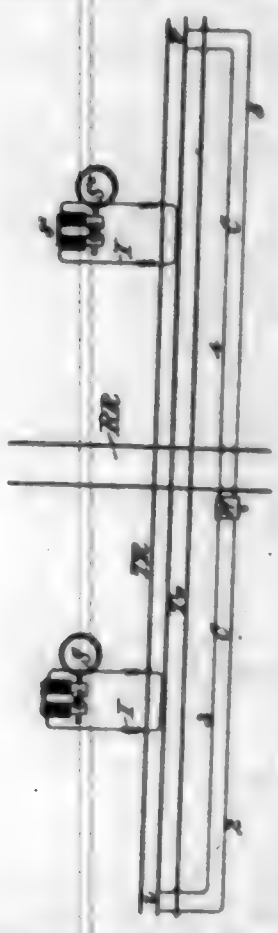
7. The combination with a vehicle of a storm-shield located in front of the dash, said shield comprising a frame covered with a wind and rain proof material, said frame having a pair of vertical posts to bear against the outer side of the dash, a pair of standards located at the back of the dash opposite the posts and flexibly connected at their upper ends with the standards, and a box secured to the standards and extending back between the posts so as to make a close bracing and strengthening fit between the pairs of said posts and standards.

8. A shield having a pair of vertical posts, a pair of standards on the opposite side of the dash from the posts, one standard opposite each post and flexibly connected above the dash with its adjacent post, a box having ends which make a close fit between the post and standard on one side and the post and standard on the other side, means for clamping the dash between the posts and standards and means for securing the box in position.

9. A frame for vehicle storm-shields having a pair of rigid parallel supports at each side edge, a plate of rigid material connecting each pair of said bars said plate having an outwardly-curved longitudinal central corrugation forming a recess with the bars to receive curtain-rollers, and curtain-rollers with curtains attached, mounted in said recesses.

10. A frame for vehicle storm-shields having a pair of rigid parallel supports at each side edge, a plate of rigid material connecting each pair of bars said plate having a central longitudinal corrugation curved toward the front of the shield, a metal cap-plate at the top of each corrugation and side curtains mounted on rollers, said rollers being mounted in the recesses formed by the parallel supports and corrugated connecting-plates.

816,014. SAFETY SYSTEM FOR ELECTRIC-ROAD CROSSINGS. ARTHUR H. JOHNSON, Rahway, N. J., assignor, by mesne assignments, to Harvey J. Donaldson, trustee, Ballston Spa, N. Y. Filed Dec. 5, 1902. Renewed Feb. 3, 1906. Serial No. 300,040.



Claim.—1. In a safety system for electric-road crossings, the combination of a conductor for supplying current to operate a car of the railway, a signal therefor, and means outside of said car for cutting off the current to check the progress of the car over a portion of the railway in proximity to said crossing and simultaneously operating said signal, substantially as set forth.

2. In a safety system for electric-road crossings, the combination of a trolley-wire to supply the working or motive current for a car, a signal therefor, and means outside of said car for controlling simultaneously the signal and the electric condition of a portion of the trolley-wire in proximity to said crossing, whereby the progress of a car may be checked in proximity to the crossing, substantially as set forth.

3. In a safety system for electric-road crossings, the combination of a trolley-wire to supply the working current for a car, having one or more insulated sections in proximity to the road-crossing, branch wires connecting said insulated section or sections with the adjoining portion of the trolley-wire, and switches in the branch wires for controlling the electric condition of said insulated section or sections of the trolley-wire, substantially as set forth.

4. In a safety system for electric-road crossings, the combination of a trolley-wire to supply the working current for a car, having one or more insulated sections in proximity to the road-crossing, branch wires connecting said insulated section or sections with the adjoining portions of the trolley-wire, switches in the branch wires for controlling the electric condition of said insulated section or sections of the trolley-wire, and one or more signals connected with the trolley-wire and operated by the switches in the branch wires, whereby the progress of the car may be checked in proximity to the crossing, substantially as set forth.

5. In a safety system for electric-road crossings, the combination of one or more conductors to supply the working or motive current for the electric road, said conductor or conductors having one or more separate insulated sections extending in proximity to the crossing, branch conductors connecting the said insulated section or sections to the main portion of the supply conductor or conductors, switches controlled outside of the cars so arranged and connected that by proper manipulation of the switches current may be impressed upon or withdrawn from an insulated section as desired, and a signal for the electric road in proximity to the crossing connected with an insulated section of the supply-conductor, said signal being normally held by the supply-current at safety, and adapted to go to danger when deprived of the current, whereby when the current is cut off from said insulated section of the supply-conductor the signal is put to danger, substantially as set forth.

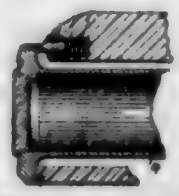
6. In a safety system for electric-road crossings, the combination of a conductor to supply the motive or working current for an electric car, said conductor having separate insulated sections extending one on each side of the crossing and in proximity thereto, branch conductors connecting the said insulated sections with the main portion of the supply-conductor provided with switches controlled outside of the car, said switches so arranged and connected that by proper manipulation current may be impressed upon or withdrawn from an insulated section as desired, whereby the progress of the car in proximity to the crossing may be controlled, one or more signals for the electric road operatively connected with the said switches, whereby when the current is cut off from one of the insulated sections of the supply-conductor, a danger-signal will be simultaneously displayed, substantially as set forth.

7. In a safety system for electric-road crossings, the combination of a conductor to supply the working or motive current for the electric cars, said conductor having an insulated section thereof extending in proximity to the crossing, branch conductors connecting the insulated section with the main body of the supply-conductor, one or more switches located in the said branch conductors and controlled by means outside of said cars independent of any operation of an electric car to block a car in the rear by depriving it of its motive current, whereby the progress of a car in proximity to the crossing may be checked, a signal for the electric road operatively connected with the said switch or switches whereby the current-supply for a car when in proximity to the crossing may be cut off and a danger-signal simultaneously displayed, substantially as set forth.

8. In a system for electric-road crossings, the combination of a signal guarding a section of the electric road at the crossing, means for operating the signal, an electric switch operatively connected with said means and operating to control the current-supply of an electric car when within the guarded section, whereby when the signal is put to danger to stop a car, the current for the said car is cut off from the guarded section, substantially as set forth.

9. In a safety system for electric and railway crossings, the combination of a signal guarding a section of the electric road at the crossing, means for operating the signal, a conductor to supply a working current for an electric car, having a section thereof extending in proximity to the crossing insulated from the body of the conductor, a source of current-supply for the said insulated section and means for cutting off the current from the insulated section without affecting the supply of current to the main body of the said conductor operatively connected with the means for operating the signal, substantially as set forth.

816,015. TUBULAR-MAGAZINE FIREARM. THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Oct. 24, 1904. Serial No. 229,881.



Claim.—1. In a tubular-magazine firearm, the combination with the fore-arm thereof, of a tubular magazine passing through the said fore-arm, and a yielding magazine-lock mounted in the forward end of the said fore-arm and coacting with the forward end of the magazine to prevent the same from jarring loose when firing the gun but yielding to permit the magazine to be screwed into the gun-frame or unscrewed therefrom.

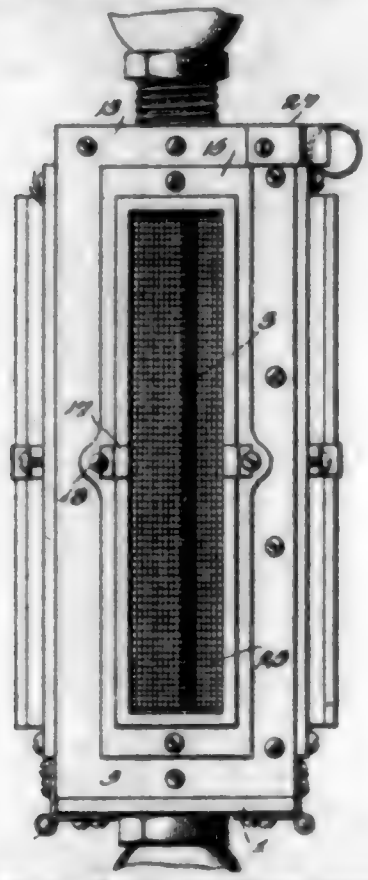
2. In a tubular-magazine firearm, the combination with the fore-arm thereof, of a tubular magazine provided at its forward end with a fixed take-down flange, and a yielding magazine-lock mounted in the forward end of the said fore-arm and coacting with the said take-down flange to hold the magazine from jarring loose in firing the gun but yielding to permit the magazine to be screwed into the gun-frame or unscrewed therefrom.

816,016. GUARD FOR WATER-GLASSES. GEORGE C. JONES, Manchester, N. H. Filed June 24, 1905. Serial No. 266,800.

Claim.—1. A water-glass guard comprising a base-section, a body-section and a door-section, both of said latter sections having hinged connection with the base-section.

2. The combination with a water-glass, of a guard therefor completely enveloping the glass and comprising a base-section, a body-section hinged thereto, and a door-section hinged to the base-section.

3. The combination with a water-glass, of a guard therefor completely enveloping the glass and comprising a base-section, a body-section hinged thereto, and a door-section hinged to the base-section, the top of the guard being in two sections respectively integral with the body-section and with the door-section.



4. A guard for water-glasses comprising a base-section, a body-section including the front wall, side wall and rear wall of the guard, said body-section being hinged to the base-section, and a door-section including the opposite side wall of the guard and hinged to the base-section, said front and side walls being provided with windows, and screens secured to the walls to protect the windows.

5. A guard for water-glasses comprising a base-section, a body-section including three walls of the guard, and the door-section including the remaining wall of the guard, the rear wall of the guard being perforated the top of the guard being formed by a portion of the body-section and a part of the tool-section.

6. A water-glass guard comprising a base-section, a body-section including three walls of the guard and a section of the top, said body-section being hinged to the base-section, and a door-section including the remaining wall of the guard and the remainder of the top.

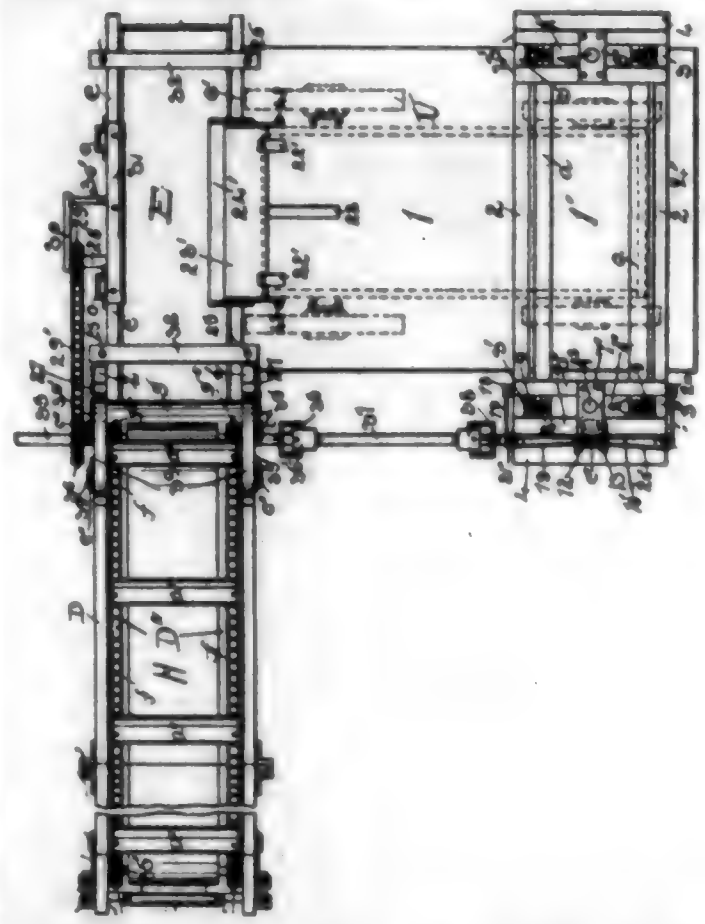
7. A water-glass guard comprising a base-section, a body-section including three walls of the guard and a section of the top, said body-section being hinged to the base-section, and a door-section including the remaining wall of the guard and the remainder of the top, and means to secure said door-section in closed position with relation to the body-section.

8. A water-glass guard comprising a base-section, a body-section including three walls of the guard and a section of the top, said body-section being hinged to the base-section, a door-section including the remaining wall of the guard and the remainder of the top, means to secure said door-section in closed position with relation to the body-section, the front wall and edge of the side walls being provided with window-frames to receive a window, and clamping-frames to secure the window in place, the rear wall being perforated.

816,017. GRAIN-ELEVATOR AND WAGON-DUMP. ROBERT J. JONES, Barneston, Nebr. Filed July 18, 1904. Serial No. 217,063.

Claim.—1. The combination with a supporting-platform, of a lifting-frame, elevating-screws secured to said lifting-frame, a reversing driving mechanism in gear connection with said elevating-screws, a lever to actuate said reversing driving mechanism, stops arranged in the connections to said lever engaged by said lifting-frame to actuate said lever to throw out of gear said reversing driving mechanism, and means to actuate said reversing driving mechanism.

2. The combination with a supporting-platform, of a lifting-frame, elevating-screws secured to said lifting-frame, a reversing driving mechanism in gear connection with said elevating-screws, a lever to actuate said reversing driving mechanism, stops arranged in the connections to said lever engaged by said lifting-frame to actuate said lever to throw out of gear said reversing driving mechanism, a feeder, an agitator within said feeder, and means to drive said reversing mechanism and said agitator.



3. The combination with a supporting-platform, of a lifting-frame, elevating-screws secured to said lifting-frame, a reversing driving mechanism in gear connection with said elevating-screws, a lever to actuate said reversing driving mechanism, stops arranged in the connection to said lever engaged by said lifting-frame, an agitator, an elevator connected to said agitator and means to operate said reversing driving mechanism, agitator and elevator.

4. The combination with a supporting-platform, of a lifting-frame, elevating-screws secured to said lifting-frame, a reversing driving mechanism in gear connection with said elevating-screws, a lever to actuate said reversing driving mechanism, stops arranged in the connections to said lever engaged by said lifting-frame to actuate said lever, an agitator, an adjustable scoop-board shiftably secured adjacent said agitator, an elevator-housing, and an endless conveyer within said elevator-housing, and means to actuate said conveyer, agitator and said reversing driving mechanism.

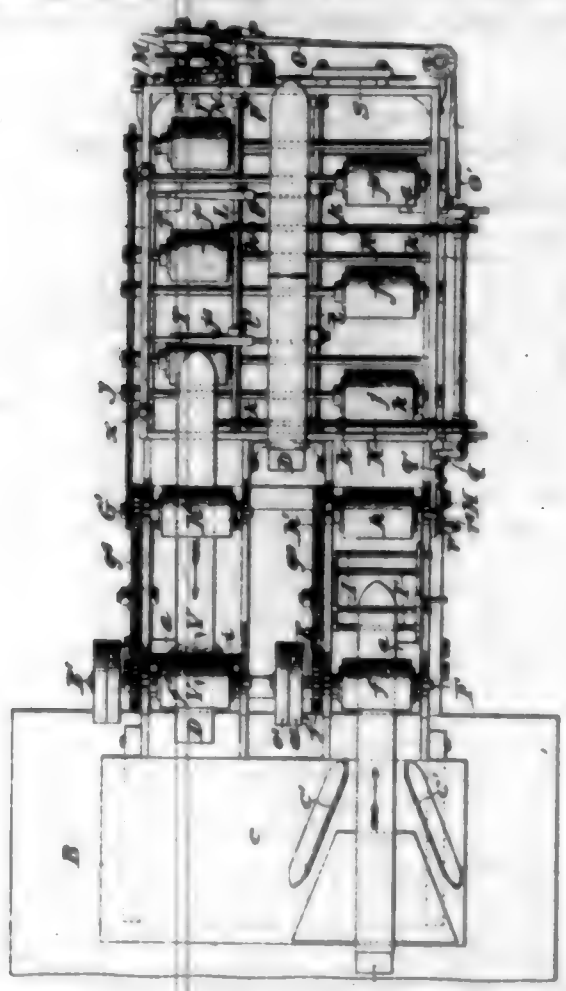
5. In a device of the character described, the combination with a suitable base, of four standards extending from said base, cross-bars uniting said standards in sets of twos above, a guide-plate secured to said cross-bars, a horizontally-disposed drive-shaft, two reversing-gears secured to said drive-shaft, a second shaft, a gear secured to one end of said second shaft adapted to be alternately engaged by said reversing-gear, two additional gears secured to said last-mentioned shaft disposed near each end upon said shaft, two vertically-positioned elevating-screws, said screws passing above through said guide-plates, a bar to guide said elevating-screws below, a gear at the lower end of each of said elevating-screws, said gears meshing with the two last-mentioned gears secured to said second-mentioned shaft, caster-frames mounted upon said elevating-screws, nuts working upon said elevating-screws and secured to said caster-frames, said caster-frames reciprocating vertically between said sets of standards, and a reversing mechanism to actuate said reversing-gears.

816,018. SINGEING-MACHINE. HENRY KRAEMER, Nazareth, Pa. Filed Mar. 26, 1904. Serial No. 200,188.

Claim.—1. In a singeing-machine the combination of singeing means; feed-rollers by which a block carrying the article to be singed is progressed; and a pair of stripping-blades, one on either side of the path pursued by the block as it is fed by the rollers, by which the article which has been singed is stripped from the block.

2. In a singeing-machine the combination of singeing means; feed-rollers by which a block carrying the article to be singed is progressed; said feed-rollers including two positively-driven rollers,

and companion rollers resting on the same and carried in open bearings; and a pair of stripping-blades, one on either side of the path pursued by the block as it passes between the positively-driven rollers and the companion rollers, whereby the article which has been singed is stripped from the block.



3. In a singeing-machine the combination of singeing means; feed-rollers by which a block carrying the article to be signed is progressed; and a pair of stripping-blades, independently adjustable in relation to each other, whereby the article which has been singed is stripped from the block.

4. In a singeing-machine the combination of singeing means; feed-rollers by which a block carrying the article to be signed is progressed; and a pair of stripping-blades inclined with their opposing edges directed forward in the direction in which the block moves between them, whereby the article to be singed is stripped from the block.

5. In a singeing-machine, the combination of the feed-rollers; singeing-jets interposed near the path pursued by the object to be singed as it is fed by the rollers; other feed-rollers alongside the first but rotating in the reverse direction; stripping-blades interposed near the path pursued by the object which has been singed as it is fed by the reversed feed-rollers; and a transferring device, whereby the object which has been fed through the singeing-jets is transferred to the line of the stripping device and its motion reversed whereby it is fed therein and delivered alongside the entrance to the singeing device.

6. In a machine for singeing textile products the combination of two parallel series of rollers each moving in opposite directions; singeing-jets in proximity to the path pursued by the object advanced by the first series of rollers; a stop limiting the advance of said object; transferring devices whereby said object when thus stopped is transferred from the first series to the parallel reverse series; and a stripping device situated in the path pursued by an object advanced by the latter series of rollers, whereby the object which has been singed is stripped from the block upon which it has been stretched, and the block returned to a point near its starting-point.

7. In a machine for singeing textile products, the combination of two parallel series of rollers each moving in opposite directions; singeing-jets in proximity to the path pursued by an object advanced by the first series of rollers; transferring devices whereby the object is transferred from the first series to the parallel reverse series; and a stripping device situated in the path pursued by an object advanced by the latter series of rollers, whereby the object which has been singed is stripped from the block upon which it has been stretched and the block returned to a point near its starting-point.

8. In a machine for singeing textile products, the combination of two parallel series of rollers moving in opposite directions; singeing-jets interposed in proximity to the path pursued by an object advanced by the first series of rollers; and a transfer device for moving an object from one series to the other consisting of endless chains, with means for intermittently progressing said endless chains.

9. A stripping device for removing a textile product from the block on which it is stretched consisting of positively-rotated rollers; and stripping-blades fixed upon either side of the path pursued by a block resting upon said rollers, the interval between the stripping-blades being slightly larger than the block which is to pass between them.

10. In a singeing-machine, the combination of the singeing-jets; companion feed-rolls by which the object to be singed is passed near the jets; reversing-rolls parallel to said feed-rolls; an endless transfer-chain running from one set of rolls to the other; and means for effecting the intermittent motion of said transfer-chain consisting of an escapement device controlled by the movement of the companion feed-rolls, whereby the passage of an object between said companion rolls effects a corresponding motion of the endless chain.

11. In a singeing-machine the combination of singeing-jets; companion feed-rolls by which the object to be singed is passed near the jets; reversing-rolls parallel to said feed-rolls; an endless transfer-chain running from one set of rolls to the other; shafts by which said transfer-chain is carried; a weight constantly tending to advance said endless transfer-chain; and means for rendering said advancement intermittent, consisting of an escapement-arm set on one of the shafts of the transfer-chain, alternately-reciprocating slide-rods interrupting the movement of the escapement-arm, and mechanism whereby the motion of the companion feed-rolls toward or away from each other occasioned by the passage of an object between them imparts a motion of alternate reciprocation to said slide-rods.

12. A reversing device, consisting of two parallel series of rolls moving in opposite directions; endless chains passing from the path of one series of rolls to that of the other; and means for intermittently advancing said endless chains.

13. A reversing device, consisting of two parallel series of rolls moving in opposite directions; endless chains passing from the path of one series of rolls to that of the other; studs on said endless chains; and means for intermittently advancing said endless chains.

14. A reversing device consisting of two parallel series of rolls, moving in opposite directions; endless chains which carry the object to be reversed from one series of rolls to a point over the other series; fingers upon which the object to be reversed is received from the endless chains; and means for depressing said fingers at intervals to drop the object to be transferred upon the latter series of rolls.

15. A reversing device, consisting of two parallel series of rolls moving continually in opposite directions; an endless chain running between the series carried by shafts parallel thereto; and means for intermittently advancing said endless chain consisting of a weighted chain which tends to rotate one of the shafts of the endless chain; and an escapement device whereby at intervals the rotation of one of said shafts is stopped.

16. A reversing device consisting of an advancing series of rolls and a parallel returning series; an endless transfer-chain passing from one series to the other; an escapement device by which the motion of the endless chain is rendered intermittent; a weighted chain tending at all times to progress said endless chain; and a winding-up device for said weighted chain consisting of fast and loose pulleys, a driving-belt and belt-shifter connection by which motion of the fast pulley winds up the weighted chain, and connections by which when the weight is up the belt is thrown to the loose pulley, while when it is down it is thrown to the fast pulley.

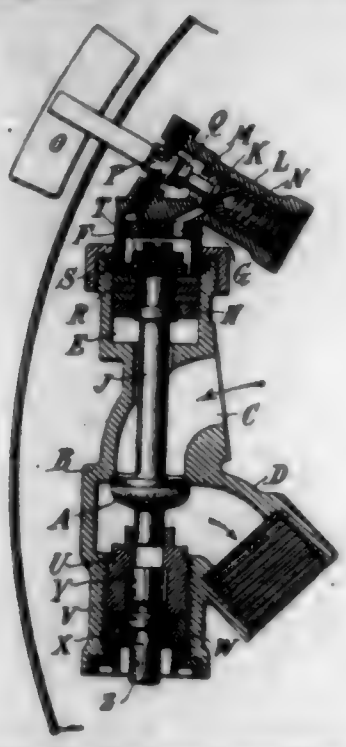
816,019. **RETARDING DEVICE FOR AUTOMOBILE TORPEDOES.** FRANK M. LEAVITT, New York, N. Y., assignor to E. W. Bliss Company, Brooklyn, N. Y., a Corporation of West Virginia. Filed July 18, 1904. Serial No. 217,104.

Claim.—1. In a torpedo operated by fluid under pressure, a retarding-valve, and means operated by said fluid for temporarily holding said valve closed to a desired extent and subsequently permitting said valve to open.

2. In a torpedo operated by fluid under pressure, means operated by said fluid for retarding its admission to the engine, said means being rendered inoperative to further retard such admission by the passage of the torpedo into the water.

3. A retarding means for torpedoes comprising in combination a piston, means admitting fluid under pressure to one side thereof, and means for exposing the opposite side of the piston to the atmos-

phere or cutting it off therefrom, the parts being constructed and arranged to permit a leakage of the pressure fluid from one side to the other of the piston so as to balance the pressure thereon when it is cut off from the atmosphere.



4. A retarding means for torpedoes comprising in combination a piston, means admitting fluid under pressure to one side thereof, the opposite side thereof being normally exposed to the atmosphere, and means controlled by the passage of the torpedo into the water for cutting said opposite side off from the atmosphere, the parts being constructed and arranged to permit a leakage of the pressure fluid from one side to the other of the piston so as to balance the pressure thereon when it is cut off from the atmosphere.

5. A retarding means for torpedoes comprising in combination a piston moving in a chamber, means admitting fluid under pressure to one side of said piston, and a valve for opening said chamber at the opposite side of the piston to the atmosphere or cutting it off therefrom, the parts being constructed and arranged to permit a leakage of the pressure fluid from one side of said piston to the other so as to balance the pressure thereon when such valve is closed.

6. A retarding means for torpedoes comprising in combination a piston H working in a chamber E into which pressure is admitted at one side of said piston, a valve K for opening said chamber at the opposite side of the piston to the atmosphere or cutting it off therefrom, means tending normally to close said valve, and a water-tripper arranged to hold said valve open while in its elevated position and to release said valve when in its lowered position.

7. In a torpedo, a source of motive fluid, an engine, and a valve in the passage leading from said source to the engine and normally partly open to permit starting of the engine slowly before admitting full pressure thereto, and means for automatically opening said valve farther to admit full pressure.

8. In a torpedo, a retarding-valve, a piston arranged to receive the pressure of the motive fluid and engage the valve-stem to hold said valve in its normal position, and means for adjusting the amount of opening of said valve in its normal position.

9. In a torpedo, a compressed-air reservoir and an engine, a valve controlling the passage from said reservoir to said engine and held closed to a desired extent by the pressure of air from said reservoir, and adapted to be opened farther to admit air to the engine, and a movable plug arranged to permit the opening of said valve or to close the same permanently.

10. In a torpedo, a retarding-valve, means for opening the same when the torpedo passes into the water, and a movable plug arranged to permit the opening of said valve or to close the same permanently.

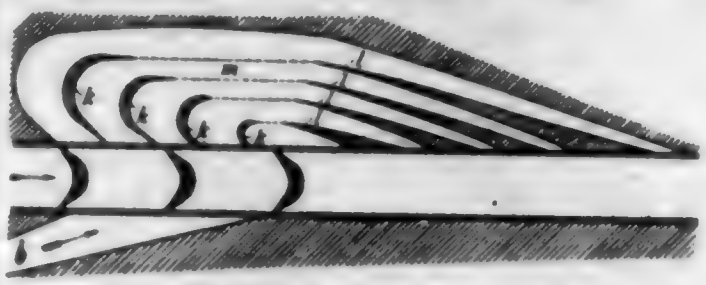
11. In a torpedo, a retarding-valve normally partly open to permit starting the engine slowly, means for opening the same wide when the torpedo passes into the water, and means for holding said valve permanently closed.

12. In a torpedo, in combination with a main valve for controlling a supply of fluid under pressure to the engine, an additional retarding-valve controlled by said fluid for temporarily retarding admission of the motive fluid to the engine.

13. In a torpedo, in combination with a main valve for controlling a supply of fluid under pressure to the engine, an additional retarding-valve, and means for holding said retarding-valve in a throttling position, said means being rendered inoperative to hold the valve and thus permitting it to be released and opened wide when the torpedo enters the water.

14. In a torpedo in combination a valve A, a stop R on the upper end of the stem thereof, and a piston H on the upper end of the stem and loosely engaging the same, and a cylinder E in which said piston moves.

816,030. GUIDING MEANS FOR TURBINES. HUGO LEWIS, Berlin, Germany. Filed Oct. 17, 1903. Serial No. 177,599.



Claim.—1. In a turbine-driven engine, a turbine running-wheel provided with paddles and a guide-canal for receiving pressure medium after it has left said wheel and again directing it against the paddles of the wheel, said guide-canal containing a plurality of catching-blades, and a plurality of inclined blades, the two sets of blades being separated by a space constituting a pressure-accumulating chamber, and the inclined blades being formed to provide discharge-passages which gradually narrow from their receiving ends toward their outlets.

2. In a turbine-engine, turbine running-wheels provided with paddles and a guide-canal for receiving pressure medium after it has left said wheel and again directing it against the paddles of the wheel, said guide-canal containing a plurality of catching-blades and a plurality of inclined blades, the two sets of blades being separated by a space constituting a pressure-accumulating chamber, and the inclined blades being so formed as to provide discharge-passages which have outlets narrower than the body of said passages.

3. In a turbine-engine, a turbine running-wheel provided with paddles and a guide-canal for receiving pressure medium after it has left said wheel and again directing it against the paddles of the wheel, said guide-canal containing a plurality of catching-blades and a plurality of inclined blades, the two sets of blades being separated by a space constituting a pressure-accumulating chamber and the inclined blades being gradually thickened from their receiving ends to their discharge ends.

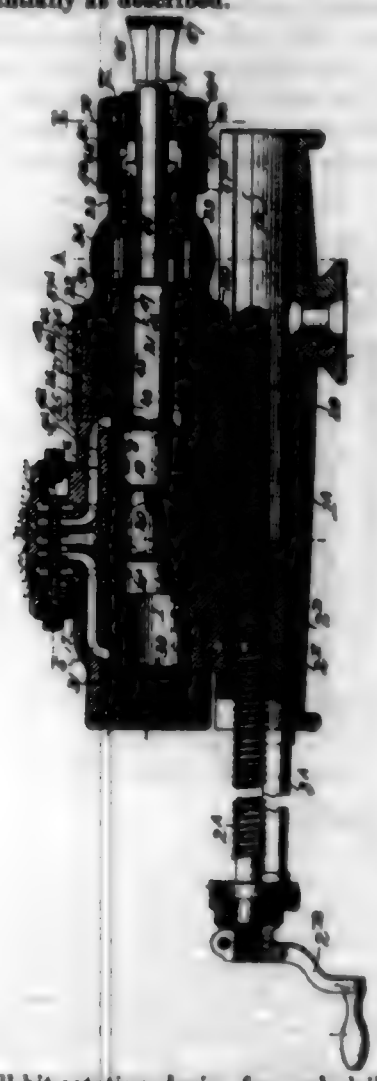
816,021. DRILL-BIT-ROTATING MECHANISM FOR ROCK-DRILLING ENGINES. JOHN G. LEYNER, Denver, Colo. Filed June 22, 1903. Serial No. 162,567.

Claim.—1. In a drill-bit-rotating device for rock-drilling engines, a suitable casing, a piston reciprocating in said casing, an aperture in said piston, a drill-bit-holding chuck rotatably supported in said casing and extending through the aperture in said piston, a circular ratchet-tooth band portion on said drill-chuck, spring-controlled pawls mounted on said piston in operative relation to the ratchet-teeth of said chuck, and means for reciprocating said piston, substantially as described.

2. In a drill-bit-rotating device for rock-drilling engines, a suitable supporting-casing, a piston arranged to reciprocate in said casing and containing an aperture, spring-controlled pawls secured to said piston in said aperture, a drill-bit-holding chuck rotatably mounted in said supporting-casing and extending through the aperture in said piston, ratchet-teeth surrounding the periphery of said drill-holding chuck and positioned thereon in operative relation to said pawls, a rock-cutting drill-bit-receiving aperture in said drill-holding chuck, a drill-bit adapted to fit in said chuck, means for attaching said rock-cutting drill-bit to said chuck and means for reciprocating said piston and pawls to rotate step by step said drill-holding chuck, substantially as described.

3. In a drill-bit-rotating device, the combination of a drill-holding chuck rotatably mounted and arranged and adapted to receive and operatively support and hold a rock-cutting drill-bit to rotate it, a piston provided with an aperture surrounding loosely said chuck, means for reciprocating said piston at right angles to the axis of said chuck, a ratchet-toothed peripheral surface on said chuck, spring-controlled pawls pivotally mounted in said piston and arranged and adapted to bear in operative meshing relation on the ratchet-teeth of said chuck and means for reciprocating said piston and pawls to ro-

tatably move step by step said drill-holding chuck and rock-cutting drill-bit, substantially as described.



4. In a drill-bit-rotating device for rock-drilling engines, the combination of the cylinders, the piston-hammer and the front cylinder-head and the rock-cutting drill-bit, with a drill-holding chuck rotatably mounted in said front cylinder and provided with an axial aperture in which said piston-hammer reciprocates, means for releasably securing said drill-bit in said chuck in striking relation to the reciprocal strokes of said piston-hammer, a circumferential ratchet-toothed peripheral surface on said chuck, a block surrounding said chuck loosely, spring-controlled pawls operatively mounted on said block and arranged and adapted to bear operatively on the ratchet-teeth of said chuck and means for reciprocally moving said block and pawls to rotatably turn said chuck and drill-bit intermittently step by step, substantially as described.

5. In a drill-bit-rotating device for rock-drilling engines, the combination with the cylinder, the valve-chest and valve, the ports in said valve-chest and cylinder, the dill-bit-holding chuck and the rock-cutting drill-bit, of a cylinder arranged transversely across the longitudinal axis of said chuck, a piston in said cylinder arranged to reciprocate therein, suitable ports leading from said piston-hammer's valve-chest and cylinder to the opposite ends of said transversely-arranged cylinder, an aperture in said piston through which said chuck extends, a circumferential row of ratchet-teeth on the peripheral surface of said chuck positioned within the aperture in said piston, and spring-controlled pawls pivotally secured in the aperture in said piston and arranged and adapted to operatively bear on the ratchet-teeth of said chuck, substantially as described.

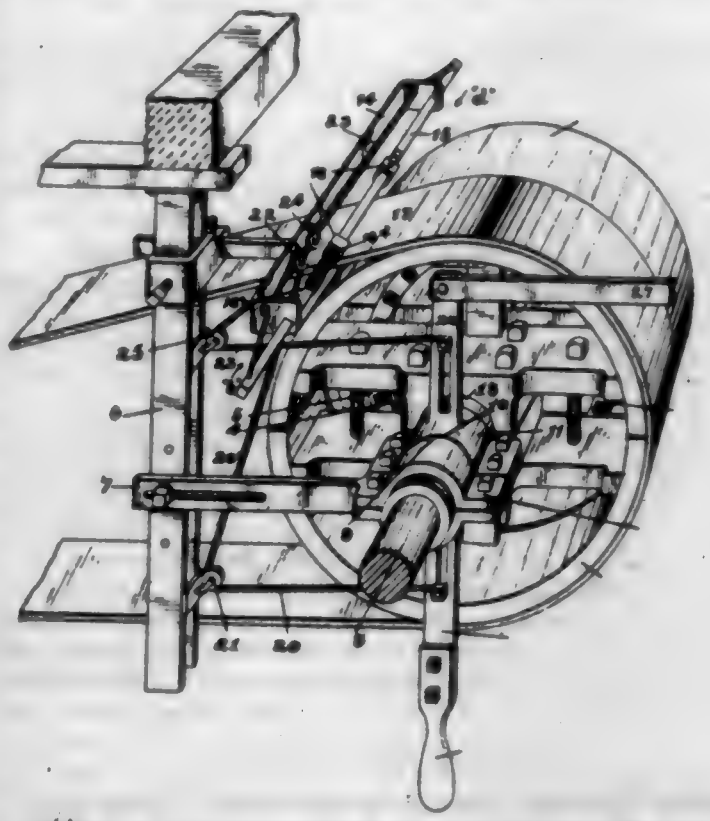
6. In a drill-bit-rotating device for rock-drilling engines, the combination with the cylinder, and the air inlet and exhaust ports, of the front cylinder-head detachably secured to said cylinder, the drill-holding chuck rotatably mounted in said cylinder-head provided with a circular band of ratchet-teeth, the piston arranged to reciprocate at right angles to said chuck and provided with pawls arranged and adapted to engage the ratchet-teeth of said piston and partially rotate said chuck at each stroke of said piston, suitable ports extending from the ports of said cylinder to the opposite ends of said pawl-actuating piston and arranged to operatively reciprocate said piston and said pawls to rotate said chuck step by step, and means for rotatably securing a rock-cutting drill-bit to said chuck within operative striking distance of the reciprocal strokes of said piston-hammer, substantially as described.

7. In a drill-bit-rotating device for rock-drilling engines, the combination with the cylinder, of a drill-holding chuck rotatably mounted in said cylinder-head having a circular row of ratchet-teeth on its periphery, a block or piston surrounding said chuck loosely, spring-controlled pawls pivotally secured in said block or piston in operative relation to said ratchet-teeth of said drill-chuck, means for reciprocating said block or piston and pawls operatively against the ratchet-teeth of said drill-holding chuck to intermittently rotate it and means for operatively securing a rock-cutting drill-bit to said drill-bit-holding sleeve and said front cylinder-head, substantially as described.

8. In a drill-bit-rotating device for rock-drilling engines, the combination with the cylinder and an operative drill-bit-holding chuck, of a circular ratchet-toothed surface on said chuck, a cylindrical chamber surrounding said chuck and its ratchet-tooth surface, a piston surrounding said chuck, means including suitable ports for reciprocating said piston in said cylindrical chamber and spring-controlled pawls pivotally secured to said piston in operative bearing relation to said ratchet-toothed surface of said chuck and arranged and adapted to push against the teeth of said chuck and rotate it step by step at each reciprocal stroke of said piston, substantially as described.

9. In a drill-bit-rotating device for rock-drilling engines, the combination with the front cylinder-head, of the drill-chuck rotatably mounted in said cylinder-head, having a circular row of ratchet-teeth on its periphery, a block having an oblong aperture therein arranged to permit said block, a transverse reciprocal movement on said chuck, circular recesses extending into one side of said block, recesses in the inner peripheral surface of the aperture in said block, a pawl pivotally mounted in each recess and in each peripheral recess in said block and arranged in bearing contact with the ratchet-teeth of said chuck, springs secured at one end to said block and arranged to resiliently bear on said pawls, means for reciprocating said pawls to rotate said chuck intermittently step by step, and means for operatively securing rock-cutting drill-bits in said chuck and front cylinder-head, substantially as described.

816,022. **POWER-TRANSMISSION MEANS.** ARBON J. LINDSAY, Toronto, Canada. Filed Jan. 11, 1905. Serial No. 240,630.



Claim.—1. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft and arranged to be shifted longitudinally thereon to revolve with the live pulley, an operating-lever having a hub revolubly mounted on the line-shaft to engage the hub of the dead pulley and cause it to revolve with the live pulley, and a belt-shifter positioned by the actuation of the operating-lever.

2. A power-transmission means comprising a line-shaft, live and dead pulleys mounted thereon, a shifting-lever to position the dead pulley to revolve with the live pulley, and a belt-shifter comprising a shifting-bar, and a belt-engaging fork composed of a stationary finger immovably connected to the shifting-bar, a movable finger having a hub adjustable on the shifting-bar, an immovable stop on the shifting-bar on the outside of the movable finger, and a tension-spring bearing against the immovable stop and movable fin-

ger to press it toward the edge of the belt and allow it to yield at the commencement of the initial movement of the shifting-bar.

3. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft, and arranged to be shifted longitudinally thereon to revolve with the live pulley, a belt-shifter, and an operating-lever having a hub loosely mounted on the line-shaft normally contacting the hub of the dead pulley to position the dead pulley to revolve with the live pulley and actuate the belt-shifter.

4. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft and arranged to be shifted longitudinally thereon to revolve with the live pulley, a belt-shifter, an operating-lever having a hub loosely mounted on the line-shaft normally contacting the hub of the dead pulley, connecting means for the belt-shifter and operating-lever, a cam forming part of the hub of the operating-lever, a stationary cam loosely encircling the line-shaft to engage the first-mentioned cam and move the hub longitudinally on the line-shaft to position the dead pulley to revolve with the live pulley during the movement of the lever when actuating the belt-shifter.

5. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft and arranged to be shifted longitudinally thereon to revolve with the live pulley, and an operating-lever having a hub, loosely mounted on the line-shaft normally contacting the hub of the dead pulley to position the dead pulley to revolve with the live pulley during the operation of the lever and arms extending radially from the hub, in combination with a belt-shifter comprising a slideway, a shifting-bar movable therein having belt-engaging forks to embrace the opposite sides of the belt and flexible connecting means attached to the ends of the shifting-bar and to the arms of the operating-lever.

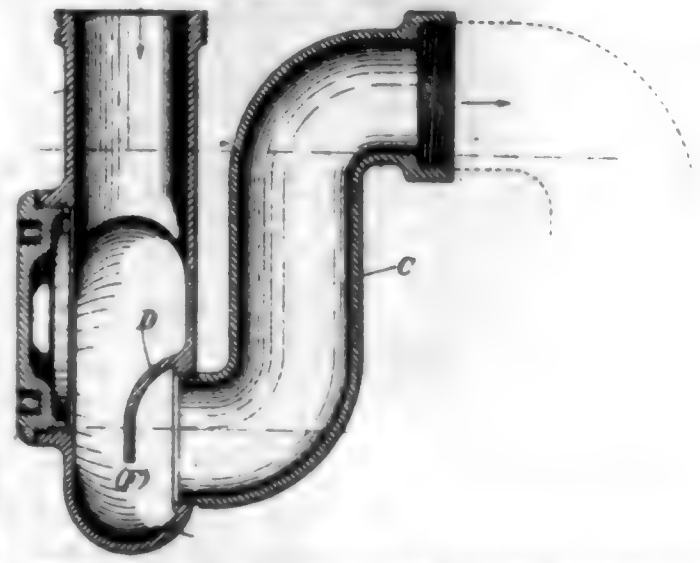
6. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft and arranged to be shifted longitudinally thereon to revolve with the live pulley, and an operating-lever having a hub, loosely mounted on the line-shaft normally contacting the hub of the dead pulley to position the dead pulley to revolve with the live pulley during the operation of the lever and arms extending radially from the hub, in combination with a belt-shifter comprising a slideway, a shifting-bar movable therein having belt-engaging forks to embrace the opposite sides of the belt and flexible connecting means attached to the ends of the shifting-bar and to the arms of the operating-lever one of the fingers of the belt-engaging fork being longitudinally movable upon the shifting-bar, and a pressure-spring to normally hold the finger in engagement with the belt and arranged to allow the finger to yield during the initial movement of the shifting-bar.

7. In a power-transmission means the combination of the line-shaft, a live pulley mounted to revolve with the line-shaft, a dead pulley loosely mounted and longitudinally movable on the line-shaft, a clutch means to cause the dead pulley to revolve in conjunction with the line-shaft and live pulley, a belt-shifting means and an operating means to actuate the belt-shifting means and position the dead pulley to be engaged by the clutch means, consisting of a stationary cam member located beyond the outer face of the dead pulley, and an operating-lever the hub of which is loosely mounted on the shaft constantly engaging the hub of the dead pulley and having a cam member to engage the stationary cam member.

8. In a power-transmission means the combination of the line-shaft, a live pulley mounted to revolve with the line-shaft, a dead pulley loosely mounted and longitudinally movable on the line-shaft, a clutch means to cause the dead pulley to revolve in conjunction with the line-shaft and live pulley, a suitably-supported guide-arm, a shifting-bar longitudinally movable through the guide-arm, idlers, flexible connections passing over the idlers and connected to the shifting-bar, an operating-lever loosely mounted on the shaft having two arms to which are attached the flexible connections and a hub one side of which is normally in contact with the hub of the dead pulley and the other side of which is provided with a cam member and a stationary cam member normally engaging the cam member of the operating-lever.

9. A power-transmission means comprising a line-shaft, a live pulley revoluble therewith, a dead pulley loosely mounted on the line-shaft and arranged to be shifted longitudinally thereon to revolve with the live pulley, an operating-lever having a hub loosely mounted on the line-shaft normally contacting the hub of the dead pulley to position the dead pulley to revolve with the live pulley when the operating-lever is actuated, a cam forming part of the outer end of the hub, a stationary cam opposed to the hub-cam to cause the displacement of the hub to shift the dead pulley on the line-shaft during the actuation of the operating-lever, in combination with the belt-shifter comprising a stationary slideway, a shifting-bar therefor, a belt-engaging fork for the shifting-bar consisting of two fingers one of which is longitudinally movable on the shifting-bar, a spring to maintain the movable finger in its normal position and arranged to yield during the initial movement of the belt-shifter and flexible connections for the shifting-bar and operating-lever.

816,023. **WASTE-TRAP.** WILLIAM H. LLOYD, Chicago, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 8, 1904. Serial No. 197,356.



Claim.—1. In a waste trap, a casing A having an enlarged base portion B, a bent outlet leg and overflow whereby the level of the seal may be formed above the enlargement of the casing, an opening through the casing below the level of the seal, and a partition in the said enlargement near the bottom of the casing whereby a seal may be formed below the opening.

2. In a waste trap, a casing designed with an enlarged base and an outlet pipe connected thereto, and a partition across its mouth, the proportions being such that the capacity of the outlet leg of the trap is greater while its horizontal sectional area is smaller than the water space in the casing at the mouth of the outlet under the partition, whereby siphonage is prevented.

3. In a waste trap, a casing containing an enlarged base and a removable cleaning plug in the side of the same, means whereby a seal may be provided below said plug, and a bent outlet leg whereby a seal may be made above the plug when such plug is in place.

4. In a waste trap a casing having a double return bend and an enlarged body portion and an outlet leg, a removable plug at the side of the casing and below the level at which the seal is formed when the plug is in place and a cross partition near the bottom of the enlargement below the opening of the plug and partially covering the outlet, whereby when the plug is removed a seal may be formed at a level below the plug.

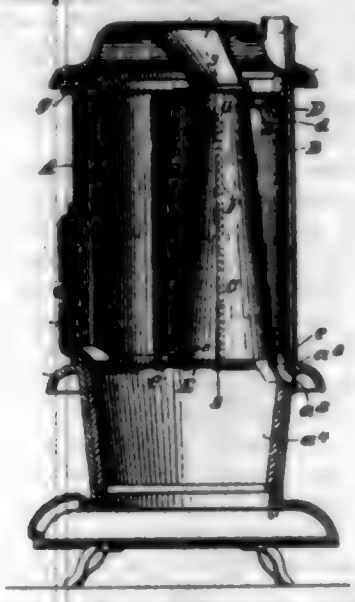
5. A waste trap comprising a casing with a bend and a downward dip and return outlet, a removable plug in the side of the casing below the level at which the seal is formed when the plug is in place, an enlargement at the base of the casing below the plug, and a partition dipping below the plug opening across the enlarged base, the proportions of parts being such that the outlet leg is of greater capacity but of less horizontal sectional area than the casing at the edge of the said partition.

6. In combination, vertical inlet and outlet pipes connected at their lower extremities, the outlet pipe curving horizontally at the upper end, a removable plug near the bottom of the inlet pipe and a depending partition in the passage between the pipes which extends below the lower edge of the plug.

816,024. **MAGAZINE HEATING-STOVE.** ELLSWORTH D. MARSHALL, Sidney, Ohio. Filed Sept. 1, 1905. Serial No. 276,711.

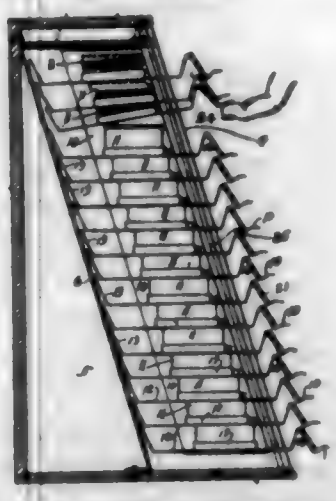
Claim.—1. In combination with a heating-stove, a fuel-magazine supported in the combustion-chamber thereof near the rear wall of the stove, a downdraft air-chamber surrounding said fuel-magazine, partitions extending upward to near the top of the air-chamber so as to divide the air-chamber into a rear and a front section, the lower end of the front section being over the center of the fire-pot, an air-inlet leading into the lower end of the rear section and an air-outlet leading from the lower end of the front section of the air-chamber down into the fire-pot.

2. In combination with a heating-stove provided with a fuel-magazine and means whereby said magazine may be charged from the top, means closing the top of said magazine, an air-chamber surrounding the fuel-magazine substantially its full length and having partitions extending upward to near the top of the air-chamber thereby dividing the air-chamber into a rear and a front section, an air-inlet leading into the lower end of the rear section and an air-outlet leading from the lower end of the front section of the air-chamber down into the fire-pot.



3. In combination with a heating-stove provided with a fuel-magazine in its combustion-chamber, an air-chamber surrounding the fuel-magazine and closed at its top, said air-chamber being located near the rear wall of the stove, partitions extending upward to near the top of the air-chamber, an air-inlet leading into the air-chamber at the rear of the partitions, and a series of air-outlets leading out of the lower end of the air-chamber in front of the partitions.

816,025. ACCOUNT-CABINET. BERT C. MAXWELL, Canton, Ohio. Filed Apr. 3, 1905. Serial No. 253,702.



Claim.—1. An account-cabinet comprising a box having a downward-forward inclined back, flexible hangers removably suspended in the box and a series of trays suspended from the hangers by flexible supports, each tray being horizontally located with its forward end in advance of the one above and the rear ends of the trays normally resting against the inclined back.

2. An account-cabinet comprising a box having a downwardly-forward inclined back, flexible hangers removably suspended in the box and a series of trays suspended from the hangers by flexible supports, each tray being located with its forward end in advance of the one above and the rear ends of the trays normally resting against the inclined back.

3. An account-cabinet comprising a box with flexible hangers removably suspended therein and a series of trays suspended from the hangers by flexible supports.

4. An account-cabinet comprising a box having a downward-forward inclined back, flexible hangers removably suspended in the box and a series of trays attached to the hangers, each tray being horizontally located with its forward end in advance of the one above, and the rear ends of the trays normally resting against the inclined back.

5. An account-cabinet comprising a box having a downward-forward inclined back, flexible hangers removably suspended in the box and a series of trays attached to the hangers, each tray being located with its forward end in advance of the one above, and the rear ends of the trays normally resting against the inclined back.

6. An account-cabinet comprising a suitable casing, a series of superposed trays, each tray having individual collapsible supports attached to its sides, and means within the casing to which said supports may be attached.

7. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports, there being forward extensions on the trays bent upward and then downward in inverted-V-shape form, the apex of one extension being located approximately in the opening of the extension above.

8. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports, there being forward and rear extensions on each tray inclined upward and outward so as to overlap the tray above.

9. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports, the sides and ends of each tray being inclined outward so as to overlap the tray above.

10. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports, there being upward-outward inclined side extensions on the tray to which the supports are attached.

11. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports attached to the middle parts of the sides of the trays.

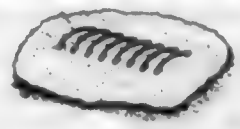
12. In an account-cabinet a series of trays suspended from flexible hangers by flexible supports.

13. In an account-cabinet, a series of trays severally suspended by individual collapsible supports, there being forward extensions on the trays bent upward and then downward in inverted-V-shaped form, the apex of one extension being located approximately in the opening of the extension above.

14. In an account-cabinet, a series of trays attached to flexible supports, there being forward and rear extensions on each tray inclined upward and outward so as to overlap the tray above.

15. In an account-cabinet, a series of trays attached to flexible supports, the sides and ends of each tray being inclined outward so as to overlap the tray above.

816,026. SURGICAL CLIP. ALBERT J. MEIER, Kirkwood, Mo. Filed Mar. 9, 1905. Serial No. 249,300.



Claim.—1. A surgical clip comprising a bar deflected from a line connecting its ends and barbs on said bar near the ends thereof and projecting out of the plane of said bar and at an angle to said plane, both of said barbs projecting upon the same side of said plane.

2. A surgical clip comprising a bar provided with barbs near its ends, said bar being deflected from a line connecting the roots of said barbs, and said barbs being inclined away from the plane of said bar, whereby said bar may lie flat upon the surface to which the clip may be secured by said barbs and the clip may be rocked upon its barbs.

3. A surgical clip comprising a bar deflected from a line connecting its ends and having sloping incisions near its ends, the metal displaced from said incisions being inclined away from said bar and at an angle to the plane of said bar and constituting barbs, the cross-section of said bar being substantially uniform from end to end except where said incisions are located.

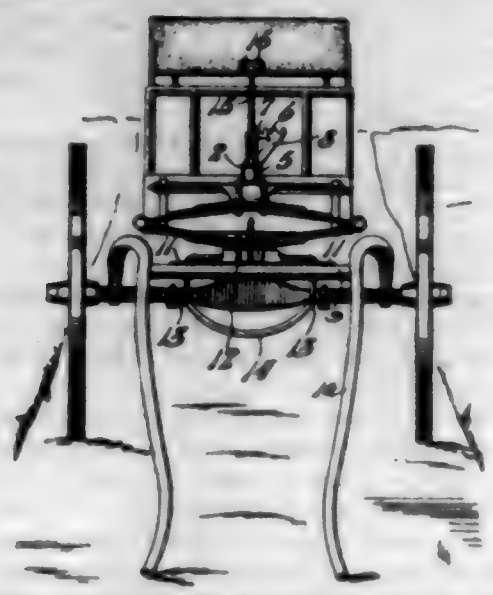
816,027. SHAFT-SUPPORT. CHARLES J. MURPHY, Annapolis, Md. Filed Sept. 2, 1905. Serial No. 276,818.

Claim.—1. A shaft-support comprising a bracket member adapted to be secured to the vehicle-body, and a latch member adapted to engage the bracket member, said latch member having an arcuate latch-bar curved to prevent disconnection from the bracket member in turning the axle of the vehicle.

2. A shaft-support comprising a bracket member adapted to be secured to the vehicle-body, and an arcuate latch-bar adapted for connection to the vehicle-shafts, said bar being of a length to permit its engagement with the bracket when the shafts are at any angle to the vehicle-body.

3. A shaft-support comprising a bracket member adapted to be secured to the vehicle-body, said member being movably mounted relative to the body and formed with a series of teeth projecting at right angles to the body of the member, and an arcuate latch-bar ar-

ranged for pivotal connection with the shafts and adapted to engage either of said teeth.



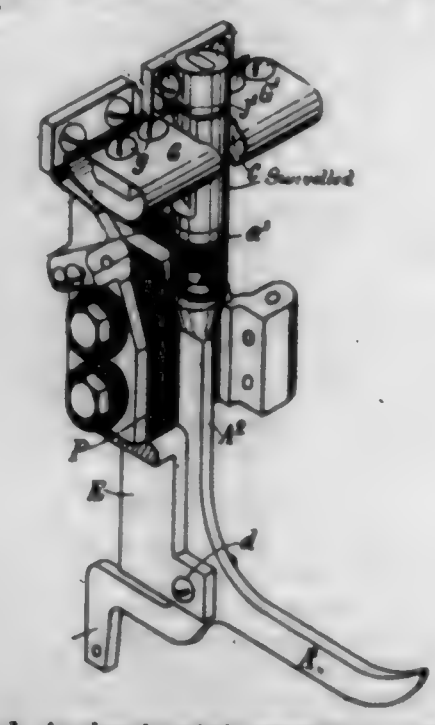
4. A shaft-support comprising a bracket member including a supporting-plate adapted to be secured to a vehicle-body, a post revolubly supported in said plate, an arm projecting forwardly and at right angles to said post, said arm being formed with a series of teeth, and a latch member supported by the shafts and including a curved bar adapted to engage either of said teeth.

5. A shaft-support comprising a bracket member adapted to be secured to the vehicle-body, a latch member supported by the shaft and adapted to engage the bracket member, and a rein-support having threaded connection with the bracket member.

6. A shaft-support comprising a bracket member adapted to be secured to a vehicle-body, and a latch member supported by the shafts and adapted to engage the bracket member, in combination with a rein-support removably connected to the bracket member.

7. A shaft-support comprising a bracket member adapted to be secured to the vehicle-body, a latch member supported by the shaft and adapted to engage the bracket member, and a rein-support having threaded connection with the bracket member, said rein-support comprising a rod formed at its upper free end with a plurality of rein-receiving rings.

816,028. **ELECTRICAL SWITCH.** James F. McElroy, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Apr. 30, 1903. Serial No. 154,924.



Claim.—1. An electric switch comprising a swiveled bar having a pair of spring-contacts the faces of which are adapted to yield in a direction substantially transverse to the plane of oscillation of said bar, a coacting pair of contacts, and means for moving one set of contacts toward and from the other.

2. An electric switch comprising a movable member, a bar swiveled to said member and having spring-contacts on opposite sides of its axis of movement, the axis of said swiveled bar being on a plane transverse to the plane of movement of said movable member, and a coacting pair of spring-contacts, the faces of said contacts being adapted to yield in a direction substantially transverse to the plane of movement of said swiveled bar.

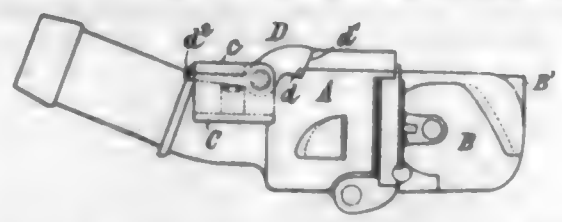
3. An electric switch comprising two pairs of spring-contacts having their contacting faces adapted to slide when making and breaking the circuit, a swiveled bar carrying one pair of said contacts, and means for moving said contacts relatively to each other in a direction substantially in the plane of said sliding faces.

4. An electric switch having two pairs of contacts, the contacts of one pair being insulated from each other and the two contacts of the other pair being electrically connected, a swiveled bar carrying one pair of said contacts and movable toward and from the other pair of contacts in a direction substantially the same as the plane of oscillation of said swiveled bar, and means for moving said swiveled bar in the direction described.

5. In an automatic switch for a train-lighting system, the combination with stationary and movable sets of contacts, of an operating device therefor, said device comprising a pivoted member having its free end movable toward and from the stationary set of contacts, a bar carrying the other set of contacts and pivotally connected with the end of said pivoted member, the axis of movement of said bar being coincident with the longitudinal center of said pivoted member.

6. A movable switch-arm having an equalizing-bar pivoted thereto on an axis substantially transverse to the direction of movement of said arm, a set of spring-contacts on said equalizing-bar, and a second set of contacts coöperating with those on the said equalizing-bar, the said contacts having yielding faces in a plane crossing the plane of movement of the switch-arm and equalizing-bar, whereby said contacts will slide relatively to each other when making and breaking the circuit.

816,029. **HOSE-COUPLING.** James F. McElroy, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed Mar. 22, 1904. Serial No. 199,560.



Claim.—1. The combination with a straight-port hose-coupler having two complementary parts engaging by a hinging motion about a fulcrum at the lower edge of their port faces, and provided with rigid, automatically-disengaging interlocking members off said fulcrum, of an automatically engaging and disengaging pivoted spring-latch supplementary to the interlocking members and so disposed as to exert its main pressure in a direction counter to the uncoupling movement of the parts.

2. The combination with a hose-coupler having two complementary parts connecting by a hinging motion about a fulcrum and having interlocking members, of an additional automatically engaging and disengaging spring-latch on one part coöperating with the other part and so disposed as to act thereon with a substantially unresolved yielding pressure about said fulcrum to hold the interlocking members together.

3. The combination with a hose-coupler having two complementary parts connecting by a hinging motion about a fulcrum, of a forwardly-projecting wing, a locking member adapted to engage with a similar wing on the other coupler part, and an automatically engaging and disengaging spring-latch in the path of the complementary wing exerting a substantially unresolved pressure toward said locking member in a direction tangent to a circle concentric with the fulcrum.

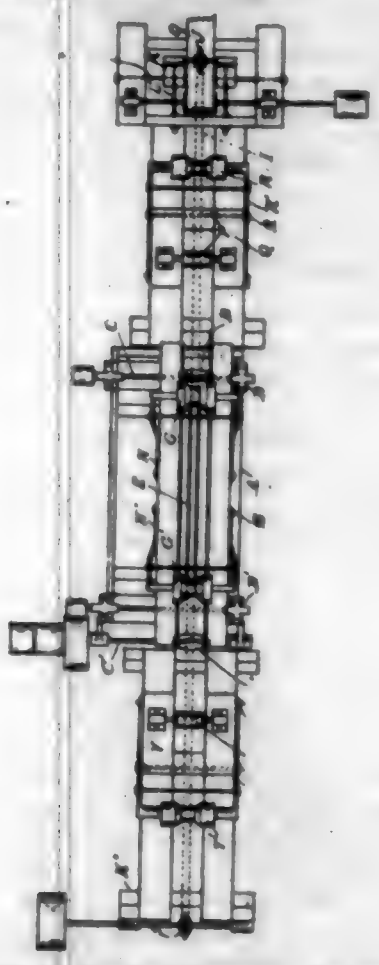
4. The combination with a coupler of the type described, of a spring-latch D mounted in an extension C and provided with an upwardly-acting spring bearing against the tongue d^3 and provided with the retaining-face d and the lifting-face d'.

5. The combination with a coupler of the type described, of a separable latch-carrying extension C provided with clamping parts to embrace and clamp between them a portion of the coupler, and a spring-latch mounted in said extension and adapted to engage the overlapping wing to the complementary part when the two parts are coupled together.

816,030. **MACHINE FOR SHAPING WOOD ARTICLES.** John H. Neville, Bay City, Mich. Filed Mar. 10, 1904. Serial No. 197,541.

Claim.—1. In a machine for shaping cross-arms, the combination of a stationary cutter, a guide-roll upon which the work travels

arranged in advance of the cutter, leaving an unobstructed space between the cutter and roll, a feed device for the cross-arm, and an auxiliary guide-roll arranged in advance of said first-mentioned roll and engaging the upper surface of the cross-arm, the two rolls coöperating together to maintain the cross-arm out of contact with the cutter for a portion of its length, the rolls allowing said cross-arm to automatically drop by reason of said unobstructed space between the cutter and roll into engagement with said cutter when released by the rolls, and means for maintaining the cross-arm in contact with said cutter for the remaining portion of its length.



2. In a machine for shaping cross-arms, the combination of a stationary cutter, a guide-roll upon which the work travels arranged in advance of the cutter, leaving an unobstructed space between the cutter and roll, a feed device for the cross-arm, and an automatically-adjustable auxiliary guide-roll arranged in advance of said first-mentioned roll and engaging the upper surface of the cross-arm, the two rolls coöperating together to maintain the cross-arm out of contact with the cutter for a portion of its length, the said cross-arm being adapted to automatically drop by reason of said unobstructed space between the cutter and roll into engagement with said cutter when released by said rolls, and automatically-adjustable pressure-exerting means for maintaining the arm in contact with said cutter for the remaining portion of its length.

3. In a machine for shaping wood, the combination of a pair of separated cutters, a feed device for the blank, and guides for guiding the blank over the first cutter for a portion of its length, then into operative relation to the cutter, and then raising the blank over the second cutter and feeding it away therefrom.

4. In a machine for shaping wood, spaced stationary cutters, a feed device for the blank, guide-rollers upon which the work travels arranged in advance of the foremost cutter and to the rear of the coöperating cutter, a stationary bearing for the blank arranged intermediate the cutters and thereabove, and oppositely-disposed hinged roller-guides engaging the upper surface of the blank adjacent opposite ends thereof to press the respective ends into contact with the respective cutters, the first-mentioned guide-rollers operating respectively to raise the work out of contact with said cutters whereby a portion of the work is not operated upon by said cutters.

5. In a machine for shaping wood, the combination of a cutter, means for guiding a portion of the work over the cutter and out of contact therewith, including a stationary guide-roller below the work in advance of the cutter and an adjustable grooved guide-roller arranged in advance of the stationary roller and above the same, the respective rollers engaging opposite surfaces of the work and coöperating together to incline the forward portion of the blank upwardly, and a continuous feed for positively moving the work between said roller and past said cutter, including a belt moving above the stationary roller and in the groove of the coöperating roller.

6. In a machine for shaping cross-arms, the combination of a stationary cutter, a guide-roll upon which the work travels arranged in advance of the cutter, leaving an unobstructed space between the cutter and roll, a feed device for the cross-arm, and an auxiliary guide-roll arranged in advance of said first-mentioned roll and engaging the upper surface of the cross-arm, the two rolls coöperating together to maintain the cross-arm out of contact with the cutter for a portion of its length, and allowing the said cross-arm to automatically drop by reason of said unobstructed space between the cutter and roll into engagement with said cutter when released by said rolls, means for maintaining the arm in contact with said cutter for the remaining portion of its length, and a longitudinally-adjustable support for the knife, whereby the length of the cut of the cross-arm may be varied.

7. The combination of a pair of cutters for cross-arms, a feed device for the cross-arms, and separated guides upon the opposite sides of the respective cutters arranged to bring the respective ends of the work into operative relation with the cutters and to lift the work out of operative relation with the cutters.

8. The combination of a cutter, a feed device thereabove for the blank, means for guiding the forward portion of the blank above the cutter, including a roller arranged forwardly of and below the cutter, a hinged roller arranged forwardly of the cutter and above the blank, and a supplemental hinged roller arranged above the cutter, and spaced from said last-mentioned roller, said guide permitting the rear portion of the blank to engage the cutter.

9. In a machine of the character described, the combination of the cutter, the feed device thereabove, for the blank, of the adjustable block Q, below said feed device, the roller P′ thereon, the frame R′ hinged to the block, and the roller R journaled therein, the two rollers constituting guides for the upper and lower surfaces of the blank.

10. In a machine for shaping wood, the combination of a cutter, means for guiding a portion of the work over the cutter and out of contact therewith, including a stationary guide-roller below the work in advance of the cutter and a grooved guide-roller arranged in advance of the stationary roller and above the same, a hinged support for the grooved guide-roller, the respective rollers engaging opposite surfaces of the work and coöperating together to incline the forward portion of the blank upwardly, and a feed-belt moving above the stationary roller and in the groove of the coöperating roller.

11. In a machine for shaping wood, the combination of a cutter, means for guiding a portion of the work over the cutter and out of contact therewith, including a stationary guide-roller below the work in advance of the cutter and a grooved guide-roller arranged in advance of the stationary roller and above the same, a hinged support for the grooved guide-roller, the respective rollers engaging opposite surfaces of the work and coöperating together to incline the forward portion of the blank upwardly, and a continuous feed for positively moving the work between said rollers and past said cutter, including a belt moving above the stationary roller and in the groove of the coöperating roller, and a series of depending grab-hooks thereon.

12. In a machine for shaping wood, the combination of a pair of separated cutters, a feed device for the blank, and guides engaging opposite surfaces of the blank for guiding the ends only of the blank into operative relation to the respective cutters, and for spacing the intermediate portion therefrom, whereby the same is not operated upon.

13. In a machine for shaping wood, the combination of a pair of separated cutters, a feed device for the blank, means for guiding the blank over the first cutter for a portion of its length, including a stationary roller arranged in advance of the cutter and below the same and a coöperating relatively movable roller arranged in advance of said first-mentioned roller and above the blank, the respective rollers engaging opposite surfaces of the blank, and means whereby the blank will then move into operative relation to the cutters and subsequently be raised over the second cutter and fed away therefrom.

14. The combination of a cutter for cross-arms, a device for feeding the cross-arm above said cutter, means whereby the arm may automatically tilt to bring one end only of said arm into operative engagement with the cutter, and means for retaining said end in contact with the cutter, including a hinged guide-roller exerting downward pressure thereon.

15. The combination of a pair of cutters, means for feeding a blank thereabove and past the same, guide-rollers permitting the blank to tilt alternately in opposite directions to bring the respective ends into engagement with the cutters, and for spacing the blank from said cutters whereby its intermediate portion is not operated upon.

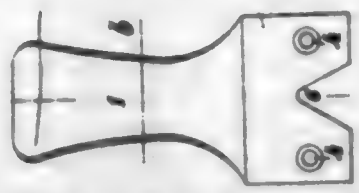
16. The combination of a pair of cutters, means for feeding a blank past the same, means permitting the blank to tilt and bring the respective ends into engagement with the cutters, and rollers for engaging respectively the upper and lower surface of the blank for spacing the blank from said cutters to prevent the intermediate portion thereof from being operated upon by said cutters.

17. In a machine for shaping wood, the combination of a pair of stationarily-journaled cutters, mechanism for feeding the work past the same, and roller-guides engaging opposite surfaces of the work and positioned to bring the end portions thereof into operative relation to the cutters, and to space the work from both cutters, thereby leaving an intermediate uncut portion.

18. In a machine for shaping wood, the combination of cutting instrumentalities, a feed device for the blank, and means for guiding the blank over said cutting instrumentalities and for then moving the opposite ends into contact therewith, leaving an intermediate uncut portion, said means including stationary guides arranged below the cutters and movable guides arranged thereabove.

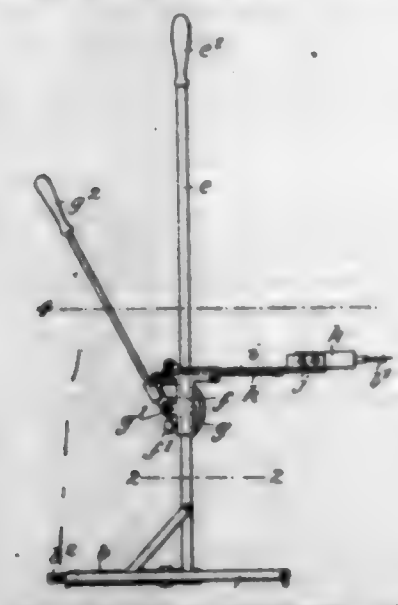
19. In a machine for shaping cross-beams, the combination of a cutter, a bearing for the blank, the space between the cutter and bearing being unobstructed, means for feeding the blank above the cutter and allowing the end portion thereof to automatically drop into said unobstructed space whereby a portion of the blank will be operated upon by said cutter, and a hinged roller exerting downward pressure on the blank when in contact with said cutter.

816,031. **CURVED FLY-REMOVER FOR SPINNING-FRAMES.** ROBERT OBERREISER, Paris, France. Filed Dec. 30, 1903. Serial No. 187,224.



Claim.—In spinning-machines, a board and a wire thread-eye projecting from the vertical edge of said board, in combination with a thread-guide comprising a plate having an upper rectangularly-grooved portion, and a lower supporting portion, the latter portion having a V-shaped notch adapted to straddle the wire thread-eye, and perforations for screws adapted to secure it to the vertical edge of said board.

816,032. **TAPE-STRETCHER.** GEORGE ORTEL, New York, N. Y. Filed Dec. 13, 1905. Serial No. 291,637.



Claim.—1. A tape-stretcher provided with a pivoted sector, a flexible strap connected thereto at its rear end, a rai secured to the strap at its front end and disconnected therefrom at its rear end, and an indicator secured to the rail, substantially as specified.

2. A tape-stretcher provided with a standard, a slide engaging the same, a sector pivoted to the slide, a flexible strap connected to the sector, and an indicator operatively connected to the strap, substantially as specified.

3. A tape-stretcher provided with a standard, a slide engaging the same, a sector pivoted to the slide, a flexible strap connected to the sector, a rail secured to the strap, means on the slide for guiding the rail, and an indicator secured to the rail, substantially as specified.

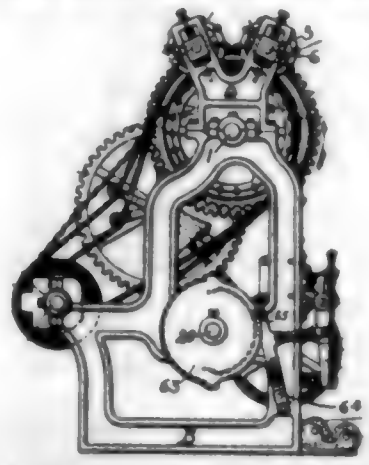
4. A tape-stretcher provided with a base, a standard pivoted thereto, a slide engaging the standard, a sector pivoted to the slide, a flexible strap connected to the sector, and an indicator operatively connected to the strap, substantially as specified.

816,033. **ROSETTE FOR ELECTRIC-LIGHT WIRES.** JOHN H. PARKER, Saugus, Mass. Filed Feb. 20, 1905. Serial No. 246,537.



Claim.—A rosette for electric-light wires comprising a base; an arch with a cord-hole near its middle, the arch extending across the base and forming with the base a continuous archway for the reception and manipulation of the lamp-cords, the archway being of substantially uniform size throughout and having end openings which are larger than the cord-hole and through which the branches extend to their contacts; all arranged to admit of the knotting of the branches of the lamp-cord and of the arrangement in the archway of both lamp-cords with reference to the cord-hole and the arrangement of the branches each with reference to its contact, substantially as described.

816,034. **WIRE-FABRIC-MAKING MACHINE.** WILLIAM N. PARRISH, Richmond, Ind., assignor of one-half to William H. Alford, Richmond, Ind. Filed Feb. 16, 1905. Serial No. 245,902.



Claim.—1. A wire-fence machine containing means for advancing the line-wires vertically upward, means for alternately winding the auxiliary wires diagonally across and around the line-wires, a builddowser and a pair of auxiliary builddowsers meshing therewith, a reel to receive the finished product, and a friction-tension for operating and controlling the reel automatically, all substantially as shown and described.

2. A wire-fence machine containing means for advancing a plurality of line-wires vertically, a series of wire-holding spools for operating around the line-wires, means for automatically controlling the operation of the spools, means for advancing and crimping the product, and means for winding the product in rolls at a justified tension, all substantially as shown and described.

3. A wire-fence machine containing means for weaving wire fence, in combination with the means for advancing and crimping the completed product, and means for winding the completed product, and for justifying the tension of the fence as it is being wound, all substantially as shown and described for the purposes set forth.

4. A wire-fence machine containing means for carrying a plurality of line-wires vertically through weaving means, means for operating the spools around the line-wires as the line-wires are advanced, builddowsers for advancing and crimping the finished product, a reel for receiving the finished product, and means for advancing the reel automatically at a continuously-justified tension, all substantially as shown and described.

5. A wire-fence machine carrying a series of vertically-disposed and upwardly-moving wires, a series of wire-containing spools for weaving cross-wires around and between the line-wires, means for supplying the line-wires to the spools at a proper uniform tension, means for advancing the line-wires and the finished product, and means for winding the finished product in a roll at a uniform automatically-operating tension, all substantially as shown and described.

6. A wire-fence machine comprising in its construction a framework having a horizontal bed-plate, a shaft extending longitudinally through the machine parallel with the bed-plate, a cam carried by said shaft for operating the shifting mechanism, an auxiliary shaft

parallel with the first-named shaft, means carried by the auxiliary shaft for operating the weaving-spools, a main bulldowser over which the fence is carried, a pair of auxiliary bulldowsers meshing with the main bulldowser to receive and crimp the fence therebetween, a reel to receive the fence from the bulldowsers, and the mechanism for automatically applying tension in the operation of the reel, all substantially as shown and described.

7. A wire-fence machine comprising in its construction a framework having a horizontal bed-plate, a shaft extending longitudinally through the machine parallel with the bed-plate, a cam carried on the outer end of said shaft for operating the shifting mechanism, a second shaft mounted in bearings suspended from housings carried by the bed-plate, which second shaft is geared to operate the weaving-spools, means for shifting the spools by the operation of said cam, a main bulldowser over which the fence is carried, a pair of auxiliary bulldowsers meshing with the main bulldowser to receive and crimp the product, a reel to receive the fence from the bulldowser, means for automatically applying tension in the operation of the reel, said reel being made in two parts and removably mounted in bearings of the machine.

8. In a fence-machine comprising a framework to support the moving parts, a bed-plate connecting the end members of the framework, a train of gears mounted on the end of the machine for operating automatically the various devices, a shaft extending through the machine parallel with the bed-plate, a cam mounted on the far end of said shaft, a second shaft parallel with the first shaft, means for revolubly mounting the second shaft, means consisting of a pair of bevel-gears mounted on the second shaft for operating the weaving-spools, a main bulldowser over which the product is carried, a pair of auxiliary bulldowsers meshing with the main bulldowsers to advance and crimp the finished product, a reel to receive the fence from the bulldowsers, means for automatically applying tension in the operation of the reel, means for removing the rolls of fence from the machine, and means for placing the machine in and out of gear, all substantially as shown and described.

9. A wire-fence machine comprising a frame having rigid end members, a bed-plate connecting said members, a series of twisting means mounted on the bed-plate, means for carrying a series of line-wires through the twisting means, a three-part bulldowser for advancing and crimping the product, means for automatically operating said twisting means and the bulldowser, means for winding the finished product at a predetermined tension, and means for carrying the wire through the twisters and for attaching the auxiliary wires to the line-wires, all substantially as shown and described.

10. A wire-fence machine carrying a series of line-wires vertically, a series of wire-containing spools, means for operating the spools around the line-wires whereby their wires are wound around the line-wires, means for shifting the direction of the operation of the spools and for changing them from one to the other of the line-wires, means for advancing the line-wires continuously, means for advancing the finished product, and means for winding the product on a reel by a changing tension, all substantially as shown and described.

11. A wire-fence machine comprising a frame, a shaft mounted in said frame, a main bulldowser mounted on said shaft, a reel upon which the product of the machine is wound, and a friction-drive between the said reel and the bulldowser.

12. In a wire-fence machine, the combination with a weaving mechanism, crimping mechanism and a reel upon which the finished product of the machine is to be wound, of a friction-drive between the crimping mechanism and said reel.

13. In a wire-fence machine, the combination with a main bulldowser, of a pair of auxiliary bulldowsers meshing with said main bulldowser and means for adjusting said auxiliary bulldowsers toward or from said main bulldowser.

14. In a wire-fence machine, the combination with a frame, of a shaft mounted in said frame, a bulldowser carried by said shaft, a gear-wheel mounted upon said shaft, means for imparting movement to said gear-wheel, a reel, and a friction-drive between said reel and said gear-wheel.

15. In a wire-fence machine, the combination with a frame, of a shaft mounted in said frame, a bulldowser carried by said shaft, a gear-wheel mounted on said shaft, means for imparting movement to said gear-wheel, sprocket-wheels frictionally driven by the gear-wheels, a reel, and connections between said sprocket-wheels and said reel.

16. In a wire-fence machine, the combination with a weaving mechanism, a crimping mechanism and a reel, of a gear-wheel secured to the crimping mechanism, a main power-shaft, gearing driven by said main power-shaft, and floating gearing located between said gearing and the gear-wheel of the crimping mechanism.

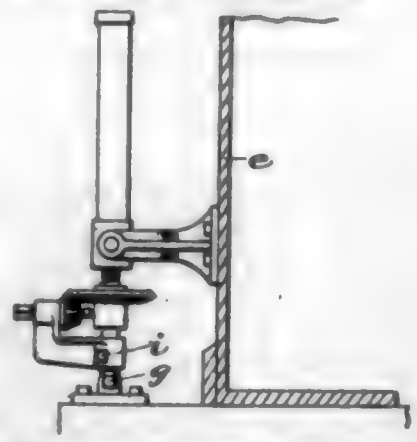
17. A bulldowser for wire-fence machines, comprising a shaft, a plurality of notched disks located upon said shaft, and a plurality of longitudinally-disposed rods or bars which lie in the notches of the disks and are secured to said disks.

18. In a wire-fence machine, the combination with a frame, of a bulldowser mounted therein and a pair of auxiliary bulldowsers mounted in sliding bearing-blocks and meshing with the main bulldowser.

19. In a wire-fence machine, the combination with a frame, of a bed-plate extending longitudinally of the machine, weaving mechanism mounted upon said bed-plate, a bulldowser located above said bed-plate, a pair of auxiliary bulldowsers which mesh with said bulldowser, a reel for receiving the finished product of the machine, and a friction-drive between the bulldowser and said reel.

20. In a wire-fence machine, the combination with a bulldowser-shaft, of a gear-wheel mounted upon said shaft, a web carried by said gear-wheel, an outwardly-extending flange carried by said web, a reel, a pair of sprocket-wheels mounted upon said flange and having frictional engagement with the web of the gear-wheel, and connections between the reel and said sprocket-wheels.

816,035. **WAGON-TIPPING DEVICE.** CHARLES PAY, Providence, R. I. Filed Oct. 12, 1905. Serial No. 282,500.



Claim.—1. In a wagon-tipping device, the combination with a nut pivotally mounted in a suitable bracket of the wagon-body, of a screw-shaft mounted in said nut and having a circular groove formed straight around in its peripheral surface, near one end thereof; a gear made fast on said screw-shaft; a block secured to the wagon-frame, and having two integral ears to extend longitudinally with the same, and each ear provided with a circular opening; a stud mounted in the ear-openings of said block; a crank-shaft; a gear keyed on said crank-shaft and in mesh with first-mentioned gear; a hanger having an ear to surround said stud between the ears of said block, a socket-hub to receive the groove portion of said screw-shaft, and a bored hub to surround said crank-shaft, respectively; and a pin mounted in first-named hub of said hanger and arranged to fit in the groove of said screw-shaft, substantially as set forth.

2. In a wagon-tipping device, the combination of a screw-shaft provided with a circular groove formed straight around in its peripheral surface, near one end thereof; a gear made fast on said screw-shaft; a block having two ears provided each with a circular opening; a stud passing through the openings of said block; a crank-shaft; a gear keyed on said crank-shaft and in mesh with first-mentioned gear; a hanger pivotally mounted on said stud between the ears of said block and having two hubs, one of which hubs has an aperture which forms a socket to receive the groove portion of said screw-shaft, and the other hub bored to receive said crank-shaft, respectively; and a pin passing through first-mentioned hub of said hanger and entering the groove of said screw-shaft, substantially as shown and for the purpose specified.

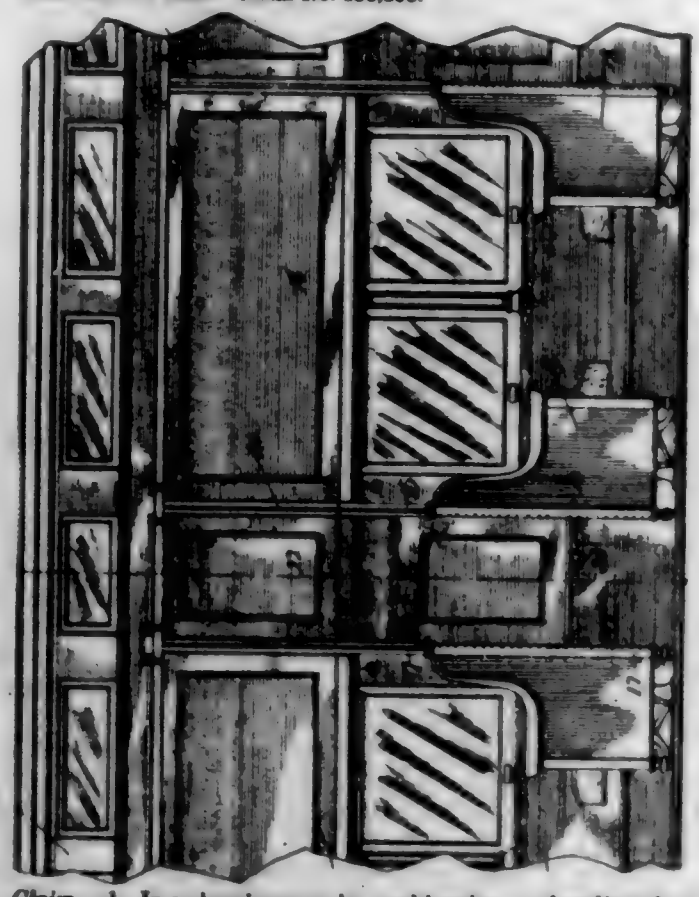
816,036. **DIAPER.** ROBERT H. PETERS, Batavia, and LEONARD A. MASON, Buffalo, N. Y., assignors, by direct and mesne assignments, to Textile Specialty Company, Buffalo, N. Y., a Corporation of New York. Filed Oct. 14, 1903. Serial No. 176,996.

Claim.—1. A woven diaper comprising a body of substantially triangular form having a longitudinal edge and two transverse edges which converge from opposite ends of the longitudinal edge, and a substantially triangular pile surface arranged on the body within a pileless margin, the longitudinal side of the pile surface being parallel with the longitudinal edge of the body while the transverse edges of the pile surface recede concavously from the adjacent oblique edges of the body, substantially as set forth.

2. A woven diaper consisting of a substantially triangular body having one long selvaged edge on one side which is parallel with the warp, a short selvaged edge which is also parallel with the warp and located opposite the long selvaged edge, two short unselvaged transverse edges arranged at opposite ends of the longitudinal edge and at right angles thereto, two long unselvaged transverse edges which converge from the opposite short transverse edges to opposite ends of the short longitudinal selvaged edge, a pileless margin and a substantially triangular pile surface arranged on the body within the pileless margin and having a longitudinal edge which is parallel with the adjacent longitudinal edge of the body and two converging transverse sides which are curved concavously forming comparatively wide pile surfaces on the waist-flaps for producing a large absorbing area on the seat of the diaper and a narrow pile surface on the breech-flap of the diaper for avoiding undue spreading of the legs, substantially as set forth.



816,037. SLEEPING-CAR. HARRY M. PULAGER, Chicago, Ill. Filed Dec. 28, 1903. Serial No. 186,690.



Claim.—1. In a sleeping-car, in combination, a plurality of sections, the permanent end walls of adjacent sections being spaced apart, and an openable wall-cabinet in the upper portion of the interspace and having its front plate or door hinged across its lower edge.

2. In a sleeping-car, in combination, a plurality of sections, adjacent sections being spaced apart, an openable wall-cabinet in the upper portion of the interspace and having its front plate or door hinged across its lower edge, and a folding step secured to the inside of the front plate.

3. In a sleeping-car, in combination, a plurality of sections, adjacent sections being spaced apart, an openable wall-cabinet in the upper portion of the interspace and having its front plate or door hinged across its lower edge, a folding step secured to the inside of the front plate, and a platform crossing the lower portion of the interspace.

4. In a sleeping-car, in combination, a plurality of sections, adjacent sections being spaced apart, an openable wall-cabinet in the upper portion of the interspace and having its front plate or door hinged across its lower edge, a folding step secured to the inside of the front plate, and a folding platform crossing the lower portion of the interspace.

5. In a sleeping-car, in combination, a sleeping-car section having a toilet-compartment at its end and an upper berth hinged to the side of the car, a headboard for separating the lower berth from this compartment, a headboard for closing the entire end of the section remote from the compartment, a downwardly-swinging plate covering the upper portion of the inner wall of the toilet-compartment, a folding step secured to the inner face of the plate, and a folding platform crossing the lower portion of the toilet-compartment.

6. In a sleeping-car, in combination, an upper berth, and a spring roller-curtain journaled within the frame of such berth.

7. In a sleeping-car, in combination, a seat-frame, and a pair of forwardly-swinging links supporting such frame at each end.

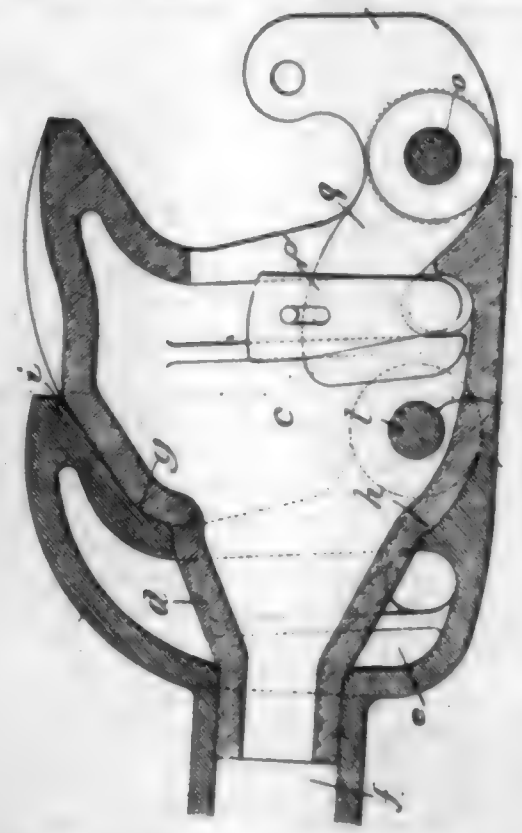
8. In a sleeping-car, in combination, a pair of seats facing each other, each seat being supported at each end upon a pair of links which swing forward and downward.

9. In a sleeping-car, in combination, a seat-frame, forwardly-swinging links supporting such frame, the links being longitudinally movable on their pivots, a fixed bracket having a shoulder, and a detent carried by the seat for engaging such shoulder.

10. In a sleeping-car, in combination, a seat-frame, forwardly-swinging links supporting the frame and being longitudinally slotted to receive their pivots, a fixed bracket having a recess, and a pin carried by one of the links for engaging the recess.

11. In a sleeping-car, in combination, a pair of facing permanent seats, the cushions of which are movable to transform the two seats into a bed, a folding berth immediately over such pair of seats, a platform back of one of the seats, a toilet-table above the platform, and a movable partition for closing the opposite end of the folding berth when the latter is in position for use.

816,038. COUPLING FOR RAILWAY ENGINES AND CARS. EDWARD POSSON, Chicago, Ill. Filed June 2, 1905. Serial No. 263,382.



Claim.—1. In a mechanism of the class described, the combination of a main coupler-head having a socket, a supplementary coupler-head removably secured in the socket, and a coupler-knuckle mounted in the supplementary coupler-head.

2. In a mechanism of the class described, the combination of a main coupler-head having a socket, a supplementary coupler-head having a stem entering the socket and provided with perforations for receiving a knuckle-holding pin, a knuckle provided with a perforation registering with the perforations in such supplementary coupler-head, a pin for holding such knuckle in position, and means for securing the supplementary coupler-head to the main coupler-head.

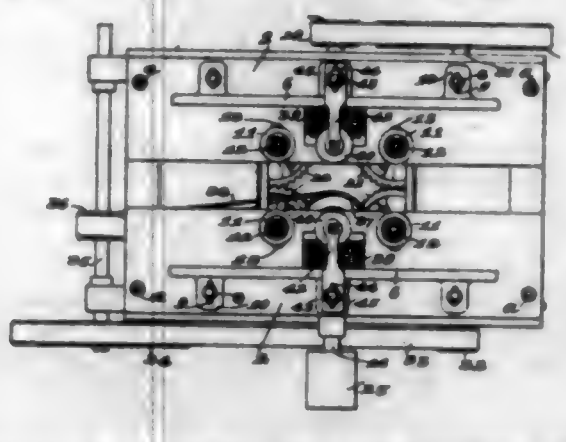
3. In a mechanism of the class described, the combination of a main coupler-head provided with a removable coupler-knuckle and forming a socket for receiving and holding a supplementary coupler-head in operative position, a supplementary coupler-head having its rear portion mounted in the socket formed by the main coupler-head, and means for securing such supplementary coupler-head to the main coupler-head.

4. In a mechanism of the class described, the combination of a supplementary coupler-head provided with perforations for receiving a pin adapted to connect such supplementary coupler-head with a permanent coupler-head, and having perforations for receiving a knuckle-holding pin, a knuckle provided with a perforation for receiving a knuckle-holding pin, and a knuckle-holding pin mounted in the supplementary coupler-head and connecting the coupler-knuckle therewith.

5. In a mechanism of the class described, the combination of a main coupler-head, a supplementary coupler-head removably secured thereto, a coupler-knuckle, and means for securing such coupler-knuckle to the main and supplementary coupler-heads respectively, as desired.

6. In a mechanism of the class described, the combination of a main coupler-head provided with perforations for receiving a pin for holding a coupler-knuckle and a supplementary coupler-head alternately in position in the main coupler-head, a supplementary coupler-head provided with a perforation adapted to register with such perforations in the main coupler-head, and a pin for securing such coupler-knuckle and supplementary coupler-head alternately in position upon the main coupler-head.

816,039. **GANG MATCHING-MACHINE.** GEORGE B. PRENDT, Orange, Mass. Filed July 8, 1902. Serial No. 114,732.



Claim.—1. The combination with a suitable support, and a set of feed-rolls, of a laterally-adjustable gage, an upright secured to the gage, and vertically adjustable with respect thereto, an arm projecting from the upright and laterally adjustable with respect thereto, a yielding support depending from the arm and a rotary member carried by the support.

2. The combination with a suitable support and a set of feed-rolls, of a gage, an upright secured thereto, an arm projecting from the upright and laterally adjustable with respect thereto, a yielding support depending from the arm and a rotary member carried by the support, the lower end of the support being deflected at an angle to its body portion.

3. The combination in a gang matching-machine, with a suitable support, of a cutter, feed-rolls located adjacent thereto, and a gage adjustable with respect to the cutter, a depending adjustable resilient arm carried by the gage, and an inclined rotary member carried by the arm, the rotary member adapted to engage the opposite side of the work from that abutting the gage to force the work against the gage.

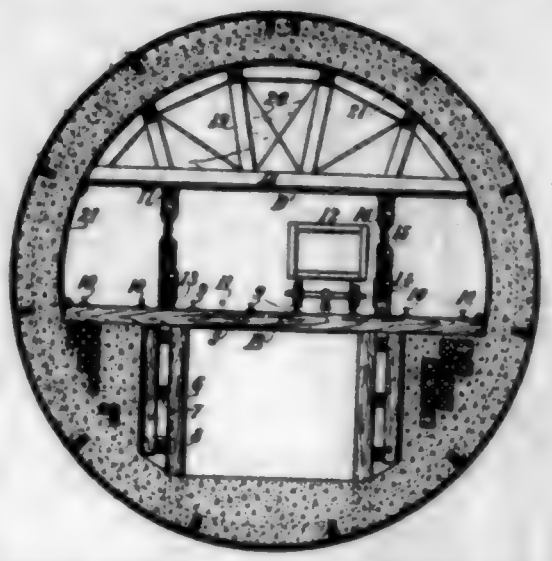
4. In a gang matching-machine, the combination with a table and cutters, of gages adjustable on the table, and depending spring-supported feed-rolls adjustably supported by and above the gage and adapted to guide and feed the work between it and the gage.

5. In a gang matching-machine, the combination with a table, and gages adjustable thereon, of two gangs of cutters in different relative arrangement with respect to their corresponding ends, and means for feeding the work down toward the table.

816,040. **APPARATUS FOR LINING TUNNELS WITH CONCRETE.** JESSE W. RENO, New York, N. Y. Filed Sept. 8, 1904. Serial No. 223,838.

Claim.—1. In tunnel construction, means for carrying on simultaneously the several operations of driving the heading, erecting a tube in the bore, and lining said tube in the rear of the heading progressively as the heading advances, comprising a substantially diametric platform adjustably arranged at the point of lining operations, through-tracks thereover connecting entrance with heading for material-cars, and subsidiary tracks for concreting apparatus interconnecting with said through-tracks.

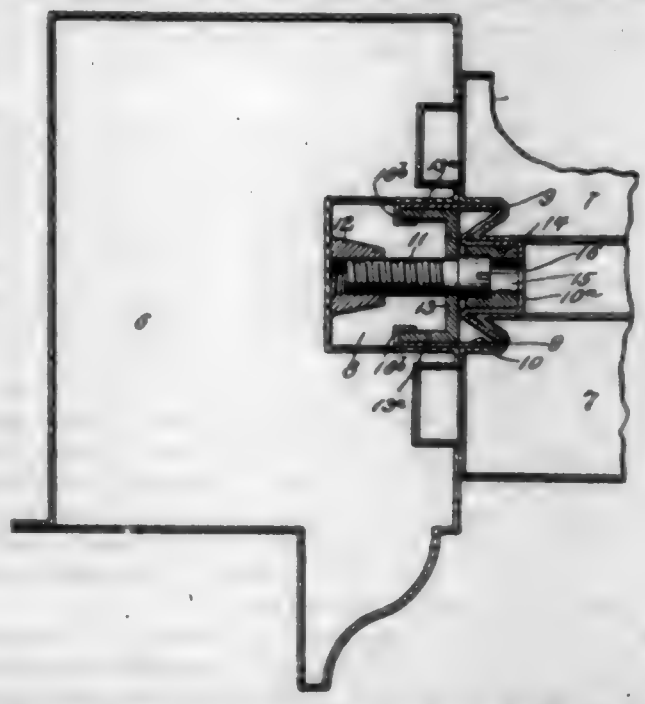
2. In tunnel construction, means for circumferentially and step by step lining the tube with concrete as the heading advances, comprising a temporary platform and approach-bridges adapted to be advanced with the progress of the work, through-tracks from entrance to heading passing over said bridges and platform, and subsidiary tracks upon said platform connecting with said through-tracks.



3. In tunnel construction, in combination with the tunnel-tube, a temporary diametric platform, removable bridges at each end thereof leading from the bottom of the tube to the platform, through-tracks running along the bottom of the tube and over said bridges and platform between entrance and heading, subsidiary parallel tracks on said platform, and switches interconnecting said subsidiary and through tracks.

4. In tunnel construction, in combination with the tunnel-tube, a substantially diametric platform adapted to be longitudinally adjusted therein, a removable bridge leading from each end of said platform to the bottom of the tunnel, main tracks along the bottom of the tunnel and over said bridges and platform, side tracks upon said platform, switches connecting the side tracks with the main tracks and concreting apparatus adjustably arranged on said platform.

816,041. **STOP AND GUIDE FOR METAL WINDOWS.** VERNON ROSS, Kansas City, Mo. Filed July 17, 1905. Serial No. 270,008.

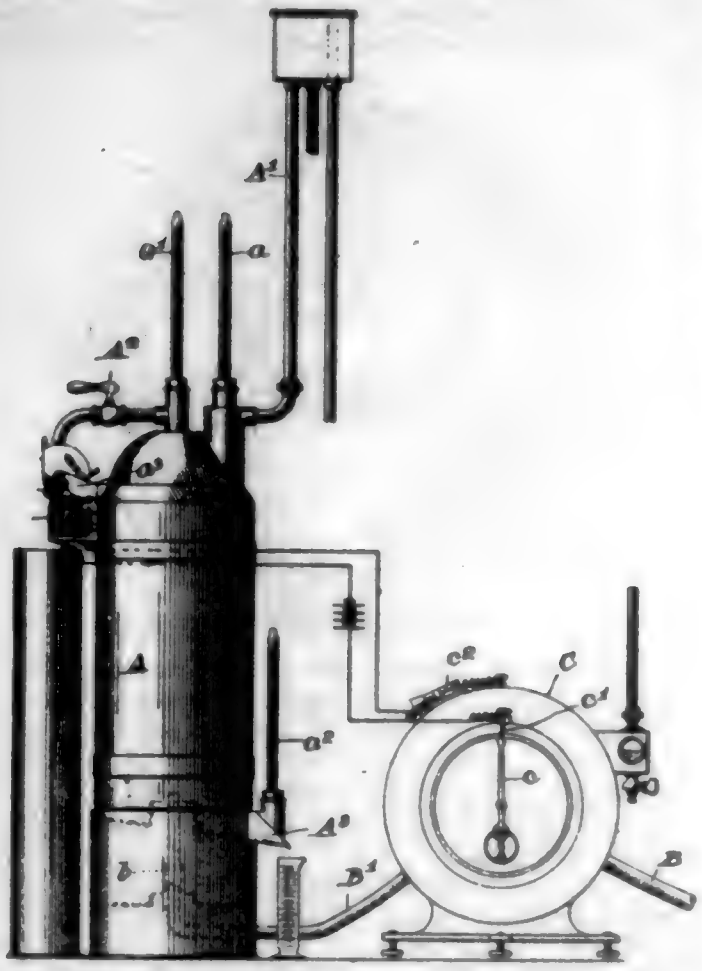


Claim.—The combination with a window-casing having a vertical channel in the side thereof, of sliding sash therein having grooved stiles, a sheet-metal strip bent to form a bead between the sash and ribs fitting in the grooves, and which fits at its sides against the sides of the channel, a screw engaging the casing, and plates fitting within said strip and located respectively under and over the head of the screw, whereby the strip may be adjusted in or out.

816,042. **GAS-CALORIMETER.** CHARLES E. SARGENT, Chicago, Ill. Filed Sept. 8, 1905. Serial No. 277,573.

Claim.—1. The combination with a heater, a fuel-meter and a

source of water-supply connected with the heater, of a device for directing the flow of water to a reservoir and deflecting it therefrom, and means governed by the meter for controlling said device.



2. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a water-receptacle arranged to receive the flow from the heater and means under the control of the meter for directing the flow from said receptacle to a reservoir and deflecting it therefrom.

3. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a water-directing device which can occupy two positions said device being constructed and arranged to direct water in a different direction in each of its positions and means under the control of the meter for determining the position of said water-directing device.

4. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a pivoted water-receiving device which can occupy two positions and which is constructed and arranged to direct water in a different direction in each of its positions and which is constructed and arranged to move from one position to the other under the influence of the water and a stop for holding the receiving device against the influence of the water, and means governed by the meter for withdrawing the stop to permit the receiving device to move.

5. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a pivoted water-deflecting device capable of occupying two positions and constructed and arranged to move under the influence of the water which it contains at any given time, means under the control of the meter for preventing movement of the water-deflecting device except at certain times and a device of retarding the movement of the water from the water-deflecting device after its movement.

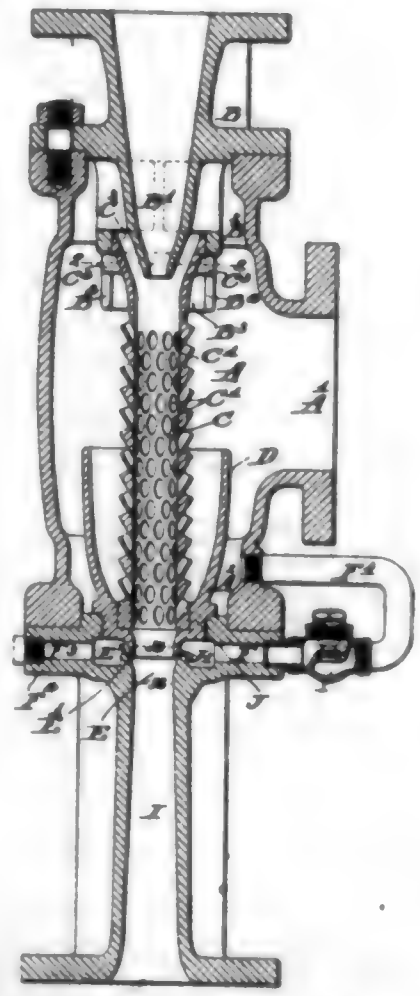
6. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a pivoted water-deflecting device capable of occupying two positions and operating to cause water to flow in a different direction in each position and to be moved from one position to the other under the influence of the water it contains, a stop arranged to prevent movement of the water-deflecting device, an electromagnet arranged to withdraw the stop and an electric circuit including said magnet and controlled by the meter.

7. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a pivoted trough divided into two portions and having a different opening from each portion, said trough being arranged to receive water from the heater in the portion which is uppermost at any given time and a stop controlled by the meter and engaging with the trough.

8. The combination with a heater, a fuel-meter and a source of water-supply connected with the heater, of a trough divided into two portions each of which has a separate opening, said trough being pivoted below its center in position to receive the water from said heater, a stop on said trough, and means of connection between the stop and the meter.

9. The combination, with a heater, a fuel-meter and a source of water-supply connected with a heater, of a trough divided into two portions each of which has a separate opening, said trough being pivoted below its center in position to receive the water from said heater, a stop on said trough, and means of connection between the stop and the meter, and a partial partition in each trough-section arranged to hold a portion of the water in each section after the trough has shifted.

816,043. CONDENSER. LOUIS SCHUTTE, Philadelphia, Pa. Filed Jan. 2, 1903. Serial No. 137,409.



Claim.—1. In an eduction-condenser having a casing, a condenser-tube situated therein and in communication therewith through perforations, a water-jet nozzle directed into the end of the condenser-tube, and a throat, situated at the delivery end of the tube and wherein the jet attains its maximum speed, the combination therewith, of a chamber adapted to collect condensed water in the steam passing to the condenser, an annular or substantially annular water-inlet entering the throat of the condenser, a connection from the water-chamber to said inlet, and an independent water-supply conduit also connecting to said inlet in the throat.

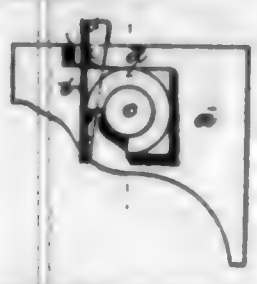
2. In an eduction-condenser having a casing, a condenser-tube situated therein and in communication therewith through perforations, a water-jet nozzle directed into the end of the condenser-tube, and a throat, situated at the delivery end of the tube and wherein the jet attains its maximum speed, the combination therewith of a baffle arranged in the path of the steam entering the casing, a water-collecting chamber, an inlet entering the throat, and a conduit from the water-collecting chamber to said inlet.

3. In an eduction-condenser having a casing, a condenser-tube situated therein and in communication therewith through perforations, a water-jet nozzle directed into the end of the condenser-tube, and a throat, situated at the delivery end of the tube and wherein the jet attains its maximum speed, the combination therewith, of a water-collecting chamber arranged to receive the condensed water in the steam passing to the condenser, a second water-collecting chamber having the form of an annulus surrounding the throat, a conduit or conduits connecting said chambers, and an annular water-jet inlet connecting said second chamber with the throat.

4. In an eduction-condenser having a casing, a condenser-tube situated therein and in communication therewith through perfora-

tions, a water-jet nozzle directed into the end of the condenser-tube, and a throat, situated at the delivery end of the tube and wherein the jet attains its maximum speed, the combination therewith, of a water-collecting chamber arranged to receive the condensed water in the steam passing to the condenser, a second water-collecting chamber having the form of an annulus surrounding the throat, a conduit or conduits connecting said chambers, an annular water-jet inlet connecting said second chamber with the throat, and an independent water-supply conduit whereby water can be supplied to the inlet to supplement or replace the condensed water in the steam.

816,044. NUT-LOCK. JOHN M. SCOTT, Racine, Wis. Filed May 1, 1905. Serial No. 258,256.



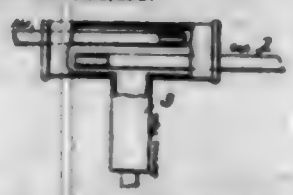
Claim.—1. In a nut-lock the combination of a nut-seat having a bolt-hole and a tapering groove cutting its face at one side of the bolt-hole within the margin of the nut, and a wedge fitted in said groove and having a flange adapted to engage with one side of the nut, the wedge and flange being of the same thickness, substantially a described.

2. In a nut-lock the combination of a nut-seat having a bolt-hole and a tapering groove cutting its face at one side of the bolt-hole within the margin of the nut, and a wedge fitted in said groove and having on one side a longitudinal marginal flange which is adapted to project from said groove beyond the face of the nut-seat into engagement with one side of the nut bearing against said seat and overhanging said groove, said groove and wedge tapering throughout their length and the wedge and its flange being of the same thickness, substantially as described.

3. In a nut-lock the combination of a nut-seat having a tapering groove cutting its face at one side of the bolt-hole within the margin of the nut and a lug projecting therefrom at the back of said groove, and a wedge fitted in said groove and having a longitudinal flange at the back adapted to project outwardly from the face of the nut-seat into engagement with one side of the nut and to bear against said lug when the wedge is inserted in said groove, substantially as described.

4. In a nut and bolt lock the combination of a seat having a groove cutting its face adjacent to the bolt-hole within the margin of the nut, and a wedge fitted in said groove and having a flange on one of its longitudinal sides adapted to project outwardly from the face of the seat into engagement with the nut or bolt-head which extends over said groove and holds the wedge therein, said groove and wedge tapering downwardly from their upper ends and so located in relation to the nut that gravity and the tendency of the nut to unscrew will operate to force the wedge downwardly, substantially as described.

816,045. GAS-MIXER. MARCUS SCOTT, Jacksonville, Fla. Filed Oct. 26, 1905. Serial No. 284,498.

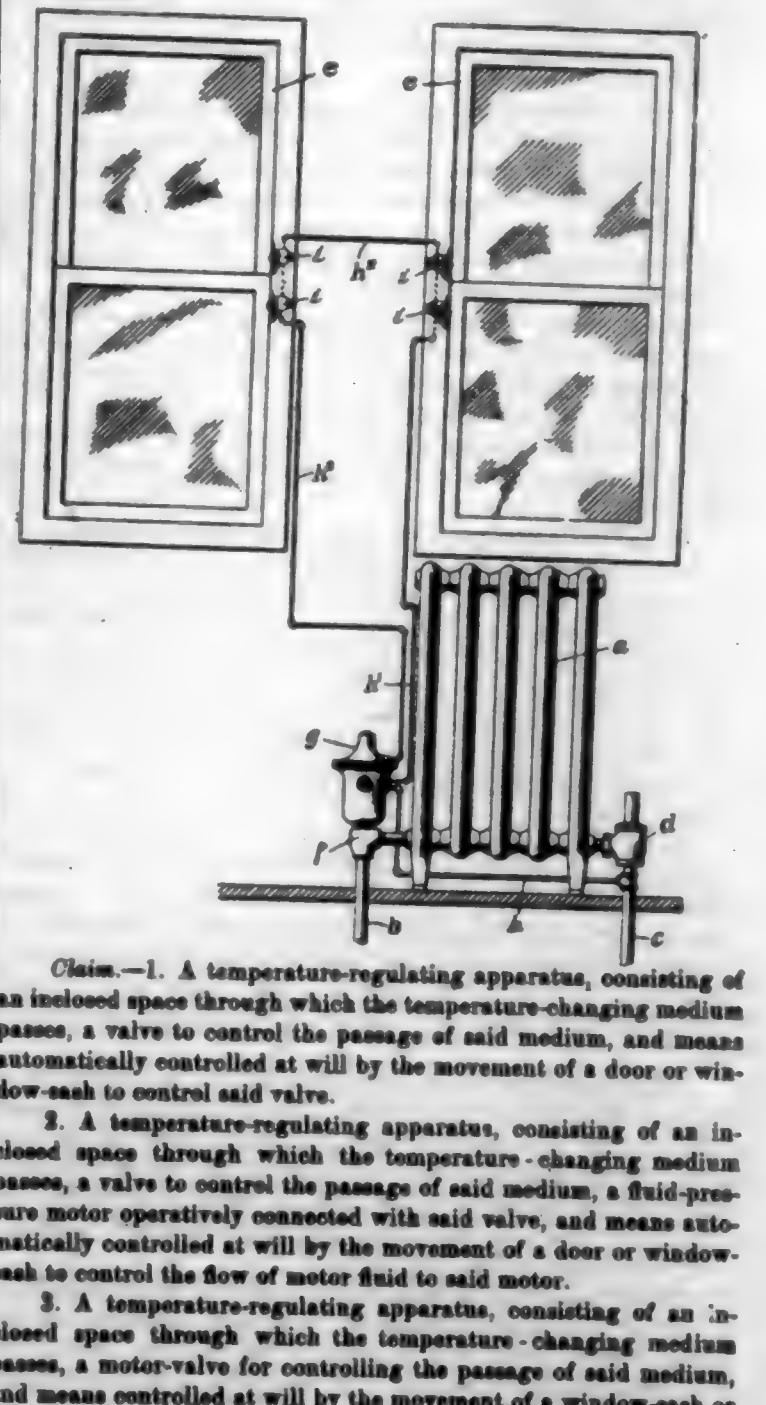


Claim.—1. A mixing-chamber having a branch connected with a source of gas-supply, a branch connected with a source of air-supply, and a branch connected with a service-pipe; said gas and air supply pipes being extended into the mixing-chamber past each other and past the branch connected with the service-pipe; the several supply-pipes and the service-pipe being provided with independent regulating-valves, and the gas-supply pipe and the service-pipe being provided with check-valves intermediate the regulating-valves and the mixing-chamber.

2. A mixing-chamber having a branch connected with a plurality of independent sources of gas-supply, a branch connected with a source of air-supply, and a branch connected with a service-pipe; the gas and air supply pipes being extended into the mixing-chamber past each other and past the inner end of the branch connected with the service-pipe; the sources of gas-supply having independent valves controlling their connection with the mixing-chamber.

3. A mixing-chamber, sources of supply of gas and of atmospheric air connected with said mixing-chamber by means of pipes having regulating-valves, said pipes being extended into the mixing-chamber past each other; a valved service-pipe extending from the mixing-chamber, at a point intermediate the inner ends of the gas and air pipes; a check-valve in the service-pipe intermediate the regulating-valve and the mixing-chamber, and a foraminous diaphragm in the pipe adjacent to the check-valve.

816,046. TEMPERATURE-REGULATING APPARATUS. JOHN A. SERRELL, Bayonne, N. J., assignor to Warren Webster and Company, a Corporation of New Jersey. Filed June 5, 1905. Serial No. 263,773.



Claim.—1. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, and means automatically controlled at will by the movement of a door or window-sash to control said valve.

2. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, and means automatically controlled at will by the movement of a door or window-sash to control the flow of motor fluid to said motor.

3. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a motor-valve for controlling the passage of said medium, and means controlled at will by the movement of a window-sash or door to operate said motor-valve.

4. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, and a valve automatically controlled at will by the movement of a door or window sash, to control the flow of motor fluid to said motor.

5. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, a motor-fluid pipe leading to said moter, and a valve in said motor-fluid pipe automatically controlled at will by the movement of a door or window-sash, to control the flow of motor fluid to said moter.

6. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pres-

sure motor operatively connected with said valve, a motor-fluid pipe leading to said motor, and having a vent, and a valve automatically controlled at will by the movement of a door or window-sash to control said vent and the flow of motor fluid through said pipe to the motor.

7. A temperature-regulating apparatus, consisting of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, a motor-fluid pipe leading to said motor, valves automatically controlled at will by the movement of a sash or door arranged in series in said motor-fluid pipe to control the flow of motor fluid to the motor, whereby said motor and the valve operated thereby will be controlled by the opening of any door or window in the series.

8. A temperature-regulating apparatus, consisting of a radiator, a valve to control the flow of heating medium in said radiator, and valve-actuating devices operatively connected with said valve and automatically controlled at will by the movement of a window-sash or door.

9. In temperature-regulating apparatus, the combination of a radiator, a valve to control the flow of heating medium in said radiator, a fluid-pressure motor operatively connected with said valve, hand-operated devices to close said valve independently of the operation of the fluid-pressure motor, and means automatically controlled at will by the movement of a door or window-sash to control the operation of said fluid-pressure motor.

10. A temperature-regulating apparatus consisting of a radiator, a valve to control the flow of heating medium in said radiator, valve-actuating devices operatively connected with said valve, and automatically controlled at will by the movement of a door or window-sash, and hand-operated devices to close said valve at will independently of the operation of the sash or door controlled valve-actuating devices.

11. In a temperature-regulating device, the combination of a radiator, a valve to control the flow of heating medium in said radiator, a fluid-pressure motor operatively connected with said valve, a motor-fluid pipe leading to said motor, a series of controlling-valves arranged in series in said pipe and each automatically controlled at will by the movement of a door or window-sash to control the flowof motor fluid to the motor, and a restricting-valve in said motor-fluid pipe controlled by the radiator-valve to restrict the passage-way through said motor-fluid pipe when any of said sash-controlled valve is opened.

12. In a temperature-regulating device, the combination of a radiator, having a motor-controlled supply-valve, and an automatically-controlled outlet, a return from said radiator in which a partial vacuum is created, a branch from said return-pipe leading to the motor-controlled supply-valve, and a valve in said branch automatically controlled at will by the movement of a window-sash or door to control the suction through said branch to the motor-controlled supply-valve.

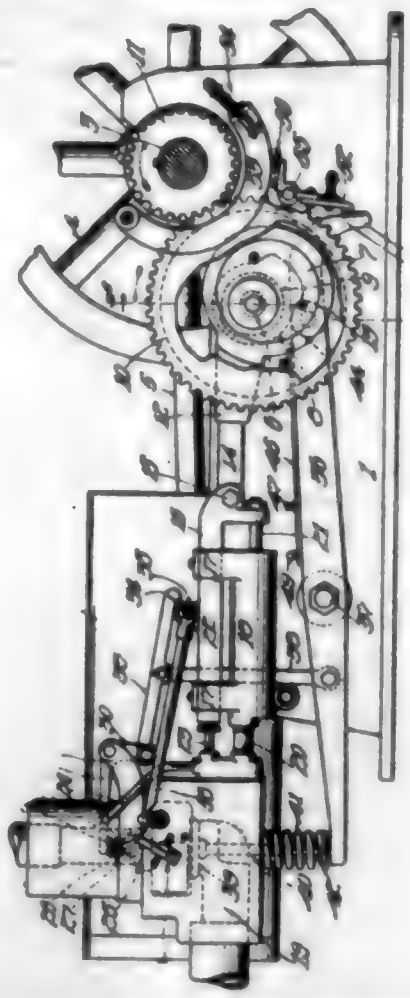
13. In a temperature-regulating apparatus the combination of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, means automatically controlled at will by the movement of a door or window-sash to control said valve, and thermostatic devices controlled by the temperature of the apartment also controlling said valve independently of the means controlled at will.

14. In a temperature-regulating apparatus, the combination of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, means automatically controlled at will by the movement of a door or window-sash to control the flow of motor fluid to said motor, and means controlled by a thermostat within the apartment to control the flow of said motor fluid independently of the means controlled at will.

15. In a temperature-regulating apparatus, the combination of an inclosed space through which the temperature-changing medium passes, a valve to control the passage of said medium, a fluid-pressure motor operatively connected with said valve, and means automatically controlled at will by the movement of a door or window-sash to control the flow of motor fluid to said motor, said motor being provided with a thermostatically-controlled vent controlled by the temperature of the apartment.

816,047. **VALVE MECHANISM FOR GAS-ENGINES.** CASSIUS M. SMITH and SOLON B. WELCOME, Los Angeles, Cal., assignors to Western Iron Works, a Corporation of California. Filed Jan. 12, 1905. Serial No. 240,673.

Claim.—1. In a gas-engine, an inlet-valve, an outlet-valve, a bell-crank lever for operating the inlet-valve, an operating-rod pivoted to the bell-crank lever and having a hook on its end, a slide-head having an eccentric operated by the engine, an eccentric-rod connecting the slide-head and eccentric, a primary cam carried by the eccentric, a pivoted rock-lever operated by the primary cam for actuating the exhaust-valve, a link connecting the rock-lever and said operating-rod, and means operable when starting the engine for automatically tilting the rock-lever intermittently a less degree than obtained by the primary cam.



2. In a gas-engine, an inlet-valve, an outlet-valve, a bell-crank lever for operating the inlet-valve, an operating-rod pivoted to the bell-crank lever and having a hook on its end, a slide-head having means for engaging said hook, an eccentric operated by the engine, an eccentric-rod connecting the slide-head and eccentric, a pivoted rock-lever for actuating the exhaust-valve, a link connecting the rock-lever and the operating-rod, means carried by the eccentric for operating the rock-shaft long and short strokes, alternately when starting the engine, and means for restricting the last means to produce the long stroke solely during normal operation of the engine.

3. In a gas-engine, an inlet-valve, an outlet-valve, a bell-crank lever for operating the inlet-valve, an operating-rod pivoted to the bell-crank lever and having a hook on its end, a slide-head having a boss for engaging said hook, an eccentric-rod connecting the slide-head and eccentric, a rock-lever with operative connection with both the outlet-valve and operating-rod, and means carried by the eccentric for actuating the rock-lever.

4. In a gas-engine, an inlet-valve, an outlet-valve, means for operating the inlet-valve, means for operating the exhaust-valve, a device operated by said last means for intermittently rendering the first means inoperative and manually-controlled means for automatically imparting a secondary movement to the exhaust-valve alternating with its regular movement for relieving the pressure in the cylinder.

816,048. **INVALID-BED.** JOHN W. SUMMERS, Mattoon, Ill. Filed Oct. 6, 1905. Serial No. 281,862.

Claim.—1. A bedstead having a vertically-tiltable bed-bottom pivotally supported at one end, and a swinging hanger carried by the frame of the bedstead and detachably engaging the under side of the bed-bottom to support the same in an elevated position.

2. A bedstead having a vertically-tiltable bed-bottom pivotally supported thereon, a pair of hangers loosely swung from the bedstead with their free upturned ends detachably engaging the under side of the free end of the bed-bottom to support the same, and a cross-bar connecting the hangers.

3. A bedstead having a cross-bar supported by the side rails thereof midway between the ends of the bedstead, bed-bottom sections hinged to the cross-bar, and swinging hangers carried by the respective ends of the bedstead with their lower free portions detachably engaging the bed-bottom sections to normally support the same in elevated positions.



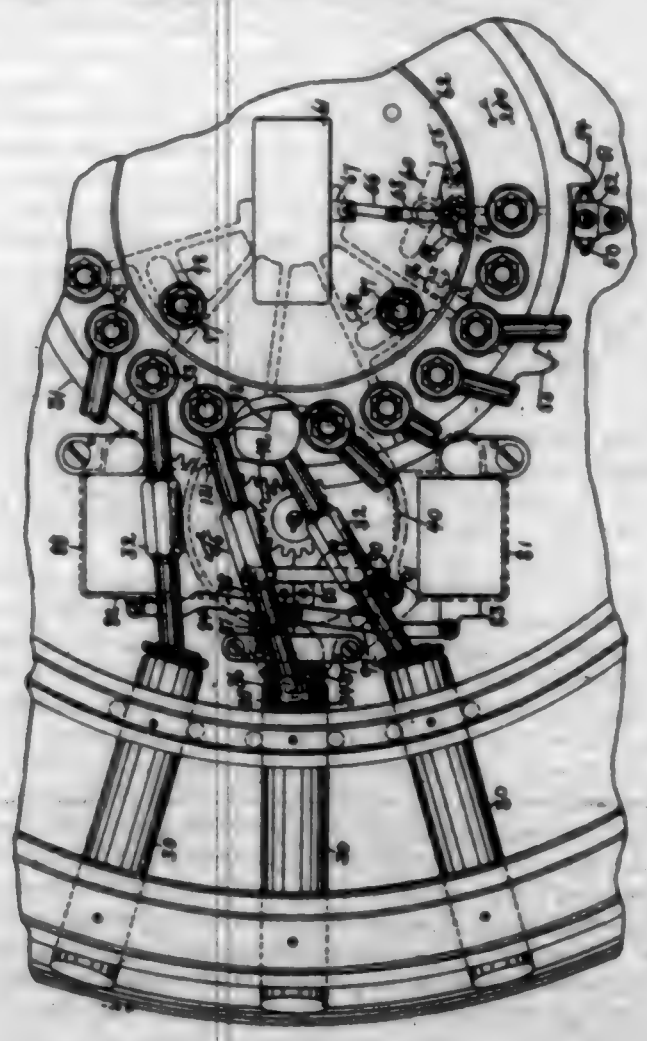
4. A bedstead having an upright terminal frame member capable of being tilted vertically to bring its lower edge across the bedstead, and frame-supporting means carried by the side rails of the bedstead and capable of being shifted into operative and inoperative positions.

5. A bedstead having flanged side rails, an upright terminal frame capable of being tilted to bring its lower edge across the top of the bedstead, and frame-supporting devices carried by the flanges of the rails and capable of being projected inwardly beyond the same for engagement with the frame and of being withdrawn across the flanges into their inoperative positions.

6. A bedstead having an upright terminal frame capable of being tilted to bring its lower edge across the top of the bedstead, pairs of links pivotally supported upon each side rail of the bedstead, and frame-supporting bars pivotally carried by the links.

7. A bedstead having an upright terminal frame capable of being tilted to bring its lower edge across the top of the bedstead, pairs of substantially horizontal links pivotally supported upon the side rails, and bars pivotally supported upon the links, said bars capable of being folded upon the links into operative and inoperative positions and provided with series of shoulders for engagement by the frame when tilted.

816,049. **DOOR-LOCKING MECHANISM.** BENJAMIN F. TRIPP, Medford, Mass. Filed July 10, 1905. Serial No. 268,954.



Claim.—1. The combination with a door, of mechanism for locking said door carried by the same and comprising a sliding bolt, a rod connected to said bolt by a ball-and-socket joint, a rotatable wheel, means for connecting said rod with said wheel, and means to rotate said wheel, substantially as described.

2. The combination with a door, of mechanism for locking said door, carried by the same and comprising a bolt, gears operatively connected with said bolt to move the same, a pawl or dog coöperating with one of said gears to prevent movement of said bolt, combination-locks carried by the door, a bar or link connecting said combination-locks, and means connected to said link or bar substantially at its center and with said pawl or dog to effect engagement and disengagement of said pawl or dog with said gear by movement of said bar by either of said locks, substantially as described.

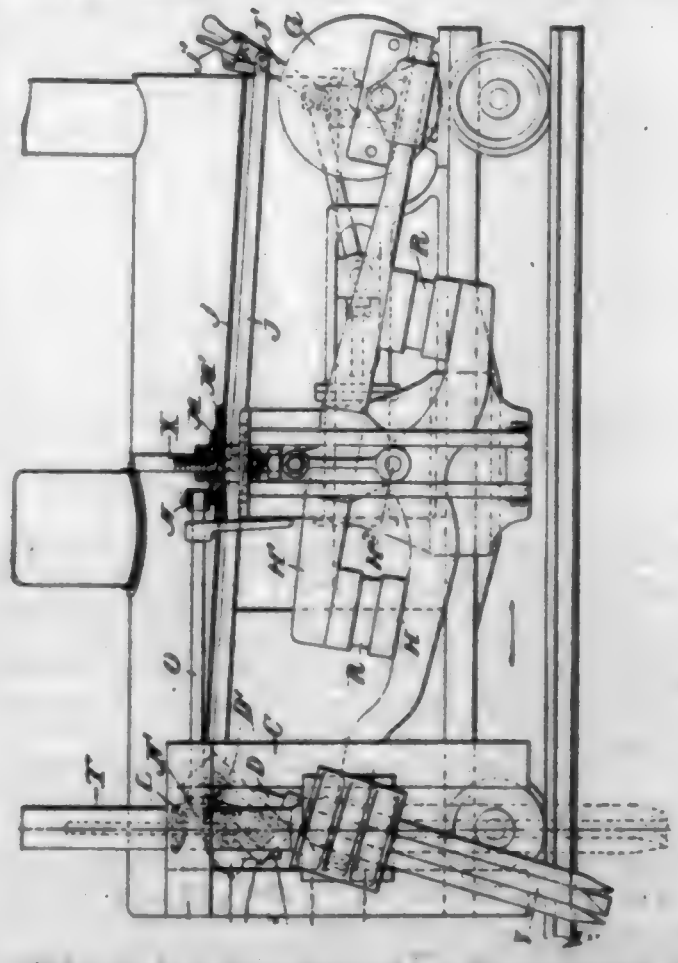
3. The combination with a door, of mechanism for locking said door, carried by the same and comprising a sliding bolt, a wheel operatively connected with said bolt, a time-lock, a stop carried by said wheel, a pawl coöperating with said stop, and a lever positively connected with said pawl and said time-lock, substantially as described.

4. The combination with door provided with a bearing-rib, a bolt extended through and supported by said bearing-rib and provided with a guideway, and means carried by and removable from said bearing-rib and extended into said guideway, substantially as described.

5. The combination with a door, of mechanism for locking said door carried by the same and comprising a sliding bolt, a rod connected to said bolt by a ball-and-socket joint, an oscillating device for said bolt to which said rod is connected to be actuated thereby, and means to move said actuating device, substantially as described.

6. The combination with a door, of mechanism for locking said door carried by the same and comprising a sliding bolt, a wheel operatively connected with said bolt, lugs or ears on said wheel, a stationary post interposed between said lugs, and adjustable stops coöperating with said post and lugs, for the purpose specified.

816,050. **CHANNELING-MACHINE.** LEONARD F. UTER, North Amherst, and ALBERT J. UTER, Elyria, Ohio. Filed May 5, 1904. Serial No. 206,561.



Claim.—1. In a channeling-machine, the combination with guides, and a block reciprocative therein, of cutters carried by and pivotally connected to the block, and means to swing the cutters during the reciprocation of the block.

2. In a channeling-machine, the combination with guides, and a block reciprocative therein, of cutters pivotally connected to the block, and means to swing the cutters to either side of the axis of reciprocation during the strokes thereof.

3. In a channeling-machine, the combination with oscillatory

reciprocative clamp having an arm, and cutters held in the clamp, of a guide angularly arranged with respect to the axis of reciprocation, in which guide the arm is slidable to oscillate the clamp.

4. In a channeling-machine, the combination with an oscillatory reciprocative clamp having an arm, and cutters held in the clamp, of a guide adjustable angularly with respect to the axis of reciprocation, in which guide the arm is slidable, during the reciprocation of the clamp, to oscillate the same.

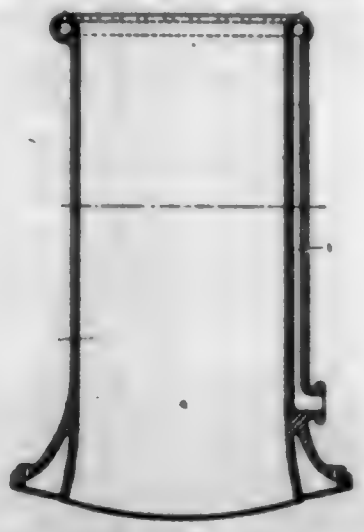
5. In a channeling-machine, the combination with guides, and a block reciprocative therein, of a cutter-clamp pivoted to the block and having a projection, and a guide-block pivoted in line with the axis of reciprocation and capable of being swung at an angle to either side of said axis, the projection having engagement with said guide-block to swing the clamp.

6. In a channeling-machine, the combination with a reciprocative block, a cutter-clamp pivoted thereto, and a lever connected to the block and clamp to reciprocate the same, of a vertically-movable guide-block disposed angularly with respect to the axis of reciprocation and arranged to engage the clamp and turn the same on its pivot, means to raise or lower the fulcrum of the lever, and connections between said means and the guide-block, constructed to raise or lower the latter accordingly.

7. In a channeling-machine, in combination, a reciprocative and pivoted cutter-clamp, a lever connected thereto and having adjustable fulcrum-piece, a bracket having guides, a block slidable in said guides, and carrying a pivoted guide having connection with the clamp and adjustable angularly with respect to the axis of reciprocation, screws connected to said piece and block to raise or lower the same, and gearing between the screws to produce similar movement thereof.

8. In a channeling-machine, in combination, vertical guides, a block reciprocative therein, a cutter-clamp having a trunnion extending through the block, an operating-lever the end of which is connected to the trunnion, and means to turn the clamp on the trunnion during the reciprocation thereof.

816,051. **SMOKE-STACK.** WILLIAM O. WALLACE, Proctorknott, Minn. Filed Nov. 18, 1904. Serial No. 233,262.

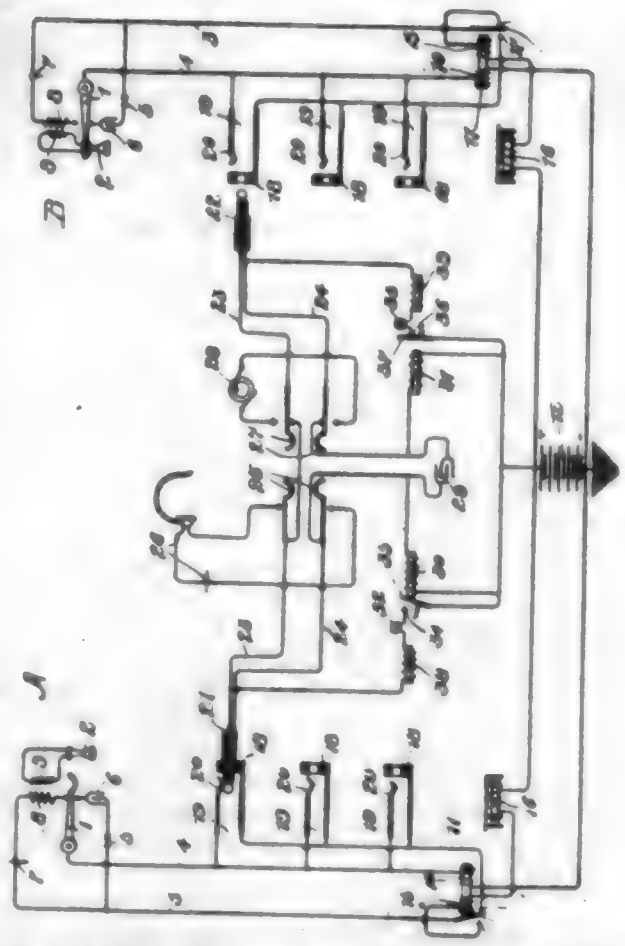


Claim.—1. A locomotive stack provided at its top with a chamber surrounding and lying wholly without the main passage of the stack, and with a vertical passage having an inlet near the base of the stack adapted to receive the exhaust from auxiliary motors and communicating at its upper end with said chamber, said chamber being provided with upwardly directed outlet means extending around its circumference.

2. A locomotive stack provided at its top with a chamber surrounding and lying wholly without the main passage of the stack and with a vertical passage having an inlet near the base of the stack adapted to receive the exhaust from auxiliary motors, and communicating at its upper end with said chamber, such parts being integrally formed, and the chamber being provided with outlet openings directed so that the draft from said chamber will not in any substantial degree augment that from the stack.

816,052. **TELEPHONE-EXCHANGE SYSTEM.** HARRY G. WESTON, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Dec. 3, 1900. Serial No. 132,655.

Claim.—1. In a telephone-exchange system, the combination with a telephone-line extending from a subetation to an exchange, of cord connecting apparatus for connecting said line with another for conversation, a common source of current at the central exchange for supplying talking and signaling current to the cord-circuit and telephone-lines, a circuit extending between one pole of said source of current and one cord-strand and including a supervisory lamp and an impedance-coil, a second circuit extending from the same pole of said source to the other cord-strand and including only the winding of a supervisory relay, connection of said cord-circuit with a telephone-line causing the circuit through said supervisory lamp to be completed, and actuation of substation apparatus upon connection of the cord-circuit with the line causing the circuit through the supervisory relay to be completed and the circuit through the supervisory lamp opened.



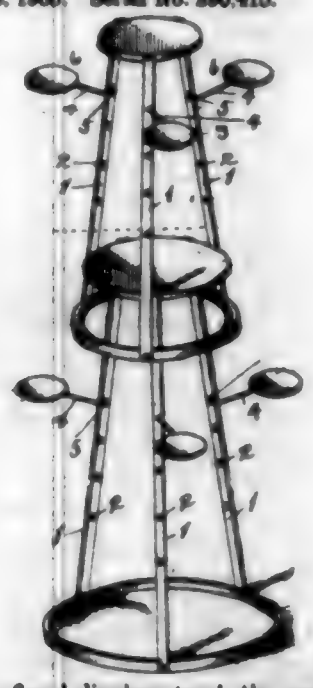
2. In a telephone-exchange system, the combination with a telephone-line extending by its limbs from a substation to an exchange, of cord connecting apparatus for connecting said line with another for conversation, a common source of current at the central exchange for supplying talking and signaling current to the cord-circuit and to the telephone-lines, a line-signal normally included in circuit with a telephone-line and said source of current upon actuation of substation apparatus, a circuit at the central exchange extending from one pole of said source of current to one cord-strand and including a switch, a supervisory lamp and a coil of high impedance, connection of said cord connecting apparatus with the line causing the line-signal to become inactive and causing said circuit to become closed, whereby the supervisory lamp becomes illuminated, and a second circuit at the exchange connected between the same pole of said source and the other cord-strand, said circuit containing only the winding of a supervisory relay controlling said switch, actuation of substation apparatus upon connection of the cord-circuit with the line causing closure of said circuit through said supervisory relay, whereby said switch is actuated to open the supervisory-lamp-containing circuit.

3. In a telephone-exchange system, the combination with a telephone-line extending from a central exchange to a substation, of cord connecting apparatus at the central exchange for connecting telephone-lines together, a common source of current at the exchange for supplying talking and signaling current to the cord-circuit apparatus and to the telephone-line, each line-limb being normally connected with one pole of said source and each including one of the differential windings of a cut-off relay, a line-signal included in one of said line-limbs and normally connected with the line-limb through the armature of said cut-off relay, spring-jacks having one contact permanently connected with one line-limb and another contact normally disconnected from the other line-limb, a circuit extending from one pole of said source to one cord-strand and including a switch, supervisory lamp, and a coil of high impedance, connection of said cord-circuit with a spring-jack causing closure of the super-

visory-lamp circuit and energization of the cut-off relay, whereby the line-signal is removed from circuit and the normally disconnected spring-jack contacts connected with the line-limb, a second circuit extending from the same pole of said source to the other cord-strand, and a supervisory relay in said second circuit and controlling said switch, actuation of substation apparatus upon connection of the cord-circuit with the line causing closure of said second circuit whereby the supervisory relay becomes energized to actuate said switch to open the supervisory lamp-circuit.

4. In a telephone-exchange system, the combination with a telephone-line extending from a substation to the exchange, of a cord-circuit for connecting said line with another for conversation, a common source of current at the exchange for supplying talking and signaling currents to the cord-circuit and telephone-line, a supervisory lamp-circuit extending between one pole of said source and one cord-strand, and a winding of high impedance included in said supervisory circuit, said impedance being included in circuit only when the substation apparatus is inactive but disconnected from any circuit upon actuation of the substation apparatus.

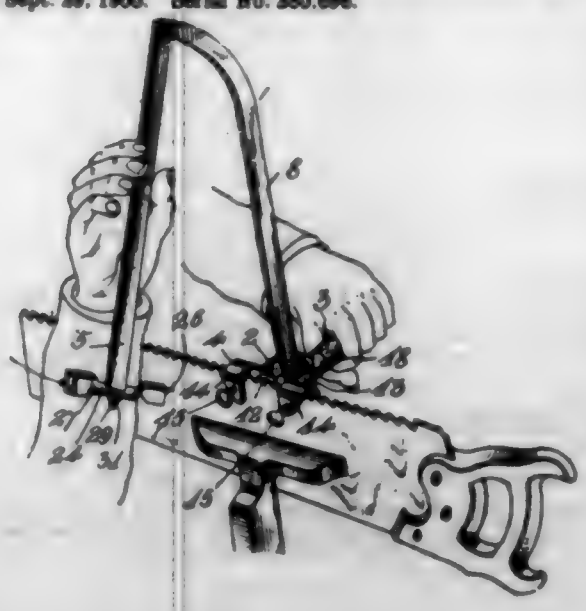
816,053. **FLORAL DISPLAY-STAND.** LOUIS WITTBOLD, Chicago, Ill. Filed Dec. 5, 1905. Serial No. 290,415.



Claim.—1. In a floral display-stand, the combination of a plurality of sections, each section consisting of upright supports fastened to a circular base portion and to a circular top portion of less diameter than the base portion, brackets adapted to be fastened to the supports for the reception of plants, and the sections proportioned so as to telescope within one another, substantially as described.

2. In a floral display-stand, the combination of supports in pyramidal formation, said supports being secured to top and base portions, apertures in said supports adapted to receive brackets, said brackets having at their inner ends curved upturned portions adapted to engage the inner side of said supports and at their outer ends rings for the reception of pots, substantially as described.

816,054. **SAW-SET.** FREDERICK A. WURST, Lawrenceburg, Ind. Filed Sept. 29, 1905. Serial No. 280,696.



Claim.—The herein-described saw-set comprising the anvil block having the shoulder on one side provided with the angularly-disposed faces 11, 12, the arm 8 having its inner end secured to the anvil-block, the guide forming the three-sided casing in which the anvil-block is placed, and having the guide-arms 14 extending from opposite sides of the anvil-shoulders, the set-screws carried by the said arms, the handle having one end opposed to the rear side of the anvil-block, said handle and guide being secured to the anvil-block and said handle being at substantially right angles to the arm 8, and the hammer having its handle pivoted to the outer end of said arm substantially as described.

816,055. **CENTRIFUGAL MELTING DEVICE.** THEODORE J. KOELLER, Nashville, Tenn., assignor to Electric Candy Machine Company, Nashville, Tenn., a Corporation of Tennessee. Filed Oct. 11, 1904. Serial No. 228,071.



Claim.—1. In a centrifugal melting device, the combination with a receptacle, of means for applying heat thereto in a localized zone, substantially as and for the purposes specified.

2. In a centrifugal melting device, the combination with a revoluble receptacle, of means for applying heat thereto in a peripherally-localized zone, substantially as and for the purposes specified.

3. In a centrifugal melting device, the combination with a receptacle, of a retaining-screen, and means for heating said screen, substantially as and for the purposes specified.

4. In a centrifugal melting device, the combination with a receptacle, of a square wire-heater ribbon, substantially as and for the purposes specified.

5. In a centrifugal melting device, the combination with a receptacle comprised of a plurality of members one of which is an interposed perforate member, of means for applying heat to said receptacle in a localized zone, substantially as and for the purposes specified.

6. In a centrifugal melting device, the combination with a receptacle comprised of a plurality of members one of which is an intermediate perforate member, of means for applying heat to said receptacle in a localized zone, and means for heating said perforate member, substantially as and for the purposes specified.

7. In a centrifugal melting device, the combination with a receptacle, of a heater within said receptacle, and an auxiliary heater arranged externally of said receptacle, substantially as and for the purposes specified.

8. In a centrifugal melting device, the combination with a revoluble receptacle, of a retaining heater-screen within said receptacle, and an auxiliary heater arranged externally of said receptacle, substantially as and for the purposes specified.

9. In a centrifugal melting device, the combination with a revoluble receptacle comprised of a plurality of members one of which is an intermediate perforate member, of a heater within said receptacle, and an auxiliary heater arranged externally of said receptacle and adjacent to said perforate member, substantially as and for the purposes specified.

10. In a centrifugal melting device, the combination with a receptacle comprised of upper and lower members separated or spaced with relation to each other, and a retaining heater-screen, substantially as and for the purposes specified.

11. In a centrifugal melting device, the combination with a receptacle comprised of upper and lower members separated or spaced with relation to each other, and a retaining heater-screen interposed between such members adjacent to the peripheries thereof, substantially as and for the purposes specified.

12. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of a primary heater, and an auxiliary heater arranged contiguously thereto, substantially as and for the purposes specified.

13. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of a heater-

screen, and an auxiliary screen adapted to be heated, substantially as and for the purposes specified.

14. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of means for applying heat thereto in a localized zone, and an auxiliary heater-screen, substantially as and for the purposes specified.

15. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of means for applying heat thereto in a localized zone, and a screen adapted to be heated, substantially as and for the purposes specified.

16. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member having an opening therein and an intermediate perforate member, of means for securing said members together, a revoluble shaft or shaft-coupling, means for securing the lower member of said receptacle to said shaft or shaft-coupling, and means for applying heat to said receptacle in a localized zone, substantially as and for the purposes specified.

17. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member and an intermediate perforate member having a lateral flange, of elongated washers engaging the lateral flange of said perforate member, means for securing said elongated washers to said lower member, a revolubie shaft or shaft-coupling secured to said lower member, and means for applying heat to said receptacle in a localized zone, substantially as and for the purposes specified.

18. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member and an intermediate perforate member, of a plurality of collars for securing the said lower member to a shaft or shaft-coupling, a shaft or shaft-coupling having collector-rings insulated therefrom and from each other, and a heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, substantially as and for the purposes specified.

19. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of a heater, and a helical auxiliary heater-screen, substantially as and for the purposes specified.

20. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of a heater, and a helical screen adapted to be heated, substantially as and for the purposes specified.

21. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member and an intermediate perforate member, of a plurality of collars for securing the said lower member to a shaft or shaft-coupling, a shaft or shaft-coupling having collector-rings insulated therefrom and from each other, a heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, and an auxiliary heater electrically connected to said shaft or shaft-coupling and to one of said collector-rings, substantially as and for the purposes specified.

22. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of a heater-ribbon in an electrical circuit, and an auxiliary heater in an electrical circuit, said circuits having a common return, substantially as and for thepurposes specified.

23. In a centrifugal melting device, the combination with a revoluble receptacle, of a retaining-screen, and means whereby said screen may be electrically energized when said receptacle is revolved, substantially as and for the purposes specified.

24. In a centrifugal melting device, the combination with a screen adapted to be heated electrically, of an insulating-housing for said screen, substantially as and for the purposes specified.

25. In a centrifugal melting device, the combination with a revoluble receptacle, a revoluble shaft or shaft-coupling, means for securing said receptacle to said shaft or shaft-coupling, and means for applying heat to said receptacle in a localized zone, substantially as and for the purposes specified.

26. In a centrifugal melting device, the combination with a receptacle, of a shaft or shaft-coupling, a plurality of collars for securing said receptacle to said shaft or shaft-coupling, a plurality of collector-rings carried by said shaft or shaft-coupling and insulated therefrom and from each other, and a heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, substantially as and for the purposes specified.

27. In a centrifugal melting device, the combination with a receptacle, of a shaft or shaft-coupling, a plurality of collars for securing said receptacle to said shaft or shaft-coupling, a plurality of collector-rings carried by said shaft or shaft-coupling and insulated therefrom and from each other, and a square wire retaining-screen heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, substantially as and for the purposes specified.

28. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member and an intermediate perforate member having lateral flanges, of a plurality of collars for securing the said lower member to a shaft or shaft-coupling, a shaft or shaft-coupling having collector-rings insulated therefrom and from each other, a square wire retaining-screen heater electrically connected to said collector-rings, and an auxiliary heater arranged externally of said receptacle and adjacent to said perforate member, substantially as and for the purposes specified.

29. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member having an opening therein and an intermediate perforate member having a lateral flange, of elongated washers engaging the lateral flange of said perforate member, means for securing said elongated washers to said lower member, a plurality of collars for securing the said lower member to a shaft or shaft-coupling, a shaft or shaft-coupling having collector-rings insulated therefrom and from each other, and a heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, substantially as and for the purposes specified.

30. In a centrifugal melting device, the combination with a receptacle comprised of a lower member, an upper member having an opening therein and an intermediate perforate member having a lateral flange, of elongated washers engaging the lateral flange of said perforate member, means for securing said elongated washers to said lower member, a plurality of collars for securing the said lower member to a shaft or shaft-coupling, a shaft or shaft-coupling having collector-rings insulated therefrom and from each other, a heater electrically connected to said collector-rings and adapted to apply heat to said receptacle in a localized zone, and an auxiliary heater-screen arranged externally of said receptacle and adjacent to said perforate member, substantially as and for the purposes specified.

31. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of heating means for the material operated upon, such heating means being adapted to maintain a constant ratio between the amount of material to which heat is supplied and the intensity of such heat, substantially as and for the purposes specified.

32. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of heating means for the material operated upon, such heating means being adapted to maintain a constant ratio between the amount of material to which heat is supplied and the amount of such heat, substantially as and for the purposes specified.

33. In a centrifugal melting device, the combination with means for containing the material to be operated upon, of heating means for the material operated upon, such heating means being adapted to maintain a constant ratio between the amount of material to which heat is supplied and the amount and intensity of such heat, substantially as and for the purposes specified.

34. In a centrifugal melting device, the combination with means for containing the material operated upon, of a plurality of contiguously-arranged heaters adapted to supply heat to the material operated upon and to be maintained at different temperatures, substantially as and for the purposes specified.

35. A device of the character described, comprising a horizontally-rotatable casing having circular, insulating top and bottom sections, an electrically-heated conductor supported between said sections, and a circumferential, perforated, insulating-wall connecting said sections, said wall surrounding said conductor and affording a transverse support therefor, substantially as described.

36. In a device for making spun-sugar candy, a rotary spinner-head comprising spaced plates or disks and a band of wire uniting the peripheries of said plates or disks.

37. A device of the character described, comprising a rotatable vessel having a circumferential discharge-passage, and an electrically-heated band in said passage composed of two contiguously-arranged series of sections, the respective sections of each series extending in parallelism, and each section of one series being connected at each of its ends to the end of a section of the other series, substantially as described.

38. A device of the character described, comprising a rotatable vessel having a circumferential discharge-passage, and an electrically-heated band in said passage composed of two contiguously-arranged series of sections, the sections of each series respectively ex-

tending transversely of the band in parallelism at opposite angles of obliquity, and each section of one series being connected at each of its ends to the end of a section of the other series, substantially as described.

816,056. PROCESS OF CONVERTING INTO FILAMENTS SUBSTANCES LIQUEFIABLE BY HEAT. THEODORE J. SOELLER, Nashville, Tenn., assignor to Electric Candy Machine Company, Nashville, Tenn., a Corporation of Tennessee. Filed Jan. 5, 1905. Serial No. 239,766.



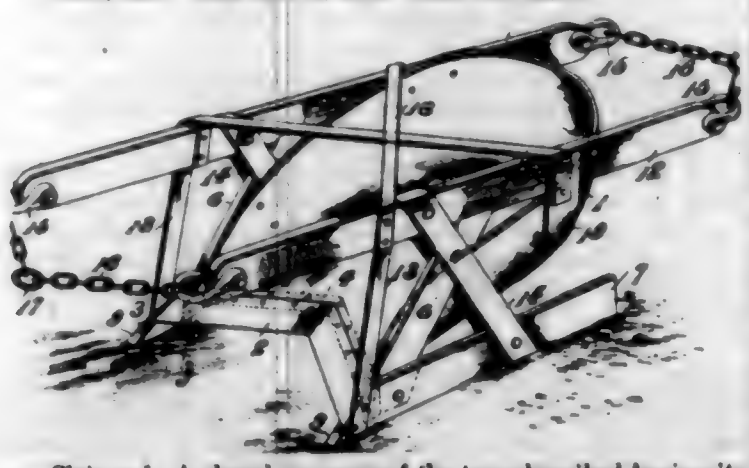
Claim.—1. The process of converting into filaments substances liquefiable by heat, which consists in supplying a substantially equal amount of heat to all increments of the material operated upon and subjecting such heated material to centrifugal force.

2. The process of converting into filaments substances liquefiable by heat, which consists in centrifugally projecting the material operated upon through a heat zone in such manner as to withdraw the material operated upon from the presence of the heat simultaneously with its liquefaction.

3. A step in the process of converting into filaments substances liquefiable by heat, which consists in supplying a substantially equal amount of heat to all increments of the material operated upon.

4. The improvement in the art of making candy, which consists of confining a mass of candy-making material, in rotating said mass and simultaneously heating the outer or peripheral portion thereof to melt the outer parts of the mass of candy-making material, and in permitting the melted portion of the candy-making material to be extruded by centrifugal force.

816,057. EXCAVATOR-SHOVEL. TONY ALEXANDER, Brookhaven, Miss. Filed Mar. 28, 1905. Serial No. 252,563.



Claim.—1. A shovel or scoop of the type described having its front edge indented and approximately of V form, a share of V form having bent terminals and having its rear edge abutting against the front edge of said shovel, a V-brace underlapping the joint formed between the share and shovel and secured to each and forming connecting means and provided with bent terminals, and landside-bars having their front ends secured between the bent terminals of the share and brace.

2. In combination with a shovel or scoop of the type described, companion draft-bars secured to opposite side portions of the shovel and provided at opposite ends with draft devices.

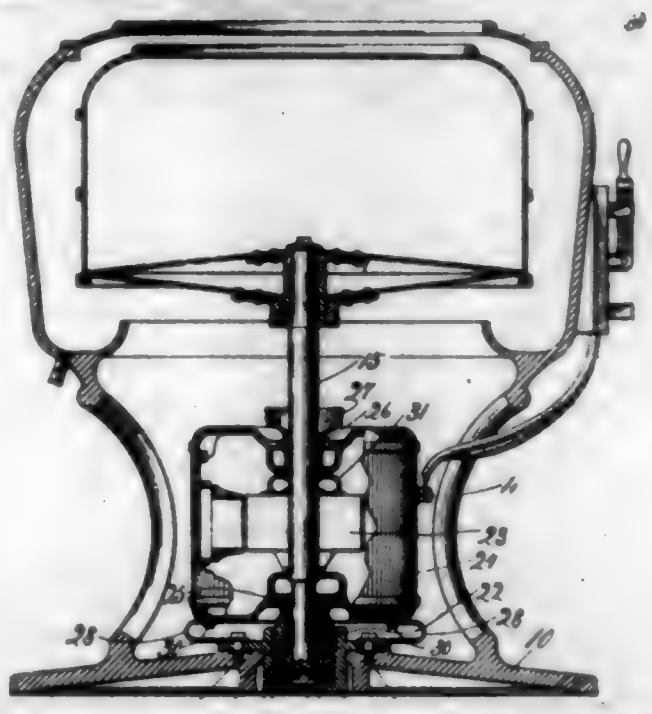
3. In combination, a shovel or scoop of the type described, draft-bars secured to the upper side portions of the shovel and provided at their ends with draft devices, and braces connecting said draft-bars and arranged over the shovel to stay the same.

4. In combination, a shovel or scoop of the type described, draft-bars at opposite sides thereof, landside-bars having their front ends connected with the forward portion of the shovel, and standards between the draft-bars, landside-bars and scoop.

5. In combination, a shovel or scoop of the type described, landside-bars at opposite sides of the shovel and having their front ends beveled to form penetrating points, draft-bars, and connecting means between the draft-bars, landside-bars and shovel.

6. In combination, a shovel or scoop of the type described, draft-bars, landside-bars having their forward ends thickened and beveled to provide penetrating points, standards connecting the draft-bars with the landside-bars and abutting at their lower front edges against the shoulders formed by said thickened parts of the latter.

816,058. CENTRIFUGAL MACHINE. WILLIAM H. ANDERS, Chicago, Ill., assignor to Nelson & Kreuter Company, a Corporation of Illinois. Filed Sept. 18, 1905. Serial No. 278,852.



Claim.—1. A centrifugal machine comprising, in combination, a base, an elastic cushion seated on the base, a journal-box resting on the cushion, a spindle stepped in the box, a motor having its rotatable element secured to the spindle and its fixed element secured to the journal-box, and a receptacle carried by the spindle.

2. A centrifugal machine comprising, in combination, a base, an annular elastic cushion seated on the base, a journal-box having a flange resting on the cushion, a spindle journaled in the box, a motor having its rotatable element secured to the spindle and its fixed element secured to the journal-box, and a receptacle carried by the spindle.

3. A centrifugal machine comprising, in combination, a base, a journal-box mounted in the base, springs supporting the box against lateral oscillation, a spindle stepped in the box an electric motor having its armature fixed to the spindle and its field fixed to the box, and a receptacle carried by the spindle.

4. A centrifugal machine comprising, in combination, a base having a well, a journal-box located in the well and having a radial flange, elastic cushions within the well and engaging opposite faces of the flange, a follower adjustably mounted in the well and bearing the cushions to the bottom thereof, a spindle stepped in the box, an electric motor having its armature and field fixed, one upon the spindle and the other upon the box, and a receptacle carried by the spindle.

5. A centrifugal machine comprising, in combination, a base, a journal-box mounted in the base, springs supporting the box against lateral oscillation, an electric motor having its armature fixed to the spindle and its field fixed to the box, stops engaging the field with the base to prevent the rotation of the former, and a receptacle carried by the spindle.

6. The combination with a frame comprising a base, a standard rising from the base and an annular casing carried by the standard of a journal-box mounted in the base, a spring reacting between the base and the journal-box, a spindle stepped in the box and extending in the casing of the frame, a motor having its rotatable element secured to the spindle and its fixed element secured to the box, and a receptacle mounted on the spindle within the annular frame-casing.

816,059. GAS-TANK. PERCY C. AVERY, Dayton, Ohio. Filed Oct. 17, 1904. Serial No. 228,810.

Claim.—1. An apparatus for storing and delivering gas having in combination a tank, a body of fibrous material filling the tank, a solvent of the gas to be stored with which the fibrous material is saturated, said solvent being supersaturated with the stored gas, the

tank being provided with a comparatively small opening, and a removable closure for said opening, the fibrous material aforesaid being arranged in the form of a strand, substantially as described.



2. An apparatus for storing and delivering gas having in combination a tank, a body of fibrous material filling the tank, a solvent of the gas to be stored with which the fibrous material is saturated, said solvent being supersaturated with the stored gas, the tank being provided with a comparatively small opening, and a closure for said opening, the fibrous material aforesaid being arranged in the form of a strand, one end of which is attached to said closure, substantially as described.

3. In an apparatus for storing and delivering gas, the combination of a tank having a comparatively small opening, a valve device having a threaded portion occupying said opening, a body of fibrous material filling the tank, said fibrous material being arranged in the form of a strand and having one end attached to the valve device and a solvent of the gas to be stored, with which solvent the fibrous material is saturated, said solvent being supersaturated with the stored gas, substantially as described.

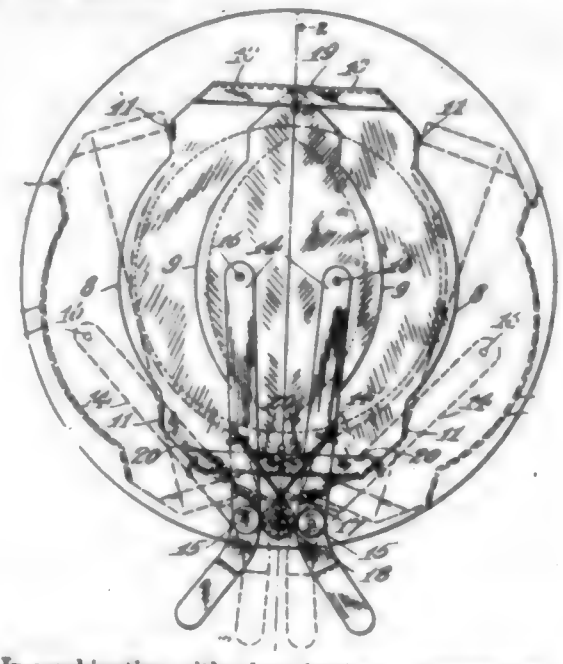
4. In an apparatus for storing and delivering gas the combination of a tank having an opening, an absorbent body filling the tank, a solvent of the gas to be stored with which the absorbent body is saturated, said solvent being supersaturated with the stored gas, a valve device closing said opening, and a perforated tube extending from the valve device into the absorbent body, substantially as described.

5. An apparatus for storing and delivering gas having in combination a tank, having through one of its end walls a comparatively small opening, a removable closure for said opening, a body of fibrous material filling the tank, a solvent of the gas to be stored with which the fibrous material is saturated, said solvent being supersaturated with the stored gas, and the fibrous material being arranged in the form of a strand, substantially as described.

816,060. **FLUE-STOPPER.** GEORGE T. BACON, Grinnell, Iowa, and WILLIAM AAR, Seattle, Wash. Filed Apr. 28, 1904. Serial No. 206,049.

Claim.—1. The combination with a base having a pipe-opening, of a stopper for said opening comprising opposite sections slidable on said base, said sections having their contiguous edges cut away to form an opening to receive a pipe and being formed at their upper and lower portions with grooves, lip-pieces slidable on said sections, said lip-pieces being adapted to close the opening formed in the contiguous edges of said sections and having opposite portions arranged in the grooves of said sections, operating-levers pivoted to the base and to said lip-pieces, and stops secured to said sections on opposite sides of the lip-pieces and being adapted to be engaged by the lip-pieces as said lip-pieces are swung, substantially as and for the purpose specified.

2. In combination with a base having a pipe-opening, a stopper for closing said pipe-opening, said stopper comprising opposite sections movable over the said pipe-opening and having their contiguous edges cut away and opposite lip-pieces slidably mounted on said sections and being movable over the cut-away portions in the inner edges of said sections, means for moving the lip-pieces, and means secured to the sections and being engaged by the lip-pieces during their movement by which the sections are moved over or away from the said pipe-opening.



3. In combination with a base having a pipe-opening, a stopper for closing said opening comprising opposite sections movable thereover, said sections having their inner edges concaved for a portion of their length, lip-pieces slidable on said sections and being adapted to extend over the concaved portions of the inner edges of said sections, means for moving said lip-pieces, and means by which the lip-pieces during their movement move said sections over said pipe-opening or retract the same.

4. In combination with a base having a pipe-opening, a stopper for closing said pipe-opening comprising opposite slidable sections movable over said pipe-opening and having their contiguous portions cut out, and lip-pieces slidably mounted on said sections and being movable over the cut-out portions of said sections, and a means for sliding the lip-pieces, said lip-pieces when moving operating said sections.

5. In combination with a base formed with a pipe-opening, opposite sections having their contiguous portions cut out and movable over said pipe-opening for partly closing the same, lip-pieces slidable on said sections and movable over the cut-out portions thereof for completely closing the pipe-opening, yieldingly-pressed means for moving said lip-pieces, and means coacting with said lip-pieces for effecting the movement of said sections.

6. In combination with a base formed with a pipe-opening, opposite sections slidable on the base so as to be moved over the pipe-opening or clear of the same, lip-pieces slidable on said sections, and yieldingly-pressed means adapted to force said lip-pieces into engagement with a pipe when inserted into the pipe-opening of said base.

7. In combination with a base formed with a pipe-opening, a stopper comprising opposite slidable sections, and opposite slidable lip-pieces slidable on said sections, said sections and lip-pieces being adapted to completely close the said pipe-opening, yieldingly-pressed means for moving the lip-pieces from over the pipe-opening, and means by which the sections are operated by and during movement of the lip-pieces.

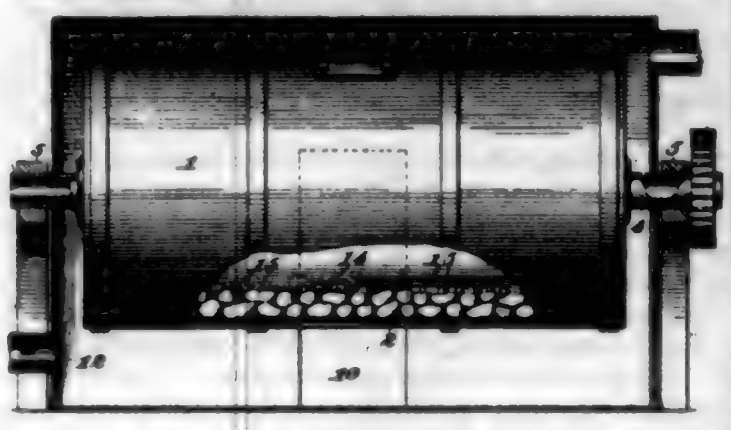
8. In combination with a base formed with a pipe-opening, a pair of levers pivoted intermediate their ends to the base, a stopper for said pipe-opening comprising lip-pieces pivoted on the inner ends of said levers, and opposite sections slidably supported on said lip-pieces, said sections being in slidable engagement with said base, and means by which said lip-pieces slide said sections.

9. In combination with a base formed with a pipe-opening, spring-pressed levers pivoted intermediate their ends to the base, a stopper comprising opposite sections having their contiguous edges cut out, and lip-pieces movable over the cut-out portions of said sections, said lip-pieces being pivotally connected to said levers, and means by which said sections are moved by said lip-pieces, said lip-pieces being movable independently of the said sections for portions of their travel.

10. In combination with a base formed with a pipe-opening, a stopper for said pipe-opening, comprising opposite sections slidable on the base and being movable over the pipe-opening, said sections having their contiguous edges cut out and lip-pieces slidable on said

sections and being movable over the cut-out portions thereof, said lip-pieces being connected to said sections and being movable independently thereof for portions of their travel.

816,061. PROCESS OF TREATING ORES. CHARLES E. BAKER and ARTHUR W. BURWELL, Cleveland, Ohio. Filed June 5, 1905. Serial No. 263,824.



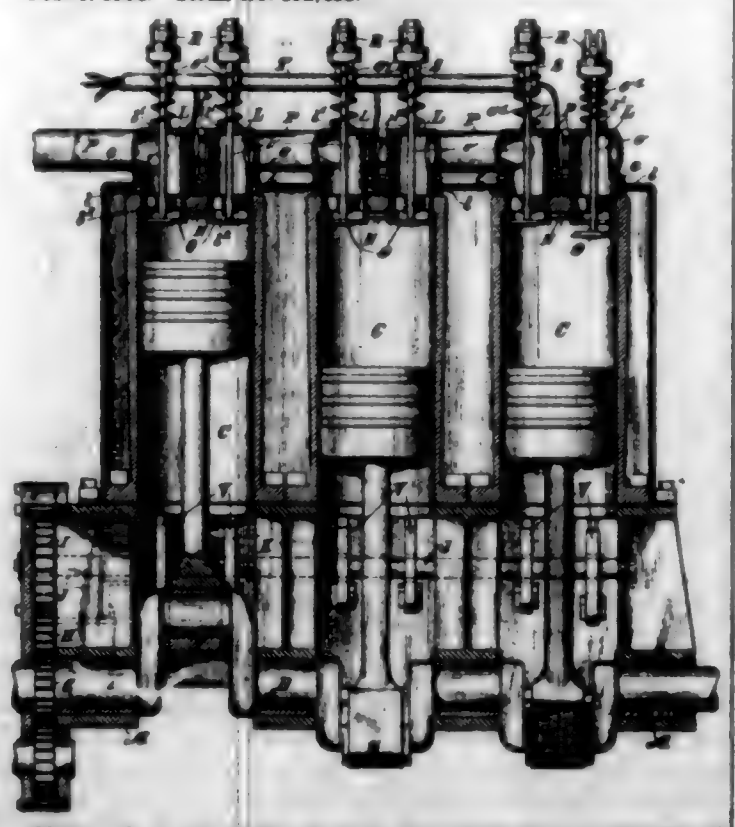
Claim.—1. The process which consists in reacting with chlorin on a pulverulent ore containing a metal or metals and a metalloid, producing the chlorid of the metal or metals of the ore and recovering the metalloid in elemental state, substantially as described.

2. The process which consists in reacting with chlorin on a pulverulent sulfid ore, producing the chlorid of the metal or metals of the ore, and recovering the sulfur in elemental state, substantially as described.

3. The process which consists in reacting with chlorin on an ore containing a metal and a metalloid, and simultaneously abrading the charge to expose fresh reacting surfaces, substantially as described.

4. The process which consists in reacting with chlorin on a sulfid ore and simultaneously abrading the charge to expose fresh reacting surfaces, substantially as described.

816,062. GAS-ENGINE. IRA S. BARNETT, Louisville, Ky. Filed Feb. 6, 1904. Serial No. 192,410.



Claim.—1. A gas-engine having, in combination, a plurality of upright cylinders arranged in alinement above a horizontally-disposed engine-shaft, pistons therein operatively connected to the engine-shaft, inlet and exhaust valves in the cylinder-heads, inlet and exhaust pipes disposed at opposite sides of the series of cylinders and communicating respectively with the inlet and exhaust valves, vertically-disposed rods having means for engaging and opening said valves, a shaft geared to the engine-shaft having a series of cams adapted at proper periods to actuate said valve-rods, electrical circuits having separate terminals in the cylinders for igniting the explosive charges, and a make-and-break device mounted on said cam-shaft connected with and adapted to make and break the several circuits in succession at the proper periods.

2. In a gas-engine, a cylinder having an opening in its head, a valve-casing fitted in said opening having an inner shoulder and an outer binding-nut screwed thereon, a water-jacket surrounding the cylinder seated against said nut and having an opening fitting around said valve-casing, and an outer nut screwed on said valve-casing against said water-jacket securing the parts in place.

3. In a gas-engine, a cylinder having openings in its head for valves, spark-plug, blow-off cock, or the like, valve-casings and fittings for such parts fitted in said openings and secured in place by inner shoulders and outer binding-nuts, a surrounding water-jacket seated against said nuts and having openings inclosing said valve-casings and fittings and other binding-nuts screwed on said valve-casings and fittings against said water-jacket.

4. A gas-engine having, in combination, a suitable bed, a cylinder having an open end secured thereto and an outer closed end or head, a working piston therein, an engine-shaft operatively connected to said piston, inlet and exhaust valves in the cylinder-head, inlet and exhaust pipes rigid with the cylinder-head and communicating with said valves, valve-operating rods arranged longitudinally of the cylinder, bearings therefor in the bed, bearings therefor supported by one of said pipes, tubes inclosing said rods and rigidly connected to said bearings, frames rigid with said rods spring-held against the opposite side of the bed, rollers carried by the far sides of the frames, a shaft passing through said frames geared to the engine-shaft to rotate once to every two rotations of the latter, and cams on said shaft adapted to engage said rollers and thereby move the rods to open the valves at the proper periods.

5. A gas-engine having, in combination, a suitable bed, a cylinder having an open end secured thereto and an outer closed end or head, a working piston therein, an engine-shaft operatively connected to said piston, inlet and exhaust valves in the cylinder-head, inlet and exhaust pipes rigid with the cylinder-head and communicating with said valves, valve-operating rods arranged longitudinally of the cylinder, bearings therefor in the bed, bearings therefor supported by one of said pipes, tubes inclosing said rods and rigidly connected to said bearings, and means for moving said rods to open said valves at the proper periods.

6. A gas-engine having, in combination, an engine-bed, a plurality of upright cylinders mounted thereon having upper closed heads, working pistons therein, an engine-shaft operatively connected with said pistons, inlet and exhaust valves in the cylinder-heads, inlet and exhaust pipes arranged at opposite sides of the cylinder having branches communicating with the inlet and exhaust valves respectively and rigidly secured to the casings thereof, a series of vertically-movable valve-operating rods, upper bearings therefor supported by one of said pipes, lower bearings therefor in the engine-bed, tubes inclosing the pipes and rigidly connecting said bearings, and a shaft geared to the engine-shaft and properly timed having a series of cams thereon for operating said valve-rods.

7. A gas-engine having, in combination, a bed having bearings for a horizontally-disposed shaft, an upright cylinder rising therefrom having its working piston connected to said shaft, inlet and exhaust valves in the upper cylinder-head, vertical valve-operating rods, a counter-shaft also journaled in bearings in said bed geared to the engine-shaft and having means for controlling said rods, an electrical igniting-circuit, a make-and-break device therefor mounted on said shaft, and a water-tight compartment in said bed in which said make-and-break device is housed.

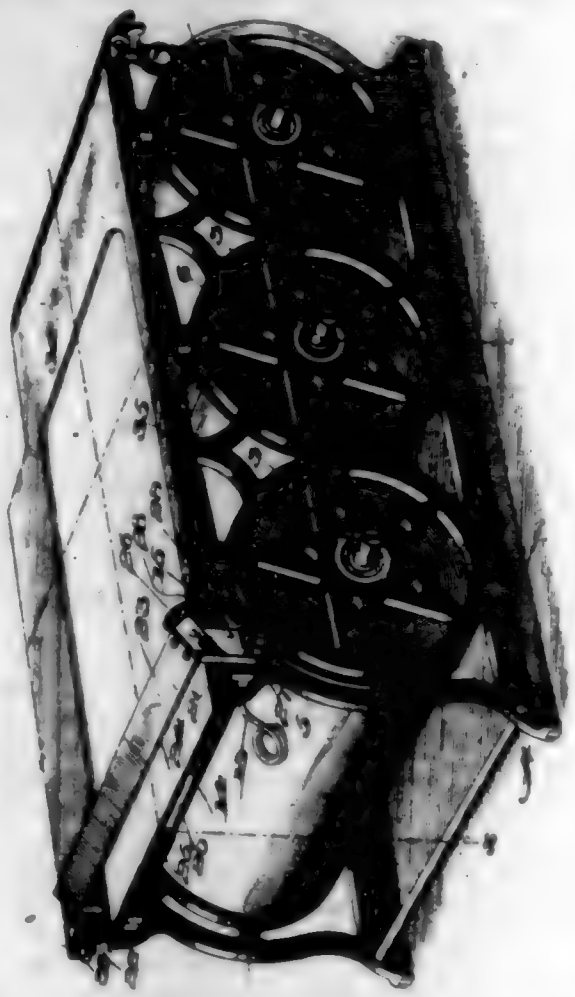
816,063. MANIFOLDING APPARATUS. JAMES BENGOUGH, JOHN A. TANSLEY, and WILLIAM J. RENDELL, Niagara Falls, N. Y., assignors to The Carter-Crume Company, Limited, Niagara Falls, N. Y., a Corporation of Canada. Filed July 14, 1904. Serial No. 216,490.

Claim.—1. In manifolding apparatus, in combination, means adapted to supply a continuous sheet of paper, spring-pressed means adapted to grip said paper, a tearing-bar movably positioned with reference to said paper, and engaging means between said tearing-bar and said spring-pressed means comprising means for interlocking and releasing the same without bringing the tearing-bar into operative position.

2. In manifolding apparatus, in combination, means adapted to supply a plurality of continuous sheets of paper, spring-pressed means adapted to grip said paper, a tearing-bar movable with reference to said paper, locking means upon said spring-pressed means, and coacting locking means upon said tearing-bar adapted to engage and interlock with said first locking means.

3. In manifolding apparatus, in combination, means adapted to supply a plurality of continuous sheets of paper, a spring-pressed

member adapted normally to engage and compress said paper, a pair of arms pivotally mounted with reference to said paper, a tearing-bar mounted upon said arms, means connected with said spring-pressed member, and coacting means upon one of said arms adapted to engage and interlock therewith.



4. In manifolding apparatus, in combination, means adapted to supply paper, a member having a tearing edge normally spring-pressed into inoperative position and adapted to be moved into an operative position with reference to said paper, and a spring-pressed member adapted normally to engage and compress said paper, said members being provided with means adapted to hold said last-mentioned member in inoperative position out of contact with said paper.

5. In manifolding apparatus, in combination, means adapted to supply a continuous sheet of a transferring medium, means adapted to supply a plurality of continuous sheets of paper in operative relation to said transferring medium, a member having a tearing edge operatively positioned with respect to said transferring medium upon the side of said paper opposite said first-mentioned supplying means, a member having a tearing edge normally spring-pressed into inoperative position and adapted to be moved into operative position with reference to said paper upon the side of said transferring medium opposite said second-mentioned supplying means, and a spring-pressed member adapted normally to engage and compress said paper, said two last-mentioned members being provided with a catch adapted to hold said spring-pressed member in inoperative position out of contact with said paper.

6. In combination, means adapted to support a sheet of paper, a member provided with a tearing edge mounted adjacent said sheet of paper and normally spring-pressed into inoperative position, and a member adapted to engage and press against said sheet, said members having means controlled in accordance with the position of said first member adapted to hold said second member in inoperative position.

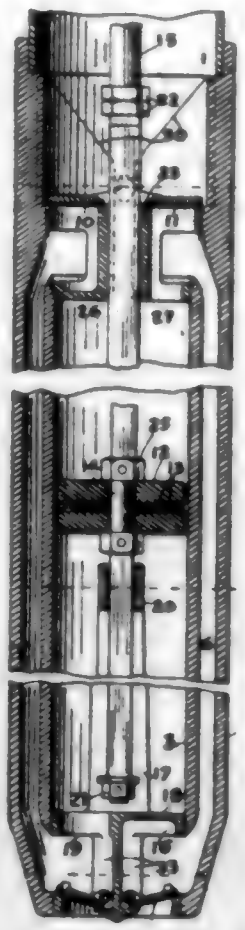
7. In combination, means adapted to support a sheet of paper, a member provided with a tearing edge mounted adjacent said sheet of paper and normally held in inoperative position, a spring-pressed member normally engaging and pressing against said sheet, a catch adapted to hold said spring-pressed member in inoperative position, and a connection between said catch and said first-mentioned member whereby said catch is released upon the movement of said first-mentioned member to operative position.

8. In combination, a supporting-bed, means adapted to supply a plurality of sheets of paper upon said bed, a pair of arms pivotally mounted with reference to said bed, a tearing-bar connected with said arms, and a spring-pressed member, said spring-pressed member having means adapted to engage and interlock with one of said arms and maintain itself in inoperative position.

9. In combination, a frame, a bed mounted thereon, means adapted to supply a plurality of sheets of paper to said bed, means adapted to supply a sheet of a transferring medium between two of said sheets of paper, a pair of arms pivotally mounted upon said frame, a tearing-bar connected with said arms adapted to be forced into contact with said paper, a spring-pressed member adapted to engage and compress said paper, a spindle upon which said spring-pressed member is fixed, a collar upon said spindle, and a tooth upon said collar adapted to engage a corresponding part upon one of said arms and to lock said spring-pressed member in inoperative position.

10. In combination, a frame, a bed, means adapted to serve a plurality of sheets of paper upon said bed in one direction, means adapted to serve a sheet of a transferring medium upon said bed in another direction, a cover adapted to fit said frame, a tearing edge upon said cover adapted to coact with said sheet of a transferring medium, a pair of arms pivotally mounted upon said frame, a tearing-bar connecting said arms, said tearing-bar being adapted to be forced into engagement with said paper, a spring-pressed member adapted to engage and compress said paper, a member to which said spring-pressed member is fixed, and means upon said last-mentioned member adapted to engage with coacting means upon one of said arms and retain said tearing-bar and said spring-pressed member in inoperative position.

816,064. DOUBLE-ACTING DEEP-WELL PUMP. WILLIAM S. BERRY and LEONARD A. STURGEON, Lindsay, Cal. Filed June 12, 1905. Serial No. 264,786.



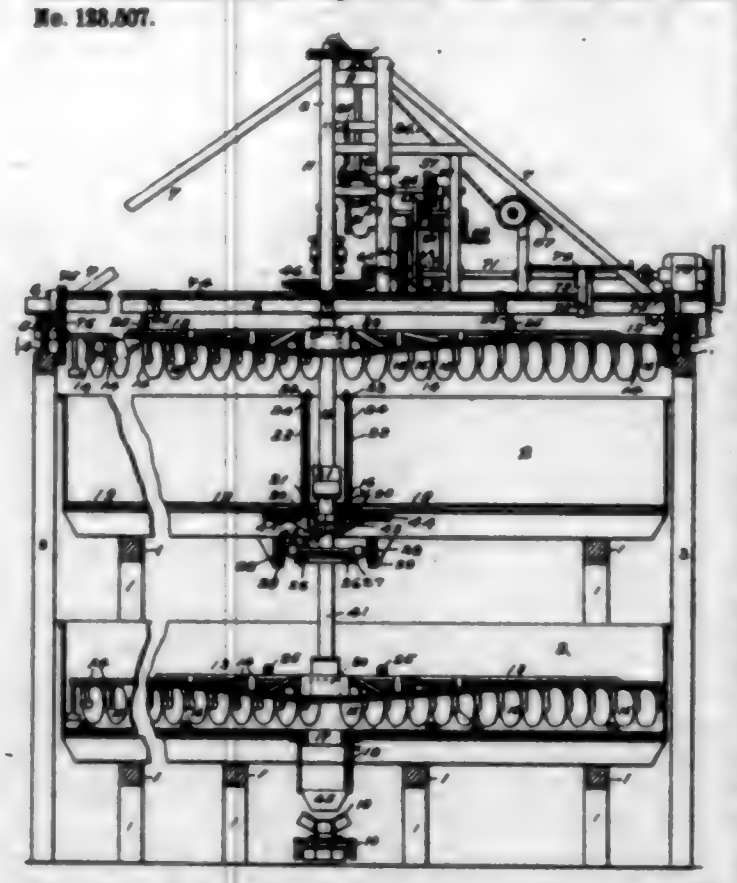
Claim.—1. In an apparatus of the character described, the combination of a cylinder having inner and outer tubes, and longitudinal webs dividing the annular space between said tubes into independent suction-channels, a piston in the inner tube, only one of the channels communicating with the interior of the inner tube below the piston, and the other communicating only with the interior of the inner tube above the piston, a cage and a pair of valves carried thereby at the lower end of the cylinder, said valves admitting liquid into the respective channels, and a cage and a pair of valves carried thereby at the upper end of the cylinder discharging the liquid from the respective channels, and a piston-rod connected with said piston and also loosely connected to said cages whereby said cages can be withdrawn with the withdrawal of the piston-rod, substantially as described.

2. In an apparatus of the character described, the combination of a cylinder having inner and outer tubes, and longitudinal webs dividing the annular space between said tubes into independent suction-channels, a piston in the inner tube, a cage in the lower end of

the outer tube and having a pair of valves therein, said cage also forming a closure on one side of the lower end of the inner tube, but admitting access thereto on the other side, a cage at the upper portion of the outer tube and a pair of valves carried thereby, said cage also forming on one side a closure for the upper end of the inner tube, but admitting access to the inner tube on the other side, and a piston-rod loosely connected to said cages whereby they may be withdrawn with the withdrawal of the piston-rod, substantially as described.

3. In an apparatus of the character described, the combination of a cylinder having inner and outer tubes and webs dividing the annular space between said tubes longitudinally into independent channels, a cage in the lower end of the cylinder having two valves admitting the liquid and a closure preventing a passage of liquid from one of said valves to the interior of the inner tube below the piston while permitting the passage of liquid thereinto through the other valve, a cage at the upper end of the cylinder having two valves for permitting the passage of the liquid, and a closure preventing communication between the upper portion of the inner tube and one of said valves and allowing it with the other valve, and a piston working in said inner tube, substantially as described.

816,065. **SYSTEM OF EXCAVATING AND FILLING VATS.**
HIRAM W. BLAISDELL, Los Angeles, Cal. Filed Oct. 23, 1902. Serial No. 128,507.



Claim.—1. A system for discharging material from a plurality of rows of tiers of receptacles, provided with means for excavating the upper receptacle, a traveling device for distributing within the subjoined receptacle the material discharged therein from said upper receptacle, means for excavating said subjoined receptacle, and mechanism for actuating the parts.

2. A system for discharging material from a plurality of rows of tiers of receptacles, provided with means for discharging material from the superimposed receptacle, a device constructed to receive the material discharged from said superimposed receptacle and distribute the same uniformly within a subjoined receptacle and mechanism for alternately actuating said means and for operating said device.

3. A system for discharging material from tiers of receptacles, provided with traveling means for discharging material from the upper receptacle, a traveling device constructed to receive the material so discharged and distribute the same within a subjoined receptacle, separate means for discharging from the subjoined receptacle the material discharged therein, a conveyer to transport the material discharged from the subjoined receptacle and mechanism for actuating the parts.

4. A system for discharging material from tiers of receptacles, provided with traveling means to excavate the superimposed receptacle, a traveling device receiving the material discharged from the superimposed receptacle and distributing the same within a subjoined receptacle, means for excavating the subjoined receptacle, and mechanism for actuating said parts.

5. A system for discharging material from tiers of receptacles, provided with a structure constructed to travel above the uppermost receptacle, means supported from said structure to excavate the superimposed receptacle, a traveling device constructed to receive the material discharged from said superimposed receptacle and distribute the same within the subjoined receptacle and mechanism for actuating the parts.

6. A system for discharging material from tiers of receptacles, provided with a structure constructed to travel above the uppermost receptacle, traveling means to discharge material through the center of the superimposed receptacle, a device to receive the material discharged from the superimposed receptacle and distribute the same in the subjoined receptacle and mechanism for actuating the parts.

7. A system for discharging material provided with traveling means for excavating an uppermost receptacle, traveling apparatus for excavating a lower receptacle, a device for operating said means and apparatus and mechanism for operating the parts.

8. A system for discharging material from rows of tiers of receptacles, provided with traveling means for discharging material from a superimposed receptacle, a device constructed to receive said discharged material and distribute the same within a subjoined receptacle, and mechanism for actuating the parts.

9. A system for discharging material from tiers of receptacles, provided with a shaft, means carried by said shaft for discharging material from the superimposed receptacle, a device constructed to receive said discharged material and distribute the same within a subjoined receptacle, an attachment operated by said shaft to discharge the material from the said subjoined receptacle, a conveyer receiving the material discharged from said subjoined receptacle and mechanism for actuating the parts.

10. A system for discharging material from tiers of receptacles, provided with a shaft, means carried thereby to discharge the material from the superimposed receptacle, an attachment upon said shaft operated thereby alternately with said means to discharge material from a subjoined receptacle, a conveyer to transport material discharged from said subjoined receptacle and mechanism for actuating the parts.

11. A system of the general character described provided with a row of tiers of receptacles, a traveling structure means carried thereby to discharge the material from the upper and lower receptacle and mechanism for operating the parts.

12. A system of the general character described provided with a traveling structure means, operated therefrom to discharge the contents of the upper and lower receptacles of each tier, a device for distributing the material discharged from the upper receptacle into a lower receptacle and mechanism for actuating the parts.

13. A system of the general character described provided with a traveling structure independent means supported therefrom to discharge the contents of an upper and lower receptacle of each tier, a traveling device distributing within the lower receptacle the material received from the upper receptacle, a conveyer to transport the material discharged from the lower receptacle and mechanism for actuating the parts.

14. A system of the general character described provided with a traveling structure carrying a shaft, an excavator thereon constructed to discharge the material from the upper receptacle of each tier, another excavator operated by said shaft to discharge the material from the lower receptacle and mechanism for operating the parts.

15. A system of the general character described provided with a traveling structure carrying a shaft, an excavator thereon constructed to discharge the material from the upper receptacle of each tier, another excavator operated by said shaft to discharge the material from the lower receptacle, a conveyer to transport the material discharged from the lower receptacle and mechanism for actuating the parts.

16. A system for discharging material from tiers of receptacles, provided with a traveling structure, a shaft carried thereby, an excavator slidable on said shaft and rotated thereby and means for supporting said excavator contiguous to said structure when not in use.

17. A system for discharging material from tiers of receptacles, provided with a traveling structure, a shaft carried thereby, an excavator feathered on said shaft, means for rotating said shaft and excavator and for elevating said shaft and excavator devices upon said structure constructed to engage and support said excavator in an inoperative position.

18. A system of the general character described provided with a supporting structure carrying a shaft, an excavator feathered thereon, means for rotating said shaft to operate said excavator and to

raise said shaft to bring said excavator into an inoperative position, another excavator operated by said shaft and mechanism for actuating the parts.

19. A system of the general character described provided with a supporting structure carrying a shaft, an excavator thereon, means for operating and supporting said excavator in an inoperative position another excavator operated by said shaft when the first excavator is in said position and devices for supporting the second excavator while the first excavator is in operation.

20. A system of the general character described provided with upper and lower receptacles, a traveling structure carrying a shaft, an excavator on said shaft operated thereby and elevated into inoperative position by said shaft, a distributer receiving the material excavated from the upper receptacle and discharging the same into the lower receptacle, a second excavator in the lower receptacle operated and elevated into inoperative position by said shaft and mechanism for actuating the parts.

21. A system of the general character described provided with an upper and lower receptacle, a traveling structure, an excavator operated and supported in inoperative position therefrom, a distributer receiving the excavated material from the upper receptacle and discharging the same into the lower receptacle, a second excavator likewise operated from said structure, an endless conveyer to transport the material from said lower receptacle and mechanism for actuating the parts.

22. A system of the general character described provided with a supporting structure carrying a slidable shaft, mechanism on said structure for elevating and lowering said shaft an excavator on the shaft operated thereby and elevated into inoperative position by said shaft and a second excavator detachably connected with said shaft and likewise operated thereby.

23. A system of the general character described provided with a supporting structure carrying a slidable shaft, mechanism on said structure for automatically raising and lowering said shaft, an excavator operated thereby and elevated into inoperative position by said shaft and a second excavator likewise operated by said shaft.

24. A system of the general character described provided with a traveling supporting structure carrying a slidable shaft, mechanism for raising and lowering said shaft, an excavator thereon operated thereby, a traveling excavator and means for detachably connecting the said shaft and traveling excavator to operate the latter when the first excavator is not in operation.

25. A system for discharging material from tiers of receptacles, provided with a traveling excavator for the lower receptacle and means for operating said excavator to discharge the contents of the lower receptacle while the upper receptacle is in use.

26. A system of the general character described provided with an upper and lower receptacle, the former having a central opening surrounded by a water-tight sleeve, an upper and lower excavator and means passing through said sleeve to operate the lower excavator and mechanism for actuating the parts.

27. A system of the general character described provided with an upper and lower receptacle the former having an opening surrounded by a removable sleeve, an upper and lower excavator, means passing through said sleeve to operate said excavators and mechanism for actuating the parts.

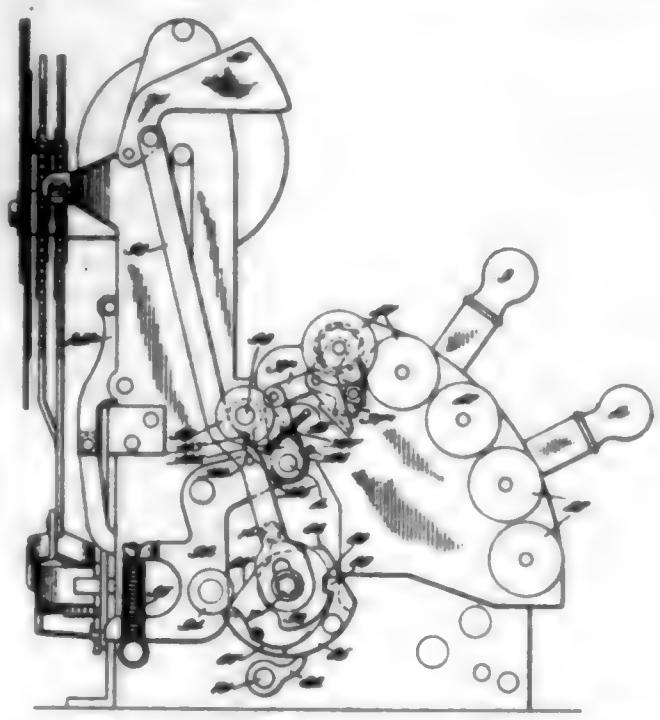
28. A system of the general character described provided with an upper and lower receptacle the former having an opening surrounded by a sleeve, a traveling structure carrying a shaft passing through said sleeve, an upper and lower excavator operated by said shaft and mechanism for actuating the parts.

29. A system of the general character described provided with an upper and lower receptacle the former having an opening surrounded by a removable sleeve, a supporting structure carrying a shaft passing through said sleeve, an upper and lower excavator operated by said shaft and mechanism for actuating the parts.

816,086. CASH-REGISTER. WILLIAM F. BOCKHOFF, Indianapolis, Ind., and EDWARD J. VON PEIN, Dayton, Ohio, assignors to National Cash Register Company, Jersey City, N. J., and Dayton, Ohio, a Corporation of New Jersey. Filed July 6, 1903. Serial No. 164,408.

Claim.—1. In a cash-register, the combination with a counter mounted in a movable frame, of a series of registering elements, means for moving said elements when in engagement with the counter, setting-levers for said registering elements, a special setting-lever, an operating-handle, means for connecting the operating-handle and the counter-frame controlled by the special setting-lever, and an indicating mechanism permanently connected to the special setting-lever.

2. In a cash-register, the combination with an operating mechanism including a crank-handle, of a counter mounted in a movable frame, a cam for operating said frame, coupling means between the operating mechanism and said cam, and a special setting-lever controlling said coupling means.



3. In a cash-register, the combination with an operating mechanism including a rock-shaft, of a counter mounted in a movable frame, a cam for actuating said frame, means for coupling said cam to the rock-shaft, and a setting element controlling said coupling means.

4. In a cash-register, the combination with an operating mechanism including a rock-shaft, of a counter mounted in a movable frame, a cam for operating said frame, coupling means between the shaft and cam, and a special setting-lever controlling said coupling means arranged to be moved to different positions for different transactions.

5. In a cash-register, the combination with an operating mechanism including a power-shaft, of a counter mounted in a movable frame, a cam mounted on the shaft, coupling means between the shaft and cam, and a setting element controlling said coupling means.

6. In a cash-register, the combination with an operating mechanism including a power-shaft, of a counter mounted in a movable frame, a throwing device for said counter-frame, coupling means between the throwing device and the power-shaft, and a special setting element controlling said coupling means.

7. In a cash-register, the combination with an operating mechanism including a rock-shaft, of a counter mounted in a movable frame, a cam for operating said frame, a pivoted pawl-clutch for coupling the cam to the shaft, and a special setting element controlling the pawl-clutch.

8. In a cash-register, the combination with a series of setting-levers, of a series of racks arranged to follow the movements of said levers but movable independently of the same, a counter mounted in a movable frame, an operating-handle and connections for bringing the counter and the registering-racks together, a special setting element, and means controlled by said element for preventing the counter and registering-racks from being brought together upon the operation of the handle.

9. In a cash-register, the combination with a series of setting elements, of a series of registering-racks movable with said elements but constructed to be actuated independently of the same, a counter, an operating-handle, means controlled by the handle for bringing the counter and the registering-racks together, a special setting element, and means controlled by said element for preventing the registering-racks and counters being brought together upon the operation of the handle.

10. In a cash-register, the combination with a series of setting-levers, of a series of registering-segments controlled by said levers but movable independently of the same, a counter arranged to be actuated by the registering-segments, an operating-handle for moving the registering-segments after they have been set by the levers, a special setting element, and means controlled by said element for preventing the counter being operated by the registering-racks upon the operation of the handle.

11. In a cash-register, the combination with a series of setting-levers, of a series of registering-segments arranged to be set by said levers but movable independently of the same, an operating-handle and connections for moving the counter-frame and for returning the registering-segments to their normal positions, a special setting element, and means controlled by said element for preventing the counter-frame being moved by the operating-handle.

12. In a cash-register, the combination with a series of amount setting-levers, of a series of registering-segments arranged to be set by the same but movable independently thereof, a counter mounted in a movable frame, a crank-handle and connections for throwing the counter-frame and returning the registering-segments, a special setting-lever, and means controlled by said lever when in certain positions for preventing the operating-handle actuating the counter-frame.

13. In a cash-register, the combination with a series of registering elements, of a counter mounted in a movable frame, an operating-handle, a pivoted latching-pawl and connections between the operating-handle and the counter-frame, and a special setting element arranged to control the positions of the latching-pawl.

14. In a cash-register, the combination with an operating mechanism, of a counter mounted in a movable frame, a special counter for counting the number of times the frame is moved, means for coupling the frame to the operating mechanism, a special setting element a certain adjustment of which controls said coupling means, and a series of special counters operatively controlled by other adjustments of said setting element.

15. In a cash-register, the combination with a power-shaft, of a setting element pivoted upon the same and movable to different positions for different transactions, a slide mounted on said setting element, a cam on the shaft for operating the slide, and a series of special counters arranged to be operated by said slide when moved by said cam.

16. In a cash-register, the combination with an operating mechanism, of a series of indicators, means for concealing the indicators, and devices for locking the operating mechanism until the concealing means is actuated.

17. In a cash-register, the combination with an operating mechanism, including a handle, of counting devices, indicators, means for moving the indicators to their set positions, and a lock for preventing the movement of the operating mechanism until the indicators have been moved to their concealed positions.

18. In a cash-register, the combination with an operating mechanism, of a series of indicators arranged to be moved to set positions by said mechanism, means for holding the indicators in their set positions, and a lock for the operating mechanism operated by the movement of the indicators out of their set positions.

19. In a cash-register, the combination with an operating mechanism, of a series of indicators arranged to be elevated to exposed positions, means for holding the indicators in their elevated positions, and a lock for the operating mechanism operated upon the descent of the indicators to their lower positions.

20. In a cash-register, the combination with an operating mechanism, of a series of indicators arranged to be moved into exposed position, and a lock for the operating mechanism actuated by the withdrawal of the indicators from exposed positions.

21. In a cash-register, the combination with an operating mechanism, of a series of rotary indicators arranged to be elevated to exposed positions, and a lock for the operating mechanism actuated by the movement of the indicators to their lower inexposed positions.

22. In a cash-register, the combination with an operating mechanism, of a special setting element arranged to be moved to different positions, a lock for the operating mechanism controlled by said setting element, and means for preventing the regular operation of the lock when the setting element is in certain position.

23. In a cash-register, the combination with an operating mechanism, of a setting element, a lock for preventing the movement of the operating mechanism until the setting element has been operated, and means controlled by the setting element for rendering the lock ineffective.

24. In a cash-register, the combination with an operating mechanism, of a special setting element, a lock for the operating mechanism arranged to be moved out of engagement with the operating mechanism upon the movement of a special setting element, means for returning the lock to its locking position, and devices for preventing this return movement when the setting element is in a certain position.

25. In a cash-register, the combination with an operating mechanism, of a lock for the same, a setting element arranged to be moved to different positions for different transactions, means actuated by the setting element for operating the lock, and devices for holding the lock in its inoperative position when the setting element is in a certain position.

26. In a cash-register, the combination with an operating mechanism, of a lock for the same which automatically relocks said mechanism after each operation of the machine, a special setting element arranged to be moved to different positions and whose movement operates the lock, and devices for holding the lock in its inoperative position when the setting element is in a certain position.

27. In a cash-register, the combination with an operating mechanism including a handle, of a special setting element arranged to be moved to different positions for different transactions, a lock for the operating mechanism arranged to be returned to locking position upon each operation of the machine, means connected to the setting element for adjusting the lock to release the operating mechanism, yielding devices for holding the lock in one or the other of its positions, and means connected to the setting element for holding the lock in an intermediate position.

28. In a cash-register, the combination with an operating mechanism, of a pivoted locking device for the same, a latch for securing the locking device both in and out of its locking position, means connected to the operating mechanism for returning the lock to its locking position upon each operation of the machine, and means connected to the setting element to move the lock to unlock the operating mechanism whenever the setting element is operated.

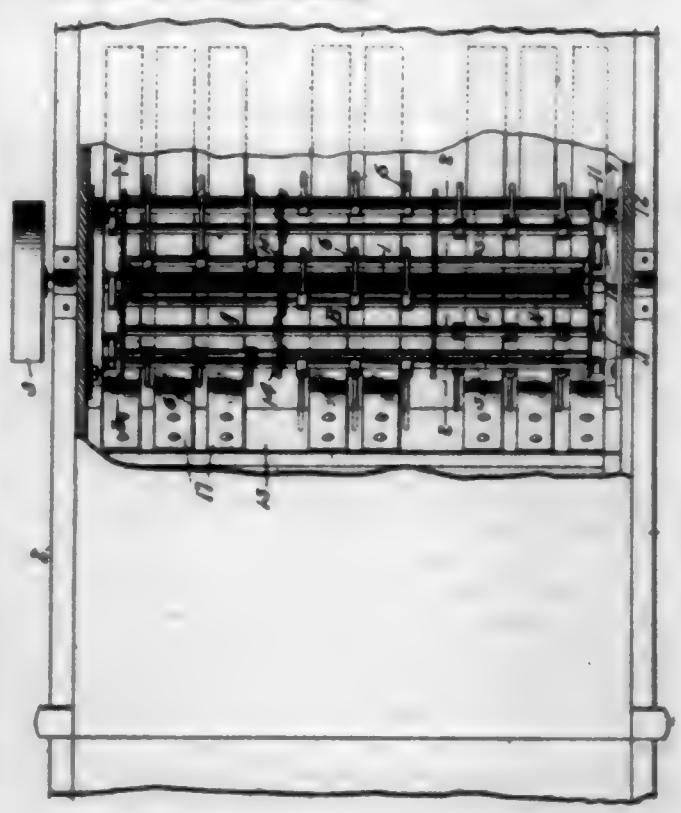
29. In a cash-register, the combination with an operating mechanism, of a counter mounted in a movable frame, turn-to-zero devices mounted independently of the counter-frame, and a movable stop for the turn-to-zero devices carried by the counter-frame and movable therewith out of the path of the turn-to-zero devices.

30. In a cash-register, the combination with a counter mounted in a movable frame, of rotary turn-to-zero devices mounted independently of the counter-frame, and stop means for the turn-to-zero devices controlled by the movements of the counter-frame.

31. In a cash-register, the combination with an operating mechanism, of counter-actuating devices, a counter mounted in a movable frame and arranged to be brought into connection with the counter-operating devices, turn-to-zero devices mounted independently of the counter-frame but engaged by the counter when the latter is disengaged from the operating mechanism, and stop means for the turn-to-zero devices controlled by the movement of the counter-frame.

32. In a cash-register, the combination with a counter mounted in a movable frame, of rotary turn-to-zero devices mounted independently of the counter-frame, a pivoted stop device mounted on the counter-frame and arranged to be engaged by the turn-to-zero devices and moved out of its normal position; the construction being such that when the counter-frame is moved the stop device is disengaged from the turn-to-zero devices and allowed to assume its normal position.

816,087. SEPARATOR. GEORGE BOETTLER, St. Peters, Mo. Filed Oct. 8, 1905. Serial No. 282,027.



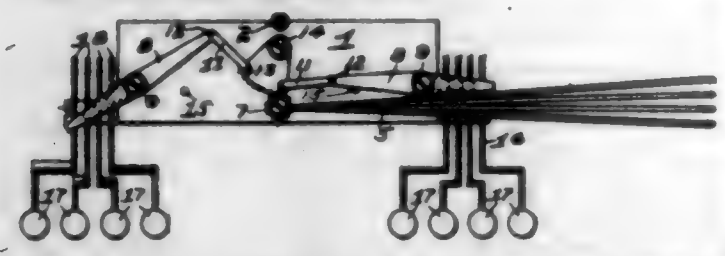
Claim.—1. A separating-cylinder including a plurality of disks, a plurality of rock-shafts supported in said disks, and teeth upon successive rock-shafts disposed between successive pairs of disks according to the arrangement of the latter longitudinally of the shaft.

2. A separating device for threshing-machines including a cylindrical structure supported for rotation and comprising a plurality of spaced disks and a plurality of rock-shafts supported circumferentially in the disks, each of said rock-shafts having a toothed portion extending between two of the supporting-disks.

3. A separating-device for threshing-machines including a cylyindrical structure supported for rotation and comprising a shaft, a plurality of disks supported upon said shaft and spaced apart, a plurality of rock-shafts extending through all of the disks and each having a toothed portion extending between two of the disks only, cranks upon the rock-shafts, and bearing-plates having cam-grooves engaging said cranks.

4. A separating device for threshing-machines including a cylindrical structure supported for rotation and comprising a shaft, a plurality of spaced disks upon said shaft, a plurality of rock-shafts extending through all of the disks and each having a toothed portion extending between two of the disks only, cranks upon the rock-shafts, and bearing-plates having cam-grooves engaging said cranks; in combination with supported straps extending beneath and partially encircling the cylinder, said straps being spaced apart for the passage of the teeth.

816,068. LEAF-TURNER. MARTIN J. BRENNAN, Dayton, Ohio. Filed Oct. 31, 1905. Serial No. 285,751.



Claim.—1. In a leaf-turner, a series of individual racks or frames upon which the sheets are held, an upright post to which the upper ends of said racks or frames are loosely connected, a series of pinions to which the lower ends of said racks or frames are fixed, a corresponding series of actuating-gears engaging said pinions, a corresponding series of angular keys having cam-surfaces on their rear ends, and a corresponding series of levers interposed between said keys and said actuating-gears, whereby separate and independent movement may be imparted to said racks or frames from said keys.

2. In a leaf-turner, a series of individual racks or frames, means for attaching leaves to said frames, an upright post to which the upper ends of said racks are operatively connected, a pinion attached to the lower end of each of said racks, an oscillating gear engaging each of said pinions, said oscillating gears being grouped upon a common shaft, a series of key-levers of angular form and having their rear ends provided with tapering surfaces, a series of angular levers having their outer ends turned down in the paths of the rear ends of said key-levers, and a series of short links connecting said angular levers with the oscillating gears.

816,069. DENTAL TOOL HOLDER OR CLUTCH. BENONI S. BROWN, Onset, Mass.; Seth A. Brown executor of said Benoni S. Brown, deceased. Filed Dec. 9, 1903. Serial No. 184,506.

Claim.—1. In a dental tool-holder, a hollow shaft carrying an endwise-movable tool-holding chuck, a lever, a lengthwise-movable connection between the chuck and the lever, an adjustable screw-fulcrum for the lever adapted to move lengthwise in the shaft and means to operate the lever.

2. In a dental tool-holder a hollow shaft carriyng an endwise-movable tool-holding chuck, a lever, a lengthwise-movable connection between the chuck and the lever, an adjustable screw-fulcrum for the lever adapted to move lengthwise in the shaft and a sleeve adapted to slide lengthwise on the outside of the shaft, in contact with and for the purpose of actuating the lever, substantially as set forth.

3. In a dental tool-holder a hollow shaft carrying an endwise-movable tool-holding chuck, a lever, a lengthwise-movable connection between the chuck and the lever, an adjustable screw-fulcrum for the lever adapted to move lengthwise in the shaft and having holes in its periphery for the purpose described, and means to operate the lever.

4. In a dental tool-holder the combination of a hollow shaft slotted for a portion of its length a tool-holding chuck mounted therein, a sleeve adapted to slide longitudinally on the outside of the shaft, operative connections between the tool-chuck and the sliding sleeve, a rod in the rearward part of the shaft adapted to slide lengthwise therein and connected with the sleeve whereby the motion of said rod will actuate the sleeve and connected mechanism.



5. In a dental tool-holder the combination of a shaft slotted for a portion of its length and containing a tool-holding chuck, a lever, a lengthwise-movable connection between the chuck and the lever, a sleeve adapted to slide lengthwise on the outside of the shaft in contact with and for the purpose of actuating the lever, and a rod in the rearward part of the shaft adapted to slide lengthwise therein and connected with the sleeve, whereby the motion of said rod will move the sleeve and connected mechanism.

6. In a dental tool-holder the combination of a hollow shaft slotted for a portion of its length, an endwise-movable tool-holding chuck, a lever, a lengthwise-movable connection between the chuck and the lever, all contained within the shaft, a sleeve adapted to slide lengthwise on the outside of the shaft in contact with and for the purpose of actuating the lever, said sleeve having a longitudinal slot in its periphery to receive the lever-arm.

7. The combination of a hollow shaft having transverse grooves in a portion of its periphery and a longitudinal slot, with an endwise-movable tool-clutching device inside and a sleeve on the outside of the shaft and means for peratively connecting the sleeve with the clutching device, said sleeve having an elastic tongue or spring adapted to engage with the grooves on the shaft for the purpose set forth and described.

816,070. HOPPER-BOTTOM CAR. THOMAS B. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Aug. 14, 1905. Serial No. 274,067.

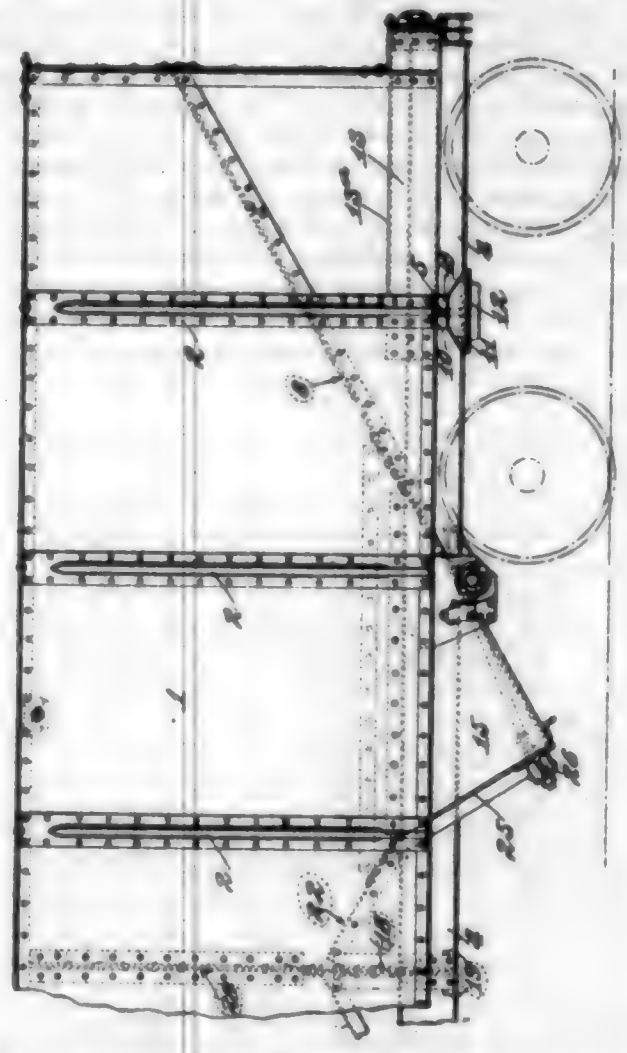
Claim.—1. In a hopper-bottom car, the combination with center sills, of a bolster-web comprising a single plate whose lower edge is recessed to receive said center sills and whose upper edge is deflected to lie perpendicular to the plane of the end floor-sheets of the hopper-bottom car, said web being continuous from side to side of the car; substantially as described.

2. In a hopper-bottom car, the combination with center sills, of a bolster-web, comprising a single plate continuous from side to side of the car and arranged between said center sills and the inclined end floor-sheet of the hopper-bottom car, the upper edge of said web being bent so as to lie perpendicular to the plane of said floor-sheet and the lower edge of said web being notched to receive the center sills, and attaching-angles for securing said bent edge of the web to said floor-sheet; substantially as described.

3. In a hopper-bottom car, the combination with center sills, of a bolster-web, comprising a single plate extending from side to side of the car and recessed at its lower edge to receive said center sills, the upper edge of said web being deflected to lie perpendicular to the plane of the end floor-sheets of the hopper-bottom car, means for connecting the deflected portion of said web to said floor-sheets, and a bottom cover-plate riveted to said web and arranged under the center sills; substantially as described.

4. In a hopper-bottom car, the combination with a bolster-web

extending from side to side of the car and forming a support for the inclined bottom floor-sheet of the car, center sills passing through said web, and short side sills terminating a short distance within said web and to which said web is connected; substantially as described.



5. In a hopper-bottom car, the combination with a bolster-web, of short side sills in the form of channels to which the ends of said web are connected, one of the flanges on said channel being cut away to accommodate the connection of said bolster-web to said short side sill; substantially as described.

6. In a hopper-bottom car, the combination with center sills, of inside hopper-sheets arranged on each side of said center sills, the upper edges of said hopper-sheets being bent inwardly toward each other at an angle to a meeting-point where said hopper-sheets are flanged and riveted together, and supports between the center sills, said supports being in the form of continuous straps which are connected to the center sills and extend up between the bent edges of the hopper-sheets and riveted thereto; substantially as described.

7. In a car, the combination with plate-girder side walls, center sills, a continuous transversely-arranged vertical web 18 arranged above said center sills at the central portion of the car and connected to said side walls and vertically-disposed angles 19 riveted to said web and to the center sills, whereby said sills are carried by said web; substantially as described.

8. In a car, the combination with plate-girder side walls and center sills, of plates forming a cross-ridge, and a continuous vertical web located at approximately the center of the car and connected to the side walls of the car, vertically-disposed angles 19 on said web which extend downwardly and are connected to the center sills to serve as a support therefor, the upper edge of said web being secured between the apex flanges of the cross-ridge plates; substantially as described.

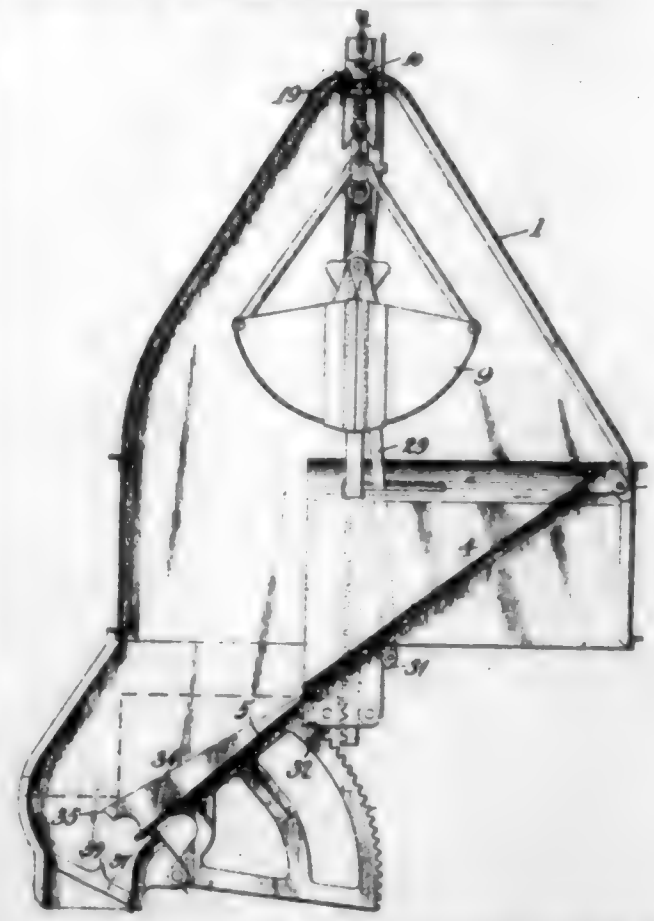
9. In a car, the combination with plate-girder side walls and center sills, of inclined cross-ridge plates extending from side to side of the car and secured to the side walls of the car, a continuous vertical web-plate secured to the side walls of the car and being located above the center sills, vertically-disposed angle-bars depending from said web-plate and being secured to the center sills, said web-plate extending up and being secured between the apex flanges of the cross-ridge plates, and gusset-plates secured to the side walls of the car and to said cross-ridge plates; substantially as described.

10. In a car, the combination with plate-girder side walls and center sills, of a continuous vertical web-plate 18 arranged above said center sills and connected thereto by angles 19 and also connected to the side walls of the car, gusset-plates secured to the side walls of the car and whose lower edges are received in recesses formed in the upper side edges of said web-plate, and cross-ridge plates whose apex flanges are riveted to the upper edge of said web-plate and the lower edges of said gusset-plates; substantially as described.

11. A door for hopper-bottom cars having a reinforcing transversely-arranged strengthening-rib extending parallel to its hinged edge; substantially as described.

12. A door for hopper-bottom cars comprising a panel and a reinforcing strengthening-rib arranged in juxtaposition to its hinged edge; substantially as described.

816,071. HOISTING APPARATUS. JEREMIAH CAMPBELL, Providence, R. I. Filed Jan. 14, 1905. Serial No. 241,066.



Claim.—1. In a coal-delivering mechanism, a movable grab, a stationary hopper having a plate movable to provide a passage for the grab into the same, means engaging said plate and positively actuated by the grab to open said passage.

2. In coal-delivering mechanism, a vertically-movable grab, a stationary hopper having a bottom plate movable to provide a passage for the grab into the same, means engaging said plate and positively actuated by the grab to open said passage.

3. In a coal-delivering mechanism, a movable grab, a stationary hopper having a plate movable to provide a passage for the grab into the same, operating means engaging said plate, and means actuated by the grab to positively engage said operating means to open said passage.

4. In a coal-delivering mechanism, a vertically-movable grab, a stationary hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, and means for opening said plate upward and into the hopper.

5. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises two plates pivotally mounted to open and close with the exit and entrance of the grab, and means for opening one of said plates upward and into the hopper, and the other downward and away from the hopper.

6. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, and a chain and sprocket actuated by the grab to operate said plate.

7. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises two plates pivotally mounted to open and close with the exit and entrance of the grab, a chain and sprocket for operating one of said plates, and a pivoted link for operating the other plate.

8. In a coal-delivering mechanism, a vertically-movable grab, a stationary hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab,

means engaged by the grab on its downward movement to open said plates.

9. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, means engaged by the grab on its downward movement to open said plate, and means for releasing the grab from said plate-opening means after a predetermined travel.

10. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, a cross-head engaged by the grab on its downward movement to open said plate.

11. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, a cross-head engaged by the grab on its downward movement to open said plate, and a latch to engage and release the cross-head from the grab after a predetermined travel.

12. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, a cross-head engaged by the grab on its downward movement to open said plate, and a latch comprising a link mounted on the cross-head and slidable thereon.

13. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, a cross-head through an opening in which the grab connection passes, means secured to the cross-head and slidable thereon to engage and release the grab connection, a cam on the hopper to actuate said slidable means, and means actuated by the cross-head to operate the pivoted plate.

14. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises a plate pivotally mounted to open and close with the exit and entrance of the grab, a cross-head through an opening in which the grab connection passes, means secured to the cross-head and slidable thereon to engage and release the grab connection, a cam on the hopper to actuate said slidable means, a sprocket operated by the cross-head and gearing operated by the sprocket to operate the pivoted plate.

15. In a coal-delivering mechanism, a vertically-movable grab, a hopper, the bottom of which comprises two plates pivotally mounted to open and close with the exit and entrance of the grab, a cross-head through an opening in which the grab connection passes, means secured to the cross-head and slidable thereon to engage and release the grab on its downward movement, a cam on the hopper to actuate said slidable means, other means for engaging the grab connection upon its upward movement, means connected with the cross-head and plates for operating the plates upon movement of the cross-head.

16. In a hopper having an opening contracted to prevent the free passage of large ore, means to prevent the large ore, held at said opening, from interfering with the passage therethrough of small ore.

17. In a hopper having a contracted opening, means for separating the small from the large ore, and for causing the small ore to freely pass through said opening without being obstructed by the large ore.

18. In a hopper having a contracted opening, means for separating the small ore from the large ore and for holding the large ore out of the path of the small ore through the opening.

19. In a hopper having an opening, a grate in said opening, a series of ribs at the throat of the opening between the ends of which the small ore may pass to the grate, means for preventing the obstruction of the grate by the large ore.

20. In a hopper having an opening, a grate in said opening, the surface of which is divided into two sections by a line of prongs or projections on the bars of the grate, a series of ribs at the throat of the hopper between the ends of which the small ore may pass to the inside section of the grate-surface, while the large ore passes over the ends of the ribs and lodges upon the outside section.

21. In a hopper having a restricted outlet, a pivoted crushing or sizing device operative in the direction through said outlet to keep said outlet clear and means whereby said crushing device is oscillated toward and from the outlet.

22. In a hopper having a restricted outlet, a grate in said outlet, and a pivoted crushing or sizing device coacting with the grate to keep the outlet clear.

23. In a hopper having a restricted outlet, a pivoted plate having a series of pointed ribs to crush and size the ore at the outlet.

24. In a hopper having a restricted outlet, a bottom plate of said hopper being pivoted to swing in the direction of the said outlet and provided with means to crush or size the ore to keep the opening clear.

25. In a hopper having a restricted outlet, a bottom plate of said hopper being pivoted to permit the passage of a grab, and provided with a series of pointed ribs to crush or size the ore at the outlet.

26. In a hopper having a restricted outlet, a bottom plate of said hopper being pivoted to permit the passage of a grab, and provided with a series of ribs sufficiently spaced to catch and guide the smaller ore and provided with knife or crushing ends to crush or size the larger material at the outlet when opening to admit the grab.

27. In a hopper having a restricted outlet, a grate across said outlet, the base of the grate being formed to divide the grate-surface into two sections, a bottom plate of said hopper pivoted to permit the passage of a grab and provided with ribs sufficiently spaced and arranged to catch and guide the smaller ore to the inside section of the grate-surface, and extended to points acting upon movement of the plate to crush the larger ore against the outside section of the grate-surface.

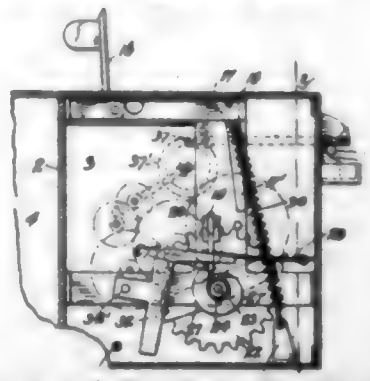
28. In a hopper having a restricted outlet, and a bottom plate movable to permit the passage of a grab, means acting by the movement of said plate to crush or size the ore at the outlet.

29. In combination a hopper having a restricted outlet, a grab and means operated by the grab to crush or size the ore at the outlet.

30. In combination a hopper having a restricted outlet and a grab, a bottom plate of said hopper positively actuated by the grab to crush or size the ore at the outlet.

31. In combination a hopper having a restricted outlet and a grab, a bottom plate of said hopper actuated by the grab to be swung upward into the hopper and crush or size the material therein.

816,072. **TIME EGG-BOILER.** HORACE H. CHEEBOUER, Seattle, Wash. Filed May 8, 1905. Serial No. 259,275.



Claim.—1. In an egg-boiler, the combination with a water-receptacle, a lid hinged to said receptacle, a spring tending to open said lid, fastening devices adapted to retain the lid in closed position, clockwork, devices actuated by said clockwork for disengaging said fastening devices from the lid, and means to adjustably set said clock-actuated devices to release the fastening devices at predetermined times, of an egg-receptacle hinged to said water-receptacle, and means operated by the opening of the lid for removing the said egg-receptacle from the other receptacle, substantially as described.

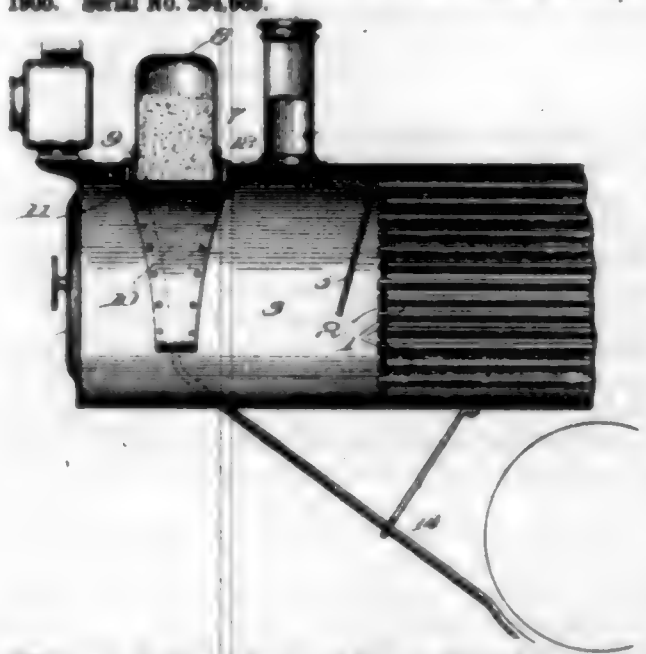
2. In an egg-boiler, in combination a water-receptacle, a lid hinged to said receptacle, a spring tending to open said lid, fastening means for securing said lid in its closed position, means actuated by clock mechanism for releasing said lid by disengaging said fastening means, said clock mechanism, means for adjustably and predeterminately setting the clock mechanism for disengaging said fastening means, an egg-receptacle hinged to said water-receptacle, means connected to said lid and operated by the opening thereof for removing the egg-receptacle from the water-receptacle, and means also operated by the opening of the lid for stopping the running of the clock mechanism, substantially as described.

3. In an egg-boiler, the combination of the water and egg receptacle, a lid hinged to said water-receptacle, clock mechanism, a spindle provided with a setting-finger, a cam on said spindle, means carried upon said spindle for detachably engaging the same with a spindle of the clock mechanism, means provided upon said lid adapted to be engaged by a trigger-lever, means for retaining said trigger-lever in engaged position with the first-named means and comprising a vertically-slidable abutment, means to cause the abutment to normally contact with said cam, means operated by the opening of the lid for withdrawing said abutment from contact with said cam and means also actuated by the opening of the lid for disengaging the first-named spindle from the spindle of the clock mechanism, substantially as described.

4. In an egg-boiler, the combination of the water-receptacle, an egg-receptacle hinged to said water-receptacle, and adapted to be swung down into the same, means for securing the egg-receptacle within the water-receptacle, means actuated by clock mechanism for releasing said securing means, and means carried by the water-receptacle and connected to the egg-receptacle for swinging the egg-receptacle on its hinge connection and withdrawing the egg-receptacle from the water-receptacle, substantially as described.

5. In an egg-boiler, the combination of the egg-receptacle, a water-receptacle provided with a hinged lid, clock mechanism adapted to be adjustably set for releasing the egg-receptacle so as to enable it to be removed from the other receptacle at the termination of predetermined lengths of time, means to accomplish such removal of the egg-receptacle, and means for stopping the action of said clock mechanism simultaneously with the removal of the egg-receptacle, substantially as described.

816,073. **LOCOMOTIVE SAND-BOX.** WILLIAM H. CLOWRY, Chicago, Ill., assignor of one-half to John Hess, Chicago, Ill. Filed June 10, 1905. Serial No. 264,669.



Claim.—1. A locomotive sand-box positioned forward of the steam-space and consisting of an outer receptacle opening into an inner chamber having walls adapted to be heated by the escaping products of combustion, substantially as described.

2. A locomotive sand-box positioned forward of the smoke-stack and consisting of a receptacle exterior of the shell of the boiler and an interior chamber having arching walls adapted to be heated by the escaping products of combustion, substantially as described.

3. A locomotive sand-box positioned forward of the smoke-stack and consisting of a receptacle exterior of the shell of the boiler, an interior chamber having arching walls adapted to be heated by the escaping products of combustion, and pipes on opposite sides of the boiler entered through the boiler-shell into the arched interior chamber near its lower ends, substantially as described.

4. A locomotive sand-box positioned forward of the smoke-stack and consisting of an outer receptacle secured to the exterior of the boiler-shell opening into an inner chamber having an arching inner wall and side walls secured to the interior of the boiler-shell and forming in combination therewith a heating-chamber, and discharge-pipes entered into the heating-chamber near its lower ends on opposite sides of the boiler-shell, substantially as described.

5. A locomotive sand-box consisting of an outer receptacle secured to the boiler-shell and communicating with a space formed by an arching inner wall and side walls forming a chamber tapering toward its ends and adapted to be heated by the heat of the locomotive, and discharge-pipes entered into the tapered ends of the heating-chamber, substantially as described.

816,074. **GUN-STOCK.** WILLIAM F. COLE, Waco, Tex. Filed Mar. 18, 1903. Serial No. 148,222.

Claim.—1. The improved gun-stock herein described, the same being constructed of wood and having a continuous or unbroken grain, and made of practically uniform diameter throughout, and a metal attachment comprising a butt-plate having its upper end provided with inwardly-projecting parallel flanges which embrace and are secured to the end of the butt on opposite sides thereof, and a diagonal portion extending forward and provided at its ends with outturned flanges which are secured to the stock in the manner described.



2. As an improved article of manufacture, the gun-stock constructed of wood having a continuous grain and made of practically uniform diameter, and an integral and rigid metal guard comprising a butt-plate and a diagonal brace, the same being secured to the stock, and the brace separated therefrom in the manner described.

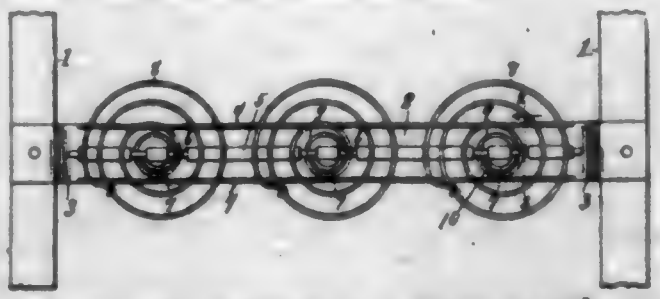
3. The improved gun-stock herein described, the same being constructed of wood, and made of practically uniform diameter throughout, and a rigid and integral metal attachment comprising a butt-plate having its upper end provided with inwardly-projecting parallel flanges which embrace and are secured to the end of the butt on opposite sides thereof, and a diagonal portion extending forward and provided at its ends with outturned flanges which are secured to the stock in the manner described.

4. As an improved article of manufacture, the gun-stock constructed of wood, and made of practically uniform diameter, and an integral and rigid metal guard provided with securing-flanges at each end and comprising a butt-plate and a diagonal brace, the same being secured to the stock by said flanges, and the brace portion separated therefrom in the manner described.

5. The improved gun-stock herein described, the same being constructed of wood and made of practically uniform diameter throughout, and a rigid and integral metal attachment comprising a butt-plate secured to the end of the stock by flanges and a diagonal portion extending forward and provided at its ends with flanges which are secured to the stock in the manner described, the length of the brace being such that it affords due space for seizing and holding manually the opposite portion of the stock, as described.

6. The improved gun-stock herein described constructed of light material and made of practically uniform diameter throughout and having an integral rigid metal bar comprising a butt-plate and a diagonal brace which is extended forward and provided at its front end with a reversely-curved portion, the same extending rearward parallel to the stock and describing a curve as and for the purpose specified.

816,075. **SPRING-SEAT STRUCTURE.** JAMES H. COOK, Detroit, Mich. Filed Dec. 4, 1905. Serial No. 290,193.



Claim.—1. The combination in a spring-seat structure, of a spring-supporting bar, a spring seated on said bar and locked thereto, and a strengthening-rod extending longitudinally of said bar and so associated therewith as to serve as a truss.

2. In a spring-seat structure, the combination with the spring-

supporting bar, a spring seated thereon, and a truss-rod extending longitudinally of the bar to truss the same, said rod serving to lock the spring thereto.

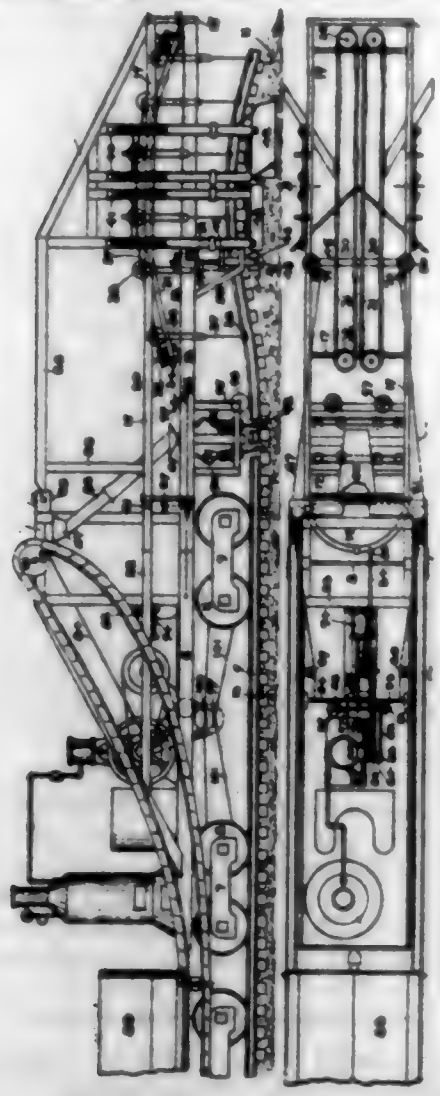
3. In a spring-seat structure, the combination of a spring-supporting bar, a spring seated thereon and a truss-rod extending longitudinally of the bar, said rod engaging the lower coil of the spring to detachably lock the spring to said bar.

4. In a spring-seat structure, the combination of the spring-supporting bar having a hollow central rib provided with transverse openings, a spring seated on said bar having its lower coil lying in said openings, and a locking-rod extending longitudinally of the hollow rib across the coil of said spring.

5. In a spring-seat structure, the combination of the spring-supporting bar, having marginal flanges and a central hollow rib provided with transverse openings, a spring seated in said openings, and a locking-rod lying in said hollow rib and crossing the coil of said spring.

6. In a spring-seat structure, the combination of the spring-supporting bar having marginal flanges and a hollow central rib provided with a series of transverse openings, a plurality of springs seated on said bar, the lower coils of which lie in said openings and are confined between said flanges, and a locking-rod extending through said hollow rib common to all of said springs and crossing the coils thereof.

816,076. APPARATUS FOR RAISING THE SUPERSTRUCTURE OF AND BALLASTING RAILWAY ROAD-BEDS. GRAHAM H. CRAVENS, De Queen, Ark. Filed May 25, 1905. Serial No. 262,117.



Claim.—1. In a device of the class described, a power-propelled vehicle or car, means for raising the railroad superstructure above the bed of the road, in advance of the car, means for conveying material beneath the raised superstructure, and a roller following said conveying means, for the purpose set forth.

2. In a device of the class described, a power-propelled vehicle or car, means for raising the railroad superstructure above the bed of the road in advance of the car, ballast-material conveying and spreading devices beneath the raised superstructure and a roller beneath said raised superstructure and following said spreading device, substantially as set forth.

3. In a device of the class described, the combination of a suitable car, means for raising the railroad superstructure above the bed of the road in advance of the car, and means for conveying ballasting material beneath the raised superstructure.

4. In a device of the class described, a suitable car, means for raising the railroad superstructure above the bed of the road in advance of the car; means for conveying ballasting material from the sides of the track beneath the raised superstructure, and means for spreading said material therebeneath.

5. In a device of the class described, a suitable car, means for raising the railroad superstructure above the bed of the road in advance of the car, means for conveying ballasting material beneath the raised superstructure, a roller following said conveying means, and means for adjusting said roller.

6. In a device of the class described, the combination of a power-propelled vehicle or car having a forwardly-extending frame, means on said frame for raising the railroad superstructure above the bed of the road, and means for adjusting said frame transversely.

7. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on the end of said car, and adapted for rotary movement thereon, means for adjusting said frame transversely, and means on said frame for raising the railroad superstructure.

8. In a device of the class described, a power-propelled vehicle or car, a frame having semicircular end portions, carried by said car, guides on the forward end of said car engaging said frame, and means on said frame for raising the railroad superstructure in advance of the car.

9. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on the end of said car, and adapted for rotary movement thereon, and means for operating said frame, for the purpose set forth.

10. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, a shaft journaled on said car, drums carried by said shaft, chains on said drums extending forwardly and secured to the sides of said frame, and means for separately actuating each of said drums, substantially as set forth.

11. In a device of the class described, a power-propelled vehicle or car, a forwardly-extended frame on said car, an upwardly-bowed track on said frame, and runners on said track substantially as set forth.

12. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, an upwardly-bowed track on said frame, having horizontal end portions 34, and runners on said track for the purpose set forth.

13. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, drums on said frame, an endless track on said frame and wound around said drums, and runners on said track for the purpose set forth.

14. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, an endless track on said frame one of the rails whereof is directly over one of the rails of the superstructure, a series of runners on said rails, and means carried by said runners for grappling the rails of the superstructure.

15. In a device of the class described a power-propelled vehicle or car, a forwardly-extending frame on said car, an endless track on said frame, a series of runners on said track, means for connecting said runners together to form a train and means depending from said runners for grappling the superstructure-rails, substantially as set forth.

16. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car a track on said frame above each of the superstructure-rails, runners on said tracks, and means depending from said runners for grappling the superstructive rails.

17. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, a track on said frame, runners on said track, means depending from said runners for grappling the superstructive rails, and means for bowing said track-rails transversely, for the purpose set forth.

18. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, track-rails on said frame, a transverse supporting-frame above said rails, arms depending from said supporting-frame and engaging said rails and means for moving said arms transversely, for the purpose set forth.

19. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, track-rails on said frame, I-beams extending transversely of said frame above said rails, a head-rail carried by said I-beams, arms depending from said head-rail and engaging said track-rails, and means for adjusting said head-rail and arms transversely, for the purpose set forth.

20. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, track-rails on said

frame, I-beams extending transversely of said frame above said rails, a head-rail carried by said I-beams, arms depending from said head-rail and engaging said arms, jack-screws carried by said head-rail and extending through standards on said forward frame, and hand-wheels on said jack-screws, substantially as and for the purpose set forth.

21. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, means on said frame for raising the superstructure of the railway, and wheels 96 depending from said frame and riding on said rails, for the purpose set forth.

22. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, means on said frame for raising the superstructure of the railway, wheels 96 riding on said rails, and means for vertically adjusting said wheels, for the purpose set forth.

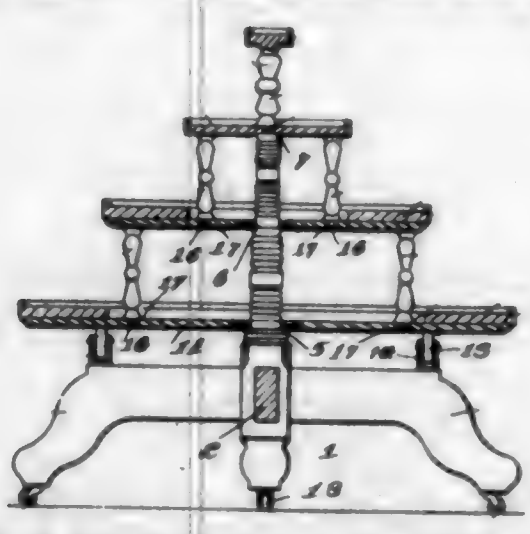
23. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame on said car, means for raising the superstructure of the railway, a frame 95 depending from said frame and having screw-posts extending upwardly through a suitable girder on said forwardly-extending frame, wheels 96 carried by said frame 95, and hand-wheels 97 mounted on said screw-posts, substantially as and for the purpose set forth.

24. In a device of the class described, a power-propelled vehicle or car, keepers extending inwardly from the forward end of said car, a forwardly-extending frame having a semicircular end portion loosely carried by said keepers, side beams supported on said car having keepers on their forward ends, an auxiliary frame extending forwardly of said beams above said first frame and having a semicircular rear portion loosely carried by the keepers on said beams, and a king-pin extending through perforations on each of said frames substantially as set forth.

25. In a device of the class described, a power-propelled vehicle or car, a forwardly-extending frame carried by said car, vertical standards on the forward end of said car, and a forwardly-extending truss pivoted on said standards and suitably connected with said forwardly-extending frame, substantially as set forth.

26. In a device of the class described, a power vehicle or car, a forwardly-extending frame on said car, means on said frame for raising the superstructure of the railway, ballast gathering and spreading blades and a roller beneath said raised superstructure, ballast-tamping means to the rear of said raising parts, means for supplying ballast, to said road-bed adjacent to said tampers, and means for operating said tampers.

816,077. **FLOWER STAND OR SUPPORT.** WILLIAM H. CRAWFORD, Dugger, Ind. Filed Jan. 12, 1906. Serial No. 295,773.

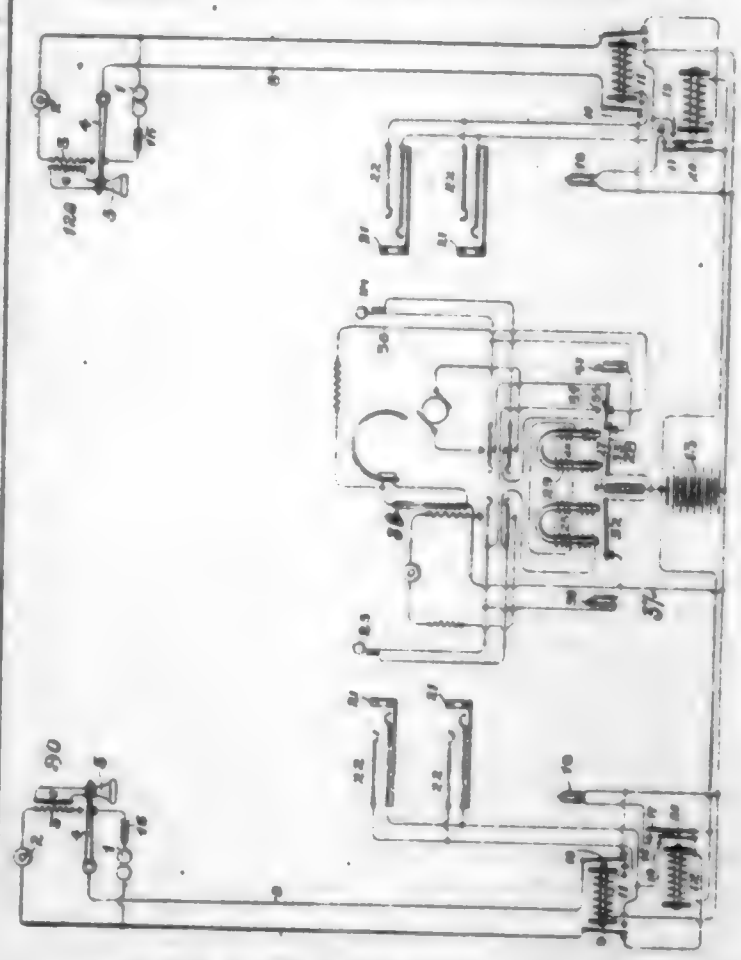


Claim.—1. A stand or support comprising a base embodying a plurality of supporting-legs, rollers applied to the upper portions of said legs, a central spindle or post extending upwardly from the base and formed with a plurality of shoulders in its length, and a body-support mounted on the base and comprising a plurality of superposed platforms, each of which is supported by means of a respective shoulder in the length of the spindle or post, the lowermost platform being also supported by means of the rollers aforesaid.

2. A stand or support comprising a base embodying a plurality of supporting-legs, rollers applied to the upper portions of said legs, a central spindle or post extending upwardly from the base and formed with a plurality of shoulders in its length, a body-support mounted on the base and comprising a plurality of superposed platforms, each of which is supported by means of a respective shoulder in the length of the spindle or post, the lowermost platform being also supported by means of the rollers aforesaid, and a plurality of vertical brace members arranged between the several supporting-platforms and connecting the same for simultaneous movement.

3. A stand or support comprising a base embodying a plurality of supporting-legs, rollers applied to the upper portions of said legs, a central spindle or post extending upwardly from the base and formed with a plurality of shoulders in its length, a body-support mounted on the base and comprising a plurality of superposed platforms, each of which is supported by means of a respective shoulder in the length of the spindle or post, the lowermost platform being also supported by means of the rollers aforesaid, and a plurality of vertical brace members arranged between the several supporting-platforms and removably connecting the same for simultaneous movement, the spindle or post of the base being surmounted by a short vertical post having a supporting-head.

816,078. **TELEPHONE-EXCHANGE SYSTEM.** WILLIAM M. DAVIS, Chicago, Ill., assignor, by mesne assignments, to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 6, 1901. Serial No. 70,994.



Claim.—1. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's substation to a central exchange, a plurality of spring-jacks of a multiple switch-board normally disconnected from the line-limbs, a single common source of current at the central exchange, a line-relay normally connected with the line-limbs through said source of current, a cut-off relay having a single winding, one terminal of said cut-off relay being connected with one terminal of said source and normally with one line-limb, the other terminal of the cut-off relay being connected with spring-jack contacts, a cord-circuit for connecting telephone-lines together, actuation of subtation apparatus causing energization of said line-relay independently of the cut-off-relay winding, and means upon connection of said cord-circuit with one of said multiple sections for closing a local circuit containing said cut-off-relay winding and said source of current whereby said cut-off relay is energized to disconnect said line-relay from circuit, and to connect the spring-jack contacts with the line-limbs, said local circuit including one of the cord-circuit conductors and one limb of the telephone-circuit.

2. In a telephone-exchange system, the combination with a telephone-line extending from a substation to a central exchange, of a plurality of multiple spring-jacks at the central exchange normally disconnected from the line-limbs, a single source of current at the central exchange for supplying both talking and signaling currents, a line-relay, a cut-off relay controlling said line-relay, one terminal

of said line-relay being permanently connected with one pole of said source, and the other terminal of the line-relay being normally connected with one line-limb independently of the cut-off-relay winding, actuation of substation apparatus causing a circuit to be completed through said line-relay and source, one terminal of said cut-off-relay winding being permanently connected with one pole of said source, the other terminal of said winding being normally connected with a contact of each of the multiple spring-jacks, and two strand cord-circuits for connecting telephone-lines together, one of said strands being normally connected with one pole of said source, connection of said cord-circuit with the spring-jack causing a local circuit to be closed through said cut-off-relay winding, said source of current, said cord-strand and said spring-jack whereby said line-relay is rendered inert, a relay for controlling said local circuit, the second cord-strand being also connected with the same pole of said source through the winding of said relay controlling said local circuit, connection of said cord-circuit with a spring-jack causing closure of a circuit including said winding, said source of current, said second cord-strand, said spring-jack, said cut-off-relay winding and the telephone line-limbs and substation apparatus.

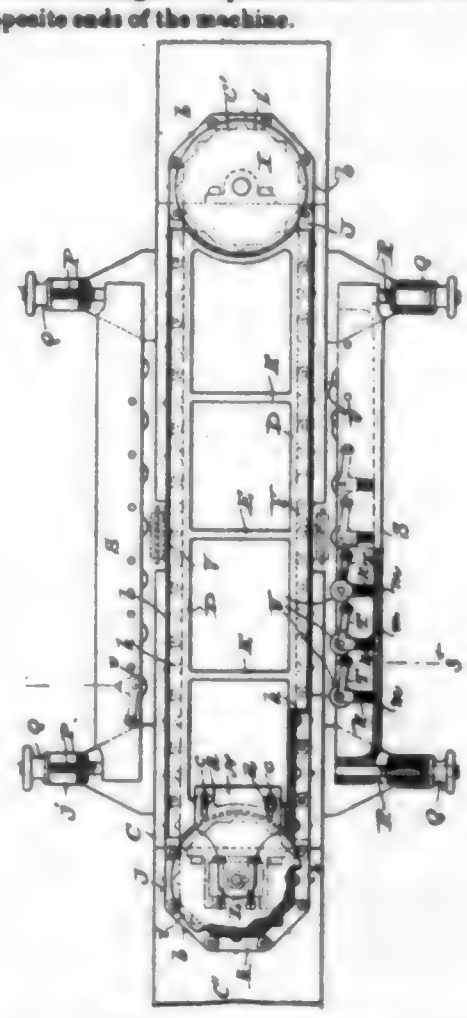
3. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's station to a central exchange, of a plurality of multiple spring-jacks at the central exchange, a single source of current at the central exchange for supplying talking and signaling currents, a line-relay, a line-indicator governed by said line-relay, actuation of substation apparatus causing actuation of said line-relay, a cut-off relay having a single winding for excluding the line-relay from circuit, cord connecting apparatus for connecting subscribers for conversation, a local circuit closed by the answering plug or switch of the cord-circuit upon connection of the cord-circuit with a spring-jack, said local circuit including the cut-off-relay winding, said source of current, a telephonic portion of the cord-circuit and a conductor portion constituting a continuation of the telephone-line, a switch included in said local circuit, and a relay in the cord-circuit for operating said switch, actuation of substation apparatus causing closure of the circuit through said relay whereby said switch is connected to open the local circuit, the circuit through said relay including the winding of said cut-off relay whereby said line-relay is maintained inoperative.

4. In a telephone-exchange system, the combination with a telephone-line extending from a substation to a central exchange, multiple spring-jacks at the central exchange normally disconnected from the line-limbs, a common source of current at the exchange for supplying talking and signaling currents, a line-relay, a line-indicator governed thereby, said line-relay being adapted for operation through the agency of the apparatus at the substation, a cut-off relay having a single winding for excluding the line-relay from circuit, cord connecting apparatus for uniting subscribers for conversation, connection of the cord connecting apparatus with a spring-jack causing closure of a local circuit, said local circuit serially including the entire cut-off-relay winding, a telephonic portion of the cord-circuit, and a conductor portion constituting a continuation of the telephone-line, a switch included in said local circuit, and a relay in the cord-circuit for operating said switch, actuation of substation apparatus causing the closure of the circuit through said relay whereby said switch is actuated to open the local circuit, said second circuit serially including said source of current, said cut-off-relay winding, a cord-circuit conductor and said line-limbs and substation apparatus.

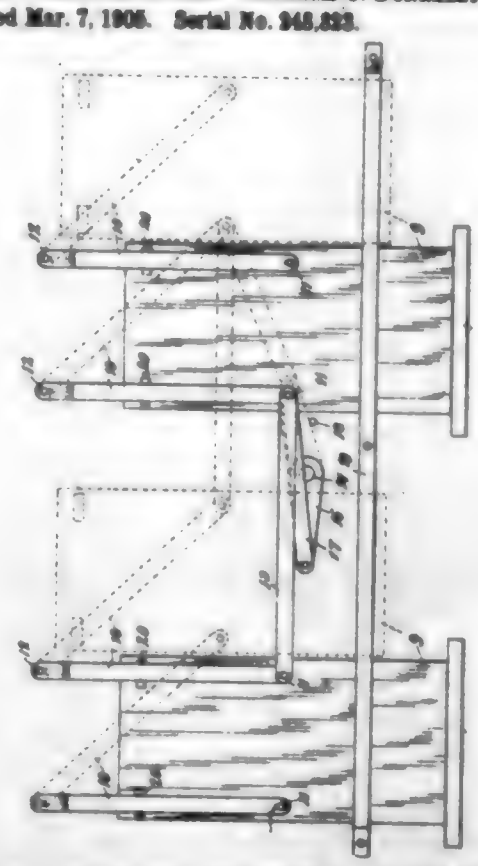
816,079. **WOODWORKING-MACHINE.** Frank Diehl, Sheboygan Falls, Wis., assignor to George P. Myers, Sheboygan, Wis. Filed Nov. 2, 1904. Serial No. 231,037.

Claim.—1. A woodworking-machine comprising a suitable frame provided with parallel side bars having upper outer lateral flanges, an endless feed-chain having straight stretches thereof backed by said side bars to which they are parallel under the flanges of same, means for driving the chain, supports in connection with the frame, adjusting-nuts for which the supports are provided with bearings, housings having screw-threaded rigid stems engaging the nuts, spring-controlled pivotal carriers in the housings, antifriction-rollers hung in the carriers opposite said straight stretches of the chain, and cutter-heads arranged to operate from below the material fed from opposite ends of the machine.

2. A woodworking-machine comprising a suitable frame provided with parallel upper side bars having upper outer lateral flanges, an endless feed-chain having straight stretches thereof backed by said side bars to which they are parallel under the flanges of same, means for driving the chain, transverse arches in connection with the frame, adjusting-nuts for which the arches are provided with bearings, housings having screw-threaded rigid stems engaging the nuts, spring-controlled pivotal carriers in the housings, antifriction-rollers hung in the carriers opposite said straight stretches of the chain, and cutter-heads arranged to operate from below on said material fed from opposite ends of the machine.



816,080. **FIRE-SHUTTER.** Bertram C. Donnelly, St. Joseph, Mo. Filed Mar. 7, 1905. Serial No. 248,823.



Claim.—1. A fire-shutter for buildings, comprising a pair of shutters, links connecting the shutters with the building upon which links the shutters may be swung from one position to another to open and close window-openings, a connecting-bar coupling the shutters together, a crank-shaft mounted on the wall of the building and having connection with the coupled shutters by which the shutters may be swung, and a guide-rail secured to the building and extending at a slight distance therefrom to guide the shutters in their movements.

2. A fire-shutter for buildings, comprising a pair of shutters, links connecting the shutters with the building upon which links the shutters may swing from one position to another to open and close window-openings, a connecting-bar coupling the shutters together

so that they move in unison, a crank-shaft mounted on the wall of the building and having connection with the coupled shutters, and means for tightening the shutters against the wall of the building as the shutters close the window-openings.

3. A fire-shutter for buildings, comprising a pair of shutters, links pivotally connected to the shutters and to the building by which the shutters may be swung from one position to another to open and close window-openings, a connecting-bar coupling the shutters together so that they move in unison, a crank-shaft mounted on the wall of the building and having connection with the coupled shutters by which they may be moved from one position to another, and wedge-blocks on the shutters to be engaged by the links as the shutters swing to their closed positions and thereby force the shutters tightly against the wall of the building around the window-openings.

4. A fire-shutter for buildings, comprising a pair of shutters, parallel links connecting the shutters with the building on which links the shutters may be swung from one position to another to open and close window-openings, a connecting-bar coupling the shutters together, a crank-shaft journaled through the wall of the building, a crank on the crank-shaft, a link connecting the crank to the coupled shutters, a handle on the crank-shaft inside the wall of the building, and a stop-lug on the wall of the building for engaging the crank after the crank and its link have passed their dead-center and the shutters are in their open position.

5. A fire-shutter for buildings having window-openings, comprising a pair of shutters, a pair of parallel links connecting each shutter with the wall of the building above the window-openings on which links the shutters may be swung from one position to another to open and close the window-openings, a connecting-bar coupling the shutters together, a crank-shaft journaled through the wall of the building, a crank on the crank-shaft, a link connecting the crank with the connecting-bar, a stop-lug on the wall of the building for limiting the movement of the crank, an operating-handle on the crank-shaft inside of the wall of the building, wedge-blocks on the shutters engaging the supporting-links as the shutters close to force the shutters away from the supporting-links against the wall around the window-openings, and a guide-rail extending across the window-openings at a distance from the wall to guide the shutters in their movements.

6. A fire-shutter for buildings, comprising a shutter, parallel links connecting the shutter with the wall of the building on which links the shutter may be swung from one position to another to open and close a window-opening, a crank-shaft journaled through the wall of the building, a crank on the crank-shaft, a link connecting the crank with the shutter, a stop for limiting the movement of the crank, and a handle on the crank-shaft inside of the wall of the building.

7. A fire-shutter for buildings, comprising a shutter, a pair of links connecting the shutter with the wall of the building on which links the shutter may be moved from one position to another to open and close a window-opening, a crank-shaft journaled through the wall of the building, a crank on the crank-shaft, a link connecting the crank with the shutter, a stop-lug for limiting the movement of the crank, means for operating the crank-shaft, and wedge-blocks on the shutter for engaging the supporting-links as the shutter is closed and forcing the shutter to bear tightly against the wall around the window-opening.

8. A fire-shutter for buildings, comprising a shutter, a link connecting the shutter with the wall of the building above a window-opening on which link the shutter may be swung from one position to another to open and close the window-opening, means for swinging the shutter, and a wedge-block on the shutter engaging the link as the shutter closes for forcing the shutter tightly against the wall of the building around the window-opening.

9. A fire-shutter for buildings, comprising a shutter, a link connecting the shutter with the wall of the building on which link the shutter may be swung from one position to another to open and close the window-opening, a bar for swinging the shutter mounted on the connection between the link and the shutter, a wedge-block on the shutter engaging the link as the shutter closes for forcing the shutter tightly against the wall of the building around the window-opening, and a guard-rail mounted on the wall of the building and extending a slight distance therefrom to form a guide for the shutter.

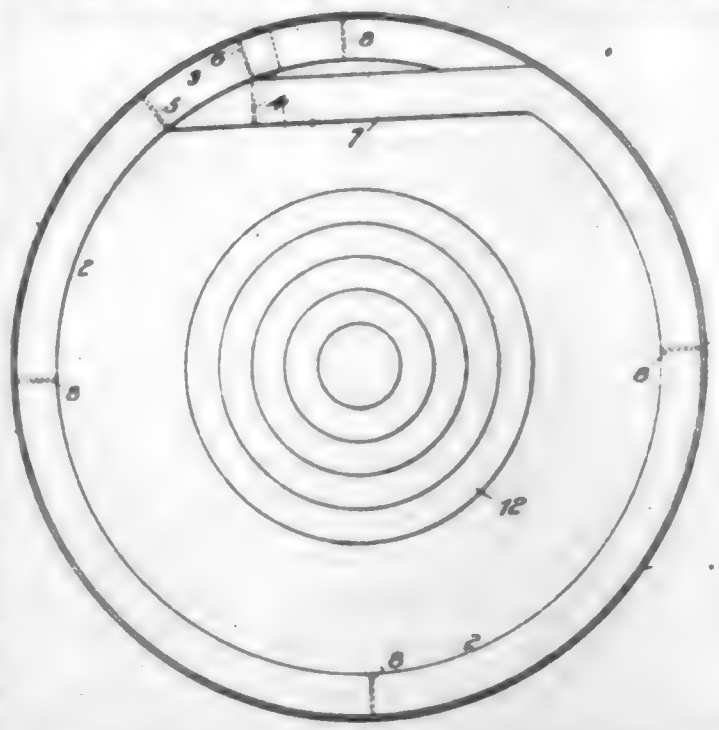
10. A fire-shutter for buildings, comprising a shutter member, links connecting the shutter member with the building upon which links the shutter member may be swung from one position to another to open and close a window-opening, means for swinging the shutter member on the links from one position to the other, and a guide-rail secured to the building and extending a slight distance therefrom to guide the shutter member in its movements.

11. A fire-shutter for buildings, comprising a shutter member, links connecting the shutter member with the building upon which links the shutter member may swing from one position to another to open and close a window-opening, means for swinging the shutter member, and means for tightening the shutter member against the wall of the building as it closes the window-opening.

12. A fire-shutter for buildings, comprising a shutter member, links pivotally connected to the shutter member and to the building by which the shutter member may be swung from one position to another to open and close a window-opening, means for swinging the shutter member, and wedge-blocks on the shutter member to be engaged by the links as the shutter member swings to its closed position and thereby force the shutter member tightly against the wall of the building around the window-opening.

13. A fire-shutter for buildings, comprising a shutter member, parallel links connecting the shutter member with the building on which links the shutter member may be swung from one position to another to open and close a window-opening, a crank-shaft journaled through the wall of the building, a crank on the crank-shaft, a link connecting the crank with the shutter member, a handle on the crank-shaft inside the wall of the building, and a stop on the wall of the building for engaging the crank after it has passed its dead-center and the shutter is in its open position.

816,081. **ANIMAL-CHASE.** WILLIS M. ELDER and CLARENCE W. TURNER, Waverly, Tenn. Filed July 15, 1905. Serial No. 269,831.



Claim.—1. A fox or other animal chase comprising a helical runway, substantially as specified.

3. A fox or other animal chase, comprising a helical runway, the upper and lower ends of which are connected together by a connecting-runway, substantially as set forth and described.

3. A fox or other animal chase, comprising a helical runway the upper and lower ends of which are connected together by a connecting-runway, and means for checking or restraining the pursuit of the coursing animal, substantially as set forth and described.

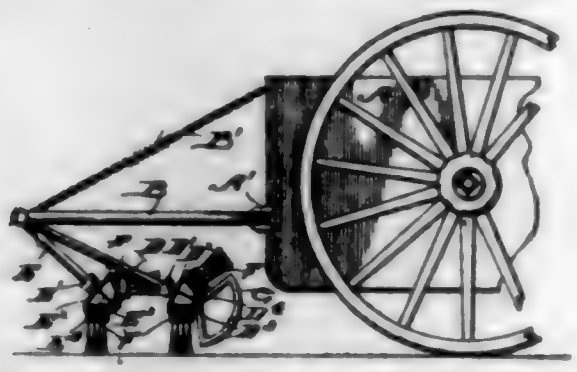
4. A fox or other animal chase, comprising a helical runway, the upper and lower ends of which are connected together by means of a wire-covered runway, restraining or checking gates situated within said connecting-runway, and checking or restraining gates suitably placed for diverting the direction of the coursing, substantially as set forth and described.

816,082. **ROAD-SWEEPER.** CHARLES J. EWART, Roscoe, N. Y. Filed Apr. 6, 1905. Serial No. 254,130.

Claim.—1. A road-sweeper, comprising a vertically-movable frame, a rod pivotally connected at one end to the said frame, and brushes carried adjacent the free end of the rod, the said brushes projecting in different directions so that one of said brushes contacts with the ground during movement of the sweeper in one direction and the other brush contacts with the ground when the rod is swung upon its pivot-point and the sweeper is moved in the opposite direction.

2. The combination with a wheeled truck, a U-shaped frame

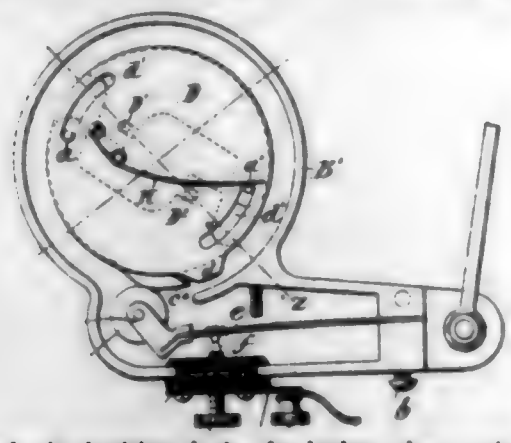
pivotally carried at the rear of the truck, a shaft carried by the frame, rods pivotally mounted on the shaft, clamping-plates carried by the rods, and a pair of brushes at an angle to each other carried by the plates.



3. The combination with a wheeled truck, of a U-shaped frame, chains adapted to normally hold the frame in a horizontal position, rods in pairs pivotally supported from the frame, said rods being arranged in sets, one set being in advance of the other set, coacting clamping plates carried by each pair of rods, and a pair of brushes at angles to each other carried by each set of clamping-plates.

4. A device of the kind described comprising a shaft vertically movable, sleeves on the shaft, rods in sets and pairs carried by the sleeves, one set being in advance of the other, coacting clamping-plates carried by each pair of rods, brushes arranged at an angle to each other carried by each pair of clamping-plates, and rockers carried by clamping-plates of one set of rods, as and for the purpose set forth.

816,083. CURRENT-CONTROLLER FOR IGNITING DEVICES FOR HYDROCARBON-ENGINES. FAY O. FARWELL, Dubuque, Iowa, assignor of one-half to The Adams Company, Dubuque, Iowa, a Corporation of Iowa. Filed Oct. 31, 1904. Serial No. 230,415.



Claim.—1. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a rotatory driven member adapted to engage one of said contacts to bring the contacts together, a driving member for said rotatory driven member, the latter being capable of a limited rotatory movement independent of its driver, means connected with the movable contact to accelerate the movement of the rotatory driven member after the latter has brought said contacts together, whereby the contacts will be quickly separated, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

2. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a rotatory disk having a cam adapted to engage one of said contacts to bring the contacts together, a driving-shaft for said disk, connections between the disk and shaft to permit a limited independent rotatory movement of the disk, a spring connected with the movable contact to accelerate the movement of the disk after the latter has brought said contacts together, whereby the contacts will be quickly separated, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

3. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a rotatory member adapted to engage one of said contacts to bring the contacts together, a driving member for said rotatory member, connections between the driving and rotatory members to permit a limited independent rotatory movement of said rotatory member, a centrifugal governor operated by the driving member to move the rotatory member in relation to the driving member, whereby the contact will be made at a time earlier or later in the movement of the driving member, means connected with the movable contact to accelerate the movement of the rotatory member after the latter has brought said contacts together, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

4. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a driving member, a rotatory member having a pin-and-slot connection with the driving member to permit a limited independent motion of the rotatory member, means on the rotatory member to bring said contacts together, means connected with the movable contact to accelerate the movement of the rotatory member after the latter has brought the contacts together, whereby the contacts will be quickly separated, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

5. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a rotatory disk having a cam adapted to engage one of said contacts to bring the contacts together, a driving member for said disk, pin-and-slot connections between the disk and driving member to permit a limited independent rotatory movement of the disk, a spring connected with the movable contact to accelerate the movement of the disk after the latter has brought said contacts together, whereby the contacts will be quickly separated, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

6. An igniting device for hydrocarbon-engines, comprising normally separated contacts, a rotatory member adapted to engage one of said contacts to bring the contacts together, a driving member for said rotatory member, pin-and-slot connections between the driving and rotatory members to permit a limited independent rotatory movement of said rotatory member, a centrifugal governor operated by the driving member to move the rotatory member in relation to the driving member, whereby the contact will be made at a time earlier or later in the movement of the driving member, means connected with the movable contact to accelerate the movement of the rotatory member after the latter has brought said contacts together, and means for regulating the period of engagement of the contacts to maintain such period substantially constant for various speeds of the engine.

7. An igniting device for hydrocarbon-engines, comprising a fixed contact and a movable spring-contact, a driving-shaft rotated at a speed having a fixed relation to the speed of the engine, a disk free to rotate to a limited extent faster or slower than said shaft, a cam or projection on said disk adapted to engage the spring-contact to close the contacts, and a weight-arm interposed between the shaft and the disk and operating by centrifugal force to move the disk with respect to the shaft, said weight-arm having a projection coöperating with the cam on the disk all so constructed and arranged that the weight-arm controls the length of time of contact with respect to the rotation of the shaft and the spring-contact accelerates the movement of the disk to secure a quick break at the contacts.

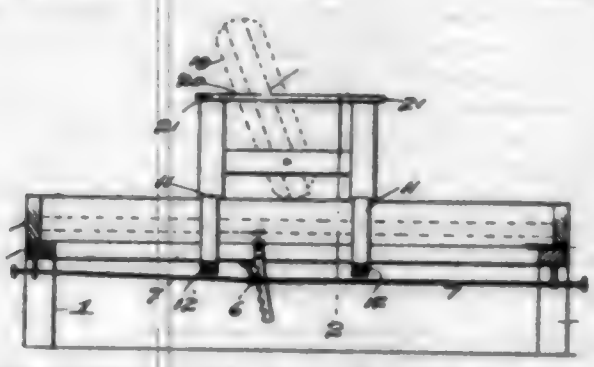
8. An igniting device for gas or gasolene engines, comprising normally separated contacts, a driving-shaft rotated at a speed that has a fixed relation to the speed of the engine, a disk free to rotate to a limited extent faster or slower than said shaft, a short projection or cam on said disk adapted to engage the movable contact and close the contacts for a short period, two weight-arms interposed between the shaft and disk, said weight-arms affected by centrifugal force and adapted to move said disk in relation to said shaft, a projection or cam on one of said weight-arms adapted to move out and add to the length of the cam on said disk, whereby the length of time of the electrical contact will be made longer or shorter.

9. An igniting device for gas or gasolene engines, comprising normally separated contacts, a driving-shaft rotated at a speed that has a fixed relation to the speed of the engine, a disk connected to said driving-shaft, a projection or cam on said disk adapted to engage the movable contact and close the contacts, one or more weighted arms secured to said disk, and a projection or cam on one of said arms adapted to be moved by centrifugal force and add its length to the cam on said disk, whereby an electrical contact for a longer or shorter period will be made.

816,084. CHAIR-LOUNGE. JOHN FLEIDALL, Chicago, Ill. Filed May 22, 1905. Serial No. 261,637.

Claim.—1. In a device of the class described, the combination with a supporting-frame, of a seat-frame pivoted thereto, means for supporting said seat-frame at various inclinations, and a chair back and arms longitudinally, adjustably supported upon said seat-frame.

2. The combination with a seat-frame, of parallel longitudinal plates connected thereto, arm-frames slidingly supported on said plate, means connecting said arm-frames, and a back-frame carried by said arm-frame.

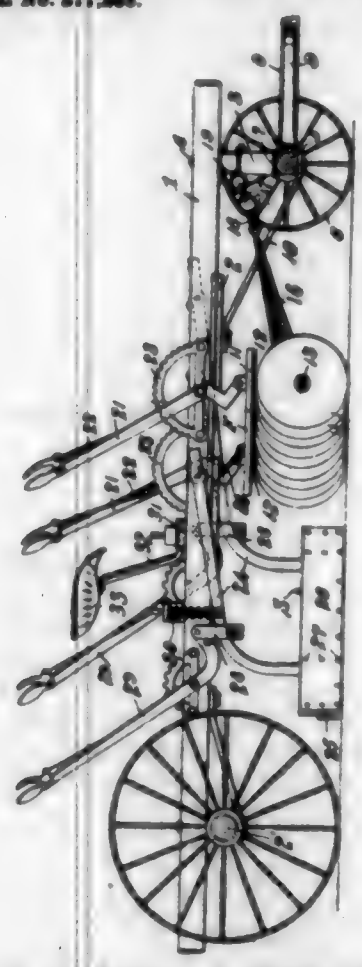


3. The combination with a frame, of plates fixed thereto and extending longitudinally thereof, hook-shaped plates slidingly engaging said first-mentioned plates, transverse bars connecting said hook-shaped plates, arm-frames fixed to and supported by said hook-shaped plates, a seat-frame supported by said first-mentioned frame between and independently of said hook-shaped plates, and a back-frame supported by said arm-frames.

4. The combination with a supporting-frame, of a seat-support carried thereby, arm-frames slidingly supported by said supporting-frame outside said seat-support, means connecting said arm-frames, and a back-frame pivotally supported by said arm-frames.

5. The combination with a supporting-frame, of a seat-frame pivotally mounted thereon, arm-frames slidingly supported by said seat-frames, and means connecting said arm-frames.

816,085. DISK LAND-CULTIVATOR, ROAD-MACHINE, AND FARM-WAGON. ABRAM L. FOOTE, Fayette, Iowa. Filed Sept. 6, 1905. Serial No. 277,268.



Claim.—1. A carrying-frame including side members, obliquely-disposed cross members, a hind axle and a front bolster; a front axle pivoted beneath the bolster, a brace member connecting the front axle with the forward oblique cross-bar; a disk-carrying frame, a disk-carrying shaft supported in said frame, draft means connecting said shaft with the front bolster; flexible means connecting the head of the disk-carrying frame with the rear oblique cross-bar; a draft-tongue connected rigidly with the front axle; and means for vertically adjusting and for retaining at various adjustments the ends of the disk-carrying frame.

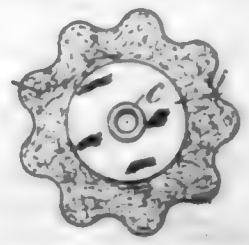
2. In a machine of the class described, a carrying-frame including side members, a hind axle and a front bolster; a front axle pivoted beneath the bolster: an adjustably-supported disk-carrying frame, a disk-carrying shaft in said frame and means connecting said shaft flexibly with the front bolster; a draft-tongue connected rigidly with the front axle; rearwardly-extending downwardly-curved beams pivoted upon the side beams of the carrying-frame, a scraper carried by said beams, and means for adjusting the scraper-carrying beams and for retaining them at various adjustments.

3. In a machine of the class described, a carrying-frame including side members, a hind axle and a front bolster; a front axle pivoted beneath the bolster; an adjustably-supported disk-carrying frame, a disk-carrying shaft in said frame, and means connecting said shaft flexibly with the front bolster to one side of the line of draft; a draft member connected rigidly with the front axle; rearwardly-extending downwardly-curved beams pivoted upon the side beams of the carrying-frame, a scraper carried by said beams, springs disposed to exert downward pressure upon the scraper-carrying beams, and means for adjusting said beams and for retaining them at various adjustments.

4. In a machine of the class described, a carrying-frame, rearwardly-extending downwardly-curved beams pivoted upon the side beams of the carrying-frame, a scraper carried by said beams, springs disposed to exert downward pressure upon said beams, adjusting-levers pivoted upon the side beams of the frame, links connected pivotally with said levers and supporting the scraper-carrying beams, and means for securing the levers at various adjustments.

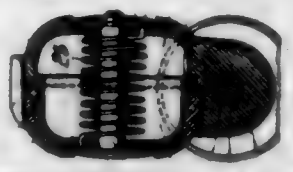
5. In a machine of the class described, the combination with a carrying-frame, of an obliquely-disposed adjustably-supported disk-carrying frame and an adjustably-supported obliquely-disposed scraper; the disk-carrying frame and the scraper being obliquely disposed in opposite directions.

816,086. PEN-WIPER. JONAS R. FOSTER, New York, N. Y., assignor to Eberhard Faber, New York, N. Y. Filed Oct. 20, 1905. Serial No. 283,672.



Claim.—A pen-wiper comprising flat absorbent material having a continuously irregular periphery formed by alternate rounding recesses and rounding projections corresponding generally to the average curvature of a pen, parallel plates one on either side of said material and each having an opening therethrough, and means, such as an eyelet extending through said openings, for securing the plates and said absorbent material together, substantially as described.

816,087. RECEPTACLE FOR GARBAGE. ARTHUR GAGNON and GEORGE PAQUETTE, Montreal, Canada. Filed Feb. 4, 1905. Serial No. 244,167.



Claim.—1. In a device of the character described, a receptacle, a cover hinged thereto and pivoted to swing in a vertical plane, and resilient means for maintaining the cover in a plurality of positions.

2. In a device of the character described, a receptacle, a cover hinged thereto and adapted to swing in a plurality of directions on two horizontal axes arranged at right angles to each other, and resilient means for maintaining the cover in a plurality of positions.

3. In a device of the character described, a receptacle, a cover attached to the receptacle by a hinge, said hinge having two horizontal axes arranged at an angle to each other, and resilient means for maintaining the cover in a plurality of different positions.

4. In a device of the character described, a receptacle, a cover therefor, a coinciding member carried by the receptacle, a corresponding member carried by the cover, a pivotal member adapted to maintain said coinciding members in operative position, means for actuating said members on said pivotal member, means adapted to limit the movement of said members, and a member pivotally securing one of said members to said receptacle.

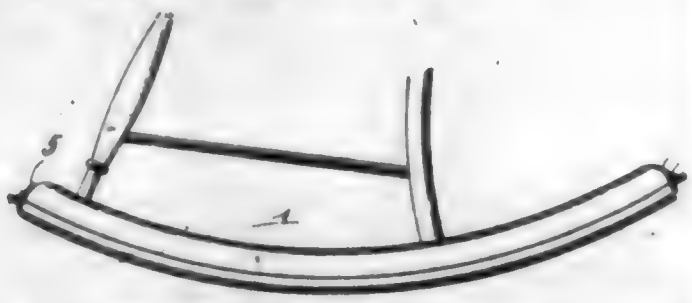
5. In a device of the character described, a receptacle, a cover therefor, a coinciding member carried by the receptacle, a corre-

sponding member carried by the cover, each of said members being provided with a recess therein, a pivotal member provided with a flat head and a screw-threaded nut disposed in said recesses, means adapted to actuate said members on said pivotal member, means for limiting the movement of said members, and means for pivotally securing one of said members to said receptacle.

6. In a device of the character described, a receptacle, a cover therefor, a coinciding member carried by the receptacle, a corresponding member carried by the cover, a pivotal member adapted to maintain said coinciding members in operative position, a spring adapted to actuate said members on said pivotal member, means adapted to limit the movement of said members, and means pivotally securing one of said members to the receptacle.

7. In a device of the character described, a receptacle, a cover therefor, a coinciding member carried by the receptacle, a corresponding member carried by the cover, a pivotal member connecting said members, a helical spring wound on said pivotal member and having its ends thrust into said coinciding members, means for limiting the movement of said members on the pivotal member, and means for pivotally securing one of said members to the receptacle.

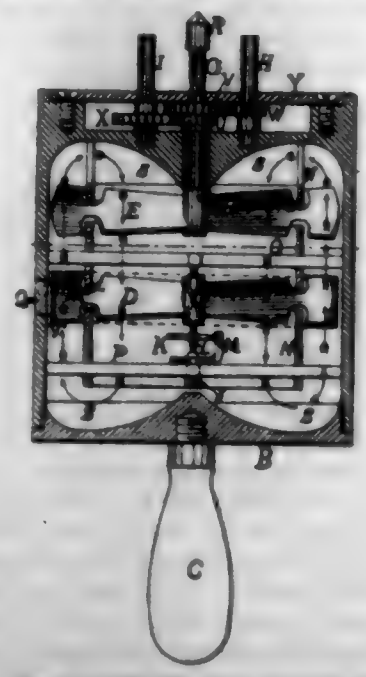
816,088. ROCKER ATTACHMENT. PHILIP J. GEYLER, Hillsboro, Ohio. Filed June 19, 1905. Serial No. 265,961.



Claim.—1. A resilient tread for rockers comprising a cushion-tire, a securing-wire inserted through said tire, apertured metallic cap-plates to secure the ends of said wire to the ends of the rocker, said cap-plates having spring-tongues to grip the ends of the wire when inserted through the apertures therein, and prongs or barbs struck out from said cap-plates to engage the ends of the rocker to hold the cap-plates in place thereon, substantially as described.

2. A rocker having a longitudinally-disposed groove formed on its under side from end to end, a cushion tread or tire arranged in said groove, a securing-wire inserted through said tire, apertured metallic cap-plates to secure the ends of said wire, to the ends of the rocker, said cap-plates having spring-tongues to grip the ends of the wire when inserted through the apertures therein, and prongs or barbs struck out from said cap-plates to engage the ends of the rocker to hold the cap-plates in place thereon, substantially as described.

816,089. SPEED-METER. RUSSELL W. HARGRAVE, Ann Arbor, Mich. Filed May 22, 1905. Serial No. 261,691.

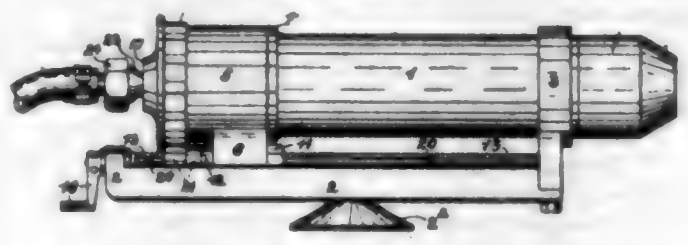


Claim.—1. The combination in a speed-meter of an inclosed case in which are arranged coaxially and to rotate two fans, having vanes with opposite pitches at their inner and outer portions, corresponding portions of the vanes of each fan having the same pitch, substantially as described.

2. The combination in a speed-meter of a case in which are arranged coaxially and to rotate two fans having vanes with opposite pitches, at their inner and outer portions, corresponding portions of the vanes of each wheel having the same pitch, and of an inner casing N to assist in the complete separation of the oppositely-traveling currents produced by the oppositely-pitched inner and outer portions, of the vanes of the impelling-fan when it is revolved, all substantially as described.

3. The combination in a speed-meter of a propelling fan-wheel E, a recording fan-wheel D, restrained by the spring K, and of the outer case A, the inner case N, together with the end B, forming the passage S, all substantially as described.

816,090. ROCK-DRILL OR ROCK-DRILLING MACHINE. HENRY HELLMAN and LEWIS C. BAYLES, Johannesburg, Transvaal. Filed Aug. 15, 1904. Serial No. 220,698.



Claim.—1. A rock-drilling machine or engine comprising in combination a drill-cylinder carrying the percussive apparatus, a shell or cradle provided with a forward guide in which said cylinder is slidably mounted, a loose sleeve encircling said cylinder constructed to slide in guideways formed in said shell or cradle, a feed-nut carried by said sleeve, a feed-screw stationarily carried by said shell or cradle, and means for rotating the screw to traverse the sleeve and with it the cylinder longitudinally of the shell or cradle.

2. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying percussive apparatus, a shell or cradle provided with a front guide in which said cylinder is slidably and rotatably mounted, a sleeve encircling said cylinder, connections for giving a slidable engagement between the sleeve and the shell, and connections comprising a rotatable shaft, for advancing and retracting the cylinder aforesaid, and gearing between said shaft and the cylinder, for rotating the latter, upon rotation of the shaft aforesaid.

3. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying percussive apparatus, a shell or cradle with which said cylinder is slidably and rotatably mounted, connections for advancing and retracting the cylinder, comprising a feed-shaft which rotatably engages a part carried by the cylinder, and gearing between said shaft and cylinder for rotating the latter upon rotation of the feed-shaft aforesaid.

4. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying the percussive apparatus, a shell or cradle in which said cylinder is slidably mounted, a feed-nut carried by said shell or cradle, a feed-screw revolubly carried by the cylinder working through the feed-nut to move the cylinder longitudinally of the shell or cradle, and gearing between the cylinder and feed-screw for rotating the cylinder by the rotation of the feed-screw.

5. In a rock-drilling machine or engine, in combination a drill-cylinder carrying the percussive apparatus, a cap or cover fitted at the rear end thereof said cover being formed with circumferential teeth, a shell or cradle in which said cylinder is slidably mounted, a feed-screw, a nut for traversing the cylinder longitudinally of its shell or cradle, a pinion carried by said feed-screw, means for compelling said pinion to rotate with said screw while permitting it to slide longitudinally thereof and means for maintaining the pinion in gear with the circumferential teeth on the cap or cover.

6. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying the percussive apparatus, a cap or cover fitted at the rear end thereof said cover being formed with circumferential teeth, a shell or cradle in which said cylinder is slidably mounted, a feed-nut and a feed-screw working therethrough for traversing the cylinder longitudinally of its shell or cradle, a pinion carried by said feed-screw formed with a feather-key engaging a feather-way formed longitudinally of the feed-screw so that the pinion is compelled to rotate with said screw and permitted to slide longitudinally thereof, means for maintaining said pinion in gear with the circumferential teeth on the cap or cover and means for rotating the screw to feed the drill and at the same time rotate the cylinder, substantially as described.

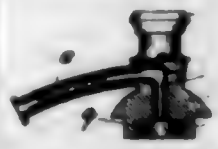
7. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying percussive apparatus, a cap or cover fitted at the rear end thereof, said cover being formed with circumferential teeth, a shell or cradle in which said cylinder is slidably mounted, a sleeve revolubly supporting the rear end of said cylinder and provided with ribs or wings which traverse guideways formed in the shell or cradle, a feed-nut and a feed-screw working therein for traversing the cylinder longitudinally of its shell or cradle, a pinion carried by said feed-screw formed with a feather-key and engaging a feather-way formed longitudinally of the feed-screw so that the pinion is compelled to rotate with said screw, and formed to slide longitudinally thereof, means for maintaining said pinion in gear with the circumferential teeth on the cap or cover, and means for rotating the screw to feed the drill and at the same time rotate the cylinder, substantially as described.

8. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying the percussive apparatus, an impact-piece located in the front end of said cylinder which serves to receive and transmit the impacts of the percussive apparatus to the drill or bit, means for compelling the drill or bit to rotate in unison with the cylinder, a shell or cradle in which the cylinder is slidably mounted, means for mounting said shell or cradle, a sleeve in which the cylinder is revolubly supported at the rear end, a feed-screw and a feed-nut for moving the cylinder longitudinally of its supporting-casing and gearing carried by the feed-screw and cylinder for rotating the latter when the screw is rotated to feed the drill, substantially as described.

9. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying the percussive apparatus, an impact-piece located in the front end of said cylinder which receives and transmits the impacts of the percussive apparatus to the drill or bit said piece being formed with a longitudinal hole to permit a quantity of the actuating fluid to pass therethrough from the cylinder, means for compelling the drill or bit to rotate in unison with the cylinder, a shell or cradle formed with a front guide in which the cylinder is slidably mounted and constructed to form longitudinal guideways, means for mounting said shell or cradle, a sleeve in which the cylinder is revolubly supported at the rear end, said sleeve being constructed with longitudinal ribs or wings traversing the guideways in the shell or cradle, a feed-screw formed with a longitudinal feather-way and a feed-nut operating in conjunction with the feed-screw for moving the cylinder longitudinally of the shell or cradle, a cap or cover fitted at the rear end of the cylinder formed with circumferential teeth and with a flange at one side of said teeth, a pinion carried by the feed-screw fitted with a feather-key sliding in the longitudinal feather-way in said screw so that the pinion is compelled to rotate with the screw and permitted to slide longitudinally thereof, means for rotating the screw to move the cylinder longitudinally of the shell or cradle and to simultaneously rotate said cylinder and means for introducing the motive fluid into said cylinder, substantially as described.

10. In a rock-drilling machine or engine, in combination, a drill-cylinder carrying percussive apparatus, a shell or cradle provided with a front guide in which said cylinder is slidably and rotatably mounted, a sleeve encircling said cylinder, connections for giving a slidable engagement between the sleeve and the cradle, a cap at the rear of the cylinder and provided with circumferential gear-teeth for which the aforesaid sleeve acts as a shroud, a pinion engaging said teeth and connections for rotating the pinion.

816,091. SIPHON-BOTTLE. JOHN G. HENRICH, London, England. Filed Jan. 24, 1906. Serial No. 297,557.

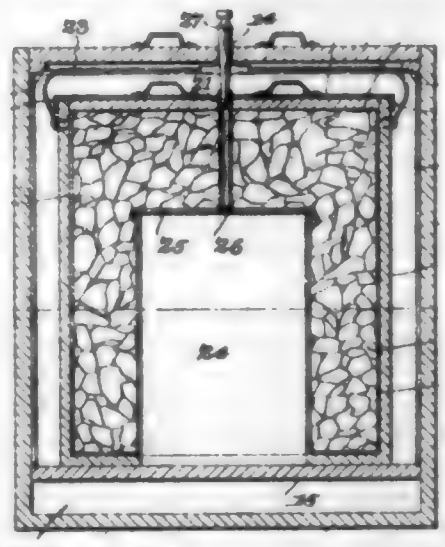


Claim.—1. A stopper for siphon-bottles comprising a screw-stopper made of porcelain, in one piece, and having a chamber provided at the top thereof and a tapped hole formed in the bottom thereof, said chamber and tapped hole being in connection by a central passage in which and within the limits of said stopper and in combination therewith is located a valve having a hollow stem provided with a number of holes at its lower end and a collar at its upper end, a spring for closing said valve and a thimble-piece screwed in the hollow of said stopper and carrying the siphon-tube substantially as described.

2. A stopper for siphon-bottles comprising, in combination a screw-stopper made of porcelain in one piece, said stopper having a chamber formed in the top thereof, and a tapped hole formed in the bottom thereof, a valve having a hollow stem provided with a number of holes at its lower end and a collar at its upper end, and a spring for closing said valve, said valve, stem, spring and collar being located centrally of and within the limits of said stopper, a thimble-piece screwed in the bottom of said stopper and carrying the siphon-tube, washers located between said thimble-piece and stopper, and stopper and bottle, substantially as described.

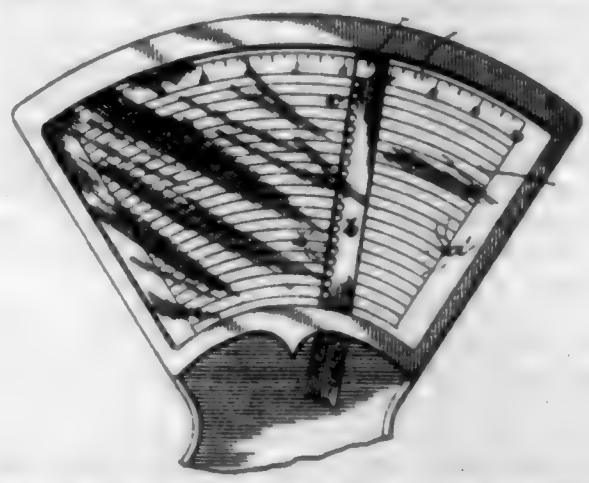
3. In combination with a siphon-bottle, an outlet-valve, a stopper having a chamber at the top thereof, a tap having in combination a hollow plug adapted to fit into said chamber when opening the outlet-valve of the bottle, a discharge-spout and a top piece, said discharge-spout and plug being in communication, and said plug having a resilient lining to fit around the top of the said outlet-valve when said plug is placed in said chamber, substantially as described.

816,092. ICE-CREAM FREEZER. FRED A. HOLMES, Eastport, Me. Filed Sept. 20, 1905. Serial No. 279,323.



Claim.—In a refrigerating apparatus, an outer casing having a detachable cover provided with a central aperture and with a transverse partition spaced from the bottom of the casing and forming a dead-air space in the bottom of the same, an inner casing spaced from the outer casing and supported upon said partition, said inner casing having a detachable cover and with an internal chamber opening downwardly, a tube extending from said chamber through the cover to said inner casing and in alinement with the aperture in the cover to the outer casing and a detachable plug extending through the aperture in said outer casing and seated in said tube.

816,093. COMPUTING-SCALE. JOSEPH HOPKINSON, Dayton, Ohio, assignor to The Computing Scale Company, Dayton, Ohio, a Corporation of Ohio. Filed Dec. 4, 1905. Serial No. 290,070.



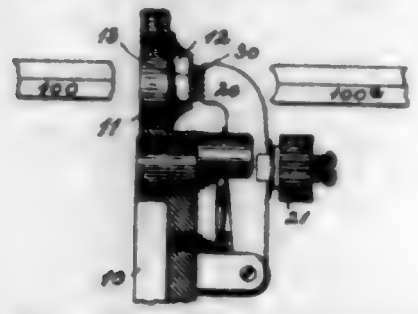
Claim.—1. In a computing-scale, a tabulated chart having a series of rows of price-total indications and an index-hand arranged to move over said chart having a series of price-per-pound indications to coöperate with the indications on said chart, a series of pointers along one edge of said index-hand, one for each row of price-total indications, a cut-away portion at the top of said hand and a row of indications on said chart adjacent to said cut-away portion, and a thin strip of material extending across the cut-away portion, substantially as and for the purpose specified.

2. In a computing-scale, a tabulated chart having a series of rows of price-total indications, an index-hand arranged to be moved over said chart and having a series of price-per-pound indications to

coöperate with the price-total indications on said chart, a series of pointers along one edge of said index-hand, and a thin strip of material extending over the series of pointers, substantially as and for the purpose specified.

3. In a computing-scale, a tabulated chart having a series of indications, an index-hand also having a series of indications to coöperate with the indications on said chart and adapted to be moved over said chart, said index-hand being cut away at intervals to correspond to the indications thereon, and a strip of material extending along the index-hand and across the series of cut-away portions, substantially as and for the purpose specified.

816,094. GRIPPING DEVICE OR CARRIER FOR BUTTON-MAKING MACHINES. JOHN HORNBY, Woonsocket, R. I., assignor to The Button Machinery Company, New York, N. Y., a Corporation of New York. Filed Apr. 22, 1904. Serial No. 204,309.



Claim.—1. In a button-making machine, means for holding a button-slab having a tool-aperture, and means for guiding said slab to a predetermined position across said aperture, said guiding means being arranged at one side of said aperture and having a plurality of converging guiding-faces each of which extends approximately at a tangent with said aperture and is adapted to engage an edge of said slab so as to bring a predetermined part of the slab across said aperture.

2. In a button-making machine comprising a fixed jaw having a tool-aperture, a guide for the slab to be operated on adapted to bring a predetermined part of the slab to register with the tool-aperture, comprising a projection of the jaw located at one side of said aperture and having a plurality of edges each of which starts at the periphery of said aperture and extends off from the same substantially at a tangent thereto.

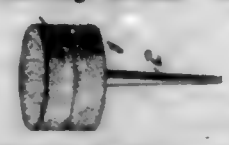
3. In a button-making machine, comprising a fixed jaw having a tool-aperture, a guide for the slab to be operated on, adapted to bring a predetermined part of the slab into registration with said aperture, said guide having adjacent to said aperture a recess adapted to receive and engage a pointed edge of said slab.

4. In a button-making machine comprising a fixed jaw having a tool-aperture, a guide for the slab to be operated on adapted to bring a predetermined part of the slab to register with the tool-aperture, comprising a projection on the jaw having an edge in a plane substantially tangent to the periphery of the tool-aperture and a recess adapted to receive and engage with the edge of the material slab.

5. In a button-making machine comprising a fixed jaw having a tool-aperture, a guide for the slab to be operated on adapted to bring a predetermined part of the slab to register with the tool-aperture, comprising a projection on the jaw having a plurality of edges each in a plane substantially tangent to the periphery of the tool-aperture and a recess adapted to receive and engage with the edge of the material slab.

6. A button-making machine, comprising a jaw having a tool-aperture and a guide for the slab to be operated on, said guide being arranged at one side of said aperture and having a plurality of converging guiding-faces which extend approximately at tangents with said aperture and also having a recess beneath the junction of said faces, the wall of said recess opposite said jaw being inclined, substantially as described and for the purposes set forth.

816,095. HEADED FASTENING DEVICE. EVERETT T. HOUSE, Brooklyn, N. Y. Filed Aug. 12, 1905. Serial No. 273,911.



Claim.—1. A cushion-headed fastening device, comprising a shank having an enlarged portion, a disk on said shank beneath said enlarged portion and an upper disk of cushioning material disposed over the enlarged portion and in facial contact with the first-mentioned disk, said disks being secured together on their contacting faces by a cementitious substance.

2. A cushion-headed fastening device, comprising a shank having an enlarged portion, a disk on said shank beneath said enlarged portion and an upper disk of flexible textile cushioning material disposed over the enlarged portion and in facial contact with the first-mentioned disk, said disks being secured together on their contacting faces by cementitious substance.

3. A cushion-headed fastening device, comprising a shank having an enlarged portion, a disk on said shank beneath said enlarged portion, and an upper disk of cushioning material disposed over the enlarged portion and in facial contact with the first-mentioned disk, and means to secure said disks together.

816,096. CHAIN. HENRY A. HOUSE, Bridgeport, Conn. Filed Sept. 26, 1905. Serial No. 280,184.



Claim.—1. A chain comprising sheet-metal loop-links with angular-shaped ends, stay-links comprising angular stay-blades to contact with said angular-shaped ends, connections for said blades, for the purpose set forth.

2. A chain comprising sheet-metal loop-links having angular-shaped ends on said links, stay-links comprising stay-blades angular in cross-section to contact with said angular-shaped ends, connections for said blades, for the purpose set forth.

3. A chain comprising alternate sheet-metal loop-links having angular-shaped ends, coupling-links connecting the loop-links, said coupling-links comprising angular-shaped stay-blades and connections for said blades, for the purpose set forth.

4. A chain comprising sheet-metal loop-links having angular-shaped ends, stay-links comprising angular stay-blades to contact with said angular-shaped ends, removable connections for said blades, for the purpose set forth.

5. A chain comprising sheet-metal loop-links having angular-shaped ends, stay-links comprising angular stay-blades, removable connections having angular openings to admit said blades, for the purpose set forth.

6. A chain comprising sheet-metal links having angular-shaped ends or seats, diamond-shaped stay-blades adapted to engage with said seats, means for yoking or connecting said blades together, for the purpose set forth.

7. A chain comprising alternate links of sheet metal with angular ends, links having angular edges adapted to engage with the apexes of said angular ends, for the purpose set forth.

8. A frictionless jointed chain comprising alternate flexible sheet-metal links having angular bearing-points in their ends, combined with angular-shaped coupling-links, for the purpose set forth.

9. A flexible sheet-metal link having a pulley-contact lower surface adapted to spring inward to conform to a pulley, and having an opening in its upper surface, a flexible bridge to span said opening, for the purpose set forth.

10. A chain comprising alternate flexible and angular-ended sheet-metal loop-links having an opening on one side and a flexible bridge spanning said opening so as to prevent abnormal expansion or stretching of said links, stay-links for coupling said loop-links together comprising stay-blades angular in cross-section, connections for said blades having angular openings to admit said blades, said blades adapted to be automatically seated at the apexes of the angular-ended loop-links, for the purpose set forth.

11. A chain comprising alternate flexible and angularly-ended loop-links having an opening in one side, a flexible bridge to span said opening, stay-links for coupling said loop-links together comprising stay-blades angular in cross-section, connections for said blades having angular openings to admit said blades, means to prevent accidental withdrawal of said blades, for the purpose set forth.

12. A chain comprising links whose inner ends are provided with angular-shaped seats, coupling-links having stay-blades or cross-bars angular in cross-section, the edges of said bars adapted to engage with the apexes of the said angular-shaped seats, expansible connections for said bars, for the purpose set forth.

13. A chain comprising alternate sheet-metal loop-links having angular-shaped ends, coupling-links therefor comprising angular-shaped stay-blades, removable connections having angular-shaped

openings for said blades, expansible cotter-pins for said blades, for the purpose set forth.

14. An angular-jointed sheet-metal chain comprising flexible loop-links adapted to bow in on one side and expand on the other so as to conform to a curved surface, angular coupling-links connecting the loop-links, for the purpose set forth.

15. A multiple-link chain comprising flexible sheet-metal loop-links having angular end seats, means on the upper side of said links to permit said upper surface to lengthen while the under side conforms to the curvature of a pulley, coupling-links comprising stay-blades angular in cross-section to contact with the angular seats of the loop-links, expansible connections embracing said stay-blades, for the purpose set forth.

816,097. **ROD FOR CARD-INDEXES.** DAVID B. HUNTER, Cambridge, Mass., assignor to Library Bureau, Boston, Mass., a Corporation of New Jersey. Filed Oct. 31, 1904. Serial No. 230,659.

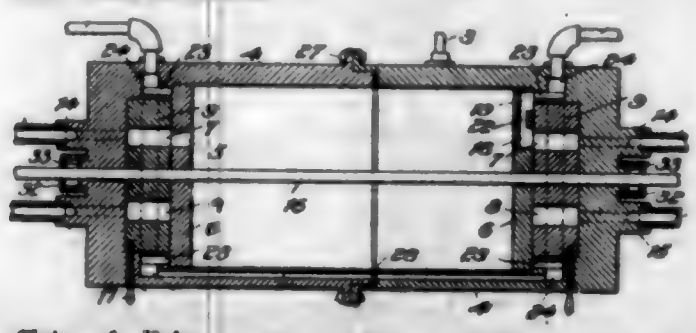


Claim.—1. A fixture for card drawers or trays, consisting of a threaded card-rod, an interiorly-threaded bushing for the rod, said bushing having a polygonal exterior to drive into the drawer or tray front, and a counterbored interior, to reduce the threaded portion thereof.

2. A drawer-fixture for threaded card-rods, consisting of an interiorly-threaded bushing having a smooth polygonal body and a cylindrical neck, the body to secure the bushing against turning in the drawer-front and the neck to center an escutcheon-plate, and the escutcheon-plate; provided with an aperture to fit the neck of the bushing and with means to secure it to the drawer-front.

3. A drawer-fixture for threaded card-rods, consisting of an interiorly-threaded bushing having a smooth polygonal body and a cylindrical neck, and a counterbored interior to reduce the length of the threaded portion thereof, the polygonal body to hold the bushing against turning in the drawer-front, and the cylindrical neck to serve as a seat for an escutcheon-plate, and the escutcheon-plate, provided with an aperture to fit the cylindrical bushing-neck and with means to secure it to the drawer-front.

816,098. **EXHAUST-CONTROLLING VALVE.** WESLEY J. INMAN, Fort Worth, Tex., assignor of one-fourth to J. H. Warren and three-eighths to C. H. McCormick, Fort Worth, Tex. Filed Jan. 4, 1905. Serial No. 239,649.



Claim.—1. Valve-gear comprising a suitable steam-chest, a shaft rotated in said chest, a rotary valve carried by said shaft and having a port therethrough and face-ports toward the end of said chest for exhausting, a seat for said valve formed in said chest and provided with exhaust-ports therethrough, an oscillating valve loosely mounted on said shaft and coöperating with said rotary valve, said oscillating valve having combined inlet and exhaust ports, and said chest having suitable inlet and exhaust ports and pipes to be connected with an engine-cylinder.

2. Valve-gear comprising a suitable steam-chest, a rotary valve having an inlet-port therethrough operating in said chest, a seat formed in said chest for said valve having exhaust-ports therethrough, an oscillating valve having combined inlet and exhaust ports therethrough coöperating with said rotary valve, and suitable combined inlet and exhaust pipes communicating with said oscillating valve and to be connected to an engine-cylinder, said rotary valve having face exhaust-ports communicating with said seat-ports and said oscillating valve.

3. Valve-gear comprising a steam-chest, combined inlet and exhaust pipes communicating with said steam-chest and to be connected to an engine-cylinder, an oscillating valve mounted in said chest and provided with combined exhaust and inlet ports to coöperate with said pipes, a rotary valve having an inlet-port therethrough and face exhaust-ports adjacent to said oscillating valve, and a seat having exhaust-ports coöperating with ports in said rotary valve.

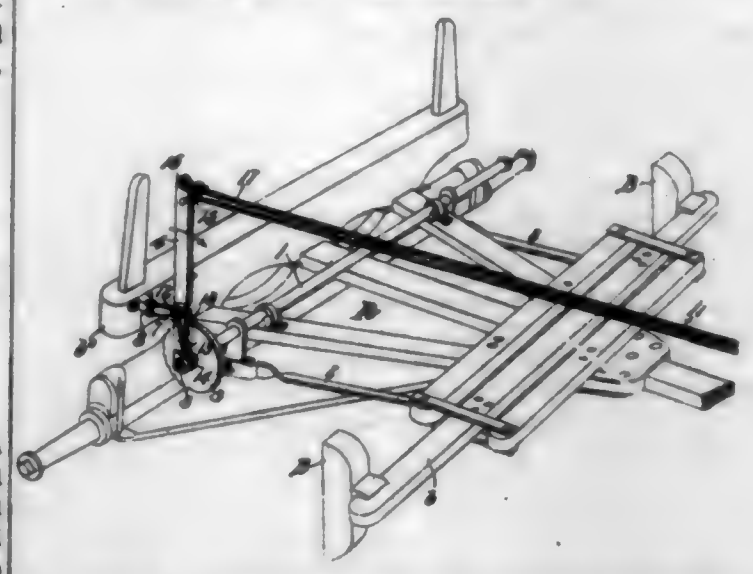
4. Valve-gear comprising a steam-chest, means for supplying said chest with steam, an oscillating valve mounted in said chest and provided with ports for alternately feeding and exhausting, combined feeding and exhausting pipes communicating with said ports, a rotary valve having an inlet-port therethrough coöperating with said oscillating valve and face exhaust-ports coöperating with said oscillating valve, and a seat formed in said chest for said rotary valve having exhaust-ports therethrough.

5. Valve-gear comprising a steam-chest, a rotary feed-valve mounted in said chest having a port therethrough, combined exhaust and feed pipes communicating with said chest, and an oscillating feed and exhaust valve coöperating with said pipes and said rotary valve for starting, stopping or reversing an engine, said rotary valve being provided with face exhaust-ports adjacent to said oscillating valve.

6. Valve-gear comprising a steam-chest, a rotary feed-valve mounted in said chest having an inlet-port therethrough, two combined feeding and exhaust pipes communicating with said chest, each pipe having a double connection with said chest, a seat for said rotary valve having exhaust-ports therethrough, and an oscillating valve having ports therethrough for feeding and exhaust purposes for starting, stopping, or reversing purposes, said oscillating valve forming the connection between said pipes and said rotary valve and said rotary valve having exhaust-ports coöperating with said oscillating valve-ports.

7. Valve-gear comprising a steam-chest, combined feeding and exhausting pipes connected with each end of said chest, an oscillating valve having combined feed and exhaust ports therethrough mounted in each end of said chest and coöperating with said pipes, a rotary valve having a feed-port therethrough mounted in each end of said chest adjacent to said oscillating valves and provided with face exhaust-ports, a seat for each valve having a plurality of exhaust-ports therethrough, the casing of said chest having a circular duct communicating with each seat-port at each end and a longitudinal duct connecting the two circular ducts, and an exhaust-pipe connected to one of said ducts.

816,099. **WAGON-BRAKE.** WILLIAM F. JENNINGS, Hot Springs, Ark. Filed Sept. 9, 1905. Serial No. 277,738.



Claim.—1. The combination with a brake-beam-operating rod, of a ratchet member rigid therewith, a pawl normally out of engagement with the member, a lever for operating the rod, and means connecting with the pawl and the lever to effect movement of the latter to actuate the ratchet member and independently thereof to bring the pawl into engagement therewith.

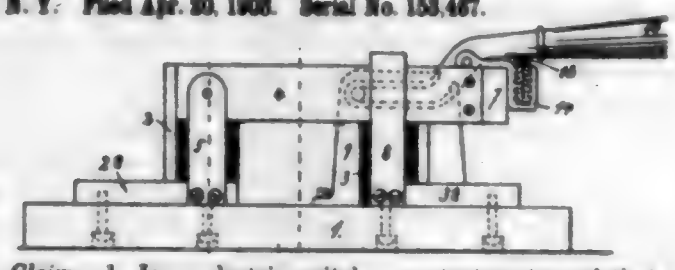
2. The combination with a brake-beam-operating rod, of a ratchet member including a pawl-rest, a pawl normally in engagement with the rest, a lever for operating the ratchet member, and means connecting with the pawl and the lever to effect movement of the latter to actuate the ratchet member and independently thereof to bring the pawl into engagement with the member.

3. The combination with a brake-beam-operating rod, of a ratchet member rigid therewith, a pawl normally out of engagement with the ratchet member, and a flexible operating member, one terminal of which is connected with the pawl and the other terminal with the lever.

4. The combination with a brake-beam-operating rod, of a ratchet member and lever rigid therewith, a yieldingly-supported pawl normally out of engagement with the ratchet member, a collar loosely mounted upon the rod and provided with an eye, and a flexible operating member having one terminal passed through the eye and secured to the pawl and the other terminal secured to the free end of the lever.

5. The combination with a brake-beam-operating rod, of a ratchet member and lever rigid therewith, a yoke supported adjacent to the ratchet member, a pawl pivotally connected with the yoke and carrying a spring to engage the under side thereof to hold the pawl normally out of engagement with the ratchet member, a collar loosely mounted upon the rod and provided with an eye, and a flexible operating member having one terminal passed through the eye and operatively connected with the free end of the pawl and its other terminal secured to the free end of the lever.

816,100. ELECTRIC SWITCH. MONTGOMERY H. JOHNSON, Utica, N. Y. Filed Apr. 20, 1903. Serial No. 153,467.



Claim.—1. In an electric switch, a contact-post consisting of a compiled body of free laminæ folded or bent longitudinally into V shape and secured at one end in a post-base, and presenting on opposite sides of such post planes of the free edges of the laminæ, and a flat switch-blade mounted to be moved into and out of contact with the post in a substantially longitudinal manner with reference to the laminæ of the post, substantially as set forth.

2. In an electric switch, a contact-post consisting of a compiled body of free laminæ folded or bent longitudinally into V shape, and secured at one end in a base, and presenting on opposite sides of the post parallel planes of the free edges of the laminæ, and a double switch-blade having flat engaging faces adapted to engage on opposite sides of the post and mounted to be moved into and out of contact with the post in a substantially longitudinal manner with reference to the laminæ of the post, substantially, as set forth.

3. In an electric switch, the combination of a contact-post, a double switch-blade engaging the post on each side, springs on opposite sides of the post secured to the base of the post and pressing the blade parts against the sides of the post, and pivot-studs or projections on said springs entering openings in the blade, substantially as set forth.

4. In an electric switch, the combination of a contact-post, a switch-blade having a plain engaging surface, a spring mounted on the base and pressing the blade against the side of the post, and a pivot projection on the spring engaging the blade and supporting the blade for pivotal movement in contact with the post, substantially as set forth.

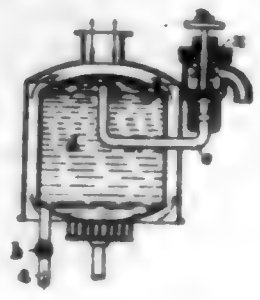
5. The combination in an electric switch of a contact-post consisting of free laminæ, a switch-blade adapted to engage the post on the edges of the laminæ, a spring mounted on the base and operating to press the blade against the post and having a pivot projection engaging the blade, substantially as set forth.

6. The combination in an electric switch, having a movable switch-blade and contact-posts, of an operating mechanism consisting of a lever pivoted on the switch-blade, constituting in part an operating-handle, a fulcrum-piece secured on the switch-base, having provision for attachable and detachable connection with the lever, and providing fulcrum-bearings for the lever in opening and closing the switch, substantially as set forth.

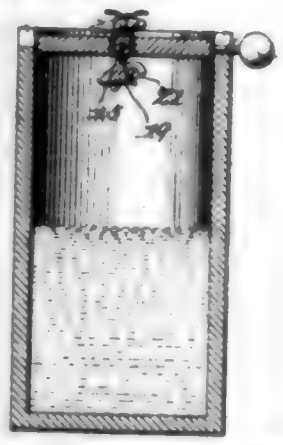
7. The combination in an electric switch of the switch-blade and operating mechanism, consisting of a lever pivoted on the swinging end of the blade, the outer end of which lever serves as a handle, a fulcrum-piece mounted on the base adjacent to the blade, having means for attachable and detachable engagement with the inner end of the lever and providing fulcrum-bearings for the lever in opening and closing the switch, and a spring for holding the lever normally in open position, substantially as set forth.

816,101. APPARATUS FOR PRODUCING BOILING WATER. HUGO JUNKERS, Aachen, Germany. Filed Apr. 3, 1903. Serial No. 151,239.

Claim.—An apparatus for producing boiling water consisting of a closed reservoir filled with water having a supply-pipe entering its lower end, a discharge-pipe leading from its upper end, a valve in the supply-pipe, a loaded automatic valve in the discharge-pipe, and means for heating the water, the arrangement being such that the automatic valve operates as a safety and delivery device and the inlet-valve operates to govern the flow to and to discharge the water from the reservoir through the delivery-pipe, substantially as described.

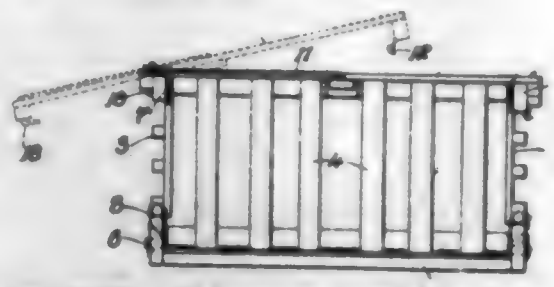


816,102. ANIMAL-TRAP. JAMES D. KITTRELL, Hope, Ark. Filed Dec. 19, 1905. Serial No. 292,434.



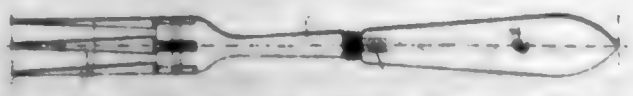
Claim.—An animal-trap comprising a receiver for the animals and open at the upper end, a trip-plate swinging centrally in said open end, means for attaching bait to the opposite sides of said plate, a stop-arm extending from one side of said plate and adapted to alternately engage the receiver at opposite sides to limit the movement of the plate, and a weight connected to said arm.

816,103. FOLDING CHICKEN-COOP. CLINTON J. LAIDIG, St. Louis, Mo. Filed May 31, 1905. Serial No. 263,043.



Claim.—A folding chicken-coop, comprising a bottom, front and rear and end walls adapted to fold against the bottom, staples disposed along the free edge of the rear wall, a top wall having rods loosely passed through said staples, front spring-latches on the top wall adapted to engage the front wall for the unfolded position of the coop, the base of the front wall having sockets for the reception of the latches, a series of hooks on the rear of the top wall, the base of the rear wall having openings for receiving said hooks, for the knocked-down position of the coop, and the upper portion of the rear wall having recesses for the reception of the same hooks for the unfolded position of the coop, and a yielding bendable removable slat carried by the top wall, substantially as set forth.

816,104. MASTICATOR. HENRI LAURENT, Paris, France. Filed Mar. 10, 1903. Serial No. 147,113.

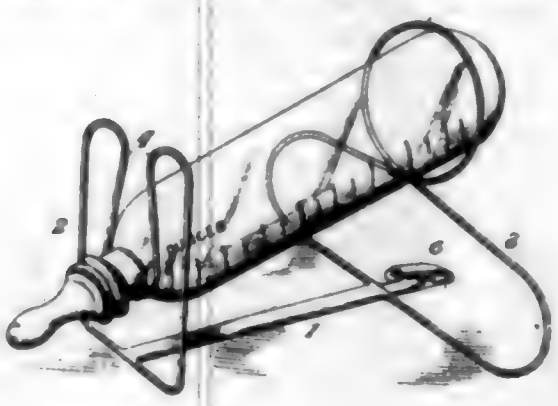


Claim.—1. A device for use at table for cutting and disintegrating food adapted to replace the ordinary table-knife, consisting of

parallel curved cutting-blades adapted to cut the food into small pieces, a solid part or shank formed at the roots of the blades, and projections with square edges formed on the shank and adapted to effect the crushing of the cut food.

2. A device for use at table for cutting and disintegrating food adapted to replace the ordinary table-knife, consisting of parallel curved cutting-blades adapted to cut the food into small pieces, a solid part or shank formed at the roots of the blades, projections with square edges formed on the shank and adapted to effect the crushing of the cut food, and a detachable handle, substantially as described.

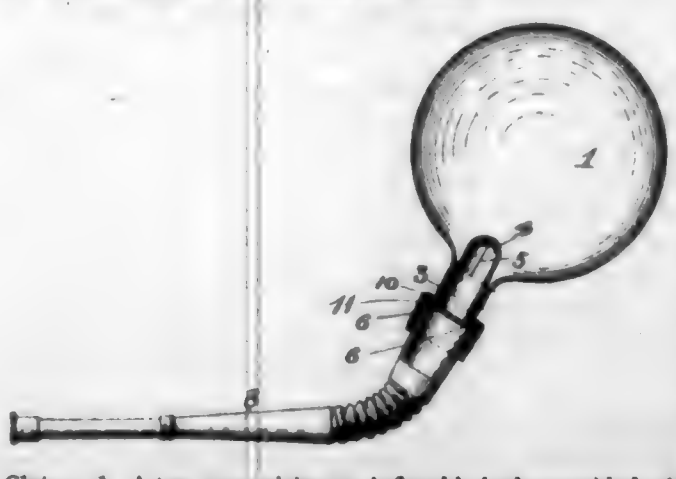
816,105. HOLDER FOR NURSING-BOTTLES. EMILY S. LEWIS, Philadelphia, Pa. Filed May 19, 1905. Serial No. 261,236.



Claim.—1. A rack or holder for nursing-bottles, comprising end supports or standards springing from a common base, one of said standards having spring-clasps for engagement with the neck and the other having a yieldingly-supported receptacle for the body, substantially as specified.

2. A rack or holder for the purpose stated, comprising a base, means for securing the same, and end supports or standards, whereof one is provided with vertically-extending spring clasps or fingers to engage the neck of the bottle, and whereof the other terminates in a spring-supported loop to receive the body of the bottle, substantially as specified.

816,106. INFLATABLE TOY. CLARENCE A. LINDSAY, New York, N. Y. Filed May 23, 1905. Serial No. 261,840.



Claim.—1. A toy, comprising an inflatable body provided with a flexible tube having a valve within the body, a bead or enlargement at its outer end and inserted and secured in said body.

2. A toy, comprising an inflatable body having a neck, a flexible tube having a valve within the body, a bead at its outer end, and a band of fabric treated with adhesive material surrounding the tube and engaged by the neck of the body.

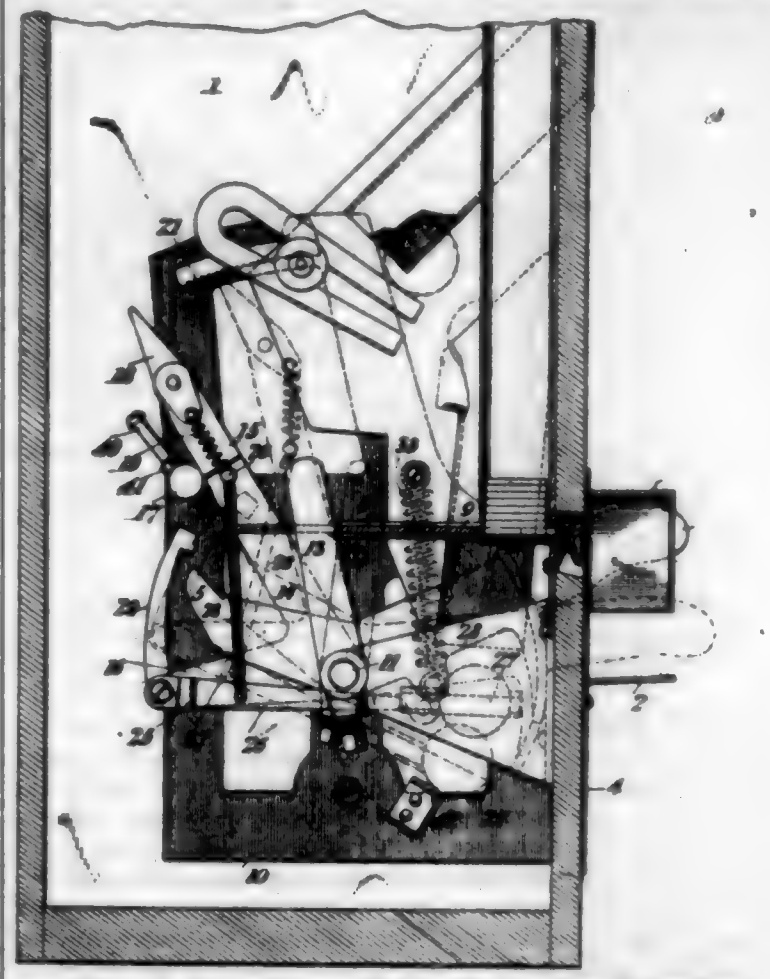
3. A toy, comprising an inflatable body provided with a valved tube having a bead or enlargement at its outer end; in combination with a separate tubular stem provided with means for engaging said tube.

4. A toy, comprising an inflatable body provided with a valved tube having a beaded or enlarged outer end; in combination with a tubular stem provided with a flexible connection for engaging said tube.

5. A toy, comprising an inflatable body provided with a valved tube having an enlarged or beaded outer end; in combination with a tubular stem having a flexible flange to engage the tube.

6. A toy, comprising an inflatable body, provided with an internal valve, and a bead or enlargement; in combination with a separate stem provided with means for engaging said bead.

816,107. COIN-CONTROLLED VENDING-MACHINE. SIDNEY L. LORD, Minneapolis, Minn. Filed Mar. 21, 1904. Serial No. 199,251.



Claim.—1. In a coin-controlled vending-machine, the combination with a delivery-slide, of a shaft, means for operatively connecting the slide and shaft, an operating-lever loosely mounted on the shaft, a bell-crank lever secured to the shaft, a spring-held pawl carried by one arm of the bell-crank lever, a rack for engaging the pawl, the distance between the fulcrum-point of the lever and the point of the pawl when the latter is disengaged from the rack, being greater than the distance between said fulcrum-point and the rack-teeth, thereby preventing rearward movement of the pawl in advance of the complete stroke of the bell-crank lever, a pivotally-mounted coin-actuated pawl carried by the shorter arm of the bell-crank lever, the outer face of said pawl being on an arcuate line approximately concentric with the axis of the shaft, and an adjustable screw serving to prevent release movement of the pawl until the completion of the delivery operation.

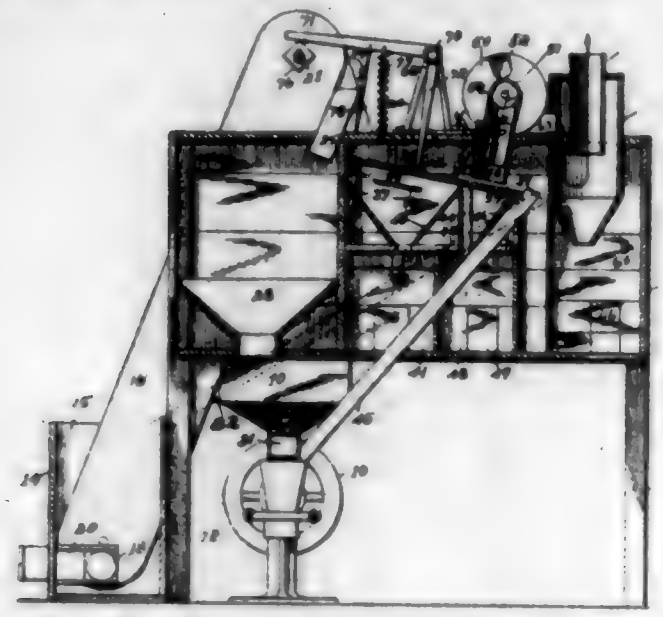
2. In a vending-machine, a shaft, a delivery means connected thereto, an operating-lever loosely fulcrumed on the shaft, a bell-crank lever secured to the shaft, a pawl pivotally mounted on the longer arm of the bell-crank lever and free to yield in both directions, a spring tending to hold the pawl in a central position, a rack with which the pawl engages, a stop for limiting movement of the bell-crank lever, a second bell-crank lever pivoted to the shorter arm of the first bell-crank lever, and including a locking-pawl and a coin-receiving bucket, the outer face of said pawl being on an arcuate line approximately concentric with the axis of the shaft, means for preventing release movement of the pawl until the completion of a delivery operation, a spring tending to maintain the operating-lever in normal position, and a lug serving by engagement with the bell-crank lever to transmit a portion of the stress of the spring thereto, substantially as specified.

816,108. PORTABLE GRIST-MILL. JOHN S. LORD, Ogden, Iowa. Filed Feb. 20, 1906. Serial No. 247,043.

Claim.—1. The combination with a grinding-mill, of a machine-frame, a sieve in the machine-frame, a hopper having two compartments, an elevator-leg in the hopper communicating with both compartments, an elevator in the elevator-leg, two discharge-spouts at the top of the elevator-leg, one discharging upon the sieve and the other discharging to the grinding-machine and a single valve controlling the discharge from the elevator-leg into said spouts.

2. The combination with a grinding-mill, of a machine-frame, a hopper having two compartments, an elevator-leg in the hopper communicating with both compartments thereof, two slide-valves controlling the communication between the compartments and the

elevator-leg, an elevator in the elevator-leg, two discharge-spouts at the top of the elevator-leg, one of said spouts discharging into the grinding-machine, a sieve receiving the discharge from the other spout, and a single valve for controlling said discharge-spouts.



3. The combination with a grinding-mill, of a machine-frame, a hopper having two compartments, an elevator-leg in the hopper communicating with both compartments thereof, two slide-valves controlling the communication between the compartments and the elevator-leg, an elevator in the elevator-leg, two discharge-spouts at the top of the elevator-leg, one of said spouts discharging into the grinding-machine, a sieve receiving the discharge from the other spout, a single valve for controlling said discharge-spouts, and means for returning grain that passes over said sieve into the said hopper.

4. The combination with a grinding-machine, of a frame, a hopper, an elevator-leg communicating with the hopper, an elevator in the elevator-leg, a spout at the top of the elevator-leg discharging into the grinding-machine, an elevator-leg receiving the discharge from the grinding-machine, an elevator in said elevator-leg, two spouts at the top of said elevator-leg, a single valve for controlling said spouts, a sieve receiving the discharge from one of said spouts and means for conveying substances that pass over said sieve back to the grinding-machine and means for conveying the substance passed through the other spout back to the hopper.

5. The combination with a grinding-machine, of a frame, a hopper, an elevator-leg communicating with the hopper, a shaft at the top of the elevator-leg, a chain-and-bucket elevator in the elevator-leg driven by said shaft, a spout at the top of said elevator-leg discharging into the grinding-machine, an elevator-leg receiving the discharge from the grinding-machine, said elevator-leg having the said shaft passed through it, a chain-and-bucket conveyer in the latter elevator-leg driven from said shaft, a discharge-spout at the latter elevator-leg, a sieve receiving the discharge from said spout and means for conveying substances passing over said sieve back to the grinding-machine.

6. The combination with a grinding-machine, of a machine-frame, a hopper having two compartments, an elevator-leg communicating with both of said compartments, a shaft at the top of the elevator-leg, a chain-and-bucket conveyer in the elevator-leg driven from said shaft, a grain-sieve and a flour-sieve in the machine-frame, two spouts at the top of the elevator-leg, one discharging into the grinding-machine and the other discharging on top of the grain-sieve, a single valve controlling said spouts, a second elevator-leg receiving the discharge from the grinding-mill, a chain-and-bucket conveyer in the second elevator-leg driven from the same shaft as the first elevator, two discharge-spouts at the top of the second elevator-leg, one of said spouts discharging upon the flour-sieve, a single valve controlling said discharge-spouts, a fan-casing on top of the machine-frame, a fan therein, means for driving said fan from the shaft of the elevators, tubes communicating with the eye of the fan-casing and extended to points adjacent to said sieves and a discharge-tube connected with the fan-casing.

7. The combination with a grinding-machine, of a machine-frame, a hopper having two compartments, an elevator-leg communicating with both of said compartments, a shaft at the top of the elevator-leg, a chain-and-bucket conveyer in the elevator-leg driven from said shaft, a grain-sieve and a flour-sieve in the machine-frame, two spouts at the top of the elevator-leg, one discharging into the grinding-machine and the other discharging on top of the grain-sieve, a single valve controlling said spouts, a second elevator-leg receiving the discharge from the grinding-mill, a chain-and-bucket conveyer in the second elevator-leg driven from the same shaft as the first elevator, two discharge-spouts at the top of the second elevator-leg, one of said spouts discharging upon the flour-sieve, a single valve controlling said discharge-spouts, a fan-casing on top of the machine-frame, a fan therein, means for driving said fan from the shaft of the elevators, tubes communicating with the eye of the fan-casing and extended to points adjacent to said sieves, a discharge-tube connected with the fan-casing, a cylinder receiving the discharge from the fan-casing, closed at its top and opened at its bottom, and an open-ended tube in the top of the cylinder with its lower end some distance beneath said top.

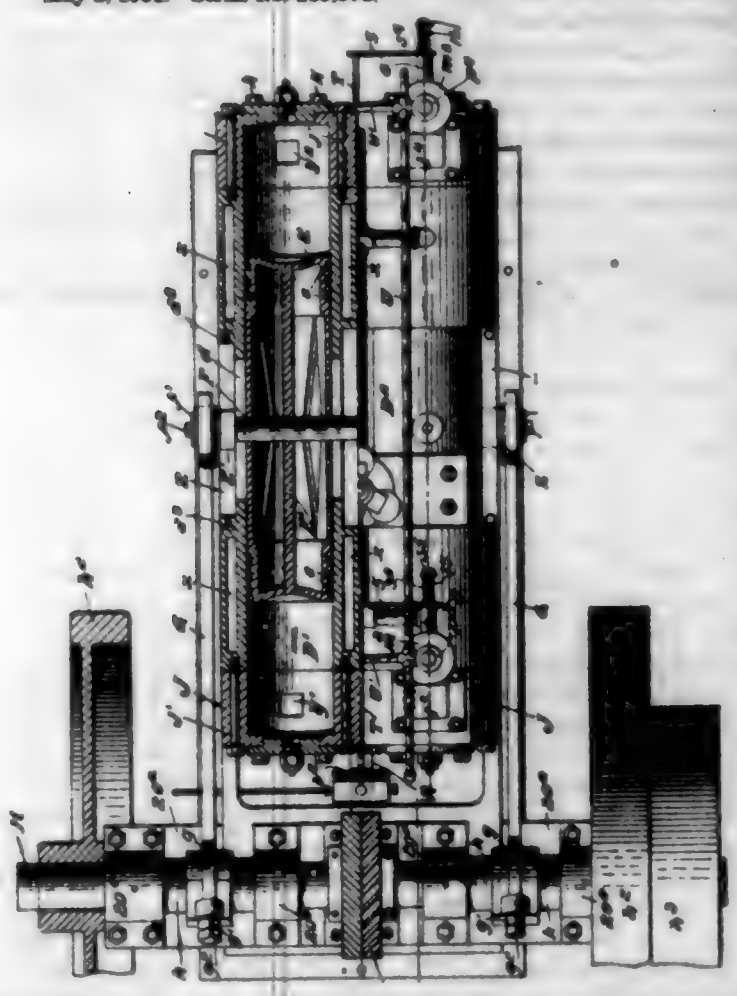
8. The combination with a grinding-machine, of a machine-frame, a hopper, an elevator-leg communicating with the hopper, an elevator in the elevator-leg, a discharge-spout at the top of the elevator-leg discharging into the grinding-machine, a second elevator-leg receiving the discharge from the grinding-machine, an elevator in the second elevator-leg, a discharge-spout for the second elevator-leg, a sieve-frame receiving the discharge from said spout, means for slidingly supporting the said frame in an inclined position, a sieve of relatively fine mesh at the upper end of the sieve-frame and a sieve of relatively coarse mesh at the lower end of the sieve-frame, said machine-frame formed with a compartment for receiving the discharge through the fine sieve, said frame also provided with a compartment receiving the discharge through the coarse sieve, and means for returning the tailings from both the fine and the coarse sieve into the grinding-machine.

9. The combination with a grinding-machine, of a machine-frame, a hopper, an elevator-leg communicating with the hopper, an elevator in the elevator-leg, a discharge-spout at the top of the elevator-leg discharging into the grinding-machine, a second elevator-leg receiving the discharge from the grinding-machine, an elevator in the second elevator-leg, a discharge-spout for the second elevator-leg, a sieve-frame receiving the discharge from said spout, means for slidingly supporting the said frame in an inclined position, a sieve of relatively fine mesh at the upper end of the sieve-frame and a sieve of relatively coarse mesh at the lower end of the sieve-frame, said machine-frame formed with a compartment for receiving the discharge through the fine sieve, said frame also provided with a compartment receiving the discharge through the coarse sieve, and means for returning the tailings from both the fine and the coarse sieve into the grinding-machine, means for vibrating the sieve-frame, and means for striking the under surface of the fine sieve.

10. In a machine of the class described, a grain-sieve and a flour-sieve, means for slidingly supporting both of said sieves in an inclined position, a rotatable shaft, an angular block on said shaft, an arm yieldingly held against the angular block, two arms fixed to the said rock-shaft and attached to the said sieve-frames, a knocker beneath the flour-sieve, and a rod attached to the arm that engages the angular block, said rod connected with said knocker.

11. In a machine of the class described, a machine-frame, a hopper having two compartments connected to the machine-frame, an elevator-leg communicating with both compartments, slides for controlling the communication between said compartments and the elevator-leg, a shaft at the top of the elevator-leg, an elevator in the elevator-leg driven from said shaft, two discharge-spouts at the top of said elevator-leg, a single valve controlling them, a sieve receiving the discharge from one of said spouts, a grinding-machine receiving the discharge from the other spout, said frame formed with a compartment receiving the discharge through the grain-sieve, means for returning the tailings from the grain-sieve to the hopper, an elevator-leg receiving the discharge from the grinding-machine, an elevator in said elevator-leg driven from said shaft, an angular block on said shaft, a spout at the top of the second elevator-leg, a grain-sieve receiving the discharge from said spout, said frame formed with a compartment receiving the discharge through the flour-sieve, means for returning the tailings from the flour-sieve to the grinding-machine, a spring-actuated arm engaging the angular block, means for vibrating both of said sieves by said arm, a knocker for the flour-sieve actuated by said arm, a fan-casing, a fan therein, two tubes communicating with the eye of the fan-casing and having their lower ends above the said sieves, adjustable sleeves on the said tubes, a discharge-tube for the fan-casing, a receptacle closed at its top and open at its bottom, receiving the discharge from the fan, said frame formed with a compartment to receive the discharge from the bottom of the said receptacle, and an open-ended tube in the top of the said receptacle with its lower end below the top of the receptacle.

816,109. **EXPLOSIVE-ENGINE.** THOMAS J. LUTZ, Jr., Mansfield, Ohio, assignor of one-half to A. Kallmerten, Mansfield, Ohio. Filed May 2, 1904. Serial No. 206,874.



Claim.—1. An explosive-engine of the character described which comprises a pair of parallelly-arranged working cylinders, an automatically-actuating working-agent feed, and an exhaust opposite each working-agent feed that form a coöperative part of each of the working cylinders, a crank-shaft-actuated means for moving the working-cylinder pistons in unison, a pair of valves for each exhaust, a crank-shaft-actuated means for alternately shifting the pairs of valves in unison, one to an open and the other to a closed position, and means for feeding the working agent to the cylinders at predetermined times, as set forth.

2. In a machine of the character described, in combination with the cylinders; the pistons; the crank-shaft, the valved intake and valved exhausts arranged substantially as shown; of a working-agent feed for each end of each cylinder, a valve for each of said feeds, a spring that positively forces each of said feed-controlling valves to closed position, a longitudinally-shiftable bar having a cross connection at each end that joins the valve-actuating springs at each end, a governor coupled with the crank-shaft which includes a shiftable member and a cam-lever connection that couples the governor-actuated shiftable member with the shifting rod that controls the valve-springs.

3. In an engine of the character described, the combination with a pair of parallelly-disposed cylinders, each having an automatically-actuated inlet-valve and an exhaust-valve in each end, a spring for each inlet-valve for forcing said valves to their closing position, a bridge member for each pair of inlet-valve stems that engage the springs, a shifting bar that connects both bridge members, the governor mechanism which includes the vertically-movable rod C and the connection *e* that joins the shifting rod T and the rod C, all being arranged substantially as shown and for the purpose described.

4. In an explosive-engine of the character described, the combination of a pair of working cylinders, each having an automatically-controlled working-agent inlet and an exhaust opposing the inlets, a valve for each exhaust normally closed by spring tension, means actuated by the crank-shaft for alternately engaging said exhaust-valves and moving them to their open position, said means including a slide-block for each valve and a detent for each slide-block adapted to be moved into engagement with the said blocks to hold them back out of position to be engaged by the crank-shaft when the valves are adjusted to an open position, as specified.

5. An explosive-engine of the character described, which comprises a pair of parallelly-disposed working cylinders, each having an automatically-actuating working-agent feed and an exhaust opposite each working-agent feed; means for coupling the pistons of the two cylinders with the engine crank-shaft to work them in unison; a valve for each exhaust; an actuating device for each transverse pair of exhaust-controlling valves adapted to alternately shift the pairs of valves in unison, one to an open, and the other to a closed position, and a working-agent feed-pump actuated by one of the devices that actuate one pair of exhaust-controlling valves.

6. In an explosive-engine of the character described, the combination with the pair of working cylinders, the pistons therefor, the crank-shaft, said cylinders having a working-agent feed-inlet at each end, an automatically-actuated valve in each end of each cylinder having an exhausting-port, and the working-agent feed; of a valve for each exhaust-port, a device actuated by the crank-shaft for shifting each transverse pair of exhaust-valves to open one as the other closes, said valve-shifting devices including a rotary shaft having cams adapted to engage the valve-stems and the plunger or piston-head of the pump, as set forth.

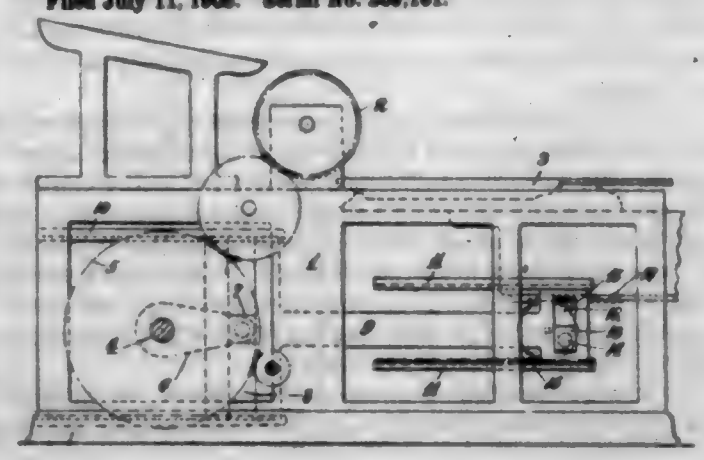
7. In an explosive-engine, having a pair of parallel working cylinders, each of which is provided with an automatically-controlled working-agent inlet in each end, a piston for each cylinder coupled together and actuated in unison by the crank-shaft; of an exhaust for each end of each cylinder, each exhaust having a controlling-valve, the valves that oppose each other at each end being in transverse alinement, a means for intermittently shifting each of the pairs of valves to their open positions and a spring-actuated device for each valve for moving it positively to its closed position and its stem in position to be engaged by the aforesaid shifting means.

8. In an explosive-engine of the character described, the combination with a pair of working cylinders each of which has an automatically-controlled working-agent inlet, and an automatically-closed outlet in each end, a working-agent feed connected with the inlets, valves for the exhaust, means for shifting the said valves operated from the engine crank-shaft to intermittently and alternately actuate the several exhaust-valves to move them to an open position, means for positively holding one or more of the said exhaust-outlet-controlling valves to their open position, as set forth.

9. In a gas-engine of the character described, the combination with the working cylinders, the automatically-controlled working-agent inlets, one in each end of each of the cylinders, the crank-shaft, the pistons, the exhaust-outlets in each end of the cylinders, means for coupling the pistons to move in unison from the crank-shaft, a carbureter or mixer connected with each working-agent inlet, a gasolene-pump that connects with all of the carbureters or mixers; of valves for controlling the exhausts, means for automatically shifting said valves to close off the exhausts and a means for first moving the said valves to their open position and then actuating the gasolene-pump, said means comprising a shaft driven from the crank-shaft and a cam upon the said shaft adapted to engage the pump-piston and the exhaust-controlling valves, substantially in the manner shown and described.

10. In an explosive-engine of the character described, in combination with the two working cylinders each having a valved working-agent inlet at each end and an exhaust opposing each inlet, and means for actuating both pistons in unison from the crank-shaft; of a valve for each exhaust, the pairs of valves at each end being in transverse alinement and each having a cross-head on its projecting stem, a guide for each pair of cross-heads, a spring connected to each cross-head for pulling the said head outward to close the valves; a detent for holding the cross-head to its rearmost position with the valve open, and the shaft R geared with the crank-shaft and having cams 8^2 for engaging the cross-heads on the exhaust-controlling valve-stems, all being arranged substantially as shown and described.

816,110. **PRINTING-MACHINE.** GEORGE A. MAIN, Alfred, N. Y. Filed July 11, 1905. Serial No. 269,161.



Claim.—1. The combination of a main rotating crank, an auxiliary crank provided with a crank-pin and having an oscillating and reciprocating motion, and a reciprocating member actuated by the main rotating crank and having at one end a guide for the reception of the pin on the auxiliary crank.

2. The combination of a main rotating crank, an auxiliary crank having an oscillating and a reciprocating motion, and provided with a crank-pin, a reciprocating member actuated by the main rotating crank, and having at one end a guide for the reception of the pin on the auxiliary crank, whereby during the complete revolution of the main crank, the auxiliary crank makes a complete oscillating and reciprocating movement with an effective arc of substantially uniform speed during the major portion of its travel in both directions.

3. The combination of a main rotating crank, having a crank-pin, an auxiliary crank having an oscillating and reciprocating motion, also provided with a crank-pin, and a reciprocating member having guides for the reception of the crank-pins.

4. The combination of a main rotating crank, having a crank-pin, an auxiliary crank having an oscillating and reciprocating motion, also provided with a crank-pin, and a reciprocating member having guides for the reception of the crank-pins, whereby during a complete revolution of the main crank the auxiliary crank makes a complete oscillating and reciprocating movement with an effective arc of substantially uniform speed during the major portion of its travel in both directions.

5. The combination of a main rotating crank having a crank-pin, an auxiliary crank, having an oscillating and reciprocating motion, provided with two crank-pins, and a reciprocating member having a guide for the crank-pin on the main crank and having a plurality of guides for the two crank-pins on the auxiliary crank.

6. The combination of a main rotating crank having a crank-pin, an auxiliary crank having an oscillating and reciprocating motion, provided with two crank-pins, and a reciprocating member having a guide for the crank-pin on the main crank, and having a plurality of guides for the two crank-pins on the auxiliary crank, whereby during a complete revolution of the main crank, the auxiliary crank makes a complete oscillating and reciprocating movement with an effective arc of substantially uniform speed during the major portion of its travel in both directions.

7. In a printing-machine: the combination of a reciprocating bed, a main rotating crank, having a crank-pin, an oscillating and reciprocating gear adapted to impart motion to the reciprocating bed, provided with a crank-pin, and a reciprocating member having guides for the reception of the crank-pins of the rotating crank and of the gear.

8. In a printing-machine: the combination of a reciprocating bed, a main rotating crank having a crank-pin, an oscillating and reciprocating gear, adapted to impart motion to the reciprocating bed, provided with a crank-pin so disposed that during a complete revolution of the main crank, the gear makes a complete oscillating and reciprocating movement with an effective arc of substantially uniform speed during the major portion of its travel in both directions, and a reciprocating member having guides for the reception of the crank-pins on the main crank and on the gear.

9. The combination of a main rotating crank having a crank-pin, an auxiliary crank having an oscillating and reciprocating motion provided with a crank-pin on both sides, and a reciprocating member having a guide for the reception of the crank-pin on the main crank, and forked at the end adjacent to the auxiliary crank with guides in each fork for the reception of the crank-pins of the auxiliary crank.

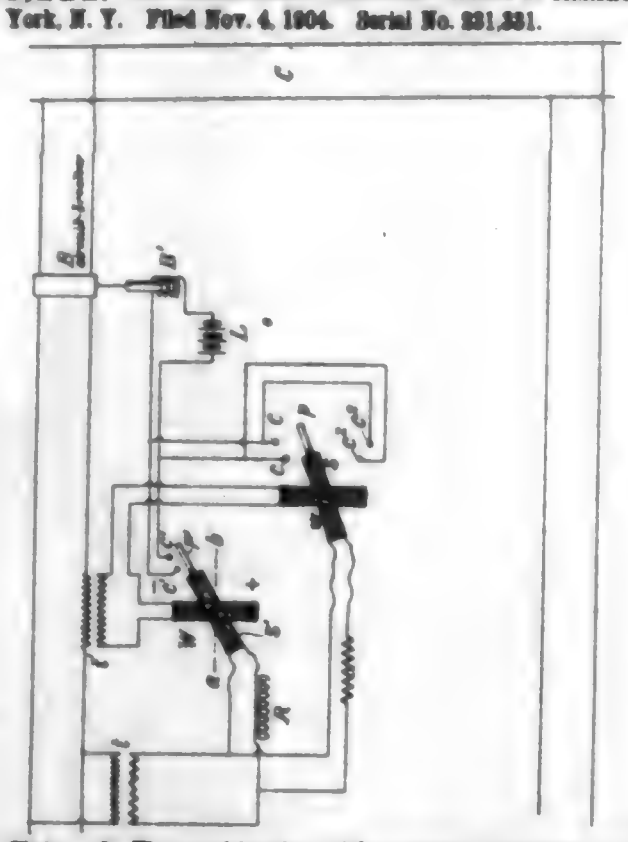
10. In a printing-machine, the combination of a reciprocating bed, a main rotating crank, an oscillating and reciprocating gear adapted to impart motion to the reciprocating bed provided with a crank-pin, and a reciprocating member actuated by the main rotating crank and having a guide at one end for the reception of the crank pin of the gear.

11. In a printing-machine, the combination of a reciprocating bed, a main rotating crank, an oscillating and reciprocating gear adapted to impart motion to the reciprocating bed provided with a crank-pin so disposed that during a complete revolution of the main crank the gear makes a complete oscillating and reciprocating movement with an effective arc of substantially uniform speed during the major portion of its travel in both directions, and a reciprocating member actuated by the main crank provided with a guide at one end for the reception of the pin on the gear.

12. The combination of a main rotating crank, an auxiliary crank provided with a plurality of crank-pins having an oscillating and reciprocating motion, and a reciprocating member actuated by the main rotating crank and having at one end a plurality of open slots which the crank-pins on the auxiliary crank progressively engage and disengage.

13. In a printing-machine, the combination of a reciprocating bed, a main rotating crank, an oscillating and reciprocating gear adapted to impart motion to the reciprocating bed provided with a plurality of crank-pins, and a reciprocating member actuated by the main crank and provided at one end with a plurality of open slots which the crank-pins on the gear progressively engage and disengage.

816,111. **REVERSE-RELAY DEVICE.** RALPH D. MERSHON, New York, N. Y. Filed Nov. 4, 1904. Serial No. 231,331.



Claim.—1. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and adapted with reference to the phase relation of the said components to produce higher torque under conditions accompanied by low power factor than when accompanied by high power factor, as set forth.

2. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and means for adjusting the magnitude and phase relation of the said components, as set forth.

3. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and means for adjusting the magnitude of one or more of the said components, as set forth.

4. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and automatic means for adjusting the magnitude and phase relation of the said components, as set forth.

5. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and automatic means for adjusting the magnitude of one or more of the said components, as set forth.

6. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent on current and electromotive force respectively, and automatic means for adjusting the magnitude and phase relation of the said components, dependent for operation upon decrease of voltage, as set forth.

7. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device actuated by force proportional to the vectorial product of components dependent upon current and electromotive force respectively, and automatic means for adjusting the magnitude of one or more of the said components, dependent for operation on decrease of voltage, as set forth.

8. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source, a local circuit, a movable contact therein, a circuit-closing device actuated by the circuit-controlling device, and means for moving the contact toward the circuit-closing device, the operation of said means being dependent upon, and proportional in extent to, abnormal electrical conditions in the external circuit of the circuit-controlling device, as set forth.

9. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source, a local circuit, a movable contact therein, a circuit-closing device actuated by the circuit-controlling device, and means for carrying the movable contact toward the circuit-closing device, the operation of the said means being dependent upon, and proportional in extent to, decrease of voltage in the external circuit of the circuit-controlling device, as set forth.

10. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source and actuated by force proportional to the vectorial product of components dependent upon current and electromotive force, a local circuit, a movable contact therein, a circuit-closing device, actuated by the circuit-controlling device, means for moving the contact toward the circuit-closing device, means for adjusting the magnitude and phase relation of the said components, and mechanism for actuating both said means, dependent for operation upon abnormal conditions in the external circuit of the circuit-controlling device, as set forth.

11. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source and actuated by force proportional to the vectorial product of components dependent upon current and electromotive force, a local circuit, a movable contact therein, a circuit-closing device actuated by the circuit-controlling device, means for moving the contact toward the circuit-closing device, means for adjusting the magnitude of one or more of the said components, and mechanism for actuating both said means, dependent for operation upon abnormal electrical conditions in the external circuit of the circuit-controlling device, as set forth.

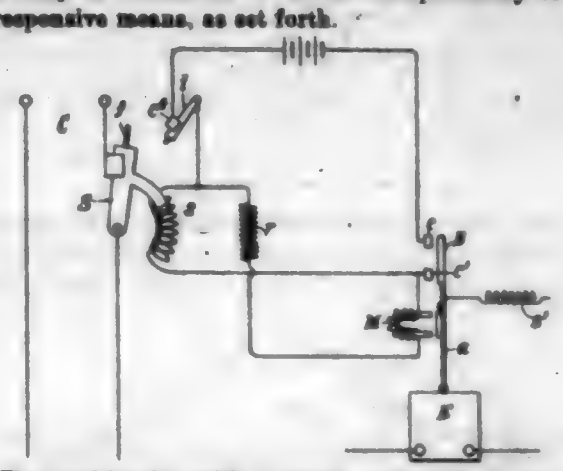
12. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source and actuated by force proportional to the vectorial product of components dependent upon current and electromotive force, a local circuit, a movable contact therein, a circuit-closing device, actuated by the circuit-controlling device, means for moving the contact toward the circuit-closing device, means for adjusting the magnitude and phase relation of the said components, and mechanism for actuating both said means, the operation of said mechanism being dependent upon, and proportional in extent to, decrease of voltage in the external circuit of the circuit-controlling device, as set forth.

13. The combination with a source of current connected with one or more other sources of current, of a circuit-controlling device connected with the first-mentioned source and actuated by force proportional to the vectorial product of components dependent upon current and electromotive force, a local circuit, a movable contact therein, a circuit-closing device, actuated by the circuit-controlling device, means for moving the contact toward the circuit-closing device, means for adjusting the magnitude of one or more of the said components, and mechanism for actuating both said means, the operation of said mechanism being dependent upon, and proportional in extent to, decrease of voltage in the external circuit of the circuit-controlling device, as set forth.

816,112. CIRCUIT-CONTROLLING APPARATUS. RALPH D. MERSHON, New York, N. Y. Filed Dec. 27, 1904. Serial No. 238,234.

Claim.—1. The combination with a circuit, coöperating contacts, and electroresponsive means for actuating the same, of electromagnetic means in the said circuit arranged to become operative upon an actuation of the said contacts and then control the said circuit independently of the said electroresponsive means, as set forth.

2. The combination with a circuit, coöperating contacts, and electroresponsive means for bringing the contacts together to complete the circuit, of an electromagnet in the circuit, and an armature therefor adapted to control the circuit independently of the said electroresponsive means, as set forth.



3. The combination with a circuit, coöperating contacts, electroresponsive means for actuating the same, and translating devices in the circuit, of electromagnetic means in the circuit arranged to become operative upon an actuation of the said contacts and then control the circuit independently of the said electroresponsive means, as set forth.

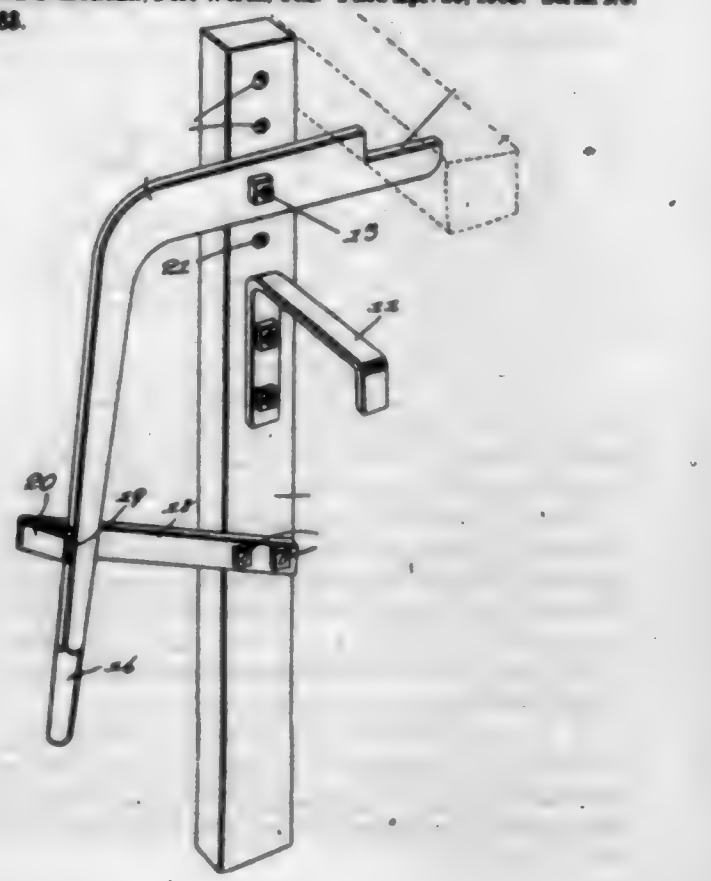
4. The combination with a circuit, coöperating contacts, and electroresponsive means for bringing the contacts together to complete the circuit, of an electromagnet in the circuit adapted to be energized by the closing of the contacts and arranged to hold the said contacts together independently of the electroresponsive means, as set forth.

5. The combination with a circuit, coöperating contacts, electroresponsive means for actuating the same, and a translating device of relatively high time constant in the circuit, of electromagnetic devices of relative low time constant in the circuit arranged to become operative upon actuation of the said contacts and then control the circuit independently of the said electroresponsive means, as set forth.

6. The combination with a circuit, coöperating contacts, electroresponsive means for bringing the same together, and a translating device of relatively high time constant in the circuit, of an electromagnet of relatively low time constant in the circuit adapted to be energized by the closing of the contacts and arranged to hold the contacts together independently of the said electroresponsive means, as set forth.

7. The combination with a circuit, coöperating contacts, and electroresponsive means for actuating the contacts, of an electromagnet in the circuit, and an armature therefor connected with one of the contacts, whereby the energization of the electromagnet will hold the contacts together independently of the electroresponsive means, as set forth.

816,113. COMBINED LIFTING-JACK AND SHAFT-SUPPORT. ROVENA G. MORGAN, Fort Worth, Tex. Filed Apr. 28, 1905. Serial No. 258,083.



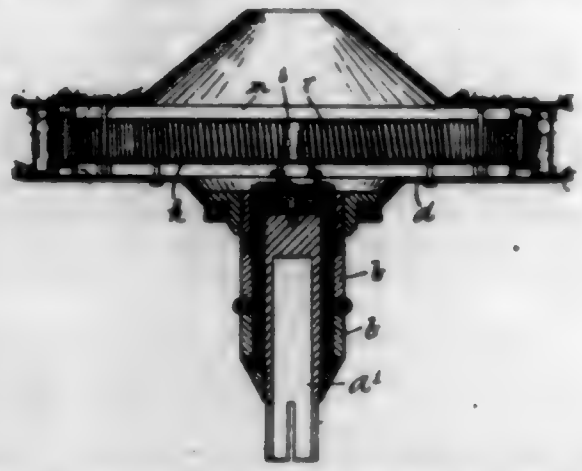
Claim.—1. A combined lifting-jack and shaft-support, comprising a base, a standard mounted thereon, a lever pivoted to the standard, a lifting-arm pivoted to the lever, a shaft-support pivoted to the standard, and means for operating the lever, substantially as described.

2. A combined lifting-jack and shaft-support, comprising a base, a standard mounted thereon, a lever pivoted to the standard, a lifting-arm pivoted to the lever, a shaft-support pivoted to the standard, and means for operating the lever, the lifting-arm and the shaft-support being pivoted to the lever at the same point, substantially as described.

3. A combined lifting-jack and shaft-support, comprising a base, a standard mounted thereon, a lever pivoted to the standard, a lifting-arm pivoted to the lever, a shaft-support pivoted to the standard, and means for operating the lever, the lifting-arm and the shaft-support being pivoted to the lever at the same point, and the shaft-support being provided with a bearing-block, substantially as described.

Claim.—A device of the class described, comprising a standard, a lever member pivoted near one end to said standard and with the longer end curving downwardly, a resilient member connected to said standard and provided near the free end with a lateral stop having an inclined outer face for automatically engaging said curved portion of said lever when the same is depressed, and a hook outstanding from the face of the standard.

816,114. CANDY-MACHINE. WILLIAM J. MORRISON, Nashville, Tenn., assignor to Electric Candy Machine Company, Nashville, Tenn., a Corporation of Tennessee. Filed Nov. 4, 1904. Serial No. 231,849.



Claim.—1. A device of the character described, comprising a rotatable vessel having a circumferential strainer composed of a series of contiguously-arranged bodies, and an electrically-heated conductor arranged adjacent said strainer, substantially as described.

2. A device of the character described comprising a rotatable casing having a circumferential strainer composed of a circular series of contiguously-arranged rods, and an electrically-heated conductor arranged within said casing, adjacent said series of rods, substantially as described.

3. A device of the character described comprising a rotatable casing having a circumferential strainer composed of a circular series of contiguously-arranged rods of insulating material, and an electrically-heated conductor arranged within said casing, adjacent said series of rods, substantially as described.

4. A device of the character described, comprising a rotatable casing having circular top and bottom sections arranged transversely of the axis thereof, a circular series of contiguously-arranged, axially-extending rods forming a strainer, means for clamping said sections against the ends of said rods, and means for heating the contents of said casing, substantially as described.

5. A device of the character described, comprising a rotatable casing having circular top and bottom sections, said sections having annular faces on their adjacent sides, and circumferential ribs extending toward each other from the outer edges of said faces, a series of rods of equal length, contiguously arranged side by side against said ribs and having their ends bearing against said faces, means for clamping said sections together, and a circularly-arranged heater between said sections and within said series of rods, substantially as described.

6. The combination of a rotatable vessel having a circumferential discharge-passage and an air-inlet passage, an air-deflecting blade mounted on said vessel adjacent said air-inlet passage and disposed to force air therethrough into said vessel as it is rotated, substantially as described.

7. A device of the character described comprising the rotatable vessel having a circumferential discharge-strainer, an annular air-chamber having discharge-ports leading to the inner side of the strainer, and means without the vessel for forcing air into said chamber, substantially as described.

8. The combination of a rotatable vessel having a circumferential discharge-passage and means for raising the air-pressure in said vessel to facilitate the discharge therefrom, comprising an air-chamber having inlet-ports leading to one side of said vessel, and discharge-ports leading to the interior of said vessel, adjacent its discharge-passage, and air-deflecting blades arranged adjacent said inlet-ports, substantially as described.

9. A device of the character described, comprising a rotatable vessel having a cylindrical perforated side wall arranged axially thereof and forming a strainer, and an electrically-heated, cylindrically-shaped band lying against the inner side of said wall, substantially as described.

10. A device of the character described, comprising a rotatable vessel having a circumferential discharge-passage and means for forcing air transversely of the discharge end of said passage while the vessel is rotated, substantially as described.

11. A device of the character described comprising a rotatable vessel having a circumferential discharge-passage, and blades on said vessel for forcing air transversely of the discharge end of said passage while the vessel is rotated, substantially as described.

12. A device of the character described comprising a vessel rotatable about a vertical axis, a collecting-receptacle in which said vessel is mounted, obliquely-disposed blades, circumferentially mounted on said vessel directly above the outer end of said passage, for forcing air transversely of said passage downwardly into said receptacle, substantially as described.

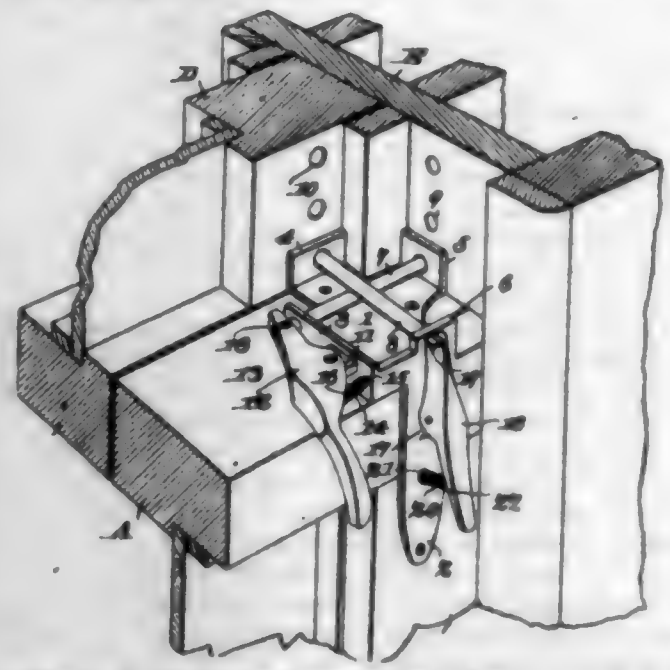
816,115. VAULT-LIGHT. JOHN MCGUIGAN and ARTHUR PRIDDLE, San Francisco, Cal. Filed Sept. 21, 1905. Serial No. 279,322.

Claim.—1. A structure of the class described comprising bars having angularly-disposed notches extending therethrough and converging toward one side thereof, intersecting bars having correspondingly-disposed sides extending through the notches of the first-mentioned bars, glasses mounted on said bars in the openings formed between them, and a binding material around said glasses and on said bars.

2. A vault-light construction comprising a series of T-bars having angularly-disposed notches in their depending flanges, a series of intersecting V-bars engaged with the notches in said T-bars, glasses mounted upon said bars and a binding material molded around said glasses and said bars, substantially as described.

3. A vault-light construction comprising a series of T-bars disposed parallel and having their depending flanges formed with angularly-disposed alining notches, a series of V-bars having their upwardly-diverging sides engaged with said alining notches, glasses having tapered lower portions to engage said V-bars and beads or ledges to engage said T-bars and a binding material molded around said glasses and said bars, substantially as described.

816,116. WINDOW-SASH FASTENER. DENNIS L. MCKINNEY and GEORGE W. HENDERSON, Fairmont, W. Va. Filed July 26, 1905. Serial No. 271,332.



Claim.—A window-sash fastener comprising a one-piece supporting-plate embodying two pairs of oppositely-alined upstanding orificed ears and a tongue or extension disposed at right angles to the body portion of the plate, one of the ears and the tongue being provided with a pintle and with a lug, a pair of bolts supported in the respective ears, a pair of levers pivotally connected with the lugs and with the bolts and projecting downward, when the fastener is positioned upon a window, thereby to be within convenient reach of the operator, and springs engaging the pintles on the ear and tongue and similar pintles on the levers to cause the bolts automatically to assume locking position.

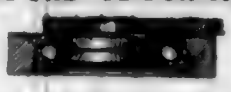
816,117. SPLIT PULLEY. OTTO A. NELSON, Ballard, Wash. Filed Mar. 28, 1905. Serial No. 252,585.



Claim.—1. A split pulley formed of two sections having their inner faces provided with oppositely-disposed recesses and projecting portions, the recess of one section receiving the projecting portion of the other section, said sections being each formed with a central opening and a slot leading therefrom, there being ribs secured to said projecting portions and normally fitting in said slots.

2. A split pulley formed of two sections having their inner faces provided with recesses and projecting portions, the recess of one section receiving the projecting portion of the other section, said sections being each formed with a central opening and a slot leading therefrom, there being ribs secured to said sections and normally fitting in said slots.

816,118. TYPE-WRITING MACHINE. LOUIS NEY, Springfield, Mass., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Oct. 30, 1903. Serial No. 179,158.



Claim.—1. In a type-bar and hanger construction, the combination of a type-bar having a hub connected thereto, a hanger having an eye adapted to receive said hub, a cover-plate that is secured to the eye and covers one end of the hub and prevents the admission of dust to the bearing; admission of dust at the other end of the hub being prevented by the type-bar, and antifriction-balls interposed between the hub and eye.

2. In a type-bar and hanger construction, the combination of a type-bar having a hub connected thereto, a hanger having an eye that is threaded and adapted to receive said hub, a cover-plate that is threaded for coöperation with the threaded portion of the eye and covers one end of the hub and prevents the admission of dust to the bearing; admission of dust at the other end of the hub being prevented by the type-bar, and antifriction-balls interposed between the hub and eye.

3. In a type-bar and hanger construction, the combination of a type-bar having an offset hub exending from one side thereof and which contitutes the sole means by which said type-bar is supported, a hanger having an eye that receives said hub, a removable plate that covers the hub at one end thereof and prevents the admission of the dust to the bearings of the type-bar at one side thereof, whereas the type-bar covers the joint between the type-bar and hanger at the other side of the bearing and prevents the admission of dust thereto, and antifriction-balls between the type-bar and hub.

4. In a type-bar and hanger construction, the combination of a type-bar having an offset hub extending from one side thereof and the hub having a ball-receiving groove therein, a hanger having an eye that receives said hub, an adjustable ball-bearing plate that is secured to the hanger and covers the hub at one end thereof and prevents the admission of dust to the bearings of the type-bar at one side thereof, whereas the type-bar covers the joint between the type-bar and hanger at the other side of the bearing and prevents the admission of dust thereto, and antifriction-balls between the hub and eye and ball-bearing plate.

5. In a type-bar and hanger construction, the combination of a type-bar having an offset hub extending from one side thereof and which constitutes the sole means by which said type-bar is supported, the hub having a circumferential ball-groove therein, a hanger having an eye that is internally screw-threaded and receives said hub, an adjustable ball-bearing-plate that is externally threaded and is adapted to be received within the eye and to coöperate with the threaded portion thereof and which covers one end of the hub and prevents the admission of dust to the bearings of the type-bar at one side thereof, whereas the type-bar covers the joint between the type-bar and hanger at the other side of the bearing and prevents the admission of dust thereto, and antifriction-balls between the hub and eye and ball-bearing plate.

6. In a type-bar and hanger construction, the combination of a type-bar having a hub that is riveted thereto and which has a peripheral ball-bearing groove, a hanger having an eye adapted to receive said hub and provided with a ball-bearing, a removable ball-bearing cover-plate independent of the hub and supported by the hanger on the side thereof opposite the type-bar, and antifriction-balls coöperating with the hub and bearings.

7. In a type-bar and hanger construction, the combination of a type-bar having an offset hub provided with a ball-bearing and which constitutes the sole support for said type-bar, a hanger having an eye adapted to receive the hub and enabling the type-bar to swing on one side thereof and to cover the joint between the type-bar and hanger, an adjustable bearing-plate secured to the eye of the hanger on the side thereof opposite the type-bar, and antifriction-balls between said hub and bearings.

8. In a type-bar and hanger construction, the combination of a type-bar having an offset grooved hub riveted thereto, a hanger having a threaded eye adapted to receive the hub and enabling the type-bar to swing on one side thereof and to cover the joint between the type-bar and hanger, a threaded bearing-plate secured to the eye of the hanger on the side thereof opposite the type-bar, and antifriction-balls between the groove in the hub and the bearings of the eye.

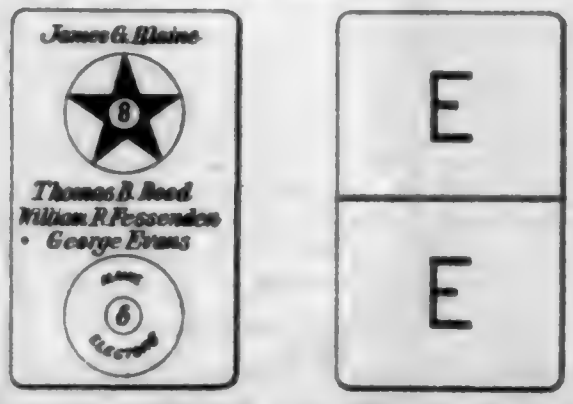
9. In a type-bar and hanger construction, the combination of a type-bar having a hub arranged on one side thereof, said hub having a substantially V-shaped peripheral groove therein, a hanger having a two-part eye, each part having a ball-bearing, means for affording an adjustment of one of the bearings within the other, and antifriction-balls between said V-shaped groove and the bearings of the eye.

10. In a type-bar and hanger construction, the combination of a type-bar having an offset hub with a substantially V-shaped peripheral groove therein, a hanger having an eye with a beveled ball-bearing therein, an adjustable bearing-plate that is connected to said eye and covers the bearings and has a ball-bearing surface beveled in an opposite direction to the ball-bearing surface in the eye, and antifriction-balls between the V-shaped peripheral groove in the hub and the beveled bearing-surfaces on the eye and plate.

11. In a type-bar and hanger construction, the combination of a type-bar having an offset hub riveted thereto, said hub being provided with a peripheral ball-groove, a hanger having an eye with a fixed ball-bearing at one side thereof and a threaded portion and a ball-bearing plate that has a threaded portion which coöperates with the threaded portion of the eye, and antifriction-balls between the hub and the bearings on the eye and plate.

12. In a type-bar and hanger construction, the combination of a hanger having an eye and a stem that is adapted to be received within a slot in a type-bar segment, an inwardly-beveled ball-bearing formed on one side of the eye, an internal thread in the eye, a plate having an external thread on the plate that coöperates with the internal thread in the eye, an inwardly-beveled ball-bearing formed on the plate, a type-bar, and an offset hub on the type-bar which is received in the eye, and antifriction-balls between said ball-bearings and hub.

816,119. PLAYING-CARDS. JAMES H. MOONAN, San Diego, Cal. Filed Sept. 8, 1904. Serial No. 223,760.

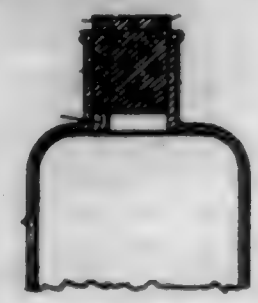


Claim.—A card apparatus comprising a deck of cards, each card having thereon the name of a State or Territory, the number of electoral votes and a designating symbol, the names of four representative men, said cards being subdivided into separate sets or series, and a series of letter-blocks containing the number of letters necessary to spell all the names of the States and Territories, substantially as described.

816,120. BOTTLE-STOPPER. HARRY E. PAYNE, Woodstock, Vt. Filed Dec. 9, 1905. Serial No. 291,055.

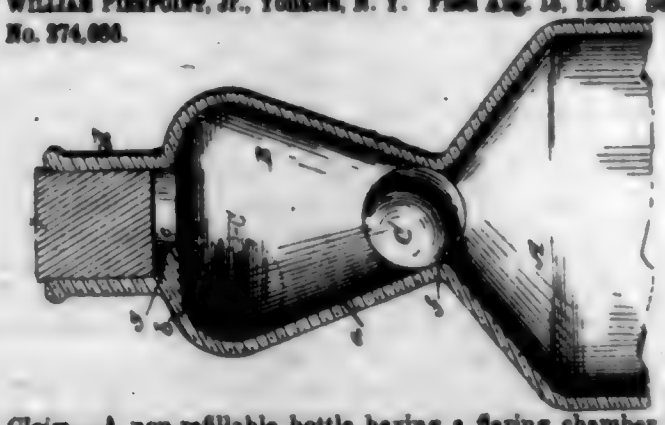
Claim.—1. The combination, with a bottle-neck provided with an internal groove extending its full length and communicating with the interior of the bottle, of a stopper which fits the said neck and

which is provided upon one side with a longitudinal projection which fits the said groove.



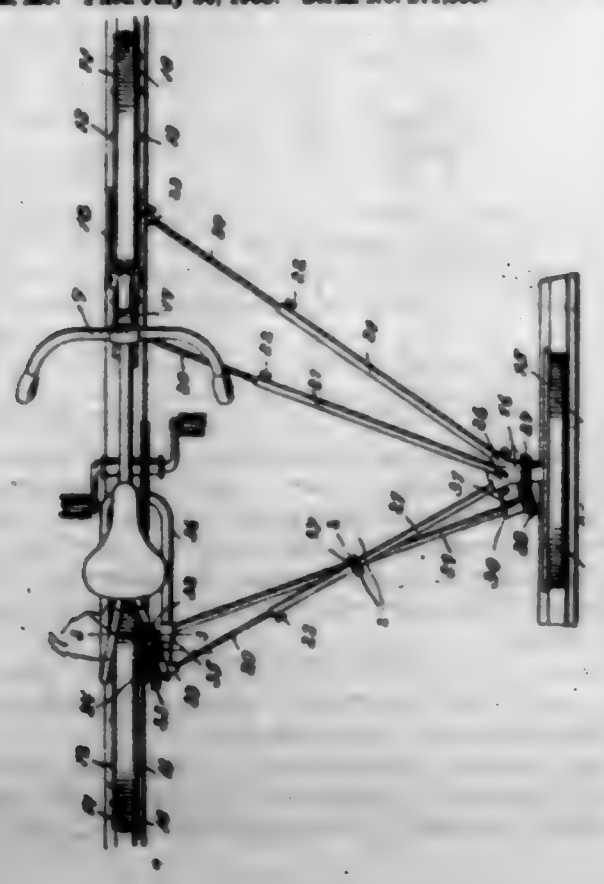
2. The combination, with a bottle-neck provided with an externally-projecting rib on one side and having an internal groove in the said rib which extends the full length of the said bottle-neck and communicates with the interior of the bottle, of a stopper which fits the said neck and which is provided upon one side with a longitudinal projection which fits the said groove.

816,121. NON-REFILLABLE BOTTLE. WILLIAM PERRY and WILLIAM PERRYMONT, Jr., Yonkers, N. Y. Filed Aug. 18, 1905. Serial No. 274,693.



Claim.—A non-refillable bottle having a flaring chamber between the body and neck thereof, a valve-seat integral with the chamber at the lower end of the same, a guard integral with the neck of the bottle and extending at right angles to the length of the neck at a single point only and into the path of a cork and having an inclined upper surface against which the lower end of a cork is adapted to engage with its under face substantially straight to a point outside of the line of the inner wall of the neck, said guard projecting horizontally into the neck at a single point only, to avoid undue contraction of the outlet through said neck, and a ball-valve within said flaring chamber and at all times confined between said valve-seat and the under side of said guard, the opening between the said guard and the opposite side of the neck being of less distance than the diameter of the said ball-valve, substantially as shown and described.

816,122. BICYCLE ATTACHMENT. GEORGE W. FULLHAM, Columbia, Mo. Filed July 26, 1905. Serial No. 271,355.

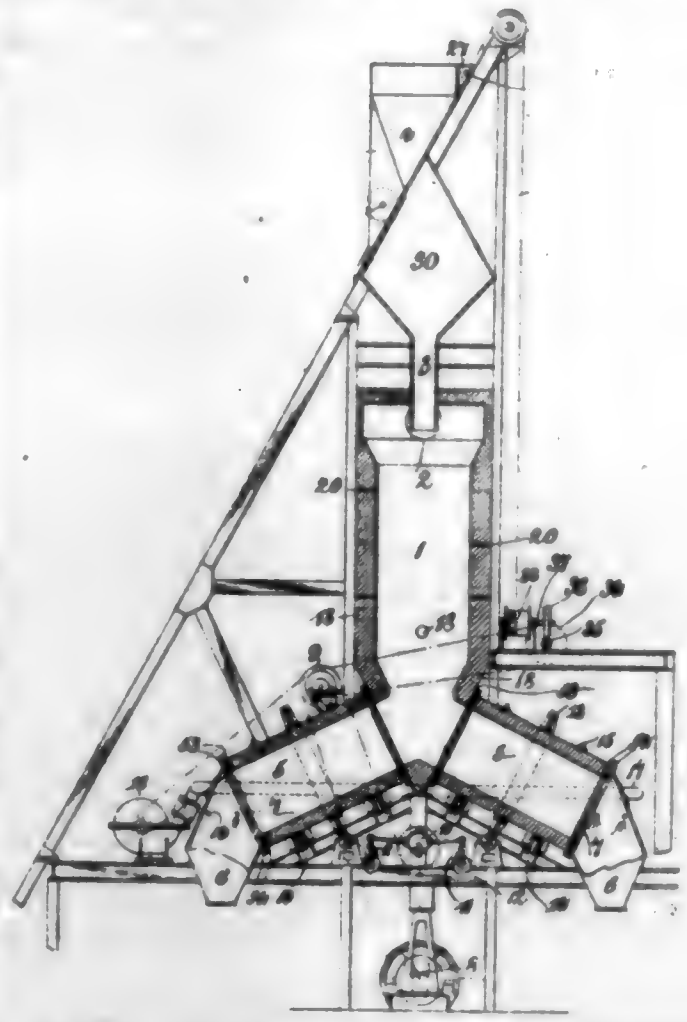


Claim.—1. The combination with a bicycle, of an auxiliary wheel extending from one side thereof, and geared to the drive-wheel of the bicycle.

2. The combination with a bicycle, of brace-rods extending laterally from the frame thereof, a bearing carried at the outer ends of said rods, and an auxiliary wheel mounted in said bearing, and geared to the bicycle.

3. The combination with a bicycle, of an auxiliary wheel, a bearing therefor having projecting socketed stems, brace-rods extending laterally from the bicycle-frame and secured in the sockets, and a gearing between the auxiliary wheel and the bicycle.

816,123. GAS-GENERATOR. JOHN RADCLIFFE, Elland, England. Filed Mar. 26, 1905. Serial No. 252,441.



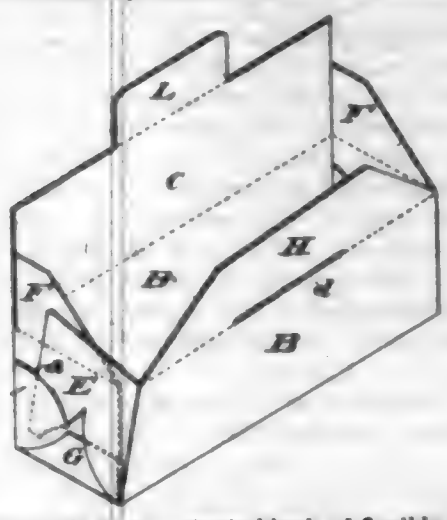
Claim.—1. The combination, with a stationary combustion-chamber for generating gas, of means for feeding fuel into the upper part of the said chamber, two inclined ash-receivers arranged below the said chamber and projecting on opposite sides of it, said ash-receivers being provided with outlets for ashes at their lower ends, a blast-pipe connected direct to the said stationary chamber whereby the generation of the gas is completed in the said stationary chamber and before its contents pass into the said ash-receivers, and means for revolving the said ash-receivers.

2. The combination, with a single stationary combustion-chamber for generating gas, of means for feeding fuel into the upper part of the said chamber, inclined ash-receivers arranged below the said chamber and projecting radially from it, said ash-receivers being provided with outlets for ashes at their lower ends, means for revolving the said receivers, a blast-pipe connected direct to the said stationary chamber whereby the generation of the gas is completed in the said stationary chamber and before its contents pass into the said ash-receivers, and means for revolving the said ash-receivers.

816,124. PAPER CARTON. LEWIS G. REYNOLDS, Dayton, Ohio. Filed May 12, 1902. Renewed Sept. 1, 1905. Serial No. 278,772.

Claim.—1. A carton made from a single blank of flexible material cut and scored to form the bottom, cover and sides, end flaps on said sides, said flaps being correspondingly tongued and slit to form interlocking end members, the inside edges of said members when interlocked coinciding with their adjacent lines of folds to form a smooth interior, flaps on said bottom adapted to be folded between their adjacent interlocking members, and wings on one of the members of each pair of interlocking end flaps, and a top flap on one side,

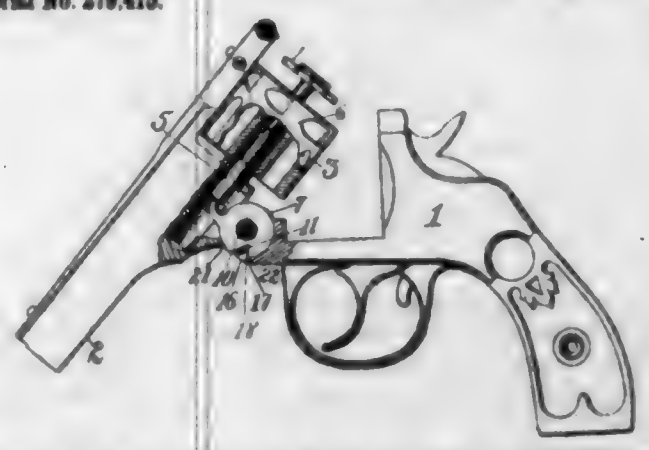
the adjacent edges of said wings and top flap being so cut as to coincide and form a smooth top surface when folded down.



2. A carton made from a single blank of flexible material cut and scored to form the bottom, cover and sides, end flaps on said sides, said flaps being correspondingly tongued and slit to form interlocking end members, the inside edges of said members when interlocked coinciding with their adjacent lines of folds to form a smooth interior, flaps on said bottom adapted to fold between their adjacent interlocking members, wings on the inner members of said interlocking flaps, and a top flap on one side, the adjacent edges of said wings and top flap being so cut as to coincide and form a smooth top surface when folded down.

3. A carton made from a single blank of flexible material cut and scored to form the bottom, cover and sides, end flaps on said sides, said flaps being correspondingly tongued and slit to form interlocking end members, the inside edges of the said members when interlocked coinciding with their adjacent lines of folds to form a smooth interior, flaps on said bottom adapted to be folded between their adjacent interlocking members, wings on one of the members of each pair of interlocking end flaps, and a top flap on one side, the adjacent edges of said wings and top flap being so cut as to coincide and form a smooth top surface when folded down, a tongue on the cover and a slit in the top-flap fold to receive said tongue to lock the box and prevent displacement of the various interlocking and coinciding parts.

816,125. EJECTOR MECHANISM FOR REVOLVERS. JAMES D. ROBERTSON, Norwich, Conn., assignor to The Thames Arms Company, Norwich, Conn., a Corporation of Connecticut. Filed Sept. 21, 1905. Serial No. 279,415.



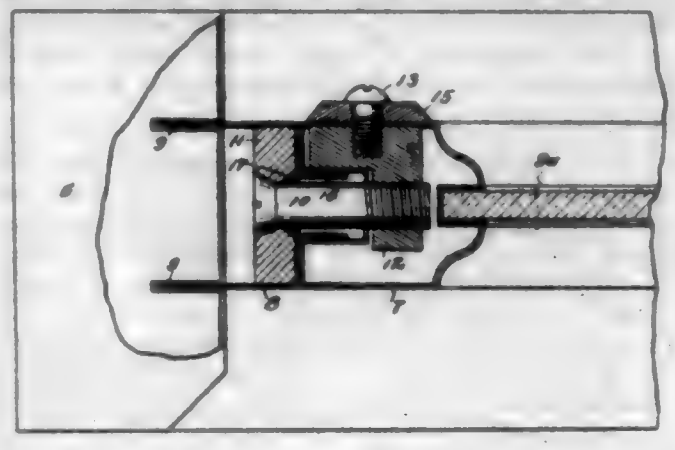
Claim.—1. In a revolver, an ejector-stem, a frame-shoulder, and a cam which is provided with a peripheral V-notch, and with a horn to engage said stem, in combination with a wedge-shaped shoulder-piece, which is provided with a spring-seated stem, and is movable in said peripheral notch, and toward said horn.

2. In the ejector mechanism of a hinged firearm, a rocking cam, which has a stem-engaging horn and a peripheral V-notch, in combination with a wedge-shaped shoulder-piece, which is eccentrically mounted in said notch upon a spring-seated stem, and thereby is normally impelled against one of the faces of said notch.

816,126. SHEET-METAL WINDOW. VERNON ROSS, Kansas City, Mo. Filed Apr. 8, 1905. Serial No. 254,581.

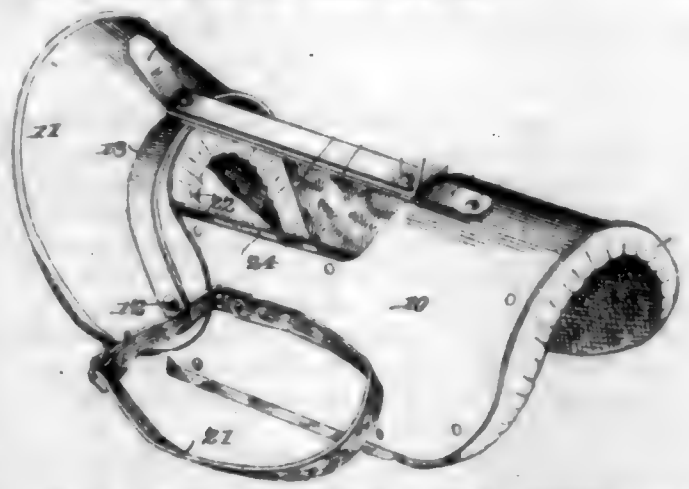
Claim.—1. A sheet-metal window, having a hollow stop on the frame thereof, a plate in the stop, a pivot-bolt projecting through the plate and stop and into the sash-stile, and a block fastened in the stile, and into which the bolt extends.

2. A sheet-metal window-sash having a block inside its stile, a plate on the outside thereof, screws which clamp the plate and block with the metal sheet of the stile therebetween, and a pivot-bolt which extends from the window-frame into the block.



3. A sheet-metal window, having a pivot-bolt projecting from its frame into the sash-stile, a block in the stile, into which the bolt extends, said stile having a vertical slot in its face, beside the block, and fastening devices extending through the slot and securing the block at adjustment in the stile.

816,127. HORSE-COLLAR PAD. WILLIAM F. SACHER, Sheboygan, Wis. Filed Aug. 18, 1905. Serial No. 274,756.



Claim.—1. In a horse-collar pad, a curved rearward plate having forwardly-extending sides adapted to support the collar, a pad within said rearward plate for bearing upon the horse at the rear of the collar and holding said side portions and the collar bearing thereon from contact with the horse, a forward curved plate swinging from said extended sides, and a pad within said forward curved plate and adapted to project between said extended sides and the body of the horse.

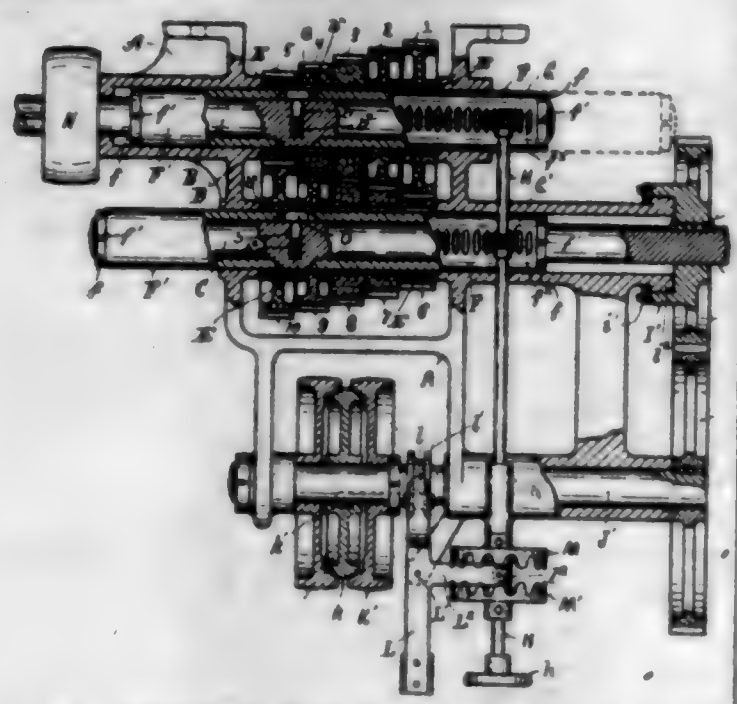
2. In a horse-collar pad, a curved rearward plate having forwardly-extending sides adapted to support the collar, a pad within said rearward plate for bearing upon the horse at the rear of the collar and holding said side portions and the collar bearing thereon from contact with the horse, a forward curved plate pivoted to said extended sides, a pad within said forward curved plate and adapted to project between said extended sides and the body of the horse, a yoke member connected to said forward plate-pivots, and a brace connecting said yoke and the rearward plate.

816,128. VARIABLE-SPEED DRIVING MECHANISM. WILLIAM L. SCHELLENBACH, Cincinnati, Ohio. Filed Jan. 31, 1903. Serial No. 141,288.

Claim.—1. In a variable-speed mechanism, a driving-shaft adapted to be adjusted endwise and provided with a key; a series of gears loosely mounted on said shaft and adapted to be respectively engaged and driven by said key; a driven shaft provided with a key and adapted to be shifted endwise; and a series of gears on said driven shaft in mesh with the gears on the driving-shaft, and adapted to respectively impart motion to the driven shaft by means of the key carried by the driven shaft.

2. In a variable-speed mechanism, a driving-shaft having an enlarged portion, a key seated in said enlarged portion; a sleeve serving as a journal for the reduced portion; a series of gears loosely mounted on the driving-shaft, and adapted to be respectively en-

gaged by the key as the shaft is shifted endwise; means for engaging the sleeve to shift the shaft endwise; a driven shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for the reduced portion of said shaft; a series of gears loosely mounted on the driven shaft and in mesh with the gears on the driving-shaft, said gears being adapted respectively to engage the key on the driven shaft and transmit motion thereto by shifting the driven shaft endwise; and means engaging the sleeve on the driven shaft to shift it endwise.



3. In a variable-speed mechanism a driving-shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for one end of the shaft; a series of gears loosely mounted on the shaft and adapted to be respectively engaged by the key by shifting the shaft endwise; a driven shaft having an enlarged portion; a key seating in said enlarged portion of the shaft; a sleeve serving as a journal for one end of the shaft; a series of gears loosely mounted on the driven shaft, and adapted to be respectively engaged by the key of the driven shaft as said shaft is shifted endwise; and means engaging the sleeves of the driving and driven shafts to shift said shafts endwise in unison.

4. In a variable-speed mechanism, a driving-shaft having an enlarged portion; sleeves mounted on said shaft on opposite sides of said enlarged portion; a key seated in said enlarged portion; a series of gears loosely mounted on the shaft and adapted to be engaged respectively by said key as the shaft is shifted endwise; a driven shaft having an enlarged portion; sleeves upon opposite sides of said enlarged portion; a series of gears loosely mounted on said shaft and in mesh with the gears on the driving-shaft, said gears on the driven shaft being adapted to be respectively engaged by the key of the driven shaft as it is shifted endwise to drive the driven shaft; and means engaging the sleeves at one end on the driving and driven shafts to shift said shafts endwise in unison.

5. In a variable-speed mechanism, a driving-shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for one end of the shaft; a series of gears loosely mounted on the shaft and adapted to be respectively engaged and driven by the key as the shaft is shifted endwise; a driven shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for one end of said shaft; a series of gears loosely mounted on said shaft and in mesh with the gears on the driving-shaft, said gears being adapted to be respectively engaged by the key of the driven shaft as it is shifted endwise to impart motion to the driven shaft; driving and driven pulleys; a controlling mechanism engaging the sleeves on the driving and driven shafts to shift said shafts endwise in unison; and means for automatically disengaging the load before each change of speed.

6. In a variable-speed mechanism, a driving-shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for one end of the shaft; series of gears loosely mounted on the shaft and adapted to be respectively engaged and driven by the key as the shaft is shifted endwise; a driven shaft having an enlarged portion; a key seated in said enlarged portion; a sleeve serving as a journal for one end of said shaft; a series of gears loosely mounted on said shaft and in mesh with the gears on the driving-shaft, said gears being adapted to be respectively engaged by the key of the driven shaft as it is shifted endwise to impart motion to the driven shaft; driving and driven pulleys; a controlling mechanism engaging the sleeves on the driving and driven shafts to shift said shafts endwise in unison and means operated by the controlling mechanism for disengaging the load before each change of speed.

7. In a variable-speed mechanism, a driving-shaft adapted to be adjusted endwise and provided with a key; a series of gears loosely mounted on said shaft and adapted to be respectively engaged and driven by said key; a driven shaft provided with a key and adapted to be shifted endwise; a series of gears on said driven shaft in mesh with the gears on the driving-shaft, and adapted to respectively impart motion to the driven shaft by means of the key carried by the driven shaft; a driving and driven pulley; a controlling mechanism adapted to shift the shafts endwise; and means operated by the controlling mechanism for disengaging the load before each change of speed.

8. In a variable-speed mechanism, a driving-shaft adapted to be adjusted endwise and provided with a key; a series of gears loosely mounted on said shaft and adapted to be respectively engaged and driven by said key; a driven shaft provided with a key and adapted to be shifted endwise; a series of gears on said driven shaft in mesh with the gears on the driving-shaft, and adapted to respectively impart motion to the driven shaft by means of the key carried by the driven shaft; a pulley adapted to drive said mechanism in the forward direction; a pulley adapted to drive said mechanism in the reverse direction; a clutch adapted to engage and be driven by either of said pulleys; a controlling mechanism adapted to shift the driving and driven shafts endwise; and means operated by the controlling mechanism for shifting said clutch to release the load before each change of speed.

9. In a variable-speed mechanism, a driving-shaft provided with a sliding clutch, a releasing-clutch influencing the rotation of said shaft, a plurality of different-sized gear-wheels suspended around said shaft and adapted to engage said sliding clutch, a driven shaft provided with a sliding clutch a plurality of different-sized gear-wheels suspended around said shaft and adapted to engage said clutch, and means for actuating the releasing-clutch on the driving-shaft and shifting the driving and driven shaft clutches in unison at a single movement.

10. In a variable-speed mechanism, a driving-shaft, a driven shaft, a plurality of gears of different sizes mounted concentrically with but not in contact with said shafts, clutch members on the respective shafts adapted to travel through said gears in unison and to respectively bring into operation different pairs of said gears, a controlling mechanism adapted to shift said clutch members along the shafts, and means operated by the controlling mechanism for disengaging the load before each change of speed.

11. In a variable-speed mechanism, a driving-shaft, a driven shaft, a plurality of different-sized gears through the bores of which said shafts pass, clutch members on the respective shafts adapted to travel through the bores of the gears, and to respectively bring into operation different pairs of said gears to effect a change of speeds, a controlling mechanism adapted to shift said clutch members along the shafts, and means operated in unison with the controlling mechanism for disengaging the load before each change of speed.

12. In a speed-variator, a pair of shafts, means for driving one of said shafts, a clutch controlling the said drive, intermeshing pairs of gear-wheels of different diameter loosely supported relative to said shafts, clutch-sleeves sliding on said shafts within the gear-wheel bores, the said sleeves having racks, gear-wheels between said sleeves engaging said racks, and means for actuating said last-named gear-wheels, whereby the said clutch-sleeves are shifted simultaneously in either direction, substantially as described.

13. In a speed-variator, a pair of shafts, means for driving one of said shafts, intermeshing pairs of gear-wheels of different diameter loosely supported relative to said shafts, clutches sliding within said gear-wheel bores adapted to fix any selected pair of intermeshing gear-wheels to their shafts, and rack and gear-wheel mechanism for shifting said clutches simultaneously, substantially as described.

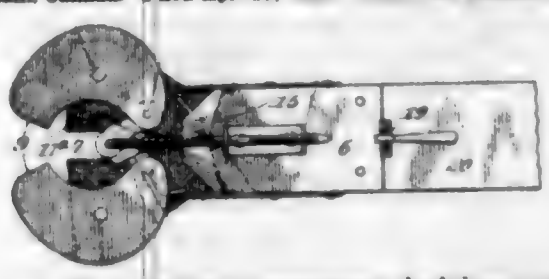
14. In a variable-speed mechanism, a driving-shaft having an enlargement, a series of pawls seated in the enlargement, a sleeve constituting a journal for one end of the shaft, a series of gears loosely mounted on the shaft and adapted to be respectively engaged and driven by the pawls as the shaft is shifted endwise, a driven shaft having an enlargement, a series of pawls seated in the enlargement, a sleeve constituting a journal for one end of the shaft, a series of gears loosely mounted on the shaft and in mesh with the gears on the driving-shaft, said gears being adapted to be respectively engaged by the pawls on the driving-shaft as it is shifted endwise to impart motion to the driven shaft, the arrangement of each of the pawls of

each shaft being such that one of the gears is engaged by a part of said series of pawls before the preceding gear is released by the remaining pawls.

15. A speed-changing mechanism, comprising two shafts, separate gears of different size revolubly supported on each shaft, the gears on one shaft meshing with those on the other shaft in reverse order, each shaft movable axially with reference to the gears thereon, a feather for locking each shaft to any one gear thereon, and means for shifting the shafts through the gears and thereby unlocking them from one pair of meshing gears and locking them to another pair of meshing gears, as set forth.

16. A speed-changing mechanism, comprising two shafts, separate gears of different size on each shaft, the gears on one shaft meshing with those on the other shaft in reverse order, each shaft movable axially wth reference to the gears thereon, a feather for locking each shaft to any one gear thereon, and connections between the two shafts whereby the axial movement of one shaft effects the axial movement of the other shaft, as set forth.

816,129. COUPLING DEVICE. ASAHEL B. SCOUTEN, Riding Mountain, Canada. Filed Apr. 30, 1905. Serial No. 258,056.



Claim.—1. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, a toggle pivoted to the jaws and constructed to actuate said jaws and lock them in a predetermined position, means for locking the toggle, and means for unlocking the toggle.

2. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, means pivoted to the jaws and constructed to actuate the jaws and lock them in a predetermined position, a rod connected to said means, a plurality of brackets secured to the casing and adapted to support said rod, the said rod being provided with a shoulder adapted to engage one of said brackets, whereby the rod is locked in position, and means for unlocking the rod.

3. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, means pivoted to the jaws and constructed to actuate and lock said jaws in a predetermined position, a rod connected at one end with said means and provided at its opposite end with a cam-lug, means for locking the rod in a predetermined position, a lever pivoted to the draft-bar and adapted to engage said cam-lug and release said rod from its locked position.

4. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, resilient means for actuating and locking said jaws, means tending to keep said jaws open, means for locking said actuating means, and means for unlocking said actuating means.

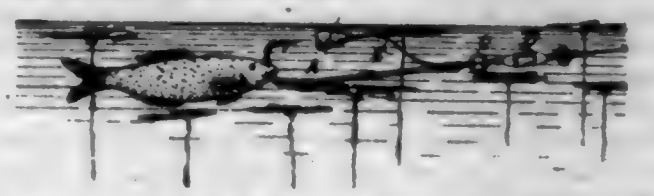
5. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, means for actuating and locking said jaws, springs tending to keep said jaws open, means for locking said actuating means and means for unlocking said actuating means.

6. The combination comprising a draft-bar, a casing secured thereon, a pair of oppositely-disposed jaws pivoted to the casing, means for actuating and locking said jaws, a projection on each of the jaws, a spring secured on each side of the draft-bar and constructed to contact with said projections, means for locking the actuating means, and means for unlocking the actuating means.

7. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, means for actuating and locking the jaws, means for limiting the movement of the jaws in one direction, resilient means tending to force said jaws in an opposite direction, and means for locking and unlocking the actuating means.

8. The combination comprising a draft-bar, a casing on the draft-bar, a pair of oppositely-disposed jaws pivoted to the casing, means for actuating and locking the jaws, means for locking and unlocking the actuating means, and means for limiting the movement of the jaws in one direction, comprising a plurality of stops on the draft means and a stop on each of the jaws.

816,130. FISH-HOOK. CHARLES A. SHAW, Chicago, Ill. Filed June 30, 1905. Serial No. 267,692.

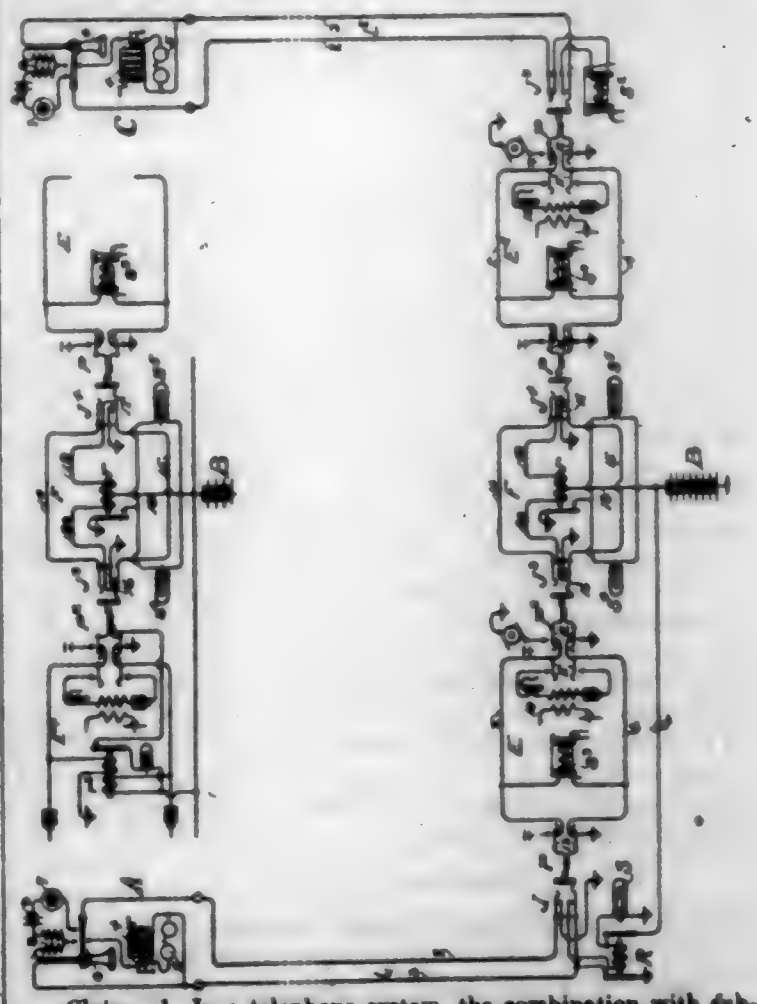


Claim.—1. The combination with a fish-hook, of a flexible wire, one end of which is rigidly secured to the shank of the hook, the free end of said wire extending toward the point of said hook, a float rigidly secured to the free end of said wire and adapted to hold the hook in a horizontal position when reeled in the water, and to hold the point of the hook upward, substantially as described.

2. The combination with a fish-hook, of a flexible wire, one end of which is rigidly secured to the shank of the said hook, and the opposite end thereof extending toward the point of said hook, a float rigidly secured to the free end of said wire, said float adapted to have enough buoyancy to keep the hook in a horizontal position when reeled in the water, and to prevent the hook from sinking, substantially as and for the purpose specified.

3. The combination with a fish-hook, of a flexible wire, one end of which is rigidly secured to the shank of the hook, the free end of said wire extending toward the point of the hook, a float rigidly secured to the free end of said wire and adapted to protect the point of the hook from engaging obstructions, and to hold the point of the hook upward, substantially as and for the purpose specified.

816,131. TRANSFER-CIRCUIT FOR TELEPHONE-EXCHANGE SYSTEMS. CHARLES A. SIMPSON, Chicago, Ill., assignor to Kellogg Switchboard & Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 27, 1904. Serial No. 230,206.



Claim.—1. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between said sections, means at each said section to connect the subscribers' lines thereof with the said transfer-circuit to establish a complete talking-circuit between the subscribers, two signals permanently connected in parallel associated one with each end of the said transfer-circuit, and means actuated in making and unmaking connections with the said transfer-circuit for suitably controlling the circuit of said signals, substantially as described.

2. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between said sections, means at each said section to

connect the subscribers' lines thereof with the said transfer-circuit to establish a complete talking-circuit between the subscribers, a signal associated with each end of the said transfer-circuit, a relay associated with the said transfer-circuit to control the circuit of said signals, and means for suitably actuating said relay in making and unmaking connections with the said transfer-circuit.

3. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between said sections, means at each said section to connect the subscribers' lines thereof with the said transfer-circuit to establish a complete talking-circuit between the subscribers, a signal associated with each end of the said transfer-circuit, a differential relay controlling the operating-circuits of said signals, and means actuated in making and unmaking connections with said transfer-circuit to control the operation of said relay to thereby suitably control the operation of said signals, substantially as described.

4. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between said sections, means at each said section to connect the subscribers' lines thereof with the said transfer-circuit to establish a complete talking-circuit between the subscribers, a signal associated with each end of the said transfer-circuit, a differential relay associated with the transfer-circuit and controlling the circuit of said signals, one winding of said relay being controlled from one end of the said transfer-circuit and the other from the other end thereof, whereby when the connection is established with either end of the transfer-circuit alone the said signals are operated and when connection exists with both ends of the circuit or with neither end, the said signals are inert, substantially as described.

5. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between said sections, means at each said section to connect the subscribers' lines thereof with the said transfer-circuit to establish a complete talking-circuit between the subscribers, a signal associated with each end of the said transfer-circuit, and means whereby when a connection is established with either end of said circuit said signals are operated and when a connection exists with both ends or with neither end of said transfer-circuits said signals are inert, substantially as described.

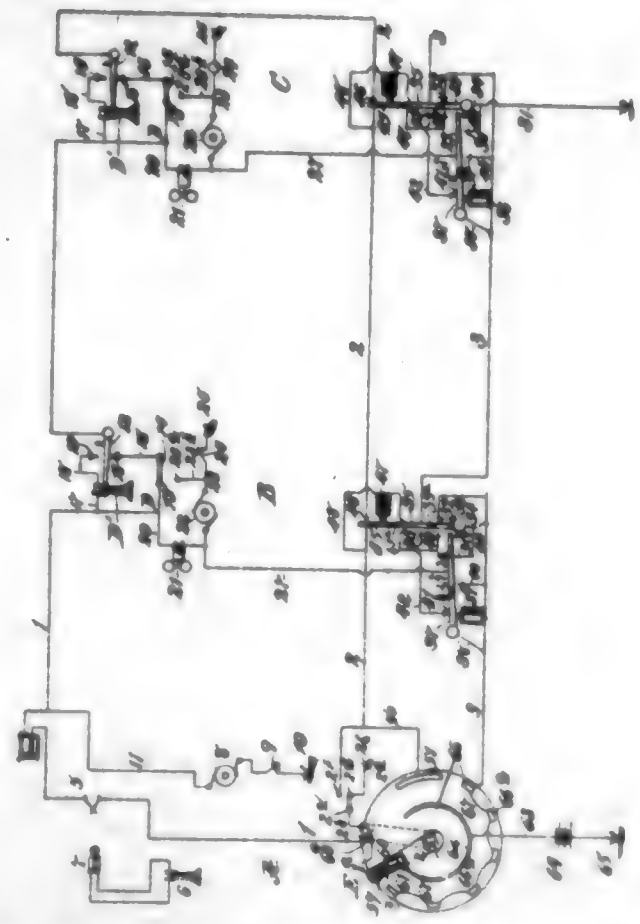
6. In a telephone system, the combination with subscribers' lines terminating upon different switchboard-sections, of a transfer-circuit extending between the said sections and terminating in a spring-jack at each end, cord-circuits at each said section to connect the subscribers' lines with the said transfer-circuit to establish a complete talking-circuit between the subscribers, a signal associated with each end of the transfer-circuit, a differential relay controlling the flow of current through said signals, contacts in each spring-jack of the transfer-circuit controlling one of the windings of said differential relay, whereby when the cord-circuits are not connected with the transfer-circuit or are connected with both ends of the same, the said differential relay is rendered inoperative but when a connection exists with either end of the transfer-circuit the said relay is operated to cause the operation of the said signals, substantially as described.

7. In a telephone system, the combination with a transfer-circuit extending between different switchboard-sections and terminating in spring-jacks thereon, of signals associated with said spring-jacks, contacts and circuit connections associated with said jacks and transfer-circuit but independent of the talking-circuit thereof for controlling said signals, said contacts being controlled by the making and unmaking of connections with said jacks, whereby the said transfer-circuit is adapted for use with various types of cord-circuits, substantially as described.

816,132. TELEPHONE SYSTEM. CHARLES B. SMITH, New York, N. Y. Filed Nov. 26, 1898. Renewed Oct. 23, 1902. Serial No. 133,944.

Claim.—1. A telephone system comprising a central office and a party-line leading therefrom having a plurality of conductors, telephone and signaling instruments for connection with one conductor, and electrically-operating devices adapted to operate one at a time and successively for selecting and placing in circuit the signaling instrument desired and for restoring the circuits to their normal conditions, means at central for sending the appropriate impulses over the conductors to select and operate the signaling instrument desired and for restoring the circuits, means at central for joining two of said conductors in a closed metallic circuit through the telephone instruments, and means corresponding with each telephone for signaling to central over such closed metallic circuit to notify central to disconnect the circuits.

2. A signaling system comprising a central office and conductors leading therefrom to a plurality of stations, connected in one of which conductors in each station are selecting devices to enable an operator at central to select any desired station, signaling devices at each station connected with another of said conductors, and restoring devices at each station connected to another conductor to restore the selecting devices to their normal conditions.



3. A telephone system comprising a central office, a party-line leading therefrom and having a conductor, a plurality of telephone and signaling instruments for connection with one conductor, and means to enable a subscriber to call central, a conductor having electrically-operating devices to be operated by current sent from the central office to select and place in circuit the desired signaling instrument, and a conductor having electrically-operating devices to restore the selecting and signaling instrument circuits to their normal conditions by current thrown on the circuit at the central office.

4. A telephone system comprising a central office and a party-line leading therefrom having main conductors to one of which are to be connected telephone instruments and signaling instruments on a normally open line, and call-producing instruments also connected with said conductor to signal to central, another of said conductors having electrically-operating devices to select and close the circuit of the desired signaling instrument by current sent from central, and another of said conductors having electrically-operating devices for each of said signaling instruments adapted to restore the selecting devices and the signaling-instrument circuits to their normal conditions by current sent from central.

5. A signaling system comprising a central office, and a party-line leading therefrom having main conductors to one of which are connected signaling instruments and means for each signaling instrument for producing a call at central, another of said conductors being divided into sections, each section corresponding to one of the signaling instruments and having electrically-operating devices to select the desired signaling instrument and to connect two of said sections together to form a through-line all by current sent over the line from central, and another conductor having electrically-operating devices connected with it corresponding to each signaling instrument to restore the corresponding selecting instruments to their normal conditions by current sent over the circuit from central.

6. A telephone system comprising a central office and a party-line leading therefrom having a plurality of conductors, telephone and signaling instruments for connection with one conductor, and means for each telephone to send a call to central, and means at central to operate said signaling instruments, said signaling instruments being located on a normally open line, electrically-operating devices connected with another of said conductors for selecting and closing the line of the desired signaling instrument and for holding it closed by current sent from central while a signal is produced, and means connected with another of said conductors for restoring the

selecting devices and the line of the selected signaling instrument to their normal conditions.

7. A telephone system comprising a central office and a party-line leading therefrom having a plurality of conductors, telephone and signaling instruments for connection with one conductor, and means for each telephone instrument to send a call to central, and means at central to operate said signaling instruments, said signaling instruments being located on a normally open line, electrically-operating devices connected with another of said conductors for selecting and closing the line of the desired signaling instrument and for holding it closed by current sent from central while a signal is produced, means connected with another of said conductors for restoring said selecting devices and the line of the selected signaling instrument to their normal conditions, and means at the central office for joining two of said conductors in a closed metallic circuit through the telephone instruments.

8. A telephone system comprising a central office and a party-line leading therefrom having a plurality of conductors, telephone and signaling instruments for connection with one conductor and means for each signaling instrument to send a call to central, and means at central to operate said signaling instruments, said signaling instruments being located on a normally open line, electrically-operating devices connected with another of said conductors for selecting and closing the line of the desired signaling instrument and for holding it closed by current sent from central while a signal is produced, means connected with another of said conductors for restoring said selecting devices and the line of the selected signaling instrument to their normal conditions, means at the central office for joining two of said conductors in a closed metallic circuit through the telephone instruments, and means corresponding to each telephone for sending a signal to central over a closed metallic circuit to indicate that the closed metallic circuit should be broken.

9. A telephone system comprising a conductor, telephone instruments normally out of circuit therewith and means for including them in said circuit, a signaling instrument for each telephone normally out of circuit, another conductor having electrically-operating devices arranged to select the signaling instrument desired and to connect it in circuit with the first-mentioned conductor, and another conductor having electrically-operating devices to restore the signaling-instrument line and the first-mentioned electrically-operating devices to their normal conditions.

10. A telephone system comprising a conductor, telephone instruments normally out of circuit therewith and means for including them in the circuit, a signaling instrument for each telephone normally out of circuit, another conductor having electrically-operating devices arranged to select the signaling instrument desired and to connect it in circuit with the first-mentioned conductor, another conductor and electrically-operating devices to be operated thereby to restore the signaling-instrument circuit and the first-mentioned electrically-operating devices to their normal conditions, and means for joining the first and last mentioned conductors together in a closed metallic circuit for the telephones.

11. A telephone system comprising a conductor having telephone instruments normally disconnected therefrom, means to connect them therewith, a signaling instrument for each telephone, means for operating the same, another conductor connected with the first-mentioned conductor at one part and normally disconnected therefrom at another part, means for joining said conductors in a closed metallic circuit, means corresponding to each telephone for breaking the first-mentioned conductor and connecting it through the devices that operate the corresponding signaling instrument, and a circuit having electrically-operating devices for selecting the signaling instrument desired.

12. A telephone system comprising a main line including hooks or contacts 12, and switches or contacts 14, telephone instruments located on branch lines connected with said main line adapted to be electrically connected therewith by said hooks or contacts 12, signaling instruments for each telephone connected with said main line, current-producing devices connected with said signaling instruments and a contact connected with said current-producing devices to be engaged by the contact 14, another line adapted to be connected in a closed metallic circuit with the first-mentioned line, an indicating instrument to be operated by current on said closed metallic circuit, and another line having electrically-operating devices to select the signaling intrument desired and connect it with the first-mentioned line in condition to be operated by current sent thereover.

13. An electrical circuit comprising a main line including contacts 13, 14, 16, and 12, branch lines exending from said conductor including telephone instruments and each having a contact to be engaged by the corresponding contact 12, normally open branch lines corresponding to each telephone instrument extending from said main line and each having a signaling instrument, current-producing devices connected with each of said branch lines and having a contact to be engaged by the contact 14, another line to be joined with said main line to form a closed metallic circuit, and a line having electrically-operating devices to select and close the branch line of the signaling instrument desired.

14. An electrical circuit comprising a main line including contacts 13, 14, 16, and 12, branch lines extending from said main line including telephone instruments and each having a contact to be engaged by the corresponding contact 12, normally open branch lines for each telephone instrument extending from said main line and each having a signaling instrument, current-producing devices connected with each of said branch lines and having a contact to be engaged by the contact 14, another line to be joined with said main line to form a closed metallic circuit, a line having electrically-operating devices to select and close the branch line of the signaling instrument desired, and electrically-operating devices connected with the second-mentioned line to restore said selecting devices and the branch lines to their normal conditions.

15. A circuit divided into normally grounded sections, electrically-operating devices for breaking said grounds and joining two sections together, another normally closed circuit having contacts to break it into sections, and electrically-operating devices connected in normally open circuits extending from the sections of the second-mentioned circuit to restore the sections of said circuit to their normal condition, the first-mentioned electrically-operating devices being arranged to close the circuits for the electrically-operating devices of the second-mentioned circuit.

16. An electrical circuit divided into normally grounded sections, electrically-operating devices connected with each section to break the ground of said section and to join two sections together, contacts to form a temporary ground for said sections, another normally closed circuit having contacts to break it into sections, branch lines extending from the sections of said circuit andeach having a contact to be engaged by a contact of said electrically-operating devices to establish a ground for the section of the second-mentioned circuit, and electrically-operating devices connected with said branch line to restore the first-mentioned electrically-operating devices and to join the sections of the second-mentioned circuit.

17. A telephone system comprising a conductor, telephone instruments, and normally open branch lines connected with said conductor for each telephone, a signaling instrument connected with each branch line, contacts in each branch line to make and break the same, another circuit divided into normally grounded sections, electrically-operating devices to break the grounds of said sections and join two sections together and to operate the contacts of the signaling-instrument branch lines to make and break said lines, and means for restoring said circuits to their normal conditions.

18. A telephone system comprising a conductor, telephone instruments, and normally open branch lines connected with said conductor for each telephone, a signaling instrument connected with each branch line, contacts in each branch line to make and break the same, another circuit divided into normally grounded sections, electrically-operating devices to break the grounds of said sections and join two sections together and to operate the contacts of the signaling-instrument branch lines to make and break said lines, and another circuit having electrically-operating devices to restore said circuits to their normal conditions.

19. A telephone system comprising a central office, a conductor leading therefrom, telephone and signaling instruments therefor, means for operating the latter, and an indicating instrument at central on said conductor, contacts and conductors connecting said conductor with ground and adapted to break the circuit of said conductor, another conductor connected with the first-mentioned conductor and leading to central, contacts to connect said conductors at central in a closed metallic circuit, another conductor having electrically-operating devices to select the desired signaling instrument, the second-mentioned conductor having electrically-operating devices to restore said selecting devices, and means at central for operating the devices connected with the second and third mentioned conductors.

20. A telephone system comprising a central office and a party-line leading therefrom having two conductors together at one part and normally disconnected at central, telephone and signaling instruments for one of said conductors, and an indicating instrument at central on said conductor, means for operating said signaling instruments and the indicating instrument, a pair of contacts one of which is connected with said conductor and the other being connected with ground through a switch, a contact to connect said two con-

tacts, a contact connected with the second-mentioned conductor to be engaged by said switch to join said conductors in a closed metallic circuit through the telephone instruments, another conductor having electrically-operating devices to select the desired signaling instrument, and means at central for operating said selecting devices.

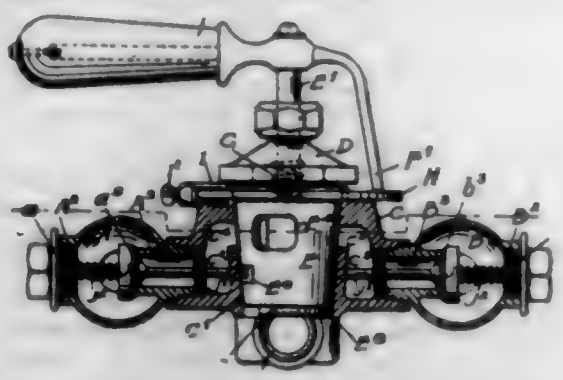
21. A telephone system comprising a central office and a party-line leading therefrom and having two conductors connected together at one part and normally disconnected at central, telephone and signaling instruments for one of said conductors, and an indicating instrument at central on said conductor, means for operating said signaling instruments and the indicating instrument, a pair of contacts one of which is connected with said conductor and the other being connected with ground through a switch, a contact to connect said two contacts, a contact connected with the second-mentioned conductor to be engaged by said switch to join said conductors in a closed metallic circuit through the telephone instruments, another circuit having electrically-operating devices to select the desired signaling instrument, electrically-operating devices connected with the second-mentioned conductor for restoring said selecting devices, and means at central for operating said selecting and restoring devices.

22. A central station, a continuous metallic line extending therefrom, a second metallic line extending therefrom and broken at a series of stations, a third line arranged to complete the circuit from each station to the central, and switch mechanism at each station arranged to successively and automatically break the third circuit connection from each station to central and build up the broken line through each station.

23. In combination, a central station, three lines leading therefrom to a series of substations, and electromagnetic selective apparatus at each of said substations adapted to be connected in series with one of said lines, and adapted to be connected in multiple with either of the other two lines.

24. In combination, a central station, three lines leading therefrom to a series of substations, electromagnetic selective apparatus at each of said substations adapted to connect said selective apparatus in series with one of said lines and to make or break a multiple connection with each of the other two lines when actuated by suitable electric impulses, and means for causing suitable impulses to flow through said electromagnetic selective apparatus.

816,135. FAUCET. WILLARD A. SPRAKMAN, Wilmington, Del. Filed Mar. 29, 1904. Serial No. 200,514.



Claim.—1. A casing having a cock-seat and a valve seat or seats, in combination with a plug-cock working in the cock-seat, a valve or valves adapted to seat themselves on the valve seat or seats aforesaid, springs acting to seat said valves and means actuated by the turning of the plug-cock to open its ports and acting to open the valve or valves and by the turning of the cock to close its ports to release the valve or valves and permit the springs to close them.

2. A casing having communicating ports, a cock-seat interposed in one or more of said ports, and one or more valve-seats also interposed in said ports, in combination with a plug-cock working in the cock-seat, a valve or valves adapted to seat themselves on the valve-seats aforesaid, springs acting to seat said valves, and means actuated by the movement of the cock to open the ports controlled by it operating to open the valves and by the movement of the cock to close its ports to release the valves permitting the springs to close them.

3. A casing having a cock-seat and a valve seat or seats, in combination with a plug-cock working in the cock-seat and having a cam or cams formed on it, a valve or valves adapted to seat themselves on the seat or seats aforesaid, springs acting to seat said valves and valve-rods connected to the valves and extending to a position to be acted on by the cams of the cock.

4. In a faucet, a casing having two fluid-inlet ports leading into it and one or more outlet-ports leading from it, in combination with valves for opening and closing the inlet-ports, means for opening and closing said valves adapted to open and close both practically simultaneously, and other means for opening and closing the inlet-ports whereby both ports may be simultaneously opened and either of them partly or wholly closed.

5. In a faucet, a casing having two fluid-inlet ports leading into it and one or more outlet-ports leading from it, in combination with valves for opening and closing the inlet-ports, means for opening and closing said valves adapted to open and close both practically simultaneously, other means for opening and closing the inlet-ports w re-by both ports may be simultaneously opened and either of them partly or wholly closed, and a handle connected with and actuating all the port closing and regulating mechanism as described and so that the simultaneously-acting valves are moved to open the ports in advance of the opening of the ports by the other port opening and regulating devices.

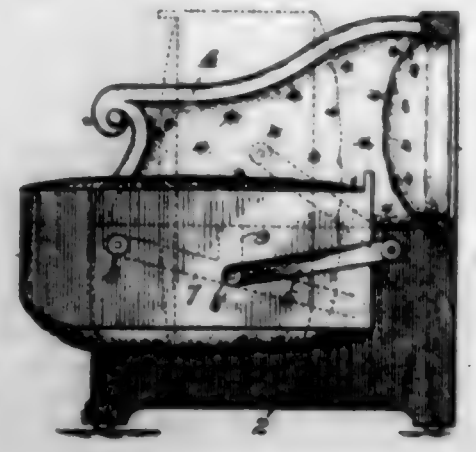
6. In a faucet, a casing having two inlet-ports, a chamber into which said ports lead and one or more outlet-ports leading from said chamber, in combination with valves arranged to open and close said inlet-ports at points in the rear of their opening into the chamber, additional port closing and regulating devices situated in the chamber and whereby the port-openings thereto may be relatively regulated, a handle and means actuated thereby and connected with the valves and other port-regulating devices as described and whereby the valves are first opened and are kept open during the various adjustments of the regulating mechanism.

7. In a faucet, a casing having two inlet-ports, a chamber into which said ports lead and one or more outlet-ports leading from said chamber, in combination with valves arranged to open and close said inlet-ports at points in the rear of their opening into the chamber, a part moving in contact with the walls of the chamber having ports formed in it and arranged to open both ports of the casing to the outlet in varying degree and to close both ports as the port-containing part is moved, means connected with said movable part and actuated thereby whereby the valves of the inlet-port are opened and closed simultaneously, and a handle for shifting the position of the movable part.

8. In a faucet, a casing having a chamber with two inlet-ports leading into it, and one or more outlet-ports leading from said chamber, in combination with valves arranged to open and close said inlet-ports at points in the rear of their opening into the chamber, a part moving in contact with the walls of the chamber having ports formed in it and arranged to open both ports of the casing to the outlet in varying degree and to close both inlet-ports of the chamber as the movable port-containing part is moved, cams connected with said movable part and actuated thereby whereby the valves of the inlet-port are opened and closed simultaneously, and a handle for shifting the position of the movable part.

9. In a faucet, a casing having a chamber with two inlet-ports leading into it, a cock-seat formed on the inner wall of said chamber and one or more outlet-ports leading from said chamber, in combination with valves arranged to open and close said inlet-ports at points in the rear of their opening through the cock-seat into the chamber, a plug-cock seated in the cock-seat and having ports formed in it to open both inlet-ports to the outlet-port in varying degree and to close both ports as the cock is turned, cams moving with the cock and arranged to open and close the valves of the inlet-ports and a handle for turning the cock.

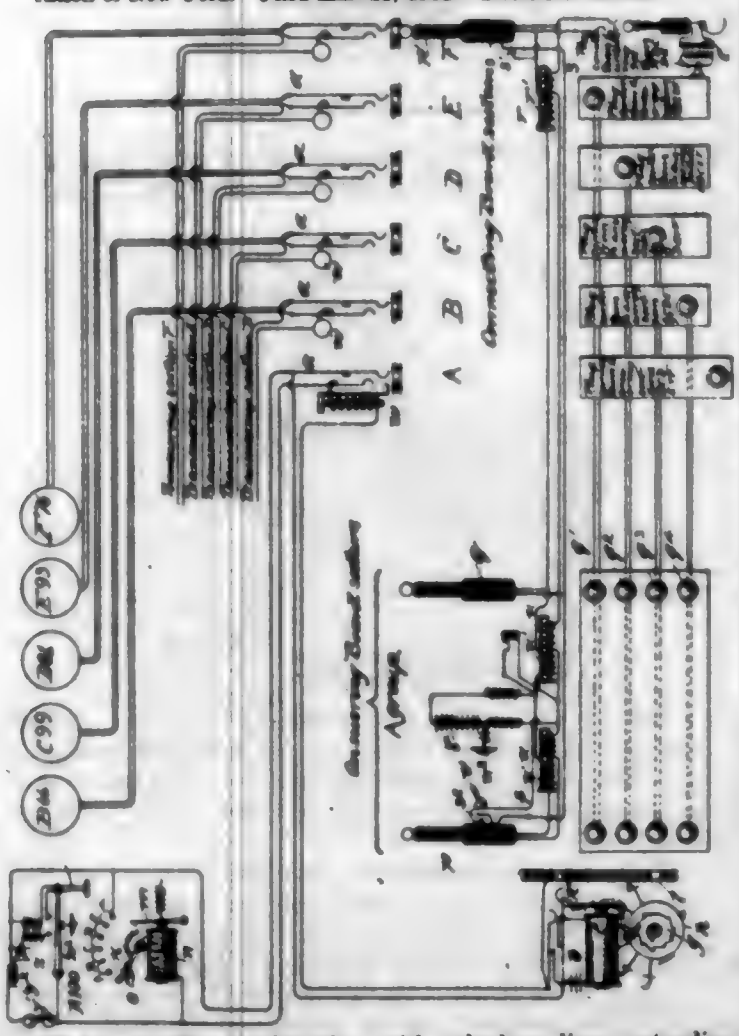
816,134. SOFA-BED. JOHN B. STRAND and JOHN H. HAUGEN, Chicago, Ill. Filed Aug. 21, 1905. Serial No. 275,061.



Claim.—1. In a sofa-bed, the combination of a back, end members having tracks or slideways formed in their opposed faces and provided with vertical ways communicating with said tracks, a reversible member provided with track-wheels engaging the tracks, and radius-links provided with lateral projections in line with the pivotal connections of said links to the reversible member, such projections having movement in the aforesaid vertical ways and bearing upon the aforesaid tracks and adapted in conjunction with the track-wheels to afford the entire supporting connection between the reversible and end members, substantially as set forth.

2. In a sofa-bed, the combination of a back, end members having inclined tracks or slideways formed in their opposed faces and provided with vertical ways communicating with said tracks, a reversible member provided with track-wheels engaging the tracks, and radius-links provided with lateral projections in line with the pivotal connections of said links to the reversible member, such projections having movement in the aforesaid vertical ways and bearing upon the aforesaid tracks and adapted in conjunction with the track-wheels to afford the entire supporting connection between the reversible and end members, substantially as set forth.

816,185. TELEPHONE-EXCHANGE SYSTEM. HAROLD B. STROUD, Chicago, Ill., assignor, by mesne assignments, to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 25, 1901. Serial No. 52,788.



Claim.—1. The combination with telephone-lines extending from subscribers' stations and passing serially through two boards at the exchange, each line having a switch connection with each board, of trunk-circuit connecting means interposed between the boards, line-indicators at one of the boards, test-indicators associated with the telephone-lines at the other board, a source of current for the trunk-circuit, and means whereby the said test-indicators are operated by said source when the trunk-circuit is connected with the line at the first board, connection of said circuit also mechanically causing restoration of the line-indicator.

2. The combination with telephone-lines extending from subscribers' stations and passing serially through two boards at the exchange, each line having a switch connection with each board, of connecting means interposed between the boards, line-indicators at one of the boards, test-indicators associated with the telephone-lines at the other board, and means whereby the said test-indicators are operated when the lines at the first board are connected with the connecting means, the said test-indicators being located to the rear of the plug-openings and presenting a signal before the plug-openings when the corresponding line is busy to guard against the insertion of plugs, connection of said connecting means with the line also causing mechanical engagement with the line-indicator to cause restoration thereof substantially as described.

3. In a trunking cord connection, the combination with the strands of the trunk-cord, of an indicator at one terminal of the trunking connection having a controlling-electromagnet provided with differentially-wound coils, means at the other terminal of the trunking connection for closing circuit through one of the said coils to effect an operation of the said indicator, and means at the first aforesaid terminal of the trunking connection for nullifying the magnetizing effect of the said winding, substantially as described.

4. In a trunking cord connection, the combination with the strands of the trunk-cord, of an indicator at one terminal of the trunking connection having a controlling-electromagnet provided with differentially-wound coils, means at the other terminal of the trunking connection for closing circuit through one of the said coils to effect an operation of the said indicator, and means at the first aforesaid terminal of the trunking connection for nullifying the magnetizing effect of the said winding, the differential coils of the controlling-electromagnet being included in opposite sides of the said cord-circuit, substantially as described.

5. In a trunking-cord connection, the combination with the strands of the trunk-cord, of an indicator at one terminal of the trunking connection having a controlling-electromagnet provided with differentially-wound coils, means at the other terminal of the trunking connection for closing circuit through one of the said coils to effect an operation of the said indicator, and means at the first aforesaid terminal of the trunking connection for opening the circuit including the said winding, substantially as described.

6. The combination with telephone-lines extending from substations to different boards of the exchange, of a trunking cord-circuit interposed between the said boards and provided with terminal plugs, two signals, one at each terminal of the cord-circuit, each signal being provided with a controlling-electromagnet having differentially-wound coils included in opposite sides of the cord-circuit, a signaling-conductor, and plug-seat switches operated by the terminal plugs, the plug at one terminal of the cord-circuit serving to close circuit through a single operating-coil of the controlling-magnet at the other terminal of the cord-circuit, while the terminal plug at the latter end of the trunking cord-circuit serves upon its removal to effect an operation of the switch controlled thereby to open the circuit including the said coil, substantially as described.

7. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' stations to different boards at the exchange, of a trunking cord-circuit at the exchange provided with three signals, each having a controlling-electromagnet having differentially-wound coils, the coils of each magnet being included in opposite sides of the cord-circuit, two of the said signals being located at one of the terminals of the cord-circuit, while the remaining signal is included at the remaining terminal of the cord-circuit, and a source of current included between the magnets of the signals at one terminal of the cord-circuit and in bridge between the sides of the cord-circuit, substantially as described.

8. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' stations to an exchange, of a cord-circuit for connecting subscribers for conversation, indicators for the cord-circuit, two electromagnets having their armatures provided with plug-seat switches adapted to receive the terminal plugs of the cord-circuit, a signaling-circuit including the said indicators, and switches controlled by the armatures of the said electromagnets, the said plugs in engaging the seats provided upon the armatures serving to open the signaling-circuit, the circuit through the electromagnets being controlled by the apparatus at the substations, whereby circuits through the said indicators may be closed and opened while the plugs are in line-jacks, substantially as described.

9. In an operator's apparatus, the combination with an electromagnet of an armature, of a plug-seat provided in the armature for receiving a plug, and a switch-contact operatively associated with the said armature, substantially as described.

10. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' stations to different boards at the exchange, of a trunking cord-circuit intervening between the boards, the said trunking cord-circuit being provided near one terminal thereof with two connecting-plugs, whereby a connection may be completed between subscribers whose lines extend to the same board, the other end of the trunking cord-circuit being provided with suitable connecting means, whereby subscribers' lines extending to different boards may be connected for conversation, a signal located at the latter end of the trunking cord-circuit, a switching device con-

trolled by one of the plugs at the first aforesaid end of the trunking cord-circuit to effect the operation of the said signal, and means for preventing the operation of the said switching device when lines extending to the same board are to be united for conversation through the agency of the said pair of connecting-plugs at one terminal of the cord-circuit, substantially as described.

11. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' stations to an exchange, each line passing through a connecting-board and terminating at an answering-board, of a spring-jack at each board connected with the line, and an indicating-signal at the connecting-board normally connected with the spring-jack thereat and with the line, the insertion of a plug in said spring-jack serving to interrupt the line and to disconnect said signal therefrom, substantially as described.

12. In a telephone-exchange system, the combination with telephone-lines extending from substations to an exchange, each line passing through a connecting-board and terminating at an answering-board, of spring-jacks and plug-openings at each board connected with said lines, and indicating-signals at the connecting-board included serially in the lines and normally connected with the spring-jacks, each signal serving when the subscriber telephonically connects himself with the corresponding line to prevent the insertion of a plug into the corresponding plug-opening, substantially as described.

13. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' stations and passing serially through switchboards at the exchange, of a trunk-circuit between the switchboards for uniting subscribers for conversation, differentially-wound-electromagnet signaling mechanism included in said trunk-circuit, and means independent of the switchboards and telephone-lines for causing actuation of said signaling mechanism for conveying intelligence between the operators at said boards.

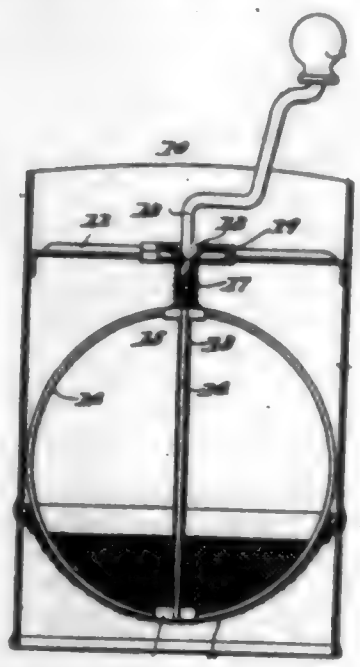
14. In a telephone-exchange system, the combination with telephone-lines extending from subscribers' substations and passing serially through switchboards at the exchange, of a trunk-circuit between said switchboards for uniting subscribers of one board with subscribers of the other board, differentially-wound-electromagnet signals and a source of current included in said trunk-circuit, and means independent of said switchboards and the telephone-lines for causing actuation of said signals to convey intelligence between the operators at said boards.

15. In a telephone-exchange system, the combination with telephone-lines each extending from a subscriber's station and passing serially through two switchboards at the exchange, of a trunk-circuit between said switchboard for uniting the subscribers of one board with the subscribers at the other board, differentially-wound-electromagnet signals and a source of current included in said trunk-circuit, means upon connection of said cord-circuit with the telephone-lines and upon actuation of substation apparatus for indicating to the board operators the condition of the line and substation apparatus, and means in said trunk-circuit entirely independent of the connection of said trunk-circuit with the lines for causing actuation of said signals to convey intelligence between the operators at the boards.

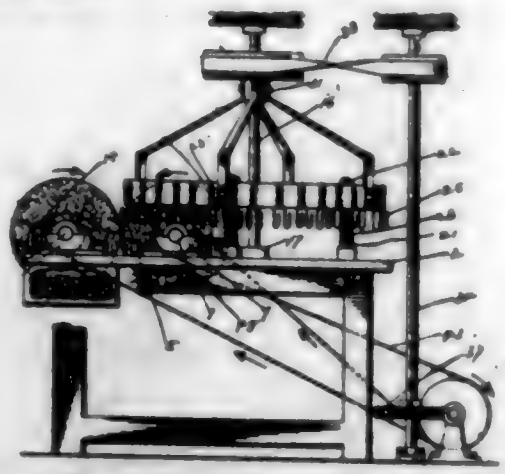
16. In a telephone-exchange system, the combination with telephone-lines each extending from a subscriber's station and terminating at a switchboard at the exchange, of a trunk-circuit between the switchboards at the exchange for uniting subscribers of one board with subscribers of another board, differentially-wound-electromagnet signals and a source of current included in the trunk-circuit, and switching means associated with the plugs of the trunk-circuit for causing actuation of said signals independent of the switchboards and telephone-lines whereby intelligence may be conveyed between the operators at the different boards.

816,136. ROTARY FLOUR-SIFTER. GEORGE J. SWEITZER, Russellville, Ark. Filed May 8, 1905. Serial No. 259,213.

Claim.—In a device of the class described, a cylindrical vessel having its opposite ends open and provided with an annular retaining-flange, a detachable reticulated bottom adapted to engage said rib and having its central portion curved toward the lower end of the vessel, a brace extending transversely of the vessel at the upper end thereof and provided with a central depression having an opening formed therein, a reinforcing-disk secured to the brace at said depression and provided with an opening adapted to register with the opening in the depression, an operating-shaft journaled in said openings and having a free vertical movement, a pair of spaced castings carried by the shaft the lower one of which is curved to conform to the bottom of the reticulated bottom, a plurality of curved agitator-arms secured to the upper casting and intersecting the longitudinal axis of the vertical shaft at the lower casting, a coil-spring interposed between the upper casting and the central depression for normally holding the agitator-arms in yieldable engagement with the reticulated bottom, and a handle carried by the free end of the operating-shaft.



816,137. HAIR-PIN RUBBING AND POLISHING MACHINE. WILLIAM H. THOMPSON, Leominster, Mass. Filed Nov. 18, 1904. Serial No. 233,371.



Claim.—1. In a device of the character described, a frame, abrading-wheels mounted thereon, a spring-supported table arranged over the frame, a conveyer passing around the table and between the wheels, and hook-supporting means carried by the conveyer.

2. In a device of the character described, a frame, abrading-wheels carried thereby, and a conveyer adapted to pass between said wheels, said conveyer having hook-supporting means, and means for automatically throwing pins from the pin-supporting means.

3. In a device of the character described, a frame, abrading-wheels suitably mounted thereon, uprights on the frame, a table yieldably supported by the uprights, and a conveyer passing around the table and between the wheels.

4. In a device of the character described, a frame, abrading-wheels mounted thereon, uprights on the frame, a table loosely mounted on the uprights, springs interposed between the table and the bases of the uprights, and a conveyer passing around the table and between the wheels.

5. In a device of the character described, a frame, abrading-wheels mounted thereon, uprights on the frame, a table loosely mounted on the uprights, springs interposed between the table and the bases of the uprights for exerting an upward movement to the table, means carried by the uprights for limiting said upward movement of the table, and a conveyer passing around the table and between the wheels.

6. In a device of the character described, a frame, abrading-wheels thereon, a table supported by the frame, a shaft, a spider on the shaft, a hoop on the spider arranged around the table and between the wheels, supporting means carried by the hoop, and means for rotating the shaft.

7. In a device of the character described, a frame, abrading-

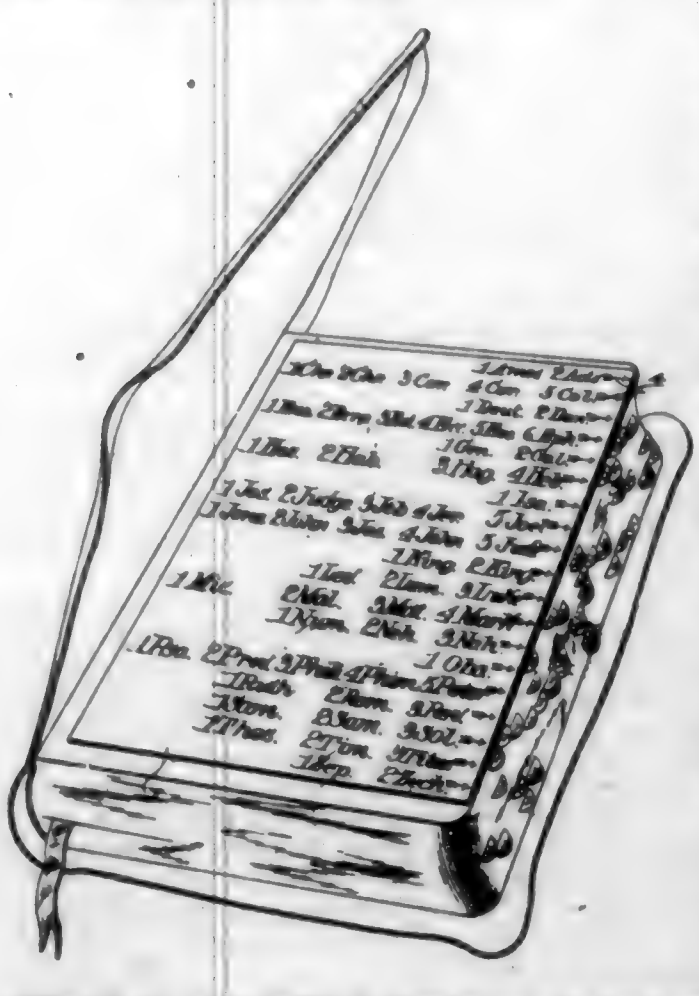
wheels mounted thereon, a conveyer passing between said wheels, article-supporting means carried by the conveyer, and means carried by the frame, for automatically throwing the articles from their supporting means.

8. In a device of the character described, a frame, abrading-wheels thereon, a conveyer passing between the wheels, means on the conveyer for supporting articles, and a trip on the frame for throwing the said articles from their supporting means.

9. In a device of the character described, a frame, abrading-wheels thereon, a conveyer passing between said wheels, means carried by the conveyer for supporting articles, and a trip arranged on the frame on an incline for throwing the said articles from their supporting means.

10. In a device of the character described, a frame, abrading-wheels thereon, a conveyer passing between said wheels, means on the conveyer for supporting articles, a trip secured at one end to the frame, the free end of the trip contacting with the articles and throwing them from their support.

816,138. BOOK-INDEX. CHARLES D. TERRELL, Piggott, Ark. Filed May 23, 1905. Serial No. 261,393.



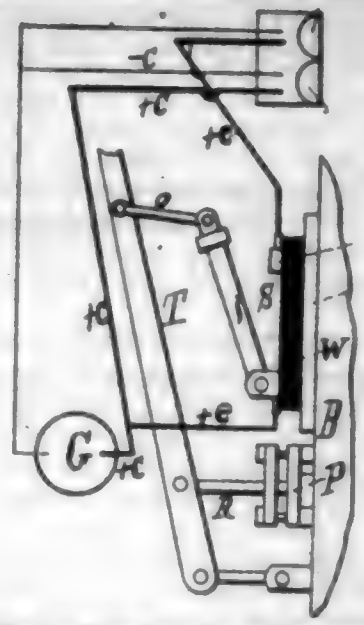
Claim.—1. As a new article of manufacture, an index-sheet bearing the names of the books of the Bible arranged in lines, the books within each line commencing with the same letter, and the lines being arranged alphabetically, and tabs weakly combined with the sheet and bearing symbols.

2. As a new article of manufacture, an index-sheet bearing the names of the books of the Bible disposed in lines arranged in alphabetical order, the books within each line commencing with the same letter and each book having a symbol beside it, and tabs weakly combined with the sheet and bearing symbols identical with those thereon.

3. As a new article of manufacture, an index-sheet bearing the names of the books of the Bible disposed in lines arranged in alphabetical order, the books within each line commencing with the same letter and each book having a numeral beside it, the numerals being in sequence, and tabs weakly combined with the sheet and bearing numerals identical with those thereon.

4. A Bible having combined with it an index-sheet bearing the names of the books thereof disposed in lines arranged in alphabetical order, the books within each line commencing with the same letter and each book having a numeral beside it, the numerals being in sequence, and tabs having numerals corresponding with those on the sheet and suitably located to indicate the different books of the Bible and in line with the rows of book-names on the sheet.

816,139. RAILWAY CAR AND LOCOMOTIVE HEADLIGHT. ADOLPH WALTER, Toledo, Ohio. Filed Dec. 18, 1901. Serial No. 86,452.



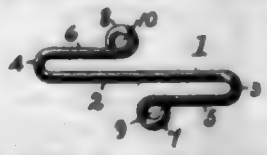
Claim.—1. The combination, in an automatically-signaling headlight for locomotives and cars, of a suitable electric headlight; a circuit connecting said headlight with a source of electricity; and a switch in said circuit locked to, and operated by, the throttle-lever.

2. The combination, in an automatically-signaling electric headlight, of a plurality of electric lights, constituting an "in-motion" and an "at-rest" signal; a circuit over which when closed electricity flows to said "in-motion" signal, from a suitable source; a circuit over which when closed electricity flows to said "at-rest" signal from said source; a double-throw switch located in the leads from said source, whereby either said "in-motion" or said "at-rest" signal is closed with said source; and a means connecting said double-throw switch with the motion of the throttle.

3. The combination, in an automatically-signaling electric headlight, of two electric lights, one constituting an "in-motion" and the other an "at-rest" signal; circuits connecting said electric lights with a source of electricity; a double-throw switch locked to, and operated by, the power-controlling device, arranged in said circuits and closing either the one or the other with said source, according to the position of said power-controlling device; a long conducting-surface placed in the circuit leading to the "in-motion" signal and so arranged that said switch will be in movable contact therewith as long as said power-controlling device remains open; and a contact-piece placed in the circuit leading to the "at-rest" signal and adapted to have contact with said switch only when said power-controlling device is closed.

4. The combination, in an automatically-signaling electric light for locomotives and cars, of a suitable electric light-signal; a circuit connecting said light-signal with a suitable source of electricity; and a switch in said circuit locked to, and operated by, the throttle-lever.

816,140. CORD-FASTENING DEVICE. DANIEL A. WEDMORE, Philadelphia, Pa. Filed Aug. 23, 1904. Serial No. 221,330.



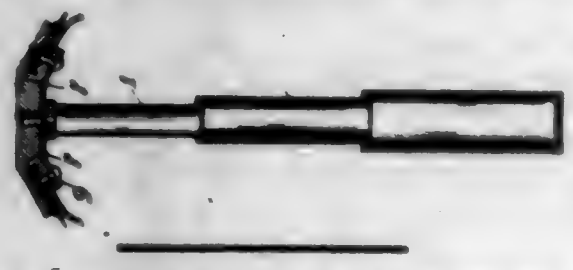
Claim.—A clamp consisting of a single piece of resilient wire having eyes 7 and 8 at its extreme ends and the portion thereof between the eyes reversely bent upon itself at points 3 and 4 to form portions 5 and 6 and portion 2 between portions 5 and 6; the wire at points 3 and 4 being bent to one side of the plane of the portions 2, 5, and 6; in substance as set forth.

816,141. SAFETY-RAZOR. ROBERT S. WILLSFIELD, Baltimore, Md. Filed Aug. 18, 1905. Serial No. 274,766.

Claim.—1. An article of manufacture, a razor comprising a head and blades, wings hinged to the head, the blades removably secured within the wings, a guard and means of securing the guard and blades to the wings, in combination with a handle, means of securing the handle to the head, substantially as described and for the purposes set forth.

2. An article of manufacture, a razor comprising a head, wings, blades and guards, the blades and guards removably secured to the

wings by suitable means, and the wings hinged to the head whereby the wings can be folded upon the head, in combination with a telescopic handle and means for removably securing the handle to the head, substantially as described and for the purpose as herein set forth.



816,142. PROCESS OF MAKING IRON FROM THE ORE. ROBERT H. AIKEN, Winthrop Harbor, Ill. Filed June 1, 1903. Serial No. 159,609.

Claim.—1. The method of making iron from iron oxids which consists in dissolving the oxid in a molten silicate of one or more metals not less electropositive than iron, and passing through the solution a continuous current adapted to decompose said oxid.

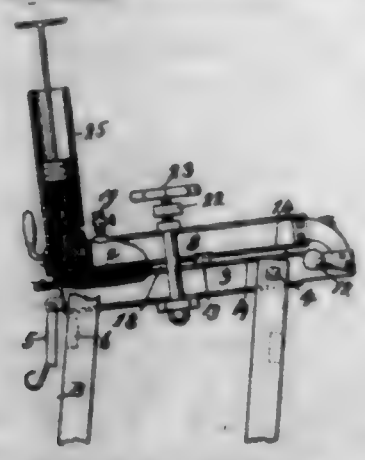
2. The method of making iron from iron oxids which consists in forming a bath of molten silicate of one or more metals not less electropositive than iron, gradually feeding into said molten bath the oxid to be operated upon, and maintaining a direct electric current through the mass.

816,143. NUT-LOCK. CHARLES A. ALLEN, Galion, Ohio. Filed Jan. 30, 1905. Serial No. 243,367.



Claim.—The combination in a device of the class designated, of a bolt provided with a threaded body portion and having a longitudinal groove with the bottom portion thereof parallel with the axis of the bolt extending through the threaded portion thereof, a nut mounted for rotation on the threads of said bolt provided with an annular recess in its forward end, a locking device of spring-wire having its main portion bowed so that the outer ends thereof will engage the outer threads of the nut, and its central convex portion bear against the bottom of said groove, and further having its forward end terminating in a right-angularly-shaped portion adapted to enter said annular recess in said nut and engage the bottom face thereof when said nut is driven forward on said threads, whereby said locking device is progressively carried along said recess in association with said nut and in operative relation therewith, substantially as shown and described.

816,144. MOLD FOR DEPOSITING PRINTING-ROLLER COMPOSITION ON FABRICS. JOHN F. AHEE, Portland, Oreg. Filed Feb. 17, 1905. Serial No. 246,085.



Claim.—1. A means for depositing elastic inking-bodies on fabric, comprising a bed-plate having means for the reception and stretching of the fabric, a cover or presser-plate, adjustable guides on the under side of the presser-plate forming the walls of the mold, means for clamping the presser-plate to the bed-plate and means for injecting the composition which is to form the inking-body into the space inclosed by said guides.

2. A means for depositing elastic inking-bodies on fabric, comprising a bed-plate having means for the reception and stretching of the fabric, a cover or presser-plate, adjustable guides on the under side of the presser-plate forming the walls of the mold, means for clamping the presser-plate to the bed-plate and means for injecting the composition which is to form the inking-body into the space inclosed by said guides, and means for heating the mold and for suddenly cooling it.

3. A mold for applying inking composition to fabric comprising two plain-surfaced parts, one of which is provided with means for holding and stretching a fabric and the other of which constitutes a fluid-chamber and is provided with adjustable strips forming the walls of the mold, means for clamping the two parts together and means for injecting a fluid composition into the space inclosed by said strips.

4. A mold consisting of a bed-plate pivotally supported at one end and a presser-plate hinged to the bed-plate, adjustable strips on the side of the presser-plate adjacent to the bed-plate, said strips forming the walls of the mold, means for locking the plates together, and means for injecting a fluid composition into the space between said strips.

5. A mold consisting of a bed-plate having means to receive and stretch a fabric, a second plate constructed with means for permitting the circulation of a fluid said second plate movable to and from said bed-plate, and having means on its side adjacent to the bed-plate forming the walls of the mold, means for clamping the plates together, and means for injecting a fluid composition into the space inclosed by said walls.

6. A mold comprising a bed-plate, a hollow presser-plate provided with means on its under side which form the walls of the mold, means for clamping the two plates together, and means for injecting fluid composition into the space inclosed by said walls, the chambers of said hollow presser-plate having inlet and outlet passages for the ingress and egress of a heating or cooling medium.

7. A mold comprising a bed-plate, a presser-plate provided with an internal chamber for the admission of a fluid said presser-plate provided with means on its under side which form the walls of the mold, means for clamping the two plates together, means for injecting fluid composition into the space inclosed by said walls, and means for holding said plates in inclined position.

8. A mold comprising a pivotally-supported bed-plate provided with means for the receipt and stretching of fabric, a presser-plate pivoted to the bed-plate and having means on its side adjacent to the bed-plate delimiting the extent of the application of the fluid composition and means for injecting a fluid composition between the plates and within the area bounded by the delimiting means.

9. A mold comprising a pivotally-supported bed-plate provided with means for the receipt and stretching of fabric, a hollow presser-plate pivoted to the bed-plate and having adjustably-secured means on its side adjacent to the bed-plate delimiting the extent of the application of the fluid composition, means for injecting a fluid composition between the plates and within the area bounded by the delimiting means and means for heating the mold and for cooling it.

10. A mold comprising a bed-plate, a presser-plate, one of said plates provided with means for the reception of a fabric, means including fixed and adjustable members interposed between the two plates forming the walls of the mold, means for locking the parts together and means for injecting a fluid composition into the space inclosed by said walls.

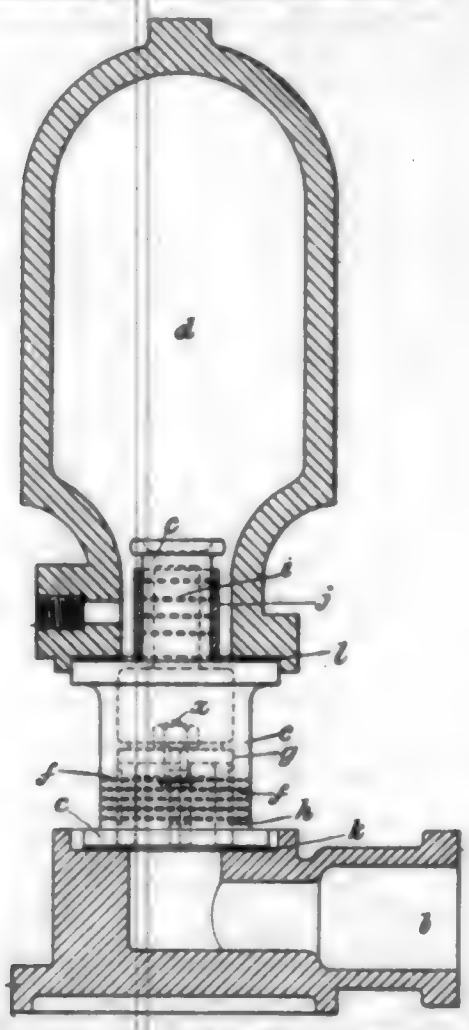
11. A mold consisting of a bed-plate pivotally supported at one end, a presser-plate hinged to the bed-plate, adjustable strips on the side of the presser-plate adjacent to the bed-plate, said strips forming the walls of the mold, means for locking the plates together and means for injecting a fluid composition into the space between said strips, said last-named means including removable pump mechanism carried by the presser-plate.

12. A mold consisting of a bed-plate having means to receive and stretch fabric, a second plate movable to and from said bed-plate and having means on its side adjacent to the bed-plate forming the walls of the mold, means for clamping the plates together, and means for injecting a fluid composition into the space inclosed by said walls, said last-named means including removable pumping mechanism carried by the presser-plate.

13. A mold comprising a tiltable bed-plate, a presser-plate carried by and tiltable with the bed-plate, means on the bed-plate for holding a fabric between the plates, means interposed between the two plates forming the walls of the mold, means for locking the plates together and means for injecting a fluid composition into the space inclosed by said walls.

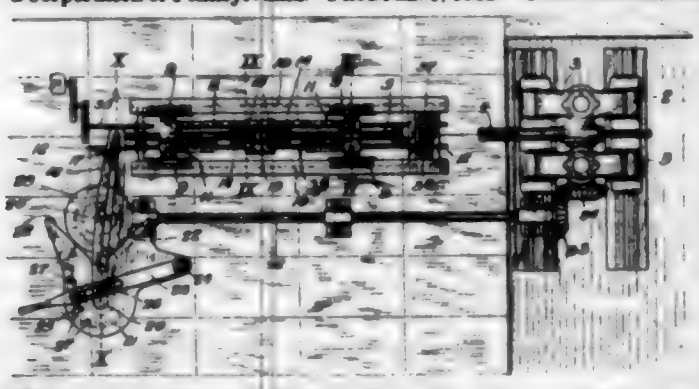
14. A mold comprising a tiltable bed-plate, a presser-plate carried thereby, means on said presser-plate forming the walls of the mold, means for locking the plates together and means including a removable pump-cylinder carried by the presser-plate for injecting a fluid composition into the space inclosed by said walls.

816,145. HYDRAULIC RAM. HUBERT V. BLAKE, Accrington, England. Filed May 10, 1905. Serial No. 259,762.



Claim.—A regulator for an elastic-band pulse-valve consisting of two frames each having a plurality of legs or supporting-corners for the elastic band, the one frame pivoting concentrically with the other and being adapted to be adjusted to make the elastic band more nearly approach or recede from the perforated casing surrounding it.

816,146. SWAGING-MILL. GEORGE H. BLAYTER, New Brighton, Pa., assignor to Pittsburgh Seamless Tube Company, Beaver Falls, Pa., a Corporation of Pennsylvania. Filed Jan. 5, 1905. Serial No. 239,761.



Claim.—1. A horizontally-traveling mandrel-supporting carriage and a mandrel-bar supported therein, with means for advancing the carriage, and means engaging the mandrel-bar for advancing it and independently reciprocating it, substantially as set forth.

2. A horizontally-traveling mandrel-supporting carriage and a mandrel-bar supported therein, with means for advancing the carriage, and means engaging the mandrel-bar for advancing it and independently reciprocating it, with means for varying the stroke of the mandrel-bar, substantially as set forth.

3. The combination with swaging-rolls and driving means therefor; of a horizontally-traveling mandrel-supporting carriage and a mandrel-bar supported therein, means for advancing the carriage, means for advancing the mandrel-bar, and means operating in correspondence with the rolls for reciprocating the mandrel-bar, substantially as set forth.

4. The combination with a carriage and a reciprocable mandrel-bar carried thereby; of a support for the carriage, a longitudinally-stationary feeding-screw arranged to propel the carriage, a screw arranged to reciprocate the mandrel-bar and to feed it in conformity with the travel of the carriage, means for reciprocating said screw, and means for turning both screws, substantially as set forth.

5. The combination with a carriage and a reciprocable mandrel-bar carried thereby; of a support for the carriage, a longitudinally-stationary feeding-screw arranged to propel the carriage, a screw arranged to feed the mandrel-bar in conformity with the travel of the carriage, means for reciprocating said screw and mandrel-bar, means for turning both screws, and means for varying the reciprocable travel of the screw, substantially as set forth.

6. The combination with swaging-rolls and driving means therefor; of a horizontally-traveling mandrel-supporting carriage and a mandrel-bar supported therein, means for advancing the carriage, means for advancing the mandrel-bar, and means in driving engagement with the rolls for reciprocating the mandrel-bar, substantially as set forth.

7. The combination with a carriage and a reciprocable mandrel-bar carried thereby; of a support for the carriage, a longitudinally-stationary feeding-screw engaging a nut secured to the carriage, and a reciprocable screw engaging a nut connected with the mandrel-bar, with means for turning the screws together and means for independently actuating the reciprocating screw longitudinally, substantially as set forth.

8. The combination with swaging-rolls and driving mechanism therefor; of a supporting-frame, a carriage mounted thereon, a longitudinally-movable mandrel-bar mounted in said carriage, a longitudinally-stationary feeding-screw in operative engagement with the carriage, a reciprocable feeding-screw in operative engagement with the mandrel-bar, means for rotating the screws together, and means connected with the roll-driving mechanism for independently reciprocating the mandrel-bar-actuating screw, substantially as set forth.

9. The combination of a supporting-frame, a carriage mounted thereon, a longitudinally-movable mandrel-bar mounted in said carriage, a longitudinally-stationary feeding-screw in operative engagement with the carriage, a reciprocable feeding-screw in operative engagement with the mandrel-bar, means for rotating the screws together, means for independently reciprocating the mandrel-bar-actuating screw, and means for varying the stroke thereof, substantially as set forth.

10. The combination of a supporting-frame, a carriage mounted thereon, a longitudinally-movable mandrel-bar mounted in said carriage, a longitudinally-stationary feeding-screw in operative engagement with the carriage, a reciprocable feeding-screw in operative engagement with the mandrel-bar, means for rotating the screws together, and an actuating-lever connected with the reciprocable screw, with means for varying the effective stroke of said lever, substantially as set forth.

11. The combination with swaging-rolls and driving means therefor: of a carriage and a mandrel-bar supported thereon, means for propelling the carriage and mandrel-bar, and means for independently and positively reciprocating the mandrel-bar in both directions, said means being connected with the roll-driving means, substantially as set forth.

12. The combination with swaging-rolls and driving means therefor; of a supporting-frame, a carriage mounted thereon, a longitudinally-movable mandrel-bar mounted in said carriage, a longitudinally-stationary feeding-screw in operative engagement with the carriage, a reciprocable feeding-screw in operative engagement with the mandrel-bar, means for rotating the screws together, an actuating-link connected with the reciprocable screw, means for varying the effective stroke of said link, and a crank device in operative engagement with said link, with means for actuating the crank device in driving engagement with the driving means for the swaging-rolls, substantially as set forth.

13. The combination with a horizontally-traveling mandrel-supporting carriage and a mandrel-bar supported therein, means for advancing the carriage, and means engaging the mandrel-bar for advancing it and independently reciprocating it; of a lever incorporated with said reciprocating means and adjusting devices arranged to vary the effective stroke thereof, substantially as set forth.

816,147. ROTARY MOTOR. JOHN K. BROOKBANK, St. Louis, Mo. Filed Oct. 27, 1904. Serial No. 230,196.

Claim.—1. In a fluid-motor, a piston having primary cups 17, secondary cups 17ª, a flange at the bottom of the primary cups and provided with outlet-ports, a flange at the top of the secondary cups and having inlet-ports, and a flange at the bottom of the secondary cups having outlet-ports; substantially as described.

2. In a motor, a casing, a piston in the casing comprising a disk, circumferential flanges on said disk, curved cups attached to one of the flanges, which flange is provided with exhaust-ports curved on the same arc as the curvature of the working faces of the cups, and a

second series of cups attached to one of the flanges, and adjacent exhaust-ports in the flange also curved on the same arc as the curvature of those particular cups; substantially as described.



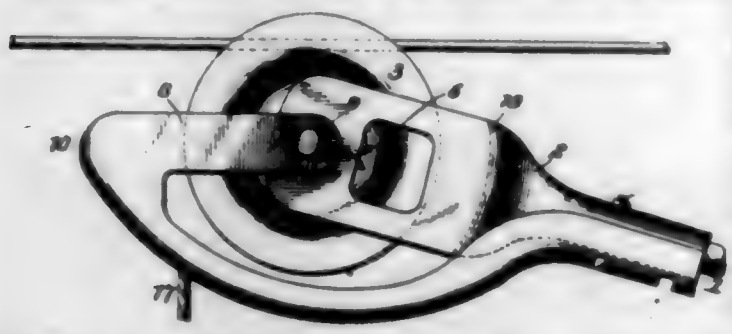
3. In a motor, a casing, a piston in the casing comprising a disk, circumferential flanges on said disk, curved cups attached to one of the flanges, which flange is provided with exhaust-ports curved on the same arc as the curvature of the working faces of the cups, a second series of cups attached to one of the flanges, adjacent exhaust-ports in the flange also curved on the same arc as the curvature of those particular cups, and abutments in the casing for dividing the two series of cups, said abutments having ports for a portion of their circumference only; substantially as described.

4. In a motor, a casing, a piston in the casing comprising a disk, circumferential flanges on said disk, curved cups attached to one of the flanges, which flange is provided with exhaust-ports curved on the same arc as the curvature of the working faces of the cups, a second series of cups attached to one of the flanges, adjacent exhaust-ports in the flange also curved on the same arc as the curvature of those particular cups, and abutments in the casing for dividing the two series of cups, said abutments having ports for a portion of their circumference only, said ports in the abutments being curved in an opposite direction to the curvature of the ports in the piston; substantially as described.

5. In a motor, a rotary piston having cups to receive the actuating fluid, which cups are provided with working faces of cycloidal curvature, and exhaust-ports in the piston-wall of each cup alining with the working face of the cup; substantially as described.

6. In a rotary motor, a casing having ported interiorly-arranged circular flanges, a piston having ported flanges alternating with the flanges of the casing, cups connected at their ends to one of the piston-flanges and to the outer edge of the piston, and cups connected at one of each of their ends to one of the piston-flanges and free at their opposite ends adjacent to one of the casing-flanges; substantially as described.

816,148. **TROLLEY-SHIELD.** JOHN W. BROWN and CHARLES W. JENKINS, Washington, D. C. Filed Apr. 29, 1905. Serial No. 258,070.



Claim.—1. A trolley-shield comprising a main body which, when secured to the trolley, rests under the wheel, and means adapted to engage the ends of the trolley-wheel shaft whereby the body of the shield may be supported therefrom, substantially as described.

2. A trolley-shield comprising a main body adapted, when in position on the trolley, to rest under the wheel, suitable means for supporting the rear end of the shield, and means for securing the forward end of the shield to the pole, substantially as described.

3. A trolley-shield, comprising a curved triangular-shaped main body, adapted to rest below and extend beyond the lower edge of the wheel and partially embrace the stem of the harp and provided at its rear end with a pair of forwardly-extending arms to embrace the upper end of the harp, said body being provided with an opening to receive the bolt or rivet which secures the trolley-pole and harp together, and said arms being provided with openings to register with those of the wheel and harp to receive the shaft of the wheel, substantially as described.

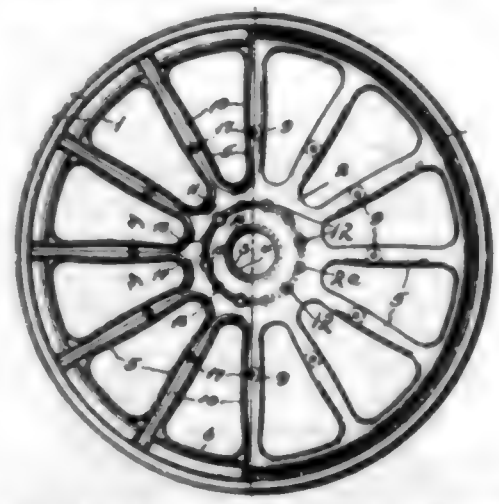
4. The combination with a trolley-pole, a harp thereon and a trolley-wheel, of a trolley-shield located below the wheel and harp and secured by a bolt or rivet which secures the pole and harp together, said shield being further provided with arms embracing the outer end of the harp and secured in position by the pin or shaft of the wheel, substantially as described.

5. The combination with a trolley-pole, a harp thereon and a trolley-wheel, of a trolley-shield located below the wheel and harp and secured by a bolt or rivet which secures the pole and harp together, said shield being further provided with arms embracing the outer end of the harp and secured in position by the pin or shaft of the wheel, said shield having a V-shaped lower face and said bolt or rivet having a correspondingly-shaped head, and the wheel-shaft having rounded ends, substantially as described.

6. The combination with a trolley-pole, a harp, a wheel-shaft, and a trolley-wheel thereon, of a shield secured below the wheel and harp and having a groove at its rear end in line with the wheel-shaft and the throat of the harp when the wheel is removed and the shaft is in contact with the wire, substantially as described.

7. The combination with a trolley-pole, a trolley-harp having a tubular stem engaged on the end of the pole, a trolley-wheel, a bolt or rivet securing the tubular stem of the harp upon the pole, and a shaft through the wheel and harp, of a trolley-shield comprising a pair of arms embracing the harp, secured upon the wheel-shaft, extended rearward and merged into a block, and a main body triangular-shaped in that part extending in a curve from said block under and beyond the sides of the wheel and trough-shaped under the tubular stem of the harp and secured thereon by the said bolt or rivet, said triangular-shaped body being provided with a hole through which is passed the retrieving-rope, substantially as described.

816,149. **VEHICLE-WHEEL.** RICHARD S. BRYANT, Columbus, Ohio. Filed Mar. 22, 1905. Serial No. 251,548.



Claim.—1. A wheel comprising opposite sections adapted to be secured together having integral semitubular spokes and rim portions, bosses pressed in one or more of the semitubular spokes, reinforcing means confined within the spokes between the bosses, and inner spoke members disposed within the outer spokes.

2. A wheel composed of opposite half-sections adapted to be secured together, each section being formed of sheet metal and provided with integral semitubular outer spokes and a central opening, a flange formed about the opening in each section, brazing means connecting the flanges, inner spoke members arranged in the outer spoke members having their inner ends secured together and terminating short of the flanges so as to provide a substantial space, and independent reinforcing means arranged in the space between the sections.

3. A wheel comprising opposite sections adapted to be secured together having semitubular outer spokes and rim portions formed integral with each other, bosses pressed in one or more of the outer spokes, tubular reinforcing means confined within the outer spoke members between the bosses, and inner spoke members disposed within the outer spoke members.

4. The combination with the opposite half-sections of a wheel and the inner and outer spoke members thereof, of independent transverse reinforcing means arranged about the central portion of the wheel, and means for holding the said reinforcing means in position passing through the same.

5. The combination with a wheel comprising opposite half-sections adapted to be brazed together, each formed with outer spoke members, a rim portion and a central opening with an annular flange extending about the opening, and inner spoke members, of transverse spoke-reinforcing means, transverse reinforcing means arranged between the inner spoke members and the flanges but separated therefrom, and transverse bracing means connecting the flanges.

6. The combination with a wheel comprising opposite half-sections adapted to be brazed together each formed with outer spokes, a rim portion formed integral with the spokes and a central opening

with an annular flange extending about the opening, of inner spoke members arranged within the outer spokes, the inner spoke members of adjacent outer spokes being secured together at their inner ends, and an internal reinforcing-ring extending from one section to the other between the inner ends of the inner spoke members and the flanges but independent thereof.

816,150. CIGARETTE-MAKING DEVICE. ALBERT E. BUCKINGHAM, Oakland, Cal., assignor to The Buckingham Manufacturing Company, San Francisco, Cal., a Corporation of California. Filed May 4, 1905. Serial No. 258,844.

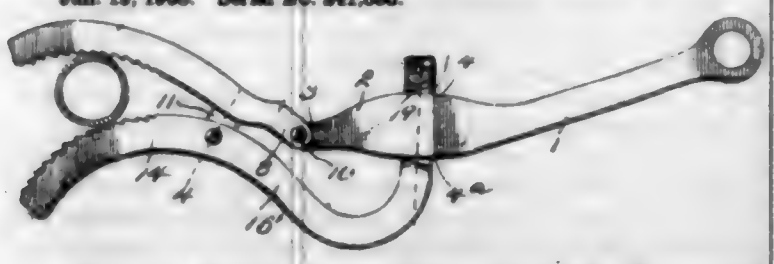


Claim.—1. A cigarette-making device consisting of a receiver open at one end, a funnel-shape prolongation of the receiver having an open end said prolongation adapted to enter the mouth of a flexible tobacco-containing package and be secured thereon, a tubular mandrel or former extending from one side of the receiver upon which mandrel the paper envelop may be rolled, a hole in the opposite side of the receiver in line with the tube and a plunger reciprocable through the receiver and into the tube.

2. In a device for the manufacture of cigarettes, a receiver open at one end and having a funnel-shaped prolongation of said open end adapted to enter and be secured in the mouth of an original flexible tobacco-containing package, a tubular mandrel projecting from one side of the receiver, upon which mandrel the paper envelop may be rolled and over the end of which said envelop is closed, a plunger reciprocating through the opposite side of the receiver in line with the tube whereby the tobacco passes from the package into the receiver and is transferred therefrom into the cigarette-envelop, and the latter is gradually expelled from the tube until filled.

3. In a cigarette-making device, a receiver, means for detachably connecting it with a tobacco-container, a flanged opening on one side of the receiver, a tubular mandrel having one end revolubly engaged with the flange, a plunger movable through the opposite side of the receiver in line with the tube, said plunger having a stop or collar to prevent its removal from the receiver.

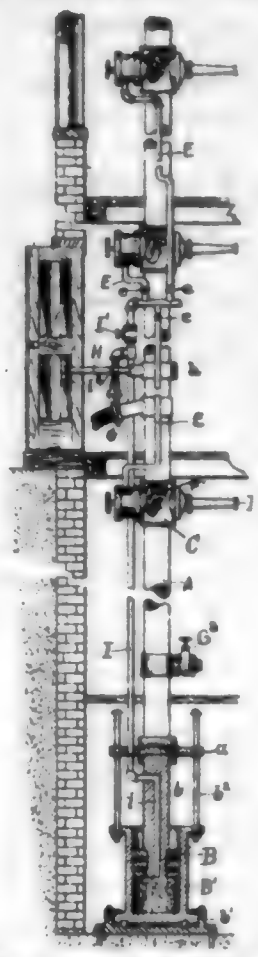
816,151. WRENCH. SEGURA E. COFFMAN, Bagwell, Tex. Filed Jan. 19, 1905. Serial No. 241,833.



Claim.—A pipe-wrench comprising a jaw having its rear end bifurcated, a second jaw provided with a slot, a lug formed integral with said first-named jaw and projecting from the lower face thereof, said lug being pivotally engaged in said slot, said second jaw having its rear end beyond the slot curved downwardly and thence upwardly and provided with an eye, the upper and lower walls of which converge in the direction of the jaw, a handle slidably disposed in said eye and having one of its ends pivoted in the bifurcated end of the first jaw, said handle having its portion engaging the eye broadened to contact with the convergent faces thereof, to provide a fulcrum for the said handle.

816,152. STAND-PIPE SYSTEM. WILLIAM F. CONRAN, Jr., New York, N. Y. Filed July 23, 1903. Serial No. 166,095.

Claim.—1. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe vertically to vary the striking-points of streams issuing from the nozzles.



2. In a stand-pipe system for buildings, the combination of a rotary stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

3. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe laterally to vary the striking-points of streams issuing from the nozzles.

4. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe vertically and laterally to vary the striking-points of streams issuing from the nozzles.

5. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe vertically and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

6. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe laterally and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

7. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and means for moving said pipe vertically, laterally and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

8. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, and hydraulic means for moving said pipe vertically to vary the striking-points of streams issuing from the nozzles.

9. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, hydraulic means for moving said pipe vertically, and means for moving said pipe laterally, whereby by either of said movements the striking-points of streams issuing from the nozzles may be varied.

10. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, hydraulic means for moving said pipe vertically, and means for rotating said pipe, whereby by either of said movements the striking-points of streams issuing from the nozzles may be varied.

11. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for controlling said valves independently from a common point, hydraulic means for moving said pipe vertically, means for rotating said pipe, and means for moving said pipe laterally, whereby by either of said movements the striking-points of streams issuing from the nozzles may be varied.

12. In a stand-pipe system for buildings, the combination of a stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, and means for hydraulically controlling said valves independently from a common point.

13. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves from a common point, and means for moving said pipe to vary the striking-points of streams issuing from the nozzles.

14. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe vertically to vary the striking-points of streams issuing from the nozzles.

15. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe laterally to vary the striking-points of streams issuing from the nozzles.

16. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valves carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe vertically and laterally to vary the striking-points of streams issuing from the nozzles.

17. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe vertically and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

18. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe laterally and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

19. In a stand-pipe system for buildings, the combination of a movable stand-pipe, a nozzle and controlling-valve carried by said pipe at several points, means for hydraulically controlling said valves independently from a common point, and means for moving said pipe vertically and laterally and also for rotating said pipe to vary the striking-points of streams issuing from the nozzles.

20. In a stand-pipe system, the combination of a stand-pipe, one or more discharge-valves a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

21. In a stand-pipe system, the combination of a movable stand-pipe, means for moving the same, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

22. In a stand-pipe system, the combination of a laterally-movable stand-pipe, means for moving the same, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

23. In a stand-pipe system, the combination of a vertically-movable stand-pipe, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

24. In a stand-pipe system, the combination of a rotary stand-pipe, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

25. In a stand-pipe system, the combination of a laterally-movable and rotary stand-pipe, means for moving and rotating the same, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

26. In a stand-pipe system, the combination of a vertically-movable and rotary stand-pipe, means for moving and rotating the same, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby discharge-valves are controlled from the operating-station.

27. In a stand-pipe system, the combination of a laterally and vertically movable and rotary stand-pipe, means for imparting lateral or vertical or rotary movement thereto, one or more discharge-valves, a piston connected with each valve, a control-pipe connected between the chamber of each piston and a branch from the stand-pipe located at an operating-station, and a valve in each control-pipe whereby said discharge-valves are controlled from the operating-station.

28. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, means for moving said pipe-line lengthwise, and means for holding said pipe-line in alinement.

29. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, means for moving said pipe-line lengthwise, means for rotating said pipe-line, and means for holding said pipe-line in alinement.

30. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, hydraulic means for moving said pipe-line lengthwise, and means for holding said pipe-line in alinement.

31. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, hydraulic means for moving said pipe-line lengthwise, means for rotating said pipe-line, and means for holding said pipe-line in alinement.

32. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, means for moving said pipe-line lengthwise, means for moving said pipe-line laterally, and means for holding said pipe-line in alinement.

33. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, means for moving said pipe-line lengthwise, means for moving said pipe-line laterally, means for rotating said pipe-line, and means for holding said pipe-line in alinement.

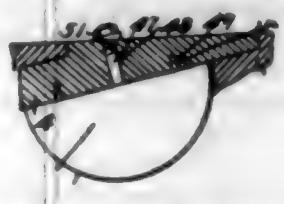
34. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, hydraulic means for moving said pipe-line lengthwise, means for moving said pipe-line laterally, and means for holding said pipe-line in alinement.

35. In a stand-pipe system for buildings, the combination of a pipe-line of fixed length, one or more water-supply connections, nozzles connected with said pipe-line at desired points, hydraulic means for moving said pipe-line lengthwise, means for moving said pipe-line laterally, means for rotating said pipe-line, and means for holding said pipe-line in alinement.

816,153. CLOD-CRUSHER. JAMES W. DALRYMPLE, Solsberry, Ind. Filed Oct. 14, 1905. Serial No. 282,801.

Claim.—1. An earth-engaging member consisting of an approximately semicircular disk having a sharp curved cutting edge

and provided at its straight edge with a radially-extending tang or shank and with lugs whereby it may be secured against rotation.



2. An earth-engaging member having a curved cutting edge and a straight engaging edge provided with a radially-extending securing member and with lugs whereby it may be secured against rotation, in combination with a supporting member apertured for the reception of the securing member and having a plurality of recesses disposed concentrically around said aperture for engagement with the lugs.

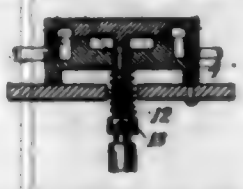
3. A supporting member, in combination with an earth-engaging member having an approximately semicircular cutting edge and provided with a straight edge engaging the under surface of the supporting member, a securing member extending from the straight edge through the supporting member, and lugs extending from said straight edge and adjustably engaging recesses in the under surface of the supporting member.

4. In an implement of the class described, a frame including a plurality of transversely-disposed members having downwardly and rearwardly inclined under surfaces, in combination with rows of earth-engaging semicircular blades having straight edges engaging the under surfaces of the transversely-disposed members, pivotal securing means, and means for securing the blades at various adjustments.

5. In an implement of the class described, a frame including a plurality of transversely-disposed members having downwardly and rearwardly inclined under surfaces, in combination with earth-engaging semicircular blades having straight edges engaging the under surfaces of the transversely-disposed members, securing-shanks extending through said members, and lugs adapted for engagement with the recesses in said members to secure the blades at various adjustments.

6. In an implement of the class described, a frame including a plurality of transversely-disposed members having downwardly and rearwardly inclined under surfaces, in combination with earth-engaging approximately semicircular blades having straight edges engaging the under surfaces of the transversely-disposed members, means for pivotally connecting the blades with the supporting members, and means for securing said blades, at various adjustments, against rotation.

816,154. ILLUMINATED DISPLAY APPARATUS. FORTUNATO M. D'ARMI, New York, N. Y. Filed Apr. 4, 1904. Serial No. 201,472.

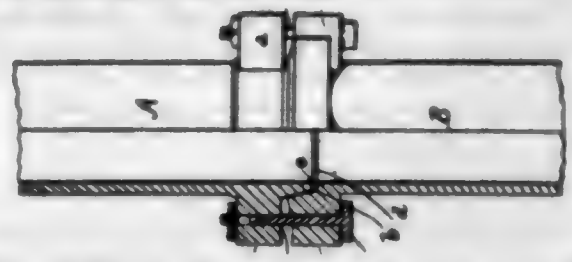


Claim.—1. In an apparatus for distributing gas to a plurality of burners in succession, the combination of a base, a supply-pipe, said base having a plurality of passages near its periphery, the supply-pipe being in communication with one of the said passages, outlet-pipes connected to the other passages, a rotary disk on the base having a channel or groove in its contiguous surface adapted to register with the passages in the base, and means for rotating the disk, as set forth.

2. In an apparatus for distributing gas to a plurality of burners in succession, the combination of a circular base, having a plurality of passages near its periphery, an inlet-pipe connected to one of said passages, outlet-pipes connected to the other passages, a rotary disk on the base, having a channel or groove in its contiguous surface adapted to register with the passages in the base, a shaft for the disk, and a motor to rotate the shaft, as set forth.

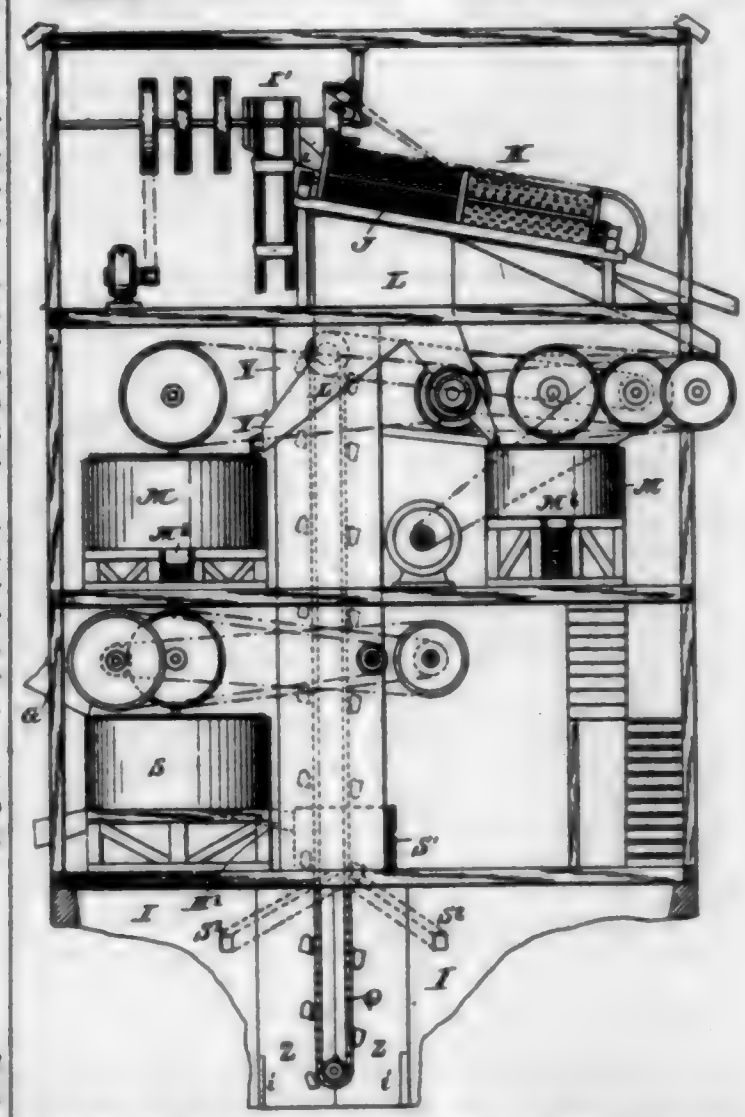
3. In an apparatus for distributing gas to a plurality of burners in succession, the combination with a circular base having a plurality of passages near its periphery, an inlet-pipe connected to one of the passages, outlet-pipes connected to the other passages, a rotary disk on the base having an arc-shaped groove or channel in its contiguous surface adapted to register with the passages in the base, and means for rotating the disk, whereby said channel or groove will put the inlet-pipe in communication with the outlet-pipes in succession, as set forth.

816,155. JOINT FOR PIPES. MARK DEAN, East Orange, N. J. Filed Dec. 14, 1903. Serial No. 185,070.



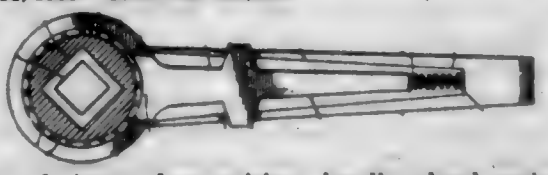
Claim.—A joint for pipes which consists of two pipe ends, one of which has a straight tapering end and the other of which is provided with an internal annular recess with straight tapering sides; the taper of the recess being of smaller diameter and of greater pitch than the taper of the entering pipe end.

816,156. APPARATUS FOR MIXING AND MAKING PLASTER AND MORTAR. ALBERT DELLANCER, SAMUEL T. NORTON, and ALBERT M. NORTON, Los Angeles, Cal. Filed Nov. 21, 1904. Serial No. 233,040.



Claim.—In a mortar-mixing apparatus, a lime-slaking tank, a series of storage-bins arranged below said tank and into any one of which the contents of said tank may be discharged, a central compartment around which all of the bins are grouped, valved discharge-openings leading from said bins into said compartment, an elevated measuring-tank, a conveyer for raising the slaked lime from said compartment to said measuring-tank, an elevated sand-measuring bin, means for depositing sand therein, a mixing-tank, and chutes leading from both measuring-tanks to said mixing-tank.

816,157. WRENCH. CHRISTOPHER C. DOTSON, Hannah, Mo. Filed June 16, 1905. Serial No. 265,565.

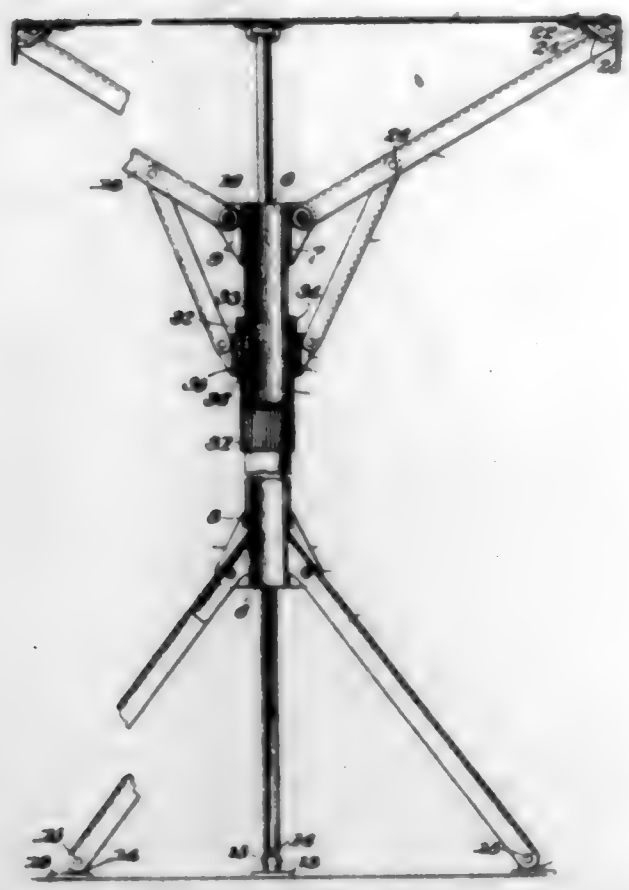


Claim.—1. A wrench comprising a handle, a head carried by one end of the handle and including spaced portions, registering openings formed in the spaced portions, a member revolubly mounted in

the openings, a body-engaging device carried by the member, said member having a notched portion between the spaced portions of the head, said handle having a longitudinal chamber therein communicating with the space between the portions of the head, a dog engaged in the chamber for longitudinal movement toward and away from the member, said dog having spaced projections adapted for engagement with the notches of the member to hold the member against rotation, means for holding the dog yieldably at the limit of its movement in the direction of the member, said dog being movable laterally to bring its projections into and out of engagement with the member interchangeably, and finger-pieces carried by the dog and extending outwardly of the stem, said finger-pieces being adapted to receive pressure thereagainst to move the dog both laterally and longitudinally.

2. A wrench comprising a handle, a head carried by one end of the handle and including spaced portions, said handle and head being formed of two castings disposed against each other, the castings having recesses in their mutually-adjacent faces to form a longitudinal chamber in the handle, said chamber communicating with the space between the portions of the head, a body-engaging member revolubly mounted in the head and having a peripherally-notched flange extending into the space between the portions of the head, a dog disposed in the passage and having projections adapted for interchangeable engagement with the notches of the flange, said dog being shiftable laterally to bring its projections into and out of engagement with the notches, finger-pieces carried by the dog and extending outwardly of the handle for movement of the dog laterally, and removable attaching devices carried by the castings, said castings being separable to permit of a removal of the dog and the body-engaging member.

816,158. FOLDING STOOL. Charles Erickson, Brooklyn, N. Y. Filed May 8, 1905. Serial No. 259,210.



Claim.—1. A camp-stool comprising a standard, arms pivoted to the standard, a seat carried by the arms, a sleeve mounted for vertical movement on the standard, and a collar engaging said sleeve and pivotally connected with the arms.

2. A camp-stool comprising a standard, pivoted legs carried by the lower end of the standard, arms pivoted to the upper end of said standard, a seat carried by said arms, a sleeve mounted for vertical movement on the standard and provided with an enlargement defining a shoulder, and a collar slidably mounted on said sleeve and pivotally connected with the arms, said collar being provided with a flange adapted to engage said shoulder.

3. A camp-stool comprising a standard having an intermediate portion thereof threaded, arms pivoted to the standard, a seat carried by said arms, an adjusting-sleeve engaging the threads on the standard, and a collar slidably mounted on said sleeve and pivotally connected with the arms.

4. A camp-stool comprising a standard, a ring detachably secured to one end of the standard, legs pivoted to said ring, arms pivoted to the opposite end of said standard, an adjusting-sleeve mounted for vertical movement on the standard and provided with a shoulder, and a collar carried by the sleeve and pivotally connected with the arms, said collar being provided with an inwardly-extending flange for engagement with said shoulder.

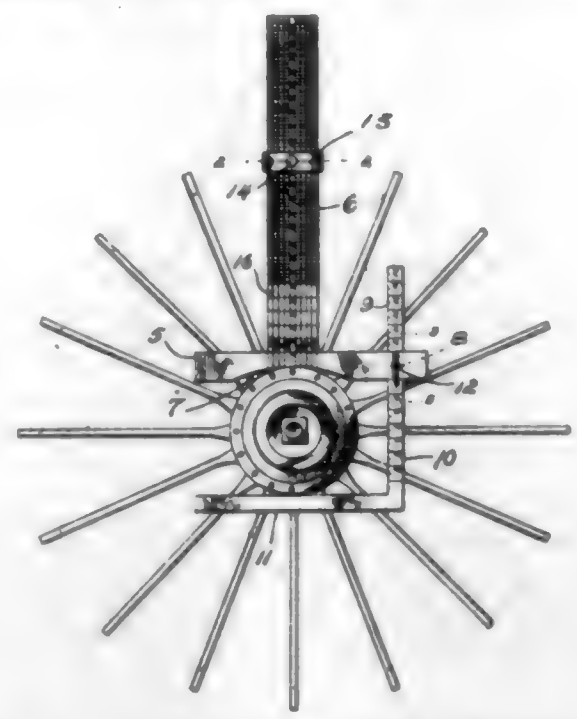
5. A camp-stool comprising a standard, arms pivoted to the standard, a seat carried by the arms, an adjusting-sleeve mounted for vertical movement on the standard, a collar carried by the sleeve and movable therewith, and rods forming a pivotal connection between said arms and collar.

6. A camp-stool comprising a standard provided with an intermediate threaded portion, arms pivoted to one end of the standard, a detachable ring carried by the opposite end thereof, legs pivoted to the ring, a sleeve engaging the threads on the standard and provided with an enlarged head defining a shoulder, a collar slidably mounted on the sleeve and having an inwardly-extending flange for engagement with the shoulder, rods forming a pivotal connection between the collar and said arms, a detachable seat, and links carried by the seat and engaging slots formed in the ends of the arms.

7. A camp-stool comprising a standard the opposite ends of which are threaded, detachable rings engaging the threaded ends of said standard, arms pivoted to the upper ring, a seat carried by the arms, legs pivoted to the lower rings, an adjusting-sleeve mounted for vertical movement on the standard, a collar carried by the sleeve and movable therewith, and rods forming a pivotal connection between the arms and collar.

8. A camp-stool comprising a standard, arms pivoted to the upper end of the standard, a detachable and invertible ring carried by the opposite end of the standard, supporting-legs pivoted to said ring, a seat carried by the arms, an adjusting-sleeve mounted for vertical movement on the standard, a collar carried by the sleeve and movable therewith, and rods forming a pivotal connection between the arms and collar.

816,159. WHEEL-GAGE. Robert L. Ravin, Princeton, Ky. Filed Sept. 8, 1905. Serial No. 277,584.



Claim.—1. An instrument of the class described comprising a head, a blade carried by the head and having scales marked thereupon, a slide engaged with the blade for movement longitudinally thereof, a marker carried by the slide and a member slidably engaged in the head and having an angular portion extending parallel to the head at the opposite side thereof to the blade said head and angular portion being adapted for the engagement of a wheel-hub therebetween said member having a scale marked thereupon arranged to indicate the diameter of hubs engaged between the angular portion of the member and the head.

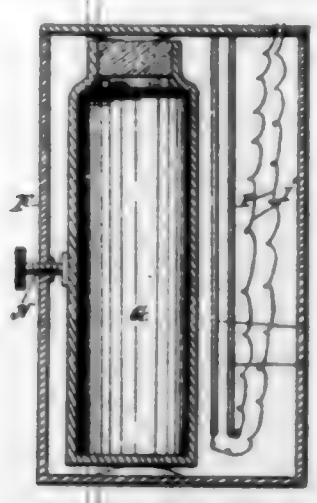
2. An instrument of the class described comprising a head having a hollow in one of its edges, a blade carried by the head and extending beyond the opposite side of the head from the hollow, a try-square disposed with one of its portions slidably engaged in the head at one side of the blade and with its other portion extending parallel to the head at the hollowed side thereof said try-square being movable through the head to bring the second-named portion toward and

away from the head, means for holding the try-square at different points of its movement a slide engaged with the blade for movement longitudinally thereof a marker carried by the slide and means for holding the slide at different points of its movement.

3. An instrument of the class described comprising portions movable toward and away from each other and adapted for the reception of a wheel-hub therebetween, means for indicating the diameter of a hub engaged between said portions, a blade carried by one of the portions and having a plurality of scales marked thereupon, a slide engaged with the blade for movement to lie at different points upon the scales and a marker carried by the slide and disposed to mark spokes engaged in a hub disposed between the movably-connected portions, the scales of the blade being arranged to indicate the diameters of wheels and the marker being arranged to mark spokes at the points at which they should be cut for the construction of wheels the diameters of which are indicated by the characters of the scales at which the slide is disposed.

4. An instrument of the class described comprising hub-receiving members adjustable to receive hubs of different sizes means for indicating the diameter of hubs received by the members, a blade carried by one of the members, said blade having a series of scales thereupon arranged to indicate different wheel-diameters and adapted for use in connection with hubs of different diameters and a spoke-marker engaged with the blade and movable to lie at different points of the scales said scales being marked to indicate the diameters of hubs in connection with which they are to be used.

816,160. **MARINE TORCH.** JOHN D. GRAHAM, Brooklyn, N. Y., assignor, by mesne assignments, to Marine Torch Company of Baltimore City, a Corporation of Maryland. Filed Apr. 7, 1899. Serial No. 712,186.



Claim.—1. In a torch, a shell charged with illuminant and provided with suitable burners, in combination with an electric igniter for one of the burners, a battery within the shell and in circuit with the igniter, a fragile vessel containing the electrolyte fluid, and means for breaking said vessel to liberate the fluid when it is desired to operate the igniter.

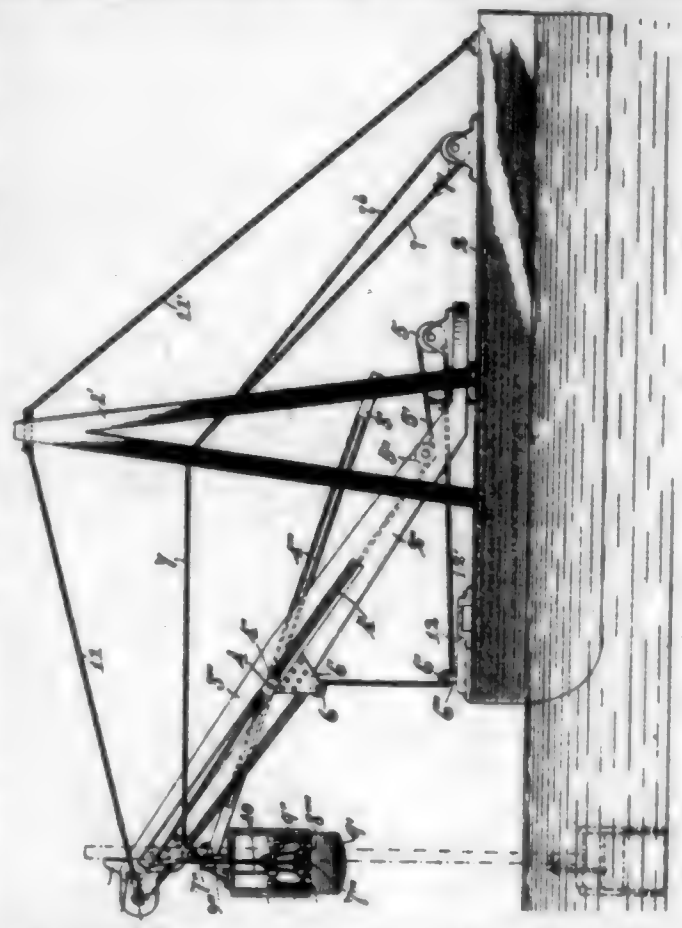
2. In a torch, a shell charged with illuminant and provided with suitable burners, in combination with an electric igniter for one of the burners, a normally inoperative battery in circuit with said igniter, a sealed vessel within the battery containing the electrolyte fluid, a second vessel containing material for producing the illuminant, and means for breaking both of said vessels, whereby the illuminant may be produced and simultaneously ignited, as set forth.

3. In a torch, a shell charged with illuminant and provided with suitable burners, in combination with a combustible cap or cover surrounding the burners and forming an air-tight seal therefor, and an igniter for the illuminant.

816,161. **DREDGING APPARATUS.** JAMES HAMILTON, New York, N. Y. Filed Feb. 6, 1905. Serial No. 244,251.

Claim.—1. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon for a lateral swinging movement; and means accompanying, and whereby said boom is stayed, at all positions assumed thereby in its swinging movements, against an upward tilting movement at its free end, substantially as herein specified.

2. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon for a lateral swinging movement; and a flexible connection, said connection accompanying said boom in its swinging movements, extending therefrom and shiftably engaging said base or vessel-deck, and accordingly connecting said base or vessel-deck and said boom, and whereby the latter is stayed, at all positions assumed thereby in its swinging movements, against an upward tilting movement at its free end, substantially as herein specified.



3. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon and having an axis of lateral movement; a trackway on said base or vessel-deck and arranged concentric to the axis of movement of said boom; a traveler movable to and fro along said trackway; and a connection between said traveler and said boom, whereby the latter is stayed, at all points or positions assumed thereby in its movements with respect ito its axis of movement, against an upward tilting movement at its free end, substantially as herein specified.

4. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon and having an axis of lateral movement; a trackway on said base or vessel-deck and consisting of opposing rails arranged concentric to the axis of movement of said boom; a traveler, mounted on track-wheels which engage and roll to and fro along said rails; and a connection between said traveler and said boom, whereby the latter is stayed, at all positions assumed thereby in its movements with respect to its axis of movement, against an upward tilting movement at its free end, substantially as herein specified.

5. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon and having an axis of lateral movement; a trackway on said base or vessel-deck and consisting of opposing Z-rails arranged concentric to the axis of movement of said boom; a traveler, provided with a sheave and mounted on track-wheels which engage underneath and roll to and fro along said rails; and a flexible connection between the sheave carried by said traveler and said boom, whereby the latter is stayed, at all positions assumed thereby in its movements with respect to its axis of movement, against an upward tilting movement at its free end, substantially as herein specified.

6. A dredging apparatus comprising a boom; a spud shiftable along said boom to and from its free end; and means for interlocking said boom and spud, when the latter shall have been shifted to the free end of said boom, substantially as herein specified.

7. A dredging apparatus comprising a boom; a spud shiftable along said boom to and from its free end; means for holding said spud interlocked with said boom when thus shifted; and a keeper for engaging said spud while being held interlocked with said boom, and whereby the interlocking effect between said boom and said spud is enhanced, substantially as herein specified.

8. A dredging apparatus comprising a boom; a spud shiftable along said boom to and from its free end; means for holding said spud interlocked with said boom when thus shifted; and a rocking keeper for engaging said spud while being held interlocked with said boom, and whereby the interlocking effect between said boom and

said spud is enhanced, and the spud is permitted, at the same time, to undergo a rocking movement, substantially as herein specified.

9. A dredging apparatus comprising a boom; a spud shiftable along said boom to and from its free end; flexible means for holding said spud interlocked with said boom when thus shifted; and a rocking keeper having a frictional face for engaging said spud while being held interlocked with said boom, and whereby the interlocking effect between said boom and said spud is enhanced, and the spud is permitted, at the same time, to undergo a rocking movement, substantially as herein specified.

10. A dredging apparatus comprising a boom; a slide carried by, and shiftable to and from the free end of, said boom; a spud engaging said slide and movable endwise independently thereof; and flexible means for urging the slide, and accordingly the spud engaging the same, to the free end of said boom and holding it there, whereby said spud and boom are interlocked, substantially as herein specified.

11. A dredging apparatus comprising a boom; a slide carried by, and shiftable to and from the free end of said boom, a spud engaging said slide, and having a rocking movement thereon and an endwise movement independently thereof; and flexible means for urging the slide, and accordingly the spud engaging the same, to the free end of said boom and holding it there, whereby said spud and boom are interlocked, substantially as herein specified.

12. A dredging apparatus comprising a boom; suitably-distributed sheaves carried by said boom; a flexible connection operating on said sheaves; a slide secured to said connection, carried by said boom, and movable to and from the free end thereof; a spud engaging said slide, and having a rocking movement thereon and an endwise movement independently thereof; and means for operating said flexible connection, whereby the slide, and accordingly the spud engaging the same, is urged to the free end of said boom and held there, for interlocking said spud with said boom, substantially as herein specified.

13. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon; a plurality of sheaves carried by, and suitably distributed along, said boom; a flexible connection operating on said sheaves and engaging said base or vessel-deck beneath said boom, and whereby the latter is stayed against an upward tilting movement at its free end, upon said flexible connection being duly actuated or tensioned; and means for thus actuating or tensioning said flexible connection, substantially as herein specified.

14. A dredging apparatus comprising a base or vessel-deck; a boom mounted thereon for a lateral swinging movement; a plurality of sheaves carried by, and suitably distributed along, said boom; a flexible connection operating on said sheaves and shiftably engaging said base or vessel-deck beneath said boom, and whereby the latter is stayed, at all positions assumed thereby in its swinging movements, against an upward tilting movement at its free end, upon said flexible connection being duly actuated or tensioned; and means for thus actuating or tensioning said flexible connection, substantially as herein specified.

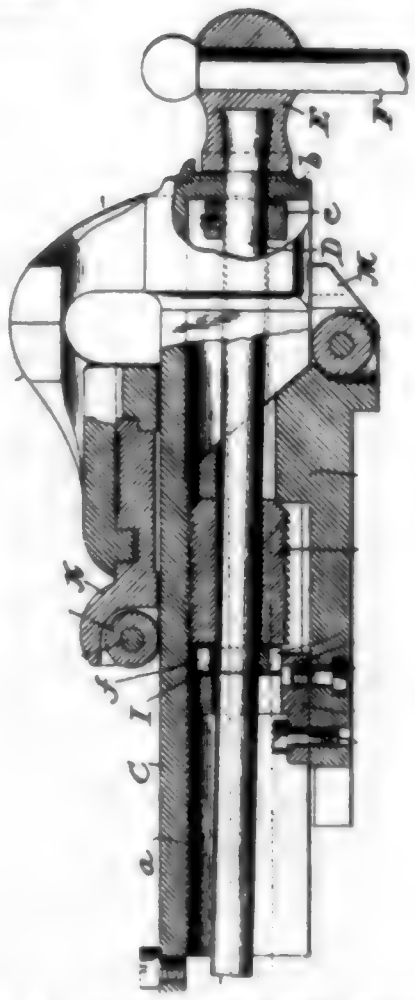
15. A dredging apparatus comprising a boom slotted longitudinally to form opposing side members; a longitudinally-slotted spud disposed to operate between said side members; a pin-like slide extending through the slot with which said spud is provided, and slidably engaging the respective side members aforenamed, said spud, accordingly, being movable endwise independently of said slide and being, at the same time adapted to rock thereon; and flexible connections for actuating and controlling said slide and said spud, respectively, substantially as herein specified.

16. A dredging apparatus comprising a boom; a spud coöperating therewith; a bucket-frame loosely jointed to said spud; and means for giving rigidity, temporarily, to the joint between said spud and said bucket-frame, substantially as herein specified.

17. A dredging apparatus comprising a boom; a spud coöperating therewith, shiftable into and out of a vertical position, and having an eye projecting laterally therefrom; a bucket-frame loosely jointed to said spud, said bucket-frame carrying a pin, movable vertically endwise; and a flexible connection whereby, when said spud shall have been shifted into its vertical position, said pin may be duly moved and caused to engage and pass through the eye aforenamed, and thereby temporarily give rigidity to the joint between said spud and said bucket-frame, said pin registering with said eye, when the spud specified occupies its vertical position, substantially as herein specified.

18. A dredging apparatus comprising a boom; a spud coöperating with said boom and shiftable to and away from the free end thereof; means for interlocking said boom and said spud when the latter shall have been shifted to the free end of the former; and means for staying said boom against an upward tilting movement at its free end, substantially as herein specified.

816,162. **BENCH-VISE.** CHARLES HANEMANN, Flushing, N. Y., assignor to Mortimer C. Lewis, New York, N. Y. Filed May 8, 1905. Serial No. 259,217.



Claim.—1. In a bench-vise having jaws, the combination with the slide-bar carrying the movable head or jaw, of a screw-rack located in said bar and movable therewith, a screw for engagement with the rack, and a shaft adjustable through and adapted to turn the screw, the screw and its shaft being arranged to be inclined by turning the shaft and the screw thereby thrown into or out of engagement with the movable rack, substantially in the manner and for the purposes set forth.

2. In a bench-vise having jaws, the combination with the screw-shaft and screw mounted and keyed to each other so that one may move within the other, the shaft carrying a notched collar separate from the screw, and a projection arranged to elevate the said collar or permit it to drop, substatially as and for the purposes set forth.

3. The combination with the vise-jaws, a screw, and a collar notched as explained, of the shaft for turning said screw and collar and made movable therein, and an abutment connected with the vise-body and arranged to permit the screw and its shaft to be inclined plain, substantially as and for the purposes set forth.

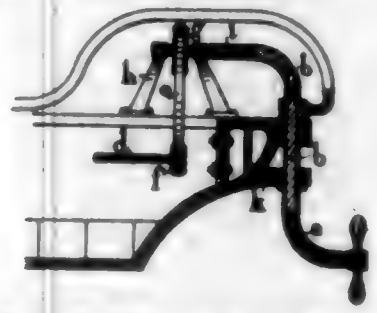
4. The combination of the vise-jaws, the slide-bar, the screw, the screw-rack, the separate collar, the screw-shaft moving longitudinally through the screw and through said collar, and the abutment, the screw being provided with a beveled projection on one end and the adjacent abutment being recessed to receive this projection, the parts being combined and arranged for operation, substantially as shown and described.

5. In a bench-vise having jaws, the combination with the slide-bar, of a screw-shaft held at one portion in the front wall of the slide-bar, the other end being arranged to rise and fall, the shaft carrying a vise-screw and the slide-bar carrying a rack, and means for causing the screw-shaft to be inclined, substantially as and for the purposes set forth.

6. In a vise having jaws, the combination with the vise-body and the slide-bar, of the snout extending up and into the slide-bar, and an antifriction-roller composed of two bearing parts united by an arbor of less diameter, the arbor being seated in the snout, substantially as shown and described.

816,163. **STEERING-PROPELLER FOR BOATS.** HEINRICH W. HELLMANN, Berlin, Germany. Filed Sept. 11, 1903. Serial No. 173,344.

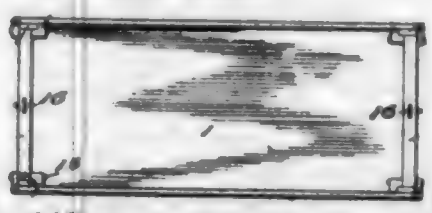
Claim.—1. In a steering and driving device for water craft, the combination of a propeller, a flexible shaft for driving said propeller, a tube surrounding the flexible propeller-shaft, means for turning said tube and thereby changing the direction of the axis of revolution of the propeller by one hundred and eighty degrees, and means for driving the flexible propeller-shaft, substantially as and for the purpose described.



2. In a steering and driving device for water craft, the combination of a propeller, a flexible shaft for driving said propeller, a tube surrounding the flexible propeller-shaft, means for turning said tube and thereby changing the direction of the axis of revolution of the propeller by one hundred and eighty degrees, means for driving the flexible propeller-shaft, a continuation of the flexible propeller-shaft in a horizontal direction, beyond the means for turning the tube, to the means for driving the shaft, and a protecting-tube surrounding the said horizontal continuation of the flexible axle, substantially as and for the purpose described.

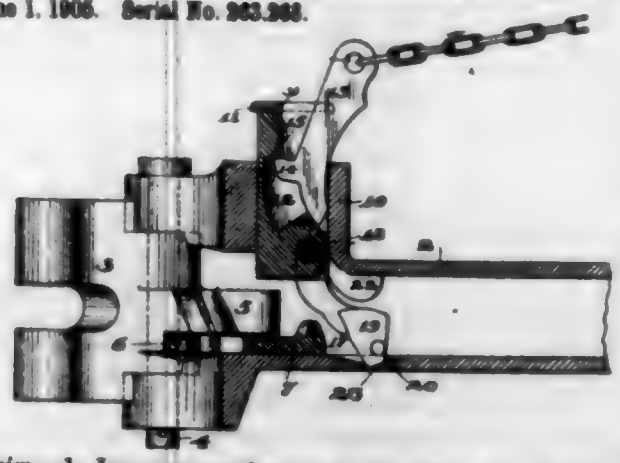
3. In a steering and driving device for water craft, the combination of a propeller, a flexible shaft for driving said propeller, a tube surrounding the flexible propeller-shaft, means for turning said tube and thereby changing the direction of the axis of revolution of the propeller by one hundred and eighty degrees, a motor for driving the flexible propeller-shaft, a belt and belt-gearing gearing said motor with said shaft, an idle pulley adapted to be pressed against said belt, or moved away from it, a continuation of the flexible propeller-shaft in a horizontal direction, beyond the means for turning the tube, to the motor, and a protecting-tube surrounding the said horizontal continuation of the flexible axle, substantially as and for the purpose described.

816,164. **FOLDING CRATE.** FRANK J. HIPP, New Brighton, Minn. Filed May 9, 1905. Serial No. 259,537.



Claim.—In a folding crate, a bottom having a strip at each end and a strip along one longitudinal side thereof, sides having notches at each end of their upper strips, bracing-strips at each end of the sides, each strip being provided with a groove, a flange spaced from the bracing-strip, end pieces adapted to be received between the said bracing-strips and the flange, bracing-strips disposed upon the end faces of the said end pieces and adapted to be received by the grooves in the first-named bracing-strips, a top, and a fastening means secured to the top for engagement with the crate.

816,165. **CAR-COUPLING.** WILLIAM KELSO, Pittsburg, Pa. Filed June 1, 1905. Serial No. 263,263.



Claim.—1. In a car-coupler, the combination of a knuckle, a movable locking-block, a knuckle-thrower adapted to engage with the tail of the knuckle and to throw the knuckle open, a kicker pivoted to the locking-block and adapted to engage with the knuckle-thrower and to operate the same through the movement of the locking-block, substantially as specified.

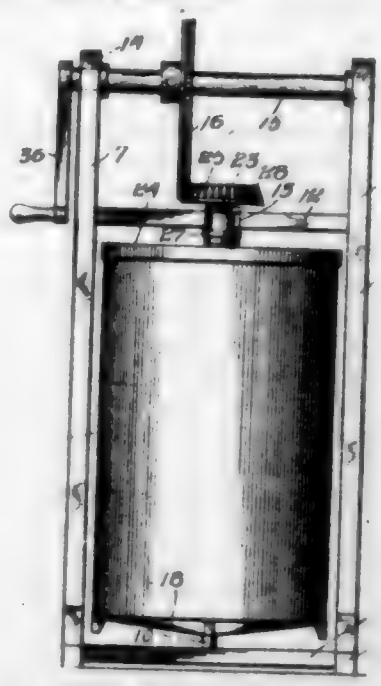
2. In a car-coupler, the combination of a knuckle, a movable locking-block, a knuckle-thrower, a pivotal pin integral with the knuckle-thrower, and adapted to seat in a cavity in the floor of the coupler-head, a kicker pivoted to the locking-block by a pin integral with the kicker, said kicker being adapted to engage with the knuckle-thrower, and to operate the same through the movement of the locking-block.

3. In a car-coupler, the combination of a knuckle, a movable locking-block, a knuckle-thrower adapted to engage with the tail of the knuckle and to throw the knuckle open, a kicker pivoted to the locking-block and adapted to engage with the knuckle-thrower and to operate the same through the movement of the locking-block, and a boss arranged to guide the movement of the kicker, substantially as specified.

4. In a car-coupler, the combination of a knuckle, the tail of which extends within the cavity of the coupler-head, an incline or cam-face formed on the lower face of the tail of the knuckle, a knuckle-thrower pivoted to the floor of the cavity, and adapted to swing below the tail of the knuckle and bear against the face of the incline to open the knuckle, a locking-block and a kicker so pivoted to the locking-block as to operate the knuckle-thrower when the locking-block is raised, substantially as specified.

5. In a car-coupler, the combination of a knuckle, a locking-block, a knuckle-thrower, a kicker pivoted to the locking-block, and a stop formed in the floor of the coupling-head and adapted to engage the kicker to hold the locking-block in a lock-set position, when the locking-block is raised, substantially as specified.

816,166. **CHURN.** FRANCE E. KRONQUEST, Loomis, Nebr. Filed June 23, 1905. Serial No. 266,617.

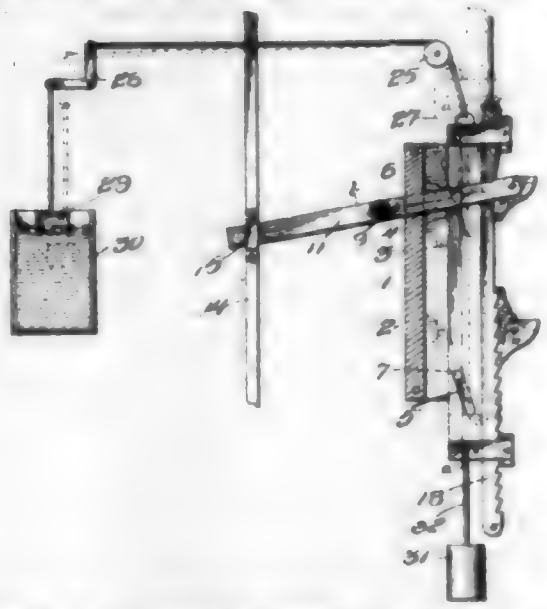


Claim.—1. A device of the class described comprising a frame, a receptacle revolubly mounted in the frame, a cross-brace mounted in the frame above the receptacle and having an opening therein, a tube removably engaged in the opening and extending downwardly into the receptacle, liquid-interrupting devices carried by the tube within the receptacle, a shaft revolubly engaged in the tube and connected with the receptacle for rotation of the latter therewith, said shaft extending upwardly out of the tube, a shaft journaled in the frame, connections between the second shaft and the first-named shaft for simultaneous rotation thereof, a plate carried by the tube above the cross-brace and having a notch therein and a pin carried by the cross-brace in the path of the notch in the plate, said pin being arranged for engagement with the notch to hold the plate and the tube against rotation.

2. A device of the class described comprising a frame, a conical upwardly-directed projection mounted in the frame, a receptacle having a conical recess in its bottom disposed with the projection engaged in the recess for rotation of the receptacle upon the projection, a flange-plate secured to the bottom of the receptacle within the latter and having an angular opening in its upper surface, a rod having lugs on its lower end engaged in the recess, a dasher rotatably mounted upon the rod, means for holding the dasher against rotation and means for rotating the rod and the receptacle.

3. A churn-dasher comprising a central portion, arms carried by the central portion, dasher-plates pivotally connected with the arms, each of said dasher-plates having an enlarged end provided with a series of openings and having a dasher-engaging arm on its other end, and a pin removably engaged in the openings in the arms and the dasher-plate for holding the plate at different points of their pivotal movement.

816,167. WINDMILL-REGULATOR. FRANCIS E. KNONGUEST, Loomis, Nebr. Filed May 10, 1905. Serial No. 259,743.



Claim.—1. In a windmill-regulator, a pump-rod, a frame mounted adjacent the pump-rod, a pump-rod lever pivoted to the frame and carrying a dog at one end and connected at its opposite end to the pump-rod, a slide-bar having diagonal slots formed therein, said bar being slidably associated with the frame, pins carried by the frame and engaged in the slots formed in the bar, the aforesaid dog on the pump-rod lever being adapted to contact with the rack-bar, another dog carried by the frame for contact with the rack-bar, a tank having a float therein, connection between the rack-bar and the windmill, connections between the float and the slide-bar, and a weight carried by the slide-bar.

2. In a windmill-regulator, a pump-rod, a frame mounted adjacent the pump-rod and having a guideway therein, upper and lower pins passed through the sides of the frame and said guideway, a slide-bar mounted within said guideway upon said pins for vertical and lateral movement, the aforesaid upper pin projecting upon opposite sides of the frame, a pump-rod lever pivotally mounted upon the projecting ends of said upper pin and carrying a pivoted dog at one end with its opposite end connected to the pump-rod, said slide-bar having upper and lower pairs of arms projecting beyond the front edge of the said frame, a rack-bar arranged to slide within the guideway of the frame and between said upper and lower pairs of arms, a dog pivotally mounted upon the frame for engagement with said rack-bar, means for limiting the upward and downward movement of the rack-bar, a tank having a float therein, connections between the float and the slide-bar, a connection between the rack-bar and the windmill, and a weight at the lower end of the slide-bar.

816,168. FIFTH-WHEEL FOR VEHICLES. EDWARD LEWIS, Winnipeg, Canada. Filed Dec. 31, 1904. Renewed Feb. 5, 1906. Serial No. 299,542.



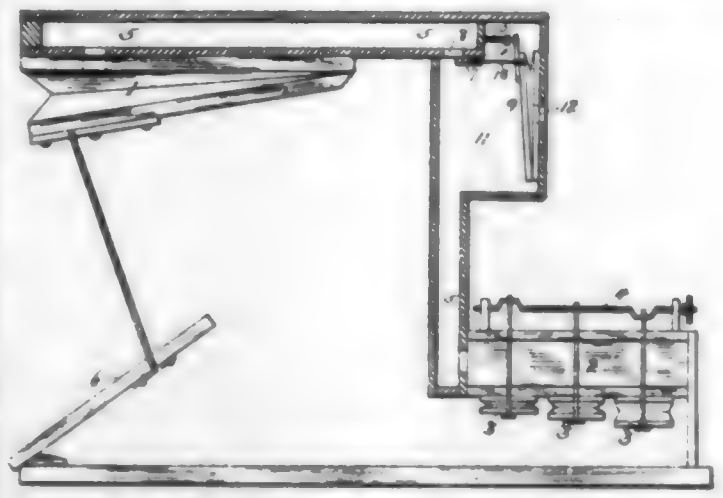
Claim.—1. In a fifth-wheel for vehicles, in combination, the axle, the segmental plate secured thereto and extending behind the axle, the head-block, the reach suitably secured thereto and the king-bolt passing through the segmental plate in the center of the arc, an L-shaped bolt or brace secured to the head-block and extending forwardly of the same, and a keeper-plate extending underneath the segmental plate and reach and having a forwardly-extending end through which the bottom end of the L-shaped bolt extends as and for the purpose specified.

2. In a fifth-wheel for vehicles, in combination the axle, the segmental plates secured thereto and extending behind the axle, the head-block, the reach suitably secured thereto, the T-shaped plate extending underneath the reach and head-block and suitably secured to both, the king-bolt passing through the segmental plate in the center of the arc and through the socket in the T-shaped plate, which extends through the segmental plate, means for limiting the turning movement of the axle and the reinforcing-plate secured to the top of the reach and extending upwardly over the head-block as and for the purpose specified.

3. In combination, the axle, the segmental plate extending behind the axle, the head-block and reach, the T-shaped plate secured to the bottom of the same, the bolts and plates securing the segmental plate to the axle and the T-shaped plate to the head-block, the spring extending underneath the plates at the top of the head-block and the king-bolt extending through the reach and segmental plate and the reinforcing-plate to the reach and extending upwardly over the spring aforesaid and suitably secured to the head-block as and for the purpose specified.

4. The combination with a vehicle-axle and the head-block, of the reach having its end secured to the head-block, a segmental plate having a straight side secured to the axle and its curved side extending to the rear thereof, said plate having a segmental slot, a T-shaped plate having the head of the T secured to the under side of the head-block and its shank secured to the under side of the reach, a king-bolt passing through the reach, T-shaped plate and segmental plate, a limiting-bolt passing through the reach and T-shaped plate and engaging the arc-shaped slot in the segmental plate, a reinforcing-plate secured to the top of the reach and overlapping the head-block, a keeper-plate secured beneath the reach and extending forward beneath the axle, and a brace connecting said forwardly-extended end with the head-block, substantially as described.

816,169. PNEUMATIC-MOTOR GOVERNOR. JOHN W. MACY, Cincinnati, Ohio, assignor to The Baldwin Company, Cincinnati, Ohio. Filed July 17, 1905. Serial No. 269,947.



Claim.—1. In a pneumatic-musical-instrument player the combination with a motor and exhaust-bellows, of a cut-off valve and a collapsible and inflatable pneumatic disposed in the airway between said motor and said exhaust-bellows; said pneumatic communicating with the outer air and having its movable member connected with said cut-off valve for regulating the air-passage, substantially as described.

2. In a pneumatic-musical-instrument player the combination with a motor and exhaust-bellows of an airway connecting said motor with said exhaust-bellows; a cut-off valve disposed in said airway and a governor-pneumatic disposed in a pneumatic-chamber formed in said airway; said pneumatic communicating with the outer air and having its movable member connected with said cut-off valve for regulating the air-passage, substantially as described.

3. In a pneumatic-musical-instrument player the combination with a motor and an exhaust-bellows, connected with said motor by an airway of a cut-off valve and governor-pneumatic controlling said valve disposed between said motor and said bellows, and means for maintaining said pneumatic in a collapsed condition in opposition to the vacuum-pressure in said airway, substantially as described.

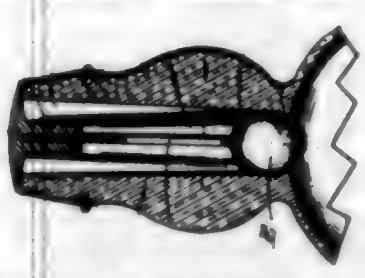
4. In a pneumatic-musical-instrument player the combination of a motor and an exhaust-bellows connected therewith for actuating said motor of a cut-off valve and governor-pneumatic controlling the airway between said motor and said exhaust-bellows; said pneumatic being externally under the influence of the vacuum-pressure of the air in said airway between said cut-off valve and said motor, and

internally communicating with the outer air, substantially as described.

5. In a pneumatic-musical-instrument player the combination of a motor and an exhaust-bellows connected therewith for actuating said motor of a cut-off valve and governor-pneumatic controlling the airway between said motor and said exhaust-bellows; said pneumatic being externally under the influence of the vacuum-pressure of the air in said airway between said cut-off valve and said motor and internally communicating with the outer air; said pneumatic being provided with means for maintaining the same in a collapsed condition, substantially as described.

6. In a pneumatic-musical-instrument player the combination of a motor and an exhaust-bellows connected therewith for actuating said motor of a cut-off valve and governor-pneumatic controlling the airway between said motor and said exhaust-bellows; said pneumatic communicating with the outer air and having its movable member connected with said cut-off valve for regulating the air-passage; said pneumatic being provided with means for maintaining the same in a collapsed condition and for regulating the degree of resistance in opposition to the vacuum-pressure in said airway, substantially as described.

816,170. CORKLESS NON-REFILLABLE BOTTLE. ROSCOE I. MAXWELL, White Plains, N. Y. Filed Jan. 2, 1906. Serial No. 294,223.



Claim.—1. A stopper for bottles comprising, in combination with a bottle with a neck, a valve-seat therein, said neck having ribs upon its inner surface terminating adjacent to said valve-seat, with channels intermediate the ribs, a ball-valve, a cap, means for locking the same to the neck, and a plunger carried by said cap and adapted to hold the valve seated, as set forth.

2. A stopper for bottles comprising, in combination with a bottle with a neck, a valve-seat therein, said neck having ribs upon its inner surface terminating adjacent to said valve-seat, with channels intermediate the ribs, a ball-valve, a cap, means for locking the same to the neck, and a plunger having threaded connection with the cap and adapted to be moved longitudinally as the cap is turned in one direction or the other, as set forth.

3. A stopper for bottles comprising, in combination with a bottle with a neck, a valve-seat therein, said neck having ribs upon its inner surface terminating adjacent to said valve-seat, with channels intermediate the ribs, a ball-valve, a cap, means for locking the same to the neck, an integral lug projecting from the inner surface of the top of the cap and having a threaded outlined hole therein, and a plunger having a threaded end engaging the threads of said lug and its opposite end designed to bear against said valve to hold the same seated, as set forth.

4. A stopper for bottles comprising, in combination with a bottle with a neck, a valve-seat therein, said neck having ribs upon its inner surface terminating adjacent to said valve-seat, with channels intermediate the ribs, a ball-valve, a cap, means for locking the same to the neck, a lug projecting from the inner surface of the top of the cap and provided with a threaded outlined lug, a plunger having a threaded end engaging the threads of said lug, the other end of said plunger flaring and having a scalloped circumference adapted to receive the ribs on the inner surface of the neck, the lower end of said plunger being concaved and adapted to bear against the ball, as set forth.

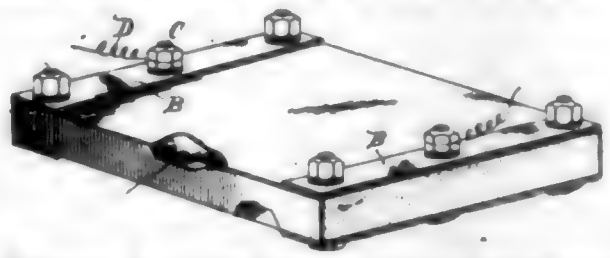
5. In combination with the neck of a bottle having longitudinal ribs therein with channels intermediate the same, a valve-seat, a ball-valve mounted within said neck, the circumference of the neck having an annular groove, a cap having apertures in the top, resilient lugs integral with said cap adapted to engage said groove, and a plunger having threaded connection with the cap and adapted to bear against said ball-valve to hold the same seated, as set forth.

816,171. ARTIFICIAL-STONE POST OR COLUMN. NICOLAS MICHELENA Y IRARRA, Renteria, Spain. Filed Mar. 6, 1905. Serial No. 248,296.

Claim.—An artificial-stone post or column having an arm and a stay for said arm formed integrally therewith, consisting of a concrete mass having embedded therein a skeleton or frame formed of metal strips which are engaged in slits or grooves in the periphery of a series of wood disks, the strips which form the skeleton of the lower part of the post being bent outwardly to form the skeleton of the stay and the strips which form the skeleton of the upper part of said post being bent outwardly to form the skeleton of the arm, said stay and arm-strips being joined at the point where they meet, and the strips which form respectively the skeleton of the upper and lower parts of the post being connected between the bends by strips spliced thereon in alinement therewith, substantially as set forth.



816,172. ELECTRIC HEATER. HARMON N. MORSE and JOSEPH C. W. FRAZER, Baltimore, Md., assignors of one-third to Robert B. Morse, Baltimore, Md. Filed Apr. 18, 1905. Serial No. 256,229.



Claim.—1. The method herein described of forming an electric heater or resistance, which consists in coating a smooth non-conducting base while heated with a paste containing graphite, clay and water.

2. The method herein described of forming an electric heater or resistance which consists in coating a smooth non-conducting surface while heated with a paste containing graphite and clay and polishing the coating to harden it.

3. The method herein described of forming an electric heater or resistance which consists in coating a non-conducting base while heated with a paste containing graphite and clay, polishing the coating to harden it and then applying subsequent coatings and polishing them until the desired degree of conductivity is obtained.

4. An electric heater or resistance comprising a non-conducting base and a thin even unbaked coating containing graphite and clay.

5. An electric heater or resistance comprising a slab of soapstone and an unbaked coating containing graphite and clay.

6. An electric heater or resistance comprising a non-conducting base and a coating containing graphite, clay and soap.

7. An electric heater or resistance comprising a slab of soapstone and a coacting containing graphite, clay and soap.

8. An electric heater or resistance comprising a slab of soapstone having a smooth surface and a coating thereon of uniform thickness and even distribution containing graphite and clay.

9. An electric heater or resistance comprising a non-conducting base and a thin coating of uniform thickness and even distribution containing graphite, clay and soap.

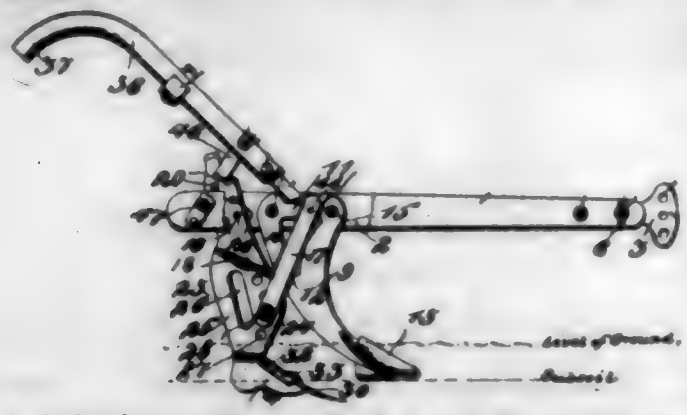
10. An electric heater or resistance comprising a non-conducting base having a smooth surface and a series of coatings or layers of a paste containing graphite and clay, each of which layers is polished to harden it and the thickness of the coating being such as to give the required conductivity.

816,173. PLOW. HEZEKIAH MORTON, Thomasville, N. C. Filed May 5, 1905. Serial No. 258,939.

Claim.—1. A beam, a plow-standard connected therewith and having opposite recesses in the sides thereof, a subsoil-standard connected with the beam in rear of the plow-standard, and straps connecting the beam with the subsoil-standard and engaging the recesses in the sides of the plow-standard.

2. A beam consisting of spaced bars, a plow-standard secured between said bars and having an upwardly and a rearwardly inclined brace provided with recesses in the sides thereof and a web connecting said brace with the standard proper, a subsoil-standard connected with the beam in rear of the plow-standard, and braces connecting the beam with the subsoil-standard and engaging the recesses in the inclined brace of the plow-standard.

3. A plow having a beam comprising a pair of spaced side bars, a standard having its upper end secured between said side bars and provided on its rear side with an upwardly-extending brace-arm, the upper end of which is also secured between said side bars, said brace-arm having recesses in opposite sides, rearwardly and downwardly extending straps lying in said recesses of said brace-arm and having their upper ends secured to the beam, and a subsoil-standard having its upper portion secured to the beam and its lower portion disposed between and secured to the lower ends of said straps, substantially as described.

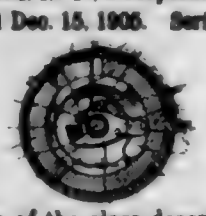


4. A plow having a beam comprising a pair of spaced side bars, a standard having its upper end secured between said side bars and provided on its rear side with an upwardly-extending brace-arm, the upper end of which is also secured between said side bars, said brace-arm having recesses in opposite sides, rearwardly and downwardly extending straps lying in said recesses of said brace-arm and having their upper ends secured to the beam, and a subsoil-standard having its upper portion secured to the beam and its lower portion disposed between and secured to the lower end of said straps, said subsoil-standard being connected to the beam for vertical adjustment and also connected to the said straps for vertical adjustment.

5. A plow of the class described having a standard inclined laterally in one direction, and a subsoil-standard offset laterally in the opposite direction and disposed in rear of the first-mentioned standard.

816,174. CARD-HOLDING DEVICE FOR TYPE-WRITERS.

John C. McLaughlin, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 25, 1905. Renewed Dec. 15, 1905. Serial No. 291,838.



Claim.—1. In a device of the class described, the combination of a hollow platen having a longitudinal slot, a card-holding clamp having a surface similar to that of the platen, and means within the platen for projecting the clamp outwardly and forwardly through the said slot in the walls of the platen and for retracting the clamp, said clamp when retracted being adapted to lie substantially flush with the surface of the platen.

2. In a device of the class described, the combination of a hollow cylindrical platen having a longitudinal slot, and a card-holding clamp within the platen adapted to be projected and retracted through said slot, the said clamp having a surface similar to the platen and when retracted being adapted to lie substantially flush with the surface of the platen.

3. In a device of the class described, the combination of a hollow cylindrical platen having a longitudinal slot in its periphery, a card-holding clamp within the platen and rotary means also within the platen for projecting and retracting the clamp through said slot, the clamp when retracted being adapted to lie substantially flush with the surface of the platen, having a surface of material similar to the surface of the platen.

4. In a device of the class described, the combination of a hollow cylindrical platen, a card-holding clamp within the platen adapted to be projected and retracted through the walls of said platen, rotary means within the platen revoluble about the axis of the platen for moving said clamp outward, and operative means within the platen for retracting the clamp.

5. In a device of the class described, the combination of a hollow cylindrical platen and a toggle-acting card-holding clamp within the platen and adapted to be projected and retracted through the walls of said platen.

6. In a device of the class described, the combination of a hollow cylindrical platen, and a toggle-acting spring-controlled card-holding clamp within the platen and adapted to be projected and retracted through the walls of said platen.

7. In a device of the class described, the combination of a hollow cylindrical platen and a toggle-acting spring-controlled card-holding clamp within the platen and adapted to lie substantially in the plane of the surface of the platen when retracted.

8. In combination, a platen, a section normally forming a part of the printing-field of the platen but movable up from the platen, a finger-piece for effecting movement of said section, and means for enabling said section to nip the edge of a card against an adjoining portion of the printing-surface of the platen.

9. The combination of a platen with a hooked member having one part seated in the surface of the platen and another part extending within the platen, means for projecting said hooked member, a spring for causing said hooked member to hook over the adjoining edge of the platen, and a spring tending to draw said hooked member into the platen.

10. The combination with a platen, of a hooked member having one part seated in the surface of the platen and another part extending within the platen, a finger-piece connected to said hooked member to project the same, and yielding means tending to draw said hooked member into the platen; means being provided for pressing the hooked member against the adjoining edge of the platen.

11. The combination with a revoluble platen, of a card-holder extending for substantially the whole length of the printing-field of the platen and sunken therein, the exterior of said card-holder being of the same material as the surface of the platen and forming therewith an unbroken printing-surface, and for projecting said card-holder, and means for causing the card-holder to nip the edge of a card.

12. The combination with a revoluble platen, of a card-holder sunken in the platen, the exterior of the card-holder being of the same material as the surface of the platen and forming therewith an unbroken printing-surface, a finger-piece mounted at the end of the platen and connected to said card-holder to project the same, and yielding means for causing the card-holder to nip the edge of a card; means being provided for returning the holder to normal position when released.

13. The combination with a revoluble platen having an axle, of a loose sleeve upon said axle, a finger-piece for turning said sleeve while the axle remains stationary, collars or arms fixed upon said sleeve, and a card-clamp hinged to said collars and extending out through the platen; the head of said clamp forming normally a portion of the printing-field of the platen.

14. The combination with a revoluble platen having an axle, of a sleeve loose upon said axle, means for turning said sleeve independently of the platen, collars fixed upon said sleeve, a card-clamp having a head extending through the platen, said clamp hinged to said collars, and said head normally forming a portion of the printing-field of the platen, a spring for retracting said clamp, and a spring tending to hold said clamp against the adjoining edge of the platen.

15. The combination of a platen having a yielding surface, with a card-holding clamp mounted thereon and having a similar surface.

16. The combination with a platen having a yielding surface, of a card-holding clamp having a surface similar to that of the platen, and means for projecting the clamp through the wall of the platen and means for retracting the clamp; said clamp when retracted constituting a portion of the printing-field of the platen.

17. The combination with a cylindrical platen having a longitudinal slot, of a card-holding clamp mounted so as to be capable of projection and retraction through said slot; said clamp when retracted being flush with the surface of the platen and forming a portion of the printing-field thereof, and formed with a part to catch over the edge of the platen when the clamp is projected, to nip a card between the clamp and the platen.

18. The combination with a cylindrical platen having a longitudinal slot in its periphery, of a card-holding clamp, and rotatable means for projecting and retracting the clamp through said slot; the clamp when retracted forming a part of the printing-field of the platen, and formed with a part to catch over the edge of the platen when the clamp is projected, to nip a card between the clamp and the platen.

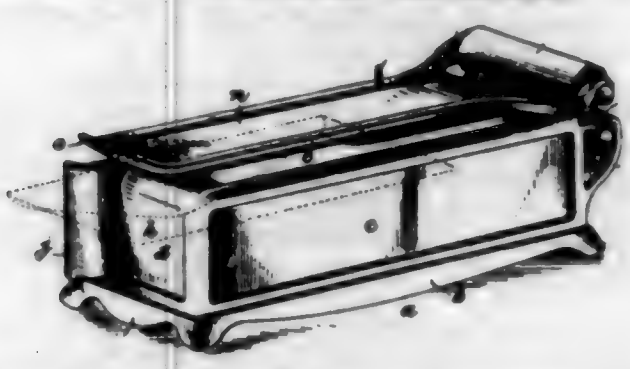
19. The combination with a cylindrical platen having an axle and provided with a longitudinal slot in its periphery, of a card-holding clamp, and means mounted upon the platen-axle for projecting said clamp; the latter when retracted lying flush with the surface of the platen and forming a portion of the printing-field thereof, and

formed with a part to catch over the edge of the platen when the clamp is projected, to nip a card between the clamp and the platen.

20. The combination with a cylindrical platen, of a toggle-acting card-holding clamp mounted for projection and retraction through the wall of the platen, and normally forming part of the printing-field of the platen.

21. The combination with a platen of a card-holding clamp having a head normally flush with the surface of the platen, so that an unbroken surface is presented, said head being mounted so as to be capable of catching over the adjoining edge of the platen, and yielding means to enable said head to nip the edge of a card.

816,175. ENVELOP-SEALING APPARATUS. JULIUS E. NACHOD, Philadelphia, Pa. Filed June 20, 1905. Serial No. 266,149.



Claim.—1. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and means for pressing the flap against the body as the envelop is drawn through the apparatus.

2. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and coöperating rolls for pressing the flap against the body as the envelop is drawn through the apparatus.

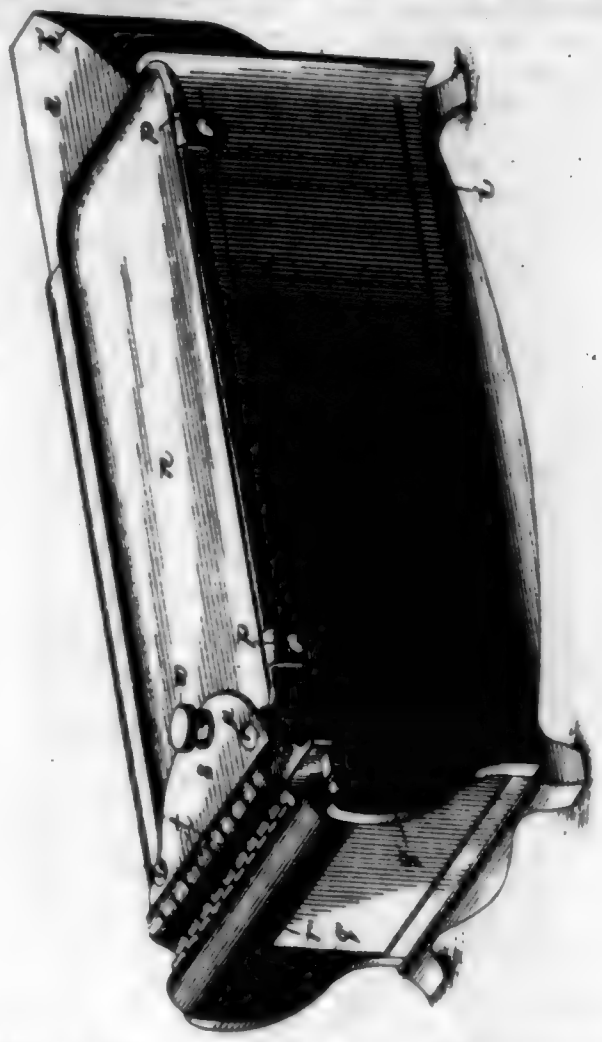
3. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and means for pressing the flap against the body as the envelop is drawn through the apparatus, said platform having a rearwardly-extending tongue for guiding the envelop to the pressing means and preventing premature contact between the flap and body.

4. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a liquid-receptacle having a wick projecting therefrom adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and means for pressing the flap against the body as the envelop is drawn through the apparatus.

5. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a removable liquid-receptacle having a wick projecting therefrom adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and means for pressing the flap against the body as the envelop is drawn through the apparatus.

6. An envelop-sealing apparatus, comprising a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body having an operating-surface gradually merging from the plane of the lateral wall into a plane parallel with and below the platform, and a yielding presser-plate above the platform, and coöperating rolls on the presser-plate and the end of the casing for pressing the flap against the body as the envelop is drawn through the apparatus.

816,176. ENVELOP-SEALING APPARATUS. JULIUS E. NACHOD, Philadelphia, Pa. Filed Nov. 10, 1905. Serial No. 286,689.

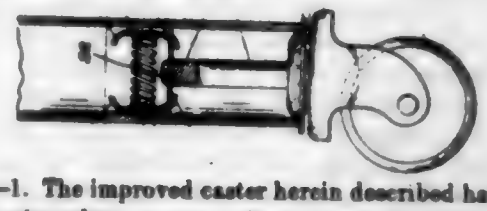


Claim.—1. In an envelop-sealing apparatus, the combination of a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body, and means for pressing the flap against the body comprising a series of independently-yieldable fingers adapted to engage the envelop transversely of its path of travel.

2. In an envelop-sealing apparatus, the combination of a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body, and means for pressing the flap against the body comprising a roller and a series of independently-yieldable fingers coöperating therewith to engage the envelop transversely of the path of travel.

3. In an envelop-sealing apparatus, the combination of a casing having a platform for supporting the body of the envelop, a lateral wall at an angle to the platform for guiding the flap, a moistening device adjacent to said lateral wall, a guide-wall for closing the flap on the body, and means for pressing the flap against the body comprising a roller mounted at the end of said platform, a plate mounted above said roller and having a series of spring-fingers coöperating with the roller to engage the envelop transversely of its path of travel.

816,177. CASTER. GEORGE E. NEUBERTH, Newark, N. J. Filed Sept. 20, 1904. Serial No. 225,165.



Claim.—1. The improved caster herein described having a pintle with a bearing-plate at or near its upper end, said bearing-plate being provided with friction-plates extending upward therefrom and said friction-plates having a spring interposed therebetween, substantially as set forth.

2. The improved caster herein described, having a pintle adapted to extend vertically into the tubular leg of an article of furniture, said pintle having loosely secured to diametrically opposite sides thereof, at its upper end, oppositely-pressing spring-controlled friction-plates adapted to engage the opposite walls of the said tubular leg above said pintle.

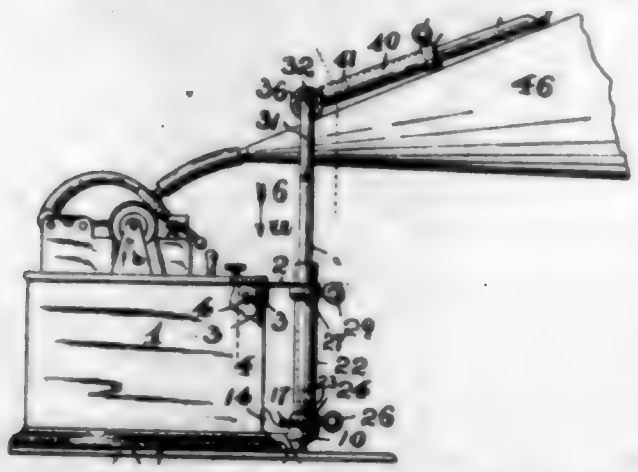
3. The improved caster herein described comprising a caster-body having a pintle and roller, a horizontal bearing-plate loosely arranged at the top of said pintle, vertical bearing-plates pivotally arranged on said bearing-plate and a spring.

4. The improved caster herein described comprising a caster-body having a pintle and roller, a horizontal bearing-plate at the top of said pintle, vertical bearing-plates pivotally arranged on said bearing-plate and having inward protuberances disposed oppositely and a spring, interposed between the vertical plates and in engagement with said protuberances

5. The improved caster herein described comprising a caster-body having a pintle and roller, a horizontal bearing-plate at the top of said pintle, vertical bearing-plates pivotally arranged on said bearing-plate and having inwardly-turned upper ends, inwardly-projecting protuberances adapted to receive a spring and a spring disposed above the pintle on said protuberances.

6. The improved caster herein described, comprising a caster-body, pintle and roller, a centrally-perforated plate arranged on the pintle, and oppositely-bearing friction-plates extending upward therefrom and means for holding said friction-plates in frictional relation with the tubular leg, substantially as set forth.

816,178. HORN-SUPPORT FOR TALKING-MACHINES. ELLIS S. OLIVER, Newark, N. J. Filed June 25, 1904. Serial No. 214,068.



Claim.—1. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-extending portion, a supporting-rod-carrying projection connected with said base-plate and extending upwardly in front of the front face of said case or box, said projection being provided with a cut-away part, and a shoe or brace on said cut-away part, said shoe or brace extending upwardly and being in engagement with a portion of the front face of the case or box, substantially as and for the purposes set forth.

2. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-extending portion, a supporting-rod-carrying projection connected with said base-plate and extending upwardly in front of the front face of said case or box, said projection being provided with a cut-away part, a shoe or brace on said cut-away part, said shoe or brace extending upwardly and being in engagement with a portion of the front face of the case or box, and means extending upwardly from said base-plate for engagement with the bottom of said case or box, substantially as and for the purposes set forth.

3. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-extending portion, a supporting-rod-carrying projection connected with said base-plate and extending upwardly in front of the front face of said case or box, said projection being provided with a cut-away part, and a shoe or brace slidably arranged upon said cut-away part, said shoe or brace extending upwardly and in engagement with a portion of the front face of the case or box, substantially as and for the purposes set forth.

4. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-extending portion, a supporting-rod-carrying projection connected with said base-plate and extending upwardly in front of the front face of said case or box, said projection being provided with a cut-away part, a shoe or brace slidably arranged upon said cut-away part, said shoe or brace extending upwardly and in engagement with a portion of the front face of the case or box, and means extending upwardly from said base-plate for engagement with the bottom of said case or box, substantially as and for the purposes set forth.

5. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-projecting portion, a projection connected with said base-plate and extending upwardly in front of the front face of said case or box, a tubular post on said projection, a rod adjustably arranged in said tubular post, and means connected with said rod for the suspension of a horn from said rod, said projection upon the base-plate being provided with a cut-away part, and a shoe or brace on said cut-away part, said shoe or brace extending upwardly and being in engagement with a portion of the front face of the case or box, substantially as and for the purposes set forth.

6. A horn-support for talking-machines, comprising a base-plate adapted to be arranged beneath the base of the case or box of the machine, and provided with a forwardly-projecting portion, a projection connected with said base-plate and extending upwardly in front of the front face of said case or box, a tubular post on said projection, a rod adjustably arranged in said tubular post, and means connected with said rod for the suspension of a horn from said rod, said projection upon the base-plate being provided with a cut-away part, a shoe or brace on said cut-away part, said shoe or brace extending upwardly and being in engagement with a portion of the front face of the case or box, and a holding-point extending upwardly from said base-plate for engagement with the bottom of the case or box, substantially as and for the purposes set forth.

7. In a horn-support for talking-machines, the combination, with a base-plate and means for connecting said plate with a portion of the case or box of the talking-machine, of a tubular post connected with said base-plate, a rod adjustably arranged in said tubular post, said rod having a curved or bent portion adapted to extend around the sound-reproducing horn of the machine and terminating in an extension, a tube connected with said extension, a rod adjustably connected with said tube, and a horn-suspension device on said rod, substantially as and for the purposes set forth.

8. In a horn-support for talking-machines, the combination, with a base-plate and means for connecting said plate with a portion of the case or box of the talking-machine, of a tubular post connected with said base-plate, a rod adjustably arranged in said tubular post, said rod having a curved or bent portion adapted to extend around the sound-reproducing horn of the machine and terminating in a screw-threaded extension, a collar and a pair of tightening-nuts on said extension, a finger on said collar, and means connected with said finger for the suspension of a horn thereon, substantially as and for the purposes set forth.

9. In a horn-support for talking-machines, the combination, with a base-plate and means for connecting said plate with a portion of the case or box of the talking-machine, of a tubular post connected with said base-plate, a rod adjustably arranged in said tubular post, said rod having a curved or bent portion adapted to extend around the sound-reproducing horn of the machine and terminating in a screw-threaded extension, a collar and a pair of tightening-nuts on said extension, a finger on said collar, a tube extending from said finger, a rod adjustably connected with said tube, and means on said rod for the suspension of a horn thereon, substantially as and for the purposes set forth.

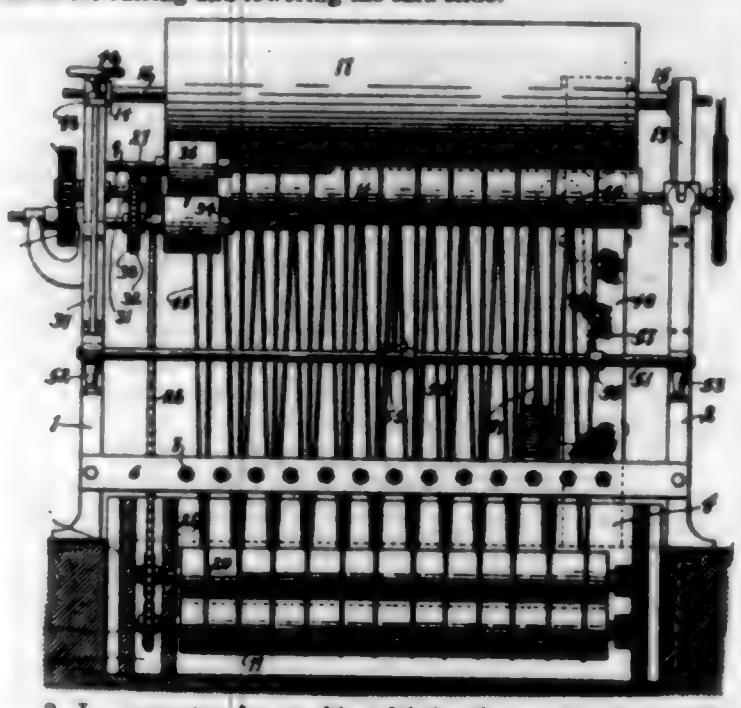
10. In a horn-support for talking-machines, the combination, with a base-plate provided with a projection 10 and means for connecting said base-plate with a portion of the case or box of the talking-machine, of a stud on said projection 10, a tubular post on said stud, means on said stud and said tubular post to prevent turning of the latter on said stud, a rod adjustably arranged in said tubular post, and means connected with said rod for the suspension of a horn from said rod, substantially as and for the purposes set forth.

816,179. APPARATUS FOR WASHING FABRICS. ISAAC E. PALMER, Middletown, Conn. Filed Sept. 22, 1904. Serial No. 225,513.

Claim.—1. In apparatus for washing fabric, the combination with a tank or vat for holding the cleansing liquid, rollers for directing fabric into and out of the tank and means for feeding the fabric along said rollers, of a tension device and means under the control of the fabric for operating the tension device.

2. In apparatus for washing fabric, the combination with a tank or vat for holding the cleansing liquid, rollers for directing fabric into and out of the tank and means for feeding the fabric along the rollers, of a guide for directing the fabric to the receiving-rollers, a vertically-movable slide for throwing the fabric out of a direct line

as it passes through the guide and means under the control of the fabric for raising and lowering the said slide.



3. In apparatus for washing fabric, the combination with a tank or vat for holding the cleansing liquid, rollers for directing fabric into and out of the tank, and means for feeding the fabric along the rollers, of a guide comprising spaced perforated walls through which the fabric passes to the receiving-rollers, a reciprocating slide located intermediate of said walls and provided with a perforation through which the fabric passes, a rocking-arm for operating the slide and means engaged by the fabric for rocking the arm and hence operating the slide to increase or diminish the tension of the fabric.

4. In apparatus for washing fabric, the combination with a tank or vat for holding the cleansing liquid, rollers for directing fabric into and out of the cleansing liquid and means for feeding the fabric along the rollers, of a rock-shaft, arms fixed to and extending laterally from the rock-shaft, a tension device connected with one of the arms, the other arm being engaged with the fabric whereby the tension device is under the control of the fabric to increase or diminish the tension on the said fabric.

5. In apparatus for washing fabric, the combination with a tank or vat for receiving the cleansing liquid, rollers for directing the fabric into and out of the cleansing liquid and means for feeding the fabric along the rollers, of a guide for directing the fabric to the receiving-rollers, a vertically-reciprocating slide engaged with the fabric as it passes through the guide, means for placing the tension device under the control of the fabric and means for counterbalancing the weight of the tension device.

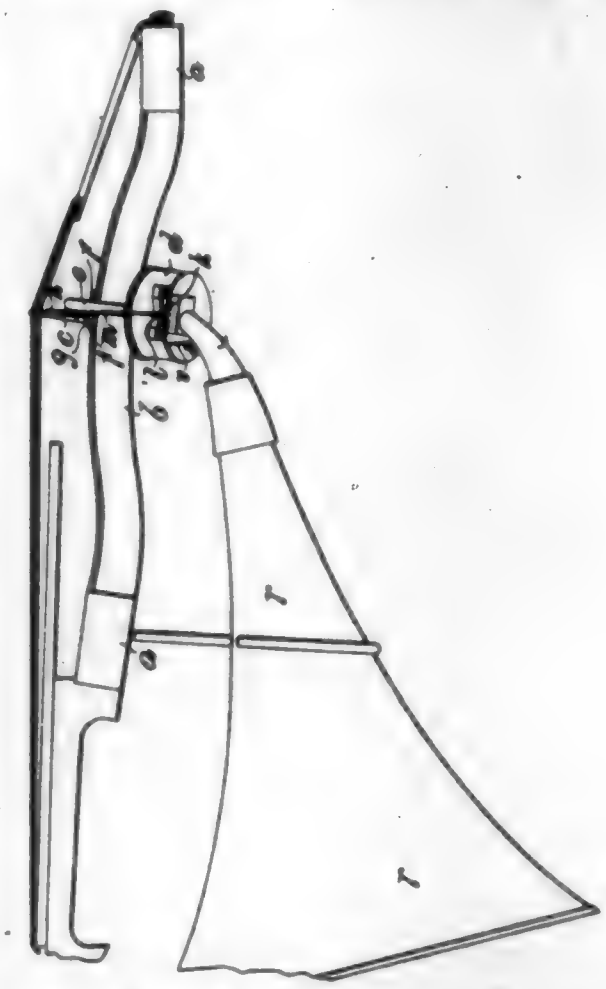
816,180. SOUND-PRODUCING INSTRUMENT. CHARLES A. PARSONS, Newcastle-upon-Tyne, England. Filed Apr. 12, 1904. Serial No. 202,867.

Claim.—1. A musical instrument, comprising in combination, a reproducing device, including a valve controlling the passage of a stream of elastic fluid, means for supplying the elastic fluid, a vibrating part adapted to vibrate with different frequencies when different notes are played on the instrument, and a connection between said vibrating part and said valve, whereby said valve reproduces the vibrations of said vibrating part, as set forth.

2. A musical instrument, comprising in combination, a reproducing device including a valve-face and a valve-cover opening in a direction substantially normal to said valve-face, and having a large area of opening for small displacements, said valve face and cover controlling the passage of a stream of elastic fluid, means for supplying the elastic fluid, a vibrating part adapted to vibrate with different frequencies when different notes are played on the instrument, and a connection between said vibrating part and said valve-cover, whereby said valve reproduces the vibrations of said vibrating part as set forth.

3. A musical stringed instrument, comprising in combination, a reproducing device including a valve controlling the passage of a stream of elastic fluid, means for supplying the elastic fluid, a string or strings adapted to be operated, and to vibrate with different frequencies when different notes are played on the instrument, a vibrating part capable of vibrating in unison with said string, and means for communicating the vibrations of said vibrating part to the valve, as set forth.

4. A musical instrument, comprising in combination, a reproducing device including a valve controlling the passage of a stream of elastic fluid, means for supplying the elastic fluid, a vibrating part adapted to be set in vibration when the instrument is played, and a viscous connection between said valve and said vibrating part, as set forth.



5. In combination with a musical instrument having a vibratory part capable of producing sound-vibrations when said instrument is played upon, an elastic-fluid chamber, a fixed grating forming part of the boundary of said chamber, means for directing elastic fluid to said chamber, an oscillating grating controlling the flow of elastic fluid through said chamber and an initial operating connection between the said oscillating grating and the vibratory part of the instrument whereby said oscillating grating will be set in motion initially from the vibrating part of the instrument and maintained in vibration so long as the instrument is played.

6. In a musical stringed instrument, in combination, an air-chamber supported from the frame of the instrument, a fixed grating forming part of the boundary of said chamber, an oscillating grating adapted to control the flow of air from said chamber, and means for actuating said oscillating grating from the strings of the instrument, as set forth.

7. In a musical stringed instrument, in combination, an air-chamber supported from the frame of the instrument, a fixed grating forming part of the boundary of said chamber, an oscillating grating adapted to control the flow of air from said chamber, and a viscous connection between said oscillating grating and a vibrating part of the instrument, as set forth.

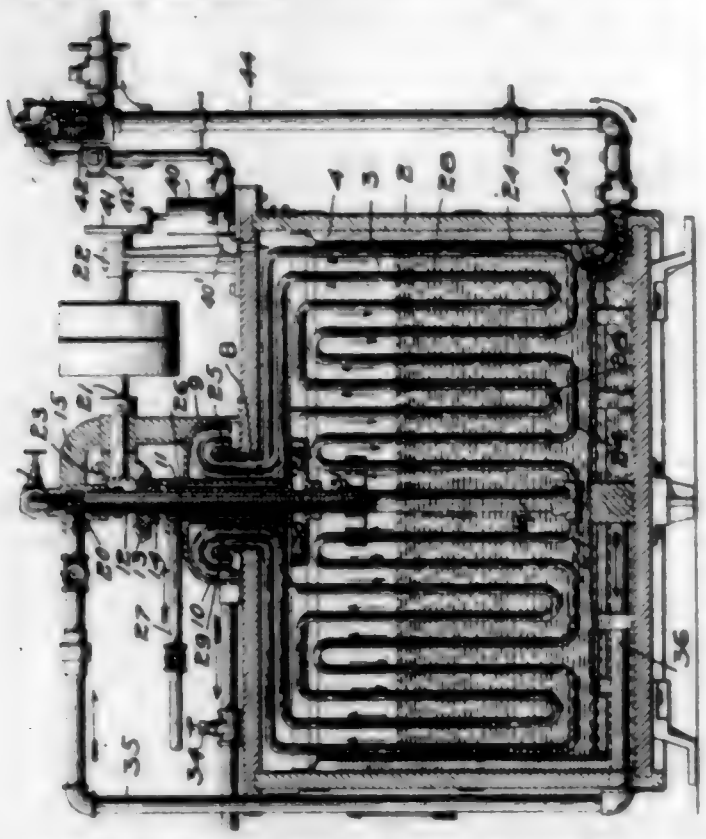
8. In a musical instrument in combination, a fixed grating supported from the frame of the instrument, a connection for supplying a stream of elastic fluid through said fixed grating, a movable grating adapted to control the passage of said stream through said fixed grating, a vibrating part adapted to vibrate with different frequencies when different notes are played on the instrument, and means for communicating the vibrations of said vibrating part to said movable grating, as set forth.

9. In a musical stringed instrument, in combination, an air-chamber supported from the frame of the instrument, a fixed grating forming part of the boundary of said chamber, an oscillating grating adapted to control the flow of air from said chamber, a spring-mounted bridge supporting the strings of the instrument, and a viscous connection between said bridge and said oscillating grating, as set forth.

10. A sound-producing instrument comprising in combination, a reproducing device including a valve controlling the passage of a stream of elastic fluid, means for supplying the elastic fluid, a vibrating part adapted to be set in vibration when the instrument is oper-

ated, and a viscous connection between said valve and said vibrating part.

816,181. COMBINED COOLER, CREAM-RIPENER, AND PASTEURIZER. DARIUS W. PAYNE, Minneapolis, Minn. Filed July 17, 1905. Serial No. 270,066.



Claim.—1. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls of said tank, a water-pipe communicating with the space between said tank and cream-receptacle, a chamber centrally arranged in said tank and having a discharge-pipe, and a series of fixed and movable agitating-tubes suspended within said cream-receptacle and having their open discharge ends terminating in said chamber, means for delivering a liquid to said tubes, and means for revolving said movable tubes in said receptacle.

2. The combination with a tank provided with a closed top, of a cream-receptacle arranged therein and spaced from the walls of said tank, a water-supply pipe leading into the space between said tank and receptacle, a hollow shaft depending within said receptacle, a chamber inclosing the same, a series of tubes provided with vertical loops carried by the lower end of said shaft and having their open discharge ends terminating in said chamber, means for supplying a tempering liquid to said tubes, and means for revolving said shaft and tubes.

3. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls thereof, a hollow shaft depending within said receptacle, a chamber inclosing said shaft, a ring loosely mounted between said chamber and shaft, a series of tubes carried by said shaft and bent to form vertical loops and having ends passing through said ring and terminating in said chamber, means for revolving said shaft and tubes, and inlet and discharge pipes communicating with said shaft with the space between said tank and receptacle and with said chamber, substantially as described.

4. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls of said tank, a series of agitating-tubes suspended within said receptacle, means for revolving said tubes, means for supplying a cooling liquid to said tubes, and an air-pump connected with said cream-receptacle, substantially as described.

5. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls thereof, a hollow shaft depending within said receptacle, a series of tubes carried by said shaft and bent into a series of vertical loops, a sleeve having a water-chamber inclosing said shaft, a series of fixed tubes supported at one end in said sleeve and bent to form loops parallel with the loops of said first-named tubes, means for revolving said shaft and first-named tubes, and tempering-fluid pipes communicating with the space between said tank and said receptacle, substantially as described.

6. The combination, with a tank, of a cream-receptacle located therein and spaced from the walls thereof, a hollow shaft depending within said receptacle, a fixed sleeve inclosing said shaft, a water to chamber mounted on said tank and inclosing said sleeve and shaft, agitating-tubes mounted on said shaft, the discharge ends of said tubes being bent inwardly and curved outwardly and downwardly within said chamber, means for revolving said shaft and the tubes carried thereby, and tempering-fluid pipes communicating with said tubes and with said chamber, substantially as described.

7. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls thereof, a series of fixed and movable agitating-tubes suspended within said receptacle, means for delivering a cooling liquid to said tubes, and means for revolving said movable tubes.

8. The combination, with a tank, of a cream-receptacle arranged therein and spaced from the walls thereof, a series of fixed and movable agitating-tubes suspended within said receptacle, means for circulating hot or cold water through said tubes, and means for revolving said tubes in said receptacle.

9. The combination, with a tank, of a cream-receptacle located therein and spaced from the walls thereof, a hollow shaft depending within said receptacle, a series of fixed and movable agitating tubes carried by said shaft, a water-pipe communicating with said hollow shaft and with a space between said tank and receptacle, a steam-nozzle arranged to project a jet of steam into said shaft, and means for revolving said shaft and tubes.

10. The combination, with a tank provided with a cream-receptacle, of a hollow shaft depending therein, a series of fixed and movable agitating-tubes carried by said shaft within said receptacle, means for revolving said shaft and movable tubes, and tempering-fluid pipes communicating with said shaft.

11. The combination, with a tank, of a cream-receptacle therein, a series of agitating-tubes suspended within said receptacle, said tubes being bent to form vertical loops, means for revolving said tubes in said receptacle, and means for circulating a cooling liquid through said tubes.

12. The combination, with a tank, of a cream-receptacle therein, a series of fixed and movable agitating-tubes suspended within said receptacle, means for passing the cooling liquid through said tubes, means for revolving said movable tubes in said receptacle, and an exhauster connected with said receptacle.

13. The combination, with a tank, of a cream-receptacle therein and spaced from the walls thereof, a hollow shaft depending within said receptacle, a series of agitating-tubes carried by said shaft, a water-inlet pipe communicating with said shaft, a branch pipe communicating with said hollow shaft and with the space between said cream-receptacle and said tank, a steam-nozzle provided between said receptacle and tank near said branch pipe, and means for revolving said shaft and tubes.

14. The combination, with a tank, of a cream-receptacle arranged therein, a hollow shaft depending within said receptacle, a series of tubes carried by said shaft and having their discharge ends extended to a point outside said receptacle, a sleeve having a water-chamber inclosing said shaft, a series of tubes carried by said sleeve and communicating with said chamber and having their discharge ends extended to a point outside said receptacle, means for revolving said shaft and said first-named tubes in said receptacle, and water supply and discharge pipes communicating with said shaft and sleeve and with the discharge ends of said tubes, substantially as described.

15. The combination with a casing, of a cream-tank therein and spaced from the walls thereof, a pipe depending within said cream-tank, means for revolving said pipe, hollow agitating-arms carried by said pipe and radiating therefrom within said cream-tank, a sleeve inclosing said pipe and provided with a water-chamber, a series of hollow agitating-arms carried by said sleeve and connected with said chamber, and means for supplying tempering fluids to said pipe and to said chamber, substantially as described.

16. The combination with a tank, of a cream-receptacle arranged therein, a hollow shaft depending centrally within said receptacle, a sleeve provided with a circulating-chamber and embracing said shaft, circulating-pipes connected to the said hollow shaft and the said sleeve, a centrally-arranged discharge-chamber for the said pipes, a ring or flange attached to the said sleeve through which the pipes pass that are connected to the said sleeve, a supplementary ring through which the pipes pass that are connected to said hollow shaft, and means for rotating said pipes and said ring.

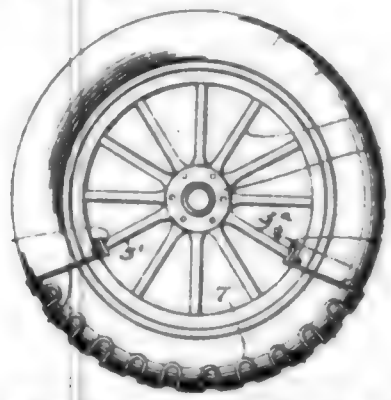
17. The combination with a cream-receptacle, of a series of fixed and movable agitating-tubes suspended within said receptacle, means for revolving said movable tubes in said receptacle, and means for passing a cooling fluid through said fixed and movable tubes.

18. The combination with a cream-receptacle, of a series of fixed and movable agitating-tubes suspended therein, means for pass-

ing a cooling fluid through said fixed and movable tubes, means for revolving said movable tubes in said receptacle, and an exhauster connected with said receptacle.

19. The combination with a cream-receptacle, of a series of fixed and movable agitators suspended within said receptacle, and means for revolving said movable agitators, and means for passing a tempering agent through said movable agitators, substantially as described.

816,182. TIRE-ARMOR. HOMER E. PROUTY, Genoa, Ill. Filed June 26, 1905. Serial No. 266,960.



Claim.—1. A wheel, including a rubber tire provided with interlocking elements arranged upon the periphery of the tire, each element having its ends secured to the spokes of the wheel.

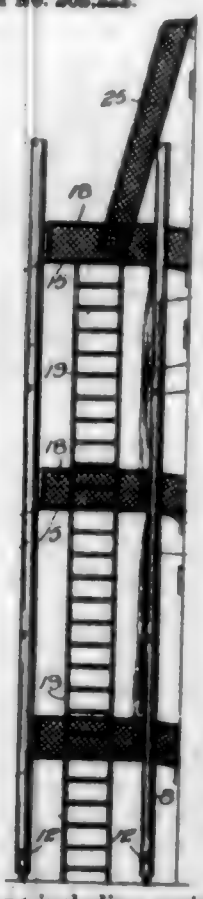
2. A wheel, including a rubber tire provided with elements arranged longitudinally of the tire in pairs, each pair of said elements having its inner longitudinal edge interlocked with the inner longitudinal edge of its companion element, the ends of each element of each pair being secured to the wheel.

3. A wheel, including a rubber tire provided with elements arranged longitudinally of the tire in pairs, each pair of said elements having its inner longitudinal edge interlocked with the inner longitudinal edge of its companion element, the ends of each element of each pair being detachably secured to the wheel.

4. A wheel, including a rubber tire provided with interlocking elements arranged upon the periphery of the tire, each element having its ends detachably secured to the spokes of the wheel.

5. As an article of manufacture, an armor for vehicle-tires consisting of pairs of interlocking elements having flexible material secured thereto at their point of interlocking engagement.

816,183. FIRE-ESCAPE. KATE PUSH, Central City, Colo. Filed Apr. 8, 1904. Serial No. 202,222.



Claim.—A fire-escape including uprights, platforms connected with the uprights, ladders connecting the platforms, a ladder connecting the lowermost platform with the ground, a rod disposed at one edge of each platform, blocks slidably disposed upon the rod, rods connected with the blocks and having hooks at their free ends for engagement with a building, and supplemental platforms removably disposed upon the rods.

816,184. EXPANSIBLE PULLEY. CHARLES J. REED, Philadelphia, Pa., assignor to Reed-Morrill Electric Co., a Corporation of Pennsylvania. Filed June 28, 1904. Serial No. 214,508.



Claim.—1. A pulley, comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, and a ring having projections entering openings in a guide-plate, as set forth.

2. A pulley, comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a ring having projections entering openings in a guide-plate, and a channel-ring surrounding and secured to said ring, as set forth.

3. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, and a tie-ring having projections entering said openings, as set forth.

4. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, a tie-ring having projections entering said openings, and a second ring surrounding and secured to said tie-ring, as set forth.

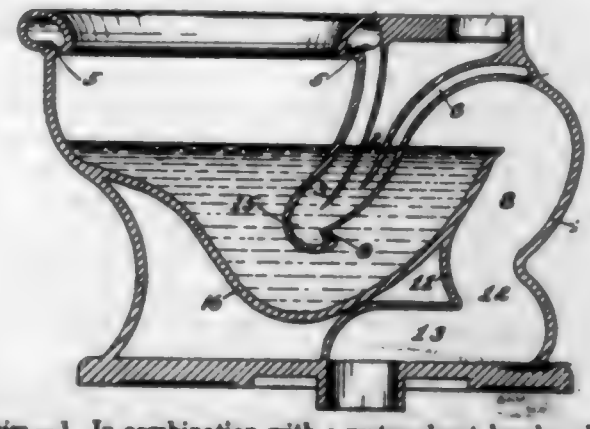
5. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, the adjacent guide-plates of the two drums having openings, a tie-ring having projections entering said openings, and a channel-ring surrounding and secured to said tie-ring, as set forth.

6. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, and a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, as set forth.

7. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, and a second ring surrounding and secured to said tie-ring, as set forth.

8. A pulley having two drums, each drum comprising movable rim-sections and slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a tie-ring having projections entering the slots of the adjacent guide-plates of the two drums, and a channel-ring surrounding and secured to said tie-ring, as set forth.

816,185. WATER-CLOSET. JOHN REHAD, Camden, N. J. Filed May 18, 1904. Serial No. 208,510.



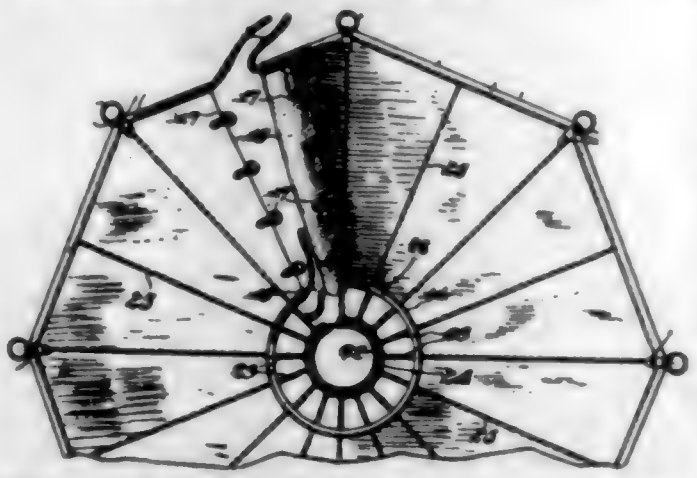
Claim.—1. In combination with a water-closet bowl, a distributing chamber or pocket located centrally within the bowl and beneath the normal water-level in the bowl, a supply-conduit leading

thereto, a jet discharging from near the bottom of said pocket, and a conduit leading from beneath the normal water-level in the pocket to the rim.

2. In combination with a water-closet bowl, a distributing chamber or pocket located centrally within the bowl and beneath the normal water-level in the bowl, a supply-conduit leading thereto, a jet discharging from beneath the normal water-level in the pocket, and a discharge-conduit leading from beneath the normal water-level in the pocket.

3. In combination with a water-closet bowl, a distributing chamber or pocket located centrally within the bowl and beneath the normal water-level in the bowl, a supply-conduit leading thereto, a jet discharging from beneath the normal water-level in the pocket, and a discharge-conduit leading from beneath the normal water-level in the pocket, the partition between the conduit delivering to, and the conduit leading from the pocket, projecting beneath the normal water-level in the pocket to form a water seal therebetween.

816,186. FRUIT-GATHERER. GEORGE H. ROBERTS, Richburg, N. Y. Filed Apr. 6, 1905. Serial No. 254,215.



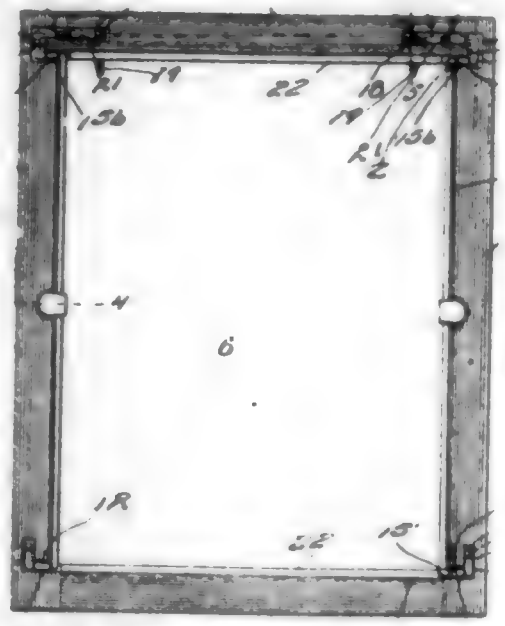
Claim.—1. In a fruit-gatherer, an apron constructed from a plurality of fabric members having their side edges converging and united along all of said edges except one by sewing, a binding-strip folded over the outer ends of the united fabric members and sewed thereto, a rope binder within the folded outer binding-strip, straps folded centrally upon themselves and riveted to the binding-strips at points where the seams between the fabric members occur and extended over said seams and secured by rivets passing through the overlapping portions of the fabric members at the seams, and rings supported by said straps.

2. In a fruit-gatherer, an apron constructed from a plurality of fabric members having their side edges converging and united along all of said edges except one by sewing, a binding-strip folded over the outer ends of the united fabric members and sewed thereto, a rope binder within the folded outer binding-strip, a binding-strip folded over the inner ends of said fabric members and sewed thereto, a rope binder within the inner binding-strip, a band for inclosing the trunk of the tree from which the fruit is to be gathered, guy members connecting said band to said apron at the points where the seams occur, straps folded centrally upon themselves and riveted to the outer binding-strip at points where the radial seams occur and extended over said seams and secured by rivets passing through the overlapping portions at the seams, and rings supported by said straps.

816,187. WINDOW-SASH. LEO B. ROBERT, Rector, Ark. Filed June 10, 1905. Serial No. 264,648.

Claim.—1. The combination with a window-sash including side and end pieces having a continuous rabbet at their inner edges, of rods disposed in the rabbet at opposite sides of the sash and having cranks at their ends, said cranks being pivotally connected with the sash for movement to bring the rods into and out of the rabbet, means for holding the rods in the rabbet and bars disposed in the rabbet at opposite ends of the sash, said rods lying in engagement with the bars to hold the latter in position, said bars and rods being adapted for engagement of a pane of glass between them and the bottom of the rabbet.

2. The combination with a window-sash, of a light removably disposed therein, rods disposed against the light and having cranks at their ends, attaching devices engaged with the cranks and secured to the sash, said cranks being movable pivotally in the attaching devices to bring the rods out of engagement with the light, devices carried by the rods and by which they may be moved and means for holding the rods in engagement with the light to hold the latter in the sash

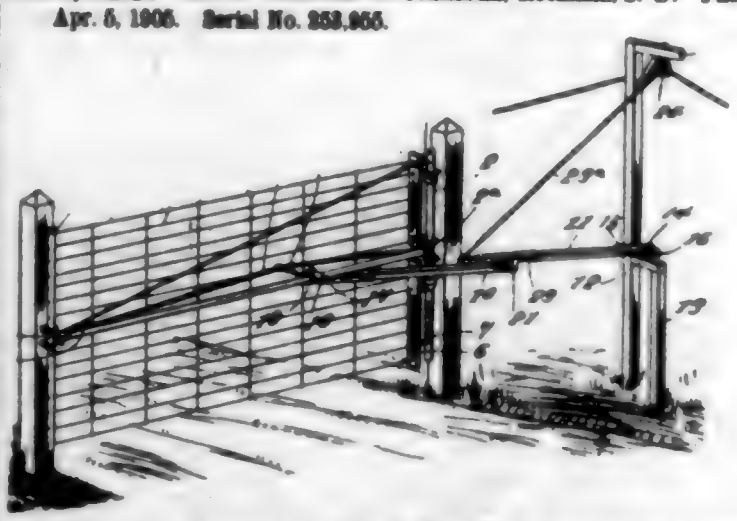


3. The combination with a window-sash adapted for the reception of a pane of glass, of pane-retaining rods pivoted in the frame for movement into and out of operative position, means for holding the rods in operative position and additional spring-actuated means for holding the rods in operative position.

4. The combination with a window-sash adapted for the reception of a pane, of pane-retaining rods mounted in the frame and movable into and out of operative position and pane-retaining bars disposed in the frame, said rods lying in engagement with the bars to hold the latter in operative position when the rods are in such position and means for holding the rods in operative position.

5. The combination with a window-sash having recesses therein and adapted for the reception of a pane, of a pane-retaining rod having angular end portions disposed in the recesses, attaching devices engaged with the angular portions for pivotal movement of these portions therein to bring the rod into and out of operative position, one of the angular portions including a curve extending out of its recess and adapted for engagement to move the rod into and out of operative position.

816,188. GATE. FREDRICK W. SCHAEFER, Rockham, S. D. Filed Apr. 5, 1905. Serial No. 253,955.

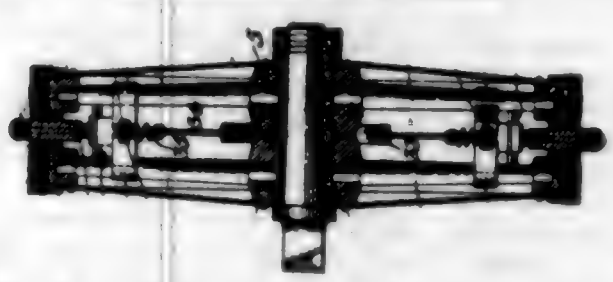


Claim.—1. A device of the class described, comprising a lever fulcrumed at one end, L-shaped plates connected with said lever near the center thereof, a swinging gate having a truss, a link connecting the truss and the L-shaped plates, and operating-ropes connected with said lever, substantially as described.

2. The combination of a swinging gate, a lever fulcrumed at one end, L-shaped plates secured to the lever and having spaced arms, a pintle supported by the arms, a link provided at one end with a strap or yoke embracing the pintle, a hinge connecting the other end of the link to the gates, and operating-ropes connected with the lever, substantially as described.

3. The combination of a swinging gate, a lever fulcrumed at one end, a link hinged at one end to the lever, a slotted plate adjustably secured to the other end of the link and having an eye, a clip mounted on the gate and provided with an eye linked into that of the said plate, and operating means for the lever, substantially as described.

816,189. VEHICLE-WHEEL. JOHN C. SCHLEICHER, Mount Vernon, N. Y. Filed Feb. 22, 1906. Serial No. 302,124.

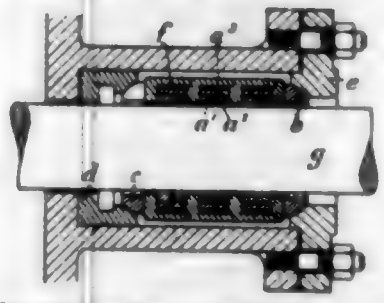


Claim.—1. A vehicle-wheel comprising two side wheels, a wheel located between said side wheels and having a band secured to its under face provided with projections, spring-plates carried on the spokes of the side wheels, seats on said plates engaged by the projections of the band, an eccentrically-mounted ratchet-wheel, a pawl engaging it, a spring-band adapted to be expanded and contracted by said ratchet-wheel and springs supported between said spring-band and spring-plates, substantially as described.

2. A vehicle-wheel comprising two side wheels, a wheel located between said side wheels and having a band secured to its under face provided with projections, spring-plates carried on the spokes of the side wheels and engaged by the projections of the band, an eccentrically-mounted ratchet-wheel, a pawl engaging it, a spring-band adapted to be expanded and contracted by said ratchet-wheel and springs supported between said spring-band and spring-plates, substantially as described.

3. A vehicle-wheel comprising two side wheels, a wheel located between said side wheels and having a band secured to its under face provided with projections, spring-plates carried on the spokes of the side wheels and engaged by the projections of the band, an eccentrically-mounted ratchet-wheel, a pawl engaging it, a spring-band adapted to be expanded and contracted by said ratchet-wheel and yieldable means supported between said spring-band and spring-plates, substantially as described.

816,190. STUFFING-BOX. JOSEF SUSSER, Hörde, Germany. Filed Mar. 28, 1905. Serial No. 252,531.



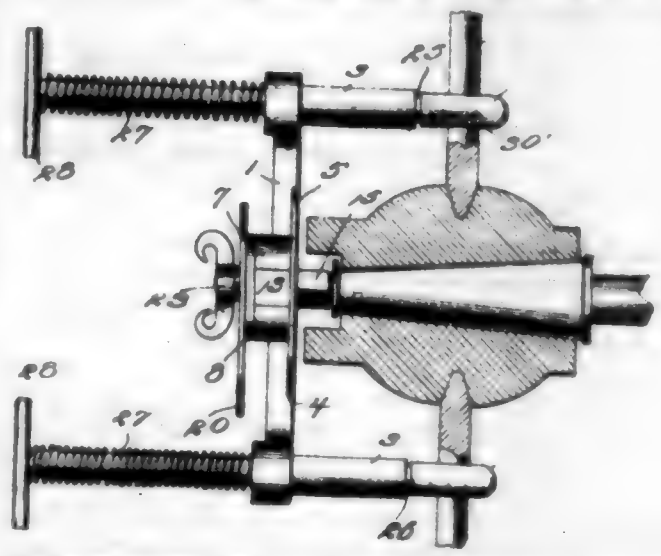
Claim.—1. In combination, a stuffing-box, and a resilient split ring loosely fitting the packed rod and adapted to bear against the packing, said box and ring presenting such conical mutually-contacting surfaces as enable the ring to slide in the box in axial direction, substantially as described.

2. In combination, a stuffing-box, an annular bush at the inner end thereof, and a resilient split ring loosely fitting the packed rod and adapted to bear against the packing, said bush and ring presenting such conical mutually-contacting surfaces as enable the ring to slide in the box in axial direction, substantially as described.

3. In combination, a stuffing-box, a loose collar at the gland end and an annular bush at the cylinder end thereof, and a resilient split ring loosely fitting the packed rod and adapted to bear against the packing, said bush and ring presenting such conical contacting surfaces as enable the ring to slide in the box in axial direction, substantially as described.

816,191. AXLE-NUT WRENCH. CHARLES E. SLATER, Colebrook River, Conn. Filed Dec. 5, 1905. Serial No. 290,360.

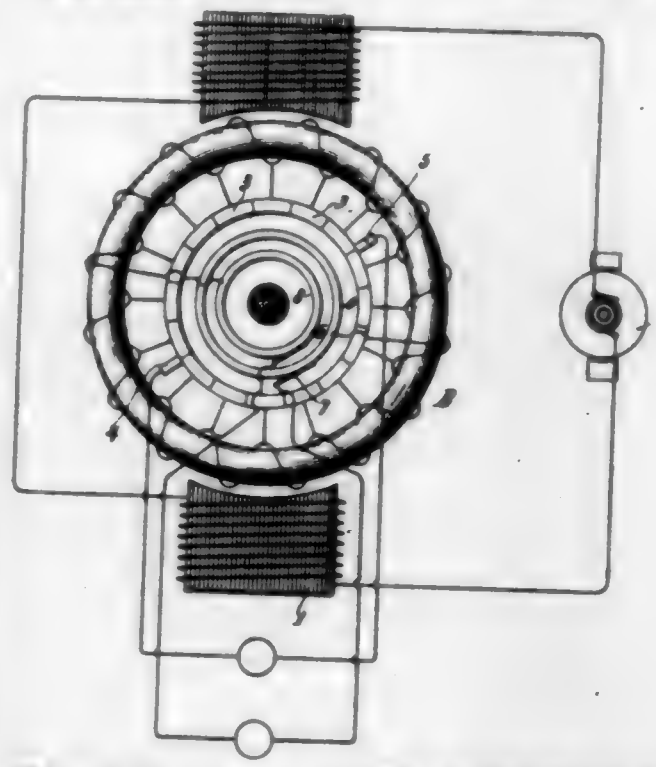
Claim.—1. A device of the character described comprising a cross-head, a plate upon the cross-head, the plate having a longitudinal slot formed therein, guide-blocks crossing the cross-head and secured thereupon and the upper face of said plate, a plate arranged upon the outer faces of the guide-blocks and provided with spaced slots, clamping-jaws protruding through the longitudinal slot of the first-named plate and having their shanks arranged between the aforesaid guide-blocks, each shank having a projection extending through the corresponding slot of the second-named plate, a cam-lever pivotally mounted upon the second-named plate and provided with cam-slots adapted to embrace the corresponding projections of the shanks of the corresponding jaws to move the latter toward and away from each other, means engaged with the projection of one of the jaws for locking the cam-lever against movement, a sleeve disposed at each end of the cross-head, and a rod yieldably mounted in each of said sleeves and provided with a spoke-engaging hook.



2. A device of the character described comprising a cross-head, a sleeve at each end of the cross-head, a guide formed upon the cross-head, nut-engaging jaws having their shanks slidably mounted in said guide, means for moving the jaws toward and away from each other, means for locking the cam-lever against movement, and spoke-engaging rods mounted through said sleeves.

3. A device of the character described comprising a cross-head, a sleeve at each end of the cross-head, a guide mounted upon each cross-head, nut-engaging jaws mounted in the guide with their jaws projecting from one side of the guide and having projections directed from the other side of the guide, a cam-lever pivotally mounted upon the guide and provided with cam-grooves for engagement with the projections of the nut-engaging jaws, means for locking the cam-lever against movement, and yieldable spoke-engaging rods mounted in the aforesaid sleeves.

816,192. ELECTRICAL GENERATOR. WILLIAM STANLEY, Great Barrington, Mass. Filed Feb. 17, 1904. Renewed Nov. 11, 1904. Serial No. 232,294.



Claim.—1. In an electrical generator, the combination of an inducing member, an induced member, means for driving one of said members at a predetermined speed, means for deriving from said induced member alternating current having a frequency independent of the speed, and means for deriving from said induced member alternating current dependent upon said predetermined speed having a frequency different from that of the first-named current, substantially as described.

2. In an electrical generator, the combination of a rotor, a stator, means for supplying the stator with alternating current of a

predetermined frequency, and means for deriving from the rotor alternating currents differing in frequency from one another, substantially as described.

3. In an electrical generator, the combination of means for producing a plurality of magnetic fields differing in phase, an induced member, and means for deriving from said induced member alternating currents differing in frequency from one another, substantially as described.

4. In an electrical generator, the combination of an inducing member, means for producing a plurality of magnetic fields differing in phase, an induced member, means for driving one of said members and means for deriving from said induced member alternating currents differing in frequency from one another, substantially as described.

5. In an electrical generator, the combination of means for producing an electromagnetic rotation of an inducing-field, an induced member and means for deriving from said induced member alternating currents differing in frequency from one another, substantially as described.

6. In an electrical generator, the combination of a rotor, a stator, means for supplying the stator with a plurality of alternating currents of a predetermined frequency, and means for deriving from the rotor alternating currents differing in frequency from one another, substantially as described.

7. In an electrical generator, the combination of a plurality of pairs of electromagnets forming the stator, means for exciting each pair of electromagnets with alternating currents of a predetermined frequency, the current supplying one pair being out of phase with respect to the current supplying another pair, a rotor, means for driving said rotor, and means for deriving from said rotor alternating currents differing in frequency from one another, substantially as described.

8. In an electrical generator, the combination of a plurality of pairs of electromagnets forming the stator, means for exciting said pairs of electromagnets respectively with out-of-phase alternating currents, a rotor, said rotor being provided with means for driving it, a commutator comprising a plurality of sections, connections between the rotor and the sections of the commutator, slip-rings, and suitable connections between potential-differing coils of the rotor and the slip-rings, substantially as described.

9. In an electrical generator, the combination of a plurality of pairs of electromagnets forming the stator, means for exciting said pairs of electromagnets respectively with out-of-phase alternating currents, a rotor comprising a plurality of coils, said rotor being provided with means provided for driving it, a commutator comprising a plurality of sections, connections between the coils and said sections, slip-rings, and suitable connections between potential-differing coils on said rotor and said slip-rings, substantially as described.

10. In an electrical generator, the combination of a plurality of pairs of electromagnets forming the inducing member, means for exciting said pairs of electromagnets respectively with out-of-phase alternating currents, an induced member comprising a plurality of coils, one of said members being adapted to be driven, a commutator comprising a plurality of sections, connections between the coils and said sections, slip-rings, suitable connections between potential-differing coils on said induced member and said slip-rings, and means for driving one of said members at a speed different from that of the electromagnetic rotation of the fields produced by said out-of-phase currents, substantially as described.

11. In an electrical generator, the combination of a plurality of pairs of electromagnets forming the stator, means for exciting said pairs of electromagnets respectively with out-of-phase alternating currents, a rotor comprising a plurality of coils, said rotor being adapted to be driven, a commutator comprising a pluraliy of sections, connections between the coils and said sections, slip-rings, suitable connections between potential-differing coils on said rotor and said slip-rings, and means for driving said rotor at a speed different from that of the electromagnetic rotation of the fields produced by said out-of-phase currents, substantially as described.

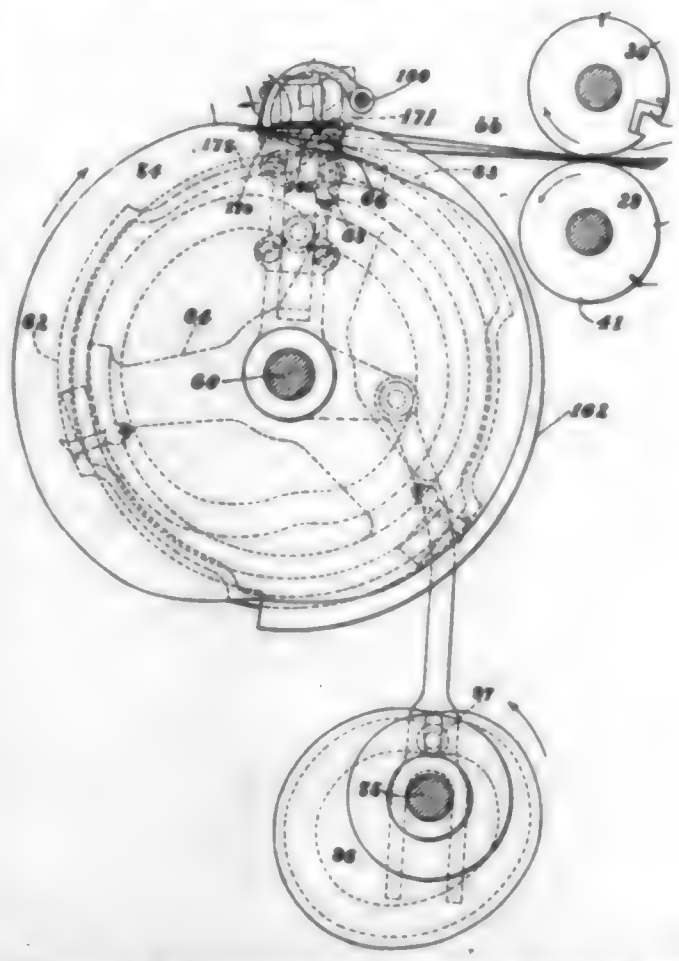
12. In an electrical generator, the combination of an inducing member, an induced member, means for driving one of the said members at a predetermined speed, a plurality of sets of brushes fixed relatively to said inducing member and means for causing said induced member to impress upon said sets of brushes respectively alternating currents differing in frequency, substantially as described.

13. In an electrical generator, the combination of an inducing member, an induced member, means for driving one of said members at a predetermined speed, a plurality of sets of brushes fixed relatively to said inducing member, means for causing said induced member to impress upon one of the said sets of fixed brushes a frequency independent of the speed and means for causing said induced member to impress upon the other set of fixed brushes a different frequency dependent upon the speed, substantially as described.

14. In an electrical generator, the combination of an inducing member, an induced member, a commutator and collecting-rings connected to said induced member, sets of brushes fixed relatively to said inducing member for said commutator and collecting-rings respectively and means for energizing the inducing member by alternating currents of a predetermined frequency.

15. In an electrical generator, the combination of an inducing member, an induced member, a commutator and collecting-rings connected to said induced member, sets of brushes fixed relatively to said inducing member for said commutator and collecting-rings respectively and means for energizing the inducing member by a plurality of multiphase alternating currents of predetermined frequency.

816,193. PAPER-BAG MACHINE. FREDERICK E. STRASBURG, Rumford Falls, Me., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed Mar. 9, 1905. Serial No. 249,267.



Claim.—1. The combination of a revoluble folding-bed, a folding-plate above the folding-bed, side clips on each, means for operating the side clips, means for gripping a bag-blank to the forward edge of the folding-plate, means for oscillating the folding-plate about the axis of the folding-bed with the face of the folding-plate in substantial parallelism with the folding-bed, and means to move the folding-plate up and down with respect of the folding-bed in coaction with the oscillation of said folding-plate.

2. The combination of a folding-bed, a folding-plate above the folding-bed, side clips on each, means for operating the side clips, a gripper-bar yieldably supported on the folding-plate, means for moving the gripper-bar up and down with respect of the folding-plate and in coaction with the forward edge thereof, means for moving the folding-plate up and down and backward with respect of the folding-bed while maintaining the forward edge of said folding-plate at a constant distance from a given line across the folding-bed.

3. The combination of a revoluble folding-bed 63, a folding-plate 150 above the folding-bed and oscillatable about the axis thereof, side clips on the folding-bed and on the folding-plate, means for operating the side clips, a gripper-bar 170 oscillatable up and down with respect of the folding-plate, means to oscillate the gripper-bar and means for moving the folding-plate in the arc of a circle with respect of the folding-bed.

4. The combination of a folding-bed, a folding-plate above the folding-bed, side clips on each, means for operating the side clips, a gripper-bar pivotally mounted on the folding-plate for engagement with the forward edge thereof, means for moving the gripper-bar up

and down with respect of the folding-plate and means for moving the folding-plate up and down and backward with respect of the folding-bed and with the face of the folding-plate in substantial parallelism therewith and with the forward edge of the folding-plate at a constant distance from a given line across the folding-bed.

5. The combination of a revoluble folding-bed having side clips thereon, a folding-plate having side clips thereon, means for operating the side clips on the folding-bed and on the folding-plate, means for gripping the bag-blank to the forward edge of the folding-plate and means for moving the folding-plate backward and upward and then backward and downward with respect of the folding-bed and with the face of the folding-plate in substantial parallelism therewith, and with the forward edge of the folding-plate always at a predetermined distance from a given line across the folding-bed.

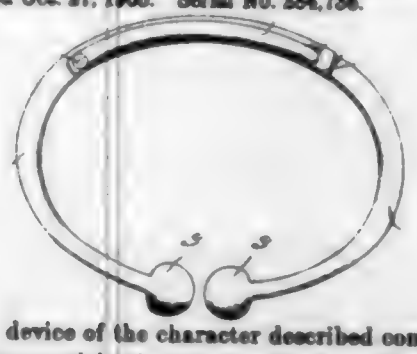
6. The combination of a folding-bed, means to grip the lower plies of a bag-blank thereto, a folding-plate above the folding-bed and means to grip the upper plies of a bag-blank thereto, means to grip the bag-blank to the forward edge of the folding-plate and means to move the folding-plate backward with respect to the folding-bed while maintaining a substantially equal distance between the forward edge of the folding-plate and a given line across the folding-bed, all combined and operating together substantially as described.

7. The combination of a folding-bed, means to grip the lower plies of a bag-blank thereto, a folding-plate above the folding-bed, means to grip the upper plies of a bag-blank thereto, means to grip the bag-blank to the forward portion of the folding-plate and means to cause the folding-plate to travel in the arc of a circle with respect of the folding-bed all combined and operating together substantially as described.

8. The combination of a folding-bed, a folding-plate above the folding-bed, oppositely-disposed side clips on each, means for operating the side clips, means for gripping a bag-blank to the forward portion of the folding-plate and means for moving the folding-plate to cause its front edge to travel in the arc of a circle about a given line across the folding-bed as an axis while maintaining the face of the folding-plate at a constant angle with the folding-bed

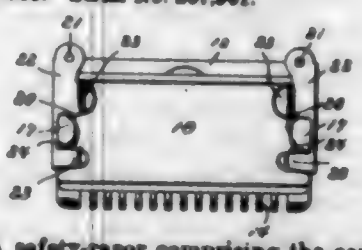
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816,194. **NOSE-RING FOR ANIMALS.** ROBERT I. TRETER, Ellis, Minn. Filed Oct. 27, 1905. Serial No. 284,736.



Claim.—A device of the character described comprising a pair of curved members each having a reduced end resulting in a shoulder having a slot therein, the extremities of each member being beveled for engagement in the slot of the opposite member, the said members also having perforations adapted for registration with each other, and a spring secured upon one of the members and provided with a depending lug for engagement in the perforations of both members to lock them against pivotal movement with respect to each other.

816,195. **SAFETY-RAZOR.** JOSEPH TURNER, Worcester, Mass. Filed July 1, 1905. Serial No. 267,961.



Claim.—1. A safety-razor comprising the combination with a suitable frame or blade-holder provided at one edge with a guard and comprising end bars provided on their front faces with blade-holding lugs, of a thin blade having apertures to register with the said lugs, and swinging clamps pivoted to said frame and by which said blade may be removably attached to the said frame or blade-holder.

2. A safety-razor comprising the combination with a suitable frame or blade-holder provided at one edge with a guard and comprising end bars provided on their front faces with blade-holding lugs, of a thin blade having apertures to register with the said lugs, and swinging clamps pivoted to said frame and by which said blade may be removably attached to the said frame or blade-holder, each of said swinging clamps comprising one or more fingers, to overlap the blade, and a flange to engage the rear side of the frame or blade-holder.

3. A safety-razor comprising the combination with a suitable frame or blade-holder provided at one edge with a guard and comprising end bars provided on their front faces with blade-holding lugs, of a thin blade having apertures to register with the said lugs, and swinging clamps pivoted to said frame and by which said blade may be removably attached to the said frame or blade-holder, said frame or blade-holder comprising a curved back-plate to which a handle is removably attached.

4. A safety-razor frame or blade-holder formed from a single piece of sheet metal and comprising a top bar, side bars with blade-holding lugs or projections on their front faces, a comb or guard, and a curved and slotted back-plate, combined with a thin blade having notches to receive said lugs or projections, swinging clamps, pivoted to said frame, to removably hold said blade in place, and a handle removably attached to said back-plate.

5. A safety-razor frame or blade-holder formed from a single piece of sheet metal and comprising a top bar, side bars with blade-holding lugs or projections on their front faces, a comb or guard, and a curved and slotted back-plate, combined with a thin blade having notches to receive said lugs or projections, pivoted clamps at the ends of said frame, to removably hold said blade in place, and a handle adjustably and removably attached to said back-plate.

6. In a safety-razor, the combination with a sheet-metal frame comprising the top bar 12, the side bars 13 having lugs on their front faces, the comb or guard 14 and the curved and slotted back-plate 15, of a thin blade having notches at its ends registering with said lugs, the swinging clamps 22 pivoted to the upper corners of said frame and having fingers to overlap said blade and recessed to receive said lugs, and a handle adjustably secured to said curved and slotted back-plate.

7. In a safety-razor, the combination with a sheet-metal frame comprising the top bar 12, the side bars 13 having the integral struck-up lugs 17 on their front faces, the comb or guard 14 and the integral-curved back-plate 15 provided with the slot 16, of a blade having notches registering with said lugs, swinging clamps 22 pivoted to said frame and having flanges 25 to engage the back of said frame, fingers 23 to overlap the front of the blade and notches to receive said lugs 17, and a handle 26 clamped to said back-plate 15 and angularly adjustable relative to said blade in the slot 16 of said back-plate.

816,196. **PULLEY-BLOCK.** WILLARD S. TUTTLE, Brooklyn, N. Y. Filed Dec. 29, 1905. Serial No. 293,776.



Claim.—1. A pulley having concave end faces and a central opening, a one-piece sheet-metal pulley-block having opposite sides depressed inwardly and entering the recesses in opposite ends of the pulley, said depressed portions of the block having apertures alined with the central aperture in the pulley, said pulley-blocks extending across diametrically opposite faces of the pulley and having its ends abutting against each other.

2. A pulley having concave end faces and a central opening, a one-piece sheet-metal pulley-block having its intermediate portion extending across one face of the pulley and its ends extending across the ends of the pulley and inwardly toward each other at the opposite face of the pulley, said ends abutting against each other, apertures in the opposite arms of the pulley-block, a support at one side of the block provided with an aperture, and a bolt passed through the support, and apertures in the pulley, and a bolt for holding the pulley in the block and screwing the block to the support.

3. A one-piece sheet-metal pulley-block bent into the form of a rectangular loop and having its ends bent inwardly and abutting against each other, whereby the opposite arms of the block may be sprung apart to receive the pulley, the meeting ends serving to hold the arms a fixed distance apart.

4. A one-piece sheet-metal pulley-block having its opposite ends bent in parallel planes and its extremities, abutting against each other and separable at the meeting line.

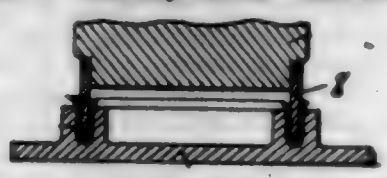
5. A one-piece sheet-metal pulley-block bent into the form of a loop and having its ends offset inwardly and abutting against each

other to limit the approach of the sides toward each other, said sides having portions thereof depressed inwardly and provided with central apertures.

6. A one-piece sheet-metal pulley-block having opposite arms or sides spaced apart and terminating in inturned ends, abutting against each other, said arms or sides having portions thereof depressed inwardly and provided with central apertures.

7. A one-piece pulley-block bent into the form of a loop having its ends abutting at one side of the pulley and its sides depressed inwardly, forming cones which abut end to end centrally within the pulley.

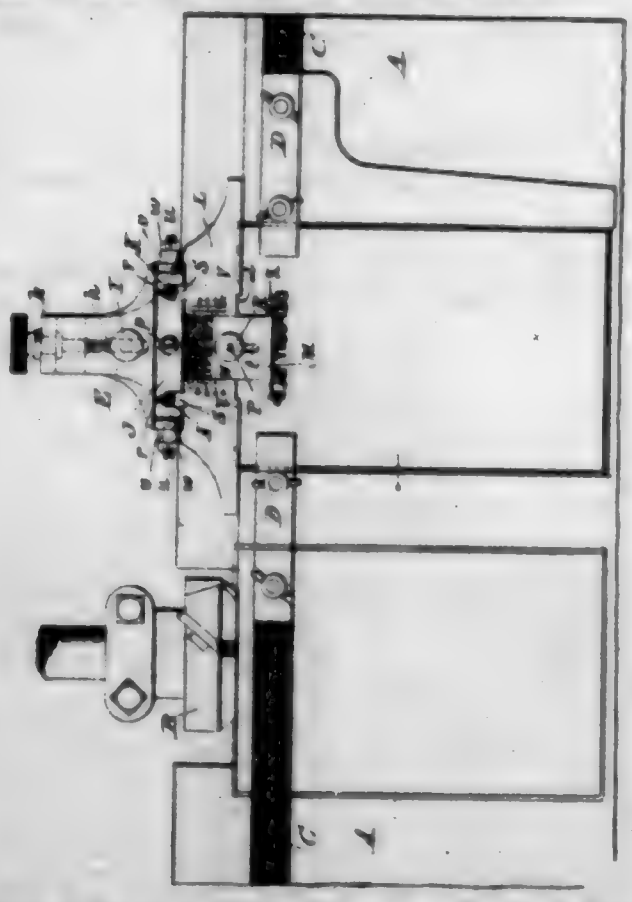
816,197. METHOD OF MAKING LEATHER PACKING-RINGS FOR HYDRAULIC PUMPS AND THE LIKE. JOHN B. WALSH, Providence, R. I. Filed May 24, 1905. Serial No. 262,083.



Claim.—1. A method of forming packing-rings which consists in bending a longitudinal blank of flexible material into the form of a ring and securing the meeting ends together, then spreading the upper portion of the ring and bending it outwardly and downwardly until the two edges of the ring are in the same plane and the ring is of concave-convex shape in cross-section, then upsetting the ring from the convex side downwardly to U shape.

2. The method of forming packing-rings, which consists in upsetting a flexible concavo-convex annulus into a substantially U shape, by pressure applied simultaneously throughout the circumference of the ring at substantially the center of the convex side, and between the center and both edges of the concave side.

816,198. METAL-CUTTING MACHINE. FERDINAND WHEEL, Brooklyn, N. Y. Filed Jan. 14, 1905. Serial No. 241,130.



Claim.—1. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage having an edge in line with the cutter and also having an extension provided with an edge arranged parallel to the first-mentioned edge.

2. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a portion having an edge in line with the cutter, an extension adjustable with respect to said portion and having an edge arranged parallel to the first-mentioned edge, and means for adjustably fixing the extension with respect to the said portion.

3. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a portion having an edge in line with the cutter, and also having a scale, an extension adjustable with respect to said portion and arranged to cooperate with said scale and having an edge arranged parallel to the first-mentioned edge, and means for adjustably fixing the extension with respect to the said portion.

4. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a portion having an edge in line with the cutter, and also having a way disposed at right angles to said edge, an extension adjustable in the way of the said portion and having an edge arranged parallel to the first-mentioned edge, and means for adjustably fixing the extension with respect to the said portion.

5. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a portion having an edge in line with the cutter, and also having a way at right angles to said edge and a scale at one side of the way, an extension adjustable in the way of the said portion and having an edge arranged parallel to the first-mentioned edge, and means for adjustably fixing the extension with respect to the said portion.

6. In a metal-cutting machine, the combination of a frame, a cutter, a gage located at one side of the cutter and having a vertically-swinging, spring-supported leaf provided with an edge in line with the cutter, and work-holding means movable parallel to the cutter and said edge of the leaf.

7. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a vertically-swinging, spring-supported leaf provided with an edge in line with the cutter, an extension adjustable with respect to said leaf and having an edge arranged parallel to the edge thereof, and means for adjustably fixing the extension with respect to the leaf.

8. In a metal-cutting machine, the combination of a frame, a cutter, work-holding means movable parallel to the cutter, and a gage comprising a body connected to the frame, a horizontally-swinging bar adjustably fixed on the body, a vertically-swinging, spring-supported leaf carried by said bar and provided with an edge in line with the cutter, an extension adjustable with respect to said leaf and having an edge arranged parallel to the edge thereof, and means for adjustably fixing the extension with respect to the leaf.

9. In a metal-cutting machine, the combination of a frame, a cutter, and a gage having an edge in line with the cutter and another edge adjustable laterally with respect to the first-mentioned edge.

10. In a metal-cutting machine, the combination of a frame, a cutter, and a gage having a vertically-swinging, spring-supported portion provided with an edge in line with the cutter, and also provided with another edge adjustable laterally with respect to the first-mentioned edge.

11. As an article of manufacture, a gage comprising a body, a horizontally-swinging bar adjustably fixed on the body, a vertically-swinging, spring-supported leaf carried by said bar and provided with an edge, an extension adjustable with respect to said leaf and having an edge arranged parallel to and movable laterally toward and from that of the leaf, and means for adjustably fixing the extension with respect to the leaf.

12. In a metal-cutting machine, the combination of a frame, a cutter, and a gage located at one side of the cutter and having a vertically-swinging, spring-supported leaf provided with an edge in line with the cutter.

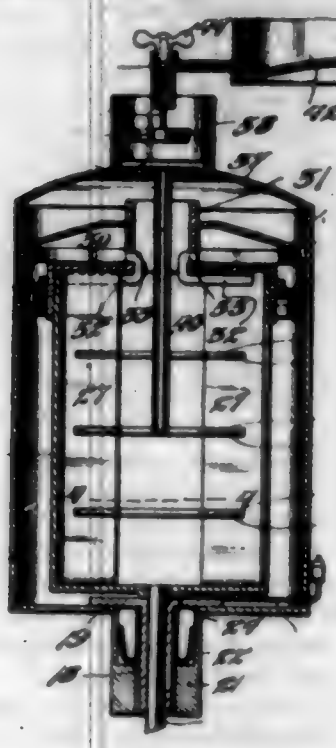
13. In a metal-cutting machine, the combination of a frame, a cutter, and a gage having an edge in line with the cutter, a recess in said edge, and another edge adjustable laterally with respect to the first-mentioned edge and arranged to seat in the recess thereof.

14. In a metal-cutting machine, the combination of a frame, a cutter, and a gage having a vertically-swinging, spring-supported leaf provided with an edge in line with the cutter and a recess in said edge, and also having an extension provided with an edge movable laterally toward and from the first-mentioned edge and arranged to seat in the recess thereof.

816,199. CENTRIFUGAL CREAM-SEPARATOR. FRED A. WEST, Portage, Wis. Filed Jan. 20, 1905. Serial No. 242,014.

Claim.—A milk-separating apparatus having a rotary receptacle, a plurality of vertical blades arranged adjacent to the periphery of said receptacle and having slots extending outwardly from their inner edges, the outer edges of said blades terminating adjacent to the inner periphery of the receptacle; and a plurality of horizontally-disposed collars fitted into the slots of said blades, the outer edges of said collars terminating short of the outer edges of said blades.

the said collars constituting the sole means for holding the blades in assembled position and the central portion of the receptacle being in free communication with the spaces between the collars.



816,200. MAIL-BOX. WILLIAM A. WERELEY, Indianapolis, Ind. Filed Sept. 1, 1904. Serial No. 222,913.



Claim.—1. The combination, with a mail-box, of a target-support carried thereby and having an upturned end, and a target mounted thereon and having a forked bearing which may be slipped astride said upturned end, whereby the target may be maintained in an upright position.

2. The combination, with a mail-box, of a target-support consisting of a round rod pivotally secured to the body of said box and having an upturned end, and a target mounted thereon and having a forked bearing which may be slipped astride said upturned end, whereby the target may be maintained in an upright position.

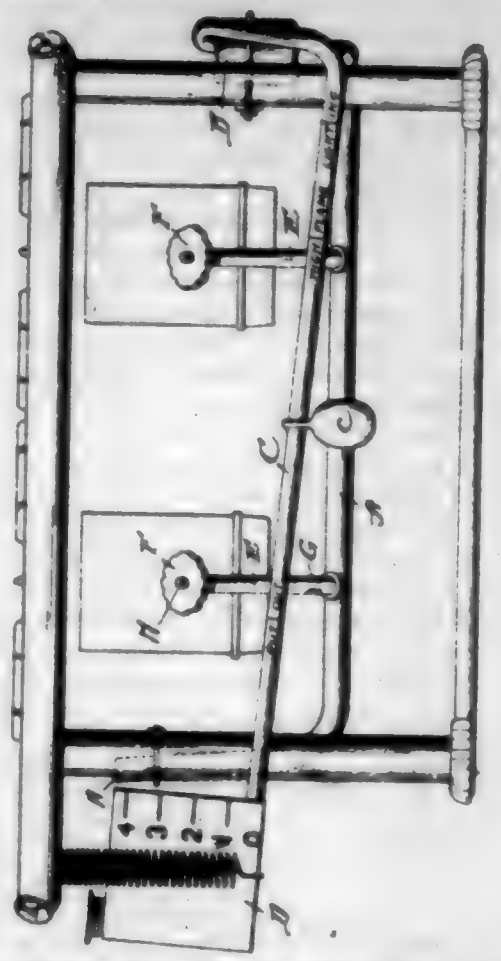
3. The combination, in a mail-box, of a body, the door, suitable fastening devices for locking the door closed against the body, a target-support carried thereby and having an upturned end, and a target mounted thereon and having a forked bearing which may be slipped astride said upturned end and whereby the target may be maintained in an upright position.

816,201. OIL-STOVE. WILLIAM H. WILDER, Gardner, Mass. Filed Oct. 31, 1903. Serial No. 179,344.

Claim.—1. In an oil-stove, in combination a burner-bowl, mean for supplying fuel, an oblique pipe leading to the burner-bowl and connected at its lower end to the fuel-supply means, a valve carried by the oblique pipe, said oblique pipe having the burner-bowl mounted directly thereon and communicating directly therewith at a point above the seat of the valve, an end of said oblique pipe being above the top of the bowl, substantially as described.

2. In an oil-stove, and in combination, a burner-bowl, means for supplying fuel, an oblique pipe leading to the burner-bowl and connected at its lower end to the fuel-supply means, a valve carried by the oblique pipe, said oblique pipe at a point above the valve-seat being directly connected to the burner-bowl at one side of the bottom thereof, communicating directly therewith and extending beyond the point of direct connection with the said burner-bowl, substantially as described.

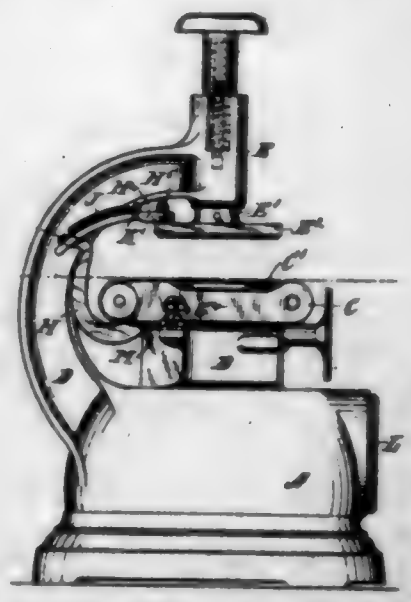
3. In an oil-stove, the combination of burners suitably supported, a movable balanced reservoir having a maintained oil-level, and means for changing the position of the reservoir and its oil-level bodily relatively to the burners.



4. In an oil-stove, the combination of a burner, a balanced reservoir, and a movable weight for varying the normal position of the reservoir.

5. In an oil-stove, the combination of a burner, a balanced reservoir having a discharge-pipe C and a sliding weight mounted on said pipe for varying the normal position of the reservoir.

816,202. TIME-PRINTING AND NUMBERING MACHINE. JOHN C. WILSON, Boston, Mass. Filed May 20, 1903. Serial No. 158,429.



Claim.—1. In a machine for simultaneously printing the time of day, and a consecutive number, a time-printing device actuated to predetermined rotation in a horizontal plane, mechanism whereby said time-printing device may be continuously rotated at a uniform velocity, a consecutive-numbering machine, the printing parts of which are adapted to be moved or rotated in a vertical plane combined with a movable platen adapted to move or rotate the printing parts of the consecutive-numbering device, and to take an imprint from the said time-printing device and the said consecutive-number-printing device simultaneously, the said time-printing device and the said consecutive-number-printing device being mounted and attached to a common supporting frame or base.

2. In a machine for simultaneously printing the time of day, the date and a consecutive number, a time-printing device actuated to predetermined rotation in a horizontal plane, mechanism whereby

said time-printing device may be continuously rotated at a uniform velocity, a consecutive-numbering device, and a date-printing device, the printing parts of which are adapted to be rotated in a vertical plane combined with a movable platen adapted to move or rotate the printing parts of the consecutive-numbering device and to take an imprint from the said time-printing device, the said date-printing device and the said consecutive-number-printing device simultaneously, the said time-printing device, the said consecutive-number-printing device and the said date-printing device being mounted upon and attached to a common supporting frame or base.

3. In a machine for simultaneously printing the time of day, the date and a consecutive number, a time-printing device actuated to predetermined rotation in a horizontal plane, mechanism whereby said time-printing device may be continuously rotated at a uniform velocity, a consecutive-numbering device, the printing parts of which are adapted to be moved or rotated in a vertical plane, a date-printing device, the printing parts of which are adapted to be rotated in a vertical plane at right angles to the said number-printing parts of the said consecutive-numbering device, combined with a movable platen adapted to move or rotate the printing parts of the consecutive-numbering device and to take an imprint from the said printing device, the said date-printing device and the said consecutive-number-printing device simultaneously, the said time-printing device, the said consecutive-number-printing device and the said date-printing device being mounted upon and attached to a common supporting frame or base.

4. In a machine for simultaneously printing the time of day and a consecutive number, a time-printing device actuated to predetermined rotation on one plane, mechanism whereby said time-printing device may be continuously rotated at a uniform velocity, a consecutive-number-printing device adapted to be rotated in a different plane, combined with a movable platen adapted to move or rotate the printing parts of the consecutive-numbering device and to take an imprint from the said time-printing device and the said consecutive-number-printing device simultaneously, the said time-printing device and the said consecutive-number-printing device being mounted and attached to a common supporting frame or base.

5. In a machine for simultaneously printing the time of day, the date, and a consecutive number, a time-printing device actuated at predetermined rotation in one plane, mechanism whereby said time-printing device may be continuously rotated at a uniform velocity, a date-printing device and a consecutive-number-printing device adapted to be rotated in a different plane from the said time-printing device, combined with a movable platen adapted to move or rotate the printing parts of the consecutive-numbering device and to take an imprint from the said time-printing device, the said date-printing device and the said consecutive-number-printing device simultaneously, the said time-printing device, the said consecutive-number-printing device and the said date-printing device being mounted upon and attached to a common supporting frame or base.

6. In a machine for simultaneously printing the time of day, and a consecutive number, a time-printing device and a consecutive-numbering device mounted upon and attached to a common supporting frame or base mechanism whereby said time-printing device may be rotated at a uniform velocity, a movable platen for simultaneously taking an imprint from both devices, combined with a pivoted lever coöperating with a projecting finger at one end attached to the said platen and coöperating at the other end with the said consecutive-numbering device to change the position of its printing parts by the movement of the said platen.

7. In a machine for simultaneously printing the time of day and a consecutive number, a time-printing device mechanism whereby said time-printing device may be rotated at a uniform velocity, and a consecutive-number-printing device mounted upon and attached to a common frame or base, a movable platen for simultaneously taking an imprint from both printing devices combined with a pivoted operating-lever with a short and a long arm from the said consecutive-number-printing device, the short arm engaging with the pawl-and-ratchet unit of the printing-wheel of the said number-printing device, and a long arm engaging with a projecting finger or arm on the said platen to change the position of the printing parts of the said consecutive-number-printing device by the movement of the said platen.

8. In a machine for simultaneously printing the time of day, and a consecutive number, a time-printing device and a consecutive-numbering device mounted upon and attached to a common supporting frame or base mechanism whereby said time-printing device may be rotated at a uniform velocity, a movable platen for simultaneously taking an imprint from both devices, combined with a pivoted lever coöperating with a projecting finger at one end attached to the said platen and coöperating at the other end with the said consecutive-numbering device to change the position of its printing parts by the movement of the said platen, and means for limiting downward movement of said pivoted lever.

9. In a machine for simultaneously printing the time of day and a consecutive number, a time-printing device, and a consecutive-number-printing device mounted upon and attached to a common frame or base mechanism whereby said time-printing device may be rotated at a uniform velocity, a movable platen for simultaneously taking an imprint from both printing devices combined with a pivoted operating-lever with a short and a long arm from the said consecutive-number-printing device, the short arm engaging with the pawl-and-ratchet unit of the printing-wheel of the said number-printing device, a long arm engaging with a projecting finger or arm on the said platen to change the position of the printing parts of the said consecutive-number-printing device by the movement of said platen, and means for limiting the downward movement of said pivoted lever.

10. In a machine for simultaneously printing the time of day and a consecutive number, a time-printing device and a consecutive-numbering device mounted upon and attached to a common supporting frame or base mechanism whereby said time-printing device may be rotated at a uniform velocity, a movable platen for simultaneously taking an imprint from both devices, combined with a pivoted lever coöperating with a projecting finger at one end attached to the said platen and coöperating at the other end with the said consecutive-numbering device to change the position of its printing parts by the movement of the said platen, and a stop-pin for limiting the downward movement of said pivoted lever.

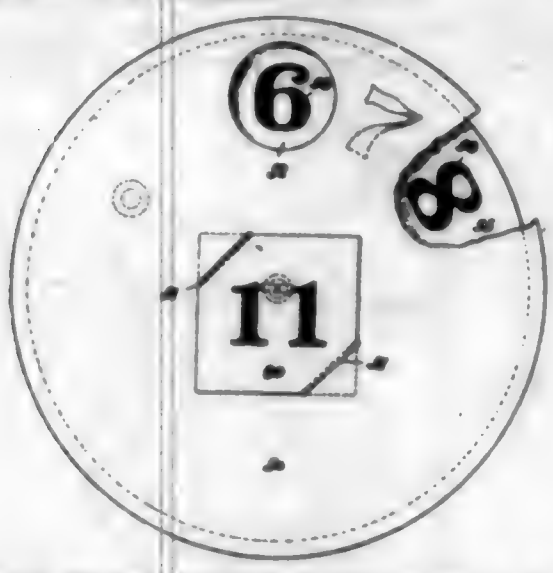
11. In a machine for simultaneously printing the time of day and a consecutive number, a time-printing device, and a consecutive-number-printing device mounted upon and attached to a common frame or base mechanism whereby said time-printing device may be rotated at a uniform velocity, a movable platen for simultaneously taking an imprint from both printing devices combined with a pivoted operating-lever with a short and a long arm from the said consecutive-number-printing device, the short arm engaging with the pawl-and-ratchet unit of the printing-wheel of the said number-printing device, a long arm engaging with a projecting finger or arm on the said platen to change the position of the printing parts of the said consecutive-number-printing device by the movement of the said platen, and a stop-pin for limiting the downward movement of said pivoted lever.

816,203. **WRENCH.** JOSEPH G. WILSON, Neosho Falls, Kans. Filed July 11, 1905. Serial No. 269,217.



Claim.—In a wrench, the combination of a sliding jaw, a rack-bar associated therewith, a ring for moving said rack-bar, the ends of said ring being constructed to impinge said rack-bar to limit the rotation of said ring, substantially as described.

816,204. **DEVICE FOR TEACHING THE FUNDAMENTAL OPERATIONS WITH NUMBERS.** CLARA ZAHN, Newark, N. J. Filed Dec. 5, 1905. Serial No. 290,357.



Claim.—1. The improved teaching apparatus herein described, comprising a front plate and a rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

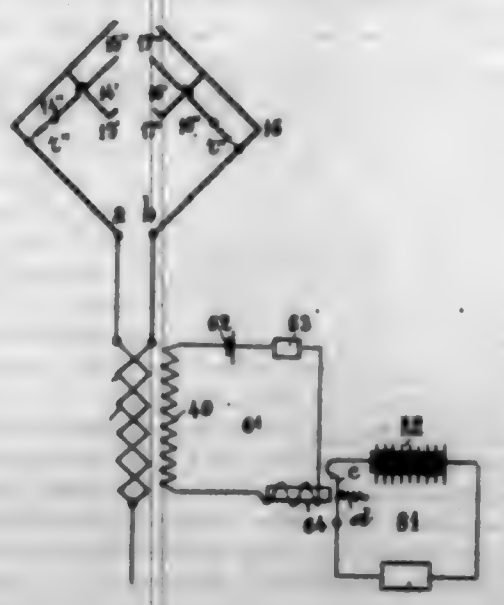
2. The improved teaching apparatus herein described, comprising a front plate and a handled rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

3. The improved teaching apparatus herein described, comprising a slitted or slotted front plate the slits of said front plate adapted to hold a digit-card, and a rear plate pivotally joined together, the front plate having a separable digit-card at the center and having an opening eccentric to said center, and the rear-plate card having a series of numbers applied to the front thereof and adapted to be brought into view at said opening, substantially as set forth.

4. The improved teaching apparatus herein described, comprising a front plate having a separable digit-card thereon and having an opening eccentric to its center and having an index-mark adjacent to said opening at the back of the front plate and a rear card or plate having a series of numbers adapted to be brought one after another into view at said opening and at its back having a series of numbered index-marks adapted to be brought into coincidence with the index-mark at the rear of the front plate substantially as set forth.

5. The improved teaching apparatus, comprising a front plate and a rear plate pivotally fastened together, the front plate having an opening eccentric to the pivotal connection and slits or slots at opposite sides of the pivotal connection, and the rear plate having numbers on both sides thereof, corresponding numbers being in position directly opposite one another, and also having a handle, and a digit-card separably inserted in said slits or slots.

816,205. **WIRELESS-TELEGRAPH RECEIVING APPARATUS.** ALESSANDRO ARTOM, Turin, Italy. Filed Sept. 7, 1905. Serial No. 277,424.



Claim.—1. A receiver for circularly or elliptically polarized electromagnetic waves, comprising aerials angularly disposed to each other, an electromagnetic wave-detector and means to operate and influence the detector, said means including a device to eliminate the action of waves not polarized circularly or elliptically on the detector, substantially as described.

2. In a receiver for elliptically or circularly polarized electromagnetic waves, aerials angularly disposed to each other, an electromagnetic wave-detector, means to eliminate the action of waves not polarized circularly or elliptically, said means in inductive relation to the detector, substantially as described.

3. In a receiver for elliptically or circularly polarized electromagnetic waves, the combination with grounded aerials angularly disposed to each other, of means to eliminate the action of waves not polarized circularly or elliptically, and a receiving instrument controlled by induced oscillation from said means, substantially as described.

4. In a receiving-station for circularly or elliptically polarized electromagnetic waves, the combination with grounded aerials angularly disposed to each other, of primary coils of a transformer between the ends of the aerials angularly disposed to each other and the ground, said coils arranged to be traversed by oscillations differing in direction, and a secondary coil in inductive relation thereto, said primary coil forming part of a circuit controlling a receiving instrument, substantially as described.

5. In a receiving-station for circularly or elliptically polarized electromagnetic waves, the combination with a pair of grounded aerials angularly disposed to each other, of a primary coil inserted between the ground and each aerial, said coils in axial alinement, a secondary coil in inductive relation to the primary coils, said primary coil forming part of a suitable circuit controlling a receiving instrument, substantially as described.

6. In a receiver for circularly or elliptically polarized electromagnetic waves, the combination with a pair of grounded aerials angularly disposed to each other, of a primary coil inserted between each aerial and the ground, and a secondary coil in inductive relation to the primary coils and all of the coils in axial alinement, said secondary coil forming part of a suitable electric circuit controlling a receiving instrument, substantially as described.

7. The combination with a pair of grounded aerials angularly disposed to each other, of a closed circuit in inductive relation to the grounded circuit of each aerial, each of said closed circuits containing a capacity and a primary coil, the two primary coils of the closed circuits arranged to carry oscillations in opposite directions, and a secondary coil in adjustable inductive relation to both primary coils and forming part of a suitable circuit controlling a receiving instrument, substantially as described.

8. The combination with two grounded aerials angularly disposed to each other, of a primary coil between each aerial and the ground, an ohmic resistance and a capacity in parallel with each coil, said coils arranged to carry oscillations in opposite directions, and a secondary coil in inductive relation to the primary coils and forming part of a suitable circuit controlling a receiving instrument, substantially as described.

9. The combination with two grounded aerials angularly disposed to each other, of a primary coil between each aerial of the ground, an ohmic resistance capable of being varied and a capacity also capable of being varied in parallel with each coil, said coils arranged to carry oscillations in opposite directions and a secondary coil in inductive relation to both primary coils and forming part of a suitable circuit controlling a receiving instrument, substantially as described.

10. The combination with a pair of aerials angularly disposed to each other, of a primary coil connected to each aerial and said primary coils connected together and grounded, said coils arranged to be traversed by oscillations in opposite directions, a closed circuit containing a source of electricity, a detector of electromagnetic waves, a translating device and a secondary coil, said secondary coil in inductive relation to both of the primary coils, an independent circuit closed by the translating device and a receiving instrument in said independent circuit, substantially as described.

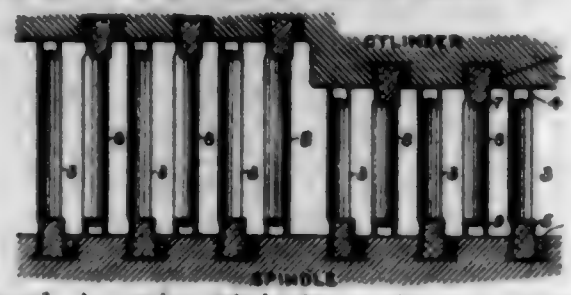
11. The combination with a pair of aerials angularly disposed to each other, of a primary coil connected to each aerial and said primary coils wound in opposite directions and grounded, a closed circuit, a battery, a coherer, an electromagnet and a secondary coil all in series in said circuit, said secondary coil in inductive relation to both of the primary coils, a normally open circuit containing a receiving instrument, said circuit closed by the electromagnet, substantially as described.

816,206. HOOK. MONTGOMERY M. BAIRD, Scranton, Pa., assignor to The Bi-Lock Hook and Eye Company, Rochester, N. Y. Filed May 17, 1905. Serial No. 260,856.



Claim.—A hook designed to engage an eye and comprising duplicate parallel strands of material joined at their outer ends, and a tongue arranged intermediate said strands, said tongue being formed with offsets arranged to project toward each other and being terminally secured to the bend joining the outer ends of said duplicate strands.

816,207. STEAM-TURBINE. CHARLES F. BARTH, Milwaukee, Wis., assignor to Allis-Chalmers Company, Milwaukee, Wis., a Corporation of New Jersey. Filed Sept. 14, 1903. Serial No. 173,369.



Claim.—1. A securing-strip having an edge at an intermediate flow portion.

2. A metallic securing-strip having a force-applying face, and a metal-flow edge near the force-applying face.

3. A metallic securing-strip having a beveled side and a pair of parallel engaging sides.

4. A turbine-blade-ring-securing strip having a beveled side and a pair of parallel engaging sides.

5. A member having a groove, a strip entering said groove and leaving a parallel-sided space in the groove, and a securing-strip having a beveled side in the parallel-sided space.

6. A member having a groove provided with a recess, a rigid strip entering the groove and leaving a parallel-sided space, and a close-slip-fit securing-strip in said parallel-sided space and adjacent said recess.

7. A member having a groove with a perpendicular side, a strip entering said groove leaving a parallel-sided space, and a securing-strip non-rectangular in cross-section in said space.

8. A member having a groove with a perpendicular side, a strip entering said groove and leaving a parallel-sided space, and a malleable securing-strip having rounded portions whereby the strip may be readily forced into locking position in said space.

9. A member having a groove provided with a locking-recess, a strip having a perpendicular side entering said groove and leaving a parallel-sided space adjacent said recess, and a malleable securing-strip in said space.

10. A member having an endless groove, a rigid strip entering said groove and leaving a parallel-sided space, and a securing-strip having a beveled portion whereby the strip may be readily forced into locking position in said space.

11. A rotary member having a peripheral groove provided with a recess, a strip entering said groove and leaving a parallel-sided space, and a malleable securing-strip having a bevel terminating near the recess whereby the strip may be forced more readily into locking position in said space.

12. A rotor having a groove provided with a recess, a blade-holding ring entering said groove and leaving a parallel-sided space, and a securing-strip having a bevel terminating near the recess, said strip having a close slip fit in said space.

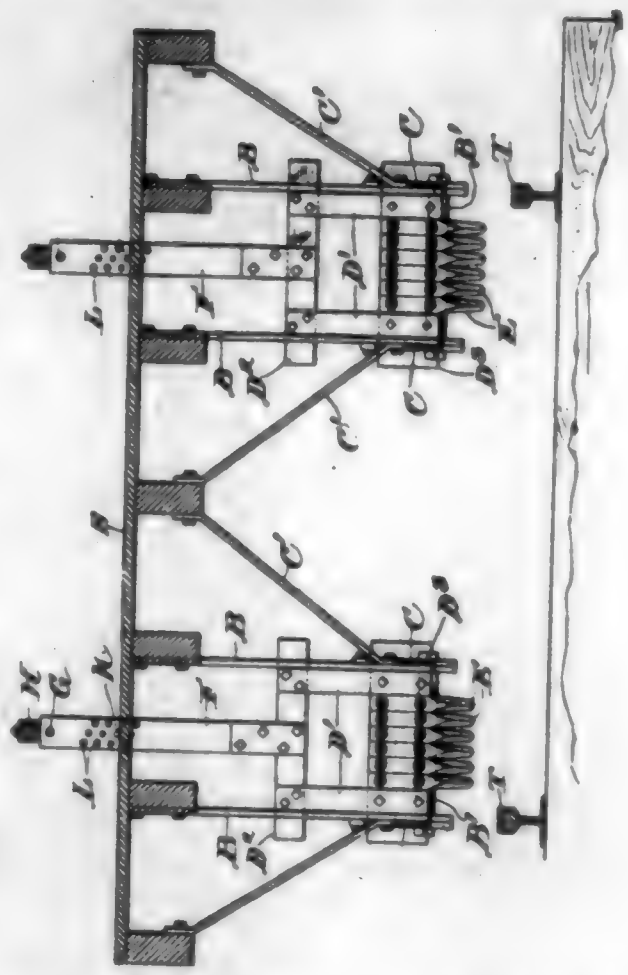
13. A rotor having a peripheral groove provided with a continuous recess in a side wall, a blade-holding ring entering said groove and leaving a parallel-sided space, and a malleable securing-strip having four obtuse angles whereby the strip may be forced more readily into locking position in said space.

14. A rotor having a peripheral groove formed with a tapering side and a perpendicular side, there being a recess in the perpendicular side, a blade-holding ring fitting against the tapering side, and a soft-metal securing-strip having an edge at the recess in the perpendicular side of the groove.

15. A rotor having a groove with a radial side and a recess, a blade-holding ring in said groove and securing means adjacent said recess for said ring.

16. A rotor having a groove with a radial side and a locking-recess, blades mounted in said groove and means adjacent said recess to rigidly secure the blades.

816,208. TRACK-CLEARING DEVICE. CHARLES C. BATTEY, Concord, N. H. Filed May 27, 1905. Serial No. 262,694.



Claim.—1. In a track-clearing device for railways, the combination of a vehicle-body, a frame secured thereto, a cutter-head mounted in the frame and a cutter secured to the cutter-head and consisting of a number of gouges placed side by side, each of said gouges inclined downwardly and forwardly, beveled with substantial symmetry on each side from front to rear to form a point, and beveled from the point upwardly on the rear side of the gouge to afford clearance, the points of said gouges being spaced apart.

2. In a track-clearing device, the combination of a vehicle-body, a frame secured thereto, a cutter-head mounted in the frame and the cutter consisting of a number of gouges secured to the cutter-head and placed side by side, each of said gouges being inclined downwardly and forwardly and provided with a clearance from the front upward on the rear side.

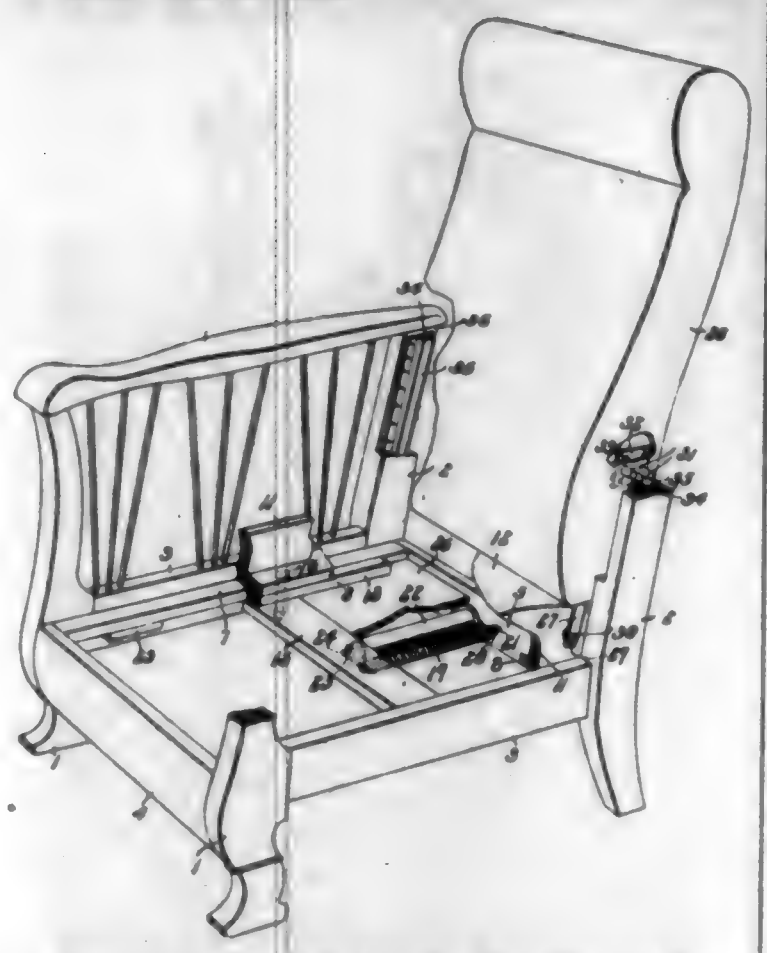
3. In a track-clearing device for railways, the combination of a vehicle-body, a frame depending therefrom, said frame consisting of the pairs of uprights, braced longitudinally and laterally, and spaced apart to admit a cutter-head, the cutter-head sliding between the pairs of uprights, cutters secured to the cutter-head, and means, operated from the vehicle, to adjust the elevation of the cutters with relation to the vehicle-body.

4. In a track-clearing device, the combination of a vehicle-body, a frame, a cutter-head sliding in the frame, portions of the cutter-head outside the rail-space and at the middle of said space being inclined, and intermediate portions next the rails being square to the direction of movement of the vehicle, cutters, consisting of gouges, secured to the cutter-head with their working ends spaced apart, and stepped cutter-seats on the inclined portions of the cutter-head.

5. In a track-clearing device, the combination of a vehicle-body, a frame, a cutter-head sliding in the frame, and comprising a cutter-bar portions of which are inclined to the direction of movement of the vehicle, cutter-seats upon said cutter-bar which are square to the direction of movement of the vehicle and cutters secured upon said seats with their working ends spaced apart.

6. In a track-clearing device, the combination of a vehicle-body, a frame, a cutter-head sliding in the frame, and comprising a cutter-bar whereof portions are inclined to the direction of movement of the vehicle, beveled blocks secured to the inclined portions of the cutter-bar and constituting seats for the cutters and the cutters seated upon said blocks with their ends spaced apart.

816,209. CHAIR. ALBERT B. BRALL, Clinton, Iowa. Filed Aug. 7, 1905. Serial No. 272,105.



Claim.—1. A chair having the upper inner portions of its rear legs provided with raised guides, a back carrying spaced studs to engage the guides, a slidable seat, and arms carried by the back and operatively connected with the seat.

2. A chair having the upper inner portions of its rear legs provided with guides, a back carrying spaced studs to engage the guides, arms having their lower ends provided with crotches, and a slidable seat having studs to engage the crotches.

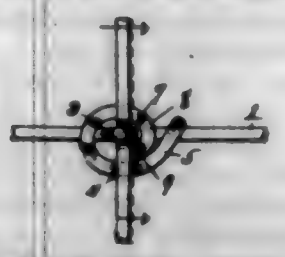
3. In a chair, the combination with the rear legs, provided on their inner faces with raised guides terminating short of the upper ends of the legs, of a back having spaced studs to engage the guides.

4. The combination with a chair having the inner faces of its rear legs cut away to form guides and carrying cap-plates to reinforce the guides, of a back carrying spaced studs to engage the guides, arms carried by the back, and a sliding seat with which the arms are operatively connected.

5. The combination with a chair having the inner faces of its rear legs cut away to form guides and carrying cap-plates to reinforce the guides, of a back carrying spaced studs to engage the guides, arms carried by the back and provided with crotched lower terminals, and a slidable seat carrying studs or projections to be engaged by the crotched terminals.

6. The combination with a chair having the upper inner portions of its rear legs provided with raised guides, and a back carrying spaced studs to engage the guides, of a slidable seat, arms carried by the back and operatively connected with the seat, and retracting and cushioning mechanisms combined with the seat.

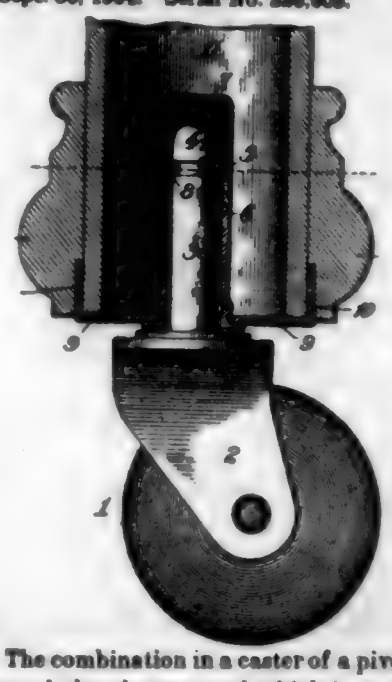
816,210. TIE FOR WIRE FENCING. FRANK H. BENEDICT, Detroit, Mich. Filed May 18, 1905. Serial No. 261,085.



Claim.—1. In a tie for wire fencing, the combination with the crossed strand and stay wires, of a tie-wire in the form of a staple having its loop end crossing and contacting the strand-wire, legs passing in the rear of the stay-wire, the terminal of one leg curving outwardly and obliquely across the strand-wire beyond the stay-wire, its end portion being formed into an eye which embraces the strand-wire and which lies in the plane of that portion of said leg which crosses said wire obliquely, the terminal of the other leg curving outwardly and across the strand-wire between the stay-wire and the eye of the first-mentioned leg, the terminal of said last-mentioned leg being bent downwardly between the side of the first-mentioned leg and the sides of the strand and stay wires and contacting said wires and leg.

2. In a fence-tie, the combination with the intersecting line and stay wires provided with crimps or bends at their point of crossing, of a looped fastening-wire having its bight engaged over one side of the line-wire, and its opposite side legs passed behind the stay-wire respectively above and below the crimp therein, one of said side legs being provided at its end with an inturned clenching-hook partly coiled about the line-wire and engaging against the crimp of the stay-wire, and the other side leg of the fastening-wire being likewise provided at its end with a clenching-hook extending over the same side of the line-wire as the other clenching-hook, but coiled in a reverse direction thereto.

816,211. CASTER. FREDERICK F. BISCHOFF, Chicago, Ill., assignor to Universal Caster and Foundry Company, a Corporation of New Jersey. Filed Sept. 30, 1904. Serial No. 226,603.



Claim.—1. The combination in a caster of a pivot-socket having an integrally-formed closed upper end which is centrally depressed to form a semispherical depression, a pintle fitting said socket and having a semispherical upper end, and a caster-wheel carried by said pintle, substantially as set forth.

2. The combination in a caster of a pivot-socket, a disk-like supporting-web at the lower end of said socket provided with a marginal upturned flange, a tubular bedstead-post fitting said web and flange, a cast ornament on the post inclosing said marginal flange, a pintle fitting said socket, and a caster-wheel carried by said pintle, substantially as set forth.

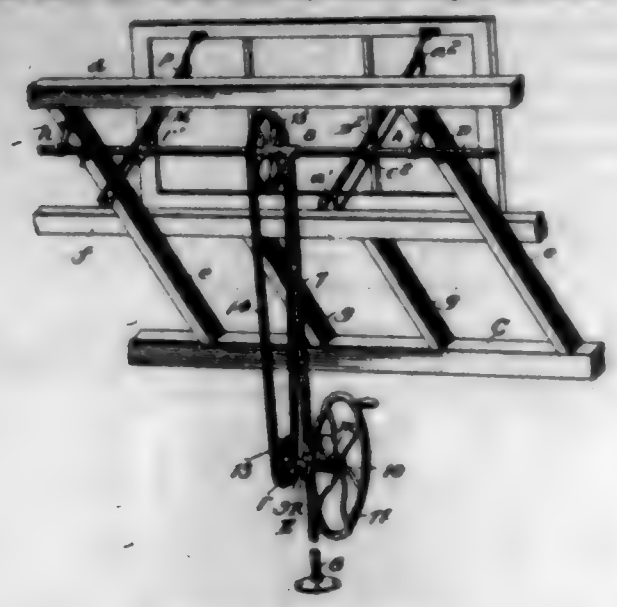
3. The combination in a caster of a pivot-socket having an integrally-formed closed upper end which is centrally depressed to form a semispherical depression, a pintle fitting said socket and having a semispherical upper end and an annular groove adjacent to such end, the socket having a bead-like inset adapted for engagement in said groove, and a caster-wheel carried by said pintle, substantially as set forth.

4. The combination in a caster of a pivot-socket formed with a closed upper end having a central semispherical depression, a disk-like supporting-web at the lower end of said socket provided with a marginal upturned flange, a tubular bedstead-post fitting said web and flange, a cast ornament on the post inclosing said marginal flange, a pintle fitting said socket, and a caster-wheel carried by said pintle, substantially as set forth.

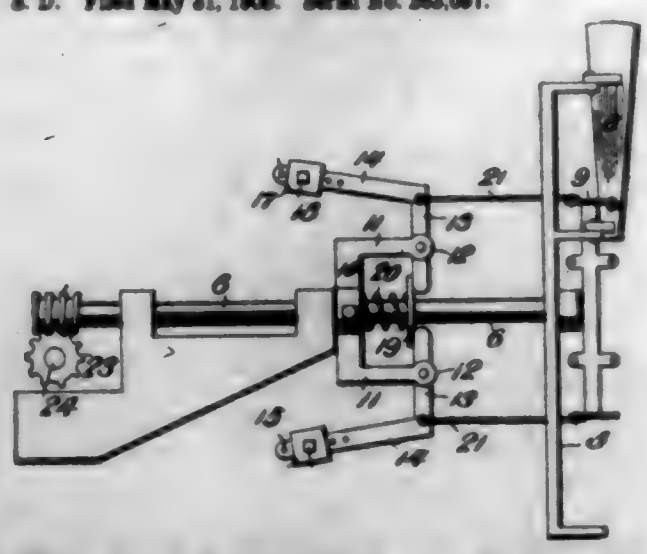
816,212. VENTILATOR-LIFTER. CHARLES A. BLACK, Jr., Hightstown, N. J. Filed Jan. 17, 1905. Serial No. 241,425.

Claim.—1. In a lifter for ventilators, the combination with a line-shaft, and means for revolving the same, of a lifter-arm having one end pivotally connected to the ventilator-sash, said lifter-arm being composed of two parallel members joined together at each end, a sprocket-chain having one end secured to the lifter-arm and the other end secured to a screw-threaded tightener operating in the other end of the lifter-arm, and a sprocket-wheel, secured on the line-shaft, whereby the ventilator-sash may be raised and lowered, substantially as set forth.

2. In a lifter for ventilators, the combination with a line-shaft, and means for revolving the same, of a lifter-arm having one end pivotally attached to the ventilator-sash, a sprocket-chain having one end attached to one end of the lifter-arm and the other end secured to a screw-threaded tightener operating in the other end of the said lifter-arm, and a sprocket-wheel secured on the line-shaft and meshing with said sprocket-chain, whereby the lifter-arm is caused to raise and lower the ventilator-sash, substantially as set forth.



816,213. WINDMILL-GOVERNOR. PAUL B. F. BORR, Grover, S. D. Filed May 31, 1905. Serial No. 263,097.



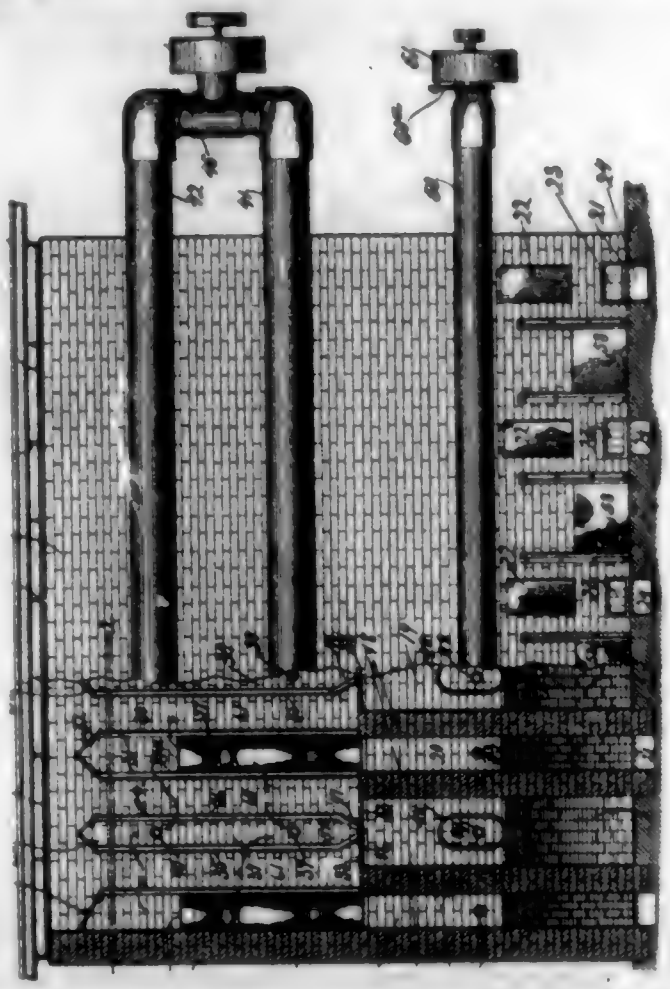
Claim.—In a mechanism of the class described the combination with a revoluble shaft, of a frame carried by the shaft, blades mounted in the frame for movement into and out of position to receive fluid-currents thereagainst, an arm secured to the shaft and extending therebeyond in opposite directions, said arm having end portions turned to extend parallel to the shaft and toward the frame, levers pivoted to the ends of said turned portions of the arm and extending radially of the shaft and at opposite sides of their pivot-points, said levers having their outer end portions turned at an angle away from the frame, weights adjustably mounted upon said end portions, a plate slidably mounted upon the shaft between the inwardly-extending portions of the levers and the arm, a helical spring engaged with the shaft between the plate and the arm and resting thereagainst to hold the plate yieldably in spaced relation to the arm and against the inner portions of the levers, and connections between said levers and the blades for movement of the latter out of operative position when the levers are moved against the action of the spring.

816,214. PEAT-OVEN. PATRICK J. BUCKLEY, Waukesha, Wis. Filed May 27, 1905. Serial No. 262,563.

Claim.—1. In a peat-oven, in combination, a closed structure, a furnace, a flue leading from the furnace into the chamber of the structure, a duct leading from the chamber of the structure, and a screen interposed between the mouth of the flue and the duct.

2. In a peat-oven, in combination, a closed structure, a furnace, a flue leading from the furnace into the chamber of the structure, a duct leading from the chamber of the structure, and a hood having perforated walls for the mouth of the flue.

3. In a peat-oven, in combination, a closed structure, a furnace, a flue leading from the furnace into the chamber of the structure, a duct leading from the chamber of the structure, a hood having perforated walls for the mouth of the flue, and means for inducing a circulation of heated gases from the furnace through the chamber of the structure to the duct.



4. In a peat-oven, in combination, a closed structure, a furnace, a flue leading from the furnace into the chamber of the structure, a duct leading from the chamber of the structure, a hood having perforated walls for the mouth of the flue, a gas-receiver within the structure, and a duct leading from the receiver.

5. In a peat-oven, in combination, an inclosure for holding the material, a furnace within the inclosure, a housing for the furnace, a flue-opening in the housing, a hood for the opening having perforated walls, a duct leading from the inclosure, and a screen for the opening of the duct.

6. In a peat-oven, in combination, an inclosure for holding the material, a plurality of independent furnace-housings within the inclosure, a flue-opening in each of the housings, a gas-receiver having foraminous walls adjacent the heated walls of the furnace-housings, a duct leading from the receiver, and a duct leading from the chamber of the inclosure.

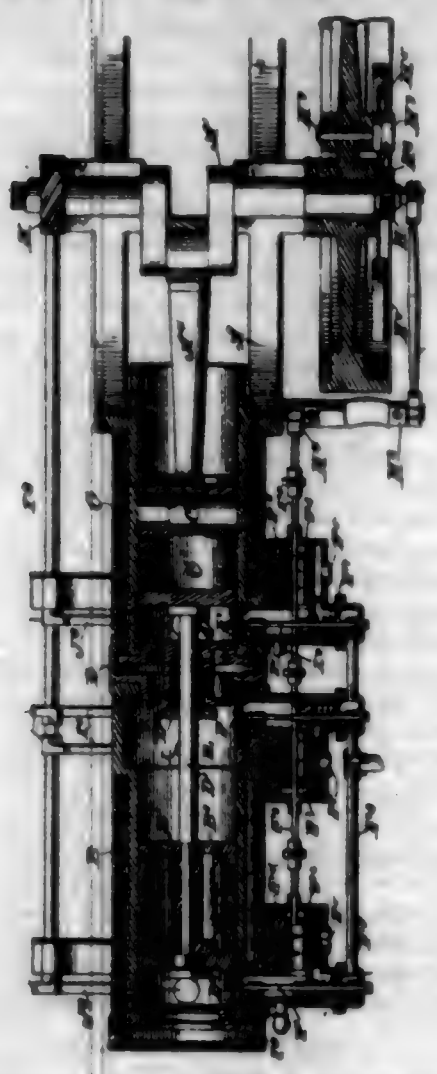
7. In a peat-oven, in combination, a furnace; a drying-chamber adjacent thereto: a gas-conduit leading from the lower part of the drying-chamber to the combustion-chamber of the furnace; a flue leading from the combustion-chamber and discharging into the drying-chamber above the receiving end of the conduit; and a discharge-flue leading from the drying-chamber.

8. In a peat-oven, in combination, an inclosure divided into a plurality of drying-bins and furnace-chambers located between the lower portions of the bins; a gas-receiver within each bin and between the walls of adjacent furnace-chambers; a conduit leading from each gas-receiver to a furnace-chamber; smoke-flues leading from the furnace-chamber to the bins and opening into the upper part thereof; a perforated hood inclosing the delivery end of each flue; and eduction-flues leading from the bins.

9. In a peat-oven, in combination, a furnace-chamber; a drying-bin adjacent thereto; a gas-receiver within the lower part of the bin; a perforated smoke-receiver within the bin and above the gas-receiver; a conduit leading from the gas-receiver to the furnace-chamber; a flue leading from the furnace-chamber to the smoke-receiver; and an eduction-flue leading from the bin.

10. In a peat-oven, in combination, a furnace-chamber; a bin adjacent thereto; a gas-receiver within the bin; a pair of hoods within the bin above the gas-receiver; a conduit leading from the gas-receiver to the furnace-chamber; a smoke-flue leading from the furnace-chamber to one of the hoods; an eduction-passage leading from the other hood to the exterior of the oven; and means for applying suction to the passage.

816,215. **TANDEM GAS-ENGINE.** LEOPOLD F. BURGER, Anderson, Ind., assignor to Woolley Foundry & Machine Works, Anderson, Ind. Filed Feb. 2, 1905. Serial No. 243,226.



Claim.—1. In a gas-engine, a plurality of cylinders having explosion-chambers at the same end, simultaneously-operating pistons therein, a compression-chamber disposed intermediate of said cylinders and in communication with the piston in one thereof at its end opposite the explosion-chamber, and means to convey the compressed fluid from said chamber to either of the cylinders.

2. In a gas-engine, a plurality of cylinders having explosion-chambers at the same end, simultaneously-operating pistons therein, a compression-chamber disposed intermediate of said cylinders and in communication with the piston in one thereof at its end opposite the explosion-chamber, means to convey the compressed fluid from said chamber to either of the cylinders, and governing-valves for each of the cylinders independent of the conveying means from the compression-chamber.

3. In a gas-engine, a plurality of cylinders having explosion-chambers at the same end, simultaneously-operating pistons therein, a compression-chamber disposed intermediate of said cylinders and in communication with the piston in one thereof at its end opposite the explosion-chamber, means to convey the compressed fluid from said chamber to either of the cylinders, governing-valves at the intake for each of the cylinders independent of the conveying means from the compression-chamber, and independent discharge-valves to control the conveying means from the compression-chamber to each cylinder.

4. In a gas-engine, a plurality of cylinders, having explosion-chambers at the same end, simultaneously-operating pistons therein, a compression-chamber disposed intermediate of said cylinders and in communication with the piston in one thereof at its end opposite the explosion-chamber, means to convey the compressed fluid from said chamber to either of the cylinders, governing-valves for each of the cylinders independent of the conveying means from the compression-chamber, independent discharge-valves to control the conveying means from the compression-chamber; a crank-shaft, a governor carried thereby and connected to said governor-valves to simultaneously operate the same, and a shaft driven from the crank-shaft and provided with means for alternately operating the discharge-valves from the compression-chamber.

5. In a gas-engine, a plurality of cylinders separated by a partition, pistons in said cylinders connected by a rod extending through said partition, explosion-chambers at the same end of each of said cylinders, and an independent compression-chamber at the opposite end of one cylinder from the explosion-chamber therein and communicating with both explosion-chambers.

6. In a gas-engine, a plurality of cylinders separated by a partition, pistons in said cylinders connected by a rod extending through said partition, explosion-chambers at the same end of each of said cylinders, a compression-chamber at the opposite end of one cylinder from the explosion-chamber therein, intake-valves for all of said chambers, and discharge-valves for the compression-chamber communicating alternately with each of the explosion-chambers.

7. In a gas-engine, a plurality of cylinders separated by a partition, pistons in said cylinders connected by a rod extending through said partition, explosion-chambers at the same end of each of said cylinders, a compression-chamber at the opposite end of one cylinder from the explosion-chamber therein, intake-valves for all of said chambers, discharge-valves for the compression-chamber communicating with each of the intake-valves for the explosion-chambers, exhaust-valves for each of the explosion-chambers, and a driven shaft provided with means for alternately controlling both the discharge-valves of the compression-chambers and the exhaust-valves of the explosion-chambers.

8. In a gas-engine, a plurality of cylinders separated by a partition, pistons in said cylinders connected by a rod extending through said partition, explosion-chambers at the same end of each of said cylinders, a compression-chamber at the opposite end of one cylinder from the explosion-chamber therein, intake-valves for all of said chambers, discharge-valves for the compression-chamber communicating with each of the intake-valves for the explosion-chambers, exhaust-valves for each of the explosion-chambers, a driven shaft provided with means for alternately controlling both the discharge-valves of the compression-chambers and the exhaust-valves of the explosion-chambers, a governing-valve for each of the explosion-chambers, and a governor for simultaneously controlling said valves.

9. In a gas-engine, a plurality of cylinders separated by a partition, pistons in said cylinders connected by a rod extending through said partition, explosion-chambers at one end of said cylinders, a compression-chamber at the opposite end of one cylinder from the explosion-chamber therein, intake-valves for all of said chambers, discharge-valves for the compression-chamber communicating with each of the intake-valves for the explosion-chambers, exhaust-valves for each of the explosion-chambers, a driven shaft provided with means for alternately controlling both the discharge-valves of the compression-chambers and the exhaust-valves of the explosion-chambers, a governing-valve for each of the explosion-chambers, a governor for simultaneously controlling said valves, a governing-valve for the intake to said compression-chamber, and a gas-feed for all of said governing-valves.

10. In a gas-engine, a cylinder provided at one end with intake and exhaust valves and at the opposite end with a compression-chamber, a piston within said chamber having opposite operating-faces, a discharge-valve carried by said compression-chamber, a lever for opening said valve, a lay-shaft provided with a cam for operating said lever, a crank-shaft, and gearing from said crank-shaft to said lay-shaft for operating the same relative to the rotation of the crank-shaft.

11. In a gas-engine, a plurality of cylinders, pistons therein connected for simultaneous operation, intake-valves for said cylinders, a compression-chamber, and means constructed and arranged for admitting the compressed fluid to said cylinders after the suction charge has been received therein.

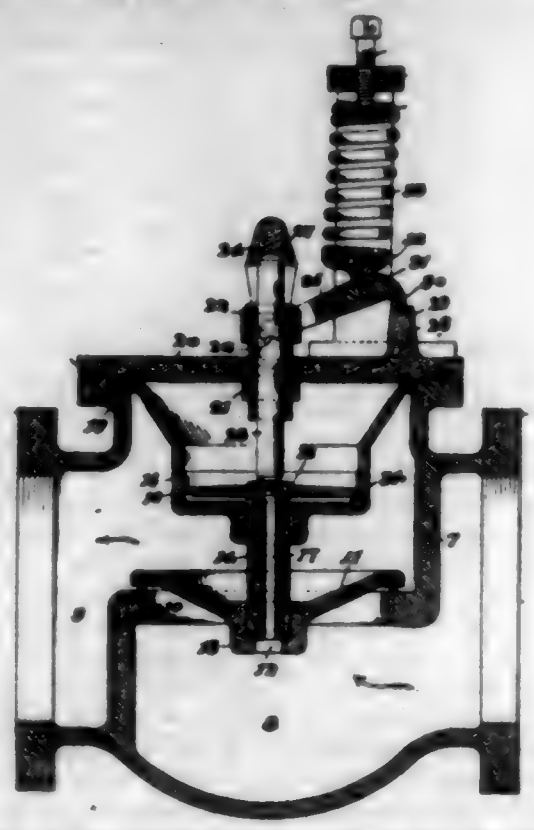
12. In a gas-engine, a plurality of cylinders, pistons therein connected for simultaneous operation, intake-valves for said cylinders, a compression-chamber, means constructed and arranged for admitting the compressed fluid to said cylinders after the suction charge has been received therein, and means for controlling the feed and exhaust to said cylinders to permit an alternate operation thereof.

13. In a gas-engine, a plurality of cylinders, pistons therein connected for simultaneous operation, intake-valves for said cylinders, a compression-chamber, means constructed and arranged for admitting the compressed fluid to said cylinders after the suction charge has been received therein, a controlling-valve for each of said cylinders, an intake-valve for said chamber, and a connection from the compression-chamber to the intake-valve beyond the controlling-valve.

14. In a gas-engine, a plurality of cylinders, pistons therein connected for simultaneous operation, intake-valves for said cylinders, a compression-chamber, means for admitting the compressed fluid to said cylinders after the suction charge has been received therein, a controlling-valve for each of said cylinders, an intake-valve for said chamber, a connection from the compression-chamber to an intake-valve beyond the controlling-valve, a crank-shaft, a governor mount-

ed thereon, and means extending from said governor for shifting the controlling-valves relative to the load upon the engine.

816,216. BACK-PRESSURE VALVE. ARTHUR W. CASE, Newark, N. J. Filed May 2, 1905. Serial No. 258,501.



Claim.—1. In a back-pressure or relief valve, the combination with a suitable valve-body having an open partition and having an opening in the outside walls with a seat at its edges for a flanged dash-pot, and having a perforated cover for said outside opening with a stuffing-box at its center, of a disk or plate adapted to close the opening in said partition, a flanged dash-pot arranged in said valve-body, said flanged dash-pot resting on said seat at its edges and being held in place by said cover, a piston-head in said dash-pot and connected to said disk, the connections having passages permitting a flow of fluid from the said body into said dash-pot beneath said piston-head, a stem extending from the piston-head through said stuffing-box and on the outside of said cover having a connection with a lever, said lever and a spring bearing on said lever, intermediate of its connection with the stem and its fulcrum.

2. In a back-pressure or relief valve, the combination with a suitable valve-body having an open partition therein, of a disk or plate adapted to close the opening in said partition, a dash-pot and a piston-head in said dash-pot and connected to said disk, the connections having passages permitting a flow of fluid from the said body into said dash-pot beneath said piston-head, a spring and compensating means transmitting the compensated power of said spring to the piston-head to counteract the pressure of said fluid, said spring and compensating means being arranged outside of said valve-body, substantially as set forth.

3. In a back-pressure or relief valve, the combination with a suitable valve-body having an open partition therein, of a disk or plate adapted to close the opening in said partition, a dash-pot and a piston-head in said dash-pot and connected to said disk, the connections having passages permitting a flow of fluid from the said body into said dash-pot beneath said piston-head, a supplemental stem extending from the piston out from said body, a lever arranged on the outside of said body and means for transmitting power therefrom to the said stem, and a spring also arranged on the outside of said body to press on said lever and force it and the said stem against the power of said fluid, substantially as set forth.

4. In a back-pressure or relief valve, the combination with a suitable valve-body having an open partition therein, of a disk or plate adapted to close the opening in said partition, a dash-pot and a piston-head in said dash-pot and connected to said disk, the connections having passages permitting a flow of fluid from the said body into said dash-pot beneath said piston-head, a supplemental stem extending out from said body, a yoke arranged on the outside of the said body and bearing on said stem, a lever bearing at one end on said yoke, and a spring bearing on said lever intermediate of its bearing on the yoke and its fulcrum, substantially as set forth.

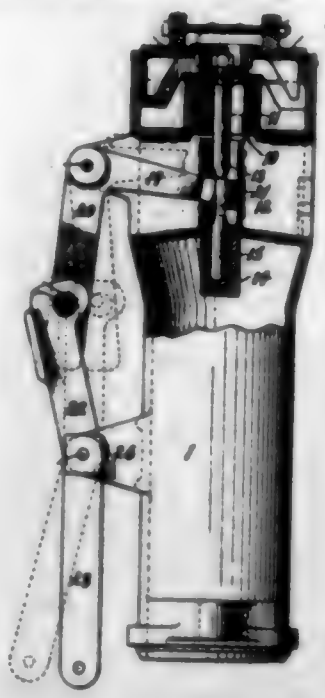
5. In a valve, the combination with the open partitioned valve-body and a disk or plate closing the passage therethrough, of a dash-pot seated within said body above said disk or plate, a tubular piston-stem connecting said disk or plate with a piston-head arranged within said dash-pot, the said stem providing open communication between the dash-pot and pressure-chamber of said valve-body, and a supplemental stem at one end engaging the piston-head within the valve-body and extending out from said body and at its outer end being engaged by a yoke, said yoke being arranged outside of said valve-body, a lever and spring, the latter receiving power from said disk through the medium of said lever-yoke and supplemental stem, substantially as set forth.

6. The combination with the valve-body having an open partition and a dash-pot therein, a disk closing the open partition, a piston-head within said dash-pot, a tubular stem connecting said head and disk, a supplemental stem extending out through the valve-body, a yoke engaging said supplemental stem, a lever fulcrumed on said valve-body and engaging said yoke, a frame attached to said body and a spring arranged between said frame and lever and engaging the latter between the ends thereof, substantially as set forth.

7. The combination with the valve-body having an open partition and a dash-pot therein, a disk closing the open partition, a piston-head within said dash-pot, a tubular stem connecting said head and disk, a supplemental stem extending out through the valve-body, a yoke engaging said supplemental stem, a lever fulcrumed on said valve-body and engaging said yoke, a frame attached to said body and a spring arranged between said frame and lever and engaging the latter between the ends thereof at a point out of line of the fulcrum of said lever and the bearings of said lever on said yoke, substantially as set forth.

8. The combination with the valve-body having an open partition and a dash-pot, a disk for closing the open partition, a piston-head within said dash-pot, a tubular stem connecting said head and disk and opening fluid communication between the chambers in said dash-pot and valve-body, a yoke, a supplemental stem, a compensating lever fulcrumed on said valve-body and engaging said yoke, a frame on said valve-body and a spring arranged to bear oppositely between the frame and lever, and change its line of pressure with the change in the position of said lever, substantially as set forth.

816,217. THROTTLE-VALVE. JOHN S. CHANNING, Wilmington, N. C. Filed Apr. 11, 1905. Serial No. 254,947.



Claim.—1. In a stand-pipe, a valve, its seat, and means for opening and closing the valve arranged to automatically reduce its leverage and thereby increase the movement of the valve after it has been started from its seat.

2. In a stand-pipe, inner and outer valves, their seats, and means for opening and closing the valves arranged to automatically reduce its leverage and thereby raise the valve rapidly after the inner valve has been started from its seat.

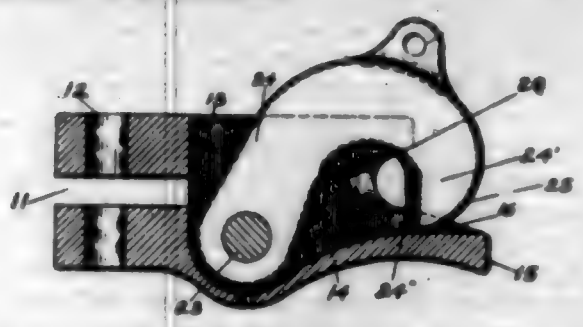
3. In a vertical stand-pipe, inner and outer valves, their seats, an inner valve-rod, a rocking lever engaging the inner valve-rod at a point within the stand-pipe beneath the inner valve and means for operating the rocking lever to primarily lift the inner valve and secondarily lift the outer valve.

4. In a stand-pipe, a valve, a seat therefor, a valve-rod, a rocking lever engaging the rod and an operating-lever arranged to shift

its connection with the rocking lever after the valve has been started from its seat to increase the movement of the valve.

5. In a stand-pipe, inner and outer valves, their seats, an inner valve-rod, a rocking lever engaging the same, and an operating-lever arranged to shift its connection with the rocking lever to increase its speed after the inner valve has been started from its seat.

816,218. COUPLING. HARRY C. CLAY, Columbus, Ind., assignor to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Oct. 23, 1905. Serial No. 284,109.



Claim.—A coupling comprising a main body having a vertical pocket 13, the bottom of which is rearwardly extended and the sides of which are forwardly and upwardly and then upwardly and forwardly inclined with intermediate link-pockets 20, and hook 24 pivoted at its forward lower end within the vertical pocket 13 at a point below the plane of the link-pockets and the rear end of which is upwardly and rearwardly inclined, all substantially as and for the purpose set forth.

816,219. FEEDING DEVICE. DENNIS COLLINS, New Hampton, Iowa. Filed Oct. 31, 1905. Serial No. 285,289.



Claim.—1. A feeding device comprising a vertically-slidable panel carrying division-boards spaced longitudinally thereof.

2. A feeding device comprising a panel disposed and slidable in a vertical plane and division-boards carried by and spaced longitudinally upon the panel.

3. A feeding device comprising a panel disposed and movable in a vertical plane and division-boards disposed in vertical planes and spaced longitudinally upon the panel.

4. A feeding device comprising a panel disposed and movable in a vertical plane and division-boards carried by the panel and spaced longitudinally and each disposed in a vertical plane perpendicular to the plane of the panel.

5. A feeding device comprising a panel disposed in a vertical plane and carrying division-boards spaced longitudinally thereof, and manually-operated means to move the panel vertically.

6. A feeding device comprising a panel disposed in a vertical plane, division-boards disposed in vertical planes and spaced longitudinally upon the panel and manually-operated means to move the panel and division-boards vertically.

7. A feeding device comprising a panel disposed in a vertical plane, division-boards carried by the panel spaced longitudinally upon the panel and each disposed in a vertical plane perpendicular to the plane of the panel and manually-operated means to move the panel and division-boards vertically.

8. A feeding device comprising a panel disposed and movable in a vertical plane, a hood disposed obliquely to and carried by the panel, and division-boards carried by and between the panel and hood.

9. A feeding device comprising a panel disposed in a vertical plane, a hood disposed obliquely to and carried by the panel, division-boards carried by and between the panel and hood and manually-operated means to move the panel and hood vertically.

10. A feeding device comprising a panel disposed and movable in a vertical plane, a longitudinally-extending hood disposed obliquely to and carried by the panel, division-boards carried by and between the panel and hood and spaced in a horizontal series.

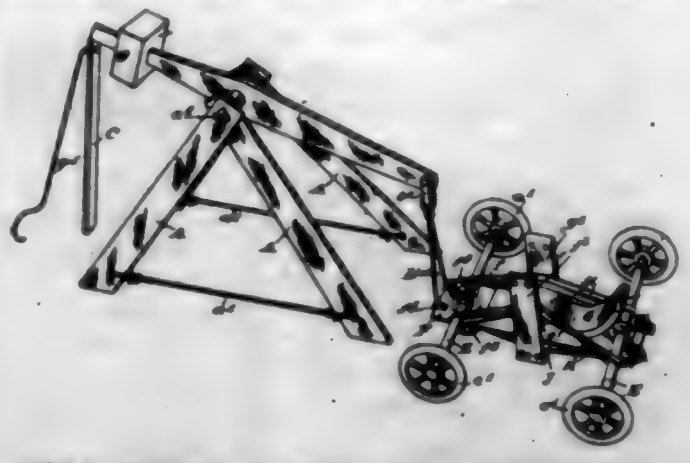
11. A feeding device comprising a panel disposed in a vertical plane, a longitudinally-extending hood disposed obliquely to and carried by the panel, division-boards carried by and between the panel and hood and spaced longitudinally upon the panel and manually-operated means to move the panel and hood vertically.

12. A feeding device comprising a panel disposed and movable in a vertical plane, a longitudinally-extending hood disposed obliquely to and carried by the panel, and division-boards carried by and between the panel and hood and spaced longitudinally upon the panel and each disposed in a vertical plane perpendicular to the plane of the panel.

13. A feeding device comprising a panel disposed in a vertical plane, a longitudinally-extending hood disposed obliquely to and carried by the panel, division-boards carrried by and between the panel and hood and spaced longitudinally upon the panel and each disposed in a vertical plane perpendicular to the plane of the panel, and manually-operated means to move the panel and hood vertically.

14. A feeding device comprising vertical guides, a panel disposed in the guides, a hood disposed and secured obliquely to the side of the panel somewhat above and extending parallel with the lower edge, triangular division-boards secured in vertical planes and each with one edge to the panel and one to the under side of the hood and spaced longitudinally upon the panel, a winch mounted upon the guides, a cable from the winch arranged to move the panel in a vertical plane, means to operate the winch and means to prevent backward movement.

816,220. AMUSEMENT APPARATUS. CLAYTON C. DEAN, Ivanhoe, Ill. Filed Sept. 20, 1905. Serial No. 279,226.

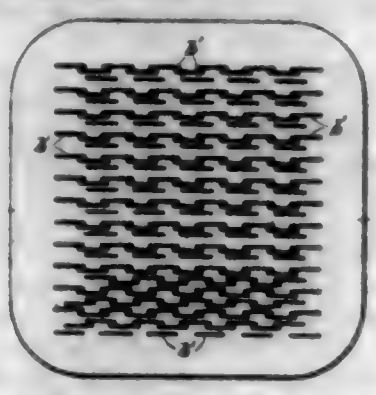


Claim.—1. In an apparatus of the class described, a standard, a counterweighted beam pivoted on said standard, a wheeled vehicle adapted to support one or more persons, means connecting said vehicle with said beam whereby said vehicle will be caused to turn over upon the upward movement of the beam, and means on said vehicle for taking up the shock resulting from its drop.

2. In an apparatus of the class described, a standard, a counterweighted beam pivoted on said standard, a wheeled vehicle adapted to support one or more persons and having guides, ropes connected with said beam, adapted to be detachably connected with the rear end of said vehicle and to be arranged in said guides, and means on said vehicle for taking up the shock resulting from its drop.

3. In an apparatus of the class described, a standard, a beam pivoted on said standard and having a weight adjustably mounted thereon, removable means for holding said beam in inoperative position, a resilient vehicle adapted to support one or more persons, protective means on said vehicle substantially as described, guides and antifrictional rope-bearings on said vehicle, ropes connected with said beam and adapted to be arranged in said guides and to be detachably connected with said vehicle.

816,221. SCALP-COMB. LUCY W. DEHART, New York, N. Y., assignor to Weidayer and Botta, New York, N. Y., a Copartnership. Filed Sept. 13, 1905. Serial No. 278,277.



Claim.—1. A comb for treatment of the scalp, comprising a back of flexible material and teeth freely mounted in holes in such back.

2. A comb for treatment of the scalp, comprising a back of flexible material and teeth freely mounted in holes in such back, said teeth having points which incline but slightly from parallelism with the back.

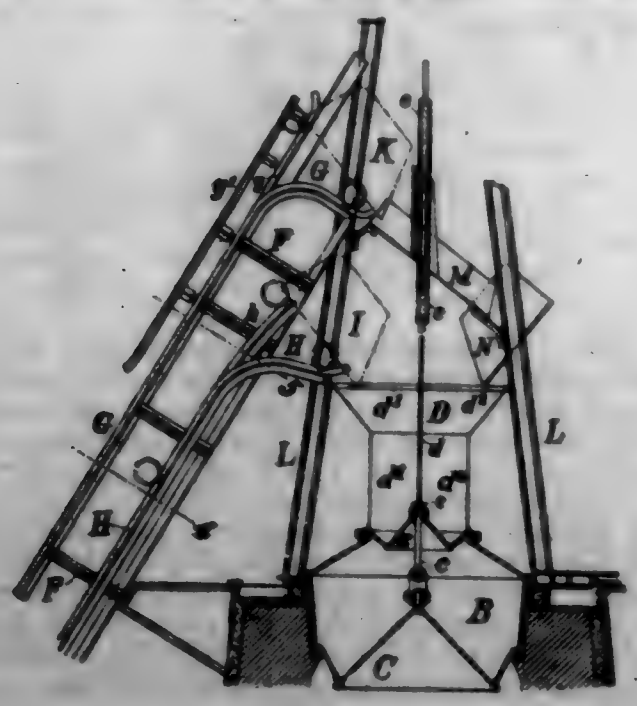
3. In a comb, the combination of a flexible back having a shape or form fitted for holding in the hand, and wire teeth loosely mounted in openings perforating the back, with shanks that extend at a right angle and points which incline but slightly from parallelism with the back.

4. In a comb, the combination of a back, and teeth connected in pairs by a cross member which normally lies against the outer surface of the back, but is free to move away therefrom under pressure applied to the teeth.

5. In a comb, the combination of a back, and teeth connected in pairs by a cross member, which normally lies against the outer surface of the back, but is free to move therefrom under pressure applied to the teeth, the teeth having points on the opposite side of the back that extend at an angle slightly out of parallelism with the back.

6. In a comb for treatment of the scalp, the combination of a back of flexible material, and teeth mounted in holes in such back, so as to be movable longitudinally under pressure applied to the teeth, and the teeth having points that extend in the direction in which the comb is moved in use.

816,222. BLAST-FURNACE-CHARGING APPARATUS. JOHN W. DOUGHERTY, Steelton, Pa. Filed Mar. 17, 1905. Serial No. 250,575.



Claim.—1. In blast-furnace-charging apparatus, the combination of a main charging-hopper, a supplemental hopper located over said charging-hopper and provided with means for discharging its contents into the main charging-hopper, and a diaphragm fixed vertically in said supplemental hopper, dividing same into compartments, substantially as described.

2. In blast-furnace-charging apparatus the combination of a main charging-hopper, a supplemental hopper located over said charging-hopper, and provided with means for discharging its contents into the main charging-hopper, and a central vertical diaphragm in said supplemental hopper, enlarged at the center to surround the bell-hanger, substantially as described.

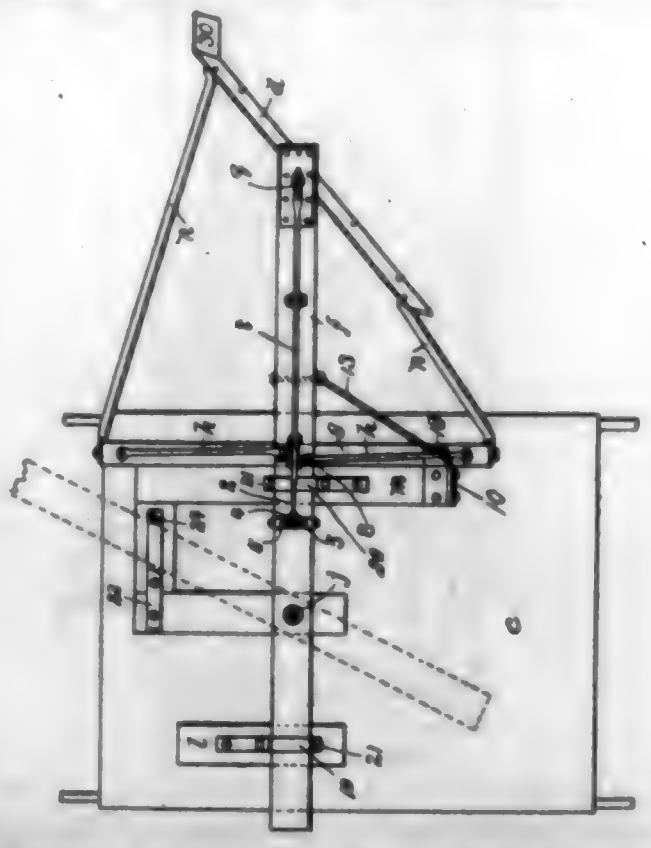
3. In blast-furnace-charging apparatus, the combination of a main charging-hopper, a supplemental hopper located over said charging-hopper, a skip arranged for discharging stock therein, and a diaphragm fixed vertically in said supplemental hopper, substantially as described.

4. In blast-furnace-charging apparatus, the combination of a plurality of skips conveying stock to the furnace-top, a main charging-hopper, a supplemental hopper located over said charging-hopper and provided with means for discharging stock therein and divided by a vertical diaphragm into compartments each receiving stock from one particular skip, substantially as described.

5. In blast-furnace-charging apparatus, the combination of a main charging-hopper, a supplemental hopper located over said charging-hopper, skips discharging stock at different levels, in substantially the same vertical plane, and an adjustably-supported chute adapted to carry stock from the upper skip across the center line of said hoppers, substantially as described.

6. In blast-furnace-charging apparatus, the combination of a plurality of skips conveying stock to the furnace-top and discharging stock at different levels, a main charging-hopper, a supplemental hopper located over said charging-hopper, and means for chuting the stock from the upper skip across the center line of the furnace and delivering same into one side of said supplemental hopper, substantially as described.

816,223. BALLAST-TRIMMER. JAMES H. DRINKWATER, Winchester, Canada. Filed July 14, 1905. Serial No. 269,744.



Claim.—1. A ballast-trimmer consisting of a lorry, a beam pivoted to the lorry, a trimming-plate, means whereby the plate is carried entirely by the beam, and a lever for operating the said plate, substantially as described and for the purpose set forth.

2. A ballast-trimmer consisting of a lorry, a beam pivoted to the platform of such lorry and adapted to be swung and projecting transversely from one side thereof, a cross-bar carried by the beam, a trimming-plate, a lever, a hanger connecting the plate to the opposite ends of the cross-bar, and a hanger connecting such plate to the lever, and means limiting the extent to which the beam can be swung.

3. A ballast-trimmer consisting of a car, a laterally-projecting

frame, and an inclined plate carried adjustably by the frame and having its lower edge in the form of a concave curve and adapted to act upon the ballast and trim away a portion of the surface thereof.

4. A ballast-trimmer consisting of a lorry, a swinging frame pivoted to the lorry, a trimming-plate pivotally hung from the frame, a lever fulcrumed on said frame and connected with the plate, and a toggle-bar connected at one end to the beam and at the other end to the lever, substantially as described.

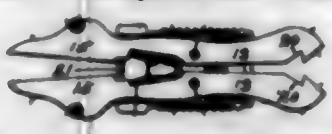
5. In a ballast-trimmer the combination with the car and the swinging frame, of the stop 22 and pin 24 for holding the frame when swung out of its operating position, substantially as described.

6. A ballast-trimmer consisting of a car, a pivoted laterally-projecting swinging frame, an inclined trimming-plate carried adjustably entirely by the frame, and a lever fulcrumed on the frame and connected with said plate to operate same.

7. A ballast-trimmer consisting of a car having a series of sills secured rigidly upon the top thereof a beam extending over the sills and laterally beyond one side of the car, means pivotally connecting the beam and central sill allowing the beam to be swung, a pair of stops upon the other sills limiting the extent of swinging movement of the beam in one direction, detachable means limiting the movement of the beam in the opposite direction, an angular lever fulcrumed at its angle to the top of the beam, a pair of standards upon the beam, a toggle-bar connected at one end to the standards and the other end to the lever, an inclined plate, a hanger connected at one end to the top of the plate and at its other end to the lever a cross-bar carried by the beam, a pair of trusses connecting the cross-bar to the beam, a hanger in the form of a loop secured to the plate and having its opposite ends pivotally connected to the ends of the cross-bar.

8. A ballast-trimmer consisting of a push-car, a frame projecting laterally from the car, and an inclined ballast-trimming plate carried by the frame and adapted to act upon the ballast, such plate having a horizontally-extending portion.

816,224. **BLIND-FASTENER.** JOHN DURR and LOUIS ANDERSON, New Britain, Conn. Filed Apr. 26, 1905. Serial No. 257,311.



Claim.—A blind-fastener comprising a two-part case, a pair of pins for securing the said two parts of the case together, a pair of double-acting lever-latches separately pivoted within the said case on the said pair of case-securing pins, and a spring for pressing the said lever-latches in one direction, both of the said lever-latches having a projecting head at each end with an inclined face at the outer end and outer edge of each head, and a shallow double-acting notch at the base of the said inclined face.

816,225. **TIRE.** CHARLES W. FAITOUTE, Summit, N. J. Filed Dec. 27, 1904. Serial No. 238,444.



Claim.—1. A cushion-tire comprising an outer casing, an interior band filling the part of said casing adapted to lie against the wheel, and resilient superposed members between said casing and the band, said members being transversely concavo-convex.

2. A cushion-tire comprising an outer casing, an interior band filling the part of said casing adapted to lie against the wheel, and resilient superposed members between said casing and the band, said members being transversely convex on their outer surfaces and longitudinally grooved at their inner surfaces.

3. A cushion-tire comprising an outer casing, an interior band filling the part of said casing adapted to lie against the wheel, and resilient superposed strips extending through the casing above said band, said strips being transversely concavo-convex.

4. A cushion-tire comprising an outer casing, an interior band filling the part of said casing adapted to lie against the wheel, and resilient superposed strips extending through the casing above said band, said strips being transversely convex on their outer surfaces and longitudinally grooved at their inner surfaces.

5. A cushion-tire comprising an outer casing, an interior band filling the part of said casing adapted to lie against the wheel, and transversely disposed and curved resilient pieces arranged between the band and casing, said pieces providing open spaces between themselves.

816,226. **MOISTURE-PROOF STRUCTURE.** HARRY FEDER, New York, N. Y. Filed Oct. 11, 1905. Serial No. 282,294.



Claim.—1. A moisture-proofed fabric composed of one or more strands of fibrous material coated with a cellular adhesive sizing for maintaining the formation of the strands, the exterior surface of the sizing being developed into an impervious moisture-proof skin or envelop.

2. A moisture-proofed fabric of tubular structure composed of one or more strands of fibrous material coated with a cellular adhesive sizing for maintaining the formation of the strands, the exterior surface of the sizing being developed into an impervious moisture proof skin or envelop.

3. A moisture-proof fabric of tubular structure provided with a core, said fabric being composed of one or more strands of fibrous material, coated with a cellular adhesive sizing for maintaining the formation of the strands, the exterior surface of the sizing being developed into an impervious moisture-proof skin or envelop.

4. A moisture-proofed structure comprising a core, a moisture-proofed paper envelop surrounding the core and a moisture-proofed textile envelop surrounding the paper envelop, the said envelops including a body of sizing having its exterior surface developed into a moisture-resisting skin or envelop.

816,227. **EYEGLASS-CLEANER.** HENRY C. FOSBERG, Falconer, N. Y. Filed Apr. 20, 1905. Serial No. 256,087.



Claim.—1. In a device for cleaning lenses and similar articles, the combination with a spring-clip having substantially parallel arms, oppositely-arranged cups on the arms, each cup having an opening in one side through which the arms pass, padding placed in the cups, and a sheet of cleaning material secured over the padding.

2. In a device for cleaning lenses and similar articles, the combination of a spring-clip having substantially parallel arms, oppositely-arranged cups on the arms, each having a peripheral groove and an opening in one side through which the arm passes, padding placed in the cups, and a sheet of cleaning material over the padding having its edges secured in the groove.

816,228. **GARMENT-CLASP.** MARSHALL B. GARDNER, Aurora, Ill., assignor to S. Florsheim & Son, Chicago, Ill., a Firm. Filed Apr. 28, 1905. Serial No. 257,987.



Claim.—1. In a garment-clasp, a holding member of flat oval form, having a lateral opening on its side, and a clasp member adapted to press the fabric against the side of said holding member and into said opening, substantially as described.

2. In a garment-clasp, a holding member of flat oval form having a covering of frictional material and a lateral opening on its side and a clasp member adapted to hold the fabric against the side of said holding member and to press it into said opening, substantially as described.

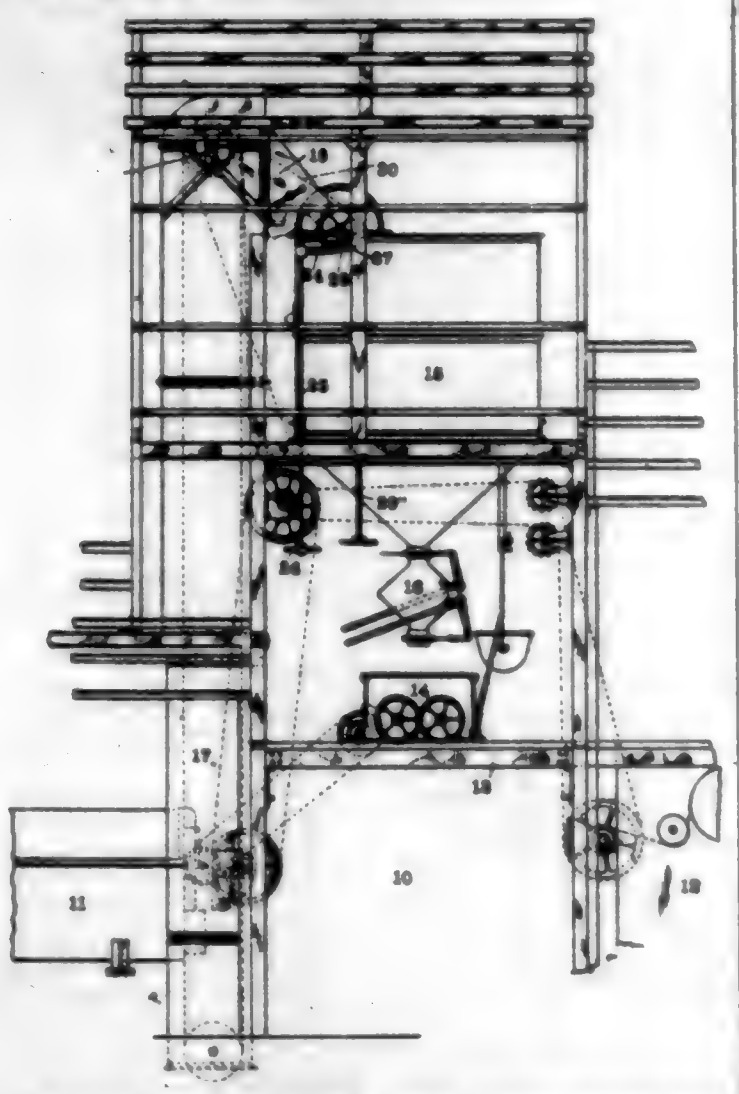
3. In a garment-clasp, a holding member having its outer surface symmetrically curved, and provided with a lateral opening on its side in combination with a clasp adapted to force the fabric against the side of said holding member, substantially as described.

4. In a garment-clasp, a holding member having a curved exterior and a lateral opening, a support for said member and a laterally-acting clasp apertured for the passage of the holding member and having means to force the fabric into the lateral opening of the holding member, substantially as described.

5. In a garment-clasp, the combination of a holding member, a rigid support therefor, a base-plate to which the said support is hinged, said base-plate being perforated, and a laterally-acting clasp member pivoted on the base-plate and adapted to cooperate

therewith to clasp the fabric on the sides of the holding member, substantially as described.

816,229. SCREEN AND STORAGE-BIN FOR ASPHALT. FREDERICK A. HETHERINGTON, Indianapolis, Ind. Filed Feb. 20, 1904. Serial No. 196,255.



Claim.—1. The combination, with an endless-belt sand-elevator and a storage-bin to which said elevator delivers, of a conical screen rotatably mounted upon a substantially horizontal axis and interposed between the discharge end of said elevator and said bin to receive material from said elevator, the axis of said screen being substantially parallel with the axis of the upper end of the elevator, a direct belt-driving connection between said elevator and screen, and means for deflecting the flow of material from said elevator directly into the storage-bin.

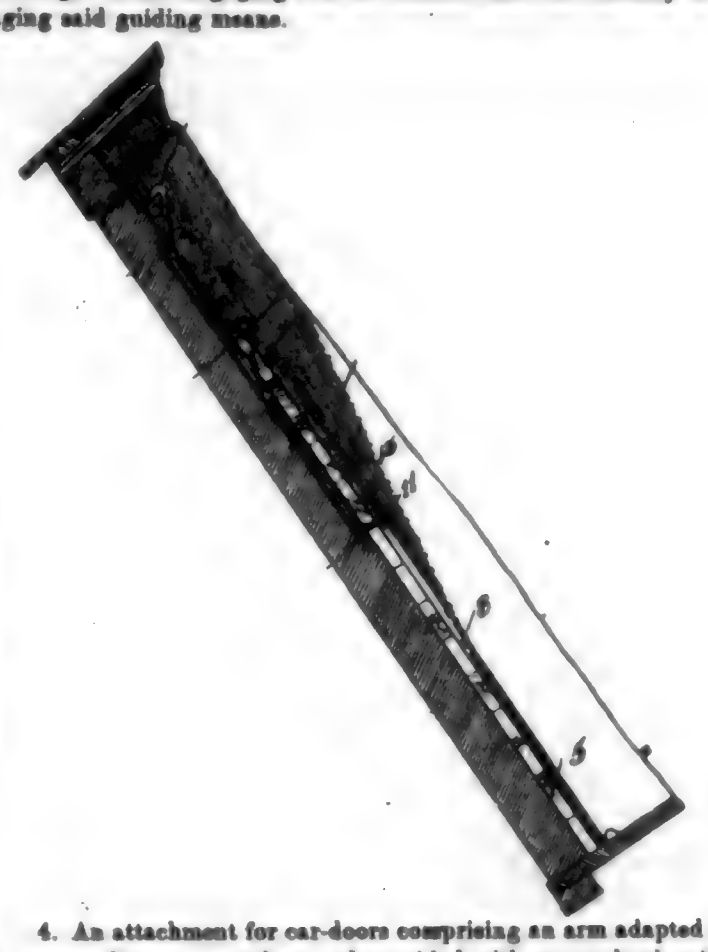
2. In an asphalt plant, the combination with a sand-elevator and storage-bin, of a receiving-drum arranged between the storage-bin and elevator, a connection between said elevator and said receiving-drum, a conical screen rotatably mounted adjacent said receiving-drum with its smaller end overlapping the same, and feeding means arranged within the drum, a door arranged to close an opening in the bottom of said receiving-drum, and means for moving said door.

816,230. GRAIN-DOOR. EDWARD A. HILL, Chicago, Ill., assignor to Chicago Grain Door Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 20, 1904. Serial No. 189,330.

Claim.—1. The combination with a car-door and a vertical guide-rod, of connections between the door and the guide-rod, said connections comprising an arm secured to the door and extending outwardly therefrom and opposite to the guide-rod, said arm being provided with an eye in the portion thereof extending opposite to said guide-rod, the side of said eye adjacent to the guide-rod being straight, a link loosely engaging said eye, and a second link engaging said first link and slidably engaging said guide-rod.

2. The combination with a car-door, of a vertical guide-rod, and connections between the car-door and guide-rod, said connections comprising an arm secured to the door and projecting outwardly therefrom and opposite to the guide-rod, said arm being provided with an eye, a round link engaging said eye, an elongated link engaging said round link and slidably engaging said guide-rod.

3. The combination with a car, of a door comprising separable upper and lower sections, vertical guiding means mounted upon said car, slidable connections between the lower door-section and the vertical guiding means, and vertically-slidable connections between the guiding means and the upper door-section, said last-named connections comprising an arm mounted upon the upper door-section and provided with an eye, a link engaging said eye, and an elongated link engaging said first-named link and slidably engaging said guiding means.



4. An attachment for car-doors comprising an arm adapted to be mounted upon a car-door and provided with an eye having the side thereof nearest the car-door flattened, a link engaging said eye, and a second link engaging said first link and adapted to be slidably mounted upon guiding means.

5. An attachment for car-doors, comprising an elongated link adapted to be slidably mounted upon guiding means, a short link loosely engaging said elongated link, an arm adapted to be mounted upon a car-door, and provided with a semicircular eye engaging said shorter link, said eye being so arranged that the flat side thereof will be nearest to the guiding means when the attachment is mounted in operative position.

6. The combination with a car provided with a door-opening, of door-posts arranged one on each side of said opening, the inner face of each door-post being provided with a rabbeted channel, vertically-arranged guide-rods mounted one upon each of said posts and opposite to the rabbet in the post, each guide-rod being formed with a shoulder adjacent to its upper end, a door adapted to said door-opening and comprising upper and lower sections, separable means for locking said door-sections together, connections whereby each door-section is slidably mounted upon each of said guide-rods so as to be independently movable thereon, the connections between the upper door-section and the guide-rods comprising a pair of arms mounted one adjacent to each of the upper corners of the upper door-section and extending outwardly opposite to the adjacent guide-rod, each arm being provided with a semicircular eye, the flat side of which is nearest to the guide-rod, a short link loosely engaging the eye, an elongated link engaging the short link and engaging the guide-rod, means for hingingly securing the upper edge of the upper door-section to the roof of the car, and means for supporting the lower edges of both door-sections adjacent to the roof of the car, substantially as described.

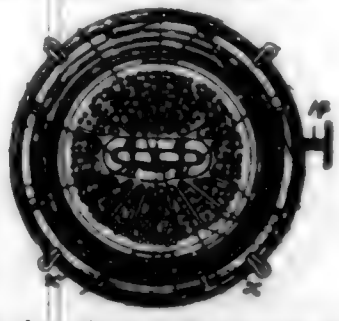
816,231. MUFFLER. WALTER HILL, St. Paul, and WILLIAM DALGARNO, Minneapolis, Minn. Filed Nov. 4, 1904. Serial No. 231,456.

Claim.—A muffler comprising a front section, a lining-section, and a rear section, each formed of a suitable fabric with the edges of said sections stitched together, a pocket formed of a tape secured to the inner side on the lining-section below its top edge and a flat curved spring arranged within said pocket, whereby a soft free edge is formed both above and below said spring, substantially as described.

816,231.



816,232. LAMP-BURNER. EVERETT D. HOLLEY, Forestville, Conn., assignor to Bristol Brass Company, Bristol, Conn., a Corporation. Filed Sept. 5, 1905. Serial No. 277,987.



Claim.—1. In a lamp-burner, the air-plate having the usual perforations with radial portions in which the perforations are omitted and having thereon the radial ribs, substantially as described.

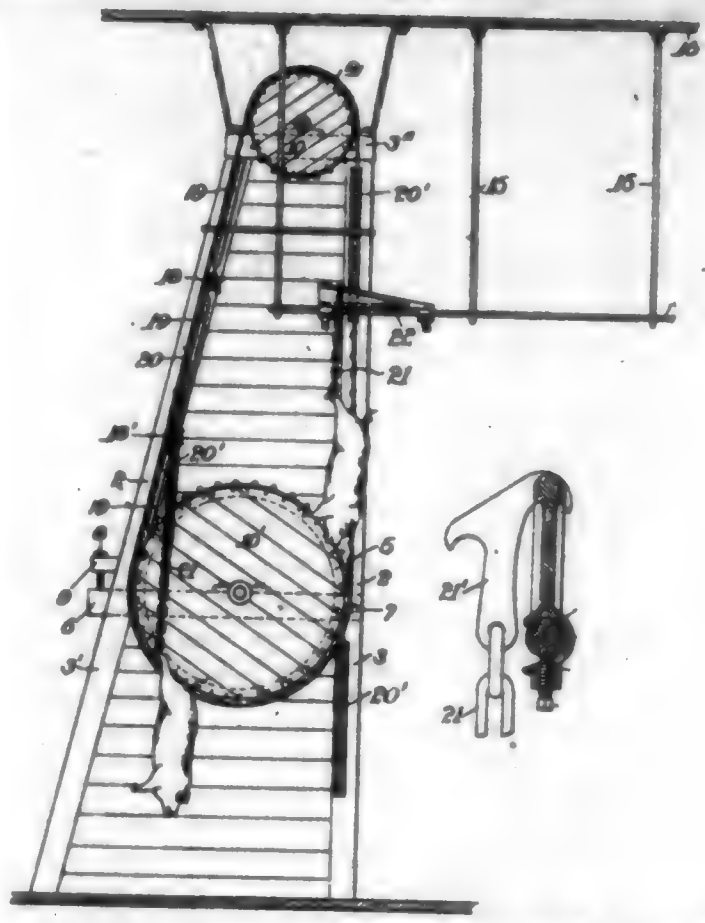
2. In a lamp-burner having an air-plate wick-tube, and neck with a bottom plate, the air-tube consisting of a plate with flanged edges and a transversely-corrugated lower end, the said plate and flanged edges passing through holes by the side of the wick-tube and held in place by crowding the corrugated lower end into engagement with the bottom plate of the neck.

816,233. HOG-HOIST. OLIVER P. HURFORD, Chicago, Ill. Filed May 25, 1903. Serial No. 158,654.

Claim.—1. In a hog-hoisting device, in combination with an endless chain and an upper and lower sprocket-wheel on which said chain is alone mounted, depending hog-shackles carried by said endless chain, said lower sprocket-wheel having a diameter greater than that of the upper sprocket-wheel and of sufficient length to form a comparatively long receiving stretch of chain whereby the hogs may be readily shackled thereon, and said lower wheel also providing a lateral support for the receiving stretch of chain throughout the shackling-pen, said wheels providing a substantially triangular arrangement of the chain conveyer and both being inside a vertical line tangent to the upper wheel whereby an upwardly-inclined ascending leg is formed and also a descending leg from which the hog upon release therefrom will be carried directly away from the chain and space inclosed thereby and a sticking-rail extending at an angle to said conveyer and adapted to receive the shackle from the descending leg, substantially as described.

2. In a hog-hoisting device, in combination with an endless carrier-chain, depending shackles carried thereby, two sprocket-wheels one above the other, on which said chain is supported, the lower wheel being of greater diameter than the upper wheel, said wheels arranged to bring the ascending leg of said chain in a path inclined upwardly toward an adjacent slaughtering-room, and the descending leg of said chain in a vertical path adjacent the slaughtering-room and a sticking-rail having a member intersecting the plane of the vertical leg of said chain and inclined therefrom toward the slaughtering-room, substantially as described.

3. In a hog-hoisting device, in combination with an endless chain an upper and a lower sprocket-wheel therefor whereby only two stretches of chain between the sprocket-wheels are formed, the lower wheel of greater diameter than the upper wheel but each having one of its vertical tangents in the same plane, whereby an ascending inclined leg of said chain and a vertical descending and delivering leg of said chain are formed, and a lateral support for the chain in the shackling-pen is provided, substantially as described.



4. In a hog-hoisting device in combination with an endless-chain conveyer, depending flexible hog-shackles secured to said conveyer, a sprocket-wheel at the upper part of said chain on which said conveyer is supported, and a larger sprocket-wheel at the lower part of said chain and forming a positive lateral support for the entire length of the receiving-leg of the chain which extends through the shackling-pen, said wheels having their centers out of alinement, with the center of the lower wheel farther away from the delivery side of the pen, whereby a substantially triangular hoist is formed having only two stretches of chain between the sprocket-wheels and with an ascending leg of the conveyer inclined toward the delivery side of the pen is provided, and a continuous straight descending leg of said chain from the top sprocket-wheel to the lower sprocket-wheel is provided, and a sticking-rail intersecting the plane of said descending leg and having a shackle-receiving member which extends away from said chain on a downward incline, substantially as described.

5. In a device of the class described, the combination, with a conveyer, means for actuating the same, means for shackling animals thereto, and a suitable receiving-rail, of an inclined delivery-block adjustable along and upon said rail, and means for securing said block upon said rail.

6. In a device of the class described, the combination, with an endless conveyer adapted to travel in a vertical plane and having a forwardly-inclined ascending leg, and means for shackling animals thereto, of a receiving-rail arranged adjacent to the path of travel of said conveyer, and an inclined delivery-block adjustable upon and along said rail.

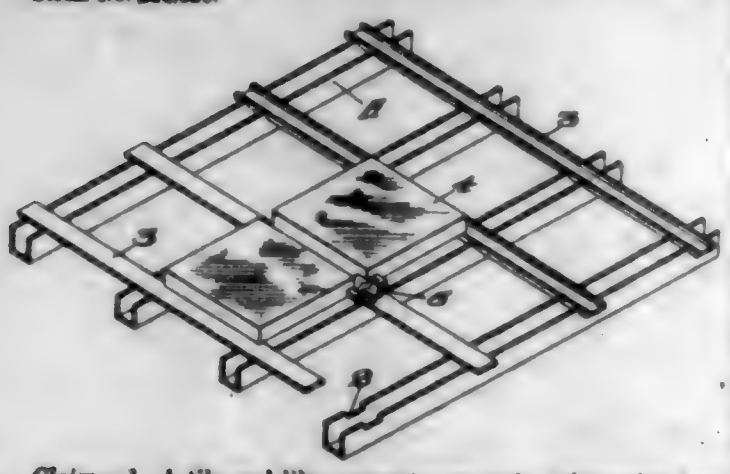
7. In a device of the class described, the combination, with an endless conveyer having a forwardly-inclined ascending leg, an auxiliary guide and support for said ascending leg, and means for shackling animals to said conveyer, of a receiving-rail arranged adjacent to the path of travel of said conveyer, and an inclined delivery-block adjustable upon and along said rail.

8. In a device of the class described, the combination, with a pair of conveyer-wheels arranged one above the other in the same vertical plane and the lower thereof being of greater diameter than the upper, of an endless conveyer mounted thereupon, said wheels being relatively disposed to provide a forwardly-inclined ascending leg of said conveyer, means for preventing lateral movement of said ascending leg, an animal-shackle detachably suspended from said conveyer, a suitable receiving-rail, and a guard insuring engagement between said shackle and said rail.

9. In a device of the class described, the combination with an endless-chain conveyer, of a large chain-supporting sprocket-wheel,

and a small chain-supporting sprocket-wheel above the large wheel, the centers of the wheels being out of alinement and forming a forwardly-inclined ascending leg, and a series of small loose guide sprocket-wheels with which said ascending leg of the chain engages, substantially as described.

816,234. SIDEWALK, FLOOR, AND ROOF LIGHT CONSTRUCTION. PETER H. JACKSON, San Francisco, Cal. Filed Nov. 6, 1905. Serial No. 286,020.



Claim.—1. A tile and like support comprising channeled bars laid with the open sides uppermost said bars having recesses cut in the upturned edges, other bars extending transversely across the first bars and fitting the recesses thereof whereby the upper surfaces of the transverse bars are substantially flush with the upper edges of the channeled bars, illuminating-tiles supported upon said bars, and spacing means at the intersection of the supporting-bars engaging the edges of the tiles for holding the tiles in position.

2. In an illuminating-tile support, channeled bars laid with the open sides uppermost having recesses cut in the upturned edges, other bars extending transversely and fitting said recesses with their upper surfaces substantially level with the upper edges of the channeled bars and forming a level support for illuminating-tiles, and interlocking means for holding the tiles in position upon said support.

3. In an illuminating-tile support, channeled bars laid with the open sides uppermost having recesses cut in the upturned edges, other bars extending transversely and fitting said recesses with their upper surfaces substantially level with the upper edges of the channeled bars and forming a level support for illuminating-tiles, and interlocking means for holding the tiles in position upon said support, said means consisting of spacing-pieces secured at the intersection of the supporting-bars.

4. The combination with illuminating-tiles and a supporting-framework therefor said framework comprising two sets of bars one set arranged at right angles to and crossing the other, of spacing-blocks resting upon the intersection of said bars and having portions parallel with the bars and extending between in contact with the edges of adjacent tiles.

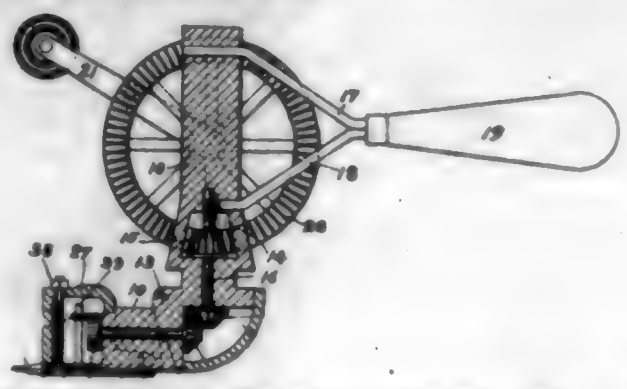
5. In an illuminating-tile structure, transverse supporting-bars forming level surfaces, illuminating-tiles having substantially flat surfaces supported upon the bars, spacing-pieces located at the intersection of said bars and having downwardly-turned lugs clasping the transverse bars, and entering the channels of the main bars, said spacing-pieces having lugs projecting horizontally between the edges of the contiguous tiles and engaging and spacing said edges apart.

6. An illuminating-tile structure consisting of channel-iron bars with the edges upturned and recessed, transverse bars fitting said recesses with the upper edges substantially flush with the upper edges of the main bars, tiles supported upon said bars, substantially cross-shaped spacing-pieces at the intersection of said bars and having portions extending between and engaging the edges of adjacent tiles and a concrete or cement filling within and upon the frame-bars and between the tiles.

7. In an illuminating-tile structure, channel-bars having their edges turned upward and recessed, transverse bars fitting said recesses and forming with the main bars level supports for the edges of illuminating-tiles, spacing-pieces fixed at the junctions of the supporting-bars, and having lugs projecting between the contiguous glass tiles, said lugs engaging the tiles and serving to hold the tiles apart and to prevent them from side movement, and a concrete or cement filling for the channels and the interspaces between the tiles.

8. The combination with illuminating-tiles and a supporting-framework of crossed bars, of spacing-pieces introduced between and engaging the edges of adjacent tiles and spacing said tiles a fixed distance apart.

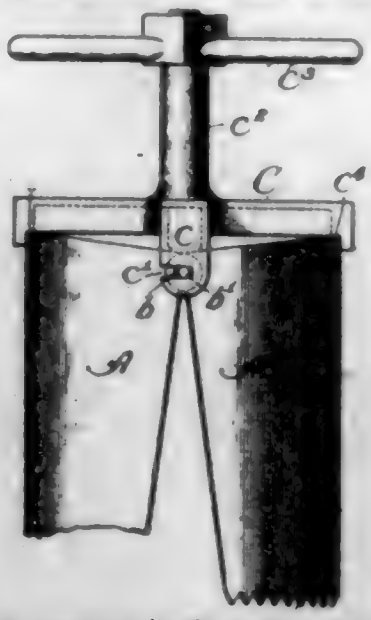
816,235. HAIR-CLIPPER. OTTO W. JOHNSON, Chicago, Ill. Filed Oct. 9, 1905. Serial No. 281,919.



Claim.—1. In a hair-clipper, the combination with a supporting-body, of a handle secured thereto, a crank-handled gear journaled on the upper portion of the body, a driving-shaft journaled on the lower portion of the body, gearing connecting the inner end of said shaft to said gear, a guard or lower plate fixed to the lower portion of the body and projecting forwardly beyond the same, an upper or cutting plate movable transversely on the lower plate and having a pair of parallel uprights, and a disk on the front end of the driving-shaft having a wrist-pin to coact with said uprights to reciprocate the upper plate, substantially as described.

2. In a hair-clipper, the combination with an elbow-shaped body having in its rear lower portion a recess, of a supporting-handle secured to the upper portion of the body, a crank-handled gear journaled on the upper portion of the body, a driving-shaft journaled on the lower portion of the body and having its rear end extending into said recess, a shaft vertically journaled near the rear end of the driving-shaft, a beveled gear on the driving-shaft and a similar gear on the adjacent end of the vertical shaft, another gear on the vertical shaft to mesh with the crank-handled gear, a guard or lower plate fixed to the lower portion of the body and projecting forwardly beyond the same, an upper plate movable transversely on the lower plate and having a pair of parallel uprights, a disk on the front end of the driving-shaft provided with a wrist-pin to coact with said uprights to reciprocate the upper plate, and a casing inclosing the disk and uprights and secured to the front portion of the body, substantially as described.

816,236. TRANSPLANTING DEVICE. RUDOLPH D. KLINE, Streator, Ill. Filed Sept. 21, 1905. Serial No. 279,401.



Claim.—1. An apparatus for the purpose set forth, comprising a plurality of blades movable toward each other, a handle for rotating said blades about the axis of the device to form a core, and a second handle adapted to replace the first-named handle for moving the blades toward each other to grip the core and enable it to be removed.

2. The combination of a pair of curved blades pivotally supported at their upper ends, and a handle having a bearing upon the upper ends of the blades and having means for causing the blades to rotate with the handle, for the purpose set forth.

3. The combination of a pair of pivotally-connected curved blades, a member supported on said blades and equipped with means detachably connected with the blades for effecting rotation thereof, and a handle connected with said member, for the purpose set forth.

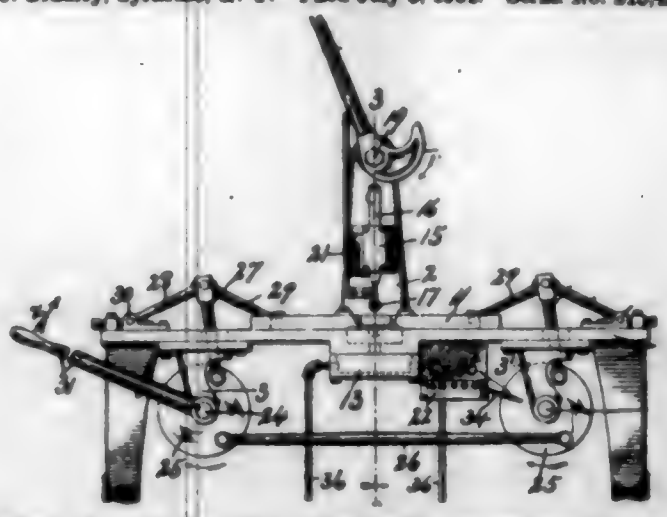
4. An apparatus for the purpose set forth, comprising a pair of

half-cylindrical blades pivotally connected at their upper portions and cut away at their adjacent edges, a bar pivotally connected with said blades and extending across the axis of the device, a rotating handle applied to the blades for rotating the device about its axis to form a core, and a handle adapted to replace said first-named handle and equipped with means for lifting upon the blades at their points of pivotal connection and pressing downwardly upon the blades at points removed from said points of pivotal connection, for the purpose set forth.

5. The combination of a pair of pivotally-connected blades and a member having bearings upon the upper ends of the blades at points removed from the pivotal connections of the blades and equipped with means for applying turning force to the blades at their points of pivotal connection, for the purpose set forth.

6. The combination of a pair of curved blades having at the upper ends of their adjacent edges pivot perforations, a bar equipped with pivots and provided centrally with a threaded perforation, a member adapted to rest upon the blades and equipped with a bolt having threaded connection with said bar, and pivoted links carried by said last-named member having recesses engaging said pivots, for the purpose set forth.

816,237. **MACHINE FOR FORMING HOLLOW SPLIT BUSHINGS.** PETER KOHLERSWEER, Syracuse, N. Y., assignor to Christopher C. Bradley, Syracuse, N. Y. Filed July 5, 1904. Serial No. 215,423.



Claim.—1. A machine for pressing flat leather strips into spherical form comprising a die having a semispherical recess, means for holding the strip centrally over the recess, a spherical die and actuating means therefor to press the center of the strip into the recess, and additional dies engaging the ends of the strip and pressing them against the opposite sides of the spherical die while the latter is in the recess, and means to actuate the additional dies back and forth.

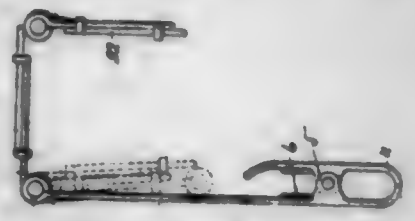
2. A machine for pressing flat leather strips into spherical form comprising a die having a semispherical recess and an abutment at one side of the recess against which one end of the strip abuts to center it over the recess, a spherical die and actuating means therefor to press the center of the strip into the recess, additional dies sliding upon the face of the first-named die to engage and press the ends of the strip upon opposite sides of the spherical die while the latter is in the recess of the first-named die, said second dies having their meeting end faces formed with concave recesses corresponding to the spherical die.

3. In a machine for forming spherical leather packings, a female die having a semispherical recess, a male die having a spherical surface, means to move one of said dies toward and from the other to press the center of the packing into the recess, means to heat one of the dies, additional dies having concave faces to engage and press the ends of the packing on the male die, a toggle connected to each additional die, means to adjust said toggle, and further means to flex and extend said toggles.

4. In a machine for forming spherical split-leather bushings, the combination with a spherical male die and a female die having a semispherical recess, one die being movable toward and from the other to press the center of the bushing into the recess, additional female dies operable to press the ends of the bushing upon the male die, toggles connected to operate the additional dies, eccentrics connected to actuate the toggles, and means connected to actuate both eccentrics simultaneously.

816,238. **HAT OR GARMENT HOLDER.** BARTLET KRUMBHAAR, Meriden, Conn. Filed Feb. 4, 1905. Serial No. 243,676.

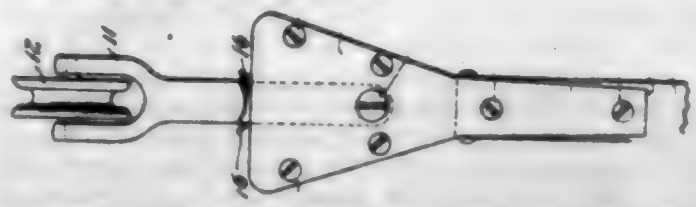
Claim.—1. A garment-holder comprising two plates, one formed with a spring-clasp at its lower end, said plates connected together by two plates arranged to slide one upon the other, substantially as described.



2. A garment-holder comprising two plates each formed with a spring-finger at the upper ends, one of said plates provided with a spring-clasp at its lower end, said plates connected by plates hinged thereto, said hinge-plates formed with shoulders to engage with the ends of said spring-fingers, substantially as described.

3. The herein-described garment-holder comprising two plates formed at their outer ends with spring-fingers and with hinge-joints, one of said plates provided at its lower end with a spring-clasp, the other plate connected with a second plate for sliding movement therewith, said plates connected together by two plates hinged respectively to the said plates and coupled together for movement one upon the other, substantially as described.

816,239. **TROLLEY-HARP.** ISAAC H. LUNT, Barre, Vt. Filed Sept. 6, 1905. Serial No. 277,187.



Claim.—1. The combination with a trolley-pole, of a sectional housing secured to the pole and formed of side sections spaced apart by lateral projections, a harp pivotally mounted between the side walls of the housing and springs disposed on each side of the harp for supporting the latter in alinement with the trolley-pole.

2. The combination with a trolley-pole, of a housing detachably secured to the pole and formed of a pair of side sections spaced apart by lateral projections, a harp mounted for lateral movement between the side sections of the housing, and springs secured to the trolley-pole and having their free ends bearing against the harp for yieldably supporting the latter in alinement with said pole.

3. The combination with a trolley-pole, of a sectional housing secured to the pole and formed of detachable side sections spaced apart by lateral projections, the walls of which are inclined or beveled, and a trolley-harp mounted for lateral movement between the sections of the housing and yieldably supported in alinement with the trolley-pole, the inclined walls of the projections serving to limit the lateral movement of the trolley-harp.

4. The combination with a trolley-pole, of a sectional housing detachably secured to the pole and formed of side sections spaced apart by lateral projections, a trolley-harp mounted for swinging movement between the sections of the housing, and springs secured to the trolley-pole and having their free ends bearing against the harp for yieldably supporting the latter in alinement with said trolley-pole.

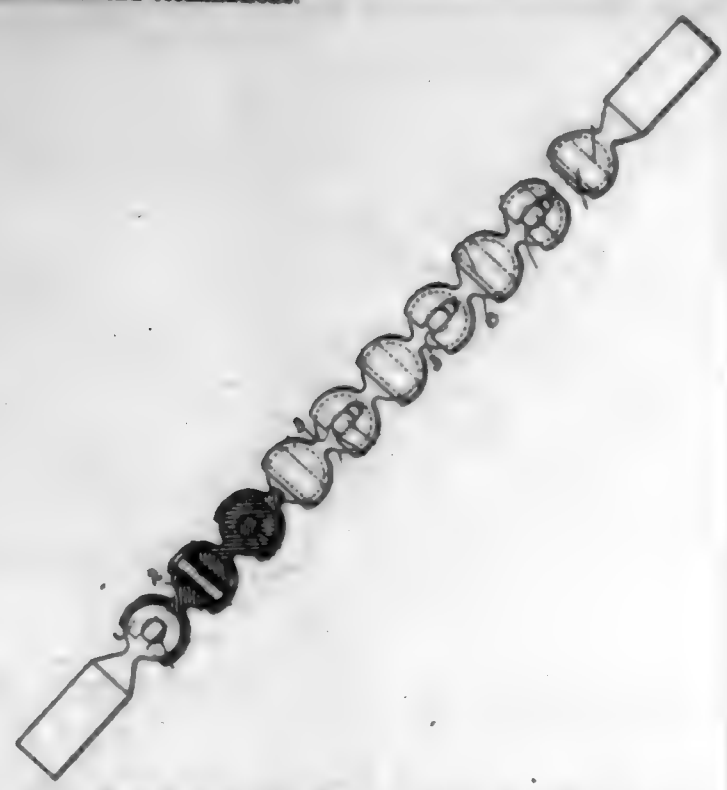
5. The combination with a trolley-pole provided with a reduced extension defining oppositely-disposed shoulders, of a sectional housing secured to the extension and formed of detachable side sections spaced apart by lateral projections, said side sections being provided with spaced depending arms adapted to engage said shoulders, a trolley-harp pivotally mounted for lateral movement between the side sections of the housing, and springs secured to the trolley-pole between the depending arms and having their free ends bearing against the harp for yieldably supporting the latter in alinement with the trolley-pole.

816,240. **FLEXIBLE SHAFT.** CHARLES J. C. MEHLIS, New York, N. Y. Filed May 22, 1905. Serial No. 261,439.

Claim.—1. A flexible shaft, consisting of a series of similar connected parts, each part comprising a sphere and socket, axial pins connecting the same for turning movement, and shaft-end terminations.

2. A flexible shaft, consisting of a series of similar connected parts, each part comprising a sphere and integral socket, the sockets

engaging the spheres in progression and slotted from the edges inward at opposite sides, and the spheres centrally perforated, axial pins in said perforations with reduced ends in the slots of the sockets, and shaft-end terminations.



3. A flexible shaft, consisting of a series of similar connected parts, each part comprising a sphere and integral socket, the sockets engaging the spheres in progression and slotted from the edges inward at opposite sides, and the spheres centrally perforated, axial pins in said perforations with reduced ends having flat opposite faces, said flat faces contacting with the parallel opposite edges of the slots and moving through the slots, compelling the axial pins to turn in the spheres, and shaft-end terminations.

4. A flexible shaft, comprising a driving-shaft end and sphere termination, a driven shaft end and socket termination, and an intervening series of similar unitary parts, each part comprising a sphere and socket, the sockets engaging the spheres and the parts being free to move in relation to one another, the sockets being provided with opposite slots in line with the said connected parts, and the spheres with axial pins with the ends of the pins received and movable in the slots of the sockets.

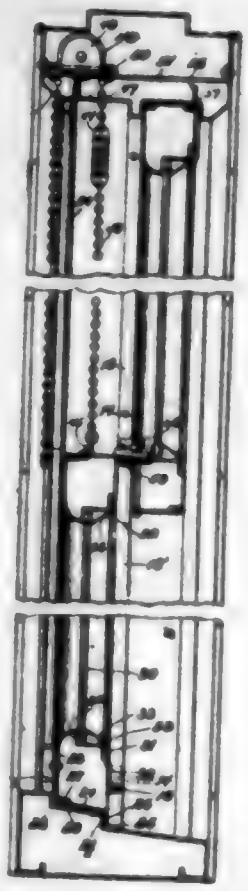
5. A flexible shaft, comprising a driving-shaft end and sphere termination, a driven shaft end and socket termination, and an intervening series of similar unitary parts, each part comprising a sphere and socket, the sockets engaging the spheres and the parts being free to move in relation to one another the sockets being provided with opposite slots in line with the said connected parts, and the spheres with axial pins having reduced ends with flattened opposite faces, the said ends being received in the slots, which in width agree with the width of the flattened ends of the pins, so that the flattened faces bear upon opposite edges of the slots and move through the slots, compelling the pins to move in the spheres.

816,241. WINDOW CONSTRUCTION. WILLIAM H. MILLER, Galveston, Tex. Filed Sept. 20, 1905. Serial No. 279,317.

Claim.—1. A window-sash formed of sheet metal, each rail consisting of two interlocking strips of sheet metal, one of said strips having shoulders for glass to abut thereagainst and a channel adjacent and parallel with the shoulder, a retaining-cap detachably mounted within the channel of each rail and extending adjacent the shoulder, a mullion-bar interposed between the rails of the sash and comprising a channeled strip, a bead projecting into and engaging said strip, a double retaining-cap extending from opposite faces of the bead and adjacent the channeled strip, and means for detachably securing said cap to the bead.

2. A mullion-bar for metallic window-sashes comprising a channeled strip, a bead projecting into and engaging said strip, a double retaining-cap extending from opposite faces of the bead and adjacent the channeled strip, and means for detachably securing said cap to the bead.

3. The combination with a metallic sash; of a sheet-metal frame therefor comprising a sill, and a head and sides mounted on the sill, said sides being each formed of an outer and an inner face-plate interlocking and secured at their edges, the inner face-plate having a sash-retaining shoulder and parallel channels, a parting-strip formed of two sections mounted within one of the channels, means for detachably securing one of said sections within the channel, and a sectional bead-strip mounted within the other channel and the sections of the said strip being removable.



4. A sash comprising top, bottom and side rails and a glass-retaining cap detachably mounted within each of said rails and formed of sheet metal, said cap having an aperture therein constituting a drain.

5. The combination with a frame; of a lower sash having a balance-weight permanently connected thereto, a longitudinally-movable flexible device connected to the sash and supported by the frame, and fusible means upon the sash adapted when the sash is raised to engage the flexible device to support the sash.

6. The combination with a window-frame, of an upper and lower sash mounted therein, weights permanently connected to the sashes, weighting means inclosed within the upper sash, thermally-operated means for automatically releasing said weighting means, a flexible device supported by the frame and secured to the lower sash, and fusible means upon said lower sash adapted to engage the flexible device and support the lower sash in raised position.

7. The combination with a sheet-metal sash having a receptacle therein provided with an outlet; of weighted devices mounted within the receptacle, and a fusible closure for the outlet extending into contact with the sash and projecting thereabove.

816,242. FIREPROOF WINDOW. WILLIAM H. MILLER, Galveston, Tex. Filed Dec. 12, 1905. Serial No. 291,443.

Claim.—1. The combination with a sheet-metal window-frame having channels in the sides thereof and slots in the walls of the channels, each having a contracted portion of a sectional parting-strip in each channel, means for permanently securing one of the sections within the channel, the second section having one end projecting into the permanently-secured section, and means engaging the walls of the slots for detachably securing said second section within the channel.

2. The combination with a sheet-metal window-frame having channels in the sides thereof and slots in the walls of the channels, each having a contracted portion of a sectional parting-strip in each channel, means for permanently securing one of the sections within the channel, the second section having one end projecting into the permanently-secured section, a grooved device slidably mounted within the contracted portion of the slot, and means engaging said device for detachably securing the second section within the channel.

3. The combination with a sheet-metal window-frame having channels in the sides thereof, of a bead-strip seated within and extending from each channel, the walls of the channel and the strip therein being slit and folded to retain the strip.

4. The combination with a sheet-metal window-frame having a channel therein, of a sectional bead-strip within the channel, one of said sections and the walls of the channel adjoining it being slit and folded to hold the section within the channel, and a second section of said strip being detachably mounted within the channel.



5. The combination with a sheet-metal window-frame, having a weight-receiving aperture in one side thereof, of a closure comprising a plate having one end adapted to project into the aperture and under one end wall thereof, side flanges upon the plate projecting into the aperture, and an end projection upon the plate adapted to overlap and to be secured to the other end wall of the aperture.

6. The combination with a sheet-metal window-frame, of a parting-strip adapted to be secured thereto and comprising channeled sections, one of said sections having a reduced end adapted to be inserted into the other section.

7. The combination with a window-frame having partitioned sides forming compartments, and pulleys within the head of the frame, of a sash within the frame, a rod slidably mounted therein, fusible means for holding the rod against movement in the sash, balances within the frame and permanently connected to the sash, a chain connected to the rod and extending over the pulleys into one of the compartments, and an auxiliary weight suspended in said compartment by the chain.

8. The combination with a sheet-metal sash having a top rail formed of interlocking metallic strips; of a trough-shaped receptacle in the top rail of the sash and having an opening in the bottom thereof and through the bottom of the rail, the edges of said receptacle being permanently secured within the interlocking portions of the rail; and a fusible closure for the opening.

816,243. **AMALGAMATOR.** WILLIAM H. MORGAN, Los Angeles, Cal. Filed June 30, 1905. Serial No. 267,696.

Claim.—1. An amalgamator comprising an inclined sluice-box provided with an amalgamated surface and having depressions forming riffles sunk in the bottom and spaced apart and charged with mercury; the upper walls of the riffles respectively being overhanging and deeper than the lower walls, and a screen arranged to shield the amalgamated surface.

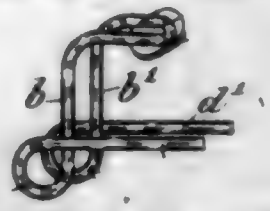
2. An amalgamator comprising a transversely-inclined sluice-box provided with an amalgamated surface and having a series of transversely-extending depressions forming riffles sunk in the bottom and spaced apart and charged with mercury, transverse revoluble amalgamated plates arranged respectively above the riffles and a screen arranged to shield the amalgamated surface.

3. An amalgamator comprising an inclined sluice-box provided with an amalgamated surface and having depressions forming riffles sunk in the bottom and spaced apart and charged with mercury; the upper walls of the riffles being overhanging and deeper than the lower walls; revoluble amalgamated plates arranged above the riffles and a screen arranged to shield the amalgamated surface and said riffles and plates.



4. An amalgamator comprising a longitudinally-inclined sluice-box provided with an amalgamated surface and having a series of transversely-extending depressions forming riffles sunk in the bottom and spaced apart and charged with mercury, a screen arranged to shield the amalgamated surface, transverse revoluble amalgamated plates arranged under the screen and above the riffles and straight, swinging pendent amalgamated plates between the sunken riffles and beneath the screen, said swinging plates adapted to lie substantially flat upon the surface of the stream passing thereunder.

816,244. **BOTTLE-CLIP.** JOHN J. MCGARRY, Redfern, New South Wales, Australia, assignor to Edmund Resch, Redfern, New South Wales, Australia. Filed Aug. 30, 1905. Serial No. 276,489.



Claim.—1. An improved bottle-clip comprising a single strip of resilient wire bent upon itself to form a cap-engaging loop, the ends of the wire being bent and extending downwardly at right angles a suitable distance and again bent at right angles forming a loop in each end, the said ends extending outwardly to engage the bottle, and a cap of flat material secured to said first-mentioned loop.

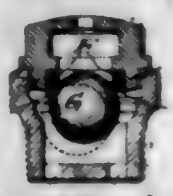
2. An improved bottle-clip comprising a single strip of resilient wire bent upon itself to form a cap-engaging loop, the ends of the wire being bent and extending downwardly a suitable distance and again bent at right angles forming a loop in each end, the said ends extending outwardly to engage the bottle, said loops being angularly disposed and causing an upward and an inward pressure of the outwardly-extending ends upon the bottle.

3. An improved bottle-clip comprising a single strip of resilient wire bent upon itself to form a cap-engaging loop, the ends of the wire being bent and extending downwardly a suitable distance and again bent at right angles forming a loop in each end, the said ends extending outwardly to engage the bottle, said loops being angularly disposed and causing an upward and an inward pressure of the outwardly-extending ends upon the bottle, and a cap of flat material secured to said first-mentioned loop.

816,245. **DYNAMIC TRAP OR DRAIN VALVE.** JAMES F. MCELROY, Albany, N. Y., assignor to Consolidated Car-Heating Company, Albany, N. Y. Filed Mar. 31, 1900. Serial No. 10,908.

Claim.—1. In a drainage-valve, a casting provided with a chamber having its sides flaring outwardly at near one end forming a side

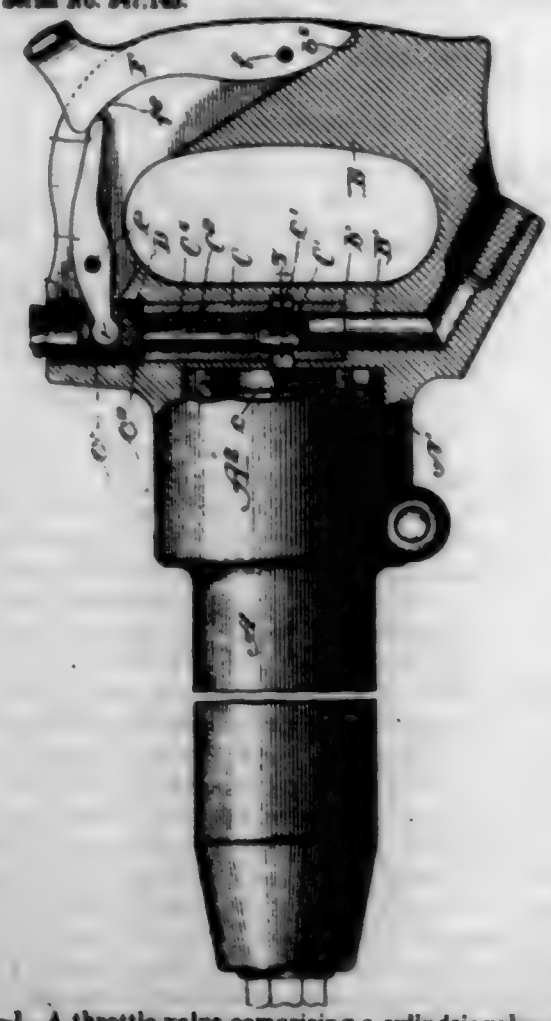
pocket, with a passage-way at one end through which the fluid may enter the casting; a hollow nut provided with restricted openings adapted to be secured to the other end of said casting; a sphere placed in said chamber adapted to close the opening leading from said chamber to said nut when forced into position by fluid entering said casting and when the pressure is removed, said sphere arranged to fall into said side pocket, substantially as described.



2. A drainage-valve consisting of a casting and a sphere, said casting provided with a chamber of considerably-larger diameter than said sphere, said casting provided with interior walls flaring outwardly and forming a side pocket at one end of said chamber, said sphere adapted to normally occupy said side pocket; a nut provided with restricted openings attached to one end of said casting; a gasket in said nut arranged to form a valve-seat in said chamber for said sphere, said casting provided with an opening at the end thereof opposite said nut so arranged that said sphere cannot close said opening.

3. In a drainage-valve a casting; a coupler; means for connecting said casting with said coupler; a nut provided with restricted openings adapted to engage one end of said casting; a gasket in said nut forming a valve-seat in said casting; a side pocket in said casting adjacent to said nut; a sphere in said casting normally occupying said side pocket, said casting provided with an uncontrolled and unobstructed passage-way leading from said casting to said coupler, substantially as described.

816,246. **THROTTLE-VALVE FOR PNEUMATIC TOOLS.** REINHOLD A. NOELLING, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed Feb. 24, 1905. Serial No. 247,143.



Claim.—1. A throttle-valve comprising a cylindric valve-chamber provided with a lateral port, a sliding valve-piston in said valve-chamber, a valve-stem connected with the piston, said piston being provided with an aperture to receive the valve-stem, a nut adjustable on the valve-stem to change the position of the valve-piston on the stem, and a spring applied to hold the valve-piston against said nut.

2. A throttle-valve comprising a cylindric valve-chamber provided with a lateral port, a sliding valve-piston in said chamber, and an endwise-movable valve-stem connected with the valve-piston, said valve-piston being provided with a central aperture to receive the valve-stem, a nut adjustable on the valve-stem to change the position of the piston on said stem, and a coiled spring surrounding the valve-stem and acting on the valve-piston both to hold the said valve-piston against the nut and to give endwise movement to the valve piston and stem.

3. A throttle-valve embracing a cylindric valve-chamber communicating at one end with an inlet-passage and closed at its opposite end, said valve-chamber being provided between its ends with a lateral exit-port, an endwise-sliding valve-piston in said chamber adapted to cover said port when advanced toward the inlet-passage and to uncover said port when retracted toward the closed end of the chamber, and a valve-stem connected with the piston and extending outwardly through the closed end of the valve-chamber, said valve-piston being provided with a passage for the leakage of air therethrough to the closed end of the valve-chamber to balance the valve.

4. A throttle-valve comprising a cylindric valve-chamber communicating at one end with an inlet-passage and closed at its opposite end, a sliding valve-piston in said chamber, and an endwise-movable valve-stem connected with the valve-piston and extending outwardly through the closed end of the valve-chamber, said valve-piston being provided with a central aperture for the valve-stem, larger in diameter than the portion of the stem which passes therethrough, a nut on the valve-stem, and a spring applied to hold the valve-piston in contact with said nut.

5. A throttle-valve comprising a cylindric valve-chamber communicating at one end with an inlet-passage, closed at its opposite end and provided with a lateral exit-port, a sliding valve-piston in said valve-chamber, a valve-stem connected with the piston and extending through the closed end of the valve-chamber, said piston being provided with an aperture to receive the valve-stem, and the valve-stem being provided with a nut adjustable thereon to change the position of the valve-piston, and a spring applied to hold the valve-piston against said nut, the central opening in the valve-piston being larger than the part of the valve-stem which passes through the same and said nut being provided with a notch which forms with the space between the valve-piston and valve-stem, a passage to permit leakage of air past the piston to balance the valve.

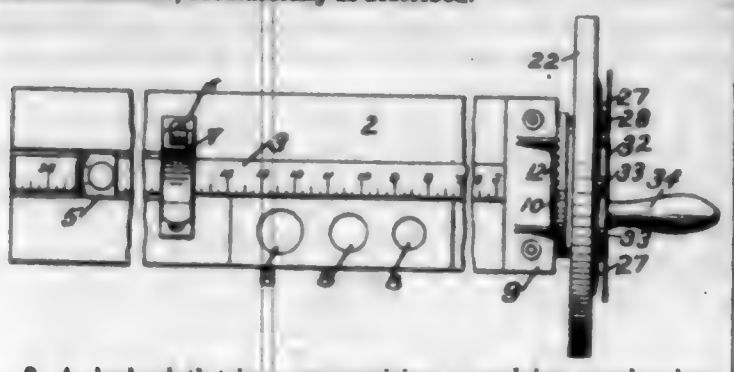
6. A throttle-valve comprising a valve-casing provided with a cylindric passage opening at both ends through the sides of the casing and with one end of which is connected an air-supply pipe, said passage having a shoulder at its inlet end, a cylindric valve-bushing seated in said passage, and bearing at its inner end against said shoulder, said bushing having a lateral exit-port and forming a valve-chamber which communicates at one end with the inlet end of said passage, a hollow plug secured in and closing the end of the passage remote from its inlet end, and bearing at its inner end against the outer end of the valve-bushing, said plug having a central guide-aperture extending therethrough, a sliding valve-piston in the valve-chamber, a valve-stem connected with said piston and sliding at its outer end in said hollow plug, and provided at its outer end with a lateral socket, a coiled actuating-spring surrounding the said valve-stem between the inner end of said plug and the said piston, and an actuating-lever pivoted to the casing and engaging with the socket in the outer end of the valve-stem.

7. A throttle-valve comprising a valve-casing provided with a cylindric passage opening at both ends through the sides of the casing and with one end of which is connected an air-supply pipe, said passage having a shoulder adjacent to its inlet end, a cylindric valve-bushing seated in said passage and bearing at its inner end against said shoulder, said bushing having a lateral exit-port and forming a valve-chamber which communicates at one end with the inlet end of said passage, a hollow plug secured in and closing the end of said passage remote from the inlet end, and bearing at its inner end against the outer end of the valve-bushing, said plug having a central guide-aperture extending therethrough, a sliding valve-piston in the valve-chamber, a valve-stem connected with said piston and sliding at its outer end in said hollow plug, said valve-stem having an enlarged head at its outer end which fits and slides in the guide-aperture of the plug, and is provided with a lateral socket, said plug having a lateral slot opposite said socket, and an actuating-lever pivoted to the casing one end of which extends through said slot in the hollow plug and engages said socket in the head of the valve-stem.

816,247. **SHADE-CLOTH TRIMMER.** FREDERICK W. ORCHARD, Minneapolis, Minn. Filed Feb. 20, 1905. Serial No. 246,361.

Claim.—1. A shade-cloth trimmer comprising a revolving member provided with an opening to receive the end of a shade-cloth roll, radially-movable knives carried by said member and yieldingly held toward said opening, and mechanism for separating said knives

when said member is turned backward to allow the insertion of the roll between them, substantially as described.



2. A shade-cloth trimmer comprising a revolving member having a central opening and a series of radially-movable knives surrounding said opening, a series of cam-surfaces arranged to revolve with said member in one direction but locked against revolution in the other direction, and means engaging said cam-surfaces to separate said knives when said member is revolved backward.

3. In a shade-cloth trimmer, the combination, with a hub, of a sleeve having cam-surfaces mounted thereon and adapted to revolve freely in one direction but locked against revolution in the other direction, a revolving member mounted on said hub and having an opening coinciding with an opening in said hub, spring-pressed radially-movable guide-blocks carried by said member, knives for said blocks, and screws passing through said knives and blocks and having ends adapted to engage said cam-surfaces when said member is turned backward.

4. A shade-cloth trimmer comprising a revolving member having an opening to receive the end of a shade-cloth roll, spring-pressed radially-movable guide-blocks carried by said member, and circular knives secured on said blocks and normally fixed but capable of adjustment to expose new cutting edges to the cloth.

5. In a shade-cloth trimmer, a revolving member having an opening to receive a shade-cloth roll, a series of spring-pressed radially-movable blocks carried by said member, knives secured on said blocks, and a guard-plate supported on said member in a plane parallel with the plane of said knives and covering the edges thereof and having openings through which the securing means for said knives is accessible, substantially as described.

6. In a shade-cloth trimmer, a hub having an opening to receive the end of a shade-cloth roll, a revolving member having an opening coinciding with the one in said hub, knives carried by said member and inclosing said opening, and a bushing removably fitting in said hub, for the purpose specified.

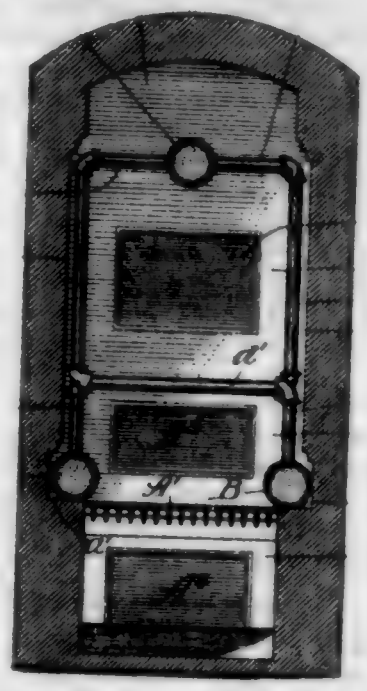
7. In a shade-cloth trimmer, the combination, with a hub, of a sleeve having cam-surfaces mounted thereon, means interposed between said sleeve and hub to allow the free revolution of said hub in one direction but lock it against movement in the other direction, a revolving member mounted on said hub and having an opening coinciding with an opening in said hub, radially-movable knives carried by said member and having means to engage said cam-surfaces when said member is turned backward, for the purpose specified.

8. In a shade-cloth trimmer, the combination, with a hub, of a sleeve having cam-surfaces mounted thereon, locking-balls fitting within recesses in said hub and adapted to engage said ring and lock it against movement in one direction but allow it to turn freely in the other direction, a revolving member on said hub and having an opening coinciding with the opening therein, and spring-pressed radially-movable knives carried by said member and having means for engaging said cam-surfaces when said member is turned backward to separate said knives, substantially as described.

816,248. **FURNACE.** JOHN J. O'SHEA, Chicago, Ill. Filed Dec. 16, 1905. Serial No. 292,110.

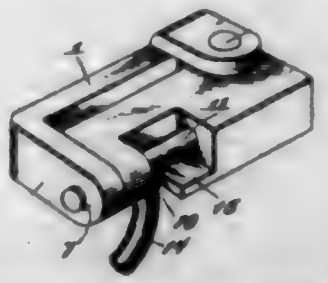
Claim.—1. In a furnace of the character described, the combination of a combustion-chamber provided with a grate, substantially horizontal pipes arranged along opposite sides of the lower portion of said combustion-chamber, series of tubes rising from said pipes within said combustion-chamber, the tubes at one side being staggered with relation to the tubes of the other side, horizontal tubes connected with the free ends of said first-named tubes and extending across the furnace, a cremating-chamber above said horizontal tubes, a longitudinal pipe at the upper portion of said cremating-chamber, and tubes connecting the free ends of said horizontal tubes with said last-named pipe, for the purpose set forth.

2. In a furnace of the character described, the combination of a combustion-chamber provided with a grate and adjacent to said grate with ledges, substantially horizontal water-pipes located above said ledges, a superposed combustion-chamber, a longitudinal pipe located above the central portion of said second-named combustion-chamber, and tubes connecting said lower pipes with said upper pipe, each tube comprising a relatively short vertical section, a horizontal section extending from the upper end thereof transversely across the furnace between said combustion-chambers, a vertical section rising from the free end of said last-named section, and a relatively short horizontal section connecting the free end of said last-named vertical section with said upper pipe, the first-named horizontal sections constituting a grate for the cremating-chamber, substantially as and for the purpose set forth.



3. In a furnace of the character described, the combination of a combustion-chamber provided with a suitable grate and with the charging-door, substantially horizontal water-pipes arranged along opposite sides of the lower portion of said combustion-chamber, tube-sections rising from said pipes, the tube-sections at one side of the furnace being staggered with relation to those at the other side thereof, horizontal tube-sections, elbows connecting one end of each of said horizontal tube-sections with the adjacent end of a vertical tube-section, a superposed combustion-chamber, vertical tube-sections at the sides of said second-named combustion-chamber, elbows connecting the lower ends of said last-named tube-sections with the free ends of said horizontal tube-sections, elbows connected with the upper ends of said last-named vertical tube-sections, a longitudinal pipe above the central portion of said second-named combustion-chamber, relatively short horizontal tube-sections connecting said last-named elbows with said last-named pipe, a charging-door for said second-named combustion-chamber at one end of the furnace and a smoke-stack connected with the opposite end of said furnace above said last-named pipe, substantially as and for the purpose set forth.

816,249. **SECURING DEVICE FOR LOGGING-CHAINS.** FREDERICK PEIKARD, Rhinelander, Wis. Filed Nov. 16, 1905. Serial No. 287,662.



Claim.—1. In a device of the character described, the combination with a stationary jaw and means thereon adapted to be engaged by a chain; of a keeper extending from the stationary jaw, a second jaw pivoted to the stationary jaw, and means upon the pivoted jaw for engaging the keeper and locking the jaws.

2. In a device of the character described, the combination with a stationary jaw having a keeper at one end and means upon said jaw adapted to be engaged by a chain; of a jaw pivoted to the stationary jaw, and a bolt slidably mounted within the pivoted jaw and adapted to engage the keeper.

3. In a device of the character described, the combination with a stationary jaw, a keeper at one end thereof and means extending from the jaw adapted to be engaged by one end of a chain; of a jaw pivoted to the stationary jaw a bolt slidably mounted therein adapted to engage the keeper, and a stem projecting from the bolt in front of the pivoted jaw.

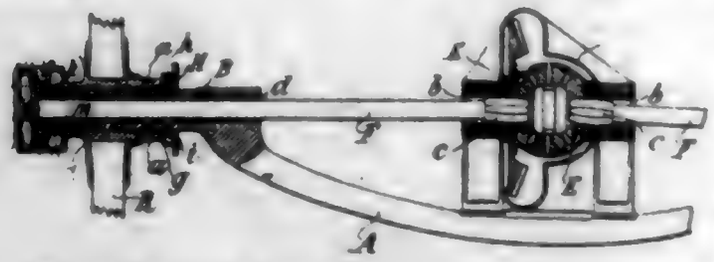
4. In a device of the character described, the combination with a stationary jaw having a keeper at one end and a loop extending from the jaw; of a second jaw pivoted to the stationary jaw, and a bolt slidably mounted within the pivoted jaw and adapted to engage the keeper.

5. In a device of the character described, the combination with a stationary jaw having a keeper at one end and a loop; of a jaw pivoted to the stationary jaw and having a recess therein, a bolt slidably mounted within the pivoted jaw and extending across the recess and adapted to engage the keeper, and a stem projecting from the bolt and recess.

6. In a device of the character described, the combination with a stationary jaw having a keeper at one end and a loop; of a jaw pivoted to the stationary jaw and having a recess therein, a bolt slidably mounted within the pivoted jaw and extending across the recess and adapted to engage the keeper, a stem projecting from the bolt and recess, and a ledge within the recess adapted to engage the stem and hold the bolt against movement and adapted to support the stem in a raised position.

7. In a device of the character described, the combination with a stationary jaw having a keeper and a loop; of a jaw pivoted to the stationary jaw and having a recess in one face, both jaws having one face beveled, a bolt slidably mounted within the pivoted jaw and extending across the recess, said bolt adapted to engage the keeper, and a stem extending from the bolt and recess.

816,250. **MOTOR-VEHICLE.** CHARLES M. J. PETIET, Villeneuve-la-Garenne, France, assignor to Société Anonyme des Automobiles Arbel, Villeneuve-la-Garenne, France. Filed Jan. 10, 1905. Serial No. 240,490.



Claim.—The combination of an axle A made in a single piece, a differential gearing fixed on said axle, transmission-shafts F connected to the driving-pinions of the differential by means of olive-shaped squared heads engaging in squared holes in the hubs of said pinions, the hubs of the wheels being journaled on the ends of the axles, rings arranged non-rotatively on the ends of the axles retaining said hubs in place, a box forming a prolongation of the hub of each wheel and provided with gaps, teeth on the ends of the transmission-shafts engaging in said gaps to transmit the rotation of the shaft to the wheel, a screw-cap closing the end of each of said boxes, and a spring interposed between the end of each shaft and said gap to form a resilient bearing or abutment.

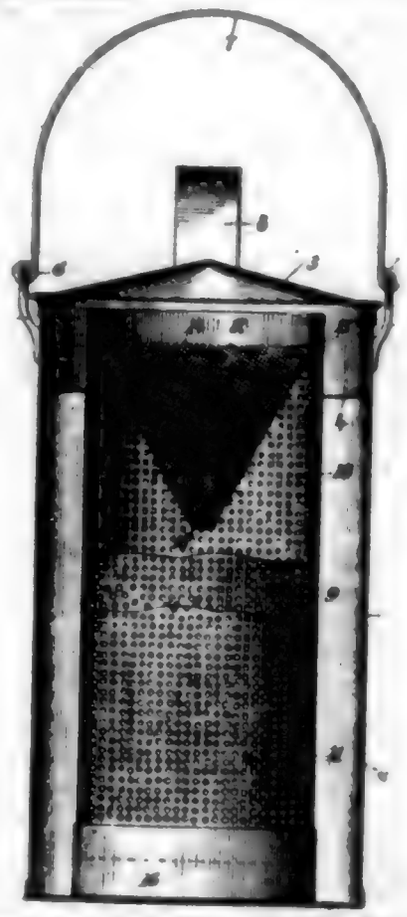
816,251. **COMBINED MINNOW BUCKET AND TRAP.** FRED PETRICKY, Austin, Tex. Filed Sept. 27, 1905. Serial No. 280,210.

Claim.—1. A combined minnow bucket and trap, comprising an outer bucket, and an inner trap-bucket consisting of tubular sections of open-work, each section being provided at one end with a hollow conical head of open-work, the apices of the heads being open and disposed toward each other within said trap-bucket, one of said tubular sections fitting telescopically within the other section to permit of varying the height or working capacity of the said inner bucket.

2. A combined minnow bucket and trap, comprising an outer bucket, and an inner bucket consisting of tubular telescopic sections of foraminated material, the sections being each provided at one end thereof with a hollow conical head of open-work, the apices of the heads being open and disposed toward each other.

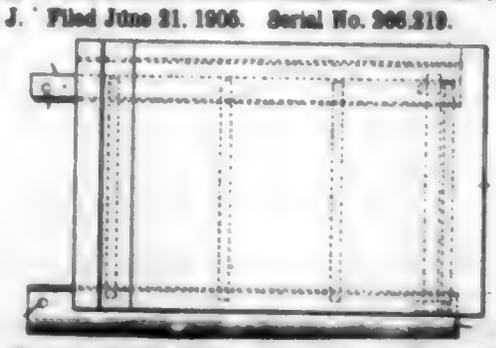
3. A minnow-trap comprising tubular sections of open-work, fitting each other telescopically to permit of varying the capacity of the trap, each section being provided at one end with a hollow conical head of open-work located within the section, the apices of the heads being open and disposed toward each other.

4. A combined minnow bucket and trap, comprising an outer bucket and an inner trap-bucket of tubular telescopic sections of open-work, an end of each of said sections being provided with a hollow conical head of open-work, the apex of which is open and disposed within the section.



5. A minnow-trap, comprising tubular telescopic sections of open-work, the upper end of one section and the lower end of the other section each being provided with a hollow conical head of open-work, one or both of said heads being detachable, and the apex of each head being open and located within the section to which it belongs.

816,252. **ARTIFICIAL-STONE SHINGLE.** ORVET PRICE, Plainfield, N. J. Filed June 21, 1905. Serial No. 266,219.



Claim.—1. A molded building-shingle formed of artificial stone or cement and having embedded therein a metallic strengthening-frame, with parts thereof projecting at one end for the reception of fastening devices and with a part thereof projecting at the side to underlap a companion shingle to form a gutter.

2. A molded building-shingle formed of artificial stone or cement, having a metallic strengthening-frame embedded therein, comprising a plurality of metallic members with tying means therebetween, said metallic members projecting beyond one end of said shingle for the reception of fastening devices and one of said metallic members underlapping a companion shingle.

3. A molded building-shingle formed of artificial stone or cement, having a metallic strengthening-frame therein comprising a pair of bars projecting at one end of said shingle for the reception of fastening devices, rods embedded within said shingle and connecting said bars, one of said bars projecting at one side of the shingle to underlap a companion shingle and form a gutter.

4. A molded building-shingle formed of artificial stone or cement and having embedded therein a metallic strengthening-frame, with a part thereof at one end arranged for the reception of fastening devices, and having a part of the frame projecting at one side arranged to underlap a companion shingle to form a gutter.

5. A molded building-shingle formed of artificial stone or cement, and having molded therein a metallic member projecting beyond one side to underlap a companion shingle to form a gutter.

6. A molded building-shingle formed of artificial stone or cement, and having molded therein a metallic member projecting beyond one side to underlap a companion shingle to form a gutter, said member projecting beyond one end of the shingle for the reception of fastening devices.

7. A molded building-shingle formed of artificial stone or cement, and having molded therein a metallic member projecting at one side to underlap an adjoining shingle to form a gutter, and means of connection with an overlapping shingle.

8. A molded building-shingle formed of artificial stone or cement, and having molded therein a metallic member projecting at one side to underlap a companion shingle to form a gutter, and a metallic stiffening-frame embedded in the shingle.

9. A molded building-shingle formed of artificial stone or cement, and having molded therein a metallic member projecting at one side to underlap a companion shingle to form a gutter, the shingle having a wedge-shaped projection on its under face.

10. A molded building-shingle formed of artificial stone or cement, and having at one side thereof a metallic member arranged to underlap a companion shingle to form a gutter, and one or more metallic members embedded in the shingle and securing said gutter member to the shingle.

11. A molded building-shingle formed of artificial stone or cement, and having at one side thereof a metallic member arranged to underlap a companion shingle to form a gutter, and a metallic strengthening-frame embedded in the shingle and securing said gutter member to the shingle, said gutter member projecting beyond one end of the shingle for the reception of fastening devices.

12. A molded building-shingle formed of artificial stone or cement, a metallic strengthening-frame embedded in the shingle, a member projecting at one end of the shingle for the reception of fastening devices, and a member projecting at one side of the shingle arranged to coöperate with a companion shingle to form a gutter.

13. A building-shingle formed of artificial stone or cement and provided at one of its edges with a channel-shaped metallic strip having one of the bent sides embedded in the shingle, the other portion of the strip projecting beyond the edge, the shingle being provided on its opposite side adjacent the edge with a channel whereby two of such shingles placed contiguous will have a projecting portion of the strip extending into said channel, and one or more members embedded in the shingle and engaging the said embedded side of the strip to secure the strip to the shingle.

14. A building-shingle formed of artificial stone or cement and provided on one of its edges with a channel-shaped metallic strip having one of the bent sides embedded in the shingle, the other portion of the strip projecting beyond the edge, the shingle being provided along its opposite side adjacent the edge with a channel whereby two of such shingles placed contiguous will have a projecting portion of the strip extending into said channel, and a metallic strengthening-frame embedded in the shingle and engaging said embedded portion of the strip to secure the latter to the shingle.

15. A building-shingle formed of artificial stone or cement and provided along one of its edges with a channel-shaped metallic strip having one of the bent sides projecting into the shingle, the other portion of the strip projecting beyond the edge, the shingle being provided along its opposite side adjacent the edge with a channel whereby two of such shingles placed adjoining will have a projecting portion of the strip extending into said channel, a metallic member projecting into the shingle and extending beyond one end for the reception of fastening devices, and one or more members embedded in the shingle and engaging said strip and said fastening member for retaining such members in position.

16. In a roof, the combination with a supporting-surface, of a series of horizontal rows of shingles, each shingle formed of artificial stone or cement and having embedded therein a metallic strengthening-frame, with a part thereof at one end arranged for the reception of fastening devices, and having a part of the frame projecting at one side and underlapping a companion shingle to form a gutter, the shingles along the other side edge being provided with grooves engaged by said frame projection, the shingles along one side edge of the roof having a tapering extension replacing the grooves, and at the other side edge of the roof having a tapering extension replacing the gutter projections of the frame.

17. A building-shingle formed of artificial stone or cement and provided with a metallic strip secured thereto and extending beyond its face along one edge, the extending portion of the strip being bent toward the plane of the other face of the shingle, the shingle having at the opposite side of said face a grooved portion corresponding in section with the section of the projecting portion of said strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said grooved portion of the other shingle, said strip having a portion projecting beyond one end of the shingle for the reception of fastening means.

18. A building-shingle formed of artificial stone or cement and provided with a metallic strip extending beyond its face along one edge, the extending portion of the strip being bent toward the plane of the other face of the shingle, the shingle having at the opposite side of said face a grooved portion corresponding in section with the section of the projecting portion of said strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said grooved portion of the other shingle, a second metallic strip secured to said face of the shingle and projecting beyond the said end of the strip for the reception of fastening means.

19. A building-shingle formed of artificial stone or cement and provided along one of its longitudinal edges with a channel-shaped metallic strip having one of the bent sides embedded in the shingle with the intermediate portion of the strip partly in engagement with one face of the shingle, and the other portion of the strip projecting beyond said edge, the shingle being provided on said face along its opposite side adjacent the edge with a channel substantially corresponding in section with the section of the projecting portion of the strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said channel, and one or more metallic members embedded in the shingle and engaging the embedded portion of the strip.

20. A building-shingle formed of artificial stone or cement and provided along one of its longitudinal edges with a channel-shaped metallic strip having one of the bent sides embedded in the shingle with the intermediate portion of the strip partly in engagement with one face of the shingle, and the other portion of the strip projecting beyond said edge, the shingle being provided on said face along its opposite side adjacent the edge with a channel substantially corresponding in section to the section of the projecting portion of the strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said channel, and a plurality of tie-rods embedded in the shingle and extending through apertured portions of the edge of the strip projecting into the shingle.

21. A building-shingle formed of artificial stone or cement and provided with a metallic strip extending beyond its face along one edge, the free edge of the strip being bent away from the plane of said face, the shingle having at the opposite side of said face a grooved portion corresponding in section with the section of the projecting portion of said strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said portion of the other shingle, and a metal piece secured to the shingle, said piece and said bent strip both projecting beyond one end of the shingle for the reception of fastening means.

22. A building-shingle formed of artificial stone or cement and provided with a metallic strip extending beyond its face along one edge, the free edge of the strip being bent toward the plane of the other face of the shingle, the shingle having at the opposite side of said face a grooved portion corresponding in section with the section of the projecting portion of said strip, whereby two of such shingles placed adjoining will have the projecting portion of the strip extending into said grooved portion of the other shingle, and an angle-strip located on the grooved face of the shingle with one of its angle portions embedded in the shingle, said angle-strip and said bent strip each projecting beyond one end of the shingle for the reception of fastening means.

23. A building-shingle formed of artificial stone or cement and provided along one of its longitudinal edges with a channel-shaped metallic strip having one of the bent sides embedded in the shingle with the intermediate portion of the strip partly in engagement with one face of the shingle, and the other portion of the strip projecting beyond said edge, the shingle being provided on said face along its opposite side adjacent the edge with a channel substantially corresponding in section with the section of the projecting portion of the strip, whereby two of such shingles placed together will have the projecting portion of the strip extending into said channel, an angle-strip having one of its angle portions extending into the shingle on the grooved side, tie-rods embedded in the shingle and projecting through apertured portions of the embedded parts of said strips, each of said strips projecting beyond one end of the shingle for the reception of fastening means.

24. A building-shingle formed of artificial stone or cement and provided along one face adjacent to one edge with a groove, said shingle having a rib extending partially across said face adjacent to one end portion, the shingle on the opposite face adjacent the other end portion being provided with a transverse channel extending partially across the shingle, whereby upon two of such shingles over-

lapping at their end portions said rib will enter said channel, the shingles being provided with a tapering extension on the grooved face at the side opposite the groove extending from the channeled end portion to the overlapped shingle.

25. A building-shingle formed of artificial stone or cement and provided along one face adjacent to one edge with a groove, said shingle having a rib extending partially across said face adjacent to one end portion, the shingle on the opposite side adjacent the other end portion being provided with a channel extending partially across the shingle, whereby upon two of such shingles overlapping at their end portions said rib will enter said channel, the shingles being provided with a tapering extension on the grooved face at the side opposite the groove and extending from the channeled end portion to the shingle overlapped, and one or more metallic angle-pieces having one of the angle portions extending into the shingle on the grooved face with the other angle portion substantially flush with said face, said pieces projecting beyond one end of the shingle for the reception of fastening means.

26. In a roof, the combination with a supporting-surface, of a series of horizontal rows of adjoining shingles each row overlapping the lower row and breaking joints therewith, a channel-shaped member secured on the lower face of each shingle at its adjoining edge, and having its opposite edges projecting into the lower faces of the respective shingles, the channel members extending beyond the upper ends of the shingles, and fastening means securing such extensions to the supporting-surface.

27. In a roof, the combination with a supporting-surface, of a series of horizontal rows of adjoining shingles, each row overlapping the lower row and breaking joints therewith, and a channel-shaped member secured on the lower face of each shingle at its adjoining edges and having its opposite edges projecting into the lower face of the respective shingles, the channel members extending beyond the upper end of the shingles, fastening means securing such extensions to the supporting-surface whereby the shingles are secured in position, and an angle-strip secured on the lower face of each shingle and having one end projecting beyond the upper end of the shingle, and fastening means securing such projecting end to the supporting-surface.

816,253. DEVICE FOR LUBRICATING JOURNAL-BEARINGS.

FRANK J. RANDALL, Jennings, Mo. Filed Mar. 13, 1905. Serial No. 249,691.



Claim.—1. A perforated holder having lubricant-tablets set therein and projecting from the face of the holder.

2. A perforated holder having tapered lubricant-tablets set therein and projecting from one side of the holder.

3. A sheet of wire fabric having lubricant-tablets set into the mesh of the fabric and projecting from one side of the fabric.

4. A sheet of wire fabric having tapering lubricant-tablets set into the mesh of the fabric and projecting from one side of the fabric.

816,254. RAILWAY-SWITCH.

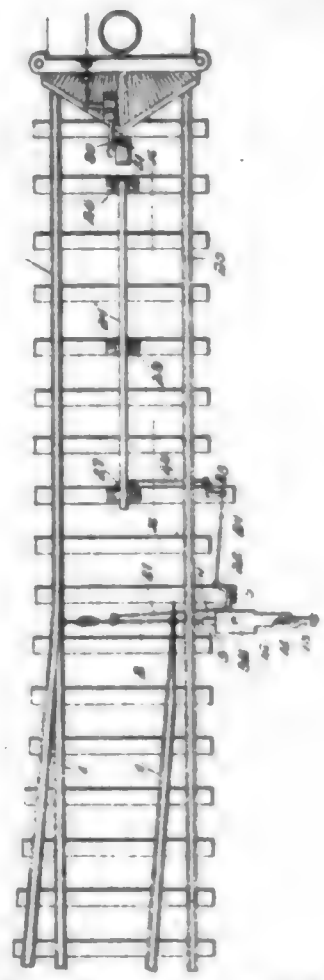
HARRY RAYMOND, Kenosha, Wis. Filed Nov. 28, 1905. Serial No. 289,436.

Claim.—1. The combination with movable switch-rails and a swinging arm for actuating the rails; of a headed stem pivotally connected to the rails, a headed stem pivotally connected to the arm, a casing slidably mounted on the stems, a locking-lever pivoted within the casing and normally interposed between the heads, and a catch for automatically engaging one of the heads.

2. The combination with movable switch-rails and means for automatically actuating them; of a swinging arm, a headed stem pivoted thereto, a headed stem connected to the rails, a casing slidably mounted upon both stems, a locking device within the casing and interposed between the heads, said device adapted to automatically withdraw from between the heads when the stems are pressed toward each other, and means for automatically locking one of the stems within the casing.

3. The combination with movable switch-rails and means for automatically actuating them; of a manually-operated arm, a headed stem extending therefrom, a headed stem connected to the rails, a casing slidably mounted upon both of the stems, a spring-pressed locking-lever interposed between the stems and adapted to automatically withdraw therefrom when the stems are pressed toward each other, and a lock for automatically engaging one of the stems within the casing.

4. In a switch, the combination with movable rails and means for automatically shifting said rails; of a manually-operated arm having a curved extension at one end, a stem pivoted to said arm, a stem connected to the rails, a casing slidably mounted on the stems, said casing having a recessed portion normally spaced from the arm and adapted to contact with the curved extension thereon, means for limiting the movement of each stem in one direction within the casing, a locking device within the casing interposed between the stems to hold them spaced apart, and a lock within the casing for automatically engaging one of the stems when released from the locking device.



5. The combination with movable switch-rails, a depressible rail and mechanism operated by the depression of the rail for actuating the switch-rails; of a headed stem connected to the switch-rails, a casing slidably mounted upon the stem, a spring-pressed locking-lever pivoted within the casing and normally engaging one end of the stem and holding it against movement, and means operated by the longitudinal movement of the stem and casing for withdrawing the locking-lever from the path of the stem.

6. The combination with movable switch-rails, a depressible rail and mechanism operated by the depression of the rail for actuating the switch-rails; of a headed stem connected to the switch-rails, a casing slidably mounted upon the stem, a spring-pressed locking-lever pivoted within the casing and normally engaging one end of the stem and holding it against movement, means operated by the longitudinal movement of the stem and casing for withdrawing the locking-lever from the path of the stem, and a spring-catch within the casing for automatically engaging the stem when projected into the casing.

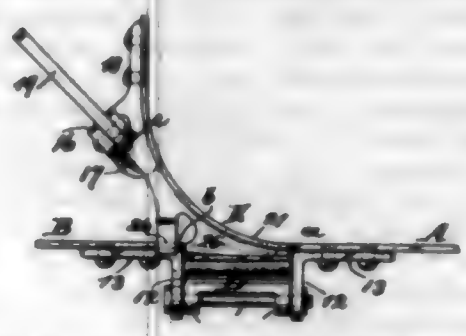
7. The combination with switch-rails, a depressible rail, and mechanism actuated by the depression of the rail for actuating the switch-rails; of a manually-movable arm, a stem pivoted to and extending from the arm, a stem pivoted to the switch-rails, a casing slidably mounted on the stems, a spring-pressed locking-lever normally interposed between the stems and within the casing, said lever adapted to be automatically withdrawn from between the stems when the stems are pressed toward each other, and a spring-catch for automatically engaging and locking one of the stems within the casing.

816,255. OVERHEAD TROLLEY-TRACK.

CHARLES G. SCHMIDT, GUSTAV SCHMIDT, and JOSEPH F. PFLUM, Cincinnati, Ohio, assignors to The Cincinnati Butchers Supply Co., Cincinnati, Ohio, a Corporation of Ohio. Filed May 11, 1905. Serial No. 259,986.

Claim.—1. Means in overhead trolley-tracks, for changing travel from one of two tracks onto the other track, there being a gap provided in each track-rail to accommodate these means which consist of rail-sections fitted to close each gap, each pivotally supported

so as to be capable of moving in or out of its gap, the arrangement and position of the parts and supports being such that one section swings in a plane substantially at right angles to the other and that while so moving, one rail-section is operatively affected by manipulation of the other rail-section and means to obtain such manipulation.



2. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably supported between the ends of rails A, B, and in a manner to either open or close the gap between these ends, another rail-section hinged to the end of rail C and supported so as to have a pivotal movement, a lever-arm forming a lengthwise extension of this latter rail-section beyond its pivot and means to swing this lever-arm to raise or lower its connected rail-section.

3. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between its end and the latter track-line, rail-sections fitted to aline with the rail ends and to close the gaps between them, supporting means attached to each of the three rail ends to which the rail-sections are pivotally attached and upon which they rest when in alined positions and means for manipulation.

4. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section fitted between the ends of rails A and B, means attached to each of these rail ends whereby and between which this rail-section is pivotally supported so as to be capable to swing either into alinement with these rail ends or outside of the track-line, a second rail-section fitted to close the gap at the end of rail C and pivotally attached to such end and means for manipulation.

5. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably fitted between the ends of rails A and B to either open or close the gap thereat, a second rail-section fitted to close the gap at the end of rail C, a flanged bracket attached to this end to which this second rail-section is pivotally connected at one of its ends and means for manipulating it to swing its other end to or from the opposite rail end.

6. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section fitted between the ends of rails A and B, brackets at these rail ends between which this rail-section is pivotally supported, its arrangement of position and distribution of weight being such that it has a tendency to normally drop into an alining position with the adjacent rail ends, supports upon which it rests while in such alined position, a second rail-section movably fitted to close the gap at the end of rail C and means for its manipulation, said means operating that when moving this second rail-section into position, this latter simultaneously displaces the first rail-section and leaves the same in a position from which it is free to drop back into rail alinement, whenever the displacing rail-section leaves its position.

7. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably fitted between the ends of rails A and B to either open or close the gap thereat, a second rail-section fitted to close the gap at the end of rail C, and pivotally supported at such rail end and in a manner to swing in a vertical plane to or from the opposite rail end, to open or close its complementary gap and means to manipulate it for such purpose.

8. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably fitted between the ends of rails A and B and supported in a manner to normally aline with them, supporting means upon which this rail-section rests while in such normal position, a second rail-section fitted to close the gap at the end of rail C and pivotally attached to such rail end so as to be capable of being swung into alinement with one of the other rail ends, contacting during such movement with the first rail-section so as to displace the same from its support which it occupies thereafter and means to manipulate this rail-section.

9. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, rail-sections fitted to each gap and pivotally supported for movement to either close or open the same, the position and arrangement of the supporting means and connections being such that one section swings in a plane at right angles to the other one and one section when assuming alined position contacts with the other section to displace the same and means for manipulation.

10. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably fitted between the ends of rails A and B and adapted to aline with them, another rail-section movably supported between the ends of rails C and A and adapted to aline with them, means to swing this section in a plane at right angles to the other section and a projection on the former section adapted to contact with the latter section to displace the same when swinging into position.

11. In means for changing in overhead trolley-tracks, travel from one track-line to another, the combination of a track-line consisting of rails A, B, arranged with a gap between their opposite ends, another track-line consisting of a rail C arranged at an angle to the track-line first mentioned, but terminating so as to also leave a gap between it and the latter track-line, a rail-section movably fitted between the ends of rails A and B to either open or close the gap thereat, a second rail-section fitted to close the gap at the end of rail C and pivotally supported with reference to such rail end and in a manner to swing in a vertical plane, to open or close its complementary gap, means to manipulate it for such purpose, and a notched tie-lock adapted to drop over and engage a rail of the adjacent track to prevent lateral displacement.

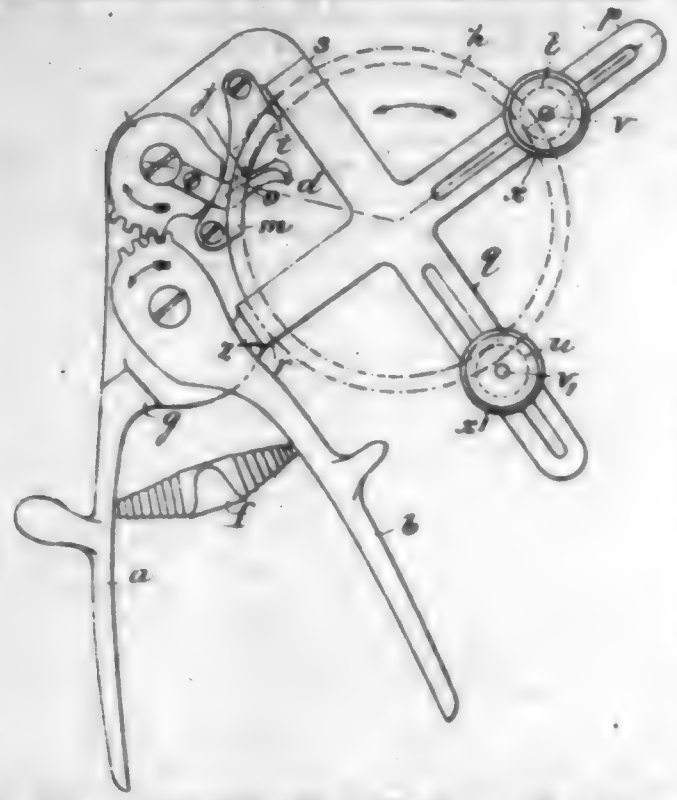
816,256. CAN-OPENER. WILHELM T. SEBELIN, Copenhagen, Denmark. Filed Feb. 17, 1905. Serial No. 246,089.

Claim.—1. A can-opener including in combination an arm, a knife movably attached thereto, means pivoted upon said arm for operating said knife, and means for supporting the knife in position to make a cut around the side of the can.

2. A can-opener including in combination a pair of arms pivoted together, a knife movably attached to one of said arms and operated by the other, a spring for separating said arms and forcing the blade into the can, and means attached to one of said arms and adapted to support the same in position to make a cut around the side of the can.

3. A can-opener including in combination means for making a cut around the side of a can, a cross fixed thereto and adapted to rest on the top of the can, and rollers adjustable radially and adapted to be fixed in any position of adjustment to support said cutting means.

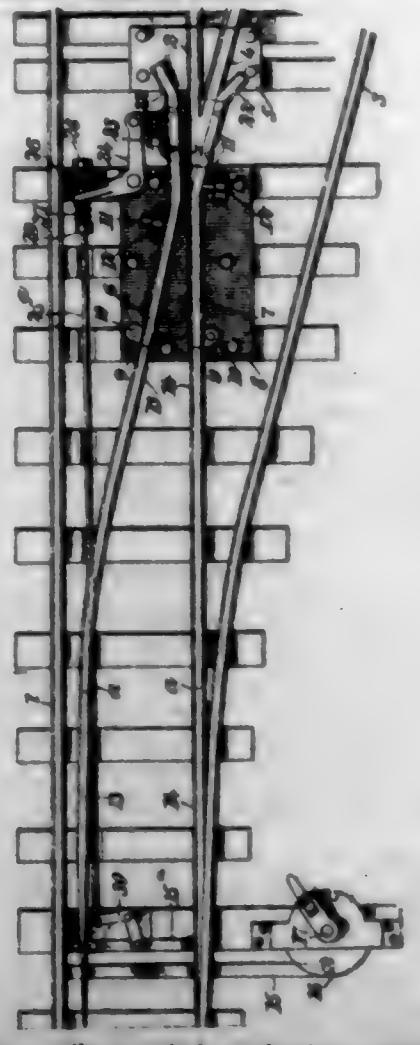
4. A can-opener including in combination an arm *a*, a plate *c* movably attached thereto, a knife *d* carried by said plate, an arm *b* movably attached to the arm *a*, a spring *f* between said arms, the plate *c* and arm *b* having a toothed engagement, whereby the spring forces the knife into the can, a cross fixed to the arm *a* and adapted to rest on the top of the can, and two rollers adjustable radially and adapted to be fixed in any position of adjustment and to catch under a projecting rim of the can to keep the apparatus firmly fixed to the can.



5. A can-opener including in combination a guide *m* having a concave edge to fit the side of a can, and a blade *d* coöperating therewith to make a cut around the side of the can.

6. A can-opener including in combination a pair of guides having concave edges to fit the side of a can, and a blade moving between said guides to make a cut around the side of a can.

816,257. RAILWAY-SWITCH. ALVA A. SHAW, Arkadelphia, Ark. Filed Nov. 14, 1905. Serial No. 287,371.



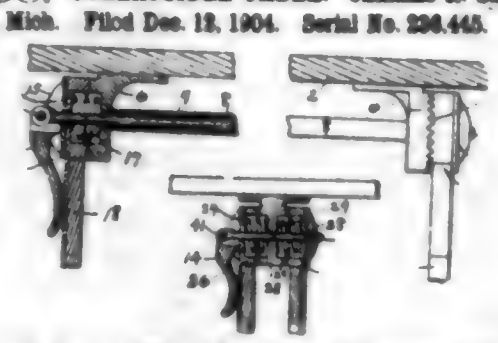
Claim.—1. In a railway-switch mechanism, swinging switch-tongues swinging frog-rail members, guides for said members, a plate pivotally connected with said frog-rail members, an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, and a rod connection between the two angle-levers.

2. In a railway-switch mechanism, swinging switch-tongues, swinging frog-rail members, guides for said members, a plate pivotally connected with said frog-rail members an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, a rod connection between the two angle-levers, a cushioning-spring on said rod engaging the last-named angle-lever.

3. In a railway-switch mechanism, swinging switch-tongues, swinging frog-rail members having their rear ends turned outward, guides for said members, a plate pivotally connected with said frog-rail members, an operating-rod pivoted to the free ends of the tongues, an angle-lever pivoted to said rod, an angle-lever pivoted to the plate connected to the frog-rail members, a rod connection between the two angle-levers, and cushion-springs on said rod engaging with the last-named angle-lever.

4. In a railway-switch mechanism, a metal plate arranged between the track-rails, swinging switch-tongues, frog-rail members having swinging connection with said plate, lateral guides for said frog-rail members, a plate underneath the frog-rail sections, and having slots, studs extended from said rail-sections into said slots, bosses on said rail-sections and surrounding the studs, and means for swinging the tongues and rail-sections.

816,258. COLLAPSIBLE TABLE. CHARLES R. SHELDON, Port Huron, Mich. Filed Dec. 12, 1904. Serial No. 236,445.



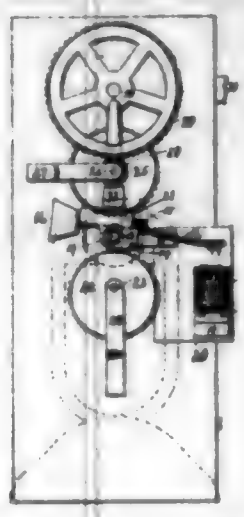
Claim.—1. In a collapsible table, the combination of a top, brackets secured to said top and each provided with rings of radial teeth on both sides, rods passing through said brackets, plates pivoted on said rods on both sides of said brackets and provided with rings of teeth adapted to engage those of the brackets, a supporting-frame, tubes mounted on said rods and extending from said brackets and plates to enter said frame, a cam-disk mounted in said frame and provided with cam stripe and slots, the stripe being adapted to force the tubes outward to engage the teeth of the inner plates with the inner rings of teeth on said brackets, the inner ends of said rods being adapted to enter said cam-slots so that said cam may pull the teeth of the outer plates into engagement with the outer rings of teeth on the brackets, springs to force the rings of teeth apart, and table-legs secured to each of said plates.

2. In a collapsible table, the combination of a top, brackets secured to said top, each provided with two rings of radial teeth, a rod passing through each bracket, plates journaled on said rod on both sides of said brackets and provided with rings of teeth adapted to engage the teeth of the brackets, springs mounted on said rod and adapted to force said rings of teeth out of engagement, a cam engaging one end of said rod to force said teeth into engagement, adjusting means mounted on the other end of said rod, and a table-leg carried by each plate.

3. In a collapsible table, the combination of a top, brackets secured to said top each provided with two rings of radial teeth, a rod passing through each bracket, plates journaled on said rod on both sides of said brackets and provided with rings of teeth adapted to engage the teeth of the brackets, springs mounted on said rod and adapted to force said rings of teeth out of engagement, a cam engaging one end of said rod adapted in connection with a stop on the other end of said rod to force said teeth into engagement, and a table-leg carried by each plate.

4. The combination of a frame, brackets secured thereto and provided with radial teeth, a rod passing through each bracket, plates journaled on said rod and provided with rings of teeth adapted to engage the teeth on the brackets, springs mounted on said rod and adapted to force said rings of teeth out of engagement, and a cam engaging one end of said rod and adapted to force said teeth into engagement with each other, adjusting means mounted on the other end of said rod, and a table-leg carried by each plate.

816,259. AUTOMATIC GEARING DEVICE. JUDSON SHOECRAFT, Bainbridge, Kans. Filed Nov. 9, 1905. Serial No. 286,479.



Claim.—1. The combination of a motor-shaft normally out of engagement with the mechanism to be driven, a cam-like device normally engaging the shaft and adapted on rotation of the shaft to bring same into engagement with the work, a lever connecting the shaft and an armature-bar, and an electromagnet in circuit with the motor for holding the shaft in engagement with the work.

2. The combination of an electric motor, mechanism adapted to be driven by the rotary member thereof but normally out of engagement therewith, a cam-like device to bring the rotary member into engagement with the work upon the rotation of said member, and an electromagnet adapted normally not to actuate said member but also adapted to hold it in engagement with the work after having been brought there by said cam-like device.

3. The combination of a motor, mechanism adapted to be driven by the rotary member thereof but normally out of engagement therewith, an eccentric normally engaging said rotary member and adapted on rotation thereof to bring said rotary member into engagement with the driven mechanism aforesaid, and an electromagnet adapted to hold said rotary member in engagement with said driven mechanism.

4. The combination of a motor, a pinion on the armature-shaft, an eccentric normally engaging the pinion, gearing to be driven by the pinion but normally out of engagement therewith, rods 37, 38 to break the motor-circuit, a shunt including a resistance-coil around said circuit-breaker, a pivoted lever 12 engaging the shaft, an armature-bar 17 on said lever, an electromagnet 18 in circuit with the motor.

5. The combination of a reversible motor, mechanism adapted to be driven thereby and having means independent of the motor for restoring it to normal position, an eccentric normally engaged by the motor and adapted on rotation thereof to bring the motor into engagement with the driven mechanism aforesaid, and an electromagnet controlled by the motor-circuit for holding the motor in engagement with said driven mechanism and adapted on breaking circuit to permit said motor to go to normal position out of engagement with said driven mechanism, whereby the said mechanism is by its independent means restored to normal position without turning the motor.

6. The combination of a reversible motor, a motor-circuit including a circuit-breaker, a shunt around the breaker including a resistance-coil, a pinion carried by the motor-shaft normally engaging an eccentric and out of engagement with the mechanism to be driven, an eccentric adapted on rotation of the motor-shaft to carry the pinion into engagement with said driven mechanism, an electromagnet controlled by the motor-circuit, an armature therefor normally out of the field thereof, a rod connecting the armature with the pinion, said rod being adapted to bring the armature into the field of the magnet by the operation of the eccentric with said pinion; together with means independent of the motor for restoring said driven mechanism to normal position upon breaking the motor-circuit.

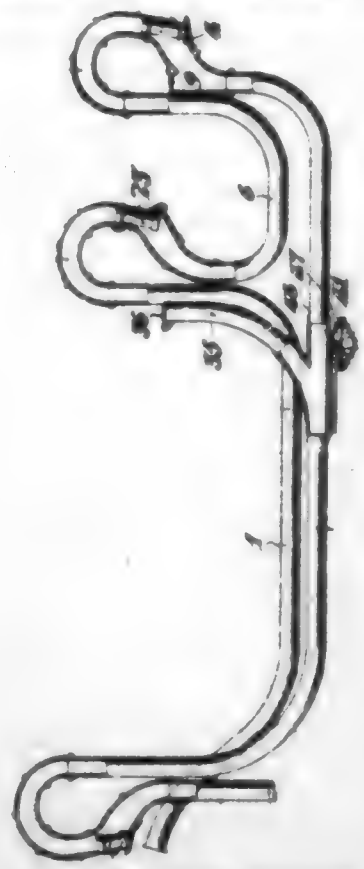
816,260. SAFETY GAS-BURNER. EMIL SMEJKAL and RUDOLF SMEJKAL, Brooklyn, N. Y. Filed Feb. 28, 1905. Serial No. 247,594.

Claim.—1. A safety gas-burner, comprising a tubular coupling, a valve passing therethrough, a casing connected with said coupling and provided with a tube which passes therethrough and communicates with the bore of said coupling, a burner-tip adapted to be connected with said casing and to communicate with said tube, the front of said casing being also normally concave, a bar extending transversely of the front of said casing, a valve-arm connected with said valve and movable in front of said bar, a spring for turning said valve in one direction, and an arm pivoted to said bar and adapted to be operated by the front of the casing to hold the valve-arm in different positions, substantially as shown and described.



2. A safety gas-burner, comprising a tubular coupling, a valve passing therethrough, a casing connected with said coupling and provided with a tube which passes therethrough and communicates with the bore of said coupling, a burner-tip adapted to be connected with said casing and to communicate with said tube, the front of said casing being also normally concave, a bar extending transversely of the front of said casing, a valve-arm connected with said valve and movable in front of said bar, a spring for turning said valve in one direction, and an arm pivoted to said bar and adapted to be operated by the front of the casing to hold the valve-arm in different positions, said casing being filled or partially filled with a liquid, substantially as shown and described.

816,261. PNEUMATIC-DESPATCH APPARATUS. FRANKLIN S. SMITH, Philadelphia, Pa. Filed June 28, 1905. Serial No. 267,408.



Claim.—1. A pneumatic despatch apparatus, comprising a despatch tube, a terminal provided with a discharge opening, a device which extends across said opening and which normally is in closed position, means in engagement with the said device and supported independently thereof, which normally prevents the same from being opened, and a device connected with the said means, which device extends into the interior of said terminal in the path of a carrier passing therethrough, the said last mentioned device being adapted to occasion disengagement of the said means from the said first mentioned device to permit the same to be opened.

2. A pneumatic despatch apparatus comprising a terminal having a semi-circular portion or section, a straight portion or section, and a reversely curved portion or section connecting the said straight portion or section and the outgoing despatch tube, and through which a carrier is adapted to pass into the said outgoing despatch tube, and the said terminal being provided with a discharge opening located upon the concaved side of the reversely curved portion or section.

3. A pneumatic despatch apparatus comprising a terminal having a discharge opening, means extending across the said opening to obstruct the passageway through the same, the said means being substantially parallel to that portion of the passageway through the terminal opposite which it is located, and being arranged at an obtuse angle to that portion of the terminal immediately in advance

thereof, whereby the passage of a carrier through the terminal and into the outgoing despatch tube is occasioned.

4. A pneumatic despatch apparatus comprising a terminal having a semi-circular portion or section, a straight portion or section connected to the semi-circular portion, a concavo-convex portion or section connecting the straight portion to the outgoing despatch tube, the said terminal being provided with a discharge opening upon the concaved side of the last mentioned portion or section, and a device extending across the said discharge opening which is adapted to either permit or prevent the discharge of the carriers through the said opening.

5. In a pneumatic despatch apparatus, a terminal having a discharge opening, a strip or plate extending across said opening, the said strip occupying a position at an obtuse angle to the direction of travel of a carrier at a point in said terminal immediately in advance of the said opening, and means adapted to permit or prevent the opening of said strip to permit or prevent the discharge of the carriers.

6. In a pneumatic despatch apparatus, a terminal having a discharge opening, a plate or strip extending across said opening, the said plate occupying a position at an obtuse angle to the direction of travel of the carriers at a point in said terminal immediately in advance of said opening, a catch adapted to engage said plate or strip and hold it normally closed, and the said plate or strip serving to deflect the forward end of the carrier and occasion a continuance of its travel through the said apparatus to a terminal which is adapted to permit its discharge.

7. In a pneumatic despatch apparatus, a terminal having a discharge opening, a plate or strip extending across the said opening, the said plate or strip being hinged at its lower edge or end at the lower side of the said opening, whereby the upper free end of the said strip is adapted to receive the impact of the carriers, and the said plate or strip occupying a position at an obtuse angle to the direction of travel of the carriers at a point in said terminal immediately in advance of said opening, and means adapted to hold the said plate or strip normally closed, and the said strip serving to deflect the forward end of a carrier and occasion the continuance of its travel through the apparatus to a terminal which is adapted to permit its discharge.

8. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a plate or strip extending across the said opening, and means adapted to engage the said strip to hold it in closed position, the said means comprising a pivoted catch which is adapted to engage the said strip, a pivoted trigger or finger projecting into the said terminal and adapted to be engaged by a carrier in transit through the said terminal, and a connection between the said trigger or finger and the said catch.

9. In a pneumatic despatch apparatus, a terminal provided with a discharge opening, a strip extending across the said opening, a pivoted catch adapted to engage the said strip, a pivoted trigger or finger having its free end projected into the interior of said terminal in the line of travel of the carriers passing through the said terminal, and a link connecting the said trigger or finger and the said catch, movement of which in one direction is adapted to occasion the disengagement of the catch from the said plate or strip.

10. In a pneumatic despatch apparatus, a terminal having a discharge opening, a plate or strip extending across the said opening, a catch located within the said terminal and pivoted upon the walls thereof, a trigger or finger located upon the opposite side and within said terminal, the said trigger or finger being adapted to be engaged by the carriers in their passage through the terminal, and a link connected to the said trigger or finger and the said catch, the said link being located within the said terminal.

11. A pneumatic despatch tube, a connection for partially exhausting the air therefrom, and means for preventing the collision of carriers in the said despatch tube, the said means comprising a movable diaphragm, the said diaphragm being associated with means which is adapted to enter the said despatch tube when the diaphragm moves in one direction, and the spaces upon opposite sides of the said diaphragm being in communication with the interior of said despatch tube.

12. A pneumatic despatch apparatus, comprising a despatch tube, a passageway communicating with the said tube for the purpose of inserting a carrier into the said tube to return it to the central or other station, means for preventing the collision of such inserted carrier with another carrier in transit through the said despatch tube, the said means comprising an air chamber provided with a movable diaphragm which separates the said air chamber into compartments, one of the said compartments being in communication with the interior of the despatch tube at a point a short distance in rear of the point of connection between the said passageway and the said despatch tube, and the other of said compartments being in communication with the interior of said tube at a point in front of the said point of connection between the passageway and despatch tube.

13. A pneumatic despatch apparatus including means to prevent the collision of carriers in the despatch tube thereof, said means comprising an air chamber having a movable diaphragm extending across the same to divide it into compartments, the said compartments being in communication with the interior of the despatch tube, a stop connected to one side of the said diaphragm and extending into an opening in the despatch tube, the said stop being adapted to project into the despatch tube when the diaphragm is moved in one direction.

14. In a pneumatic despatch apparatus, a pneumatic despatch tube, a connection for creating a partial vacuum therein, a branch tube provided at a sub-station of the apparatus for the reception of carriers to return the same to the central station, the said branch tube forming a junction with the said despatch tube, and means for preventing the collision of carriers in the despatch tube, the said means comprising an air chamber having a flexible diaphragm extending across the same to divide it into compartments, one of the compartments being in communication with the despatch tube, upon one side of the junction of the branch tube and the despatch tube, and the other compartment being in communication with the despatch tube upon the other side of the said junction, whereby when the return branch tube is opened to insert a carrier, the pressure in one of the said compartments is changed to normal atmospheric pressure.

15. A pneumatic despatch apparatus comprising a despatch tube, a terminal provided with a discharge opening, a device extending across the said opening, which device normally occupies a closed position, movable means which normally prevents the said device from being opened, a releasing device having connection with the said movable means, and carriers adapted to travel through the said despatch tube, one of the said carriers being of such a length that it is adapted to occasion movement of the said movable means at a time to permit impact of the said carrier to open the said device, and the other of said carriers being of a different length whereby it does not occasion movement of the said movable means at a time to permit the impact of the said other carrier to open the said device.

16. A pneumatic despatch apparatus comprising a despatch tube, a terminal provided with a discharge opening, a plate or strip extending across said opening, which plate or strip normally occupies a closed position, means normally in engagement with said plate or strip to prevent it from being opened, a movable releasing device having connection with the said means, and carriers adapted to travel through the said despatch tube, one of which carriers is of such a length that its forward end is adapted to engage the said plate or strip at the same time that its rear end is in engagement with the said releasing device to occasion movement of the means to disengage the same from the said plate or strip to permit the said plate or strip to be opened by the impact of said carrier, the other of said carriers being of a different length whereby it is not adapted to occasion movement of the said releasing means at a time to permit the said plate or strip to be opened by the impact of the said other carrier.

17. A pneumatic despatch apparatus comprising a despatch tube, a terminal provided with a discharge opening, means extending across the said opening to obstruct the passageway through the same, a catch which is adapted to engage the said means to prevent it from being opened, a device connected to the said catch to control its position, and carriers adapted to travel through the said despatch tube, one of the said carriers being of such length that its forward end is adapted to engage or strike the said means at the same time that its rear end is in engagement with the said device, the other of the said carriers being of greater length, whereby its rear end is adapted to occupy a position beyond the said device and out of contact therewith at the time that its forward end strikes the said means.

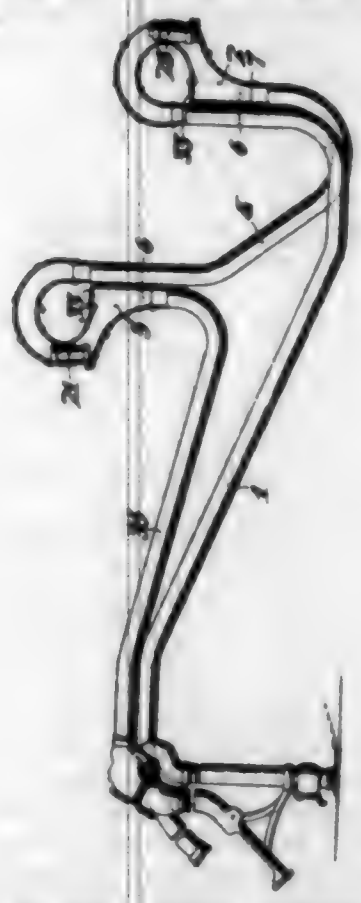
18. A pneumatic despatch apparatus, comprising a terminal having a discharge opening, a device which extends across the said opening and which device is normally in a closed position, a pivoted catch normally in engagement with the said device, and means connected to the said catch, which means extends into the interior or passageway of the said terminal, and a carrier provided with a head upon its end which is adapted to engage the said means to occasion disengagement of the catch from the said device to permit the same to be opened by the impact of the said carrier.

19. A pneumatic despatch apparatus, comprising a terminal having a discharge opening, a device extending across the said discharge opening to close the same, a catch, means for normally holding the said catch in engagement with the said device, a projection

or finger connected to the said catch, the said projection or finger extending into the interior of the said terminal and the said projection or finger being adapted to be engaged by a carrier as it approaches the said discharge opening, whereby the said catch is disengaged from the said device to permit the same to be opened by the impact of the said carrier.

20. A pneumatic despatch apparatus comprising a plurality of terminals each of which is provided with a discharge opening, devices extending across the said openings to close the same, a catch which is normally out of engagement with one of said devices, and a second catch which is normally in engagement with the other of said devices, and means associated with the said catches which are adapted to be engaged by a pneumatic despatch carrier in its passage through the apparatus to occasion movement of the said catches.

816,262. PNEUMATIC-DESPATCH APPARATUS. FRANKLIN S. SMITH, Philadelphia, Pa. Filed June 22, 1905. Serial No. 267,404.



Claim.—1. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a device which extends across the said opening and which device is normally in a closed position, a pivoted catch normally in engagement with the said device, and means integral with the said catch which extends therefrom into the interior or passageway of the said terminal, and a carrier provided with a head upon its end which is adapted to engage the said means to occasion disengagement of the catch from the said device to permit the latter to be opened by the impact of the said carrier.

2. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a device extending across the said opening, the said device being normally in a closed position, a pivoted catch normally in engagement with the said device, means extending from the said catch into the interior or passageway of the said terminal, a carrier provided with a head upon its end which is adapted to engage the said means and occasion disengagement of the catch from the said device to permit the same to be opened by the impact of the said carrier, and a second carrier provided with a projection upon its end which is adapted to strike the device extending across the said discharge opening whereby the said second carrier is adapted to be deflected so that the front portion or end thereof adjacent to the said projection is prevented from coming into engagement with the said means to occasion disengagement of the said catch from the said device.

3. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a device extending across the said opening, the said device being normally in a closed position, a pivoted catch normally in engagement with the said device, means extending from the said catch into the interior or passageway of the said terminal, a carrier provided with a head or enlargement upon its end which is adapted to engage the said means and occasion disengagement of the catch from the said device to permit the same to be opened by the impact of the said carrier, and a second carrier provided with a head or enlargement upon one end, and a projection, of less diameter than the said head or enlargement, which is adapted to strike the said device extending across the said discharge opening, whereby deflection of the front or forward end of the said carrier is occasioned to prevent the said head or enlargement from engaging with the said means to disengage the said catch from the said device.

4. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a device extending across the said discharge opening to close the same, a catch, means for normally holding the said catch in engagement with the said device, a projection or finger integral with the said catch and which extends therefrom into the interior of the said terminal, the said projection or finger being adapted to be engaged by a carrier as it approaches the said discharge opening, whereby the said catch is disengaged from the said device to permit the latter to be opened by the impact of the said carrier.

5. A pneumatic despatch apparatus comprising a terminal having a discharge opening, a device extending across the said discharge opening to close the same, a catch, a weight connected with the said catch to hold the catch normally in engagement with the said device, a projection or finger extending from the said catch into the interior of the said terminal, the said projection or finger being adapted to be engaged by a carrier as it approaches the said discharge opening, whereby the said catch is disengaged from the said device to permit the same to be opened by the impact of the said carrier.

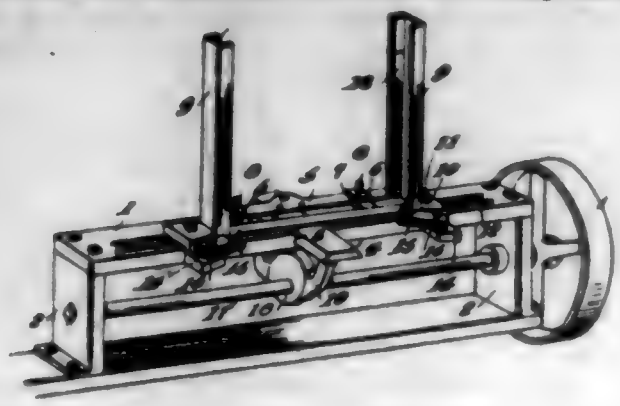
6. A pneumatic despatch apparatus comprising a plurality of terminals, each of which is provided with a discharge opening, devices extending across the said openings to close the same, a catch which is normally out of engagement with one of the said devices, and a second catch which is normally in engagement with the other of said devices, each of the said catches being provided with a projection or finger which extends directly therefrom into the interiors or passageways of said terminals, each of the said fingers or projections being adapted to be engaged by the forward end of a carrier as it approaches the said discharge opening, whereby the first named catch is adapted to be moved into engagement with the closing device with which it is associated, the second catch being adapted to be disengaged from the closing device with which it is associated.

7. A pneumatic despatch apparatus comprising a plurality of terminals, each of which is provided with a discharge opening, devices extending across the said discharge openings to close the same, catches adapted to engage the said devices to prevent the same from being opened, one of the said catches being normally out of engagement with its associated device, and the other of said catches being normally in engagement with its associated device, a projection or finger extending from each of the said catches into the interior of the said terminals, carriers adapted to travel through the said despatch apparatus, one of the said carriers being provided with heads or enlargements upon its ends, the other of said carriers being provided with projections which are of greater length than the distances between the ends of the fingers which extend into the interiors of the terminals and the inner surface of the closing devices and which projections are of less diameter than the adjacent portions of the carrier, the front or forward end of the first of the said carriers being adapted to engage the projection or finger of the first named catch to occasion movement of the same to engage its associated device, and the said carrier being adapted to engage the projection or finger of the second catch to occasion the disengagement of the same from its associated device, and a projection of the second named carrier adapted to strike the device for closing the discharge openings whereby if the catch which is associated with a device is disengaged therefrom, the said device will be opened, and whereby if the said device is engaged by its associated catch, the forward end of the said carrier will be deflected so as to prevent engagement of the same with the finger of the said catch.

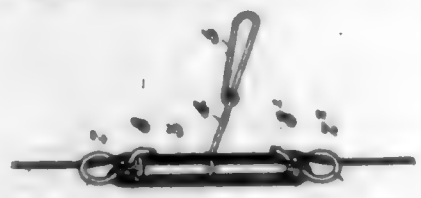
816,263. BLIND-SLAT CLIPPER. STEPHEN C. SMITH, Watsontown, Pa. Filed June 14, 1905. Serial No. 265,208.

Claim.—In a machine of the type described, the combination of a bed-plate provided with a longitudinal slot therein, vertical guides carried by the bed-plate, lateral enlargements at the lower ends of said guides, fastenings passing through said enlargements and the slot in the bed-plate and adjustably connecting the guides to said bed-plate, extensions projecting from the enlargements, a pair of cutters carried by each extension and projecting therefrom toward the space between the guides, a transversely-movable feed-plate mounted on the bed-plate between the guides, a bar mounted transversely at one end of the feeding-plate and of dovetail form in cross-section, small feeding-plates adjustable on the ends of the bar and

provided with dovetail sockets to receive said bar, arms projecting downwardly from the bar, a shaft mounted beneath the bed-plate, an eccentric carried by said shaft and operating between the arms aforesaid to actuate the feeding-plate, and means for rotating said shaft.



816,264. LEADER-LINK. WILLIAM H. SOPER, Yonkers, N. Y. Filed Aug. 12, 1905. Serial No. 273,865.



Claim.—1. A leader-link comprising a main supporting-spindle having an eye at each end, and a pair of lateral projections thereon.

2. A leader-link comprising a main supporting-spindle having an eye at each end, and a pair of hooks substantially in the axial planes of said eyes.

3. A leader-link comprising a main supporting-spindle formed of a single piece of wire, said wire being bent into an eye at each end of the spindle and terminating in lateral projections.

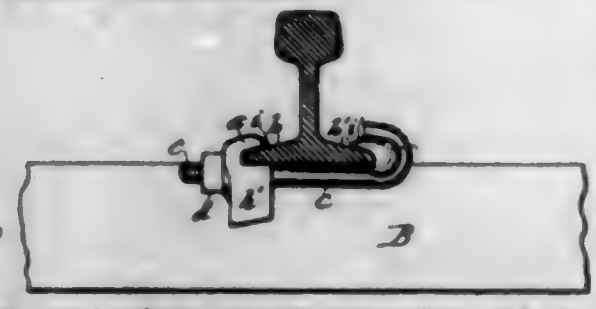
4. A leader-link comprising a main supporting-spindle formed of a single piece of wire, said wire being bent into an eye at each end of the spindle and terminating in laterally-projecting hooks.

5. A leader-link comprising a main supporting-stem having its ends bent into a circular or curved form to produce eyes, the terminal portions of the material being wrapped around the body of the stem and terminating in a pair of laterally-projecting hooks.

6. In a leader-link, a sleeve having a laterally-projecting arm carrying an eye, and a main supporting-spindle loosely swiveled on said sleeve and having an eye at each end and a pair of laterally-projecting hooks.

7. In an attachment for fishing-lines and the like, a main supporting-spindle bent to form an eye at each end, and having terminal portions forming hooks.

816,265. RAILWAY-RAIL STAY. HIRAM H. SPONSELLER, Wadsworth, Ill., assignor of one-half to Edward Lass, Ottumwa, Iowa. Filed Nov. 13, 1905. Serial No. 287,045.



Claim.—1. A rail-stay comprising means for engaging one side of the rail and one side of the cross-tie, a bolt extending across the under side of the rail and adjustably supported at one end of said engaging means and formed with a hook at its opposite end, separately-formed rail-engaging means interposed between the said hook and rail, and means for tightening the holds of said bolt on the aforesaid rail-engaging means.

2. A rail-stay comprising two jaws engaging opposite sides of the rail, and a flange bearing on one side of the cross-tie, a bolt extending across the under side of the rail and having one end passing through one of said jaws and formed at the opposite end with a hook embracing the other of said jaws, and means applied to the bolt for forcing both jaws into gripping position on the rail.

3. In combination with a jaw engaging one of the rail-flanges and formed with a transverse aperture and with a tie-abutting flange, a jaw engaging the opposite rail-flange, a bolt extending across the under side of the rail and having one end screw-threaded and passing through the said aperture and formed at its opposite end with a hook embracing the other of said jaws, and a nut applied to the protruding threaded end of the bolt and pressing on the back of the jaw.

4. In combination with a jaw engaging one of the rail-flanges and a bolt extending across the under side of the rail and having one end engaging the said jaw, of a jaw engaging the opposite rail-flange and provided with an aperture receiving through it the end of the bolt and with an inwardly-extending reinforce bearing on the bolt, a tie-abutting flange extending from the said bearing to the jaw, and means applied to the bolt for forcing the jaws into gripping position on the rail.

5. In combination with a jaw engaging one of the rail-flanges and provided with an aperture and with a tie-abutting flange, a jaw engaging the opposite rail-flange and formed with a groove in its exterior, a bolt formed at one end with a hook disposed in said groove and having its opposite end passing through the aforesaid aperture, and means applied to the protruding end of the bolt for forcing the jaws into gripping position on the rail.

6. In combination with a jaw engaging one of the rail-flanges and formed with a transverse aperture, a jaw engaging the opposite rail-flange and formed externally with a groove and with reinforcing-ribs at opposite sides of said groove, a bolt passing through the aforesaid aperture and terminating in a hook disposed in the said groove, and means applied to the opposite end of the bolt for forcing the jaws to the rail.

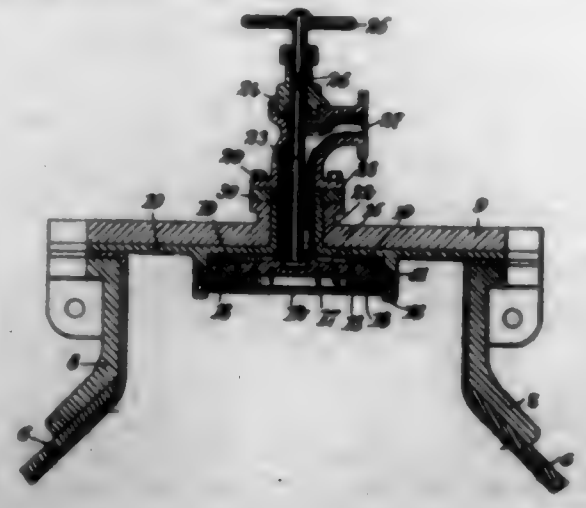
7. In combination with a jaw engaging the cross-tie and one of the rail-flanges and provided with a transverse aperture, a jaw formed with a groove receiving the opposite rail-flange, a hard-metal grip in said groove, and engaging the rail, a bolt passing through the aforesaid aperture, and formed at one end with a hook engaging the exterior of said grooved jaw, and means applied to the opposite end of said bolt for forcing the two jaws to the rail.

8. In combination with a jaw engaging the cross-tie and one of the rail-flanges and provided with a transverse aperture, a jaw formed with an internal groove receiving the opposite rail-flange and with an external groove and reinforcing-ribs at opposite sides of said groove, a hard-metal rail-gripping plate seated in the internal groove, a bolt passing through the apertured jaw and formed at one end with a hook embracing the external grooved portion of the jaw, and means applied to the opposite end of the bolt for forcing the jaws to the rail.

9. The combination with rail, of a pair of jaws adapted to be forced into gripping engagement with the two flanges of the rail, a bolt arranged to extend beneath the rail and formed at one end with a hook arranged to embrace one of said jaws and provided at the opposite end with adjustable means whereby said jaws may be held in gripping engagement with said rail, a portion of the structure being provided with a depending flange adapted to engage a vertical face of a tie.

10. A rail-stay comprising a bolt adapted to extend underneath a rail and provided at one end with a hook, a rail-gripping jaw adapted to be seated within said hook, said jaw being provided with teeth adapted to bite into the upper face of a rail-flange, a second jaw engaging the opposite end of said bolt, which end of said bolt is provided with adjustable means for holding said jaws in gripping engagement with a rail, and means depending from said structure and adapted to engage a vertical face of a tie.

816,266. GAS-FILTER. GEORGE A. STERLING, Watertown, N. Y. Filed May 6, 1905. Serial No. 259,110.



Claim.—1. The combination of a digester provided with a cover, an annular member connected with said cover and depending into said digester, a filter having substantially the form of a disk and connected with said annular member being disposed substantially parallel with the general plane of said cover and being provided with apertures, a spider disposed intermediate of said filter and said cover, bosses mounted upon said spider and adapted to enter said apertures, guide-pins mounted upon said spider and projecting into others of said apertures for the purpose of holding said spider in a predetermined relation to said filter, and a manually-operated stem connected with said spider for raising and lowering the same.

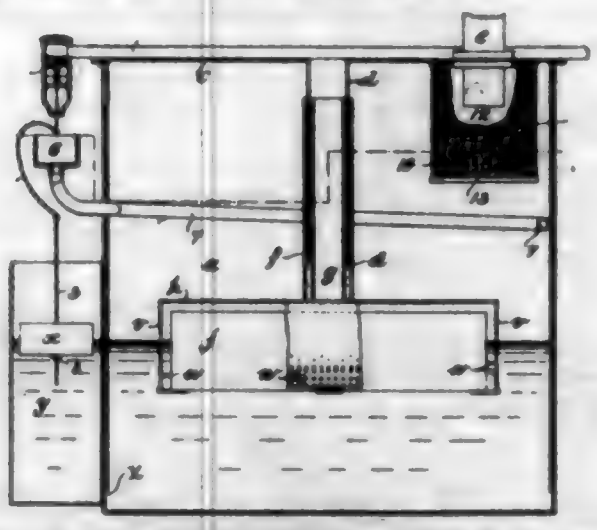
2. The combination of a digester, a cover therefor, a filter disposed adjacent to said cover and spaced therefrom, a spider mounted intermediate of said filter and said cover, means for moving said spider relatively to said filter, bosses connected with said spider and adapted to engage said filter for the purpose of preventing the same from fouling, guides for said spider, a stirrup-swivel connected with said spider, and a manually-operated stem provided with a head engaging said stirrup-swivel for the purpose of moving said spider relatively to said filter.

3. The combination of containing vessel, a T connected therewith for allowing the passage of steam and gases therefrom, said T being provided with a flange, a cap mounted upon said T and provided with a flange mating said flange of said T, a stuffing-box connected with said cap and supported thereby, a revoluble stem engaging said cap and said stuffing-box, means for actuating said stem, and a gas-filtering member connected with said stem and adapted to prevent the passage of coarse substances from said containing vessel to said T.

4. The combination of a digester, a cover therefor, said cover being provided with an annular member, a filter connected with said annular member and provided with holes, a spider encircled by said annular member and provided with bosses adapted to enter said holes, means for causing said bosses to aline with said holes, and mechanism for shifting the position of said spider relatively to said filter.

5. The combination of a digester, a filter connected therewith for allowing the escape of gases therefrom while preventing the escape of other materials, and a member movable toward and from said filter and provided with means for preventing said filter from fouling, said member being further provided with beads serving as limiting-stops for engaging the digester.

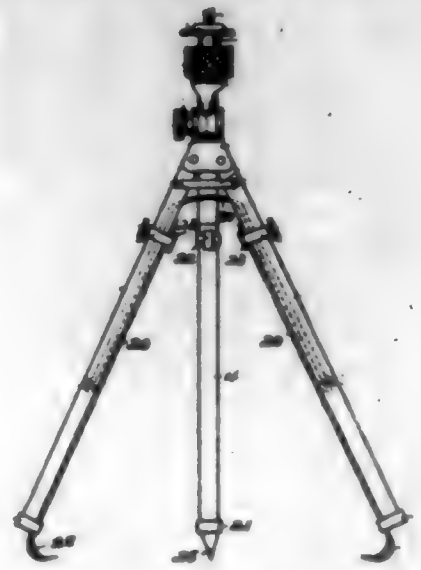
816,267. CARBURETING APPARATUS. MATTHEW STEEL, Gosforth, England. Filed Feb. 3, 1905. Serial No. 244,023.



Claim.—1. The improved carbureting apparatus comprising the combination of a vessel adapted to hold liquid hydrocarbon, concentric tubes through which the air to be carbureted passes to the hydrocarbon, an inlet-pipe depending between said concentric tubes, a float, a casing around said float forming a chamber, said concentric tubes forming a liquid seal and telescopic connection between the depending inlet-pipe and said chamber, said casing being provided with holes at different levels all below the normal level of the hydrocarbon, the total area of said holes increasing at each successive lower level.

2. The improved carbureting apparatus comprising the combination of a vessel adapted to hold liquid hydrocarbon, concentric tubes through which the air to be carbureted passes to the hydrocarbon, an inlet-pipe depending between said concentric tubes, a float, a casing around said float forming a chamber, said concentric tubes forming a liquid seal and telescopic connection between the depending inlet-pipe and said chamber, said casing being provided with holes at different levels all below the normal level of the hydrocarbon, the area of liquid in the chamber being greater than the cross-sectional area of said inlet-pipe.

816,268. TRIPOD FOR CAMERAS. OTTO W. STEINDORF, Wheeling, W. Va. Filed Mar. 30, 1905. Serial No. 253,796.



Claim.—1. In a tripod, a head, legs pivoted in said head, adjustable extension-strips carried by said legs, a prong on the end of one of said strips, and a hook or claw carried by each of the other strips, a ball-and-socket joint adjustably mounted in said head, and means for mounting a camera upon said joint.

2. In a tripod, a head provided with a bifurcation therein, legs pivotally mounted in the opposite ends of said bifurcation, a second bifurcation in said head at right angles to the first, a leg pivotally mounted in the rear end of said second bifurcation, slidable extensions carried by said legs, hooks or claws carried by the extensions on the first-mentioned legs, a prong carried by the extension on the other leg, and adjustable means for mounting a camera on said head.

3. In a tripod, a head provided with bifurcations therein, legs pivotally mounted in the opposite ends of one of said bifurcations and a leg similarly mounted in the rear end of the other bifurcation, slidable extensions carried by said legs, hooks or claws carried by the extensions on the first-mentioned legs, a prong carried by the extension on the other leg, and a ball-and-socket joint adjustably mounted in said head, said joint comprising an exteriorly-threaded cup with a socket therein and having a stem with an eye therethrough, a ball mounted in said socket, an integral stem having a threaded end carried by said ball, and an exteriorly-threaded cap encircling said stem and adapted for manipulation on said cup to adjust said ball in position.

4. In a tripod, a head, legs pivoted in said head, adjustable extension-strips carried by said legs, a prong on the end of one of said strips, and a hook or claw on the end of each of the other strips, a spring for normally holding the last-mentioned legs close together, means for holding said legs spread against the tension of said spring, a ball-and-socket joint adjustably mounted in said head, and means for mounting a camera upon said joint.

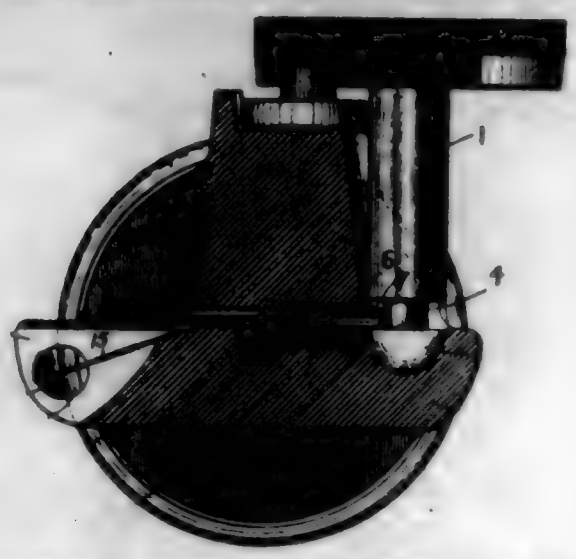
5. In a tripod, the combination with a head and adjustable legs suitably mounted in said head, of a ball-and-socket joint pivotally mounted in said head over said legs, said joint comprising an exteriorly-threaded cup with a socket therein and having a stem with an eye therethrough, a ball mounted in said socket, an integral stem having a threaded end carried by said ball, and an interiorly-threaded cap encircling said stem and adapted for manipulation on said cup to adjust said ball in position.

816,269. CASTER. CHARLES STENGEL, Hamilton, Ohio. Filed Sept. 2, 1905. Serial No. 276,781.

Claim.—1. In a caster, the combination, substantially as set forth, of a housing having a step-bearing and a horizontal cylindrical socket above the base of said bearing, a stem having its foot stepped in said bearing and provided with a circumferential groove, and a cylindrical union-block journaled in said socket and having a tongue engaging said groove, said union-block being adapted for angular motion in said socket under the influence of said grooved stem.

2. In a caster, the combination, substantially as set forth, of a housing having a step-bearing and a horizontal cylindrical socket above the base of said bearing, a stem having its foot stepped in said

bearing and provided with a circumferential groove, and a cylindrical union-block journaled in said socket and having a tongue with a flat lower surface engaging said groove.



3. In a caster, the combination, substantially as set forth, of a housing having a step-bearing and a horizontal cylindrical socket above the base of said bearing, a stem having its foot stepped in said bearing and provided with a circumferential groove, a cylindrical union-block journaled in said socket and having a tongue engaging said groove, and a pin tightly engaging an aperture in the housing and bearing against the rear end of said union-block.

4. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a rearwardly-projecting horn with a horizontal aperture therein, and a scraper disposed in said aperture and projecting outwardly sidewise from the perforation in said horn and engaging the treads of the floor-wheels.

5. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a rearwardly-projecting horn with a horizontal circular aperture, and a scraper semicircular in cross-section disposed in said aperture and projecting sidewise from the horn and engaging the treads of the floor-wheels.

6. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a rearwardly-projecting horn with a horizontal aperture, a scraper disposed in said aperture and projecting sidewise from the horn and engaging the treads of the floor-wheels, and a spring engaging said housing and scraper and serving to hold the scraper yieldingly to the wheels.

7. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a vertically-slitted rearwardly-projecting horn with a horizontal aperture, a scraper disposed in said aperture and projecting sidewise from the horn and engaging the treads of the floor-wheels, and a wire spring disposed in the slit of the horn and having its heel secured to the scraper and its free end engaging the housing.

8. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a vertically-slitted rearwardly-projecting horn with a horizontal aperture, a scraper disposed in said aperture and projecting sidewise from the horn and engaging the treads of the floor-wheels, and a wire spring disposed in said slit and having its heel bent about a portion of the scraper and having its free end engaging the housing.

9. In a caster, the combination, substantially as set forth, of a stem, a pair of floor-wheels, a housing articulated to the stem and having a vertically-slitted rearwardly-projecting horn with a horizontal aperture, a scraper disposed in said aperture and projecting sidewise from the horn and engaging the treads of the floor-wheels, and a wire spring having its heel passing through an aperture in the scraper and bent about a portion of the scraper and having its free end in engagement with the housing.

816,270. REFRACTORY MATERIAL FOR ELECTRIC INSULATION AND OTHER PURPOSES. DEMETRIUS M. STEWARD, Chattanooga, Tenn. Filed Feb. 26, 1903. Serial No. 145,061.

Claim.—1. An insulating and refractory material comprising the combination of water-glass and steatite or their substantial equivalents, chemically converted practically to a complete extent by heat.

2. An insulating and refractory material comprising the combination of steatite and water-glass or their substantial equivalents, converted by practically complete reaction.

3. An insulating and refractory material comprising the combination of powdered steatite and water-glass or their substantial equivalents, substantially in the proportions specified, converted by practically complete reaction.

4. An insulating and refractory material consisting of the combination of steatite and water-glass or their substantial equivalents, in convertible proportions, converted by practically complete reaction.

5. An insulating and refractory material consisting of the combination of powdered steatite and water-glass or their substantial equivalents, substantially in the proportions specified, converted by practically complete reaction.

6. An insulating and refractory material consisting of a complex anhydrous bisilicate composed essentially of silica with sodium and magnesium oxids.

816,271. PROCESS OF PRODUCING NEW REFRACTORY MATERIAL FOR THE MANUFACTURE OF INSULATORS AND OTHER USES. DEMETRIUS M. STEWARD, Chattanooga, Tenn. Filed May 25, 1905. Serial No. 262,202.

Claim.—1. The process which consists in the conversion of a mixture of hydrous silicates in convertible proportions into a complex anhydrous bisilicate through the application of heat.

2. The process which consists in the conversion of a mixture of magnesium silicate and sodium silicate or their equivalent into a complex anhydrous bisilicate by the application of heat.

3. The process which consists in the conversion of a mixture of steatite and water-glass or their substantial equivalents in convertible proportions, by the application of heat, substantially as specified.

4. The process which consists in subjecting, for a requisite period of time, a mixture of suitably-constituted material having steatite for its base to a temperature at which the desired reaction and the conversion of the mixture to my compound will take place.

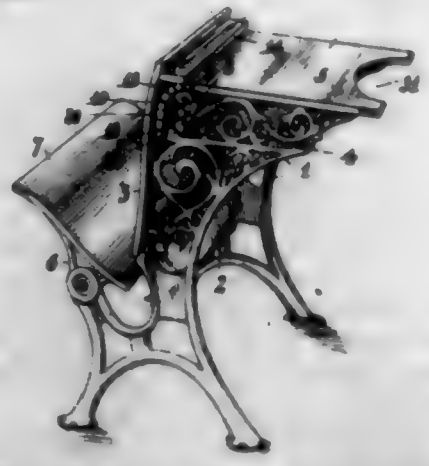
5. The process which consists in producing a complex anhydrous bisilicate by preparing a mixture of hydrous silicates and subjecting the same to a temperature at which the necessary reaction occurs, substantially as specified.

6. The process which consists of preparing a mixture of hydrous silicates in suitable proportions and in subjecting said mixture to a temperature at which the reaction necessary to its conversion occurs, substantially as and for the purpose specified.

7. The process which consists in preparing a mixture of magnesium and sodium silicates and in effecting reaction therein upon the application of heat at a temperature necessary to the conversion of the mixture.

8. The process of producing an insulating and refractory compound, the same being a complex anhydrous bisilicate having for its essential constituents silica with sodium and magnesium oxids, which consists in subjecting, for a requisite period of time, a mixture of suitable components, having steatite for its base, to a temperature at which the reaction necessary to the conversion of the mixture to the compound will take place.

816,272. SCHOOL-DESK. WILLIAM H. STOCKMAN, Buffalo, N. Y., assignor to Thomas H. Wall, Buffalo, N. Y. Filed Mar. 3, 1905. Serial No. 248,304.



Claim.—1. A desk having side standards provided with elevated portions at their inner ends extending above the plane of the upper edges of said standards and having upward and forwardly curved slots opening at the upper edges of said standards, said elevated portions having lateral flanges and a dovetail portion above

said flanges, a ledge provided with dovetail grooves to fit the dovetailed portions of said elevated portions and overhanging said elevated portions to lie above the open ends of said slots, and a slidable top having a flexible portion extending into said slots.

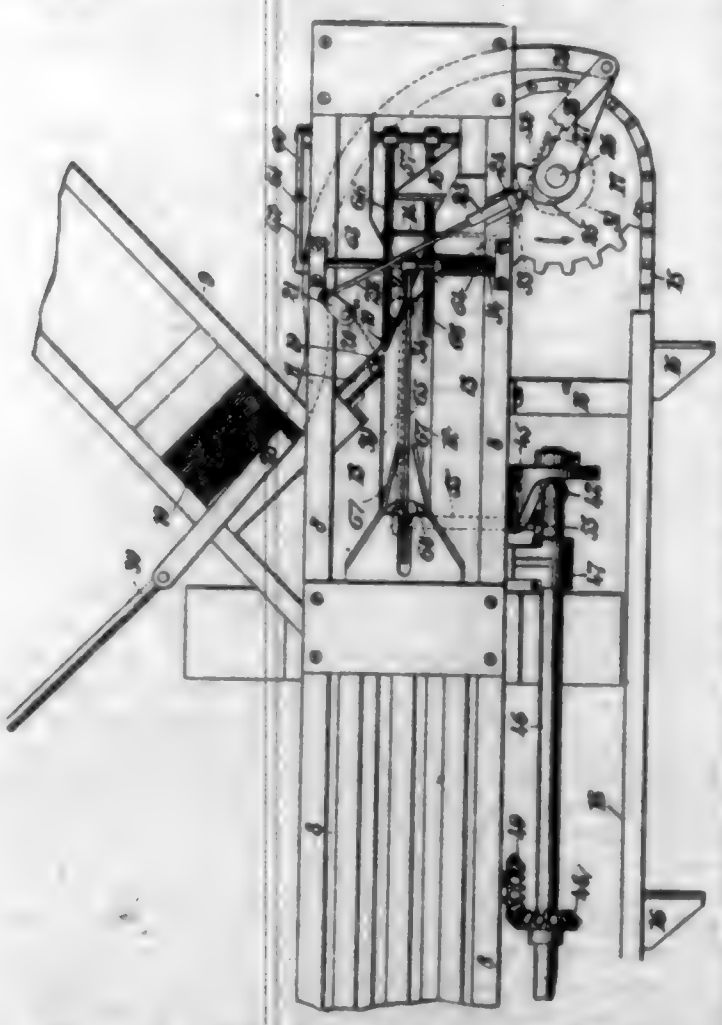
2. A desk having standards provided with upwardly and forwardly curved slots opening at the upper ends thereof, a wooden slidable top having a rigid front portion and a flexible rear portion, said flexible portion only being adapted to enter said slots, said top having a groove near each side edge extending through said entire flexible portion and through said rigid portion to a point near the front edge thereof, each of said grooves having one wall of that part formed in the rigid portion of said top formed of metal, the top of the standards fitting into said grooves.

3. A desk having standards provided with inwardly-directed flanges at their upper ends and having rearwardly and downwardly curved guide-slots at their rear ends, a slidable top lying on said standards and comprising a rigid front portion and a flexible rear portion, said flexible portion only being adapted to enter said guide-slots, said top being provided on its under side with guide-grooves, and metal strips on the rigid portion of the top only and extending into said grooves and lying underneath the inwardly-directed flanges on the standards.

4. A desk having side standards provided with inwardly and outwardly directed flanges near the upper edges thereof and with inwardly-directed flanges at said edges, and a slidable top supported on the first-mentioned flanges and having guide-grooves on its under side, and metal strips extending into said grooves and lying underneath the second-mentioned flanges.

816,273. ATTACHMENT FOR CARTON-MAKING MACHINES.

RICHARD SUNDERMAN, Buffalo, N. Y. Filed Mar. 14, 1905. Serial No. 250,010.



Claim.—1. The combination of a guideway through which carton-blanks are adapted to travel, means for passing a carton-blank through said guideway, means for exerting pressure upon oppositely-disposed portions of said carton-blank, a plunger to be forced into said carton-blank for the purpose of opening the same, and means for actuating said plunger.

2. The combination of a frame provided with a passage-way, a plunger supported by said frame and adapted to move into said passage-way, means for actuating said plunger, mechanism for passing a carton-blank into said passage-way and into alinement with said plunger, and means for exerting pressure progressively upon opposite portions of said carton-blank in order to facilitate the entrance of the plunger thereinto.

3. The combination of a frame provided with a passage-way, a chute disposed adjacent to said frame for feeding carton-blanks into said passage-way, a slide coacting with said chute for delivering said carton-blanks into said passage-way one at a time, means for squeezing each carton-blank edgewise after it enters into said passage-way, a plunger for partially entering each carton-blank so as to distend the same, and means for actuating said plunger.

4. The combination of a frame provided with a passage-way, means for feeding into said passage-way carton-blanks one at a time, a standard extending into said passage-way and serving as a limiting-stop for each carton-blank, a movable dog for gripping one end of said carton-blank and forcing the same toward said standard so as to exert pressure edgewise upon said carton-blank, a plunger disposed adjacent to said carton-blank and in alinement with the position thereof when said plunger is in contact with said limiting-top, and means for actuating said plunger so as to partially open said carton-blank.

5. The combination of means for exerting pressure edgewise upon a carton-blank, a member movable relatively to said carton-blank and adapted to be inserted thereinto for the purpose of opening said carton-blank, and mechanism for actuating said member.

6. The combination of means for exerting pressure upon the edges of a carton-blank so as to distend the same, a plunger provided with a sharp point and disposed substantially in alinement with said carton-blank, means for forcing said plunger into said carton-blank, and automatic mechanism for withdrawing said plunger.

7. The combination of means for exerting pressure upon the edges of a carton-blank so as to open the same, a movable member to be forced against said carton-blank so as to bend outwardly certain flaps thereof, another member movable relatively to said carton for closing another flap thereof, means for actuating both of said last-mentioned members, a plunger to be forced into said carton-blank so as to assist in distending the same, and means for actuating said plunger.

8. The combination of a limiting-stop, means for feeding a carton-blank thereagainst, a dog for engaging the free edge of said carton-blank and forcing the same toward said limiting-stop, thereby exerting pressure edgewise upon said carton-blank, a plunger provided with a sharp point and disposed in alinement with said carton-blank, and cam-controlled mechanism for causing said plunger to reciprocate.

9. The combination of framework provided with a passage-way, means for forcing carton-blanks one at a time through said passage-way, a member disposed adjacent to said passage-way and adapted to move relatively to said carton-blanks for the purpose of bending the flaps thereof outwardly, and a cam coacting with the movements of said blank for actuating the movements of said member.

10. The combination of means for holding a carton-blank, a plunger disposed substantially in alinement with said carton-blank, means for reciprocating said plunger in the general direction of said carton-blank for the purpose of opening the latter, a spring-arm movable relatively to said plunger and adapted to press a portion of said carton-blank into engagement therewith, and cam mechanism for moving said spring-arm into and out of engagement with said carton-blank.

11. The combination of means for holding a carton-blank, a plunger provided with a comparatively sharp point to be inserted within said carton-blank, means for automatically actuating said plunger relatively to said carton-blank, and a swinging arm provided with a spring portion for engaging the exterior of said carton-blank for the purpose of assisting said plunger to enter the same.

12. The combination of mechanism for feeding carton-blanks one at a time, means for momentarily holding each blank after being thus fed, a plunger provided with a sharp point for entering the carton-blank and distending the same, an arm connected with said plunger for actuating the same, mechanism connected with said arm for retracting said plunger, and a movable member for pressing momentarily against said carton-blank so as to guide said plunger thereinto.

13. The combination of means for holding a carton-blank, a plunger disposed in alinement with said carton-blank when thus held, mechanism for forcing said plunger partially into said carton-blank for the purpose of distending the same, means for squeezing said carton-blank edgewise while said plunger makes its thrust, a movable member provided with a portion for pressing the portion of said carton-blank directly against said plunger, and means for actuating said movable member.

14. The combination of a carton-blank, a plunger to be forced thereinto for opening the same, a swinging arm provided with a por-

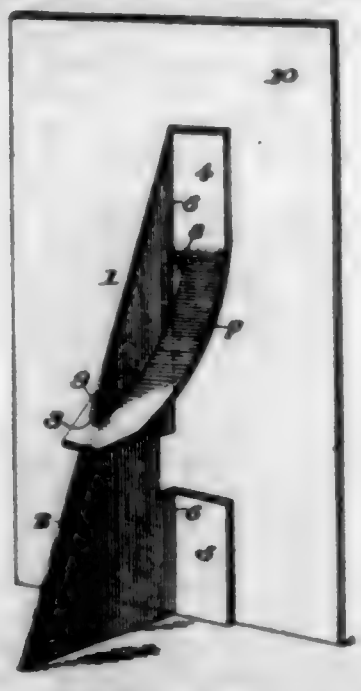
tion for gently pressing a part of said carton-blank against said plunger in order to facilitate the insertion of said plunger into said carton-blank, and means for actuating said swinging arm.

15. The combination of means for holding a carton-blank, a plunger to be inserted within said carton-blank for the purpose of opening the same, mechanism provided with a movable member for forcing a part of said carton-blank laterally against said plunger so as to dispose said carton-blank favorably for the action of said plunger, means for actuating said plunger, and means for squeezing said carton-blank edgewise while said plunger is being inserted thereinto.

16. The combination of a framework provided with a passage-way, a plunger mounted upon said framework and movable relatively thereto, means for passing a carton-blank into said passage-way and into alinement with said plunger, mechanism for holding said carton-blank in fixed position, and a member provided with a spring portion for pressing upon the exterior of said carton-blank in order to facilitate the entrance of said plunger into said carton-blank.

17. The combination of a framework provided with a passage-way, means for passing the carton-blank into said passage-way, and members mounted oppositely and adapted to exert pressure upon the edges of said carton-blank for the purpose of distending the same.

816,274. **EASEL.** JOHN B. THOMPSON, Philadelphia, Pa., assignor to Kettertinen Lithographic Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 14, 1905. Serial No. 282,760.



Claim.—1. In a device of the character described, upper and lower flaps, a wing connected therewith, a tongue connected with said upper flap and in alinement with said lower flap and a hook on said tongue said hook being adapted to engage with the outer edge of the wing, when the tongue is properly bent therefor.

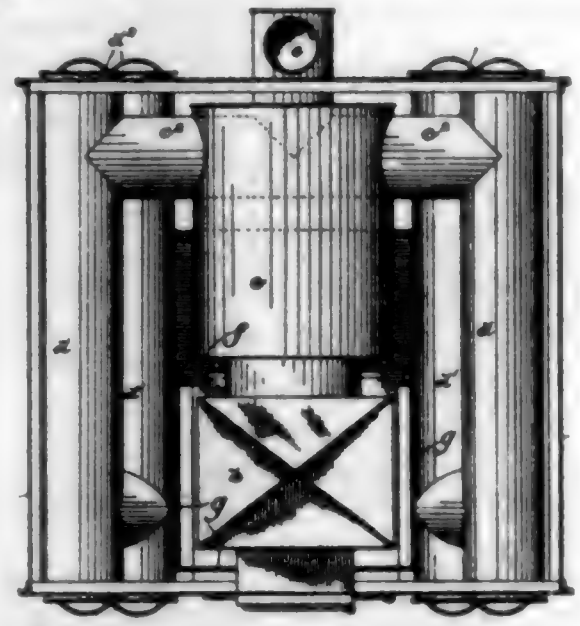
2. In a device of the character described, upper and lower flaps, a wing connected therewith having a notch in an edge thereof, a tongue connected with said upper flap and a hook on said tongue adapted to engage with the notch in said wing when the tongue is properly placed therefor.

3. In a device of the character described, upper and lower flaps, a wing connected therewith having a notch in the outer edge thereof, a tongue connected with the upper flap and in alinement with the lower flap, said tongue and said wing having a space therebetween and a hook cut from said wing and connected with said tongue, the latter being adapted to permit engagement with said hook and with said notch.

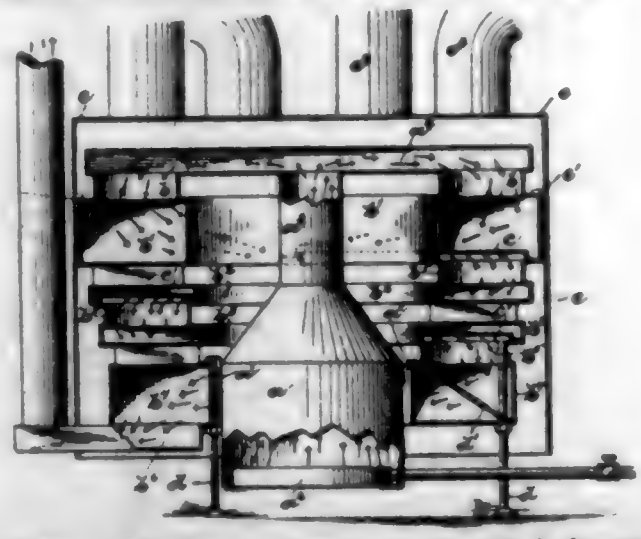
4. As a new article of manufacture, an easel formed of a single sheet comprising a wing having a notch in an edge thereof, an upper and a lower flap connected with said wing, a tongue extending from one of said flaps and formed from the material between said flaps and a hook carried by said tongue adapted to engage said notch when said easel is in operative position.

816,275. **FURNACE.** RALPH S. THOMPSON, Springfield, Ohio, assignor to The Springfield Furnace Company, Springfield, Ohio, a Corporation of Ohio. Filed Nov. 22, 1904. Serial No. 233,931.

Claim.—In a heating apparatus as described, the combination of a rectangular casing, an air-inlet and an air-outlet in said casing, a fire-box and a combustion-chamber in said casing, a secondary combustion-chamber of comparative large size extending rearward from the primary combustion-chamber, upper and lower pairs of separator-tubes extending through said rectangular casing with their ends protruding beyond the walls thereof, said upper pair of separator-tubes being more widely separated than the lower pair of separator-tubes, a connection between the secondary combustion-chamber and each separator-tube of the upper pair, a connection between each upper separator-tube and its corresponding lower separator-tube, a flue and a connection between the flue and each of the lower separator-tubes, a horizontal deflector below the secondary combustion-chamber, and inclined deflectors attached to the walls of said rectangular casing and overhanging the upper separator-tubes, substantially as specified.



816,276. **GAS-FURNACE.** RALPH S. THOMPSON, Springfield, Ohio, assignor to The Springfield Furnace Company, Springfield, Ohio, a Corporation of Ohio. Filed Nov. 23, 1904. Serial No. 233,962.



Claim.—1. In a heating apparatus as described, the combination with a casing, an inlet and an outlet therein, of a series of superposed independent separator-rings, the diameters of the successive separator-rings decreasing in regular order from top to bottom; a combustion-chamber, a connection from said combustion-chamber to the uppermost separator-ring, connections between the successive separator-rings and a flue connecting with the lowermost separator-ring whereby the products of combustion will be carried in a downward course through the successive separator-rings, substantially as and for the purpose specified.

2. In a heating apparatus as described, a casing an air-inlet and an air-outlet therein, a series of superposed separator-rings of various diameters, the external diameter of the uppermost separator-ring being substantially equal to the internal diameter of the casing, and the internal diameter of the lowermost separator-ring being approximately equal to the external diameter of the combustion-chamber, and the intermediate separator-rings varying in regular order, each separator-ring being separated from adjacent separator-rings by intervening space; a combustion-chamber, connections from the combustion-chamber to the uppermost separator-ring, connections between successive separator-rings and a flue connecting with the lowermost separator-ring, the whole composing a structure wherein

the products of combustion will be conducted in a downward course from the topmost separator-ring through the successive separator-rings to the flue, and wherein the air in its passage from the inlet to the outlet will pass between the adjacent heated surfaces of the separator-rings, substantially as specified.

816,277. COMBINATION KEYHOLE BIT AND SAW. EARLY R. TOWNLEY, Rosecrets, W. Va. Filed Aug. 21, 1905. Serial No. 275,176.

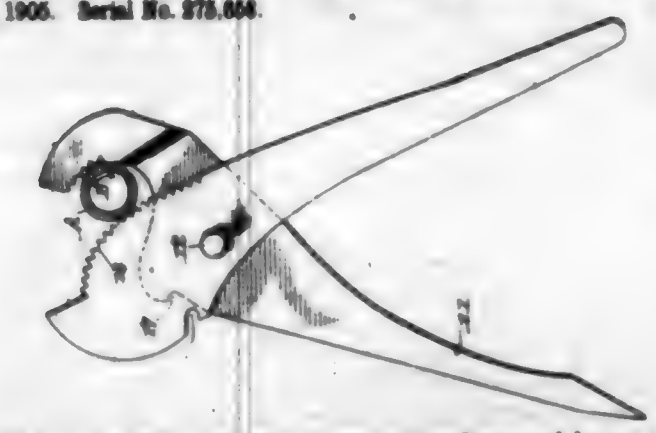


Claim.—1. A keyhole-forming implement comprising in a single integral element a bit and a shank formed with teeth upon its edge and its opposite flat faces formed with rasping surfaces.

2. A keyhole-forming implement comprising in a single integral element a bit and a shank having portions of different thickness and formed upon its opposite edges with saw-teeth.

3. A keyhole-forming implement comprising in a single integral element a bit and a shank having portions of different thickness and formed upon its opposite edges with saw-teeth and having its opposite flat faces formed with rasping surfaces.

816,278. PLIERS. ALLEN TRACHT, Galion, Ohio. Filed Aug. 24, 1905. Serial No. 275,668.



Claim.—1. Pliers embodying crossed and pivoted levers provided with jaws having work-engaging faces substantially in alinement with the pivot and continued by complementary faces disposed entirely upon one side of a plane including the alined jaw-faces and the pivot.

2. Pliers embodying crossed and pivoted levers provided with jaws opposite the levers and having work-engaging faces substantially in alinement with the pivot and continued by complementary serrated faces disposed entirely upon one side of a plane including the alined jaw-faces and the pivot.

3. Pliers embodying crossed and pivoted levers provided with jaws opposite the levers and having work-engaging faces substantially in alinement with the pivot and continued by complementary curved serrated faces disposed entirely upon one side of a plane including the alined jaw-faces and the pivot.

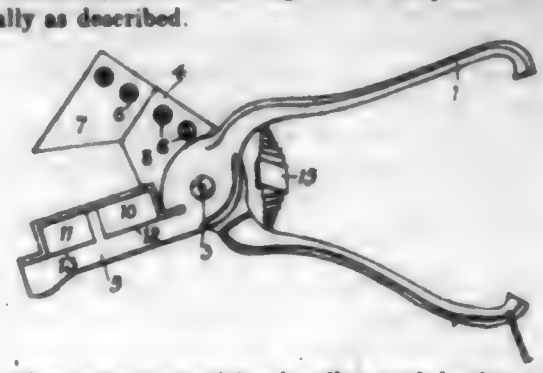
4. Pliers embodying crossed and pivoted levers provided with jaws, one of which has a work-engaging face conforming substantially to a parabolic curve whose directrix passes through the pivot and the other jaw provided with a complementary curved face.

5. Pliers embodying crossed and pivoted levers provided with jaws one of which has a serrated work-engaging face conforming substantially to a parabolic curve whose directrix passes through the pivot and the other jaw provided with a complementary serrated work-engaging face.

6. Pliers embodying crossed and pivoted levers provided with jaws opposite the levers and having work-engaging faces substantially in alinement with the pivot and continued one by a parabolic face and the other by a concave face complementary to the parabola and both wholly upon the same side of the pivot.

816,279. MITER-CUTTER. WILEY H. TROSPER, Santa Clara, Cal. Filed Nov. 7, 1905. Serial No. 286,197.

Claim.—1. A miter-cutter comprising handles, each having a jaw, and pivoted together, one of the jaws being provided with a cutter moving past the other jaw, and the latter jaw being provided with guide-walls and rest-surfaces, the guide-walls being at right angles to the rest-surfaces, and at acute angles with the plane of the cutter, substantially as described.



2. A miter-cutter comprising handles, each having a jaw, and pivoted together, one of the jaws being provided with a cutter moving past the other jaw, and the latter jaw being provided with guide-walls and rest-surfaces, the guide-walls being at right angles to the rest-surfaces, and at angles of forty-five degrees with the plane of the cutter, substantially as described.

3. A miter-cutter comprising handles, each having a jaw, and pivoted together, one of the jaws being provided with a cutter moving past the other jaw, and the latter jaw being provided with guide-walls and rest-surfaces, the guide-walls being at right angles to the rest-surfaces, and at acute angles with the plane of the cutter, and the second jaw also having a bearing-surface between the guide-walls and bearing against the side of the cutter, substantially as described.

4. A miter-cutter comprising handles, each having a jaw, and pivoted together, one of the jaws being provided with two cutters having their edges extending at an obtuse angle with each other, and the latter jaw being provided with guide-walls and rest-surfaces, the guide-walls being at right angles to the rest-surfaces, and at acute angles with the plane of the cutters, substantially as described.

816,280. VENTURI TUBE. ARTHUR S. TUTTLE, New York, N. Y. Filed Aug. 2, 1904. Serial No. 219,219.



Claim.—1. In a Venturi tube, an expanding outlet in which the angle near the throat is approximately five degrees and in which the angle is substantially greater than five degrees at a distance from said throat.

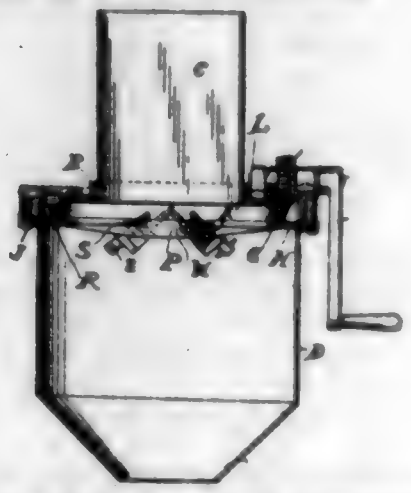
2. In a Venturi tube, an expanding outlet in which the angle near the throat is approximately five degrees and in which the angle increases progressively toward the outlet end.

3. In a Venturi tube, an expanding outlet made up of a series of cone frustra of progressively-increasing angles, starting with an angle of approximately five degrees.

4. In a Venturi tube, an expanding outlet in which the angle near the throat is approximately five degrees and which is succeeded by an angle of approximately eight degrees.

5. In a Venturi tube, an expanding outlet in which the angle near the throat is approximately five degrees and in which the angle increases continually toward the outlet end.

816,281. ICE-SHAVING MACHINE. GEORGE W. VAN SANT, Bellevue, Ky. Filed Mar. 6, 1905. Serial No. 248,764.



Claims.—1. In an ice-shaving machine, a framework, a carriage, said carriage mounted to revolve in said framework, cutting-knives, said cutting-knives attached to said carriage, and disposed on opposite sides thereof, a bar carrying said knives, the knives passing through a guide-bar permanently attached to the carriage, means for moving said knives up and down in said guide-bar, the points of each set of knives extending up at an angle and in opposite positions so that continuous cutting is produced, in combination with means for revolving said carriage, all combined and operating as set forth.

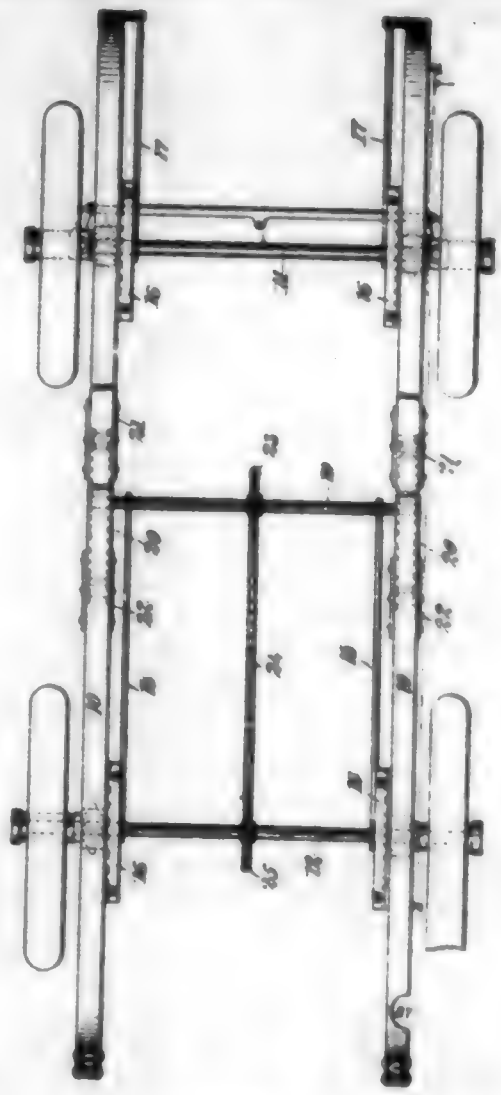
2. In an ice-shaving machine, a framework, a carriage, said carriage mounted to revolve in said framework, cutting-knives, said cutting-knives attached to said carriage and disposed on opposite sides thereof, means for adjusting said knives on said carriage, a guide-bar, said knives passing through said guide-bar for adjustment, in combination with means for revolving said carriage, a hopper for holding the ice, a cylinder lying below said framework, a screen in said cylinder, said screen being removable, said screen sifting the shaved ice and holding the particles which are too large, a spout for removing said large particles, all combined and operating as set forth.

816,282. MOTOR-VEHICLE RUNNING-GEAR. RALPH B. VAUGHN, Kingston, Pa. Filed Oct. 2, 1905. Serial No. 280,991.

Claim.—1. In a vehicle, the combination of a frame, an axle, a radius-bar connecting the frame and axle, a hanger fastened to the frame and loosely inclosing the axle, the hanger curving in an arc concentric to the center of movement of the radius-bar, a driving-gear for the axle, said gear including elements the centers of which are respectively coincident to the ends of the radius-bar, a spring fastened to the frame, a yoke connected to the spring, a box in which the axle is mounted, the box sliding in the yoke, and cushions held in the yoke above and below the box.

2. In a vehicle, the combination of a frame, an axle, a radius-bar connecting the frame and axle, a hanger fastened to the frame and loosely inclosing the axle, the hanger curving in an arc concentric to the center of movement of the radius-bar, a driving-gear for the axle, said gear including elements the centers of which are respectively coincident to the ends of the radius-bar, a spring fastened to the frame, a yoke connected to the spring, a box in which the axle is mounted, the box sliding in the yoke, and pneumatic cushions held in the yoke above and below the box.

3. In a vehicle, the combination of a frame, an axle, a radius-bar connecting the frame and axle, a hanger fastened to the frame and loosely receiving the axle, the hanger being curved concentrically to the center of movement of the radius-bar, a gear for driving the axle, the gear including elements respectively coincident with the ends of the radius-bar, a half-elliptic spring having its ends secured to the frame, a yoke carried intermediate the ends of said spring, a box in which the axle is mounted, the box being loosely arranged in the yoke, and cushions held in the yoke above and below the box.



4. In a vehicle, the combination of a frame, an axle, a radius-bar joining the frame and axle, a hanger attached to the frame and loosely receiving the axle, the hanger curving concentrically to the center of movement of the radius-bar, a sprocket-gear arranged with its center coincident to the front end of the radius-bar, a gear mounted on the axle, a chain connecting said gears, a spring secured to the frame, a yoke attached to the spring, a box in which the axle is mounted, said box sliding in the yoke, and cushions held in the yoke above and below the box.

5. In a vehicle, the combination of a frame, a spring attached thereto, a yoke attached to the spring, an axle, a box in which the axle is mounted, said box being carried loosely in the yoke, cushions held by the yoke above and below the box, a driving-shaft connected with the frame, and means for maintaining the driving-shaft and the axle at a fixed distance with respect to each other.

6. In a vehicle, the combination of a frame, a half-elliptic spring having its ends connected to the frame, a yoke carried by the spring intermediate its ends, an axle, a box in which the yoke is mounted, said box being loosely mounted in the yoke, cushions held in the yoke above and below the box, a driving-shaft connected with the frame, and means for maintaining the driving-shaft and the axle at a fixed distance with respect to each other.

7. In a vehicle, the combination of a frame, a half-elliptic spring, one end of which is joined to a rigid part of the frame, a link for joining the other end of the spring to the frame, a yoke carried by the spring intermediate the same, an axle, a box in which the axle is mounted, said box being slidably mounted in the yoke, cushions held in the yoke above and below the box, a driving-shaft connected with the frame, and means for maintaining the driving-shaft and the axle at a fixed distance with respect to each other.

8. In a vehicle, the combination of a frame comprising longitudinal side bars, hangers depending from each and side members extending between the hangers at each side of the frame, a cross-shaft extending between said side members, a radius-bar connected to the cross-shaft, a rear axle connected to the radius-bar, hangers depending from the frame in which the rear axle is loosely arranged, the hangers curving concentrically to the front end of the radius-bar, a gearing for driving the rear axle, the gearing including elements respectively coincident to the axle and the front end of the radius-bar,

means including a spring for connecting the rear axle with the frame, a front axle, and means for connecting said axle with the frame.

9. In a vehicle, the combination of a frame, comprising longitudinal side bars, hangers depending from each, and side members extending between the hangers at each side of the frame, a cross-shaft extending between the side members, a radius-bar the front end of which is coincident with said cross-shaft, a rear axle to which the radius-bar is joined, a hanger loosely receiving the axle, the hanger curving concentrically to the front end of the radius-bar, a half-elliptic spring having its front end joined to one of the first-named hangers of the frame and its rear end joined to the rear part of the frame, a yoke attached to the spring intermediate of its ends, means for loosely mounting the axle in the yoke, a front axle, and means for mounting the same.

10. In a vehicle, the combination of a frame, comprising longitudinal side bars, hangers depending from each and side members extending between the hangers at each side of the frame, a cross-shaft extending between the side members, a radius-bar the front end of which is coincident with said cross-shaft, a rear axle to which the radius-bar is joined, a hanger loosely receiving the axle, the hanger curving concentrically to the front end of the radius-bar, a half-elliptic spring having its front end joined to one of the first-named hangers of the frame and its rear end joined to the rear part of the frame, a yoke attached to the spring intermediate its ends, means for loosely mounting the axle in the yoke, a front axle, and means for mounting the same; said means for loosely mounting the axle in the yoke comprising a box in which the axle is arranged, the box sliding in the yoke, and cushions held by the yoke above and below the box.

11. In a vehicle, the combination of a frame, front and rear axles, radius-bars connecting the axles with the frame, hangers secured to the frame, in which hangers the axles are loosely received, said hangers curving in arcs respectively concentric to the centers of movement of the radius-bars, springs connected to the frame, and means for mounting the axles on the springs.

12. In a vehicle, the combination of a frame, front and rear axles, radius-bars connecting the axles with the frame, hangers secured to the frame, in which hangers the axles are loosely received, said hangers curving in arcs respectively concentric to the centers of movement of the radius-bars, springs connected to the frame, and means for mounting the axles on the springs; said means for mounting the axles on the springs comprising yokes connected with the springs, boxes in which the axles are mounted, and cushions held by the yokes above and below the boxes.

13. In a vehicle, the combination of a frame, an axle, a radius-bar connecting the frame and axle, a curved hanger attached to the frame and loosely receiving the axle, a half-elliptic spring having its ends in connection with the frame, and means for connecting the intermediate portion of the spring with the axle.

14. In a vehicle, the combination of a frame, comprising longitudinal side bars, hangers depending from the middle portion of each and side members connecting the hangers at each side, front and rear axles, curved hangers depending from the side bars of the frame, in which hangers the axles are loosely arranged, radius-bars connecting the axles with the frame, half-elliptic springs having their front ends joined to the frame and their rear ends linked to the front hangers of the frame, means connecting said springs with the front axle, additional half-elliptic springs having their front ends joined to the rear hangers of the frame, links connecting the rear ends of the additional springs with the frame, and means for connecting said additional springs with the rear axle.

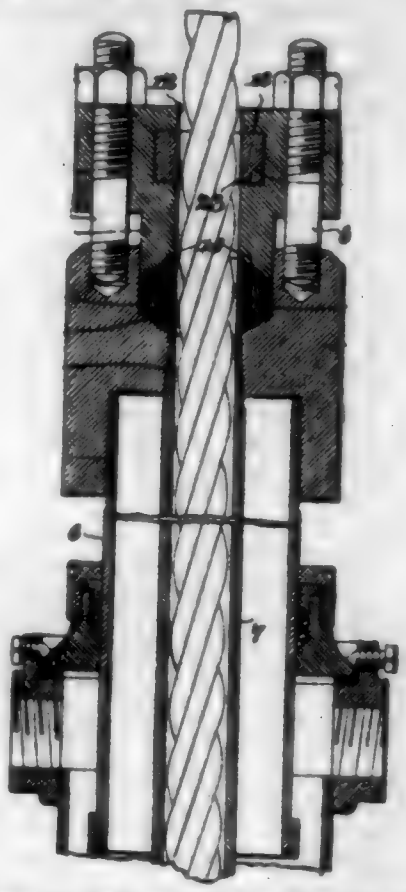
15. In a vehicle, the combination of a frame, comprising longitudinal side bars, hangers depending from the middle portion of each and side members connecting the hangers at each side, front and rear axles, curved hangers depending from the side bars of the frame, in which hangers the axles are loosely arranged, radius-bars connecting the axles with the frame, half-elliptic springs having their front ends joined to the frame and their rear ends linked to the front hangers of the frame, means connecting said springs with the front axle, additional half-elliptic springs having their front ends joined to the rear hangers of the frame, links connecting the rear ends of the additional springs with the frame, and means for connecting said additional springs with the rear axle; said means for connecting said springs with the front and rear axles comprising yokes attached to the springs, boxes in which the axles are mounted, the boxes sliding in the yokes, and cushions held in the yokes above and below the boxes.

816,288. FASTENER FOR WINDOW-SASH CORDS. CHRISTIAN J. WEIMAR, Dayton, Ohio. Filed Dec. 22, 1905. Serial No. 293,071.

Claim.—In a fastener for window-sash cords, a member consisting of two outer curved walls and an intermediate wall, said walls being of uniform lengths and providing inclosed spaces for looping the sash-cord, the intermediate wall having a notch in one end thereof to receive and grip the sash-cord at the bend thereof, substantially as specified.

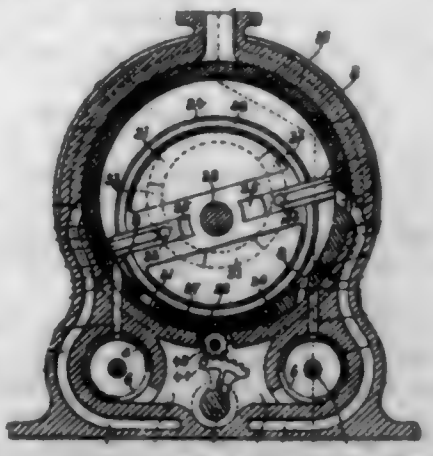


816,284. OIL-SAVER. WILLIAM A. WILLIAMSON, Friendly, W. Va. Filed Dec. 30, 1905. Serial No. 293,946.



Claim.—A device of the class described comprising a head having a bore for the reception of a drill-rope, a tube depending from the head and forming a continuation of the bore, a pipe depending from the head concentric with and of greater diameter than the tube, the top of the head having a packing-socket in communication with the bore, a gland adjustable upon the head and fitting in the packing-socket, and a drill-rope clamp carried by the gland.

816,285. ROTARY ENGINE. IRA ABBOTT, Wyandotte, Mich. Filed Aug. 4, 1904. Serial No. 219,456.



Claim.—1. In a rotary engine, the combination of a cylinder having its inner face cut away for a distance at its lower side to form a recess therein and provided with inlet and exhaust ports on opposite sides, heads on the cylinder provided with bearings below the axis of the cylinder, a shaft in said bearings extending longitudinally through the cylinder, a rotary piston provided with radial slots secured on said shaft, blades in said slots movable radially therein, studs on said blades, ways in the cylinder-heads arranged concentrically with the axis of the cylinder, blocks in said ways having openings to receive said studs, a contact-plate within said recess, and

springs to hold said plate in contact with the piston to prevent the passage of the steam.

2. In a rotary engine, the combination with a cylinder having ports, of heads in the cylinder having outwardly-extending hub-bearings externally screw-threaded at their outer ends, a shaft in said bearings, a rotary piston secured to said shaft, sleeves on the shaft at each side of the piston engaging the hub of the same at one end and extended outward through the bearings, and internally-screw-threaded caps on the outer ends of the hub-bearings to engage the ends of the sleeves and force the same inward against the hub of the piston to center the same in the cylinder.

3. In a rotary engine, the combination with a cylinder having an inlet and an exhaust port, a rotary piston mounted eccentrically within the cylinder and forming an abutment, blades carried by said piston, a base portion having a chamber forming a steam-chest and bored transversely to form a valve-chamber communicating through passages with the steam-chest and inlet-port, a cylindrical valve in said valve-chamber open to the steam-chest and provided with an opening to register with the passage leading to the inlet-port, and means for rocking said valve in timed relation to the movement of the piston.

4. In a rotary engine, the combination of a cylinder having steam-passages formed in its inner face and leading around the same from an opening in its top and provided with inlet and exhaust ports between said passages, a bushing-ring covering the passages and provided with openings opposite the ports, a piston mounted eccentrically within the cylinder with one side engaging the ring between the ports, and means for opening and closing said ports.

5. In a rotary engine, the combination with a cylinder having an intake and an exhaust port at each side, a bushing-ring fitting within said cylinder and having openings opposite said ports, a slide-valve within said openings in the ring to open and close said ports, a rotary piston mounted eccentrically within the cylinder with one side engaging the bushing-ring between the ports and forming an abutment, blades carried by said piston, and means for moving the valve.

6. In a rotary engine, the combination of a cylinder having steam-passages leading around the same from an opening at its top and provided with inlet and exhaust ports between said passages; a base portion having a chamber forming a steam-chest into which the steam-passages open, valve-chambers at each side of said chest communicating with said chest and with the inlet-ports, an exhaust-chamber, and exhaust-passages leading from the exhaust-ports to said exhaust-chamber around the valve-chambers and between the steam-passages; a rotary piston in said cylinder having blades; valves in the valve-chambers; and means for operating said valves.

7. In a rotary engine, the combination of a cylinder having an inlet and an exhaust port, at each side and having its inner face recessed adjacent to said ports, a slide-valve in said recess to control the ports, a rotary piston mounted eccentrically within the cylinder and contacting the face of the cylinder between its ports, blades carried by said piston, and means for moving the valve longitudinally in its recess.

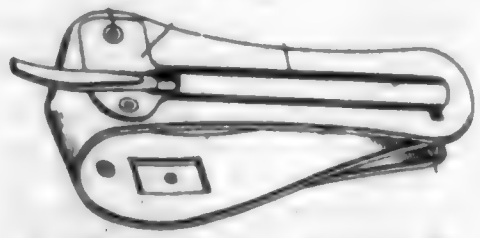
8. In a rotary engine, the combination of a cylinder having an inlet and an exhaust port in each side, heads on said cylinder having bearings at one side of their axes, a shaft in said bearings, a rotary piston secured on the shaft and engaging the cylinder at one side to form an abutment, blades radially movable in said piston, studs on said blades, ways on the heads concentric with the axis of the cylinder into which ways the studs project, a longitudinally-movable valve in the face of the cylinder to cover the exhaust-ports at each side and provided with openings to register with the inlet-ports, a steam-chest below the cylinder, a shaft mounted in bearings on the walls of said chest, a sector on said shaft within the chest to operate the slide-valve, and a lever secured to the outer end of said shaft to turn the same to shift the valve.

9. In a rotary engine, the combination of a cylinder having an inlet and an exhaust port at each side and having its inner face recessed adjacent to said ports to receive a valve, a valve in said recess to open and close the ports, means for shifting said valve, heads on the cylinder provided with bearings at one side of the axis of the cylinder, a shaft in said bearings extending outward through the same, a rotary piston on said shaft contacting the face of the cylinder between its ports, blades carried by said piston in contact with the face of the cylinder, a base portion having a steam-chest and transverse bores at each side of said chest forming valve-chambers, passages being formed in the base connecting the chest and valve-chambers and the valve-chambers with the inlet-ports, cylindrical valves in the valve-chambers having stems extending outside the base, eccentrics on the engine-shaft, arms on the valve-stems, and connecting-rods connecting the eccentrics and arms.

10. In a rotary engine, the combination of a cylinder having an opening at its upper side, grooves in its inner face extending around the cylinder each way from said opening near each end of the cylinder, an inlet and an exhaust port at each side between said grooves communicating with inlet and exhaust passages, and a hole adjacent to each inlet-port communicating with the exhaust-passage; a base portion formed with a chamber forming the steam-chest, an exhaust-chamber into which the exhaust-passages lead, and valve-chambers at each side of the steam-chest communicating with the same and into which the inlet-passages open, and bored transversely through the casing; cylindrical valves having closed ends in said valve-chambers; plugs in the outer ends of the valve-chambers to close the same valve-stems extending through the plugs at one end; arms on the outer ends of said stems; a bushing-ring fitting within the cylinder to cover the grooves in the face thereof and formed with openings opposite the ports having inwardly-extending flanges; a longitudinally-movable valve to fit within said openings in the ring and provided with openings to register with the inlet-ports and also holes to register with the holes adjacent to said ports; heads on the cylinder provided with bearings arranged eccentrically with the axis of the cylinder; an engine-shaft in said bearings; a rotary piston secured on said shaft and provided with radial slots; blades in said slots, a contact-plate in the lower side of the cylinder engaging the side of the piston to form an abutment; a pinion mounted in bearings in the steam-chest and engaging teeth on the lower side of the slide-valve; a shaft mounted in bearings on the walls of the chest; a sector on said shaft engaging the pinion; a hand-lever on the outer end of said shaft; eccentrics on the engine-shaft; and connecting-rods connecting the eccentrics and the ends of the arms on the valve-stems

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816,286. **HUSKING-PEG.** JOHN H. AXIN, Ames, Iowa. Filed Oct. 16, 1905. Serial No. 282,906.

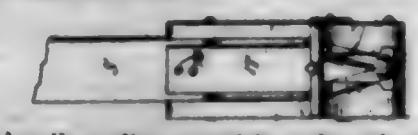


Claim.—1. A husking-peg comprising a metallic strip, a split tubular socket integral therewith, a slotted extension and a lug extending in opposite directions from one end of the socket and at right angles thereto, a plug retained in the socket by the lug, a peg slidably mounted within and extending from the socket, means upon the peg and engaging the strip for limiting the movement of the peg, and a spring interposed between the plug and peg.

2. A husking-peg comprising a flexible handpiece having an integral strap and securing means therefor, a metallic strip secured upon the handpiece, a split tubular socket integral with said strip, a slotted extension and a lug at one end of the socket and integral therewith and extending at right angles thereto, the extension projecting through the handpiece and adapted to be engaged by the strap, a plug retained within the socket by the lug, a peg slidably mounted within and extending from the socket, means upon the peg and engaging the metallic strip for limiting the movement of the peg, and a spring within the socket and interposed between the plug and peg.

3. A husking-peg comprising a flexible handpiece having an integral securing-strap, means for fastening the end of the strap, a sheet-metal strip secured upon the handpiece and having an integral split tubular socket thereon and a slotted extension and a lug at one end of the socket and integral therewith, said extension projecting through the handpiece and engaged by the strap, a peg slidably mounted within and extending from the socket, a lug thereon slidably engaging the metallic strip, and a spring within the socket and interposed between the lug and peg for holding said peg normally projected from the socket.

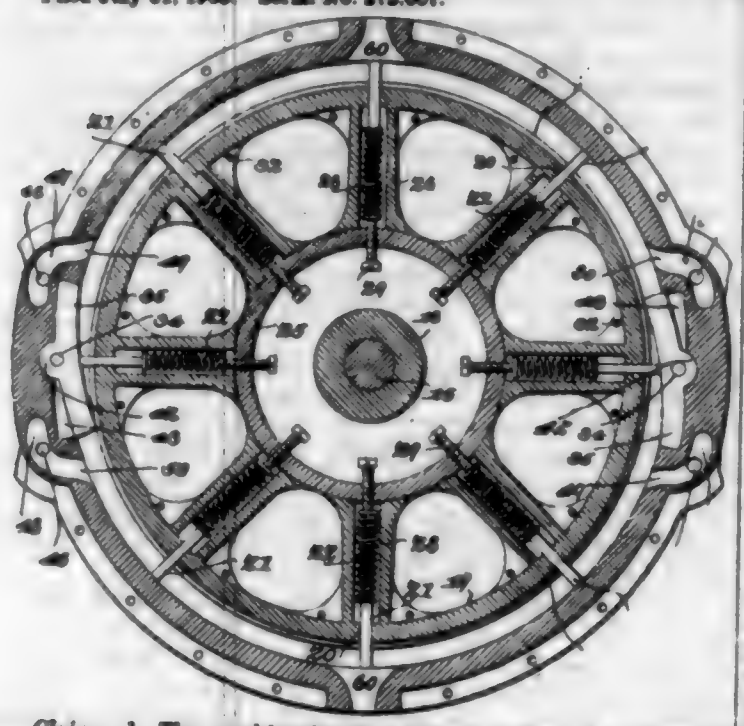
816,287. **SPIKE-PULLER.** DAVID AUER, Milan, Mo. Filed Apr. 19, 1905. Serial No. 256,343.



Claim.—A spike-puller comprising a lever having a curved upturned lower end, provided with a notch having converging sides; a

bar extending across the notch; a pair of claw members pivoted to the lever, and extending through the notch and beyond the end of the lever; and a wedge secured to the aforesaid bar, and extending between the claw members.

816,288. ROTARY ENGINE. DAVID F. BAKER, Dundee, Oreg. Filed July 31, 1905. Serial No. 272,007.



Claim.—1. The combination in a rotary engine, of a sectional piston-drum having inner and outer concentric flanges, the outer flange being provided with radially-disposed openings, piston-wings guided in said openings, springs tending to thrust the wings outward, and screws extending through threaded openings in the inner flange and bearing against the inner ends of said springs.

2. In a rotary engine, a piston formed of a pair of members provided with spaced concentric flanges, the outer flange being carried by one section, and the inner flange by the other section, radially-disposed arms carried by one of the sections and provided with spring-receiving recesses, piston-wings extending through openings in the outer flange and into said recesses, springs bearing against the inner edges of the piston-wing, and screws carried by the inner flange and forming adjustable supports for said springs.

3. The combination in a rotary engine, of a concentric piston-drum having radially-movable wings, an abutment pivotally mounted in a recess in the wall of the cylinder, steam-chambers formed in the wall of the cylinder on opposite sides of the abutment, ports leading from the chambers to the steam-space of the cylinder, and means for controlling the passage of steam to one or other of the chambers.

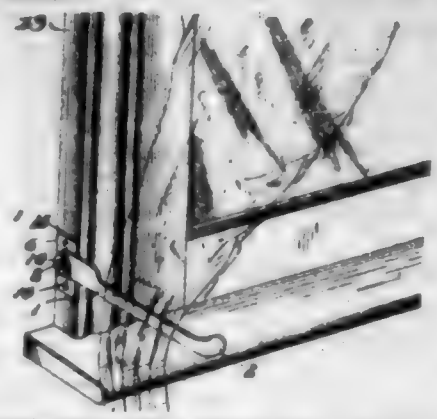
4. The combination in a rotary engine, of a cylinder having an abutment-receiving recess and provided with spaced steam-chambers, an abutment pivotally mounted in said recess, means for controlling the admission of steam to one or other of the steam-chambers, means for adjusting the abutment to present either of its ends into the steam-space end of the cylinder, and a piston arranged within said cylinder.

5. The combination in a rotary engine, of a cylinder having an abutment, a pair of steam-chambers arranged on opposite sides of the abutment, a slide-valve for controlling the admission of steam to said chambers, a slide-valve-operating means, means for adjusting the position of the abutment, and a revoluble piston-drum arranged within the cylinder.

6. The combination in a rotary engine, of a cylinder, a main shaft, a piston mounted thereon and provided with radially-movable piston-wings, a pair of pivotally-mounted abutments arranged within the cylinder, a disk mounted on the shaft and operatively connected to both abutments to permit simultaneous adjustment of the same, a pair of steam-chambers arranged on each side of the abutments, controlling-valves for said steam-chambers, a valve-operating disk mounted on the shaft, and means for connecting said disk to the valves.

816,289. CURTAIN-HOLDER. GEORGE W. BARNETT, Chicago, Ill., assignor to Thornton & Barnett Mfg. Co., a Corporation of Illinois. Filed July 31, 1905. Serial No. 272,008.

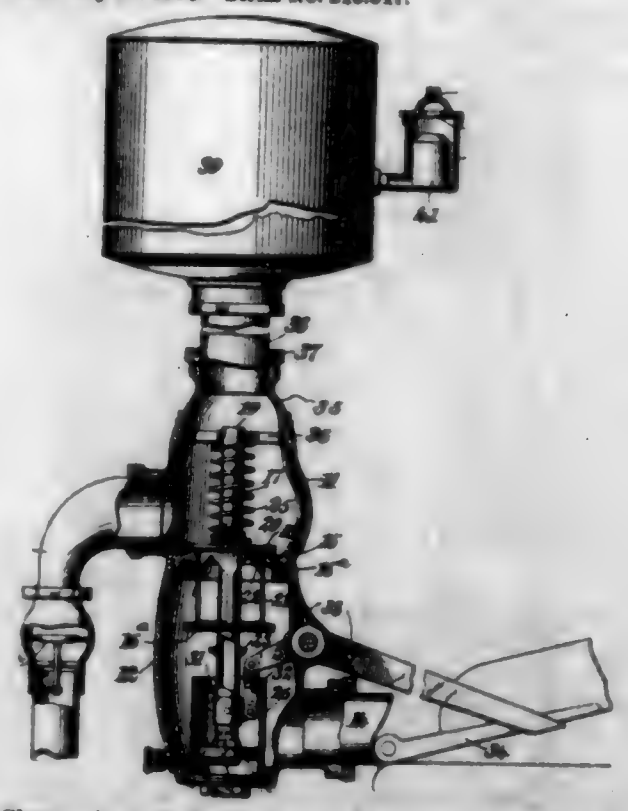
Claim.—1. A curtain-holder comprising an attaching-bracket pierced by an opening and provided with a shoulder in rear of the opening, a holder-arm having an opening for registration with the opening in the bracket and provided with a shoulder to engage the shoulder of the bracket in the substantially horizontal position of the arm, a threaded headed pin passing through the openings of the arm and the bracket, a nut upon the pin at the rear side of the bracket, and a spring embracing the pin and bearing in opposite directions against the head thereof and the arm to yieldably support the arm in an elevated position.



2. The combination with a window-frame having a seat in one edge thereof and a socket in the back of the seat, of an attaching-plate secured to the edge of the window-frame and provided with an opening registering with the seat of the frame and also provided with a shoulder alined in rear of the opening, a swinging arm having an opening registered with the opening of the bracket and provided with a shoulder to engage the shoulder of the bracket in the substantially horizontal position of the arm, a headed threaded pin passing through the openings of the arm and the bracket and entering the socket of the frame, a nut fitted in the seat of the frame and receiving the threaded pin, and a spring embracing the pin and bearing in opposite directions against the head thereof and the arm to yieldably support the latter in an elevated position.

3. A curtain-holder comprising an attaching-plate having a pivot-stud between its ends and projecting at substantially right angles to the plane of the plate, one side of the plate having a lateral projection at substantially right angles to the plate in the same direction as the pivot-stud and alined therewith transversely of the plate, and a curtain-holding arm pivoted upon the stud and provided with a stop projection to engage the projection of the plate.

816,290. FLUSH-VALVE. ERNEST D. BARRETT, Plainfield, N. J. Filed July 16, 1904. Serial No. 216,847.



Claim.—1. A flush-valve comprising a valve proper, a hollow stem having an open lower end provided with a check-valve and perforations through its walls, means for closing said perforations, a piston rigidly attached to said valve-stem, and a dash-pot in which said piston is adapted to reciprocate.

2. A flush-valve comprising a valve proper, a hollow stem upon which said valve is slidably mounted, said stem having a closed upper end, an open lower end provided with a check-valve and inter-

mediate perforations in its walls and provided with a projection, said projection being adapted to engage the valve and move it with the piston.

3. A flush-valve comprising a hollow stem having a closed upper end, an open lower end and perforations in its walls, a valve slidingly mounted on the stem and adapted to close all of said perforations and prevent the admission of water to the interior of said hollow valve-stem, a piston on the stem, and a dash-pot in which said piston is adapted to move.

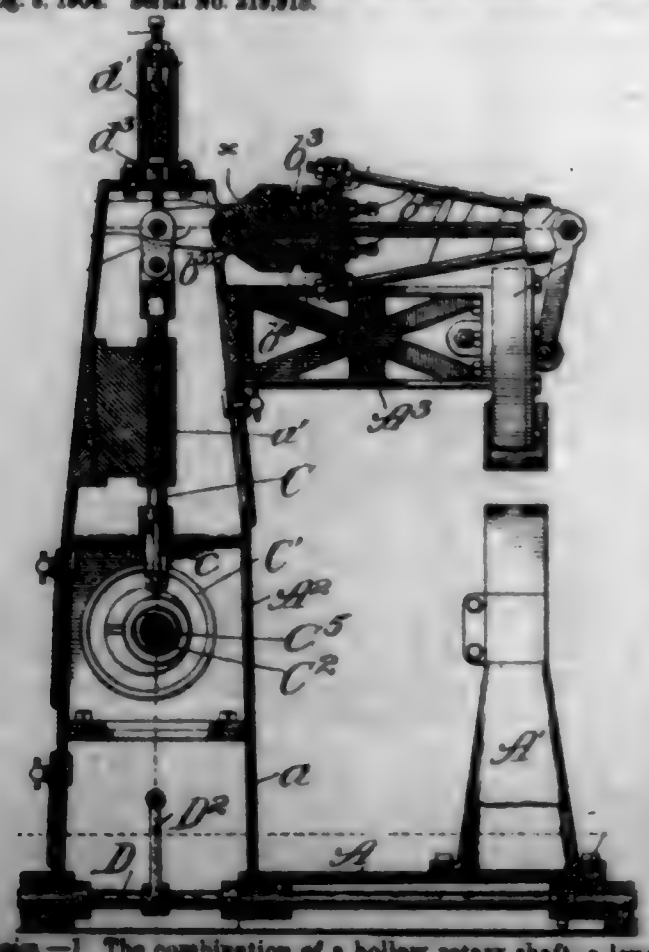
4. The combination of a hollow stem having a closed end, an open end and perforations in its walls, a valve slidingly mounted thereon, a piston attached to the valve-stem and movable independently of the valve, a dash-pot in which said piston is adapted to reciprocate, means for raising the valve-stem, and means for causing the valve-stem to engage with the valve during a portion of its upward movement.

5. The combination of a valve-casing, a tank in communication with the upper part of said casing, means for feeding water to said tank, a valve located below the top of said tank and adapted to admit the passage of air therethrough, means for closing said valve when the height of the water in the tank reaches the level of the valve, a partition in said casing having valve-seats on opposite sides thereof, a valve-stem, two valves mounted on said stem, a skeleton frame for connecting said valves, means in the casing for forcing the upper valve toward its seat, a piston on said valve-stem below the valves, a cup adapted to receive the piston, said cup having a passage in the wall thereof below the piston, a needle-valve for controlling the outlet of water through said passage, means for moving said valve-stem and piston.

6. The combination of a casing provided with two valve-seats, two valves, a frame, having passages in its walls and a central passage, for rigidly connecting said valves together, means for forcing one of said valves toward its seat, a valve-stem connected with said valves, a piston on the valve-stem, a cup for receiving said piston and retarding the motion of the latter, and means for forcing the piston into the cup and seating one of the valves.

7. The combination of a casing having a partition provided with a valve-seat on each side thereof, a valve-stem, a skeleton frame connected with said stem and having passages therethrough for water, two valves in said skeleton frame adapted to seat on the opposite sides of the valve-seat, a cup surrounding the valve-stem, and a piston on the valve-stem near the cup adapted to enter the cup, said cup having an adjustable outlet.

816,291. **POWER-HAMMER.** CLARENCE W. BLACKSTONE, Chicago, Ill., assignor of one-half to Fred H. Knapp, Chicago, Ill. Filed Aug. 8, 1904. Serial No. 219,915.



Claim.—1. The combination of a hollow rotary shaft, a longitudinally-shiftable shaft therein, a spring at one end of said hollow shaft and yieldingly holding the inner shaft in its normal position of rest, manually-actuated means engaging the free end of the inner shaft, a transversely-shiftable eccentric mounted on the hollow shaft, said last-named shaft having an opening at the eccentric, and an eccentric-shifting member at said opening engaging the eccentric and connections between the shiftable shaft and shifting member constructed to shift the eccentric in either direction, according to the movement of the shiftable shaft, for the purpose set forth.

2. The combination of a hollow rotary shaft, a shiftable eccentric thereon, an eccentric-shifting member pivoted in said shaft and having engagement with the eccentric adapted for shifting the eccentric in either direction, a counterweight shiftably mounted on said shaft, an actuating member for said weight within said shaft, and an inner shiftable shaft having openings therein into which extend the members for shifting the eccentric and counterweight, for the purpose set forth.

3. The combination with a hammer-actuating lever, of hollow rotary shaft, a transversely-shiftable eccentric mounted on an intermediate portion thereof and connected with said lever, the shaft having an opening at the eccentric, an eccentric-shifting cam pivoted in said shaft at said opening and bearing against the eccentric on opposite sides of the shaft whereby to positively move the eccentric in both directions, a shaft within said rotary shaft and which rotates therewith, said inner shaft being equipped with means for actuating said cam in both directions, means applied to and yieldingly confining said inner shaft in one direction, and means serving to shift said inner shaft in the other direction, for the purpose set forth.

4. The combination of a hollow rotary shaft provided intermediately with an opening, a shiftable eccentric mounted on said shaft at said opening, an eccentric-shifting cam within said shaft and controlling the movements of said eccentric in both directions, a longitudinally-shiftable inner shaft equipped with means for actuating said cam, said inner shaft rotating with the outer shaft, a non-rotating shaft-shifting member equipped with a rack and slidably mounted in a bearing, and a manually-actuated pinion engaging said rack, for the purpose set forth.

5. In a machine of the character set forth, the combination of a hollow standard, a hammer-actuating lever pivoted on said standard and having its rear end extending thereinto, an actuating-rod depending from the rear end of said lever within the standard, an eccentric connected with the lower end of said rod, a hammer connected with the front end of the lever, and an adjustable spring connected with said standard above the lever and having a bearing on the rear end of the lever, for the purpose set forth.

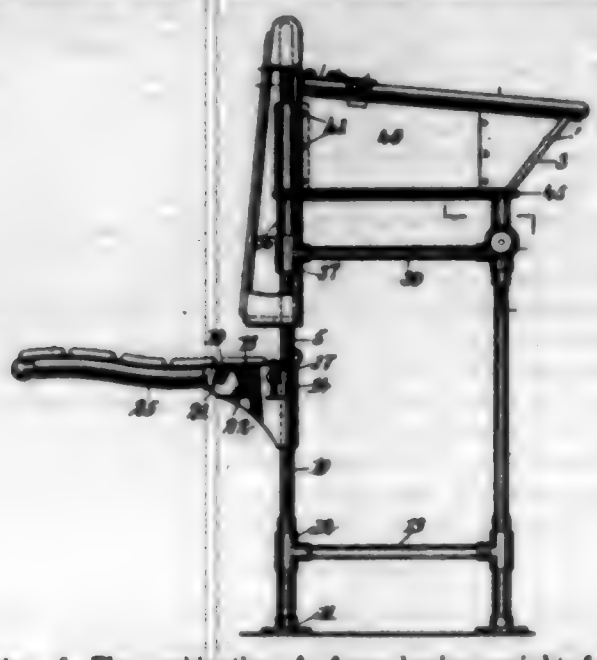
6. In a machine of the character described, the combination of a pivoted rear lever-section, actuating means connected with the rear end thereof, a front lever-section pivotally connected with the front end of said rear lever-section, a spring tending yieldingly to depress the front section when the front end of the rear section is depressed, a stop serving to limit the depression of said front section under the action of said spring, and a hammer connected with the front end of said lever, for the purpose set forth.

7. In a machine of the character described, the combination of a pivoted rear lever-section, actuating means therefor, a front lever-section pivotally connected with the front end of the rear section, an adjustable stop for limiting the depression of the front section with relation to the rear section, an adjustable spring serving yieldingly to hold said stop in contact with its seat, and a hammer connected with the front end of the front lever-section, for the purpose set forth.

8. In a machine of the character described, the combination of a pivoted rear lever-section, actuating means therefor, a front lever-section having its rear end pivotally connected with the front end of the rear lever-section, an adjustable spring confined between the adjacent ends of said lever-sections above the axis of the pivot joining said sections, an adjustable stop confined between the adjacent ends of said lever-sections beneath the axis of the pivotal connection thereof, and a hammer connected with the free end of the front lever-section, for the purpose set forth.

9. In a machine of the character described, the combination of a frame having a base with a longitudinally-extending rock-shaft journaled therein and equipped at its front end with a laterally-extending treadle, a transversely-extending hollow rotary shaft journaled in said frame above the rear portion of said rock-shaft, an eccentric shiftably connected with said shaft, a longitudinally-shiftable inner shaft through the medium of which said eccentric is shifted, connections between said rock-shaft and said inner shaft, a vertically-disposed plunger connected with said eccentric, a forwardly-projecting hammer-actuating lever having its rear end connected with said plunger, and a hammer connected with the front end of said hammer-actuating lever, for the purpose set forth.

816,292. ADJUSTABLE SEAT AND DESK. JOHN T. BERRY, Second, Cold Spring, N. Y. Filed July 7, 1905. Serial No. 268,666.



Claim.—1. The combination of a frame having uprights formed of metallic rods, a metallic desk having sockets for receiving said rods, and means for securing the desk to the rods; said desk comprising metallic side pieces bent around the uprights, and having a bottom riveted to said side pieces.

2. The combination of a frame having uprights, a desk through which said uprights pass, said desk comprising side pieces passing around said uprights, a bottom and a top secured to said side pieces, and means for securing the desk in adjusted positions upon the uprights.

3. The combination of a frame having uprights, a series of tubes slidably mounted upon said uprights, a pair of side pieces having their ends flanged around said tubes and supported thereby, said side pieces being provided with flanges at their upper and lower edges, a top and a bottom secured to said flanges, and a frame passing around the desk below the bottom outside of said uprights, the bottom being secured to said frame.

4. The combination of a series of uprights, two of said uprights being formed of an inverted-U-shaped rod, a desk slidably mounted upon said uprights, and a stationary front wall for said desk having an extension passing over the front uprights and extending downwardly to form a back-rest, said back-rest being formed of sheet material and having a frame at the bottom thereof engaging the uprights.

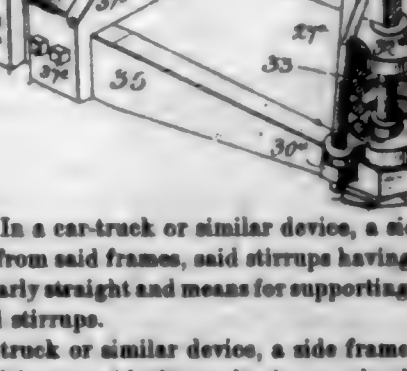
5. The combination of a series of uprights, two of said uprights being formed of an inverted-U-shaped rod, a desk slidably mounted upon said uprights, a stationary front wall for said desk having an extension passing over the front uprights and extending downwardly to form a back-rest, said back-rest being formed of sheet material and having a frame at the bottom thereof engaging the uprights, whereby said desk can be vertically moved upon the uprights past said front wall, and a seat located below said back-rest and vertically adjustable.

6. The combination of a frame, comprising a series of uprights, a desk vertically adjustable on said uprights, a stationary back-rest located on the uprights and having a rear extension forming one wall of the desk, a bracket on each of the front uprights, means for securing said brackets in adjusted position upon the uprights, and a seat pivotally mounted upon said brackets.

7. The combination of a frame having a back-rest thereon, a pair of brackets provided with jaws for gripping a portion of the frame, means for clamping said jaws together to secure said brackets in any desired position upon the frame, said brackets each having a shoulder with a downwardly-facing surface, a pair of hinge members pivotally mounted upon said brackets and provided with projections adapted to engage said shoulders, a pipe connected with each of said pivoted members, and means on said pipes for supporting a seat.

8. The combination of a frame having a back-rest thereon, a pair of brackets provided with jaws for gripping a portion of the frame, means for clamping said jaws together to secure said brackets in any desired position upon the frame, said brackets each having a shoulder with a downwardly-facing surface, a pair of hinge members pivotally mounted upon said brackets and provided with projections adapted to engage said shoulders, a pipe connected with each of said pivoted members, said pipes being turned toward each other at their outer ends and provided with sockets, a cross-piece mounted in said sockets, and a plate mounted upon said cross-piece and said pipes and extending to the rear toward the frame, said plate being bent around the cross-piece and pipes.

816,293. BRAKE-HANGER. GEORGE M. BRILL, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed June 27, 1905. Serial No. 267,188.

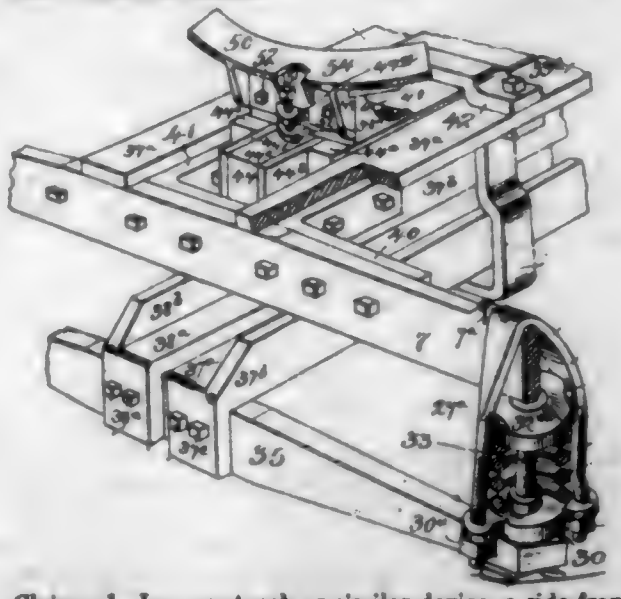


Claim.—1. In a device of the class described, a pocket, bearing-blocks adapted to turn in said pocket, and a hanger free to turn in said blocks.

2. In a device of the class described, a pocket, bearing-blocks adapted to turn in said pocket, a hanger free to turn in said blocks, and means for forcing the blocks against the hanger.

3. In a device of the class described, a pocket, bearing-blocks adapted to turn in said pocket, a hanger turning in said blocks, and a wedge-block and a wedge for forcing the blocks against the hanger.

816,294. CAR-TRUCK. JOHN A. BRILL and SAMUEL M. CURWEN, Philadelphia, Pa.; said Curwen assignor to said Brill. Filed Mar. 31, 1904. Serial No. 200,862.



Claim.—1. In a car-truck or similar device, a side frame, stirrups suspended from said frames, said stirrups having one leg offset and the other nearly straight and means for supporting a bolster connected with said stirrups.

2. In a car-truck or similar device, a side frame, stirrups suspended from said frame, said stirrups having one leg bifurcated and means for supporting a car-body connected with said stirrups.

3. In a car-truck or similar device, a side frame, stirrups suspended from said frame, said stirrups having one leg bifurcated and the other leg offset and means for supporting a car-body connected with said stirrups.

4. In a car-truck or similar device, side frame with elastic links suspended therefrom, each link comprising a stirrup with one leg offset and the other nearly straight and bifurcated, a spring-seat secured to said legs, a spring resting on said seat, a cap on said spring, and a bolt suspended from said cap, and means for connecting said elastic links.

5. In a car-truck or similar device, a side frame, elastic links suspended from said frame, an equalizing-bar connecting said links, and means for permitting a vertical adjustment of said bar to compensate for wear on the wheels so that the car-body may always be maintained at the same level.

6. In a car-truck or similar device, a side frame, elastic links suspended from said frame having bolts protruding from their lower ends, an equalizing-bar connecting said bolts, and means for adjustably supporting said bar on said bolts.

7. In a car-truck or similar device, a side frame, elastic links suspended from said frame, means in said links for splaying the lower ends outwardly, and an equalizing-bar uniting the lower ends of said links.

8. In a car-truck or similar device, a side frame, elastic links suspended from said frame, each link being provided with a stirrup with an offset leg and nearly straight leg, and means for uniting the lower ends of said elastic links.

9. In a car-truck or similar device, a side frame, elastic links suspended from said frame, each link supporting a block with an angular top, and an equalizing-bar resting on edges of said angular blocks.

10. In a car-truck or similar device, a side frame, an equalizing-bar, angular blocks supporting said equalizing-bar at each end and means for supporting said angular blocks.

11. In a car-truck or similar device, equalizing-bars and means for supporting the same, and a spring-plank composed of two angle-bars with upper vertically-disposed webs and lower horizontally-disposed webs.

12. In a car-truck or similar device, equalizing-bars and means for supporting the same, and a spring-plank composed of two angle-bars with upper vertically-disposed webs and lower horizontally-disposed webs which are extended and bent over the sides of the equalizing-bars and attached thereto.

13. As an article of manufacture, a side frame with extending arms, projections at the ends of said arms forming a recess between them, the upper projection being longer than the lower.

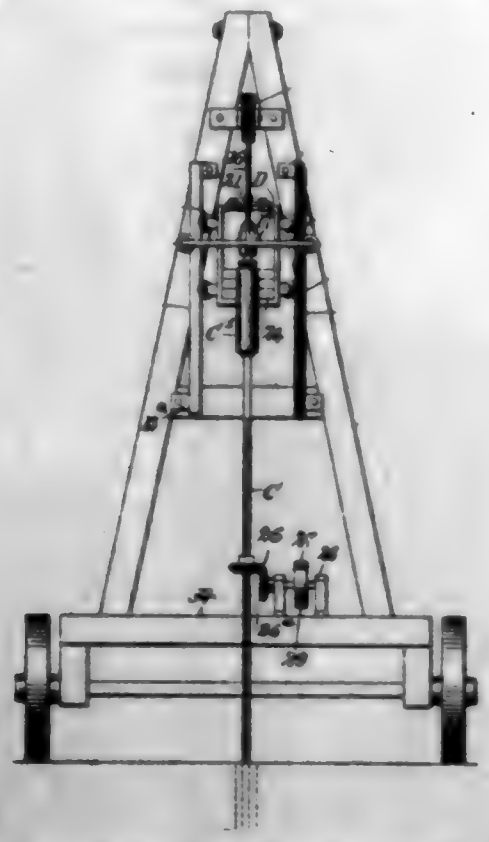
14. As an article of manufacture, an elastic link comprising a stirrup with one leg offset and the other leg bifurcated, a spring-seat, a spring resting thereon, a spring-cap and a bolt extending from said cap through said seat.

15. As an article of manufacture, a stirrup with one leg offset and the other leg bifurcated.

16. As an article of manufacture, a perforated block with an angular face presenting a straight edge which is adapted to support one end of an equalizing-bar.

17. In a truck or similar device, angle-metal transoms connected by tie-bars which pass above and below said transoms.

816,295. **EQUALIZING WEIGHT-FEED FOR DRILL-SHANKS.** KARNELL BROOKS, New York, N. Y. Filed July 7, 1905. Serial No. 268,867.



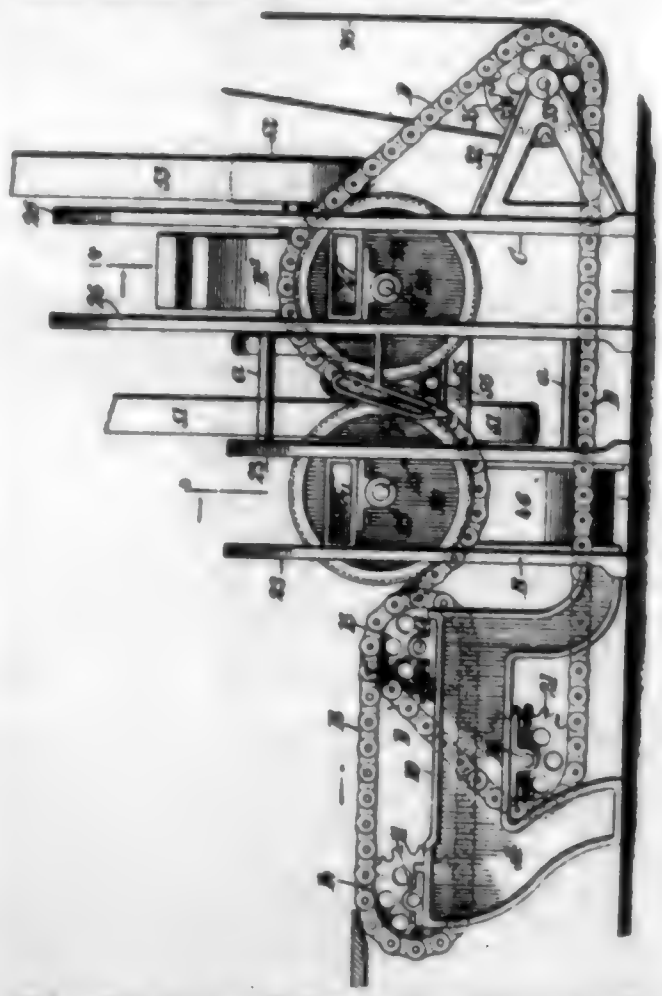
Claim.—1. A supporting structure for a drill-rod, an equalizing-arm connected with the swivel-head of the drill-rod, a weight-carrier connected with the said equalizing-arm, and removable weights located within the carrier.

2. The combination with a support, a drill-rod and its swivel-head, a weight-carrier connected with the said swivel-head, and weights removably placed in the weight-carrier to counterbalance the drill-rods.

3. In a feed for drill-rods, a support, an equalizing-arm adapted for vertical movement, roller-guides for the said arm, a swivel-head for drill-rods connected with the equalizing-arm, a weight-carrier, roller-guides for the said arm, a swivel-head for drill-rods connected with the equalizing-arm, a weight-carrier, roller-guides for the said carrier, a cable connection between the equalizing-arm and the weight-carrier, and a roller-support for the cable.

4. In feeding mechanism for drills, the combination with a support, a mast located thereon, a pulley mounted at the upper portion of the mast, and parallel vertical rails supported on the mast, the rails being V-shaped in cross-section, of a horizontal steadying-arm substantially U-shaped in plan view, friction-rollers located at the ends of the said arm, having peripheral V-grooves and adapted for engagement with the outer faces of the said rails, a swivel-head for drill-rods connected with the said steadying-arm, a weight-carrier having conical wheels engaging with the inner surfaces of the said rails, a cable attached to the said steadying-arm and removably connected with the weight-carrier, a roller-support for the said cable, and suspension-bars adjustable on the weight-carrier and adapted for engagement with the upper face of the steadying-arm when the cable is detached from the weight-carrier.

816,296. **DECORTICATING-MACHINE.** MODESTO CASTELLON, Merida, Mexico. Filed Jan. 5, 1906. Serial No. 239,741.



Claim.—1. In a decorticating-machine, conveyer devices arranged tandem, an endless conveyer-chain in engagement with the lower portion of one device and the upper portion of the other device, and scraping devices mounted to operate adjacent and at right angles to the side faces of the conveyer devices.

2. In a decorticating-machine, conveyer-wheels having peripheral grooves, the said conveyer-wheels being arranged tandem, an endless conveyer-chain in engagement with the grooved portions of the wheels, the said chain passing in engagement with the bottom of one wheel and the top of the other, said chain being constructed of series of pivotally-connected and interlocking links, and scraping-wheels mounted to revolve opposite the side faces of the conveyer-wheels and at right angles thereto, troughs leading from the chain-engaged portions of the said conveyer-wheels to the lower portions of the respective scraping-wheels, a switch located between the two conveyer-wheels opposite the lower portion of the wheel in engagement with the lower stretch of the chain and means coöperate with the switch to change the leaf end for end.

3. In a decorticating-machine, conveyer-wheels arranged tandem, an endless conveyer-chain in engagement with th lower portion of one wheel and the upper portion of the other wheel, a switch and means to coöperate with the switch to change the leaf end for end located between the conveyer-wheels adjacent to the lower stretch

of chain, and scraping devices mounted to operate at right angles to the side faces of the conveyer-wheels, the axes of the said scraping devices being one higher than the other, so that the upper portion of the initial scraping device is slightly below the axis of the adjacent scraping device, and the axis of the initial scraping device is practically in horizontal alinement with the lower edge of the first conveyer-wheel, and the axis of the second scraping device is in horizontal alinement with the upper edge of the second conveyer-wheel.

4. In a decorticating-machine, conveyer-wheels arranged tandem, an endless conveyer-chain in engagement with the lower portion of one wheel and the upper portion of the other wheel, a switch located between the conveyer-wheels adjacent to the lower stretch of chain, and scraping-wheels mounted to revolve at right angles to the side faces of the conveyer-wheels, the axes of the said scraping-wheels being one higher than the other, so that the upper portion of the initial scraping-wheel is slightly below the axis of the adjacent scraping-wheel, and the axis of the initial scraping-wheel is practically in horizontal alinement with the lower edge of the first conveyer-wheel, and the axis of the second scraping-wheel is in alinement with the upper end of the second conveyer-wheel, and segmental troughs located below the under edges of the scraping-wheels, the said troughs extending up one to the upper edge of one conveyer-wheel and the other to the lower edge of the other conveyer-wheel.

5. In a decorticating-machine, conveyer-wheels arranged tandem, an endless conveyer-chain in engagement with the lower portion of one wheel and the upper portion of the other wheel, a switch between the conveyer-wheels adjacent to the chains means to coöperate with the switch to change the leaf end for end, scraping-wheels mounted to revolve at right angles to the side faces of the conveyer-wheels, both of the scraping-wheels being on the same side of the machine and the switch being located at the opposite side of the machine and troughs for the scraping-wheels.

6. In a decorticating-machine, conveyer-wheels arranged tandem, an endless conveyer-chain in engagement with the lower portion of one wheel and the upper portion of the other wheel, a switch between the conveyer-wheels adjacent to the chains, scraping-wheels mountd to revolve at right angles to the side faces of the conveyer-wheels, both of the scraping-wheels being on the same side of the machine and the switch being located at the opposite side of the machine, a blower located on the side of the machine on which the scraping-wheels are located, said blower being located between the scraping-wheels and the nozzle of the blower extending in the direction of the switch below the under edge thereof and troughs for the scraping-wheels.

7. In decorticating-machines, conveyer-wheels, an endless conveyer-chain passed over the top of one wheel and in engagement with the bottom of the other wheel, scraping devices located at angles to the side faces of the conveyer-wheels, and devices for reversing the leaves carried by the conveyer-chain at a point between the two conveyer-wheels.

8. In decorticating-machines, the conveyer-wheels arranged in tandem, an endless conveyer-belt passed in engagement with the top of one wheel and with the bottom of the other, scraping-wheels mounted at right angles to the conveyer-wheels and located at the same side of the machine, the axis of the initial scraping-wheel being in horizontal alinement with the under edge of the adjacent conveyer-wheel and the axis of the second scraping-wheel being in horizontal alinement with the upper edge of the second conveyer-wheel, troughs for the scraping-wheels and a reversing mechanism located at a point between the two conveyer-wheels, comprising a blower located at one side of the machine and a switch located at the opposite side of the machine, the switch being adjacent to the lower portion of the conveyer-wheel with which the lower stretch of the conveyer-belt engages, and the outlet for the blower being adjacent to the under side of the said switch.

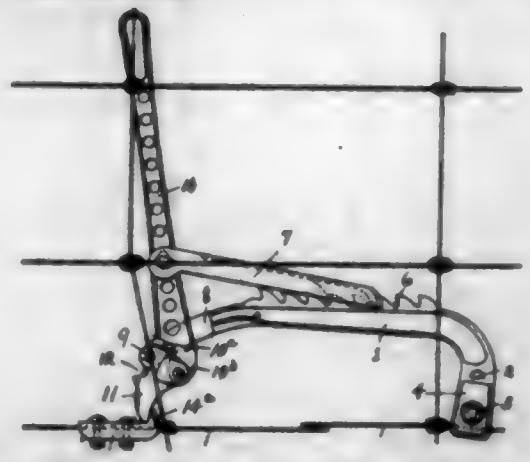
9. In decorticating-machines, the conveyer-wheels arranged in tandem, an endless conveyer-belt passed in engagement with the top of one wheel and with the bottom of the other, scraping-wheels mounted at right angles to the conveyer-wheels and located at the same side of the machine, the axis of the initial scraping-wheel being in horizontal alinement with the under edge of the adjacent conveyer-wheel and the axis of the second scraping-wheel being in horizontal alinement with the upper edge of the second conveyer-wheel, and a reversing mechanism located at a point between the two conveyer-wheels, comprising a blower located at one side of the machine and a switch located at the other side of the machine, the switch being adjacent to the lower portion of the conveyer-wheel with which the lower stretch of the conveyer-belt engages and the outlet for the blower being adjacent to the under side of the said switch, and troughs located adjacent to the bottom portions of said scraper-wheels, one trough leading to the upper edge of one conveyer-wheel and the other trough leading to the lower edge of the other conveyer-wheel.

816,297. **WALL-TIE.** GEORGE H. CHARLS, Middletown, Ohio, assignor to the American Rolling Mill Company, Middletown, Ohio. Filed Dec. 7, 1905. Serial No. 290,664.



Claim.—As an article of manufacture a wall-tie for embedment in a mortar-joint, formed of a strip of sheet metal provided with a continuous longitudinal series of transverse corrugations forming opposing ridges and valleys and with a continuous longitudinal series of perforations through the corrugations and placing each valley in communication with two opposing valleys the perforations, having greater length than width and having their major dimensions parallel with the corrugations.

816,298. **COMBINED WIRE STRETCHER AND SPLICER.** ANDREW CHURCH and CHARLES A. CHURCH, Adrian, Mich. Filed May 17, 1905. Serial No. 260,808.



Claim.—1. A tool of the class described, comprising a substantially L-shaped bridging member having a clamp at one end and a rack on a portion thereof, a lever removably fulcrumed to the free end of said member, a pawl in removable engagement with said lever and having its free end coacting with said rack, and means for gripping a wire having a projection thereon for coacting with the end of the lever.

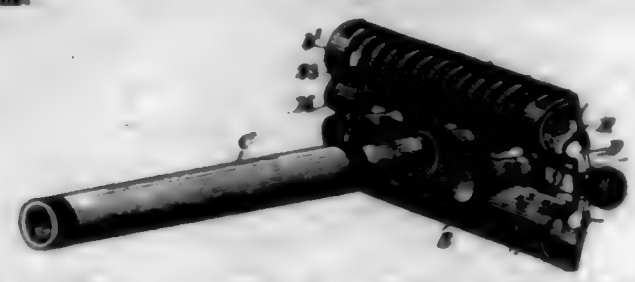
2. A tool of the class described, comprising a substantially L-shaped bridging member having gripping means at one end, a rack formed on a portion thereof, and its other end forked or bifurcated, the arms of said forked portion being each provided with an axially-alining inwardly-projecting stud, a lever loosely fulcrumed on said studs within the forks, a pawl pivoted to the lever for coacting with said rack, and wire-gripping means for coacting with the end of said lever.

3. A tool of the class described, comprising a break-bridging member having gripping means at one end and a rack formed on a portion thereof, a lever fulcrumed to the free end of said bridging member, wire-gripping means coacting with the weight end of the lever, and a pawl in engagement with said lever and having its free end coacting with said rack.

4. A splicing-tool comprising a bridging member having a clamp at one end thereof, a lever fulcrumed to the other end of said member and having the end of its weight-arm formed with depressions or sockets, a clamping member having lugs or spurs for engaging the depressions or sockets in the lever, and means for retaining the lever in adjusted position.

816,299. **SAFETY-RAZOR.** FREDERICK A. CLAUSSEN, Weehawken Heights, N. J. Filed May 26, 1905. Serial No. 262,404.

Claim.—1. A safety-razor consisting of a body-frame constructed in two sections adjustable relative to each other, an intermediate connecting member for said sections, blades placed back to back and locked to the intermediate connecting member, being supported at their cutting edges by the two adjustable sections, means for locking the blades in position, and adjusting devices for the said frame-sections.



2. A safety-razor consisting of a central bar-section, slotted upwardly-curved wing-sections mounted upon the bar-section for movement to and from each other, blades placed back to back on the bar-section above said wing-sections, their cutting edges resting upon the wing-sections, and locking devices for the wing-sections and the said blades.

3. A safety-razor consisting of a central bar-section, slotted wing-sections adjustably mounted upon the bar-section, blades having retaining connection with the bar-section and supporting engagement with the wing-sections, locking-clamps for the ends of the blades, and a handle adapted for connection with the bar-section.

4. In safety-razors, a body-frame constructed in three sections, a bar-section and wing-sections, one at each side of the bar-section, the wing-sections comprising slotted horizontal body members and downwardly and upwardly curved guard members, set-screws passed through sundry of the slots in the body members of the wing-sections and into the bar-section, a handle passed through other of the slots of the body members of the wings and into the bar-section, blades having opposing beveled surfaces at their cutting edges, which blades are placed back to back in engagement with the bar-section, their cutting edges resting upon the guard members of the wings, and clamps removably carried by the said frame, engaging with the said knives or blades, preventing them from having end movement and holding them likewise against transverse movement.

5. A safety-razor consisting of a frame comprising a central bar-section and a wing-section at each side of the bar-section, each wing-section consisting of a horizontal body member having a series of slots therein and downwardly and upwardly curved guard members, slotted at their outer longitudinal portions, forming a series of guard-fingers, the body members of which wings slide one upon the other beneath the bar member, and set-screws passed through the slots in the body members of the wings and into the bar member, a handle removably attached to the bar member, blades placed back to back against the bar-section of the frame, said blades having slots at their ends, their cutting edges resting upon the guard-fingers, and clamps removably attached to the ends of the bar-section of the frame, which clamps are provided with fingers extending into the slots of the blades and over the upper faces of the blades, the clamps being further provided with foot members which extend beneath and engage with the under faces of the body-frame at a point below the bar-section.

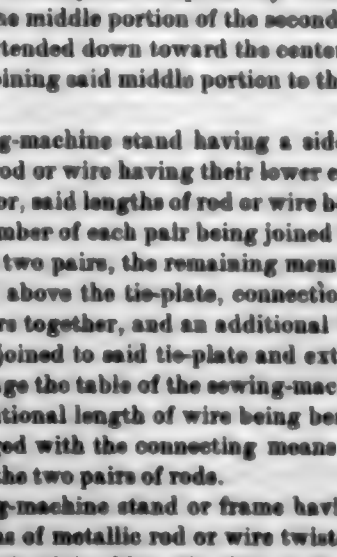
6. In safety-razors, a frame comprising guard-sections adjustable to and from one another, means for connecting the guard-sections, blades placed back to back and supported by the said guard-sections and their connecting medium, a handle for the frame, and locking devices for the blades and the guard-sections.

7. In safety-razors, a central bar-section, guards supported at opposite sides of the bar-section, adjustable to and from each other, independent blades having parallel relation to each other, which blades have bearing against the bar-section and are supported by said guards, locking devices for the blades, and means for adjusting the guards and locking them in adjusted position.

816,300. **SEWING-MACHINE STAND.** GARRETT D. COOPER, Providence, R. I. Filed Apr. 6, 1905. Serial No. 254,943.

Claim.—1. A sewing-machine stand or frame constructed of two side sections and a back or brace, each side section being formed of lengths of metallic rod or wire, means for joining said lengths together, including a clamp or tie-plate for each side section, and means for mounting the sewing-machine balance-wheel on one of said clamp or tie-plates.

2. A sewing-machine stand having two side sections and a back or brace, the side sections being formed of lengths of metallic rod or wire, means for fastening said lengths together, said means including a clamp or tie-plate, and means for mounting the balance-wheel of the sewing-machine on said clamp or tie-plate.



3. A sewing-machine stand or frame comprising side sections, a brace extending between them, the side sections being formed of lengths of metallic rod or wire, means for joining said lengths together, said means including a brace or tie-plate, means for mounting the fly-wheel of the sewing-machine on said brace or tie-plate, a tie-rod extending between the side sections of the frame or stand, and a treadle mounted on the said tie-rod.

4. A sewing-machine stand comprising side sections and a brace or back extending between them, the side sections being formed of lengths of rod or wire, and means for fastening them together, and the sides of the frame each having four bent or rounding portions adapted to engage the floor to sustain the frame or stand.

5. A sewing-machine stand comprising side sections and a brace or back extending between them, the side sections and brace or back being formed of lengths of rod or wire, and means for fastening them together, and the sides of the frame each having four bent or rounding portions adapted to engage the floor to sustain the frame or stand.

6. A sewing-machine stand having side sections each provided with two lengths of rod or wire, means for fastening said lengths together at their lower ends, and an additional length of rod or wire having its end portions joined respectively to the first-named lengths of rod or wire, the middle portion of the second-named length of rod or wire being extended down toward the center of the side sections, and means for joining said middle portion to the first-named lengths of rod or wire.

7. A sewing-machine stand having a side section comprising four lengths of rod or wire having their lower ends bent to form feet engaging the floor, said lengths of rod or wire being twisted together in pairs, one member of each pair being joined to a tie-plate extending between the two pairs, the remaining members of said pairs extending upward above the tie-plate, connections fastening said remaining members together, and an additional length of rod or wire having its ends joined to said tie-plate and extending upward from the same to engage the table of the sewing-machine, the middle portion of said additional length of wire being bent downward and inward and engaged with the connecting means for the said remaining members of the two pairs of rods.

8. A sewing-machine stand or frame having two side sections formed of lengths of metallic rod or wire twisted together, and two of said lengths being joined by a tie-plate or clamp, a tie-rod extending between said tie-plates or clamps from one side section of the frame to the other, a treadle mounted on the tie-rod, and a brace extending from the top of the frame or stand downward and connected to the tie-rod adjacent to the side sections.

9. A sewing-machine stand having side sections formed of lengths of rod or wire twisted into engagement with each other, each side section having end portions of said lengths of rod or wire located at the bottom of the section and bent rounding to form four portions arranged in line with each other in the plane of the side section and adapted to engage the floor and forming supports for the stand whereby the stand is given a firm and wide base.

10. A sewing-machine stand having side sections formed of lengths of rod or wire twisted into engagement with each other, each side section having end portions of said lengths of rod or wire located at the bottom of the section and bent rounding to form four portions adapted to engage the floor and forming supports for the stand whereby the stand is given a firm and wide base, a tie-plate extending between and connecting two of said rounding end portions of the rod or wire on each side section of the stand, a tie-rod extending be-

tween said tie-plates from one side section to the other, and a back or brace extending between the side sections of the frame and joined to said tie-rod directly adjacent to the tie-plates.

11. A sewing-machine stand having side sections formed of lengths of rod or wire twisted and joined together, each side section having at its bottom end portions of the said rods or wires bent rounding to engage the floor and sustain the stand, a tie-plate extending between and connecting two of said end portions at each side section of the stand, and a tie-rod joined to and extending between said tie-plates, the tie-rod being adapted to carry the sewing-machine treadle.

12. A sewing-machine stand having side sections formed of lengths of rod or wire twisted and joined together, each side section having at its bottom end portions of the said rods or wires bent rounding to engage the floor and sustain the stand, a tie-plate extending between and connecting two of said end portions at each side section of the stand, a tie-rod joined to and extending between said tie-plates, the tie-rod being adapted to carry the sewing-machine treadle, and a back or brace extending between the side section and joined to the tie-rod directly adjacent to said tie-plates.

13. A sewing-machine stand having side sections formed of lengths of rod or wire twisted and bent together, tie-plates extending between portions of said rods or wires to join them together, and a fly-wheel mounted on and sustained by one of said tie-plates.

14. A sewing-machine stand having side sections each being formed of five lengths of rod or wire, two of said lengths being twisted together in pairs and having their lower ends bent rounding to engage the floor and support the stand, means for joining together said pairs of rods or wire at the bottom of the stand, the fifth section of rod or wire having its ends twisted into one member of each of said pairs of rods and having its intermediate portions extending upward into connection with the table, and thence downward toward the center of the stand, means connecting the said downwardly-extending portion of the fifth length of rod or wire with members of said pairs of rods, and an additional means connected to the end portions of the fifth length of rod or wire and to members of said pairs of rods, said additional means extending across the side section from one of said pairs of rods to the other.

15. A sewing-machine stand having side sections each being formed of five lengths of rod or wire, two of said lengths being twisted together in pairs and having their lower ends bent rounding to engage the floor and support the stand, means for joining together said pairs of rods or wire at the bottom of the stand, the fifth section of rod or wire having its ends twisted into one member of each of said pairs of rods and having its intermediate portions extending upward into connection with the table, and thence downward toward the center of the stand, means connecting the said downwardly-extending portion of the fifth length of rod or wire with members of said pairs of rods, an additional means connected to the end portions of the fifth length of rod or wire and to members of said pairs of rods, said additional means extending across the side section from one of said pairs of rods to the other, a tie-rod extending between said side sections of the stand and joined to the first-named means connecting the two pairs of rods or wires together, said tie-rods serving to mount the treadle of the sewing-machine, and a back or brace extending between the side sections and joined to the tie-rod directly adjacent to the side sections.

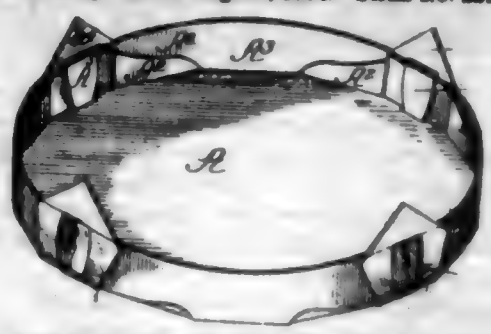
16. A sewing-machine stand having side sections each being formed of five lengths of rod or wire, two of said lengths being twisted together in pairs and having their lower ends bent rounding to engage the floor and support the stand, means for joining together said pairs of rods or wire at the bottom of the stand, the fifth section of rod or wire having its ends twisted into one member of each of said pairs of rods and having its intermediate portions extending upward into connection with the table, and thence downward toward the center of the stand, means connecting the said downwardly-extending portion of the fifth length or rod or wire with members of said pairs of rods, an additional means connected to the end portions of the fifth length of rod or wire and to members of said pairs of rods, said additional means extending across the side section from one of said pairs of rods to the other, and a fly-wheel mounted on means for connecting members of said pairs of rods with said downwardly-extending intermediate portion of the fifth section of rod or wire.

816,301. SWEAT-BAND. ROBERT H. CURTIS, Long Branch, and HENRY D. CURTIS, Red Bank, N. J. Filed July 20, 1905. Serial No. 271,781.

Claim.—As an improved article of manufacture, a sweat-band for hats, and a series of leaves of pliable material secured at one longitudinal edge to the central circumferential portion of the band, being provided at their opposite or free longitudinal edges with marginal ribs, the ends of adjacent leaves being beveled, and the said adjacent ends being arranged to overlap, as described.



816,302. PAPER TRAY. FRANK B. DAVIDSON, Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J., a Corporation of New Jersey. Filed Aug. 22, 1904. Serial No. 221,690.



Claim.—1. A tray made of a single piece of sheet material, comprising a flat bottom and a plurality of sets of marginal flaps, each set embracing a central flap and exterior flaps provided with lateral straight extensions which overlap said central flap, said central flap being extended above the upper margins of the said extensions and provided with a tongue which is cut from the said central flap and is joined at its base to the upper part of said central flap, and which extends over the meeting edges of the said extensions and at its lower end is engaged with the blank below the lower edges of the extensions.

2. A tray made of a single piece of sheet material, comprising a flat bottom and a plurality of sets of marginal flaps, each set embracing a central flap and exterior flaps provided with lateral straight extensions which overlap said central flap; said central flap being provided with a U-shaped slit, the central part of which extends into the bottom and which forms a tongue which is joined at its base to the upper part of the said central flaps and extends downwardly over the meeting ends of said extensions and at its inner end is engaged with the bottom of the tray at the said central part of the U-shaped slit.

3. A tray made of a single piece of sheet material, comprising a flat bottom and a plurality of sets of marginal flaps, each set embracing a central flap, two intermediate flaps and two exterior flaps which are folded upwardly from the bottom on lines of fold having angular relation to each other, the two exterior flaps having lateral straight extensions which are folded outside of the intermediate flaps with their ends inside of the central flap, said central flap having a downwardly-directed tongue which is cut therefrom and extends downwardly from the outer part of the said central flap over the ends of said extensions.

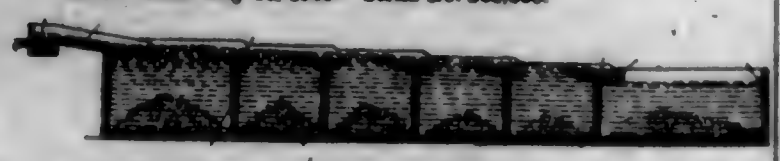
4. A blank for a tray provided with a plurality of sets of marginal flaps which are separated from the central part or body of the blank by means of score-lines arranged at equal distances from the center of said blank and at right angles to the radial lines thereof, each set of flaps embracing a central flap and two exterior flaps having straight extensions which extend along the outer margin of the central flap, said central flap being provided with a U-shaped slit forming a tongue which is longer than the width of said straight extensions on the exterior flaps and which extends from the outer end of said central flap toward the base of the same.

5. A blank for a tray provided with a plurality of sets of marginal flaps which are separated from the central part or body of the blank by score-lines arranged at equal distances from the center of the blank and at right angles to the radial lines thereof, each set of flaps embracing a central flap, intermediate flaps at either side thereof, and two exterior flaps having lateral straight extensions which extend along the outer margins of the intermediate and central flaps, said central flap being extended to form a tab and provided with a U-shaped slit forming a tongue longer than the width of said lateral straight extensions on the exterior flaps and which is joined to the

outer part of said central flap and extends toward the base of the same.

6. A blank for a tray provided with a plurality of sets of marginal flaps which are separated from the central part of the blank by score-lines arranged at equal distances from the center of the blank and at right angles to radial lines of the blank, each set of flaps embracing a central flap, and two exterior flaps provided with lateral, straight extensions, said center flap being provided with a U-shaped slit the central part of which extends inside of the score-line at the base of said central flap and which forms a tongue which is attached to the outer end of the flap and the end of which extends inside of the said score-line at the base of said central flap.

816,303. GRAPHITE-SEPARATOR. JOHN H. DAVIS, Glens Falls, N. Y. Filed May 11, 1905. Serial No. 260,060.



Claim.—1. A graphite-separator, comprising a main trough, means for feeding graphite ore and water thereto, means for maintaining a water-level in the trough, and a series of partitions in the trough, each provided with a separating-plate having its front end located just below said water-level; each of said plates being provided with means for carrying away fine sand and mud from a point near the surface of the water.

2. A graphite-separator, comprising a main trough, means for feeding graphite ore and water thereto, means for maintaining a water-level in the trough, and a series of partitions in the trough, each provided with a separating-plate having its front end located just below said water-level; each of said plates being provided with means for carrying away fine sand and mud from a point near the surface of the water, and each of said plates being located at a lower level than those between it and the point at which the ore enters.

3. A graphite-separator, comprising a main trough, means for feeding graphite ore and water thereto, means for maintaining a water-level in the trough, a series of partitions in the trough, each provided with a separating-plate having its front end located just below said water-level, each of said plates being provided with means for carrying away fine sand and mud from a point near the surface of the water, and a dam located beyond the last plate and extending downwardly from a point above it.

4. A graphite-separator, comprising a trough having a partition, means for maintaining a water-level in the trough, and a plate located upon said partition and projecting inwardly therefrom, the upper surface of said plate being inclined, said plate being provided with means for collecting and discharging fine sand and mud from a point just below the water-level.

5. A graphite-separator comprising a trough having a partition, an inclined plate located on said partition, said plate having a passage opening from a point just below the water-level and means for conveying water from said passage to the outside of the trough.

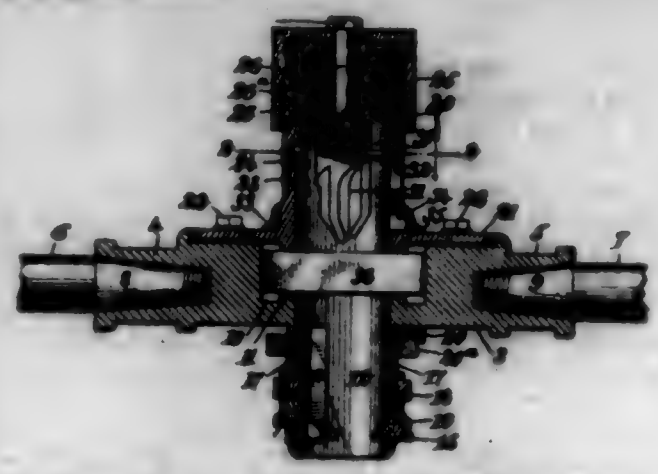
6. A graphite-separator comprising a trough having a partition, a plate located adjacent to said partition and projecting inwardly therefrom, the upper surface of said plate being inclined and the plate being provided with means for collecting and discharging fine sand and mud from a point just below the water-level.

7. A separator comprising a main trough, a series of partitions therein, each being provided with a separating-plate having its front end located just below the water-level, each of said plates being provided with means for carrying away fine sand and mud from a point near the surface of the water, and a dam located beyond the last plate and extending downwardly from a point above it.

8. A separator comprising a main trough for containing water and a series of partitions in the trough, each provided with a separating-plate having its front end located just below the water-level, each of said plates being provided with means for carrying away fine material from a point near the surface of the water, and each of said plates being located on a lower level than the plates between it and the point at which the material to be operated upon enters the main trough.

816,304. COMBINED REAMER AND DIE-STOCK. JOHN J. DELEHANTY, Chicago, Ill. Filed Mar. 7, 1905. Serial No. 248,891.

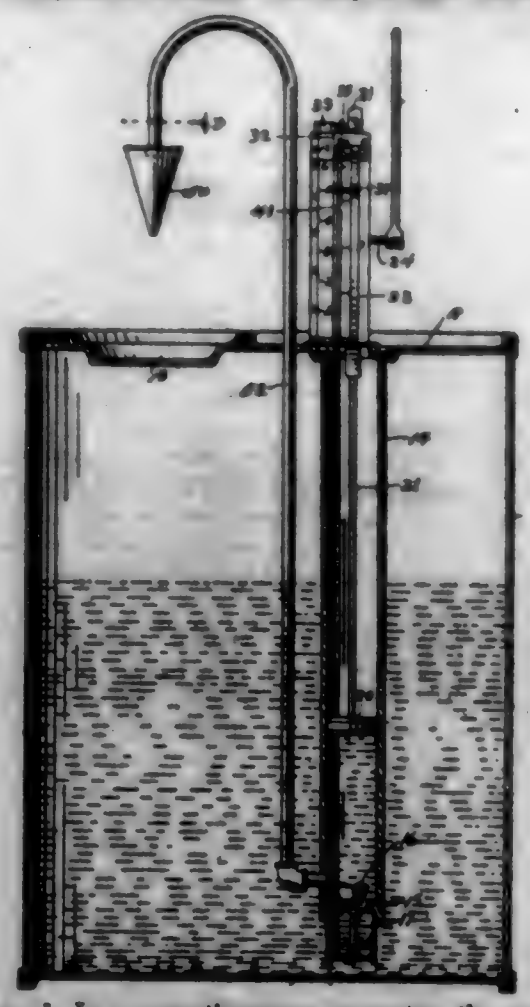
Claim.—1. The combination of a die-stock provided with a barrel, said barrel having a slot, a reamer mounted centrally within said barrel and provided with a pin projecting into said slot, a threaded bolt engaging said reamer for the purpose of gradually shifting the position thereof relatively to said barrel, and spring mechanism for tensioning said reamer.



2. The combination of a die-stock provided with a barrel, a cap mounted upon said barrel and movable relatively thereto, a bolt connected with said cap, a spring encircling said bolt, a reamer mounted within said barrel and connected with said bolt, and means for preventing rotation of said reamer relatively to said barrel.

3. The combination of a die-stock provided with a clamping member, a plate mounted upon said die-stock and provided with a second clamping member engaging the first clamping member, said plate being further provided with a barrel, a reamer mounted within said barrel and adapted to engage a pipe, a spring for tensioning said reamer, means for adjusting said reamer, and a thread-cutting die engaged by said clamping members and also adapted to engage said pipe.

816,305. COMPUTING-PUMP APPARATUS. FRANK P. DUNN, Anderson, Ind., assignor to The Anderson Tool Company, Anderson, Ind., a Corporation of Indiana. Filed July 13, 1905. Serial No. 269,560.



Claim.—1. In a computing-pump apparatus, the combination with the piston-rod, of a stationary scale with graduations that indicate the extent of movement of the piston-rod required to discharge any desired quantity of fluid at one operation of the piston-rod, and an adjustable stop movable adjacent the scale and cooperating with the graduations thereon that limit the movement of the piston-rod whereby at each complete operation thereof a uniform quantity of fluid will be discharged.

2. In a computing-pump apparatus, the combination with the piston-rod, of a stationary scale with graduations that indicate the extent of movement of the piston-rod required to discharge fluid of

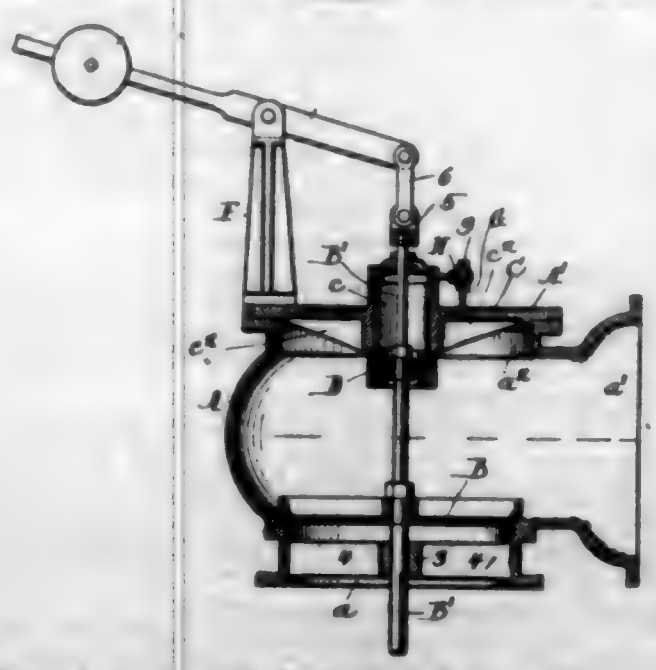
any desired value at one operation of the piston-rod, and an adjustable stop movable adjacent said scale and coöperating with the graduations thereon that limits the movement of the piston-rod whereby fluid of unity of value will be discharged at each complete operation of the piston-rod.

3. In a computing-pump apparatus, the combination with the piston-rod, of a stationary quantity-scale with graduations that indicate the extent of movement of the piston-rod required to discharge fluid of any desired quantity at one operation of the piston-rod, a vertically-stationary value-scale parallel with said quantity-scale with graduations that indicates the extent of movement of the piston-rod required to discharge fluid of any desired value at one operation of the piston-rod, a pointer connected with said piston-rod extending to both of said scales, and an adjustable stop in the path of said pointer and which is movable adjacent said scales and coöperating with the graduations thereon.

4. In a computing-pump apparatus, the combination of a piston-rod with a rack on the upper end thereof, a guide for the movement of said piston-rod slotted vertically on two opposite sides, a scale parallel with said guide, indicating means extending from the piston-rod through one of said slots to said scale, a lever, and an actuating-segment operated thereby and extending through the other one of said slots in connection with said rack for operating the piston-rod.

5. The combination with a tank, of a pump-cylinder secured to the top thereof and extending down into the tank, a discharge-tube leading from the lower part of said cylinder up through the top of the tank, a piston-rod extending up through the top of said tank, a guide for the piston-rod secured upon the top of said tank, means mounted in connection with said guide for actuating the piston-rod, a scale secured to said guide and parallel therewith, a pointer on the piston-rod and extending to said scale, and an adjustable stop mounted on said guide for limiting the movement of the piston-rod and setting the device so that it will discharge a uniform quantity of fluid at each complete operation of the piston-rod.

816,306. **VALVE MECHANISM.** JULIUS A. DYRLIE, Joliet, Ill. Filed Aug. 7, 1903. Serial No. 168,569.



Claim.—1. A valve of the character described comprising a casing having a valve-seat, a disk valve on the outlet or discharge side of said valve-seat, exposed on its opposite sides to the inlet and discharge pressures respectively and arranged to automatically open when the inlet-pressure exceeds the discharge-pressure, a stem connected to said valve, a piston on said stem, a cylinder for said piston, and means for exposing the opposite sides of said piston to different fluid-pressures to hold the valve open and for equalizing the pressure on opposite sides of the piston to permit the shift of the valve to closed position, substantially as described.

2. A valve of the character described comprising a casing having a valve-seat, a disk valve arranged on the discharge side of said valve-seat, exposed on opposite sides to the inlet and discharge pressures respectively and arranged to be automatically opened when the inlet-pressure exceeds the discharge-pressure, a stem connected to said valve, a piston of less area than said valve on said stem and a cylinder for said piston, said cylinder having valve mechanism and ports for placing the opposite ends of the cylinder in communication with the interior of the valve-casing and with the atmosphere respectively to hold the valve open, and for equalizing the pressure on opposite sides of said piston to permit the shift of the valve to closed position, substantially as described.

3. A valve of the character described comprising a casing having a valve-seat, a disk valve on the discharge side of said valve-seat, exposed on its opposite sides to the inlet and discharge pressures respectively and a stem connected to said valve and provided with a piston of less area than said valve, a cylinder for said piston, said cylinder being open at one end and having a by-pass leading from the valve-casing and a port leading from the atmosphere both opening into its opposite end, and valve mechanism controlling said by-pass and port arranged to expose the opposite sides of the piston to different fluid-pressures to hold the valve open and to equal fluid-pressures to permit the shift of the valve to closed position, substantially as described.

4. A valve of the character described comprising a casing having a valve-seat, a disk valve arranged on the discharge side of said valve-seat, exposed on its opposite sides to the inlet and discharge pressures respectively and arranged to be automatically opened when the inlet-pressure exceeds the discharge-pressure, a stem connected to said valve and provided with a piston of less area than said valve, a cylinder for said piston, a by-pass or channel leading from the discharge side of the valve-casing and a port leading from the atmosphere or opening into one end of said cylinder and valve mechanism controlling said by-pass and port for exposing the opposite sides of said piston to different pressures to hold the valve open and to equal pressures to permit the shift of the valve to closed position, substantially as described.

5. A valve of the character described comprising a casing having inlet and outlet ports and a valve and valve-seat intermediate said ports, said valve being arranged on the discharge side of said valve-seat and exposed on opposite sides to the inlet and discharge pressures, a stem connected to said valve and provided with a piston, a cylinder for said piston communicating at one end with said valve-casing, a by-pass leading to the opposite end of said cylinder from the discharge side of the valve-casing having a port opening to the atmosphere, and a three-way valve controlling said ports, substantially as described.

6. A valve of the character described comprising a casing having inlet and outlet ports and a valve and valve-seat intermediate said ports, said valve being arranged on the discharge side of said valve-seat and exposed on opposite sides to the inlet and discharge pressures, a stem connected to said valve and provided with a piston, a detachable casing-head provided with a cylinder for said piston, said cylinder communicating at one end with the discharge side of said valve-casing, a by-pass pipe or channel leading from the discharge side of said casing to the opposite end of said cylinder and a manually-controllable valve in said by-pass pipe or channel, substantially as described.

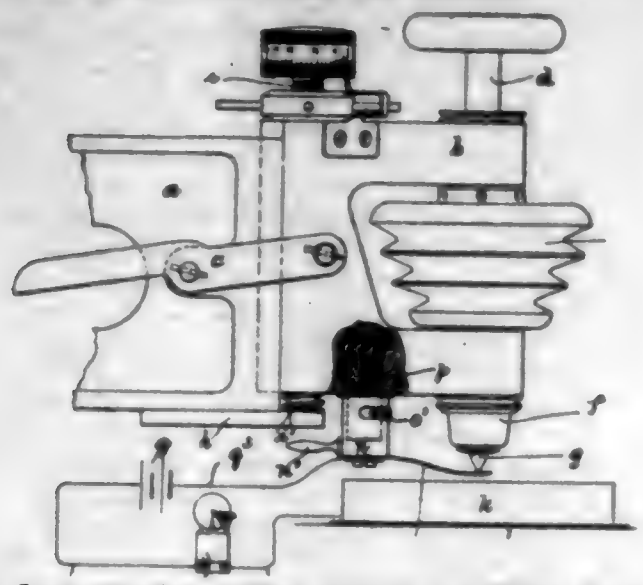
7. A valve of the character described comprising a casing having inlet and discharge ports, a horizontally-disposed valve-seat and disk valve interposed between said inlet and discharge ports, a vertical valve-stem extending through the valve-casing, a counterbalance-lever connected to said stem, a piston of less area than said valve on said stem, a cylinder for said piston communicating at one end with the valve-casing, a by-pass pipe or channel leading from said valve-casing to the opposite end of said cylinder and a manually-controllable valve in said by-pass whereby the closed end of said cylinder may be placed in communication with the interior of the casing or with a lesser air-pressure, substantially as described.

816,307. **ENGRAVING-MACHINE.** WILLIAM S. BATCH, Sag Harbor, N. Y. Filed Aug. 28, 1905. Serial No. 275,348.

Claim.—1. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable contact of known thickness arranged adjoining the tool, a contact opposed thereto, and an annunciator, said movable contact being normally spaced away from said opposed contact, and adapted to be interposed between the tool and said opposed contact whereby movement of the tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.

2. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable flat spring-metal contact of known thickness arranged adjoining the tool, a contact opposed thereto, and an annunciator, said movable contact being normally spaced away from said opposed contact and adapted to be interposed between the tool and said opposed contact whereby movement of the

tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.



3. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable flat spring-metal contact of known thickness having a curved end and arranged adjoining the tool, a contact opposed thereto, and an annunciator, said movable contact being normally spaced away from said opposed contact and adapted to have the curved end thereof interposed between the tool and said opposed contact whereby movement of the tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.

4. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable contact of known thickness mounted on the cutter-head and insulated therefrom, adjoining the tool, a contact opposed thereto, and an annunciator, said movable contact being normally spaced away from said opposed contact and adapted to be interposed between the tool and said opposed contact whereby movement of the tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.

5. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable contact of known thickness pivotally mounted on the cutter-head and insulated therefrom, adjoining the tool, a contact opposed thereto, and an annunciator, said movable contact being normally spaced away from said opposed contact and adapted to be interposed between the tool and said opposed contact whereby movement of the tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.

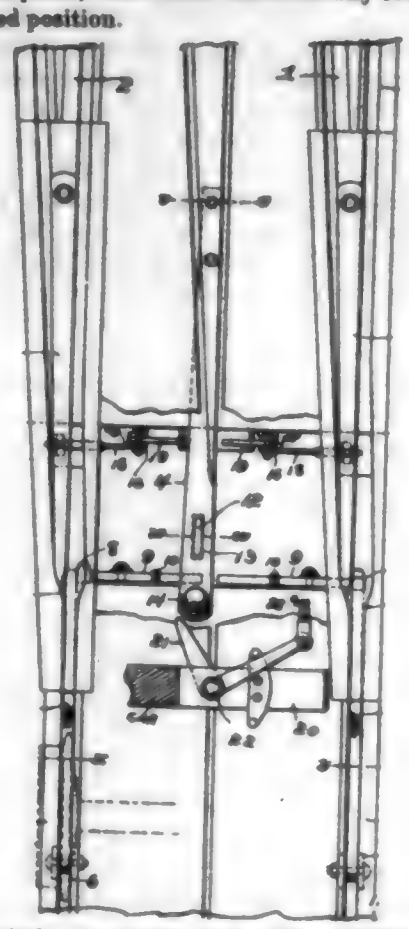
6. In an engraving-machine, means for establishing a basis for the adjustment of the tool comprising a normally open electrical circuit including therein a movable flat spring-metal contact of known thickness pivotally mounted on the cutter-head and insulated therefrom, adjoining the tool, a contact opposed thereto and an annunciator, said movable contact being normally spaced away from said opposed contact and adapted to be interposed between the tool and said opposed contact whereby movement of the tool will force said contact into engagement with said opposed contact to close the circuit and actuate said annunciator.

7. In an engraving-machine, a cutter-head, a tool carried thereby, a stud thereon and insulated therefrom, a work-support, an insulated rest for the work thereon, a sleeve pivotally mounted on said stud, means whereby said sleeve may be turned on said stud, a flat spring-metal contact-piece carried by said sleeve and having its free end curved, of means establishing a basis for the adjustment of said tool comprising a normally open electrical circuit including therein said contact-piece, a contact on said rest, opposed thereto, and an annunciator, whereby movement of said tool will force said contact-piece into engagement with said opposed contact to close the circuit and actuate said annunciator.

816,308. SWITCH. Matthew S. Farmer, Washington, D. C. Filed July 21, 1905. Serial No. 270,049.

Claim.—1. In a switch, the combination with a switch-point rail, of a normally depressed switch-throwing device, means for elevating said device, and means for automatically locking the switch in either thrown position.

2. In a switch, the combination with a switch-point, of a central rail connected with the switch-point and normally depressed, a device on said rail to be engaged by a device on the car to throw the rail and switch-point, and means automatically locking the rail in either depressed position.



3. In a switch, the combination with a switch-point, of a normally depressed switch-throwing pin, a tread-lever in the track to be engaged by a wheel-flange to elevate the device, means on a car to throw the device to one side, and means automatically locking the switch in either position.

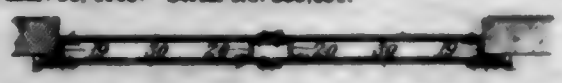
4. In a switch, the combination with two switch-points, of a central swinging rail connected with both points, a bar hinged to the rails and normally depressed, a pin on the bar movable through an opening in the rail, lifting-levers to elevate the bar and locking the same against lateral movement when depressed, tread-levers in the track to operate the lifting-levers, and means on the car to engage and throw the pin when the latter is elevated.

5. In a switch, the combination with a switch-point, of a vertically and laterally movable bar connected with the switch-point, a vertical pin on the bar, a lifting-lever to elevate the bar, a tread-lever operated by the flange of a car-wheel to operate the lifting-lever, and means on a car to engage the pin and throw the bar and switch-point when the bar is elevated.

6. In a switch-operating mechanism, the combination with a bar connected with the switch-point, and a vertical pin on said bar, of a crank-shaft on a car, a tongue on the crank-shaft to engage the pin, a yoke or T-lever pivoted between its ends to the car-platform, a rod connecting the said lever and crank-shaft, and a foot-treadle at opposite ends of the yoke or horizontal member of the lever to be depressed and throw the lever in either direction.

7. In a switch-operating mechanism the combination with a pin connected with the switch-point, of a car-platform, a lever fulcrumed in the platform, two treadles connected with the lever to throw it in either direction, a crank-shaft connected with the car-truck, a rod connecting the crank-shaft and lever, and a horizontal tongue secured to the lower end of the crank-shaft.

816,309. FIREPROOF FIXTURE. Eugene F. Fitzpatrick, New York, N. Y., assignor of one-half to Thomas H. Reilly, New York, N. Y. Filed Mar. 31, 1905. Serial No. 253,051.



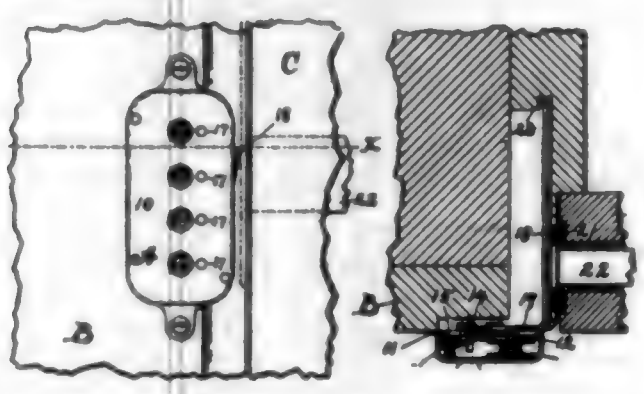
Claim.—1. A shutter, comprising a front plate and a back plate, Z-bars mounted upon opposite sides of said shutter, fastening members for detachably securing said Z-bars to said front and said back plates, and means for mounting said shutter.

3. In a shutter, the combination of a front plate and a back plate, Z-bars disposed oppositely to each other and intermediate of said plates, one of said Z-bars having the angular conformity of a

wall, and a hinge member connected with one of said plates and with said wall for enabling said shutter to swing as a door.

3. In a shutter, the combination of a front plate and a back plate, members disposed upon opposite edges of said shutter and spacing said plates apart, and a Z-bar mounted within the top edge of said shutter and secured to one of said plates, said Z-bar having a portion for partially overlapping a wall above said door.

816,310. LOCK-INDICATOR. WASHINGTON I. FOX, Burlington, Vt., assignor of one-fourth to George A. Shewell, Lawrence, Mass. Filed Nov. 11, 1904. Serial No. 232,327.



Claim.—1. An indicator for mortise-locks comprising a box-like case adapted to be placed on the face of a door-casing adjacent to the lock-bolt keeper, a rear plate for the said case, a counting-register, an actuator, and a combined operating plate and arm movably mounted on the said rear plate of the case in position to have the operating-plate engage the said actuator, and with the operating-arm extending rearwardly across the path of the lock-bolt just inside the bolt-mortise in the lock-bolt keeper.

2. An indicator for locks, comprising an ordinary counting-register having a rear plate and an actuator, an operating-arm projecting rearwardly from the said rear plate, and a right-angular plate by which the said operating-arm is movably mounted on the rear of the indicator in position to have the said arm acted upon by the lock-bolt and to have the said plate act upon the said actuator.

3. An indicator for locks, comprising a counting-register, a resilient operating-arm connected with the said counting-register in position to be acted upon by a lock-bolt, an abutment for the outer end of the said operating-arm to act upon and prevent undue deflection and a part carrying the said abutment and supporting it in its proper position relatively to the said operating-arm.

816,311. DUPLICATING-MACHINE. HARRY C. GARNETER, Cleveland, Ohio, assignor to The American Multigraph Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 7, 1903. Serial No. 146,651.

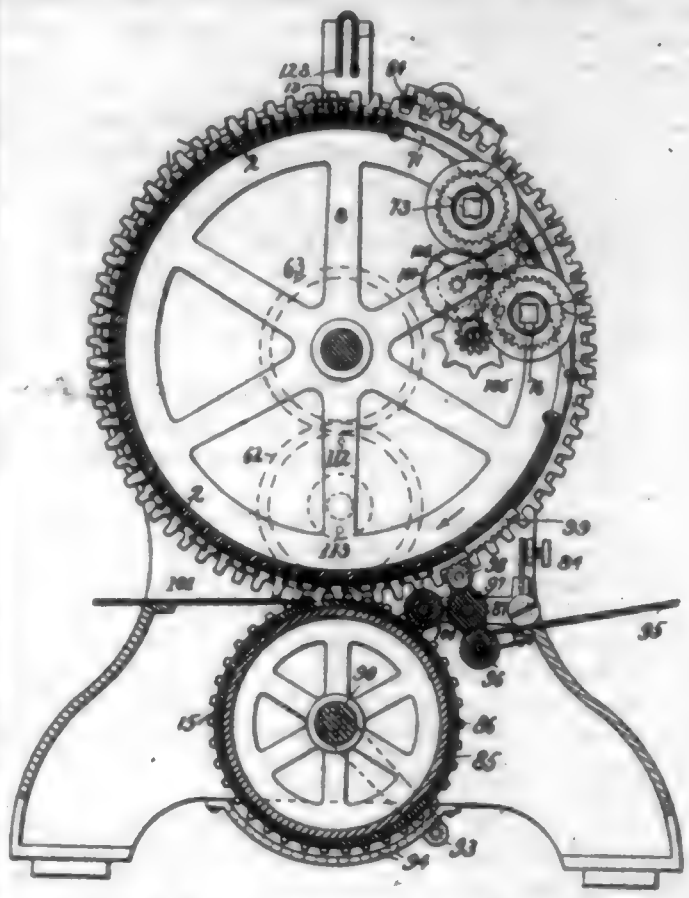
Claim.—1. In a duplicating-machine, the combination of a printing-drum adapted to carry rows of type on its surface, a pair of spools carried by said drum and adapted to carry a ribbon passing around the printing-face, mechanism for driving one of said spools to feed the ribbon, said spool being separable from the driving mechanism, and a spring for causing engagement therewith, substantially as described.

2. In a duplicating-machine, the combination of a printing-drum having a recess therein, a pair of spools mounted in said recess, and adapted to carry a ribbon passing around the drum, mechanism for driving either spool to feed the ribbon in either direction, said spools being separable from their driving mechanism, and means for holding them in engagement therewith, substantially as described.

3. In a duplicating-machine, the combination of a printing-drum having a recess therein, a pair of longitudinal spools mounted in said recess and adapted to carry a ribbon for the printing-drum, a rotatable driving mechanism carried by the drum with which one of the spools engages at one end, and a spring bearing against the other end of the spool and tending to keep it in such engagement, substantially as described.

4. In a duplicating-machine, the combination of a printing-drum adapted to carry rows of type on its surface, a pair of spools carried by said drum and adapted to carry a ribbon passing around the printing-face, one of said spools consisting of a body and a head separable therefrom, and a spring tending to cause engagement between said body and head, substantially as described.

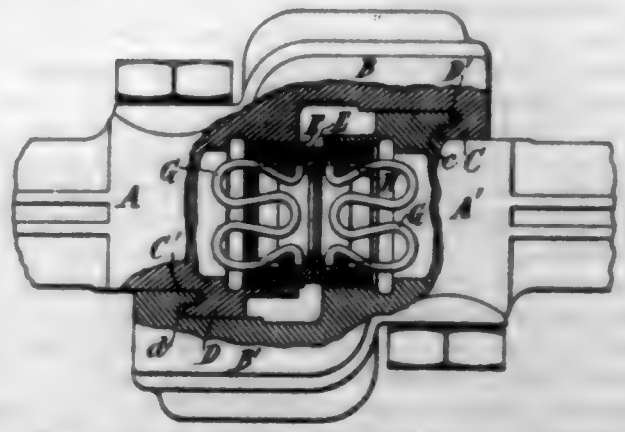
5. In a duplicating-machine, the combination of a printing-drum adapted to carry rows of type on its surface, a pair of spools carried by said drum and adapted to carry a ribbon passing around the printing-face, said spools each consisting of a body and a head separable therefrom, springs tending to cause engagement between said bodies and heads, and means for turning said heads as the drum is rotated to feed the ribbon, substantially as described.



6. In a duplicating-machine the combination of a printing-drum adapted to carry rows of type on its surface, a pair of spools carried by said drum and adapted to carry a ribbon passing around the printing-face, one of said spools consisting of a body and a head separable therefrom by means of an angular-shank connection between the body and the head, and means for automatically turning the head as the drum rotates, substantially as described.

7. In a duplicating-machine, the combination of a printing-drum, a pair of spools carried by said drum and adapted to carry a printing-ribbon passing around the drum, gears on said spools, an intermediate gear adapted to engage with the gear on either spool, gearing for driving said intermediate gear and including a star-wheel, a pair of stationary pins with either of which said star-wheel may engage, one on one side of the wheel and one on the other, a beat lever pivoted to one of the arms of the drum, and having on one arm said intermediate gear and on the other arm said star-wheel, and a handle secured to one of said arms for shifting it, substantially as described.

816,312. HOSE-COUPLING. EDWARD E. GOLD, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,770.



Claim.—1. A gravity hose-coupler having a body, a rocking gasket and a separate socket of unyielding material between said gasket and said body and in which said gasket rocks.

2. A gravity hose-coupler having a body, a rocking gasket of brass, and an unyielding socket of brass between said gasket and said body and in which said gasket rocks.

3. A gravity hose-coupler having a gasket, a separate metal

socket having a slot therein, and a spring attaching said gasket to said socket and engaged in said slot.

4. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, and having an incompressible gasket adapted by its engagement with a corresponding gasket of the complementary coupler to limit the relative movement of the lugs of the two couplers, an unyielding backing for said gasket, and means for taking up wear on said lugs.

5. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, and a metal gasket adapted by its engagement with a corresponding gasket of the complementary coupler to limit the relative movements of the lugs of the two couplers, and an unyielding backing for said gasket adjustable in an axial direction to take up the wear of said lugs.

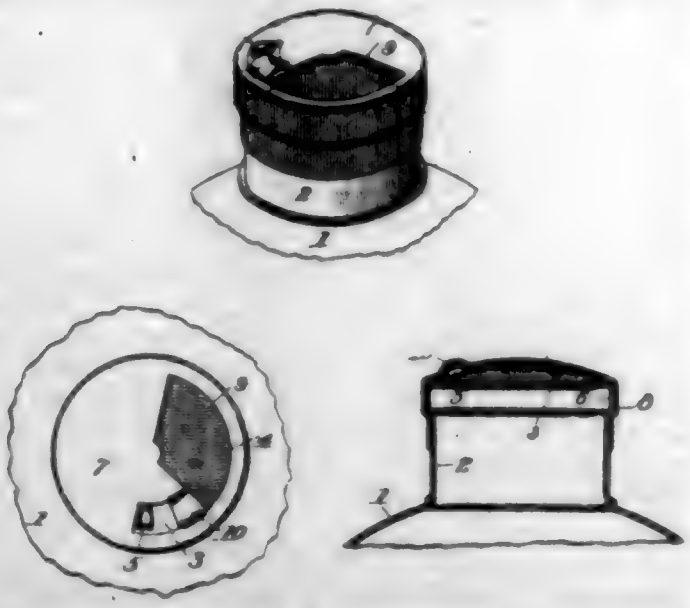
6. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, and a rocking gasket adjustable in an axial direction to take up the wear of said lugs.

7. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, a rocking gasket and a socket therefor adjustable in an axial direction to take up the wear of said lugs.

8. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, a rocking gasket, and a socket therefor screwing into the head of the coupler.

9. A gravity hose-coupler having lugs adapted for engagement with corresponding lugs on a complementary coupler, a rocking gasket E, a socket F of non-corrodible metal screwing into the head of the coupler and having a slot H therein, and a spring G attaching said gasket to said socket and engaged in said slot.

816,313. POWDER-CAN TOP. JOHN H. GOSS, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Sept. 29, 1905. Serial No. 280,609.



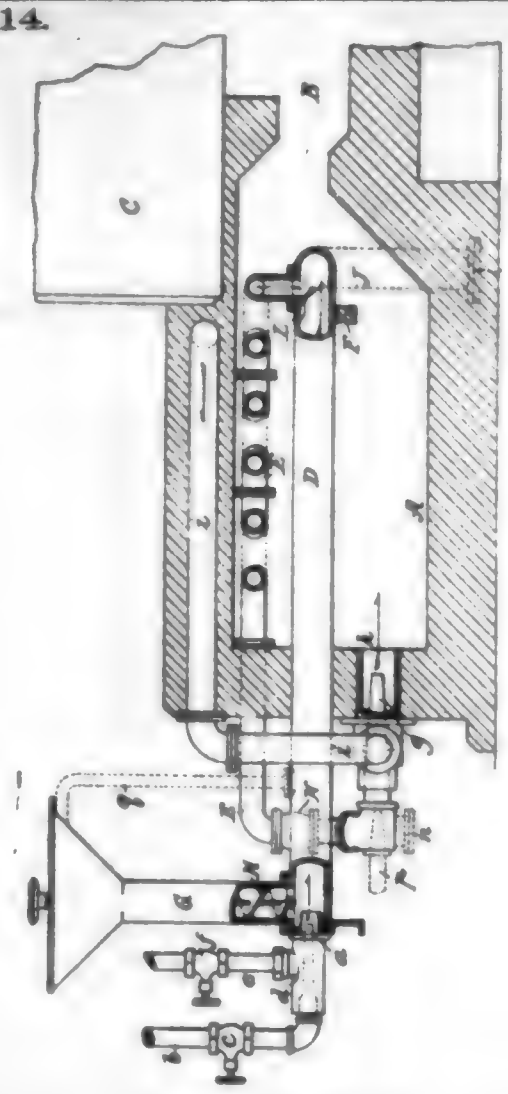
Claim.—A powder-can top, having a dome provided with a discharge-orifice and an adjacent stop, and a rotatable cover applied to said dome and having a complemental orifice and a bridge spanning said orifice and adapted to ride over said stop as the cover is rotated to cover and uncover the orifice in the dome.

816,314. PROCESS FOR MAKING AND BURNING FUEL-GAS. WALTER T. GRIFFIN, Plainfield, N. J. Filed Dec. 12, 1903. Serial No. 185,000.

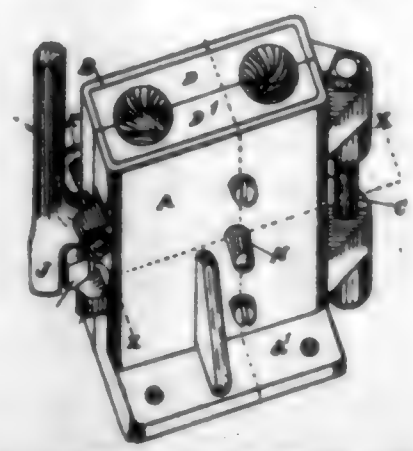
Claim.—1. The herein-described process of generating and burning fuel-gas, which consists in passing a mixture of steam and finely-divided carbonaceous material through a heated zone, conducting the formed gases through the zone, introducing a supply of oxygen into the current of gases, and burning the mixture beneath the zone to maintain the same, as set forth.

2. The herein-described process of generating and burning fuel-gas, which consists in passing a mixture of superheated steam and finely-divided carbonaceous material through a heated zone, conducting the formed gases back through the zone to a point outside the same, introducing a supply of oxygen into the current of gases, then conducting the mixture under the zone and burning the mixture, as set forth.

816,314.



816,315. METAL MOLD FOR MAKING BRASS CASTINGS. FRANK HAGENBOS, St. Louis, Mo. Filed Aug. 31, 1905. Serial No. 276,537.



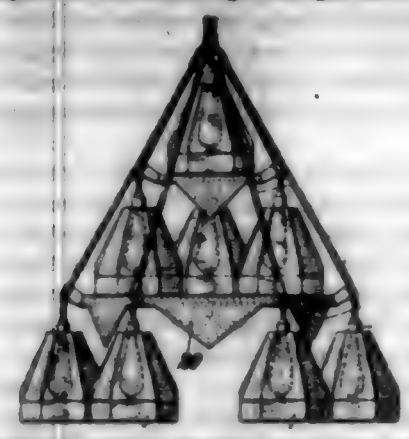
Claim.—In a metal mold for making car-bearing castings, the two sections of the mold hinged together, in combination with an inserted gate-block of hard sand forming the end of the casting-cavity, said block having gate-openings through it to the interior of the mold, and internal loose undercut stripe on the convex bearing side of the mold-cavity which form inward projections on the casting, and externally a double-acting lever hinged to the edge of one of the sections said lever having an angular arm to hold the two sections together and a straight arm to force the two sections of the mold apart, substantially as shown and described.

816,316. SHADE. LOUIS W. HAIGHT, White Plains, and WILLIAM B. CHAPMAN, New York, N. Y. Filed Mar. 7, 1905. Serial No. 248,890.

Claim.—1. The combination of a plurality of shades formed of perforate metal with bosses or projections at or surrounding the perforations, electric lights within said shades, electrical conducting-cables extending to the lights and supporting the same and the attached shades, and spreaders connected to the cables and holding them distended, the spreaders being formed of perforate metal with bosses or projections at or surrounding the perforations.

2. A shade and reflector having a metallic plate with perforations therein, and bosses or projections at the edges of the perforations.

3. A shade or reflector having a plate with perforations therein, and bosses or projections surrounding the edges of the perforations.



4. A shade formed with a number of perforate metallic plates fastened together at their edges, and portions of said plates projected beyond the seams between the plates.

5. The combination of a plurality of electric lamps, an electric cable attached to and sustaining each lamp, and spreaders provided with means for engaging said cables, the spreaders extending from one cable to the other and serving to hold the lamps separated.

6. The combination of a plurality of electric lamps, an electric cable connected with and sustaining each lamp, all of said cables emanating from a single point, and spreaders having means in connection with the cables, the spreaders extending from one cable to the other, and causing the cables to diverge from said single point whereby to separate the lamps.

7. A shade or reflector having a metallic plate with perforations therein, and bosses or projections at the edges of the perforations and on the inner side of the shade or reflecter, for the purpose specified.

8. A shade formed of a number of perforated metallic plates having bosses or projections at the edges of the perforations, for the purpose specified, said plates being fastened together at their edges, and portions of said plates projecting outward beyond the seams between the plates.

9. A shade formed of a number of perforated metallic plates having bosses or projections at the edges of the perforations, for the purpose specified, said plates being fastened together at their edges, and portions of said plates projecting outward beyond the seams between the plates, said projected portions of the plates also being perforated and having bosses or projections at the edges of the perforations.

10. The combination of a plurality of shades formed of perforate metal with bosses or projections at or surrounding the perforations, said shades being adapted to receive electric lamps, electrical conducting-cables extending to the shades and supporting the same, the cables being adapted to supply a current to said lamps, and spreaders connected to the cables and holding them distended, the spreaders being formed of perforate metal with bosses or projections at or surrounding the perforations.

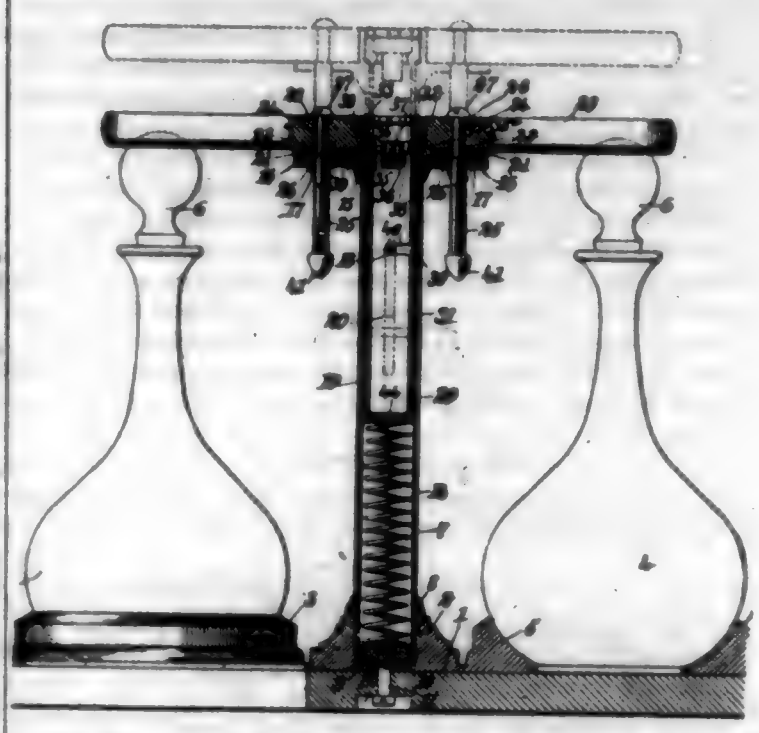
11. The combination of a plurality of electric lamps, an electric cable attached to and sustaining each lamp, and spreaders provided with means for engaging said cable, the spreaders extending from one cable to the other and serving to hold the lamps separated, said spreaders being formed of perforate sheet metal with bosses or projections at or surrounding the perforations.

12. The combination of a plurality of electric lamps, an electric cable connected to and sustaining each lamp, all of said cables emanating from a single point, and spreaders having means in connection with the cable, the spreaders extending from one cable to the other and causing the cables to diverge from said single point whereby to separate the lamps, said spreaders being formed of perforate sheet metal with bosses or projections at or surrounding the perforations.

816,817. **STAND FOR LIQUID-CONTAINING VESSELS.** OSCAR HANNARLUND, New York, N. Y., assignor of one-half to Allan Furman, New York, N. Y. Filed Aug. 10, 1905. Serial No. 273,603.

Claim.—1. A stand or holder for stoppered liquid-containing vessels, comprising a base, a post thereon, a member adapted to be moved vertically with respect to the post, a rotatable member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, and means for preventing said members from being thus moved except on rotating the second-named member to a determinate position.

2. A stand or holder for stoppered liquid-containing vessels, comprising a base, a hollow post thereon, a hollow member adapted to be moved vertically within the post, a rotatable hollow member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, and means for preventing said members from being thus moved except on rotating the second-named member to a determinate position.



3. A stand or holder for stoppered liquid-containing vessels, comprising a base, a post thereon, a member adapted to be moved vertically with respect to the post, and a rotatable member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, said post and said members being constructed with means for preventing the members from being thus moved except on rotating the second-named member to a determinate position.

4. A stand or holder for stoppered liquid-containing vessels, comprising a base, a hollow post thereon, a hollow member adapted to be moved vertically within the post, and a rotatable hollow member within and adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, said post and said members being provided with means for preventing the members from being thus moved except on rotating the second-named member to a determinate position.

5. A stand or holder for stoppered liquid-containing vessels, comprising a base, a post thereon, a member adapted to be moved vertically with respect to the post, a rotatable member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, means for preventing said members from being thus moved except on rotating the second-named member to a determinate position, and normally restrained means actuated to force the members upwardly when such position of said second-named member is reached.

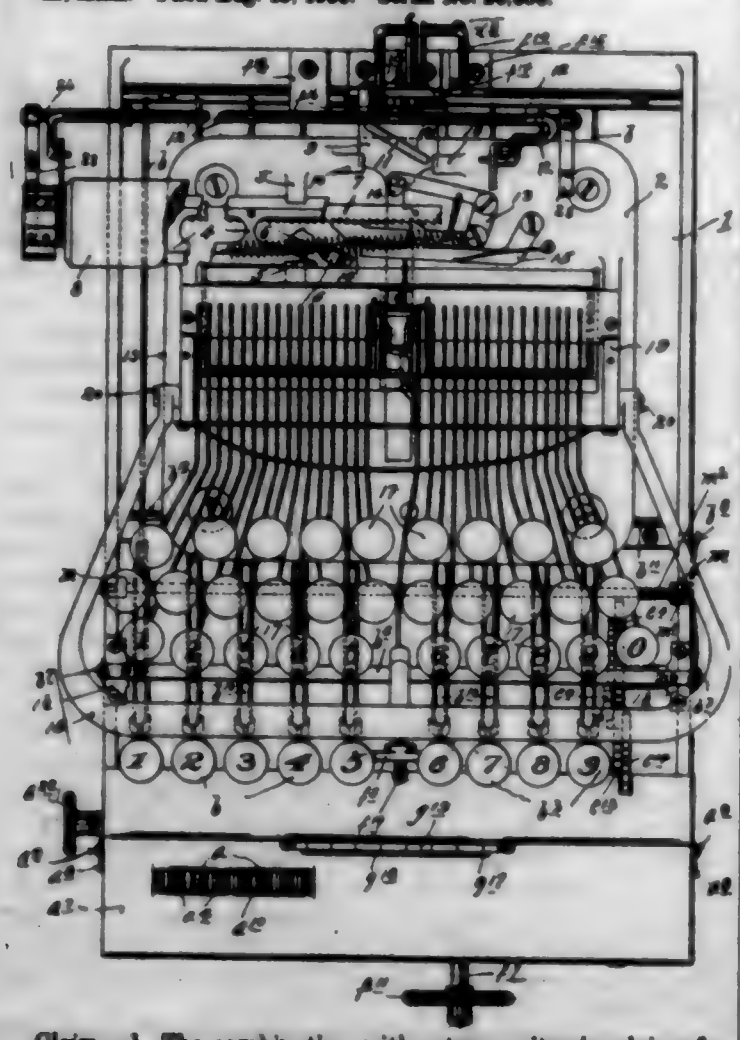
6. A stand or holder for stoppered liquid-containing vessels, comprising a base, a hollow post thereon, a hollow member adapted to be moved vertically within the post, a rotatable hollow member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, means for preventing said members from being thus moved except on rotating the second-named member to a determinate position, and normally restrained means actuated to force the members upwardly when such position of said second-named member is reached.

7. A stand or holder for stoppered liquid-containing vessels, comprising a base, a post thereon, a member adapted to be moved vertically with respect to the post, a rotatable member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, said post and said members being constructed with means for preventing the members from being thus moved except on rotating the second-named member to a determinate position, and normally restrained means actuated to force the members upwardly when such position of said second-named member is reached.

8. A stand or holder for stoppered liquid-containing vessels, comprising a base, a hollow post, having a transverse pin interiorly thereof, a hollow member within the post, having vertical slots therein, through which the pin extends and provided at the upper end thereof with an escutcheon having a keyhole therein, a second member within the first having bayonet-slots therein, the vertical branches of which register with said vertical slots in the first-named member, and through which said pin also extends, said first-named member carrying a beam adapted for engagement with one or more stoppers of vessels on the base and said second-named member having a head at its upper end, provided with a nib and opposite recesses, and a key for insertion through said keyhole, adapted to receive said nib, and having projections which enter said recesses.

9. A stand or holder for stoppered liquid-containing vessels, comprising a base, a post thereon, a member adapted to be moved vertically with respect to the post, a rotatable member adapted to be moved vertically with said first-named member, the latter carrying a beam adapted for engagement with one or more stoppers of vessels on the base, and means for preventing said members from being thus moved except on rotating the second-named member to a determinate position, the lower end of the first-named member having an inturned flange on which rests the lower end of the second-named member.

816,318. CALCULATING-MACHINE. HANS HANSEN, Minneapolis, Minn. Filed Aug. 13, 1900. Serial No. 26,666.



Claim.—1. The combination with a type-writer involving finger-operated numeral-keys, of computing mechanism involving a register made up of a series of sections, a bank of finger-operated digit-keys having finger-pieces exposed where they may be struck by the fingers, a differential feed device actuated by said digit-keys and operating on said register-sections, and connections from the type-writer carriage, whereby the step-by-step movement of said carriage will render said differential feed device operative on the sections of said register, in succession.

2. The combination with a type-writer involving a bank of numeral-keys, of computing mechanism involving a series of counting-wheels, a wheel-mover mounted for both axial and rotary movements, an independent bank of finger-operated digit-keys with connections to the corresponding numeral-keys of the type-writer, a differential feed device actuated by said digit-keys and rotating said wheel-mover, and connections between the type-writer carriage and said wheel-mover for imparting a step-by-step movement from the left toward the right, to said wheel-mover, and rendering it operative on said counting-wheels in succession.

3. The combination with a type-writer involving finger-operated numeral-keys, of computing mechanism comprising a bank of finger-operated digit-keys, with finger-pieces exposed where they may be struck by the fingers, and connections between the numeral-keys of said type-writer and the corresponding digit-keys of said computing mechanism, which connections cause the latter to operate the former, but permit the former to be operated without operating the latter.

4. The combination with a type-writer, involving a carriage and finger-operated numeral-keys, of calculating mechanism comprising an independent bank of finger-operated digit-keys having finger-pieces exposed where they may be struck by the fingers, a divided connection between said digit-keys and the corresponding numeral-keys of the type-writer, and means for simultaneously disconnecting the sections of said divided connections, at will.

5. The combination with a type-writer involving finger-operated numeral-keys, of calculating mechanism comprising an independent bank of finger-operated digit-keys having finger-pieces exposed where they may be struck by the fingers, a divided connection between said digit-keys and the corresponding numeral-keys of the type-writer, and a pivoted bail engageable with said connections to render them operative and inoperative, at will, said bail having a device for setting it in either of its two positions.

6. The combination with a type-writer having a carriage of a register involving a series of sections, differential feeding mechanism, a wheel-mover movable step by step from one section to the other of said register, and connections between said wheel-mover and the type-writer carriage, operating to move the former step by step over the sections of said indicator and then to leave the said wheel-mover standing idle upon the continued movement of the type-writer carriage toward the left.

7. The combination with a register made up of a series of counting-wheels, of a bank of digit-keys, a rotary feed-shaft, a wheel-mover rotating with and sliding on said feed-shaft for successive action on said counting-wheel, differential feed mechanism rotating said feed-shaft, and an intercepting stop device comprising a ratchet-wheel on said feed-shaft, a pawl coöperating with said ratchet-wheel, and a connection from said pawl subject to the action of any of the depressed digit-keys, substantially as described.

8. The combination with a series of counting-wheels and a key-operated differential wheel-mover which operates in succession thereon, of a series of carrying-levers adapted to be set in operative position by the rotation of counting-wheels of a given order, and hand-operated means for restoring successively to normal position such carrying-levers as have been set by the counting-wheels, thus effecting the carrying over of the proper amount from a lower to a higher denominational order.

9. The combination with a series of counting-wheels and a differential wheel-mover which operates in succession thereon, of a series of carrying-levers arranged to be set in operative position by counting-wheels of a given order, a paper-supporting carriage moving uniform distances for letter-spacing, and means for restoring to normal position such carrying-levers as have been set by the counting-wheels, said means being operative during the return of the paper-supporting carriage to its initial position for starting a new line.

10. The combination with a register made up of a series of adding-wheels and carrying devices, of resetting mechanism for said adding-wheels, comprising a shaft on which is rigidly mounted a series of mutilated gear-wheels, corresponding in number to the number of adding-wheels, and coöperative teeth or projections on said adding-wheels, said mutilated gear-wheels and adding-wheels being capable of intermeshing with each other, and also capable of free movements, in which each set clears the other, without shifting the relative positions to each other of the shafts or supports of either set of wheels, and means for rotating the shaft on which said mutilated gears are mounted.

11. The combination with the counting-wheels *a* having the carrying-pins a^{15}, resetting-pins a^{20} and teeth a^{16}, of the carrying-lever a^{11} subject to said carrying-pins a^{15} and provided with the pawls a^{17} acting upon said ratchet-teeth a^{16}, the shaft a^{21} with suitable finger-piece, the series of resetting-gears a^{22} coöperating with said pins a^{20}, as described, a pawl-releasing bail acting upon said pawls a^{17}, and a cam-disk on said shaft a^{21} having connections for operating said releasing-bail, substantially as described.

12. A register comprising a series of counting-wheels with a series of carrying-levers, which carrying-levers are set in carrying positions by wheels of a lower order and carry onto the wheels of a higher order, under movements from their carrying to their normal positions, in combination with a register-carriage having a cam op-

erating on said carrying-levers under movements from the right toward the left, means for imparting a step-by-step movement of said carriage from the left toward the right, a wheel-mover mounted to rotate with respect to, but to travel with said carriage for action on said counting-wheel, and differential feed mechanism for imparting the rotary feed movements to said wheel-mover, substantially as described.

13. The combination with a type-writer, of a register involving a series of counting-wheels and carrying devices, a register-carriage connected for movements with the type-writer carriage and provided with a supplemental sliding frame-section, a latch for locking together the register-carriage and the supplemental frame, a trip for releasing said latch at one limit of movement, which latch becomes operative at the other limit of movement, a wheel-mover mounted to travel with said supplemental carriage-section for successive action on said counting-wheels, and differential feed mechanism for rotating said wheel-mover, substantially as described.

14. The combination with a type-writer, of a register involving a series of counting-wheels and carrying devices, a register-carriage connected for movements from the left toward the right, under movements of the type-writer carriage from the right toward the left, which register-carriage has a sliding supplemental section, a latch for locking said sections of the register-carriage together, a trip for releasing said latch under the movement of said register-carriage to the extreme right, a rotary wheel-mover mounted to travel with the supplemental register-carriage section for action on the count ng-wheels from left toward the right, and differential feed mechanism for rotating said wheel-mover.

15. The combination with a type-writer, of a register involving a series of counting-wheels and carrying-levers, which carrying-levers carry onto the wheels of a higher order when moved from their carrying or set position back to normal, a register-carriage connected for movements from the left toward the right, under movements of the type-writer carriage from the right toward the left, which register-carriage is provided with a sliding supplemental section and with a cam for action on said carrying-levers, under movements toward the left, a rotary wheel-mover mounted to travel with said supplemental frame-section, and differential feed mechanism for rotating said wheel-mover, substantially as described.

16. The combination with a type-writer having an escapement-controlled carriage, of a register involving a series of counting-wheels, a register-carriage connected to the type-writer carriage for reverse movements therefrom, a wheel-mover mounted to travel with said register-carriage for successive action on said counting-wheels, differential feed mechanism for rotating said wheel-mover, and a handpiece mounted for a compound movement and provided with connections to said register-carriage and to the type-writer escapement, whereby one movement releases said escapement and the other moves the register and type-writer carriages, substantially as described.

17. The combination with a type-writer having an escapement-controlled carriage and a roll-feeding ratchet, of a register involving a series of counting-wheels and carrying devices, a register-carriage connected for movements with the type-writer carriage, a wheel-mover traveling with said register-carriage for action on said wheel, differential feed mechanism for rotating said wheel-mover, and a handpiece having connections to said register-carriage and to the escapement and ratchet devices of said type-writer, whereby one movement of said handpiece will release said escapement and actuate said roller-feed ratchet, and the other movement thereof will move the register and type-writer carriages, substantially as described.

18. The combination with a type-writer having a space-bar and escapement device, of an attachment comprising a register, a bank of digit-keys operating the numeral-keys of the type-writer, but permitting said numeral-keys to be operated independently thereof, and a connection between the space-bar and escapement device of the type-writer and said independent bank of digit-keys, for operating the former upon the depression of any of the said digit-keys, whereby the computing mechanism is operative without actuating the printing devices of the type-writer.

19. The combination with a type-writer having a carriage, of an attachment comprising a register, a bank of digit-keys, denominational selecting mechanism controlled by the type-writer carriage, differential feed mechanism controlled by said digit-keys, and a connection between the space-bar of the type-writer and the digit-keys of said attachment, for controlling the denominational selecting mechanism through the movements of the type-writer carriage when operating the computing-machine without recording the figures on the paper in the type-writer.

20. The combination with a bank of digit-keys, of a register-mover having a ratchet-wheel, a stop pawl or arm cooperating with said ratchet-wheel and subject to any depressed digit-key at the limit of its downward movement, differential feed mechanism controlled by said keys and operating on said register-mover, and a detent operative while the digit-key is making its return movement, to lock said stop pawl or arm in engagement with the said ratchet-wheel, substantially as described.

21. The combination with a type-writer, of a register comprising a series of counting-wheels, a register-carriage, a wheel-mover rotatable with respect to but traveling with said register-carriage, differential feed mechanism for rotating said wheel-mover, and connections between the register-carriage and the type-writer carriage involving a device for temporarily interrupting the movement of the register-carriage while the type-writer carriage makes a step of movement, substantially as described.

22. The combination with a type-writer having a feed-rack, of an attachment comprising a bank of digit-keys, a register made up of counting-wheels, a register-carriage, a wheel-mover moved by said register-carriage for action on said counting-wheels, a differential feed mechanism controlled by said digit-keys and imparting a rotary feed movement to said wheel-mover, connections between said register and type-writer carriages involving a driving and a driven part, the latter having at least two ratchet-teeth, and the former having a coöperating pawl, and a pivoted trip engageable with said pawl to cause an escapement movement thereof, substantially as described.

23. In adding attachments for type-writers, the combination with the transversely-movable paper-carriage and the regular type-keys and printing devices of the type-writer, of a supplemental series of adding-keys arranged to actuate the printing devices of the corresponding type-keys, and an adding mechanism operated by the adding-keys to add together the amounts printed by the operation of said keys, substantially as described.

24. The combination with a type-writer, of a computer having an independent set of digit or computing keys, and connections between the computer-keys and the numeral-keys of the type-writer, which connections cause the computer-keys to operate the numeral-keys of the type-writer, and thereby, the printing devices, but which connections permit the numeral-keys of the type-writer to be operated without operating said computer-keys, whereby the combined machine is always ready for use to secure the double function of listing and adding numbers, or the type-writer may be used, independently of the computer, in the ordinary way for type-writing purposes.

25. The combination of a type-writer, a computer, an actuating connection between the numeral-keys of the type-writer and the computer, and mechanism arranged to be operated once for each line to operate the computer and to shift the carriage of the type-writer, substantially as described.

26. The combination of a computing-machine having an operative lever, a type-writer having a traveling carriage, and a connection between said lever and the type-writer carriage, substantially as described.

27. The combination with a type-writer having mechanism for feeding the paper thereon, of a computer, an actuating mechanism between the numeral-keys of the type-writer and the computer, an operating mechanism for the computer, and a connection between said operating mechanism and the paper-feeding mechanism of the type-writer, substantially as described.

28. The combination with a type-writer having a traveling carriage and mechanism mounted thereon for feeding the paper, of a computer having actuating mechanism and an operating-lever, and a connection between the lever of the computer and the paper-feeding device of the type-writer, substantially as described.

29. The combination with a type-writer, of a computer having a carriage receiving motion from the type-writer carriage, and a slip-motion device in the driving connections between said two carriages, which slip-motion device is operative to hold the computer-carriage stationary while the type-writer escapes for feed movement, whereby punctuation or spacing may be made to appear between columns of the listed numbers, substantially as described.

30. The combination with a type-writer, of a computer having a carriage receiving motion from the type-writer carriage, a slip-motion device in the driving connections between said two carriages, and a buffer-spring for action on the computer-carriage at the time when the slip-motion occurs in the said driving connections, and throughout the subsequent travel of said computer-carriage, all for coöperation to permit punctuation or spacing to be made to appear in the listed line of numbers, substantially as described.

31. In adding attachments for type-writers, the combination with the transversely-movable paper-carriage and the regular type-keys and the printing devices of the type-writer, of a supplemental series of adding-keys, means connecting said keys with the printing devices of the corresponding type-keys, but leaving the latter normally free to be operated independently of the adding-wheels, and an adding mechanism operated by the adding-keys, to add together the amounts printed by the operation of said keys, substantially as described.

32. In adding attachments for type-writers, the combination with the transversely-movable paper-carriage and the regular type-keys and printing devices of the type-writer, of a supplemental series of adding-keys coöperating with the corresponding type-keys to cause the latter to actuate the printing devices when the adding-keys are operated, but leaving them normally free to independently actuate their printing devices when the adding devices are not operated, and an adding mechanism operated by the adding-keys to add together the amounts printed by the operation of said keys, substantially as described.

33. In adding attachments for type-writers, the combination with the transversely-movable paper-carriage and the regular type-keys and printing devices of the type-writer, of a supplemental series of adding-keys adapted to separately depress the corresponding type-keys to actuate their printing devices, but leaving the type-keys normally free to be depressed independently of the adding-keys, to actuate said printing devices, and an adding mechanism operated by the adding-keys to add together the amounts printed by the operation of said keys, substantially as described.

34. In adding attachments for type-writers, the combination of a type-carrier, a type-key, and connections for operating said carrier, an adding-key also arranged to operate said carrrier, but permitting independent operation of said carrier by the type-key, and an adding mechanism operated by said adding-key, substantially as described.

35. In adding attachments for type-writers, the combination of a type-carrier, a type-key, and connections for operating said carrier, an adding-key also operating said carrier through the same connections, but permitting the independent operation of the carrier by the type-key, and an adding mechanism operated by said adding-key, substantially as described.

36. In adding attachments for type-writers, the combination of a type-carrier, a type-key, and connections for operating said carrier, an adding-key coöperating with the type-key to depress the same when the adding-key is depressed, but permitting depression of the type-key independently of the adding-key, and an adding mechanism operated by the adding-key, substantially as described.

37. In adding attachments for type-writers, the combination of a type-carrier, a type-key, and connections for operating the same, an adding-key, means for automatically coupling the adding-key and type-key together upon the depression of the adding-key, but permitting depression of the type-key independently of the adding-key, and an adding mechanism operated by the adding-key, substantially as described.

38. The combination with a type-writer having a traveling carriage controlling the letter-spacing in the printed line, of a computer having an actuating device arranged to be operated once for each line, and having a connection for moving said type-writer carriage.

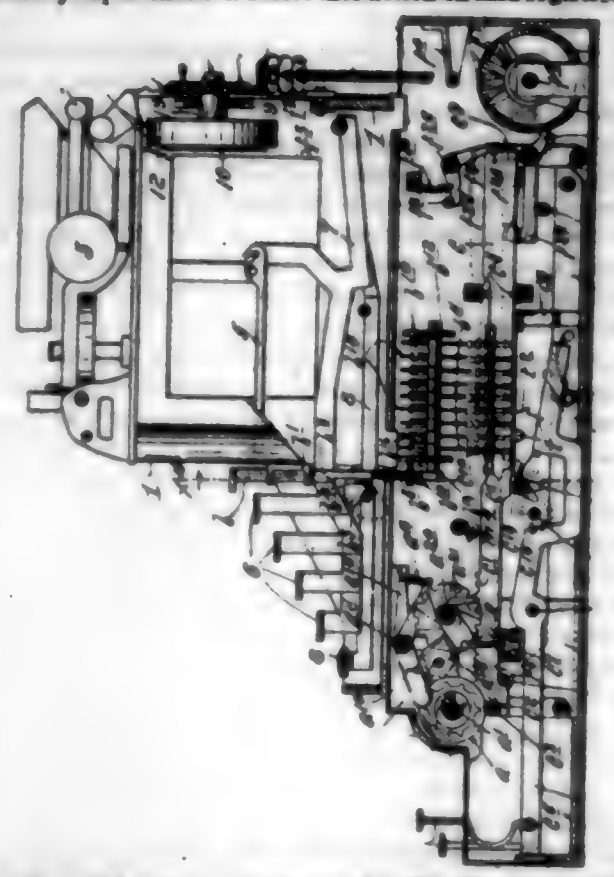
39. In combination, a type-writer carriage having paper-feeding devices thereon, a computer having operating mechanism, arranged to be operated once for each line, and a connection between said computer-operating mechanism and paper-feeding devices, substantially as described.

40. In a combined type-writer and computer, the combination with a type-writer carriage, of paper-feeding devices thereon, computer-operating mechanism, arranged to be operated once for each line, and connections between said computer-operating mechanism and type-writer carriage and paper-feeding devices thereon, substantially as described.

41. In a combined type-writer and computer, the combination with computer-operating mechanism, arranged to be operated once for each line, of a type-writer carriage, and connections between said carriage and computer-operating mechanism, whereby the carriage may be returned and moved in either direction of its longitudinal movements, at will, for setting the same in different positions for writing a new line, substantially as described.

816,819. CALCULATING-MACHINE AND TYPE-WRITER ATTACHMENT. Hans Hansen, Brooklyn, N. Y. Filed June 27, 1902. Serial No. 113,468.

Claim.—1. In combination, a register, a preliminary-representation device, key-controlled means for setting said preliminary-representation device, involving a movable denominational-order selector having a plurality of tappets arranged to be brought into action in succession, and means for subsequently bringing the "set" preliminary-representation device into action on said register.



2. In combination, a register, a plurality of decimal-order bars having a differential action on said register, of preliminary-representation pins for each such bar, key-controlled means for setting said units-pins, said means involving a selector having tappets arranged to be brought into action in succession, and means coöperating with the "set" units-pins, for subsequently moving said decimal-order bars, to actuate the register.

3. The combination with printing mechanism having numeral-keys and punctuation-keys, of a register, numeral-key-controlled means for actuating said register, to register the amount printed, said means involving a "decimal-order selector," having tappets arranged to be brought into action in succession, the said tappets being differentially spaced, at intervals, to delay the action of certain of the tappets, when a punctuation-key is struck, whereby punctuated amounts may be printed and the proper amounts accumulated on the register.

4. In combination, a register involving a series of numeral-wheels, decimal-bars actuating said numeral-wheels and having each a series of units-pins, key-controlled means for setting said units-pins, involving a "decimal-order selector" having tappets arranged to be brought into action in succession, from left toward the right, or in the natural order in which the numerals of the amount are to be read.

5. In combination, a register involving a series of numeral-wheels, a decimal-order bar actuating said adding-wheels and having each a series of units-pins or preliminary-representation pins, key-controlled means for setting the said units-pins, to effect a preliminary representation of an amount to be registered, said means involving "decimal-order selection" having tappets arranged to be brought into action in succession, from left toward the right, and means coöperating with the "set" units-pins, for subsequently rendering said decimal-order bars operative to register the amount on the register.

6. The combination with printing mechanism having numeral-keys and punctuation-keys, of a register, numeral-key-controlled means, for controlling the action of said register, to record the amount printed, said means involving a "decimal-order selector" having a series of tappets arranged to be brought into action in succession, which series of tappets are differentially spaced, at intervals, to delay the action of certain of the tappets, when a punctuation-key is struck, the said decimal-order selector having an adjustment transversely of the line of operative movement, for the purposes set forth.

7. In combination, printing mechanism having numeral-keys and punctuation-keys, a register, numeral-key-controlled means for controlling the action of said register, to record the amount printed, said means involving a "decimal-order selecter" having at least two

series of tappets, the one series of tappets being uniformly spaced, and the other series of tappets being located out of line with the tappets of the former series, and being differentially spaced, at intervals, to delay the action of certain of said differentially-spaced tappets, when a punctuation-key is struck, and means whereby either of the two series of tappets may be thrown into action, at will.

8. The combination of a rotary tappet-drum, provided with one set of uniformly-spaced spirally-arranged tappets, and an intermediate set of differentially-spaced tappets, said drum being adjustable for placing either set of tappets in operative position, key-controlled step-by-step spring-power, drum-operating mechanism, a series of adding-wheels, means controlled by the keys and said tappet-drum, for determining the setting of said adding-wheels, and manually-operated mechanism for effecting the setting of said adding-wheels.

9. The combination of a register having a plurality of numeral-wheels, a rotary tappet-drum having spirally-spaced tappets, key-controlled, step-by-step spring-power tappet-drum-actuating mechanism, numeral-wheel actuating, tappet-actuated "decimal-order bars" provided with key-set "units-pins," and numeral-printing mechanism, actuated by said key-controlled, spring-power mechanism.

10. The combination of a tappet-drum, having a plurality of spirally-spaced tappets, key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, adding-wheel-actuating, tappet-actuated decimal-bars, provided with key-set "units-pins," and a manually-operated carriage, having a driving-bar for action on the "set" units-pins, for operating the adding-wheels.

11. The combination with a rotary tappet-drum, having a plurality of spirally-spaced tappets, key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, a series of tappet-selected decimal-order bars, provided each with a series of units-pins, key-actuated units-pin-setting mechanism, manually-actuated mechanism operating on the "set" units-pins, to operate said adding-wheels, and type-writing mechanism subject to said spring-power mechanism and key mechanism, said type-writing mechanism having keys which operate independently of the adding mechanism.

12. The combination with a tappet-drum, having a plurality of spirally-spaced tappets, of key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, a series of tappet-selected decimal-order bars, provided with units-pins, key-actuated units-pin-setting mechanism, and manually-actuated mechanism for setting the adding-wheels, by the said units-pins and decimal-bars, and for returning the latter to their normal positions.

13. The combination of a tappet-drum, having a plurality of spirally-spaced tappets, key-controlled, step-by-step, spring-power tappet-drum-operating mechanism, a series of adding-wheels, means controlled by the keys in said tappet-drum for determining the "setting" of the adding-wheels, type-writing mechanism actuated by said tappet-drum-controlling mechanism, for printing the amount to be set on the adding-wheels, manually-operated mechanism for effecting the "setting" of said adding-wheels, and means whereby said manually-operated mechanism automatically returns the type-writer carriage, and tappet-drum, to predetermined positions.

14. The combination of a tappet-drum, having a plurality of spirally-spaced circumferentially differentiated or offset tappets, key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, means controlled by the keys and said tappet-drum, for determining the "setting" of the adding-wheels, type-writing mechanism actuated by said tappet-drum-controlling mechanism, for recording the "setting" of the adding-wheels, and manually-operated mechanism for effecting the "setting" of said adding-wheels, said mechanism involving means whereby the type-writer carriage and tappet-drum are returned to predetermined positions.

15. The combination of a tappet-drum having a plurality of spirally-spaced and circumferentially-differentiated tappets, key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, means controlled by the keys and said tappet-drum, for determining the "setting" of the adding-wheels, type-writing mechanism actuated by the tappet-drum-controlling keys, for recording the "setting" of the adding-wheels, manually-operated mechanism for effecting the "setting" of said wheels, and means whereby said manually-operated mechanism automatically returns the type-writer carriage and tappet-drum to predetermined positions, which predetermined positions of said carriage and drum are relatively variable.

16. The combination of a tappet-drum, having a plurality of spirally-spaced and circumferentially-differentiated tappets, key-controlled step-by-step spring-power tappet-drum-operating mechanism, a series of adding-wheels, means controlled by the keys and said tappet-drum, for determining the "setting" of the adding-wheels, manually-operated mechanism for effecting the "setting" of said wheels, and means whereby said manually-operated mechanism automatically returns the type-writer carriage and tappet-drum to any of several predetermined positions, for divisions of columns and to any column of any division, consisting of a differential coupling between the crank of the manual mechanism and the gear-train of the tappet-drum, and consisting further of differential keys on the said crank.

17. The combination with the crank of the manual apparatus, having a constant predetermined range of movement, of the tappet-drum gear-train having different ranges of movement, and the stop-carrying plate constituting a part of the coupling between said crank and said gear-train, and adjustably connected to the latter.

18. The combination of a type-writer-carriage-operating mechanism, spacing-bars of said mechanism controlling the same, the tappet-drum geared with said operating mechanism, and having a plurality of spirally-spaced tappets, a series of adding-wheels, a series of adding-keys, means controlled by the adding-keys and said tappet-drum, for determining the "setting" of the adding-wheels, and manually-operated mechanism for effecting the "setting" of the adding-wheels.

19. The combination of the type-writer-carriage-operating mechanism, spacing-bar controlling the same, type-writer keys, tappet-drum geared with said carriage-operating mechanism and having a plurality of spirally-spaced tappets, a series of adding-wheels, adding-keys, means controlled by said adding-keys and said tappet-drum, for determining the "setting" of the adding-wheels, and manually-operated mechanism for effecting the setting of said wheels, said adding-keys adapted to operate the type-writer keys, and also to operate the adding mechanism independently of said type-writer keys, at the will of the operator.

20. The combination with a rotary tappet-drum having spirally-arranged tappets, key-controlled step-by-step impelling means for said tappet-drum, a series of adding-wheels, a series of racked bars geared with said adding-wheels, for setting them, a series of units-pins on each such bar, controlling the "setting" of the respective adding-wheels, means controlled by the keys for "setting" the respective units-pins of the respective series, means whereby said bars are placed in position for the "setting" of the units-pins under the action of said tappet-drum, and means for operating said racked bars to rotate said adding-wheels.

21. The combination of the rotary tappet-drum, having spirally-spaced tappets, key-controlled step-by-step impelling means for operating the said tappet-drum, a series of adding-wheels, a series of rack-bars geared with said adding-wheels, a series of units-pins on each rack-bar, for controlling the "setting" of the adding-wheels, means controlled by the keys for "setting" the units-pins of the several bars, means whereby said bars are placed in position for the "setting" of the units-pins under the action of said tappet-drum, means for action on the set units-pins to move said bars and operate said adding-wheels, and means for restoring the set units-pins to normal positions.

22. The combination with a rotary tappet-drum having spirally-arranged tappets, key-controlled step-by-step impelling means for operating said tappet-drum, a series of adding-wheels, a series of toothed rack-bars geared with said adding-wheels, respectively, for operating them, said bars being controlled by said tappets, a series of units-pins on each rack-bar, for differentially connecting with the bar-operating device and, respectively, controlled by the keys, and manually-actuated means for controlling said bars.

23. The combination with a type-writing machine comprising the usual key-controlled step-by-step power-operated carriage and complementary adjuncts, of a rotary tappet-drum geared with the carriage-actuating mechanism, a series of adding-wheels, a series of toothed racks geared with the said adding-wheels, respectively, for operating them, said racks being controlled by the tappets, respectively, a series of units-pins on each rack-bar, adding-key mechanism for differentially setting said pins, manually-operated rack-actuating mechanism operating on the set units-pins, and means for controlling the type-writer-carriage-operating mechanism through the adding-keys and the type-writer spacing-bar, independently of the type-writer keys.

24. The combination with a rotary tappet-drum, a series of adding-wheels, adding-wheel-actuating and units-pin-carrying bars, key-actuated units-pin-setting mechanism, bar-lifting tappet-actuated levers, bar-retaining latch-hooks, means for simultaneously lifting up one bar preparatory to setting its pin and releasing a bar

having its pin set, and means for actuating the adding-wheel-actuating bars.

25. The combination of the rotary tappet-drum, a series of adding-wheels, adding-wheel-actuating and units-pin-carrying bars, key-actuated units-pin-setting mechanism, bar-lifting tappet-actuated levers, bar-retaining latch-hooks, means for simultaneously hooking up a bar, preparatory to setting its pin and releasing the bar having its pin set, and manually-operated bar-actuating mechanism.

26. The combination with a tappet-drum and a units-pin-carrying and adding-wheel-operating bars, of bar lifting and tripping levers, a support for said levers mounted to move away from said tappet-drum, to permit unobstructed return movements of said tappet-drum, and means for thus moving said levers and their support and returning them to normal positions.

27. The combination with a tappet-drum and units-pin-carrying and adding-wheel-operating bars, of bar lifting and tripping levers, a support for said levers mounted to move away from said tappet-drum, to permit unobstructed reverse movement of the said drum, and means for thus moving said levers and their support and returning them to normal position, consisting of a pivoted latch, a spring connecting said latch to said movable lever-support, and manually-operated means operating on the said latch.

28. The combination with a tappet-drum and a series of adding-wheels, of units-pin-carrying adding-wheel-operating bars, latch-hooks coöperating with said bars, and the bar-lifting levers having tripping-arms and tappet-engaged arms.

29. The combination with a tappet-drum and adding-wheels, of units-pin-carrying tappet-operated adding-wheel-operating bars, latch-hooks coöperating with said bars, bar-lifting latch-hook-tripping levers having tappet-engaged arms, a pivoted support for said lever, a spring retracting said support, and means for returning said support to normal position.

30. The combination with a series of adding-wheels and a series of adding-wheel-operating bars each having a plurality of units-pins, of means for setting said pins, and means for restoring said pins to normal positions, after they have performed their work and before said bars have been returned to normal positions.

31. The combination with a series of adding-wheels, of rack-bars operating said adding-wheels, a plurality of units-pins carried by each rack-bar, means for setting said units-pins, and an automatically-actuated units-pin-restoring bar operating to restore to normal positions, such of said units-pins as have been set and have performed their work.

32. The combination with adding-wheels and adding-wheel-operating rack-bars, of a plurality of units-pins carried by each rack-bar, means for setting said units-pins, a pivoted units-pin-restoring bar, and an operating-carriage having a pawl operating on said restoring-bar, and having a part operating on said rack-bars.

33. The combination with adding-wheels, of rack-bars for operating said adding-wheels, unit-pins carried by each rack-bar, means for setting said units-pins, a reciprocating operating carriage having a push-bar operating on the set units-pins, under the forward movement of the carriage, and a pin-restoring bar operated under the return movement of the carriage.

34. The combination with adding-wheels and adding-wheel-operating bars and units-pins carried by each bar, of means for setting said pins, an operating-carriage having a push-bar operating on the set units-pins, a pivoted units-pin-restoring bar, a pawl on said carriage for operating said restoring-bar, and means for preventing the lifting of said bars, when said units-pins are restored to normal position.

35. The combination with adding-wheels and adding-wheel-operating rack-bars provided with units-pins, of means for setting said pins, an operating-carriage operating on the set units-pins, an eccentric units-pin-restoring bar, a pawl on said carriage for operating said restoring-bar, and a pivoted bar located over said rack-bars and movable into a position to prevent lifting of the bars, when the set units-pins are returned to normal positions.

36. The combination with adding-wheels and adding-wheel-operated bars and units-pins carried by each bar, of units-pin-setting mechanism, and means for restoring to normal positions, erroneously-set pins, before they have been brought into action.

37. The combination with adding-wheels and adding-wheel-operating bars and units-pins carried by each bar, of pin-setting mechanism, and keys for restoring to normal positions erroneously-set pins.

38. The combination with adding-wheel and adding-wheel-actuating rack-bars and units-pins carried by each rack-bar of a transverse series of units-bars overlying said units-pins, reciprocating bars and bell-cranks suspending said units-bars, key-actuated rock-shafts, tappets and pawls for actuating said reciprocating bars, means for lifting up said rack-bars, to present their units-pins to the action of said units-bars.

39. In a combined type-writer and calculating-machine, the combination with the numeral-key levers of the type-writer, of a series of adding-keys constructed each in two sections and so connected and arranged that when one of the said key-sections is struck, the calculating mechanism only will be actuated, and when the other key-section is struck both the calculating mechanism and the printing mechanism of the type-writer will be actuated.

40. The combination with a type-writer and calculating mechanism, of a series of slotted tubular key-stems, supplemental key-stems in the said tubular stems, with the numeral-key levers of the printing mechanism arranged in the slots of said key-stems and subject to the said supplemental key-stems.

41. In a combined type-writing and calculating machine, a series of two-part or divided adding-keys, the one section of which operates only on the calculating mechanism and the other section of which operates both on the calculating mechanism and on the numeral-printing mechanism of the type-writer.

42. In a combined type-writing and calculating machine, the combination with the shouldered key-stems, of the calculating mechanism, and the type-writer spacing-bar, of the bar pivoted to the members of the spacing-bar and arranged for engagement with said key-stem shoulders, or for disengagement therewith, at the will of the operator.

43. In a combined type-writer and computing-machine, the combination with printing devices, a register, preliminary-representation devices, means for setting the latter, means for repeatedly bringing said preliminary-representation devices into action on said register, of means for causing the numbers set up on the preliminary-representation devices to be printed only once during repeated actions on the register for purposes of multiplication, substantially as described.

44. In a combined type-writer and computing-machine, the combination with key-operated printing devices, a register, preliminary-representation devices, means for setting the latter, of means for repeatedly bringing said preliminary-representation devices into action on said register without actuating the printing devices, for effecting multiplication, substantially as described.

45. In a combined type-writer and computing-machine, the combination with a register, of preliminary-representation devices, means for setting the same, means for repeatedly bringing said preliminary-representation devices into action on said register without actuating the printing devices of the type-writer, for effecting multiplication, and a device adapted to be variably set to render said preliminary-representation devices inoperative after a predetermined number of register-actuating movements, substantially as described.

46. The combination with type-writing mechanism, a series of adding-wheels, actuating-bars therefor, units-pins carried by each bar, means for setting said pins, means coöperating with the set pins to actuate said bar, of a units-pin-restoring bar, and manually-operated means for setting the adding mechanism in position allowing repeated adding of any given number represented by the set units-pins, a variable but predetermined number of times without operating the keys or units-pin-setting mechanism, or the printing mechanism.

47. The combination with a series of adding-wheels, of actuating-bars therefor, means for actuating said bars, units-pins carried by each bar, means for setting said units-pins, the units-pin-restoring bar, the pawl carried by the bar-actuating means and operating on said restoring-bar, and means for displacing said restoring-bar, with respect to said pawl, and allowing uniform repeated operations of the adding-wheels, for multiplication.

48. The combination with adding-wheels, actuating-bars therefor, means for actuating said bars, units-pins carried by said bars, means for setting said pins, a units-pin-restoring bar, and a pawl carried by the bar-actuating means, for operating said restoring-bar, of means for displacing said restoring-bar relative to said pawl and allowing uniform repeated operations of the adding-wheels, for multiplication, and consisting of the manually-operated cam-disk and pawl for disconnecting said restoring-bar, relatively to said pawl, the ratchet-wheel normally inoperative by said lifting-pawl, an indicator-disk on the ratchet-wheel shaft, a spring for resetting said restoring-bar, and a stop-pawl mechanism for controlling the position of the ratchet-wheel and the indicator-disk.

49. The combination of the type-writer-carriage-operating mechanism, spacing-bar controlling the same, type-writer keys, a

tappet-drum geared with said carriage-operating mechanism and having a plurality of spirally-placed tappets, a series of adding-wheels, adding-keys, means controlled by said adding-keys and said tappet-drum, for determining the setting of the adding-wheels, manually-operated mechanism for effecting the setting of said wheel, said adding-keys adapted to operate the type-writer keys, and also operate the adding mechanism independently of said type-writer keys, at the will of the operator, and clutch mechanism of the type-writer-carriage mechanism and the tappet-drum driver, for uniform register of reclutching.

50. The combination of a type-writer carriage, key-controlled spring-power mechanism, connections between the former and the latter for transmitting uniform movement, a toothed gear attached to the spring-power mechanism, a decimal-order selector, and means for connecting and disconnecting said decimal-order selector to and from said gear and for positively locking said selector against movements when disconnected.

51. The combination of a type-writer carriage, spring-power mechanism actuating the same in one direction, a tape-drum, two tapes coiled reversely around said drum and attached to the type-writer carriage, a series of adding-wheels, an operating-lever for effecting the setting of the adding-wheels, and intermediate connections between said tape-drum and said operating-lever for rewinding the spring-power mechanism and returning the carriage to any desired position.

52. The combination with a decimal-order selector, of a register, decimal-bars, keys controlling the action of said decimal-bars, spring-power mechanism controlled by the keys, means for holding one bar at a time in position so that the action of the key mechanism determines the "setting" of its corresponding adding-wheel, and means for restoring such decimal-bar to normal position simultaneously with the positioning of a bar of the next lower order, under the control of the keys, substantially as described.

53. The combination with printing mechanism and a paper-supporting carriage which has a step-by-step movement for letter-spacing, of type-lever-operating keys, a series of decimal-bars, means for bringing the decimal-bars successively under control of the keys, whereby numbers may be set up in the digital order on said bars.

54. The combination with printing mechanism and a paper-supporting carriage which has a step-by-step movement for letter-spacing, of type and type-levers operated by said keys for effecting the printing, an operating-lever having a predetermined range of movement, connections between said carriage and said lever, for automatically returning the carriage, a movable stop-carrier, and denominational selecting-keys, for arresting the movement of said carriage and carrier, at different distances from a predetermined point, substantially as described.

55. The combination with the printing mechanism and a paper-carriage which has a step-by-step movement for letter-spacing, of keys controlling the same, a register, a series of decimal-order-register-actuating bars having a movement in one direction for bringing them under control of the keys, and having a movement in another direction for actuating said register, substantially as described.

56. The combination with printing mechanism and a paper-carriage which has a step-by-step movement for letter-spacing, of a register, a series of decimal-order-register-actuating bars, and means for restoring to normal positions said decimal-bars, after performing their work of actuating the register, substantially as described.

57. The combination with printing mechanism and a paper-supporting carriage which moves uniformly for letter-spacing, of a register, a preliminary-representation device, key-controlled means for "setting" said preliminary-representation device, a decimal-order selector, means for subsequently bringing the "set" preliminary-representation device into action on said register, and adjustable means capable of being set in advance, of the beginning of the work, in different positions, for rendering the decimal-order selector inoperative on its coacting elements, at certain predetermined but variable points, whereby a space is secured on the paper between the columns of figures, on which space punctuation-marks may be printed, if desired, without disarranging the connections which actuate the adding-wheels.

58. In an adding-machine, the combination of a series of numeral-keys, a series of parallel rock-shafts one connected to each numeral-key, a series of parallel reciprocatory bars arranged transversely across said series of rock-shafts, one of said bars being connected to each of said shafts, and adding mechanism controlled by said reciprocatory bars.

59. In a writing and adding machine, the combination with a series of numeral-keys and the printing means actuated thereby, of a series of parallel rock-shafts one connected to each numeral-key; a series of parallel reciprocatory bars arranged transversely across said series of rock-shafts, one of said bars being connected to each of said shafts; and adding mechanism controlled by said reciprocatory bars.

60. In an adding-machine, the combination of a series of numeral-keys arranged transversely across the machine; a series of rock-shafts, one connected to each numeral-key and each extending in a front-to-back direction; a series of transverse reciprocating members, one connected to each rock-shaft; and adding mechanism controlled by said transverse reciprocating members.

61. In a writing and adding machine, the combination with the series of numeral-keys arranged transversely across the machine and the printing means actuated thereby, of a series of rock-shafts one connected to each numeral-key and each extending in a front-to-back direction, a series of reciprocatory members each of which is connected to one of said rock-shafts and extends in a direction transversely of the machine; and adding mechanism controlled by said reciprocatory members.

62. In an adding-machine, the combination of a series of numeral-keys arranged in a transverse direction across the machine, a series of rock-shafts one connected to each of said keys, said rock-shafts extending in a direction from front to rear of the machine, a series of slides one connected to each of said rock-shafts, said slides extending across said series of rock-shafts, an adding mechanism controlled by said slides and means for operating said adding mechanism.

63. In an adding-machine, the combination of a series of numeral-keys arranged transversely across the machine, a series of rock-shafts one connected to each numeral-key and each extending in a front-to-rear direction; a series of transverse reciprocating members, one connected to each rock-shaft; a transversely-arranged series of differentially-movable elements controlled by said reciprocating members; and means whereby a coöperative relation is established between said series of reciprocating members and one after another of said differentially-movable elements.

64. In a writing and adding machine, the combination with the series of numeral-keys arranged transversely across the machine, and the printing means actuated by said keys, of a series of rock-shafts, one connected to each numeral-key and each extending in a front-to-back direction; a series of transverse reciprocating members, one connected to each rock-shaft; a transversely-arranged series of differentially-movable elements; and means whereby a coöperative relation is established between said series of transverse reciprocating members and one after another of said differentially-movable elements as the keys are operated to print.

65. In a writing and adding machine, the combination with the series of numeral-keys arranged transversely across the machine and the printing means actuated by said keys, of a series of rock-shafts one connected to each numeral-key and each extending in a front-to-back direction; a series of transverse reciprocating members one connected to each rock-shaft; a transversely-arranged series of registering elements controlled by said reciprocating members to add numbers; and means for operating said registering elements.

66. In a combined type-writer and adding-machine, the combination with the series of keys arranged transversely across the machine, and the printing means actuated thereby, of an adding mechanism arranged across the front of the machine and including a series of register-wheels, a series of transverse reciprocating slides, and links connecting the several rock-shafts with the numeral-keys.

67. The combination with a type-writer, of a register, a preliminary-representation device, key-controlled means for setting said preliminary-representation device, involving a movable denominational-order selector having a plurality of tappets arranged to be brought into action, in succession, to select the denominations and means for subsequently bringing the set preliminary-representation device into action on said register, substantially as described.

68. The combination of a register having a plurality of numeral-wheels, a movable denominational-order selector having a plurality of tappets arranged to be brought into action, in succession, to select the denominations, key-controlled spring-power mechanism for operating said denominational selector, under a step-by-step action, decimal-order bars provided with units-pins adapted to be set under the coöperation of the keys and said denominational selector, and numeral-printing mechanism actuated by said key-controlled spring-power mechanism, substantially as described.

69. The combination with a movable denominational-order selector having a plurality of tappets arranged to be brought into action, in succession, for selecting the denominations, key-controlled step-by-step spring-power mechanism for operating said selector, a series of adding-wheels, means controlled by the keys and said de-

denominational selector for determining the setting of the adding-wheels, type-writing mechanism actuated by said selector-controlled mechanism, for printing the amount to be set on the adding-wheels, manually-operated mechanism for effecting the setting of said adding-wheels, and means whereby said manually-operated mechanism automatically returns the type-writer carriage and denominational selector to predetermined positions, substantially as described.

70. In a computing-machine, the combination with key-actuated elements, of spring-held digit-selecting elements normally free or disconnected from said key-actuated elements, and intermediate connections allowing said key-actuated elements to operate said digit-selecting elements, but automatically releasing the latter from the former, and permitting the digit-selecting elements to return to normal positions in advance of the key-actuated elements, substantially as described.

71. In a computing-machine, the combination with key-actuated rock-shafts, of spring-held digit-selecting bars normally free from said shafts, and actuating connections, between said shafts and bars, allowing the shafts to actuate the bars for the selecting action, but automatically releasing the actuated bar from its actuating-shaft and permitting the bar to return to normal position in advance of the shaft, substantially as described.

72. In a computing-machine, the combination with the key-actuated rock-shafts b^{12} and the spring-held digit-selecting bars b^{11}, with their tie-bars b^{13} and coupling bell-cranks b^{14}, of the tappets b^{21} on the shafts b^{12}, and the spring-pressed pawls b^{19} on said tie-bars b^{13}, all arranged for coöperation, substantially as described.

73. In a computing-machine, the combination with the key-actuated racks b^5, of the spring-held rock-shafts b^{12} having the gears b^{13} engaging said racks b^5, the spring-held digit-selecting bars b^{11}, with their tie-bars b^{13} and coupling bell-cranks b^{14}, the tappets b^{21} on said shafts b^{12}, and the spring-pressed pawls b^{19} on said tie-bars b^{13}, all arranged for coöperation, substantially as described.

74. In a computing-machine, the combination with the series of register-wheels having each a tens-carrier tooth a^{15}, of the composite sets of tens-carrier wheels a^{16}, a^{18} and a^{17}, rigid with each other but loose on their common support a^{14}, a manually-operated reciprocating carriage, and the shaft a^{20} with the spirally-arranged gear-segments a^{21}, receiving motion from said carriage, and operating on the "set" sets of said composite or tens-carrier wheels, to transfer the tens, on the return motion of the carriage, substantially as described.

75. The combination of the adding-wheels a and parts carried thereby, shaft a', toothed gear-wheels p^2, toothed rack-bar p, shaft p^4 carrying arms p^3 and the carrying devices a^{16}, a^{18} and a^{17} on the fixed rod a^{14}.

76. The combination of one series of digit-keys operative on or common to all the denominations, escapement mechanism controlled by the keys, a rotary denominational-order selector, a register, printing devices, preliminary-representation devices, means for setting up a number on said preliminary-representation devices, means for accumulating said number on the register without actuating the printing devices, and means for repeatedly bringing said preliminary-representation devices into action on the register, for purposes of multiplication, substantially as described.

77. The combination with one series of digit-keys operative on or common to all of the denominations, numeral-printing devices having key connections arranged to print the numerals successively and in the order in which the keys are struck, key-controlled denominational-order selector, a register, means for accumulating on the register the number printed by the printing devices, and means for repeatedly accumulating said number on the register, without operating the keys more than once, for the purpose of multiplication.

78. The combination of one series of digit-keys operative on or common to all the denominations, a register, preliminary-representation devices, means for setting up a number on said preliminary-representation devices, means for repeatedly accumulating such number on the register, and mechanism adapted to be variably set in advance, for determining the number of times the preliminary-representation devices shall be operative on the register, for purposes of multiplication, substantially as described.

79. In a writing and computing machine, the combination with printing devices capable of printing any desired words or numbers, a register, preliminary-representation devices, means for setting the latter, of means for repeatedly bringing said preliminary-representation devices into action on said register without actuating the printing devices, for effecting multiplication, substantially as described.

80. In a writing and computing machine, the combination with printing devices, a register, preliminary-representation devices, means for setting the latter, of means for repeatedly bringing said preliminary-representation devices into action on said register without actuating any of the printing devices during such repetitions, for effecting multiplication, substantially as described.

81. In a writing and computing machine adapted to write any desired words or numbers, the combination with a paper-supporting carriage, a denominational-order selector supported independently of the paper-supporting carriage and having synchronous movements all the time with the longitudinal movements of said carriage, of means for varying the operative selecting position of the selector relatively to the type-writer carriage.

82. In a writing and computing machine adapted to write any desired words or numbers, the combination with a paper-supporting carriage, key-controlled carriage-driving mechanism, a denominational-order selector supported independently of the paper-supporting carriage and having synchronous movements all the time with the longitudinal movements of said carriage, of means for connecting and disconnecting the denominational-order selector from said carriage-driving mechanism at will, thereby varying the operative selecting position of the selector relatively to the carriage.

83. In a writing and computing machine adapted to write any desired words or numbers, the combination with a paper-supporting carriage, a denominational-order selector supported independently of the paper-supporting carriage, connections between said carriage and said denominational selector of such character that the movements of said two parts must necessarily be synchronous with each other all the time, a register, preliminary-representation devices, and operating mechanism for bringing said preliminary-representation devices into action on the register.

84. The combination with a register, a movable denominational-order selector having tappets arranged to be brought into action in succession, preliminary-representation devices, means for setting the latter, devices whereby the register-wheels are automatically thrown into engagement with said preliminary-representation devices during movements of the latter in one direction and automatically disengaged therefrom during reverse movements, and means for positively moving the preliminary-representation devices in the direction of both their actuating and return movements, substantially as described.

85. The combination with a register, a movable denominational-order selector having a plurality of tappets arranged to be brought into action in succession, decimal-order bars having a differential action on the register, means for positively moving the decimal-order bars in both directions of their longitudinal motion, of devices whereby the register-wheels are automatically subjected to the action of the decimal-bars during movements of the latter in one direction and automatically released from action of said bars during reverse movements, substantially as described.

86. The combination with a movable denominational-order selector having a plurality of tappets arranged to be brought into action in succession, rack-bars having variable longitudinal travel, devices for establishing operative connections between said selector and said racks, manually-operated means for positively moving the racks in both directions of their longitudinal motion, a register having wheels engageable with the racks, and devices whereby the register-wheels are automatically actuated by the racks during movements of the latter in one direction and automatically released from action of said racks during their return movement, substantially as described.

87. The combination with a rotary tappet-drum having spirally-arranged tappets, racks having variable travel, and subject to the action of the keys and said tappet-drum, manually-operated means for positively moving the racks in both directions of their longitudinal motion, a register having wheels engageable with the racks, of devices whereby the register-wheels are automatically made subject to the action of the racks during movements of the latter in one direction but not subject thereto during reverse movements of said racks, substantially as described.

88. The combination with a movable denominational-order selector having a plurality of tappets arranged to be brought into action in succession, racks carrying adjustable units-pins subject to be set by the action of the keys and said denominational-order selector, manually-operated means for positively moving the racks in both directions of their longitudinal motion, of a register having counting-wheels a to which are pivoted the spring-held pawls a^6, and carrying the ratchet-wheels a^5 and gear-wheels a^3 in mesh with the racks c', substantially as and for the purposes set forth.

89. A computing-machine having a movable denominational selector provided with selecting-tappets, which selector is adjustable

to render its tappets operative or inoperative in respect to its selecting action.

90. A computing-machine having a rotary denominational selector provided with selecting-tappets, which selector is axially adjustable to render its tappets operative or inoperative in respect to its selecting action.

91. In a writing and computing machine, the combination of key-actuated printing devices, a rotary denominational selector, selecting by its rotary action adding mechanism controlled thereby for adding the numbers printed by the printing devices, and means for printing the total of the several numbers without actuating the register-wheels of the adding mechanism.

92. The combination with a type-writer carriage, of a computing-machine having preliminary-representation devices, a manually-operated device for transferring the preliminary representation to the register-wheels of the computer, and intermediate devices leaving said carriage and manually-operated device normally free of each other, for the purpose of actuating the computing mechanism without actuating said carriage as in multiplication, but adapted to connect said carriage and manual device at will for returning the carriage to initial position by the manipulation of the manual device.

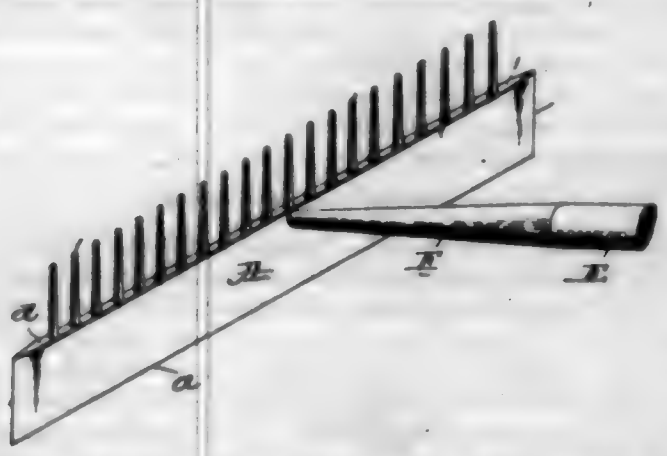
93. In a writing and computing machine, the combination of one series of digit-keys operative on or common to all the denominations, key-actuated printing devices, a register, a key-controlled denominational-order selector, preliminary-representation devices controlled by the keys and said selector, mechanism for bringing the preliminary-representation devices into action on the register, and means for restoring to normal positions erroneously-set preliminary-representation devices before being brought into action on the register.

94. In a combined writing and computing machine, the combination of one series of digit-keys operative on or common to all the denominations, printing devices adapted to print any desired words or numbers, a register, a key-controlled denominational-order selector, preliminary-representation devices controlled by the keys and said selector, mechanism for bringing the preliminary-representation devices into action on the register and means for restoring to normal positions erroneously-set preliminary-representation devices before being brought into action on the register.

95. The combination with adding-wheels and adding-wheel-actuating bars and units-pins carried by each bar: of units-pin-setting mechanism, and key-operated means for restoring to normal positions erroneously-set pins.

96. The combination with adding-wheels and adding-wheel-actuating bars and units-pins carried by each bar, of units-pin-setting mechanism, key-operated means for restoring to normal positions erroneously-set pins, and means movable into position to prevent lifting of said bars when the set pins are returned to normal positions.

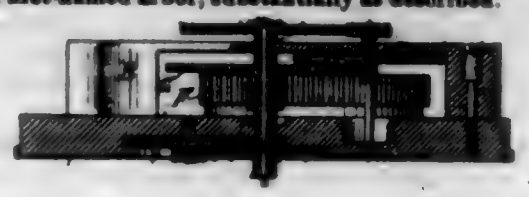
816,820. COMBINED HOE AND RAKE. WALTER L. HARRIS, Salem, Mass. Filed Dec. 27, 1904. Serial No. 238,576.



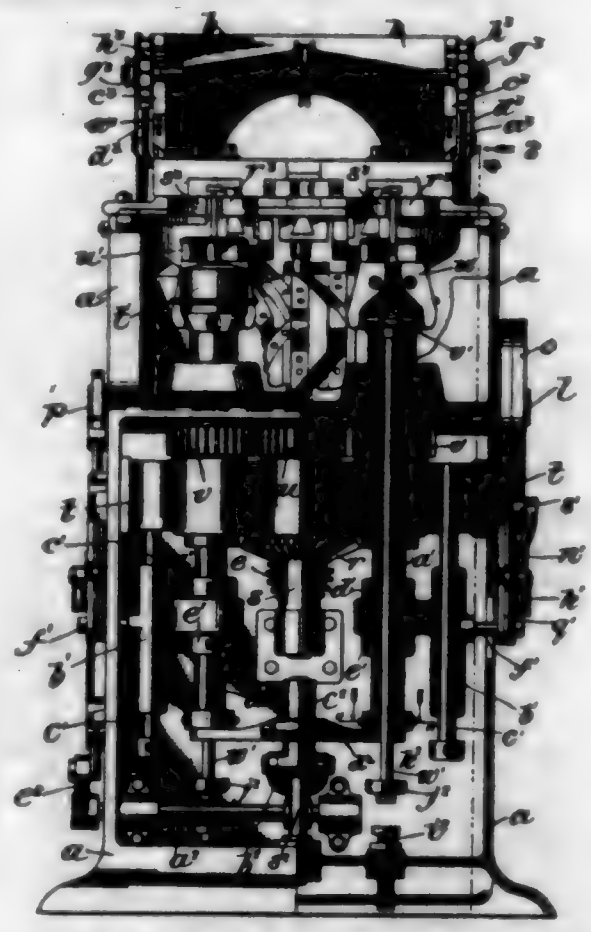
Claim.—A combined rake and hoe consisting of a relatively long and narrow hoe-blade sharpened throughout its long front edge and at both its narrow ends, a series of rake-teeth projecting from the middle portion but not the ends of the back edge of said blade whereby either end as well as the front edge of the hoe-blade may be used without interfering with the rake-teeth, and a handle therefor.

816,821. REMONTOIR WINDING-WATCH. FRANTISEK HARTMANN, Prague, Austria-Hungary, assignor of one-half to Josef Olink, Prague, Austria-Hungary. Filed Mar. 23, 1905. Serial No. 251,568.

Claim.—In a watch-movement, the combination, with a suitable frame, of the center wheel journaled therein, the minute-hand-carrying arbor penetrating axially, and rotatable in, the center wheel, a pinion formed as one with the center wheel, a spring-box journaled in said frame and meshing with said pinion, another arbor, another gear fixed on the first-named arbor, other pinions on the last-named arbor meshing the one with said last-named gear and the other with the center wheel, an hour-hand-carrying gear rotatable on said first-named arbor, and means for rotating said hour-hand-carrying gear from said first-named arbor, substantially as described.



816,822. BOLT-THREADING MACHINE. JAMES H. HASKINS, San Diego, Cal., assignor of one-half to International Harvester Company, Chicago, Ill., a Corporation of New Jersey. Filed Aug. 3, 1903. Serial No. 167,991.



Claim.—1. In a blank-threading machine, the combination of a rotating and reciprocating threading-tool having a tubular spindle and an interior rod w' for operating the cutting-jaws, cutting-dies v', sliding pins v' mounted transversely in the head of the tool and acting to close the dies, the inner ends of the pins and the upper end of the rod w' being beveled so that the endwise movement of the rod causes the pins to close the dies.

2. In a blank-threading machine, the combination of a rotating and reciprocating tool having a tubular spindle e' and an interior rod w' for operating the cutting-dies, a cross-head d^3 through which the rod slides, means for reciprocating the tool, means for operating the cross-head to withdraw the rod when the tool reaches its uppermost position, and a stop f^3 against which the rod strikes when the tool is lowered and by which the rod is thrust upward again into the spindle.

3. In a blank-threading machine, the combination of a rotating and reciprocating tool having a tubular spindle e' and an interior rod w' for operating the cutting-dies, said rod having a collar j^3, a cross-head d^3 through which the end of the rod below the spindle slides, a shaft a^3 having a crank b^3 for operating the cross-head, a crank-arm c^3 on the shaft, a cam p for operating the shaft a^3, a rod f^3 connected to the arm c^3 and operated by the cam, and a spring h^3 for counterbalancing the weight of the cross-head and its operating devices.

4. In a blank-threading machine, the combination of a rotating and reciprocating tool having a tubular spindle e' and an interior rod w' for operating the cutting-dies, said rod having a collar j^3 at its lower end, a cross-head d^3 through which the end of the rod below

the spindle slides, a sliding sleeve c^4 connected to the cross-head and guided on a fixed pin c^5, a shaft c^3 having a yoke-shaped crank b^3 on one end of the shaft and connected to the sleeve, a crank-arm c^6 on the other end of the shaft, a cam p on the shaft l, a rod f^6 operated by the cam and connected to the arm c^6, a housing inclosing the rod, and a spring b^2 reacting between the rod and the housing to counterbalance the cross-head and its operating devices.

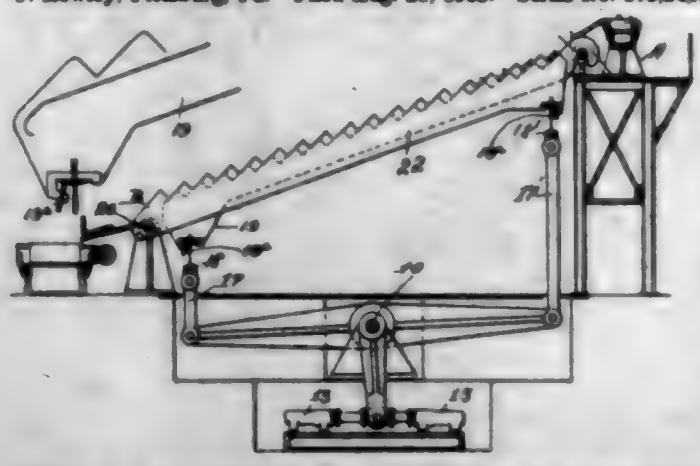
5. In a blank-threading machine, the combination of the tubular spindle of the tool, the cutting-dies pivoted in the head of the tool, transverse pins v' working in said head serving to close the dies, the rod w' for operating the pins, and a brake between the spindle and the rod.

6. In a blank-threading machine, the combination of the tubular spindle of the tool, the cutting-dies pivoted in the head of the tool, transverse pins having beveled inner ends and their outer ends bearing against the tail ends of the dies, a reciprocating rod w' working in the spindle for operating the pins, and an elastic friction-brake between the spindle and rod.

7. In a blank-threading machine, the combination of the tubular spindle of the tool, the cutting-dies pivoted in the head of the tool, transverse pins having beveled inner ends and their outer ends bearing against the tail ends of the dies, a reciprocating rod w' having a beveled upper end and working in the spindle so as to thrust the pins outward to close the dies, a collar l^6 on the lower end of the spindle, and a spring-pressed friction-block w^3 passing through the collar and spindle and bearing on the rod.

8. In a blank-threading machine, the combination of the tubular spindle of the tool, the cutting-dies pivoted in the head of the tool, transverse pins having beveled inner ends and their outer ends bearing against the tail ends of the dies, a reciprocating rod w' having a beveled upper end and working in the spindle so as to thrust the pins outward to close the dies, a collar l^6 on the lower end of the spindle, a centering-collar l^5 between the rod and spindle, a friction-block w^3 bearing against the rod, and an adjustable spring c^3 to vary the braking power of the block.

816,323. **HOTBED.** JOHN A. HELLSTROM, Pittsburg, Pa., assignor of one-third to William S. Haugh, Allegheny, Pa., and one-third to John T. Rowley, Pittsburg, Pa. Filed Aug. 21, 1903. Serial No. 170,241.



Claim.—1. In a bed for cooling metal rods or bars, the combination of two sets of relatively bodily displaceable bars located side by side and having serrations which are placed staggered on one set of bars relatively to the serrations on the other set of bars for engaging and transferring the rods from one set of bars to the other set thereof, and means for relatively bodily displacing said bars.

2. In a bed for cooling metal rods or bars, the combination of two sets of relatively bodily displaceable bars operating simultaneously side by side up and down in opposite directions having serrations placed staggered on one set of bars relatively to the serrations on the other set of bars for engaging and holding the rods, one set of bars automatically effecting transfer to the other set thereof by their relative movement, and means for relatively bodily displacing said sets of bars.

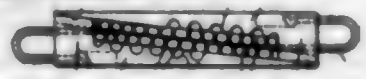
3. In a bed for cooling metal rods or bars, the combination of two sets of independently-pivoted oscillating bars operating simultaneously side by side up and down in opposite directions, each set of bars having serrations, the serrations on one set of bars being set staggered relatively to the serrations on the other set of bars for engaging and transferring the rods from one set of bars to the other set thereof by the relative movement of the bars, and means for oscillating said sets of bars simultaneously in opposite directions.

4. In a bed for cooling metal rods or bars, the combination of two sets of bars located side by side, one set being pivoted at one end thereof and the other set being pivoted at the opposite end thereof, whereby the bars are adaptable for relative oscillation, said sets of bars having serrations, the serrations of one set of bars being set staggered relatively to the serrations on the other set of bars for engaging and transferring the rods from one set of bars to the other set thereof by the relative movement of the bars, and means for oscillating the sets of bars simultaneously in opposite directions.

5. In a bed for cooling metal rods or bars, the combination of two sets of inclined bars, each set being adapted for bodily displacement up and down, staggered sets of stops on the two sets of bars for holding and transferring the rods, step by step, from one set of bars to the other set from the upper part of the bed to the lower part thereof by the relative displacement of said sets of bars, and means for moving each set of bars up and down.

6. In a bed for cooling metal rods or bars, the combination of two sets of bars relatively pivoted for relative bodily displacement and located side by side and having serrations, the serrations on one set of bars being placed staggered relatively to the serrations on the other set of bars for engaging and transferring the rods from one set of bars to the other set thereof, and means for relatively bodily displacing said bars.

816,324. **PRINTER'S QUOIN.** HENRY A. HEUPEL, Buffalo, N. Y., assignor of one-half to Joseph A. Dingens, Buffalo, N. Y. Filed Oct. 3, 1905. Serial No. 281,126.



Claim.—1. The combination of a pair of quoins having inclined contact-faces and adapted to be moved lengthwise along said faces for tightening the quoins, and a safety locking device capable of lengthwise movement with reference to the quoins and adapted to be driven between opposing faces thereof after the quoins have been tightened, substantially as set forth.

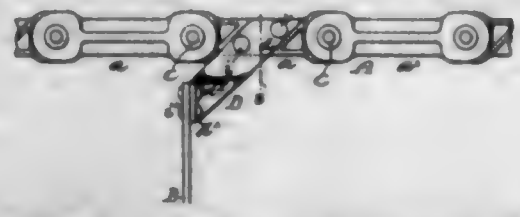
2. The combination of a pair of quoins having inclined contact-faces and means for moving the quoins lengthwise relative to each other along said faces, and a safety locking device attached to the large end of a quoin and adapted to be driven with its free end between opposing faces of the quoins, substantially as set forth.

3. The combination of a quoin and a safety locking device capable of lengthwise movement on the quoin and comprising a binding-arm which is adapted to be driven between opposing faces of a pair of quoins and an attaching-arm by which the device is connected to the quoin while being capable of lengthwise movement thereon, substantially as set forth.

4. The combination of a quoin and a safety locking device capable of lengthwise movement on the quoin and comprising a binding-arm which is arranged adjacent to the inclined face of the quoin and an attaching-arm which is arranged adjacent to the back of the quoin and movably connected therewith, substantially as set forth.

5. The combination of a quoin having on its face side a longitudinal rib and lugs arranged on opposite sides thereof and projecting beyond the same and on its rear side a longitudinal attaching-recess, and a safety locking device capable of lengthwise movement on the quoin and comprising a binding-arm arranged upon said rib between said lugs and an attaching-arm arranged adjacent to the back of the quoin and having an attaching-shoulder which engages in said recess, substantially as set forth.

816,325. **CHAIN-LINK.** FREDERIC V. HEUSEL, Philadelphia, Pa., assignor to The Link Belt Engineering Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 19, 1905. Serial No. 279,183.



Claim.—1. The combination in a conveyer-chain, of a flight or other carrier and two attachments, each attachment bent on a diagonal line to form a body portion and a flange, the body portion being secured to the chain and the flange to the flight or other carrier, substantially as described.

2. The combination of a conveyer-chain, a carrier, two bent attachments each having a body portion and a flange, the body portions being secured to the chain and arranged close together, while the flanges are spread apart and secured to the carrier, substantially as described.

3. The combination of a chain-link, an attachment having a diagonal body portion secured to the link and having a projecting portion to which a flight or other form of carrier can be secured, substantially as described.

4. The combination of a chain-link having a diagonal pocket in each side, a flight or other form of carrier and an attachment secured to the flight and mounted in the diagonal pocket of the chain, substantially as described.

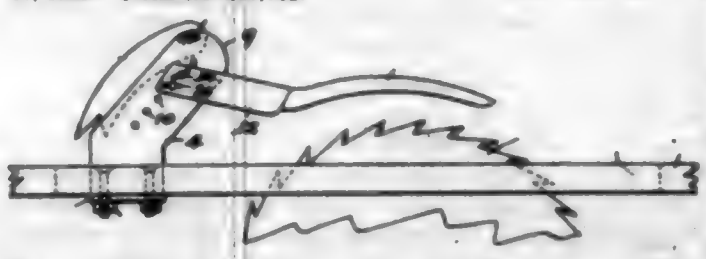
5. The combination of a chain-link having a diagonal pocket in each side, a flight or other carrier, plate attachments each bent to form a body portion, a flange and a connecting-web, the body portion of each attachment being mounted in the pocket of the link and secured to said link, the flange of each attachment being secured to the flight or other carrier, substantially as described.

6. An attachment for a conveyer-chain made of a single piece of flat metal bent to form a body portion, a flange portion and a web connecting the two, substantially as described.

7. An attachment for a conveyer-chain made of a single piece of flat metal bent on diagonal lines to form a body portion to be secured to a chain, and a flange portion to be secured to a flight or other carrier, substantially as described.

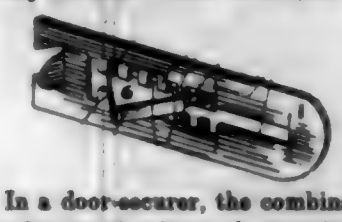
8. An attachment for a conveyer-chain made of a single piece of flat metal beveled at each end in opposite directions and bent to form a body portion, a flange and a connecting-web, substantially as described.

816,326. SAW-GUARD. JACOB G. HILL, Reading, Pa. Filed Nov. 17, 1905. Serial No. 287,763.



Claim.—A saw-guard comprising a spreader having a right-angled lower end, elongated openings in said angled end, bolts passing through said end, a series of perforations in the upper end of said spreader, a hood-piece having its rear end split longitudinally, both portions of said split end being bent to lie parallel with each other, said split ends having perforations adapted to register with one or more of the perforations in the spreader, screws passing through both the spreader and said split end, a curved hood formed on the forward end of said hood-piece adapted to extend over the saw, and a loosely-pivoted pawl attached to the top of said spreader.

816,327. DOOR-SECURER. ELLERY M. HOAGLAND, San Francisco, Cal. Filed July 25, 1905. Serial No. 271,135.



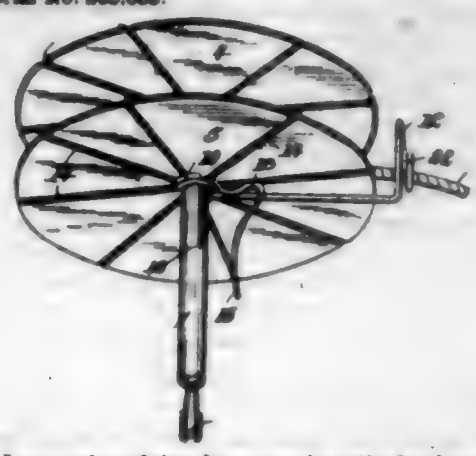
Claim.—1. In a door-securer, the combination of a plate provided with means for securing it to a door-casing or the like, and cut out axially to form a guideway, and having also a series of recesses extending from the side of the guideway in the plane of the plate, and a slide sliding in said guideway and having a flange movable transverse in any one of the recesses, substantially as described.

2. In a door-securer, the combination of a plate provided with means for securing it to a door-casing or the like, cut out axially to form a guideway, and having also a series of recesses at each side of said guideway and a slide in form substantially a right-angled triangle, the hypotenuse having a flange and the two shorter sides also having a flange spaced from the first flange to permit the slide to slide freely in said guideway, the flange on a shorter side passing through one of said recesses to lock the slide against rearward movement, substantially as described.

3. In a door-securer, the combination of a plate cut out along its axis to form a guideway, said cut-out portion being closed at the end, said plate having lips cut out on each side of the rear end of said guideway, and recesses extending from the guideway on each side thereof at the forward portion, and a slide substantially a right-angled triangle in form, comprising a web and double flanges extending therefrom, one on the hypotenuse of the triangle and the other on the two shorter sides, said flanges being spaced from each other to permit the web to slide freely in said guideway, substantially as described.

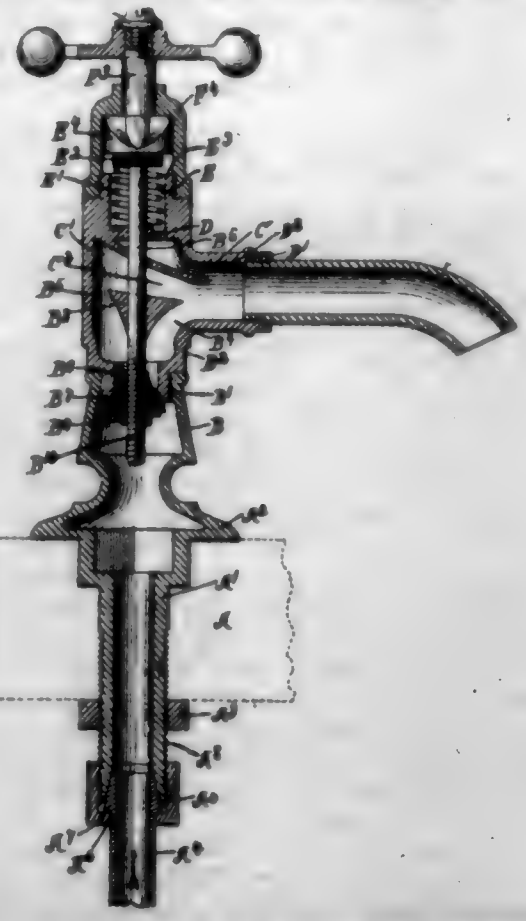
4. In a door-securer, the combination of a plate provided with means for securing it to a casing or the like, and cut out axially to form a guideway, and a slide in said guideway comprising a web passing through the guideway, and extensions from said web at right angles to the plane thereof, the extension on one side of the web extending farther to the rear than that on the other side, whereby when the web has been moved transversely through the guideway the two extensions bind upon the plate and prevent rearward movement of the slide, substantially as described.

816,328. REEL. JAMES D. HOLT, Carnegie, Pa. Filed June 13, 1905. Serial No. 265,063.



Claim.—In a device of the character described, a handle, an axle rigidly held in one end of said handle, and having a head on its outer end, a sleeve revolubly mounted on said axle between said head and the end of the handle, a reel fixed on said sleeve to revolve therewith and comprising a hub surrounding the sleeve, and side plates fixed on the ends of said sleeve, a handle carried by the outer of said side plates, the inner of said side plates having radial grooves, a pawl formed of a piece of wire having one of its ends secured to the handle and bent to form a projection to engage one of the grooves in the said side plate, and to form a finger-piece lying alongside the handle, and a line-guide formed from a piece of wire having one end affixed to the said handle, and its outer end formed with an eye to receive a line, substantially as described.

816,329. SELF-CLOSING BASIN-COCK. JOSEPH A. JOHNSTON, Chicago, Ill. Filed Sept. 16, 1903. Serial No. 173,563.



Claim.—1. In a basin-cock the combination of a supply-pipe with a valve therein, a body, a discharge-pipe leading therefrom, a valve-stem projecting down through the body, a support for said

stem within said body a partition separate from the support in the upper part of the body through which the valve-stem snugly passes, a valve and valve-chamber beyond said partition and a handle whereby the two valves are simultaneously controlled.

2. In a basin-cock the combination of a supply-pipe with a valve therein, a body, a discharge-pipe leading therefrom, a valve-stem projecting down through the body, a support for said stem within said body a partition separate from the support in the upper part of the body through which the valve-stem snugly passes, a valve and valve-chamber beyond said partition and a handle whereby the two valves are simultaneously controlled, and a spring to keep the supply-valve normally closed.

3. In a basin-cock the combination of a chamber, a passage-way leading thereto and one leading therefrom, a valve to control the supply to said chamber, a triangular piece within said chamber and in close proximity to said valve, a downwardly-projecting deflector within said chamber and a diaphragm above said deflector, said triangular piece, deflector and diaphragm each serving in turn to direct the flow of the inlet-supply toward the outlet and also as an obstruction to prevent its escape above said diaphragm, substantially as shown and described.

4. In a basin-cock the combination of a cock-body with a valve-stem therethrough, a supply-inlet leading into the body, a controlling-valve therefor, a discharge-pipe leading from the body, a stream-dividing device in the body above the supply-opening and provided with inclined surfaces to produce two passage-ways through the body on opposite sides of the valve-stem, a downwardly and forwardly projecting diaphragm in the upper part of the body arranged so as to leave a passage-way between it and the top of the stream-dividing device.

5. In a basin-cock the combination of a hollow body portion with a supply-pipe leading thereinto, a controlling-valve in such supply-pipe, a discharge-pipe leading from the body portion, a stop-valve above the hollow body portion, a valve-stem on which the two valves are supported, a handle for operating them so that when one is closed the other is open, a stream-dividing device in the hollow body portion above the end of the supply-pipe and a deflector within the hollow body portion between its upper surface and the upper surface of the stream-dividing device, substantially as shown.

6. In a basin-cock the combination of a cock-body with a guide therein to divide the water into two separate channels and a pocket into which one of said channels opens, and a channel leading from such pocket to the other channel and a diaphragm above the guide and a channel above the same which unites with the other channel.

7. In a basin-cock the combination of a cock-body with a downwardly-inclined deflector in its upper portion forming a waterway above the same, and a guide-piece in its lower portion which divides the lower portion into two channels, one leading directly from the inlet to the outlet and the other leading in a circuitous path from the inlet to the outlet.

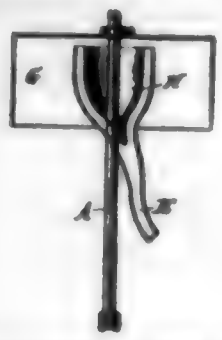
8. In a basin-cock the combination of a cock-body with a downwardly-inclined deflector in its upper portion forming a waterway above the same, and a guide-piece in its lower portion which divides the lower portion into two channels, one leading directly from the inlet to the outlet and the other leading in a circuitous path from the inlet to the outlet, and a pocket into which the circuitous way first discharges.

9. In a basin-cock the combination of a cock-body with a downwardly-inclined deflector in its upper portion forming a waterway above the same, and a guide-piece in its lower portion which divides the lower portion into two channels, one leading directly from the inlet to the outlet and the other leading in a circuitous path from the inlet to the outlet, the latter portion of the circuitous passage-way being approximately parallel with the direction of discharge.

10. In a basin-cock the combination of a cock-body with a valve-stem therethrough, a controlling-valve at the supply-inlet, and a guide for dividing the body of the valve into two waterways, one of which leads directly from the supply to the discharge, the other of which leads by a circuitous passage from the supply to the discharge, a portion of such waterway which contains the valve-stem being arranged to carry a current approximately at right angles thereto and a diaphragm above the guide and a channel above the same which unites with the other channel.

11. In a basin-cock, the combination of a supply-pipe with a valve therein, a body, a discharge-pipe leading therefrom, a valve-stem projecting down through the body, a partition in the upper part of the body through which the valve-stem snugly passes, a valve and valve-chamber beyond said partition, and a handle whereby the two valves are simultaneously controlled.

816,330. FRICTIONLESS BEARING FOR ELECTRIC METERS. THOMAS J. JOHNSTON, Brooklyn, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 28, 1901. Serial No. 76,967.



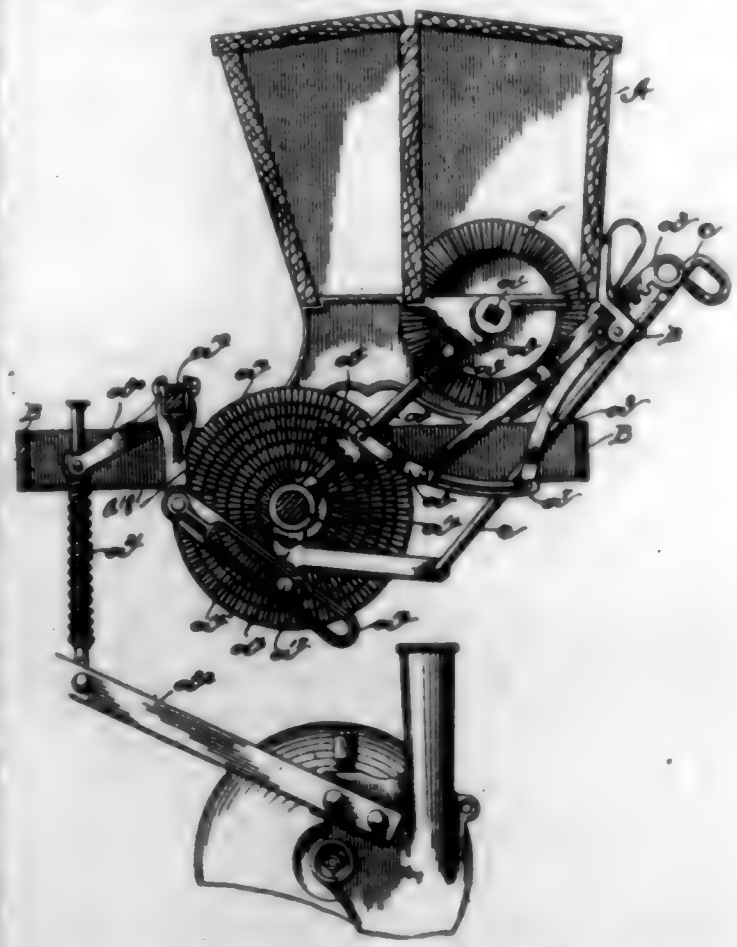
Claim.—1. In a meter, a movable element, a vertical shaft therefor the end of which is tapered, and means for applying air under pressure to said tapered end to support the shaft free from said means.

2. The combination of a rotatable shaft having a tapered end, means for applying air under pressure to said tapered end to support the shaft free from said means, and a bearing to position the shaft.

3. In a meter, a movable element, a vertical shaft therefor having a surface arranged at an angle to the axis of rotation of the shaft, and means for applying air under pressure to said surface to support the movable element with a clearance between said surface and said means of sufficient width to permit the air to pass freely therethrough.

4. The combination of a vertical rotatable shaft having thereon a surface arranged at an angle to the axis of the shaft, means for applying air under pressure to said surface to support the shaft with a clearance between said surface and said means of sufficient width to permit the air to pass freely therethrough, and a bearing to position the shaft.

816,331. SPEED DEVICE FOR SEEDING-MACHINES. SYLVESTER H. JONES and ELMER E. TOWLE, Richmond, Ind., assignors to American Seeding Machine Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 26, 1905. Serial No. 289,005.



Claim.—1. In a grain-drill, the combination of a distributer-shaft, with a main driving-shaft, change-of-speed devices between said shaft and said distributer-shaft, comprising a movable disk and gear, shifting device for said gear for throwing the distributer-shaft out of commission, furrow-opening devices and lifting mechanism therefor, means for manually operating the shifting device independent of the movement of the lifting mechanism, connections between said lifting mechanism and said shifting device whereby the shifting device will be operated by the depression of the furrow-opening devices, substantially as described.

2. In a grain-drill, the combination of a main driving-shaft with a distributer-shaft, furrow-opening devices, devices normally connecting said devices, lifting means for said furrow-opening devices, hand-operated shifting means for said connecting device, connections between said lifting mechanism and said distributer-shaft whereby the hand-operated shifting means will be operated during the movement of the lifting mechanism for the purpose of connecting the main driving-shaft and the distributer-shaft, substantially as described.

3. In a grain-drill, the combination of a main driving-shaft with a distributer-shaft, change-of-speed connections between said devices, furrow-opening devices, means for elevating and lowering the same, means for disconnecting the gear of the change-of-speed connections, and devices operated by the lifting mechanism for automatically connecting said gear connections subsequent to the operation of said disconnecting means and during the movement of the lifting mechanism, for the purpose specified.

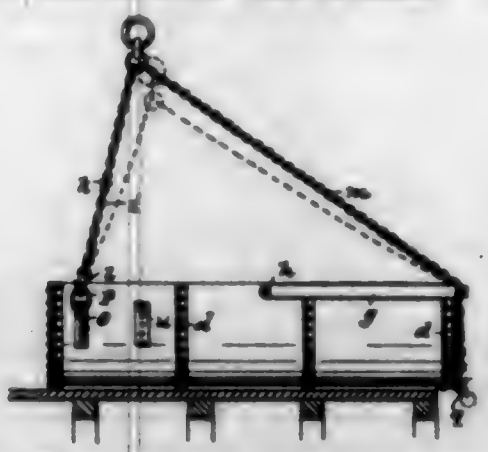
4. In a grain-drill, the combination of a main driving-shaft and a distributer-shaft, a plurality of gears normally held in position to transmit movement from the main driving-shaft to said distributer-shaft, a shifting device adapted to operate upon said gear for disconnecting the distributer-shaft from the main driving-shaft, a furrow-opening device and lifting mechanism therefor, means connecting the lifting mechanism with the shifting device for automatically moving the shifting device for the purpose of connecting the main driving-shaft and the distributing devices during the movement of the depression of the furrow-opener, substantially as described.

5. In a grain-drill, the combination of a main driving-shaft and a distributer-shaft, connections between said devices, furrow-opening devices, and lifting devices therefor, a shifting device for the connections between the distributer and the main driving shaft, means operated by the lifting device for throwing said shifting device during both the elevating and depressing movement of the lifting device.

6. In a grain-drill, the combination of a change-of-speed device, comprising a disk with concentric circles of teeth, a sliding gear, a shifting device comprising a yoke and arm fulcrumed to the hopper, and a sliding handle pivoted to said arm between the fulcrum-point and the gear, for the purpose specified.

7. In a grain-drill, the combination of a change-of-speed device, comprising a disk with a plurality of teeth, a sliding gear member, a sliding handle or indicator-rod, means for multiplying the amount of movement transmitted from said handle to said gear member, for the purpose specified.

816,832. **BUCKET OR CONVEYER.** WILLIAM F. JOHNS, Little Falls, N. J. Filed Oct. 2, 1905. Serial No. 280,906.



Claim.—1. The combination of the vessel having one open side a closure for the open side, a tackle connected with the vessel and having a branch engaged with said closure, and means for disconnectively connecting said branch with the vessel, substantially as described.

2. The combination of the vessel having one open side, a closure for the open side pivotally mounted in the vessel, a tackle connected with the vessel and having a branch engaged with said closure, and means for disconnectively connecting said branch with the vessel, substantially as described.

3. The combination of the vessel having one open side, a closure for the open side having pivotal movement in the vessel around a substantially horizontal axis, a tackle connected with the vessel and having a branch connected with said closure, and means for disconnectively connecting said branch with the vessel, substantially as described.

4. The combination of the vessel having one open side, a closure for the open side having pivotal movement in the vessel around a substantially horizontal axis, a tackle connected with the vessel and having a branch having a running engagement with said closure, and means for disconnectively connecting said branch with the vessel, substantially as described.

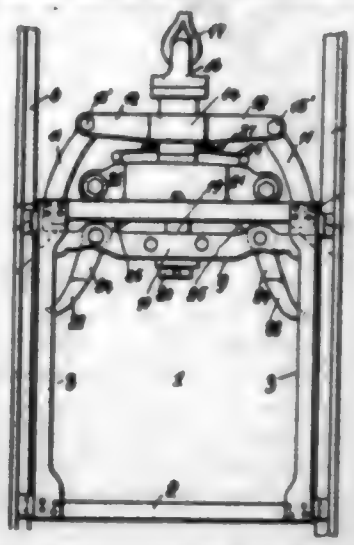
5. The combination of the vessel having one open side, a closure for the open side having up-and-down movement in the vessel, a tackle connected with the vessel and having a branch having a running engagement with the closure, and means for disconnectively connecting said branch with the vessel, substantially as described.

6. The combination of the vessel having one open side, rings pivoted in opposite side walls thereof, a three-branch tackle having two branches connected with said rings, and a hook and eye for connecting the third branch with the vessel, the one being carried by said third branch and the other by the vessel adjacent its open side, substantially as described.

7. The combination of the vessel having one open side, a closure for the open side having up-and-down movement in the vessel, a tackle connected with the vessel and having a branch, means for disconnectively connecting said branch with the vessel at a point adjacent the lower mid-portion of said closure, and a latch pivoted in said closure and normally overlapping said branch, substantially as described.

8. The combination of the vessel having one open side, a closure for the open side having up-and-down movement in the vessel, a tackle connected with the vessel and having a branch, a guiding device for said branch arranged on the closure, and devices, carried one by said branch and the other by the vessel, for disconnectively connecting said branch with the vessel, the one carried by said branch being engageable with said guiding device to limit the movement of said branch in the latter, substantially as described.

816,833. **SAFETY DEVICE FOR ELEVATORS.** SANDO KAGNO, Allegheny, Pa. Filed June 8, 1905. Serial No. 264,285.



Claim.—1. In an elevator safety device, the combination with a cage and rails for guiding the same, said cage being supported by a hoisting-cable, of a yoke carried by the top of said cage, a cross-head carried by said cage, a vertically-movable king-pin mounted in said yoke and said cross-head and connected to said hoisting-cable, said pin having a slot formed therein, a spring mounted in said slot and adapted to engage said yoke, depending members carried by said pin, and locking-levers pivotally mounted on said cross-head and adapted to engage said members, the ends of said levers being enlarged and serrated and adapted to engage said rails when said pin moves downwardly within said yoke and said cross-head, substantially as described.

2. In an elevator safety device, the combination with a cage and rails for guiding the same, said cage being supported by a hoisting-cable, of a yoke carried by the top of said cage, a cross-head carried by said cage, a vertically-movable pin mounted in said yoke and said cross-head and adapted to be connected to said cage, depending members carried by said pin, locking-levers pivotally mounted in said cross-head and adapted to be actuated by said members, and means carried by said pin to operate said levers when said pin is released by said cable, substantially as described.

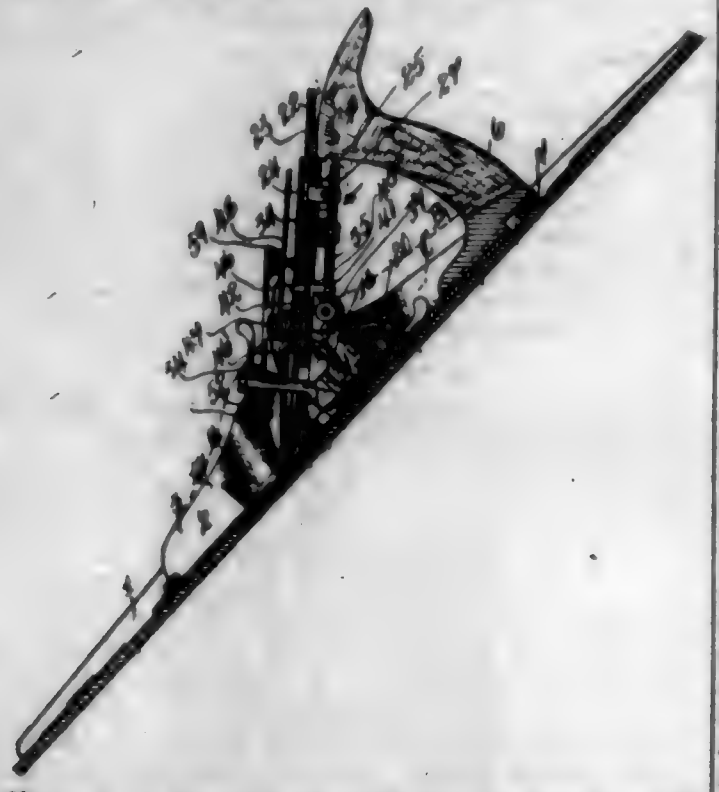
816,834. **TENSION MEMBER FOR COMPOSITE CONSTRUCTION.** JULIUS KAHN, Detroit, Mich., assignor to Trussed Concrete Steel Company, Detroit, Mich., a Corporation of Michigan. Filed June 21, 1905. Serial No. 266,241.

Claim.—1. A metal bar having a plurality of rows of disconnected projections extending from a side thereof, the projections of one row overlapping the gaps in each adjacent row, the projections being so proportioned that the bar shall be uniform in tensile strength throughout the portion of its length having such projections.



2. A metal bar having a plurality of rows of disconnected projections extending from each side thereof, the projections of each row having parallel sides, the projections of one row overlapping the gaps in each adjacent row, and the projections being so proportioned that the bar shall be of uniform tensile strength throughout the portion of its length having such projections.

816,335. CARPENTER'S PLANE. ALEXANDER KALLA, New York, N. Y. Filed Apr. 25, 1905. Serial No. 257,209.



Claim.—1. An improved carpenter's plane comprising a stock, an adjustable bit-iron carried by said stock, said bit-iron being provided with a bit and shave-iron, means for adjusting said bit and shave-iron with reference to each other, an opening in the bottom of said stock, a projecting nose upon said bit-iron adapted to pass through said opening, and means for imparting a vertical movement to said bit-iron, whereby the bit thereupon can be adjusted relatively to the bottom surface of said stock.

2. An improved carpenter's plane comprising a stock, an adjustable bit-ifon carried by said stock, said bit-iron being provided with a bit and shave-iron, means for adjusting said bit and shave-iron with reference to each other, an opening in the bottom of said stock, a projecting nose upon said bit-iron adapted to pass through said opening, a cam carried by said stock, means carried by said bit-iron for engaging said cam, and means for operating said cam in such a manner as to impart a vertical movement to said bit-iron whereby the bit thereupon can be adjusted relatively to the bottom of said stock.

3. An improved carpenter's plane comprising a stock, an adjustable bit-iron carried by said stock, said bit-iron being provided with a bit and shave-iron, means for adjusting said bit and shave-iron with reference to each other, an opening in the bottom of said stock, a projecting nose upon said bit-iron, said nose having the rear wall thereof in contact with the bottom member of said stock, whereby chattering of the bit is prevented, a cam carried by said stock, means carried by said bit-iron for engaging said cam, and means for operating said cam in such a manner as to impart a vertical movement to said bit-iron whereby the bit thereupon can be adjusted relatively to the bottom of said stock.

4. An improved carpenter's plane comprising a stock, vertical guideways carried by said stock, a bit-iron adjustably mounted in said guideways, a bit and shave-iron adjustably mounted upon said bit-iron, an opening in the bottom of said stock, a projecting nose upon said bit-iron, said nose having the rear wall thereof in contact with the rear wall of said opening, whereby chattering of said bit is prevented, a cam carried by said stock, means carried by said bit-iron for engaging said cam, and means for operating said cam in such a manner as to impart a vertical movement to said bit-iron, whereby the bit thereupon can be adjusted relatively to the bottom of said stock.

816,336. CAR-COUPLING. FREDERICK KELLER, Allentown, and DAVID BOWERS, Emaus, Pa., assignors of one-third to Irwin F. Huebner, Allentown, Pa. Filed July 12, 1905. Serial No. 269,276.



Claim.—1. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm and means for releasing the locking-block on the inward movement of the locking-arm to permit entrance of the latter within the chamber and engagement thereof by the locking-block when the latter again assumes its forward position, said first-named means embodying an auxiliary locking-block connected to but having movement independently of the main locking-block, and an operating-lever having movable connection with said auxiliary locking-block.

2. A coupling comprising a coupling-head having an inner chamber therein and formed at one side of the forward open end of the chamber with a communicating recess, a locking-block mounted to swing back and forth in the chamber and normally occupying a forward position within the entrance to said recess by gravity, means for securing the block in this position, a locking-arm having a hook at its end, and means for releasing the locking-block in the inward movement of the locking-arm to permit entrance of the latter within the chamber and the confinement of said hook within said recess by the locking-block when it assumes its forward position, the said first-named means embodying an auxiliary locking-block connected to but having movement independently of the main locking-block, and an operating-lever having movable connection with said auxiliary locking-block.

3. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said first-named means embodying an abutment and engaging device therefor, an auxiliary locking-block connected to but having movement independently of the main locking-block, and an operating-lever having movable connection with said auxiliary locking-block.

4. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said first-named means embodying duplicate abutments on the base of the chamber, and engaging devices therefor.

5. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a main locking-block mounted to swing back and forth in the chamber and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm and means for releasing the locking-block on the inward movement of the locking-arm to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, the forward end of the chamber being provided with a sill acting as a stop to limit the forward move-

ment of the locking-block, and said first-named means embodying an auxiliary locking-block connected to but having movement independently of the main locking-block, and an operating-lever having movable connection with said auxiliary locking-block.

6. A coupling comprising a coupling-head having an inner chamber therein, and formed at one side of the forward open end of the chamber with a communicating recess, a main locking-block mounted to swing back and forth in the chamber and normally occupying a forward position within the entrance to said recess by gravity, means for securing the block in this position, a locking-arm having a hook at its end, and means for releasing the locking-block on the inward movement of the locking-arm to permit entrance of the latter within the chamber and the confinement of said hook within said recess by the locking-block when it assumes its forward position, the forward end of the chamber being provided with a sill acting as a stop to limit the forward movement of the locking-block and said first-named means embodying an auxiliary locking-block connected to but having movement independently of the main locking-block, and an operating-lever having movable connection with said auxiliary locking-block.

7. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said second-named means embodying a pivoted lever and an operating-trigger therefor, actuated both on the inward and outward movements of the locking-arm.

8. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said second-named means embodying a pivoted lever and an operating-trigger therefor, actuated both on the inward and outward movements of the locking-arm, the trigger having an oblong-shaped head having a rounded surface.

9. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said second-named means embodying a pivoted lever and an operating-trigger therefor, actuated both on the inward and outward movements of the locking-arm, the trigger having an oblong-shaped head having a rounded surface, the locking-arm having on the under surface thereof a protuberance for effecting movable contact with the trigger.

10. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said locking-block being constructed of duplicate side members separated by a space and connected by a pin and said first-named means embodying abutments on the base of the chamber, a link working on said pin and a yoke having pivotal connection with the link and normally engaging with said abutments.

11. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber, and normally occupying a forward position therein by gravity, means for locking the block in this position, a movable knuckle having a locking-arm, and means for releasing the locking-block on the inward movement of the locking-arm, to permit entrance of the latter within the chamber and the engagement thereof by the locking-block when the latter again assumes its forward position, said locking-block being constructed of duplicate side members separated by a space and connected by a pin and said first-named means embodying abutments on the base of the chamber, a link working on said pin, a yoke having pivotal connection with the link and normally engaging with said abutments, and said second-named means embodying a pivoted lever having branches coöperating with said yoke and an operating-trigger therefor actuated by the locking-arm when moved in either direction.

12. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber and normally occupying forward position therein by gravity, means for carrying said main locking-block rearwardly within the chamber, and means for catching and retaining the same in this position, embodying an abutment within the chamber, said first-named means embodying an auxiliary locking-block connected to but having movement independently of the main locking-block and an operating-lever having movable connection with said auxiliary locking-block.

13. A coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a locking-block mounted to swing back and forth in the chamber and normally occupying forward position therein by gravity, means for carrying said main locking-block rearwardly within the chamber, and means for catching and retaining the same in this position, said locking-block being constructed with duplicate side members separated by a space and connected by a pin, and said first-named means embodying an auxiliary block in said space and having separated members formed with corresponding curved slots through which said pin extends, said members being connected by a base having lateral extensions, a link working on the pin, and an operating-lever working through a slot in the head and having movable connection with the link.

14. A car-coupling comprising a coupling-head formed with an inner chamber, the forward end of which is open, a main locking-block to swing back and forth in the chamber and normally occupying a forward position therein by gravity, the base of the chamber having abutments thereon, means for locking the block in its forward position embodying a yoke having pivotal support and the members of which are normally in engagement with the forward edges of said abutments, a movable knuckle having a locking-arm, means for releasing the locking-block on the inward movement of the locking-arm embodying a pivoted lever having lateral branches coöperating with said yoke and provided with an actuating-trigger operated on the inward and outward movements of the locking-arm, said lever having at the rearward extremity thereof weighted lateral extremities normally engaging the rearward edges of the abutments, and means for catching and retaining the main locking-block in the position within the chamber embodying an auxiliary locking-block having movable relation to said main locking-block, a link having movable relation to said main block, and an operating-lever extending through a slot in the head and having pivotal connection with both the said block and link, the auxiliary block being provided rearwardly thereof at the sides with cheeks, the forward faces of which normally engage with the rearward faces of the operative members of the yoke.

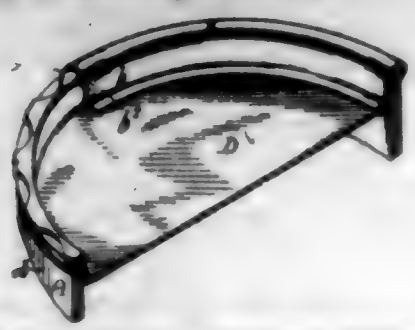
816,337. **WINDOW-LOCK.** JACOB KILLMEYER, Pittsburg, Pa. Filed Oct. 2, 1905. Serial No. 281,029.



Claim.—In a window-lock the combination with a window-frame and sashes, of perforated metal strips carried by the sides of the sashes, a lock-casing mounted in the window-frame, rocking levers pivotally mounted in said casing, pins pivotally connected to said levers and extending through the outer wall of the casing and into the perforations in the said strips, and longitudinally-sliding levers pivotally connected to said rocking levers, said sliding levers being formed with heads seating in openings in the outer face of said casing.

816,338. **PAPER BOX OR CONTAINER.** JAMES C. KENNEY, Philadelphia, Pa., assignor to American Paper Bottle Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 5, 1904. Serial No. 227,677.

Claim.—1. The combination of a body portion of yielding material, a closure having a notched edge overlying the outer edge of the body portion, and a ring having an outer flange adapted to be embedded in the body portion for confining the notched-edge closure to the body of the box, substantially as described.



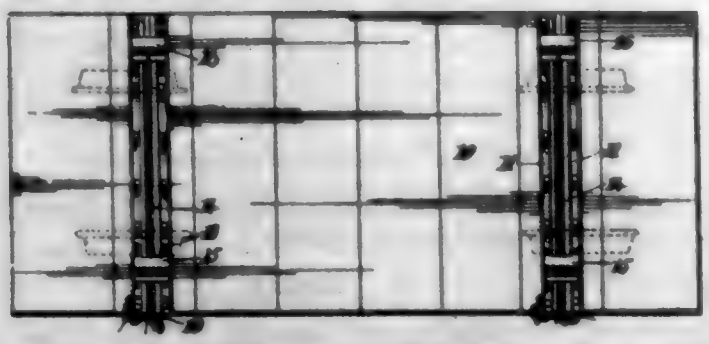
2. The combination in a box, of a body of yielding material, a closure greater in diameter than the body and having a notched edge which overlaps the end of the body, a ring retaining the closure against the body portion, said ring having an outer flange engaging the overlapping projections of the closure and embedded with said projections in the yielding body, whereby said flange of the ring comes in direct contact with the body between the projections, substantially as described.

3. The combination in a box, of a body portion, a closure having a notched edge and greater in diameter than the body portion, said closure being heavier at the center than at the edges, the central portion of the closure being less in diameter than the body, and means for attaching the notched thin portion of the closure to the body portion.

4. The combination in a box, of a body portion, a closure consisting of two members secured together, one member being greater in diameter than the body portion of the box, the other member being less in diameter than the body portion, the member of greater diameter having a notched edge, with a metallic ring having inner and outer flanges by which the notched member of the said closure is confined to the body portion of the box, the member of less diameter being held between the ring and the member of greater diameter.

5. The combination in a box of a body of yielding material, a closure greater in diameter than the body and having a notched edge which overlaps the end of the body, a ring having a long inner flange retaining the closure against the inner wall of the body, and a short outer flange engaging the projections of the closure and embedded with said projections in the yielding body whereby the outer flange of the ring comes in direct contact with the body, substantially as described.

816,339. LOG-CHOCK. JESSE E. KNIGHT, Blue Canyon, Wash. Filed Oct. 30, 1905. Serial No. 285,007.



Claim.—1. The combination of a support, two chocks thereon of which one is movable, a chock-chain attached to the movable chock and extending along the support to the end thereof opposite the movable chock, an eye at said end of the support through which the chain is rove, and a claw or grappling-hook adapted to engage the eye and chain, for the purpose specified.

2. The combination of a support, two chocks thereon of which one is movable, and a chock-chain attached to the movable chock and extending along the support to the end thereof opposite the movable chock, said movable chock being angular in form and capable of folding down over the edge of the support.

3. The combination of a support, a movable chock arranged to slide thereon, said chock being angular in form and capable of folding down over one end of the support.

4. The combination of a support, parallel rails thereon forming a passage-way between them, a chock arranged to slide on the rails, and a chain attached to the chock and extending through the passage-way.

5. The combination of a support, parallel rails thereon forming a passage-way, a chock arranged to slide on the rails, a chain attached to the chock and extending through the passage-way, and an eye secured to the edge of the support opposite the chock through which eye the chain is rove.

6. The combination of a support, parallel rails thereon forming a passage-way, a chock arranged to slide on the rails, a chain attached to the chock and extending through the passage-way, an eye secured to the end of the support opposite the chock, through which eye the chain is rove, and a grapple adapted to engage the chain and eye for the purpose specified.

7. The combination of a support, means mounted thereon forming a passage-way with a slideway above it, a chain lying in the passage-way, and a chock attached to the chain and mounted in the slideway.

8. The combination of a support, means mounted thereon and forming a passage-way with a slideway above it, a chain lying in the passage-way, and a chock attached to the chain and mounted in the slideway, the said means also having guard-walls at the side of the slideway.

9. The combination of a support, two railroad-rails mounted thereon on their sides with the balls of the rails adjacent and spaced apart, a chain lying between the balls of the rails, and a chock attached to the chain and running on the balls of the rails between the base-flanges of the rails.

10. The combination of a support, two chocks of which one is movable and angular in form, whereby it may fold down over the edge of the support, and means for removably holding the chocks in position.

11. The combination with a support of means forming a slideway with guard-walls at its sides, an angular chock adapted to move on the slideway between the guard-walls, and capable of folding down over the edge of the support, and means for removably holding the chock is position.

12. The combination of a support, and an angular chock mounted thereon and capable of folding down over one end of the support, for the purpose specified.

816,340. HAMMOCK-SUPPORTING FRAME. CHARLES KNOBELSCHILD, Milwaukee, Wis., assignor to Gem Hammock and Fly Net Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed May 2, 1904. Serial No. 205,972.



Claim.—1. A hammock-supporting frame, comprising a rigid elongated base member, U-shaped head and foot standards pivoted at their ends to the base member respectively at a little distance from the head and the foot thereof, extensible tie-rods pivoted to the base member respectively near the head and the foot thereof and to the standards respectively near the upper ends thereof, the frame being adapted to be set up with the standards inclining outwardly in the direction of the length of the frame and upwardly, and the standards and tie-rods without disconnection at their ends to be folded

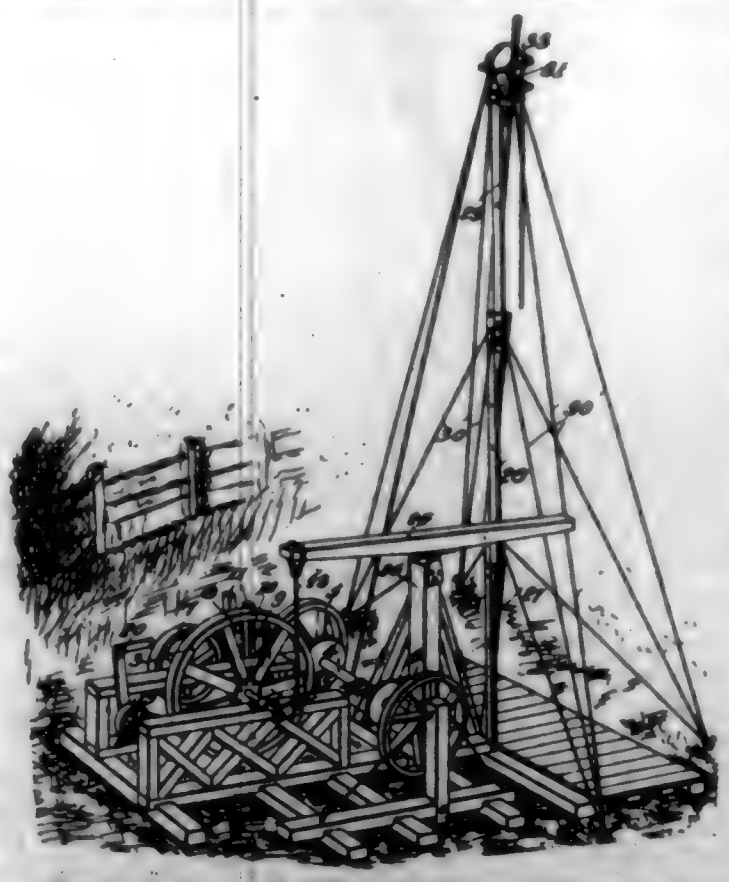
inwardly down onto the base member in collapsed form for storing or transportation.

2. In a hammock-supporting frame, a rigid elongated base member in parallelogram form and having ribbed or flanged side rails, U-shaped standards pivoted to the side rails of the base member respectively at a little distance from the head and the foot thereof and adapted to fold inwardly down on the base member one standard on the outside and the other standard on the inside of the upright ribs and onto the flanges of the side rails of the base member, and tie-rods secured to the base member and to the standards adapted to secure the standards in upward position on the base member and against the strain of a hammock supported thereon and to be folded down alongside and respectively at the inside and outside of said standards.

3. In a hammock-supporting frame, a rigid elongated base member having ribbed or flanged side rails, U-shaped standards pivoted to the side rails of the base member respectively at a little distance from the head and the foot thereof and adapted to fold inwardly down on the base member one standard on the outside and the other standard on the inside of upright ribs or flanges of the side rails of the base member and so that both standards are in a common plane with the ribs on the base, and tie-rods secured to the base member and to the standards each tie-rod being composed of two parts telescoping on each other and having means for locking them to each other releasably in adjusted position and being capable of being folded down alongside the standards respectively on the inside and the outside thereof and in the same plane therewith.

4. In a hammock-supporting frame, the combination with a rigid elongated base member, and a pair of U-shaped standards pivoted to and collapsible on the base member, of tie-rods pivoted to the base member and to the standards, each tie-rod being formed in two parts, the lower part being pivoted to the base member and the upper part being pivoted to the standard and one part being channeled and the other part being movable endwise in the channeled part, a flat spring secured to the channeled part and having a pin on its free end adapted to enter registering holes therefor in the two parts and lock them in position, and a stop on the channeled part adapted to engage the free end of the spring and prevent the withdrawal of the pin from the hole therein.

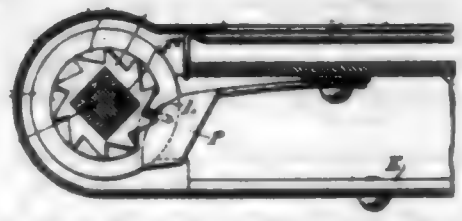
816,841. **WELL-DRILLING MACHINE.** WILLIAM L. KNOWLES, Hatton, Ohio. Filed Apr. 22, 1905. Serial No. 257,013.



Claim.—1. In a well-drilling machine, a derrick-mast composed of the supporting-post 27, the lever 27' pivoted thereto, the pairs of lazy-tongs levers 28 and 29 connected with each other, the levers 28 being pivoted to the supporting-post 27 and the lever 27', a shaft mounted on the upper ends of the uppermost levers 29, a crown-pulley mounted on said shaft, the pulleys 35 and 36 attached to the post 27, the hoisting-rope 34 passing about the pulleys 35 and 36 and extending from the pulley 36 to one of the levers 28, the pulley 37 carried by said lever 28, and the stays 30 connected with the upper end portions of the several pairs of lazy-tongs levers and adapted to be raised as the mast is extended by operation of the hoisting-rope 34.

2. In a well-drilling machine, a derrick-mast composed of a supporting-post, lazy-tongs levers carried by said supporting-post, spaced members at the ends of the uppermost of the lazy-tongs levers, a shaft supported in said spaced members, and a pulley mounted upon said shaft.

816,842. **ADDING-MACHINE.** NOBYOSHI H. KODAMA and ABRAHAM I. GANCHER, New York, N. Y., assignors to Automatic Adding Machine Company, New York, N. Y. Filed Jan. 18, 1905. Serial No. 241,763.



Claim.—1. An adding-machine comprising a series of number-wheels, manually-controlled means for turning the said number-wheels, independent one of the other, a ratchet-wheel for each number-wheel, sidewise-projecting pawls, one for each number-wheel and adapted to engage the ratchet-wheel of the next following number-wheel in the series, fixed disk cams, one for each pawl, concentric with the number-wheels, each disk cam normally holding the corresponding pawl out of engagement with the ratchet-wheel of the next following number-wheel, the disk cam having a cut-out portion for allowing the pawl to move into engagement with the ratchet-wheel on the number-wheel carrying the pawl completing a turn, and a spring-arm fixed at one end and provided at the other end with a cam, having a curved edge corresponding to the cut-out portion of the disk cam for causing the pawl to follow the said cut-out portion.

2. An adding-machine comprising a series of number-wheels, manually-controlled means for turning the said number-wheels, independent one of the other, a ratchet-wheel for each number-wheel, sidewise-projecting pawls, one for each number-wheel and adapted to engage the ratchet-wheel of the next following number-wheel in the series, fixed disk cams, one for each pawl, concentric with the number-wheels, each disk cam normally holding the corresponding pawl out of engagement with the ratchet-wheel of the next following number-wheel, the disk cam having a cut-out portion for allowing the pawl to move into engagement with the ratchet-wheel on the number-wheel carrying the pawl completing a turn, and a fixed plate having spring-dogs for the ratchet-wheels and spring-cams having curved edges corresponding in shape to the cut-out portions of the disk cams, the said spring-cams yieldingly engaging the pawls and directing them into the cut-out portions of the disk cams.

3. An adding-machine comprising a frame having a table, and numeral-plates on the table spaced apart to form guideways, a manually-controlled spindle journaled in the said frame and normally held against turning, number-wheels mounted to rotate loosely in one direction on said spindle, sprocket-wheels each turning with a corresponding number-wheel, idler sprocket-wheels journaled in the frame, endless chains passing over the said sprocket-wheels, the top run of the chains traveling over the table and extending in the guideways formed by the numeral-plates, a ratchet-wheel turning with each number-wheel, sidewise-projecting pawls one for each number-wheel and adapted to engage the ratchet-wheel of the next following number-wheel in the series, fixed disk cams one for each pawl, concentric with the number-wheels, each disk cam normally holding the corresponding pawl out of engagement with the ratchet-wheel of the next following number-wheel, the disk cams each having a cut-out portion for allowing the pawl to move into engagement with the ratchet-wheel on the number-wheel carrying the pawl completing a turn, a plate carrying integral spring-cams registering with the cut-out portions of the disk cams to direct the pawls into said cut-out portions, and a plate carrying integral spring-dogs engaging the sprocket-wheels turning with the number-wheels, the said plates being superimposed and secured by the same means to the under side of the table, and a spring-pressed pawl fulcrumed on each number-wheel, and extending in the reverse direction to that in which the wheel is normally turning, the said pawl being adapted to engage a recess on the spindle.

4. An adding-machine comprising a frame having a table and numeral-plates on the said table, spaced apart to form guideways, a spindle journaled in the said frame and normally held against turn-

ing, number-wheels mounted to rotate loosely in one direction on the said spindle and independent one of the other, sprocket-wheels, each secured to a corresponding number-wheel and turning therewith, an idler sprocket-wheel journaled in the frame, an endless chain passing over the said sprocket-wheels, the links of each chain corresponding each to the distance between adjacent numerals on the numeral-plates, a ratchet-wheel turning with each number-wheel a pawl pivoted in a recess in each number-wheel and extending sidewise to engage the ratchet-wheel of the next adjacent number-wheel, and means directing a pawl into and out of engagement with its ratchet-wheel, the said means consisting of disk cams held on the spindle and over the peripheral edges of which ride the said pawls, each disk cam having a cut-out portion in its periphery, spring cam-plates fixed on the frame and registering with said cut-out portions of the disk cams, the said cam-plates being adapted to yieldingly engage the pawls, to direct the same into the cut-out portions, and spring-dogs fixed on the frame and engaging the sprocket-wheels secured to the number-wheels for preventing reverse movement of said number-wheels.

5. The combination with a stand having an inclined seat curved at the top and bottom, of an adding-machine having a casing shaped to correspond with the said inclined seat and removably fitting within the same.

6. The combination with a stand provided with a rack at its rear portion, and having an inclined recess in its front portion, of an adding-machine having a casing containing the registering mechanism, the said casing removably fitting said inclined recess in the front of the stand.

7. An adding-machine comprising a frame, a spindle journaled in the frame, number-wheels mounted to rotate loosely in one direction on the said spindle, sprocket-wheels secured on the hubs of the number-wheels, a shaft fixed in the frame, sprocket-chains passing over the sprocket-wheels on the hubs of the number-wheels and over corresponding idle sprocket-wheels mounted to turn loosely on the said fixed shaft, ratchet-wheels secured on the hubs of the number-wheels, a sidewise-extending pawl fulcrumed on each number-wheel and adapted to engage the ratchet-wheel on the hub of the next adjacent number-wheel, disk cams secured on the spindle and normally holding the pawls out of engagement with said ratchet-wheels, each disk cam having a cut-out portion to allow the pawl to move into engagement with the corresponding ratchet-wheel, a plate having spring-cams registering with the cut-out portions of the disk cams for directing the pawls into the said cut-out portions, and a plate having spring-dogs engaging the sprocket-wheels on the hubs of the number-wheels for preventing reverse movement of said number-wheels, the said plates being superimposed and secured to the frame.

8. An adding-machine comprising a frame having a table, a spindle mounted in the frame adjacent to one end of the table, a series of number-wheels mounted to turn on said spindle independently of each other, a ratchet-wheel on the hub of each number-wheel, a sprocket-wheel on the hub of the number-wheel between the latter and the ratchet-wheel, a pawl carried by each number-wheel and adapted to engage the ratchet-wheel on the hub of the next number-wheel in the series, disk cams fixed to the spindle between the number-wheels and normally holding the corresponding pawls out of engagement with the ratchet-wheels, the disk cams each having a cut-out portion to permit the pawl to move into engagement with the ratchet-wheel, spring-dogs fixed to the under side of the table and engaging the sprocket-wheels on the hubs of the number-wheels, and spring-arms also fixed to the under side of the table and arranged alternately to the spring-dogs, the said spring-arms being provided at their free ends with cams registering with the cut-out portions of the disk cams, for the purpose set forth.

816,343. **PROCESS OF FISH PRESERVATION.** Walter Lake, St. John's, Newfoundland. Filed Oct. 19, 1904. Serial No. 229,176.

Claim.—1. A method of preserving fish which consists in eviscerating and cooking the fish, separating the bones and the skin, dividing the flesh into pieces, then seasoning the same, then expelling air by means of pressure on the fish after the fish has been placed in a can, removing a portion of the water and continuing these steps until the can is substantially filled, hermetically sealing the can, puncturing the same, expelling the air by means of pressure on the can and then sealing the can and then boiling it.

2. A method of preserving fish which consists in eviscerating and cooking the fish, separating the bones and skin, dividing the flesh into pieces, removing a portion of the water, mixing the drained flesh with a salted solution; removing the air by consolidation of the fish at the bottom of the said solution after the mixture has been placed in a can, removing the excess of liquid and continuing these steps until the can is substantially filled, hermetically sealing the can, then puncturing the same, then expelling the remainder of the air by pressure on the can and resealing the package and boiling the same.

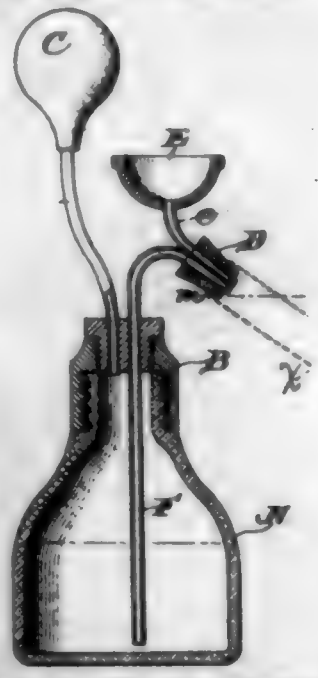
816,344. **FOUNTAIN-PEN.** Warren H. Lancaster, Baltimore, Md. Filed Oct. 13, 1905. Serial No. 282,626.



Claim.—1. A feed for fountain-pens comprising a tube having an ink-opening at the top and an air-opening at the bottom, and a valve having an ink-duct therethrough, said valve slidingly mounted within said tube and snugly fitting the same, and constituting a means to wholly or partially close the air-opening and at the same time regulate communication between the ink-opening in the tube and the ink-duct in the valve.

2. A feed for fountain-pens comprising a tube and a longitudinally-channeled valve slidingly mounted within said tube and snugly fitting the same, said tube having an ink-opening at the top and an air-opening at the bottom, and said valve constituting a means to wholly or partially close said air-opening and at the same time regulate communication between said ink-opening and the channel in said valve.

816,345. **FOUNTAIN-PEN-FILLING DEVICE.** Rhodes G. Lockwood, Boston, Mass., assignor to Davidson Rubber Company, Boston, Mass., a Corporation of Massachusetts. Filed Apr. 26, 1905.



Claim.—1. A device for filling fountain-pens consisting of an air-tight reservoir; means to compress the air therein; a supply-pipe leading from the ink within the reservoir, having its outer end turned downwardly and connected with a nozzle; said nozzle; an overflow-cup connected with the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

2. A device for filling fountain-pens consisting of an air-tight reservoir; a pump connected with the reservoir to compress the air therein; a supply-pipe leading from the ink-supply within the reservoir, having its outer end turned downwardly and connected with a nozzle; said nozzle; an overflow-cup connected with the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

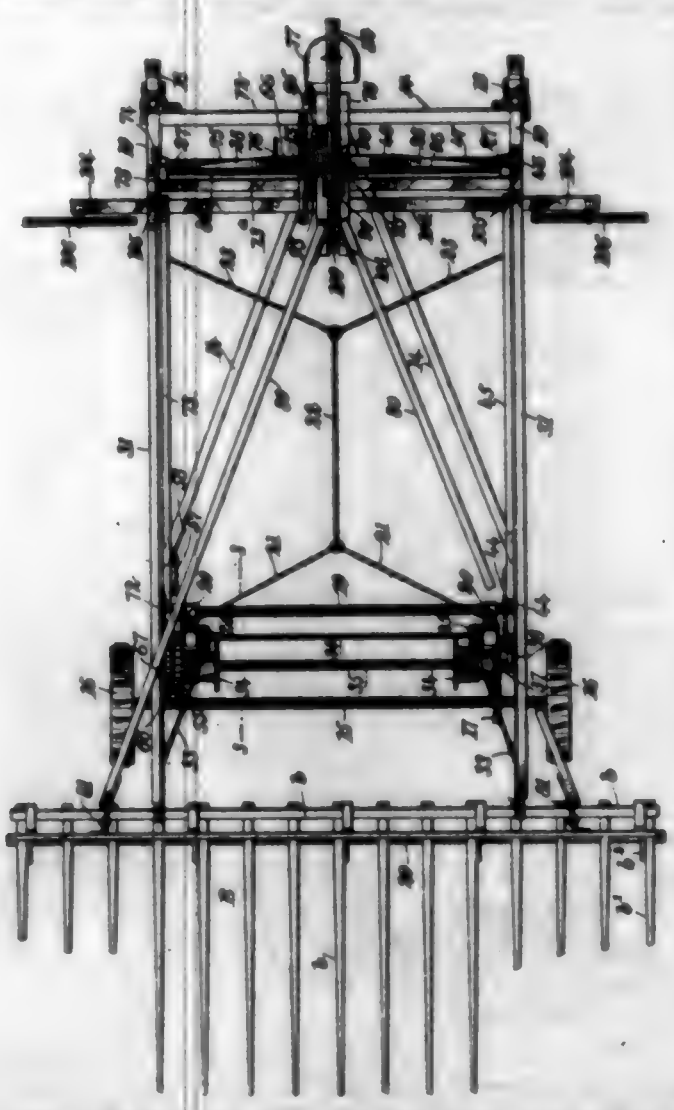
3. A device for filling fountain-pens consisting of an air-tight reservoir; a nozzle; two tubes extending from the nozzle; one of said tubes leading to the ink-supply within the reservoir and the other leading to an overflow-cup above the nozzle; said cup; a pump having a tube extending therefrom to the reservoir; all organized and operating substantially as described.

4. A reservoir; a detachable cap therefor, closing said reservoir air-tight; an elastic bulb connected to the reservoir through the cap; a tapered nozzle of elastic material for receiving the mouth of the barrel of a fountain-pen; a tube, one end of which extends from the nozzle to the ink-supply within the reservoir; an overflow-cup con-

nected to the nozzle, to receive and return any overflow to the supply-tube, substantially as shown and described.

5. A device for filling fountain-pens consisting of a flexible air-tight reservoir; a supply-pipe leading from the ink-supply within the reservoir, having its outer end turned downwardly and connected with a nozzle; said nozzle; an overflow-cup connected with the nozzle to receive and return any overflow of ink to the supply-tube, all organized and operating substantially as described.

816,346. HAY RAKE AND STACKER. ORIN B. MANN, Meeteetse, Wyo. Filed July 31, 1905. Serial No. 271,869.



Claim.—1. In a hay rake and stacker, the combination with a wheel-supported frame, a rake and connections pivoted to the rake and the frame, of a gear located on the axle of the frame, a drum-shaft mounted in the frame parallel with the axle, said shaft having forward and rearward movement at one end, a gear on the said shaft at its shifting end, adapted to mesh with the gear on the axle, a shifting arm pivoted on the frame and connected with the said shifting end of the drum-shaft, a shifting bar connected with the shifting arm and extending to the rear of the frame, a crank-shaft connected with the said shifting bar, a shifting lever connected with the said shaft, a support carried upward from the frame at the rear of the rake, link-connected tripping-arms pivoted on said support, a connection between the said trip-arms and the shifting arm, and a projection from the said connections between the rake and the frame, adapted to engage the upper trip-arm when the rake is elevated.

2. In a hay rake and stacker, a wheeled support, forward and rear standards upon said support, the forward standards being higher than the rear, a rake located in advance of the forward standards, hangers pivotally connected with the rake, upper and lower combined lifting and guide arms at each side of the frame, pivotally connected with the said hangers and with the said rear standards, a gear-wheel located on the axle of the frame, a drum-shaft mounted in the said frame parallel with the axle, which drum-shaft at one end is mounted for forward and rearward movement, drums on said shaft, a gear at said shifting end of the drum-shaft, adapted for engagement with the gear on the axle, a shifting lever mounted on the frame and connected with the said shifting end of the drum-shaft, a crank-shaft at the rear of the machine, connected with the said lever and terminating at its inner end in a handle, guide devices carried by the forward standard, lift-cables connected with the lower lift-arms, being passed over the said guide devices and connected with the said drums, trip-arms pivoted upon one of the forward standards, link connections between the trip-arms, a connection between the lower trip-arm and the shifting lever, and a projection from the lifting-arm, adapted to engage the projecting portion of the upper trip-arm when the rake is raised to dumping position.

3. In a hay rake and stacker, a wheel-supported frame, the axle whereof is provided with a gear near one end, forward and rear standards carried by the frame, friction-pulleys carried by the upper portion of the forward standards, a rake, hangers pivotally connected with the rake, upper and lower combined guide and lift arms pivoted at their forward ends to the hangers and at their rear ends to the rear standards, a drum-shaft adjacent to the axle, one end of which drum-shaft is mounted for forward and rearward movement, a gear on the shifting end of the drum-shaft adapted to mesh with the gear of the axle, a shifting arm mounted on the frame and connected with the shifting end of the drum-shaft, forwardly-extending horizontal arms pivoted to one of the forward standards, connections between the arms and between the lowermost arm and the said shifting arm, a pin extending from the inner side of one of the lower lift-arms, adapted when the rake is fully elevated to engage with the upper horizontal arm and carry the drum-shaft out of connection with the axle, drums on the said drum-shaft, and cables attached to the forward ends of the lower lift-arms and passed over said friction-pulleys to a connection with the said drums.

4. In a hay rake and stacker, a wheel-supported frame the axle whereof is provided with a gear near one end, forward and rear standards carried by the frame, friction-pulleys carried by the upper portion of the forward standards, a rake, hangers pivotally connected with the rake, upper and lower combined guide and lift arms pivoted at their forward ends to the hangers and at their rear ends to the rear standards, a drum-shaft adjacent to the axle, one end of which drum-shaft is mounted for forward and rearward movement, a gear on the shifting end of the drum-shaft, adapted to mesh with the gear of the axle, a shifting arm mounted on the frame and connected with the shifting end of the drum-shaft, forwardly-extending horizontal arms pivoted to one of the forward standards, connections between the arms and between the lowermost arm and the said shifting arm, a pin extending from the inner side of one of the lower lift-arms, adapted when the rake is fully elevated to engage with the upper horizontal arm and carry the drum-shaft out of connection with the axle, drums on the said drum-shaft, and cables attached to the forward ends of the lower lift-arms, passed over the said friction-pulleys to a connection with the said drums, a shifting bar connected with the said shifting arm, a crank-shaft connected with said bar at the rear of the frame, and a shifting lever connected with the said shaft.

5. In a hay rake and stacker, a wheeled support, forward and rear standards carried by the support, a shaft carried by the rear standards, a swinging standard pivotally mounted on the said shaft, being free at its upper and at its lower end, an operating-lever for the said swinging standard, a rake, hangers pivotally connected with the rake, guide-arms pivotally connected with the hangers and the rear standards, means for raising and lowering the said rake, arms pivoted to the upper portion of the vertical section of the rake, a rack-bar to which said arms are connected, a pinion carried at the upper end of the swinging standard for engagement with the teeth of the said rack-bar, a sprocket-wheel on the same shaft as the pinion, a combined sprocket-pinion and hand-wheel mounted on the shaft connecting the rear standards, and a chain connection between the sprocket-wheel and sprocket-pinion, whereby to dump the rake or give upper and lower inclination to the rake-teeth.

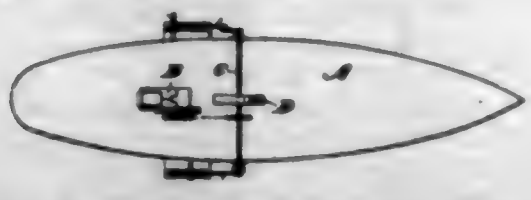
6. In a hay rake and stacker, a wheel-supported frame, forward and rear standards carried by the frame, a rake located in front of the forward standards and having a vertical section, a pivotal support for the rake and guides for said supports, pivoted thereto and to the rear standards, a shaft extending from one rear standard to the other, a swinging standard pivotally mounted on said shaft, arms attached to the upper portion of the vertical section of the rake, a rack-bar connecting said arms at the rear, a pinion mounted at the upper portion of the swinging standard, engaging the teeth of the rack-bar, a notched wheel, and a sprocket-wheel secured to the same shaft as the pinion, a sprocket-pinion and attached hand-wheel mounted on the shaft between the rear standards, a chain connection between the sprocket-pinion and sprocket-wheel, a spring-controlled latch arranged for engagement with the notched wheel, and a lever for operating the said latch.

7. In a hay-rake and stacker, a wheel-supported frame, forward and rear standards carried by the frame, a rake located in front of the forward standards and having a vertical section, a pivotal support for the rake and guides for said support, pivoted thereto and to

the rear standards, a shaft extending from one rear standard to the other, a swinging standard pivotally mounted on said shaft, arms attached to the upper portion of the vertical section of the rake, a rack-bar connecting said arms at the rear, a pinion mounted at the upper portion of the swinging standard, engaging the teeth of the rack-bar, a notched wheel, and a sprocket-wheel secured to the same shaft as the pinion, a sprocket-pinion and attached hand-wheel mounted on the shaft between the rear standards, a chain connection between the sprocket-pinion and the sprocket-wheel, a spring-controlled latch arranged for engagement with the notched wheel, a lever for operating the said latch, a carriage through which the shaft of the pinion, sprocket-wheel and the notched wheel passes, friction-rollers carried by the said carriage for engagement with the upper edge of the rack-bar, and an operating-lever for the lower end of the swinging standard.

8. In a hay rake and stacker, a wheel-supported frame, forward and rear standards carried by the frame, a rake located in front of the forward standards and having a vertical section, a pivotal support for the rake and guides for said support, pivoted thereto and to the rear standards, a shaft extending from one rear standard to the other, a swinging standard pivotally mounted on said shaft, arms attached to the upper portion of the vertical section of the rake, a rack-bar connecting said arms at the rear, a pinion mounted at the upper portion of the swinging standard, engaging the teeth of the rack-bar, a notched wheel, and a sprocket-wheel secured to the same shaft as the pinion, a sprocket-pinion and attached hand-wheel mounted on the shaft between the rear standards, a chain connection between the sprocket-pinion and the sprocket-wheel, a spring-controlled latch arranged for engagement with the notched wheel, a lever for operating the said latch, a carriage through which the shaft of the pinion, the sprocket-wheel and the notched wheel passes, friction-rollers carried by the said carriage for engagement with the upper edge of the rack-bar, and an operating-lever for the lower end of the swinging standard, a draft device comprising two lengthy draft-trees having their inner ends adjacent to the lower end of the swinging standard, a guide-pulley mounted in the frame, chains connected to the inner ends of the said lengthy doubletrees, a single chain connecting the first-named chains, which single chain is passed over said pulley to an attachment to the lower end of the swinging standard, and a swingletree at the outer end of each lengthy draft-tree.

816,847. PROPELLER. George Machtemheimer, San Francisco, Cal. Filed May 1, 1905. Serial No. 258,317.



Claim.—1. An apparatus for the propulsion of vessels, said apparatus consisting of turnably-mounted gates or frames, slides in which said gates are guided, and reciprocable hinged shutters extending transversely across said gate and opening freely in one direction and closing when moved in the opposite direction, and means by which the gates may be reversed.

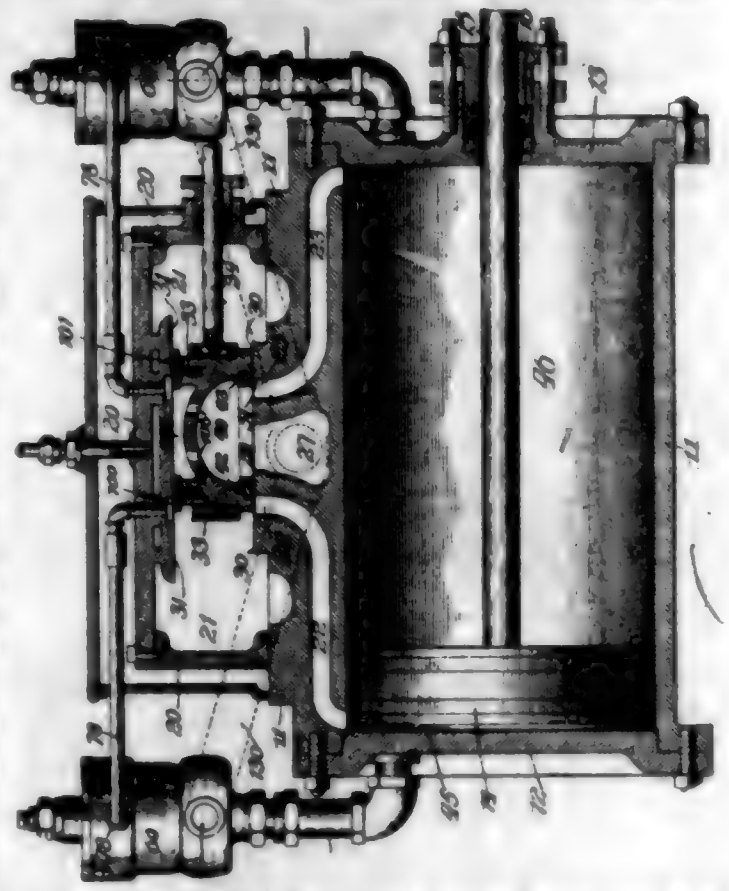
2. In an apparatus for the propulsion of vessels, guides fixed upon opposite sides of the vessel parallel with the keel, with gates opening and closing and having central vertical columns or standards with collars or flanges slidable in the guides, a yoke fixed to the standard connections with cranks, and a motor whereby power may be applied to reciprocate the gates.

3. In an apparatus for the propulsion of vessels, guides fixed upon each side of the vessel parallel with the keel, gates having hinged opening and closing shutters, vertical columns extending above and below the central portion of the gates having flanges slidable in the guides, shafts connected with the gates and turnable in the standards, gear-wheels mounted and fixed upon the outer ends of the shafts, and worms or screws engaging said gears and mechanism by which the worm-gear is actuated to revolve and reverse the gate with relation to the direction of motion.

4. In an apparatus for the propulsion of vessels, horizontally-guided reciprocating gates with hinged alternating opening and closing shutters, standards extending above and below the central portion of the gate and slidable in guides carried upon the vessel-shafts connected with the gates and extending through said standards, worm-gears fixed to the shafts, transverse shafts carrying worms to engage said gears, and star-wheels turnable loosely upon the shafts with pawl-and-ratchet mechanism whereby said star-wheels are engaged with the shaft and prevented from turning in one direction, and mechanism interposed in the line of travel of the star-wheel, teeth whereby said wheel and connected parts are rotated at each reciprocation of the gates.

5. In an apparatus for the propulsion of vessels, horizontally-guided reciprocating gates having hinged opening and closing shutters extending transversely across their opening, centrally-fixed standards extending upwardly and downwardly from the gate and slidable in guides fixed to the vessel, worm-gears and star-wheel, whereby said gears revolve, a shaft parallel with the line of travel of the gates having arms and a device whereby said arms are moved into or out of the path of travel of the star-wheel.

816,848. CYLINDER-COMPRESSION-RELIEF VALVE. John W. Miller, Chicago, Ill. Filed June 14, 1905. Serial No. 265,231.



Claim.—1. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder, and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; a supplemental valve connected to the cylinder adapted when opened to allow the gas within the cylinder to exhaust, adapted to be opened by pressure of gas in the cylinder, and mechanism connecting said supplemental valve with the main-valve mechanism adapted to hold the supplemental valve closed during the portion of the engine-stroke that steam is working in the cylinder and to release the supplemental valve during the remainder of the stroke of the engine.

2. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder, and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; an independent exhaust-pipe at or near one end of the cylinder, a valve in said exhaust-pipe normally closed but capable of being opened by the pressure of steam, air or gas passing from the cylinder through the said exhaust-pipe and mechanism connecting said supplemental valve with the main-valve mechanism of the engine adapted to hold the supplemental valve closed thereby closing the independent exhaust-pipe during the time steam is working in the portion of the cylinder adjacent to the exhaust-pipe.

3. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder, and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; an independent exhaust-pipe at or near one end of the cylinder, a valve in said exhaust-pipe normally closed but capable of being opened by the pressure of steam, air or gas passing from the cylinder through the said exhaust-pipe and mechanism connecting said supplemental valve with the main-valve mechanism of the engine adapted to hold the supplemental valve closed thereby closing the independent exhaust-pipe during the time steam is working in the portion of the cylinder adjacent to the exhaust-pipe and to release the supplemental valve during the remainder of the stroke of the engine.

4. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder, and v. .ve mechanism to control the admission and exhaustion of steam to and from the cylinder; another exhaust-pipe at or near one end of the cylinder, a supplemental valve mounted in the said exhaust-pipe, said valve being normally closed but adapted to be opened by the pressure of air, gas or steam passing from the cylinder through said exhaust-pipe, and a steam-pipe so connecting the supplemental valve with the main-valve mechanism that live steam holds the supplemental valve closed during the portion of the piston-stroke that steam is working in the part of the cylinder adjacent to the supplemental valve.

5. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder, and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; an independent exhaust-pipe leading from at or near one end of the cylinder, a supplemental valve mounted in said exhaust-pipe adapted to be opened by the pressure of steam, air or gas passing from the cylinder through said exhaust-pipe to allow said gases to escape, and a steam-pipe so connected with the supplemental valve and with the main-valve mechanism that live steam holds the supplemental valve closed during the time steam is working in the end of the cylinder adjacent to the supplemental valve and also so connected that said steam-pressure is cut off from the supplemental valve at or before the main exhaust-valve of the engine opens to the same end of the cylinder.

6. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; an independent exhaust-pipe at or near the one end of the cylinder, a differential piston-valve mounted in said exhaust-pipe having its smaller area adapted to be engaged by steam, air or gas passing from the cylinder through the independent exhaust-pipe to open said valve, to permit said gases to pass out of the cylinder, and a steam-pipe connecting the larger end of the differential valve with the main-valve mechanism of the engine; said connection being made at such a point that live steam is admitted to the larger end of the supplemental valve to hold it closed during the portion of the stroke of the engine that steam is working in the end of the cylinder adjacent to the supplemental valve.

7. In combination with an engine having a cylinder, a piston and piston-rod in the cylinder and valve mechanism to control the admission and exhaustion of steam to and from the cylinder; an independent exhaust-pipe at or near each end of the cylinder; a supplemental valve mounted in each of said independent exhaust-pipes; said valves being adapted to normally close said pipes and to be opened by the pressure of steam, air or gas in the end of the cylinder to which each supplemental valve belongs, a steam-pipe connecting each of said supplemental valves to the main-valve mechanism of the engine in such a way that while steam is being used for work in one end of the cylinder the supplemental valve at that end of the cylinder is held closed by steam admitted by the main-valve mechanism of the engine and at the same time there is no steam-pressure tending to close the supplemental valve at the opposite end of the cylinder.

8. A cylinder-compression-relief valve comprising a casing having, in one portion two ports or openings, one adapted to be connected to an engine-cylinder and the other for the exhaustion of steam, air or gas and in another portion a port or opening adapted to be connected to a source of live steam, a piston-valve within the casing adapted to have one end engaged by steam, air or gas entering the valve through said cylinder-port to move said valve to open a communication between said first two openings or ports and the other end adapted to be engaged by steam entering the casing through said steam-port, to move said valve in the opposite direction to close the connection between said cylinder and exhaust ports in the casing.

9. A cylinder-compression-relief valve comprising a casing having in one portion two ports or openings, one adapted to be connected to an engine-cylinder and the other for the exhaustion of steam, air or gas; and in another portion a port or opening adapted to be connected to a source of live steam; a piston-valve within the casing adapted to have one end engaged by steam, air or gas entering the valve through said cylinder-port to move said valve to open a communication between said first two openings or ports and the other end adapted to be engaged by steam entering the casing through said steam-port, to move said valve in the opposite direction to close the connection between said cylinder and exhaust ports in the casing; the area of the piston engaged by the live steam being greater than the area engaged by the exhaust-steam.

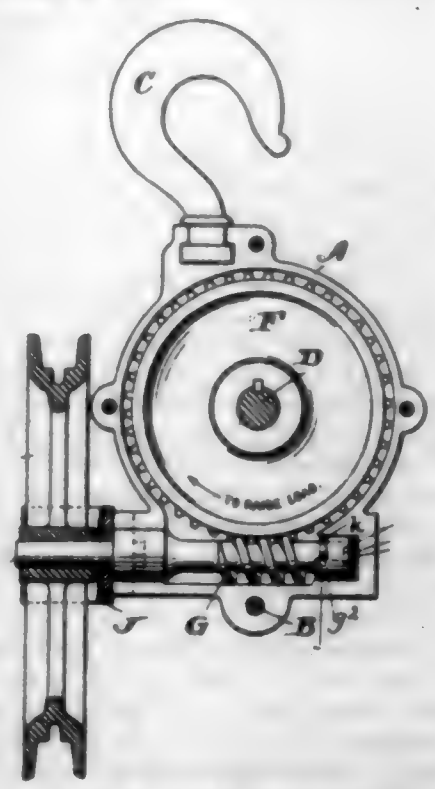
10. A cylinder-compression-relief valve comprising a casing having in one portion two ports or openings, one adapted to be connected to an engine-cylinder and the other for the exhaustion of steam, air or gas and in another portion a port or opening adapted to be connected to a source of live steam; a piston-valve within the casing adapted to have one end engaged by steam, air or gas entering the valve through said cylinder-port to move said valve to open a communication between said first two openings or ports and the other end adapted to be engaged by steam entering the casing through said steam-port to move said valve in the opposite direction to close the connection between said cylinder and exhaust ports in the casing; and means for draining the live-steam space in said mechanism.

11. A cylinder-compression-relief valve comprising a casing having in one portion two ports or openings, one adapted to be connected to an engine-cylinder and the other for the exhaustion of steam, air or gas, and in another portion a port or opening adapted to be connected to a source of live steam; a piston-valve within the casing adapted to have one end engaged by steam, air or gas entering the valve through said cylinder-port to move said valve to open a communication between said first two openings or ports and the other end adapted to be engaged by steam; a drainage-valve in communication with the live-steam space in said mechanism adapted to be closed by the pressure of steam within the mechanism and adapted to open for drainage when the steam-pressure is removed.

12. In mechanism of the class described, the combination of a casing 60 having at one end ports or openings 61 and 64 communicating with each other through the casing, and at the other end a steam port or opening 78, a piston-valve 66 having one end 68 adapted to be engaged by steam from port or pipe 78, and another end 67 adapted to be engaged by exhaust-steam in pipe 61; and means for adjusting the length of travel of the piston 66.

13. In mechanism of the class described, the combination of a casing; a piston-valve adapted to be moved backward and forward within the casing under the action of steam admitted at either end of the piston, and a supplemental drainage-valve larger at one end than the other, through the main valve adapted to be engaged by the steam at either end of the casing substantially as described for the purposes set forth.

816,349. HOIST. EDWARD Y. MOORE, Cleveland, Ohio. Filed Dec. 12, 1904. Serial No. 236,422.



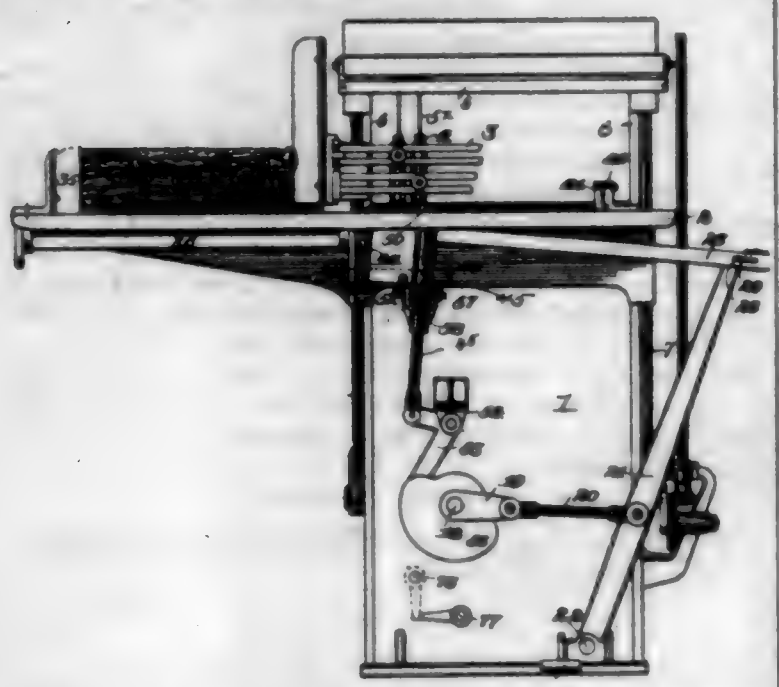
Claim.—1. In a hoist, the combination of a worm, a worm-wheel, a cap at the end of the worm having an opening in its end, a thrust-pin adapted to project through such opening and form a thrust-bearing for the worm, the edge of the cap being inclined, and a pin projecting from the worm adapted to engage said incline, the incline being in such a direction that the worm tends to withdraw from the cap on the lowering rotation of the worm.

2. In a hoist, the combination, a worm, a worm-wheel, a cap on the end of the worm and having an inclined edge, a pin projecting from the worm and adapted to engage said edge, a member adapted to project through an opening in the end of the cap on the elevating rotation of the worm and form a thrust-bearing for the worm, and an abrupt shoulder on the cap between the high and low points of its incline, said pin being adapted to abut said shoulder whereby the independent rotation of the worm is limited.

3. In a hoist, the combination of a casing made in two coöperating halves, a worm and worm-wheel within the casing dividing in a plane substantially passing through the axis of the worm, a cap on the end of the worm within the casing and having an inclined engagement with the worm, said cap having a hole through its end through which a thrust-pin on the end of the worm may project, and a thrust-plate within the casing opposite the end of said pin and bridging the line of division between the two halves of the casing.

4. In a hoist, in combination, a two-part casing, a worm and worm-wheel within the casing, a shank of the worm extending outside of the casing, ears formed on the casing adjacent to the shank of the worm, and a chain-guard extending across the shank of the worm and secured to the ears, said shank being reduced at the chain-guard, whereby the chain-guard serves the double purpose of guiding the chain and retaining the worm within the casing.

816,350. NAILING-MACHINE. HENRY W. MORGAN, Rochester, N. Y. Filed June 20, 1900. Serial No. 20,690.



Claim.—1. The combination with a frame, a work-table thereon, nail-driving devices arranged above the table, a driving-shaft and an intermittently-driven shaft actuating said nail-driving devices, a cleat-support, and a feeding device operating over the latter to position a cleat upon the work-table, of intermittently-driven operating means connected to said cleat-feeding device actuated by the driving-shaft, and means operated by the driven shaft for controlling the operation of the cleat-feeding device.

2. The combination with a frame, a work-table thereon, and nail-driving devices arranged above the latter, a driving-shaft, an intermittently-driven shaft actuated therefrom, and a cleat-support arranged at the side of the work-table, of a cleat-feeding device operating over the support, intermittently-moving operating devices connected to the feeding device and operated from the driving-shaft, and a cam connected to the driven shaft and connections operated thereby to cause the movement of the feeding device to position a cleat prior to the nailing operation.

3. The combination with a frame, a work-table thereon, nail-driving devices supported above the table, a driving-shaft, and a driven shaft, of a cleat-support arranged at the side of the work-table, a cleat-feeding device, a rotary shaft for operating said device, and clutch devices arranged between the latter and the driving-shaft, of the cam operated by the driven shaft, and clutch-controlling devices operated by said cam.

4. The combination with a frame, a work-table thereon, nail-driving devices arranged above the table, a driving-shaft, and a driven shaft actuated therefrom and connected to the nailing devices, of a cleat-support arranged at the side of the table, feeding devices adapted to position a cleat upon the work-table, a shaft operating said devices, and a clutch connection between said shaft and the driving-shaft normally disengaged, a rock-shaft having the arm thereon for controlling the operation of the clutch, an arm on the rock-shaft, and a cam on the driven shaft engaged by said arm.

5. The combination with a frame having a work-table, nail-driving devices, a driving-shaft, a driven shaft actuated therefrom and connected to the nailing devices, and a cleat-support arranged at the side of the work-table, of a cleat-feeding device, a shaft mounted in the frame, connections between the shaft and the feeding device, and clutch connections between the said shaft and the driving-shaft normally disengaged, a rock-shaft having the finger controlling the operation of the clutch, the movable arm on the rock-shaft, and a stop for holding the rock-shaft stationary, a cam on the driven shaft operating the movable arm, and connections between the arm and rock-shaft, whereby the latter may be operated when released from the stop.

6. The combination with a frame, a work-table thereon, nailing devices, a driving-shaft and a driven shaft actuated thereby and connected to the nailing devices, and a cleat-support arranged at the side of the work-table, a feeding device, a shaft connected thereto, and clutch connections between the latter and the driving-shaft, of a rock-shaft having a finger controlling the operation of the clutch, a stop for arresting the movement of the rock-shaft, and a movable arm mounted upon the latter, a cam upon the driven shaft coöperating with the movable arm, connections between the latter and the rock-shaft whereby the shaft may be oscillated, and means for returning the finger to release the clutch upon the completion of the nailing operation.

7. In a nailing-machine having a driving-shaft, the combination with a driven shaft, nailing devices actuated by said shaft and a work-table having a slotted cleat-support at one side, of a feeding-arm provided with a finger adapted to engage a cleat, a guide upon the rear of the table, a presser adapted to engage the forward side of a cleat to hold it against the guide, and means operated by the driven shaft controlling the cleat-feeding devices.

8. The combination with a frame having driving and driven shafts, nailing devices actuated thereby, a work-table having a slotted cleat-support at one side and a guide on the support, of a feeding-arm supported on the guides and having a finger adapted to engage a cleat, a guide upon the rear of the table, a presser adapted to engage the forward side of a cleat to hold it in engagement with the guide and means operated by the driving-shaft for controlling the operation of the feeding-arm and retracting the presser below the table after the cleat has been positioned.

9. The combination with a frame having driving and driven shafts, nailing devices actuated thereby, a work-table having a slotted cleat-support and guides arranged upon the lower side of the support, of a feeding-arm supported at one end upon the guides and having a finger, a cleat-guide upon the rear of the table, and operating devices connected to the driving-shaft and operating the arm, a presser movable relative to the guide adapted to engage the forward side of a cleat, a movable bearing supporting the presser and means for retracting the latter after the cleat has been positioned.

10. The combination with a frame provided with a work-table having a slotted cleat-support, a driving-shaft, nailing devices actuated thereby, and a cleat-feeding arm operating beneath the table, of a guide upon the rear side of the latter, a wing pivoted to the table carrying a vertically-moving presser and permitting its movement relatively to the guide, operating devices connected to the driving-shaft for operating the feeding-arm, and means controlled by said devices for retracting the presser beneath the guide after a cleat has been positioned.

11. The combination with a frame provided with a work-table having a cleat-support at the side thereof, a driving-shaft, nailing devices actuated thereby, and a cleat-feeding arm operating beneath the table, of a shaft operated by the driving-shaft having a cam, and connections between the shaft and feeding-arm, a wing pivoted beneath the table, a vertically-movable presser carried thereon having a roller upon its upper end, and connections between the presser and the cam for retracting the former after a cleat has been positioned.

12. The combination with a frame having a work-table provided with a slotted cleat-support at the side thereof, a driving-shaft, nailing devices actuated thereby and guides arranged beneath the support, of a feeding-arm supported on the guides having a finger operating through the slot, a lever pivoted to the frame and connected to the arm, and an operating-shaft, connections between the latter and the lever, means for operating the shaft by the movement of the driving-shaft, a wing pivoted to the table and carrying a vertically-movable presser having a roller upon its upper end, a cam mounted upon the operating-shaft, and the lever coöperating therewith and connected to the presser for retracting the latter.

13. The combination with a frame having a work-table provided with a cleat-support, a driving-shaft, a driven shaft operated thereby having a cam, and nailing devices connected to the driven shaft, of a cleat-feeding device, a shaft connected thereto and a clutch arranged between the latter and the driving-shaft having a

stop-arm for releasing it and arresting the movement of the clutch, a rock-shaft having a finger normally engaging the clutch-arm and provided with a stop-finger and an adjustable stop on the frame under the control of the operator adapted to engage the stop-finger, a spring for retaining the rock-shaft in normal position when the stop is released, a movable arm mounted upon the rock-shaft engaging the cam on the driven shaft, and connections between the arm and shaft, whereby the latter is operated through the movement of the cam when the stop is released.

14. The combination with a machine embodying nail-driving mechanism, and a cleat-feeding device therefor, of an intermittently-operating shaft for actuating the nailing devices, an intermittently-operating shaft for causing the operation of the cleat-feeding devices, an automatic clutch device for controlling the cleat-feeding devices, and a cam connected to the shaft of the nailing device for controlling said feeding devices.

15. The combination with a nailing-machine, an operating-shaft therefor having a cam, and means for feeding cleats to the nailing-machine, of operating devices for the cleat-feeding means, and a clutch controlling them, clutch-operating devices actuated by the cam on the nailing-machine-operating shaft and operating devices arranged between the cam and clutch.

16. The combination with a nailing-machine, means for actuating it and a cam operated thereby, of a cleat-feeder, a driving means therefor, and a clutch between the cleat-feeder and driving means, an arm controlling the clutch, a second arm actuated by the cam and having a limited independent movement relatively to the first-mentioned arm and a spring connection between the arms.

17. The combination with a nailing-machine, means for actuating it, and a cam operated thereby, of a cleat-feeder, a driving means therefor and a clutch between the cleat-feeder and driving means, an arm controlling the clutch, a second arm actuated by the cam and having a limited independent movement relatively to the first-mentioned arm, a spring connection between the arms and a stop under the control of the operator for regulating the movement of the arms.

18. The combination with a nailing-machine, means for actuating it, and a cam operated thereby, of a cleat-feeder, a driving means therefor and an automatic clutch between said means and the feeder, an arm automatically operated in one direction to control the clutch, a second arm coöperating with and actuated by the cam having a limited movement relatively to the clutch-controlling arm, a spring connection between said arms and means for governing the operation of the clutch-controlling arm.

19. The combination with a work-support, a cleat-guide at the rear of the work-support having the inclined grooves, of a presser-roller inclined relative to the work-support and movable above and below said support, and means for feeding boards or cleats between the guide and roller.

20. The combination with a work-support, of a cleat-guide at the rear of the support, a removable cleat-presser in front of the guide, and cleat-feeding devices operable between the guide and presser.

21. The combination with a work-support, of a reciprocating cleat-feeder movable laterally of the support, a cleat-guide at the rear, a movable presser at the front, and a driving means for reciprocating the feeder and elevating and depressing the presser.

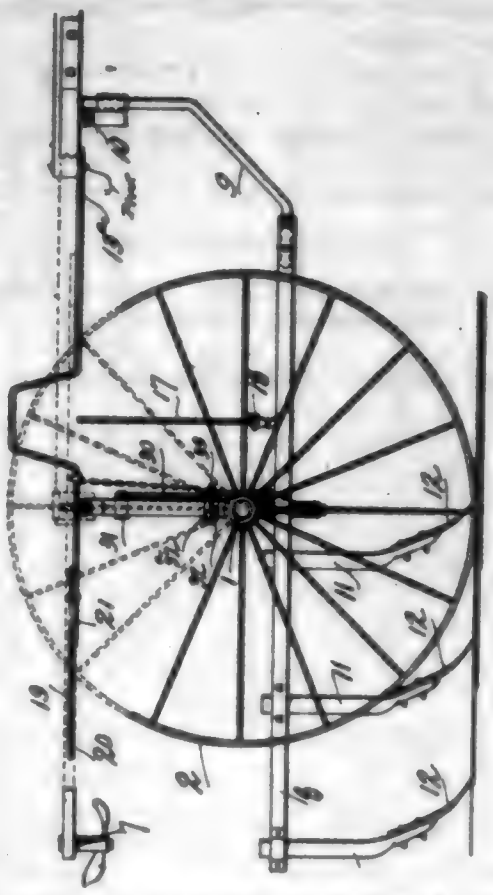
22. The combination with a work-support, and a cleat-guide thereon, of a reciprocating cleat-feeder, a vertically-movable cleat-presser, a shaft, and connections between said shaft and the feeder and presser for reciprocating the former and operating the latter vertically relatively to the support.

23. The combination with a work-support, and nail-drivers, and operating devices therefor, of the cleat-feeder movable laterally of the support, operating devices for the feeder, a cam operated by the driver-operating devices for controlling the time of operation of the feeder relatively to the driving operation, and means under the control of the operator for regulating the operation of the feeding devices independently of the movement of the cam.

24. The combination with a work-support having a cleat-guide thereon, and nail-driving devices, of a reciprocating cleat-feeder having a pawl thereon to engage a cleat and operating to feed cleats beneath the nail-driving devices, a crank operating the feeder, and a removable pressing device for holding the cleat during the nailing operation.

816,851. CULTIVATOR. THOMAS MULALLY, Princeville, Ill. Filed Apr. 11, 1905. Serial No. 255,000.

Claim.—1. In a cultivator, the combination with the shovel-beams, of a lever adjustably and pivotally connected at its front end, chains connected with the beams and the lever, adjustably-mounted supports, and guide-wheels suitably attached to said supports, around which the said chains are carried.



2. In a cultivator, the combination with the shovel-beams, of a lever pivoted to have horizontal movement on said cultivator, chains connected to the beams and the lever, adjustably-mounted supports, and guide-wheels suitably attached to said supports, around which the said chains are carried.

3. In a cultivator, the combination therewith of a lever pivoted at its front end to a support of the cultivator, chains connected with the body of the lever and with devices slidably connected with the shovel-beams, bracket-arms having a laterally-adjustable connection with the arched axle of the cultivator, and sheave-wheels supported by the bracket-arms around which the said chains are carried.

4. In a cultivator, the combination with the shovel-beams and axle thereof, of supports attached to said axle, bracket-arms adjustably attached to said supports, guide-wheels connected with the said arms, chains connected with the beams and passing over the guide-wheels, and means to which the free ends of the chains are attached for controlling the said beams.

5. In a cultivator, the combination with the shovel-beams and axle thereof, of supports vertically adjustable on the axle, bracket-arms laterally adjustable on the said supports, guide-wheels attached to said arms, a lever, and flexible connections between the lever and said beams, the connections passing around the guide-wheels aforesaid.

6. In a cultivator, the combination with the shovel-beams and axle thereof, of supports sustained in a suitable manner by the axle, bracket-arms provided with hooked ends, and adjustably connected to the said supports; a guide-wheel connected to the hooked ends of the arms, a sheave-wheel slidably attached to the beams, a lever, and chains connecting the sheave-wheels of the beams with the lever and passing over the guide-wheels aforesaid.

7. In a cultivator, the combination with the shovel-beams and axle, a yoke connecting the said beams, a lever fulcrumed in advance of the axle and the body thereof horizontally swingable across the same, an arch formed in the body of the lever above the yoke aforesaid, chains connected at one end to the lever and having connection at their opposite ends with the beams, guides for the said chains, and supports for the guides being adjustably connected to the axle.

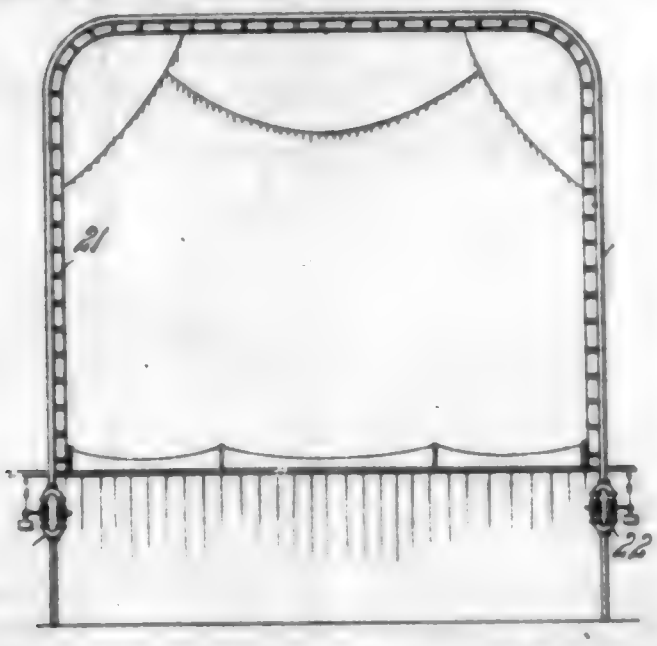
8. In a cultivator, the combination with the shovel-beams and axle, a yoke connecting the said beams, a lever pivoted in an adjustable manner in advance of the axle, an arch in the body of the lever above the yoke aforesaid, chains connected at one end to the lever and having connection at their opposite ends with the beams, guides for the chains intermediate their connections, and a vertically and laterally adjustable support for the said guides.

9. In a cultivator, the combination with the shovel-beams and axle, a yoke connecting the said beams, a lever pivoted in an adjustable manner in advance of the axle, an arch in the body of the lever

above the yoke aforesaid, chains connected at one end to the lever and having connection at their opposite ends with means having a vertically-slidable connection with the beams, guides for the chains intermediate their ends, and a vertically and laterally adjustable support for the said guides.

10. In a cultivator, the combination with the shovel-beams and axle thereof, of supports swingably and vertically adjustable on the axle, bracket-arms laterally adjustable on said supports, guide-wheels carried by said arms, a lever, and connections between the lever and said beams, said connections passing around the guide-wheels aforesaid.

816,352. FIRE-EXTINGUISHER. HAROLD T. MURPHY, Springfield, Mass. Filed Jan. 20, 1905. Serial No. 241,960.



Claim.—1. In a fire-extinguishing apparatus, the combination with sprinkling-pipes, of a supply-pipe communicating therewith, a valve-casing connected to the supply-pipe and provided with branch passages, a valve in each branch passage, means acting normally to impart an opening movement to one of said valves, and a fusible device for holding the valve-opening means against operation during normal temperature conditions.

2. In a fire-extinguishing apparatus, the combination with sprinkling-pipes, of a supply-pipe communicating therewith, a valve-casing connected to said supply-pipe and having branch passages, a normally closed valve in each branch passage, automatic means for opening one of said valves, a fusible device for holding said opening means against operation and manually-operable means for the other valve.

3. In a fire-extinguishing apparatus, the combination with the sprinkling-pipes, arranged adjacent the ceiling of a building, of a supply-pipe communicating with the sprinkling-pipes, a valve-casing connected to said supply-pipe and having branch passages, said casing being located adjacent the floor of the building, a normally closed plug-valve in each branch passage, automatic means for operating one of said valves, a fusible device for holding said means against operation, and manually-operable means for the other valve.

4. In a fire-extinguishing apparatus, the combination with the sprinkler-pipes, of a supply-pipe communicating therewith, a valve-casing connected to said supply-pipe and having branch passages, a normally closed valve in each branch passage, a weight suspended from the stem of one of said valves and normally acting to open the latter, a fusible support for said weight, and manually-operable means for the other valve.

5. The combination with an arch, of sprinkler-pipes following the outline thereof, a supply-pipe for said sprinkler-pipes, a curtain adjacent one face of the arch and adapted to be lowered to close the arch-opening, water-wheels connected to and adapted when rotated to lower the curtain, a casing for each water-wheel, a supply-pipe therefor, a valve-casing in each of the supply-pipes, valves in said supply-pipes, and means for automatically opening the valves to lower the curtain and discharge water from the sprinkler-pipes.

6. The combination with an arch, of a supply-pipe following the outline of the arch-opening, discharge-nozzles extending from the supply-pipe and directed toward the opening through the arch, valve-casings at opposite sides of the arch communicating with the supply-pipe, each casing having branch passages therein, and a normally closed valve in each branch passage, one of said valves at each side of the arch being adapted to be opened manually and independently of the others, and the latter adapted to be opened automatically by the action of heat.

7. The combination with an arch having a curtain adjacent one face thereof, of supply-pipes adjacent opposite faces of the arch and following the outline of the opening of the arch, said pipes being adapted to receive the curtain therebetween, discharge-nozzles extending from the pipes and adjacent the opening of the arch, valve-casings within the pipes at opposite sides of the arch and adjacent the bottom thereof, each casing having passages therein, and a normally closed valve in each passage, one of said valves being adapted to be opened manually and independently of the other valve, which is adapted to be opened automatically by the action of heat.

8. The combination with an arch having supply-pipes adjacent opposite faces thereof, and outlet-nozzles extending from the pipes and adjacent the edges of the arch; of a curtain adjacent one face of the arch and adapted to be received between the pipes, water-wheels connected to and adapted when rotated, to lower the curtain, a casing for each wheel, a supply-pipe therefor, a valve-casing in each of the supply-pipes, valves therein, and means for automatically opening the valves to lower the curtain and discharge water from the nozzles.

9. The combination with an arch having supply-pipes adjacent opposite faces thereof, and outlet-nozzles extending from the pipes and adjacent the edges of the arch, of a curtain adjacent one face of the arch and adapted to be received between the pipes, water-wheels connected to and adapted when rotated, to lower the curtain, a casing for each wheel, a supply-pipe therefor, a valve-casing in each of the supply-pipes, each casing having passages therein, a normally closed valve in each passage, a weight supported by one of the valves of each casing, and a fusible support for each weight.

10. In a fire-extinguishing apparatus, the combination with a sprinkling-pipe, of a supply-pipe communicating therewith, a valve-casing combined with the supply-pipes and provided with branch passages, a manually-operable valve in one of said passages, and an automatically-operable valve in the other passage.

11. In a fire-extinguishing apparatus, the combination with sprinkling-pipes, of a supply-pipe communicating therewith, a valve-casing combined with the supply-pipe and provided with branch passages, a manually-operable valve in one of said passages, an automatically-operable valve in the other of said passages, and fusible means the destruction of which permits the operation of the automatically-operable valve.

12. In a fire-extinguishing apparatus, the combination with a sprinkling-pipe, of a supply-pipe communicating therewith, a valve-casing combined with said supply-pipe, located adjacent the floor of the building and provided with branch passages, a manually-operable valve in one of said passages and an automatically-operable valve in the other of said passages.

13. The combination with an arch, of a sprinkler-pipe conforming to the outline thereof, a supply-pipe for said sprinkler-pipe, a curtain arranged upon a roller and adapted to be lowered to close the arch-opening, said roller being provided with means whereby it is rotated by water discharged from said sprinkling-pipe to lower the curtain.

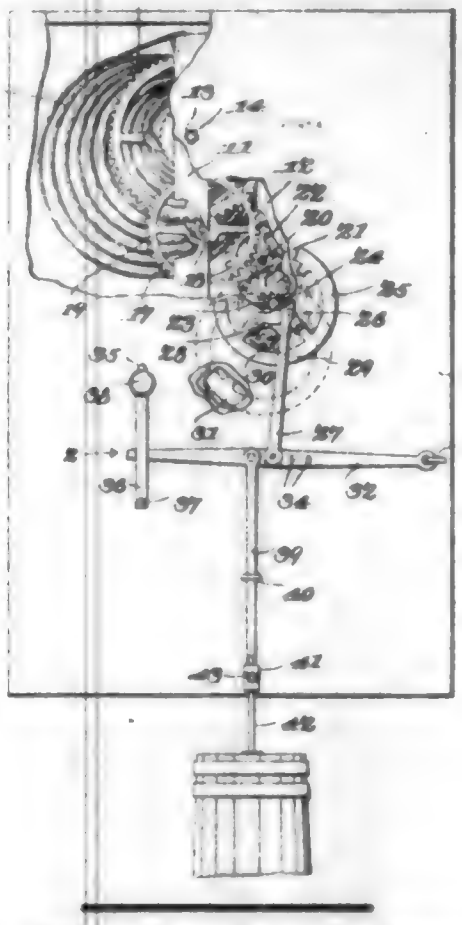
14. The combination with an arch of a sprinkler-pipe conforming to the outline thereof, a supply-pipe for said sprinkler-pipe, a curtain arranged upon a roller and adapted to be lowered to close the arch-opening, said roller being provided with means whereby it is rotated by water discharged from said sprinkling-pipe to lower the curtain, and means for manually lowering said curtain.

816,353. CHURN-MOTOR. JOSEPH M. MCBRIDE, Poteau, Ind. Ter. Filed Aug. 31, 1905. Serial No. 276,625.

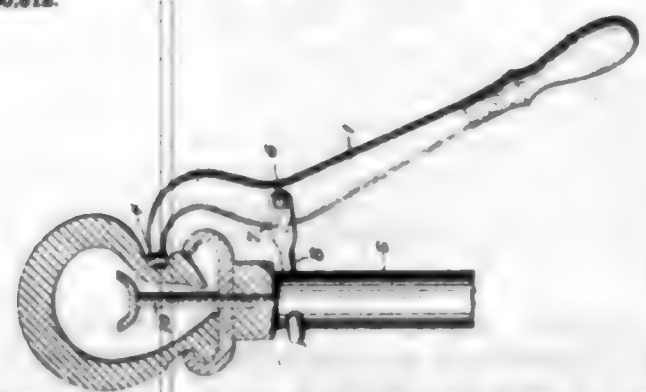
Claim.—1. A churn-operating mechanism comprising a casing, a motor arranged within the casing, a shaft projecting through the walls of the casing and provided with a crank-arm, a bearing-plate secured to the casing, a horizontally-disposed lever having one end thereof pivoted to said casing and its free end movable in a vertical plane over the surface of the bearing-plate, a link pivotally secured to the lever intermediate its ends and connected to the crank-arm, a pitman secured to the lever and provided with means for attachment to a churn-dasher, a brake-lever carried by the bearing-plate, and means for moving the brake-lever in contact with the free end of the horizontal lever.

2. A churn-operating mechanism comprising a casing, a motor arranged within the casing, a shaft projecting through the walls of the casing and provided with a crank-arm, a bearing-plate secured to

and spaced from the casing, a horizontally-disposed perforated lever having one end thereof pivoted to the casing and its free end movable in a vertical plane over the surface of the bearing-plate, a link pivoted in one of the perforations in the lever and connected with the crank-arm, a pitman secured to the lever and provided with means for attachment to a churn-dasher, a brake-lever having one end thereof secured to and spaced from the bearing-plate, and an adjusting-screw threaded in the free end of the brake-lever and the adjacent portion of the bearing-plate for moving said brake-lever in contact with the horizontal lever.



816,354. VEHICLE-TIRE TOOL. CHARLES MCCARTHY and MILLROY M. PERRICK, Columbus, Ohio. Filed Mar. 12, 1905. Serial No. 250,812.

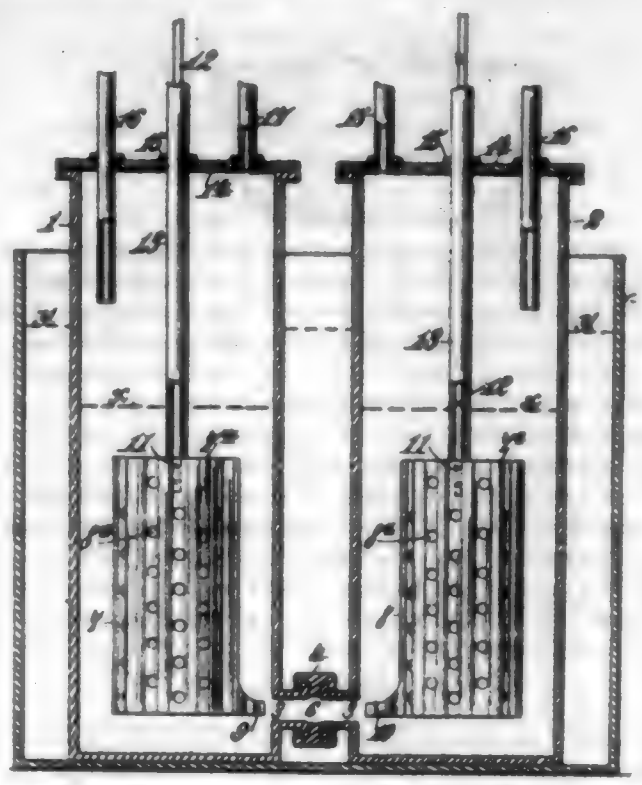


Claim.—1. A tool for removing pneumatic-tire casings from clencher-rims, comprising a lever having a curved portion at one end which terminates in an elongated curved tire-engaging face, a handle provided at the other end of said lever and a hook pivotally secured to the lever intermediate its ends, said hook lying in a plane transverse to that of the said lever.

2. A tool for removing vehicle-tires, comprising a lever having a curved portion at one end thereof, said curved portion terminating in an elongated tire-engaging plate curved upon its face and provided with rounded edges and a handle formed at the other end of said lever and a hook pivotally secured to the lever intermediate its ends and extending transversely thereto.

813,355. APPARATUS FOR DECOMPOSING WATER BY ELECTROLYSIS. WILLIAM F. M. MCCARTY, Rocky Ridge, Md., assignor to Thomas A. Darby, trustee, New York, N. Y. Filed Nov. 8, 1904. Renewed Sept. 25, 1905. Serial No. 280,058.

Claim.—1. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, an electrode suitably connected with a source of electricity suspended in each tank, each of said electrodes having a discharge portion projecting laterally therefrom and located directly opposite one end of said conduit, the said projecting portion of each electrode being directed toward that of the other electrode.



2. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a spiral electrode suspended in each tank and suitably connected with a source of electricity and having at its lower end a radially-projecting portion located directly opposite one end of said conduit.

3. In an apparatus of the class described, in combination with two tanks communicating through the medium of a conduit, a spiral electrode of large superficial area suspended in each tank and suitably connected with a source of electricity, and provided at one end with a radially-projecting portion located directly opposite one end of said conduit.

4. In an apparatus of the class described, in combination with two tanks communicating near their lower ends through the medium of a conduit, a spiral electrode of large superficial area suspended in an upright position in each tank and connected at its upper end with a suitable source of electricity, each of said electrodes having its outer coil terminating at the lower end of the electrode in a radially-projecting portion extending outward from the coil and having its outer end located directly opposite one end of said conduit.

5. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a corrugated spiral electrode suitably connected with a source of electricity suspended in each tank, each of said electrodes having a radially-projecting discharge portion located directly opposite one end of said conduit.

6. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a perforated spiral electrode suitably connected with a source of electricity suspended in each tank, each of said electrodes having a radially-projecting discharge portion located directly opposite one end of said conduit.

7. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a corrugated and perforated spiral electrode suitably connected with a source of electricity suspended in each tank, each of said electrodes having a radially-projecting discharge portion located directly opposite one end of said conduit.

8. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a corrugated spiral electrode suspended in each tank and suitably connected with a source of electricity and having at its lower end a radially-projecting portion located directly opposite one end of said conduit.

9. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a perforated spiral electrode suspended in each tank and suitably connected with a source of electricity and having at its lower end a radially-projecting portion located directly opposite one end of said conduit.

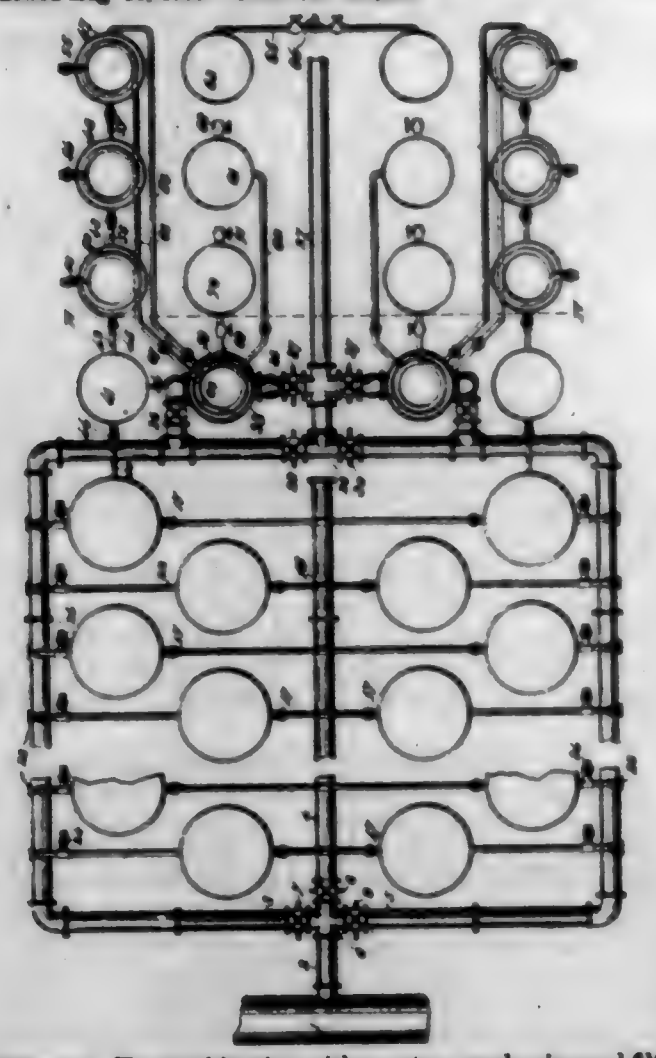
10. In an apparatus of the class described, a pair of tanks communicating through the medium of a conduit, and a corrugated and perforated spiral electrode suspended in each tank opposite one end of said conduit and suitably connected with a source of electricity.

816,356. CULINARY VESSEL. HENRY MCCONNELL, Minneapolis, Minn. Filed Nov. 7, 1904. Serial No. 231,773.



Claim.—A culinary vessel from which the liquid contents may be drained without the escape of the solid contents, embodying a receptacle having radial projections on the outside, at equal distances from each other, a substantially flat cover engaging with the top edge only of the receptacle and located entirely without the receptacle, hook-shaped projections depending from the under side of the cover for coöperation with the radial projections, the hook portions of said projections being extended horizontally and the ends bent upwardly to just pass the radial projections when the cover rests on the vessel, but adapted to engage said projections when the cover is raised, the space between the radial projections and bodies of the hooks being sufficient to permit the cover to separate slightly from the receptacle without becoming detached, whereby a drainage-space is provided; substantially as described.

816,357. APPARATUS FOR PURIFYING WATER. JOSEPH H. MCDONALD, New York, N. Y. Original application filed Dec. 21, 1900, Serial No. 40,663. Divided and this application filed Mar. 4, 1902. Renewed Aug. 18, 1905. Serial No. 274,806.



Claim.—1. The combination with a water-supply pipe and filter in operative communication therewith, of a steriliser-case in communication with the filtered-water supply, a steam-heating pipe within the same, coils communicating with the interior of the case and its heating-coil respectively, means of discharge from said coils respectively, and a cooler containing said coils and in operative communication with the source of water-supply.

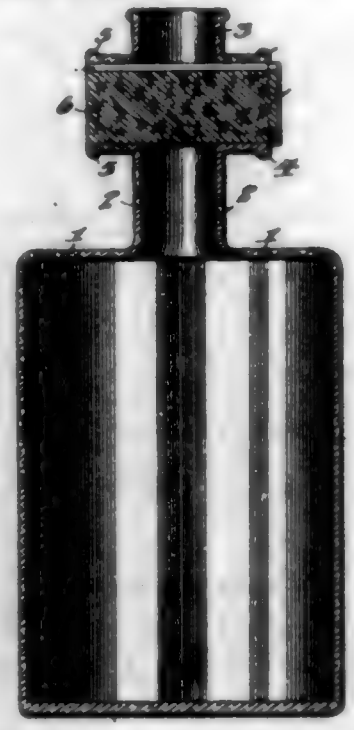
2. The combination with a water-supply pipe operatively communicating with a cooler, of a pair of independent coils in said cooler, a steriliser-case provided with a heating-coil communicating with one of the coils in the cooler, the interior of said case communicating with the other coil of the cooler.

3. The combination with a water-supply pipe operatively communicating with a cooler, of a pair of independent coils in said cooler, a steriliser-case provided with a heating-coil communicating with one of the coils in the cooler, the interior of said case communicating with the other coil of the cooler, and independent receptacles communicating respectively with the coils in the cooler, one for the reception of water from one coil and the other for the reception of water from the other coil.

4. The combination with a water-supply pipe and a cooler, of a steriliser-case and a coil within the cooler in operative communication with each other and with the water-supply pipe, a heating-coil within said case and a second coil within the cooler in operative communication with said heating-coil.

5. The combination with a water-supply pipe and a cooler, of a steriliser-case and a coil within the cooler in operative communication with each other and with the water-supply pipe, a heating-coil within said case, and a second coil within the cooler in operative communication with said heating-coil, a pair of reservoirs and valve-controlled means of communication between said reservoirs and the coils within the cooler respectively.

816,358. BOTTLE. WILLIAM W. MCLAREN, Bisbey, Ala. Filed Feb. 4, 1905. Serial No. 244,191.



Claim.—1. A bottle provided with alining openings, and a stopper mounted in said openings, said stopper being provided with a longitudinally-extending groove.

2. A bottle having a neck formed with three openings of the same size, two of said openings being in alinement with each other, and a removable and rotary stopper in said alined openings, said stopper having a longitudinal groove therein.

816,359. COMPOSITION OF MATTER FOR REMOVING OLD PAINT, VARNISH, &c. AUGUST NIEDHARDT, Albany, N. Y. Filed Oct. 17, 1905. Serial No. 283,094.

Claim.—1. The herein-described composition of matter consisting of cabinet-makers' glue, tallow, and starch, substantially as described and for the purpose specified.

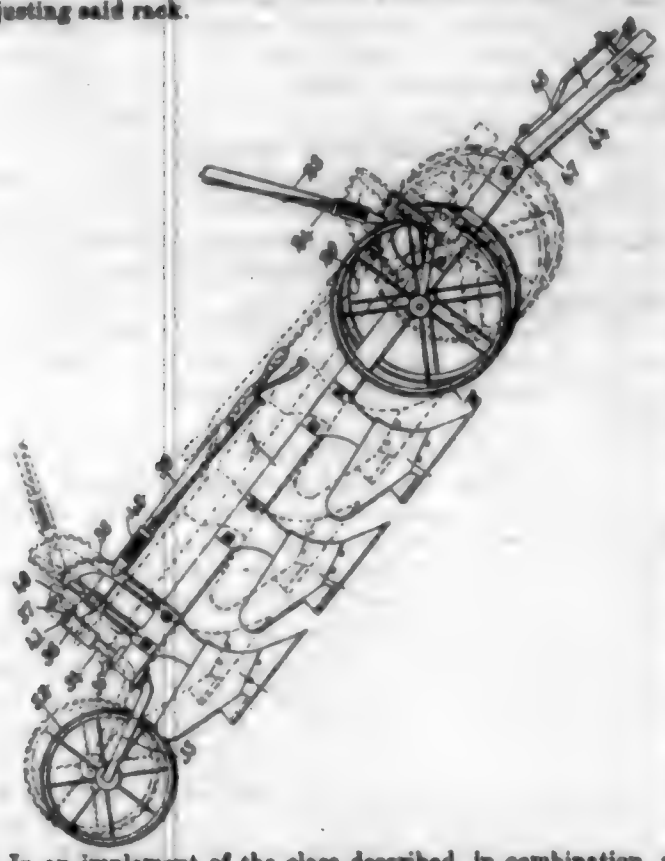
2. The herein-described composition of matter for removing old paint, varnish, &c., from wood or other material, consisting of cabinet-makers' glue, seven-tenths, tallow, one-tenth, starch, two-tenths, and coloring-matter, substantially as described.

816,360. PLOW. ROBERT NELSON, San Martin, Cal. Filed Aug. 18, 1905. Serial No. 275,406.

Claim.—1. In an implement of the class described, in combination, a frame, a pair of parallel axles rotatably mounted in the said frame, wheels carried by said axles, a lever adapted to rotate one of said axles, a curved bar constituting a rack and carried pivotally by one of said axles, and a locking-bolt on said lever for adjusting said bar.

2. In an implement of the class described, in combination, a frame, an axle carried thereby and projecting at one side of said frame, a second axle displaced laterally with respect to said first axle carried rotatably by said frame and projecting at the opposite side of said frame, said axles having arms, wheels carried on said

arms, a lever attached to one of said axles, and affording means for rotating the same, a curved rack pivoted to one of said arms and lying adjacent to said lever, and a locking-bolt carried by said lever for adjusting said rack.

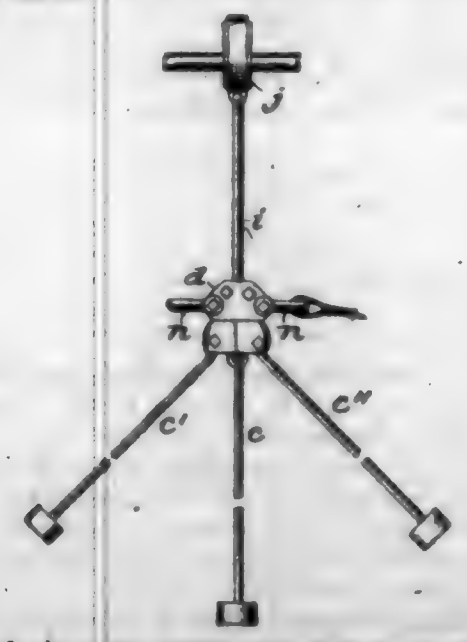


3. In an implement of the class described, in combination, a frame, an axle rotatably carried thereby and projecting at one side thereof, a second axle rotatably carried thereby and projecting at the opposite side of said frame, said axles having arms, wheels carried on said arms, a lever attached to one of said axles and affording means for rotating the same, a rack connecting said axles, and means for locking said rack in different positions so as to adjust the angular relation of said arms.

4. In an implement of the class described, in combination, a frame, a vertically-disposed rotatable spindle at the rear of said frame, means for guiding said spindle upon said frame, a wheel carried on said arm, a swivel-head attached to said spindle, and a lever supported on said frame and engaging said swivel-head to adjust the vertical position of said spindle.

5. In an implement of the class described, in combination, a frame, a vertical rotatable spindle, means for guiding said spindle on said frame, said spindle having an arm extending rearwardly therefrom, a wheel carried on said arm, a swivel-head attached to the upper extremity of said spindle and having a lateral slot therein, a lever supported on said arm and having a pin engaging said slot, and means for locking said lever in a plurality of positions.

816,361. **BRANCH CLAMP FOR OIL-WELLS.** ROBERT B. NELSON, Cornplanter township, Venango county, Pa. Filed Oct. 23, 1905. Serial No. 284,117.



Claim.—1. As a new article of manufacture, a clamp of the class described made up of a back formed of a single piece; a face the upper half of which is made of a single piece and the lower half of which is formed of two pieces; and means for securing the parts together.

2. As a new article of manufacture, a clamp of the class described made up of a back formed of a single piece and provided with a loop for the attachment of an oil-well rod; a face one half of which is made of a single piece and the other half of which is formed of two pieces; and means for securing the back and face members together.

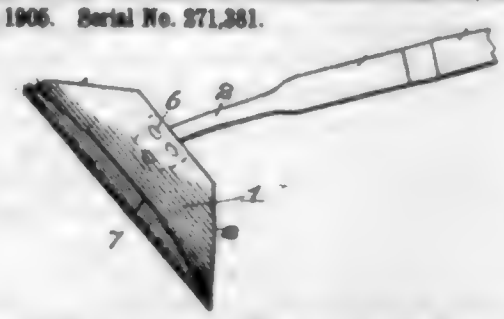
3. As a new article of manufacture, a clamp of the class described made up of a one-part back and a multipart face secured thereto; said back and face being formed with a plurality of recesses for the reception of headed rods, and the several parts of the face being separately detachable from the back to release a rod while holding the other rods securely.

4. As a new article of manufacture, a clamp of the class described made up of a one-part back and a multipart face secured thereto, the parts of the face being separately detachable from the back; and means for securing a tie-line to said clamp.

5. In combination in a structure of the class described, a driving mechanism; a multipart clamp which connects said mechanism with a plurality of oil-well rods; said rods; the parts of said clamp being separately removable to detach one or more of said rods while retaining the remaining rods in locked condition.

6. As a new article of manufacture, a clamp made up of a back and a multipart face secured thereto; the opposed faces of said back and face being formed with coöperating recesses and the parts of said face being separately detachable from said back.

816,362. **HOE.** WILLIAM A. NYSWONGER, Montrose, Colo. Filed July 26, 1905. Serial No. 271,381.



Claim.—1. An implement of the class described, comprising a shank provided with an integral, flat portion of greater width than said shank, a concavo-convex blade secured intermediate its length to the flat portion of said shank, said blade provided with a curved cutting edge extending its entire length, a curved and a straight cutting edge formed upon one end of said blade and a straight cutting edge formed upon the opposite end.

2. An implement of the class described, comprising a handle, an upwardly and outwardly curved shank provided with a ferrule, carried by said handle, said shank provided with an integral flat portion, and a concavo-convexed blade fixedly secured to the flat portion of said shank, said blade positioned at an oblique angle to said handle, said blade provided with a main cutting edge of substantially the same length as said blade and with a substantially straight, auxiliary cutting edge, said main and auxiliary cutting edges constituting a trowel structure, and said blade provided at one end with a curved cutting edge.

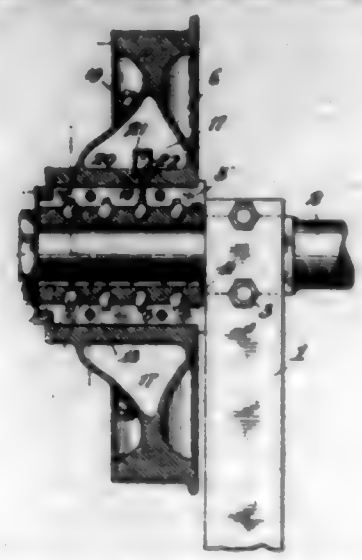
816,363. **CAR-WHEEL.** HARRY C. OBRNDIRK, Cleveland, Ohio. Filed Jan. 26, 1906. Serial No. 298,008.

Claim.—1. The combination of an axle adapted to be mounted in bearings against rotation, a sleeve rigidly secured to said axle, an outer sleeve surrounding said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways, balls supported in said raceways, and a tread-section rigidly secured to said outer sleeve.

2. The combination of an axle adapted to be mounted in bearings against rotation, a sleeve rigidly secured to said axle, an outer sleeve surrounding said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways, balls supported in said raceways, the depth of said grooves and the diameter of the balls being such as to maintain said sleeves a uniform distance apart throughout their opposing faces, and a tread-section rigidly secured to said outer sleeve.

3. The combination of an axle adapted to be mounted in bearings against rotation, a sleeve rigidly secured to said axle, an outer sleeve surrounding said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways,

said grooves being substantially V-shaped in section and the bottoms thereof constituting ducts to receive a lubricant, balls supported in said raceways, and a tread rigidly secured to said outer sleeve.

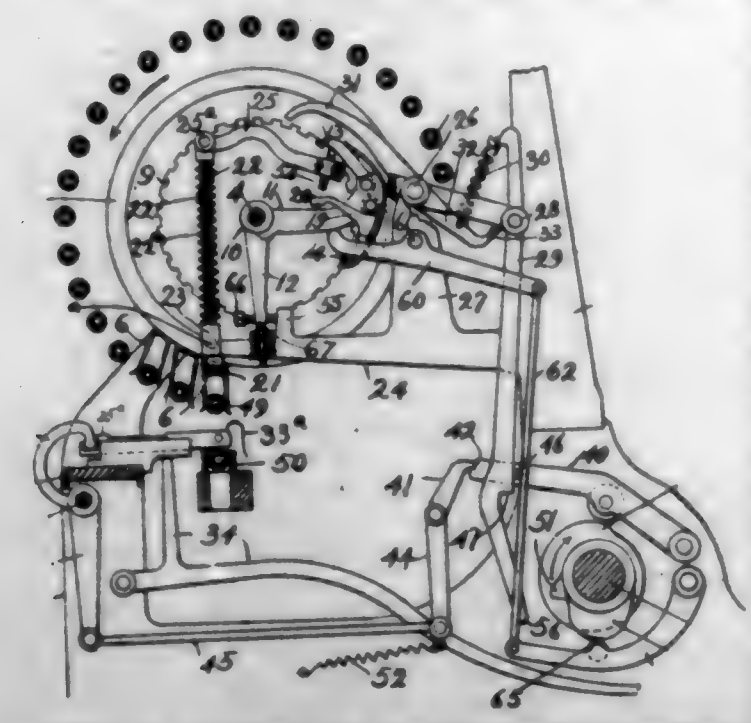


4. The combination of an axle adapted to be mounted in bearings against rotation, an inner sleeve of a single piece of hardened steel shrunk on said axle, an outer sectional sleeve surrounding but not in bearing contact with said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways, balls supported in said raceways, and a tread-section rigidly secured to said outer sleeve.

5. The combination of an axle adapted to be mounted in bearings against rotation, a sleeve rigidly secured to said axle, an outer sleeve surrounding said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways, balls supported in said raceways, said outer sleeve being in sections the outer ends of which are reduced and exteriorly screw-threaded to receive a cap, and a tread-section rigidly secured to said outer sleeve.

6. The combination of an axle adapted to be mounted in bearings against rotation, a sleeve rigidly secured to said axle, an outer sleeve surrounding said axle-sleeve, the opposing faces of said sleeves being provided with complemental grooves to form raceways, balls supported in said raceways, a tread-section rigidly secured to said outer sleeve, and means for supplying a lubricant to said raceways.

816,364. **WEFT-REPLENISHING MECHANISM FOR LOOMS.** FELIX O'DONNELL, Pawtucket, R. I., assignor of one-half to Susan A. Brown, Pawtucket, R. I. Filed Mar. 3, 1905. Serial No. 248,235.



Claim.—1. A machine of the character described comprising a rotatable feeder, a transferrer, operating means for said feeder supported independently of said transferrer and placed in operative position by the latter, and means for intercepting said operating means to return the latter to its normal position after the operation of said transferrer.

2. A machine of the character described comprising a rotatable feeder, a transferrer, operating means for said feeder adapted to be set by said transferrer, and means independent of the transferrer intercepting said operating means to return the latter to its normal position after the operation of the transferrer.

3. A machine of the character described comprising a rotatable feeder, a transferrer, operating means for said feeder intercepting the path of movement of the transferrer, and means independent of the transferrer for intercepting said operating means to return the latter to its normal position.

4. A machine of the character described comprising a rotatable feeder, a transferrer, operating means for said feeder arranged to intercept the path of movement of said transferrer in its downward stroke, and means for intercepting said operating means to return the latter to its normal position.

5. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier operated by said transferrer, and means intercepting said pawl-carrier to return the latter to its normal position.

6. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier arranged to intercept the path of movement of said transferrer, and means intercepting said pawl-carrier to return the latter to its normal position.

7. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier, and a pivoted member intercepting said pawl-carrier to return the latter to its normal position.

8. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier intercepting the path of movement of said transferrer, and a pivoted member intercepting said pawl-carrier to return the latter to its normal position.

9. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier, a pivoted member normally engaging said pawl-carrier, and means for intermittently operating said member.

10. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier, a pivoted member normally engaging said pawl-carrier, an operating-lever connected to said member, and means for intermittently rocking said lever.

11. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier, a pivoted member intercepting said pawl-carrier to return the latter to its normal position, and means for limiting the movement of said pawl-carrier.

12. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier intermittently operated by said transferrer, and means for preventing a rebound of said pawl-carrier.

13. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier intermittently operated by said transferrer, means for returning said pawl-carrier to its normal position, and means for preventing a rebound of said pawl-carrier.

14. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier intermittently operated by said transferrer, and a catch adapted to engage said pawl-carrier to prevent rebound thereof.

15. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier having a notched portion and intermittently operated by said transferrer, and a spring-catch adapted to engage the notch of said pawl-carrier.

16. A machine of the character described comprising a rotatable feeder, a transferrer, a pawl-carrier having a notch and intermittently operated by said transferrer, a spring-catch adapted to engage said notch, and means for returning said pawl-carrier to its normal position.

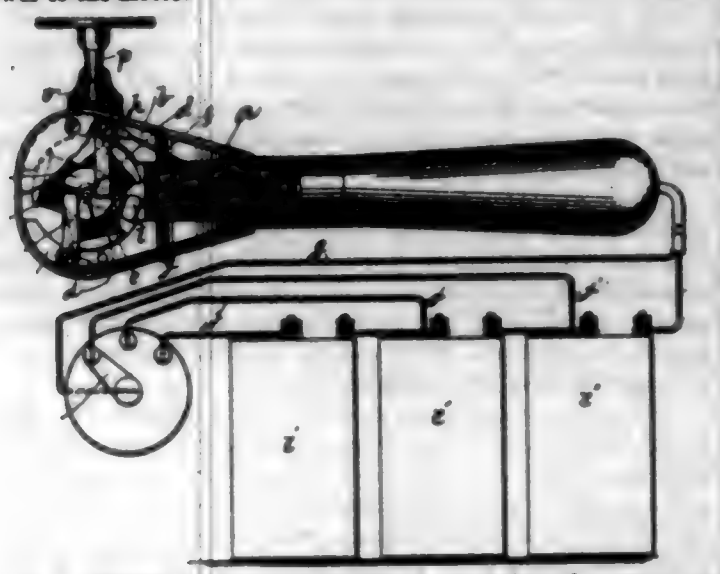
17. A machine of the character described comprising a rotatable feeder, a transferrer, an angular pawl-carrier operated by said transferrer, a pivoted returning member normally engaging one member of said pawl-carrier and a locking device adapted to engage the other member of said pawl-carrier.

816,365. **VIBRATOR FOR MASSAGE TREATMENT.** WILLIAM OLSON, Mount Vernon, N. Y. Filed Oct. 6, 1904. Renewed June 19, 1905. Serial No. 266,045.

Claim.—1. A vibrator for massage treatment, comprising a handle and case connected together and a hammer-piece fixed to the case exteriorly thereof, a prime mover within said case and a rotary unbalanced member actuated thereby in the plane of the hammer-piece for effecting the vibration.

2. An unbalanced rotary motor, an inclosing case having the motor pivoted in opposite sides respectively, a hammer-piece attached to the inclosing case, a handle attached to the case approxi-

mately at right angles to the hammer-piece and means for supplying power to the motor.

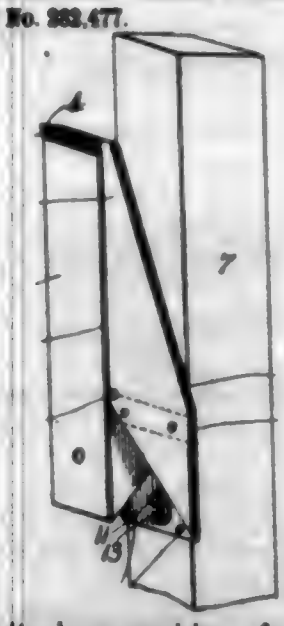


3. A vibrator for massage treatment consisting of a rotary unbalanced electromagnetic armature, fixed pole-pieces, an inclosing case for said armature and pole-pieces having said armature pivoted in opposite sides respectively, a hammer-piece fixedly attached to the exterior of the case, a handle attached to the case approximately at right angles to the axial line of the motor and hammer-piece, and circuit-wires to the motor-terminals.

4. An unbalanced rotary motor, an inclosing case having the motor pivoted in opposite sides respectively, a hammer-piece attached to the inclosing case in the plane of rotation of the motor, a handle attached to the case approximately at right angles to the hammer-piece and means for supplying power to the motor through the handle.

5. A vibrator for massage treatment, consisting of a rotary unbalanced electromagnetic armature, fixed pole-pieces, an inclosing case for said armature and pole-pieces having said armature pivoted in opposite sides respectively, a hammer-piece fixedly attached to the exterior of the case in the plane of the rotation of the armature, a handle attached to the case approximately at right angles to the axial line of the motor and hammer-piece, and circuit-wires arranged lengthwise through the handle.

816,366. LETTER-BOX. GEORGE L. PARK, Elgin, Ill. Filed Oct. 12, 1905. Serial No. 282,477.



Claim.—1. A letter-box comprising a fixed member and a pivoted member, and means whereby the pivoted member may be secured to open only a short distance to admit articles thereto and whereby it may also be released to open still farther to remove its contents.

2. A letter-box comprising a fixed member and a pivoted member, said pivoted member self closing and locking and when locked adapted to be opened a short distance to admit articles thereto but when released adapted to be opened farther to remove its contents.

3. A letter-box comprising, a fixed member having an oblique back and open bottom and front, and a pivoted member adapted to close said front and bottom, and means to lock said members together so that they can be separated sufficiently to admit articles thereto and when released may be separated farther to remove its contents.

4. A letter-box comprising a fixed member having its back partly oblique and its front and bottom open, and a member, pivoted to the fixed member, adapted to close the front thereof and having an inclined bottom adapted to close the bottom of the fixed member, the rear edge of said bottom adapted to move along close to the inner surface of the oblique portion of the back of said latter member when the receptacle is opened.

5. A letter-box comprising a fixed member having its back partly oblique and its front and bottom open, and a member, pivoted to the fixed member, adapted to close the front thereof and having an inclined bottom adapted to close the bottom of the fixed member, the rear edge of said bottom adapted to move along close to the inner surface of the oblique portion of the back of said latter member when the receptacle is opened, a staple on said fixed member, and a hasp secured to the pivoted member and adapted to automatically engage said staple to lock said pivoted member against being sufficiently opened to remove the contents of the receptacle.

6. A letter-box comprising a fixed member and an automatically-closing member pivoted thereto, said fixed member having its front and bottom open, a staple on the inner surface of said fixed member, said pivoted member adapted to close the front of said fixed member and having a bottom adapted to close the bottom of the fixed member, a hasp carried by said bottom and adapted to engage said staple to lock said members against being sufficiently opened to remove the contents of the receptacle.

7. A letter-box comprising a fixed member and an automatically-closing member pivoted thereto, said fixed member having its front and bottom open, a staple on the inner surface of said fixed member, said pivoted member adapted to close the front of said fixed member and having an oblique bottom adapted to close the bottom of the fixed member, a hasp carried by said bottom and adapted to engage said staple to lock said members against being sufficiently opened to remove the contents of the receptacle.

816,367. ONE-PIECE BLOUSE GARMENT. JOHN B. PEARSON, Stoneham, Mass. Filed Sept. 8, 1902. Serial No. 173,670.



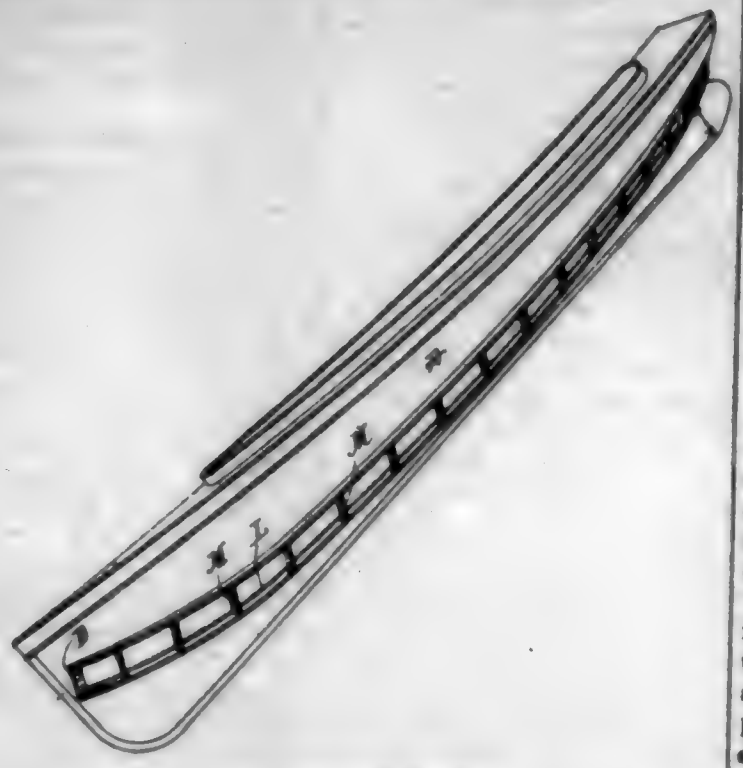
Claim.—1. A one-piece blouse garment of the character specified comprising a blouse and pants combined, concealed straps on the inside of the blouse, the same being secured to the shoulders of the blouse and extending down forward and back and attached to the waist of the garment for imparting the blouse effect thereto, which blouse and pants are open in the back, the blouse by a vertical opening and the pants by a flap adapted to be let down, the blouse in the back also being provided with a portion extending below the waist-line and over which said flap of the pants is adapted to extend and be attached to the waist of the garment underneath the fold of the blouse which conceals the means of fastening.

2. In a one-piece blouse garment of the character specified, a belt at the waist thereof, straps or loops attached to the waist of the garment and also to the inside of the overhang of the blouse thereof, through which loops or straps said belt is adapted to pass, substantially as and for the purposes set forth.

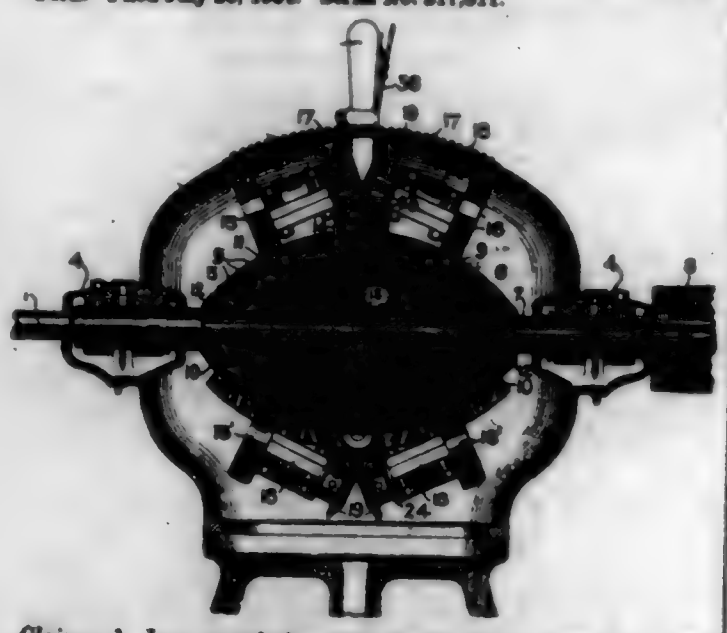
816,368. PROPELLING MECHANISM. FENELON PELISSIER, Gonaïves, Haiti. Filed July 14, 1905. Serial No. 269,631.

Claim.—A hull having side openings near the stem and stern thereof, and having longitudinal guideways formed on the outer side thereof, an endless chain, paddles having bodies disposed at right angles to said chain and having oppositely-projecting arms disposed

longitudinally with said chain, said arms being attached to said chain, and means for continuously driving said chain.



816,369. SPEED-CHANGING DEVICE. OTTO F. PERSSON, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 20, 1904. Serial No. 217,311.



Claim.—1. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a pair of connected pinions engaging respectively with said gears, and means for moving said pair of pinions lengthwise of said gears.

2. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two pairs of connected pinions engaging respectively with said gears, and means for simultaneously moving both pairs of pinions lengthwise of said gears and in the same direction.

3. In a speed-changing device, the combination with a shaft, of a conoidal friction-gear secured thereto, a sleeve rotatable on said shaft, a conoidal friction-gear secured on said sleeve with its base adjacent to that of the other gear, one or more pairs of connected pinions engaging with said gears, and means for moving them lengthwise thereof.

4. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, and a pair of connected pinions mounted on said lever and engaging with said gears.

5. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, two short shafts mounted on said lever at an angle with each other, pinions mounted on the shafts which engage respectively with said gears, and means connecting said shafts.

6. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, two short shafts mounted on said lever at an angle with each other, a pin on on each shaft engaging with a gear, and bevel-gears connecting the adjacent ends of said shafts.

7. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers fulcrumed on opposite sides of said axis at points concentric with the curve of the gears, pairs of pinions carried by said levers and engaging with said gears, and connections between said levers whereby both move simultaneously in the same direction lengthwise of said gears.

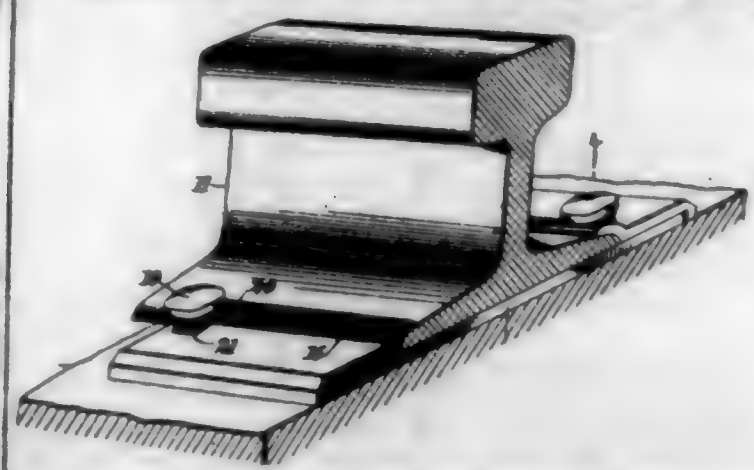
8. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers pivoted on opposite sides of said axis at points concentric with the curve of the gears, pairs of pinions carried by said levers and engaging with said gears, a slide movable in a line transverse to the line joining the two pivots, and blocks pivoted to said slide and engaging with said levers.

9. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers pivoted on opposite sides of said axis and provided with longitudinal slots, guide-bars extending perpendicular to the line joining the pivots, a slide movable between said bars, blocks fitting in the slots in the levers and pivoted to said slide, and pairs of pinions carried by said levers and engaging with said gears.

10. In a speed-changing device, the combination with a casing, of a shaft journaled therein, two conoidal friction-gears, one fast and the other loose on said shaft, a bridge and a hanger secured to the inside of the casing, a lever pivoted to the bridge, a pair of pinions carried thereby which engage the under side of the gears, a lever pivoted to the hanger, a pair of pinions on the latter lever which engage the upper side of the gears, and connections between said levers.

11. In a speed-changing device, the combination of two overlapping members, each provided with lateral lugs, compression-springs seated between said lugs, and means for keeping the two members in line.

816,370. RAILWAY SPIKE AND TIE-PLATE. TOLBERT G. PETERMAN, Cumberland, Md. Filed May 26, 1905. Serial No. 262,343.



Claim.—1. The combination with a tie-plate of a spike having downwardly-extended flanges at three sides of its head.

2. The combination with a tie-plate of a spike having downwardly-extended flanges at three sides of the lower portion of its head, said flanges being sharpened at the lower edge.

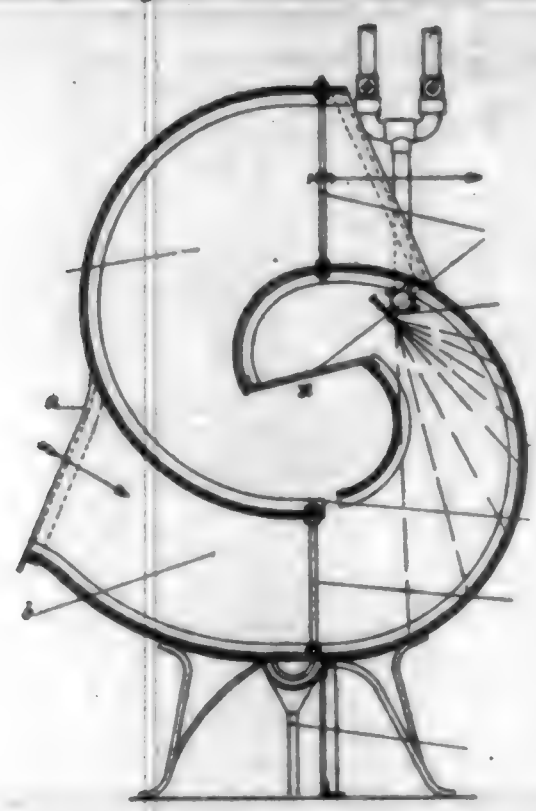
3. The combination with a tie-plate of a spike having a head concaved at one side and downwardly-extended flanges at three of its other sides, the said flanges being sharpened at the lower edge.

4. A railway tie-plate comprising two longitudinally-separated members, each member having a portion for extending over a portion of the other member, and each member having on its upper side, a flange for engaging over the base of a rail.

816,371. AIR-PURIFIER. HEINRICH PLATZ, Munich, Germany, assignor to The Firm of Franz Scherg, (Inhaber L. Scherg & K. Lotmer,) Munich, Germany. Filed Oct. 18, 1905. Serial No. 283,233.

Claim.—1. An air-purifier consisting of a housing having formed therein channels in the shape of superposed funnels having

their smaller ends curled toward each other and opening into each other one funnel serving as an inlet and the other as an outlet.



2. An air-purifier consisting of a housing having formed therein channels in the shape of superposed curled funnels having their smaller ends engaging with and opening into each other and means for spraying a liquid over the wall of one of said channels one funnel serving as an inlet and the other as an outlet.

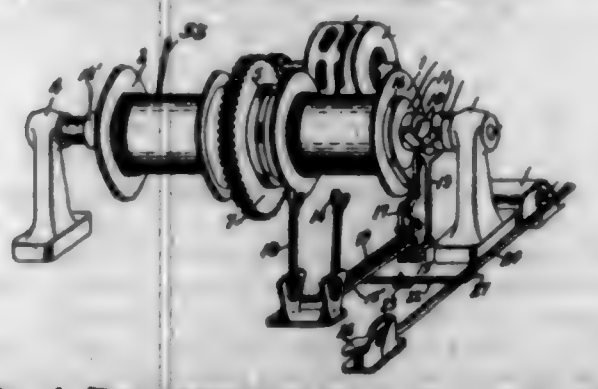
3. An air-purifier consisting of a housing having formed therein channels having the shape of superposed funnels having their ends curled within each other and opening up into each other, the upper and lower enlarged ends forming the outlet and inlet and an atomizer mounted within the said channel at the point of its smallest cross-section.

4. An air-purifier consisting of a housing having formed therein channels being arranged in the form of superposed funnels having their smaller ends engaging with and opening into each other, the one funnel serving as an inlet and the other as an outlet and of a container being arranged in the lower funnel for taking up water or ice.

5. An air-purifier consisting of a housing having formed therein an obvolute channel with successively converging and diverging walls, and means for impregnating the air with moisture during its passage therethrough.

6. An air-purifier consisting of a housing having formed therein two spiral channels connecting at their smaller inturned ends, a spray device arranged in the channels near the point of junction and operating in a direction opposed to the flow of the air through the channels, and a drain leading from said channel.

816,372. **HOISTING APPARATUS.** WILLIAM B. POTTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1906. Serial No. 328,869.



Claim.—1. The combination of two drums, means for driving said drums, and means controlled by a single lever for causing one or both of said drums to engage said driving means.

2. The combination of two drums, friction means for driving said drums, and means controlled by a single lever for causing one or both of said drums to frictionally engage said driving means.

3. The combination of two drums, friction means for driving said drums, means normally operating to hold one of said drums out of contact with said driving means, and a single means adapted to force one or both of said drums into engagement with said driving means.

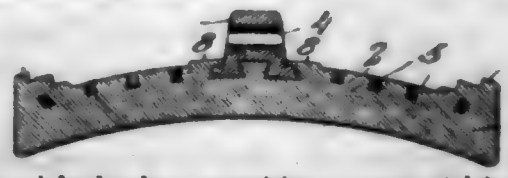
4. The combination of a hoisting-drum and an operating-drum, friction means for driving both of said drums, means normally acting to hold said hoisting-drums out of contact with said driving means, and a single means adapted on part movement to force the operating-drum into engagement with the driving means and upon further movement to force both drums into engagement with said driving means.

5. The combination of a shaft supported at its ends, two drums mounted on said shaft and provided with friction-surfaces at their adjacent ends, a wheel provided with corresponding friction-surfaces loosely feathered on said shaft between said drums, a spring located between said wheel and one of said drums to normally hold said wheel out of contact therewith and in contact with the other drum, and a thrust device for moving said spring-pressed drum into engagement with said wheel.

6. The combination of two drums, means for driving said drums, means controlled by a single lever for causing one or both of said drums to engage said driving means, and a brake device for one of said drums.

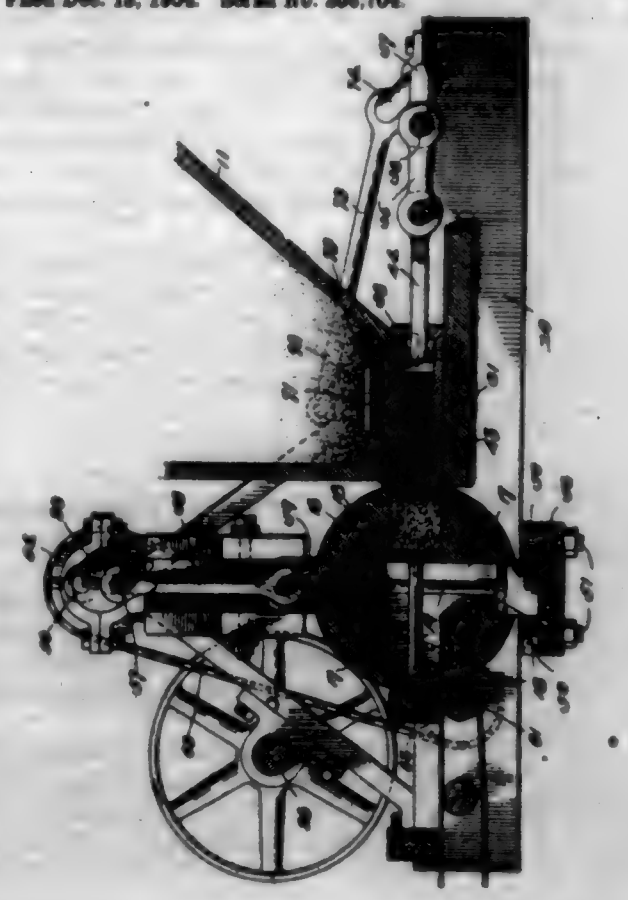
7. The combination of a hoisting-drum and an operating-drum, means for driving said drums, means normally operating to hold the hoisting-drum out of contact with its driving means, means operated by a single lever adapted upon part movement to force the operating-drum into engagement with said driving means and upon further movement to force the hoisting-drum into engagement with said driving means, and a brake device engaging said hoisting-drum.

816,373. **BRAKE-SHOE.** JAMES F. POWERS, Elkton, Md. Filed Dec. 16, 1905. Serial No. 292,109.

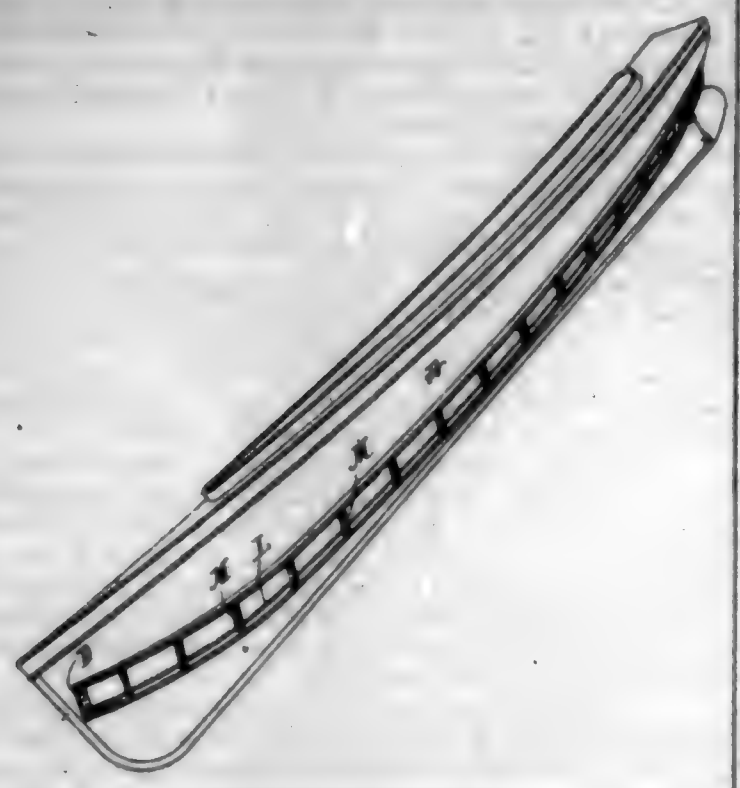


Claim.—A brake-shoe comprising a cast-metal body portion having a hard-metal strengthening member applied to the rear face thereof, said member being provided with a plurality of dovetailed openings and with an intermediate bearing-head having a dovetailed recess formed therein, said recess and openings being designed to receive material of the body for uniting the strengthening member thereto and the body having enlargements in which the member is terminally embedded.

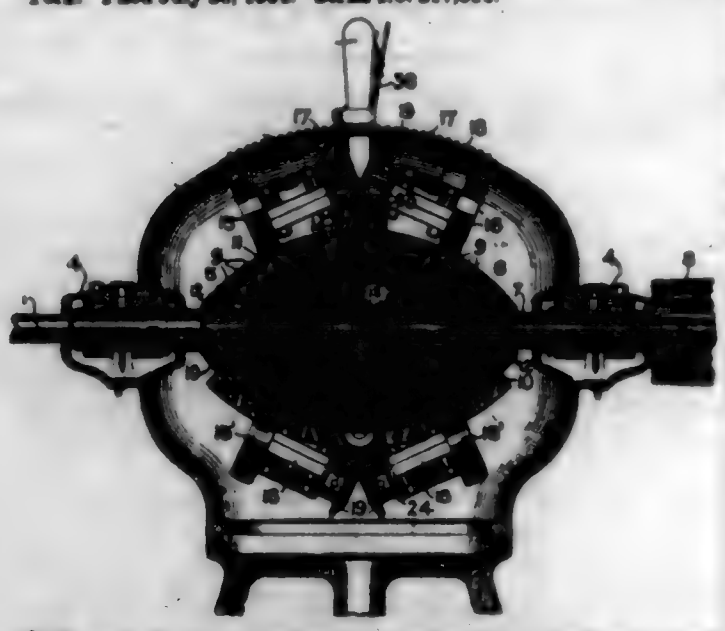
816,374. **BRICK-MAKING MACHINE.** CHARLES W. PRATT, Martin, Tenn., assignor of one-half to Thomas J. Taylor, Martin, Tenn. Filed Dec. 13, 1904. Serial No. 236,704.



longitudinally with said chain, said arms being attached to said chain, and means for continuously driving said chain.



816,369. SPEED-CHANGING DEVICE. OTTO F. PERSSON, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 20, 1904. Serial No. 217,311.



Claim.—1. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a pair of connected pinions engaging respectively with said gears, and means for moving said pair of pinions lengthwise of said gears.

2. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two pairs of connected pinions engaging respectively with said gears, and means for simultaneously moving both pairs of pinions lengthwise of said gears and in the same direction.

3. In a speed-changing device, the combination with a shaft, of a conoidal friction-gear secured thereto, a sleeve rotatable on said shaft, a conoidal friction-gear secured on said sleeve with its base adjacent to that of the other gear, one or more pairs of connected pinions engaging with said gears, and means for moving them lengthwise thereof.

4. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, and a pair of connected pinions mounted on said lever and engaging with said gears.

5. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, two short shafts mounted on said lever at an angle with each other, pinions mounted on the shafts which engage respectively with said gears, and means connecting said shafts.

6. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of a lever fulcrumed at a point concentric with the curve of said gears, two short shafts mounted on said lever at an angle with each other, a pin on on each shaft engaging with a gear, and bevel-gears connecting the adjacent ends of said shafts.

7. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers fulcrumed on opposite sides of said axis at points concentric with the curve of the gears, pairs of pinions carried by said levers and engaging with said gears, and connections between said levers whereby both move simultaneously in the same direction lengthwise of said gears.

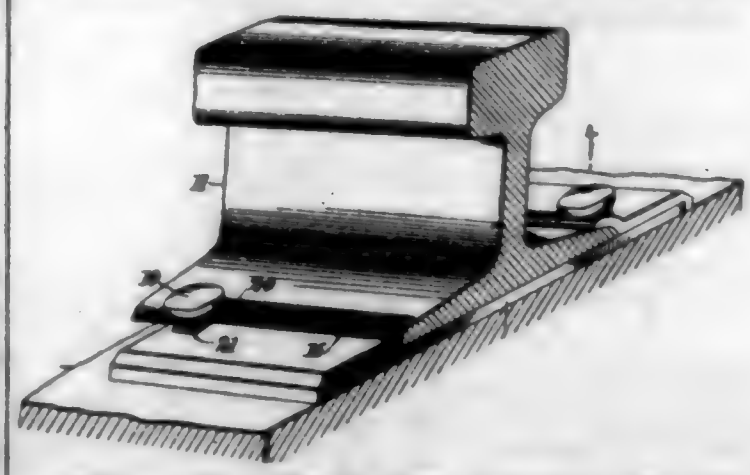
8. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers pivoted on opposite sides of said axis at points concentric with the curve of the gears, pairs of pinions carried by said levers and engaging with said gears, a slide movable in a line transverse to the line joining the two pivots, and blocks pivoted to said slide and engaging with said levers.

9. In a speed-changing device, the combination with two conoidal friction-gears independently rotatable on a common axis with their bases adjacent, of two levers pivoted on opposite sides of said axis and provided with longitudinal slots, guide-bars extending perpendicular to the line joining the pivots, a slide movable between said bars, blocks fitting in the slots in the levers and pivoted to said slide, and pairs of pinions carried by said levers and engaging with said gears.

10. In a speed-changing device, the combination with a casing, of a shaft journaled therein, two conoidal friction-gears, one fast and the other loose on said shaft, a bridge and a hanger secured to the inside of the casing, a lever pivoted to the bridge, a pair of pinions carried thereby which engage the under side of the gears, a lever pivoted to the hanger, a pair of pinions on the latter lever which engage the upper side of the gears, and connections between said levers.

11. In a speed-changing device, the combination of two overlapping members, each provided with lateral lugs, compression-springs seated between said lugs, and means for keeping the two members in line.

816,370. RAILWAY SPIKE AND TIE-PLATE. TOLBERT G. PETERMAN, Cumberland, Md. Filed May 26, 1905. Serial No. 262,262.



Claim.—1. The combination with a tie-plate of a spike having downwardly-extended flanges at three sides of its head.

2. The combination with a tie-plate of a spike having downwardly-extended flanges at three sides of the lower portion of its head, said flanges being sharpened at the lower edge.

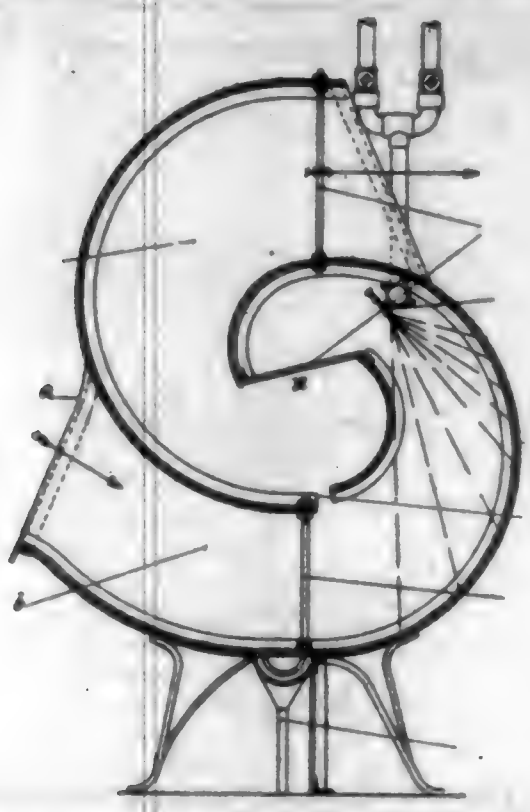
3. The combination with a tie-plate of a spike having a head concaved at one side and downwardly-extended flanges at three of its other sides, the said flanges being sharpened at the lower edge.

4. A railway tie-plate comprising two longitudinally-separated members, each member having a portion for extending over a portion of the other member, and each member having on its upper side, a flange for engaging over the base of a rail.

816,371. AIR-PURIFIER. HERMANN PLATZ, Munich, Germany, assignor to The Firm of Franz Schorg, (Inhaber L. Schorg & K. Lohner,) Munich, Germany. Filed Oct. 18, 1905. Serial No. 283,333.

Claim.—1. An air-purifier consisting of a housing having formed therein channels in the shape of superposed funnels having

their smaller ends curled toward each other and opening into each other one funnel serving as an inlet and the other as an outlet.



2. An air-purifier consisting of a housing having formed therein channels in the shape of superposed curled funnels having their smaller ends engaging with and opening into each other and means for spraying a liquid over the wall of one of said channels one funnel serving as an inlet and the other as an outlet.

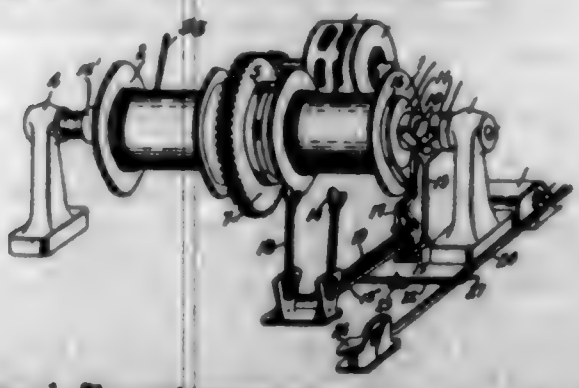
3. An air-purifier consisting of a housing having formed therein channels having the shape of superposed funnels having their ends curled within each other and opening up into each other, the upper and lower enlarged ends forming the outlet and inlet and an atomizer mounted within the said channel at the point of its smallest cross-section.

4. An air-purifier consisting of a housing having formed therein channels being arranged in the form of superposed funnels having their smaller ends engaging with and opening into each other, the one funnel serving as an inlet and the other as an outlet and of a container being arranged in the lower funnel for taking up water or ice.

5. An air-purifier consisting of a housing having formed therein an obvolute channel with successively converging and diverging walls, and means for impregnating the air with moisture during its passage therethrough.

6. An air-purifier consisting of a housing having formed therein two spiral channels connecting at their smaller inturned ends, a spray device arranged in the channels near the point of junction and operating in a direction opposed to the flow of the air through the channels, and a drain leading from said channel.

816,372. HOISTING APPARATUS. WILLIAM B. POTTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1904. Serial No. 218,998.



Claim.—1. The combination of two drums, means for driving said drums, and means controlled by a single lever for causing one or both of said drums to engage said driving means.

2. The combination of two drums, friction means for driving said drums, and means controlled by a single lever for causing one or both of said drums to frictionally engage said driving means.

3. The combination of two drums, friction means for driving said drums, means normally operating to hold one of said drums out of contact with said driving means, and a single means adapted to force one or both of said drums into engagement with said driving means.

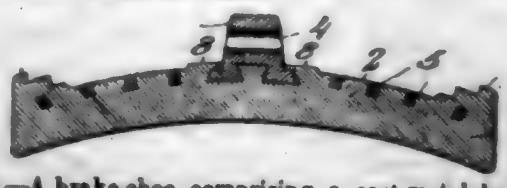
4. The combination of a hoisting-drum and an operating-drum, friction means for driving both of said drums, means normally acting to hold said hoisting-drums out of contact with said driving means, and a single means adapted on part movement to force the operating-drum into engagement with the driving means and upon further movement to force both drums into engagement with said driving means.

5. The combination of a shaft supported at its ends, two drums mounted on said shaft and provided with friction-surfaces at their adjacent ends, a wheel provided with corresponding friction-surfaces loosely feathered on said shaft between said drums, a spring located between said wheel and one of said drums to normally hold said wheel out of contact therewith and in contact with the other drum, and a thrust device for moving said spring-pressed drum into engagement with said wheel.

6. The combination of two drums, means for driving said drums, means controlled by a single lever for causing one or both of said drums to engage said driving means, and a brake device for one of said drums.

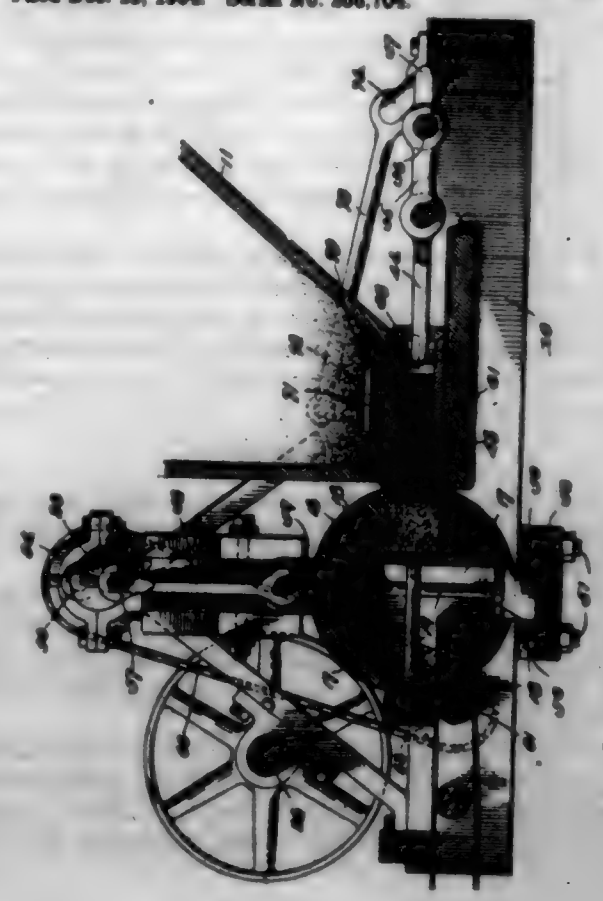
7. The combination of a hoisting-drum and an operating-drum, means for driving said drums, means normally operating to hold the hoisting-drum out of contact with its driving means, means operated by a single lever adapted upon part movement to force the operating-drum into engagement with said driving means and upon further movement to force the hoisting-drum into engagement with said driving means, and a brake device engaging said hoisting-drum.

816,378. BRAKE-SHOE. JAMES F. POWERS, Elkton, Md. Filed Dec. 16, 1905. Serial No. 292,109.



Claim.—A brake-shoe comprising a cast-metal body portion having a hard-metal strengthening member applied to the rear face thereof, said member being provided with a plurality of dovetailed openings and with an intermediate bearing-head having a dovetailed recess formed therein, said recess and openings being designed to receive material of the body for uniting the strengthening member thereto and the body having enlargements in which the member is terminally embedded.

816,374. BRICK-MAKING MACHINE. CHARLES W. PRATT, Martin, Tenn., assignor of one-half to Thomas J. Taylor, Martin, Tenn. Filed Dec. 13, 1904. Serial No. 236,704.



Claim.—1. In a brick-machine, a movable mold, an initial pressing-die for filling the mold, a pair of re-pressing devices, and means for traversing the mold between the initial die and the re-pressing devices.

2. The combination with a movable mold, of an initial mold filling and pressing die, a pair of re-pressing devices serving to impart equal pressure on opposite sides of the material in the mold, a discharging means, and mechanism for imparting a step-by-step movement to the mold.

3. The combination with a mold, of a means for imparting a step-by-step movement thereto, a mold filling and pressing die, a re-pressing die, means coacting therewith for imparting equal pressure to the opposite sides of the material in the mold, and mechanism for discharging the re-pressed brick from the mold.

4. The combination with a movable mold-carrier, of bottom plates carried thereby and connected in pairs, a presser-block arranged to enter an empty mold and engage the bottom plate thereof, a re-pressing die arranged to enter a second mold opposite to the first, and means for simultaneously moving the presser-block and re-pressing dies in opposite directions, respectively.

5. The combination with a revoluble mold, having a bottom plate, of means for moving the bottom plate in one direction against the material, a re-pressing die for engaging the opposite surface of the material, and means for operating said bottom plate and re-pressing die.

6. The combination with a movable mold, of a bottom plate serving also as an ejecting or mold-clearing means, a re-pressing die, and means for simultaneously moving the bottom plate and re-pressing die in opposite directions respectively.

7. The combination with a mold having a movable bottom plate a re-pressing die, a shaft having diametrically-opposed cranks, and means connecting the cranks, respectively, to the bottom plate and the die, thereby to impart movement to the same in opposite directions, respectively.

8. The combination with a revoluble cylinder having diametrically-opposed molds, of bottom plates arranged in said molds, a ratchet, connecting means between the bottom plates, a re-pressing die for engaging the material in one mold and forcing the same against the bottom plate, and a presser-block engaging the opposite bottom plate and tending to resist said movement.

9. The combination with a frame, of a revoluble member having a crank-pin, a cylindrical mold-carrier having a plurality of molds, a ratchet-wheel secured to the mold-carrier, a pawl engaging said ratchet-wheel, a pivotally-mounted lever carrying the pawl, a rod connecting the lever to the crank-pin, a hopper, a preliminary filling and pressing die arranged under said hopper, a rock-shaft connected to said die, a rocker-arm on said shaft, and a rod connecting said rocker-arm to the juncture of the connecting-rod and pawl-carrying lever, thereby to form a toggle-lever for the operation of the die.

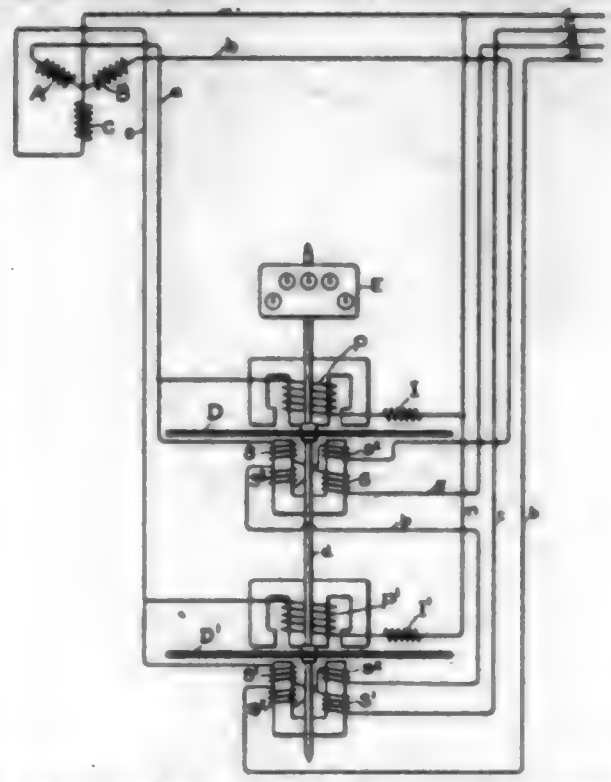
10. The combination with a frame, of a cylindrical mold-carrier having a plurality of molds, a ratchet-wheel secured thereto, a pawl for engaging the ratchet-wheel, a lever carrying said pawl, a hopper, an initial pressing-die for filling the successive molds, means connecting the die to the pawl-carrying lever, a crank-shaft, a gear on said crank-shaft, a crank-pin carried by the gear, a rod connecting the crank-pin to the pawl-carrying lever, a pair of opposing pressing members, means for connecting the same to the crank-shaft, a conveyer-belt, and means for imparting continuous lengthwise movement to said conveyer-belt.

11. The combination with a movable mold, of a hopper, an inner mold filling and pressing die movable through the hopper to fill the mold, a crank-shaft arranged near the lower portion of the hopper, a plurality of feeding-fingers carried by the shaft and serving to force the material down in advance of the die, and an operating-crank connected to the shaft.

816,375. **ELECTRIC METER.** WILLIAM H. PRATT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 26, 1904. Serial No. 217,966.

Claim.—1. In a meter, in combination with a four-wire three-phase system, two field-windings connected respectively between two phases and the neutral, two field-windings connected in series with said phases respectively, and two field-windings both connected in series with the third phase.

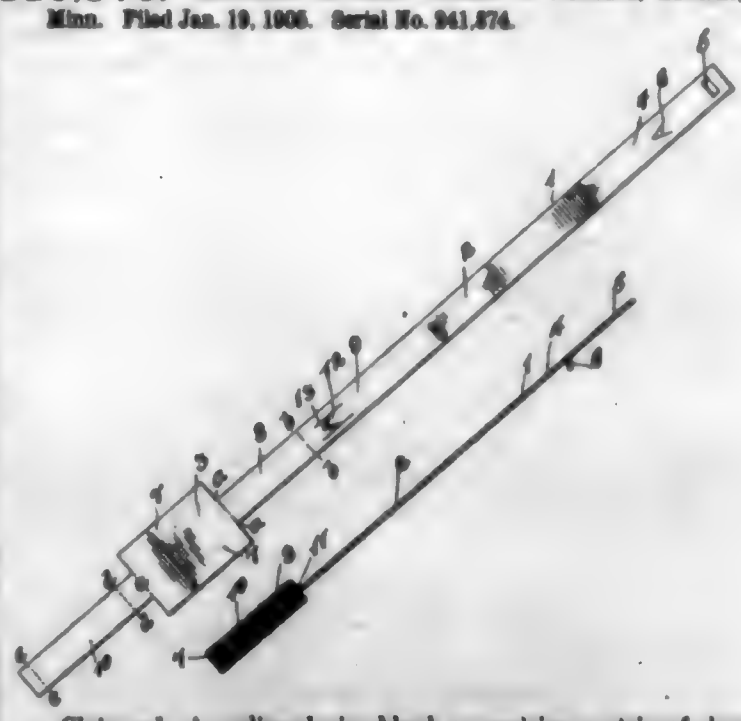
2. In a meter, in combination with a four-wire three-phase system, two instruments each comprising two series windings connected in different phases, and one potential-winding connected to one of said phases, the potential-winding of each instrument being connected to the phase in which neither of the series coils of the other instrument is connected.



3. In a meter, in combination with a four-wire three-phase system, two instruments each comprising one potential-winding and two series windings, the potential-winding and one series winding of one instrument being connected in one phase, the potential-winding and one series winding of the other instrument being connected in a second phase, and the other series windings of both instruments being connected in the third phase.

4. In a meter, in combination with a four-wire three-phase system, two potential-windings connected respectively between two of the phases and the neutral, two series windings connected respectively in said phases, and two series windings both connected in the third phase.

816,376. **SEALING DEVICE.** FRANK W. PURCELL, Luverne, Minn. Filed Jan. 19, 1905. Serial No. 241,874.

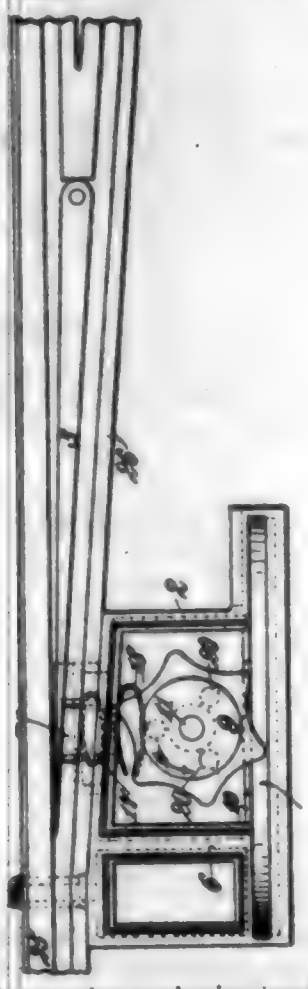


Claim.—1. A sealing-device blank comprising a strip of sheet metal formed at a suitable distance from one end with a widened portion adapted to have its sides bent up to form the sides of a casing, the ends of the strip forming a comparatively short and a comparatively long tongue respectively, the latter having at a suitable distance from the widened portion a locking-spur 12 and a guard 13 and provided near its outer end with an opening 5 and a spur 6.

2. A sealing device formed from a blank strip having a portion to form a casing open at one end, and a tongue extending from the open end of the casing having a portion doubled in the casing and provided with a locking-spur 12 and a guard 13, and a portion extending from said doubled portion adapted to be doubled and having its outer portion inserted in the casing, said outer portion of the tongue having an opening 5 to receive the locking-spur 12, and a

spur 6 to engage a flange at the opening in the casing, substantially as described.

816,377. SWITCH. HUGH RICHARDSON, Atlanta, Ga. Filed Aug. 18, 1905. Serial No. 274,456.



Claim.—1. Switch-operating mechanism involving two springs of different strength, one of which controls the other.

2. Switch-operating mechanism involving two springs of different strength, and means coöperative with the spring of greater strength to tension or relieve from tension the spring of less strength, the latter constituting a switch-point-governing device.

3. Switch-operating mechanism involving a spring adapted, when freed of tension, to shift the switch in one direction, and a second spring of greater strength adapted, when put under tension, to tension the other spring and to shift the switch in the opposite direction.

4. Switch-operating mechanism involving a spring adapted, when freed of tension, to shift the switch in one direction, a second spring of greater strength adapted, when put under tension, to tension the other spring and to shift the switch in the opposite direction, and a member arranged for operation from a moving car, having means to tension or free from tension the second spring.

5. The combination of a switch-tongue and two springs of different strength, connected therewith, the spring of less strength acting against a fixture, and mechanism for tensioning or relieving from tension the spring of greater strength, to cause the tensioning of the other spring and also the movement of the switch-tongue.

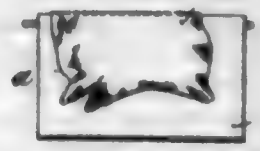
6. The combination of a switch-tongue, a spring, one branch of which acts against a suitable fixture and the other of which is connected with and acts against the tongue, a second spring, one branch of which is also connected with the tongue, said second spring being of greater strength than the first spring, and means to act against the free branch of the second spring to tension or free from tension the latter.

7. Switch-operating mechanism involving two springs of different strength, a wheel having arms, and means upon the wheel to tension or free from tension the spring of greater strength.

8. Switch-operating mechanism involving two springs of different strength, a wheel, the arms of which are adapted to be engaged to move the wheel step by step, and means depending from the wheel to tension or free from tension the spring of greater strength.

816,378. DYEING LEATHER. RICHARD RIEDEL, Osterwieck, Germany. Filed Apr. 7, 1904. Serial No. 202,091.

Claim.—1. The process of dyeing leather, which consists in placing the skins or leathers upon flexible perforated backings, bending said skins or leathers and said flexible backings to double said skins or leathers, and then subjecting said skins or leathers while on said bent perforated backings to the action of the dyeing liquor.

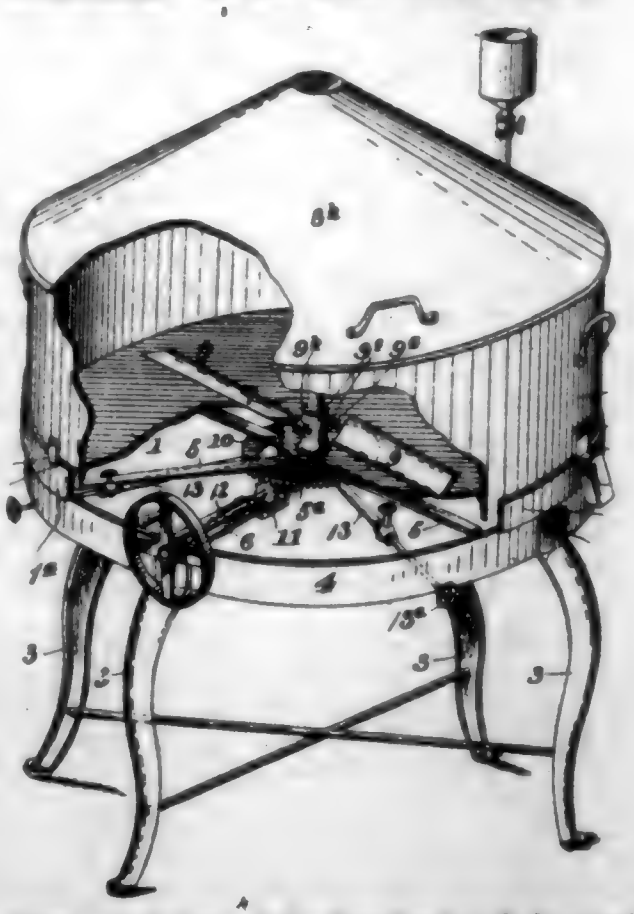


2. The process of dyeing leather, which consists in placing the skins or leathers to be dyed upon flexible perforated backing-plates, bending the plates and skins or leathers to double the latter, suspending said bent plates with the skins or leathers thereon upon bases of the required form, and subsequently subjecting the skins or leathers to the action of the dyeing liquor.

3. The process of dyeing leather, which consists first in attaching the skins or leathers to be dyed upon flexible perforated backing-plates and then subjecting said skins or leathers, while on the backing-plates, to the dyeing liquor, substantially as set forth.

4. The process of dyeing leather, which consists in placing the skins or leathers to be dyed upon flexible wire-nettings, bending said skins or leathers and said flexible wire-nettings, suspending the said wire-nettings with the skins or leathers thereon upon rigid bases of the required form, and subsequently subjecting the skins or leathers to the dyeing liquor.

816,379. COFFEE AND CEREAL ROASTER. KARL H. ROHNER, Rochester, Minn. Filed Nov. 7, 1905. Serial No. 286,574.



Claim.—1. A device of the character described, comprising a containing-receptacle, means for actuating said receptacle, and a series of burner-equipped pipes arranged under said receptacle and having their burner-furnished ends arranged at varying distances from the center of said bottom and at intervals apart one from the other around said center.

2. A device of the character described, having a fixed rim-like member provided with rotary bearings, a rotatable bottom member resting upon said bearings, an upright shaft central of said bottom member and equipped with lateral radial stirrers effective for engaging the contents of said bottom member, and a series of burner-equipped pipes arranged under said bottom member and having their burner-furnished ends arranged at varying distances from the center of said bottom member and at intervals apart one from the other around said center.

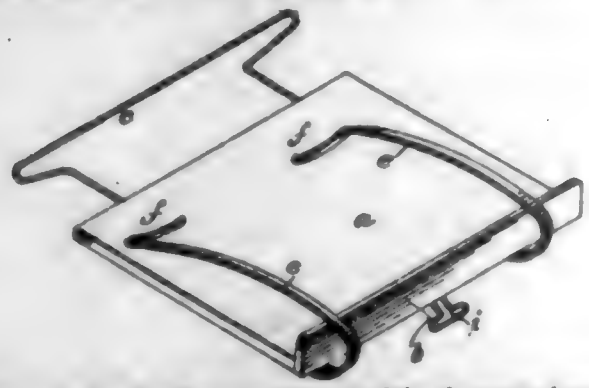
3. A device of the character described, comprising a fixed bottom member provided with rotary bearings, a rotatable bottom member resting upon said rotary bearings, a cylinder or casing superposed upon said bottom member and provided with a vent-equipped cover, a shaft central of said bottom member and provided with lateral stirrers effective for engaging the contents of said bottom member and a

series of burner-equipped pipes arranged under said bottom member and having their burner-furnished ends arranged at varying distances from the center of said bottom member and at intervals apart one from the other around said center.

4. A device of the character described, having a fixed rim-like member, a containing-receptacle or pan superposed upon the latter, and a series of burner-equipped pipes arranged under the bottom of said receptacle, with their burner-furnished ends arranged at varying distances from the center of said bottom.

5. A device of the character described, employing a containing-receptacle including a rotary bottom member, a shaft extending centrally through said bottom member, and agitator-blades having end stem portions and a sleeve applied to said shaft and having opposite horizontal eye members receiving said stem portions, said stem portions being equipped with nuts to secure the same in said eye members.

816,380. **BOOK-SUPPORT.** Forrest E. Rugg, Binghamton, N. Y., assignor of one-half to Frank A. Bigelow, Binghamton, N. Y. Filed June 19, 1905. Serial No. 265,974.



Claim.—1. In a book support or tray of the character described, a rod having vertical portions slidably supported on the back of the tray and a horizontal part at the top of said vertical portions which may be drawn up or outward to render the support extensible the ends of the upper horizontal part having recurvate beads made therein, to extend said support laterally beyond the vertical portions, and substantially coincident with the sides of the tray.

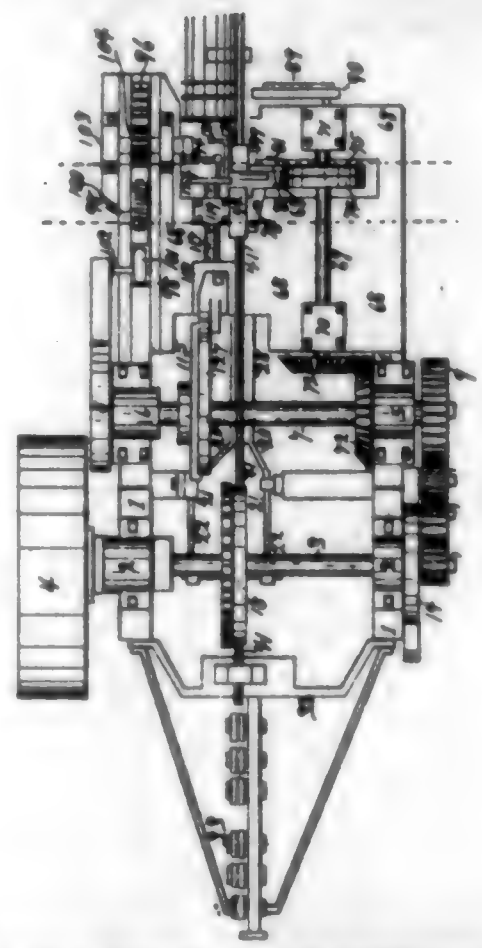
2. The combination, with a book support or tray, having a flange at its lower edge, of spring-operated leaf-holders consisting of small bowed arms which extend from the back of the tray, over the flange to near the top of said tray, where the ends of the arms are bent inward toward each other, the arms at their lower ends beneath the tray being formed into flat bars which are superposed one upon the other, each bar being split at its end and the split parts being bent to loosely engage the opposite bar, whereby the arms are rendered adjustable laterally.

3. The combination, with a book support or tray, having a flange at its lower edge, of spring-operated leaf-holders consisting of small bowed arms which extend from the back of the tray, over the flange to near the top of said tray, where the ends of the arms are bent inward toward each other, the arms at their lower ends beneath the tray being formed into flat bars which are superposed one upon the other, each bar being split at its end and the split parts being bent to loosely engage the opposite bar, whereby the arms are rendered adjustable laterally, and coiled springs formed from a length of wire which at its center is formed into a finger-loop extending outward below the tray the upper ends of the arms of the finger-loop being bent around the said superposed flat bars and secured by screw-eyes to the bottom of the tray, the wire being then formed into springs and again secured by screw-eyes to the bottom of the tray.

4. The combination with a book support or tray, of spring-operated leaf-holders formed into flat bars beneath the tray and superposed one upon the other, the ends of which bars are split and the split portions of one bar being lapped loosely around the other, and two springs secured to the sides of the tray and provided each with an integral finger-piece being in engagement with the said bars to actuate the leaf-holders.

816,381. **BALE-TIE MACHINE.** Gordon A. Russel, Omaha, Nebr. Filed July 7, 1905. Serial No. 268,658.

Claim.—1. A bale-tie machine comprising mechanism adapted to convey wire stock within the machine, means for severing the wire stock into wire-blanks, in combination with a revoluble detaining-head, a series of radially-disposed slots therein, a wire-twister, a wire-loop former adapted to receive, convey and confine an end of wire-blank within said slots; said wire-twister being adapted to twist said end of wire-blank while thus confined within one of said slots.



2. A bale-tie machine comprising mechanism adapted to convey wire stock within the machine a predetermined distance, means for severing the wire stock into wire-blanks, in combination with a revoluble detaining-head, a series of radially-disposed slots therein, a wire-twister, a wire-loop former adapted to receive, convey and confine an end of wire-blank within said slots; said wire-twister being adapted to twist said end of wire-blank while thus confined within one of said slots.

3. A bale-tie machine comprising mechanism adapted to convey wire stock within the machine a predetermined distance, means for severing the wire stock into wire-blanks of varying lengths by means of adjustment-gears of varying diameters, in combination with a revoluble detaining-head, a series of radially-disposed slots therein, a wire-twister, a wire-loop former adapted to receive, convey and confine an end of wire-blank within said slots; said wire-twister being adapted to twist said end of wire-blank while confined within one of said slots.

4. A bale-tie machine comprising a feed-wheel adapted to rotate upon a fixed axial plane, a second feed-wheel adapted to make intermittent peripheral contact therewith, means for lateral conveyance of wire within the machine a predetermined distance, means for cutting the wire stock into blanks of predetermined varying lengths, in combination with a series of slots upon a revoluble detaining-head, a loop-former adapted to contact, consecutively, with said slots, and means for twisting one end of a wire-blank while confined within the slot.

5. A bale-tie machine comprising wire-cutting means consisting of a stationary member and a cam-actuated member, means for causing wire to be drawn within the machine a predetermined distance before being cut, a loop-former adapted to form a loop upon the end of a wire, a revolving twister adapted to twist a wire loop, a revolving detaining-head, and a series of rotating receptacles adapted to contain the wire before and after the wire is cut into lengths; said loop-former being adapted to make contact with the wire loop upon the detaining-head, at which time the twister rotates to form the twisted loop.

6. A bale-tie machine comprising wire-cutting means, consisting of a stationary member and a cam-actuated member, means for causing wire to be drawn within the machine a predetermined distance before being cut, a loop-former adapted to perform a reciprocated rotary movement on its shaft and form a loop upon the end of a wire, a twister adapted to have an intermittent rotary movement to twist a wire loop, a rotating detaining-head, and a series of rotating receptacles adapted to contain wire before and after the wire has

been cut; said loop-former being adapted to make contact with the wire loop upon the detaining-head at which time the twister rotates to form the twisted loop.

7. A bale-tie machine comprising means for twisting a wire loop consisting of an angularly-formed arm adapted to have periodical rotation, means for forming a wire loop consisting of an angularly-formed arm adapted to have reciprocated rotation; means for cutting wire into lengths consisting of a stationary member and a cam-actuated member; the angular arm for said twisting means being adapted to detain the wire length while the angular arm for said loop-forming means performs its rotary movement.

8. A bale-tie machine comprising means for twisting a wire loop consisting of an angularly-formed arm adapted to have periodical rotation, means for forming a wire loop consisting of an angularly-formed arm adapted to have reciprocated rotation; means for cutting wire into lengths consisting of a stationary member and a cam-actuated member; the angular arm for said twisting means being adapted to detain the wire length while the angular arm for said loop-forming means performs its rotary movement; in combination with a shaft, and a series of receptacles longitudinally and radially disposed thereon.

9. A bale-tie machine comprising means for twisting a wire loop consisting of an angularly-formed arm adapted to have periodical rotation, means for forming a wire loop consisting of an angularly-formed arm adapted to have reciprocated rotation; means for cutting wire into lengths consisting of a stationary member and a cam-actuated member; in combination with a shaft, a detaining-head thereon, a series of receptacles longitudinally and radially disposed thereon; the angular arm for said twisting means being adapted to detain the wire length while the angular arm for said loop-forming means performs its rotary movement; said shaft being adapted to rotate in one direction causing rotation of said detaining-head and series of receptacles, and said angular arm for loop-forming means being adapted to make contact with the detaining-head at the time the angular arm for the twisting means performs its rotation.

10. A bale-tie machine comprising a twister having an angularly-formbd arm adapted to have a periodical rotation; a wire-loop former having an angularly-formed arm adapted to have reciprocated rotation; means for cutting wire into lengths consisting of a stationary member and a cam-actuated member, in combination with wire-feeding mechanism, wire-straightening mechanism, a series of receptacles adapted to contain wire before and after it has been cut into lengths, a wire-detaining head and a revoluble shaft, said detaining-head and series of receptacles to be disposed upon said shaft and to receive rotation thereby; the angular arm of the twister being adapted to detain the wire length while the angular arm of the loop-former performs its rotation; the angular arm of the loop-former being adapted to make contact with the detaining-head while the angular arm of the twister is performing its rotation.

11. The combination of a rotating twister having a shank portion, and transversely positioned thereon a wire-contacting portion, a rotating loop-former having a shank portion and transversely seated thereon a wire-receiving portion, a revoluble detaining-head and radially-disposed slots thereon, wire-feeding mechanism and wire-cutting mechanism; said loop-former being adapted to make contact upon the slots of the detaining-head at which time the twister rotates to form the twisted loop.

12. The combination of a rotating twister having a shank portion and transversely positioned thereon a wire-contacting portion and mechanism for delivering the wire upon the wire-contacting portion; a rotating loop-former having a shank portion, and transversely seated thereon a wire-receiving portion, a revolving detaining-head, and radially-disposed slots thereon; wire-feeding mechanism and wire-cutting mechanism, said loop-former being adapted to make contact upon the slots of the detaining-head at which time the twister rotates to form the twisted loop.

13. The combination of a rotating twister having a shank portion and transversely positioned thereon a wire-contacting portion, and mechanism for delivering the wire upon the wire-contacting portion; a rotating loop-former having a shank portion and transversely seated thereon a wire-receiving portion; mechanism for rotating the twister; a revoluble detaining-head and radially-disposed slots thereon; wire-feeding mechanism and wire-cutting mechanism, said loop-former being adapted to make contact upon the slots of the detaining-head at which time the twister rotates to form the twisted loop.

14. The combination of a rotating twister having a shank portion, and transversely positioned thereon a wire-contacting portion, and mechanism for delivering the wire upon the wire-contacting portion; a rotating loop-former having a shank portion, and transversely seated thereon a wire-receiving portion, mechanism for rotating the twister and loop-former; a revoluble detaining-head and radially-disposed slots thereon; wire-feeding mechanism, wire-cutting mechanism, and wire-straightening mechanism, said loop-former being adapted to make contact upon the slots of the detaining-head at which time the twister rotates to form the twisted loop.

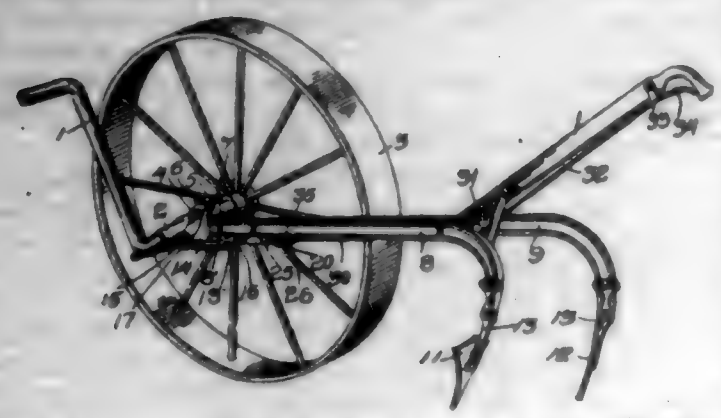
15. The combination of a rotating twister having a shank portion, and transversely positioned thereon a wire-contacting portion, a rotating loop-former having a shank portion and transversely seated thereon a wire-receiving portion, a revoluble detaining-head and radially-disposed slots thereon, wire-feeding mechanism, wire-cutting mechanism and wire-straightening mechanism; said loop-former being adapted to make contact upon the slots of the detaining-head at which time the twister rotates to form the twisted loop; a shaft, and revoluble thereon a series of radially-disposed wire-receiving receptacles, said receptacles being adapted to receive wire before and after being cut.

16. The combination of a rotating twister having a shank portion, and transversely positioned thereon, a wire-contacting portion; a rotating loop-former having a shank portion, and transversely seated thereon a wire-receiving portion; a revoluble detaining-head, and radially-disposed slots thereon; wire-feeding, wire-cutting and wire-straightening mechanism; said loop-former being adapted to make contact within the slots of the detaining-head at the time the twister rotates to form a twisted wire loop; a shaft, and revoluble thereon a series of radially-disposed wire-receiving receptacles, a double and similarly toothed conveying-wheel mounted upon said shaft, said receptacles being adapted to contain wire before being cut and after the wire loop has been twisted; said receptacles, conveying-wheel and detaining-head being adapted to convey wire during their radial movement upon said shaft.

17. The combination of a rotating twister having a shank portion, and transversely positioned thereon a wire-contacting portion; a rotating loop-former having a shank portion, and transversely seated thereon a wire-receiving portion; a revoluble detaining-head, and radially-disposed slots thereon; wire-straightening, wire-feeding and wire-cutting mechanism; said loop-former being adapted to make contact with the slots of the detaining-head at the time the twister rotates to form a twisted-wire loop; a shaft, and revoluble thereon a series of radially-disposed wire-receiving tube-receptacles; a series of radially-disposed longitudinally-bisected tubes and a double similarly-toothed conveying-wheel mounted upon said shaft, the overlapping guards 54, said tube-receptacles and series of bisected tubes being adapted to contain wire before the wire has been cut and after the wire loop has been twisted; said receptacles, bisected tubes, conveying-wheel and detaining-head being adapted to convey wire during their radial movement upon said shaft.

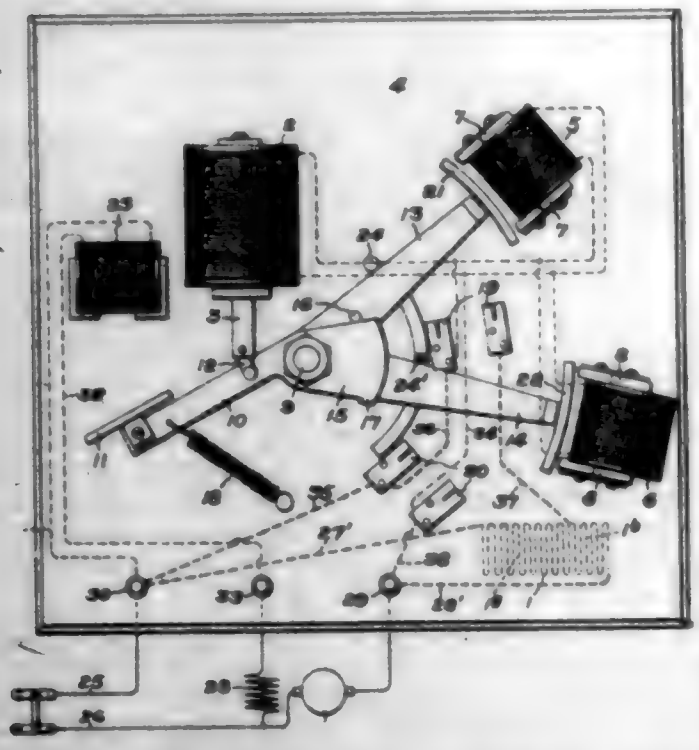
18. The combination of a rotating twister having a shank portion 123, and a wire-contacting portion 124, a rotating loop-former having a shank portion and transversely-seated wire-receiving portions 106 and 105 thereon, the revoluble detaining-head 47, the separating-head 48 and the finger 150, the slots 91 within the detaining-head, the feed-wheels 18 and 19 with the actuating-spring 30 upon the lever 29, the straightening-wheels 33, the disks 74 and 75, the dog-levers 80 and 81, the cutting-shears 65 and 66, the spring-actuating rod 84, the lugs 67 and 77 upon said disks; said loop-former being adapted to make contact with the slots of the detaining-head at the time the twister rotates to form a twisted-wire loop; the shaft 52 and the series of tubes 53, the bisected tubes 83, the conveying-wheel 49, detaining-head 47 and separating-head 48 mounted revolubly upon said shaft; the curved arms 55 radially disposed about and disposed to rotate by operation of said shaft; the overlapping guards 54 upon said arms; computing devices consisting of the lever 129, the plunger 131, the wheel 135 having a blank periphery and a partly-mutilated periphery, the shaft 61 with its radially-extending arm 140, the lever 137 adapted to make contact with periphery of wheel 135 and with arm 140, the arms 62 upon shaft 61; the guide-chamber 64 containing the slot 88; the blocks 92 upon the detaining-head, the depressing-arm 111, the crank 90 and the arm 89 rigidly disposed thereon, said crank being adapted to rotate and make contact with blocks 92 upon the detaining-head, and the arm 89 adapted to make contact with the depressing-arm 111; said depressing-arm being adapted to move within the slot 88; said series of tubes and bisected tubes being adapted to contain wire before said wire has been cut and after the loop has been twisted; said receptacles, bisected tubes, conveying-wheel and detaining-head being adapted to convey wire during the radial movement of the shaft upon which they are mounted.

816,882. CULTIVATOR. FREDERICK E. SCHAAL, Seward, Nebr. Filed Aug. 17, 1905. Serial No. 274,545.



Claim.—A device of the character described comprising a casting having a lip projecting from one end and an extension at the opposite end provided with a perforated upright, the said casting having a longitudinal bore throughout its length above the level of the upper faces of the said lip and extension, a rod mounted for sliding movement through said bore, and a spring encircling the rod between the casting and said upright.

816,883. MOTOR-STARTER. ERNEST SCHATTNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 20, 1905. Serial No. 270,442.



Claim.—1. The combination with a motor-circuit, of a starting-switch therefor comprising a magnetically-suspended switch-arm mounted to establish the running connections of the motor when released, and means dependent upon the speed of the motor for releasing said arm.

2. The combination with a motor-circuit, of a starting-switch therefor comprising a switch-arm adapted to establish running connections of the motor, means whereby said arm is suspended upon closing the motor-circuit, and means dependent upon the speed of the motor for releasing said arm.

3. The combination with a motor-circuit and means for closing the same, of a starting-switch comprising a contact, a switch-arm arranged to fall by gravity into engagement therewith to establish running connections of the motor, a magnet-winding adapted to retard said switch-arm, and means dependent upon the speed of the motor for releasing said arm.

4. The combination with a motor-circuit and means for closing the same, of a starting-switch comprising a movable switch-arm adapted when moved to establish the running connections of the motor, an armature carried by said switch-arm, an electromagnet having its poles in proximity to the path of movement of said armature whereby movement of the switch-arm is retarded, and means dependent upon the speed of the motor for impressing upon the terminals of said electromagnet a continuously-decreasing electromotive force.

5. The combination with a motor-circuit, of a starting-switch therefor comprising a starting resistance, a plurality of switch-arms adapted to successively cut out sections of said resistance, means whereby said arms are suspended upon closing the motor-circuit, and means dependent upon the speed of the motor for releasing said arms.

6. The combination with a motor-circuit, of a starting-switch therefor comprising a starting resistance, a plurality of switch-arms adapted to successively cut out sections of said resistance, means whereby said arms are magnetically suspended upon closing the motor-circuit, and means dependent upon the speed of the motor for releasing said arms.

7. The combination with a motor-circuit, of a starting-switch therefor comprising a plurality of pivoted switch-arms normally supported in raised position, means for automatically removing said support upon closing the motor-circuit and simultaneously producing a magnetic suspension for said arms, and means for releasing said arms.

8. The combination with a motor-circuit, of a starting-switch therefor comprising a plurality of pivoted switch-arms, means for mechanically supporting said arms in raised position, means for automatically removing said support upon the closing of the motor-circuit and simultaneously producing a magnetic suspension for said arms, and means for releasing said arms.

9. The combination with a motor-circuit, of a starting-switch therefor comprising a starting resistance, a switch-arm pivoted to fall by gravity when released to cut out a section of said resistance, means for suspending said arm, and means dependent upon the speed of the motor for releasing the same.

10. The combination with a motor-circuit, of a starting-switch therefor comprising a plurality of pivoted switch-arms, means for mechanically supporting said arms in raised position, means for automatically removing said support upon the closing of the motor-circuit and simultaneously producing a magnetic suspension for said arms, and means dependent upon the speed of the motor for releasing said arms.

11. The combination with a motor-circuit, of a starting-switch comprising a resistance and contacts therefor, a plurality of pivoted switch-arms having a bias toward engagement with said contacts, means for mechanically supporting said arms in raised position, electromagnetic means for automatically removing said support and simultaneously producing a magnetic suspension for said arms, and means dependent upon the speed of the motor for releasing said arms to successively cut out sections of said resistance.

12. A starting-switch comprising a resistance and contacts therefor, a plurality of movable contacts having a bias toward engagement with said contacts, a spring-returned support for said movable contacts, electromagnetic means for automatically moving said support against the tension of its spring and simultaneously producing a magnetic suspension for said movable contacts, a no-voltage magnet for holding said support in retracted position, and means dependent upon the speed of the motor for releasing said arms to successively cut out sections of said resistance.

13. A motor-starter comprising a spring-retracted circuit-closer, a resistance, a plurality of movable contacts adapted to gradually cut out said resistance and normally held in open-circuit position by the circuit-closer, a no-voltage magnet for holding the circuit-closer in closed position, and magnetic means governed by the counter electromotive force of the motor for successively releasing the movable contacts to cut out resistance.

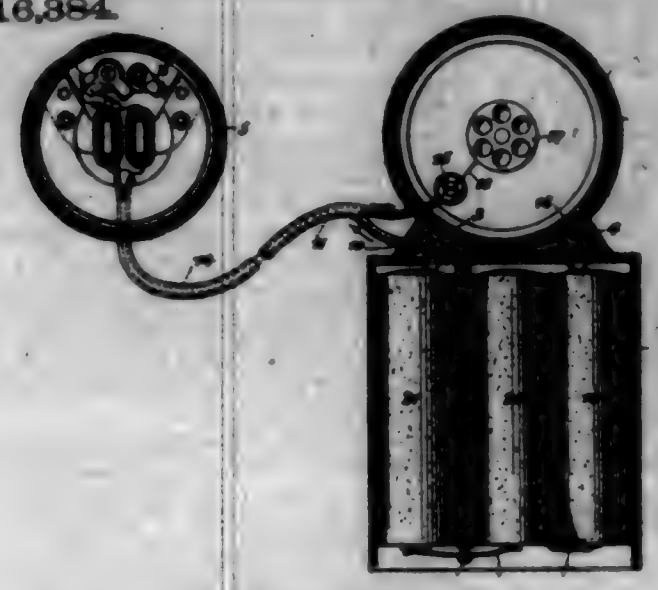
816,884. BATTERY. EUGENE W. SCHNEIDER, New York, N. Y., assignor to The Mears Bar Phone Company, New York, N. Y., a Corporation of New York. Filed Aug. 11, 1905. Serial No. 274,017.

Claim.—1. A battery composed of a plurality of cells, and means whereby one of said cells by an end-to-end reversal thereof may be thrown into or out of the generating-circuit of the battery.

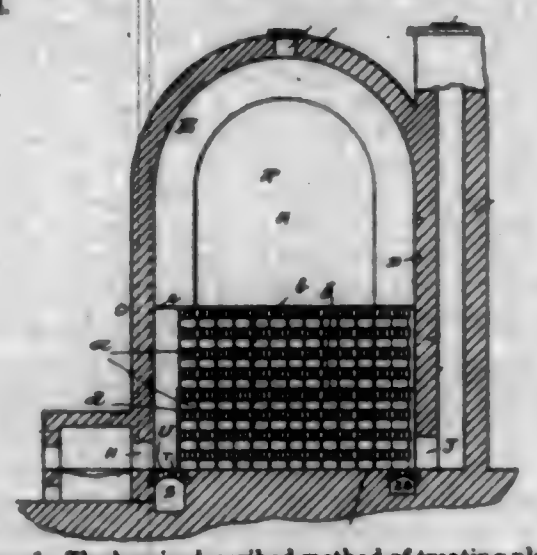
2. A battery composed of a plurality of cells, one of said cells in one position thereof acting merely as a conductor of the battery-current and not as a generator, and means whereby said cell by an end-to-end reversal thereof may be thrown into the generating-circuit of the battery.

3. A two-compartment battery-case containing two battery-cells in one compartment and one battery-cell in the other compartment, said last-named cell in one position thereof acting merely as a conductor of the battery-current and not as a generator, and means whereby said cell by an end-to-end reversal thereof may be thrown into the generating-circuit of the battery.

816,384.



816,885. METHOD OF TREATING PLASTIC MATERIAL. ALEXANDER A. SCOTT, Knoxville, Tenn. Filed Oct. 12, 1905. Serial No. 283,414.



Claim.—1. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

2. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; and then subjecting the entire mass of said blocks to a moving, drying gaseous medium; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

3. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; each successive group being subjected to an artificially moved, drying gaseous medium before another group is set thereon; and then subjecting the entire mass of said blocks to a gaseous medium of a higher temperature, substantially as and for the purpose herein described.

4. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups, each successive group being subjected to an artificially and horizontally moving, drying gaseous medium before another group is set thereon; and then subjecting the entire mass of said blocks to a gaseous medium of a higher temperature, substantially as and for the purpose herein described.

5. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a series of group-sections horizontally beside each other to form a group, subjecting each of said sections to the action of an artificially-moved drying agent while an adjacent section is being set, and then superposing additional group-sections of such green blocks upon said first group and subjecting them successively to the action of an artificially-moved drying agent, and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

6. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a series of group-sections horizontally beside each other, subjecting each of said sections to an artificially-moved, drying gaseous medium while an adjacent group is being set, then superposing additional group-sections of such green blocks upon said first group and subjecting them successively to an artificially-moved drying gaseous medium, and then subjecting the entire mass to an intensely-heated moving gaseous medium, substantially as and for the purpose herein described.

7. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a series of group-sections horizontally beside each other, subjecting each of said group-sections to an artificially and horizontally moving, drying gaseous medium while an adjacent section is being set, then superposing additional group-sections of such green blocks upon said first group and subjecting said superposed sections to an artificially and horizontally moving, drying gaseous medium; and then subjecting the entire mass of said blocks to an intensely-heated, moving gaseous medium, substantially as and for the purpose herein described.

8. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting a limited group of said blocks in a chamber, then subjecting said blocks to an artificially warmed and moved, drying gaseous medium until they are dried sufficiently to resist downward pressure; then setting another limited group of wet or green blocks of said material upon the first group of such blocks; then subjecting the blocks of said second group to an artificially-warmed, drying gaseous medium; and then subjecting the entire mass of said blocks to intense heat, substantially as and for the purpose herein described.

9. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting a group of said blocks in a chamber and drying said blocks by subjecting them to an artificially warmed and moved, drying gaseous medium; then setting another group of such green blocks upon said first group of blocks and subjecting said group of green blocks to an artificially-warmed, drying gaseous medium; and then subjecting the entire mass of said blocks to intense heat, substantially as and for the purpose herein described.

10. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then successively setting such blocks in a plurality of superposed groups, each successive group being subjected to artificially-moved drying-air before another group is set thereon; then subjecting the entire mass of said blocks to a moving, drying gaseous medium; and then subjecting the entire mass of said blocks to a burning heat, substantially as and for the purpose herein described.

11. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups and isolating said groups with combustible sheet-form material and subjecting each successive group to an artificially-moved, drying gaseous medium before another group is set thereon; then eliminating said sheet-form material; and thereafter subjecting the entire mass of said blocks to a heated, gaseous medium, substantially as and for the purpose herein described.

12. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups and isolating said groups with combustible sheet-form material and subjecting each successive group to an artificially-moved, drying gaseous medium before another group is set thereon; then burning said sheet-form material; and thereafter subjecting the entire mass of said blocks to a heated gaseous medium, substantially as and for the purpose herein described.

13. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups and isolating each group with combustible sheet-form material, each successive group being subjected to an artificially-moved, drying gaseous medium before another group is placed thereon; then eliminating said sheet-form material; then subjecting the en-

tire mass of said blocks to a higher drying temperature; then subjecting the entire mass to a burning heat, substantially as and for the purpose herein described.

14. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups and isolating each group with combustible sheet-form material, each successive group being subjected to an artificially-moved, drying gaseous medium before another group is placed thereon; then burning said sheet-form material; then subjecting the entire mass of said blocks to a higher drying temperature; then subjecting the entire mass to a burning heat, substantially as and for the purpose herein described.

15. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups, each successive group being subjected to an artificially-moved drying gaseous medium before another group is set thereon, and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

16. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; each successive group being subjected to the action of artificially-moved air at moderate temperature before another group is set thereon; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

17. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups, each successive group being subjected to the action of artificially-moved air at moderate temperature; then subjecting the entire mass of said blocks to the action of products of combustion at moderate temperature; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

18. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a compartment, in a plurality of superposed groups; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; then subjecting the entire mass of said blocks to the action of highly-heated products of combustion; then, while the last-mentioned step is in progress, setting more of said green blocks in a second compartment, in a plurality of superposed groups, each successive group being subjected to the action of the heated gases conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in said second-mentioned compartment to a high temperature, substantially as and for the purpose herein described.

19. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a compartment, in a plurality of superposed groups; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; then subjecting the entire mass of said blocks to the action of highly-heated products of combustion; then, while the last-mentioned step is in progress, setting more of said green blocks in a second compartment, in a plurality of superposed groups, each successive group being subjected to the action of the products of combustion conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in said second compartment to a high temperature, substantially as and for the purpose herein described.

20. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; setting said blocks in a plurality of superposed groups and subjecting each successive group to the action of an artificially-moved drying gaseous medium before another group is set thereon and by stages setting a flash-wall of said dried blocks in front of the groups which have been dried; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

21. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; setting said blocks in a plurality of superposed groups and subjecting each group to the action of an artificially-moved drying gaseous medium before another group is set thereon and by stages setting a flash-wall of said dried blocks in front of the groups which have been dried; then subjecting the entire mass of said blocks to the action of a drying gaseous medium; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

22. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups and subjecting each successive group to the action of an artificially and horizontally moving drying gaseous medium before another group is set thereon and by stages setting a flash-wall of said dried blocks in front of the groups which have been dried; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

23. The herein-described method of treating plastic material, which method consists in generating a stream of said material, in the green state, severing the material of said stream into blocks and conducting said stream into a compartment; setting said blocks in a plurality of superposed groups and subjecting each successive group to the action of an artificially-moved drying gaseous medium before another group is set thereon and by stages setting a flash-wall of said dried blocks in front of the groups which have been dried; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

24. The herein-described method of treating plastic material, which method consists in generating a stream of said material, in the green state, severing the material of said stream into blocks and conducting said stream into a compartment; setting said blocks in a plurality of superposed groups and subjecting each successive group to the action of an artificially-moved horizontally-moving drying gaseous medium before another group is set thereon and by stages setting a flash-wall of said dried blocks in front of the groups which have been dried; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

25. The herein-described method of treating plastic material, which method consists in generating a stream of said material, in the green state, severing the material of said stream into blocks and conducting said stream into a compartment; setting said blocks within said compartment in a plurality of superposed groups, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

26. The herein-described method of treating plastic material, which method consists in generating a stream of said material, in the green state, severing the material of said stream into blocks and conducting said stream into a compartment; setting said blocks within said compartment in a plurality of superposed groups, each successive group being subjected to the action of an artificially and horizontally moving drying agent before another group is set thereon; and then subjecting the entire mass of said blocks to a high temperature, substantially as and for the purpose herein described.

27. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; setting said blocks alternately in a plurality of superposed groups in two compartments, each successive group in the same compartment being subjected to the action of an artificially-moved drying agent while a group is being set in the other of said compartments; and then subjecting the entire mass of said blocks in each of said compartments to a high temperature, substantially as and for the purpose herein described.

28. The herein-described method of treating plastic material, which method consists in generating a stream of said material, in the green state, severing the material of said stream into blocks and conducting said stream alternately into two compartments; setting said blocks alternately in a plurality of superposed groups in said compartments, each successive group in the same compartment being subjected to the action of an artificially-moved drying agent while a group is being set in the other of said compartments; and then subjecting the entire mass of said blocks in each of said compartments to a high temperature, substantially as and for the purpose herein described.

29. The herein-described method of treating plastic material, which method consists in subjecting a mass of dried blocks of said material to the action of highly-heated gases in a compartment and allowing said mass to cool; then, while said action is proceeding, setting similar blocks alternately in a plurality of superposed groups in two other compartments, each successive group in the same com-

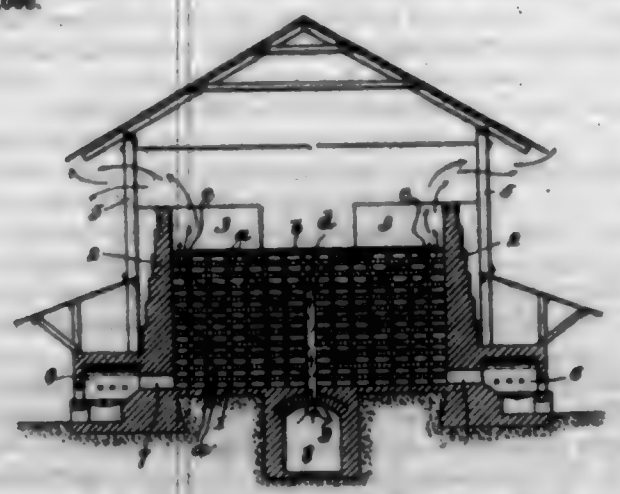
partment being subjected to the action of the gases conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in said last two compartments to a high temperature, substantially as and for the purpose herein described.

30. The herein-described method of treating plastic material, which method consists in subjecting a mass of dried blocks of said material to the action of highly-heated gases in a compartment and allowing said mass to cool; then, while said action is proceeding, setting similar blocks alternately in a plurality of superposed groups in two other compartments, each successive group in the same compartment being subjected to the action of the gases conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in each of said last two compartments to the action of heated gases conducted from another mass of said blocks; and then subjecting the entire mass of said block in each of said last two compartments to a high temperature, substantially as and for the purpose herein described.

31. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a compartment in a plurality of superposed groups, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon; then subjecting the entire mass of said blocks to the action of highly-heated gases and allowing said mass to cool; then, while the last-mentioned step is in progress, setting similar blocks alternately in a plurality of superposed groups in two other compartments, each successive group in the same compartment being subjected to the action of the heated gases conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in each of said last-mentioned compartments to a high temperature, substantially as and for the purpose herein described.

32. The herein-described method of treating plastic material, which method consists in subjecting a mass of said material to the action of highly-heated gases in a compartment and allowing the same to cool; then, while said action is proceeding, setting similar blocks alternately in a plurality of superposed groups in two other compartments, each successive group in the same compartment being subjected to the action of the horizontally-moving gases conducted from said first-mentioned compartment; and then subjecting the entire mass of said blocks in said last two compartments to a high temperature, substantially as and for the purpose herein described.

816,386. METHOD OF TREATING PLASTIC MATERIAL. ALEXANDER A. SCOTT, Knoxville, Tenn. Filed Nov. 13, 1905. Serial No. 287,096.



Claim.—1. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; driving a drying agent upward between the upright sides of the mass of blocks after the setting of each group, and deflecting said drying agent laterally through the last set group; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

2. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to or against the lateral walls of the compartment and having an upright flue-spacing between said lateral walls, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent being made to rise through said flue-spacing and move thence laterally through the then last of said groups and then upward out of said groups; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

3. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to the lateral walls of the compartment and all excepting the uppermost group having an upright flue-spacing between said lateral walls; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent being made to rise through said flue-spacing and move thence laterally through the then last of said groups, and then upward out of said group; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

4. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to the lateral walls of the compartment and having an upright flue-spacing between said lateral walls, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent being made to rise through said flue-spacing and move thence laterally through the then last of said groups and then upward out of said group; and then passing a highly-heated gaseous medium into the base of said mass and thence through said mass, substantially as described.

5. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to the lateral walls of the compartment and having an upright flue-spacing between said lateral walls, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent being made to rise through said flue-spacing and move thence laterally through the then last of said groups and then upward out of said group; and then passing a highly-heated gaseous medium into the base of said mass from opposite sides and thence through said mass, substantially as described.

6. The herein-described method of treating plastic material which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to the lateral walls of said compartment, a cover being placed upon each successive group, said cover extending almost to the lateral edges of said group and said group being then subjected to the action of an artificially-moved drying agent made to rise centrally through said group beneath said cover, and said cover being then removed before another group is set thereon; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

7. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; driving a drying agent upward between the upright sides of the mass of blocks after the setting of each group, and deflecting said drying agent laterally through the last set group; then subjecting the entire mass of said blocks to a high temperature, and then passing air downward through said mass and thence through another group of green blocks, substantially as described.

8. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to or against the lateral walls of the compartment and having an upright flue-spacing between said lateral walls, each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent being made to rise through said flue-spacing and move thence laterally through the then last of said groups and then upward out of said group; then subjecting the entire mass of said blocks to a high temperature, and then passing air downward through said mass and thence through another group of green blocks, substantially as described.

9. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups within a compartment, said groups extending to the lateral walls of the compartment and all excepting the uppermost group having an upright flue-spacing between said lateral walls; each successive group being subjected to the action of an artificially-moved drying agent before another group is set thereon, said drying agent

being made to rise through said flue-spacing and move thence laterally through the then last of said groups, and then upward out of said group; then subjecting the entire mass of said blocks to a high temperature; and then passing air downward through said mass and thence through another group of green blocks, substantially as described.

10. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

11. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after setting each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a high temperature; then passing a stream of air through said mass and thence through another group of green blocks, substantially as described.

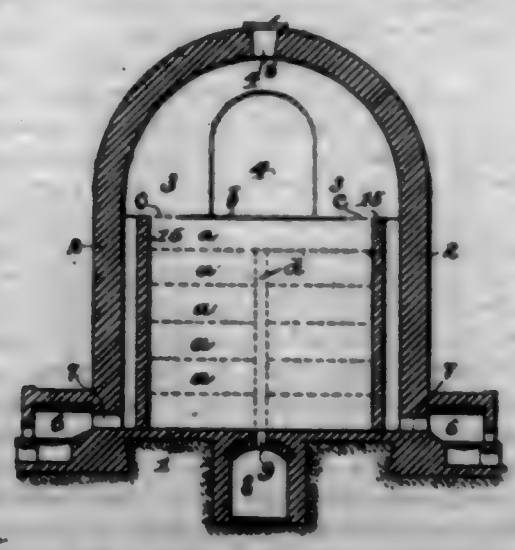
12. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent upward through said mass; then subjecting the entire mass of said blocks to a high temperature; and then passing air downward through said mass, substantially as described.

13. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent upward through said mass; then subjecting the entire mass of said blocks to a high temperature; then passing air downward through said mass and thence to and through another group of green blocks, substantially as described.

14. The herein-described method of treating plastic materal, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; driving air at moderate temperature upward between the upright sides of the mass of blocks after the setting of each group, and deflecting said air through the last-set group; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

15. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; driving air at moderate temperature upward between the upright sides of the mass of blocks after the setting of each group, and deflecting said air through the last-set group; then subjecting the entire mass of said blocks to the action of a drying agent; and then subjecting the entire mass of said blocks to a high temperature, substantially as described.

816,387. METHOD OF TREATING PLASTIC MATERIAL. ALEXANDER A. SCOTT, Knoxville, Tenn. Filed Nov. 14, 1905. Serial No. 287,621.



Claim.—1. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium; and passing said gaseous medium thence to and through another group of green blocks, substantially as described.

2. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium and passing said gaseous medium thence to and through another group of green blocks; and then passing air through said mass of blocks and conducting said air thence to and through a group of green blocks, substantially as described.

3. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass, substantially as described.

4. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass and thence to and through another group of green brick, substantially as described.

5. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass and thence to and through a group of green blocks; then passing air downward through said mass and thence to and through another group of green blocks, substantially as described.

6. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups with upright flue-spacing; and, after the setting of each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium and passing said gaseous medium thence to and through another group of green blocks, substantially as described.

7. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups with upright flue-spacing; and, after the setting of each group, driving a drying agent into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium and passing said gaseous medium thence to and through another group of green blocks; and then passing air through said mass of blocks and conducting said air thence to and through a group of green blocks, substantially as described.

8. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups with upright flue-spacing; and, after the setting of each group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass, substantially as described.

9. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups with upright flue-spacing; and, after the setting of each group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass and thence to and through another group of green brick, substantially as described.

10. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups with upright flue-spacing; and, after the setting of each

group, driving a drying agent upward through said mass; then passing a highly-heated gaseous medium downward through said mass and thence to and through a group of green blocks; then passing air downward through said mass and thence to and through another group of green blocks, substantially as described.

11. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving air at moderate temperature into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium; and passing said gaseous medium thence to and through another group of green blocks, substantially as described.

12. The herein-described method of treating plastic material, which method consists in forming said material, in the green state, into blocks; then setting said blocks in a plurality of superposed groups; and, after the setting of each group, driving air at moderate temperature into the base of said mass of blocks between the upright sides of said mass and thence through said mass; then subjecting the entire mass of said blocks to a highly-heated gaseous medium and passing said gaseous medium thence to and through another group of green blocks; and then passing air through said mass of blocks and conducting said air thence to and through a group of green blocks, substantially as described.

816,388. **FRICTIONAL TRANSMISSION ELEMENT.** PARASCHEVA SECHIARI, Paris, France, assignor to La Société Civile d'Études de l'Indéchirable Grimeon, Lyon, France. Filed Nov. 6, 1905. Serial No. 286,090. (Model.)



Claim.—1. A frictional transmission element having a covering or envelop of cork.

2. A transmission element having a working surface of denaturized cork.

3. A transmission element having a covering of denaturized cork applied in sheets.

4. A transmission element having a body of textile fabric and a covering composed of sheets of denaturized cork.

5. A driving-belt comprising a body of textile fabric and a covering of denaturized cork applied in sheets.

6. A driving-belt comprising superposed plies of textile fabric and a covering of cork sheets applied thereto by rubber-containing cement.

7. A driving-belt embodying a plurality of plies of textile fabric applied to each other by means of india-rubber cement, and a covering of cork sheets likewise applied by means of india-rubber cement to the outer plies.

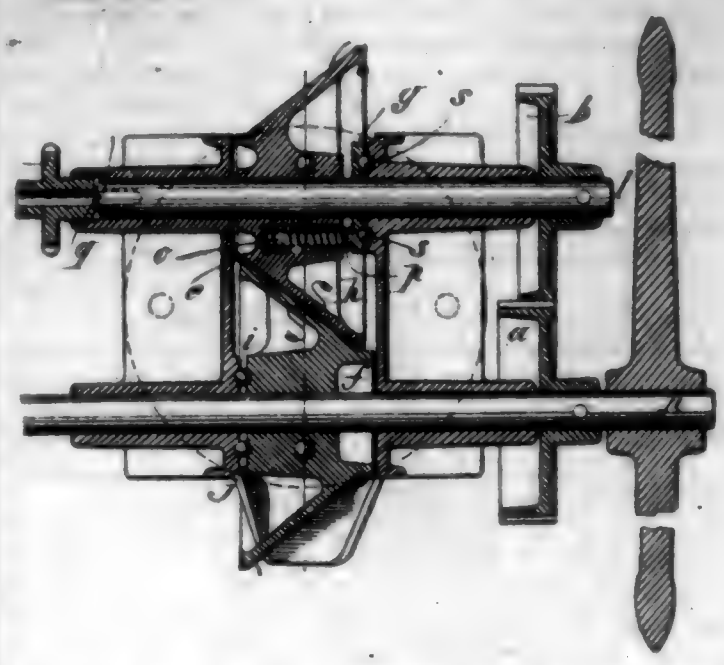
816,389. **SLAG CEMENT AND METHOD OF MAKING THE SAME.** JOSEPH A. SHINN, Pittsburg, Pa. Filed July 3, 1901. Serial No. 67,544.

Claim.—1. The method of making slag-cement consisting in granulating basic slag, mixing this granulated slag with hydrated lime and dehydrated iron oxid and dry-grinding the mixture sufficiently fine that at least ninety per cent. will pass through a two-hundred-mesh screen; substantially as described.

2. The method of making slag-cement, consisting in mixing granulated basic slag, hydrated lime, and dehydrated iron oxid in the following proportions: seventy-five to ninety parts of slag, ten to twenty parts of lime, and three to fifteen parts of iron oxid, and then dry-grinding the mixture; substantially as described.

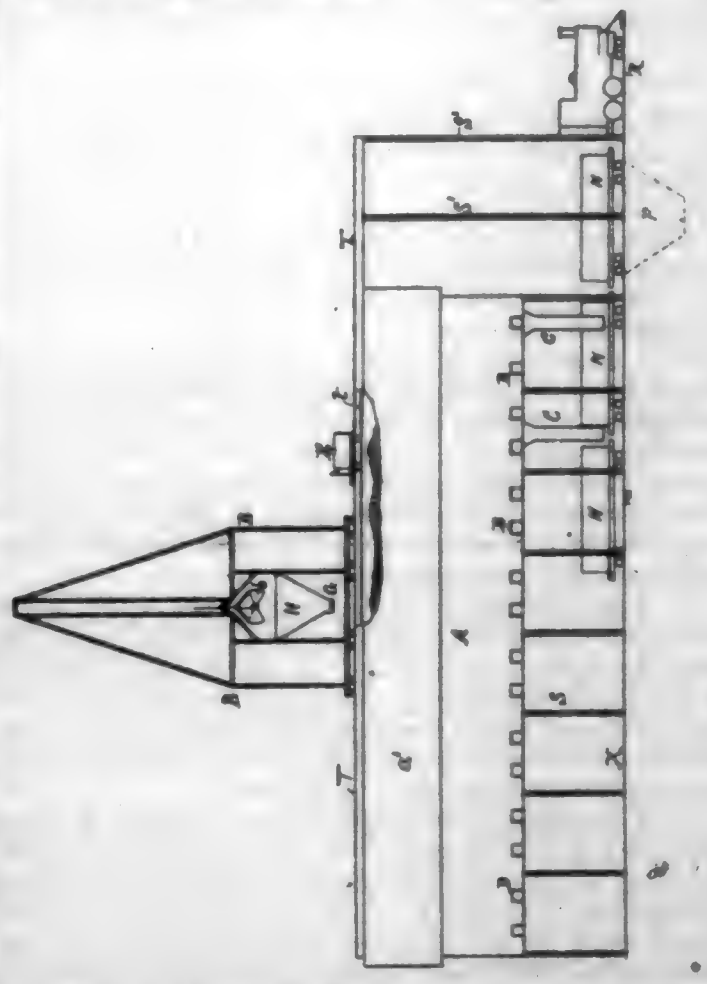
3. As a new composition of matter, a slag-cement consisting of a finely-ground mixture containing seventy-five to ninety parts of basic slag, ten to twenty parts of hydrated lime, and three to fifteen parts of iron oxid; substantially as described.

816,390. **APPARATUS FOR CRUSHING GRAIN.** ALBERT SIMON and AUGUSTE SIMON, Cherbourg, France. Filed Jan. 5, 1903. Serial No. 137,933.



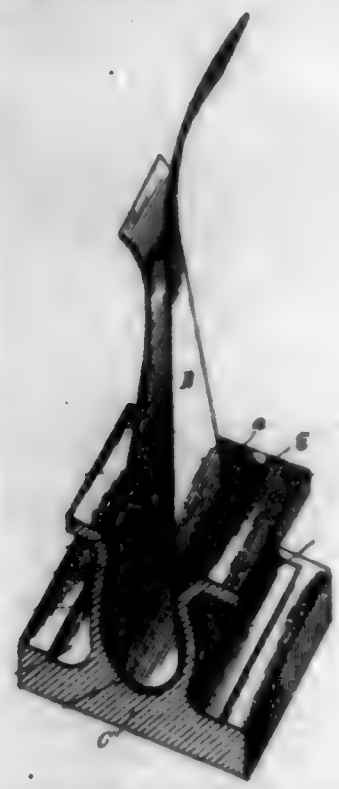
Claim.—In an apparatus for crushing grain, the combination of two shafts, coacting cones mounted on said shafts, a suitable framework in which said shafts are carried, one of said shafts being slidably mounted in said framework, a rotating disk on said shaft adapted to bear against said framework, a coil-spring in the hub of the cone on said slidable shaft bearing against said ring, and a screw in the frame bearing against which the end of said slidable shaft is adapted to be thrust by the action of said spring.

816,391. **APPARATUS FOR HANDLING COAL AND OTHER GRANULAR MATERIAL.** AUGUSTUS SMITH, New York, N. Y. Filed Jan. 31, 1905. Serial No. 243,509.



Claim.—A plant for handling coal or other granular material, said plant comprising a storage structure with a traveling elevating apparatus mounted on the top thereof and a distributing means mounted on the top thereof, and an extension at one end of the storage structure, so that the elevating and distributing apparatus may be moved out past the structure proper to raise coal or other granular material from points within the prolongation of the planes containing the sides of the storage structure proper.

816,392. DEVELOPING-RECEPTACLE FOR PHOTOGRAPHIC FILMS. SAMUEL W. SMITH, Ansonia, Conn. Filed May 9, 1905. Serial No. 259,486.



Claim.—1. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section, the said chamber being open at its top and having its side wall extending inwardly toward each other from said top, downwardly and then inwardly until the said walls meet forming a curved surface at the bottom of the chamber.

2. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section, the said chamber being open at its top and having flat sills projecting outwardly from the respective sides of the top, the said chamber having its side walls extending inwardly toward each other from their junction with their respective sills and further extending downwardly and then inwardly toward each other until they meet forming a curved surface at the bottom of the chamber.

3. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section, the said chamber being open at its top and having its maximum vertical dimension greater than its maximum transverse dimension, and the said base having its respective sides projecting outwardly forming concave runs which terminate respectively beyond the outer edges of said chamber.

4. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section, the said chamber being open at its top and having flat sills projecting outwardly from the respective sides of said top, the said chamber also having its vertical dimension greater than its transverse dimension, and the said base having its respective sides projecting outwardly forming concave runs which terminate respectively beyond the outer edges of said sills.

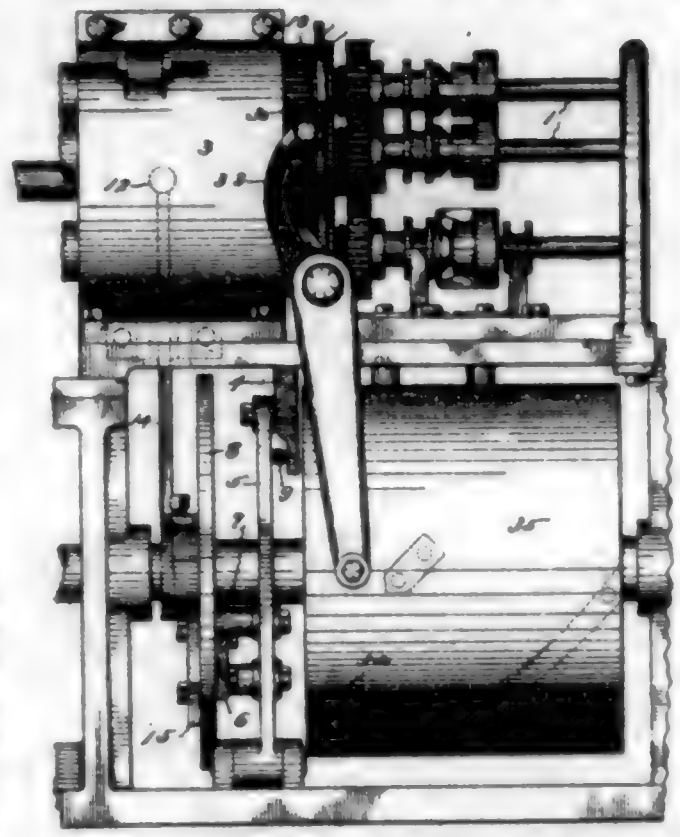
5. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section and having its maximum vertical dimension greater than its maximum transverse dimension, the said chamber being open at its top and having its side walls extending toward each other from said top downwardly and then inwardly until the said walls meet forming a curved surface at the bottom of the chamber.

6. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section and having its maximum vertical dimension greater than its maximum transverse dimension, the said chamber being open at its top and having flat sills projecting outwardly from the respective sides of the top, the said chamber also having its side walls extending inwardly toward each other from their junction with their respective sills, and further extending downwardly and then inwardly toward each other until they meet forming a curved surface at the bottom of the chamber.

7. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section, said chamber being open at its top and having its interior surface curved downwardly at the bottom, and the said base having its respective sides projecting outwardly forming concave runs which terminate respectively beyond the outer edges of said chamber.

8. A photographic developing-receptacle consisting of a base surmounted by a developing-chamber rectangular in longitudinal section and open at its top, the said chamber having flat sills projecting outwardly from the respective sides of said top, and having its interior surface curved downwardly at the bottom, and the said base having its respective sides projecting outwardly forming concave runs which terminate respectively beyond the outer edges of said sills.

816,393. THREADING MECHANISM FOR AUTOMATIC SCREW-MACHINES. CHRISTOPHER M. SPENCER, Windsor, Conn., assignor to The Universal Machine Screw Company, Hartford, Conn., a Corporation of Connecticut. Filed Mar. 2, 1905. Serial No. 248,040.



Claim.—1. In a screw-machine a plural number of revoluble tubular spindles, two gears loosely mounted upon each spindle, a central driving-shaft, a gear mounted on the central shaft and meshing with one gear on each spindle, a tubular driving-shaft on the central shaft, a gear mounted on the tubular shaft and meshing with the other gear on each spindle, a clutch on each spindle for connecting either of the gears with its spindle, a yoke encircling each clutch, a lever for moving the yokes, and a cam for oscillating the lever, substantially as specified.

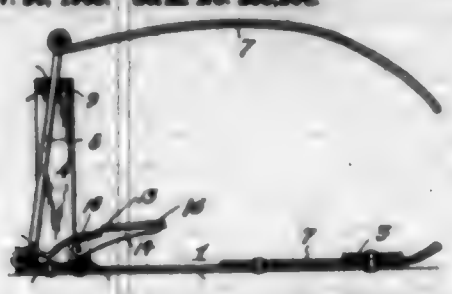
2. In a screw-machine a plural number of revoluble tubular spindles, two gears loosely mounted upon each spindle, a central driving-shaft, a gear mounted on the central shaft and meshing with one gear on each spindle, a tubular driving-shaft on the central shaft, a gear mounted on the tubular shaft and meshing with the other gear on each spindle, a clutch on each spindle for connecting either of the gears with its spindles, a yoke encircling each clutch and a collar on the central shaft holding the inner ends of the yokes, substantially as specified.

3. In a screw-machine a plural number of revoluble tubular spindles, two gears loosely mounted upon each spindle, a central driving-shaft, a gear mounted on the central shaft and meshing with one gear on each spindle, a tubular driving-shaft on the central shaft, a gear mounted on the tubular shaft and meshing with the other gear on each spindle, a clutch on each spindle for connecting either of the gears with its spindle, a yoke encircling each clutch, a collar on the central shaft holding the inner ends of the yokes, a lever adapted to engage the outer ends of the yokes, and a cam for oscillating the lever, substantially as specified.

4. In a screw-machine a plural number of revoluble tubular spindles, two gears loosely mounted upon each spindle, a clutch keyed to each spindle between the gears, springs adapted to thrust the clutches in one direction, a central driving-shaft, a gear mounted on the central shaft and meshing with one gear on each spindle, a tubular driving-shaft on the central shaft, a gear mounted on the tubular shaft and meshing with the other gear on each spindle, a yoke encircling each clutch, a collar mounted on the driving-shaft and

having mortises receiving the inner ends of the yokes, a lever adapted to engage the outer end of each yoke and force it and the clutch against the thrust of the springs, and a cam for oscillating the lever, substantially as specified.

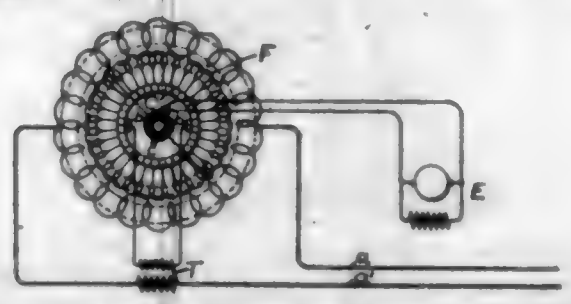
816,894. ANIMAL-TRAP. CHARLES C. STRONG, Hunlopur, Mich. Filed Nov. 30, 1905. Serial No. 289,264.



Claim.—1. A trap of the character described comprising a base, a fixed yoke-shaped jaw having formed in its upper end a slot, a movable jaw consisting of an open frame adapted to be projected through the slot in said fixed jaw and to coact therewith, a spring connected to said movable jaw, a hinged tongue to hold said movable jaw down against the tension of said spring, and means whereby said tongue is released by the weight of the animal, substantially as described.

2. A trap of the character described comprising a base, a fixed yoke-shaped jaw, having formed in its upper end a slot, a double row of teeth formed on the inner side of the upper end of said fixed jaw, a movable jaw consisting of an open frame adapted to be projected through the slot in said fixed jaw, a row of teeth formed on the lower cross-bar of said movable jaw, to coact with the teeth of said fixed jaw, when the trap is sprung, a bowed spring connected to said base and to the upper end of the movable jaw, a hinged tongue to engage and hold said movable jaw in set position and a hinged trip-arm adapted to be moved by the weight of an animal to release said tongue and spring said trap, substantially as described.

816,895. ALTERNATING-CURRENT GENERATOR. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1904. Serial No. 217,867.



Claim.—1. In an alternating-current generator, a field structure provided with a distributed winding and a many-part commutator connected thereto, brushes bearing on said commutator, means for supplying direct current to the field to magnetize the field structure on a line fixed relatively thereto, and means for supplying to said brushes a current varying in magnitude and phase with the armature-current.

2. In an alternating-current generator, a field structure provided with a distributed winding and a many-part commutator connected thereto, brushes bearing on said commutator, means for supplying direct current to the field to magnetize the field structure on a line fixed relatively thereto, and a series transformer having its secondary connected to said brushes and its primary connected in the armature-circuit.

3. In an alternating-current generator, a distributed field-winding provided with a many-part commutator, brushes bearing on said commutator, means for supplying to said brushes current varying in magnitude and phase with the armature-current, and means for supplying direct current to fixed points on said field-winding.

4. In an alternating-current generator, a distributed field-winding provided with a many-part commutator, brushes bearing on said commutator, a series transformer having its primary in the armature-circuit and its secondary connected to said brushes, and means for supplying direct current to fixed points on said field-winding.

5. In an alternating-current generator, a distributed field-winding provided with a many-part commutator and with collector-rings, commutator-brushes, collector-ring brushes, a source of direct current connected to the latter brushes, and a series transformer having its secondary connected to the commutator-brushes and its primary connected in the armature-circuit.

6. In an alternating-current generator, a distributed field-winding, means for supplying to said winding at points fixed in space a current varying in magnitude and phase with the armature-current, and means for supplying direct current to said winding at points revolving therewith.

7. In an alternating-current generator, a distributed field-winding, means for supplying to said winding at points fixed with respect to the armature-terminals and opposite thereto a current varying in magnitude and phase with the armature-current, and means for supplying direct current to said winding at points fixed with respect to said winding.

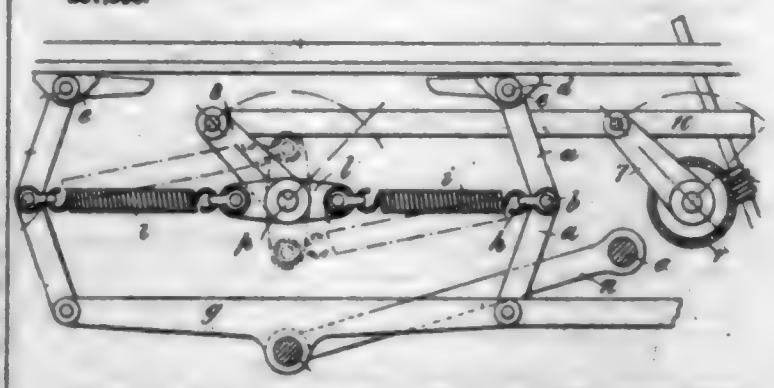
8. In a polyphase generator, a distributed field-winding, means for supplying to the portion of said winding at any given instant adjacent to a phase of the armature-winding a current varying in magnitude and phase with the current in said phase of the armature, and means for supplying a direct current to fixed points on said field-winding.

9. In a polyphase generator, a distributed field-winding, means for supplying to said winding at points fixed with respect to the terminals of the several phases of the armature and opposite thereto currents varying in magnitude and phase with the current in the phase of the armature opposite thereto, and means for supplying direct current to fixed points on said winding.

10. In a polyphase generator, a distributed field-winding provided with a many-part commutator, brushes bearing on said commutator, series transformers having their primaries connected in circuit with the several phases of the armature and their secondaries connected to said brushes so as to supply to each portion of said field-winding a current varying in magnitude and phase with the current in the adjacent portion of the armature, and means for supplying a direct current to fixed points on said winding.

11. In a polyphase generator, a distributed winding provided with a many-part commutator and with collector-rings, a plurality of brushes bearing on said commutator and corresponding in position to the terminals of the several phases of the armature, series transformers having their primaries connected in circuit with the several phases of the primary and their secondaries connected to the commutator-brushes, and a source of direct current connected to said collector-rings.

816,896. BEARING-SPRING FOR MOTOR-VEHICLES. THOMAS G. STEVENS, Greenhithe, England. Filed Dec. 17, 1904. Serial No. 237,308.



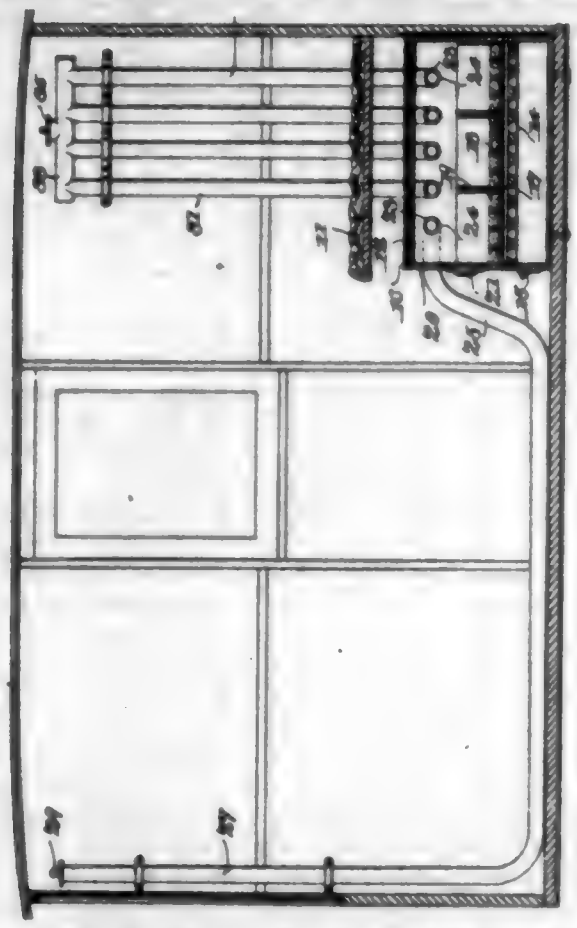
Claim.—1. In a motor-car, a spring supporting-frame interposed between the car-body and axle, comprising toggle levers or links connected to the car-frame and to the axle, helical springs connected at their outer ends to the central pivots or middle joints of the toggles, and means connected with the inner ends of the springs to elongate the springs on either side of the vehicle separately, substantially as described.

2. In a motor-car, a spring supporting-frame interposed between the car-body and axle, comprising toggle levers or links connected to the car-frame and to the axle, helical springs connected at their outer ends to the central pivots or middle joints of the toggles, a rotatable cross-head connected to the inner ends of the springs, and means for operating said cross-head to elongate or contract the springs, substantially as described.

3. In a motor-car, a spring supporting-frame interposed between the car-body and axle, comprising toggle levers or links connected to the car-frame and to the axle, helical springs connected at their outer ends to the central pivots or middle joints of the toggles, a rotatable cross-head connected to the inner ends of the springs, a transverse carrying-shaft, a pinion loosely mounted on the shaft, and provided with clutch-teeth on both faces, loose sleeves having similar teeth mounted on the same shaft on either side of the pinion and

connected to the bearing-spring cross-heads on opposite sides of the vehicle, an operating worm-spindle geared with said pinion, and means for engaging and disengaging the coupling-sleeves and pinion, substantially as described.

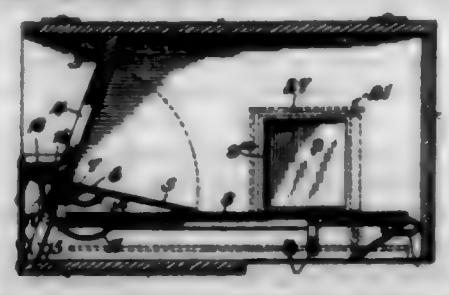
816,397. VEHICLE-HEATER. JOHN F. SWENSEL and DENNIS BYRNE, Jr., Clyde, Kans. Filed Apr. 18, 1905. Serial No. 256,230.



Claim.—1. In a heating apparatus, the combination with a casing having an intake-damper adjacent its bottom, of a removable fuel-receptacle divided into compartments and having a perforate bottom disposed above the intake-damper, a conductor-flue extending across said casing above the receptacle and pierced along its under surface by apertures disposed to receive the products of combustion from the receptacle and extending beyond the casing and provided with an opening and a closure for the opening.

2. In a heating apparatus, the combination with a casing having an intake-damper adjacent its bottom, of a slidably-removable fuel-receptacle divided into a plurality of compartments and having a perforate bottom disposed normally above the intake, a conductor-flue extending across said casing adjacent the top of the receptacle and pierced along its under surface by spaced apertures disposed to receive the products of combustion from the receptacle and extending at opposite sides beyond the casing and bent upwardly and each riser provided with an opening and a closure for the opening.

816,398. ANIMAL-TRAP. JESSE J. SWINT, Langdale, Ala. Filed June 12, 1905. Serial No. 264,532.



Claim.—1. In a trap, the combination of a casing having an entrance-opening, a depressible platform arranged within the casing, a normally open door located at the entrance-opening, and a rock-shaft mounted on the casing independently of the door and the platform and provided with arms connected respectively with the platform and with the door for closing the latter when the platform is depressed.

2. In a trap, the combination of a casing having an entrance-opening, a depressible platform mounted within the casing and provided with projecting arms, a normally open door located at the entrance-opening of the casing, and a rock-shaft mounted on the casing independently of the platform and the door and provided with terminal arms connected with the arms of the platform, said rock-shaft being also provided with an intermediate arm arranged to engage and close the door when the platform is depressed.

3. In a trap, the combination of a casing having an entrance-opening and provided with an outlet adapted to communicate with a cage, inner and outer reversely-operating doors, a depressible platform located within the casing, and rock-shafts mounted on the casing independently of the doors and the platform and connected with and actuated by the platform for operating the said doors.

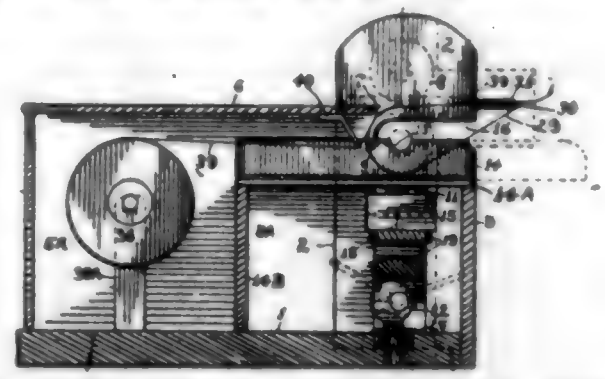
4. In a trap, the combination of a casing having an entrance-opening and provided with an outlet, inner and outer doors located at the outlet and at the entrance-opening, the inner door being arranged to swing horizontally, and means for communicating motion from the platform to both the inner and outer doors, whereby the latter will be reversely operated.

5. In a trap, the combination of a casing having an entrance-opening, a normally open door located at the entrance-opening, a depressible platform, springs secured to the casing and located at the front and rear portions of the platform and having free ends supporting the same.

6. In a trap, the combination of a casing having an opening, a horizontally-swinging door mounted at the opening and provided with an arm, a depressible platform, and a rock-shaft having a loop connected with the platform, said rock-shaft being also provided with an arm connected with and arranged to oscillate the arm of the door for opening and closing the same.

7. In a trap, the combination of a casing having an opening, a door hinged at the opening, a guard having flanges receiving the free edges of the door and projecting outward from the casing for preventing a captured animal from opening the door, and means for operating the door.

816,399. LETTER-COPYING PRESS. GEORGE H. TAYLOR, Norfolk, Va. Filed Apr. 15, 1905. Serial No. 255,714.



Claim.—1. A copying-press comprising a water-reservoir, an adjustable roller transversely disposed and partly immersed therein, an absorbent band driven by the roller, a polygonal bar adapted to support the band, and spring means actuating the said polygonal bar to keep the band in a stretched condition.

2. A copying-press comprising a water-reservoir, a vertically-adjustable roller bearing transversely thereupon and partly immersed therein, an endless liquid-absorbing band adapted to be driven by the said roller, a rectangular-shaped bar adapted to support the band, and spring-pressed means at each end of the said rectangular-shaped bar for maintaining the said band in a state of tensile stress.

3. A copying-press comprising a water-pan, a vertically-adjustable roller adapted to periodically bear upon and partly immersed therein, a non-adjustable roller juxtaposed to the said adjustable roller, an absorbent band adapted to be driven by the said roller, a polygonal bar having rounded edges adapted to support the said band, adjustable spring-pressed means acting on the said bar to normally maintain a tensile stress upon the said band, means for feeding a continuous strip of copying-tissue between the said rollers, and means for guiding the said tissue to conform to a part of the circumference of the said adjustable roller.

4. A copying-press comprising a water-pan, an adjustable roller partly immersed therein, a non-adjustable roller above the said adjustable roller, shafts for supporting the rollers, an endless belt adapted to be driven by the said adjustable roller, a polygonal bar adapted to support the said belt, adjustable spring means for separating the said bar from the roller to stretch the belt, means for feeding a strip of paper between the said rollers at an incline, and spring-pressed equalizing means for normally causing the rollers to compress the said belt and the strip of paper.

5. A copying-press comprising a water-pan, an adjustable roller periodically supported by and partly immersed in the pan, a non-adjustable roller above the said adjustable roller, shafts for supporting the rollers, an endless woven band adapted to be driven by the adjustable roller, a polygonal bar adapted to support the band, a plurality of slotted end rods for holding the polygonal bar, a set of internally-screw-threaded sleeves for partly inclosing the said rods, springs within the sleeves and acting on the rods to expel the same for tightening the band on the roller, and screw means acting on the springs to regulate the tension of the said band.

6. A copying-press comprising a normally supported water-reservoir, an adjustable roller periodically supported by the reservoir and partly immersed therein, a roller in proximity to the adjustable roller, an operating-handle on the shaft of the adjustable roller to rotate the same in one direction, an endless absorbent belt adapted to be driven by the said adjustable roller, a polygonal rod adapted to support said belt, a band of paper adapted to be fed over the belt and between the rollers, a set of vertically-slotted standards for supporting the rollers, a plurality of slotted end rods for supporting the polygonal rod, a set of internally-screw-threaded sleeves for the slotted end rods, springs in the sleeves acting on the rods and the polygonal rod to tighten the belt, adjusting-screws for increasing the tension of the springs, slots in the said sleeves, and stop-pins on the slotted end rods and adapted to reciprocate within the slot for limiting the stroke of the said slotted rods.

7. A copying-press comprising a water-pan, a non-adjustable roller above the pan, an adjustable roller partly within the same, an endless moving absorbent belt driven by the roller and passing between the rollers, means for feeding copying-paper thereupon, a centrally-pivoted equalizing-bar adapted to maintain alinement of the rollers, a curved spring under the bar, and eccentric cams adapted to raise and lower the said adjustable roller to resiliently unite the rollers to compress the band and the copying-paper.

8. A copying-press comprising a water-reservoir, a non-adjustable roller above the reservoir, an adjustable roller partly immersed and periodically supported by the reservoir, an endless absorbent belt passing around the said adjustable roller and driven thereby, means for feeding a band of paper upon the said belt and between the rollers, a centrally-pivoted rockable bar for maintaining transverse alinement of the rollers, a semi-elliptic spring beneath the bar and yieldably supporting the same, means for resiliently operating the said rollers to compress the belt and the band of paper, a series of eccentric cams for actuating the rollers, and means for adjusting the degree of pressure acting on the said belt and paper band by the eccentric cams.

9. A copying-press comprising a box or casing, sill or bottom members having grooves therein, a vertical set of dovetailed end members or standards extending above the upper surface of the box, a lid or cover having an inclined end, a horizontal slot in the upper portions of the end members, a non-adjustable roller above the slot, a horizontally-disposed water-pan, an adjustable roller below the first-named roller periodically carried by and partly immersed in the said pan, a shaft therefor, a plurality of detachable bearing-blocks for supporting the ends of the shaft, vertical grooves or channels upon the inner sides of the said standards for movably supporting and partly inclosing the bearing-blocks, a spring-pressed equalizing-bar extending from side to side of the box or casing having its ends movably positioned in the said groove or channel, pressure means for normally causing the said rollers to be in transverse alinement with each other by the said equalizing-bar, an absorbent band passing around and driven by the said adjustable roller and extending outwardly from between the rollers, a spring-pressed polygonal bar for exerting a tensile strain upon the band, means for feeding a strip of paper between the rollers and upon the absorbent band from a point at or near the center of one of the rollers, and means for detaching the said adjustable roller and the band with the water-pan from the said standards when the said rollers are separated.

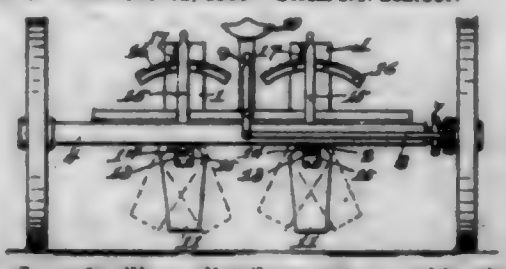
10. A copying-press comprising a box having an approximately central partition, a plurality of horizontally-slotted and vertically-grooved standards at one end of the box, a non-adjustable roller above the slotted portion of the standards, an adjustable roller below the slot, a water-pan beneath the adjustable roller and periodically supporting and partly immersing the roller, a shaft for the roller, detachable bearing-blocks for supporting the ends of the roller-shaft and working in the said grooved portion, a transversely-disposed centrally-pivoted equalizing-bar for supporting the said bearing-blocks at its ends, a set of horizontally-disposed detachable narrow plates supported upon the said central partition and the end members of the box or casing, means for keeping the bearing-blocks in the grooves by the said narrow plates, a semi-elliptic spring beneath the said equalizing-bar, and a plurality of cams for raising and lowering the said spring and equalizing-bar with their attached mechanism.

11. A copying-press comprising a box, a set of grooved and slotted standards, a roller mounted for non-adjustment upon the upper portion of the standards, a roller mounted for vertical adjustment beneath the first-named roller, shafts for the said rollers, a set of bearing-blocks for the ends of the shaft of the adjustable roller, a detachable water-reservoir for periodically supporting and partly immersing the said roller, an operating-handle for the roller, means for causing the said roller to rotate in one direction by the handle, a set of plates for supporting the said water-reservoir when under the rollers, a transversely-disposed equalizing-bar having a central aperture therein, a curved spring having a vertically-projecting lug or pin for rockably supporting the equalizing-bar when engaged with the said aperture, means for causing the rollers to be in transverse alinement by the said equalizing-bar when the rollers are in operation, and eccentric means acting on the said equalizing-bar and its connecting members to vary the pressure of the lower roller upon the upper roller.

12. A copying-press comprising a box or casing, a set of sill members therefor, a set of dovetailed standards inserted therein, a non-adjustable and an adjustable roller between the standards, supporting-shafts for the said rollers, a water-pan for partly immersing one of the rollers, vertical channels in the standards, a set of notched bearing-blocks adapted to rise and fall in the channel, a transversely-disposed rockable equalizing-bar, a curved spring beneath and pivotally supporting the said bar at its center, a set of slotted vertically-movable blocks working partly in the said channel and supporting the curved spring at its ends, a set of roller-compressing eccentric cams partly within and partly without the said slots in the blocks, a shaft for the said cams, means for supporting the lower ends of the vertically-movable blocks on the said shaft, adjustable screw means on the said sill members for forming a constant bearing-surface for the edges or face of the eccentric cams.

13. A copying-press comprising a box or casing, a set of sill members therefor, a set of vertical standards at one end of the casing having vertical channels and horizontal slots therein, means for connecting the said standards and the sill members by a dovetail joint, a roller in the upper portion of and between the standards, an adjustable roller in normal transverse alinement therewith and insertible in the said horizontally-slotted portions of the standards, shafts for supporting the rollers at their ends, an operating-handle on the adjustable roller for operating the same in one direction of rotation, a water pan or reservoir having notches in the sides thereof for the shaft of the adjustable roller for periodically supporting and partly immersing the same, a set of detachable concave-ended bearing-blocks working in the said vertical channel of the standards, a plurality of plates for supporting the water-pan and confining the bearing-blocks in the channel, a centrally-pivoted and transversely-rockable bar for supporting the said bearing-blocks, an arched spring for yieldably mounting the bar, a set of transversely-separated notched blocks having slots therein and working partly inclosed in the said channels of the standards, a set of eccentric cams within the said slots in the blocks and adapted to cause them to rise and fall to compress the said arched spring to unite and separate the said rollers, a shaft for the eccentric cams extending through to each side of the casing or box, a lever or handle on one end of the eccentric-shaft for operating the eccentrics, axially-ribbed sleeves in the said sill members having screw-threads therein, a set of screws adapted to pass through the sleeves for forming a bearing-joint for the edges or periphery of the cams during their movement, and means for adjusting the said rollers by the sleeved screws, means for raising the eccentric-shaft during movement of the eccentric, and slots on the lower portions of the said standards to accommodate the movement of the said shaft.

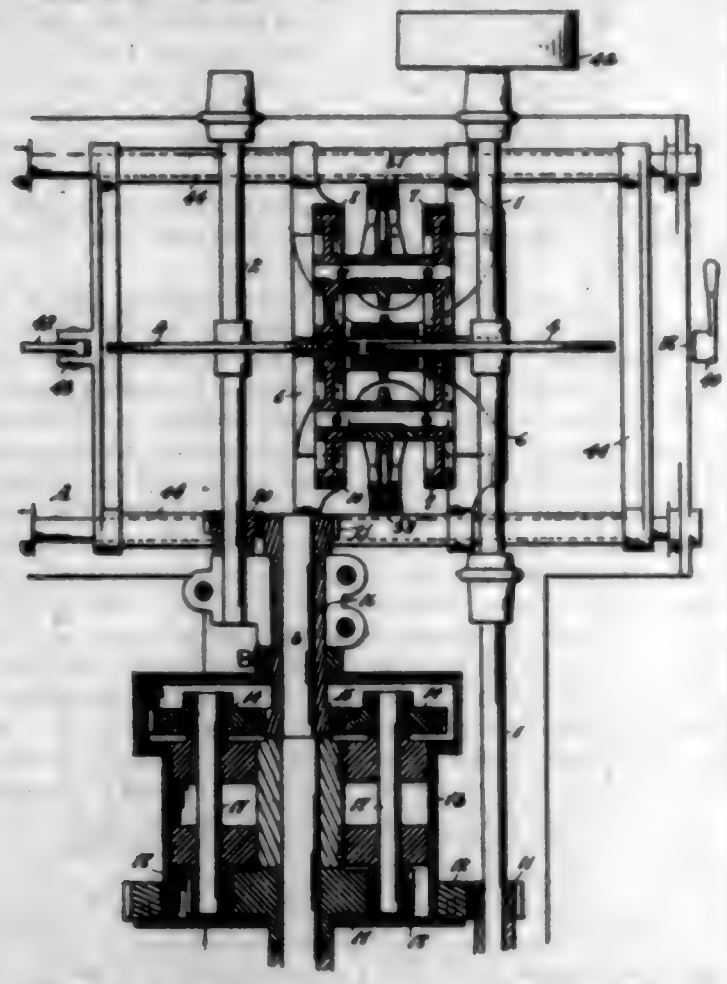
816,400. **FERTILIZER-DISTRIBUTER.** RICHARD J. TAYLOR, Como, N. C. Filed Oct. 12, 1905. Serial No. 282,447.



Claim.—In a fertilizer-distributer, the combination, with a sulky-frame, pivot-ears depending from the frame, the hoppers, a toothed rack secured to the back of each hopper, and the T-shaped

hangers, of the chutes pivoted in said ears and each having a pivot-bolt connection with the hangers, a separate and independent hand-lever attached to each chute and having said bolts extending therethrough, and a pawl carried by each lever to hold the chutes in independent lateral adjustment.

816,401. CHANGE-SPEED GEAR. JOSEF TRAUNREINER, Detroit, Mich., assignor of one-half to John Anderson, Detroit, Mich. Filed Sept. 18, 1905. Serial No. 278,552.



Claim.—1. In a change-speed gear, in combination with a plurality of parallel shafts, disks carried thereby and in the same plane, gears carried by said shafts, a driven shaft, gears mounted thereupon and adapted to be actuated by the gears on both of said first-mentioned shafts, and friction-wheels in contact with each side of said disks, substantially as described.

2. In combination with a shaft and a disk carried thereby, a second shaft and a disk carried thereby in the same plane with the first, friction-wheels engaging on both sides of both said disks, a reciprocatory frame carrying both said friction-wheels, means for reciprocating said frame, means for shifting the wheels into and out of engagement with the disks, the said means consisting of a shaft, a disk thereon, links actuating the bearings of said friction-wheels, substantially as described.

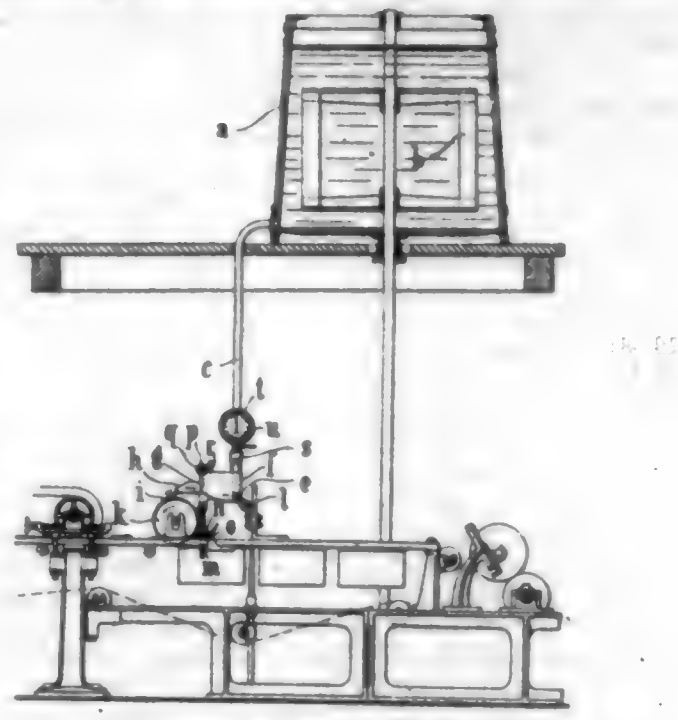
3. In combination with a pair of shafts and friction-disks carried thereby, a plurality of friction-wheels on each side of said disks, means whereby said wheels may be moved to a position of motion-transmitting contact with said disks, a driven shaft and means connecting the same with both of said first-named shafts whereby it is simultaneously actuated by both, substantially as described.

4. In combination, a pair of friction-disks, bearings therefor, transfer-wheels frictionally engaging said disks, an oscillating friction-wheel actuator and spring connections between the actuator and the wheels, substantially as described.

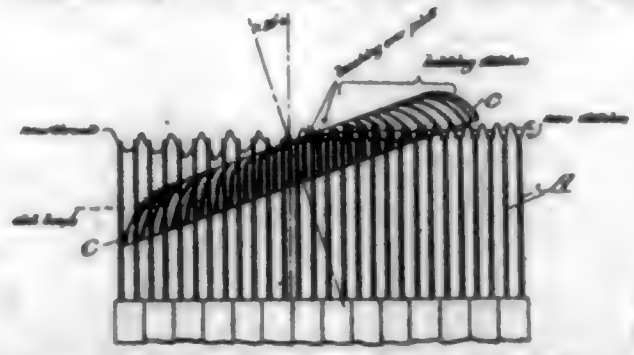
5. In combination, a pair of friction-disks, bearings therefor, transfer-wheels engaging said disks on opposite sides thereof, swinging hangers carrying said transfer-wheels, an actuator for said hangers, spring connections between said actuator and said hangers, and means whereby the actuator passes a point of unstable equilibrium and rests at either side thereof in a position of stable equilibrium, substantially as described.

816,402. PAPER-MAKING MACHINE. CLEMENS TITTEL, Josefsthal, near Laibach, Austria-Hungary. Filed June 20, 1904. Serial No. 213,206.

Claim.—In combination with the wet part of the squeezing-roller of a paper-machine, a vat for coating material provided with a supporting device, a conduit-pipe leading from the said vat and having a horizontally-perforated pipe extending over the whole width of the machine, a tipping trough communicating with the said pipe, the said tipping trough being vertically adjustable, a sluice movably disposed in the trough, an overflow terminating at the apron of the squeezing-roller, a stop-cock within the conducting-pipe, and an index means connected to the stop-cock and displaceable to right or left.



816,403. LOOP-UNIFYING AND CAST-OFF BUR. ERNEST TOMPKINS, Troy, N. Y. Filed Apr. 6, 1905. Serial No. 254,156.



Claim.—1. In combination with a knitting-machine, a rotary bur provided with fixed blades adapted to positively cast off the old stitches and simultaneously hold a number of new stitches after drawing them to equal length.

2. In combination with a knitting-machine a rotating bur provided with fixed blades each adapted to engage the needles, raise a stitch thereon, tension the stitch, and hold such stitch until a number of successive stitches have been raised, substantially as set forth.

3. In combination with a knitting-machine having a rotating series of needles; a rotatable cast-off bur arranged beside the needle-path and provided with blades adapted to engage the needles, each blade being so constructed that by the mere rotation of the bur it is caused to first engage and raise a stitch on the needle, draw the stitch to a uniform size, and then hold such stitch in form until a number of successive stitches have been formed, thus preventing shortening of the stitches and insuring uniformity of work, substantially as described.

4. In combination with a cylinder knitting-machine having a series of traveling needles, a rotary bur, located adjacent to the needles, and inclined at an angle of about twenty degrees thereto, and provided with radially-projecting blades, each adaptd to engage a needle, and as it moves therewith to push the stitch upwardly on the needle, moving the stitch longitudinally on the needle, to form the stitch, positively tension it, and retain it under tension and in form until a number of succeeding stitches are raised and formed, and finally casting off the stitch, substantially as described.

816,404. MANUFACTURE OF FILAMENTS AND FILMS FROM VISCOSE. CHARLES H. WAITE, Lansdowne, Pa., assignor, by mesne assignments, to Silas W. Pettit, Philadelphia, Pa. Filed May 3, 1904. Serial No. 206,173.

Claim.—1. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a solution comprising an acid sulfite, substantially as set forth.

2. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a solution comprising acid sodium sulfite, substantially as set forth.

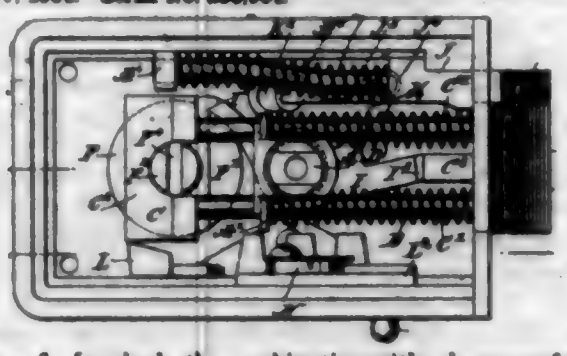
3. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a solution comprising an acid sulfite and a dehydrating agent, substantially as set forth.

4. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a solution comprising acid sodium sulfite and a dehydrating agent, substantially as set forth.

5. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a solution comprising an acid sulfite and a saline dehydrating agent, substantially as set forth.

6. The hereinbefore-described improvement in the manufacture of viscose products, which consists in initially subjecting them to the action of a setting solution comprising acid sodium sulfite and ammonium sulfate, substantially as set forth.

816,405. LOCK. NICHOLAS W. WEBB, New York, N. Y. Filed Nov. 1, 1904. Serial No. 230,904.



Claim.—1. In a lock, the combination with a keeper, of a main bolt for engaging the keeper, a locking device for locking the main bolt in a projected position, and an auxiliary bolt for engagement with the said keeper in advance of the main bolt when closing the door, the said auxiliary bolt actuating the said locking device, to unlock the main bolt for the latter to be in position to be retracted, the keeper being arranged to hold the said auxiliary bolt in a retracted positon while the door is closed.

2. A lock provided with a spring-pressed main bolt, a locking device for holding the said main bolt against retraction, an auxiliary bolt extending beyond the main bolt when both bolts are projected, a pivoted arm arranged to receive a swinging motion from the said auxiliary bolt and to actuate the said locking device, and a manually-controlled retracting mechanism for the said main bolt, controlling the said locking device independent of the said auxiliary bolt and the said arm.

3. A lock comprising a keeper, a spring-pressed main bolt, a spring-pressed locking-lever for locking the said main bolt against retraction, an auxiliary bolt extending beyond the said main bolt when both bolts are projected, and a pivoted arm controlled by the said auxiliary bolt and engaging the said locking-lever, to swing the latter out of engagement with the main bolt.

4. A lock comprising a keeper, a spring-pressed main bolt, a spring-pressed locking-lever for locking the said main bolt against retraction, an auxiliary bolt extending beyond the said main bolt when both bolts are projected, a pivoted arm controlled by the said auxiliary bolt and engaging the said locking-lever, to swing the latter out of engagement with the main bolt, and a manually-controlled retracting mechanism for retracting the said main bolt independent of the said auxiliary bolt, the said retracting mechanism also controlling the said locking-lever independent of the auxiliarybolt and its pivoted arm.

5. A lock comprising a keeper, a spring-pressed main bolt, a spring-pressed locking-lever for locking the said main bolt against retraction, an auxiliary bolt extending beyond the said main bolt when both bolts are projected, a pivoted arm controlled by the said auxiliary bolt and engaging the said locking-lever, to swing the latter out of engagement with the main bolt, and a cam-disk adapted to be turned and having means for engaging the main bolt with a view to retract the same, the said disk having a peripheral notch for engagement by a tooth on the said locking-lever.

6. A lock, provided with a spring-pressed main bolt, a pivoted and spring-pressed locking-lever for locking the main bolt projected, a spring-pressed auxiliary bolt, and means for actuating the locking-lever from the auxiliary bolt to release the main bolt, when the auxiliary bolt is pushed inward.

7. A lock provided with spring-pressed main bolt, a pivoted and spring-pressed locking-lever for locking the main bolt projected, a spring-pressed auxiliary bolt, and a pivoted arm operated by the auxiliary bolt and actuating the locking-lever to release the main bolt when the said auxiliary bolt is pushed inward.

8. A lock provided with a main bolt, a locking device for the main bolt, an auxiliary bolt, means for actuating the locking device from the auxiliary bolt when said bolt is pushed inward, and means for permanently locking the main bolt and with it the auxiliary bolt in retracted positions.

9. A lock provided with a main bolt, an auxiliary bolt, and means for permanently locking the auxiliary bolt in a retracted position.

10. A lock provided with a main bolt, a locking device for the said main bolt, to hold the latter against retraction, an auxiliary bolt for controlling the said locking device, and manually-controlled means for retracting the auxiliary bolt and locking it permanently in a retracted position and freeing the said locking device.

816,406. FUSE-PLUG. AUGUST WEBER, Sr., and AUGUST WEBER, Jr., Schenectady, N. Y.; said Weber, Jr., assignor to said Weber, Sr. Filed Mar. 8, 1904. Serial No. 197,135.



Claim.—1. In a fuse-plug and in combination, a screw-shell adapted to form one of the exterior contact members; a base of insulating material having its inner end inclosed and secured within said screw-shell and provided with a cavity extending from its outer end approximately to its inner end and having a partition erected from its inner end extending across the interior of its screw-shell-inclosed portion; a contact member mounted upon the exterior of the inner end of the base; and a fuse extending over said partition and connected with said contact members through apertures in said base, portions of said fuse occupying on opposite sides of said partition chambers respectively inclosed between said partition and outer screw-shell-inclosed portions of the wall of the base.

2. In a fuse-plug and in combination, a base of insulating material, and a screw-shell inclosing and secured upon the inner end of said base adapted to form one of the exterior contact members, said base being provided with a cavity extending approximately to its inner end and with a pair of apertures in its inner end and having a partition erected from its inner end extending between said apertures across the interior of its screw-shell-inclosed portion, and said screw-shell having a connecting member extending through one of said end apertures into said cavity on one side of said partition; an exterior contact member mounted upon the exterior of the inner end of the base having a connecting member extending through the other of said end apertures into said cavity on the other side of said partition; and a fuse extending over said partition connected at its opposite ends to said connecting members respectively.

3. In a fuse-plug and in combination, a hollow base of insulating material provided with a pair of fuse-connection apertures and with an enlargement of its cavity at the other end thereof and a ventilating-aperture remote from said fuse-connection apertures extending from said cavity enlargement longitudinally through and inclosed on all sides by the wall of the base and opening exteriorly at the side thereof; exterior contact members; a fuse within the base-cavity connected with said contact members through the fuse-connection apertures respectively; and a closure for the open end of the base.

4. In a fuse-plug and in combination, a hollow base of insulating material provided with a pair of fuse-connection apertures in its inner end wall and with an enlargement of its cavity at the outer end thereof, and a ventilating-aperture remote from said fuse-connection apertures extending from said cavity enlargement longitudinally through the wall of the base and opening exteriorly at the side thereof; a screw-shell inclosing said base adapted to form an exterior contact member and having an integral tongue formed by a displaced portion of its end wall projecting through one of said fuse-connection apertures in the end wall of the base; an exterior contact member mounted upon the inner end of the base having a connection

member projecting through the other of said fuse-connection apertures; a fuse within the base-cavity connecting said tongue and connection member; and a closure for the outer end of the base.

5. In a fuse-plug and in combination, a hollow base of insulating material provided with a pair of fuse-connection apertures in its inner end wall and with an enlargement of its cavity at the outer end thereof, and a ventilating-aperture remote from said fuse-connection apertures extending from said cavity enlargement longitudinally through the wall of the base and opening exteriorly at the side thereof, and having a partition erected from its inner end wall extending transversely of the base-cavity between said fuse-connection apertures; a screw-shell inclosing said base adapted to form an exterior contact member and having an integral tongue formed by a displaced portion of its end wall projecting through one of said fuse-connection apertures in the end wall of the base; an exterior contact member mounted upon the inner end of the base having a connection member projecting through the other of said fuse-connection apertures; a fuse within the base-cavity connecting said tongue and connection member; and a closure for the outer end of the base.

6. In a fuse-plug and in combination, a hollow base of insulating material provided on its outer side with oppositely-located depressions and having a partition erected from its inner end wall extending transversely of the base-cavity approximately in line with said depression; a screw-shell inclosing the base having side portions introverted into said side depressions therein; and a fuse extending over said partition and connected with exterior contact members.

7. In a fuse-plug and in combination a hollow base of insulating material having a plain cylindrical portion and an aperture in its inner end; of a screw-shell inclosing the plain cylindrical portion of the base and having an integral displaced portion of its end wall projecting through said aperture in the inner end of the base whereby rotative movement of the screw-shell on the base is prevented; and means for securing said screw-shell against longitudinal movement on the base.

8. In a fuse-plug and in combination a base of insulating material, and a screw-shell adapted to form one of the exterior contacts secured upon and inclosing the inner end of the base, said base being provided with a cavity extending approximately to its inner end and with a pair of apertures in its inner end and having a partition erected from its inner end extending between said apertures across the interior of its screw-shell-inclosed portion, and said screw-shell having an integral displaced portion of its end wall projecting through one of the end apertures in the base; an exterior contact insulated from said screw-shell having a connection member projecting through the other end aperture in the base; and a fuse extending over said partition connecting said connection member and displaced portion of the screw-shell.

9. In a fuse-plug, the combination with a hollow base of insulating material having a partition and apertures on opposite sides of said partition; of a contact member exteriorly mounted upon the inner end of the base having a post projecting through one of said apertures within the base; a screw-shell inclosing the base adapted to form the other contact member, and having an integral tongue formed by an introverted portion of its end wall extending through the other of said apertures within the base, and a fuse extending over said partition connected at its opposite ends to said tongue and post respectively.

10. In a fuse-plug, the combination with a hollow base of insulating material having an angular exterior inner end and side depressions; of a screw-shell inclosing said base provided in its end with an angular opening adapted to fit the angular portion of the base and having side portions introverted to occupy said side depressions.

11. In a device of the class described, the combination with a base of insulating material of general cylindrical form having an exterior cam-shaped surface; a depressed seat adjacent to the higher point of said cam; and a flange overhanging said seat on the outer side thereof; of a cap adapted to receive the flanged end of said base, and having a spring member adapted to ride upon said cam by a rotative movement of the cap upon the base, and adapted to occupy said depressed seat.

12. In a device of the class described, the combination with a base of insulating material of general cylindrical form having near one end an exterior cam-surface, a depressed seat adjacent to the higher portion of said cam; and a flange overhanging said depressed seat and cam-surface on the outer side thereof, and provided with a lateral recess extending from the lower portion of said cam-surface through the adjacent end surface of said base; of a cap adapted to receive said end of the base; said cap having a spring member adapted to be inserted through said recess by a telescoping movement and to ride upon said cam and occupy said depressed seat by a rotative movement of the cap.

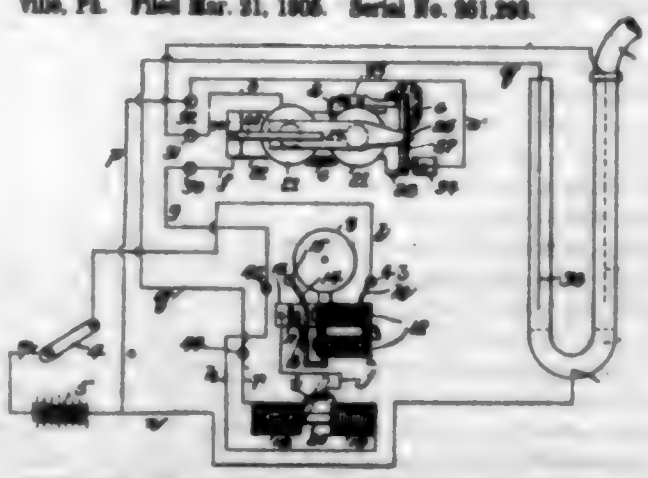
13. In a device of the class described, the combination with a base of insulating material of general cylindrical form having near one end an exterior cam-surface, a depressed seat adjacent to the higher portion of said cam, and a flange overhanging said depressed seat and cam-surface on the outer side thereof, and provided with a lateral recess extending from the lower portion of said cam-surface through the adjacent end surface of said base; of a sheet-metal cap adapted to receive said end of the base, said cap being provided with a slit in its side wall, and having an edge portion of said side wall adjacent to said slit indented to form a spring member adapted to be inserted through said recess by a telescoping movement, and to ride upon said cam and occupy said depressed seat by a rotative movement.

14. In a device of the class described, the combination with a sheet-metal cap having its side walls slitted and portions thereof adjacent to said slits introverted on the side opposite the end wall of the cap; of a disk of insulating material secured within said cap between the end wall thereof and the cut edges of said introverted portions.

15. In a device of the class described, the combination with a base of insulating material of general cylindrical form having on diametrically opposite sides thereof near one end an exterior cam-surface, a depressed seat adjacent to the higher portion of said cam, and a flange overhanging said depressed seat and cam-surface on the outer side thereof, and provided with lateral recesses extending from the lower portions of the respective cams through the adjacent end surface of said base; of a sheet-metal cap adapted to receive said end of the base, said cap being provided with an aperture in its end wall, and on diametrically opposite sides with a pair of slits in its side wall, and having edge portions of said wall adjacent to said slits indented to form spring members adapted to be inserted through said respective recesses by a telescoping movement, and to ride upon said respective cams and occupy said respective depressed seats by a rotative movement; and a transparent disk interposed between the end wall of the cap and the cut edges of said introverted side portions thereof.

16. In a fuse-plug and in combination, a hollow base of insulating material provided on its outer side with a depression and having a partition erected from its inner end extending transversely of the base-cavity in line with said depression; and a screw-shell inclosing the base having a side portion introverted into said side depression therein.

818,407. ELECTRIC PRESSURE-INDICATOR. JOSEPH E. WERTZ, Newhaven, Pa., assignor of one-half to W. E. Day, Connellsville, Pa. Filed Mar. 31, 1905. Serial No. 253,293.



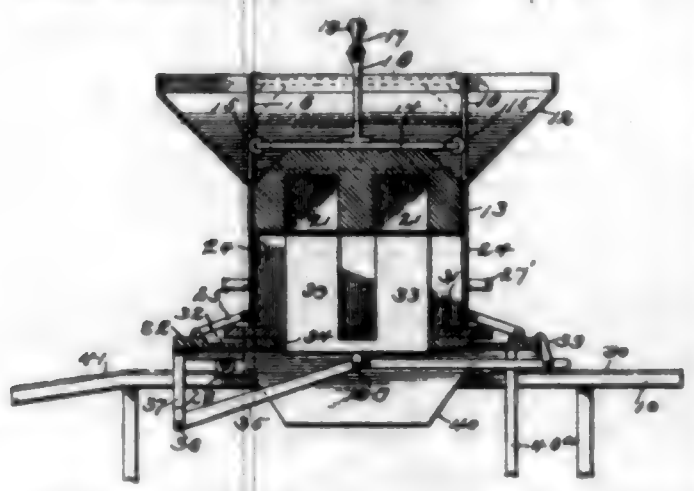
Claim.—1. The combination with a pressure-gage, containing a movable conducting material, a high-pressure conductor, a low-pressure conductor, and an intermediate conductor located in said gage, an electromagnetic signaling device arranged in a circuit normally closed between said high-pressure conductor and a battery, said battery, a circuit extending from said low-pressure conductor to said battery and normally closed between the low-pressure conductor and the battery and means for opening said last-named circuit.

2. The combination with a gage adapted to be connected with a source of supply of gas under pressure, a low-pressure conductor, arranged in said gage, a second conductor arranged in said gage, fluid-conducting material located in the gage, and constantly in contact with the second-named conductor and normally out of contact with the low-pressure conductor, an electromagnetic signaling apparatus

connected in circuit with both said conductors, the circuit connecting both conductors to the signaling apparatus being normally closed at a point between the low-pressure conductor and the signaling apparatus, a battery, a circuit-controller adapted when circuit has been established between the said two conductors in the gage to open the circuit between the low-pressure conductor and the signaling apparatus, and to establish a short circuit including the battery and the signaling apparatus.

3. In an apparatus of the character described, the combination of a gage, three conductors arranged in said gage, each of said conductors being normally connected with a battery, a fluid-contacting material arranged in the gage and normally in constant contact with one of said conductors and normally out of contact with the two other of said conductors, electromagnetic signaling apparatus, a battery, a circuit-controller, and suitable electrical connections therebetween, said controller being in series circuit with the battery and two of the conductors in the gage and being adapted when the last-named two conductors in the gage are electrically connected, to establish circuit through the battery and the signaling devices and cut out the circuit through said two conductors.

816,408. **BLOCK-MOLDING MACHINE.** GILBERT WILHELM, Traverse City, Mich. Filed Apr. 20, 1905. Serial No. 256,626.



Claim.—1. A block-molding machine comprising a filling-hopper, a wheeled platform having recesses in its top, a pallet on the platform and having its ends overhanging the recesses, a mold having its sides and ends hinged to the platform and resting on the pallet, and cores carried by the platform and extensible therethrough and through the pallet into the mold.

2. The combination of a table formed of two spaced parts, a hopper over the table, a wheeled platform mounted on the table, guides extending downwardly from the platform into the space between the parts of the table, a mold mounted on the platform, said mold and platform having registering openings, and cores carried by the platform and movable up and down between the guides and through the said openings into and out of the mold.

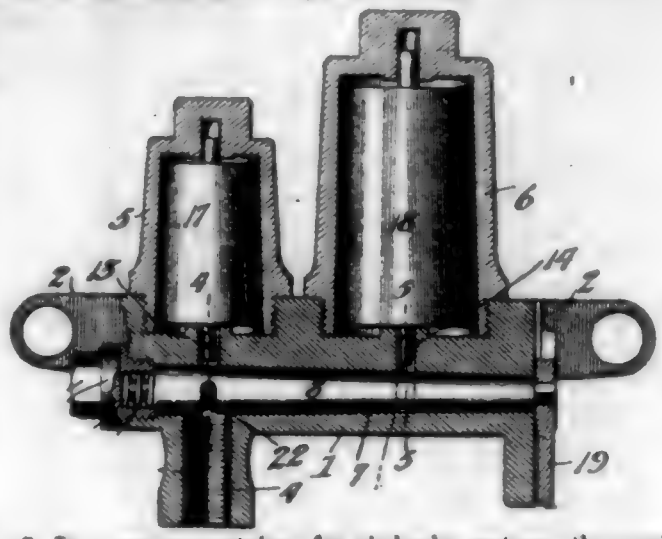
3. The combination of a table formed of two spaced parts, a hopper supported on the table, a wheeled platform mounted on tracks on the parts of the table, and movable over the space therebetween, a mold on the platform, said platform and mold having registering openings, and a core carried by the platform and movable up and down in the said space and through the said openings into and out of the mold.

4. In a block-molding machine, in combination, a filling-hopper, a mold thereunder, and a tamper working up and down in the hopper and having a peaked top.

816,409. **PRESSURE-RETAINING VALVE FOR AIR-BRAKE SYSTEMS.** WALTER WILHELM, Mount Savage, Md. Filed July 11, 1905. Serial No. 269,219.

Claim.—1. A pressure-retaining valve provided with a release exhaust-passage and high and low pressure exhaust-passages, valves controlling the said high and low pressure exhaust-passages, and a controlling device having three operative positions to, respectively, connect a brake-cylinder with the atmosphere, connect said cylinder with the low-pressure exhaust-passage, and to connect the cylinder directly with the high-pressure exhaust-passage independent of the low-pressure exhaust-passage, said device being movable in one direction from the release position to successively connect the brake-cylinder with said high and low pressure exhaust-passages, substantially as described.

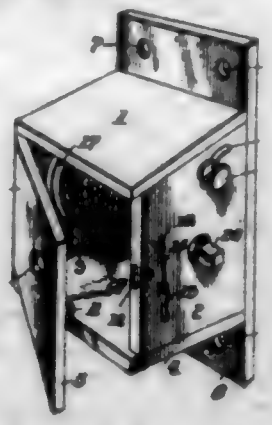
2. In a pressure-regulating device for air-brake systems, the combination of a body provided with a release outlet-passage and high and low pressure valves controlling said high and low pressure passages, and a controlling device adjustable to one position to connect the brake-cylinder with the atmosphere through said release outlet-passage, to a second position for connecting the brake-cylinders with the low-pressure valve and to a third position for connecting the brake-cylinder with the high-pressure valve, said positions being respectively, at one end at the center, and at the other end of a defined arc of travel substantially as described.



3. In a pressure-retainer for air-brake systems, the combination of a body provided with valve-chambers, each having a port leading to the atmosphere, said body also being provided with a release exhaust-passage, valves in said chambers controlling said ports, a turn-plug provided with coöperating passages, said plug being adjustable in an arc of one-hundred and eighty degrees to one position to connect the brake-cylinder with the release exhaust-passage, to a second position to connect the brake-cylinder with the low-pressure chamber, and to a third position to connect the brake-cylinder with the high-pressure chamber independent of the low-pressure chamber, said positions being, respectively, at one end, at the center, and at the other end of said arc, and a handle for actuating said plug.

4. A pressure-retaining valve provided with an inlet-passage, a release exhaust-passage, high and low pressure exhaust-passages, a bore connected with the inlet-passage and extending between the high and low pressure passages, valves controlling the said high and low pressure passages, a plug-valve disposed longitudinally in said bore and movable in an arc of one hundred and eighty degrees, said valve being provided at one end with a nearly-circular groove and at its opposite end with a semicircular groove to coöperate respectively with the inlet, release and low-pressure exhaust-passage and the high-pressure exhaust-passage, and with a longitudinal groove terminating at one end between the ends of the nearly-circular groove and connected at its opposite end with the one end of the semicircular groove, and a handle for actuating said valve, substantially as specified.

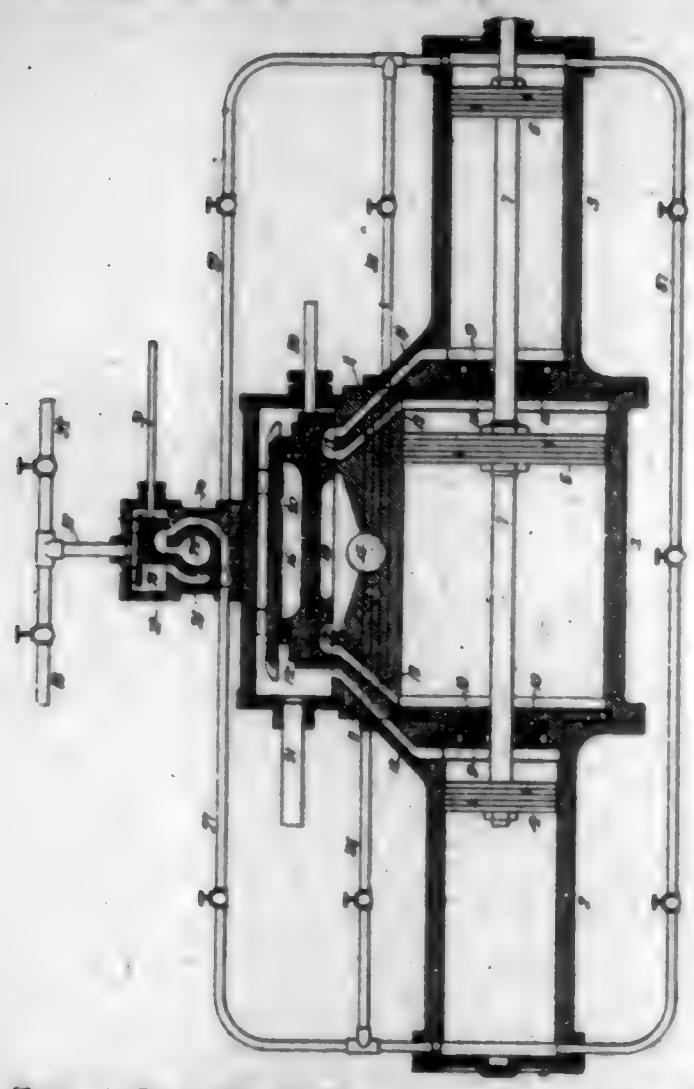
816,410. **LINE-REEL.** GEORGE W. WILLIAMS, Braddock, Pa. Filed Apr. 22, 1904. Serial No. 204,503.



Claim.—The combination with a receptacle having a door provided with an opening for the passage of a clothes-line, of a shaft journaled in the side walls of the receptacle, a handle attached to said shaft, heads mounted on said shaft within the receptacle, one of said heads having a toothed edge, a spring-pressed pawl pivoted on the inner side of the receptacle and engaging said toothed edge, a pin carried by said pawl, and extending through a slot in the side of the receptacle and a button screwing on said pin and engaging the

side of the receptacle to hold the pawl out of engagement with the head of the reel when it is desired to unwind the clothes-line from the reel.

816,411. COMPOUND STEAM-ENGINE. WILLIAM WELLS, Philadelphia, Pa. Filed June 19, 1905. Serial No. 265,996.



Claim.—1. The combination in a compound engine, of a low-pressure cylinder, pair of high-pressure cylinders, pistons in each of said cylinders, valve mechanism for admitting motive fluid into one end of each high-pressure cylinder, exhausting it therefrom into corresponding ends of the low-pressure cylinder and exhausting it from the latter, and means for admitting to the other ends of the high-pressure cylinders, motive fluid from a source independent of that which supplies the first-mentioned ends of the high-pressure cylinders, substantially as specified.

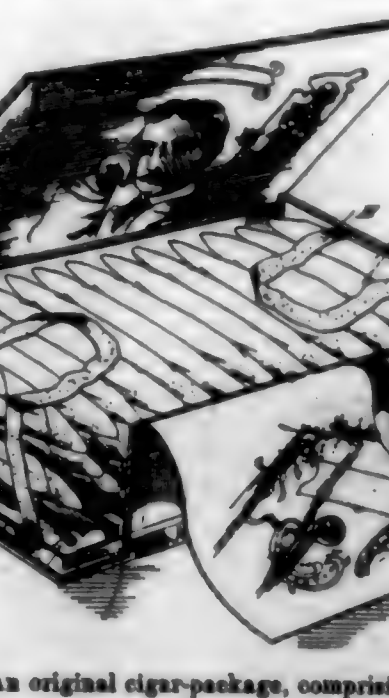
2. The combination in a compound engine, of a low-pressure cylinder, pair of high-pressure cylinders, pistons in each of said cylinders, valve mechanism for admitting motive fluid into one end of each high-pressure cylinder, exhausting it therefrom into corresponding ends of the low-pressure cylinder and exhausting it from the latter, and independent valve mechanism controlling the admission and exhaust of a separate supply of motive fluid operating in connection with the other ends of the high-pressure cylinders, substantially as specified.

3. The combination in a compound engine of a low-pressure cylinder, pair of high-pressure cylinders, pistons in each of said cylinders, valve mechanism for admitting motive fluid into one end of each high-pressure cylinder, exhausting it therefrom into corresponding ends of the low-pressure cylinder and exhausting it from the latter, and independent valve mechanism controlling the admission and exhaust of a separate supply of motive fluid operating in connection with the other ends of the high-pressure cylinders, said supplementary valve mechanism having its passages crossed, substantially as and for the purpose set forth.

4. The combination in a compound engine, of a low-pressure cylinder, pair of high-pressure cylinders, pistons in each of said cylinders, valve mechanism for admitting motive fluid into one end of each high-pressure cylinder, exhausting it therefrom into corresponding ends of the low-pressure cylinder and exhausting it from the latter, and connections between the inner end of each high-pressure cylinder, the adjoining end of the low-pressure cylinder and the outer end of the other high-pressure cylinder, substantially as specified.

5. The combination in a compound engine, of a low-pressure cylinder, pair of high-pressure cylinders, pistons in each of said cylinders, valve mechanism for admitting motive fluid into one end of each high-pressure cylinder, exhausting it therefrom into corresponding ends of the low-pressure cylinder and exhausting it from the latter, an independent connection between the other ends of the high-pressure cylinders, and means for opening and closing communication through said connection, substantially as specified.

816,412. HOT-AIR HEATER. SAMUEL W. WELT, Alvada, Ohio. Filed Jan. 12, 1905. Serial No. 240,520.



Claim.—A stove having a rotary grate and an air-heating attachment, said attachment comprising the base-ring to bear on and removable from the grate and having the annular flange on its upper side and depending lugs to enter the spaces between the grate-bars and cause said base-ring to rotate with the grate when shaking down the ashes, the drum having an open bottom detachably seated on the base-ring within the flange thereof, and the air-pipe leading from the upper end of the drum and having a laterally-projecting pipe extending through the wall of the stove and preventing the drum from rotating with the grate and the base-ring.

816,413. CIGAR-MOISTENER. JASPER S. WRIGHT, York, Pa. Filed Mar. 15, 1905. Serial No. 250,247.

Claim.—1. An original cigar-package, comprising an original manufacturer's box constructed to contain a predetermined number of cigars and enlarged to receive a false bottom, a false bottom within said box, and having a downwardly-extending flange supporting the same above the bottom of the box, and a pad-containing receptacle of a depth equal to that of the flanges of the false bottom, and holding a moistening-pad and constructed to support the false bottom against pressure used for packing the cigars in the box.

2. An original cigar-package, comprising an original manufacturer's box constructed to contain a predetermined number of cigars and enlarged to receive a false bottom, a false bottom removably supported within the box, means for supporting the false bottom above the bottom of the box and forming a pad-containing space below the same, and a pad-containing receptacle holding a moistening-pad

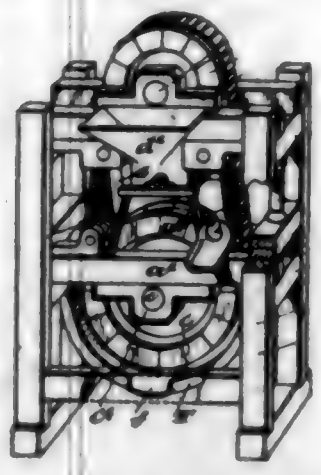
and constructed to support the false bottom against pressure used for packing the cigars in the box.

3. An original cigar-package, comprising an original manufacturer's box constructed to contain a predetermined number of cigars and enlarged to receive a false bottom, a false bottom within said box, and a pad-containing receptacle below said false bottom and adapted to hold a moistening-pad and constructed to support the false bottom against pressure used for packing the cigars in the box.

4. An original cigar-package, comprising an original manufacturer's selling-box constructed to contain a predetermined number of cigars, a false bottom within the box and supported above the bottom thereof, a pad below said false bottom, and loops having their ends secured to the ends of the false bottom and extending upwardly over the cigars at the end and top when the tapes are drawn together whereby the cigars are firmly clamped upon the false bottom against an upward or sidewise movement, and the false bottom can be removed and the cigars held in their packed relation thereon.

5. An original cigar-package, comprising an original manufacturer's selling-box, constructed to contain a predetermined number of cigars, a false bottom within the box and supported above the bottom thereof, a pad below said false bottom, and flexible tapes secured to the endr of the false bottom and extending upward over the cigars and adapted to be grasped by one hand and drawn together over the ends and top of the cigars for removing the false bottom upward and out of the top of the box and holding the cigars thereon, whereby the pad may be moistened and the false bottom replaced within the box with the cigars held in the packed relation thereon.

816,414. CIDER-PRESS. BENJAMIN WITHER, Plattsville, Canada. Filed Mar. 14, 1905. Serial No. 250,094.



Claim.—1. In a cider-press, the combination with the frame, of a pair of wheels, an endless belt connecting the same and a grinder interposed between the wheels and designed to depc .it pomace directly onto one of the wheels as and for the purpose specified.

2. In a cider-press, the combination with the frame, of a pair of wheels, an endless belt connecting the same, a grinder interposed between the wheels and designed to deposit pomace directly onto one of the wheels and a trough secured to the frame and located beneath one of the wheels as and for the purpose specified.

3. In a cider-press, the combination with the frame, of a pair of wheels, an endless belt connecting the same, a grinder interposed between the wheels and designed to deposit pomace directly onto one of the wheels and a supplemental belt suitably supported and extending within the main belt around the wheel underneath the grinder as and for the purpose specified.

4. In a cider-press, the combination with the frame, of a pair of wheels, an endless belt connecting the same, a grinder interposed between the wheels and designed to deposit pomace directly onto one of the wheels and a supplemental belt suitably supported and extending within the main belt around the wheel underneath the grinder and a trough secured to the frame and located beneath one of the wheels as and for the purpose specified.

5. In a cider-press, the combination with the frame, of a pair of wheels, an endless belt connecting the same, a grinder interposed between the wheels and designed to deposit pomace onto one of the wheels, a supplemental belt suitably supported and extending within the main belt around the wheel underneath the grinder and a spout having an open bottom with spring edges designed to coact against the wheel and inner belt as and for the purpose specified.

6. The combination with the frame, the wheels and the shafts thereof, the lower one of which has stationary journals in the frame, the upper wheel and shaft thereof and the swinging bearing-support, of a movable cross-bar in said frame adapted to support the end of said bearing-support, and a screw for adjusting said cross-bar, substantially as described.

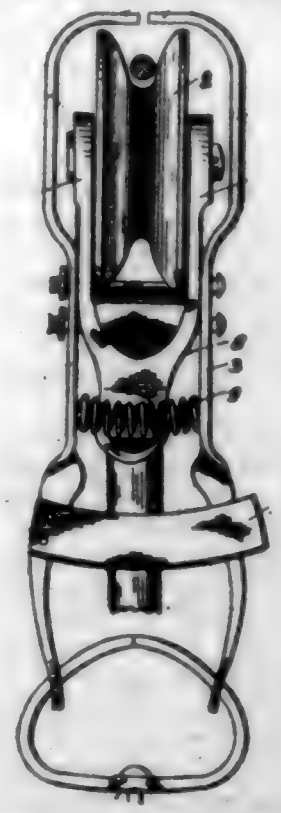
7. In a machine of the class described, two wheels and the shafts thereof suitably journaled in the frame and an endless belt carried by the wheels and comprising slats connected together by an endless wire cable extending through same and having the side and ends provided with notches as and for the purpose specified.

8. In a machine of the class described, two wheels and the shafts thereof suitably journaled in the frame and an endless belt carried by the wheels and comprising slats connected together by an endless wire cable extending through same and having the side and ends provided with notches and their abutting edges provided with rubber strips as and for the purpose specified.

9. In a machine of the class described, two wheels and the shafts thereof suitably journaled in the frame and an endless belt carried by the wheels and comprising slats connected together by an endless wire cable extending through same and having the side and ends provided with notches and their abutting edges provided with rubber strips and an endless belt supported in suitable idlers and extending around the lowermost wheel inside of the main belt as and for the purpose specified.

10. In a machine of the class described, two wheels and the shafts thereof suitably journaled in the frame and an endless belt carried by the wheels and comprising slats connected together by an endless wire cable extending through same and having the side and ends provided with notches and their abutting edges provided with rubber strips, an endless belt supported in suitable idlers and extending around the lowermost wheel inside of the main belt and a spout having an open bottom having scraping edges designed to come in contact with the wheel and inner belt as and for the purpose specified.

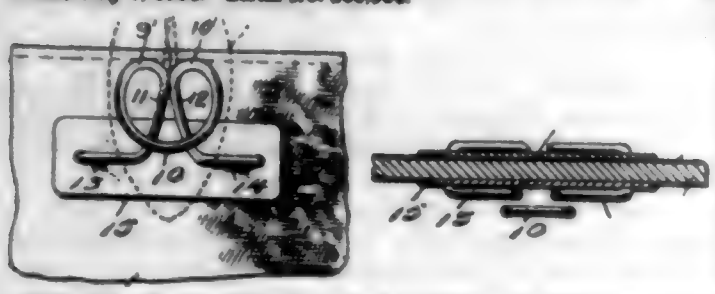
816,415. TROLLEY. HENRY ZANDER and GUSTAV HAHN, Wilmerding, Pa. Filed Sept. 25, 1905. Serial No. 280,093.



Claim.—1. The combination with a trolley-harp and a trolley mounted therein of a pair of guard-fingers mounted upon said harp, a pair of bolts passing through said guard-fingers in said harp, said harp being formed with curved inclined sides one of said bolts being passed therethrough at a point along said curved sides, a spring interposed between said fingers below said bolts, and the said fingers being formed at their lower ends with eyes, and a ring held in said eyes.

2. The combination with a trolley-harp and a trolley mounted therein of a pair of guard-fingers mounted upon said harp, a pair of pins passing through said guard-fingers in said harp, and securing the former to the latter so as to permit of a slight lateral motion, said harp being formed with inclined sides, the lowermost of said pins passing through at a point along said sides, an expansive spiral spring interposed between said fingers, below said pins, a clip for binding said fingers from extreme inward movement under pressure of said spring, the lower ends of said fingers being formed with eyelets and the ring being held in said eyelets.

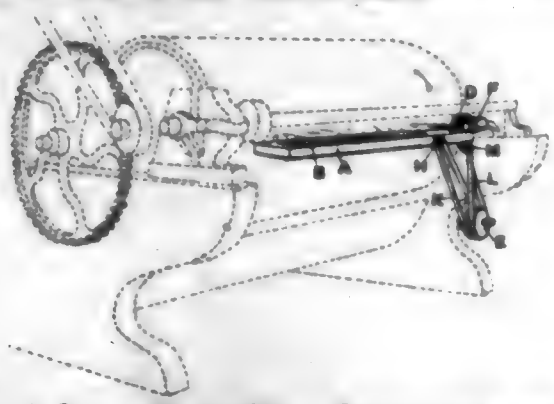
816,416. BUTTON. RICHARD H. A. D'AILLY, Tiptonville, Tenn. Filed May 7, 1904. Serial No. 206,906.



Claim.—1. The combination with a fabric, of plates disposed against opposite faces thereof and having alining perforations, a staple passed through certain of the perforations and the fabric with their ends against one of the plates, and a wire having its central portion looped and its end portions passed also through perforations of the plates and through the fabric and having their extremities bent against one of the plates.

2. In a button, the combination with a plate having openings therethrough, of a wire having its central portion looped and having portions bent to lie behind the loop and to extend beyond the latter, said portions outwardly of the loop being bent to extend through the openings of the plate and said wire having end portions bent beyond the plate in opposite directions.

816,417. FLEECE-CARRIER. THOMAS B. AINLEY, Sherbrooke, Canada. Filed Apr. 21, 1905. Serial No. 256,515.



Claim.—1. In a carding-machine, a fleece-remover comprising a casing, a traveling belt therein mounted, a forwarding-cone adjacent the belt end thereof, and means for actuating said belt and cone.

2. In a carding-machine, a fleece-remover comprising a casing, an endless traveling belt therein mounted whereby the upper belt-surface is exposed for receiving said fleece, a guiding-cone intermediate the belt and the trumpet, and means for rotating said belt and cone respectively.

3. In a carding-machine, a fleece-carrier comprising an endless belt, positioned for receiving, supporting, and transporting the fleece to the trumpet, and a positively-rotated intermediate cone for forwarding said fleece to said trumpet.

4. In a carding-machine, a fleece-carrier located adjacent the doffer and immediately under the comb whereby the stripped fleece will fall upon the carrier-belt, be supported and carried thereupon toward the trumpet, and a positively-rotated conical forwarder intermediate the belt end and the trumpet.

5. In a carding-machine, a fleece-carrier comprising an endless belt mounted upon end rollers located adjacent the doffer periphery and immediately under the fleece-removing comb, whereby the stripped fleece will fall upon the carrier-belt, be supported thereby, and carried thereupon toward the trumpet, a conical rotating forwarder located intermediate the belt end and the trumpet, driving-pulleys mounted upon said rollers and forwarder, and a belt for transmitting motion to said pulleys whereby said belt will be caused to travel and said forwarder rotate, thereby assisting in the translation of the fleece toward the trumpet.

816,418. HORSE-HOE. FRANK W. ANDERSON, Westfield, N. Y. Filed Jan. 11, 1906. Serial No. 295,601.

Claim.—1. The improved horse-hoe comprising a forward truck, a frame composed of two angular bars which are loosely coupled or jointed together at front and rear points, one of said bars having a hoe or cutting-blade attached to and pendent therefrom, and the other bar having a cutting-disk attached to and pendent therefrom, handles connected with the respective bars, and means for locking the two bars in any required angle or adjustment to each other, the same being attached adjacent to the rear coupling, and devices connected therewith and under the control of the operater for locking and releasing the same, substantially as described.



2. The improved horse-hoe comprising a forward truck, a frame which is loosely connected therewith and comprises two angular bars which are loosely coupled at front and rear points, one bar having a pendent blade attached thereto, a rotatable cutting-disk which is pivotally connected with the rear angle of the opposite bar, handles which are rigidly attached to the first-named bar and to the pivotal connection of the cutting-disk, the said bars having means for locking them at different angles or adjustments, the same comprising upward projections of the adjacent and overlapping ends of the rear bars which have a series of openings, a retractable spring locking-pin adapted to enter such openings, and a device connected with the adjacent handle and under the control of the operator whereby the pin may be retracted to allow adjustment or rocking of the bars on each other, for placing them at different angles, substantially as described.

3. The improved cultivating implement comprising a forward truck and a frame connected therewith and comprising two bars which diverge laterally in their central portions and are extended toward each other in the rear, the two being jointed together at front and rear, cultivating devices connected with the respective bars at their rear angles, and means for locking the bars rigidly together in a horizontal plane or at different angles thereto, substantially as described.

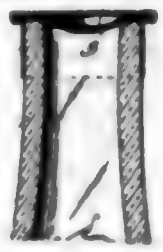
4. The combination, with the frame comprising bars which diverge from each other in their central portions and having rear portions that extend toward each other, the said frames being connected by loose joints at front and rear so that each may be rocked on the other, a blade attached to and pendent from one of said beams and adapted to be shifted at different horizontal angles, and a reversible concavo-convex disk connected with the other bar, and handles connected with the respective bars, substantially as described.

5. The combination, with a front truck and a frame composed of angular bars which are loosely jointed together and provided with means for locking them in any required adjustment or angle, of a pendent blade having a shank provided with an enlarged head having a series of openings, and screw-bolts adapted to pass through said openings and to secure the blade to the bar at any required angle or adjustment, substantially as described.

6. The combination, with the frame comprising angular bars which are coupled loosely at front and rear points and provided with means for locking them at any required angle, of a cutting-disk, arms in which the same is journaled, a block to which the said arms are adjustably secured, the said block being pivoted to one of the frame-bars and provided with a handle, substantially as described.

7. The combination, with a frame comprising two bars which diverge laterally from each other in their middle portions and have rear portions extending toward each other, the two being loosely jointed together at front and rear and provided with means for locking them in any required adjustment, a cutting-blade which is adjustably attached to one of the bars, and a concavo-convex disk arranged at the opposite angle of the frame, a rear frame-piece which is pivoted at that point so as to swing laterally, arms 23 which are detachably secured to such frame-piece, their lower portions being arranged at an angle to the upper ones so that the disk will be carried forward or backward by reversal of the arms in the manner described.

816,419. **BOTTLE.** JAMES C. ANDERSON, Highland Park, Ill. Filed Mar. 28, 1905. Renewed Feb. 15, 1906. Serial No. 301,272.



Claim.—1. A closure for glass bottles or other glass vessels, consisting of a metal body welded to the glass vessel and with a projecting portion surrounding the exit-orifice of the vessel and adapted to be crimped, clamped or otherwise secured upon a sealing device located over the exit-orifice; and a sealing device located over the exit of the vessel and held in position by the projecting portion of the metal body after it has been crimped, clamped or otherwise secured upon the sealing device, whereby the said vessel when emptied of its contents, cannot be refilled and sold as an original package, as hereinbefore set forth.

2. A closure for glass bottles or other glass vessels consisting of a metal ring or tube welded to the glass with a portion extending beyond and surrounding the exit of the vessel, and adapted to be turned downwardly upon a seal or stopper; a seal or stopper located over the exit of the vessel and held in place by the metal ring or tube when the projecting portion thereof has been turned downward and a film of solder at the juncture of the metal ring or tube and the seal or stopper, whereby the contents of the vessel are hermetically sealed through the medium of the welded joint between the metal and the glass, and the solder-joint between the metal ring or tube and the seal or stopper, substantially as hereinbefore set forth.

3. A bottle composed of glass having a tube of sheet-steel welded to the neck thereof and extending a suitable distance above the upper extremity thereof, such projecting portion adapted to be turned down upon, and to secure in position, a closure device located upon the upper extremity of the bottle-neck, substantially as and for the purpose set forth.

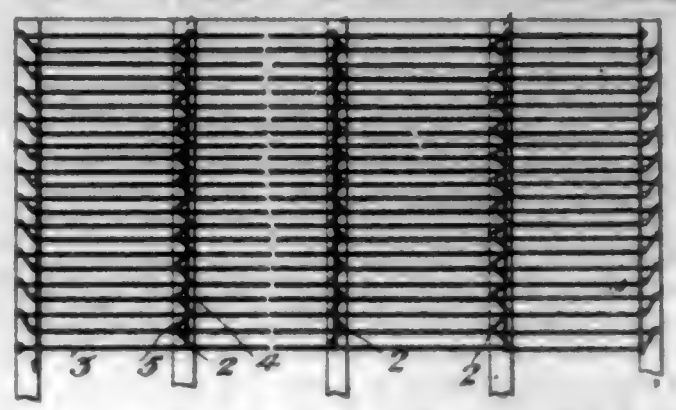
4. A bottle composed of glass, having a sheet-metal ring or tube of different diameter at opposite ends and with an intermediate shoulder, said tube welded to the bottle-neck, and projecting above the upper terminus of said neck a sufficient distance to constitute a surrounding flange adapted to be turned down upon and to securely confine a closure device located upon the upper extremity of the bottle, substantially as and for the purpose set forth.

5. A bottle composed of glass and having welded to the neck thereof, a steel ring or tube projecting a suitable distance above the upper terminus thereof and adapted to be turned inwardly and downwardly, in combination with one or more disk-closure devices located upon the upper extremity of the neck of the bottle and held in such position to seal the contents of the bottle by the inwardly and downwardly turned portion of the steel ring or tube, substantially as and for the purpose set forth.

6. A bottle composed of glass and having welded to the neck thereof a steel ring or tube with a portion extending above the upper extremity of the neck of the bottle and turned downwardly upon a seal or stopper; and a seal or stopper consisting of suitable material and of reversely-curved dish form confined and held in place, substantially as hereinbefore set forth.

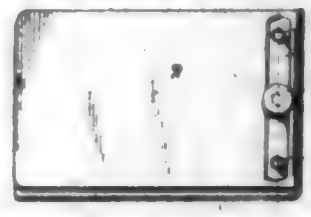
7. The method herein described of securing a metallic ring or tube to the upper portion of a glass vessel, which consists in heating the upper portion of the vessel to a viscid and compressible condition, then forcing the metallic ring into close contact with the glass to exclude the air at such contact locality and with a portion of the ring or tube extending beyond the extremity of the vessel and finally exerting pressure to cause suitable welding contact between the metallic ring or tube and the glass, substantially as hereinbefore set forth.

816,420. **PLASTERING CONSTRUCTION.** JOSEPH BARBAGELATA, Jr., New York, N. Y. Filed Nov. 8, 1904. Serial No. 231,966.



Claim.—The combination with the beams of a room, of a zigzag wire extending along each beam, a longitudinal wire extending along each beam, transverse wires connected with said beams and plaster fixed to said wires, said longitudinal wire extending under every other one of the transverse wires, and said zigzag wire extending over all of the transverse wires.

816,421. **LOOSE-LEAF BINDER.** JOHN B. BARLOW, Grand Rapids, Mich. Filed Aug. 22, 1904. Serial No. 221,725.

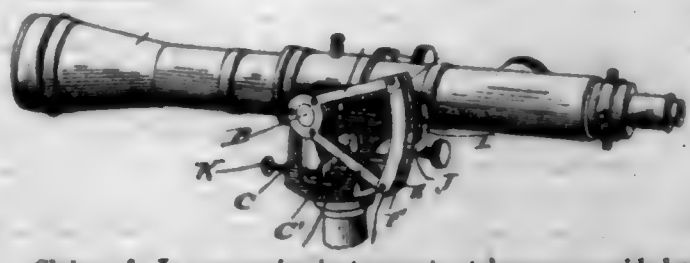


Claim.—1. In a loose-leaf binder including covers, plates oppositely arranged on the covers, eyelets connecting the plates to the latter, one of said plates having hollow posts intermediate the eyelets, studs intermediate the eyelets on the other plate and adapted to slidably engage in said hollow posts, a threaded pin intermediate the said posts, an interiorly-threaded post terminating exteriorly of the cover in a thumb-nut and adapted to engage the pin for adjusting the covers, spring-fingers carried by one of the covers and eyelets in the cover forming passages for the studs and for securing said fingers in position.

2. In a loose-leaf binder, covers, one of the same provided with openings, plates mounted on said covers and arranged opposite one another, hollow posts on one of said plates, studs on the other plate and passing through the openings in the cover for slidably engaging the hollow posts, a threaded pin and an interiorly-threaded post engaging one another intermediate the hollow posts, said threaded post terminating exteriorly of the cover in a thumb-nut, spring-fingers intermediate the posts and eyelets in said openings forming means for securing the fingers to the cover.

3. In a loose-leaf binder including an upper and lower cover flexibly connected, plates arranged on the upper face of the said covers, hollow rivets for securing said plates to the cover and arranged to register with one another, hollow posts carried by the lowermost plate, said upper plate provided with openings forming passages, studs on the upper plate passing through said openings and slidably engaging the hollow posts, a threaded pin intermediate said posts, and an interiorly-threaded post terminating exteriorly of the cover in a thumb-nut and adapted to engage the threaded pin for adjusting the covers.

816,422. **ATTACHMENT FOR SURVEYING INSTRUMENTS.** WILLIAM M. BEAMAN, Washington, D. C. Filed June 14, 1905. Serial No. 265,185.



Claim.—1. In a surveying instrument, a telescope provided with stadia-wires, and an arc connected to the telescope and movable therewith and a movable index arranged in combination with the said telescope and arc, said arc being graduated according to a law of natural sines, whereby a single reading of the instrument used in

connection with a stadia-rod will be sufficient to determine the difference in elevation between the instrument and rod.

2. In a surveying instrument the combination with the telescope having an ordinary arc connected thereto and movable therewith, of a supplemental arc, connected to the first-mentioned arc, said supplemental arc being graduated according to a law of natural sines, and an index movable independent of the telescope, said index extending across the first-mentioned arc and resting against the supplemental arc for the purpose specified.

3. In a surveying instrument a telescope having an ordinary arc, a supplemental arc, having graduations adjacent both edges, one set of graduations being according to a law of natural sines, and the other set of graduations being according to a law of natural cosines, and a movable index extending across the ordinary arc and resting flush with the supplemental arc for the purpose specified.

4. In a surveying instrument, a telescope, a vertical arc and a movable index, said arc being graduated outwardly from a zero-point near its middle and similarly on either side of said zero-point, said graduations following a certain law of natural sines, said arc having such selected positions computed from said law as will give when placed on the arc, even whole-number multiples, which for certain positions of the telescope, indicating such graduations, will, when multiplied by observed rod distance, give the difference in elevation between the instrument and the rod, whereby farther computation is avoided, as described.

5. In a surveying instrument, a telescope provided with a vertical arc, and a movable index, said arc being graduated outwardly from a zero-point, near its middle and similarly on either side of said zero-point, said graduations following a certain law of natural cosines, said arc having such selected angular positions computed from said law as will give when placed on the arc, even whole-number percentages whereby for any setting of the telescope, can be read by estimation, the percentage of correction, to be subtracted from the observed stadia distance, in order to obtain the true horizontal distance.

816,428. **TRUNK-TRAY SUPPORT.** AARON S. BELSER, Philadelphia, Pa. Filed Nov. 13, 1905. Serial No. 287,059.



Claim.—1. In a case having walls, tray-supports consisting of metal bars, having attaching means comprising pointed projections arranged to engage said walls, and regions intermediate of said projections extending free from said walls, substantially as set forth.

2. In a case having walls, the combination of tray-supports comprising metal bars arranged to bear at their ends and center against said walls, and attaching means comprising pointed projections affixed to said metal bars and arranged to engage said walls, substantially as set forth.

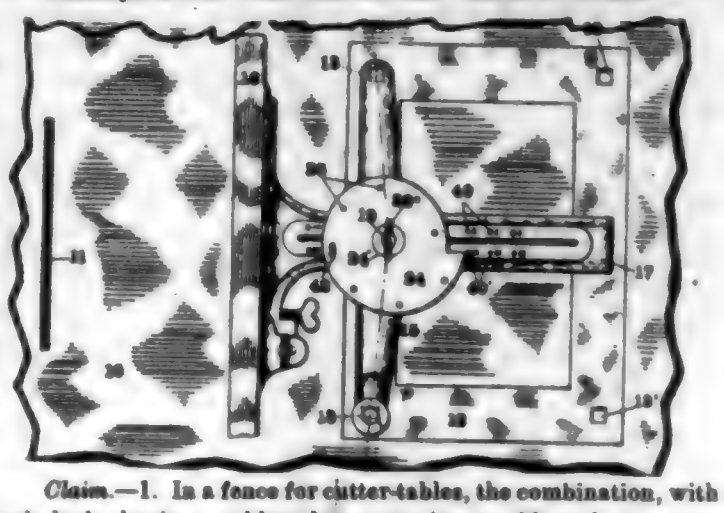
3. In a case having end walls, the combination with tray-supports comprising metal bars arranged to bear at their ends and center against said walls; of attaching means comprising pointed projections arranged to engage said walls; and, regions between said center and ends bent outward from said walls, substantially as set forth.

4. In a trunk having end walls, the combination of a tray; of supports for said tray comprising U-shaped bars; pointed projections in integral relation with said bars arranged to engage said walls; means arranged to secure said bars to said walls; and, regions in said bars which extend free from said walls, substantially as set forth.

5. In a trunk having end walls, the combination with a tray; of supports for said tray, comprising metal bars of U-shaped section, the edges of the flanges of which are provided with pointed projections engaged with said end walls, the body of each bar being provided with apertures; and, means entered through said apertures, engaging said bars with said walls, substantially as set forth.

6. A support of the class described consisting of a metal bar of U-shaped section, the edges of the flanges of which are provided with pointed projections, and the body of the bar pierced with apertures for fastening means, substantially as set forth.

816,424. **ADJUSTABLE FENCE FOR SAWS.** THOMAS BEHR, Indianapolis, Ind. Filed June 30, 1905. Serial No. 267,332.

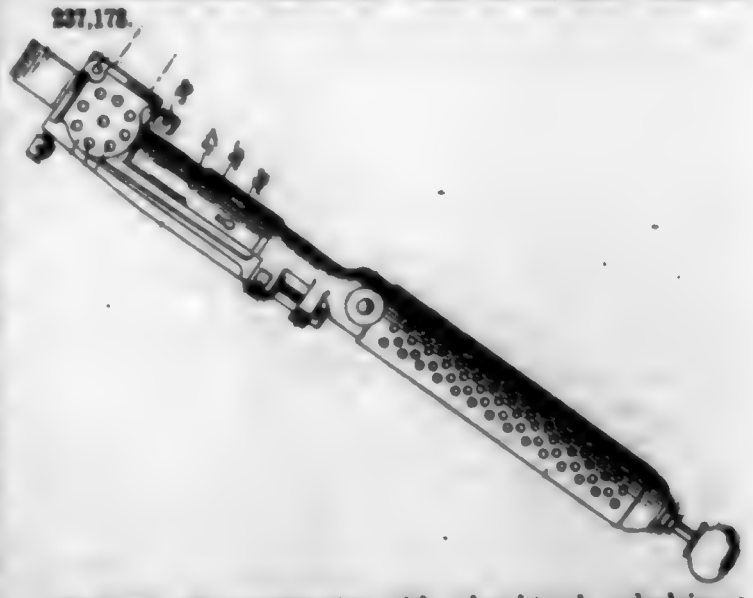


Claim.—1. In a fence for cutter-tables, the combination, with a main body, having a rabbeted recess on its one side and a transverse groove in its other side and a flanged block in said recess, of a fence having a finger projecting from its rear side, said finger having a sliding engagement with the groove of the main body and a set of position-finding means the different parts of said set being at varying distances from the working face of the fence, and another set of position-finding means carried by the main body and independently movable thereon, whereby any part of the position-finding set carried by the main body may be brought into registry with any part of the position-finding set carried by the fence, the arrangement being such that each change in registry involves a shifting of the fence to accomplish it, and means for holding the fence in any desired position of adjustment on the main body comprising a bolt connecting said block, the main body and the movable set of position-finding devices and a nut.

2. In a fence for cutter-tables, the combination, with a main body, of a fence having a finger projecting from substantially the center of its rear side, said finger having a sliding engagement with the main body and having a plurality of pin-holes formed therein at varying distances from the working face of the fence, a gage-plate rotatably mounted upon the main body on a pivot in the central line of said finger and provided with a plurality of pin-holes varying in distance from the center of said plate, a pin adapted to pass through any hole of the gage-plate and into any hole in the fence-finger, and means for securing the main body upon the table at different distances from the cutter, substantially as set forth.

3. In a fence for cutter-tables, the combination, with a main body, of a fence having a finger projecting from substantially the center of its rear side, said finger having a sliding engagement with the main body and having a plurality of pin-holes formed therein at varying distances from the working face of the fence, a gage-plate rotatably mounted upon the main body on a pivot in the central line of said finger and provided with a plurality of pin-holes varying in distance from the center of said plates, and a pin adapted to pass through any hole of the gage-plate and into any hole in the fence-finger.

816,425. **COMBINED HAND-TORCH AND SOLDERING-IRON.** EMILE BLOCK, New Orleans, La. Filed Dec. 16, 1904. Serial No. 237,178.



Claim.—1. The combination with a hand-torch embodying a reservoir, a burner, and a burner-tube, of a removable support, a

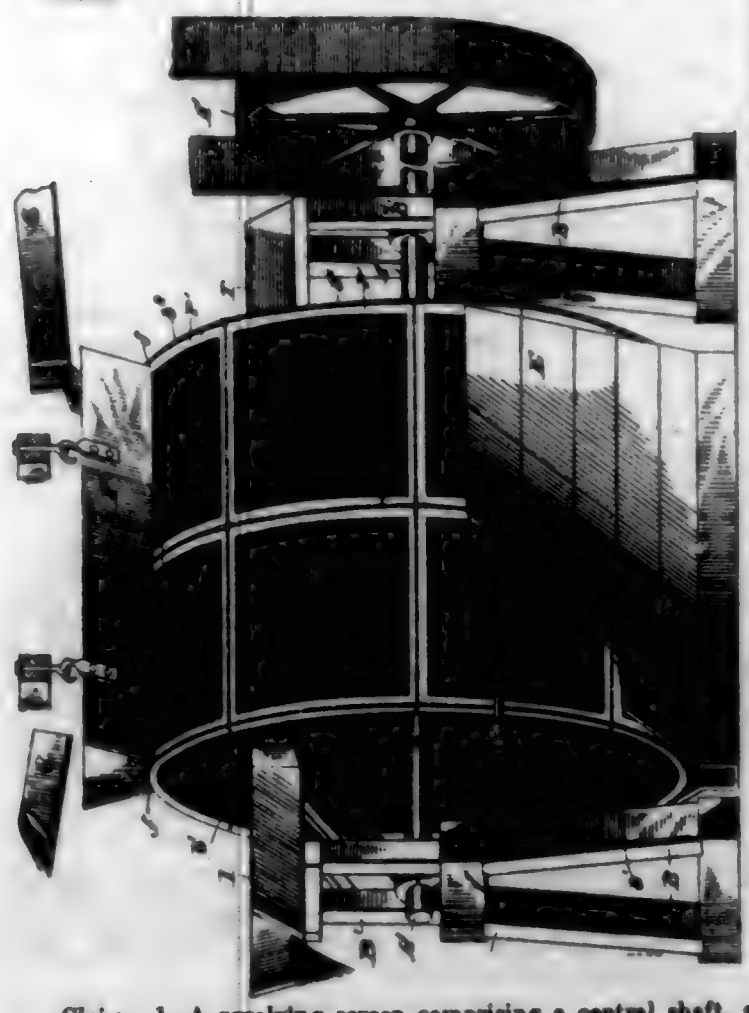
chamber for receiving the heat and products of combustion from said burner-tube carried wholly by said support, and a soldering-iron mounted in said chamber.

2. The combination with a burner, and a chamber mounted in operative relation thereto to receive the heat and products of combustion therefrom and having a plurality of soldering-iron-receiving apertures therein, of means within the chamber and independent of the soldering-iron for closing all but one of said apertures against egress of the heat and products of combustion.

3. The combination with a burner, and a chamber mounted in operative relation thereto to receive the heat and products of combustion therefrom and having two soldering-iron-receiving apertures therein, of a shutter or damper pivotally mounted in said chamber and adapted to close either of said apertures against egress of the heat and products of combustion.

4. The combination with a burner, and a chamber mounted in operative relation thereto to receive the heat and products of combustion therefrom and having two soldering-iron-receiving apertures therein, of a soldering-iron adapted to be removably inserted in either of said apertures, and a shutter or damper pivoted in said chamber and adapted to be turned on its pivot to close either of said apertures, said shutter or damper being held against either aperture by the contact therewith of the soldering-iron when located in the other aperture.

816,426. REVOLVING DRUM-SCREEN. John P. Brew and Edwin P. Surran, Basin, Mont. Filed June 9, 1905. Serial No. 264,621.



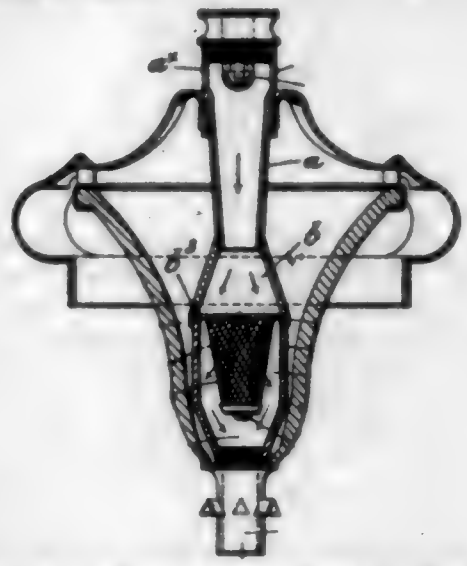
Claim.—1. A revolving screen comprising a central shaft, a drum having a peripheral covering of screen material and open ends, a central supporting-frame connecting the shaft to the drum and consisting of a central spider with radial arms rigidly attached to the shaft and having adjustable spoke ends, an external hopper placed above the drum for feeding the material on the outer surface of the same and two reversely-inclined discharge-troughs arranged in the drum and extending from the center outwardly and downwardly through the open ends of the same and external supports for these discharge-troughs.

2. A revolving screen comprising a drum having a peripheral covering of screen material with open ends, two feed-troughs emptying externally upon opposite ends of the drum, a single supporting-frame, arranged centrally in the drum, a shaft rigidly connected to said central frame, and two discharge-troughs arranged upon external supports and projecting into opposite ends of the drum to balance the strain on the centrally-supported drum.

3. A revolving screen comprising a shaft, a drum with peripheral screen and open ends and outwardly-projecting flanges at each end, a central support for the drum consisting of a spider-frame with radial spokes, a hopper placed exteriorly above the drum, two troughs arranged inside the drum beneath the hopper on opposite sides of the central support and extending downwardly and outwardly through the open ends of the drum, a spray-pipe arranged outside the drum to play on the same, and a housing with waste-box inclosing the lower portion of the drum.

4. A revolving screen comprising a shaft, a drum having a peripheral covering of screen material, a central spider-frame, the drum-frame composed of panel-seats made of separate longitudinal T-bars and circular T-bars, and spokes connected to the central spider-frame and having flanged outer ends bolted to both the longitudinal and cross members of the T-bars.

816,427. INVERTED INCANDESCENT GAS-BURNER. James Bamber, London, England, assignor to The New Inverted Incandescent Gas Lamp Company, Limited, London, England. Filed May 8, 1905. Serial No. 259,472.

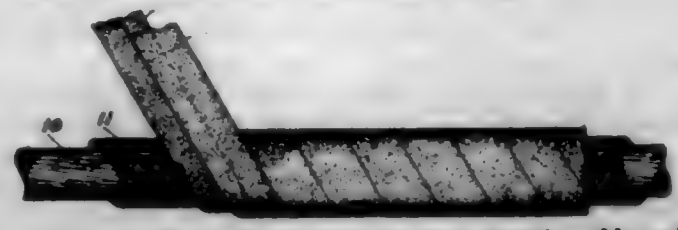


Claim.—1. In an inverted incandescent gas-burner, the combination of a Bunsen tube divided into two portions, a mixing-chamber having means for attaching its upper end to the upper portion of the Bunsen tube, and its lower end to the lower portion of said tube, a foraminous cage or basket in said chamber, and a conical or conoidal deflector in said cage or basket.

2. In an inverted incandescent gas-burner, the combination with the Bunsen tube of a mixing-chamber constructed in two detachable parts and interposed in the length of said tube, a foraminous cage or basket located in said chamber and having its lower end closed, a rim or flange on the upper end of said cage or basket adapted to be supported within the mixing-chamber, and a conical or conoidal deflector extending upward from the bottom of the cage or basket.

3. In an inverted incandescent gas-burner, the combination, with the Bunsen tube, of a mixing-chamber interposed in the length of said tube, a foraminous cage or basket within said chamber, an internal deflector within said chamber for deflecting the downcoming air and gas outwardly through the sides of said cage or basket, and an external deflector or cone surrounding said mixing-chamber and part of the Bunsen tube, at a short interval therefrom.

816,428. ELECTRIC CABLE. Harold W. Buck, Niagara Falls, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 27, 1904. Serial No. 218,407.



Claim.—1. The method of fireproofing electric cables which consists in placing the cables in their final position, treating a fireproof material with a fireproof self-hardening liquid, and applying said treated material while wet to the cables so as to completely inclose them.

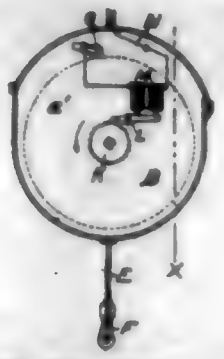
2. The method of fireproofing electric cables which consists in placing the cables in their final position, impregnating a porous fireproof material with a silicious solution, and applying said impreg-

nated material while wet to the surface of the cables so as to completely envelop them.

3. The method of fireproofing electric cables which consists in placing the cables in their final position, impregnating asbestos with a silicate-of-soda solution, and wrapping said impregnated asbestos while wet about the cables so as to completely envelop them.

4. The method of fireproofing electric cables which consists in placing the cables in their final position, impregnating a strip of asbestos with a silicious solution, and wrapping the impregnated strip while wet spirally about the cables so as to completely incase them.

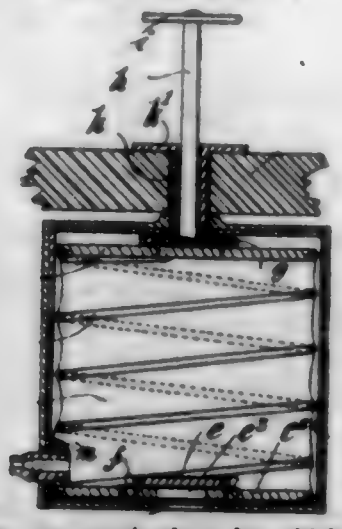
816,429. DEVICE FOR SUPPORTING CABLES OF ELECTRIC LAMPS. JAMES F. BURNS, Albany, N. Y. Filed July 13, 1905. Serial No. 269,307.



Claim.—1. The combination of a frame; a reel mounted therein; a means for rotating said reel; a ratchet connected with said reel; a dog adapted to engage said ratchet; a magnet in operative connection with said dog; a lamp-cable; a lamp attached to said cable; said cable placed on said reel; a means for connecting said magnet and said cable with an electric circuit, substantially as described.

2. The combination of a frame; a reel mounted therein; a spring connected with said frame and with an arbor on the hub of said reel; a ratchet connected with said reel; a dog engaging said ratchet connected with said frame; a magnet in operative connection with said dog; sheaves connected with the peripheries of said reel, respectively; a lamp-cable adapted to be wound about said reel; a means for placing said lamp-cable and magnet and sheaves within an electric circuit, substantially as described.

816,430. PNEUMATIC ALARM. JOHN CAIRNS, Bangor, Ireland. Filed July 6, 1905. Serial No. 268,311.

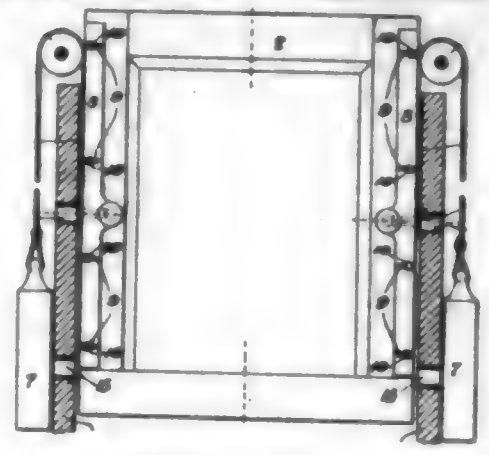


Claim.—1. In a pneumatic alarm for vehicles, a rigid casing, a bellows therein, a holder for said casing extended across the top and bottom and opposite sides thereof, a guide-tube secured in said holder and in said casing and having a flange, and a rod passed through said tube and connected with the bellows.

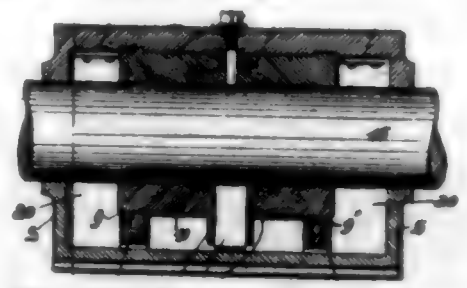
2. In a pneumatic alarm for vehicles, a rigid casing having a hole in its bottom, a bellows in said casing having coincident hole, a loosely-mounted valve in said bellows controlling the opening therein, a holder passed beneath the casing and secured to the bottom thereof and extended upon opposite sides and across the top of the casing with an opening coincident with the opening in the bottom of the casing, a guide secured in the top cross-piece of said holder and into the casing and a rod passed through the top of the holder and connected with the bellows.

816,431. WINDOW. DAVID R. CALEB, Groveland, Pa. Filed May 2, 1905. Serial No. 258,472.

Claim.—In a window sash and frame, the combination of a sash-frame provided with variably-located bolt-sockets and strip-grooves, laterally-adjustable locking-bolts provided with outwardly-extending key-shanks, weather-strip plates secured upon the face of the sash at each side and adapted to engage the sash-grooves, means for securing the sash-strips in operative and inoperative positions, said strips being provided with locking-apertures arranged to engage the key-shanks, with supporting sash-weights and bands engaging the terminals of the locking-bolts, substantially as set forth.



816,432. JOURNAL-BOX. JOHN CHARRY, Ispica borough, Pa. Filed Dec. 13, 1905. Serial No. 291,606.



Claim.—1. The combination with a shaft, of a two-part journal-box, consisting of a main supporting-housing, said housing embodying a base-plate, a casing, partitions mounted in said casing, a bearing-block supported by said partitions and adapted to support said shaft, a bearing-block adapted to fit upon said shaft and the first-named bearing-block, a cap adapted to fit over said bearing-block and rest upon said housing, means to convey a lubricant from the bottom of said casing to said shaft, substantially as described.

2. The combination with a shaft, of a two-part journal-box, consisting of a main supporting-housing, said housing embodying a base-plate and a casing, partitions mounted in said casing, a bearing-block supported by said partitions and engaging said shaft, a bearing-block adapted to fit upon said shaft and interlock with the first-mentioned bearing-block, a cap fitting over the second-named bearing-block and resting on said housing, scrapers carried by said cap and engaging said shaft, and means for conveying a lubricant from the bottom of the casing to said shaft.

816,433. SIDE-DRESSING TOOL FOR SAW-TEETH. RICHARD C. CHARLTON, Philadelphia, Pa., assignor to Henry Disston and Sons Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 16, 1904. Serial No. 237,121.

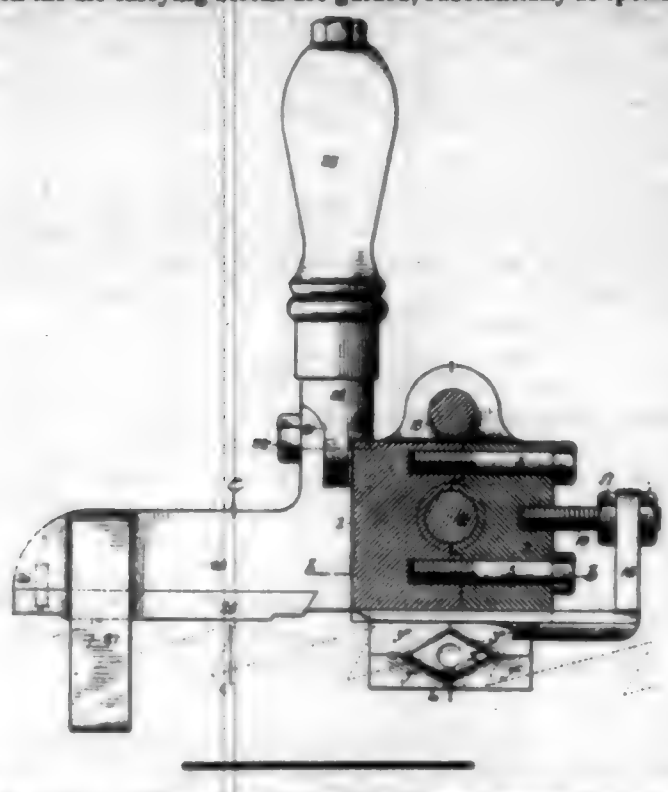
Claim.—1. A side-dressing tool having opposite die-carrying blocks and a body of H-shaped cross-section presenting oppositely-projecting cheek-pieces between which said die-carrying blocks are guided, substantially as specified.

2. A side-dressing tool having opposite die-carrying blocks, single operating-screw having a right-hand threaded portion engaging one of said blocks and a left-hand threaded portion engaging the other block, and a body structure in which said operating-screw is rotatably mounted, substantially as specified.

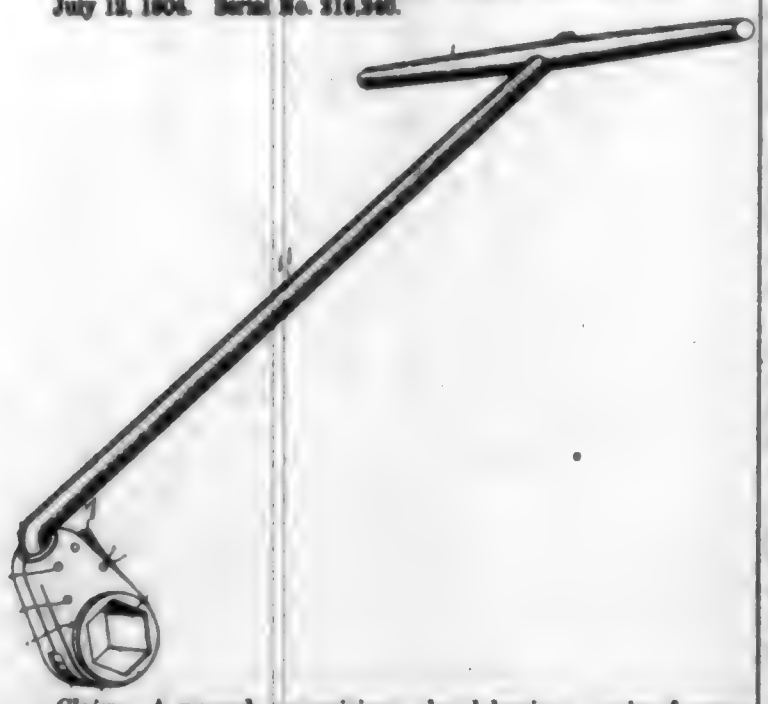
3. A side-dressing tool having opposite die-carrying blocks, a single operating-screw having a right-hand threaded portion engaging one of said blocks, a left-hand threaded portion engaging the other block, and a reduced portion between the said threaded portions, a two-part body structure having each part recessed for engagement with said reduced portion of the operating-screw, and means for securing together the two parts of said body structure, substantially as specified.

4. A side-dressing tool having opposite die-carrying blocks, an operating-screw having a right-hand threaded portion engaging one

of said blocks and a left-hand threaded portion engaging the other block and a central body structure providing a bearing for said operating-screw and having oppositely-projecting cheek-pieces between which the die-carrying blocks are guided, substantially as specified.



816,434. WRENCH. WILLIAM H. CLAFLIN, Oakdale, Wis. Filed July 12, 1904. Serial No. 216,246.

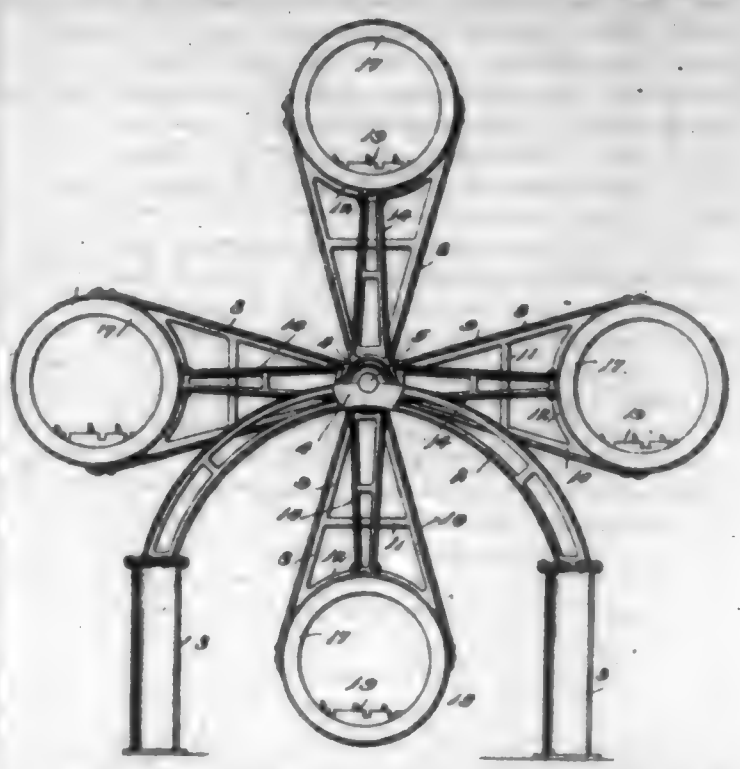


Claim.—A wrench comprising a head having a pair of oppositely-disposed spaced-apart plates secured together and provided with central openings therein, a barrel having teeth therewith and provided with a through-opening said barrel being mounted in the openings of the plates with its teeth in contact with the spaced-apart portion of the plates, the head having a groove open at its end adjacent to said barrel, a pawl provided with a plurality of notches pivoted within the groove for engagement with the teeth, a spring seated in the groove and acting on the pawl for maintaining the latter normally in engaging position, a vertical recess in one end of the head, an elongated rod having a right-angular bend at one end mounted in said recess said bend of said rod being provided on opposite sides with grooves, means passing through suitable openings in the plates and through the recesses of the bent end of the rod to secure said end within said recess, and a cross-bar on the outer end of the rod serving to operate the wrench, substantially as specified.

816,435. AMUSEMENT APPARATUS. OWEN M. CONNELLY, Philadelphia, Pa. Filed Nov. 11, 1905. Serial No. 286,949.

Claim.—1. An amusement device comprising a rotatable frame provided with radial arms, compartments supported upon the outer ends of the arms and provided with annular trackways, and cars in the compartments adapted to traverse said trackways.

2. An amusement device comprising a rotatable frame having radial arms, each of said arms being formed of diverging members and a curved connecting-brace, forming therewith a partially-circular seat at the outer end of the arm, circular compartments arranged within the seats of the arms and provided with annular trackways, and cars in the compartments adapted to traverse said trackways.



3. An amusement device comprising a rotatable frame having radial arms, each of said arms being provided at its outer end with a semicircular seat, circular compartments arranged in said seats and provided with annular trackways, and cars in the compartments adapted to traverse said trackways.

4. An amusement device comprising a rotatable frame having a series of radial arms arranged in pairs, each pair of radial arms being provided with semicircular seats, compartments arranged within said seats and secured to the arms, each compartment being provided with an annular trackway, and a car arranged to traverse said trackway.

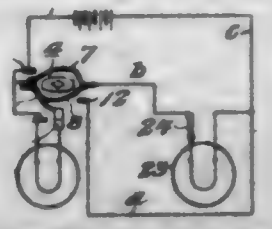
5. An amusement device comprising a rotatable frame having a series of radial arms, compartments carried by said arms, each of said compartments comprising an annular frame having an interior lining forming an annular track-surface, guards at the sides of said track-surface, and a car within the compartment having wheels or rollers to traverse said track-surface between the guards.

6. An amusement device comprising a rotatable frame having radial arms, each of said arms comprising pairs of divergent members, and braces connecting the members of each pair, the outer ends of the arms being formed with semicircular seats, circular compartments arranged in said seats and provided with annular trackways, and cars in the compartments adapted to traverse said trackways.

7. An amusement device comprising a rotatable frame having a series of radial arms, each of said arms comprising spaced members formed of side pieces having semicircular seats at their outer ends, compartments arranged in said seats and secured to the arms, each compartment having an annular trackway, and a car arranged therein and adapted to traverse said trackway.

8. An amusement device comprising a rotatable frame, annular chambers or compartments carried by said frame, each compartment having an interior annular trackway, annular guards at the sides of said trackway, retaining-rails on the inner sides of the guards, and a car having wheels or rollers to traverse said trackway between the retaining-rails.

816,436. ELECTRIC-LIGHT SOCKET AND KEY. OWEN C. COVER, Goshen, Ind. Filed Nov. 12, 1904. Serial No. 232,514.



Claim.—1. A device of the class described comprising a body having a chamber and a lamp-engaging post terminating within the chamber, a pair of oppositely-disposed spring contact members sustained within the chamber, a fixed contact with which the free end

of one of the members may engage, a pair of spaced fixed contacts between which the free end of the other member is adapted for movement and with either of which it may engage, and an operating member common to and adapted for moving both of the spring members.

2. In an electric-lamp system, a circuit having a pair of lamps included therein, a pair of oppositely-disposed spring contact members arranged within the circuit, a fixed contact with which one of the spring members may engage, a pair of fixed contacts between which the other spring member is adapted for movement and with either of which it may engage, and an operating member common to both of the spring members for actuating the same to circuit the lamps in series or multiple.

3. In an electric-lamp system a circuit containing a pair of lamps, a socket having a pair of spaced contacts, an oppositely-disposed fixed contact, and contact members one of which is operable between the spaced contacts and the other operable with relation to the fixed contact, and means for operating said contact members to divide the circuit through both of said contact members or through but one of said members, whereby to arrange the lamps in series or in parallel circuit.

4. An electric-lamp system including a pair of lamps, a socket having spaced contacts included in the circuit of one of said lamps, oppositely-disposed spaced contacts included in the circuit of the other lamp, and spring contact members adapted for operation to connect the first-mentioned spaced contacts and connect the lamps in parallel or to disconnect one of each of said pair of spaced contacts and thereby connect the lamps in series.

5. A socket for electric-lighting systems comprising a body having oppositely-disposed spaced contacts, spring contact members arranged within the body and respectively connected at opposite ends to one of each of said pair of spaced contacts, the remaining ends of each of said contact members being free, and means for operating said contact members to include all of said spaced contacts in the circuit or but one of each of said pairs of contacts.

816,437. **MECHANICAL MOTOR.** CHARLES DACHIEWICH, Philadelphia, Pa., assignor of fifty-one one-hundredths to Charles Frelhofer and Frederick Hanson, Philadelphia, Pa. Filed Oct. 31, 1904. Serial No. 230,749.



Claim.—1. A mechanical motor comprising a stem or shaft mounted so as to rotate, a helical track carried thereby and moving with said stem, and a freely-movable weight resting on said track and serving to rotate the stem or shaft, the track and weight partaking of such rotative movement.

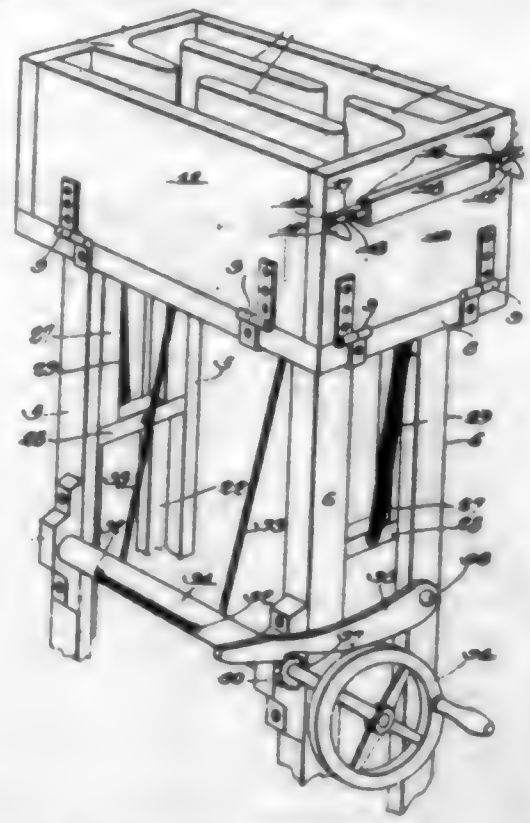
2. A mechanical motor comprising a stem or shaft mounted so as to rotate, helical tracks carried thereby and moving with said stem, and freely-movable weights mounted upon said tracks and exerting their power thereon to rotate the stem or shaft, the tracks and weights partaking of such rotative movement.

3. A mechanical motor comprising a stem or shaft mounted so as to rotate, helical tracks carried by said stem, said tracks having their pitch disposed toward the axis of rotation and moving with said stem, and weights adapted to move along and with said tracks and rotate the stem or shaft, the tracks and weights partaking of such rotative movement.

4. A mechanical motor comprising a stem or shaft mounted so as to rotate, a pair of helical tracks carried by said stem or shaft and disposed opposite each other with their pitch inclined toward the axis of rotation, and weights adapted to said tracks, said weights in moving tending to displace the helical tracks and thereby rotate the stem or shaft carrying the same.

5. A mechanical motor comprising a stem or shaft mounted so as to rotate, a pair of helical tracks carried by said stem or shaft and disposed opposite each other with their pitch inclined toward the axis of rotation, said tracks having concaved faces, and weights adapted to move along said tracks, said weights tending to displace the helical tracks and thereby rotate the stem or shaft carrying the same.

816,488. **CEMENT-BLOCK MACHINE.** CLARENCE F. DAVIS, Sherwood, Mich., assignor of one-half to A. Le Roy Locke, Bronson, Mich. Filed May 8, 1905. Serial No. 259,457.



Claim.—1. In a machine of the class described, a mold having movable side walls provided with terminal locking-lugs, movable end walls provided with openings adapted to receive said lugs, and gravity-actuated locking-bars carried by the end walls for engagement with said locking-lugs.

2. In a machine of the class described, a mold having pivoted side walls provided with terminal recessed locking-lugs, pivoted end walls provided with openings adapted to receive said lugs, and locking-bars slidably mounted on the end walls and movable by gravity into engagement with the recesses in the locking-lugs.

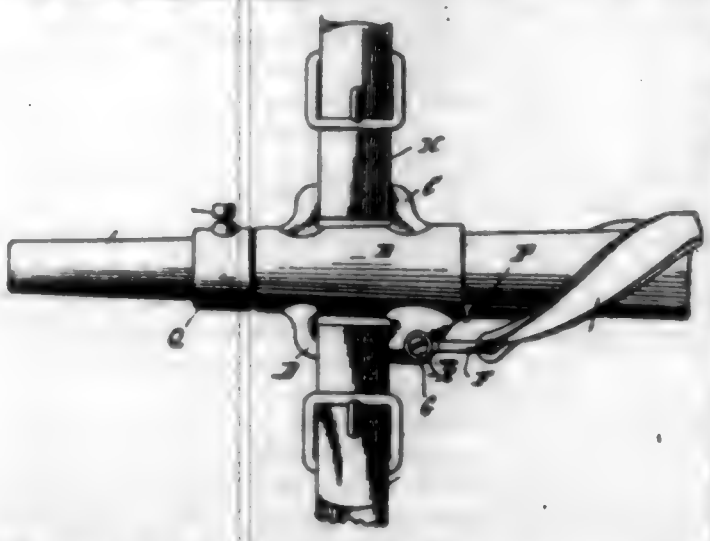
3. In a machine of the class described, a mold having pivoted side walls provided with terminal recessed locking-lugs, pivoted end walls provided with openings adapted to receive said lugs, and gravity-actuated locking-bars having their opposite ends inclined or beveled for engagement with the recesses in the locking-lugs.

4. In a machine of the class described, the combination with a frame, of a mold, a bed-plate secured to the frame and provided with a plurality of openings, side and end walls pivoted to the frame and adapted to engage the bed-plate when in closed position, terminal locking-lugs secured to the side walls, a plurality of core members engaging the openings in the bed-plate and movable to operative and inoperative positions within the mold, a winding-drum for operating said core members, means for locking the cores in inoperative position, means for returning said cores to operative position and gravity-actuated locking-bars carried by the end walls and

adapted to engage the terminal lugs, for locking the side and end walls in closed position.

5. In a machine of the class described, the combination with the legs or standards, of a mold, a bed-plate provided with a plurality of openings, a frame surrounding the bed-plate, side and end walls pivoted to the frame and adapted to engage the bed-plate when in closed position, a plurality of core members engaging the openings in the bed-plate and movable to operative and inoperative positions within the mold, a winding-drum journaled in said standards for operating the core members, said drum being provided with a plurality of spaced openings, a flexible medium passing through the openings in the winding and having its opposite ends secured to said core members, a pawl-and-ratchet mechanism for locking said members in inoperative position, and means for returning said core members to operative position.

816,439. SHAFT-TUG. FRANK DAVIS, Jr., St. John, Ill. Filed Aug. 31, 1905. Serial No. 276,531.

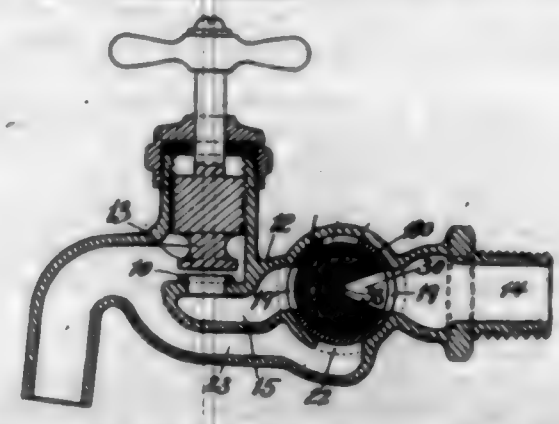


Claim.—1. A shaft-tug consisting of a sleeve mounted on the shaft of a vehicle, loops formed on said sleeve and adapted to receive portions of the harness, a clevis secured to one of the loops and adapted to receive the holdback-strap of the harness, a clamp secured upon the shaft in front of the sleeve, and a lug carried by the shaft and adapted to prevent the sleeve from sliding up on the shaft.

2. A shaft-tug consisting of a sleeve mounted on a vehicle-shaft, means on said sleeve adapted to receive portions of the harness, means for preventing the sleeve from sliding backward on the shaft, and a clamp secured on the shaft and adapted to prevent the sleeve from sliding forward on the shaft.

3. A shaft-tug comprising a sleeve, loops on the sleeve adapted to receive portions of the harness, a clevis having an offset portion pivotally secured to one of the loops, a lug secured to the shaft and engaging the sleeve, and an adjustable clamp engaging the opposite end of the sleeve.

816,440. FAUCET. FRANK A. DUNHAM, Brockton, Mass. Filed Oct. 3, 1905. Serial No. 281,120.



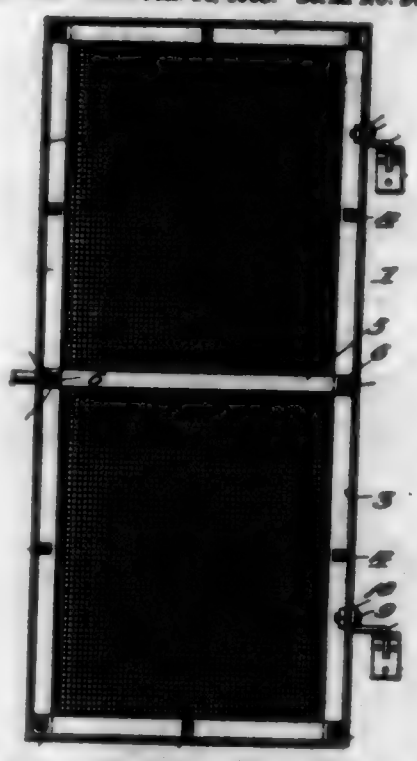
Claim.—1. An appliance of the character stated, comprising a casing having an inlet, a filtered-water outlet, and an intermediate socket, a chambered filter-holder, a bodily-removable filter having a sediment depression or pocket with foraminous sides and located in the holder, said holder being adapted to be given a half-rotation in the socket and provided with oppositely-arranged ports, one of the portions of the holder between the ports being closed to shut off liquid from the casing-outlet, while the other portion of the holder between the ports is provided with an opening to permit the entrance of liquid into the holder and filter, the casing having also a waste-outlet which communicates with one of said ports to permit the escape of waste water and sediment.

2. An appliance of the character stated, comprising a casing having an inlet, a filtered-water outlet, and an intermediate socket having a waste-outlet, a chambered filter-holder, a bodily-removable filter having a sediment depression or pocket with foraminous sides and located in the holder, said holder being adapted to be given a half-rotation in the socket and provided with oppositely-arranged ports, one of the portions of the holder between the ports being closed to shut off liquid from the casing-outlet, while the other portion of the holder between the ports is provided with an opening to permit the entrance of liquid into the holder and filter, the holder having also a waste-outlet adapted to receive water and sediment from the filter.

3. An appliance of the character stated, comprising a casing having an inlet, an outlet, and an intermediate socket, a chambered filter-holder adapted to be given a half-rotation in the socket and provided with oppositely-arranged ports which permit the passage of liquid from the inlet to the outlet, and a foraminous filter removably mounted in said holder and adapted to turn with said holder and having a depression or sediment-pocket in one side, said pocket having foraminous sides and coinciding with one of said ports.

4. A filter comprising a foraminous tube or shell having a depression or sediment-pocket with foraminous sides, and a filling of filtering material within said shell.

816,441. DOOR. FLOYD K. EASTMAN and ARTHUR M. EASTMAN, Manistique, Mich. Filed Jan. 14, 1905. Serial No. 241,144.



Claim.—A door comprising a frame made of angle metal, said frame having perforations in both of its sides, filling material in said frame, removable strips secured to the frame for holding the filling material in position, removable hinge-bolts fitted in the perforations on one side of said frame, hinges connected with said hinge-bolts, and a removable latch-pin fitted into one of the perforations in the opposite side of said frame.

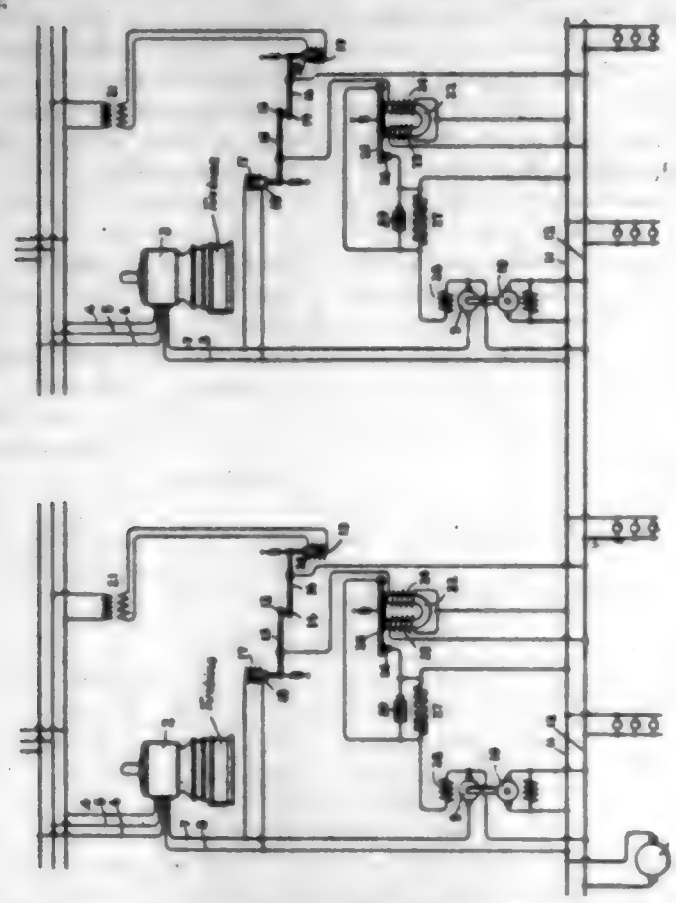
816,442. SYSTEM OF ELECTRICAL REGULATION. WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 1, 1904. Serial No. 214,878.

Claim.—1. The combination of an alternating-current generator having alternating-current mains leading therefrom, and having a direct-current exciting-circuit connected thereto, a source of exciting-current connected to said exciting-circuit, a booster interposed in the exciting-circuit, and a regulator for said booster responsive both to the voltage of the alternating-current mains and to the resultant voltage of said exciting-source and booster.

2. The combination of a plurality of alternating-current generators, a common source of exciting-current, and a booster or regulating source of voltage interposed between said source and each of said generators.

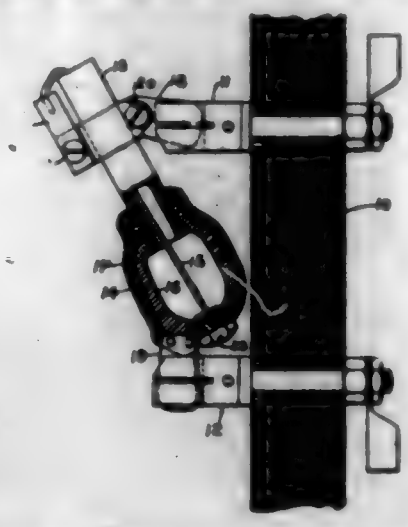
3. The combination of a dynamo-electric machine having two

relatively rotatable members, one of which is connected to an alternating-circuit and the other to a direct-current circuit, a voltage-generating device in circuit with said direct-current circuit, and a winding on said device responsive both to the voltage of the alternating-current mains and to the resultant voltage of said direct-current circuit.



4. The combination of a plurality of alternating-current dynamo-electric machines, a common source of exciting-current, and a regulating source of voltage interposed between the source of exciting-current and one or more of said machines.

816,443. EXPULSION-FUSE. CHARLES E. EVELETH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 14, 1904. Serial No. 208,037.



Claim.—1. A thermal cut-out or fuse, comprising an inclosing envelop consisting of an open-ended tubular portion and an enlarged portion or chamber having unyielding walls throughout, and a fuse-wire extending through said tubular and enlarged portions.

2. A thermal cut-out or fuse, comprising an inclosing envelop consisting of an open-ended tubular portion and an enlarged portion or chamber at or near one end thereof, said chamber having unyielding walls throughout and a fuse-wire surrounded by air and extending throughout the length of said envelop.

3. A thermal cut-out or fuse, comprising an inclosing envelop consisting of a tubular portion having one end open and terminating at its other end in an enlarged portion or chamber having unyielding walls throughout, and a fuse-wire extending through the said tubular and enlarged portions.

4. A thermal cut-out or fuse, comprising an inclosing envelop consisting of a tubular portion having one end open and terminating at its other end in an enlarged closed portion or chamber having unyielding walls throughout, and a fuse-wire surrounded by air and extending throughout the length of said envelop.

5. A thermal cut-out or fuse, comprising an inclosing envelop consisting of an open-ended non-conducting tube and an enlarged portion or chamber, said chamber being composed of pressure-resisting material and having unyielding walls throughout, and a fuse-wire extending through said tubular and enlarged portions.

6. A thermal cut-out or fuse, comprising an inclosing envelop consisting of an open-ended non-conducting tube and an enlarged portion or chamber, said chamber being composed of pressure-resisting material and having unyielding walls throughout, and a fuse-wire surrounded by air and extending throughout the length of said envelop.

7. A thermal cut-out or fuse, comprising an inclosing envelop consisting of a tubular portion having one end open and terminating at its other end in an enlarged portion or chamber having unyielding walls throughout, and a fuse-wire extending through said chamber and tubular portion beyond its open end and fixed to the outside of said tubular portion.

8. The combination with circuit-terminals, of a thermal cut-out or fuse, comprising an inclosing envelop provided with contacts adapted to be connected to said terminals, said envelop consisting of an open-ended tubular portion and an enlarged portion or chamber having unyielding walls throughout, and a fuse-wire in circuit with said contacts extending through the said enlarged and tubular portions.

9. The combination with circuit-terminals, of a thermal cut-out or fuse, comprising an inclosing envelop consisting of a tubular portion and an enlarged portion or chamber, an upper contact secured to the outside of said tubular portion, a lower contact secured to said enlarged portion, and a fuse-wire connected to the interior of said chamber and electrically connected to the lower contact and extending through said chamber and tubular portion beyond the open end of the latter into electrical connection with the upper contact.

10. A thermal cut-out or fuse, comprising a fuse-wire and an inclosing envelop therefor consisting of an open-ended tubular portion and an enlarged portion or chamber, said chamber being composed of material having higher pressure-resisting properties than said tubular portion and having unyielding walls throughout.

11. A thermal cut-out or fuse, comprising a fuse-wire and an inclosing envelop therefor consisting of a tubular portion having a non-conducting inner surface and an enlarged portion or chamber having an inner surface of conducting material and unyielding walls throughout, said fuse-wire being connected to the inner surface of the said chamber and extending therefrom through said tubular portion.

12. A thermal cut-out or fuse, comprising a fuse-wire and an inclosing envelop therefor consisting of a tubular portion having a non-conducting inner surface and an enlarged portion or chamber having a conducting inner surface, a contact electrically connected to the inner surface of said chamber, and a contact secured to the outer surface of said tubular portion, said fuse-wire being connected to the inner surface of said chamber and extending therefrom through said tubular portion beyond its open end into electrical connection with the adjacent contact.

13. The combination with a pair of fixed circuit-terminals, of a tubular fuse directly connected to and mechanically supported by said terminals and extending obliquely to a line joining said terminals.

14. The combination with a pair of fixed circuit-terminals, of a tubular fuse connected to and mechanically supported by said terminals, said fuse having its axis extending in front of one terminal and in rear of the other.

15. The combination with a pair of fixed circuit-terminals, of a removable tubular fuse directly connected to and mechanically supported by said terminals and extending obliquely to a line joining said terminals.

16. The combination with a pair of fixed circuit-terminals, of a tubular fuse removably connected to and mechanically supported by said terminals, said fuse having its axis extending in front of one terminal and in rear of the other.

17. The combination of a support, terminal clips extending from one face thereof, and a tubular fuse removably secured thereto and having the end of the tube adjacent to said support closed, said fuse lying with its closed end between said clips and its open end projecting away from said support.

18. The combination of a vertical support, vertically-disposed terminals thereon, and a tubular fuse removably secured thereto and having the end of the tube adjacent to said support closed and the open end extending upward and away from said support.

19. The combination with a pair of circuit-terminals of a tubular fuse having an open end pointing away from said terminals and connected thereto so as to be more firmly seated in said terminals by the recoil caused by the blowing of the fuse.

816,444. ELECTRIC SWITCH. AUGUSTINE R. EVERSLEY and RALPH E. BARKER, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Sept. 14, 1903. Serial No. 173,026.



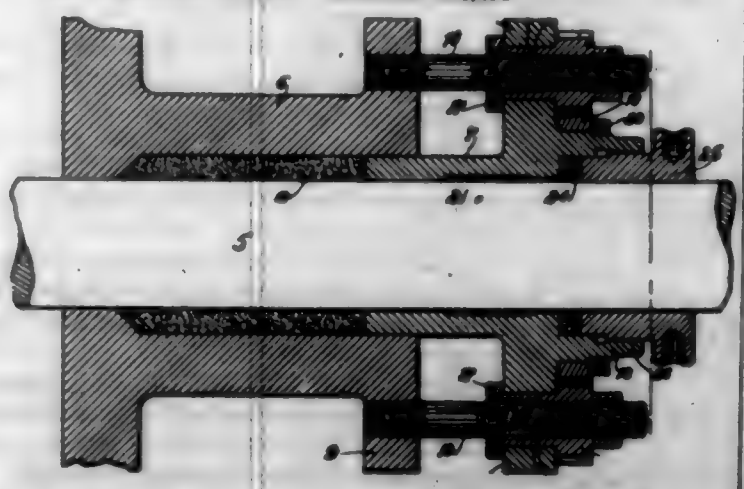
Claim.—1. The combination of an insulating-base, a plurality of stationary contacts mounted thereon, a metallic bush secured to said base and electrically connected to one of said contacts, a shaft journaled in said bush, and a switch-blade loosely mounted upon said shaft and connected thereto by a spring and adapted to make electrical connection between said bush and the respective stationary contacts.

2. The combination of an insulating-base provided with a central aperture, a plurality of stationary contacts mounted on one side thereof, a metallic bush secured in said central aperture, a metallic strip located on the opposite side of said base and electrically connected to said bush and one of the stationary contacts, a shaft journaled in said bush and provided with a crank-arm, a switch-blade loosely mounted on said shaft in the path of said crank and adapted to make electrical connection between said bush and the respective contacts, and a spring connecting said shaft and said switch-blade.

3. In an electric switch, the combination of an actuating-shaft, a switch-blade loosely mounted thereon and having one end bent up at right angles, a spring connecting said shaft and said blade, and a crank secured to said shaft and provided with two spaced lugs or projections one of which extends radially from the shaft and adapted to engage the bent end of the switch-blade and the other of which is bent up parallel to the shaft and adapted to engage an edge of the switch-blade.

4. In an electric switch, the combination of a base of insulating material provided with a circular recess with radial extensions therefrom, metal contacts seated in said extensions and extending into the circular recess, a metallic bush extending through said base concentric with said recess, and a shaft journaled in said bush and provided with a spring-pressed switch-blade adapted to make contact with said metallic contacts.

816,445. STUFFING-BOX. FREDERICK W. FELBERG, Dayton, Ky. Filed June 14, 1905. Serial No. 265,151.



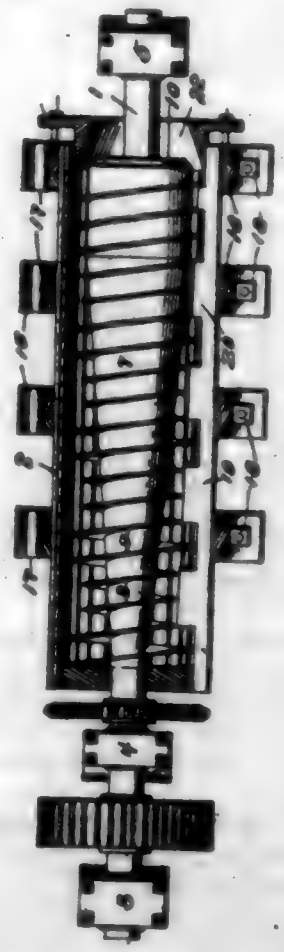
Claim.—1. In a stuffing-box, a casing, a plurality of threaded bolts fixed therein and projecting therefrom, a gland provided with a flange having openings through which said bolts project, nuts rotatably mounted on said bolts and bearing against said flange, and means for transmitting equally to all of said nuts movement imparted to any one of them, whereby all parts of said gland are moved forward at a uniform rate.

2. In a stuffing-box, a casing, a plurality of threaded bolts rigidly fastened thereto and projecting therefrom, a gland provided with a flange having openings through which said bolts project, nuts rotatably mounted on said bolts and bearing against said flange, and means for gearing said nuts together so that a rotary movement imparted to any one of the nuts will be transmitted to all and all parts of the gland will be moved at a uniform rate.

3. A stuffing-box consisting of a casing provided with a flange, a plurality of threaded bolts projecting from said flange, a gland, a plurality of gear-nuts carried by said gland and rotatably mounted on said bolts, and an idler-gear meshing with all of said gear-nuts and mounted upon said gland in such a manner that a rotary movement imparted to any one of said gear-nuts is transmitted to all.

4. In combination, a piston-rod, a stuffing-box for said piston-rod, consisting of a casing having a plurality of fixed threaded bolts projecting therefrom, a gland, a plurality of gear-nuts rotatably mounted on said bolts and in said gland, an idler-gear concentric with said shaft and meshing with said gear-nuts, the arrangement being such that all parts of said gland will be moved a uniform distance parallel to said shaft when a rotary movement is given to any one of said nuts.

816,446. PRESS. JOHN C. FINDTNENT, Brinkley, Ark., and JOHN J. MCNALLY, Norfolk, Va., assignors to The Continuous Extracting Press Corporation, Norfolk, Va., a Corporation of Virginia. Filed Oct. 24, 1904. Serial No. 230,787.



Claim.—1. In a press, a feed-screw having threads of alternately increasing and decreasing diameter.

2. In a press, a feed-screw having threads of different size so arranged that the threads of one size alternate with threads of another size.

3. In a press, a feed-screw comprising a tapering shaft, and threads of different sizes so arranged that threads of a greater diameter alternate with threads of a lesser diameter.

4. In a press, a feed-screw having threads for advancing and threads for dividing the material, the said different kinds of threads being arranged alternately.

5. In a press, a feed-screw comprising a tapering shaft, and having thereon threads for advancing and threads for dividing the material, the said different kinds of threads being arranged to alternate.

6. A press comprising a cylindrical press-chamber, and a feed-screw therein embodying a tapering shaft having advancing-threads and dividing-threads, the said different kinds of threads being arranged to alternate.

7. A press comprising a cylindrical press-chamber, and a feed-screw therein embodying a tapering shaft, dividing-threads which extend outward close to the inner wall of the press-chamber, and advancing-threads of relatively smaller diameter arranged to alternate with the dividing-threads.

8. A press comprising a cylindrical press-chamber, and a feed-screw therein comprising a tapering shaft having dividing-threads of uniform diameter, and advancing-threads of progressively-increasing diameter which are arranged to alternate with the dividing-threads.

9. In a press, a feed-screw comprising a shaft made tapering for a portion of its length and cylindrical for the remainder of its length, and means on said shaft for feeding or advancing the material along the press-chamber.

10. In a press, a feed-screw comprising a shaft made tapering for a portion of its length and cylindrical for the remainder of its length, and threads extending along both of such shaft portions.

11. In a press, a press-chamber, a feed-screw working therein, a resistance-plate having an outwardly-contracting discharge-orifice and adjustable toward and away from the discharge of the press-chamber, and means for holding said plate rigid when adjusted.

12. In a press, a press-chamber, a feed-screw working therein, and an annular resistance-plate having a conico-cylindrical orifice and made adjustable toward and away from the discharge of the press-chamber.

13. In a press, a press-chamber, a feed-screw working therein, and a stationary baffle within the press-chamber for preventing rotation of the material as it is acted on by the feed-screw.

14. In a press, a press-chamber, a feed-screw working therein, and a series of stationary baffles ranged along the press-chamber to counteract the tendency of the feed-screw to turn the material within said chamber.

15. In a press, a press-chamber, a feed-screw working therein, and one or more stationary baffles detachably connected with the press-chamber.

16. In a press, a press-chamber composed of a circular series of slats extending lengthwise thereof and arranged to leave intervening outwardly-expanding exits, and also formed with strainer-passages in their abutting faces, and strainers arranged in said passages.

17. In a press, a press-chamber composed of a circular series of slats extending lengthwise thereof and arranged to leave outwardly-expanding exits between them and having flat parallel abutting faces, and drain-ports formed in the abutting faces of said slats and leading outward from the press-chamber.

18. In a press, a press-chamber composed of a circular series of slats extending lengthwise thereof and arranged to leave intervening outwardly-expanding exits, and also formed with strainer-passages and drain-ports leading outward from said passages, and strainers arranged in the strainer-passages.

19. A press comprising a press-chamber, a feed-screw working therein, and a feeder embodying a casing, a rotary drum working therein, and feathering-blades mounted within the drum and connected therewith by roller-joints and projecting through the periphery of the drum, said blades being rotatable on an axis eccentric to the axis of the drum.

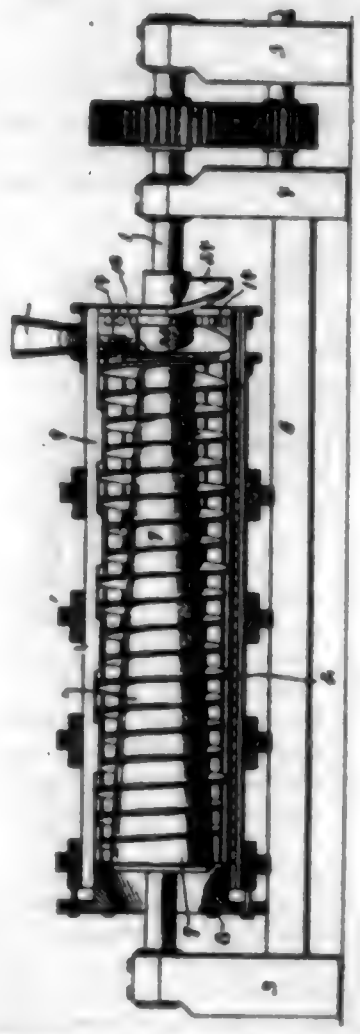
20. A press comprising a press-chamber, a feed-screw working therein, and a feeder embodying a casing, a rotary drum working therein, feathering-blades mounted in the drum and having a jointed connection with a shaft mounted within the drum, and a key made fast to said shaft and having a sliding engagement with the drum.

21. A press comprising a press-chamber, a feed-screw working therein, and a feeder embodying a casing, outer and inner rotary members, feathering-blades connected to the inner member and working through the periphery of the outer member, and a key fast to one of said members and having a sliding connection with the other member.

816,447. PRESS. John C. Pendergast, Brinkley, Ark., and John J. McNally, Norfolk, Va., assignors to The Continuous Extracting Press Corporation, Norfolk, Va., a Corporation of Virginia. Filed Apr. 3, 1905. Serial No. 253,426.

Claim.—1. In a press, a press-chamber having a stationary head, and a feed-screw working in said chamber and having a portion of its thread running substantially parallel to said head and offset therefrom to leave a receiving-space between said head and the said parallel portion of the thread.

2. In a press, a press-chamber having a stationary head, a feed-screw working in said chamber and having a portion of its thread arranged substantially parallel to said head, and means for varying the space between said head and the substantially parallel portion of the thread.



3. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a portion of its thread so disposed as to form in conjunction with said head a receiving-space with substantially parallel sides.

4. In a press, a press-chamber having a stationary head, and a feed-screw having a portion of its thread so disposed as to form in connection with said head a receiving-space with substantially parallel sides.

5. In a press, a press-chamber having a stationary head, a feed-screw working therein and having its thread so disposed as to leave in conjunction with said head a receiving-space with substantially parallel sides, and means for varying the width of said space.

6. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a thread of uniform pitch except at or near its receiving end where the thread is extended substantially parallel to said head and its extreme end portion pitched at a greater angle than the thread on the major portion of the screw.

7. In a press, a press-chamber having a stationary head, and a feed-screw working therein and having a portion of its thread of sectional construction.

8. In a press, a press-chamber, a feed-screw working therein, and means for varying the thickness of a portion of the thread of the feed-screw.

9. In a press, a press-chamber, and a feed-screw working therein and having a portion of its thread double or consisting of two parts each having a different pitch.

10. In a press, a press-chamber, a feed-screw working therein, and a positively-actuated automatic check at the receiving end of the press-chamber said check acting in conjunction with the feed-screw to hold back the incoming material.

11. In a press, a press-chamber, a feed-screw working therein, and a check at the receiving end of the press-chamber having a positive intermittent movement and acting in conjunction with the feed-screw to hold back the incoming material.

12. In a press, a press-chamber, a feed-screw working therein, a check at the receiving end of the press-chamber acting in conjunction with the feed-screw to hold back the incoming material, and means acting positively for advancing and retracting said check.

13. In a press, a press-chamber, a feed-screw working therein, a movable check connected with the press-chamber and acting in conjunction with the feed-screw to hold back the incoming material, and positively-acting check-actuating means carried by the screw-shaft.

14. In a press, a press-chamber, a feed-screw working therein, a movable check mounted in the head of the press-chamber, and means for advancing said check into the press-chamber and moving the same outward therefrom during each revolution of the screw.

15. In a press, a press-chamber, a feed-screw working therein, a check working through the head of the press-chamber and arranged to be thrown outward by the thread of the feed-screw, and a cam on the screw-shaft for throwing the check inward.

16. In a press, a press-chamber, a feed-screw working therein, a pivotally-mounted check at the receiving end of the press-chamber, and means for swinging said check to a position in line with the space between the screw-threads and away from said position.

17. In a press, a press-chamber, a feed-screw working therein, a check at the receiving end of the press-chamber, and means for varying the throw or reach of said check.

18. In a press, a press-chamber, a feed-screw working therein, and a sectional check at the receiving end of the press-chamber.

19. In a press, a press-chamber, a feed-screw working therein, and a laminated check at the receiving end of the press-chamber having detachable plies.

20. In a press, a press-chamber having a stationary head and a feed-screw working therein and having a portion of its thread so disposed as to form in conjunction with said head a receiving-space with substantially parallel sides, one of which is stationary and the other movable.

21. In a press, a press-chamber having a stationary head, a feed-screw working therein and having its thread so disposed as to leave in conjunction with said head a receiving-space with substantially parallel sides, one of which is stationary and the other movable, and means for varying the width of said space.

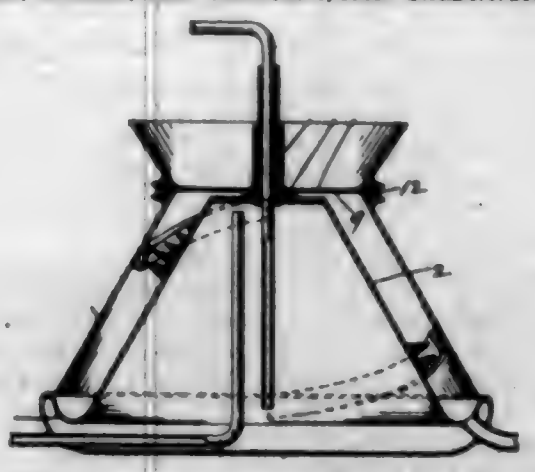
22. In a press, a press-chamber, a feed-screw working therein, a check working through the head of the press-chamber and arranged to be thrown outward by the thread of the feed-screw, and means on the feed-screw shaft for throwing the check inward.

23. In a press, a press-chamber, a feed-screw working therein, and means for varying the distance between the runs of the thread of the feed-screw at the place where said feed-screw is charged.

24. In a press, a press-chamber, a feed-screw working therein, and means for varying the distance between the terminal run of the thread at one end of the feed-screw and the adjacent head of the press-chamber.

25. In a press, a press-chamber, a feed-screw working therein and having a variable-size receiving throat or space, and a check of variable size working in the receiving throat or space of the feed-screw.

816,448. APPARATUS FOR TREATING LIQUIDS. HOMER O. FISHER, Cleveland, Ohio. Filed Oct. 6, 1905. Serial No. 281,583.



Claim.—1. In apparatus for treating liquids, in combination, a chamber provided with a medium for varying the temperature thereof, means for supplying the liquid to be treated to the surface of the casing of said chamber, and means contacting with said surface for preventing the collection of particles of substance upon the same.

2. In apparatus for treating liquids, in combination, a chamber provided with means for varying the temperature thereof, means for supplying the liquid to be treated to the surface of the casing of said chamber, and rotary means contacting with said surface for preventing the collection of particles upon the same.

3. In apparatus for treating liquids, in combination, a surface over which the liquid to be treated is adapted to flow, means for varying the temperature of said surface, and means contacting with the same for preventing the collection of particles thereon.

4. In apparatus for treating liquids, in combination, an inclined surface over which the liquid to be treated is adapted to flow, means for varying the temperature of said surface, and means contacting with said surface for preventing the collection of particles of substance upon the same.

5. In apparatus for treating liquids, in combination, a conical-shaped surface down which the liquid to be treated is adapted to flow, means for varying the temperature of the same, and means contacting with said surface for preventing the collection of particles of substance upon said surface.

6. In apparatus for treating liquids, in combination, a conical casing adapted to receive a stream of the liquid to be treated upon its inclined surface, and a rotary reservoir mounted upon said casing and adapted to deliver the liquid to be treated to the inclined surface of said casing.

7. In apparatus for treating liquids, in combination, a conical-shaped casing adapted to receive small streams of the liquid to be treated upon its inclined surface, a rotary reservoir mounted upon said casing and provided with means for delivering small streams of the liquid to be treated to the upper part of said surface, and means for varying the temperature of the surface of said casing.

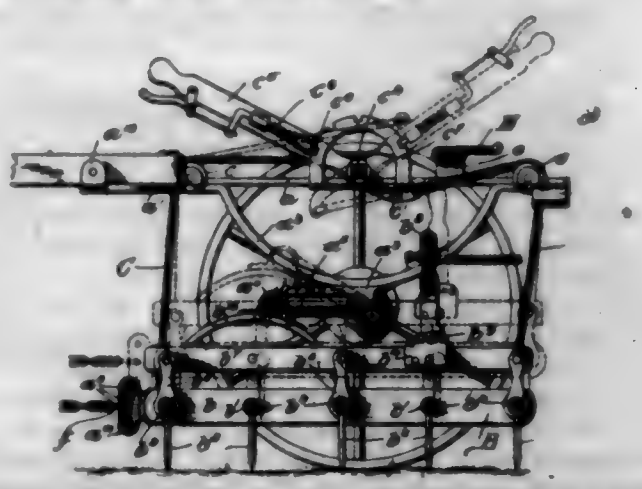
8. In apparatus for treating liquids, in combination a conical-shaped casing adapted to receive the liquid to be treated upon its inclined surface, means engaging said surface to prevent the collection of particles of substance upon the same, a reservoir mounted upon said casing and adapted to deliver the liquid to be treated to the inclined surface of said casing, and means for varying the temperature of said surface.

9. In apparatus for treating liquids, in combination, a frusto-conical-shaped casing adapted to receive the liquid to be treated upon its inclined surface, a brush engaging such surface to prevent the collection of particles of substance upon said surface, a reservoir mounted to deliver the liquid in small streams to said surface, means for shifting said brush upon said surface, and means for varying the temperature of said surface.

10. In apparatus for treating liquids, in combination a frusto-conical casing adapted to form a chamber for receiving the medium for varying the temperature of the liquid to be treated, a brush spirally arranged and adapted to engage the surface of said conical casing, means for rotating said brush, a reservoir mounted upon said conical casing and adapted to deliver small streams of the liquid to be treated to the surface of said casing, and means for supplying a medium to said surface for varying the temperature of the liquid.

11. In apparatus for treating liquids, the combination with the base, of a frusto-conical casing mounted therein and adapted to receive the liquid to be treated upon its inclined surface, a reservoir mounted upon said casing and provided with perforations for supplying small streams of the liquid to be treated to the surface of said casing, a brush carried by said reservoir and adapted to engage the surface of said conical casing, means for rotating said reservoir and said brush, and means for supplying a medium to said surface to vary the temperature thereof.

816,449. RIDING-HARROW. PHILIP FLEMING, Burton View, Ill. Filed Oct. 10, 1905. Serial No. 282,214.



Claim.—1. In a riding-harrow and in combination, a main frame comprising longitudinal bars and cross-bars connecting the ends of the longitudinal bars, downwardly-projecting arched brackets on the longitudinal bars, bearings on the brackets, a main shaft journaled in the bearings, and having a cranked portion therebetween, wheels on the ends of the shaft, a harrow-section below the frame, upwardly-projecting arched brackets on the harrow-sections, bearings on the brackets for engaging the cranked portion of the main shaft, a shaft journaled on the main frame above the main shaft, oppositely-projecting arms on the shaft within the frame, pulleys

journaled at the corners of the frame, eyes on the corners of the harrow-sections, flexible connections between the eyes and the oppositely-projecting arms and engaging the pulleys, a lever secured to the shaft, a toothed quadrant on the frame, a spring-actuated catch on the lever for engaging the teeth of the quadrant, and harrow-sections arranged upon either side of the central section and movably connected thereto.

2. In a riding-harrow and in combination, a main frame, brackets extending below the frame, a shaft journaled in the brackets and having a cranked portion, wheels on the ends of the shaft, a harrow-section below the frame, bearings on the harrow-section for engaging the cranked portions of the shaft, a shaft journaled in the frame, oppositely-arranged pairs of arms on the shaft, means for rotating the shaft, and a flexible connection between the arms and the harrow-section.

3. In a riding-harrow and in combination, a frame, a shaft journaled on the frame and having a cranked portion, wheels on the ends of the shaft, a harrow-section supported by the cranked portion, a second shaft journaled on the frame and provided with oppositely-arranged pairs of arms, a flexible connection between the arms and the harrow-section, and means whereby to rotate the second shaft.

4. In a riding-harrow, the combination with the frame having depending brackets, of a shaft journaled in the brackets and having a cranked portion, wheels on the ends of the shaft, a harrow-section having brackets provided with bearings for engaging the cranked portion of the shaft, and means on the frame for elevating and depressing the harrow-section.

816,450. HARNESS-SADDLE. GEORGE L. FORMAN, Louisville, Ky. Filed Oct. 7, 1905. Serial No. 281,763.



Claim.—1. A harness-saddle provided interiorly with a space which extends beneath its seat and has an open mouth, supporting means in said space, and a returning mechanism supported by said supporting means and extending beneath said seat and provided with means for connecting the same with the bridle-rein of the harness.

2. A harness-saddle provided interiorly with a space which extends beneath its seat and has an open mouth, supporting means in said space, a spring-drum mounted in said space and upon said supporting means, a strap extending from said drum and beneath said seat and means for connecting said strap with the bridle-rein of the harness.

3. A harness-saddle comprising a seat and a tree and having a chamber between the same, a supporting means in said chamber, and a returning means mounted in said chamber and supported by said supporting means, said returning means being movable relatively to said seat and having means adapted to connect it with the bridle of the harness.

4. A harness-saddle, comprising a seat and a tree, said seat being constructed to provide, between it and the tree, communicating chambers which are located one in advance of the other and of which the rear chamber is of greater diameter than the forward chamber and said forward chamber having an open mouth, a supporting means arranged in said rear chamber, and a returning means for said hook, carried by said supporting means and having a strap extending into said forward chamber and adapted to be drawn thence through the open forward end of the same, said strap having means adapted to connect it with the bridle-rein of the harness.

5. A harness-saddle, comprising a seat which is expanded at its rear end and has side and rear flanges which depend from its upper wall and are relatively arranged to form in the body of said seat communicating chambers which extend longitudinally thereof and are closed at the side and rear by said flanges, and a returning means supported in the rear chamber and extending through the forward chamber and provided with means adapted to connect it with the bridle-rein of the harness.

6. A harness-saddle, comprising a seat having top, side and rear walls relatively arranged to provide within it communicating chambers located one in advance of the other, the rear chamber being expanded with respect to the forward chamber and said forward chamber having an open mouth, a supporting means in said rear chamber, and a returning means mounted in said rear chamber upon said supporting means and having a part adapted to extend through the forward chamber and provided with means for connecting it with the bridle-rein of the harness.

7. A harness-saddle, comprising a seat having top, side and rear walls relatively arranged to provide within it communicating chambers located one in advance of the other, one of said chambers having spaced flanges within its interior, a check-hook adapted to move relatively to said seat, and a returning means for said hook, supported by said flanges and connected with said hook.

8. A harness-saddle, comprising a seat vertically expanded at the rear and having an upper wall provided with depending side and rear flanges relatively arranged to provide communicating chambers which extend longitudinally of the seat and are closed at the side and rear and open at the front, a spring-drum mounted to rotate in the vertically-expanded rear chamber of the seat, a strap on said drum, extending thence into the forward chamber and adapted to be drawn through the open forward end of the latter and a check-hook connected with the forward end of said strap.

9. A harness-saddle, comprising a seat having a chamber formed within it and provided within said chamber with spaced flanges, a spring-drum supported by said flanges and mounted to rotate between the same, a strap mounted on said drum and a check-hook connected with said strap.

10. A harness-saddle, comprising a seat vertically expanded at the rear and having an upper wall, side walls and a rear wall relatively arranged to provide communicating chambers closed at the top, sides and rear, spaced flanges in said rear chamber, a check-hook adapted to move relatively to said seat and a spring-actuated returning means for said hook, connected therewith and arranged in said chambers and supported by said flanges.

11. A harness-saddle, comprising a seat vertically expanded at the rear and having an upper wall, side walls and a rear wall relatively arranged to provide communicating chambers closed at the top, sides and rear, spaced flanges in said rear chamber, said flanges having slots, a shaft supported by said flanges and having its ends mounted in said slots, a drum mounted to rotate on said shaft, a spring connected to said drum and shaft, a strap mounted on said drum, and a check-hook connected with said strap.

12. A harness-saddle, comprising a chambered seat having a bridge-piece at its forward end, a tree secured to said bridge-piece, a check-hook adapted to move relatively to said seat and a returning means for said hook connected therewith and arranged within the chamber in said seat.

13. A harness-saddle provided with a chamber arranged beneath the upper surface of its seat, a supporting means arranged in said chamber, a check-hook adapted to move relatively to said saddle, and a returning means for said hook carried by said supporting means.

14. A harness-saddle provided interiorly with a chamber which is open at the front end, a supporting means arranged in said chamber, a check-hook outside said chamber, and a returning means for said hook, comprising a spring-drum which is mounted in said chamber and upon said supporting means and is provided with a strap which is adapted to extend through the open front end of the saddle, and is connected with said hook.

15. A harness-saddle provided interiorly with a space which extends longitudinally thereof, beneath its seat and is open at the front, a supporting means arranged in said space, a connecting device movable outside of said space and in position to have its rearward movement stopped by the front end of said seat, and a returning means for said device, supported in said space and upon said supporting means and provided with a strap which extends longitudinally of said space and is connected with said device.

16. A harness-saddle provided interiorly with a space which extends longitudinally thereof beneath its seat and is open at the front, a supporting means arranged in said space, a check-hook movable outside of said space and in position to have its rearward movement stopped by the front end of said seat, and a returning means for said device, comprising a spring-drum mounted in said space and upon said supporting means and provided with a strap which extends longitudinally of said chamber and is connected with said hook.

17. A harness-saddle comprising a seat and a tree and having a space between the same, a bridge-piece extending across but not closing one end of said space and connected with said seat and tree, a lip connecting the tree and seat with each other at the end remote from said bridge-piece, and a returning means adapted to be connected with the bridle-rein and supported in said space.

18. A harness-saddle, comprising a chambered seat having a

bridge-piece at one end and a lip at the other end, a tree one end of which is secured to said bridge-piece and the other end of which is engaged by said lip, a movable check-hook, and a returning means for said hook connected therewith and arranged in the chamber in said seat.

19. A harness-saddle, comprising a chambered seat having a bridge-piece at one end and a lip at its other end, a tree one end of which is secured to said bridge-piece and the other end of which is engaged by said lip, a movable check-hook, and a returning means for said check-hook, connected therewith and arranged in the chamber in said seat, said returning means comprising a spring-drum and means extending through said seat and connecting said drum with said hook.

20. A harness-saddle, comprising a seat and a tree, flanges projecting from one of the same toward the other, a check-hook adapted to move relatively to said saddle and an automatic returning means for said hook mounted between said seat and tree and supported by said flanges.

21. A harness-saddle, comprising a seat and a tree, flanges projecting from one of the same toward the other, a check-hook adapted to move relatively to said saddle and an automatic returning means for said hook comprising a spring-drum mounted between said seat and tree and supported by said flanges.

816,451. **IMPLEMENT FOR TRUING THE INTERNAL FORMS OF TUBES.** FRANCIS A. FORWOOD, Chester, Pa. Filed Dec. 30, 1903. Serial No. 187,126.



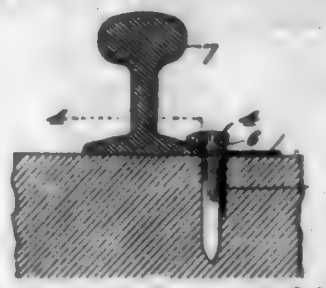
Claim.—1. In an implement for truing the internal forms of tubes, the combination of a radially-slotted body containing within its slots diametrically-expansible bearings each carrying a roller, said body with its bearings and rollers being adapted to be indefinitely progressed through a tube which is to be trued; a bar carrying said body, slidably fitted therein, and having a tapering portion adapted to expand said bearings when thrust forward within the radially-slotted body; means for preventing rotation of said slotted body upon said bar; and an adjustable collar upon said bar of a size small enough to pass through the tube to be trued by which the extent to which the bar may be thrust into the body is limited, substantially as set forth.

2. In an implement for truing the internal forms of tubes, the combination of a radially-slotted body containing within its slots diametrically-expansible bearings each carrying a roller with a cylindrical and a tapering face, said body with its bearings and rollers being adapted to be indefinitely progressed through a tube which is to be trued; a bar carrying said body, slidably fitted therein, and having a tapering portion adapted to expand said bearings when thrust forward within the radially-slotted body; means for preventing rotation of said slotted body upon said bar; and an adjustable collar upon said bar of a size small enough to pass through the tube to be trued by which the extent to which the bar may be thrust into the body is limited, substantially as set forth

3. In an implement for truing the internal form of tubes, the combination of a radially-slotted body containing within its slots diametrically-expansible bearings, each carrying a roller, the said body with its bearings and rollers being free to be indefinitely progressed through a tube which is to be trued; a bar by which said body is carried, slidably fitted therein, and having a tapering portion adapted to expand said bearings; means for preventing rotation of said slotted body upon said bar; and shoulders upon the bar which limit the motion of the body upon it in either direction, and both of which are small enough to pass freely within the tube to be trued, between which shoulders the body is free to slide longitudinally upon the bar, substantially as set forth.

816,452. **COMBINED RAIL AND SPIKE BRACE.** GEORGE A. FREEMAN, Grampian, and CHARLES E. SOUTMAN, Cresson, Pa. Filed Aug. 13, 1905. Serial No. 273,913.

Claim.—1. A combined rail and spike brace, embodying a body portion and a depending tongue, said body portion projecting beyond said tongue at each side thereof.



2. A combined rail and spike brace, embodying a body portion and a tongue projecting therefrom, said tongue being bent at an angle to said body portion and projecting into said body portion so as to leave the latter projecting on each side thereof.

3. In combination with a rail, a tie, and a spike driven into said tie and engaging said rail, a brace consisting of a body portion and a tongue projecting therefrom and driven into the tie immediately back of said spike, said body portion projecting on each side of said tongue to contact with the rail-flange when said tongue is driven into place.

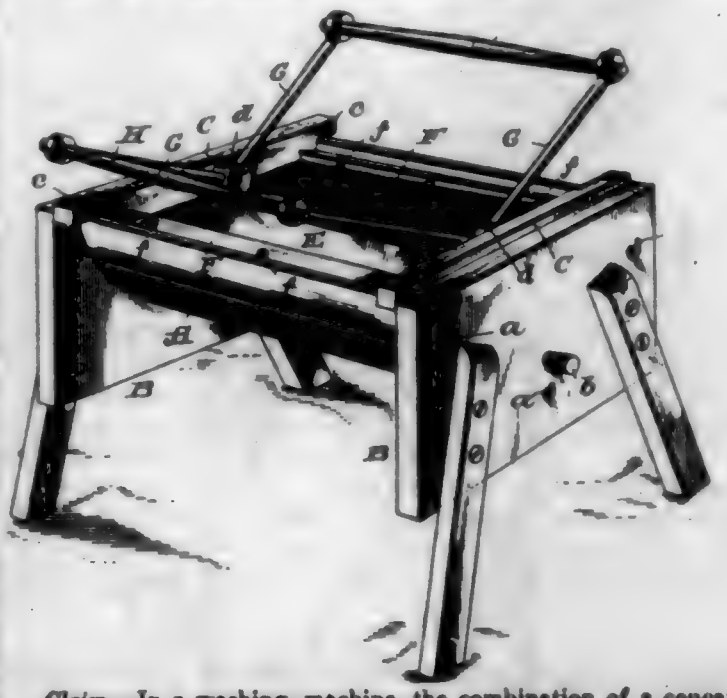
4. The combination with a rail, a tie, and a spike driven into said tie and engaging said rail, a brace consisting of a body portion and a tongue projecting therefrom and formed wider than said spike, said tongue being driven into the tie immediately back of said spike, said body portion projecting on each side of said tongue to contact with the rail-flange when said tongue is driven into place.

816,453. **BOOT AND SHOE TREE.** STEPHEN FRENCH, Swanscombe, England, assignor to Industrial Patents Limited, London, England. Filed Aug. 12, 1905. Serial No. 273,970.



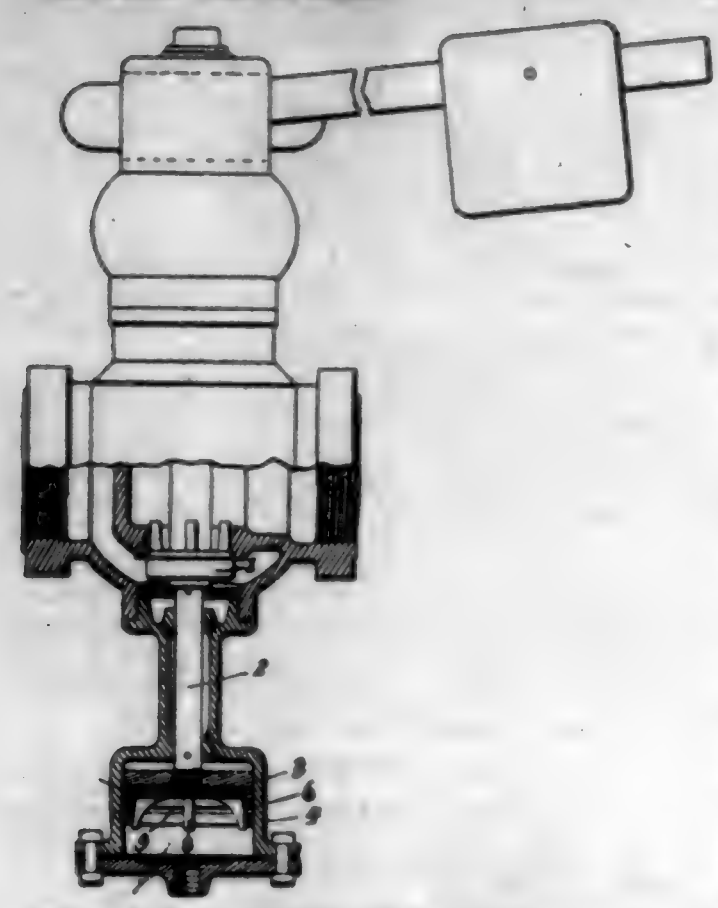
Claim.—The herein-described boot or shoe tree consisting of the front piece or tree, a spring composed of a metal strip bent upon itself and pivoted to the tree, the two members of said spring being secured together between the ends of the spring to provide a longer and shorter portion, for the purpose described.

816,454. **WASHING-MACHINE.** CHARLES O. PROSTERSON, Ashland, Wis. Filed Dec. 22, 1904. Serial No. 237,994.



Claim.—In a washing-machine, the combination of a concave tub and a support therefor, notched beams adapted to fit within the upper edges of said tub, pintles mounted in said beams and carrying a beater, said beater being composed of headed portions to which said pintles are secured, and perforated presser-boards arranged at an angle to each other supported by said heads, said presser-boards being provided with tongues at each end projecting beneath said beams, perforated abutments extending longitudinally of said tub, and means for oscillating said beater, substantially as described.

816,455. DIAPHRAGM FOR CONTROLLING VALVES. LOUIS B. FULTON, Pittsburg, Pa., assignor to The Chapin-Fulton Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 1, 1904. Serial No. 196,026.

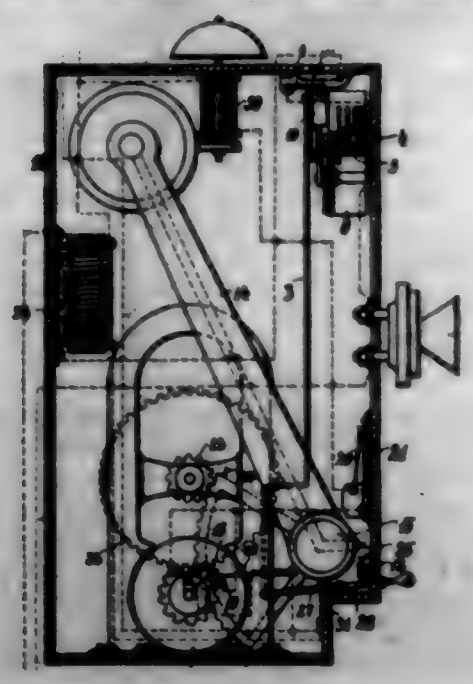


Claim.—1. The combination with the cylinder and a piston-like head movable therein, of a freely-movable cup-shaped imperforate diaphragm in said cylinder, and means concentric with but not secured to the diaphragm for protecting the same from engagement with the end of said cylinder.

2. The combination with a cylinder having a piston-like head movable therein, of a diaphragm bearing against but not secured to such head and having a cylindrical portion fitted against the wall of the cylinder, and a chair concentric with the interior of such diaphragm and having a portion or portions designed to project beyond the outer edge of the latter when the chair is within the diaphragm, as set forth.

3. The combination with a cylinder having a piston-like head movable therein, of a diaphragm bearing against but not secured to such head and having a cylindrical portion fitted against the wall of the cylinder, and a chair concentric with the interior of such diaphragm conforming thereto and having an annular opening, and lugs designed to project beyond the outer edge of the diaphragm when the chair is within the latter, as set forth.

816,456. TIME-REGISTER FOR TELEPHONES. GUSTAV FIRST, Pressburg, Austria-Hungary. Filed Jan. 26, 1904. Serial No. 191,190.



Claim.—1. A time-register for telephones, provided with means for registering the time of use of the transmitter independently of the receiver.

2. A time-register for telephones, comprising a motor-train mechanism, a transmitter and means to permit both to act together and a receiver adapted to be used independently of the mechanism and transmitter.

3. A time-register for telephones, comprising a motor-train mechanism, a transmitter and transmitter-circuit, and manually-operated means for placing said mechanism and transmitter into operative position and a receiver independent of the mechanism and transmitter.

4. A time-register for telephones, comprising a motor-train mechanism, a transmitter, a transmitter-circuit, and manually-operated means for placing said mechanism and transmitter into operative position, in combination with means adapted to actuate such mechanism, itself actuated by said manually-operated means.

5. A time-register for telephones, comprising a motor-train mechanism, a transmitter, a transmitter-circuit, a receiver, an electromagnetic mechanism adapted to make inoperative the mechanism and transmitter, and a circuit-closing device to operate said electromagnetic mechanism.

6. A time-register for telephones, comprising a motor-train mechanism, a transmitter, a transmitter-circuit, a receiver, an electromagnetic mechanism adapted to make inoperative the mechanism and transmitter, the receiver carrying in its handle a circuit-closing device for operating said electromagnetic mechanism, said receiver itself being unaffected by said mechanism.

7. A time-register for telephones, in combination with a receiver and a transmitter and means for registering the time of use one independently of the other.

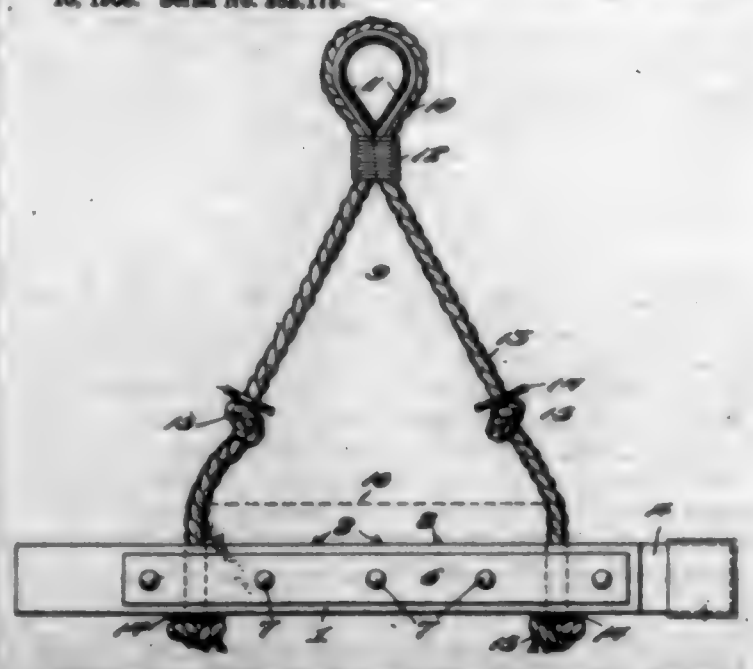
816,457. BLUE FIBROUS MATERIAL AND PROCESS OF DYEING SAME. VICTOR FUSSENEGGER, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Feb. 7, 1905. Serial No. 244,630.

Claim.—1. The process herein described for the manufacture of fast-blue dyestuffs on the fiber, which consists in saturating the fiber with a mixture of alkylated diamidobenzhydrols and diphenylamin derivatives and in oxidizing same together by means of an oxidizing agent.

2. The process of dyeing, which consists in preparing leuco compounds from a mixture of alkylated diamidobenzhydrols and diphenylamin derivatives, saturating the fibers with said compounds and oxidizing them to a dye by oxidizing agents.

3. As a new product, a fibrous material of blue shade, obtained by oxidizing a mixture of alkylated diamidobenzhydrols and diphenylamin derivatives within the fiber, being fast to water, soap, soda, dilute alkalies and acids and reduced by hydrosulfite.

816,458. SCAFFOLD-SUPPORT. ANWYL O. GARDINER, Oakland, Cal., assignor of one-half to D. Knabbe, Oakland, Cal. Filed Oct. 10, 1905. Serial No. 282,179.



Claim.—A scaffold-plank-supporting beam having slots running from each end toward the center and a hanger comprising flexi-

ble sections adapted to engage in said slots and having a series of enlargements to engage the under side of the beam, whereby the points of such engagement may be shifted for different widths of plank and the hanger members will automatically draw in to embrace the sides of said plank.

816,459. EDGE-TRIMMER. JAMES A. GATES, Detroit, Mich., assignor of one-half to John Hinchman, Detroit, Mich. Filed June 12, 1905. Serial No. 161,186.



Claim.—1. The combination of a cutter-blade having a central aperture adapted to permit the passage of a bolt, a shaft axially perforated to permit the passage of a bolt, said shaft being formed in two portions, one of said portions increasing in diameter toward its inner end, the inner ends of the portions of the shaft being against the blade, a bolt passing through the perforations in the shaft and aperture in the blade, a nut upon said bolt, said nut and bolt acting only upon said shaft to bind the two parts together and against the blade, a holder having separable forks and having a bearing on one of said forks adapted to fit the surface of variable diameter on said shaft, and a bolt and nut for securing said forks together.

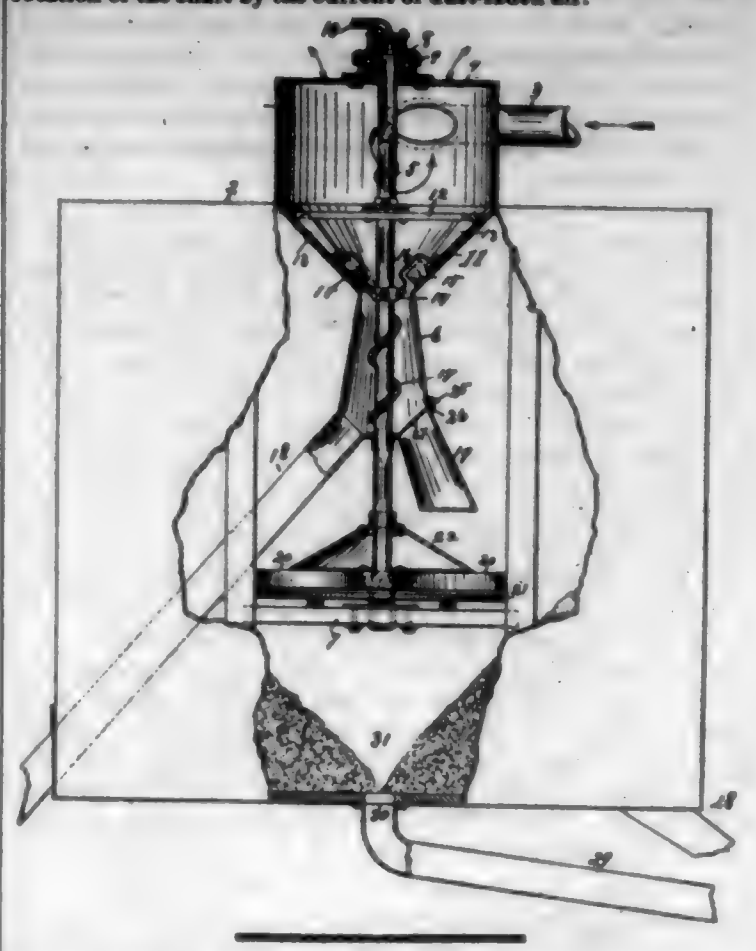
2. The combination of a cutter-blade having a central aperture adapted to permit the passage of a bolt, a shaft axially perforated to permit the passage of a bolt, said shaft being formed in two portions, each of said portions being formed of increasing diameter toward its inner end, the inner ends of said portions of the shaft being against the blade, a bolt passing through the perforations of said axle and aperture in the blade, and acting only against the portions of the shaft to bind the same together and against the blade, and a holder having separable bearings adapted to fit the surfaces of varying diameter on the shaft, and a bolt and nut adapted to secure said bearings together.

816,460. AUTOMATIC DISTRIBUTER FOR BLOWER-SEPARATORS. GEORGE GEISENDORFER and WILLIAM A. ALLEN, Upton, Cal.; said Allen assignor to said Geisendorfer. Filed Oct. 14, 1905. Serial No. 282,955.

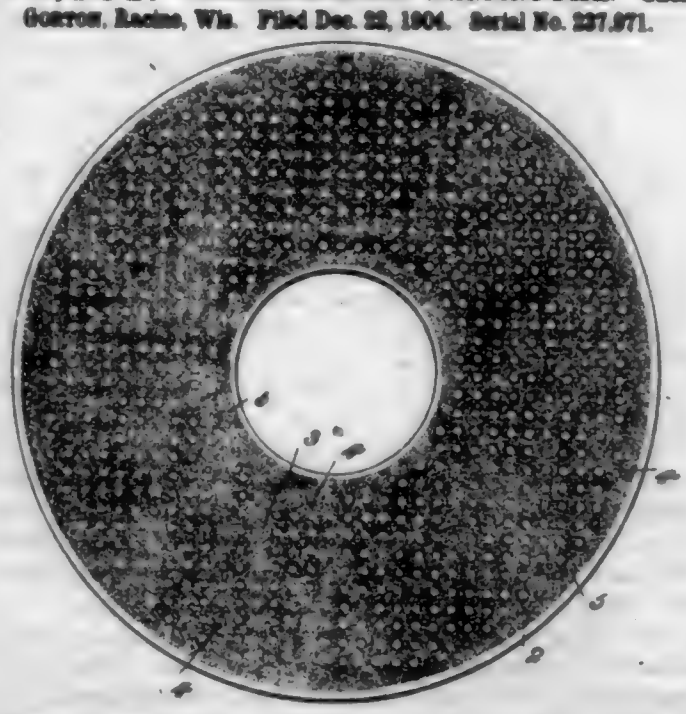
Claim.—1. In a distributer for blower-separators, a casing provided with a chute, two conduits leading from the lower end of the chute, valves for closing said conduits, a rotary shaft through the casing, and a distributer at the lower end of the shaft under the end of one of said conduits.

2. In a distributer for blower-separators, a casing provided with a chute, two diverging conduits leading from the lower end of the chute, an oscillating valve for each of the conduits, an oscillating handle connected with said valves for moving them across said conduits alternately, a rotary shaft through the chute and between said valves, and a distributer on the shaft below the end of one of said conduits.

3. A distributer for blower-separators comprising a cylindrical casing, having a downwardly-tapered lower part forming a hopper, a chute connected to the lower part of said hopper, a platform below the chute, a shaft passing through the casing, hopper and chute, an agitator secured to the shaft within the hopper, a spiral secured to the shaft within the chute, blades on the lower end of the shaft in proximity to the platform, a conical deflector secured to the shaft and having its base immediately above the blades, the ends of said blades extending beyond the said base, and means for causing the rotation of the shaft by the current of dust-laden air.



816,461. CLEARANCE-SPACE GRINDING-DISK. GEORGE GORTON, Racine, Wis. Filed Dec. 22, 1904. Serial No. 237,971.



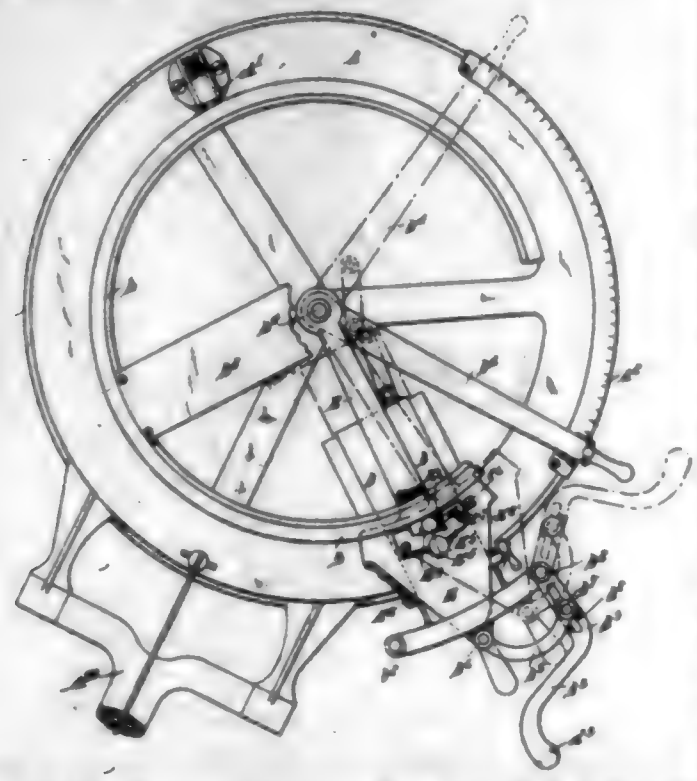
Claim.—1. A grinding-sheet having a working abrading-surface secured on a face thereof and consisting of a layer of adhesive and grit formed with a multiplicity of isolated non-working clearance-spots distributed throughout said surface, each surrounded by said abrading-surface, whereby all portions of said layer are bound or connected together, substantially as described.

2. A grinding-sheet consisting of a flexible sheet having a layer 3 of abrading material secured on a face thereof and formed with a multiplicity of isolated blank clearance-spots 4, distributed throughout said layer between the margins thereof, substantially as described.

816,462. CHEESE-CUTTER. JOHN HALLIDAY, Detroit, Mich. Filed Feb. 5, 1904. Serial No. 192,213.

Claim.—1. The combination of a cheese-carrier, a device adapted to be manipulated, means for connecting a point on the carrier with a point on the manipulated device, and means for constraining the motion of the manipulated device so that it shall move at an increasing angle to the portion of the carrier with which it is directly connected and thereby decrease the rate of movement of the carrier toward the end of travel of the manipulated device, for the purpose described.

2. In a cheese-cutter, the combination of a rotary cheese-supporting device, a frictional clutch coacting with the cheese-supporting device adapted to actuate said supporting device during its stroke in one direction and to move independently thereof during its stroke in the other direction, a pivoted lever-arm adapted to actuate said frictional clutch, and means for connecting said lever-arm to said clutch, said lever-arm being arranged to finish its stroke at or near its dead-center.



3. In a cheese-cutter, the combination of a rotary cheese-supporting device, a reciprocating part adapted to actuate the cheese-carrying device during its stroke in one direction, and to move independent thereof during its stroke in the other direction, a pivoted lever-arm adapted to actuate said actuating device, and means for connecting said lever-arm to said actuating device adjustably toward and away from the pivot of said lever-arm.

4. In a cheese-cutter, the combination of a rotary cheese-supporting device, a reciprocating part adapted to actuate the cheese-carrying device during its stroke in one direction, and to move independent thereof during its stroke in the other direction, a pivoted lever-arm adapted to actuate said actuating device, and means for connecting said lever-arm to said actuating device, said lever-arm being arranged to finish its stroke at or near its dead-center.

5. In a cheese-cutter, the combination of a base, a revoluble carrier, and mechanism for revolving said carrier comprising an arm and a pivoted element so arranged as to move said arm at constantly-decreasing speed relative to the rate of movement of said pivoted element, whereby the movement of said carrier ends before the end of the movement of said pivoted element.

6. In a cheese-cutter, the combination of a base, a revoluble carrier, and mechanism for revolving said carrier comprising an arm and a pivoted element so arranged as to move the arm near the completion of its stroke at a constantly-decreasing speed relative to the rate of movement of said pivoted element, whereby the movement of said carrier ends before the end of the movement of said pivoted element.

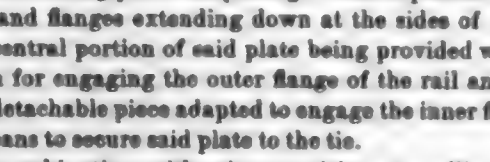
7. In a cheese-cutter, the combination of a base, a revoluble carrier, mechanism for revolving said carrier, and a pivoted element so arranged as to move said carrier-revolving mechanism at a constantly-decreasing speed relative to the rate of movement of said pivoted element, whereby the movement of said carrier ends before the end of the movement of the pivoted element.

8. In a cheese-cutter, the combination of a base, a revoluble table, a lever for moving said table a predetermined distance, and connections between the lever and table whereby the movement of the table ceases before the movement of the lever ceases.

9. In a cheese-cutter, the combination of a base, a revoluble table, a handle for moving said table a predetermined distance, and connections between the handle and table whereby the movement of the table gradually ceases with a constant rate of movement of the handle.

10. In a cheese-cutter, the combination of a base, a revoluble table, a handle for moving said table a predetermined distance, and connections between the handle and table whereby the movement of the table gradually ceases before the handle reaches the limit of its throw.

816,463. RAILWAY-TIE. WILLIAM I. F. HARDEN, Hartford, Kans. Filed Dec. 15, 1905. Serial No. 291,837.



Claim.—1. The combination, with a tie having a depression in its upper face, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the tie, one end of the central portion of said plate being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail, and means to secure said plate to the tie.

2. The combination, with a tie having a depression in its upper surface, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the tie, one end of the central portion of said plate being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail and securing-bolts extending horizontally through the tie from one flange to the other.

3. The combination, with a tie having a depression in its upper surface, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the tie, one end of the central portion of said plate being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail, the ends of the flanges of the rail-plate extending beyond the edges of the rail and provided with bolt-holes, and securing-bolts extending horizontally through the tie from one flange to the other.

4. The combination, with a tie comprising a metallic casing with a concrete and wood filling and having a depression in its surface, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the tie, one end of the central portion of said plate being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail, and means to secure said plate to the tie.

5. The combination, with a tie comprising a metallic casing filled with concrete with blocks of wood embedded therein at the points where the rails are to rest, said wooden blocks arranged below the level of the upper surface of the tie and the sides of the casing formed with slots to correspond, of rail-locking plates each comprising a central portion fitting in the depression formed by one of said wooden blocks and the slots in the casing of the tie, and flanges extending down at the sides of the tie, said plates having means to engage the rails and means to secure said plates to the tie.

6. The combination, with a tie comprising a metallic casing filled with concrete with blocks of wood embedded therein at the points where the rails are to rest, said wooden blocks arranged below the level of the upper surface of the tie and the sides of the casing formed with slots to correspond, of rail-locking plates each comprising a central portion fitting in the depression formed by one of said wooden blocks and the slots in the casing of the tie, and flanges extending down at the sides of the tie, one end of the central portion of each of said plates being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail, and means to secure said plate to the tie.

7. The combination, with a tie comprising a metallic casing filled with concrete with blocks of wood embedded therein at the points where the rails are to rest, said wooden blocks arranged below the level of the upper surface of the tie and the sides of the casing formed with slots to correspond, of rail-locking plates each comprising a central portion fitting in the depression formed by one of said wooden blocks and the slots in the casing of the tie, and flanges extending down at the sides of the tie, one end of the central portion of each of said plates being provided with an integral portion for engaging the outer flange of a rail and the other end with a detachable piece adapted to engage the inner flange of the rail, the ends of the flanges of the rail-plate extending beyond the edges of the rail and provided with bolt-holes, and securing-bolts extending horizontally through the tie from one flange to the other.

8. The combination, with a tie comprising a casing formed with a broad lower portion or base and a narrower upper portion and a

filling of concrete and wood, said tie formed with a depression in its upper surface, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the upper portion of the tie, said plate having means to lock a rail and means to secure said plate to the tie.

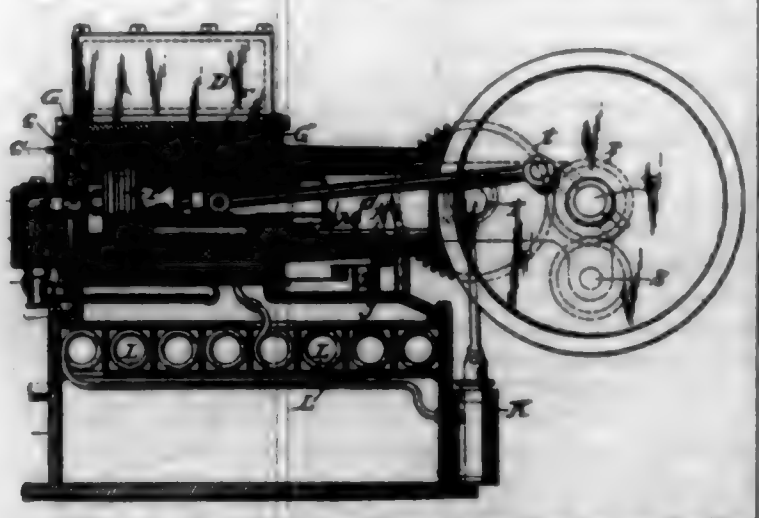
9. The combination with a tie comprising a casing formed with a broad lower portion or base and a narrower upper portion and a filling of concrete with blocks of wood embedded therein at the points where the rails are to rest, said wooden blocks arranged below the level of the upper surface of the tie and the sides of the casing formed with slots to correspond, of rail-locking plates each comprising a central portion fitting in the depression formed by one of said wooden blocks and the slots in the casing of the tie and flanges extending down at the sides of the tie, said plates having means to engage the rails and means to secure said plates to the tie.

10. The combination with a tie comprising a casing formed with a broad lower portion or base and a narrower upper portion and a filling of concrete with blocks of wood embedded therein at the points where the rails are to rest, said wooden blocks arranged below the level of the upper surface of the tie and the sides of the casing formed with slots to correspond, of rail-locking plates, each comprising a central portion fitting in the depression formed by one of said wooden blocks and the slots in the casing of the tie, and flanges extending down at the sides of the tie, one end of the central portion of each of said plates being provided with an integral portion for engaging the outer flange of the rail and the other end with a detachable piece adapted to engage the inner flange of the rail, and means to secure said plate to the tie.

11. The combination, with a tie comprising a casing formed with a broad lower portion or base and a narrower upper portion and a filling of concrete and wood, said tie formed with a depression in its upper surface, of brace-bars arranged in the upper angles of the tie and provided with slots adapted to register with the slots in the casing, a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the upper portion of the tie outside of said brace-bars, said plate having means to lock a rail and means to secure said plate to the tie.

12. The combination, with a tie comprising a casing formed with a broad lower portion or base, a narrower upper portion having its upper edges bent over forming braces, and a filling of concrete and wood, said tie formed with a depression in its upper surface, of a rail-locking plate comprising a central portion fitting said depression and flanges extending down at the sides of the upper portion of the tie, said plate having means to secure said plate to the tie.

816,464. **ENGINE.** WILLIAM HECKERT, Findlay, Ohio, assignor of one-half to Henry W. Seney, Toledo, Ohio. Filed Oct. 4, 1904. Serial No. 227,168.



Claim.—1. An engine comprising, in combination, a plurality of longitudinally-arranged cylinders whose working pistons are impelled in opposite directions by action of combustible gas on one side and steam on the other side, means controlling the admission, ignition and exhaust of gas for the proper times for the different pistons, a water-chamber surrounding the cylinders and having a surmounting steam-dome, a steam-chest common to the cylinders having communication with the steam-dome, and a valve working in said steam-chest controlling the admission and exhaust of steam at the proper times for the different cylinders.

2. An engine comprising, in combination, a plurality of longitudinally-arranged cylinders whose working pistons are impelled in opposite directions by action of combustible gas on one side and steam on the other side, suitably-timed gas inlet and exhaust valves and igniters for the combustion-chambers, annular water-spaces surrounding the cylinders and merging into a common steam-dome, fire-flues extending through said annular water-spaces for conducting the hot gases of combustion therethrough, a common steam-chest located between the cylinders, a pipe supplying the same with steam from the steam-dome, and a valve working in said steam-chest controlling admission and exhaust of steam for the steam sides of the cylinders.

3. An engine comprising, in combination, a base constituting a water-tank; a bed-frame thereon comprising in a rigid structure two parallel cylinders, an intermediate common steam-chest, outer shells providing annular water-spaces and merging into a surmounting steam-dome, and extensions from the rear cylinder-heads supporting the bearings for the crank-shaft; a crank-shaft journaled in said bearings having crank-wheels connected to the working pistons; a valve in said steam-chest automatically controlling admission and exhaust of steam to one side of each piston; means for automatically introducing, igniting and exhausting combustible gas at the opposite side of each piston; fire-flues extending through the said water-spaces for receiving the hot gases; a serpentine exhaust-passage in communication with said fire-flues; and a similar passage for the inflowing feed-water in association therewith.

4. An engine having, in combination a plurality of longitudinally-arranged cylinders whose working pistons are impelled in opposite directions by action of combustible gas on one side and steam on the other, an intermediate steam-chest, a surrounding water-chamber in which the water is heated by the hot gases, a steam-dome from which steam is supplied to said steam-chest, a rotary valve in said steam-chest supplying steam alternately to the respective cylinders, and gas-control devices operated by rotation of said valve.

5. An engine having, in combination, two cylinders with oppositely-moving pistons, an intermediate steam-chest, a hollow rotary valve therein rotating once to every two rotations of the crank-shaft, said valve having openings for admission of steam thereinto and diametrically opposite inlet-ports therethrough and intermediate diametrically opposite exhaust-ports consisting of outer channels adapted to communicate with the exhaust, and ports leading from the steam-chest to the cylinders located so that an exhaust-port registers with one cylinder-port when an inlet-port registers with the other cylinder-port.

6. An engine having, in combination, a cylinder whose working piston is driven by combustible gas, a surrounding water-space or boiler, a series of fire-flues extending through said water-space having communication at one end with the combustion-chamber, a winding or convolute fire-passage with which said flues communicate at the opposite end, and a feed-water pipe arranged in large convolutions composed of close spiral coils throughout said winding fire-passage.

7. A combined gas and steam engine wherein the hot gases are utilized for heating water for generation of steam, a winding exhaust-passage for such gases, and a feed-water pipe arranged in close spiral coils in said passage.

8. An engine having, in combination, a cylinder, means for driving its working piston by expansion of combustible gases, a surrounding water-space, fire-flues extending therethrough communicating with the combustion-chamber, a convolute fire-passage into which the gases exhaust from said flues, and a feed-pipe for supplying water to said water-space extending through said convolute fire-passage.

9. An engine having, in combination, a cylinder whose working piston is impelled by action of combustible gases, a surrounding water-space, a series of fire-flues extending therethrough communicating with the combustion-chamber, and solid cores or rods of smaller diameter than the internal diameters of said flues introduced within said flues, substantially as and for the purpose described.

10. An engine having, in combination, a cylinder whose working piston is impelled by action of combustible gases, a surrounding water-space, a series of fire-flues extending therethrough communicating with the combustion-chamber, and cores or rods of slightly-smaller diameter than the internal diameters of said flues introduced and centered within said flues, substantially as and for the purpose described.

11. An engine having, in combination, a cylinder in which gas works on one side of the piston and steam on the other, and an automatically-driven unitary structure or device operating the steam-valve and also the gas-exhaust valve, and means for controlling said valves to drive, stop or reverse the engine by adjustment of said structure.

12. An engine having, in combination, a cylinder in which gas

works on one side of the piston and steam on the other, an igniting device, exhaust-valve for the gas side, and a rotating structure comprising a rotary valve controlling admission to and exhaust of steam from the steam side and cams for operating said igniting device and exhaust-valves.

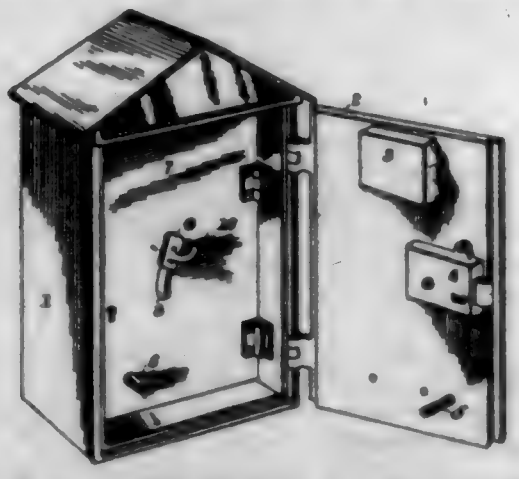
13. An engine having, in combination, a cylinder in which gas and steam work on opposite sides of the piston, a rotary valve controlling the admission and exhaust of steam, a gas-exhaust valve, and controlling mechanism therefor operated from the valve-shaft of said rotary steam-valve.

14. An engine having, in combination, a cylinder in which gas and steam work on opposite sides of the piston, igniting mechanism, gas-exhaust-valve mechanism, and a rotary structure comprising a rotary valve controlling admission and exhaust of steam, and capable of being shifted longitudinally and thereby driving, stopping or reversing the engine, and gas-exhaust-valve-operating cam and igniter-operating cam rotary and shiftable therewith for properly controlling said gas-valve mechanism and igniting mechanism whether said steam-valve is moved to drive the engine forward or reversely.

15. An engine having, in combination, a cylinder in which steam works on one side of the piston and gas on the other, a steam-valve, igniter, and gas-exhaust valve, and an automatically-driven actuator having means for operating said steam-valve, igniter and gas-exhaust valve, said actuator being susceptible of adjustment, and means for controlling the mechanisms actuated thereby to drive, stop or reverse the engine by such adjustment.

16. An engine having, in combination, a cylinder in which steam works on one side of the piston and gas on the other, a steam-valve, igniter, and gas-exhaust valve, and an automatically-driven actuator having means for operating said steam-valve, igniter and gas-exhaust valve, and means for starting, stopping and reversing the engine operated by said actuator.

816,465. **FIRE-ALARM BOX.** STEPHEN J. HERRICK, Bellevue, Pa., assignor to American Electric Alarm Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Apr. 26, 1904. Serial No. 204,960.



Claim.—1. In a fire-alarm system, the combination with a main line, of a plurality of boxes arranged in series-circuit on said line, each box being provided with a pull-lever, a toothed segment movable thereby and a spring-motor adapted to be wound by the movement of said segment for mechanically rotating a signal-wheel, and each box being provided with electrically-operable means so constructed and arranged that while one of said boxes is in operation, the electrically-operable means of the other boxes will lock the said segment.

2. In a fire-alarm box, the combination of a normally unwound spring-motor for mechanically rotating a signal-wheel, means for winding said motor, means for locking said motor-winding means, an electromagnet and an armature, said armature being arranged and adapted to operate said locking means at such time as the signal-wheel-rotating means is inactive, and electrical circuits and contacts operable by the signal-wheel-rotating mechanism to close the circuit through said electromagnet.

3. In a device of the character described, the combination of a signal-wheel, clockwork mechanism for rotating said wheel, a contact-arm movable by said signal-wheel, an electromagnet in circuit with said contact-arm, a lever carrying an armature, a member carried by the clockwork mechanism and adapted to be engaged by the armature-carrying lever when the electromagnet is deenergized, and means whereby said armature-carrying lever will be mechanically moved within the sphere of attraction of said electromagnet by the winding of said clockwork mechanism.

4. In a device of the character described, the combination of a signal-wheel, clockwork mechanism operably connected to said signal-wheel, a winding-segment meshing with the winding-arbor of said clockwork mechanism, a lug carried by said winding-segment, a contact-arm adapted to be engaged by said signal-wheel, an electromagnet in a circuit adapted to be closed by said contact-arm, an armature-lever adapted to engage and lock on the winding-segment when the said electromagnet is deenergized, and means carried by the clockwork mechanism for mechanically moving said armature-lever within the sphere of attraction of the electromagnet when the said winding-segment is moved to wind the clockwork mechanism.

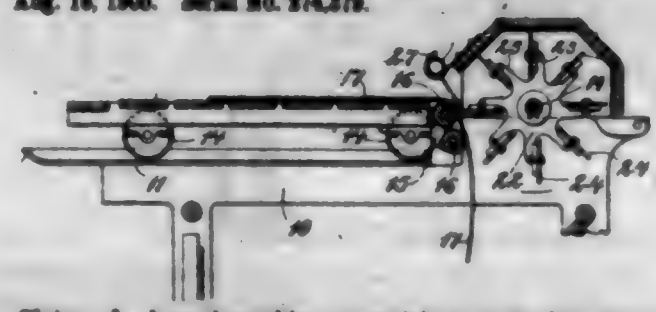
5. In a device of the character described, the combination of a signal-wheel, clockwork mechanism operably connected to said signal-wheel, a winding-segment meshing with the winding-arbor of said clockwork mechanism, a lug carried by said winding-segment, a contact-arm adapted to be engaged by said signal-wheel, an electromagnet in a circuit which is closed by said contact-arm when the same is moved by the rotation of the signal-wheel, a cam-disk carried on the winding-arbor of said clockwork mechanism, a contact carried by said armature-lever adapted to be engaged by said cam so as to move the armature-lever within the sphere of magnetic attraction of said electromagnet when the said cam is turned by the movement of the winding-arbor.

6. In a device of the character described, the combination of a clockwork mechanism, means for winding the same, a signal-wheel mounted on one of the shafts of said clockwork mechanism, spring-actuated contact-arms, one of which is adapted to be engaged by the signal-wheel to close the contact therebetween, an electromagnet in circuit with said contact-arms, contact-tongues arranged to shunt the circuit through said contact-arms, and an arm carried by one of the shafts of said clockwork mechanism and adapted to maintain the shunt-circuit closed through said contact-tongues while the operating mechanism of the device is in passive condition.

7. In a device of the character set forth, the combination with a signal-wheel, clockwork mechanism for imparting motion to said signal-wheel, a winding-segment mounted on the shaft and meshing with the clockwork mechanism, an arm carried on said shaft, a pivoted lever, and a dog carried by said lever and adapted to engage with the arm of said shaft, of means for retarding the movement of said arm when the said arm is pulled to wind the clockwork mechanism.

8. In a device of the character set forth, the combination of a signal-wheel, clockwork mechanism for rotating said wheel, contact-arms movable by said signal-wheels, an electromagnet in circuit with said contact-arms, an armature-lever pivotally mounted adjacent to said electromagnet, means carried by said armature for locking the winding-arbor of said clockwork mechanism, contact-posts arranged in series on the incoming and outgoing circuit of said electromagnet, a spring-actuated switch-lever adapted to simultaneously establish contact between the contact-posts of the incoming and outgoing lines, a pin carried by said switch-lever, a box inclosing said switch-lever, a hinged door carried by said box, and projections on the door to engage the pin on said switch-lever when the said door is closed so as to break the circuit through said contact-posts.

816,466. **PELT-CLEANER.** JOHN HEMINGWAY, Lynn, Mass. Filed Aug. 18, 1905. Serial No. 274,579.



Claim.—1. A wool-scrubber comprising a pair of freely-mounted rolls, means for guiding a pelt over said rolls and rotating cleaning-blades mounted relatively to said rolls to cause the edges of said blades to engage a stretch of the pelt opposite the space between the rolls.

2. A wool-scrubber comprising a support for the pelt, said support having rolls mounted one above another whereby a pelt on the support may extend across the space in front of and between said rolls, and rotary cleaning devices mounted relatively to said rolls to engage a stretch of the pelt opposite the space between said rolls.

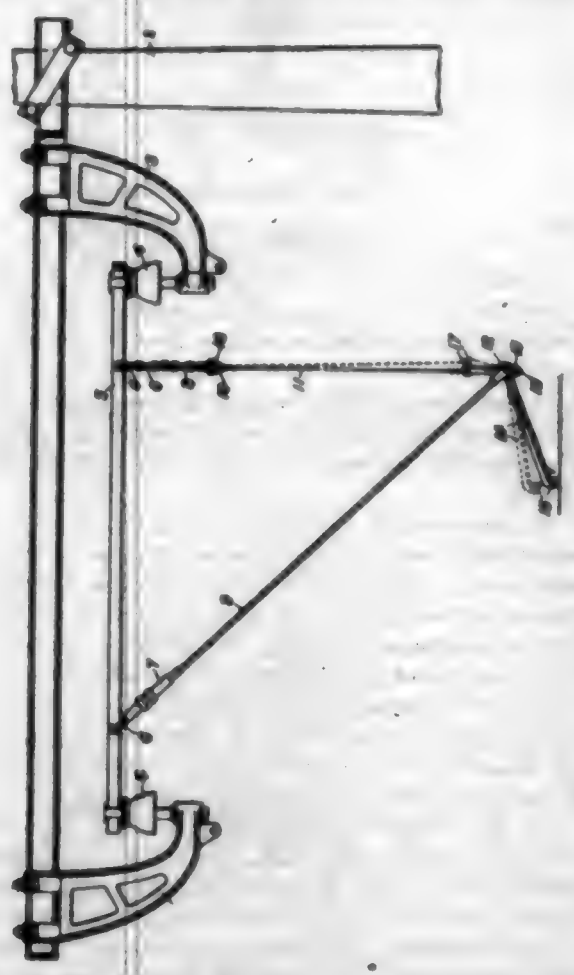
3. A wool-scrubber comprising a pair of freely-mounted rolls, means for guiding a pelt over said rolls, cleaning devices to act upon

a pelt extending in front of and across the space between said rolls, and means for supplying water at the point where the pelt is engaged by said cleaning devices.

4. A wool-scrubber comprising rotary cleaning devices, and a truck freely movable toward and from said cleaning devices, said truck being adapted to support a pelt and having a pair of freely-mounted rolls across which the pelt is passed while acted upon by the cleaning devices.

5. A wool-scrubber comprising a pair of freely-mounted rolls one below the other and the lower one being in advance of the upper one, means for guiding a pelt over said rolls, a shaft substantially in the plane of the upper roll and having cleaning-blades adapted to engage a stretch of the pelt opposite the space between the rolls, and means for rotating said shaft.

816,467. SYSTEM OF TROLLEY-WIRE SUSPENSION. PAUL B. HERRMER, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Sept. 10, 1904. Serial No. 223,945.



Claim.—1. The means for suspending trolley-wires comprising a thrust member, a flexibly-supported tension member, and a bell-crank lever pivoted to said thrust member and connected at one end to the tension member and at the other end to the trolley-wire.

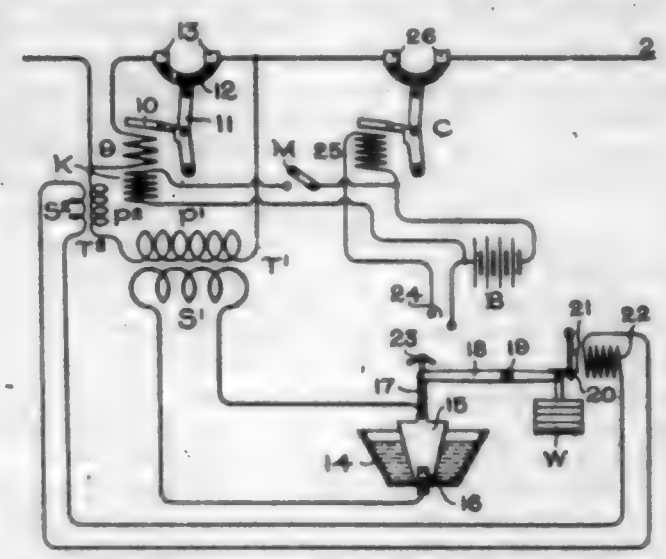
2. The means for suspending trolley-wires at curves comprising a thrust member, a flexibly-supported tension member arranged to receive the curve pull of the wire, and a bell-crank lever with arms of unequal length pivoted on said thrust member and connected at its short arm to said tension member and adapted to engage at its long arm with the trolley-wire.

3. In a system of trolley-wire suspension at curves, the combination with a main conductor-wire having a section thereof joined at a plurality of points by an unequal section of an auxiliary wire, means for supporting the longer section vertically and horizontally and means for yieldingly resisting vertical movement of the shorter section.

816,468. MAKING AND BREAKING HIGH-POTENTIAL CIRCUITS. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 14, 1898. Serial No. 699,301.

Claim.—1. The combination with an electric circuit, of an impedance for said circuit, a shunt around said impedance, means in said shunt responsive to change of current density for automatically opening said shunt on an overload, a circuit-breaker outside of said shunt, and means controlled by the opening of said shunt for operating said circuit-breaker.

2. The combination with an electric circuit, of an impedance, an automatic cut-out for cutting said impedance into circuit upon the occurrence of predetermined electrical conditions in said circuit, and a second cut-out included in circuit and responsive to the action of the first cut-out to break said circuit.



3. An electric circuit having a switch included therein, a transformer-primary arranged to be cut into circuit by the opening of said switch, a variable resistance in the transformer-secondary and a second switch in said circuit arranged to be operated when said resistance is increased.

4. An electric circuit having in series therewith two switches, a transformer-primary shunted about one of said switches and means for varying the resistance of the transformer-secondary.

5. An electric circuit having a circuit-breaker included therein, a coil in a branch circuit across said circuit-breaker, means controlled by the opening of the circuit-breaker for varying the impedance of the coil, and means for completely opening said circuit after varying the impedance of said coil.

6. An electric circuit having an overload circuit-breaker included therein, a coil arranged to be included in the circuit when the circuit-breaker is opened, means controlled by the opening of the circuit-breaker for increasing the impedance of the coil after it is included in circuit, and means for subsequently breaking said circuit.

7. An electric circuit having a circuit-breaker included therein, a coil arranged to be included in the circuit when the circuit-breaker is opened, means controlled by the opening of the circuit-breaker for varying the impedance of said coil, and means for automatically opening said circuit after the impedance of said coil has been varied.

8. An electric circuit having a circuit-breaker included therein, a liquid rheostat arranged to receive energy over leads shunted about said circuit-breaker, and means, brought into action upon the opening of said circuit-breaker for completely opening said circuit.

9. The combination with a plurality of electromagnetic circuit-breakers included in an electric circuit, one of said breakers having its trip-coil included in said circuit, and means responsive to the opening of the first breaker to trip the second.

10. The combination with a plurality of electromagnetic circuit-breakers, each provided with individual tripping means, and means responsive to the opening of one breaker to energize the trip-coil of the other to open it.

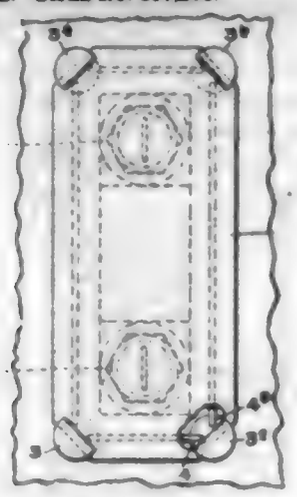
11. The combination with an electric circuit, of an electromagnetically-tripped circuit-breaker therein having its trip device actuated directly from said circuit, of a second circuit-breaker, and means responsive to the opening of the first breaker to actuate the trip of the second breaker to open it.

12. The combination with an electric circuit, of two automatic cut-outs therein, one of said cut-outs being connected to open on overload in said circuit, means controlled by said opening for gradually reducing the current in the circuit and subsequently operating the second cut-out.

13. The combination of an electric circuit, of an inductance therein, an automatic cut-out normally shunting the same, a switch in circuit and a trip-coil energized through the agency of the inductance when the automatic cut-out acts.

14. The combination with an electric circuit, with two automatic cut-outs therein, one of said cut-outs being connected to open upon the occurrence of predetermined electrical conditions in said circuit, and means controlled by said opening for reducing the current in the circuit and subsequently operating the second cut-out.

816,469. FUSE-BOX. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 14, 1902. Serial No. 107,270.



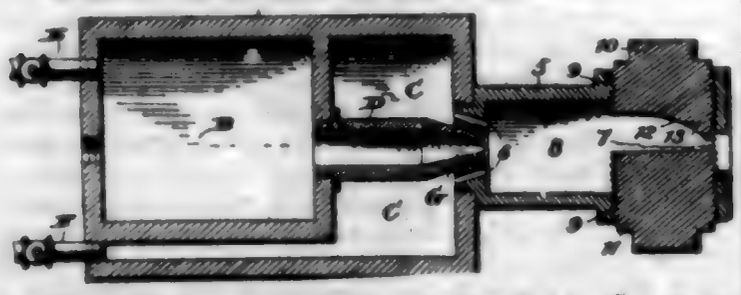
Claim.—1. The combination with a fuse, of an inclosure having transparent side walls, undercut supports and a resilient transparent cover sprung into the undercuts in said supports.

2. The combination with a fuse, of an inclosure having a support, longitudinally and transversely grooved posts extending upward from said support, and sheets of transparent material removably inserted into said grooves to form the sides and top of said inclosure.

3. The combination with a fuse, of an inclosure having a support, longitudinally and transversely grooved posts extending upward from said support, and mica sheets removably inserted into said grooves to form the sides and top of said inclosure.

4. The combination with a fuse, of an inclosure having a support, posts extending upward from said support and provided with longitudinal grooves extending throughout their length and transverse grooves adjacent to their outer ends, mica sheets inserted into the longitudinal grooves to form the side walls of said inclosure and a mica sheet sprung into the transverse grooves to form the top of said inclosure.

816,470. HYDROCARBON-BURNER. JAMES F. HIGGINS, New Orleans, La. Filed June 21, 1905. Serial No. 266,246.



Claim.—1. A nozzle of the character described having suitable means of entrance and exit of fuel and a screw-threaded aperture disposed transversely with respect to the exit, and comprising a screw-threaded plug within said aperture and arranged to project across the exit, said plug being formed with a discharge-passage.

2. A nozzle of the character described having suitable means of entrance and exit of fuel and a screw-threaded aperture disposed transversely with respect to the exit, and comprising a screw-threaded plug within said aperture and arranged to project across the exit, said plug being formed with an elongated discharge-passage.

3. A nozzle of the character described having suitable means of entrance of fuel, and a mixing-chamber, in combination with rotatable means transversely movable across the path of fuel in the nozzle, whereby the discharge therefrom is regulated, said rotatable means having a fuel-passage therethrough.

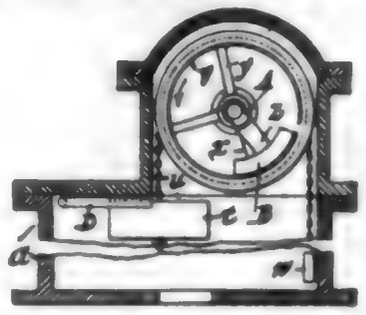
4. A nozzle of the character described having suitable means of entrance of fuel, a mixing-chamber, and a screw-threaded aperture disposed transversely in the nozzle, in combination with a screw-threaded plug within said aperture, whereby the discharge from said nozzle is regulated, said plug being formed with an elongated discharge-passage.

5. A nozzle of the character described having suitable means of entrance and exit of fuel and two screw-threaded apertures disposed transversely with respect to the exit, and comprising oppositely-disposed screw-threaded plugs within said apertures and arranged to project across the exit, whereby the discharge therefrom is regulated, and one of said plugs being formed with a discharge-passage.

6. A nozzle of the character described having suitable means of entrance and exit of fuel and two screw-threaded apertures disposed transversely with respect to the exit, and comprising oppositely-disposed screw-threaded plugs within said apertures and arranged to project across the exit, whereby the discharge therefrom is regulated, and one of said plugs being formed with an elongated discharge-passage.

7. The combination with a nozzle of the character described having means of entrance and exit of fuel and two screw-threaded apertures disposed transversely with respect to the exit, of oppositely-disposed screw-threaded plugs within said apertures and arranged to project across the exit, whereby the discharge therefrom is regulated, and one of said plugs being formed with an inclined surface and a discharge-passage.

816,471. WATER-FEEDING DEVICE FOR STEAM-BOILERS. JOHN T. INNES, Mount Gambier, South Australia, Australia. Filed Oct. 30, 1905. Serial No. 285,165.



Claim.—1. In a device of the type set forth, a valve-tank having rotary inlet and outlet steam-valves, mounted on a single shaft, said inlet-valve being adapted to communicate with the boiler, a member rotatably mounted within said tank adapted to actuate said inlet and outlet valves, and means carried by said last-named member for actuating the same, said last-named means being operated upon the rise and fall of the water-level within the tank, substantially as described.

2. In a device for utilizing boiler-steam, a valve-tank provided with rotatable inlet and outlet valves mounted on a single shaft, said inlet-valve communicating with the boiler, a rotatable member mounted within said tank, a striker operative thereby and adapted to communicate a rotative movement to said inlet and outlet valves, and means for operating said rotatable member upon the rise and fall of the water-level in said tank, comprising a float and a weight oppositely disposed with respect to the rotatable member, and means connecting said float and weight passing around said last-named member, substantially as described.

3. In a device for utilizing boiler-steam, the combination of a valve-tank a steam-valve casing provided with rotatable inlet and outlet valves mounted on a single shaft, said inlet-valve communicating with the boiler, steam-valve casings provided with recesses therein, lugs formed integral with one end thereof, the opposite end of said casings being provided with recesses, and the casings being further provided with ports and a steamway, and a rotatable member disposed within the valve-tank adapted to operate said valves and valve-casings, movement being communicated to said member automatically by the rise and fall of the water within the tank, substantially as described.

4. In a device of the character set forth, a valve-tank provided with inlet and outlet ports, valve-casings rotatably mounted within said tank, valves provided with flanged faces and having ports therein, being further provided with an internal chamber, a stop formed integral with said valves adapted to engage with the rotatable valve-casings, a spindle supporting said valves provided with a pin and socket member, and a rotatable member mounted within the valve-tank adapted to actuate said valves through the rise and fall of the water-level within said valve-tank, substantially as described.

5. In a device of the character set forth, the combination with a valve-tank having inlet and outlet valves mounted on a single shaft, said inlet-valve therein communicating with the boiler, a rotatable member mounted within said tank, means for actuating said rotatable member automatically upon the rise and fall of the water-level within the tank, said means comprising a float, a chain passing over the rotatable member and connected with said float, and a weight connected to the other end of said chain, and a striker member actuated by means of the rotatable member for the purpose of opening and closing the valves of the valve-tank alternately.

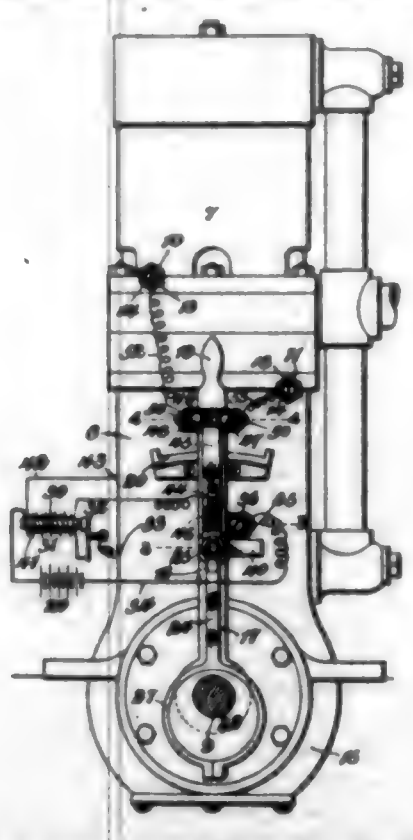
6. A device for utilizing boiler-steam for boiler-feed purposes comprising a valve-tank provided with rotatable valves mounted on a single shaft for the admission and discharge of steam and of water,

a spraying device, the water-chamber provided with a condensing means for discharge-steam, and means operative automatically through the rise and fall of the water-level in the tank adapted to alternately open and close the admission and discharge valves of the valve-tank, substantially as described..

7. In a device for utilizing boiler-steam for the purposes of boiler-feed, a valve-tank, rotary inlet and outlet steam-valves, means for controlling and limiting the rotary movement of said valves, a rotatable member mounted within the valve-tank, a striker operative through said rotatable member at predetermined periods, means for actuating the rotative member comprising a float and a counterweight having connection over the rotatable member and adapted to operate said member in opposite directions upon the rise and fall of the water-level within the valve-tank, a spraying means disposed at the top of said tank, a water-chamber, a coil disposed within the water-chamber connected to the steam-outlet, and inlet and outlet water-pipes provided with suitable cocks and check-valves, substantially as described.

8. In a device for utilizing boiler-steam for the purposes of boiler-feed, a valve-tank, a water-chamber, an air-pressure chamber, a spraying device connected with the water-chamber and with the air-chamber, rotary inlet and outlet valves disposed in said valve-tank, and a rotatable means operative upon the rise and fall of the water-level in said tank for the purpose of actuating said rotary inlet and outlet valves, alternately, substantially as described.

816,472. SPARKING IGNITION MECHANISM. JOHN F. JOHNSON, Chester, Pa. Filed Oct. 19, 1904. Serial No. 229,194.



Claim.—1. In ignition mechanism, the combination with an engine, of a sparker, induction apparatus having a secondary circuit including the sparker, a source of electrical energy having a primary circuit that includes said induction apparatus, a switch for the secondary circuit including an element alternately movable in reverse directions, a switch for the primary circuit including an element alternately movable in reverse directions, a device for operating the switches to successively close the secondary and primary switches in the order named and open the same in reverse order, and an eccentric device driven by the engine to effect the necessary movements of said device.

2. In ignition mechanism, the combination with an engine, of a sparker, induction apparatus having a secondary circuit including the sparker, a source of electrical energy having a primary circuit that includes said induction apparatus, a switch for the secondary circuit, a switch for the primary circuit, a device for operating the switches to successively close the secondary and primary switches in the order named and open the same in reverse order, said device having a swinging movement and a reciprocatory fulcrum, and an eccentric device given by the engine and engaging the operating device to effect the necessary movements thereof.

3. In ignition mechanism, the combination with an engine, of a sparker, induction apparatus having a secondary circuit including the sparker, a source of electrical energy having a primary circuit that includes said induction apparatus, a swinging switch-operating device, switch mechanism for closing and opening the primary and secondary circuits, said mechanism including a swinging contact element carried by the operating device and a reciprocating contact element actuated by said operating device, and means for effecting the swinging movement of the switch-operating device to swing and reciprocate said contact elements.

4. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device and a fulcrumed arm having a contact device coacting with the first-mentioned device, means for operating the arm from the engine, means for changing the path of movement of the contact device carried by the arm, and an electric circuit including the switch and sparker.

5. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device and a fulcrumed arm having a contact device coacting with the first-mentioned device, means for operating the arm from the engine, means for changing the position of the fulcrum of the arm for varying the path of movement of the contact device carried thereby, and an electric circuit including the switch and sparker.

6. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a stationary contact device and an arm having a sliding fulcrum and a contact device coacting with the first-mentioned device, means for operating the arm from the engine, an adjustable guide for the sliding fulcrum of the arm, and an electric circuit including the switch and sparker.

7. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a laterally-adjustable support, means for holding the support in different lateral positions, an arm pivoted between its ends on the support, a contact device carried by one end of the arm, and another contact device disposed in the path of movement of that carried by the arm, means driven from the engine and connected to the other end of the arm for swinging said arm, and an electric circuit including the switch and sparker.

8. In ignition mechanism, the combination with an engine, of a sparker, a swinging lever, means for holding the lever in different positions, a switch comprising an arm pivoted to the lever and coacting contact devices, one of which is mounted on the lever, the other being mounted on the arm, means operated by the engine for swinging the arm, and an electric circuit including the switch and sparker.

9. In ignition mechanism, the combination with an engine and an engine-shaft, of a sparker, a lever having a fulcrum the axis of movement of which is substantially concentric to that of the engine-shaft, means for holding the lever in different positions, a switch comprising an arm pivoted between its ends upon the lever, an eccentric carried by the engine-shaft and having a connection with one end of the arm and coacting contact devices, one of which is mounted on the lever, the other being carried by the free end of the arm, and an electric circuit including the switch and sparker.

10. In ignition mechanism, the combination with an engine-shaft, of a lever journaled on the shaft, a rack, a dog coöperating with the rack for holding the lever in different relations, an arm movably mounted on the lever, means carried by the shaft and connected to the arm for moving the same, a sparker, a switch comprising coacting elements, one of which is mounted on the lever, the other being mounted on the arm, and an electric circuit for the sparker including the switch.

11. In ignition mechanism, the combination with an engine-shaft, of a swinging support, means holding the support in different positions against its swinging movement, a sparker, a switch comprising coacting elements, one of which is mounted on the swinging support, the other having a reciprocatory movement on said support, means mounted on the shaft for effecting the reciprocatory movement of said element, and an electric circuit including the switch.

12. In ignition mechanism, the combination with an engine-shaft, of a lever journaled on the shaft, means for holding the lever in different positions against its swinging movement, a sparker, a swinging arm having a fulcrum that reciprocates upon the lever, a switch comprising elements, one of which is mounted on the lever, the other reciprocating with the fulcrum, means mounted on the engine-shaft for swinging the arm and reciprocating its fulcrum, and an electric circuit including the switch.

13. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device, a swinging arm having a pivot-support between its ends, said pivot having a reciprocatory movement and another contact device supported on and carried by the pivot, means connected to one end of the arm and driven by the engine for moving the same, and an electric circuit including the switch and sparker.

14. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device, a swinging arm having a reciprocatory fulcrum that is adjustable transversely of its path of reciprocation and another contact device carried by the fulcrum, means operated by the engine for moving the arm, and an electric circuit including the switch and sparker.

15. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device, a swinging arm having a reciprocatory fulcrum and another contact device carried by the fulcrum, a guide for the fulcrum of the arm, said guide being adjustable transversely of the path of reciprocation of the fulcrum, and an electric circuit including the switch and sparker,

16. In ignition mechanism, the combination with an engine, of a sparker, a switch comprising a contact device, a swinging arm having a reciprocatory fulcrum, a contact device carried by said fulcrum and coacting with the first-mentioned contact device, an adjustable lever having a guideway that receives the fulcrum of the arm, and an electric circuit including the switch and the sparker.

17. In ignition mechanism, the combination with an engine, of a sparker, a swinging arm having a reciprocatory fulcrum that is adjustable transversely of its path of reciprocation, an electrical contact device adjustable with the fulcrum and maintained against reciprocation therewith and another electrical contact device operated by the fulcrum and also adjustable with the same, means operated by the engine for moving the arm, and an electric circuit including the switch.

18. In ignition mechanism, the combination with an engine, of spark-generating mechanism including a sparker, a swinging arm having a reciprocatory fulcrum, a contact device movable with the arm, a contact device movable with the fulcrum, other contact devices coacting with said movable devices, and means for swinging and reciprocating the arm.

19. In ignition mechanism, the combination with an engine, of spark-generating mechanism including a sparker, a swinging arm having a reciprocatory fulcrum located between its ends, a contact device carried by one end of the arm, a reciprocatory contact device movable with the fulcrum, other contact devices coacting with said movable devices, and means connected to that end of the arm opposite the one carrying the contact for effecting the movement of said arm.

20. In ignition mechanism, the combination with an engine, of spark-generating mechanism including a sparker, a swinging arm having a reciprocatory fulcrum, a guide for the fulcrum adjustable transversely of its path of movement, sets of coacting contact devices, one of said contact devices being carried by the arm and another by the fulcrum, and means driven by the engine for effecting the movement of the arm.

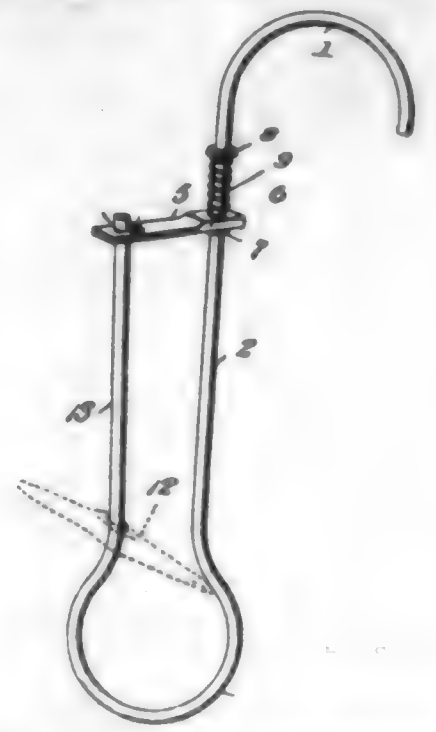
21. In ignition mechanism, the combination with an engine, of spark-generating mechanism including a sparker, a swinging arm having a reciprocatory fulcrum, a guide for said fulcrum adjustable transversely of its path of reciprocation, sets of coacting contact devices carried by the guide, the arm, and the fulcrum, and means driven by the engine for effecting the movement of the arm.

22. In ignition mechanism, the combination with an engine, of spark-generating mechanism including a sparker, a swinging lever having a guideway, contact devices located on the lever, contiguous to one end and contiguous to the guideway, an arm having a reciprocatory fulcrum operating in the guideway, a contact device carried by the fulcrum, another contact device carried by the arm, and means for operating the arm from the engine.

23. In ignition mechanism, the combination with an engine and engine-shaft, of spark-generating mechanism including independent sparkers, a lever having a fulcrum substantially concentric to the engine-shaft and provided with a longitudinally-disposed slot, contact-heads carried by the free end of the lever and having electrical connections with the sparkers, an arm having a fulcrum between its ends that is slidably mounted in the slot of the lever, a contact device carried by one end of the arm and successively coacting with the contact-heads of the lever, a cam on the engine-shaft having an engagement with the other end of the arm, another contact-head carried by the lever contiguous to the slot, a contact device carried by the fulcrum and coacting with the last-mentioned head, and means for holding the lever in different positions.

24. In ignition mechanism, the combination with an engine, of a sparker, induction apparatus having a secondary circuit including a sparker, a source of electrical energy having a primary circuit that includes said induction apparatus, a switch for the secondary circuit, a switch for the primary circuit, one of said switches including an oscillating member, the other including a reciprocatory member, and a movable actuating device having a reciprocating portion and an oscillating portion, said portions respectively carrying the reciprocating and oscillating members of the switches.

816,478. CARRIER. OTTO JOHNSON, Evanston, Ill. Filed Nov. 8, 1905. Serial No. 286,430.



Claim.—1. A carrier comprising a supporting-loop, a plain portion depending therefrom, an implement-receiving stem having spring connection with said plain portion, a keeper connected with the plain portion and adapted for locking engagement with the free end of the stem, said keeper being mounted for free movement about the plain portion, and a spring for holding the keeper in lowered position.

2. A carrier comprising a supporting-loop, a plain portion depending therefrom, an implement-receiving stem connected with the plain portion and extending parallel therewith, a keeper pivotally supported on the plain portion, a spring for maintaining the keeper in lowered position upon said plain portion, the free end of the keeper being formed with a keyhole-slot, and the free end of the stem being formed with recesses to receive the walls of the narrowed portion of said slot.

816,474. STEAM-TRAP. WARREN S. JOHNSON, Milwaukee, Wis. Filed Feb. 17, 1905. Serial No. 246,054.

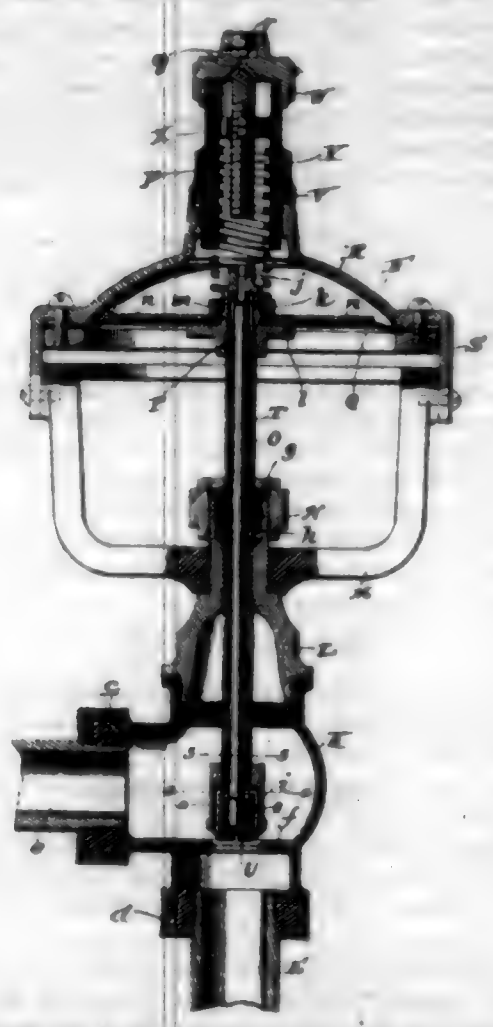
Claim.—1. In combination with a steam-trap having an outlet provided with a valve-seat, a chamber having a movable wall exposed on one side to the atmosphere; a valve-plug connected to and movable with said wall and adapted and arranged normally to close said outlet; and a suction device connected with the interior of said chamber and serving to withdraw the air therefrom and thereby to unseat the valve, substantially as described.

2. In a steam-trap, the combination of a valve shell or casing provided with an outlet having a valve-seat; a valve-plug adapted and arranged normally to close said outlet; a hollow shell or casing provided with a movable wall having one face exposed to the external atmosphere; a connection between said movable wall and the valve-plug; a suction device communicating with the interior of the shell or casing and serving to withdraw air therefrom; and a thermostatic device controlling communication between the suction device and said shell or casing, substantially as described.

3. In combination with a valve shell or casing provided with an outlet-opening having a valve-seat, a suction-pipe communicating with the valve-casing on the delivery side of said opening; a valve-plug adapted and arranged normally to close said opening; a motor shell or casing provided with a movable wall or member exposed on one side to the external atmosphere; a pipe or tube connecting the interior of the motor shell or casing with the suction-pipe; and a thermostatic device applied to said pipe or tube and serving to cut off all communication between the valve-chamber and the motor-chamber when the temperature rises, and to open the same when the temperature falls below a predetermined point.

4. The herein-described steam-trap comprising a shell or casing having an outlet-passage, and adapted to be connected with the

steam or water space of a vessel or chamber to be relieved, and with an exhauster; a motor shell or casing R carried by the valve shell or casing and provided with movable wall Q exposed on one side to the atmosphere; tube O connected with said wall, passing into the valve shell or casing, and provided with a valve-plug *i* and passage *j*; expansible rod T mounted within tube O, and adapted to seal and unseal the passage *j*; and spring Y, serving to press downward the movable wall Q and the parts carried thereby.



5. In combination with a chamber or vessel adapted to contain heated pressure fluid; a valve shell or casing connected with said chamber or vessel and provided with an outlet having a valve-seat; a valve controlling said outlet; a motor-chamber fixed in relation to the valve shell or casing and provided with a movable wall exposed on one face to the atmosphere; a tube connecting said movable wall with the valve-plug and forming a passage of communication between the motor-chamber and the space below the valve-seat; a suction apparatus connected with the outlet of the valve shell or casing and adapted to draw air from the motor-chamber through the tube connecting the valve-plug and the movable wall; and a rod or bar contained within, and of relatively greater expansibility than, the tube, adapted and arranged to close the passage through said tube upon an increase of temperature beyond a predetermined point, and to open said passage when the temperature falls below said point.

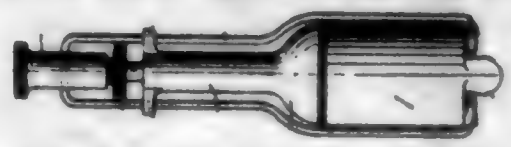
6. The herein-described steam-trap comprising valve shell or casing K; valve-plug *i*; tube O, provided with cap-piece P, having passage *j*; rod T mounted within the tube O; flexible disk or diaphragm Q having one face exposed to the atmosphere; shell or casing R, provided with air-inlet *q*; and spring Y, all substantially as described and shown.

7. In combination with valve shell or casing *k*, and valve-plug *i*; shell or casing R provided with movable wall Q, having one face exposed to the atmosphere, and with an air-inlet *q*; a stem connecting said wall with the valve-plug *i*; spring Y bearing upon wall Q; a pipe or tubular connection extending from the space within the chamber R, to a point below the valve-plug; and a thermostatic device serving to close and open said connection, as the temperature rises and falls.

8. In a steam-trap of the character described, the combination of a valve-casing and valve; a fluid-pressure motor for actuating said valve, comprising a hollow shell or chamber R and a movable wall or member Q for said chamber, connected with said valve; means for normally pressing said valve toward its seat; means for exhausting the air from the motor-chamber to cause the pressure of the atmosphere on the exposed face of the movable wall or member to move the valve in opposition to the closing devices; and an air-inlet opening into the motor-chamber and provided with a regulating-valve, whereby air is permitted constantly to enter said motor-chamber, but is prevented from destroying the action of the suction device therein.

9. The herein-described steam-trap, comprising a valve shell or casing having an outlet-opening provided with a valve-seat; a valve-plug to close said outlet; a yoke or frame supported by the casing; a shell or chamber supported by the yoke or frame; a flexible disk or sheet forming one wall of said chamber; a neck or extension rising from said chamber; a cap applied to said neck and provided with an air-inlet; a valve for regulating the capacity of said inlet; a spring contained within the neck; an adjustable abutment for said spring; a tube connecting the diaphragm or movable wall and the valve-plug; and an expansible rod mounted within said tube and adapted by its expansion and contraction to close and to open the passage through said tube, all substantially as set forth.

816,475. AIR-VALVE FOR STEAM-RADIATORS. JAMES L. JUDGE, Minneapolis, Minn. Filed June 6, 1905. Serial No. 264,624.



Claim.—1. In an air-valve for radiators, the combination of the body of the air-valve adapted to be attached to a radiator and to allow air from the radiator to pass into and through the said body, a valve-seat near the outer exit of said body, an adjustable steam-valve adapted to be closed upon said valve-seat, a head in which said valve is adjustably secured, and a bail secured to said head, said bail passing through ears upon the upper portion of said body, said bail being bent outward and then downward at the middle portion thereof, and said bail being secured at the lower portion of said body, substantially as shown and described.

2. In an air-valve for radiators, the combination of the body of the air-valve, comprising a float-chamber and a valve-stock, adapted to be attached to a radiator and to allow air from the radiator to pass into and through the said body, a valve-seat within and near the outer exit of said valve-stock, an adjustable steam-valve adapted to be closed upon said valve-seat, a head in the inner end of which said valve is adjustably secured, and a bail secured to said head, said bail passing through ears upon the upper portion of said body and being secured to the lower portion of said body, said head and bail being also so adjusted to said body and valve as to prevent the removal of said valve from said head, substantially as set forth and described.

816,476. PUMP. GEORGE W. KELLOGG, Rochester, N. Y. Filed Aug. 26, 1904. Serial No. 222,389.

Claim.—1. The combination of two cylinders of unequal lengths, a piston and rod for each, and means for reciprocating the pistons oppositely, said means comprising unequal gears and rack-teeth on the rods to move the pistons with different velocities.

2. The combination of two cylinders of unequal lengths, a piston and rod for each, and means for reciprocating the pistons oppositely, said means comprising one comparatively large and two smaller gears on opposite sides of the large gear all having the same axis, and suitable coacting rack-teeth on the piston-rods.

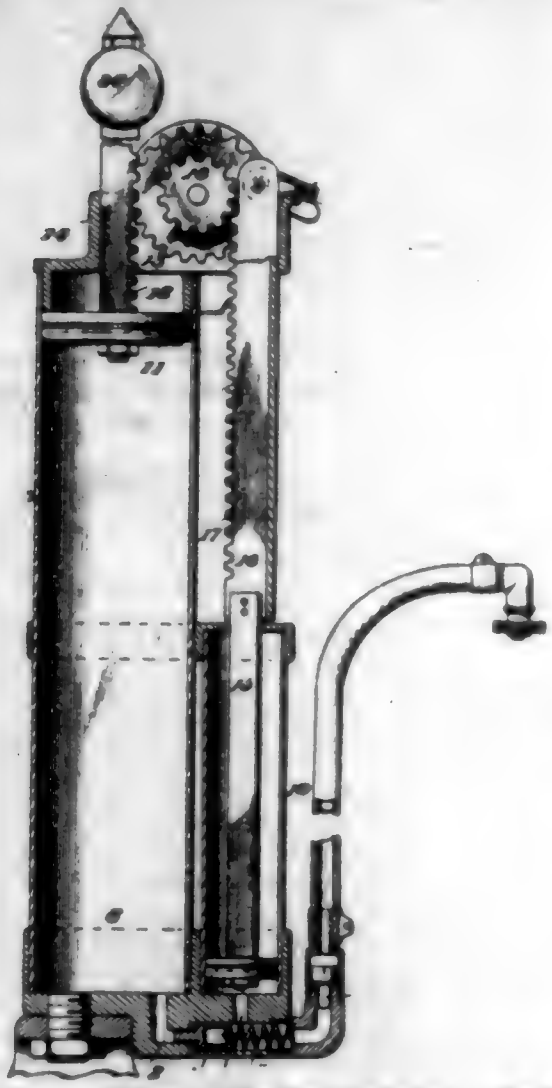
3. The combination of two cylinders of unequal lengths, a piston and rod for each, and means for reciprocating the pistons oppositely, said means comprising one comparatively large and two smaller gears all having the same axis, and suitable coacting rack-teeth on the piston-rods, one of said rods being U-shaped in cross-section to embrace the larger gear and each edge provided with teeth to engage the two smaller gears on opposite sides of the larger one.

4. In a compound pump, a plurality of cylinders, a plurality of pistons each having a rod provided with rack-teeth, coacting gears one for each piston-rod, and means for effecting the disengagement of one of said piston-rods from its gear at will without interrupting the operation of the other piston whereby either both cylinders or one may be used.

5. In a compound pump, a plurality of cylinders, a plurality of pistons each having a rod provided with rack-teeth, coacting gears one for each piston-rod, and means for effecting the disengagement of said piston-rod from its gear at will without interrupting the operation of the other piston, one of said racks being movable lengthwise to an inoperative position.

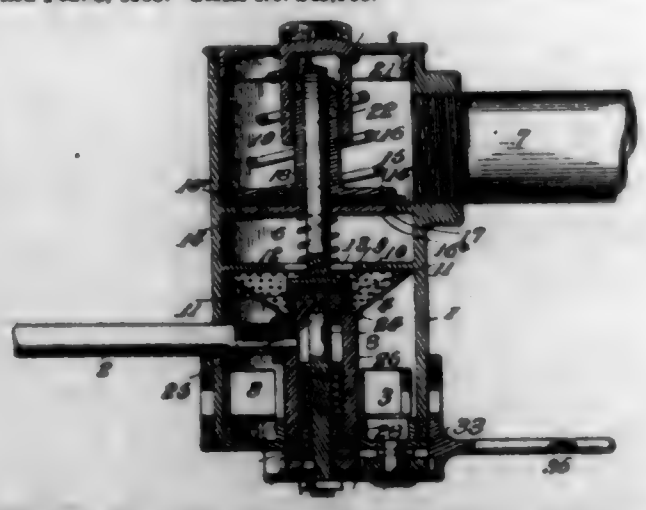
6. In a compound pump, a plurality of cylinders, a plurality of pistons each having a rod provided with rack-teeth, coacting gears

one for each piston-rod, and means for effecting the disengagement of one of said piston-rods from its gear at will without interrupting the operation of the other piston, and a device to prevent accidental connection.



7. In a compound pump, a plurality of cylinders, a plurality of pistons each having a rod provided with rack-teeth, coacting gears one for each piston-rod, means for effecting the disengagement of one of said piston-rods from its gear at will without interrupting the operation of the other piston, and a device to prevent accidental connection, said device consisting of a pivoted latch, said latch being also adapted to prevent accidental disconnection.

816,477. CARBURETER. George W. Kellogg, Rochester, N. Y. Filed Feb. 3, 1905. Serial No. 243,960.



Claim.—1. In combination a main casing having air-inlet ports, a fuel-supply pipe, a fuel-regulating valve, the valve-casing 24 having a fuel-admission port 25 regulable by said valve, a fuel-distributing cup-valve having lateral ports 11 to communicate with said admission-port, and an air-distributer having a plurality of perforations and situated between the air and fuel inlets and extending above and below the ports of said fuel-distributing cup-valve, whereby the fuel is distributed in the midst of distributed air.

2. In combination a main casing having a mixing-chamber and air-inlet port, a fuel-supply pipe, a fuel-regulating valve, the valve-casing having a fuel-admission port regulable by said valve, a part having fuel-distributing ports communicating with said fuel-admission port, and an air-distributer having a plurality of perforations and situated between the air and fuel inlets to the mixing-chamber, said fuel-distributing ports being situated in a plane passing through the air-distributer transverse to the main casing whereby fuel is distributed in the midst of distributed air.

3. The combination of the main casing having diaphragms 14 and 12 inclosing a mixing-chamber, valve 15 having tubular stem 18, valve 9 having stem 22, valve-casing 24, and springs normally pressing each valve to its seat.

4. In a carbureter, the needle-valve casing having two ports one receiving gasolene and communicating with a conduit for residuum and the other communicating with the valve-passage to convey the separated gasolene, the said gasolene-port being directed downward and the other upward whereby the gasolene is compelled to descend before it rises to the needle-valve for the better separation of sediment.

5. In combination with a needle-valve of the carbureter, a casing having an admission-port, and a sediment-holder, said valve-casing having a port to direct all fuel toward said holder and away from the needle-valve port.

6. The combination of the main casing provided with air-ports in its periphery, the needle-valve casing, the needle-valve and stem, the circular damper provided with ports in its periphery to coact with the casing-ports, a circumferential rack on the damper, and a pinion loose on the valve-stem, meshing with the rack on the damper, a device for manipulating the damper, a device for manipulating the valve-stem, means to lock said pinion and said valve-operating device together, said device being movable endwise the valve-stem to unloose the locking means.

816,478. PACKING-RING. Emma A. Kirschning, Berlin, Germany, administratrix of Hermann Kirschning, deceased. Filed Jan. 17, 1906. Serial No. 296,581.

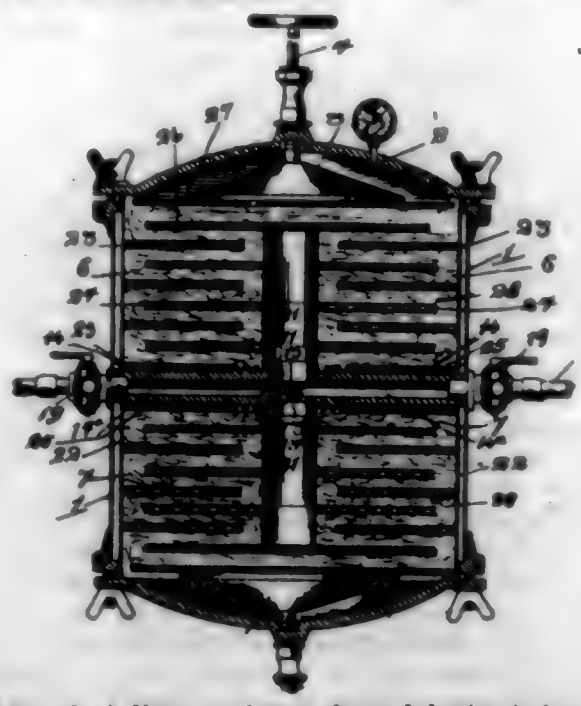


Claim.—1. A packing-ring consisting of spirally-wound strips of flexible material; each winding of the strips being provided with projections engaging with corresponding recesses in the adjacent winding.

2. A packing-ring consisting of spirally-wound strips of flexible material; each winding of the strips being provided with a longitudinal projection extending throughout the winding and engaging with a corresponding longitudinal recess in the adjacent winding.

3. A packing-ring consisting of spirally-wound strips; each winding of the strips being concave-convex and the concave portion of each winding engaging with the convex portion of the adjacent winding.

816,479. FILTER. William B. Klein, Chicago, Ill. Filed Dec. 26, 1905. Serial No. 293,233.



Claim.—1. A filter, consisting of a tank having in its center a cross-wall provided with inlet and outlet passages on opposite sides of the cross-wall opening into the companion chambers, filtering means in each of the chambers, and a detachable connection between the outlet-passage of one chamber and the inlet-passage of the companion chamber for operating the chambers independently or simultaneously, substantially as described.

2. In a filter, the combination of a tank provided with a cross wall or plate having sockets in its opposite faces, separated outlet-passages connecting with the oppositely-disposed sockets, oppositely-opening inlet-passages in the central wall or plate, perforated central passages in the companion chambers of the filter entered into the oppositely-disposed sockets, and packing surrounding the perforated central passages, substantially as described.

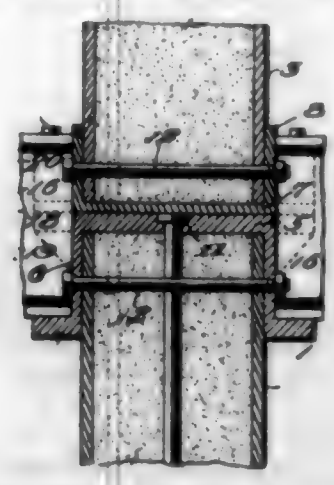
3. In a filter, the combination of a tank provided with a cross wall or plate having sockets in its opposite faces, separated outlet-passages connecting with the oppositely-disposed sockets, oppositely-opening inlet-passages in the central wall or plate, perforated central passages in the companion chambers of the filter entered into the oppositely-disposed sockets, packing surrounding the perforated central passages, and a detachable connection leading from the outlet from one of the chambers to the inlet of the companion chamber for enabling the chambers to operate independently or in combination with one another, substantially as described.

4. In a filter, the combination of a substantially cylindrical tank having near its center a circular cross-wall provided with four radially-extending ribs, two of the ribs being cored out to provide outlet-passages, and the two other ribs being channeled on opposite sides of the wall or plate to provide inlet-passages, oppositely-opening separated central sockets one for each of the outlet-passages, perforated tubes in the companion chambers of the filter entered into the oppositely-opening sockets, and packing surrounding the tubes, substantially as described.

5. In a filter, the combination of a substantially cylindrical tank having near its center a circular cross-wall provided with four radially-extending ribs two of the ribs being cored out to provide outlet-passages, and the two other ribs being channeled on opposite sides of the wall or plate to provide inlet-passages, oppositely-opening separated central sockets one for each of the outlet-passages, perforated tubes in the companion chambers of the filter entered into the oppositely-opening sockets, packing surrounding the tubes, and a detachable connection leading from the outlet from one of the chambers to the inlet of the companion chamber for enabling the chambers to operate independently or in combination with one another, substantially as described.

6. In a filter, the combination of a tank, removable caps or covers at opposite ends of the tank, a cross wall or plate having therein separated outlet-passages leading from the divisions of the tank, central passages in the companion chambers of the filter leading to the outlets, and packing surrounding the central passages, substantially as described.

816,480. **COMBINED COLUMN CAP AND BASE.** JOHN LALLY, Waltham, Mass. Filed July 27, 1904. Serial No. 218,382.



Claim.—1. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, means for securing the sleeves or flanges and abutment-plate together, and oppositely-arranged saddles projecting outward from the upper portion of the combined base and adapted to underlie and support the upper flanges of I-beams or girders.

2. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, means for securing the sleeves or flanges and abutment-plate together, stirrups projecting outward from the combined cap and base to support the lower edges of the beams or girders, and saddles projecting outward therefrom to support the upper portions of beams or girders.

3. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, means for connecting the sleeves or flanges and abutment-plate, saddles extending outward from the combined cap and base to support the upper portions of beams or girders, said saddles extending upward from the abutment-plate, and saddle extensions extending downward from the abutment-plate in line with the saddle member.

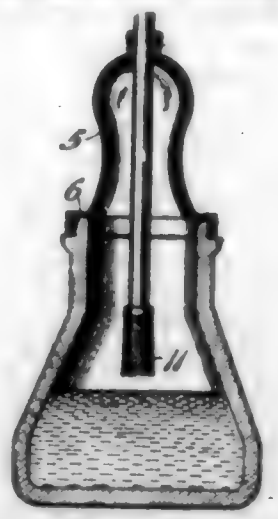
4. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, beam or girder supports extending outward from the sleeves or flanges, and tie-bolts passing through said sleeves or flanges above and below the abutment-plate and adapted to pass also through the ends of column-sections inserted within the sleeves or flanges, for fastening said parts together.

5. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, saddles extending upward from the abutment-plate and adapted to support the upper flanges of a beam or girder, lugs extending laterally from the saddles, and bolts passing through said lugs and flanges of the I-beam.

6. A combined cap and base for columns comprising an abutment-plate, sleeves or flanges extending upward and downward therefrom, means for securing the ends of the column-sections within said sleeves or flanges, the abutment-plate extending outward beyond the sleeves or flanges and being provided with one or more radial slots to admit the web of an I-beam, and means for supporting an I-beam or girder and securing the same to the combined cap and base.

7. The combination of tubular metallic column-sections, of a combined column cap and base comprising an abutment-plate fitting between the open ends of the sections, tubular flanges or sleeves extending upward and downward from the abutment-plate and entirely surrounding the end portions of the column-sections, means for securing the parts of the column cap and base together, and means on the combined cap and base for supporting horizontal beams or girders.

816,481. **CAP AND BRUSH FOR BOTTLES.** JOHNSON LANE, Jamestown, Cal. Filed Oct. 24, 1905. Serial No. 284,226.

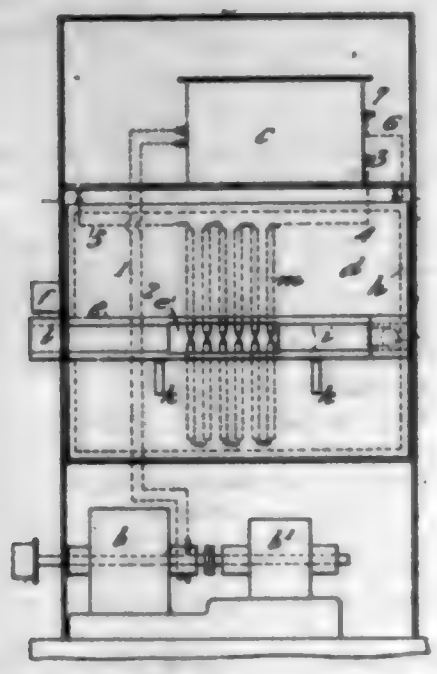


Claim.—1. A combined bottle-cover and dipper comprising a cover formed of elastic material and having a substantially bell-shaped body provided at its base with a flange having a horizontal and a vertical portion, the said vertical portion being provided with a stiffening-ring to hold it from distention and directly engage the mouth of the bottle, the crown portion of the stopper being formed with a sleeve, a brush having a handle extending through the stopper and sleeve, and fastening means securing the sleeve to the handle.

2. In a combined bottle-cover and dipper, the combination with a bottle having a neck portion provided with a vertically-disposed rim and a horizontal shoulder at the base thereof, of an elastic cover comprising a bell-shaped body provided upon its crown portion with an upwardly-extending sleeve and having at its base a flange formed with a horizontal portion to rest upon the rim and a vertical portion to surround the same and rest upon the shoulder, a stiffening-ring permanently secured upon the inner face of the vertical portion of the flange to hold the same from distention and directly engage the rim, a brush having a handle projecting through the cover-body and sleeve, and a wrapper encompassing the sleeve and securing the handle thereto.

816,482. **APPARATUS FOR BLEACHING AND STERILIZING.** SIDNEY LEETHAM, York, England, assignor to The Ozonized Oxygen Company Limited, Manchester, England. Filed July 16, 1904. Serial No. 216,893.

Claim.—1. In apparatus for bleaching and similar operations the combination of an ozonizer, a sparking discharge apparatus and a high-tension electric circuit including in series both the ozonizer and the sparking discharge apparatus.



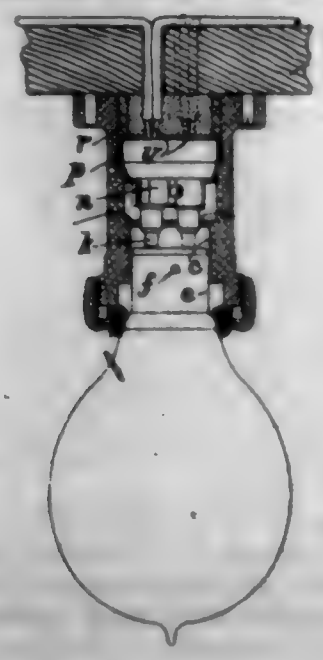
2. In apparatus for bleaching and similar operations the combination of an ozonizer, pairs of electrodes, a spark-gap between the electrodes of each pair, and electrical conductors connecting the said pairs of carbons in series with each other and with the said ozonizer.

3. In apparatus for bleaching and similar operations, the combination of an ozonizer, a conduit, pairs of electrodes in the said conduit, a spark-gap between the electrodes of each pair, a source of high-tension discontinuous electric current and electrical conductors connecting the said pairs of electrodes with the said ozonizer and with the said source of current in such a manner that the ozonizer acts as a condenser for the circuit of the electrodes.

4. In apparatus for bleaching and similar operations a sparking discharge apparatus comprising a conduit, built of fireproof plates, consecutive pairs of electrodes passing through the said plates, a spark-gap between the electrodes of each pair, a source of high-tension electric current and electrical conductors connecting the said pairs of electrodes with the said source of high-tension electric current.

5. In apparatus for bleaching and similar operations a sparking discharge apparatus comprising a conduit built of fireproof plates, a window in the side of the said conduit, consecutive pairs of electrodes passing through the said plates, a spark-gap between the electrodes of each pair, a source of high-tension electric current and electrical conductors connecting the said pairs of electrodes with the said source of high-tension electric current.

816,483. **HOLDER FOR ELECTRIC INCANDESCENT LAMPS.** PETER LEONARD and CHARLES H. JONES, Great Crosby, near Liverpool, England. Filed Feb. 17, 1904. Serial No. 193,953.



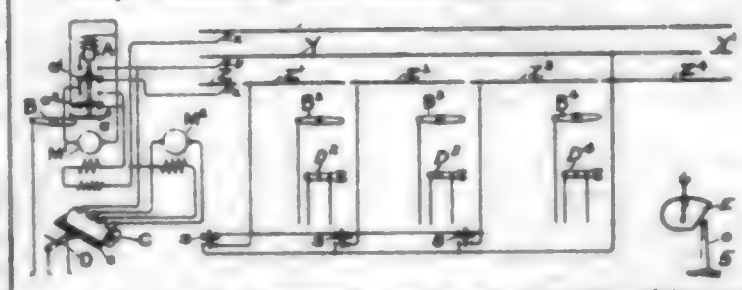
Claim.—1. A holder for an incandescent lamp, having a hollow shell with a coned seat in its interior, a plug in said shell, said plug being constructively independent of the lamp and provided with spring-contacts, with means for securing the leading-in wires of the circuit, and with a packing which fits snugly in said coned seat and forming a water-tight joint, and means for preventing the displacement outwardly of the plug toward the attaching end of the shell.

2. An electric incandescent-lamp holder, having a shell, a plug which fits water-tight into said shell, the spring-plungers carried by said plug, the leading-in wires, the ring *r* in the shell exterior to the plug and embracing said wires, and insulating material which fills said ring about the wires, said ring being disposed between the said plug and the attaching end of the shell.

3. In electric incandescent-lamp holders, the combination with an outer tubular shell of earthenware, of an earthenware plug inserted thereinto, spring-plungers and terminals carried by the plug, the terminals being slotted to receive the leading-in wires and provided with screws to pinch them tight in the slots, a rubber ring for making a water-tight joint between the plug and the hollow shell, and an earthenware tube placed round the leading-in wires for spanning the space between the plug and the lamp board or base, said ring being filled with sealing-wax or other insulating compound.

4. The combination with a lamp board or base, of a hollow lamp-holder secured to said base, leading-in wires having partially-naked bights which project from said base or board into said holder, a ring of earthenware which fits into said holder about the bights of the wires, and a filling of insulating material in said ring and about the wires, a portion of the naked bights of the wires projecting through and beyond the filling in said ring.

816,484. **AUTOMATIC CARRIER.** SAM H. LIBBY, East Orange, N. J., assignor to Sprague Electric Company, a Corporation of New Jersey. Filed Sept. 1, 1904. Serial No. 222,944.



Claim.—1. In an automatic carrier system, a motor-driven carrier, a normally energized continuous conductor, a normally dead sectional conductor, collecting devices carried by the carrier and engaging said conductors, the device engaging said sectional conductor being normally connected to the driving-motor, means at each station for energizing the sectional conductor as far as that station to bring said carrier to said station, and means for connecting the driving-motor to the continuous conductor to return the carrier.

2. In an automatic carrier system, a motor-driven carrier, a normally energized continuous conductor, a normally dead sectional conductor, collecting devices carried by the carrier and engaging said conductors, a switch carried by said carrier adapted to connect the driving-motor to either of said conductors and arranged normally to connect said motor to said sectional conductor, means at each station for energizing said sectional conductor as far as that station to bring said carrier to said station, and means for shifting said switch to connect the driving-motor to the continuous conductor to return said carrier.

3. In an automatic carrier system, a motor-driven carrier, a plurality of stations, a point to which the carrier is to be returned, a normally energized continuous conductor and a normally dead sectional conductor extending from said stations to said point, collecting devices carried by the carrier and adapted to engage said conductors respectively, a switch carried by said carrier adapted to connect the driving-motor to either of said conductors and arranged normally to connect it to said sectional conductor, a magnet-winding controlled by said switch and arranged to be energized when said switch is moved to connect the motor to the continuous conductor and adapted when energized to hold said switch in that position, means at each station for energizing the sectional conductor between the return-point and that station, to bring the carrier to that station, and means for shifting said switch to connect the motor to the continuous conductor to return the carrier.

4. In an automatic carrier system, a motor-driven carrier, two parallel conductors adapted to be engaged thereby, a switch adapted to connect the driving-motor to either of said conductors, means for

holding said switch normally in one position, means for shifting said switch to its other position, and a magnet-winding arranged to be connected in circuit with the driving-motor when said switch is moved to its second position and adapted when energized to hold said switch in said position.

5. In an automatic carrier system, a motor-driven carrier, two conductors adapted to be engaged thereby, one of said conductors being normally dead and the other normally energized, collecting devices carried by said carrier and adapted to engage said conductors, the device engaging said normally dead conductor being normally connected to the driving-motor, means for energizing said normally dead conductor to move said carrier in one direction, and means for connecting the driving-motor to the normally energized conductor to move said carrier in the other direction.

6. In an automatic carrier system, a motor-driven carrier, two conductors adapted to be engaged thereby, one of said conductors being normally dead and the other normally energized, collecting devices carried by said carrier and adapted to engage said conductors, the device engaging said normally dead conductor being normally connected to the driving-motor, means for energizing said normally dead conductor to move said carrier in one direction, means for connecting the driving-motor to the normally energized conductor to move said carrier in the other direction, and electromagnetic means for maintaining said connection until the carrier reaches the end of said conductor.

7. In an automatic carrier system, a plurality of stations, a carrier, an electric motor carried thereby, a controlling-switch for said motor carried by said carrier, means at each station adapted to engage said controlling-switch, and manually-operated means controllable from the floor for operating said engaging means.

8. In combination, an overhead track, a hoist traveling thereon, an electric motor and controlling-switch carried by said hoist, means at a plurality of points adjacent to the track for engaging said controller, and manually-operated means controllable from the floor for operating said engaging means.

9. In an automatic carrier system, a motor-driven carrier, a continuous conductor, a sectional conductor, collecting devices carried by the carrier and engaging said conductors, the device engaging said sectional conductors being normally connected to the driving-motor, means at each station for controlling the supply of current to the section of the sectional conductor to bring said carrier to said station, and means for connecting the driving-motor to the continuous conductor to return the carrier.

10. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, collecting devices carried by the carrier and engaging said conductors, a motor-controlling switch for connecting the motor on the carrier in circuit with either of said collecting devices, and switches for separately controlling the supply of current to the sections of the sectional conductor.

11. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, the continuous conductor extending beyond the sectional conductor at one end of the system and the sectional conductor extending beyond the continuous conductor at the other end, an electrical connection joining the continuous conductor and the last section of the sectional conductor, and switches for separately controlling the supply of current to the remaining sections of the sectional conductor.

12. In combination, a motor-driven carrier, a trolley system comprising two conductors of substantially equal length, the one being slightly displaced longitudinally with reference to the other, collecting devices carried by the carrier and engaging said conductors, a reversing-switch arranged to complete the connections of the motor on the carrier for one direction of rotation through one of said collecting devices and for the opposite direction of rotation through the other collecting device, and means whereby the said switch will be maintained in one position as long as the collecting device corresponding to that position is in engagement with its trolley-conductor and will be shifted into its other position when said collecting device passes from its trolley-conductor.

13. In combination, a motor-driven carrier, a trolley system comprising two conductors of substantially equal length, the one being slightly displaced longitudinally with reference to the other, collecting devices carried by the carrier and engaging said conductors, a reversing-switch arranged to complete the connections of the motor on the carrier for one direction of rotation through one of said collecting devices and for an opposite direction of rotation through the other collecting device, and an electromagnet in series with one of said collecting devices, and adapted to maintain said switch in one position as long as said collecting device is in contact with its conductor.

14. In combination, a motor-driven carrier, a trolley system therefor passing through a number of stations, means for starting the carrier at any of said stations, means for automatically stopping the carrier at a predetermined point, and controlling means at each station for starting said carrier from said point in the opposite direction to bring it back to that station.

15. In combination, a motor-driven carrier, a trolley system comprising two conductors, collecting devices carried by said carrier and engaging said conductors, and means whereby the disengagement of one collecting device from its corresponding conductor will change the motor connections so that current will be supplied thereto through the other collecting device.

16. In combination, a motor-driven carrier, a trolley system comprising two conductors, means for closing the motor-circuit through the collecting device engaging one of said conductors, and means whereby the disengagement of the said collecting device from its corresponding conductor will cause the motor to be supplied with current through the other collecting device.

17. In combination, a motor-driven carrier, a trolley system comprising two conductors, collecting devices carried by said carrier and engaging said conductors, means for closing the motor-circuit through one of said collecting devices, and means whereby the disengagement of said collecting device from its corresponding conductor will cause the motor to be connected to the other collecting device with its circuit arranged for rotation in the reverse direction.

18. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, collecting devices carried by the carrier and engaging said conductors, means for connecting the motor in circuit with one of said collecting devices, and means whereby a stoppage of current-flow through said collecting device will cause the motor-circuit to be connected to the other collecting device.

19. In combination, a motor-driven carrier, a trolley system comprising two conductors, collecting devices carried by the carrier and engaging said conductors, means for closing the motor-circuit through one of said collecting devices, and means whereby a cessation of current through said collecting devices will cause the motor-circuit to be connected to the other collecting device.

20. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, collecting devices carried by said carrier and engaging said conductors, means for closing the motor-circuit through the collecting device engaging the continuous conductor, and means whereby a cessation of current-flow will connect the motor-circuit to the collecting device engaging the sectional conductor.

21. In combination, a motor-driven carrier, a trolley system comprising two conductors, collecting devices carried by the carrier and engaging said conductors, means for closing the motor-circuit through one of said collecting devices, and means for shifting the motor-circuit connections to the other collecting device.

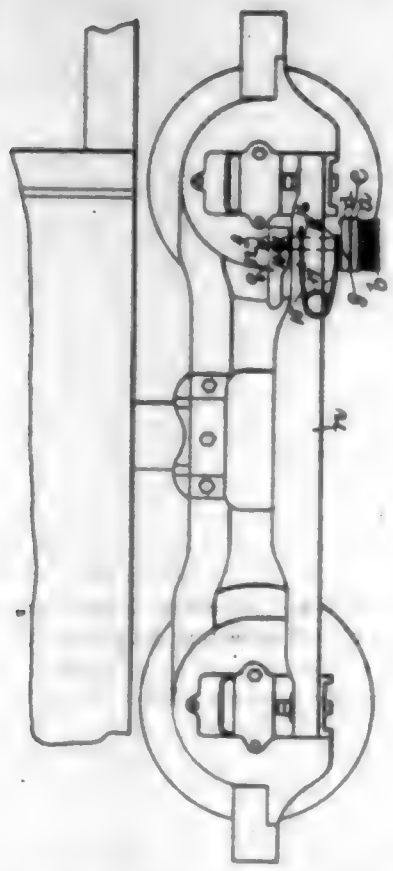
22. In combination, a motor-driven carrier, a trolley system comprising two conductors, collecting devices carried by the carrier and engaging said conductors, means for closing the motor-circuit through one of said collecting devices, and means whereby the motor-circuit will be automatically connected to the other collecting device when the motor-driven carrier reaches a certain point in its travel.

23. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, collecting devices carried by the said carrier and engaging said conductors, means for connecting the motor in circuit with the collecting device engaging the continuous conductor, means whereby the motor-circuit will be connected to the other collecting device when the motor-driven carrier reaches a certain point along the way, and means for controlling the supply of current to the several sections of said sectional conductor.

24. In combination, a motor-driven carrier, a trolley-conductor passing through a number of stations, a collecting device carried by said carrier and engaging said conductor, a switch for closing the motor-circuit through said collecting device, and manually-operated means at each of said stations for operating said switch.

25. In combination, a motor-driven carrier, a trolley system comprising a continuous conductor and a sectional conductor, the said trolley system passing through a plurality of stations, collecting devices carried by the carrier and engaging said conductors, a circuit-closing switch for closing the motor-circuit through one or the other of said collecting devices, and manually-operated means at each station for operating said switch.

816,485. RAIL-CLEANING APPARATUS. JOHN LITDALL, Boston, and PAUL WINSOR, Weston, Mass. Filed Jan. 23, 1904. Serial No. 190,289.



Claim.—1. The combination with a car-truck, of a rail-cleaning device, a support for said rail-cleaning device carried by said truck, a handle secured to said device, a guide attached to said support and through which the said handle is extended, an actuating device for said cleaning device pivoted to said handle and coöperating with said support to raise said cleaning device when moved into one position, and to permit said cleaning device to be lowered when moved into another position, said actuating device coöperating with said support to retain the cleaning device in its raised position until said actuating device is positively moved, and a spring to move said cleaning device downward when the actuating device is moved into another position, substantially as described.

2. The combination with a car-truck, of a brush for cleaning the upper surface of a third rail or conductor, comprising a plurality of metal bristles or wires, a back to which said bristles or wires are secured, a reinforcing-back, and a layer of insulating material interposed between said backs, means to secure said backs together, a bar or handle secured to said brush and extended upward, a guide for said bar or handle, an actuating device pivoted to said bar or handle above said guide and acting to elevate said brush when turned in one direction, and a spring to move said brush downward when said actuating device is moved into another position, substantially as described.

3. In a rail-cleaning apparatus, in combination, a cleaning device to engage the rail to be cleaned, a substantially vertical handle attached to said device, a support for said device above which said handle is extended, and means pivoted to said handle above said support to elevate said cleaning device when the said means is turned into one position and to permit said cleaning device to move downward when said means is turned into another position, said means cooperating with said support to automatically retain the cleaning device in its raised position, until said means is positively turned, substantially as described.

4. In a rail-cleaning apparatus, in combination, a cleaning device to engage the rail to be cleaned, a substantially vertical handle attached to said device, a support for said device above which said handle is extended, and means pivoted to said handle above said support to elevate said cleaning device when the said means is turned into one position and to permit said cleaning device to move downward when said means is turned into another position, said means cooperating with said support to automatically retain the cleaning device in its raised position, until said means is positively turned, and a spring to move said cleaning device into its lowered position, substantially as described.

5. In a rail-cleaning apparatus, in combination, a cleaning device to engage the rail to be cleaned, a substantially vertical handle attached to said device, a support for said device, and a cam pivoted to said handle and having a substantially flat face to engage the said support to automatically retain said cleaning device in its elevated position, and having a second flat face to engage said support and limit the downward movement of said cleaning device, substantially as described.

6. In a rail-cleaning device, in combination, a vertically-movable device adapted to engage the rail to be cleaned, a handle attached to said cleaning device, a support for said cleaning device, and a device pivotally attached to said handle to elevate said cleaning device when turned into one position, and to permit said cleaning device to move downward when turned into another position, said device coöperating with said support to automatically retain the cleaning device in its raised position until said device is positively turned, substantially as described.

7. In a rail-cleaning device, in combination, a cleaning device adapted to engage the rail to be cleaned, a support for said cleaning device, a spring to keep said cleaning device in engagement with said rail, comprising a bent wire rod having one end fastened to said support and its opposite end in sliding engagement with said cleaning device, and a lifting device acting in opposition to said spring to elevate said cleaning device, substantially as described.

8. In a rail-cleaning device, in combination, a vertically-movable device provided with metal bristles or wires adapted to engage the rail to be cleaned, a handle attached to said cleaning device, a support for said cleaning device, and an actuating device pivotally secured to said handle and coöperating with said support, said handle having provision for adjustable connection with said actuating device, substantially as described.

9. In a rail-cleaning device, in combination, a vertically-movable brush provided with metal bristles or wires adapted to engage the rail to be cleaned, a back piece to which said bristles are secured, a reinforcing-back secured to said back piece, insulating material interposed between said back pieces, a metal bar having a flange secured to said reinforcing-back and provided with a groove, a support for said brush, a hollow guide secured to said support and through which said bar extends, a lever pivoted to said bar above said support and coöperating with the latter to elevate the brush when turned into one position, and a wire spring having one end secured to said support and its other or free end resting in the groove of the flange on said bar, substantially as described.

10. In a rail-cleaning device, in combination, a vertically-movable cleaning device provided with a metallic member adapted to engage the rail to be cleaned, a metal handle attached to said device, means to insulate said metal handle from the metal member of the cleaning device, a support for said cleaning device, and means movably connected with said handle to support said cleaning device in its elevated position, substantially as described.

11. In a rail-cleaning device, in combination, a cleaning device provided with a plurality of cutting members capable of yielding under pressure, a handle attached to said device, a support for said device, a spring to force said device downward, and means pivotally connected with said handle to move thereon in a vertical plane and to elevate the brush when moved into one position and automatically retain it in said position, and to permit of the downward movement of said brush under the influence of the spring when moved into another position, substantially as described.

12. In a rail-cleaning device, in combination, a movable cleaning device adapted to engage the rail to be cleaned and provided with a handle, a spring to keep said device in engagement with said rail, a support for said spring, and a cam pivoted to said handle above said support and having substantially flat faces substantially at right angles to each other which coöperate with said support, substantially as described.

816,486. RAKE. GEORGE M. LOWE, Latrobe, Pa. Filed May 10, 1905. Renewed Feb. 28, 1906. Serial No. 303,472.



Claim.—A rake comprising a tubular head elliptical in cross-section and having pairs of alining perforations in the line of its major cross-sectional axis, teeth having reduced upper ends engaged each through a pair of alining perforations of the head with the adjacent curved face of the head in the concavity of its shoulder, said

reduced portions projecting above the head and being threaded, the nuts engaging with the reduced portions above the head, a ferrule having diverging arms disposed with their extremities against the head, bolts engaged through the arms and head and a handle engaged in the ferrule.

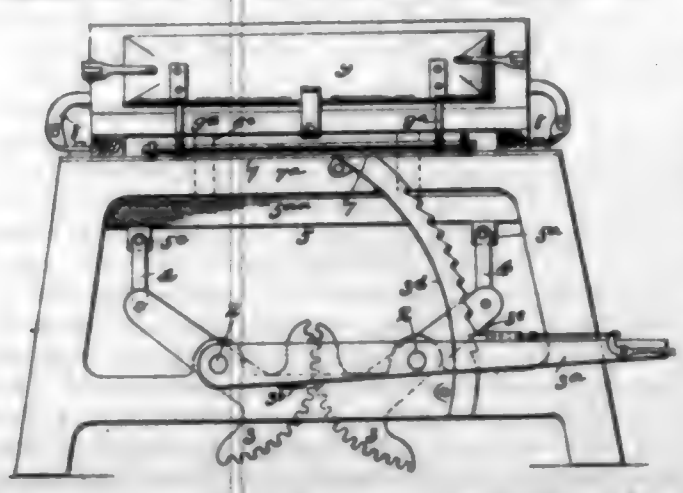
816,487. STEAM-TURBINE. DAVID LUNDAIR, West Bay City, Mich., assignor of one-half to Jacob P. Bender, Bay City, Mich. Filed Sept. 21, 1905. Serial No. 279,418.



Claim.—1. A steam-turbine comprising a casing made in sections having external and internal flanges, said sections being bolted together and having rings secured between the external section-flanges and extending into the casing, a series of guides secured to said internal flanges and rings and provided with openings, a series of turbine-wheels mounted upon a shaft within said casing, buckets on said wheels, an inlet-port at one end of said casing, and an exhaust-port at the opposite end, substantially as described.

2. In a compound steam-turbine consisting of sections having internal and external flanges, guides secured to the internal flanges, rings secured to the external flanges and guides secured thereto, a shaft extending through said casing, a series of impact turbine-wheels mounted upon said shaft within said casing, a series of larger steam-turbine wheels secured to said shaft within said casing, a live-steam-inlet pipe at one end of said casing, and an exhaust-port at the opposite end thereof, substantially as described.

816,488. CEMENT-BLOCK-MOLDING MACHINE. FRANK P. MARTIN, Beloit, Wis. Filed Apr. 11, 1905. Serial No. 255,018.

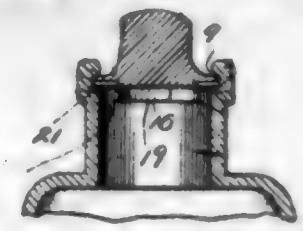


Claim.—1. A machine of the character described, comprising a stationary upright frame-support, end and lateral mold members arranged thereon and constituted of base portions one partially overlying the other and provided in their thus opposed surfaces with engaging slots and set bolts or screws, respectively, and of hinged or pivoted ends and sides proper connected to said base portions, and adapted for mutual retention in operative position.

2. A machine of the character described, comprising a stationary upright frame-support, end and lateral mold members arranged thereon and constituted of base portions one partially overlying the other and provided in their thus opposed surfaces with engaging slots and set-screws, respectively, and of hinged or pivoted ends and sides proper connected to said base portions and adapted for mutual retention in operative position, a vertically-movable frame or carriage sliding upon the aforesaid frame-support and bearing duplicate cores and a partition arranged equidistantly between said cores, said cores and partition being received within the chamber formed by said mold members, and actuating mechanism for said core and partition-bearing carriage.

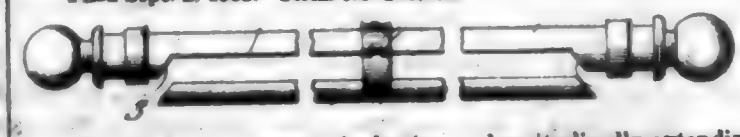
816,489. BOTTLE-SEAL. ISAAC B. MERCER and HARRY D. ORCHARD, Bloomington, Ind. Filed Apr. 4, 1905. Serial No. 254,615.

Claim.—1. The combination with a bottle having recesses in the upper edge of its neck at diametrically opposite points thereof, and having angular ears formed thereupon, the angular portions of the ears extending inwardly over the edge of the neck above the recesses, of a cap having a notched flange said notches of the flange being arranged for the passage of the ears therethrough said cap being rotatable upon the bottle to bring the portions of its flange between the notches thereof beneath the angular portions of the ears, and spring-tongues carried by the cap and arranged for engagement in the recesses when the cap is in its last-named position.



2. The combination with a bottle having recesses in the upper edge of its neck and having ears extending upwardly and inwardly over the recesses, of a closure for a neck comprising a cap having a flange engaged beneath the inwardly-extending portions of the ears, said flange having notches for the passage of the ears therethrough, and spring-tongues carried by the cap and lying with their ends engaged in the recesses, said flange having slots therein for the reception of the tongues.

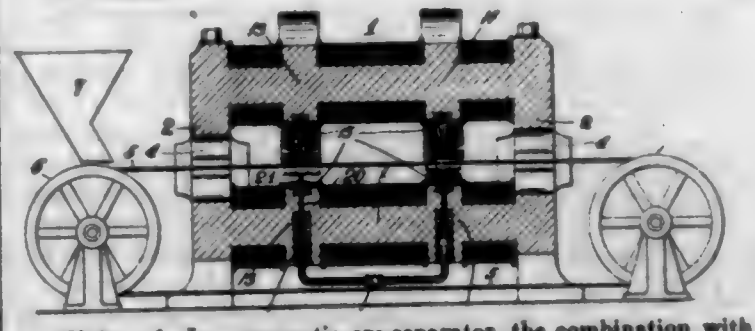
816,490. CURTAIN-POLE. JAMES N. MILLS, Oak Station, Pa. Filed Sept. 2, 1905. Serial No. 276,859.



Claim.—1. A curtain-pole having a longitudinally-extending recess formed in one face thereof, a clamping-strip adapted to be seated within the recess, retaining-rings slidably mounted upon the pole and movable into engagement with the ends of the clamping-strip to hold the latter in place, a pivoted clamping member carried by the pole for engagement with the strip at a point between its ends, and means for holding the clamping member in engaging position.

2. A curtain-pole having a longitudinally-extending recess, a clamping-strip adapted to seat within the recess, rings slidably mounted on the pole and movable into engagement with the ends of the strip for holding the same in place, a plate attached to the pole and having spring bearing portions, and a clamping member pivotally connected with the plate and adapted for engagement with the strip at a point between its ends, said clamping member having cam-heads acted upon by the spring portions for maintaining the member in clamping position.

816,491. MAGNETIC ORE-SEPARATOR. RICHARD R. MOFFATT, Brooklyn, N. Y., assignor to Imperial Ore Separator Company a Corporation of New York. Original application filed July 19, 1904. Serial No. 217,222. Divided and this application filed Oct. 6, 1904. Serial No. 227,249.



Claim.—1. In a magnetic ore-separator, the combination with a feed-conveyer and two separating-conveyers, of a magnet comprising two sets of opposed poles producing two fields of different intensity, two cores each connecting one pole of one set in magnetic circuit with one pole of the other set, and side frames connecting the poles of the same set in magnetic circuit with each other.

2. In a magnetic ore-separator, the combination with a magnet comprising two sets of opposed poles producing two fields of different intensity, two cores each connecting one pole of one set in magnetic circuit with one pole of the other set, and side frames, having apertures, connecting the poles of the same set in magnetic circuit with each other, of a feed-conveyer adapted to pass through the said apertures in the side frames, and two separating-conveyers.

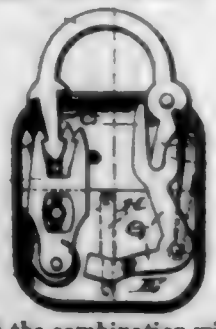
3. In a magnetic ore-separator, the combination with a feed-conveyer, and two separating-conveyers, of a magnet comprising two sets of opposed poles, the poles of one set being nearer together than the poles of the other set, two cores each connecting one pole of one set in magnetic circuit with one pole of the other set, and side frames connecting the poles of the same set in magnetic circuit with each other.

4. In a magnetic ore-separator, the combination with a magnet comprising two sets of opposed poles, the poles of one set being nearer together than the poles of the other set, two cores each connecting one pole of one set in magnetic circuit with one pole of the other set, side frames, having apertures, connecting the poles of the same set in magnetic circuit with each other, of a feed-conveyer adapted to pass through the apertures of the side frames, and two separating-conveyers.

5. In a magnetic ore-separator, the combination with two parallel cores having opposed poles, side-frame extensions, having apertures, terminating the said cores at both ends and connecting the said cores in magnetic circuit, arranged in apposition to each other, and means for securing the said side-frame extensions together, of a feed-conveyer adapted to pass through the said apertures, and a separating-conveyer.

6. In a magnetic ore-separator, the combination with two parallel cores each having a plurality of poles, opposed to a like number of poles on the other core, side-frame extensions, having apertures, terminating the said cores at both ends and connecting the said cores in magnetic circuit, arranged in apposition to each other, and means for fastening the said side-frame extensions together, of a feed-conveyer adapted to pass through the apertures in the side-frame extensions, and a plurality of separating-conveyers.

816,492. LOCK. MARTIN HOHR, Newport, Ky., assignor of one-third to George B. Poole, Cincinnati, Ohio. Filed Sept. 13, 1905. Serial No. 278,262.



Claim.—1. In a lock the combination with the casing formed in two parts, of a hasp pivoted to the lower part, tumblers arranged in said part, a lever pivoted in said part adapted to engage the hasp, and a locking-bolt carried by the other part for the purpose described.

2. In a lock, the combination with the casing formed in two parts, of a hasp pivoted to the lower part, tumblers pivoted in said part, a plate secured over said tumblers, a duplicate pair of tumblers arranged over said tumblers on the plate, a spring locking-bolt carried by the other part, and a lever operated by the hasp adapted to engage said bolt for the purpose described.

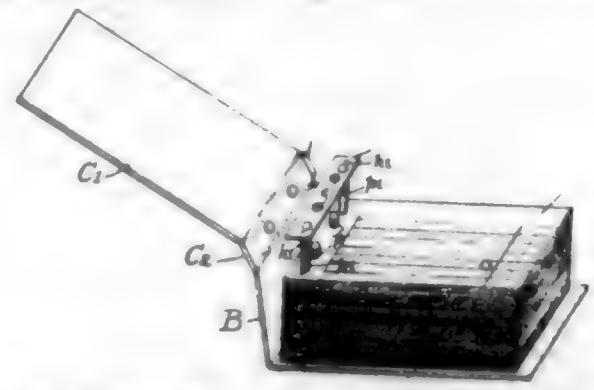
3. In a lock, the combination with the casing formed in two parts, one of the parts being provided with a guideway on the outside, a locking-bolt arranged under the guideway on the inside, and means connected to the hasp for forcing the bolt into the guideway for the purpose described.

4. In a lock, the combination with the casing, tumblers pivoted in said casing, a hasp pivoted in said casing and provided with an inwardly-projecting member, a guideway formed on the face of the casing, a spring-bolt secured in the casing under the guideway, and a lever operated by the hasp adapted to engage the bolt for the purpose described.

5. In a lock, the combination with an upper and lower shell, of a double set of tumblers secured in the lower shell, a plate secured between said tumblers, a spring-actuated hasp secured in said shell, a lever provided with jaws at one end and adapted to engage the hasp and beveled at the other end, a guideway formed in the face of the other shell, a spring-bolt secured under the guideway on the inside and projecting up in said guideway and adapted to be operated by the beveled end of the lever for the purpose described.

816,493. LOOSE-LEAF-BINDER FRAME AND LEAF THEREFOR. HENRY J. MOORE, Rochester, N. Y., assignor to John C. Moore Corporation, Rochester, N. Y. Filed Aug. 28, 1905. Serial No. 276,694.

Claim.—1. In a system of loose-leaf-binder construction and leaves therefor, leaves having all of them a common opening or common openings adapted to be engaged by a fixed post or fixed posts in all the binder-frames, all of such leaves having another opening or other openings adapted to be engaged by removable posts in the binder-frames, such leaves divided into classes by such other opening or openings therein, binder-frames each having a fixed post or fixed posts adapted to engage the first-mentioned opening or openings in all of such leaves, and a series of removable posts or pairs of posts each adapted to use in any one of such binder-frames but conformed to engage the second-mentioned opening or openings in but one of such classes of leaves.



2. In a system of loose-leaf-binder construction and leaves therefor, leaves having all of them a common opening or common openings adapted to be engaged by a fixed post or fixed posts in all the binder-frames, all of such leaves having another opening or other openings adapted to be engaged by removable posts in the binder-frames, such leaves divided into classes by such other opening or openings therein, binder-frames each having a fixed post or fixed posts adapted to engage the first-mentioned opening or openings in all of such leaves, and a series of removable posts or pairs of posts each adapted to use in any one of such binder-frames but conformed to engage the second-mentioned opening or openings in but one of such classes of leaves, such first openings circular and the fixed posts arranged to engage the same of cylindrical form and such removable posts having a general cylindrical form with a projection extending along one side of each one thereof and such different classes of such leaves constituted by the differences in such second openings adapting them to be engaged by such removable post or posts.

3. In a system of loose-leaf-binder construction and leaves therefor, leaves having all of them a common opening or common openings adapted to be engaged by a fixed post or fixed posts in all the binder-frames, all of such leaves having another opening or openings adapted to be engaged by removable posts in the binder-frames, such leaves divided into classes by such other opening or openings therein, binder-frames each having a fixed post or fixed posts adapted to engage the first-mentioned opening or openings in all of such leaves, and a series of removable posts or pairs of posts each adapted to use in any one of such binder-frames but conformed to engage the second-mentioned opening or openings in but one of such classes of leaves, such first openings circular and the fixed posts arranged to engage the same of cylindrical form and such removable posts having a general cylindrical form with a projection extending along one side of each one thereof and such different classes of such leaves constituted by the differences in such second openings adapting them to be engaged by such removable post or posts, the differences in such removable posts or pairs of posts constituted by different angular dispositions of such projections thereon and such correspondingly different classes of such leaves constituted by the different openings therein adapting them for engagement by such different removable posts or pairs of posts.

4. A leaf for a loose-leaf binder having two pairs of openings, each pair adapted to be so engaged by a corresponding pair of prismatic posts that a plurality of such leaves may be held in alinement by either pair of posts independently of the other pair, one of such openings having a lateral extension adapting such leaves to use in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

5. A leaf for a loose-leaf binder having two pairs of openings, each pair adapted to be so engaged by a corresponding pair of prismatic posts that a plurality of such leaves may be held in alinement by either pair of posts independently of the other pair, each opening of one pair having a lateral extension adapting such leaves to use in

a binder-frame having the corresponding posts each provided with a corresponding projecting ridge on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

6. A leaf for a loose-leaf binder having two pairs of openings, each pair adapted to be so engaged by a corresponding pair of cylindrical posts that a plurality of such leaves may be held in alinement by either pair of posts independently of the other pair, one of such openings having a lateral extension adapting such leaves to use in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

7. A leaf for a loose-leaf binder having two pairs of openings, each pair adapted to be so engaged by a corresponding pair of cylindrical posts that a plurality of such leaves may be held in alinement by either pair of posts independently of the other pair, each opening of one pair having a lateral extension adapting such leaves to use in a binder-frame having the corresponding posts each provided with a corresponding projecting ridge on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

8. In a system of loose-leaf-binder construction, means for mechanically classifying the binder-frames and the leaves for use therewith comprising coöperating irregularities in the impaling-posts and in the openings therefor in the leaves for preventing the use of any such leaves in any classified binder-frame except of the corresponding class and permiting the use of the leaves in all such classes in a common binder-frame substantially the same as any one of the classified binder-frames except as to such means for effecting such mechanical classifications, such common binder-frame adapted to hold the leaves of all such classes in alinement independently of such classifying means.

9. A leaf for a loose-leaf binder having two closed openings each adapted to be engaged by a corresponding prismatic post whereby a plurality of such leaves may be held against withdrawal and in alinement, one of such openings having a lateral extension adapting such leaves to use in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

10. A leaf for a loose-leaf binder having two closed openings each adapted to be engaged by a corresponding prismatic post whereby a plurality of such leaves may be held against withdrawal and in alinement, each of such openings having a lateral extension adapting such leaves to use in a binder-frame in which each corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

11. A leaf for a loose-leaf binder having two closed openings each adapted to be engaged by a corresponding cylindrical post whereby a plurality of such leaves may be held against withdrawal and in alinement, one of such openings having a lateral extension adapting such leaves to use in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

12. A leaf for a loose-leaf binder having two closed openings each adapted to be engaged by a corresponding cylindrical post whereby a plurality of such leaves may be held against withdrawal and in alinement, each of such openings having a lateral extension adapting such leaves to use in a binder-frame in which each corresponding post is provided with a corresponding projecting ridges on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

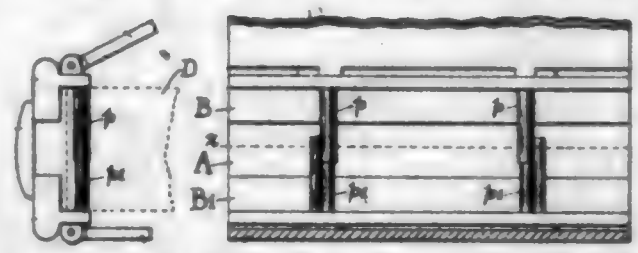
13. A leaf for a loose-leaf binder having two openings each adapted to be so engaged by a corresponding prismatic post that a plurality of such leaves may be held thereby in alinement, one of such openings having a lateral extension and such opening and extension therein conformed to permit the use of such leaves in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

14. A leaf for a loose-leaf binder having two openings each adapted to be so engaged by a corresponding prismatic post that a plurality of such leaves may be held thereby in alinement, each of such openings having a lateral extension and such openings and extensions therein conformed to permit the use of such leaves in a binder-frame in which each corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

15. A leaf for a loose-leaf binder having two openings each adapted to be so engaged by a corresponding cylindrical post that a plurality of such leaves may be held thereby in alinement, one of such openings having a lateral extension and such opening and extension therein conformed to permit the use of such leaves in a binder-frame in which the corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridge is angularly alined relative to the lateral extension in such opening therefor.

16. A leaf for a loose-leaf binder having two openings each adapted to be so engaged by a corresponding cylindrical post that a plurality of such leaves may be held thereby in alinement, each of such openings having a lateral extension and such openings and extensions therein conformed to permit the use of such leaves in a binder-frame in which each corresponding post is provided with a corresponding projecting ridge on one side thereof only when such projecting ridges are angularly alined relative to the lateral extensions in such openings therefor.

816,494. LOOSE-LEAF-BINDER FRAME AND LEAF THEREFOR. HENRY J. MOORE, Rochester, N. Y., assignor to John C. Moore Corporation, Rochester, N. Y. Filed Aug. 28, 1905. Serial No. 276,006.

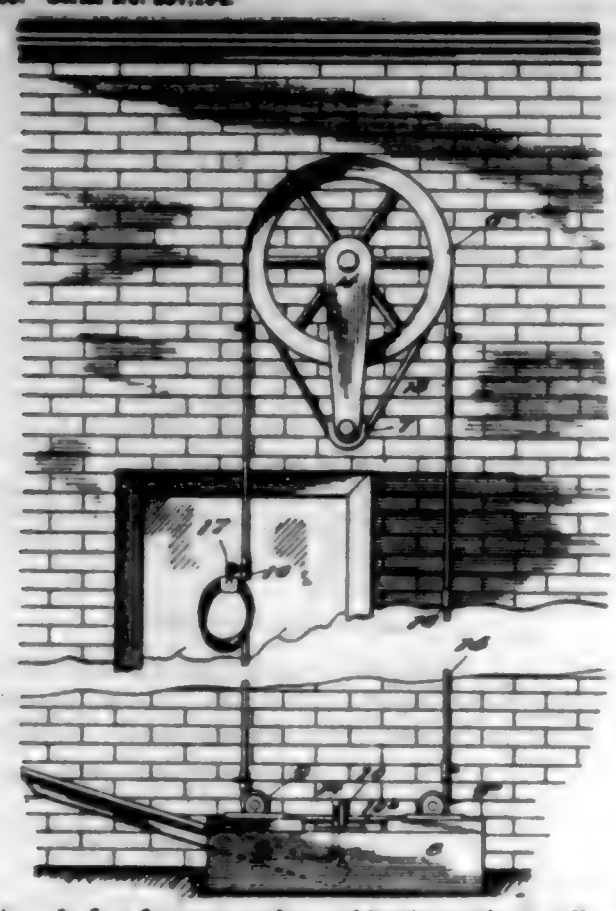


Claim.—1. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member, leaves in such binder having openings therein to receive such impaling-posts, such tubular impaling-posts conformed to engage those portions of such openings in the leaves therefor and hold them in alinement independently of the posts on such first plate, and such prismatic members on such first plate arranged to lie outside of and parallel with the tubular posts on the second plate conformed to engage the portions of the openings therefor in such leaves and hold the same in alinement independently of the tubular posts carried by the second plate.

2. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member, leaves in such binder having openings therein to receive such impaling-posts, such tubular impaling-posts conformed to engage those portions of such openings in the leaves therefor and hold them in alinement in all directions independently of the posts on such first plate, and such prismatic members on such first plate arranged to lie outside of and parallel with the tubular posts on the second plate conformed to engage the portions of the openings therefor in such leaves and hold the same in alinement in all directions independently of the tubular posts carried by the second plate.

3. In a loose-leaf binder, two plates movable relatively toward and from each other, carried by the first plate two impaling-posts each comprising two prismatic members having parallel axes and connected by a web, carried by the second plate two tubular posts each coöperating with and telescoping over one of the prismatic members of the corresponding post on the first plate, each of such tubular posts having a longitudinal slot in one side thereof to receive the web connecting the corresponding telescoping member with its adjacent parallel member.

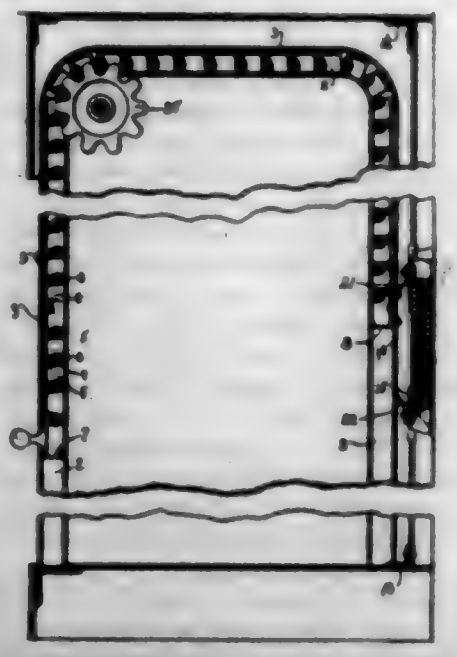
816,495. FIRE-ESCAPE. Sargent E. Moore, Dallas, Tex., assignor of one-half to Watson W. Hayes, Dallas, Tex. Filed Apr. 26, 1905. Serial No. 257,194.



Claim.—1. In a fire-escape, the combination with an endless cable operatively mounted alongside of a building, of means for braking said cable, comprising a movable platform, located at the base of said cable, and a braking member mounted on said platform adapted to be brought into engagement with the operating-cable upon the descent and alighting upon the platform of each person carried by the cable.

2. In a fire-escape, the combination with an endless cable operatively mounted alongside of a building, of a support adjacent the lower end of said operating-cable and provided with a transverse plate having a cut-away portion, and a pivoted platform provided with a braking member having a prong-shaped upper portion adapted to coöperate with the cut-away portion of said transverse plate and to receive the operating-cable therebetween.

816,496. CURTAIN AND COUNTERBALANCE FOR BOOK AND OTHER CASES. Angus McKenzie, Canton, Ohio. Filed Dec. 27, 1904. Serial No. 238,278.



Claim.—1. The combination of a case, a curtain consisting of slats pivotally joined together, a vertical bar, sliding heads mounted on said bar and provided with strike-plates, a double-flanged contact-plate secured to one of the slats and located intermediate the strike-plates, and springs actuated by the movement of the sliding heads, substantially as and for the purpose specified.

2. In a case of the class described, a flexible curtain adapted to be elevated and lowered upon the front and rear sides of the case, a vertical channel-bar, sliding heads having lateral flanges mounted on said bar, strike-plates secured to the sliding heads, a double-flanged plate secured to the curtain and located intermediate the strike-plates, a fixed plate intermediate the flanges on the heads, and springs located between said plate and the respective flanges, said springs being actuated by the movement of the heads, substantially as and for the purpose specified.

3. The combination of a case, a curtain therefor adapted to be shifted from front to rear, a vertical bar located in the back of the case, a sliding head mounted upon the vertical bar and provided with a strike-plate, a plate secured to one of the curtain-slats and adapted to strike the upper side of the strike-plate carried by the sliding head by the downward movement of the slat provided with the plate, and a spring adapted to cushion the curtain, said spring actuated by the movement of the sliding head, substantially as and for the purpose specified.

816,497. PROCESS OF PRODUCING PAPER FOR LITHOGRAPHIC PRINTS. Lewis W. Hotze, Mechanicsville, N. Y. Filed Feb. 4, 1904. Serial No. 191,937.



Claim.—1. The process of coating paper to produce a surface for lithographic prints consisting in first sizing the web to fill the pores and provide a homogeneous surface, removing the excess of sizing solution, drying the web, then applying an enamel coating composed essentially of casein which fastens to the sizing and web, and finally drying the web after the application of the enamel coating, said several steps being successively performed in one continuous operation.

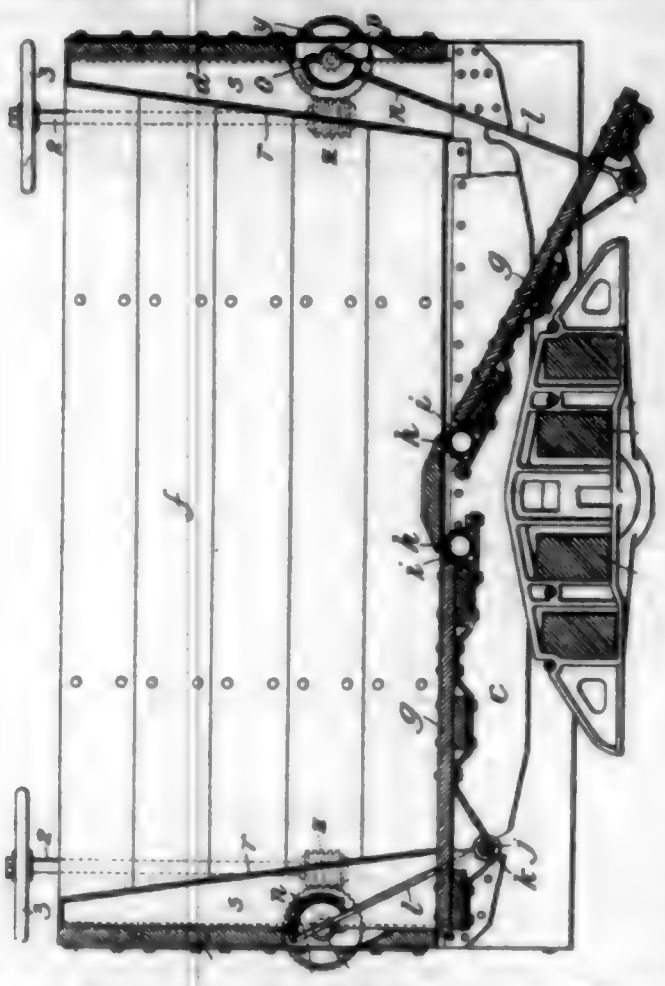
2. The process of coating paper to produce a surface for lithographic prints consisting in first applying a preliminary sizing to the web to fill the pores and provide a homogeneous surface, squeezing out the excess of sizing solution, then drying the web, next conveying it through a solution of coating-enamel containing as an essential ingredient casein, and finally drying the coating-web by means of hot air.

816,498. DUMP-CAR. Spencer Otis, Chicago, Ill. Filed Nov. 23, 1904. Serial No. 234,042.

Claim.—1. In a dump-car, the combination of a car-frame, side frames provided with hollow side stakes, dumping-doors mounted in the car-frame, door-operating shafts mounted on opposite sides of the car parallel with the side frames each having eccentric drums mounted thereon in the hollow side stakes, and a flexible element attached to each of such eccentric drums and connected with the doors for operating and supporting such doors, substantially as described.

2. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-operating shaft mounted in the car-

frame extending longitudinally along the side thereof and having an eccentric drum substantially circular upon the side farthest from the axial center of the shaft and relatively flat upon the side nearest the axial center thereof, chain mechanism attached to such eccentric member adapted to be mounted thereon and connected with the door, and means for operating such shaft, substantially as described.



3. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-supporting shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, and means for operating and supporting such flexible element and thereby the door-supporting shaft and door, substantially as described.

4. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-supporting shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, and main-operating-shaft mechanism to which such flexible element is connected for operating and supporting such flexible element and thereby the door-supporting shaft and door, substantially as described.

5. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, a main operating-shaft with which such flexible element is connected for operating and supporting such flexible element and thereby the door, and means for operating such main operating-shaft and thereby raising and lowering the swinging shaft and door, substantially as described.

6. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, a main operating-shaft mounted in the car-frame and having an eccentric member, a flexible element attached to such eccentric member and connected with the swinging shaft and thereby with the door, and means for operating such main operating-shaft and thereby the door, substantially as described.

7. In a dump-car, the combination of a car-frame provided with transverse beams having a space between the sides thereof for admitting mechanism for operating the dumping-doors, side stakes connected with such transverse beams provided with a space therein for admitting mechanism for operating the dumping-doors, a plurality of dumping-doors pivotally mounted in such car-frame, main operating-shafts mounted upon the side frames, and mechanism mounted in the hollow portion of the side stakes connected with such main operating-shaft and dumping-doors and extending through the space formed between the side portions of the transverse beams for operating and supporting the doors, substantially as described.

8. In a dump-car, the combination of a plurality of dumping-doors, a supporting-framework in which such doors are pivotally mounted provided with side frames and hollow side stakes, main operating-shafts rotatably mounted in such side frames, and mechanism connected with such shafts and dumping-doors and arranged inside the hollow side stakes for operating and supporting such doors, substantially as described.

9. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-supporting shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, main-operating-shaft mechanism to which such flexible element is connected for operating and supporting such flexible element and thereby the door-supporting shaft and door, gear mechanism for operating such main operating-shaft, and means for connecting such gear mechanism operatively with the operating-shaft and releasing it therefrom to permit the doors to swing to open position, substantially as described.

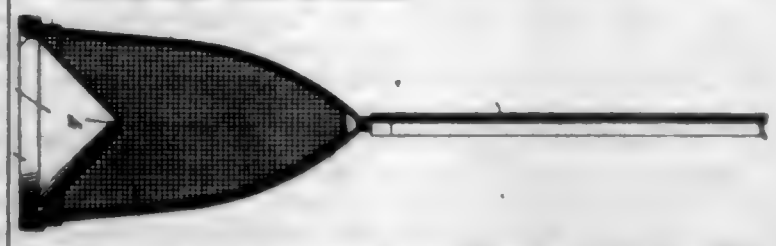
10. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-operating shaft mounted in the car-frame and having an eccentric member rotatable therewith, a flexible element attached to such eccentric member and connected with the door for operating such door, a worm-wheel mounted upon such main operating-shaft in movable relation thereto, clutch mechanism for operatively connecting such worm-wheel with the main operating-shaft and disconnecting it therefrom to permit the rotation of the shaft while the worm-wheel is stationary, and means for operating such worm-wheel, substantially as described.

11. In a dump-car, the combination of a car-frame, a dumping-door mounted therein, a door-supporting shaft extending beneath such door and movable therewith, a flexible element upon which such shaft is suspended, main-operating-shaft mechanism to which such flexible element is connected for operating and supporting such flexible element and thereby the door-supporting shaft and door, a worm-wheel mounted upon such main operating-shaft in movable relation thereto, clutch mechanism for operatively connecting such worm-wheel with the main operating-shaft and disconnecting it therefrom to permit the rotation of the shaft while the worm-wheel is stationary, and means for operating such worm-wheel, substantially as described.

12. In a dump-car, the combination of a car-frame provided with hollow side stakes, dumping-door mechanism pivotally mounted in such frame, main-operating-shaft mechanism for operating the dumping-door mechanism, and door-operating mechanism mounted inside the hollow side stakes and connected with the main-operating-shaft mechanism and dumping-door mechanism, substantially as described.

13. In a dump-car, the combination of a supporting-framework, dumping-doors pivotally mounted therein, side frames provided with panels hollowed out for admitting door-operating shafts between the outside and inside surfaces of such side frames, door-operating shafts mounted between the outside and inside surfaces of the side frames, and means for connecting such door-operating shafts with the doors, substantially as described.

816,499. **FLY-TRAP.** JOEL B. F. PIERCE, Oxford, Mass. Filed Dec. 13, 1905. Serial No. 291,618.



Claim.—1. A fly-trap comprising a net having a bearing portion to rest against a ceiling and an opaque mouth or entrance portion provided with an opening communicating with the interior of the net, and means for manipulating the trap.

2. A fly-trap comprising a trap-body having a bearing portion to rest against a ceiling, an opaque mouth portion having an entrance-opening leading into the body, and means for manipulating the trap-body.

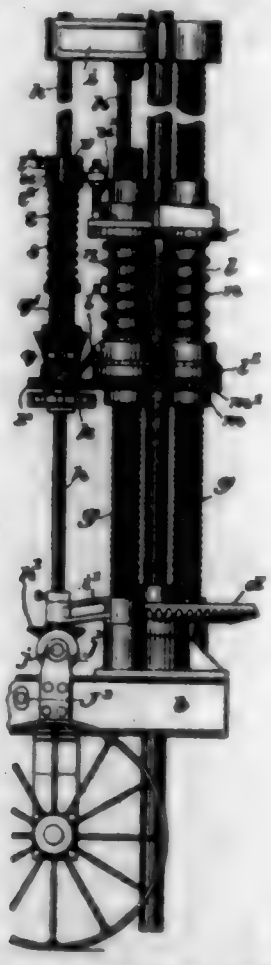
3. A fly-trap comprising a trap-body having an upper open end provided with a bearing portion to rest against a ceiling, an opaque funnel-shaped mouthpiece projecting therein and provided at its reduced end with an opening communicating therewith, and means for manipulating the trap-body.

4. A fly-trap comprising a trap-body having an open upper end provided with a bearing portion to rest against a ceiling, an opaque funnel-shaped mouth or entrance member removably mounted upon

the upper end of the body and projecting therein and provided with an entrance-opening at its reduced end, and means for manipulating the trap-body.

5. A fly-trap comprising a supporting-frame, a net carried thereby and having an upper open end, an opaque funnel-shaped mouth or entrance member removably mounted upon the frame and projecting into the opening end of the net and provided at its reduced end with an entrance-opening communicating therewith, and a manipulating-handle attached to the frame.

816,500. FEEDING MECHANISM FOR DRILLING MACHINERY. CHARLES F. PRESLAR, Cincinnati, Ohio, assignor to The Preslar-Crowley Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Mar. 23, 1904. Serial No. 199,555.



Claim.—1. In a feed mechanism for a drilling-machine means to support a drill, a spring carrying said support and means responsive to the compression of said spring to vary the rate of feed of said drill.

2. In a feed mechanism for a drilling-machine a support for a drill, springs carrying said support, a feed-actuating member and means responsive to variance in pressure of the drill on said support whereby said actuating member is moved to operative position.

3. In a feed mechanism for a drilling-machine a support for the drill, a standard carrying said support, a spring mechanism interposed between such standard and said support, and means responsive to the compression of said spring mechanism whereby said support is fed relatively to said standard.

4. In a feed mechanism for a drilling-machine a yielding drill-support and means adapted to be thrown into operative position by the yielding of said support to feed the drill.

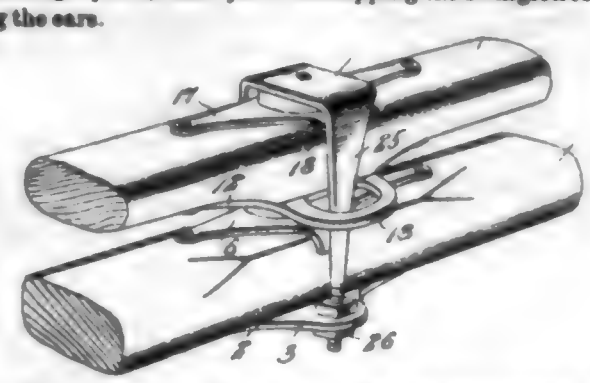
5. In a feed mechanism for a drilling-machine a yielding drill-support and a clutch adapted to be thrown into operative position by the yielding of said support to feed the drill.

6. In a feed mechanism for a drilling-machine a yielding drill-support, feeding means therefor, and a clutch interposed between said support and feeding means adapted to be thrown into operative position by the yielding of said support to actuate said feeding means.

7. In a feed mechanism for a drilling-machine a yielding drill-support, a clutch member connected therewith, feeding means for said support having a complemental clutch member, said clutch members being arranged to move into operative connection upon yielding of said support.

816,501. ATTACHMENT FOR SWINGLETREES. WILLIAM C. PATCHARD, Augusta, Ga. Filed June 30, 1905. Serial No. 267,773.

Claim.—1. The combination with a cross-bar having a socket thereupon and ears secured to and projecting from the cross-bar; of a swingletree having a socket therein, a ball seated within the socket and forming a pivot, and a yoke overlapping the swingletree and engaging the ears.



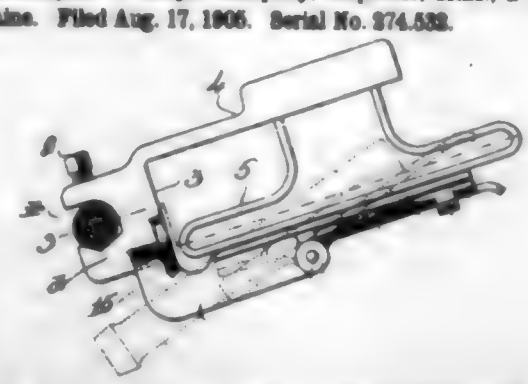
2. The combination with a cross-bar having a socket in the upper face thereof, and ears secured to and extending from the cross-bar; of a swingletree having a socket in one face thereof, a pivoted ball seated within the sockets, a loop secured to and extending from the swingletree, and a yoke overlapping the swingletree and secured to the ears, said yoke engaging the loop.

3. The combination with a cross-bar having a socketed plate secured thereto, and ears secured to and extending from the cross-bar; of a swingletree, a socketed plate secured thereto, a pivoted ball seated within the sockets, a loop integral with the socketed plate of the swingletree, and a yoke overlapping the swingletree and secured to the ears, said yoke engaging the loop.

4. The combination with a cross-bar having a socketed plate secured thereon, and ears secured to and extending from the cross-bar; of a swingletree, a socketed plate secured thereto, a ball seated within the sockets, a second socketed plate upon the swingletree, a ball seated therein, and a yoke mounted upon the last-mentioned ball and secured to the ears.

5. The combination with a cross-bar having a socketed plate thereon and ears secured to and extending from the plate; of a swingletree, socketed plates secured to opposite faces thereof, balls seated within the socketed plates, one of said balls forming a pivot for the swingletree, a loop extending from the swingletree, and a yoke mounted upon one of the balls and secured to the ears, said yoke engaging the loop.

816,502. BOBBIN-HOLDER. ALONZO B. RHOADES, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 17, 1905. Serial No. 274,532.



Claim.—1. In a bobbin-holder, a stationary rest for the bobbin provided with a back-stop, and having a discharge-opening for a spent bobbin, and means to tilt the spent bobbin and eject it endwise through the discharge-opening.

2. In a bobbin-holder, in combination, a stationary rest for the bobbin, provided with a back-stop and having a discharge-opening for a spent bobbin, and a tilting ejector mounted on the rest and adapted to tilt the spent bobbin and effect its ejection endwise through the discharge-opening.

3. In a bobbin-holder, a bobbin-rest comprising stationary, laterally-separated sides, a tilting ejector pivotally mounted between them, and a back-stop, tilting of the ejector depressing the inner end of and effecting ejection of the spent bobbin beneath the back-stop.

4. A bobbin-holder having a rest for the bobbin, and means to tilt a spent bobbin in the direction of its length and thereby eject the same at the back of the rest.

5. A bobbin-holder having a rest for the bobbin, said rest comprising stationary and tilting members, manual movement of the tilting member depressing the inner end of a spent bobbin and ejecting the same at the back of the rest, and means to normally prevent ejecting movement of the tilting member of the bobbin-rest.

6. A bobbin-holder having a fixed, bifurcated rest for the bob-

bin, a discharge-outlet for the ejection of a spent bobbin at the back of the rest, and a tilting ejector pivotally mounted in the bifurcated portion of said rest, to tilt a spent bobbin and eject it through the discharge-outlet.

7. In a bobbin-holder, a bobbin-rest comprising parallel, fixed side members, a central member fulcrumed on and adapted to tilt longitudinally between the side members, to eject a spent bobbin, and means to normally prevent such tilting of said central member of the rest.

8. In a bobbin-holder, a stationary, bifurcated rest for the bobbin, a back-stop adjacent the inner end of the rest, and an elongated, transversely-concave ejector tiltably mounted in the bifurcated rest and adapted when tilted to eject a spent bobbin from the back of the rest and below the back-stop.

9. A bobbin-holder having a stationary rest for the bobbin, and an overhanging arm, laterally-movable guards depending from the arm, a back-stop at the base of the latter, and a tilting ejector mounted centrally in the rest, to tilt and eject a spent bobbin under the back-rest, the outer end of the ejector when tilted engaging and separating the guards.

816,503. STOPPER FOR HOT-WATER BAGS. GEORGE H. F. SCHRADER, Greenburg, N. Y., assignor to A. Schrader's Son, Incorporated, New York, N. Y., a Corporation of New York. Continuation of application Serial No. 99,895, filed Mar. 25, 1902. This application filed Dec. 9, 1905. Serial No. 291,105.



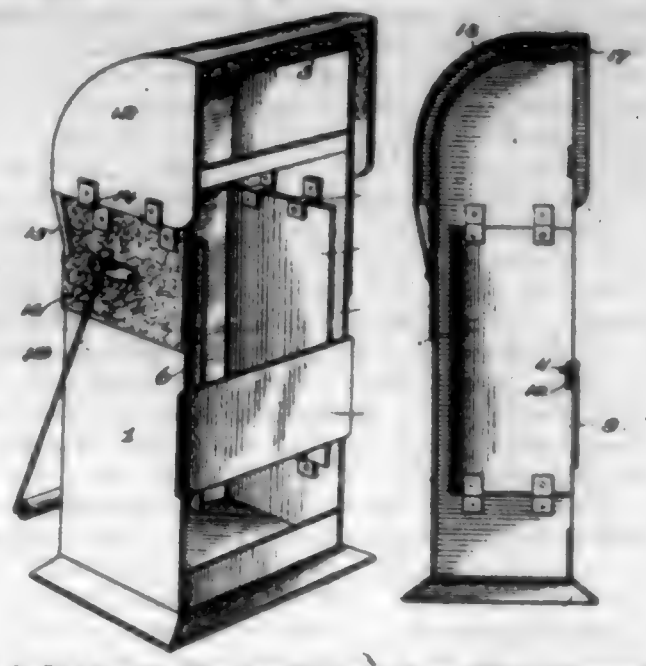
Claim.—1. A stopper for hot-water bags having a sheet-metal body with a flange at its upper edge, and a sheet-metal head with its edge crimped over said flange, said head being of easily-bendable metal to permit it to be crimped tightly upon said flange and being bent at its center to form a ring stiffening it against the transverse pressure to which it is subjected in use and to form a central socket, a reinforcing-plate filling said socket and clamped closely to the flat central portion thereof, and a handle extending transversely to the plane of the head and having its ends passing through the central portion thereof and through said reinforcing-plate and clamping said plate tightly to the central portion of the head to form practically a part thereof, so that the head has practically a central portion of extra thickness and a surrounding ring of extra stiffness whereby it is adapted to resist pressure upon the handle, and an edge of maximum flexibility to form a close joint with the flanged body.

2. A stopper for hot-water bags having a sheet-metal body A with an outward flange E at its upper edge and a sheet-metal head C having its edge N crimped over said flange, said head being of easily-bendable material to permit it to be crimped tightly upon said flange and being bent up at its center to form a stiffening-ring O resisting more effectually the transverse pressure to which it is subjected in use, and to form a central socket, a reinforcing-plate F fitting closely in said socket so as to brace said stiffening-ring against inward collapse and clamped closely to the flat central portion G, and a handle extending transversely to the plane of the head and having its ends passing through the central portion thereof and through said reinforcing-plate and clamping said plate to the central portion of the head to form practically a part thereof, so that the head has practically a central portion of extra thickness and a surrounding ring of extra stiffness braced against inward collapse, whereby it is adapted to better resist pressure upon the handle, and an edge of maximum flexibility to form a close joint with the flanged body.

816,504. LAMP-HOLDER. THOMAS SHARP, Carlisle, Pa. Filed June 22, 1905. Serial No. 266,467.

Claim.—1. In a lamp-holder, a casing open at one side, and proportioned to accommodate a lamp, a shield interposed between the lamp and casing and stopping short of both the top and the bottom of the casing, and defining a space, a top curved toward the open side, and a curved hood spaced from the curved top and the sides.

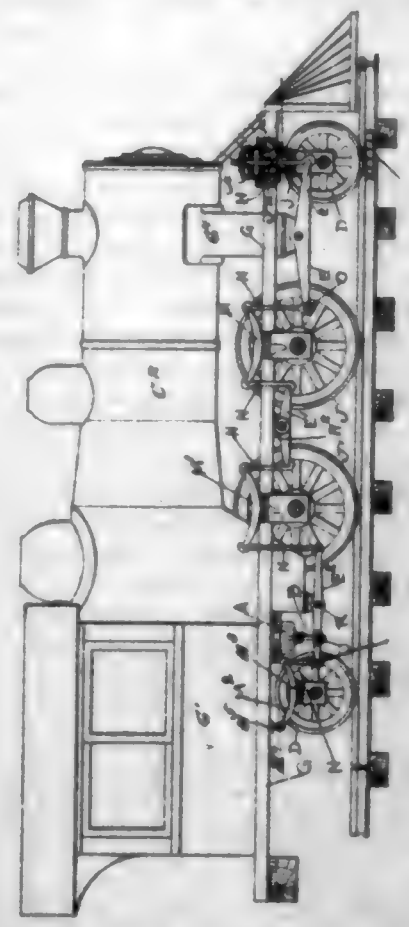
2. In a lamp-holder, a casing open at one side, and proportioned to accommodate a lamp, a shield interposed between the lamp and casing and stopping short of both the top and the bottom of the casing and defining a space, a top curved toward the open side, and a curved hood spaced from the curved top and the sides and rising from the point adjacent the top of the shield.



3. In a lamp-holder, a casing open at one side and proportioned to accommodate a lamp and provided with an anchor-receiving recess, a shield interposed between the lamp and casing and stopping short of both the top and the bottom of the casing and defining a space, a top curved toward the open side, and a curved hood spaced from the curved top and sides.

4. In a lamp-holder, a casing open at one side and proportioned to accommodate a lamp and provided with an anchor-receiving recess, a shield interposed between the lamp and casing and stopping short of both the top and the bottom of the casing and defining a space, a top curved between the open side and a curved hood spaced from the curved top and the side and rising from a point adjacent to the top of the shield.

816,505. TRACTION-INCREASING MECHANISM. FRED L. SHELDON, Tacoma, Wash. Filed Aug. 11, 1905. Serial No. 273,808.



Claim.—1. The combination with drive-wheel trucks, front and rear pony-trucks, a frame supported upon said drive-wheel trucks, a boiler carried by said frame, of a depending standard secured near the front end of said boiler, a main lever pivotally mounted upon said standard, an auxiliary lever pivotally mounted upon said boiler or frame, an intermediate lever pivotally mounted upon said frame, parallel springs mounted upon said drive-wheel trucks and rear pony-truck, means connecting said levers to said springs, and means for

swinging the outer end of said primary and auxiliary levers upward and thereby lifting weight off of said pony-trucks.

2. In a mechanism of the class described, the combination with drive-wheel trucks, and front and rear pony-trucks, a frame carried by said drive-wheel trucks, of a boiler carried by said frame, said boiler provided with a depending standard formed near its front end, a primary lever pivotally mounted upon said standard, auxiliary levers pivotally mounted upon said boiler or frame near its rear end, intermediate levers pivotally mounted upon said frame between said drive-wheel trucks, parallel springs positioned upon said drive-wheel trucks and the rear pony-truck, means connecting the springs carried by the rear pony-truck to the frame, hangers connecting said levers to said springs, cylinders carried by said frame near the front and rear ends, pistons mounted within said cylinders, means connecting said pistons to the outer ends of said levers, said pistons being capable of moving within said cylinders for swinging said levers and thereby removing weight off of said pony-trucks and placing it upon the drive-wheel trucks.

3. In a mechanism of the class described, the combination with a drive-wheel truck, a front and a rear pony-truck, a frame supported upon said drive-wheel truck, a boiler carried by said frame, of a primary and auxiliary levers pivotally mounted upon said boiler or frame, means engaging said drive-wheel truck and connecting the levers, a cylinder carried by said frame above said front pony-truck, a piston positioned within said cylinders, said front pony-truck provided with a saddle, a piston-rod extending through said saddle and secured to said piston, a member carried by said piston-rod and normally bearing against said saddle for supporting the weight carried by said pony-truck, and means for synchronously swinging the rear ends of the auxiliary levers upward when said piston is moved within the cylinder for lifting the front end of the primary lever upward.

4. In a mechanism of the class described, the combination with a drive-wheel truck, front and rear pony-trucks, a frame positioned above the axles of said trucks, a boiler positioned above said frame, of a saddle having a recess carried by said front pony-truck, springs carried by said trucks, levers and hangers connecting said springs, a piston-rod extending through the saddle of the front pony-truck and connected to one of said levers, said piston-rod provided with a supporting member, an adjustable member carried by said piston-rod and normally in engagement with said supporting member, said member normally resting in the recess of the saddle, a cylinder provided with a piston positioned above said front pony-truck, said piston connected to said piston-rod, a cylinder positioned near the rear pony-truck, a piston positioned within said last-mentioned cylinder, and a piston-rod connected to said piston and the levers contiguous to said rear pony-truck.

5. In a mechanism of the class described, the combination with drive-wheel trucks, front and rear pony-trucks, a frame positioned above the axles of said trucks, a boiler positioned above said frame, of a standard secured to said boiler near its front end, springs positioned upon said trucks, means connecting the springs carried by said rear pony-truck at one end to said frame, intermediate levers fulcrumed upon said frame between said drive-wheel trucks, a primary lever fulcrumed upon said standard, auxiliary levers fulcrumed upon said boiler or frame between the rear pony-truck and one of said drive-wheel trucks, a cylinder secured to said frame contiguous to said rear pony-truck, a piston provided with a piston-rod, positioned within said cylinder, said piston-rod connected to said auxiliary levers, said front pony-truck provided with a saddle, said frame provided with a transverse beam above said saddle, a flat, metallic plate secured upon said beam, said plate and beam provided with registering apertures, a sleeve positioned within the aperture of said beam, a cylinder positioned above said plate, a base-plate interposed between said flat plate and cylinder, said cylinder provided with inlets and outlets, a piston positioned within said cylinder, a piston-rod provided with a threaded portion intermediate its ends, and with a hooked lower end, said piston-rod connected to said piston, said primary lever provided with a recess, the hooked lower end of said piston-rod connected to said primary lever and engaging its recessed portion, a hollow box positioned upon said piston-rod and normally engaging the recessed portion of said saddle, and an adjustable member threaded upon said rod and normally bearing upon said hollow box.

6. The combination with front and rear pony-trucks, a drive-wheel truck between said front and rear pony-trucks, a frame supported upon said drive-wheel truck, a boiler positioned above said frame, of movable members supported upon said frame and in engagement with said drive-wheel and rear pony-truck, means carried by said frame and connected to said movable member contiguous to said rear pony-truck for moving the member, a cylinder provided with a piston, carried by said frame contiguous to said front pony-truck, a piston-rod provided with a hook, connected to said piston, said piston-rod connected to said movable members, and means carried by said piston-rod and engaging said front pony-truck for normally supporting the weight upon said pony-truck.

7. In a mechanism of the class described, the combination with a pony-truck, of a saddle carried by said pony-truck, a frame positioned above said saddle, a cylinder carried by said frame, a piston positioned within said cylinder, a piston-rod connected to said piston and extending through said saddle, a lever in engagement with said piston-rod and adapted to press upon said saddle and capable of being moved, when said piston-rod is actuated for moving said lever, and thereby lifting weight off of said saddle.

8. A mechanism of the class described, the combination with a pony-truck provided with a saddle, a piston-rod extending through said saddle, a lever connected to said piston-rod, a member, constituting a stop, positioned upon said piston-rod, a box interposed between said stop and saddle, and capable of being engaged by said stop for supporting weight, and means for moving said piston-rod and lever and thereby lifting weight off of said saddle.

9. A lever-actuating device for a traction-increasing mechanism, comprising a saddle, a frame carried contiguous to said saddle, a cylinder carried by said frame, a piston positioned within said cylinder, a piston-rod slidably mounted upon said saddle and fixedly secured to said piston, an adjustable member threaded upon said piston-rod, a box positioned upon said piston-rod between said saddle and adjustable member, and a lever supported upon the outer end of said piston-rod.

10. In a mechanism of the class described, the combination of a pony-truck provided with a saddle, a frame positioned above said saddle, a vertically-movable member connecting said saddle and frame, means connected to said movable member and normally pressing down upon said saddle for supporting weight, and means for moving said member for lifting weight off of said saddle.

11. In a mechanism of the class described, the combination with a pony-truck and a frame, of a slidable rod connecting said pony-truck and frame, a member, constituting a stop, carried by said rod, a stationary member positioned upon said rod between said stop and pony-truck, the stop normally pressing upon said stationary member and pony-truck, and means for moving said rod and thereby lifting weight off of said pony-truck.

12. In a mechanism of the class described, the combination with drive-wheel trucks, front and rear pony-trucks, a frame positioned upon the axle of said front truck, a boiler positioned above said frame, of a standard secured to said boiler near one end, springs positioned upon said trucks, means connecting one end of one of the springs to said frame, an intermediate lever fulcrumed upon said frame, between said drive-wheel trucks, a primary lever fulcrumed upon said standard, an auxiliary lever fulcrumed upon said boiler and frame between the rear pony-truck and one of said drive-wheel trucks, means connecting all of said levers and springs, a cylinder provided with a piston carried by said frame contiguous to said front pony-truck, and a piston-rod connected to said piston, said piston-rod extending through a portion of said front pony-truck and connected at its lower end to said primary lever.

816,506. MASSAGE INSTRUMENT. WILLIAM O. SHELTON, Chicago, Ill. Filed Apr. 3, 1905. Serial No. 253,561.

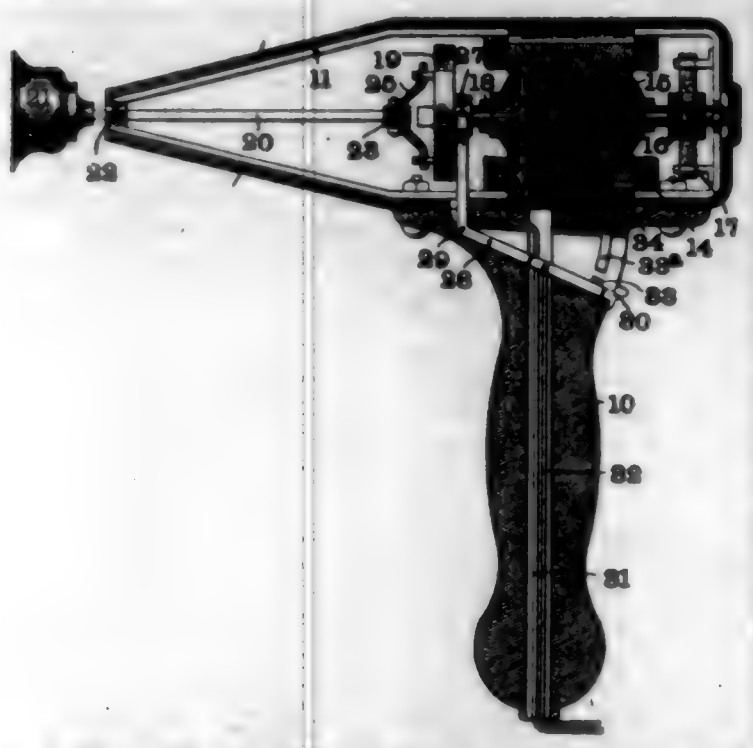
Claim.—1. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a normally stationary pivotal joint on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member.

2. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a universal joint on said frame and connected with said contact member at a point fixed relatively to said contact member.

3. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising an arm carrying said contact member and a normally stationary universal joint on said frame, said joint being connected with said arm at a point fixed relatively to said contact member.

4. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections

between said members, said operating connections comprising a universal joint normally stationary on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member.



5. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a toggle and a pivotal joint on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member.

6. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a normally stationary pivotal joint on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member, and one of said members being movable toward and away from the other to adjust said operating connections.

7. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a universal joint on said frame and connected with said contact member at a point fixed relatively to said contact member, and one of said members being movable toward and away from the other to adjust said operating connections.

8. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a universal joint normally stationary on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member, and means for moving one of said members toward and away from the other to adjust said operating connections.

9. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a universal joint normally stationary on said frame, said joint being connected with said contact member at a point fixed relatively to said contact member, and one of said members being movable toward and away from the other to adjust said operating connections laterally of the axis of rotation of said rotary member.

10. The combination with a frame, of a rotary member carried thereby, a contact member, and adjustable operating connections between said members, said operating connections comprising a universal joint on said frame and connected with said contact member at a point fixed relatively to said contact member, said rotary member being movable toward and away from said contact member to adjust said operating connections.

11. In a massage instrument, the combination with an electric motor, of a contact device, connections between said motor and contact device for operating the latter, and means for varying said connections to change the amount of movement imparted to said contact device, said means also controlling the flow of current to said motor.

12. In a massage instrument, the combination with a motor provided with a rotary member, of a pivoted arm, a toggle rotatable independently of said arm and connected with said rotary member, and a contact device carried by said arm.

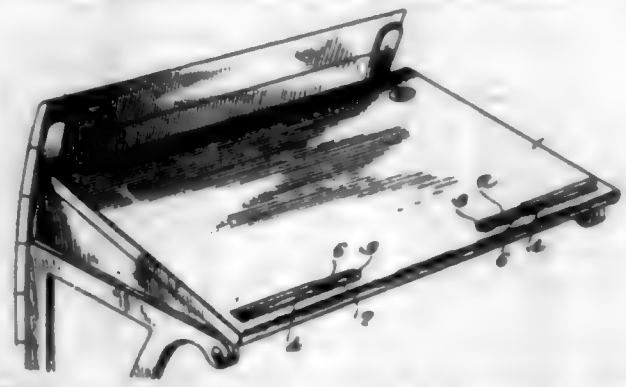
13. In a massage instrument, the combination with a motor provided with a rotary member, of a pivoted arm, a toggle rotatable independently of said arm and connected with said rotary member, means for moving said rotary member to vary the toggle connections, and a contact device carried by said arm.

14. In a massage instrument, the combination with a motor, of a rotary member driven by said motor, a pivoted arm mounted to vibrate and to rotate about its axis, connections between said arm and rotary member, means for preventing the rotation of said arm, and a contact device carried by said arm.

15. In a massage instrument, the combination with an electric motor, of a rotary member driven by said motor, a pivoted arm, a toggle connection between said arm and rotary member, connections for moving said rotary member longitudinally of its axis to vary said toggle connections, said connections for moving said rotary member also controlling the flow of current to said motor, and a contact device carried by said arm.

16. In a massage-machine, the combination with a motor having a rotary member, of a pivoted arm, a toggle sleeved upon said arm and connected with said rotary member, and contact device carried by said arm.

816,507. **BOOK-SUPPORT.** EDWARD SEERING, Chester, S. C. Original application filed Sept. 7, 1904, Serial No. 223,563. Divided and this application filed Jan. 19, 1905. Serial No. 241,846.

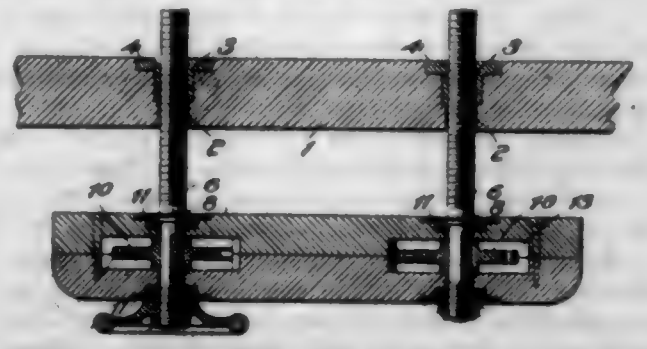


Claim.—1. A book-support comprising a base, and a book-supporting ledge slidable within the base and provided with an inclined tongue-and-groove connection with the base to elevate and depress the ledge, the top of the base being provided with a finger-notch intersecting one end of the recess to give access to the ledge for sliding the same endwise to project above the top of the base.

2. A book-support comprising a base having a recess intersecting the upper surface thereof, one wall of the recess being provided with a groove inclined to the vertical, and a book-supporting ledge slidably mounted within the recess and provided with a tongue working in the groove, the top of the base being provided with a finger-notch intersecting one end of the recess to give access to the ledge for sliding the same endwise to project above the top of the base.

3. A book-support comprising a base having a recess intersecting the upper surface thereof, one wall of the recess being provided with a groove inclined to the vertical, and a book-supporting ledge slidable within the recess and provided with a tongue working in the groove, the ledge being projected above the base at one limit of its movement and flush with the upper surface of the base at its opposite limit, the upper surface of the base having a finger-notch terminally intersecting the recess at that end thereof which is adjacent the lower end of the groove.

816,508. **PARALLEL BENCH-VISE.** WILLIAM H. SNOW, Brattleboro, Vt. Filed July 20, 1905. Serial No. 271,328.

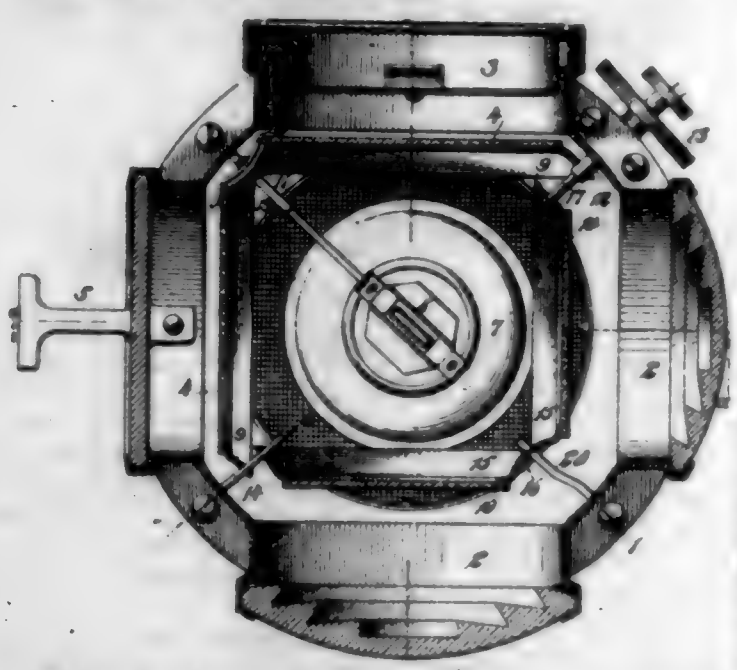


Claim.—1. In a parallel vise, the clamping-jaw, a pair of mounting screw-stems therefor, a mounting-bearing for each screw-stem consisting of a recessed or cup plate on the inner and on the outer sides of the jaw, a conical shoulder on each screw-stem within the re-

cone of each cup-plate at the inner side of the jaw, a screw-cone within the recess of the cup-plate on the outer end of one of the screw-stems, a nut-lock for said cone, the hand-wheel screwed upon the other screw-stem formed with a clamping bearing-cone projecting within the cup-plate of the other screw-stem, a clamp-nut for the conical hand-wheel, ball-bearings within the said cups, a sprocket-wheel on each screw-stem within the jaw and a chain connecting the wheels the said elements comprising the clamping-jaw.

2. In a vise, the combination with the clamping-jaw, and a pair of mounting screw-stems therefor each having a shoulder, of mounting-bearings for the stems consisting of a conical shoulder abutting the shoulder on each screw-stem at the inner side of the jaw, ball-bearings at said shoulders, ball-bearings for said screw-stems at the outer side of the jaw, a cone and a lock-nut both screwed on the outer end of one screw-stem, a hand-wheel screwed upon the outer end of the other screw-stem and formed with a bearing-cone whereby screwing in said hand-wheel causes its cone to be clamped upon the ball-bearings and the said conical shoulder to be clamped upon its ball-bearings, and a lock-nut for the wheel.

816,509. SIGNAL-LAMP. FURMAN D. SPEAR, Brooklyn, N. Y., assignor to Arm-Spear Manufacturing Company, New York, N. Y. Filed Nov. 8, 1904. Serial No. 231,834.



Claim.—1. A lamp-body having light-openings, in combination with one or more colored glasses within the lamp-body, carried by a horizontally-revoluble shaft, the axis of rotation being oblique to the axes of the light-openings.

2. A lamp-body having light-openings, in combination with a plurality of colored glasses within the lamp-body, carried by a horizontally-revoluble shaft, the axis of rotation being oblique to the axes of the light-openings.

3. A lamp-body having light-openings, in combination with a plurality of colored glasses within the lamp-body, carried by a horizontally-revoluble shaft, the axis of rotation being oblique to the axes of the light-openings, and means for manipulating the shaft from the exterior of the lamp-body.

4. A lamp-body having light-openings, in combination with a plurality of sets of colored glasses mounted on independent, horizontally-revoluble shafts within the lamp-body, the axes of rotation being oblique to the axes of the light-openings.

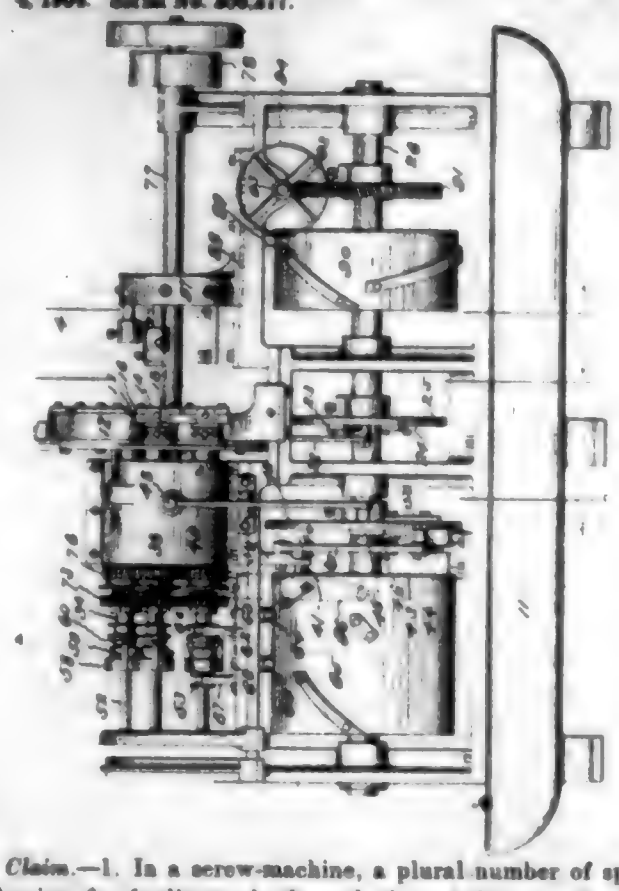
5. A lamp-body having light-openings, in combination with a plurality of sets of colored glasses mounted within the lamp-body on independent, horizontally-revoluble shafts, the axes of rotation being oblique to the axes of the light-openings, and means for manipulating said shafts from the exterior of the lamp-body.

6. The combination with a lamp-body provided with a light-opening, of a colored glass mounted within the lamp-body, and means for rotatably moving said glass over the plane of the lamp-burner, across the interior of the lamp-body, to or from the opening.

7. The combination with a lamp-body provided with a plurality of light-openings, of a plurality of glasses mounted within the lamp-body, and means for rotatably moving said glasses over the plane of the lamp-burner, across the interior of the lamp-body, to or from the lenses or openings.

8. The combination with a lamp-body provided with a plurality of light-openings, of a plurality of sets of glasses mounted within the lamp-body, and means for independently rotatably moving either of said sets of glasses over the plane of the lamp-burner, across the interior of the lamp-body, to or from the lenses or openings.

816,510. AUTOMATIC SCREW-MACHINE. CHRISTOPHER M. SPENCER, Windsor, Conn., assignor to The Universal Machine Screw Company, Hartford, Conn., a Corporation of Connecticut. Filed May 4, 1904. Serial No. 206,277.



Claim.—1. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, cutting and forming tools movable toward and from the axes of the spindles, a head adjacent to the ends of the spindles, a plate movably supported by the head adjacent to the ends of the spindles, means connecting the plate with each of the cutting and forming tools whereby the several tools are fed simultaneously toward the axes of the spindles by the movement of the plate, and mechanism for moving the plate, substantially as specified.

2. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, cutting and forming tools movable toward and from the axes of the spindles, a head adjacent to the ends of the spindles, a plate movably supported by the head adjacent to the ends of the spindles, a variable-feed means connecting the plate with each of the cutting and forming tools whereby the several tools are fed simultaneously with a decreasing speed toward the axes of the spindles by the movement of the plate, and mechanism for moving the plate, substantially as specified.

3. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, cutting and forming tools movable toward and from the axes of the spindles, a head adjacent to the ends of the spindles, a plate movably supported by the head adjacent to the ends of the spindles, means connecting the plate with each of the cutting and forming tools whereby the several tools are fed simultaneously toward the axes of the spindles by the movement of the plate, mechanism for moving the plate, threading and cutting tools movable toward the ends of the spindles, and mechanism for feeding the threading and cutting tools toward the ends of the spindles contemporaneously with the movement of the plate, substantially as specified.

4. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, a head adjacent to the ends of the spindles and supporting cutting and forming tools, an annular plate supported by the head, mechanism for oscillating the annular plate, and mechanism connected with the annular plate for feeding the several

tools simultaneously toward the axes of the spindles, substantially as specified.

5. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, a head supporting cutting and forming tools, an annular plate supported by the head, toggles connecting the head and cutting and forming tools, links connecting the plate and the toggles, and mechanism for oscillating the plate and feeding the several tools simultaneously toward the axes of the spindles, substantially as specified.

6. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, a head supporting cutting and forming tools, an annular plate supported by the head, toggles connecting the head and the cutting and forming tools, links connecting the plate and the toggles, an arm extending from the plate, and cams adapted to engage the arm for oscillating the plate and feeding the several tools simultaneously toward and from the axes of the spindles, substantially as specified.

7. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for revolving the spindles about the axis of the machine, mechanism for rotating the spindles on their own axes, a head supporting cutting and forming tools, an annular plate supported by the head, adjustable blocks supported by the head, toggle-links connected with the cutting and forming tools and with the adjustable blocks, links connecting the annular plate and the toggles, and mechanism for oscillating the plate and feeding the several tools simultaneously toward the axes of the spindles, substantially as specified.

8. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for rotating the spindles, a rotatable head supporting the spindles, mechanism for intermittently rotating the head, mechanism for stopping and locating the head, cutting and forming tools movable toward and from the axes of the spindles, a fixed head adjacent to the ends of the spindles, a plate movably supported by the fixed head, means connecting the plate with each of the cutting and forming tools whereby the several tools are fed simultaneously toward the axes of the spindles by the movement of the plate, and mechanism for moving the plate, substantially as specified.

9. In a screw-machine, a plural number of spindles, mechanism for feeding rods through the spindles, mechanism for rotating the spindles on their own axes, a clutch mounted on each spindle, mechanism common to all the spindles for rotating the spindles normally connected by the clutches with the spindles, mechanism for reversing the rotation of the spindles when they reach a certain position adapted to be connected with the spindles by the clutch, mechanism for shifting the clutches, threading and cutting tools movable toward the ends of the spindles, and mechanism for feeding the threading and cutting tools toward the ends of the spindles, substantially as specified.

10. In a screw-machine, a plural number of tubular spindles, two gears loosely mounted upon each spindle, a clutch keyed to each spindle between the gears, a central driving-shaft, a gear mounted on the driving-shaft and meshing with one gear on each spindle, a driving-sleeve mounted on the shaft, a gear mounted on the driving-sleeve and meshing with the other gear on each spindle, and mechanism for moving the clutch for connecting one or the other of the gears with each spindle, substantially as specified.

11. A spindle-rotating mechanism for a screw-machine having a tubular spindle, a pair of gears loosely mounted on the spindle, a clutch keyed to the spindle between the gears, a driving-shaft bearing a gear in mesh with one of the spindle-gears, a driving-sleeve mounted on the shaft and bearing a gear in mesh with the other spindle-gear, springs normally causing the clutch to frictionally engage one gear, and a shoe, lever and cam adapted to cause the clutch to positively engage the other spindle-gear, substantially as specified.

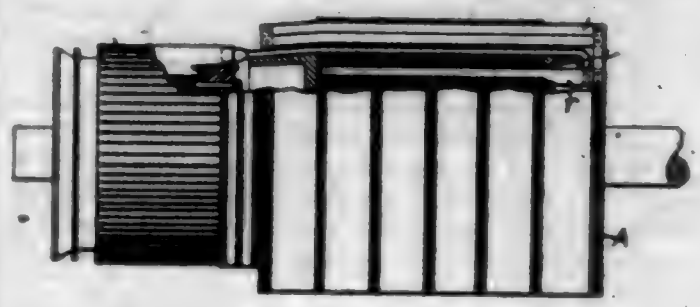
12. In a screw-machine, a head supporting a plural number of spindles, a longitudinally-adjustable tool-head adjacent to the spindle-head, tool-slides movable in and out of the face of the tool-head, an annular plate supported by the tool-head adjacent to the slides, mechanism for oscillating the annular plate, and mechanism mounted on the annular plate for reciprocating the slides simultaneously, substantially as specified.

13. In a screw-machine, a head supporting a plural number of spindles, a longitudinally-adjustable tool-head adjacent to the spindle-head, tool-slides movable in and out on the face of the tool-head, an annular plate adjacent to the slides, a cam for oscillating the plate, toggles connecting the slides and the head, and a link connecting the plate and the toggles, substantially as specified.

14. In a screw-machine a tubular spindle, two gears loosely mounted on the spindle, a clutch keyed to the spindle between the gears, two independently-rotated driving-shafts having their axes alined adapted to turn in opposite directions, a gear mounted on one driving-shaft and meshing with one gear on the spindle, a gear mounted on the other driving-shaft and meshing with the other gear on the spindle, and mechanism for moving the clutch for connecting one or the other of the gears with the spindle, substantially as specified.

15. In a screw-machine a number of reveluble tubular spindles, a central driving-shaft adapted to rotate all of the spindles in one direction, a driving-shaft having its axis alined with the axis of the other driving-shaft, adapted to rotate all of the spindles in the opposite direction, gearing connecting the driving-shafts with the spindles, and a clutch connected with each spindle and adapted to connect each spindle with either of the driving-gearing, substantially as specified.

816,511. **DYNAMO-ELECTRIC MACHINE.** CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 28, 1905. Serial No. 243,014.



Claim.—1. In a dynamo-electric machine, a slotted armature, a winding in the slots, a commutator, and bifilar resistances supported in holes in the armature-body independent of said slots and inserted in the connections between said windings and the commutator-segments.

2. In a dynamo-electric machine, an armature provided with peripheral slots and holes below and independent of said slots, a winding in said slots, a commutator, and bifilar resistances supported in said holes and connected to said winding and to said commutator.

3. In a dynamo-electric machine, an armature provided with peripheral slots and holes below and independent of said slots, coils in said slots, a commutator, bifilar resistances supported in said holes and having their terminals at the end of the armature away from the commutator, a connection from one terminal of each resistance to the adjacent end of an armature-coil, and a connection from the other terminal of each resistance extending across the armature-body to a commutator-segment.

4. In a dynamo-electric machine, an armature provided with peripheral slots and holes below and independent of said slots, coils in said slots, a commutator, bifilar resistances supported in said holes and having their terminals at the end of the armature away from the commutator, a connection from one terminal of each resistance to the adjacent end of an armature-coil, and a connection from the other terminal of each resistance extending through one of said slots to a commutator-segment.

5. In a dynamo-electric machine, an armature provided with peripheral slots and holes below and independent of said slots, armature-coils in said slots, a commutator, leads of higher resistance per unit of length than said coils connected to said commutator and extending through said slots across the armature, and bifilar resistances of higher resistance per unit of length than said leads supported in said holes and having their terminals connected to said coils and to said leads at the end of the armature away from the commutator.

6. In a dynamo-electric machine, a slotted armature, a winding in the slots, a commutator, and high-resistance leads supported in the armature-body independently of said slots and inserted in the connections between said windings and the commutator-segments, the portions of said leads extending beyond the armature-body being of greater cross-section than the portions within said body.

7. In a dynamo-electric machine, an armature provided with peripheral slots and holes below and independent of said slots, a winding in said slots, a commutator, and bifilar resistances sup-

ported in said holes connected to said winding and to said commutator, the portions of said leads extending outside of said holes being of lower resistance per unit of length than the portions contained within said holes.

8. A core of an electrical machine having one set of slots adjacent to its surface and another set of slots more remote from such surface, main conductors located in the outer slots, and high-resistance conductors located in the inner slots.

9. In an electrical machine, a core having two concentric sets of slots and two sets of conductors located in said slots and connected together, the inner set being of higher resistance than the outer set.

10. In an electrical machine, a cylindrical, magnetizable core having a set of slots adjacent to its periphery and a second set of slots comparatively remote from its periphery, of relatively low resistance and high resistance conductors located in said slots and connected in circuit with each other.

11. In an electrical machine, a member having a cylindrical magnetizable core provided with a circumferential set of slots adjacent to its outer surface, a circumferential set of slots between said outer set and the inner surface of the core, relatively low resistance conductors located in said outer slots and relatively high resistance conductors connected thereto and located in said inner slots.

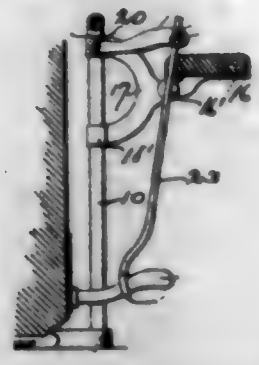
12. In an electrical machine, the combination with a commutator of an armature having core-slots adjacent to the surface of its core for the reception of coils, and a series of slots in said core between the outer slots and the inner surface of the core, and relatively high resistance conductors located in said inner slots and connecting the armature-conductors to the commutator-bars.

13. In an electrical machine, an armature having a laminated core provided with slots adjacent to its outer surface, and slots intermediate its outer and its inner surfaces, armature-coils located in said outer slots, relatively high resistance conductors located in said inner slots, each of said conductors being doubled upon itself and connected at one end to a corresponding armature-coil and at its other end to a commutator-bar.

14. An electrical-machine core having concentric sets of slots, those of one set being adjacent to the surface, and of the proper number, form and dimensions to contain armature-coils and those of the other set being of the proper number, form and dimensions to contain resistance-leads for connection to the armature-coils.

15. An electrical-machine core having concentric sets of slots, in combination with two sets of conductors of different resistance located in the slots of the respective sets and connected together, the slots of each set being adapted, in number, form and dimensions, to its conductors.

816,512. **EXTENSION-PEDAL.** Hugo Taussig, Cleveland, Ohio. Filed Dec. 6, 1905. Serial No. 290,636.



Claim.—1. An extension-pedal comprising resilient base-blocks, a supporting-frame mounted thereon, a foot-rest adjustably mounted in said frame, auxiliary pedals also adjustably mounted in said frame, and depending pedal-engaging rods carried by said auxiliary pedals.

2. An extension-pedal comprising a supporting-frame, a foot-rest, a support therefor adjustably mounted on said frame, auxiliary pedals carried by said foot-rest support, and depending pedal-engaging rods carried by said auxiliary pedals.

3. An extension-pedal comprising a supporting-frame, a foot-rest, a support therefor adjustably mounted on said frame, auxiliary pedals carried by said foot-rest support, and depending pedal-engaging rods adjustably mounted in said auxiliary pedals.

4. An extension-pedal comprising a supporting-frame, a foot-rest, a support therefor adjustably mounted on said frame, auxiliary pedals carried by said foot-rest support, and depending pedal-engaging rods carried by said auxiliary pedals and provided with laterally-extended arms.

5. An extension-pedal comprising a supporting-frame, a foot-rest, a support therefor adjustably mounted on said frame, auxiliary pedals carried by said foot-rest support, depending pedal-engaging rods carried by said auxiliary pedals and having laterally-extended arms, and means for adjusting said pedal-engaging rods.

6. An extension-pedal comprising a supporting-frame, a foot-rest, brackets for said foot-rest adjustably mounted on said frame, auxiliary pedals supported by said brackets, and depending pedal-engaging rods carried by said auxiliary pedals.

7. An extension-pedal comprising a supporting-frame, a foot-rest, brackets for said foot-rest adjustably mounted on said frame, a rod supported by said brackets and carrying auxiliary pedals, and depending pedal-engaging rods carried by said auxiliary pedals.

8. An extension-pedal comprising a supporting-frame, a foot-rest, brackets for said foot-rest adjustably mounted on said frame, a rod supported by said brackets and carrying auxiliary pedals, depending pedal-engaging rods carried by said auxiliary pedals and provided with laterally-extended arms, and means for adjusting said pedal-engaging rods.

9. An extension-pedal comprising resilient base-blocks, a frame supported thereby, and auxiliary pedals mounted in said frame.

10. An extension-pedal comprising base-blocks each provided with a resilient tongue, a frame supported thereby, and auxiliary pedals mounted in said frame.

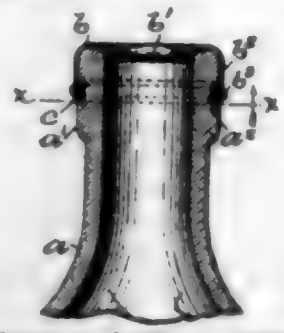
11. An extension-pedal comprising base-blocks each of which is split horizontally to form a resilient tongue, a frame supported by said blocks, and auxiliary pedals mounted in said frame.

12. An extension-pedal comprising base-blocks each provided with a reduced extension forming a shoulder, said reduced portion being split horizontally to form a spring-tongue, a frame supported by said blocks, and auxiliary pedals mounted in said frame.

13. An extension-pedal comprising resilient base-blocks, a frame supported thereby, and auxiliary pedals mounted in said frame and provided with depending pedal-engaging rods.

14. An extension-pedal comprising resilient base-blocks, a frame supported thereby, and auxiliary pedals adjustably mounted in said frame and provided with adjustable depending pedal-engaging rods.

816,513. **CLOSURE FOR SEALING BOTTLES OR SIMILAR ARTICLES.** Frederick B. Thatcher, Providence, R. I. Filed Dec. 27, 1905. Serial No. 293,441.



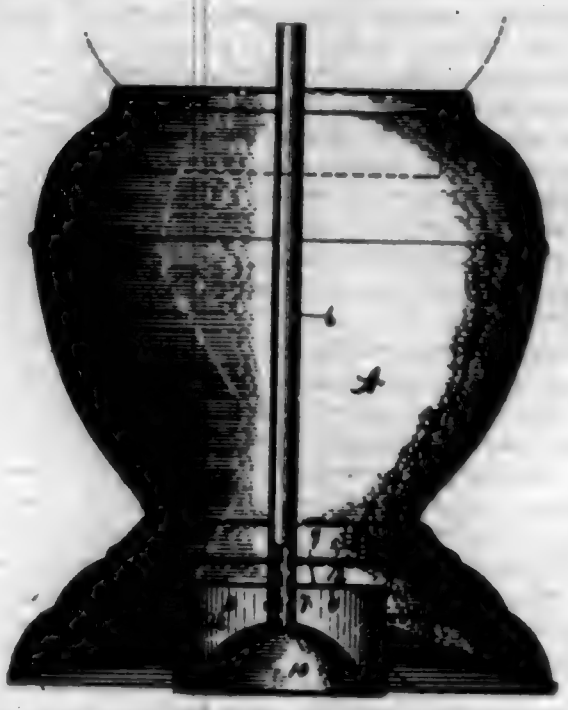
Claim.—1. In a closure for bottles or similar articles, the combination of a bottle or similar article having an outer annular groove adjacent its mouth, a compressible ring in the annular groove, a metallic cap having a rim and a beading on the edge of the rim, whereby on compressing the beading on the rim of the cap into the annular groove and onto the compressible ring, the bottle or similar article is hermetically sealed.

2. In a closure for bottles or similar articles, the combination of a bottle having the neck a merging into the head a' in which is the outer annular groove a^3, a compressible ring c in the annular groove a^3 and a metallic cap b having the depressed portion b' in the top, the outwardly-flaring circular rim b^1 and the round beading b^2 on the edge of the rim b^1, whereby on compressing the beading b^2 on the rim b^1 into the annular groove a^3 in the head a' and onto the compressible ring c, the bottle is hermetically sealed.

816,514. **PERCOLATOR.** Charles E. Terwilliger, Meriden, Conn., assignor to American Silver Company, Bristol, Conn., a Corporation. Filed Aug. 26, 1905. Serial No. 275,564.

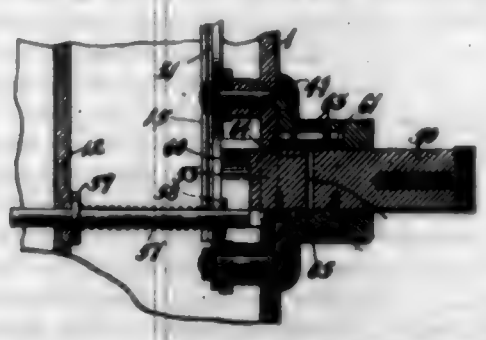
Claim.—1. In a percolator, the combination of a vessel having a central depression in its bottom with the fountain chamber and tube, the said fountain-chamber being deeper than the said depression and provided with side perforations at a point above the side wall of the said central depression, and with a perforated concave bottom from which the tube extends, whereby the main vessel is di-

vided into three separate chambers that communicate with each other through the perforations in the said side wall and concave bottom, substantially as described.



2. In a percolator, the combination of a vessel with a fountain-chamber fitted thereto, the said chamber having an imperforate top, perforated sides and a concave bottom having perforations, the perforations in the sides and bottom both opening into the said chamber, and a fountain-tube extending upwardly from below the said concave bottom and through the fountain-chamber, whereby the liquid flowing to the lower end of the said tube passes from the main chamber of the vessel through the said fountain-chamber.

816,515. COIN-CONTROLLED VENDING-MACHINE. FRANK W. TUCKER, Milford, Conn. Filed July 1, 1905. Serial No. 267,899.



Claim.—1. A coin-receiving plunger comprising outer and inner sections spaced apart forming a coin-receiving space, a socket-piece within which the plunger is fitted to slide having a coin-receiving slot through its wall and a spring-actuated pressure-plate in the socket-piece engaging the periphery of the plunger.

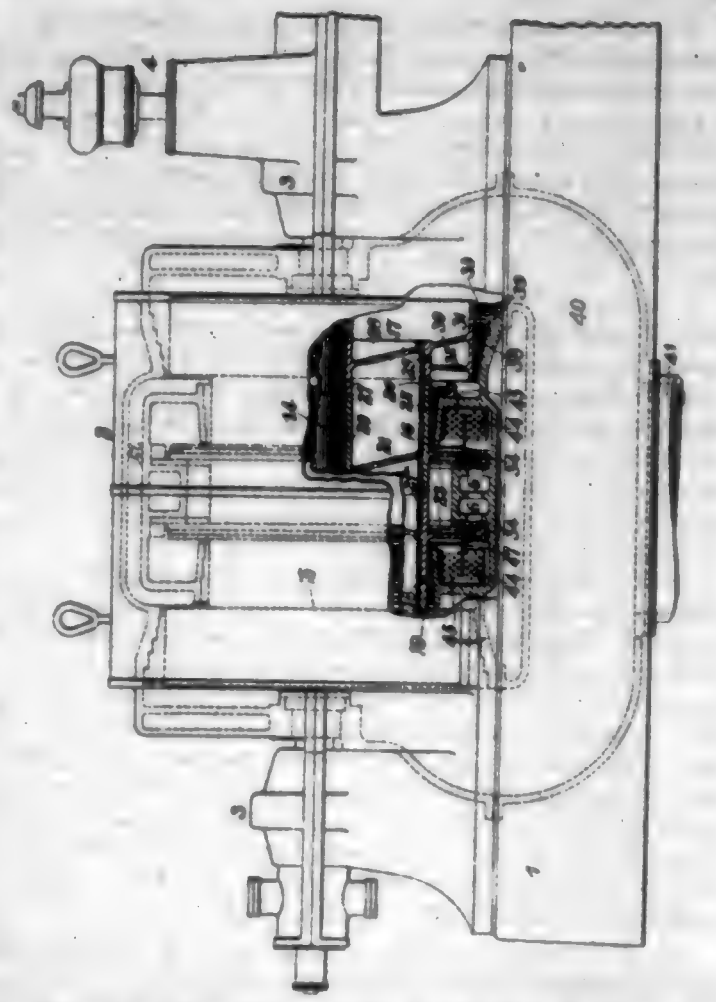
2. A coin-receiving plunger comprising outer and inner sections spaced apart forming a coin-receiving space, a socket-piece within which the plunger is fitted to slide having slots through its opposite walls and a spring-actuated pressure-plate mounted in the socket-piece in engagement with the periphery of the plunger, the said pressure-plate having a slot therein of less width than the space between the outer and inner sections.

3. A coin-receiving plunger comprising outer and inner sections, a bar secured to the peripheries of the outer and inner sections for spacing them apart to form a coin-receiving space, a slotted socket-piece within which the plunger is fitted to slide and a spring-actuated pressure-plate mounted in the socket-piece for supporting the predetermined coin together with the said bar.

4. A coin-receiving plunger comprising outer and inner sections, a bar secured to the peripheries of the sections for spacing them apart, a slotted socket-piece within which the plunger is fitted to slide and a spring-actuated pressure-plate mounted in the socket-piece in engagement with the peripheries of the outer and inner sections, the said pressure-plate and bar having slots therein of less width than the space between the said sections.

5. In combination, a socket-piece having a coin-receiving slot therein and a plunger fitted to slide within the socket-piece comprising inner and outer sections spaced apart, the plunger being the same size in cross-section as the predetermined coin.

816,516. FLUID-PRESSURE TURBINE. GEORGE WESTINGHOUSE, Pittsburg, Pa. Filed May 5, 1903. Renewed Sept. 20, 1905. Serial No. 279,367.



Claim.—1. In a fluid-pressure turbine, the combination with a shaft and a drum comprising a plurality of sections mounted thereon and having annular sets of blades, the first and last of said sections being of materially greater diameter than the intermediate section or sections, of a cylinder comprising a plurality of sections having annular sets of vanes and means for supplying the propelling fluid to the first set of blades in jets at a given velocity.

2. In a steam-turbine, the combination with two drum-sections having radial blades, corresponding cylinder-sections having radial guide-vanes, and an inlet-chamber having nozzles arranged to expand the steam and project it from said chamber in jets against the working faces of said blades, of drum and cylinder sections of lesser diameter having sets of radial blades and guide-vanes of increasing length longitudinally of the turbine between which the steam is progressively expanded, and drum and cylinder sections which receive the steam from the intermediate sections and are of greater diameter than the intermediate sections.

3. In a steam-turbine, the combination with an inlet-chamber, drum-sections at the opposite sides thereof provided with blades, and nozzles through which the steam is expanded to increase its impact velocity and by which it is directed against the working faces of the blades, and drum-sections having sets of blades against which the steam acts as it is progressively expanded, the first and last drum-sections being of greater diameter than the intermediate section or sections.

4. In a steam-turbine, a drum-section provided with annular sets of blades and a ring comprising a plurality of segments removably attached to one end of said drum-section and provided with an annular set of blades.

5. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage divided into two symmetrical sections having separated inlets, and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

6. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage divided into two sections having separated inlets and through which

sections the working fluid flows in opposite directions, and a fluid conduit or passage separated from the interior of the turbine for placing the inlets to said sections in communication one with the other.

7. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage divided into two symmetrical sections having separated inlets and through which sections the fluid flows in opposite directions, and a fluid conduit or passage separated from the interior of the turbine for placing the inlets to said sections in communication one with the other.

8. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage divided into two sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

9. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

10. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmtrical sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

11. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

12. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy divided both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

13. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

14. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

15. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

16. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections having separated inlets and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

17. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

18. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

19. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two symmetrical sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

20. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said

low-pressure stage being divided into two symmetrical sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

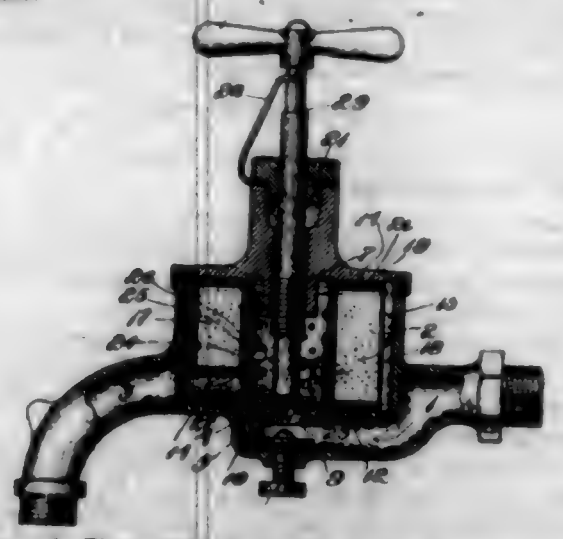
21. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

22. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

23. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage separated from the interior of the turbine proper for placing the inlets to said sections in communication one with the other.

24. In a multistage turbine, a high-pressure stage employing expansion-nozzles for converting thermal energy of the working fluid into kinetic energy in the form of velocity and moving rows of blades for fractionally abstracting the energy due to said velocity, a low-pressure stage employing alternate annular rows of stationary vanes and moving blades whereby the working fluid is fractionally expanded and energy derived both by impulse and by reaction; said low-pressure stage being divided into two sections located at opposite ends of the turbine and through which sections the working fluid flows in opposite axial directions, and a fluid conduit or passage for placing the inlets to said sections in communication one with the other.

816,517. COMBINED FAUCET AND FILTER. AUGUSTUS P. WHALEN, South Portland, Me. Filed July 10, 1905. Serial No. 268,959.



Claim.—1. The combination with a faucet, having a passage for water and a valve therein, of a filter set in the passage separate from the valve; a free by-pass around the filter; a gate for the by-pass, independent of the valve and arranged in series therewith; and a single stem arranged to operate both valve and gate successively by a continuous motion in the same direction.

2. The combination with a faucet, having a passage for water and a valve therein, of a filter separate from the valve and set in the passage between the valve and the spout of the faucet; a free by-pass leading around the filter and back to the passage; a gate for the by-pass arranged in series therewith; and a single stem arranged to operate both valve and gate successively by a continuous motion in the same direction.

3. The combination with a faucet, having a passage for water and a valve therein, of a filter set in the passage; a free by-pass around the filter; a gate for the by-pass; a single stem arranged to open both valve and gate in different portions of its travel; and a latch arranged normally to lock the stem from the portion of its travel which would open the gate

4. The combination with a faucet, having a passage for water and a valve therein, of a hollow cylindrical filter set within the passage and arranged for water to flow radially through it; a stem for the valve passing through the cylinder; a free passage by the filter; a gate for said by-pass; and means whereby the stem of the valve during a portion of its movement operates the gate.

5. The combination with a faucet, having a passage for water and a valve therein, there being a chamber arranged in the passage; of a cylindrical filter with hollow interior set in the chamber, the said valve being arranged to admit water to the interior of the cylinder; a stem for the valve passing through the said interior; a free by-pass from the said interior to the exterior of the filter; and a gate for the by-pass, operated by said stem.

6. The combination with a faucet, having a passage for water and a valve therein, there being a chamber arranged in the passage, of a removable cover for the chamber; a cylindrical filter with hollow interior set in the chamber, the said valve communicating directly with the interior of the cylinder, and having a valve-stem passing through the said interior and cover; a free by-pass between the interior and exterior of the filter; a gate for the by-pass; and means to operate the gate.

7. The combination with a faucet, having a passage for water and a valve therein, of a hollow cylindrical filter set within the passage and arranged for water to flow radially through it; a stem for the valve passing through the cylinder; a free passage by the filter; a gate for the said by-pass; means whereby the stem of the valve during the extreme portion of its movement operates the gate; and a latch arranged to engage the exterior portion of the stem and arrest its movement before the stem opens the gate.

8. The combination with a faucet, having a passage for water and a valve therein and a stem for the valve, of a filter set in said passage; a free passage by the filter; a hinged gate for said by-pass, opening against the current; and means whereby the stem of the valve during a portion of its movement operates the gate.

9. The combination with a faucet, having a passage for water and a valve therein and a stem for the valve, of a filter set in said passage; a free passage by the filter; a hinged gate for said by-pass at its entrance; and means whereby the stem of the valve during a portion of its movement operates the gate, the hinge being arranged for the gate to close by its own weight when released.

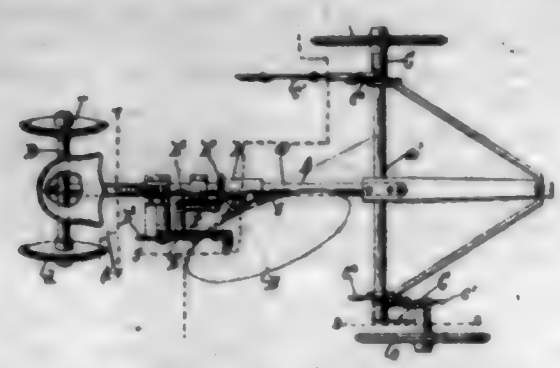
10. The combination with a faucet, having a passage for water and a valve therein, there being a chamber in the passage, of a cylindrical filter with hollow interior set in the chamber, the said valve being arranged to admit water to the interior of the cylinder; a removable cover for the chamber bearing against the end of the cylinder opposite the valve; a stem for said valve passing through the cylinder and cover; an auxiliary valve arranged in line therewith and operating in the opposite direction on the supply side of the port of said valve; a free by-pass from the interior to the exterior of the filter; a gate for the by-pass; and means to operate said gate.

11. The combination with a faucet, having a passage for water and a valve therein, there being a chamber in the passage, of a cylindrical filter with hollow interior set in the chamber and provided with a packing-ring at each end, said valve being arranged to admit water to its interior; a removable cover engaging the packing-ring on the end of the cylinder opposite the valve; a stem for the valve passing through the cylinder and cover; a free by-pass from the interior of the filter to its exterior; and a gate for the by-pass operated by said valve-stem.

816,518. PLOW. HARRY WIARD, Syracuse, N. Y. Filed Sept. 7, 1899. Serial No. 729,716.

Claim.—1. A plow comprising a frame having a lengthwise member, a rotary disk, a support for the disk having a bearing journaled on said lengthwise frame member and movable from either side to the other of said member for reversing the disk, and means

carried by said frame member for moving the disk from either side to the other of said member, substantially as and for the purpose specified.



2. A plow comprising a frame having a lengthwise member, a rotary disk, a support for the disk having a bearing journaled on said lengthwise frame member and movable from either side to the other of said member for reversing the disk, an axle pivoted to the frame member at the rear of the disk and extended laterally on opposite sides of said member, furrow-wheels mounted on the axle on opposite sides of the frame member, and means carried by the frame member for moving the disk from either side to the other of said member, substantially as and for the purpose described.

3. A plow comprising a frame having a lengthwise member, a rotary disk, a support for the disk having a bearing journaled on said lengthwise frame member and movable from either side to the other of said member for reversing the disk, and means for moving the disk from either side to the other of the frame member, said means comprising a lever pivoted to the frame member and movable forwardly and rearwardly on its pivot, and power-transmitting means between the lever and the bearing for the disk, substantially as and for the purpose set forth.

4. A plow comprising a frame having a lengthwise member, and a member extending crosswise of the first-mentioned member and rigid therewith, arms pivoted on the ends of the crosswise member, supporting-wheels journaled on said arms, means for raising and lowering said arms independently of each other, a rotary disk supported by the lengthwise member at the rear of the crosswise member, and movable from either side to the other of said lengthwise member for reversing the disk, furrow-wheels supported by the lengthwise frame member at the rear of the disk and on opposite sides of the lengthwise frame member, said furrow-wheels being free to move vertically, and means for moving the disk from either side to the other of the lengthwise frame member, substantially as and for the purpose specified.

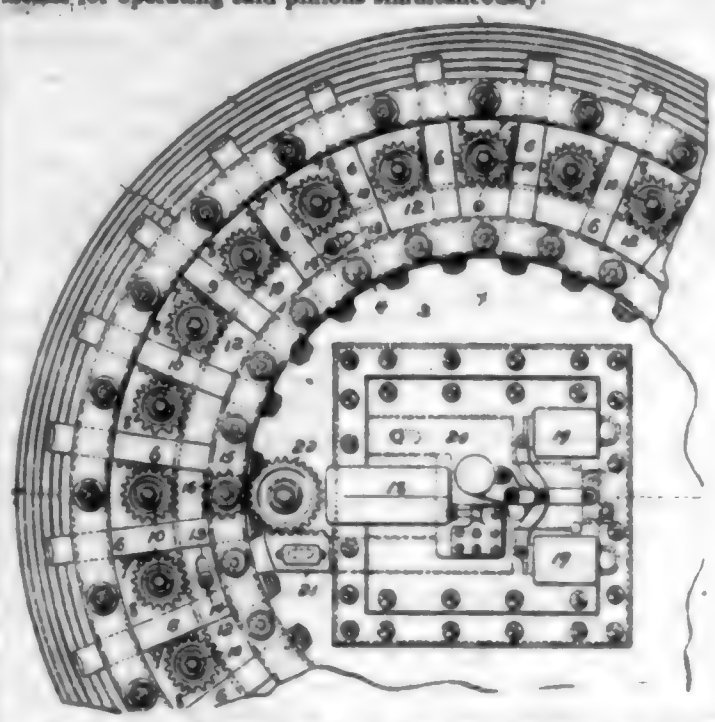
5. A plow comprising a frame, a rotary disk supported by the frame and movable on a substantially horizontal axis substantially parallel to the line of draft for reversing the disk from right to left and vice versa, an axle pivoted to the frame at the rear of the axis of the disk, and wheels mounted on the extremities of the axle, one of the wheels having its tread movable in the furrow when the disk is in an operative position and the other wheel having its tread movable in the furrow when the disk is in its reversed operative position, substantially as and for the purpose described.

6. A plow comprising a frame, a rotary disk supported by the frame and movable on a substantially horizontal axis substantially parallel to the line of draft for reversing the disk from right to left and vice versa, an axle having its intermediate part pivoted to the frame at the rear of the axis of the disk and free to move on its pivot, and wheels mounted on the extremities of the axle, one of the wheels having its tread movable in the furrow when the disk is in an operative position and the other wheel having its tread movable in the furrow when the disk is in its reversed operative position, substantially as and for the purpose specified.

816,519. **BOLT CONSTRUCTION FOR SAFE OR VAULT DOORS.** James H. Williams, Philadelphia, Pa., assignor to Remington and Sherman Company, Philadelphia, Pa. Filed June 18, 1904. Serial No. 213,158.

Claim.—1. The combination with a door provided with an outer series of bolt-guides arranged in circular formation, and an inner series of bolt-guides parallel with the outer series, of a series of bolts each carried by an inner and outer guide, independent means engaging each bolt for moving same longitudinally, the said means being located intermediate the outer and inner guides, and devices for actuating all of said bolt-engaging means simultaneously.

2. The combination with a door having two parallel series of bolt-guides, of a series of bolts having bearings in said guides, a rack on an intermediate portion of each bolt, pinions located intermediate of the guides meshing with the racks on the bolts, and means for operating said pinions simultaneously.



3. The combination with a circular door having two parallel series of bolt-guides, of a series of radially-disposed bolts mounted in said guides, a rack on each bolt between its guides, pinions intermediate of the bolt-guides and meshing with the racks on the bolts, a circular rack meshing with said pinions and means for actuating said circular rack.

4. The combination with a door provided with two parallel series of bolt-guides, of a series of bolts having bearings in said guides, each bolt provided with a rack between said guides, gears located between the bolt-guides and engaging the racks on the bolts, a rack also located between said guides and meshing with said pinions, said rack having a series of teeth on its inner edge, a pinion meshing with said series of teeth, and means for rotating said last-mentioned pinion.

5. The combination with a circular door having parallel circular enlargements or rings on its inner face, of a series of radially-disposed bolts having bearings in alined openings in the enlargements or rings, racks on said bolts between the rings, gears between the rings engaging the racks on the bolts, a circular rack engaging all of said gears, a pinion adapted to drive the rack, a journal on which said pinion is secured, projecting through the door, and locking mechanism controlling the operation of the pinion.

6. The combination with a circular door, having parallel rings or enlargements on its inner face, of a series of radially-disposed bolts extending all around the door and having alined bearings in said rings or enlargements, racks secured to the bolts, gears between the rings or enlargements engaging the racks on the bolts, a circular rack around the inner ring or enlargement engaging all of said gears, a pinion engaging said rack, a journal extending through the door and adapted to operate said pinion, and locking mechanism controlling the operation of the pinion.

816,520. **PUMP.** Charles F. Wray, Rochester, N. Y. Filed May 9, 1904. Serial No. 207,120.

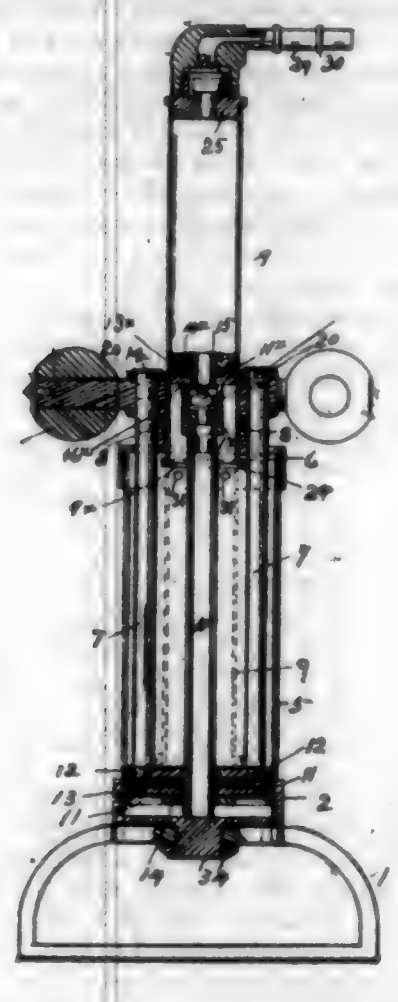
Claim.—1. In a pump, a cylinder, a second cylinder concentric with the first, said cylinders being relatively movable, and a single tubular piston-rod having pistons at its opposite end working in the cylinders, and means for actuating the pistons.

2. In a pump, a cylinder, a piston, a cylinder-cap having an extension, piston-actuating rods movable through the cap, a handle-bar fixed to the rods, and a second cylinder supported in said cap, said bar embracing the second cylinder.

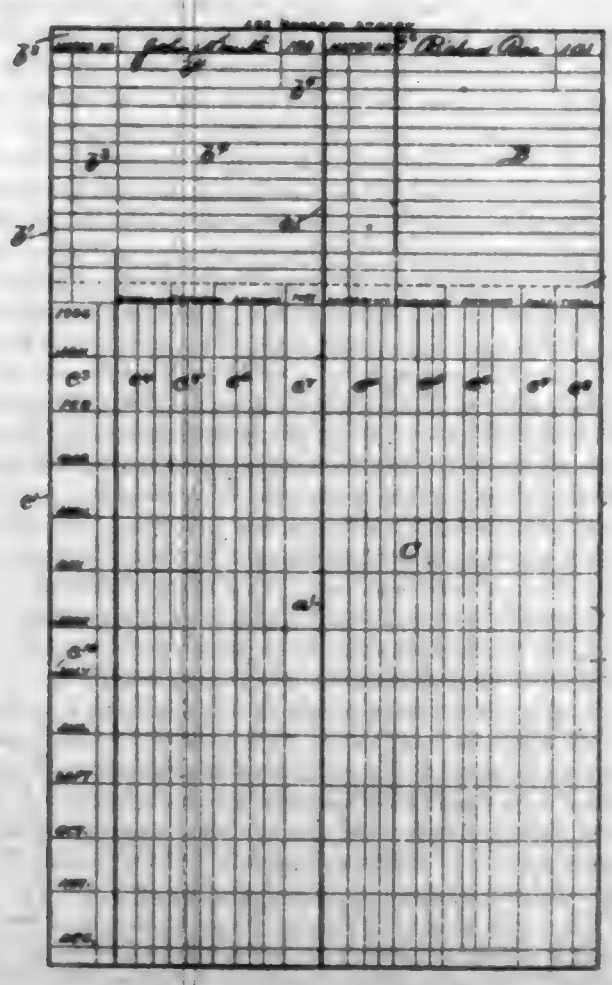
3. In a pump, a cylinder-cap having a tubular extension, piston-actuating rods movable through the cap, a handle-bar fixed to the rods, a second cylinder concentric with that first named and supported and guided in said cap extension, pistons, one in each cylinder, and a hollow piston-rod connecting the pistons.

4. In a pump, a cylinder, a piston, a cylinder-cap, piston-actuating rods movable through the cap, a handle-bar fixed to the rods, a second cylinder supported in said cap, and movable therethrough, the rods also being adapted to be housed in said latter cylinder.

5. In a pump, the combination of a cylinder having a cap provided with a tubular extension, a second cylinder movable through the extension, a piston for the first-named cylinder, and a handle-bar operatively connected to said piston, said extension constituting a guide for the smaller cylinder and a stop for the handle-bar.

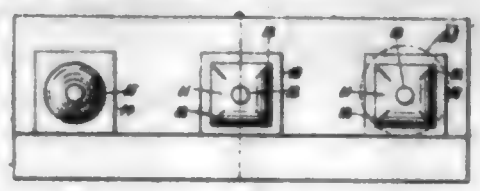


816,521. LEDGER. WALTER WYLIE, Los Angeles, Cal. Filed Dec. 27, 1905. Serial No. 293,522.



Claim.—A ledger, comprising a plurality of sheets having a series of transverse perforations, dividing each sheet into a relatively short upper portion, and a relatively long lower portion, and ruled vertically upon each side to divide the sheet into vertical halves, the upper portion being ruled upon each side transversely into a series of lines, and each half being ruled vertically to form a column headed "Meter number," and columns of a width sufficient for names and for a street-number, one half of the lower portion being ruled to form a column of a width sufficient for dates, and columns headed "Statements," "Consumption," "Amounts" and "Post," the other half being ruled into columns headed "Statements," "Consumption," "Amounts," "Post" and "Total," and the entire lower portion being ruled transversely into spaces of a width sufficient for one month's business, the said spaces bearing, in the column of a width sufficient for dates, the names of the twelve months, respectively.

816,523. NAIL CAP-PLATE. GEORGE R. WYMAN, East Walpole, Mass., assignor to F. W. Bird & Son, East Walpole, Mass., a Firm. Filed July 6, 1905. Serial No. 268,473.



Claim.—A nail cap-plate formed of sheet metal having a rectangular plain marginal bearing-surface and a rectangular raised center of less diameter than the marginal portion, the corners of said center forming strengthening-ribs.

816,528. HOUSE-HEATING SYSTEM. JOHN A. WYEROOP, Washington, D. C. Filed May 12, 1904. Serial No. 207,637.



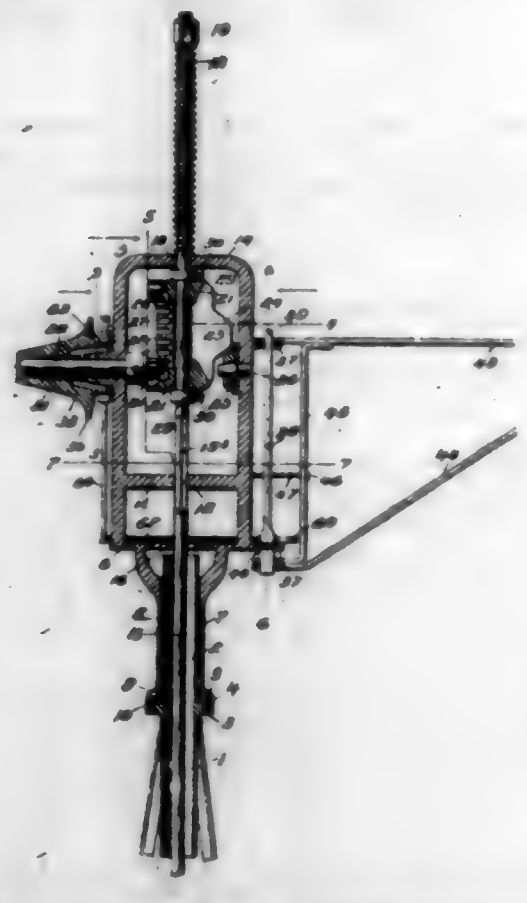
Claim.—1. The combination with a plurality of apartments each comprising a plurality of rooms, of a source of heat in each apartment, circuits operatively communicating with the said sources of heat respectively, the upper pipes of all of said circuits being situated above said apartments, and vertical heat-distributing pipes arranged to heat the rooms of each apartment, respectively, operatively and independently communicating each with its respective circuit.

2. The combination with a plurality of apartments each comprising a plurality of rooms, of a source of heat in each apartment, circuits operatively communicating with the said sources of heat, respectively, the upper pipes of all of said circuits being situated

above said apartments and the lower pipes thereof being located below the floor of the apartment to which it belongs, and vertical heat-distributing pipes arranged to heat the rooms of each apartment, respectively, operatively and independently communicating each with its respective circuit.

3. The combination with a plurality of apartments each comprising a plurality of rooms, of a source of heat in each apartment, circuits operatively communicating with the said sources of heat, respectively, the upper pipes of all of said circuits being situated above said apartments and the lower pipes thereof being located below the floor of the apartment to which it belongs, and vertical heat-distributing pipes arranged to heat the rooms of each apartment, respectively, operatively and independently communicating each with its respective circuit and disposed within the partitions defining the rooms of the apartment to which it belongs.

816,524. WIND-MOTOR. JOHN C. EISELER, Seymour, Tex. Filed June 27, 1905. Serial No. 267,234.



Claim.—1. A motor of the class described, comprising in combination with a pipe-base adapted to be rigidly secured to a tower, and a standard connected to said pipe-base, of a pivotally-mounted frame comprising a base portion, a pipe-section secured thereto to fit over the pipe-standard, a yoke-shaped standard to said frame-base, a wind-wheel having a shaft mounted in a bearing in said yoke-shaped standard, a rod mounted in said frame and projecting into said pipe-standard, means for holding said rod from rotation, a rod-gear pivotally mounted on said rod and comprising bearing portions, a gear member connecting said bearing portions together at one side, a web connecting said bearing portions together at the other side, a pinion on the wheel-shaft for engaging said gear member whereby the rotary motion of the wheel-shaft will transmit a reciprocal motion to said rod, said web having a wing and a loosely-mounted cam-wheel pivotally mounted on the yoke-shaped frame for coöperating with said wing to hold the gear in connection with said pinion, said wind-wheel including a hub having a brake-rim, a brake mounted on the yoke-shaped standard for engaging said brake-frame, a vane pivotally secured to the yoke-shaped standard, means for holding the vane in its normal position, said vane adapted to be moved out of its normal position by the action of the wind, means mounted on the frame-base and connected with the brake and the frame for applying the brake as the vane leaves its normal position substantially as shown and described.

2. In a motor of the class described, a supporting-frame, a wind-wheel mounted thereon, a power-shaft geared with said wind-wheel, said wind-wheel having a hub provided with a brake-rim, a pair of brake-levers mounted on said frame and having brake-shoes, for engaging said brake-hub, a vane pivotally mounted on said frame and having a pivot-shaft, a gear-section mounted on said vane-shaft, an endless chain passing over said gear-section, said endless chain being connected with said supplemental brake-lever, all being arranged so that when the vane is moved on its pivot, the motion thereof will be imparted to the brake to operate the same as shown and described.

3. In a motor of the class described, a supporting-frame, a wind-wheel mounted thereon, a power-shaft geared with said wind-wheel, said wind-wheel having a hub provided with a brake-rim, a pair of brake-bands mounted on said frame, for engaging said brake-hub, a supplemental lever for operating said brake-bands, said brake-bands having brake-shoes, a vane pivotally mounted on said frame and having a pivot-shaft, a gear-section mounted on said pivot-shaft, an endless chain secured to said supplemental brake-lever and connected with said vane-shaft, all being arranged so that when the vane is moved on its pivot, the motion thereof will be imparted to the brake to operate the same, means for holding said vane in its normal position, said vane being arranged to be moved out of its normal position by wind-power, and a supplemental means connected with said vane for moving the same out of its normal position at all times, substantially as shown and described.

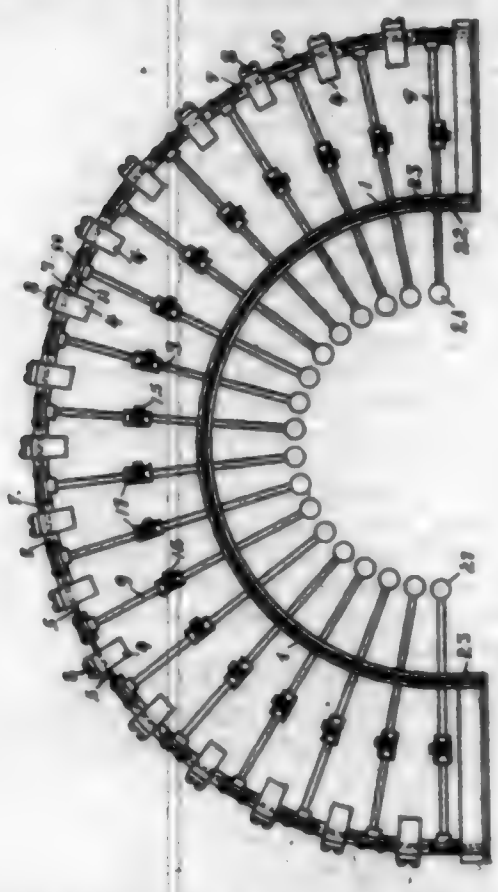
4. A motor of the class described comprising a supporting-frame, consisting of a base, a ∩-shaped vertical standard projecting upwardly from said base, a pipe-section projecting downwardly from said base, a support, a means for pivotally securing said pipe-section to said support, a power-rod passing through said support and said pipe-section, said ∩-shaped standard having a cross-brace provided with a bearing-aperture and having its upper portion provided with a bearing-aperture to permit passage of said power-rod, an oblate gear on said power-rod between said bearing portions, means for holding said oblate gear from lengthwise movement on said rod, a wind-wheel shaft mounted in a bearing in said ∩-shaped standard, a pinion on said wind-wheel shaft for meshing with said oblate gear, means on said ∩-shaped standard for coöperating with said oblate gear to hold the same in mesh with said pinion at all times, said power-rod projecting through said ∩-shaped frame above the same, a coil-spring on said rod above said ∩-shaped frame, means carried by the rod for adjustably securing the spring in position and to regulate its tension, brake devices carried by said ∩-shaped standard for coöperating with the wind-wheel, a vane-shaft pivotally mounted on said supporting-frame in the plane containing the ∩-shaped standard, a vane secured to said vane-shaft, idler-gears mounted on said supporting-frame base, a gear-section on said vane-shaft, an endless chain passing around said gear-section and said idler-gears and connected to said brake devices, said brake devices adapted to be operated by said vane when moved out of its normal position, means for holding said vane in its normal position, and independent means for moving said vane out of its normal position, substantially as shown and described.

5. A motor of the class described, comprising in combination with a pipe-base adapted to be rigidly secured to a tower, and including a pipe-standard projecting up from said pipe-base, of a pivotally-mounted rectangular frame comprising a base portion, a pipe connection secured thereto to fit over the pipe-standard, a yoke-shaped standard secured to said base portion, a wind-wheel having a shaft mounted in bearings in said yoke-shaped standard, a rod mounted in said frame and projecting into said pipe-standard, said rod and its bearing in the standard having provisions in virtue of which the rod is non-rotatable, an oblate rod-gear pivotally mounted on said rod, and consisting of bearing portions, a gear member connecting the bearing portions together at one side and a web connecting the bearing portions together at the other side, a pinion on the wheel-shaft for meshing with the gear member, said web having a wing and a loosely-mounted cam-wheel rotatably mounted on the yoke-frame for coöperating with the wing to hold the gear in connection with the pinion and an equalizing device on said rod above said pivotally-mounted frame, substantially as shown and described.

6. A motor of the class described, comprising in combination with a pipe-base adapted to be rigidly secured to a tower and including a pipe-standard projecting up from said base-pipe, of a pivotally-mounted rectangular frame comprising a base portion, a pipe connection secured thereto to fit over the pipe-standard, a yoke-shaped standard secured to said base portion, a wind-wheel having a shaft mounted in bearings in said yoke-shaped standard, a rod mounted in said frame and projecting in said pipe-standard, said rod and its bearing in the standard having provisions in virtue of which the rod is non-rotatable, an oblate rod-gear pivotally mounted on said rod, and consisting of bearing portions, a gear member connecting the bearing portions together at one side and a web connecting the bearing portions together at the other side, a pinion on the wheel-shaft

for meshing with the gear member, said web having a wing and a loosely-mounted cam-wheel rotatably mounted on the yoke-frame for coöperating with the wing to hold the gear in connection with the pinion, an equalizing device on said rod above said pivotally-mounted frame, and a vane pivotally mounted to said frame, a brake device for the wind-wheel shaft controlled by the movement of said vane, substantially as shown and described.

816,525. CHIME-RINGING APPARATUS. ARTHUR H. ADELBERGER, Buffalo, N. Y. Filed July 23, 1904. Serial No. 217,282.



Claim.—1. In a chime-ringing apparatus, the combination with a series of pivoted levers connected with the bells of the chime and radially arranged in a semicircle, the center of which is the point at which the operator stands, and the sectional sockets to which the radial levers are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

2. In a chime-ringing apparatus, the combination with a series of spring-controlled pivoted levers connected with the bells of the chime and radially arranged in a semicircle, the center of which is the point at which the operator stands, and the sectional sockets to which the radial levers are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

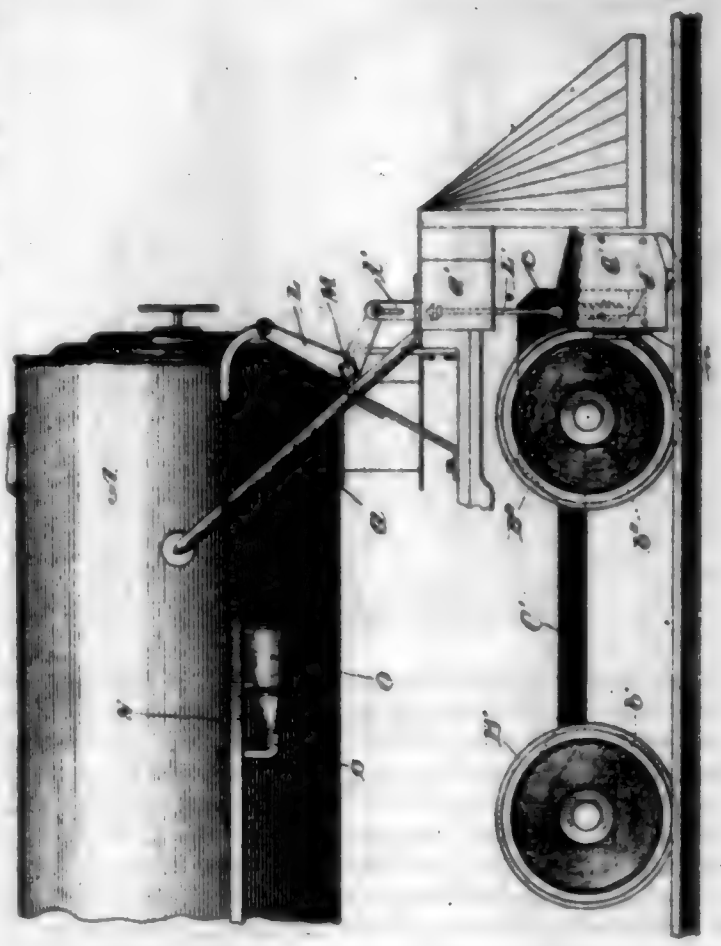
3. In a chime-ringing apparatus, the combination with the radial levers and their sectional sockets to which they are removably attached, of the semicircular rod adapted for the pivotal and removable reception of the sectional sockets and the semicircular series of spaced posts provided with sockets adapted for the removable reception of the semicircular rod.

4. In a chime-ringing apparatus, in combination, the radial lever 9, the bifurcated block 13 connected with the bell and in adjustable engagement with the lever 9 and the spiral spring 20, one end of which is secured to the block 13 and its other end secured to the framework.

5. In a chime-ringing apparatus, the combination with the lever 28, 30, the radial lever 9 and connections between such levers, of the hammer 27 on the upper end of lever 28, 30 and the muffler 36 secured to such lever, as and for the purpose stated.

816,526. LOCOMOTIVE SNOW AND ICE FLANGER. FRED C. ABBY, Chicago, Ill., assignor to Railway Appliances Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 31, 1904. Serial No. 239,094.

Claim.—1. In a flanger for cleaning railroad-tracks, the combination with a supporting-frame, of deflecting-blades carried by said frame above the rails, laterally-movable flanging-blades carried by said frame, and means for permitting said flanging-blades to yield relatively to said frame when a fixed object is engaged.



2. In a flanger for cleaning railroad-rails, the combination with a supporting-frame, of deflecting-blades carried by said frame above the rails, laterally-movable flanging-blades carried by said frame and yielding means movably retaining said blades in operative relation to the rails.

3. In a flanger for cleaning railroad-rails, the combination with a supporting-frame, of deflecting-blades carried by said frame above the rails, laterally-movable flanging-blades carried by said frame, and springs interposed between said flanging-blades and said support for normally retaining said blades in operative relatien to the rails.

4. In a flanger for cleaning railroad-rails, the combination with a supporting-bar, of brackets projecting from said bar, and laterally-movable flanging-blades yieldingly secured beneath said brackets.

5. In a flanger for cleaning railroad-rails, the combination with a supporting-bar, of brackets projecting from said bar, flanging-blades pivotally connected to said brackets, and springs interposed between said flanging-blades and said brackets to normally retain the points of said blades in operative relation to the rails.

6. In a flanger for cleaning railroad-rails, the combination with a supporting-bar, of brackets projecting from said bar, plates supported above the rails by the ends of said bar and by said brackets, deflecting-blades carried by said plates above the rails, and flanging-blades yieldingly mounted beneath said brackets.

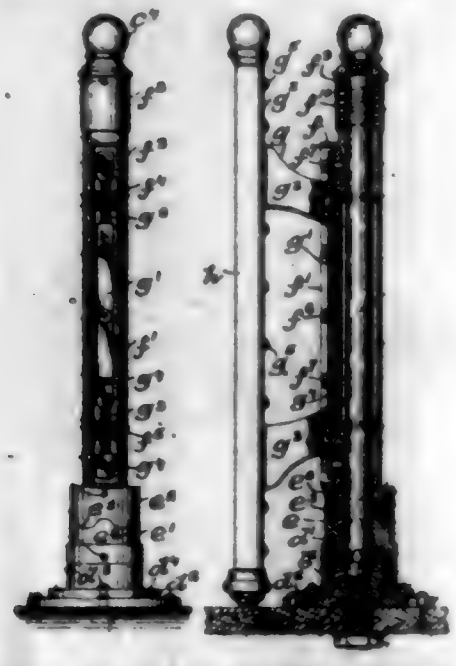
7. In a flanger for cleaning railroad-rails, the combination with a supporting-bar, of brackets projecting from said bar, flanging-blades pivotally connected to said brackets, springs interposed between said flanging-blades and said brackets to normally retain the points of said blades in operative relation to the rails, and guide-lugs on the flanging-blades in sliding engagement with said brackets.

816,527. HINGE FOR GATES. SAMUEL H. BERRY, Providence, R. I. Filed Apr. 21, 1904. Serial No. 204,204.

Claim.—1. In a hinge, the combination with a movable member provided with bearing-knuckles and means of attachment to a gate or door, of a pivotal support therefor comprising in its construction a base-plate and mechanism for adjusting the gate vertically on the support consisting of a flanged sleeve intermediate the base-plate and the movable member, and means for securing the flanged sleeve in the adjusted position, as described.

2. In a hinge, the combination with a movable member formed of two parts, one part of which is provided with bearing-knuckles

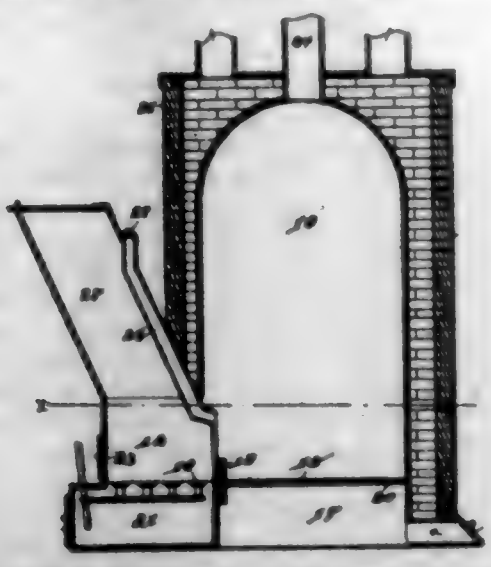
and the other part of which is pivotally secured thereto, and means of attachment to a gate or door, of a pivotal support and mechanism for adjusting the gate vertically on the support, as described.



3. In a hinge, the combination with a two-part movable member comprising a box member provided with knuckles, and a gate member pivotally and adjustably secured to the box member, and means of attachment to a gate or door, of a pivotal support therefor comprising in its construction a vertical rod, a base-plate, a cam-sleeve intermediate the base-plate and the movable member, and means for adjusting and securing the cam-sleeve on the vertical rod.

4. In a support for a hinge, the combination with a base-plate, a vertical rod rigidly secured to the base-plate, a flanged sleeve adjustably secured to the base-plate, and a cam-faced sleeve adjustably secured to the flanged sleeve, of two sleeves forming the hinge-knuckles surrounding the vertical rod, a cam-faced sleeve adjustably secured to the lower hinge-knuckle, a box member connecting the two hinge-knuckles and a frame rigidly secured to the gate and adjustably supported in the box member, as described.

816,528. HOT-AIR FURNACE. ARTHUR BOYCE, Des Moines, Iowa. Filed Apr. 16, 1904. Serial No. 203,387.



Claim.—1. In a furnace, the combination of a combustion-chamber, an air-chamber located under said combustion-chamber and in open communication therewith at a plurality of points, a fire-pot located alongside of said combustion-chamber and in open communication therewith, a plurality of tubes each of said tubes at its lower end being in open communication with said air-chamber and having its upper end extended upward into and terminated within the path of the products of combustion as they pass from the fire-pot into the combustion-chamber and adapted to feed air into the midst of said products of combustion and means for controlling the supply of air to said air-chamber.

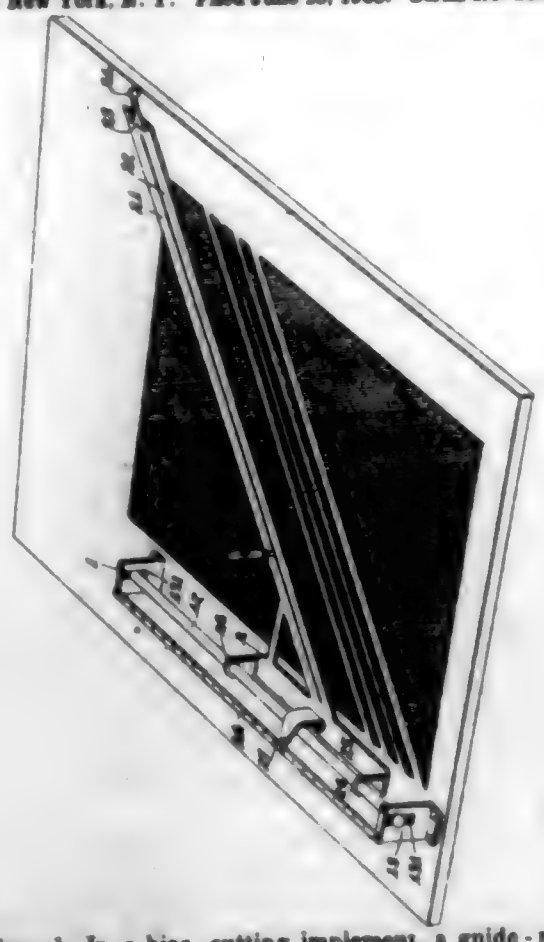
2. In a furnace, a combustion-chamber, an air-chamber under the combustion-chamber provided with air-holes in its top to aid in producing an upward draft in the furnace, means for regulating the passage of air into the air-chamber, a fire-pot communicating with the front and lower portion of the combustion-chamber and means to feed air to the products of combustion as they pass from the fire-pot into the combustion-chamber.

3. In a furnace, a combustion-chamber, an air-chamber under the combustion-chamber closed at its front end and provided with air-holes in its top to feed air into the combustion-chamber at different points to produce an upward draft in the furnace, means for regulating the passage of air into the air-chamber, a fire-pot in front of the air-chamber in a plane above the air-chamber, a plurality of open-ended tubes fixed in the air-chamber immediately in rear of the fire-pot to feed air upward into the products of combustion as they pass from the fire-pot into the combustion-chamber.

4. In a furnace, a combustion-chamber, an air-chamber under the combustion-chamber closed at its front end and provided with means to admit air at its rear end, a plurality of open-ended tubes fixed in the top of the air-chamber, a fire-pot communicating with the lower end and front of the combustion-chamber and a fuel-magazine on top of the fire-pot extending upward and inclining forward and an air-conductor on the back of the magazine communicating with the combustion-chamber to mingle air with the products of combustion as they pass from the fire-pot into the combustion-chamber.

5. A hot-air furnace comprising a double-walled combustion-chamber, an air-chamber under the combustion-chamber closed at its front end and provided with an air-register at its rear end and air-holes in its top, a plurality of open-ended tubes fixed in the top and front of the air-chamber, a fire-pot communicating with the lower end and front of the combustion-chamber, a fuel magazine on top of the fire-pot extending upward and inclining forward, an air-conductor on the back of the magazine communicating with the combustion-chamber to mingle air with the products of combustion as they pass into the combustion-chamber, a grate in the bottom of the fire-pot and an ash-chamber under the grate, arranged and combined as shown and described to operate in the manner set forth for the purposes stated.

816,529. IMPLEMENT FOR BIAS-CUTTING. NEWTON B. BURT, New York, N. Y. Filed June 15, 1905. Serial No. 265,456.



Claim.—1. In a bias-cutting implement, a guide-rod and a knife-guide slidable therealong and detachably dependent therefrom by hook-like arms.

2. In a bias-cutting implement, a cutting-arm mounted upon a horizontal guide-rod so as to freely slide therealong, said slide-rod being elastically supported.

3. In a bias-cutting implement, a cutting-arm having hook-arms detachably engaging with and slidably mounted upon a horizontal guide-rod, said slide-rod being vertically yieldable.

4. In a bias-cutting implement, a knife-guide supported at one extreme end by a flexible extension carrying a ball-roller at the end thereof.

5. A bias-cutting implement having a cutting-guide horizon-

tally movable in the plane of the table and elastically supported vertically to accommodate goods of diverse thicknesses.

6. A bias-cutting implement having a cutting-guide laterally movable in parallel diagonals in the plane of the table and elastically supported vertically to accommodate goods of diverse thicknesses.

7. In a bias-cutting implement, a knife-edge having an elastically-supporting roller-bearing at one extreme end thereof, and at the other end being dependent from a vertically-yieldable guide-rod.

8. In a bias-cutting implement, a vertically-yieldable guide-rod and detachably dependent therefrom a knife-guide supported at one extreme end by a flexible extension carrying a ball-roller at the end thereof.

9. In a bias-cutting implement, a knife-edge having a yielding roller-bearing at one extreme end thereof, said knife-edge being dependent at the other end from a vertically-yieldable guide-rod and extending therefrom at an angle of approximately forty-five degrees.

10. In a bias-cutting implement, a fixed guide comprising a scale-end bearings and a guide-rod elastically supported therein, a knife-guide carrier dependent from said rod by hook-like arms, and a knife-guide having an elongated slot extending therefrom and yieldably supported at its extreme end by a roller-ball, said carrier providing an index-pointer for registering the width of cloth cut.

11. In a bias-cutting implement, a fixed guide comprising slotted end pieces, springs therein, a guide-rod supported by said springs, and a knife-guide slidably mounted upon said guide-rod and having an index-pointer associated with a suitable scale upon said fixed guide.

12. In a bias-cutter, a fixed guide member having a vertically-yieldable guide-rod elastically supported at its ends in suitable bearings and a knife-guide detachably dependent from said rod and having an index-pointer for determining the width of the cut stripe, said knife-guide having a yielding bearing upon its extreme end.

13. In a bias-cutting implement, a fixed guide comprising slotted end pieces, springs therein, and a guide-rod vertically supported by said springs but restrained against other movement, and a knife-guide slidably mounted upon said guide-rod and having an index-pointer associated with a suitable scale upon said fixed guide for determining width of stripe cut.

14. In a bias-cutter, a fixed guide member having a vertically-yieldable guide-rod supported by springs in suitable bearings at its ends, a scale and a knife-guide detachably dependent therefrom having an index-pointer for coöperating with said scale in determining the width of the cut stripe, said knife-guide having a yielding bearing upon its extreme end.

15. In a bias-cutting implement, a fixed guide comprising a scale, end bearings, and a guide-rod elastically supported therein, a knife-guide carrier dependent from said rod by hook-like arms, and a knife-guide having an elongated slot extending therefrom and yieldably supported at its extreme end by a roller-ball, said carrier providing an index-pointer for registering the width of cloth cut.

816,530. STEAM-BOILER. CONWAY C. CHERRY, Seattle, Wash. Filed May 8, 1905. Serial No. 259,207.

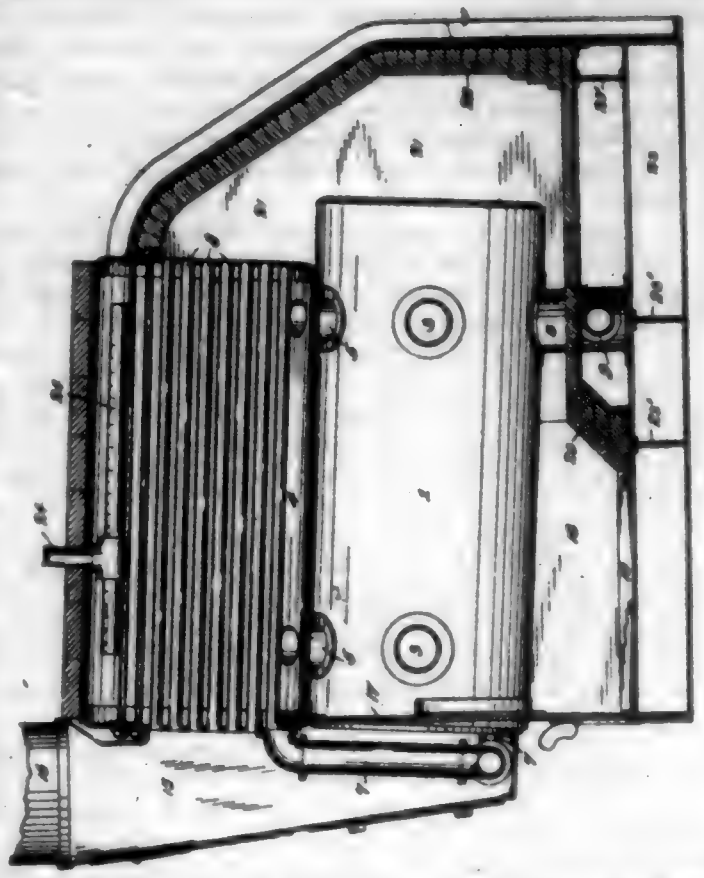
Claim.—1. In a boiler, a pair of lower drums and an upper drum communicatively connected, a casing surrounding the sides and rear end of the lower drums and being spaced therefrom and extending upwardly and engaging the sides and rear end of the upper drum at points adjacent its top, and an uptake at the front end communicating with each of said drums.

2. In a boiler, a pair of lower and an upper drum, communicatively connected, a casing forming passages about said drums, the rear wall of said casing being inclined forward and terminating at the upper drum to direct the combustion-gases into said upper drum, and an uptake communicating with each of said drums at the front ends thereof.

3. In a boiler, a pair of lower drums having tubes extending therethrough, an upper drum having tubes extending therethrough and a steam-space above the tubes, a casing surrounding and spaced from the lower drums and extending upwardly to engage the upper drum at points in alinement with the upper tubes thereof, and an uptake at the front end communicating with each of the drums.

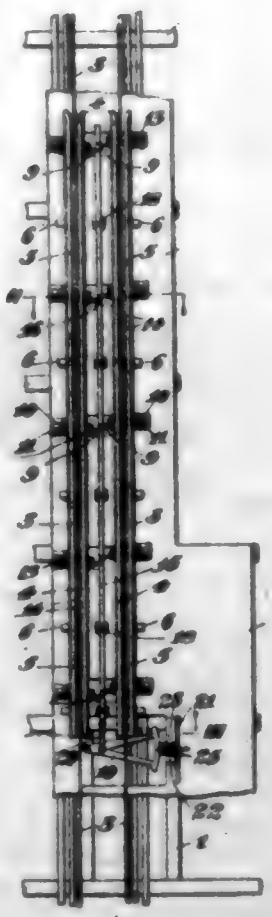
4. In a boiler, a plurality of intercommunicating drums disposed at varying elevations, and a curved casing spaced from the sides and rear ends of the lower drums and extending upwardly and inwardly and spaced from the upper drum, the rear wall of said casing being inclined to direct the combustion-gases into said upper drum.

5. In a boiler, intercommunicating drums disposed at varying elevations, a casing spaced from said drums and following the general outline thereof to provide passages about the drums, the rear end of the casing extending inwardly to direct the combustion-gases into the upper drum.



6. In a boiler, a pair of lower and an upper drum each communicatively connected to the other, and a casing spaced from and following the curvature of the sides of the lower drums and thence extending upwardly and inwardly and terminating adjacent the upper portion of the upper drum and in engagement with the latter.

816,531. TRACK-BRAKE. JAMES M. COOK, Jr., Johnstown, Pa. Filed June 7, 1905. Serial No. 264,072.



Claim.—1. In a track-brake, the combination with the car-wheels, of a stationary brake-bar on one side of the track-rail, a laterally-movable brake-bar on the other side of said track-rail, means for holding said laterally-movable brake-bar against longitudinal movement, and means for operating said movable brake-bar to press it against the car-wheels.

2. In a track-brake, the combination with the track-rail and the

car-wheels, of a stationary brake-bar on one side of said track-rail, a brake-bar on the other side of said track-rail movable along a line at a right angle with said track-rail, and means for operating said movable brake-bar to press it against the car-wheels.

3. In a track-brake, the combination with the track-rail and the car-wheels, of a stationary brake-bar on one side of said track-rails, a movable brake-bar on the other side of said track-rail, guides for said movable brake-bar located at right angles with the track-rail, and means for operating said movable brake-bar to press it against the car-wheels.

4. In a track-brake, the combination with the track-rail and the car-wheels, of a brake-bar on each side of the track-rail, a link connection between said brake-bars, and means for operating said connection to clamp the car-wheels between said brake-bars.

5. In a track-brake, the combination with the track-rail and the car-wheels, of a stationary brake-bar on one side of the track-rail, a movable brake-bar on the opposite side thereof, a lever carried by said stationary brake-bar and connected with said movable one, and means for operating said lever to clamp the car-wheels between said brake-bars.

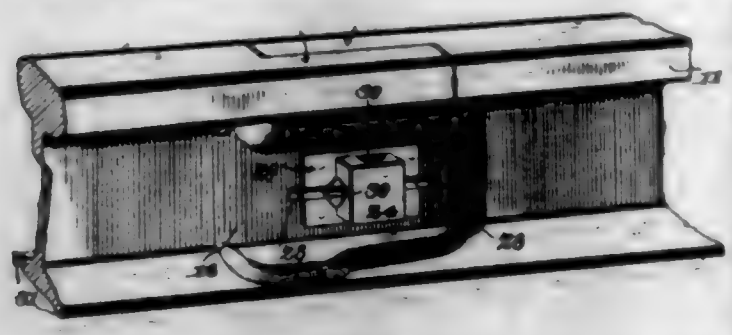
6. In a track-brake, the combination with the track-rail and the car-wheels, of a stationary brake-bar, located on the inside of the track-rail, a movable brake-bar located on the outside thereof, guides for said movable brake-bar, bell-crank levers carried by said stationary brake-bar, links connecting said levers with said movable brake-bar, a rod connecting said levers, and means for operating said rod to clamp the car-wheels between said brake-bars.

7. In a track-brake, the combination with the track-rails and the car-wheels, of stationary brake-bars located on the inside of the track-rails, movable brake-bars located on the outside thereof, guides for said movable brake-bars located at right angles with the track-rails, bell-crank levers mounted upon said stationary brake-bars, links connecting said levers with said movable brake-bars, wearing-plates for said links, a rod connecting said levers, a sector-gear connected with said rod, and a hand-wheel geared with said sector-gear.

816,532. FIREPROOF AND WATERPROOF COMPOSITION. EDWARD COVINGTON, Salt Lake City, Utah. Filed July 16, 1903. Renewed Aug. 12, 1905. Serial No. 274,014.

Claim.—The herein-described composition of matter consisting of burnt gypsum, mica, silica, graphite and mica-schist, substantially as and for the purpose specified.

816,533. RAILWAY-RAIL JOINT. HOWARD CRAMER, Newberry, Pa., assignor of one-fourth to Charles H. Knapp and one-fourth to Napoleon B. Wright, Williamsport, Pa. Filed Apr. 14, 1905. Serial No. 255,557.

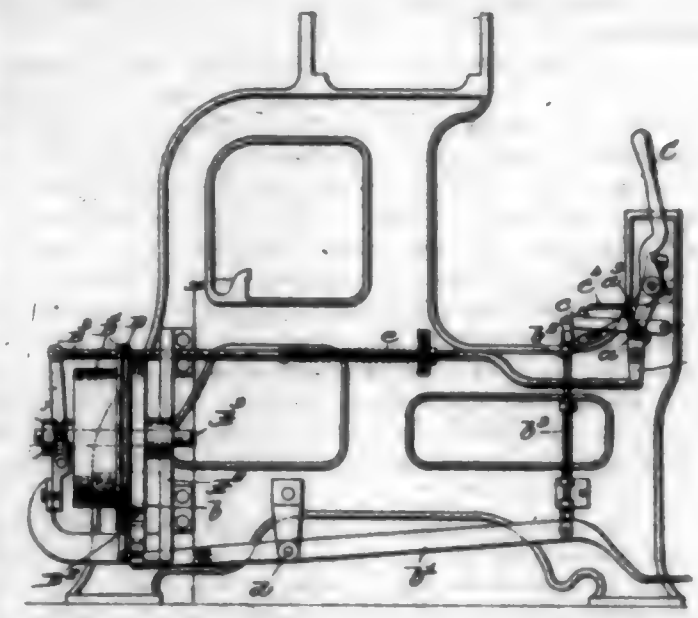


Claim.—1. In a rail-joint, the rail ends having the head portions compressed to form a scarf-joint longitudinally on one side and the vertical web and tie-flange portions compressed laterally to form a scarf-joint longitudinally on the other side, said laterally-compressed portion of the vertical webs extended laterally and bearing beneath the head portions of the rails.

2. In a rail-joint, the rail ends having the head portions compressed to form a scarf-joint longitudinally on one side and the vertical web and tie-flange portions compressed to form a scarf-joint longitudinally on the opposite side, and with the outer edges of the tie-flanges turned downwardly and provided with spaced rib-sections for embedding in the ties.

816,534. BRAKE MECHANISM FOR LOOMS. RANDOLPH CROMPTON, Worcester, Mass., assignor to Randolph Crompton, George Crompton, Edward D. Thayer, and William B. Scofield, Worcester, Mass., a Firm. Filed Aug. 24, 1904. Serial No. 221,936.

Claim.—1. In a brake mechanism for looms, the combination of a shaft, a fast and a loose pulley on said shaft, means operable from either side of the loom for frictionally connecting said pulleys in driving relation, a brake-pulley and a brake member, devices normally acting to apply the brake foot-controlled means at opposite sides of the loom to release the brake member from said pulley, and means for maintaining the brake member in said released relation with the brake-pulley when the foot-controlled means is freed from the action of the foot while the loom remains at rest.



2. In a brake mechanism for looms, the combination of a driving-shaft, a driving member thereon, a friction member also on said shaft, a friction-band for acting on said friction member, main shipping devices disposed at opposite sides of the loom for connecting and disconnecting the driving-shaft and driving member, foot-controlled means independent of the shipping device and disposed at opposite sides of the loom for releasing the brake-band from the friction member when starting or turning back, a holding-lever, connections between said lever and said foot-controlled means and locking devices for said holding-lever.

3. In a brake mechanism for looms, the combination of a driving-shaft, a driving member thereon, a friction member also on said shaft, a friction-band for acting on said friction member, main shipping devices disposed at opposite sides of the loom for connecting and disconnecting the driving-shaft and driving member, the auxiliary knock-off lever, means independent of the shipping devices and disposed also at opposite sides of the loom for releasing the brake-band from the friction member in starting or turning back, a holder-lever, yielding connections between the holding-lever and the auxiliary knock-off lever, and means for locking the holding-lever by the knock-off lever to maintain the said releasing means in released position.

816,535. SHED-FORMING MECHANISM FOR LOOMS. RANDOLPH CROMPTON, Worcester, Mass., assignor to Randolph Crompton, George Crompton, Edward D. Thayer, and William B. Scofield, Worcester, Mass., a Firm. Filed Feb. 20, 1905. Serial No. 246,416.

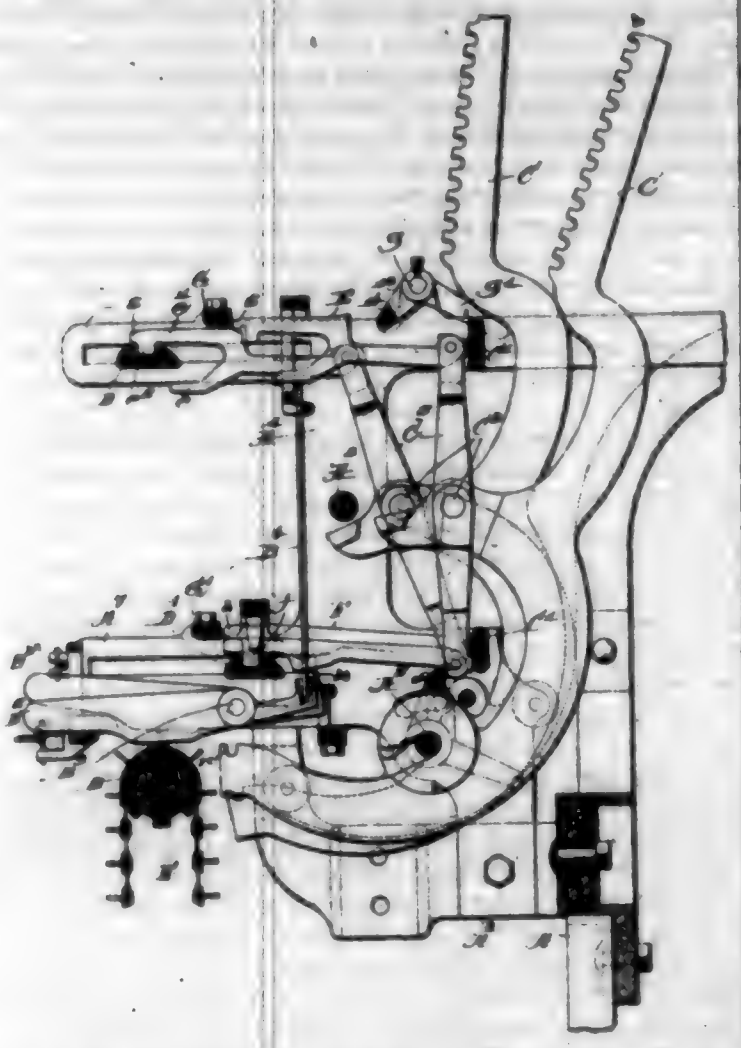
Claim.—1. In a loom, a series of jacks, levers pivoted thereto and provided at their opposite ends with hooks having lugs, knives grooved longitudinally to receive the lugs, and releasing means operating alternately upon opposite ends of said levers prior to distributing the hooks for a change of shed to release the side edges of said hooks from frictional contact with the side walls of said groove.

2. A jack having a lever, hooks operatively connected with its opposite ends, a plurality of stationary stop-bars, and a device to remove said hooks from contact with said stop-bars that the hooks may fall when called for by the pattern-surface.

3. In a loom, a series of hooks and knives with which said hooks are engaged prior to the movement of the knives to move the hook for the formation of sheds, means for moving the hook longitudinally after the knives complete their inward stroke, to break the contact of the edges of the work with the edges of knives, and pattern-controlled mechanism to thereafter distribute the hooks with relation to the knives.

4. In a shed-forming mechanism for looms, a plurality of knives, kicker-rods connected with said knives, means for moving said

knives and their kicker-rods, a plurality of notched jacks, a lever pivoted on each jack, hooks pivoted to the opposite ends of said levers, means to effect the engagement and disengagement of said hooks with said knives, two rock-shafts, and a releasing device for each rock-shaft, said kicker-rods moving said rock-shafts that said releasing device may act on one or the other end of said levers, substantially as and for the purpose described.



5. In a shed-forming mechanism for looms, a plurality of knives, kicker-rods connected with said knives, means for moving said knives and their kicker-rods, a plurality of notched jacks, a lever pivoted on each jack, hooks pivoted to the opposite ends of said levers, means to effect the engagement and disengagement of said hooks with said knives, two rock-shafts, provided with a releasing device and a lever, said kicker-rods moving said rock-shafts that said releasing device may act on one or the other end of said levers, and a spring connecting the ends of the levers attached to said rock-shafts.

6. A jack having a lever, hooks operatively connected with its opposite ends, a plurality of stationary stop-bars, a device to remove said hooks from contact with said stop-bars that the hooks may fall when called for by the pattern-surface, said jack being notched at its opposite end portions and an intermediate device to which is adjustably attached the harness connections leading from said jacks.

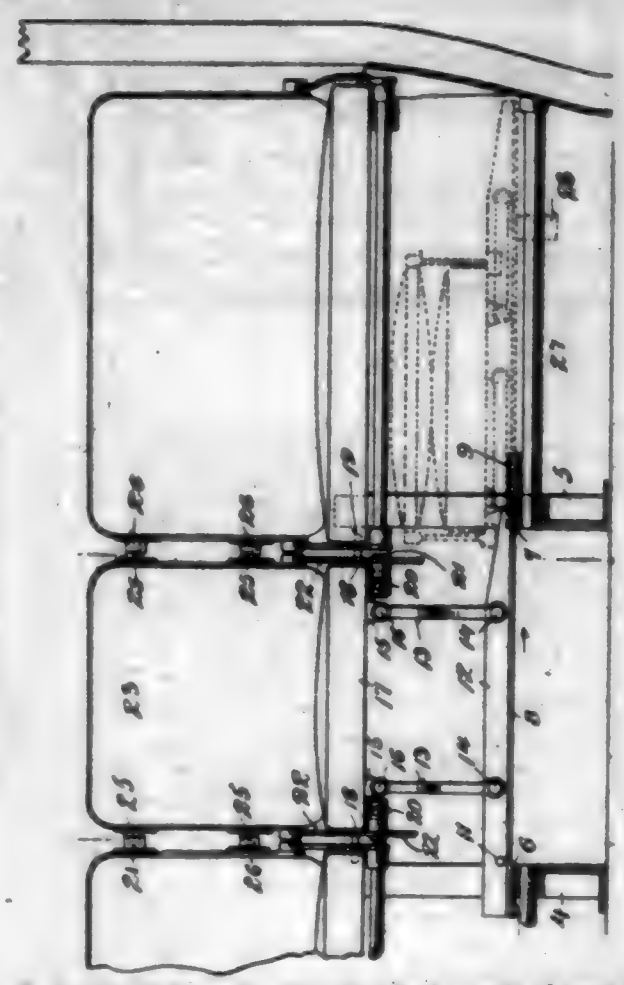
816,536. **FORK.** JOHN W. CURRIER, Boston, Mass. Filed Apr. 22, 1905. Serial No. 256,856.



Claim.—A fork comprising a tubular body provided at one end with tines, a plunger movable longitudinally within the body, one end of said plunger cooperating with the tines and the opposite end projecting beyond the adjacent end of the body for manual manipulation, and a spring encircling the plunger and adapted to normally maintain said plunger in inoperative position.

816,537. **DISAPPEARING SEAT.** SAMUEL M. CURWEN, Haverford, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Feb. 9, 1905. Serial No. 244,837.

Claim.—1. In an article of the class described, a pair of seats with an aisle between them, a cushion, a back having pivoted connections with said cushion, hinged collapsible means for supporting said cushion and permitting the same to be stored under one of said seats.



2. In an article of the class described, a pair of seats with an aisle between them, a cushion, a back having a pivotal connection therewith, a bar and means for supporting the same, and levers pivoted to said bar and cushion and adapted to support it between said seats.

3. In a device of the class described, a pair of seats having bifurcated supports, a bar resting on said supports, upwardly-extending links pivoted to said bar and the seat-cushion pivotally connected to said links.

4. In a device of the class described, a pair of seats having supports, an angle-bar adapted to said supports, upwardly-extending links pivoted to said angle-bar, a seat-cushion pivotally connected with said links, a back pivotally connected with said cushion and means on said back for engaging the adjacent seats and holding it in alinement with the backs of said seats.

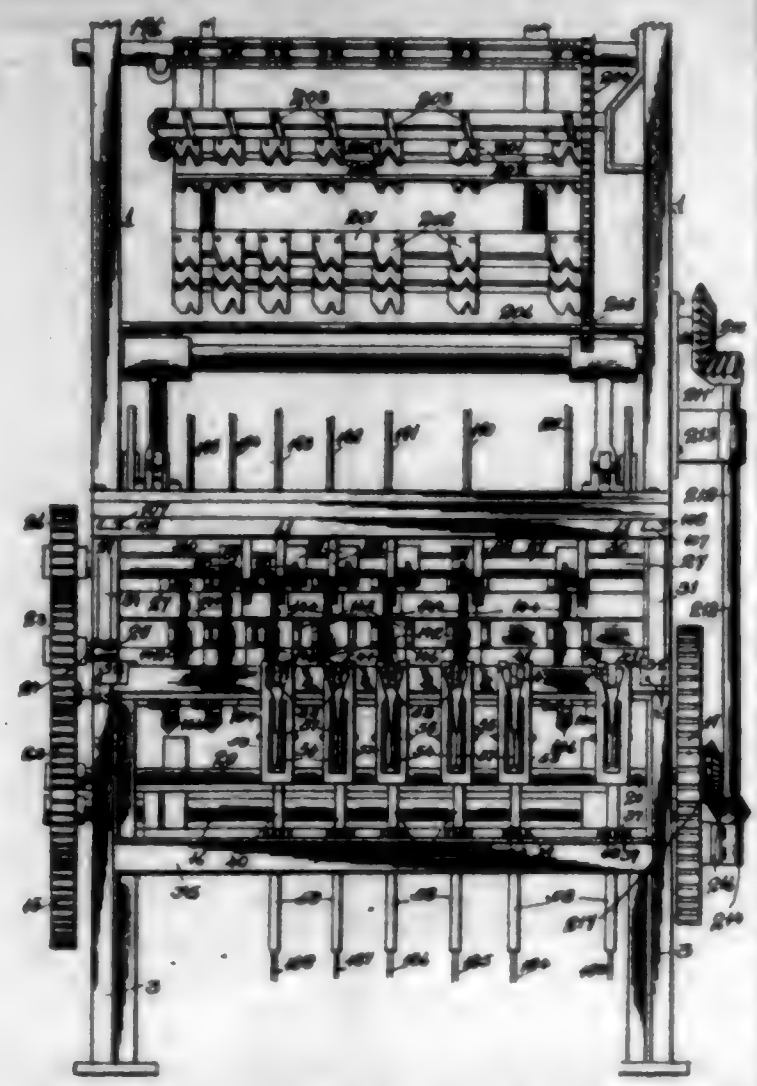
816,358. **WIRE-FENCE-MAKING MACHINE.** JOSEPH M. DENNING, Cedar Rapids, Iowa. Filed May 26, 1905. Serial No. 262,446.

Claim.—1. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, and mechanism for severing the advance portion of each stay-wire as continuously fed forward to form a section of a transverse stay-wire crossing the plurality of strand-wires, substantially as described.

2. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance portion of each stay-wire as continuously fed forward to form a section of a transverse stay-wire crossing the plurality of strand-wires, and mechanism for carrying forward and delivering the stay-wire sections into position for coiling their ends around the strand-wires and forming a continuous sectional stay-wire, substantially as described.

3. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, mechanism for carrying forward and delivering the stay-wire sections into position for coiling their ends around the strand-wires,

end a reciprocating mechanism for coiling the ends of the stay-wire sections around each other and then around the strand-wires as the strand-wires are fed forward, substantially as described.



4. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, a fixed cutter for each stay-wire and through which the stay-wire is guided and held in its passage for the leading end portion of the stay-wire to be projected and furnish a section of a transverse stay-wire crossing the plurality of strand-wires, a revoluble cutter for each fixed cutter the two cutters coöperating to sever the advance portion of the stay-wire projected through the fixed cutter, and means for continuously driving the revoluble cutter, substantially as described.

5. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, a plurality of reciprocating plungers engaging the stay-wire sections and carrying the sections forward and delivering the same into position adjacent to the strand-wires, and means for reciprocating the plungers, substantially as described.

6. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, mechanism for advancing the sections of the transverse stay-wire into position adjacent to the strand-wires, a plurality of reciprocating coilers operating to coil the ends of the transverse stay-wire sections around each other and then around the strand-wires while the strand-wires are being fed forward, and means for reciprocating the coilers, substantially as described.

7. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, a fixed cutter for each stay-wire and through which the advance end portion of the stay-wire is projected to furnish a section of a transverse stay-wire crossing the strand-wires, a revoluble cutter coöperating with the fixed cutter for severing the stay-wire section from each stay-wire, means for driving the revoluble cutter, a plurality of reciprocating plungers for carrying forward the severed sections of the stay-wire into position adjacent to the strand-wires, means for reciprocating the plungers, a plurality of coilers, one for each strand-wire and encircling its strand-wire and engaging the adjoining crossing ends of the transverse stay-wire sections, and means for advancing the coilers coincident with the advance of the strand-wires, substantially as described.

8. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, a fixed cutter for each stay-wire and through which the advance end portion of the stay-wire is projected to furnish a section of a transverse stay-wire crossing the strand-wires, a revoluble cutter coöperating with the fixed cutter for severing the stay-wire section from each stay-wire, means for driving the revoluble cutter, a plurality of reciprocating plungers for carrying forward the severed sections of the stay-wire into position adjacent to the strand-wires, means for reciprocating the plungers, a plurality of coilers, one for each strand-wire and encircling its strand-wire and engaging the adjoining crossing ends of the transverse stay-wire sections, means for advancing the coilers coincident with the advance of the strand-wires, and means for continuously revolving the coilers while coiling the ends of the stay-wire sections around the strand-wires, substantially as described.

9. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, a fixed cutter for each stay-wire and through which the leading end portion of the stay-wire is projected to furnish a section of a transverse stay-wire crossing the strand-wire, a plurality of revolving cutters one for each fixed cutter, a shaft on which the revolving cutters are fixedly mounted, and a train of gear for driving the shaft from the main power-shaft of the machine, substantially as described.

10. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, a plurality of plungers engaging the severed sections of the transverse stay-wire, a reciprocating bar carrying the plungers, a pull-and-push bar leading from the reciprocating bar, a bell-crank lever having one end of the pull-and-push bar connected thereto, a rod connected with the other end of the bell-crank lever, an eccentric for operating the rod, a shaft on which the eccentric is fixedly mounted, and a driving connection between the shaft and the main power-shaft of the machine, substantially as described.

11. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, mechanism for carrying the stay-wire sections forward to the strand-wires, a plurality of coilers, each coiler having a head and a stem with an axial hole for the passage of a strand-wire, a sleeve encircling the stem and connected therewith, a bevel-gear for each sleeve, a bevel-gear for each bevel-gear of the sleeves, a shaft for the last-named bevel-gears, and a driving connection between the shaft and the main power-shaft of the machine, substantially as described.

12. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, mechanism for carrying the transverse stay-wire sections forward to the strand-wires, a plurality of coilers, each coiler having a head and a stem with an axial hole for the passage of a strand-wire, a sleeve encircling the stem and connected therewith, a fork for each coiler-head, a bar carrying the forks, a rocking lever connected at one end with the bar, a bar connected to the other end of the rocking lever, a roller on the lower end of the last-named bar, a cam engaging the roller, a shaft having the cam fixedly attached thereto, and a driving connection between the shaft and the main power-shaft of the machine, substantially as described.

13. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, mechanism for continuously feeding forward a plurality of stay-wires, mechanism for severing the advance end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, mechanism for carrying the transverse stay-wire sections forward to the strand-wires, a plurality of coilers, each coiler having a head and a stem with an axial hole for the passage of a strand-wire,

a sleeve encircling the stem and connected therewith, a bevel-gear for each sleeve, a bevel-gear for each bevel-gear of the sleeves, a shaft for the last-named bevel-gears, a driving connection between the shaft and the main power-shaft of the machine, a fork for each coiler-head, a bar carrying the forks, a rocking lever connected at one end with the bar, a bar connected to the other end of the rocking lever, a roller on the lower end of the last-named bar, a cam engaging the roller, a shaft having the cam fixedly attached thereto, and a driving connection between the shaft and the main power-shaft of the machine, substantially as described.

14. In a wire-fence machine, the combination of a plurality of fixed cutters, through each of which a transverse stay-wire passes and is guided and held in its passage, a revolving cutter for each fixed cutter and coöperating therewith to sever the portion of the stay-wire projected through the fixed cutter and form a stay-wire section, and means for continuously driving the revolving cutters, substantially as described.

15. In a wire-fence machine, the combination of a plurality of fixed cutters through each of which a section of a transverse stay-wire passes, a revolving cutter for each fixed cutter and coöperating therewith to sever the projected portion and form a stay-wire section, means for continuously driving the revolving cutters, and a divided retaining-tube between each of the fixed cutters and into which the section of the stay-wire is entered, each retaining-tube open on its delivery side, substantially as described.

16. In a wire-fence machine, the combination of a plurality of fixed cutters, a plurality of revoluble cutters one for each fixed cutter for severing the sections of a transverse stay-wire crossing the strand-wires, a retaining-tube between the fixed cutters and into which the severed sections of the transverse stay-wire sections is entered, each tube open on its delivery side, and a plurality of reciprocating plungers for forcing the stay-wire sections from the retaining-tube and carrying the sections forward, substantially as described.

17. In a wire-fence machine, the combination of a plurality of fixed cutters, a plurality of revoluble cutters one for each fixed cutter for severing the sections of a transverse stay-wire crossing the strand-wires, a retaining-tube between the fixed cutters and into which the severed section of the transverse stay-wire sections is entered, each tube open on its delivery side, a plurality of reciprocating plungers for forcing the stay-wire sections from the receiving-tubes and carrying the sections forward, a bar common to all of the plungers, a pull-and-push bar for each end of the plunger-bar, a bell-crank lever for each pull-and-push bar, a rod for each bell-crank lever, an eccentric for each rod, a shaft having the eccentrics fixedly mounted thereon, and means for revolving the shaft, substantially as described.

18. In a wire-fence machine, the combination of a plurality of fixed cutters through each of which a stay-wire passes, a revolving cutter for each fixed cutter and coöperating therewith to sever the leading end portion of the stay-wire and form a transverse stay-wire section, means for continuously driving the revolving cutters, a divided retaining-tube between each of the fixed cutters and into which the section of the stay-wire is entered, each retaining-tube open on its delivery side, a plurality of upper guide-fingers, a plurality of lower guide-fingers between which and by which fingers the sections of the transverse stay-wire are held and guided while being carried forward, substantially as described.

19. In a wire-fence machine, the combination of a plurality of fixed cutters through each of which a transverse stay-wire passes, a revolving cutter for each fixed cutter and coöperating therewith to sever the leading end portion of the stay-wire and form a transverse stay-wire section, means for continuously driving the revolving cutters, a divided retaining-tube between each of the fixed cutters and into which the section of the transverse stay-wire is entered, each retaining-tube open on its delivery side, a plurality of upper guide-fingers, a plurality of lower guide-fingers between which and by which fingers the sections of the transverse stay-wire are held and guided while being carried forward, a plurality of reciprocating plungers for forcing the sections of the transverse stay-wire from the retaining-tubes and carrying the sections forward between the fingers, and means for reciprocating the plungers, substantially as described.

20. In a wire-fence machine, the combination of a series of upper and lower fingers for guiding the sections of a transverse stay-wire, and a plurality of plungers engaging the sections of the transverse stay-wire and carrying the sections forward between the fingers, substantially as described.

21. In a wire-fence machine, the combination of a series of upper and lower fingers for guiding the sections of a transverse stay-wire, a plurality of plungers engaging the sections of the transverse stay-wire and carrying the sections forward between the fingers, a bar common to all the plungers, a pull-and-push bar at each end of the plunger-bar, a bell-crank lever for each pull-and-push bar, a rod for each bell-crank lever, an eccentric for each rod, a shaft having the eccentric fixedly mounted thereon, and means for revolving the shaft, substantially as described.

22. In a wire-fence machine, the combination of a plurality of fixed cutters through each of which a stay-wire passes, a revolving cutter for each fixed cutter and coöperating therewith to sever the leading end portion of the stay-wire and form a transverse stay-wire section, means for continuously driving the revoluble cutter, a divided retaining-tube between each of the fixed cutters and into which the section of the transverse stay-wire is entered, each retaining-tube open on its delivery side, a plurality of upper guide-fingers with the intermediate ones arranged in pairs on opposite sides of a twister or coiler head, a plurality of lower guide-fingers one intermediate of each two twister-heads and between which and by which and the upper guide-fingers the sections of the transverse stay-wire are held and guided while being carried forward, substantially as described.

23. In a wire-fence machine, the combination of a plurality of fixed divided tubes receiving thereinto the sections of a transverse stay-wire, a series of upper guide-fingers, a series of lower guide-fingers, and a plurality of reciprocating plungers for forcing the sections of the transverse stay-wire from the retaining-tubes and carrying the sections forward between the guide-fingers, substantially as described.

24. In a wire-fence machine, the combination of a plurality of fixed divided tubes receiving thereinto the sections of a transverse stay-wire, a series of upper guide-fingers, a series of lower guide-fingers, a plurality of reciprocating plungers for forcing the sections of the stay-wire from the restraining-tubes and carrying the sections forward between the guide-fingers, and a plurality of coiler-heads over which the sections of the transverse stay-wire are delivered by the plungers, substantially as described.

25. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, a plurality of coiler-heads, one coiler-head for each strand-wire, means for continuously revolving the coiler-heads, and means for reciprocating the coiler-heads to have a forward movement coincident with the forward travel of the strand-wires, substantially as described.

26. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, a plurality of coiler-heads, one head for each strand-wire, a shaft for each coiler-head through which and the coiler-head the strand-wire passes, a sleeve encircling the shaft, a connection between the shaft and the sleeve permitting endwise movement of the shaft, and means for continuously revolving the sleeve and thereby revolving the shaft and coiler-head continuously, substantially as described.

27. In a wire-fence machine, the combination of mechanism for continuously feeding forward a plurality of strand-wires, a plurality of coiler-heads, one head for each strand-wire, a shaft for each coiler-head through which and the coiler-head the strand-wire passes, a sleeve encircling the shaft, a connection between the shaft and the sleeve permitting endwise movement of the shaft, means for continuously revolving the sleeve and thereby revolving the shaft and coiler-head continuously, and means for reciprocating the coiler-heads and the shaft for the coiler-heads in one direction of travel to move coincident with the forward travel of the strand-wires, substantially as described.

28. In a wire-fence machine, the combination of mechanism for severing the section of a continuously-advanced transverse stay-wire, mechanism for carrying forward the severed sections of the transverse stay-wires and mechanism for coiling the ends of the stay-wire section around continuously-fed strand-wires, said mechanism employing a plurality of reciprocating and continuously-revolving coiler-heads, substantially as described.

29. In a fence-wire machine, the combination of mechanism for severing the sections of a continuously-advanced transverse stay-wire, means for retaining the sections in a fixed position after being severed, means for guiding and directing the severed sections from their retained position, and means for carrying forward the severed sections from the retaining means and across the guiding means to a position for coiling the ends of the sections around the strand-wires, substantially as described.

30. In a wire-fence machine, the combination of mechanism for severing the sections of a continuously-advanced transverse stay-wire, means for retaining the sections in a fixed position after being severed, means for guiding and directing the severed sections from their

retained position, means for carrying forward the severed sections from the retaining means and across the guiding means to a position for coiling the ends of the sections around the strand-wires, and a plurality of continuously-revolving and reciprocating coiler-heads for engaging the ends of the sections of the transverse stay-wire and coiling the ends around the strand-wires, substantially as described.

31. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, and a mechanism for severing a portion of the projected end of each stay-wire as the stay-wire is continuously advanced to form a section of a transverse stay-wire crossing the plurality of strand-wires, substantially as described.

32. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, a fixed cutter for each stay-wire and through which the stay-wire passes and is guided and held for the advance end of the stay-wire when projected to furnish a section of a transverse stay-wire crossing the strand-wire, a revoluble cutter cooperating with the fixed cutter for severing the projected portions of the stay-wires forming the stay-wire sections from each stay-wire, and means for driving the revoluble cutters, substantially as described.

33. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, mechanism for severing as continuously fed forward the leading end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, means for carrying forward the severed sections of the transverse stay-wire and mechanism for coiling the ends of the stay-wire sections around the strand-wires as the strand-wires continuously advance, substantially as described.

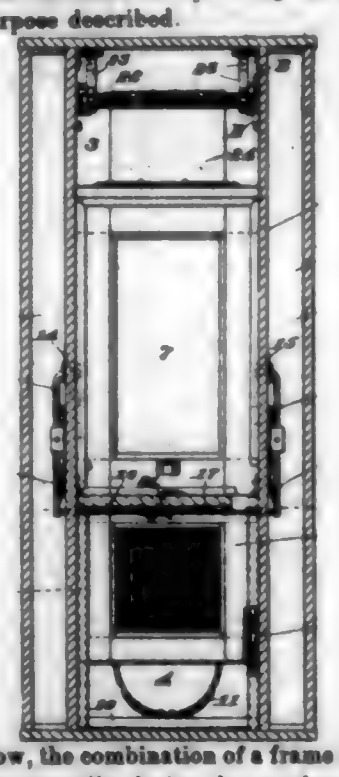
34. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, mechanism for severing the leading end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, a fixed retaining-tube for each severed section of the transverse stay-wire, guide-fingers between which the severed sections of the transverse stay-wire are carried, and reciprocating plungers for carrying forward the sections of the transverse stay-wire between the guide-fingers, substantially as described.

35. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, mechanism for severing the leading end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, a fixed retaining-tube for each severed section of the transverse stay-wire, guide-fingers between which the severed sections of the transverse stay-wire are carried, reciprocating plungers for carrying forward the sections of the transverse stay-wire between the guide-fingers, and a plurality of coilers over the acting ends of which the sections of the stay-wires are delivered for the coilers to engage the ends of the stay-wire sections and coil the same around the strand-wires, substantially as described.

36. In a wire-fence machine, the combination of a carrier for the completed fence and for continuously feeding forward a plurality of strand-wires, a plurality of feed-wheels for continuously feeding forward a plurality of stay-wires, mechanism for severing the leading end portion of each stay-wire to form a section of a transverse stay-wire crossing the plurality of strand-wires, a fixed retaining-tube for each severed section of the transverse stay-wire, guide-fingers between which the severed sections of the transverse stay-wire are carried, reciprocating plungers for carrying forward the sections of the transverse stay-wire between the guide-fingers, a plurality of coiler-heads over the acting ends of which the sections of the stay-wire are delivered for coiling the ends of the same around the strand-wires, means for reciprocating the coiler-heads, and means for revolving the coiler-heads, substantially as described.

816,589. CAR-WINDOW. HERMAN F. DIETZ, Syracuse, N. Y., assignor, by direct and mesne assignments, of one-fourth to Joseph Shahadi and one-fourth to Barbara Shahadi, Syracuse, N. Y. Filed May 20, 1904. Serial No. 208,949.

Claim.—1. In a window, the combination of a movable sash, means for moving the sash, pivoted stop-levers arranged at opposite sides of the sash and having corresponding ends movable into engagement with the sash for limiting the movement thereof, a lever pivoted intermediate of its ends and having its ends connected respectively to the other ends of the stop-levers, said lever being provided with a lateral extension, and an actuating member coöperating with the lateral extension for operating the lever, substantially as and for the purpose described.



2. In a window, the combination of a frame having an opening, a movable sash for normally closing the opening, means for moving the sash, pivoted stop-levers movable into engagement with the sash for limiting the movement thereof, a lever pivoted intermediate of its ends and having its ends connected respectively to the stop-levers, and an actuating member for the lever, arranged beneath the opening and movable in a direction at right angles to the path of movement of the sash, substantially as and for the purpose specified.

3. In a window, the combination of a frame having an opening, a movable sash for normally closing the opening, means for moving the sash, pivoted stop-levers extending lengthwise of the sash at opposite sides thereof and having corresponding ends provided with laterally-extending engaging parts fixed thereto and movable into engagement with the sash for limiting the movement thereof, a lever pivoted intermediate of its ends and having its ends connected respectively to the other ends of the stop-levers, and an actuating member for the lever, arranged beneath the opening and movable in a direction at right angles to the path of movement of the sash, substantially as and for the purpose set forth.

4. In a window, the combination of a frame having an opening, a movable sash for normally closing the opening, means for moving the sash, pivoted stop-levers extending lengthwise of the sash at opposite sides thereof and having corresponding ends provided with laterally-extending engaging parts fixed thereto and movable into engagement with the sash for limiting the movement thereof, a lever pivoted intermediate of its ends and having its ends connected respectively to the other ends of the stop-levers, said lever being provided with a lateral extension, and an actuating member coöperating with the lateral extension for operating the lever, said actuating member being arranged beneath the opening and movable in a direction at right angles to the path of movement of the sash, substantially as and for the purpose described.

5. In a window, the combination of a movable sash, a carriage movable with the sash, and a supplemental sash supported by the carriage and movable therewith and relatively thereto, substantially as and for the purpose described.

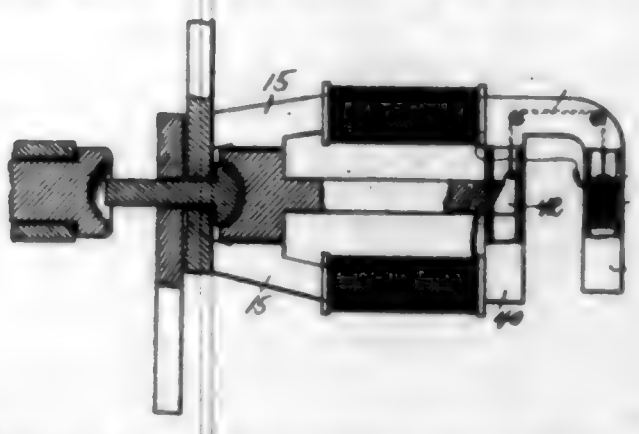
6. In a window, the combination of a movable sash, a supplemental sash lying in the same plane as the first-mentioned sash and normally in contact therewith, and a spring for holding the supplemental sash in its normal position and for permitting movement thereof relatively to the first-mentioned sash out of its normal position, substantially as and for the purpose set forth.

7. In a window, the combination of a movable sash, a carriage movable with the sash, a supplemental sash supported by the carriage and movable therewith and relatively thereto, and a spring supported by the carriage for moving the supplemental sash relatively to the carriage, substantially as and for the purpose set forth.

8. In a window, the combination of a frame having an opening and a chamber extending beneath the opening and communicating therewith, a movable sash for normally closing the opening, a carriage movable with the sash and comprising, bars depending from the sash into the chamber and spaced a distance apart, and a cross-bar between the lower ends of the depending bars, a supplemental sash normally arranged in the chamber and guided on the depending bars, and a spring mounted on the cross-bar for forcing the supplemental sash toward the first-named sash, substantially as and for the purpose described.

9. In a window, the combination of a frame, a sash, a bearing formed with an open-sided bearing-opening, a roller having a bearing in said opening, a flexible connection between the sash and the roller, a pivoted part for holding the roller in said bearing-opening, and a catch for detachably engaging said pivoted part, substantially as and for the purpose specified.

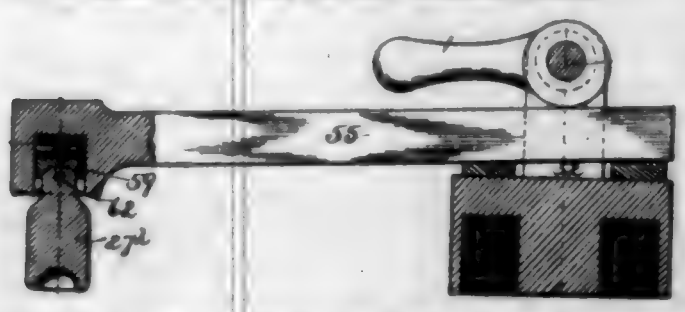
816,540. **MAGNETIC RIVET-HOLDER.** HENDERSON B. DOUGLAS, Butler, Pa., assignor of one-half to John S. Douglas, Butler, Pa. Original application filed Dec. 2, 1904, Serial No. 235,203. Divided and this application filed May 18, 1905. Serial No. 261,022.



Claim.—1. In combination, a magnetic holder, a die or set supported thereby, a wedge-block at the rear of the die or set, and an electromagnet for adjusting the wedge-block; substantially as described.

2. In combination, a magnetic holder, having a hollow handle, a die or set, a wedge-block for adjusting the same, a solenoid carried by the handle, and a solenoid-core having a flexible connection with said wedge-block; substantially as described.

816,541. **MAGNETIC RIVET-HOLDER.** HENDERSON B. DOUGLAS, Butler, Pa., assignor of one-half to John S. Douglas, Butler, Pa. Original application filed Dec. 2, 1904, Serial No. 235,203. Divided and this application filed May 18, 1905. Serial No. 261,022.



Claim.—1. The combination with a magnetic holder, of a die or set, and a longitudinally-adjustable carrier extending between the holder and die to vary the distance between the two.

2. The combination with a magnetic holder, of an arm adjustable to varying angular positions with respect to the holder, a locking-clamp for the arm, and a die or set carried by the arm.

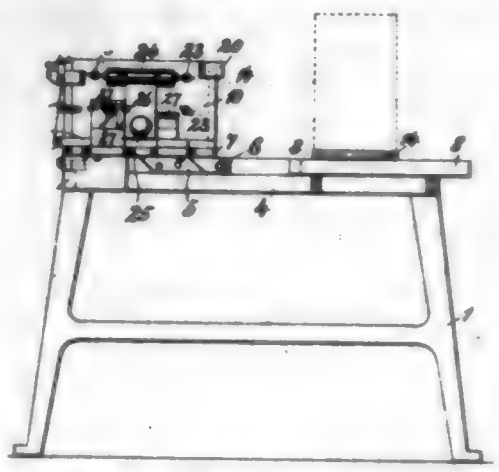
3. The combination with a magnetic holder, of a die-carrying arm supported by the holder and adjustable to varying angular positions with respect to the face of the holder, and a clamp for locking said arm in adjusted position.

4. The combination with a magnetic holder, of a clamp carried thereby, and an adjustable die-carrying arm with which the clamp engages.

5. The combination with a magnetic holder, of a clamp carried thereby, a die-carrying arm extending through the clamp, and a tapered washer between the holder and arm for varying the angular position of the latter.

6. The combination with a magnetic holder, of a tapered washer arranged on the outer face thereof, a clamp carried by the holder, an arm having one end engaged by the washer and clamp and provided with a recess at its opposite end, and a yieldably-supported die or set arranged in said recess.

816,542. **MACHINE FOR MANUFACTURING SOLID CONCRETE BUILDING-BLOCKS OR VENEER-BLOCKS.** ROBERT EDMONDSON, South Bend, Ind. Filed Sept. 7, 1904. Serial No. 223,307.



Claim.—1. In a machine for molding building-blocks and artificial stone, a combination of the main frame, a mold-box consisting of a front side, a top side, two end sides hinged to the front side, a removable side opposed to the top side, and means for holding sides in place, as set forth.

2. In a machine for molding building-blocks and artificial stone, the combination of the main frame, a mold-box clamped to a carriage mounted on the main frame to support the mold-box, in its upset position, as set forth.

3. In a machine for molding building-blocks and artificial stone, the combination of the main frame, a mold-box clamped to a carriage, said carriage hinged to short movable bars, sliding backward and forward on main frame, as set forth.

4. In a machine for molding building-blocks and artificial stone the combination of the main frame, a mold-box, a carriage, short bars, movable handles on each end of the carriage, hinged to end sides of mold-box, as set forth.

5. In a machine for molding building-blocks and artificial stone, the combination of the main frame, a mold-box clamped to a carriage, said carriage mounted on main frame, hinged to short bars, sliding backward and forward on main frame, movable handles on each end of carriage, hinged to end sides of mold-box, a movable plate on inside of the mold-box fastened to end side of mold-box for shortening the blocks, as set forth.

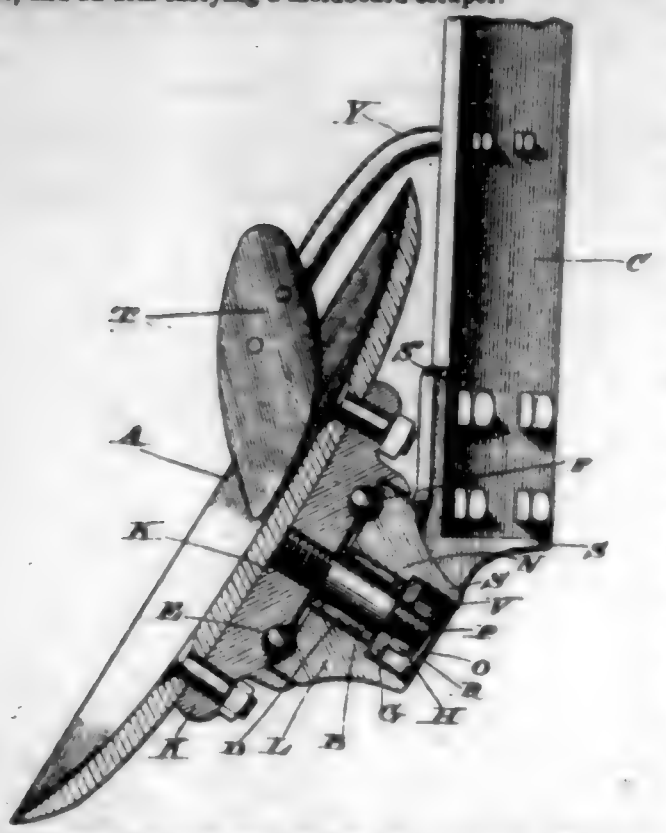
816,543. **ROTARY-DISK PLOWING ATTACHMENT.** ELIAS C. ERB, Hunter, and ALLEN L. POWLISON, Erie, N. D., assignors of one-third to David H. Huston, Hunter, N. D. Filed Feb. 27, 1905. Serial No. 247,545.

Claim.—1. In a rotary plowing attachment, a concave rotary plowing-disk, a plate secured thereto, an axle secured to the plate, a bearing-support having a boxing for said axle, antifriction devices between the axle and boxing, said bearing-support having a socket cast integral therewith, said socket having its plane positioned at an oblique double angle to the axis of the rotary plowing-disk, a standard, said socket adapted to receive the lower end of said standard, an arm connected approximately centrally to said standard, said standard carrying a moldboard-scraper, and said standard adapted to be connected to a grading, or ditching, or wagon-loading machine.

2. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally on the rear side of the said plowing-disk, said bearing-plate having a central aperture, an axle screwed into said aperture, a boxing for said axle, a standard connected to said boxing, an arm connected approximately centrally on said standard, and a moldboard-scraper connected to said arm.

3. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of said rotary plowing-disk, a central axle projecting rearwardly from said bearing-plate, a roller-bearing placed around said axle, a bearing-support carrying a boxing for the roller-bearing axle, said bearing-plate and bearing-support having circular concave ball-races opposite each other, a series of bearing-balls placed in said ball-races, means for retaining the said bearing-support in proper adjustment

to the said central axle, a standard connected to the said bearing-support, and an arm carrying a moldboard-scraper.



4. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate centrally connected to the disk, an axle screwed into said plate and projecting rearwardly, a roller-bearing placed around said axle, a supporting-boxing for said axle, a standard connected to said supporting-boxing, and said attachment having an arm carrying a moldboard-scraper.

5. In a rotary-disk plow attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said rotary plowing-disk, said bearing-plate having a central aperture, an axle screwed into said central aperture and said axle rearwardly projecting from said central aperture in said bearing-plate, a bearing-support surrounding said axle, and a standard connected to said bearing-support at an oblique double angle to the axis of the rotary plow-disk.

6. In a rotary-disk plowing attachment, a concave rotary plowing-disk, an axle, a roller-bearing around said axle, a supporting-boxing for said axle, a standard connected at an oblique double angle to the said supporting-boxing, an arm connected approximately centrally on said standard, and said standard carrying a moldboard-scraper adapted to turn earth from the rotary plowing-disk.

7. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, said bearing-plate having a central aperture, an axle fixedly inserted in said aperture and projecting centrally at the rear side of the said bearing-plate, a bearing-support around said axle, and ball-bearings placed between said bearing-plate and said bearing-support.

8. A rotary-disk plowing attachment having a metal bearing-support, said bearing-support having a concave rotary plowing-disk axled thereon, a bearing-plate having a central aperture, an axle screwed into said aperture, a standard connected to the bearing-support at an oblique double angle to the axis of the rotary plowing-disk, an arm connected approximately centrally to the standard, the arm carrying a moldboard-scraper, and said standard constructed and adapted to be connected to machines for grading, ditching, and wagon-loading.

9. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, said bearing-plate having a central aperture, an axle screwed into said aperture and projecting centrally at the rear side of the said bearing-plate, and a roller-bearing placed around said axle.

10. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, a metal axle fixedly inserted and projecting centrally at the rear side of the said bearing-plate, a bearing-support, a standard connected to said bearing-support, an arm connected approximately centrally on said standard, and said arm carrying a moldboard-scraper adapted to turn earth from the rotary plowing-disk.

11. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, said bearing-plate having a central aperture, a metal axle screwed into said aperture, the inner end of said metal axle reaching through the bearing-plate to the rear side of the concave plowing-disk and projecting centrally at the rear side of the said bearing-plate.

12. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate having a central aperture, an axle screwed into said central aperture, and projecting rearwardly therefrom, a bearing-support having a standard-socket formed integral with the said bearing-support, the said bearing-support having the socket-surface positioned at an oblique double angle to the front surface of the said bearing-support, a standard connected at said socket to the said-bearing-support, an arm carrying a moldboard-scraper, and said arm connected approximately centrally on the said standard.

13. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said rotary plowing-disk, said bearing-plate having a circular concave track adapted for bearing-balls to travel in, a series of bearing-balls placed in said circular concave track, a central axle connected to the center of the said bearing-plate, a roller-bearing placed surrounding the said central axle, a bearing-support surrounding the said central axle, said bearing-support having a circular concave track adapted for bearing-balls to travel in, a bur on the rear end of the said central axle, means for locking said bur, a standard, and the said bearing-support having an arm adapted to connect with the beam of a plow.

14. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, said bearing-plate having a central aperture, a metal axle fixedly inserted into the said central aperture of the bearing-plate, the inner end of said metal axle reaching through the bearing-plate to the rear side of the concave plowing-disk, said metal axle projecting centrally at the rear side of the said bearing-plate, a metal support having a boxing for the said axle to rotate in, a standard connected to said support, said standard connected to the support at an oblique double angle to the axis of the rotary plowing-disk, and said attachment constructed and adapted to be used in combination with and as a part of a grading, or ditching, or wagon-loading machine.

15. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the rotary plowing-disk, a central axle screwed centrally into the said bearing-plate, a bearing-support surrounding the said central axle, a bur on the rear end of the said central axle, means for locking said bur, a standard, and said bearing-support connected to said standard at an angle to the axis of the said concave rotary plowing-disk.

16. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the said plowing-disk, an axle inserted through said bearing-plate and projecting centrally at the rear side of the said bearing-plate, a bearing-support surrounding the central axle, means for retaining the said axle in proper adjustment to the bearing-support, a standard, an arm connected approximately centrally to said standard, said arm carrying a moldboard-scraper, said standard having its surface connected to the bearing-support at an oblique double angle to the axis of the rotary plowing-disk.

17. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected centrally to the rear side of the rotary plowing-disk, a central axle on the bearing-plate, a bearing-support surrounding the said central axle, a bur on the rear end of the said central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, a standard, said bearing-support connected to the lower end of the standard, an arm connected approximately centrally on the said standard, and said arm carrying a moldboard-scraper adjusted to turn earth from the said rotary plowing-disk.

18. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected to the rear side of the rotary plowing-disk, a central axle connected centrally to the said bearing-plate, a bearing-support surrounding the said central axle, a washer placed around the rear end of the central axle, a bur on the rear end of the central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, a standard, and said bearing-support connected to the lower end of the said standard, an arm connected approximately centrally on the said standard, and said arm carrying a moldboard-scraper adjusted to turn earth from the said rotary plowing-disk.

19. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a bearing-plate connected to the rear side of the said rotary plowing-disk, said bearing-plate having a circular concave track adapted for bearing-balls to travel in, a series of bearing-balls placed in the said circular concave track, a central axle connected centrally to the said bearing-plate, a roller-bearing placed surrounding the said central axle, a bearing-support surrounding the central axle, said bearing-support having a circular concave track adapted for bearing-balls to travel in, a bur on the rear end of the central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, and the bearing-support having an arm adapted to connect with the beam of a plow.

20. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a central bearing-plate connected to the rear side of the said rotary plowing-disk, said bearing-plate having a circular concave track, adapted for bearing-balls to travel in, a series of bearing-balls placed in the said circular concave track, a central axle connected centrally to the said bearing-plate, a roller-bearing placed surrounding the said central axle, a bearing-support surrounding the central axle, said bearing-support having a circular concave track adapted for bearing-balls to travel in, a bur on the rear end of the central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in a slot in said bur, a standard, and the bearing-support connected to the lower end of the standard.

21. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a central bearing-plate connected to the rear side of the said rotary plowing-disk, a central axle connected centrally to the said bearing-plate, a roller-bearing placed surrounding the said central axle, a bearing-support surrounding the said central axle, a bur on the rear end of the said central axle, said bur having a slot, said axle having a hole through its rear end, a key placed in said hole, said key inserted in the slot in said bur, a standard, and said bearing-support connected to the lower end of the said standard.

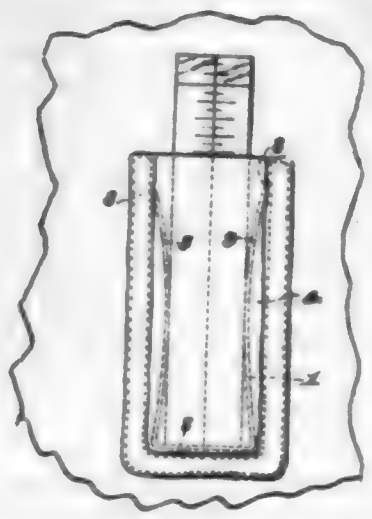
22. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a central bearing-plate connected to the rear side of the said rotary plowing-disk, said central bearing-plate having a circular concave track adapted for bearing-balls to travel in, a series of bearing-balls placed in the said circular concave track, a central axle connected centrally to the said bearing-plate, a bearing-support surrounding the said central axle, said bearing-support having a circular concave track adapted for said bearing-balls to travel in, a bur on the rear end of the said central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, a standard, and the bearing-support connected to the lower end of the said standard.

23. In a rotary-disk plowing attachment, a rotary plowing-disk, a central bearing-plate bolted to the rear side of the said rotary plowing-disk, a central axle connected centrally to the said bearing-plate, a bearing-support surrounding the said central axle, a washer placed around the rear end of the central axle, a bur screwed onto the rear end of the said central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, a dust-excluding cap placed over the bur and rear end of the central axle, a standard, said bearing-support connected to the lower end of the said standard, an arm connected approximately centrally on the said standard, and said arm carrying a mold board-scraper adjusted to turn earth from the said rotary plowing-disk.

24. In a rotary-disk plowing attachment, a concave rotary plowing-disk, a central bearing-plate connected to the rear side of the said rotary disk, said central bearing-plate having a circular concave track adapted for bearing-balls to travel in, a series of bearing-balls placed in the said circular concave track, a central axle connected centrally to the said bearing-plate, a roller-bearing placed surrounding the said central axle, a bearing-support surrounding the said central axle, said bearing-support having a circular concave track adapted for said bearing-balls to travel in, a washer placed around the rear end of the said central axle, a bur on the rear end of the said central axle, said bur having a slot, said axle having a hole through its rear end, a key placed through said hole, said key inserted in the slot in said bur, a dust-excluding cap placed over the bur and the rear end of the said central axle, a standard, and the bearing-support connected to the lower end of the said standard.

816,544. **POCKET-RULE HOLDER.** RILEY D. FASSETT, Denver, Colo., assignor of one-half to William H. Neff, Denver, Colo. Filed Dec. 31, 1904. Serial No. 239,154.

Claim.—1. A pocket-rule holder formed with a straight portion for fitting in the bottom of the pocket, and side portions extending therefrom and having a spring action for forcing their free ends into the material of the pocket, the central portion of said arms curved inwardly their entire length for gripping the rule which is placed in the pocket.



2. A pocket-rule holder comprising a bent strip of material provided with a straight, central body portion and inwardly-bowed side arms provided with free ends, the free ends of said arms being beveled for forming sharpened edges, and each arm having a curved surface and a shorter straight surface formed upon its free end, constituting the engaging point.

3. A device of the character described, comprising a bent strip of material provided with a straight, central body portion, and arms bowed inwardly their entire length, said arms constituting article-clamping means, and each arm provided with a penetrating-point formed upon its free end.

816,545. **SEAT-BACK.** BERTRAND L. FIELD, Minneapolis, Minn., assignor of one-half to A. L. Straight, Minneapolis, Minn. Filed June 19, 1905. Serial No. 266,532.



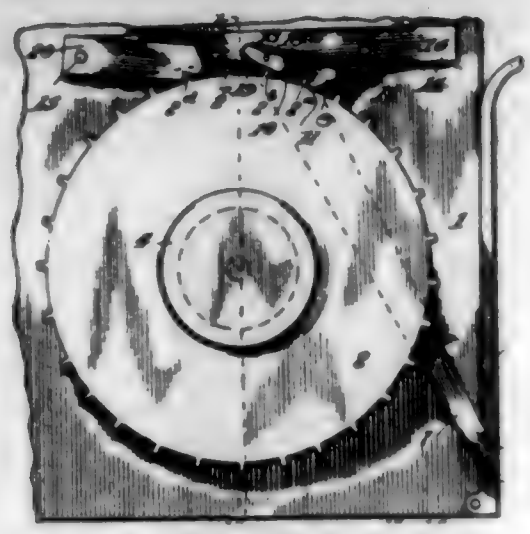
Claim.—1. A folding seat-back comprising a frame 2 having extensions or feet 6, a wire frame 11 having a looped portion 13 and outwardly-turned ends 12, and links 9 pivotally connected to said frame 2 having holes to receive said ends 12, substantially as described.

2. The combination, with a plank 7, of an upright frame 2 having cross-bars and feet or extensions 6 to bear on the under surface of said plank, a wire frame 11 having a looped portion 13 to engage the forward edge of said plank and outwardly-turned ends 12 and links 9 pivotally connected with said frame 2 and having a series of holes wherein said ends 12 are adjustable.

3. The combination with a plank 7, of a frame 2 having its lower ends bent substantially at right angles to the main portion of the frame and parallel substantially with the bottom of said plank and adapted to bear thereon, the rear edge of the plank fitting into the corner formed by the angle between said lower ends and said frame, and a seat-frame pivotally connected to said back-frame and having a downwardly-turned forward end to clasp the forward edge of said plank and supporting said frame 2 in an inclined position, substantially as described.

4. The combination with a plank or seat, of a back-frame having its lower ends bent substantially at right angles to the main portion of the frame and parallel substantially with the bottom of said seat and adapted to bear thereon, the rear edge of said seat fitting into the corner formed by the angle between said lower ends and said frame, and means above said seat connecting it and said frame and securing them together, substantially as described.

816,546. MECHANICAL MOVEMENT. OSCAR LE ROY FIELD, Ithaca, N. Y. Filed Oct. 5, 1905. Serial No. 281,453.



Claim.—1. A mechanism comprising a driven member in combination with a detent to stop backward movement of said member, and an oscillating driving member adapted on its forward stroke to engage and advance the driven member and on its return stroke to reëngage said member and press it back against the said detent.

2. A mechanism comprising in combination a driven member, a detent to stop backward movement of said member and an oscillating driving member adapted on its forward stroke to advance the driven member and on its return stroke to engage said member and lock it in an advanced position.

3. A mechanism comprising in combination a driven membe and an oscillating driving member adapted on its forward stroke to advance the driven member and near the end of its return stroke to operatively engage said member, whereby the final position of the driven member is determined by the final or normal position of the driving member.

4. A mechanism comprising in combination a ratch, a detent to stop backward movement of said ratch, and an oscillating driving-pawl adapted to operatively engage the ratch both on its forward and its return strokes.

5. A mechanism comprising in combination a ratchet-wheel, a detent to stop backward movement of said wheel, and an oscillating driving-pawl adapted on its forward stroke to advance the wheel and near the end of its return stroke to reëngage the wheel, whereby in its final position the wheel is rigidly locked between the detent and the pawl.

6. A mechanism comprising a ratchet-wheel, a driving-pawl, and a detent controlled by said pawl and adapted to limit the advance movement of the ratchet-wheel.

7. A mechanism comprising in combination a ratchet-wheel, a driving-pawl, and a detent pivotally mounted and formed with a cam-surface that is held yieldingly in engagement with the driving-pawl, whereby the movement of said pawl controls the position of the detent so as to limit the advance movement of the wheel.

8. A mechanism comprising a ratchet-wheel, a detent to stop backward movement of said wheel, a driving-pawl, and a second detent controlled by the driving-pawl and adapted to limit the advance movement of the wheel.

9. A mechanism comprising a toothed wheel in combination with a detent adapted to stop backward movement of the wheel, and an oscillating driving-pawl coöperating with the teeth of the wheel and adapted on its forward stroke to engage one of said teeth to advance the wheel and on its return stroke to engage the next following tooth and press the wheel back against the detent.

10. A mechanism comprising a toothed wheel in combination with a detent adapted to stop backward movement of the wheel, a second detent controlled by a moving part of the mechanism and adapted to limit the forward movement of the wheel, and an oscillating driving-pawl coöperating with the teeth of the wheel and adapted on its forward stroke to engage one of said teeth to advance the wheel and on its return stroke to engage the next following tooth and press the wheel back against the first-named detent.

11. A mechanism comprising in combination a ratchet-wheel having teeth adapted to be operatively engaged in both directions, an oscillating driving-pawl held yieldingly in engagement with the teeth of the wheel, shoulders formed on said pawl, one to engage a tooth during the forward stroke and the other during the return stroke of the pawl, and means for lifting said pawl during the first part of its return stroke, whereby the backwardly-engaging shoulder clears the tooth engaged during the forward stroke and engages the next following tooth.

12. A mechanism comprising in combination a ratchet-wheel having teeth adapted to be operatively engaged in both directions, an oscillating driving-pawl held yieldingly in engagement with the teeth of the wheel, a pair of oppositely-facing shoulders formed on said pawl at a distance apart greater than the thickness of the ratchet-wheel teeth, and a cam-surface on said pawl adapted to coöperate with said teeth.

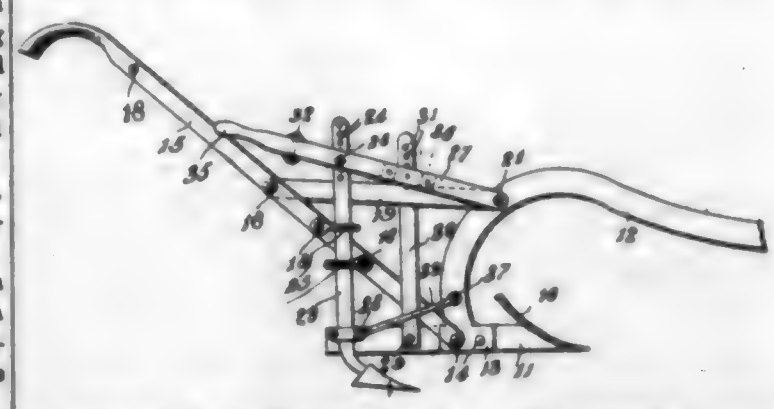
13. A mechanism comprising in combination a ratchet-wheel having teeth adapted to be operatively engaged in both directions, a detent engaging said teeth to stop backward movement of the wheel, an oscillating driving-pawl held yieldingly in engagement with the teeth of the wheel, a pair of oppositely-facing shoulders formed in the engaging face of the pawl at a distance apart greater than the thickness of the ratchet-wheel teeth, a cam-surface on said pawl adapted to coöperate with said teeth, and a second detent pivotally mounted and formed with a cam-surface that is held yieldingly in engagement with the driving-pawl, whereby the movement of the pawl controls the position of the detent so as to limit the advance movement of the wheel.

14. A mechanism comprising in combination a ratch, a driving-pawl, a member adapted to press against the pawl and hold it yieldingly in engagement with the ratch, and means to positively limit the movement of said member.

816,547. PROCESS OF MAKING MEDICINES. ROBERT GROSS, Rastenberg, Thuringia, Germany, assignor to The Firm of Ferro-Phosphat-Gesellschaft Emilio Schramm & Co., Hamburg, Germany. Filed June 6, 1904. Serial No. 211,445.

Claim.—The herein-described process of producing medicines, which consists in burning white phosphorus, collecting the products of combustion, distilling said products of combustion, separating the distillates, heating one of the distillates, stirring the same, and adding ferrum reductum thereto, substantially as described.

816,548. SUBSOIL-PLOW. JOSEPH B. HARRIS, Branson, Mo., assignor of one-half to James B. Hicks, Branson, Mo. Filed Jan. 2, 1906. Serial No. 294,207.

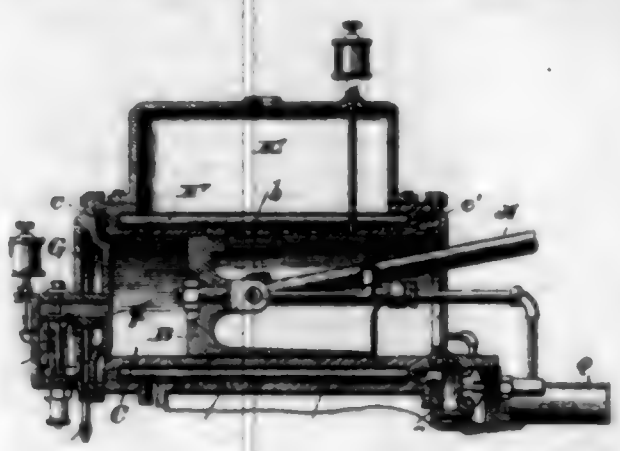


Claim.—1. The combination with a plow including a moldboard, landside, beam and diverging handles connected by spaced stay members, of a subsoil-moldboard having a vertical standard, guard members connected to said stay members and embracing the standard, a radius-bar movably connecting said standard to the plow, and means connected to the plow for adjusting the standard and its moldboard and maintaining the same in adjusted position.

2. The combination with a plow including a moldboard, landside, beam and diverging handles connected by spaced stay members, of a subsoil-moldboard having a vertical standard, guard members connected to said stay members and embracing the standard, a radius-bar movably connecting said standard to the plow, a supporting-bar rising from the landside and provided with a plurality of spaced apertures, a lever pivoted at one end to the beam and adjustably coupled to said standard and provided with a keeper embracing said supporting-bar, and a locking member movably connected to said lever and with one end extended laterally for engagement one at a time with the aperture in the supporting-bar.

816,549. GAS-ENGINE. WILLIAM HECKERT, Findlay, Ohio, assignor of one-half to Henry W. Seney, Toledo, Ohio. Original application filed June 13, 1902, Serial No. 111,537. Divided and this application filed May 18, 1903. Serial No. 157,606.

Claim.—1. In a gas-engine, the combination with the cylinder and its working piston, of the hollow cylinder-head constituting an annular generating-chamber adjacent immediately to and encircled by the explosion-chamber of the cylinder, means for introducing oil or explosive-rendering material into said generating-chamber, a mixing-chamber on the cylinder-head having a port for admitting gas thereinto from said generating-chamber and having communication with an air-supply, a distinct passage leading from said mixing-chamber through the generating-chamber into the explosion-chamber, and a valve controlling admission of explosive mixture to said passage adapted to open on the suction-stroke of the piston.



2. In a gas-engine the combination of a cylinder having a flaring end providing an annular fire-space of greater diameter than the cylinder and open to the explosion-chamber thereof, a hollow cylinder-head closing said end of the cylinder and having its inner face or wall projected inward and having an internal gas-generating chamber encircled by said annular fire-space, means for introducing oil or explosive-rendering material into said generating-chamber, and means for admitting generated gas into the explosion-chamber of the cylinder.

3. In a gas-engine, the combination of a cylinder having at one end of its explosion-chamber an annular fire-space of greater diameter than the cylinder, a series of fire-flues surrounding the cylinder and communicating with said annular fire-space, a hollow head closing said end of the cylinder and having an internal gas-generating chamber encircled by said annular fire-space, means for introducing oil or explosive-rendering material into said generating-chamber, and means for admitting generated gas into the explosion-chamber of the cylinder.

4. In a gas-engine, the combination with the cylinder and piston, of an air-reservoir and pipe connections leading therefrom to the gas end of the cylinder, and means for causing a current of air to circulate around the piston in contact with the interior walls of the cylinder and to pass thence into said reservoir for applying heated air to the gas generating and mixing apparatus.

5. In a gas-engine, the combination with the cylinder and reciprocating piston therein having a groove or channel around its periphery and longitudinal bores or tubes on opposite sides thereof with ports opening into said channel, hollow piston-rods fitting said tubes or bores, one having an air-inlet and the other having an air-outlet leading to an air-reservoir, an inwardly-opening valve in the former rod, and an outwardly-opening valve in the other rod, whereby on reciprocation of the piston a current of air is forced around said piston in contact with the interior walls of the cylinder and thence into said reservoir.

6. In a gas-engine, the combination with the cylinder and reciprocating piston therein having a groove or channel around its periphery, of an air-reservoir, and an air-pump connected with the said channel around the piston for pumping air into said channel and thence to said reservoir during reciprocation of the piston.

7. In a gas-engine, the combination with the cylinder and piston, of the cylinder-head formed between its outer and inner walls with a gas-generating chamber therein substantially surrounded by the explosion-chamber of the cylinder, means for introducing explosive-rendering material into said generating-chamber, an outer adjacent mixing-chamber having communication with said generating-chamber and with a source of air-supply, and a valved conduit leading from said mixing-chamber through the generating-chamber to the explosion-chamber.

8. In a gas-engine, the combination with the cylinder and its working piston, of the hollow cylinder-head constituting a gas-generating chamber into which oil or explosive-rendering material is introduced, an annular fire-space surrounding said generating-chamber and opening into the explosion-chamber of the cylinder, a distinct mixing-chamber into which gas from said generating-chamber and air from an air-supply are introduced, a distinct passage leading from said mixing-chamber into the explosion-chamber of the cylinder, and a valve for admitting explosive mixture from said mixing-chamber into said passage on the suction-stroke of the piston.

9. In a gas-engine, the combination of a cylinder whose explosion-chamber merges into an enlarged annular space at one end, a hollow cylinder-head inclosing said cylinder and space and having its inner face or wall projected inward and having its internal chamber serving as a gas-generating chamber surrounded by said annular space, means for introducing oil or explosive-rendering material into said generating-chamber, a valve for admitting the gas generated therefrom into the explosion-chamber on the suction-stroke of the piston, and an annular series of fire-flues communicating with said annular fire-space for conveying off the exhaust-gases.

10. In a gas-engine, the combination with the cylinder and its working piston, of the cylinder-head having a gas-generating chamber therein adjacent to the explosion-chamber of the cylinder, an oil-feeding device associated with the cylinder-head consisting of a member having a conical bore the larger end of which opens into said generating-chamber and a longitudinal air-nozzle at the smaller end of said bore for injecting air thereinto and an adjustable needle-valve for controlling said air-nozzle and an oil-nozzle in said member behind and at an angle to said air-nozzle, and a distinct mixing-chamber adjacent to the generating-chamber and having a port for admitting vaporized oil or gas thereinto from said generating-chamber, means for supplying air into said mixing-chamber for commingling with the gas, and a distinct valve-controlled passage leading from said mixing-chamber into the explosion-chamber of the cylinder for conducting the commingled explosive mixture thereto on the suction-stroke of the piston.

11. In a gas-engine, the combination with the cylinder and its working piston, of the cylinder-head having a gas-generating chamber therein adjacent to the explosion-chamber of the cylinder, means for introducing explosive-rendering material into said generating-chamber, an adjacent mixing-chamber having a port into which vaporized oil or gas is admitted from said generating-chamber, a cylindrical air-chamber in connection with said mixing-chamber, a tubular rotary or oscillatory valve in said air-chamber, registering ports in said valve and the wall of said air-chamber, the port in the latter being in connection with said mixing-chamber, and a valve-controlled passage leading from the mixing-chamber into the explosion-chamber of the cylinder.

816,550. **GRINDING-MACHINE.** LOUIS W. HOLUB, New York, N. Y. Filed Apr. 18, 1904. Serial No. 203,738.

Claim.—1. In a grinding-machine of the type set forth, a plurality of chucks, means for moving them in an endless course, a grinding means eccentrically disposed thereto, means for adjusting the grinding means in a vertical plane, and means for adjusting the chucks in a horizontal plane.

2. In combination a rotary grinding means, a frame slidable laterally with relation to the axis thereof, rotary chucks supported by said frame and being eccentrically disposed with relation to said grinding means, means for successively bringing said chucks beneath said grinding means, and means for rotating said chucks at such point of their travel.

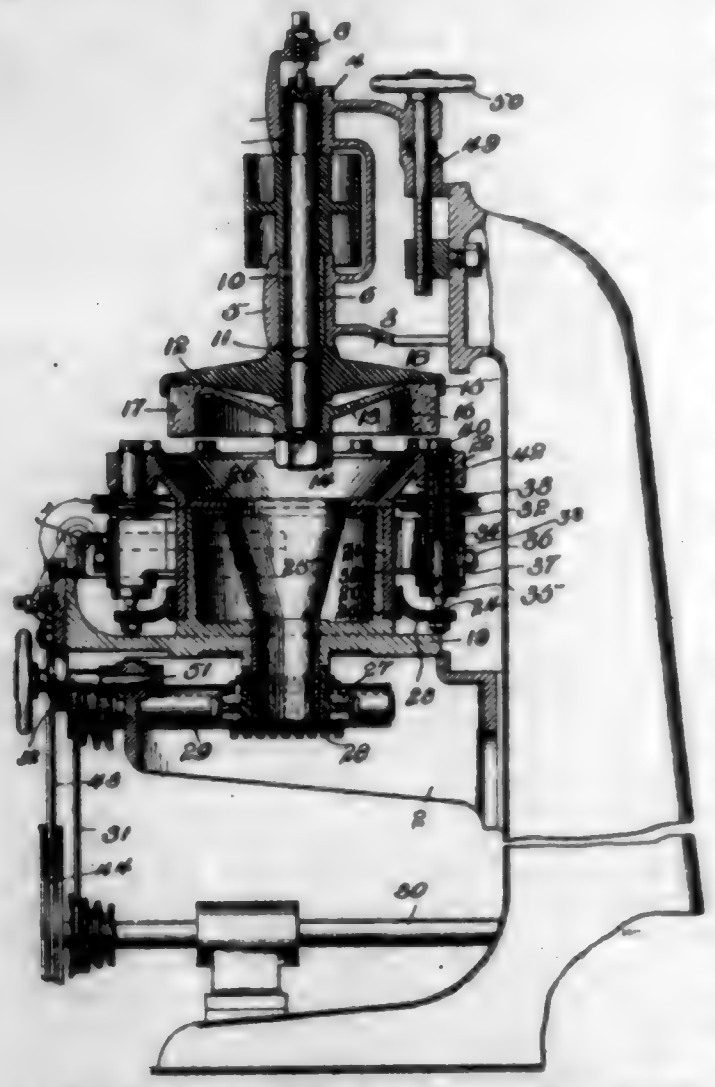
3. In combination with a frame provided on its upper face with a cylindrical track, a carriage having its lower portion embracing the said track, a chute extending through said track and being secured to said carriage, chucks carried by said carriage, means for operating said chucks, and means for operating said carriage coöperating with the means carried by the chute.

4. In combination with a standard, a grinding-ring adjustably mounted on the upper portion thereof, a table slidable laterally relative to the axis thereof, chucks supported on said table, means for moving them in an endless course, means for rotating said chucks only at the point when beneath the grinding-ring.

5. In a machine of the type set forth, a track, a carriage into which the track projects, a flange formed integral with the carriage and engaging the upper edge of the track, a chute secured to said flange, means for operating said carriage, and chucks rotatably mounted on said carriage in combination with means for driving the same.

6. In a machine of the type set forth, a table formed with a cylindrical track projecting upwardly from its upper face, said track

being formed with an external annular shoulder, a carriage embodying a cylindrical body portion telescoping said track and having its lower edge resting on the annular shoulder thereof, an internal flange secured to said carriage and resting on the upper edge of said track, a chute secured to said flange, and means for rotating said carriage.



7. In a machine of the type set forth, a standard, a rotating carriage thereon, chucks carried by said carriage, said chucks embodying reciprocating casings, and spindles having jaws open and closed by the movement of said casings, means on said carriage forming a bearing for the lower end of said spindles means for rotating said chucks at a predetermined point of travel, and means on said standard partially embracing said carriage for reciprocating said casings after the chucks have passed the aforementioned point.

8. In combination, a standard formed with a table, a carriage-support laterally mounted thereon, a carriage rotatably mounted on said support, chucks carried thereby, a chute extending downwardly from the carriage, a gear secured to said chute, means engaging said gear for rotating said carriage, and means for reciprocating said carriage-support.

816,551. CONTROLLER FOR SLIDING DOORS. ANSEL M. EASTON, Millbrae, Cal. Filed July 21, 1902. Serial No. 116,433.



Claim.—1. A controlling mechanism, applicable to a door of the kind described, consisting of door-raising means operable from a conveniently-remote point, an automatic clutch located by the door and operating to hold it at a suitable elevation, and releasing means carried by the door and acting to remove the clutch far enough therefrom to allow the door if raised above a certain level to pass it upon being suddenly dropped; substantially as set forth.

2. An automatic clutch, applicable to a vertically-sliding door of the kind described, consisting of a pendent hook adapted to swing into engagement with the bottom of the door as it is being raised, a rock-shaft suitably journaled on the doorway, from which said hook is suspended, an upwardly and rearwardly inclined crank secured to said rock-shaft, and a reflexed pin on said crank, combined with an upwardly and rearwardly bent arm secured to the door and capable of moving said pin and crank toward the door to swing back the pendent hook, and one or more lines secured to the door and operable at a distance whereby the door can be raised and allowed to descend more or less rapidly and accordingly be missed or caught by said clutch, as required; substantially as set forth.

3. In a controlling mechanism for a vertically-movable door of the kind described, a gravity-actuated latch having one part adapted to engage with the door and means secured to the door in position out of alinement with the door-engaging part of the latch to engage with another part of the latch to permit or prevent the engagement of the first-mentioned part.

4. The combination, in a controlling mechanism for a vertically-movable door of the kind described, of a rock-shaft located on the framework beside the door carrying an inwardly-directed pendent hook, and provided with an oppositely-extending releasing portion, an arm inclined away from and secured to the door in position for engaging with the said releasing portion when the door is raised and automatically controlling the reëngagement of the hook when the door is lowered, and means for controlling the rate of descent of the door.

5. The combination with a perforated wall, of a pulley at each perforation in the wall, a vertically-movable door below each pulley, an automatic gravity-controlled lock for each door and two oppositely-extending cords secured to each door and passed over its respective pulley, one of the cords passing through the perforation to the opposite side of the wall.

6. The combination with a sliding door and means for opening and closing the door, of a latch comprising a suitably-journaled shaft, a hook carried by the shaft and resting against the door when closed, and means, offset from the journaled portion of the shaft to cause the hook to normally engage the door, and tripping means carried by the door for engaging the latch to release the door.

REISSUES.

12,465. TYPE-WRITING MACHINE. FRANK X. WAGNER, New York, N. Y., assignor, by mesne assignments, to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 9, 1904. Serial No. 211,874. Original No. 660,231, dated Oct. 23, 1900.

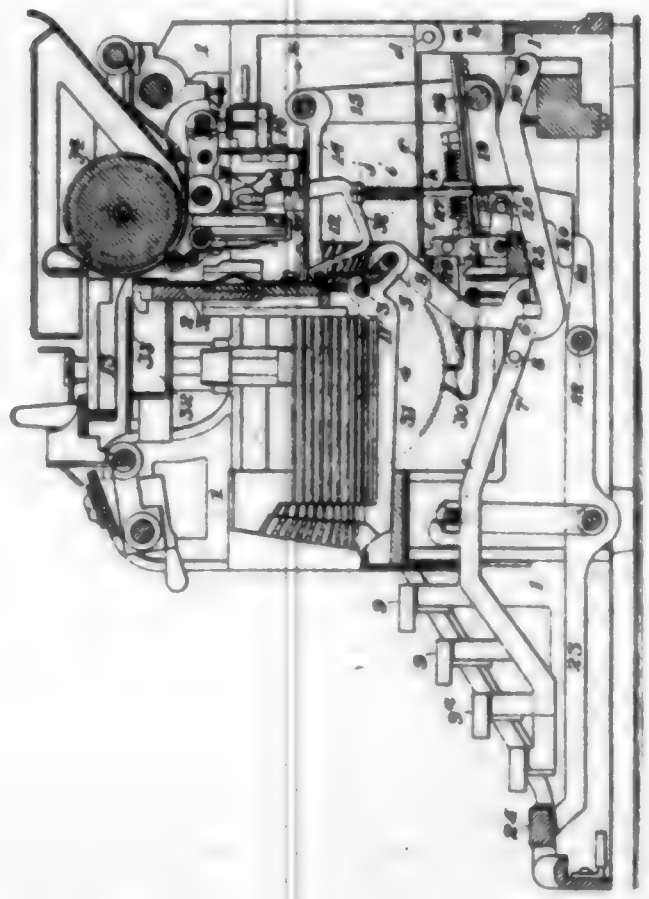
Claim.—1. In a type-writing machine, the combination of a series of type-bars one of which carries an accent-type, a carriage, a series of keys for operating the type-bars, a universal bar operable by the keys, carriage-feeding devices controlled by said universal bar, means also controlled by said universal bar for moving the ribbon to cover and uncover the printing-point at each impression, and means under the control of the accent type-key for preventing a feeding movement of said carriage.

2. In a type-writing machine, the combination of a series of type-bars one of which carries an accent-type, a carriage, a ribbon-vibrator, keys connected to the type-bars, means for enabling each of the keys except the accent type-key to effect feeding movements of the carriage, and means for enabling all of the keys to move said vibrator to cause the ribbon to cover the printing-point at each impression.

3. In a type-writing machine, the combination with types, keys, a carriage, and a ribbon-vibrator, of a universal bar operable by the keys and having means for operating said ribbon-vibrator, carriage-feeding devices operable by said universal bar, and means controlled by one of the type-keys for preventing the movement of the universal bar from effecting a feeding movement of the carriage.

4. In a type-writing machine, the combination with types, type-keys, and a carriage, of a universal bar operable by the type-keys, a ribbon-vibrator operable by said universal bar, carriage-feeding devices also operable by said universal bar, and a detent operated by one of the type-keys and controlling one of said universal-bar and carriage elements, for preventing the feed of the carriage at the operation of said key.

5. In a type-writing machine, the combination with types, type-keys, and a carriage, of carriage-feeding mechanism controlled by the type-keys, a detent capable of being set by one of said type-keys in position to prevent the carriage from feeding, means for enabling any of the remaining type-keys to release said detent, and a ribbon-vibrator operable by all of said type-keys.



6. In a type-writing machine, the combination with types, type-keys, and a carriage, of a ribbon-vibrator operable by any of said type-keys, a carriage-feeding mechanism controlled by the type-keys, and a detent for preventing the feeding movement of the carriage; said detent being capable of being set to effective position by one of the type-keys and releasable by the remaining type-keys.

7. In a type-writing machine, the combination with types, type-keys, and a carriage, of a carriage-feeding reciprocatory universal bar operable by the type-keys, a ribbon-vibrator operable by said universal bar, a detent set by one of said type-keys and arresting the universal bar near the initial portion of its return movement, so that the carriage does not feed, and a spring releasing said detent upon the movement of the universal bar by a succeeding key.

8. In a front-strike writing-machine, the combination with types, type-keys, and a carriage, of a ribbon-vibrator operable by all of said keys, a normally ineffective carriage detent or lock, means for enabling one of said type-keys to set said detent to effective position, and means for enabling a subsequent stroke of any of the other type-keys to release said detent.

9. In a front-strike writing-machine, the combination with types, type-keys and a carriage, of a carriage detent or lock which one of said type-keys is capable of setting but incapable of releasing and others of said type-keys are capable of releasing but incapable of setting, and a ribbon-vibrator controlled by all of said keys.

10. In a front-strike writing-machine, the combination with a system of rearwardly-striking type-bars and a carriage, of a universal bar, a system of keys for operating the type-bars and the universal bar, a ribbon-vibrator movable by the universal bar, and means for enabling all except one of said keys to effect feeding movements of said carriage.

11. In a front-strike writing-machine, the combination with a system of rearwardly-striking type-bars and a carriage, of a system of keys connected to said type-bars, a universal bar operable by said type-bars, a ribbon-vibrator movable by the universal bar, carriage-feeding devices controlled by the universal bar, and means controlled by one of said keys for preventing the feeding movement of the carriage.

12. In a device of the character specified, the combination of a carriage, feed mechanism therefor, a "blank" key, means controlled by said "blank" key for locking the feed mechanism out of operation; a system of types, one of which is controlled by said "blank" key; said key forming one of a system of keys which control the types; and a ribbon-vibrator operable by all the keys in the system.

13. In a device of the character specified, the combination of type-carriers, keys for operating said type-carriers, said keys including a "blank" key, a carriage, feed mechanism for said carriage, means controlled by said "blank" key for locking the feed mechanism out of operation, means controlled by the remaining keys for releasing the locking means, and a ribbon-vibrator operable by all of the keys.

14. In a device of the character specified, the combination of type-carriers, keys therefor including a "blank" key, a ribbon-vibrator operable by all of said keys, a carriage, feed mechanism for said carriage, a spacing-key for operating said feeding mechanism without printing, means controlled by said "blank" key for locking the feed mechanism out of operation, and means controlled by the remaining type-keys and spacing-key for releasing said locking means.

15. In a type-writing machine, the combination of types, keys therefor, a carriage, a ribbon-vibrator operable by all the keys, carriage-feeding mechanism, a locking-dog for preventing feed of the carriage, a detachable locking-dog support, means operatively connecting said locking-dog with one of said type-keys, and a coöperative locking-abutment movable by the remaining type-keys.

16. In a type-writing machine, the combination of types, keys therefor, a carriage, a ribbon-vibrator operable by all the keys, carriage-feeding mechanism, a movable spring-pressed locking-dog, means operatively connecting said dog to one of said keys, and a coöperative locking-abutment connected to said feeding mechanism.

17. In a type-writing machine, the combination of types, keys therefor, a carriage, a ribbon-vibrator operable by all the keys, a carriage-feeding mechanism, a movable spring-pressed locking-dog controlled by one of said keys, a coöperative locking-abutment associated with said feeding mechanism, and dog-releasing means controlled by the remaining keys.

18. In a type-writing machine, the combination of types, keys therefor, a ribbon-vibrator operable by all the keys, a carriage, a carriage-feeding mechanism, a movable spring-pressed locking-dog, yielding means connecting said dog to one of said keys, the tension of said yielding means being sufficient to overcome the tension of the spring of the locking-dog, and a coöperative locking-abutment connected to the carriage-feeding mechanism.

19. In a type-writing machine, the combination of types, keys therefor, a ribbon-vibrator operable by all the keys, a carriage, a carriage-feeding mechanism, a movable spring-pressed locking-dog, a spring-pressed connection between said locking-dog and one of said keys and a coöperative abutment connected to the feeding mechanism.

20. In a type-writing machine, the combination of types, keys therefor, a ribbon-vibrator operable by all the keys, a carriage, a carriage-rack, a feed-dog, means for moving one of said rack and dog elements laterally with relation to the other, and means controlled by one of said keys for locking the movable feed element.

21. In a type-writing machine, the combination of types, keys therefor, a ribbon-vibrator operable by all the keys, a carriage, a carriage-rack, a feed-dog, means for moving one of said rack and dog elements laterally with relation to the other, a spacing-key, means connected to one of said type-keys for locking the movable feed element against movement in one direction, and means for releasing said movable feed element by the operation of any of the remaining type-keys or the spacing-key.

12,466. MACHINE FOR POLISHING BOOTS OR SHOES. CALEB BILASEAU, West Bridgewater, and ADELARD P. CHAPDELAINE, Brockton, Mass., assignors to United-Xpedite Finishing Company, Berwick, Me., and Boston, Mass., a Corporation of Maine. Filed June 18, 1904. Serial No. 213,131. Original No. 738,976, dated Sept. 15, 1903.

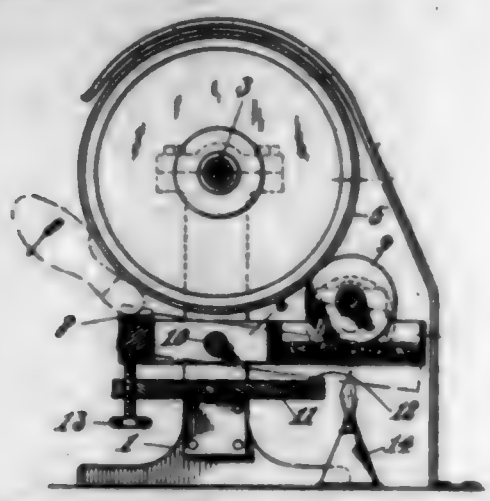
Claim.—1. In a machine for polishing boots and shoes, the combination with a polishing-wheel, and a frame provided with a wax-well, of a wax-supply roll, a shoe-rest, and a heating device for melting or liquefying the wax.

2. In a machine for polishing boots and shoes, the combination with a polishing-wheel, of a tilting frame provided with a wax-well, a wax-supply roll and a shoe-rest.

3. In a machine for polishing boots and shoes, the combination with a polishing-wheel, and a tilting frame provided with a wax-well, of a wax-supply roll, a shoe-rest, and a gage having stops to limit the tilting of the frame.

4. In a machine for polishing boots and shoes, the combination with a polishing-wheel, and a tilting frame provided with a wax-well,

of a wax-supply roll, a shoe-rest, and a heating device for melting or liquefying the wax.



5. In a machine for polishing boots and shoes, the combination with a polishing-wheel, and a tilting frame provided with a wax-well, of a wax-supply roll, a shoe-rest, a gage having stops to limit the tilting of the frame, and a heating device for melting or liquefying the wax.

6. In a machine for polishing boots and shoes, the combination with a polishing-wheel, and a tilting frame provided with a wax-well, of a wax-supply roll, a shoe-rest, and an adjustable stop for said frame.

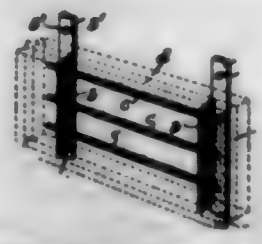
7. In a machine of the class described, the combination with a polishing-wheel, of a movable shoe-rest to support the heel of a shoe in position to be polished, and wax-supplying means constructed and arranged with relation to the shoe-rest whereby movement of the shoe-rest may render said supplying means operative for supplying wax to the polishing-wheel.

8. In a machine of the class described, the combination with a polishing-wheel, of a rest adapted to support a shoe in position to be polished, wax-supplying means normally inoperative for supplying wax to the polishing-wheel, and connections between the rest and the wax-supplying means for rendering the wax-supplying means operative for supplying wax to the polishing-wheel when a shoe is supported on the shoe-rest.

9. In a machine of the class described, the combination with a polishing-wheel, of wax-supplying means, and means constructed and arranged to be engaged by the shoe being operated upon whereby wax is caused to be supplied to the polishing-wheel.

10. In a machine for finishing heels, the combination with a rotary polishing-wheel, a movable rest to engage one part of the edge of the heel while another part of the heel edge is being operated upon by the polishing-wheel, and means for supplying wax to the periphery of the polishing-wheel, of connections between said rest and the wax-supplying means whereby the wax-supplying means is rendered operative for supplying wax to the polishing-wheel when the rest is moved.

12,467. BUILDING CONSTRUCTION. ORVEY PRICE, Plainfield, N. J. Filed June 9, 1905. Serial No. 264,534. Original No. 733,944, dated May 2, 1905.



Claim.—1. A building-block, formed of a mass of hardened plastic material and a metallic strengthening-frame embedded therein, said frame comprising bars of angular cross-sectional form partly embedded and partly exposed, and connecting-rods passed through and extending between the bars, and said bars having portions extending beyond the edges of the block at the rear thereof, a part for the reception of fastening devices to hold the block in place and a part to lie in the rear of a companion block.

2. A building-block, formed of a mass of hardened plastic material, and a metallic strengthening-frame embedded therein, said frame comprising bars of angular cross-sectional form, each bar having a flat portion, one side face of which lies flush with one side face of the block, and connecting-rods extending through the angular bars from one to the other.

3. A building-block, formed of a mass of hardened plastic material, and a metallic strengthening-frame embedded therein, said frame comprising bars of angular cross-sectional form, each bar having a flat portion one side face of which lies flush with one side face of the block, and connecting-rods extending through the angular bars from one to the other, and the said flat portion being extended at one end beyond the adjacent edge of the block to facilitate fastening the block in place.

4. The combination with a supporting-surface, of a plurality of blocks formed of a mass of plastic material, a metallic frame embedded in each block, said frames comprising bars of angular cross-sectional form, each bar having a flat surface one face of which lies flush with one side face of the block, connecting-rods extending between the angular bars from one to the other, the said flat portions being extended at one end beyond the adjacent edge of the block to permit the adjacent block to overlap the extended portion, and means fastening each extended portion to the said supporting-surface.

5. A composition building-block provided with bars of angular cross-section extending across the block, one flange of said bars being wholly embedded therein and the other exposed, the wholly-embedded flanges being connected by strengthening-rods and the other flanges being extended beyond the edges of the block, a part thereof for the reception of fastening or retaining devices.

6. A composition building-block provided with bars bent or shaped in cross-section extending across the block, one part thereof being wholly embedded therein and another part running exteriorly substantially entirely across the rear of the block, the wholly-embedded parts being connected by strengthening means and the other parts being extended beyond an edge of the block for the reception of fastening or retaining devices.

7. A composition building-block having its edge constructed to interlock with a companion block and provided with bars bent or shaped in cross-section extending across the block, one part thereof being wholly embedded therein and another part exposed and extending exteriorly substantially entirely across the rear of the block, the wholly-embedded part being connected by strengthening means and the other parts being extended beyond the edges of the block, a part thereof for the reception of fastening or retaining devices and a part thereof to lie in the rear of a companion block.

8. A composition building-block provided with bars extending across the block, each having a plurality of flanges, one flange of each bar being wholly embedded in the block and the other exposed, the wholly-embedded flanges being connected by strengthening means and the other flanges being located at the rear and extended beyond an edge of the block to facilitate the fastening of the block in position.

9. A composition building-block having a metallic strengthening-frame embedded therein, comprising a pair of bars spaced apart and running across the block one part thereof being wholly embedded therein and another part exposed and extending substantially across the rear of the block, and one or more rods located in the plane of the block and connecting said bars, the latter having portions projecting beyond the edges of the block at the rear thereof, a part for the reception of fastening devices for fastening the block in place and a part to lie in rear of a companion block.

10. A composition building-block having a metallic strengthening-frame comprising bars of angular cross-sectional form, and means embedded in said block and connecting similar flanges of said bars, the other flanges of the bars having portions extending beyond an edge of the block for the reception of fastening devices for fastening the block in place.

11. A composition building-block having a metallic strengthening-frame comprising bars of angular cross-sectional form, means embedded in the block and connecting similar flanges of said bars, the other flanges of said bars having portions extending beyond both edges of the block, a part for the reception of fastening devices for fastening the block in place and a part to lie in the rear of a companion block.

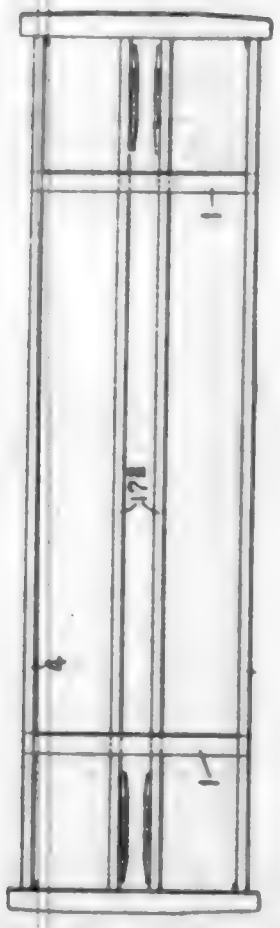
12. A building-slab for weather-boarding or siding, formed of artificial stone or cement and having its edge provided with means for interlocking with or overlapping a companion slab, and provided with a strengthening-frame embedded therein and made up of members running in both directions, parts of some of the embedded members running in one direction exteriorly of the slab in the rear and substantially entirely across such slab and projecting beyond the edge of said slab for the reception of fastening devices.

13. A building-slab for weather-boarding or siding, formed of artificial stone and having its edge constructed to interlock with or

overlap a companion slab, and provided with a metallic strengthening-frame embedded therein throughout the major portion of said slab and comprising a pair of bent or shaped bars spaced apart, with an intermediate bond, said embedded bars having parts located exteriorly of and lapping the slab at the rear substantially entirely across such slab, a part thereof projecting beyond the edges of the slab for the reception of fastening devices and a part thereof to lie in the rear of a companion slab.

14. A building-block formed of artificial stone or cement having a metallic strengthening-frame embedded therein, said frame comprising a pair of bars located relatively remote to each other and tied together, said bars having parts thereof extending entirely across the rear of the block and beyond the edges of said block, some for the reception of fastening devices and others to overlap the rear of a companion block.

12,468. **BODY-BOLSTER FOR RAILWAY-CARS.** CHARLES S. SHALLENBERGER, St. Louis, Mo. Filed Jan. 13, 1906. Serial No. 295,953. Original No. 751,875, dated Feb. 9, 1904.



Claim.—1. A body-bolster composed of a casting having a recess formed in its under side adapted to receive the sill members, and a combined center plate and compression-block adapted to be located within said recess between the sill members; substantially as described.

2. A body-bolster for railway-cars consisting of a casting having a recess in its under side adapted to receive the sill members, a combined center plate and compression-block located in said recess between the sill members, and means for holding the said center bearing and compression-block permanently in position within said recess; substantially as described.

3. A body-bolster for railway-cars consisting of a casting having downward and outward extensions at its ends, and provided with a recess in its under side adapted to receive the sill members, a combined center bearing and compression-block located in said recess between the sill members, and means for holding the said center bearing and compression-block in position thereon; substantially as described.

4. A car-bolster for railway-cars comprising a casting consisting of a top having downward and outward extensions integral with its ends, lower members having their outward ends formed integral with the said extensions, integral connections 11 connecting the inner ends of the lower members with the top, there being a recess or space between the said members adapted to receive the sill members, a combined center bearing and compression-block located within said recess or space and between the sill members, and means for holding the said center bearing and compression-block in position; substantially as described.

5. A body-bolster for railway-cars, consisting of a casting having a recess in its under side adapted to receive the sill members, a combined center plate and compression-block located in said recess, and means for holding the said center bearing and compression-block permanently in position within said recess; substantially as described.

6. The combination with longitudinal sills extending from end to end of the car, of a bolster composed of a casting and having a recess in its under side adapted to receive said sill members, and a center plate closing the under side of the recess and acting as a compression member for the bolster; substantially as described.

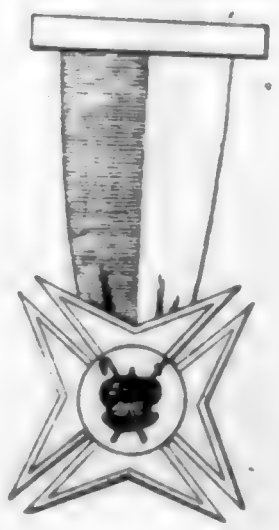
7. The combination with longitudinal sill members, of bolsters near each end thereof, each bolster being composed of a casting having a recess in its under side, and a center plate closing said recess, said center plate also serving as a compression member of the bolster; substantially as described.

8. The combination with longitudinal sills, of bolsters arranged near each end thereof, each bolster having a recess in its under side to receive said sills, a compression-block arranged between the sills, and a center bearing arranged under the sills; substantially as described.

9. The combination with longitudinal sills, bolsters arranged thereon near the ends of said sills, each of said bolsters comprising a casting having a recess in its under side designed to receive the sills, a compression-block in said recess between the sills, and a center plate closing the lower side of said recess and arranged under the sills and compression-block; substantially as described.

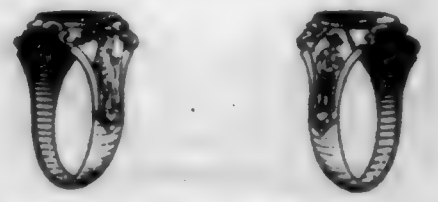
DESIGNS.

37,914. **BADGE.** JOHN B. GOODWIN, Baltimore, Md., assignor to Sovereign Grand Lodge of The Independent Order of Odd Fellows, Baltimore, Md., a Corporation of Maryland. Filed Feb. 7, 1906. Serial No. 300,010. Term of patent 14 years.



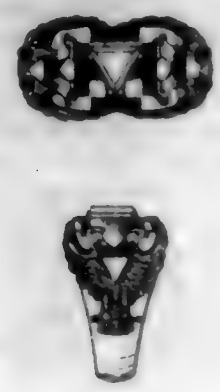
Claim.—The ornamental design for a badge, as shown.

37,915. **RING.** EDMOND JAMES CARR and ELMER THEODORE RUBERTON, Portland, Oreg. Filed Feb. 24, 1906. Serial No. 947,198. Term of patent 3½ years.



Claim.—The ornamental design for a ring, as shown.

37,916. RING. Anne A. Donat, Cincinnati, Ohio. Filed Feb. 16, 1906. Serial No. 301,804. Term of patent 7 years.



Claim.—The ornamental design for a ring, as shown.

37,917. GOBLET. Albert Pick, Chicago, Ill. Filed Jan. 15, 1906. Serial No. 296,226. Term of patent 7 years.



Claim.—The ornamental design for a goblet, as shown.

37,918. EYELET. George A. Langham, Haverhill, Mass. Filed Nov. 1, 1904. Serial No. 231,023. Term of patent 7 years.



Claim.—The ornamental design for an eyelet, as shown.

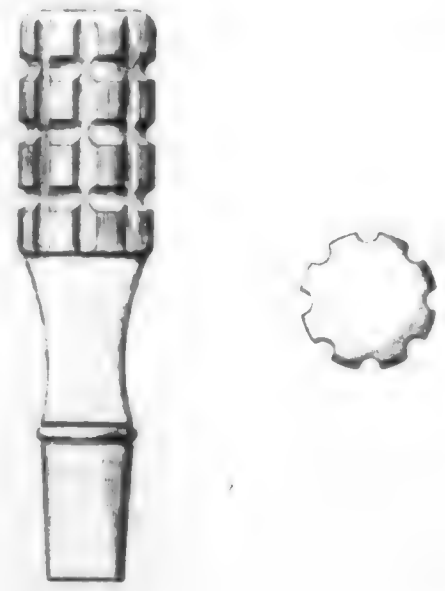
37,919. BAROMETER-CASE. Howard Wolfstein, New York, N. Y., assignor to American Thermo-Ware Company, New York, N. Y., a Corporation of New York. Filed Feb. 12, 1906. Serial No. 300,806. Term of patent 7 years.

37,919.



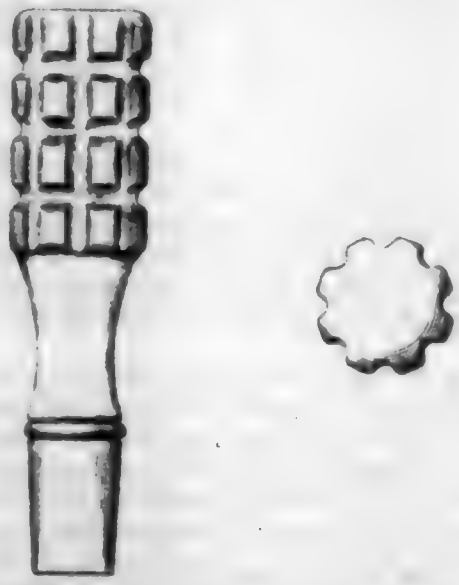
Claim.—The ornamental design for a barometer-case, as shown.

37,920. TOOL-HANDLE. John J. Tower, Montclair, N. J. Filed Nov. 16, 1904. Serial No. 233,043. Term of patent 14 years.



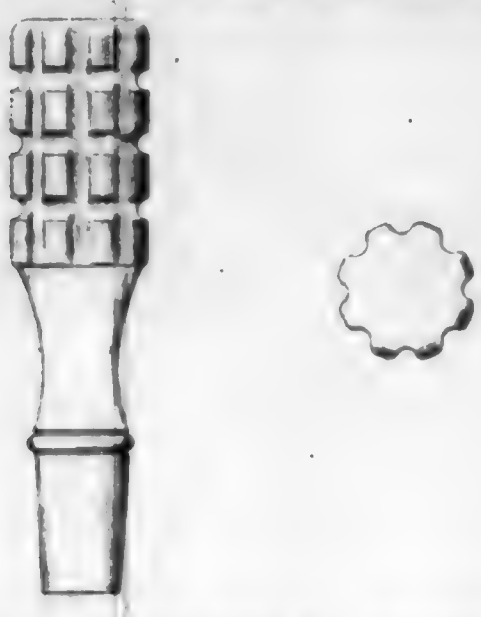
Claim.—The ornamental design for a tool-handle as shown.

37,921. TOOL-HANDLE. John J. Tower, Montclair, N. J. Filed Nov. 16, 1904. Serial No. 233,049. Term of patent 14 years.



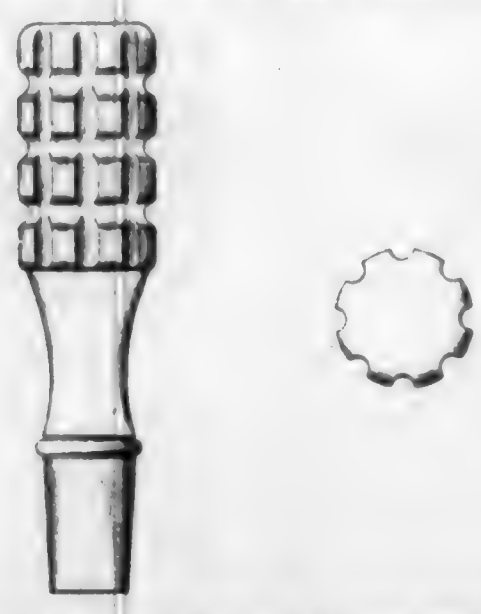
Claim.—The ornamental design for a tool-handle as shown.

37,922. TOOL-HANDLE. JOHN J. TOWER, Montclair, N. J. Filed Nov. 16, 1904. Serial No. 233,050. Term of patent 14 years.



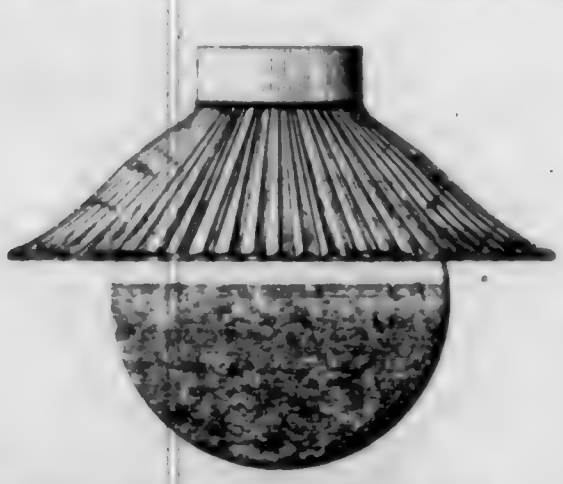
Claim.—The ornamental design for a tool-handle as herein shown.

37,923. TOOL-HANDLE. JOHN J. TOWER, Montclair, N. J. Filed Nov. 16, 1904. Serial No. 233,051. Term of patent 14 years.



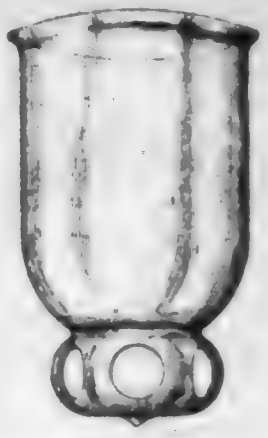
Claim.—An ornamental design for a tool-handle as herein shown.

37,924. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed Jan. 29, 1904. Serial No. 191,232. Term of patent 14 years.



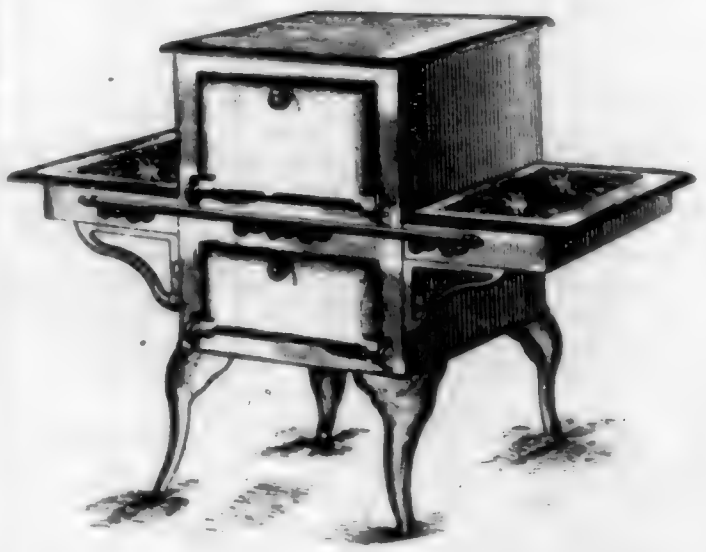
Claim.—The ornamental design for an illuminator, as herein shown and described.

37,925. INCANDESCENT GAS-GLOBE. SIDNEY MASON, Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J., a Corporation of New Jersey. Filed Jan. 25, 1906. Serial No. 297,906. Term of patent 14 years.



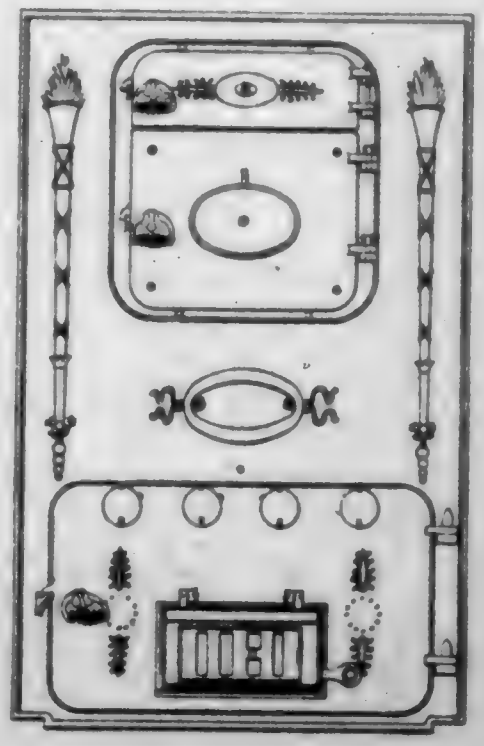
Claim.—The ornamental design for an incandescent gas-globe, as shown.

37,926. GAS-STOVE. LOUIS STOCKSTROM, St. Louis, Mo. Filed Jan. 22, 1906. Serial No. 297,373. Term of patent 7 years.



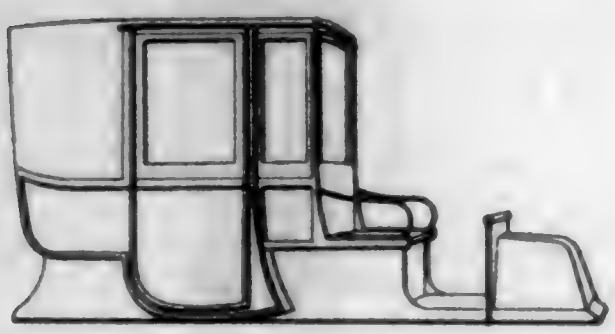
Claim.—The ornamental design for a gas-stove, as shown.

37,927. HEATING-FURNACE FRONT. CHARLES SMITH, Chicago, Ill., assignor to Charles Smith Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 7, 1906. Serial No. 300,011. Term of patent 14 years.



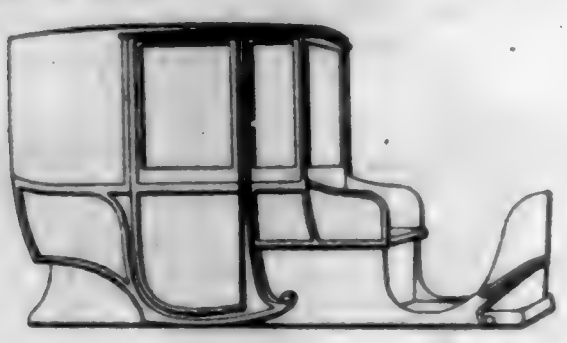
Claim.—The ornamental design for a heating-furnace front, as shown.

87,928. AUTOMOBILE-BODY. PAUL W. STEINBECK, New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 3, 1906. Serial No. 294,477. Term of patent 14 years.



Claim.—The ornamental design for an automobile-body as shown.

87,929. AUTOMOBILE-BODY. PAUL W. STEINBECK, New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 3, 1906. Serial No. 294,478. Term of patent 14 years.



Claim.—The ornamental design for an automobile-body as shown.

87,930. PRINTED TEXTILE FABRIC. EDWARD B. VANDERGAW, Brooklyn, N. Y. Filed Feb. 12, 1906. Serial No. 300,807. Term of patent 7 years.



Claim.—The ornamental design for a printed textile fabric as shown.

TRADE-MARKS

PUBLISHED MARCH 27, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 49. SOAP. The N. K. Fairbank Company, Chicago, Ill. Filed Apr. 1, 1905.

PRIMROSE

The designation "Primrose."

Ser. No. 65. LAXATIVES. K K K Remedies Company, Keokuk, Iowa. Filed Apr. 1, 1905.

kkk

The letters "K K K."

Ser. No. 78. CANNED FRUITS AND VEGETABLES. S. Hamill Company, Keokuk, Iowa. Filed Apr. 1, 1905.

Ser. No. 78.

OLIVE BRANCH



The words "Olive Branch," beneath which are arranged two olive branches bearing clusters of olives and between which branches is a central ornamental figure.

Ser. No. 250. WHISKY. W. H. Jones and Co., Boston, Mass. Filed Apr. 3, 1905.

OLD GOLD

The words "Old Gold."

Ser. No. 260. LAUNDRY SOAP. J. G. Haas Soap Co, St. Louis, Mo. Filed Apr. 10, 1905.

Sm. No. 980.



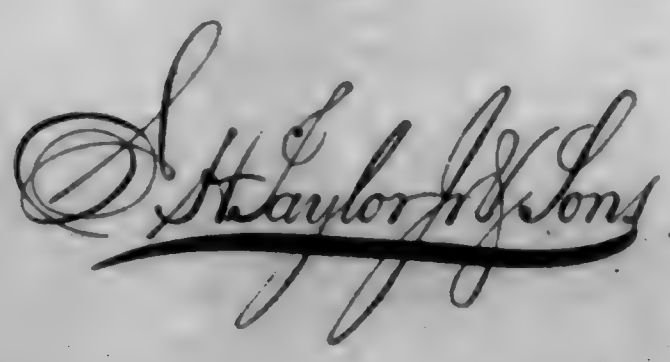
The word "CALICO," printed in the upper left-hand corner of a rectangular field and across the lower right-hand corner of which field appears a straight band, and in the lower right-hand corner of the field below this band is a rectangular field on which appears a shield bearing the letters "O K" in the form of a monogram, there being the representation of an eagle above said shield, the representation of a unicorn on the left-hand side of said shield, and the representation of a lion on the right-hand side of said shield.

Sm. No. 1,088. LEATHER BOOTS AND SHOES. BRADLEY & MERCALF COMPANY, Milwaukee, Wis. Filed Apr. 10, 1905.



The figure of a boot mounted on wheels and drawn by a pair of running horses having a driver seated on the boot, this driver being a bearded man in scant flowing drapery carrying a scythe, the blade of which scythe extends forward over his left shoulder.

Sm. No. 1,077. WHISKY. E. H. TAYLOR, JR. & SONS INCORPORATED, Frankfort, Ky. Filed Apr. 11, 1905.



The words, character, and abbreviations "E. H TAYLOR JR & SONS."

Sm. No. 1,335. VERTICAL-PLANE CAR-COUPLERS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio. Filed Apr. 13, 1905. Used ten years.

TOWER

The word "TOWER."

Sm. No. 1,364. RAINPROOF COATS. LEVEAU H. HESS, Philadelphia, Pa. Filed Apr. 13, 1905.



The words "ALL WEATHER," in quotation-marks, inclosed in concentric circles.

Sm. No. 1,588. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Apr. 15, 1905.

ALUMINUM

The word "ALUMINUM."

Sm. No. 1,754. SOAP. HOWARD AUTOMATIC CO., Chicago, Ill. Filed Apr. 15, 1905. Used ten years.

GREEN OIL SOAP

The words "GREEN OIL SOAP."

Sm. No. 1,881. WHISKY. FRIEDMAN & WORTH, Cincinnati, Ohio. Filed Apr. 17, 1905.



The word and letters "CABINET O K" in a double triangular-shaped figure.

Sm. No. 2,040. WHISKY. JOS. A. MAGNUS & CO., Cincinnati, Ohio. Filed Apr. 17, 1905.



The words "MURRAY HILL CLUB" and a fanciful heraldic design showing six crossed arrows bound together above a heraldic

roll and a crowned lion holding a branch bearing an acorn in one of its paws and issuant from a heraldic roll.

SER. No. 2,266. BEERS. BRAMLEDGE & WOMBS, New York, N. Y. Filed Apr. 19, 1905.

Imperial

The word "IMPERIAL."

SER. No. 2,271. WATCHES, WATCHCASES, WATCH-MOVEMENTS, AND PARTS THEREOF. NEW YORK STANDARD WATCH CO., Jersey City, N. J. Filed Apr. 19, 1905.



The representation of a globe surrounded by clouds and on which is perched an eagle with outstretched wings and having a timepiece suspended from its beak, the globe bearing the words "THE BEST WATCH IN THE WORLD FOR THE MONEY."

SER. No. 2,332. WHISKY. PHILIP PFEILER, Elgin, Ill. Filed Apr. 20, 1905.

CENTURY CLUB

The words "CENTURY CLUB."

SER. No. 2,341. BRANDY. PHILIP PFEILER, Elgin, Ill. Filed Apr. 20, 1905. Used ten years.

PEERLESS

The word "PEERLESS."

SER. No. 2,493. WHISKY. CHARLES W. BAUER, St. Louis, Mo. Filed Apr. 26, 1905.

KING BEE

The words "KING BEE."

SER. No. 2,469. BONE FERTILIZER. F. S. ROYSTER GUANO CO., Norfolk, Va. Filed Apr. 26, 1905. Used ten years.

FARMER'S BONE

The words "FARMER'S BONE."

SER. No. 2,568. WHISKY. W. L. WELLER & SONS, Louisville, Ky. Filed Apr. 31, 1905.

HARLEM CLUB

The words "HARLEM CLUB" and the representation of a fanciful animal's head with pointed ears and snake-like mouth with protruding tongue and resting on a heraldic roll within a scroll design.

SER. No. 3,060. BRONZE POWDERS, LEAF-BROCADES, FLITTERS, METALLICS, AND ALUMINUM POWDERS AND BRONZING LIQUIDS. GOLDSCHMIDT BROS., New York, N. Y. Filed Apr. 26, 1905.



The representation of a star having a circular field within the same upon which appears the letter "G," inclosing the representation of an easel supporting a panel upon which is arranged the abbreviation "BROS."

SER. No. 3,100. LEATHER BOOTS AND SHOES. J. B. HUNTER, Zanesville, Ohio. Filed Apr. 26, 1905.



A symbol comprising a scroll formed of a central portion having convex upper and lower edges from which extend end portions having outer convex edges and upper and lower sides which converge toward the central portion.

SER. No. 3,101. LEATHER BOOTS AND SHOES. J. B. HUTTER, Zanesville, Ohio. Filed Apr. 26, 1905.

GOLD

The word "GOLD."

SER. No. 3,207. PREPARATIONS FOR THE TREATMENT OF THE HEAD AND HAIR. Hudson & Co. Inc., New York, N. Y. Filed Apr. 21, 1905.

CARPINE

The word "CARPINE."

SER. No. 3,352. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga. Filed Apr. 28, 1905.

MOUNTAIN DELL

The words "MOUNTAIN DELL."

SER. No. 3,571. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905.

OKATEX

The word "OKATEX."

SER. No. 3,572. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

NUBIAN

The word "NUBIAN."

SER. No. 3,573. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

STERLING

The word "STERLING."

SER. No. 3,575. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

NATIONAL

The word "NATIONAL."

SER. No. 3,577. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

KING

The word "KING."

SER. No. 3,578. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

ACHILLES

The word "ACHILLES."

SER. No. 3,580. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905.

NABOB

The word "NABOB."

SER. No. 3,581. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

PEARL

The word "PEARL."

SER. No. 3,582. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

KAISER

The word "KAISER."

SER. No. 3,583. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

DUDE

The word "DUDE."

SER. No. 3,584. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

PURITAN

The word "PURITAN."

SER. No. 3,586. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

HARD PAN

The words "HARD PAN."

SER. No. 3,587. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

CONQUEROR

The word "CONQUEROR."

SER. No. 3,588. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

MECHANIC

The word "MECHANIC."

SER. No. 3,589. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

HERCULES

The word "HERCULES."

SER. No. 3,590. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

PILGRIM

The word "PILGRIM."

SER. No. 3,591. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

VULCAN

The word "VULCAN."

SER. No. 3,592. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 20, 1905. Used ten years.

KRAKO

The word "KRAKO."

SER. No. 3,603. WOMEN'S BONNETS, HATS, AND HEAD-DRESSES. KATHERINE GANDY, New York, N. Y. Filed Apr. 20, 1905.

SER. No. 3,603.



A full-faced representation of the head of a cat centrally placed in a circular background slightly larger than the head aforesaid, the ears of the cat projecting beyond the limits of the circular background.

SER. No. 3,652. FARM-WAGONS. KENTUCKY WAGON MANUFACTURING COMPANY, Louisville, Ky. Filed Apr. 20, 1905.



The word "BLUEGRASS."

SER. No. 4,087. ALE. JOHN LABATT, London, Canada. Filed May 3, 1905.



An open oval portion having a central octagonal figure in which is the representation of an arrow-head surrounded by a border, which cuts the border of the octagonal figure. On each side of the octagonal figure is a band extending horizontally to the circumference of the oval, having to the left and right of the figure the words "JOHN" and "LABATT," forming a facsimile signature of the applicant, and terminating at each end in a small oval, with sheaves of barley in the small ovals. In the upper portion of the main oval is printed the word "LABATT'S," immediately below is printed the word "INDIA," and lower the word "PALE." Below is printed the word "ALE," and next to the margin of the main oval are printed the words "LONDON, CANADA." On the margin, of said main oval is a row of small oval figures, in each of which is printed the letter "L." Below the main oval are two circles overlapping each other and the

said oval, representing the respective sides of a medal awarded to the applicant, John Labatt, at the International Exposition of Paris in 1878.

Ser. No. 4,180. WINE. W. H. Jones and Co., Boston, Mass. Filed May 3, 1905.

RAINBOW

The word "Rainbow."

Ser. No. 4,418. FARM-WAGONS AND DUMP-CARTS. Kentucky Wagon Manufacturing Company, Louisville, Ky. Filed May 5, 1905.

OLD HICKORY

The words "Old Hickory."

Ser. No. 4,488. METALLIC PENS. The Spencerian Pen Co., New York, N. Y. Filed May 6, 1905.

SPENCERIAN

The arbitrarily-coined word "Spencerian."

Ser. No. 4,509. WHISKY. Hannaman Bare & Co., Cincinnati, Ohio. Filed May 8, 1905. Used ten years.

Rocky Fork

The words "Rocky Fork."

Ser. No. 4,595. WATCHES, WATCHCASES, AND WATCH-MOVEMENTS. Philadelphia Watch Case Co., Riverside, N. J. Filed May 8, 1905.

EXCELSIOR

The word "Excelsior."

Ser. No. 4,805. COLLARS AND CUFFS. William Barker Company, Watervliet, N. Y. Filed May 9, 1905.



The pictorial representation of a dog's head holding in its mouth a shirt-collar and having around its neck a dog-collar on which the word "Barker" appears, the dog's head being disposed within a double ring or border, in which the words "Barker Brand" appear.

Ser. No. 5,180. ELECTRIC SWITCHES AND PARTS THEREOF AND MOUNTINGS AND INCLOSURES THEREFOR. D. & W. Fuse Co., Providence, R. I. Filed May 11, 1905.

D & W

The letters and character "D & W."

Ser. No. 5,145. WHISKY. The Hoffheimer Bros. Co., Cincinnati, Ohio. Filed May 11, 1905.

GOLDEN CROWN

The words "Golden Crown," over which is a design representing a crown.

Ser. No. 5,310. WINE. Henry Block Co Limited, New Orleans, La. Filed May 12, 1905.



The representation of a winged head with three legs extending therefrom inclosed in a circle and the words "Vino Marsalino."

Ser. No. 5,355. FARM-WAGONS. Kentucky Wagon Manufacturing Company, Louisville, Ky. Filed May 12, 1905. Used ten years.

"TENNESSEE"

The word "Tennessee," in quotation-marks, on a panel.

Ser. No. 5,359. DOORS AND WINDOWS. Van Kannel Revolving Door Co., New York, N. Y. Filed May 12, 1905.

ENUPHYLL

The fanciful word "Enuphyll."

Ser. No. 5,568. LEATHER-TURNED SHOES. Charles O. Tinson, Lynn, Mass. Filed May 13, 1905.

Ser. No. 5,568.



The words "FOOT-EASE" arranged on a panel extending across the middle of the representation of a human foot, which is surrounded by the outline of a shoe.

Ser. No. 5,648. COTTON SHEETINGS AND DRILLINGS. GREENWOOD COTTON MILL, Greenwood, S. C. Filed May 15, 1906.



The representation of the chimney and roof of a house with apples lying thereon and two cats in crouching attitude.

Ser. No. 5,659. DETONATING CAPS AND BLASTING-FUSES. THE AETNA POWDER CO., Chicago, Ill. Filed May 15, 1906.



The representation of a shield bearing the words "LION BRAND" and the representation of a lion rampant.

Ser. No. 5,672. COTTON SHEETINGS AND DRILLINGS. PIEDMONT MFG CO., Piedmont, S. C. Filed May 15, 1906.



The representation of three flying horses.

Ser. No. 6,025. BITTERS. DR. J. G. B. SIEGERT & HIJOS, Port of Spain, Island of Trinidad. Filed May 18, 1906.

Angostura

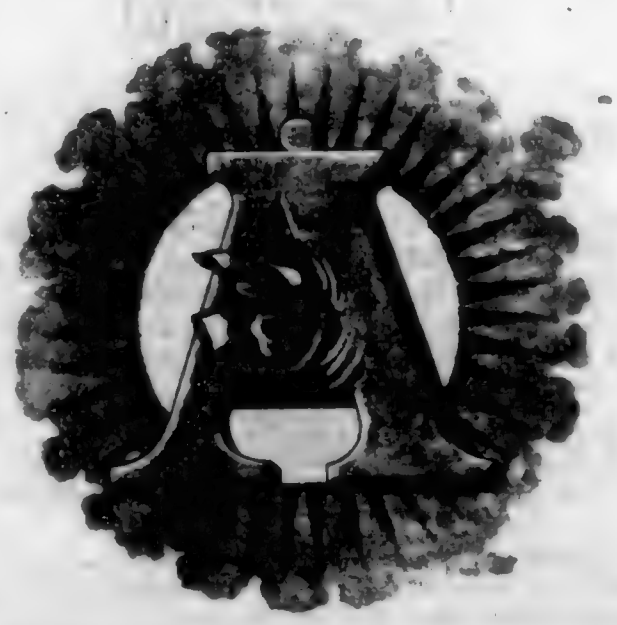
The word "ANGOSTURA."

Ser. No. 5,818. LIQUID SMOKE DISTILLED FROM WOOD. THE B. E. WRIGHT COMPANY, Ltd., Kansas City, Mo. Filed May 16, 1906.



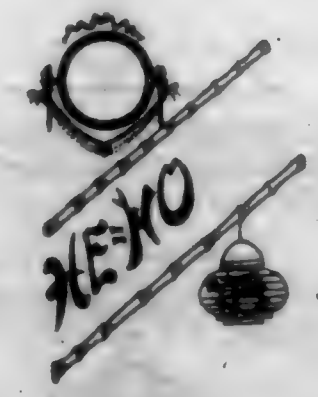
The representation of a grove of trees with foliage simulating smoke and a smoking ham suspended in the foliage and the words "WRIGHT'S CONDENSED SMOKE."

Ser. No. 6,212. FRESH BEEF, PORK, AND MUTTON. THE AGAR PACKING COMPANY, Des Moines, Iowa. Filed May 18, 1906.



The capital letter "A" with the head of a hog projecting through said letter "A" and above the bar therein, said letter "A" being placed on a background in which the representation of the sun forms the central portion.

Ser. No. 6,241. WHISKY. FRUCHTER BROS., Cairo, Ill. Filed May 22, 1906.



The word "HE-HO" and the representation of a cane above and below said word with a Chinese lantern bearing a monogram of the letters "F B" suspended from the lower cane and a circular ornamental panel arranged above the upper cane and having on each side torches connected by chains with scroll ornamentation above.

SER. No. 6,278. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa. Filed May 22, 1905. Used ten years.

MONTROSE

The word "MONTROSE."

SER. No. 6,355. SWITCHES AND SOCKETS, RECEPTACLES, CONNECTIONS, AND FITTINGS THEREFOR FOR ELECTRICAL USE. THE HART MANUFACTURING COMPANY, Hartford, Conn. Filed May 22, 1905.

Diamond H

The word "DIAMOND," associated with the letter "H."

SER. No. 6,487. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed May 24, 1905. Used ten years.

Chesterfield

The word "CHESTERFIELD."

SER. No. 6,730. TOOTH-BRUSHES, HAIR-BRUSHES, AND BRUSHES FOR PERSONAL USE. S. MAW, SON & SONS, London, England. Filed May 26, 1905. Used ten years.



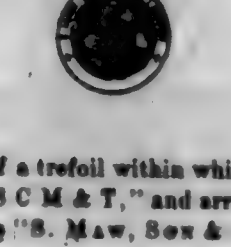
A representation of a trefoil within which is a monogram consisting of the letters "S C M & T," and arranged in a circle about the whole are the words "S. MAW, SON & SONS, LONDON."

SER. No. 6,809. LEATHER BOOTS, SHOES, AND SLIPPERS OF ALL KINDS AND UPPER AND SOLE LEATHER USED IN THEIR MANUFACTURE. PACKARD & FIELD, Brockton, Mass. Filed May 27, 1905. Used ten years.

BURTWELT

The word "BURTWELT."

SER. No. 6,856. REMEDIES FOR THE CURE OF RHEUMATISM AND SIMILAR DISEASES. JAMES LEONARD ODOM, Lester, S. C. Filed May 29, 1905.



The photograph of the registrant.

SER. No. 7,107. SAFES. HERRING-HALL-MARVIN SAFE COMPANY, Hamilton, Ohio, and New York, N. Y. Filed May 31, 1905.



A monogram composed of the letters "H," "H," and "M," the letters "H" having one vertical member in common, while the outer members of the letter "M" are formed by the lower portions of the outer vertical members of the letters "H," said monogram being encircled by letters forming the word "SAFECRAFT" reading in opposite directions, the letters "S" and "T" being present but once, while the remaining letters are repeated to the right and left, respectively.

SER. No. 7,288. POCKET-KNIVES. ADOLPH KASTOR & BROS., New York, N. Y. Filed June 2, 1905.

TIP TOP

The arbitrary words "TIP TOP."

SER. No. 7,383. BISCUIT OR CRACKERS. THE NATURAL FOOD COMPANY, Niagara Falls, N. Y. Filed June 3, 1905.



The conventional representation of the mythological character Ceres represented as holding a lighted torch in one hand and a sheaf of wheat in the other.

SER. No. 7,384. BISCUIT OR CRACKERS. THE NATURAL FOOD COMPANY, Niagara Falls, N. Y. Filed June 3, 1905. Used ten years.

SHREDDED

WHOLE

WHEAT

The words "SHREDDED WHOLE WHEAT" arranged on successive lines one word under the other.

SER. No. 7,474. LEATHER BOOTS AND SHOES. AL. A. ROSENBURG & Co., Boston, Mass. Filed June 5, 1906.



The representation of a black eagle with wings outspread standing on a pedestal behind a red shield with scroll ribbons flowing from the shield upon which appear the words "BLACK EAGLE."

SER. No. 7,526. WINE. CHARLES & Co., New York, N. Y. Filed June 6, 1906. Used ten years.



The representation of a wicker basket apparently filled and covered over the top and partly down the sides. A cord holds the cover close to the basket, and a label is on the top with a corner slipped under the cord, the label bearing the words "PLEASE DELIVER QUICKLY." A tag is suspended on one side of the handle and bears the words "CHARLES & Co."

SER. No. 7,616. PERIODICALLY-ISSUED STORY-PAPER. THE A. D. PORTER COMPANY, New York, N. Y. Filed June 7, 1906.

THE HOUSEWIFE

The words "THE HOUSEWIFE."

SER. No. 7,716. ASH-SIFTERS. JOSEPH P. HILL, Worcester, Mass. Filed June 8, 1906.

"HUSTLER"

The word "HUSTLER," which has quotation-marks before and after it.

SER. No. 7,755. STERLING-SILVER JEWELRY FOR PERSONAL ADORNMENT. THEODORE W FOSTER & BRO. CO., Providence, R. I. Filed June 9, 1906.

F.&B.

The letters and character "F. & B."

SER. No. 7,747. MEDICINE ADAPTED TO PURIFY THE BLOOD AND TO REGULATE THE KIDNEYS, LIVER, AND BOWELS. FLORIAN JOSEPH SCHMIDT, Chicago, Ill. Filed June 9, 1906.

SCHMIDT'S



Joseph Schmidt

System

RENOVATOR

My portrait and facsimile signature and the words "SCHMIDT'S SYSTEM RENOVATOR."

SER. No. 7,831. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1906.



The representation of the bust of a child in nightcap and nightgown surrounded by a scroll or wreath and dots and above the whole the arbitrarily-selected word "DOT," associated with the word "BRAND."

SER. No. 7,834. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1906.

ECLIPSE JUNIOR

The arbitrarily-selected words "ECLIPSE JUNIOR."

SER. No. 7,835. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1906.



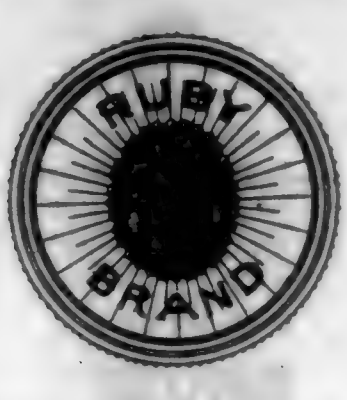
A picture or representation of a lone palmetto-tree behind which the sun appears half sunken below the horizon and above the whole the arbitrarily-selected word "PALMETTO," associated with the word "BRAND."

SER. No. 7,838. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed June 10, 1906.



The representation of a rural scene showing a windmill, keeper's house, trees, and a man and in the distance a sailing vessel upon a lake and above the whole the arbitrarily-selected words "WIND MILL."

SER. No. 7,887. CONDENSED MILK. VERMONT CONDENSED MILK Co., Richmond, Vt., and New York, N. Y. Filed June 10, 1905.



The representation of a cut and set ruby with its divergent rays, above which is the arbitrarily-selected word "RUBY," associated with the word "BRAND," the whole inclosed in a series of concentric circles.

SER. No. 7,951. CIGARS. JOSEPH WEINBERG, Dayton, Ohio. Filed June 12, 1906.

U.S. SUPREME JUDGE

The words "U. S. SUPREME JUDGE."

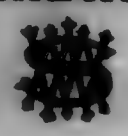
SER. No. 8,185. HEAVE-POWDER. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1906.



A panel bearing the words "DR. HESS HEAVE POWDER" and representations of a man and the head of a horse, the man holding in one hand a package of powder and the horse's head resting on his other hand.

SER. No. 8,196. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed June 15, 1906. Used ten years.

INTERNATIONAL



The word "INTERNATIONAL" and my monogram, "M W S."

SER. No. 8,197. POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn. Filed June 15, 1906. Used ten years.

INTERNATIONAL

The word "INTERNATIONAL" and my monogram, "M W S."

SER. No. 8,198. FABRICS FOR INSULATING, DEADENING, SHEATHING, BUILDING, AND FOR COVERING PURPOSES. UNION FIBRE Co., Winona, Minn. Filed June 15, 1906.

LINOFELT

The word "LINOFELT."

SER. No. 8,202. CANDY. THE ROBERT F. MACKENZIE Co., Cleveland, Ohio. Filed June 15, 1906.



The words "OLD HICKORY," and the picture of Andrew Jackson inclosed in an oval, and a hickory-tree with bluebells growing around it.

SER. No. 8,332. TURPENTINE. STANDARD OIL Co. OF NEW YORK, New York, N. Y. Filed June 16, 1906. Used ten years.



The words "FROM PRATT WORKS NEW YORK, U. S. A." appearing in three curved lines embraced at either end by scrolls, the words "SPIRITS OF" and "TURPENTINE" in two lines curving in opposite directions between which an ornamental figure or dash appears, and below in two curved lines "THE GUARANTY" and "PATENT CANS."

SER. No. 8,374. MACARONI, VERMICELLI, SPAGHETTI, AND NOODLES. LOUIS RASTRUP and KIERAN SCANLAN, Chicago, Ill., administrators of the estate of John B. Canepa, deceased, assignors to The John B. Canepa Company, Chicago, Ill., a Corporation of Illinois. Filed June 16, 1906.

SER. No. 8,374.



The representation of an eagle with outstretched wings and standing upon a scroll and the words "DELL' AQUILA."

SER. No. 8,391. CANNED LOBSTER. WILKINSON, GARDEN & Co., Newark, N. J. Filed June 17, 1906.

IDEAL

The word "IDEAL."

SER. No. 8,392. CANNED FRUITS AND VEGETABLES. WILKINSON, GARDEN & Co., Newark, N. J. Filed June 17, 1906.

IDEAL

The word "IDEAL."

SER. No. 8,433. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAREY-CAGUAS TOBACCO Co., New York, N. Y., and Caguas, Porto Rico. Filed June 17, 1906.

DIADONA

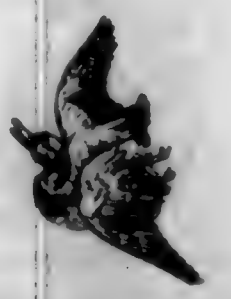
The word "DIADONA."

SER. No. 8,479. WHISKY. H. L. GRIESEDIECK DIST'G Co., St. Louis, Mo. Filed June 19, 1906.

SCENTER

The word "SCENTER."

SER. No. 8,513. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass. Filed June 19, 1906.



The representation of a duck with outstretched wings.

SER. No. 8,504. WHISKY. THE J. & G. BUTLER Co., Columbus, Ohio. Filed June 18, 1906.



The words "CLOVER DALE" inclosed in quotation-marks and the outline of a bottle across which is written "J. & G. BUTLER & Co."

SER. No. 8,617. MEDICINAL TONIC AND CORDIAL. UDOLPHO WOLFE COMPANY, New York, N. Y. Filed June 20, 1906.

WOLFE'S
AROMATIC
SCHIEDAM
SCHNAPPS

The words "WOLFE'S AROMATIC SCHIEDAM SCHNAPPS" and the facsimile signatures of "UDOLPHO WOLFE" and "JOEL B. WOLFE."

SER. No. 8,625. WHISKY. P. J. BOWLIN LIQUOR Co., St. Paul, Minn. Filed June 21, 1906.

KING'S CHOICE

The words "KING'S CHOICE."

SER. No. 8,630. BRANDY. P. J. BOWLIN LIQUOR Co., St. Paul, Minn. Filed June 21, 1906. Used ten years.



The words "SAN DIEGO," associated with the words "PURE CALIFORNIA BRANDY P. J. BOWLIN LIQUOR Co. ST., PAUL, MINN." inclosed in an ornamental circular border.

SER. No. 8,701. SHOE-DRESSING. GEO B KEITH COMPANY, Brockton, Mass. Filed June 21, 1905.



The representation of a man in evening dress walking over a shoe.

SER. No. 8,706. COMPRESSED YEAST WHICH IS USED IN THE MAKING OF BREAD AND BREADSTUFFS. THE FLEISCHMANN CO., Cincinnati, Ohio, and New York, N. Y. Filed June 21, 1905.



A rectangular panel bearing the words "FLEISCHMANN'S COMPRESSED YEAST" and a design of a sheaf of wheat inclosed in concentric circles surmounted by an eagle, panels, and scrolls with a lion rampant on each side of the circles and a scroll beneath and circular fields on each side of the design showing medals.

SER. No. 8,707. COMPRESSED YEAST WHICH IS USED IN THE MAKING OF BREAD AND BREADSTUFFS. THE FLEISCHMANN CO., Cincinnati, Ohio, and New York, N. Y. Filed June 21, 1905.

The Fleischmann Co

The words and abbreviation "THE FLEISCHMANN CO."

SER. No. 8,781. WINES. P. GARGIULO & Co., New York, N. Y. Filed June 28, 1905.



The word "GRAGNANO," associated with a pictorial representation, the words "EXTRA SUPERIOR," and the representation of a shield having a crown above it and a scroll below it. Said pictorial representation is of a city with a volcano and mountain ranges behind it and a body of water to one side. Said shield displays a coat of arms, consisting of a tower, a tree, and a hand holding a branch. Said scroll displays the words "STEMMA DI GRAGNANO."

SER. No. 8,943. SYRUP FOR BEVERAGES. MILTON L. BROOKES, Fort Worth, Tex. Filed June 24, 1905.



The word "PEACOCK" and the representation of a woman clad in drapery and standing on the back of a peacock holding a glass in her hand.

SER. No. 8,948. WHISKY. PEEBLES & KAHN, Cincinnati, Ohio. Filed June 24, 1905.



The word "MAGNET," behind which is a drawing representing a magnet and its armature.

SER. No. 9,086. WHISKY. JOSEPH M. DAVIS, Minneapolis, Minn. Filed June 26, 1905. Used ten years.

SHERIDAN

The word "SHERIDAN."

SER. No. 9,356. WHEAT BREAKFAST-FOOD. THE WHEATENA COMPANY, New York, N. Y. Filed June 28, 1905. Used ten years.

Wheatena

The word "WHEATENA."

SER. No. 9,573. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 1, 1905.



The representation of a steamship under headway, the view being almost bow on and from the starboard side. At each side of the view is shown a curved rope, the ends of the rope terminating at the top and bottom in circular designs surmounted by a crown and showing at the center a lion rampant supporting a globe. Upon the top device are the words "THE CUNARD STEAMSHIP CO. LIMITED," and upon the bottom device are the words "ROYAL MAIL STEAMSHIPS."

SER. No. 9,575. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 1, 1905.



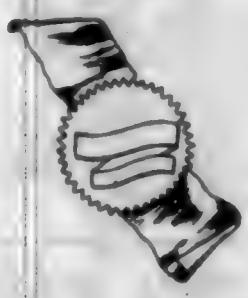
A rectangular design upon which the representation of Napoleon the First appears clad in robes of state and standing on a dais beneath a canopy holding in his left hand a scepter, while his right arm is outstretched over an open book and an emblem surmounted by a cross which rest upon a draped table.

SER. No. 9,578. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 1, 1905.



A rectangular design showing the representation of the flat-iron building in New York city, with the buildings and streets adjacent, the view being taken as the spectator looks in a southerly direction from Madison Square.

SER. No. 9,675. CANNED FRUITS AND VEGETABLES. THE BOOTH PACKING COMPANY, Baltimore, Md. Filed July 3, 1905. Used ten years.



The representation of a gold seal on a blue ribbon, said seal having a scroll-shaped figure thereon.

SER. No. 9,740. COMBINATION SASH ADJUSTERS AND LOCKS. LOUIS PETRACCHONE, New York, N. Y. Filed July 3, 1905.

SER. No. 9,740.

FENDO

The word "FENDO."

SER. No. 9,782. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905. Used ten years.



The pictorial representation of a bottle-cork with a wire fastened around it and twisted and the word "BUDWEISER" appearing thereon.

SER. No. 9,793. BAKING-POWDER. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

RICHELIEU

The arbitrarily-selected word "RICHELIEU."

SER. No. 9,798. LEMON EXTRACT, VANILLA EXTRACT, AND ORANGE EXTRACT. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

Richelieu

The arbitrarily-selected word "RICHELIEU."

SER. No. 9,849. REMEDIES FOR DIPHTHERIA AND OTHER DISEASES OF THE THROAT. LUIGI D'AMBROSIO, New York, N. Y. Filed July 6, 1905.

HYLDA

The coined word "HYLDA" and a monogram of the letters "L D A."

SER. No. 10,045. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill. Filed July 11, 1905.

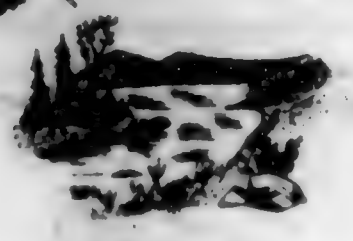
WHITE LINE

The words "WHITE LINE."

SER. No. 10,163. CANNED CORN. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill. Filed July 12, 1905.

SER. No. 10,168.

RIVERVIEW



The word "RIVERVIEW" and the picture of a river scene showing a river with both its vegetation-covered banks.

SER. No. 10,196. PIANOS. DECKER & SON, New York, N. Y. Filed July 12, 1905.

Decker & Son



An emblem in the form of a coat of arms, associated with the name "DECKER & SON" and having as characteristics the representation of a shield charged with the head and fore legs of a deer erased, with an arrow directed upward between the fore legs, surmounted by head and neck armor with the visor closed beneath ornamental scrolls and above a ribbon bearing the inscription "ESTABLISHED 1856," the whole superposed upon a sable mantle, with a lioness rampant regardant as the crest.

SER. No. 10,210. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 12, 1905.

ANTILLIA

The word "ANTILLIA."

SER. No. 10,214. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 12, 1905. Used ten years.

CHERUB

The word "CHERUB."

SER. No. 10,428. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed July 17, 1905.

WILL-O'-THE-WISP.

The words "WILL-O' THE-WISP."

SER. No. 10,431. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed July 17, 1905.

Gatling Battery Torpedo.

The words "GATLING BATTERY TORPEDO."

SER. No. 10,434. HAND STICK-FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed July 17, 1905.

Meteor Sticks

The words "METEOR STICKS."

SER. No. 10,435. TORPEDO-FIREWORKS. EDW. H. WAGNER, New York, N. Y. Filed July 17, 1905.

ERUPTING VOLCANO

The words "ERUPTING VOLCANO."

SER. No. 10,538. GAS-STOVES. WILLIAM M. CRANE Co., New York, N. Y. Filed July 13, 1905.

OMECA

The word "OMECA."

SER. No. 10,578. SKIN-FOODS AND COMPLEXION CREAMS AND OINTMENTS. GRAHAM BROS. & Co., Chicago, Ill. Filed July 10, 1905.

LANA

The word "LANA."

SER. No. 10,582. OSTRICH FEATHERS. W. PEITSCHKE STRAUSSFEDER FABRIK, Berlin, Germany. Filed July 3, 1905.



The representation of a negro's head surrounded by two ostrich feathers and the word "NEGRO."

SER. No. 10,583. WHISKY. FRED J. TAERR, Boston, Mass. Filed July 10, 1905. Used ten years.

ASHLAWN

The word "ASHLAWN."

SER. No. 10,608. PILLS FOR LIVER AND BOWEL COMPLAINTS. B. T. DAVIS, Huntington, W. Va. Filed July 20, 1905.



A panel bearing the representation of a volcano in eruption and the words "DR. WINSTON'S MOUNTAIN ROOT PILLS FOR THE LIVER."

SER. No. 10,647. WHISKY. FRED J. TABER, Boston, Mass. Filed July 21, 1905.



An oval design terminating at the top and bottom in birds' heads with the words, letters, and figures "G. W. T. Co. ESTABD. 1826."

SER. No. 10,648. WHISKY. FRED J. TABER, Boston, Mass. Filed July 21, 1905. Used ten years.

OLD BELFRY

The words "OLD BELFRY."

SER. No. 10,661. CENTRIFUGAL SEPARATORS IN WHICH A LIQUID IS ONE OF THE COMPONENT PARTS OF THE MATERIAL TREATED. THE DE LAVAL SEPARATOR COMPANY, New York and Poughkeepsie, N. Y. Filed July 21, 1905.

ALPHA

The word "ALPHA."

SER. No. 10,691. SALVE. ECKMORE GALL CURE COMPANY, Old Town, Me. Filed July 22, 1905. Used ten years.



The representation of a working horse.

SER. No. 10,693. GALL CURE. ECKMORE GALL CURE COMPANY, Old Town, Me. Filed July 22, 1905. Used ten years.

GALL CURE



The pictorial representation of a horse in harness, associated with the words "GALL CURE."

SER. No. 10,724. WHEAT-FLOUR. SAGINAW MILLING COMPANY, Saginaw, Mich. Filed July 22, 1905.



A representation of a figure of Uncle Sam as commonly given in illustrations of a fanciful character representing the United States, associated with a banner or scroll held by the figure named and the initials "U. S.," standing for Uncle Sam.

SER. No. 10,743. ELECTRIC SOLDERING-TOOLS. L. P. BROWN & COMPANY, Chicago, Ill. Filed July 24, 1905.

VULCAN

The word "VULCAN" inclosed in a panel or frame approximately rectangular in outline and having the corners slightly indented.

SER. No. 10,804. CARTRIDGES AND BULLETS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn. Filed July 26, 1905. Used ten years.

Metal Cased

The words "METAL CASED."

SER. No. 10,805. CARTRIDGES AND BULLETS. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn. Filed July 26, 1905. Used ten years.

Soft Point

The words "SOFT POINT."

SER. No. 10,913. TONIC FOR THE SCALP AND SKIN. GUST TIMES, Chicago, Ill. Filed July 27, 1905.

TIME
N

The word "TIME" and the letter "N" inclosed in a triangle.

SER. No. 10,988. CURED FISH. (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905. Used ten years.

PEERLESS

The word "PEERLESS."

SER. No. 10,966. CANDIES, BONBONS, AND CHOCOLATE CANDY. MENGE L. MOSSENTHAL, New York, N. Y. Filed July 26, 1905.

TELEPHONE

The word "TELEPHONE."

SER. No. 11,091. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905.



The representation of a colt rampant, carrying parts of a spear in its mouth and parts of a spear between its forelegs.

SER. No. 11,092. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 1, 1905.



The word "COLT" above the representation of a colt rampant, carrying parts of a spear in its mouth and parts of a shear between its forelegs, the whole inclosed in a circular panel.

SER. No. 11,116. CONDENSED MILK. VERMONT CONDENSED MILK CO., Richmond, Vt., and New York, N. Y. Filed Aug. 1, 1905.

Silver Cord

The words "SILVER CORD," represented as formed in script by a cord and having a knot at the end thereof.

SER. No. 11,161. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.



A representation of the head and shoulders of a woman wearing a tall-crowned hat.

SER. No. 11,820. BAKING-POWDER. CLEVELAND BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 7, 1905. Used ten years.

CLEVELAND'S

The word "CLEVELAND'S."

SER. No. 11,821. BAKING-POWDER. CLEVELAND BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 7, 1905. Used ten years.

SER. No. 11,321.



A parallelogram composed of two panels differentiated from each other by being printed in two shades of buff color, upon one of which appears a central disk of blue encircled by a red border, said disk bearing the words "PURITY," "STRENGTH," and "PERFECTION," with the name of the article, "CLEVELAND'S SUPERIOR BAKING POWDER," curving over and beneath said disk.

SER. No. 11,400. ICE-CREAM SALT AND SALT FOR SALTING HIDES. BROWN & SHAW, New York, N. Y. Filed Aug. 7, 1905.



The representation of an antique salt-cellar, showing a chariot with a figure seated on the same and an open receptacle for salt resting on the rear and thereof.

SER. No. 11,504. WHISKY. EDWARD BLOCK & Co., Kansas City, Mo. Filed Aug. 10, 1905.

RICH LAWN

The words "RICH LAWN."

SER. No. 11,569. HORSESHOES AND CALKS. THE NEVERSLIP MANUFACTURING COMPANY, New Brunswick, N. J. Filed Aug. 12, 1905. Used ten years.

NEVERSLIP

The word "NEVERSLIP."

SER. No. 11,628. CATARRHAL REMEDY. GEORGE WILSON, Purcell, Miss. Filed July 18, 1905.



The picture of the registrant.

SER. No. 11,627. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS CO., New Haven, Conn. Filed Aug. 14, 1905.



A monogram of the letters "P W" inclosed by an oval.

SER. No. 11,652. LIQUID GLUE, GUM, AND MUCILAGE. LYONS INK, LIMITED, Manchester, England. Filed Aug. 14, 1905.

CLUCINE

The word "CLUCINE."

SER. No. 11,694. BUTTER. OWL'S HEAD CREAMERY COMPANY, Enosburg Falls, Vt. Filed Aug. 16, 1905.



The representation of an owl perched on a limb with its head appearing through an elliptically-shaped figure.

SER. No. 11,935. CHOCOLATE. SOCIÉTÉ GÉNÉRALE SUISSE DE CHOCOLATS, Vevey, Switzerland. Filed Aug. 22, 1905.

GALA

The word "GALA."

SER. No. 11,940. ALBUMEN OBTAINED FROM THE TREATMENT OF STARCH. TOLMATSCH & KLEIN, Frankfort-on-the-Main, Germany. Filed Aug. 23, 1905.

Ser. No. 11,940.

Tolly

The word "Tolly" arranged in the space formed by two oppositely-disposed intersecting triangles.

Ser. No. 11,942. SEMIMONTHLY MAGAZINE. Review Publishing Company, New York, N. Y. Filed Aug. 22, 1905.

THE CARPET AND UPHOLSTERY TRADE REVIEW

The words "The Carpet and Upholstery Trade Review."

Ser. No. 11,953. CHOCOLATE. Société Générale Suisse de Chocolats, Vevey, Switzerland. Filed Aug. 24, 1905.

DELTA

The word "Delta."

Ser. No. 11,968. GRASS AND FIELD SEEDS. Wm. G. Scarlett, Baltimore, Md. Filed Aug. 24, 1905.

ACORN 8 BRAND

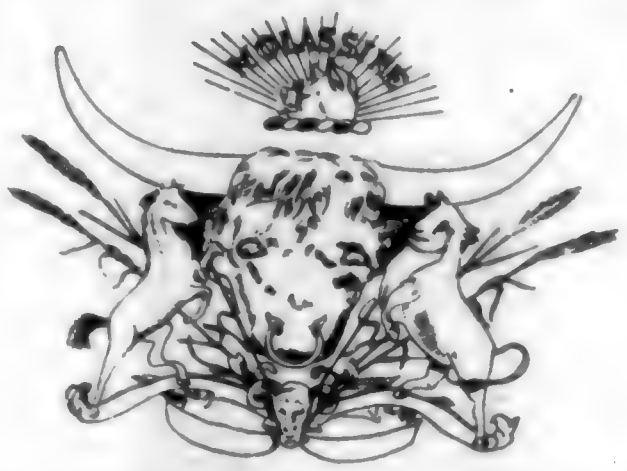
The representation of an acorn on which is the letter "8," above which is the word "Acorn" and under which is the word "Brand."

Ser. No. 12,039. ROOFING, SHEATHING, WATERPROOFING, AND BUILDING FELT. Warren-Kerry Company, Philadelphia, Pa. Filed Aug. 26, 1905. Used ten years.

ACME

The word "Acme."

Ser. No. 11,986. PREPARED FOOD AND COMPOUNDS FOR USE AS AND FOR ADMIXTURE WITH FOOD FOR STOCK. The Molassine Company, Ld., London, England. Filed Aug. 26, 1905.



A bull's head with a ring through its nose, pigs for eyes, and lambs for nostrils, said head flanked by a horse and bull rampant, supported by a scroll with a ram's head in center thereof and stalks of corn thrust through its horns, and of a boar's head above the bull's head as a crest on a bar on a background of radiating rays bearing the word "Molassine."

Ser. No. 12,074. COATS, VESTS, TROUSERS, AND OVERCOATS. M. Wile & Company, Buffalo, N. Y. Filed Aug. 30, 1905.

"CLOTHES OF QUALITY"

The words "Clothes of Quality" flanked by quotation-marks.

Ser. No. 12,149. TONIC REMEDY FOR TREATMENT OF HEART, LUNG, KIDNEY, LIVER, NERVE, AND OTHER ORGANIC DISEASES. The Moro Medical Co., Montreal, Canada. Filed Sept. 1, 1905.



The fanciful representation of a man's head in the garb of a friar or monk, associated with the words "Moro's Pills for Men." The head is surrounded by a circular border, from the opposite sides of which extend panels.

Ser. No. 12,282. APERIENT PILLS AND PILLS FOR THE TREATMENT OF THE LIVER AND KIDNEYS. Robert Henry Nevill Johnson, London, England. Filed Sept. 6, 1905.

Eugene Le Clerc

The facsimile representation of the signature of "Eugene Le Clerc."

SER. No. 12,214. CEREAL PASTE FOODS, SUCH AS MACARONI, SPAGHETTI, AND VERMICELLI. THE JOHN B. CANEPA COMPANY, Chicago, Ill. Filed Sept. 5, 1905. Used ten years.



STAR

The word "STAR" and the representation of a five-pointed star.

SER. No. 12,274. MACHINERY-PACKING. CHARLES NUHRING, Cincinnati, Ohio. Filed Sept. 6, 1905.

IXL

The letters "I. X. L."

SER. No. 12,352. MAINSPRINGS FOR TIMEPIECES. BENJAMIN ALLEN, Chicago, Ill. Filed Sept. 7, 1905.



The letters, character, and abbreviation "B A & Co" on a diamond-shaped figure.

SER. No. 12,375. SCRAPPLE. THOMAS HARRIS, New York, N. Y. Filed Sept. 8, 1905.

PANAP

The arbitrary word "PANAP."

SER. No. 12,390. CANNED SARDINES. WILLIAM UNDERWOOD COMPANY, Boston, Mass. Filed Sept. 8, 1905.

A T

The letters "A T."

SER. No. 12,506. CARBONATED TONIC BEVERAGE AND THE EXTRACT FOR MAKING THE SAME. BLUE SEAL SUPPLY CO., Boston, Mass. Filed Sept. 12, 1905.

SER. No. 12,506.



The representation of a bear standing erect and holding a stick in its paws, associated with the hyphenated word "RON-BRE," both being inclosed in scroll ornamentation and all being inclosed in a rhombus.

SER. No. 12,666. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa. Filed Sept. 15, 1905.

REDSTONE

The word "REDSTONE."

SER. No. 12,833. WHEAT-FLOUR. BALLARD & BALLARD CO., Louisville, Ky. Filed Sept. 21, 1905.

TIPO 2 ESPECIAL

The words and numeral "TIPO 2 ESPECIAL."

SER. No. 12,834. WHEAT-FLOUR. BALLARD & BALLARD CO., Louisville, Ky. Filed Sept. 21, 1905.



The words and numeral "HARINA SUPERIOR TIPO 2 ESPECIAL" inclosed in an ornamental border.

SER. No. 13,108. SCISSORS AND SHEARS. EMIL FORSBERGH, New York, N. Y. Filed Sept. 28, 1905.

SER. No. 13,109.

NEEDLEPOINT

The word "NEEDLEPOINT."

SER. No. 13,134. BATH-TUBS. STANDARD SANITARY MFG. CO., Pittsburg, Pa. Filed Sept. 20, 1905.

Perfecto

The word "PERFECTO."

SER. No. 13,204. EARTH-SCRAPERS. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio. Filed Oct. 2, 1905.

"K&J"

The letters and character "K & J" inclosed in quotation-marks.

SER. No. 13,300. WHEAT-FLOUR. THE SECURITY MILLING COMPANY, Abilene, Kans. Filed Oct. 5, 1905.



The word "HAVASAK," which is displayed upon a transverse scroll the ends of which inclose stalks of wheat, the pictorial representation of a bag of flour bearing the word "HAVASAK" upon a truck about which are representations of brownies, across the top in slightly overlapping curved lines the words "SECURITY MILLING CO" across the bottom a scroll bearing the words "THE CREAM OF KANSAS WHEAT."

SER. No. 13,348. SKIRTS AND PETTICOATS. BROWN, DURRELL & CO., Boston, Mass., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass., a Corporation of Massachusetts. Filed Oct. 5, 1905. Used ten years.

KINGSTON

The word "KINGSTON."

SER. No. 13,334. WHISKY. GLASNER & BARGEN DISTILLING & IMPORTING CO., Kansas City, Mo. Filed Oct. 5, 1905. Used ten years.

MOUNT AUBURN
Pure Rye
Old Monongahela
Glasner & Bargen,
KANSAS CITY, U.S.A.

The words "MOUNT AUBURN," associated with the words "PURE RYE OLD MONONGAHELA GLASNER & BARGEN, KANSAS CITY, U. S. A." and a circular figure bearing the monogram "G & B" and ornamented with fanciful scrollwork.

SER. No. 13,359. BOOKS ON SALESMANSHIP. THE NATIONAL SCHOOL OF SALESMANSHIP, Minneapolis, Minn. Filed Oct. 5, 1905.



A representation of the earth resting upon a base having thereon the words "SUCCESS" "FAITH" "WORK" "ROCK OF TRUTH," the whole surrounded by an oval border containing the words "THE NATIONAL SCHOOL OF SALESMANSHIP MINNEAPOLIS."

SER. No. 13,363. AXES. AMERICAN TOOL COMPANY, Highland Park, Ky. Filed Oct. 6, 1905.

W.K.THOMPSON

The name "W. K. THOMPSON," printed or impressed in the particular or distinctive manner disclosed—that is to say, the letters of said name increasing gradually in height from the center to the opposite ends of the name, said name being associated with scrolls arranged above and below the same.

SER. No. 13,416. WORSTED, WOOLEN, AND COTTON-MIXED PIECE GOODS. GRIFFON COMPANY, New York, N. Y. Filed Oct. 7, 1905.

GOLD SELVEDGE

The words "GOLD SELVEDGE."

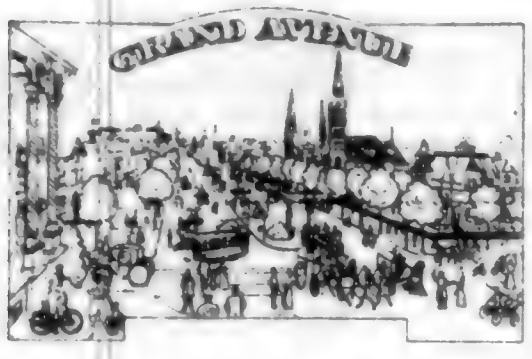
SER. No. 13,432. ENAMELED STEELWARE HOUSEHOLD AND COOKING UTENSILS. MAURICE STRAKOSCH, New York, N. Y. Filed Oct. 9, 1905. Used ten years.

SER. No. 13,432.

THE WARE THAT WEARS

The words "THE WARE THAT WEARS."

SER. No. 13,488. CIGARS. WILLIAMS & BRENCKLE CIGAR MANUFACTURING CO., Milwaukee, Wis. Filed Oct. 11, 1905. Used ten years.



The words "GRAND AVENUE," accompanied by a prospective view of a portion of Grand Avenue, at Milwaukee, Wisconsin.

SER. No. 13,504. HEADACHE SPECIFIC PUT UP IN TABULAR FORM. MIGRANOSE IMPORTING CO., Philadelphia, Pa. Filed Oct. 11, 1905.



The representation of an emblem which comprises the representation of a shield bearing the picture of a beaver at work, a crowned helmet supporting a crest of two wings, and filigree or scroll work arranged above and on each side of the shield.

SER. No. 13,529. CANDY. THE DARBY CANDY CO., Baltimore, Md. Filed Oct. 12, 1905. Used ten years.



The phrase "MADE BY DARBY."

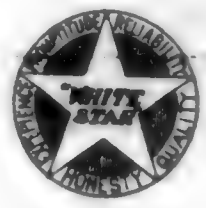
SER. No. 13,597. FURS IN THE PIECE AND FUR GARMENTS. MAX BOWSKY, New York, N. Y. Filed Oct. 14, 1905.

SER. No. 13,597.



The representation of the head of a dog wearing a collar on which appear the words "OLD RELIABLE."

SER. No. 13,647. DRY BATTERIES. EMPIRE STATE DRY BATTERY CO., New York, N. Y. Filed Oct. 16, 1905.



A star-shaped figure and inscribed in a circle around which are printed the words "PROMPTITUDE RELIABILITY QUALITY HONESTY EXPERIENCE." In the middle of the star are printed the words "WHITE STAR."

SER. No. 13,660. LAXATIVE PREPARATIONS. EL ZERNAC COMPANY, New York, N. Y. Filed Oct. 16, 1905.

TAKA LAXA

The words "TAKA LAXA."

SER. No. 13,700. GAS-BURNERS AND MANTLES THEREFOR. WELSBACH LIGHT COMPANY, Gloucester, N. J. Filed Oct. 17, 1905. Used ten years.

WELSBACH

The word "WELSBACH."

SER. No. 13,741. EXTRACT OF BEEF. THE PIONEER PACKING COMPANY, Omaha, Nebr. Filed Oct. 19, 1905.

Marshall's

The word "MARSHALL'S," in the possessive, in script.

SER. No. 13,768. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C. Filed Oct. 19, 1905.

BLUE RIBBON

The words "BLUE RIBBON."

SER. No. 13,765. SPICES. GEWERICH & VON BERKEN, New York, N. Y. Filed Oct. 19, 1905.



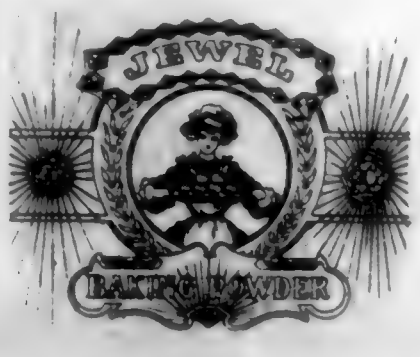
The representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND," set in ornamental type, on a curved line above the representation of the diamond.

SER. No. 13,800. CANNED OYSTERS. THE BOOTH PACKING COMPANY, Baltimore, Md. Filed Oct. 21, 1905.

OLD HONESTY

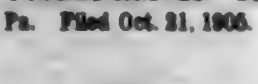
The words "OLD HONESTY."

SER. No. 13,808. BAKING-POWDER. FRANK L. SABRINER, New York, N. Y. Filed Oct. 21, 1905.



The phrase "JEWEL BAKING POWDER," in connection with a picture showing in front view a waitress wearing an apron and a cap and carrying in both hands a tray, said picture being surrounded by a fanciful border and a band or panel embellished by the representation of sparkling jewels.

SER. No. 13,820. POCKET-KNIVES. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905.



The representation of a mural crown and an arrow projected across the same.

SER. No. 13,824. SHOVELS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa. Filed Oct. 21, 1905. Used ten years.



The word "FAIRMOUNT" and the representation of a diamond-shaped figure within which said word is contained, a bar and angular figures above and below the latter, said bar and angular figures being inclosed by said diamond-shaped figure.

SER. No. 13,896. BISCUIT OR CRACKERS. THE NATURAL FOOD COMPANY, Niagara Falls, N. Y. Filed Oct. 24, 1905.

TRISCUIT

The word "TRISCUIT."

SER. No. 13,946. PAPER AND ENVELOPS, INCLUDING BOTH RULED AND UNRULED COMMERCIAL AND CORRESPONDENCE PAPER OF ALL KINDS, BOTH SHEET AND BOUND FORM. FITZ ALLEN FLINN, New York, N. Y. Filed Oct. 25, 1905.



The representation of a bell having in its side or face a crack, split, mutilation, or irregular fracture.

SER. No. 13,956. TONICS AND MEDICATED WINES. MARIANI & CO., New York, N. Y. Filed Oct. 26, 1905. Used ten years.

VIN TONIQUE MARIANI
A LA
COCA DU PÉROU



The words "VIN TONIQUE MARIANI A LA COCA DU PÉROU," together with the representation of the top of a bottle-cap resting on the upper end of the neck of a bottle. On the said bottle-cap inclosed in a circle are the words and figures "MARIANI 41, BD. HAUSSMANN" and the representation of coca-seed. On the side of the capsule at the end of the neck of the bottle is the facsimile signature "A MARIANI," and on the top of said capsule is the representation of the seed of the coca-plant.

SER. No. 13,991. ADHESIVE PLASTERS. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905.

ZO

The letters "Z O."

SER. No. 14,005. FELTED ABSORBENT COTTON. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

LINTINE

The coined word "LINTINE."

SER. No. 14,009. FELTED ABSORBENT COTTON. JOHNSON & JOHNSON, New Brunswick, N. J. Filed Oct. 28, 1905. Used ten years.

COTTONOID

The coined word "COTTONOID."

SER. No. 14,161. SPECTACLES, EYEGLASSES, AND LENSES FOR SPECTACLES AND EYEGLASSES. A. K. HAWKES, Atlanta, Ga. Filed Nov. 1, 1905. Used ten years.



The representation of two eyes, the word "HAWKES" and a scroll being placed between said eyes, and a pair of spectacles located below said eyes and showing on the center of the same a crystal with rays radiating therefrom and the words "CRYSTALISED LENSES" below the spectacles, the whole being surrounded by a plain border straight at the upper part and curved at the sides and lower part.

SER. No. 14,207. ANESTHETICS. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany. Filed Nov. 2, 1905.

NOVOCAIN

The word "NOVOCAIN."

SER. No. 14,355. WINDOW-SHADE CLOTH AND SHADES. JAY C. WEMPLE CO., New York, N. Y. Filed Nov. 6, 1905.

EMPIRE

The word "EMPIRE."

SER. No. 14,366. VANILLA-OIL. CORRIDO EXTRACT CO., New York, N. Y. Filed Nov. 6, 1905.

Vanoleum

The word "VANOLEUM."

SER. No. 14,424. SHEETINGS AND DRILLINGS. BUFFALO COTTON MILLS, Buffalo, S. C. Filed Nov. 8, 1905.

SER. No. 14,424.



The representation of a Chinese boy having an apple on his shoulder, the whole being arranged within a circular border, and below the same the word "ORCHARD" and the representation of two apples.

SER. No. 14,425. SHEETINGS AND DRILLINGS. BUFFALO COTTON MILLS, Buffalo, S. C. Filed Nov. 8, 1905.



SABLE

The representation of a sable having a bird in its mouth and associated with the word "SABLE."

SER. No. 14,427. SHEETINGS. CAREY, BAYNE & SMITH COMPANY, (INCORPORATED,) New York, N. Y. Filed Nov. 8, 1905.



The words "COPPER FASTENED" arranged within the representation of a frame on which metal straps are indicated.

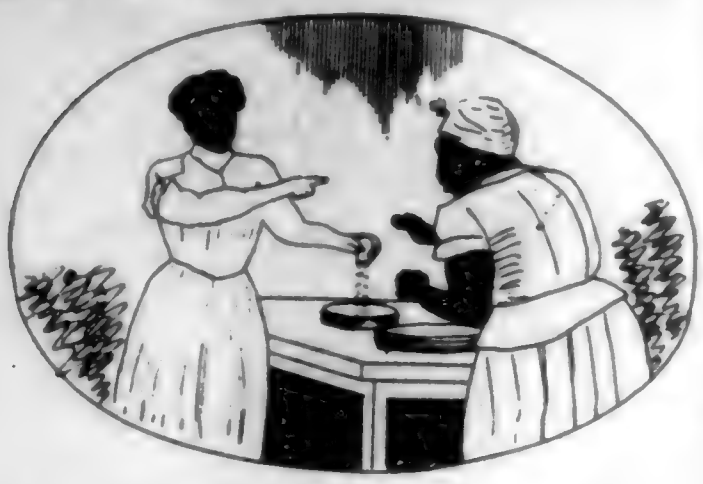
SER. No. 14,444. CLOCKS AND WATCHES. THE WESTERN CLOCK MFG. CO., La Salle, Ill. Filed Nov. 9, 1905.

"O. K."

The letters "O. K." inclosed in quotation-marks.

SER. No. 14,527. SALT. PETER J. L. BRAKING, New York, N. Y. Filed Nov. 13, 1905.

SER. No. 14,527.



The representation of two colored women facing each other and standing at a kitchen-table. One of the colored women wears a turban, and she is endeavoring to shake salt out of a salt-box, while the other colored woman is bareheaded and holds in her hand a salt-box from which the salt is flowing freely, with the disengaged hand pointing to the said colored woman with the turban.

SER. No. 14,591. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,594. MOWER, BINDER, REAPER, AND HEADER KNIFE AND SICKLE-HEADS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,597. GRINDSTONE-FRAMES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 14, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,712. TACK-CLAWS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 18, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,716. SCREW-DRIVERS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.



A representation of a diamond-shaped figure with the letters and character "W" "&" "B" "Co" placed in the respective corners thereof.

SER. No. 14,717. KNIFE-SECTIONS, INCLUDING MOWER, REAPER, BINDER, AND HEADER KNIFE-SECTIONS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Nov. 16, 1905.



A representation of a diamond-shaped figure with the letters and character "W & B Co" placed in the respective corners thereof.

SER. No. 14,798. BUTTONS. ALMA MANUFACTURING CO., Baltimore, Md. Filed Nov. 18, 1905.



The arbitrary word "To-Go" and the words "IVORY FINISH," all placed within a circle.

SER. No. 14,845. FEED-WATER HEATERS. THE NATIONAL PIPE BENDING COMPANY, New Haven, Conn. Filed Nov. 20, 1905. Used ten years.

NATIONAL.

The word "NATIONAL."

SER. No. 14,875. MOTOR-VEHICLES, COMMONLY KNOWN AS AUTOMOBILES. PREMIER MOTOR MANUFACTURING COMPANY, Indianapolis, Ind. Filed Nov. 21, 1905.



The words "THE QUALITY CAR."

SER. No. 14,876. MOTOR-VEHICLES COMMONLY KNOWN AS AUTOMOBILES. PREMIER MOTOR MANUFACTURING COMPANY, Indianapolis, Ind. Filed Nov. 21, 1905.

Premier

The word "PREMIER."

SER. No. 14,883. PACKAGES OF COTTON-BATTING OF VARIOUS SIZES AND WEIGHTS PREPARED FOR THE MARKET AND FOR TRADE AND COMMERCE. WILLIAM LOWENTHAL, Cohoes, N. Y. Filed Nov. 21, 1905.

LILY

The word "LILY."

SER. No. 14,901. WHEAT-FLOUR. THE GEARY MILLING & ELEVATOR COMPANY, Geary, Okla. Filed Nov. 22, 1905.



The representation of a dog's head, the words "THE FLOUR OF PURITY" above, and the words, character, and abbreviation "GEARY MILL & ELEVATOR CO'S TRUE FRIEND, GEARY, OKLA.," which, together with ornamental scrolls, are inclosed in an elliptical frame below the representation of the dog's head.

SER. No. 14,988. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa. Filed Nov. 25, 1905.

CARPE DIEM

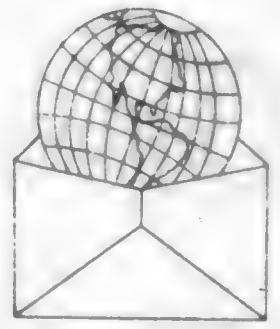
The fanciful title "CARPE DIEM."

SER. No. 14,964. WHEAT-FLOUR. HIGHLAND MILLING COMPANY, Highland, Ill. Filed Nov. 24, 1905.

HIGHLAND BEAUTY

The words "HIGHLAND BEAUTY."

SER. No. 14,984. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa. Filed Nov. 25, 1905.



The representation of an envelop and a terrestrial globe emerging therefrom.

SER. No. 14,985. ENVELOPS AND PAPER. CHARLES J. COHEN & SON, Philadelphia, Pa. Filed Nov. 25, 1905.

ZENITH

The fanciful title "ZENITH."

SER. No. 15,024. WHEAT-FLOUR. ELLENDALE MILLING COMPANY, Ellendale, N. D. Filed Nov. 27, 1905. Used ten years.



BEAUTIFUL

The word "BEAUTIFUL," associated with a bust picture of a woman wearing a high ruff and a crown.

SER. No. 15,033. TYPE-WRITER RIBBONS. JOHN R. KRATINER, New York, N. Y. Filed Nov. 22, 1905.



A black diamond-shaped figure upon which appear the words "DIAMOND BRAND" and upon which is outlined a diamond-shaped figure divided into halves by a horizontal line, the upper half being equally divided by a vertical line and the lower half containing the letter "S," the whole inclosed in a diamond-shaped figure, the sides of which are parallel to those of the inner diamond-shaped figures.

SER. No. 15,118. TELEPHONE-SWITCHBOARDS. THE SUMTER TELEPHONE MFG. CO., Sumter, S. C. Filed Dec. 1, 1905.

Unitype

The arbitrary word-symbol "UNITYPE."

SER. No. 15,154. WHEELED LEVER OF IMPROVED DESIGN AND ADAPTED TO BE INSERTED UNDER THE END OF A LOAD OF LUMBER AND TO RAISE THE LOAD OFF THE SUPPORT. JOHN M. PERRINE, Jr., Tacoma, Wash. Filed Dec. 2, 1905.

MACK-JACK

The hyphenated word "MACK-JACK."

SER. No. 15,168. HYDRAULIC CEMENT. UTICA CEMENT MFG. CO., Utica, Ill. Filed Dec. 4, 1905.



The words "BLACK BALL BRAND" and the representation of a black ball.

SER. No. 15,230. RIBBONS OF DIFFERENT SHADES AND COLORS. FRY & FRIEDGAM, New York, N. Y. Filed Dec. 6, 1905.



The words "RADIUM RIBBONS" inclosed in a circular band.

SER. No. 15,193. CHEWING AND SMOKING TOBACCO. THE BLOCH BROS TOBACCO CO, Wheeling, W. Va. Filed Dec. 4, 1905.



The words "MERRY WORLD," associated with a conventional representation of the world upon which is delineated a smiling face, parallels of latitude and longitude appearing on the world where the features of the depicted face are not thereby rendered indistinct.

SER. No. 15,251. CHEWING-GUM. F. J. SANTA & SON, Lima, Ohio. Filed Dec. 7, 1905.



The bust picture of a college girl in mortar-board cap and gown, associated with the word "VARSITY" and with the words "PEPSIN CHEWING GUM."

SER. No. 15,256. BUTTER. FERDINAND GRUNERT, Chicago, Ill. Filed Dec. 7, 1905. Used ten years.



The words "BLUE LABEL" disposed in two horizontal lines upon a rectangular blue figure or background, said background being disposed obliquely of the margin of the label.

SER. No. 15,278. ACCORDIONS. CHARLES BRUNO, New York, N. Y. Filed Dec. 8, 1905.



The representation of a lyre used in connection with the word "LYRA."

SER. No. 15,312. HOLLOW ENAMELED STEELWARE. LEFFLER, TEEBLE & Co., New York, N. Y. Filed Dec. 8, 1905.



The arbitrarily-selected word "PYROLITE" arranged on an oblong block held in the jaws of a lion's head, which is surrounded by a circular band on which the words "IMPORTED QUADRUPLE-COATED WARE" are placed.

SER. No. 15,336. DRIED FRUITS. S. C. TOOKER & Co., Minneapolis, Minn. Filed Dec. 11, 1905.



The word "LASS-O."

SER. No. 15,362. INTERNAL REMEDIES FOR THE TREATMENT OF RHEUMATISM, SCIATICA, NEURALGIA, AND GOUT. HENRY F. EDGALL, San Francisco, Cal. Filed Dec. 12, 1905. Used ten years.

PINUS

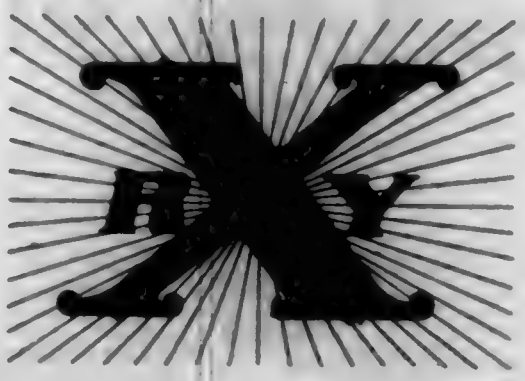
The word "PINUS."

SER. No. 15,383. INSULATING-TAPE. MASSACHUSETTS CHEMICAL COMPANY, Walpole, Mass. Filed Dec. 13, 1905.

DRYFIELD

The word "DRYFIELD."

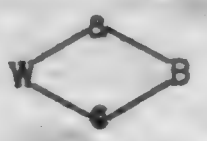
SER. No. 15,422. WHEAT-FLOUR. CORDELL GIN & MILLING COMPANY, Cordell, Okla. Filed Dec. 14, 1905.



On a background consisting of radiating lines the letter "X," on which is imposed the word "RAY."

SER. No. 15,445. CULTIVATORS. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio. Filed Dec. 15, 1905.

SER. No. 15,445.



A representation of a diamond-shaped figure with the letters and character "W & B Co." placed in the respective corners thereof.

SER. No. 15,471. LEATHER SHOES. AUGUSTUS WRIGHT COMPANY, Petersburg, Va. Filed Dec. 16, 1905.



The words "HIGH ART."

SER. No. 15,503. STEEL PENS. PAYOT, UPHAM & Co., San Francisco, Cal. Filed Dec. 18, 1905.



The representation of a scimiter and a swastika or fylfot superposed thereon.

SER. No. 15,504. STEEL PENS. PAYOT, UPHAM & Co., San Francisco, Cal. Filed Dec. 19, 1905.

AKBAR

The word "AKBAR."

SER. No. 15,544. OVERALLS, COMPREHENDING THEREIN BOTH OVERTROUSERS AND OVERSHIRTS USED BY WORKINGMEN. THE GLOBE OVERALL CO., Cincinnati, Ohio. Filed Dec. 20, 1905.



The representation of a workman swinging a lantern, the position of the lantern being in what is known in railway-signaling language as "safe" or "all right," and the word "ALRITE" extending across the representation of the man and inclosed in quotation-marks.

SER. No. 15,605. WOMEN'S SHIRT-WAISTS AND SHIRT-WAIST SUITS. J. MAYER & Co., Baltimore, Md. Filed Dec. 22, 1905.



The words "THE MONOGRAM," with a monogram of the letters, character, and abbreviation "J. M. & Co." appearing in the loop of the letter "M."

SER. No. 15,648. TOILET-PAPER. THOMAS F. SPRIGG, Baltimore, Md. Filed Dec. 28, 1905.

Sanitary
HIGH GRADE
THOROUGHLY MEDICATED WITCH-HAZEL
TOILET PAPER
EXPRESSLY PREPARED, AND FOR FINE DRUGGISTS' TRADE.

The representation of a growing bush appearing in connection with the words "SANITARY HIGH GRADE THOROUGHLY MEDICATED WITCH-HAZEL TOILET PAPER. EXPRESSLY PREPARED, AND FOR FINE DRUGGISTS' TRADE."

SER. No. 15,650. MAGAZINE OR PERIODICAL. CURRIER-BOYCE COMPANY, Chicago, Ill. Filed Dec. 28, 1905.

Woman's World

The words "WOMAN'S WORLD."

SER. No. 16,060. HORSESHOES. THE INTERNATIONAL UNION OF JOURNEYMEN HORSESHOERS, Denver, Colo. Filed Dec. 27, 1905.

JHU

The letters "J H U" arranged in the form of a monogram.

SER. No. 16,155. POULTRY MEDICINE FOR LIMBER NECK AND ROUP. CHARLES J. CLARKE, Paris, Ky. Filed Jan. 12, 1906. Used ten years.

CLARKE'S
LIMBER NECK
AND
ROUP CURE

The words "CLARKE'S LIMBER NECK AND ROUP CURE."

SER. No. 16,173. REMEDY FOR THE CURE OF RHEUMATISM AND GOUT. ERNST BISCHOFF, New York, N. Y. Filed Jan. 13, 1906.

Spiroform

The word "SPIROFORM."

SER. No. 16,189. HOSIERY. ERNEST BLOOD, Philadelphia, Pa. Filed Jan. 11, 1906.

The Blood Mfg Co

The written autograph signature "THE BLOOD MFG. CO." in the handwriting of Ernest Blood, the applicant.

SER. No. 16,198. OINTMENT. PRESLEY GARY, Tiptonville, Tenn. Filed Jan. 15, 1906. Used ten years.

Dr. GARY'S
VEGETABLE OINTMENT
FOR
FEMALE DISEASES.

The words "DR. GARY'S VEGETABLE OINTMENT FOR FEMALE DISEASES."

SER. No. 16,209. CATHARTIC PILLS AND TABLETS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y. Filed Jan. 16, 1906.



The representation of a human eye having wings extending from each side thereof in a downwardly direction. In the open space between these wings beneath the eye is a portrait of James Doan, below which are printed the words "DOAN'S DINNER PILLS." On the wing at the left of the portrait is the word "DOAN'S" and on the one at the right the word "SPECIALITIES."

SER. No. 16,210. CATHARTIC PILLS AND TABLETS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y. Filed Jan. 16, 1906.



The representation of a human eye having wings extending from each side thereof in a downwardly direction. In the open space between the wings beneath the eye is a portrait of James Foster, below which are printed the words "FOSTER'S DINNER PILLS." On the wing at the left of the portrait is the word "FOSTER'S" and on the one at the right the word "SPECIALITIES."

SER. No. 16,212. OINTMENTS. FOSTER-MCCLELLAN COMPANY, Buffalo, N. Y. Filed Jan. 16, 1906.



An inclosing band or circle having on opposite sides thereof extending inwardly for some distance from its circumference opposing scrolls or ribbons. In the space above the scrolls or ribbons on a segmental solid field concentric with the inclosing circle and adjacent thereto are arranged the words "FOSTER'S OINTMENT." Directly below this solid segmental field is a concentric open or skeleton field. In the space below this open field and opposite the inner ends of the scrolls or ribbons is arranged the portrait of James Foster, above which is the representation of a human eye having wings extending downwardly from each side thereof and partially inclosing said portrait. On the wing at the left of the portrait is the word "FOSTER'S" and on the wing at the right the word "SPECIALITIES." Below the portrait is a band or circle concentric with the inclosing circle and connecting the scrolls or ribbons.

SER. No. 16,218. ALTERATIVE, TONIC, AND BLOOD-PURIFYING COMPOUNDS. SAMUEL K. ELLIOTT, Los Angeles, Cal. Filed Jan. 16, 1906.



The letter-symbol "S. K. E."

SER. No. 16,222. CIGARS. GEORGE W. KELLY, Belmont, Ohio. Filed Jan. 16, 1906.



The words "BIG BUCK" and the representation of a buck's head.

SER. No. 16,301. LAXATIVES. FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1906.

KASAGRA

The word "KASAGRA."

SER. No. 16,302. NEURALGIA AND HEADACHE REMEDY. FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1906.

SHAC

The word "SHAC."

SER. No. 16,303. NEURALGIA AND HEADACHE REMEDY. FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1906.



A blue triangular field.

SER. No. 16,304. MEDICINE FOR GONORRHEA AND ITS COMPLICATIONS AND FOR THE TREATMENT OF ALL CASES WHERE A URINARY ANTISEPTIC IS INDICATED. FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1906.

METHYLOIDS

The word "METHYLOIDS."

SER. No. 16,305. MEDICINE FOR AFFECTIONS OF THE THROAT AND BRONCHIAL TUBES. FREDERICK STEARNS & Co., Detroit, Mich. Filed Jan. 19, 1906.

Zymole Pastyls

The words "ZYMOLE TROKEYS."

SER. No. 16,310. DIETETIC ALBUMINOUS PREPARATIONS. BAUER & Co., Berlin, Germany. Filed Jan. 19, 1906.

SANATOGEN

The word "SANATOGEN."

SER. No. 16,403. PLASTIC BLACK INSULATING COMPOUND FOR ARMATURE AND FIELD COILS AND OTHER ELECTRICAL APPARATUS. EMIL CALMAN & Co., New York, N. Y. Filed Jan. 22, 1906.

OHM-LAC

The name "OHM-LAC."

SER. No. 16,418. SPICES. OKLAHOMA WHOLESALE GROCER CO., Oklahoma, Okla. Filed Jan. 22, 1906.



The word "QUAIL" and the picture of a quail inclosed by two concentric circles with grass in the background and with ornamental scrollwork at each side of the circles.

SER. No. 16,423. CHEESE. POPPER GRAY & CO., New York, N. Y. Filed Jan. 22, 1906.



The representation of an ornamental bow of ribbon, upon the knot portion of which appear the letters and abbreviation "P G & Co" in monogram form. Above the bow appear the words "MANHATTAN BRAND" and below the bow the words "CREAM CHEESE," the whole being inclosed within a rectangular border.

SER. No. 16,433. STUFFED OLIVES. S J VALK & BRO., New York, N. Y. Filed Jan. 23, 1906.



The words "LITTLE ELVES" and the representation of an elf or tiny quaint human figure with one arm akimbo and the other extended holding a stuffed olive.

SER. No. 16,555. PURE MALT SCOTCH WHISKY. GEORGE SMITH GRANT, Inveraven, Scotland. Filed Jan. 26, 1906. Used ten years.

GLENLIVET

The word "GLENLIVET."

SER. No. 16,647. MALT WHISKY. GOLDBERG, BOWEN & COMPANY, San Francisco, Cal. Filed Jan. 31, 1906.

SER. No. 16,647.



A vignette portrait of William Penn, the words "OLD WILLIAM PENN" written in script above the same, and an ornamental panel of generally rectangular shape with curved border and scrollwork intertwined beneath said portrait.

SER. No. 16,717. MEDICINAL PREPARATIONS IN LIQUID AND SOLID FORM FOR INTERNAL USE. BRISTOL-MYERS COMPANY, Brooklyn, N. Y. Filed Feb. 3, 1906.

GASTROGEN

The word "GASTROGEN."

SER. No. 16,718. MEDICINAL PREPARATIONS IN LIQUID AND SOLID FORM FOR INTERNAL USE. BRISTOL-MYERS COMPANY, Brooklyn, N. Y. Filed Feb. 3, 1906.

PAP-A-SINE

The word "PAP-A-SINE."

SER. No. 16,834. COTTON PIECE GOODS. EVERETT MILLS, Lawrence, Mass. Filed Feb. 8, 1906.



The representation of the head and shoulders of a tiger.

SER. No. 16,949. BUCKETS FOR PUMP-BUCKET CHAINS. THE TEMPLE PUMP COMPANY, Chicago, Ill. Filed Feb. 13, 1906. Used ten years.

VICTOR

The word "VICTOR."

SER. No. 17,164. CULINARY UTENSILS MADE OF GALVANIZED WARE. THE LISK MANUFACTURING CO. LIMITED, Canandaigua, N. Y. Filed Feb. 19, 1906. Used ten years.



The representation of a Maltese cross and the word "LISK" in the middle of the cross.

SER. No. 17,179. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed Feb. 19, 1906.



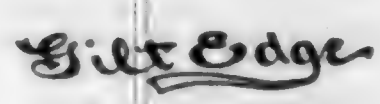
The word "ELECTRO."

SER. No. 17,189. REFRIGERATORS. EUREKA REFRIGERATOR CO., Indianapolis, Ind. Filed Feb. 19, 1906.



The word "OPAL."

SER. No. 17,246. CRAYONS. THE AMERICAN CRAYON CO., Sandusky, Ohio. Filed Feb. 22, 1906. Used ten years.



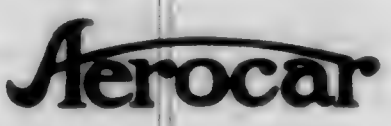
The words "GILT EDGE."

SER. No. 17,247. CRAYONS. THE AMERICAN CRAYON CO., Sandusky, Ohio. Filed Feb. 22, 1906.



The word "HYGIEIA."

SER. No. 17,250. AUTOMOBILES. THE AEROCAR COMPANY, Detroit, Mich. Filed Feb. 23, 1906.



The word "AEROCAR."

SER. No. 17,251. AUTOMOBILES. THE AEROCAR COMPANY, Detroit, Mich. Filed Feb. 22, 1906.



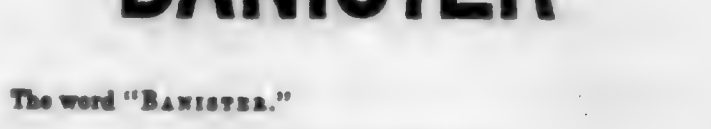
Two concentrically-arranged circles having arranged within the word "AEROCAR" on vertical and horizontal panels intersecting in the form of a cross.

SER. No. 17,258. PRESS OR MACHINE FOR SETTING AND REMOVING EYELETS, SOMETIMES ALSO CALLED "FASTENERS," "BINDERS," AND "RIVETS." EDWARD L. SIBLEY, Bennington, Vt. Filed Feb. 22, 1906.



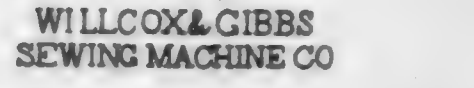
The word "CHALLENGE."

SER. No. 17,269. MEN'S AND BOYS' LEATHER BOOTS, SHOES, AND SLIPPERS. JAMES A. BANISTER COMPANY, Newark, N. J. Filed Feb. 22, 1906. Used ten years.



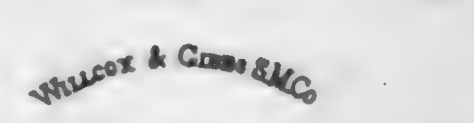
The word "BANISTER."

SER. No. 17,318. SEWING-MACHINES AND SEWING-MACHINE PARTS AND ATTACHMENTS. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y. Filed Feb. 24, 1906. Used ten years.



The words "WILLCOX & GIBBS SEWING MACHINE CO."

SER. No. 17,320. SEWING-MACHINES AND SEWING-MACHINE PARTS AND ATTACHMENTS. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y. Filed Feb. 24, 1906. Used ten years.



The words and letters "WILLCOX & GIBBS S. M. CO."

SER. No. 17,365. CIGARETTE-PAPER IN ALL FORMS. LEOPOLD KEELMANN, New York, N. Y. Filed Feb. 26, 1906.



The word "SUNRISE."

SER. No. 17,374. GAS OR OIL ENGINES. THE TEMPLE PUMP COMPANY, Chicago, Ill. Filed Feb. 26, 1906.

Master Workman

The words "MASTER WORKMAN."

SER. No. 17,384. HAIR-CURLERS. MAGIC CURLER COMPANY, Philadelphia, Pa. Filed Feb. 27, 1906.



A bar having a mass of hair wound thereon.

SER. No. 17,396. DEVICES FOR CONNECTING BRANCH AND MAIN CIRCUITS. H. T. PAINE Co., Philadelphia, Pa. Filed Feb. 26, 1906.

TAPLETS

The word "TAPLETS."

SER. No. 17,445. FIELD-SEEDS AND GRASS-SEEDS, INCLUDING CLOVER-SEEDS. HORACE E. CONKLIN, Binghamton, N. Y. Filed Mar. 1, 1906.

I X L

The letters "I X L."

50,580. PLOW
La.
The words "S
Filed August
UARY 30, 1906.

50,581. PIAN
The word "B
Filed August
ARY 30 1906.

50,582. H
Catasauqua
The word "B
Filed Decemb
JANUARY 30,

50,583. DUPL
PADS THE
Falls, N. Y.
The word "Co
Filed January
UARY 30, 1906.

50,584. PISTO
ING COMPAN
The words and
FORD. CT. U. S.
Filed August
ARY 30, 1906.

50,585. PISTO
ING COMPAN
The words "(
closed for distin
Filed August
ARY 30, 1906.

50,586. ROPE
The represents
coil a pictorial
woman wearing
scribed the wor
sented a section
the words and
N. Y."
Filed July 28,
ARY 30, 1906.

50,587. CALF
CALF. DO
The represents
appear represent
which appear th
Filed July 27,
ARY 30, 1906.

50,588. GRAN
burg, Pa.
The word "M
woman carrying
ranged on each
rectangular fram
Filed October
UARY 30, 1906.

50,589. AX
TOOL WORK
The representa
121 o G

TRADE-MARKS

REGISTERED MARCH 27, 1906.

50,580. PLOWS. A. BALDWIN & CO. LIMITED, New Orleans, La.

The words "SOUTHERN BELLE."

Filed August 12, 1905. Serial No. 11,616. PUBLISHED JANUARY 30, 1906.

50,581. PIANOS. HATTIE BAUMEISTER, New York, N. Y.

The word "BAUMEISTER." Used ten years.

Filed August 7, 1905. Serial No. 11,385. PUBLISHED JANUARY 30 1906.

50,582. HORSESHOES. BRYDEN HORSE SHOE COMPANY, Catasauqua, Pa.

The word "Boss."

Filed December 22, 1905. Serial No. 15,590. PUBLISHED JANUARY 30, 1906.

50,583. DUPLICATE SALES-SLIP BOOKS AND PAPER PADS THEREFOR. CARTER-CRUME CO. LIMITED, Niagara Falls, N. Y.

The word "CONTINUOUS."

Filed January 4, 1906. Serial No. 15,891. PUBLISHED JANUARY 30, 1906.

50,584. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The words and abbreviations "COLT'S PT. F. A. MFG. CO. HARTFORD. CT. U. S. A." Used ten years.

Filed August 1, 1905. Serial No. 11,093. PUBLISHED JANUARY 30, 1906.

50,585. PISTOLS. COLT'S PATENT FIRE ARMS MANUFACTURING COMPANY, Hartford, Conn.

The words "(NEW SERVICE)", and these have been used inclosed for distinction by parentheses.

Filed August 1, 1905. Serial No. 11,094. PUBLISHED JANUARY 30, 1906.

50,586. ROPE. COLUMBIAN ROPE COMPANY, Auburn, N. Y.

The representation of a coil of rope having upon one end of the coil a pictorial representation of the head and shoulders of a woman wearing upon her head a cap on the band of which is inscribed the word "COLUMBIA." Just above the head is represented a section of rope with frayed ends. Below the figure are the words and abbreviations "COLUMBIAN ROPE CO. AUBURN, N. Y."

Filed July 28, 1905. Serial No. 10,962. PUBLISHED JANUARY 30, 1906.

50,587. CALFSKIN, PATENT-LEATHER, AND WAXED CALF. DOERR & REINHART, Worms, Germany.

The representation of a shield having an upper panel, in which appear representations of a key and a star, and a lower panel, in which appear the letters, character, and word "D & R WORMS."

Filed July 27, 1905. Serial No. 10,916. PUBLISHED JANUARY 30, 1906.

50,588. GRANULATED TOAST. DAVID JAMES ETLY, Pittsburg, Pa.

The word "MOST" and the representation of the bust of a woman carrying a dish of food, there being heads of wheat arranged on each side of the woman, the whole being inclosed in a rectangular frame.

Filed October 9, 1905. Serial No. 13,463. PUBLISHED JANUARY 30, 1906.

50,589. AXES, ADZES, AND HATCHETS. EVANSVILLE TOOL WORKS, Evansville, Ind.

The representation of the head of a fox.

Filed July 13, 1905. Serial No. 10,264. PUBLISHED JANUARY 30, 1906.

50,590. KNITTED COVERS FOR HOT-WATER BOTTLES. GLOVERSVILLE KNITTING CO., Gloversville, N. Y.

The representation of the letter "Y" constructed in open knitting and provided at the angle formed by the meeting of the inclined upper arms of the letter with a knot, knots also being shown upon each of the said inclined arms and adjacent to the upper ends thereof, associated with the word "NOT."

Filed September 26, 1905. Serial No. 13,037. PUBLISHED JANUARY 30, 1906.

50,591. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.

The word "JUPITER."

Filed August 7, 1905. Serial No. 11,363. PUBLISHED JANUARY 30, 1906.

50,592. CHROME-TANNED LEATHER. P. RIELLY & SON, Newark, N. J.

The word "NIKETES."

Filed July 15, 1905. Serial No. 10,375. PUBLISHED JANUARY 30, 1906.

50,593. RIDING AND WALKING PLOWS. PARLIN & ORENDORFF CO., Canton, Ill.

The expression "P. & O. CANTON PLOWS."

Filed August 3, 1905. Serial No. 11,212. PUBLISHED JANUARY 30, 1906.

50,594. TALKING-MACHINE RECORDS. THE ENGLEWOOD CO., Chicago, Ill.

The words "SILVER TONGUED."

Filed August 2, 1905. Serial No. 11,203. PUBLISHED JANUARY 30, 1906.

50,595. OIL-CUPS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.

The word "PIONEER." Used ten years.

Filed July 26, 1905. Serial No. 10,796. PUBLISHED JANUARY 30, 1906.

50,596. BLACK AND COLORED INKS IN FLUID, CRYSTAL, AND POWDERED FORM. ALBERT TURNER, Holt Town, Manchester, England.

The word "ORION."

Filed August 15, 1905. Serial No. 11,673. PUBLISHED JANUARY 30, 1906.

50,597. WIRE. UNITED SHOE MACHINERY COMPANY, Boston, Mass.

The letters "I V I" arranged in a horizontal line in the sequence indicated.

Filed July 13, 1905. Serial No. 10,929. PUBLISHED JANUARY 30, 1906.

50,598. RECORDS FOR TALKING-MACHINES. VICTOR TALKING MACHINE COMPANY, Camden, N. J.

The word "GRAMOPHONE."

Filed December 23, 1905. Serial No. 15,617. PUBLISHED JANUARY 30, 1906.

50,599. HEEL-PROTECTORS. FRANK W. WHITCHER, Boston, Mass.

The representation of a V-shaped piece of metal formed upon a flat base and having a hole therethrough and beside the V-shaped piece a nail standing erect on the point thereof.

Filed August 18, 1905. Serial No. 11,776. PUBLISHED JANUARY 30, 1906.

50,600. BOX-TOE MATERIAL AND INNERSOLING. FRANK W. WHITCHER, Boston, Mass.

The word "VICTOR."

Filed January 2, 1906. Serial No. 15,829. PUBLISHED JANUARY 30, 1906.

50,601. STOP AND WASTE COCKS. A. Y. MCDONALD & MORRISON MANUFACTURING COMPANY, Dubuque, Iowa.

The words "BIG PYN," through which is inserted a big pin.

Filed September 22, 1905. Serial No. 12,900. PUBLISHED JANUARY 30, 1906.

50,602. PRETZELS. JOSEPH S. BACHMAN, Reading, Pa.

A blue seal with a serrated edge, a circle inside of said serrations, and a smaller centrally-disposed white seal with a serrated edge and the representation of a pretzel thereon. Above the smaller seal appears the word "BACHMAN'S" and below it the word and abbreviation "READING, PA."

Filed September 2, 1905. Serial No. 12,161. PUBLISHED JANUARY 30, 1906.

50,603. DULL-BLACK AND COLORED CALF-LEATHER. BARNET LEATHER CO., New York, N. Y.

The word "OKAY."

Filed June 9, 1905. Serial No. 7,773. PUBLISHED JANUARY 30, 1906.

50,604. WHEAT-FLOUR. BAY STATE MILLING COMPANY, Winona, Minn., and Boston, Mass.

The word "WINGOLD," the representation of a mill and elevator in a fancy scroll-like frame, the words and letters "BAY STATE MILLING CO., WINONA, MINN. U. S. A.," and a scroll bearing the words "OUR HIGHEST GRADE PATENT," all surrounded by a fancy border.

Filed September 2, 1905. Serial No. 12,200. PUBLISHED JANUARY 30, 1906.

50,605. LEATHER BOOTS AND SHOES. HARRY L. BOND, Wheeling, W. Va.

The representation of a man attired in conventional afternoon walking costume, wearing a silk hat and carrying a cane, and the hyphenated word "WALK-MORE" extending diagonally across the figure of the man.

Filed September 21, 1905. Serial No. 12,886. PUBLISHED JANUARY 30, 1906.

50,606. EGG-NOODLES AND MACARONI. C. F. MUELLER CO., Jersey City, N. J.

The words "WHITE LEGHORN" arranged in the form of an arc above an elliptical border, in which appears a design comprising the representation of two hands breaking an egg over a plate and a bunch of wheat-stalks fastened together just above the top of the border by a scroll-like ribbon tied in a knot and surrounding the top and sides of the border.

Filed September 2, 1905. Serial No. 12,203. PUBLISHED JANUARY 30, 1906.

50,607. CONCRETE WASHTRAYS. ECONOMY MANUFACTURING CO., New Haven, Conn.

A diamond-shaped figure inclosing the words "THE ECONOMY TRAY."

Filed September 27, 1905. Serial No. 13,050. PUBLISHED JANUARY 30, 1906.

50,608. PREPARATION MADE FROM SKIM-MILK. EKENBERG MILK PRODUCTS CO., Cortland, N. Y.

The word "CREMFLOR."

Filed May 12, 1905. Serial No. 5,342. PUBLISHED JANUARY 30, 1906.

50,609. PREPARATION MADE FROM SKIM-MILK. EKENBERG MILK PRODUCTS CO., Cortland, N. Y.

The word "MILCFLOR."

Filed May 12, 1905. Serial No. 5,343. PUBLISHED JANUARY 30, 1906.

50,610. SYRUP AND MOLASSES. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The word "EMPRESS."

Filed June 27, 1905. Serial No. 9,182. PUBLISHED JANUARY 30, 1906.

50,611. LEATHER BOOTS AND SHOES. EDGAR GOLDSBERRY, La Fayette, Ind.

The representation of a diamond or lozenge shaped figure in red with the words "THE MODEL" in white thereon. Used ten years.

Filed July 10, 1905. Serial No. 9,962. PUBLISHED JANUARY 30, 1906.

50,612. FORCE-FEED LUBRICATORS AND THE PARTS THEREOF. GREENE, TWEED & Co., New York, N. Y.

The word "MULTIPLUS."

Filed December 11, 1905. Serial No. 15,334. PUBLISHED JANUARY 30, 1906.

50,613 WHEAT-FLOUR. GWINN BROS. & Co., Huntington, W. Va., and Washington Court-House, Ohio.

The Aldine device comprising a dolphin entwined about the stem of an anchor.

Filed May 17, 1905. Serial No. 5,890. PUBLISHED JANUARY 30, 1906.

50,614. OYSTERS. HAAS BROS., New York, N. Y.

The words "BLUE POINT OYSTERS," associated with the representation of an oyster-shell containing an oyster and an arrow or spear point arranged obliquely thereacross and having a pennant near the end thereof.

Filed May 1, 1905. Serial No. 3,868. PUBLISHED JANUARY 30, 1906.

50,615. TRUNKS, SUIT-CASES, TRAVELING-BAGS, SATCHELS, AND TELESCOPES. HENRY POLLACK TRUNK CO., Dallas, Tex.

The representation of a parrot perched on the top edge of a trunk and having one of its legs uplifted with a satchel clutched in the elevated claw, associated with the words "POLLY BRAND."

Filed October 4, 1905. Serial No. 13,283. PUBLISHED JANUARY 30, 1906.

50,616. BAKING-POWDER. JACK FROST BAKING POWDER CO., St. Louis, Mo.

The pictorial representation of a landscape, in the center of which appears a small house, together with trees and shrubbery, the ground and the roof of the house being covered with snow. At the top of the pictorial representation appear the words "JACK FROST," the letters forming said words appearing as though covered with snow and frost. At the lower portion of the picture appear the words "BAKING POWDER."

Filed April 12, 1905. Serial No. 1,302. PUBLISHED JANUARY 30, 1906.

50,617. NITRO COMPOUNDS. JOVEITE MANUFACTURING COMPANY, Alexandria, Va.

The word "JOVEITE." Used ten years.

Filed September 21, 1905. Serial No. 12,884. PUBLISHED JANUARY 30, 1906.

50,618. GLASS LAMP-CHIMNEYS. LA BASTIE GLASS CO., Ottawa, Ill.

The word "SILVER" inclosed within a narrow rectangular border.

Filed December 1, 1905. Serial No. 15,116. PUBLISHED JANUARY 30, 1906.

50,619. NEUFCHATEL CHEESE. W. A. LAWRENCE & SON, Chester, N. Y.

The figure of a cow. Used ten years.

Filed June 19, 1905. Serial No. 8,619. PUBLISHED JANUARY 30, 1906.

50,620. SHAFT-HANGERS. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis.

The words "DIAMOND RING" and the representation of a finger-ring carrying a setting. The word "DIAMOND" is shown printed across the setting and the word "RING" within the circle formed by the representation of a finger-ring.

Filed October 13, 1905. Serial No. 13,560. PUBLISHED JANUARY 30, 1906.

50,621. FRUIT-TREES, BUDS AND SCIONS THEREOF. OREGON NURSERY COMPANY LIMITED, Salem, Oreg.

The word "MIRACLE."

Filed December 21, 1905. Serial No. 15,555. PUBLISHED JANUARY 30, 1906.

50,622. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn.

The words "IMPROVED STRAIGHT." Used ten years.

Filed April 25, 1905. Serial No. 2,965. PUBLISHED JANUARY 30, 1906.

50,623. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal.

The word "DAFFODIL," associated with a representation of a bunch of daffodils.

Filed May 24, 1905. Serial No. 6,550. PUBLISHED JANUARY 30, 1906.

50,624. COFFEE. A. SCHILLING & COMPANY, San Francisco, Cal.

The words "SCHILLING'S BEST." Used ten years.

Filed June 27, 1905. Serial No. 9,283. PUBLISHED JANUARY 30, 1906.

50,625. EXTRUDED METALS. THE COE BRASS MANUFACTURING COMPANY, Torrington, Conn.

The representation of a Greek cross within a circle.

Filed October 30, 1905. Serial No. 14,083. PUBLISHED JANUARY 30, 1906.

50,626. DOUBLE-CANED CHAIRS AND ROCKERS. THE DELAWARE CHAIR CO., Delaware, Ohio.

The words and abbreviation "THE DELAWARE, O., CHAIR." Used ten years.

Filed July 7, 1905. Serial No. 9,900. PUBLISHED JANUARY 30, 1906.

50,627. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "JACOBS" inclosed in quotation-marks. Used ten years.

Filed October 2, 1905. Serial No. 13,203. PUBLISHED JANUARY 30, 1906.

50,628. IRON AND STEEL CASTINGS AND FORGINGS. THE MCCONWAY & TORLEY CO., Pittsburg, Pa.

The letters "M T" inclosed within the letter "C."

Filed October 9, 1905. Serial No. 13,460. PUBLISHED JANUARY 30, 1906.

50,629. SUSPENSORY BANDAGES AND JOCK-STRAPS. THE S. H. WETMORE CO., New York, N. Y.

The word "CENTURY."

Filed May 16, 1905. Serial No. 5,858. PUBLISHED JANUARY 30, 1906.

50,630. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.

A brand in a circular frame containing the representation of a fox, below which in a shield-like device are the words and abbreviation "RED FOX SWEET SPRINGS, MO.," around the upper section the words and abbreviation "SWEET SPRINGS MILLING CO.," on one side in a scroll the word "BEAUTIFUL," and on the opposite in a scroll the words "ROLLER PATENT."

Filed September 2, 1905. Serial No. 12,188. PUBLISHED JANUARY 30, 1906.

50,631. WAGONS. THE TIFFIN WAGON CO., Tiffin, Ohio.

The representation of a wagon-wheel containing at the hub a portrait of the first Governor of Ohio, Edward Tiffin, deceased. Above the portrait appear the words "FIRST GOVERNOR OF OHIO," and below the portrait appears the name "EDWARD TIFFIN." On the spokes of the wheel appear bar-like transverse marks.

Filed May 9, 1905. Serial No. 4,822. PUBLISHED JANUARY 30, 1906.

50,632. EJECTORS. THE UNITED INJECTOR CO., New York, N. Y.

The letters "H" and "D" in Gothic type connected by a hyphen.

Filed August 19, 1905. Serial No. 11,818. PUBLISHED JANUARY 30, 1906.

50,633. MAGAZINES. TRIBUNE CO., Chicago, Ill.

The words "WORKER'S MAGAZINE."

Filed September 29, 1905. Serial No. 13,141. PUBLISHED JANUARY 30, 1906.

50,634. SARDINES. VON BREMEN, MACMONNIES & CO., New York, N. Y.

The representation of a body of water containing icebergs and in the background the aurora borealis and in the foreground the word "AURORA."

Filed September 11, 1905. Serial No. 12,467. PUBLISHED JANUARY 30, 1906.

50,635. ANVILS. WIEBUSCH & HILGER, LIMITED, New York, N. Y.

The representation of a horseshoe and the word "AMERICAN" arranged above and the word "WROUGHT" arranged below the horseshoe.

Filed April 15, 1905. Serial No. 1,782. PUBLISHED JANUARY 30, 1906.

50,636. BASE-BALL BATS. A. G. SPALDING & BROS., New York, N. Y.

The word "MUSEROOM."

Filed October 28, 1905. Serial No. 13,561. PUBLISHED JANUARY 30, 1906.

50,637. BASE-BALLS. A. J. REACH CO., Philadelphia, Pa.

The words "OFFICIAL AMERICAN ASSOCIATION." Used ten years.

Filed June 21, 1905. Serial No. 8,690. PUBLISHED JANUARY 30, 1906.

50,638. WHISKY. WILHELM ALBRECHT, Boston, Mass.

The word "ZIGZAG" with a zigzag line representing a flash of lightning crossing the same.

Filed December 6, 1905. Serial No. 15,242. PUBLISHED JANUARY 30, 1906.

50,639. ELECTRIC MOTORS. BARTH, WYGANT & BROWN, Hornellsville, N. Y.

The word "ROYAL."

Filed June 6, 1905. Serial No. 7,543. PUBLISHED JANUARY 30, 1906.

50,640. SAWS. GEORGE NATHAN CLEMSON, Middletown, N. Y.

The representation of a star surrounded by a circle.

Filed May 18, 1905. Serial No. 6,000. PUBLISHED JANUARY 30, 1906.

50,641. PAPER BAGS. JOHN CLOCHESSY, New York, N. Y.

The word "WHALEBONE" inclosed in an ellipse.

Filed May 18, 1905. Serial No. 6,020. PUBLISHED JANUARY 30, 1906.

50,642. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The representation of a crescent and the word "CRESCENT."

Filed May 13, 1905. Serial No. 5,503. PUBLISHED OCTOBER 31, 1905.

50,643. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "CRESCENT."

Filed May 13, 1905. Serial No. 5,519. PUBLISHED OCTOBER 31, 1905.

50,644. CORN-FILE. BYRON FRINK, Detroit, Mich.

The word "KURO-KORNO" inclosed in quotation-marks.

Filed June 26, 1905. Serial No. 9,064. PUBLISHED JANUARY 30, 1906.

50,645. DICTIONARIES. G. & C. MERRIAM COMPANY, Springfield, Mass.

A circle having a wreath eccentrically arranged therein, which incloses the letters "N" and "W" arranged in a monogram. Used ten years.

Filed April 26, 1905. Serial No. 3,096. PUBLISHED JANUARY 30, 1906.

50,646. DICTIONARIES. G. & C. MERRIAM COMPANY, Springfield, Mass.

The representation of a wreath inclosing the letters "N" and "W" arranged in the form of a monogram. Used ten years.

Filed April 26, 1905. Serial No. 3,097. PUBLISHED JANUARY 30, 1906.

50,647. WHISKY. GLASNER & BARDEN DISTILLING & IMPORTING CO., Kansas City, Mo.

The word "SUPERBA" and a fanciful scroll design with two concentric circles in the center inclosing the monogram "G & B."

Filed October 5, 1905. Serial No. 13,335. PUBLISHED JANUARY 30, 1906.

50,648. RYE WHISKY. G. GUMP & SONS, Baltimore, Md.

The word-symbol "GORDON." Used ten years.

Filed May 12, 1905. Serial No. 5,292. PUBLISHED JANUARY 30, 1906.

50,649. LADIES' SHOES. HAHNE & COMPANY, Newark, N. J.

The words "HER MAJESTY."

Filed June 5, 1905. Serial No. 7,506. PUBLISHED JANUARD 30, 1906.

50,650. NON-ALCOHOLIC BEVERAGES MADE OF COLA-NUTS. JOHN W. HALL, Baltimore, Md.

The word-symbol "BISSI."

Filed October 5, 1905. Serial No. 13,319. PUBLISHED JANUARY 30, 1906.

50,651. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.

The letters and word "H AND W" arranged as a monogram, the

letter "H" being inclined to the line of its base and the letter "W" intertwined therewith.

Filed April 28, 1905. Serial No. 3,476. PUBLISHED JANUARY 30, 1906.

50,652. WATER-SPRAYERS, SHOWERS, AND PARTS, FIXED OR PORTABLE. J. P. EUSTIS MFG. CO., Boston, Mass.

The words "THE BRASSCRAFTERS."

Filed June 9, 1905. Serial No. 7,757. PUBLISHED JANUARY 30, 1906.

50,653. WHISKY. MARTIN & MCANDREWS, Baltimore, Md.

The arbitrarily-selected word-symbol "CELTIC CLUB."

Filed August 22, 1905. Serial No. 11,913. PUBLISHED JANUARY 30, 1906.

50,654. EXPLOSIVES. MASURITE EXPLOSIVE COMPANY, Masury, Ohio.

A series of concentric diamond-shaped figures bearing the word "MASURITE" inclosed in a rectangular border of separated cylinders, two of which bear the word "MASURITE." Within the border are shown an electric battery, a cylinder being rolled by two hands, a cylinder held in a hand with an exploder being inserted therein by another hand, two hands tying a cylinder after an exploder has been inserted therein, and a hand pointing to the central lower cylinder of the rectangular border, which cylinder shows an exploder therein connected by electric wires with the battery.

Filed June 28, 1905. Serial No. 9,364. PUBLISHED JANUARY 30, 1906.

50,655. WHISKY. SIDNEY F. MILLER, New York, N. Y.

The words "PLATO WHISKEY," associated with a representation of the head of Plato upon a circular background with ornamental scrollwork at the side.

Filed April 28, 1905. Serial No. 3,502. PUBLISHED JANUARY 30, 1906.

50,656. WHISKY. ERNEST E. NORDENHOLZ, Baltimore, Md.

A rectangular background bearing a pictorial representation of the cruiser *Maryland*, the words "CRUISER MARYLAND," and a row-boat inclosed in an oval border and the words "FIRST IN LINE" and "PURE OLD MARYLAND RYE."

Filed May 22, 1905. Serial No. 6,219. PUBLISHED JANUARY 30 1906.

50,657. CIGARS. HENRY T. OFFTERDINGER, Washington, D. C.

The words "DEER HEAD," a circular panel containing the representation of a deer's head, a wreath of stalks and heads of grain, and the letters "H. T. O." "within a diamond-shaped figure.

Filed October 9, 1905. Serial No. 13,449. PUBLISHED JANUARY 30, 1906.

50,658. WHISKY. THOMAS E. O'KEEFE, Oswego, N. Y.

The word "WOODCOCK" and the picture of a woodcock.

Filed May 12, 1905. Serial No. 5,336. PUBLISHED JANUARY 30, 1906.

50,659. LEATHER BOOTS, SHOES, AND SLIPPERS. PRESTON B. KEITH SHOE CO., Brockton, Mass.

The word "KONQUEROR."

Filed May 20, 1905. Serial No. 6,135. PUBLISHED JANUARY 30, 1906.

50,660. CORDIAL FOR BLENDING WHISKIES. ADOLPHUS REINERT, New York, N. Y.

The words "CHAVALLIER'S FAMOUS ROYAL BLENDINE" surmounted by the representation of a crown, to the left of which appears the pictorial representation of a lion and to the right of which appears the pictorial representation of a unicorn. The monogram "A R" appears upon a shield-shaped figure between the representations of the lion and unicorn and below the representation of the crown. A broken undulating line also appears between the figures and words forming the trade-mark.

Filed September 26, 1905. Serial No. 13,044. PUBLISHED JANUARY 30, 1906.

50,661. WHISKY. LOUIS ROSENZWEIG, Chicago, Ill.

The words "ROCKY MOUNTAIN" and the representation of a circular panel on which appears a mountain scene, with rocks and trees in the foreground and the sun rising between the mountains.

Filed May 22, 1905. Serial No. 6,294. PUBLISHED JANUARY 30, 1906.

50,662. SPICES. A. SCHILLING & COMPANY, San Francisco, Cal.

The arbitrary words "SCHILLING'S BEST." Used ten years.

Filed June 27, 1905. Serial No. 9,292. PUBLISHED JANUARY 30, 1906.

50,663. IRON AND STEEL TUBES. SPANG, CHALFANT & Co., Pittsburg, Pa.

The word "ETNA" inclosed in quotation-marks within a diamond-shaped figure.

Filed June 27, 1905. Serial No. 9,261. PUBLISHED JANUARY 30, 1906.

50,664. PHOTOGRAPHIC PAPER AND FILMS. SOCIÉTÉ ANONYME "LUNA," Lausanne, Switzerland.

The combination of the word "LUNA" with a black disk, in which are drawn in white lines a crescent with human face, three stars in front of said human face, and the letters and character "V & C" crossing said disk and crescent, the said black disk being surrounded by a series of white pearls.

Filed May 15, 1905. Serial No. 5,616. PUBLISHED JANUARY 30, 1906.

50,665. LAGER-BEER. THE CONSUMERS PARK BREWING Co., New York, N. Y.

The representation of an imperial crown having streamers depending therefrom and a rosette located below said crown.

Filed December 1, 1905. Serial No. 15,130. PUBLISHED JANUARY 30, 1906.

50,666. BOTTLES OF SQUARE OR CUBICAL FORM. THE COOK & BERNHEIMER CO., New York, N. Y.

The words "MOUNT VERNON." Used ten years.

Filed June 9, 1905. Serial No. 7,769. PUBLISHED JANUARY 30, 1906.

50,667. SOUVENIR ARTICLES. THE C. M. ROBBINS CO., Attleboro, Mass.

The letters "C M R" arranged as a monogram and inclosed in a diamond.

Filed June 24, 1905. Serial No. 9,005. PUBLISHED JANUARY 30, 1906.

50,668. AERATED TONIC BEVERAGES AND SYRUPS FOR THE SAME. THE DR. PEPPER CO., Dallas, Tex.

The abbreviation and word "DR. PEPPER." Used ten years.

Filed June 24, 1905. Serial No. 14,256. PUBLISHED JANUARY 30, 1906.

50,669. CHOCOLATES. THE PHELPS COMPANY, Meadville, Pa.

The words "A RARE BIT."

Filed October 9, 1905. Serial No. 13,452. PUBLISHED JANUARY 30, 1906.

50,670. STERLING-SILVER FLAT WARE, HOLLOW WARE, AND TABLEWARE. THEODORE W. FOSTER & BRO. CO., Providence, R. I.

A flag having a triangular portion cut out from its outer or fly end and borne by a staff, the upper portion of which is shown, and upon the flag are carried the letters and character "F & B."

Filed June 9, 1905. Serial No. 7,754. PUBLISHED JANUARY 30, 1906.

50,671. RYE WHISKY. ULMAN, BOYKIN & Co., Baltimore, Md.

The words "WESTMORELAND CLUB," associated with a monogram composed of the letters, character, and abbreviation "U B & Co."

Filed May 8, 1905. Serial No. 4,624. PUBLISHED JANUARY 30, 1906.

50,672. STOGIES. J. WILLIAMS & BROS., Meyersdale, Pa.

The representation of a tobacco-leaf, upon which are arranged the words "ORIGINAL MEYERSDALE SEED STOGIES."

Filed June 2, 1905. Serial No. 7,274. PUBLISHED JANUARY 30, 1906.

50,673. WHISKY. MORRIS WORTMANN, New York, N. Y.

The words "RED SEAL WHISKEY."

Filed May 13, 1905. Serial No. 5,560. PUBLISHED JANUARY 30, 1906.

50,674. LEATHER BOOTS AND SHOES. WINGO, ELLETT & CRUMP SHOE CO., Richmond, Va.

The word "KENMORE."

Filed May 11, 1905. Serial No. 5,213. PUBLISHED JANUARY 30, 1906.

50,675. GELATIN. AMERICAN GLUE CO., Boston, Mass.

The words "BOSTON CRYSTAL GELATINE." Used ten years.

Filed May 3, 1905. Serial No. 4,104. PUBLISHED JANUARY 30, 1906.

50,676. WATERPROOF PAPERS. F. W. BIRD & SON, Walpole, Mass.

The representation of a girl supporting above her head a comparatively large portion of sheet material, which appears to serve as a protection to the person from the rain, which is indicated by slanting lines, the girl's feet resting upon lines representing the ground. Used ten years.

Filed September 29, 1905. Serial No. 13,130. PUBLISHED JANUARY 30, 1906.

50,677. NATURAL, CONCENTRATED, AND CARBONATED MINERAL WATER. BLUE ROCK MINERAL SPRING COMPANY, Louisville, Ky.

The words "BLUE ROCK."

Filed November 2, 1905. Serial No. 14,215. PUBLISHED JANUARY 30, 1906.

50,678. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Island of Porto Rico.

The word "TURABO."

Filed December 18, 1905. Serial No. 15,493. PUBLISHED JANUARY 30, 1906.

50,679. GLUE. CHEMISCHE FABRIK FÜR LEIN & DÜNGER "ZIMMERMANN," Ludwigshafen A. R., Germany.

The representation of an ax, a compass, and a square superposed or crossing each other and inclosed in an elliptical border. This emblem is associated with the German words "SCHUTZ-MARKE GESETZ. DEPONIERT."

Filed November 1, 1905. Serial No. 14,170. PUBLISHED JANUARY 30, 1906.

50,680. PLUG CHEWING-TOBACCO. GILBERT SON & Co., Murray, Ky.

The words "BLACK DIAMOND" and the representation of a black diamond-shaped figure.

Filed September 21, 1905. Serial No. 12,882. PUBLISHED JANUARY 30, 1906.

50,681. CANDIES OF ALL KINDS. HAZELWOOD COMPANY, LIMITED, Spokane, Wash.; Galena, Ill.; Sioux City, Iowa; New York, N. Y., and Portland, Oreg.

The word "HAZELWOOD" written in script with a paraph thereunder.

Filed September 18, 1905. Serial No. 12,770. PUBLISHED JANUARY 30, 1906.

50,682. SOAP CHIPS. J. T. KENNY & Co., St. Paul, Minn.

The words "POKER BRAND."

Filed September 18, 1905. Serial No. 12,735. PUBLISHED JANUARY 30, 1906.

50,683. CARBONATED GINGER-ALE. LOWENSTEIN & Co., Atlanta, Ga.

The word "CASCADE" in script letters with a paraph, appearing against a red band, the words "GINGER ALE" below and appearing against a background of radiating lines, all being inclosed in a diamond-shaped gilt border.

Filed September 13, 1905. Serial No. 12,534. PUBLISHED JANUARY 30, 1906.

50,684. TOILET AND LAUNDRY SOAP. MAPLE CITY SOAP WORKS, Monmouth, Ill.

The words "TWO MAPLE LEAVES," associated with maple-leaves, between which said words are arranged, said leaves bearing the superscription "MAPLE CITY."

Filed September 21, 1905. Serial No. 12,848. PUBLISHED JANUARY 30, 1906.

50,685. TOILET SOAPS. MÜLHENS & KROPFF, New York, N. Y.

The abbreviation and number "No. 4711."

Filed October 20, 1905. Serial No. 13,777. PUBLISHED JANUARY 30, 1906.

50,686. CLEANSING AND SCOURING PREPARATION. PALAMI COMPANY, Boston, Mass.

The word "PALAMI" in script.

Filed August 10, 1905. Serial No. 11,473. PUBLISHED JANUARY 30, 1906.

50,687. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn.

The words "IMPROVED STRAIGHT." Used ten years.

Filed April 25, 1905. Serial No. 2,965. PUBLISHED JANUARY 30, 1906.

50,688. LIQUID DRIERS. PRATT & LAMBERT, Buffalo, N. Y.

The words "PRATT'S PATENT LIQUID DRIER." Used ten years.

Filed May 29, 1905. Serial No. 7,043. PUBLISHED JANUARY 30, 1906.

50,689. CHOCOLATES AND BONBONS. R. L. PERRY Co., Boston, Mass.

The word "SAMOSET" with the first letter "S" crossed by the representation of an arrow.

Filed June 9, 1905. Serial No. 7,753. PUBLISHED JANUARY 30, 1906.

50,690. CANDY. REYMER & BROTHERS, INCORPORATED, Pittsburg, Pa.

A circular seal having a serrated edge and bearing the word "REYMER'S" in ornamental script-like type.

Filed June 24, 1905. Serial No. 9,010. PUBLISHED JANUARY 30 1906.

50,691. CHICKEN-FEED. ROSS BROTHERS, Worcester, Mass.

The representation of a hen surrounded by chickens in various attitudes of movement, interest, and repose.

Filed November 16, 1905. Serial No. 14,739. PUBLISHED JANUARY 30, 1906.

50,692. HIGH GRADE OF CHEWING-TOBACCO. RYAN-HAMPTON TOBACCO Co., Newburg, Ind.

The representation of a straw hat and the words "STRAW HAT," associated with the word "CHEW" above the band, the word "NAVY" beneath.

Filed July 11, 1905. Serial No. 10,108. PUBLISHED JANUARY 30, 1906.

50,693. CIGARS. S. S. PIERCE Co., Boston, Mass.

The words "BODAS DE ORO" and the representation of a wedding party coming out of a church, with carriages and trees in the background.

Filed July 3, 1905. Serial No. 9,681. PUBLISHED JANUARY 30, 1906.

50,694. WHISKY. SAMUEL WESTHEIMER & SON WHOLESALE LIQUOR Co., St. Joseph, Mo.

The words "DOUBLE STANDARD" and the representation of three medallions, one produced in gold containing the head of Abraham Lincoln, one produced in silver bearing the head of Gen. George Washington, and the other produced in gold bearing the head of Andrew Jackson, the medallions being surmounted by a scroll held in the beak of an eagle and bearing the words "HONESTY PURITY EQUALITY," so located upon said scroll as to come over the medallions, beneath which medallions are the words "THE MONEY OF OUR HEROES." Above the first medallion the name "ABRAHAM LINCOLN," below the second the name "GEN. GEORGE WASHINGTON," and above the third medallion the name "ANDREW JACKSON" appear.

Filed July 28, 1905. Serial No. 10,979. PUBLISHED JANUARY 30, 1906.

50,695. SOAP. GEO. A. SCHMIDT, Chicago, Ill.

The word "IT."

Filed June 21, 1905. Serial No. 9,299. PUBLISHED JANUARY 30, 1906.

50,696. GLUE. CHARLES A. SODEN, Boston, Mass.

The word "HOLDFAST," associated with the picture of a dog's head.

Filed December 20, 1905. Serial No. 15,534. PUBLISHED JANUARY 30, 1906.

50,697. SOAP POWDER COMBINED WITH MINERAL INGREDIENTS. THE CUDAHY PACKING Co., Chicago, Ill., and South Omaha, Nebr.

The words "OLD DUTCH CLEANSER," associated with the representation of a woman attired in a short dress and wearing wooden shoes, an apron, and a hood, having one of her sleeves turned up and brandishing a stick, together with the words "CHASES DIRT MAKES EVERYTHING 'SPICK AND SPAN.'"

Filed September 15, 1905. Serial No. 12,635. PUBLISHED JANUARY 30, 1906.

50,698. LEATHER-DRESSINGS IN LIQUID, PASTE, AND SOLID FORM. THE FRANK MILLER COMPANY, New York, N. Y.

The words "FRANK MILLER'S." Used ten years.

Filed December 22, 1905. Serial No. 15,608. PUBLISHED JANUARY 30, 1906.

50,699. OILSTONES, WATERSTONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL Co., Scranton, Pa.

The word "REX" and the representation of a crown appearing on a keystone, which is superimposed on a disk.

Filed November 3, 1905. Serial No. 14,230. PUBLISHED JANUARY 30, 1906.

50,700. MALT EXTRACTS. THE TROMMER COMPANY, Fremont, Ohio.

The arbitrary word "TROMMER." Used ten years.

Filed May 18, 1905. Serial No. 6,024. PUBLISHED JANUARY 30, 1906.

50,701. MEDICINAL BEVERAGE. AMUND G. THOMPSON, Chicago, Ill.

The portrait of the applicant, Amund G. Thompson, associated with his facsimile signature and the word "PHOSPERALE."

Filed September 2, 1905. Serial No. 12,159. PUBLISHED JANUARY 30, 1906.

50,702. VARNISHES. TOCH BROTHERS, New York, N. Y.

A rectangular panel having thereon the representation of an owl, a chimney from which smoke is issuing, and a rising sun, all being inclosed in a wreath and associated with the word "OWL," in the letter "O" of which appears an owl's head.

Filed August 12, 1905. Serial No. 11,578. PUBLISHED JANUARY 30, 1906.

50,703. PAINT AND VARNISH REMOVER. TOCH BROTHERS, New York, N. Y.

The word "ALMATOX."

Filed August 12, 1905. Serial No. 11,586. PUBLISHED JANUARY 30, 1906.

50,704. WHITE LEAD. TOCH BROTHERS, New York, N. Y.

The representation of a rising sun and a monogram of the letters "T B," associated with the words "ARCTIC WHITE LEAD WARRANTED THE BEST SUBSTITUTE FOR PERFECTLY PURE LEAD." Used ten years.

Filed August 12, 1905. Serial No. 11,587. PUBLISHED JANUARY 30, 1906.

50,705. VARNISHES AND JAPANS. VALENTINE & COMPANY, New York, N. Y.

The representation of a shield bearing a monogram of the letters "L V Co" and a decorative scroll extending on each side of the shield bearing the word and figures "INCORPORATED 1882," with the word "LAWSON" above the shield.

Filed June 27, 1905. Serial No. 9,259. PUBLISHED JANUARY 30, 1906.

50,706. WASHING-MACHINES. WAHLE FOUNDRY AND MACHINE WORKS, Davenport, Iowa.

The word "CASCADE."

Filed September 8, 1905. Serial No. 12,366. PUBLISHED JANUARY 30, 1906.

50,707. CIGARS, CHEROOTS, AND STOGIES. WISCONSIN CIGAR CO., Madison, Wis.

The word-symbol "PERMIT."

Filed November 2, 1905. Serial No. 14,214. PUBLISHED JANUARY 30, 1906.

50,708. OLIVE-OIL. ANTONIO ZUCCA, New York, N. Y.

The representation of an eagle standing erect with outstretched wings and a crown above its head, all arranged on a shield.

Filed August 26, 1905. Serial No. 12,087. PUBLISHED JANUARY 30, 1906.

50,709. OILED CLOTHING. A. J. TOWER COMPANY, Boston, Mass.

The representation of a fish.

Filed September 28, 1905. Serial No. 13,104. PUBLISHED JANUARY 30, 1906.

50,710. "ANTI-SET-OFF" COMPOSITIONS. AMERICAN OFFSET COMPANY, New York, N. Y.

The word "PARALOID."

Filed December 4, 1905. Serial No. 15,179. PUBLISHED JANUARY 30, 1906.

50,711. SUSPENDERS FOR WEARING-APPAREL. RUDOLPH F. BARTEL, New York, N. Y.

The word "POLO."

Filed September 25, 1905. Serial No. 13,018. PUBLISHED JANUARY 30, 1906.

50,712. SALVE. BICKMORE GALL CURE COMPANY, Oldtown, Me.

The words "WORK THE HORSE." Used ten years.

Filed July 22, 1905. Serial No. 10,690. PUBLISHED JANUARY 30, 1906.

50,713. HAIR-RESTORER. L. A. H. BRANDT, Buffalo, N. Y.

The portrait of Adolf Brandt on an oval panel.

Filed December 1, 1905. Serial No. 15,126. PUBLISHED JANUARY 30, 1906.

50,714. DYSPEPSIA-CAKES. HARALD A. C. DAHL, New York, N. Y.

The representation of the head of a child and an open box of cakes, with the words "DAHL'S DYSPEPSIA CAKES" appearing on the box and on the cover therefor and the words "THIS IS WHAT YOU WANT" appearing at one side of the box. Used ten years.

Filed August 25, 1905. Serial No. 12,008. PUBLISHED JANUARY 30, 1906.

50,715. DYSPEPSIA-CAKES. HARALD A. C. DAHL, New York, N. Y.

The representation of a rectangular cake with the words "DAHL'S DYSPEPSIA CAKES" and "PANIS DIETETICUS" appearing thereon. Used ten years.

Filed August 25, 1905. Serial No. 12,009. PUBLISHED JANUARY 30, 1906.

50,716. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "KIMONO SUITINGS" and the representation of a woman dressed in Japanese costume.

Filed August 22, 1905. Serial No. 11,902. PUBLISHED JANUARY 30, 1906.

50,717. DRESS-SHIRTS AS DISTINGUISHED FROM UNDERSHIRTS. ELIAS BROS. & Co., New York, N. Y.

The word "EUREKA" in script letters in an inclined line and with a paraph under the word. Used ten years.

Filed August 24, 1905. Serial No. 11,954. PUBLISHED JANUARY 30, 1906.

50,718. WHISKY. FIGGE DOYLE CO., Milwaukee, Wis.

The words "CUSTOM HOUSE," above which is a monogram consisting of the letters and abbreviation "F D Co" and beneath which is a picture of a large building with a clock-tower rising from one side of it, with other buildings, street-car, pedestrians, and horses and wagons in the near vicinity.

Filed June 8, 1905. Serial No. 7,653. PUBLISHED SEPTEMBER 19, 1905.

50,719. ALKALINE ANTISEPTIC AND GERMICIDE. GIRARD COMPANY, INCORPORATED, Philadelphia, Pa.

The word "EUZONE."

Filed November 15, 1905. Serial No. 14,638. PUBLISHED JANUARY 30, 1906.

50,720. TOILET WASH FOR THE SKIN. ROSE GLAUB, Crittenden, Ky.

A monogram of the letters "R G."

Filed September 20, 1905. Serial No. 12,806. PUBLISHED JANUARY 30, 1906.

50,721. COTTON CLOTH. HEWLETT & LEE, New York, N. Y.

The representation of a fictitious or fabulous animal. This animal is represented with uplifted tail curving over its back, teeth displayed, and fore foot uplifted.

Filed September 21, 1905. Serial No. 12,893. PUBLISHED JANUARY 30, 1906.

50,722. COTTON CLOTH. HEWLETT & LEE, New York, N. Y.

The representation of a Chinese unicorn in the peculiar type and style of Chinese art. The unicorn is represented with uplifted tail and head and with the mouth open in the act of catching a package falling from above.

Filed September 21, 1905. Serial No. 12,894. PUBLISHED JANUARY 30, 1906.

50,723. COTTON CLOTH. HEWLETT & LEE, New York, N. Y.

An enlarged representation of a Chinese coin, on the surface of which are engraved characters in the Chinese language. Through an opening in the center of the coin appear the head and shoulders of a Chinese boy arrayed in the costume of that country and holding in each hand a number of coins of a Chinese type hung on cords.

Filed September 21, 1905. Serial No. 12,895. PUBLISHED JANUARY 30, 1906.

50,724. PILLS AND COUGH MEDICINE. SAMUEL HOLZMAN, New York, N. Y.

A representation of two fern-leaves and a monogram of the letters "B M C," the whole inclosed in an oval-shaped wreath of oats and associated with the words "BRADFORD'S HOME REMEDIES," appearing in said wreath.

Filed August 23, 1905. Serial No. 11,944. PUBLISHED JANUARY 30, 1906.

50,725. LOCAL ANESTHETICS. BENJAMIN B. LAWRENCE, New York, N. Y.

The word "ANESTHOL."

Filed November 13, 1905. Serial No. 14,559. PUBLISHED JANUARY 30, 1906.

50,726. CASTOR-OIL. MORRIS BROS., Allegheny, Pa.

The representation of a boy standing with legs spread, associated with the words "I LIKE IT." Used ten years.

Filed November 2, 1905. Serial No. 14,219. PUBLISHED JANUARY 30, 1906.

50,727. DYES. PAAS DYE CO., Newark, N. J.

A colored egg bearing upon its surface the words "PAAS EASTER EGG DYES."

Filed November 13, 1905. Serial No. 14,530. PUBLISHED JANUARY 30, 1906.

50,728. DYES. PAAS DYE CO., Newark, N. J.

The words "PAAS EGG DYES." Used ten years.

Filed November 13, 1905. Serial No. 14,531. PUBLISHED JANUARY 30, 1906.

50,729. ANTISEPTIC REMEDY. HENRY C. POPE, Birmingham, Ala.

A circular figure of contrasting color bounded by a circle and subdivided into a central square and four equal segments, the letters "P. P." appearing on the square and the numerals "1 8 8 8" appearing severally on the respective segments.

Filed July 29, 1905. Serial No. 11,000. PUBLISHED JANUARY 30, 1906.

50,730. OINTMENT. RACHEL B. RAY, Eureka Springs, Ark.

The words "MIGHTY TO SAVE," associated with a portrait of the applicant.

Filed August 26, 1905. Serial No. 12,041. PUBLISHED JANUARY 30, 1906.

50,731. PREPARATION FOR THE RELIEF OF RHEUMATISM AND KINDRED AILMENTS. GEORGE L. SHAFER, Sacramento, Cal.

The hyphenated word "WAB-SKO-KA." Used ten years.

Filed November 11, 1905. Serial No. 14,519. PUBLISHED JANUARY 30, 1906.

50,732. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of a lighthouse surrounded by water, a sailing vessel and steamer being represented, respectively, at the right and left of the lighthouse and the moon being represented as shining through clouds, associated with the words "EDDYSTONE" and "WM. SIMPSON & SONS," the whole being surrounded by an ornamental border.

Filed August 4, 1905. Serial No. 11,253. PUBLISHED JANUARY 30, 1906.

50,733. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The representation of an ornamental scroll bearing the words "WM. SIMPSON & SONS," with the words, "FAST BLACK" below, associated with an obverse and reverse representation of a medal, the obverse bearing the words "AMERICAN INSTITUTE NEW YORK" and a representation of the coat of arms of said institute and the reverse bearing the words "AWARDED TO WM. SIMPSON & SONS FOR SUPERIOR CAMBRIC PRINTS 1869," the whole being inclosed in a border. Used ten years.

Filed August 26, 1905. Serial No. 12,014. PUBLISHED JANUARY 30, 1906.

50,734. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of a lighthouse surrounded by water in which floats a portion of a wreck, associated with the words "EDDYSTONE" and "WM. SIMPSON & SONS," the whole being surrounded by an ornamental border.

Filed September 5, 1905. Serial No. 12,234. PUBLISHED JANUARY 30, 1906.

50,735. GRANULATED SMOKING-TOBACCO. THE F. R. PENN TOB. CO., Reidsville, N. C.

The word "GOLD CRUMBS" arranged one above the other and separated by a circular panel, on which appears the representation of a bag of tobacco partly opened and the contents spilling therefrom. On the bag appears a label bearing the words "GOLD CRUMBS" and the representation of a circular panel and a bag of tobacco.

Filed April 12, 1905. Serial No. 1,211. PUBLISHED JANUARY 30, 1906.

50,736. BEER. THE JOHN BRENNER BREWING CO., Covington, Ky.

The letters "I X L."

Filed April 13, 1905. Serial No. 1,369. PUBLISHED JANUARY 30, 1906.

50,737. STOGIES. THE R. & W. JENKINSON CO., Pittsburg, Pa.

The arbitrarily-selected word "WINNERS."

Filed April 17, 1905. Serial No. 2,062. PUBLISHED JANUARY 30, 1906.

50,738. EYELETS AND LACING-HOOKS. UNITED FAST COLOR EYELET COMPANY, Boston, Mass.

A figure in the shape of a diamond.

Filed July 13, 1905. Serial No. 10,931. PUBLISHED JANUARY 30, 1906.

50,739. PLUG CUT TOBACCO. WEISERT BROTHERS TOBACCO COMPANY, St. Louis, Mo.

The word "ARROW," with the representation of a shield having thereon two crossed arrows.

Filed May 1, 1905. Serial No. 3,877. PUBLISHED JANUARY 30, 1906.

50,740. TOOTH-POWDER. WOODMAN-DAVIS CO., Worcester, Mass.

The words "DR. WOODMAN'S PEARLOZONE."

Filed September 23, 1905. Serial No. 12,935. PUBLISHED JANUARY 30, 1906.

50,741. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa.

The letters "P. C. W." inclosed in a rectangular border formed of parallel lines.

Filed May 25, 1905. Serial No. 6,551. PUBLISHED JANUARY 30, 1906.

50,742. MEDICINE FOR EXTERNAL USE. ANTISEPTIC PHARMACAL COMPANY, St. Louis, Mo.

The representation of a bottle, beside which stands the figure of a partially-nude man, whose left arm rests against said bottle, a bottle being grasped in the hand on said arm.

Filed November 15, 1905. Serial No. 14,639. PUBLISHED JANUARY 30, 1906.

50,743. OVERALLS, APRONS, COATS, AND PANTS. CLEVELAND & WHITEHILL COMPANY, Newburgh, N. Y.

The word "KEYSTONE" and the representation of a keystone.

Filed April 15, 1905. Serial No. 1,763. PUBLISHED JANUARY 30, 1906.

50,744. BUTTONS. DIECKERHOFF, RAFFLOER & CO., New York, N. Y.

The representation of an escutcheon—an argent and a fess azure charged with a mullet of the field—and a small ribbon below said representation.

Filed May 6, 1905. Serial No. 4,579. PUBLISHED JANUARY 30, 1906.

50,745. LIQUID PREPARATION FOR EXTERNAL APPLICATION FOR RHEUMATISM. HENRY E. FOWLER, Guilford, Conn.

The word and figures "VETOA 41424."

Filed November 20, 1905. Serial No. 14,832. PUBLISHED JANUARY 30, 1906.

50,746. VETERINARY REMEDY. HAMER'S SURE CURE COMPANY, Vermont, Ill.

A representation of the head and fore shoulders of a horse in a solid color having behind its ears and on its shoulder the representation of a sore with pus running therefrom in a contrasting color.

Filed August 21, 1905. Serial No. 11,854. PUBLISHED JANUARY 30, 1906.

50,747. LINIMENT. JAMES M. HOOD, Albertville, Ala.

A triangular-shaped figure with the name "J. M. HOOD" in script writing inclosed in a paraph or flourish and arranged within the triangle and the words "HOOD'S HOMESTEAD LINIMENT" inscribed upon the sides and base of the triangle.

Filed August 11, 1905. Serial No. 11,538. PUBLISHED JANUARY 30, 1906.

50,748. OUTER GARMENTS. LEVI STRAUSS & CO., San Francisco, Cal.

Two horses attached to opposite sides of a garment of the trousers or overalls kind and men driving the horses in opposite directions.

Filed May 3, 1905. Serial No. 4,176. PUBLISHED JANUARY 30, 1906.

50,749. MEDICINES FOR VENEREAL DISEASES. CHARLES G. MARINO, Coney Island, N. Y.

The word "CARAWA."

Filed November 20, 1905. Serial No. 14,847. PUBLISHED JANUARY 30, 1906.

50,750. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The word "DELHI." Used ten years.

Filed May 11, 1905. Serial No. 5,234. PUBLISHED JANUARY 30, 1906.

50,751. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The word "BENGAL." Used ten years.

Filed May 11, 1905. Serial No. 5,247. PUBLISHED DECEMBER 5, 1905.

50,752. PHARMACEUTICAL PREPARATIONS FOR THE TREATMENT OF KIDNEY DISEASES. MCKESSON & ROBBINS, New York, N. Y.

The word "THEOSALIN."

Filed November 21, 1905. Serial No. 14,888. PUBLISHED JANUARY 30, 1906.

50,753. MEDICINE FOR INTERNAL USE. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.

The word "CUTICURA."

Filed November 15, 1905. Serial No. 14,662. PUBLISHED JANUARY 30, 1906.

50,754. OINTMENT. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass.

The word "CUTICURA."

Filed November 15, 1905. Serial No. 14,663. PUBLISHED JANUARY 30, 1906.

50,755. KID AND LAMBSKIN GLOVES. STERN BROTHERS, New York, N. Y.

The word "LUPIN."

Filed May 1, 1905. Serial No. 3,887. PUBLISHED JANUARY 30, 1906.

50,756. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of the facsimile signature of the original firm "WM. SIMPSON & SONS."

Filed June 30, 1905. Serial No. 9,462. PUBLISHED JANUARY 30, 1906.

50,757. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A rectangular cross-hatch border forming a central panel, on which is a second panel in contrasting color, associated with the words "DE LAINE FINISH." Used ten years.

Filed June 30, 1905. Serial No. 9,467. PUBLISHED JANUARY 30, 1906.

50,758. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A shield-like panel bearing the term "SILK C."

Filed June 30, 1905. Serial No. 9,476. PUBLISHED JANUARY 30, 1906.

50,759. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The word "FROCKS."

Filed June 30, 1905. Serial No. 9,478. PUBLISHED JANUARY 30, 1906.

50,760. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A rectangular-shaped border having semicircular inner border portions united to the sides near each end inclosing a representation of a braided background, associated with the words "DE LAINE FINISH." Used ten years.

Filed July 3, 1905. Serial No. 9,655. PUBLISHED JANUARY 30, 1906.

50,761. COTTON TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of a lighthouse surrounded by an ornamental border, associated with the words "SILK FINISH VELVETTE."

Filed July 8, 1905. Serial No. 9,927. PUBLISAED JANUARY 30, 1906.

50,762. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of a panel having a general oval contour with semicircular projections surrounded by an ornamental border, associated with a central scroll and bearing the words "EXTRA ALPACA FINISH CLOTH." Used ten years.

Filed July 12, 1905. Serial No. 10,175. PUBLISHED JANUARY 30, 1906.

50,763. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A rectangular border inclosing an elongated oval inner border having arrow-like terminations, the two borders being embraced at their sides by an ornamental clasp, associated with the words "SOFT FINISH." Used ten years.

Filed July 12, 1905. Serial No. 10,176. PUBLISHED JANUARY 30, 1906.

50,764. HAIRCLOTH CHEVIOTS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A ribbon scroll bearing the words "HAIR CLOTH CHEVIOTS," associated with the words "WM. SIMPSON & SONS." Used ten years.

Filed July 14, 1905. Serial No. 10,302. PUBLISHED JANUARY 30 1906.

50,765. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A banner-shaped border, upon the face of which are the words "WM. SIMPSON & SONS" and "LINEN FINISH." Used ten years.

Filed July 14, 1905. Serial No. 10,307. PUBLISHED JANUARY 30, 1906.

50,766. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A banner-shaped border bearing upon the face thereof the words "WM. SIMPSON & SONS" and "INDIA SILK STYLES." Used ten years.

Filed July 14, 1905. Serial No. 10,308. PUBLISHED JANUARY 30, 1906.

50,767. DRAPERY AND UPHOLSTERY CRETONNES. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A series of panels, in one of which is a conventional wing-like figure, associated with conventional representations of a lotus, and the words "EGYPTIAN" and "CRETONNE" in the other panels.

Filed July 15, 1905. Serial No. 10,363. PUBLISHED JANUARY 30, 1906.

50,768. TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A representation of three classically-draped women beside a sarcophagus in an attitude of mourning.

Filed July 15, 1905. Serial No. 10,364. PUBLISHED JANUARY 30, 1906.

50,769. SHIRTINGS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The word "ANCHOR," a representation of an anchor, a sailor leaning against a snubbing-post, and a background showing ships at sea, associated with the words "SHIRTINGS. WM. SIMPSON & SONS. PHILADELPHIA." and "WARRANTED FAST COLORS," the whole inclosed in a border representing anchors and chains. Used ten years.

Filed July 19, 1905. Serial No. 10,552. PUBLISHED JANUARY 30, 1906.

50,770. CONSUMPTION REMEDY. THE PISO COMPANY, Warren, Pa.

The word "Piso's." Used ten years.

Filed November 17, 1905. Serial No. 14,760. PUBLISHED JANUARY 30, 1906.

50,771. REMEDY FOR CATARRH. THE PISO COMPANY, Warren, Pa.

The word "Piso's." Used ten years.

Filed November 17, 1905. Serial No. 14,761. PUBLISHED JANUARY 30, 1906.

50,772. VELVETEENS. A. WIMPFHEIMER AND BROTHER, New York, N. Y.

The word "BOULEVARD" in script letters with a paraph under the greater part thereof.

Filed August 5, 1905. Serial No. 11,296. PUBLISHED JANUARY 30, 1906.

50,773. SHADE-CLOTHS. AMORY, BROWNE & Co., Boston, Mass., and New York, N. Y.

A wheel with a wing attached thereto, in connection with the word "FORTUNE."

Filed June 7, 1905. Serial No. 7,596. PUBLISHED JANUARY 30, 1906.

50,774. COVERT CLOTHS, VENETIANS, BROADCLOTHS, AND CHEVIOTS. ARTHUR BEBEL, New York, N. Y.

The word "MOHEGAN" mounted upon a panel.

Filed May 24, 1905. Serial No. 6,481. PUBLISHED JANUARY 30, 1906.

50,775. CONDITION-POWDERS. FREDERIC G. BOYNTON, Boston, Mass.

The words "SHERIDAN'S CAVALRY" and the representation of General Sheridan mounted upon a horse and apparently leading a cavalry charge in the foreground of a minor scene in which the representations of mounted soldiers appear, this matter being surrounded by an ornamental border of harmonizing design flanked by the heads of a cow, horse, chicken, and hog, each inclosed within circular borders, there being also a scroll extending between the borders of the two lower heads.

Filed June 13, 1905. Serial No. 8,062. PUBLISHED JANUARY 30, 1906.

50,776. CERTAIN NAMED MEDICINE. CARL O. F. BURKSTROM, Chicago, Ill.

The words "HIMMALIA TONIC" and the words "CASS GAY LA VARTS," associated with the representation of the head of a tiger with wide-open mouth.

Filed May 4, 1905. Serial No. 5,004. PUBLISHED JANUARY 30, 1906.

50,777. LIQUID COURT-PLASTER. CARPENTER CHEMICAL Co., Detroit, Mich.

The representation of a small drum with its upper head broken out and two kittens partially within the same and with their heads and shoulders above the upper rim of the same, together with the words "CAN'T BE BEAT" and a pair of drumsticks.

Filed April 17, 1905. Serial No. 2,066. PUBLISHED JANUARY 30, 1906.

50,778. DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.

The word "OXYDIAMINOGENE."

Filed June 14, 1905. Serial No. 8,076. PUBLISHED JANUARY 30, 1906.

50,779. SHIRTS, COLLARS, AND CUFFS. CLUETT PEABODY & Co., Troy, N. Y.

The word "CLUPECO."

Filed June 28, 1905. Serial No. 9,328. PUBLISHED JANUARY 30, 1906.

50,780. HOSIERY. COOPER, WELLS & Co., St. Joseph, Mich.

The words "IRON CLAD" inclosed within quotation-marks upon scroll-like panels at opposite sides of a central circular panel comprising concentric rings, within the center of which is shown the pictorial representation of a warship. The words "COOPER, WELLS & CO. ST. JOSEPH, MICH." and "ST. JOE KNIT SEAMLESS HOSIERY" appear within the concentric rings.

Filed May 22, 1905. Serial No. 6,329. PUBLISHED JANUARY 30, 1906.

50,781. MEDICINAL PREPARATION. V. DE LEO, Tampa, Fla.

The word "EPOCALINO," associated with the representation of a four-leaf clover and the letters "V. DE L."

Filed July 13, 1905. Serial No. 10,253. PUBLISHED JANUARY 30, 1906.

50,782. CHARCOAL. BERNARD S. FEINER, Springfield, Mass.

A black seal having thereon a representation of a volcano partially inclosed by a triangular-shaped chevron, associated with the words "FEINER'S QUICK FIRE CHARCOAL" on said seal and chevron.

Filed July 14, 1905. Serial No. 10,333. PUBLISHED JANUARY 30, 1906.

50,783. SKIRTS. M. GOLDMAN & Co., New York, N. Y., and Cleveland, Ohio.

The representation of a butterfly and the words "THE BUTTERFLY SKIRT."

Filed June 1, 1905. Serial No. 7,166. PUBLISHED JANUARY 30, 1906.

50,784. LINIMENT. WILLIAM B. HADLEY, New York, N. Y.

The arbitrary word-symbol "WUNDERWURK" in light letters on a dark oblong background.

Filed May 3, 1905. Serial No. 4,171. PUBLISHED JANUARY 30, 1906.

50,785. INSECTICIDES. FAITH L. HANLIN, Chicago, Ill.

The representation of the interior of a bedroom inclosed in a rectangular frame with a portière in front and drawn to one side and showing a bed with a rug in the foreground with dead bugs under the bed and a bug on the bed holding a white flag, and on the rug appear the words "THE TOGO EXTERMINATOR FOR BED BUGS. USE ONCE A YEAR AND THE PLEASURE IS ALL YOURS," and in the foreground is also shown a shield supported by three rifles, against which shield is a bug holding a white flag.

Filed July 6, 1905. Serial No. 9,844. PUBLISHED JANUARY 30, 1906.

50,786. LAXATIVE MEDICINES. SAMUEL BRUBAKER HARTMAN, Columbus, Ohio.

The word "MANALIN."

Filed April 14, 1905. Serial No. 1,433. PUBLISHED JANUARY 30, 1906.

50,787. GARTERS. CHRISTINA J. HIGLEY, New York, N. Y.

The words "NEW YORK." Used ten years.

Filed June 19, 1905. Serial No. 8,515. PUBLISHED JANUARY 30, 1906.

50,788. LINIMENT. P. L. HOOVER & BROS., Carlisle, Ind.

The head of a horse and that of a steer inclosed by a circular border.

Filed May 18, 1905. Serial No. 5,967. PUBLISHED JANUARY 30, 1906.

50,789. REMEDIES FOR RHEUMATISM FOR INTERNAL AND EXTERNAL USE. HOT SHOT MEDICINE Co., Kane, Pa.

The words "HOT SHOT" and a pyramid of shot in red color.

Filed May 29, 1905. Serial No. 7,051. PUBLISHED JANUARY 30, 1906.

50,790. HATS AND CAPS. EDWARD M. KNOX, New York, N. Y.

A fanciful shield having two falcons rampant thereagainst. Centrally of the shield is a representation of a falcon, while in one corner of the shield is arranged a checkered surface. Above the shield is a representation of a falcon standing on a perch. Above this latter falcon is a scroll. Beneath the shield is a second scroll having thereon the words "MOVEO ET PROFICIO." Beneath this second scroll are the words "KNOX NEW YORK."

Filed May 29, 1905. Serial No. 7,030. PUBLISHED JANUARY 30, 1906.

50,791. REMEDY FOR CROUP AND COLDS. ROBERT P. MENARD, Macon, Ga.

The words "MENARD'S FRENCH CROUP SURE." Used ten years.

Filed May 23, 1905. Serial No. 6,353. PUBLISHED JANUARY 30, 1906.

50,792. POTASH, LYE, AND CAUSTIC SODA. A. MENDLESON'S SONS, Albany, N. Y.

The word "DAISY."

Filed May 19, 1905. Serial No. 6,066. PUBLISHED JANUARY 30, 1906.

50,793. REMEDY FOR HOG-CHOLERA. JOSEPH J. PATER, Hamilton, Ohio.

The words "CORN BELT."

Filed July 14, 1905. Serial No. 10,320. PUBLISHED JANUARY 30, 1905.

50,794. COATS AND TROUSERS. J. SAMUELS & BRO., Providence, R. I.

The words "MANUFACTURERS OUTLET COMPANY," together with the representation of a crown on each side of the word "OUTLET." Used ten years.

Filed May 6, 1905. Serial No. 4,557. PUBLISHED JANUARY 30, 1906.

50,795. MEDICINES FOR THE REGULATION OF THE LIVER AND PURIFICATION OF THE BLOOD. THE A. H. LEWIS MEDICINE Co., St. Louis, Mo.

A rectangular panel having thereon the words, letters, and abbreviations "NATURES REMEDY. THE GREATEST LIVER REGULATOR AND BLOOD PURIFIER KNOWN. MANUFACTURED BY THE A. H. LEWIS MEDICINE CO. ST. LOUIS, MISSOURI." and the portrait of DR. A. H. Lewis in the central portion of said panel and inclosed in a circular frame ornamented by sprays and leaves,

with an ornamental scroll extending across the panel, on which appear words indicating the price of treatment, the ingredients of the medicine, and the diseases for which it is used as a remedy.

Filed April 1, 1905. Serial No. 71. PUBLISHED JANUARY 30, 1906.

50,796. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal., and New York, N. Y.

The representation of a spinning-wheel contained within the letter "D," wherein the letter "D" is of conventionalized form, consisting of the letter "L" and an elongated curve constituting a monogram of the letters "L" and "D," the spinning-wheel provided with a distaff full of flax resting on the horizontal part of said conventionalized letter or monogram, the words "DR. DEIMEL'S LINEN-MESH UNDERWEAR" being in the curved portion thereof.

Filed June 10, 1905. Serial No. 7,857. PUBLISHED JANUARY 30, 1906.

50,797. REMEDY FOR CATARRH, TUBERCULOSIS, AND ALLIED DISEASES. THE MEDICINAL BALSAM COMPANY, San Francisco and Palo Alto, Cal.

A face view of a nun or sister of a Roman Catholic religious order, clothed in her appropriate costume, bearing upon the portion covering the breast the representation of a red Latin cross, a halo being shown back of her head and beside and partly in front of her an oval shield, and above her head the words "MARVELOUS BALSAM" and below her feet the words "ICH DIEN."

Filed June 3, 1905. Serial No. 7,356. PUBLISHED JANUARY 30, 1906.

50,798. MEDICINES FOR PURIFYING THE BLOOD. THE M.I.S.T. Co., Toledo, Ohio.

The capital letters "M.I.S.T." spaced by periods and associated with the words, abbreviation, and numeral "No. 2 NERVE TONIC TOLEDO, OHIO," arranged within a rectangular figure having a fancy border and a portrait of S. B. McMurray, deceased, displayed within an oval panel disposed within the rectangular figure at the left of said letters and words.

Filed June 9, 1905. Serial No. 7,722. PUBLISHED JANUARY 30, 1906.

50,799. MEDICINES FOR PURIFYING THE BLOOD. THE M.I.S.T. Co., Toledo, Ohio.

The word "M.I.S.T." in capital letters arranged across the face of a waterfall and represented as emerging from the mist rising therefrom, said waterfall being displayed within a rectangular figure and having at its left a mass of rocks, at its right a tablet projecting from a bed of flowers and bearing the words "THE ONLY SCROFULA, CATARRH, BLOOD, LIVER AND KIDNEY MEDICINE ON EARTH," and across its bottom, to the right of the rocks, a rectangular panel bearing the words "MURRAY'S INFALLIBLE SYSTEM TONIC," to the left of which panel is the word "MEANS." A triangular panel appears within the lower left-hand corner of the figure, in which are represented leaved branches.

Filed June 9, 1905. Serial No. 7,723. PUBLISHED JANUARY 30, 1906.

50,800. TOILET POWDER. THE STORK COMPANY, Boston, Mass.

The word "STORK" and the representation of a stork.

Filed April 8, 1905. Serial No. 779. PUBLISHED JANUARY 30, 1906.

50,801. MEDICINE FOR THE CURE OF LIVER AND KIDNEY DISEASES. THOMPSON MEDICAL COMPANY, Titusville, Pa.

The word "BAROSMA."

Filed May 4, 1905. Serial No. 4,263. PUBLISHED JANUARY 30, 1906.

50,802. FLOUR MADE FROM WHEAT. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, LTD., Minneapolis, Minn.

The word "BEST," having each letter divided centrally into two parts, the intervening space being occupied by a diamond or square arranged to leave a white margin between the diamond or square and the adjacent portion of the letter. Used ten years.

Filed April 25, 1905. Serial No. 2,978. PUBLISHED JANUARY 30, 1906.

50,803. MEDICINE FOR CERTAIN NAMED DISEASES. ULRICH FRIEDERICH SCHLAEPFER, Zurich, Switzerland.

The word "PARACELSUS."

Filed November 18, 1905. Serial No. 14,780. PUBLISHED JANUARY 30, 1906.

LABELS

REGISTERED MARCH 27, 1906.

12,727.—*Title:* "OLD LEGAL WHISKEY." (For Whisky.) THE PARKER BLAKE CO. LTD. New Orleans, La. Filed February 24, 1906.

12,728.—*Title:* "ORCHERADE." (For Extracts and Beverages.) W. H. HUTCHINSON & SON, Chicago, Ill. Filed February 28, 1906.

12,729.—*Title:* "HIRES THE ONLY ROOTBEER." (For Carbonated Rootbeer.) THE CHARLES E. HIRES COMPANY, Philadelphia, Pa. Filed February 6, 1906.

12,730.—*Title:* "DECREE." (For Cigars.) H. SOMMER COMPANY, Quakertown, Pa. Filed February 26, 1906.

12,731.—*Title:* "HOLIDAY COFFEE." (For Coffee.) THE CANBY, ACH & CANBY CO., Dayton, Ohio. Filed February 12, 1906.

12,732.—*Title:* "CRESO." (For Biscuit.) THE HITCHNER BISCUIT COMPANY, West Pittston, Pa. Filed February 23, 1906.

12,733.—*Title:* "FAULTLESS." (For Canned Corn.) WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed September 27, 1905.

12,734.—*Title:* "NEWARK." (For Canned Corn.) WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed September 27, 1905

12,735.—*Title:* "ARCADIA BEAUTY." (For Canned Corn.) WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed September 27, 1905.

12,736.—*Title:* "WAYNE." (For Canned Corn.) WAYNE COUNTY PRESERVING CO., Newark, N.Y. Filed September 27, 1905.

12,737.—*Title:* "BURNHAM." (For Canned Corn.) WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed September 27, 1905.

12,738.—*Title:* "JOHN TAYLOR'S HAM." (For Ham.) THE TAYLOR PROVISION CO., Trenton, N. J. Filed February 12, 1906.

12,739.—*Title:* "AMAZON VEGETABLE BOILER COMPOUND." (For a Vegetable Boiler Compound.) AMAZON CHEMICAL MANUFACTURING CO., Manistee, Mich. Filed February 10, 1906.

12,740.—*Title:* "CLEOPATRA MASSAGE CREAM AND SKIN FOOD." (For a Toilet Lotion.) FACIAL TOILET MANUFACTURING COMPANY, Grand Rapids, Mich. Filed March 1, 1906.

12,741.—*Title:* "PROF. EMIL LINNEBACH'S MYSTERIOUS REMEDY FOR TOOTHACHE AND FACIAL NEURALGIA." (For Medicine.) EMIL LINNEBACH, New York, N. Y. Filed February 17, 1906.

12,742.—*Title:* "FEL BOVIS BUTTON TABLETS." (For Medicine.) S. M. and J. I. LOWRY, Atlanta, Ga. Filed February 23, 1906.

PRINTS

REGISTERED MARCH 27, 1906.

1,607.—*Title:* "THE EUREKA THE STANDARD WATER SOFTENER & PURIFIER OF THE WORLD." (For a Water Softening and Purifying Apparatus.) HERMANN ROMÜNDER, Milwaukee, Wis. Filed February 24, 1906.

1,608.—*Title:* "A TRIP AROUND CANDIES, JOHNSTON." (For Confections and Candies.) HUMMEL & DOWNING CO., Milwaukee, Wis. Filed December 26, 1905.

1,609.—*Title:* "THE SIGN OF THE BEST GLOVE." (For Gloves and Mittens.) THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill. Filed February 23, 1906.

1,610.—*Title:* "ROYAL WRAPPER." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., Milltown, N. J., and New York, N. Y. Filed March 2, 1906.

1,611.—*Title:* "ROYAL ACE." (For Playing-Cards.) WILLIS W. RUSSELL CARD CO., Milltown, N. J., and New York, N. Y. Filed February 28, 1906.

1,612.—*Title:* "CRESCENT ACETYLENE BURNERS." (For Acetylene-Burners.) CRESCENT BURNER MANUFACTURING COMPANY, New York, N. Y. Filed February 26, 1906.

1,613.—*Title:* "STAR ENAMEL AND SAPOLIN FLOOR STAIN." (For Enamel and Floor-Stain.) GERSTENDORFER BROS., New York, N. Y. Filed February 21, 1906.

1,614.—*Title:* "SAPOLIN CARRIAGE GLOSS COLORS." (For Carriage Gloss-Colors.) GERSTENDORFER BROS., New York, N. Y. Filed February 21, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE PEIRCE.

Decided January 13, 1906.

AFFIDAVITS—TIME OF FILING—WHEN VERIFIED SHOWING IS REQUIRED.

Where affidavits are offered as evidence that the rejection of the claims by the Primary Examiner was erroneous, they should ordinarily be submitted to the Primary Examiner before the prosecution of the case before him has been closed by final rejection or appeal; otherwise they should be accompanied by a verified showing of reasons for the delay, similar to that required under Rule 68.

ON REFERENCE.

STONE-WORKING MACHINE.

Messrs. Arthur O. Fraser & Co. for the applicant.

ALLEN, *Commissioner:*

This case has been submitted to me by the Examiner for determination whether certain affidavits which have been offered shall be received.

The case was several times amended and rejected while before the Primary Examiner, and an appeal was finally taken to the Examiners-in-Chief. Before decision upon the appeal the affidavits in question were presented and remanded to the Primary Examiner under Rule 141. The Examiner refused to admit the affidavits on the ground that they do not come within the classes of affidavits admissible by the Examiner under Rule 76, but are such as can, under that rule, only be admitted by special permission of the Commissioner. It is not necessary to determine in this case whether the affidavits would have been admissible if they had been seasonably presented. They were not seasonably presented, and no showing duly verified has been made of good and sufficient reasons for the delay. The affidavits are offered as evidence that the rejection of the claims by the Primary Examiner was erroneous. Such evidence should ordinarily be submitted to the Primary Examiner before prosecution of the case before him has been closed by final rejection or appeal. When presented after final rejection or appeal, affidavits or other new evidence should be accompanied by a verified showing of reasons for the delay, such as is required by Rule 68 in the case of tardy amendments touching the merits of an application. The only showing found in the present case as to why the affidavits were not earlier presented is the statement of the attorney that the applicant was not in a position to make the experiments referred to in the affidavits until after the appeal was taken. This is insufficient. Moreover, it is stated in the affidavit of the applicant that the experiments have extended over two years, whereas the case was not closed before the Primary Examiner and the appeal taken until less than a month before the affidavit was executed.

The Examiner should have refused to admit the affidavits for the reasons given herein and will so refuse to admit them and notify the Examiners-in-Chief of this conclusion.

FELSING v. NELSON.

Decided January 13, 1906.

INTERFERENCE—DISSOLUTION—ABANDONMENT OF INVENTION.

The alleged abandonment of an invention claimed in a reissue application by reason of the failure to make claims thereto in the original application goes to the right of the party to make such claims and cannot be considered under the head or irregularity in the declaration.

APPEAL on motion.

PNEUMATIC STRAW-STACKER.

Messrs. Bradford & Hood and *Mr. E. W. Bradford* for Felsing.

Mr. E. G. Siggers for Nelson.

ALLEN, *Commissioner:*

This is an appeal by Nelson from a decision of the Primary Examiner denying his motion to dissolve the interference on the ground of irregularity in the declaration thereof.

The interference was declared between Nelson's patent and a reissue application of Felsing. The alleged irregularity is stated to be that Felsing has abandoned the invention, because his patent exhibits no intention to claim the subject-matter which he is now seeking to claim. The contention is, in other words, that the claims of the reissue are not for the same invention as the original patent. The same reason is urged in support of the allegation that Felsing has no right to make the claims. Appellant is therefore attempting to urge precisely the same matter both as an irregularity and as lack of right to make the claims. The Primary Examiner treated the question as one relating to the right to make the claim, and in this he was correct.

The appellant urges that the question of abandonment relates to the regularity of the declaration and is reviewable upon interlocutory appeal, as appears from the decision in *Meden* v. *Curtis*, (117 O.G., 1795.) In that case, however, the question was as to the abandonment of the application, whereas here the question is as to abandonment of the invention. The two questions are entirely different, since the first relates to procedure, while the second goes directly to the merits. The allegation of abandonment of the invention is, in effect, an allegation

that the applicant has no right to make the claim, and therefore it will not be considered upon the allegation of irregularity.

No irregularity in the declaration appears, and therefore the decision of the Primary Examiner is affirmed.

NOBLE *v.* SESSIONS.

Decided January 16, 1906.

INTERFERENCE—MOTION FOR DISSOLUTION—INTERFERENCE IN FACT.

Where the claims of the issue cover only such elements of the structures as are common to the two cases and the specific differences in the structures shown are not such as to make the terms have different meanings in the two cases, *Held* that there is an interference in fact.

APPEAL on motion.

TROLLEY.

Mr. Glenn S. Noble and *Messrs. Davis & Davis* for Noble.

Mr. H. H. Bliss for Sessions.

ALLEN, *Commissioner:*

This is an appeal by Noble from the decision of the Primary Examiner refusing to dissolve the above-entitled interference as to counts 1, 2, 3, and 4.

It is alleged that the Examiner erred in concluding that there is an interference in fact and in concluding that there was no such irregularity in the declaration as will preclude a proper decision upon the question of priority of invention.

It does not appear from the arguments made that there was any irregularity in the declaration. The argument was directed to the question of interference in fact and to the right of Sessions to make the claims of the issue.

The Examiner has decided that Sessions is entitled to make the claims, and under the express provisions of Rule 124 there is no interlocutory appeal from that decision. The appellant says in his brief:

> Furthermore, if it is held that Sessions's application discloses the subject-matter of these four counts, then the case comes exactly within the decision of the Circuit Court of Appeals of the District of Columbia, in *Beckman* v. *Wood*, (89 O. G., 2459, 1899.) In that case, it was held that the earlier applicant who failed to claim his device broadly was not entitled to make the claim after the later applicant and inventor had made application for a similar device in which the broad claims were such as would include the earlier invention.

These questions, if they are to be reviewed at all, must be reviewed with the final decision in the interference and not upon interlocutory appeal. (*U. S., ex rel. Lowry*, v. *Allen*, 116 O. G., 2253.)

The only question for determination upon this appeal is whether the terms of the issue have the same meaning when read in connection with the disclosure in the two cases.

Both parties have substantially the same form of spring and both use it in the same relation to the trolley-wheel to perform the same function. The use of this spring is what lends patentability to the claims of the issue. Sessions's trolley-pole is made up of two bars spaced apart and carrying the roller between them, whereas Noble's consists of a single pole with a forked end to receive the roller. Sessions's roller also is wider than Noble's; but this seems to be due to the fact that he uses a different form of trolley-pole. Sessions does not claim that there is any novelty in the general style of his trolley, and it does not appear that there is novelty in the style used by Noble. The claims of the issue cover only such elements of the structures as are common to the two cases, and the specific differences in the structures shown are not such as to make the terms have different meanings in the two cases.

Sessions's roller is a "trolley-wheel" in the same sense as the appellant's, notwithstanding the specific differences between the wheels, and the spring is a centralizing-spring in both cases.

It must be held that there is an interference in fact, and therefore the decision of the Primary Examiner is affirmed.

ESCHINGER *v.* DRUMMOND AND LIEBERKNECHT.

Decided January 20, 1906.

1. INTERFERENCE—DISSOLUTION—PATENTABILITY OF ISSUE OVER ISSUE OF PRIOR INTERFERENCE.

Where it is alleged that there has been irregularity in declaring the interference because the senior party had been involved in a prior interference in which the issue was substantially the same as the present issue and that in such prior interference such party had been defeated on the question of priority, *Held* that the question presented is one involving the right of the senior party to make the claims in issue and will therefore not be considered on direct appeal from the Primary Examiner under the head of irregularity.

2. SAME—ISSUE—NOT LIMITED BY CONSTRUCTION.

Where the counts of the issue are claims made by both parties and allowed by the Primary Examiner and they are clear as to scope, they will not be limited by construction beyond the plain import of their terms.

3. SUPERVISORY AUTHORITY OF THE COMMISSIONER.

The supervisory authority of the Commissioner will not be exercised to review a favorable decision on the question of patentability except in a very clear case.

APPEAL on motion.

TYPE-MOLDS.

Messrs. Church & Church for Eschinger.

Messrs. Brown & Seward for Drummond and Lieberknecht.

ALLEN, *Commissioner:*

This is an appeal by Eschinger from a decision of the Primary Examiner denying his motion to dissolve the interference on the ground of non-interference in fact and irregularity in the declaration thereof. The appeal also invokes the exercise of the supervisory power of the Commissioner on the question of patentability.

The application of Drummond and Lieberknecht here involved was involved in a prior interference with an application of another party, Duncan, Prichard, and Macauley, and priority of invention was awarded to Duncan *et al.* The application of Eschinger here involved and said application of Duncan *et al.* are owned by the same assignee.

Prior to the declaration of this interference Duncan *et al.* copied certain claims which had been allowed to Drummond and Lieberknecht over the prior interference issue; but these claims were rejected by the Primary Examiner as involving new matter. Pending this appeal an appeal was taken to the Examiners-in-Chief on the question of new matter, and a decision thereon has just been rendered allowing all of said claims except one, one of said allowed claims being a count of this interference and the claim refused being another count thereof.

It is urged that the issues of this interference cover and include the subject-matter of the prior interference and that the Examiner should therefore have either dissolved this interference or that said application of Duncan *et al.*

should be included therein. A decision on the question here presented necessarily involves a comparison of the issue of the prior interference and the issue of this interference to determine whether or not this issue is patentable over the prior issue. The only purpose of raising this question is to secure a decision on the question of the patentability of the claims of Drummond and Lieberknecht involved in the issue or their right to make such claims. This question was treated by the Primary Examiner as one going to the merits, and very properly so, and it will not be reviewed here under the head of irregularity. This disposes of the fourth, fifth, sixth, and eighth reasons for appeal.

The first, second, third, and ninth reasons for appeal relate to the question of interference in fact. It is urged that the issues when construed in the light of the prior art and the application of Duncan *et al.* must be so limited to the specific constructions of the respective parties that no interference in fact exists; but the terms of the issue seem to be clear and definite, and there is therefore no necessity for construing them to mean anything which they do not clearly express. To do so would be to decide that they are not patentable as they now stand. These claims have been allowed by the Primary Examiner over the prior art, and, furthermore, the claims of Drummond and Lieberknecht have been allowed over the issue of the prior interference. The evident purpose of the contention is to get a decision on the question of the patentability of the claims in issue or of the right of Drummond and Lieberknecht to make the claims in view of the prior decision. The Primary Examiner decided these questions in favor of the parties, and the rules provide that there shall be no appeal from such a favorable ruling.

The first reason for appeal is broad enough to raise the question of interference in fact without regard to the prior art. The constructions of both parties perform the same function in substantially the same way, and the language of the issue is broad enough to read on both devices. This seems to be recognized by appellant, and there seems to be no serious contention that there is no interference in fact, providing the applications alone are considered. In any event there appears to be no room for such a contention, and inasmuch as the applications alone will be considered, for the reasons above stated, it must be held that there is an interference in fact.

The seventh reason for appeal is—

that the issues do not correctly and definitely set forth the patentable subjects-matter of the claims of the respective applications involved.

Appellant's brief does not specify any indefiniteness which prevents a clear understanding of the issue other than as to matters involved in the questions above treated, and this point therefore needs no further consideration.

The exercise of my supervisory authority is also invoked, to the end that a patent may not be issued to Drummond and Lieberknecht on the claims in issue in view of the prior adjudication in favor of Duncan *et al;* but no good reason is seen for taking such unusual action, especially in view of the fact that one of the claims in issue has been allowed in the Duncan *et al.* application, and the questions raised may be contested in the interference which will probably be declared in view of the decision of the Examiners-in-Chief. The supervisory authority will not be exercised to review a favorable decision on the question of patentability except in a very clear case. The action of the Examiners-in-Chief in refusing one of the claims rejected by the Primary Examiner is evidence that this case does not come within the exception. The request is therefore refused.

The decision of the Primary Examiner holding that there is an interference in fact and that there was no irregularity in declaring the interference is therefore affirmed.

EX PARTE MICHAELIS.

Decided March 17, 1906.

1. APPLICATION—FILING DATE—PARTS OF DRAWINGS NOT RECEIVED.

Where the specification refers to a "Figure 1" of the drawing and no figure of that number appears on the sheets filed, *Held* that the application clerk properly refused to give the papers a filing date as a complete application.

2. SAME—SAME—SAME—PRACTICE.

Where a filing date is refused by the Office on account of the omission of certain figures from the drawings and said figures, in the applicant's opinion, do not involve substantial additions to or departures from the disclosure in the papers originally filed, the proper practice is to file a petition for the earlier date, accompanied by the omitted figures.

ON REQUEST.

APPARATUS FOR RECORDING AND REPRODUCING SOUND ON DISKS IN SOUND-PRODUCING MACHINES.

Messrs. Beach & Chapman for the applicant.

ALLEN, *Commissioner:*

This is a request that certain papers be received as a complete application for patent of the date upon which they were filed.

The papers comprise a petition, specification, oath, and two sheets of drawings. The specification refers to a "Figure 1" of the drawing; but no figure of that number appears on the sheets filed. The application clerk informed the applicant that these papers had been entered as an informal application on account of the omission of Fig. 1 from the drawing and stated that this figure must be shown before the case could go forward to the Examiner. In refusing to enter the papers as a complete application the application clerk followed the practice indicated in *ex parte Ehrendriech*, (C. D., 1904, 75,) and his action is approved as correct.

The practice of refusing filing dates as completed applications in those cases where the papers filed do not include all of the drawings referred to in the specification is believed to be in the best interests of applicants and to result in no injustice or hardship. If the filing date were given and the application entered as complete before receiving all the drawings and the completed drawings when filed were found to contain matter not found in the original disclosure, the applicant in order to protect his invention would be put to the expense of a new application and would at the same time lose the earlier filing date, which is the only thing sought to be gained by the present request. If, on the other hand, when the filing date is refused by the application clerk the applicant is of the opinion that the omitted drawing involves no substantial addition to or departure from the disclosure in the papers originally filed, he may file a petition for the earlier filing date, accompanied by the omitted drawing. Such a petition will be referred to the Primary Examiner for report, and if on consideration of the same it is found that the drawings originally omitted, but submitted with the petition, do not,

in fact, add to or depart from the original disclosure the application clerk will be directed to enter the application as complete on the date of filing of the original papers.

The request is denied.

MIEL *v.* YOUNG.

Decided March 17, 1906.

1. INTERFERENCE—MOTION FOR DISSOLUTION—APPEAL FROM AFFIRMATIVE DECISION UNDER RULE 124.

Held that the court of appeals in the case of *Podlesak and Podlesak* v. *McInnerney* (120 O. G., 2127) is not believed to have departed from its position announced in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters' Compress Company*, (116 O. G., 2253,) wherein it sustained the Office in its refusal to permit appeals from decisions upon motions for dissolution which affirmed the merits of a party's claim.

2. SAME—CONSIDERATION OF RIGHT TO CLAIM UPON APPEAL UPON PRIORITY OF INVENTION.

Held that the case of *Podlesak and Podlesak* v. *McInnerney* (120 O. G., 2127) is believed to emphasize and carry forward the suggestions contained in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters' Compress Company*, (116 O. G., 2253,) to the effect that an opponent's right to make claims might be questioned upon appeal from decisions upon priority of invention where a holding of right on the part of one party to make the claims operates to deny a patent to another party who, if such holding be in error, is the first inventor.

ON PETITION.

STONE-SAWS.

Messrs. Bartlett, Brownell & Mitchell and *Mr. T. W. Fowler* for Miel.

Mr. F. G. Dieterich and *Messrs. F. G. Dieterich & Co.* for Young.

ALLEN, *Commissioner:*

This is a petition by Miel that the Primary Examiner be directed to fix a limit of appeal from his decision upon Miel's motion for dissolution affirming the right of Young to make claims in issue.

Miel recognizes that Rule 124 denies the right of appeal from a decision of the Primary Examiner upon motion for dissolution affirming the right of a party to make claims, but contends that the rule should be set aside in view of the decision of the court of appeals in the case of *Podlesak and Podlesak* v. *McInnerney*, (120 O. G., 2127.) The court fully considered the contention for the right of appeal from decisions upon motions for dissolution which affirm the merits of a party's claim in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters' Compress Company*, (116 O. G., 2253,) and sustained the rule, holding that the Office was justified and correct in its position refusing to permit appeals from such decisions. I find nothing in the *Podlesak and Podlesak* v. *McInnerney* decision indicating any intention upon the part of the court to depart from the conclusions stated in the decision *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry*, etc. On the contrary, it is believed that the later of these decisions only emphasizes and carries forward the suggestions contained in the earlier decision to the effect that an opponent's right to make claims might be questioned upon appeal from decisions upon priority of invention where a holding of right on the part of one party to make the claims operates to deny a patent to another party who, if such holding be in error, is the first inventor.

The petition is denied.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ROLFE *v.* HOFFMAN.

Decided December 5, 1905.

1. INTERFERENCE—DELAY IN FILING APPLICATION AFTER REDUCTION TO PRACTICE.

Where two years elapsed between a party's alleged reduction to practice and the filing of his application for a patent, during which interval his rival entered the field and secured a patent, *Held* that such delay standing by itself does not constitute an abandonment of his rights to a patent based on priority of invention.

2. ABANDONMENT OF INVENTION—PROOF.

Where two years elapsed between an alleged reduction to practice and the filing of an application for patent, *Held* that neither abandonment nor forfeiture of a right to receive a patent can be presumed, but must be proved.

3. INTERFERENCE—REDUCTION TO PRACTICE.

Where the Rolfe exhibits were made and tested, *Held* that it is considered that his work as an inventor was finished, physically as well as mentally, and that there was a complete reduction to practice.

4. INTERFERENCE—PRIORITY.

Held that Rolfe did not abandon his invention or conceal it from the public, and being the first to conceive, the first to disclose to others, and the first to reduce to practice is the first inventor and entitled to award of priority.

Mr. L. S. Bacon, Mr. J. H. Milans, and *Mr. Miller Belfield* for the appellant.

Mr. Luther L. Miller for the appellee.

DUELL, *J.:*

This appeal is taken to review the decision of the Commissioner of Patents awarding priority of invention to Otto C. Hoffman of an invention in electric-circuit protectors. The various tribunals of the Patent Office have not been in accord. The Commissioner and Examiner of Interferences agreed in rendering decisions in favor of Hoffman while the Examiners-in-Chief found in favor of Rolfe.

The invention in controversy is set forth in the following issues:

1. In a thermal circuit-protector, in combination, a fixed member; a spring, a spring-finger fixed with relation to said fixed member and tending to lie in contact therewith, which finger is adapted to hold said spring flexed, said spring tending to separate the spring-finger from said fixed member; and a solder connection between said fixed member and said spring-finger.

2. In a thermal circuit-protector, in combination, a fixed member; a spring; a spring-finger fixed with relation to said fixed member and tending to lie in contact therewith, which finger is adapted to hold said spring flexed, said spring tending to separate the spring-finger from said fixed member; a solder connection between said fixed member and said spring-finger; and a substance offering comparatively high resistance to the passage of an electric current, in proximity to said solder connection.

3. In a thermal circuit-protector, in combination, two ears; a spring-finger adapted to lie in contact with each one of said ears; a spring adapted to be held flexed by said spring-fingers and tending to separate said spring-fingers from said ears; and a fusible solder connection between each one of said ears and its spring-finger.

4. In a thermal circuit-protector, in combination, two ears; a spring; a spring-finger adapted to lie in contact with each one of said ears and to hold said spring flexed, said spring tending to separate the spring-fingers from said ears; and a fusible solder connection between each of said ears and its spring-finger.

5. In a thermal circuit-protector, in combination, two ears; a spring; a spring-finger adapted to lie in contact with each one of said ears and to hold said spring flexed, said spring tending to separate the spring-fingers from said ears; a fusible solder connection between each of said ears and its spring-finger; and a substance offering comparatively high resistance to the passage of an electric current, in proximity to said solder connection.

6. In a thermal circuit-protector, in combination, a fixed member; a spring; a spring-finger fixed with relation to said fixed member and tending to lie in contact therewith, which finger has a projection adapted to engage said spring to hold the latter flexed, said projection also causing said spring to tend to separate said spring-finger from said fixed member; and a fusible solder connection between said fixed member and said spring-finger.

7. In a thermal circuit-protector, in combination, a fixed member; a spring; a spring-finger fixed with relation to said fixed member and tending to lie in contact therewith, which finger has a projection adapted to engage said spring to hold the latter flexed,

said projection also causing said spring to tend to separate said spring-finger from said fixed member; a fusible solder connection between said fixed member and said spring-finger; and a substance offering comparatively high resistance to the passage of an electric current, in proximity to said solder connection.

8. In a thermal circuit-protector, in combination, two ears; a pair of spring-fingers having inclined outer ends, said fingers adapted to lie between said ears, each of said fingers contacting one of the ears; a fusible solder connection between each one of said ears and its spring-finger; and a spring having an opening adapted to receive the outer ends of said spring-fingers, said spring being held flexed by said fingers when the fingers are held by said solder connection but tending to separate said fingers from said ears.

Hoffman is the senior party and relies upon the record date of his application for patent which was filed January 19, 1903, and matured into a patent dated November 17, 1903. Rolfe is an applicant. His application was not filed until December 29, 1903, forty-two days after the issue of Hoffman's patent. To prevail Rolfe must prove priority beyond a reasonable doubt. He must overcome Hoffman's conception and disclosure predicated upon the filing of Hoffman's application and the constructive reduction to practice by Hoffman based on the same act. The date to be overcome it will be remembered is January 19, 1903.

That Rolfe was the first to conceive and disclose the invention to others is established beyond a doubt. His case really turns upon the weight that is to be given to his three exhibits Nos. 1, 2, and 3. These exhibits, one and all, contain the elements of each count of the issue excepting the spring or springs which support the heat-cartridge. That these exhibits were made by Rolfe in December, 1901, and by him shown to Wiesinger and Schwarze about that time is sufficiently proved and is not successfully questioned. If they constituted a reduction to practice then Rolfe is entitled to an award of priority for he will then have proven priority of conception, disclosure and reduction to practice, and, in the absence of any clearly proven abandonment his right to a patent has not become forfeited either to the public or to his rival. It is true that two years elapsed between his alleged reduction to practice and the filing of his application for patent, during which interval his rival entered the field and secured a patent. Such a period of delay, standing by itself does not constitute an abandonment of his right to a patent based on priority of invention. An inventor having reduced his invention to practice is entitled to a period of two years in which to put the same in public use and on sale without a forfeiture of his right to receive a patent based upon an application filed before the statutory bar has arisen. Neither abandonment nor forfeiture within that period can be presumed but must be proven. True the acts of an inventor may be such as to amount to an abandonment or forfeiture within that period but such acts must be proven. Moreover his proven acts may be such as to require a finding that what he did was not a reduction to practice but must be rated as an abandoned experiment. The doctrine enunciated by this court in *Mason* v. *Hepburn* (13 App. D. C., 510) and *Warner* v. *Smith* (13 App. D. C., 111) was based upon the facts disclosed by the records in those cases, and the rule there laid down will not be extended to any case not coming clearly within it, as we said in *McBerty* v. *Cook*, (16 App. D. C., 133.) There is absolutely nothing in the record in this case to warrant a finding of abandonment by Rolfe. It appears that Rolfe after making these exhibits submitted them to his patent attorney, with whom they were left to be patented in their turn; that the American Electric Fuse Company had the right to obtain patents for Rolfe's inventions in the art to which the device in controversy relates and exercised that right subsequent to December 1, 1901, to the extent of filing about twenty applications; that Rolfe talked more or less about this invention with others, and that he preserved the exhibits. These facts negative any idea of abandonment of the invention. It is not necessary to determine whether or not the facts disclosed are sufficient to prove that Rolfe was as diligent as he should have been had he only been the first to conceive and disclose, and not the first to reduce to practice. As we said in *Oliver* v. *Felbel*, (20 App. D. C., 255:)

The diligence required of an inventor is diligence rather in the reduction of his invention to practice than in application to the Patent Office or in manufacturing his device for public use.

Furthermore, conceding that Rolfe was the first to reduce to practice, he did not unreasonably delay the filing of an application for patent and has sufficiently shown the reason for such delay as there was.

Was the construction of Exhibits Nos. 1, 2 and 3 by Rolfe an act sufficient to base a finding of reduction to practice, or was such construction, plus such test of them as was made sufficient? An affirmative answer to either branch of the question must result in an award of priority to Rolfe.

Rolfe made these exhibits in December, 1901, and showed them to Wiesinger and Schwarze, both of whom were familiar with inventions and devices relating to the electric art. He operated them in the presence of the former but not before Schwarze who says, however, that when Rolfe showed them to him he examined and understood them and told Rolfe that it was not necessary to operate them as he knew they would work. He testified that he had been in the electrical business for thirty years and had had experience with a variety of electric appliances, including telephones and telephone appliances. The invention relates to devices for protecting low-tension circuits such as telegraph, telephone and fire-alarm from injurious effects of unduly strong currents such as those carried by power and lighting circuits. The art is a well-developed one and most of the devices used for the purpose are simple and their working well understood not only by electricians but by those who work in that line, yet lay no claim to be ranked as experts. A man of ordinary skill and experience in the art would, in our opinion, understand the device in controversy, and would come to the conclusion that it would work. The Patent Office raises no question that Rolfe has fully described an operative device, and when that device shown and described in the application for the patent is substantially the same as the device made in December, 1901, that fact, at least in the present case, is persuasive that the device belongs to that class of simple devices where it is not essential that actual tests of the invention be made in order to complete the inventive act. The device in controversy belongs to the type of simple devices disclosed and referred to in *Mason* v. *Hepburn*, *supra*; *Roe* v. *Hanson*, (19 App. D. C., 559,) and analogous cases rather than to the devices disclosed in *MacDonald* v. *Edison* (21 App. D. C., 527) and analogous cases.

We agree with the following statement of the Examiners-in-Chief referring to these exhibits, adding that, in our opinion the expert in the art would not be required to rank very high among experts to come to the conclusion that the device would operate. They said:

Exhibits 2 and 3 are of the type of the preferred form of Rolfe's application and Exhibit 1 is that of the other form of his application. Each exhibit contains the elements of each count of the issue excepting the spring or springs which support the heat-cartridge. Those springs, having forked upper ends to receive and removably support the heat-cartridge and acting to separate its parts when the solder uniting them is melted, were then old in the art. But in that prior art the parts, after separation to break the circuit did not resume their original closed-together relation to restore the circuit, nor did they become resoldered ready for another like operation by another abnormal current.

From these facts it is evident that to any expert in the art each of these exhibits of heat-cartridges indicates at sight that they are constructed to be inserted into the old forks of the old springs, and that by those old springs the part of the heat-cartridge of each exhibit will be separated on the melting of the solder uniting them, to break the circuit, and that, then, the spring-fingers being released from one of the springs will resume the closed-together position and be resoldered by the setting of the solder just melted by the heat of the abnormal current.

In short an expert in the art at sight of either exhibit would understand its construction and operation and would know whether or not it would successfully operate for its purpose.

But if the device in controversy belongs to the more numerous class of inventions which require tests and workings to prove that they are operative and have been clearly reduced to practice we believe that the test made by Rolfe, and witnessed by Wiesinger of this simple device in this well-developed art was sufficient to prove that it would operate under all usual conditions and that it was not necessary to operate it in a telephone-circuit in order to claim a reduction to practice. As said in *Gallagher* v. *Hien*, (25 App. D. C. 77:)

> In considering this question (tests constituting a reduction to practice) we apprehend that the same act or set of acts may or may not constitute a reduction to practice, modified, as they may be, by the special circumstances of the particular case.

Rolfe says that when the devices were tested—

> they were placed between two springs and connected with the circuit with wires and the current heated up the solder. As soon as the solder became heated to 160°, it allowed the spring-points to go together and release the circuit-spring and open the circuit. The springs went back to their original position before the solder cooled and resoldered.

He further says that he operated the devices with currents such as would prevail in telephone-circuits if the telephone-circuits became crossed with wires, carrying more current than was safe. This was a fair test for the devices would not be called into play when placed in a telephone-circuit until something more than the ordinary current flowing through the circuit was present. It needed an unduly strong current to call the devices into operation. Such a current was used.

When the exhibits were made and tested we consider that "the work of the inventor was finished, physically as well as mentally" and that there was a complete reduction to practice.

Rolfe being the first to conceive, the first to disclose the invention in controversy to others, who thoroughly understood it, and its working, and the first to reduce it to practice is the first inventor and being such is entitled to an award of priority, for he never abandoned his invention or concealed it from the public.

It follows that the decision of the Commissioner must be reversed and priority of invention awarded to Rolfe; and it is accordingly so ordered. The clerk of this court will certify this opinion and the proceedings of this court in the cause to the Commissioner of Patents, according to law. Reversed.

Court of Appeals of the District of Columbia.

IN RE BAKER.

Decided December 7, 1905.

PATENTABILITY—WORK OF A SKILLED MECHANIC.

Held, in view of the state of the art relating to combined funnels and valves and the Baker patent, which shows a reversible funnel in combination with a valve, that using the neck of a funnel as part of a plug-valve to be opened by turning the funnel involves nothing more than the work of a skilled mechanic.

Mr. L. S. Bacon, *Mr. J. H. Milans*, and *Mr. Dunn* for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

SHEPARD, *J.*:

This is an appeal from a decision of the Commissioner of Patents rejecting the application of Clara A. Baker for a patent for a combination inlet-valve and funnel, having the following elaborate claims:

1. In a liquid-filling cock the combination with a valve, of a funnel connected thereto so that by turning up said funnel the valve is opened, while by turning it down the valve is closed, substantially as described.
2. In a liquid-filling cock the combination with a valve having two passage-ways, of a funnel connected thereto so that by turning up said funnel the valve is opened, while by turning it down the valve is closed, substantially as described.
3. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, a funnel having a bend and a shank, said shank having a corresponding port and forming the plug of said valve, so that a movement of the funnel operates said valve, substantially as described.
4. In a combination inlet-valve and funnel, a valve-casing having suitable ports therein, a funnel having a bend and shank, said shank having corresponding ports and forming the plug of said valve, so that a movement of the funnel operates said valve, substantially as described.
5. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, means for holding parts together, a funnel having a bend and shank, said shank having a corresponding port and forming the plug of said valve so that a movement of the funnel operates said valve, substantially as described.
6. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, a funnel having a bend and a shank, threaded end on said shank, a washer, and a nut on said threaded end, said shank having a corresponding port and forming the plug of said valve so that a movement of the funnel operates said valve, substantially as described.
7. In a combination inlet-valve and funnel, a valve-casing having a suitable inlet-port therein, a plug at right angles to said inlet-port, which plug is provided with a corresponding port, a funnel having a bend formed integral with said plug for operating the same, and a continuous passage connecting said bend, said plug, and said inlet-port when the funnel is turned up, substantially as described.
8. In a combination inlet-valve and funnel, a valve-casing having a suitable inlet-port therein, a plug at right angles to said inlet-port, which plug is provided with a corresponding port, a funnel having a bend formed integral with said plug for operating the same, and a continuous passage connecting said bend, said plug, and said inlet-port with the open air when the funnel is turned up.

These claims were rejected on references made to the following patents: Hurff, August 18, 1868, No. 81,091, improvement in house-ventilators; Richardson, March 25, 1890, No. 423,954, measuring-funnel; Andlauer, August 26, 1890, No. 435,272, attachment to gasolene-stoves; William C. Baker, April 12, 1892, No. 396,288, car-heating apparatus.

As the funnel and valve connections shown in the Hurff, Richardson, and Andlauer patents, were never used in a car-heating system or anything related thereto, it may be possible that they ought not, of themselves, to stand in the way of a patent to the applicant, whose combination is primarily intended for use in what is called the "Baker system" of car-heating, although it is stated that her device is particularly well adapted for filling boilers, expansion-drums on Baker heaters, gasolene and water tanks in automobiles and the like. But this we need not undertake to decide, as we are of opinion that the application is met by the reference to the Baker patent. That Baker was the inventor of the Baker car-heating system, and, it is stated, was the father of the applicant. That patent shows a reversible funnel in combination with a valve, the funnel working in conjunction with the valve to accomplish the same purpose sought in applicant's improvement. Considering this, as well also as the general state of the art relating to combined funnels and valves, we fully agree with the Commissioner that the improvement made in using the neck of the funnel as part of the plug-valve to be opened by turning the funnel, shows nothing more than the work of a skilled mechanic. It did not amount to invention.

The decision will therefore be affirmed, and the proceedings herein certified to the Commissioner of Patents as required by law. It is so ordered. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	Nevada		
Alaska, District of			New Hampshire		
Arizona Territory		1	New Jersey	27	5
Arkansas	2		New Mexico Ter't'y		
California	29	17	New York	77	105
Colorado	7	1	North Carolina		1
Connecticut	16	7	North Dakota		
Delaware	1		Ohio	48	21
District of Columbia	6	1	Oklahoma Territ'y	2	
Florida			Oregon	5	
Georgia	5	12	Pennsylvania	56	45
Hawaii Territory		1	Porto Rico		
Idaho	1		Rhode Island	3	16
Illinois	58	28	South Carolina		2
Indian Territory			South Dakota	2	
Indiana	6	7	Tennessee	4	1
Iowa	16	4	Texas	6	2
Kansas	4	2	Utah	4	
Kentucky	8	7	Vermont	5	
Louisiana	4	1	Virginia	5	10
Maine		3	Washington	7	4
Maryland	4	8	West Virginia	5	1
Massachusetts	30	45	Wisconsin	14	2
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Netherlands		1
Austria-Hungary	2	2	Newfoundland		
Belgium	4		New South Wales	1	
Brazil			New Zealand	4	
British West Indies			Norway		
Canada	11		Peru		
Cape Colony			Queensland		
Chile			Roumania		
China			Russia	4	
Costa Rica			San Salvador		
Cuba			Scotland	2	
Denmark			South Africa		
Ecuador			Spain		
England	24	5	Sweden	1	
France	4	1	Switzerland	1	1
Germany	16	4	Tasmania	1	
Ireland			Turkey	1	
Italy	2		Victoria	1	
Japan			Western Australia		
Java					
Mexico			Total to citizens of foreign countries	80	14
Natal	1				

Money by Mail.

Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 9, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

Exhibits 2 and 3 are of the type of the preferred form of Rolfe's application and Exhibit 1 is that of the other form of his application. Each exhibit contains the elements of each count of the issue excepting the spring or springs which support the heat-cartridge. Those springs, having forked upper ends to receive and removably support the heat-cartridge and acting to separate its parts when the solder uniting them is melted, were then old in the art. But in that prior art the parts, after separation to break the circuit did not resume their original closed-together relation to restore the circuit, nor did they become resoldered ready for another like operation by another abnormal current.

From these facts it is evident that to any expert in the art each of these exhibits of heat-cartridges indicates at sight that they are constructed to be inserted into the old forks of the old springs, and that by those old springs the part of the heat-cartridge of each exhibit will be separated on the melting of the solder uniting them, to break the circuit, and that, then, the spring-fingers being released from one of the springs will resume the closed-together position and be resoldered by the setting of the solder just melted by the heat of the abnormal current.

In short an expert in the art at sight of either exhibit would understand its construction and operation and would know whether or not it would successfully operate for its purpose.

But if the device in controversy belongs to the more numerous class of inventions which require tests and workings to prove that they are operative and have been clearly reduced to practice we believe that the test made by Rolfe, and witnessed by Wiesinger of this simple device in this well-developed art was sufficient to prove that it would operate under all usual conditions and that it was not necessary to operate it in a telephone-circuit in order to claim a reduction to practice. As said in *Gallagher* v. *Hien*, (25 App. D. C. 77:)

In considering this question (tests constituting a reduction to practice) we apprehend that the same act or set of acts may or may not constitute a reduction to practice, modified, as they may be, by the special circumstances of the particular case.

Rolfe says that when the devices were tested—

they were placed between two springs and connected with the circuit with wires and the current heated up the solder. As soon as the solder became heated to 160°, it allowed the spring-points to go together and release the circuit-spring and open the circuit. The springs went back to their original position before the solder cooled and resoldered.

He further says that he operated the devices with currents such as would prevail in telephone-circuits if the telephone-circuits became crossed with wires, carrying more current than was safe. This was a fair test for the devices would not be called into play when placed in a telephone-circuit until something more than the ordinary current flowing through the circuit was present. It needed an unduly strong current to call the devices into operation. Such a current was used.

When the exhibits were made and tested we consider that "the work of the inventor was finished, physically as well as mentally" and that there was a complete reduction to practice.

Rolfe being the first to conceive, the first to disclose the invention in controversy to others, who thoroughly understood it, and its working, and the first to reduce it to practice is the first inventor and being such is entitled to an award of priority, for he never abandoned his invention or concealed it from the public.

It follows that the decision of the Commissioner must be reversed and priority of invention awarded to Rolfe; and it is accordingly so ordered. The clerk of this court will certify this opinion and the proceedings of this court in the cause to the Commissioner of Patents, according to law. Reversed.

Court of Appeals of the District of Columbia.

IN RE BAKER.

Decided December 7, 1905.

PATENTABILITY—WORK OF A SKILLED MECHANIC.

Held, in view of the state of the art relating to combined funnels and valves and the Baker patent, which shows a reversible funnel in combination with a valve, that using the neck of a funnel as part of a plug-valve to be opened by turning the funnel involves nothing more than the work of a skilled mechanic.

Mr. L. S. Bacon, *Mr. J. H. Milans*, and *Mr. Dunn* for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

SHEPARD, *J.*:

This is an appeal from a decision of the Commissioner of Patents rejecting the application of Clara A. Baker for a patent for a combination inlet-valve and funnel, having the following elaborate claims:

1. In a liquid-filling cock the combination with a valve, of a funnel connected thereto so that by turning up said funnel the valve is opened, while by turning it down the valve is closed, substantially as described.
2. In a liquid-filling cock the combination with a valve having two passage-ways, of a funnel connected thereto so that by turning up said funnel the valve is opened, while by turning it down the valve is closed, substantially as described.
3. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, a funnel having a bend and a shank, said shank having a corresponding port and forming the plug of said valve, so that a movement of the funnel operates said valve, substantially as described.
4. In a combination inlet-valve and funnel, a valve-casing having suitable ports therein, a funnel having a bend and shank, said shank having corresponding ports and forming the plug of said valve, so that a movement of the funnel operates said valve, substantially as described.
5. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, means for holding parts together, a funnel having a bend and shank, said shank having a corresponding port and forming the plug of said valve so that a movement of the funnel operates said valve, substantially as described.
6. In a combination inlet-valve and funnel, a valve-casing having a suitable port therein, a funnel having a bend and a shank, threaded end on said shank, a washer, and a nut on said threaded end, said shank having a corresponding port and forming the plug of said valve so that a movement of the funnel operates said valve, substantially as described.
7. In a combination inlet-valve and funnel, a valve-casing having a suitable inlet-port therein, a plug at right angles to said inlet-port, which plug is provided with a corresponding port, a funnel having a bend formed integral with said plug for operating the same, and a continuous passage connecting said bend, said plug, and said inlet-port when the funnel is turned up, substantially as described.
8. In a combination inlet-valve and funnel, a valve-casing having a suitable inlet-port therein, a plug at right angles to said inlet-port, which plug is provided with a corresponding port, a funnel having a bend formed integral with said plug for operating the same, and a continuous passage connecting said bend, said plug, and said inlet-port with the open air when the funnel is turned up.

These claims were rejected on references made to the following patents: Hurff, August 18, 1868, No. 81,091, improvement in house-ventilators; Richardson, March 25, 1890, No. 423,954, measuring-funnel; Andlauer, August 26, 1890, No. 435,272, attachment to gasolene-stoves; William C. Baker, April 12, 1892, No. 396,288, car-heating apparatus.

As the funnel and valve connections shown in the Hurff, Richardson, and Andlauer patents, were never used in a car-heating system or anything related thereto, it may be possible that they ought not, of themselves, to stand in the way of a patent to the applicant, whose combination is primarily intended for use in what is called the "Baker system" of car-heating, although it is stated that her device is particularly well adapted for filling boilers, expansion-drums on Baker heaters, gasolene and water tanks in automobiles and the like. But this we need not undertake to decide, as we are of opinion that the application is met by the reference to the Baker patent. That Baker was the inventor of the Baker car-heating system, and, it is stated, was the father of the applicant. That patent shows a reversible funnel in combination with a valve, the funnel working in conjunction with the valve to accomplish the same purpose sought in applicant's improvement. Considering this, as well also as the general state of the art relating to combined funnels and valves, we fully agree with the Commissioner that the improvement made in using the neck of the funnel as part of the plug-valve to be opened by turning the funnel, shows nothing more than the work of a skilled mechanic. It did not amount to invention.

The decision will therefore be affirmed, and the proceedings herein certified to the Commissioner of Patents as required by law. It is so ordered. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 5. TUESDAY, APRIL 3, 1906. PRICE—$5 per year

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	4	1	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	.....	.....
Arizona Terriotry	.....	1	New Jersey	27	5
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California	20	17	New York	77	105
Colorado	7	1	North Carolina	.....	1
Connecticut	16	7	North Dakota	.....	.....
Delaware	1	.....	Ohio	48	21
District of Columbia	6	1	Oklahoma Territ'y	2	.....
Florida	.....	.....	Oregon	5	.....
Georgia	5	12	Pennsylvania	56	45
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Idaho	1	.....	Rhode Island	3	16
Illinois	58	28	South Carolina	.....	2
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Indiana	6	7	Tennessee	4	1
Iowa	16	4	Texas	6	2
Kansas	4	2	Utah	4	.....
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Louisiana	4	1	Virginia	5	10
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Maryland	4	8	West Virginia	5	1
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Nebraska	3	3			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	1
Austria-Hungary	2	2	Newfoundland	.....	.....
Belgium	4	.....	New South Wales	1	.....
Brazil	.....	.....	New Zealand	4	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	11	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	4	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	2	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	24	5	Sweden	1	.....
France	4	1	Switzerland	1	1
Germany	16	4	Tasmania	1	.....
Ireland	.....	.....	Turkey	1	.....
Italy	2	.....	Victoria	1	.....
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Java	.....	.....			
Mexico	.....	.....	Total to citizens of foreign countries	80	14
Natal	1	.....			

Money by Mail.

Money sent by mail to the Patent Office will be at the risk of the sender. Letters containing money should be registered.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 5, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business March 27, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Mar. 20	Feb. 9	265
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 17	Feb. 1	417
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 15	Nov. 2	693
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 14	Nov. 27	298
327	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 13	Mar. 2	241
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 13	Feb. 1	315
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 13	Jan. 8	346
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 13	Aug. 2	300
	Under one month.			
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 12	Feb. 23	232
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 12	Feb. 8	355
332	X. Carriages and Wagons.....	Mar. 12	Nov. 2	928
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 12	Sept. 18	720
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Mar. 9	Dec. 26	292
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Mar. 8	Oct. 9	659
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Mar. 7	Oct. 21	660
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 5	Aug. 1	769
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 3	Nov. 13	617
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 2	Aug. 21	766
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 1	Jan. 16	225
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 1	Jan. 11	575
226	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 1	Jan. 2	433

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 1	Dec. 15	460
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 1	Dec. 1	364
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 1	July 31	1177
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Feb. 27	Nov. 24	293
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Feb. 27	Sept. 12	636
	Between one and two months.			
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Feb. 26	Oct. 2	715
282	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 23	Feb. 20	372
327	XVIII. Steam-Engineering, etc ...	Feb. 20	Dec. 14	455
109	XVI. Telegraphy and Telephony.	Feb. 12	Dec. 19	349
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 12	Oct. 26	526
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Feb. 8	Jan. 3	528
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Feb. 5	Nov. 13	582
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 3	Oct. 7	797
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 29	Oct. 21	326
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Jan. 29	Sept. 12	622
	Between two and three months.			
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Jan. 26	Nov. 11	488
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 15	June 20	1054

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189	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
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	Under one month.			
	Designs.....	Mar. 12	Feb. 23	64
	Under fifteen days.			23
	Labels and Prints.....	Mar. 23	Mar. 22	

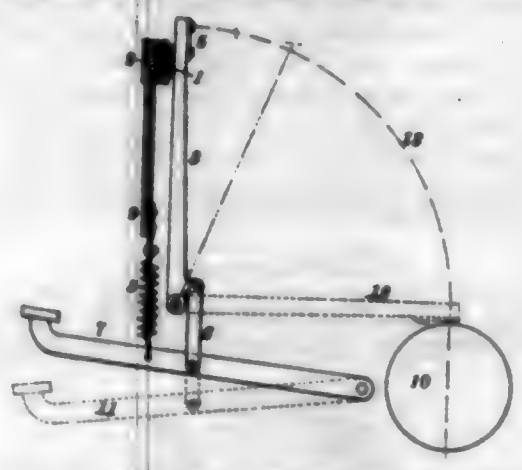
Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

PATENTS

GRANTED APRIL 3, 1906.

816,552. **TYPE-WRITER.** WILLIAM BAXTER, Jr., Jersey City, N. J. Filed May 20, 1902. Serial No. 108,245.



Claim.—1. In a type-writer, a yielding inelastic cushion, against which the type-bars strike on the return stroke, consisting of a sheath of soft flexible material, and a filling of finely-divided material, in rounded form.

2. A type-bar pad, having in its structure the inherent qualities of yielding and non-resiliency and constructed in fluted form.

3. The combination of a cushion located to receive the impact of the type-bars on their return stroke, formed of a sheath and a filling yielding by lateral displacement, and an abutment shaped to receive said cushion and support it along the sides.

4. The combination of a yielding inelastic cushion to support the type-bars in their normal position, consisting of a sheath of flexible material, and a filling of finely-divided material, and an abutment shaped to receive and hold said cushion.

5. The combination of a yielding inelastic cushion consisting of a sheath arranged to divide said cushion into compartments, these compartments being filled with a finely-divided material, yielding by lateral displacement; and an abutment fastened to the frame of the machine, and provided with a groove or depression to hold the cushion in its proper position.

6. A yielding inelastic cushion to receive the impact of the type-bars, comprising compartments made of flexible material, filled with a finely-divided substance.

7. A yielding inelastic cushion to receive the impact of the type-bars, consisting of an inclosing sheath divided into compartments filled with a finely-divided material; the line of division between the compartments running at an angle to the direction in which the filling tends to gravitate.

8. In a type-writer, a yielding inelastic cushion for arresting the type-bars in normal position, constructed of an inclosing sheath and a filling of finely-divided material; the sheath being formed in a plurality of compartments, the lines of division between which compartments extend at an angle to the length of the cushion.

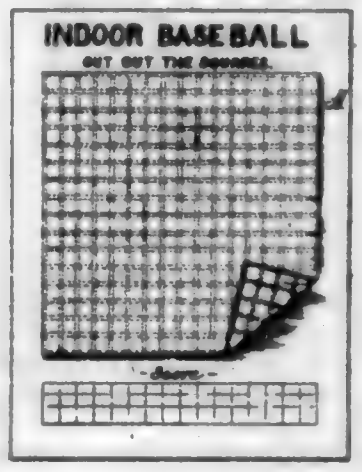
9. In a type-writer, a yielding inelastic cushion for arresting the type-bars in normal position, constructed of an inclosing sheath and a filling of finely-divided material; the sheath being formed in a plurality of compartments the lines of division between which compartments extend at an angle to the length and to the transverse dimension of the cushion.

10. In a type-writer, a yielding inelastic cushion to receive the impact of the type-bars on their return stroke, consisting of a sheath of flexible material constructed to form compartments running diagonally across the face of the cushion, and a filling of finely-divided material in these compartments.

11. The combination of a type-writer-key cushion constructed with a filling to absorb the energy of the blow yielding by lateral displacement when struck by the type-bars, properly located to receive the impact of said bars; an abutment shaped to receive and hold the cushion, and the type-bars constructed with rounded surfaces or corners along the portion that strikes the cushion.

12. The combination of a yielding non-resilient cushion to support type-bars in their normal position, consisting of a sheath of suitable flexible material, and a filling of finely-divided material; an abutment secured to the frame of the machine and adapted to receive and hold the cushion; type-bars arranged to strike and rest against the cushion; and the operating key-levers acting under a suitable return influence, to return the type-bars to their normal position against the cushion.

816,553. **GAME APPARATUS.** PHILIP BECKER, Anderson, Ind., assignor, by mesne assignments, to Geneva Toy & Game Company, a Corporation of New York. Filed June 13, 1904. Serial No. 212,892.



Claim.—1. A game apparatus comprising a mount and a plurality of sections of sheet material arranged in juxtaposition thereon and independently removable therefrom, in combination with inscriptions representing game values on said sections disposed on the faces of the same which are adjacent and concealed by the mount.

2. A game apparatus comprising a mount, in combination with a sheet of sheet material secured thereon, said sheet being divided into a plurality of sections, and marks representing game values on the face thereof concealed by the mount and corresponding in position to said sections.

3. A game apparatus comprising a card or mount and a layer of sheet material disposed thereon having portions which are directly secured to the mount and portions or sections unsecured thereto, said unsecured portions being bounded by perforations whereby they are readily separable from the secured portions, and game values inscribed on the reverse or concealed sides of said removable portions or sections.

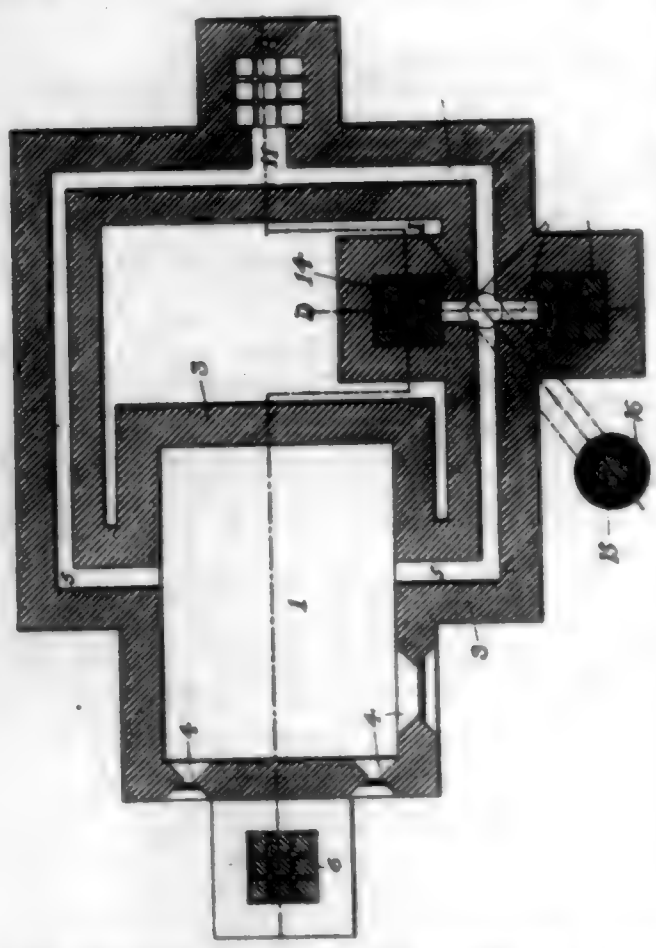
4. A game apparatus comprising a card or mount, a layer of sheet material permanently secured to said card along a plurality of lines, perforations through said layer around the unsecured sections thereof, whereby said unsecured sections are designated as removable from the mount, and marks representing values on the reverse concealed sides of some of said sections.

5. A game apparatus comprising a mount, a sheet provided with double lines forming strips subdividing the same into a plurality of sections and permanently secured to said mount by the strips, in combination with inscriptions on the reverse concealed sides of said sections.

816,554. **ELECTRIC FURNACE.** ARSON G. BETTS, Troy, N. Y. Filed May 20, 1904. Serial No. 208,946.

Claim.—1. In combination, an electric furnace comprising a furnace-chamber adapted to contain on its hearth a bath of liquid conductor; a channel leading into said chamber, and adapted to con-

tain liquid conductor; electrodes arranged to supply electric current to pass through the liquid conductor in the channel; and means for causing motion of liquid conductor through the channel to the bath on the hearth.



2. In combination, an electric furnace comprising a hearth adapted to contain a bath of liquid conductor; a channel, both ends of which lead into the hearth, and adapted to contain liquid conductor; electrodes arranged to supply electric current to pass through the liquid conductor in the channel; and means for causing a circulation of liquid conductor from the hearth through the channel and back to the hearth.

3. An electric furnace, comprising in combination; a furnace-chamber adapted to contain on the hearth thereof a bath of a liquid conductor; a channel leading into said chamber and adapted to contain liquid conductor; an electrode placed to make electrical connection with the conducting liquid on the hearth; and an electrode placed to make electrical connection with conducting liquid in said channel; an exterior source of electric current to supply an electric current of suitable volume to said electrodes; and means for causing motion of liquid conductor through the channel to the bath on the hearth.

4. An electric furnace, comprising in combination; a furnace-chamber adapted to contain on the hearth thereof a bath of liquid conductor; a channel with both ends leading into said chamber and adapted to contain liquid conductor; an electrode placed to make electrical connection with the conducting liquid on the hearth, and an electrode placed to make electrical connection with conducting liquid in said channel; an exterior source of electric current to supply an electric current of suitable volume to said electrodes; and means for causing a circulation of liquid conductor from the bath on the hearth, through the channel and back to the hearth.

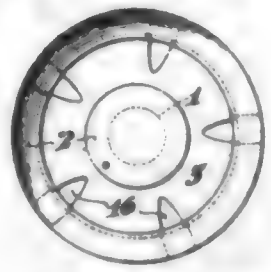
5. An electric furnace, comprising in combination, a furnace-chamber adapted to contain on the hearth thereof a bath of liquid conductor; a channel with both ends leading into said chamber and adapted to contain liquid conductor; an electrode placed to make electrical connection with the conducting liquid on the hearth; and an electrode placed to make electrical connection with conducting liquid in said channel; an exterior source of electric current to supply an electric current of suitable volume to said electrodes; and electromagnetic means for causing a circulation of liquid conductor from the bath on the hearth, through the channel and back to the hearth.

6. An electric furnace, comprising in combination, a furnace-chamber adapted to contain on the hearth thereof a bath of liquid conductor; a channel with both ends leading into said chamber and adapted to contain liquid conductor; an electrode placed to make electrical connection with the conducting liquid on the hearth; and an electrode placed to make electrical connection with conducting liquid in said channel; an exterior source of electric current to supply an alternating electric current of suitable volume to said electrodes; and electromagnetic means for causing a circulation of liquid conductor from the bath on the hearth, through the channel and back to the hearth.

7. In combination with an electric furnace, in which the heating effect of the electric current is applied to liquid conductor contained in a channel communicating with a bath of liquid conductor on a hearth, an electromagnetic circulating device which consists of; means of creating a magnetic field at some point of the channel; a cross-channel adapted to contain a conductor and intersecting the main channel in said magnetic field; and means for causing an electric current to pass through the cross-channel.

8. In combination with an electric furnace, in which the heating effect of an alternating electric current is applied to liquid conductor contained in a channel communicating with a bath of liquid conductor on a hearth, an electromagnetic circulating device which consists of; means for creating a magnetic field at some point of the channel; a cross-channel adapted to contain a conductor, and intersecting the main channel in said magnetic field; and means for causing an alternating electric current to pass through the cross-channel alternating substantially synchronously with the current in the main channel.

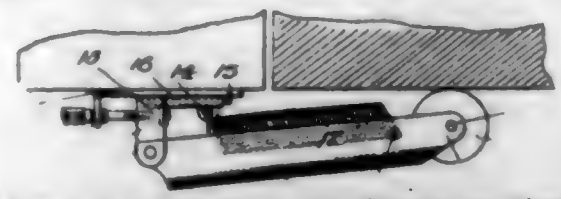
816,555. **TOOL FOR GRINDING LENSES.** JOHN L. BOASCH, Jr., Philadelphia, Pa. Filed June 20, 1905. Serial No. 266,103.



Claim.—1. A tool for grinding bi-focal lenses having a grinding surface, and having also a relatively deep depression formed in the said tool, and interrupting the continuity of the said surface, and the said tool being provided with ports or openings which extend laterally from the said depression.

2. A tool for grinding bi-focal lenses comprising a head portion which is provided with a grinding surface and which is also provided with a circular or annular channel, which interrupts the said grinding surface, the said tool being provided with ports or openings extending from the bottom of the said channel to the outer edge of the said tool.

816,556. **SPRING FOR DOORS, GATES, AND THE LIKE.** GEORGE M. BOTT, Ashland, Ohio, assignor of one-half to Francis B. Marks, Ashland, Ohio. Filed Aug. 14, 1905. Serial No. 274,096.



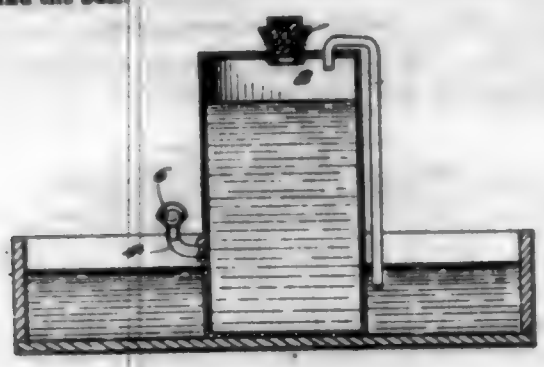
Claim.—1. In combination a base-plate, an arm pivotally connected thereto, a helical spring disposed longitudinally of the arm and having one end connected to the arm, and an adjustable connection between the other end of the spring and the base-plate, said connection comprising a plate slidably carried by the base-plate and having a lug to which the spring is connected and a thumb-screw for moving said plate, substantially as described.

2. In combination a base-plate, a longitudinally-channeled arm pivotally connected thereto, a helical spring lying within the channel and having one end connected to the bracket and the other end to the arm and an antifriction-wheel journaled in the channel and projecting beyond the same.

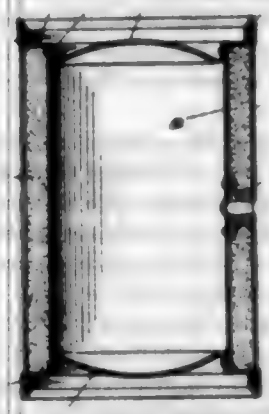
816,557. **WATERING DEVICE.** ALONZO H. CHURCH, Beacon, Iowa. Filed Sept. 18, 1905. Serial No. 279,092.

Claim.—A device of the character described, comprising a trough and a reservoir supported within the trough and provided with a funnel-shaped feed-opening 5 and a closure therefor, an air-pipe 3 having its upper end returned upon itself to form a crooked end the

extremity of which extends into the top of the reservoir and the said pipe having its other end extending outside of the reservoir and down along the side of the same into the trough below the upper edge thereof, the said pipe being entirely unobstructed throughout its length and forming an open communication between the interior of the reservoir and the interior of the trough, and an outlet-spout 4 secured to said reservoir, the said spout being curved upwardly at its outer end and extending above the lower end of the pipe 3 and above the normal high-water level and being provided in its outer end with an upwardly-opening ball-valve mechanism and with a guard around the ball.



816,558. METALLIC VESSEL. CHARLES L. COFFIN, Detroit, Mich., assignor to Electric Metal Working Company, Detroit, Mich., a Corporation. Filed Apr. 20, 1905. Serial No. 256,659.



Claim.—1. A metallic barrel comprising an outer metallic headed shell, and an inner shell insertible within and suspended from the heads of the outer, free from the walls thereof.

2. In a metallic barrel, the body formed of two spaced shell-sections arranged one within the other, and a head for the body carrying a flange connecting with the inner section and a spacing and closure member extending between the sections.

3. A metallic barrel, consisting of a body formed of two concentrically-arranged spaced shell-sections, and heads for the body carrying integral therewith outwardly-projecting annular flanges forming means of connection between the heads and the inner section, and lateral spacing-flanges extending intermediate of and closing the space between the shells.

4. A metallic vessel consisting of a body comprising two separated shell-sections arranged one within the other, and heads having integral spacing portions for and uniting the shells, in different planes from the planes of the heads.

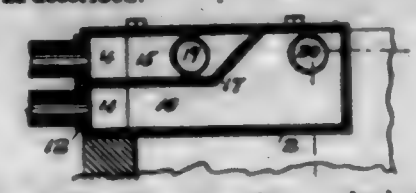
5. A metallic vessel consisting of a body composed of two separated shells arranged one within the other, heads for said body, separated vertical flanges upon each head engaging the ends of the shell-sections, and lateral portions upon the heads uniting the flanges and covering the space between the shells.

6. A metallic vessel comprising a headed inner shell-section, an outer shell-section spaced from the inner, and heads for the outer shell uniting the sections.

7. A metallic vessel comprising a headed inner shell-section, an outer shell-section spaced from and extending beyond the ends of the inner, and heads for the outer shell uniting the sections.

816,559. FLUID-SUPPLY FITTING. PATRICK CONNOLLY, New York, N. Y. Filed Dec. 18, 1902. Renewed Sept. 2, 1905. Serial No. 276,522.

Claim.—1. A fitting for forming connections, as for hot and cold water, formed of a casing having parallel branches and having partitions forming in each branch two compartments, and connecting-passages between the corresponding compartments of the branches, inlet-openings to said end connecting-passages, and outlet-openings from each compartment in the outer wall of each branch, substantially as described.

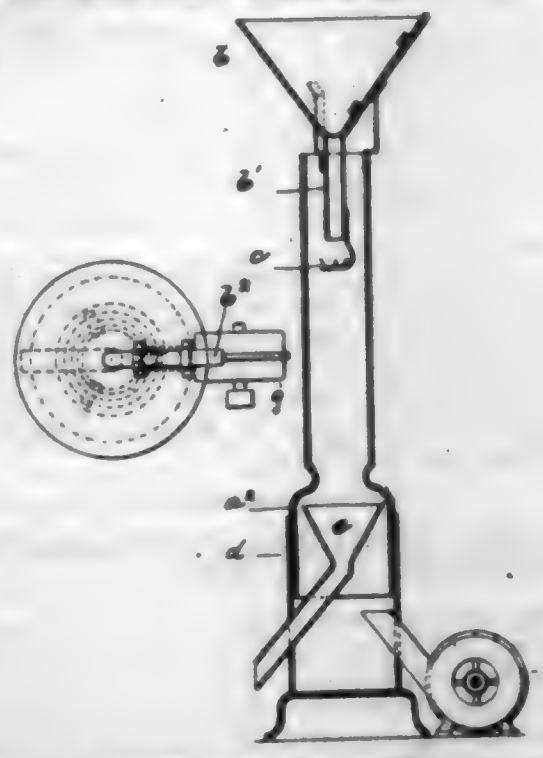


2. A fitting for forming connections, as for hot and cold water, formed of a casing having parallel branches 2 and 3, and a connecting-plate 5, and having partitions forming in each branch two compartments, and connecting-passages between the corresponding compartments of the branches, inlet-openings to said end connecting-passages, and outlet-openings from each compartment in the outer wall of each branch, substantially as described.

3. A fitting for forming connections, as for hot and cold water, formed of a casing having parallel branches and having partitions forming in each branch two compartments, and connecting-passages between the corresponding compartments of the branches, inlet-openings to said end connecting-passages, and outlet-openings from each compartment in the outer wall of each branch, said partitions being formed to permit the outlet-openings to be placed substantially parallel with the top of the casing, substantially as described.

4. A fitting for forming connections, as for hot and cold water, formed of a substantially rectangular casing having parallel branches and a rear connecting portion, inlet-openings in the rear wall of the rear connecting portion, partitions extending from between the inlet-openings of the rear connecting portion through said branches, and outlet-openings in the outer wall of each branch on either side of said partitions, substantially as described.

816,560. SEED-CLEANING APPARATUS. DANIEL P. COOLEY, Granby, Conn., assignor of one-half to Theodore G. Case, Hartford, Conn. Filed Mar. 23, 1905. Serial No. 251,574.

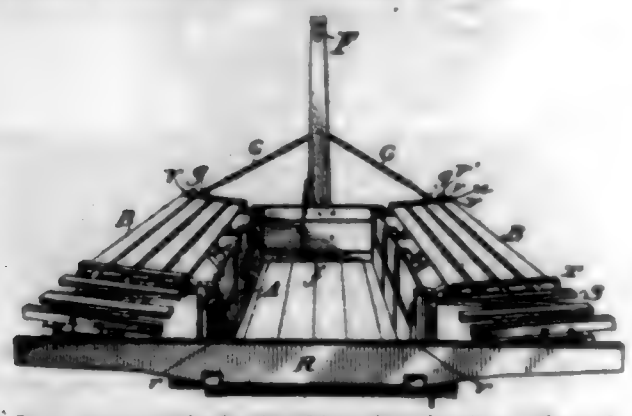


Claim.—1. In a device of the class specified a base, a tubular cleaning-chamber mounted in said base, the lower end of said chamber being enlarged to form a shoulder, a delivery-funnel mounted at the top thereof, a receiving-funnel extending into the bottom of said cleaning-chamber in operative relation to said shoulder to form an annular passage for an air-blast, said tubular member and receiving-funnel being adjustable with relation to one another to increase or diminish the size of said annular passage, and means for supplying an air-blast at the bottom of the cleaning-chamber.

2. In a device of the class specified the base, the tubular member adjustably mounted therein, the delivery-funnel arranged above said tubular member having a tube extending into the top thereof, a gate to control the discharge from said delivery-funnel, a spreader located underneath the tube on the delivery-funnel, a receiving-funnel located below the cleaning-chamber and having an outlet-orifice, and the blast-fan, substantially as described.

816,561. HAY AND STOCK RACK. DANIEL M. COX, Moulton, Iowa. Filed Oct. 1, 1904. Serial No. 226,879.

Claim.—1. In a wagon-rack, having removable and adjustable hinged rack-wings, hinges for said wings, bolted to side arms of same, strengthening-stripe secured to said wings, and adjustable braces secured to said stripe, substantially as described.



2. In a wagon-rack, having hinged rack-wings adapted to be readily removed, braces to support said wings in adjusted position, end standard provided with a beveled end engaging with the box and end-gate, adjustable binding-pole adapted to engage with aperture in the top of said standard, and bracing-chains from said standard to hooks in the rack-wings; a chain adjusted to the rear end of the binding-pole, with a hook at the lower end of same to engage chains attached to scoop-board, substantially as described.

3. In a convertible wagon-rack, comprising the bed or box with hinged rack-wings removably secured to said bed, auxiliary end-gate adapted to fit above the box-gate by the use of staples in conjunction with the hasps for securing said gate, substantially as described.

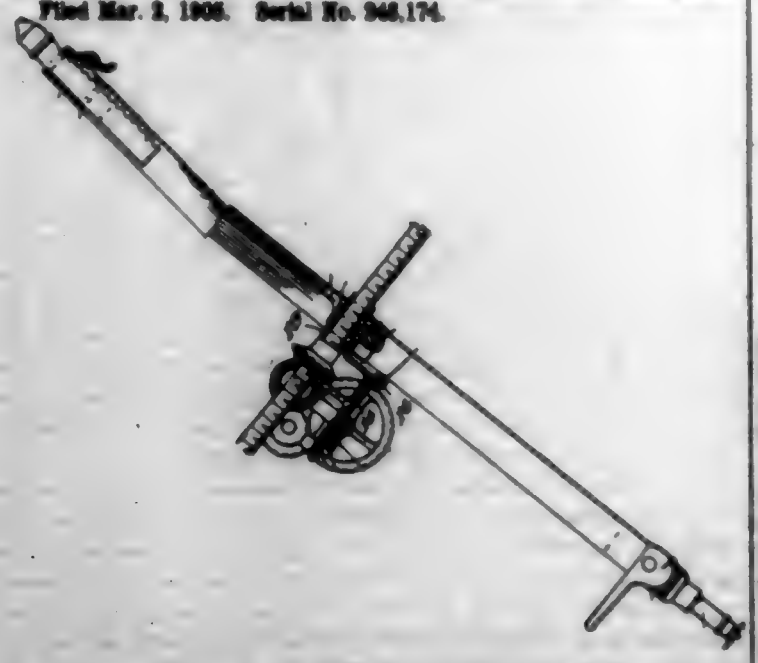
4. In a wagon-rack, removable and adjustable scoop-board, hinged by hasps to cleat on the under side of box, chains secured to said scoop-board, the said chains serving the threefold function of (1st) permitting the scoop-board to be adjusted at an angle convenient for scooping corn, or loading and unloading hogs, calves or sheep; (2d) holding the scoop-board in a vertical position, and (3d) holding the binding-pole in the center of the load, by virtue of the attachment of said chains to the chain suspended from the rear end of said binding-pole, substantially as described.

5. In a wagon-rack, the combination of a scoop-board capable of being held in a vertical position by means of rod passing through frame of said scoop-board with an extension attachment, substantially as set forth.

6. In a wagon-rack, the combination of a wagon-box with an extension attachment provided for said rack, being adapted to the lengthening of the rack-wings, substantially as set forth.

7. In a wagon-rack, the combination of a scoop-board, side sections therefor, being a constituent part thereof, with sections adjustable thereto, having respect to the deepening of the said scoop-board, substantially as set forth.

816,562. MINER'S DRILL. CLYDE C. CRAWFORD, Athens, Ohio. Filed Mar. 2, 1905. Serial No. 248,174.



Claim.—1. In a miner's drill, the combination of a supporting-post, a supporting-frame connected with the upright, and a slidable plate carried by said supporting-frame and adapted to hold the same in an ascertained position.

2. In a miner's drill, the combination of a post or upright, a rest carried by said upright, a supporting-frame connected with said rest, a longitudinally-adjustable supporting-plate carried by said frame, and a transverse bar at one end of said plate and adapted to bear against the supporting-post and support the drilling mechanism at a predetermined adjustment.

3. In a miner's drill, the combination of a supporting-upright, a rest carried by said upright, a drill-supporting frame connected with said rest, and an adjustable supporting member carried by the drill-supporting frame and adapted to engage the supporting-upright to hold said frame at a predetermined adjustment.

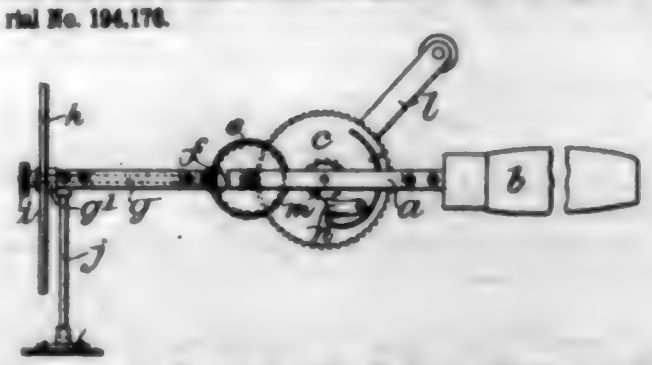
816,563. MINER'S DRILL. CLYDE C. CRAWFORD, Athens, Ohio. Filed Sept. 12, 1905. Serial No. 278,161.



Claim.—1. In a miner's drill, the combination of a supporting-frame, a drill-rod mounted thereon, a rotatable bearing for the drill-rod having threaded connection therewith, a main gear having spline connection with the drill-rod and adapted to rotate the same, means for actuating said main gear, adjustable bearing-brackets attached to the frame, and a train of gears mounted on said bearing-brackets and arranged to connect the main gear aforesaid with the rotatable bearing, whereby rotation may be imparted to said bearing, adjustment of the bearing-brackets above mentioned being adapted to connect or disconnect the main gear from the rotatable bearing as described.

2. In a miner's drill, the combination of a supporting-frame, a drill-rod mounted therein, a rotatable bearing carried by the frame and having threaded connection with the drill-rod to advance the same when it is rotated, a gear provided on said bearing, a main gear having spline connection with the gear-rod, means for actuating the main gear to impart rotation to the drill-rod, bearing-brackets projecting downwardly from the supporting-frame, and slotted at one end, fastenings passing through the slots of the bearing-brackets to adjustably secure the same to the supporting-frame, and a train of gears carried by the bearing-brackets aforesaid and adapted to connect the main gear with the gear on the rotatable bearing of the drill-rod to cause simultaneous rotation of the drill-rod and the bearing, the adjustable connection between the bearing-brackets and the supporting-frame admitting of disconnecting the train of gears from the main gear and the gear on the bearing-bracket, for the purpose specified.

816,564. HAND-GEAR VIBRATORY MASSAGING-MACHINE. JAY VAN TUYL DANIELS, London, England. Filed Feb. 18, 1904. Serial No. 194,176.



Claim.—1. A vibrating machine for massaging purposes comprising a frame, a spindle journaled therein, a disk carried solely by the said spindle and having its center of gravity to one side the axis of the spindle, and means for driving the spindle to vibrate the frame for imparting vibrations to the body.

2. A vibratory machine for massaging purposes comprising a frame, a spindle journaled therein, a disk carried solely by the said spindle, means for adjusting the center of gravity of said disk in relation to the axis of the spindle and means for driving the spindle to vibrate the frame for imparting vibrations to the body.

3. A vibrating machine for massaging purposes comprising a frame, a contact plate or device secured to the frame, a driving-spindle rotatably mounted in the frame, a disk mounted solely upon the spindle and rotated thereby the center of gravity of which is eccentric to the axis of the spindle, means for rotating the spindle, the spindle passing through a slot in the disk, and a thumb-nut upon the spindle

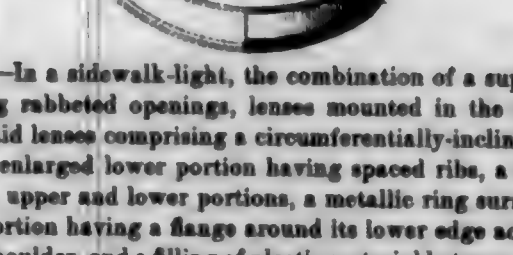
securing the disk thereto, whereby the axis of rotation of the wheel may be made more or less eccentric.

4. A vibrating machine comprising a frame, a revoluble device mounted thereon having its center of gravity to one side of its center of revolution, means for rotating the said device including a pawl and ratchet whereby said device may rotate freely and in advance of said pawl and ratchet the rotation of said device vibrating the frame for vibrating the body, substantially as described.

5. In a hand vibrating machine, a rotating spindle, and a disk, eccentrically mounted on the end thereof in a plane perpendicular thereto, substantially as described.

6. In a hand vibrating machine, a rotating spindle, a disk eccentrically mounted on the end thereof in a plane perpendicular thereto, and means for adjusting the eccentricity of the disk, substantially as described.

816,565. CAR-COUPLING. JOHN DARLING, Rutherglen, Scotland, assignor to Darling's Patent Automatic Coupling Limited, Glasgow, Scotland. Filed Feb. 3, 1906. Serial No. 300,761.



Claim.—1. In a car-coupling, a pair of oppositely-arranged slides having bifurcated ends, a coupling-link pivoted to the end of each slide, a gravity-hook pivoted within the bifurcation of the end of each slide and adapted to engage the link of the opposite slide, and means for releasing the hook from the link, substantially as described.

2. In a car-coupling, a pair of oppositely-arranged slides having bifurcated ends, a coupling-link pivoted to the end of each slide, a gravity-hook pivoted within the bifurcation of the end of each slide and adapted to engage the link of the opposing slide, a rod connected to said hook and mounted to reciprocate independently of the slide, and means adapted to engage said rod to disengage the hook from the link.

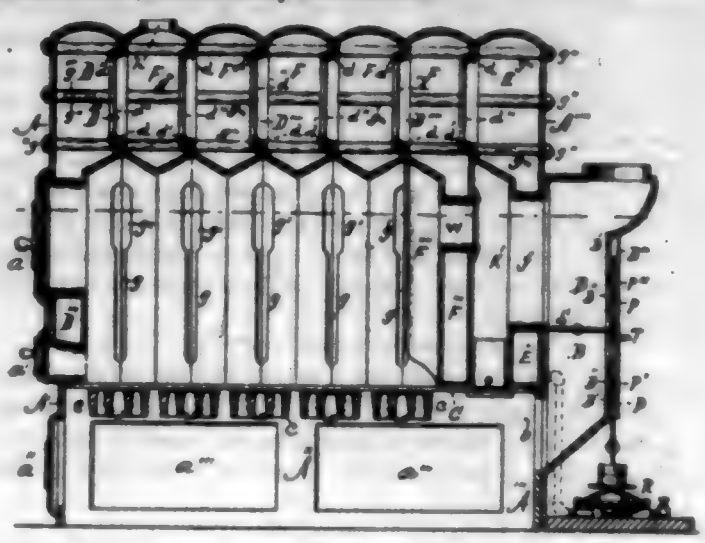
3. In a car-coupling, a pair of oppositely-arranged slides having bifurcated ends, a coupling-link pivoted to the end of each slide, a gravity-hook pivoted within the bifurcation of the end of each slide and adapted to engage the link of the opposing slide, a rod connected to said hook and mounted to reciprocate independently of the slide, and means for locking said rod against reciprocation with the slide, whereby the hook is elevated when the slide is reciprocated.

816,566. SIDEWALK-LIGHT. CHRISTIAN H. ROSS and SAMUEL DADOMY, Chicago, Ill., assignors to Dauchy Iron Works, a Corporation of Illinois. Filed Nov. 16, 1905. Serial No. 287,687.

Claim.—In a sidewalk-light, the combination of a supporting-plate having rabbeted openings, lenses mounted in the rabbeted openings, said lenses comprising a circumferentially-inclined upper portion, an enlarged lower portion having spaced ribs, a shoulder between the upper and lower portions, a metallic ring surrounding the upper portion having a flange around its lower edge adapted to rest on the shoulder, and a filling of plastic material between the ribs.

816,567. STEAM AND HOT-WATER BOILER. MARK DEAN, Boston, Mass., assignor to The Herendeen Manufacturing Company, Geneva, N. Y. Filed Dec. 30, 1897. Serial No. 664,600.

Claim.—1. In a steam or hot-water boiler, in combination with the vertical water-passages F'' set on opposite sides of the fire-pot and separated by vertical flame-spaces; the vertical water-passages F' provided with the straight horizontal sides c' facing inward toward the fire-pot and at right angles with said flame-passages, the horizontal flame-passages H located between said passages F'' and F', and horizontal passages connecting the passages H with the smoke-flue, whereby the flames are drawn in vertical sheets horizontally outward from the opposite sides of the fire-pot or combustion-chamber between the water-passages F'' and impinge horizontally against the walls c' of the water-passages F' at right angles to said walls and are thence drawn horizontally through the passages H to the smoke-flue, substantially as described.



2. In a steam or hot-water boiler, in combination with two rows of vertical water-passages set between the fire-pot and the side of the boiler whereby a horizontal passage H is formed between said rows; a number of non-inflammable heat-deflecting bars suspended within said passage H, whereby the flames entering said passage are split and deflected against the walls of the water-passages adjoining the passage H, substantially as set forth.

3. In a steam or hot-water boiler, in combination with two rows of vertical water-passages set between the fire-pot and the side of the boiler whereby a horizontal passage H is formed between said rows; the non-inflammable heat-deflecting bars K thicker at their centers than at their front edges and suspended within said passage H, whereby the flames entering said passage are split and deflected against the walls of the water-passages adjoining the passage H, substantially as described.

4. In a steam or hot-water boiler, in combination with two rows of vertical water-passages set between the fire-pot and the side of the boiler whereby a horizontal passage H is formed between said rows; the series of non-inflammable heat-deflecting bars varying in thickness and with the thickest bar nearest the front wall of the boiler and said bars growing gradually thinner toward the rear wall thereof, said bars being suspended within said passage H, whereby the flames entering said passage are split and deflected against the walls of the water-passages adjoining the passage H, substantially as set forth.

5. In a steam or hot-water boiler, in combination, the domes D, F, provided with the water passages or legs D', F' F'' extending down on opposite sides of the fire-pot as described, each dome F being provided with four water-legs F', F'' two of which are on each side of the fire-pot whereby horizontal passages H are formed between each series of pairs of water-legs, the rearmost of the domes F being formed with the water-legs F'' extending at their inner ends forward over the rear gate at F''''; and the dome E provided with the broad inwardly-extending water-legs E', all substantially as and for the purpose set forth.

6. A generator comprising upright sections arranged one in advance of the other, a number of the sections being each formed with substantially upright chambers at opposite sides of the combustion-chamber, connected at their upper ends, said chambers being provided with flues extending through their front and rear faces, and fire-passages communicating laterally with the flues for conducting the products of combustion thereto.

7. A generator comprising upright sections arranged one in advance of the other, a number of the sections being each formed with substantially upright chambers at opposite sides of the combustion-chamber, connected at their upper ends, said chambers being provided with elongated upright flues extending through their front and rear faces at opposite sides of the combustion-chamber, and having their front and rear faces formed with fire-passages communicating laterally with the inner sides of the flues through the upright sides of the combustion-chamber for conducting the products of combustion to said flues.

8. A generator comprising upright sections arranged one in advance of the other, a number of the sections being each formed with substantially upright chambers at opposite sides of the combustion-chamber, connected at their upper ends, said chambers being provided with flues extending through their front and rear faces, and one of the sections being provided with flues extending through its front and rear faces and alined with the former flues, fire-passages communicating laterally with the inner sides of the flues, and a wa-

ter-containing chamber arranged at the rear of the fire-passages for forming the rear wall of the combustion-chamber.

9. A generator comprising upright sections arranged one in advance of the other, a number of the sections being each formed with substantially upright chambers at opposite sides of the combustion-chamber, connected at their upper ends, said chambers being provided with flues extending through their front and rear faces, and fire-passages communicating laterally with the flues for conducting the products of combustion thereto, and one of the sections being provided with flues extending through its front and rear faces and alined with the former flues, fire-passages communicating laterally with the inner sides of the flues and a water-containing chamber arranged at the rear of the fire-passages for forming the rear wall of the combustion-chamber.

816,568. **REMOVABLE DUST-PROTECTIVE COVER.** LOUIS J. DIRAND, Torrington, Conn., assignor, by direct and mesne assignments, to The Torrington Novelty Manufacturing and Supply Company, Torrington, Conn., a Corporation of Connecticut. Filed Nov. 29, 1904. Serial No. 234,791.



Claim.—1. The combination of a pair of pivoted roller-carriers, a spring-roller mounted on said carriers, a cover one of whose ends is secured to said roller, and means for holding the cover distended against the tension of said roller when the cover is drawn over the article.

2. The combination of a pair of pivotally-mounted roller-carriers, a pin-and-slot connection for mounting said carriers, a telescopic spring-roller mounted on said carriers, a cover one of whose ends is secured to said roller, a cover-rod at the opposite end of the cover, and a cover-holding hook.

3. The combination of a pair of brackets, a pair of pivoted roller-carriers, a pin-and-slot connection between said carriers and said brackets, a spring-roller mounted on said carriers, and a cover-holding hook.

4. The combination of a pair of brackets, a pair of roller-carriers, a pin-and-slot connection between said carriers and said brackets, a spring-roller mounted on said carriers, a cover-holding hook, and a cover-rod, said brackets and carriers having alining notches substantially for the purpose set forth.

5. The combination of a pair of brackets, a pair of pivoted roller-carriers having a combined pivotal and translatable connection with said brackets, a spring-roller mounted on said carriers, and means for locking the parts in their adjusted positions.

6. The combination of a pair of brackets, a pair of roller-carriers having a combined pivotal and translatable connection with said brackets, a telescopic spring-roller mounted on said carriers, a cover connected to said roller, a telescopic cover-rod at the opposite end of the cover, and a hook at such end, said carriers and brackets having alining notches substantially for the purpose set forth.

816,569. **CIGAR-CUTTER.** NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Oct. 15, 1904. Serial No. 228,544.



Claim.—1. In a cigar-cutter of the character described, the combination of a frame, a spring-returned handle mounted thereon, a rod secured only at one end to said frame, a gage slidably mounted on said rod, and a set-screw in said gage.

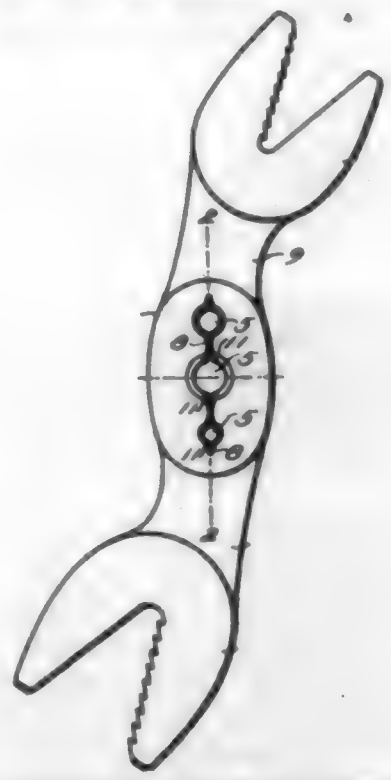
2. In a cigar-cutter of the character described, the combination of a frame having a groove therein, a spring-returned handle mounted on said frame, a rod secured only at one end to said frame, a gage slidably mounted on said rod and depending in said groove, and a set-screw in said gage.

3. In a cigar-cutter of the character described, the combination of a frame, a spring-returned handle mounted thereon, a rod secured only at one end to said frame and extending throughout the length of the frame and positioned parallel thereto, of a gage slidably mounted upon said rod and depending in the groove of the frame and a set-screw to lock said gage in the desired position upon said rod.

4. In a cigar-cutter of the character described, the combination with the frame, a spring-returned cutter-handle mounted thereon, of a gage-rod secured at one end only to the frame thus leaving one end free to vibrate and a gage adjustably mounted on said rod.

5. In a cigar-cutter, the combination with the frame, and a spring-returned cutter-handle mounted on the frame, of a gage-rod secured only at one end to the frame, a gage adjustable on the said rod, and means clamping the gage to the rod in its various adjustments.

816,570. **TOOL FOR STRAIGHTENING BOLTS AND RETRACING THE THREADS THEREON.** JAY D. EDMONDS, Chicago, Ill., assignor to Edmonds-Metsel Manufacturing Company, Chicago, Ill. Filed Oct. 28, 1904. Serial No. 230,336.



Claim.—1. A tool of the class described, comprising a plate having a threaded aperture extending transversely through the same, the threads being of uniform height in the middle of the plate, and the plate being countersunk in one face so as to gradually reduce the height of the threads as they approach said face, said plate having therein a transverse slot intersecting said aperture, and the ends of said reduced threads being beveled at their intersection with said slot, at an angle both to the plane of said slot and to the axis of the aperture, substantially as described.

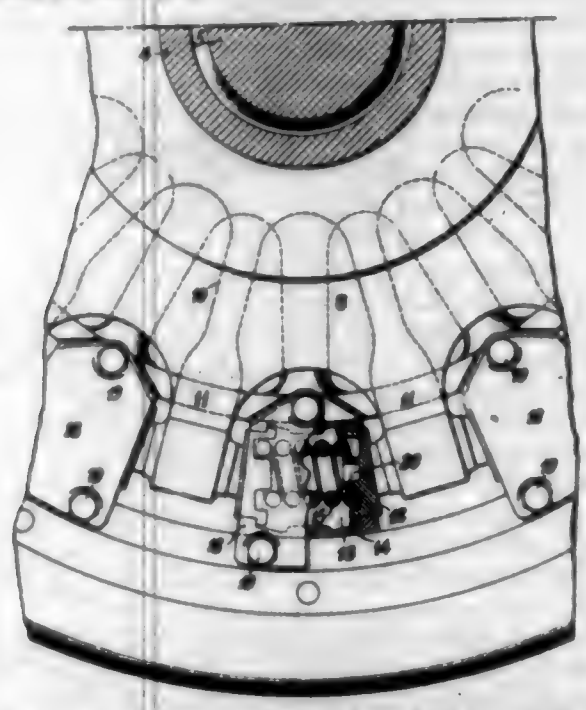
2. A tool of the class described comprising a plate having a threaded aperture extending transversely through the same, and having therein a transverse slot intersecting the threads of said aperture, said plate being countersunk in one face so as to gradually reduce the height of the threads as they approach said face, and said plate being beveled at the intersection of said slot with the surface of the countersink, the bevel being at an angle to the surface of the countersink, being also at an angle to the plane of the slot and to the axis of the aperture, substantially as described.

816,571. **FLEXIBLE CONNECTION AND SUSPENSION MEANS FOR GEARLESS MOTORS.** KARL F. ELLER, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 3, 1905. Serial No. 253,983.

Claim.—1. The combination with a truck-axle and a wheel having an annular series of chambers in one side and coil-springs in said chambers, of an electric motor, a sleeve or quill for the motor-armature having substantially radial arms each of which has rigidly-supported heads that project into adjacent wheel-chambers and have seats for the ends of the springs.

2. In a truck, the combination with a wheel having an annular

series of chambers and coil-springs located therein, of an electric motor, a sleeve or quill for the motor-armature that loosely surrounds the wheel-axle and is provided with arms at one end the extremities of which have heads that project into the wheel-chambers to engage the ends of adjacent coil-springs and having flanges to prevent withdrawal from the chambers.



3. In a truck, the combination with a wheel provided with an annular set of chambers and helical springs therein having their axes disposed approximately at right angles to wheel radii, of an electric motor and a sleeve or quill for the motor-armature that loosely surrounds the wheel-axle and is provided with radial arms at one end, the extremities of which have rigidly-supported heads each of which engages the adjacent ends of two of the helical springs and has means to prevent withdrawal from the chamber.

4. In a truck, the combination with a wheel provided with an annular set of equally-spaced chambers and helical springs therein, of an electric motor and a sleeve or quill for the motor-armature that loosely surrounds the wheel-axle and is provided with a plurality of arms the outer end of each of which projects into two of said wheel-chambers to engage the adjacent ends of two of said springs and is provided with flanges to prevent withdrawal.

5. The combination with a truck-axle, a wheel having an annular set of chambers and helical springs seated in said chambers with their axes substantially perpendicular to the wheel radii, of an electric motor and a sleeve or quill for the motor-armature having substantially radial arms each of which has a head that projects into two adjacent chambers against the ends of the helical springs contained therein and is provided with flanges that prevent withdrawal from the chambers.

816,572. **THRESHING-MACHINE TONGUE.** WILLIAM FARRER, Long Prairie, Minn., assignor of one-half to August Fitzer, Ramsey county, Minn. Filed June 24, 1905. Serial No. 266,777.

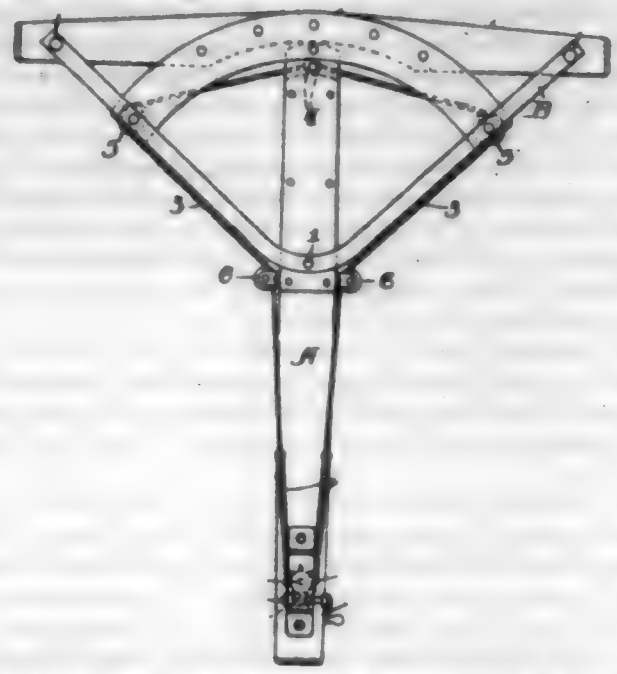
Claim.—1. In a device of the class described, a tongue pivoted between brace-rods in combination with guide-plates for the inner end of the tongue and a system, consisting of pulleys, a cable, chain, sprocket, worm and crank, for controlling the angle of the tongue relative to the vehicle to which it is attached.

2. In a device of the class described, a tongue pivoted between brace-rods near its center and having its inner end free to swing between guide-plates, in combination with a cable attached to the inner end of said tongue and provided with sheaves for carrying said cable, and a chain, sprocket, tongue, worm and crank for drawing the inner end of said tongue either to the right or left.

3. A device of the class described, comprising a cross-bar adapted to be attached to the front axle of a threshing-machine, a pair of curved braces rigidly attached at their ends to said cross-bar, a tongue pivoted between the centers of said braces, a pair of guide-plates for the inner end of the tongue, and means for swinging said tongue to the right or left.

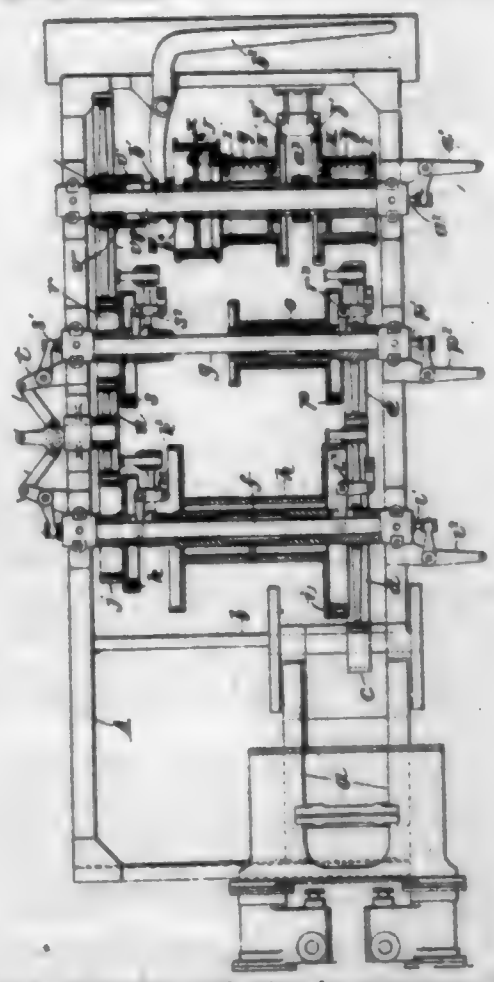
4. A device of the class described, comprising a pair of curved braces, one above the other, rigidly attached at their ends to a threshing-machine and forming bows in front of said machine, a pivot between the centers of said braces, a tongue, free to swing at both extremities, carried by said pivot, and means for swinging said tongue.

5. A device of the class described, comprising a pair of forwardly-curved braces, a pivot between said braces, a tongue centrally journaled upon said pivot, and means for swinging said tongue to the right or left and holding it in a predetermined position.



6. A device of the class described, comprising a frame provided with a pivot near its front, a tongue centrally journaled upon said pivot and provided with guide-plates for its rear end, and means for swinging said tongue upon said pivot and holding it at a desired angle to the threshing-machine.

816,573. **OPERATING MECHANISM FOR EXCAVATORS, DREDGES, AND THE LIKE.** WALTER FERRIS and FREDERIC B. BAGER, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed June 9, 1905. Serial No. 264,338.



Claim.—1. Operating mechanism for excavators, dredges and the like, comprising a prime mover, two main drum-shafts driven in opposite directions thereby, an auxiliary drum-shaft, and means for driving said auxiliary shaft from one or the other of said main shafts, whereby the auxiliary shaft may be reversed without changing the direction of movement of said main shafts.

2. Operating mechanism for excavators, dredges and the like, comprising a prime mover, a main drum-shaft geared to said prime mover, a second main drum-shaft geared for opposite rotation to the main drum-shaft, an auxiliary drum-shaft, and gearing adapted to

drive the auxiliary shaft from one or the other of said main drum-shafts, whereby the auxiliary shaft may be reversed without changing the direction of movement of said main shafts.

3. Operating mechanism for excavators, dredges and the like, comprising a prime mover, two main shafts, drums mounted thereon, clutch mechanism adapted to connect the respective drums to their shafts, means for driving the main shafts in opposite directions from said prime mover, an auxiliary shaft, one or more drums on said auxiliary shaft, clutch mechanism for connecting the same to said shaft, loose gears on the respective main shafts, clutch mechanism for connecting the same to their respective shafts, and gears connecting the drive-shaft and the gears on the main shafts, whereby the auxiliary shaft may be reversed without changing the direction of motion of said main shafts.

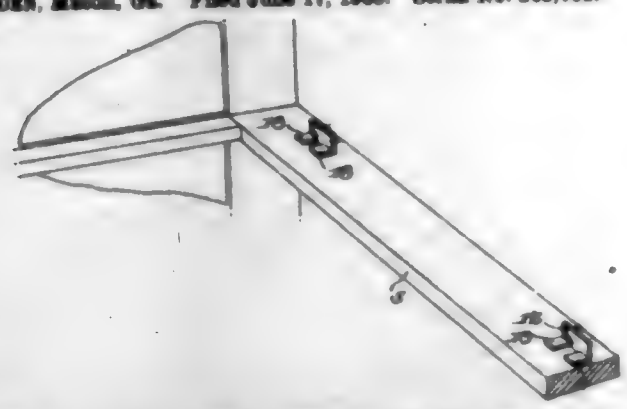
4. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a plurality of drums loose upon said shaft, a clutch for coupling the gear to the shaft or to one of said drums, and a clutch for coupling the other drum or drums to the shaft.

5. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a plurality of drums loose upon said shaft, a clutch for coupling the gear to the shaft or to one of said drums, a clutch for coupling the other drum or drums to the shaft, and means for driving said gear in either direction.

6. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a boom-operating drum loose upon said shaft, a clutch member fast to the shaft, a clutch member on the gear, a clutch member loose on the shaft coöperating with said clutch members, and adapted to couple the gear to the shaft or to said drum, spud-operating drums loose on said shaft and a clutch for coupling said spud-operating drums to the shaft.

7. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a boom-operating drum loose upon the shaft, clutch mechanism adapted to connect the gear to the shaft or to said drum, spud-operating drums loose on said shaft, clutch mechanism adapted to connect the latter drums to the shaft, and means for locking said spud-operating drums against rotation.

816,574. DRAWER-STOP. CHARLES T. GARDEN and HARRY GARDEN, Macon, Ga. Filed June 17, 1905. Serial No. 265,781.



Claim.—1. A drawer-stop comprising a body portion having a depending attaching-spur and angularly-disposed bracing-ears.

2. A drawer-stop comprising a body portion having a depending attaching-spur and a plurality of spaced angularly-disposed bracing-ears.

3. A drawer-stop comprising a body portion having a depending attaching-spur and a pair of spaced bracing-ears disposed at right angles to said body portion.

4. A drawer-stop comprising a body portion having angularly-disposed bracing-ears and a plurality of depending attaching-spurs.

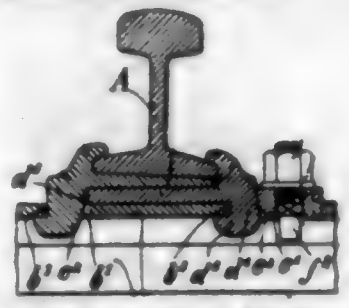
5. A drawer-stop comprising a vertically-disposed body portion having an integral depending attaching-spur extending in the same plane therewith, said body portion being provided with angularly-disposed bracing-ears.

6. A drawer-stop comprising a body portion having a pair of spaced angularly-disposed bracing-ears, and a depending attaching-spur extending from the body portion between said bracing-ears.

7. As an article of manufacture, a drawer-stop, produced from a single metal blank one edge of which is cleft to form a depending attaching-spur and the metal on each side of said cleft bent upwardly at right angles to the blank to form angularly-disposed bracing-ears.

816,575. RAIL-SECURING MEANS. THEODOR GARDIN, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Dec. 21, 1905. Serial No. 292,807.

Claim.—1. In a rail-securing device, the combination with the rail and the tie, of a pair of superposed plates upon which the rail rests, having claws engaging the base-flange of the rail, and each being provided with means engaging the tie.



2. In a rail-securing device, the combination with the rail and the tie, of a pair of superposed plates upon which the rail rests, each having a claw engaging the foot of the rail and a lateral projection engaging the lower face of the tie, and locking means engaging the tie and holding the plates from lateral displacement.

3. In a rail-securing device, the combination with the rail and the tie having a perforation at each side of the rail, of a pair of superposed plates upon which the rail rests, each having a claw engaging the foot of the rail and a projection projecting through a perforation in the tie to engage the lower face of the tie, a lock-piece seated in one of the perforations of the tie and engaging one of the plates and means for securing said lock-piece in position.

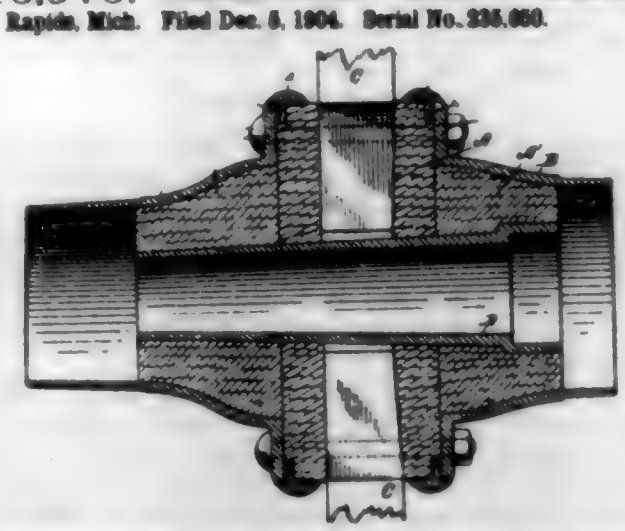
4. A rail-securing device comprising a pair of plates one adapted to be supported upon the other, each having a claw to engage the base-flange of the rail and a projection to engage the tie.

5. A rail-securing device comprising a pair of plates one adapted to be supported upon the other, each having a claw to engage the base-flange of the rail and a projection to engage the tie, the upper plate being provided with a cut-away portion at one end to receive the claw of the other plate, and the latter being provided with a cut-away portion to receive the projection of the former.

6. A rail-securing device comprising a pair of plates adapted to be superimposed and to support the rail a claw carried by each plate to engage the rail, a hook projection carried by each plate to engage within an opening in a tie, and a wedge lock-piece adapted to engage within an opening in the tie and secure the plates in position.

7. A rail-securing device comprising a pair of plates adapted to be superimposed and to support a rail, a claw carried by each plate to engage the rail, a hook projection carried by each plate to engage within an opening in a tie, and a wedge lock-piece adapted to engage within an opening in the tie and secure the plates in position, said lock-piece carrying means for holding it within an opening in the tie.

816,576. VEHICLE-WHEEL. HERBERT B. GILLETTE, Grand Rapids, Mich. Filed Dec. 5, 1904. Serial No. 235,050.



Claim.—1. In a vehicle-wheel, the combination of a short central block having substantially flat ends and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges which are set into said central block so that their outer faces are flush with the end faces of said central block; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

2. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat

inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges which are set into said central block so that their outer faces are flush with the end faces of said central block; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

3. In a vehicle-wheel, the combination of a short central block having substantially flat ends and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges; and bolts arranged through the flanges of said end block casings and said central block, for the purpose specified.

4. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

5. In a vehicle-wheel, the combination of a short central block having substantially flat ends, and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

6. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

7. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; hub-bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

8. In a vehicle, the combination of a short central block having substantially flat ends; hub-bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

9. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; bands for said central block having inwardly-projecting flanges; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

10. In a vehicle-wheel, the combination of a short central block having substantially flat ends; hub-bands for said central block having inwardly-projecting flanges; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings, and central block, for the purpose specified.

11. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; hub-bands for said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly projecting perforated flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

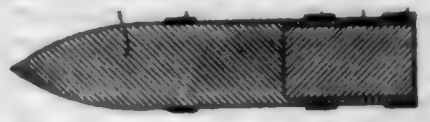
12. In a vehicle-wheel, the combination of a short central block having substantially flat ends; hub-bands for said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central blocks; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

13. In a vehicle-wheel, the combination of a short central block; bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

14. In a vehicle-wheel, the combination of a short central block; bands for said central block having inwardly-projecting flanges; end blocks adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

15. In a vehicle-wheel, the combination of a short central block; bands for said central block; end blocks adapted to contact with the ends of said central blocks; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

816,577. **STEEL PROJECTILE.** ALBERT HAASE, Essen-Rottenscheid, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Nov. 13, 1905. Serial No. 287,126.



Claim.—1. The combination with a projectile having a front portion separating from the remainder of the projectile upon impact, of means on the front portion preventing the wabbling of the projectile during its passage through the barrel, said means being adapted to readily strip from the projectile when the projectile pierces the armor.

2. The combination with a projectile having a front portion adapted to separate from the remainder of the projectile upon impact, of a soft-metal guiding-band arranged on the front portion and adapted to be readily stripped therefrom when the projectile pierces armor.

3. The combination with a projectile having a front portion adapted to separate from the rear portion upon impact, of a guiding-band arranged on the front portion of the projectile and adapted to be readily stripped therefrom when the projectile pierces armor, the front portion of the projectile having a diameter in the rear of the band at greatest equal to the inner circumference of the band.

816,578. **WIRE-FENCE TOOL.** EDWIN HARRIS, Athens, Tex. Filed Feb. 2, 1905. Serial No. 243,894.

Claim.—1. In an implement of the class described, a central relatively stationary member provided with a supporting-handle and having a transverse cavity formed therein for supporting a binding member, and coiling members swinging from said central member at opposite sides of said cavity and having means for engaging the free ends of said binding member and reversely coiling the same around a body supported therein and within said cavity.

2. In an implement of the class described, a central relatively

drive the auxiliary shaft from one or the other of said main drum-shafts, whereby the auxiliary shaft may be reversed without changing the direction of movement of said main shafts.

3. Operating mechanism for excavators, dredges and the like, comprising a prime mover, two main shafts, drums mounted thereon, clutch mechanism adapted to connect the respective drums to their shafts, means for driving the main shafts in opposite directions from said prime mover, an auxiliary shaft, one or more drums on said auxiliary shaft, clutch mechanism for connecting the same to said shaft, loose gears on the respective main shafts, clutch mechanism for connecting the same to their respective shafts, and gears connecting the drive-shaft and the gears on the main shafts, whereby the auxiliary shaft may be reversed without changing the direction of motion of said main shafts.

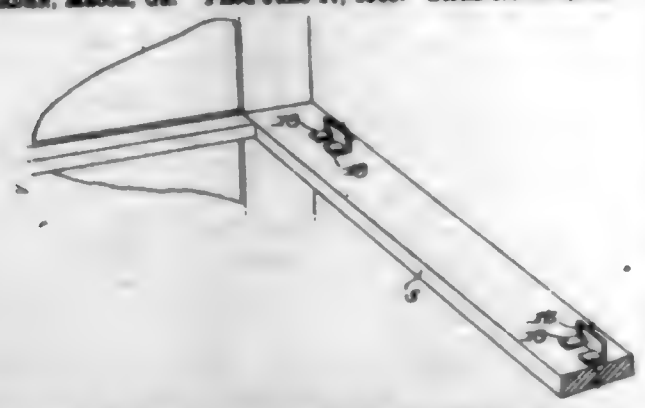
4. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a plurality of drums loose upon said shaft, a clutch for coupling the gear to the shaft or to one of said drums, and a clutch for coupling the other drum or drums to the shaft.

5. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a plurality of drums loose upon said shaft, a clutch for coupling the gear to the shaft or to one of said drums, a clutch for coupling the other drum or drums to the shaft, and means for driving said gear in either direction.

6. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a boom-operating drum loose upon said shaft, a clutch member fast to the shaft, a clutch member on the gear, a clutch member loose on the shaft coöperating with said clutch members, and adapted to couple the gear to the shaft or to said drum, spud-operating drums loose on said shaft and a clutch for coupling said spud-operating drums to the shaft.

7. Operating mechanism for excavators, dredges and the like, comprising a shaft, a gear loose upon said shaft, a boom-operating drum loose upon the shaft, clutch mechanism adapted to connect the gear to the shaft or to said drum, spud-operating drums loose on said shaft, clutch mechanism adapted to connect the latter drums to the shaft, and means for locking said spud-operating drums against rotation.

816,574. DRAWER-STOP. CHARLES T. GARDEN and HARRY GARDEN, Macon, Ga. Filed June 17, 1905. Serial No. 265,781.



Claim.—1. A drawer-stop comprising a body portion having a depending attaching-spur and angularly-disposed bracing-ears.

2. A drawer-stop comprising a body portion having a depending attaching-spur and a plurality of spaced angularly-disposed bracing-ears.

3. A drawer-stop comprising a body portion having a depending attaching-spur and a pair of spaced bracing-ears disposed at right angles to said body portion.

4. A drawer-stop comprising a body portion having angularly-disposed bracing-ears and a plurality of depending attaching-spurs.

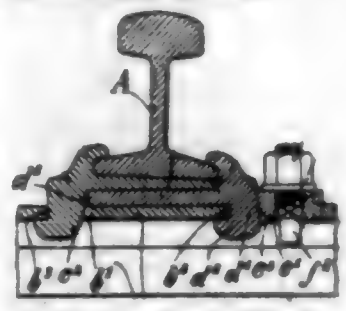
5. A drawer-stop comprising a vertically-disposed body portion having an integral depending attaching-spur extending in the same plane therewith, said body portion being provided with angularly-disposed bracing-ears.

6. A drawer-stop comprising a body portion having a pair of spaced angularly-disposed bracing-ears, and a depending attaching-spur extending from the body portion between said bracing-ears.

7. As an article of manufacture, a drawer-stop, produced from a single metal blank one edge of which is cleft to form a depending attaching-spur and the metal on each side of said cleft bent upwardly at right angles to the blank to form angularly-disposed bracing-ears.

816,575. RAIL-SECURING MEANS. THEODOR GARDIN, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Dec. 21, 1905. Serial No. 293,267.

Claim.—1. In a rail-securing device, the combination with the rail and the tie, of a pair of superposed plates upon which the rail rests, having claws engaging the base-flange of the rail, and each being provided with means engaging the tie.



2. In a rail-securing device, the combination with the rail and the tie, of a pair of superposed plates upon which the rail rests, each having a claw engaging the foot of the rail and a lateral projection engaging the lower face of the tie, and locking means engaging the tie and holding the plates from lateral displacement.

3. In a rail-securing device, the combination with the rail and the tie having a perforation at each side of the rail, of a pair of superposed plates upon which the rail rests, each having a claw engaging the foot of the rail and a projection projecting through a perforation in the tie to engage the lower face of the tie, a lock-piece seated in one of the perforations of the tie and engaging one of the plates and means for securing said lock-piece in position.

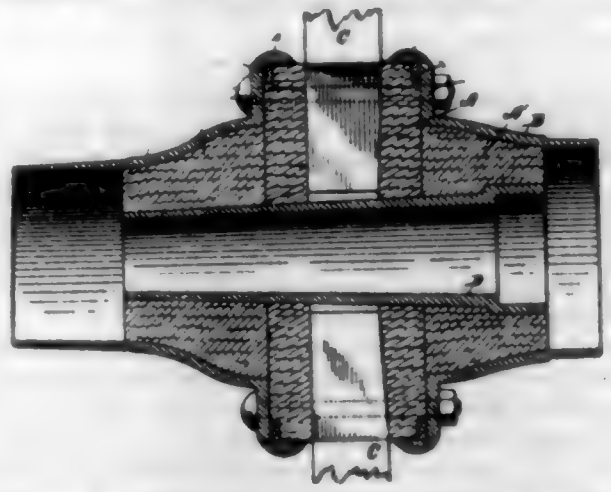
4. A rail-securing device comprising a pair of plates one adapted to be supported upon the other, each having a claw to engage the base-flange of the rail and a projection to engage the tie.

5. A rail-securing device comprising a pair of plates one adapted to be supported upon the other, each having a claw to engage the base-flange of the rail and a projection to engage the tie, the upper plate being provided with a cut-away portion at one end to receive the claw of the other plate, and the latter being provided with a cut-away portion to receive the projection of the former.

6. A rail-securing device comprising a pair of plates adapted to be superimposed and to support the rail a claw carried by each plate to engage the rail, a hook projection carried by each plate to engage within an opening in a tie, and a wedge lock-piece adapted to engage within an opening in the tie and secure the plates in position.

7. A rail-securing device comprising a pair of plates adapted to be superimposed and to support a rail, a claw carried by each plate to engage the rail, a hook projection carried by each plate to engage within an opening in a tie, and a wedge lock-piece adapted to engage within an opening in the tie and secure the plates in position, said lock-piece carrying means for holding it within an opening in the tie.

816,576. VEHICLE-WHEEL. HERBERT B. GILLETTE, Grand Rapids, Mich. Filed Dec. 5, 1904. Serial No. 235,650.



Claim.—1. In a vehicle-wheel, the combination of a short central block having substantially flat ends and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges which are set into said central block so that their outer faces are flush with the end faces of said central block; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

2. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat

inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges which are set into said central block so that their outer faces are flush with the end faces of said central block; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

3. In a vehicle-wheel, the combination of a short central block having substantially flat ends and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges; and bolts arranged through the flanges of said end block casings and said central block, for the purpose specified.

4. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing, said hub-bands having inwardly-projecting rib-like flanges; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

5. In a vehicle-wheel, the combination of a short central block having substantially flat ends, and having spokes mortised thereinto; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

6. In a vehicle-wheel, the combination of a short central block having substantially flat ends; end blocks having substantially flat inner ends adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting perforated flanges on their inner ends; hub-bands for said central block, arranged to embrace the flanges of said end-block casing; and bolts arranged through the flanges of said end-block casings and said central block, for the purpose specified.

7. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; hub-bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

8. In a vehicle, the combination of a short central block having substantially flat ends; hub-bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings, and central block, for the purpose specified.

9. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; bands for said central block having inwardly-projecting flanges; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

10. In a vehicle-wheel, the combination of a short central block having substantially flat ends; hub-bands for said central block having inwardly-projecting flanges; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block and with said hub-bands; and bolts arranged through the flanges of said casings, and central block, for the purpose specified.

11. In a vehicle-wheel, the combination of a short central block having substantially flat ends with spokes mortised thereinto; hub-bands for said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central block; casings for said end blocks into which they are forced, having outwardly projecting perforated flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

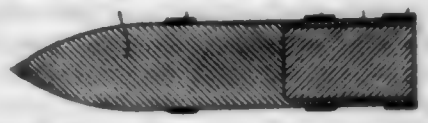
12. In a vehicle-wheel, the combination of a short central block having substantially flat ends; hub-bands for said central block; end blocks having substantially flat inner ends, adapted to contact with the ends of said central blocks; casings for said end blocks into which they are forced, having outwardly-projecting perforated flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

13. In a vehicle-wheel, the combination of a short central block; bands for said central block having inwardly-projecting flanges set into said central block so that their outer faces are flush with the end faces of said central block; end blocks adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

14. In a vehicle-wheel, the combination of a short central block; bands for said central block having inwardly-projecting flanges; end blocks adapted to contact with the ends of said central block; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block and with said bands; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

15. In a vehicle-wheel, the combination of a short central block; bands for said central block; end blocks adapted to contact with the ends of said central blocks; casings for said end blocks, having outwardly-projecting flanges at their inner ends adapted to contact with the ends of said central block; and bolts arranged through the flanges of said casings and central block, for the purpose specified.

816,577. STEEL PROJECTILE. ALBERT HAASE, Essen-Rüttenscheid, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Nov. 13, 1905. Serial No. 287,126.



Claim.—1. The combination with a projectile having a front portion separating from the remainder of the projectile upon impact, of means on the front portion preventing the wabbling of the projectile during its passage through the barrel, said means being adapted to readily strip from the projectile when the projectile pierces the armor.

2. The combination with a projectile having a front portion adapted to separate from the remainder of the projectile upon impact, of a soft-metal guiding-band arranged on the front portion and adapted to be readily stripped therefrom when the projectile pierces armor.

3. The combination with a projectile having a front portion adapted to separate from the rear portion upon impact, of a guiding-band arranged on the front portion of the projectile and adapted to be readily stripped therefrom when the projectile pierces armor, the front portion of the projectile having a diameter in the rear of the band at greatest equal to the inner circumference of the band.

816,578. WIRE-FENCE TOOL. EDWIN HARRIS, Athens, Tex. Filed Feb. 2, 1905. Serial No. 243,894.

Claim.—1. In an implement of the class described, a central relatively stationary member provided with a supporting-handle and having a transverse cavity formed therein for supporting a binding member, and coiling members swinging from said central member at opposite sides of said cavity and having means for engaging the free ends of said binding member and reversely coiling the same around a body supported therein and within said cavity.

2. In an implement of the class described, a central relatively

stationary member provided with a supporting-handle and having a transverse cavity provided with channels in its adjacent faces for holding a substantially U-shaped binding member, and coiling members swinging from said central member at opposite sides of said cavity and provided with channels for engaging the free ends of said binding member and reversely coiling them around a body held therein and within said cavity.



3. In an implement of the class described, a central relatively stationary member provided with a terminal handle and having a transverse cavity provided with channels in its adjacent faces disposed at an incline to the transverse plane of the central member for holding a substantially U-shaped binding member, and coiling members swinging from said central member at opposite sides of said cavity and provided with channels for engaging the free ends of said binding member and reversely coiling them around a body held therein and within said cavity.

4. In an implement of the class described, a central member having a transverse cavity provided with channels in its adjacent faces disposed at an incline to the transverse plane of the central member for holding a U-shaped binding member, and coiling members swinging from opposite sides of said central member and from opposite sides of the cavity therein and provided with holding-channels operating in alinement with the channels in said cavity.

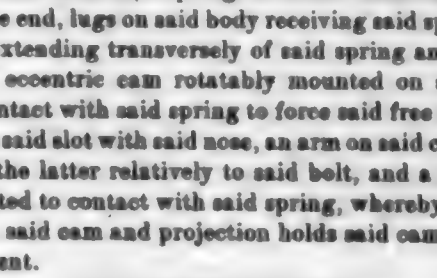
5. In an implement of the class described, a central member having a transverse cavity with the portions of the central member disposed at opposite sides of the center transversely of the same and having means for supporting a U-shaped binding member within said cavity, and coiling members swinging from opposite sides of said central member and at opposite sides of said cavity and having means for engaging the free ends of said binding member from opposite sides and reversely coiling them around a body held therein and within said cavity.

6. In an implement of the class described, a central member having a transverse cavity with the portions of the central member disposed at opposite sides of the center transversely of the same and having channels disposed in the adjacent faces of said cavity whereby means are provided for supporting a U-shaped binding member inclined to the transverse plane of the central member, and coiling members swinging upon said central member from opposite sides and at opposite sides of said cavity and with channels operating in alinement with the holding-channels in said cavity.

7. In an implement of the class described, a central member having a transverse cavity with the portions of the central member disposed at opposite sides of the center transversely of the same and having channels disposed in the adjacent faces of said cavity whereby means are provided for supporting a U-shaped binding member inclined to the transverse plane of the central member, said central member having shoulders reversely inclined and in alinement respectively with the channels in said cavity, and coiling members swinging from opposite sides of said central member and at opposite sides of said cavity and having means for engaging the free ends of said binding member from opposite sides and reversely coiling them around a body held therein and within said cavity and binding thereon by compression against said shoulders.

8. In an implement of the class described, a central relatively stationary member provided with a supporting-handle and having a cavity formed therein for supporting a binding member, and coiling members swinging from said central member at opposite sides of said cavity and provided with operating-handles disposed at substantially right angles to the longitudinal plane of the stationary member, said coiling members being provided with means for engaging the free ends of the binding member and reversely coiling the same around a body supported within said cavity.

816,579. **DUMPING-BUCKET.** ALEXANDER HENDERSON, Jersey City, N. J., assignor to John Henderson, Jersey City, N. J., and Max Schalscha, Hoboken, N. J. Filed June 27, 1905. Serial No. 267,233.



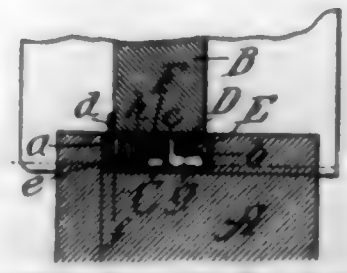
Claim.—1. In a bucket of the character set forth, a body, a hinged bottom, a spring on said body adapted to engage said bottom, an eccentric cam rotatably mounted on an axis transverse to said spring and adapted to force the latter into position to engage said bottom, and means for partially rotating said cam.

2. In a bucket of the character set forth, a body, a hinged bottom, and a nose on said bottom, a spring on said body having a slot in its free end adapted to engage said nose, an eccentric cam rotatably mounted on an axis transverse to said spring and adapted to force said free end into position to engage said slot with said nose, and means for partially rotating said cam.

3. In a bucket of the character set forth, a body having a hinged bottom, a spring secured at the upper end to said body, the free lower end adapted to be moved to engage or release said bottom by movements toward or from said body, lugs on said body receiving said spring between them, a removable bolt extending transversely of said spring through said lugs, a reversible eccentric cam rotatably mounted on said bolt and adapted to induce said movements of said spring, and an arm on said cam for partially rotating the latter, said cam adapted to be mounted on said bolt in one position to induce the releasing movement of said spring by a movement of said arm in one direction, or in the reverse position to induce such releasing movement by a movement of said arm in the opposite direction.

4. In a bucket of the character set forth, a body, a hinged bottom, a nose on said bottom, a spring secured to said body and having a slot in its free end, lugs on said body receiving said spring between them, a bolt extending transversely of said spring and mounted in said lugs, an eccentric cam rotatably mounted on said bolt and adapted by contact with said spring to force said free end into position to engage said slot with said nose, an arm on said cam extending oppositely to the latter relatively to said bolt, and a projection on said arm adapted to contact with said spring, whereby the action of said spring on said cam and projection holds said cam against accidental movement.

816,580. **WINDOW.** ARTHUR B. HULL, Chicago, Ill., assignor to Benjamin S. McClellan, Chicago, Ill. Filed Mar. 31, 1905. Serial No. 253,142.

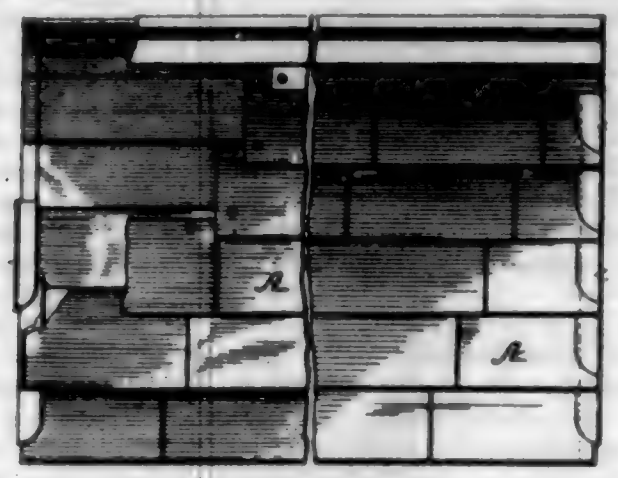


Claim.—In a window, the combination of a raising and lowering sash provided on its opposite vertical edges with longitudinally-extending metal shoes, longitudinally-extending metal jamb-strips on the window-casing against which the said shoes fit and slide, and cooperating bearings and springs between the shoes and jamb-strips engaging as the sash is closed to press the sash against the jamb, substantially as and for the purpose set forth.

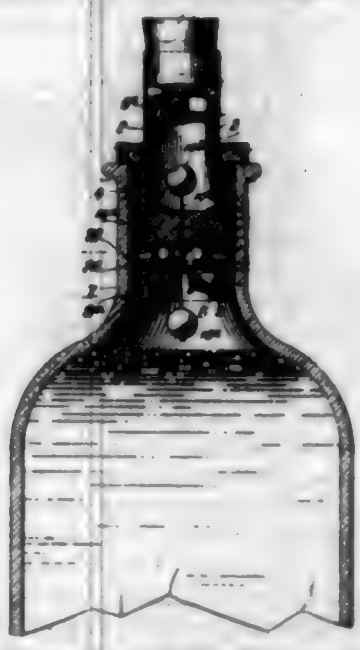
816,581. **ROOFING.** HENRY M. JACKSON, Lancaster, Ohio. Filed Nov. 3, 1904. Serial No. 231,318.

Claim.—The combination with a roof-sheathing and shingles laid in rows thereon, of the improved securing and protecting device, consisting of a metal strip having at one edge an integral tongue which is bent downward and secured in a vertical plane to the side edge of the roof, and the remaining free portion of the base of said

strip projecting beneath the shingles, and the top portion of the strip being beat over the shingles, thus inclosing the side edges of the same, substantially as described.



816,582. NON-REFILLABLE BOTTLE. GEORGE KERR, Dallas, Oreg. Filed Aug. 15, 1905. Serial No. 274,284.



Claim.—1. An apparatus of the class described, comprising a casing adapted to be secured within the bottle-neck, said casing having an externally-threaded portion and a washer-receiving portion, a flexible washer on said washer-receiving portion and a check-nut on said threaded portion for securing the casing in the bottle-neck, a valve mechanism detachably secured to the lower end of said casing, said valve mechanism comprising a valve-seat, a float-valve therefor, a weight pendently secured to said float-valve to normally hold the same on its seat, a second weight resiliently secured to said valve, and a guard within the tubular section substantially as shown and described.

2. An apparatus of the class described, comprising a tubular member having a washer-receiving portion, a washer thereon, said tubular member having a threaded portion, a nut on said threaded portion for expanding the washer to cause it to tightly impinge the bottle-neck, a guard within said tubular member, said tubular member adapted to receive a cork above the guard, a second tubular member secured to the lower end of the first tubular member and forming a continuation thereof, a valve-seat in said second tubular member, said valve-seat having a fluid-passage and a plurality of air-passages, a valve adapted to seat on said valve-seat, and a funnel member secured to said second tubular member below said valve-seat with its small end arranged to discharge through the fluid-passage in said valve-seat, substantially as shown and described.

3. An apparatus of the class described, comprising a tubular member having a washer-receiving portion, a washer thereon, said tubular member having a threaded portion, a nut on said threaded portion for expanding the washer to cause it to tightly impinge the bottle-neck, a guard within said tubular member, said tubular member adapted to receive a cork above the guard, a second tubular member secured to the lower end of the first tubular member and forming a continuation thereof, a valve-seat in said second tubular member, said valve-seat having a fluid-passage and a plurality of air-passages, a valve adapted to seat on said valve-seat, a funnel member secured to said second tubular member below said valve-seat with its small end arranged to discharge through the fluid-passage in said valve-seat, said valve having a pendent weight for normally holding it on its seat.

4. An apparatus of the class described, comprising a tubular member having a washer-receiving portion, a washer thereon, said tubular member having a threaded portion, a nut on said threaded portion for expanding the washer to cause it to tightly impinge the bottle-neck, a guard within said tubular member, said tubular member adapted to receive a cork above the guard, a second tubular member secured to the lower end of the first tubular member and forming a continuation thereof, a valve-seat in said second tubular member, said valve-seat having a fluid-passage and a plurality of air-passages, a valve adapted to seat on said valve-seat, a funnel member secured to said second tubular member below said valve-seat with its small end arranged to discharge through the fluid-passage in said valve-seat, said valve-seat having a pendent weight for normally holding it on its seat, and a second weight flexibly secured to said valve to form an agitator substantially as shown and described.

5. An apparatus of the class described, comprising a tubular member having a washer-receiving portion, a washer thereon, said tubular member having a threaded portion, a nut on said threaded portion for expanding the washer to cause it to tightly impinge the bottle-neck, a guard within said tubular member, said tubular member adapted to receive a cork above the guard, a second tubular member secured to the lower end of the first tubular member and forming a continuation thereof, a valve-seat in said second tubular member, said valve-seat having a fluid-passage and a plurality of air-passages, a valve adapted to seat on said valve-seat, a funnel member secured to said second tubular member below said valve-seat with its small end arranged to discharge through the fluid-passage in said valve-seat, said valve having a pendent weight for normally holding it on its seat, a second weight flexibly secured to said valve to form an agitator, said funnel member being spaced from the periphery of said second tubular member to form a passage therebetween substantially as shown and described.

6. An apparatus of the class described, comprising a tubular member having a washer-receiving portion, a washer thereon, said tubular member having a threaded portion, a nut on said threaded portion for expanding the washer to cause it to tightly impinge the bottle-neck, a guard within said tubular member, said tubular member adapted to receive a cork above the guard, a second tubular member secured to the lower end of the first tubular member and forming a continuation thereof, a valve-seat in said second tubular member, said valve-seat having a fluid-passage and a plurality of air-passages a valve adapted to seat on said valve-seat, a funnel member secured to said second tubular member below said valve-seat with its small end arranged to discharge through the fluid-passage in said valve-seat, said valve having a pendent weight for normally holding it on its seat, a second weight flexibly secured to said valve to form an agitator, said funnel member being spaced from the periphery of said second tubular member to form a passage-way between, an apertured bridge member secured to said valve-seat, substantially as shown and described.

7. An apparatus of the class described, comprising a tubular member having an enlarged lower end, a washer-receiving portion and a threaded portion, a washer surrounding said tubular member on said washer-receiving portion, a nut adapted to coöperate with said threaded portion to expand the washer and force it to tightly engage the bottle-neck, a valve mechanism comprising a second tubular member detachably secured to said enlarged portion of said first tubular member and forming an extension thereof an annular valve-seat within said second tubular member, said valve-seat having a fluid-passage and a plurality of radially-arranged apertures communicating with said fluid-passage and the exterior of the second tubular member, a cross-bar secured to said valve-seat and passing across the fluid-passage thereof, a valve adapted to seat on said valve-seat and comprising a buoyant portion and a washer portion, a flexible member secured to the bottom of said valve and passing through an aperture in said cross-bar, a weight secured to said flexible member to normally hold the valve seated, all being arranged as shown and described.

8. An apparatus of the class described, comprising a tubular member having an enlarged lower end, a washer-receiving portion and a threaded portion, a washer surrounding said tubular member on said washer-receiving portion, a nut adapted to coöperate with said threaded portion to expand the washer and force it to tightly engage the bottle-neck, a valve mechanism comprising a second tubular member detachably secured to said enlarged portion of said first tubular member and forming an extension thereof, an annular valve-

seat within said second tubular member, said valve-seat having a fluid-passage and a plurality of radially-arranged apertures communicating with said fluid-passage and the exterior of the second tubular member, a cross-bar secured to said valve-seat and passing across the fluid-passage thereof, a valve adapted to seat on said valve-seat and comprising a buoyant portion and a washer portion, a flexible member secured to the bottom of said valve and passing through an aperture in said cross-bar, a weight secured to said flexible member to normally hold the valve seated, a spring member secured to said valve, and projected upwardly therefrom, and a weight secured to the end of said spring member substantially as shown and described.

9. An apparatus of the class described, comprising a tubular member having an enlarged lower end, a washer-receiving portion and a threaded portion, a washer surrounding said tubular member on said washer-receiving portion, a nut adapted to coöperate with said threaded portion to expand the washer and force it to tightly impinge the bottle-neck, a valve mechanism comprising a second tubular member detachably secured to said enlarged portion of said first tubular member and forming an extension thereof, an annular valve-seat within said second tubular member, said valve-seat having a fluid-passage and a plurality of radially-arranged apertures communicating with said fluid-passage and the interior of the second tubular member, a cross-bar secured to said valve-seat and passing across the fluid-passage thereof, a valve adapted to seat on said valve-seat and comprising a buoyant portion and a washer portion, a flexible member secured to the bottom of said valve and passing through an aperture in said cross-bar, a weight secured to said flexible member to normally hold the valve seated, a spring member secured to the valve, and projected upwardly therefrom, and a weight secured to the end of the spring member, a funnel-shaped member secured to and spaced from said second tubular member with its small end discharging into the fluid-passage of the valve-seat, substantially as shown and described.

10. An apparatus of the class described, comprising a tubular member having an enlarged lower end, a washer-receiving portion and a threaded portion, a washer surrounding said tubular member on said washer-receiving portion, a nut adapted to coöperate with said threaded portion to expand the washer and force it to tightly engage the bottle-neck, a valve mechanism comprising a second tubular member detachably secured to said enlarged portion of the first tubular member and forming an extension thereof, an annular valve-seat within said second tubular member, said valve-seat having a fluid-passage and a plurality of radially-arranged apertures communicating with said fluid-passage and the exterior of the second tubular member, a cross-bar secured to said valve-seat and passing across the fluid-passage thereof, a valve adapted to seat on said valve-seat and comprising a buoyant portion and a washer portion, a flexible member secured to the bottom of said valve and passing through an aperture in said cross-bar, a weight secured to said flexible member to normally hold the valve seated, a funnel-shaped member secured to and spaced from said second tubular member with its small end discharging into the fluid-passage of the valve-seat substantially as shown and described.

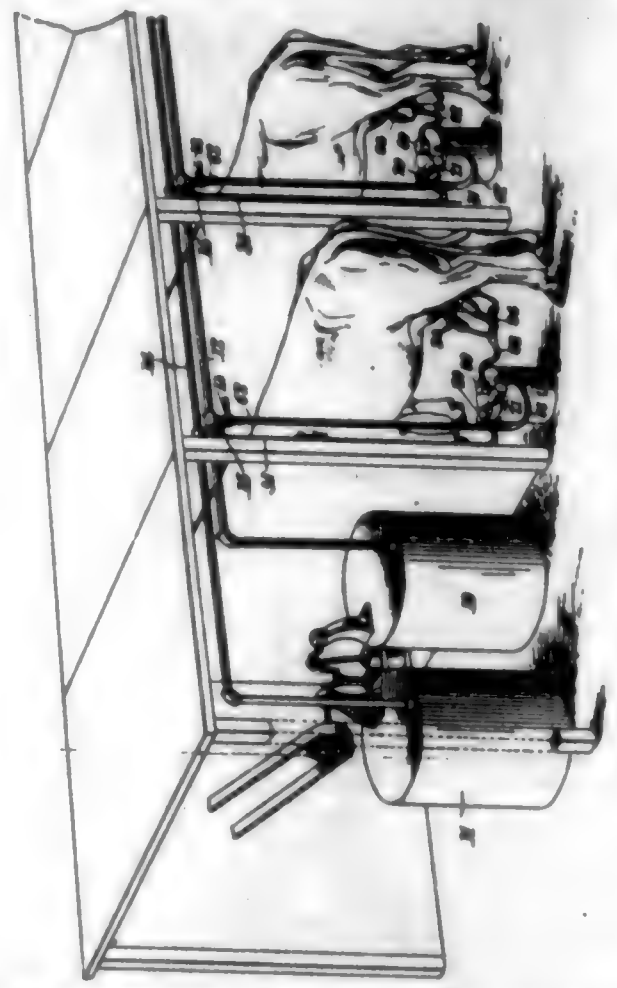
816,583. MILKING-MACHINE. DANIEL KLEIN, West Chester, Pa., assignor of one-third to Mary E. Bowman, Salem, Va. Filed July 14, 1905. Serial No. 269,859.

Claim.—1. In a milking-machine, a pulsator having air-exhaust and compressed-air connections, and provided with a milk-tube connection, means for maintaining the milk-tube in communication with the air-exhaust, and for admitting to the milk-tube a quantity of air at predetermined intervals, without raising the pressure within the tube to that of the atmosphere.

2. In a device of the class specified, a pulsator having air-exhaust, compressed-air, and milk-tube connections, said pulsator having means for placing the milk-tube and air-exhaust in communication, and for cutting off such communication and reducing the degree of air exhaustion, the periods of high and low exhaustion alternating.

3. In apparatus of the class described, a pulsator having air-exhaust, compressed-air, and milk-tube connections, and a piston-valve forming a part of the pulsator and arranged to alternately open communication between the air-exhaust and the milk-tube, and the outer air and the milk-tube.

4. In a device of the class specified, a pulsator having air-exhaust, compressed air, and milk-tube connections, a piston-valve forming a part of such pulsator and serving to alternately establish communication between the air-exhaust and the milk-tube, and the outer air and the milk-tube, and means for closing the outer air connection in advance of the equalization of the milk-tube with atmospheric pressure.



5. In apparatus of the class described, the combination with a milk-tube, of a pulsator having pressure and vacuum cylinders, a pair of connected pistons arranged in said cylinders, air-exhaust and compressed-air connections leading to the vacuum and pressure cylinders, respectively, ports arranged in the vacuum-cylinder, one of said ports leading to the milk-tube, and the other to the outer air, the piston of the vacuum-cylinder serving as a valve for placing the milk-tube alternately in communication with the air-exhaust and with the air-inlet port.

6. In a device of the class specified, the combination with pressure and vacuum cylinders, of a pair of connected pistons arranged in said cylinders, air-exhaust and compressed-air connections leading, respectively, to the vacuum and pressure cylinders, a milk-tube, also, having ported communication with the vacuum-cylinder, an air-port under the control of the piston of the vacuum-cylinder for admitting air to the milk-tube, and means for controlling the pressure of the air admitted through said port.

7. In apparatus of the class described, the combination with vacuum and pressure cylinders, of air-exhaust, and compressed-air connections leading, respectively, to said vacuum and pressure cylinders, a milk-tube connection having a terminal port opening into the vacuum-cylinder, an air-port, also, communicating with the milk-tube and opening into the vacuum-cylinder, and a self-closing pressure-regulating valve for admitting air to that portion of the vacuum-cylinder with which said air-port communicates.

8. In apparatus of the class described, the combination with vacuum and pressure cylinders, of a pair of connected pistons arranged in said cylinders, air-exhaust and compressed-air connections leading to the vacuum and pressure cylinders, respectively, a milk-tube having a terminal port opening into the vacuum-cylinder, an air-port communicating with the milk-tube, and, also, opening into vacuum-cylinder, the piston of the vacuum-cylinder serving as a valve for alternately placing the milk-tube in communication with the air-exhaust, and with the air-port, and an automatic means for controlling the pressure of air admitted through said air-port to the milk-tube.

9. In a device of the class specified, the combination with vacuum and pressure cylinders, of a pair of connected pistons arranged in said cylinders, air-exhaust and compressed-air connections leading to the vacuum and pressure cylinders, respectively, a milk-tube having a terminal port communicating with the vacuum-cylinder, an adjustable self-closing pressure-regulating valve for

admitting air to one end of the vacuum-cylinder, and an air-port extending from the vacuum-cylinder to the milk-tube port and under the control of the piston of the vacuum-cylinder.

10. In apparatus of the class described, the combination with vacuum and pressure cylinders, of a pair of connected pistons arranged in said cylinders, a compressed-air connection leading to the pressure-cylinder, an air-exhaust port leading to one end of the vacuum-cylinder, a self-closing pressure-regulating valve arranged at the opposite end of the vacuum-cylinder, and serving to admit a quantity of air, but closing before the pressure in the vacuum-cylinder is equal to atmospheric pressure, a milk-tube port communicating with the vacuum-cylinder, and a port or by-pass leading from the air-entrance end of the vacuum-cylinder to the milk-port, said ports being under the control of the piston of the vacuum-cylinder.

11. In a device of the class specified, the combination with vacuum and pressure cylinders, of a pair of connected pistons in said cylinders, a fluid-pressure port communicating with the pressure-cylinder, an air-exhaust port communicating with one end of the vacuum-cylinder, a partial vacuum at the end of the vacuum-cylinder tending to induce movement of both pistons in one direction and the pressure of the fluid in the pressure-cylinder tending to force both pistons in the opposite direction, a milk-tube port opening into the vacuum-cylinder and under the control of the piston therein, a pressure-regulating valve for admitting air to that end of the vacuum-cylinder opposite the air-exhaust port, said valve closing before the air in the cylinder has reached atmospheric pressure, and a port or by-pass under the control of the piston of the vacuum-cylinder and serving to establish connection between the milk-port and the air end of the vacuum-cylinder.

12. In apparatus of the class described, the combination with vacuum and pressure cylinders, of a pair of connected pistons in said cylinders, a fluid-pressure-supply port leading to the pressure-cylinder, a valve for controlling the flow of the fluid-pressure through said port, an air-exhaust connection at one end of the vacuum-cylinder, an air-inlet arranged at the opposite end of the vacuum-cylinder, milk-tube and air ports arranged in the vacuum-cylinder and under the control of the piston therein, and automatic means serving to open the fluid-pressure valve and admit fluid-pressure to the pressure-cylinder when the air-port of the vacuum-cylinder is uncovered.

13. In apparatus of the class described, the combination with the vacuum and pressure cylinders, of a pair of connected pistons in said cylinders, a valved port for supplying fluid under pressure to the pressure-cylinder, an air-exhaust port arranged at one end of the vacuum-cylinder, an automatically-closable valve arranged at the opposite end of the vacuum-cylinder and serving to admit air thereto, milk-tube and air ports leading to the vacuum-cylinder and under the control of the piston therein, and mechanism for automatically opening the pressure-controlling valve after the milk-tube port has been closed and the air-port of the vacuum-cylinder opened.

14. In apparatus of the class described, a vacuum-cylinder, a piston therein, an air-exhaust connection at one end of the cylinder, an air-inlet at the opposite end of the cylinder, milk-tube and air ports communicating with the cylinder, the air-port being arranged to communicate with the air-inlet cylinder, and being connected to the milk-tube port, said piston serving to alternately place the milk-tube connection in communication with the air-exhaust connection, and with the air-port, means for retarding movement of the piston in the direction of the air-exhaust connection, and means for effecting a quick return of the piston after momentary opening of the air-port.

15. In apparatus of the class described, a milk-receptacle, an air-exhaust communicating therewith, a vacuum-cylinder connected to the milk-receptacle, a milk-tube having a port opening into one end of the vacuum-cylinder, a piston arranged in the vacuum-cylinder and serving when moved in one direction to open said milk-port and permit the flow of milk into the receptacle, and an air-port, also, under the control of the piston, said port being open when the milk-port is closed, to partly break the vacuum in the milk-tube without increasing the pressure in the receptacle.

16. In a milking-machine, a milk-receptacle, an air-exhaust communicating therewith, a vacuum-cylinder, a port opening into the cylinder, an air-port extending between the cylinder and the milk-tube, a piston arranged in the cylinder and movable in one direction by the reduction of pressure in the receptacle, means for retarding such movement and permitting communication between the milk-port and the receptacle for a comparatively long period, the milk-port being closed by the piston in advance of the air-port, and means for effecting a quick return movement of the piston and the closing of the air-port in advance of the opening of the milk-port.

17. In apparatus of the class described, the combination with a milk-receptacle, having an air-exhaust connection, of a vacuum-cylinder connected to the receptacle, a milk-tube having a port opening into the cylinder, an air-port for establishing communication between one end of the cylinder and the milk-tube, a piston arranged within said cylinder and serving as a valve for controlling communication between the milk-port and the receptacle connection and between the milk-port and the air-port, there being a pair of valved ports arranged at that end of the cylinder with which the air-port communicates, and serving, respectively, for the admission and discharge of air.

18. In apparatus of the class described, the combination with a milk-tube having a terminal port, of a suction-port, and an air-port, a valve for controlling communication between the milk-port, the suction-port and the air-port, a pressure-cylinder, a piston arranged therein and connected to the valve, a valve for controlling the admission of an actuating fluid to said cylinder, an automatic valve-operating means, and means for controlling the escape of the fluid from the cylinder, and thus timing the operation.

19. In apparatus of the class described, the combination with a casing having a suction-port, a milk-port, and an air-port, of a valve for controlling communication of the milk-port alternately with the suction-port and the air-port, a pressure-cylinder, a piston arranged therein and connected to the valve, a valve for controlling the flow of fluid under pressure to said cylinder, means for opening and closing said valve, and an escape-port leading from the cylinder and having an adjustable valve for regulating the speed at which the fluid discharges from the cylinder.

20. In apparatus of the class described, the combination with vacuum and pressure cylinders, of pistons arranged in the cylinders, a piston-rod connecting the two pistons, a suction-port, a milk-port, and an air-port, all leading into the vacuum-cylinder, and under the control of the piston therein, a pressure-port leading to the pressure-cylinder, a valve for controlling the flow of fluid under pressure through said pressure-port, and means carried by the piston-rod for controlling the movement of said valve.

21. In apparatus of the class described, the combination with vacuum and pressure cylinders, of a pair of pistons arranged therein, a rod connecting said pistons, a suction-port, a milk-port, and an air-port, all communicating with the vacuum-cylinder and under the control of its piston, a valve for controlling the flow of fluid under pressure into the pressure-cylinder, a trigger for maintaining the valve in closed position, a valve-opening member, and means for tripping said trigger and permitting opening movement of the valve when the pistons have completed their stroke in one direction.

22. In apparatus of the class described, the combination with vacuum and pressure cylinders, of a pair of pistons arranged in the cylinders, a piston-rod connecting said pistons, a suction-port, a milk-port, and an air-port, all in communication with the vacuum-cylinder and under the control of its piston, a valve for controlling the flow of fluid under pressure into the pressure-cylinder, a spring for opening said valve, a trigger for maintaining the valve in closed position, and a tappet member carried by the piston-rod and serving to move the trigger to release position at the completion of the stroke of the piston in one direction.

23. In apparatus of the class described, the combination with vacuum and pressure cylinders, of pistons arranged in said cylinders, a rod connecting said pistons, a suction-port, a milk-port, and an air-port all communicating with the vacuum-cylinder and under the control of its piston, a valve for controlling the flow of fluid under pressure to the pressure-cylinder, a spring for opening the valve, a pivotally-mounted trigger having at one end a shoulder for engaging and holding the valve in open position, the opposite end of said trigger having an inclined cam-face, and a tappet carried by the piston-rod and arranged to ride over said cam-face and release the trigger after the completion of the stroke of the pistons in one direction.

24. In mechanism of the class described, a pressure-cylinder, a piston arranged therein, a piston-rod, a valve member connected to the piston-rod, a valve for controlling the flow of fluid under pressure into said cylinder, said valve having both inlet and escape ports, a spring tending to move the valve to open position, a pivotally-mounted trigger-bar having a shoulder for engaging the valve and maintaining the same in closed position, said trigger having an inclined cam-face, and means carried by the piston-rod for engaging said cam-face to trip the trigger and permit opening movement of the valve.

25. In apparatus of the class described, the combination with a fluid-pressure cylinder, of a piston arranged therein, a piston-rod, a valve member connected to said piston-rod, a valve for controlling the flow of fluid under pressure into the cylinder, said valve having both

inlet and escape ports, an adjustable means for controlling the escape of fluid through said port, a spring tending to move the valve to its open position, a pivotally-mounted trigger-bar having a shoulder for engaging and locking the valve in closed position, said trigger-bar having an inclined cam-face at that end opposite the shoulder, a tappet member carried by the piston-rod and serving by engagement with said cam-face to trip the trigger, and a valve-closing pin carried by said tappet-arm.

26. In apparatus of the class described, the combination with a fluid-pressure cylinder, of a piston arranged therein, a piston-rod connected to said piston, a valve member under the control of said piston-rod, a valve for controlling the flow of fluid under pressure to, and the exhaust from, said cylinder, an arm projecting from said valve, a spring acting on the arm and tending to move the valve to open position, a pivotally-mounted trigger-bar having at one end a shoulder for engaging the arm, and a tongue for limiting movement of said trigger, an inclined cam-face arranged at the opposite end of the trigger-bar, a tappet carried by the piston-rod and arranged to engage said cam-face, and a pin projecting from the tappet and adapted to engage the valve-arm and move said valve to closed position.

27. In apparatus of the class described, the combination with a fluid-pressure cylinder, of a piston arranged therein, a piston-rod, a valve member connected to the piston-rod, a valve for controlling the flow of fluid under pressure into, and the exhaust from said cylinder, an arm projecting from said valve, a spring engaging the arm and tending to move the valve to open position, a trigger for holding the valve in closed position, means carried by the piston-rod for tripping the trigger, a pin operable by the piston-rod for engaging and moving the valve to closed position, and an adjustable needle-valve for controlling the exhaust from said pressure-cylinder.

28. In apparatus of the class described, a pulsator having a means for controlling the flow of milk, a base-plate to which the pulsator is secured, said base-plate being arranged to form the cover of a milk-receptacle, and a casing carried by the base-plate and provided with transparent upper and lower walls for the ready inspection of the contents of the pail, said casing forming a portion of the milk-duct and permitting inspection of the milk as it flows toward the receptacle.

29. In apparatus of the class described, a base-plate arranged to form the cover of a milk-receptacle, a casing secured to the base-plate and having upper and lower transparent walls to permit inspection of the contents of the receptacle, a milk-tube discharging into the casing at a point between said upper and lower walls, and a suction-tube leading outward from said casing, whereby the rate of flow of the milk may be observed.

816,584. RAILWAY PILE-DRIVER AND THE LIKE.

SAMUEL L. G. KNOX, Milwaukee, and WALTER FERRIS, South Milwaukee, Wis., assignors to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin.

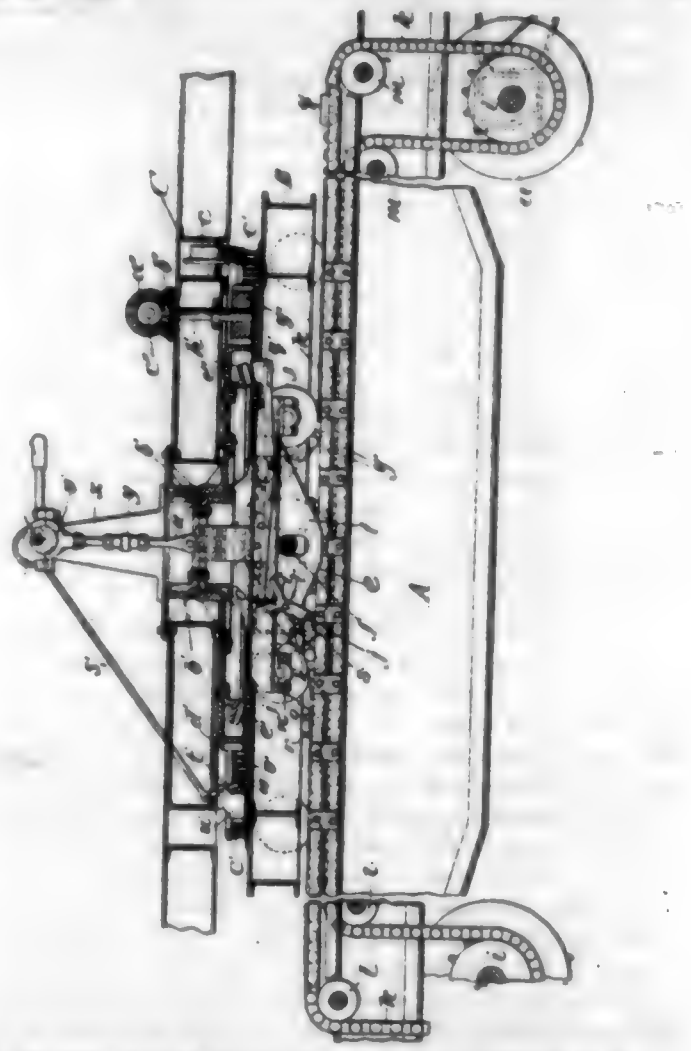
Filed May 28, 1906. Serial No. 318,809.

Claim.—1. In railway pile-driver and like apparatus having a rotary and longitudinally-movable superstructure, the combination of a driving-sprocket carried by the superstructure, a driven sprocket on the car-axle, an endless chain engaging the respective sprockets to drive the car, and means for imparting motion to said driving-sprocket.

2. In railway pile-driver and like apparatus having a rotary and longitudinally-movable superstructure, the combination of a driving-sprocket carried by the superstructure, a driven sprocket on the car-axle, an endless chain adapted to engage the driving-sprocket on opposite sides thereof and meshing with the driven sprocket, means whereby the driving-sprocket may be engaged with one or both stretches of the chain irrespective of the position of the superstructure, and mechanism for imparting motion to said driving-sprocket.

3. In railway pile-driver and like apparatus having a rotary and longitudinally-movable superstructure, the combination of a driving-sprocket carried by the superstructure, driven sprockets on two of the car-axles, an endless chain adapted to engage the driving-sprocket on opposite sides thereof and meshing with both of said driven sprockets, means for disengaging one stretch of the chain from the driving-sprocket, and means on the superstructure for imparting motion to said driving-sprocket, whereby when both stretches of the chain are engaged with the driving-sprocket and the latter is driven, the car will be propelled on the track.

4. In railway pile-drivers and the like, the combination of a car, a longitudinally-movable superstructure thereon, a driving-sprocket carried by the superstructure, driven sprockets on the car-axle, an endless chain meshing with the driven sprockets and engaging the driving-sprocket on opposite sides thereof, means for imparting motion to the driving-sprocket, and mechanism for disengaging one stretch of the chain from the driving-sprocket and for locking said chain to the car-body, whereby when both stretches of the chain engage the operating driving-sprocket, the car is propelled on the track, and when one stretch of the chain is disengaged and said chain is locked to the car-body, the superstructure is moved longitudinally on the car-body.



5. In railway pile-drivers and the like, the combination of a car, a carriage mounted for longitudinal movement thereon, a deck revolubly mounted on said carriage, a driving-sprocket on said carriage, driven sprockets on the car-axles, an endless chain meshing with said driven sprockets and engaging the driving-sprocket on opposite sides thereof, a floating gear on the carriage meshing with a gear on the driving-sprocket shaft, a shaft on the deck operated by a prime mover on said deck and geared to said floating gear, whereby the car may be propelled by the prime mover, a lock for securing the chain to the car-body, and mechanism for disengaging one stretch of the chain from the driving-sprocket and for engaging the chain-lock with the chain, whereby the carriage may be moved longitudinally of the car-body by the prime mover.

6. In railway pile-drivers and the like, the combination of a car, a carriage mounted for longitudinal movement thereon, a deck revolubly mounted on said carriage, a floating gear on the carriage driven from the prime mover on the deck, a driving-sprocket on the carriage geared to said floating gear, driven sprockets on the car-axles, an endless chain engaging the driving-sprocket on opposite sides thereof and meshing with the driven sprockets, and means operated by a single lever for controlling the engagement of the chain with the driving-sprocket, the locking of the floating gear against rotation, the locking of the deck to the carriage, and the locking of the chain to the car-body.

7. In railway pile-drivers and the like, the combination of a car, a carriage longitudinally movable thereon, a deck revolubly mounted on said carriage, and means controlled by a single lever for propelling the car, for swinging the deck on the carriage and for traversing the carriage on the car.

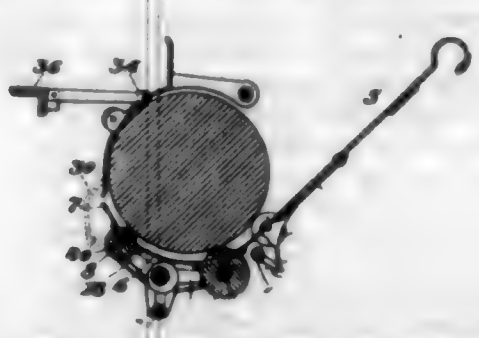
8. In railway pile-drivers and the like, the combination of a car, a carriage longitudinally movable thereon, a deck revolubly mounted on said carriage, a floating gear on the carriage geared to the prime mover on the deck, a driving-sprocket geared to the floating gear, a drive-chain engaging with opposite sides of said driving-sprocket and meshing with driven sprockets on the car-axles, and means controlled by a single lever for locking the deck and the float-

ing-gear drive to the carriage and the chain to the car-body, and for disengaging one stretch of the chain from the driving-sprocket.

9. In railway pile-drivers and the like, the combination of a car, a carriage longitudinally movable thereon, a deck revolubly mounted on said carriage, a floating gear on the carriage geared to the prime mover on the deck, a driving-sprocket geared to the floating gear, a drive-chain engaging with opposite sides of said driving-sprocket and meshing with driven sprockets on the car-axles, a deck-lock for locking the deck to the carriage, a chain-lock and a lock for the floating gear, a reciprocating frame controlling the engagement of one stretch of the chain with the driving-sprocket, the chain-lock with the drive-chain and the gear-lock with the floating gear, and a lever on the deck for actuating the deck-lock and the reciprocating frame.

10. In railway pile-drivers and the like, the combination of a car, a carriage longitudinally movable thereon, a deck revolubly mounted on said carriage, a floating gear on the carriage, a driving-shaft on the deck geared to the prime mover and to the floating gear, a driving-sprocket on the carriage operated by said floating gear, a drive-chain engaging with opposite sides of said driving-sprocket and meshing with driven sprockets on the car-axles, a deck-lock, a chain-lock, and a lock for the floating gear carried by the deck, the car and the carriage respectively, a reciprocating frame on the carriage provided with means for disengaging one stretch of the chain from the driving-sprocket and also for controlling the operation of the chain-lock and the floating-gear lock, and a lever on the deck for simultaneously actuating the deck-lock and the reciprocating frame.

816,585. **TYPE-WRITING MACHINE.** EDWARD F. KUHATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 26, 1904. Serial 230,060.



Claim.—1. In a type-writing machine, the combination with a revoluble platen, and types mounted to strike upon the front thereof, of a releasable main pressure-roll for feeding the paper forwardly under the platen, a deflector curving around the under side of the platen in such relation thereto that a sheet may readily be inserted in front of the platen and pushed back around the under side of the platen between said deflector and the platen, while the latter remains stationary, said deflector extending longitudinally of the platen and out of contact therewith, and an auxiliary roll in rear of the platen for holding sheets against the same while said main pressure-roll is released to permit the backward insertion of a sheet.

2. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of releasable means beneath the platen for holding paper against the same so as to cause the paper to turn with the platen, independent means for holding paper against the rear side of the platen while said releasable means are released, and a deflector extending along the platen and curving beneath the same but separate therefrom.

3. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of means beneath the platen and including a releasable main pressure-roll, for feeding and guiding paper around the under side of the platen, said feeding and guiding means being so constructed as to form with the platen substantially throughout its length a continuous open passage, such as to permit a sheet to be inserted backwardly at the front of the platen and pushed down and mechanically guided back beneath the platen while the latter is stationary, and an independently-releasable auxiliary device mounted to bear against the rear side of the platen in rear of said main roll.

4. In a type-writing machine, the combination with a revoluble platen, of forward and rear main pressure-rolls beneath the platen, means for releasing said pressure-rolls, an auxiliary roll bearing against the platen in rear of said main rolls, and independent means for releasing said auxiliary roll.

5. In a type-writing machine, the combination with a frame of a platen journaled therein, forward and rear main pressure-rolls beneath the platen, means, including a key mounted upon said frame, for releasing said pressure-rolls, an auxiliary roll bearing against the platen in rear of said main rolls, and means, including an independent key also mounted upon said frame, for releasing said auxiliary roll.

6. In a type-writing machine, the combination with a frame of a platen journaled therein, a release-key mounted upon said frame, means beneath the platen and controlled by said release-key, for holding paper against the platen so as to cause the paper to turn with the platen, independent means for holding paper against the rear side of the platen while said releasable means are released, and a key or lever for releasing said independent means.

7. In a type-writing machine, the combination with a revoluble platen, of a deflector curving beneath and up in front of the platen and underlying substantially the entire platen, said deflector being well separated from said platen so as to permit ready insertion of a sheet backwardly at the front of the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, releasable means projecting up through said deflector for holding the paper against the platen, and a device pressing against the rear side of the platen for holding paper against the same while said releasable means is released.

8. In a type-writing machine, the combination with a revoluble platen, of a deflector curving beneath and up in front of the platen and underlying the principal portion of the platen, said deflector being mounted away from said platen so as to form therewith an open passage for substantially the length of the platen, to permit ready insertion of a sheet backwardly at the front of the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, pressure-rolls projecting up through said deflector, and means for holding said pressure-rolls mechanically away from the platen so as to leave both hands of the operator free to introduce and adjust a sheet backwardly beneath the platen; said passage terminating in an unobstructed entrance for the backward insertion of paper between the platen and the deflector just below the printing-line.

9. In a type-writing machine, the combination with a revoluble platen, of a deflector curving beneath and up in front of the platen and underlying the principal portion of the platen, said deflector being mounted away from said platen to permit ready introduction and backward adjustment of a sheet from the front side of the platen, pressure-rolls projecting up through said deflector, means for holding said pressure-rolls mechanically away from the platen, and means bearing against the rear side of the platen in rear of said pressure-rolls for holding paper thereagainst during such backward introduction and adjustment.

10. In a type-writing machine, the combination with a revoluble platen, of a deflector curving beneath and up in front of the platen and underlying the principal portion of the platen, said deflector being mounted away from said platen to permit ready introduction and backward adjustment of a sheet from the front side of the platen, forward and rear sets of main pressure-rolls projecting up through said deflector, means for holding said pressure-rolls mechanically away from the platen, and releasable means bearing against the rear side of the platen in rear of said pressure-rolls for holding paper thereagainst during such backward introduction and adjustment.

11. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a deflector curving beneath and up in front of the platen nearly to the printing-line thereon, said deflector being mounted away from said platen so as to form therewith an open passage for substantially the length of the platen, to permit ready introduction and backward adjustment of a sheet from the front side of the platen, main pressure rolls projecting up through said deflector, means for releasing said pressure-rolls, an auxiliary roll bearing against the rear side of the platen in rear of said main rolls, and means for mechanically holding said auxiliary roll away from the platen.

12. In a type-writing machine, the combination with a revoluble platen and types mounted to strike on a visible side thereof, of a deflector-plate curving beneath and up in front of the platen and terminating at its front edge just below the printing-line in a forwardly bent or flaring lip, said deflector being mounted away from said platen, releasable pressure-rolls projecting up through said deflector against the under side of the platen; said deflector and platen cooperating to make an open continuous passage which terminates in an unobstructed entrance for the introduction of paper backwardly between the platen and the deflector; and means for holding another sheet stationary in position upon the platen during such backward introduction.

13. In a type-writing machine, the combination with a revoluble platen and types mounted to strike on a visible side thereof, of a deflector-plate curving beneath and up in front of the platen and provided with openings, both the sides and ends of said openings being formed with downwardly-inclined lips, and releasable pressure-rolls projecting up through said openings; said plate standing far away from the platen throughout, and an unobstructed entrance being provided for the insertion of sheets backwardly between the platen and said deflector just below the printing-line.

14. In a type-writing machine, the combination with a revoluble platen, of a deflector-plate curving beneath and up in front of the platen and provided with openings, both the sides and ends of said openings being formed with downwardly-inclined lips, pressure-rolls projecting up through said openings against the platen, means for mechanically holding said pressure-rolls away from the platen, and a paper-holding device bearing against the platen in rear of said pressure-rolls; said plate standing far away from the platen throughout, and an unobstructed entrance being provided for the insertion of sheets backwardly between the platen and said deflector just below the printing-point.

15. In a type-writing machine, the combination with a revoluble platen, of a deflector-plate curving beneath and up in front of the platen and provided with openings, both the sides and ends of said openings being formed with downwardly-inclined lips, forward and rear sets of pressure-rolls projecting up through said openings against the platen, means for mechanically holding said pressure-rolls away from the platen, and means in rear of said pressure-rolls for holding the paper against the platen when said rolls are released.

16. In a type-writing machine, the combination with a revoluble platen, of a deflector-plate curving beneath and up in front of the platen and also extending upwardly and rearwardly from the platen to form a paper-shelf, said plate underlying the principal portion of the platen, and its front edge being bent forwardly to form a lip, and said plate being mounted away from the platen so as to permit the introduction and backward adjustment of a sheet from the front of the platen while the latter is stationary, openings being provided in said plate beneath the platen and having both their ends and sides formed with downwardly-inclined lips, forward and rear sets of pressure-rolls projecting up through said openings against the platen, key-controlled means for moving said rolls away from the platen and mechanically holding them there, and means in rear of said pressure-rolls for holding paper against the platen when said rolls are released.

17. In a type-writing machine, the combination with a revoluble platen, of main releasable pressure-rolls beneath the platen, a deflector-plate beneath the platen and separated therefrom, a plurality of auxiliary rolls for bearing against the rear side of the platen when said main rolls are released, and a single key or lever provided with means for releasing both of said auxiliary rolls independently of said main rolls.

18. In a type-writing machine, the combination with a revoluble platen, of main releasable pressure-rolls beneath the platen, a deflector-plate beneath the platen and separated therefrom throughout, said deflector-plate forming with the platen an open passage extending downwardly and rearwardly, a plurality of auxiliary rolls for bearing against the rear side of the platen when said main rolls are released, and a single device provided with means for holding both of said auxiliary rolls mechanically away from the platen; said passage terminating in an unobstructed entrance for the backward insertion of the paper between said platen and said deflector.

19. In a type-writing machine, the combination with a revoluble platen, of a curved deflector-plate beneath the platen and separated therefrom throughout, said deflector-plate forming with the platen an open passage extending downwardly and rearwardly, releasable pressure-rolls projecting up through said deflector-plate, and separate pressure devices in rear of said rolls and bearing against the rear side of the platen at widely-separated points, for holding sheets from skewing after the pressure-rolls are released and during the insertion of a sheet backwardly between the platen and deflector-plate; said passage terminating in an unobstructed entrance for the backward insertion of the paper between said platen and said deflector.

20. In a type-writing machine, the combination with a platen and types mounted to strike upon a visible side thereof, of means beneath the platen and standing well away therefrom, to form therewith a commodious passage for guiding rearwardly around beneath the platen sheets which are inserted downwardly in front of the platen, releasable means for pressing the sheets against the platen to cause the paper to turn therewith, and means for holding one sheet stationary in position upon the platen while another sheet is thrust back through said passage.

21. In a type-writing machine, the combination with a platen and types mounted to strike upon a visible side thereof, of means beneath the platen and standing away therefrom, for guiding rearwardly around beneath the platen sheets which are inserted downwardly in front of the platen, releasable rolls for pressing the sheets against the platen to cause the paper to turn therewith, and means mounted in rear of the platen for holding one sheet stationary in position upon the platen while another sheet is thrust back through said passage.

22. In a type-writing machine, the combination with a platen and types mounted to strike upon a visible side thereof, of means beneath the platen and standing away therefrom, for guiding rearwardly around beneath the platen sheets which are inserted downwardly in front of the platen, and releasable means for pressing the sheets against the platen to cause the paper to turn therewith; and means independent of said rolls for retaining previously-inserted sheets in proper relation to the platen during the insertion of fresh sheets and the adjustment thereof around the stationary platen.

23. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front or other visible side thereof, of a deflector extending along the platen and curving beneath the same but well out of contact therewith so as to coöperate therewith to form a commodious passage such that a sheet may readily be inserted in front of the platen and pushed back around the under side of the platen between the deflector and the platen while the latter remains stationary, and means mounted in rear of the platen for holding one sheet stationary in position upon the platen while another sheet is thrust back through said passage.

24. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front or other visible side thereof, of a releasable pressure roll or rolls for feeding the paper forwardly around the platen, and a deflector extending along the platen and curving beneath the same but out of contact therewith, and so constructed that the sheet may readily be inserted in front of the platen and pushed back around the under side of the platen between the deflector and the platen while the latter remains stationary; and means independent of said deflector for retaining a previously-inserted sheet or sheets against the platen during the insertion and adjustment of a sheet by means of said deflector while the platen remains stationary.

25. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a deflector extending along the under side of the platen and curving beneath and up in front of the platen, said deflector being well separated from said platen so as to permit ready insertion of a sheet backwardly at the front of the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, and means for detaining a previously-inserted sheet against accidental displacement while a sheet is being inserted around the platen outside of said previously-inserted sheet.

26. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a deflector extending along the under side of the platen and curving beneath and up in front of the platen, said deflector being well separated from said platen so as to permit ready insertion of a sheet backwardly at the front of the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, and means for detaining a previously-inserted sheet against accidental displacement while a sheet is being inserted around the platen outside of said previously-inserted sheet; and releasable pressure-rolls mounted in position to press both sheets against the platen to cause them to turn with the platen.

27. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a deflector extending along the platen and curving beneath and up in front of the same, said deflector being mounted away from said platen so as to permit ready insertion of a sheet backwardly at the front of the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, there being an unobstructed entrance for the backward insertion of the paper between the platen and the deflector just below the printing-line, and releasable rolls for pressing the paper against the platen.
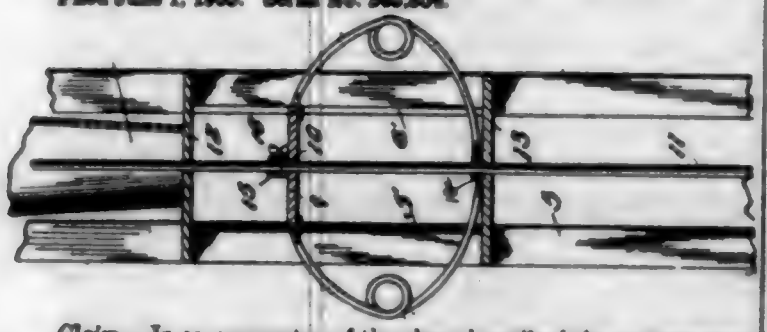
28. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a deflector extending along the platen and curving beneath and up in front of the same, said deflector being mounted away from said platen so as to permit ready insertion of a sheet backwardly at the front of

the platen and the free backward movement of the sheet around the under side of the platen while the latter is stationary, there being an unobstructed entrance for the backward insertion of the paper between the platen and the deflector just below the printing-line, and releasable rolls for pressing the paper against the platen; and means for preventing accidental displacement of a previously-inserted sheet while another sheet is being inserted around the platen outside of said previously-inserted sheet.

29. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a deflector-plate extending along the platen and curving beneath and up in front of the platen and terminating at its front edge just below the printing-line in a forwardly bent or flaring lip, said deflector being mounted away from said platen throughout its extent, and releasable rolls for pressing paper against the platen.

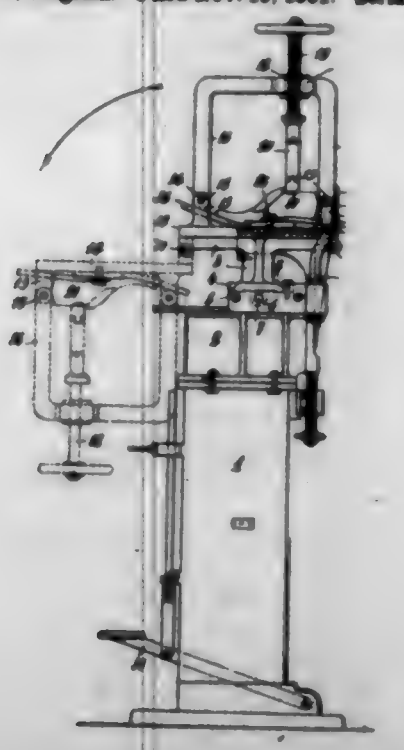
30. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a deflector-plate extending along the platen and curving beneath and up in front of the platen and terminating at its front edge just below the printing-line in a forwardly bent or flaring lip, said deflector being mounted away from said platen throughout its extent, and releasable rolls for pressing paper against the platen; and means independent of said pressure-rolls for preventing accidental displacement of a previously-inserted sheet during the insertion of another sheet around the platen outside of said sheet.

816,586. **WINDMILL PUMP-ROD.** JOHN LUBCK, Fairbury, Nebr. Filed June 1, 1905. Serial No. 263,354.



Claim.—In an apparatus of the class described the combination with corner-uprights having guides at their innermost portions, of a rectangular plate disposed with its corners in the guides for sliding vertical movement of the plate, a support secured to the uprights below the plate, a pump-rod slidably engaged in the support and in the plate, a collar slidably engaged with the rod above the plate, a set-screw engaged in the collar and arranged for operation to impinge against the rod to hold the collar at different points upon the rod, and a spring-rod having a convolution at its center in which the pump-rod is slidably engaged, said spring-rod lying with its convolution upon the support and extending outwardly and then inwardly and having its ends secured to the plate, said spring-rod having convolutions at its outermost points.

816,587. **LASTING-MACHINE.** CLEMENT VAN MARCKE DE LUMMEN, Brussels, Belgium. Filed Nov. 19, 1901. Serial No. 83,300.



Claim.—1. In a lasting-machine, a supporting-frame, a last-support carried thereby, upper-stretching devices carried by the supporting-frame, pressure-plates for holding the edges of the leather after it has been stretched and means permitting the inverting of the pressure-plates while the latter are still holding the edges of the leather, substantially as described.

2. In a lasting-machine, a supporting-frame, a last-support carried thereby, a supplemental frame hinged to said supporting-frame, upper-stretching devices carried by said supporting-frame and means carried by the supplemental frame for holding the edges of the leather after it has been stretched, said supplemental frame with the upper-holding means being capable of being inverted, substantially as described.

3. In a lasting-machine a supporting-frame, a last-support carried thereby, a supplemental frame hinged at one side to said supporting-frame, retaining means for locking the other side of the supplemental frame to the supporting-frame, holding means for holding the last on the support, stretching devices carried by the supporting-frame for stretching the upper and means carried by the supplemental frame for holding the upper when stretched, said means being adapted to be inverted with the supplemental hinged frame, substantially as described.

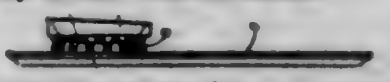
4. In combination, a main frame, a last-support carried thereby, sliding supports guided by said frame, cross-pieces hinged to said sliding supports, pressure-plates on said cross-pieces, means for displacing the pressure-plates with respect to each other, a device for fixing the last on the last-support, the said device being carried by the hinged cross-pieces of the sliding supports without interfering with the movement of the same and being adapted to be turned down with the said cross-pieces and pressure-plates after the stretching of the upper, substantially as and for the purpose set forth.

5. In combination, a main frame, a last-support carried thereby, sliding supports guided by said frame, cross-pieces hinged to said sliding supports, pressure-plates on said cross-pieces, means for displacing the pressure-plates with respect to each other, a stirrup for fixing the last on the last-support, the said stirrup being provided with guide-rods, vertical arms having eyes through which said guide-rods pass, said vertical arms projecting from the cross-pieces hinged to the sliding supports in such a manner that the said stirrup, the cross-pieces and the pressure-plates may be turned down with the last after the stretching of the upper substantially as and for the purpose set forth.

6. In combination, a main frame, a last-support carried thereby, sliding supports guided by said frame, cross-pieces hinged to said sliding supports, pressure-plates on said cross-pieces, means for displacing the pressure-plates with respect to each other, a stirrup for fixing the last on the last-support, the said stirrup being provided with guide-rods, vertical arms having eyes through which said rods pass, said arms projecting from the cross-pieces hinged to the sliding supports and means adapted to hold the stirrup firmly when the sliding supports are displaced with the pressure-plates with respect to each other, substantially as and for the purpose set forth.

7. In combination, a main frame, a last-support carried thereby, sliding supports guided by said frame, cross-pieces hinged to said sliding supports, pressure-plates on said cross-pieces, hinges between the said cross-pieces and the sliding supports, means for displacing the pressure-plates with respect to each other, four vertical arms projecting from the cross-pieces hinged to the sliding supports, said arms having eyes, a stirrup for fixing the last on the last-support, the said stirrup being provided with four guide-rods passing through eyes of the vertical arms two vertical supports provided with forks in which normally rest the ends of two of the guide-rods and means for preventing any opening of the hinges while the upper is being mounted on the last, substantially as described and for the purpose set forth.

816,588. **MIRROR-HOLDER.** CARLOS B. MOORE, Worcester, Mass. Filed May 13, 1905. Serial No. 260,214.



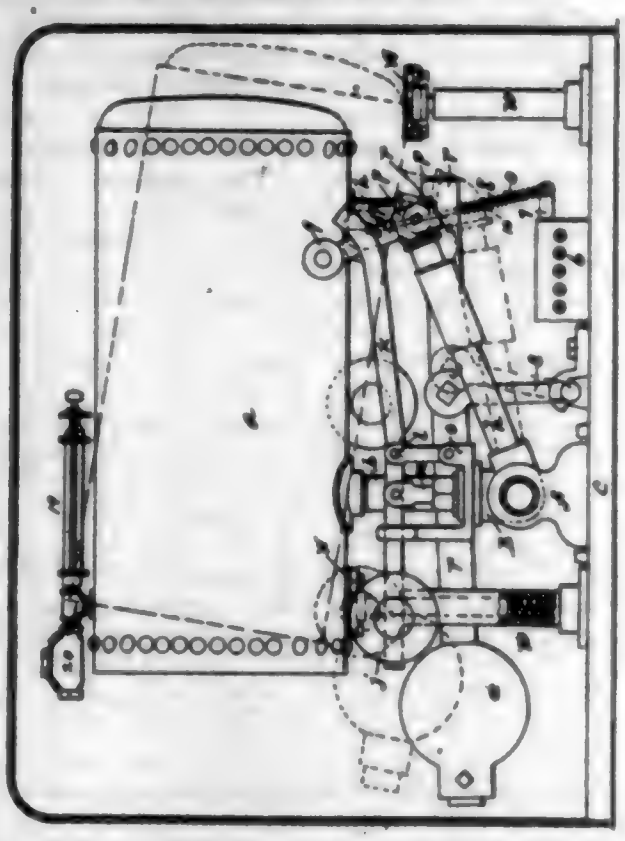
Claim.—1. A mirror and mirror-frame, a separate unperforated concave elastic disk provided with a raised rim, said frame being provided with means for gripping said raised rim.

2. A mirror, a concave elastic disk, and a frame for said mirror having a raised portion adapted to grip the perimeter of the disk.

3. In combination with a mirror and frame therefor, a concave elastic disk provided with a raised rim and having its adhering face oblique to the plane of the mirror and means integral with the mirror-frame for grasping the raised rim of the disk.

4. The combination of a mirror, a mirror-frame having an integral gripping portion, and a concave elastic disk provided with a raised rim, said rim being adapted to be engaged by the gripping portion of the frame.

816,589. GOVERNOR FOR STEAM SYSTEMS AND METER THEREFOR. JOHN MORRHEAD, Detroit, Mich., assignor to David Stott, Detroit, Mich. Filed May 26, 1905. Serial No. 262,336.



Claim.—1. The combination of a tilting receiving-chamber, a transverse rocking pipe below said chamber, and communicating therewith upon which said chamber is mounted to admit water into said chamber and to discharge water therefrom, a counterbalance-weight to hold the receiving-chamber in normal position until the weight of the water therein causes the tilting of said chamber, a return-pipe communicable with said chamber, valve mechanism to control the communication of said return-pipe with said chamber, and a registering device exterior to the receiving-chamber, said pipe serving as trunnions upon which the tank may tilt, said valve mechanism and said registering mechanism simultaneously actuated by the tilting of said chamber.

2. The combination of a tilting receiving-chamber, a transverse rocking pipe upon which said chamber is mounted, a counterbalance-weight to hold the receiving-chamber in normal position until the weight of the water therein causes the tilting of said chamber, a return-pipe communicable with said chamber through which water of condensation enters into said chamber, valve mechanism on one side of the receiving-chamber to control the admission of water through the return-pipe into said chamber, an outlet-pipe communicable with said chamber, valve mechanism on the opposite side of the receiving-chamber to control the communication of the outlet-pipe with said chamber, and a registering device, said valve mechanism and said registering device actuated by the tilting of said chamber, one of said valve mechanisms being opened when the other is closed.

3. The combination of a tilting receiving-chamber, mechanism to admit water into said chamber and to permit discharge of water therefrom, valve mechanisms to control the admission of water into the chamber additional valve mechanism to control the discharge of water therefrom, means to hold the receiving-chamber in normal position until the weight of water therein causes the tilting of said chamber, and a registering device actuated by the tilting of said chamber, said valve mechanisms also actuated by the tilting of said chamber, one of said valve mechanisms being opened when the other is closed.

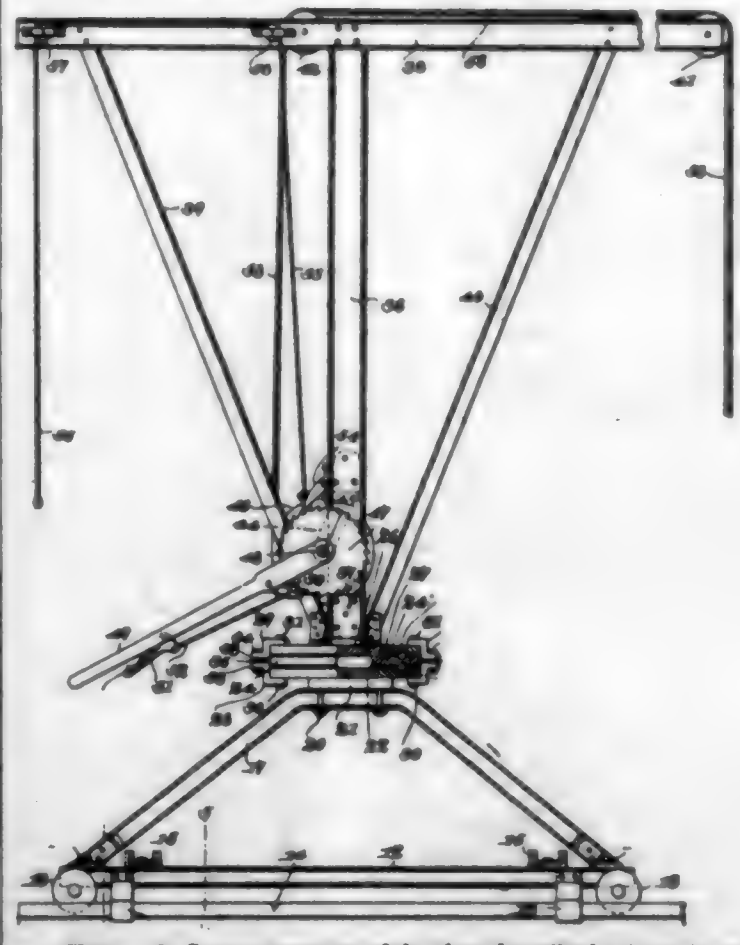
4. The combination of a tilting water-receiving chamber means to hold said chamber in normal position until the weight of water therein causes the tilting of said chamber, an inlet-channel communicable with said chamber, valve mechanism arranged to be normally open to control said channel, an outlet-channel communicable with said chamber, and valve mechanism normally closed to control communication of the outlet-channel of the chamber, the valve mechanism controlling the inlet-channel arranged to be closed by the tilting of the chamber, and the valve mechanism controlling the outlet-channel arranged to be simultaneously opened by the tilting of the chamber.

5. The combination of a tilting water-receiving chamber means to hold said chamber in normal position until the weight of water therein causes the tilting of said chamber, an inlet-channel communicable with said chamber, valve mechanism arranged to be normally open to control said channel, an outlet-channel communicable with said chamber, and valve mechanism normally closed to control communication of the outlet-channel of the chamber the valve mechanism controlling the inlet-channel arranged to be closed by the tilting of the chamber, and the valve mechanism controlling the outlet-channel arranged to be simultaneously opened by the tilting of the chamber, said receiving-chamber provided with an air-inlet valve and with an air-outlet valve.

6. The combination of a tilting water-receiving chamber means to hold said chamber in normal position until the weight of the water therein causes the tilting of said chamber, an inlet-channel communicable with said chamber, valve mechanism arranged to be normally open to control said channel, an outlet-channel communicable with said chamber, and valve mechanism normally closed to control communication of the outlet-channel of the chamber, the valve mechanism controlling the inlet-channel arranged to be closed and the other valve mechanism arranged to be simultaneously opened by the tilting of the chamber, and a registering device simultaneously actuated by the tilting of the chamber.

7. The combination of a tilting receiving-chamber, a transverse rocking pipe communicating with said chamber upon which said chamber is mounted, means to hold the receiving-chamber in normal position until the weight of the water therein causes said chamber to tilt, a return-pipe communicating with said transverse pipe, valve mechanism to control communication through the return-pipe, an outlet-pipe communicating with said transverse pipe, valve mechanism to control the discharge through the outlet-pipe and a registering device, said valve mechanisms and said registering device actuated by the tilting of said chamber to register the number of times the receiving-chamber tilts.

816,590. DERRICK. THOMAS J. MCCLAIN and ROBERT S. MCDANIEL, Twist, Tex. Filed Aug. 21, 1905. Serial No. 275,113.

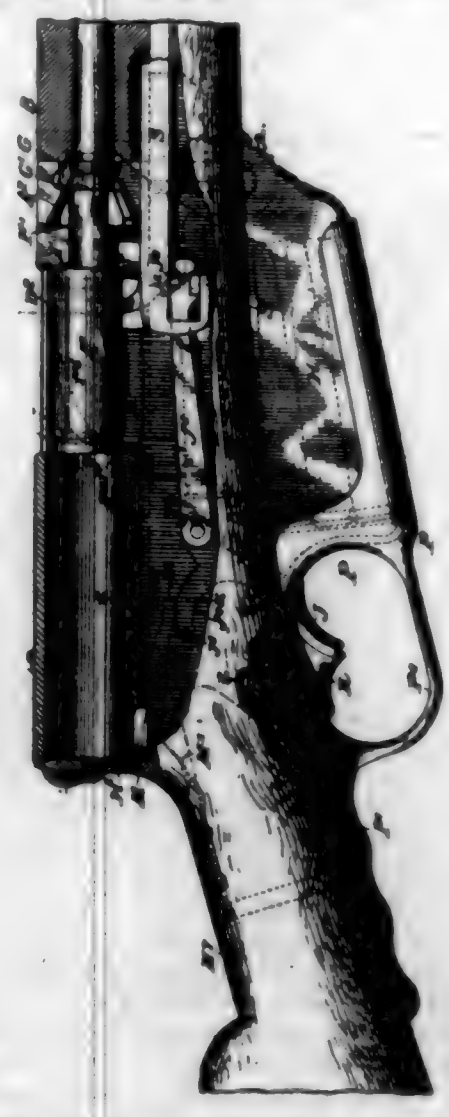


Claim.—1. In an apparatus of the class described, a base-frame, side frames in arching form and connected at their terminals to said base-frame, a tie member connecting the upper ends of said arched frames, a swivel base member connected to said tie member, a swivel member rotatively connected to said swivel base member, a mast extending from said rotative swivel member, and a boom extending transversely of said mast.

2. In an apparatus of the class described, a base-frame, a swivel base member spaced above said base-frame, frame-standards connected to said swivel base members and diverging therefrom and connected at their lower terminals to said base-frame, a swivel member rotatively bearing upon said swivel-base and formed with an elevated central portion, an annular member bearing upon said rotative swivel member exteriorly of said elevated central portion, clips connecting said annular member and swivel base member, a mast extending from said elevated central portion of said rotative swivel base member, and a boom extending transversely of said mast.

3. In an apparatus of the class described, a base member provided with an annular bearing-ball channel, a swivel member rotatively bearing upon said base member and formed with an elevated central portion and with annular bearing-ball channels in the upper and lower faces, an annular member bearing upon said rotative swivel member, and provided with an annular bearing-ball channel, bearing-balls disposed in said channels between said base member and swivel member and annular member, spaced clips connecting said base member and annular member, and a mast extending from the elevated central portion of said rotative member.

816,591. AUTOMATIC GAS-OPERATED FIREARM. SAMUEL N. MCCLEAN, Washington, Iowa, assignor to The McClean Arms and Ordnance Company, Cleveland, Ohio, a Corporation of New Jersey. Filed Apr. 5, 1898. Serial No. 676,580.



Claim.—1. In a firearm, a gun-barrel, a gas-chamber gradually expanding from the point where it enters the bore of the barrel, and a piston in the chamber.

2. In a firearm, a gun-barrel, a gas-chamber gradually expanding from its front end where it enters the bore of the barrel, and a piston in said chamber.

3. In a firearm, a gun-barrel, a gas-chamber having one portion parallel with the barrel, another portion constituting a prolongation of the bore of the barrel, and a curved portion through which the bore of the barrel communicates with said parallel portion, and a piston in said chamber.

4. In a firearm, a gun-barrel, a gas-chamber having a gradually-expanding portion communicating with the bore of the barrel, and a pressure-timing device, whereby the duration of pressure in said chamber is determined.

5. In a gun, the combination of a barrel and a reciprocatory and rotatory breech-block, a motor-piston actuated by the gases of discharge, and means operated by said piston for reciprocating and rotating said breech-block.

6. In a gun, the combination of a barrel and a reciprocatory and rotatory breech-block, a slide actuated in one direction by the gases of discharge and in the opposite direction by a spring and a cam engagement between the slide and breech-block for reciprocating and rotating said block.

7. In a gun, the combination of a barrel, and a reciprocatory and rotatory breech-block, having a cam-surface, with a slide actuated in one direction by the gases of discharge and in the opposite direction by a spring, and provided with a part operatively engaging said cam-surface for reciprocating and rotating said block.

8. In a gun, the combination of a barrel and a reciprocatory and rotatory breech-block, with a discharge-actuated slide and a cam engagement between said breech-block and slide for reciprocating and rotating said block.

9. In a gun, the combination of a barrel and a reciprocatory and rotatory breech-block having a cam-surface, with a discharge-actuated slide, having a part operatively engaging said cam-surface for reciprocating and rotating said block.

10. In a gun, the combination of a barrel, a reciprocatory and rotatory breech-block, a reciprocating motor-piston actuated rearward by the gases of discharge, and means operated by said piston for reciprocating and rotating said block.

11. In a gun, the combination of a barrel, a reciprocatory and rotatory breech-block, a reciprocating piston actuated rearward by the gases of discharge, and a cam engagement between said piston and breech-block for reciprocating and rotating said block.

12. In a gun, the combination of a barrel, a reciprocatory and rotatory breech-block provided with a cam-surface, a reciprocating piston actuated rearward by the gases of discharge and provided with a part operatively engaging the cam-surface on the breech-block for reciprocating and rotating said block.

13. In a gun, the combination of a barrel, and a gas-chamber having a portion communicating with the bore of the barrel, said portion having a gradually-increasing cross-sectional area from the bore outward.

14. In a gun, the combination of a gun-barrel, and a gas-chamber of larger cross-sectional area than the bore of the barrel, but having a portion communicating with the bore of the barrel which is of gradually-increasing cross-sectional area from the bore to the main portion of the chamber.

15. In a gun, the combination of a gun-barrel, and a gas-chamber of larger cross-sectional area than the bore of the barrel, and having a conical or funnel-shaped portion communicating with the bore of the barrel with the main portion of the gas-chamber, with its larger end opening into the said main portion.

16. In a gun the combination of a barrel, a gas-chamber having its front wall formed on the arc of a circle, the entrance of the chamber being located in front of the muzzle end of the barrel, and its other end being located to one side of the bore, and having an opening in its front wall in line with the bore of the barrel for the passage of the projectile.

17. In a gun, the combination of a barrel, a gas-chamber of larger cross-sectional area than the bore of the barrel, having its front wall formed on the arc of a circle, the entrance of the chamber being located in front of the muzzle end of the barrel and its end being located to one side of the bore, and having an opening in its front wall in line with the bore of the barrel for the passage of the projectile, and a conical or funnel-shaped portion communicating with the bore of the barrel.

18. In a gun, the combination of a barrel, a gas-chamber located at the muzzle end of the barrel and having a laterally-deflected portion communicating with the bore of the barrel, the gas-chamber being of gradually-increasing cross-sectional area from its entrance throughout a portion of its length.

19. In a gun, the combination of a barrel, a gas-chamber located at the muzzle end of the barrel and having an opening therethrough for the passage of the projectile, and having a laterally-deflected portion communicating with the bore of the barrel, the gas-chamber being of gradually-increasing cross-sectional area from its entrance throughout a portion of its length.

20. In a gun, the combination of a barrel, a gas-chamber located at the muzzle end of the barrel having a laterally-deflected conical or funnel-shaped portion communicating with the bore of the barrel, the gas-chamber being of gradually-increasing cross-sectional area from its entrance throughout a portion of its length.

21. In a gun, the combination of a barrel, a gas-chamber located at the muzzle end of the barrel, having an opening therethrough

for the passage of the projectile, and having a laterally-deflected conical or funnel-shaped portion communicating with the bore of the barrel, the gas-chamber being of gradually-increasing cross-sectional area from its entrance to the barrel throughout a portion of its length.

22. In a gun, the combination of a barrel, a laterally-deflected gas-chamber having its entrance in front of the bore of the barrel, an extension on the front wall of the chamber having an opening therethrough in line with the bore of the barrel and constituting an extension thereof, for the passage of the projectile, the gas-chamber being of gradually-increasing cross-sectional area from its entrance to the barrel throughout a portion of its length.

23. In a gun, the combination of a barrel, a laterally-deflected gas-chamber, having its entrance in front of the bore of the barrel, and a conical or funnel-shaped portion communicating with the bore of the barrel, and an extension on the front wall of the chamber having an opening therethrough in line with and constituting an extension of the bore of the barrel for the passage of the projectile.

24. In a gun, the combination of a barrel, a laterally-deflected gas-chamber having its entrance in front of the bore of the barrel, a conical or funnel-shaped portion whose entrance is in line with the bore of the barrel, and an extension on the front wall of the chamber having an opening therethrough in line with and constituting an extension of the bore of the barrel for the passage of the projectile.

25. A gas-chamber located in front of the end of the bore of the barrel and having a funnel-shaped opening into the same, its anterior side formed on an arc of a circle and perforated to permit the free passage of the projectile through the chamber, a gas-cylinder communicating with the said chamber, and a slide movable in the said cylinder and connected to the bolt action.

26. In a gas-operated firearm a gas-cylinder and a slide movable in the said cylinder and connected with a reciprocating and rotating bolt action and having a piston-head formed of a movable part and an immovable part containing an air-chamber and an opening into the same in which is located a conical valve to afford a gas-check by means of an air-pressure within the cylinder.

27. In a gas-operated firearm the combination of a cylinder and a piston movable within the same, the said piston formed of a movable part and an immovable part and containing an air-chamber, the sides of which are formed to yield against the cylinder to afford a gas-check caused by an air-pressure within the cylinder, a spring located within the chamber in the cylinder, and a valve to open and close the chamber in the cylinder, and connection between the said cylinder and the operating parts.

28. A gas-chamber located in front of the bore of the barrel formed on an arc of a circle perforated to permit the free passage of the projectile and having a constantly-increasing diameter, a gas-cylinder connected with the said chamber, a slide having a piston-head and movable in said cylinder and connected with the bolt action.

29. A reciprocating breech-bolt having a spiral cam-guide which has a diagonal part at its rear end, and locking-lugs on the forward end of the bolt, a receiver having companion locking-lugs and a discharge-actuating slide engaging with the said bolt-guide, a latch carried by the bolt and engaging with the said slide and with the receiver to lock and release the slide.

30. A gas-actuated slide, a spring to resist the movement of the said slide, a breech-bolt connected to the said slide, a sear carried by the said slide, and a trigger engaging the sear to discharge the weapon by the forward terminal movement of the slide.

31. In a gun, the combination of a barrel, a slide actuated in one direction by the gases of discharge and in the other direction by a spring, a sear carried by said slide, and yielding means coöperating with the sear to check the terminal movement of the slide.

33. In a gun, the combination with a barrel, a slide actuated rearwardly by the gases of discharge and actuated forwardly by a spring, a sear carried by said slide and yielding means coöperating with the sear to check the slide before it completes its forward movement.

33. A discharge-actuated slide, a spring to resist the movement of said slide, a piston carried by said slide, a dash-pot in the path of said piston to afford an air-cushion in checking the terminal movement of the slide and connection between the said slide and the bolt action.

34. A discharge-actuated slide, a spring to resist the movement of the said slide in one direction, a piston carried by and movable on said slide, a sear carried by said slide and engaging the said piston, a cylinder located in the path of the said piston to afford an air-cushion in checking the terminal movement of the slide, means releasing the said sear releasing the slide from the piston to permit a terminal firing action of the slide and a bolt action connected to said slide.

35. A reciprocating and rotating breech-bolt having a groove formed to receive, retain and release a shell-extractor, the said groove cut out to permit the extractor to be assembled at a point beyond its working path of movement, and a shell-extractor forming a segment of a collar and a spring carried by the extractor.

36. A reciprocating and rotating breech-bolt having an extractor-seat forming a groove partially encircling the neck of the bolt, the said groove cut out to permit the extractor to be assembled at a point beyond its working path of movement, the anterior side of the extractor-seat having a beveled flange, a shell-extractor having a collar part forming a segment of a circle and the anterior side of the collar being beveled to fit movably under its companion bevel in the extractor-seat about the bolt, and a spring to exert a tension on the extractor.

37. A reciprocating and rotating breech-bolt having an extractor-seat formed with a beveled flanged bearing, an extractor having a companion beveled bearing and a spring carried by the said extractor and exerting a yielding tension against the bolt-head and a depression in the bolt-head and engaging the spring to afford a semi-latched condition of the extractor with the bolt.

38. A reciprocating and rotating breech-bolt having an extractor-seat partially encircling the bolt and formed with a beveled flange, the said seat cut out to permit the extractor to be assembled at a point beyond its working path of movement, a shell-extractor having a collar part and a companion bevel to movably retain it in combination with the bolt, a spring carried by the extractor and exerting a yielding tension between the bolt and the extractor, a latching depression in the bolt-head engaging the said spring and a receiver having a groove engaging the extractor at the limit of its forward movement and preventing it from rotating and governing its latching engagement with the bolt.

39. A receiver formed integrally with the barrel having a guiding-path for the bolt and locking-lugs near the forward end of the receiver, the forward end of the chamber in the receiver being beveled and having a conical shape to afford additional thickness and strength of the receiver-walls, and a breech-bolt movable in the said receiver and having locking-lugs which are provided with a companion bevel to afford additional strength to the bolt action.

40. A receiver having a guideway for a reciprocating and rotating bolt and cam-locking lugs, a reciprocating and rotating breech-bolt having companion locking-lugs, a cartridge-magazine having cartridge-retaining wings which project up into the receiver, the locking-lugs of the bolt movable between the wings of the magazine, and the body part of the bolt cut away to permit a rotating, locking action of the bolt.

41. A receiver having a guideway for a reciprocating and rotating breech-bolt and locking-lugs, a reciprocating and rotating breech-bolt having companion locking-lugs and a body part of the bolt provided with a cam-track, a cartridge-magazine having cartridge-retaining wings extending up into the receiver, the locking-lug of the breech-bolt movable between said wings, and the body part of the bolt cut out to permit a rotating, locking action of the bolt, and an actuating-slide engaging the cam-guide in the breech-bolt and a spring-actuated lifter located in the magazine.

42. A receiver having a guideway for a reciprocating and rotating breech-bolt and locking-lugs, a reciprocating and rotating breech-bolt having companion locking-lugs and a body part of the bolt provided with a cam-track, a cartridge-magazine having cartridge-retaining wings extending up into the receiver, the locking-lug of the breech-bolt movable between said wings, and the body part of the bolt cut out to permit a rotating, locking action of the bolt, and an actuating-slide engaging with the cam-guide in the breech-bolt, a spring-actuated lifter located in the magazine, and a firing-pin.

43. A firing action comprising a discharge-actuated slide, a spring to resist the rearward movement of said slide, a reciprocating breech-bolt operated by said slide, a sear engaging said slide, a trigger engaging the said sear and an additional sear also engaging the slide and engaged by the trigger.

44. In a firearm, a trigger action comprising a primary sear, a secondary sear, a trigger in position to consecutively operate said sears, and a cut-off adjustable to stop the trigger after it has tripped either sear.

45. In a firearm, capable of single or automatic firing, the combination of a breech-block, with means engaging and retaining said block in open or loading position, a sear retaining the firing action when the breech-block is closed, a trigger in operative relation with

said means and sear, and capable of operating the same by a single or by successive pulls and a trigger check or cut-off determining such operation.

46. A trigger action comprising a primary sear, an auxiliary sear and a trigger cut-off engaging with the trigger, the cut-off permitting a limited movement of the trigger to control the single firing action, an additional movement of the trigger to control the loading action and a terminal movement of the trigger to control the automatic action, a cartridge-magazine, a spring-pressed cartridge-lifter in the magazine, a reciprocating breech-bolt, a sear engaging the breech-bolt at the terminal part of its rearward movement and located in the path of the movement of the said cartridge-lifter and engaged by it to effect the engagement of the sear with the breech-bolt.

47. A reciprocating breech-bolt, a receiver carrying the bolt, a cartridge-magazine, a cartridge-lifter carried by the magazine, a sear engaging the breech-bolt at the terminal part of its rearward movement and located in the path of the movement of the cartridge-lifter and engaged by the lifter to effect its engagement with the bolt, and a trigger engaging the said sear to release it from the bolt.

48. A cartridge-magazine, a cartridge-lifter movable in the magazine, a spring to exert a yielding tension against the lifter, a handle movable in a guideway located in said magazine, and means causing the lifter to move with the handle.

49. A cartridge-magazine having a guide way or groove, a sliding handle movable in the said guideway, a cartridge-lifter pivotally supported and movable in the said guideway, a spring carried by the cartridge-lifter and exerting a yielding tension upon it, the forward end of the said guideway being beveled or flared and the said handle carrying a pawl which engages with the said lifter to depress the lifter by reciprocating the handle.

50. In a magazine-gun the combination of a magazine, a reciprocating breech-bolt above the magazine, a slide movable in guideways in said magazine and having a part engaging the upper cartridge in its forward movement, and operative connections between the slide and bolt.

51. In a magazine-gun, the combination of a magazine, a reciprocating bolt above the magazine, a slide movable in guides in the magazine, a cartridge-engaging arm on the slide projecting upward in front of the bolt, connections between the bolt and slide and a cartridge-extractor carried by the bolt.

52. In a magazine-gun, the combination of a magazine a reciprocating bolt above the magazine, a slide having lost-motion connections with the bolt and movable in guideways in the magazine, an arm or part on said slide projecting upward in front of the bolt, and a cartridge-extractor carried by the bolt.

53. A receiver, a breech-bolt carried by the receiver, a cartridge-magazine having a guide-groove, a cartridge-feed and cartridge-ejector movable in the said guide to feed and eject the cartridges.

54. In a firearm, a reciprocating breech-bolt having a groove or seat, a cartridge-ejector engaging with the said groove, and a spring exerting a yielding tension against the ejector, the said ejector having a limited movement to permit the rearward terminal movement of the bolt to eject the shell.

55. A barrel and receiver having a bracket which forms one member of a hinge, a stock-frame having a companion member for the hinge, a reciprocating breech-bolt carried by said receiver, a gas-actuated slide engaging the breech-bolt, a pawl or latch engaging with the receiver to lock it against the frame and the said slide depressible out of the path of the bolt to permit the bolt to be quickly disassembled.

56. In a firearm a receiver, a reciprocating breech-bolt having a bolt-locking cam and a latching-cam, a bolt-latch carried by the bolt and an operating-slide engaging said cams to govern and time the reciprocating latching and locking action of the bolt.

57. In a firearm a receiver for the breech-bolt, a breech-bolt having a bolt-locking cam-guide and a latching-cam, a latch carried by the bolt and provided with a latching-lug, the said lug having a cam-face and an actuating-slide engaging with the said breech-bolt and with the said cams and bolt-latch to govern and time the latching action of the slide with the breech-bolt and the locking action of the bolt with the receiver.

58. In a firearm a receiver, a reciprocating breech-bolt movable in the receiver, a discharge-actuated slide engaging with the breech-bolt to reciprocate and lock it a sear controlling said slide and a trigger engaging the sear whereby the loading and firing action of the arm may be controlled.

59. In a firearm, the combination of a gas-actuated slide, a spring to resist the movement of the slide, a breech-bolt connected to the slide, a sear carried by the slide provided with a lug, an arm having lugs arranged in the vertical plane of the lug carried by the sear but in different horizontal planes, and means for moving the arm to cause either of said lugs at will to coöperate with the lug on the sear to trip the sear and permit the discharge of the weapon by the terminal movement of the slide.

60. In a firearm, the combination of a breech-bolt, a slide actuated in one direction by the gases of discharge, and actuated in the opposite direction by a spring, means for checking the terminal forward movement of the slide, a trigger carrying devices arranged in different horizontal planes, coöperating with devices carried by the slide, whereby the slide may be released or the checking of its terminal movement prevented at will.

61. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor mounted on said breech-block.

62. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor mounted on said breech-block.

63. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, and an extractor mounted on said breech-block.

64. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor mounted on said breech-block.

65. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, and an extractor mounted on said breech-block.

66. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, and an extractor mounted on said breech-block.

67. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, and means operated by said piston for first rotating to unlock and then withdrawing said breech-block, from said chamber, and for returning and locking the same, with a firing-pin secured to said piston and passing through said breech-block.

68. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, and means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, with a firing-pin secured to said piston and passing through said breech-block.

69. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, and a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, with a firing-pin secured to said piston and passing through said breech-block.

70. In a gas-operated breech-loading gun the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, and a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from

said chamber, and for returning and locking the same, with a firing-pin secured to said piston and passing through said breech-block.

71. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, and a reciprocating motor-piston provided with a stud or pin to engage in said groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, and a firing-pin secured to said stud or pin and mounted in said breech-block.

72. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into the breech-block and engaging said cam-groove, and a firing-pin secured to said pin and mounted in said breech-block.

73. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block, from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor mounted on said breech-block.

74. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor mounted on said breech-block.

75. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and movable with said piston, and an extractor mounted on said breech-block.

76. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor mounted on said breech-block.

77. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston provided with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, a firing-pin mounted in said breech-block, and secured to and moving with said piston, and an extractor mounted on said breech-block.

78. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove, on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, a firing-pin mounted in said breech-block, and secured to and moving with said piston, and an extractor mounted on said breech-block.

79. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor mounted on said breech-block, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

80. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor mounted on said breech-block, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

81. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and returning and locking the same, an extractor mounted on said breech-block, means for feeding the cartridges to the gun in front of said breech-block; and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

82. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor mounted in said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

83. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston provided with a stud or pin to engage in said cam-groove for first rotating to unlock, and then withdrawing said breech-block, or vice versa, an extractor mounted on said breech-block, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

84. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, an extractor mounted on said breech-block, means for feeding the cartridges to the gun in front of said breech-block and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

85. In a breech-loading gun, the combination with a motor-piston and mechanism for opening and closing the breech, of means for drawing the empty cartridge-case to the rear, and an ejector operated by said piston.

86. In a gun, a gas-chamber, a gas-tube communicating therewith, a driving-rod having a piston moving in said tube, a spring resisting the movement of said rod, a reciprocating breech-bolt having a cam-guide terminating in a straight part at its forward end, a firing-pin, and operative connections between the driving-rod and said cam-guide, whereby the bolt is actuated by the driving-rod and the gun is discharged by the terminal forward movement thereof.

87. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block, from said chamber, and for returning and locking the same, an extractor pivoted on said breech-block and operated by said piston, and means restraining the extractor from turning with the breech-block.

88. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor pivoted on said breech-block and operated by said piston.

89. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor pivoted on said breech-block and operated by said piston.

90. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, and an extractor pivoted on said breech-block and operated by said piston.

91. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for mov-

ing said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor pivoted on said breech-block and operated by said piston.

92. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, and an extractor pivoted on said breech-block and operated by said piston.

93. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, and an extractor pivoted on said breech-block and operated by said piston.

94. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block having interrupted engagement in said chamber, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor engaging in a longitudinal groove in the receiver and revolubly connected to said breech-block, and operated by said piston.

95. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block having interrupted engagement with said chamber, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor engaging in a longitudinal groove in the receiver, and revolubly connected to said breech-block, and operated by said piston.

96. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block having interrupted engagement with said chamber, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, and an extractor engaging in a longitudinal groove in the receiver and revolubly connected to said breech-block, and operated by said piston.

97. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, having interrupted engagement with said chamber, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, and an extractor engaging in a longitudinal groove in the receiver and revolubly connected to said breech-block, and operated by said piston.

98. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, and having interrupted engagement with said chamber, a reciprocating motor-piston provided with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, and an extractor engaging in a longitudinal groove in the receiver and revolubly connected to said breech-block, and operated by said piston.

99. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, and an extractor engaging in a longitudinal groove in the receiver and revolubly connected to said breech-block, and operated by said piston.

100. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

101. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

102. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston, and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

103. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

104. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston provided with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

105. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, a firing-pin mounted in said breech-block and secured to and moving with said piston, and an extractor pivoted on said breech-block and operated by said piston.

106. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

107. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, means operated by said piston for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

108. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block, a reciprocating motor-piston, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

109. In a gas-operated breech-loading gun, the combination with a breech-block chamber, of a barrel, a cylinder connected to said barrel, a motor-piston mounted in said cylinder, a mainspring for moving said piston in the opposite direction, a breech-block, a cam engagement between said piston and said breech-block for first rotating to unlock and then withdrawing said breech-block from said chamber, and for returning and locking the same, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

110. In a breech-loading gun, the combination with a barrel, and a breech-block chamber, of a breech-block provided with a cam-groove therein, a reciprocating motor-piston provided with a stud or pin to engage in said cam-groove for first rotating to unlock and then withdrawing said breech-block, or vice versa, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases

111. In a breech-loading gun, the combination with a barrel and a breech-block chamber, of a breech-block adapted to rotate and lock or unlock in and to move longitudinally into and out of said chamber, with a cam-groove on said breech-block, a reciprocating motor-piston provided with a pin passing into said breech-block and engaging said cam-groove, an extractor pivoted on said breech-block and operated by said piston, means for feeding the cartridges to the gun in front of said breech-block, and an ejector operated by said piston in its rearward motion for ejecting the empty cartridge-cases.

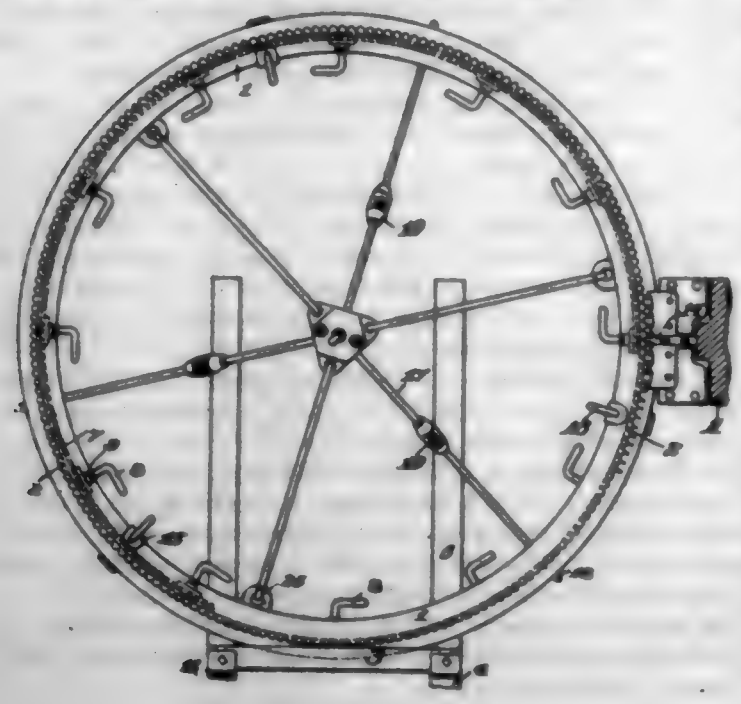
112. In a breech-loading gun, the combination with a motor-piston and mechanism for opening and closing the breech, of means for drawing the empty cartridge-case to the rear, and an ejector longitudinally disposed to and operated by said piston.

816,592. **INSERTED SAW-TOOTH.** WILLIAM S. MCLEAN, Vancouver, and JAMES D. KINNEY, New Westminster, Canada. Filed Mar. 27, 1905. Serial No. 252,340.



Claim.—In a cut-off saw, an inserted tooth consisting of a bit having parallel side faces, the portions by which said tooth is secured to the blade being of the same thickness as the blade, means for securing the tooth to the blade, said tooth having a projecting portion of greater thickness than the saw-blade, which portion is provided with parallel side faces, the outer end of the bit being ground to a moderately acute angle, the end plane of which slopes downwardly in the direction of the intended movement of the saw, such downwardly-sloping planes of alternate teeth sloping toward opposite sides of the saw-blade, substantially as shown and described.

816,593. **APPARATUS FOR USE IN PERFORATING THE FLANGES OF TANK-SECTIONS.** DAVID O. PAIGE, Detroit, Mich., assignor to The Pfaudler Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 24, 1905. Serial No. 247,121.



Claim.—1. In an apparatus for positioning tank-sections and analogous bodies during punching and similar operations, the combination with the punching device, of a support, a templet revolubly carried by the support and adapted to retain the section in proper shape while being operated upon, and a guide arranged to coöperate with the templet and center the latter and the section in operative position relatively to the punching device.

2. The combination with a punch, and a work-support, of an annular templet sustained by the support and secured in fixed relation to the work to be operated upon, of coöperatively-arranged centering devices engaging concentric portions of the templet at different points of its circumference for maintaining a fixed axis for the templet and the work during the punching operation.

3. The combination with a punch or other tool, a support for the work, a templet adapted to be secured in fixed relation to the work, and having a series of concentrically-arranged notches thereon and means for suspending the templet and work from said support, of coöperatively-arranged centering and positioning devices adapted to engage the templet at different points of its circumference to maintain a given axis therefor relatively to the tool, one of said devices having a part adapted to coöperate with the notches of the templet to rotatably position it relatively to the tool.

4. The combination with the operating-tool, of a templet adapted to receive a hollow annular body, and devices on the templet for drawing the said body into proper shape relatively to the templet.

5. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped hollow body, and adjustable devices arranged to coöperate with the inner surfaces of the said body at suitable intervals for drawing the said body into a given shape relatively to the templet preparatory to being operated on by the tool.

6. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped hollow body, and a plurality of radially-movable devices adapted to be moved outwardly to coöperate with the inner surfaces of the body at suitable intervals for causing the latter to conform to a given configuration.

7. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped hollow body, devices arranged at suitable intervals around the templet and adapted to move outwardly and coöperate with the body causing the latter to conform to a given configuration, and means for simultaneously operating the said devices.

8. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped hollow body, devices arranged at suitable intervals around the templet and adapted to coöperate with the body for causing the latter to conform to a given configuration, operating-rods connected to said devices, and a rotatable plate operatively connected to the operating-rods for simultaneously operating the said devices.

9. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped body, devices thereon arranged to coöperate with the body for causing the latter to conform to a given configuration, and a guide arranged to coöperate with the templet to center the latter and the body relatively to the tool.

10. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped body, devices thereon arranged to coöperate with the body for causing the latter to conform to a given configuration, a guide arranged to coöperate with the templet to center the latter and the body relatively to the tool, and means for adjusting the guide to accommodate bodies of different diameters.

11. The combination with the operating-tool, of an annular templet adapted to receive a correspondingly-shaped flanged body and having a series of notches formed thereon, a stop arranged to coöperate with the notches of said templet for positioning the latter and the flange of the annular body relatively to the operating-tool, and a guide adjustable to correspond with templets of different diameters, and arranged to coöperate with the templet and center the said body relatively to the tool.

12. The combination with the punching-machine having a plurality of dies arranged in an arc of a predetermined radius, of an annular templet adapted to be applied to a correspondingly-shaped flanged body which is to receive an annular row of perforations, said row to have a radius equal to the radius of the arc of the dies, and a guide coöperating with a concentric surface on the templet for retaining the templet and the said body centered relatively to the dies of the tool.

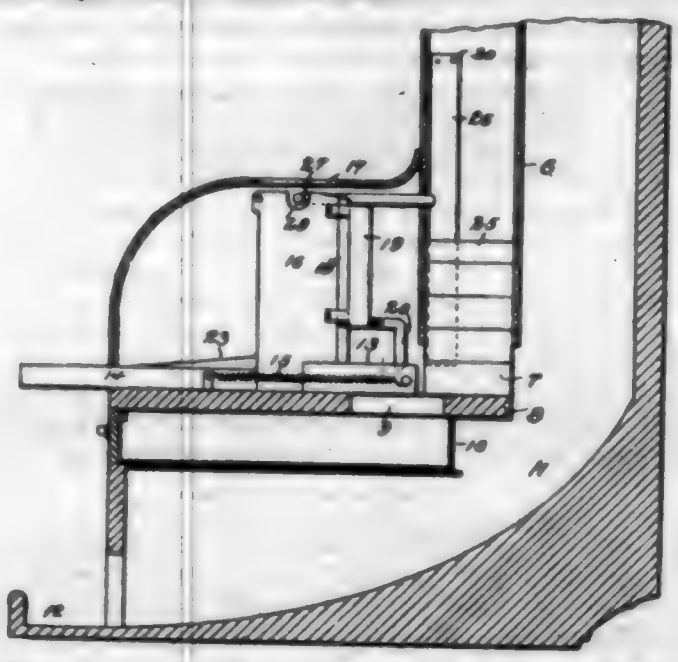
13. The combination with the operating-tool, of a templet adapt-

ed to receive an annular body, a support for the templet, and devices for causing the body to conform to a given configuration relatively to the templet, and for securing the templet and body in fixed relation while being operated on by the tool.

14. The combination with the operating-tool, of a templet adapted to receive an annular body, devices on the templet for causing the body to conform to a given configuration, and clamps for securing the templet and body in fixed relation.

15. The combination with the operating-tool, of a templet adapted to receive an annular body, a support by means of which the templet is revolubly supported, devices for revolubly supporting the said body, devices on the templet for causing the said body to conform to a given configuration, and clamping devices for securing the templet and body in fixed relation while the latter is being operated on by the said tool.

816,594. **VENDING-MACHINE.** JOSEPH W. PEDEN, Marshall, Mich., assignor of four-tenths to Ralph C. Teague, four-tenths to Wilbur J. Vaughn, and two-tenths to Frank Otto, all of Detroit, Mich. Filed Apr. 11, 1905. Serial No. 254,973.



Claim.—1. In a vending-machine, in combination, a shelf having a coin-slot and a delivery-opening, a magazine of which the shelf forms a bottom, a coin-chute supported upon the shelf in front of the magazine and having guides at its rear edge, a delivery-pusher slidable on the shelf under the magazine and chute and having a slot registering with the coin-chute, and acting to push the coin from the chute to the slot in the shelf and to push goods from the magazine to the opening in the shelf, and a block slidable in the guides on the chute, having a downwardly-extending detent engaged behind the rear end of the pusher, between the chute and the magazine.

2. In a vending-machine, in combination, a coin-chute, a goods-magazine, and a spring secured to the side of the magazine and located between said side and the goods therein and normally held back by the goods, and having an arm which is moved across the mouth of the chute by the spring when the magazine is empty.

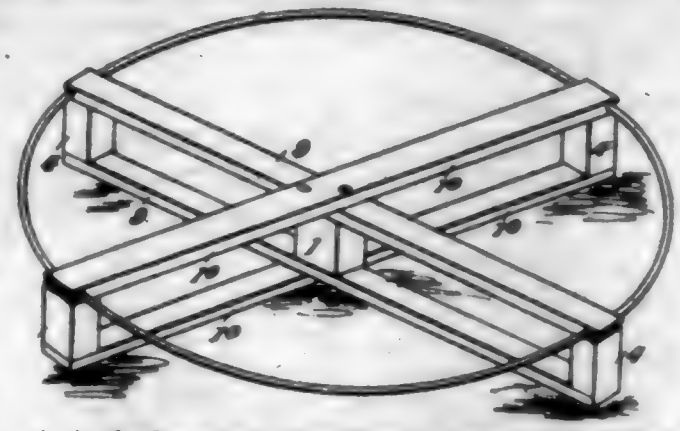
3. In a vending-machine, in combination, a coin-chute, a goods-magazine, a spring in the magazine normally held back by the goods therein, and having an arm which is moved by the spring across the chute when the magazine is empty, and a weight-follower upon the goods having a notch into which the spring advances when the follower reaches the bottom of the magazine.

816,595. **SHOCK-SUPPORT.** BENJAMIN B. PERTE, Belle Mina, Ala. Filed June 24, 1905. Serial No. 266,060.

Claim.—1. A shock-support comprising a center post, intersecting cross-bars supported thereon and rigidly secured thereto at points between their ends, transverse supporting members connecting the outwardly-extending arms of the intersecting cross-bars, upright supports at the extremities of the cross-bars, and inwardly-extending braces connecting the upright supports to inner portions of the shock-support.

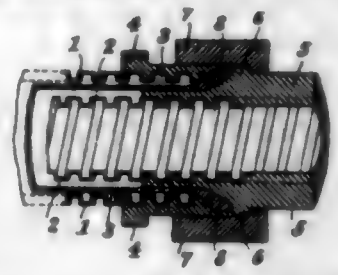
2. A shock-support comprising a center post, intersecting cross-bars supported thereon, a corresponding set of intersecting cross-bars at the base of the center post, upright members connecting the ends of the corresponding upper and lower cross-bars, and transverse members connecting the arms of the upper set of cross-bars.

3. A shock-support comprising intersecting cross-bars, a wire stretched around the cross-bars and held in position by notches or grooves in the ends of the cross-bars, and means for supporting the device a suitable distance from the ground.



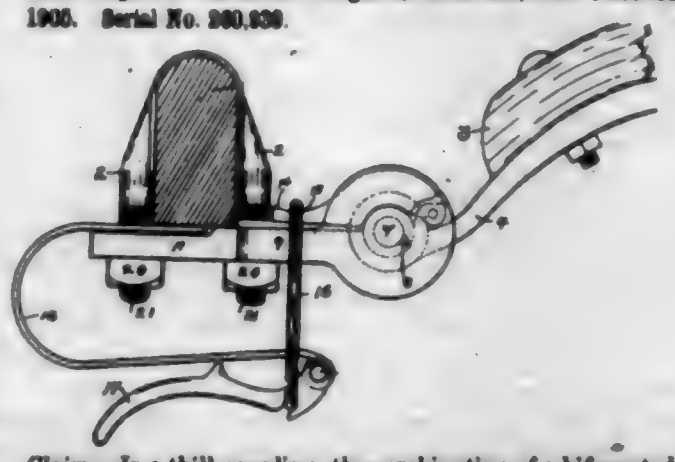
4. A shock-support comprising a center post, intersecting cross-bars supported thereon and having their extremities notched, a corresponding set of intersecting cross-bars at the base of the center post, upright supports connecting the ends of the corresponding upper and lower cross-bars, and a transverse supporting member passing around the upper cross-bars and secured in the notches at the extremities thereof.

816,596. **COUPLING FOR INTERNALLY AND EXTERNALLY ARMORED HOSE.** NICOLAS PERSOFF, St. Petersburg, Russia. Filed June 8, 1905. Serial No. 264,281.



Claim.—In combination, with an inner pipe 2 and an outer pipe 1, a tubular connecting-piece 5 having a portion of substantially the same diameter as the outer pipe, a projection 6 on said piece 5, said piece 5 having a reduced end in which the end of the inner pipe 2 fits, said reduced end curving outwardly toward the projection 6, a rubber hose extending over said reduced end and curved portion, said hose lying between the inner and outer pipes, packing placed between the end of the hose and the projection 6, a screw-threaded sleeve fitting over the end of pipe 1 and a sleeve 7 having a portion screwed to the sleeve 4 and a projecting portion engaging with the projection 6.

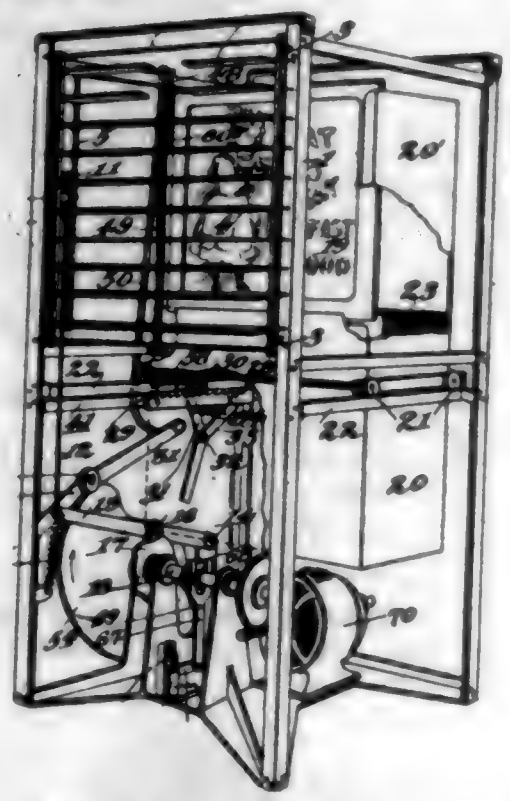
816,597. **THILL-COUPLING.** ALFRED PFLUGRADT, Milwaukee, Wis., assignor to Amanda L. Pflugradt, Milwaukee, Wis. Filed May 18, 1905. Serial No. 260,939.



Claim.—In a thill-coupling, the combination of a bifurcated fastening-plate, the forked ends of which are provided with semicircular recesses for the reception of the coupling-pins of a thill-iron; a pair of clamping-plates pivotally connected at one of their ends with the forked ends of the fastening-plate and provided with semicircular recesses adapted to register with the recesses of the fastening-plate; annular packings located in said semicircular recesses; a thill-iron provided with an eye for the reception of a coupling-pin; a coupling-pin secured at its center in said eye and having its protruding ends located in said packings, a spring rigidly connected at one end with the fastening-plate; a clamping-lever pivotally connected at one end with said spring and a link communicating between the

clamping-lever and said clamping-plates, all substantially as and for the purpose specified.

816,598. DISPLAY APPARATUS. ABNER A. PHIPPS, New York, N. Y., assignor to Robert Carr, Oak Park, Ill. Filed Apr. 25, 1905. Serial No. 257,354.



Claim.—1. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, and means for feeding the carriage forward step by step and comprising a rack on the carriage, a locking-pawl operating on the rack, a feed-pawl normally out of engagement with the rack, means for operating said pawl, and means for throwing the pawl into engagement with the rack.

2. In a display apparatus; the combination of a movable carriage, a plurality of pictures stored in said carriage, and means for feeding the carriage forward step by step and comprising a rack on the carriage, a locking-pawl operating on the rack, a feed-pawl normally out of engagement with the rack, means for operating said pawl, a weighted lever rigid with said feed-pawl, and a tripper for operating said lever to throw the feed-pawl into operative engagement with the rack.

3. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, and means for feeding the carriage forward step by step and comprising a rack on the carriage, a locking-pawl operating on the rack, a feed-pawl normally out of engagement with the rack, means for operating said pawl, a lifter for carrying the pictures one at a time into display position, a tripper on the lifter, and means connected with said feed-pawl and located in the path of movement of the tripper and adapted to be operated by said tripper to throw the feed-pawl into operative engagement with the rack.

4. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, a rack on the carriage, a feed-pawl and a locking-pawl operating on the rack, and a releaser for holding said pawls out of engagement with the rack and operated by the carriage at the limit of its forward movement.

5. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, a rack on the carriage, a feed-pawl and a locking-pawl operating on the rack, a releaser on the rack arranged to hold said pawls out of engagement with the rack and operated by the carriage at the limit of its forward movement, and means for returning the carriage to its initial position.

6. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carrriage, a rack on the carriage, a feed-pawl and a locking-pawl operating on the rack, a releaser movably arranged on the rack and adapted to hold said pawls out of engagement with the rack at the limit of the forward movement of the carriage, and lugs on the carriage for operating said releaser.

7. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, a rack on the carriage, a feed-pawl and a locking-pawl operating on the rack, a releaser movably arranged on the rack, lips on said releaser projecting across the rack normally behind the pawls, and a lug on the rack arranged to push said releaser forward and cause said lips to disengage the pawls from the rack.

8. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, a rack on the carriage, a feed-pawl and a locking-pawl operating on the rack, a releaser movably arranged on the rack and provided with lips adapted to engage the pawls, a lug on the rear end of the rack arranged to push the releaser forward to cause said lips to disengage the pawls from the rack, and a lug on the forward end of the rack to return said releaser to its normal position.

9. In a display apparatus, the combination of a movable carriage, a plurality of pictures stored in said carriage, a vertically-operating lifter, a projection on each picture, a finger on the lifter arranged to engage the projection on the picture to carry the picture into display position, and a lug on the lifter above said finger.

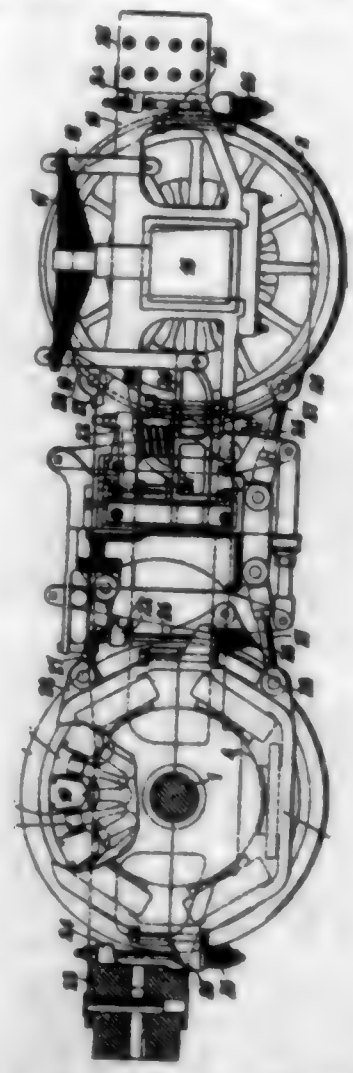
816,599. OILSTONE-BOX. CHARLES F. PIPPY, Calgary, Canada, assignor to Pike Manufacturing Company, Pike, N. H., a Corporation of New Hampshire. Filed May 5, 1905. Serial No. 259,046.



Claim.—1. In an oilstone-box, a box-body recessed to receive the oilstone, a cover adapted to fit over the sides of the box-body and a leaf or tab to which one end of the cover is hinged, the leaf or tab being pivoted to the end of the box-body, substantially as described.

2. In an oilstone-box, a box-body recessed to receive the oilstone, a cover adapted to fit over the sides of the box-body, a leaf or tab to which one end of the cover is hinged, the leaf or tab being pivoted to the end of the box-body, and a latch or fastener secured to the opposite end of the cover, substantially as described.

816,600. SUSPENSION MEANS FOR ELECTRIC-RAILWAY MOTORS. CHARLES A. PHILANDER, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 3, 1905. Serial No. 253,642.



Claim.—1. In an electric locomotive, the combination with a truck-frame, a driving-axle, a quill, a motor-armature mounted

thereon, and a motor-field-magnet frame having bearings for said armature, of lugs integral with said frame and leaf-springs having their middle portions attached to said lugs and having their ends secured to said truck-frame.

2. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a field-magnet frame surrounding and having bearings for said armature, of lugs integral with said field-magnet frame, and leaf-springs having their ends secured to said truck-frame and their middle portions secured to said lugs.

3. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a field-magnet frame surrounding and having bearings for said armature, of lugs integral with said field-magnet frame, leaf-springs having their ends secured to said truck-frame and their middle portions secured to said lugs, and links between said motor and said truck-frame.

4. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a field-magnet frame surrounding and having bearings for said armature, of lugs integral with said motor-frame, leaf-springs having their ends secured to said truck-frame and their middle portions secured to said lugs, and links attached respectively to the upper and lower sides of the motor-frame and to the truck-frame.

5. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a field-magnet frame surrounding and having bearings for said armature, of a centrally-located lug on each side of the motor-frame, and leaf-springs having their ends supported by the truck-frame and their middle portions secured to said lugs.

6. In an electric locomotive, the combination with a truck-frame, a driving-axle, a quill surrounding said axle and connected thereto, a motor-armature mounted on said quill, and a motor-field-magnet frame having bearings for said quill, of a centrally-located lug on each side of the motor-frame, and springs having their ends supported by the truck-frame and their middle portions secured to said lugs.

7. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a motor-field-magnet frame having bearings for said armature, of a pair of links suspended from the truck-frame at each side of the motor and a spring interposed between each side of the motor-frame and the corresponding links.

8. In an electric locomotive, the combination with a truck-frame, a driving-axle, a motor-armature flexibly mounted thereon, and a field-magnet frame having bearings for said armature, of spring connections between the middle portions of the field-magnet frames and the truck-frame adjacent to the ends of the motor.

9. In an electric locomotive, the combination with a truck-frame and its axles, of an electric motor having its armature loosely sleeved upon one of said axles and spring connections between substantially the middle point of each side of the field-magnet frame of the motor and the truck-frame.

10. In an electric locomotive, the combination with a truck-frame and its axles, of an electric motor having its armature loosely sleeved upon one of the axles and leaf-springs connected at their middle points to the middle points of the sides of the motor field-magnets and at their ends to the truck-frame.

816,601. **WELT.** GEORGE B. ROLLINS, East Bridgewater, Mass., assignor to Brockton Folding Machine Company, a Corporation of Massachusetts. Filed Apr. 4, 1904. Serial No. 201,566.



Claim.—1. A welt, having a series of transverse cuts, oblique to the plane of the welt, said cuts at their ends terminating short of the edges of the welt and less in length than the width of the welt.

2. A welt for Goodyear-welted shoes, one side thereof being whole and the opposite side being provided with a series of transverse cuts made without removing any of the leather, said cuts being shallower than the thickness of the welt, and terminating short of the edges of the welt.

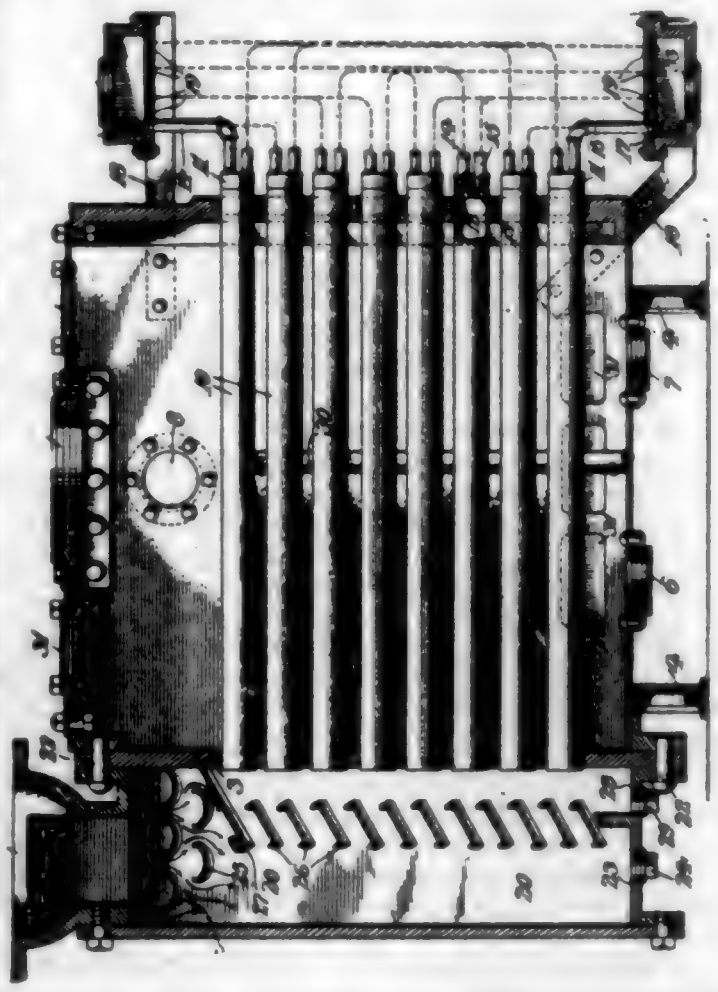
3. A welt, having a series of transverse cuts, extending partially through the welt obliquely to the plane of the welt and terminating at their ends short of the edges of the welt.

4. A welt, having a series of transverse crescent-shaped cuts, each less in length than the width of the welt and extending obliquely to the plane of the welt, said cuts being shallow at their opposite ends, and the opposite edges of the welt being whole.

5. A welt, having integral edges, and containing a series of transverse cuts extending obliquely to the plane of the welt and deepest intermediate their ends.

6. A welt, having integral edges, and containing a series of transverse grooves S, and a plurality of oblique cuts interspersed between said grooves and terminating short of the edges of the welt.

816,602. **CONDENSER.** HIRAM C. RUGGLES, Pasadena, Cal. Filed Jan. 25, 1906. Serial No. 297,844.



Claim.—1. In a steam-condenser a condenser-chamber provided with water inlets and outlets; a series of tubes secured therein, communicating at one end with a steam-supply chamber and the other end of each tube terminating in a plurality of discharge-openings.

2. A steam-condenser comprising a steam-supply chamber; a condenser-chamber provided with water inlets and outlets; a series of tubes secured therein communicating at one end with a steam-supply chamber, said chamber having an inlet in the top thereof, the other ends of said tubes terminating in a plurality of discharge-openings, said openings connected to discharge-chambers having outlets; and a series of separating-plates secured inside of said steam-supply chamber.

3. A steam-condenser comprising a steam-supply chamber having an inlet at the top; a condenser-chamber provided with water inlets and outlets; a series of tubes secured therein communicating at one end with a steam-supply chamber, the other ends of the tubes terminating in discharge-outlets, said outlets connected to discharge-chambers having outlets; and a series of removable inclined separating-plates secured inside of said steam-supply chamber.

4. A steam-condenser comprising a steam-supply chamber having an inlet at the top; a water-receiving chamber having an outlet; a gas-receiving chamber having an outlet; a condenser-chamber provided with water inlets and outlets; a partition secured in said chamber between the inlets; a series of tubes secured therein communicating at one end with said steam-supply chamber, the other ends of said tubes having closures with a plurality of openings therein, one of said openings communicating downwardly with said water-receiving chamber and the other opening communicating upwardly with said gas-receiving chamber; a series of removable curved inclined separating-plates secured in a horizontal plane below the inlet to the steam-chamber; a series of removable inclined channel-separating plates secured one above the other adjacent the inlet ends of said tubes.

816,808. BREECH-LOADING GUN. ANDREW H. RUSSELL, Washington, D. C. Filed June 22, 1905. Serial No. 266,472.



Claim.—1. In a breech-loading gun, a bolt and means for locking the same by a partial rotation, a pivot carried by said bolt and extending in a line transverse to the axis of the bolt, a handle-lever turning on said pivot and provided with a segment-gear, and a gear on the frame with which said segment engages to rotate the bolt.

2. In a breech-loading gun, a bolt having a rotating locking portion and a non-rotating portion, a handle-lever connected to the rotating portion by a pivot extending in transverse direction, a segment-gear rigid with the handle-lever, and gear-teeth on the frame with which said segment engages to rotate the bolt.

3. In a bolt-gun, the bolt provided with locking-lugs at its front end, a frame with which said lugs engage to hold the bolt against recoil, a handle on the bolt having gear-teeth, and the frame having gear-teeth with which said teeth on the handle engage, for turning the bolt and locking and unlocking the same.

4. The combination, in a bolt-gun, of a frame having recoil-resisting abutments, a bolt having rigid lugs which engage said abutments to lock the bolt, a pintle on the bolt extending laterally and having a segment-gear and a handle connected thereto, and a gear on the frame with which said segment engages to lock or unlock the bolt.

5. In a bolt-gun, the combination of a bolt having rigid lugs projecting radially near its front end, a frame having recesses to receive said lugs and abutments against which the lugs hold in resisting recoil, a segment-gear pivoted to the bolt and actuated by a handle rigid with the gear, and a geared housing on the frame with which said segment engages to rotate the bolt.

6. In a bolt-gun, the combination of a frame provided with recesses and recoil-taking abutments near the breech of the barrel, a bolt having rigid lugs near its front end to engage said abutments, a rigid pintle extending laterally near the rear of the bolt, a segment-gear pivoted on said pintle and having a rigid handle, and a housing on the frame having teeth with which the segment-teeth engage to rotate the bolt in locking and unlocking.

7. In a bolt-gun, the combination with the bolt having a radial pintle, of a handle-lever pivoted to said pintle and a segment-gear moving with the handle, a housing on the frame with which said gear engages to rotate the bolt, and a stop-piece to limit the rotary movement of said handle in unlocking the bolt.

8. In a bolt-gun, the combination of a bolt having locking-lugs, a frame with which said lugs engage, a handle-lever connected to the bolt and engaging the frame by a gear to rotate the bolt, and means for holding the handle in rigid relation with the bolt at the termination of the rotary unlocking movement.

9. In a bolt-gun, the combination of the bolt and frame, a handle-lever movable relatively to the bolt and having gear-teeth engaging gear-teeth on the frame to turn the bolt, the hammer, and a notch on the handle-lever with which said hammer engages to prevent movement of said handle-lever, substantially as described.

10. The combination of the frame, bolt, and handle pivoted to the bolt, and gears engaging the handle with the frame to rotate the bolt, of a stop on the handle and gun to limit the handle movement in locking the bolt.

11. In a bolt-gun, the handle-lever pivotally connected to the bolt, and a handle-guide piece on the stock with which the handle engages in closed position, to guide the initial movement of the handle in opening the breech.

12. The combination, in a bolt-gun, of a handle-lever pivoted to the bolt and having gear-teeth, the housing having gear-teeth with which said gears on the handle engage to rotate the bolt, and a guide-piece on the frame against which a part of the handle may bear in turning the bolt during the closing movement.

13. In a bolt-gun, the combination with a turning part of the bolt, of a laterally-extending pintle thereon, a handle having segment-gear carried by said pintle, means for holding the handle in fixed relation to the bolt during the longitudinal movement of the bolt, and a tooth-gear on the frame with which said gear engages to turn the bolt.

14. In combination with the turning bolt, a pintle thereon having a longitudinal and circumferential slot, and a handle adapted to engage the frame in locking or unlocking the bolt having a fin which enters said slot and permits a partial rotation of the handle around the pintle without permitting the removal while the fin is in the circumferential portion of the slot.

15. In a bolt-gun, the bolt having a side pintle slotted longitudinally and in a circumferential direction, the handle surrounding said pintle and having a fin to enter said slot, and means to hold the handle against movement around said pintle to permit the escape of the fin from the longitudinal slot.

16. In a bolt-gun, the combination with a rotating bolt and means for turning the same on its axis, of a movable stop automatically operating to obstruct the final closing movement of the bolt.

17. In a bolt-gun, the combination with a rotating bolt and means for turning the same in its closing movement, of a movable stop automatically operating to obstruct the final closing movement of the bolt, and means for moving this stop out of working position.

18. In a bolt-gun, the combination with a rotating breech-bolt, of a movable stop adapted to be set to allow of the opening of the breech, and automatically operating to obstruct the firing of the gun.

19. In a bolt-gun, the combination with a rotating breech-bolt and means for locking the same, of a movable stop adapted to be set to permit the opening of the bolt, automatic means by which the stop obstructs the closing of the bolt, and means by which this stop may be held inoperative.

20. The combination with the bolt-closing mechanism of a bolt-gun, of a stop automatically moved into position to obstruct the final bolt turning and closing movement, and means for rendering said stop inert.

21. In a bolt-gun, the frame having a housing over the bolt and provided with a rib facing toward the barrel, a shoulder at one side of the receiver in front of and below said rib, a shoulder at the opposite side of the receiver projecting above the first, and a receptacle for the cartridge-clip between said shoulders, whereby the clip may be guided to its receptacle by said rib and stopped by the higher shoulder, when the bolt is retracted.

22. In a bolt-gun, the frame having a housing over the bolt and having a rib facing toward the barrel, shoulders in front of and below said rib, one of said shoulders being higher than the other, there being a recess for the loaded cartridge-clip between said shoulders, and notches in the shoulders to receive the edges of the clip in front of the retracted bolt.

816,604. SHOWER-BATH. CHARLES C. RUSSELL, Cleveland, Ohio. Filed Feb. 12, 1904. Serial No. 193,337.

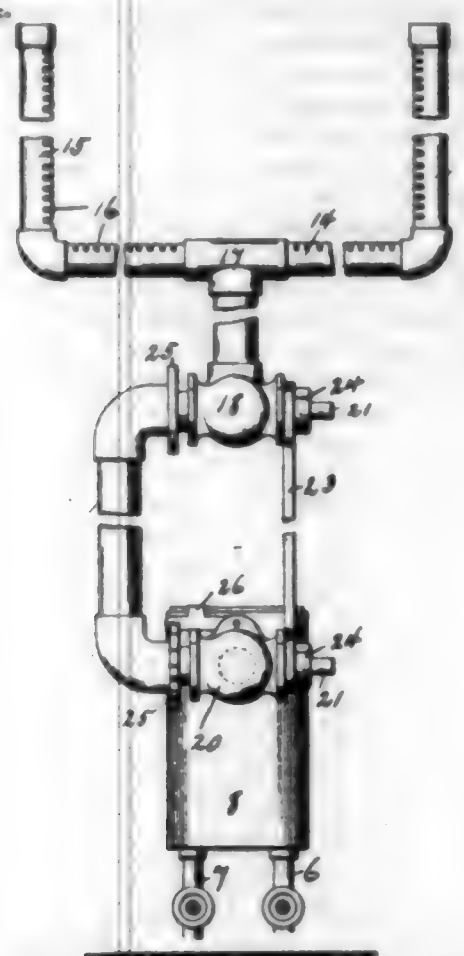
Claim.—1. A mixer for shower-bath apparatus, comprising an outer casing having a removable cover at the top and hot and cold water inlets at the bottom, an outlet in the side of the casing near the top thereof, a perforated partition extending across within the casing, between the inlets and outlet, and a pin projecting upwardly from the partition, in the casing.

2. In a shower-bath apparatus, the combination with a supply-pipe, of a rigid spray-pipe extending crosswise and having at its ends forwardly-projecting branches spaced so that a person may enter therebetween, said pipe and branches having inwardly-directed jet-holes, and a flexible coupling connecting the supply and spray pipes and constructed and arranged to permit the spray-pipe and branches to be set at various heights.

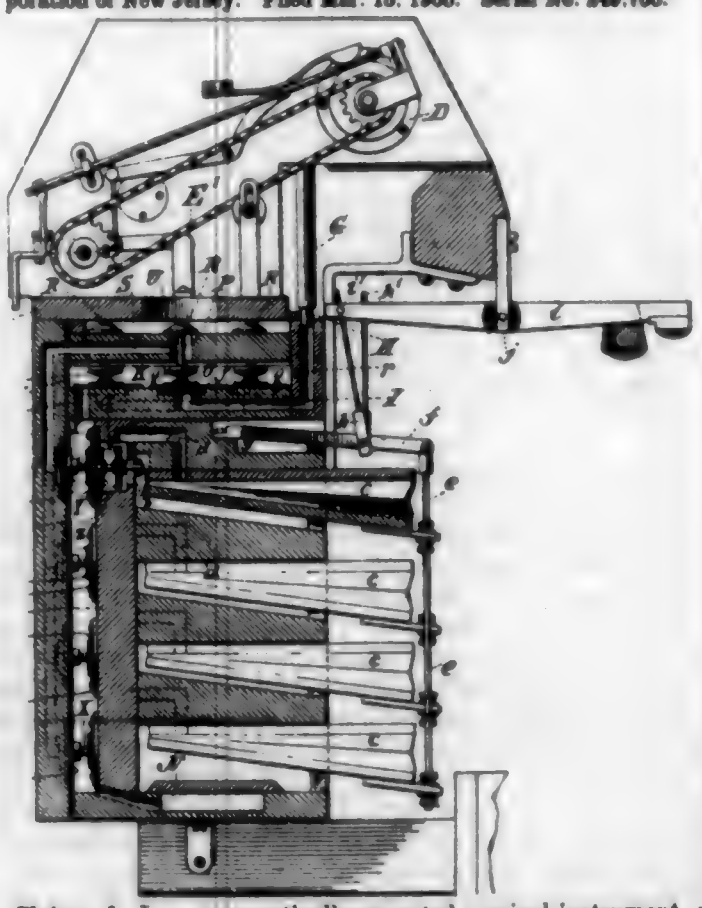
3. In a shower-bath apparatus, the combination with a supply-pipe and a spray-pipe, of a coupling connecting the same and permitting the spray-pipe to be set at various heights, comprising a connecting-pipe having at one end a turning joint with the supply-pipe and at the other end a turning joint with the spray-pipe, the axes of said joints being parallel, and a latch at each joint, engageable between the parts thereof, to hold the pipes as set.

4. In a shower-bath apparatus, the combination with a supply-pipe and a spray-pipe, each having at its end a joint-casing, of a coupling connecting said pipes and constructed to permit the spray-pipe to be set at various heights, comprising a connecting-pipe terminating at its ends in perforated plugs which extend through said casings and turn therein, the axes of the plugs being parallel, a brace-bar secured to the ends of the plugs, beyond the casings, and means to hold the parts as set.

816,604.



816,605. AUTOMATIC PIANO-PLAYER. JOSE SAMPER, Rahway, N. J., assignor to The Regina Company, Rahway, N. J., a Corporation of New Jersey. Filed Mar. 13, 1905. Serial No. 249,700.



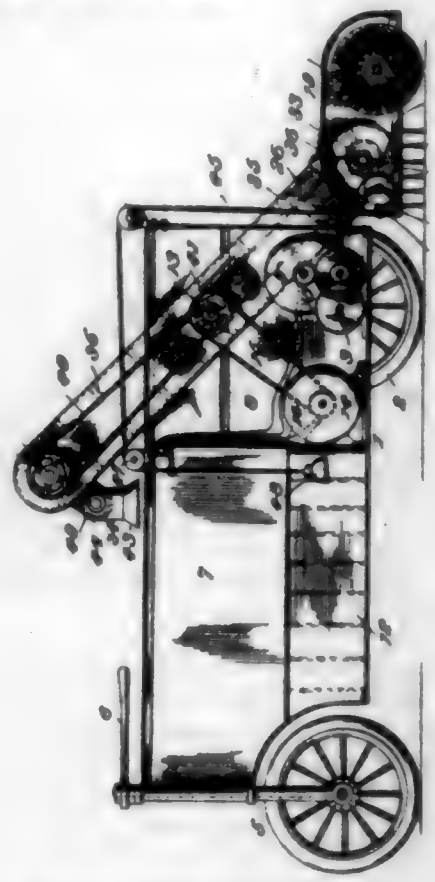
Claim.—1. In a pneumatically-operated musical instrument, a frame having a first primary wind-chest K and a second primary wind-chest M communicating therewith, a removable wall i normally closing both of said wind-chests at one side, diaphragms T carried by said wall in the second primary wind-chest and channels S leading from said diaphragms T to the first primary wind-chest, first primary valves R and Q controlling the connection of said channels with the outside air and the first primary wind-chest respectively, pneumatics C and second primary valves Z and Y controlled by said diaphragms to connect the pneumatics either with the outside air or with the second primary wind-chest, diaphragms J in the first primary wind-chest, for controlling the first primary valves, and a tracker-board F having channels G, I, leading to the last-named diaphragms.

2. In a pneumatically-operated musical instrument, pneumatics, a vertically-disposed second primary wind-chest, second primary valves controlling the connection of said pneumatics with either the outside air or the second primary wind-chest, a first primary wind-chest disposed horizontally above the second primary wind-chest and communicating therewith, channels for controlling the position of the second primary valves from the first primary wind-chest, first primary valves controlling the connection of said channels with either the outside air or the first primary wind-chest and a tracker-board having connections governing the position of the first primary valves.

3. In a pneumatically-operated musical instrument, a wind-chest having a removable wall at one side, primary valves in said wind-chest, a tracker-board having connections for controlling the position of said primary valves, said connections passing along the wall of the wind-chest opposite to the removable wall thereof and being provided with bleeding-holes extending toward said removable wall, a second primary wind-chest below said first-named wind-chest and covered by said removable wall, and pneumatics, the connection of which with either the outside air or the second wind-chest is controlled primarily by said first primary valves.

4. In a pneumatically-operated musical instrument, a pneumatic, a striker and a mechanical connection between said striker and pneumatic, said connection comprising a link consisting of two sections having a screw connection with each other, one of said sections being rotatably secured in a pivot f' which is in turn rotatably mounted in the striker.

816,606. STREET-CLEANER. JAMES G. SANDERSON, Scranton, Pa., assignor of one-half to Alva D. Blackington, Dunmore, Pa. Filed Sept. 6, 1902. Serial No. 122,434.



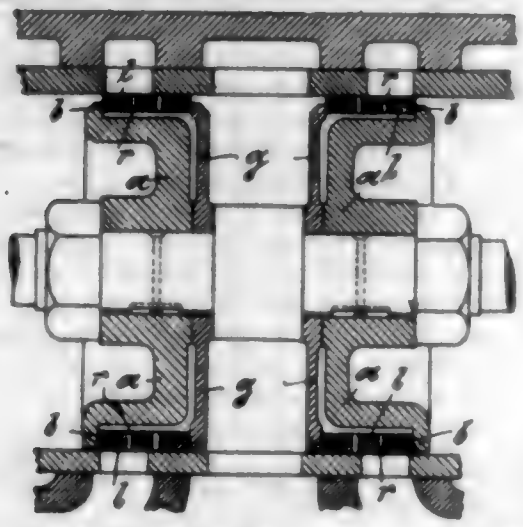
Claim.—1. The combination with the frame, a shaft carried thereby, and means for rotating the shaft, of a collector-casing carrying a brush, two casings journaled on the shaft and to the collector-casing, mechanism for operating the brush from the shaft mounted in one of the casings, and a conveyer also operated by the shaft mounted in the other casing.

2. The combination with the frame, carrying a motor, and a collector-casing carrying a brush, of two casings connecting the collector-casing with the frame, brush-operating mechanism mounted in one of the casings, and a conveyer mounted in the other casing.

3. In a street-sweeper, the combination with the collector mounted in the front of the machine-frame and comprising a casing, a rotary brush journaled in the casing, a shelf mounted in the rear of the brush and a single screw conveyer carrying the material received on the shelf, to one side of the collector; of a conveyer extending from the side of the collector, a motor carried by the machine, connections between the motor, the conveyer and the brush whereby the two latter are operated by the former, and independent means for propelling the machine.

4. The combination with the vehicle-frame having a front and a rear compartment, of a brush mounted in advance of the frame and movable up and down relatively thereto, a conveyer carrying the sweepings from the brush to the rear compartment, a motor mounted in the front compartment, and propelling the vehicle, a second motor also mounted in the front compartment and operating the conveyer and the brush in the direction of travel of the vehicle, and a cable, extending from the brush to the rear compartment by which the brush may be raised and lowered.

816,607. PISTON-VALVE. WILHELM SCHMIDT, Wilhelmshöhe, Germany. Filed Nov. 7, 1904. Serial No. 231,756.



Claim.—1. A piston-valve for steam or other fluid motive-power engines with two distinct valve-bodies, each of them consisting of a cylindrical part *a* and a movable plate, and a packing-ring having radial bores, the cylindrical part *a* having a circumferential groove for putting in the split packing-ring, for the purpose as described.

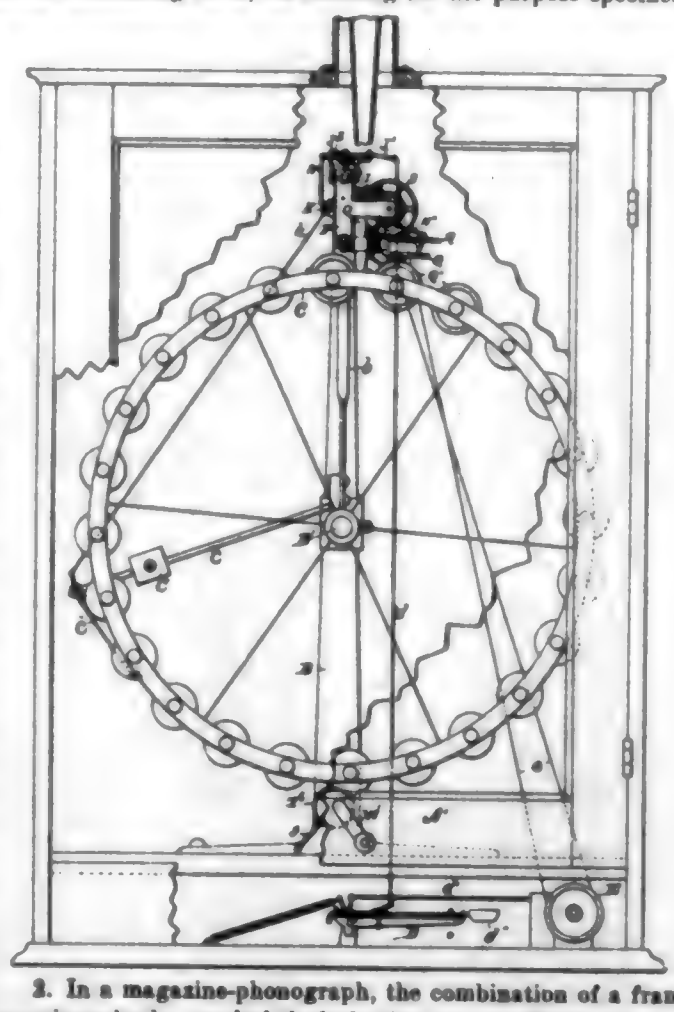
2. A piston-valve for steam or other fluid motive-power engines with two distinct valve-bodies, each of them consisting of a cylindrical part *a*, an elastical plate partially movable and a packing-ring having small radial bores, the cylindrical part *a* having a circumferential groove for putting in a split packing-ring, for the purpose as described.

3. A piston-valve for steam or other fluid motive-power engines with two distinct valve-bodies, each of them consisting of a cylindrical part *a*, a movable plate, forming an annular space together with the part *a*, and a packing-ring having small radial bores, the cylindrical part *a* having a circumferential groove for putting in the split packing-ring, the small radial bores therein serving for compensating the steam-pressure on the inner and outer side of the packing-ring, for the purpose as described.

4. A piston-valve for steam or other fluid motive-power engines with two distinct valve-bodies, each of them consisting of a cylindrical part *a*, an elastic plate partially movable, forming an annular space together with the part *a* and a packing-ring having small radial bores, the cylindrical part *a* having a circumferential groove for putting in the split packing-ring, the small radial bores therein serving for compensating the steam-pressure on the inner and outer side of the packing-ring, for the purpose as described.

816,608. MAGAZINE-PHONOGRAPH. CYRUS C. SHOLLEY, Hart, Mich. Filed Oct. 26, 1904. Serial No. 230,076.

Claim.—1. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange *s* thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch *m* therein to allow said spring-arm G'' to pass therethrough, and a lug *m'* adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon, adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog, whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; connections from said rock-shaft to said adjustable support for said driving-wheel for the said mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; means for adjusting said magazine-wheel independently of said pivoted lever; a controlling-lever for the motoc; an arm H on said rock-shaft, adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting it to drop to stop the motor; a stop L for the said controlling-lever, consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the lever when released by the said arm H, said arm H being adapted to actuate said wheel for bringing the long arms into and out of position to engage said motor controlling lever, all coacting for the purpose specified.



2. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange *s* thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch *m* therein to allow said spring-arm G'' to pass therethrough, and a lug *m'* adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to rock said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog, whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; means for adjusting said magazine-wheel independently of said pivoted lever; a controlling-lever for the motor; an arm H on said rock-shaft, adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting it to drop to stop the motor; a stop L for said controlling-lever, consisting of a wheel having long and short arms thereon, the long arms

of which are adapted to support the lever when released by the said arm H, said arm H being adapted to actuate said wheel for bringing the long arms into and out of position to engage said motor-controlling lever, all coacting for the purpose specified.

3. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange n thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon, adapted to engage said magazine-wheel; connections from said lever to said carriage; connections from said rock-shaft to said adjustable support for said driving-wheel for the said mandrel-shaft wheels, whereby the said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; a controlling-lever for the motor; an arm H on the said rock-shaft, adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting it to drop to stop the motor; a stop L for the said controlling-lever, consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the lever when released by the said arm H, said arm H being adapted to actuate said wheel for bringing the long arms into and out of position to engage said motor-controlling lever, all coacting for the purpose specified.

4. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange n thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a controlling-lever for the motor; an arm H on said rock-shaft adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting it to drop to stop the motor; a stop L for said controlling-lever, consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the lever when released by the said arm H, said arm H being adapted to actuate said wheel for bringing the long arms into and out of position to engage said motor-controlling lever, all coacting for the purpose specified.

5. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange n thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon, adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog, whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; connections from said rock-shaft to said adjustable support for said driving-wheel for the said mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; means for adjusting said magazine-wheel independent of said pivoted lever; a controlling-lever for said motor; connections from said rock-shaft to said motor-controlling lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, all coacting for the purpose specified.

6. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange n thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog, whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; means for adjusting said magazine-wheel independent of said pivoted lever; a controlling-lever for the motor; connections from said rock-shaft to said motor-controlling lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, all coacting for the purpose specified.

7. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange n thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon, adapted to engage said magazine-wheel; connections from said lever to said carriage connections from said rock-shaft to said adjustable support for said driving-wheel for the said mandrel-shaft wheels, whereby the said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; a controlling-lever for the motor; connections from said rock-shaft to said motor-controlling lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, all coacting for the purpose specified.

8. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said car-

riage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a controlling-lever for the motor; connections from said rock-shaft to said motor-controlling lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, all coacting for the purpose specified.

9. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G,'' whereby said rock-shaft is throwa rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; connections from said rock-shaft to said adjustable support for said driving-wheel for said mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; and means for adjusting said magazine-wheel independent of said pivoted lever, for the purpose specified.

10. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl therein adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; and means for adjusting said magazine-wheel independent of said pivoted lever, for the purpose specified.

11. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; and means for adjusting said magazine-wheel independent of said pivoted lever, for the purpose specified.

12. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; and means for adjusting said magazine-wheel independent of said pivoted lever, for the purpose specified.

13. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; connections from said rock-shaft to said locking-dog whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; and connections from said rock-shaft to said adjustable support for said driving-wheel for said mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels, for the purpose specified.

14. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'' whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; a locking-dog for said magazine-wheel; and connections from said rock-shaft to said locking-dog whereby said

locking-dog is held out of engagement when said rock-shaft is in its rearward position, for the purpose specified.

15. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl thereon adapted to engage said magazine-wheel; connections from said lever to said carriage; and connections from said rock-shaft to said adjustable support for said driving-wheel for said mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels, for the purpose specified.

16. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; a pivoted lever having a pawl therein adapted to engage said magazine-wheel; and connections from said lever to said carriage, for the purpose specified.

17. In a magazine-phonograph, the combination of a frame; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft, having a cam-shaped flange thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; driving connections for said carriage to said driving-shaft, adapted to be thrown into and out of engaging position by said rock-shaft; a spring-arm on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connection from said rock-shaft to said reproducer, whereby said reproducer is thrown into and out of contact with the record-rolls upon the actuation of said rock-shaft; means for advancing said magazine-wheel with a step-by-step movement; connections from said means to said carriage whereby said carriage is returned to its initial position; connections from said rock-shaft to said locking-dog whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; a controlling-lever for the motor; an arm H on the said rock-shaft, adapted to engage the said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting it to drop to stop the motor; a stop for the said controlling-lever consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the lever when released by the said arm H, said arm H being adapted to actuate said wheel for bringing the long arms into and out of position to engage the said motor-controlling lever, all coacting for the purpose specified.

18. In a magazine-phonograph, the combination of a frame; a magazine-wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; driving connections for said carriage to said driving-shaft, adapted to be thrown into and out of engaging position by said rock-shaft; a spring-arm on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said rock-shaft to said reproducer, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft; means for advancing said magazine-wheel with a step-by-step movement; connections from said means to said carriage whereby said carriage is returned to its initial position; connections from said rock-shaft to said locking-dog whereby said locking-dog is held out of engagement when said rock-shaft is in its rearward position; a motor; a screw-threaded driving-shaft having suitable driving connections to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft; and connections from said rock-shaft to said motor, for the purpose specified.

19. In a magazine-phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel with said record-roll; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having a suitable driving connection to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft; and connections from said rock-shaft to said motor, for the purpose specified.

20. In a magazine-phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel with said record-roll; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having a suitable driving connection to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; driving connections for said carriage to said driving-shaft adapted to be thrown into and out of engaging position by said rock-shaft; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft; and connections from said rock-shaft to said motor, for the purpose specified.

21. In a magazine-phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel with said record-roll; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having a suitable driving connection to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a wheel or disk N on said driving-shaft having a cam-shaped flange s thereon adapted to engage said arm G'''' to throw said rock-shaft forwardly; a driving-arm G' adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G'', whereby said rock-shaft is thrown rearwardly; and connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft, for the purpose specified.

22. In a magazine-phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel with said record-roll; a phonograph-reproducer pivotally supported on said carriage; a motor; a screw-threaded driving-shaft having a suitable driving connection to said motor; a rock-shaft carried by said carriage; an arm G'''' on said rock-shaft; a

wheel or disk N on said driving-shaft having a cam-shaped flange n thereon adapted to engage said arm G''' to throw said rock-shaft forwardly; driving connections for said carriage to said driving-shaft adapted to be thrown into and out of engaging position by said rock-shaft; a spring-arm G'' on said rock-shaft; a disk M on said driving-shaft, having a notch m therein to allow said spring-arm G'' to pass therethrough, and a lug m' adapted to engage said arm G''', whereby said rock-shaft is thrown rearwardly; and connections from said reproducer to said rock-shaft, whereby said reproducer is thrown into and out of contact with the record-roll upon the actuation of said rock-shaft, for the purpose specified.

23. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; a driving-arm on said rock-shaft adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm on said rock-shaft; and a disk on said driving-shaft having a notch therein and having a laterally-projecting lug on its outer face adapted to engage said spring-arm to actuate said rock-shaft, for the purpose specified.

24. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; driving connections for said carriage to said driving-shaft; a spring-arm on said rock-shaft; and a disk on said driving-shaft having a notch therein and having a laterally-projecting lug on its outer face adapted to engage said spring-arm to actuate said rock-shaft, for the purpose specified.

25. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; a driving-arm on said rock-shaft adapted to engage said driving-shaft when said rock-shaft is in its forward position; an arm on said rock-shaft; and a disk on said driving-shaft having a notch therein and having a laterally-projecting lug on its outer face adapted to engage said arm to actuate said rock-shaft, for the purpose specified.

26. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; driving connections for said carriage to said driving-shaft; an arm on said rock-shaft; and a disk on said driving-shaft having a notch therein and having a laterally-projecting lug on its outer face adapted to engage said arm to actuate said rock-shaft, for the purpose specified.

27. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; a driving-arm on said rock-shaft adapted to engage said driving-shaft when said rock-shaft is in its forward position; a spring-arm on said rock-shaft; and a disk on said driving-shaft having a notch therein adapted to engage said spring-arm to actuate said rock-shaft, for the purpose specified.

28. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a screw-threaded driving-shaft; driving connections for said carriage to said driving-shaft; a spring-arm on said rock-shaft; and a disk on said driving-shaft having a notch therein adapted to engage said spring-arm to actuate said rock-shaft, for the purpose specified.

29. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a spring-arm on said rock-shaft; a disk having a notch therein and having a laterally-projecting lug on its outer face adapted to engage said spring-arm to actuate said rock-shaft; and driving connections for said disk or wheel, for the purpose specified.

30. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with said record-roll; a spring-arm on said rock-shaft; a disk having a notch therein adapted to engage said spring-arm to actuate said rock-shaft; and driving connections for said disk or wheel, for the purpose specified.

31. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with the record-roll; a screw-threaded driving-shaft; a driving-arm on said rock-shaft adapted to engage said screw-threaded driving-shaft when the rock shaft is in its forward position; an arm on said rock-shaft having a laterally-projecting yielding pin thereon; and a disk or wheel on said driving-shaft having a flange with an inwardly-deflected end thereon adapted to engage said pin on said arm to throw the same downwardly to bring the reproducer into contact with the record-roll, and the driving-arm into engagement with the driving-shaft, for the purpose specified.

32. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with the record-roll; a screw-threaded driving-shaft; a driving-arm on said rock-shaft adapted to engage said screw-threaded driving-shaft when the rock-shaft is in its forward position; an arm on said rock-shaft; and a disk or wheel on said driving-shaft having a flange with an inwardly-deflected end thereon adapted to engage said arm to throw the same downwardly to bring the reproducer into contact with the record-roll, and the driving-arm into engagement with the driving-shaft, for the purpose specified.

33. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer carried by said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with the record-roll; an arm on said rock-shaft having a laterally-projecting yielding pin thereon; a disk or wheel having a flange with an inwardly-deflected end thereon adapted to engage said pin on said arm to throw the same downwardly to bring the reproducer into contact with the record-roll; and driving connections for said disk or wheel, for the purpose specified.

34. In a phonograph, the combination of a record-roll; means for revolving the same; a carriage adapted to reciprocate parallel therewith; a phonograph-reproducer carried by said carriage; a rock-shaft adapted to raise and lower said reproducer to throw the same into and out of engagement with the record-roll; an arm on said rock-shaft; a disk or wheel having a flange with an inwardly-deflected end thereon adapted to engage said arm to throw the same downwardly to bring the reproducer into contact with the record-roll; and driving connections for said disk or wheel, for the purpose specified.

35. In a magazine-phonograph, the combination of a suitable frame; a motor; a magazine-wheel carrying mandrels; record-rolls on said mandrels; driving connections for said mandrels; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; a controlling-lever for said motor; an arm on said rock-shaft adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting the said lever to drop and stop the motor; a stop for said controlling-lever consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the controlling-lever when released by said rock-shaft arm, said rock-shaft arm being adapted to actuate said wheel for bringing the long arms into

and out of position to engage said motor-controlling lever, for the purpose specified.

36. In a magazine-phonograph, the combination of a suitable frame; a motor; a magazine-wheel carrying mandrels; record-rolls on said mandrels; driving connections for said mandrels; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; a controlling-lever for said motor; an arm on said rock-shaft adapted to engage said controlling-lever when said rock-shaft is in its forward position, and to release the same when said rock-shaft is in its rearward position, thereby permitting the said lever to drop and stop the motor; a stop for said controlling-lever consisting of a wheel having long and short arms thereon, the long arms of which are adapted to support the controlling-lever when released by said rock-shaft arm, said rock-shaft arm being adapted to actuate said wheel for bringing the long arms into and out of position to engage said motor-controlling lever, for the purpose specified.

37. In a magazine-phonograph, the combination of a suitable frame; a motor; a magazine-wheel carrying mandrels; record-rolls on said mandrels; driving connections for said mandrels; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; a controlling-lever for said motor; connections from said rock-shaft to said controlling-lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, for the purpose specified.

38. In a magazine-phonograph, the combination of a suitable frame; a motor; a magazine-wheel carrying mandrels; record-rolls on said mandrels; driving connections for said mandrels; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the moving of said carriage; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; a controlling-lever for said motor; connections from said rock-shaft to said controlling-lever; and a stop for said motor-controlling lever adapted to be thrown into and out of engaging position by the reciprocation of said carriage, for the purpose specified.

39. In a magazine-phonograph, the combination of a suitable frame; a motor; a record-roll magazine; record-rolls carried thereby; a carriage adapted to reciprocate parallel with said record-rolls; means for actuating said carriage; a controlling-lever for said motor; connections from said carriage to said lever, adapted to be released at the end of the movement of said carriage to stop the motor; and a stop for said controlling-lever, adapted to be thrown into and out of engaging position by the reciprocation of said carriage, for the purpose specified.

40. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally projecting arm t' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm t' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

41. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheels; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm t' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm t' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

42. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm t' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm t' of said shaft T carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

43. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm t' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm t' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

44. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls

thereon carried by said wheels; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

45. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; means for returning said carriage to its initial position, adapted to actuate said magazine-wheel with a step-by-step movement; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

46. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported in said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; connections from said rock-shaft to said adjustable support for the driving-wheel of the mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

47. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shaft; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

48. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; connections from said rock-shaft to the motor; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

49. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheels; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; connections from said rock-shaft to said adjustable support for the driving-wheel for the mandrel-shaft wheels, whereby said driving-wheel is thrown into and out of position to engage said mandrel-shaft wheels; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage said arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

50. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; wheels on said mandrel-shafts; a driving-wheel for said mandrel-shaft wheels; an adjustable support therefor; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; connections from said rock-shaft to said adjustable support for the driving-wheel for the said mandrel-shaft wheels, whereby said driving-shaft is thrown into and out of position to engage said mandrel-shaft wheels; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in frictional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm f' of said shaft T, carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

51. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; mandrel-shafts having record-rolls thereon carried by said wheel; a carriage adapted to reciprocate parallel with said record-rolls; a phonograph-reproducer pivotally supported on said carriage; a rock-shaft carried by said carriage, adapted to raise and lower said reproducer to throw the same into and out of contact with said record-rolls; means for actuating said carriage; means for automatically actuating said rock-shaft at the end of the movement of said carriage; a locking-dog for said magazine-wheel; connections for said locking-dog to said rock-shaft; a pivotally-supported shaft T having a friction-wheel T'' and a laterally-projecting arm f' thereon; a pivotally-supported link U' on the inner end of said shaft T; a spring adapted to hold said link in fric-

tional contact with the face of said wheel T''; a crank-shaft W adapted to engage the arm t' of said shaft T carried by the door of said casing; and a spring for holding said friction-wheel T'' normally out of engagement with said magazine-wheel, all coacting for the purpose specified.

52. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; a pivotally-supported shaft having a friction-wheel and a laterally-projecting arm thereon; a pivotally-supported link on said shaft; a spring adapted to hold said link in frictional contact with the face of said wheel; and a crank adapted to engage the arm on said shaft carried by the door of said casing, for the purpose specified.

53. In a magazine-phonograph, the combination of a casing; a door therefor; a magazine-wheel; a pivotally-supported shaft having a friction-wheel and a laterally-projecting arm thereon; a pivotally-supported link on said shaft; and a crank adapted to engage the arm on said shaft carried by the door of said casing, for the purpose specified.

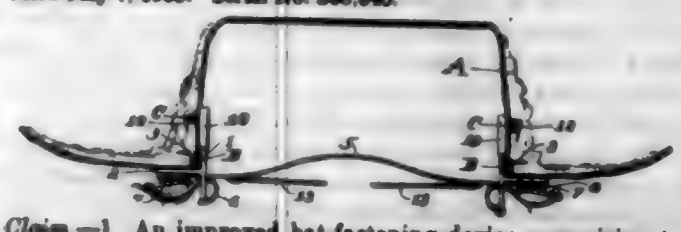
54. In a magazine-phonograph, the combination of a casing; a magazine-wheel; a pivotally-supported shaft having a friction-wheel thereon and a laterally-projecting arm thereon; a pivotally-supported link on said shaft; a spring adapted to hold said link in frictional contact with the face of said wheel; and a crank adapted to engage the arm of said shaft, for the purpose specified.

55. In a magazine-phonograph, the combination of a casing; a magazine-wheel; a pivotally-supported shaft having a friction-wheel and a laterally-projecting arm thereon; a pivotally-supported link on said shaft; and a crank adapted to engage the arm on said shaft, for the purpose specified.

56. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft having a friction-wheel and a laterally-projecting arm thereon; a pivotally-supported link on said shaft; and a spring adapted to hold said link in frictional contact with said wheel; for the purpose specified.

57. In a magazine-phonograph, the combination of a magazine-wheel; a pivotally-supported shaft having a friction-wheel thereon and a laterally-projecting arm thereon; and a pivotally-supported link on said shaft, for the purpose specified.

816,609. HAT-FASTENER. HENRY SIEGRIST, New York, N. Y. Filed July 7, 1905. Serial No. 268,640.



Claim.—1. An improved hat-fastening device comprising two plates oppositely disposed each plate having an extension, an opening below said extension, a cam fulcrumed in said opening, means for retaining said plates in a hat, in combination with a flat spring provided with hair-pins, and means for indirectly connecting said spring with said cam as described.

2. In a hat-fastener, the combination of two T-shaped plates oppositely disposed each plate being provided with a pin and an opening on opposite sides of an extension-piece 2, of a cam fulcrumed in said opening, means for securing said plates in a hat and of a spring provided with hair-pins, said spring being indirectly connected to said cam, substantially as described.

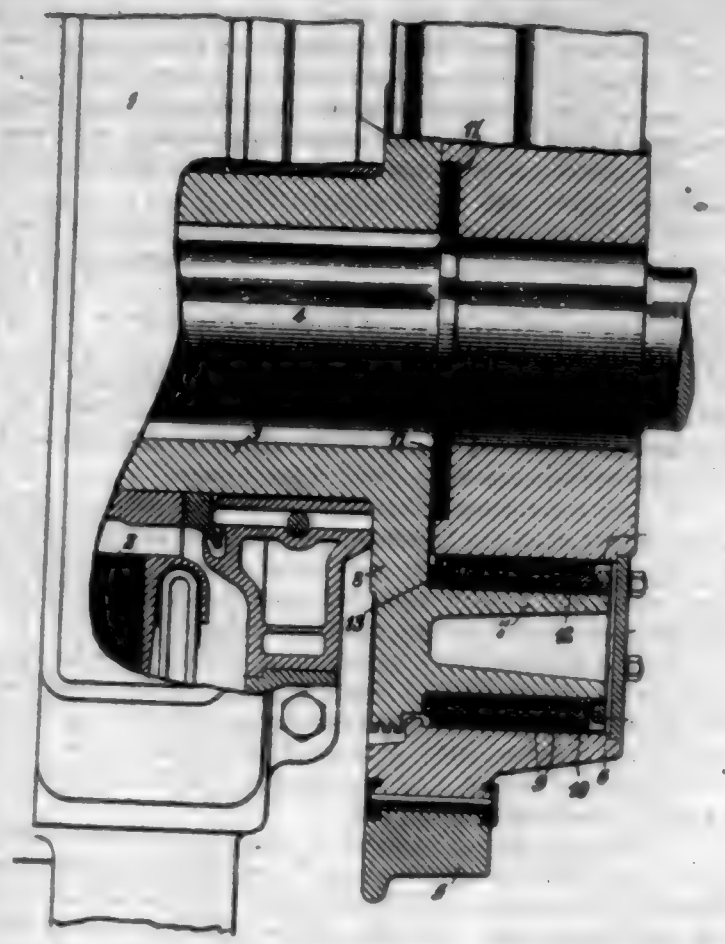
3. In a hat-fastener, the combination of two plates adapted to be temporarily fastened on diametrically opposite sides of a lady's hat and of a spring-strip provided with hair-pins, said strip being connected indirectly to the two plates by a link and a cam, substantially as described.

816,610. FLEXIBLE CONNECTION FOR GEARLESS MOTORS. ROBERT SMORFORD, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 22, 1905. Serial No. 261,672.

Claim.—1. The combination with a truck-wheel having a cylindrical chamber or opening and a set of yielding, resilient rings arranged side by side in said opening, of an electric motor, a sleeve or quill for the motor-armature having a boss that projects through the set of rings in said wheel-chamber.

2. The combination with a truck-wheel having a cylindrical chamber, of a motor-armature, a sleeve therefor having a boss that projects into said wheel-chamber and a set of side-by-side rubber rings interposed between said boss and the wall of the chamber.

3. The combination with a truck-wheel having a cylindrical chamber the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill having a boss that projects into said wheel-chamber and a set of soft-rubber rings having concave side faces and interposed between the boss and the wall of its chamber.



4. The combination with a truck-axle and a wheel having a chamber the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill surrounding the axle and having a boss that projects from one end thereof into said wheel-chamber, and a set of compressible, resilient rings interposed in said chamber between its wall and the corresponding boss.

5. The combination with a truck-axle and a wheel therefor, having a cylindrical chamber, the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill surrounding the axle, and of greater internal diameter than the axle, and having a boss that projects into said wheel-chamber, and a set of compressible, resilient rings in said chamber through which the corresponding boss projects.

6. The combination with a truck-axle and a wheel therefor, having a set of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill loosely surrounding the axle and having bosses that project into said wheel-chambers, and a set of soft-rubber rings interposed between each boss and the surrounding wall of its chamber.

7. The combination with a truck-axle and a wheel therefor, having a set of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a motor-armature, a sleeve or quill therefor, surrounding the axle but adapted to have lateral movement with reference thereto and having bosses that project into the wheel-chambers, and a set of soft-rubber rings and having concave side faces and interposed between each boss and the surrounding wall of its chamber.

8. The combination with a truck-wheel having an annular set of cylindrical chambers or openings and a set of yielding, resilient rings arranged side by side in each of said openings, of an electric motor, a sleeve or quill for the motor-armature having bosses that severally project through the sets of rings in said wheel-chambers.

9. The combination with a truck-wheel having an annular set of cylindrical chambers, of a motor-armature, a sleeve therefor having bosses that project into said wheel-chambers and a set of side-by-side rubber rings interposed between each boss and the wall of the corresponding chamber.

10. The combination with a truck-wheel having a set of cylindrical chambers the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill having bosses that project into said wheel-chambers and a set of soft-rubber rings having concave side faces and interposed between each boss and the wall of its chamber.

11. The combination with a truck-axle and a wheel having a set

of chambers the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill surrounding the axle and having bosses that project from one end thereof into said wheel-chambers, and a set of compressible, resilient rings interposed in each of said chambers between its wall and the corresponding boss.

12. The combination with a truck-axle and a wheel therefor, having a set of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill surrounding the axle, and of greater internal diameter than the axle, and having bosses that project into said wheel-chambers, and a set of compressible, resilient rings in each of said chambers through which the corresponding boss projects.

13. The combination with a rotatable member having a chamber or opening and a set of yielding, resilient rings arranged side by side in said opening, of an electric motor, a sleeve or quill for the motor-armature having a boss that projects through the set of rings in said chamber.

14. The combination with a rotatable member having a chamber, of a motor-armature, a sleeve therefor having a boss that projects into said chamber and a set of side-by-side rubber rings interposed between said boss and the wall of the chamber.

15. The combination with a rotatable member having a chamber the axis of which is substantially parallel to the axis of the member, of a sleeve or quill having a boss that projects into said chamber and a set of soft-rubber rings having concave side faces and interposed between the boss and the wall of its chamber.

16. The combination with a shaft or axle and a wheel having a chamber the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill surrounding the shaft or axle and having a boss that projects from one end thereof into said wheel-chamber, and a set of compressible, resilient rings interposed in said chamber between its wall and the corresponding boss.

17. The combination with a shaft or axle and a wheel therefor, having a chamber, the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill surrounding the shaft or axle and having a boss that projects into said wheel-chamber, and a set of compressible, resilient rings in said chamber through which the corresponding boss projects.

18. The combination with a truck-axle and a wheel therefor, having a set of chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill loosely surrounding the axle and having bosses that project into said wheel-chambers, and a set of soft-rubber rings interposed between each boss and the surrounding wall of its chamber.

19. The combination with a truck-axle and a wheel therefor, having a set of chambers, the axes of which are substantially parallel to the wheel-axis, of a motor-armature, a sleeve or quill therefor, surrounding the axle but adapted to have lateral movement with reference thereto and having bosses that project into the wheel-chambers, and a set of soft-rubber rings and having concave side faces and interposed between each boss and the surrounding wall of its chamber.

20. The combination with a rotatable member having a chamber or opening and a set of yielding, resilient rings arranged side by side in said chamber or opening, of an electric motor, a sleeve or quill for the motor-armature having a boss that projects through the set of rings in said chamber or opening.

21. The combination with a rotatable member having an annularly-disposed set of chambers, of a motor-armature, a sleeve therefor having bosses that project into said chambers and a set of side-by-side rubber rings interposed between each boss and the wall of the corresponding chamber.

22. The combination with a rotatable member having a chamber the axis of which is substantially parallel to the wheel-axis, of a sleeve or quill having a boss that projects into said wheel-chamber and a set of soft-rubber rings having concave side faces and interposed between the boss and the wall of its chamber.

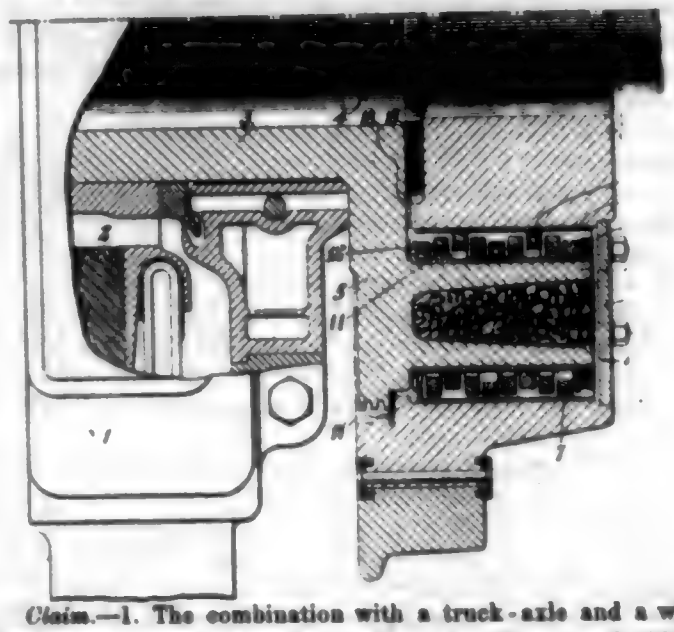
23. The combination with a shaft or axle and a wheel having a set of chambers the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill surrounding the shaft or axle and having bosses that project from one end thereof into said wheel-chambers, and a set of compressible, resilient rings interposed in each of said chambers between its wall and the surrounding boss.

24. The combination with a shaft or axle and a wheel therefor, having a set of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill surrounding the shaft or axle, and of greater internal diameter than the shaft or axle, and having bosses that project into said wheel-chambers, and a set of compressible, resilient rings in each of said chambers through which the corresponding boss projects.

25. The combination with a rotatable member having one or more chambers, and a set of side-by-side resilient rings in each chamber, of an operating member provided with one or more bosses that project through the set or sets of rings in said chamber or chambers.

26. The combination with a rotatable member having a plurality of cylindrical chambers and a set of side-by-side resilient rings in each of said chambers, of an operating member having bosses that severally project through the sets of rings in said chambers.

816,611. **FLEXIBLE CONNECTION AND SUSPENSION DEVICE FOR GEARLESS MOTORS.** ROBERT SIEGFRIED, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 22, 1905. Serial No. 261,873.



Claim.—1. The combination with a truck-axle and a wheel therefor, provided with a cylindrical chamber, the axis of which is substantially parallel to the axis of the wheel, of a motor-armature having a quill or sleeve provided with a boss that projects into the wheel-chamber, and compressible, resilient means interposed between the bosses and the circumferential wall of its chamber.

2. The combination with a truck-axle and a wheel therefor, provided with a set of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a quill or sleeve provided with a set of cylindrical bosses at one end that project into the wheel-chambers, and a resilient, cushioning means interposed between each boss and the surrounding wall of its chamber.

3. The combination with a truck-axle and a wheel therefor, provided with a set of chambers, of a quill or sleeve loosely surrounding the axle and provided with bosses that project from one end into the corresponding wheel-chambers, and a helical spring interposed between each of the bosses and the surrounding wall of its chamber.

4. The combination with a truck-axle and a wheel therefor, provided with a cylindrical chamber, of a quill or sleeve loosely surrounding the axle and provided with a cylindrical boss that projects into the wheel-chamber, and a helical spring surrounding the boss, each turn of which is offset from the adjacent turns so that no two adjacent turns make either internal or external contact at corresponding points.

5. The combination with a truck-axle and a wheel therefor, having a set of cylindrical chambers, of a motor-armature, a sleeve or quill therefor, that loosely surrounds the axle, and is provided with a set of bosses that project into the wheel-chambers, a helical spring surrounding each of the bosses, each turn of which is offset from the adjacent turns so that no two adjacent turns make either internal or external contact at corresponding points, and means for retaining each spring in position on the corresponding boss.

6. The combination with a truck-axle and a wheel therefor, having a cylindrical chamber, of a motor-armature having a sleeve or quill loosely surrounding the axle, and provided with a hollow cylindrical boss that projects into the wheel-chamber, a helical spring that surrounds the said boss and is so formed that each turn of the helix is offset from the adjacent turns, and means within the hollow bosses for lubricating the springs.

7. The combination with a truck-axle and a wheel therefor, having a plurality of cylindrical chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill loosely surrounding the axle, and provided with hollow cylindrical bosses that project into the wheel-chambers, helical springs surrounding the respective bosses, each turn of each of which is offset from the adjacent turns so that each of the turns is eccentric with reference to the oth-

ers, and means located within each boss for providing lubricating material to the corresponding spring.

8. The combination with a truck-axle, and a wheel therefor, having a plurality of cylindrical chambers, of a quill or sleeve having a plurality of bosses that severally project into said chambers and a plurality of helical springs severally surrounding the bosses within the chambers and each having a plurality of consecutive turns each of which is eccentric with reference to the others, so that no two of the said consecutive turns engage either the chamber or the boss at corresponding points.

9. The combination with a wheel having one or more chambers offset from its axis and a driving member, the axis of which is normally coincident with that of the wheel and having one or more bosses that project into said chamber or chambers, of a helical spring surrounding said boss or each of them, each convolution of which is eccentric to adjacent convolutions.

10. The combination with a member having a cylindrical chamber and another member having a boss that projects into the chamber, of a helical spring surrounding the boss and interposed between the boss and the walls of the chamber, the spring being formed so that no two adjacent convolutions normally engage either the boss or the chamber-walls on a line parallel with the axis of the boss.

11. The combination with two rotatable members having normally coincident axes, one of said members having one or more chambers and the other having one or more corresponding bosses that project into said chamber or chambers, of a helical spring surrounding said boss or each of them, each convolution of which is eccentric with reference to adjacent convolutions.

12. The combination with a truck-wheel and its axle, of a motor-armature, a quill therefor that loosely surrounds the axle, yielding connections between the quill and the truck-wheel and a cushioning-ring interposed between the end of the quill and the truck-wheel.

13. The combination with a truck-axle and a wheel therefor, provided with a chamber, of a motor-armature having a quill or sleeve provided with a boss that projects into the wheel-chamber, and a compressible, resilient means that surrounds the boss within the chamber.

14. The combination with a truck-axle and a wheel therefor, provided with a set of chambers, of a quill or sleeve provided with a set of bosses at one end that project into the wheel-chambers, and a resilient cushioning means that surrounds each boss within its chamber.

15. The combination with a truck-axle and a wheel therefor, provided with a chamber, of a quill or sleeve loosely surrounding the axle and provided with a boss that projects into the wheel-chamber, and a helical spring surrounding the boss, each turn of which is offset from the adjacent turns so that no two adjacent turns make either internal or external contact at corresponding points.

16. The combination with a truck-axle and a wheel therefor, having a set of chambers, of a motor-armature, a sleeve or quill therefor, that loosely surrounds the axle, and is provided with a set of bosses that project into the wheel-chambers, a helical spring surrounding each of the bosses, each turn of which is offset from the adjacent turns so that no two adjacent turns make either internal or external contact at corresponding points, and means for retaining each spring in position on the corresponding boss.

17. The combination with a truck-axle and a wheel therefor, having a chamber, of a motor-armature having a sleeve or quill loosely surrounding the axle, and provided with a hollow boss that projects into the wheel-chamber, a helical spring that surrounds the said boss and is so formed that each turn of the helix is offset from the adjacent turns, and means within the hollow bosses for lubricating the springs.

18. The combination with a truck-axle and a wheel therefor, having a plurality of chambers, the axes of which are substantially parallel to the wheel-axis, of a sleeve or quill loosely surrounding the axle, and provided with hollow bosses that project into the wheel-chambers, helical springs surrounding the respective bosses, each turn of each of which is offset from the adjacent turns so that each of the turns is eccentric with reference to the others, and means located within each boss for providing lubricating material to the corresponding spring.

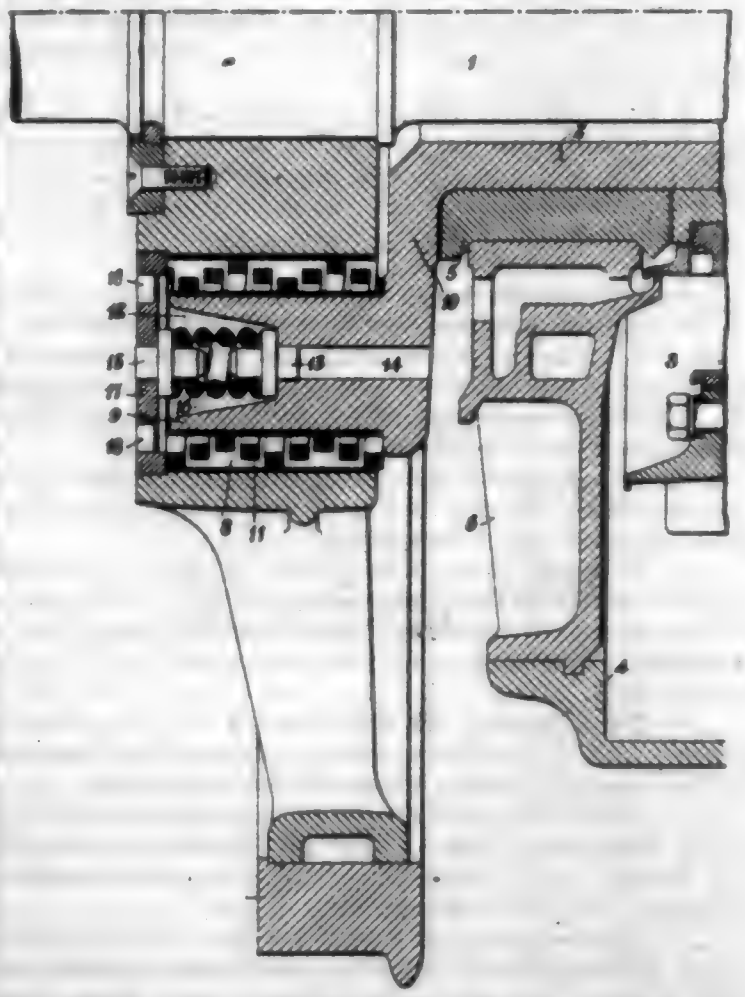
19. The combination with a truck-axle, and a wheel therefor, having a plurality of chambers, of a quill or sleeve having a plurality of bosses that severally project into said chambers and a plurality of helical springs severally surrounding the bosses within the chambers and each having a plurality of consecutive turns each of which is eccentric with reference to the others, so that no two of the said consecutive turns engage either the chamber or the boss.

20. The combination with a wheel having one or more chambers offset from its axis and a driving member, the axis of which is normally coincident with that of the wheel, and having one or more bosses that project into said chamber or chambers, of a resilient cushion surrounding said boss, or each of them.

21. The combination with a member having a chamber and another member having a boss that projects into the chamber, of a helical spring surrounding the boss and interposed between the boss and the walls of the chamber, the spring being formed so that no two adjacent convolutions normally engage either the boss or the chamber-walls on a line parallel with the axis of the boss.

22. The combination with two rotatable members having normally coincident axes, one of said members having one or more chambers and the other having one or more corresponding bosses that project into said chamber or chambers, of a resilient cushion surrounding said boss, or each of them.

816,612. **FLEXIBLE CONNECTION FOR GEARLESS MOTORS.** ROBERT SIEGFRIED, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Dec. 18, 1905. Serial No. 292,226.



Claim.—1. The combination with an axle having a wheel provided with a set of chambers, a quill or sleeve surrounding the axle and provided with bosses that project into the chambers, and resilient cushioning means that surround the bosses within the chambers, of resilient cushioning means between the ends of the bosses and the wheel.

2. The combination with an axle having a wheel provided with a set of chambers, a quill or sleeve surrounding the axle and provided with bosses that project into the chambers, and resilient cushioning means that surround the bosses within the chambers, of helical springs located between the ends of the bosses and the wheel, whereby the energy of relative axial motion of the wheel and quill may be absorbed.

3. The combination with an axle and a wheel mounted thereon that is provided with a set of chambers, of a quill or sleeve that surrounds the axle and is provided with recessed bosses that project into the chambers, resilient cushioning means surrounding the bosses within the chambers, sets of corresponding, oppositely-disposed projections at the ends of the chambers and at the bottoms of the recesses, respectively, and resilient means located within the recesses and supported in position by means of the projections.

4. The combination with an axle, a wheel mounted thereon that is provided with a set of chambers, a quill or sleeve surrounding the axle, bosses that project therefrom into the chambers and are provided with recesses, and resilient cushioning means surrounding the

bosses within the chambers, of sets of corresponding, oppositely-disposed projections at the ends of the chambers and at the bottoms of the recesses, respectively, and helical compression-springs that are located within the recesses and surround the projections.

5. The combination with an axle, a wheel mounted thereon that is provided with a set of chambers, a quill or sleeve surrounding the axle, bosses that project therefrom into the chambers and are provided with recesses, and resilient cushioning means surrounding the bosses within the chambers, of sets of corresponding, oppositely-disposed and removable projections at the inner ends of the chambers and at the bottoms of the recesses, respectively, and helical springs that are located within the recesses and surround the projections.

6. The combination with a member having a chamber, another member having a boss that projects into the chamber and is provided with an end recess, and a resilient cushioning means surrounding the boss within the chamber, of a resilient cushioning means between the two members that is located in the recess in the boss.

7. The combination with a member having a chamber, another member having a boss that projects into the chamber and is provided with an end recess, of corresponding, oppositely-disposed projections at the end of the chamber and at the bottom of the recess, respectively, and a resilient cushioning means between the members that is located within the recess and that is supported in position by means of the projections.

8. The combination with a member having a chamber, another member having a boss that projects into the chamber and is provided with an end recess, of corresponding, oppositely-disposed projections at the end of the chamber and at the bottom of the recess, respectively, and a helical spring that is located within the recess and surrounds the projections.

9. The combination with a member having a chamber, another member having a boss that projects into the chamber and is provided with a recess, of corresponding, oppositely-disposed and removable projections at the end of the chamber and at the bottom of the recess, respectively, and a helical spring that is located within the recess and surrounds the free ends of the projections.

10. The combination with a wheel and its axle, of a quill that loosely surrounds the axle, and cushioning means interposed between the end of the quill and the wheel.

11. The combination with a wheel and its axle, of a quill that loosely surrounds the axle, a dynamo-electric machine that is mounted thereon, resilient connections between the quill and the truck-wheel and cushioning means interposed between the end of the quill and the wheel.

12. The combination with a wheel and its axle, of a quill that loosely surrounds the axle, and means for absorbing the energy of relative longitudinal motion between the axle and the quill.

13. The combination with a wheel and its axle, of a quill that loosely surrounds the axle, a resilient coupling between the quill and the wheel, and resilient means for opposing relative endwise movement of the shaft and the quill.

14. The combination with a wheel and its axle, of a quill that loosely surrounds the axle, a multiple spring-coupling between the quill and the wheel and a spring cushioning means between the quill and the wheel to oppose relative endwise movement of said parts.

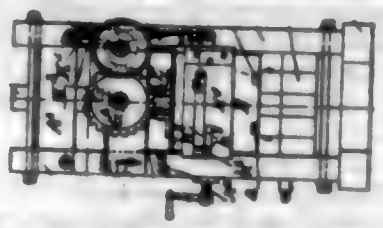
15. The combination with an axle, and a wheel therefor having chambers, of a quill having bosses that project into said chambers, springs surrounding said bosses, and spring cushioning means for opposing relative endwise movement of the quill and the wheel.

16. The combination with a member having a chamber that is open at one end, another member having a boss that projects into the chamber through the open end, and a resilient cushioning means surrounding the boss within the chamber, of resilient cushioning means between the end of the boss and the inner end of the chamber.

17. The combination with a rotatable member having a chamber that is open at one end, another rotatable member having a boss that projects into the chamber through its open end, and a resilient cushioning means that surrounds the boss within the chamber, of a resilient cushioning means between the end of the boss and the inner end of the chamber.

816,613. MACHINE FOR MAKING CEMENT BLOCKS. EMANUEL SILVA and JAMES O. SILVA, Springfield, Ill. Filed Oct. 13, 1904. Serial No. 228,267.

Claim.—1. In an apparatus of the class described, the combination of a main structure having a bed, a platform traveling on said bed, means for propelling said platform, a stationary plate alongside of said platform, gates connected with said stationary plate, a clamping-plate parallel to said stationary plate, means for moving said clamping-plate relative to said stationary plate and means for connecting said gates with said clamping-plate so as to permit movement of said clamping-plate between said gates, as set forth.



2. In an apparatus of the class described, the combination of a main structure, a movable platform on the main structure, a fixed plate alongside of said platform, a movable clamping-plate parallel to said fixed plate, means for moving said clamping-plate, gates mounted on said fixed plate and detachably connected with said clamping-plate, a mold fitting between said fixed plate and said clamping-plate and between said gates, means for holding said mold against movement between said gates and means for applying pressure to the contents of said mold, as set forth.

3. In an apparatus of the class described, the combination of a main frame, a bed on the main frame having longitudinal guides, a shaft transverse to said bed, a spool secured on said shaft, a platform slidable on said bed, cords connecting said platform with said spool, a mold-containing device mounted above said platform, a mold in said mold-containing device, means for applying lateral pressure to said mold, and means for applying pressure to the contents of said mold, as set forth.

4. A mold-containing device, consisting of a fixed member, a movable member parallel to said fixed member and movable toward or away from said fixed member, means for moving said movable member, gates at the end of said mold-containing device and latches connecting said gates with the movable member of said mold-containing device so as to permit transverse movement of said movable member; in combination with a mold-supporting device, a mold, and means for applying pressure on the material contained in said mold, as set forth.

5. In a mold-containing device, the combination of a stationary side piece, a transversely-movable side piece parallel to said stationary side piece, gates mounted on said stationary side piece and having L-shaped slots, latches mounted on said gates, hooks secured on said movable side piece and projecting through and slidable in the L-shaped slots through said gates, said latches engaging with said hooks, to secure said gate, as set forth.

6. In an apparatus of the class described, the combination of a main frame, a mold-containing device mounted thereon and having a clamping-plate movable relative to the mold, guide-rods secured on said clamping-plate at right angles thereto, stationary guides in which said guide-rods travel, and a screw connected with and adapted to move said clamping-plate inwardly or outwardly, as set forth.

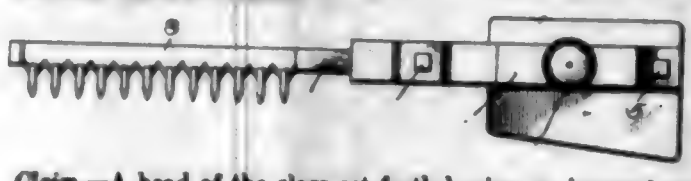
7. In an apparatus of the class described, the combination of a main frame, a platform traveling on the main frame, a mold-containing device above said platform, a screw-shaft mounted on the main frame, nuts traveling on said screw-shaft, a slidable platen, toggle-arms connecting said platen with said nuts; a vertical bar secured centrally on said platen, a stationary plate supported on the main frame and guiding said bar, toggle-arms connecting said stationary plate with said nuts, and means for turning said screw-shaft, as set forth.

8. In an apparatus of the class described, the combination of a main frame, a platform traveling on the main frame, a mold-containing device above said platform, a slidable platen, a vertical bar secured on said platen, a stationary plate guiding said bar, a screw-shaft having right-hand and left-hand threads and mounted to turn in bearings on the main frame, nuts traveling on said screw-shaft, toggle-arms connecting said nuts with said platen and said stationary plate, a cog-wheel and a cog-pinion secured on the screw-shaft, a rotating counter-shaft supported on the main frame and a pulley supported on said counter-shaft, cog-pinions loose on said counter-shaft and having clutch members, a clutch member slidable on the counter-shaft and engaging with the clutch members of said pinions, and an intermediate pinion intermeshing with a cog-pinion on the counter-shaft and the cog-pinion on the screw-shaft, as set forth.

9. A core-lifting device consisting of a stem having a spear-head, in combination with a core-block on which said stem is secured, a vertically-movable platen having an opening accommodating said spear-head, and doors mounted on said platen and operated by said spear-head, as set forth.

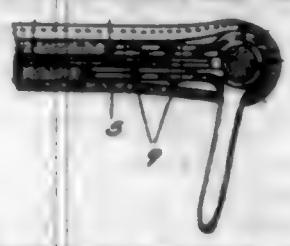
10. In an apparatus of the class described, the combination of a mold, a core-block usable with said mold, a stem secured on said core-block and having a spear-head, a slidable platen having an opening accommodating the head of said stem and gravitating doors mounted on said platen above the opening through said platen and separated a suitable distance to permit the withdrawal of the spear-head between said doors and through the opening in the platen when the core-block is turned at right angles to its original position, as set forth.

816,614. HEAD FOR REAPER OR MOWER BLADES. MADISON SMITH and JOSEPH P. PARTENHEIMER, Princeton, Ind. Filed Oct. 31, 1905. Serial No. 285,260.



Claim.—A head of the class set forth having an integral construction and formed with a rectangular bore extending longitudinally through the lower portion thereof completely from end to end of the head, a blade-carrying shank rectangular in cross-section and inserted longitudinally and adjustably in the bore, and set-screws projecting downwardly from the top of the head and communicating with the bore in the lower portion of the latter to engage the shank, said set-screws being located adjacent to opposite ends of the head to provide a double fastening for the shank and permit the latter to be adjusted with respect to the head.

816,615. CHEEK-PIECE FOR BRIDLE-BITS. NEIL STALKER, West Hartford, Conn. Filed June 8, 1905. Serial No. 264,255.



Claim.—A bridle-bit cheek-piece consisting of an annular body with a ring-opening, a pair of yielding jaws integral with and extending outwardly from the body and having rivet-perforations, and a cheek-finger integral with and curving rearwardly and downwardly from the body, substantially as specified.

816,616. CONVERTIBLE SOFA AND TABLE. NATHANIEL B. STONE, Outlook, Wash. Filed Sept. 16, 1903. Renewed Aug. 26, 1905. Serial No. 275,979.



Claim.—1. In a convertible table and sofa, the combination with a base member having a seat and upstanding arms, of a table member that swings between an upright position behind the base member and a substantially horizontal position upon the arms of said member, and an intermediate device having fixed pivotal connections at its ends with the base member below the arms and fixed pivotal connections at its ends with the longitudinal central portion of the table member, said latter pivotal connections being disposed above the former and at the rear upper corners of the arms when the table member is in its rearmost position to permit said table member to be swung over the arms prior to the movement of the said intermediate device.

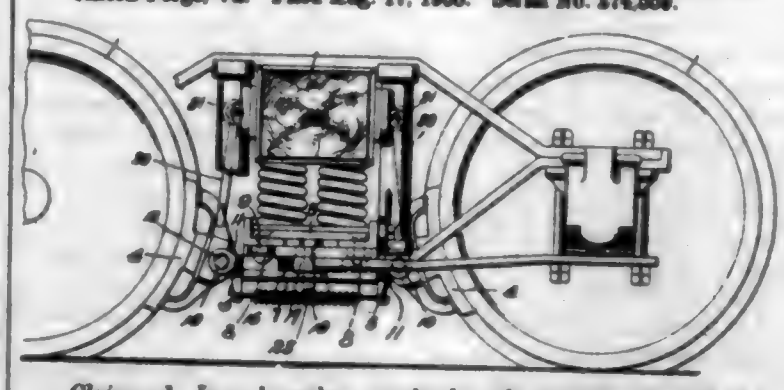
2. In an article of furniture of the class described, the combination with a seat member having a seat and upstanding arms at the ends of said seat, of a table member arranged to rest flat upon the arms over the seat and movable to an upright position behind said seat member, a rock-shaft journaled on the seat member contiguous to the rear side of the same beneath the seat and between the arms, and links rigidly attached to the rock-shaft and having pivotal connections with the table member, said pivotal connections, when the links are in their rearmost position, being located at the upper rear corners of the arms and permitting the swinging of the table member from an upright to a horizontal position independently of the movement of the links.

3. In an article of furniture of the class described, the combination with a seat member, of a table member adapted to swing behind the seat member and also rest thereon, spaced links connecting the seat member and table, and a removable back having detachable connections with the links and covering the same when in place.

4. In an article of furniture of the class described, the combination with a seat member having upstanding arms, of a table member adapted to swing upon the arms and behind the seat member, spaced links connecting the seat member and table and arranged between the arms, a removable back adapted to fit between the arms in advance of the links, and spring-clips for detachably connecting the back to the links.

5. In an article of furniture of the class described, the combination with a seat member having upstanding arms, of a table member adapted to swing behind the seat member and also rest upon the arms, spaced links connecting the seat member and table member and located between the same, and a removable back arranged to fit between the arms and rest against the links, said links constituting supports for said back.

816,617. BEAMLESS CAR-BRAKE. GEORGE W. SWISHER, Clifton Forge, Va. Filed Aug. 17, 1905. Serial No. 274,559.



Claim.—1. In a beamless car-brake, the combination of the spring-bolster of the truck, a box secured to the under side thereof, having a longitudinal slideway, transverse horizontal slot, and vertical elongated pin-opening, plungers mounted in the slideway of the box and provided with perforated bifurcated outer ends, and oppositely-beveled inner ends providing bearing ends spaced apart transversely as well as longitudinally in the box, brake-shoes pivotally connected to said outer ends of the plungers, a controlling-lever working in the slot of the box between the beveled ends of the plungers and impinging the same, and a retaining-pin passing through the lever and working in the elongated pin-opening of the box, substantially as set forth.

2. In a beamless car-brake, the combination of the spring-bolster of the truck, a box secured thereto having a longitudinal slideway, transverse horizontal slot, and vertical elongated pin-opening, plungers mounted in the slideway of the box and provided with oppositely-beveled inner ends providing bearings spaced apart both longitudinally and transversely of the box, brake-shoes connected to the outer ends of the plungers, a controlling-lever working in the transverse slot of the box between the beveled ends of the plungers and impinging the same, and a retaining-pin passing through the lever and working in the elongated pin-opening of the box, substantially as set forth.

3. In a beamless car-brake, the combination of a box adapted to be secured to a member of the car-truck and having a longitudinal slideway and transverse horizontal slot, plungers mounted in the slideway of the box and provided with oppositely-beveled inner ends, brake-shoes connected to the outer ends of the plungers, and a controlling-lever working in the slot of the box and lying in the plane of and between the beveled ends of the plungers, and impinging the same.

4. In a beamless car-brake, the combination of the box, the plungers adapted to slide in said box and carrying the brake-shoes, and a spreading means also provided with a bearing in said box entering between and bearing against said plungers.

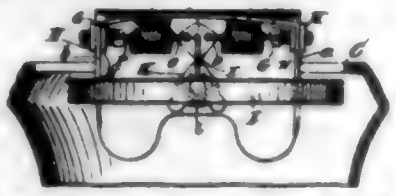
5. In a beamless brake employing a box having plungers sliding therein and carrying the brake-beams and a spreading-lever extending transversely through the box and operating upon the plungers; the herein-described plunger constructed with a beveled inner end providing a bearing-point at one side thereof and constructed for the attachment of the brake-shoe at its outer end.

6. In a beamless brake employing oppositely-sliding plungers and a lever working between said plungers for spreading the same; the herein-described box providing longitudinal sliding bearings for the plungers and a transverse slot in the plane of the plunger-bearings, to admit a controlling-lever.

7. In a beamless brake employing oppositely-sliding plungers and a lever working between said plungers for spreading the same; the herein-described box providing longitudinal sliding bearings for the plungers and a transverse slot in the plane of the plunger-bearings to admit a controlling-lever, and a vertical elongated pin-opening intersecting both the longitudinal slideway and the transverse slot.

8. In a beamless car-brake, the combination of the car-truck, brake-shoes and suspending and applying means mounted upon relatively fixed parts of the truck; said applying means comprising sliding plungers and a lever interposed between said plungers and having a direct bearing against each.

816,618. MARINER'S COMPASS. WILLIAM THOMSON, Largs, and FRANCIS W. CLARE, Glasgow, Scotland. Filed Oct. 3, 1903. Serial No. 175,711.



Claim.—1. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the compass-bowl within the binnacle, said means comprising a pair of horizontal spiral springs arranged approximately parallel to the top of the bowl and having connection with the binnacle and the bowl.

2. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the compass-bowl within the binnacle, said means comprising horizontal spiral springs arranged at opposite sides of the binnacle and having connection with the bowl.

3. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the bowl within the binnacle, said means comprising a pair of horizontal spiral springs connected with the binnacle, and a link connection between said springs, said link connection being provided with means for supporting the bowl.

4. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the bowl within the binnacle, said means comprising a pair of horizontal spiral springs, a link connection between said spiral springs, and a link connection between each spiral spring and the binnacle.

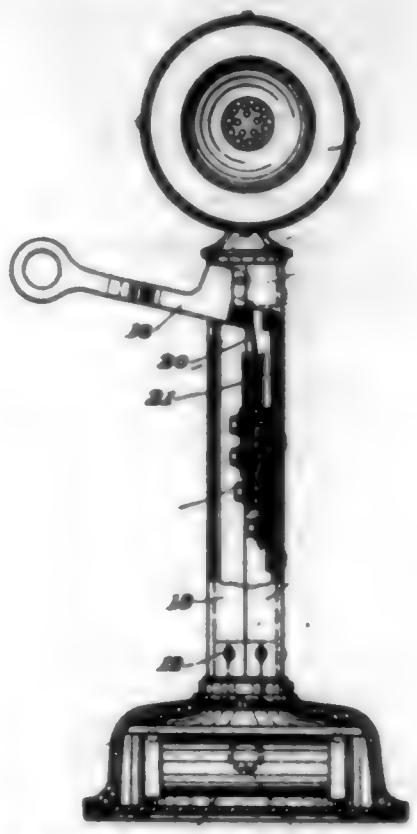
5. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the bowl within the binnacle, said means comprising a pair of horizontal spiral springs, a link connection between said spiral springs, and a link connection between each spiral spring and the binnacle, and means for straining said suspending means.

6. In a mariner's compass, the combination with the binnacle and the compass-bowl, of means for suspending the bowl within the binnacle, said means comprising a plurality of horizontal spiral springs, said springs being arranged in series on opposite sides of the binnacle, the springs of each series having link connection with the binnacle and link connection with each other, and the link connections between the springs being provided with means for supporting the bowl.

816,619. TELEPHONE DESK-STAND. HENRY TIDEMAN, Menominee, Mich. Filed Sept. 14, 1905. Serial No. 278,384.

Claim.—1. In a telephone desk-stand, a base, a cap, a web attached to said base and said cap and forming a part of the shaft connecting them, and a detachable plate forming the completing portion of the shaft between base and cap, substantially as described.

2. In a telephone desk-stand, a base, a cap, and a tubular shaft connecting said base and said cap and forming the structural supporting portion of the desk-stand between said base and said cap, said tubular shaft being formed of two parts, a fixed one and a detachable one, substantially as described.



3. In a telephone desk-stand, a base, a cap, a tubular shaft connecting said base and said cap and forming the structural supporting member of the desk-stand between said base and said cap, said tubular portion being formed of two parts, one fixed and one detachable, and an electrical switch mounted upon one of the parts of said tubular shaft, substantially as described.

4. In a telephone desk-stand, a base, a cap, a tubular shaft connecting said base and said cap and forming the structural supporting member of the desk-stand between said base and said cap, said tubular portion being formed of two parts, and an electrical switch mounted upon one of said parts, substantially as described.

5. In a telephone desk-stand, a base, a cap, a tubular shaft connecting said base and said cap and forming the structural supporting member between said base and said cap, said tubular member being formed of two parts, one fixed to base and cap and the other movable with reference to base, cap and fixed part; an electrical switch mounted upon the fixed part of said tubular shaft; and a receiver-hook lever pivotally sustained in said cap and adapted to operate said electrical switch, substantially as described.

6. In a telephone desk-stand, a base, a cap, a tubular shaft connecting said base and said cap and forming the structural supporting member of the desk-stand between base and cap, said tubular member being formed of two parts, one fixed to said base and said cap and the other movable with reference to said base, said cap and the fixed part; an electrical switch mounted upon one part of the tubular shaft; and a receiver-hook lever pivotally sustained in said cap and adapted to operate said electrical switch, substantially as described.

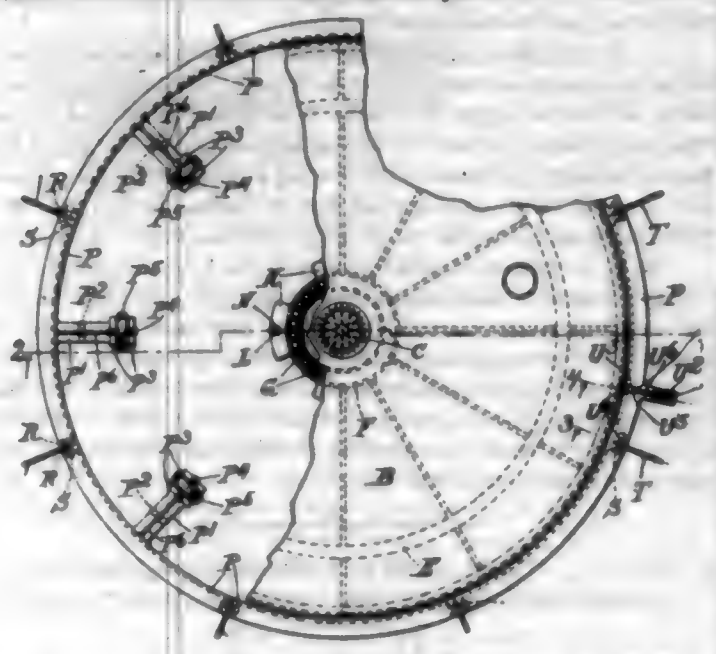
7. In a telephone desk-stand, a base, a cap, a tubular shaft connecting said base and said cap and forming the structural supporting portion of the desk-stand between said base and said cap, said tubular portion being formed of two parts; an electrical switch mounted upon one of the parts of said tubular shaft; and a receiver-hook lever pivotally sustained in said cap and adapted to operate said electrical switch, subtantially as described.

816,620. AUTOMOBILE TURN-TABLE. EDWARD A. TURNER, Chicago, Ill. Filed Aug. 7, 1905. Serial No. 273,969.

Claim.—1. A turn-table for automobiles and the like comprising a rotatable water-shedding wash-platform with a pit adapted to receive and collect such water, a discharge connection leading from the pit and suitable devices on which the table is mounted above and in association with the pit.

2. A turn-table for automobiles and the like comprising a rotatable dish-shaped water-shedding wash-platform with a pit having a water-collecting bottom and adapted to receive and collect such water, a discharge connection leading from the lowest point of such pit and suitable devices on which the table is mounted above and is associated with the pit.

3. A turn-table for automobiles and the like comprising a rotatable dish-shaped water-shedding wash-platform having a central aperture, with a pit having a dish-shaped bottom, and adapted to receive and collect such water, a discharge connection leading from the lowest point of said pit, and suitable devices on which the table is mounted above and in association with the pit.



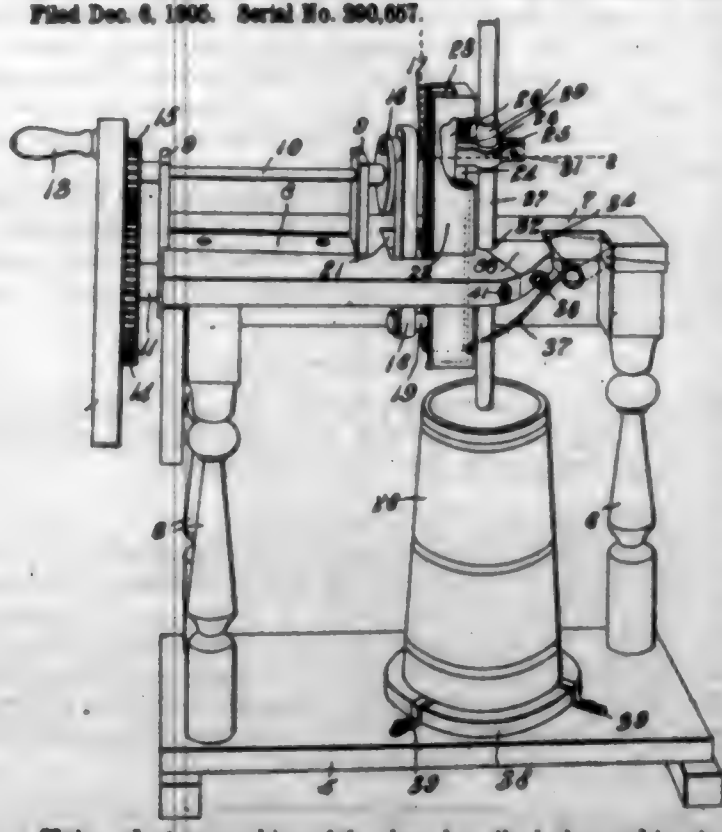
4. A turn-table for automobiles comprising a pit with a series of angular curved rim-pieces thereabout, inwardly-projecting arms from such rim-pieces, wheels supported on said arms and a platform rotatably mounted above said wheels.

5. A turn-table for automobiles comprising a pit, a central pedestal with open sides rising therein, anchors therefor embedded in the floor of the pit, a raceway for balls in the top of the pedestal and a rotatable platform mounted upon said balls.

6. A turn-table for automobiles comprising a pit, a central hollow cylindrical pedestal rising therein, anchors therefor embedded in the floor of the pit, a raceway for balls in the top of the thimble and a rotatable platform mounted upon said balls said pedestal provided with openings in its sides, and said pit provided with a central discharge-aperture beneath the thimble.

7. A turn-table for automobiles comprising a rotary platform with a pit and suitable supporting parts, said pit provided with a series of angular curved rim-pieces which are flanged at their adjacent ends, a cross-bolt through the flanges, and an anchor-piece connected with said bolt and embedded in the wall of the pit.

816,621. CHURNING-MACHINE. HENRY L. VAN DUMEN, Lockhart, Tex., assignor of one-half to Robert W. Boyd, Lockhart, Tex. Filed Dec. 6, 1905. Serial No. 290,657.



Claim.—1. In a machine of the class described, the combination with a base adapted to support a churn, of a table secured to and spaced from the base and provided with an opening for the reception of the churn-dasher, a block pivoted to the table and forming one wall of the dasher-receiving opening, and means for reciprocating the dasher, there being a recess formed in the table adapted to receive the pivoted block when moved to open position.

2. In a machine of the class described, the combination with a base adapted to support a churn, standards secured to the base and arranged in substantially triangular form, a table-top secured to the standard and having one end thereof reduced and provided with an opening for the reception of the churn-dasher, a block pivoted to the table-top and forming one wall of the dasher-receiving opening, and means for reciprocating the dasher, there being a recess formed in the reduced end of the table-top for the reception of the pivoted block when the latter is moved to open position.

3. In a machine of the class described, the combination with a base adapted to support a churn, of a table secured to and spaced from the base and provided with an opening for the reception of the churn-dasher, a guiding member secured to the table, a slide mounted for vertical movement in the guiding member and provided with a fixed and movable clamping member for engagement with the churn-dasher, means for reciprocating the slide, and a block pivoted to the table and forming one wall of the dasher-receiving opening.

4. In a machine of the class described, the combination with a base adapted to support a churn, of a table secured to and spaced from the base and provided with an opening for the reception of the churn-dasher, a guiding member supported by the table, a slide mounted for vertical movement in the guiding member and provided with a fixed and a movable clamping member for engagement with the churn-dasher, a block hinged to the table and forming one wall of the dasher-receiving opening, a spring engaging the table and slide, respectively, and means for reciprocating the slide.

5. In a machine of the class described, the combination with a base adapted to support a churn, of a table secured to and spaced from the base and provided with an opening for the reception of the churn-dasher, a guiding member supported by the table and provided with a dovetailed recess, a correspondingly-shaped slide mounted for vertical movement in the recess and provided with a fixed clamping member, a spring-clip secured to the fixed clamping member for holding the churn-dasher in engagement therewith, a screw engaging the free end of the clamping member and clip, a block pivoted to the table and forming one wall of the dasher-receiving opening, and means for reciprocating the slide.

6. In a machine of the class described, the combination with a base adapted to support a churn, of a table secured to and spaced from the base and provided with an opening for the reception of the churn-dasher, a guiding member secured to the table, a slide mounted for vertical movement in the guiding member and provided with means for engagement with the churn-dasher, a driving-wheel having a gear-wheel secured thereto and movable therewith, a bracket secured to the table, a shaft journaled in the bracket and provided with a pinion meshing with the gear-wheel, a crank-pin carried by the shaft, a pitman connecting the crank-pin and the slide, and a spring secured to the table and slide, respectively.

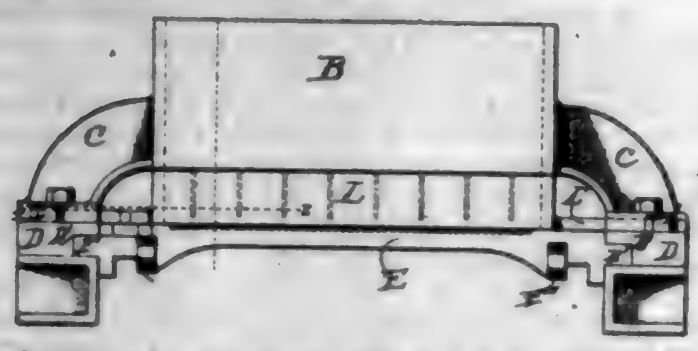
816,622. RETTING PROCESS FOR TEXTILE FIBERS. ACHILLE VAN STERKELEYN, Brussels, Belgium. Original application filed Feb. 14, 1902, Serial No. 94,089. Divided and this application filed Aug. 3, 1904. Serial No. 219,411.

Claim.—Process for retting textile fibers such as flax, hemp, jute and the like, characterized by the passage of the said fibers through a bath, the water of which has been raised to a temperature of about 95° to 100° centigrade by the introduction of steam, for the purpose of converting the pectin into parapectic acid, the operation in question being followed by the passage through a second bath maintained at a pressure of three atmospheres by the introduction of a current of steam, for the purpose of dissolving and discharging parapectic acid and of spreading uniformly throughout the fibers pectic acid finally dissolved, the latter operation being effected, if desired with the addition of substances intended to soften and to render the fibers supple, such as for instance glycerin or sulforicinate of sodium.

816,623. MATCH-MAKING MACHINERY. BERNARD G. VAUGHAN, Joliet, Ill., assignor of one-third to Fred Bennitt and one-third to Louis A. Sherwood, both of Joliet, Ill. Filed Aug. 4, 1904. Serial No. 219,562.

Claim.—1. In a machine of the class described, in combination, a bed-frame, a setting-head slidably mounted in said frame and hav-

ing grooves on its upper surface, said grooves being of greater depth at one end than at the other, and a follower slidably mounted in said frame having on its upper surface grooves continuous with the shallow portion of the grooves in said head and of the same depth as said shallow grooves, substantially as described.

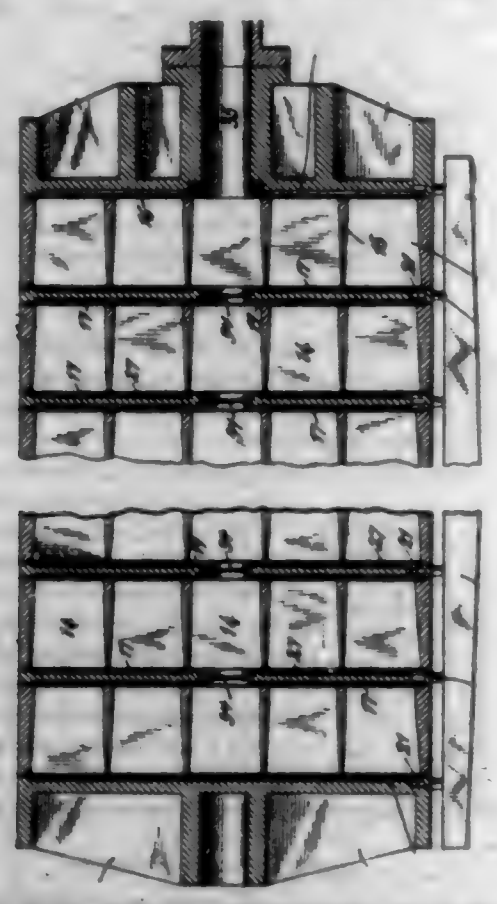


2. In a machine of the class described, in combination, a bed-frame, a loading-hopper mounted above said frame, a filling-hopper immediately beneath said loading-hopper and loadable therefrom and adapted to move across said frame, a splint-setting head adapted to move forward and back in said frame, said head being immediately below said filling-hopper and fillable therefrom, and a pivoted roller M upon said filling-hopper engaging with a curved slot on said head, substantially as described.

3. In a machine of the class described, in combination, a frame, a filling-hopper slidably mounted on said frame, a grooved splint-setting head slidably mounted on said frame and below said hopper, means for moving said head, and an actuating connection between said head and said hopper comprising a curved slot on said head engaging with a pivot on said hopper, said actuating connection being unconnected with said frame, substantially as described.

4. In a machine of the class described, in combination, a frame, a loading-hopper thereon, a filling-hopper slidable on said frame and forming a continuation of said loading-hopper, a splint-setting head having grooves on its upper surface, adapted to reciprocate on said frame and adapted to be filled by said filling-hopper, actuating means for said head, and a pivotal actuating connection between said head and said filling-hopper comprising a curved slot on said head engaging with a pivot on said hopper substantially as described.

816,624. MACHINE FOR MOLDING LUMP-STARCH. THEODORE B. WAGNER, Chicago, Ill. Filed Nov. 26, 1904. Serial No. 234,414.



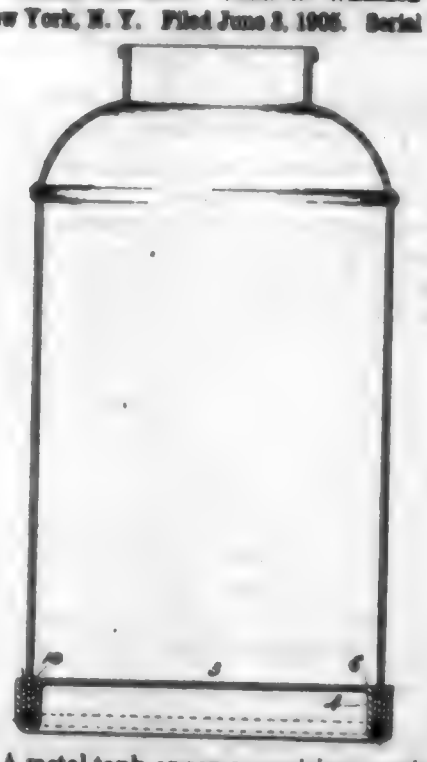
Claim.—1. In a machine for molding starch, the combination of one or more mold-plates containing cells; one or more filter-plates, means for clamping said mold-plates and filter-plates together; means for forcing starch-milk under pressure into the cells of the mold-plate or mold-plates; and means for carrying off the water expressed from the starch-milk, substantially as described.

2. In a machine for molding starch, the combination of (*a*) one or more mold-plates containing cells having tapering sides; (*b*) one or more filter-plates interposed between said mold-plates; (*c*) means for clamping said mold-plates and filter-plates together; (*d*) means for forcing starch-milk under pressure into the cells of the mold-plates; and (*e*) means for carrying off the water expressed from said starch-milk, substantially as described.

3. In a machine for molding starch, the combination of (*a*) one or more removable mold-plates containing cells having tapering sides; (*b*) one or more removable filter-plates interposed between said mold-plates; (*c*) means for clamping said mold-plates and filter-plates together; (*d*) means for forcing starch-milk under pressure into the cells of the mold-plates; and (*e*) means for carrying off the water expressed from the starch-milk, substantially as described.

4. In a machine for molding starch, the combination of (*a*) one or more removable mold-plates containing cells; (*b*) one or more removable filter-plates interposed between said mold-plates; (*c*) bars upon which the mold-plates and filter-plates are carried; (*d*) means for clamping said mold-plates and filter-plates together; (*e*) means for forcing starch-milk under pressure into the cells of the mold-plates; and (*f*) means for carrying off the water expressed from the starch-milk, substantially as described.

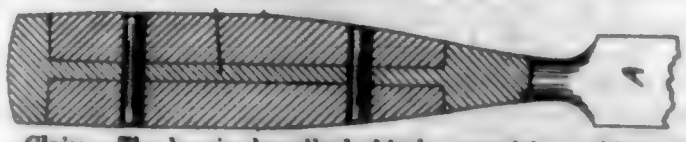
816,625. TANK OR CAN. JOHN W. WALLACE and HENRY A. KEMPF, New York, N. Y. Filed June 3, 1905. Serial No. 263,519.



Claim.—1. A metal tank or can comprising a main body, a bottom having an inner and outer flange a ring of greater thickness than the thickness of the material composing the body of the can placed in the bottom of the space between the flanges forming a base to and supporting the lower edge of the body and brazing metal or solder interposed between the main body of the can and the said flanges, substantially as described.

2. A metal tank or can comprising a main body, a bottom having an inner and outer flange, a ring formed with notches placed in the bottom of the space between the said flanges and brazing metal or solder interposed between the main body of the can and the said flanges, substantially as described.

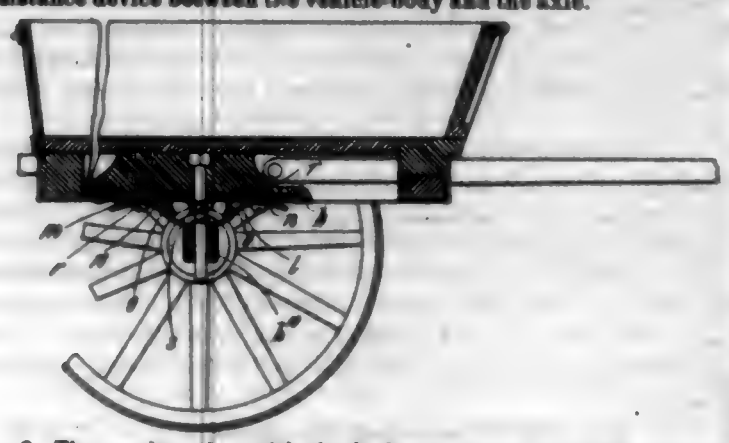
816,626. CARPENTER'S CHISEL. WILLIAM S. WARD, Plantsville, Conn., assignor to The H. D. Smith & Company, Plantsville, Conn. Filed June 26, 1905. Serial No. 267,376.



Claim.—The herein-described chisel, comprising a blade, bolster, flattened handle-web and solid cylindrical head all formed integral, and handle-scales secured on the opposite sides of the said flattened web, the said handle-web being arranged edgewise with reference to the broad sides of the chisel-blade.

816,627. CART. JOHN A. WATT, Halifax, Canada. Filed Jan. 31, 1905. Serial No. 243,469.

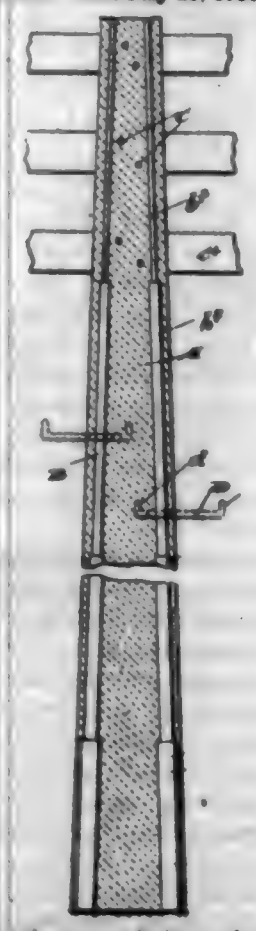
Claim.—1. The combination with the body portion of a vehicle and an axle having vertical perforations, of a pair of pins carried by the vehicle-body and projecting into the perforations, and a yielding resistance device between the vehicle-body and the axle.



2. The combination with the body portion of a vehicle and an axle having a pair of vertical perforations, of a pair of pins carried by the body and projecting into the perforations, a pair of bearing-plates upon the under side of the body one adjacent to each pin, a pair of bow-springs having their ends bearing slidably upon the bearing-plates and their convex sides in contact with the axle, and a pair of expansible helical springs bearing between the bearing-plates and the convex sides of the bow-springs.

3. The combination with the body portion of a vehicle and an axle having a pair of vertical perforations, of a pair of pins carried by the body and projecting into the perforations, a pair of slotted bearing-plates upon the under side of the body one adjacent to each pin, a pair of bow-springs having their ends bearing slidably upon the bearing-plates and their convex sides in contact with the axle, lugs carried by the bow-springs and having their ends located slidably in the slots in the bearing-plates and a pair of expansible helical springs bearing between the bearing-plates and the convex sides of the bow-springs.

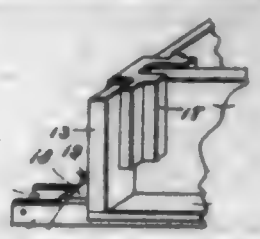
816,628. **ELECTRIC-TRANSMISSION POLE.** JOHN L. WELLER, St. Catharines, Canada. Filed July 20, 1904. Serial No. 218,099.



Claim.—In an electric-transmission pole, the combination with the main body of concrete, of a series of reinforcing rods or poles, each embedded longitudinally in the concrete and comprising several lengths of different sizes connected together end to end and located in proximity to the exterior of the pole, the cross-sectional area of each successive length decreasing from the bottom to the top of the pole as specified.

816,629. **KNOCKDOWN BOX.** JAMES J. WHITE, Chicago, Ill. Filed Jan. 5, 1905. Serial No. 239,744.

Claim.—1. In a knockdown box, in combination, sills, a bottom, sides and ends thereon, and clamps fastened to the sills and having arms which engage and support both the sides and ends of the box.



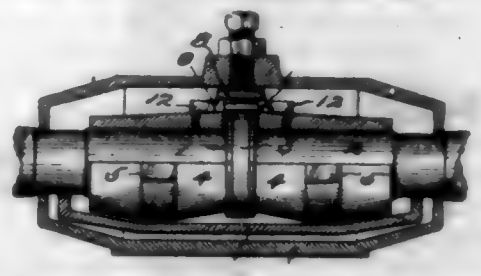
2. A corner-joint support for knockdown boxes, comprising a bracket having at the bottom a projecting foot and at the top overhanging and depending arms spaced from the body of the bracket and from each other and arranged to receive and support the sides and ends of the box in said spaces.

3. In a knockdown box, in combination, sills, bottom and side boards resting thereon, and clamps fastened to the sills and extending up on the outer side of said side boards and over the top and down on the inner side thereof, substantially as described.

4. The combination with the bottom, and side boards of a box, of sills under the box, and brackets clamped to the sills, having an upright body portion on the outer side of the side boards, and spaced arms depending on the inner side thereof, between which arms the ends of the adjoining side boards fit.

5. A knockdown box having sills, supporting-brackets for the sides and ends of the box, resting upon the sills, and inclined screws connected to the sills under the box and extending outwardly and upwardly through the brackets and constructed to bind the brackets to the sills.

816,630. **JOURNAL-BEARING.** PARDON A. WHITNEY, Southington, Conn. Filed June 29, 1905. Serial No. 267,545.



Claim.—1. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

2. The combination with a journal of a lubricating-ring a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, and a bed supporting the box, substantially as specified.

3. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, a bed supporting the box, and a cover secured to the bed, substantially as specified.

4. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, movable buttons on the top of the cap adjacent to the passages, and a box supporting the blocks, substantially as specified.

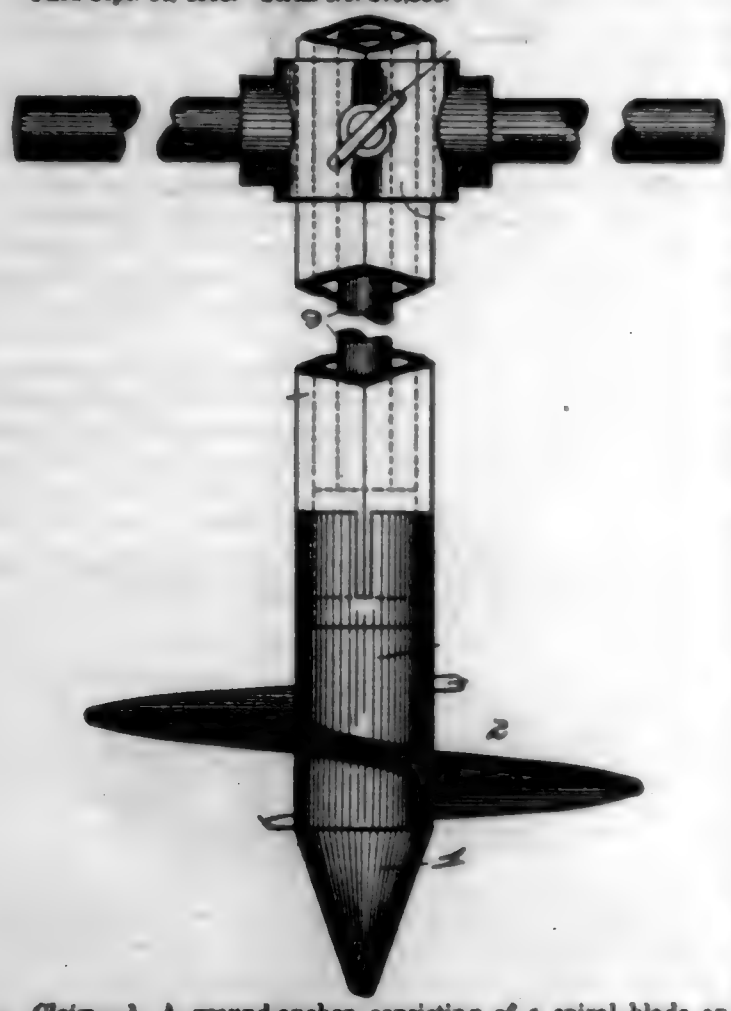
5. The combination with a journal of a lubricating-ring formed in sections and held to the journal by a spring-band, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

6. The combination with a journal of a lubricating-ring a pillow-block each side of the ring, a cap having inclined upper surfaces over the pillow-blocks and having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap ex-

tending from the passages to perforations through the cap, and a box supporting the blocks, substantially as specified.

7. The combination with a journal of a lubricating-ring, a pillow-block each side of the ring, a cap over the pillow-blocks having a recess for the ring and passages from the recess to the top of the cap, with ribs on the top of the cap extending from the passages to perforations through the cap, a box supporting the blocks, a bed supporting the box, a cover fastened to the bed, and a screw extending through the cover for holding the cap down to the journal, substantially as specified.

816,631. GUY-ANCHOR. CHARLES J. WIDNER, Sidney, Ohio. Filed Sept. 14, 1905. Serial No. 278,286.



Claim.—1. A ground-anchor consisting of a spiral blade arranged above the point of said anchor, the body of the anchor terminating at its upper end in a socket portion rectangular in cross-section with a shoulder therebelow, an anchor-rod attachable within said square portion, an eye detachably connected to said anchor-rod, and means for engaging the square portion of said anchor to insert the anchor in the ground.

2. In a ground-anchor, a spiral blade, a socket extension above said blade, an anchor-rod securable within said extension, a reinforcing member on said socket extension, and means engaging said reinforcing member for inserting the anchor in the ground.

3. In a ground-anchor, a spiral blade surrounding a cylindrical body above the point of the anchor, a socket extension projecting from said cylindrical body, an anchor-rod attachable within said body, a reinforcing member surrounding said socket extension and resting upon the cylindrical body, a sleeve engaging said reinforcing member, and a wrench engaging said sleeve, whereby means are provided for boring said anchor in the ground.

4. In a ground-anchor, a spiral blade, an integral extension above said blade, an anchor-rod projecting through said extension, a reinforcing member surrounding said extension, a sleeve engaging said reinforcing member, a wrench engaging said sleeve, and an eye adapted to be placed on the end of said anchor-rod for the guy-wire after the anchor has been inserted in the ground and the operating parts removed therefrom.

5. The combination with an anchor and a rod fixed with respect to and extending upwardly from the anchor, of an anchor-sinking device comprising a tubular portion adapted to receive the rod and provided with means for coöperating with means on the anchor and holding it against turning on the anchor, and means carried by said tubular portion for directly engaging the rod.

6. The combination with an anchor and a rod fixed with respect to and extending upwardly from the anchor, of an anchor-sinking device comprising a tubular portion adapted to receive the rod, and means carried by said tubular portion for directly engaging the rod and fixing the tubular portion with respect thereto.

7. The combination of an anchor, a rod extending upwardly from the anchor and having a shouldered portion disposed in the anchor, means in the anchor arranged to coöperate with the shouldered portion of the rod to prevent withdrawal of the rod from the anchor, and an anchor-sinking device comprising means for directly engaging the rod.

8. The combination of an anchor, a rod extending upwardly from the anchor and having a shouldered portion disposed in the anchor, means in the anchor arranged to coöperate with the shouldered portion of the rod to prevent withdrawal of the rod from the anchor, and an anchor-sinking device comprising a tubular portion adapted to receive the rod and provided with means for coöperating with means on the anchor and holding it against turning on the anchor, and means carried by said tubular portion for directly engaging the rod.

9. The combination of an anchor having a spiral blade and a socket extension above said blade and also having a bore or socket and an integral shoulder in said bore or socket, a rod extending upwardly from the anchor and having a shouldered portion disposed in the bore or socket thereof below the shoulder in said bore or socket, a tube surrounding the rod, and coöperating means on the tube and the anchor for holding the former against turning on the latter.

10. The combination of an anchor, a rod fixed to and extending upwardly from the anchor, and an anchor-sinking device having means for directly engaging the rod.

816,632. APPARATUS FOR DISPLAY ADVERTISING. ELMORE O. WILCOX, Cleveland, Ohio. Filed Nov. 6, 1903. Serial No. 180,130.



Claim.—1. In a machine for display advertising and the like, a series of endless conveyers parallel with each other, a series of panels pivotally connected with each of said conveyers, means to reverse said panels on their pivots, and means adapted to lock each panel against rotation on its pivots at a predetermined point in its travel.

2. A display-machine for advertising and the like, comprising parallel sets of endless conveyers and a series of perpendicularly-disposed panels pivotally mounted on each set of conveyers, supplementary traveling supports to sustain the weights of each panel, and means adapted to lock each panel against rotation on its pivot at a predetermined point in its travel.

3. A machine as described comprising a series of upright panels and endless connections flexibly uniting said panels, a floor supporting said panels and wheels around which said endless connections travel and rotatable parts between said connections adapted to keep the panels in right traveling relations, substantially as described.

4. A series of panels set endwise and endless chains in which the said panels are rotatably pivoted at each end, rollers on said chains adapted to support the weight of each panel in its travel, a support over which said rollers are adapted to ride, and a locking device adapted to rigidly hold each panel against pivotal rotation at a predetermined point in its travel.

5. In a machine for display advertising, a series of panels and supports for the panels having holes centrally disposed, endless chains for conveying said panels, spindles on said chains loosely engaged in said holes and rollers on said spindles to carry the panels, a support for said rollers, a set of sprocket-wheels for said chains, and a member on one of said sets of wheels adapted to lock each panel against rotation on its respective spindles when opposite thereto.

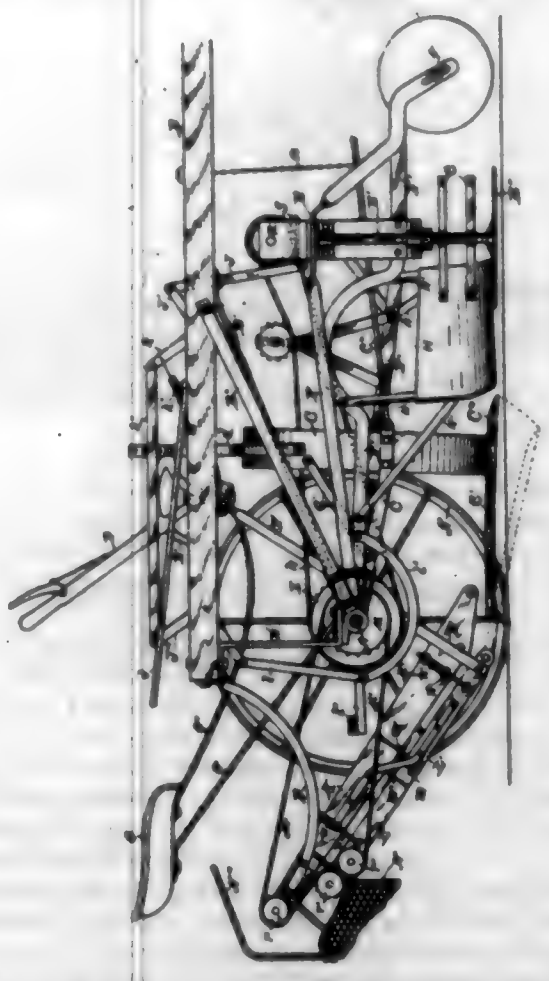
6. The combination of the main frame, a plurality of sets of perpendicularly-disposed rotatable panels arranged side by side transversely of said frame, endless chains pivotally uniting the upper and lower ends of each set of panels, a floor and rollers to sustain the weight of each individual panel thereon, means connected with each

set of panels to aline corresponding panels in the several sets at the front of the machine and thus produce a complete exhibiting-surface, and means to hold each panel against rotation on its pivot during part of its travel.

7. In a display advertising-machine, a series of display-panels, cross-bars supporting the lower ends of said panels, and a spindle and roller member for each cross-bar, in combination with endless flexible connections engaging said spindle and roller member, and a rotating support for said connections having an interlocking member adapted to engage and hold each cross-bar against rotation on its spindle.

8. In a display advertising-machine, a series of display-panels and rigid pieces across the ends of said panels top and bottom, chains connecting said pieces having pivot connections centrally with said pieces, wheels carrying said chains, and interlocking members on said wheels and rigid pieces respectively constructed to aline said panels at the front of the machine, substantially as described.

816,633. **BEET-HARVESTING MACHINE.** CLARENCE L. WESTERBURN, Kalamazoo, Mich., assignor, by direct and mesne assignments, of two-thirds to William H. Engel, Kalamazoo, Mich., and Willis H. Deal, Ostosso, Mich. Filed Jan. 12, 1903. Serial No. 138,660.



Claim.—1. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms, pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; means for adjusting said pulling device; all coacting for the purpose specified.

2. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; means for adjusting said pulling device; all coacting for the purpose specified.

3. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; means for adjusting said pulling device; all coacting for the purpose specified.

4. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; a pulling device arranged at the rear of said deflector; a support therefor, pivotally supported on said axle; means for adjusting said pulling device; all coacting for the purpose specified.

5. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; all coacting for the purpose specified.

6. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets, all coacting for the purpose specified.

7. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; a guide-wheel for said topping-frame; means for raising and lowering said topping-frame; all coacting for the purpose specified.

8. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; a driving-shaft; gear connections from said driving-shafts to said disk-shafts; sprocket-wheels on said axle and driving-shaft; a sprocket-chain therefor; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; and radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; all coacting for the purpose specified.

9. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair

of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; driving connections from said axle to said shafts; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; and means for adjusting said pulling device, all coacting for the purpose specified.

10. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; driving connections from said axle to said shafts; means for raising and lowering said topping-frame; a moldboard-like deflector carried by said arms, arranged at the rear of said cutting-disks; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; and means for adjusting said pulling device, all coacting for the purpose specified.

11. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; driving connections from said axle to said shafts; means for raising and lowering said topping-frame; radially-projecting arms on one of said disk-shafts adapted to engage the severed tops of the beets; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; and means for adjusting said pulling device, all coacting for the purpose specified.

12. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; driving connections from said axle to said shafts; means for raising and lowering said topping-frame; a pulling device arranged at the rear of said deflector; a support therefor pivotally supported on said axle; and means for adjusting said pulling device, all coacting for the purpose specified.

13. In a beet-harvesting machine, the combination of an axle; wheels for supporting and driving the same; a main frame having journal-boxes for said axle; forwardly-extending arms pivotally supported on said axle; a topper-frame carried by said arms; a pair of vertically-arranged shafts; cutting-disks on the lower ends of said shafts; and an adjustable guide-wheel for said topping-frame, all coacting for the purpose specified.

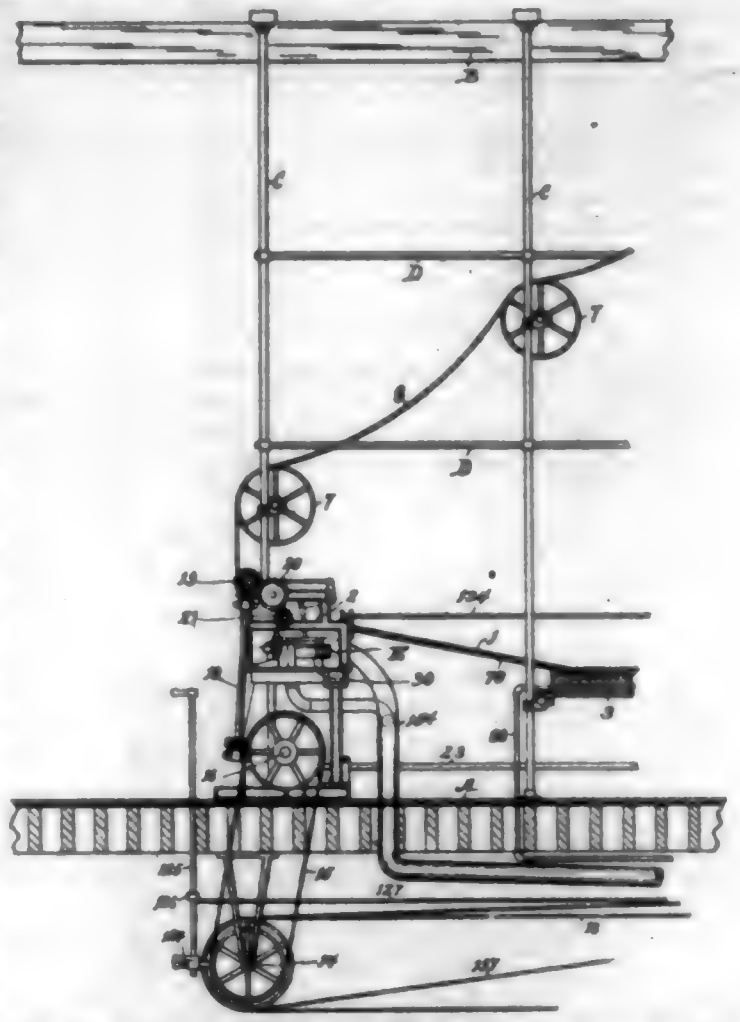
14. In a machine of the class described, the combination of a frame; carrying-wheels; an axle therefor; a topper device; forwardly-projecting arms pivotally secured to said axle by which said topper device is carried; means for raising and lowering said topper device; a pulling device arranged to the rear of said topper device; carrying-arms therefor pivotally secured to said axle; means for adjusting said pulling device; and a draft-rod connected to the carrying-arms of said pulling device, for the purpose specified.

15. In a machine of the class described, the combination of a frame; carrying-wheels; an axle therefor; a topper device; forwardly-projecting arms pivotally secured to said axle by which said topper device is carried; means for raising and lowering said topper device; a pulling device arranged to the rear of said topper device; carrying-arms therefor pivotally secured to said axle; and means for adjusting said pulling device, for the purpose specified.

816,634. MATCH-MACHINE. WILLIAM H. WYMAN, Oshkosh, Wis., assignor, by mesne assignments, to Union Match Company, Duluth, Minn., a Corporation of Minnesota. Filed Apr. 3, 1899. Serial No. 711,582.

Claim.—1. In a match-machine, the combination of a vertically-reciprocable stick-cutting and stick-sticking head provided at its front with a vertically-disposed grooved guide-plate face and with cutter-bar grooves extending rearwardly from the front and inclined downwardly rearwardly, and cutter-bars having cutters at their ends about apertures transversely through the bars substantially at right angles to the length of the bars, said bars being secured to the cutter-head in said oblique grooves, the cutter-bars and the cutter-bar apertures being at oblique angles to the motion of the cutter-head and to the grooved face of the cutter-head so that sticks cut by the cutters and forced through the cutter-bar apertures are thrust at an oblique angle against the guide-face.

2. In a match-machine, the combination with a frame having horizontally-disposed ways above a composition-roller, and a flexible stick-carrying carrier normally supported and adapted to travel on said ways, of means for raising said carrier temporarily from the ways, comprising a rock-shaft above said carrier, radial depending arms on said rock-shaft provided with rollers under the carrier, and a rod attached to a radial arm on the rock-shaft by which the shaft can be oscillated and the carrier raised.



3. In a match-machine, the combination with a frame provided with fixed horizontally-disposed ways and a flexible stick-carrying carrier supported and traveling thereon, of a composition-supplying roller mounted below and adjacent to said carrier, a composition-pan in which said roller is mounted rotatably and removably, said pan being supported and slidable endwise on the frame from beneath the carrier, and means for lifting the carrier temporarily from the ways and away from the composition-roller.

4. In a match-machine, the combination with a driven shaft, an adjacent shaft in the same axial line, and a pawl on one of said shafts engaging a ratchet-wheel on the other shaft providing for slip motion in one direction, of a chain belt running on the second-named shaft and on a wheel loose on a shaft connected operatively to the composition-manipulating mechanism, said last-mentioned shaft, and a pawl and ratchet connecting said shaft and loose wheel thereon operatively in one direction.

5. In a match-machine, the combination with a driven shaft, an adjacent shaft in the same axial line, and a pawl on one of said shafts engaging a ratchet-wheel on the other shaft providing for slip motion in one direction, of a chain belt running on the second-named shaft and on a wheel loose on another shaft connected operatively to the composition-manipulating mechanism, a third shaft geared to the second-named shaft, a fourth shaft geared by a worm to said third shaft, and a belt connecting the fourth shaft operatively to a driving-shaft other than the one to which the first-named shaft is geared.

6. In a match-machine, the combination with the main frame and a movable carrier thereon of an ejector-carrying ancillary frame reciprocable vertically on the main frame, a rock-shaft journaled in the main frame, arms projecting radially from the rock-shaft, blocks wristed on the radial arms of the rock-shaft, and screws adjustable in the blocks supporting the ancillary frame thereon.

7. In a match-machine, the combination with a continuously-movable match-carrier, of an ancillary frame reciprocable parallel with the movement of the carrier and synchronously therewith in one direction, a rock-shaft carrying said ancillary frame on its radial arms and provided with an actuating radial arm, a reciprocating rod pivoted on said actuating radial arm, ways in which said rod reciprocates, means for reciprocating the rod, and means for adjusting the length and throw of said rod.

816,685. RAZOR-STROP. HENRY F. HARNOCK, Centralia, Ill., assignor to Montgomery Waddell, New York, N. Y. Filed Aug. 13, 1903. Serial No. 169,262.



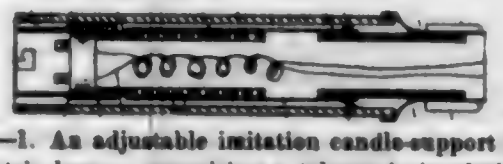
Claim.—1. The razor-strop herein described, consisting of a flexible body, a metallic layer on one side thereof and a finishing layer of silk on the opposite side of said body, substantially as described.

2. The razor-strop herein described comprising a flexible body, a layer of aluminium on one side thereof and a finishing layer of silk on the other side of said body, substantially as described.

3. The razor-strop having finely-divided metallic aluminium incorporated in its surface, substantially as described.

4. A razor-strop comprising a soft non-metallic portion, the surface of which is covered with finely-divided aluminium mixed with an appropriate viscid substance, substantially as described.

816,686. ADJUSTABLE SUPPORT FOR INCANDESCENT ELECTRIC LAMPS. OSCAR T. BANKS, London, England. Filed Oct. 6, 1904. Serial No. 227,497.



Claim.—1. An adjustable imitation candle-support for incandescent electric lamps, comprising a telescopic insulating hollow stem or support having sufficient free space within it to contain slack electrical cords or connections, a lamp-socket mounted on the stem, means for fixing the stem in the candle-socket and means for supporting an inclosing tube on the stem.

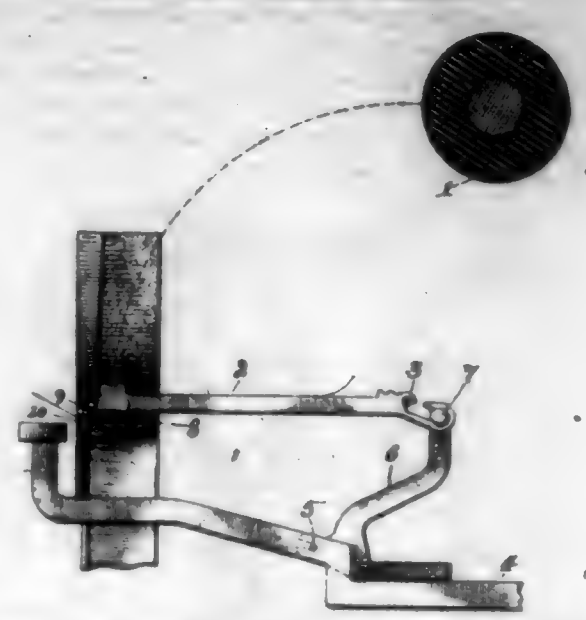
2. An adjustable imitation candle-support for incandescent electric lamps, comprising a telescopic insulating hollow stem or support having sufficient free space within it to contain slack electrical cords or connections, a cylindrical lamp-socket provided with bayonet-slots adapted to be screwed onto the stem, a removable porcelain insulator for the usual contact-plungers, adapted to be inserted in the holder and secured by screwing in the insulating-stem, means for fixing the stem in the candle-socket and means for supporting an inclosing tube on the stem.

3. In an adjustable imitation candle-support for incandescent electric lamps, a hollow telescopic stem or support consisting of two tubes of fiber composition or other insulating material, and a metal sleeve joining the two tubes and fixed to one tube but free to slide on the other tube, and means for fixing the sliding parts after adjustment substantially as described.

4. In an adjustable imitation candle-support for incandescent electric lamps, a hollow telescopic stem or support consisting of upper and lower telescopically-connected tubes of fiber composition or other insulating material, a cylindrical lamp-socket fitting on the upper tube, and a removable porcelain base secured in the socket by the insertion of the said tube substantially as described.

5. In an adjustable imitation candle-support for incandescent electric lamps, a lamp-socket provided with bayonet-slots, a removable insulating-base inserted in the socket, and a telescopic insulating hollow stem or support adapted to fit into the lower part of the lamp-socket and form a stop for the insulating-base substantially as described.

816,687. TYPE-WRITER. WILLIAM BARTER, Jr., Jersey City, N. J. Filed Feb. 4, 1902. Serial No. 142,222.



Claim.—1. In a type-writer, a type-bar pad absorbent of the work of the returning type-bars, embodying in its structure thin, flexible, and non-resilient metal, yieldingly supported in the body of the pad.

2. A type-writer pad constructed of thin layers of non-resilient metal in thin flexible form.

3. A type-writer pad constructed of non-resilient metal in thin form, arranged in layers with intervening material separating the folds or layers.

4. A yielding non-resilient type-writer pad constructed of thin flexible but non-resilient sheet metal together with a suitable spacing material, the composite material thus formed being arranged in layers.

5. A yielding non-resilient type-writer pad constructed of a composite material made up of metal foil and cloth, such composite material being formed into layers to form a pad of the desired thickness.

6. A yielding non-resilient type-writer pad constructed of a composite material made up of metal foil and cloth, such composite material being formed into layers to form a pad of the desired thickness, and the cloth being continued in the fold or roll beyond the metal and suitably secured to form a sheath for the pad.

7. A yielding non-resilient pad constructed of folds of flexible non-resilient metal, and a suitable sheath surrounding the pad so formed.

8. A yielding non-resilient pad constructed of flexible non-resilient metal in thin form, formed into layers with intervening separating material, and having a sheath surrounding the pad thus formed.

9. A yielding non-resilient type-writer pad formed of folds of a composite material consisting of thin non-resilient sheet metal with a suitable fabric folded to develop the pad of sufficient dimensions, the fabric being continued in the fold beyond the metal, so as to completely surround the pad, and having its end stitched or suitably secured to the sheath-forming portion of the fabric to complete the closure.

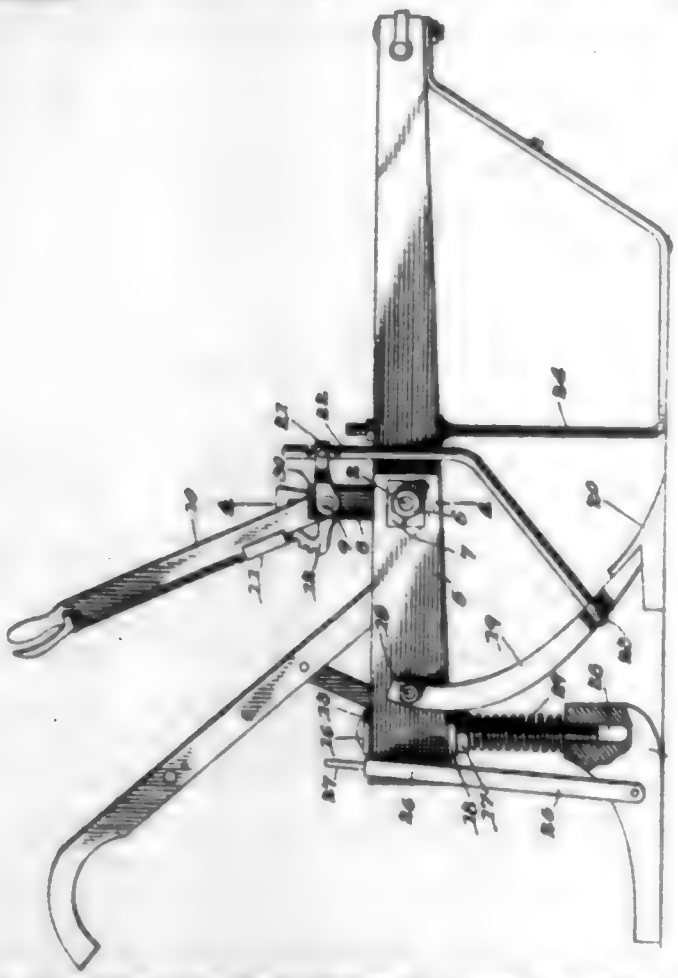
10. A yielding non-resilient type-writer pad formed of a composite material consisting of thin non-resilient sheet metal with a suitable fabric folded to develop the pad of sufficient dimensions, the fabric being extended beyond the metal, so as to completely surround the pad, and having the extension stitched or suitably secured to the sheath-forming portion of the fabric to complete the closure, and formed into a projecting attaching seam.

816,688. COTTON-BLOCKER. FELIX M. BRADLEY, Blackshear, Ala. Filed Aug. 12, 1905. Serial No. 273,942.

Claim.—1. A beam, a threaded rod extending therethrough, blocks or side members upon said threaded rod, nuts for securing the beam, the rod and the side members adjustably together, a pair of spaced straps upon the rear end of the beam, and means for securing the side members adjustably between said straps.

2. A beam, a threaded rod extending therethrough and connected therewith, side members fitted adjustably upon said rod, a pair of slotted straps secured upon the upper and lower edges of the beam near the rear end of the latter, bolts extending through said slots and through apertures in the side members, and tightening-nuts upon said bolts.

3. A beam, a threaded rod extending therethrough and connected therewith, side members fitted adjustably upon said rod and having upwardly-extending boxes, a rock-shaft journaled in said boxes, means for manipulating said rock-shaft and for securing it at various adjustments, cranks secured adjustably upon the rock-shaft, standards connected pivotally with the beam and with the side members, earth-engaging blades upon said standards, and arms connected pivotally with the standards and adjustably with the cranks upon the rock-shaft.



4. In a device of the class described, a beam, side members spaced from and connected adjustably with the beam, standards connected with the beam and also with the side members and having earth-engaging blades, a runner connected with the beam in front of the standard supported by said beam, and runners flexibly connected with the side members in rear of the standards supported thereby.

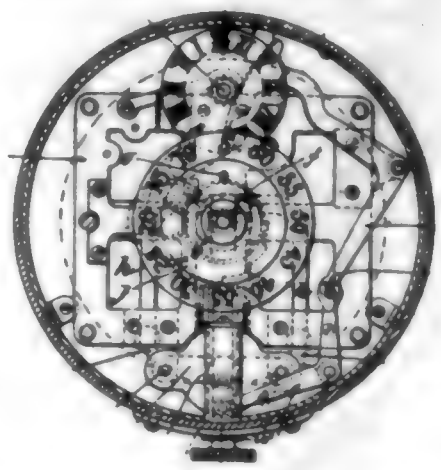
5. In a device of the class described, a standard-carrying member, a bolt extending through and downwardly therefrom, a yoke straddling the standard-supporting member and having an aperture guided upon a pin extending upwardly from said member, and a runner pivotally connected with said yoke and having a socket receiving the lower end of the bolt.

6. In a device of the class described, a standard-carrying member, a bolt extending through and downwardly therefrom, a yoke straddling the standard-supporting member and having an aperture, a pin extending upwardly from the standard-supporting member through the aperture of the yoke, a runner connected pivotally with the yoke and having a bolt-receiving socket, and a spring mounted upon the bolt above the runner and exercising downward pressure upon the latter.

7. In a device of the class described, a beam, a threaded rod extending transversely therethrough, parallel spaced slotted straps connected with the rear end of the beam, standard-carrying side members connected adjustably with the threaded rod, bolts extending through the slotted straps and through the side members, tightening-nuts upon said bolts, yokes straddling the side members and connected movably therewith, runners connected pivotally with said yokes and having bolt-receiving sockets, and springs mounted upon the bolts and exercising downward pressure upon the runners.

816,639. SPEEDOMETER. JAMES H. BULLARD, Springfield, Mass. Filed Dec. 30, 1904. Serial No. 239,001.

Claim.—1. In an instrument of the class described, the combination with a suitable power mechanism, of a record-disk rotating continuously at minute-hand speed and receiving during its rotation the record of successive occurrences, and a time-dial having a partial rotary movement at periods, said time-dial being arranged in complemental relation to the record-disk on the same side or face of the instrument.



2. In an instrument of the class described, the combination of a power mechanism having an arbor rotating at minute-hand speed, a record-disk turning with said arbor and having minute-period indications, a separate time-dial having hour-period indications and exposed for reading on the same side or face of the instrument as the record-disk, and means for periodically rotating the time-dial to bring its indications into complemental reading relation to those of the record-disk.

3. In an instrument of the class described, the combination with a clock mechanism and the center arbor thereof, of a record-disk supported on, and rotatable with the latter, a device to mark the dial intermittently during its rotation, a second time-disk and suitable mechanism to impart partial rotatory movement to the time-disk synchronously with the radial movement of the marking device.

4. In an instrument of the class described, the combination with a clock mechanism and the center arbor thereof, of a record-disk supported on said arbor to rotate at minute-hand speed, a helical cam supported on said arbor to rotate at hour-hand speed, said cam having steps on its periphery corresponding to hourly divisions of time; a second time-disk; a device to intermittently mark the record-disk during its rotation, and a member bearing on the periphery of the cam and connected with the marking device and with the time-disk, whereby the passing of a step of the cam will shift the marking device radially of the record-disk, and impart partial rotatory movement to the time-disk.

5. In an instrument of the class described, the combination with a clock mechanism and the center arbor thereof, of a record-disk supported on said arbor to rotate at minute-hand speed, and provided with radial divisional lines to indicate minute periods; a second time-dial provided with hour-divisions indicated by numerals; said time-dial being rotatably supported on a separate arbor; and exposed for reading at the same side or face of the instrument as the record-disk and bearing a complemental relation to the latter mechanism to mark the record-dial during its rotation, and means of connection between the marking mechanism and said time-dial, whereby it may be rotated at periods to shift from one hour to the next for each revolution of the record-disk.

6. In an instrument of the class described, the combination with a clock mechanism and the center arbor thereof, of a record-disk supported on said arbor to rotate at minute-hand speed, and provided with radial divisional lines to indicate minute periods; said periods being indicated by numerals; a second time-dial provided with hourly divisions indicated by numerals, both dials being readable on the face of the instrument, mechanism to rotate said record-disk continuously, and means to rotate the time-dial to bring each hourly division thereof into a certain position relative to a fixed point at the completion of each revolution of the record-disk.

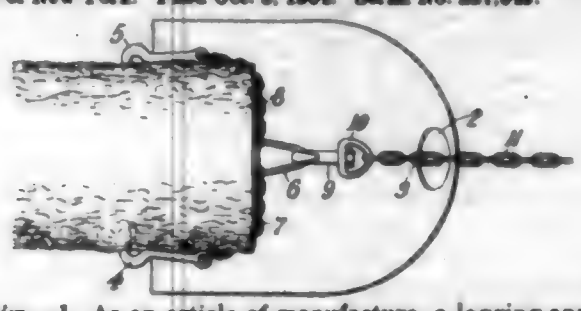
7. The combination of a clock mechanism and a center arbor thereof, of a record-disk supported on the arbor to rotate at minute-hand speed, a helical cam supported on said arbor to rotate at hour-hand speed, a marking device for the record-disk, a lever bearing on the periphery of the cam and connected with the marking device to move the latter radially of the disk by the movement of one end of said lever toward the axis of the cam, the latter having an annular groove in the hub thereof opening toward the side of the cam, there being an opening extending into said groove at right angles to the axis of the cam to permit the end of the lever bearing on the cam to drop into said groove; said lever being movable away from the cam to disengage it from the groove in the latter and to permit its engagement again with the periphery of the cam.

8. In an instrument of the class described, the combination of a clock mechanism and the usual rotatable center arbor therefor, of a

record-disk supported on the arbor, a device to mark the record-disk, and electrically-actuated means to actuate the marking device comprising an electromagnet within the instrument and a circuit extending through the casing of the instrument and including said magnet, a battery and a make-and-brake device, together with other means to automatically break the circuit when the instrument is removed from its support.

9. In an instrument of the class described, a rotatable record-disk and mechanism to mark a record on said disk in paths encircling the axis thereof, certain points in the path of the recording-marks being distinguished from the others by a change in the character of the mark.

816,640. LOGGING APPARATUS. JOSEPH BUTLER, Naumai, New Zealand, assignor to Ledgerwood Manufacturing Company, a Corporation of New York. Filed Oct. 8, 1904. Serial No. 227,649.



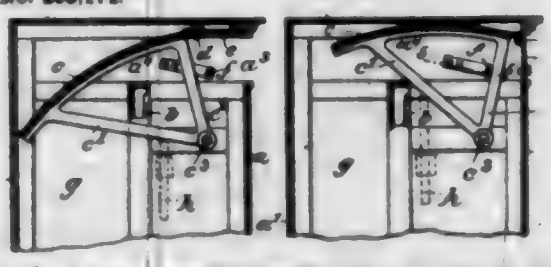
Claim.—1. As an article of manufacture, a logging-apparatus shoe consisting of a log-bearing approximately flat body with an upwardly-carved forward extension having a perforation therein, a chain extending through the perforated portion, and a grappling device carried by said chain.

2. As an article of manufacture, a logging-apparatus shoe consisting of a log-bearing corrugated flat body with an upwardly-curved forward extension having a perforation therein, a chain passing through the perforation, a hook connected to the chain, log-gripping mechanism, and a connection between the hook and the log-gripping mechanism.

3. In a logging apparatus in combination a log-carrying shoe having an approximately flat log-bearing body portion, and a forward extension therefrom, in combination with log-grappling mechanism formed of a plurality of hooks, a flexible mechanism between said hooks, and a hauling-chain passing through the shoe and forming an adjustable locking engagement with the forward portion of said shoe whereby the whole may operate as a jacking device.

4. As a logging apparatus, in combination, a log-grappling device, an oblong link whereby the same may be tightened, a hauling-chain and a shoe containing a perforation through which said hauling-chain extends.

816,641. PIANO. WILLIAM D. CALLOW, Newark, N. J., assignor to Roth & Engelhardt, New York, N. Y., a Firm. Filed Dec. 26, 1905. Serial No. 293,174.



Claim.—1. A piano provided with a top, an open front, and a curved pivoted reflector below the top, substantially as specified.

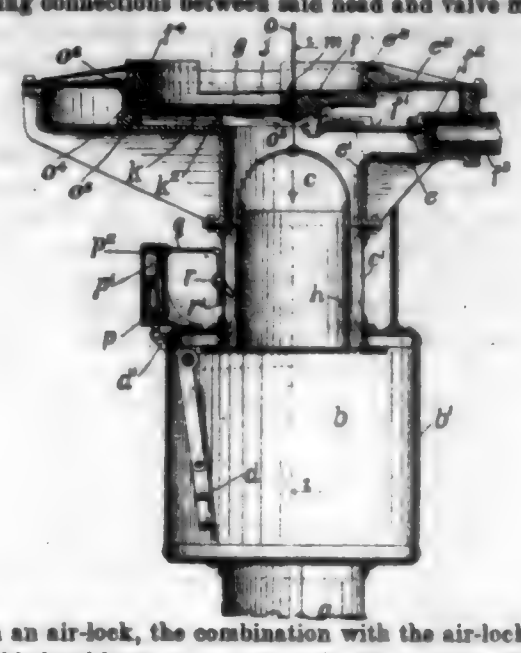
2. A piano provided with a top, an open front, a pivoted reflector below the top, and a fall hinged to the reflector, substantially as specified.

816,642. AIR-LOCK. SINCLAIR W. CHILES, South Bethlehem, Pa. Filed June 15, 1905. Serial No. 265,416.

Claim.—1. In an air-lock, the combination of a movable head having an aperture for the passage of the bucket and adapted, when moved in one direction to partially close the air-lock chamber, a valve member operatively connected with the head to close the aperture therein when said head is moved to partially close the air-lock chamber.

2. In an air-lock, the combination with the air-lock chamber, of a movable head having an aperture for the passage of the bucket and movable across the opening of the air-lock chamber, a movable valve member, adapted to close the aperture in the head, and power-transmitting connections between said valve member and head.

3. In an air-lock, the combination with the air-lock chamber, of a movable head having an aperture for the passage of the bucket and movable across the opening of the air-lock chamber, a movable valve member, adapted to close the aperture in the head, said head and valve member having between their adjacent edges when closed together an opening for the passage of the hoisting-rope, and power transmitting connections between said head and valve member.



4. In an air-lock, the combination with the air-lock chamber, of a movable head having an aperture for the passage of the bucket and movable across the opening of the air-lock chamber, and means controlled by the movements of the said head to close the aperture therein when said head is moved to bring the aperture out of register with the passage through the air-lock chamber and to open it when said aperture is brought in register with said passage.

5. In an air-lock, the combination of a movable head, having an aperture for the passage of the bucket, and adapted when moved in one direction to partially close the air-lock chamber, and a valve member operatively connected with the head to close the aperture therein when the head is moved to partially close the aperture, said head and valve member meeting at the point of travel of the hoisting rope and having an opening between them for the passage of said rope at said point of meeting.

6. In an air-lock, the combination of a movable head, having an aperture for the passage of the bucket, and adapted when moved in one direction to partially close the air-lock chamber, and a valve member operatively connected with the head to close the aperture therein when the head is moved to close the aperture, said head and valve member meeting at the point of travel of the hoisting-rope and having an opening between them for the passage of said rope at said point of meeting, and grooved rollers at said point of meeting carried by said parts, between which the hoisting-rope passes when said parts are closed.

7. In an air-lock, the combination with the air-lock chamber of a sliding head having an aperture for the passage of the bucket and movable transversely across the opening of the air-lock chamber, and a sliding valve member operatively connected with the head to close the aperture therein when the head is projected.

8. In an air-lock, the combination with the air-lock chamber of a sliding head having an aperture for the passage of the bucket and movable transversely across the opening of the air-lock chamber, a sliding valve member, and links between said head and valve member to move the valve member in the opposite direction to the head when the head is moved.

9. An air-lock consisting of a valve member and a movable head oppositely moving and meeting when closed at the point of travel of the hoisting-rope, and having an opening between them for the passage of the hoisting-rope at said point of meeting.

10. In an air-lock, the combination with the air-lock chamber, of a movable head having an aperture adapted to be brought in register with the air-lock chamber, and having a seat about said aperture on its lower face, and a valve member operatively connected with said head to close upon said seat and close the aperture when said head is moved to bring its aperture in register with the air-lock-chamber.

11. In an air-lock, the combination with the air-lock chamber, of a movable head having an aperture adapted to be brought in register with the air-lock chamber, and having a seat about said aperture on its lower face, and a valve member operatively connected with said head to close upon said seat and close the aperture when said head is moved to bring its aperture in register with the air-lock

chamber, said head and valve member meeting at the point of travel of the hoisting-rope and having an aperture for the rope at said point of meeting.

12. In an air-lock, the combination with the air-lock chamber, of the sliding head *f* having the aperture *j* and the ledge *m* substantially tangential to said aperture, and the sliding valve member *g* operatively connected with the head *f* and moving in the opposite direction thereto and adapted when moved forward to seat against said ledge *m* and close the aperture *j*, said head and valve member *g* having between them when closed together an aperture for the hoisting-rope.

13. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, and means to operate the lower valve, automatically controlled by the passage of the bucket through said air-lock chamber.

14. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, means to operate the lower valve, and controlling devices for controlling said means to operate the lower valve, adapted to be automatically actuated by the bucket in its passage through the air-lock chamber.

15. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, means to operate the lower valve, and controlling devices for controlling said means to operate the lower valve having an operating part extending in the path of the bucket in the air-lock chamber and adapted to be automatically actuated by the bucket in its passage through the air-lock chamber.

16. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, means to operate the lower valve, and controlling devices for controlling said means to operate the lower valve, embracing a lever projecting in the air-lock chamber in the path of the bucket and adapted to be actuated thereby.

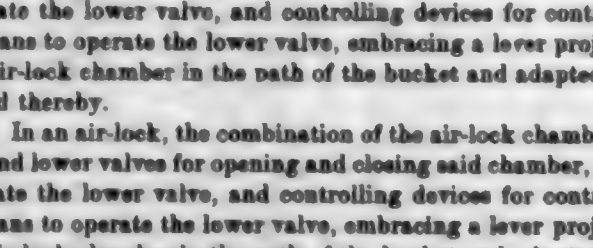
17. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, means to operate the lower valve, and controlling devices for controlling said means to operate the lower valve, embracing a lever projecting in the air-lock chamber in the path of the bucket and adapted to be actuated thereby, and provided with means to restore said lever to position to be again actuated by the bucket after it has been moved thereby.

18. In an air-lock, the combination of the air-lock chamber, the upper and lower valves for opening and closing said chamber, a fluid-pressure motor for operating said lower valve, a controlling-valve in the motor-fluid pipe to said pressure-motor, and a lever for said valve projecting in the air-lock chamber in the path of the bucket and adapted to be actuated thereby.

19. In an air-lock, the combination of a movable head having an aperture for the passage of the bucket and adapted when moved in one direction to partially close the air-lock chamber, and a movable valve member adapted to close the aperture in said head when it is moved to partially close the air-lock chamber.

20. In an air-lock, the combination with the air-lock chamber, of a head movable transversely across the air-lock chamber and having an aperture for the passage of the bucket adapted to be brought in register with the passage-way through said air-lock chamber when the head is shifted into one position, and a movable valve adapted to close the aperture in said head.

816,643. **STUFFING-BOX FOR TRAVELING CABLES, RODS, &c.** SINCLAIR W. CHILES, South Bethlehem, Pa. Filed Oct. 14, 1905. Serial No. 282,726.



Claim.—1. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable.

2. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, and adjustable means carried by the box or frame for receiving the end thrust of the annular packing and compensate for wear.

3. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, adjustable means carried by the box or frame for receiving the end thrust of the annular packing and compensate for wear, and antifriction-bearings between the annular packing and the means for taking the end thrust.

4. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, adjustable means carried by the box or frame for receiving the end thrust of the annular packing and compensate for wear, and antifriction-bearings between the annular packing and the means for taking the end thrust consisting of rings resting against the ends of the annular packing and balls between the rings and the means for receiving the end thrust on the box or frame.

5. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, adjustable means carried by the box or frame for receiving the end thrust of the annular packing and compensate for wear, and antifriction-bearings between the annular packing and the means for taking the end thrust consisting of rings resting against the ends of the annular packing and having their holes made with helical grooves corresponding to the helical ribs on the cable whereby they are rotated by the traveling cable at a speed equal to that of the packing, and balls between the rings and the means for receiving the end thrust of the box or frame.

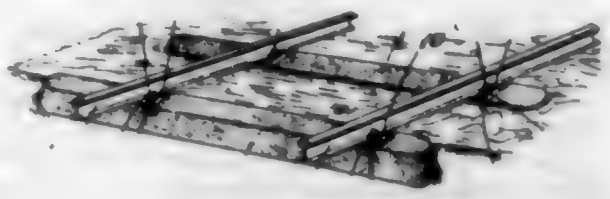
6. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable and in which the packing is provided with pockets containing lubricant.

7. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, and means to lubricate the cable in passing through the annular packing.

8. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, antifriction-bearings arranged upon each end of the annular packing, and means to hold the antifriction-bearings upon the box or frame.

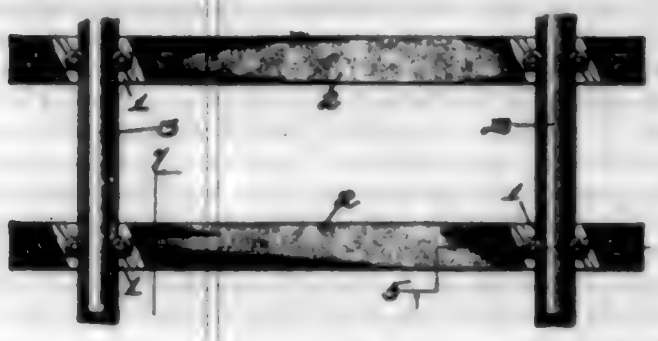
9. A stuffing-box for cables &c., consisting of a box or frame through which the cable travels, an annular packing journaled in the box or frame so as to rotate on an axis concentric with the cable and having its hole provided with helical grooves to engage the strands or ribs of the cable, antifriction-bearings arranged upon each end of the annular packing, means to hold the antifriction-bearings upon the box or frame, and means for adjusting the said bearings to take up the lost motion due to wear.

816,644. **RAILWAY-TIE.** HENRY H. CLOUGH, Elyria, Ohio. Filed Mar. 14, 1904. Serial No. 197,964.



Claim.—A railway-tie, comprising a concrete body portion, a longitudinally-extending bar embedded therein, tie-plates provided with ribs embedded in the concrete and depending into lateral contact with said bar, and integral lugs on said ribs projecting into holes in said bar and locked therein by the surrounding mass of concrete, substantially as described.

816,645. RAILWAY-TIE PLATE AND MEANS FOR SECURING RAILS THERETO. HENRY H. CLOUGH, Elyria, Ohio. Filed Mar. 14, 1904. Serial No. 197,965.



Claim.—1. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate and disposed outside of the rail-seat thereon, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-bar and a clamping-bolt, substantially as described.

2. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, which extends obliquely to the rail-seat, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-bar and a clamping-bolt, substantially as described.

3. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said plate, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, said raised portion being of substantially the same length as said slot, a clamping-bar and a clamping-bolt secured in the slot in said tie-plate applied to said clamping-bar, substantially as described.

4. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, which extends obliquely to the rail-seat, a raised portion on said tie-plate at the side of said slot remote from the rail-seat and of substantially the same length as said slot, clamping-bars and clamping-bolts secured in said slots applied thereto, substantially as described.

5. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, a raised portion on said tie-plate at the side of the slot therein remote from the rail-seat, clamping-bars and clamping-bolts secured in said slots applied thereto, the upper surface of the raised portion of said tie-plate being inclined downwardly and inwardly and the outer end of the clamping-bar designed to engage therewith, being correspondingly inclined upwardly and outwardly, substantially as described.

6. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-washer and a clamping-bolt applied thereto, substantially as described.

7. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-washer and a clamping-bolt secured in the slot in said tie-plate applied thereto, the upper surface of the raised portion of said tie-plate being inclined downwardly and inwardly and the under side of said clamping-washer being inclined or beveled upwardly and outwardly, substantially as described.

8. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-bar and a clamping-bolt applied thereto, the head of said clamping-bolt bearing against the lower edges of the slot in said tie-plate, and the dimensions of said tie-plate from the lower edge of the slot therein to the upper surface of the raised portion of said tie-plate decreasing inwardly from the side of said plate, substantially as described.

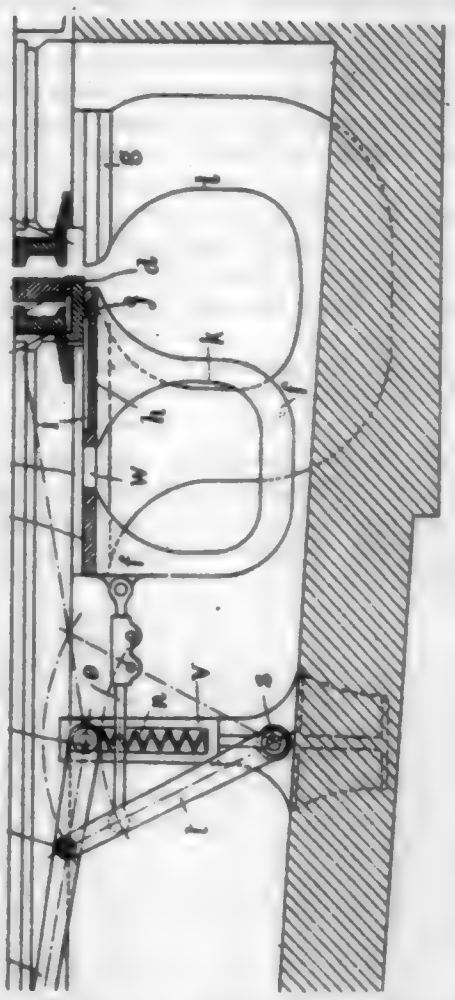
9. The combination with a tie-plate, of means for securing a rail thereto, said means comprising a slot formed in said tie-plate, a raised portion on said tie-plate at the side of said slot remote from the rail-seat, a clamping-bar and a clamping-bolt applied thereto, the head of said bolt bearing against the lower edges of the slot in said tie-plate, and the lower edges of said slot being inclined upwardly and inwardly from the side of said plate relatively to the upper surface of the raised portion of said tie-plate, substantially as described.

10. The combination with a tie-plate, of means for securing a rail thereto, said means comprising slots formed in said tie-plate and disposed outside of the rail-seat thereon, raised portions on said tie-plate at the sides of said slot remote from the rail-seat, clamping-bars and clamping-bolts secured in said slots applied to said clamping-bars, substantially as described.

11. The combination with a tie-plate, of means for securing a rail thereto, said means comprising slots formed in said tie-plate and disposed outside of the rail-seat thereon, raised portions on said tie-plate at the sides of said slots remote from the rail-seat, clamping-bars and clamping-bolts secured in said slots applied to said clamping-bars, said clamping-bars being thicker at their outer ends than at their inner ends, substantially as described.

12. A railway-tie formed of composition, a securing-plate in the body of the tie, and devices for adjustably securing the rail to said plate; substantially as and for the purpose specified.

816,646. POINT OR SWITCH FOR ELECTRIC TRAMWAYS WORKING UPON THE SLOT-CONDUIT SYSTEM. ALBERT N. CONNETT, London, England, assignor to J. G. White and Company, Incorporated, New York, N. Y. Filed Aug. 24, 1905. Serial No. 275,635.



Claim.—1. In a point for slot-conduit tramways the combination with the point-casting, of an upper tongue pivoted in said casting, a lower tongue broader than the first tongue at its free end, and also pivoted in the casting beneath the first tongue, means for supporting the lower tongue at both sides of the point, means connecting the lower tongue to the upper tongue such that when the lower tongue is moved across the slot in either direction the upper tongue is moved across the slot through a lesser distance, and means for moving the lower tongue positively in both directions.

2. In a point for slot-conduit tramways the combination with the point-casting of an upper tongue pivoted in said casting, a lower tongue broader at its free end than the upper tongue and also pivoted in the casting beneath said tongue, means for supporting the lower tongue at both sides of the point, a slot in the lower tongue, a pin on the upper tongue engaging in said slot and means for moving the lower tongue across the point from one side to the other, whereby the upper tongue is also moved through a less distance than the lower tongue, while the slot is left open for the passage of the plow.

3. In a point for slot-conduit tramways the combination with the point-casting, the upper and lower tongues, and the pin-and-slot connecting means between said tongues, of a yoke-piece, means for moving said yoke-piece across the conduit and back again and means for connecting the yoke-piece to the lower tongue such that at each complete movement of the yoke-piece across the conduit the lower tongue shall be moved from one side to the other of the slot and the upper tongue moved across the slot whereby said slot will in both positions be left open for the passage of the plow in the required direction.

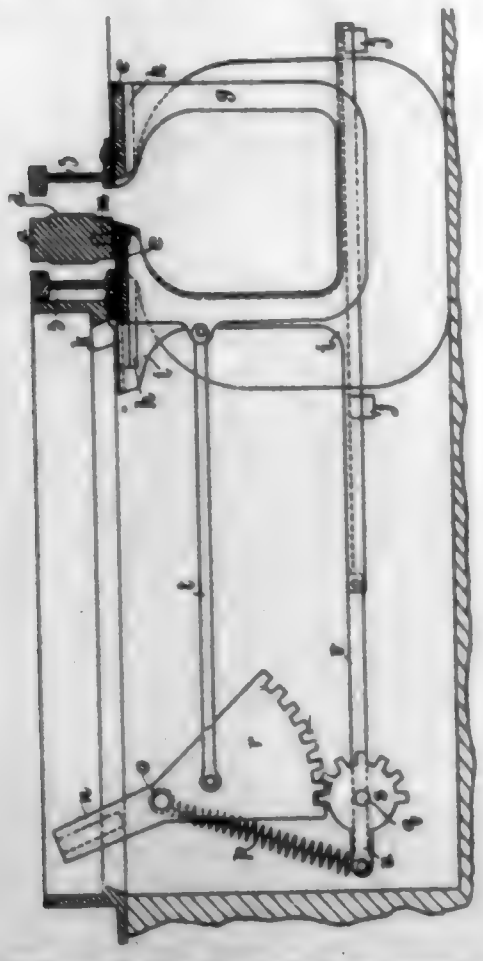
4. In a point for slot-conduit tramways the combination with the point-casting, the upper and lower tongues and the pin-and-slot connecting means between said tongues, of a yoke-piece, means for moving said yoke-piece across the conduit and back again, and a pin-and-slot connection between the lower tongue and yoke-piece such that at each complete movement of the yoke-piece the lower tongue is moved across the point by the pin-and-slot connection above mentioned, whereby the slot is left open for the passage of the plow in either position of the point.

5. In a point for slot-conduit tramways the combination with the point-casting, of upper and lower tongues, a pin-and-slot connection between said tongues adapted to allow the lower tongue to move farther than the upper tongue, means for supporting said lower tongue at each side of the point, a yoke-piece and pin-and-slot connecting means between said yoke-piece and the lower tongue and an operating mechanism comprising levers, links and a spring arranged in such manner that when the yoke-piece is in either of its extreme positions no force exerted on the upper tongue except by means of the operating-bar can displace the tongues, yoke and operating mechanism.

6. In a point for slot-conduit tramways the combination with the point-casting, of the upper tongue *a*, the lower tongue *b*, the pin-and-slot connection *x y* between said tongues, and the means for supporting and for operating the lower tongue, substantially as described.

7. In a point for slot-conduit tramways the combination with the point-casting of the upper tongue *a*, the lower tongue *b*, the pin-and-slot connecting means between said tongue, the yoke *f*, the pin-and-slot connecting means between said yoke and the lower tongue and the operating mechanism for said yoke adapted to hold the yoke and the point-tongue locked in their extreme positions, substantially as described.

816,647. **POINT OR SWITCH FOR ELECTRIC TRAMWAYS WORKING UPON THE SLOT-CONDUIT SYSTEM.** ALBERT H. CONNETT, London, England, assignor to J. G. White and Company, Incorporated, New York, N. Y. Filed Aug. 24, 1905. Serial No. 275,626.



Claim.—1. In a point for slot-conduit tramways the combination with the fixed point-casting and rail-tracks, of an upper tongue pivoted in said casting, two broad lower tongues pivoted under the slot-rails at opposite sides of the slot near the free end of the upper tongue, means connecting together said lower tongues in such manner that they must move simultaneously, means for supporting each of the lower tongues, and means for operating the upper and lower tongues in such a manner that when the upper tongue is moved in one direction the lower tongues are simultaneously moved in the opposite direction whereby a support is provided for the upper tongue, while the slot is left clear for the passage of the plow in the required direction.

2. In a point for slot-conduit tramways the combination with the fixed point-casting and rail-tracks, of an upper tongue pivoted in said casting, two broad lower tongues pivoted under the slot-rails at opposite sides of the slot near the free end of the upper tongue, a yoke-piece connecting together said lower tongues at a fixed distance apart, a standard, pin-and-slot connecting means between said standard and the upper tongue and operating mechanism adapted to simultaneously move the standard in one direction across the point and move the yoke in the other direction whereby the upper tongue is moved across the point in the opposite direction to the two lower tongues, and the slot is left open for the passage of the plow in the required directions while the upper tongue is supported by one of the lower tongues.

3. In a point for slot-conduit tramways the combination with the fixed point-casting and rail-tracks, of the upper tongue pivoted in the casting, the two lower tongues pivoted under the slot-rails at opposite sides of the slot near the free end of the upper tongue, and means for simultaneously moving the two lower tongues across the point while moving the upper tongue in the opposite direction whereby one of the lower tongues is brought beneath the upper tongue to support the same and the slot is left open for the passage of the plow in the desired direction.

4. In a point for slot-conduit tramways the combination with the fixed point-casting, the upper tongue *a* pivoted in said casting, and the lower tongues *c c* pivoted at *f f* of the yoke *g* connecting the lower tongues at a fixed distance apart, the standard *i*, pin-and-slot connecting means between said standard and tongue *a*, and operating mechanism adapted to move the yoke and lower tongues in one direction while simultaneously moving the standard and upper tongue in the opposite direction, substantially as described.

5. In a point for slot-conduit tramways the combination with the fixed point-casting, the upper tongue *a* pivoted in said casting, the lower tongues *c c* and means for supporting same, a yoke *g* connected to said lower tongues, and the standard *i* with means operatively connecting it to the upper tongue, of operating mechanism adapted to move the yoke in one direction, while simultaneously moving the standard in the opposite direction across the point, said operating mechanism being such that the yoke holds the point locked in either of its extreme positions unless moved by the operating mechanism, substantially as described.

816,648. **COMPOSITION FOR COLORING OR PAINTING.** ROBERT W. CORNELISON, Bloomfield, N. J. Filed Oct. 24, 1903. Serial No. 178,366.

Claim.—1. A water-color composition consisting of water, starch, gum-tragacanth, glycerin, an alcohol and beta-naphthol together with suitable coloring-matter soluble in water, substantially as described.

2. In a water-color composition such as described, a farinaceous base with suitable coloring-matter soluble in water, in combination with glycerin, an alcohol and beta-naphthol, substantially as described.

3. In a water-color composition such as described, a suitable farinaceous base with suitable coloring-matter in combination with an antiseptic consisting of beta-naphthol and an alcohol substantially as described.

4. A water-color composition consisting of water, starch, gum-tragacanth, glycerin, propyl alcohol and beta-naphthol together with suitable coloring-matter soluble in water, substantially as described.

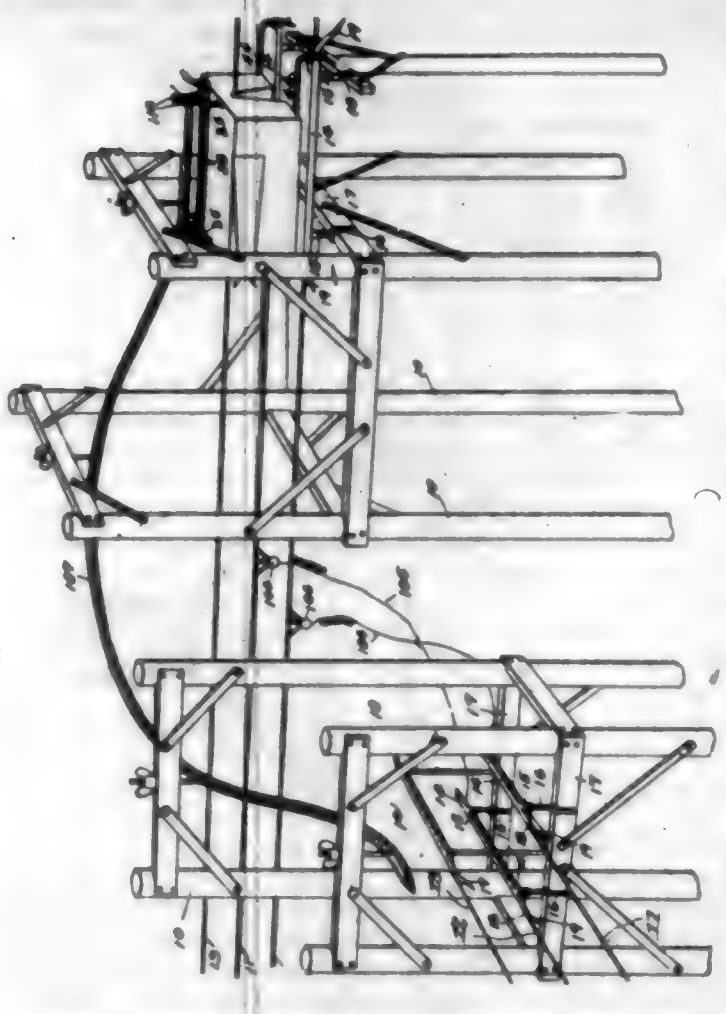
816,649. **ELECTRIC AUTOMATIC MAIL-CARRIER.** MICHAEL DANNER, Pinola, Ill. Filed Aug. 8, 1905. Serial No. 273,575.

Claim.—1. In a telpher system, line-wires extending between stations and forming carrier-supports, rigid bars connected to the wires and in alinement therewith, said bars forming carrier-supports at the stations, each bar having downwardly-bent end portions forming guards or guides for directing the wheels of the carrier on to said bars.

2. In a telpher system, a carrier having a plurality of independent compartments each provided with a movable bottom portion, trip-arms of different length carried by the car and connected to said bottoms, and means for engaging said trip-arms to effect the opening of the bottoms and the discharge of the contents of the receptacles.

3. In a telpher system, a carrier having a plurality of receptacles, tripping mechanisms for controlling the dumping of said recep-

tacles, said tripping mechanisms extending, respectively, different distances from the car, and means at the different stations arranged to be engaged by said tripping mechanisms to effect the discharge of the receptacles at the proper stations.



4. In a telpher system, a carrier having a plurality of independent receptacles, and a pivoted bottom for each receptacle, a latch for holding the bottom in closed position, a vertically-disposed shaft connected to the latch, an adjustable arm extending from the shaft, and arm-engaging members arranged along the line.

5. In a telpher system, a carrier having a plurality of independent receptacles, a pivoted bottom for each receptacle, a latch holding the bottom in closed position, a vertically-disposed shaft connected to the latch, an adjustable arm extending from the shaft, means arranged along the line for engaging the arms, and a spring acting on each shaft and tending to move the arm of said shaft into parallel relation with the carrier.

6. In a telpher system, a carrier having a plurality of independent receptacles, a pivotally-mounted loop forming the bottom of each receptacle, a vertically-disposed shaft having bearings in the frame of the carrier and provided with loop-supporting arm, a holding-spring engaging said arm and tending to maintain the same in loop-engaging position, a trip-arm carried by the shaft and extending outward from the side of the carrier in position to be engaged by a tripping-lever on the line, and a spring arranged on the shaft and tending normally to move the tripping-arm into parallel relation with the carrier.

7. In a telpher system, the combination with the line-wires, of a carrier mounted thereon and provided with a collecting-receptacle, article-clamping jaws arranged at different points along the line and adjustable into the path of movement of the carrier, and a jaw-spreading arm supported by the carrier and serving to open said jaws and effect the discharge of the articles into said receptacle.

8. In a telpher system, the combination with the line-wires, of a carrier having a collecting-receptacle, article-clamping jaws arranged at stations along the line, a swinging arm for the support of each pair of jaws, means for holding said arm with the jaws in the path of movement of the carrier, and a jaw-spreading arm supported by said carrier and movable between the jaws to effect the discharge of the articles carried thereby.

9. In a telpher system, the combination with the line-wire, of a carrier having a collecting-receptacle, article-clamping jaws arranged at different points along the line, a spring tending normally to hold the jaws together, an arm supporting the jaws, a support to which said arm is pivoted, a pair of guides for the arm, a spring tending normally to hold the arm in operative position, a locking device for holding the arm with the jaws in the path of the carrier, and a jaw-spreading arm supported by the collector and arranged to open the jaws and remove the articles therefrom.

10. The combination with a movable car or carrier having an article-receptacle, of a pair of guard-arms projecting from the carrier, a collecting-arm arranged between the guard-arms, and article-supporting members arranged at different positions along the line and engageable by the collecting-arm as the car passes the stations.

11. In a telpher system, the combination with the line-wires, of a frame having a plurality of pairs of wheels running on the wires, levers pivoted to the frame, and carrying one of the pairs of wheels, and springs engaging said levers and tending to force said wheels into engagement with the wires.

12. In a telpher system, a line comprising three wires, two arranged in a horizontal plane, and the third in a plane above and between the other two, a carrier having a recessed central portion to straddle the third wire, and supporting-wheels arranged on the carrier and running on all of the wires.

13. In a telpher system, a main line, and a branch line, each comprising a plurality of parallel wires, a carrier having wheels running on said wires, a switching member in the form of a rail leading between the main and branch lines, and auxiliary wheels mounted on the carrier and arranged to engage and travel on said rail.

14. In a telpher system, a main line, and a branch line, each provided with a plurality of parallel wires, a switch-rail extending over the wires, and forming a connecting means between the two lines, a carrier having wheels running on the line-wires, auxiliary wheel-supports on said carrier, wheels mounted thereon and adapted to travel on the switch-rail, and means for automatically tripping said supports and lowering the wheels to prevent the passage of the carrier to the branch line.

15. In a telpher system, a main line, a branch line, each line including a series of parallel wires, a wheeled carrier arranged to travel on the wires, a switch-rail extending over and connecting the two lines, pivotally-mounted wheel-carrying arms on the carrier, wheels arranged on said arms and adapted to travel on the switch-rail, springs tending normally to lower said arms, and move the wheels to a position below the switch-rail, locking devices for maintaining said arms in elevated position, adjustable trip-arms connected to said locking device, and trip-engaging devices arranged at different points along the line.

16. In a telpher system, the combination with main and branch lines, each including a plurality of parallel wires, a switch-rail extending over the two lines, said rail being of T shape in cross-section, a wheeled carrier arranged to travel on the wires, a pair of sets of pivoted arms mounted on the carrier, means for connecting the arms for mutual movement, wheels carried by said arms and adapted to travel on the horizontal web of the T-rail, springs tending to depress the arm, a locking-bolt for holding said arms in upright position, a bell-crank lever connected to the bolt, and an adjustable arm connected to the bell-crank lever and arranged to be engaged by trips or stops at different points along the line.

17. In a telpher system, line-wires, a support, and a track-bar pivoted at a point intermediate of its ends to said support and free for swinging movement in a vertical plane and provided at its ends with means for engaging the wire.

18. In a telpher system, a pivotally-mounted track-bar forming a connection between the line-wire and its support, said bar being free for swinging movement in a vertical plane.

816,650. CUTTING APPARATUS FOR MOWING-MACHINES. SPENCER DAVIS, Hazelton, Kans. Filed Dec. 5, 1905. Serial No. 290,373.



Claim.—1. A cutting apparatus for harvesters and the like, having relatively stationary cutting members and a relatively movable cutter-bar carrying cutting members which coact therewith, and in which the cutter-bar is twisted near the heel thereof, so that the planes of the cutting edges of the respective members cross each other at an angle.

2. The combination in a cutting apparatus, of fingers having ledger-plates, and a reciprocating yielding cutter-bar the points of the blades of which are tilted so that the edges of the blades cross the edges of the ledger-plates at an angle.

3. The combination in a cutting apparatus, of a finger-bar, and a reciprocating cutter-bar the heel of which slides in guides and the

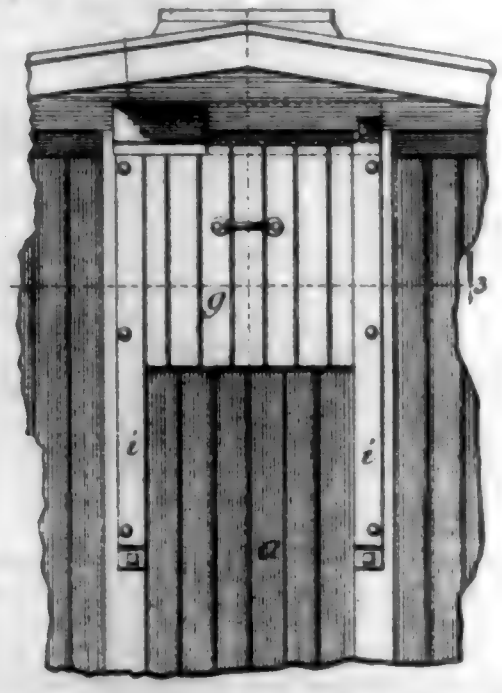
body of which is yieldingly supported and carries its knives with their points depressed so that the plane of the knife edges crosses the plane of the coacting edges on the fingers.

4. The combination in a cutting apparatus, of a finger-bar, and a reciprocating cutter-bar the heel of which slides in guides and the body of which is free to yield up and down and has its upper surface inclined downwardly and forwardly and its knives secured thereon with their cutting edges extending at an angle across the coacting edges on the fingers.

5. The combination in a cutting apparatus, of a finger-bar, a yielding reciprocating cutter-bar thereon having knives the plane of whose cutting edges crosses the plane of the coacting edges of the bar, and a spring-pressed plate covering a section at the heel of the cutter-bar.

6. The combination in a cutting apparatus, of a finger-bar and shoe, a yielding reciprocating cutter-bar thereon, a plate covering a section at the heel of the cutter-bar, and a spring secured to the shoe and bearing upon the plate.

816,651. BOX-CAR DOOR. FREDERIC A. DELANO, Chicago, Ill. Filed July 25, 1904. Serial No. 218,068.



Claim.—A car provided with an opening, guides at the sides of the opening, a door movable vertically in the guides and having upper and lower recesses on its inner face, the upper recess having a beveled lower face and the lower recess having a horizontal upper face a wearing-strip secured to the inner face of the door and bent so as to enter the recesses, and a spring-pressed bolt mounted in the car adjacent the opening and adapted to enter either recess, said bolt having a beveled end face and a horizontal upper face.

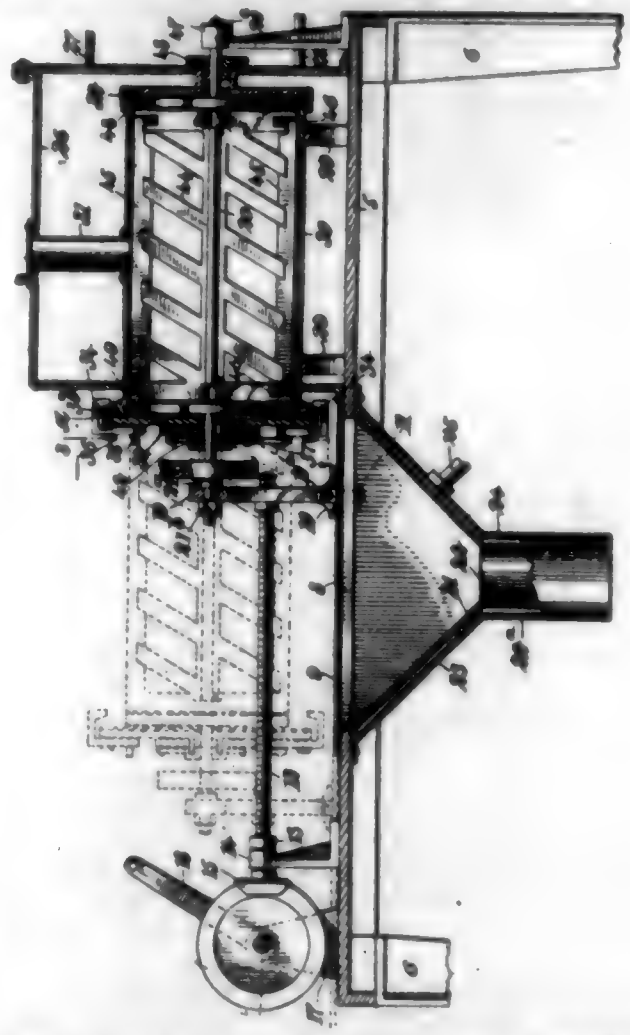
816,652. ICE-CREAM FREEZER. JOSEPH B. DUNNE and CLARENCE A. FLETCHER, Chicago, Ill. Filed Feb. 21, 1905. Serial No. 246,746.

Claim.—1. The combination of a freezing-chamber, a shaft extending into said freezing-chamber, a piston mounted upon said shaft for the purpose of ejecting a commodity from said freezing-chamber, a hopper disposed adjacent to said freezing-chamber, a door movable relatively to said hopper, and means controllable at will for moving said door and said shaft simultaneously.

2. The combination of a receptacle for containing a freezing mixture or the like, a freezing-chamber mounted within said receptacle and projecting therefrom, said freezing-chamber being provided with an open end, a closure member for said open end, a shaft extending through said closure member, means for supporting said shaft, mechanism for withdrawing said shaft from a part of its supporting means, and partly from said freezing-chamber, a dasher connected with said shaft, and a piston mounted upon said shaft and coacting therewith for ejecting a commodity from said freezing-chamber.

3. The combination of a freezing-chamber, a dasher revolubly mounted within said freezing-chamber, a closure member for said freezing-chamber, and means controllable at will and connected with said closure member and with said dasher, for removing the same simultaneously.

4. The combination of a table provided with a gateway, a movable gate for opening and closing said gateway, a freezing-chamber disposed adjacent to said gateway and adapted to discharge its contents thereinto, ejecting mechanism for ejecting a commodity from said freezing-chamber through said gateway, and means connected with said movable gate and also connected with said mechanism, for the purpose of actuating the same and ejecting said commodity



5. The combination of a freezing-chamber, mechanism for ejecting a frozen commodity from said freezing-chamber, a hopper disposed adjacent to said freezing-chamber for receiving and guiding the commodity thus ejected, and a steam-jacket for heating said hopper so as to slightly melt said commodity.

6. The combination of a driving mechanism, gearing connected therewith and including a pair of revoluble threaded stems, a yoke provided with portions engaging said stems, whereby said yoke may be moved in opposite directions according to the direction of motion of said driving mechanism, a dasher connected with said yoke, means for turning said dasher, a piston connected with said dasher, and a freezing-chamber encircling said dasher and said piston.

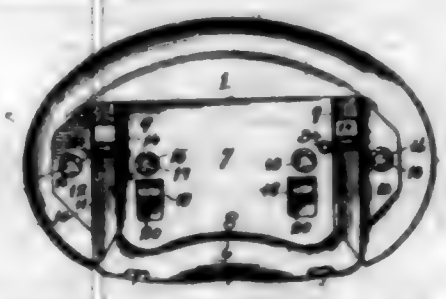
7. The combination of a receptacle for holding a refrigerant, a freezing-chamber mounted partially within said receptacle, a shaft passing through said freezing-chamber and said receptacle, a piston mounted upon said shaft bearings for supporting said shaft, and gearing controllable at will for causing said shaft to travel in the general direction of its axis so as to remove it from said freezing-chamber.

8. The combination of a receptacle for holding a refrigerant, a freezing-chamber mounted partially within said receptacle, a tubular member extending from the outer surface of said receptacle to said freezing-chamber so as to place said freezing-chamber in communication with the outer atmosphere, a closure member for said tubular member, a dasher mounted within said freezing-chamber, means for actuating said dasher incidental to the freezing of a commodity within said freezing-chamber, and means controllable at will for removing said dasher without disturbing said closure member.

816,653. HANDLE AND SOCKET-PLATE FOR CASKETS. JOHN C. EDWARD, Chicago, Ill. Filed Sept. 12, 1905. Serial No. 278,179.

Claim.—1. In combination with a handle having a body portion and inwardly-projecting arms, a socket-plate having recesses adapted to receive the arms and a reinforcing-plate extending substantially from end to end of the socket-plate and bent to form channels bridging the recesses in the socket-plate, each of the channels having side walls and a cross-wall, the cross-wall being cut away to form an

inner stop for the end of one of the handle-arms and the end of the recesses in the socket-plate forming an outer stop, and pivots passing through the handle-arms to pivot said arms within the channels and allow the handle to be turned in a position to have the end of the arm abut against the inner stop and an intermediate portion of the handle-arm abut against the outer stop when the handle is raised, substantially as described.



2. In combination with a handle having a body portion and inwardly-projecting arms, a socket-plate having recesses adapted to receive the arms and a reinforcing-plate extending substantially from end to end of the socket-plate and bent to form channels bridging the recesses in the socket-plates, each of the channels having side walls and a cross-wall, the cross-wall being cut away to form an inner stop for the end of one of the handle-arms and the end of the recess in the socket-plate forming an outer stop, pivots passing through the handle-arms to pivot said arms within the channels and allow the handle to be turned in a position to have the end of the arm abut against the inner stop and an intermediate portion of the handle-arm abut against the outer stop when the handle is raised, and inwardly-extending burs formed by punching screw-holes through the socket-plate and reinforcing-plate, said burs being upset to clamp the two plates together, substantially as described.

3. In combination with a handle having a body portion and inwardly-projecting arms, a socket-plate having recesses adapted to receive the arms and a reinforcing-plate extending substantially from end to end of the socket-plate and bent to form channels bridging the recesses in the socket-plate, each of the channels having side walls and a cross-wall, the cross-wall being cut away to form an inner stop for the end of one of the handle-arms and the end of the recess in the socket-plate forming an outer stop, pivots passing through the handle-arms to pivot said arms within the channels and allow the handle to be turned in a position to have the end of the arm abut against the inner stop and an intermediate portion of the handle-arm abut against the outer stop when the handle is raised, inwardly-extending burs formed by punching screw-holes through the socket-plate and reinforcing-plate, said burs being upset to clamp the two plates together, and tongues cut out of the metal composing the reinforcing-plate and inwardly turned to provide stops or supports for reinforcing the metal adjacent to the screw-holes, substantially as described.

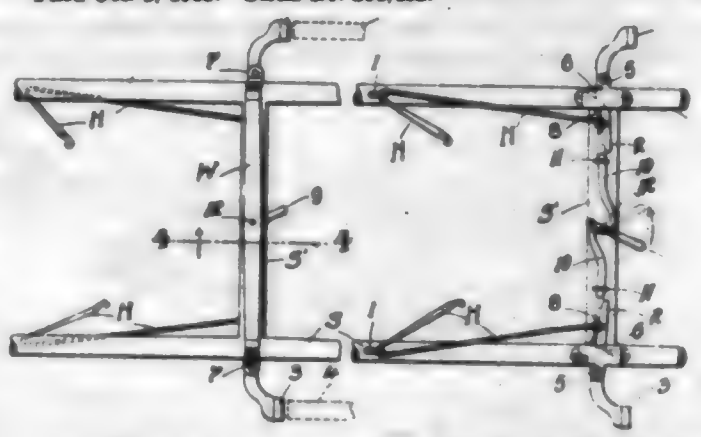
4. A handle formed of two sections of metal, each of the sections having an outwardly-rounded body portion and pivotal arms secured thereto, one of the sections having channel-arms and the two sections being clamped together by means of overlapping ears or tongues, substantially as described.

5. A socket-plate having inwardly-extending recesses adapted to receive the arms of a handle and a recess in one of its edges adapted to receive the body of a handle, a reinforcing-plate extending substantially from end to end of the socket-plate and provided with channels adapted to bridge the recesses, said channels having side walls and a cut-away cross-wall, in combination with a handle consisting of two sections, each having a body portion and pivotal arms, the arms of one of the sections having a channel formation and the two sections being clamped together by tongues or ears, and pivot-pins passing through the side walls of the channels on the reinforcing-plate and through the channeled pivotal arms of the handle for pivoting the handle to allow the ends of the arms to abut against the lower edge of the cut-away portion of the cross-wall and intermediate portions of the handle-arms to abut against the end edges of the slots in the socket-plate when the handle is raised, substantially as described.

6. A socket-plate for caskets formed of sheet metal of oval shape and having inwardly-rounded edges at its top and ends, the bottom edge being cut away to provide a cross-recess for the reception of the body of a handle, said cross-recess terminating in inwardly-extending end recesses adapted to receive the arms of a handle, a reinforcing-plate on the rear face of the socket-plate and abutments on the reinforcing-plate, in combination with a handle formed of two sections of sheet metal, each of the sections having a body portion with pivotal arms, the pivotal arms on one section being of channel formation, and pivots for securing the arms of the handle to the socket and allowing the ends of the handle-arms to abut against the stops of the reinforcing-plate and for allowing intermediate portions of the handle-arms to abut against the inner ends of the recesses in the socket-plate, substantially as described.

7. A handle formed of two sections of sheet metal, each of the sections having a body portion with pivotal arms, the pivotal arms on one section being of channel formation and the body portions of the sections being outwardly rounded and secured together by means of overlapping tongues formed in the edge of one of the handle-sections, and the sections of the pivotal arms being secured together by overlapping tongues, substantially as described.

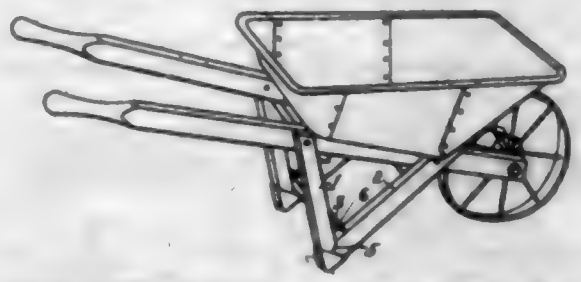
816,654. **VEHICLE-BRAKE.** JAMES H. EVERETT, Pacific, Mo. Filed Oct. 5, 1905. Serial No. 281,423.



Claim.—1. In a vehicle, a spring-controlled brake-lever having a shoe normally disengaged from the wheel, a holdback-strap secured respectively to the lever and draft-animal and adapted when under tension to force the shoe against the wheel, and suitable locking mechanism mounted on the cross-bar of the shaft for preventing the setting of the brake when the holdback is under tension, substantially as set forth.

2. In a vehicle, a pair of shafts, brake-levers pivoted on opposite sides thereof, springs for keeping the levers normally disengaged from the wheels, horizontally-reciprocating locking-bars for locking the brake-levers against movement, and a lever pivoted to the cross-bar of the shafts for actuating the bars in either direction, substantially as set forth.

816,655. **WHEELBARROW-SHOE.** MARTIN V. GARVER, Bryan, Ohio. Filed July 8, 1905. Serial No. 268,819.

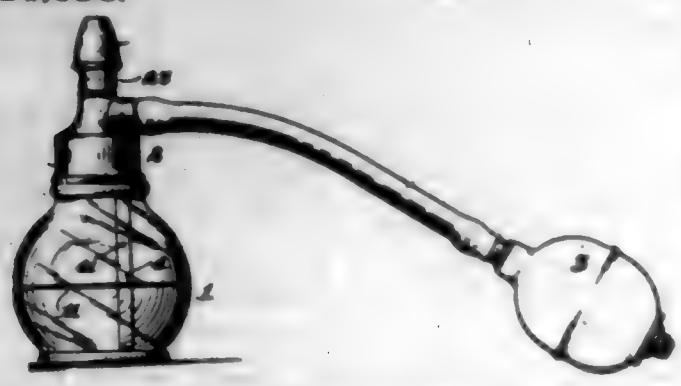


Claim.—In a wheelbarrow, a leg and a brace, the ends of said two members meeting at an angle, in combination with a socket-piece having sides and inclined ends arranged to form a cavity for the reception of the meeting ends of the leg and brace, downwardly-projecting portions on the bottom of the socket-piece disposed longitudinally in the direction of the movement of the barrow, and a bolt disposed between said downwardly-projecting portions and engaged with the socket-piece, the brace and the leg, substantially as described.

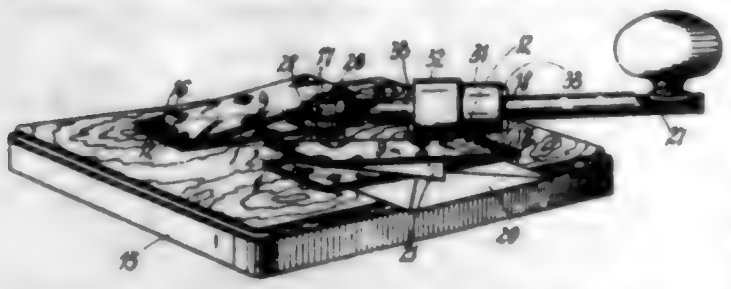
816,656. **ATOMIZER.** ISAAC G. GURNEE, Butler, N. J., assignor to The American Hard Rubber Company, a Corporation of New York. Filed Dec. 22, 1904. Serial No. 238,071.

Claim.—An atomizer comprising a body portion, a cap connected with the body portion and having a vapor-outlet and an air-inlet, a straight unitary air-pipe communicating with said air-inlet and extending downward from the cap to a point below the filling-point of the body portion, said unitary air-pipe having one or more lateral apertures, an internal shoulder and a smooth portion adjacent to said shoulder, and a plug fitted frictionally into the smooth portion of the air-pipe and having apertures coöperating with the apertures of the air-pipe, said plug being located entirely within the unitary air-pipe intermediate the ends thereof, and the largest diameter of said plug being smaller than the diameter of the air-pipe.

816,656.



816,657. APPARATUS FOR EMBOSSING PAPER. THOMAS HAWKINS, London, England. Filed Sept. 16, 1904. Serial No. 224,760.



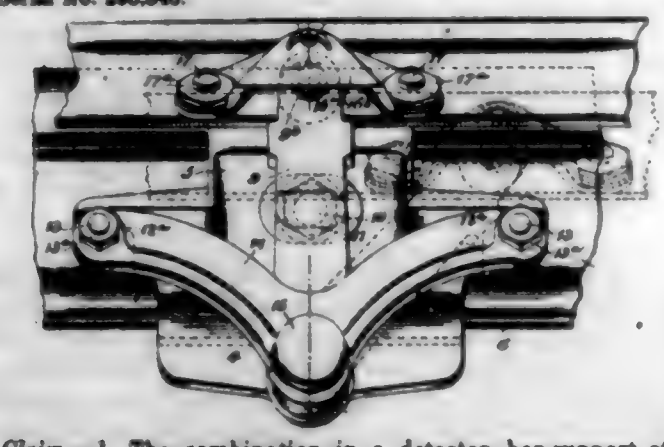
Claim.—1. Apparatus for embossing comprising a base, a die carried by said base, and a lever for producing rolling contact-pressure upon said die.

2. Apparatus for embossing comprising a base, a plurality of dies for embossing note-paper and envelops carried by said base, and means for producing rolling contact-pressure upon said dies.

3. Apparatus for embossing comprising a base, a die carried by said base, a bolt 26, a lever 27 upon said bolt, means for adjusting the height of said bolt, a roller 31 upon said lever, a band 32 upon said roller, and means for holding the roller in position upon said lever.

4. Apparatus for embossing comprising a base, dies carried by said base, a bolt 26, a lever 27 upon said bolt, means for adjusting the height of said bolt a roller 31 upon said lever, a band 32 upon said roller and means for holding the roller in position upon said lever.

816,658. CLIP FOR DETECTOR-BARS. JOHN S. HOBSON, Edgewood Park, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 10, 1906. Serial No. 295,340.



Claim.—1. The combination in a detector-bar support of a bracket portion having a bearing, a yoke portion also having a bearing and secured to the bracket, a pin journaled in said bearings and a link movable on said pin.

2. The combination of a link suitably pivoted at one end in a support, a detector-bar, and a connection between the link and detector-bar, comprising a plate carried by the detector-bar and provided with a pin which fits in an opening in the link.

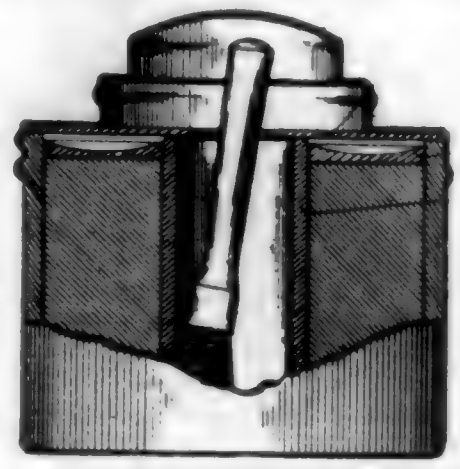
3. The combination of a link suitably pivoted at one end in a support, a detector-bar, and a connection between said link and detector-bar comprising a hood fastened to the detector-bar to receive the adjacent end of the link and carrying a pin or stud which fits in an opening in the link.

4. The combination in a detector-bar support, of a bracket portion, having a bearing and outwardly-extending projections, a yoke portion also having a bearing and secured to the projecting portions of the bracket, a pin journaled at its ends in said bearings and a link pivoted on the pin intermediate the bearings.

5. The combination in a detector-bar support, of a bracket portion having a bearing, a yoke portion also having a bearing and secured to the bracket, a pin journaled at its ends in said bearings and a link pivoted on said pin intermediate the bearings.

6. The combination in a detector-bar support, of a bracket portion having a bearing, a yoke portion also having a bearing and a cylindrical recess and secured to the bracket, a pin journaled in said bearings, and a link provided with a hub pivoted on said pin intermediate the bearings, said hub at one side fitting in the cylindrical recess in the yoke and having a cylindrical recess which receives the adjacent portion of the bearing of the bracket.

816,659. PASTE-POT COVER. EDMUND HOFFMAN, Brooklyn, N. Y., assignor to S. S. Stafford, Incorporated, New York, N. Y., a Corporation of New York. Filed Dec. 23, 1905. Serial No. 293,562.



Claim.—1. A paste-pot cover formed of two pieces, the lower piece having a marginal flange to fit the upper end of the pot, a shoulder at the upper end of the flange, and a dome extending upward from the shoulder; and the upper piece being permanently secured to the dome of the lower piece and having an upwardly-extending imperforate dome adapted to cover the upper end of the paste-brush handle.

2. A paste-pot cover formed of two pieces of sheet metal, the lower piece having a threaded marginal flange, an approximately horizontal annular shoulder extending inward from the upper end of the flange, and an annular dome extending upward from the inner edge of the annular shoulder, said dome having a flat, approximately horizontal, perforated upper end; and the upper piece having an outer flange fitting around and secured to the dome of the lower piece, an annular shoulder extending inward from the flange and resting against the flat top of the dome of the lower piece, and a dome extending upward from the last-mentioned annular shoulder, said last-mentioned dome having a concavo-convex upper end.

816,660. METALLIC REINFORCE FOR HARNESS-COLLARS. JOSEPH C. HOOPER, San Francisco, Cal. Filed Sept. 9, 1905. Serial No. 277,784.

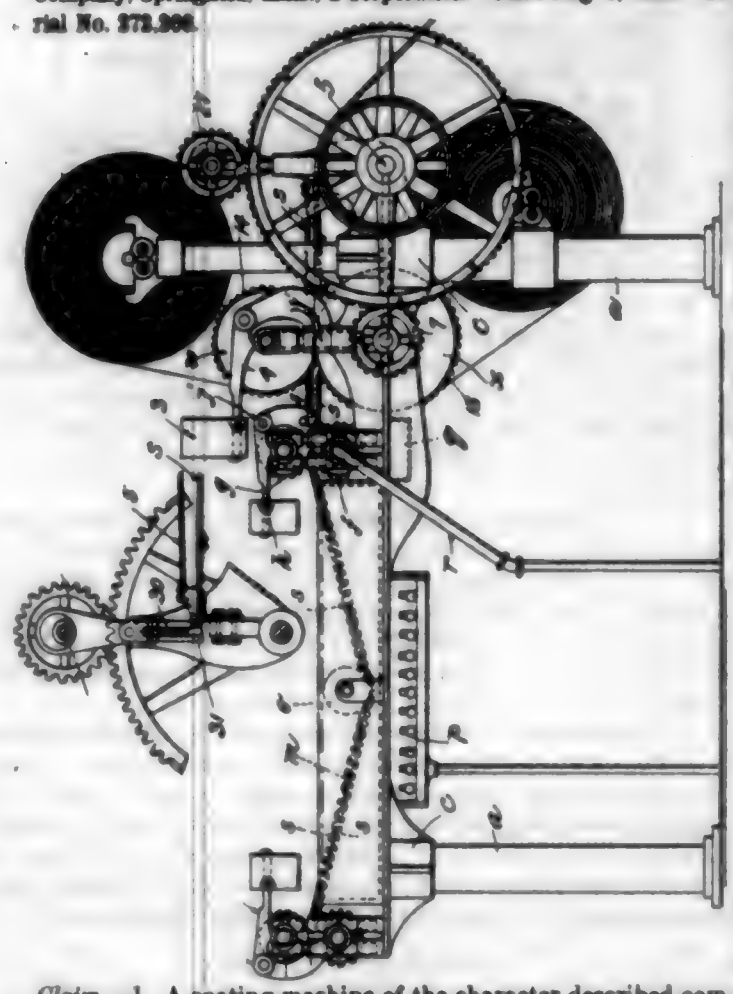


Claim.—1. As a new article of manufacture, a reinforce for the throat portion of the rims of harness-collars, consisting of an integral substantially tubular metal reinforce curved throughout its length to conform to the curvature of the throat portion of the rim of the collar and having a longitudinal opening throughout one side thereof to permit the introduction of the rim, said member being rigid throughout whereby the same is held by its own rigidity in its applied position against movement on the rim.

2. The combination with a horse-collar, of a reinforce for the rim thereof, comprising an integral substantially tubular reinforce curved throughout its length to conform to the curvature of the rim of the collar and having a longitudinal opening at one side thereof to permit its introduction onto the rim, said reinforce being formed throughout of rigid material, whereby when the edges thereof are

compressed onto the rim of the collar to secure the same thereon, it will be held solely by its own rigidity in its applied position.

816,661. MACHINE FOR MAKING ROOFING MATERIAL. FRANK D. JACOBS, Northampton, Mass., assignor to Protected Metal Company, Springfield, Mass., a Corporation. Filed Aug. 1, 1905. Serial No. 272,206.



Claim.—1. A coating-machine of the character described comprising a trough for the liquid adhesive, suitable feed-rolls to carry a strip of body material through the adhesive in the trough; wiper-rolls, and presser-rolls between which the strip of material is fed, and means to apply a coating strip to each side of the strip of body material prior to the passage of the latter through the presser-rolls, and a suitable mechanism to automatically cut said body-strip into predetermined lengths after its passage through the presser-rolls, said cutting means operating when the feeding-rolls are stationary.

2. In a coating-machine of the character described, a trough for the liquid adhesive, feed-rolls located at each end of the trough to carry a strip of body material through the adhesive, certain of said feed-rolls constituting wiper-rolls; presser-rolls located beyond the wiper-rolls, and means to feed a strip of coating material through the presser-rolls in contact with the opposite sides of said strip of body material, and a suitable mechanism to automatically cut said strip of material into predetermined lengths after its passage through the presser-roll, said cutting means operating at the instant the feeding-rolls become stationary.

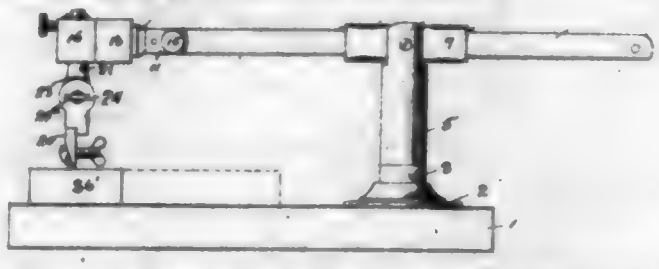
3. In a coating-machine of the character described, a trough for the liquid adhesive, feed-rolls located at each end of the trough to carry a strip of body material through the adhesive, certain of said feed-rolls constituting wiper-rolls; presser-rolls located beyond the wiper-rolls, and means to feed a strip of coating material through the presser-rolls in contact with the opposite sides of said strip of body material, and a suitable mechanism to automatically cut said strip of material into predetermined lengths after its passage through the presser-roll, together with devices to arrest the movement of the feed-rolls and presser-rolls during the cutting operation.

4. In a coating-machine of the character described, a suitable trough for the liquid adhesive, feed-rolls located at opposite ends of the trough to carry a strip of body material through the adhesive, one pair of said feed-rolls constituting wiper-rolls; presser-rolls located beyond the wiper-rolls, and a suitable driving connection between the presser-rolls and the feed-rolls, together with suitable devices to arrest the presser-roll periodically comprising a set of mutilated gears between the driving means and the feed-rolls, and shearing mechanism to cut the strip of body material while the presser-rolls are inactive, said shearing mechanism being operatively connected to said driving means.

5. A coating-machine of the character described comprising a trough for the liquid adhesive, suitable feed-rolls to carry a strip of body material through the adhesive in the trough; wiper-rolls, and presser-rolls between which the strip of body material is fed, and means to apply a coating strip to each side of the strip of body material prior to the passage of the latter through the presser-rolls; a suitable driving connection between the presser-rolls and the feed-rolls and wiper-rolls; a driving-shaft, and a broken gear mounted thereon to engage the presser-rolls, whereby the latter may be rotated intermittently; a shearing mechanism to cut the strip after its passage through the presser-rolls, and means to actuate said shearing mechanism when the presser-rolls are at rest.

6. A coating-machine of the character described comprising a trough for the liquid adhesive, suitable feed-rolls to carry a strip of body material through the adhesive in the trough; wiper-rolls, and presser-rolls between which the strip of material is fed, and means to apply a coating strip to each side of the strip of body material prior to the passage of the latter through the presser-rolls, a suitable driving connection between the presser-rolls and the feed-rolls and wiper-rolls, a driving-shaft, and a shearing mechanism to cut the strip after its passage through the presser-rolls, and two broken gears mounted on the driving-shaft one of which is operatively connected with the rolls, and the other of which is operatively connected with said shearing mechanism the one being operative while the other is at rest.

816,662. SHEAR-SHARPENER. JAMES C. JEFFREY, Beaumont, Tex. Filed May 15, 1905. Serial No. 260,458.



Claim.—1. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, an arm carried in the upper end of said support, and a pair of clamping-jaws adjustably and revolubly mounted in the outer end of said arm.

2. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, an arm pivotally mounted in the upper end of said support, and a pair of clamping-jaws adjustably and revolubly mounted in the outer end of said arm.

3. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, an arm slidably mounted in the upper end of said support, and a pair of clamping-jaws adjustably and revolubly mounted in the outer end of said arm.

4. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, a slidingly and pivotally mounted arm carried in the upper end of said support, and a pair of clamping-jaws carried upon the outer end of said arm.

5. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, a slidingly and pivotally mounted arm carried in the upper end of said support, and a pair of clamping-jaws rotatably and adjustably carried upon the outer end of said arm, for the purpose set forth.

6. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, a pivoted casing or sleeve carried in the uppe end of said support, an arm slidably mounted in said sleeve or casing and adjustable means for carrying a blade above the grinding-surface connected to one end of the arm.

7. In a device of this character, the combination of a base, a grinding-surface carried thereby, a pivotally-mounted support carried by the base, a pivoted casing or sleeve carried in the upper end of said support, an arm slidably mounted in said sleeve or casing, a rotatable block carried by one end of said arm, and an adjustable blade-clamping device carried by said rotatable block.

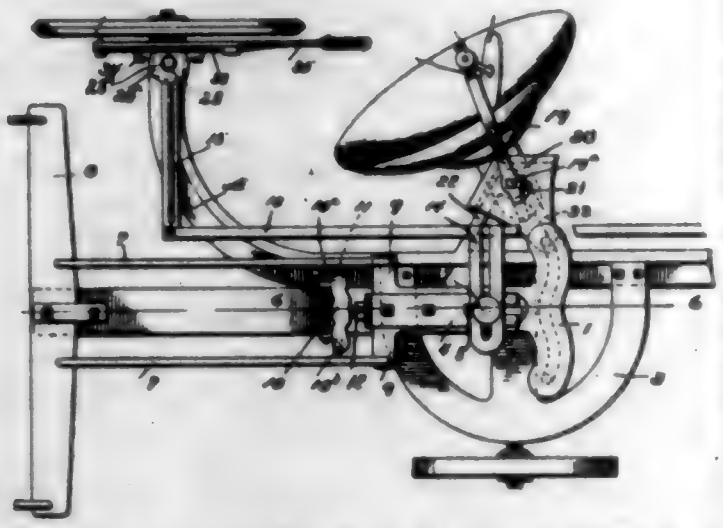
8. In a device of this character, the combination of a base, a grinding-surface mounted upon said base, a pivotal support carried by the base, a pivotally and slidingly mounted arm carried by said support, a rotatable block carried by one end of said arm, a pin pivotally mounted within said block, and a clamp pivotally and adjustably connected to said pin adapted to carry a blade.

9. In a device of this character, the combination of a base, a grinding-surface mounted upon said base, a pivotal support carried by the base, a pivotally and slidingly mounted arm carried by said support, a rotatable block carried by one end of said arm, a pin pivotally mounted within said block, a stationary jaw pivotally connected to said pin, and an adjustable jaw carried by said stationary jaw.

10. In a device of this character, the combination of a base, a grinding-surface mounted upon said base, a pivotal support carried by the base, a pivotally and slidingly mounted arm carried by said support, a rotatable block carried by one end of said arm, a pin pivotally mounted within said block, a stationary jaw pivotally connected to said pin, an adjustable jaw carried by said stationary jaw, and means for adjusting said jaws whereby their surfaces will be at different angles to each other.

11. In a shear-sharpener, the combination of a base, a pivoted support mounted thereon, means for carrying the blade to be sharpened, and pivotally-mounted means carrying said blade-carrying means.

816,663. REVERSIBLE DISK PLOW. WILLIAM G. JORLING, Ridgedale, Tenn. Filed Apr. 15, 1905. Serial No. 255,708.



Claim.—1. In a reversible disk plow having furrow-wheels at both ends of the plow-beam, the combination with a reversing cam-piece having an operative connection to the plow, of an equalizing-bar having arms connected to the furrow-wheels to vary the lead thereof, and an adjustable bolt and slotted piece connecting the cam-piece and the said bar, to shift the latter when the plow is reversed.

2. In a reversible disk plow, the combination with a frame and a reversible disk thereon, of a tongue pivoted upon the frame, a whiffletree on the tongue, a reversing cam-piece pivoted on the frame and connected to the disk, and connections between the whiffletree and the cam-piece, independent of the tongue, for operating the same.

3. In a reversible disk plow, in combination, a frame, a reversible disk thereon, a tongue pivoted on the frame, a reversing cam-piece pivoted on the frame and having a connection with the disk to reverse the same, a whiffletree on the tongue, and connections between said whiffletree and the reversing cam-piece.

4. In a reversible disk plow, the combination with the frame and the reversible disk thereon, of a reversing-piece pivoted on the frame and connected to the disk, a tongue pivoted on the frame, and a latch between the tongue and said piece.

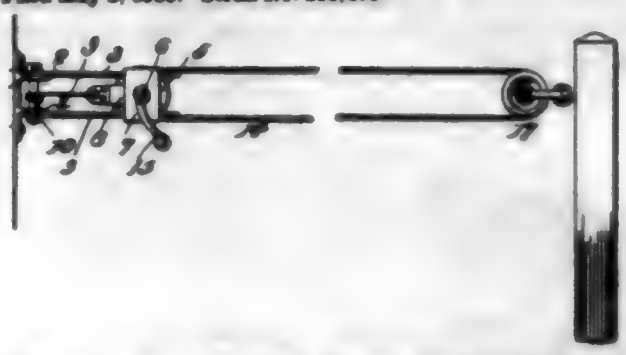
5. In a reversible disk plow, the combination with the frame and the reversible disk thereon, of a tongue on the frame, a cam-piece pivoted on the frame and having at one end a connection with the disk to reverse the same and at the other end a detachable engagement with the tongue.

6. In a reversible disk plow, the combination with a frame having a wedge-shaped abutment thereon formed of two spaced arms which meet at the point, of a plow-support pivoted on said abutment and having a slot therein, and a scraper-standard also pivoted on said abutment and having its inner end projecting through said slot between the arms and arranged to strike the same to reverse the scraper.

7. The combination with a disk plow, of a scraper-arm supported on the frame of the plow and overhanging the disk, a sleeve hinged to the outer end of the arm, and a rod rotatable in said sleeve and carrying a scraper-blade in contact with the disk.

8. In a reversible plow, the combination with furrow-wheels having turning-axles at the ends of the plow-beam, of an equalizing-bar connected to said axles and having an extension, a disk-reversing element pivoted on the plow-frame, and a slot-and-bolt connection between said element and said extension.

816,664. CLOTHES-LINE. CEPHAS C. JOHNSON, Piedmont, Ohio. Filed May 2, 1905. Serial No. 258,470.



Claim.—1. In a clothes-line, the combination of a bracket, arms pivotally mounted thereon by means of a pintle, a pulley mounted upon blocks adapted to slide upon the aforementioned arms and a flexible member connecting the blocks and the fore-mentioned pintle so that the blocks carrying the pulley can be caused to slide by turning the pintle.

2. In a clothes-line, the combination of a bracket having spaced lugs projecting therefrom, arms pivotally mounted upon said lugs by a pintle passing therethrough, a pulley mounted upon blocks adapted to slide upon the before-mentioned arms, and a flexible member connecting the blocks and the before-mentioned pintle so that the blocks carrying the pulley can be caused to slide by turning the pintle.

3. In a clothes-line, the combination of a bracket having spaced lugs projecting therefrom, arms pivotally mounted upon said lugs by a pintle passing therethrough, a pulley mounted upon blocks adapted to slide upon the before-mentioned arms, a flexible member connecting the blocks and the before-mentioned pintle so that the blocks carrying the pulley can be caused to slide by turning the pintle, and means for locking the pintle against turning backward.

816,665. SINK-CLEANER. GEORGE A. KEENE, Lynn, Mass. Filed Dec. 9, 1905. Serial No. 291,009.



Claim.—1. A sink-cleaner comprising a holder, a scraper extending therefrom, and a swinging plate supported by the holder and adapted for use as a scoop or shovel, said plate being adapted to be swung or dropped into operative position or to be swung up out of operative position when the scraper is to be used.

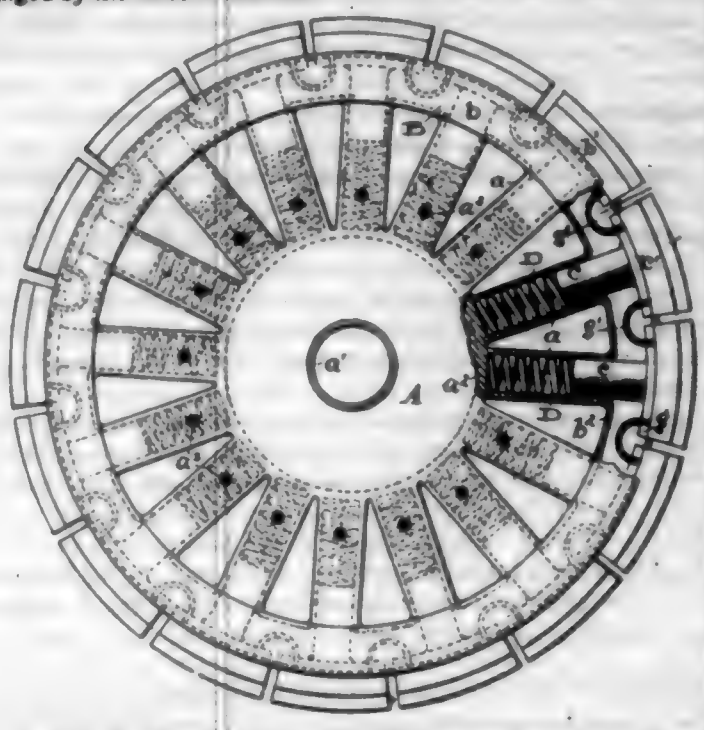
2. A sink-cleaner comprising a holder, a scraper extending from the lower edge thereof, and a swinging plate supported by the holder and adapted for use as a scoop or shovel, said plate extending when it is lowered into operative position below the lower edge of the scraper, and being adapted to be swung up out of operative position when the scraper is to be used.

816,666. WHEEL FOR AUTOMOBILES. CHARLES B. KIRKALL, Cleveland, Ohio. Filed Mar. 13, 1905. Serial No. 249,716.

Claim.—1. A wheel provided with tubular spokes and a fixed rim about the outer ends of said spokes having right-angled sides, in combination with a tire consisting of a series of separate segments confined within the sides of said rim and provided with stems mounted in said spokes and laterally-projecting portions along their sides overlapped and engaged by said rim sides.

2. A wheel having tubular spokes and a rim with side walls about said spokes, in combination with a tire formed in segments corresponding to said spokes, said segments being provided with stems independently mounted in said spokes, and the outer edges of said side walls on the rim being engaged at the sides of said segments.

3. A wheel having tubular spokes, springs in said spokes and a rim about said spokes having walled sides and openings into the spokes, in combination with tire-segments in said rim provided with stems bearing on said springs and ribs on the sides of said segments engaged by the sides of said rim.



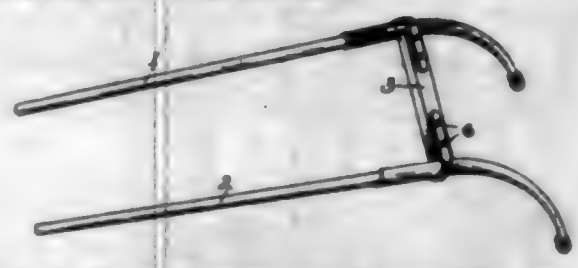
4. The wheel having tubular spokes and bridges on the inside of the same between their ends, springs on said bridges, and a rim about the wheel at the ends of said spokes having walled sides, in combination with tire-sections in said rim and having stems mounted in said spokes against said springs and sides engaged by the sides of said rim.

5. A wheel having a continuous flanged rim, in combination with a tire in sections mounted in said rim and said sections provided with ribs along their outer edges engaged by the edges of the rim, tubular spokes for said wheel, spring-pressed, guide-stems mounted in said spokes and flexible connections between said tire-sections.

6. In spring-tire wheels, a wheel having tubular spokes with valved air-inlets between their ends and a rim having openings coincident with said spokes, in combination with segmental tire-sections working in said rim and having stems entering said spokes above said valves, said spokes having diaphragms below said valves.

7. A wheel having tubular spokes and a continuous rim with right-angled walls at each side, in combination with a tire formed in segments spaced apart at their ends and confined within said rim, said segments having spring-supported stems independently mounted in said spokes and engaged along their sides within the edges of said rim, and flexible dust-excluding pieces connecting adjacent ends of said segments and of greater length than the normal space between said segments.

816,667. **VEHICLE-THILL.** ALEXANDER LOTT, Sumnery, Miss. Filed July 21, 1905. Serial No. 270,612.



Claim.—1. The combination with the cross-bar and a thill jointed to an end of the same, of means secured to one face of the cross-bar and extending around the thill to the opposite face of the bar, and adjustable means securing the free end of the first-mentioned means.

2. The combination with the cross-bar and a thill jointed to an end of the same, of a strap secured to one face of the cross-bar and bent around the thill to the opposite face of the bar, and adjustable means securing the free end of said strap.

3. The combination with the cross-bar and a thill jointed to an end of the same, of a flexible strap secured to one face of the cross-bar and bent around the thill to the opposite face of the said bar, and adjustable means securing the free end of said strap.

4. The combination with the cross-bar and a thill jointed to one end of the same, of a strap secured to one face of the cross-bar and extending around the thill to the opposite face of the bar, said strap being provided with an eye at its free end, a threaded bolt secured at one end to the strap through the eye, and means securing the other end of the bolt.

5. The combination with the cross-bar and a pair of thills, each of which is jointed to one end of the cross-bar, means secured to one face of the cross-bar and extending around the thill to the opposite face of the cross-bar, and adjustable means connecting the free end of said first-mentioned means.

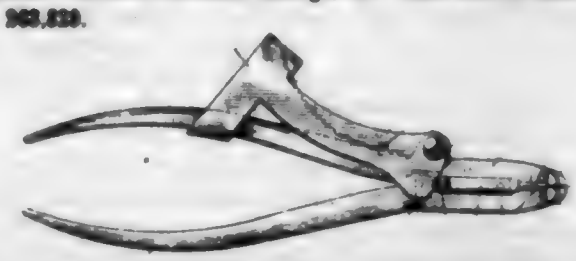
6. The combination with the cross-bar and a pair of thills, each of which is jointed to one end of the cross-bar, of straps secured to one face of the cross-bar and extending around the thill to the opposite face thereof, and adjustable means for connecting the free end of the straps.

7. The combination with the cross-bar and a pair of thills, each of which is jointed to one end of the cross-bar, means secured to one face of the cross-bar and extending around the thills to the opposite face of the cross-bar, a pair of tie-rods, each secured at one end to one end of said means, and common means for securing the other ends of the tie-rods together.

8. The combination with the cross-bar and a pair of thills, each of which is jointed to one end of the cross-bar, straps secured to one face of the cross-bar and extending around the thills to the opposite face of the cross-bar, bolts, each secured at one end to the free end of a strap and threaded at its other end, and common means into which the threaded ends of the bolts are screwed.

9. The combination with the cross-bar and a pair of thills, each of which is jointed to one end of the cross-bar, of straps secured to one face of the cross-bar and extending around the thills to the opposite face of the cross-bar, said straps being provided with laterally-extending portions having eyes, bolts connected at one of their ends to the strap through the eyes, and common means into which the free ends of the bolts are threaded.

816,668. **DENTAL INSTRUMENT FOR RAISING BARBS UPON WIRES.** LLOYD S. LOURIE, Chicago, Ill. Filed June 5, 1905. Serial No. 263,529.



Claim.—1. The combination with a pair of pliers, of independently-actuated means carried thereby, for engaging the article grasped by said pliers, to raise a sliver thereon.

2. The combination with a pair of pliers, of a plunger movably mounted thereon and adapted to engage and cut into or bend the article grasped by the pliers, and means carried by said pliers for operating the plunger.

3. The combination with a pair of pliers, of a plunger movably mounted thereon, said pliers being arranged to hold the article at an oblique angle to said plunger, whereby when the same is operated a sliver or barb is raised upon the article.

4. The combination with a pair of pliers, of a plunger movably mounted thereon and adapted to engage the article held by said pliers, and a lever connected with said plunger and pivotally mounted upon said pliers for operating the same.

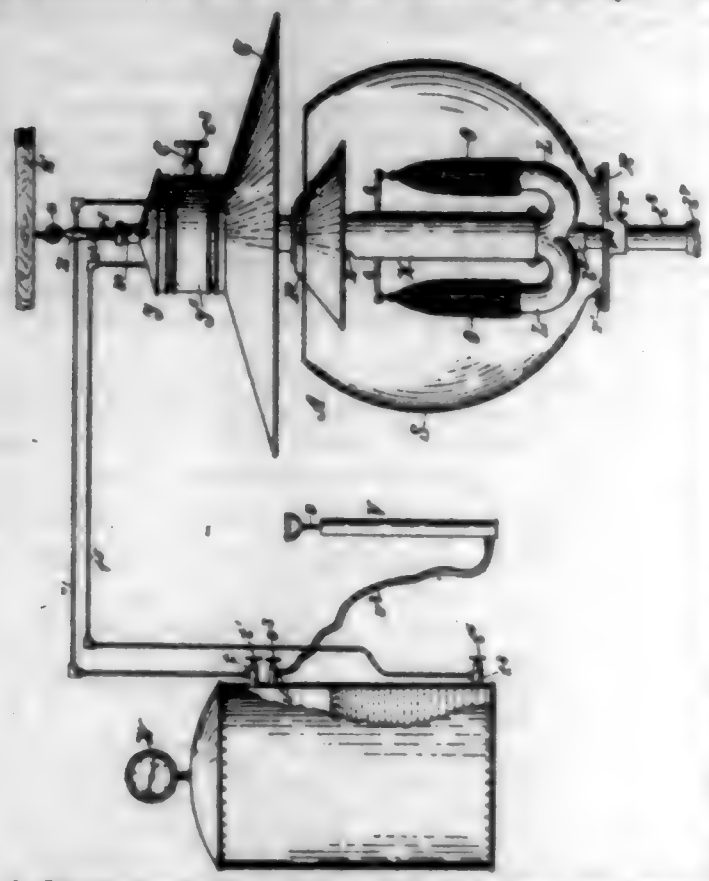
5. The combination with a pair of pliers, of a lever pivotally mounted upon said pliers, a tubular support pivotally connected to said lever, and a plunger carried by said tubular support adapted to engage and cut or bend the article grasped by the pliers.

6. The combination with a pair of pliers, of a lever pivotally mounted upon said pliers, a tubular support pivotally connected to said lever, and a plunger adjustably carried by said tubular support and adapted to engage and cut or bend the article grasped by the pliers.

816,669. **CARBURETING-LAMP.** EDMUND B. LUDWIG, Kansas City, Mo. Filed Feb. 6, 1902. Renewed Sept. 5, 1905. Serial No. 277,007.

Claim.—1. In a carbureting-lamp, a casing having a vaporizing-chamber and separate passages for admitting the gaseous and the liquid fuel to the vaporizing-chamber, a valve-stem within said casing and separate valves on said stem conjointly operating with

the stem to cut off the supply of the gaseous and liquid fuel from said passages to the vaporizing-chamber and also acting with the stem to cut off the flow of the gaseous and the liquid fuel alternately.



2. In a carbureting-lamp, a valve-casing having a vaporizing-chamber and separate passages in communication with each other for admitting the gaseous and the liquid fuel to the vaporizing-chamber, one of said passages having a valve-seat, a valve-stem having its inner end within the valve-seat, said valve-chamber having a chamber concentric with the valve-stem in communication with the passages for the gas and the vaporizing-chamber, a valve on said stem movable to and fro with the stem in said chamber, and a needle-valve on said latter valve acting alternately therewith to cut off the flow of the gas from the passage for the gas to said chamber.

3. In a carbureting-lamp, the combination with one or more burners, of a gas-generating tube located above the burners and heated thereby, air and gas mixing conductors beneath said tube leading to the burners, a depending tube supporting the air and gas mixing conductors, having openings at the bottom, supports for said tube and a diaphragm within the said supporting-tube through which the lower end of the gas-generating tube extends, and an inner down-draft-tube of smaller diameter leaving a space between the outer and inner tubes, leading to the air and gas mixing conductors.

4. In a carbureting-lamp, a gas-generating tube containing gas under pressure, and air and gas mixing conductor, and a tube supporting said conductor, a support for said tube having openings in the sides thereof, for the admission of heat adjacent to the gas-generating tube, a diaphragm within the said supporting-tube through which the lower end of the gas-generating tube extends, and a down-draft-tube beneath the said diaphragm, leading to the air and gas mixing conductor.

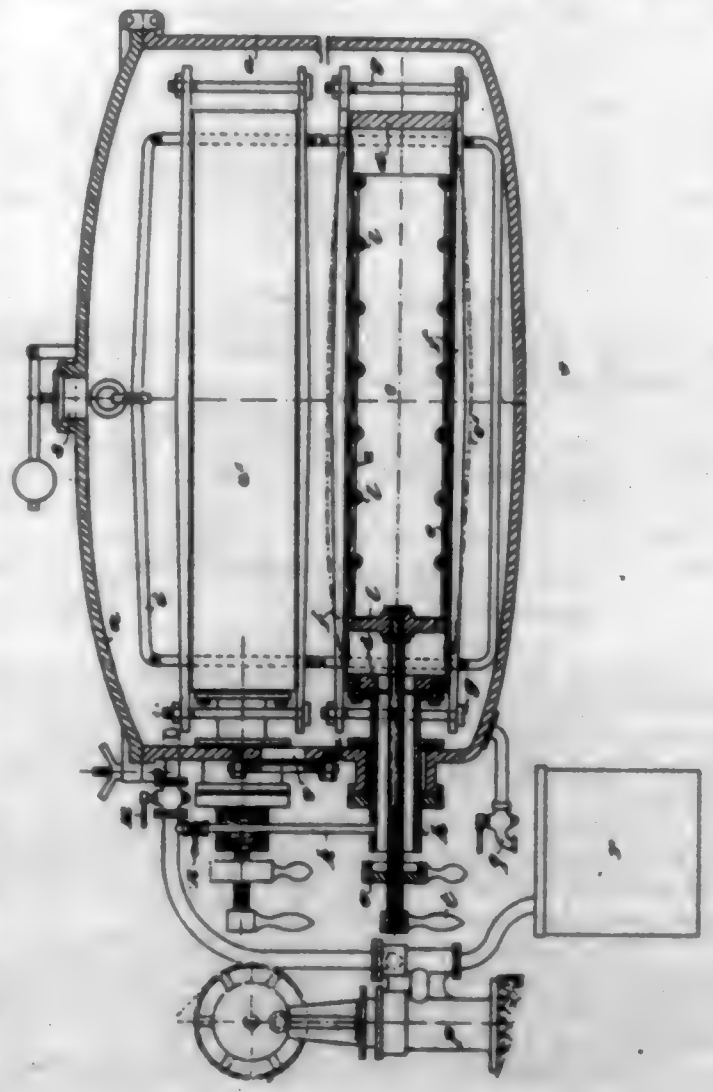
5. A carbureting-lamp comprising a vaporizer for the hydrocarbon, and a gas-generating tube connected with the vaporizer, an air and gas mixing conductor and an air-conducting tube supporting said air and gas mixing conductor, a support for said tube adjacent to the gas-generating tube having openings in the sides thereof for the passage of heat, means for admitting air to the vaporizer under pressure and controlling the supply, and devices on the air and gas mixing conductors for diffusing the light.

6. A carbureting-lamp comprising a vaporizing-case having a chamber for the hydrocarbon, and a jet-opening and a vaporizing-chamber in communication with the jet-opening, a valve-casing having a chamber for air and a valve-seat in communication with the jet-opening and said vaporizing-chamber, a valve-stem and a cone-valve on the said stem controlling the admission of the air, to the vaporizing-chamber, a separate valve on said stem controlling the admission of the air to the air-chamber, a gas-generating tube connected with the vaporizing-chamber having a discharge-opening, a gas and air mixing conductor below the gas-generating tube, a heating-tube supporting the air and gas mixing conductor, and supports therefor having openings between the supports for the admission of heat connected with the vaporizing-case, a mantle on said air and gas mixing conductor, and means for directing the heat of the mantles to the gas-generating tube.

7. A carbureting-lamp comprising a vaporizing-case, having a chamber for the hydrocarbon liquid fuel, and a jet-opening and a vaporizing-chamber in communication with the jet-opening, a valve-casing having a chamber for air, and a valve-seat in communication with the jet-opening and said vaporizing-chamber, a valve-stem and a cone-valve on said stem controlling the admission of the air to the vaporizing-chamber, a separate valve on said stem, controlling the admission of the air to the air-chamber, a gas-generating tube connected with the vaporizing-chamber, said valve-casing having a valve-chamber located between the vaporizing-chamber, and the gas-generating tube and a balance-valve in said chamber, a gas and air mixing conductor below the gas-generating tube, a heating-tube supporting the air and gas mixing conductor and also connected with the vaporizing-case, a mantle on said air and gas mixing conductor, and means for directing the heat from the mantle to the gas-generating tube.

8. In a carbureting-lamp comprising a vaporizing-case having a chamber for the hydrocarbon, and a jet-opening at one end, and a chamber for air having a valve-seat in the other end in communication and in axial line with the jet-opening, and a vaporizing-chamber in communication with the jet-opening and the air-chamber, a valve-casing having an intermediate solid portion and a valve-chamber, a valve-stem having a cone-valve in the valve-seat of the air-chamber and extending through the intermediate solid portion of the valve-casing, a valve on said stem closing the opening to the chamber, said valve-casing having an opening for air to the air-chamber, and a needle-valve on the valve to the air-chamber closing said opening, a gas-generating tube connected with the vaporizing-case and the vaporizing-chamber having a discharge-opening, an air and gas mixing conductor, and a heating-tube, and supporting devices connecting the heating-tube with the vaporizing-case, and lugs connecting the lower end of said case with the air and gas mixing conductor, and a tank for gasolene, and an air-compressor, tubes connected with said tank for conducting the gasolene and compressed air, one of which tubes is connected with the chamber for hydrocarbon, in the vaporizing-case, and the other with the opening in the valve-casing leading to the air-chamber in the valve-casing, and an adjusting device for the valve-stem.

816,670. APPARATUS FOR TANNING LEATHER. HENRI DE MARNEFFE, Liege, Belgium. Filed Oct. 29, 1904. Serial No. 230,579.



Claim.—1. In an apparatus of the character described, the combination with a closed vessel, of a frame to which the hides are secured, and an adjustable internal frame, substantially as described.

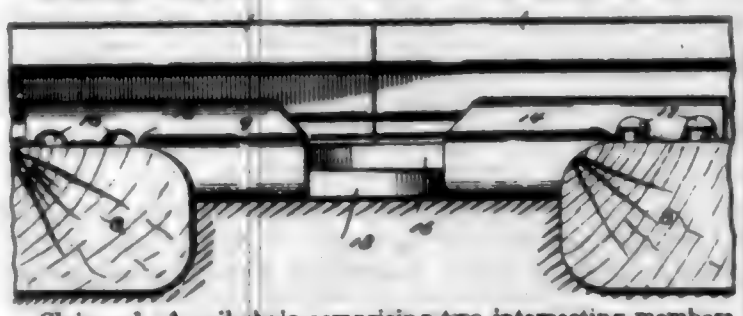
2. In an apparatus of the character described, the combination with a closed vessel, of a frame to which the hides are secured, an internal frame having ribs to support the hides, and means for adjusting the internal frame within the first frame, substantially as described.

3. In an apparatus of the character described, the combination with a closed vessel, of a frame to which the hides are secured, means for varying the air-pressure in said vessel, an internal frame, and means for adjusting said internal frame, substantially as described.

4. In an apparatus of the character described, the combination with a closed vessel, of a frame to which the hides are secured, an internal adjustable frame, means for varying the pressure outside of the supporting-frame, and means for varying the pressure inside the supporting-frame, substantially as described.

5. In an apparatus of the character described, the combination with a closed vessel, of frames supporting the hides, and an indicator comprising a piece of material such as is being treated, arranged to cover an opening in said vessel, substantially as described.

816,671. RAIL-JOINT. GEORGE H. MARSHALL and CHARLES L. DUNN, St. Johns, Mich. Filed Aug. 23, 1905. Serial No. 275,415.



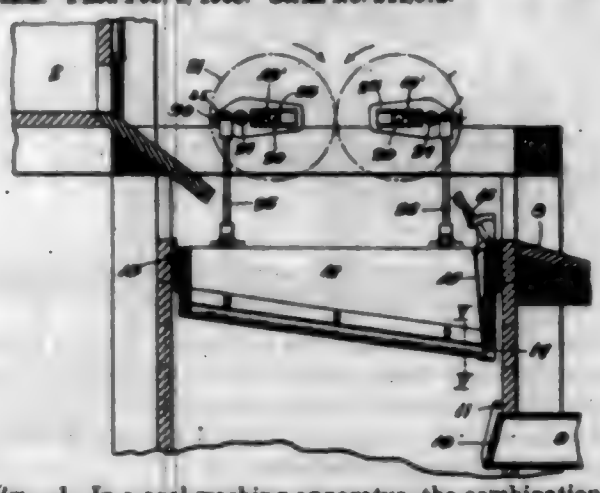
Claim.—1. A rail-chair comprising two intersecting members having rail-engaging means which extend in different planes on opposite sides of the point of intersection.

2. A rail-chair comprising two separable members having rail-engaging means, one of said members engaging one of the rails on one side and the opposite side of the adjoining rail, and vice versa.

3. A rail-chair comprising two intersecting members secured to the stringers, and having depending portions resting on the road-bed, and provided with rail-engaging means which extend in different planes on opposite sides of the point of intersection.

4. A rail-chair comprising two members, each of which consists of blocks provided with rail-engaging means, and a plate connecting said blocks, said plates intersecting, and the blocks extending in different planes on opposite sides of the point of intersection of the plates.

816,672. COAL-WASHING APPARATUS. ROBERT L. MARTIN, Jr., Pittsburg, Pa., assignor, by direct and mesne assignments, to Pittsburgh Coal Washer Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Feb. 4, 1905. Serial No. 244,072.



Claim.—1. In a coal-washing apparatus, the combination with a jig-tank, of a vertically-reciprocating jig having a bottom composed of a series of overlappng freely-pivoted slats adapted to open and shut under the influence of the reciprocations, substantially as set forth.

2. In a coal-washing apparatus, the combination with a jig-tank, of a vertically-reciprocating jig having a bottom composed of a series of overlapping freely-pivoted slats adapted to open and shut under the influence of the reciprocations, with means for receiving the water and coal from the upper portion of the jig and for renewing the supply of water beneath the jig, substantially as set forth.

3. In a coal-washing apparatus, the combination with a jig-tank and a settling-tank adjacent thereto, with means for conveying water from the settling-tank to the jig-tank beneath the jig; of a vertically-movable jig provided with a series of overlapping freely-pivoted slats adapted to open and shut under the influence of the reciprocations, substantially as set forth.

4. In a coal-washing apparatus, the combination with a jig-tank and a settling-tank adjacent thereto, with means for conveying water from the settling-tank to the jig-tank beneath the jig; of a vertically-movable jig provided with a series of overlapping freely-pivoted slats adapted to open and shut under the influence of the reciprocations, with means for reciprocating the jig, substantially as set forth.

5. In a coal-washing apparatus, the combination with a jig-tank and a settling-tank adjacent thereto, with means for conveying water from the settling-tank to the jig-tank beneath the jig; of a vertically-movable jig provided with a series of overlapping freely-pivoted slats adapted to open and shut under the influence of the reciprocations, and an independent opening-gate arranged to allow the heavier particles to escape from the jig, substantially as set forth.

6. In a coal-washing apparatus, the combination with a jig-tank and a settling-tank adjacent thereto, with means for conveying water from the settling-tank to the jig-tank beneath the jig; of a vertically-movable jig provided with a series of overlapping freely-pivoted slats comprising an opening and closing bottom, with means for imparting a slow upward and a fast downward stroke to the jig, substantially as set forth.

7. In a coal-washing apparatus, the combination of a jig-tank, a reciprocating jig therein provided with a bottom having attached inwardly-opening valves, and a settling-tank adjacent to the jig-tank, with an intervening inwardly-opening flap-valve leading into the jig-tank whereby a circulation of water is established from the jig-tank to the settling-tank and from the settling-tank into the jig-tank at a lower level upon reciprocating the jig, substantially as set forth.

8. In an apparatus of the class described, the combination of a jig-tank, a reciprocating jig therein provided with a bottom having attached inwardly-opening valves, a settling-tank, a slate-tank, an overflow-conduit leading from the jig-tank to the settling-tank, a conduit leading from the settling-tank to the slate-tank, and a conduit leading from the slate-tank to the interior of the jig-tank at a lower lever, with a covering flap-valve opening into the jig-tank, substantially as set forth.

9. A coal-washing jig comprising a vertically-reciprocable framework provided with a bottom composed of a series of overlapping freely-pivoted gates, substantially as set forth.

10. A coal-washing jig comprising a vertically-reciprocable framework provided with a bottom composed of a series of overlapping freely-pivoted gates, and means for limiting the upward travel of said gates, substantially as set forth.

11. A coal-washing jig comprising a vertically-reciprocable framework provided with a bottom composed of a series of overlapping freely-pivoted gates, and an adjustable device arranged to limit the upward travel of said gates, substantially as set forth.

12. A coal-washing jig comprising a vertically-reciprocable framework provided with a sloping bottom composed of a series of overlapping freely-pivoted gates, substantially as set forth.

13. A coal-washing jig comprising a vertically-reciprocable framework provided with a sloping bottom composed of a series of overlapping freely-pivoted gates, and a discharge-gate at the lower end of said jig, substantially as set forth.

14. A coal-washing jig comprising a vertically-reciprocable framework provided with a sloping bottom composed of a series of overlapping freely-pivoted gates, and a discharge-gate at the lower end of said jig, with means for locating said gate at varying heights, substantially as set forth.

15. Mechanism for variably actuating a jig consisting of pivoted levers provided with pitmen connected to the levers at one side of their pivotal bearings, and means for actuating the levers having a sliding engagement therewith on the other side of said bearings, substantially as set forth.

16. The combination with a vertically-reciprocating jig having a valve-controlled bottom, of slotted pivoted levers connected with the jig by pitmen, and actuating-cranks engaging the slots of the levers, substantially as set forth.

17. The combination with a reciprocating jig having a valve-controlled bottom, of slotted levers connected with the jig by pitmen,

reciprocating cranks engaging the levers, and adjustable fulcrum-bearings for the levers, substantially as set forth.

18. The combination with a vertically-reciprocating jig, of pivotally-mounted slotted levers provided with a plurality of pitmen connections located at different distances from the fulcrum centers of the levers and pitmen connected therewith and with the jig, with actuating-cranks engaging the slotted levers, substantially as set forth.

19. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of the water on the downward stroke, and means for imparting a slow upward and a fast downward stroke to the jig, substantially as set forth.

20. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of the water on the downward stroke, and actuating mechanism consisting of pivoted levers, means connecting the jig with said levers at one side of their pivotal bearings, and means for actuating the levers in changing engagement therewith at the other side of said bearings, substantially as set forth.

21. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of the water on the downward stroke, and actuating mechanism consisting of pivoted levers, means connecting the jig with said levers at one side of their pivotal bearings, and means for actuating the levers in changing engagement therewith at the other side of said bearings, with means for adjusting the pivotal bearings of the levers, substantially as set forth.

22. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of the water on the downward stroke, and actuating mechanism consisting of pivoted levers, means connecting the jig with said levers at one side of their pivotal bearings, and means for actuating the levers in changing engagement therewith at the other side of said bearings, with means for varying the normal distance between said actuating means and the pivotal bearings, substantially as set forth.

23. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of the water on the downward stroke, and actuating mechanism consisting of pivoted levers, means connecting the jig with said levers at one side of their pivotal bearings, and actuating-cranks in driving engagement with the levers, with means for adjusting the pivotal bearings of the levers, substantially as set forth.

24. The combination with a jig-tank, of a vertically-movable jig provided with attached mechanism for closing the bottom of the jig against passage of water on the upward stroke and for providing for passage of water on the downward stroke, actuating mechanism consisting of pivoted levers, pitmen connecting said levers with the jig, and means for actuating the levers in changing engagement therewith and providing for different rates of travel on the upward and downward motion of the jig, substantially as set forth.

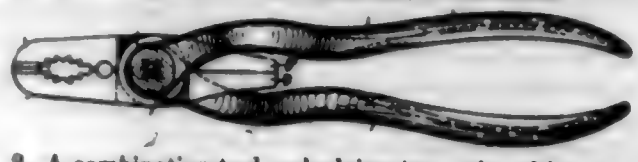
816,673. CONTAINER FOR CIGARS. SIMON C. MARUM, New York, N. Y. Filed Oct. 10, 1904. Serial No. 227,850.



Claim.—A container for cigars, comprising the rear and side walls between which the cigars may extend, and separated front bars connecting the side walls and serving to retain the cigars in place, while permitting them to be seen, one of said bars having an extension, furnishing a closure with which the inner ends and the adjacent sides of the cigars may contact, the side and rear walls being extended at the opposite end, whereby to form a closure for the container.

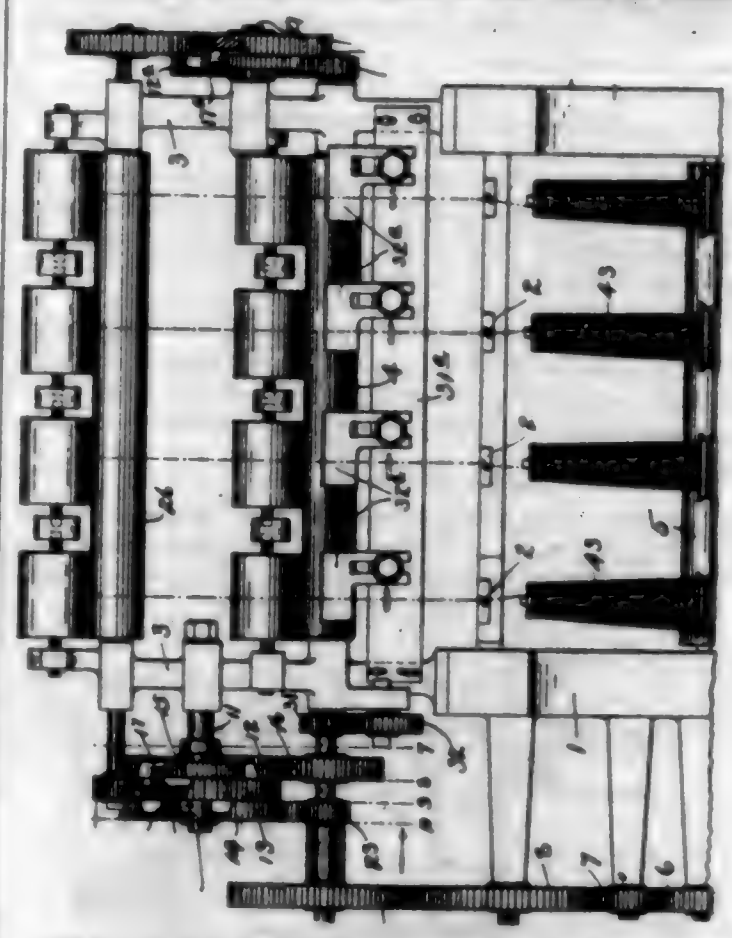
816,674. COMBINATION-TOOL. OLE MENDUS, Faribault, Minn. Filed Aug. 18, 1905. Serial No. 274,604.

Claim.—1. A combination-tool consisting of a plurality of double pairs of jaws each two pairs of said jaws being united by a pair of shanks crossing each other with square sockets formed in their outer faces and round apertures extending transversely through said shanks and central of said sockets, a pair of handles having flat heads on their inner ends with transverse apertures formed therethrough, the aperture in one of said heads being round and the aperture in the other head being square, lugs formed on the inner faces of said heads of the handles which lugs are adapted to fit into said sockets in the shanks of the jaws, a bolt having a permanent head on one end the other end being threaded with its shank adapted to extend through said apertures in the shank and the heads of the handles, one portion of the shank of the bolt being formed square to fit in the square aperture of one of the heads of one of the handles, and a knurled tap adapted to be run on the threaded portion of said bolt to bind the parts together, all substantially as set forth.



2. A combination-tool embodying two pairs of jaws, a pair of shanks integrally connecting the pairs of jaws, with apertures extending transversly through the shanks in the center of their crossing-points, and with a square socket formed in the outer face of each shank central of said apertures, a pair of handles having flattened heads from which they extend in outward and inward oppositely-disposed curves with the rear portions of the handles parallel with each other, a square lug extending in from the face of the head of each handle which lugs are of a size to fit said sockets in the jaw-shanks, a bolt for connecting the shanks of the jaws with the handles, a tap for retaining the bolt in position, and means for preventing the turning of the nut by the operation of the handles, all substantially as shown and described.

816,675. SPINNING AND TWISTING MACHINE. JOHN R. MILSON, Providence, R. I., assignor of one-fourth to Collins Brothers, Pawtucket, R. I., a Firm. Filed May 15, 1906. Serial No. 266,383.



Claim.—1. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different character, means for driving one or more of said sets at two speeds only, namely; a low speed and a high speed, and means for shifting from one speed to the other.

2. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different character, means for driving one or more of said sets at two speeds only, namely; a low speed and a high speed, means for shifting from one speed to the other and means for controlling the distance or length that each color shall be formed in the yarn.

3. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different character, means for driving one or more of said sets at two speeds

only, namely; a low speed and a high speed and adjustable means independent from the rolls for controlling the distance or length that each color shall be formed in the yarn.

4. In a spinning and twisting machine a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different colors, means for driving one or more of said sets at two speeds only, namely, a low speed and a high speed, and means whereby two or more solid colors may be formed of a predetermined length at different points at the same time in the yarn.

5. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different colors, means for driving one or more of said sets at two speeds only, namely, a low speed and a high speed, means whereby two or more solid colors may be formed of a predetermined length at different points at the same time in the yarn and means independent from the rolls for controlling the distance or length that each color shall be formed in the yarn.

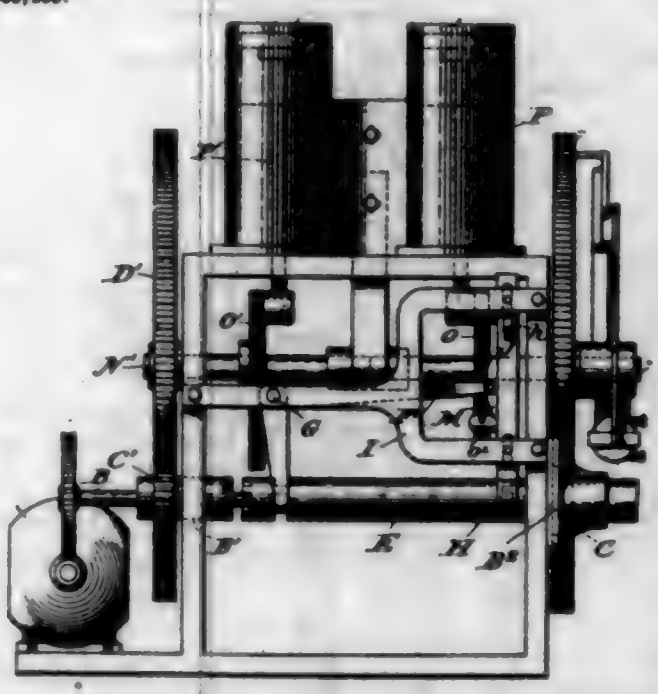
6. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different character, means for driving one or more of said sets at two speeds only, namely; a low speed and a high speed and means for shifting from one speed to the other, said means including a cam-operated pawl and a ratchet-wheel.

7. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different colors, one of said sets being driven at a constant speed and means for driving one or more of the remaining sets at two speeds only, namely, faster and slower than the said constant-speed rolls.

8. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different colors, one of said sets being driven at a constant speed, means for driving one or more of the remaining sets at two speeds only, namely; faster and slower than the said constant-speed rolls, and means whereby two or more solid colors may be formed for a predetermined length at different points at the same time in the yarn.

9. In a spinning and twisting machine, a plurality of sets of continuously-driven rolls for feeding a plurality of threads of different colors, one of said sets being driven at a constant speed and means for driving one or more of the remaining sets at two speeds only, namely; faster and slower than the said constant-speed rolls, means whereby two or more solid colors may be formed for a predetermined length at different points at the same time in the yarn, and adjustable means whereby the length of each color may be controlled.

816,676. **MECHANISM FOR OPERATING RAILWAY-SIGNALS.** WILLIAM V. MOAK, Utica, N. Y. Filed July 12, 1905. Serial No. 269,489.



Claim.—1. Mechanism for operating two railway-signals, blades consisting of a single motor, a driving-shaft operated by said motor, two driving-wheels mounted loosely upon said shaft, a sleeve mounted upon said shaft between said wheels, said sleeve turning positively with said shaft and having a limited movement upon said shaft parallel with its axis, means for gearing one end of said sleeve with one of said wheels and the other end of said sleeve with the other wheel, said sleeve not being of sufficient length to be geared to both wheels at the same time, means for shifting said sleeve from contact with one wheel to contact with the other wheel, in combination with two signal-blades and means for operating one signal-blade from one wheel and the other signal-blade from the other wheel, substantially as described.

2. In an operating mechanism for railway-signals, a motor, a driving-shaft operated by said motor, two driving-wheels mounted loosely upon said shaft, a sleeve mounted upon said shaft between said wheels, notches and teeth on each end of said sleeve, notches and teeth on each of said driving-wheels adjoining the ends of said sleeve and adapted to mesh with the notches and teeth on the adjacent ends of said sleeve, said sleeve attached to said driving-shaft so as to turn positively with said shaft but to be capable of a limited movement upon said shaft parallel with its axis, said shaft being less in length than the distance between said driving-wheels, two other wheels mounted upon shafts adapted to turn with said wheels one of which wheels being adapted to be turned by one of said driving-wheels and the other of said wheels being adapted to be turned by the other of said driving-wheels, arms mounted on each of said shafts, two rods one attached to one of said arms mounted on one shaft and the other rod to the arm mounted on the other shaft, two signal-blades mounted upon a post, one of said rods attached to one blade and the other rod attached to the other blade and adapted to operate said signal-blades as said arms are raised and lowered, together with means for shifting said sleeve from contact with one driving-wheel into contact with the other driving-wheel, substantially as described.

3. A mechanism for operating two railway-signals from one motor, consisting of a motor, a driving-shaft, two driving-wheels mounted loosely upon said shaft, a sleeve mounted upon said shaft between said wheels of less length than the distance between said wheels, notches and teeth on each end of said sleeve, notches and teeth on each of said driving-wheels adjacent to and adapted to mesh with the notches and teeth on the ends of said shaft, said sleeve attached to said shaft and revolving positively with said shaft and at the same time capable of a limited movement upon the shaft back and forth parallel with its axis, two other wheels mounted upon separate shafts each adapted to turn with its wheel, one of which wheels being adapted to be turned by one of said driving-wheels and the other of said wheels adapted to be turned by the other driving-wheel, a bracket fixedly attached to the frame of the machine, a lever pivoted upon said bracket, one arm of said lever in contact with said sleeve and adapted to shift said sleeve back and forth upon the driving-shaft from contact with one driving-wheel to contact with the other driving-wheel as the lever is rocked upon its pivot, the other arm of said lever being attached to a sliding bar mounted movably upon said bracket, an arm extending from the shaft of one of said wheels, connecting with and adapted to move said sliding bar up and down as the said shaft of said wheel turns partly around and returns to its original position thereby rocking said lever on its pivot and shifting said sleeve, in combination with two signal-blades and means for operating them, one from one of said wheels and the other from the other wheel, substantially as described.

816,677. **ELEVATOR.** THOMAS E. MURRAY, Brooklyn, N. Y. Filed Nov. 18, 1905. Serial No. 287,966.

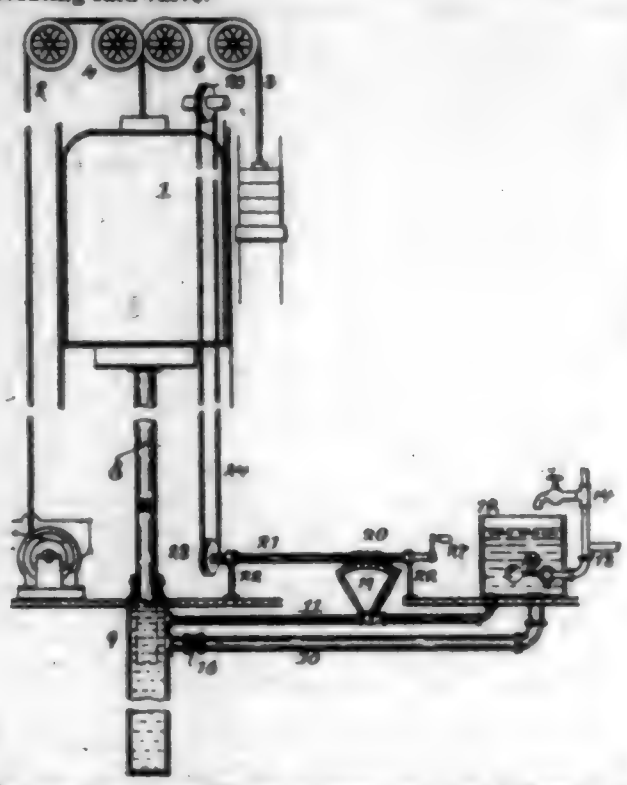
Claim.—1. The combination with an elevator-car and hoisting-gear therefor, of a vertical rigid support secured to said car, a cylinder containing liquid disposed below said car and receiving said support, a liquid-escape conduit communicating with said cylinder and means for regulating the escape of liquid from said cylinder through said conduit upon the descent of said car.

2. The combination with an elevator-car and hoisting-gear therefor, of a closed liquid-receptacle, a tank, means positively actuated by said car for causing a flow of liquid from said tank to said receptacle on the ascent of said car and for forcing said liquid out of said receptacle and into said tank on the descent of said car and means for controlling the escape of liquid from said receptacle to said tank.

3. The combination with an elevator-car and hoisting-gear therefor, of a vertical supporting-plunger, a cylinder containing liquid disposed below said car and receiving said plunger, a tank communicating with said cylinder and means controllable within said car for regulating the escape of liquid from said cylinder to said tank.

4. The combination with an elevator-car and hoisting-gear therefor, of a vertical supporting-plunger, a cylinder containing liquid disposed below said car and receiving said plunger, a tank, a duct between said tank and cylinder, a check-valve in said duct constructed to prevent flow of liquid from cylinder to tank, a second duct between said duct and said cylinder and a valve for regulating liquid-flow through said last-named duct.

5. The combination with an elevator-car and hoisting-gear therefor, of a vertical supporting-plunger, a cylinder containing liquid disposed below said car and receiving said plunger, a tank, a duct between said tank and cylinder, a check-valve in said duct constructed to prevent flow of liquid from cylinder to tank, a second duct between said tank and said cylinder, a valve for regulating liquid through said last-named duct and means controllable within said car for actuating said valve.



6. The combination with an elevator-car and hoisting-gear therefor, of a vertical supporting-plunger, a cylinder containing liquid disposed below and receiving said plunger, a tank, a duct between said tank and said cylinder, a check-valve in said duct constructed to prevent flow of liquid from cylinder to tank, a second duct between said tank and said cylinder, a valve for regulating liquid-flow through said last-named duct, a rack-segment carried by said valve-stem, a worm engaging with said segment and an endless cord for actuating said worm and extending within said car.

7. The combination with an elevator-car and hoisting-gear therefor, of a hollow vertical supporting-plunger, a cylinder below said car containing liquid and receiving said plunger, a tank, a duct between said tank and said cylinder, and a valve in said duct.

8. The combination with an elevator-car and hoisting-gear therefor, of a vertical supporting-plunger, a cylinder below said car containing liquid and receiving said plunger, a tank, means for delivering a supply of liquid to said tank, a duct between said tank and said cylinder, means for preventing flow through said duct from cylinder to tank, a second duct between tank and cylinder and a valve in said last-named duct.

816,678. ELEVATOR. THOMAS B. MURRAY, Brooklyn, N. Y. Filed Nov. 25, 1905. Serial No. 288,067.

Claim.—1. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle and means for regulating the flow of liquid from said cylinder to said tube.

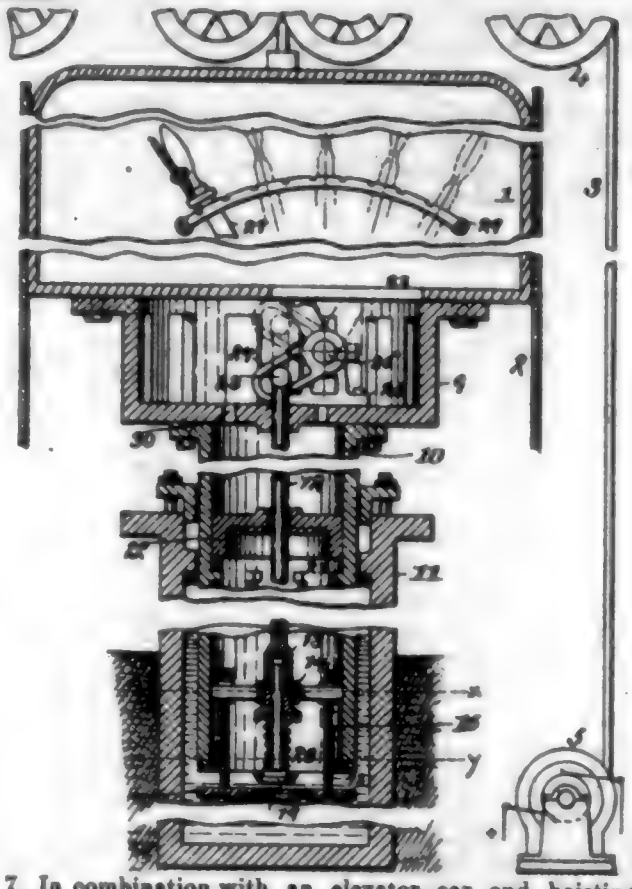
2. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle, means for regulating the flow of liquid from said cylinder to said tube and a device within said car for controlling said regulating means.

3. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle, and a check-valve at the lower end of said tube.

4. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle, a check-valve at the lower end of said tube, a valve seated in said check-valve, and means for controlling said last-named valve.

5. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing cylinder disposed below said car, a tube depending from said car and entering said cylinder and means in said tube for regulating flow of liquid from said cylinder into said tube.

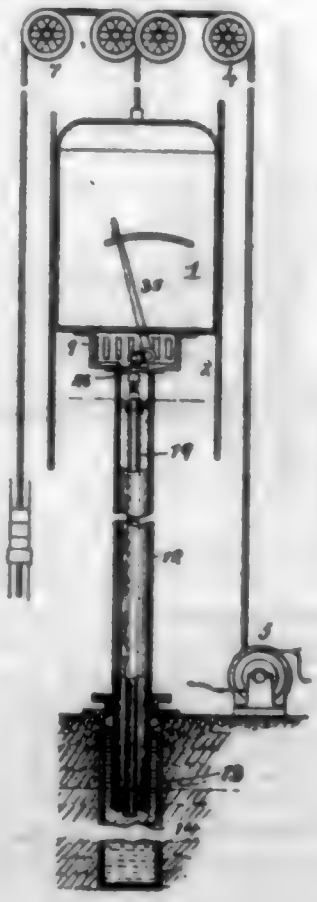
6. In combination with an elevator-car, and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle, a valve having its seat in the bottom of the tube, a valve-rod for operating said valve extending through said tube, and means within said car for operating said valve-rod.



7. In combination with an elevator-car and hoisting-gear therefor, a closed liquid-containing receptacle, a tube connected to said car and entering said receptacle, a valve-rod, a valve having its seat in the bottom of said tube and provided with a stem entering a recess in the end of said valve-rod and a spring between said valve and valve-rod end.

8. In combination with an elevator-car and hoisting-gear therefor, a closed liquid-containing cylinder, a tube having openings at its upper end and connected to said car and entering said cylinder, a valve for controlling the inflow of liquid from said cylinder to said tube, a rod for said valve extending through said tube, a loose piston on said rod and means for retaining said piston in the upper part of said tube.

816,679. ELEVATOR. THOMAS B. MURRAY, Brooklyn, N. Y. Filed Dec. 1, 1905. Serial No. 289,720.



Claim.—1. In combination with an elevator-car and a closed liquid-containing receptacle, two tubes, one within the other, connected to said car and entering said receptacle, means for controlling the passage of liquid from said receptacle to the annular space between said tubes and means for regulating the flow of liquid from said inner tube to said outer tube.

2. In combination with an elevator-car and a closed liquid-containing receptacle, two tubes, one within the other, connected to said car and entering said receptacle, means for controlling the passage of liquid from said receptacle to the annular space between said tubes, means for regulating the flow of liquid from said inner tube to said outer tube and a device within said car for operating said regulating means.

3. In combination with an elevator-car and a liquid-containing receptacle, two tubes, one within the other, connected to said car and entering said receptacle, means actuated by the movement of said car for intermittently permitting and preventing passage of liquid from said receptacle to the annular space between said tubes, and means for regulating the flow of liquid from said inner tube to said outer tube.

4. In combination with an elevator-car and a closed liquid-containing receptacle, a tube depending from said car and entering said receptacle, a check-valve at the lower end of said tube, a second tube fixed in said first tube and extending through said check-valve and means for regulating the flow of liquid from said inner tube into said outer tube.

5. In combination with an elevator-car and a closed liquid-containing receptacle, a tube depending from said car and entering said receptacle, a check-valve at the lower end of said tube, a second tube fixed in said first tube and extending through said check-valve, means for regulating the flow of liquid from said inner tube into said outer tube and a snifting-valve in the upper part of said inner tube.

6. In combination with an elevator-car and a closed liquid-containing receptacle, a tube depending from said car and entering said receptacle, a check-valve at the lower end of said tube, a second tube fixed in said first tube and extending through said check-valve and a vertically-moving valve disposed at the upper end of said inner tube for regulating the flow of liquid from said inner tube to said outer tube.

7. In combination with an elevator-car and a closed liquid-containing receptacle, a tube depending from said car and entering said receptacle, a check-valve at the lower end of said tube, a second tube fixed in said first tube and extending through said check-valve, a vertically-moving valve disposed at the upper end of said inner tube for regulating the flow of liquid from said inner tube to said outer tube, a hollow stem for said valve having air-openings in its wall, and a snifting-valve seated in said stem.

8. In combination with an elevator-car and a closed liquid-containing receptacle, a tube depending from said car and entering said receptacle, a check-valve at the lower end of said tube, a second tube fixed in said first tube and extending through said check-valve, a vertically-moving valve disposed at the upper end of said inner tube for regulating the flow of liquid from said inner tube to said outer tube, a hollow stem for said valve having air-openings in its wall, a snifting-valve seated in said stem, a valve-rod, a lever within the car and means between the lever and rod supported below said car for transmitting motion from said lever to said rod.

816,680. **CHANGEABLE ILLUMINATED SIGN.** GEORGE J. PELSTRING and HENRY G. PELSTRING, Latonia, Ky. Filed Oct. 18, 1905. Serial No. 283,294.



Claim.—1. In a sign, the combination of two frames, one fitted within the other to form a sign-frame complete, a case into which the two frames are removably fitted as a whole, transparent material in sheet form supported in each frame and blocks containing stenciled letters interchangeably supported between the transparent material of the two frames.

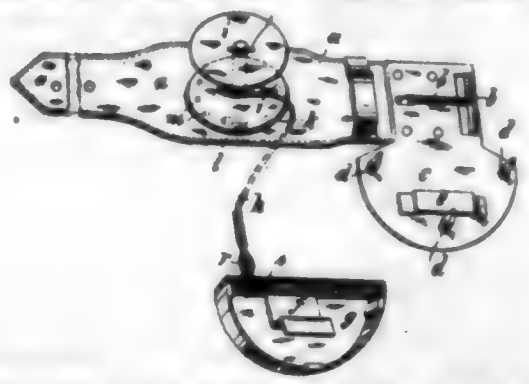
2. In a sign, the combination of a front of a material permitting passage of light, a frame provided with horizontally-arranged letter-supports behind the same and letter-blocks having stenciled letters interchangeably supported on these supports and being held thereon by the front mentioned.

3. In a sign, the combination of a retaining-front of a material permitting passage of light, strips of glass supported horizontally behind the same and arranged edgewise one below the other and letter-blocks having stenciled letters interchangeably supported on these strips.

4. In a sign, the combination of a frame provided with horizontally-arranged letter-supports, letter-blocks having stenciled letters and provided with flanges whereby they are interchangeably supported on the letter-supports mentioned and a front in front of these letter-blocks to retain them in position on their supports.

5. In a sign, the combination of series of letter-blocks having stenciled letters, supports for these blocks and a front in front of these letter-blocks to hold them in position on their supports said front being of a material which permits passage of light.

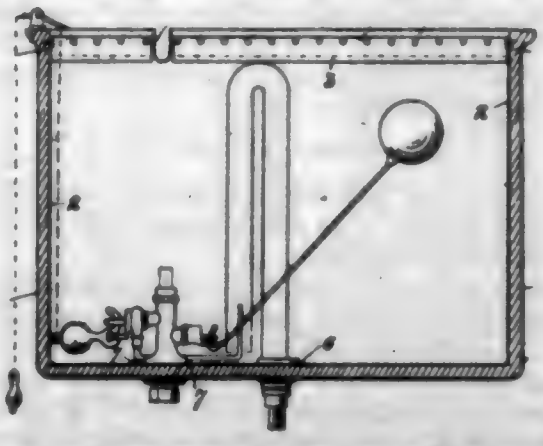
816,681. **LIFE-SAVING APPARATUS.** ANTON PULLER, Spandau, Germany. Filed Dec. 10, 1904. Serial No. 236,262.



Claim.—1. In a device of the class set forth the combination with a wristband of a plate having spikes and attached to said wristband, a casing removably mounted on said plate to cover said spikes, a line having one end connected to said casing, and a bobbin secured to the wrist-band to which the other end of said line is attached, substantially as described.

2. In a device of the class set forth, in combination, a wristband, a plate having spikes attached to said wristband, a casing removably mounted on said plate, a bobbin secured to the wristband, a case covering said bobbin said case having a guiding-slot, a line attached to said bobbin and to said casing, and means for preventing said line from unwinding from said bobbin substantially as described.

816,682. **LINING FOR WOODEN TANKS.** FRANK E. REED and JOHN HEALD, Jamestown, N. Y., assignors, by direct and mesne assignments, to The Columbus Brass Company, Columbus, Ohio, a Corporation of Ohio. Filed Jan. 2, 1904. Serial No. 187,479.

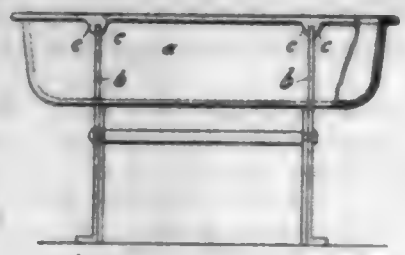


Claim.—A tank consisting of a wooden shell, an unattached sheet-metal lining within said shell, a strip attached to said shell above the upper edge of said lining and extending over the same, the upper edge of said strip folded toward said shell, and a space between the lower edge of said fold and said upper edge of the lining, substantially as and for the purpose specified.

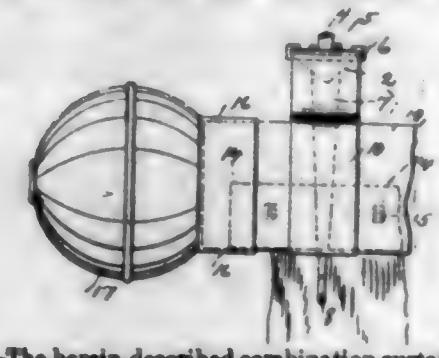
816,683. **KNEADING-TROUGH.** ALFRED SCHMID-KELLER, Zürich, Switzerland. Filed July 18, 1904. Renewed Oct. 16, 1905. Serial No. 283,042.

Claim.—An improved kneading-trough made of glass, a hori-

zontal flange around its upper edge and a rounded edge at the upper end of the trough, bosses downwardly projecting from the lower surface of the horizontal flange each provided with an incision and a collapsible stand the upper ends of which are inserted into the incisions of said bosses, substantially as described and shown and for the purpose set forth.

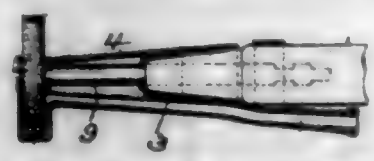


816,684. COMBINED CURTAIN-POLE, BRACKET, AND WINDOW-SHADE HOLDER. JOHN H. SEBERRS, Sharon, Pa. Filed Dec. 17, 1904. Renewed Nov. 28, 1905. Serial No. 289,435.



Claim.—The herein-described combination curtain-pole, bracket and window-shade holder, comprising the bracket having a straight portion 1, an open ring 10 at one end, a means for attachment with the window-frame 3 consisting of the downwardly-bent portion 2 and nail 4 the head of which is formed with an opening in which a wedge 5 is placed, the metallic pole 12 open along the base and fitted with removable end caps 17 supported in said rings 10, the inner sectional pole 14 adapted to receive and hold the curtains and means for holding said sections together, and the window-shade brackets 7 slidably connected to curtain-pole bracket 1 having means 8 for engagement with the bearings of the window-shade, all arranged and combined for service, substantially as and for the purpose described.

816,685. SHIELD AND MOISTENER FOR DENTAL TOOLS. CHARLES A. SEVIER, Jackson, Tenn. Filed June 20, 1904. Serial No. 214,662.

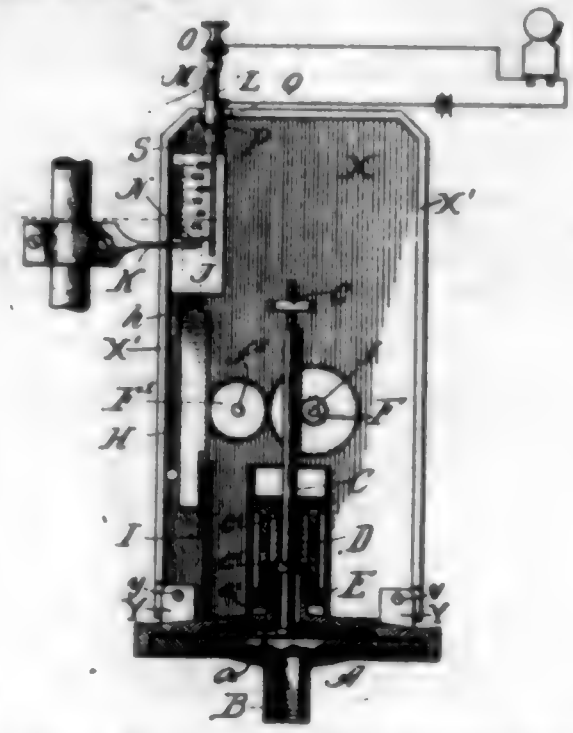


Claim.—The combination with a dental grinding-tool, of a shield partly embracing the edge and embracing the front and rear faces of said tool, and a pipe for discharging water against a face of the grinding-tool within the shield.

816,686. HORSE-POWER INDICATOR AND ENGINE-OVERLOAD ALARM. JOHN F. SERRYLER, Chicago, Ill. Filed Nov. 23, 1904. Serial No. 234,585.

Claim.—1. The combination of a chamber provided with a communicating passage to the steam-supply of an engine, a movable wall to such chamber, a longitudinally-movable rod in contact at one end with the movable wall, an adjustable spring in connection with said rod, an adjustable gland attached to the wall of the chamber, such gland inclosing said spring and said rod, a lock-nut to hold the gland in position, an electric circuit, a graduated scale-plate and an index-finger thereto, electrical contacts connected with such graduated scale-plate, a connection between said longitudinally-movable rod and said graduated scale-plate, said index-finger attached to the governing device of the engine, substantially as described and shown.

2. The combination, in a horse-power indicator and engine-overload alarm, of a movable graduated scale-plate, an electric contact-piece mounted on the scale-plate to move therewith and movable thereover, an electric circuit, such electric contact-piece forming an element in such circuit, and an index-finger movable to contact with the electric contact-piece and move such contact-piece to close the circuit, and a connection between the index-finger and the governing device of an engine.



3. The combination of a longitudinally-movable rod, an adjustable spring, a movable abutment, the movable rod, the spring and the movable abutment related to vary the tension of the spring on the rod, means to lock the movable abutment in an adjusted position, a movable diaphragm in contact with one end of the rod, a diaphragm-chamber and a passage-way for steam communicating with the source of steam-supply of an engine and with the diaphragm-chamber to continuously obtain variable pressure on the rod against the resiliency of the spring, such variation in pressure corresponding with the varying pressure of the steam-supply of the engine, substantially as described and shown.

4. The combination of a base and a movable scale-plate on the base with a movable abutment mounted on the scale-plate to move therewith and movable thereover, means to move the scale-plate, an additional movable abutment, a connection between such additional movable abutment and the valve mechanism of an engine, such additional movable abutment arranged to move the movable abutment relative to the scale-plate.

5. The combination of a base and a movable scale-plate on the base with an abutment mounted on the scale-plate to move therewith and movable thereover, an additional abutment movable over the scale-plate, a connection between such additional abutment and the governing device of an engine, steam-actuated mechanism, a connection between such mechanism and the scale-plate, and means to supply steam, the pressure whereof corresponds with the pressure of the steam in the engine, to actuate such mechanism.

6. The combination of a base, a slotted scale-plate movably mounted on the base, an index-finger extending through the slot and movable with the scale-plate and movable thereover, an additional index-finger movable relative to the first-named index-finger, means to move the slotted scale-plate, and means to move the last-named index-finger to contact with the first-named index-finger and move the same relative to the scale-plate.

7. The combination of insulating material, a metal rod longitudinally mounted on such insulating material, an index-finger on the rod, an electric contact-piece adjustably mounted adjacent to the rod, a scale-plate adjacent to the index-finger, an electric generator, an electric signal and electric conductors connecting the contact-piece, the generator, the signal and the longitudinally-movable rod, substantially as described.

8. The combination in an engine provided with a govering device, of a graduated movable scale, a projection arranged to travel over the face of the scale, an electric circuit, an electric generater, contact-pieces, and a signal device in said circuit, an index-finger on the scale and movable thereover said projection arranged to strike the index-finger and close the circuit by the travel thereof beyond a predetermined maximum, means to adjust the graduated movable scale and index-finger thereon in accordance with different steam-pressures; all combined substantially as shown and described.

9. In an engine provided with a governing device, the combination of a graduated movable scale, a projection arranged to travel over the face of the scale, an electric circuit, an electric generator, contact-pieces, an index-finger and a signal device in said circuit,

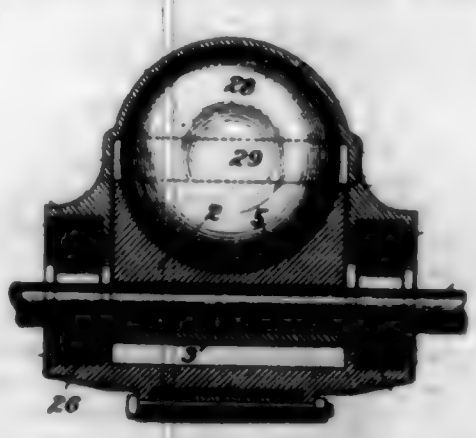
means to adjust said index-finger, said projection arranged to strike the index-finger and close the circuit by the travel thereof beyond a predetermined maximum, means to adjust the instrument in accordance with different steam-pressures, and a connection between such means and said scale; substantially as shown and described.

10. In combination with an engine provided with a source of steam-supply, a diaphragm, a casing in which the diaphragm is placed, such casing provided with a diaphragm-chamber, means to yieldingly maintain the diaphragm in a determined position and to resist movement thereof by pressure of steam thereon in the diaphragm-chamber, such resistance to the movement of the diaphragm increasing as the movement of the diaphragm increases, a passage-way connecting the diaphragm-chamber with the steam-generator, a movable abutment, a connection between the movable abutment and the diaphragm, an electric circuit provided with an electric signal and with an electric switch, a connection between the movable abutment and the switch, an additional movable abutment arranged to coact with the first-named movable abutment and a connection between the additional movable abutment and the governing device of the engine, substantially as described.

11. In an engine provided with a source of steam-supply the combination of a diaphragm, a casing in which the diaphragm is placed, such casing provided with a diaphragm-chamber, means to yieldingly maintain the diaphragm in a determined position and to increasingly resist increased movement thereof by pressure of steam thereon in the diaphragm-chamber, a passage-way connecting the diaphragm-chamber with the steam-generator, a combined movable abutment and index, a connection between the combined movable abutment and index and the diaphragm, an electric circuit provided with an electric signal and with an electric switch, a connection between the combined movable abutment and index and the switch, an additional movable abutment arranged to coact with the first-named movable abutment and the connection between the additional movable abutment and the governing device of the engine, substantially as described.

12. The combination of a diaphragm-shell, a diaphragm in the shell, such shell provided with a diaphragm-chamber and with a communicating passage-way therefrom to the source of steam-supply of an engine, means to resist movement of the diaphragm by the steam and to yieldingly maintain the diaphragm in a determined position, a longitudinally-movable rod, a connection between the rod and the diaphragm, a movable graduated scale-plate provided with a finger, and a connection between said scale-plate and the longitudinally-movable rod and a movable abutment actuated by the valve mechanism of an engine and arranged to coöperate with the finger; substantially as shown and described.

816,687. **PNEUMATIC OR ELASTIC SPRING FOR VEHICLES.** WILLIAM H. STAATS, Cohoes, N. Y. Filed Sept. 28, 1905. Serial No. 280,488.



Claim.—1. A pneumatic vehicle-spring comprising a cup mounted on the vehicle-axle, a relatively movable cap surmounting said cup, a hanger, two inwardly-channeled, elongated collars encircling said axle, one at each side of said cup, and disposed between and formed integrally with opposite sides of said cap and the ends of said hanger respectively, packing arranged in the channels in said collars and a cushion arranged between and compressed by said cup and cap.

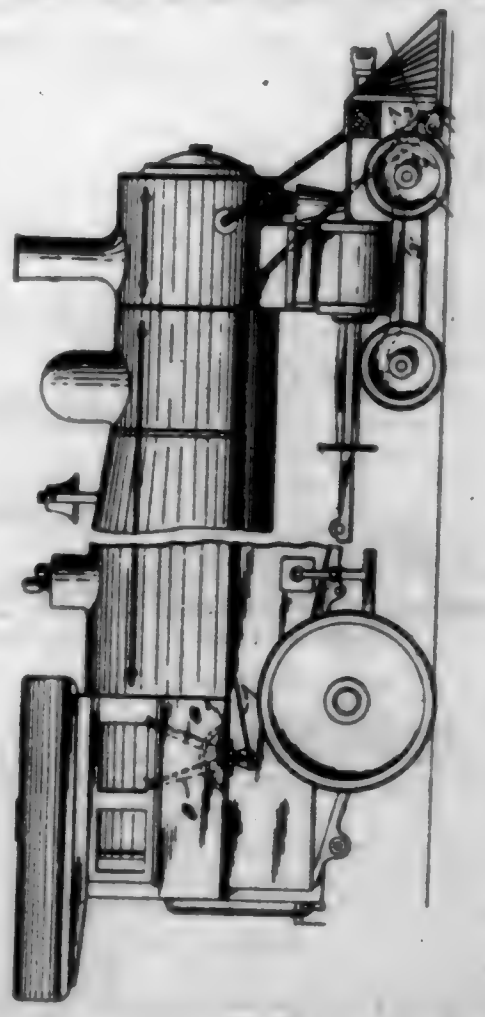
2. A pneumatic vehicle-spring comprising a cup mounted on the vehicle-axle, a relatively movable cap surmounting said cup and overlapping the edges thereof, said cap being provided on opposite sides with ears, a hanger, two inwardly-channeled elongated collars encircling said axle and disposed between and formed integrally with said ears and the ends of said hanger respectively, packing arranged in the channels in said collars, and a cushion arranged between and compressed by said cup and cap.

3. A pneumatic vehicle-spring comprising a cup mounted on the vehicle-axle, a cap arranged to cover the hollow in said cup, to overlap the edges thereof, and to have relative movement therewith and provided on opposite sides with downwardly-extending ears, a hanger, two inwardly-channeled, vertically-elongated collars encircling said axle and disposed between and formed integrally with said ears and the ends of said hanger respectively, whereby said axle is held against relative longitudinal movement but is allowed a limited vertical movement, packing arranged in the channels in said collars, and an inflated hermetically-sealed cushion arranged between and compressed by said cup and cap.

4. A pneumatic vehicle-spring comprising a cup mounted on the vehicle-axle, the interior of said cup being substantially hemispherical in shape, and the exterior being provided with cylindrical bearing edges, a cap arranged over said cup, to overlap the edges thereof, and have relative movement therewith, the interior of said cap being substantially hemispherical in shape except that portion thereof which overlaps the edges of the cup, which portion is substantially cylindrical in shape, said cap being provided on opposite sides with downwardly-extending ears, a hanger below the axle, two inwardly-channeled vertically-elongated collars encircling said axle and disposed between and formed integrally with said ears and the ends of said hanger respectively, whereby said axle is held against relative longitudinal movement but is allowed a limited vertical movement, packing arranged in the channels in said collars and an inflated hermetically-sealed cushion arranged between and compressed by said cup and cap.

5. In a pneumatic vehicle-spring, the combination with a vehicle-axle and a vehicle-spring proper, of a relatively movable cup and cap, the cup being mounted on the axle and the cap disposed above said cup and being mounted on the spring proper by means comprising a hanger disposed beneath the axle and connected to the edges of said cap by two elongated collars which encircle said axle, one at each side of said cup, whereby said axle may have a limited vertical but no horizontal movement relative to the spring proper, a cushion arranged between and compressed by said cup and cap, and packing-rings arranged interiorly of said collars.

816,688. **ATTACHMENT FOR LOCOMOTIVES.** SYLVESTER G. STEVENS, Duluth, Minn., assignor to Lawrence Switch Co., Duluth, Minn., a Corporation. Filed July 22, 1904. Serial No. 217,721.



Claim.—1. The combination, with a motor-truck frame, of a shaft journaled therein, a drum secured on said shaft, a cable wound

on said drum for operating the same at a distance, and an antifriction bearing-wheel carried by the outer end of said shaft and arranged to be depressed to a point below the top of the track-rails, for the purpose specified.

2. The combination, with a motor-truck, of a shaft journaled therein, a drum secured on said shaft, a cable wound on said drum for operating the same at a distance, a crank secured on said shaft, a bearing-wheel carried by said crank, and means for limiting the oscillating movement of said crank and shaft.

3. The combination, with a motor-truck, of a shaft journaled therein means within control of the driver for rocking said shaft, a crank secured on said shaft and provided with a bearing-wheel 11 and a lug 12 at opposite ends, and a stop 13 arranged to engage said lug and arrest the oscillating movement of said crank and shaft, substantially as described.

4. The combination, with a motor-truck, of two shafts journaled therein in line with each other, means within control of the driver for oscillating said shafts, cranks secured on the outer ends of said shafts and provided with antifriction bearing-wheels, and stops for limiting the oscillating movement of said cranks and shafts.

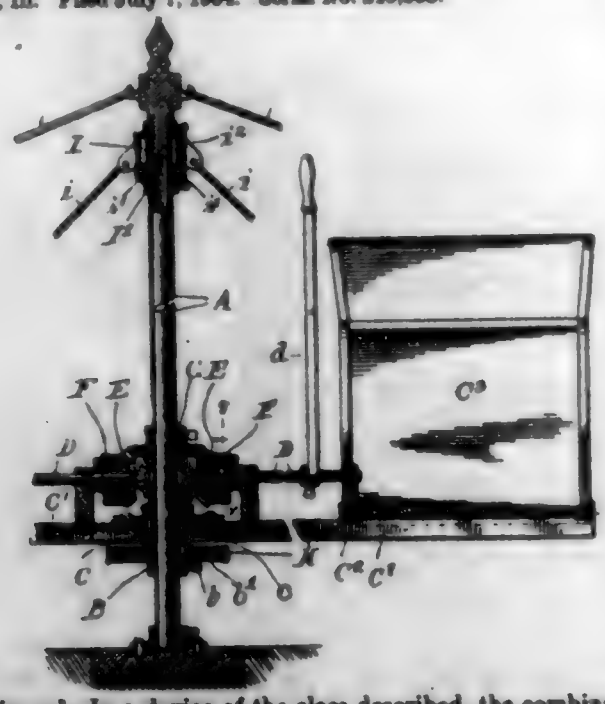
5. The combination, with a motor-truck, of the shafts 3 and 4 journaled therein, a washer 9 provided between the contiguous ends of said shafts, drums 5 and 6 secured on said shafts, cables wound upon said drums, levers connected to said cables for revolving said shafts, and cranks mounted upon the outer ends of said shafts and having suitable bearing-wheels, for the purpose specified.

6. The combination, with a motor-truck, of shafts journaled therein upon opposite sides of the truck, each shaft being movable independently of the other one, drums provided on said shafts, cables coiled around said drums, and depressible tread devices carried by the outer ends of said shafts and arranged to be depressed to a point below the top of the rails, substantially as described.

7. The combination, with a motor-truck, of shafts journaled therein on opposite sides of the truck, each shaft being operable independently of the other one, means within control of the driver for rocking said shafts, depressible tread devices carried by said shafts and arranged to be depressed below the top of the track-rails, substantially as described.

8. The combination, with a motor-truck, of a shaft journaled therein, a drum secured on said shaft, a cable wound on said drum for operating the same at a distance, and means carried by said shaft and arranged to be depressed to a point below the top of the track-rails, for the purpose specified.

816,689. **MERRY-GO-ROUND.** CHARLES M. STEVENSON, Harvard, Ill. Filed July 7, 1904. Serial No. 215,565.

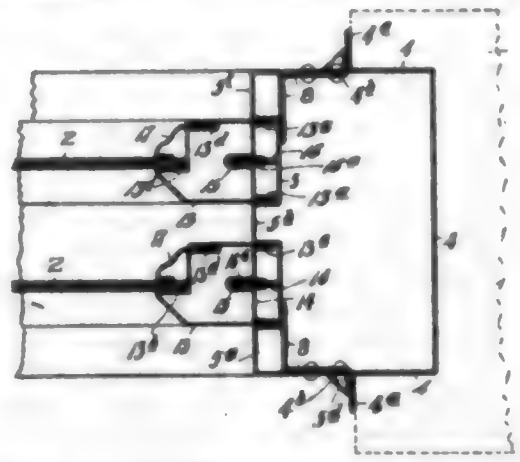


Claim.—1. In a device of the class described, the combination with a center pole, a platform rotatable thereon and seats on the platform, of a stationary pinion on the center pole, a radial rock-shaft journaled on the platform, a pinion loose on the end of said shaft in engagement with the stationary pinion, ratchet-teeth on the loose pinion, a hand-lever adjacent to one of the seats and having a limited oscillatory movement, and a pawl carried by said shaft and adapted for engagement with the ratchet-teeth on said loose pinion, but so arranged that when the hand-lever is at one of its limits of movement it will be automatically thrown out of engagement with the ratchet-teeth.

2. In a device of the class described, the combination with a center pole, a platform rotatable thereon and seats on the platform, of a stationary pinion on the center pole, a radial rock-shaft journaled on the platform, a pinion loose on the end of said shaft in engagement with the stationary pinion, said loose pinion being hollow and provided with internal ratchet-teeth, a hand-lever adjacent to one of the seats and having a limited oscillatory movement, and a pawl carried by said shaft and adapted for engagement with the ratchet-teeth on said loose pinion, but so arranged that when the hand-lever is at one of its limits of movement it will be automatically thrown out of engagement with the ratchet-teeth.

3. In a device of the class described, the combination with a center pole, a platform rotatable thereon and seats on the platform, of a stationary pinion on the center pole, a radial rock-shaft journaled on the platform, a pinion loose on the end of said shaft in engagement with the stationary pinion, ratchet-teeth on the loose pinion, a plate fast upon the rock-shaft, a hand-lever adjacent to one of the seats and having a limited oscillatory movement, and a gravity-pawl pivoted upon said plate and adapted for engagement with the ratchet-teeth upon the loose pinion, but arranged to be automatically thrown out of engagement therewith when the hand-lever is at one of its limits of movement.

816,690. **METALLIC WINDOW SASH AND FRAME.** JOSEPH TYRA, Minneapolis, Minn. Filed Aug. 14, 1905. Serial No. 274,035.



Claim.—1. In a metallic window-sash, the combination with sheet-metal plates 13 bent into channel form, of filling-plates 14 secured to and between the outturned parallel sides of said plates 13, and weather-strips made up of the channel-shaped holders 16ª and pliable blades 16 secured together, said weather-strips 16ª 16 being detachably seated in the channels 15 formed in the intermediate portion of said filling-plates 14, substantially as described.

2. In combination, upper and lower window-sash made up of sheet-metal plates bent to form hollow bars, the upper bar of the lower sash and the lower bar of the upper sash having surfaces that engage obliquely, and the former having a projecting rib that overlaps the latter, substantially as described.

3. In combination, upper and lower window-sash made up of sheet-metal plates bent to form hollow bars, the top bar of the lower sash being made up of the plate 21 bent to form the shoulder 21ª, fold 21ᵇ and projecting flange 21ᶜ, and a joint-strip 22 fitting in said fold 21ᵇ and coöperating with the said shoulder 21ª to hold the upper edge of the glass, substantially as described.

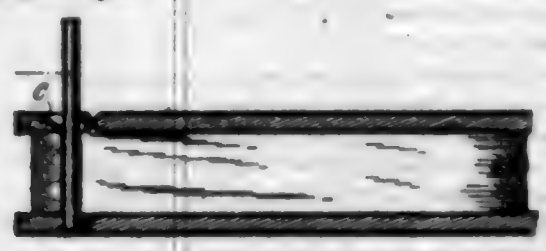
4. In a metallic window-sash, an intermediate bar made up of plates 24 and 25 formed respectively with U-shaped folds 24ª and 25ª, said parts being telescoped together, substantially as described.

5. A metallic window-frame, the sides thereof being made up of sheet-metal plates bent to form the sash-stops and sash-guiding channels, each of the said stop-forming plates being made up of a plurality of overlapped sections, the lower of which when raised affords access to the space containing the window-weights, substantially as described.

816,691. **PAPER-BINDER.** FERDINAND H. VOLKERT, Chicago, Ill. Filed Dec. 8, 1902. Serial No. 134,219.

Claim.—1. In a device of the character described, the combination with a pair of clamping-bars, of a pin uniting said bars, one end of said pin passing through a keyhole opening in one of said bars, the larger portion of the opening being slightly greater than, and the smaller portion of the opening slightly less than the diameter of the pin whereby when said bar is tilted so that the larger portion of the opening surrounds the pin, the pin and bar may be relatively moved while when said bar is tilted so that the smaller portion of the open-

ing surrounds the pin, the wall thereof engages the pin at diametrically opposite points thereby positively retaining the bar immovable with respect to the pin.



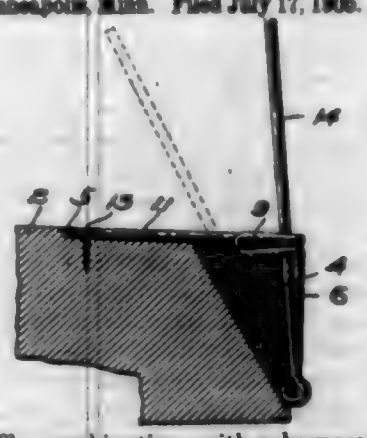
2. In a device of the character described, the combination with a pair of clamping-bars, of a pin uniting said bars, one of said bars having an inclined hole extending therethrough of a diameter slightly greater than the thickness of said pin whereby when said bar is tilted relatively to the pin the pin and bar may be relatively moved, and a restricted hole communicating with and of less diameter than said first hole whereby when the bar is at right angles to said pin the latter will be gripped at diametrically opposite points by the wall of said second hole and the pin and bar thereby relatively locked.

3. In a device of the character described, the combination with a pair of clamping-bars, of a pin uniting said bars, one of said bars having an irregular hole extending to one edge thereof through which said pin passes, said bar also having a saw-cut extending from its opposite edge in alinement with said hole, the width of said hole being so related to the thickness of said pin that in one position of the bar the pin and bar may be relatively moved while in another position of said bar the wall of the hole will engage the pin and lock the same relatively to the bar.

4. In a device of the character described, the combination with a pair of clamping-bars, of a pin uniting said bars, one of said bars having an inclined hole extending therethrough of a diameter slightly greater than the thickness of said pin whereby when said bar is tilted relatively to the pin, the pin and bar may be relatively moved, and a restricted hole extending from one edge of said bar into said first hole but of less diameter than said first hole whereby when the bar is at right angles to said pin the latter will be gripped by the wall of said second hole and locked relatively to the bar, said bar also having a saw-cut extending from the edge thereof opposite to the edge from which said second hole extends.

5. In a device of the character described, the combination with a pair of clamping-bars, of a pin uniting said bars, one of said bars having an inclined hole extending therethrough of a diameter slightly greater than the thickness of said pin whereby when said bar is tilted relatively to the pin the pin and bar may be relatively moved, and a restricted hole extending from one edge of said bar into said first hole but of less diameter than said first hole whereby when the bar is at right angles to said pin the latter will be gripped by the wall of said second hole and locked relatively to the bar.

816,693. ATTACHMENT FOR HARNESS-PEGS. ELMER D. WALLACE, Minneapolis, Minn. Filed July 17, 1905. Serial No. 270,056.



Claim.—1. The combination, with a harness-peg, of a tongue pivoted thereon at its outer end and adapted to be swung to an upright position, and means for limiting the outward movement of said tongue when raised to such position, substantially as described.

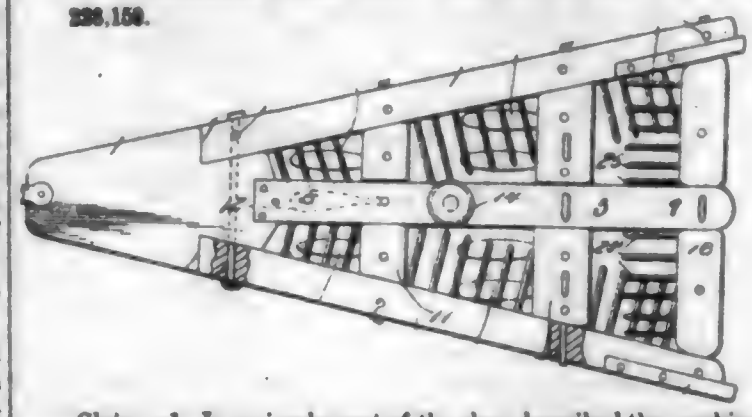
2. The combination, with a harness-peg provided with a mortise in its outer end, of a tongue pivoted on said peg and adapted to be swung to an upright position in said mortise, and means for limiting the outward swinging movement of said tongue, substantially as described.

3. The combination, with a harness-peg provided with a mortise in its outer end, of a wire having a laterally-turned end secured to said peg on one side of said mortise, said wire having a loop formed therein near the top of said mortise, and an end secured to the top of said peg, and a tongue pivoted on the lower end of said wire in front of said mortise and adapted to swing back and forth therein and enter said loop and be held thereby in an upright position, substantially as described.

4. The combination, with a peg, of a tongue pivotally supported thereon near its outer end and adapted to be swung to an upright position and project above the top of the peg, and means preventing the accidental displacement of said tongue from such position, substantially as described.

5. The combination, with a harness-peg having a mortise in its outer end, of a wire 6 secured to said peg at its lower end and having an inwardly-projecting arm 11 and an intermediate loop, and a tongue 14 pivoted to the lower end of said wire 6 and adapted to swing back and forth in said mortise and enter said loop, substantially as described.

816,693. CONVERTIBLE CULTIVATOR AND PLANTER. HENRY WARFIELD, Topeka, Kans. Filed Oct. 13, 1904. Serial No. 228,159.



Claim.—1. In an implement of the class described the combination with a central member including a head and vertically-spaced plate projecting rearwardly from the head, of transverse members secured between the plates forwardly of the rearward ends thereof and projecting therebeyond in both directions, the said transverse members having outwardly-extending pins at their outer ends, said members having passages formed therein in which the pins are removably engaged, said members having other passages adapted for the reception of pins, ground-treating devices carried by the side members and arranged to lie in operative position when certain of the passages of the side members are engaged by the pins and out of operative position when other of the passages are engaged by the pins, a transverse member removably engaged between the rearward ends of the plates, said member having passages formed therethrough at right angles to each other, said plates having perforations formed therein adapted for registration with the passages of the last-named member interchangeably, said perforations and passages being adapted for the reception of a pin, and ground-treating teeth carried by the last-named transverse member and extending therefrom, said ground-treating teeth lying in planes parallel with one of the passages of the members.

2. In an implement of the class described, the combination with a central member including a head, vertically-spaced plates projecting from the head, and transverse members secured between the plates and projecting therebeyond in both directions, said transverse members having outwardly-extending pins at their outer ends, of side members having passages formed therein in which the pins are removably engaged, said side members having other passages therein adapted for the reception of the pins, and ground-treating devices carried by the side members, said side members being adapted to lie with their ground-treating devices in operative position when certain of their passages are engaged by the pins, and to lie with their ground-treating devices in inoperative position when their other passages are engaged by the pins.

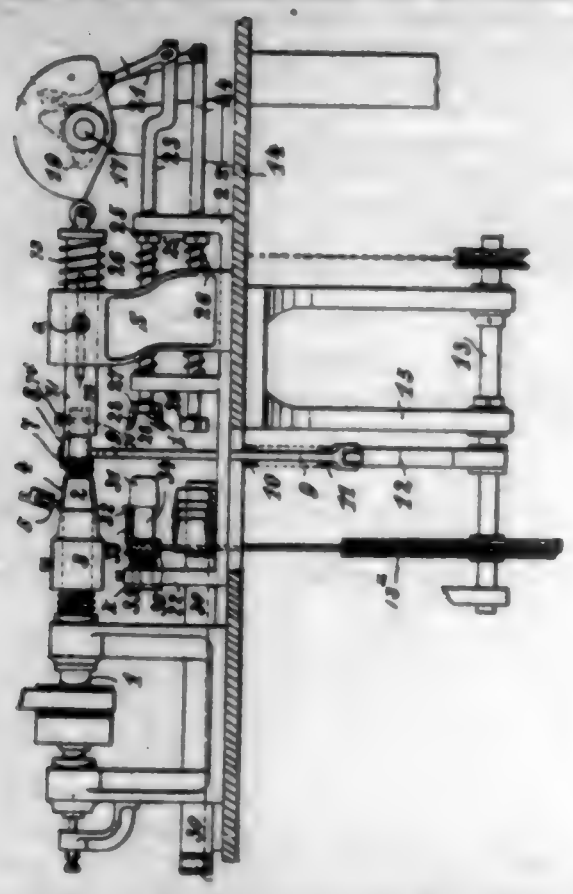
816,694. MACHINE FOR SPINNING, TRIMMING, AND STACKING CAPSULES. EDUARD WATEK, Friedberg, Austria-Hungary, assignor of one-half to Ignaz Nagy, Friedberg, Austria-Hungary. Filed Jan. 5, 1904. Serial No. 187,768.

Claim.—1. In a sheet-metal-shaping machine, shaping devices, a trimmer, a carrier, means to transfer the shaped article to the carrier and means to transfer said article from the carrier to the trimmer.

2. In a sheet-metal-shaping machine, a trimmer, a carrier, means to feed the shaped article to the carrier, means to transfer said article from the carrier to the trimmer and means to return the article to the carrier after being trimmed.

3. In a sheet-metal-shaping machine, a trimmer, a receiver for

the finished article, a carrier, means to feed the shaped article to the carrier, means to move said carrier first to the trimmer and then to the receiver, means to transfer the shaped article from the carrier to the trimmer and return said article after being trimmed to the carrier, and means to eject the finished article onto the receiver.



4. In a machine for shaping sheet-metal hollow articles, a receiver for the finished article, a carrier, means to feed the shaped article to the carrier, and means to eject the article from the carrier and nest or telescope the same on the receiver.

5. In a machine for shaping hollow articles, a trimmer, a receiver, a carrier, means to feed the shaped article to the carrier, means to transfer the article therefrom to the trimmer, means to return the trimmed article to the carrier, means to move the carrier from the trimmer to the receiver and means to eject the finished articles from the carrier and nest or telescope the same on the receiver.

6. A machine for making bottle-capsules, comprising an edge-trimmer, a carrier, means to move it to and from the edge-trimmer, means to feed the shaped capsule to said carrier, means to transfer said capsule from the carrier to the edge-trimmer and return it to said carrier after having its edge trimmed.

7. A machine for making bottle-capsules, comprising an edge-trimmer, a receiver for the finished article, a carrier, means to move the same to and from said trimmer and to and from said receiver, means to feed the shaped article to the carrier, means to transfer the shaped capsule from the carrier to the trimmer and to return the trimmed capsule to said carrier and means to eject the trimmed capsules from the carrier and nest or telescope the same on the receiver.

8. In a machine such as described, the combination with spinning appliances comprising a revoluble spindle and means to strip the spun capsule off said spindle, edge-trimming appliances comprising a revoluble cutter, a carrier adapted to receive the spun capsule ejected from the spinning-spindle, and mechanism to move said carrier from said spindle to the edge-trimming appliances; of mechanism to take the spun capsule from the carrier and present its edge to the aforesaid cutter, substantially as set forth.

9. In a machine such as described, the combination with spinning appliances comprising a revoluble spindle and means to strip the spun capsule off said spindle, edge-trimming appliances comprising a revoluble cutter and a conical support for the capsule, a carrier comprising a slide-bar having a receiver for the capsule at one end consisting of two tapering segments; of mechanism to move the carrier from in front of the spinning-spindle, in front of the cutter, and means for taking the spun capsule from the carrier and presenting it to the cutter, for the purpose set forth.

10. In a machine such as described, the combination with spinning appliances, comprising a revoluble spindle and means to strip the spun capsule off said spindle, edge-trimming appliances comprising a revoluble cutter, and a receiver for the finished capsules; of a carrier adapted to receive the spun capsule stripped off the spinning-spindle, mechanism to move said carrier from said spindle to the edge-trimming appliances and then to said receiver, mechanism to take the spun capsule from the carrier and present its edge to the aforesaid cutter when said carrier has moved to the edge-trimming appliances and to return the trimmed capsule to said carrier, and mechanism to eject the trimmed capsule from the carrier when the latter has moved to the aforesaid receiver, substantially as set forth.

11. In a machine such as described, the combination with spinning appliances comprising a revoluble spindle and means to strip the spun capsule off said spindle, edge-trimming appliances comprising a revoluble cutter and a support for the capsule, and a receiving-channel; of a carrier adapted to receive the spun capsule, mechanism to move said carrier first in front of the edge-trimming appliances and then in front of the receiving-channel, mechanism to take the spun capsule from the carrier, move it onto its support and present its edge to the aforesaid cutter and move the trimmed capsule back to the carrier while in front of the edge-trimming appliances, and mechanism to eject the finished capsule from the carrier into the aforesaid channel while said carrier is in front of said channel, whereby the capsules are nested or telescoped, and mechanism to return the carrier to its normal position in front of the spinning-spindle, substantially as set forth.

12. In a machine such as described, the combination with spinning appliances comprising a revoluble spindle having a conical head and means to strip the spun capsule off said head; edge-trimming appliances comprising a revoluble spindle having a conical head shorter than the capsule and a radial cutter at the base of said head, a receiving-channel for the finished capsule and a carrier constructed to receive the capsule stripped off the head of the spinning-spindle; of mechanism to move said carrier from said spindle first in front of the head of the edge-trimming spindle, then in front of the receiving-channel and back in front of the spinning-spindle, mechanism to take the spun capsule from the carrier, transfer it to and hold it stationary on the head of the edge-trimmer spindle and then take it back to the carrier while the latter is in front of said spindle, and an ejector operating to eject the finished capsule from the carrier while the latter is in front of the aforesaid receiving-channel, substantially as set forth.

13. In a machine such as described, the combination with spinning appliances comprising a revoluble headed spindle and means to strip the spun capsule off said spindle, edge-trimming appliances comprising a revoluble spindle provided with a head shorter than the head of the spinning-spindle and with a radial cutter at the base of said head and a receiving-channel for the finished capsules, said edge-trimming spindle arranged below the spinning-spindle and said channel arranged below the edge-trimming spindle in different vertical planes but parallel to one another; of a carrier adapted to receive the capsule stripped off the spinning-spindle, mechanism to move said carrier first to the edge-trimmer spindle and then to the receiving-channel and back to the spinning-spindle, means to take the spun capsule from the carrier, transfer it to the head of the edge-trimmer spindle, and take it back to the carrier while the latter is in front of said spindle, and means to eject the finished capsule from the carrier while the latter is in front of the receiving-channel, substantially as set forth.

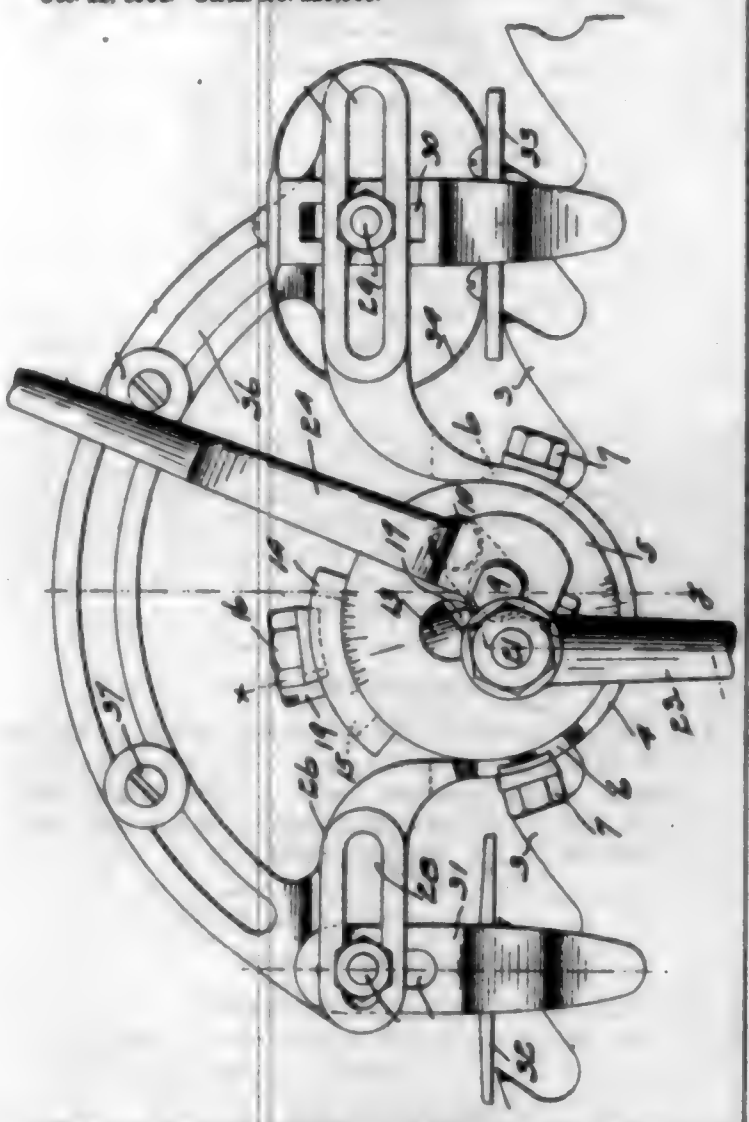
14. In a machine such as described, the combination with the spinning appliances comprising a revoluble spindle, means to strip the spun capsule therefrom, a spring-retracted follower in line with said spindle and means to move the follower toward the spindle against the stress of its spring, the spindle 34 and the receiving-channel 30; of a forked carrier adapted to receive the spun capsule stripped off the spinning-spindle, mechanism to move the carrier from in front of the spinning-spindle when the follower has been retracted, first in front of the spindle 34, then in front of the channel 30 and back in front of the spinning-spindle, means to take the spun capsule from the fork of the carrier to the spindle 34 and hold it stationary thereon until the edge of the capsule is trimmed off, and then return the finished capsule to said fork while the latter is in front of said spindle 34, and means to eject the finished capsule from the carrier-fork while the latter is in front of the receiving-channel, substantially as set forth.

15. The combination with the spindle 1, its spring-actuated sleeve 3, the spring-retracted follower 7, the cam 6, the spindle 34, means to rotate both said spindles and cam, the channel 30, the carrier-stem 9 having forked head 8 and the revoluble cam 12 acting on said stem and constructed to move the forked head of said carrier from in front of the spindle 1, when follower 7 is retracted, in front of spindle 34, then in front of channel 30 and back in front of spindle 1; of the spring-actuated bar 23 having a head comprising gripping-arms 28, the spring-retracted ejector-bar 24 and mechanism to successively move said bar 23 and ejector 24 against the stress of their

springs first to take the spun capsule from the fork of the carrier, transfer it to spindle 34, and return it to said fork while the latter is in front of such spindle, and to eject the finished capsule from the carrier-fork into the aforesaid channel when said carrier is in front of the channel, substantially as and for the purpose set forth.

16. The combination with the edge-trimmer spindle 34 having head 31, the carrier-stem 9 having a tapering fork 8 provided at its outer end with inwardly-converging lugs 37 and means for imparting periodical rectilinear movements to the carrier-stem to and from spindle 34; of the bar 23 coaxial with spindle 34 and having a head provided with gripping-jaws and with peripheral grooves in line with the aforesaid lugs 37 on the carrier-fork, and means to reciprocate the bar 23 to move its head through the fork to the spindle 34 and then retract said bar to move its head out of the fork of the carrier, for the purpose set forth.

816,695. SAW-SWAGE. ALBERT E. WHITE, Eau Claire, Wis. Filed Oct. 22, 1904. Serial No. 229,500.



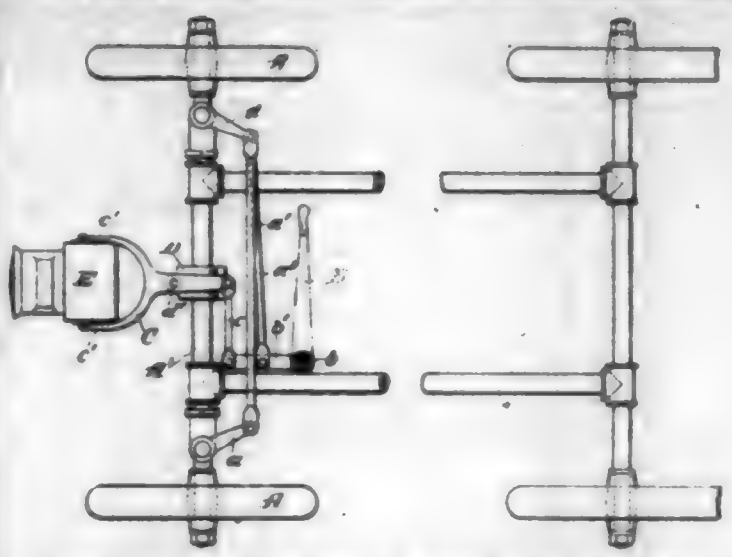
Claim.—1. In a saw-swaging tool, the combination with a cylindrical head or block having a slot to receive the saw-teeth, of a band having upwardly-turned ends terminating in horizontal extensions, and a downwardly-curved semicircular middle portion intermediate to said ends, said block being mounted above and in said semicircular portion, means carried by the ends of said band to straddle the saw-teeth and rest thereon, a swaging-die and an operating-lever secured to said die and an arched band connecting the ends of said first-named band and bracing the middle section thereof and having stops in the path of said lever, substantially as described.

2. In a saw-swaging tool, the combination, with a cylindrical head or block having a slot to receive the saw-teeth, of a semicircular band having ends provided with means to rest upon the saw and in which band said block is supported, a swaging-die mounted in said block, an operating-lever having a forked lower end adapted to straddle said block and secured to the ends of said die, the handle portion of said lever being above the middle of the die and in the vertical plane of said slot, and an arched longitudinally-slotted bar mounted on said band above said block and provided with stops adjustably supported in said slot in the path of said lever, substantially as described.

3. In a saw-swaging tool, the combination, with a frame having a bracket provided with a longitudinal slot, of an arm having a vertical slot, a bolt passing through said slot and securing said arm and bracket together, the lower end of said arm being forked, and a plate provided in the crotch of said fork, and a spring yieldingly connecting said arm and said plate

4. In a saw-swaging tool, the combination, with a frame, of an arm mounted thereon and having a forked lower end to straddle the teeth of the saw, a plate provided in said fork to rest upon the saw-teeth, and a spring having its middle portion secured to said arm and its ends supporting said plate, substantially as described.

816,696. MECHANISM FOR VEHICLE-LANTERNS. WILLIAM B. WHITE, Cleveland, Ohio. Filed Feb. 27, 1904. Serial No. 195,642.



Claim.—1. The combination of vehicle-wheels, manually-operated means for changing the angularity of the same, a lantern-bracket connected with said means, a support for said bracket carried by the vehicle-body and fixed relatively to the same, said bracket embracing said support on two sides and connected to the same by a pivotal bolt, whereby the angularity of said wheels and said bracket may be varied concurrently.

2. The combination with the vehicle-wheels and a steering-lever of a motor-vehicle; of a lantern-bracket pivotally mounted upon the vehicle-body; a bell-crank connected with said steering-lever; link connections between said bell-crank and said vehicle-wheels; and other link connections between said bell-crank and said lantern-bracket.

3. The combination with the front axle, the front wheels, suitable stub-axles for the latter, and the steering-lever of a motor-vehicle; of two bell-cranks connected respectively at their front ends to said stub-axles; a link connecting the rear ends of said bell-cranks; a lantern-bracket pivotally mounted upon the vehicle-body; link connections between said lantern-bracket and the steering-lever; and a link connecting said link connections and the rear end of one of said bell-cranks.

816,697. COMBINED LIFT AND BED-SUPPORT FOR INVALIDS. HENRY WILLIAMS, Finchley Road, county of Middlesex, England. Filed Nov. 16, 1905. Serial No. 287,658.

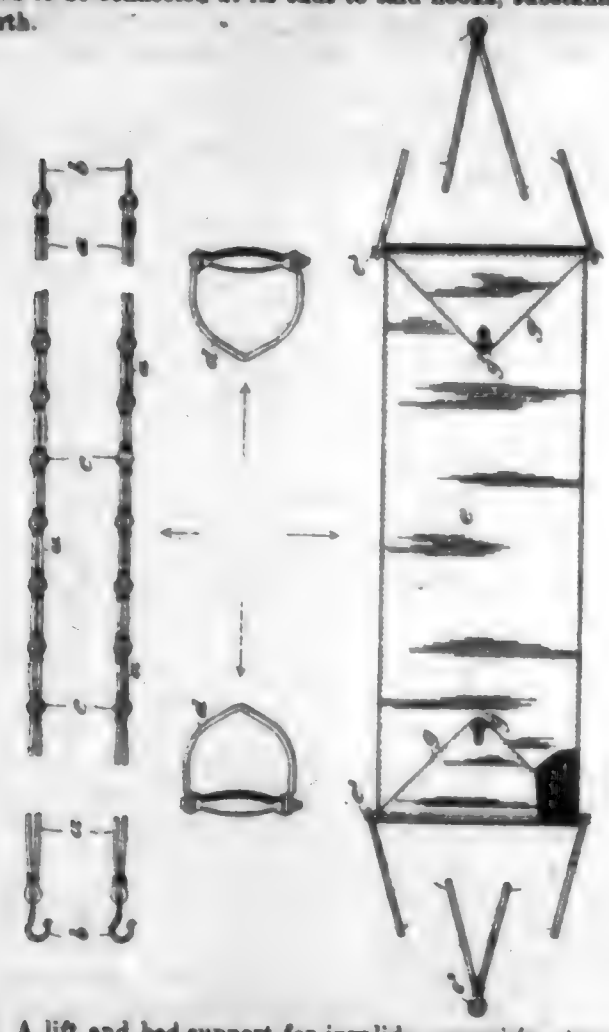
Claim.—1. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, and a supporting-band, adapted to be connected at its ends to said hooks, substantially as set forth.

2. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band and eyelets connected to the ends of said band adapted to engage said hooks, substantially as set forth.

3. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band of flexible material, stiffening members at the ends of said band, cords secured to said stiffening members and eyelets on said band-cords adapted to engage said hooks, substantially as set forth.

4. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band adapted to be connected at its ends to said hooks, and a removable cover inclosing said band.

5. A lift and bed-support for invalids, comprising, two double cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks and a supporting-band, adapted to be connected at its ends to said hooks, substantially as set forth.



6. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band made of stout fabric, stiffening members at the ends of said band that prevent said band rolling up transversely, cords attached to the ends of said stiffening members, and eyelets on said band-cords adapted to engage said hooks, substantially as set forth.

7. A lift and bed-support for invalids, comprising two cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band made of stout cotton cloth formed with loops at its ends, wooden rods loosely placed in the end loops of said band with their end portions projecting therefrom, cords attached to the projecting ends of said rods, a removable cover of washable material inclosing said band, and eyelets on said band-rod cords adapted to engage said hooks, substantially as set forth.

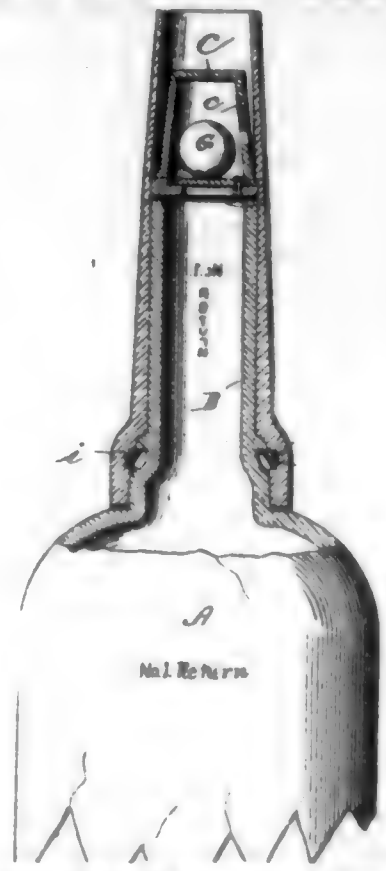
8. A lift and bed-support for invalids, comprising two double cords, eyelets secured in the middle portion of said cords, hooks attached to the ends of said cords and adapted to engage said eyelets, handles adapted to engage in said hooks, a supporting-band made of stout cotton cloth formed with loops at its ends, wooden rods loosely placed in the end loops of said band with their end portions projecting therefrom, cords attached to the projecting ends of said rods, a removable cover of washable material inclosing said band, and eyelets on said band-rod cords adapted to engage said hooks, substantially as set forth.

816,698. HAY-CARRIER. FRANCIS M. VENTER, Ottawa, Ill. Filed Jan. 13, 1906. Serial No. 295,880.



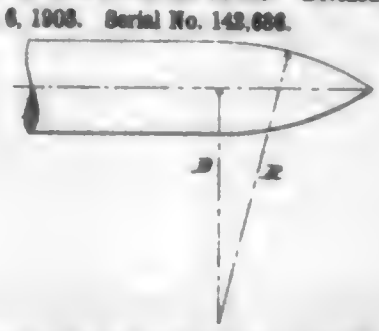
Claim.—The hay-carrier, the fork-pulley whereof is provided with lateral flanges between its rim and hub, said flanges being adapted to be engaged by the grappling-dogs.

816,699. NON-REFILLABLE BOTTLE. AMBER G. ABIRAM, Washington, D. C. Filed Sept. 8, 1905. Serial No. 277,679.



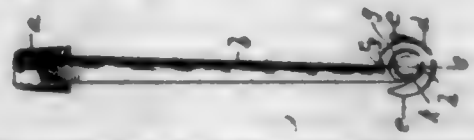
Claim.—A bottle of the kind described comprising a bottle having a neck, a sleeve fitted to and telescoping over the neck and formed to extend above the mouth of the bottle; said extending part made tapering above the mouth, a packing-ring disposed on the mouth of the bottle, a valve-seat on the packing-ring, a flexible valve secured to the valve-seat, a hollow cone having its base seated on the valve-seat and engaging the sleeve at the base of the taper whereby it is held in place and said cone provided with discharge-openings, and a ball-weight within the cone to bear on the valve.

816,700. TRACER AND TOOL FOR ENGRAVING-MACHINES. MARK BARR, London, England, assignor, by mesne assignments, to Linotype & Machinery Limited, London, England. Original application filed Oct. 13, 1900. Serial No. 32,999. Divided and this application filed Feb. 6, 1903. Serial No. 142,686.



Claim.—A tracer and tool for use in a pantograph engraving-machine, each formed of a rod having a curved working end lying in a surface of revolution about the axis of its rod, the contours of said end being defined by two finite geometrical distances, viz., the radius of curvature of said curved end and the perpendicular distance of the center of this curvature from the axis of the rod; the said distances being so short as to produce a perceptible curvature; the said distances for the tracer being proportional to those for the tool.

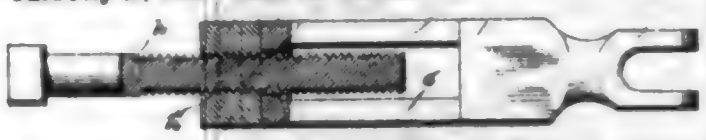
816,701. SPINNING-FLIER. WILLIAM BECKWITH, Lowell, Mass., assignor of one-half to Bertie B. Davis, Lowell, Mass. Filed June 24, 1905. Serial No. 266,207.



Claim.—The herein-described improvement in spinning-fliers, comprising the downwardly-extending arms *b* of the frame, the curled lower ends thereof, said curls being in the form of substantially circular coils extending in the path of revolution of the arm, the outer ends *c* of the curls extending upward for a short distance along the side of the arm but flaring somewhat therefrom; and

eyes held frictional-tight within the curl, each eye consisting of the main portion *g* which is concentric with the corresponding portion of the curl, the end portion *h* extending along the lower portion of the inner surface of the curl toward the outer end thereof and the opposite end portion *k* which extends from the main portion of the curl under the end of the arm and inward from the line of the side of said arm above and in the opposite direction from the end portion *h* of the eye and in the opposite direction from the end portion *c* of the curl, whereby the thread may slip easily along the arm behind the upturned end of the curl and between said upturned end and the downturned end *k* of the eye into said eye, for the purpose set forth.

816,702. RAILWAY-BRAKE. THADDEUS BELL, Grafton, W. Va. Filed July 29, 1905. Serial No. 271,766.



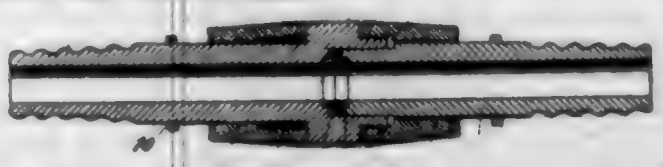
Claim.—1. In combination, a yoke having a head, a portion of the head being reduced, a flap hinged to the reduced portion of the head, an apertured extension carried by the flap, a stud on the head engaged by the apertured extension of the flap, and means for holding the apertured extension in engagement with the stud.

2. In combination, a yoke having a head, a portion of the head being reduced, a flap hinged to the reduced portion of the head, an apertured extension carried by the flap, a stud on the head engaged by the apertured extension of the flap, said stud being provided with an aperture, and a wedge adapted to engage the aperture of the stud to hold the apertured extension of the flap in engagement with the stud.

3. In combination, a yoke having a head, a portion of the head being reduced, a flap hinged to the reduced portion of the head, an apertured extension carried by the flap, a stud on the head engaged by the apertured extension of the flap, said stud being provided with an aperture, a wedge adapted to engage the aperture of the stud to hold the apertured extension of the flap in engagement with the stud, and means carried by the wedge engaging the stud to hold the said wedge against displacement.

4. In combination, a yoke having a head provided with a smooth bore, a portion of the head being reduced, the reduced portion of the head being provided with a threaded recess coinciding with the bore of the head, a flap pivoted to the reduced portion of the head, said flap being provided with a threaded recess registering with the recess of the reduced portion of the head when in a closed position, means for holding the flap in a closed position, and a rod having a threaded portion adapted to be engaged by the threads of the reduced portion of the head and its flap.

816,703. HOSE-COUPLING. CLAUDE B. BEWLEY, Los Angeles, Cal., assignor of one-half to John C. Bewley, Los Angeles, Cal. Filed June 9, 1904. Serial No. 211,806.



Claim.—1. In combination, a member for a hose-coupling comprising a hollow, substantially cylindrical body, one end of which is recessed internally around the base and externally longitudinally upon opposite sides and is provided with two shoulders and two oppositely-located forwardly-extending projections, the sides of the projections and of said recesses being straight and parallel with each other and with the axis of the body, the width of the projections being in correspondence with the width of the recesses and the upper surface of the forward end of each projection provided with screw-threads, and a ring adapted to screw upon said projections and abut endwise against said shoulders.

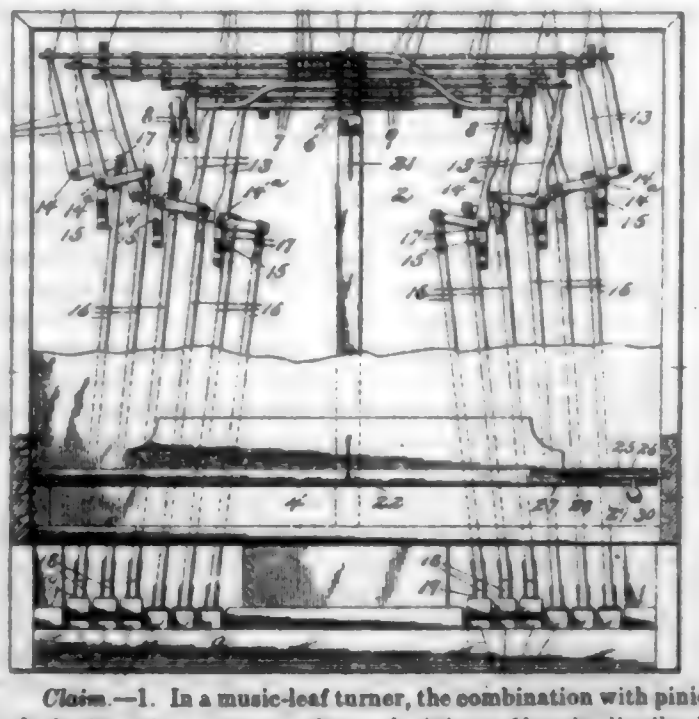
2. A hose-coupling comprising two tubular interlocking members, each having a set of shouldered, longitudinally-projecting externally-threaded extensions, and longitudinal recesses therebetween, each extension of one member fitting in a recess in the opposite member, and internally-screw-threaded rotatable rings on said members, said rings being adapted to screw onto one set of extensions and abut endwise against the other set.

3. A hose-coupling comprising two interlocking members, each having a set of oppositely-located shouldered, longitudinally-projecting extensions and longitudinal recesses therebetween the sides of the extension and recesses being parallel with each other and with the axis of the member, each extension of said member fitting in a recess of the opposite member, and internally-screw-threaded rotatable rings on said members for engaging with said shoulders and extensions respectively, said rings adapted to screw onto one set of extensions and abut endwise against the other set.

4. A hose-coupling comprising two tubular members each having an abutment and screw-threaded interlocking extensions projecting longitudinally therefrom forward of the abutment, a gasket seated in each tubular member, and a ring mounted to turn around each tubular member and engaging with the abutment thereon to limit its longitudinal movement, each ring being internally screw-threaded to engage with the screw-threaded projections on the other member.

5. A hose-coupling comprising two tubular members having each a set of raised, longitudinally-projecting, externally-threaded extensions, and internally-threaded rings adapted to screw onto one set of extensions and abut endwise against the other set.

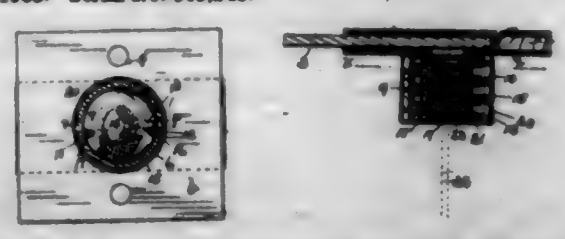
816,704. MUSIC-LEAF TURNER. JEREMIAH A. BITTING, South Bethlehem, Pa. Filed June 12, 1905. Serial No. 264,858.



Claim.—1. In a music-leaf turner, the combination with pinions and a leaf-turning arm secured to each pinion; of longitudinally-sliding racks engaging the pinions, pivoted bell-crank levers connected to the ends of the racks, an actuating-rod for each bell-crank lever, all of said parts lying generally in the same plane, and piano key-levers connected to the rods, said pinions and arms being at the top of the sheets to be turned.

2. In a music-leaf turner, the combination with pinions in vertical alinement and a leaf-turning arm connected to each pinion, the arms bent at their ends to lie one in front of the other; of longitudinally-sliding racks engaging the pinions, a pair of pivoted bell-crank levers connected to each rack, the upright arm of one lever connected to one end of the rack and the upright arm of the other lever of the pair to the other end of the rack, vertical operating-rods connected to the laterally-projecting arms of the levers, all of said parts lying generally in a plane, and piano key-levers mounted at right angles to the general plane in which the parts operate and each connected to a vertical operating-rod.

816,705. LOCK. EDMOND R. BOOTH, Cincinnati, Ohio. Filed July 13, 1905. Serial No. 269,243.



Claim.—1. A lock comprising a bolt-case, a bolt therein, a slotted tumbler-case, tumblers in said tumbler-case, each tumbler having an elliptical keyhole, and an arm extending at right angles to the length of the elliptical keyhole and adapted to engage within the slotted portion of the tumbler-case, and a key adapted to engage said tumblers to move them and thereby throw the bolt.

2. In a lock, a bolt-case provided with a central projecting cylindrical tumbler-case having its bore open at its union with the bolt-case and provided at its outer end, or the cap thereof, with an inturned annular flange, a slotted key-guide at the outer end of the case inside said flange, tumblers insertible in the bore of the tumbler-case and adapted for engagement therewith to lock them against turning movement, a locking-bolt provided with a transverse slot and a locking-pin supported in said tumbler-case and adapted to traverse said slot and be actuated by the tumblers.

3. In a lock, a bolt-case, a bolt therein, a slotted tumbler-case, tumblers adapted to engage the slotted portion of the tumbler-case, washers adjacent said tumblers, guide and locking pins engaging said tumblers, a pin-support therefor, and a key-guide and inclosing cap for said tumbler-case.

4. In a lock, a tumbler having an elliptical keyhole and an arm extending at an angle to the length of said elliptical keyhole, said tumbler by reason of that shape permitting the key to turn so as to throw the tumbler out of engagement with the slotted portion of the tumbler-case, and then to be turned freely therein.

5. In a lock, a bolt-case, a bolt therein, means for operating said bolt, a slotted tumbler-case, tumblers located therein each having an arm adapted to engage the slotted portion of said tumbler-case, washers provided with notches and guide and locking pins supported in said tumbler-case to engage the walls of said notches.

6. In a lock, a bolt-case, a bolt therein provided with a transverse slot, a cylindrical tumbler-case connected to said bolt-case and provided with longitudinal slots, apertured tumblers each provided with an arm and notches, said arm being adapted to engage the walls of said longitudinal slots to hold the bolt in locked or unlocked position, washers interposed between said tumblers, a locking-pin supported in said tumbler-case and adapted to traverse said transverse slot and engage the walls of the tumbler-notches, and means for turning the tumblers.

7. In a lock, a bolt-case, a bolt therein, a slotted tumbler-case, tumblers within said tumbler-case each having an arm adapted to engage said slotted portion of the tumbler-case, guide and locking pins engaging said tumblers, a pin-support therefor and an inclosing cap to said tumbler-case.

8. In a lock, a bolt-case provided with a bolt-channel, a bolt therein having a transverse slot, a cylindrical tumbler-case having an opening communicating with the channel of the bolt-case and provided with longitudinal slots, tumblers each having an elongated depression upon one edge, locking-arms, and guide and locking pin notches to permit the arms of the tumblers to be moved laterally into the tumbler-case slots or out of same so that the tumblers may be revolved in said case, and guide and locking pins supported in said tumbler-case and adapted to engage the notches of the tumblers.

9. In a lock, a slotted tumbler-case a tumbler having an elliptical keyhole, and an arm extending at right angles to the length of the elliptical keyhole, guide and locking pins supported in said tumbler-case adjacent said tumbler, said tumbler having a depression to permit it to escape the pins as set forth.

10. In a lock, a bolt-case, a bolt therein provided with a transverse slot, a cylindrical tumbler-case connected to said bolt-case and provided with longitudinal slots, apertured tumblers, each provided with an arm and notches, said arm being adapted to engage said longitudinal slot-walls to hold the bolt in locked or unlocked position, a locking-pin supported in said tumbler-case adapted to traverse said transverse slot and engage the walls of the tumbler-notches, and means for turning the tumblers.

11. In a lock, a bolt-case, a bolt adapted to work therein, a slotted tumbler-case adjacent said bolt-case, apertured tumblers having arms of various lengths depending upon the shape of the key adapted to engage the slotted portion of the tumbler-case.

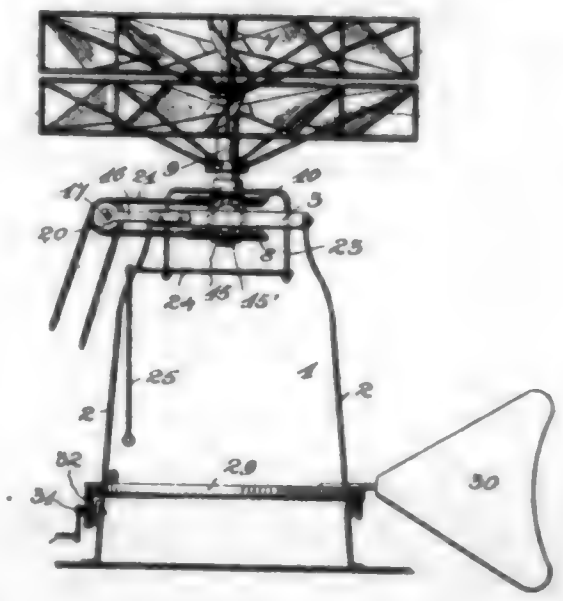
12. In a lock, a bolt-case, a bolt therein, means for operating said bolt, a tumbler-case, a tumbler therein having a central elliptical keyhole, locking-arms, and a locking-pin notch, and a locking-pin supported in said tumbler-case and adapted to engage said notch.

13. In a lock, a bolt-case, a bolt therein provided with a transverse slot, a cylindrical tumbler-case connected to said bolt-case and provided with longitudinal slots, apertured tumblers each provided with an arm and notches, a locking-pin adapted to traverse the slot of the locking-bolt and engage the walls of the tumbler-notches, and a guide-pin supported in said tumbler-case adapted to enter the notches in the tumblers and to hold the several tumblers in alinement with each other and the arms out of engagement with the slots in the tumbler-case as the tumblers are being turned.

14. A lock comprising a bolt-case, a bolt therein, a tumbler-case having a plurality of slots, tumblers in said tumbler-case, each tumbler having an elliptical keyhole and an arm extending at an angle to the length of said keyhole and adapted to engage within one of said slots, some of said tumblers being arranged transversely to the others, and a key adapted to engage said tumblers to move them and thereby throw the bolt.

15. A lock comprising a bolt-case, a bolt therein, a slotted tumbler-case, tumblers in said tumbler-case, each tumbler having an elliptical keyhole and an arm extending at an angle to the length of the elliptical keyhole and adapted to engage within the slotted portion of the tumbler-case, a pin-support having a cross-shaped key-slot and a key adapted to be inserted in said cross-shaped key-slot either vertically or horizontally for the purposes specified.

816,706. DIRIGIBLE AIR-SHIP. ARIEL BRATSCHER, New Castle, Pa. Filed Mar. 14, 1904. Serial No. 198,160.



Claim.—1. Raising, lowering and propelling mechanism for air-ships, comprising a supporting-frame having an outer frame, an inner frame pivotally mounted in the outer frame and thereby adapted to be tilted or inclined, a bearing on the center of the inner-frame pivot, a shaft extending above the inner frame and journaled in said bearing, a tubular shaft revoluble on the first-named shaft, a propeller-wheel on each of said shafts, reversely-disposed bevel-gears, one on each of said shafts and respectively above and below said bearing, beveled gears mounted on the inner-frame pivot and engaging said reversely-disposed bevel-gears, means to actuate said gears to rotate the propeller-wheels and their shafts simultaneously in reverse directions, and means to tilt or incline the inner frame at will, substantially as described.

2. Raising, lowering, propelling and steering mechanism for air-ships, comprising a supporting-frame having an outer frame, an inner frame pivotally mounted in the outer frame and thereby adapted to be tilted or inclined, a bearing on the center of the inner-frame pivot, a shaft extending above the inner frame and journaled in said bearing, a tubular shaft revoluble on the first-named shaft, a propeller-wheel on each of said shafts, reversely-disposed bevel-gears, one on each of said shafts and respectively above and below said bearing, beveled gears mounted on the inner-frame pivot and engaging said reversely-disposed bevel-gears, means to actuate said gears to rotate the propeller-wheels and their shafts simultaneously in reverse directions, means to tilt or incline the inner frame at will, a circular rack revolubly supported on the supporting-frame below the outer frame, a rudder-blade fixed to the said rack and carried thereby, a spur-gear mounted on said supporting-frame and engaging said rack, and means to rotate said spur-gear, substantially as described.

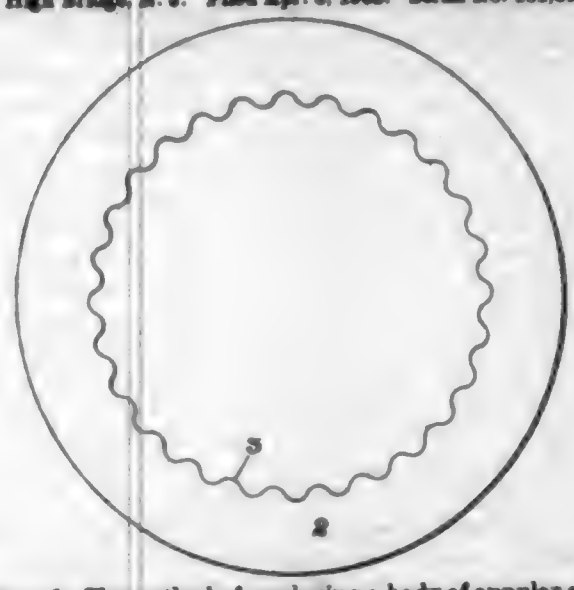
816,707. PROCESS FOR THE MANUFACTURE OF QUARTZ-GLASS FROM QUARTZ-SAND, &c. JACOB BRENDEL, Höchst-on-the-Main, Germany. Filed Sept. 19, 1904. Renewed Aug. 30, 1905. Serial No. 278,477.

Claim.—A process for the manufacture of quartz-glass from quartz-sand, silica and the like, consisting in melting the raw material into a cohesive mass which, on cooling, is broken up into small pieces which are several times heated up to a high temperature and then quickly cooled in water, whereby, in the subsequent fusing operation, the formation of air-bubbles in the glass is obviated, and a glass, practically unaffected by changes of temperature, is obtained.

816,708. MANUFACTURE OF ARTICLES FROM QUARTZ-GLASS. JACOB BRENDEL, Höchst-on-the-Main, Germany. Filed Sept. 19, 1904. Renewed Aug. 30, 1905. Serial No. 278,478.

Claim.—In the manufacture of articles from quartz-glass, first converting the raw material into a fibrous or woolly state and then after molding same into the required form again melting it, substantially as described.

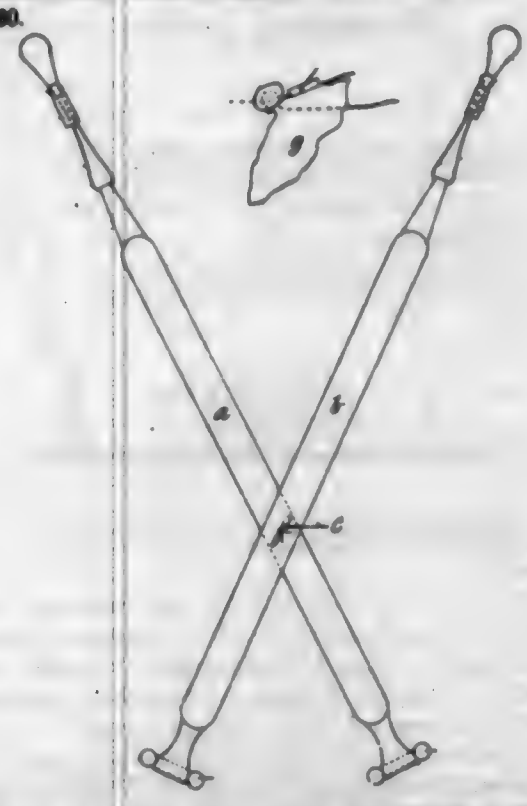
816,709. METHOD OF FORMING CASTINGS. WALTER BRINTON, High Bridge, N. J. Filed Apr. 8, 1902. Serial No. 101,892.



Claim.—1. The method of producing a body of annular section, consisting in casting it in a form in which the area of the inner surface is greater than the area of the outer surface of the body, and then subjecting the body to heat and then cooling it.

2. The method of producing a body of annular section, consisting in casting it in a form in which the outer face is substantially circular in transverse section, and the inner face is substantially sinusoidal in transverse section, thereupon subjecting the body to heat and then cooling it.

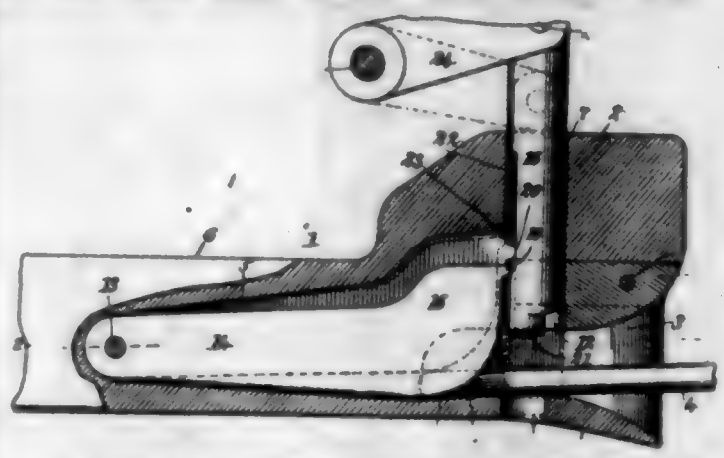
816,710. APPLIANCE FOR RETAINING BLANKETS, RUGS, AND SIMILAR COVERINGS IN POSITION. OLGA E. BULEY, Shepherd's Bush, London, England. Filed June 19, 1905. Serial No. 266,060.



Claim.—An appliance for retaining blankets and other coverings on the user, the said appliance consisting of two braces placed across one another and held at the crossing-point by suitable means: a knob at two of the corresponding ends of the braces, a loop at the other two corresponding ends, and means for tightening the loops round their corresponding knobs when placed thereover, substantially as hereinbefore described.

816,711. CAR-COUPLING. BENJAMIN J. COBB, Leesville, La. Filed July 8, 1905. Serial No. 268,763.

Claim.—1. A coupling, comprising a member having a head provided with a mouth for the entrance to the head of an end of a coupling-link, an engaging pin for the link slidable up and down within the head, and means for retaining the pin in its upward position, the forward upper portion of the head projecting beyond the corresponding lower portion thereof, as and for the purpose set forth.



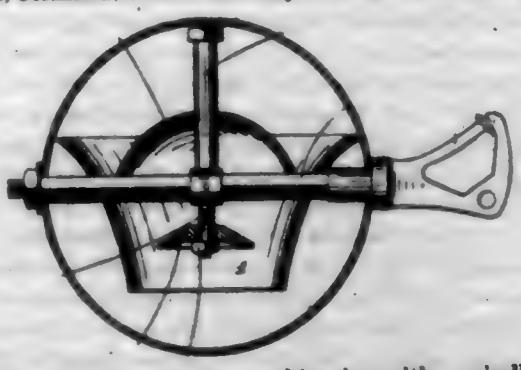
2. A coupling, comprising a member having a head provided with a mouth for the entrance to the head of an end of a coupling-link, an engaging pin for the link slidable up and down within the head, and means for retaining the pin in its upward position, adapted to release the pin automatically on contact of the link with said means, the forward upper portion of the head projecting beyond the corresponding lower portion thereof, as and for the purpose set forth.

3. A coupling, comprising a member having a head provided with a mouth for the entrance within the head of an end of a coupling-link, said mouth merging into a throat extending into the shank of the head, an engaging pin for the link slidable up and down within an opening therefor in the head, and means for retaining the pin in its upward position, embodying a controlling-block having an outer curved face and a lip and provided with a shank pivoted at its extremity adjacent to the extremity of the throat, said pin having a notch in one side thereof in which said lip is received as the pin is drawn upwardly.

4. A coupling, comprising a member having a head provided with a mouth for entrance within the head of an end of a coupling-link, an engaging pin for the link slidable up and down within an opening therefor in the head, means for retaining the pin in its upward position, and a block removably supported in the upper part of the mouth for enabling access to the interior of said member.

5. A coupling, comprising a member having a head provided with a mouth for entrance within the head of an end of a coupling-link, an engaging pin for the link slidable up and down within an opening therefor in the head, means for retaining the pin in its upward position, and a block removably supported in the upper part of the mouth for enabling access to the interior of said member, said block having a notch in the inner portion thereof for receiving and guiding the pin when the latter is raised and lowered.

816,712. DAMPER FOR STOVEPIPES, FLUES, &c. HARVEY W. CONWAY, Columbus, Ohio. Filed July 17, 1905. Serial No. 270,096.



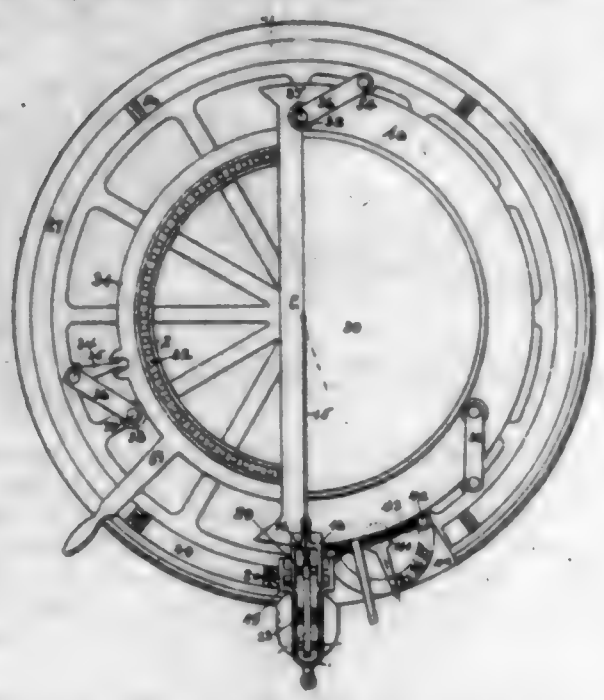
Claim.—1. In a damper, the combination with a spindle, of the bell thereon, a rod on the spindle at right angles thereto and within the bell and a cup adapted to slide on said rod.

2. In a damper, the combination with a spindle, of the bell thereon, two rods on the spindle projecting at opposite sides therefrom and within the bell, and a cup on each of said rods and slidable thereon.

3. In a damper, the combination with a spindle, a tapering bell thereon open at both ends, and a device supported in the wider end of the bell and adapted to slide toward and from the smaller of the

open ends to increase or diminish the area of the opening through the bell around the said device.

816,713. CHEESE-CUTTING MACHINE. JOHN W. CULMER, Cleveland, Ohio, assignor to The Arithmetical Scale Co., Chattanooga, Tenn. Filed Mar. 19, 1904. Serial No. 198,926.



Claim.—1. In a cheese-cutter, a base fitted at its periphery with a divisional mechanism comprising a horizontally-rotatable plate having vertical stop-pieces at its opposite ends and a revoluble winged gage extending between and journaled in said stop-pieces, a peripherally-ratcheted revoluble stage superposed on and concentric with said base, a lever journaled concentric with said base and extending between said stops and beyond the base and having a spring-pawl engaging said ratcheted stage and a second spring bearing upon the upper face of the aforesaid winged gage as shown and described.

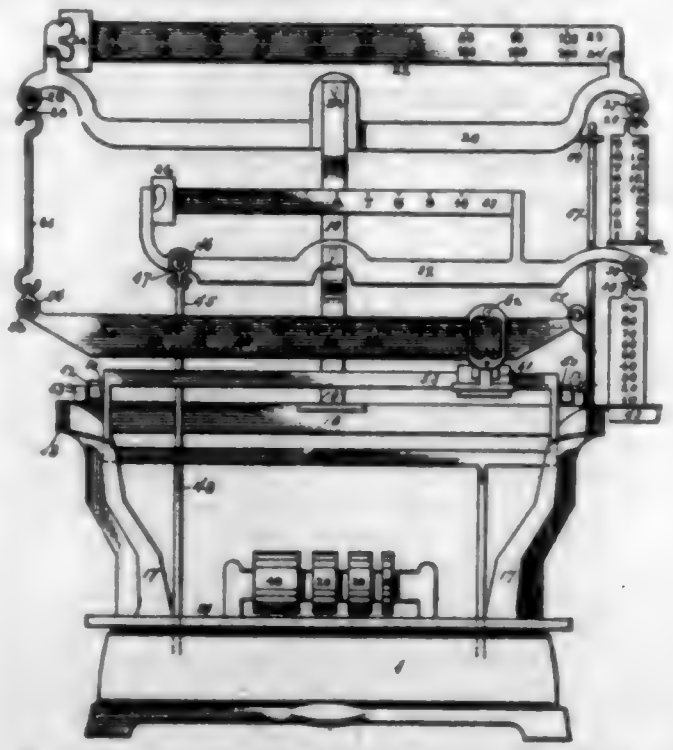
2. In a cheese-cutter, a base having a depressed recess in its periphery, fitted with a rotatable plate having stops at its ends, and an arc-scale concentric with said plate, said base adapted to support concentrically a peripherally-ratcheted revoluble stage, and a centrally-journaled lever extending over and beyond the rotatable plate and between the stops thereon, a finger extending from the body of said rotatable plate and adapted to indicate upon said arc-scale the amount of limitation of movement of said lever, a pawl upon said lever engaging with said ratcheted stage, and a detent upon said base also engaging the ratchet of said stage, as shown and described.

3. In a cheese-cutter as described, an outwardly-closed interiorly-open vertical casing, a base supporting said casing upon its periphery, counterpart guide-channels oppositely situated within the inner open face of said casing and having a vertical upper portion, a rearwardly-inclined and wider lower portion and a curved central portion forming a continuous channel, a knife-head having an open rear with outside guides within the aforesaid channels and horizontal slots on each side, a blade held within a scarf in the front of said knife-head by a central pin, two set-screws passing from the open rear of said knife-head and abutting against said blade for its adjustment relatively to said head, a lever having transverse projecting studs within the horizontal slots of the knife-head and its opposite end journaled at a lower point in said vertical casing, an operating-lever journaled within said casing and having its inner end extending upwardly within and its longer end extending without said casing and upwardly to a normal vertical position, a link connecting the transverse stud-lever with the operating-lever within the vertical casing, whereby when said operating-lever is drawn downwardly the knife-head is caused to follow the guide-channels, the blade cutting, first, at an angle toward the center, then becoming horizontal, and finally being drawn slightly toward the rear, a revoluble stage within and upon the base and means for centering a cheese thereon, and mechanism for revolving and for limiting the revolution thereof substantially as described.

4. In a cheese-cutter having a base, a controllably-revoluble stage supported on the base and mechanism for proportionally regulating its revolution; a vertical casing made fast upon the outer rim of said base and having inner open edges fitted with counterpart guide-channels having an upper portion vertical, a lower portion inclined rearwardly and a curved central portion uniting said upper and lower portions; a rearwardly-recessed knife-head, having guides entering said channels and horizontal slots on either side, a lever having a cross-bar within said slots and its opposite end journaled into said casing, a hand-lever journaled within and extending outside said casing, and a link connecting said lever with the lever of the knife-head, whereby the movement of said hand-lever operates said knife-head within its approximately vertical channel, and a blade fitted into the forward portion of said knife-head and adapted to have its edge parallel with the stage at the lower portion of its stroke and to strike the outer and upper surface of the cheese at the beginning of its stroke as shown and described.

5. In a cheese-cutter as described, a vertical casing upon the periphery of the base having its outer surface closed and its inner face open, counterpart guide-channels oppositely situated within the inner open face, said channels having a vertical upper portion a rearwardly-inclined and wider lower portion and a curved central portion forming a continuous channel, a knife-head having an open rear with outside guides, within the aforesaid channels, and horizontal slots on each side; a blade held within a scarf in the front of said knife-head by a central pin, two set-screws passing from the open rear of said knife-head and abutting against the shoulders of said blade whereby it may be adjusted relatively to said head, a lever having a cross-head within the horizontal slots of the knife-head and its opposite end journaled in the vertical casing and connected by a link with an operating-lever journaled at a lower point in said casing and having its inner end extended upwardly and outwardly to connect with said link, thence outside said casing where it is curved upward so that its long arm is normally vertical; whereby when said lever is drawn downwardly the knife-head is caused to follow the guide-channels the blade cutting, first, at an angle toward the center, then becoming horizontal and finally being drawn slightly to the rear as described.

816,714. COMPUTING-SCALE. JOHN W. CULMER, Cleveland, Ohio. Filed Nov. 23, 1904. Serial No. 234,004.



Claim.—1. In a scale, a horizontal base, an elevated cap transverse the base, a horizontally-positioned weight-supporting lever system the members of which are respectively fulcrumed near opposite extremities of the base, a horizontally-positioned cross-bar above the cap, having its ends connected with the free end of one of the levers within the base, an equalizing-lever pivotally supported on the cap, and pivotally supporting the cross-bar at its opposite ends, a weighing-beam fulcrumed above and parallel with the cap, and a positive connection between said weighing-beam and said pivotally-supported cross-bar, as shown and described.

2. In a scale, a frame comprising a horizontal base, a horizontal cap above and transverse of one end of said base, a central vertical beam-stand having two vertically-alined beam-seats, and an end-positioned vertical beam-stop having two beam-limiting openings and a fulcrum-seat made fast upon said cap, as shown and described.

3. In a scale of the class described, a weight-supporting lever system the members of which are respectively fulcrumed near opposite extremities of the base, a horizontal bar having its ends connect-

ed with said levers, a horizontal equalizing-lever pivotally supporting said bar, a weighing-beam centrally fulcrumed above said bar and having its load-pivot positively connected therewith, a weighing-scale bar, with a slidable poise, and a pendant for loose weights upon said weighing-beam, a graduated-price bar parallel with said horizontal bar, a superposed value-beam, a positively-connected link between said value-beam and said horizontally-positioned price-bar, and an adjustable link between said price-bar and said horizontal vertically-movable bar, as shown and described.

4. In a scale of the class described, a weighing mechanism as described, a pivotally-supported horizontal bar, a multiplying-lever fulcrumed upon the frame and parallel with the said bar of the weighing mechanism, a value-beam fulcrumed above and parallel with said elements, connected at its load-pivot, with the said multiplying-lever, and a link comprising a body embracing the horizontal bar and slidable thereon, a frame surrounding the multiplying-lever and provided with a pivot adapted to contact with the upper edge of said lever, a handle pivoted upon the said body and a link connecting said handle with said frame, whereby the pivot may be brought into contact with the multiplying-lever or released therefrom, as shown and described.

5. In a computing-scale a weighing mechanism having a horizontal bar member pivotally supported at its ends, a computing mechanism comprising a value-beam with a multiplying-lever fulcrumed above and parallel with the pivotally end-supported bar member of the weighing mechanism, and a connecting-pivot, a frame surrounding said multiplying-lever supporting said pivot, a block embracing said horizontal bar, a handle journaled upon said block and a link connecting said handle with the frame surrounding the multiplying-lever, whereby said pivot may be moved along said bar and connected with said multiplying-lever as shown and described.

6. In a computing-scale having a weighing mechanism with a horizontal cross-bar member pivotally supported at its ends, and a computing mechanism having a fulcrumed graduated and notched multiplying-lever parallel with said bar; a connecting-pivot carriage comprising a sleeve adapted to be moved upon the said cross-bar and fitted with a link vertically movable on said sleeve, counterpart frames journaled upon said vertically-movable link and arising upon both sides of the aforenamed multiplying-lever, a pivot connecting said counterpart frames above the inclosed lever, pointers in said frames adapted to indicate upon graduations on the said lever, shoulders on the vertically-movable link adapted to limit the rocking movement of the journaled frame, a handle journaled on the sleeve and a link connecting said handle with the vertically-movable link, as shown and described.

7. A computing-scale comprising a weighing mechanism having horizontal weight-supporting levers, a horizontal bar transverse and connected at its ends to one of said levers, a horizontally-fulcrumed equalizing-lever pivotally supporting said horizontal bar, a weighing-beam connected by its load-pivot to said bar and provided with a graduated weight-scale, a poise to indicate thereon and a pendant to receive loose weights; and a computing mechanism having a multiplying-lever fulcrumed above and parallel with said horizontal bar, and provided with equal-spaced notches on its upper edge, and a plurality of equal-spaced graduated price-scales on its sides in register with said notches; a superposed value-beam having a plurality of value-scales, adapted to coöperate with the price-scales of the multiplying-lever, a poise to indicate thereon, a pendant for loose weights adapted to coöperate with both price and value scales and indicating their maximum graduations of weight or value, a flexible connection between the value-beam and the multiplying-lever, and a connecting-pivot adapted to be moved longitudinally upon the horizontal bar of the weighing mechanism, and forced into any desired notch of the multiplying-lever of the computing mechanism, as shown and described.

816,715. **CEMENT FENCE-POST.** CLARENCE DODD, Waterville, Ohio, assignor of one-half to Frank Roach, Waterville, Ohio. Filed Nov. 1, 1905. Serial No. 285,570.

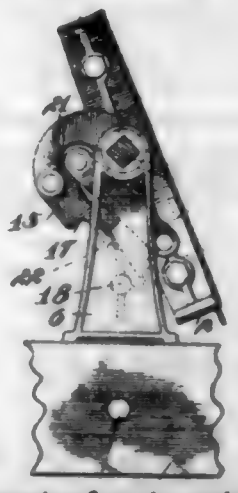
Claim.—1. A concrete fence-post having a series of cavities extending transversely across one of its side faces, one above the other, and metal linings for said cavities, said linings having, respectively, narrow elongated openings disposed flush with said face of the post.

2. In a concrete fence-post, a series of metal members of the width of the fence-post, said members having, respectively, a cavity with an elongated mouth and being embedded in the post with the mouth disposed transversely of and flush with one of the faces of the post.

3. In a concrete fence-post, a wire-holder comprising a strip of sheet metal of the width of the face of the post, said strip being twice doubled and embedded in the face of the post, substantially as shown and described.



816,716. **DUMPING-FLOOR.** JOHN F. DORNFELD, Chicago, Ill. Filed Dec. 28, 1905. Serial No. 293,690.



Claim.—1. In a dumping-floor, in combination, a floor-section; a standard for pivotally supporting said floor-section; and means on said floor-section and said standard for supporting the unbalanced weight of said section.

2. In a dumping-floor, in combination, a pivotally-supported floor-section; a stationary member; and a toggle-lever connected with said floor-section and said stationary member and adapted to support the unbalanced weight of said section.

3. In a dumping-floor, in combination, a supporting-standard; a floor-section pivotally supported upon said standard; and a toggle-lever connected with said floor-section and with said standard for supporting the unbalanced weight of said section.

4. In a dumping-floor, in combination, a pivotally-supported floor-section; a stationary member; and a toggle-lever connected with said stationary member and said floor-section, one of said connections being a sliding connection.

5. In a dumping-floor, in combination, a pivotally-supported floor-section; a toggle-lever, one member of which is pivotally connected with said floor-section; and a fulcrum for the other member of said toggle-lever, said last-mentioned member having a sliding connection with said fulcrum.

6. In a dumping-floor, in combination, a supporting-standard; a floor-section pivotally supported upon said standard; and a toggle-lever pivotally connected with said floor-section and loosely connected with said standard.

7. In a dumping-floor, in combination, a floor-section; a shaft

therefor; a standard for supporting said shaft; a toggle-lever connected with said floor-section and said standard; and an arm moving with said shaft for flexing said toggle-lever.

8. In a dumping-floor, in combination, a floor-section; a standard; a shaft; a sleeve on said shaft rotatably supported in said floor-section and said standard; means for locking said floor in the operative position; and an arm fixed to said sleeve for operating said locking means.

9. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting member; a toggle-lever, one member of which is pivotally connected with said floor-section and the other member of which lever is adapted to rest upon said supporting member; means for preventing said toggle-lever from flexing in one direction; and a guide extension on the second-mentioned toggle-lever member.

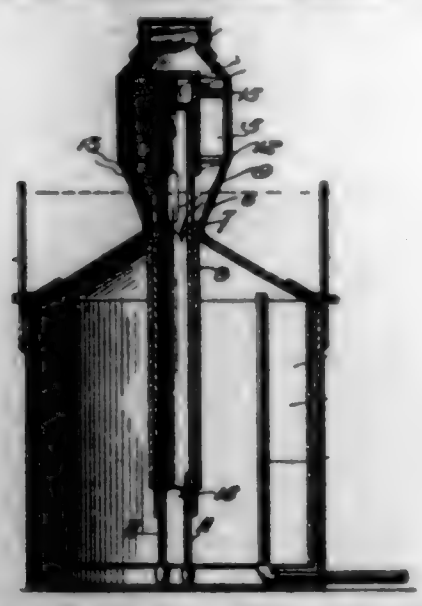
10. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting-standard; a stud on said standard; a toggle-lever connected with said floor-section and adapted to bear against said stud; and a stop-stud on said standard.

11. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting-standard; a stud on said standard; a toggle-lever pivotally connected with said floor-section and adapted to bear against said stud; a stop-stud on said standard; and an extension on one member of said toggle-lever adapted to move between said studs.

12. In a dumping-floor, in combination, a supporting-standard; a floor-section; a shaft supported in said floor-section and said standard; an arm fixed with relation to said shaft; a block pivotally connected with said arm, said block having a notch in its lower side; a stud on said standard adapted to lie in said notch; a link connected with said floor-section and with said block; and a stop-stud for limiting the movement of said block and link in one direction.

13. In a dumping-floor, in combination, a floor-section provided with a bearing; an angular shaft; a sleeve fitted upon said shaft, one end of said sleeve lying in said bearing; a standard having a bearing for the other end of said sleeve; an arm fixed with relation to said sleeve; a block pivotally connected with said arm; a link pivotally connected with said block and said floor-section; a stud for supporting said block; a stop-stud for limiting the movement of said block and link in one direction; and a guide extension on said block adapted to lie between said studs.

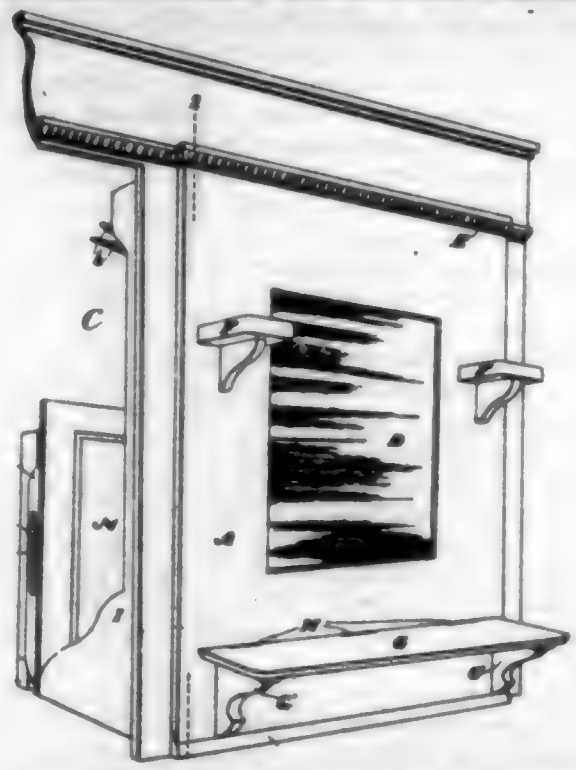
816,717. **ACETYLENE-GAS GENERATOR.** John B. Dulaney, Eator, Tex. Filed Aug. 3, 1905. Serial No. 272,566.



Claim.—1. An acetylene-gas generator comprising a water-tank, a gas-bell slidable therein, a carbid-hopper mounted upon said bell, a valve-seat in said hopper, a guide-tube depending from said seat and into said bell, a tubular valve slidable in said guide-tube and formed with discharge-openings, a valve-ring upon said valve-tube above its openings, a projection upon the lower end of said valve-tube adapted to engage the bottom of said tank, and a combined guide and guard for the upper end of said valve-tube slidably mounted within said hopper, substantially as described.

2. An acetylene-gas generator comprising a water-tank, a gas-bell slidable therein, a carbid-hopper mounted upon said bell, a valve-seat in said hopper, a guide-tube depending from said seat and into said bell, a tubular valve slidable in said guide-tube and formed with discharge-openings, a valve-ring upon said valve-tube above its openings, feet upon the bottom of said valve-tube adapted to engage the bottom of said tank, an apertured flange within said hopper, a sleeve projecting loosely through the aperture in said flange and having its lower, open end telescoping the upper end of said valve-tube, and a shoulder upon said sleeve adapted to engage said flange, substantially as described.

816,718. **TILTING OR WALL BED.** James B. Eastman, Los Angeles, Cal., assignor to Marshall & Stearns Company, Los Angeles, Cal., a Corporation of Arizona. Filed June 14, 1904. Serial No. 212,558.



Claim.—1. A wall-bed having a swinging L-shaped fulcrum secured at the top thereof to the bottom of the bed near the front end thereof, the bottom of the fulcrum being disconnected from the bed, said fulcrum having the lowest portion thereof a short distance above the floor when the bed is in a vertical position and being held by the bed out of engagement with the floor and being non-supporting during a portion of the time that the bed is being turned from a vertical to a horizontal position.

2. A wall-bed having notches at the lower front corners of the frame and a swinging fulcrum secured to the bottom thereof near such notches, said fulcrum having the lowest portion thereof a short distance above the floor when the bed is in a vertical position and being held by the bed out of engagement with the floor and being non-supporting during a portion of the time that the bed is being turned from a vertical to a horizontal position, in combination with a guide-block adapted to fit into the notches of the frame.

3. A wall-bed; a recess having an opening in the front thereof for the reception of the bed and having a back wall; a swinging fulcrum secured to the bottom of the frame of the bed near the head thereof; a closure-panel hinged to the head of the frame; a brace hinged to the other end of the closure-panel and to the back wall of the recess in which the bed is chambered when in a vertical position.

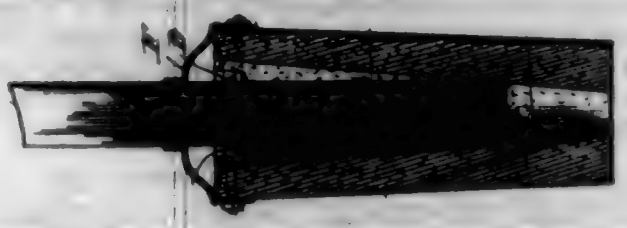
4. The combination of a recess having an opening at the front thereof and provided with a back wall and a guide-block at the bottom of said opening; a bed adapted to be received in said recess when in a vertical position, the frame of said bed having notches therein adapted to engage said guide-block, said frame forming a closure for said opening when in a vertical position; a swinging fulcrum secured to the bottom of the frame of said bed near the head thereof, and supports near the foot thereof; a closure-panel hinged to the head of the frame; a brace hinged to the top of said closure-panel and to the wall of the recess; counterbalancing-weights slidably secured to the head of the bed.

5. In a wall-bed means to counterbalance the weight thereof comprising a weighted frame slidingly attached to the head of the frame of the bed; said weighted frame having legs adapted to contact with the floor a little before such bed-frame assumes a vertical position.

6. The combination of a bed-frame; supports secured to the bottom of the frame near the foot thereof; a support consisting of a shelf having brackets secured to the lower side thereof, said last support being pivotally secured to the bottom of the frame near the head thereof and having the lower end of the brackets a short distance above the floor when the bed is in a vertical position and being non-support-

ing to the frame during a portion of the time that the bed is being turned from a vertical to a horizontal position and constituting a swinging fulcrum.

816,719. FENCE-POST. HENRY L. FELL, Battle Creek, Mich. Filed Sept. 18, 1905. Serial No. 278,936.



Claim.—1. In a post, the combination of a base having a conical bore of largest diameter at top, an upright having its lower end wedged in the base, and clamps secured to the upper part of base and engaging the upright so as to hold it in vertical position, substantially as described.

2. In a post, the combination of a base having a bore, an upright having its lower end seated in the bore, and clamps engaging the upright above its lower end, and secured to the adjacent sides of the base, substantially as described.

3. In a post, the combination of a base having a conical bore, an upright having its lower end seated in the contracted portion of the bore, and opposite clamps embracing the upright above its lower end and secured to the adjacent sides of the base, substantially as described.

4. In a post, the combination of a base having a bore, an upright having its lower end seated in the bore, clamps engaging the upright above its lower end and secured to the adjacent sides of the base, and a top plate covering the clamps and base.

5. In a post, the combination of a hollow base, an upright having its lower end wedged in the bore, clamps engaging the upright above its lower end and having their legs attached to the adjacent sides of the base, and tie-plates and nuts on said clamps, substantially as described.

6. In a post, the combination of a tapered base having a conical bore largest at its upper end, an upright of smaller size than the upper part of the bore and having its lower end wedged in the bore, clamps embracing opposite sides of the upright above its lower end and having their legs secured to the adjacent sides of the base, and a top plate, substantially as described.

7. In a post, the combination of the base having a conical bore, an upright having its lower end wedged into the lower part of the bore, means for holding the upright in vertical position relative to the base, while leaving an air-space around the major part of the upright in the base.

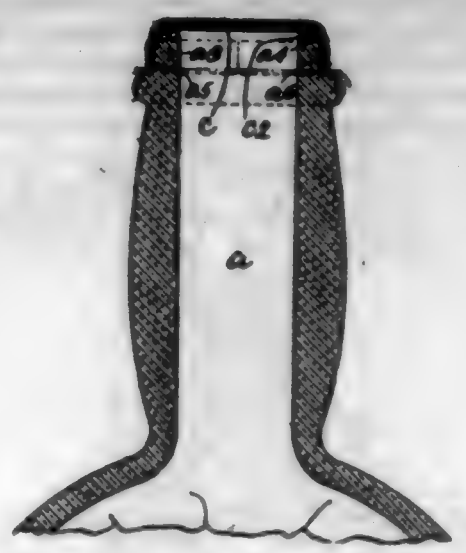
8. In a post, the combination of a base having a conical bore, a cover for the upper part of base, an upright extending through the cover and having its lower end wedged in the conical bore of the base, so as to leave a dry air-space around the major part of the upright within the base, substantially as described.

9. In a post, the combination of a base having a conical bore, a cover for the upper part of base, an upright extending through the cover and having its lower end wedged in the conical bore of the base, so as to leave a dry air-space around the major part of the upright within the base; with clamps connected to the upright and base below the cover, substantially as described.

816,720. CLOSURE DEVICE FOR BOTTLES, JARS, AND OTHER VESSELS. WILLIAM B. PENN, Sheepshead Bay, N. Y. Filed June 19, 1905. Serial No. 266,048.

Claim.—1. The herein-described means for closing a bottle, jar or other vessel; comprising a cap having a depending flange or rim provided with vertically-arranged teeth which decrease in transverse thickness from the bottom thereof upwardly, the parts of said flange or rim between said teeth being spiral in form and being contracted or drawn inwardly from one of said teeth to the other, the bottle or vessel being also provided at the opening thereinto with an annular portion having vertically-arranged teeth which correspond with those on the flange or rim of the cap or disk and which increase in transverse thickness from the bottom thereof upwardly, and the walls of said annular portion between said teeth being spiral in form and inwardly and downwardly contracted, substantially as shown and described.

2. A bottle or other vessel provided with an opening around which is an annular portion having vertically-arranged teeth between which the parts of the annular portion are spiral in form and inwardly and downwardly contracted, and a cap having a depending flange or rim provided with vertically-arranged teeth between which the parts of the flange or rim are spiral in form and inwardly and downwardly contracted, substantially as shown and described.



3. A bottle or other vessel provided with an opening around which is an annular portion having vertically-arranged teeth between which the parts of the annular portion are spiral in form and inwardly and downwardly contracted, and a cap having a depending flange or rim provided with vertically-arranged teeth between which the parts of the flange or rim are spiral in form and inwardly and downwardly contracted, and a packing-disk placed in said cap and composed of compressible material saturated with a preservative material, substantially as shown and described.

4. A bottle, jar or similar vessel provided with a neck in the outer top portion of which is an annular groove below which is an annular portion provided with vertically-arranged teeth between which said annular portion is spiral in form and inwardly and downwardly contracted, and a cap provided with a depending flange or rim having vertically-arranged teeth between which the flange or rim is spiral in form and inwardly and downwardly contracted, said cap being also provided with a packing-disk, the perimeter of which fits in said annular groove, substantially as shown and described.

5. The herein-described closure device for bottles, jars and other vessels, comprising a cap having a depending flange or rim provided with vertically-arranged teeth between which the flange or rim is spiral in form and inwardly and downwardly contracted, substantially as shown and described.

6. The herein-described closure device for bottles, jars and other vessels, comprising a cap having a depending flange or rim provided with vertically-arranged teeth between which the flange or rim is spiral in form and inwardly and downwardly contracted, and a packing-disk placed in said cap, substantially as shown and described.

7. The herein-described closure device for bottles, jars and other vessels, comprising a cap having a depending flange or rim provided with vertically-arranged teeth between which the flange or rim is spiral in form and inwardly and downwardly contracted, and a packing-disk placed in said cap, said packing-disk being composed of fibrous material saturated with preservative material, substantially as shown and described.

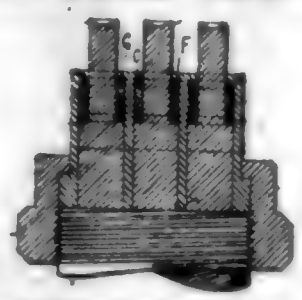
816,721. SPLICING-SOCKET FOR CABLES. JAMES L. FRAZIER, Peoria, Ill. Filed Jan. 17, 1905. Serial No. 241,426.



Claim.—In a coupling of the class described the combination of a rope member tapered from one end to the other and having a partial longitudinal tapering bore the surface of which is substantially parallel with the tapering exterior of the member, the cable ends within said bore, said member at its small end being substantially the same diameter as the cable, there being a second straight bore within the larger end of the said rope member opening into the tapering bore and of considerably smaller diameter than the latter bore and provided with screw-threads, a link-carrying member having a body of the full diameter of the rope member and having a threaded extremity of reduced diameter to screw into the threaded bore of the

said rope member, said body being flattened and tapered at two diametrically opposite sides beginning immediately at the first member as shown, there being a hole through the flat sides to form a closed eye, a second combined rope member and link-carrying member identical with those described, and a closed link for connecting the said link-carrying members, the shortest diameter of the link having a diameter substantially equal to the greatest diameter of the coupling members, and a pin extending through each extremity of the link-carrying members and the rope members as shown.

816,722. PUNCH-HOLDER. WILLIAM H. FROGGATT, Jr., Philadelphia, Pa. Filed Dec. 12, 1905. Serial No. 291,332.



Claim.—A punch-holder consisting of a round metal blank with holes drilled through it, leaving shoulders to keep the punches from falling out, and compressible composition washers cemented to the shoulders of the holes, on the inside of the holes, so as to form a continuation of, and of the same width as, the shoulders of the holes.

816,723. WATCH BARREL-ARBOR. JOHN W. GIBSON, Mystic, Iowa, assignor of one-half to William H. Lowe, Mystic, Iowa. Filed June 8, 1905. Serial No. 264,330.



Claim.—The combination with a barrel-arbor or the like, formed with an eccentrically-disposed slot, having its inner end terminating in an angularly-disposed portion, a spring seated in said slot and having an angularly-bent portion adapted to engage the angularly-extending portion of said slot, and a locking-pin passed through alining apertures in said barrel and spring, substantially as described.

816,724. FIREPROOF SAFE AND PROCESS OF FILLING THE WALLS OF THE SAME. WILLIAM H. HALL, Glendale, and EDWARD C. HALL, Cincinnati, Ohio. Filed Feb. 21, 1905. Serial No. 246,742.



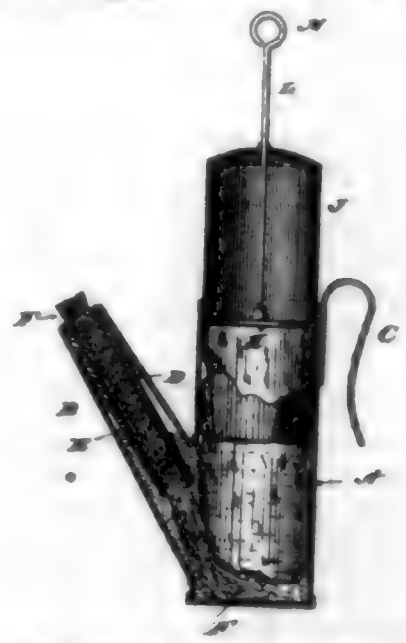
Claim.—1. In a fireproof safe, the combination with an inner casing and an outer casing forming interspace therebetween, and fireproof filling for said interspace, said fireproof filling containing previously-formed collapsible hollow bodies embedded in and forming homogeneous mass with said filling, substantially as described.

2. In a fireproof safe, the combination with an inner casing and an outer casing forming interspace therebetween, and cement filling for said interspace, said filling containing previously-formed hollow cement bodies embedded in and forming homogeneous mass with said filling, substantially as described.

3. The process of filling the interspace of a safe which consists in forming bodies having cavities, and then embedding said bodies in the filling for said interspace, said bodies being drier than said filling when embedded therein, and said bodies and filling being of homogeneous composition for forming a homogeneous mass when said filling is set, substantially as described.

4. The process of filling the walls of a safe which consists in forming hollow hydraulic cement bodies, permitting the same to dry, and then embedding the same in said walls in a hydraulic-cement filling while the latter is in wet state, whereby moisture from said filling is absorbed by said hollow bodies, and then permitting said filling and bodies to dry, whereby said filling and bodies form a homogeneous mass, substantially as described.

816,725. MINER'S LAMP. EDWIN D. HODSON, Canton, Ill., assignor of one-half to Benjamin B. Hinkle, Canton, Ill. Filed Apr. 11, 1905. Serial No. 255,080.



Claim.—1. In a torch of the character described, a container, a wick therefor, a tubular telescoping member adapted for entering the container and holding the oil to be burned, and a sliding member within the said telescoping member for ejecting the oil.

2. In a torch of the character described, a container for the oil, an inverted cupped member adapted for entering the container, a member adjustably carried in the cupped member for vertical movement and a rod member attached to said member for making such adjustment as described and for the purposes explained.

3. In a torch of the character described, the body for containing the material to be burned, the burner-tube secured thereto and larger at its end of attachment with the body than at its free extremity, a wick-carrying tube for insertion into the latter, the same being smaller at one end than the other but whose internal diameter is uniform throughout its length, a wick carried in said tube, the latter being split for the purposes indicated.

4. In a torch of the character described, the body thereof for containing the material to be burned, the burner-tube secured thereto, the same being larger at its end of attachment to the body, a wick-carrying tube inserted therein and removable therefrom, the same being of larger diameter at its outer end than its inner end but having a bore for the wick of uniform size, a wick for said tube, there being perforations in the inner end of the tube for passage of oil, said tube being split for the purposes described.

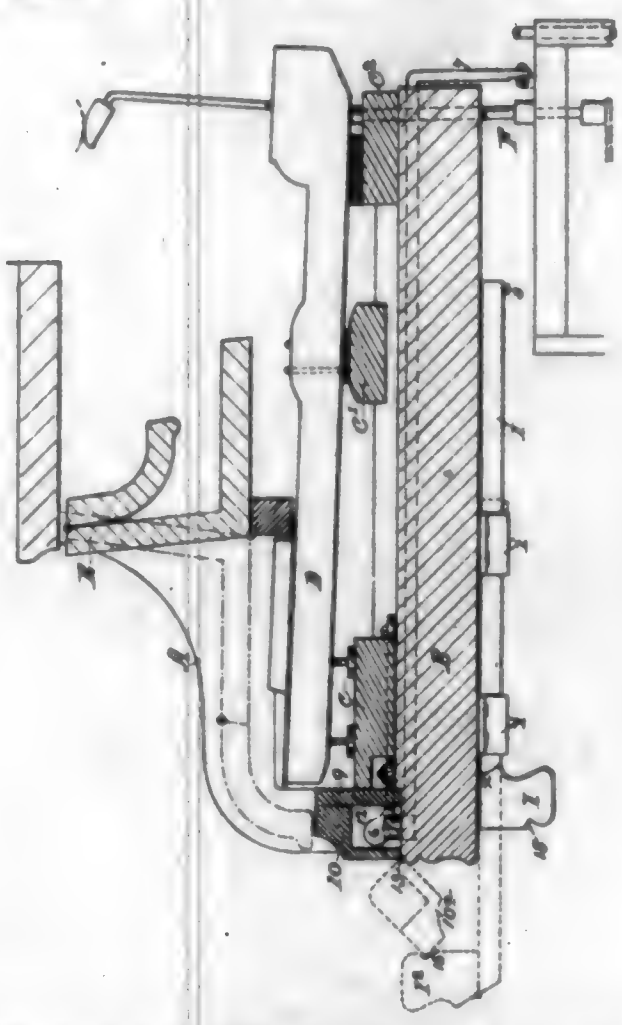
5. A miner's lamp comprising the oil-container A, the burner-tube B of greater diameter at its base than at its mouth, the wick-tube D within the burner-tube, its upper end fitting the mouth of the latter, the lower end of said wick-tube being of smaller external diameter than its upper end but whose bore is the same diameter throughout, there being perforations in the said lower end, the solid-oil container J adapted for entrance to the top of the container A and to be lowered therein as the oil is reduced and consumed.

6. A miner's lamp comprising the oil-container A, the burner-tube B of greater diameter at its base than at its mouth, the wick-tube D within the burner-tube, its upper end fitting the mouth of the latter, the lower end of said wick-tube being of smaller external diameter than its upper end but whose bore is the same diameter throughout, there being perforations in the said lower end, the solid-oil container J adapted for entrance into the top of the container A and to be lowered therein as the oil is reduced and consumed, and the vertically-adjustable member K within the said container J for the purposes described.

7. A miner's lamp comprising the oil-container A, the burner-

tube B of greater diameter at its base than at its mouth, the wick-tube D within the burner-tube, its upper end fitting the mouth of the latter, the lower end of said wick-tube being of smaller external diameter than its upper end but whose bore is the same diameter throughout, there being perforations in the said lower end, the solid-oil container J adapted for entrance into the top of the container A and to be lowered therein as the oil is reduced and consumed, the vertically-adjustable member K within said container J, and the rod L for adjusting the said member K for the purposes described.

816,726. AUTOMATIC COMBINATION-PIANO. NELSON D. HOSLEY, Meriden, Conn., assignor to Wilcox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed Sept. 3, 1904. Serial No. 223,226.



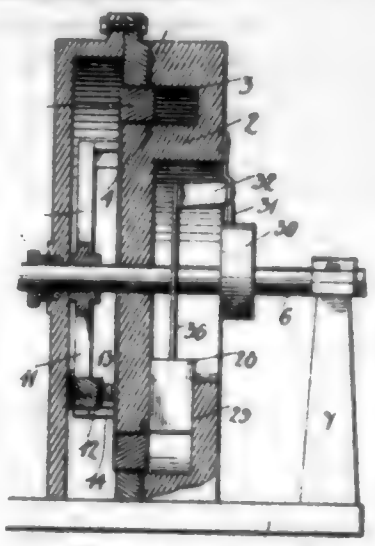
Claim.—1. In an automatic piano, the combination with the key-bed, manual-keys, and an automatic action having its expression-controlling manipulators disposed at the edge of the key-bed in front of the manual-keys; of an adjustable rest device supported on the key-bed with its head member, when at extended position, projecting in front of the expression-controlling device as a rest for the hand of the operator, and retractable to a position beneath the key-bed, substantially as set forth.

2. In an automatic piano or like instrument, the combination with the key-bed, the manual-keyboard, and expression-manipulating devices having their terminals at the front of said keyboard; of a key-slip member adapted for concealing said manipulating device, and hinged to swing forward for exposing the same, and an extendible rest device adjustably connected with the key-bed and having means for supporting the key-slip member when at open position, and for resting the hand of the operator thereon.

816,727. ROTARY ENGINE. JAMES M. KING, Fresno, Miss. Filed July 24, 1905. Serial No. 271,006.

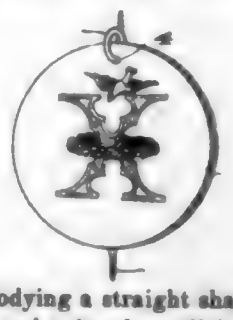
Claim.—1. A rotary engine comprising a cylinder having an annular channel, steam and exhaust ports communicating with said channel and a recess in one side, within the radius of said channel, a movable abutment to open and close said channel and having its inner end extending into said recess, a revoluble piston having an abutment or wing to travel in said channel, means to control the admission of steam to the cylinder-channel, a cam revoluble with the piston and opposite the recess in the cylinder, a rocking bar operated by said cam, and means, actuated by the said rocking bar and connected to the inner end of the first-mentioned abutment to actuate such abutment.

2. A rotary engine comprising a cylinder having an annular channel, steam and exhaust ports communicating with said channel, and a recess in one side, within the radius of said channel, a movable abutment to open and close said channel and having its inner end extending into said recess, a revoluble piston having an abutment or wing to travel in said channel, means to control the admission of steam to the cylinder-channel, a cam revoluble with the piston and opposite the recess in the cylinder, a rocking bar operated by said cam, and a multiplying-bar connected to and operated by the rocking bar and connected to the inner end of the first-mentioned abutment to actuate such abutment.



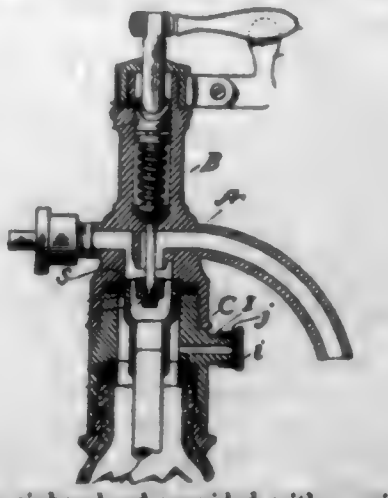
3. A rotary engine having a cylinder, a rotary piston therein, a longitudinally-movable plug-valve to admit steam to the cylinder, an angularly-movable arm to which the plug-valve is attached, and a cam revoluble with the piston and coacting with the said arm to cause the said valve to cut off the admission of steam after a partial rotation of the piston and cause the steam to act expansively during the remainder of the rotation of the piston.

816,728. PIN. FRANK J. KRISTOFEK, Coshocton, Ohio, assignor to The Meek Company, Coshocton, Ohio. Filed Nov. 10, 1905. Serial No. 286,762.



Claim.—A pin embodying a straight shank having a coil-loop intermediate of its ends and pointed parallel terminals that project in opposite directions from the loop, and a badge having a loose engagement with the loop.

816,729. SIPHON-HEAD. DEWIS LANDAU, San Francisco, Cal. Filed May 3, 1905. Serial No. 258,690.



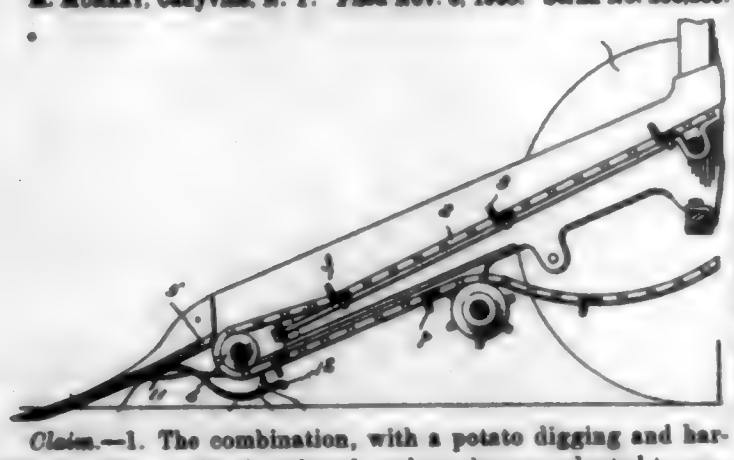
Claim.—1. A siphon-head provided with a suitable spout, a valve arranged to operate in conjunction with said spout, a rotary member formed with an inclined face, and a pin stationary relative to said member and bearing against said face, said pin being formed with a spreading head adapted to removably rest in said siphon-head substantially as set forth.

2. A siphon-head provided with a suitable spout and valve, a handle arranged to operate said valve, and means adjustable relative to said handle and arranged to limit the movement thereof, for the purpose set forth.

3. A siphon-head provided with a suitable spout and valve, a siphon-tube, a seat in said head to receive said tube, a siphon-bottle, and a member encircling said tube and interposed between said head and said bottle and screw-threaded to said head, said member being provided with a vent for the purpose set forth.

4. A siphon-head provided with a suitable spout, valve and siphon-tube, a seat to receive said tube, a siphon-bottle provided with a rim, a washer engaging said tube, a secondary washer engaging said rim, and means for affording a vent between said washers for the purpose set forth.

816,730. SHIELD FOR POTATO-DIGGING MACHINES. FRANK M. MURRAY, Cadyville, N. Y. Filed Nov. 8, 1905. Serial No. 286,330.



Claim.—1. The combination, with a potato digging and harvesting machine, a digging-shovel, and an elevator adapted to convey the potatoes from the shovel to the rear of the machine, of a shield or fender comprising a curved plate having one end removably mounted on the shovel, the contour of the plate following that of the machine toward the rear thereof, and wires depending from the machine and passing through openings in the rear of the plate whereby the same is supported.

2. The combination with a potato-digger having a digging-shovel and an elevator, of a shield or fender comprising a curved, resilient plate having its front end mounted on the shovel, the contour of the plate following that of the machine, and means for supporting the rear end of said plate, said means permitting the resilient plate to yield upwardly, substantially as described.

3. The combination with a potato-digger having a digging-shovel and an elevator, of a shield or fender comprising a transversely-curved, resilient plate having a flat front end formed with elongated openings or slots and a downwardly-curved rear end formed with apertures, bolts or the like passed through said slots for removably securing the front of the plate on said shovel, and connections depending from the machine and engaged with said apertures to support the rear of the resilient plate and permit it to yield upwardly, substantially as described.

816,731. RAILWAY-TIE AND RAIL-JOINT FASTENER THEREFOR. GEORGE S. MYERS, Philadelphia, Pa. Filed Dec. 30, 1905. Serial No. 293,543.

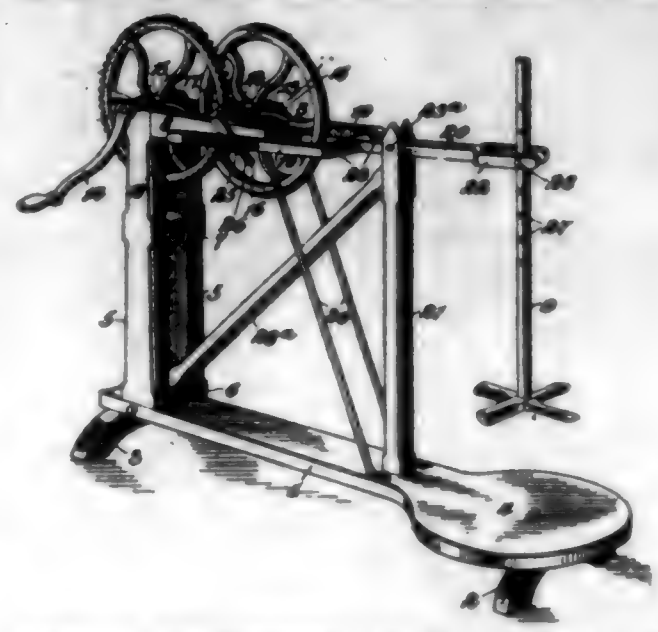


Claim.—1. The combination of a railway-rail consisting of a head and web, a metallic tie, angle-plates riveted to said tie and means for securing the web of the rail between the angle-plates whereby said rail will be supported in an upright position, as specified.

2. The herein-described combination of a railway-rail consisting of a head and web, a metallic tie, two angle-plates riveted to said tie, a stay-block also riveted to the tie on the outside angle-plate so as to bear against the latter, a clamp-block located upon the inside angle-plate and bolts passed through said angle-plates and a stay-block whereby the web of the rail is secured in position, as specified.

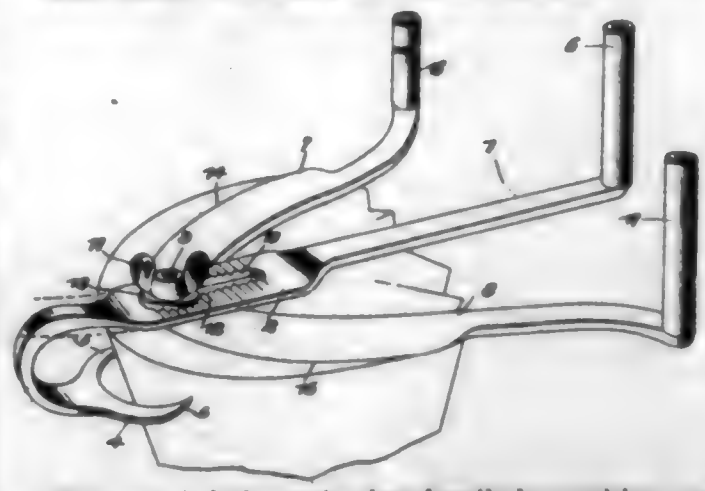
3. The herein-described combination of a metallic tie, angle-plates riveted to said tie, a rail consisting of a head and web, the web adapted to fit between the angle-plates, the inside of the rail adapted to rest upon the angle-plates, and bolts for securing the web in place between the angle-plates, as specified.

816,732. CHURN. JOSEPH C. MCCOLLUM, Bloomfield, Mo., assignor of one-third to Lee Westenhaver and one-third to Krabee C. Spence, Bloomfield, Mo. Filed Jan. 30, 1906. Serial No. 298,690.



Claim.—A churn comprising a base, a rear support rising from the base and provided at the top with a forwardly-projecting supporting portion, gearing mounted on the rear support and having a crank-shaft mounted on the said forwardly-projecting supporting portion, said crank-shaft having terminal crank elements, a dasher arranged at the front of the base, a front standard rising from the base, and an oscillatory lever fulcrumed at an intermediate point on the front standard and connected at its front end to the dasher, and having a rear forked or bifurcated portion straddling the forwardly-projecting supporting portion of the said rear support, the sides of the rear bifurcated or forked portion of the lever being slotted to receive the terminal crank elements of the crank-shaft.

816,733. HORSE-HOOF CUTTER. DUNCAN MCDONALD, Cape North, Canada. Filed June 3, 1905. Serial No. 263,643.



Claim.—1. A device of the class described comprising a main bar or member provided with hoof-engaging devices, a pair of trimming-knives pivotally associated with the member and provided with operating-handles, and means for adjusting the knives longitudinally of the member.

2. A device of the class described comprising a main bar or member provided with hoof-engaging devices and a longitudinal slot, a pivoting-bolt adjustable in the slot, and having means for securing it at the desired adjustment, and a pair of trimming-knives pivoted upon the bolt and provided with operating-handles.

3. A device of the class described comprising a main bar or member provided with hoof-engaging devices and a longitudinal slot, a pivoting-bolt seated in the slot and provided with a clamping-nut, a pair of trimming-knives pivoted upon the bolt and provided with operating-handles, and a washer interposed between the nut and member and provided with teeth for engaging coöperating teeth formed on the member.

816,734. LOOSE-LEAF BINDER. SYDNEY C. HOYT, Chicago, Ill. Filed Aug. 1, 1904. Serial No. 218,968.

Claim.—1. In a binder, the combination with a clamping-plate and a binding-plate of binding-posts connecting the same, means operated at the binding-plate acting to adjust the posts as to length

above the binding-plate and a lever on the end of each post acting to force the clamping-plate inwardly.



2. In a binder, the combination with a binding-plate and a clamping-plate of binding-posts extending through the binding-plate and adjustable as to length therein, a bolt engaged through the binding-plate and having threaded engagement in the end of each post, a lever on the upper end of each binding-post above the clamping-plate and adapted when forced inwardly to bring inward pressure upon the clamping-plate.

3. In a binder, the combination with a binding-plate and a clamping-plate of registering apertures therethrough, binding-posts extending through the clamping-plate and into the binding-plate, a bolt engaging each post through the binding-plate and acting to adjust the post with respect thereto and a lever on the upper end of the binding-post acting to force the clamping-plate inwardly and means for engaging the ends of said levers in binding position.

4. In a device of the class described, a binding-post comprising one or more sections adapted to be engaged with a binding-plate and to extend through a clamping-plate and a lever hinged to the upper end of said binding-post acting to turn downwardly and force the clamping-plate inwardly.

5. A binding-post for the purpose specified comprising a plurality of sleeve-sections of uniform diameter, threaded internally from end to end and having notches in the ends for engagement with a tool and bolts complementally threaded for their entire length and affording the connection between the abutting ends of said sleeves.

6. A binder of the class described comprising a binding-plate and a clamping-plate, binding-posts holding the same in operative relation comprising a plurality of sleeves of uniform diameter and internally threaded at each end, a threaded bolt affording the connection between the abutting ends of adjacent sleeves and a lever at the outer end of each post acting to force the clamping-plate inwardly.

7. In a binder, a tubular sectional binding-post of uniform diameter adapted to extend into the binding-plate, a headed bolt swiveled in the binding-plate and engaging in said post and a lever pivoted at the upper end of said post and adapted when in alinement therewith, to form an extension thereof.

8. A binder of the class described comprising a binding-plate and a clamping-plate, binding-posts holding the same in operative relation comprising a plurality of sleeves of uniform diameter and internally threaded at each end, a threaded bolt affording the connection between the abutting ends of said sleeves, a lever at the outer end of each post acting to force the clamping-plate inwardly, a follower intermediate the clamping and binding plates and means for adjusting said follower with respect thereto.

9. In a binder the combination with the clamping and binding plates of extensible posts connecting the same comprising internally-threaded sleeves and bolts forming the connection between said sleeves, a lever on the outer ends of said posts acting to force the clamping-plate inwardly, means for holding said levers in clamping relation and an adjustable follower carried on said plates.

10. In a device of the class described the combination with a binding-plate of posts adjustably secured thereon each comprising a plurality of internally-threaded sleeves and bolts adapted to engage said sleeves together, a clamping-plate movably engaged on said posts, a lever at the upper end of each post adapted to be turned inwardly and compress said clamping-plate, a follower intermediate said plates and an operating-shaft therefor adapted when the clamping-plate is released to be removed with the follower.

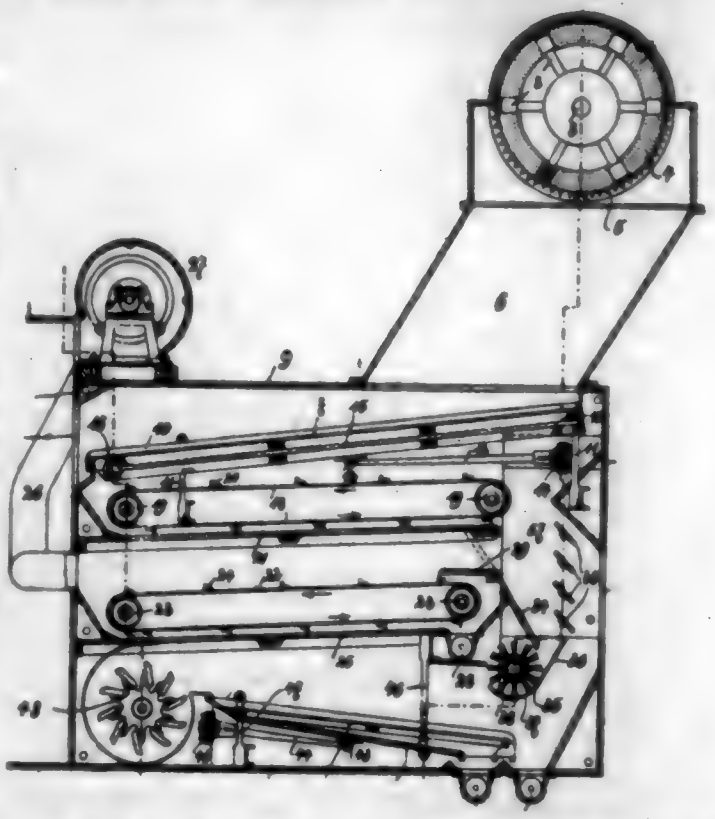
11. A binding-post for the purpose specified comprising a plurality of tubular sections having internally-threaded ends and complementally-threaded bolts acting to secure the abutting ends of said sections together and a hinged section thereon adapted when in one position to form a continuation thereof.

12. A binder comprising in combination, top and bottom plates, posts adapted to hold said plates in operative relation, a lever on each post acting to limit the outward movement of one of said plates, a follower slidably engaged on the front faces of said posts and an adjusting-shaft therefor adapted to permit said follower to be removed from the front of the binder.

13. A binder comprising in combination top and bottom plates, posts adapted to hold said plates in operative relation, a lever on the upper end of each post adapted to force the top plate inwardly and interchangeable bolts carried in the bottom plate adapted to move said posts vertically.

14. In a loose-leaf binder, the combination with the top and bottom plates of posts slidably engaged therethrough, each comprising internally-threaded sections and bolts threaded complementally therewith adapted to engage abutting ends of said sections, a lever hinged at the upper end of each post and interchangeable bolts swiveled in the bottom plate adapted to raise and lower said posts.

816,735. APPARATUS FOR SEPARATING RUBBER FROM CANVAS, METAL, AND OTHER MATERIAL. HERMANN PFEIFFER, Hanover, Germany. Filed Dec. 23, 1904. Serial No. 238,644.



Claim.—1. In a machine for separating rubber from foreign substances, the combination of a screen, with a pair of conveyers below the same, means for inducing an air-current between the conveyers, and means for returning the lighter material from below the lower conveyer to the screen, substantially as specified.

2. In a machine for separating rubber from foreign substances, the combination of a screen, with a pair of conveyers and a well below the screen, means for inducing a current of air through the well and between the conveyers, and a brush at the bottom of the well, substantially as specified.

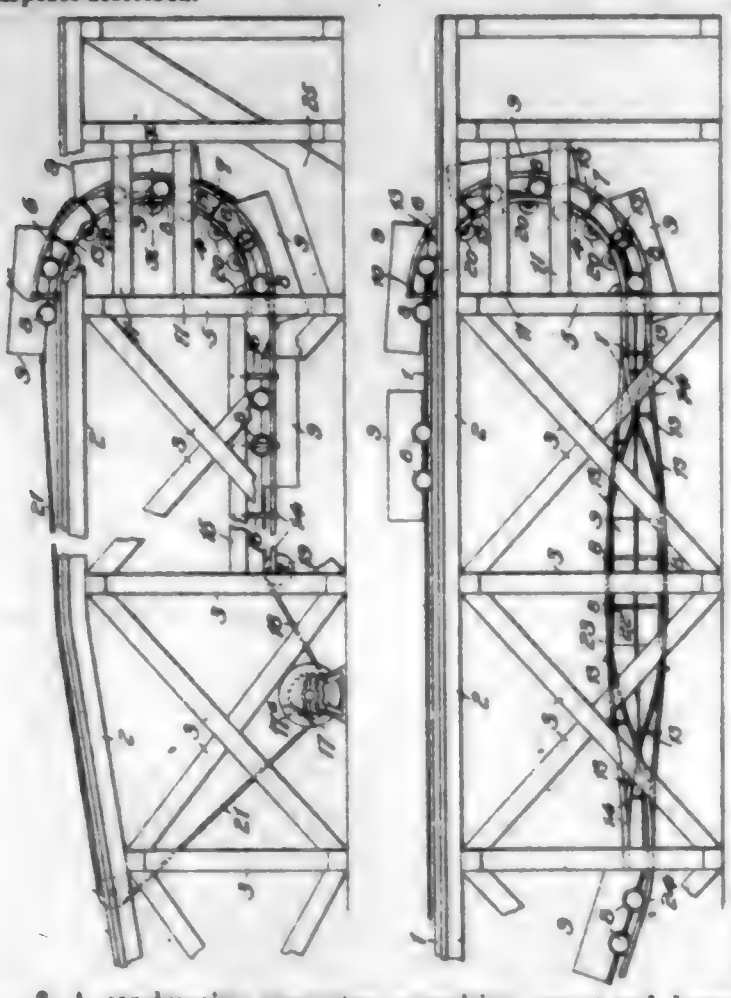
3. In a machine for separating rubber from foreign substances, the combination of an upper screen, with a pair of conveyers and a well below the screen, means for inducing a current of air through the well and between the conveyers, a lower screen, means for returning the lighter particles from below the lower conveyer to the upper screen, and means for carrying the heavier particles from the bottom of the well to the lower screen, substantially as specified.

4. In a machine for separating rubber from foreign substances, the combination of means for tearing the rubber, with an upper reciprocating screen, means for blowing air through said screen, a pair of conveyers and a well below the screen, means for inducing a current of air through the well and between the conveyers, a lower screen, means for returning the lighter particles from below the lower conveyer to the upper screen, and means for carrying the heavier particles from the bottom of the well to the lower screen, substantially as specified.

816,736. CAR-DUMP. HARVEY M. RAMSEUR, Birmingham, Ala. Filed July 12, 1905. Serial No. 269,535.

Claim.—1. In a car-dumping apparatus, the combination with hoisting machinery and a cable driven thereby, of a plurality of independent cars adapted to be coupled together and detachably connected to said cable, a track for said cars comprising rails in different horizontal planes, a vertical curve connecting said rails in different planes and comprising double rails, and antifriction-pulleys for

supporting said cable as it rounds said curve, said cars being adapted to be lowered and raised by said cable around said curve, for the purposes described.



2. A car-dumping apparatus comprising upper and lower tracks, a curve connecting said tracks and comprising double rails, the inner rails forming a continuance of the upper track and the outer rails forming a continuance of the lower track, independent cars adapted to be detachably coupled in trains and passed around said curve for the purpose of dumping their contents, a hoisting-drum, a cable driven thereby and detachably connected to one of a train of said cars for the purpose of raising or lowering them around said curve, and antifriction devices on which said cable rests in rounding said curve.

3. The combination of two tracks in different planes, a substantially vertical curve connecting said tracks, cars adapted to pass around said curve and be inverted thereby, a plurality of hoisting-drums, a cable connected to one drum and adapted to pass around said curve to draw said cars to the dump, a second cable and drum adapted to lower said cars around said curve and draw them back up around it, and antifriction devices around said curve on which said cables run in rounding said curve.

4. In a car-dumping apparatus, a track which is curved downwardly to invert a car running thereon, and which is curved in a spiral manner to right the car, substantially as described.

5. In a car-dumping apparatus, a track which is curved downwardly to invert a car running thereon, and which is curved in a spiral manner to right the car, and means to guide said car around said curve and spiral, substantially as described.

6. In a car-dumping apparatus, a track for a car which leads downwardly around a substantially semicircular curve and is then twisted in a half-spiral causing a car which has been inverted by passing around the curve or half-spiral to be righted as it continues around the half-spiral or curve, in combination with dumping-cars having wheels running on said track, and means to move said cars around said curve and half-spiral, substantially as described.

7. In a car-dumping apparatus, a car-track, the rails of which are bent downwardly in a curve, guard-rails beginning at said curve and continuing around the same and beyond to form a lower track, on which the cars, inverted in traversing said curve, are supported, and stationary means to right said cars as they traverse this lower track after leaving said curve.

8. In a car-dumping apparatus, an upper and a lower track leading from the same side toward a downwardly-disposed curve connecting said tracks, the rails of the lower track being disposed in a spiral manner to cause a car in traversing said spiral to become inverted, a flexible rope or chain for drawing cars around said curve and spiral, and antifriction-supports for said rope or chain while passing around said curve, substantially as described.

9. In a car-dumping apparatus, a double track having oppositely-arranged rails disposed tread to tread and twisted in a half-spiral curve, a car having wheels adapted to run on one or the other of said tracks in passing around said half-spiral, means to draw said car through said half-spiral to invert it, and means to right and return the empty car, substantially as described.

10. In a car-dumping apparatus, a dumping-track comprising a half-spiral and a curve, an endless cable or rope passing around said curve and through said half-spiral, antifriction supporting means for said cable or rope, and dumping-cars detachably connected to said cable and adapted to be drawn through said half-spiral and around the curve for the purpose of dumping and righting them, substantially as described.

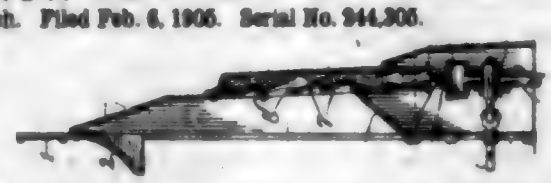
11. In a convertible dumping apparatus, a continuous track comprising car dumping and righting portions, rails forming double tracks around said dumping and righting portions and which are so arranged that a car makes two half-turns on longitudinal and transverse axes in passing around said portions, and means to pass the cars in either direction around said continuous track, whereby they are dumped and automatically righted, substantially as described.

12. In a convertible dumping apparatus, a continuous track, portions of which are in different planes, double rails forming a portion of said track and arranged to invert a car running over them, double rails connecting the portions of the track in different planes which are so disposed as to invert a car in passing from one plane to the other, and means to pass the cars in either direction around said continuous track, for the purposes described.

13. A dumping apparatus comprising a main track, a lower track, a downwardly-disposed curve connecting said tracks, cars adapted to be detachably coupled in trains and to move on said tracks, in combination with operating mechanism for the cars comprising one cable for drawing the cars to a point where they can be lowered around the curve and a second cable for lowering and raising the cars back up around said curve to the main track, machinery for driving said cables, and antifriction devices to reduce the wear on the cables in rounding the dumping-curve.

14. Dumping mechanism for independent cars adapted to be detachably connected and handled in trains, which comprises a main track, a cable to move the loaded cars along said track to a point whence they will run by gravity to the dumping-point, driving means for said cable, a second cable adapted to be connected to the rear end of the train of cars, and driving machinery which controls, by said second cable, the lowering of said cars to the dumping-point, and dumping means comprising downwardly-curved track devices which invert the cars as they pass around them, said latter cable acting both to lower and to raise the cars around said curve and return them to the main track, as and for the purposes described.

816,737. GAS-GRATE. ALFRED D. RAYBONE, Grand Rapids, Mich. Filed Feb. 6, 1905. Serial No. 244,305.



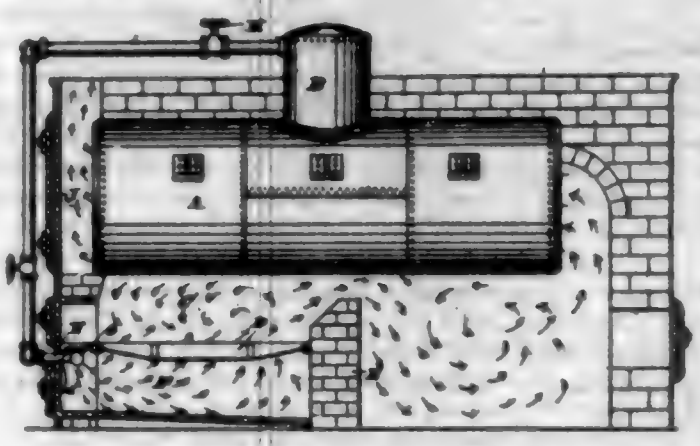
Claim.—1. In a gas-grate, the combination of a back plate having an inclined upper portion, a middle portion recessed rearward, and also further recessed rearward in its lower part; and a burner-plate, attached to the back plate, and provided with a superposed series of inclined portions, connected by horizontal portions having jet-openings, and mixing-tubes extending downward from the bottom of the burner-plate, and opposite the lower recess of the back plate.

2. In a gas-grate, the combination of a back plate having an inclined upper portion provided with ventilating-openings, a recessed middle portion and a further recessed lower portion, a burner-plate attached to the back plate in front of the recessed middle portion and provided with a series of inclined portions connected by horizontal portions, integral mixing-tubes extending downward from the burner-plate and opposite the lower recessed portion of the back plate, a horizontal plate connecting the lower ends of the tubes, and a gas-distributing chamber adjustably supported below the tubes and provided with jet-openings opposite the tubes.

3. In a gas-grate, a back plate having a forwardly and upwardly inclined upper part a rearwardly-recessed middle portion and a further rearwardly-recessed lower portion, a burner-plate attached to the back plate opposite its middle portion, integral mixing-tubes extending downward from the burner-plate and opposite the lower recessed portion of the back plate, a vertically-adjustable gas-chamber beneath the mixing-tubes, forwardly and outwardly inclined side

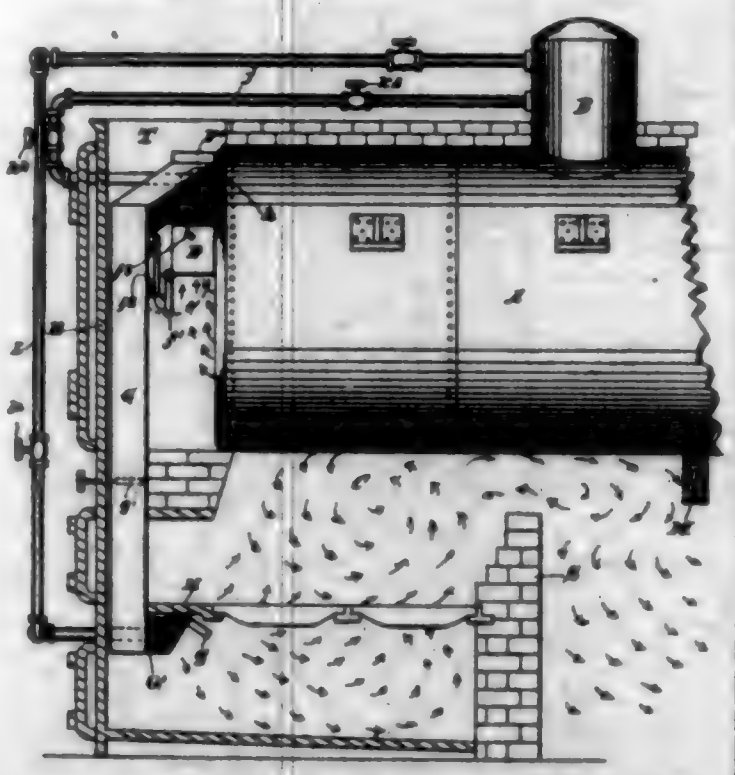
plates attached to the sides of the back plate, a front attached to the top of the back plate and to the front edges of the side plates, and an inclined plate extending from the front plate to the lower part of the burner-plate.

813,738. SMOKE-CONSUMER. THOMAS REES, Chicago, Ill. Filed June 2, 1905. Serial No. 263,563.



Claim.—In combination with a boiler and its furnace, a steam connection leading from the boiler to the upper forward end of the ash-pit, means extending transversely of the ash-pit in communication with the steam connection for directing steam toward the base of the ash-pit at a point in advance of the rear of the ash-pit.

816,739. SMOKE-CONSUMER. THOMAS REES, Chicago, Ill. Filed Sept. 13, 1905. Serial No. 278,318.



Claim.—1. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler above the tube-openings said hood having its lower side open, conduits leading from the hood to beneath the fire-box, means for directing the discharge of the conduits toward the base of the ash-pit at a point in advance of the bridge-wall, and means for creating a draft within the conduits.

2. In combination with a furnace, a tubular boiler a hood secured to one of the boilers above the tubular openings, a chamber carried by the hood, conduits leading from the chamber to beneath the fire-box of the furnace, means for directing the discharge of the conduits toward the base of the ash-pit at a point in advance of the bridge-wall, and means for creating a draft within the conduits.

3. In combination with a furnace, a tubular boiler therein, a hood arranged at one end of the boiler above the tubular openings, said hood having its lower side open, distributors within the ash-pit at the forward end thereof, conduits leading from the hood to the distributers, each of said distributers having the inner side open, a deflector for the open portion of the distributers and means for creating a draft within the conduits.

4. In combination with a furnace, a tubular boiler, a hood at one end of the boiler and arranged above the tubular openings said hood having its lower side open, conduits leading from the hood to the ash-pit of the furnace, means for directing the discharge of the conduits toward the base of the ash-pit at a point in advance of the bridge-wall, and means within the hood for creating a draft through the conduits.

5. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler above the tube-openings said hood having its lower side open, conduits leading from the hood to beneath the fire-box, means for directing the discharge of the conduits toward the base of the ash-pit at a point in advance of the bridge-wall, means for creating a draft within the conduits, and means for controlling the passage through the conduits.

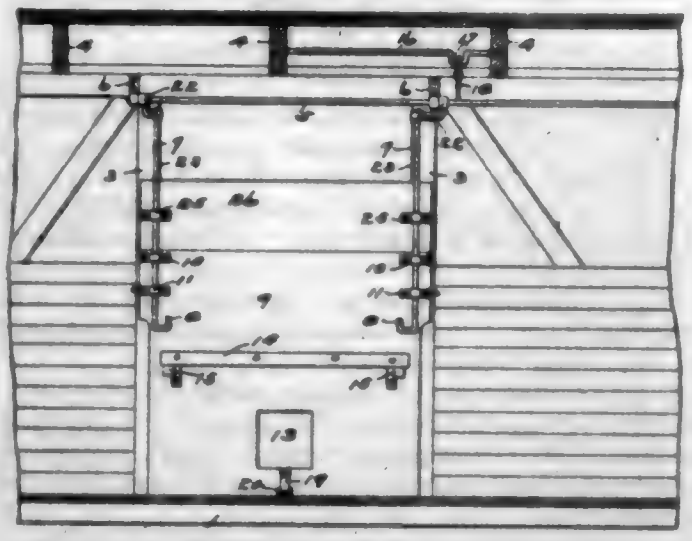
6. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler said hood having its lower side open, conduits leading from the hood and terminating within the ash-pit, pipes leading from the boiler and terminating within the hood for creating a draft and means for directing the discharge of the conduits within the ash-pit toward the bottom of said ash-pit at a point in advance of the bridge-wall.

7. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler said hood having its lower side open, conduits leading from the hood and terminating within the ash-pit, pipes leading from the boiler and terminating within that portion of the conduits within the fire-box for creating a draft and means for directing the discharge of the conduits within the ash-pit toward the bottom of said ash-pit at a point in advance of the bridge-wall.

8. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler, said hood having its lower side open, conduits leading from the hood and terminating in transversely-extending portions within the ash-pit, the inner side of each transversely-extending portion being open.

9. In combination with a furnace, a tubular boiler, a hood arranged at one end of the boiler, said hood having its lower side open, conduits leading from the hood and terminating in transversely-extending portions within the ash-pit, the inner transverse side of each transversely-extending portion being open, and deflecting-lips carried by the transversely-extended portions of the conduits and extending above the open side thereof.

816,740. GRAIN-DOOR. JOHN RILEY, Minneapolis, Minn. Filed May 13, 1904. Serial No. 207,565.

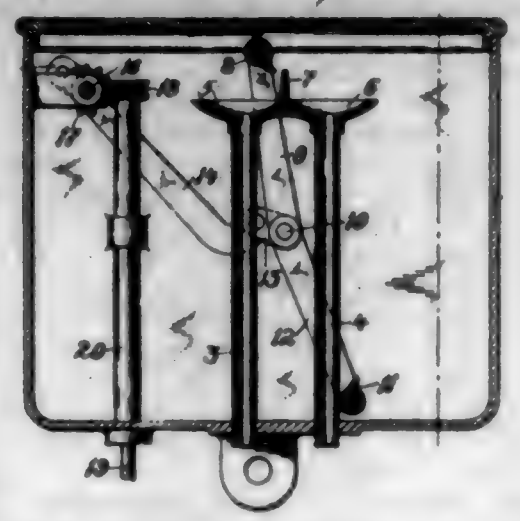


Claim.—1. The combination, with a car, of a track suspended over the door-opening and extending along the side of the car beyond said opening and provided with sliding hangers 22, rods 7 swiveled in said hangers at their upper ends and having their lower ends inwardly turned forming hooks 8, a door 9 having guides for said rods, and stops to engage said hooks 8 when the door is raised, substantially as described.

2. The combination, with a car, of a track mounted thereon, a door slidably supported on said track and arranged to be swung inwardly thereon to a position beneath the roof of the car, a rod having an offset supported beneath said roof, a hook slidably arranged on said rod, and a link carried by said door and arranged to be engaged by said hook when the door is lifted.

3. The combination, with a car, of a track mounted thereon over the door-opening, hangers slidably arranged on said track, rods swiveled in said hangers and provided with lugs near the upper ends, a door composed of two sections slidably mounted on said rods, the upper section having guides provided with slots to receive said lugs and allow said upper section to be moved to the upper ends of said rods, for the purpose specified.

816,741. LUBRICATING MECHANISM. CARL C. RIOTTE, Jersey City, N. J. Filed Nov. 14, 1905. Serial No. 287,232.



Claim.—1. In a lubricating device, a casing, a plurality of distributing-pockets with discharge-outlets, a series of buckets, a frame carrying said buckets, and means for oscillating said frame to bring said buckets alternately into position over said pockets.

2. In a lubricating device, a casing, two series of discharge-outlets, each of said series including a plurality of distributing-pockets, two series of buckets for said distributing-pockets, a frame carrying said buckets, and means for oscillating said frame to bring said buckets alternately into position over said pockets.

816,742. SOUND-RECORDING DEVICE. HENRY P. ROBERTS, New York, N. Y. Filed Nov. 29, 1904. Serial No. 234,782.



Claim.—1. In a sound-recording device, the combination of a fixed portion, a portion telescoping therein, a diaphragm pivoted to said telescoping portion and carrying a stylus, a tracking device carried by said telescoping portion, a second tracking device carried by said diaphragm, and automatic means for forcing said telescoping portion downward.

2. In a sound-recording device, the combination with a bridge to carry the thrust of the recorder, of a diaphragm having bodily movement independent of said bridge.

3. In a sound-recording device, the combination of a plate, a diaphragm carrying a stylus and held by said plate, two vertically-telescoping members constituting a vertical sound-conveying passage, said plate being pivoted upon the relatively movable member aforesaid.

4. In a sound-recording device, the combination of a plate, a diaphragm carrying a stylus and held by said plate, two vertically-telescoping members constituting a vertical sound-conveying passage, said plate being pivoted upon the relatively movable member aforesaid, and automatically-operating mechanism for forcing said movable member downward.

5. In a sound-recording device, the combination of a plate, a diaphragm carrying a stylus and held by said plate, two vertically-telescoping members constituting a vertical sound-conveying passage, said plate being pivoted upon the relatively movable member aforesaid, and a tracking device also carried by said movable member.

6. In a sound-recording device, the combination of a plate, a diaphragm carrying a stylus and held by said plate, two vertically-telescoping members constituting a vertical sound-conveying passage, said plate being pivoted upon the relatively movable member aforesaid, a tracking device also carried by said movable member, and automatically-operating means for forcing said movable member downward.

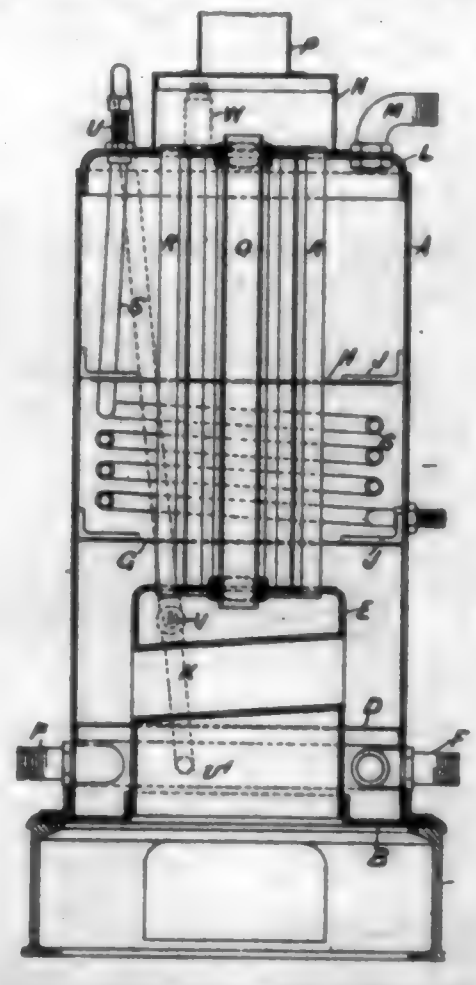
7. In a sound-recording device, the combination of a vertically-movable diaphragm-support, a plate hinged to said support and carrying a diaphragm with its stylus, and automatically-operating means for moving said support and diaphragm downward for engagement with blank cylinders of different thicknesses.

8. In a sound-recording device, the combination of a vertically-movable plate-support, a diaphragm hinged to said support and carrying a diaphragm with its stylus, and automatically-operating means for moving said support and diaphragm downward for engagement with blank cylinders of different thicknesses.

9. In a sound-recording device, the combination of a relatively stationary vertical tube adapted for engagement upon a movable carriage of a talking-machine, a second tube telescoping therein and terminating at its lower end in a flaring portion, a similarly-shaped plate having a central opening hinged thereto and nesting within said flare, a diaphragm with its stylus carried by said hinged plate, and automatically-operating means for forcing said diaphragm downward.

10. In a sound-recording device, the combination of a relatively stationary vertical tube and a tube telescoping vertically therein to form a continuous sound-conveying passage, a plate carrying a diaphragm and stylus and hinged to said movable tube, and spring-actuated means for automatically forcing said plate and diaphragm downward.

816,748. AMMONIA-VAPORIZER. JOHN ROSSON, Wallsend, England. Filed Apr. 24, 1905. Serial No. 257,126.



Claim.—1. Apparatus for the purpose set forth comprising in combination three boilers, means in each boiler for vaporizing ammonia from its aqueous solution, vapor-delivery pipes from and to each boiler, and means for cooling the aqueous contents of each boiler, in combination with connections comprising stop-valves whereby the communications between said boilers may be so disposed that while any one of the boilers is vaporizing, another is absorbing, and the third cooling, substantially as described.

2. A boiler for the purpose set forth comprising in combination a vertical shell, fire-box, smoke-box and uptake from the latter, tubes between the smoke-box and fire-box, a horizontal perforated plate surrounding the fire-box, an inlet for ammonia-gas to the water-space below said plate, baffle-plates above the fire-box and a delivery-pipe substantially as described.

3. A boiler for the purpose set forth comprising in combination a vertical shell, fire-box, smoke-box and uptake from the latter, tubes between the smoke-box and fire-box, a horizontal perforated plate surrounding the fire-box, an inlet for ammonia-gas to the water-space below said plate, baffle-plates above the fire-box a coil for circulation of cooling medium for cooling the water in said boiler, and a delivery-pipe substantially as described.

816,744. BOTTLE NECK AND STOPPER. STEPHEN D. ROBBINS, St. Louis, Mo. Filed Feb. 6, 1905. Serial No. 244,570.



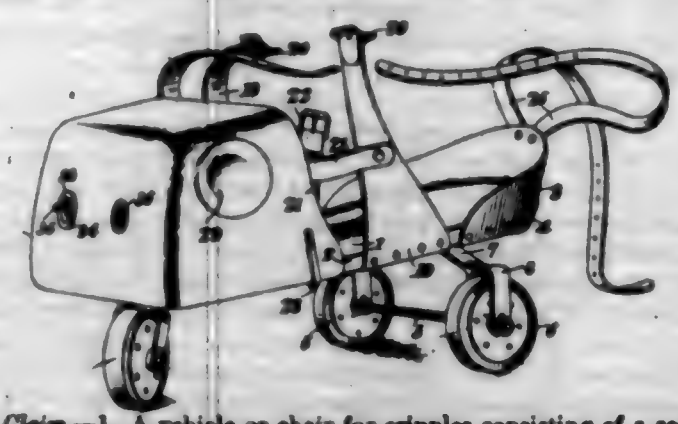
Claim.—1. In a bottle or receptacle, the combination with the neck having an internal flange, of a tube within the neck, springs fastened to the tube to abut against the flange, a perforated netting at the outer end of the tube, a device to secure the netting in position, a valve to control the passage through the tube, washers on the inner end of the tube, and an elastic stopper on the tube between the washers, substantially as specified.

2. In a bottle or receptacle, the combination with the neck having an internal flange, of a tube within the neck, springs fastened to the tube to abut against the flange, a perforated netting at the outer end of the tube, and a mouthpiece clamped onto the outer end of the tube outside the neck of the receptacle, substantially as specified.

3. In a bottle or receptacle, the combination with the neck having an internal flange, of a tube within the neck, springs fastened to the tube to abut against the flange, a mouthpiece clamped onto the outer end of the tube outside the neck of the bottle, a perforated netting between the mouthpiece and the tube, and a valve within the tube adjacent to the perforated netting, substantially as specified.

4. In a bottle or receptacle, the combination with the neck having an internal flange, of a tube within the neck, springs fastened to the tube to abut against the flange, a ball located within the outer end of the tube, a perforated netting against the outer end of the tube to hold the ball in the tube, a mouthpiece clamped upon the outer end of the tube and the netting, and an elastic stopper fastened to the inner end of the tube, substantially as specified.

816,745. VEHICLE FOR CRIPPLES. FRANK ROWLEY, Battle Creek, Mich. Filed Aug. 18, 1905. Serial No. 274,775.



Claim.—1. A vehicle or chair for cripples consisting of a seat shaped to receive the thighs of the occupant, a running-gear for the seat, and means to fasten the seat to the thighs of the occupant, the seat being supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and the device capable of being tilted rearwardly to bring its rear end into contact with the roadway to form an emergency-stop.

2. A vehicle or chair for cripples consisting of a seat shaped to receive the thighs of the occupant, a running-gear supporting the seat at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, means for connecting the seat to the occupant thereof, and a boot hinged to the front end of the seat.

3. A vehicle or chair for cripples consisting of a seat shaped to receive the thighs of the occupant, a running-gear supporting the seat at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, means for connecting the seat to the occupant thereof, a boot hinged to the front end of the seat, and a catch to fasten the boot to the seat.

4. A vehicle or chair for cripples consisting of a seat shaped to receive the thighs of the occupant, a running-gear supporting the seat at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, means for connecting the seat to the occupant thereof, a boot hinged to the front of the seat, and spring-catches carried by opposite sides of the boot and capable of snapping beneath the respective edges of the seat to secure the boot thereto.

5. A vehicle or chair for cripples consisting of a wheeled seat supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, the seat capable of being laterally tilted upon the wheels by a swaying movement of the body of the occupant for steering the device, and means for securing the device to the occupant.

6. A vehicle or chair for cripples consisting of a seat, a caster-wheel, a pair of wheels upon which the seat is capable of being tilted laterally by swaying movements of the occupant to steer the device, the seat being supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means for attaching the seat to the occupant.

7. A vehicle or chair for cripples consisting of a seat, a caster-wheel therefor, a bolster upon which the seat is capable of being laterally tilted, supporting-wheels carried by the bolster, the seat being supported at a height to give access of the hands of the occupant to the roadway for manipulating and propelling the device, and means to attach the seat to the occupant thereof.

8. A vehicle or chair for cripples consisting of a seat, a supporting caster-wheel therefor, a bolster upon which the seat is capable of tilting laterally, each end of the bolster being provided with a depending yoke, a supporting-wheel mounted within each yoke, the seat being supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means to attach the device to an occupant.

9. A vehicle or chair for cripples consisting of a seat, a supporting caster-wheel therefor, a bolster upon which the seat is capable of tilting laterally, supporting-wheels carried by the bolster, guard members depending from the seat and passing loosely through openings in the bolster, the seat being supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means for attaching the seat to the occupant thereof.

10. A vehicle or chair for cripples consisting of a seat, a supporting caster-wheel therefor, a bolster upon which the seat is capable of tilting laterally, supporting-wheels carried by the bolster, guards depending from the seat and passing loosely through openings in the bolster, braces extending between the guards and the seat, the seat being supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means for attaching the device to the occupant thereof.

11. A vehicle or chair for cripples consisting of a seat, a supporting caster-wheel therefor, an upwardly-bowed bolster, a pin depending from the seat and passing loosely through a central opening in the bolster, a head upon the lower end portion of the pin, an elastic element between the head and the bolster, supporting-wheels carried by the opposite ends of the bolster, the seat capable of tilting laterally upon the bolster and supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means for attaching the device to the occupant thereof.

12. A vehicle or chair for cripples consisting of a seat, a supporting caster-wheel for the front of the seat, an upwardly-bowed bolster at the rear of the seat with its ends provided with depending yokes, supporting-wheels mounted within the yokes, a pin depending from the seat and loosely piercing the middle of the bolster, a head upon the lower end portion of the pin, an elastic element between the head and the bolster, guards depending from the seat and passing loosely through the bolster, braces extending between the seat and the lower ends of the guards, the seat capable of tilting laterally upon the bolster for steering the device and supported at a height to give access of the hands of the occupant to the roadway for propelling and manipulating the device, and means for attaching the seat to the occupant thereof.

816,746. MEDICAL APPLIANCE. FLORA S. RUSSELL, Boston, Mass. Filed Sept. 12, 1903. Serial No. 172,873.

Claim.—1. A device of the character described, comprising a

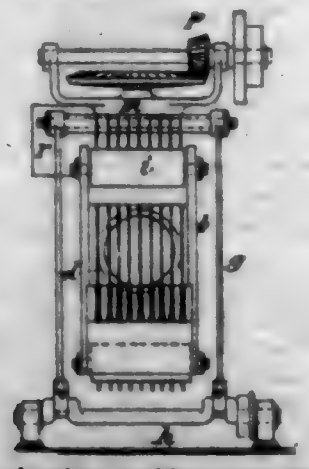
body portion of rigid material having inner and outer walls separated to form a chamber between them, and having a receptacle formed by said inner wall which is provided with an open mouth, and rigid inlet and outlet tubes attached to the outer wall of said body portion to communicate with said chamber and located substantially in line with the mouth of the receptacle within said body portion, substantially as described.



2. A device of the character described, comprising a body portion having an open mouth and provided in its walls with a chamber, an inlet and an outlet tube or pipe attached to said body portion and communicating with said chamber, and a partition-wall located in said chamber between said inlet and outlet tubes, substantially as described.

3. A device of the character described, comprising a substantially bulb-shaped body portion of rigid material having an open mouth, and provided with an inner and outer wall forming a chamber within said body portion, of rigid inlet and outlet tubes detachably attached to said body portion substantially in line with the mouth of the said body portion, substantially as described.

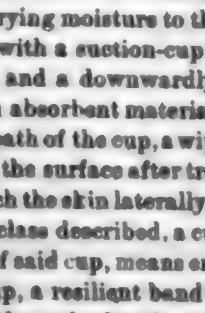
816,747. CLAY-CLEANING APPARATUS. AXEL SARNOW, Asstrup, Germany. Filed Aug. 12, 1905. Serial No. 273,944.



Claim.—A clay-cleaning machine comprising a grate movable in an inclined direction and having grate-bars with offsets adapted to lift the impurities retained by said grate-bars in combination with a transporting-screw in a part of the casing above said grate having a lateral opening, said screw being provided with a friction-plate at its upper end, adapted to engage with a constantly-revolving friction-plate when the pressure of the accumulated impurities lifts the screw substantially as described and for the purpose set forth.

816,748. MASSAGE APPLIANCE. EDWARD S. SAUSSMAN, Chicago, Ill. Filed July 18, 1904. Serial No. 216,937.

Claim.—1. The combination with a suction-cup, of a shoe carried therein and means adjustably supporting said shoe above the mouth of the cup and adapted to regulate the pressure of the shoe upon the surface treated.



2. The combination of a suction-cup, with a shoe therein positioned to contact with the surface treated, means acting to regulate the tension of the shoe upon said surface and absorbent material engaged in the walls of said cup.

3. In a suction-cup, a threaded rod extending upwardly through the suction-aperture, a bar-nut engaging above and below the same and adapting the same for adjustment vertically in the cup and means carried on the rod acting to exert tension and pressure upon the surface included within the cup.

4. A suction-cup provided with a recess in the side walls thereof, absorbent material in said recess, a shoe in said cup and means for adjusting said shoe with respect to the mouth of the cup.

5. A narrow suction-cup, a shoulder in the side walls thereof, a band inclosing the cup and forming a recess below said shoulder, a shoe in said cup and means adjustably engaged in the top of said cup adapted to adjustably support said shoe.

6. A cup for the purpose specified comprising a rigid structure affording a relatively long narrow mouth having inclined edges, means on said cup affording a recess at the front of the same and moisture-carrying means in said recess.

7. In a suction-cup having a narrow mouth and having the bottom inclined outwardly and upwardly at the top and an inwardly and upwardly inclined surface at the rear thereof, a shoe rigidly but adjustably supported therein, above the mouth of the cup and means adapting the same for carrying moisture to the surface treated.

8. The combination with a suction-cup of conducting material having an oblong mouth and a downwardly-opening recess at the front end of the cup, of an absorbent material in said recess adapted to deliver moisture in the path of the cup, a wiper carried at the rear of the cup and acting to dry the surface after treatment, and a shoe acting within the cup to stretch the skin laterally of the travel of the cup.

9. In a device of the class described, a cup, a longitudinally-apertured nipple on the top of said cup, means engaged thereon adapted to exhaust air from the cup, a resilient band around said cup affording a recess to the walls thereof, absorbent material in said recess and a vertically-adjustable shoe in said cup.

10. In a massage suction-cup, a shoe suspended centrally therein above the mouth of the cup, a rod adjustably engaged therein and in the top of the cup adapted to adjust the shoe, a band inclosing said cup and absorbent material intermediate said band and the cup.

11. The combination with a suction-cup adapted for thermal applications and having a constricted mouth of a rotary shoe located in and above the mouth, means holding the same from upward movement and means applying moisture in advance of the cup.

12. The combination with a massage suction-cup having a restricted mouth adapted for thermal applications and having a recess in the front side thereof, a moisture-carrying medium in said recess, a wiper pivoted on the cup and carried at the rear thereof and a spiral shoe rigidly supported in and above the mouth of the cup.

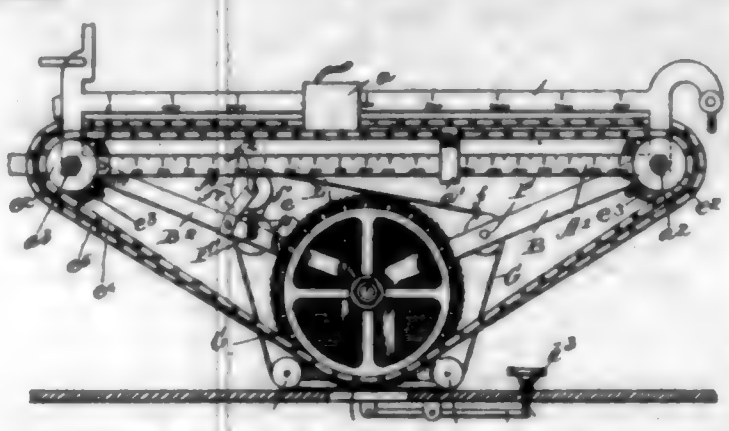
13. In a massage suction-cup, a yoke adjustably engaged therein and rollers journaled on said yoke adapted to exert lateral pressure on the surface treated.

14. A massage suction-cup provided with an outwardly-directed shoulder thereon, a band engaged on said shoulder and depending below the same to near the bottom of the cup, absorbent material in the recess thus formed, and a shoe adjustably engaged in said cup.

15. A rigid massage suction-cup having a restricted mouth of less width than length, a recess at the front of the cup, an absorbent material therein, a resilient band engaging around the cup and affording the outer wall for said recess, a wiper adjustably supported at the rear of the cup and an adjustably-supported shoe within the cup adapted to apply tension to the skin.

816,749. SCALE-REGISTER. MARTIN SCHMIDT, Secor, Ill. Filed June 30, 1902. Serial No. 163,504.

Claim.—1. The combination with a scale-beam of a weight slidably supported thereon, bracket-hangers carried on the ends of said beam, wheels journaled in said hangers centrally of the beam, raised type on the periphery thereof, a type-ribbon carried on said hangers, means for operating said wheels simultaneously with the weights and a manually-operated key pivotally supported beneath said ribbon.



2. In a device of the class described, a plurality of scale-beams, a weight slidably supported on each, an inwardly-directed bracket-arm engaged at each end of said beams, a type-wheel journaled therein and having on its periphery raised numbers corresponding with the numbers on the beam, a type-ribbon supported in operative relation with the type-wheels, a flexible connection between the type-wheels and the slidable weight whereby movement of the weight acts to correspondingly rotate the type-wheels, a key acting to support a record-blank and adapted to be operated manually to drive the blank against the type-ribbon and type.

3. The combination with a scale-beam comprising a plurality of graduated parallel bars, of a plurality of hangers extending inwardly from the ends thereof, a type-wheel for each bar independently journaled therein, raised type on the periphery of each corresponding with the graduations on the bar, a weight slidably secured on each bar, a sprocket-chain connected with each weight and also with the corresponding type-wheel and acting to partially rotate the same by the movement of the weight and manually-operated means acting to print the record.

4. The combination with a scale-beam comprising a plurality of parallel graduated bars, of a frame supported at the ends of said scale-beam, a type-wheel for each bar, independently journaled in said frame, raised type on its periphery corresponding with the graduations of the bar, a sprocket-wheel connected with each type-wheel, corresponding sprocket-wheels at the end of the scale-beam, a sliding weight on each scale-bar and sprocket-chains connected at their ends on said weights and extending around said sprocket-wheels, ribbon-spools also carried on said frame and a type-ribbon secured thereon and extending beneath the periphery of the type-wheels, a manually-operated key acting to support paper in operative relation with and force the same against said ribbon and type when the weight is determined.

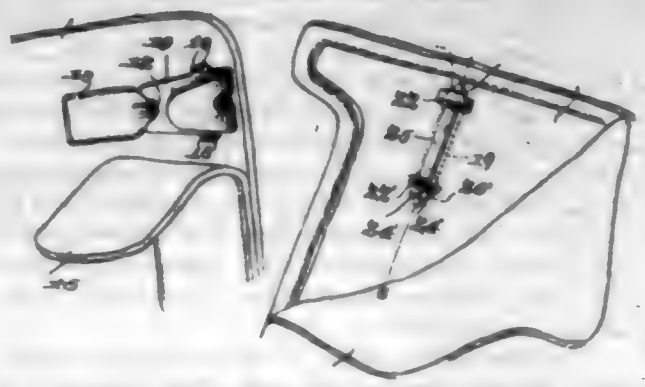
5. The combination with a scale-beam, of brackets on the ends thereof extending downwardly and inwardly, registering means journaled at the lower ends of said brackets, sprocket-wheels journaled at the ends of said beam, a sprocket-wheel carried on said registering means, a sprocket-chain on said wheels, a weight slidably engaged on said beam and connected with said chain and a manually-operated key adapted to coöperate with said registering means to record the amount weighed.

6. The combination with a plurality of scale-beams, of bracket-hangers on the ends thereof extending downwardly and inwardly, a transverse shaft at the lower ends thereof, a sleeve rotatively engaged on each end of said shaft, a type-wheel on each sleeve, a sprocket-wheel adjacent each type-wheel, sprocket-wheels journaled at the ends of said beams, sprocket-chains trained over said wheels, weights slidably engaged on said beams and connected with said chains, a type-ribbon carried on said hangers and a key adapted to contact with said ribbon.

816,750. **GARMENT-FASTENER.** ANDREW E. SMITH, Fredonia, N. Y. Filed Oct. 5, 1905. Serial No. 281,670.

Claim.—1. A garment-fastener embodying a hook member, a bar curved laterally adjacent its ends and terminating in spear-points provided each with a slot and a keeper proportioned to be inserted through the slots.

2. A garment-fastener embodying a hook member, a bar curved laterally adjacent the ends and terminating in spear-points provided each with a slot and a stitch-receiving opening, a keeper proportioned to be inserted through the slots and having a stitch-receiving opening registering with the opening in the spear-point.



3. A garment-fastener comprising a hook member, a bar adapted to be inserted at its end through a fabric, and a keeper slidable longitudinally within the ends of the bar.

4. A garment-fastener embodying, a hook member comprising a plate folded upon itself and provided with a slot to receive a fastening-ribbon and with spurs for engaging the garment, a bar curved laterally adjacent its ends and terminating in spear-points provided each with a slot and a stitch-receiving opening, a keeper proportioned to be inserted through the slots and having a head at one end and a stitch-receiving opening at the other registering with the opening of the spear-point.

816,751. **REDUCING AGENT OR COMPOSITION FOR USE IN PHOTOGRAPHY.** HARRY E. SMITH, London, England. Filed May 12, 1905. Serial No. 260,144.

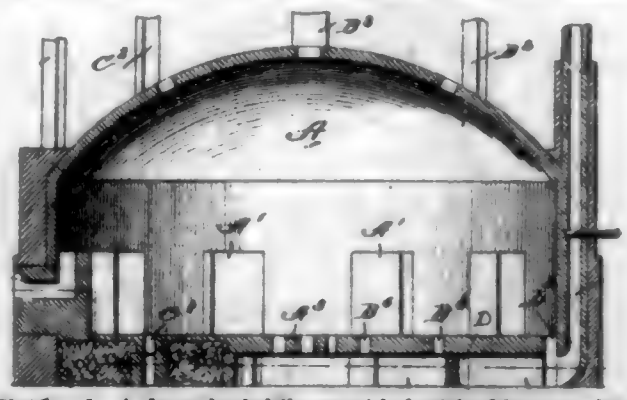
Claim.—1. In a photographic reducing agent the combination of a compound containing cobalt and the nitrite radical group (NO_2), with an acid.

2. In a photographic reducing agent the combination of a compound containing cobalt, the nitrite radical group (NO_2), and a metal of the alkali group, with an acid.

3. In a photographic reducing agent the combination of a substance containing cobalt, a base other than cobalt, the nitrite radical group (NO_2), and an acid.

4. The combination with a photographic reducing agent containing cobalt and the nitrite radical group, with an acid, of a bath of dilute ammonia whereby subsequent discoloration may be prevented.

816,752. **DOWNDRAFT-KILN.** GEORGE B. SNOWDEN, New Cumberland, W. Va. Filed July 24, 1905. Serial No. 271,060.



Claim.—1. A downdraft-kiln provided with chimneys disposed at the outer kiln-wall, a central draft-flue beneath the kiln-floor provided with radially-extending flues each communicating with a chimney at its outer end, and independent segmental flue systems at each side of the central flue and provided with a plurality of radial flues each disposed intermediate of two floor-openings and communicating with an independent chimney of less area than the chimney of the central flue.

2. A downdraft-kiln provided with chimneys disposed at the outer kiln-wall, a central draft-flue beneath the kiln-floor provided with radially-extending flues each communicating with a chimney at its outer end, independent segmental flue systems at each side of the central flue and provided with a plurality of radial flues each communicating with an independent chimney, and a floor structure provided with elongated draft-ports adjacent to each of the chimneys controlling the segmental flues.

3. A downdraft-kiln provided with chimneys disposed at the outer kiln-wall, a central draft-flue beneath the kiln-floor provided with radially-extending flues each communicating with a chimney

at its outer end, independent segmental-flue systems at each side of the central flue and provided with a plurality of radial flues each communicating with an independent chimney, and a floor structure provided with draft-ports communicating with the segmental flues and disposed at substantially equal distances from the radial flues controlling the same.

4. In a downdraft-kiln, a central circular flue occupying substantially one-third of the floor area of the kiln, radial flues extending from this central flue and closed at their outer ends, independent segmental flues disposed at opposite sides of said central flue, a series of radial flues extending from the segmental flues and disposed between each pair of floor-openings therein, chimneys disposed in the kiln-walls and each communicating with said radial flues from the segmental flues, and heating-furnaces disposed in the kiln-walls alternating with said chimneys.

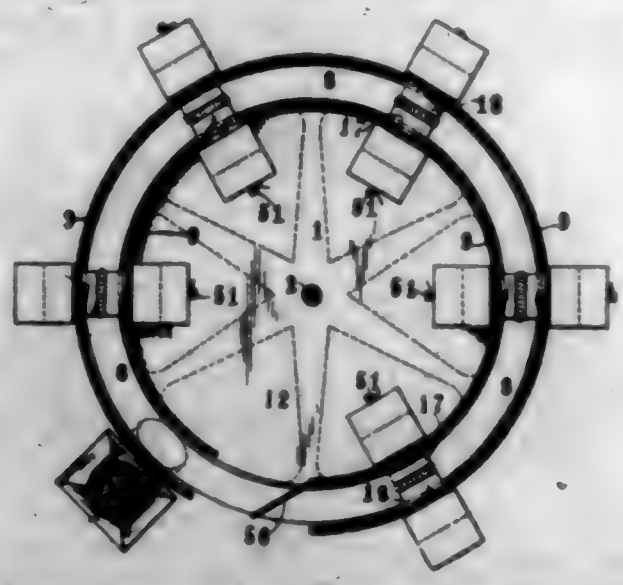
5. In a downdraft-kiln, a central flue having opposite radial extensions therefrom communicating with chimneys at their outer ends, independent segmental flues at opposite sides of said central flue of less cross-sectional area than the central flue, a plurality of radial flues extending therefrom and disposed between each pair of floor-openings in the segmental flues, and chimneys controlling said segmental flues.

6. A downdraft-kiln comprising central and segmental sections, direct flues from the central section to diametrically opposite chimneys, radial flues from the segmental sections each terminating in a chimney of less area than those connected with the central section, and suitable floor-openings communicating with said flues.

7. A downdraft-kiln comprising central and segmental sections, direct flues from the central section to diametrically opposite chimneys, radial flues from the segmental sections each terminating in a chimney of less area than those connected with the central section, and floor-openings in the segmental section each arranged intermediate two adjacent flues.

8. A downdraft-kiln comprising central and segmental sections, direct flues from the central section to diametrically opposite chimneys, radial flues from the segmental sections each terminating in a chimney of less area than those connected with the central section, floor-openings in the segmental section each arranged intermediate two adjacent flues, floor-openings for the central section arranged at the terminal of radial flues extending from a central annular space communicating with both diametrically opposite chimneys.

816,753. **CEMENT-BURNING FURNACE.** WILLOUGHBY R. SNYDER, Nazareth, Pa. Filed July 20, 1904. Serial No. 217,217.



Claim.—1. In a cement-burning furnace the combination with a movable hearth provided with a reverberatory hood, of a series of pairs of arc electrodes operatively disposed within the hood above the hearth, and draft-compelling means adapted to produce a current of air in opposition to the direction of movement of the hearth.

2. In a cement-burning furnace the combination with a relatively movable hearth and a reverberatory hood, of a plurality of pairs of arc electrodes operatively disposed within the hood above the hearth, and draft-compelling means adapted to supply a current of air from the last of said series of electrodes between the first series.

3. In a cement-burning furnace the combination with a rotatory hearth and reverberatory hood above the same, of a series of arc electrodes disposed within the hood above the hearth, and a stack communicating with the interior of the hood in operative propinquity to the initial electrodes.

4. In a cement-burning furnace the combination with a rotatory annular hearth, reverberatory hood, stack, and series of pairs of arc electrodes within the hood above the hearth, of a feed and discharge aperture in the hood and a scraper operatively disposed above the hearth within said aperture, substantially as specified.

5. In a cement-burning furnace the combination with a relatively movable hearth and reverberatory hood, of a pair of arc electrodes disposed obliquely within the hood across the hearth, whereby in operation they lay an arc across the entire extent of the hearth.

816,754. **STRAINING-HOOK FOR MUSICAL INSTRUMENTS.** ADOLPH G. SOMTMANN, Philadelphia, Pa. Filed June 22, 1905. Serial No. 266,277.



Claim.—1. In combination with a musical instrument having a stretchable head, straining means therefor comprising resilient straining-hooks each provided with an apertured bend midway its length and a portion below the bend to lie against the body of the instrument, and a bolt passing through said aperture as means for connecting the same with the associated straining mechanism.

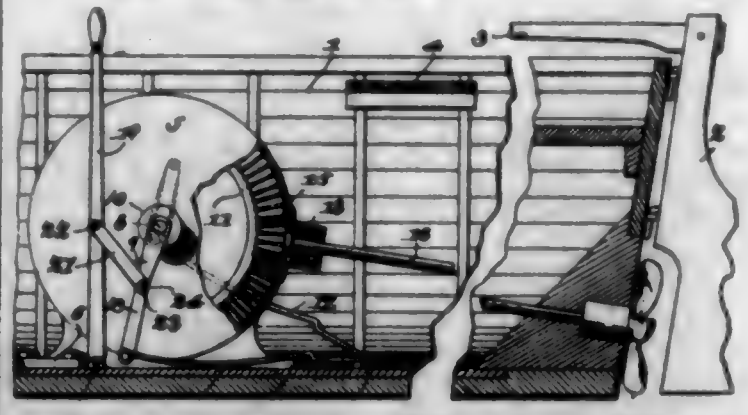
2. In combination with a musical instrument having a stretchable head, a resilient straining-hook having a vertical portion and a bent-out portion midway its length at substantially a right angle with the vertical portion, an aperture in said bent-out portion and a straining-bolt operating through said aperture, the said parts being so formed and constructed as to exert a resilient tension upon the said stretchable head.

3. A straining-hook for musical instruments formed of sheet metal having a hook portion, a vertical portion adjoining said hook portion, a horizontal portion adjoining said vertical portion and at right angles thereto, with a sharp return-curve and a larger reverse curve and terminating below in the plane of the said first-mentioned vertical portion.

4. The combination of a straining-bolt and a resilient straining-hook connected therewith for musical instruments, the said hook having its general longitudinal extension in a vertical plane provided with a hook proper at one end and an intermediate apertured loop portion projecting out of the plane of its vertical extension.

5. The combination of a straining-bolt, and a straining-hook wrought of sheet metal having its general longitudinal extension in a vertical plane provided at its upper end with the hook proper and midway its extension with a transversely-projecting apertured loop for receiving said bolt and means connected therewith for securing the associated straining mechanism.

816,755. **MOTOR-BOAT.** CHARLES H. SPENCE, St. Paul, Minn. Filed Oct. 11, 1905. Serial No. 282,334.



Claim.—1. The combination with a boat having a thwart, of an upright gear-case supported upon the bottom of the boat and terminating short of the level of the thwart, a drive-shaft piercing the case transversely of the boat, cranks upon the ends of the shaft, treadles connected to the cranks, a gear mounted upon the shaft within the case, the rear portion of the case having a lateral extension, a shaft-bearing at the rear of the case extension, a downwardly and rearwardly inclined propeller-shaft having its forward end journaled in the bearing and entering the case extension, and a pinion carried by the forward end of the propeller-shaft within the case extension and in mesh with the drive-gear.

2. The combination with a boat having a propeller, of a motor connected to the propeller and located within the boat below the

center of gravity thereof, the motor being provided with a crank-shaft, treadles accessible from one side of the motor connected to the crank-shaft, and an upstanding lever accessible from the opposite side of the motor and carrying a link detachably connected to the crank-shaft.

816,756. COMBINED REFLECTOR AND SOCKET HOOD. WILLIAM H. SPENCER, Brooklyn, N. Y., assignor to George Frink Spencer, Newark, N. J. Filed May 2, 1905. Serial No. 258,482.



Claim.—1. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, said rib being provided with receiving holes, a socket-hood in said opening, said hood being provided with receiving holes registering with the holes in said rib, means arranged in and extending through said registering holes for securing said hood in a fixed position in said opening and a continuous and unbroken enamel or other layer upon the outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, substantially as and for the purposes set forth.

2. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, a socket-hood in the said opening, means connected with the said rib for securing said hood in a fixed position in said opening, and a continuous and unbroken enamel or other layer upon said outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, substantially as and for the purposes set forth.

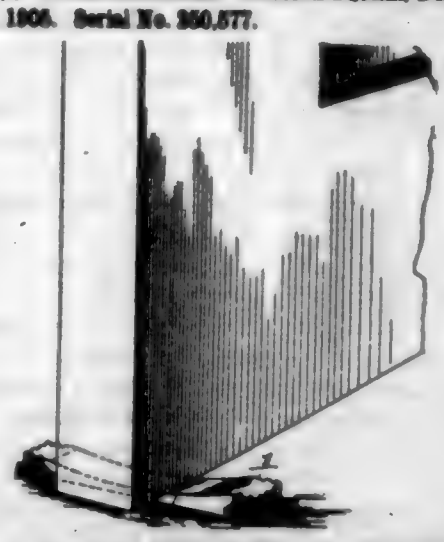
3. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, said rib being provided with receiving holes, a socket-hood in said opening, said hood being provided with holes or perforations near its lower edge portion, said holes or perforations in the hood being surrounded with outwardly-extending projections, said projections extending into and being in holding engagement with the holes in said rib for securing said hood in a fixed position in the opening of the reflector-shell, and a continuous and unbroken enamel or other layer upon said outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, substantially as and for the purposes set forth.

4. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, said rib being provided with receiving holes, a socket-hood in said opening, said hood being provided with holes or perforations near its lower edge portion, said holes or perforations in the hood being surrounded with outwardly-extending projections, said projections extending into and being in holding engagement with the holes in said rib for securing said hood in a fixed position in the opening of the reflector-shell, a bead upon the lower marginal edge portion of said socket-hood, said bead abutting against the lower edge of said rib, and a continuous and unbroken enamel or other layer upon said outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, substantially as and for the purposes set forth.

5. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, said rib being provided with receiving holes, a socket-hood in said opening, said hood being provided with holes or perforations near its lower edge portion, said holes or perforations in the hood being surrounded with outwardly-extending projections, said projections extending into and being in holding engagement with the holes in said rib for securing said hood in a fixed position in the opening of the reflector-shell, a continuous and unbroken enamel or other layer upon said outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, a lamp-receiving socket removably arranged in said hood, said lamp-receiving socket having nut-receiving depressions, nuts in said depressions, and screws extending through the registering perforations in said rib and the socket-hood, said screws being screwed into said nuts, substantially as and for the purposes set forth.

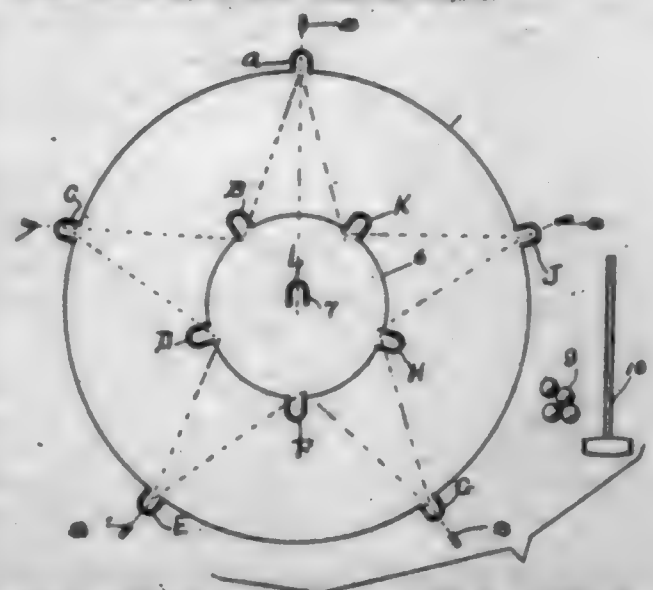
6. A combined reflector and socket hood, comprising a reflector-shell having a centrally-disposed opening, an inner and downwardly-extending rib surrounding the said opening, said rib being provided with receiving holes, a socket-hood in said opening, said hood being provided with holes or perforations near its lower edge portion, said holes or perforations in the hood being surrounded with outwardly-extending projections, said projections extending into and being in holding engagement with the holes in said rib for securing said hood in a fixed position in the opening of the reflector-shell, a bead upon the lower marginal edge portion of said socket-hood, said bead abutting against the lower edge of said rib, a continuous and unbroken enamel or other layer upon said outer surfaces of said hood and reflector-shell, said layer entirely closing the joint between said hood and reflector-shell to provide a reflector which is waterproof at the top, a lamp-receiving socket removably arranged in said hood, said lamp-receiving socket having nut-receiving depressions, nuts in said depressions, and screws extending through the registering perforations in said rib and the socket-hood, said screws being screwed into said nuts, substantially as and for the purposes set forth.

816,757. DOOR-HOLDER. WILLIAM SQUIRE, Denver, Colo. Filed Mar. 17, 1905. Serial No. 250,577.



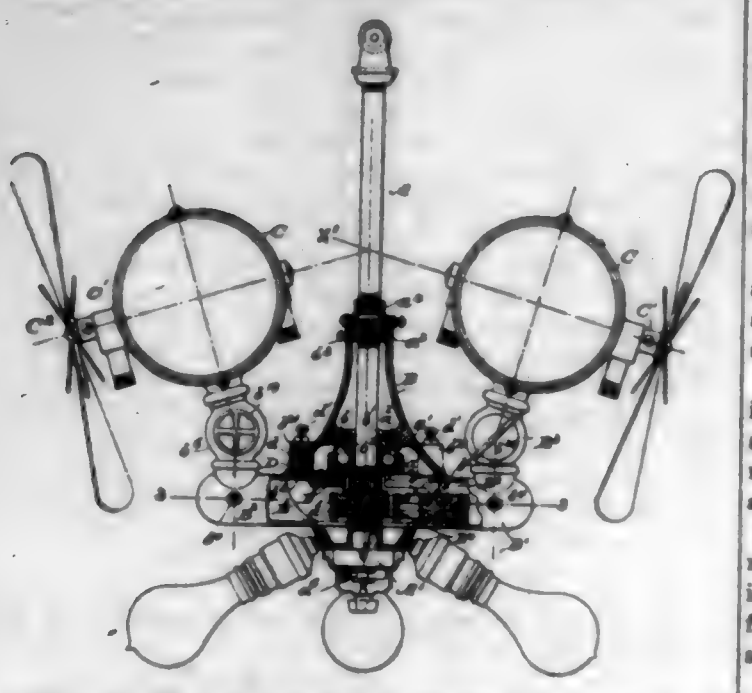
Claim.—A door-holder consisting of a rectangular block having a concave upper face extending approximately from end to end of said block, whereby said block is made thinnest at its central portion to receive the bottom of a door between the thicker ends of said block and check the swinging of the door in either direction.

816,758. GAME APPARATUS. LOUIS F. STICKWEL, Dayton, Ohio. Filed July 25, 1905. Serial No. 271,177.



Claim.—In a game apparatus the combination with balls adapted for movement over a game-field, of a flag-holder, flags adapted for engagement in the holder, an indicator comprising a body having a plurality of faces and having representations of flags upon its faces corresponding to the first-mentioned flags and a second indicator having a plurality of faces, certain of said faces having numbers marked thereupon, certain of said faces being blank and certain of said faces having characters thereon indicating disposition to be made of the first-named flags.

816,759. **MEANS FOR PRODUCING AIR-CURRENTS.** BERNARD A. STOWE, Cleveland, Ohio, assignor to The Jandus Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 27, 1903. Serial No. 163,423.



Claim.—1. The combination of a rotatory fan, a rotatory support therefor, and means arranged to automatically exert a positive frictional braking action upon said support directly proportional to the velocity of revolution.

2. The combination of a rotatory fan, a rotatory support therefor, and means controlled by the centrifugal force of its parts arranged to exert a braking action upon said support.

3. The combination of a rotatory support having two arms angularly related to the support's axis of rotation, a rotatory fan and motor mounted upon each such arm, each of the latter including an oscillatory member, and braking means actuated by said oscillatory member, the oscillation of said latter member being controlled by the centrifugal force of the rotating parts.

4. The combination of a rotatory support, a member pivotally mounted upon such support and having a plane of oscillation intersecting the plane of rotation of such support, a rotatory fan mounted upon such member, and a brake for controlling the rotation of said support and controlled by said pivotally-mounted member.

5. The combination of a rotatory support, a member pivotally mounted upon such support having a plane of oscillation intersecting the plane of rotation of such support, a rotatory fan and motor therefor mounted upon said member, and a brake for controlling the rotation of said support, and controlled by said pivotally-mounted member.

6. The combination of a rotatory support having two arms angularly related to the support's axis of rotation, a rotatory fan mounted upon each such arm and arranged to effect the support's rotation, and means for exerting a braking action upon such rotating support, such means arranged so as to be capable of movement toward and from the axis of rotation of said support.

7. The combination of a rotatable support having two arms angularly related to the support's axis of rotation, each such arm including an oscillatory member, a fan mounted upon each of said latter, means for effecting the support's rotation, and braking means actuated by said oscillatory member, the operation of the latter being controlled by the centrifugal force of the rotating parts.

8. The combination of a rotatable support having two arms angularly related to the support's axis of rotation, each such arm including an oscillatory member, a fan and a motor therefor mounted upon each of said latter and arranged to effect the rotation of said support, and braking means actuated by said oscillatory members, the operation of the latter being controlled by the centrifugal force of the rotating parts.

9. The combination of a rotatable support, a fan mounted thereon and arranged to impart a rotating movement thereto, a fixed friction member and means controlled by the rotating parts bearing upon such friction member.

10. The combination of a rotatable support, a fan mounted thereon and arranged to impart a rotating movement thereto, a fixed friction member and an oscillatory arm mounted upon said support arranged to bear upon said friction member and controlled in its operation by the centrifugal force of the rotating parts.

11. The combination of a rotatable member, a rotatory fan mounted thereon and arranged to effect the rotation of said member, braking means for controlling the speed of rotation of the latter, and means for varying the intensity of action of said braking means for a given amount of rotating power exerted by said fan.

12. The combination of a rotatable member, a rotatory fan mounted thereon and arranged to effect the rotation of said member, braking means for controlling the speed of rotation of the latter, and a spring arranged to counteract the said braking action.

13. The combination of a rotatable member, means for effecting the rotation of said member, means for effecting a braking action upon said member, and a spring arranged to counteract said braking action.

14. The combination of a rotatable member, means for effecting a braking action upon said member, a spring arranged to counteract said braking action, and means for varying the intensity of action of such spring.

15. The combination of a rotatable support, means for effecting its rotation, means for effecting a braking action upon said member and controlled by the centrifugal force of the rotating parts, and means for varying the intensitiy of such braking action for a given amount of power exerted by said rotating means.

16. The combination of a rotatable member, a rotatory fan mounted thereon and arranged to effect its rotation, means for effecting a braking action upon said member controlled by the centrifugal force of the rotating parts, and means for varying the intensity of such action for a given amount of power exerted by said fan.

17. The combination of a rotatable member, a rotatory fan mounted thereon and arranged to effect its rotation, means for effecting a braking action upon said members controled by the centrifugal force of the rotating parts, and an adjustable spring arranged to counteract such centrifugal force.

18. The combination of a rotatable member, an oscillatory arm upon said member, a rotatory fan mounted upon said arm and arranged to rotate said member, revolving parts arranged to actuate said arm by their centrifugal force, and a spring arranged to counteract such force.

19. The combination of a rotatable member, having two arms angularly related to its axis of rotation, and each provided with an oscillatory arm arranged to be actuated by the centrifugal force of revolving parts, a rotatory fan mounted upon each such oscillatory arm, and a spring for counteracting the centrifugal force acting upon each such oscillatory arm.

20. The combination of a support, a rotatable arm mounted upon said support, a fan-motor mounted upon said arm, electric illuminating means carried by said support, conductors connecting said motor and illuminating means with a common source of current, and a switch in the circuit, said conductors and switch being arranged to cut in or cut out from the circuit either said motor or illuminating means or both.

21. The combination of a depending support, a rotatable bracket mounted upon the lower part of said support, a fan-motor mounted upon said arm, electric illuminating means carried by said support and mounted below said bracket, conductors connecting said motor and illuminating means with a common source of current, and a switch located at the lower end of said support, said conductors and switch being arranged to cut in or cut out from the circuit said motor or illuminating means or both.

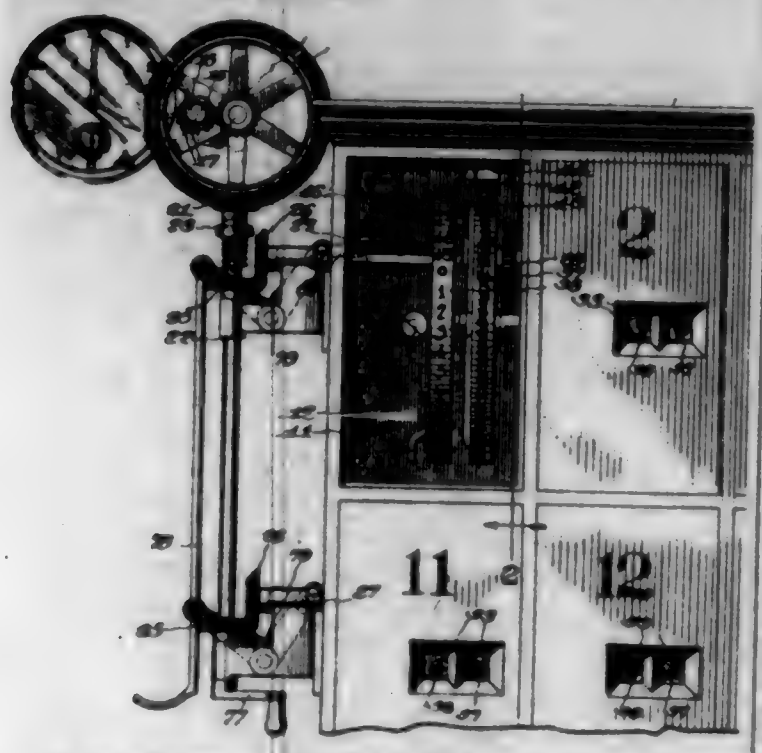
816,760. **CALCULATING-MACHINE.** SEWARD E. SWICK, Marysville, Ohio, assignor of one-half to Fred E. Weckel, Marysville, Ohio. Filed Apr. 3, 1905. Serial No. 253,435.

Claim.—1. In mechanism of the class described, an indicator arranged to display the amount due for time worked, and an indicator-operating means including a transmission member arranged to make one complete revolution during each twenty-four hours and having gear-teeth corresponding to the actual number of working hours.

2. In mechanism of the class described, an indicator arranged to display the amount due for time worked, and an indicator-operating means including two transmission-gears arranged to intermesh, the first gear having teeth of a number corresponding to the number of hours constituting a given working period, the teeth being divided into groups by a space representing the period of noon intermission, said gear being arranged to make one complete revolution during each twenty-four hours, and the second gear being provided with twenty-four teeth representing the number of hours in a day.

3. In mechanism of the class described, a support, a plurality of removable and interchangeable casings carried thereby, an indicating mechanism in each casing, transmission-gears carried by the

casing, a timed operating-shaft having a plurality of gears arranged to intermesh with such transmission-gears, and an independent means for moving each casing to connect and disconnect its transmission-gear from the shaft-gear.



4. In mechanism of the class described, a support having a plurality of removable casings, indicating means in each of said casings, transmission-gear carried by the casings, a timed operating-shaft having a plurality of gears arranged to intermesh with said transmission-gear, and a key-controlled cam for moving the casing and controlling the intermeshing of its transmission-gear with the shaft-gear.

5. In apparatus of the class described, a support, a plurality of movable casings carried thereby, indicating means in each casing, transmission-gear carried by the casing, a timed operating-shaft having a plurality of gears arranged to intermesh with the transmission-gear, a cam, and a spring for controlling the movement of each casing, and a key-actuated means for controlling the movement of the cam.

6. In mechanism of the class described, a support provided with a plurality of compartments, movable casings arranged in said compartments, an indicating means in each of the casings, transmission-gears carried by the casings, a timed operating-shaft having gears for intermeshing with the transmission-gear, a fixed cam on the casing, a stem extending through said cam, a cam carried by the stem and engaging with the fixed cam, a spring tending to move the casing in one direction, and a key for revolving said stem and altering the position of the casing.

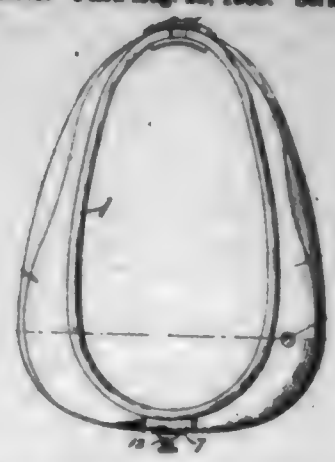
7. In apparatus of the class described, an indicating-disk bearing numerals representing money values and provided with gear-teeth, a pinion intermeshing with the teeth, the number of teeth of said pinion corresponding to a predetermined wage-rate, and a timed operating means for revolving said pinion.

8. In apparatus of the class described, the combination with an indicating means, of an operating means, gearing connections between the two, a cam controlling the mesh of such gearing connections, and means carried by the indicating mechanism for engaging such cam and disconnecting the gearing when the indicating means arrives at zero.

9. In mechanism of the class described, a support having a plurality of compartments, casings arranged in the compartments and provided with indicating mechanisms, a timed operating-shaft, common to all of the indicating mechanisms, and means for simultaneously connecting all of said indicating mechanisms to the shaft.

10. In mechanism of the class described, the combination with a time-train, of a gear operated thereby, a shaft on which said gear is loosely mounted, clutching means between the gear and shaft, a second shaft having gearing connections with the first, a plurality of gears on the second shaft, a plurality of indicating devices having gears movable toward and from the gears of the second shaft, cams controlling the movement of the indicating devices, stems carrying said cams, arms extending from the stems, a rod engaging all of said arms, and means connecting the rod and the clutch mechanism, whereby on movement of said rod all of the indicating mechanism will be connected to the second shaft, and the time-train will be unclutched to permit restoring of the indicating devices to zero.

816,761. **PNEUMATIC HORSE-COLLAR.** HERBERT J. THOMSEN, Minden, Nebr. Filed Aug. 22, 1905. Serial No. 275,267.



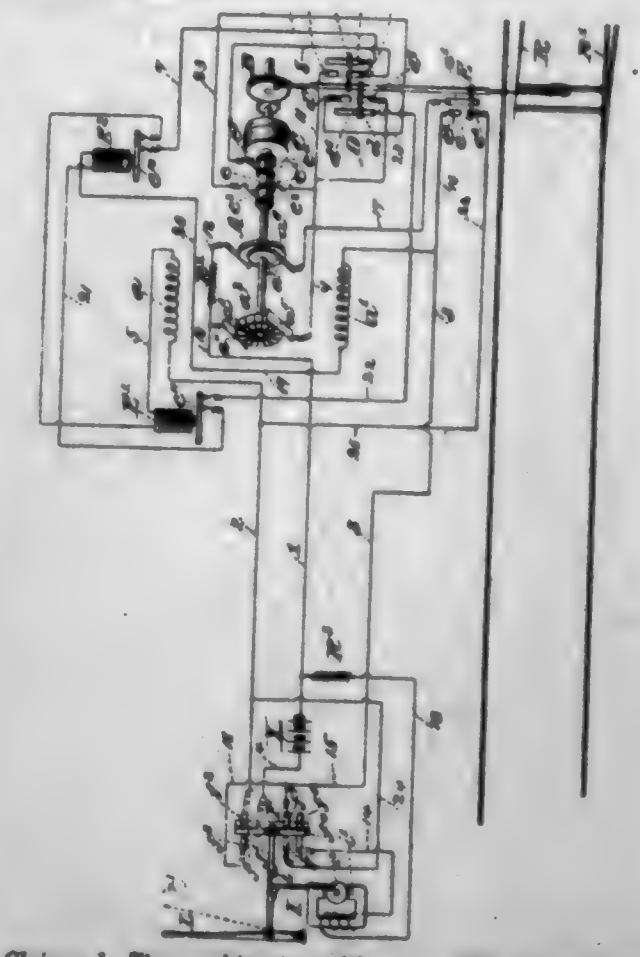
Claim.—1. The combination with a horse-collar of pneumatic pads connected by a restricted air-passage, and a valve controlling the passage of air through said air-passage.

2. In a pneumatic horse-collar, the combination with a rim portion of pneumatic pads connected by a restricted air-passage, and a valve controlling the passage of air through said air-passage.

3. In a pneumatic horse-collar, the combination with a stiff rim portion, of pneumatic pads secured to the under side thereof, a restricted air-passage connecting said pads, a valved aperture in one of said pads through which the air is introduced, and a needle-valve controlling the passage of air through said restricted air-passage.

4. In a pneumatic horse-collar, the combination with a stiff portion, of pneumatic pads secured to the under side thereof, a pipe forming a restricted air-passage connecting said pads, a metallic casing surrounding said pipe, a needle-valve mounted in said casing and controlling the flow of air through said restricted air-passage and a valved aperture in one of said pads through which air is introduced.

816,762. **APPARATUS FOR CONTROLLING THE PASSAGE OF CARS OR VEHICLES ALONG A RAILWAY.** LOUIS H. THULLEN, Edgewood, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Jan. 18, 1905. Serial No. 241,598.



Claim.—1. The combination with a reversible electric motor, a switch-and-lock movement operated thereby, an electric clutch in circuit with the motor and adapted when energized to couple the armature of the motor with the switch-and-lock movement whereby the switch-and-lock movement will be operated, and a circuit-controller operated by the switch-and-lock movement for opening the circuit including the electric clutch but not the motor-circuit.

2. The combination with a reversible electric motor, a switch-and-lock movement operated thereby, an electric clutch adapted at times to be included in series circuit with the motor and adapted when in series with the motor to couple it with the switch-and-lock movement whereby it will be operated, and a circuit-controller operated by the switch-and-lock movement for closing a shunt-circuit around the electric clutch.

3. The combination with an electric motor constructed to have reverse rotations of its armature, a switch-and-lock movement operated thereby, and an electric clutch for coupling the armature of the motor with the switch-and-lock movement, said electric clutch comprising two energizing windings one of which is in circuit with the motor when the motor-armature rotates in one direction, and the other of which is in circuit with the motor when the motor-armature rotates in a reverse or opposite direction.

4. The combination with an electric motor, provided with a winding in which an electric current is generated by the rotation of the motor-armature, a source of current for operating the motor, operating-circuits including said motor and source of energy, a controlling-lever for said circuits, a switch-and-lock movement operated by said motor, an electric clutch adapted when in the operating-circuit of the motor to couple the motor-armature with the switch-and-lock movement, an indication mechanism for the controlling-lever comprising electromagnetic means, indication-circuits which include the electromagnetic means of the indication mechanism and the said winding of the motor, and a circuit-controller operated by the switch-and-lock movement for cutting said clutch out of the operating circuit thus preventing further operation of the switch-and-lock movement and leaving the motor free to be operated to generate current in the indication-circuits to operate the indication mechanism.

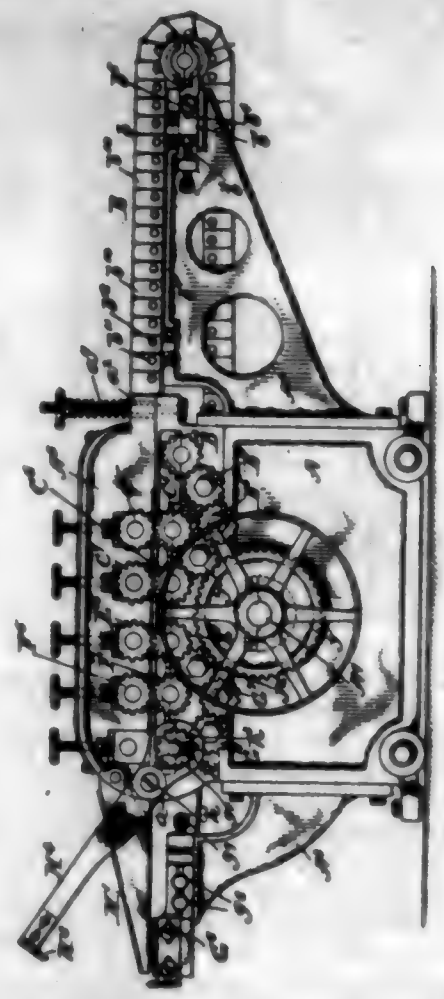
5. The combination with an electric motor, provided with a winding in which an electric current is generated by the rotation of the motor-armature, a source of current for operating the motor, operating-circuits including said motor and source of energy, a controlling-lever for said circuits, a switch-and-lock movement operated by said motor, an electric clutch adapted when in the operating-circuit of the motor to couple the motor-armature with the switch-and-lock movement, an indication mechanism for the controlling-lever comprising electromagnetic means, indication-circuits which include the electromagnetic means of the indication mechanism and the said winding of the motor, and a circuit-controller operated by the switch-and-lock movement for cutting said clutch out of the operating-circuit thus preventing further operation of the switch-and-lock movement and leaving the motor free to be operated to transform a direct current into an alternating current to operate the indication mechanism, and a second circuit-controller operated by the switch-and-lock movement for controlling the indication-circuits.

6. The combination with an electric motor provided with a winding and means for transforming a direct current to an alternating current by the rotation of the motor-armature, a source of current for operating said motor, a controlling-lever, operating and indicating circuits controlled by said lever, an indicating mechanism included in the indicating-circuits, a switch-and-lock movement operated by the motor, an electric clutch for coupling the motor-armature with the switch-and-lock movement when included in an operating-circuit of the motor, and a circuit-controller operated by the switch-and-lock movement for cutting said clutch out of the operating-circuit after an operation of the switch-and-lock movement whereby the motor can be operated to transform an indication-current.

7. The combination with an electric motor provided with a single field-winding and two armature-windings by means of which a reverse rotation of the armature can be had, a third winding comprised in the motor for transforming a direct current into an alternating current for indicating purposes, a soure of energy for said motor, operating-circuits including said source and motor, indication-circuits including said winding, a controlling-lever for said circuits, and indicating mechanism for said lever which is included in the indicating-circuits, a switch-and-lock movement operated from said motor, an electric clutch for coupling the motor-armature with the switch-and-lock movement when included in an operating-circuit, and a circuit-controller operated by the switch-and-lock movement for cutting said clutch out of the operating-circuit and thereby prevent further operation of the switch-and-lock movement.

8. The combination with an electric motor provided with a winding in which a current is generated by the rotation of the motor-armature, a switch-and-lock movement operated by the motor, an electric clutch for coupling the motor-shaft with the switch-and-lock movement when included in an operating-circuit with the motor, and a circuit-controller operated by the switch-and-lock movement after each operation thereof for cutting said clutch out of the operating-circuit.

816,763. MACHINE FOR MAKING HAY FROM CORN AND OTHER STALKS. CHARLES H. TRASK, Lynn, Mass. Filed July 26, 1902. Serial No. 116,954.



Claim.—1. In a machine of the character specified, a frame, and in combination therewith a series of devices for feeding a plurality of stalks to a series of slitting-cutters and for flattening the same while they are being fed, means in front of said cutters for retaining said stalks against lateral displacement and for guiding the same to feed lengthwise thereto, and said series of slitting-cutters arranged to cut each of said flattened stalks lengthwise into long, narrow strands.

2. In a machine of the character specified, a frame and in combination therewith means for feeding and flattening a plurality of stalks, means in front of a series of slitting-cutters for retaining said stalks against lateral displacement and for guiding each of said stalks to feed lengthwise thereto, said series of slitting-cutters disposed to cut each flattened stalk lengthwise into long, narrow strands, and means beyond said cutters for receiving the cut strands and for drawing the same from the cutters.

3. In a machine of the character specified, a frame and in combination therewith a stalk-feeding belt, stalk feeding, flattening, individualizing and guiding mechanism consisting of two driven rolls one of which has a series of box-grooves and the other of which has a corresponding series of sections to enter said grooves, feeding and flattening rolls disposed beyond the said mechanism and between the same and a series of slitting-cutters, and said slitting-cutters so placed as to cut the flattened stalk into long, narrow strands.

4. In a machine of the character specified, a frame and in combination therewith a series of stalk feeding, guiding and flattening devices, which are in line with one another and which act also to separate and guide the stalks to feed lengthwise to a series of slitting-cutters, feedways interposed between said devices for facilitating the guidance of the stalks, and said series of slitting-cutters to which the flattened stalks are guided and fed, said cutters being placed relatively near together so as to cut each flattened stalk into long, narrow strands.

5. In a machine of the character specified, the combination with a stalk-traveling belt having a plurality of walled receiving-ways for independently receiving and individualizing the stalks, of a series of stalk feeding and flattening devices which are in line with the respective ways of said traveling belt, and which serve also to guide the stalk along its entire length that it may be fed longitudinally upon the cutters and a series of cutters adapted to cut the flattened stalks lengthwise, said cutters being placed relatively near to-

gether that each flattened stalk may be cut lengthwise into long strands.

6. In a machine of the character specified, a frame and in combination therewith a stalk-feeding belt comprising two or more chains, composed of flat links riveted to each other near their inner edge to provide a walled recess or way open at its top for receiving and individualizing stalks delivered thereto and for feeding the same, a series of slitting-cutters, and a series of devices interposed between said stalk-feeding belt and said cutters for receiving the stalks from said belt and for guiding, flattening and feeding the same lengthwise upon said cutters.

7. In a machine of the character specified, a frame and in combination therewith a multiple stalk receiving and feeding device having a series of narrow, stalk-receiving ways separated by walls and adapted to feed the stalks endwise, a series of feeding and flattening devices beyond said device, feedways between said feeding and flattening devices and said device, which enter into coöperation therewith, forming walled or box-like ways leading from the stalk-receiving ways of the device aforesaid to a series of slitting-cutters, and said series of slitting-cutters in line with said ways.

8. In a machine of the character specified, a frame and in combination therewith, a traveling feed-belt having a series of stalk-receiving ways, means for adjusting said belt, means for keeping the same from sagging, a series of feeding and flattening devices in front of said belt adapted also to individualize and guide said stalks in a direction in continuation of the ways thereof, and a series of cutters disposed to cut the flattened stalks lengthwise into long, narrow strands.

9. In a machine of the character specified, a frame and in combination therewith a multiple stalk receiving and feeding device having a series of stalk-receiving ways separated by walls and adapted to feed the stalks lengthwise, stalk-receiving rolls in line with said stalk-receiving ways, means for guiding the stalks from said ways to the rolls and preventing them from crossing one another in the rolls, stalk-flattening means and a series of cutters adapted to cut the flattened stalks lengthwise, said cutters being placed relatively near together that each flattened stalk may be cut lengthwise into long strands.

10. In a machine of the character specified, a frame and in combination therewith one or more pairs of stalk-receiving rolls having a series of independent stalk-receiving ways, a pair of stalk-flattening rolls and a pair of stalk-cutting rolls beyond said flattening-rolls, the lower roll of each of said pairs being stationarily held and the upper roll of each of said pairs being independently adjustable upon its support, said support and means for providing it with a yielding variable pressure.

11. In a machine of the character specified, a frame and in combination therewith a series of stalk feeding and flattening devices, a series of slitting-cutters to which the flattened stalks are fed, which cutters are placed relatively near together so as to cut each flattened stalk into strands, means for individualizing and guiding the stalks to feed lengthwise upon said cutters, and means for receiving the strands from said cutters and for carrying them from the same.

12. In a machine of the character specified, a frame and in combination therewith a series of stalk feeding and flattening devices, a series of slitting-cutters to which the flattened stalks are fed, which cutters are placed relatively near together so as to cut each flattened stalk into strands, means in front of said cutters for retaining the stalks against lateral displacement and for guiding each of the same to feed lengthwise upon said cutters, and a strand receiving, holding and carrying means beyond said cutters adapted to draw the cut strands from said cutters and to feed the same.

13. In a machine of the character specified, a frame and in combination therewith a series of stalk feeding and flattening devices, means in front of a series of slitting-cutters for retaining the stalks against lateral displacement and for guiding each of the same to feed lengthwise upon said cutters, said series of slitting-cutters, so placed as to cut the flattened stalks lengthwise into long, narrow strands, a strand holding and carrying means beyond said cutters adapted to draw the cut strands from said cutters and to feed the same, and a knife adapted to cut the strands crosswise.

14. In a machine of the character specified, a frame and in combination therewith a series of slitting-cutters, strand-feeding rolls beyond said cutters, a varying feed-belt passing around one of said rolls, and a strand-cutter.

15. In a machine of the character specified a frame and in combination therewith stalk shredding or slitting cutters, strand-feeding rolls beyond said cutters and strand receiving and carrying means beyond said rolls, a strand-assembling cover and a strand-cutter.

16. In a machine of the character specified, a frame and in combination therewith a stalk-feeding belt, stalk shredding or slitting cutters, stalk feeding and flattening rolls interposed between said belt and cutters, strand receiving and carrying devices, a strand-assembling cover, and a strand-cutter.

17. In a machine of the character specified, a frame and in combination therewith a pair of shredding or slitting cutter-rolls, a pair of flattening-rolls, one or more pairs of feed-rolls, and a common support for one roll of each pair pivoted at one end and yieldingly retained at the other, whereby said rolls may be provided with a yielding movement with respect to their companion rolls and also with a varying pressure decreasing from the cutter-rolls to the feed-rolls.

18. In a machine of the character specified, a frame and in combination therewith a device having a plurality of separated, open, stalk-receiving ways into which the stalks are adapted to be laid or deposited sidewise and fed lengthwise, flattening means beyond said ways, and slitting-cutters beyond the flattening means for slitting the flattened stalks into long, narrow strands.

19. In a machine of the character specified, a frame and in combination therewith a device having a plurality of separated, stalk-receiving ways, in which the stalks are adapted to be laid or deposited and fed endwise, means beyond said ways for gradually flattening said stalks, and beyond said flattening means slitting-cutters for slitting the flattened stalks into long, narrow strands.

20. In a machine of the character specified, a frame, and in combination therewith a multiple stalk receiving and feeding device having a series of narrow stalk-receiving ways separated by walls, in which the stalks are adapted to be deposited or laid and fed endwise, rolls to assist in flattening the stalks, a yielding support for such rolls hinged from one end of the machine, and rotary cutters arranged to slit the flattened stalks fed lengthwise into long, narrow strands.

21. In a machine of the character specified, a frame and in combination therewith a multiple stalk receiving and feeding device having a series of narrow, stalk-receiving ways separated by walls, in which the stalks are adapted to be deposited or laid and fed endwise, adjustable rolls for flattening the stalks, a yielding support for said rolls hinged to one end of the machine, resilient means at the other end of the machine bearing on said support, whereby the pressure of the roll on said stalks may be varied, and a series of cutters arranged to slit the flattened stalks fed lengthwise into long, narrow strands.

22. In a machine of the character specified, a frame and in combination therewith a multiple stalk receiving and feeding device having a series of narrow, stalk-receiving ways separated by walls, in which the stalks are adapted to be deposited or laid and fed endwise, self-adjustable rolls for flattening the stalks, a series of cutters to slit the flattened stalks fed lengthwise into long, narrow strands, and a belt beyond said cutters to feed the strands therefrom.

23. In a machine of the character specified, a frame, sets of flattening-rolls adapted to feed and set to gradually flatten cornstalks, and slitting-cutters beyond said rolls for slitting the flattened stalks into long, narrow strands.

24. In a machine of the character specified, a frame and in combination therewith sets of flattening-rolls adapted to feed and set to gradually flatten cornstalks, means whereby the pressure of said flattening-rolls may be gradually increased, and slitting-cutters beyond said rolls for slitting the stalks into long, narrow strands.

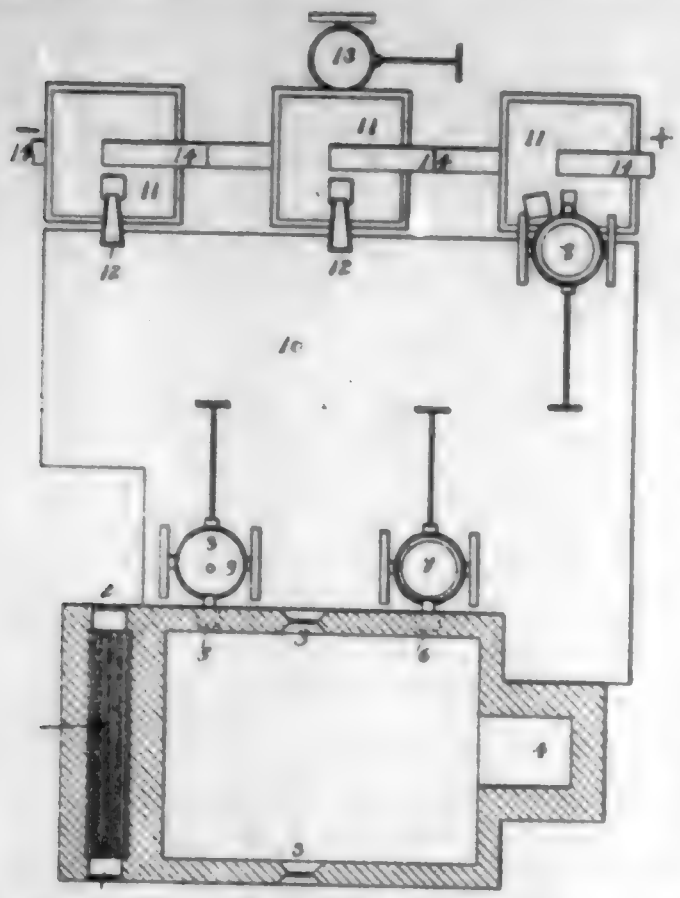
25. In a machine of the character specified, a frame and in combination therewith a series of slitting-cutters, a pair of flattening-rolls arranged in front of said cutters, one or more pairs of feed-rolls, a common yielding support for said feed and flattening rolls pivoted to one end, and tensional means for retaining the other end of said support, whereby said rolls may be provided with a yielding movement with respect to their companion rolls and also with a varying pressure decreasing from the slitting-cutters.

816,764. PROCESS OF SMELTING LEAD ORES. WILLIAM VALENTINE and ARROW G. BETTS, Troy, N. Y. Filed June 15, 1904. Serial No. 212,745.

Claim.—1. The process of recovering lead from lead-sulfid ores which consists in fusing the ore and accompanying gangue into a matte and a slag, and electrolytically separating lead from the matte by bringing the matte into contact with a cathode in a fused electrolyte in which lead sulfid is substantially insoluble.

2. The process of recovering lead from lead-sulfid ores which consists in fusing the ore and accompanying gangue into a matte and a slag, and electrolytically separating lead from the matte by bringing the matte into contact with a cathode in a fused electro-

lyte containing a dissolved sulfid, and in which lead sulfid is substantially insoluble.

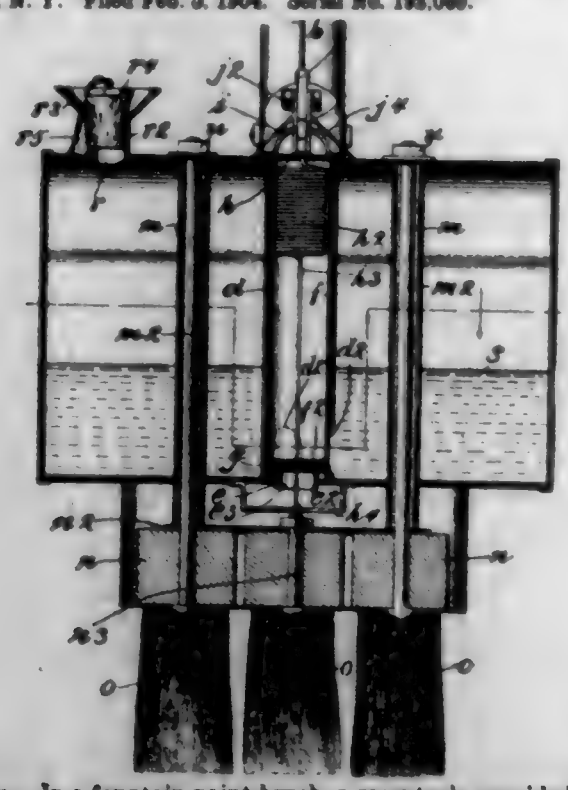


3. The process of recovering lead from lead-sulfid ores which consists in fusing the ore and accompanying gangue into a matte and a slag, and electrolytically separating lead from the matte by bringing the matte into contact with a cathode in an electrolyte of fused sodium chlorid, containing sodium sulfid.

4. In the electrolytic process of reducing lead from lead sulfid by reduction at a cathode in a fused electrolyte which does not dissolve lead sulfid to a substantial degree, the step of adding a sulfid soluble in the electrolyte.

5. In the electrolytic process of reducing lead from lead sulfid by reduction at a cathode in an electrolyte of fused sodium chlorid, the step of adding sodium sulfid to the electrolyte.

816,765. FOUNTAIN PAINT-BRUSH. ALBERT WAGNER, New York, N. Y. Filed Feb. 5, 1904. Serial No. 192,060.



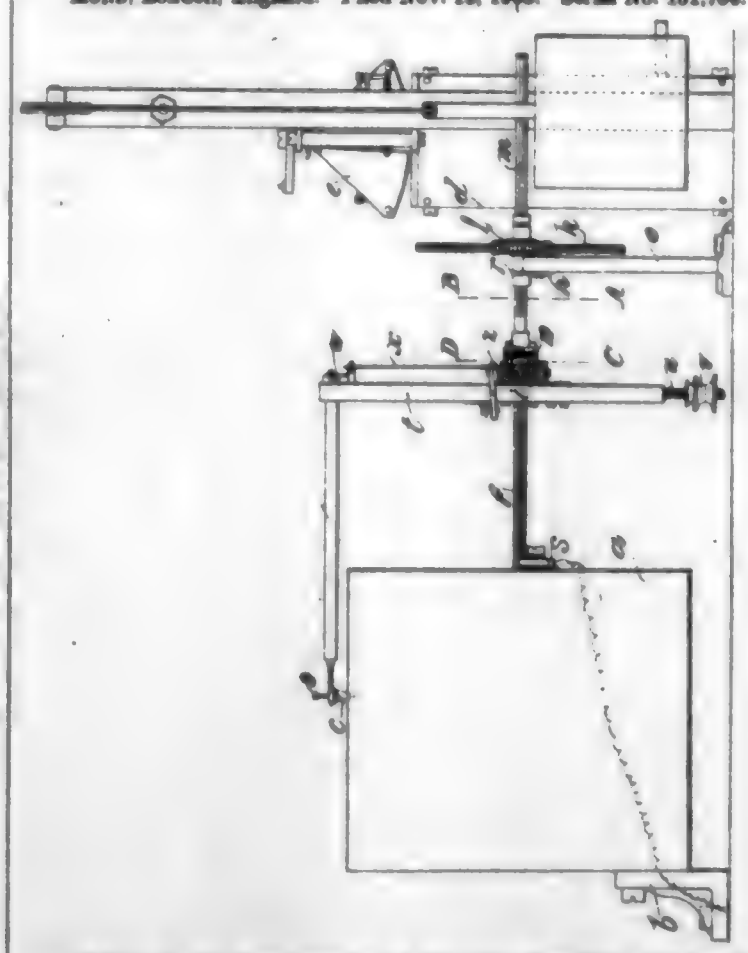
Claim.—In a fountain paint-brush, a receptacle provided in the bottom thereof with a port or passage, a casing secured to said receptacle and inclosing said port or passage and open at the bottom, tubes passing through said receptacle and into said casing, brushes mounted in said casing and held therein by rods passing through said tubes, and means for feeding paint through said port or passage onto said brushes, substantially as shown and described.

816,766. EYEGLASSES. WILLIAM H. WEBSTER, Pittsfield, Mass. Filed Oct. 23, 1905. Serial No. 283,990.



Claim.—The herein-described eyeglasses, comprising the horizontally-disposed spring having its end bent or coiled inwardly and extending forwardly, lens-studs, each having an arm 11 bearing against the under side of the spring and having an upturned end disposed in one of the loops formed between the end and adjacent portion of the spring-bridge and secured to said end thereof, and nose-guards each having an upwardly-extending arm 17 secured between said upturned end of one of the lens-studs and the adjacent end of the spring-bridge, substantially as described.

816,767. CHRONOGRAPH. MEYER WILDERMANN and ROBERT L. MOND, London, England. Filed Nov. 18, 1903. Serial No. 181,736.



Claim.—1. In chronographs of the type described, the combination of a stationary drum; a laterally-displaceable screwed pen-carrying spindle axially disposed with regard to said drum; a power-wheel adapted to rotate said spindle while allowing it to move longitudinally; a stationary nut-segment with which said spindle operatively engages together with a bearing for said power-wheel adapted to allow said spindle sufficient lateral movement to be disengaged from said nut-segment in order to adjust the position of said pen-carrying spindle longitudinally.

2. In chronographs of the type described, the combination of a stationary drum, a laterally-displaceable screwed pen-carrying spindle axially disposed with regard to said drum; a power-wheel adapted to rotate said spindle while allowing it to move longitudinally; motor means disposed within said drum for driving said wheel; a stationary nut-segment with which said spindle operatively engages together with a bearing for said power-wheel adapted to allow said spindle sufficient lateral movement to be disengaged from said nut-segment in order to adjust the position of said pen-carrying spindle longitudinally.

3. In chronographs of the type described the combination of a stationary drum; a laterally-displaceable screwed pen-carrying spindle axially disposed with regard to said drum; a power-wheel adapted to rotate said spindle while allowing it to move longitudinally; a stationary nut-segment with which said spindle operatively engages; a bearing for said power-wheel adapted to allow said spindle sufficient lateral movement to be disengaged from said nut-seg-

ment in order to adjust the position of said pen-carrying spindle longitudinally, together with means for preventing longitudinal movement of said power-wheel relatively to said bearing.

4. In chronographs of the type described the combination of a stationary drum; a laterally displaceable screwed pen-carrying spindle axially disposed with regard to said drum; a power-wheel adapted to rotate said spindle while allowing it to move longitudinally; a stationary nut-segment with which said spindle operatively engages; antifriction elements on which said power-wheel rests adapted to allow said spindle sufficient lateral motion to be disengaged from said nut-segment in order to adjust the position of said pen-carrying spindle longitudinally, together with means including a groove arranged to prevent longitudinal movement of said power-wheel relatively to said antifriction elements.

5. In chronographs of the type described, the combination of a stationary drum; a laterally-displaceable screwed pen-carrying spindle axially disposed with regard to said drum; a power-wheel adapted to rotate said spindle while allowing it to move longitudinally; a stationary nut-segment with which said spindle operatively engages; antifriction-wheels on which said power-wheel rests adapted to allow said spindle sufficient lateral movement to be disengaged from said nut-segment in order to adjust the position of said pen-carrying spindle longitudinally, together with a circumferential groove in a part of said power-wheel coacting with said antifriction-wheels to prevent relative longitudinal movement therebetween.

6. In chronographs of the type described, the combination with a pen-carrying arm actuated by a laterally-displaceable screwed spindle, and means for adjusting the position of said pen-carrying arm longitudinally, of a cross-head fixed to the end of said arm; guides attached to said cross-head, one at each end thereof; a spring-controlled block slidably mounted on said guides; a pen yieldingly and adjustably connected to said block together with means connecting said slidable block to its operative means.

7. In chronographs of the type described, the combination with a stationary drum; a rotatable and laterally-displaceable spindle axially disposed with regard to said drum; means for adjusting the position of the pen-carrying spindle longitudinally; a transverse arm carried by said spindle together with a pen-carrying arm carried by said transverse arm; a cross-head fixed to the end of said pen-carrying arm; guides attached to said cross-head, one at each end thereof; a spring-controlled block slidably mounted on said guides; a pen yieldingly and adjustably connected to said block together with means connecting said slidable block to its operative means, said connecting means including a bell-crank disposed at about the junction of said transverse and pen-carrying arm.

8. In chronographs of the type described, the combination of a stationary drum; a screwed spindle axially disposed with regard to said drum; a transverse arm attached to said spindle; and means for adjusting the position of the transverse arm longitudinally; an adjustable balance-weight on one end of said transverse arm; a pen-carrying arm mounted on the other end of said transverse arm; guides attached to said pen-carrying arm, a spring-controlled block slidably mounted on said guides; a pen yieldingly and adjustably connected to said block together with means for connecting said slidable block to its operative means.

9. In chronographs of the type described, the combination of a pen-carrying arm; guides attached to said arm; a spring-controlled block slidably mounted on said guides; a pen-carrying element hinged to said block; means for securing and adjusting said pen-carrying element on said block, together with means connecting said slidable block to its operating means.

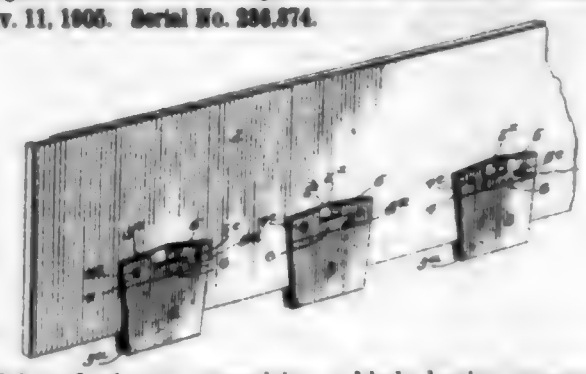
10. In chronographs of the type described, the combination of a stationary drum; a screwed spindle axially disposed with regard to said drum; a transverse arm mounted on said spindle; a pen-arm carried by said transverse arm; a plurality of pens carried by said pen-arm; electromagnetic means for the operation of each of said pens together with means for operatively connecting said pens to their respective electromagnets including coaxial links, one of which is hollow, passing through said pen-arm.

11. In chronographs of the type described, the combination of a stationary drum; a screwed spindle axially disposed with regard to said drum; a pen-arm carried by said spindle; a plurality of pens mounted on said pen-arm; electromagnetic means for the operation of each of said pens together with coaxial links, one of which is hollow, for operatively connecting said electromagnets to said pens.

12. In chronographs of the type described, the combination of a stationary drum; a spindle axially disposed with regard to said drum, said spindle being in three coaxial lengths insulated from each other, one of said lengths being screwed; a stationary nut with which said screwed length engages; two pens carried by said spindle; electromagnetic means for the operation of each of said pens; means for completing the operative circuit of one pen including an end length of said spindle together with means for completing the operative electric circuit of the other pen including the other end length of said spindle and a connection passing longitudinally through the middle length.

13. In chronographs of the type described, the combination of a uniformly-moving motor, a fixed recording-drum, a pen-carrying arm operatively connected to the motor, a transversing laterally-displaceable screw for said pen-carrying arm and means for longitudinally transversing the pen-carrying arm relatively to the fixed drum.

816,768. **STONE-CUTTING SAW.** JAMES S. YOUNG, Bethel, Vt., assignor to Harriet M. Young, trustee for Maurice D. Young. Filed Nov. 11, 1905. Serial No. 286,874.



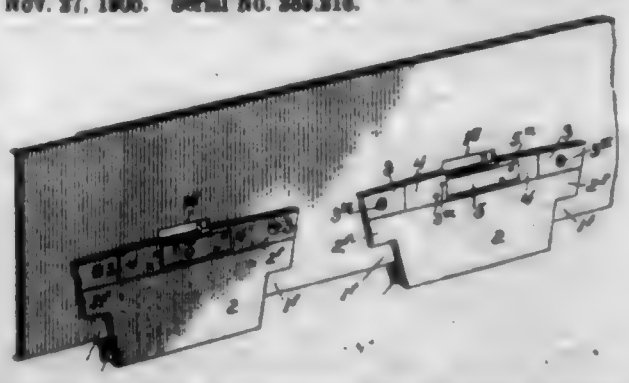
Claim.—1. A saw comprising a blade having recesses in its lower edge provided with tongues, teeth detachably held in said recesses and having grooves to coöperate with the blade-tongues, and wedges held in said recesses over the teeth and interlocking with the blade and teeth and with each other, substantially as shown and described.

2. A saw comprising a blade having recesses in its lower edge provided with tongues, teeth detachably held in said recesses and having grooves to coöperate with the blade-tongues, a plurality of wedges held in said recesses over the teeth and interlocking with the blade and teeth, and means coöperating between the wedges for holding the wedges in their tooth-locking positions.

3. A saw comprising in combination with a blade having recesses in its edge, of insertible teeth detachably held in said recesses; means carried by the blade and teeth for holding the teeth from lateral movement, a plurality of means inserted above the teeth in the recesses for holding the teeth from vertical movement, means for interlocking the last-named means with the teeth and blade to prevent such last-named means from lateral movement, and locking devices carried by the means inserted above the teeth and interlocking with each means for holding such means in their set positions, substantially as shown and described.

4. A saw comprising in combination with the blade having recesses in its edge, of insertible teeth adapted to be held in said recesses, said blade having tongues on the recess-faces, said teeth having corresponding grooves to coöperate therewith, a plurality of wedge devices insertible above the teeth and in the recesses and having grooves for coöperating with the blade-tongues, tongues for cooperating with the top tooth-grooves, and means carried by one of said wedge devices and engaging the other wedge device for holding said wedge devices from working loose, substantially as shown and described.

816,769. **STONE-CUTTING SAW.** JAMES S. YOUNG, Bethel, Vt., assignor to Harriet M. Young, trustee for Maurice D. Young. Filed Nov. 27, 1905. Serial No. 289,216.



Claim.—1. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöper-

ate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedge in place, substantially as shown and described.

2. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöperate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedges in place, locking devices carried by said locking-wedges for interlocking the same, substantially as shown and described.

3. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöperate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedges in place, said blade having supplemental recesses, substantially as shown and described

4. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöperate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedges in place, locking devices carried by said locking-wedges for interlocking the same, said blade having supplemental recesses substantially as shown and described.

5. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöperate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedges in place, said blade and said teeth having interlocking shoulders.

6. A saw comprising a blade having recesses in its lower edge, said blade being provided at said recesses with tongues, teeth detachably held in said recesses and having grooves to coöperate with said tongues, main wedges held in said recesses over the teeth and interlocking with the blade and teeth, and locking-wedges likewise held in said recesses for locking the main wedges in place, said blade having supplemental recesses, said blade and teeth having interlocking shoulders.

7. A saw comprising in combination with a blade having tooth-receiving recesses and shoulders projecting into said recesses, of shouldered teeth fitting within said recesses and interlocking with said blade, said teeth having their upper edges spaced from the upper edges of the recesses, and wedge devices held in said recesses above the teeth, substantially as shown and described.

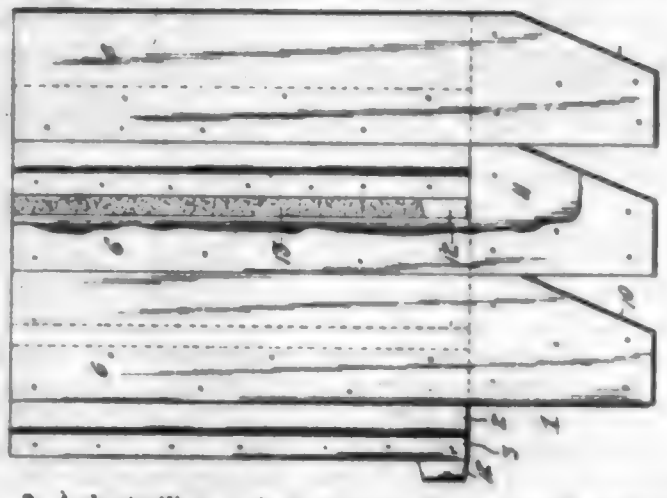
8. A saw comprising in combination with a blade having tooth-receiving recesses and shoulders projecting into said recesses, of shouldered teeth fitting within said recesses and interlocking with said blade, said teeth having their upper edges spaced from the upper edges of the recesses, wedge devices held in said recesses above the teeth, supplemental wedges held in said recesses, and locking devices carried by said supplemental wedges, substantially as shown and described.

9. A saw comprising in combination with a blade having tooth-receiving recesses and shoulders projecting into said recesses, of shouldered teeth fitting within said recesse and interlocking with said blade, said teeth having their upper edges spaced from the upper edges of the recesses, wedge devices held in said recesses above the teeth, supplemental wedges held in said recesses, locking devices carried by said supplemental wedges, said blade having supplemental recesses merging with the first-mentioned recesses, substantially as shown and described.

816,770. SHEET-PILING. HENRY L. ZANDER, New Orleans, La. Filed June 26, 1905. Serial No. 267,094.

Claim.—1. A sheet-piling comprising a plurality of sections each having a projecting tongue on one side provided with a laterally-enlarged head and having a groove in another side provided with a contracted neck to receive the tongue of the adjoining section, said groove being larger than the head of the tongue, to form a space between the tongue and the opposing face of the groove, means on one of said sections to close the bottom of said space, and a plastic filling in said space to effect a water-tight joint between said sections.

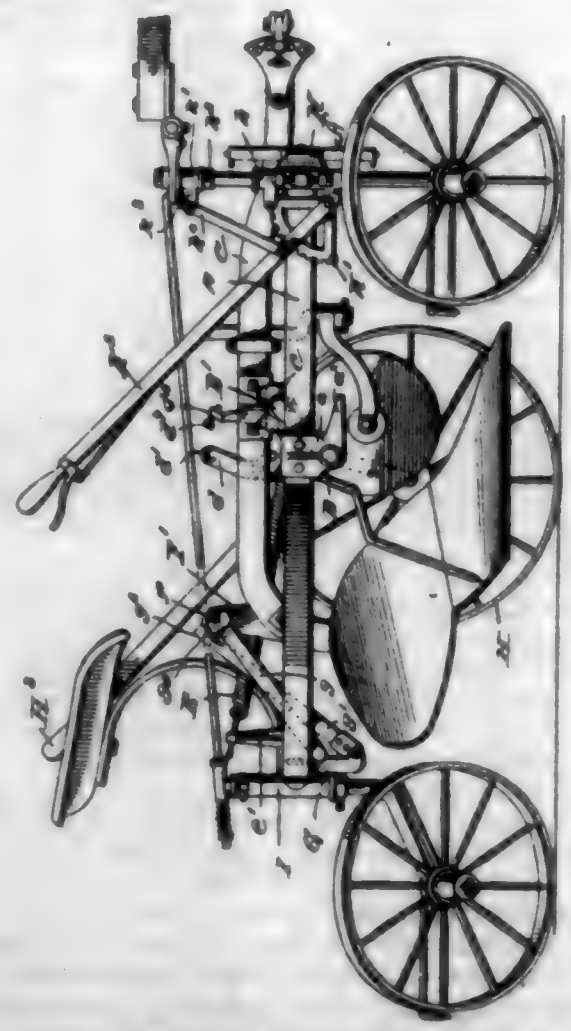
2. A sheet-piling comprising a plurality of sections, each of said sections having along one of its edges a tongue provided with an enlargement or head and along its other edge a groove provided with a contracted neck and adapted to receive the head of the tongue of the adjacent section, said groove being of greater size than said tongue to receive a filling of cement or the like, a bottom closing the lower end of the groove in each section, and a projection upon the lower end of the head of the tongue of each section, said projection being adapted to enter the groove in the adjacent section, substantially as described.



3. A sheet-piling section comprising a body having along one of its edges a longitudinally-extending groove provided with a contracted neck, a bottom closing the lower end of said groove, a longitudinally-extending tongue upon the opposite edge of said section and provided with a longitudinally-extending enlargement or head adapted to enter the groove of an adjacent section, and a projection upon the lower end of said head or tongue, substantially as described.

4. A sheet-piling section comprising three boards secured to each other in parallel relation with the intermediate one projecting in one direction to form a tongue and the two outer ones projecting in the opposite direction to form a groove, cleats upon said tongue and in said groove, a block in the lower end of said groove and a projection or block upon the lower end of said tongue, substantially as described.

816,771. SULKY-PLOW. WILLIAM L. BEALL, Albion, Mich., assignor to Gale Manufacturing Company, Albion, Mich. Filed Aug. 9, 1905. Serial No. 273,293.



Claim.—1. A sulky-plow having mechanism for lowering the plow to the ground point downward, and for raising it out of the ground point first, the said construction including a link construc-

tion having a sliding connection with the plow, and a dog for being engaged and disengaged from said plow, said dog having its rear pivot lower than the rear pivot of the link construction substantially as described.

2. A sulky-plow, having mechanism for lowering the plow to the ground point downward and for raising it out of the ground point first, the said construction including a double-link construction and a dog for being engaged and disengaged from said plow, said dog having its pivot below the level of the rear pivot of said double link and said dog extending upwardly between the two parts of said link substantially as described.

3. A sulky-plow having mechanism for lowering the plow point downward and for raising it up point first, said construction including a link construction having a sliding connection with the plow, with the forward pivot of the link construction forming the connection with the plow, and a dog for being engaged with and disengaged from the plow, the said dog being pivoted lower than the rear pivot of said link construction whereby the forward end of the link construction has first a rearward movement in respect to the plow when the plow begins to descend and a forward movement in respect to said plow as the plow finishes its downward movement substantially as described.

4. In a sulky-plow, the combination with the main frame of a bearing for a furrow-wheel pivoted upon the said frame to swing in a vertical plane, of a screw construction for swinging said bearing on its pivot and securing it in the position desired, substantially as described.

5. The combination with the main frame, of the plate provided with a bearing for a furrow-wheel, said plate being secured to said frame on one side of the bearing by a pivot, and provided on its opposite side with an arm, and adjusting devices for engaging said arm, substantially as described.

6. The combination with the main frame, of the plate provided with a furrow-wheel bearing, said plate on one side of the bearing being pivoted to said frame and having an outwardly-extending arm on its opposite side provided with an opening therethrough, a screw passing through said arm and nuts for adjusting said arm upon said screw, substantially as described.

7. In a sulky-plow, the combination with the main frame, of a bearing for a furrow-wheel pivoted upon said frame to swing in a vertically-disposed plane and means for adjusting the said bearing in different positions, substantially as described.

816,772. **PROCESS OF SMELTING LEAD SULFID.** ANSON G. BETTS, Troy, N. Y. Filed May 26, 1905. Serial No. 262,489.

Claim.—1. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing an alkali metal and a heavy metal other than lead, producing metallic lead, and a heavy metal-alkali-metal matte, and eliminating a large part of the sulfur in combination with the alkali metal by air oxidation.

2. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing an alkali metal and a heavy metal other than lead, producing metallic lead, and a heavy metal-alkali-metal matte, and eliminating a large part of the sulfur from the fused matte by air oxidation.

3. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing an alkali metal and a heavy metal other than lead, producing metallic lead, and a heavy metal-alkali-metal matte, and eliminating sulfur from the fused matte with an air-blast.

4. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing an alkali metal and a heavy metal other than lead, producing metallic lead, and a heavy metal-alkali-metal matte, and eliminating sulfur from the fused matte by blowing a current of air through it when melted.

5. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing an alkali metal and iron, producing metallic lead and an iron-alkali-metal matte, separating the lead and some slag from the matte, and oxidizing the fused matte by blowing a current through it when melted.

6. The process of converting lead sulfid into metallic lead and sulfurous gas which consists in reacting on it with materials containing iron and sodium, producing metallic lead and an iron-sodium matte, separating the lead, and blowing a current of air through the melted matte.

7. The process of smelting lead ore which consists in reacting on it with materials containing iron and sodium, producing metallic lead and an iron-sodium matte, separating the lead, blowing a current of air through the melted matte, and using the product in smelting lead ore.

816,773. **SMELTING LEAD SULFID.** ANSON G. BETTS, Troy, N. Y. Filed May 26, 1905. Serial No. 262,490.

Claim.—1. The process of recovering lead from compounds of lead and sulfur, which consists in smelting with materials containing a heavy metal, the sulfid of which forms with the sulfid of an alkali metal a fusible double sulfid, and an alkali metal, producing a heavy metal-alkali-metal matte, and a slag containing less than five per cent. of ferrous oxid.

2. The process of recovering lead from compounds containing lead and sulfur which consists in smelting with materials containing iron and an alkali metal, producing an iron-alkali-metal matte, and a slag carrying less than five per cent. of ferrous oxid.

3. The process of recovering lead from compounds containing lead and sulfur which consists in smelting with materials containing iron and an alkali metal, producing metallic lead, and iron-alkali-metal matte, and a slag carrying less than five per cent. of ferrous oxid.

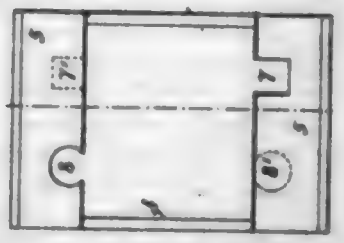
4. The process of recovering lead from compounds containing lead and sulfur which consists in smelting with materials containing iron and sodium, producing metallic lead, and an iron-sodium matte, and a slag containing less than two per cent. of ferrous oxid.

5. The process of recovering lead from compounds containing lead and sulfur which consists in smelting with compounds of iron and sodium, carbon, a basic compound of at least one of the metals iron and sodium, producing metallic lead, and iron-sodium matte, and a slag containing less than two per cent. of ferrous oxid.

6. The process of recovering lead from compounds of lead and sulfur which consists in smelting with carbon, basic compounds of iron and of sodium, producing metallic lead, and an iron-sodium matte, and a slag containing less than two per cent. of ferrous oxid.

7. In the process of recovering lead from compounds of lead and sulfur by smelting with compounds of iron and an alkali metal to produce metallic lead and a light metal-iron matte, and a slag containing less than two per cent. of ferrous oxid, producing in the first place a slag with over two per cent. of ferrous oxid, and treating the slag at a smelting temperature with addition of sulfur compounds to form further quantities of alkali-metal-iron matte and a slag containing less than two per cent. of ferrous oxid.

816,774. **IRON-FRAMED WOOD PAD FOR TRACK-RAILS.** GIUSEPPE BORINI, Reggio Emilia, Italy. Filed Oct. 26, 1905. Serial No. 284,506.



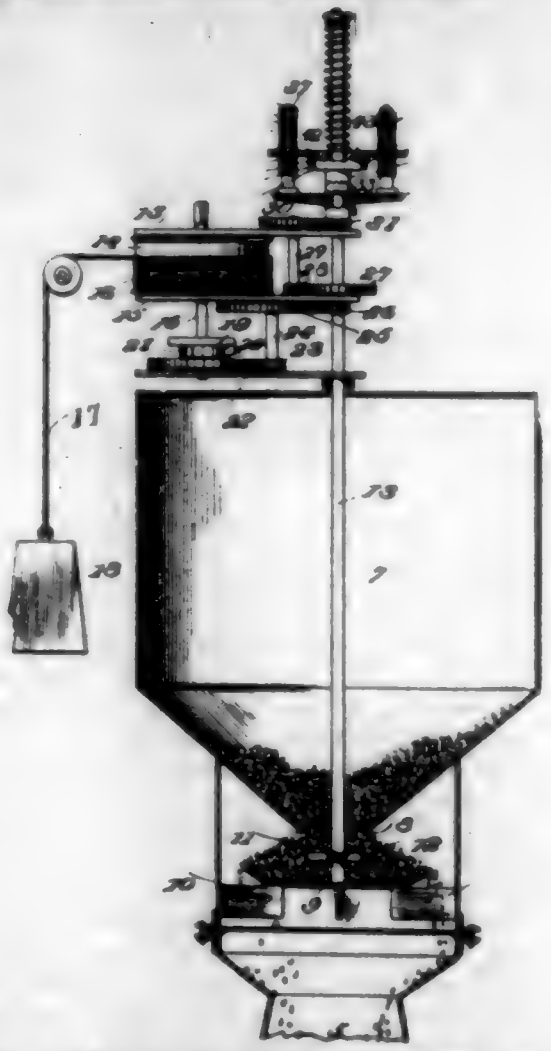
Claim.—In an iron-framed wood pad for track-rails, a wood plate on which the rail-foot is directly supported, and a metallic frame superposed to the wood plate leaving an upper free surface designed to be in direct contact with the rail-foot, the said frame embracing the block and located above the lower face thereof and having side pieces out of contact with the foot of the rail which is kept elevated by the thickness of the wood plate, while the two horizontal cross-pieces of the frame act as shoes or heels to receive the lateral pull of the rail, and have holes on their edge for the passage of hooks and bolts.

816,775. **ACETYLENE-GAS GENERATOR.** OTTO M. BRAUER, Marshalltown, Iowa. Filed Feb. 28, 1905. Serial No. 247,760.

Claim.—1. In an acetylene-gas-generating machine, the combination of a generator, a gasometer embodying a bell, carbid-feed mechanism for the generator including a motor-shaft, interlocking clutch elements mounted upon said motor-shaft, connections between one of said clutch elements and the bell, and coöperating friction devices carried by the respective clutch elements for the purpose specified.

2. In an acetylene-gas generator, the combination of a genera-

tor, a gasometer embodying a bell, carbid-feed mechanism for the generator including a motor-shaft, a motor operably connected with the motor-shaft, means connected with the bell for breaking the rotative continuity of the motor-shaft to cut off feeding of the carbid, and other means operated by the bell for securing differential rotative continuity of the motor-shaft to cause feeding of the carbid proportionate with the variation of pressure in the gasometer.



3. In an acetylene-gas generator, the combination of a generator, a gasometer embodying a bell, carbid-feed mechanism for the generator including a motor-shaft, a motor operably connected with the motor-shaft, a friction-disk operably connected with the motor, and yielding pressure devices coöperating with said friction-disk and operably connected with the gasometer-bell to cause feeding of the carbid proportionate with the variation of pressure in the gasometer.

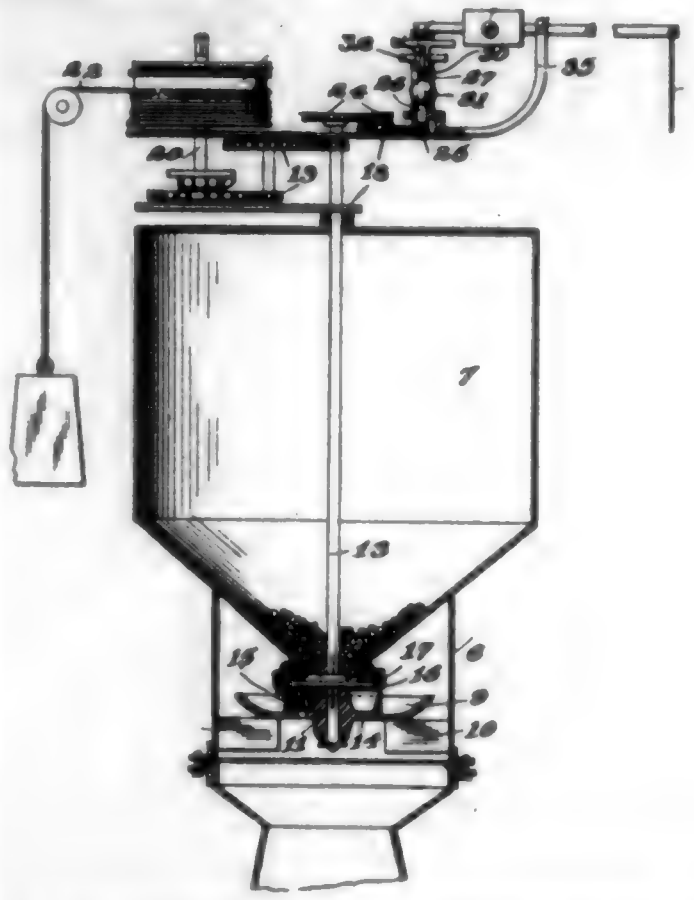
4. In an acetylene-gas generator, the combination of a generator, a gasometer embodying a bell, carbid-feed mechanism for the generator including a motor-shaft, a motor operably connected with the motor-shaft, a friction-disk operably connected with the motor, yielding pressure devices coöperating with said friction-disk and operably connected with the gasometer-bell to cause feeding of the carbid proportionate with variation of pressure in the gasometer, and interlocking clutch elements, one carried by the motor-shaft and the other operably connected with the bell to cut off feeding of the carbid at a predetermined point in the movement of said bell.

5. In an acetylene-gas generator, a gasometer embodying a bell, carbid-feed mechanism including a motor-shaft, a friction-disk mounted upon the motor-shaft, a clutch element keyed to the motor-shaft, a second clutch element loose upon the motor-shaft and adapted to interlock with the above-mentioned clutch element, yielding pressure devices carried by the second or loose clutch element, means for normally holding the clutch elements aforesaid in interlocking condition, and a shifting-lever for actuating the loosely-mounted clutch element and pressure devices and connected with the gas-bell of the gasometer.

6. In an acetylene-gas generator, the combination of a generator, a gasometer, carbid-feed mechanism for the generator including a motor, means operable by variation in pressure in the gasometer for positively locking the motor from operation to cut off feeding of the carbid, and other means also operable by the variation of pressure in the gasometer for securing differential action of the motor as specified, to cause feeding of the carbid proportionate with this variation.

816,776. ACETYLENE-GAS GENERATOR. OTTO M. BRAUER, Marshalltown, Iowa. Filed July 19, 1905. Serial No. 270,341.

Claim.—1. In an acetylene-gas generator, carbid-feed mechanism including a motor-shaft, a motor for actuating the shaft, and means operable by variation in volume of the gas generated and embodying separate lever mechanisms for positively locking the motor-shaft from movement to cut off feeding of the carbid, and for securing differential speed thereof to cause feeding of carbid proportionate with variation in the volume of gas.



2. In an acetylene-gas generator, carbid-feed mechanism, a motor-shaft for operating the carbid-feed mechanism, a motor for actuating said shaft, a disk operably connected with the motor-shaft for rotation thereby, and means consisting of levers operable by variation in volume of the gas generated for governing the operation of the motor-shaft, one of said levers coacting with the disk aforesaid to secure differential speed of the motor-shaft, and cause feeding of carbid proportionate with variation in the volume of gas, the other lever coacting with said disk to lock the shaft from movement to cut off feeding of the carbid.

3. In an acetylene-gas generator, carbid-feed mechanism, a motor-shaft for operating the carbid-feed mechanism, a motor for actuating said shaft, a disk operably connected with the motor-shaft for rotation therewith, and means consisting of levers operable by variation in volume of the gas generated for governing the operation of the motor-shaft, one of said levers having a yielding pressure device adapted to engage with the disk aforesaid, and cause feeding of carbid proportionate with variation in the volume of gas, and the other of said levers being adapted to interlock with said disk to cut off feeding of the carbid, for the purpose specified.

4. In an acetylene-gas generator, carbid-feed mechanism, a motor-shaft for operating the carbid-feed mechanism, a motor for actuating said shaft, a disk operably connected with the motor-shaft for rotation therewith, means consisting of levers operable by variation in volume of the gas generated for governing the operation of the motor-shaft, one of said levers coacting with the disk aforesaid to secure differential speed of the motor-shaft, and cause feeding of carbid proportionate with variation in the volume of gas, the other lever coacting with said disk to lock the shaft from movement to cut off feeding of the carbid, and means normally tending to cause the levers to coact with the disk.

5. In an acetylene-gas generator, carbid-feed mechanism, a motor-shaft for operating the carbid-feed mechanism, a motor for actuating said shaft, a disk operably connected with the motor-shaft for rotation therewith, means consisting of levers operable by variation in volume of the gas generated for governing the operation of the motor-shaft, one of said levers coacting with the disk aforesaid to secure differential speed of the motor-shaft, and cause feeding of carbid proportionate with variation in the volume of gas, the other lever coacting with said disk to lock the shaft from movement to cut off feeding of the carbid, and means comprising weights carried by the levers normally tending to cause the same to coact with the disk.

6. In an acetylene-gas generator, the combination of a generator, a carbid-holder, a feeding device for governing the feed of carbid from the holder to the generator comprising a feed-pan adapted to receive carbid from the holder, said pan being provided with centrally-arranged apertures, a flange projecting upwardly from the pan and surrounding the apertured portion thereof, a disk operating above the flange and apertured portion of the pan, feeding-blades above said disk, and a motor-shaft connected with the disk and blades to effect rotation thereof.

7. In an acetylene-gas generator, the combination of a generator, a carbid-holder, a carbid-feeding device for governing the feed of carbid from the holder to the generator consisting of a feed-pan at the outlet of the carbid-holder, said pan being centrally apertured and centrally enlarged to form a bearing, a flange extending upwardly from the pan and surrounding the apertured portion thereof, the upper portion of said flange being formed with a knife-edge, a motor-shaft for operating in the carbid-holder and having its lower end mounted in the bearing of the feed-pan, a disk mounted on the motor-shaft and arranged above the apertured annular flange portion thereof, and blades rotatable by the motor-shaft and arranged above the disk, the disk being of a diameter substantially the same as the annular flange aforesaid.

816,777. **JEWELER'S IMPLEMENT.** WILLIAM F. BROWN, San Francisco, Cal. Filed Aug. 16, 1905. Serial No. 274,433.



Claim.—1. A jeweler's implement embodying a head provided with alined orifices, a vise embodying an abutment and a pair of jaws, and a staking-tool adapted to engage the orifices and the abutment.

2. A jeweler's implement comprising a head provided with alined orifices, a vise disposed within the head and embodying an abutment and a pair of jaws, and a staking-tool having a stock to engage the abutment and provided with a foot for supporting the staking-tool in vertical position.

3. A jeweler's implement embodying a head provided with alined orifices, a vise disposed within the head and embodying an abutment provided with a guide-flange and a pair of jaws, and a staking-tool comprising a stock to engage the abutment, an anvil or table, and a foot combined with the stock.

4. A jeweler's implement embodying a head provided with alined orifices, a vise embodying an abutment and a pair of jaws, and a staking-tool adapted to engage the orifices and having an inclined face to coact with the abutment.

5. A jeweler's implement embodying a head provided with alined orifices, a vise disposed within the head and embodying an abutment provided with a guide-flange and a pair of jaws, and a staking-tool comprising a stock to engage the abutment, an anvil or table, and a foot combined with the stock and disposed at right angles to the anvil or table.

6. A jeweler's implement embodying a head provided with alined orifices, a vise embodying a wedge-shaped abutment and a pair of jaws, and a staking-tool adapted to engage the orifices and having an inclined face to coact with the apex of the abutment.

7. A jeweler's implement embodying a head provided with alined orifices, a vise embodying an abutment and a pair of jaws, and a staking-tool comprising a stock to engage the wedge-shaped abutment, an anvil or table provided with a plurality of orifices, and a foot.

816,778. **LUBRICATOR FOR SLIDE-BEARINGS.** WILLIAM L. CARD and FRANK S. CARD, Denver, Colo. Filed Jan. 24, 1906. Serial No. 297,613.



Claim.—1. The combination of a slide-bearing, track and a lubricant-chamber which incloses said bearing and track.

2. The combination of a slide-bearing, a track, and a lubricant-chamber having openings for the reception of the track and slide-bearing.

3. The combination of a slide-bearing, a track, and a lubricant-chamber having openings for the reception of the track, said openings being provided with stuffing-boxes.

4. The combination of a slide-bearing, a track, a lubricant-chamber having openings for the reception of the track, and means for securing the lubricant-chamber to the track.

5. The combination of a slide-bearing having lubricant channels or grooves, a track therefor, and a lubricant-chamber relatively arranged with respect to the track to permit the submergence of the slide-bearing.

6. The combination of a slide-bearing having lubricant channels or grooves provided with air-ports, a track for said bearing, and a lubricant-chamber relatively arranged with respect to the track to permit the submergence of the slide-bearing.

7. The combination of a slide-bearing, a track therefor, and a lubricant-chamber having openings for the reception of the track, said lubricant-chamber being provided with means for its support and the support of the track.

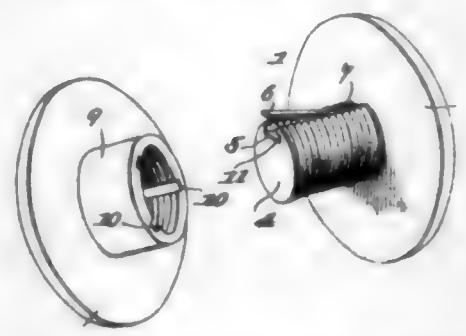
8. The combination of a slide-bearing, a lubricant-chamber, and a track for the slide-bearing, said track being located within the lubricant-chamber.

9. The combination of a slide-bearing, a lubricant-chamber having means for its support, and a track for the slide-bearing arranged within and supported by the lubricant-chamber.

10. The combination of a slide-bearing, a lubricant-chamber having an opening through which the lubricant may be withdrawn, a track for the slide-bearing, said track being located within the lubricant-chamber, and a closure for the said opening in the lubricant-chamber.

11. The combination of a slide-bearing, a track therefor, and means whereby the contacting portions of said slide-bearing and track may be submerged in a lubricant.

816,779. **FASTENING-STUD.** HENRY M. CHEEK, Pleasant Plains, Ark. Filed Nov. 29, 1905. Serial No. 289,638.



Claim.—A fastening-stud comprising a bolt member embodying a head and a threaded shank provided with a longitudinal channel having a lateral notch, a spring secured at one end in the channel and adapted to be moved into engagement with the notch to hold the spring within the plane of the threads, and a nut member provided with an internally-threaded sleeve having a plurality of longitudinal channels to be engaged by the spring to hold it at any desired adjustment relatively to the shank.

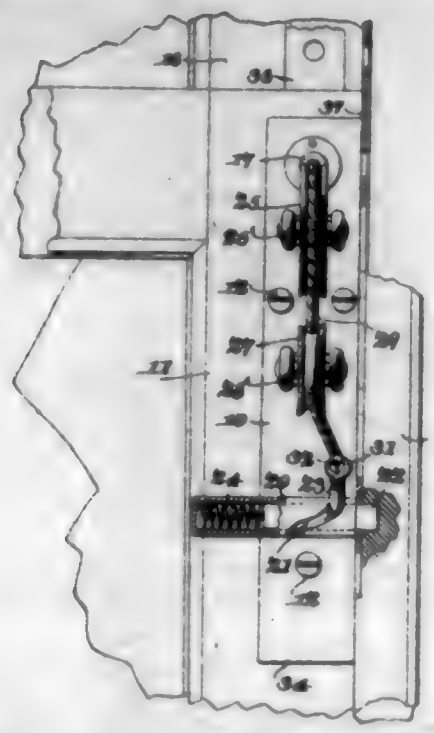
816,780. **SASH-LOCK.** FRANKLIN M. COLEMAN, Moultrie, Ga. Filed Sept. 7, 1905. Serial No. 277,341.

Claim.—1. A sash-lock comprising a plate, a plurality of bolts mounted on the plate and arranged at an angle to each other for engagement with the window-frame and one of the window-sashes respectively, a flexible connection between said bolts for simultaneously moving the bolts to inoperative position, and means carried by the flexible connection and engaging the plate for locking said bolts in inoperative position.

2. A sash-lock comprising a bolt mounted upon and extending through one sash for engagement with the opposite sash, a second bolt mounted upon the same sash and adapted to engage the window-frame, and a flexible connection between the bolts for simultaneously moving said bolts to inoperative position.

3. A sash-lock comprising a plate provided with a lateral lip, a plurality of bolts mounted on the plate and arranged at an angle to each other for engagement with the adjacent sash and window-frame respectively, a flexible connection between the bolts for moving the same to inoperative position, and a hook carried by the flexi-

ble connection and adapted to engage the lip for locking said bolts in inoperative position.



4. A sash-lock comprising, a bolt mounted upon and extending through one sash and engaging the other sash, a bolt mounted upon the same sash at right angles to the first bolt and engaging the window-frame, means whereby a rotary movement of the frame-engaging bolt moves said bolt to inoperative position and means, connecting the two bolts for disengaging both bolts, simultaneously.

5. A sash-lock comprising a spring-actuated bolt mounted upon and extending through one sash and engaging the other sash, a second bolt mounted at right angles to the first bolt and adapted to engage the window-frame, a member provided with a cam-slot for engagement with the second bolt and so arranged that a rotary movement moves the bolt longitudinally out of engagement, pulleys mounted between the bolts, a cord passing over the pulleys and connecting the bolts whereby a rotary movement of the frame-engaging bolt moves the other bolt longitudinally to inoperative position, means carried by the cord for maintaining the bolts in inoperative position and means for manipulating the cord.

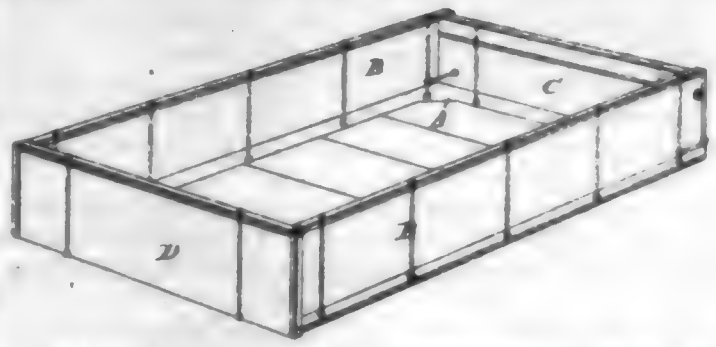
816,781. ADDING DEVICE. LUCIUS E. COLEMAN, Santa Ana, Cal., assignor to William H. Spake, Anaheim, Cal. Filed Jan. 21, 1903. Renewed Feb. 10, 1906. Serial No. 300,496.



Claim.—A device for keeping account of the tens in the process of addition comprising a light portable disk adapted to be held in the hand and revolved one step whenever ten units have been added, said disk having peripheral notches and spurs, such spurs being of sufficient height to indicate by their passages over the thumb and finger that the disk has been moved one notch, said disk bearing on its opposite faces marginal rows of numerals, each numeral being disposed adjacent to one of the notches or depressions for the purpose specified.

816,782. VEHICLE-BODY. DAVID W. CONNELL, Moline, Ill., assignor to Velie Carriage Company, Moline, Ill., a Corporation of Illinois. Filed Jan. 19, 1905. Serial No. 241,260.

Claim.—1. A vehicle-body having, in combination, a bottom frame, side and end panels mounted thereon having lower beveled edges resting in counterformed grooves in the bottom frame, fastening-bolts passing through the panels and bottom frame and clamping the former on the latter, and a bolt embedded in a longitudinal groove in the end panel and holding the side panels against the ends thereof.



2. A vehicle-body having, in combination, a bottom frame, side panels mounted thereon, metal stripe secured on the top and end edges of said panels, fastening-bolts passing through the stripe and panels and bottom frame and binding these parts together, and concealed eyebolts having their eyes inclosing the fastening-bolts near the ends of said panels and fastening the said stripe to the end edges of said panels.

3. A vehicle-body having, in combination, a bottom frame, side panels mounted thereon, an end panel between the side panels, fastening-bolts passing through the panels and bottom frame and clamping the former on the latter, and a bolt passing through the side panels and embedded in a groove in the end panel holding said side panels in place against the ends of the end panel.

4. A vehicle-body having, in combination, a bottom frame, side panels mounted thereon, an end panel between the side panels, metal stripe on the top edges of the side panels bent down on the end edges thereof, fastening-bolts passing through said stripe and side panels and bottom frame, and fastening-bolts passing through the end panel and bottom frame, concealed eyebolts binding the down-bent parts of said stripe to the end edges of the side panels, the eyes of said eyebolts inclosing the fastening-bolts in the side panels nearest the ends thereof, and a bolt embedded in a longitudinal groove in the end panel and passing through the side panels, holding the latter against the ends of the end panel.

5. In a vehicle-body, a corner construction comprising, in combination, a sill, a panel mounted thereon, a strip on the top and end edges of the panel, a fastening-bolt passing through the strip, panel and sill, and an eyebolt binding the strip to the end of the panel and having its eye inclosing the aforesaid fastening-bolt.

816,788. PEN AND PENCIL HOLDER. SAMUEL COTLER, Newark, N. J. Filed Aug. 7, 1905. Serial No. 272,894.



Claim.—1. The improved pen and pencil holder herein described comprising a perforated, resilient sheet-metal body having a center portion, lateral arms extending oppositely from opposite sides of said center portion and at the lower end of said body having prongs turned backward from said center portion, holding-pins 9, formed of a single piece of wire doubled midway of its length and bent near where it is doubled to form a seat to engage the upper end of said center portion, to which end said seat is fastened, the said lateral arms being curved forwardly, then outwardly and rearwardly, nearly into engagement with the front of said center portion, wire extensions fastened to said arms and extending through the perforations in said body and at their free extremities provided with heads adapted to prevent withdrawal through said body, substantially as set forth.

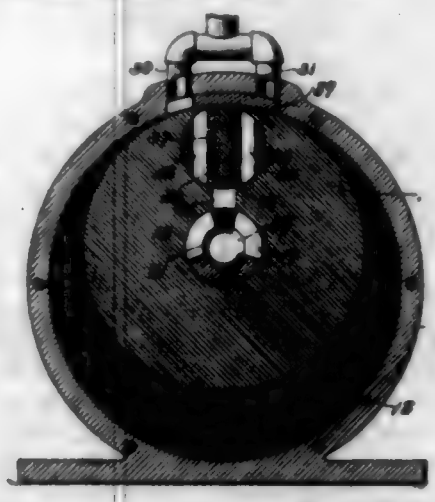
2. The improved pen and pencil holder herein described, consisting of a perforated body of resilient sheet metal, said body portion provided with downwardly-extending pins adapted to enter the garment and with upwardly-inclined prongs adapted to prevent the withdrawal of said pins from said garment and having integrally formed thereon curved arms at opposite sides thereof, which integral arms extend oppositely, outwardly, and forwardly from, and then backwardly toward the front surface of the center part of said body, terminating a little short of said front surface, and wire extensions of reduced width attached to said arms and extending through the perforations in said body, the ends of the integral arms being adapted to press on said body, substantially as set forth.

3. The improved pen and pencil holder herein described, com-

prising a sheet-metal body portion provided at the top with downwardly-extending pins adapted to enter the garment and at the lower ends with upwardly-inclined prongs adapted to prevent the withdrawal of said pins from the garment when a pencil or pen is drawn from said holder, said body portion, having between its opposite ends, curved arms adapted to inclose the pen and pencil and hold the same by frictional contact, the body portions being perforated and the free extremities of said arms provided with reduced extensions which project through said perforations and are free to slide therein.

4. The improved pen and pencil holder herein described consisting of a perforated body of resilient sheet metal, having integrally formed thereon curved arms at opposite sides thereof, which arms extend oppositely, outwardly and forwardly from, and then backwardly toward the front surface of the center part of said body, terminating a little short of said front surface, and wire extensions attached to said arms and extending through the perforations in said body, the extremities of said wire extensions being provided with heads preventing a withdrawal of said wire extensions from the body but permitting the wire to slide in said perforations, substantially as set forth.

816,784. **ROTARY ENGINE.** PETER C. DAHL, Clarkfield, Minn. Filed Jan. 6, 1906. Serial No. 294,910.



Claim.—1. In a rotary engine, a cylinder, a revoluble piston-drum arranged therein, a hollow stationary shaft around which the drum revolves, a port leading through the shaft, a cut-off valve carried by the piston, there being a drum-port leading from the shaft to the cut-off valve, and a piston-wing operatively connected to said valve.

2. In a rotary engine, the combination with a cylinder, of a revoluble piston-drum arranged therein, a hollow stationary shaft around which the drum revolves, a port leading through the shaft, a drum-port movable into alinement with the shaft-port as the drum rotates, a cut-off valve having a steam-port movable into alinement with the drum-port, and a piston wing or blade for actuating such valve.

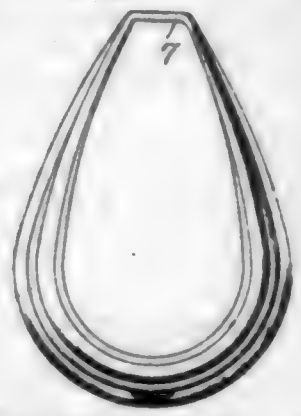
3. The combination in a rotary engine, of a cylinder, a stationary shaft eccentric to said cylinder, a piston-drum mounted on the shaft, a steam-port formed in the shaft, a port formed in the drum and arranged to communicate with the shaft-port as the drum revolves, an oscillatory cut-off valve carried by the drum and having a port movable into alinement with such drum-port, and a piston wing or blade mounted for movement concentric with the cylinder and extending through said valve.

4. In a rotary engine, the combination with a cylinder, of a hollow stationary shaft eccentric to the cylinder and provided with a pair of ports, a valve arranged within the shaft and movable to open one and close the other port in accordance with the direction of rotation of the engine, a piston-drum mounted on the shaft and having a port which passes the shaft-ports as the drum revolves, and an oscillatory cut-off valve having a central slot, a piston wing or blade mounted for movement concentric with the cylinder and extending through the drum and into the slot of the valve, whereby oscillatory movement is imparted to the valve as the drum rotates, and a pair of ports extending through said valve and movable into alinement with the drum-port.

5. The combination in a rotary engine, of a cylinder, a power-shaft extending through one head of the cylinder, the axis of the shaft being coincident with the axis of the cylinder, a hollow stationary shaft carried by the opposite head of the cylinder and forming a steam-inlet, said shaft having a port, a piston-drum mounted on the stationary shaft and having a port, and a piston wing or blade carried by the power-shaft and extending through a slot in the drum.

6. The combination in a rotary engine, of a cylinder having a pair of exhaust-ports, a revoluble piston-drum eccentric to the cylinder and engaging the inner circular wall of the cylinder at a point between the two exhaust-ports, a slidable valve curved to follow the contour of the wall of the cylinder and movable to open one or other of the exhaust-ports, an oscillatory cut-off valve arranged within the drum, a steam-supply leading within the drum, a port for placing the steam-supply in communication with the cut-off valve, and a piston-wing movable with the cut-off valve and mounted for rotative movement concentric with the cylinder.

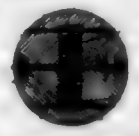
816,785. **HORSE-COLLAR.** JOSEPH BULBERG, Alton, Iowa. Filed June 10, 1905. Serial No. 264,615.



Claim.—1. A horse-collar comprising a spring-metal frame including side members and a connecting top portion, said frame consisting of a spring-metal blank curved transversely at its end portions and bent upon itself and flattened at its intermediate portion, said intermediate portion being bent longitudinally and a pneumatic pad held tightly within the inclosure of each of the side members.

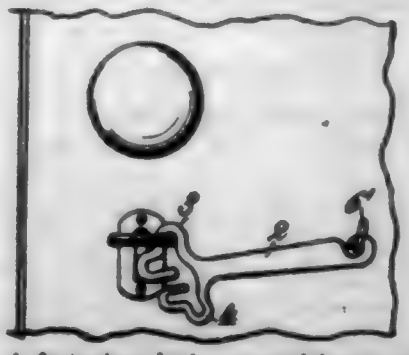
2. A horse-collar comprising a spring-metal frame including side members and a connecting top portion, said frame consisting of a spring-metal blank curved transversely at its end portions and bent upon itself and flattened at its intermediate portion, said intermediate portion being bent longitudinally and a pneumatic pad held tightly within the inclosure of each of the side members, and means for holding the free ends of the side members together, the outer sides of the side members being each grooved longitudinally to receive a hame.

816,786. **CURTAIN-POLE.** JOHN T. BIZELL, Piedmont, Ala. Filed Feb. 7, 1905. Serial No. 244,571.



Claim.—A curtain-pole comprising longitudinal clamping members hinged together at one edge and having respectively a longitudinal groove and a longitudinal rib arranged for mutual engagement, said members having registering recesses in their mutually adjacent faces, helical springs having their ends disposed in corresponding recesses, said springs being provided with terminal eyes, and pins engaged with the clamping members and passing through the eyes of the springs to hold the latter in the recesses.

816,787. **FASTENING DEVICE FOR KEYS, WINDOWS, &c.** ADDISON C. FLETCHER, New York, N. Y. Filed Feb. 27, 1905. Serial No. 247,501.



Claim.—1. A fastening device comprising two hooks of substantially duplicate construction and disposed in a common plane, each hook consisting of two connected approximately U-shaped portions the outer terminals of the outer U-shaped portions being directly opposite each other.

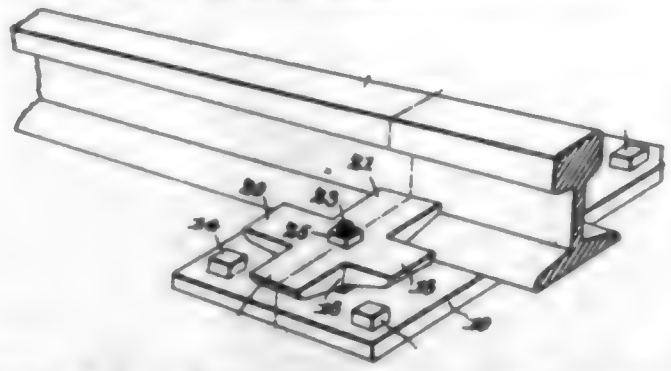
2. A fastening device comprising a shank and two hooks of substantially duplicate construction at one end of the shank, the hooks facing each other and each consisting of two connected approximately U-shaped portions disposed at an angle to each other.

3. A fastening device comprising a body provided at one end with means for securing its loose suspension and at the other end with two stiff hooks of duplicate shape facing each other, each hook being adapted for locking engagement with an eye.

4. A fastening device comprising two hooks of substantially duplicate construction facing toward each other, each hook having interiorly thereof a shoulder arranged substantially opposite the bill thereof.

5. A fastening device comprising a body having an opening at one end, whereby it may be connected with a hook or equivalent device in a loose manner and two stiff hooks at the opposite end of duplicate construction, said hooks facing toward each other, being of different sizes, and each being adapted for locking engagement with an eye.

816,788. RAIL-FASTENER. ELI T. FORRESTER, Denver, Colo. Filed Nov. 29, 1905. Serial No. 289,639.



Claim.—1. In a rail-fastener a rigid, angular base-flange clamp having an eccentrically-disposed angular lug extending therefrom, said lug provided with a centrally-disposed bolt-receiving aperture.

2. In a rail-fastener, a rigid base-flange clamp having arms radiating therefrom and of different lengths, and an angular lug extending from the clamp and having a centrally-disposed bolt-receiving aperture therein.

3. A rail-fastener comprising a tie-plate provided with a polygonal recess and a rigid base-flange clamp embodying a plurality of flange-engaging arms and means for engagement within the recess.

4. A rail-fastener comprising a tie-plate provided with a polygonal recess and a rigid base-flange clamp embodying a plurality of flange-engaging arms and means engaging the recess and so proportioned that either arm may be clamped in rigid contact with the flange.

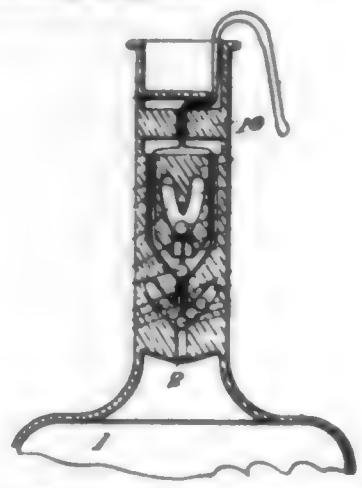
5. A rail-fastener comprising similar tie-plates arranged to or spaced upon opposite sides of a tie and provided with registering openings and polygonal recesses forming part of the openings, a base-flange clamp provided with an angular lug to engage the recess and an opening registering with the openings of the plates, and a bolt having a head to conform to and engage within the recess of the under plate and to extend through the upper plate and the flange-clamp.

6. A rail-fastener comprising similar tie-plates arranged to be spaced upon opposite sides of a tie and provided with registering openings and polygonal recesses forming a part of the openings, a rigid base-flange clamp embodying a plurality of radially-extending flange-engaging arms graded in length and a lug proportioned to be engaged within the polygonal opening of the upper plate and to position either arm in contact with the flange, and a bolt having a head to conform to and engage within the recess of the under plate and to extend through the upper plate and the flange-clamp.

816,789. NON-REFILLABLE BOTTLE. WILLIAM S. FREEL, Bay City, Mich. Filed May 15, 1905. Serial No. 260,454.

Claim.—1. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage, said passage having an upwardly-inclined recess in communication therewith, a valve adapted to be seated in the passage at its junction with the upwardly-inclined recess, and having a stem attached thereto, a guard member over the before-mentioned passage against which the valve-stem impinges to limit the movement of the valve, and a movable weight in said recess adapted to rest normally against the valve to hold it closed.

2. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage, said passage having an upwardly-inclined recess in communication therewith, two valves connected by a stem and adapted to be seated, respectively, at the top of the passage and at its junction with the upwardly-inclined recess, a movable weight operating in said recess and adapted to rest normally against the valve to hold it tightly seated, and means for limiting the movement of the valve.



3. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage leading into the interior of the bottle, a guard member over said passage and having a recess therein which has external communication through an outlet opposite the passage, a valve adapted to be seated in the passage and having a stem attached thereto extending into the outlet leading from the recess in the guard member, and a movable weight in said recess adapted to rest normally on the top of the stem to hold the valve tightly seated, the walls of the recess converging toward the outlet to guide the movable weight against the valve-stem.

4. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage leading into the interior of the bottle, a guard member over said passage having a recess therein which has external communication through an outlet opposite the passage, a valve adapted to be seated in the passage and having a stem attached thereto extending into the outlet leading from the recess in the guard member, and having a platform on the end thereof, and a movable weight in said recess adapted to rest normally on the platform to hold the valve tightly seated, the walls of the recess converging toward the outlet to guide the weight upon the before-mentioned platform.

5. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage leading into the interior of the bottle, a guard member over said passage having a recess therein which has external communication through an opening opposite the passage, and which has a member pendent from the crown thereof and terminating over the opening, a valve adapted to be seated in the passage and having a stem attached thereto extending into the opening leading into the recess in the guard member, and a movable weight in said recess adapted to rest normally on the stem and be prevented from sudden upward movement by the before-mentioned pendent member.

6. In a non-refillable bottle, the combination of a neck having a portion thereof contracted to form a passage, said passage having an upwardly-inclined recess in communication therewith, a guard member over said passage having a recess therein which has external communication through an opening in the bottom thereof, a valve adapted to be seated in the passage at its junction with the upwardly-inclined recess, and having a stem attached thereto extending into the opening leading into the recess in the guard member, a movable weight in said recess adapted to rest normally on the top of the stem, and a movable weight in the before-mentioned upwardly-inclined recess adapted to rest normally against the valve.

816,790. CANDLE-WICK. GIUSEPPE GENOVESE and EDUARDO CALVI, New York, N. Y. Filed July 6, 1905. Serial No. 268,526.



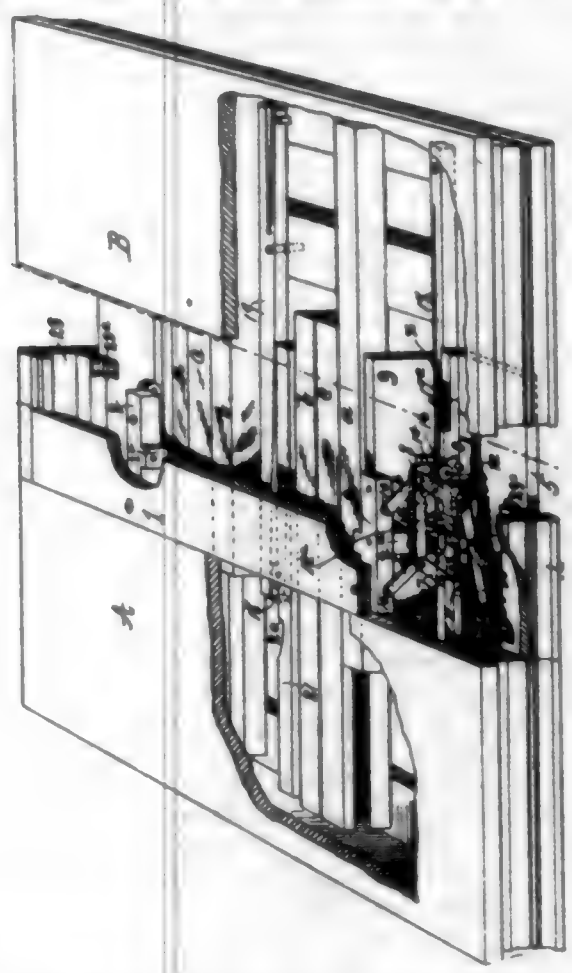
Claim.—1. The improved candle herein described, comprising a body portion of any suitable material adapted to melt and supply the flame with illuminating fuel, a wick adapted to feed said fuel to the flame, said wick having incorporated with the body material a composition of vegetable wax and stearin, substantially as set forth.

2. A wick for candles consisting of a suitable absorbent body portion and a composition of carnauba-wax and stearin.

3. The improved candle comprising a body portion adapted to be melted to supply the wick with fuel and a wick treated with carnauba-wax and stearin.

4. A wick comprising an absorbent body portion treated with a composition of vegetable wax and stearin.

816,791. EXTENSION-TABLE. CHARLES H. GOLLER, Hicksville, Ohio. Filed July 11, 1904. Serial No. 216,070.



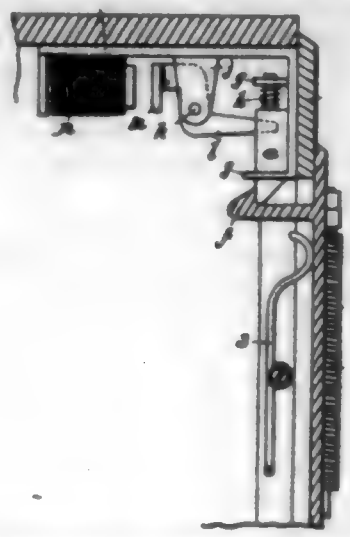
Claim.—1. In an extension-table, a movable extension portion, an extension-leaf, mechanism for raising and lowering said leaf carried by said extension portion, swinging side-rail sections mounted on said extension portion, and engaging beneath the ends of said leaf when in operative position, said side-rail sections being foldable inwardly beneath the leaf ends when the latter is in lowered position, and means connected to said leaf-operating mechanism for simultaneously actuating the side-rail sections.

2. In an extension-table, a movable extension portion, an extension-leaf, a pair of toggle mechanisms carried by said extension portion and having operative connections with the leaf for raising and lowering the same, swinging side-rail sections mounted on said extension portion, and engaging beneath the ends of said leaf when in operative position, said side-rail sections being foldable inwardly beneath the leaf ends when the latter is in lowered position, and means connected to said toggle mechanism for simultaneously actuating the side-rail section.

3. In an extension-table, opposite table-halves, a rising and falling extension-leaf, two pairs of toggle-links connected respectively with the leaf and with a sliding member of the table, a coupling-bar connection between the opposite toggle-links, a bar connected with one pair of toggle-links and carrying a lifting-roller, an oscillating member pivoted on the shaft of said roller and carrying an engaging pin, said oscillating member having a sliding fulcrum connection with one of the toggle-links and a reciprocating operating-bar having a plurality of shoulders or notches coöperating with the said engaging pin of the oscillating member.

4. In an extension-table, two separable table-halves, a leaf adapted to be interposed between the separated table-halves, two pairs of toggle-links connected at top with the under side of the leaf and at bottom with a sliding member of the table, a bar which pivotally connects said two pairs of toggle-links, a bar which at one end is pivotally connected with the toggle-links the other end being turned downwardly and carrying a roller at its lower end, a bar pivoted between its ends on the shaft of said roller and having a longitudinal slot at top and carrying a transverse pin at bottom, a stud on one of said toggle-links engaged with said slot, and a sliding bar 17 having two notches each adapted to engage said transverse pin.

816,792. LOCK. OLIVER H. P. GREEN and DELOS CARPENTER, Orion, Mich. Filed Sept. 6, 1904. Serial No. 223,257.



Claim.—1. A locking mechanism comprising a casing, a door provided with a latch on its inner face, a locking-bolt within the casing to engage said latch, a bell-crank lever engaged at one end with said bolt to actuate the bolt, the opposite end of the bell-crank constituting an armature, and an electromagnet adjacent to the armature end of the lever to actuate the lever.

2. A locking mechanism comprising a casing, a door, a movable bolt to lock the door, a bell-crank lever engaged at one end with said bolt to actuate the bolt, the opposite end of the bell-crank lever constituting an armature, an electromagnet to attract the armature end of the bell-crank lever, an electrical circuit leading to said magnet, and means to open and close said circuit.

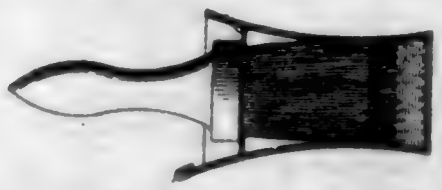
3. A locking mechanism, comprising a casing, a door, a locking-bolt supported in the casing to lock the door, a bell-crank lever engaged at one end with said bolt to actuate the bolt, and constructed to form an armature at the opposite end thereof, an electrical circuit, an electromagnet in said circuit to actuate said armature, and a switch to open and close said circuit.

4. A locking mechanism comprising a casing, a door provided with a latch, a locking-bolt on the inside of the casing to engage the latch and lock the door in closed position, a lever engaged at one end with said bolt to actuate said bolt, the opposite end of the lever constituting an armature, and electrical mechanism accessible from the inner side of the door for actuating said lever.

5. A locking mechanism, comprising in combination a casing, a door, a locking-bolt located on the inside of the casing to engage the door and lock the door in closed position, a lever engaged at one end with said bolt to actuate the bolt, a switch accessible from the inner side of the door, and electrical mechanism controlled by said switch to actuate said lever.

6. A locking mechanism comprising in combination a casing, a spring-actuated door, a locking-bolt located on the inside of the casing to control the operation of the door, a lever engaged at one end with said bolt to actuate the bolt, and constituting an armature at its opposite end, and electrical mechanism to actuate said lever.

816,793. BRUSH-HOLDER. CHARLES A. HARRIS, Brattleboro, Vt. Filed Dec. 4, 1905. Serial No. 290,221.



Claim.—1. A paint-brush provided with a flat cup-sealing ring fitted upon the hub or head thereof and having a diameter adapted to maintain a horizontal edge seal upon the walls of the cup in any position of the ring.

2. A paint-brush provided with a flat cup-sealing ring fitted in a circumferential groove in the hub or head of the brush whereby to facilitate the seating of said ring and provide an edge seal upon the cup-walls.

3. A paint-brush having a flat cup-sealing ring in a circumferential groove in the hub or head and having a circumferential bead to provide a convex surface to automatically effect and maintain a sealing function upon the surface of the cup-walls in any position of the ring.

4. A paint-brush having a cup-sealing ring of rubber fitted upon

its head or hub and adapted to support the brush and cause the circumferential edge of said ring to maintain the sealing function upon the surface of the walls of the cup whether the brush be suspended in a vertical or in an inclined position.

5. A holder for a paint-brush consisting of a cup for containing a fluid and having its open end terminating in flaring walls and a flat ring fitted on the head or hub of the brush and having a diameter to cause it to maintain a sealing function upon the flaring walls in any position of the ring.

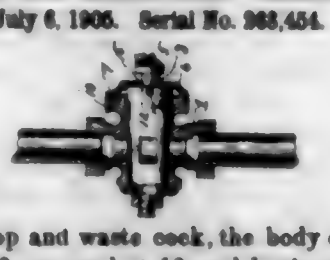
816,794. HAND LINING-TOOL. EDWARD R. HARRIS, New York, N. Y. Filed Oct. 27, 1904. Serial No. 230,223.



Claim.—1. A hand lining-tool comprising a body portion, a handle connected with the body portion, a cutter seated in the body portion, the said body portion being provided with a depending lip to engage the edge of the plate and a guide to engage the surface of the plate, means for adjusting the cutter longitudinally in the body and means for adjusting the cutting edge of the cutter laterally with respect to the body.

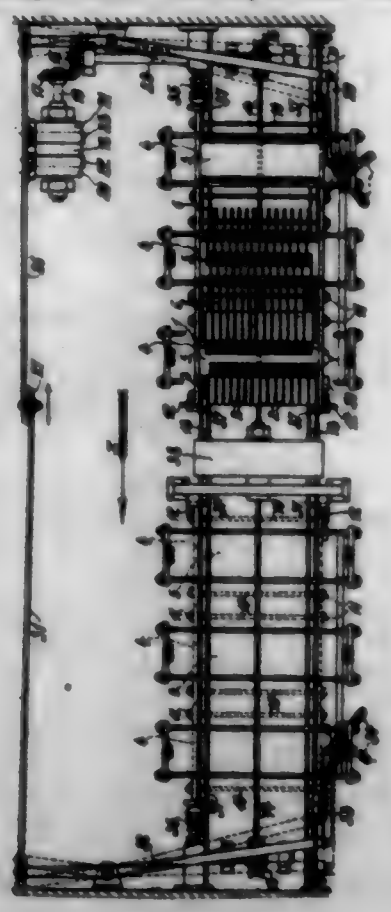
2. A hand lining-tool comprising a body provided with a groove, a cutter located in the groove, a sleeve swiveled in the body and having a screw-threaded engagement with the cutter for adjusting the cutter longitudinally along the groove, a spring having a lateral bearing against the cutter and an adjusting-screw seated in the body and working against the cutter in opposition to the tension of the spring.

816,795. STOP AND WASTE COCK. GEORGE P. HELLER, Louisville, Ky. Filed July 6, 1905. Serial No. 268,454.



Claim.—In a stop and waste cock, the body or shell 1, having the annular flange 10, recessed at 12, and having the inner part or wall of said recess continuous with the flange to form a protecting-guard for the plug, in combination with the cap 6, having the rib 7, and the handle 5 adapted to engage with and turn the cap and plug, substantially as described.

816,796. APPARATUS FOR PRINTING YARNS. ALFRED HOSMANN, Gothenburg, Sweden. Filed July 6, 1904. Serial No. 215,558.



Claim.—1. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, of a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members designed for printing different colors and placed upon the said carriage in several successive rows extending parallel to the threads, and means for causing one or more printing members in each row to simultaneously print the same color in the displacement of the said carriage across the threads, substantially as and for the purpose herein set forth.

2. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, of a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members designed for printing different colors and placed upon the said carriage in several successive rows extending parallel to the threads, the printing members of one row alternating with those of the next row, and means for causing one or more printing members in each row to simultaneously print the same color in the displacement of the said carriage across the threads, substantially as and for the purpose herein set forth.

3. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, of a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members designed for printing different colors and placed upon the said carriage in several successive rows extending parallel to the threads, selective means for operating the printing members in each row independently of each other for simultaneously printing one or more stripes of the same color in the displacement of the said carriage across the threads, substantially as and for the purpose herein set forth.

4. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, of a carriage, means for displacing this carriage in the transverse direction of the said threads, dye-tanks located on the said carriage, printing members placed in these tanks in several successive rows extending parallel to the threads, and selective means for raising the printing members in each row from the aforesaid dye-tanks to their operative position for simultaneously printing one or more stripes of the same color in the displacement of the said carriage across the threads, substantially as and for the purpose herein set forth.

5. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members placed upon the said carriage, levers for supporting these members, means for depressing the levers separately, and means for holding the said members in their operative position, substantially as and for the purpose herein set forth.

6. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members placed upon the said carriage, levers for supporting these members, means for depressing the levers separately, locking-hooks, a spring connection between the said locking-hooks and levers, transverse tilting bars adapted to engage with the locking-hooks, balance-weights attached to the tilting bars, and a stop, substantially as and for the purpose herein set forth.

7. In apparatus of the character described, the combination, with a carrier for supporting a series of threads to be printed, a carriage, means for displacing this carriage in the transverse direction of the said threads, printing members placed upon the said carriage, levers for supporting these members, strikers arranged to act upon the said levers, and means for controlling separately each of the strikers, substantially as and for the purpose herein set forth.

816,797. COAL-POCKET. FRANK K. HOOVER and ARTHUR J. MASON, Chicago, Ill. Filed Jan. 26, 1906. Serial No. 298,543.

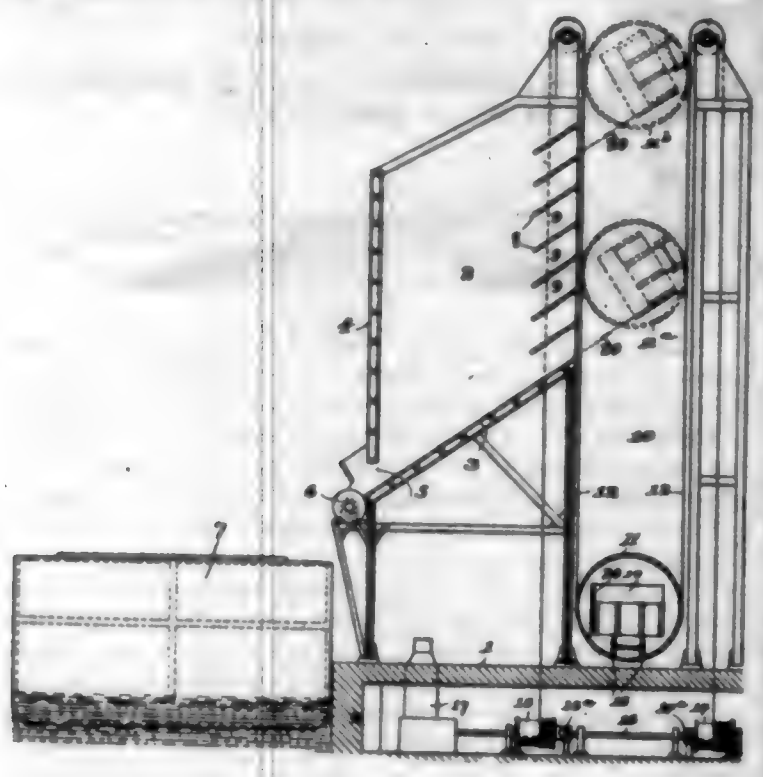
Claim.—1. The combination with a pocket having a louvered side, of means for introducing material to be stored therein thereto through the louver-openings, substantially as described.

2. The combination with a pocket having a louvered side, of a lifting-car dump located opposite said louvered side and serving to discharge material to be stored into said pocket through the louver-openings, substantially as described.

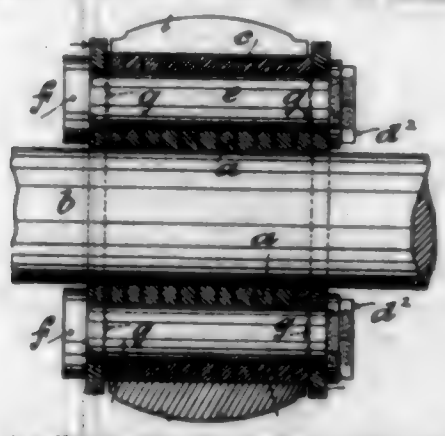
3. The combination with a pocket having a louvered side, of a vertical guideway located behind said louvered side, a car-lift therein, and means for elevating said car-lift and dumping the same opposite and into any of the louver-openings, substantially as described.

4. The combination with a pocket having discharging means in

its front wall and a louvered rear wall, of a vertical guideway located behind said rear wall, a car-lift therein, and means for elevating said car-lift and dumping the same opposite and into any of the louver-openings, substantially as described.



816,798. ROLLER-BEARING. WILLIAM HOULDSWORTH, Manchester, England. Filed Mar. 7, 1905. Serial No. 248,819.



Claim.—1. A roller-bearing for shafts or axles consisting of a ring or sleeve for the shaft or axle, an outer shell of larger diameter, a ring of rollers arranged in the space between such sleeve and shell, a washer arranged at each end of the sleeve and shell which form the roller-race, a portion of the rollers passing loosely through the washers, collars on such projecting rollers bearing against the washers and by means of which the washers can be brought into contact with the ends of the sleeve and shell forming the roller-race substantially as described.

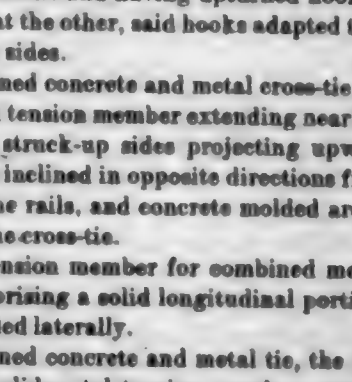
2. The roller-bearing for shafts or axles consisting of a spirally-formed sleeve for the shaft or axle, an outer spiral ring of larger diameter, a washer arranged at each end of the spiral rings, rollers contacting with each other and filling up the annular space formed between the spiral rings a portion of such rollers passing loosely through the end washers, collars on such rollers bearing against the washers by means of which the spiral rings are put in compression substantially as described.

3. The roller-bearing consisting of a spirally-formed sleeve for the shaft or axle, an outer spiral ring of larger diameter, a washer arranged at each end of such spiral rings, rollers filling up the annular space formed between the spiral rings, a number of such rollers passing loosely through the end washers, collars on such projecting rollers bearing against the washers by means of which the spiral rings are put in compression, and a sleeve compressed upon the outer spiral ring to maintain the rollers in contact throughout with the spiral rings substantially as described.

4. The roller-bearing consisting of a spirally-formed sleeve for the shaft or axle, an outer spiral ring of larger diameter, a washer arranged at each end of such spiral rings, rollers filling up the space between the spiral rings, a number of such rollers passing loosely through the end washers, collars on such projecting rollers bearing against the washers by means of which the spiral rings are put in compression, loose sleeves arranged on the ends of the rollers, and a sleeve compressed upon the outer spiral ring to maintain the rollers in contact with the spiral rings and a curved or spherical surface formed on the sleeve substantially as described.

5. A roller for roller-bearings consisting of a central portion of requisite diameter, said roller having reduced ends, and sleeves mounted rotatably on such reduced ends to form a roller of the requisite diameter throughout substantially as described.

816,799. SINGLE-DELIVERY MATCH-BOX. CHARLES HUBBELL, Wilmington, Ohio. Filed Nov. 2, 1905. Serial No. 285,663.



Claim.—1. A match-box provided with a pivoted cover the top of which is formed with a central conical extension having a discharge-opening formed therein, the interior walls of the adjacent portion of the cover being curved toward said discharge-opening, and a cap for closing the discharge-opening.

2. A match-box provided with a pivoted cover the top of which is formed with a central conical extension having a discharge-opening formed therein, the interior walls of the adjacent portion of the cover being curved toward said discharge-opening, and a spring-cap pivoted to the cover and having its free end provided with a terminal depression forming a depending lug for closing the discharge-opening, the intermediate portion of the cap being spaced from the cover and bowed outwardly to form a finger-piece.

816,800. RAILWAY CROSS-TIE. JULIUS KAHN, Detroit, Mich., assignor to Trussed Concrete Steel Company, Detroit, Mich., a Corporation of Michigan. Filed July 13, 1904. Serial No. 216,294.



Claim.—1. The combination of a rail-bearing plate for cross-ties comprising a body having parallel depressed portions to receive bolts, and bolts passing under the body of said plate and through said depressed portions and having upturned hooks at one end and nuts and washers at the other, said hooks adapted to engage the rail-flange on opposite sides.

2. In a combined concrete and metal cross-tie, the combination of a trough-shaped tension member extending near the bottom of the same and having struck-up sides projecting upward and the top edges of said sides inclined in opposite directions from vertical lines passing through the rails, and concrete molded around the same to form the body of the cross-tie.

3. A metal tension member for combined metal and concrete construction, comprising a solid longitudinal portion and a portion of the same expanded laterally.

4. In a combined concrete and metal tie, the combination of a concrete body, a solid-metal tension member extending longitudinally of the same and having extending latticed projections in the form of "expanded metal."

5. A rail-bearing plate for cross-ties comprising a body having a depressed portion to receive a bolt, and arms extending downwardly from each end.

6. A bearing-plate and connecting means for cross-ties and rails, comprising a body having a depressed socket to receive a bolt, arms extending downward from each end, and a bolt having an upturned hook passing through said socket.

7. In a concrete cross-tie, the combination of a plate resting on said cross-tie, and having a depressed socket, arms extending downward to secure the plate to said cross-tie, a bolt passing under the body of said plate and through said socket having an upturned hook on one end and on the other a washer having a projecting portion, said hook and washer adapted to engage a rail-flange, said cross-tie having a groove to permit the insertion of the bolt and washer.

8. In a combined concrete and metal cross-tie, the combination of a metal tension member extending near the bottom of the same and having auxiliary tension members extending upward, concrete molded around the same to form the body of the cross-tie, a bearing-plate comprising a body having a depressed socket to receive a bolt and arms extending downward into the concrete from the plate, and

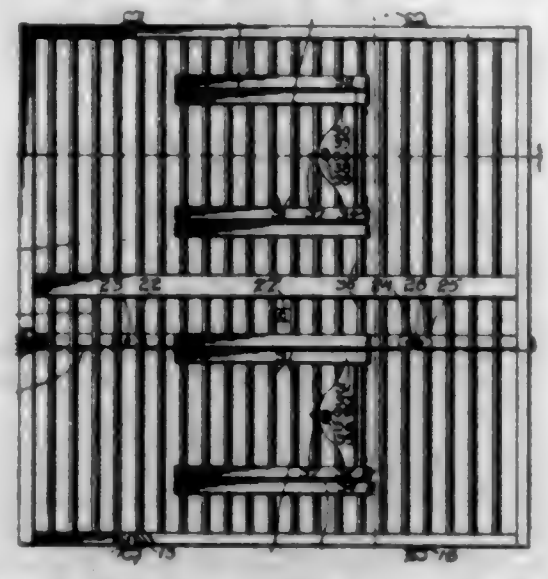
a bolt having an upturned hook to secure a rail to said cross-tie, said bolt passing through said socket.

9. In a combined concrete and metal cross-tie, the combination of the concrete body, a flat metal tension member extending longitudinally near the bottom of the same and having upwardly-extending latticed projections in the form of "expanded metal," the upper edges of said "expanded-metal" portions being of uneven height being highest at the points immediately under the bearing-points of the rails.

10. In a combined concrete and metal tie, the combination of a concrete body, a metal tension member extending longitudinally near the bottom of the same and having struck-up auxiliary tension members lying across the lines of greatest tensional stress in said concrete to transmit the tensional stresses to said main tension member, plates on said cross-tie at the points of contact of the rails bolts passing beneath said plates, and anchors extending into the concrete to hold said bolts and thereby secure the rails and cross-ties together.

11. In a combined concrete and metal cross-tie, the combination of the concrete body, a flat metal tension member extending longitudinally near the bottom of the same and having upwardly-extending latticed projections in the form of "expanded metal," the upper edges of said "expanded-metal" portions being of uneven height, being highest at the points immediately under the bearing-point of the rails, a plate resting on said cross-tie, and having a depressed socket, arms extending downward to secure the plate to said cross-tie, a bolt passing under the body of said plate and through said socket, a washer, having a projecting portion to engage a rail, on one end of said bolt, the other end having a hook to engage the flange of a rail to secure the same to the cross-tie.

816,801. FOLDING CRATE. WILLIAM H. KELCHNER, New York, N. Y. Filed June 20, 1904. Serial No. 213,381.



Claim.—A folding crate comprising a bottom, walls hinged to the bottom adjacent to opposite edges thereof and including upper and lower sections hinged at their meeting edges for movement of the sections to lie at times one upon the other and at times to lie in a common plane, said walls being movable to lie at times horizontal to the bottom and at times at right angles thereto, a top hinged to the upper sections of the walls and arranged to lie against said upper sections when the latter are in their folded positions, walls hinged to the bottom adjacent to its remaining edges, and arranged for movement to lie at times against the upper face of the bottom and at times to extend at right angles thereto, said second-named walls being disposed to lie between the end portions of the first-named walls when the second-named walls are in position to extend at right angles to the bottom to prevent movement of the first-named walls, depending members carried by the top, means engaging the sides and the depending members to hold the walls and top against movement with respect to each other, said top including a plurality of spaced members, a partition arranged within the closure of the first and second named walls for movement to lie upon the bottom or to extend upwardly therefrom, plates provided with screw-threaded openings carried by the said partition, perforated plates disposed upon certain of the spaced members of the top and having thumb-screws engaged therein, the said screws being adapted for engagement in screw-threaded openings of the plates of the partition to hold the latter against movement, other means passed through opposite sides of the crate and piercing the said partition to aid in holding the latter against movement, a plate having a threaded perforation carried by the bottom, said plate being adapted to receive one of the aforesaid thumb-screws within its perforation when said thumb-screw is disengaged from its first-named plate and when the portions of the crate are in their folded position to hold said portions in such position, closures for the crate, and means for locking the closures in position, the said locking means including a swinging member.

816,802. RAILROAD-SPIKE. CHARLES M. KERR, Idaho Falls, Idaho. Filed Apr. 13, 1905. Serial No. 256,347.



Claim.—1. A spike having a recess formed in one longitudinal face thereof, a dog pivoted in said recess with its upper end normally projecting therefrom, and its lower end normally within the recess, said lower end of the dog terminating in an outwardly-directed hook, and a spring arranged to hold the dog yieldably in normal position, said dog being pivotally movable to throw its hook end from the recess when subjected to pressure against the end face of its upper normally projected end.

2. A spike having its shank provided with a recess, a dog pivotally mounted in the recess and having a hook at its lower end and a head at its upper end, the rear of the dog having a notch formed therein immediately beneath its head portion, and a spring contacting with the said notch and the rear wall of the recess to hold the upper end of the dog normally out of the recess with the end of the latter therein.

816,803. PACKING-GASKET. JULIUS A. LANDSBERGER, Alameda, Cal., assignor to Hermetic Closure Co., Chicago, Ill. Filed Mar. 20, 1905. Serial No. 251,182.



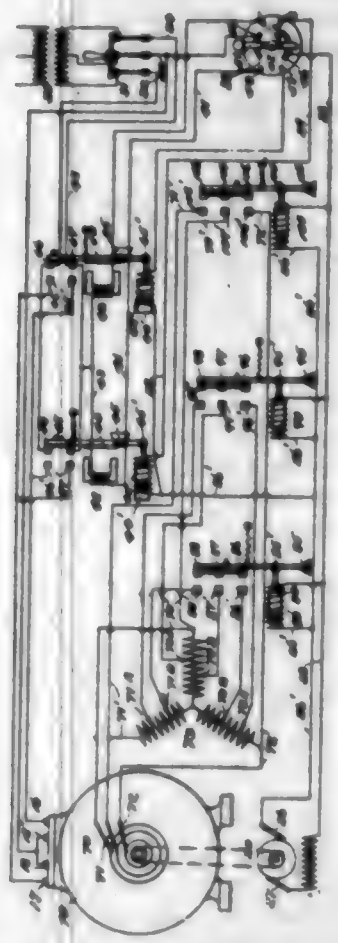
Claim.—1. As a new article of manufacture, a packing-gasket having its surface coated or glazed with a compound of vaseline and paraffin-wax, substantially as described, for the purpose specified.

2. As a new article of manufacture, a cover for receptacles carrying a packing-gasket, said gasket having its exposed surface coated or glazed with a compound of vaseline and paraffin-wax, substantially as described, for the purpose specified.

3. As a new article of manufacture, a cover for receptacles carrying a packing-gasket, said gasket having its exposed under surface coated or glazed with a compound of vaseline and paraffin-wax, substantially as described, for the purpose specified.

816,804. SYSTEM OF MOTOR CONTROL. AXEL MAGNUSON, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 18, 1905. Serial No. 241,502.

Claim.—1. The combination with an electric motor, of controlling apparatus therefor, means for controlling single-phase current to operate said motor-controlling apparatus, and an electric device for holding said motor-controlling apparatus in a predetermined position.



2. The combination with a multiphase motor, of controlling apparatus therefor, means in a circuit connected across any two of the mains of said motor, for closing a single-phase circuit to said motor-controlling apparatus, and electric holding means for said controlling apparatus.

3. The combination with an electric motor, of controlling apparatus therefor, holding means for said controlling apparatus, a source of single-phase current, a source of direct current, and a single switch device for controlling the single-phase current to operate said motor-controlling apparatus and for controlling the direct current to operate said holding means.

4. The combination with an electric motor, of starting-switches therefor, electroresponsive devices for closing said switches, electromagnetic apparatus for holding said switches in closed position, a source of single-phase current, a source of direct current and a single manual switch for controlling the single-phase current to operate said electroresponsive devices and for controlling the direct current to operate said electromagnetic holding apparatus.

5. The combination with an alternating-current motor, of reversing-switches therefor, single-phase magnets for actuating said switches to closed position, direct-current magnets for holding said switches in closed position, and means for controlling both the said single-phase magnets and the said direct-current magnets.

6. The combination with an alternating-current motor, of two reversing-switches therefor, an electroresponsive device for each of said switches to actuate the same to closed position, an electromagnet connected to each switch to hold the same in closed position, and a manual switch for controlling single-phase current to operate either of the electroresponsive devices and for controlling direct current to operate the corresponding holding-electromagnet.

7. In combination with a motor, a source of electrical supply, a resistance in series with the motor-armature, and a generator connected to the motor and arranged to control said resistance in starting the motor.

8. In combination with a motor, a source of electrical supply, a resistance in series with the motor-armature, and a generator mechanically connected to the motor and arranged to control said resistance in starting and stopping the motor.

9. In combination with an alternating-current motor, a source of electrical supply, a resistance electrically connected to the motor, and a generator connected to the motor and arranged to control the movement of the motor upon starting, by controlling the resistance.

10. In combination with a motor, an opposition element in circuit with the motor and a generator mechanically connected to the motor and arranged to control the movement of the motor in starting and stopping by controlling the opposition element.

11. In combination with an alternating-current motor, a resistance electrically connected to the motor, and a generator connected to the motor and arranged to control the resistance in proportion to the speed of the motor on starting.

12. In combination with a motor, controlling-circuits therefor, electromagnetic switches in the controlling-circuits means for generating a variable voltage in proportion to the speed of the motor, said voltage applied to said electromagnetic switches in the controlling-circuits which are arranged to be actuated by the variable voltage.

13. In combination with a motor, an opposition element in circuit with the motor, a generator so connected to the motor that it will generate a voltage in proportion to the speed of the motor, a plurality of electromagnets in connection with the generator and arranged to control the opposition element.

14. The combination with an electric motor and a mechanism driven thereby, a generator mechanically connected to the driven mechanism, an electroreceptive device connected to said generator, and means electrically connected to the motor and operated by said electroreceptive device for controlling the acceleration of the motor upon starting.

15. In combination with an electric motor, a mechanism driven thereby, an opposition element in the motor-circuit, an electroresponsive device for controlling the opposition element, and a generator connected to the driven mechanism and arranged to actuate the electroresponsive device to cut the opposition element out of the motor-circuit in a number of steps in proportion to the acceleration of the driven mechanism.

16. In combination with an electric motor, a starting device therefor, electric circuits to actuate the starting device, a source of electrical supply, and another source of electrical supply dependent upon the movement of the motor and arranged to coöperate with the first source of supply to hold the starting device during the rotation of the motor.

17. In combination with an electric motor, a starting device therefor, electric circuits to actuate the starting device, a source of electrical supply, and another source of electrical supply dependent upon the movement of the motor and proportional to its speed and arranged to coöperate with the first source of supply to hold the starting device during the rotation of the motor.

18. In combination with an electric motor, an electrically-operated starting device therefor, electric circuits to actuate the starting device, a source of electrical supply, another source of electrical supply dependent upon the speed of the motor and proportional to its speed and arranged to coöperate with the first source of supply to hold the starting device during the rotation of the motor, and a manually-operated switch to control the circuits to the starting device.

19. A starting device for motors comprising an alternating-current motor, a direct-current generator connected to run with the motor, and means actuated by the current from the generator to control the starting and accelerating of the motor.

20. In combination with an alternating-current motor, a source of alternating-current supply, an opposition element in the motor-circuit, a series of electromagnetic responsive devices for removing the opposition element from the motor-circuit, and a source of direct-current supply dependent upon the movement of the motor and proportional to its speed, arranged to actuate the electroresponsive devices one by one as the speed of the motor increases.

21. In combination with an alternating-current motor, a source of alternating-current supply, a starting device for the motor arranged to be actuated by the alternating current, means dependent upon the movement of the motor for generating a direct current, and a magnetic device operated by such direct current to hold the starting device firmly in closed position.

22. In combination with an alternating-current motor, a source of alternating-current supply, a starting device for the motor arranged to be actuated by the alternating current, a direct-current generator dependent upon the movement of the motor arranged to generate a voltage proportional to the speed of the motor, a magnetic device connected to such direct-current generator and arranged to hold the starting device firmly in closed position, an opposition element in the motor-circuit, and a series of electroresponsive devices for removing the opposition element from the motor-circuit, said electroresponsive devices being connected to the direct-current generator and arranged to be actuated one by one as the motor accelerates.

23. In combination with an alternating-current motor, an electrically-operated starting device therefor, and circuits for actuating

the starting device comprising an alternating-current circuit and a direct-current circuit.

24. In combination with an alternating-current motor, a starting device therefor, alternating-current and direct-current circuits, said starting device being actuated by a single-phase alternating current and positively held in operative position by a direct current.

25. In combination with an alternating-current motor, a starting device therefor, said starting device being actuated by a single-phase alternating current and positively held in operative position by a direct current, alternating-current and direct-current electrical circuits for the starting device, and a manually-operated switch for controlling the circuits.

26. In combination with an alternating-current motor, a device for starting the motor in one direction, and another device for starting the motor in the other direction, alternating-current and direct-current circuits said starting devices being actuated by a single-phase alternating current and positively held in operative position by a direct current.

27. In combination with an alternating-current motor, a resistance, an electrically-operated reversing-switch, circuits for the reversing-switch for both alternating and direct currents, a manually-operated switch for controlling the circuits, electroresponsive devices for controlling the resistance, and a direct-current generator connected to run with the motor, arranged to supply the direct-current circuits for the reversing-switch and to automatically actuate the electroresponsive devices.

28. In combination with an alternating-current motor, a resistance, an electrically-operated reversing-switch, circuits for the reversing-switch for both alternating and direct currents, a manually-operated switch for controlling the circuits, electroresponsive devices for controlling the resistance, and a direct-current generator connected to run with the motor arranged to supply the direct-current circuits for the reversing-switch and to automatically actuate the electroresponsive devices in proportion to the acceleration of the motor.

29. In combination with an alternating-current motor, a resistance, an electrically-operated reversing-switch, circuits for the reversing-switch for both alternating and direct currents, a manually-operated switch for controlling the circuits, electroresponsive devices for cutting out the resistance step by step, and a direct-current generator connected to run with the motor arranged to supply the direct-current circuits for the reversing-switch and to automatically actuate the electroresponsive devices one at a time in proportion to the acceleration of the motor.

30. In combination with a motor, means for reversing the direction of rotation of the motor, a generator connected to run with the motor, means for keeping the direction of the current generated by the generator the same if the direction of rotation of the motor is changed, and means actuated by the current generated by the generator for controlling the motor.

31. In combination with a motor, means for reversing the direction of rotation of the motor, a resistance for the motor-circuit, a generator connected to run with the motor, means for keeping the direction of the current generated by the generator the same if the direction of rotation of the motor is changed, and means actuated by the current generated by the generator for controlling the motor by cutting the resistance into and out of the motor-circuit.

32. In combination with a motor, means for reversing the direction of rotation of the motor, a generator connected to run with the motor, means connected with the generator for keeping the direction of its generated current the same, said generator arranged to generate a voltage in proportion to the speed of the motor, and electroresponsive devices dependent upon the generated voltage for controlling the acceleration of the motor.

33. In combination with an alternating-current motor, a starting device therefor, and a direct-current generator connected to run with the motor and arranged to control the acceleration of the motor, in starting the motor.

34. In combination with an alternating-current motor, a starting device therefor actuated by alternating current, and a direct-current generator connected to run with the motor and arranged to control the acceleration of the motor.

35. In combination with an alternating-current motor, means for starting the motor in one direction or the other, and a direct-current generator connected to run with the motor and arranged to control the acceleration of the moter.

36. In combination with an alternating-current motor, means for starting the motor in one direction or the other, said means actuated by alternating current, and a direct-current generator connected to run with the motor and arranged to control the acceleration of the motor.

37. In combination with an alternating-current motor, means for starting the motor in one direction or the other, said means actuated by an alternating current, a manually-operated switch for controlling the starting device, and a direct-current generator connected to run with the motor and arranged to control the acceleration of the motor.

38. In combination with an alternating-current motor, a starting device therefor, alternating-current and direct-current circuits, said starting device being actuated by an alternating current and positively held in operative position by a direct current.

39. In combination with an alternating-current motor, a starting device therefor, said starting device being actuated by an alternating current and positively held in operative position by a direct current, alternating-current and direct-current electrical circuits for the starting device, and a manually-operated switch for controlling the circuits.

40. In combination with an alternating-current motor, a device for starting the motor in one direction, and another device for starting the motor in the other direction, alternating-current and direct-current circuits, said starting devices being actuated by an alternating current and positively held in operative position by a direct current.

41. In a starting device for alternating-current motors, a source of supply, a starting mechanism, alternating-current and direct-current circuits, means connected with said source of supply arranged to actuate the starting mechanism to start the motor, and a direct-current generator mechanically connected to the motor and arranged to control the acceleration of the motor step by step.

42. In a system of motor control, two sources of current-supply, one being pulsating and connected to the motor, the other being a direct current generated by the movement of the motor and variable from zero to a maximum in proportion to the speed of the motor and adapted to control the acceleration of the motor.

43. In a system of motor control, two sources of current-supply, one of which is not variable and is connected to the motor, the other of which is generated by the movement of the motor and is variable from zero to a maximum in proportion to the speed of the motor.

44. In a system of motor control, two sources of current-supply, one of which is not variable and is connected to the motor, the other of which comprises a generator connected to the motor and is variable from zero to a maximum in proportion to the speed of the motor.

45. In a system of motor control, two sources of current-supply, one being obtainable before the motor is started and the other being dependent upon the movement of said motor, means operated by current from one of said sources for starting, reversing or stopping the motor, and means operated by current from the other source for effecting an acceleration of the motor.

46. In combination with an electric motor, an external source of current-supply of practically constant value, a controlling device in series with the motor, and a generator mechanically connected to the motor and arranged to control the controlling device.

47. In combination with an electric motor, an external source of current-supply of practically constant value, a starting-switch for the motor, a controlling device for the motor, and a generator mechanically connected to the motor and arranged to control the controlling device.

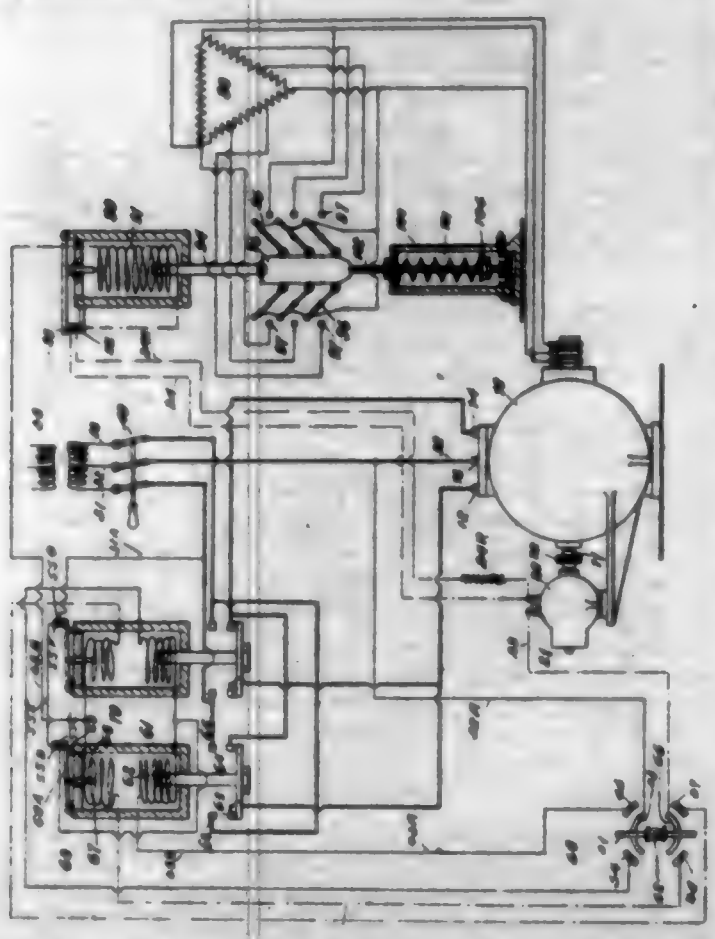
48. In combination with an electric motor, an external source of current-supply of practically constant value, an electrically-actuated starting-switch for the motor, a manually-operated circuit-closer for the starting-switch, a controlling device for the motor, and a generator mechanically connected to the motor and arranged to control the controlling device.

816,805. **SYSTEM OF MOTOR CONTROL.** AXEL MAGNUSON, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 14, 1905. Serial No. 265,167.

Claim.—1. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a starting-switch for the motor, a single magnet for actuating the starting-switch, said magnet being energized by pulsating and direct currents, and means dependent upon the generator for controlling the motor.

2. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets each having a single frame and being energized by pulsating and direct currents, and means dependent upon the generator for controlling the motor.

3. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a starting-switch for the motor, a magnet for actuating the starting-switch, said magnet being energized by pulsating and direct currents, and means dependent upon the generator for controlling the motor.



4. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets being energized by pulsating and direct currents, and means dependent upon the generator for controlling the motor.

5. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets having two windings, one for pulsating and the other for direct currents, and means dependent upon the generator for controlling the motor.

6. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets being energized by pulsating and direct currents, and means actuated by the magnet for cutting off the pulsating current from the magnet while the motor is running.

7. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a starting-switch for the motor, a magnet for actuating the starting-switch, said magnet being energized by pulsating and direct currents, means actuated by the magnet for cutting off the pulsating current from the magnet while the motor is running, and means dependent upon the generator for controlling the motor.

8. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a starting-switch for the motor, a magnet for actuating the starting-switch, said magnet being energized by pulsating and direct currents, means dependent upon the generator for controlling the motor, and a manually-operated circuit-closer for controlling both the pulsating and direct currents in the magnet.

9. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets being energized by pulsating and direct currents, means dependent upon the generator for controlling the motor, and a manually-operated circuit-closer for controlling both the pulsating and direct currents in the magnets.

10. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, said magnets being energized by pulsating and direct currents, means actuated by the magnets for cutting off the pulsating current from the magnet while the motor is running, means dependent upon the generator for controlling the motor, and a manually-operated circuit-closer for controlling both the pulsating and direct currents in the magnets.

11. A motor, a source of pulsating current therefor, a generator driven by the motor and arranged to produce a direct current proportional in strength to the speed of the motor, a reversing-switch for starting the motor in either direction, magnets for actuating the reversing-switch, said magnets being energized by the pulsating and direct currents, and means actuated by the direct current for cutting off the pulsating current from the magnet when the direct current reaches a predetermined strength.

12. A motor, a source of pulsating current therefor, a generator driven by the motor and arranged to produce a direct current proportional in strength to the speed of the motor, a reversing-switch for starting the motor in either direction, magnets for actuating the reversing-switch, said magnets being energized by the pulsating and direct currents, means actuated by the direct current for cutting off the pulsating current from the magnet when the direct current reaches a predetermined strength, and a manually-operated circuit-closer for controlling both the pulsating and direct currents in the magnets.

13. A motor, a source of pulsating current therefor, a direct-current generator driven by the motor, a reversing-switch for the motor, magnets for actuating the reversing-switch, each of said magnets having two windings one for pulsating and the other for direct currents, and a single-magnet frame and means dependent upon the generator for controlling the motor.

14. A motor, a controlling device therefor, a generator driven by the motor, and a solenoid in circuit with the generator arranged to gradually actuate the controlling device in proportion to the speed of the motor.

15. A motor, a controlling device therefor comprising a plurality of circuit-closers, a generator driven by the motor, and a solenoid in circuit with the generator arranged to actuate the circuit-closers step by step in proportion to the speed of the motor.

16. A motor, a controlling device therefor, a generator driven by the motor, a solenoid in circuit with the generator arranged to gradually actuate the controlling device in proportion to the speed of the motor, and a retarding device for the solenoid.

17. A motor, a controlling device therefor, a generator driven by the motor, a solenoid in circuit with the generator arranged to gradually actuate the controlling device in proportion to the speed of the motor, and an adjustable retarding device for the solenoid.

18. A motor, a controlling device therefor, a generator driven by the motor, a solenoid in circuit with the generator arranged to gradually actuate the controlling device in one direction in proportion to the speed of the motor, and means to actuate the controlling device in the other direction.

19. A motor, a controlling device therefor, a generator driven by the motor, a solenoid in circuit with the generator arranged to gradually actuate the controlling device in one direction in proportion to the speed of the motor, and adjustable means to actuate the controlling device in the other direction.

20. A motor, a controlling device therefor, a generator driven by the motor, an electromagnetic actuator for the controlling device, and means actuated by the controlling device for weakening the current of the generator.

21. A motor, a starting-switch and a controlling device therefor, a generator driven by the motor, an electromagnetic actuator for the controlling device, and means actuated by the controlling device for weakening the current of the generator.

22. A motor, a magnetically-actuated starting-switch therefor, a controlling device for the motor, an electromagnetic actuator for the controlling device, a source of current-supply depending on the movement of the motor and arranged to produce a current proportional in strength to the speed of the motor for actuating the electromagnetic devices, and means actuated by the controlling device for weakening said current after the motor has reached a predetermined speed.

23. A motor, two sources of electrical energy, one of which is pulsating and practically constant in value and is conducted to the motor, the other of which is direct and proportional in strength to the speed of the motor, and a solenoid connected to said second source of energy and arranged to gradually control the acceleration of the motor in starting.

24. A motor, two sources of electrical energy, one of which is pulsating and practically constant in value and is conducted to the motor, the other of which is direct and proportional in strength to the speed of the motor, a solenoid connected to said second source of energy and arranged to gradually control the acceleration of the mo-

tor in starting, and a manually-operated circuit-closer arranged to control both sources of electrical energy.

25. A motor, a starting-switch therefor, two sources of electrical energy, one of which is pulsating and practically constant in value and is conducted to the motor, the other of which is direct and proportional in strength to the speed of the motor, and a solenoid connected to said second source of energy and arranged to gradually control the acceleration of the motor in starting.

26. In a system of motor control, an alternating-current motor, a starting device therefor, two sources of electrical energy, one of which is pulsating and practically constant in value and is conducted to the motor, the other of which is direct and proportional in strength to the speed of the motor, a solenoid connected to said second source of energy and arranged to gradually control the acceleration of the motor, and a manually-operated master-switch for controlling the system.

27. A motor, a source of current therefor, a magneto driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, and motor-controlling apparatus separate from the field-windings but connected to said magneto to be operated by the current therefrom.

28. A motor, a source of current therefor, a magneto having permanently-magnetized fields, said magneto being driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, and motor-controlling means separate from the field-windings but connected to said magneto to be operated by the current therefrom.

29. A motor, a source of current therefor, a magneto having permanently-magnetized fields and a field-winding, said magneto being driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, and motor-controlling means separate from the field-windings but connected to said magneto to be operated by the current therefrom.

30. A motor, a source of current therefor, a magneto having permanently-magnetized fields and a field-winding, means for insuring the generated current flowing through said field-winding in the same direction regardless of the direction of rotation of the magneto, said magneto being driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, said current arranged to control the movement of the motor.

31. A motor, a starting device, a motor-controlling device separate from the motor field-windings, a source of electrical supply for the motor, a magneto driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, and connections between said magneto and said motor-controlling device.

32. A motor, a starting device and a controlling device therefor, a source of electrical supply for the motor, a magneto driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, said current arranged to control the starting and controlling devices for the motor, and a manually-operated circuit-closer to control the generated current of the magneto.

33. A motor, a starting device and a controlling device therefor, a source of electrical supply for the motor, a magneto driven by the motor and arranged to generate a current proportional in strength to the speed of the motor, said current arranged to control the starting and controlling devices for the motor, and means actuated by the controlling device for weakening the generated current of the magneto after the motor has reached a predetermined speed.

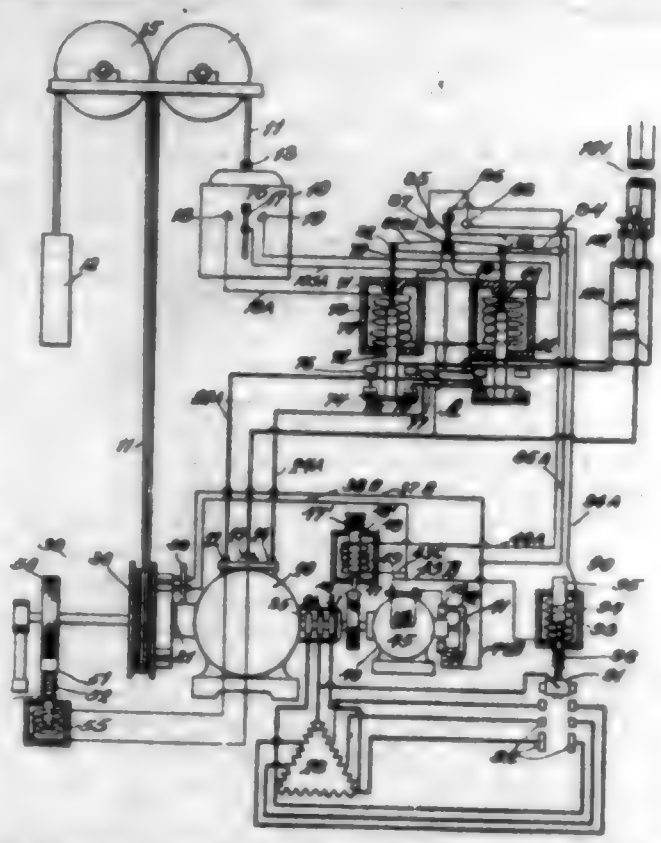
816,806. ELECTRIC TRACTION-ELEVATOR. Axel Magnuson, New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 17, 1905. Serial No. 287,770.

Claim.—1. An electric motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.

2. An electric motor, a magnetic sheave arranged to be driven thereby, a winding for the sheave, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and connected to the winding.

3. An electric motor, a magnetic sheave arranged to be driven thereby, said sheave comprising sections along its periphery arranged to be alternately magnetized with opposite polarities, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.

4. An electric motor, a magnetic sheave arranged to be driven thereby, said sheave having two side pieces, each of which forms a rim and carries upon it alternately-projecting portions which form its periphery, said portions being arranged to be alternately magnetized with opposite polarities, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.



5. An electric motor, a magnetic sheave arranged to be driven thereby, said sheave having two side pieces, each of which forms a rim and carries upon it alternately-projecting portions which form its periphery, a winding for each of said portions, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.

6. An alternating-current motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a direct-current generator connected to run with the motor and arranged to energize the sheave.

7. An alternating-current motor, a starting-switch therefor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a direct-current generator connected to run with the motor and arranged to energize the sheave.

8. An alternating-current motor, a reversing-switch for the motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a direct-current generator connected to run with the motor and arranged to energize the sheave.

9. An alternating-current motor, an electrically-actuated reversing-switch for the motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a direct-current generator connected to run with the motor and arranged to energize the sheave.

10. An alternating-current motor, an electrically-actuated reversing-switch therefor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, a direct-current generator connected to run with the motor and arranged to energize the sheave, and means for operating the reversing-switch from the car.

11. An alternating-current motor, a brake for the motor, a magnetic sheave arranged to be driven by the motor, a car, a cable connecting the sheave and the car, and a direct-current generator connected to run with the motor and arranged to energize the sheave.

12. An alternating-current motor, an electrically-actuated reversing-switch therefor, an electrically-actuated brake for the motor, a magnetic sheave arranged to be driven by the motor, a car, a cable connecting the sheave and the car, a direct-current generator connected to run with the motor and arranged to energize the sheave and means for operating the reversing-switch and the brake from the car.

13. An alternating-current motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the car and the sheave, a direct-current generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, said voltage being arranged to energize the sheave.

14. An alternating-current motor, a magnetic sheave arranged to be driven thereby, an opposition element in the motor-circuit, a car, a cable connecting the car and the sheave, a direct-current gen-

erator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, said voltage arranged to energize the sheave, and means actuated by said variable voltage for automatically cutting the opposition element out of the motor-circuit.

15. An alternating-current motor, a magnetic sheave arranged to be driven thereby, an opposition element in the motor-circuit, a car, a cable connecting the car and the sheave, a direct-current generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, a brake applied by the variable voltage in stopping, said voltage being arranged to energize the sheave, and means actuated by said variable voltage for automatically cutting the opposition element out of the motor-circuit.

16. An electric motor, a magnetic sheave arranged to be driven thereby, a car, a cable of magnetic material connecting the sheave and the car and a generator connected to run with the motor and arranged to energize the sheave.

17. An electric motor, a magnetic sheave arranged to be driven thereby, a car, a counterweight, a cable of magnetic material running on the sheave and connecting the car and the counterweight and a generator connected to run with the motor and arranged to energize the sheave.

18. An alternating-current motor, a magnetic sheave arranged to be driven thereby, a reversing-switch for the motor, an opposition element in the motor-circuit, a car, a cable connecting the car and the sheave, a direct-current generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, said voltage arranged to energize the sheave, and an electroresponsive device actuated by said variable voltage for automatically cutting the opposition element out of the motor-circuit.

19. An alternating-current motor, a magnetic sheave arranged to be driven thereby, an electrically-actuated reversing-switch for the motor, an electrically-actuated brake for the motor, an opposition element in the motor-circuit, a car, a cable connecting the car and the sheave, a direct-current generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, said voltage arranged to energize the sheave, an electroresponsive device actuated by said variable voltage for automatically cutting the opposition element out of the motor-circuit and manually-operated circuit-closer for operating the reversing-switch and the brake.

20. An alternating-current motor, a magnetic sheave arranged to be driven thereby, an electrically-actuated reversing-switch for the motor, an electrically-actuated brake arranged to be released when the motor is energized, an opposition element in the motor-circuit, a car, a counterweight, a cable of magnetic material connecting the car and the counterweight and running on the sheave, a direct-current generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, a second brake arranged to be applied to the motor by the variable voltage in stopping, said voltage being arranged to energize the sheave, an electroresponsive device actuated by said variable voltage for automatically cutting the opposition element out of the motor-circuit and a car-switch arranged to control the movement of the motor.

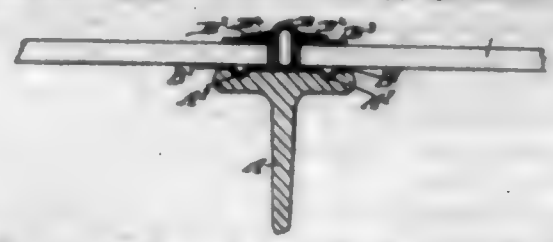
21. A motor, a magnetic sheave arranged to be driven thereby, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.

22. A motor, a magnetic sheave arranged to be driven thereby, said sheave comprising sections along its periphery arranged to be alternately magnetized with opposite polarities, a car, a cable connecting the sheave and the car, and a generator connected to run with the motor and arranged to energize the sheave.

23. A motor, a magnetic sheave arranged to be driven thereby, a car, a counterweight, a cable of magnetic material running over the sheave and connecting the car and the counterweight and a generator connected to run with the motor and arranged to energize the sheave.

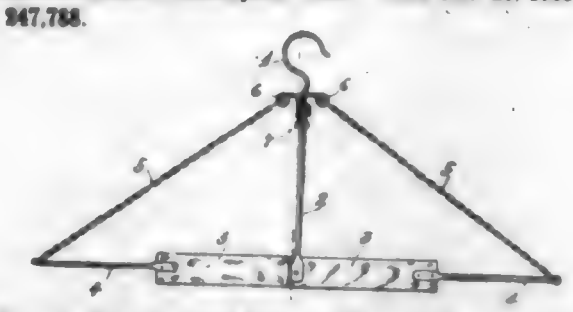
816,807. GLAZING DEVICE. Frank W. Mellowes, Sheffield, England. Filed Nov. 14, 1905. Serial No. 287,287.

Claim.—1. In a glazing device the combination with a glazing-bar having a flat-top table longitudinally grooved between the center and each edge of the table and provided with holes through the table, a web with slots in it constituting terminations of the holes, nuts engaged by the glazing-bar at the slots, an incorrodible bar on the top table with holes coaxial with those of said table, three integral flanges above the top table on each side of the incorrodible bar, the lower pair extending upon the top of the glazing-bar to form bearings for the glass, and bolts one extending through each set of the coaxial holes into engagement with the nut appropriated thereto.



2. In a glazing device the combination with a glazing-bar having a flat-top table longitudinally grooved between the center and each edge of the table and provided with holes through the table, a web with slots in it constituting terminations of the holes, nuts engaged by the glazing-bar at the slots, an incorrodible bar on the top table with holes coaxial with those of said table, three integral flanges above the top table on each side of the incorrodible bar, the lower pair extending upon the top of the glazing-bar to form bearings for the glass, bolts one extending through each set of the coaxial holes into engagement with the nut appropriated thereto and packing in the longitudinal grooves.

816,808. GARMENT-HANGER. Walter E. Mesmo, Minneapolis, Minn., assignor of one-third to Fred A. Richter and one-third to Herman A. Richter, Minneapolis, Minn. Filed Feb. 28, 1905. Serial No. 247,788.



Claim.—1. In a garment-hanger, the combination with a pair of spring-legs, and means for supporting the same, of a pair of clamping-strips independently pivoted to each of said legs, leaving an unobstructed space between the said two legs, and means for forcing said clamping-strips onto a garment placed between them, substantially as described.

2. In a garment-support, the combination with a pair of spring-legs, provided at their upper ends with a supporting device, of clamping-strips pivoted to the lower ends of said legs, in oppositely-projecting pairs, the outer ends of said pairs of clamping-strips being connected by approximately U-shaped spring members, flexible connections between the upper portions of said legs and the outer portions of said U-shaped members, and means for forcing said clamping-strips onto a garment placed between them, substantially as described.

3. In a garment-support, the combination with a pair of spring-legs 2, having at their upper end a hook 1, and a link 7 slidable on said legs, of the clamping-strips 3 pivoted to the lower ends of said legs, with a clearance-space between the two pivots, the U-shaped spring-sections 4 connecting the ends of said clamping-strips 3, and flexible connections between the outer portions of said sections 4 and the upper portions of said spring-legs 2, substantially as described.

816,809. CAR-CUSPIDOR. Emanuel Metzger, Kingston, N. Y., assignor of two-thirds to Julius Hardenburgh and Nathan David, Kingston, N. Y. Filed Sept. 5, 1903. Renewed Aug. 25, 1905. Serial No. 275,847.



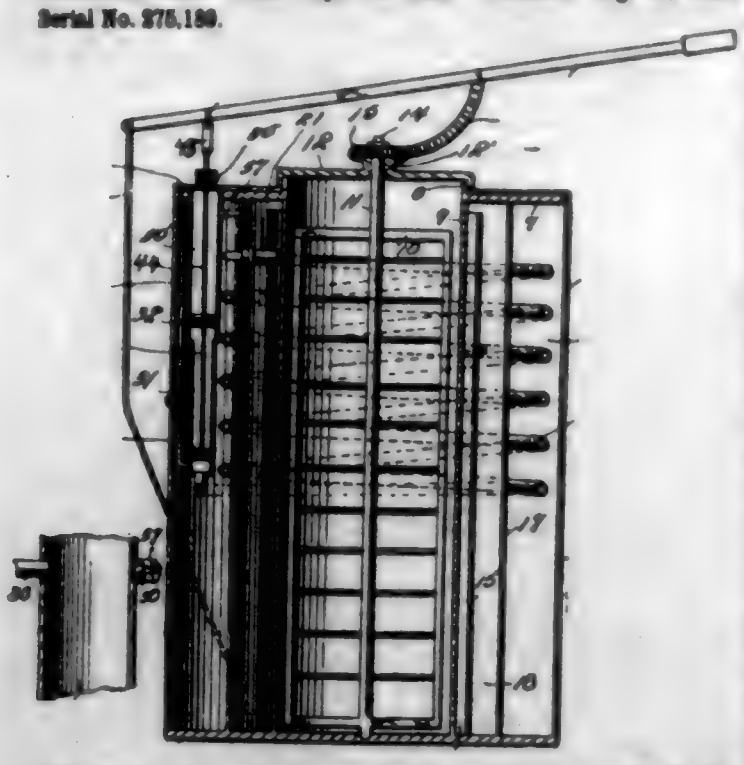
Claim.—1. A cuspidor comprising a body provided with a hinged top member having adjacent to one end thereof a receiving-opening and provided at its under side with rigid guides extending beneath the imperforate portion of the top and along the opposite side edges of the receiving-opening, said rigid guides being provided

at spaced intervals with holding-recesses, and a foot-actuated sliding cover held to operate within the fixed guides and provided contiguous to the opposite side edges with pendent bosses slidable on the guides and adapted to engage in the holding-recesses when the cover is in either of its extreme positions, and held so engaged with said recesses by the superimposed weight of the cover.

2. A cuspidor comprising a body provided with a top having a receiving-opening and rigid guides formed therein at spaced intervals with recesses, and a sliding cover provided at its under side with projecting bosses slidable on the flat surfaces of the guides and arranged in spaced relation for engagement with said recesses with the cover in either of its extreme positions, and so held in engagement with such recesses by the superimposed weight of the cover.

3. A car-cuspidor comprising a body provided with a top member having a receiving-opening therein and rigid guides coextensive with the said member, and a foot-actuated sliding cover working in said guides and provided with fastening means slidably engaging the guides and also having an interlocked connection therewith, said interlocked connection being temporarily maintained by the superimposed weight of the cover.

816,810. ICE-CREAM FREEZER. CLYDE E. MOLESWORTH, Oklahoma, Okla. Filed Sept. 24, 1903. Renewed Aug. 21, 1905. Serial No. 275,189.



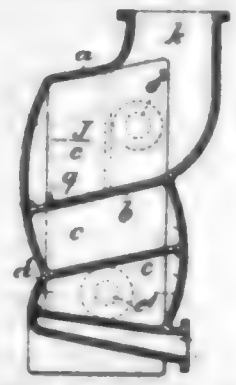
Claim.—1. A freezing apparatus comprising a receptacle for the material to be frozen, a refrigerating-chamber surrounding the receptacle, a refrigerant-chamber surrounding the refrigerating-chamber radiating-coil exterior to the refrigerant-chamber and connected at one end with the refrigerating-chamber and a compression apparatus having an inlet connected with the refrigerant-chamber and an outlet connected with the outer end of the radiating-coil, the refrigerating-chamber and the refrigerant-chamber being in communication at their upper ends to permit of overflow of the refrigerant from the refrigerating-chamber into the refrigerant-chamber.

2. A self-contained freezing apparatus comprising a receptacle for the material to be frozen, a refrigerating-chamber in active relation to the receptacle, a refrigerant-chamber communicating with the refrigerating-chamber, a radiating-coil lying exterior to the said receptacle and chambers, and connected at one end with the refrigerating-chamber, a compressor having its outlet end connected with the coil and its inlet end connected with the refrigerant-chamber, and a water-chamber surrounding said receptacle and first-named chambers and in which the coil and compressor are contained.

3. A freezing apparatus comprising a receptacle for the material to be frozen, a refrigerating-chamber in active relation to the receptacle, a water-chamber surrounding said receptacle and refrigerating-chamber, a radiator in the water-chamber, one end of the radiator being connected with the refrigerating-chamber and having an automatic relief-valve, and a compression-pump having an inlet in communication with the refrigerating-chamber and an outlet connected with the radiator at the opposite end thereof from the relief-valve.

4. A freezing apparatus comprising a receptacle for the material to be frozen, a refrigerating-chamber surrounding the receptacle, a refrigerant-chamber surrounding the refrigerating-chamber and communicating with the latter at its upper end, a water-chamber surrounding the refrigerant-chamber, a radiating-coil in the water-chamber encircling the refrigerant-chamber, one end of said coil being connected with the refrigerating-chamber and having an automatic relief-valve, and a pump in the water-chamber having an inlet connected with the refrigerant-chamber and having an outlet connected with the lower end of the coil.

816,811. APPARATUS FOR CONDENSING STEAM. DONALD B. MORMON, Hartlepool, England. Filed Jan. 22, 1905. Serial No. 242,422.



Claim.—1. Apparatus for condensing steam and heating water, comprising a heat-transferring compartment traversed by water-tubes and having at one side a steam-distributing chamber of gradually-increasing length in the direction of the length of the apparatus from its inlet to its outlet end and having its latter end corresponding in area and shape to the inlet end of said compartment and in open and free communication therewith, and at the other side a steam-outlet parallel to and of practically the same length as said tubes.

2. Apparatus for condensing steam and heating water, comprising a heat-transferring compartment having at one side thereof a downwardly-extending steam-distributing inlet-chamber of gradually-increasing length in the direction of the length of the apparatus and having its lower outlet end corresponding in length and height to the length and height of said compartment and curved toward said compartment for part of its length, and at the opposite side of said compartment a steam-outlet chamber also of the full height and length of the compartment, and water-tubes traversing said compartment and parallel to the steam inlet and outlet.

3. Apparatus for condensing steam and heating water, comprising a heat-transferring compartment having at one side a steam-inlet space and at the other side a steam-outlet space, said steam-spaces each extending the full length and depth of the said compartment and in free and open communication therewith, the steam-inlet space gradually decreasing in cross-sectional area from its inlet and the steam-outlet space gradually increasing in cross-sectional area toward its outlet end, and water-tubes traversing said compartment in a direction parallel to said steam-spaces.

4. Apparatus for condensing steam and heating water comprising a casing provided internally with diaphragms arranged to form successive heat-transferring compartments and water-tubes extending longitudinally through said compartments, the successive compartments communicating with each other through alternately-arranged connecting-ports each of which extends longitudinally and practically throughout the full length of the compartments and parallel to the water-tubes therein.

5. Apparatus for condensing steam and heating water comprising a casing provided internally with diaphragms arranged to form successive heat-transferring compartments and water-tubes extending longitudinally through said compartments, the successive compartments communicating with each other through alternately-arranged steam inlet and outlet spaces or openings and connecting-ports that extend longitudinally and practically throughout the full lengths of the compartments and are parallel to the water-tubes therein for the purpose set forth.

6. Apparatus for condensing steam and heating water comprising a casing provided internally with diaphragms arranged to form successive heat-transferring compartments and water-tubes extending longitudinally through said compartments, the successive compartments communicating with each other through alternately-arranged connecting-ports of successively-decreasing cross-sectional area in the direction in which the steam flows through the apparatus, for the purpose set forth.

7. Apparatus for condensing steam and heating water comprising a casing divided internally by diaphragms into successive heat-transferring compartments that communicate with each other

through alternately-arranged connecting-ports, and groups of water-tubes arranged to traverse the said compartments in a direction parallel to said connecting-ports and to leave between them and the adjacent sides of the compartments and at opposite sides of each connecting-port clear uninterrupted or tubeless outlet and inlet spaces or passages, the cross-sectional area of each connecting-port being such that the velocity of flow through the port and the adjacent inlet space or passage will approximate to the velocity of flow from the group of tubes in the adjacent compartment.

8. In apparatus for condensing steam and heating water, a number of successive heat-transferring compartments that are traversed by nests of water-tubes arranged at right angles to the direction in which steam will flow through them and are connected together in pairs by ports parallel to said tubes, the longitudinal space located between each nest of tubes and the adjacent side wall of the compartment containing said nest of tubes being made of varying cross-sectional area in the direction in which the steam flows, the cross-sectional area of each outlet-space from one nest of tubes gradually increasing in the direction toward the port leading to the inlet-space of the next adjacent nest of tubes and the cross-sectional area of each inlet-space gradually decreasing in a direction away from the said port.

9. Apparatus for condensing steam and heating water comprising a casing divided internally by diaphragms into successive heat-transferring compartments that communicate with each other through alternately-arranged connecting-ports, and groups of water-tubes arranged to traverse the said compartments in a direction parallel to said connecting-ports and to leave between them and the adjacent sides of the compartments and at opposite sides of each connecting-port clear uninterrupted or tubeless outlet and inlet spaces or passages that extend approximately the full length of the compartments and embrace the adjacent sides of adjacent pairs of compartments and each of which increases in cross-sectional area from its remote end toward the corresponding connecting-port between two compartments.

10. In apparatus for condensing steam and heating water a pair of adjacent heat-transferring compartments in communication with each other at one side through a connecting-port extending practically the full length of the compartments and having a concave side wall common to the adjacent sides of the two compartments, and groups of water-tubes extending lengthwise through said compartments parallel to said connecting-port and arranged to leave between them and the side wall outlet and inlet spaces of approximately plano-concave section at opposite sides of said connecting-port, each of said spaces having its widest part adjacent to the connecting-port between each pair of them and diminishing in width in a direction extending away from said port.

11. Apparatus for condensing steam and heating water, comprising a number of successive heat-transferring compartments traversed by water-tubes and connected together alternately at opposite sides by sets of tubeless outlet and inlet spaces with interposed connecting-ports that extend practically the full length of the compartments, the successive sets of outlet and inlet spaces with intervening connecting-port being of successively-decreasing size in the direction of the flow of steam through the apparatus.

12. Apparatus for condensing steam and heating water, comprising heat-transferring compartments provided with water-tubes, and separate liquid-sealed outlets arranged to simultaneously lead away water of condensation from different parts of said apparatus.

13. Apparatus for condensing steam and heating water, comprising successive heat-transferring compartments provided with water-tubes, a water-receptacle, and separate liquid-sealed outlet-passages of small surface area arranged to lead water of condensation simultaneously and independently from different parts of said apparatus to said water-receptacle.

14. Apparatus for condensing steam and heating water, comprising successive heat-transferring compartments provided with separate water-tubes, a hot-well, and water-sealed drain-passages of small surface area extending from different parts of said apparatus and in communication with said hot-well.

15. Apparatus for condensing steam and heating water, comprising a casing divided internally, by diaphragms into successive heat-transferring compartments arranged in communication with each other and having inclined lower sides, water-tubes traversing said compartments, water-sealed drain-passages of small surface area each leading from an inclined lower side, and a hot-well into which said drain-passages discharge.

16. Apparatus for condensing steam and heating water, comprising a casing divided internally by diaphragms into successive heat-transferring compartments that are in communication with each other through connecting-ports arranged alternately at opposite parts of the apparatus, a water-receptacle, and separate water-sealed drain-passages of small surface area arranged at one end of the apparatus and adapted to allow of water of condensation flowing off simultaneously from different compartments into said receptacle.

17. Apparatus for condensing steam and heating water, comprising a casing divided internally by diaphragms into successive heat-transferring compartments connected together in pairs by alternately-arranged ports and having inclined lower parts, a hot-well, and water-sealed drain pipes or passages arranged to receive water of condensation from said inclined lower parts and discharge it into said hot-well.

18. Apparatus for condensing steam and heating water comprising a casing divided into successive heat-transferring compartments arranged one above the other, connected together by a longitudinal port, and separated by a partition one side of which terminates adjacent to said port, and water collecting and guiding means arranged at the free side of said partition for the purpose set forth.

19. In apparatus for condensing steam and heating water, heat-transferring compartments arranged one above the other, connected together by a longitudinal port, and separated by a partition one side of which terminates adjacent to said port, and an upwardly-projecting lip extending along the free side of said partition and adapted to prevent water of condensation flowing over the edge of said partition in drops or spray.

20. Apparatus for condensing steam and heating water, comprising heat-transferring compartments arranged one above the other and connected together at one side of the apparatus through a connecting-port and separated by a partition one side of which terminates at one side of said port, a water-sealed drain-passage, and means arranged near the free edge of said partition and adapted to collect water of condensation flowing over said partition and guide it to said drain-passage.

21. Apparatus for condensing steam and heating water, comprising heat-transferring compartments arranged one above the other and connected together at one side of the apparatus through a connecting-port and separated by a partition one side of which terminates at one side of said port, a water-sealed drain-passage located at one end of said apparatus, and an upwardly-projecting lip extending along the free edge of said partition and adapted to collect water of condensation from said partition and direct it toward said drain-passage.

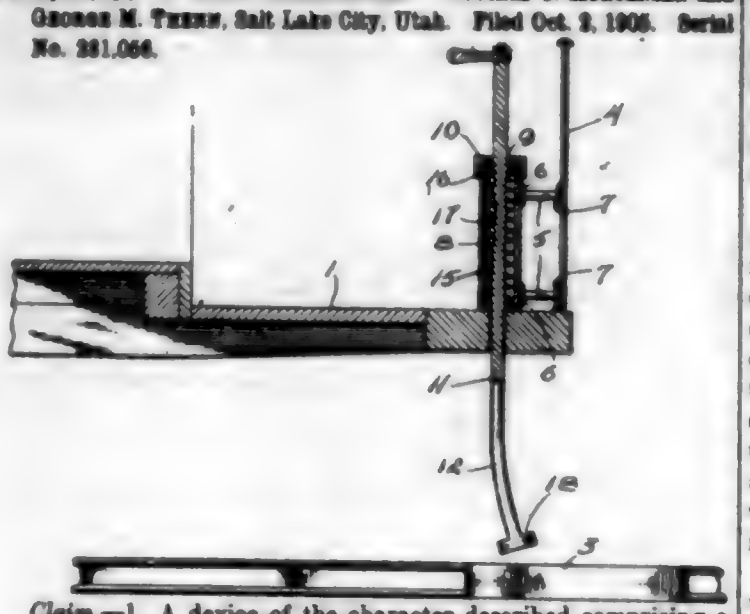
22. Apparatus for condensing steam and heating water, comprising a number of connected heat-transferring compartments arranged one above the other and separated by inclined diaphragms, the lowest compartment having an inclined bottom, a steam-distributing chamber in connection with the first compartment, and an air-outlet in communication with the last compartment, nests of water-tubes extending horizontally through said compartments, means connecting the nests of tubes together to form a passage-way through which water can be caused to flow, a hot-well at the lower part of said apparatus, and separate drain-pipes extending from the lower parts of some of the compartments to said hot-well.

23. Apparatus for condensing steam and heating water, comprising a number of connected superimposed heat-transferring compartments made of different capacities and separated from each other by inclined diaphragms, the largest compartment being at the top and the smallest at the bottom, a steam-distributing chamber arranged at one side of the apparatus and made of increasing cross-sectional area from its inlet to its outlet end the latter end being in free and open communication practically over the whole length and height of the inlet end of said largest compartment and draining into that compartment, an air-outlet from the lowest compartment, nests of tubes extending through said compartments, communicating passages between the adjacent ends of said compartments, said passages extending practically the full length of said compartments, a drain-pipe for the upper pair of compartments and the steam-distributing chamber, a separate drain-pipe for the lowest compartment, and a hot-well into which said drain-pipes discharge.

24. Apparatus for condensing steam and heating water, comprising a casing, inclined diaphragms arranged one above the other and extending alternately from opposite sides of said casing so as to form a number of connected superimposed compartments of different capacities, a steam-distributing chamber of gradually-increasing length, in the direction of the length of the apparatus, from its inlet to its outlet end which is in direct communication with the inlet end of the largest compartment, an air-outlet from the smallest compartment, and connecting spaces of plano-concave section between the adjacent sides of pairs of compartments and the adjacent side wall of

the casing, a drain-pipe leading from the inclined bottom of the lowest compartment, a drain-pipe leading from the lower end of the second diaphragm from the bottom of the casing, and a hot-well located at the bottom of said apparatus and into which the said drain-pipes discharge below the level of water therein.

816,812. SWITCH MECHANISM. WILLIAM C. MORTENSEN and GEORGE M. TYRRE, Salt Lake City, Utah. Filed Oct. 2, 1905. Serial No. 281,056.

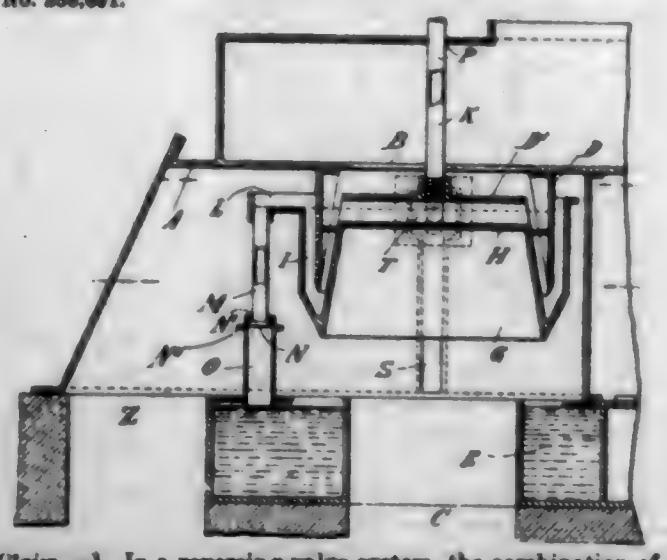


Claim.—1. A device of the character described comprising a casing having a removable cap, alining perforations formed one in the cap and one in the bottom of the casing, a curved arm mounted for slidable and rotatable movement with respect to the casing, the lower end of the said curved arm having a transverse enlargement, and a hand-lever detachably secured to the upper end of said arm.

2. The combination with a car-body, of a pair of arms secured thereto, a casing secured to the arm and provided in its bottom with a central perforation, a cap removably disposed upon the upper end of the casing and provided with a central perforation for alinement with the aforesaid perforation, a curved arm slidably and rotatably mounted in the casing through the aforesaid perforations, a helical spring surrounding the arm within said casing, a washer removably disposed upon the arm and located within the casing, and a hand-lever secured to the upper end of the arm.

3. A device of the character described comprising a casing having a central perforation in one end, and a removable cap at its upper end provided with a perforation for alinement with the aforesaid perforation, an arm mounted for sliding and rotatable movement within the casing through said perforations and having its lower end curved and enlarged transversely at its extremity, a helical spring surrounding said arm within the casing, a washer removably engaged with the arm and located normally within the casing, and a lever mounted upon the upper end of the arm to cause a rotatable and sliding movement of the latter.

816,813. REVERSING-VALVE FOR REGENERATIVE FURNACES. JOHN B. MAU, New York, N. Y. Filed Nov. 22, 1905. Serial No. 288,691.



Claim.—1. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, and a valve working between said seats in such a manner that at one period it makes a water seal with one seat only and at another period a simultaneous water seal with both seats, said valve being made of a partition, a vertically-movable water-trough around the rim of the partition and an overflow from the water-trough, and provided with means to prevent the water discharged through the overflow from coming into direct contact with the draft air and the hot gases during the descent of the trough from upper position to the lower water seal.

2. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, and a valve working between said seats in such a manner that at one period it makes a water seal with one seat only and at another period a simultaneous water seal with both seats, said valve being made of a partition, a water-trough around the rim of the partition and movable therewith, an overflow from the water-trough, a discharge-pipe hanging from the overflow and another pipe that leads the water to the lower water-seal trough and into which said hanging pipe extends.

3. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, and a valve working between said seats in such manner that at one period it makes a water seal with one seat only and at another period a simultaneous water seal with both seats, said valve being made of a partition, a water-trough around the rim of the partition and movable therewith, an overflow from the water-trough, a pipe extending from the overflow and a second pipe telescoping therewith in such a manner that in the upward movement of the valve, there happens a moment when said second pipe is caught and lifted up by said first pipe and in the downward movement of the valve there happens a time when said second pipe will be prevented from moving farther down with said first pipe.

4. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, a valve that works between said seats in such a manner that at one period it makes a water seal with one seat only and at another period a simultaneous water seal with both seats, said valve being made of a partition, a water-trough around the outer rim of the partition with a cross-section narrowing down toward its bottom and an overflow from the water-trough, and provided with means to remove the water discharged through the overflow from the direct influence of the draft and hot gases.

5. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, a valve that works between said two seats in such a manner that at one period it makes a water seal with one seat only and at another period a water-seal with both seats, said valve being made of a partition, a water-trough around the outer rim of the partition and an overflow from the water-trough with its bottom higher up than the top of the partition, and provided with means to remove the water discharged through the overflow from the direct influence of the draft air and the hot gases.

6. In a reversing-valve system, the combination within the limits of one valve-chamber, of an upper valve-seat, a lower valve-seat, a valve working between said seats in such a manner that at one period it makes a water seal with only one of said seats and at another period a water seal with both said seats, and at least one valve-guide sliding in a vertical slot in the side plate of the casing.

7. In a reversing-valve system, the combination of an upper valve-seat, a lower valve-seat, a valve working between said seats in such a manner that at one period it makes a water seal with one seat only and at another period a simultaneous water seal with both seats, a valve-guide consisting of at least one bolt screwed to the side of the valve and a slot in the side plate in which it slides, the slot widening at its upper end into a space open at the back, and a removable cover to close said space in the back.

816,814. ANIMAL-TRAP. CHARLES F. NELSON, Galesburg, Ill., assignor to E-Z Manufacturing Company, Galesburg, Ill., a Corporation of Illinois. Filed July 12, 1904. Serial No. 216,262.



Claim.—1. A trap comprising a base, a base-plate secured thereto having perforated ears at its ends, and an arm or plate integral with the base-plate and having perforated ears, and a slot or way in one of last aforesaid ears leading to one of said last-named perforations.

2. In an animal-trap, a base, a base-plate secured thereto transversely thereof, upturned perforated ears at the ends of said plate, an arm extending from said plate and having perforated ears at the ends thereof, one of said last-named ears having a slot leading to the

perforation therein, and a tripping-lever having studs adapted to engage with said perforations and slot.

3. A trap comprising a base, a base-plate secured thereto, an arm or plate having eyes, a way leading to one of said eyes, a tripping-lever having studs greater in one cross-dimension than in the other, a locking-lever and a spring-actuated jaw.

4. A trap comprising a base, a base-plate and an arm integral therewith fixed to said base, said arm having perforated ears and a slot leading to one of said perforations, and a tripping-lever having studs adapted to be seated in said perforations, one of said studs being of such shape that it will pass freely through said slot when in one position but in no other.

5. A trap comprising a base, a base-plate and an arm integral therewith fixed to said base, said arm having perforated ears, a slot in one of said ears, a tripping-lever having studs adapted to be seated in said perforations, one of said studs being adapted to pass freely through said slot when in one position but in no other, a locking-lever, a jaw, and a spring adapted to actuate said jaw and to hold the tripping-lever in such position that it cannot be disengaged from said perforations.

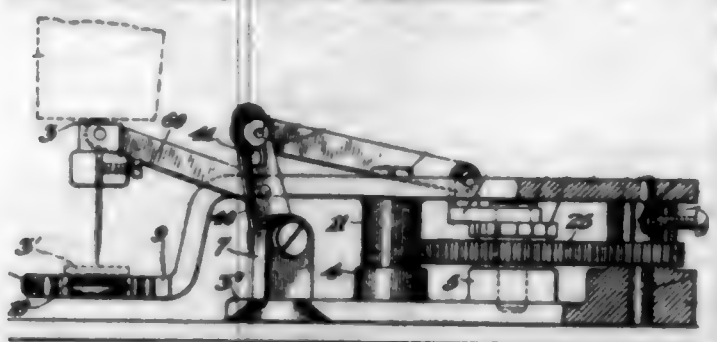
6. A trap comprising a base, a base-plate secured thereto, an arm or plate having eyes, a way leading to one of said eyes, a tripping-lever having studs the thickness of which is small in comparison with their other dimensions, a locking-lever and a spring-actuated jaw.

7. In a trap, an integral base-plate and arm, said arm having upturned ends, one of said ends having a perforation and the other a slotted eye.

8. A tripping-lever for animal-traps comprising an extended major portion, an upturned end, an aperture in said end and a detent overlying said aperture.

9. In a trap, a base, a base-plate, perforated ears at the end of said plate, and an arm or plate having its ends turned upwardly, a perforation in one of said last-named ends and a slot in the other.

816,815. **BUTTON-SEWING ATTACHMENT FOR SEWING-MACHINES.** CHARLES E. ONGLEY, New York, N. Y., assignor of one-half to George S. Terry and one-fourth to Ella L. Ongley, both of New York, N. Y. Filed Apr. 18, 1905. Serial No. 256,230.



Claim.—1. The combination with a sewing-machine of a button-sewing attachment therefor comprising a gear-wheel, a disk extending from the said wheel having an elongated slot, a block located in said elongated slot, a screw threaded through the disk and engaging the said block in a direction at right angles to the axis of said gear-wheel, means to clamp the screw in position with said disk, an arm pivoted to said block, means connected with the arm to hold a button, and means to rotate the gear-wheel, and thereby move the arm.

2. In a button-sewing attachment for a sewing-machine the combination of a gear-wheel, a disk extending from said wheel, a block located in an elongated slot in the disk, means to secure the said block at various distances from the axial line of the gear-wheel, an arm pivoted to said block, adjustable means connected with the arm to hold a button, means to rotate the gear-wheel, a second pivot located to be engaged with an elongated slot in said arm, means to turn the gear-wheel and thereby revolve the pivot extending from said block, and move the means to hold the button.

3. In a button-sewing attachment for a sewing-machine the combination of a pivot, an arm having an elongated slot in about its central portion that is engaged with said pivot, a gear-wheel located under one end of said arm, means to intermittently rotate said wheel, a block arranged to move with said wheel, a pivot extending from the block, a screw perpendicular to the axial line of the pivot, means carried by the wheel for supporting the screw, means for connecting the screw to said block whereby said block may be adjusted and held at different radial distances from the axial line of the gear-wheel, and means at the other end of the arm to hold a button.

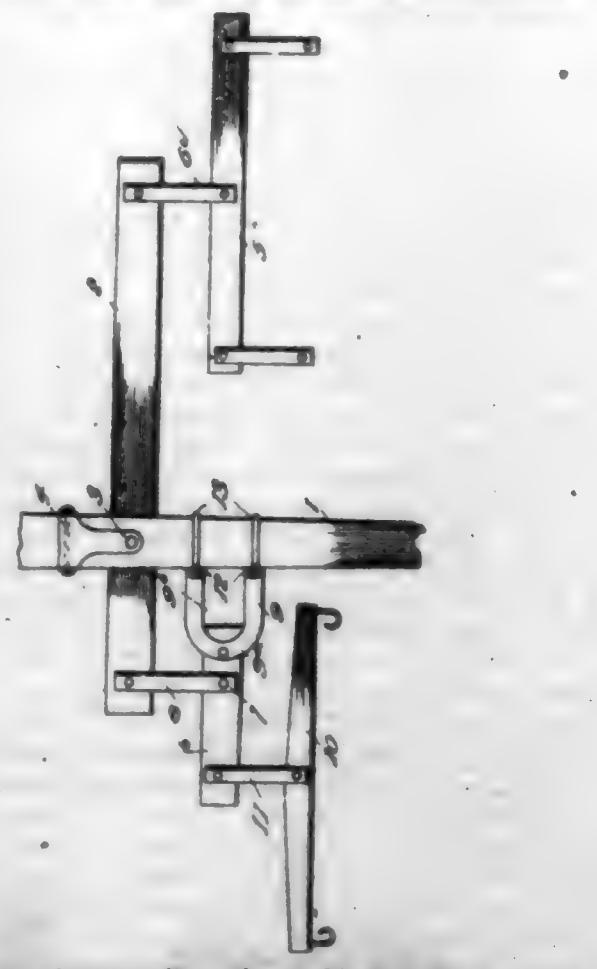
4. In a button-sewing attachment the combination of an arm, means to move an end of the arm in a predetermined path, jaws slidably supported on the arms, springs having grooves attached to the jaws, an arm pivoted to each jaw, a pivot joining the other ends of the latter arms, means to open the jaws and maintain them parallel with each other, and at the same time move the joined end of the latter arms in directions perpendicular to the direction of the movements of the jaws.

5. In a button-sewing attachment the combination of an arm, means to move an end of the arm in a predetermined path, a bar on the arm, jaws slidably supported on the bar, springs having grooves attached to the jaws, an arm pivoted to each jaw, a pivot joining the other ends of the latter arms, a shaft, a right-handed thread on one end of the shaft, and a left-handed thread on the other end thereof, another arm extending from the said bar and engaging a groove of the said shaft.

6. The combination of a sewing-machine and a button-sewing attachment therefor, comprising a needle-bar, a needle connected to the bar, an arm, connections between the bar and said arm to move an end of the said arm so as to carry the openings in a button in the path of the needle in a predetermined way, jaws extending from the arm, grooved springs extending from the jaws, arms pivoted to the jaws so as to hold a button at one point of its circumferential edge, with two points of said edge bearing against the springs.

7. The combination of a sewing-machine, and a button-sewing attachment, comprising a needle-bar, a support, an arm swinging from the support, a link supported on a pivot of the needle-bar and on a pivot on said arm, a boss, a shaft arranged to rotate therein, a gear-wheel supported on the shaft, a ratchet-wheel on the shaft, a plate fastened to the shaft, a spring-actuated pawl on the plate arranged to engage the ratchet-wheel, a post extending from the said plate, a second link pivoted to said post and adjustably pivoted to the arm, a second gear-wheel meshing with the first gear-wheel, a disk extending from the second gear-wheel, a block located in an elongated slot of the disk, a pivot extending from the block, means to vary the distance between the axis of the pivot and the second gear-wheel, a second boss, a pivot extending from the latter boss, an arm with an elongated slot engaging the latter pivot, and having a hole at one end engaging the pivot of the said block, and an adjustable button-holding device at the other end of the arm.

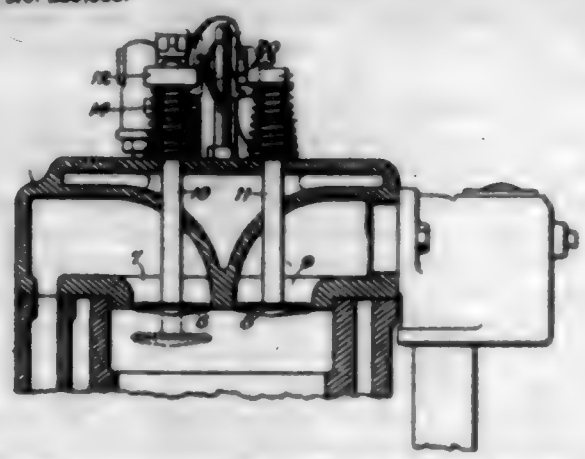
816,816. **DRAFT-EQUALIZER.** JOHN R. PARKS and JAMES H. DAY, Wood Lake, Nebr. Filed Sept. 22, 1905. Serial No. 279,672.



Claim.—In a draft-equalizer, the combination of a tongue, a transverse equalizing-lever pivoted at its ends to the tongue, a bracket projecting laterally from the tongue in advance of the equalizing-lever, said bracket being composed of upper and lower U-shaped bracket-irons, U-shaped clamps receiving the tongue and connecting

the bracket-irons together and securing the same to the tongue, a short lever connected at its inner end with the bracket and having said end received between the bracket-irons, a link connecting the short lever at a point between its ends with one end of the equalizing-lever and whiffletrees connected with the other end of the equalizing-lever and with the outer end of the short lever.

816,817. VALVE-CONTROLLING MECHANISM FOR GAS-ENGINES. HENRY J. PODLESÁK, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Oct. 22, 1904. Serial No. 229,518.



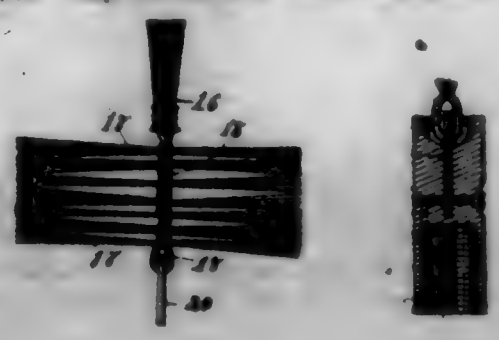
Claim.—1. In a gas-engine, the combination of inlet and exhaust ports and valves operating to open and close said ports alternately, means for operating said exhaust-port valve, means unconnected with said valve-operating means for holding the inlet-valve positively closed, said means adapted to engage with and be directly controlled by the exhaust-valve in moving toward its seat.

2. In a gas-engine, the combination of a cylinder, inlet and exhaust ports and valves operating to open and close said ports alternately, means for operating said exhaust-port valve, said valves having projecting stems outside said cylinder, springs surrounding said stems and operating to hold said valves against their seats, a two-armed lever mounted to vibrate between said valve-stems, independent of said valve-operating means one arm of said lever engaging the inlet-valve to hold it positively closed when the exhaust-valve is open, and the other arm of the lever being engaged with the stem of the exhaust-valve so as to release said inlet-valve when the exhaust-valve is moving toward its seat.

3. In a gas-engine, the combination of a cylinder, inlet and exhaust ports and valves operating to open and close said ports alternately, means for operating said exhaust-port valve, said valves having projecting stems outside said cylinder, springs surrounding said stems and operative to hold said valves against their seats, a stud between said stems, a two-armed lever pivoted on the stud, one arm of said lever engaging the inlet-valve to hold it positively closed when the exhaust-valve is open, and the other arm of said lever being engaged with the stem of the exhaust-valve so as to release the inlet-valve when the exhaust-valve is moving toward its seat.

4. In a valve mechanism for gas-engines, the combination of a cylinder, inlet and exhaust ports communicating therewith, valves operating to open and close said ports alternately, means for operating said exhaust-port valve, said valves having projecting stems outside said cylinder, springs surrounding said stems and operative to hold said valves against their seats, a stud between said stems, a two-armed lever pivoted on the stud, one arm of said lever engaging the inlet-valve to hold it positively closed when the exhaust-valve is open, a spring operative to hold said arm in contact with said stem, and the other arm of the lever engaging with the stem of the exhaust-valve so as to release the inlet-valve when the exhaust-valve is moving toward its seat.

816,818. BOTTLE-WASHING DEVICE. HENRY H. POGGENSEE, Chicago, Ill. Filed Nov. 29, 1904. Serial No. 234,704.



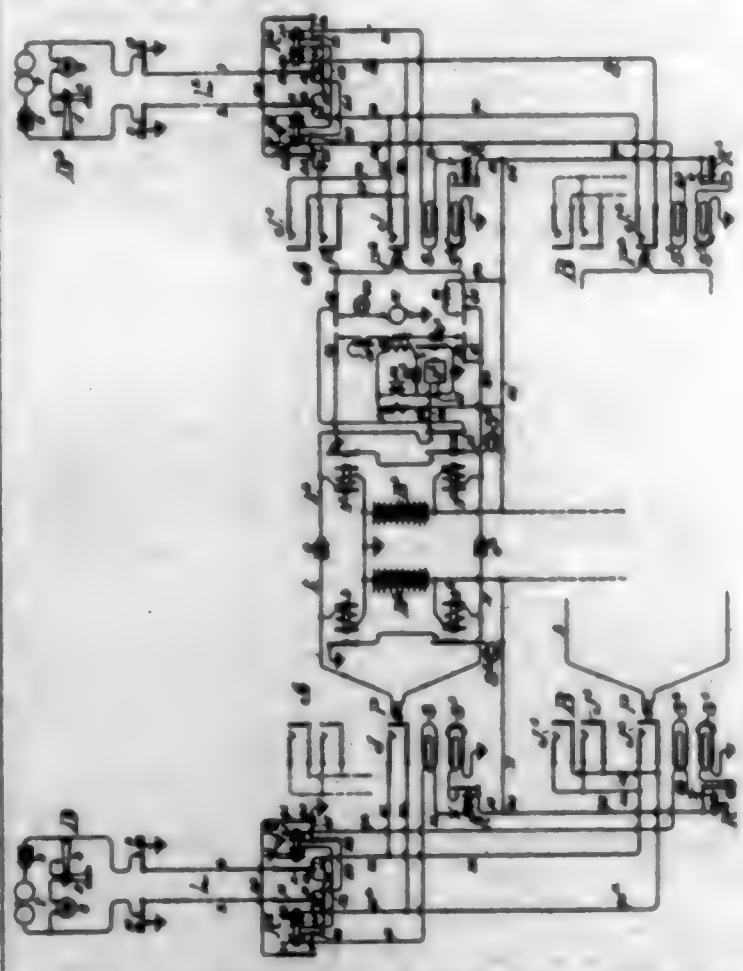
Claim.—1. In a telephone system, the combination with a telephone-line, of a plurality of relays therefor at the central office, parts controlled by said relays and means for causing the operation of said relays singly from the substation and simultaneously from the central office, substantially as described.

2. In a telephone system, the combination with a telephone-line, of two relays only therefor at the central office, parts controlled by said relays and means for causing the operation of said relays singly from the substation and simultaneously from the central office, substantially as described.

3. In a telephone system, the combination with a telephone-line, of a plurality of relays therefor at the central office, means controlled from the substation for operating said relays singly to produce different signals at the central office and means controlled from the central office for simultaneously operating both said relays to render said signals inoperative, substantially as described.

4. In a telephone system, the combination with a telephone-

816,819. TWO-DIVISION TELEPHONE SYSTEM. HOWARD M. PORT, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 24, 1903. Serial No. 178,528.



Claim.—1. In mechanism of the class described, the combination of a stock perforated for the passage of water and having a slot in its end and a brush adapted for cleaning purposes having a plate upon its lower end adapted to be inserted within said slot in said stock, and means for securing said plate in the stock.

2. In mechanism of the class described, the combination of a stock perforated for the passage of water and having a slot in its end and a brush adapted for cleaning purposes having a plate upon its lower end adapted to be inserted within said slot in said stock, and a screw through said stock and plate at right angles to said plate adapted to detachably secure said plate in position in the stock.

3. In mechanism of the class described, the combination of a stock perforated for the passage of water and having a slot cut lengthwise in one end and an enlarged recess in the same end, a brush loosely secured to a plate adapted to fit in said slot in said stock, the lower end of the brush being adapted to move freely within said enlarged recess in the end of the stock, and means for detachably securing said plate and brush in said position.

4. In mechanism of the class described, the combination of a stock perforated for the passage of water and having a slot cut lengthwise in one end and an enlarged recess in the same end, a brush loosely secured to a plate adapted to fit in said slot in said stock, the lower end of the brush being adapted to move freely within said enlarged recess in the end of the stock, and a detachable screw passing through said stock and plate at right angles to the plate.

line, of two relays therefor at the central office, means controlled from the substation for singly operating said relays to produce different calling signals at the central office, and further means controlled at the central office for operating both said relays to render said signals inoperative, substantially as described.

5. In a two-division exchange, the combination with a telephone-line extending from a substation to the central office, of a calling signal for the telephone-line in each division of the switchboard, two relays for the line each controlling one of said signals, means for singly operating either of said relays from the substation to actuate the corresponding signal, and means for operating both of said relays when connection is established with the line at either of said divisions to render said signals inoperative, substantially as described.

6. In a telephone system, the combination with a telephone-line extending from a substation to the central office, of two relays for the line at the central office, switches at the substation one for each relay, adapted when actuated to close a circuit of the corresponding relay so as to operate the same, and means at the central office for causing and controlling the operation of both said relays, substantially as described.

7. In a telephone system, the combination with a telephone-line, of two line-signals for the line located at different places in the switchboard, a relay for each said signal associated with the line, means at the substation for closing the circuit of said relays individually so as to selectively operate the said signals, and further means for closing an operating-circuit of both said relays when a connection is established with the line at the central office to actuate both relays to thereby render said signals inoperative, substantially as described.

8. In a telephone system, the combination with a telephone-line, of a pair of relays therefor at the central office, telephonic apparatus controlled by said relays, a central source of current located at the said office, means at the substation for closing a circuit from said source through either of said relays, and means for operating both said relays when a connection is established with the telephone-line, substantially as described.

9. In a telephone system, the combination with a telephone-line, of a pair of relays therefor at the central office, telephonic apparatus controlled by said relays, a central source of current at said office, means at the substation for closing a circuit from said source through either of said relays, and means at the central office for closing a circuit from said source through both said relays, substantially as described.

10. In a telephone system, the combination with a telephone-line, of a pair of relays therefor, each of said relays having two windings, telephonic apparatus controlled by said relays, means at the substation for closing a circuit for current through one winding of each of said relays so as to operate them singly, and means at the central office for simultaneously closing a circuit through the other windings of both said relays to operate them jointly, substantially as described.

11. In a telephone-exchange, the combination with a telephone-line, of a pair of relays therefor, telephonic apparatus controlled by said relays, means at the substation of the line for actuating either of said relays singly, a locking-circuit for each of said relays, and means for energizing both of said relays simultaneously when a connection is established with the line at the central office, substantially as described.

12. In a telephone-exchange, the combination with a telephone-line, of two relays therefor, telephonic apparatus controlled by said relays, means for energizing one of said relays over one line conductor and for energizing the other over the other line conductor, the energizing of one of said relays from the substation serving to open the path for current from the substation through the other relay, whereby the actuation of one relay prevents the simultaneous actuation of the other from the substation, and means for actuating both of said relays when a connection is established with the line at the central office, substantially as described.

13. In a telephone system, the combination with a telephone-line, of two relays therefor at the central office, telephonic apparatus controlled by said relays, means controlled from the substation for energizing one of said relays over one line conductor and the other relay over the other line conductor, said relays serving when so actuated to open the substation-circuit of the other relay, whereby both relays cannot be simultaneously actuated from the substation, a locking-circuit for each of said relays completed through normal contacts of the other relay, and means for operating both relays when a connection is established with the line whereby said locking-circuits are opened, substantially as described.

14. In a telephone system, the combination with a metallic telephone-line, a relay and a signaling device in series in each of the line conductors, a source of current with which said line conductors are normally connected, a local locking-circuit for each of said relays adapted when closed to short-circuit the resistance of the line conductor, and means when a connection is established with the line for actuating both said relays to thereby render the locking-circuits and signaling devices inoperative, substantially as described.

15. In a telephone system, the combination with a metallic telephone-line, of a relay, a line-signaling device and a source of current in series in the order named in each line conductor; a portion of the conductor between the source of current and the signaling devices being common to a plurality of lines, and a pilot-signaling device located in said common portion, substantially as described.

16. In a telephone system, the combination with a metallic telephone-line, of two signals therefor at the central office located upon different divisions of the switchboard, two relays for the line adapted to be singly operated from the substation to actuate either of said signals selectively, and means when a connection is established with the line for operating both of said relays to render said signals inoperative during the connection, the path for current for said operation of the said relays including a portion of the talking-circuit, substantially as described.

17. In a telephone system, the combination with a metallic telephone-line, of line-signals therefor located upon different divisions of the switchboard, two line-relays for the line adapted to be singly operated from the substation, one of said relays controlling one of said signals and the other controlling the other signal, and means when a connection is established with the line for operating both of said relays over a local circuit including a portion of one side of the talking-circuit, substantially as described.

18. The combination with a telephone-line, of normally disconnected connection-terminals for the line at the central office, a pair of signals for the line at the central office, two relays also at the central office and adapted to be singly operated from the substation to control the operation of either of said signals, and means to operate both of said relays when connection is established with said lines to render said line-signals inoperative and to connect the normally disconnected connection-terminals with the line, substantially as described.

19. In a telephone-exchange, the combination with a telephone-line, of two relays therefor, a signal controlled by each relay, means at the substation of the line for controlling the actuation of either of said relays singly, the actuation of one relay serving to prevent the simultaneous actuation of the other, and means for actuating both of said relays when a connection is established with the line at the central office, substantially as described.

20. In a telephone system, the combination with a telephone-line, of two relays therefor at the central office, a signal controlled by each relay, means controlled from the substation for energizing one of said relays over one line conductor and the other over the other line conductor, a locking-circuit for each of said relays completed through normal contacts of the other relay, and means for operating both relays when a connection is established with the line whereby said locking-circuits are opened, substantially as described.

21. In a telephone system, the combination with a telephone-line, of two signals therefor at the central office located upon different divisions of the switchboard, two relays for the line adapted to be singly operated from the substation to actuate each of said signals selectively, cord-circuits to establish connections with the line for conversation, a source of current associated with the cord-circuits, and means when a connection is established with the line by said cord-circuits for operating both of said relays by current from said source to render the signals inoperative during the connection, said source being included in the metallic talking-circuit to furnish current to the subscriber's station for the operation of the transmitter, substantially as described.

22. In a telephone system, the combination with a metallic telephone-line, of two signals therefor at the central office located upon different divisions of the switchboard, a central source of current with which said line is connected at the central office, two relays for the line adapted to be operated from said source, means at the substation to cause the operation of said relays singly, a cord-circuit at the central office to establish connections with the line for conversation, and means for including said source and both relays in a local circuit including a portion of the talking-circuit when a connection is established for conversation, whereby said relays are operated to render the signals inoperative during a connection and the said source is included in the metallic circuit of the line to furnish current for conversation, substantially as described.

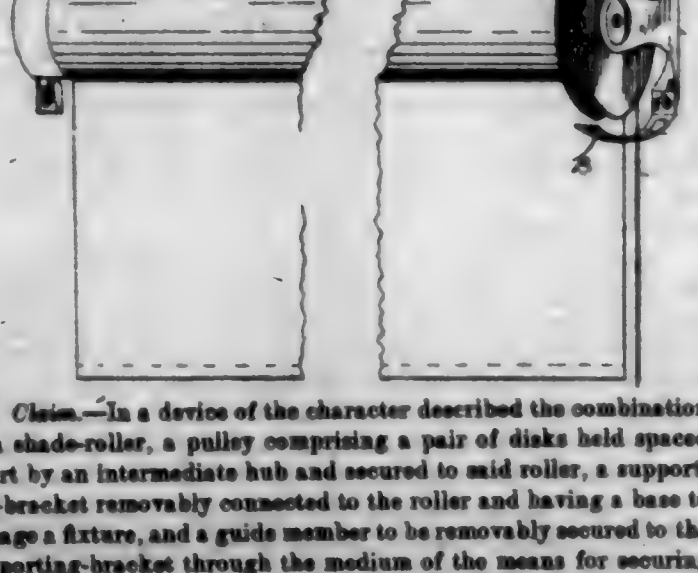
23. In a telephone system, the combination with a telephone-

line of signals therefor located upon different divisions of the switch-board, a pair of relays for the line at the central office each controlling one of said signals, a central source of current at the central office adapted to operate said relays when the circuits thereof are closed at the substation, and a cord-circuit at the central office adapted when connected with the line for conversation to close a circuit from said source through both relays to simultaneously actuate them and thereby prevent the operation of said signals, said source being also connected with the telephone-line to furnish current to the substation for talking, substantially as described.

24. In a telephone system, the combination with a telephone-line, of a pair of signals therefor at the central office, a pair of relays for the line controlling said signals, each of said relays having two windings, means at the substations for closing a circuit for current through one winding of each of said relays to operate them singly, a cord-circuit to establish connections with the line for conversation at the central office, a source of current associated with the cord-circuit to furnish current to the substation for talking, and means for including said current source and the said other windings of both relays in a local circuit when a connection is established whereby both relays are actuated during the connection, substantially as described.

25. In a telephone system, the combination with a telephone-line, of a signal therefor upon the different divisions of a divided central switchboard, a relay associated with the line for each signal and adapted to be selectively operated from the substation, each said signal having a local circuit completed through normal contacts of the relay of the other signal, and means for operating both said relays when a connection is established with the line for conversation to open the local circuits of both said signals, substantially as described.

816,820. **PULLEY FOR WINDOW-SHADE ROLLERS.** LOUIS J. POULIOT, Montreal, Canada, assignor of one-half to Alexandre P. Simar, Montreal, Canada. Filed Feb. 25, 1905. Serial No. 246,963.



Claim.—In a device of the character described the combination of a shade-roller, a pulley comprising a pair of disks held spaced apart by an intermediate hub and secured to said roller, a supporting-bracket removably connected to the roller and having a base to engage a fixture, and a guide member to be removably secured to the supporting-bracket through the medium of the means for securing said bracket to the fixture, said guide member being coextensive in width with the width of the pulley and formed with a longitudinal opening practically coextensive in width with the width of the hub.

816,821. **SIEVE-CLEANER FOR GRAIN-SEPARATORS.** FAUSTIN PAREE, Milwaukee, Wis. Filed May 5, 1905. Serial No. 259,833.

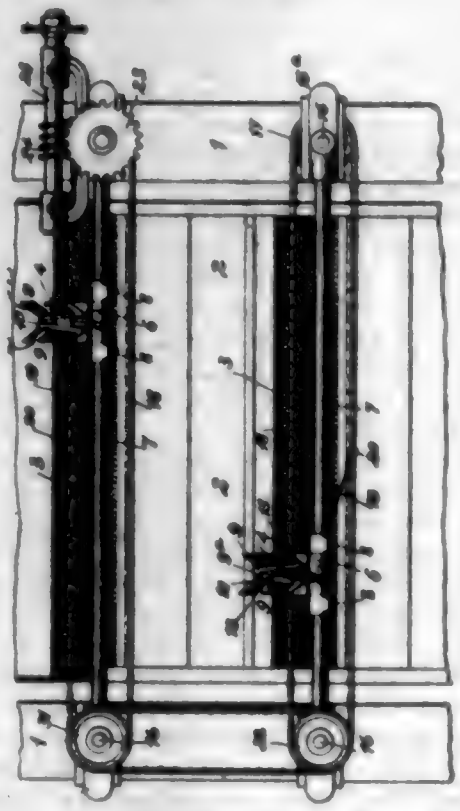
Claim.—1. In combination, a sieve, and a scraper comprising blades disposed about the longitudinal axis of the scraper and capable of rotation, said blades being adapted to normally rest and slide on the surface of the sieve and to turn over in meeting with resistance from an abnormal obstruction in the sieve-surface and means to slide the scraper over the sieve, substantially as described.

2. In combination, a sieve, and a revoluble scraper, capable of vertical movement about its longitudinally-disposed shaft, substantially as described.

3. In combination, a sieve, and a revoluble scraper, capable of play laterally of its longitudinally-disposed shaft around which it is capable of revolving, substantially as described.

4. In combination, a sieve, and a scraper comprising blades so disposed on opposite sides of the longitudinally-disposed shaft of the scraper that at least two of the blades will bear upon the screen at oppositely-disposed lines to steady the scraper in its movement, substantially as described.

5. In combination, a sieve, and a scraper-blade in contact with the sieve having a normally downward incline in the direction of its travel and adapted to be raised and turned to pass over an abnormal obstruction in the path of its travel when brought into contact with the obstruction, substantially as described.



6. In combination, a sieve, and a scraper comprising blades so disposed that at least two of the blades will rest on the sieve-surface on opposite sides of the longitudinal axis of the scraper, and formed with intervening spaces, portions of one blade being opposite the spaces of another blade, substantially as described.

7. In combination, a sieve, and a scraper comprising blades formed with openings through the scraping portion of the blades and so disposed that at least two of the blades will rest on the sieve-surface on opposite sides of the longitudinal axis of the scraper, substantially as described.

8. In combination, a sieve, and a slidable scraper normally non-rotatable in its movement over the sieve and capable of rotating about its horizontally-disposed axis when meeting with an abnormal obstruction and to pass over the obstruction, substantially as described.

9. In combination, a sieve, and a scraper comprising blades, and a shaft upon which they are mounted and toward and from which they are capable of movement transversely to the normal longitudinal axis thereof, substantially as described.

10. In combination, a sieve, and a scraper comprising blades, and a shaft upon which the blades are revolubly mounted and toward and from which they are capable of movement transversely to the normal longitudinal axis thereof, substantially as described.

11. In combination, a sieve, a scraper, a rail with which the scraper is connected and along which it moves, brackets supporting shafts carrying sprocket-wheels, a chain connecting one sprocket-wheel with the other a connection between said chain and the scraper, a bevel-wheel on the shaft of one of the sprocket-wheels, a pinion mounted to mesh with said bevel-wheel, and a drive-chain wheel actuating said pinion, said brackets supporting the guide-rail and the sprocket-chain and said power-transmitting wheels, substantially as described.

816,822. **DISPENSING-RECEPTACLE.** SAMUEL S. RIDER and DANIEL J. O'DONNELL, Washington, D. C. Filed May 22, 1905. Serial No. 261,612.

Claim.—1. In a receptacle of the character described, the combination of telescoping sections, both of which are adapted to contain fluid, and one of which has an outlet through which the fluid passes from the receptacle, each section being provided with a piston, said pistons operating during the telescoping of the sections to force the fluid from both sections out through said outlet.

2. A receptacle of the character described, comprising two telescopic sections both of which are adapted to contain fluid and one of which has an outlet-opening through which the fluid may pass from the receptacle, a partition carried by one of the sections and separating the receptacle into two compartments, said partition having

an opening therethrough to establish communication between the two compartments, and a piston in the opposite section, said partition and piston operating during the telescoping of the sections to force the fluid from both compartments out through said outlet-opening.



3. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid, and one of which has an outlet through which the fluid passes from the receptacle, said outlet being controlled by a normally closed valve, and each section being provided with a piston which operates in the opposite section, whereby during the telescoping of the sections the pistons act to force the fluid from both sections out through said outlet.

4. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid, one of which has an outlet through which fluid passes from the receptacle, each section being provided with a piston which operates in the opposite section whereby during the telescoping of the sections the pistons act to force fluid from both sections out through said outlet and means for locking the sections together when at the end of their inward telescoping movement.

5. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid and which have a threaded connection with each other, one of which sections has an outlet through which fluid passes from the receptacle, and a piston carried by each section and operating in the opposite section, whereby during the telescoping of the sections the pistons act to force fluid from both sections out through said outlet.

6. In a receptacle of the character described, the combination of two telescopically-arranged fluid or material containing compartments, means whereby the telescoping of the sections acts to force the contents of the receptacle from both compartments, and means for locking the sections together when at the end of their inward telescoping movement.

7. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid and one of which has an outlet through which fluid passes from the receptacle, each section having a piston therein which operates in the opposite section, one of said pistons having an opening communicating with the interior of the section to which it is connected.

8. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid and one of which has an outlet through which fluid passes from the receptacle, each section carrying a piston which operates in the opposite section, one of said pistons having an opening therethrough, and the other piston being provided with a hollow piston-rod which passes through the opening in the first-named piston and through which communication is established between the sections, the arrangement being such that during the telescoping of the sections, fluid is forced from both sections out through the said outlet.

9. In a receptacle of the character described, the combination of telescoping sections both of which are adapted to contain fluid, and one of which has an outlet through which the fluid passes from the receptacle, each section being provided with a piston which operates in the opposite section, one of said sections being provided with a screw-threaded jacket, and the opposite section having a threaded part engaging the threads of the jacket whereby the rotation of the shell relative to the sections telescopes said sections, and causes the pistons to force the fluid from both sections out through said outlet.

10. A receptacle of the character described, comprising two telescoping fluid or material containing compartments, and means for locking the compartments together when at the end of their inward telescoping movement.

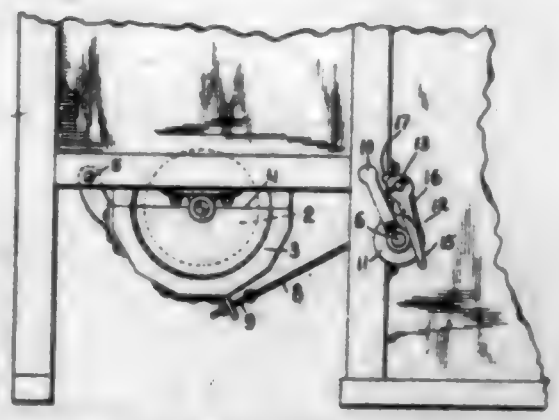
11. A receptacle of the character described, comprising two telescoping fluid or material containing sections, a normally closed valve in one of said sections, and means for locking the sections together when at the end of their inward telescoping movement.

12. A receptacle of the character described, comprising two telescoping fluid or material containing compartments, a normally closed valve in one of said sections, and rotatable means external of the receptacle for causing the two sections to telescope.

13. A receptacle of the character described, comprising two telescoping fluid or material containing compartments, a normally closed valve in one of said sections, and rotatable means engaging the two sections for causing them to telescope.

14. A receptacle of the character described, comprising two telescopic sections, both of which are adapted to contain fluid and one of which has an outlet through which the fluid may pass, a piston in each section, and rotary means operable during turning movement to cause the sections to telescope and the pistons to move in opposite directions whereby to force the fluid from both sections out through said outlet.

816,823. CLOVER-HULLER. WILLIAM C. ROBBY, Laporte, Ind., assignor to The M. Rumely Company, Laporte, Ind. Filed Oct. 9, 1905. Serial No. 281,904.



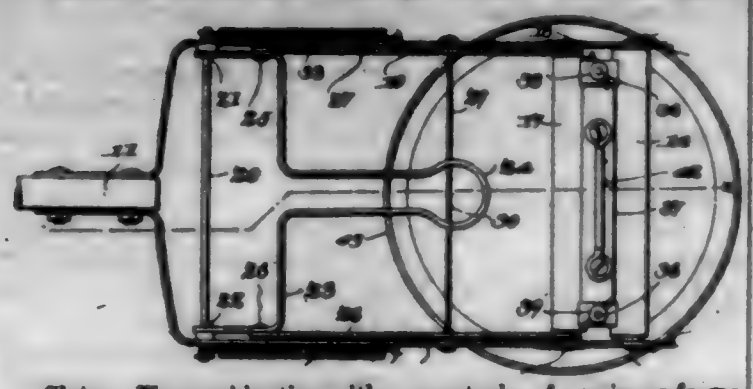
Claim.—1. The combination, substantially as set forth, of a cylinder, a concave movable to and from the cylinder, a hinge supporting one side of the concave, a shaft, a sprocket-wheel on the shaft, a chain engaging the sprocket-wheel, an adjusting-screw connecting an end of the chain with the concave, a handle for turning the shaft, a notched disk upon the shaft, a latch-pawl adapted to engage the notch, and a handle for disengaging the pawl.

2. The combination, substantially as set forth, of a cylinder, a concave movable to and from the cylinder, a hinge supporting one side of the concave, a shaft, connections from the shaft to the concave whereby the turning of the shaft may draw the concave to normal position, a handle for turning the shaft, a notched disk upon the shaft, a latch-pawl adapted to engage the notch, an eccentric having the heel of the pawl journaled upon it, and a handle for turning the eccentric.

3. The combination, substantially as set forth, of a cylinder, a concave movable to and from the cylinder, a hinge supporting one side of the concave, a shaft, connections from the shaft to the concave whereby the turning of the shaft may draw the concave to normal position, a handle for turning the shaft, a notched disk upon the shaft, a latch-pawl adapted to engage the notch, an eccentric having the heel of the latch-pawl journaled upon it, a handle for turning the eccentric, and a lug moving with the eccentric and adapted to engage and release the latch-pawl.

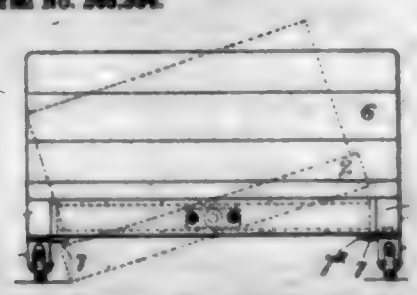
4. The combination, substantially as set forth, of a cylinder, a concave movable to and from the cylinder, a hinge supporting one side of the concave, a shaft, a sprocket-wheel on the shaft, a chain engaging the sprocket-wheel, an adjusting-screw connecting an end of the chain with the concave, a handle for turning the shaft, a notched disk upon the shaft, an eccentric, a handle for turning the eccentric, a latch-pawl having its heel journaled upon the eccentric and having its toe adapted to engage the notch of the disk, and a lug carried by the handle of the eccentric and adapted to release the latch-pawl from the notch of the disk.

816,824. COMBINED MOP HEAD AND WRINGER. NICHOLAS SCHELL, Chillicothe, Ohio. Filed Apr. 17, 1905. Serial No. 255,960.



Claim.—The combination with a receptacle, of a wringer-frame proportioned for operation upon the receptacle and consisting of spaced side bars provided with longitudinal slots near the ends of the side bars, a relatively stationary roller journaled between the side bars at one end of the frame, a movable roller spaced from the stationary roller and journaled in the adjacent slots, a cross-bar mounted for longitudinal movement in the opposite slots, a bail pivotally mounted on the bar and provided with an operating-handle, an auxiliary frame connecting the movable roller and bail, a rod extending transversely across the side bar for limiting the downward movement of the operating-handle, and springs connecting the side bars and cross-bar for holding the movable roller in yieldable contact with a mop-head.

816,825. TRUCK. JOHN SCHREIBER, Jersey City, N. J. Filed July 6, 1905. Serial No. 268,334.



Claim.—1. A truck comprising a main frame having an open unobstructed inner space, a movable platform of less area than said space pivotally supported within said frame adapted to swing within and through said space at an angle to the plane of the frame and means for locking the platform firmly in horizontal position with respect to the frame, substantially as described.

2. A truck comprising a main frame provided with an open unobstructed inner space, a movable platform of less area than said space pivotally supported by the frame within said space, the upper surfaces of the main frame and the platform being substantially on the same plane, and means for locking the platform in such position, whereby when the platform is unlocked it may swing within and through the main frame at an angle to the plane of the frame, substantially as described.

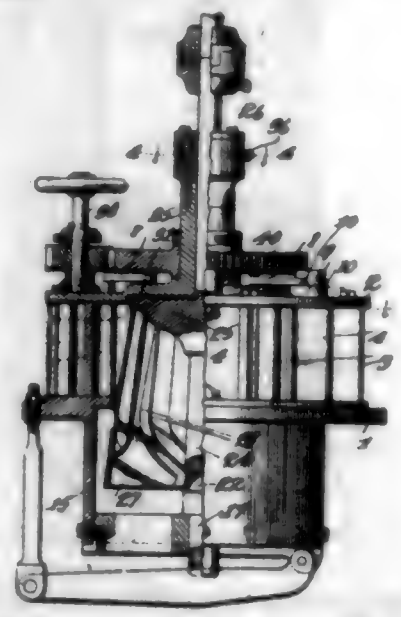
3. A truck comprising a main frame having an open unobstructed inner space, a platform of less area than said space pivotally supported by the frame within said space, the pivotal support for the platform being located substantially midway between its sides to enable the platform to swing in either direction within and through the frame at an angle to the plane of the frame, and means for locking the platform firmly in horizontal position with respect to the frame, substantially as described.

4. A truck comprising a frame provided with an unobstructed inner space, a movable platform of less area than said space pivotally supported by the frame within said space, and a lock carried by the main frame and having a bolt adapted to engage the platform and arranged when withdrawn to permit the platform to swing within and through said space at an angle to the plane of the frame, substantially as described.

5. A truck comprising a frame having an unobstructed inner space, a platform of less area than said space pivotally supported by the truck within said space, a lock having a bolt, and a spring to push the bolt into operative position, the lock being carried by one member of the truck to engage the other member of the truck all arranged to permit the platform to swing within and through said frame, substantially as described.

816,826. WATER-WHEEL. JAMES L. SHELTON, Richmond, Va. Filed Aug. 30, 1904. Serial No. 222,745.

Claim.—1. In a turbine water-wheel, the combination with a wheel or runner, of stationary partitions disposed on lines approximately tangential to the wheel or runner, and gates arranged between the partitions, each gate being pivotally mounted at a point intermediate of its length in the space between two partitions, and being movable to present its inner edge adjacent to the periphery of the wheel or runner, or to a position in which the gate is in contact with both of the partitions, one edge of the gate being arranged on a curved line to permit the water-pressure to assist in moving the gate to open position, and the partition against which the curved surface of the gate rests when closed being recessed at a point in advance of the end of the gate to form an elongated surface for directing a current of water with considerable force against the curved portion of the gate.

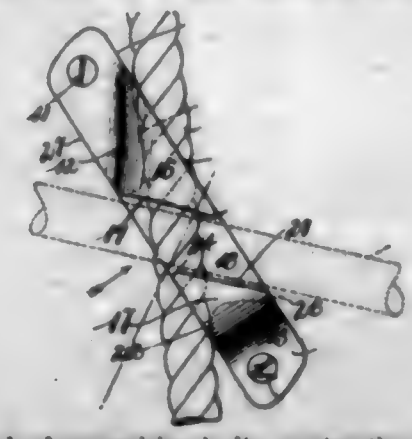


2. In a turbine water-wheel, a wheel or runner, a frame member having gate-pintle-receiving openings and provided with arcuate slots struck from the centers of such openings, pivoted gates having end pintles extending through the pintle-receiving opening, each of the upper pintles having a non-circular end portion projecting above the frame, a rocker-arm having a socket for the reception of said non-circular end and provided with a laterally-extended flange, a bolt extending through the arcuate slot adjacent to the pintle-receiving opening, and securing the flange to the gate at a point some distance from the pintle, and a cam-disk for operating said rocker-arm, said disk being provided with grooves for operating the pivoted gates in successive diametrically-opposed pairs, substantially as specified.

3. In a turbine water-wheel, a wheel or runner having a plurality of buckets, each provided on its impact-face with a rib, the highest end of said rib being adjacent to the outer edge of the bucket, whereby the entering stream of water will exercise a lifting tendency on the runner.

4. In a turbine water-wheel, a runner having a plurality of buckets, each provided with sigmoidal ribs on that side exposed to the action of the water, the highest ends of the ribs being adjacent to the outer edge of the bucket, the lower faces of said ribs being arranged substantially at a right angle to the face of said bucket, and the upper faces of the ribs being rounded.

816,827. MOORING AND TOWING CHOCK. NORMAN L. SKERRY, Somerville, Mass. Filed Nov. 3, 1905. Serial No. 285,660.



Claim.—1. A chock comprising in its construction a passage-way extending laterally thereaross, the opposite sides of said passage-way diverging one from the other from the inner toward the outer side of said chock, said passage-way having an inlet-passage extend-

ing thereinto from the top of said chock and located at an angle to the median lateral plane of said passage-way, said median plane intersecting one side of said inlet-passage.

2. A chock comprising in its construction a passage-way extending laterally thereacross and adapted to guide a rope, said passage-way located between two ears and having an inlet-passage leading downwardly thereinto at an angle to said passage-way between said ears, the upper ends of said ears projecting past each other and adapted to project over a rope located in said passage-way from opposite sides thereof, whereby said rope is locked against accidental disconnection from said chock.

3. A chock comprising in its construction a passage-way adapted to guide a rope and having an inlet-passage leading thereinto at an angle thereto, said inlet-passage and passage-way formed by two ears forming a part of said chock and adapted to extend diagonally across a rope located in said passage-way and from opposite sides thereof, whereby said rope may be inserted in said passage-way, through said inlet-passage, but will be locked against accidental disconnection from said chock.

816,828. DENTAL CONTOUR-PLIERS. NATHAN H. SMITH, Seattle, Wash. Filed July 12, 1905. Serial No. 269,433.



Claim.—A pair of dental contour-pliers comprising similar complemental members pivoted near one end and comprising suitable handles, and jaws, the latter gradually tapering throughout their length and pivoted at or near their extremities with a longitudinal mating crimp and projection, one of the jaws having a flat gripping-face and the other jaw having its inner face flat and the remainder transversely rounded the longitudinal gripping elements coming together when the jaws are closed.

816,829. NON-REFILLABLE BOTTLE. WARREN P. SWETT, Arlington, Mass. Filed Jan. 22, 1906. Serial No. 297,069.



Claim.—1. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition; a valve in the lower portion of the bottle held normally upward against its seat and against the body of liquid in the bottle, said bottle being provided with a valve-chamber for the valve and a passage leading from said valve-chamber to the interior of the spout behind the diaphragm; and a stopple adapted to be pressed into the upper end of the bottle, whereby after the diaphragm has been fractured, the forcing of the stopple into the bottle causes the valve to be removed from its seat by the pressure of the contained liquid.

2. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition, the lower portion of said bottle being provided with a chamber below the body of the liquid; a ring or seal secured in said lower portion of the bottle around and extending over said chamber; a valve in said chamber held normally up against the inner edge of said ring or seal, said bottle being provided with a passage leading from the valve-chamber to the interior of the spout behind the diaphragm; and a stopple adapted to be pressed down into the bottle from the upper end, whereby after the diaphragm has been fractured the valve may be forced from its seat by the pressure of the contained liquid.

3. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition, the lower portion of said bottle being provided with a chamber below the body of the liquid; a ring or seal secured in said lower portion of the bottle and provided with a downturned annular lip extending into said chamber; a valve in said chamber held normally up against said lip, said bottle being provided with a passage leading from the valve-chamber to the interior of the spout behind the diaphragm; and a stopple adapted to be pressed down into the bottle from the upper end, whereby after the diaphragm has been fractured the valve may be forced from its seat by the pressure of the contained liquid.

4. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition, the lower portion of said bottle being provided with a chamber below the body of the liquid and with an annular groove around said chamber; a ring or seal extending over the edge of the mouth of said chamber and provided with a shank or web held in said groove by suitable cement; a valve in said chamber held normally up against the ring or seal, said bottle being provided with a passage leading from the valve-chamber to the interior of the spout behind the diaphragm; and a stopple adapted to be pressed down into the bottle from the upper end whereby after the diaphragm has been fractured the valve may be forced from its seat by the pressure of the contained liquid.

5. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition, the lower portion of said bottle being provided with a chamber below the body of the liquid and with an annular groove around said chamber, the inner wall of said groove being provided with an outwardly-extending flange; a ring or seal extending over the edge of the mouth of said chamber and provided with a shank or web held in said groove by suitable cement, said shank or web being provided with an inwardly-extending flange below the flange in the groove; a valve in said chamber held normally up against the ring or seal, said bottle being provided with a passage leading from the valve-chamber to the interior of the spout behind the diaphragm; and a stopple adapted to be pressed down into the bottle from the upper end, whereby after the diaphragm has been fractured the valve may be forced from its seat by the pressure of the contained liquid.

6. A non-refillable bottle, comprising the body portion *a*; the bottom provided with the hollow foot or base *a'*; the central downward extension *b* integral with said bottom and provided with a suitable chamber; a valve in said chamber held normally upward against its seat and thereby forming a closed bottom; a spout or outlet in the wall of the bottle provided with a passage closed normally by a diaphragm or partition, said chamber being connected with the interior of the spout by a passage; and a stopple adapted to be pressed down into the bottle from the upper end, whereby after the diaphragm has been fractured the valve may be forced from its seat by the pressure of the contained liquid.

7. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition; a valve adapted under normal conditions to prevent the contents of the bottle from entering said spout; and a stopple adapted to be forced down into the bottle after the fracture of the diaphragm and thereby cause the valve to open by the pressure of the liquid.

8. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition; a valve adapted under normal conditions to prevent the contents of the bottle from entering said spout; and a stopple adapted to be forced down into the bottle after the fracture of the diaphragm and thereby cause the valve to open by the pressure of the liquid, said stopple being provided with a recess in its upper surface for the insertion of an operating tool or instrument.

9. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition; a valve adapt-

ed under normal conditions to prevent the contents of the bottle from entering said spout; and the cork stopple h provided on its under side with the annular flange i adapted to bear against the inner surface of the bottle, said stopple being adapted to be forced down into the bottle and thereby cause the valve to be opened by the pressure of the liquid.

10. In a non-refillable bottle, the wall or main portion a provided on its inner surface with downwardly-facing annular shoulders d; a spout or outlet provided with a passage closed normally by a diaphragm or partition; a valve adapted under normal conditions to prevent the contents of the bottle from entering said spout; and a stopple provided with a peripheral locking mechanism whereby when the stopple is forced down into the bottle it is locked by said shoulders to the extent of preventing upward movement.

11. In a non-refillable bottle, a spout or outlet provided with a passage closed normally by a diaphragm or partition, the lower portion of said bottle being provided with a chamber below the body of liquid, and with a passage connecting said chamber with the spout behind the diaphragm; a ring or seal supported in the bottle above the chamber; a valve in the chamber held normally up against the seal; and a stopple provided on its lower surface with a downward extension adapted to enter the ring and force down the valve from its seat when the stopple is pushed approximately to the bottom of the bottle after the fracture of the diaphragm.

816,830. **EXPLOSIVE COMPOUND.** MILTON S. TALBOT, Durban, Natal; Albert A. Shuter, Durban, Natal, administrator of said Talbot, deceased. Filed Dec. 28, 1903. Serial No. 186,910.

Claim.—1. An explosive containing an alkaline chlorate, camphor mixed in explosive proportions and castor-oil.

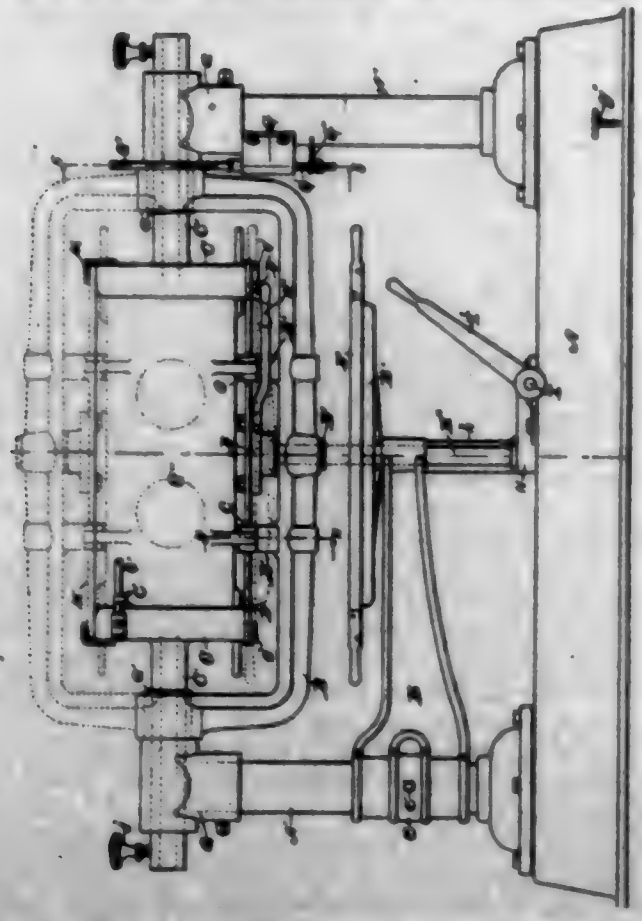
2. An explosive containing fourteen parts of potassium chlorate, one part of camphor and one part of castor-oil.

3. An explosive containing an alkaline chlorate, camphor, castor-oil and manganese dioxid.

4. An explosive containing an alkaline chlorate, camphor, castor-oil, manganese dioxid, burnt umber and potassium bichromate.

5. An explosive consisting of fifty-six parts of potassium chlorate, four parts of camphor, four parts of castor-oil, eight parts of burnt umber, four parts of manganese dioxid and twelve parts of potassium bichromate.

816,831. **MOLDING-MACHINE.** DAVID D. TRACY and HUGH J. KEENAN, Jackson, Mich. Filed May 5, 1905. Serial No. 259,071.



Claim.—1. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

2. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever; said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

3. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

4. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor

when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

5. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

6. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

7. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged through said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position, and means for operating said rack-bar, all coacting for the purpose specified.

8. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; and means for operating said rack-bar, all coacting for the purpose specified.

9. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for the said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position, and means for operating said rack-bar, all coacting for the purpose specified.

10. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position, and means for operating said rack-bar, all coacting for the purpose specified.

11. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; and a rack-bar arranged to engage said spindle when said crane is in its inner position, and means for operating said rack-bar, all coacting for the purpose specified.

12. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-le-

ver connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

13. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged through said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position, and means for operating said rack-bar, all coacting for the purpose specified.

14. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled to said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

15. In a molding-machine, the combination of a hollow base; a pair of standards; bearings mounted on said standards; a yoke-like frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, all coacting for the purpose specified.

16. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner position; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

17. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

18. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame, a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner position; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connections being arranged within one of said standards, for the purpose specified.

19. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point; a notched disk secured to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connections being arranged within one of said standards, for the purpose specified.

20. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner position; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point, for the purpose specified.

21. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods there-

for adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point, for the purpose specified.

22. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner position; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point, for the purpose specified.

23. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, said links being connected to said lever at opposite points in relation to its pivot-point, for the purpose specified.

24. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner position; means for shifting said end walls; a notched disk secured to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

25. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; means for shifting said end walls; a notched disk secured to said frame; a latch adapted to engage said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

26. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom, mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said end walls are in their inner position; means for shifting the said end walls; a notched disk secured to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

27. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; means for shifting the said end walls; a notched disk secured to said frame; a latch adapted to engage the said disk; and a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards, for the purpose specified.

28. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when the said end walls are in their inner position; and means for shifting the said end walls, for the purpose specified.

29. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold, comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates arranged within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; and means for shifting the said end walls, for the purpose specified.

30. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when the said end walls are in their inner position; and means for shifting the said end walls, for the purpose specified.

31. In a molding-machine, the combination of a pair of standards; bearings mounted on said standards; a frame journaled on said bearings; cross-pieces carried by said frame; a mold comprising a bottom mounted on said cross-pieces; end walls having outwardly-projecting journals arranged through said bearings; side walls pivotally mounted on said cross-pieces; hooks on said walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; and means for shifting said end walls, for the purpose specified.

32. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a notched disk secured to said mold; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, for the purpose specified.

33. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, for the purpose specified.

34. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a notched disk secured to said mold, a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, for the purpose specified.

35. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; a rock-shaft; an operating-lever therefor; and a segment on said rock-shaft arranged to engage said rack-bar, for the purpose specified.

36. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a notched disk secured to said mold; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; and means for operating said rack-bar, for the purpose specified.

37. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a stop for said crane adapted to serve as a rest therefor when said crane is in its inner position; a rack-bar arranged to engage said spindle when said crane is in its inner position; and means for operating said rack-bar, for the purpose specified.

38. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a notched disk secured on said mold; a latch adapted to engage the said disk; a trip-lever for said latch connected thereto by a suitable link-and-lever connection, said connection being arranged within one of said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; and means for operating said rack-bar, for the purpose specified.

39. In a molding-machine, the combination of a pair of standards; a mold journaled on said standards; a crane mounted on one of said standards; a table carried by said crane; a vertically-arranged downwardly-projecting spindle for said table; a rack-bar arranged to engage said spindle when said crane is in its inner position; and means for operating said rack-bar, for the purpose specified.

40. In a molding-machine, the combination of a suitable frame; a mold journaled on said frame; a crane mounted on said frame adapted to swing under or out from said mold; a table pivotally mounted on said crane; and means for elevating the said table when said crane is in its inner position, for the purpose specified.

41. In a molding-machine, the combination of a suitable frame; a mold journaled on said frame; a crane mounted on said frame adapted to swing under or out from said mold; a table mounted on said crane, and means for elevating the said table when said crane is in its inner position, for the purpose specified.

42. In a molding-machine, the combination of a suitable frame; a mold journaled on said frame; a crane mounted on said frame, adapted to swing under or out from said mold; and a table pivotally mounted on said crane, for the purpose specified.

43. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; a lever pivotally mounted on said frame; links connected to said end walls and to said lever; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, for the purpose specified.

44. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, for the purpose specified.

45. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; a lever pivotally mounted on said frame; links connected to said end walls and to said lever; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, for the purpose specified.

46. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; links connected to said end walls and to said lever; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, for the purpose specified.

47. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, for the purpose specified.

48. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, for the purpose specified.

49. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls

having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, for the purpose specified.

50. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, for the purpose specified.

51. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; means for shifting said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, all coacting for the purpose specified.

52. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; means for shifting said end walls; a swinging crane mounted on one of said standards; and a table pivotally mounted on said crane, all coacting for the purpose specified.

53. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; means for shifting said end walls; a swinging crane mounted on one of said standards; means for operating said crane; and a table pivotally mounted on said crane, for the purpose specified.

54. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; means for shifting said end walls; a swinging crane mounted on one of said standards; means for operating said crane; and a table pivotally mounted on said crane, for the purpose specified.

55. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; and means for shifting said end walls, for the purpose specified.

56. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; supporting-rods therefor adjustably arranged through said hollow journals; movable side walls; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; and means for shifting said end walls, for the purpose specified.

57. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting journals arranged through said bearings; movable side walls; hooks on said side walls; forwardly and outwardly-projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; and means for shifting said end walls, for the purpose specified.

58. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold, comprising a bottom, carried by said frame; end walls having outwardly-projecting journals arranged through said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of the said end walls; and means for shifting said end walls, for the purpose specified.

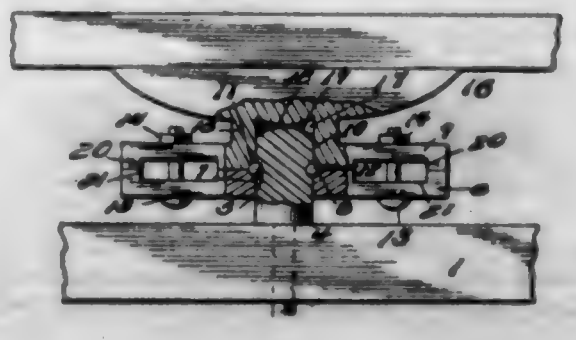
59. In a molding-machine, the combination of a frame; a support upon which said frame is journaled; a mold carried by said frame comprising a bottom; adjustably-supported end walls; side walls hinged at their lower edges; forwardly and outwardly projecting arms on said end walls adapted to engage the said side walls, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a lever pivotally mounted on said frame; and links connected to said end walls and to said lever, for the purpose specified.

60. In a molding-machine, the combination of a frame; a support upon which said frame is journaled; a mold carried by said frame comprising a bottom; adjustably-supported end walls; side walls hinged at their lower edges; forwardly and outwardly projecting arms on said end walls adapted to engage the said side walls, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a top or retaining board for said mold; hooks on said end walls adapted to engage the same when said walls are in their inner positions; and means for shifting said end walls, for the purpose specified.

61. A mold comprising a bottom; movable end walls; side walls hinged at their lower edges; hooks on said side walls; forwardly and outwardly projecting arms on one of said end walls adapted to engage the said hooks, whereby the said side walls are forced inwardly or outwardly by the shifting of said end walls; a pivotally-mounted lever; links connected to said end walls and to said lever, whereby the same may be shifted, for the purpose specified.

62. In a molding-machine, the combination of a pair of standards; bearings on said standards; a frame journaled on said bearings; a mold carried by said frame; end walls for said molds, having outwardly-projecting hollow journals arranged through said bearings; end plates within said end walls; and supporting-rods therefor adjustably arranged through said hollow journals, for the purpose specified.

816,832. **FIFTH-WHEEL.** JOHN A. WELCH, Loyal, Wis. Filed June 1, 1905. Serial No. 263,215.



Claim.—1. In a device of the class described, a king-bolt having a groove formed therein, and upper and lower fifth-wheel plates disposed upon the king-bolt, the plates being secured together and having a groove arranged opposite the groove of the king-bolt and bearing-balls arranged within the raceway formed by said groove for suspending the king-bolt within the said plates and permitting rotation of the former.

2. In a device of the class described, a king-bolt having a groove formed between its ends, fifth-wheel plates detachably secured together and embracing the king-bolt, the plates being provided with grooves to form a raceway between them and the king-bolt, and bearing-balls arranged in said raceway to support the king-bolt rotatively within the fifth-wheel plates.

816,833. COMPOSITION FOR MOLDS. JOSEPH G. WEYER, Providence, R. I. Filed Dec. 2, 1904. Serial No. 235,258.

Claim.—A mold to receive metal castings composed of a mixture of equal quantities of plaster-of-paris and finely-sifted coal-ashes.

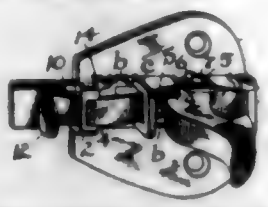
816,834. PEDAL-GUARD. CHARLES H. WOODALL, Albany, Ga. Filed Apr. 28, 1905. Serial No. 256,110.



Claim.—1. A pedal-guard comprising a plate-metal body having one end formed into a longitudinally-disposed spring-tongue with its opposite end bent at substantially right angles thereto to form a shield, the opposite edges of the body adjacent the shield being provided with means for detachably embracing the pedal.

2. The combination with a piano-pedal, of a guard member applied to the under side of the pedal and provided at its outer end with a spring-tongue extending along and bearing against the under side of the pedal and at its inner end with a pendent shield covering the pedal-opening in the piano-case, said guard being provided with attaching means detachably embracing the pedal.

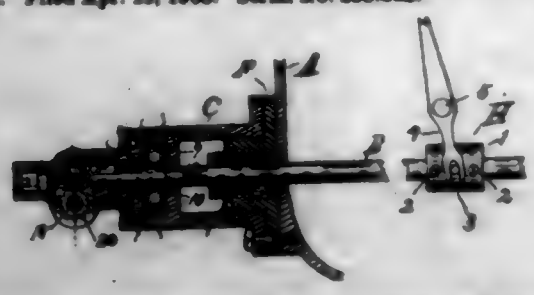
816,835. SPRING-LATCH. JOHN L. ZEIGER, Cleveland, Ohio. Filed Jan. 13, 1904. Serial No. 188,907.



Claim.—1. In spring-latches, a body part struck from sheet metal and having raised cross-bridges at its ends and slotted ears between said bridges at right angles to the base of said body, a flat spring resting upon said bridges, a latch pivoted in said ears and resting upon said spring and having a heel behind its pivot, and a sliding lock having a raised portion engaged over said spring and adapted to engage under the said heel and thus lock the latch, substantially as described.

2. A spring-latch comprising a body with cross-bridges at its ends and ears at its sides, a spring on said bridges and a latch pivoted in said ears and bearing on said spring between its ends, said latch having a shoulder off its pivot, in combination with a slidable lock provided with a raised portion to engage the said shoulder and a spring portion engaging beneath one of the said cross-bridges, substantially as described.

816,836. SCREW-PROPELLER. EARL E. ADAMS, Battle Creek, Mich. Filed Apr. 13, 1905. Serial No. 255,262.



Claim.—1. In a propeller, the combination of a stuffing-box, a bracket having openings in the side thereof mounted over said stuffing-box, a collar carried by said bracket, an antifriction-bearing fitted within said collar, a shaft passing through said stuffing-box and antifriction-bearings and a screw-propeller mounted upon the end of said shaft and adapted to bear against said antifriction-bearing, for the purposes set forth.

2. In a propeller, the combination of a stuffing-box, a bracket having openings in the side thereof mounted over said stuffing-box, and an opposite cupped extremity interiorly threaded, a collar comprising two longitudinal sections having a threaded end adapted to fit within the threaded end of said bracket and an enlarged opposite extremity having an interiorly annular groove, a propeller-hub having a flange on one end thereof adapted to be received by said groove, antifriction-bearings interposed within said collar between said hub and the cup-bottom of said bracket, a shaft passing through said stuffing-box, bracket and antifriction-bearing, and secured to said propeller-hub, substantially as and for the purpose set forth.

3. In a propeller, the combination of a bracket, a collar carried by said bracket, antifriction-bearings fitted within said collar, a hub having a longitudinal bore and pockets triangularly intersecting said bore from the exterior, gear located within said pockets, propeller-blades pivotally secured to said gear passing through said pockets, a shaft passing through said collar, antifriction-bearings in said bracket, said shaft being longitudinally adjustable, means to rotate said hub with said shaft, means to longitudinally adjust said shaft, means to operate said blades with said shaft, and means to limit the throw of said blades within said pockets, substantially as and for the purposes set forth.

4. In an adjustable propeller, the combination with a shaft longitudinally adjustable and provided with annular cogs at its outer extremity, of a hub retained from longitudinal movement but rotatable therewith, secured upon the outer extremity of said shaft, longitudinal pockets triangularly arranged in the circumference of said hub intersecting the bore of said hub, a shoulder formed at either end of said pockets, gear-segments operative within said pockets meshing with the annular cogs of said shaft, propeller-blades axially operative from said segments, the shoulders at either side of said pockets adapted to engage and prevent said segments from rotating farther than a predetermined pitch of said blades, all arranged to coact substantially as and for the purpose set forth.

5. In a propeller, the combination with a shaft, a propeller secured at the outer extremity of said shaft, and a bracket encompassing said shaft, of a collar comprising two longitudinally-separable sections, said collar having an interiorly-grooved outer extremity adapted to fit over an outwardly-turned flange on said propeller-hub, and an opposite extremity exteriorly threaded and adapted to fit within a corresponding threaded outer extremity of said bracket, antifriction end-thrust bearings interposed between said propeller and said bracket within the threaded extremity of said collar, and means to tighten said collar, substantially as and for the purpose set forth.

816,837. EYEGLASSES. LEO F. ADT, Troy, N. Y. Filed Mar. 23, 1905. Serial No. 251,573.



Claim.—1. In eyeglasses, the combination with the lenses having a post attached thereto, and an arm adapted to be secured to the post, of a shoulder on one of the parts and a seat on the other part having walls for engaging on opposite sides of the shoulder, and a device for moving the arm transversely of the post to force the shoulder of one part into the seat of the other.

2. In eyeglasses, the combination with the lenses having a post attached thereto, and an arm adapted to be secured to the post, of a shoulder on one of the parts and a seat on the other part having walls for engaging on opposite sides of the shoulder and of a smaller size than that of the shoulder, and a device for forcing the shoulder of one part into the seat of the other.

3. In eyeglasses, the combination with the lenses, and a post or stud attached thereto having a shoulder thereon, of an arm adapted to be secured to the post at one side of the shoulder and having a finger to engage the opposite side thereof, and a device for moving the arm transversely of the post to force the shoulder thereof between the finger and body portion of the arm.

4. In eyeglasses, the combination with the lenses, and a post attached thereto having a shoulder thereon, of an arm adapted to be secured to the post having a body portion arranged to engage at one side of the shoulder and a finger to engage at the opposite side there-

of, a seat being formed between the finger and body of the arm of a size smaller than the coöperating portion of the shoulder, and a device for forcing the shoulder of the post into the seat of the arm.

5. In eyeglasses, the combination with the lenses, and posts attached thereto each having a shoulder thereon, of an arm adapted to be secured to the post having a body portion arranged at one side of the shoulder and an additional portion arranged at the opposite side thereof, the walls formed between the body and additional portions of the arm being arranged to form a contracted seat, and a device for drawing the shoulder into the seat to lock the post and arm.

6. In eyeglasses, the combination with a lens, a post attached thereto, and an attaching-arm adapted to be secured to the post, of a projection on one of the parts, and a tapered seat on the other adapted to receive and bind on opposite sides of said projection.

7. In eyeglasses, the combination with a lens, of a post attached thereto having a bearing-surface and a shoulder at one side only of the bearing portion, the side of the bearing-surface opposite to said shoulder being open or unobstructed to enable the bearing-surface to receive either horizontally or vertically extending attaching-arms for the spring and guard, one of said arms having a recess formed therein with walls to engage both the inner and outer sides of said projection.

8. In eyeglasses, the combination with a lens, a post attached thereto, and an arm adapted to be secured to the post, of a projection on one of the parts, and a locking device on the other part having wedging engagement with the inner and outer sides of said projection, and a device for securing the arm to the post.

816,838. LENS-MOUNT AND CONNECTION FOR EYEGLASSES. Leo F. Adt, Troy, N. Y. Filed May 9, 1905. Serial No. 259,555.



Claim.—1. In eyeglasses, the combination with a lens, an attaching device having means for securing it to the lens, and the mounting adapted to be fastened to the attaching device, of a locking member for the mounting secured in position by the lens-securing means.

2. In eyeglasses, the combination with an apertured lens, an attaching device a securing-screw passing through the lens-aperture, and the mounting adapted to be secured to the attaching device, of a locking device operated by the lens-screw for fastening the mounting to the attaching device.

3. In eyeglasses, the combination with a lens, an attaching device, a lens-securing screw, and a mounting adapted to be secured to the attaching device, of a device locked by the lens-screw for fastening the mounting and attaching device.

4. In eyeglasses, the combination with a lens having an attaching device thereon adapted to receive an apertured attaching portion of the mounting, of a device for connecting the mounting and attaching device embodying a member having a projection entering the aperture of the attaching portion and a shoulder coöperating with the sides of the said portion, and means for operating the said member.

5. In eyeglasses, the combination with a lens, and an attaching device provided with a receptacle for the apertured attaching portions of the mounting, of a locking device having a portion arranged to enter the aperture of the attaching portion and bearing on a portion of the attaching device as a fulcrum, and means operating on the locking device to tilt it about its fulcrum and thereby bind the attaching portion of the mounting against the attaching device.

6. In eyeglasses, the combination with a lens, and an attaching device secured thereto adapted to receive the attaching portions of the mounting, said device having an inclined portion formed thereon, of a member for connecting the attaching portions of the mounting and the attaching device having an inclined portion arranged to coöperate with the corresponding portion of the attaching device for operating the said member to secure the mounting.

7. In eyeglasses, the combination with a lens, a lens-securing screw and an attaching device, adapted to receive the attaching portions of the mounting, of a member operated by the lens-screw and arranged to coöperate with the attaching portions of the mounting to clamp them to the attaching device.

8. In eyeglasses, the combination with a lens, a lens-securing screw and an attaching device, adapted to receive the attaching portion of the mounting, of a locking member having a countersunk aperture therein to coöperate with the lens-screw for operating the member, a portion of the latter coöperating with the attaching portion of the mounting to secure it to the attaching device.

9. In eyeglasses, the combination with a lens, and an attaching device adapted to be secured thereto having a box or receptacle to receive the attaching portions of the mounting, of a locking member having a portion arranged to coöperate with the attaching portions of the mounting and bearing on a portion of the attaching device as a fulcrum, and means operating on the locking member to produce a clamping action between the attaching portions of the mounting and the box.

10. In eyeglasses, the combination with a lens, an attaching device adapted to be secured thereto provided with an apertured box or receptacle to receive the attaching portions of the mounting, of a locking member having a portion arranged to enter the aperture of the box and coöperate with the attaching portions of the mounting, and means for operating the locking member to clamp the attaching portions of the mounting within the box.

11. In eyeglasses, the combination with a lens, an attaching device having an arm arranged to rest at one side of the lens and provided with a box or receptacle for the attaching portions of the mounting, of a locking member having a portion adapted to coöperate with the attaching portions of the mounting and bearing on the attaching device as a fulcrum, and a screw coöperating with the locking member to clamp the attaching portions of the mounting in the box and for securing the arm of the attaching device.

816,839. LENS-MOUNT AND CONNECTION FOR EYEGLASSES. Leo F. Adt, Troy, N. Y. Filed May 16, 1905. Serial No. 260,642.



Claim.—1. In eyeglasses, the combination with the lenses and the mounting adapted to be connected thereto, of an attaching device for each lens having an attaching-arm and formed to receive the mounting, a locking member for connecting the mounting and attaching device, and a securing device extending through the lens and the said attaching-arm and coöperating with the locking member to secure it in locked position.

2. In eyeglasses, the combination with the lenses and the mounting adapted to be connected thereto, of a device formed to receive the mounting and having an apertured attaching-arm for engagement with one surface of the lens, a locking member having a portion to coöperate with the mounting to secure it to the device, and provided with an arm to rest at one side of the lens, and a lens-securing device passing through the attaching-arms of the locking member and the said device.

3. In eyeglasses, the combination with the lenses, and the spring and guards adapted to be attached thereto, of an attaching device secured to each lens by a lens-screw and having a seat to receive a portion of the spring and guard and a projection to enter an aperture therein, and a locking device secured by the lens-screw for fastening the spring and guards to the attaching device.

4. In eyeglasses, the combination with the lenses, and the spring and guards adapted to be attached thereto, of a device for each lens having a seat to receive the attaching portion of the spring and guard, a locking member embodying a strap having a portion to coöperate with the attaching poriton of the spring and guard and an arm overlapping one side of the lens, and a lens-securing device for securing both the attaching device and locking member.

5. In eyeglasses, the combination with the lenses, and the spring and guards adapted to be attached thereto, of an attaching device for each lens having an arm adapted to engage one surface thereof, and provided with a seat to receive the attaching portion of the spring and guard, of a strap having an intermediate portion to coöperate with the attaching portion of the spring and guard, and arms overlapping the opposite surfaces of the lens and adapted to receive the lens-securing device.

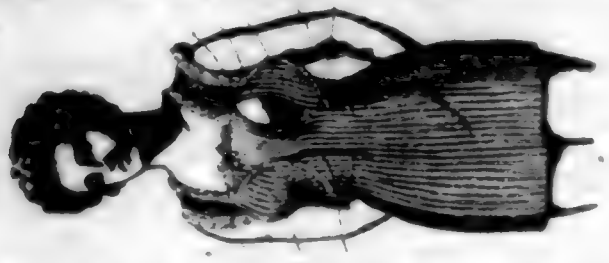
6. In eyeglasses, the combination with the lenses, and the mounting having portions adapted to be attached thereto, of an attaching device for each lens formed to receive an attaching portion of the mounting, a locking member having a portion coöperating with the attaching portion of the mounting, and means arranged transversely of the plane of the lens for operating the locking member relatively to the attaching device for securing the mounting to the attaching device.

7. In eyeglasses, the combination with the lenses, and the mounting adapted to be secured thereto, of an attaching device for each lens formed for attachment to the mounting, a locking member hav-

ing a portion coöperating with the mounting, and a device serving to secure the attaching device to the lens and for producing relative motion between the locking member and the attaching device for securing the mounting.

8. In eyeglasses, the combination with the lenses, and the mounting adapted to be secured thereto, of an attaching device for each lens formed to connect with the mounting, of a locking member having a portion coöperating with the mounting and an arm arranged opposite to a lens-surface having a countersunk aperture therein, and a screw extending through the lens and the apertured arm of the locking member for drawing the latter toward the lens to secure the mounting.

816,840. NURSING-GARMENT. WILLIAM L. BAILIE, Jr., Norfolk, Va. Filed July 7, 1905. Serial No. 268,668.



Claim.—1. A nursing-garment provided with breast-openings, in combination with covering-flaps for said openings, and means independent of the garment for fastening said flaps together when in closed position.

2. A nursing-garment provided in its bust portion with vertical slits, in combination with covering-flaps secured to the outer edges of said slits and adapted to extend inward toward each other over the slits, and means independent of the garment for fastening said flaps together to retain them in closed position.

816,841. LINOTYPE-MACHINE. RICHARD M. RENDELL, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 12, 1905. Serial No. 278,194.



Claim.—1. In a linotype-machine the combination of the line-confining jaw, a rigid bearing and an intermediate sliding wedge acting to sustain the jaw in definite position and to release the same.

2. In a linotype-machine, the combination of the movable jaw to confine the matrix-line, a fixed bearing, and an intermediate mechanically-actuated wedge.

3. The combination of the line-confining jaw a mechanically-actuated wedge and an adjustable bearing for the wedge.

4. In a linotype-machine a movable line-confining jaw in combination with a mechanically-actuated wedge and an intermediate adjustable connection.

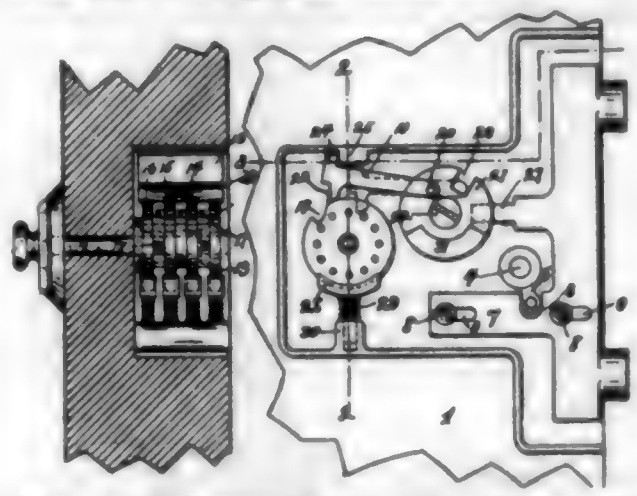
5. In a linotype-machine the combination of the movable jaw, the wedge, a rigid support therefor, a block bearing on the wedge and an adjustable rod connecting the block and the jaw.

6. In combination the jaw, the rod, the block secured to the rod and the wedge-bearing surfaces *k* and *k'*.

7. In a linotype-machine and in combination, the jaw, the toothed rod, the block, means adjustably connecting the rod and block, the wedge and the tubular screw sustaining the wedge.

8. In a linotype-machine matrices, expansible wedge-spacers, and jaws to confine the line in combination with means for adjusting the jaws to the length of the final line before and during a first expansion of the spacers, then releasing the jaw to permit alinement of the matrices, then restoring the original relation of the jaws prior to a second and final adjustment of the spacers.

816,842. PERMUTATION-LOCK. CHARLES H. BLECHSCHMIDT, Bellevue, Ky. Filed July 6, 1905. Serial No. 268,425.



Claim.—1. In a permutation-lock, the combination, with a series of tumblers, and a spindle upon which the same are loosely mounted, of shoes embracing the side faces of the tumblers to hold the same in parallel planes and means for holding the shoes in engagement with the tumblers to insure proper action thereof, substantially as described.

2. In a permutation-lock, the combination, with a series of tumblers, and a spindle upon which the same are loosely mounted, of spring-pressed shoes embracing the peripheries and side faces of said tumblers to hold the same in alinement to insure proper action thereof, and to prevent displacement when set, substantially as described.

3. In a permutation-lock, the combination, with a series of tumblers with a notch in each tumbler, and a releasing-bar to enter said notches when the tumblers are brought into alinement, a slotted disk to which said bar is pivoted, and a projecting surface on the bolt to enter said slot when the disk is rotated by the movement of the releasing-bar, said disk being weighted to prevent movement in the proper direction, except when positively actuated, substantially as described.

816,843. GATE. GEORGE B. ISAACS, Santa Ana, Cal. Filed Jan. 6, 1906. Serial No. 294,536.



Claim.—1. A gate comprising head and tail stiles; a center board pivotally secured at the ends thereof to the head and tail stiles near the centers thereof; a lifting-lever pivotally secured to the center board near the head-stile; a spring secured to the bottom of said lever and to the center board near the center thereof; a brace-board pivotally secured to the top of the lifting-lever and to the top of the tail-stile; and a plurality of tie-strands extending from the head-stile to the tail-stile and united thereto.

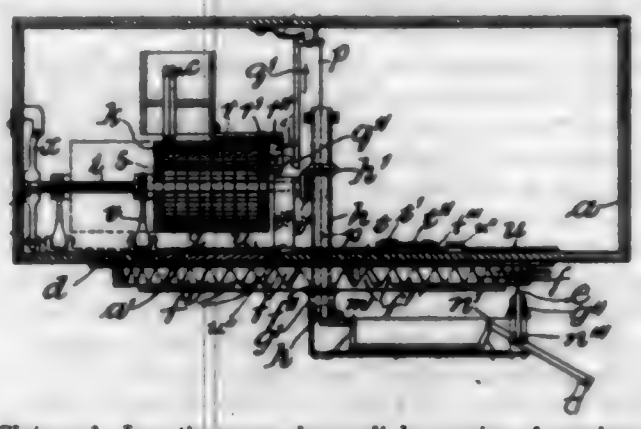
2. A gate comprising head and tail stiles; means pivotally se-

cured to the center thereof to hold said stiles separated; a lever pivotally secured to said separating means near the head-stile; means secured to the lower end of said lever to draw it toward the tail-stile; means secured to the upper end of said lever and to the upper portion of the tail-stile to hold the same against being moved toward the head-stile; and a plurality of tie-strands extending from the head-stile to the tail-stile and united thereto.

3. A gate comprising head and tail stiles; means pivotally secured to the centers of said stiles to hold them separated; a lever pivotally secured to said separating means near the head-stile, said lever projecting above and below said separating means; means secured to the lower end of said lever to draw it toward the tail-stile; means secured to the upper end of said lever and to the upper portion of the tail-stile to hold the upper end of said lever against being moved toward the head-stile; and a plurality of means extending from the head-stile to the tail-stile and pivotally united thereto whereby said stiles are kept parallel with each other.

4. In combination a gate comprising head and tail stiles; a center board pivotally secured at the ends thereof to said stiles near the centers thereof; a lifting-lever pivotally secured to the center board near the head-stile; a spring secured to the bottom of said lever and to the center board near the center thereof; a brace-board pivotally secured to the top of the lifting-lever and to the top of the tail-stile; a plurality of tie-strands extending from the head-stile to the tail-stile and united thereto; a gate-post; hinges secured to the gate-post and to the head-stile; a fastening-post; and fastening means secured to said fastening-post adapted to secure said gate in its closed position.

816,844. EMPLOYEE'S TIME-RECORDER. FRANK BROOK, Huddersfield, England. Filed Apr. 12, 1905. Serial No. 255,294.



Claim.—1. In a time-recorder, a dial, a series of numbers and recesses therein, said recesses having countersunk portions, an arm adapted to traverse said dial, a rotatable drum, means intermediate said drum and said arm, whereby, upon the movement of said arm, the said drum is rotated, printing devices, a lever mounted in the aforesaid arm and adapted to operate the said printing devices, a centering-pin adapted to enter the countersinks in the recesses whereby the lever for actuating the printing devices may be operated only after the centering-pin has entered a countersink in one of the recesses, thus positively centering the lever opposite the correct number.

2. In a time-recorder, a dial having two or more circles of numerals, and recesses or depressions, which recesses do not extend through the dial, a swinging arm carrying two pointers, a rotary cylinder carrying a recording-strip, and connections intermediate said cylinder and said swinging arm, to rotate said cylinder through the movement of said swinging arm, type-wheels, a hammer within said cylinder, connections intermediate said hammer and each of said pointers, to actuate said hammer by the inward movement of either pointer, substantially as shown and described.

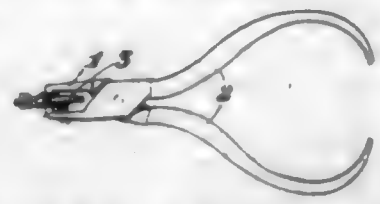
3. In a time-recorder, a skeleton drum or cylinder movable longitudinally of its axis and carrying a recording-strip on its periphery, a hammer located within said cylinder, and adapted to strike against the inner surface of the recording-strip, to press the strip against the type-wheels, means for rotating the cylinder and means for moving the cylinder longitudinally of its axis, said latter means comprising a grooved hub on the cylinder, a lever having a pointer at one end adapted to traverse the face of an index-card and suitable connections between said grooved hub and said lever whereby the longitudinal movement of the cylinder may be indicated.

4. In a time-recorder, a skeleton drum or cylinder movable longitudinally of its axis and carrying a recording-strip on its periphery, a hammer located within said drum and adapted to strike against the inner surface of said recording-strip to thereby force the same against the type-wheels, means for rotating said cylinder and means for moving said cylinder longitudinally of its axis, said latter means comprising a grooved hub on the cylinder adapted to receive one end of a pivotally-mounted arm, the opposite end of said arm being pivotally mounted in a reciprocating rod whereby the drum may be engaged or disengaged at will and when so engaged moved longitudinally in either direction as desired.

5. In a time-recorder, a dial, a series of numbers and recesses thereon, an arm carrying a pointer and movable about the dial, a skeleton drum having longitudinal strips carrying a recording-blank thereon and means actuated by the arm for rotating the drum, said dial having a series of blank spaces or portions unprovided with numbers or recesses corresponding to the longitudinal strips of the drum, whereby such longitudinal strips are not brought opposite the printing instrumentalities.

6. In a time-recorder, a dial, a series of numbers and recesses thereon, an arm carrying a pointer and movable about the dial, a drum having a recording-strip thereon, means actuated by the arm for rotating the drum, a shaft on which said drum is longitudinally movable, a pivotally-mounted swinging bracket in which one end of said shaft is journaled, means comprising a grooved hub on the drum and a coöperating pivotally-mounted reciprocating arm, whereby said drum may be moved longitudinally upon the said shaft, the aforesaid pivotally-mounted swinging bracket and pivotally-mounted reciprocating arm both being adapted to swing clear of the path of the drum, as said drum is withdrawn from its shaft.

816,845. OPTICAL TOOL. LEWIS B. CAPPS, Seattle, Wash. Filed May 16, 1905. Serial No. 260,719.



Claim.—1. A device of the type set forth comprising a plurality of compressors, means for operating the same, a former, and a support for said former mounted in one of said compressors and being free to be moved independently thereof.

2. A device of the type set forth comprising opposite compressors, means to move the same toward and from each other, and a former yieldingly supported between said compressors.

3. A device of the type set forth comprising a plurality of compressors, means for operating the same toward and from each other, and a former arranged between said compressors and being movably supported in one thereof.

4. A device of the type set forth comprising a plurality of compressors, means for operating the same, a former arranged between said compressors, and a support to which said former is secured slidably mounted in one of said compressors.

5. A device of the type set forth comprising opposite compressors, means for operating the same, a former arranged between said compressors, a support for said former slidably mounted in one of said compressors, and resilient means for normally holding said former from the last-named compressor.

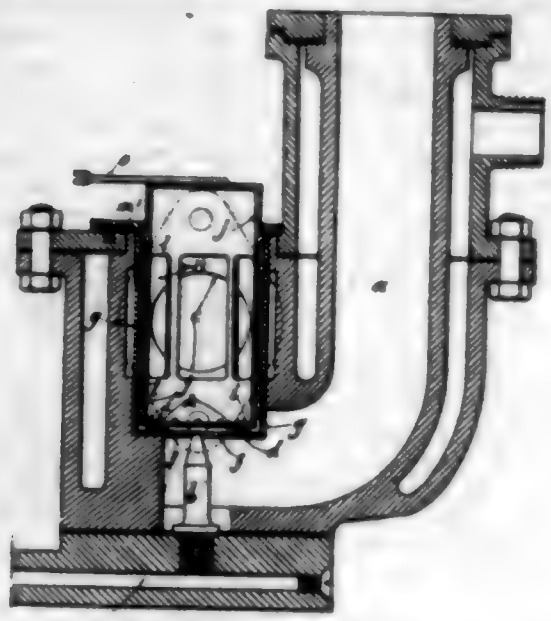
6. A device of the type set forth comprising a plurality of compressors, means for operating the same, a former, a support for said former mounted in one of said compressors and being free to be moved independently thereof, and means for resiliently holding the former spaced from the last-named compressor.

7. In a device of the type set forth, a pair of compressors comprising jaws pivoted together and provided with operating-handles, one of said compressors being formed with a slot, lips on the inner faces of said jaws, a former, a support for the former projecting through the slot of said compressor, and a spring encircling said support and serving to hold said former from the last-named compressor.

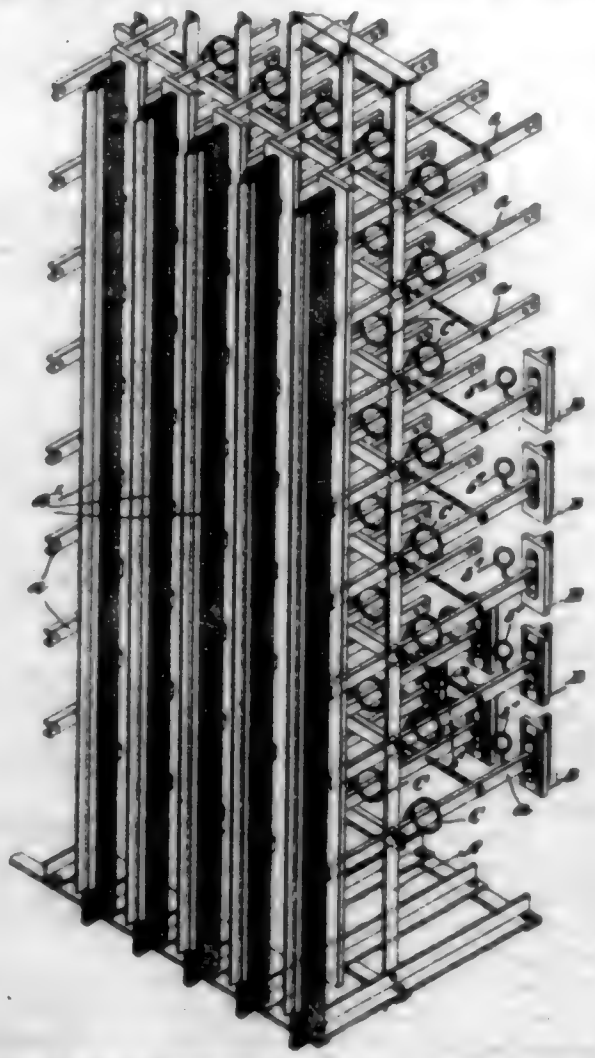
816,846. CARBURETER FOR PETROLEUM-MOTORS. FERDINAND CHARRON and LÉONCE GIRARDOT, Paris, France. Filed Mar. 22, 1902. Serial No. 99,514.

Claim.—A jet or spray carbureter for petroleum-motors, comprising a carburation-chamber to which leads the nozzle or petrol-outlet nozzle *b* and which is connected by one side to the air-inlet pipe *a* and by the other side to the combustible-mixture-outlet pipe *c* leading to the motor, in combination with an iris diaphragm *f* arranged across the air-stream-issuing section in the plane of the orifice of the nozzle *b*, a rotating cylinder *f* which controls the blades of

the diaphragm and which is provided with windows a for the outlet of the combustible mixture, a plate m which keeps said cylinder in position and insures a joint on its circumference and a controlling-lever c secured to the cylinder outside of the carbureter, substantially as and for the purpose set forth.



816,847. IRON-FRAMED DISTRIBUTING-BOARD FOR TELEPHONE-EXCHANGES. FRANK B. COOK, Chicago, Ill. Filed Feb. 2, 1903. Serial No. 141,459.



Claim.—1. In a distributing-board, the combination of a supporting-frame having rearwardly-extending arms, a terminal block secured to the rear end of each of said arms, said blocks being arranged in rows both vertically and horizontally, and a conductor-supporting ring associated with each block.

2. In a distributing-board, the combination of a supporting-frame, the said frame having horizontally-disposed rearwardly-extending arms, a plurality of vertically-disposed supports secured to the forward ends of said arms, and terminal blocks secured to the rear ends of said arms, said blocks being arranged in rows, both vertically and horizontally there being but a single supporting-arm for each block, and the blocks all being readily removable from their respective arms.

3. In a distributing-board, the combination of a supporting-frame, said frame having horizontally-disposed rearwardly-extending arms, and terminal blocks secured to the rear ends of said arms, said blocks being arranged in rows, both vertically and horizontally there being but a single supporting-arm for each block, and the blocks all being readily removable from their respective arms.

4. In a distributing-board, the combination of a supporting-frame, the said frame having horizontally-disposed rearwardly-extending arms, a plurality of metallic supporting-strips secured to the forward ends of said arms, and a terminal block secured to the rear end of each arm.

5. In a distributing-board, the combination of a supporting-frame, a plurality of terminal blocks arranged in horizontal rows at the back of said frame, and with space between the rows, the members of each row having a vertical arrangement, and a plurality of line-terminal strips secured to the face of each block, the strips of each block being mounted one above the other there being but a single supporting-arm for each block, and the blocks all being readily removable from their respective arms.

6. In a distributing-board, the combination of a metal frame provided with arms, a terminal block secured to the end of each arm each block being provided with four rows of holes, the holes of one row alternating with those of the adjacent row, and a plurality of metal line-terminal strips suitably mounted upon the outer face of each block, the terminal strips of each block being arranged in two rows, the members of one row of terminals alternating with those of the other row.

7. In a distributing-board, the combination of a supporting-frame, a plurality of terminal blocks secured to the back of said frame, said blocks being arranged in vertically-extending rows, and with space between the rows, the members of each row having a vertical arrangement, and a plurality of line-terminal strips secured to the face of each block, the strips of each block being mounted one above the other each block being removably secured to the frame by a single attaching-bracket.

8. In a distributing-board, the combination of an iron frame provided with arms, a metal bracket removably secured to the end of each arm, terminal blocks suitably secured to said brackets, said blocks being arranged in rows both vertically and horizontally with space between, and a group of metal line-terminal strips suitably mounted upon the outer face of each block.

9. In a distributing-board, the combination of a supporting-frame, a plurality of terminal blocks secured to the back of said frame, said blocks being arranged in rows both vertically and horizontally, and with space between the vertical and horizontal rows, and a plurality of line-terminal strips secured to each block each block being removably secured to the frame by a single attaching-bracket.

10. An iron-framed distributing-board having its back provided with a plurality of vertically-disposed strips of insulation carrying horizontally-disposed metallic line-terminal strips, said strips of insulation being arranged in rows, both vertically and horizontally and each strip of insulation being removably connected with the frame through the medium of a single attaching-bracket.

11. In a distributing-block for a distributing-board, the combination of a terminal block, a strip of insulation secured thereto, rows of metallic terminal clips extending through the strip of insulation and suitably secured thereto, holes through the terminal block arranged to accommodate conductors leading from the terminal clips, a suitable bracket secured to the terminal block for mounting same to the distributing-frame, and a distributing-ring secured to the said bracket and through which the said conductors extend.

12. In a distributing-block for a distributing-board, the combination of a terminal block, a strip of insulation secured thereto, metallic terminal clips extending through the strip of insulation and suitably secured thereto, holes through the terminal block arranged to accommodate conductors leading from the terminal clips, and a distributing-ring in proximity to the distributing-block through which the said conductors extend.

13. In a distributing-block for a distributing-board, the combination of a terminal block, a strip of insulation secured thereto, metallic terminal clips extending through the strip of insulation and suitably secured thereto, and holes through the terminal block arranged in parallel rows, the holes of one row alternating or being staggered with the holes of another row, and adapted to accommodate conductors leading from the terminal clips.

14. A strip of insulating material, holes extending transversely through the said strip so as to be entirely surrounded by the material thereof, metallic terminal clips inserted endwise through the said holes so as to leave space between a portion of the surface of each clip and a portion of the surface of each hole, respectively, and bent portions on the inserted ends of the clips, formed thereon after same are inserted, to securely clamp the said clips in place in the said holes.

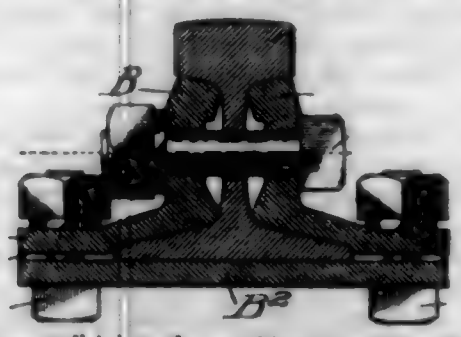
15. In a distributing-block for a distributing-board, the combination of a terminal block, a strip of insulation secured thereto, rows of metallic terminal clips extending through holes in the said strip of insulation and bent at each side of the strip of insulation to clamp the said clips in place in the said holes, and rows of holes through the terminal block arranged to accommodate conductors leading from the terminal clips.

16. In a distributing-board of the character described, a terminal block B, a strip of insulation b' suitably secured to the block B, rows of holes extending transversely through the strip of insulation b', the holes of one row alternating with the holes of another row, terminal strips $b\,b$ extending through the said holes in the strip of insulation b', each said terminal strip b being offset or bent at each end of the hole through which it extends to clamp it in the said hole, holes $b^0\,b^0$ extending through the terminal block B adjacent to the terminal strips $b\,b$, the conductors leading from the terminal strips $b\,b$ passing through the said holes $b^0\,b^0$, a bracket secured to the block B and adapted to be secured to the iron framework of a distributing-board or the like, and a distributing-ring b^4 suitably secured to the said bracket and through which the said conductors extend, substantially as described.

17. In a distributing-board, the combination of a supporting-frame provided with horizontally-disposed arms, vertically-disposed protector-strips carried by the forward ends of the said arms, terminal blocks carried by the rearward ends of said arms and arranged in rows both vertically and horizontally with space between, each block being mounted separately on its supporting-arm, and suitable terminal strips carried by the said blocks.

18. In a distributing-board, the combination of vertically-arranged supports carrying horizontally-disposed arms, vertically-disposed protector-strips carried by the forward ends of the said arms, suitable protectors carried by the protector-strips, terminal blocks carried by the rearward ends of said arms and arranged in rows both vertically and horizontally with space between, each block being mounted separately on its supporting-arm, suitable strips of insulation carried by the said blocks, metallic terminal strips carried by the said strips of insulation, and suitable distributing-rings to accommodate the jumper-wires leading from the protectors to the terminal blocks.

816,848. RAIL-JOINT. WILLIAM DAVIS, Bloomington, Ill., assignor, by direct and mesne assignments, of one-third to W. A. Freese, Bloomington, Ill., one-third to G. W. Quactenbush, Marshall, Mo., and one-third to C. A. King, Chicago, Ill. Filed Mar. 13, 1905. Serial No. 249,780.

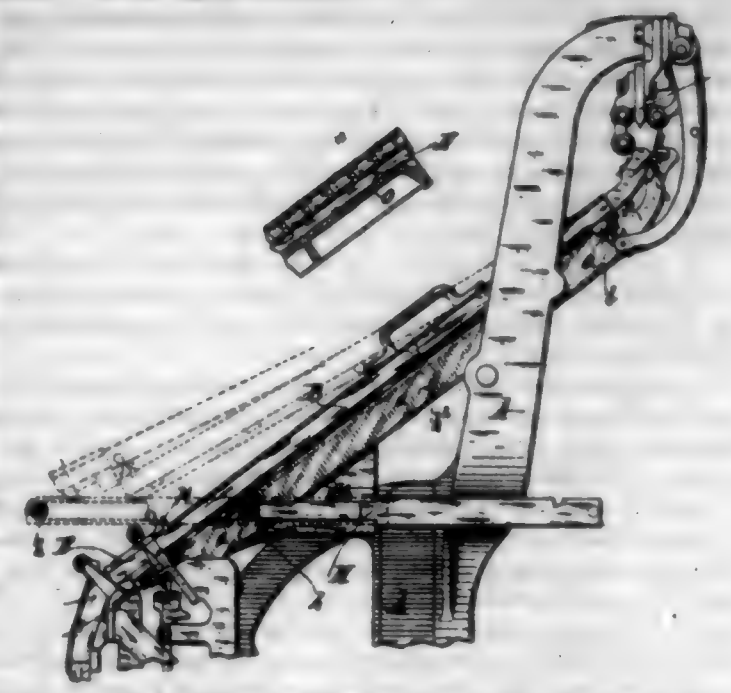


Claim.—In a rail-joint, the combination with rails, of a flat, flangeless base-plate supporting the adjacent end portions of the rails, fish-plates embracing the rails and having bearings on the base-flanges at their bases, the base-plate having lateral edge portions projecting beneath the fish-plate flanges and separated therefrom by spaces, bolts joining the fish-plates and passing through the webs of the rails, whereby the rails are clamped between the fish-plates, and bolts connecting the fish-plate flanges with the lateral portions of the base-plate wholly outside the edges of the base-flanges of the rails and having bearings on the fish-plate flanges and on the marginal portions of the base-plate outside the base of the rail, whereby the base-flanges of the rails are securely clamped and the springiness of the metal aids in maintaining a tight joint, substantially as and for the purpose set forth.

816,849. LINOTYPE-MACHINE. PHILIP T. DODGE, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed June 5, 1905. Serial No. 263,783.

Claim.—1. In a linotype-machine, the combination of a main frame, an inclined magazine removable endwise at the front of the machine, and means for mechanically lifting the forward end of the magazine and sustaining it during its removal and replacement clear of the adjacent parts at the front of the machine.

2. In a linotype-machine, the combination of a main frame, an escapement mechanism fixed thereon, a magazine sustained on the frame in operative relation to the escapement mechanism and removable endwise at the front of the machine, and mechanism for raising the magazine and sustaining the same clear of the escapement mechanism during its removal.



3. In a linotype-machine, the combination of a main frame, an inclined magazine mounted thereon and removable endwise at the front of the machine, and a support movable forward beyond the magazine and adapted to raise the same and sustain it during its removal.

4. In a linotype-machine, a main frame, an inclined magazine removably mounted thereon, magazine-supports adapted to be advanced to the front of the machine, and means for suspending the magazine thereon.

5. The combination of the main frame and the base-frame a thereon, the removable magazine, and the sliding frame H.

6. The combination of the main frame and secondary frame a thereon, the forwardly-sliding frame H, and the removable magazine provided with suspending means to engage the frame H.

7. In a linotype-machine, the main frame, the inclined frame a thereon, the magazine removable in a forward direction, the movable support for the forward end of the magazine, and means, such as projections b, to prevent accidental movement of the magazine endwise.

8. In a linotype-machine and in combination with a supporting-frame a, a magazine B seated thereon and removable endwise therefrom at the front, and longitudinally-guiding means substantially as described to prevent lateral movement of the magazine during its removal and replacement.

816,850. PROCESS OF PREPARING AND GROWING AND DISTRIBUTING ORGANISMS WHICH FIX OR GATHER ATMOSPHERIC NITROGEN. GEORGE H. RAPP-THOMAS, Wellington, New Zealand. Filed Sept. 20, 1905. Serial No. 280,663.

Claim.—1. The herein-described process which consists of thoroughly cleaning and sterilizing the nodule of a leguminous plant, then fracturing it while sterilized, and obtaining from it a quantity of bacteria in a bacteriologically-pure condition and mixing them with a corresponding quantity of sterilized water until a milky fluid is produced, then taking a predetermined quantity of the milky fluid and placing it in a culture vessel with a medium substantially free from nitrogen, and maintaining the culture vessel at developing temperature until the bacteria colonies appear.

2. The herein-described process which consists of thoroughly cleaning and sterilizing the nodule of a leguminous plant, then fracturing it while sterilized, and obtaining from it a quantity of bacteria in a bacteriologically-pure condition and mixing them with a corresponding quantity of sterilized water until a milky fluid is produced, then taking a predetermined quantity of the milky fluid and placing it in a culture vessel with a medium substantially free from nitrogen, and maintaining the culture vessel at developing temperature until the bacteria colonies appear, then transferring part of the bacteria colonies to distributing vessels containing media, and maintaining these distributing vessels at a developing temperature until the bacteria colonies have developed.

3. The herein-described process which consists of thoroughly cleaning and sterilizing the nodule of a leguminous plant of the nitrogenous class, then fracturing the nodule while sterilized, and obtaining from it a quantity of bacteria in a bacteriologically-pure condition, then mixing with it a corresponding quantity of sterilized water until a milky fluid is produced, then taking a small quantity of the milky fluid and placing it in a culture vessel containing a medium and maintaining this culture vessel and its contents at a substantially even temperature of approximately 25° centigrade until the bacteria colonies appear, then transferring a small quantity of the bacteria colonies to distribution vessels containing media, and maintaining these last-mentioned vessels at a substantially even temperature of about 25° centigrade until the bacteria colonies have developed.

4. A process for preparing, growing and distributing organisms which fix or gather atmospheric nitrogen consisting of preparing and growing the organisms and maintaining them virulent in distributing vessels.

5. A process for preparing, growing and distributing organisms which fix or gather atmospheric nitrogen consisting of preparing and growing the organisms and maintaining them virulent in a distributing vessel by a medium contained therein.

6. A process for preparing and growing and distributing organisms which fix or gather atmospheric nitrogen, consisting of preparing the organisms, growing and distributing them on a moist medium of a non-nitrogenous character.

7. A process for preparing and growing and distributing organisms which fix or gather atmospheric nitrogen consisting of preparing and growing the organisms bacteriologically pure and maintaining them in distributing vessels in a substantially non-nitrogenous environment.

8. The process of distributing nitrogen-gathering organisms, which consists in transferring such organisms from a laboratory stock culture to a distributing vessel substantially closed against access of air and containing a medium of a non-nitrogenous character, and transporting them in said distributing vessel.

9. The process of distributing virulent nitrogen-gathering organisms, which consists in transporting them in a substantially nitrogen-free environment.

10. The process of restoring non-virulent organisms contained in a distributing vessel which consists in providing a vessel with a sterilized medium, bringing the vessels into juxtaposition and discharging the contents of one into the other.

11. The process of restoring the virulency of non-virulent nitrogen-gathering organisms, which consists in supplying medium of a non-nitrogenous character to distributing vessels containing said non-virulent organisms.

12. A medium for the culture of organisms which fix or gather atmospheric nitrogen comprising ash, agar, maltose, and water.

13. A medium for the culture of organisms which fix or gather atmospheric nitrogen comprising fourteen grams of ash, two thousand two hundred and ten cubic centimeters of water, twenty-six grams of shredded agar, and thirty-five grams of maltose.

14. A medium for the culture of organisms which fix or gather atmospheric nitrogen comprising fourteen grams of ash, two thousand two hundred and ten cubic centimeters of water, twenty-six grams of shredded agar, and thirty-five grams of maltose, and a restoring medium proportionally consisting of fifteen-hundred cubic centimeters of water, ten grams of ash, and twenty-six grams of maltose.

15. A non-nitrogenous medium for preparing and growing and distributing organisms which fix or gather atmospheric nitrogen comprising, ash, carbohydrate, and water.

16. A non-nitrogenous medium for preparing and growing and distributing organisms which fix or gather atmospheric nitrogen comprising carbohydrate, water and neutralizing agent.

17. A non-nitrogenous medium for preparing and growing and distributing organisms which fix or gather atmospheric nitrogen comprising ash, carbohydrate, water and a stiffening agent.

18. A medium containing nitrogen-gathering bacteria in sealed distributing vessels.

19. A medium for the culture and distribution of nitrogen-gathering organisms, said medium being free from nitrogen and containing the constituents of wood-ash.

20. A bacteriological distributing-package containing virulent nitrogen-gathering bacteria in a substantially nitrogen-free environment.

21. A bacteriological distributing-package comprising a receptacle, a non-nitrogenous medium contained therein, a culture of nitrogen-gathering organisms carried by the medium and means for restricting the access of air to the receptacle.

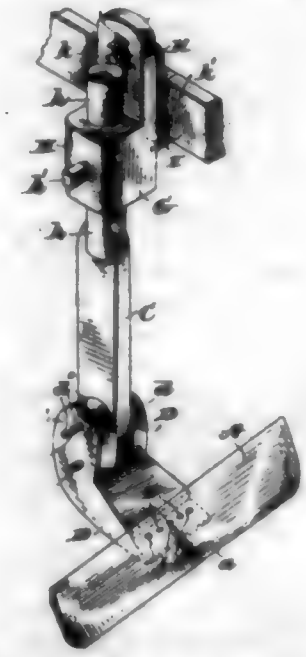
22. A bacteriological distributing-package comprising a sealed receptacle, a non-nitrogenous medium contained therein and a culture of virulent nitrogen-gathering organisms carried by the medium.

23. A bacteriological distributing-package comprising a receptacle, a non-nitrogenous medium, and a culture of virulent nitrogen-gathering organisms carried by the medium, said medium containing the constituents of wood-ash.

24. A bacteriological distributing-package comprising a receptacle, a culture medium, and a culture of nitrogen-gathering organisms, said medium containing ash.

25. A bacteriological distribution-package comprising a receptacle, a culture medium, and virulent nitrogen-gathering organisms in said receptacle.

816,851. **WEEDER ATTACHMENT.** CHARLES D. EDDY, Blue Creek township, Paulding county, Ohio. Filed Aug. 8, 1905. Serial No. 273,834.



Claim.—1. An attachment of the character described comprising a transversely-adjustable cutter-blade, and means for supporting the same including a shank, means for rotatably and lengthwise adjustably supporting the shank, and a shiftable member between the shank and blade whereby the angularity of the blade relative to the ground may be changed.

2. An attachment of the character described comprising a transversely-disposed blade, and means for supporting the same including a shank, means for rotatably and lengthwise adjustably supporting the shank, and a shiftable member between the shank and blade whereby the vertical angularity of the blade relative to the ground may be changed.

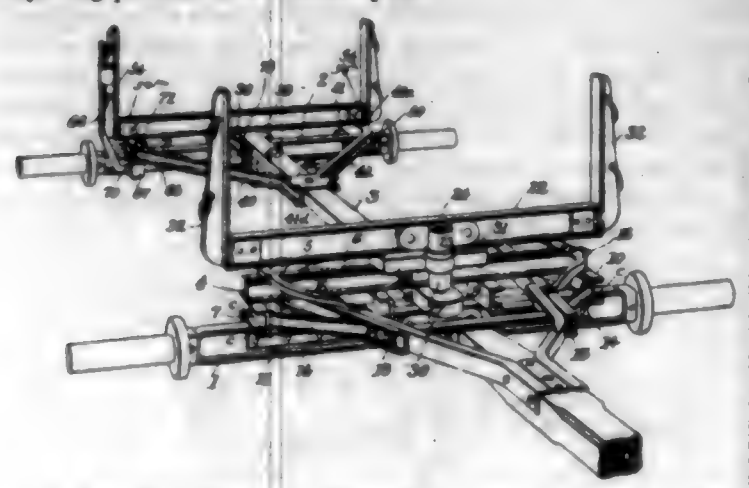
3. An attachment of the character described comprising a bracket having vertical and lateral bearing-surfaces for engaging the bottom and side surfaces of a beam, a substantially L-shaped bolt adjustably associated with said bracket and arranged to bear against the top and opposite side surfaces of said beam, an offset portion on said bracket, a shank member and an implement associated therewith in combination with means for adjustably securing said shank member in said offset portion of the before-mentioned bracket.

4. An attachment of the character described comprising a bracket having vertical and lateral bearing-surfaces for engaging the bottom and side surfaces of a beam, a substantially L-shaped bolt adjustably associated with said bracket and arranged to bear against the top and opposite side surfaces of said beam, an offset portion on said bracket, provided with a vertical opening, a shank member and an implement associated therewith in combination with means for adjustably securing said shank member in the opening of said offset portion.

816,852. **RUNNING-GEAR FOR VEHICLES.** EMIL RIEPELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Sept. 5, 1905. Serial No. 277,991.

Claim.—1. In a running-gear the combination of an axle having a vertical web and a horizontal flange, a bolster thereover, an angular bracket-plate attached to the web of the axle and projecting horizontally outward beyond the flange of the same, and an intermediate

spacing member connected respectively to said bolster and with the projecting portion of the bracket-plate.



2. In a running-gear the combination of an axle having a vertical web and horizontal flanges, a bolster provided with a horizontal flange, an angular bracket-plate connected with the web of the axle and projecting outwardly beyond the flange of the same, and a chair-plate seated between the bolster and axle and fastened respectively to the flange of the bolster and to the projecting portion of the bracket-plate.

3. In a running-gear the combination of an axle embodying a vertical web and oppositely-extending horizontal flanges, a bolster, angular bracket-plates attached to opposite sides of the web of the axle and projecting outwardly in opposite directions therefrom beyond the edge of the flanges, and a spacing member between the bolster and axle, said spacing member being fixed to the bolster and provided with a flange fixed to the projecting portions of the bracket-plates.

4. In a running-gear the combination of an axle having a vertical web and oppositely-extending flanges at the top, a bolster formed with horizontal flanges at the bottom, angular bracket-plates secured to the vertical web of the axle and projecting outwardly beyond the flanges of the same, and fore-and-aft-spacing members formed with upper and lower flanges connected respectively with the flanges of the bolster and with the projecting portions of the bracket-plates.

5. In a running-gear the combination of an axle formed with a vertical web and a horizontal flange, a bolster, hounds fixed to the bolster and provided with a lower flange, and an angle-plate fixed to the web of the axle, projecting outwardly beyond the flanges of the same and connected with the lower flange of the hounds.

6. In a running-gear the combination of an axle provided with a vertical web and a horizontal flange, hounds extending across the axle at opposite sides of the center and formed with upper and lower horizontal flanges, bracket-plates fixed to the web of the axle and having a horizontal portion extending beyond the flange of the axle and connected with the lower flange of the hounds, and a bolster seated on the hounds and formed with a flange fixed to the upper flange of the hounds.

7. In a running-gear the combination of an axle provided with a vertical web and oppositely-extending horizontal flanges, two pairs of angular bracket-plates, the plates of each pair being applied to opposite sides of the web of the axle and riveted to the same and formed with horizontal portions projecting in opposite directions beyond the flanges, a plurality of fore-and-aft chair-plates formed with upper and lower flanges, said chair-plates being seated on the projecting portions of the bracket-plates and having their bottom flanges riveted to the projecting bracket-plates, and a bolster formed with a bottom flange seated on and riveted to the upper flange of the chair-plates.

8. In a running-gear the combination of an axle formed with a vertical web and oppositely-extending horizontal flanges, bracket-plates formed with a vertical portion attached to said web, and with a horizontal portion extending outwardly beyond the flanges and at an inclination upward above the upper face of said flanges, a bolster, and intermediate spacing members fixed to the bolster and formed with a bottom flange fixed to the upwardly-inclined projecting portion of the bracket-plates.

9. In a running-gear the combination of an axle, a sand-bolster thereover, hounds extending between said parts and secured to the same, spacing members extending between the axle and bolster and fastened to the same, and hound-braces fastened to the spacing members and to the hounds.

10. In a running-gear the combination of an axle, a sand-bolster thereover, hounds extending between the axle and bolster and fastened to the same, fore-and-aft chair-plates between the axle and bolster at the outer sides of the hounds and secured to said axle and bolster, and hound-braces fastened between their ends to the chair-plates, and connected at their ends with the hounds.

11. In a running-gear the combination of an axle, a sand-bolster thereover, hounds extending between said parts, and a hound circle-iron, comprising an angle-bar bent in the form of a loop with its forward ends fastened to the hounds, the said angle-bar being flattened and applied to the top of the bolster and the flattened portion fastened to the same.

12. In a running-gear for vehicles, the combination of an axle, hounds secured thereto, a hound circle-iron, and an intermediate connecting angle-plate formed with a horizontal portion seated on and riveted to the hound, and with a vertical portion seated against and riveted to the circle-iron.

13. In a running-gear the combination of an axle, hounds secured thereto, a hound circle-iron formed with a horizontal top flange and with a vertical flange, and angle-plates having their vertical portion fastened to the vertical flange of the circle-iron, and their horizontal portion fastened to the upper side of the hounds.

14. In a running-gear the combination of an axle, hounds secured thereto, a hound circle-iron fixedly sustained with reference to the hounds and extending transversely above the same in rear of the axle, said circle-iron being formed with a horizontal inwardly-extending top flange, and with a vertical flange, and a wear-plate formed with a vertical flange seated and secured to the vertical flange of the circle-iron, and having a horizontal flange extending rearwardly from said circle-iron and serving as a bearing-surface for the reach.

15. In a running-gear the combination of an axle, a sand-bolster fixed thereover and formed with a rounded bearing-socket having a hole therethrough for the king-bolt, and a bolster surmounting the sand-bolster and formed with a depending rounded projection to enter said socket in the sand-bolster, said projection having an opening therethrough for the king-bolt.

16. In a running-gear the combination of an axle formed with a vertical web and forwardly-extending upper and lower flanges, a king-bolt bearing-block fixed to said web and extending beyond the flanges, a sand-bolster fixed above the axle, a king-bolt bearing-block extending at the front of the sand-bolster, a bolster surmounting the sand-bolster and formed with a vertical web and forwardly-extending flanges, a king-bolt bearing-block connected with the web of said bolster and extending beyond the flanges, and a king-bolt extending downward through said bearing-blocks.

17. In a running-gear the combination with the bolster formed with a vertical longitudinal web, of a stake having a transverse flange seated against the web, and an angle-plate seated in the angle formed by the web and flange and secured to said parts.

18. In a running-gear the combination with a bolster formed with upper and lower oppositely-extending horizontal flanges, and with a central longitudinal connecting-web, of a stake formed with a flat transverse flange seated against the end of the bolster, and angle-plates formed with a longitudinal portion and with a transverse portion, said angle-plates being seated in the angles formed by the flanges of the bolsters and flange of the takes, with the longitudinal portion of the angle-plates fastened to the web and the transverse portion of the angle-plates fastened to the flange of the stake.

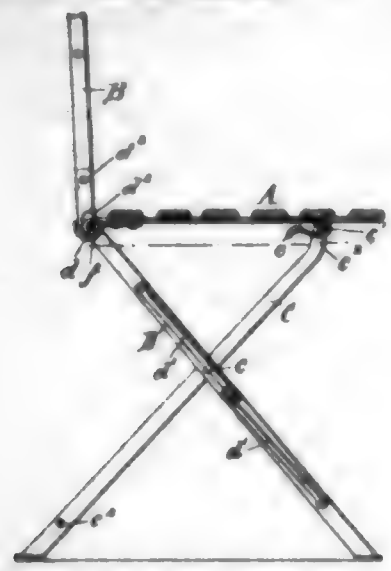
19. In a running-gear the combination with a bolster of I form in cross-section, of a stake of T form in cross-section seated against the end of the bolster, and opposing angle-plates seated in the angles formed by the bolster and stake and firmly fastened to the same.

20. In a running-gear for vehicles, the combination of the rear axle and bolster thereover, intermediate spacing members connected with the bolster and axle and arranged with a space between them to receive and guide the reach, a brake-shaft bearing sustained by one of the spacing members; whereby this spacing member serves the threefold function of spacing the axle and bolster at the center, guiding the reach, and sustaining the brake-shaft bearing, a hound extending between the axle and bolster, a brake-shaft bearing sustained by said hound, a brake-shaft mounted in said bearings, and a brake mechanism operatively connected with the shaft.

21. In a running-gear and in combination with the rear axle, a bolster thereover, a fore-and-aft chair-plate extending between the axle and bolster and formed with upper and lower horizontal flanges arranged outwardly, hounds extending between and secured to the bolster and axle, a brake-shaft bearing-block on the under side of the lower flange of the chair-plate, a staple-bolt embracing said block and extending upwardly through the flanges of said chair-plate, a brake-shaft bearing applied to the under side of one of the hounds, a

staple-bolt embracing said bearing and the bound, a brake-shaft mounted in said bearings, and a brake mechanism operatively connected with said shaft.

816,853. FOLDING CHAIR. JOHN E. EMMLE, West Seneca, N. Y. Filed Mar. 13, 1905. Serial No. 249,711.



Claim.—1. In a folding chair, the combination of legs, a seat pivoted to the same, a back pivoted at its lower end to the legs above the pivot-line of the seat and provided with a stop-arm which projects downwardly from the pivot-line of the back and swings toward and from the pivot of the seat, a stop on the pivot of the seat which arrests the forward movement of the stop-arm, and a locking-jaw arranged on the seat and engaging against the rear side of the stop-arm when the latter rests against said stop, substantially as set forth.

2. In a folding chair, the combination of legs, a seat pivoted to the same, a back pivoted to the legs above the pivot-line of the seat and provided with a stop-arm which projects downwardly from the pivot-line of the back and has its lower end arranged in rear of the pivot-line of the seat, a hinge-knuckle on the seat, connecting the seat with the legs and forming a stop which arrests the forward movement of the stop-arm and the rearward movement of the back, and a locking-jaw on the seat which engages against the rear side of the stop-arm when the latter bears against said knuckle, substantially as set forth.

3. A folding chair comprising two pairs of oblique folding legs, the rear pair having upright top extensions, a back pivoted at its lower end between the upper ends of said top extensions, and a seat pivoted at the lower ends of said top extensions, both the back and seat being arranged to swing downwardly in folding the chair, substantially as set forth.

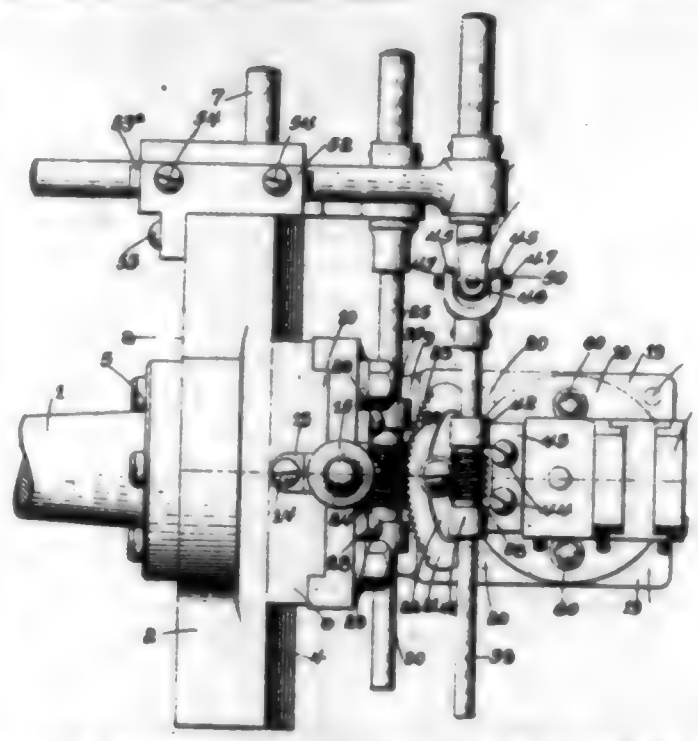
4. A folding chair comprising a pair of oblique inner legs provided with upright top portions, a pair of oblique outer legs pivoted to said inner legs, a seat pivoted at its rear end between the inner legs at the lower ends of their upright top portions, and a back pivoted at its lower end between the inner legs at the upper ends of their upright top portions, the back and the seat being arranged to swing downwardly in folding the chair, substantially as set forth.

816,854. TAPER-BORING MACHINE. ANTHONY FERNANDEZ, Dunkirk, N. Y. Filed Oct. 28, 1901. Serial No. 80,197.

Claim.—1. A taper-boring machine, comprising a rotating stem or spindle, a cross-beam secured to said spindle, a slide-block movably mounted thereon, a turret adjustable to any angle, adjusting connecting mechanism interposed between the cross-beam and the turret, comprising shafts for adjusting the turret, one of which is provided with a universal joint permiting of such adjustment from a point outside and independently of the turret.

2. In a taper-boring machine, a support, a turret revoluble on said support, means for revolving said turret, a tool-holder supported on said turret, a feed-screw operatively connected with the tool-holder, a worm-wheel secured to said feed-screw, a shaft connected by a universal connection, a slidable bearing for and holding one section of said shaft subetantially perpendicular to the support, a bearing fixed to and rotatably movable with the turret in which the other section of the shaft is mounted and a worm mounted on the shaft to revolve therewith but to allow independent endwise movement of the shaft, said worm being held in mesh with said worm-wheel.

3. In a taper-boring machine, the combination of a cross-beam, a slide-block adjustable longitudinally on the cross-beam, a turret-support adjustable at right angles to the cross-beam on the slide-block, a turret carried revolubly on said support, a tool-holder supported on said turret, a feed-screw operatively connected with the tool-holder, a worm-wheel secured to said feed-screw, a slide-bar held transversely adjustable on the cross-beam, a universally-jointed shaft journaled in said slide-bar at right angles to the slide-bar and the turret, and a worm mounted on the shaft to revolve therewith but to allow independent endwise movement of the shaft, said worm being held in mesh with said worm-wheel.



4. In a taper-boring machine, a cross-beam, a slide-block on the cross-beam, a turret-support on the slide-block, a turret having a toothed segment and being revolubly supported upon the turret-support, a shaft having a worm engaging a toothed segment, a tool-holder slidably mounted on the turret, and a sectional universally-jointed bar having one section journaled upon the turret for adjusting the said tool-holder, and a slidable bearing carried by the cross-beam for journaling the other section.

5. In a taper-boring machine, a support, a turret carried by the support, means for partially rotating said turret, a tool-holder on said turret and a sectional universally-jointed shaft adapted to adjust said tool-holder on said head, one only of the sections of said rod being journaled on the turret and the other in a bearing slidably mounted in the support.

6. In a taper-boring machine, a support, a turret revolubly attached to said support and having a toothed segment, a shaft carrying a worm meshing with the segment, a tool-holder slidably mounted on the turret and a sectional universally-jointed shaft having means for adjusting the tool-holder, one section of said shaft having slidable adjustment at right angles to the cross-beam and the other section being journaled in bearings to the turret.

7. In a taper-boring machine, a cross-beam, a slide-block capable of longitudinal movement on said cross-beam, a turret-support slidably mounted on the slide-block, capable of movement transversely with respect to the cross-beam, a turret revolubly attached to said support, a tool-holder slidably mounted on the turret, a slide-bar having adjustable support and projecting laterally from the cross-beam, a shaft journaled in said slide-bar and being longitudinally adjustable therein, and a shaft having universally-jointed connection to said first-mentioned shaft and journaled in bearings attached to the turret, said last-mentioned shaft having means coupled to the shaft and tool-holder for slidably adjusting the tool-holder.

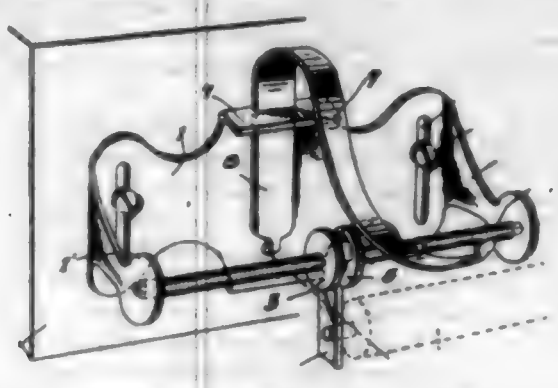
816,855. SHADE-BRACKET AND CURTAIN-POLE SUPPORT. JAMES E. FORBRAND, Seattle, Wash. Filed Nov. 20, 1905. Serial No. 288,211.

Claim.—1. A bracket of the type set forth comprising a frame, an immovable externally screw-threaded track supported thereon, a traveler in threaded engagement with said track, and a hanger carried by said traveler.

2. In a device of the type set forth comprising a frame, a track supported thereon and being externally screw-threaded, a traveler in threaded engagement with said track and being rotatable, and a hanger loosely engaging said traveler.

3. A device of the type set forth comprising a frame having an-

gular extensions, a track secured to said extensions of the frame, a traveler on said track and being adjustable longitudinally thereof, a hanger carried by said traveler, a forwardly-projecting keeper on the frame, and a curtain-pole hanger having a shank projecting through said keeper and provided with a tongue, said frame being formed with apertures adapted for reception of the tongue on the shank of said curtain-pole hanger.



816,856. PLUG. MATTHEW W. GARTSIDE and JAMES H. FOSTER, Cleveland, Ohio, assignor to Parish & Bingham Company, Cleveland, Ohio, a Corporation of West Virginia. Filed Dec. 7, 1904. Serial No. 235,813.



Claim.—1. A plug for sinks, bowls, &c., comprising a flexible body having an opening through the same, an inner thimble fitting within said opening and extending above said body, a flange on said thimble for fitting against the lower face of said body, a cap-plate fitting over the extending portion of said inner thimble, a flange on said cap-plate for fitting against the upper face of said body, and spring connections between the walls of said thimble and cap-plate for holding the same together.

2. A plug for sinks, bowls, &c., comprising a flexible body having an opening through the same, an inner thimble fitting within said opening and extending above said body, a flange on said thimble for fitting against the lower face of said body, a cap-plate fitting over the extending portion of said thimble, a flange on said cap-plate for fitting against the upper face of said body, and beads on the walls of said thimble and cap-plate for engaging with each other to hold the same together and in place.

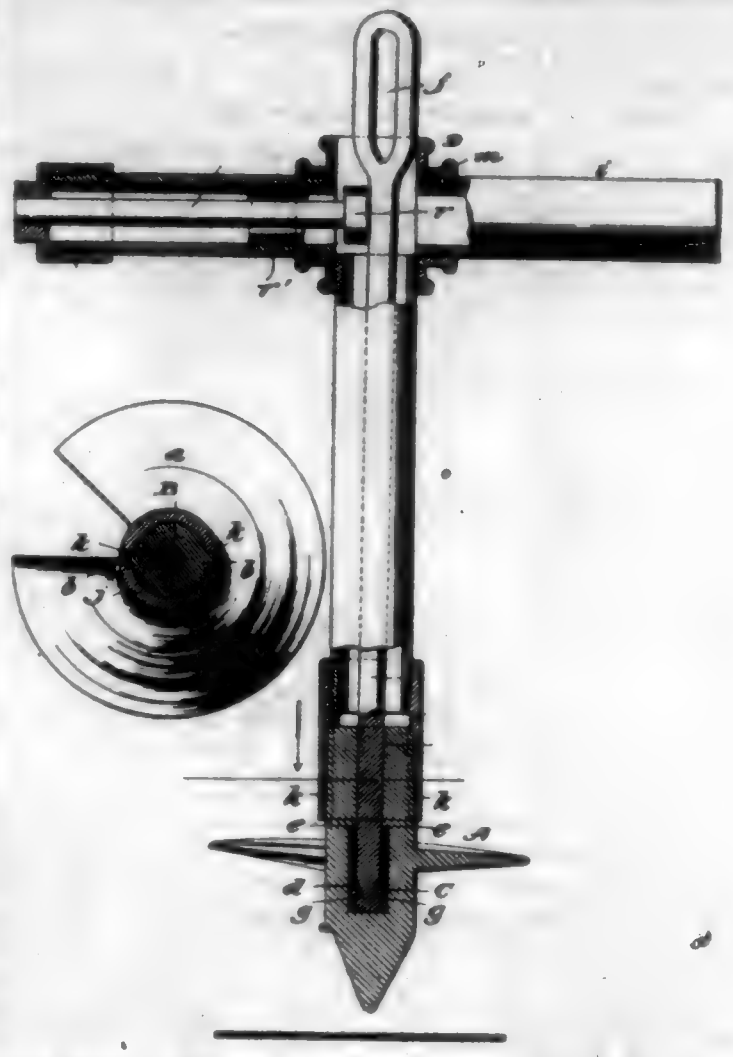
3. A plug for sinks, bowls, &c., comprising a flexible body having an opening through the same, an inner thimble fitting within said opening and extending above said body, a flange on said thimble for fitting against the lower face of said body, a cap-plate fitting over the extending portion of said thimble, a flange on said cap-plate for fitting against the upper face of said body, and beads struck out from the walls of said thimble and cap for engaging with each other and forming a spring connection to hold the same together and in place.

816,857. ANCHOR. ORRIN GEORGE and PHILIP SMITH, Sidney, Ohio, assignors to The Philip Smith Co., Sidney, Ohio. Filed Oct. 30, 1905. Serial No. 285,106.

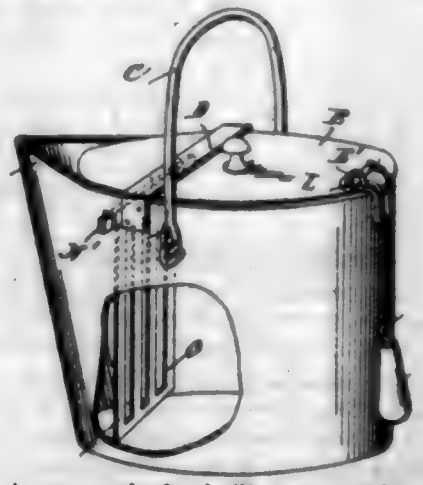
Claim.—1. The combination with an anchor having exterior fins, and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising a tubular portion adapted to receive the rod and provided in its lower end with grooves arranged to snugly receive the fins of the anchor.

2. The combination with an anchor and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising a tubular portion adapted to receive the rod, a hollow handle portion extending at an angle to said tubular portion, a body screwed and movable in and out on the said handle portion, and a stem fixed to said body and arranged to be moved through the medium of the same into and out of engagement with the rod.

3. The combination with an anchor having exterior fins, and a rod fixed with respect to and extending upwardly from the anchor; of an anchor-sinking device comprising an upright tubular portion adapted to receive the rod and provided in its lower end with grooves arranged to snugly receive the fins of the anchor, a tubular handle portion extending at an angle to the upright tubular portion, a cap-like body screwed on the outer end of said handle portion, and a stem fixed with respect to said cap-like body and arranged to engage the rod at the side thereof.



816,858. VEGETABLE-BOILER. ALICE M. HAM, Kent, Wash. Filed Sept. 13, 1905. Serial No. 278,281.



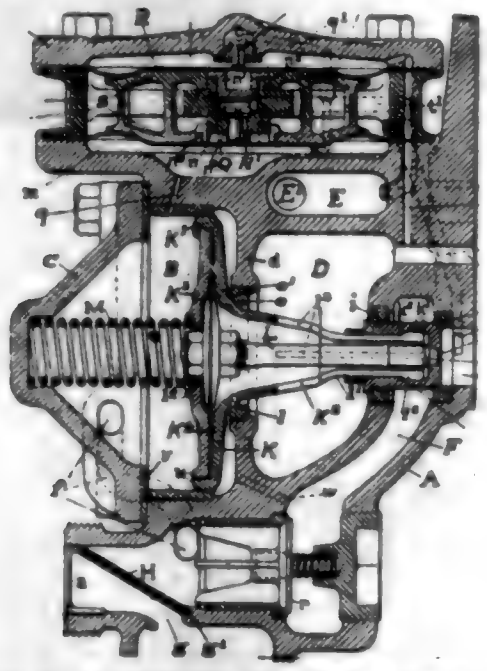
Claim.—1. A receptacle for boiling vegetables comprising a body portion having a nose, a rack having longitudinal slots therein, the upper end of the rack having oppositely-projecting arms which are pivotally mounted in apertures in the wall of the receptacle, with a space intervening between said rack and the entrance to the spout, said rack adapted to swing within the receptacle with its lower end a slight distance above the bottom of the latter, as set forth.

2. A receptacle for boiling vegetables comprising a body portion having a nose, a rack having longitudinal slots therein, the upper end of the rack having oppositely-projecting arms which are pivotally mounted in apertures in the wall of the receptacle, with a space intervening between said rack and the entrance to the spout, said rack adapted to swing within the receptacle with its lower end a slight distance above the bottom of the latter, a cover, and a strap fastened over the top of the receptacle and adapted to hold the forward edge of the cover to the receptacle, as set forth.

3. A receptacle for boiling vegetables comprising a body portion having a nose, a rack having longitudinal slots therein, the upper end of the rack having oppositely-projecting arms which are pivotally mounted in apertures in the wall of the receptacle, with a space intervening between said rack and the entrance to the spout, said

rack adapted to swing within the receptacle with its lower end a slight distance above the bottom of the latter, a cover, a strap fastened over the top of the receptacle and adapted to hold the forward edge of the cover to the receptacle, a loop secured to the kettle, an eye upon the cover over which said loop engages, a key passing through said eye, and a handle for tilting the receptacle, as set forth.

816,859. **FLUID-PRESSURE BRAKE.** MAURY W. HIBBARD, Chicago, Ill. Filed July 6, 1903. Serial No. 164,324.



Claim.—1. In an automatic fluid-pressure brake apparatus, having a movable abutment, governing the passage of pressure to the brake-cylinder, and a passage for feeding pressure from the train-pipe to the auxiliary reservoir, the combination of a separate movable flexible diaphragm device exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively, and a valve in said feed-passage actuated by movement of said diaphragm device to open said passage when the train-pipe pressure exceeds that in the auxiliary reservoir.

2. In an automatic fluid-pressure brake apparatus, having a movable abutment, governing the passage of pressure to the brake-cylinder, and a passage for feeding pressure from the train-pipe to the auxiliary reservoir, the combination of a separate movable flexible diaphragm device exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively, and a valve in said feed-passage actuated to open by movement of said diaphragm device under preponderance of train-pipe pressure, and operating to close said passage when the auxiliary-reservoir pressure exceeds that in the train-pipe.

3. In an automatic fluid-pressure brake apparatus having a movable abutment governing the passage of pressure to the brake-cylinder, a passage for feeding pressure from the train-pipe to the auxiliary reservoir, and a brake-cylinder exhaust-passage, the combination of a separate movable flexible diaphragm device exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively, and valves in both said passages actuated by movement of said diaphragm device to open said passages when the train-pipe pressure exceeds that in the auxiliary reservoir.

4. In an automatic fluid-pressure brake apparatus, having a movable abutment governing the passage of pressure to the brake-cylinder, a passage for feeding pressure from the train-pipe to the auxiliary reservoir and a brake-cylinder exhaust-passage, the combination of a separate movable flexible diaphragm device exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively, a check-valve in said exhaust-passage seating under pressure from the brake-cylinder and actuated by movement of said diaphragm device to open against any brake-cylinder pressure when the train-pipe pressure exceeds that in the auxiliary reservoir.

5. In an automatic fluid-pressure brake apparatus, having a movable abutment, governing the passage of pressure to the brake-cylinder, and a passage for feeding pressure from the train-pipe to the auxiliary reservoir, the combination of a separate movable diaphragm device exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively, a valve in said feed-passage actuated by movement of said diaphragm device to open said passage when the train-pipe pressure exceeds that in the auxiliary reservoir, and a pressure-retarding valve in said passage seating in the direction of the train-pipe.

6. In an automatic fluid-pressure brake apparatus, having a movable abutment, governing the passage of pressure to the brake-cylinder, and a passage for feeding pressure from the train-pipe to the auxiliary reservoir, the combination of a movable abutment formed with two coöperating diaphragms exposed at their outer sides, respectively, to pressure from the train-pipe and auxiliary reservoir, a brake-cylinder exhaust-passage between said diaphragms, and valves in said feed and exhaust passages actuated by movement of said coöperating diaphragms to open both said passages when the train-pipe pressure exceeds that in the auxiliary reservoir.

7. In an automatic fluid-pressure brake apparatus having a movable abutment governing the passage of pressure to the brake-cylinder, a passage for feeding pressure from the train-pipe to the auxiliary reservoir and a brake-cylinder exhaust-passage, the combination of a movable abutment formed with two coöperating diaphragms exposed at their outer sides respectively to pressure from the train-pipe and auxiliary reservoir and at their inner sides to atmosphere, and valves in said feed and exhaust passages actuated by movement of said coöperating diaphragms to open said passages when the train-pipe pressure exceeds that in the auxiliary reservoir.

8. In an automatic fluid-pressure brake apparatus having a movable abutment, governing the passage of pressure to the brake-cylinder, and a passage for feeding pressure from the train-pipe to the auxiliary reservoir, the combination of a stationary spider-frame having a chamber interposed in the brake-cylinder exhaust-passage, flexible diaphragms on opposite sides of said spider-frame exposed at their outer sides respectively to pressure from the train-pipe and auxiliary reservoir, a spacer movable upon said spider-frame and bearing at opposite sides respectively against said diaphragms and valves in said feed and exhaust passages actuated by movement of said spaced diaphragms.

9. In an automatic fluid-pressure brake apparatus having ports and passages communicating respectively with the train-pipe, auxiliary reservoir and brake-cylinder, the combination of an emergency-valve, a piston device governing said valve, a graduating-valve, and a flexible diaphragm on said piston device and having movement independent thereof operatively connected with said graduating-valve, said piston and diaphragm being exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively.

10. In an automatic fluid-pressure brake apparatus, having ports and passages communicating respectively with the train-pipe, auxiliary reservoir and brake-cylinder, the combination of a chambered emergency-valve provided with a service-port, a piston device having a chambered perforate stem operatively engaging said emergency-valve, a diaphragm on said piston device and having movement independent thereof, and a graduating-valve in the chambered emergency-valve governing said service-port operatively connected with said diaphragm, the said piston and diaphragm being exposed on opposite sides to pressure from the train-pipe and auxiliary reservoir respectively.

11. In a triple valve device for fluid-pressure brake apparatus having a piston-chamber communicating with the train-pipe, an auxiliary-reservoir chamber communicating with the auxiliary reservoir, an emergency-passage, and auxiliary reservoir feed and brake cylinder exhaust-passages, a brake-cylinder emergency-port extending from the emergency-passage and presenting a valve-seat, a guide-opening in line with said port extending between the emergency-passage and auxiliary-reservoir chamber and presenting a valve-seat to the auxiliary-reservoir chamber, a chambered emergency-valve movable in said guide-opening and having valve-faces arranged to close air-tight against said seats respectively, a service-port and graduating-valve in the chambered emergency-valve and operating means for said valves exposed to, and movable under variations in, pressure from the train-pipe and auxiliary reservoir.

12. In a triple valve device for automatic fluid-pressure brake apparatus, a piston-chamber communicating with the train-pipe, an auxiliary-reservoir chamber communicating with the auxiliary reservoir, an opening between said chambers surrounded by a valve-seat in the piston-chamber, a brake-cylinder emergency-passage communicating with the piston-chamber, auxiliary-reservoir feed and brake cylinder exhaust-passages, a piston device in said piston-chamber having a seating-face closing air-tight against said valve-seat and a stem portion passing through said opening, and emergency and graduating valves operatively connected with said piston device.

13. In a triple valve device for automatic fluid-pressure brake apparatus, a piston-chamber, a port at said chamber communicating with the train-pipe and presenting a valve-seat in said chamber, an auxiliary-reservoir chamber in open communication with the aux-

iliary reservoir, an opening between said chambers presenting a valve-seat in the piston-chamber, a brake-cylinder emergency-passage communicating with the piston-chamber, a piston device in the piston-chamber presenting valve-faces on its opposite sides to engage respectively and close air-tight against said piston-chamber valve-seats, and emergency and graduating valves operatively connected with said piston device, whereby in emergency action the piston after opening the emergency-valve, to admit train-pipe pressure to the brake-cylinder, opens the emergency-passage to the auxiliary reservoir and closes communication between the piston-chamber and train-pipe.

14. In a triple valve device for automatic fluid-pressure brake apparatus, a piston-chamber, a port in said chamber communicating with the train-pipe and presenting a valve-seat in said chamber, an auxiliary-reservoir chamber in open communication with the auxiliary reservoir, an opening between the said chambers presenting a valve-seat in the piston-chamber, a brake-cylinder emergency-passage extending from the piston-chamber near the train-pipe port therein, and a piston in the piston-chamber presenting valve-faces on its opposite sides to engage respectively and close air-tight against said piston-chamber valve-seats, and in its movement from one said seat to the other crossing the port of the emergency-passage, whereby in emergency action the piston after opening the emergency-valve, to admit train-pipe pressure to the brake-cylinder, crosses the emergency-port and opens the emergency-passage to the auxiliary reservoir and closes communication between the piston-chamber and train-pipe.

15. In a triple valve device for automatic fluid-pressure brake apparatus, the combination with the piston-chamber having an annular inner guide-wall, auxiliary-reservoir chamber, emergency-passage and auxiliary-reservoir feed and brake cylinder exhaust-passages, of an opening between the piston-chamber and auxiliary-reservoir chamber, presenting a valve-seat in the piston-chamber, a piston device formed with a valve-face at one side, a graduating spring operating normally to press the piston device at its said valve-face air-tight against said seat, the piston fitting around its circumference loosely the annular wall of the piston-chamber and sliding readily therein, and emergency and graduating valves operatively connected with said piston device, substantially as and for the purpose set forth.

16. In an automatic fluid-pressure brake apparatus, having a train-pipe passage, drain-cup and port in said passage opening into the drain-cup, a disk-shaped strainer fitting the bore of said passage and extending in an inclined direction over said port to deflect particles of dust into said port, substantially as described.

17. In an automatic fluid-pressure brake apparatus, having a train-pipe passage, drain-cup and port in said passage communicating with the drain-cup, a strainer having a frame presenting two parts at an angle to each other, fitting the bore of said passage and extending at one part in an inclined direction over said port and at its other part engaging the wall of the passage to hold the strainer firmly in position, and a wire-gauze diaphragm on said inclined part, substantially as described.

18. In a valve device for actuating fluid-pressure brakes, the combination of valve mechanism for controlling the admission and release of fluid-pressure to and from the brake-cylinder, and a valve normally tending to close communication between the train-pipe and auxiliary reservoir and cutting off the feed but actuated by said valve mechanism and held to open position when the brake-cylinder is at released position.

19. In a railway-brake-actuating device of the type in which a movable-abutment-actuated release-valve and a movable-abutment-actuated service-valve are independent of each other, the combination, with said valves, of means controlled by the abutment of the release-valve for governing the feed to the auxiliary reservoir.

20. In a device for actuating brakes, the combination of release-valve mechanism and a valve controlled by such release-valve mechanism and governing the flow or feed of air to the auxiliary reservoir.

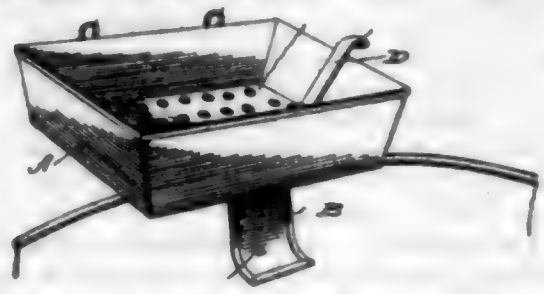
21. In a device for actuating brakes, the combination of release-valve mechanism, a feed-valve controlled by said release-valve mechanism and governing the flow or feed of air to the auxiliary reservoir, and means for causing the release-valve to open before the feed-valve opens.

22. In a device for actuating brakes, the combination of a single feed-passage extending from the train-pipe to the auxiliary reservoir, a valve in said passage closing in the direction of the auxiliary reservoir, a diaphragm operating by preponderance of train-pipe pressure to open said valve, and a check-valve in said passage closing in the direction of the train-pipe.

23. In a device for actuating brakes, the combination of release-valve mechanism and a separate valve arranged in a feed-passage between the train-pipe and auxiliary reservoir and governed by said release-valve mechanism to close said feed-passage approximately when the release-valve is closed, and to open the same approximately when the release-valve is opened.

24. In a device for actuating brakes, the combination of release-valve mechanism, a separate valve for controlling the feed of air to the auxiliary reservoir, and a movable abutment for operating both of said valves.

816,860. SOAP-HOLDER. CLARA HOWARD, Rice Lake, Wis. Filed Sept. 19, 1905. Serial No. 279,125.



Claim.—As a new article of manufacture, a soap-holder comprising a body shaped to receive a piece of soap, and an attaching-loop, of inverted-U shape, disposed below the body and fixed at the middle of its bight to the bottom thereof and having its ends flared and arranged in the same horizontal plane.

816,861. PHOTOGRAPHIC SHEET. WILLIAM H. JAMES, Iowa City, Iowa. Filed Oct. 30, 1905. Serial No. 285,161.



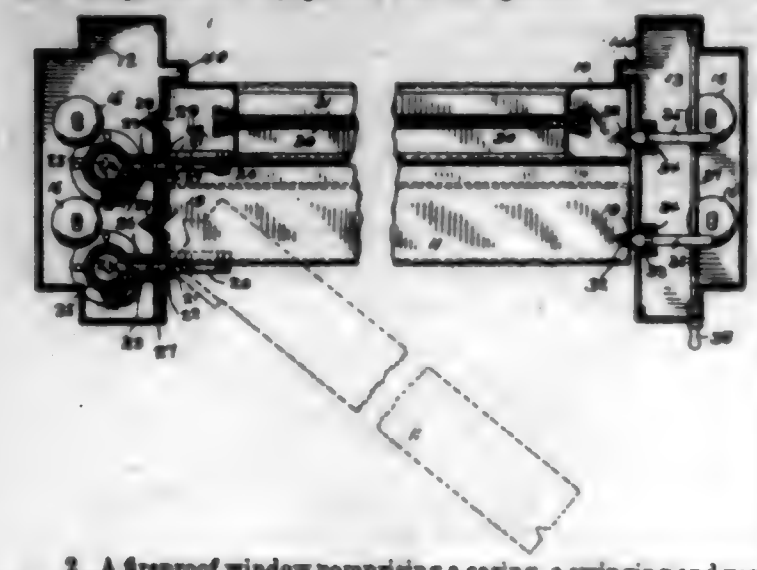
Claim.—1. As a new article of manufacture, a photographic sheet of paper or other suitable material, having a sight part designed to receive a picture, and also having a border surrounding the sight part and made up of an outer dark or dense portion and an inner mezzo-shade portion; the dark or dense portion being gradually merged into the mezzo-shade portion and the said mezzo-shade portion being gradually merged into the sight part, whereby the sheet simulates a raised panel.

2. As a new article of manufacture, a photographic device comprising a mount, and a flat photographic sheet of paper or other suitable material affixed at its back to the face of the mount; the said photographic sheet having a sight part designed to receive a picture, and also having a border surrounding the sight part and made up of an inner mezzo-shade portion which gradually merges into the sight part and an outer dark or dense portion which gradually merges into the mezzo-shade portion, whereby the sheet simulates a raised panel.

816,862. FIREPROOF WINDOW FRAME AND SASH. WILLIAM P. KIRK, Bridgeport, Conn. Filed July 14, 1905. Serial No. 269,626.

Claim.—1. A fireproof window comprising a casing, a swinging and vertically-movable sash fitted thereto, the free side of the sash having a vertical groove, and a combined guide and weather strip

fitted to said groove, means being provided for moving the strip to and from position of engagement with said groove.



2. A fireproof window comprising a casing, a swinging and vertically-movable sash fitted thereto, the free side of the sash having a vertical groove V-shaped in cross-section, a combined guide and weather strip shaped to fit said groove, and means for moving said strip to and from position of engagement with said groove.

3. A fireproof window comprising a casing having a vertical guideway, a counterbalanced sash, and hinges for said sash, each hinge having one leaf connected to the sash and the other leaf extending into the casing and having a head fitted to said guideway, the leaf being flat or in one plane from its head to the pintle of the hinge.

4. A fireproof window comprising a casing having a vertical guideway, a counterbalanced sash, and hinges for said sash, each hinge having one leaf connected to the sash and the other leaf extending into the casing and having a head fitted to said guideway, the leaf being flat or in one plane from its head to the pintle of the hinge, and the portions of the leaves which inclose the pintle bearing against the said casing.

5. A fireproof window comprising a sheet-metal casing having a concealed sheet-metal guideway inclosed within and protected by said casing, and a sliding and swinging sash having hinge members formed with heads inclosed in said guideways.

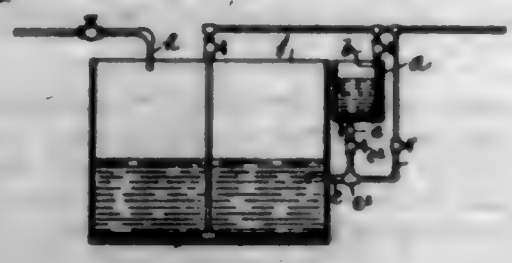
6. A fireproof window comprising a sheet-metal casing, a guideway inclosed within and secured to the casing to reinforce its wall, a sliding and swinging sash having hinge members formed with heads engaging the guideways.

7. A fireproof window comprising a sheet-metal casing, a sheet-metal guideway within the casing and having flanges secured to the wall thereof, and a sliding and swinging sash having hinge members formed with heads engaging the guideways.

8. A fireproof window comprising a sheet-metal casing, vertically movable and swinging sheet-metal sash-frames, the casing at the hinged side of the sashes having vertical channels and the adjacent sides of the sash-frames having ribs to fit said channels, the free sides of the sash-frames having vertical channels and the opposing wall of the casing having slots, and movable guide and weather strips adapted to project from said slots into the channels of the sashes and to be retracted into the casing.

9. A fireproof window comprising a sheet-metal casing, vertically-movable and swinging sheet-metal sash-frames, the casing at the hinged side of the sashes having vertical channels and the adjacent sides of the sash-frames having ribs to fit said channel, the free sides of the sash-frames having vertical channels and the opposing wall of the casing having slots, guides and weather-strips shaped to fit said sash-frame channels and mounted in said slots of the casing and having racks extending into the casing, shafts mounted in the casing and having pinions engaging said racks, and means for actuating said shafts and pinions to project and retract the said strips.

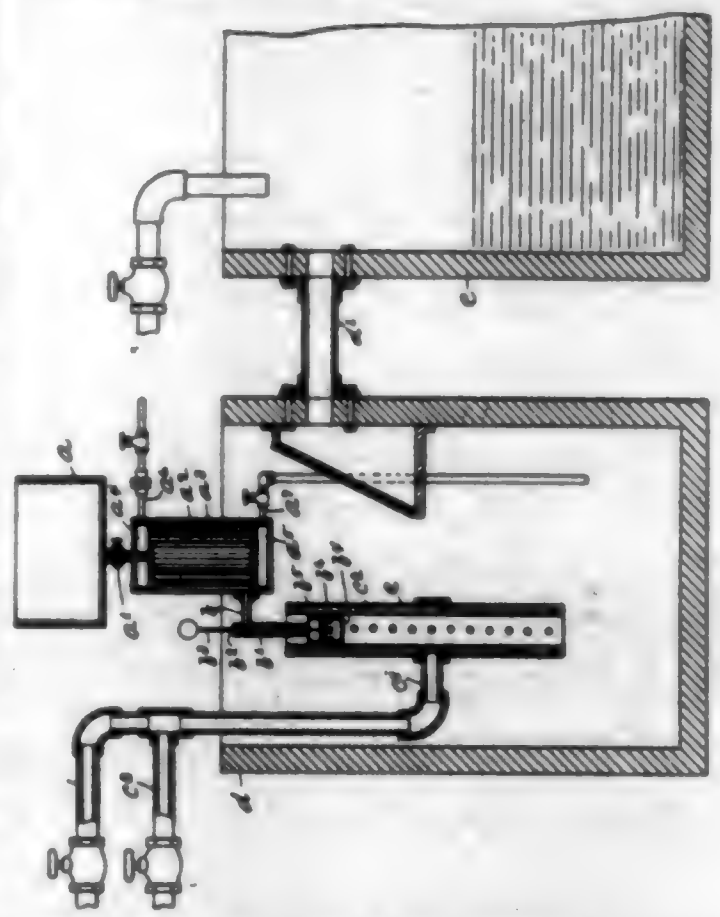
816,863. PROCESS OF DISSOLVING SIZE FOR PAPER-MAKING. BRUNO KNUPFER, Stoneham, Mass. Filed July 7, 1905. Serial No. 268,702.



Claim.—1. The process herein described of preparing size for paper-making, which consists in heating a measured volume of resin size, and spraying the liquefied size into a measured volume of hot water, to produce an emulsion, and then adding to the emulsion thus produced a measured volume of cold water.

2. The process herein described of preparing size for paper-making, which consists in heating a measured volume of resin size, then spraying the liquefied size into a measured volume of hot water to produce an emulsion, and then agitating the emulsion thus produced and adding thereto a measured volume of cold water.

816,864. APPARATUS FOR DISSOLVING SIZE FOR PAPER-MAKING. BRUNO KNUPFER, Stoneham, Mass. Filed July 7, 1905. Serial No. 268,703.



Claim.—1. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, an emulsifying-chamber, means for discharging the liquefied size into said chamber in small jets or streams, means for delivering hot water under pressure to said emulsifying-chamber likewise in small jets or streams, to disintegrate the jets or streams of liquefied size and produce an emulsion, and a tank adapted to receive the emulsion which is discharged from the emulsifying-chamber, substantially as described.

2. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, an emulsifying-chamber, means for discharging the liquefied size into said chamber in small jets or streams, means for delivering hot water under pressure to said emulsifying-chamber likewise in small jets or streams, to disintegrate the jets or streams of liquefied size and produce an emulsion, means for regulating the volume of hot water relative to the size, and a tank adapted to receive the emulsion which is discharged from the emulsifying-chamber, substantially as described.

3. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, an emulsifying-chamber, means for discharging the liquefied size into said chamber in small jets or streams, means for delivering hot water under pressure to said emulsifying-chamber, likewise in small jets or streams, to disintegrate the jets or streams of liquefied size and produce an emulsion, and a tank containing said emulsifying-chamber which receives the emulsion which is discharged therefrom, substantially as described.

4. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, an emulsifying-chamber, means for discharging the liquefied size into said chamber in small jets or streams, means for delivering hot water under pressure to said emulsifying-chamber, likewise in small jets or streams to disintegrate the jets or streams of liquefied size and produce an emulsion, and a tank adapted to receive the emulsion which is discharged from the emulsifying-chamber, having an outlet, and a tank adapted

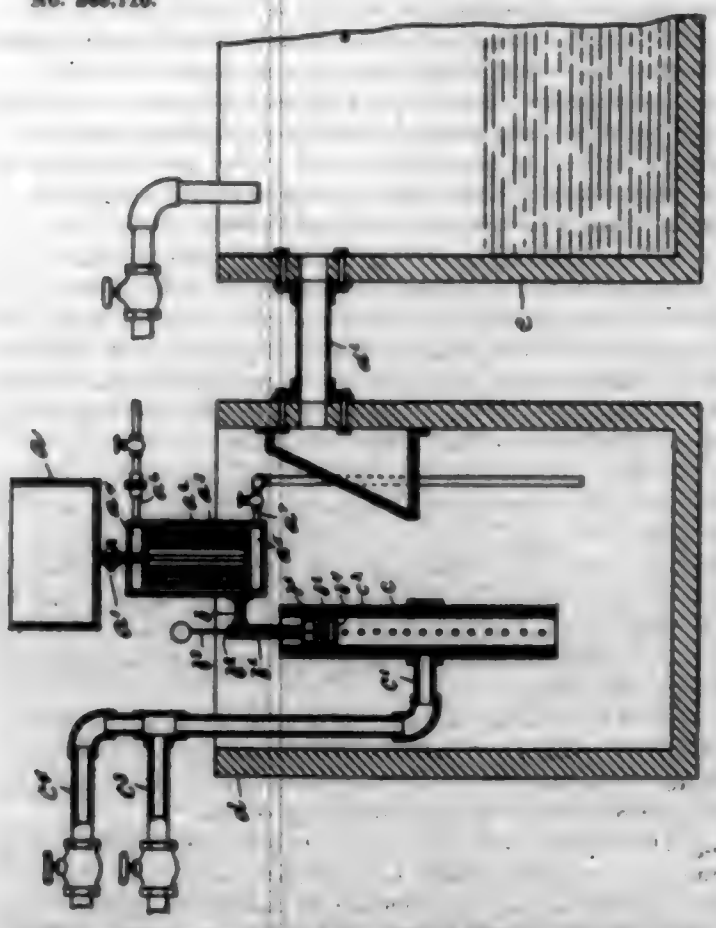
to contain cold water which is connected with said tank which receives the emulsion, substantially as described.

5. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, an emulsifying-chamber, means for discharging the liquefied size into said chamber in small jets or streams, means for delivering hot water under pressure to said emulsifying-chamber, likewise in small jets or streams, which are directed at angles to the jets or streams of liquefied size which act to disintegrate them and produce an emulsion, and a tank adapted to receive the emulsion which is discharged from the emulsifying-chamber, substantially as described.

6. In an apparatus for dissolving size for paper-making, the combination of means for heating the size, a receiver for the liquefied size having a perforated discharging-plate, two concentrically-disposed tubes arranged with a space between them, the inner tube being perforated and forming an emulsifying-chamber into which the jets or streams of liquefied size from the perforated plate are discharged, means for forcing hot water into the space between said tubes and through the perforations of the inner tube into the emulsifying-chamber, which act upon and disintegrate the jets or streams of liquefied size, and a tank for receiving the emulsion thus produced, substantially as described.

7. In an apparatus for dissolving size for paper-making, the combination of two concentrically-disposed tubes arranged with a space between them, the inner tube being perforated and attached to the outer tube at both ends, means for discharging hot water from the perforations of said inner tube in small jets or streams, means for heating the size, a receiver for the liquefied size having a perforated discharge-plate located at the upper end of said perforated tube, to discharge the liquefied size in small jets or streams into said tube, at the upper end thereof, which are acted upon and disintegrated by the jets or streams of hot water, and a tank for receiving the emulsion thus produced, substantially as described.

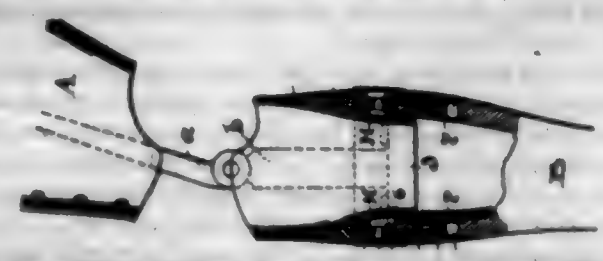
816,865. PROCESS OF DISSOLVING SIZE FOR PAPER-MAKING. BRUNO KNIPPLER, Stoneham, Mass. Filed July 7, 1905. Serial No. 268,710.



Claim.—The process herein described of preparing size for paper-making, which consists in heating a measured volume of resin size, then subjecting the same in small jets or streams to the action of forcibly-expelled jets or streams of hot water, in predetermined relative proportions, to disintegrate the jets or streams of liquefied size and produce an emulsion, and in then adding the emulsion to a measured volume of cold water.

816,866. ARTIFICIAL LIMB. HJALMAR LEONARD, Chicago, Ill. Filed June 28, 1905. Serial No. 266,912.

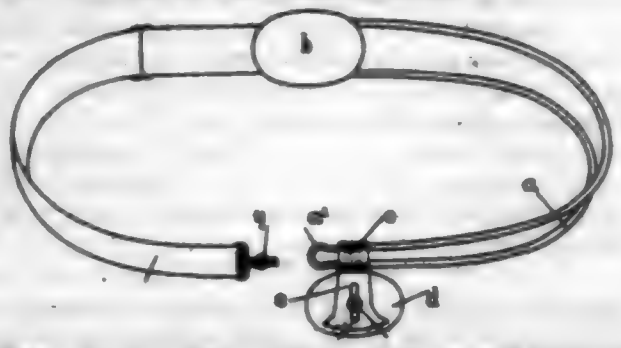
Claim.—1. In artificial limbs, the combination of a leg member and a stump-socket thereon, recesses in the top of said member and socket-carriers in said recesses having elastic supporting-strips, and supports for said strips and carriers provided with lateral projections at their outer ends resting on said leg member at the top of said recesses.



2. In artificial limbs, a leg member having a plurality of recesses in its top, in combination with a stump-socket seated over said recesses, independent carriers therefor removably located in said recesses, and means to yieldingly suspend said carriers in said recesses with their upper ends above the top of said leg member.

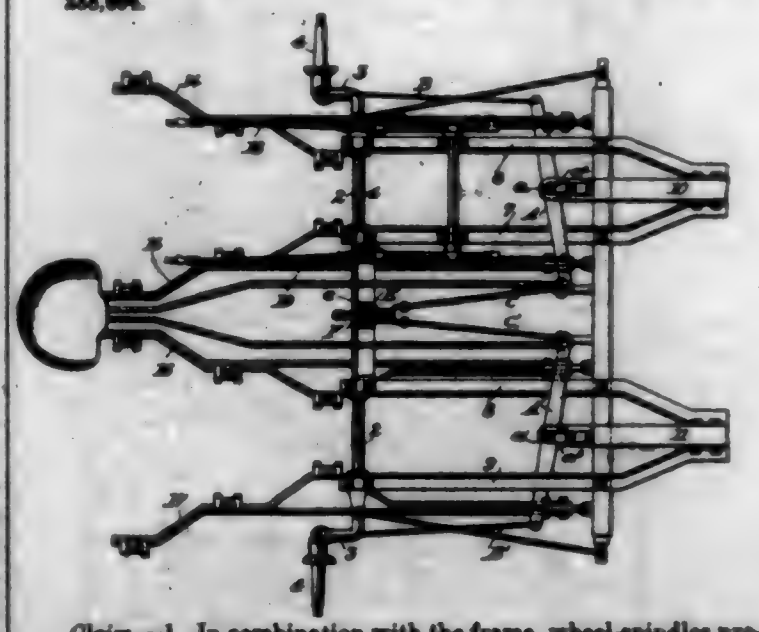
3. In artificial limbs, a leg member having a square-shouldered top, in combination with a stump-socket having a reduced inner portion entering said leg member and an annular shoulder outside said reduced inner portion, recesses in the top of said leg member, rectangular carriers in said recesses and spring-supports in said carriers, and a cross-piece for each carrier having one end of said spring-support engaged therewith.

816,867. SURGICAL TRUSS. JAMES LEVERONE, New London, Conn. Filed Dec. 15, 1904. Serial No. 237,021.



Claim.—In a truss the combination with a curved frame or body, band, consisting of a resilient wire bent upon itself to form upper and lower members; of a bracket secured to and pierced by the members on a line downwardly divergent from the face of the plate, and from the normal vertical alinement of the members of the body-band; of a pad-body adjustably secured to the bracket; of a pad hinged to the body-band; and means for holding the body-band in position.

816,868. BALANCING MECHANISM FOR WHEEL-CULTIVATORS. ALEXUS C. LINDGREN, Moline, Ill., assignor to Moline Plow Company, a Corporation of Illinois. Filed Nov. 22, 1905. Serial No. 288,094.



Claim.—1. In combination with the frame, wheel-spindles provided with supporting ground-wheels movable back and forth with reference to the frame, an adjusting-lever sustained by the frame, operative connections between the adjusting-lever and the wheel-spindles, said connections including two levers pivoted between their ends to the frame, and vertically-movable beams sustained by the frame.

2. In combination with a frame, wheel-spindles having supporting-wheels movable back and forth with reference to the frame, an adjusting-lever mounted on the frame, two horizontal pivotal levers also mounted on the frame, and operatively connected with the adjusting-lever and with the wheel-spindles, and vertically-movable beams sustained by the frame.

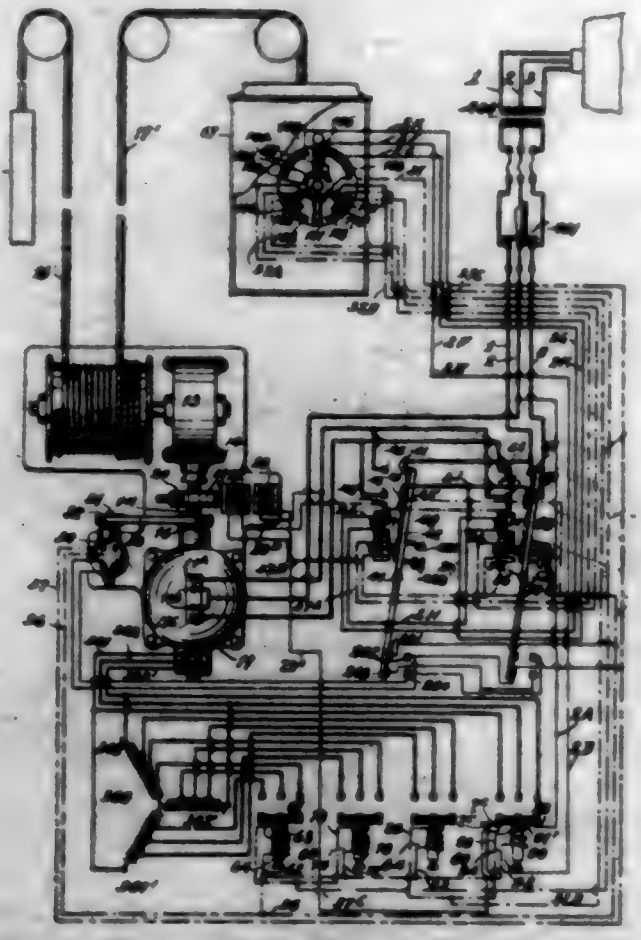
3. In combination with a frame, an axle mounted therein and provided with cranked ends movable back and forth, wheels mounted on said axle, a hand-lever sustained by the frame, transversely-arranged levers mounted on the frame and operatively connected with said hand-lever and with the cranked ends of the axle and vertically-movable beams sustained by the frame.

4. In combination with the frame, an axle mounted therein and provided with cranked ends movable back and forth, ground-wheels on said axle, a hand-lever, transversely-arranged equalizing-levers mounted on the frame, connections between the inner ends of the equalizing-levers and the hand-lever, connections between the outer ends of the equalizing-levers and the cranked ends of the axle and vertically-movable beams sustained by the frame.

5. In combination with the frame, an axle mounted therein and formed with cranked ends movable back and forth ground-wheels on the ends of the axle, transversely-arranged levers pivoted between their ends to the frame and inclining downward at their outer ends, connections between the outer ends of the levers and the cranked ends of the axle, a hand-lever on the frame, connections between said hand-lever and the inner ends of the transverse levers and vertically-movable beams connected with the frame.

6. In a wheeled cultivator, the combination of the frame, an axle mounted to rock therein and formed with cranked ends, ground-wheels on the ends of the axle, a draft-tongue extending forwardly from the frame, transversely-arranged levers pivoted between their ends on the frame and disposed end to end, links connecting the outer ends of the levers with the cranked ends of the axle, a hand-lever pivoted to the frame, means for locking said lever fixedly to the frame, rods connecting said lever with the inner ends of the transverse levers, and cultivator-beams connected with the frame and movable vertically.

816,869. **ELECTRIC-ELEVATOR SYSTEM.** AXEL MAGNUSON, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed May 23, 1905. Serial No. 261,803.



Claim.—1. In an elevator the combination of a hoisting mechanism, a movable car connected thereto, a stationary alternating-current motor for actuating the hoisting mechanism, an external source of current-supply, a second source of current-supply, dependent upon the motion of the hoisting mechanism, suitable electrical circuits, and a switch in the car arranged to control the movement of the car by controlling both current-supplies.

2. In an elevator system the combination of a car, two electric machines, one adapted to propel or drive the car, the other to generate a current in proportion to the speed of the car, automatic means for controlling the acceleration of the car by said generated current, a manually-operated switch in the car arranged to start and stop said first electric machine and to directly control said automatic controlling means.

3. In an elevator system, a motor, a reversing-switch for the motor, two sources of current-supply one of which is pulsating and is arranged to close the reversing-switch, the other of which is direct and is arranged to hold the reversing-switch in closed position, means for controlling the two current-supplies, and means for automatically cutting out the pulsating current.

4. In an elevator system, a motor and a car, a reversing-switch for the motor, two sources of current-supply, one of which is pulsating and constant in value and is arranged to close the reversing-switch to start the motor, the other of which is direct and proportional in strength to the speed of the car and is arranged to hold the reversing-switch in closed position while the car is running, a switch in the car for controlling both the pulsating and direct currents, and means for automatically cutting out the pulsating current.

5. In an elevator system, a motor and a car, a reversing-switch for the motor, two sources of current-supply, one of which is pulsating and constant in value and is arranged to close the reversing-switch to start the motor, the other of which is direct and proportional in strength to the speed of the car and is arranged to hold the reversing-switch in closed position while the car is running, a switch in the car for controlling both the pulsating and direct currents, and means for automatically cutting out the pulsating current when the direct current reaches a predetermined strength.

6. In an elevator system, an alternating-current motor, a source of alternating-current supply, an electromagnetically-actuated reversing-switch for the motor, a single-phase current arranged to close the reversing-switch and a direct current arranged to hold the reversing-switch, and means for cutting out the single-phase current after the motor has started.

7. In an elevator system, an alternating-current motor, a source of alternating-current supply, an electromagnetically-actuated reversing-switch for the motor, a single-phase current arranged to close the reversing-switch and a direct current arranged to hold the reversing-switch, a manually-operated switch for controlling the single-phase current, and means for automatically cutting out the single-phase current after the motor has started.

8. The combination with an alternating-current motor, a reversing-switch therefor, a generator connected to run with the motor and arranged to produce a direct current proportional in strength to the speed of the motor, means for controlling the motor by the direct current thus produced, and means on the reversing-switch for causing the generator to produce its current in the same direction when the generator is run in one direction or the other.

9. In an elevator system, an alternating-current motor, a source of alternating-current supply, a generator connected to run with the motor and arranged to produce a direct current proportional in strength to the speed of the motor, an electroresponsive device for controlling the acceleration of the motor, said electroresponsive device being actuated by the direct current, and a manually-operated switch for directly controlling the direct-current circuit to the electroresponsive device.

10. In combination with a hoisting apparatus, an electric brake having two windings, one adapted for alternating currents and arranged to release the brake, the other adapted for direct currents and arranged to hold the brake in released position.

11. In combination with a hoisting apparatus, an electric brake therefor, an external source of current-supply arranged to release the brake in starting the apparatus, and an independent source of current-supply generated by the movement of the apparatus and arranged to coöperate with said first source of supply in holding the brake in released position.

12. In combination with a hoisting apparatus, an electric brake therefor, an external source of current-supply arranged to release the brake before starting the apparatus, and an independent source of current-supply generated by the movement of the apparatus and arranged to hold the brake in released position while the apparatus is running.

13. In combination with a hoisting apparatus, an electric brake therefor, an external source of alternating-current supply arranged to release the brake before starting the apparatus, and an independ-

ent source of direct-current supply generated by the movement of the apparatus and arranged to hold the brake in released position while the apparatus is running.

14. In combination with a hoisting apparatus, an electric brake therefor, an external source of alternating-current supply arranged to release the brake before starting the apparatus, an independent source of direct-current supply generated by the movement of the apparatus and arranged to hold the brake in released position while the apparatus is running, and means for automatically cutting off the alternating current after the direct current holds the brake.

15. In combination with a hoisting apparatus, an electric brake, an alternating-current electromagnet comprising a winding and a laminated core, and a direct-current electromagnet comprising a winding and a solid core both of said electromagnets being arranged to actutate the brake.

16. In combination with a hoisting apparatus, an alternating-current motor for driving the same, a source of alternating-current supply, an electric brake, a reversing-switch for applying the alternating current to the motor and to the brake, a direct current generated by the movement of the motor and arranged to coöperate with the alternating current to actuate the brake.

17. In combination with a hoisting apparatus, an alternating-current motor for driving the same, a source of alternating-current supply, an electric brake, a reversing-switch for applying the alternating current to the motor and to the brake, a direct current generated by the movement of the motor and arranged to coöperate with the alternating current to actuate the brake, and a manually-operated switch for controlling the reversing-switch.

18. In combination with a hoisting apparatus, an electric motor, a source of current-supply, an electric brake for the apparatus, and a generator driven by the apparatus and arranged to control the acceleration of the motor and to hold the brake in released position while the motor is running.

19. In an elevator system, an alternating-current motor, a source of alternating-current supply, a generator connected to run with the motor and arranged to produce a direct current proportional in strength to the speed of the motor, a brake and a starting-switch for the motor, both of which are actuated by a single-phase current in starting and by the direct current after starting the motor, an electroresponsive device actuated by the direct current for controlling the acceleration of the motor, and a manually-operated switch whereby the starting, stopping and acceleration of the elevator is controlled.

20. In an elevator system, a car, an alternating-current motor, a source of alternating-current supply, a generator connected to run with the motor and arranged to produce a direct current proportional in strength to the speed of the motor, a brake and a starting-switch for the motor, both of which are actuated by the alternating current in starting the motor and are held by the direct current after the motor has started, an electroresponsive device actuated by the direct current for controlling the acceleration of the motor and arranged to cut off the alternating current from the brake and the starting-switch, and a manually-operated car-switch whereby the brake, the starting-switch and the electroresponsive device are controlled.

21. In an elevator system, a car, an alternating-current motor, a source of alternating-current supply, a generator connected to run with the motor and arranged to produce a direct current proportional in strength to the speed of the motor, a brake and a starting-switch for the motor both of which are actuated by the alternating current in starting the motor and are held by the direct current after the motor has started, an electroresponsive device comprising a series of electromagnets actuated by the direct current for controlling the acceleration of the motor step by step, one of which is arranged to cut off the alternating current from the brake and the starting-switch, and a manually-operated car-switch whereby the brake, the starting-switch and the electroresponsive device are controlled.

22. In an electric-elevator system, a car, a hoisting apparatus connected thereto, an alternating-current motor for actuating the hoisting apparatus, an opposition element in the motor-circuit, a source of alternating-current supply, a generator connected to run with the apparatus and arranged to produce a direct current proportional in strength to the speed of the car, a brake, a reversing-switch, alternating-current circuits and direct-current circuits for the brake and the reversing-switch, an electroresponsive device comprising a plurality of electromagnets actuated by the direct current for controlling the acceleration of the motor step by step by removing the opposition element from the motor-circuit, one of said magnets being arranged to cut off the alternating current from the brake and the reversing-switch, and a manually-operated switch in the car for controlling the alternating-current circuits and the direct-current circuits and thereby controlling the starting, stopping and acceleration of the car.

23. In an elevator system, an alternating-current motor, a source of alternating-current supply, an electromagnetically-actuated reversing-switch for the motor, the alternating current arranged to close the reversing-switch, a direct current arranged to hold the reversing-switch, and means for cutting out the actuating alternating current from the reversing-switch after the motor has started.

24. In an elevator system, an alternating-current motor, a source of alternating-current supply, an electromagnetically-actuated reversing-switch for the motor, the alternating current arranged to close the reversing-switch, a direct current arranged to hold the reversing-switch, a manually-operated switch for controlling the alternating current, and means for automatically cutting out the alternating current after the motor has started.

25. In combination with an electric motor, a reversing-switch therefor, a generator connected to run with the motor and arranged to produce a current proportional in strength to the speed of the motor, means for controlling the motor by the current thus produced, and means on the reversing-switch for causing the generator to produce its current in the same direction when the generator is run in one direction or the other.

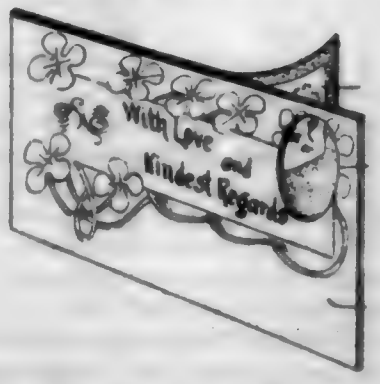
26. In an elevator system, an electric motor, a source of current-supply, a generator connected to run with the motor and arranged to produce a current proportional in strength to the speed of the motor, an electroresponsive device for controlling the acceleration of the motor, said electroresponsive device being actuated by the current produced by said generator, suitable circuits therefor, and a manually-operated switch for directly controlling the circuits to the electroresponsive device.

27. In an elevator system, an electric motor, a source of current-supply, a generator connected to run with the motor and arranged to produce a current proportional in strength to the speed of the motor, an electroresponsive device for controlling the acceleration of the motor, said electroresponsive device being actuated by the current produced by said generator, suitable circuits therefor, and a manually-operated switch arranged to cut in or out a part or all of the electroresponsive device at will.

28. A controlling device for an elevator-motor, a stationary motor, a source of current-supply connected thereto and adapted to start the motor and to drive the motor, a movable car, an electric generator connected with the elevator mechanism arranged to generate a current in proportion to the speed of the elevator mechanism, said current adapted to actuate the motor-controlling device, and a switch in the car adapted to control the controlling device to control the starting, the speed, the reversing and the stopping of the elevator mechanism.

29. In an elevator-controlling mechanism of the class described, an external source of supply constant in value, said source adapted to start and drive the elevator mechanism, another source of supply obtained only after the elevator has started and proportional in value to the speed of the elevator mechanism, an elevator-car, a manually-operated switch in the elevator-car, contacts in the switch-wires connected to the car and adapted to travel with the car, said wires being directly connected to the various contacts in the car-switch and also directly connected to the motor-controlling means, some of said wires carrying the circuits for the external source of supply and some carrying the circuits for the source of supply generated by the movement of the elevator mechanism and being adapted to conjointly communicate the operation from the car-switch to the motor-controller.

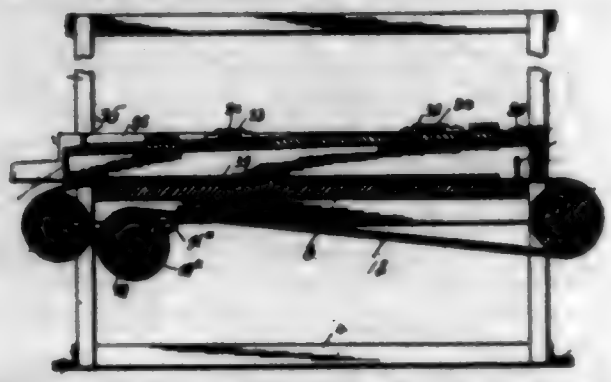
816,870. PHOTOGRAPHIC MAILING-CARD. SAMUEL A. MARKOFF, New York, N. Y. Filed Jan. 20, 1906. Serial No. 296,540.



Claim.—A mailing-card, comprising a body portion having a display-opening, a flap or sheet of thin material capable of being

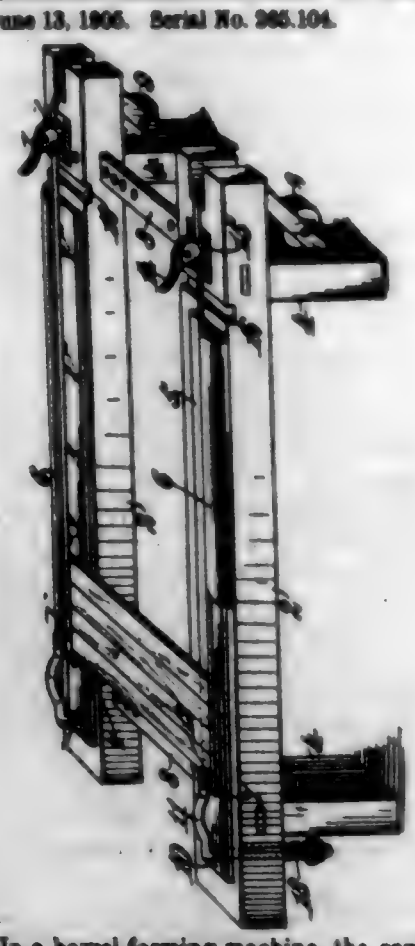
rolled back upon itself and of having the position of the display-opening defined thereon, said flap being attached in part to said body portion and loosely overlying the display-opening, and an adhesive on said flap serving to attach the back of a photograph or the like to said flap so that the photograph will register with the display-opening, and to seal the flap to the body portion.

816,871. STUFFING-MACHINE. MORRIS MARKOV, Duquesne, Pa. Filed Feb. 6, 1905. Serial No. 244,442.



Claim.—A machine of the type described comprising a frame, a horizontal platform mounted in said frame, longitudinally-disposed side frames arranged above said platform, a transverse frame arranged at one end of said platform, a main door hinged at one end to said transverse frame, an auxiliary door hinged to the said main door at one side thereof, keepers carried by said main door and said auxiliary door, bars passing through said keepers to maintain said main door and auxiliary door in the same plane, a conveyer mounted in the said frame and extending longitudinally of and above the said platform, means for operating said conveyer, and carriers attached to the conveyer.

816,872. BARREL-FORMING DEVICE. IRA H. MELVIN, Laurel, Del. Filed June 13, 1906. Serial No. 321,104.



Claim.—1. In a barrel-forming machine, the combination of a nail-clenching member adapted to support staves from which the barrel is to be formed, and means associated with the nail-clenching member for positively holding hooping material while being nailed to the stave.

2. In a barrel-forming machine, the combination of two beams, plates fastened to the upper side of said beams, constituting nail-clenching means and serving to support the staves from which the barrel is to be formed, and gage members fastened to said beams and against which the ends of the staves are to be placed to hold them in line.

3. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, and independent devices for positively holding the hooping material at different points in its length.

4. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, means against which the ends of the staves abut to hold them in line, and end stops to be engaged by the terminal staves.

5. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, means against which the ends of the staves abut to hold them in line, and adjustable end stops to be engaged by the terminal staves.

6. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, and end stops to be engaged by the terminal staves.

7. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, end stops against which the terminal staves are to be placed, and stops between the end stops to coöperate with intermediate staves.

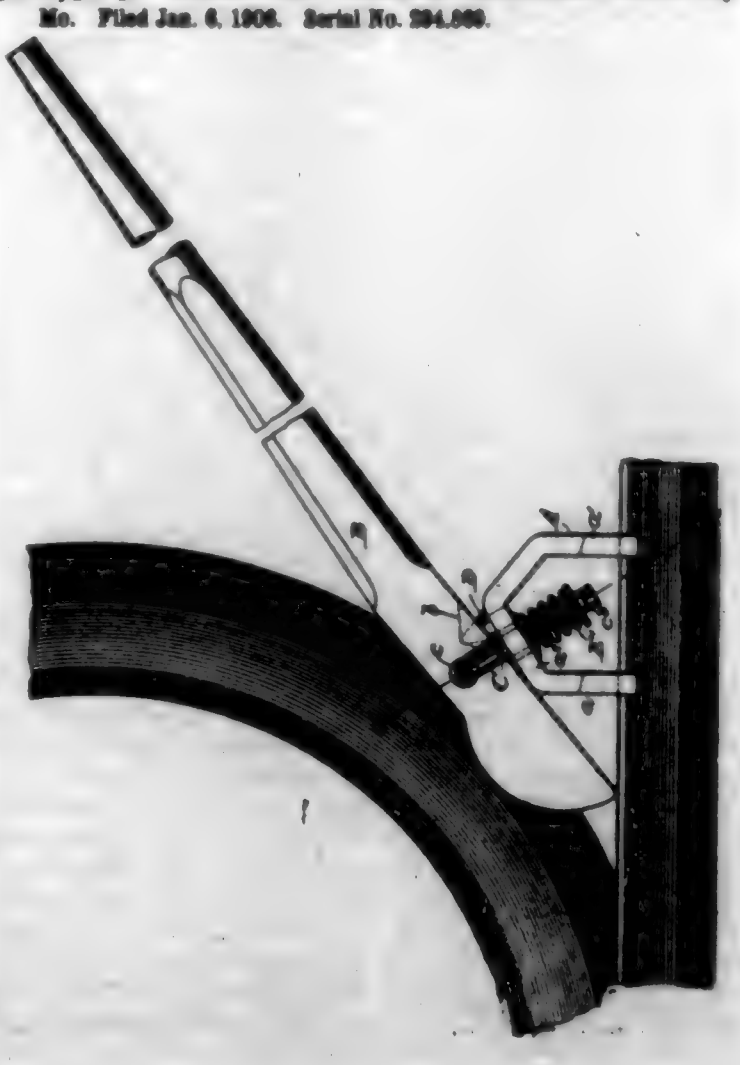
8. In a barrel-forming machine, the combination of a bed, slotted to receive a cutting implement, means for clenching nails and to support the staves from which the barrel is to be formed, and means for positively holding the hooping material, and located at opposite sides of the slotted portion of the bed.

9. In a barrel-forming machine, the combination of a bed having nail-clenching means, said means being adapted to support the staves from which the barrel is to be formed, means for supporting reels of ribbons, and means for positively holding the advanced portions of the ribbons against movement.

10. In a barrel-forming machine, the combination of nail-clenching means adapted to support the staves from which the barrel is to be formed, cam-levers for holding the material from which the hooping is made, plates having ears between which the levers are fulcrumed and between which the hoop-forming material is led, and means for holding the extreme forward ends of the hooping material.

11. In a barrel-forming machine, the combination of nail-clenching means adapted to support the staves from which the barrel is to be formed, barbed members to penetrate the hooping material, extending across the staves, and cam-levers, the cams of which also hold the hooping material at longitudinally-remote points from said barbed members.

816,873. CAR-MOVER. FREDERICK MERTENSMEYER, Kansas City, Mo. Filed Jan. 6, 1906. Serial No. 294,669.



Claim.—1. In a car-mover, the combination with a fulcrum member adapted to rest on the rail, of a coöperating lever adapted to engage the car-wheel and supported by and having a pivotal motion with reference to the fulcrum member, and a spring acting respectively on the lever and fulcrum member and tending to draw them together.

2. In a car-mover the combination of a fulcrum-block adapted to rest on the rail, a lever pivoted to said block and adapted to be engaged with the car-wheel, and means for holding the block yieldingly against the lever.

3. In a car-mover, the combination of a fulcrum-block a lever, a link connecting said parts pivotally, and a spring acting respectively against the block and link.

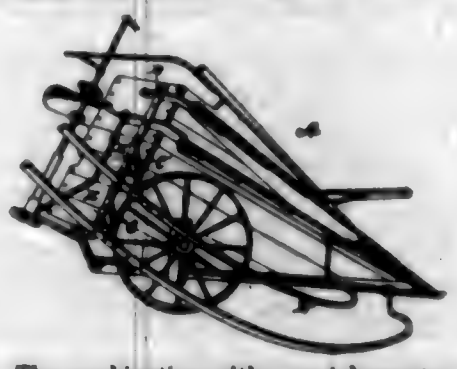
4. In a car-mover, the combination of a fulcrum-block, a lever adapted to fulcrum thereon, a link jointed to the lever and extending loosely through the block, and a spring encircling the link and bearing at one end against the block and at its opposite end against the link.

5. In a car-mover the combination of a fulcrum-block, a lever adapted to fulcrum thereon, a U-shaped link having its horizontal portion mounted loosely in the lever and having its legs extending loosely through the block, and spiral springs encircling said legs on the under side of the block, and bearing respectively against the block and legs.

6. In a car-mover, the combination of a fulcrum-block, a fulcrum-pin extending upwardly therefrom, a lever provided in its under side with a socket to receive the pin and movable relatively to the same on an axis coincident with the end of the pin, and a link connection between the lever and block.

7. In a car-mover, the combination of a fulcrum-block adapted to rest on the rail, a coöperating fulcrum-lever, one of said parts having a socket and the other a fulcrum-pin to enter the socket, the said lever being movable relatively to the block on an axis coincident with the end of the pin, and a connection between the lever and the block.

816,874. ATTACHMENT FOR CORN-HARVESTERS. HERMAN MORRISS, Ottawa, Ohio. Filed Dec. 16, 1904. Serial No. 237,123.

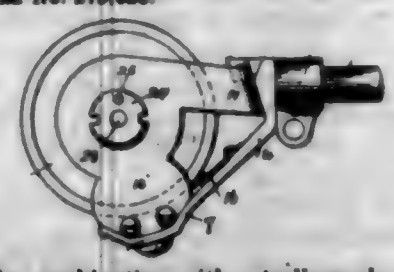


Claim.—1. The combination with a corn-harvester, of a stalk-lifting bar projecting at the side thereof, so as to raise the row adjacent to the one undergoing harvesting, and an adjustable brace connected to said bars and to the rear part of the harvester.

2. The combination with a corn-harvester, of stalk-lifting bars extending from one side thereof, adjustable braces connected to said bars near their rear ends and to the harvester, and stay-pieces adjustably connected to said braces and to a support on the harvester.

3. The combination with a corn-harvester, of flexible stalk-lifting bars removably secured at one side thereof, adjustable braces adjustably connected to said bars and to a support on the machine, and stays by which said braces are supported.

816,875. TROLLEY-HARP. BARNEY MURPHY, New Haven, Conn., assignor of one-half to Fred Wallace, New Haven, Conn. Filed Aug. 24, 1905. Serial No. 275,033.



Claim.—1. The combination with a trolley-pole of an arm secured at the outer end thereof and extending downwardly and forwardly therefrom, and formed at its outer end with a seat having inclined transverse walls, a pin mounted in said seat a block having inclined surfaces located in said seat and turning upon the pin, a yoke secured to the ends of said block and extending upwardly therefrom, and a wheel mounted in said yoke, substantially as described.

2. The combination with a trolley-pole of an arm secured at the outer end thereof and extending downwardly and forwardly therefrom and providing a seat with inclined side walls, a block located in said seat upon a pin, a yoke secured to the ends of said block and extending upwardly therefrom, a wheel mounted between the sides of said yoke upon a pin, said pin provided at one end with a head, an inwardly-extending lug and at the other end with threads to receive a nut having an inwardly-extending lug, said lugs adapted to enter holes formed in the sides of said yoke, substantially as described.

3. The combination with a trolley-pole of an arm secured to the forward end thereof, and extending downwardly and forwardly therefrom, and providing a seat having transverse-inclined side walls, a block located in said seat, a pin extending upward through said seat and upon which said block may turn, a yoke secured to the ends of said block and extending forwardly therefrom, the sides of the yoke connected by a rearwardly-extending bow, a wheel mounted between the sides of said yoke, and a finger formed at the upper end of said arm and extending forwardly and downwardly into said bow, substantially as described.

4. The combination with a trolley-pole of an arm secured at the forward end thereof and extending forwardly and downwardly therefrom, and providing a seat having transverse-inclined side walls, a block located in said seats, a pin extending upward through said seat and on which said block may be turned, a yoke secured to the ends of said block and extending forwardly therefrom a wheel mounted upon a pin connected with the sides of said yoke, and the spring secured to said arm and extending downwardly and forwardly and bearing at its forward end upon said block, which it tends to force into said seat, substantially as described.

816,876. MAIL-DELIVERY APPARATUS. HENRY MCCABE, Arcola, Ill. Filed Aug. 30, 1905. Serial No. 276,426.



Claim.—1. An automatic mail-delivery apparatus comprising a track-supported car which is open at opposite ends, a pair of spaced conveyers working longitudinally within the car and provided with corresponding slats coöperating to form mail-bag-receiving pockets, operating means for actuating the conveyers, and a trip for controlling the operating means.

2. In a mail-delivery apparatus, the combination of a track-supported car which is open at opposite ends and provided with a longitudinal bifurcation in the rear ends of its bottom, a pair of spaced longitudinal conveyers within the car at opposite sides of the bifurcation, means for working the adjacent sides of the conveyers toward the rear of the car, and a trip for controlling the conveyer-operating means.

3. In a mail-delivery apparatus, the combination of a track-supported car which is open at its opposite ends and is provided with a bifurcation in the rear end of its bottom, a pair of spaced longitudinally-disposed conveyers at opposite sides of the bifurcation, a delivery-receptacle adapted to be carried through the car by and between the conveyers and provided at its lower end with a bail capable of depending through the bifurcation in the bottom of the car, means for operating the conveyers, a stationary trip for actuating the conveyer-operating means, and a stationary catcher disposed for engagement with the link of the receptacle when depending through the bifurcation in the bottom of the car.

4. In a mail-delivery apparatus, the combination of a track-supported car which is open at opposite ends, a pair of spaced conveyers within the car, a windlass disposed transversely across the conveyers, cable connections between the windlass and the respective conveyers, a series of crank-arms carried by the windlass externally of the car, and a stationary trip disposed for engaging one of the crank-arms to operate the conveyers.

5. In a mail-delivery apparatus, the combination with a track-supported car, a pair of spaced longitudinally-disposed conveyers within the car, each conveyer comprising front and rear upstanding rollers, a flexible endless belt running around the rollers, upper and lower longitudinally-disposed guides for the inner ply of the conveyer, conveyer-operating means, and a stationary trip for actuating said operating means.

6. In a mail-delivery apparatus, the combination with a track-supported car which is open at opposite ends and is provided with a longitudinal bifurcation in the rear end of its bottom, a pair of spaced longitudinally-disposed conveyers extending from the front to the rear of the car and disposed at opposite sides of the bifurcation, each including upstanding front and rear rollers, an endless flexible belt running around the rollers slats carried transversely by the belt, and upper and lower longitudinal guides for the inner ply of the conveyer, the slats of the two conveyers being disposed in alinement to form pockets between the conveyers, a windlass mounted transversely across the tops of the rear end portions of the conveyers, cable connections between the windlass and the respective conveyers, crank-arms carried by the windlass externally of the car, and a stationary trip located in the path of the crank-arms.

7. In a mail-delivery apparatus, the combination with a track-supported car open at opposite ends, of a support independent of the car, a delivery member carried by the support and provided with means for holding a mail-bag in position to enter the open front of the car when the latter passes the support, and a mail-catching element carried by the support beneath the car in position to catch a bag at the rear end of the car.

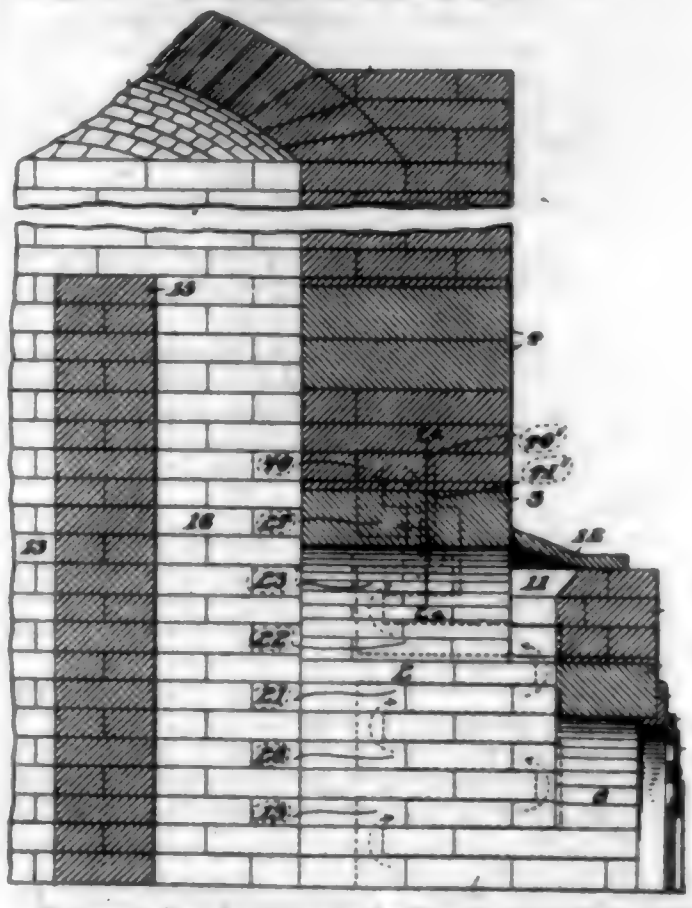
8. In a mail-delivery apparatus, the combination with a track-supported car which is open at opposite ends and is provided with a longitudinal bifurcation in the rear end of its bottom, of spaced conveyers working longitudinally within the car at opposite sides of the bifurcation, conveyer-operating means, a stationary trip for actuating the conveyer-operating means, a series of delivery-receptacles provided at their upper and lower ends with swinging bails and capable of being carried through the car by and between the conveyers, the lower bails capable of dropping through the bifurcation in the bottom of the car, a stationary delivery element having means for supporting one of the delivery devices by its upper bail in position to be received within the open front of the car, and a stationary mail-catcher disposed to engage the bail of a delivery-receptacle which depends through the bifurcation in the bottom of the car.

9. In a mail-delivery apparatus, the combination with a track-supported car, of a stationary support, a vertically-movable carrier mounted upon the support and yieldably held in an elevated position, upper and lower arms mounted upon the carrier and disposed to have the car pass therebetween, one of the arms being provided with a catcher, and the other one being provided with a delivery element.

10. In a mail-delivery apparatus, the combination with a track-supported car, of a stationary support, a vertically-movable carrier mounted upon the support, a counterbalancing-weight connected to the carrier, upper and lower arms connected to the carrier and disposed to have the car travel therebetween, one of the arms being provided with a catcher, and the other having a delivery element.

11. In a mail-delivery apparatus, the combination with a stationary post having a cross-head, of an overhead track supported by the cross-head, a car mounted to travel upon the track and open at opposite ends, a conveyer working in the car from front to rear thereof, conveyer-operating means, a trip carried by the post for actuating the conveyer-operating means, a vertically-movable carrier yieldably supported in an elevated position, upper and lower substantially horizontal arms connected to the carrier and disposed to have the car travel therebetween, a catcher carried by the lower arm, and a delivery element carried by the upper arm.

816,877. **HOT-BLAST FURNACE.** JAMES M. MCCLAVE, Toronto, Ohio. Filed Jan. 31, 1905. Serial No. 243,066.



Claim.—1. In a furnace, an ash-pit arch, means for regulating the admission of air through the same, a combustion-chamber arch at the rear of the first arch, a fuel-feeding opening above the first arch and in front of the second arch, means for closing said opening, and a zigzag hot-air flue on each side of the furnace and over the roof thereof, one flue opening through the roof into the forward portion of the chamber and the other through the roof into the rear portion thereof, the walls of the chamber being uninterrupted.

2. In a furnace, an arched combustion-chamber, a zigzag flue on each side thereof and over the roof, the passages from one horizontal passage to another being formed by the upper surface of the arch and a notch in the edge of the brick separating said horizontal passages.

3. In a furnace, means for closing the front of the furnace to the ingress of air, zigzag flues in each side wall for heating air, and flues leading the air from the first-named flues through the roof into both the front and the rear portions of the furnace-chamber the roof of the furnace being uninterrupted from front to rear.

4. In a furnace, a plurality of air-heating flues in the walls thereof, means for conducting the air in one flue through the roof only to the front portion of the furnace-chamber, and means for conducting the air in another flue through the roof only to the rear portion of said chamber the roof of the furnace being uninterrupted from front to rear.

5. In a furnace, a zigzag air-passage in the wall thereof, the vertical connection between consecutive legs of the passage being formed of bricks having notches therein.

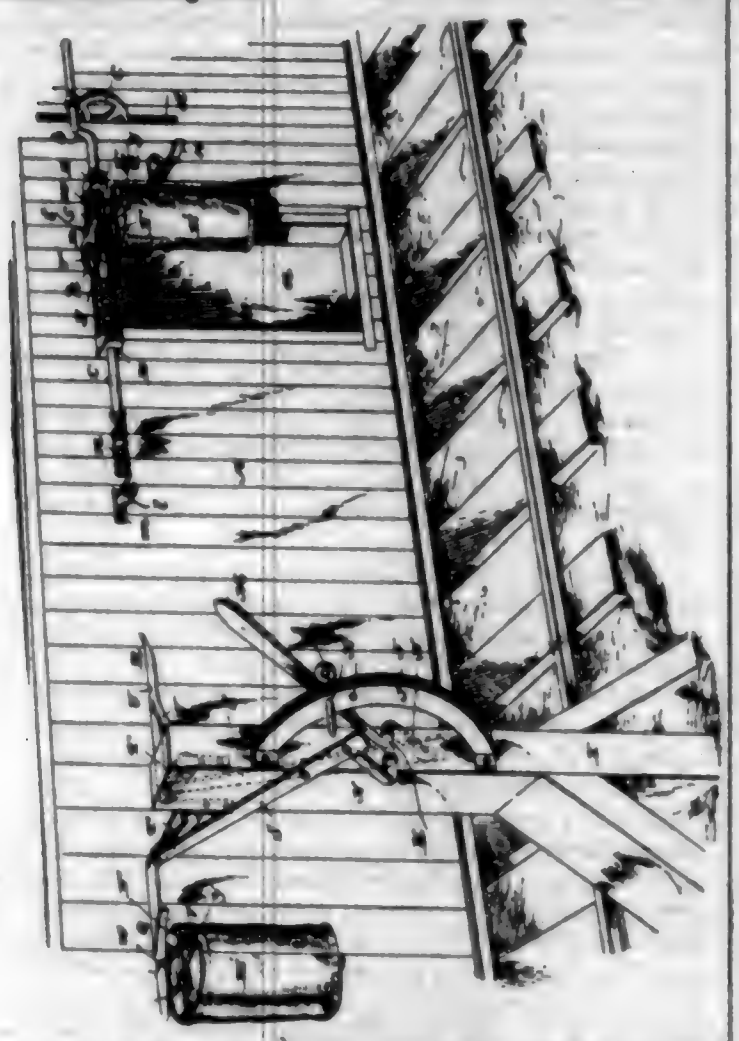
816,878. **MAIL-BAG-DELIVERY APPARATUS.** JOHN T. NASH, Lexington, Ky. Filed Jan. 26, 1906. Serial No. 298,061.

Claim.—1. In a mail-bag-delivery apparatus, the combination of a car, a longitudinally-movable spring-backed device carried by the car and arranged to deliver mail-bags to and take mail-bags from a stationary device, and a signal arranged to be actuated by movement of the said device.

2. In a mail-bag-delivery apparatus, the combination of a car, a movable device carried by the car and arranged to deliver and take mail-bags, and a signal arranged to be actuated by movement of said device.

3. In a mail-bag-delivery apparatus, the combination of a car, a longitudinal shaft carried by the car and arranged to move endwise and turn on its axis and having a crank, a device arranged on the

shaft in position to deliver and take mail-bags, a spring for cushioning the shaft, a signal arranged to be actuated by endwise movement of the shaft, a movable device within the car, a keeper for said device, and a connection between said device and the crank of the endwise-movable and rocking shaft.



4. In a mail-bag-delivery apparatus, the combination of a car, an endwise-movable and swinging device carried by the car and arranged to deliver and take mail-bags, a signal arranged to be actuated by endwise movement of said device, and means within the car connected with and arranged to swing the said device.

5. In a mail-bag-delivery apparatus, the combination of a car, a longitudinal shaft carried by the car and arranged to move endwise and turn on its axis and having a crank, a device arranged on the shaft in position to deliver and take mail-bags, a spring for cushioning the shaft, a gong disposed inside the car, a lever connected with the shaft and arranged to strike the gong, a lever arranged within the car, a keeper for said lever, and a connection between the lever and the crank of the shaft.

6. In a mail-bag-delivery apparatus, the combination of a car, a device carried by the car and arranged to deliver bags to and take bags from a stationary device, and a resilient buffer device extending laterally from the car at a point in rear of the device for carrying bags.

7. In a mail-bag crane, the combination of a suitable support, and bag-holders carried by the support and extending in opposite directions and arranged in different horizontal planes; the said bag-holders being adjustable whereby either may be disposed in a plane above the other.

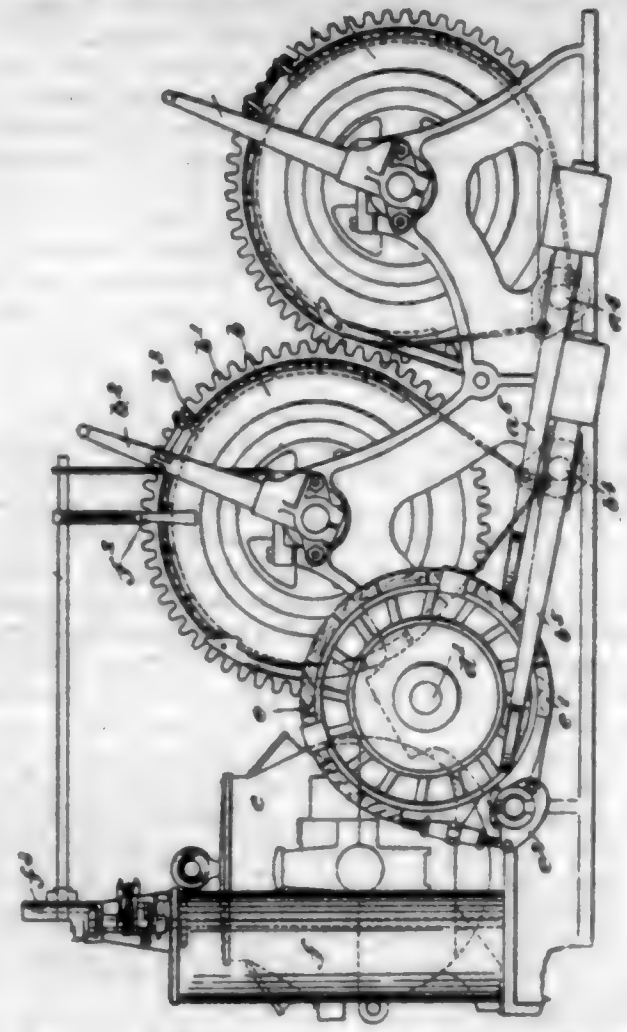
8. In a mail-bag crane, the combination of a suitable support, bag-holders carried by the support and movable up and down, and means for synchronously moving one bag-holder up and the other down.

9. In a mail-bag crane, the combination of a suitable support, bag-holders carried by the support and movable up and down, means for synchronously moving one holder up and the other down, and means for adjustably fixing the said adjusting means.

10. In a mail-bag crane, the combination of a suitable support, vertically-swinging bag-holders carried by the support, a rock-shaft journaled on the support and having oppositely-directed arms, links connecting said arms and the bag-holders, and means for adjustably fixing the rock-shaft in different positions.

11. In a mail-bag delivery apparatus, the combination with a crane comprising a support, bag-holders carried by the support and arranged in different horizontal planes, and means for synchronously moving one holder up and the other down; of a car, and a device carried by the car and movable over one holder of the crane and under the other holder thereof and having bag-holders arranged to take and deliver bags.

816,879. **ELECTRICAL HOISTING APPARATUS.** ALBION E. NORRIS, Cambridge, Mass. Filed Sept. 22, 1904. Serial No. 226,610.



Claim.—1. In a hoisting apparatus, the combination with hoisting-drums of brake-levers and clutch-levers arranged adjacent to the usual position of the operator, an electric driving-motor, a controlling-lever therefor, also arranged adjacent the position of the operator, and a step-by-step electric controller relatively remote from its controlling-lever.

2. In a hoisting apparatus, the combination with a bed-plate of hoisting means mounted thereon, electric driving means arranged adjacent one end of the bed-plate, a step-by-step electric controller also arranged adjacent the end of the bed-plate, and a controlling-lever arranged relatively remote from its controller.

3. In a hoisting apparatus, the combination of hoisting means, driving means therefor, a step-by-step controller, a controlling-lever therefor and a yielding connection between said controller and said lever.

4. In a hoisting apparatus, the combination of hoisting means, driving means therefor, a step-by-step controller, a controlling-lever therefor and a flexible coupling between said controller and said lever.

5. In a hoisting apparatus, the combination of hoisting means, driving means therefor, a step-by-step controller having a controlling-lever arranged in simulation of a steam-engine throttling-lever, and means for causing said controller to snap from one position to another in response to a movement of its lever in simulation of an engine-throttle movement.

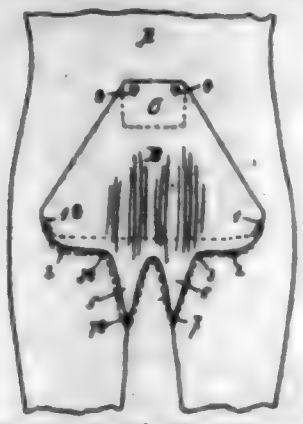
6. In a hoisting apparatus, the combination of hoisting means, driving means therefor, a controller-shaft, a star-wheel for said controller-shaft, a controlling-lever arranged in simulation of a steam-engine throttle-lever, and an elastic connection between said lever and said controller-shaft.

7. In a hoisting apparatus the combination with hoisting means, driving means therefor, a step-by-step controller, a controller-lever, an elastic connection between said lever and said controller tending to turn the controller-shaft with increased force as the controller-lever is moved, and means for retarding movement of the controller-shaft, said means acting with a non-increasing force on movement of said shaft.

8. In an apparatus of the class described, the combination with a bed-plate, of a plurality of hoisting-drums mounted thereon at one end of the bed-plate and an electric driving-motor mounted at the

other end thereof, an intermediate counter-shaft geared to the motor and also geared to said drums, and load-holding means upon said counter-shaft.

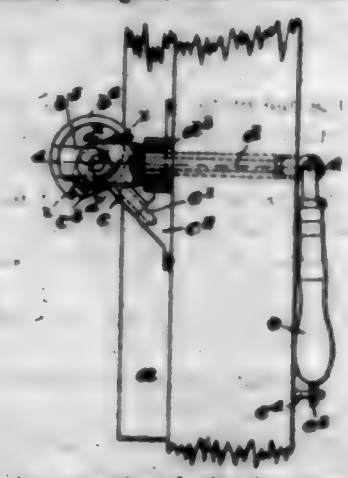
816,880. UNION UNDERGARMENT. JOHN PENNINGTON, Camden, N. Y. Filed Dec. 14, 1903. Serial No. 185,057.



Claim.—1. A union garment having a transverse cut across the seat portion of the garment and adjacent to the crotch and continued up at the sides of the garment, thereby forming a free skirt portion, and a single flap covering the seat portion of the garment and having gores depending from its lower portion and inserted and secured in the upper portions of the inner leg-seams, the lower edge of said flap secured to the garment along the lower edge of said cut and from end to end thereof, the flap being free above said lower stitched edge, and means for removably securing the free end of the flap, substantially as described.

2. A union garment having an opening extending transversely across the seat portion of the garment adjacent the crotch and at the upper portions of the inner leg-seams, a single flap arranged transversely across said seat portion and stitched to the garment adjacent to and throughout the length of the lower edge of said opening, said flap being free above said opening and having two depending gores stitched in said inner leg-seams, respectively, and means for removably securing the free upper end of said flap to the garment about at the waist-line, substantially as described.

816,881. MECHANISM FOR OPERATING SHUTTERS, &c. EDWIN PRESCOTT, Arlington, Mass. Filed Nov. 10, 1904. Serial No. 232,149.



Claim.—1. An operating device for operating shutters or the like having a swinging and rotating member adapted for connection to the shutter, a rotatable member connected to said swinging member and inclined to the plane of movement thereof, an operating member also inclined to said rotatable member and a connection between said operating member and rotatable member for the turning thereof, the turning of said rotatable member acting both to swing said swinging member and also turn the same upon its axis.

2. A shutter-operator having an operating device a multipart connecting-joint, one part being supported for turning movement to a fixed part of the building, a second part connected to the shutter and pivoted to said first part for swinging movement, a third part for swinging said first part and a connection between said third part and said operating means.

3. A shutter-operator having operating means, a member connected to a fixed part of the building, a member secured to the shutter and pivotally connected to said first member for swinging movement about the same, the axes of said two members being inclined one to another, means for turning said first member to cause said shutter member to swing said shutter and a connection between said turning means and said operating means.

4. A jointed connection for operating shutters or the like comprising a swinging member constrained to move in a given direction, a rotatable member connected in fixed pivotal relation thereto and an operating member universally jointed to said rotatable member for causing the turning thereof.

5. A jointed connection for operating shutters or the like having a member rotatable about a fixed axis, a second member secured in fixed pivotal relation thereto and constrained to swing in a given direction on rotation of said first member, and a third member having connections adapted to rotate the same simultaneously with the rotation and swinging respectively of said first and second members.

6. In an operating device for operating shutters or the like, a rotatable member, a second rotatable member secured in fixed pivotal relation thereto connections constraining the same to swing in a given direction on rotation of said first member and also to turn therewith, and means for rotating said second member.

7. The combination with a shutter having a stile hinged to a building, of an operating member, a swinging member moved thereby, means for moving said swinging member to swing and simultaneously lift the shutter, connections between said lifting means and said operating means and an elastic bar connecting said swinging member to the shutter at a point other than and beyond the hinged stile.

8. The combination with a shutter having a stile hinged to a building, of operating means for opening and closing the shutter from within said building, means for lifting the same simultaneously with the movement of the operating means near the final movement thereof, connections between said operating means and said lifting means and a yieldable connection between said operating means and said shutter at a point other than and beyond the hinged stile.

9. The combination with a shutter having a stile hinged to a building, of operating means for opening and closing the shutter from within the building, a swinging member moved thereby, means for lifting said swinging member simultaneously with the movement thereof, connections between said operating means and said lifting means and swinging member and means connecting said swinging member to said shutter at a point other than the hinged stile thereof.

10. In a mechanism for operating shutters or the like, the combination with operating means for opening and closing the shutter, a swinging arm moved by said operating means and connected with the shutter, and connections between said arm and shutter permitting the connection of the latter with or its disconnection from said swinging arm at a position intermediate the full-open or closed positions of the shutter only.

11. In a mechanism for operating shutters, or the like, the combination with an operating-shaft of a pivoted drop-handle having cars of unequal length, fastening means therefor, and means associated with the handle for varying the inequality in the relative lengths of said cars.

12. A shutter-operator having a swinging member for connection to the shutter a rotatable member having a fixed axis and inclined downwardly and away from the plane of swinging movement and connections between said rotatable member and said swinging member.

13. A jointed connection for operating shutters or the like comprising a center piece and three members pivotally connected thereto, said members being each partially rotatable and one having in addition a swinging movement about said center piece.

14. A shutter-operating device comprising a rotating and swinging member for attachment to the shutter, an operating member for moving said swinging member operating means for moving said operating member, and a directing member connected with the swinging member and the operating member.

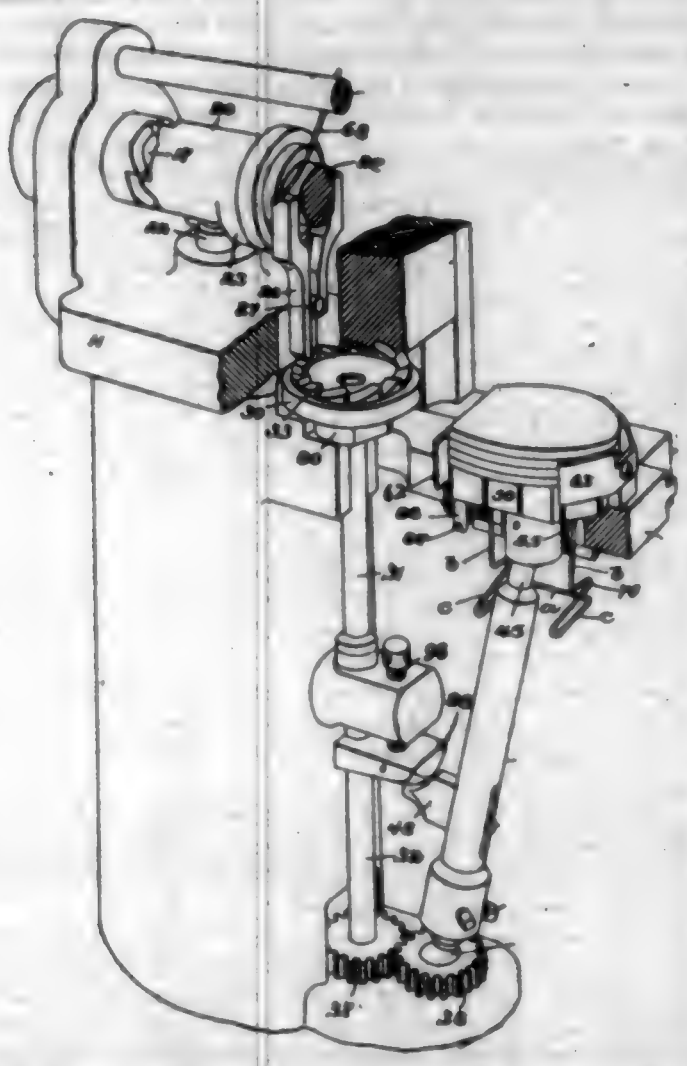
15. A shutter-operator having a rotating and swinging member for attachment to the shutter and a turning directing member pivotally secured thereto, having its axis inclined to the axis of the first member.

16. The combination with a shutter, of an operating device therefor comprising a rotatable member, a second member secured in fixed pivotal relation thereto, connections constraining said second member to swing in a given direction on rotation of said first member, and a third member lying in a plane substantially at right angles to the pivotal axis of the shutter for rotating said second member, and connections between said second member and said rotating means.

816,882. HEEL-LOADING MACHINE. ALBERT F. PRESTON, Boston, Mass. Filed Aug. 27, 1902. Serial No. 121,217.

Claim.—1. The combination of a heel-holder capable of receiv-

ing different sizes of heels, means for automatically feeding said holder with reference to a fastener-driving mechanism, whereby a predetermined number of nails are set in succession in the heel in the same predetermined relation to each other irrespective of the size of the heel, and means whereby the contour face of the heel determines the distance between the periphery of the heel and the position of the fastener.



2. The combination of a heel-holder, and automatic mechanism for effecting a variable feed of the said holder relative to a fastener-driving mechanism.

3. The combination of a rotatable work-holder, and automatic mechanism for effecting a step-by-step rotation of said holder relative to a fastener-driving mechanism in steps of variable length.

4. The combination of a rotatable work-holder movable toward and from the line of movement of a fastener-driving plunger, and mechanism for automatically moving said holder toward and from said line of movement and in variable steps about an axis substantially parallel to said line of movement.

5. The combination of a rotatable work-holder, means for automatically feeding said work-holder and varying its relation to the line of movement of a fastener-driving plunger to cause a predetermined number of fasteners to be set in a predetermined relation to the work, and means whereby the contour face of the heel determines the distance between the periphery of the heel and the position of the fastener.

6. The combination of a heel-holder, and automatic means for variably feeding said holder relative to a fastener-driving mechanism, said means including mechanism for controlling the movement of the holder in a manner to cause a predetermined number of fasteners to be set in the face of the heel around the curved edge and across the breast thereof.

7. The combination with a rotary gage or templet, of a work-holder rotatable in unison with said templet and adapted to hold the work against said gage, the contour face of the work controlling the relative positions of the gage and work-holder.

8. The combination with a rotary gage or templet, of a work-holder movable toward and from said gage and adapted to retain the work against the gage, the contour face of the work controlling the relative position of the gage and work-holder, and means for rotating said gage and work-holder in unison.

9. The combination with a rotary gage or templet, of a work-holder movable toward and from said gage, and means for imparting a variable step-by-step rotation to said gage and said work-holder.

10. The combination with a rotary gage or templet having an irregular periphery, of a work-holder adapted to move toward or from the gage to hold the work thereagainst, and means for effecting a rotation of the work-holder and the gage.

11. A machine of the character described, comprising a work-holder, a horizontally-movable clamp on said work-holder, means for rotating said holder, and mechanism for automatically stopping the rotation of said work-holder and opening said clamp.

12. A machine of the character described comprising a work-holder movable into and out of operative position, means for effecting the rotation of the work-holder, a work-clamp on said work-holder, and automatic means for effecting the movement of said work-holder into and out of operative position and the closing and opening of said clamp.

13. In a machine of the character referred to, the combination with intermeshing gears, of shafts connected to said gears to rotate therewith, a device for rotating one of said shafts, a work-holder rotatable with the other of said shafts, and provisions whereby one of said shafts can swing toward and from the other of said shafts.

14. A machine of the character referred to, comprising a pair of intermeshing gears, a rotatory templet or work-gage, a rotatory work-holder, shafts rotatable with said gears respectively, one of said shafts having affixed thereto the templet or gage and the other having fixed to it the work-support, and provisions whereby the work-support is movable toward and from the templet.

15. A machine of the character referred to comprising a work-feeding ratchet having teeth of variable length, and a reciprocatory pawl moving through a constant path for actuating said ratchet.

16. A machine of the character referred to comprising a pawl movable in an unvarying path, a ratchet-wheel having teeth of varying length, and a work-feeding device actuated by said ratchet.

17. A machine of the character referred to comprising a pawl movable in an unvarying path, a ratchet-wheel having teeth of varying length, and a rotary work-feeding device rotated with a variable step-by-step motion by said ratchet.

18. A machine of the character referred to comprising a pawl movable in an unvarying path, a ratchet-wheel having teeth of varying length, a templet or gage movable with said ratchet-wheel, a rotary holder for a heel in which a series of nails, equal in number to the ratchet-wheel, are to be set, and connections between said work-holder and said ratchet for moving said ratchet-wheel and holder in unison.

19. A machine of the character referred to comprising a pawl movable in an unvarying path, a ratchet-wheel having teeth of varying length, a rotary holder for a heel in which a series of nails, equal in number to the ratchet-teeth, are to be set, said holder being operated by said ratchet-wheel, and provisions for automatically moving the work-holder to inoperative position when the rotation of the holder is completed.

20. In a machine of the character described a heel-feeding mechanism, automatic means whereby a predetermined number of substantially equally spaced nails are set in the face of a heel at a predetermined distance from the edge, and means whereby the contour face of the heel determines the distance between the periphery of the heel and the position of the nails.

21. In a machine of the character described, a rotary heel-holder, automatic mechanism for rotating said heel-holder with steps of variable length, and automatic mechanism for positioning the heel-holder relatively to a fastener-driving mechanism to cause the nails to be set at substantially equal distance from the edge of the heel.

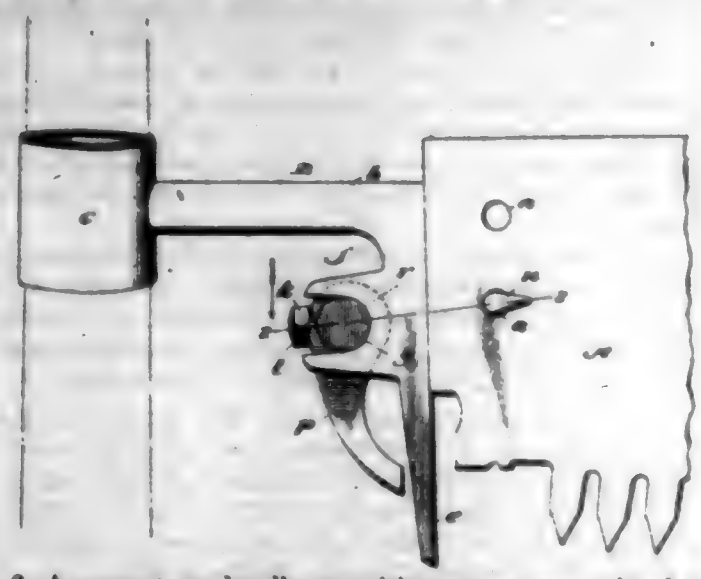
22. In a machine of the character referred to a rotary work-holder, and a rotary work-gage or templet which has an operative surface varying in distance from its axis of rotation.

23. A machine of the character referred to comprising a work-gage, a work-holder adapted to hold the work against the gage, a guide for the work-holder, a gear having a fixed axis of rotation and a shaft transmitting power from the gear to the work-holder, and universal joints interposed between the work-holder and the gear, whereby the work-holder is rotated by said gear and at the same time is adapted to move bodily toward and from said gage.

816,888. **SAW-HANDLE.** MATTHEWS SAWER, Portland, Oreg., assignor of one-half to Edward L. Donaldson, Portland, Oreg. Filed Aug. 22, 1905. Serial No. 275,373.

Claim.—1. A crosscut-saw handle comprising a tang arranged to bear against one end of a saw-blade and having bifurcated lugs on its rear side, a cylindrical part disposed in the bifurcations of said lugs and having a diametrical threaded bore, a cam-lever having a

bifurcated portion fulcrumed on the cylindrical part and arranged to bear against the rear side of the tang, and a threaded bolt extending through and engaging the threaded bore in the cylindrical part and also extending through an aperture in the tang and having a head arranged to engage an aperture in a saw-blade.

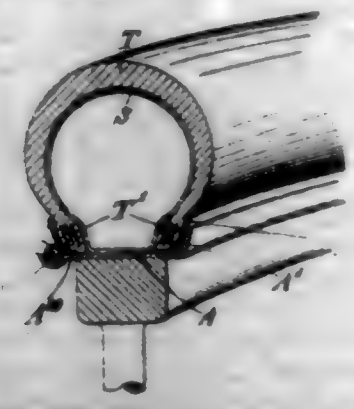


2. A crosscut-saw handle comprising a tang arranged to bear against one end of a saw-blade, a transversely-disposed part movable fore and aft in guides provided in the tang, a bolt carried by and disposed at a right angle to said part and having a head arranged to engage an aperture in a saw-blade, and a cam-lever fulcrumed on said transversely-disposed part and arranged to engage the rear side of the tang.

3. A crosscut-saw handle comprising a tang arranged to bear against one end of a saw-blade, a transversely-disposed part movable fore and aft in guides provided in the tang and having a diametrical, threaded bore, a threaded bolt extending through and engaging the thread of said bore and having a head arranged to engage an aperture in a saw-blade; said bolt being disposed at a right angle to the fore-and-aft-movable part, and a cam-lever fulcrumed on the fore-and-aft-movable part and bearing against the rear side of the tang.

4. A crosscut-saw handle comprising a tang arranged to bear against one end of a saw-blade and having guides open at their rear ends, a transversely-disposed part movable fore and aft in and removable from the said guides and having a diametrical, threaded bore, a threaded bolt extending through and engaging the thread of said bore and having a head arranged to engage an aperture in a saw-blade; the said bolt being disposed at a right angle to the fore-and-aft-movable part, and a cam-lever fulcrumed on the fore-and-aft-movable part and bearing against the rear side of the tang.

816,884. DETACHABLE PNEUMATIC TIRE. CHARLES S. SCOTT, Cadiz, Ohio, assignor, by mesne assignments, to The Goodyear Tire and Rubber Company. Filed Mar. 23, 1905. Renewed Mar. 5, 1906. Serial No. 304,264.



Claim.—1. The combination of a vehicle-wheel rim having a depressed groove near its detaching edge, an annular, inextensible, detachable, rim-flange, having an inner diameter which permits its ready passage over the outer edge of the groove, and a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, substantially as described.

2. The combination of a vehicle-wheel rim having a depressed groove near its detaching edge, an annular, inextensible, detachable rim-flange having an inner diameter which permits its ready passage over the outer edge of the groove, a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, and a pneumatic tire, the inflation of which forces the rim-flange against the abutment, substantially as described.

3. The combination of a vehicle-wheel rim having a depressed groove at or near the detaching edge, an annular, inextensible rim-flange having an inner diameter greater than the diameter of the outer edge of the groove, and a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, substantially as described.

4. The combination of a vehicle-wheel rim having a depressed groove at or near the detaching edge, an annular, inextensible rim-flange having an inner diameter greater than the diameter of the outer edge of the groove, a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, and a pneumatic tire forcing the rim-flange against the abutment on inflation, substantially as described.

5. The combination of a vehicle-wheel rim which is cylindrical near its detaching edge, a groove depressed therein, at or near the detaching edge, an annular inextensible rim-flange having an inner diameter greater than the diameter of the outer edge of the groove, but of a size to fit the cylindrical rim-surface, and a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, substantially as described.

6. The combination of a vehicle-wheel rim which is cylindrical near its detaching edge, a groove depressed therein at or near the detaching edge, an annular, inextensible rim-flange having an inner diameter greater than the diameter of the outer edge of the groove but of a size to fit the cylindrical rim-surface, a contractible locking-ring which is passed over the outer edge of the groove and sprung into the groove to form an abutment for the rim-flange, and a pneumatic tire forcing the rim-flange against the abutment on inflation, substantially as described.

7. A vehicle-wheel rim having a groove at one edge, a detachable, inextensible rim-flange, having a seat on the rim, and a locking-ring contracted into the groove by lateral outward movement of the rim-flange, substantially as described.

8. A vehicle-wheel rim having a groove at one edge, a detachable, inextensible rim-flange, having an inclined face and a seat on the rim, and a locking-ring fitting in the groove and coöperating with the inclined face on the rim-flange whereby lateral outward movement of the rim-flange causes a contraction of the locking-ring, substantially as described.

9. A vehicle-wheel rim having a groove at one edge, a detachable, inextensible rim-flange, having an inclined face, and a locking-ring which is curved in cross-section fitting in the groove and coöperating with the inclined face, substantially as described.

10. A vehicle-wheel rim having a groove at one edge, a detachable, inextensible rim-flange having an annular wedge-shaped foot, and a locking-ring fitting in the groove, substantially as described.

11. A cylindrical vehicle-wheel rim having a side flange at one edge and a depressed groove at the other edge, an annular, inextensible rim-flange coöperating with the side flange, and an annular, inextensible rim-flange having an inner diameter greater than the diameter of the outer edge of the groove and fitting the cylindrical rim portion and a contractible locking-ring sprung into the groove over its outer edge, substantially as described.

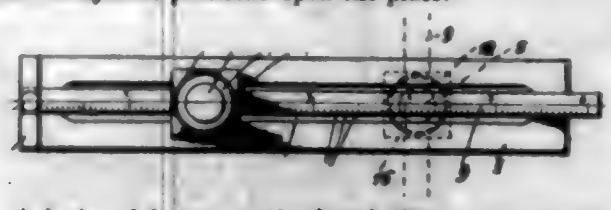
12. The combination of a vehicle-wheel rim having a depressed groove at one edge thereof, an annular detachable rim-flange having an inner diameter greater than the diameter of the edges of the groove, thereby permitting of the mounting of the flange upon the rim, and a locking-ring which is passed over one edge of the rim and sprung into the groove and constitutes an abutment for the rim-flange, thereby retaining it in operative position, substantially as described.

13. The combination of an imperforate vehicle-wheel rim having one side provided with a depressed groove, an annular rim-flange separate from the tire and having an inner diameter which permits its passage over one edge of the rim, and a locking-ring which is passed over the outer edge of the rim and sprung into the groove to form an abutment for the separate flange, thereby retaining it in operative position, substantially as described.

14. A vehicle-wheel comprising a rim having a groove, an endless tire-holding device separate from the tire and mounted thereon, and a locking device adapted to be sprung over the edge of the rim and mounted in the groove and engaging said holding device for securing the latter in position, substantially as described.

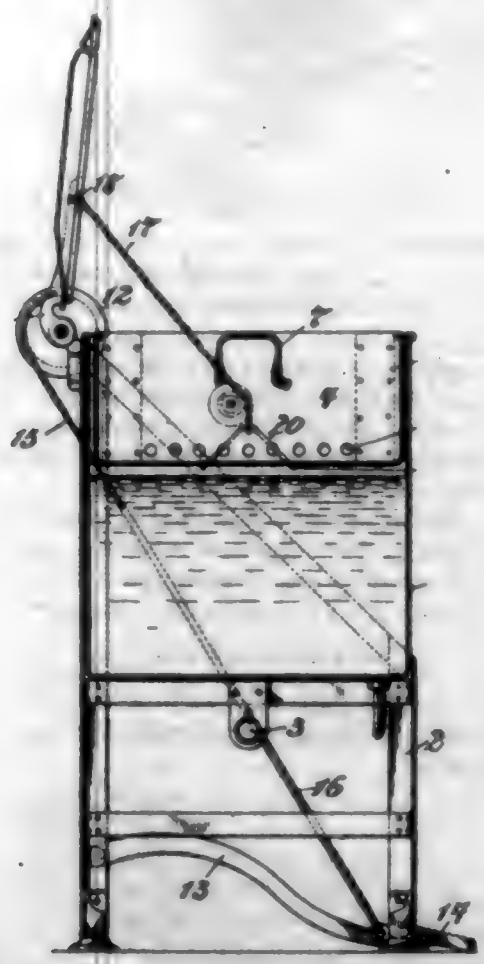
816,885. COMBINATION HAND-TOOL. RALPH G. SHALLENBERGER, Braddock, Pa. Filed Sept. 19, 1905. Serial No. 279,178.

Claim.—1. A device of the type set forth embodying a longitudinally-slotted plate, a bolt arranged in the slot of said plate, said bolt being provided with an opening therethrough, a ruler extending through the opening in the bolt and means for locking the bolt and the ruler at adjusted positions upon the plate.



2. A device of the type set forth embodying a plate formed with an enlarged recessed edge, and a longitudinal slot in the body portion thereof, a bolt extending through said slot and movable therein, a ruler passing through said bolt and adapted to be held in said recess when in the same actual disposition as said slot, an element loosely mounted upon said bolt and bearing against said ruler, and adapted to lock the same at any angle with relation to said plate, under pressure, and a set-nut mounted upon said bolt, and bearing against said locking element, said locking element being formed on its underneath surface with a shoulder adapted to bear against the walls of said slot, in its locking position.

816,886. BASIN-STERILIZER. HAROLD W. SHOPPARD, East Orange, N. J. Filed Sept. 20, 1905. Serial No. 280,755.



Claim.—1. In a sterilizer, a main tank, a movable tray therein, a treadle and means connecting said treadle with said tray for producing operative movement of the tray, substantially as described.

2. In a sterilizer, a main tank, a tray sliding vertically therein, a treadle and means connecting said treadle with said tray for lifting said tray, substantially as described.

3. In a sterilizer, a main tank, a perforated tray fitting loosely therein, guides on said tray for preventing tilting thereof, a treadle and means connecting said treadle for lifting said tray, substantially as described.

4. In a sterilizer, a main tank, a tray fitting therein, wheels on the inner faces of the tank sides, a chain connected to each side of said tray and passing over each of said wheels, a treadle and operative connections between said treadle and chain, substantially as described.

5. In a sterilizer, a main tank, a tray fitting therein, a shaft pivoted to said tank and carrying a wheel on one end thereof, a treadle, a chain connecting said treadle with said wheel and operative connections between said shaft and tray for raising the latter, substantially as described.

6. In a sterilizer, a main tank, a tray fitting therein, a treadle, a shaft pivoted to said tank, arms fixed to said shaft, operative connections between said arms and said tray and operative connections between said treadle and shaft, substantially as described.

7. In a sterilizer, a main tank, a tray fitting therein, wheels within the tank, a shaft pivoted to said tank, arms on said shaft, a wheel on said shaft, a treadle, a chain connecting said treadle with the wheel on said shaft and chains connecting said arms with said tray and passing over the wheels within said tank, substantially as described.

8. In a sterilizer, a main tank, a pivoted cover thereon, a tray fitting in said tank, a treadle and operative means connecting said treadle with said cover and tray for raising both simultaneously, substantially as described.

9. In a sterilizer, a main tank, a cover thereon, a tray fitting said tank and connections between said cover and tray whereby the weight of the tray tends to hold down said cover, substantially as described.

10. In a sterilizer, a main tank, wheels within the same, a tray fitting within said tank, a cover for said tank and flexible connections between the tray and cover passing over said wheels, substantially as described.

11. In a sterilizer, a main tank, a tray fitting the same, a shaft pivoted to said tank, a treadle operatively connected to said shaft, arms fixed on said shaft, a cover operatively connected to said arms and operative connections between said arms and said tray, substantially as described.

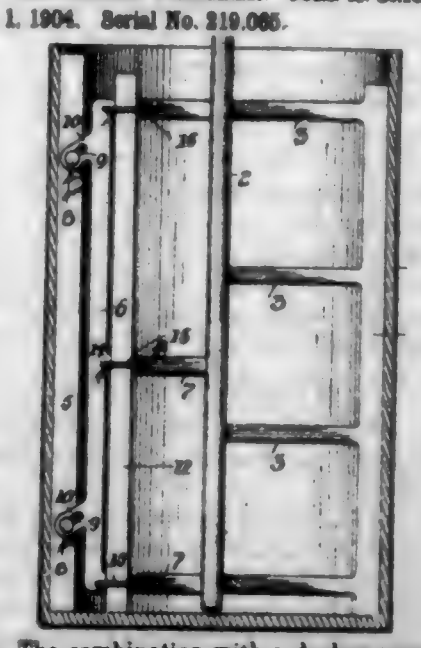
12. In a sterilizer, a tray, a cradle for supporting the same, a treadle and operative means connecting said treadle and cradle, substantially as described.

13. In a sterilizer, a tank, a tray, a cradle for supporting the same, a cover for the tank and means connecting said cradle and cover whereby a weight on said cradle tends to hold down said cover, substantially as described.

14. In a sterilizer, a tank, a tray fitting the same, a cradle extending under said tray from side to side thereof and lifting means connected to said cradle at both sides of said tray, substantially as described.

15. In a sterilizer, a tank, a shaft pivoted thereto, a treadle, operative connections between said treadle and shaft, arms on said shaft, a cradle within said tank, a tray on said cradle and operative connections between said cradle and said arms, substantially as described.

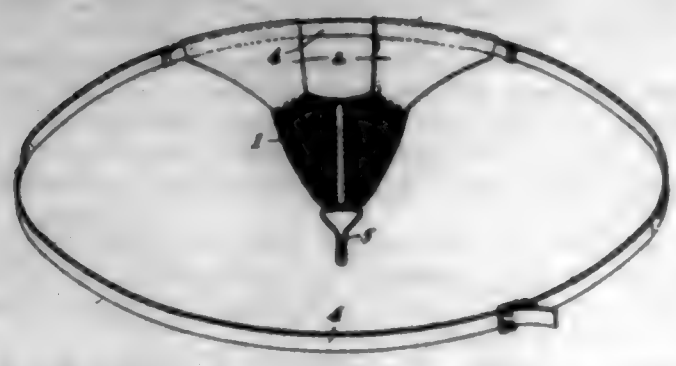
816,887. ICE-CREAM FREEZER. JOHN A. SNIGO, Pittsburg, Pa. Filed Aug. 1, 1904. Serial No. 219,065.



Claim.—1. The combination with a dasher comprising a shaft and laterally-extending wings and having two scraper-bars, one of which has lateral movement independent of the dasher, of stirrups carried by the dasher adjacent said laterally-movable scraper-bar, and a strip held to the dasher by said stirrups and movable freely in a plane radial to the shaft independently of the dasher, as and for the purpose described.

2. The combination with a dasher comprising a shaft and laterally-extending wings carried thereby, said dasher having a movable scraper-bar carried by the wing at one side of the shaft, of a strip of material attached to one wing of the dasher between the outer end and the inner end of the said wing, and stirrups carried by the dasher and embracing said strip, said stirrup being of such size as to permit universal movement of said strip.

816,888. SUSPENSORY. JOHN R. SCHNEEVILLE, Washington, D. C. Filed Dec. 29, 1905. Serial No. 293,722.

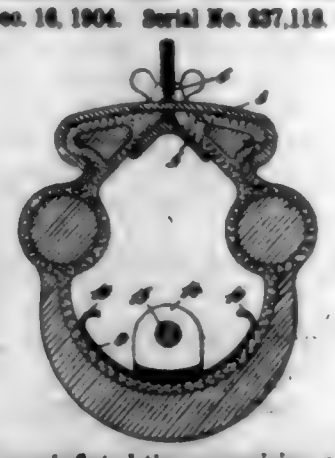


Claim.—1. A suspensory comprising a bag, a belt for supporting the anterior portion thereof, and means on the posterior portion of said bag for securing it to a garment, substantially as described.

2. A suspensory comprising a bag, a belt for supporting the anterior portion thereof, and a flap secured to the posterior portion of the bag and provided with a buttonhole, substantially as described.

3. A suspensory comprising a bag, two supports secured to the anterior portion thereof, a belt attached to said two supports, said belt provided with a non-elastic portion extending between and through said two supports, and the remainder of said belt formed of elastic material, and means on the posterior portion of the bag for securing it to a garment, substantially as described.

816,889. FLEXIBLE TIRE. ALBERT V. STICHELEN, Gand, Belgium. Filed Dec. 16, 1904. Serial No. 237,118.



Claim.—1. A non-inflated tire comprising a cover, a lining for said cover, resilient or spring means for placing said cover under tension, said lining having annular pockets therein and elastically-extensible material contained in said pockets and arranged to be put under tension by said resilient or spring means.

2. A non-inflated tire comprising a cover, a lining of textile material strengthening the same, a metallic ring placed inside the cover, means for expanding said ring, whereby the tire is placed under tension, said lining being provided with pockets on each side of the cover, a pair of flexible india-rubber rings inclosed in said pockets, the said flexible rings being expanded by said metallic ring to give resiliency to the tire, substantially as described.

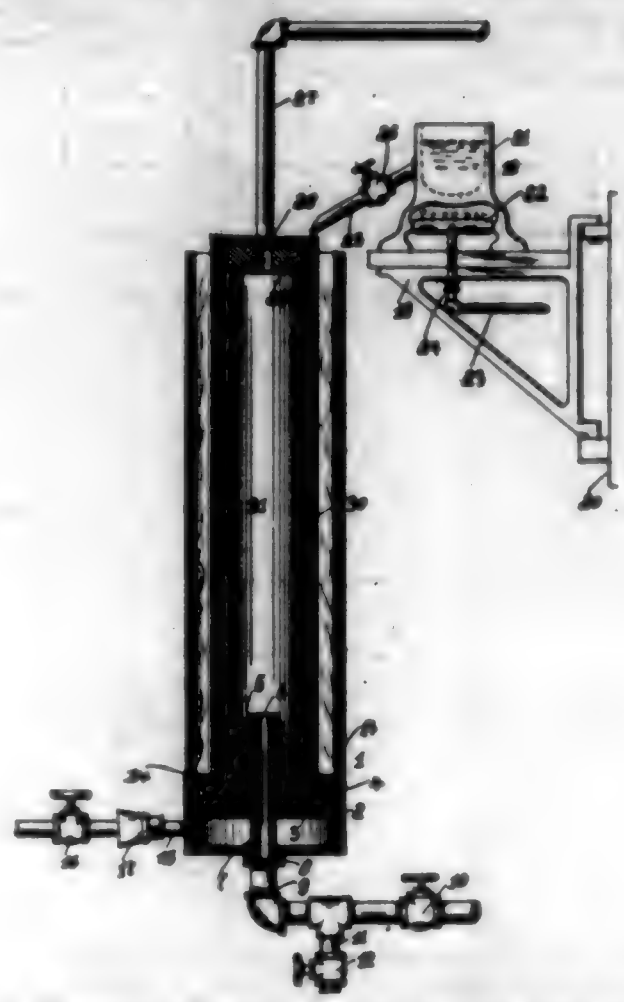
816,890. PROCESS OF LINING WORKING BARRELS AND PIPES. NATHAN C. STONER, Sistersville, W. Va. Filed Nov. 28, 1905. Serial No. 289,510.

Claim.—1. A method of lining a working barrel comprising the mounting of a liner within a barrel, heating the barrel, then artificially cooling the liner, then pouring a molten substance between the liner and the barrel, and allowing said substance and the barrel to cool whereby the contraction of the barrel and adhering element will cause said barrel to shrink upon the liner, substantially as described.

2. The method of lining a barrel consisting of first placing a liner within the barrel, heating said barrel, pouring a molten adhering substance between said liner and said barrel, and artificially cooling said liner to cause said barrel to shrink upon said liner, substantially as described.

3. The herein-described process of lining a barrel, consisting in interposing a molten adhering substance between said liner and said barrel, and artificially cooling said liner to cause said barrel to shrink thereon when the barrel cools, substantially as described.

4. The herein-described process of lining a working barrel, consisting in subjecting said barrel to a high degree of heat, artificially cooling the liner within said barrel, and then pouring a molten adhering substance between said barrel and said liner, to cause said barrel to contract upon said liner, substantially as described.

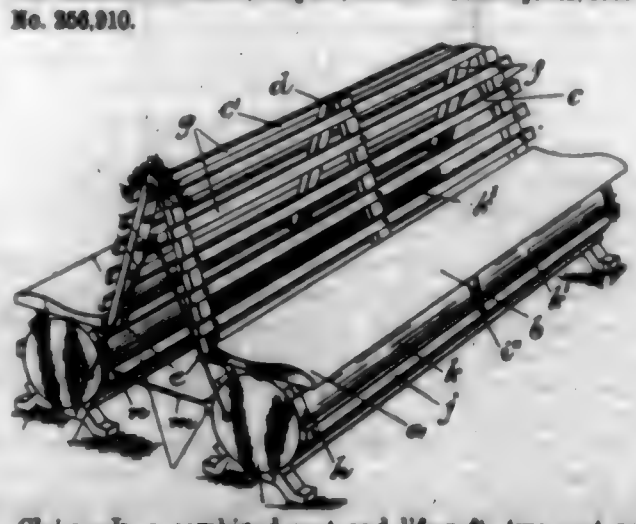


5. The method of uniting a liner to a working barrel, comprising the insertion of a heated adhering substance between said liner and said barrel, and artificially cooling said liner, substantially as described.

6. The method of uniting a liner and a pipe consisting in heating a pipe and simultaneously cooling a liner arranged within the pipe and then pouring a molten adhering substance between said liner, and said pipe, and then allowing the pipe to cool, to cause said pipe to shrink upon said liner.

7. A method of uniting a liner and a pipe consisting in pouring a molten adhering substance between said liner and said pipe, and subjecting said substance to heated and cooled surfaces, to cause said barrel to adhere to said liner, substantially as described.

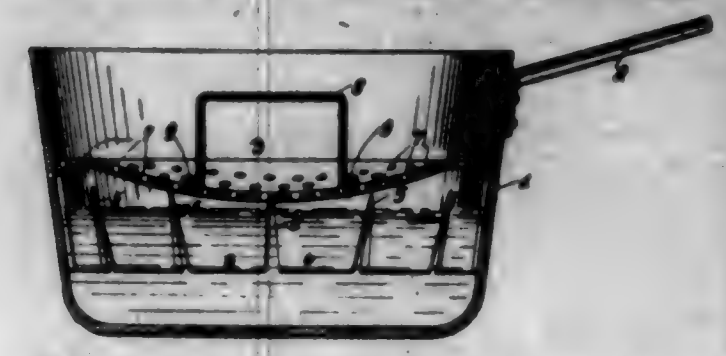
816,891. COMBINED SEAT AND LIFE-RAFT. CECIL TAYLOR and CHARLES S. TAYLOR, Drayton, Canada. Filed Apr. 22, 1905. Serial No. 256,910.



Claim.—In a combined seat and life-raft, two seat parts arranged in parallel relation to one another, air-tight chambers fastened within a framework comprising the base of the said seat part, a slatted back hinged to each of the said seat parts, the said slatted backs being hinged together along their upper and adjacent edges, a hook-bar fastened to the said seat parts and adapted to maintain the said seat parts and backs in the arrangement as a seat, a brace-bar fastened to the ends of the said seat parts and adapted to maintain the parts in the rearrangement as a life-raft, coiled springs fastened to plates and lever-arms arranged in combination at the junction of the said backs, being adapted to maintain the backs in one plane

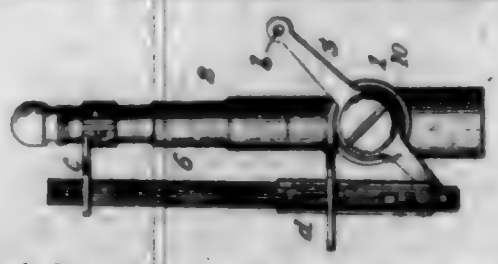
when arranged to form the deck of the said raft, as and for the purpose specified.

816,892. ATTACHMENT FOR CULINARY VESSELS. CORA M. WASLEY, Empire, Ohio. Filed Apr. 27, 1905. Serial No. 257,662.



Claim.—In an attachment of the character described, the combination with a suitable boiler, of a concavo-convex plate having a plurality of small openings extending substantially over the entire surface of the plate, the edges of said plate being bent downwardly and sheared to form resilient members adapted to frictionally engage the sides of said boiler, and a handle rigidly mounted upon the upper side of said plate centrally thereof, substantially as described.

816,893. SAFETY GAS-BURNER. CHARLES H. WHITE, Sparrows Point, Md. Filed June 27, 1905. Serial No. 267,173.

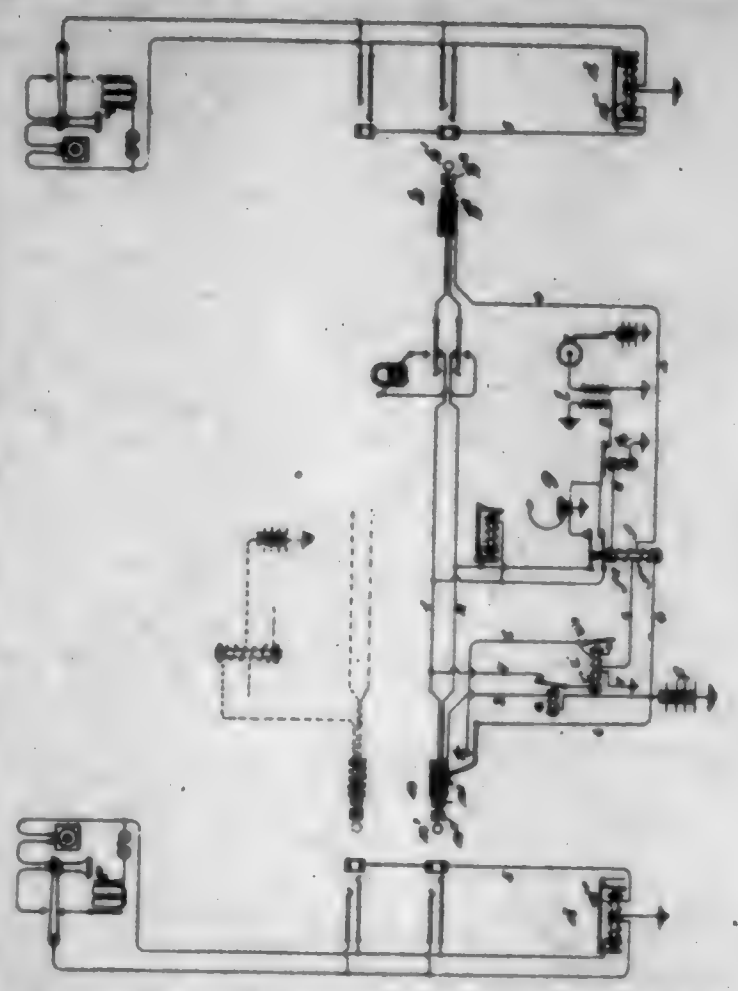


Claim.—1. In combination with a gas-burner, a supply-cock adapted to be manually opened, a thermostat within the influence of the ignited gas, formed of two thermostatic blades secured together at the top only, and normally closed, which blades under the influence of the increased heat, are deflected in opposite directions and made to separate at their lower ends, one of the thermostatic blades being provided with two detents arranged one above the other, and projecting in opposite directions, and the other blade having an opening through which one of the said detents passes loosely, an arm extending from the cock-key to which the lower end of the thermostat is hinged, a spring to yieldingly retain the cock-key in a closed position, and a device which in the elevation of the thermostat effected by the opening of the supply-cock, serves as a support for the detents successively, substantially as, and for the purpose specified.

2. In combination with a gas-burner, a supply-cock adapted to be manually opened, a thermostat within the influence of the ignited gas, formed of two thermostatic blades secured together at the top only, and normally closed, which blades under the influence of increased heat, are deflected in opposite directions and made to separate at their lower ends, one of the said thermostatic blades provided with two detents arranged one above the other, and project in opposite directions, and the other blade having an opening through which one of the said detents passes loosely, an arm extending from the cock-key to which the lower end of the thermostat is hinged, a spring to yieldingly retain the cock-key in a closed position, and a slotted guide within which the thermostat is laterally confined, the upper part of which guide serves as a support for the detents successively, in the elevation of the thermostat effected by the opening of the supply-cock, substantially as, and for the purpose specified.

816,894. APPARATUS FOR TELEPHONE-SWITCHBOARDS. HENRI E. A. ANDRÉ, Paris, France, assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 27, 1904. Serial No. 205,069.

Claim.—1. The combination with a number of telephone-lines each provided with multiple connection-terminals at a central switchboard, of an answering and a calling plug, a link conductor connecting said plugs for uniting any two of said lines at the connection-terminals thereof, a central-office telephone apparatus adapted to be connected with said link conductor, a local circuit established in the act of making connection from either plug to the terminal of any busy line, a relay in said local circuit, blocking mechanism controlled by said relay for rendering the central-office telephone apparatus inoperative for communication over said link conductor, and means actuated in making connection with any line for establishing at the several multiple terminals of such line a peculiar electrical condition to which the said relay is responsive when the circuit of said relay is established at another multiple terminal of the same line, whereby the central-office telephone apparatus is automatically blocked when it is attempted to make connection with a busy line.



2. The combination with a number of telephone-lines each provided with multiple connection-terminals at a central switchboard, of a link conductor for uniting any two of said lines at the connection-terminals thereof, a central-office telephone adapted to be connected with said link conductor, a local circuit established in making connection from the link conductor to the terminal of any busy line, a relay in said local circuit, a source of signal-current adapted to produce a characteristic sound in the telephone, switching mechanism controlled by said relay adapted to apply said source of signal-current to the central-office telephone, blocking mechanism controlled by said relay for rendering the central-office telephone inoperative for communication over said link conductor, and means actuated in making connection with a multiple terminal of any line for establishing at the other multiple terminals a peculiar electrical condition to which the aforesaid relay is responsive when the circuit of said relay is established at one of such other multiple terminals, whereby the characteristic signal is produced in the central-office telephone and the same rendered inoperative when it is attempted to make connection with a busy line.

3. The combination with a pair of plugs and link conductors uniting them, of an operator's telephone adapted for connection with the link conductors, an electromagnetic blocking device adapted when actuated to render the telephone apparatus inoperative, a local circuit for said blocking device, a relay controlling said local circuit, a locking-winding for the relay included in said local circuit, a branch 7 from one of the conductors including a winding of said relay, telephone-lines and multiple spring-jacks thereof, a source of current, and means actuated in making connection with a spring-jack of any line for connecting said source of current to contacts of the several multiple spring-jacks of such line, with which the plug-contact forming the terminal of the branch 7 is adapted to engage, whereby the blocking device is automatically actuated when connection is made with a busy line.

4. The combination with telephone-lines each having multiple spring-jacks and a test-conductor extending to all such spring-jacks, of means for making connection with a line at any of the multiple spring-jacks thereof, and for maintaining a peculiar electrical condition of the test-conductor of such line during such connection, a plug and a circuit containing telephone apparatus adapted to be con-

nected with the terminals of said plug, an electromagnetic switch controlling said circuit, a relay *i* in a branch conductor 7 connected with a contact-piece of the plug, said relay being brought into circuit with the test-conductor of a line when the plug is inserted in a spring-jack of such line, said relay being responsive to the electrical condition of the test-conductor, according to the busy or idle condition of the line whose spring-jack is plugged into, a local circuit including a source of current and said electromagnetic switch, and adapted to be controlled by said relay *i*, and a switch *k* actuated in the use of the plug for establishing said local circuit and bringing the same under the control of said relay *i*, whereby the connection of the circuit containing the telephone apparatus with the line into whose spring-jack the plug is inserted, is dependent upon the busy or idle condition of said line.

5. The combination with telephone-lines each having multiple spring-jacks, and a test-conductor extending to all such spring-jacks, of means for making connection with a line at any of the multiple spring-jacks thereof and for establishing a peculiar electrical condition of the test-conductor of such line during such connection, a pair of plugs *a b* and link conductors uniting them, for connecting lines together, a telephone adapted for connection with the link conductors, an electromagnetic blocking-switch adapted to render the telephone inoperative, two magnet-windings f' f^3 for independently actuating said blocking-switch, a relay *i* in a branch conductor 7 connected with a contact-piece of the answering-plug of the pair aforesaid, said relay being brought into circuit with the test-conductor 5 of a line when the said answering-plug is inserted in a spring-jack of such line, the relay being responsive to the electrical condition of the test-conductor according to the busy or idle condition of the line, a local circuit controlled by said relay, including a source of current and the winding f^3 of said electromagnetic blocking-switch, and a local circuit for the other winding f' controlled in registering contacts of the calling-plug of the pair aforesaid and the spring-jack of the line into which said calling-plug may be inserted, whereby the use of the telephone in association with the plugs is blocked while two lines are united by said plugs, or when connection is made with a busy line.

6. The combination with multiple spring-jack line-terminals at a telephone-switchboard, and a test-conductor uniting the respective test-contacts of said spring-jacks, plugs and plug-circuits, means adapted to establish a peculiar electrical condition of said test-conductor, telephone apparatus associated with each plug-circuit, a branch from one of the talking-strands of each plug-circuit, said branch being momentarily brought into connection with said test-conductor during the insertion of the plug associated therewith into a spring-jack, a relay in each branch adapted to respond to such changed electrical condition of said test-conductor, and means controlled thereby adapted to render the telephone apparatus associated with such plug inoperative.

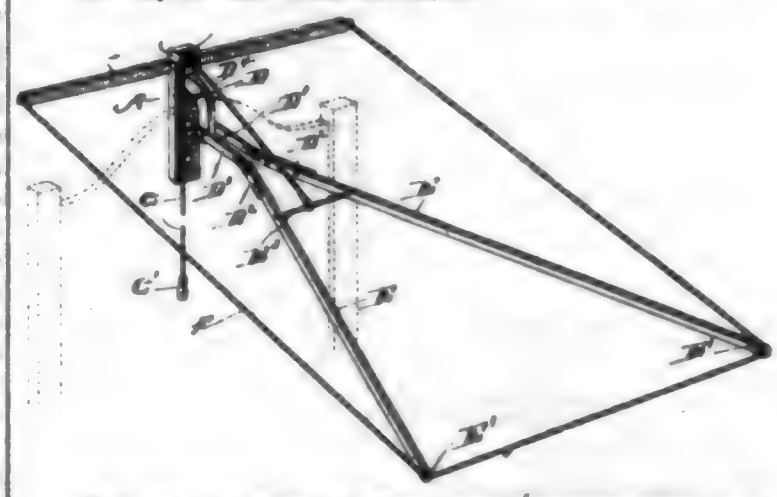
7. The combination with multiple spring-jack line-terminals at a telephone-switchboard, and a test-conductor uniting the respective test-contacts of said spring-jacks, plugs and plug-circuits, means associated with each plug adapted to establish a peculiar electrical condition of said test-conductor when a plug is inserted in any of said spring-jacks, telephone apparatus associated with each plug-circuit, a branch from one of the talking-strands of each plug-circuit, said branch being momentarily brought into connection with said test-conductor during the insertion of the plug associated therewith into a spring-jack, a relay in each branch adapted to respond to such changed electrical condition of said test-conductor, and means controlled thereby adapted to render the telephone apparatus associated with such plug inoperative.

8. The combination with multiple spring-jack line-terminals at a telephone-switchboard, and a test-conductor uniting the respective test-contacts of said spring-jacks, plugs and plug-circuits, means associated with each plug adapted to establish a peculiar electrical condition of said test-conductor when a plug is inserted in any of said spring-jacks, a telephone normally associated with each plug-circuit, a branch from one of the talking-strands of each plug-circuit, said branch being adapted to be momentarily brought into connection with the said test-conductor during the insertion of the plug associated therewith into a spring-jack, a relay in each branch adapted to respond to such changed electrical condition of said test-conductor, a source of signal-current adapted to produce a characteristic tone in said telephone, and switching mechanism controlled by said relay adapted to sever the connection of said telephone with the plug-circuit and connect the same with said source of signal-current.

9. The combination with a plug and plug-circuit, of telephone apparatus adapted for connection with said plug-circuit, an electromagnetic switch adapted to render said telephone apparatus inoperative during connection, an actuating-circuit for said switch terminating on a test-contact of the answering-plug, a telephone-line, a spring-jack terminal therefor, a part of said spring-jack adapted to be engaged momentarily by the test-contact of the plug as the plug is inserted in making connection with the line, and a source of current adapted to be applied to said part in the use of the telephone-line, whereby said electromagnetic switch is actuated to render the telephone inoperative when connection is made with a line which is in use.

10. The combination with a number of telephone-lines extending from substations to multiple terminals at a central office, of an answering and a calling plug, and a plug-circuit therefor for uniting said lines, telephonic apparatus associated with said plug-circuit, blocking mechanism for rendering said telephonic apparatus inert, a relay for operating said blocking mechanism, and a circuit for said relay completed as said answering-plug engages the terminal of a busy line.

816,895. **MOSQUITO-NET FRAME.** EDMUND L. AWTRY, Atlanta, Ga., assignor of one-third to Henry Bruce McDaniel, Atlanta, Ga. Filed May 31, 1905. Serial No. 263,173.

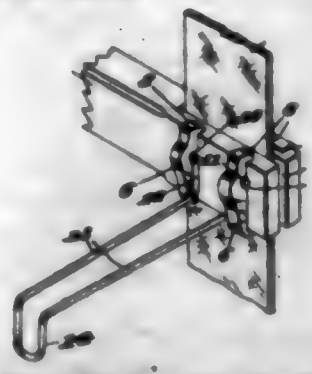


Claim.—1. A device of the kind described comprising a block, a bar carried by the block and at right angles thereto, an arm carried by the block, divergent bars pivotally supported from the block, a cord connected to the ends of the first-mentioned bar and carried around the ends of the pivotally-supported bars, and means for raising and lowering the last-mentioned bars.

2. A device of the kind described comprising a supporting-block, pivotally-supported, divergent bars, a cross-piece carried by the bars, a pulley on the block, a cord connected to the free ends of all of the bars, and a cord connected to the cross-piece and extending over the pulley.

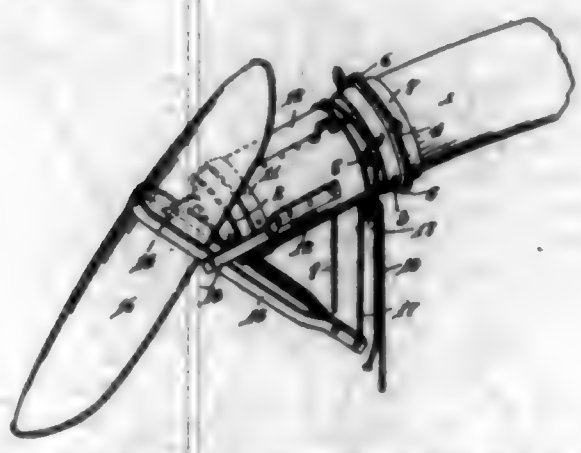
3. The combination with a block having a curved arm, extending downwardly from the front face of the block, metal strips pivoted to opposite sides of the curved arm and having divergent forward portions, bars connected to said forward portions, a bar carried by the block and at right angles thereto, a cord extending from the bar carried by the block to and across the front ends of the bars carried by the metal strips, a cross-piece connecting the last-mentioned bars, a pulley carried by the block and a cord running over the pulley connected at one end to the cross-piece.

816,896. **FIRE-ESCAPE.** IGNATZ BIEL, Newport, Ky. Filed Apr. 10, 1905. Serial No. 254,626.



Claim.—A device of the character described comprising flexible stiles, rungs having notches through which the stiles are passed, clamping means on the ends of the rungs for holding the same in position upon the stiles and spacing devices formed of rods centrally bent to produce arms and with said stiles connected to the ends of the rungs.

816,897. DISTRIBUTING-NOZZLE FOR PNEUMATIC CONVEYER-PIPES. OSCAR E. BRAY, Warsaw, N. Y. Filed Dec. 27, 1904. Serial No. 238,210.



Claim.—1. A distributing attachment for pneumatic conveyer-pipes, having in combination a sleeve rotatably engaging over the end of said pipe, a plurality of collars rigidly fixed to said pipe, one at each end of said sleeve, strut members projecting from said sleeve past the outer end of said pipe, a directing-shield, a holder carrying the same, pivotally mounted between said strut members, and a plurality of cord systems, one whereby the sleeve may be rotated in either direction with respect to the pipe, and the other whereby the position of said deflecting-shield and holder with respect to the sleeve and the pipe-terminal may be regulated, substantially as described.

2. A distributing attachment for pneumatic conveyer-pipes having in combination a sleeve rotatively mounted on the free end of the pipe, struts carried thereby and projecting beyond the end of the pipe, a holding-yoke pivotally carried by said struts across the end of the pipe, a directing-shield carried by said yoke, an adjusting-cable whereby the position of said yoke and distributing-guide with respect to said sleeve may be regulated, and adjusting-cables secured to said sleeve and independent of said first-mentioned cable whereby the sleeve may be rotated with respect to the pipe, substantially as described.

3. A distributing attachment for pneumatic conveyer-pipes, having in combination a deflector member, a yoke carrying the same, a sleeve rotatably carried on the end of the conveyer-pipe, struts projecting therefrom beyond the end of the pipe, whereon said yoke is pivotally mounted, means fixed to the pipe whereby longitudinal movement of the sleeve thereupon is prevented, and a plurality of adjusting-cables, one whereby the position of the deflector and yoke across the end of the pipe may be regulated, and the other whereby the sleeve may be rotated with respect to the pipe, substantially as described.

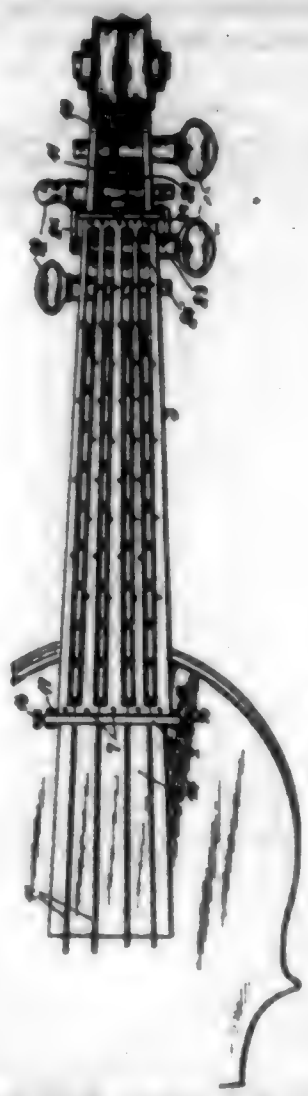
4. A distributing attachment for pneumatic conveyer-pipes, having in combination a sleeve rotatably mounted near the free end of the pipe, a plurality of collar members one at each end of said sleeve, said members being fixed to the pipe and being adapted to prevent longitudinal movement of said sleeve, a cable system whereby said sleeve may be rotated in either direction, struts projecting from said sleeve past the end of the pipe, a yoke pivotally mounted therebetween, a distributing-shield carried by said yoke, and a cable connecting said yoke and said sleeve whereby their relative position may be changed.

816,898. ATTACHMENT FOR STRINGED INSTRUMENTS. GEORGE P. BUCHANAN, Allegheny, Pa. Filed Aug. 4, 1905. Serial No. 272,702.

Claim.—1. The combination with a finger-board of a stringed instrument, of a keyboard detachably mounted upon said finger-board, said keyboard consisting of bridges, frames secured to said bridges, spring-actuated keys pivotally mounted between said frames, a detachable plate carried by the neck of said instrument, a screw carried by one of said bridges and adapted to engage said plate, and means carried by the other of said bridges whereby it may be clamped to said instrument, substantially as described.

2. The combination with the neck of a stringed instrument, of a keyboard detachably connected to said neck, said keyboard consisting of bridges, longitudinally-disposed channel-frames mounted between said bridges, keys pivotally mounted between said frames, springs mounted within said frames and adapted to normally hold said keys in an elevated position, means carried by the neck of said instrument, to retain one of said bridges in a fixed position, and means carried by the other of said bridges to engage said neck to hold said keyboard upon said neck, substantially as described.

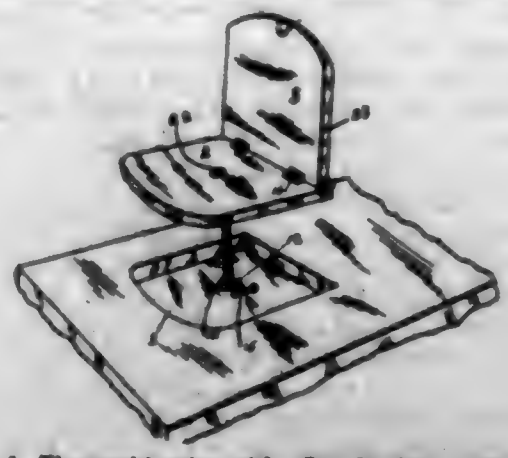
3. The combination with a stringed instrument, of a keyboard adapted to be mounted above the strings of said instrument, said keyboard consisting of two bridges adapted to be detachably connected to said instrument, longitudinally-disposed channel-frames carried by said bridges, spring-actuated keys mounted between said frames, substantially as described.



4. A keyboard for stringed instruments consisting of two bridges, channel-frames mounted between said bridges, spring-actuated keys mounted between said frames, and clamping means carried by said bridges, substantially as described.

5. The combination with the neck of a stringed instrument, of a keyboard adjustably mounted upon said neck, said keyboard consisting of longitudinally-disposed channel-frames, spring-actuated keys mounted between said frames, substantially as described.

816,899. THEATER-CHAIR. JOSEPH B. CHASE and JOHN S. McCREARY, Canal Dover, Ohio. Filed Oct. 2, 1905. Serial No. 280,973.

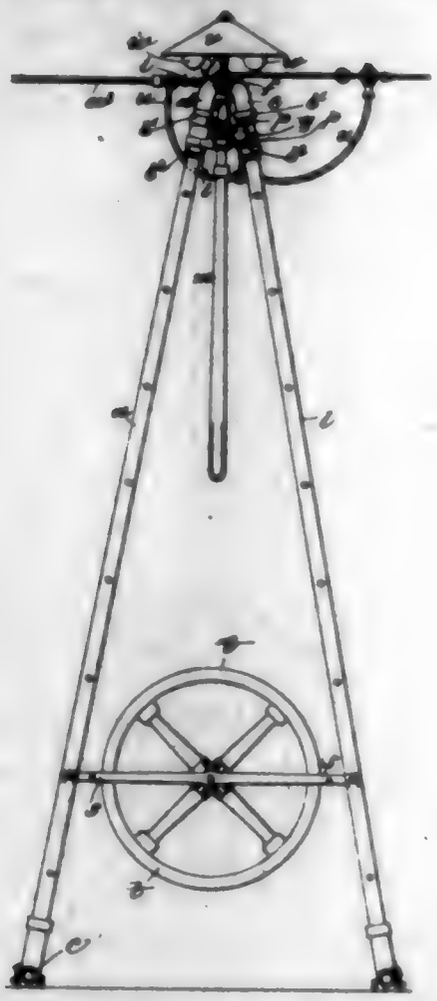


Claim.—1. The combination with a floor having a recess formed therein, of a socket carried by said floor, a stirrup bracing said socket, a leg mounted in said socket, a chair-seat carried by said leg, a back hinged to said seat and adapted to fold thereon, a strip hinged to said seat, and adapted to fold thereon and engage said back, countersunk rings pivotally connected to said back and said seat, and means to hold said leg in an elevated position in said socket, substantially as described.

2. In a chair, the combination with a floor having a recess formed therein, of a socket carried by said floor centrally of said recess, a chair-seat mounted in said recess, a centrally-depending leg

carried by said seat and extending into said socket, a back hinged to said seat, a strip hinged to said seat, means to support said chair, above said recess, substantially as described.

816,900. PORTABLE INSULATED SUPPORT FOR DOUBLE-WIRE ELECTRIC LINES. ALBERT COLLET, Paris, France. Filed May 19, 1904. Serial No. 208,781.



Claim.—1. A portable support for electric conductors, consisting of two ladders hinged together at their upper ends, said ladders being provided with means for insulating them from the ground and means for insulating the uprights at one side from those at the other side, and winches for straining the wires mounted on the respective sides of the support.

2. A portable support for electric wires, having two upright members hinged together at their upper ends, a sheave, a winch-frame hinged about one of the members and provided with a hook to engage the other member, a locking device for said hook hinged on the last-named member, a winch-drum mounted in said frame, and means for rotating said drum.

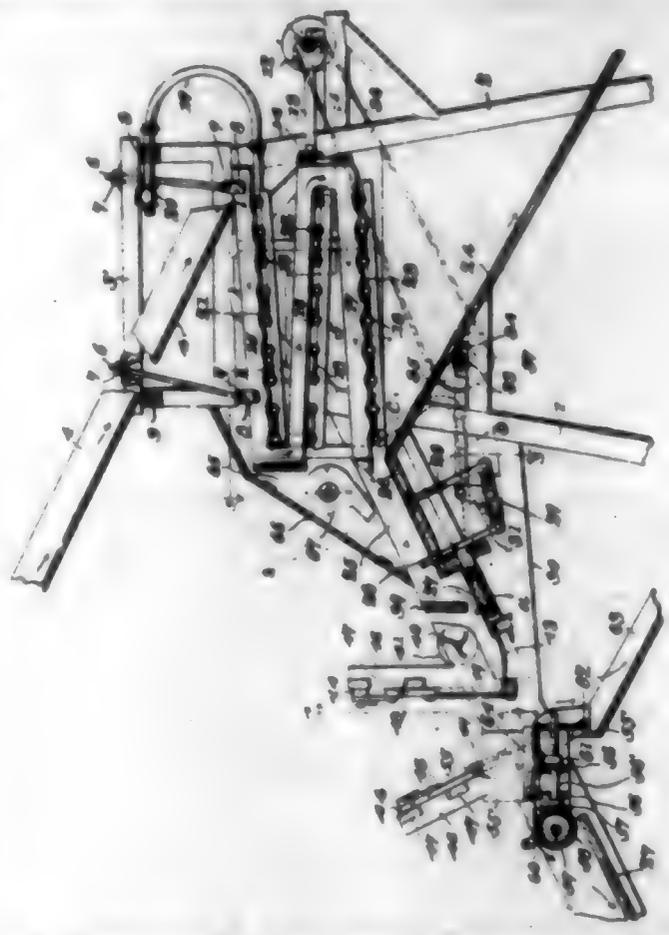
816,901. SLATE-PICKING MACHINE. WILLIAM J. DEVERS, Scranton, Pa., assignor of two-thirds to Dwight R. Lathrop and Chas. W. Treverton, Scranton, Pa. Filed Sept. 1, 1904. Serial No. 223,068.

Claim.—1. In a separator of the class described, the combination with a frame, of a gravity-chute having one or more separating-openings, a shaking-shoe leading to the chute, a heating-coil for the shoe, a heating-coil for the chute, a flexible pipe connecting the two heating-coils, a supply-pipe mounted upon the frame, and a flexible pipe connecting the supply-pipe with the heating-coil of the shoe.

2. A separator of the class described comprising a gravity-chute having one or more separating-openings, a shaking-shoe leading to the chute and provided with a corrugated bottom, and a heating-coil carried by the shoe with its sections located within the corrugations upon the under side of the shoe.

3. A separator of the class described comprising a gravity-chute having one or more separating-openings, a shaking-shoe leading to the chute and provided with a corrugated bottom having the alternate corrugations perforated, and a heating-coil carried within the imperforate corrugations of the shoe upon the under side thereof.

4. A separator of the class described comprising a gravity-chute having one or more separating-openings, a shaking-shoe leading to the chute and provided with upper and lower corrugated flights with the alternate corrugations of the lower flight perforated, and heating-coils carried by the flights within the corrugations and upon the under sides of the flights, the coils of the lower flight being located in the imperforate corrugations only.



5. A separator of the class described comprising a gravity-chute having one or more separating-openings, a shaking-shoe leading to the chute and provided with upper and lower corrugated flights and an intermediate flat flight, the upper and intermediate flights being imperforate and the lower flight having its alternate corrugations perforated, and heating-coils carried by the under sides of the flights, the coils of the corrugated flights being located within the corrugations thereof and in the imperforate corrugations only of the lower flight.

6. In a separator of the class described, the combination with a frame, of a shaking-shoe mounted thereon and provided with corrugated flights, the lowermost flight having its alternate corrugations perforated, heating-coils carried by the under sides of the flights in the corrugations thereof with the coils of the perforate flight in the imperforate corrugations thereof, a supply-pipe carried by the frame, a flexible pipe connecting the supply-pipe with the coils of the shoe, a chute leading downwardly from the discharge end of the agitating device, heating-coils for the chute, and a flexible pipe connecting the chute-coils with the heating-coils of the agitating device.

7. In a separator, the combination of a gravity-chute having a discharge-opening, a chute-supporting frame rising above the upper end of the chute, swinging links hung from the frame, an agitating device comprising a frame hung from the links and provided with a series of flights with the lowermost flight discharging into the chute, heating-coils upon the under side of the chute and upon the under sides of the flights, a flexible supply-pipe carried by the frame and connected to the heating-coils of the flights, and another flexible pipe connecting the heating-coil of the chute with the lowermost heating-coil of the flights.

8. In a separator, the combination of a gravity-chute having a discharge-opening, an agitating device communicating with the top of the chute, heating means for the agitating device, heating means for the chute, and pickers working through the bottom of the chute between the heating means therefor and the agitating device.

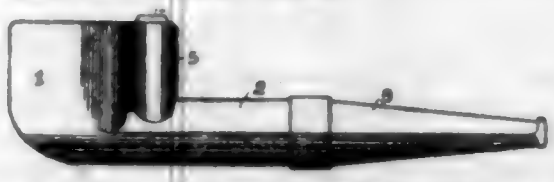
9. In a separator, the combination of a gravity-chute having a discharge-opening, an agitating device in communication with the top of the chute, heating means for the agitating device, heating means for the chute, pickers working through the chute between the heating means thereof and the agitating device, and a blast device located between the agitating device and the pickers and directed toward the latter and the lower end of the chute.

10. In a separator, the combination of a gravity-chute having a discharge-opening, an agitating device in communication with the upper end of the chute, heating means for the agitating device, heating means for a portion of the chute, pickers working through the chute between the heating means thereof and the agitating device, a

housing inclosing the chute from the lower limit of the pickers to the discharge end of the agitating device, and a blast device located within the housing and directed toward the pickers and the lower end of the chute.

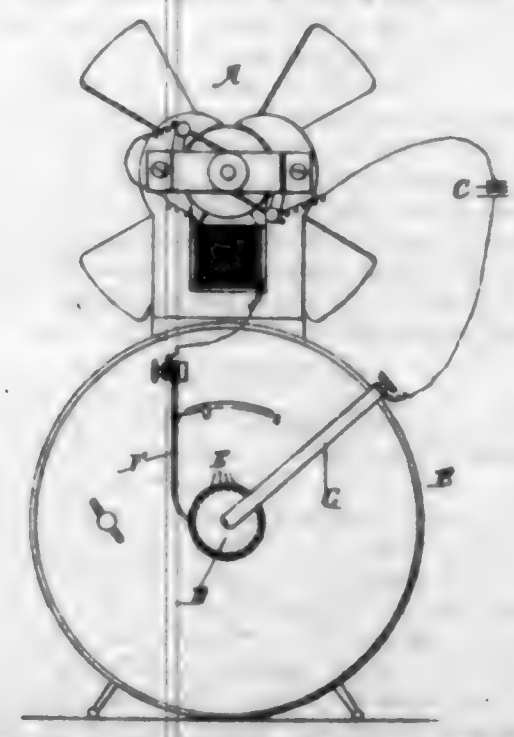
11. In a separator of the class described, the combination with a gravity-chute having a discharge-opening, a supporting-frame for and rising above the top of the chute, a swinging agitating device mounted upon the frame above the top of the chute and including connected flights leading to the chute, the lower flight being perforate, a refuse-chute beneath the lowermost flight and leading away from the separating-chute, a supply-chute leading to the uppermost flight, a drive-shaft mounted upon the frame, a connection between the drive-shaft and the agitating device for swinging the same, heating-coils carried by the under sides of the flights, a flexible supply-pipe connected to the heating-coil, a heating-coil for the chute located above the discharge-opening thereof, a flexible pipe connecting the latter coil with the coil of the agitating device, pickers working through the chute between its heating-coil and the agitating device, a housing for the chute extending from the lower limit of the picker to the discharge end of the agitating device, and a blast device located within the housing and directed toward the pickers and the lower end of the separating-chute.

816,902. SMOKING-PIPE. MARTIN DONOHOE, California, Pa. Filed Aug. 25, 1905. Serial No. 275,704.



Claim.—A smoking-pipe consisting of a bowl and a stem, a mouthpiece carried by said stem, said stem having an opening extending throughout its length and extending through the lower part of the bowl to the front thereof, an integral enlargement carried by said bowl, said enlargement having a vertically-disposed opening extending from the top of the bowl to the bottom of the stem, a solid non-metallic pin fitting in the opening in said enlargement, said pin tightly sealing the upper and lower ends of said opening, said pin being formed with a recess on one side extending from the port in the bowl of the pipe upwardly therefrom, said pin having a transverse recess on its opposite side extending from a point opposite the upper end of the first-named recess to the opening in the stem, said pin having a transverse recess connecting the two recesses in the sides of the pin and the said pin having a head resting on the upper surface of said enlargement.

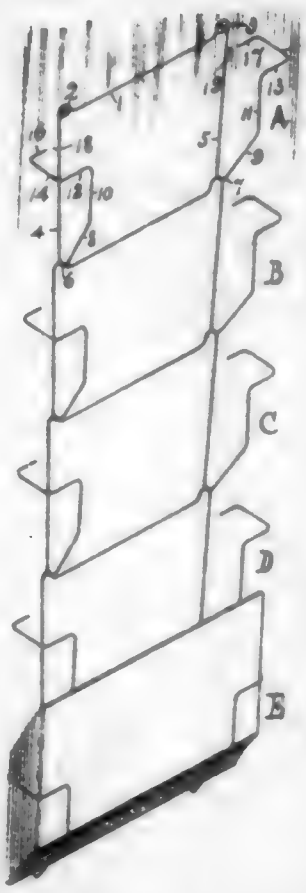
816,903. COMBINATION CLOCK AND FAN. SPENCER D. EARL, Norristown, Pa. Filed May 5, 1905. Serial No. 258,803.



Claim.—1. The combination of an electric fan, clock and source of electricity, with make-and-break apparatus included in the circuit and adapted to be operated from one of the wheels of the clock to make and break the circuit alternately, as specified.

2. In a device of the character described, in an electric fan, a clock, a metallic disk secured upon the same shaft as one of the hands of the clock and adapted to turn therewith, blocks of insulating material arranged an equal distance apart around the periphery of the disk, the outer surface of the insulating-blocks being flush with the metallic portion between the blocks, a spring finger, the end of which is in spring-contact with the periphery of the disk, a source of electricity, one terminal of which is permanently in electrical connection with the metallic disk, a wire leading from the other terminal of the source of electricity, and after passing through the fan-motor being connected to the spring-finger, as specified.

816,904. HOLDER FOR ILLUSTRATED POST-CARDS. EARL J. EARLY, Philadelphia, Pa. Filed Jan. 24, 1906. Serial No. 297,566.



Claim.—1. A card-holder, or similar article, formed of a single piece of wire bent to have supporting-loops, front and back portions joined by angular bottom portions to support the article or articles stored and displayed, and outward bends at the extremities of the front portions to secure the contained article or articles in endwise position.

2. A holder for cards or other articles, formed of a single piece of wire with loops for the support of the upper one, and for the support of succeeding ones, one upon another; front and back portions joined by a bottom part which carries each card at a different elevation, and portions formed to secure the cards in endwise position.

3. A series of holders for cards or similar articles, each formed of a single piece of wire, bent and shaped for a central suspension, loops for supporting each one of the series upon another of the series; front and back retaining portions, bottom-retaining portions, and end-retaining portions, with open spaces through which the members of the series may be interlocked or removed from such interlocking.

4. Storage and display holders for cards or like articles, formed of wire, with bends for suspension, front and back parts for confining the objects, bottom parts to support each article at a different elevation, bends at the top of the front members which confine the articles as to their ends, and permit the insertion of another holder to be supported by the holder aforesaid.

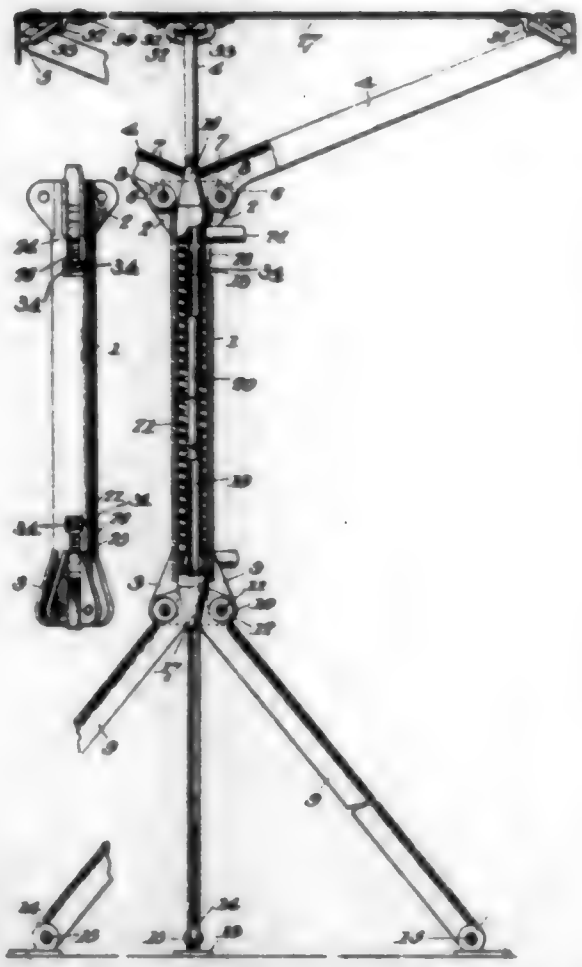
5. A receptacle for holding and displaying illustrated postal cards or the like, formed and fashioned of wire, in the following manner; first a horizontal back member with loops for suspension, downward extensions therefrom, with bends at their lower ends, from which upwardly extend angular bottom portions on which the displayed objects rest, in different elevations, and from which the wire extends upwardly in practically parallel relation to the back portions and at their upper ends terminate in bends forming three sides of a rectangle to confine the ends of the cards or objects displayed, with openings through which to insert and remove another receptacle to be suspended from the aforesaid receptacle, as and for the purposes set forth.

6. A wire receptacle for the storing and display of goods, fash-

loned of wire to form sustaining-loops, vertical back portions, front portions tending diagonally upward from the back portions for a distance then running parallel and terminating in horizontal bends, outward, then backward and lastly inward to near the back portions.

7. A receptacle for the storing and display of post-cards, or like articles, comprising wire bent to vertically pass the back and front of the articles, somewhat remote from their ends, with right-angular loops to confine the articles endwise and means whereby the receptacles may be interlocked in desired numbers.

816,905. CAMP-STOOL. CHARLES ERICSSON, Brooklyn, N. Y. Filed Apr. 3, 1905. Serial No. 253,099.



Claim.—1. A camp-stool embodying a standard, arms and legs pivotally connected therewith, and locking mechanism adapted to be projected between the inner terminals of the arms and legs to hold them either in open or closed position.

2. A camp-stool embodying a standard, arms and legs pivotally connected therewith and spring-pressed locking mechanism adapted to be projected between the terminals of the arms and legs to hold them in either open or closed position.

3. A camp-stool embodying a standard, a plurality of arms and legs pivotally connected with the respective terminals thereof, and a pair of spring-pressed cones adapted to engage the terminals of the arms and legs.

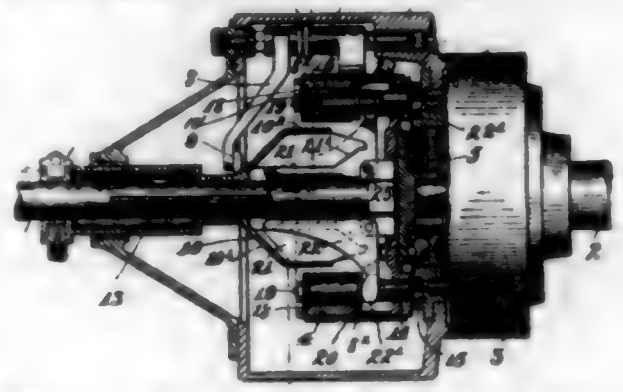
4. A camp-stool embodying a tubular standard, arms and legs pivotally connected therewith, a pair of cones engaging respectively with the inner terminals of the arms and legs, a telescopic shank connecting the cones, a coiled spring surrounding the shank and engaging the cones to hold them in engagement with the terminals of the arms and legs, and means for retracting the cones to permit either opening or closing of the arms and legs.

5. A camp-stool embodying a tubular standard having its terminals provided with pairs of spaced ears, arms and legs positioned between the respective ears, and a pair of spring-pressed cones carried by the standard and engaging the terminals of the arms and legs.

6. A camp-stool embodying a standard, a plurality of arms and legs pivotally connected with the respective terminals thereof, spring-pressed locking elements adapted to engage the terminals of the arms and legs, and a seat detachably combined with the arms.

7. A camp-stool embodying a standard having its terminals provided with pairs of spaced ears, the ears at one end of the standard being intercurrently disposed relatively to those at the other end, arms and legs pivoted between the respective sets of ears, and spring-pressed locking devices adapted to engage the terminals of the arms and legs when in either open or closed position.

816,906. CLUTCH. GUSTAVE R. FRANQUIST, New York, N. Y. Filed June 1, 1905. Serial No. 263,205.



Claim.—1. A clutch comprising a driving and a driven part, a sleeve slidably arranged within the latter and having a cam thereon, an arm bearing against said cam for frictionally engaging said parts together, and means for positively locking them together, said means being successively operated by continuous movement of said sleeve and cam.

2. A clutch comprising a driving and a driven part, said parts having coaxial engaging surfaces, a cam for engaging said surfaces and having ribs and separate means operated by said ribs for positively locking said parts together.

3. A clutch comprising a driving part having a spiral band and a driven part having a coaxial engaging face, a sliding cam adapted to bring said faces into engagement, and means operated by the cam at its final movement for locking the parts positively together.

4. A clutch comprising a drum, a driving part including a spiral band surrounding the drum, a cam having connections for tightening said spiral band, and means actuated by the cam in its final movement for positively locking the drum to the driving part.

5. A clutch comprising a drum, a driving part having a spiral band surrounding said drum, a coaxially-sliding wedge or cam, a lever actuated by said cam to tighten said spiral band, a locking-bolt, and a lever actuated by said cam for throwing said locking-bolt into operation at the final movement of the cam.

6. A clutch comprising a driving and a driven part, a coaxial sliding wedge or cam having two separate cam-faces thereon, a lever actuated by one of said cam-faces for frictionally engaging the driving and the driven part, positive locking means, and a second lever engaged by the other of said cam-faces for actuating the positive locking means.

7. A clutch comprising a drum, a rotatable part or casing surrounding said drum and having a band, a lever connected to the tail of said band and extending toward the axis of the drum, a locking-bolt within the drum and arranged to slide longitudinally thereof to engage said outer part or casing, a lever connected with said bolt and a sliding cam disposed within the drum and having faces thereon arranged to successively engage both of said levers.

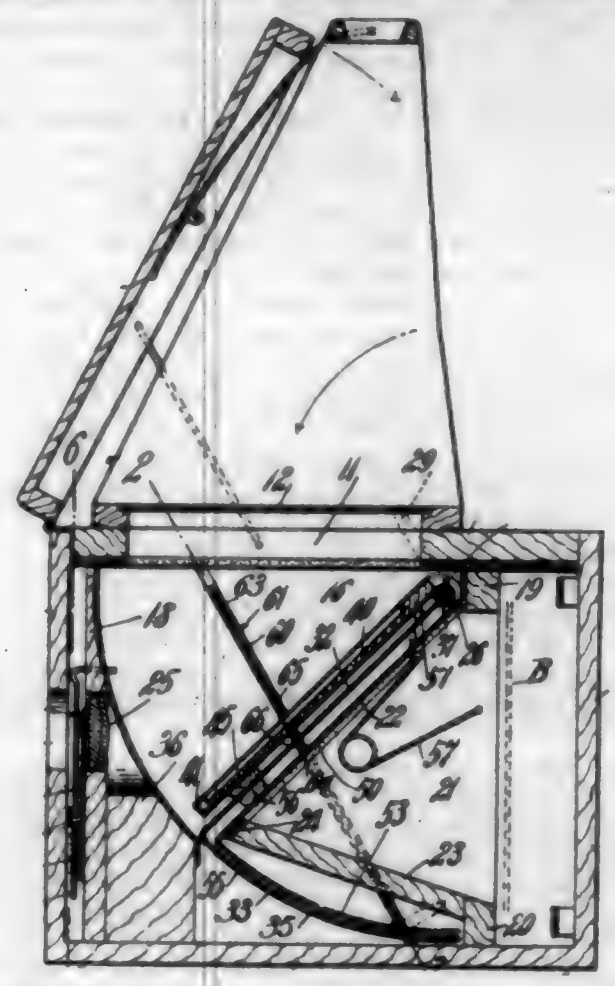
8. A clutch comprising a drum, a rotatable part or casing surrounding said drum and having a spiral band anchored thereto and surrounding the drum, a lever connected to said band and extending toward the axis of the drum, a locking-bolt, a lever for throwing said locking-bolt, a cam having a steeply-inclined conical face to initially engage said first-named lever, and a slightly-inclined conical face to act upon said lever at the final movement of the cam, and having additional cam-faces to act upon the lever which actuates the locking-bolt at the conclusion of movement of the cam.

816,907. PHOTOGRAPHIC CAMERA. JULIUS D. GARFIELD, Springfield, Mass. Filed Dec. 1, 1905. Serial No. 289,813.

Claim.—1. In a photographic camera, a camera-box having a top opening, and a front lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a protector-plate beneath the mirror, and adapted to have swinging movements similar to those of the mirror, latches for respectively automatically engaging and holding the mirror in its raised position, and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror, to release the protector-plate latch, permitting the protector-plate to be then raised, and means for raising the protector-plate.

2. In a photographic camera, a camera-box having a top opening, and a front lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a protector-plate beneath the mirror, and

adapted to have swinging movements similar to those of the mirror, latches for respectively automatically engaging and holding the mirror in its raised position, and the protector-plate in its lowered position, the protector-plate latch being operative by its movement preparatory to engaging the lowered protector-plate, to release the mirror-latch, permitting the mirror to be then swung to its lowered position, and means for operating the protector-plate in both directions.



3. In a photographic camera, a camera-box having a top opening, and a front lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a protector-plate beneath the mirror, and adapted to have swinging movements similar to those of the mirror, latches for respectively automatically engaging and holding the mirror in its raised position, and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror, to release the protector-plate latch, permitting the protector-plate to be then raised, and the protector-plate latch being operative by its movement for engagement with the lowered protector-plate to release the mirror-latch from its engagement with the raised mirror.

4. In a photographic camera, a camera-box having a top opening and a lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a lifter under the mirror, pivotally mounted for swinging movements, and means for imparting its swinging movements thereto, a protector-plate beneath the lifter, and adapted to have swinging movements similar to those of the mirror and lifter, latches for respectively automatically engaging and holding the mirror in its raised position and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror to release the protector-plate latch, permitting the protector-plate to be then raised, and means for raising the protector-plate.

5. In a photographic camera, a camera-box having a top opening, and a front lens-opening, a mirror pivotally mounted for swinging movements for assuming alternately a horizontal position adjacent said top opening, and an inclined position behind the lens-opening, a pivotally-mounted lifter, under the mirror, and a protector-plate beneath the lifter, said lifter and protector-plate being adapted to have swinging movements similar to those of the mirror, means for swinging the lifter in opposite directions for respectively positively raising the mirror, and for positively downwardly swinging the protector-plate, latches for respectively automatically engaging and holding the mirror in its raised position and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror to release the protector-plate latch from its engagement with the protector-plate, and the protector-plate latch being adapted to cause by its movement for engagement with the lowered protector-plate a releasing of the other latch, leaving the mirror free to downwardly swing, and a spring operative to upwardly swing the protector-plate.

6. A camera-box having a top opening and a front lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a lifter under the mirror, pivotally mounted for swinging movements, and means for imparting its swinging movements thereto, a protector-plate beneath the lifter, and adapted to have swinging movements similar to those of the mirror, a spring-pressed lever pivotally mounted within the side of the box having at upper and lower portions thereof latch members for respectively engaging and holding the mirror in its raised position and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror to swing the said lever, thereby disengaging the protector-plate latch from the protector-plate, and means for exerting a raising force against the protector-plate.

7. A camera-box having a front lens-opening and a top opening, a horizontal rod in an upper part of the box behind the top opening, a mirror and a protector-plate pivotally hung on said rod and adapted to have swinging movements independently of each other, a spring-pressed lever pivoted within the side of the box and having at upper and lower portions thereof respectively a mirror-latch and a protector-plate latch, means for positively upwardly swinging the mirror, independently-operative means for exerting an upward force against the protector-plate, and means for downwardly swinging the protector-plate, said latches being arranged relatively to the course of movements of the mirror and protector-plate to alternately engage the one and release the other of said last-named parts.

8. A camera-box having a front lens-opening and a top opening, a horizontal rod, in an upper part of the box behind the top opening, and provided with an externally-accessible lever member, a mirror and a protector-plate both pivotally loosely hung on said rod and adapted to have swinging movements independently of each other, a lifter fixed to and adapted to have rocking movements in unison with said rod, and extending between and unattached relatively to both the mirror and the protector-plate, a spring-pressed lever pivoted within the side of the box and having at upper and lower portions thereof respectively a mirror-latch and a protector-plate latch, and a spring for exerting an upward force against the protector-plate, and said latches being arranged relatively to the course of movements of the mirror and protector-plate to alternately engage the one and release the other of said last-named parts.

9. A camera-box having a front lens-opening and a top opening, a mirror and a protector-plate pivotally mounted to have swinging movements, independently of each other, and said protector-plate having a curved depending apertured shutter at its portion toward the lens-opening, a spring-pressed lever pivoted within the side of the box and having at upper and lower portions thereof respectively a mirror-latch and a protector-plate latch, means for positively upwardly swinging the mirror, independent means for exerting an upward force against the protector-plate, and means for downwardly swinging the protector-plate, and said latches being arranged relatively to the course of movements of the mirror and protector-plate to alternately engage the one and release the other of said last-named parts.

10. In a photographic camera, a camera-box having a top opening and a lens-opening, and a diaphragm-stop, movable to a position opposite the lens-opening, a mirror adapted to swing to a horizontal position adjacent said top opening and to an inclined position behind the lens-opening, a lifter under the mirror, pivotally mounted for swinging movements, and means for imparting its swinging movements thereto, and said lifter coacting with said diaphragm-stop to bring the latter to its position opposite the lens-opening on the upward movements of such lifter, a protector-plate beneath the lifter, and adapted to have swinging movements similar to those of the mirror and lifter, latches for respectively automatically engaging and holding the mirror in its raised position and the protector-plate in its lowered position, the mirror-latch being operative by its movement preparatory to engaging the raised mirror to release the protector-plate latch, permitting the protector-plate to be then raised, and means for raising the protector-plate.

816,908. SOUND-BOX. JOSEPH GAYNOR, New York, N. Y. Filed Oct. 27, 1905. Serial No. 284,616.

Claim.—1. A sound-box for talking-machines provided with a needle-holder, means for clamping the needle to the holder, and

means for displacing the needle laterally from within the holder, substantially as specified.



2. A sound-box for talking-machines provided with a needle-holder having an elongated opening, means for clamping the needle to the holder, and means for displacing the needle laterally from within the opening, substantially as specified.

3. A sound-box for talking-machines provided with a needle-holder having an elongated opening, a screw for clamping the needle to the holder, a spring-pawl adapted to extend across the opening, and means for displacing the needle laterally from within the opening, substantially as specified.

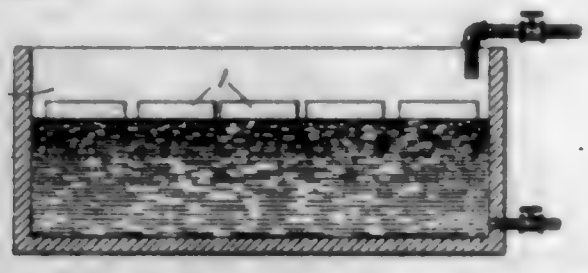
4. A sound-box for talking-machines provided with a needle-holder, a plunger, and separate means operatively connected to the plunger for clamping the needle to the holder and for displacing the needle laterally from within the holder, substantially as specified.

5. A sound-box for talking-machines provided with a needle-holder, a plunger, a pivoted ejector having laterally-extending arms adapted to engage the needle, and means for operatively connecting the plunger to said ejector, substantially as specified.

6. A sound-box for talking-machines provided with a needle-holder, a plunger, a clamp-screw, a pivoted ejector having laterally-extending arms, and means for operatively connecting the plunger to the clamp-screw and to the ejector, substantially as specified.

7. A sound-box for talking-machines provided with a tubular casing, an inclosed grooved plug, a plurality of magazines communicating with the casing, a needle-holder, and a chute intermediate the casing and said holder, substantially as specified.

816,909. METHOD OF MAKING COMPOSITE RAILROAD-TIES. WILLIAM GOLDIE, Wilkinsburg, Pa. Filed Dec. 5, 1903. Serial No. 183,963.



Claim.—1. The method of making railway-ties which consists in taking a mass of fiber, compressing the same to a degree of density sufficient to hold spikes, and then holding the same in compressed condition.

2. The method of making railway-ties which consists in taking a mass of fiber, treating the same with a preservative, compressing the same to a degree of density sufficient to hold spikes, and then holding the same in compressed condition.

3. The method of making railway-ties which consists in taking a mass of fiber, softening the same, then compressing the same to a degree of density sufficient to hold spikes, and holding the same in compressed condition.

4. The method of making railway-ties which consists in taking a mass of fiber, treating the same with preservative, drying the same, then compressing the same to a degree of density sufficient to hold spikes, and holding the same in compressed condition.

5. The method of making railway-ties which consists in taking a piece of wood, impregnating the same with a wood-preservative, and then compressing the same and holding it in compressed condition.

6. The method of making railway-ties which consists in taking a piece of wood, compressing the same, and then holding the same in compressed condition.

7. The method of making railway-ties which consists in taking a piece of wood, steaming the same, and then compressing the same and holding it in compressed condition.

8. The method of making railway-ties, which consists in taking a piece of wood, impregnating the same with a wood-preservative, drying the same, then steaming the same, and finally compressing the same and holding it in compressed condition.

9. The method of making railway-ties which consists in taking a hollow metallic body with openings in its upper face, compressing masses of fiber to a degree of density sufficient to hold spikes and forcing the same in compressed condition into said hollow metallic body opposite said openings.

10. The method of making railway-ties which consists in taking a hollow metallic body provided with openings in its upper face, taking masses of fiber, treating the same with a preservative, and then compressing the same to a degree of density sufficient to hold spikes and forcing the same in compressed condition into the hollow metallic body opposite the openings therein.

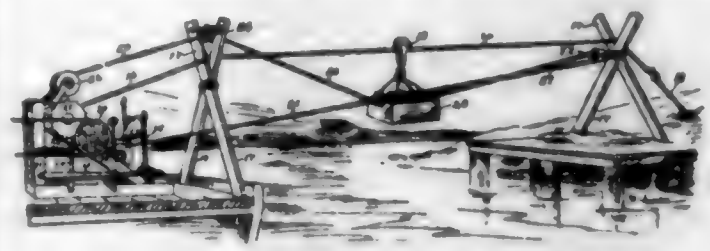
11. The method of making railway-ties which consists in taking a hollow metallic body with openings in its upper face, and compressing wooden blocks and forcing the same in compressed condition into said hollow metallic body opposite said openings.

12. The method of making railway-ties which consists in taking a hollow metallic body provided with openings in its upper face, taking wooden blocks and steaming the same, then compressing said wooden blocks forcing the same in compressed condition into the hollow metallic body opposite the openings therein.

13. The method of making railway-ties which consists in taking a hollow metallic body provided with openings in its upper face, taking blocks of wood, impregnating the same with a wood-preservative, and then compressing the same and forcing them in compressed condition into the hollow metallic body opposite the openings therein.

14. The method of making railway-ties which consists in taking a hollow metallic body provided with openings in the upper face thereof, taking blocks of wood, impregnating the same with a wood-preservative, drying the same, then steaming the same, and finally compressing the same and forcing them in compressed condition into the hollow metallic body opposite the openings therein.

816,910. CONVEYING APPARATUS. ADRIAN HALL and JOHN M. HALL, Greenfield, Ind. Filed Nov. 27, 1905. Serial No. 289,332.



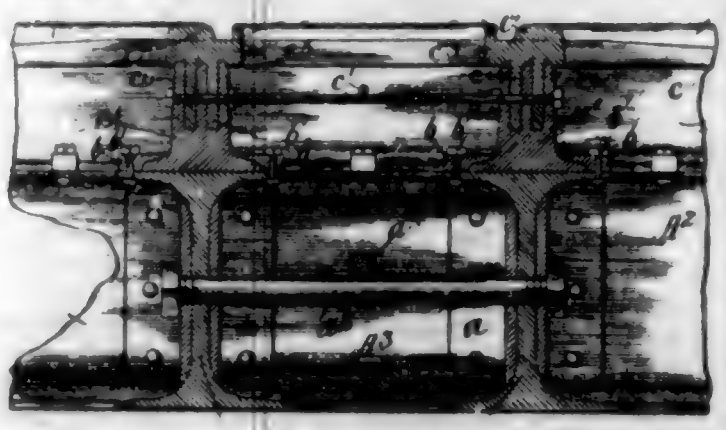
Claim.—1. In a conveying apparatus, the combination of a carrier, cables extending from said carrier for moving the same in opposite directions, a pair of drums for operating said cables, pulleys for driving each drum, a friction driving-pulley intermediate said first-mentioned pulleys that is movable into or out of engagement with either or both of said pulleys, a shaft on which said driving-pulley is mounted, an eccentric-bearing for said shaft, and a lever-actuated means for operating said eccentric-bearing.

2. In a conveying apparatus, a carrier, cables connected with said carrier for moving the same in opposite directions, a pair of drums for drawing said cables so as to cause opposite movement of the carrier, a frame on which said drums are mounted, a pulley mounted in connection with one drum-shaft, a corresponding pulley mounted on the frame, means for transmitting power from said last-mentioned pulley to the other drum, a friction driving-pulley between said two mentioned pulleys, a shaft on which said driving-pulley is mounted, an eccentric-bearing for said shaft, and a lever-actuated means for operating said eccentric-bearing so as to cause the movement of said driving-pulley into or out of engagement with either or both of said pulleys, substantially as set forth.

3. In a conveying apparatus, a stationary supporting-cable, a carrier on said cable, a frame at one end of said cable, means mounted on said frame for tightening and holding said cable taut, a cable connected with said carrier for moving the same on said supporting-cable, means mounted in connection with said frame for moving said carrier-moving cable, and means for simultaneously actuating the means for tightening the supporting-cable and the means for moving the carrier-cable.

4. In a conveying apparatus, a supporting-cable, a carrier movable on said cable, a frame at one end of said cable, a drum on said frame for tightening and holding said cable taut, releasable means for preventing the backward movement of said drum, a gear connected with said drum, a cable connected with the carrier for moving the same, a drum on said frame for operating said carrier-cable, a driving-shaft for operating said carrier-cable drum, a pinion on said driving-shaft engaging the gear on said supporting-cable drum for actuating the same, and a clutch on the driving-shaft operating in connection with said pinion, whereby the supporting-cable may be tightened when desired and during the operation of the carrier-cable drum.

816,911. **RAILWAY FROG AND CROSSING.** EUGENE HAYWARD, Chicago, Ill., assignor of one-half to Samuel F. Rush and one-third to John B. Morris, Chicago, Ill. Filed July 21, 1904. Serial No. 217,460.



Claim.—1. A railway-frog comprising a base or foundation, rail-bases secured thereto each provided with a longitudinal channel therein rail-heads having downwardly-directed webs adapted to engage in the channels of the rail-bases, an inwardly-directed horizontal flange of the rail-head adapted to support the wheels on the wheel-flanges over the frog and a rib on the inner edge of said horizontal flange acting as a guard-rail.

2. In a railway-crossing, a subbase of structural steel, beams rigidly engaged together at their points of intersection, a rail-base rigidly supported thereon, each comprising parallel members extending across the frog and parallel members at an angle thereto and abutting against the same, clamping-plates engaging said bases to the subbase rail-heads removably supported on and engaged to the rail-bases and an inwardly-directed flange on each rail-head adapted to support the wheel over the intersection of the rail-heads.

3. The combination in a railway-frog, of a rail-base comprising a flanged bottom portion, a central upwardly-directed rib having a plurality of longitudinal channels therein affording upwardly-directed longitudinal webs and having inclined upper faces.

4. In a railway-frog, the combination with a rail-head provided with downwardly-directed unflanged webs and inclined faces adjacent the same, of a rail-base having webs provided with inclined faces complemental with the faces on said rail-head, a flange on the inner side of the rail-head adapted to be engaged by the wheel-flange of the car-trucks, and an upwardly-directed rib on the inner edge of said flange acting as a guard-rail.

5. In a railway-frog a subbase comprising I-beams rigidly engaged together at an angle, track-rails thereon each provided with an inwardly-directed flange positioned for the wheel-flange to track thereon and an upwardly-directed rib on the margin of said flanges acting as a guard-rail and inwardly-directed clamps engaged on the subbase adapted to engage over the rail-bases and secure the rails in place.

6. In a railway-frog a subbase, rail-bases thereon provided with a plurality of upwardly-opening channels, laterally-directed clamps rigidly engaging the rail-bases on said subbases, rail-heads provided with a plurality of downwardly-directed webs adapted to engage in said channels and transverse rods engaging oppositely-disposed rails together.

7. In a railway crossing the combination with a rigidly-constructed base or foundation affording a support for the rails of the crossing, of a rail-base for each rail rigidly secured upon said foundation and each provided with a plurality of narrow longitudinal channels therein, rail-head, webs thereon adapted to engage in the channels of the rail-base and an inwardly-directed flange on each rail-head adapted to carry the wheels upon the flanges in passing the crossings, a rib on each of said flanges acting as a guard-rail, the rail-bases of one track extending continuously over the crossing, the rail-heads of the other extending continuously across the same and notched transversely to permit the passing of the flanges of the wheels along the other track.

8. In a railway-crossing, a base or foundation comprising parallel I-beams spaced a distance apart to afford a support for one of the tracks abutting an intermediate, alined I-beam affording a support for the other track, angle-plates in the intersecting angles of the foundation thus formed, rigidly connecting said I-beams, track-rails secured upon the said foundation or base, an inwardly-directed flange on each of said track-rails adapted to be engaged by the flanges of the wheels in passing the crossing and an upwardly-directed rib on each side acting as a guard-rail.

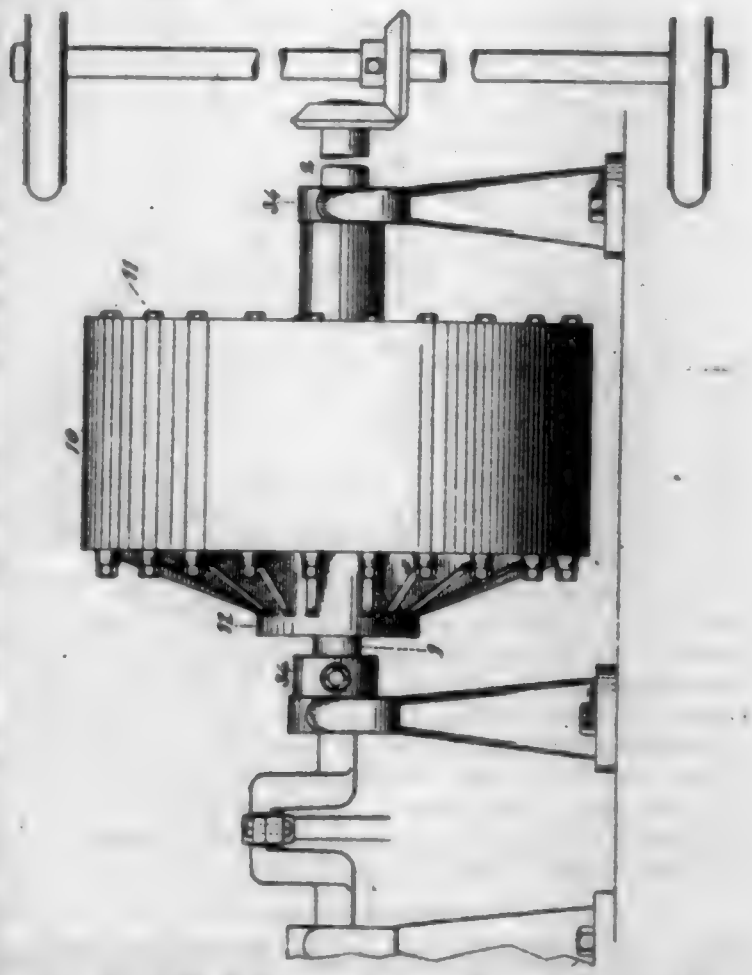
9. A structural-steel base for the purpose specified comprising parallel I-beams adapted to support the rails of one track and abutting and intermediate I-beam spaced to support the rails of the other track, angle-plates rigidly bolted in the intersecting angles of said I-beams, bolts rigidly connecting the web of oppositely-disposed I-beams.

10. The combination with a structural-steel base or foundation of a railway-crossing thereon comprising track-rails, two of which extend continuously over the crossing, the other of which are afforded by abutting and intermediate track-rail sections, metallic brackets adapted to engage over the rail-flanges and to be rigidly secured to the foundation, inwardly-directed flanges on each of said track-rails upon which the track-wheels are supported on the wheel-flanges in passing the crossing, an upwardly-directed rib on the inner edge of each flange acting as a guard-rail.

11. The combination with a structural-steel foundation of a rail-base comprising a bar of rail length laterally flanged at its bottom providing an upwardly-directed central rib thereon, parallel upwardly-directed webs on said ribs having inclined upper faces and adapted to receive between the same the complemental webs of a rail-head adapted to fit in the upper inclined faces of said web.

12. A crossing comprising a plurality of beams extending the length thereof and parallel with one track, parallel beams at an angle therewith and abutting against the same, continuous track-rails on said last-named beams, track-rails on said first-named beams and abutting against the said continuous rails and transverse rods engaging oppositely-disposed rails together.

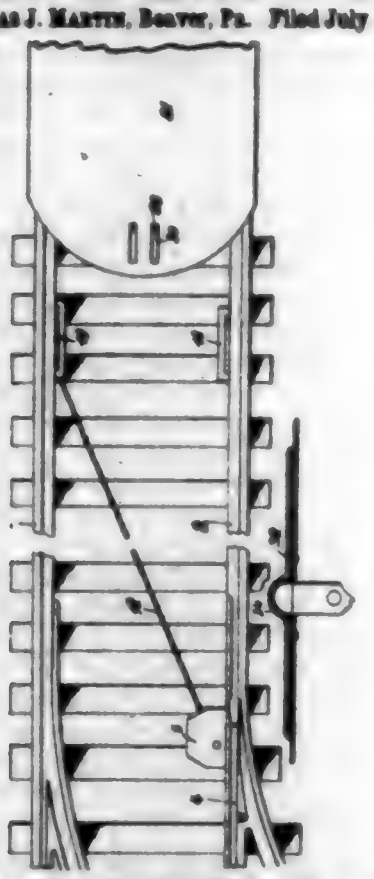
816,912. **DYNAMO-MAGNETIC-POWER TRANSMISSION DEVICE.** JOHN O. HEINER, Jr., Lowell, Mass. Filed Apr. 17, 1905. Serial No. 255,921.



Claim.—A driving-shaft; a driven shaft; a multipolar field, and an internal-slotted armature; one shaft being fixed to the field, and the other shaft fixed to the armature; commutator-segments fixed to

and electrically connected with the armature-coils; a multiplicity of brushes to engage these segments, each brush being fixed to the field and between its adjacent pole-pieces; and electrical connections, whereby the windings of the armature are short-circuited through the brushes of the commutator, and the windings on the pole-pieces of the field, and poles are formed in the armature at the brushes, each pole of the armature attracting one and repelling the other, of its adjacent poles of the field and causing the field to move in the same direction as does the armature.

816,913. SWITCH-THROWING DEVICE. GEORGE W. HERCULES and THOMAS J. MARTIN, Beaver, Pa. Filed July 13, 1905. Serial No. 269,514.



Claim.—1. In a switch-throwing device, the combination with two main rails, siding-rails, a pivoted switch-tongue, and a car, of two casings carried one by each of said main rails, a third casing arranged adjacent said tongue mechanism mounted in said casings and connected to said switch-tongue, means carried by said car to actuate the mechanism in either of the casings carried by the main rails to throw said switch-tongue, substantially as described.

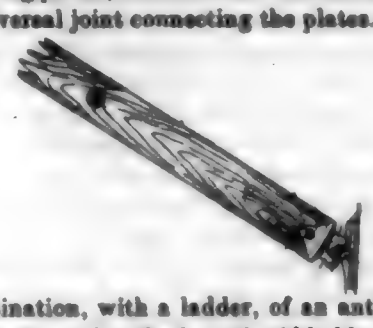
2. In a switch-throwing device, the combination with two main rails, a pivoted switch-tongue, and a car, of casings carried by each of said rails, a third casing arranged adjacent said switch-tongue a pivoted standard mounted in said third casing and connected to said switch-tongue, an arm pivoted in each of the first-named casings and connected to said pivoted standard, means carried by said car to actuate either of said pivoted arms to throw said switch-tongue, substantially as described.

3. In a switch-throwing device, the combination with two main rails, a pivoted switch-tongue, and a car, of two casings carried one by each of said rails, a third casing mounted adjacent the switch-tongue a pivoted standard mounted in said third casing, and connected to said switch-tongue, an arm pivoted in each of the other of said casings and connected to said standard, two rack-bars carried by said car and adapted to engage said arms, means to actuate said rack-bars, substantially as described.

4. In a switch-throwing device, the combination with two main rails, a pivoted switch-tongue, a car, and a signal, of a casing carried by each of said rails, a third casing arranged adjacent said tongue a standard mounted in said third casing and connected to said switch-tongue, an arm pivoted in each of the other of said casings and connected to said standard, a plurality of racks carried by said car and adapted to alternately engage said arms, signal-actuating mechanism mounted adjacent to said tracks, means carried by said car to actuate said racks and simultaneously operate said signal mechanism and move said tongue, substantially as described.

816,914. ANTISLIP ATTACHMENT FOR LADDERS. HENRY D. HINCKLEY, Hartford, Conn., assignor of one-half to Charles R. Keeney and one-half to The Hinckley Specialty Company, both of Hartford, Conn. Filed Aug. 8, 1904. Serial No. 220,083.

Claim.—1. The combination, with a ladder, of an antislip attachment comprising plates, one of which is secured to the foot of said ladder, and a universal joint connecting the plates.



2. The combination, with a ladder, of an antislip attachment comprising a plate secured to the foot of said ladder; a second plate, provided with means to prevent slippage; and a universal joint connecting said plates.

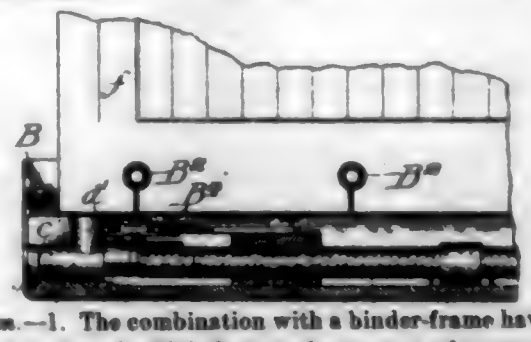
3. The combination, with a ladder, of an antislip attachment secured to the foot thereof, and comprising a plate having ears; a second plate mounted for universal movement between the ears; and means carried by said second plate for preventing slippage of the attachment.

4. The combination, with a ladder, of a plate secured to the foot thereof, said plate having perforated ears; a second plate having ears; a universal joint carried by the ears of both plates; and an antislip device carried by the second plate.

5. The combination, with a ladder, of a plate secured to the foot thereof, said plate having perforated and internally-threaded ears; a second plate having perforated and internally-threaded ears; a ball located between the ears; screws having points entering recesses of the ball; and an antislip device carried by said second plate.

6. The combination, with a plate having a flat base, and a perforated ear rising from said base, and also having separated ears depending from said base, of screws threaded into said depending ears; a ball having recesses to receive the ends of the screws; a second plate having perforated ears rising therefrom; screws threaded into the ears of said second plate, and entering the ball; and an antislip device carried by said second plate.

816,915. BINDER. WILLIAM G. JONES, Chicago, Ill., assignor of one-half to Harry Sloper Jones, Chicago, Ill. Filed Dec. 26, 1905. Serial No. 293,242.



Claim.—1. The combination with a binder-frame having a key-socket and equipped with bolt-engaging means, of a removable lock inserted in said socket and provided with a bolt coacting with the bolt-engaging means of the binder, for the purpose set forth.

2. The combination with a binder equipped with a key-socket and with bolt-engaging means, and having adjacent to said socket shoulders for preventing rotation of the lock-casing, of a lock entered in said socket and equipped with a bolt coacting with the bolt-engaging means of the binder, and having on the lock-casing a projection adapted to engage said shoulders, for the purpose set forth.

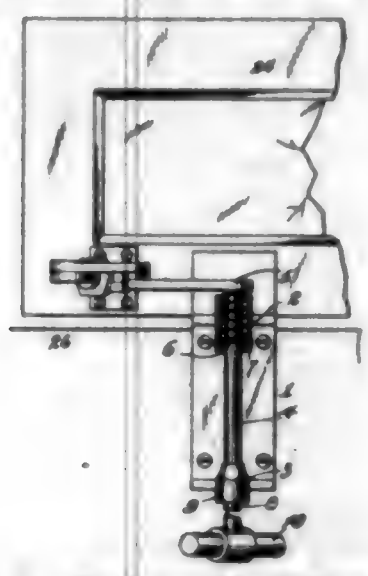
3. The combination with a binder equipped with an adjustment-screw having a lock-entering projection, said binder being equipped also with a key-receiving socket, of a lock having a casing entered in said socket and provided at its inner end with an opening receiving the projection of said adjustment-screw, and a bolt in said casing at right angles to the adjustment-screw and engaging the projection thereof, for the purpose set forth.

4. The combination with a binder equipped with an adjustment-screw provided near one end with an angular portion for receiving an adjustment-key and adjacent to said angular portion with a reduced cylindrical portion provided with an annular groove, of a removable lock having a casing provided at its inner end with an opening receiving the reduced cylindrical portion of the adjustment-screw, and a bolt at right angles to said screw and provided with a projection engaging said annular groove, for the purpose set forth.

5. A lock for the purpose set forth, comprising a casing provided at its inner end with an opening adapted to fit over the adjusting-rod of a binder, a key-receiving barrel in alinement with said

opening and equipped with bolt-retracting means, a casing extension at one side of the casing, a bolt housed in said extension and having its axis at right angles to the axis of the casing, and barrel-locking devices housed by said casing extension, for the purpose set forth.

816,916. SASH-ADJUSTER. HERBERT H. KEELER, New York, N. Y. Filed Aug. 29, 1905. Serial No. 276,315.



Claim.—1. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and an adjustable spring-yielding connector pivoted to said crank and said fastening, said connector comprising an inclosed link, a bar having a limited pin-and-slot connection with said link, a reflexed spring between said bar and said link, gripe on said bar, a stud provided with coöperating gripe and fastening means to secure said stud and bar together in adjusted position.

2. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and an adjustable spring-yielding connector pivoted to said crank and fastening, said connector comprising a link, a bar having a limited pin-and-slot connection with said link, a reflexed spring between said bar and link, a stud and adjusting means to adjustably secure said stud and said bar together.

3. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and a connector pivoted to said crank and said fastening and comprising a link and an adjustable union having a limited pin-and-slot connection with said link and a spring between said union and said link.

4. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and an adjustable spring-yielding connector between said crank and said fastening comprising a link and an adjustable union slidingly connected with said link and a spring between said union and said link.

5. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and a spring-yielding connector between said crank and said fastening comprising a link and a union loosely connected with said link and a spring between said union and said link.

6. In sash-adjusters, a bracket, guiding-sleeves on said bracket and a rotary actuating-rod in said sleeves, a fastening to be applied to a sash from one side of the same and adjustable connections between said fastening and said actuating-rod, comprising a link, a bar having a pin-and-slot connection with said link a spring between said bar and said link, a stud and adjusting means to hold said stud and bar in adjusted position.

7. In sash-adjusters, a bracket, guiding-sleeves on said bracket an actuating-rod in said sleeves, a fastening adapted to be applied to a sash from one side of the same and adjustable spring-yielding connections between said fastening and said actuating-rod.

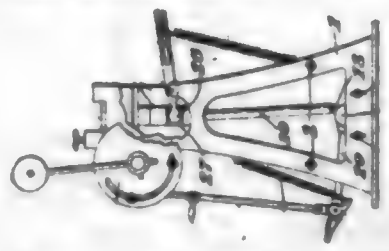
8. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod having an operating-handle on its depending end, mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of the car, and an adjustable connector between said crank and said fastening comprising a plurality of members and adjusting means to hold said members together in adjusted position.

9. In sash-adjusters, a bracket provided with bearing-sleeves, an actuating-rod having an operating-handle on its depending end, mounted in said bracket, retaining devices to yieldably hold said actuating-rod in position, a crank secured to said rod, a fastening provided with means to apply the same to a sash from the inside of car, and an adjustable connector between said crank and said fastening comprising a plurality of members provided with coöperating corrugated gripe and screw-adjusting means to hold said members together in adjusted position.

10. In sash-adjusters, an adjustable spring-yielding connector comprising a link, a bar having a limited pin-and-slot connection with said link, a spring between said bar and said link, gripe on said bar, a stud having gripe and adjusting means to hold said stud and bar in adjusted position.

11. In sash-adjusters, a connector comprising a link, a bar having a pin-and-slot connection with said link a spring between said bar and said link, a stud and adjusting means to hold said stud and bar in adjusted position.

816,917. CORNICE-BRAKE. GEORGE C. KERNS, Cincinnati, Ohio. Filed Oct. 30, 1905. Serial No. 285,011.



Claim.—1. A device of the character described comprising clamping-jaws, an end frame, actuating means for moving one jaw toward the other, a lever pivoted on the end frame with one end connected with the movable jaw and a counterbalancing-spring having one end connected with the end frame and its opposite end connected with said lever.

2. A device of the character described comprising clamping-jaws one of which is movable toward and from the other, lifting-rods engaged beneath the ends of the movable jaw, bearing members having adjustable pins on which the lifting-bars are supported and means for operating the bearing members in unisbn.

3. A device of the character described comprising stationary and movable jaws, a lifting-rod engaged beneath the movable jaw, a bearing member having a socket, a pin adjustably held in said socket and whereon the lifting-bar is supported, a screw carried by the bearing member and engaged beneath the said pin for adjusting the same and means for rocking the bearing member.

4. A device of the character described comprising stationary and movable jaws, a lifting-rod engaged beneath the movable jaw, a bearing member having a socket extended downward in it and open at the upper part of said member, a screw having threaded engagement in the lower part of said socket and provided with a slotted upper end, a pin adjustably held in the socket with its lower end rested on said screw and its upper end engaged beneath the lifting-rod and means for rocking the bearing member.

5. A device of the character described comprising stationary and movable jaws, an end frame, a bearing-plate vertically adjustable at the lower part of the end frame and having screws for holding it in adjusted position, a lifting-rod engaged beneath the movable jaw, a bearing member mounted to rock in the bearing-plate and having an adjustable pin engaged beneath the lifting-rod and means for rocking the bearing member.

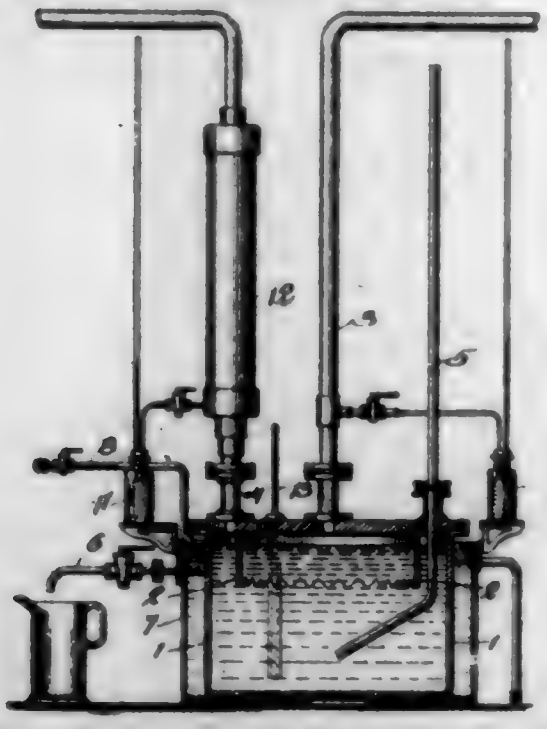
6. A device of the character described comprising stationary and movable jaws, a counterbalancing device connected with the movable jaw for counterbalancing the same, a lifting-rod engaged beneath the movable member, a bearing member mounted to rock and having a projection engaged beneath the lifting-rod, a treadle-lever connected to operate the bearing member and a retracting device connected with the treadle-lever for retracting the same.

7. A device of the character described comprising stationary and movable jaws, a counterbalancing device connected with the

movable jaw for counterbalancing the same, a lifting-rod engaged beneath the movable jaw, a bearing member mounted to rock and having a projection engaged beneath the lifting-rod, a treadle-lever connected to operate the bearing member and a retracting device having a compensating connection with the treadle-lever and arranged to partially retract the same when fully depressed.

8. A device of the character described comprising stationary and movable jaws, a counterbalancing device connected with the movable jaw to counterbalance the same, a lifting-rod engaged beneath the movable jaw, a bearing member mounted to rock and having a projection engaged beneath the lifting-rod, a treadle-lever connected to operate the bearing member, an arm pivoted on the treadle-lever and adapted to depend therefrom when said lever is uplifted and a retracting-spring connected with the depending part of said arm and arranged to partially retract the treadle-lever when the same is fully depressed.

816,918. PROCESS OF MAKING SULFURIC ACID. RUDOLF KNIETSCH, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company, a Corporation of New York. Filed July 18, 1901. Serial No. 68,498.



Claim.—1. The improvement in the process of manufacturing sulfuric acid by the absorption of sulfuric anhydrid in sulfuric acid which consists in maintaining throughout the operation the strength of said absorbing acid between ninety-seven and ninety-nine per cent. of H_2SO_4.

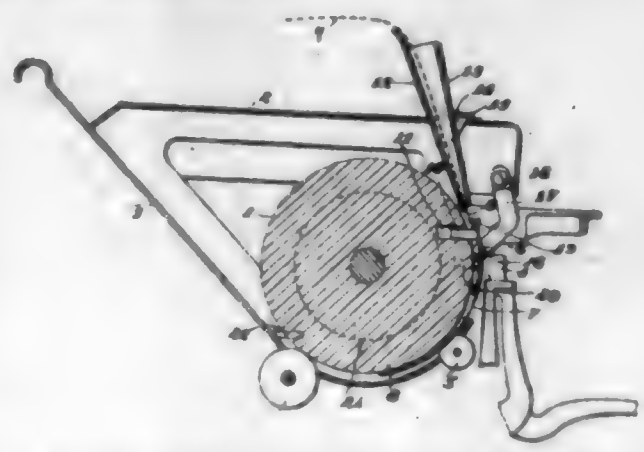
2. The process of manufacturing sulfuric acid, which consists in causing sulfuric anhydrid to be absorbed by a body of liquid acid and simultaneously supplying a diluting agent in sufficient quantity to maintain the liquid acid at its original degree of concentration, so that from the start of the operation to the discharge of the finished product, the strength of the sulfuric acid remains unaltered.

3. The herein-described process for manufacturing sulfuric acid, which consists in providing a body of liquid acid of substantially the same strength as the product it is desired to obtain, causing sulfuric anhydrid to be absorbed by said acid and supplying simultaneously with the sulfuric anhydrid a sufficient amount of a diluting agent to said body of liquid acid, to keep said liquid acid at a constant degree of concentration from the beginning of the operation to the end.

4. The process of manufacturing sulfuric acid, which consists in causing sulfuric anhydrid to be absorbed by liquid sulfuric acid, supplying simultaneously with the anhydrid a diluting agent in sufficient quantity to keep the liquid acid at its original degree of concentration, and cooling the liquid acid where it absorbs the anhydrid.

816,919. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed May 31, 1905. Serial No. 263,119.

Claim.—1. In a type-writing machine, the combination with a revoluble platen, of a spring-pressed clip mounted upon the platen to clasp the bottom edge of the paper; said clip revoluble with the platen, and having a gage for the bottom edge of the paper; and means for causing the clip to release the paper.



2. In a type-writing machine, the combination with a revoluble platen, of a spring-pressed clip mounted upon the platen to receive and gage the bottom edge of the paper, said clip revoluble with said platen; and means rendered effective by the forward revolution of the platen for opening said clip at a predetermined point in the revolution of the platen.

3. In a type-writing machine, the combination with a revoluble platen, of a clip mounted upon the platen to receive the bottom edge of the paper, means rendered effective by the forward revolution of the platen for opening said clip, and means for arresting the forward revolution of the platen immediately upon the clip being opened.

4. In a type-writing machine, the combination with a revoluble platen, and a platen-frame, of a spring-clip mounted upon the platen to receive the bottom edge of the paper, means rendered effective by the forward revolution of the platen for opening said clip at a predetermined point in the revolution of the platen; means for arresting the forward revolution of the platen immediately upon the clip being so opened; and means for guiding the paper bottom end foremost into said clip at such stopping-point.

5. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a clip mounted upon the platen to receive the bottom edge of the paper, means for opening said clip at a predetermined point in the forward revolution of the platen; and means upon the platen-frame for guiding the paper bottom end foremost into said clip; said guiding means comprising a paper-shelf erected upon the platen-frame at the front side of the platen and extending upwardly and rearwardly therefrom.

6. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a clip mounted upon the platen to receive the bottom edge of the paper, means for opening said clip, and means for guiding paper bottom end foremost into said clip; said guiding means comprising a paper-shelf erected upon the platen-frame and extending from the front side of the platen upwardly and rearwardly, and also including a transparent celluloid shield in front of said paper-shelf and separated therefrom so as to form a passage for the paper.

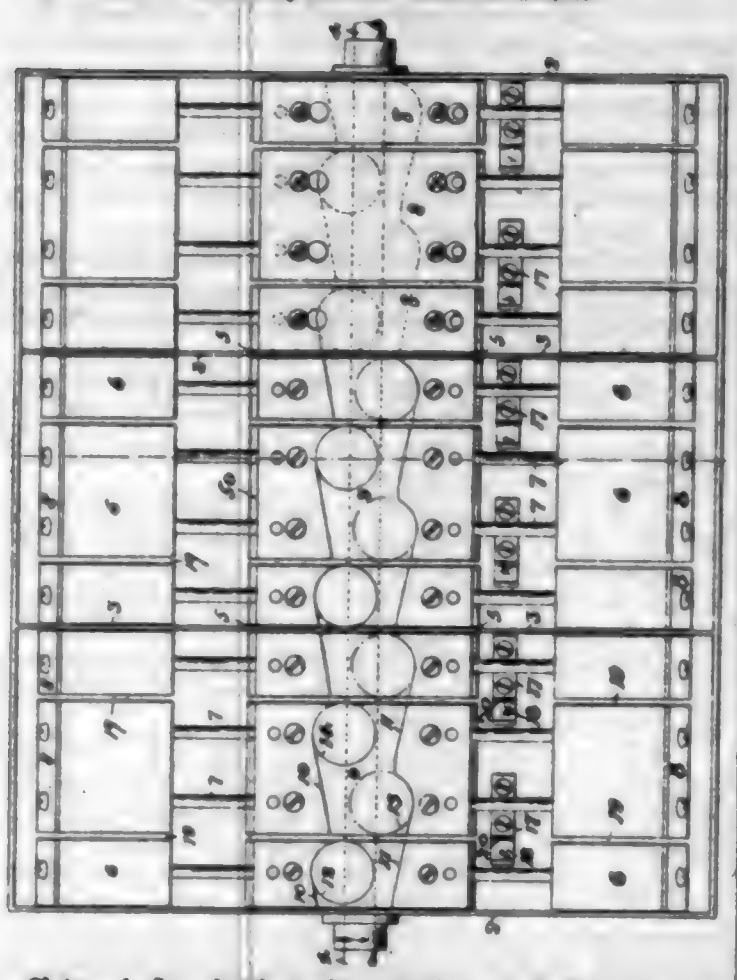
7. In a type-writing machine, the combination with a revoluble platen and a platen-frame, of a paper-clip mounted upon the platen to receive and gage the bottom edge of the paper, means rendered effective by the forward revolution of the platen for opening said clip, and means mounted upon the platen-frame for guiding the paper bottom edge first into said clip.

8. In a type-writing machine, the combination with a revoluble platen, and a platen-frame, of a clip mounted upon the platen to receive the bottom edge of the paper, and means rendered effective by the forward revolution of the platen for opening said clip at a predetermined point, means for limiting the forward revolution of the platen as soon as the clip is opened, and means for limiting the forward stroke of the platen.

9. In a type-writing machine, the combination with a revoluble platen, of a clip mounted upon the platen to receive the bottom edge of the paper; said clip comprising a plate fitted to the platen and extending longitudinally thereof and spring-arms attached at one end to the plate and curving around the platen and attached to the latter, and pressure-rolls bearing upon said platen between said spring-arms.

10. In a type-writing machine, the combination with a revoluble platen of a clip mounted upon the platen to receive the bottom edge of the paper, a series of gage-pins fixed to the clip, the platen having perforations to receive said pins, and means for opening the clip.

816,920. **BOTTLE-WASHING MACHINE.** PHILIP D. LAIBLE, Newark, N. J. Filed July 15, 1905. Serial No. 269,795.



Claim.—1. In a bottle-washing machine, a shaft, a drum on said shaft, radial spokes arranged longitudinally of said drum, said spokes providing longitudinal bottle-passages, and means for imparting to bottles in said passages step-by-step movement.

2. In a bottle-washing machine, a shaft, a drum on said shaft forming at its periphery a drainage-seat for the necks of radially-disposed bottles, spokes projecting from said drum and forming runways for bottles and means for turning said shaft and means adapted to automatically effect a movement of said bottles through said runways as the shaft and its spoke rotate.

3. In a bottle-washing machine, a tank, a shaft, a drum on said shaft, spokes projecting from said drum and having opposite members with bottle-recesses in their facing sides and forming a longitudinal runway for bottles, means for shifting the bottles from recess to recess in said runway, and means for turning the shaft.

4. In a bottle-washing machine, a tank, a shaft, longitudinal radial spokes on said shaft each comprising opposite members having in their facing sides series of oppositely-disposed bottle-recesses adapted to guide the bottles in a direction parallel with the shaft as they gravitate after having been raised and carried across the vertical plane of the said shaft by the said spokes, and means for turning said shaft.

5. In a bottle-washing machine, a tank, a shaft, longitudinal radial spokes on said shaft comprising opposite members having in their facing sides series of oppositely-disposed bottle-recesses, guides stationed in the forward upper quadrant of the path of movement of said spokes and adapted to engage the bottles to shift them from one recess to the next, and means for turning said shaft.

6. In a bottle-washing machine, a tank, a shaft, radial spokes projecting from said shaft and forming a longitudinal runway for bottles, guides upon said tank adapted to engage the bottles and shift them in said runway, and means for turning said shaft.

7. In a bottle-washing machine, a tank, a drum, radial spokes upon said drum forming longitudinally of the drum runways for bottles and being transversely slotted, guides projecting into said slots and adapted to engage and shift the bottles, and means for rotating said drum.

8. In a bottle-washing machine, a tank, a drum, radial spokes upon said drum each forming a longitudinal runway for bottles and being transversely slotted, upper and lower guides projecting into said slots and means for turning the drum.

9. In a bottle-washing machine, a tank divided transversely into narrow compartments adapted to successively receive the bottles, a drum arranged longitudinally of said tank, spokes projecting radially from said drum and forming longitudinal runways for bottles, and means for turning said drum.

10. In a bottle-washing machine, a tank divided into narrow transverse compartments adapted to successively receive the bottles, a shaft, radially-extending members upon said shaft forming between themselves a longitudinal runway for bottles, guides adapted to engage the bottles, and means for turning the said shaft.

11. In a bottle-washing machine, a tank, a drum, longitudinal radially-projecting members upon said drum each comprising members forming between themselves a runway for bottles, said members being transversely slotted, guides projecting into said slots, and means for turning said shaft and its radial members.

12. In a bottle-washing machine, a tank, transversely divided into compartments, a rotary bottle-carrier mounted above said tank and slotted to receive the partitions thereof, and means for shifting bottles in said carrier when they are elevated out of the tank.

13. In a bottle-washing machine, a tank, a recessed drum adapted to receive the abutting mouths of bottles without closing the same, spokes upon said drum forming at their outer portions runways or passages for the bodies of bottles, guides for shifting the bottles in said runways or passages, and means for turning the drum.

14. In a bottle-washing machine, a tank, a drum, longitudinal rows of spokes on said drum, having members at the outer ends of two adjacent rows of spokes forming between themselves a runway for the body portions of bottles, straps closing the outer side of said runway, strips upon the bases of said spokes forming a rest for the necks of the bottles, means for rotating said drum, and fixed guides adapted to engage the bottles in said runway.

15. In a bottle-washing machine, a tank, a rotary bottle-carrier comprising a drum, radial spokes thereon with outer bottle-receiving members, said outer members being transversely slotted, fixed guides each having a body portion adapted to enter a slot of the outer members of the bottle-carrier and an inclined end adapted to lie between the spokes of said carrier and engage the bottles, and means for turning said bottle-carrier.

16. In a bottle-washing machine, a tank, a rotary bottle-carrier mounted longitudinally of and above said tank, and comprising a drum, spokes on said drum having outer bottle-receiving members, said outer members being transversely slotted, a top rod above said bottle-carrier, upper guides upon said top rod and lower guides upon the tank, said guides each having a body portion adapted to enter a slot of the outer members of the bottle-carrier and an inclined end adapted to lie between the spokes of said carrier and engage the bottles, and means for turning said bottle-carrier.

17. In a bottle-washing machine, a tank, a series of transverse tank-compartments, a bottle-carrier mounted longitudinally of said series of tank-compartments and comprising a drum, spokes on said drum having outer transversely-slotted members to receive the bottle, said bottle-carrier, upper guides upon said top rod and lower guides upon the tank, said guides each having a body portion adapted to enter a slot of the outer members of the bottle-carrier and an inclined end adapted to lie between the spokes of said carrier and engage the bottles, and means for turning said bottle-carrier.

816,921. **RAILWAY-TIE AND FASTENER.** JOHN P. LANCASTER, Cincinnati, Ohio. Filed July 26, 1905. Serial No. 271,822.

Claim.—1. A railway tie or stringer having, in upper inward-extending portions or arms thereof, downward-facing recesses, rail-flange-securing clamps effective with the latter to receive fastenings for holding said clamps in place.

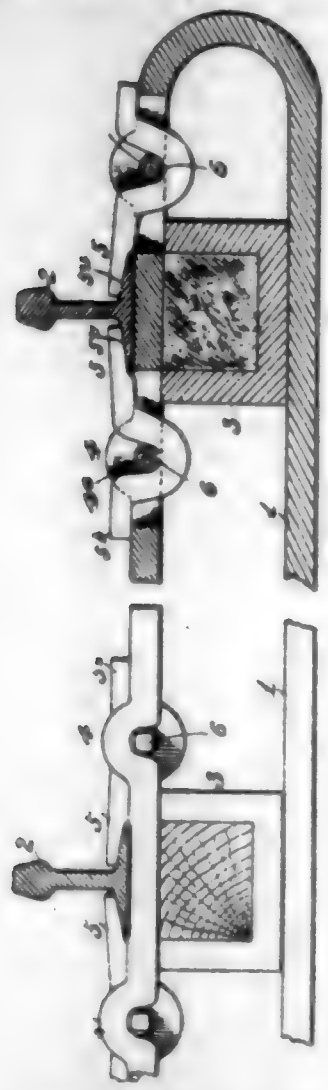
2. A railway tie or stringer having, in upper inward-extended portions or arms thereof, downward-facing arcuate formations, rail-flange-securing clamps effective with the latter to receive fastening bolts or pins for securing said clamps in place.

3. A railway tie or stringer having, in upper inward-extended portions or arms thereof, downward-facing arcuate formations, rail-flange-securing clamps of practically U form depending through slots cleaving the walls of said arcuate formations, and fastening means effective with the aforesaid parts to retain said clamps in place.

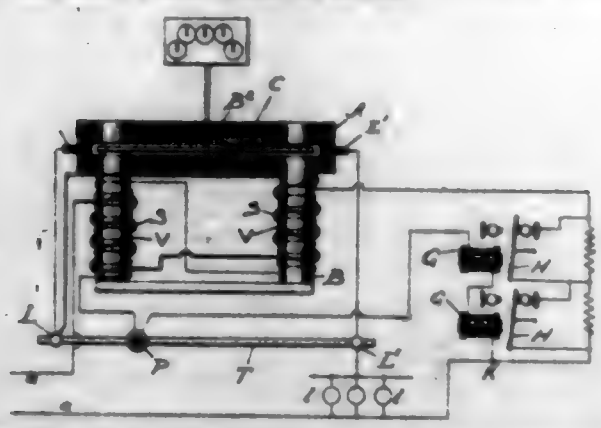
4. A railway tie or stringer having, in upper inward-extended portions or arms thereof, downward-facing arcuate formations, with slots extending transversely therethrough, rail-flange-holding clamps of practically U form, with their curved portions depending through said slots, and fastening bolts or pins, effective for use in connection with the aforesaid parts, for holding the clamps in place.

5. A railway tie or stringer having, in upper inward-extended portions or arms thereof, downward-presented arcuate formations, rail-flange-securing clamps, of practically U form with their curved portions depending through slots cleaving the walls of said forma-

tions, and tapering fastening pins or bolts effective with the aforesaid parts to retain the clamps in place.



816,922. ELECTRIC METER. ROBERT C. LANPHIER, Springfield, Ill. Filed Mar. 9, 1904. Serial No. 197,308.



Claim.—1. The combination in a mercury motor-meter, of an armature-circuit adapted to carry the work-current, and a pressure-field-coil circuit connected to such armature-circuit so that more or less of the pressure-current shall pass through the path of the work-current in the armature or disk and produce a light-load starting torque.

2. The combination in a mercury motor-meter, of an armature, a pressure-field coil having series connection therewith and means for varying the relative amount of pressure-field current passing through the armature.

3. In a mercury motor-meter, the combination with an armature-circuit carrying current varying with the work, of a pressure-field-coil circuit having series connection therewith, and means for varying the proportion of pressure-field-coil current passing through the armature.

4. In a motor-meter of the type described, the combination with the armature-circuit, of a branch around the same, a pressure-field-coil circuit and means for connecting the terminal thereof to said branch at different points to determine the amount of current that shall flow through the armature and pressure-field coil in series to produce the starting torque.

5. In a meter of the type described, the combination of two main-current armature-paths in multiple and in which the currents conspire to produce rotation and means for adjusting the proportion of current flowing through said paths.

6. In a meter of the type described, the combination of two main-current armature-paths in which the currents conspire to produce rotation and means for adjusting the proportion of current flowing through said paths.

7. In a mercury motor-meter, the combination with the main armature-circuit, of a supplemental armature-circuit producing a lesser torque and means for changing the distribution of current in said circuits to adjust the action of the meter for different loads.

8. In a mercury motor-meter having a constant-pressure field-coil of two main-circuit armature-paths and means for changing the proportion of current flowing through said paths to adjust the action of the meter for different loads.

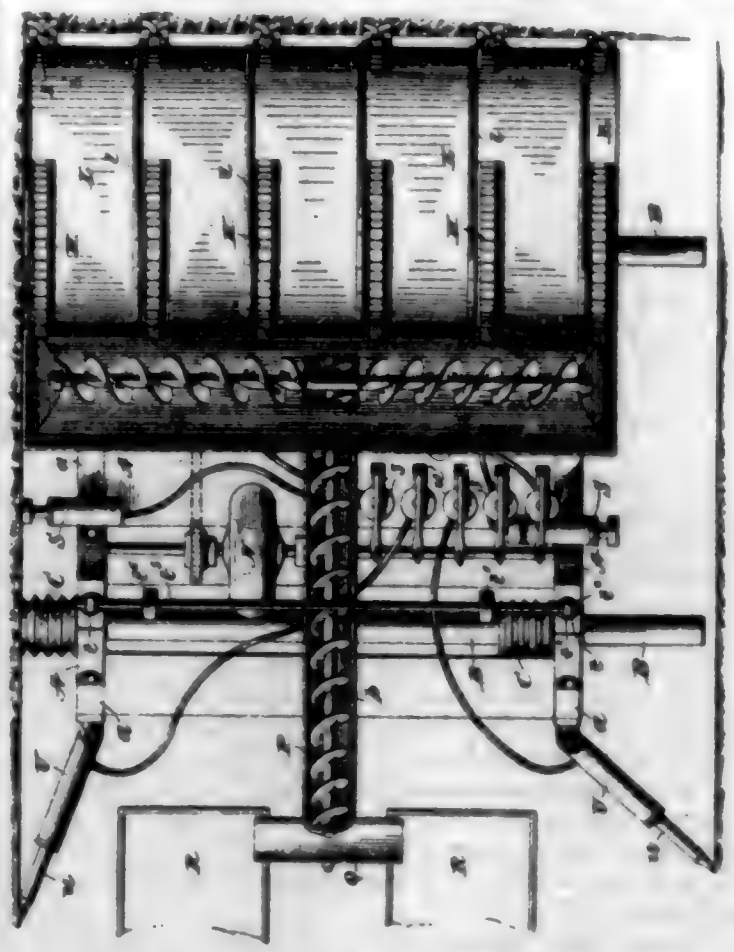
9. In a mercury motor-meter, the combination with the two armature-paths, of the bridging resistance and means for adjusting the connection of the meter-circuit with said resistance to vary the distribution of current in the two paths.

10. In a mercury motor-meter, the combination of a pressure-field coil in which the current increases with a decrease of temperature, an armature-circuit and a shunt or branch around the same having a lesser temperature coefficient than that of the armature, said shunt being adjusted as described to compensate for the tendency of the meter to run slow when the current in the armature and shunt-field coil increases owing to decrease of temperature below that for which the meter is calibrated.

11. In an electric meter, the combination with two armature-circuits having different torque-producing effects, said circuits being connected by loops or branches embodying a metal having a lower temperature coefficient than the armature-paths themselves.

12. In a mercury motor-meter, the combination of a torque-producing field-coil operated by shunt-current, a branch around the motor embodying a metal having a different temperature coefficient than that of the armature-path and means for connecting the pressure-coil circuit to said branch at different points to vary the amount of current that shall produce a light-load or starting torque.

816,923. MACHINE FOR CUTTING HEADINGS. WILLIAM A. LATHROP, Wilkes-Barre, Pa. Filed Aug. 31, 1903. Serial No. 171,437.



Claim.—1. In a machine for cutting headings, the combination of a cutter adapted to cut a channel transverse to the machine, which channel shall be as long as the corresponding transverse dimension of the machine, and means for moving said cutter laterally to widen said channel.

2. In a machine for cutting headings, the combination of a cutter, means for causing said cutter to cut a channel as long as the

transverse dimension of the machine in the direction of the channel, and means for moving said cutter laterally to widen the channel.

3. In a machine for cutting headings, the combination of a cutter, means for causing said cutter to cut a channel as long as the transverse dimension of the machine in the direction of the channel, and means for moving said cutter laterally throughout the length of said channel to widen the same.

4. In a machine for cutting headings, the combination of a cutter, means for causing said cutter to cut a vertical channel equal in length to the height of the heading, and means for moving said cutter laterally throughout the length of said channel to widen the same.

5. In a machine for cutting headings, the combination of a series of cutters, means for causing said cutters to cut channels as long as the corresponding transverse dimension of the machine, forward of the framework of the machine, and means for moving said cutters laterally to remove the material between said channels.

6. In a machine for cutting headings, the combination of supports, cutting devices mounted on and adapted to cut forward of said supports for a distance equal to the corresponding transverse dimension of the machine, and means for shifting said cutting devices bodily on said supports in a direction transverse to the direction of motion of said cutting devices.

7. In a machine for cutting headings, the combination of a series of cutters, means for causing said cutters to cut parallel channels as long as the dimension of the machine in the direction of the channels, and means for moving said cutters laterally throughout the length of said channels to widen the same.

8. In a machine for cutting headings, the combination of a series of cutters, means for causing said cutters to cut vertical channels equal in length to the height of the heading, and means for moving said cutters laterally throughout the length of said channels to widen the same.

9. In a machine for cutting headings, the combination of a series of cutters adapted to cut parallel grooves forward of the framework of said machine, and means for moving said cutters laterally a distance equal to the distance between two adjacent grooves.

10. In a machine for cutting headings, the combination of a series of cutters adapted to cut parallel grooves from one transverse limit of the heading to the opposite wall thereof, and means for moving said cutters laterally a distance equal to the distance between two adjacent grooves.

11. In a machine for cutting headings, the combination of a series of cutters adapted to cut equidistant parallel grooves from the top to the bottom of the heading, and means for moving said cutters laterally a distance equal to the distance between two adjacent grooves.

12. In a machine for cutting headings, the combination of a series of cutting-chains forward of the framework of said machine, means for causing said chains to cut parallel channels, and means for moving said chains laterally in said channels to remove the material between the latter.

13. In a machine for cutting headings, the combination of a pair of parallel shafts, sprocket-wheels on the ends of said shafts and at intermediate points thereon, sprocket-chains passing over the said wheels and carrying cutters, means for driving said wheels, and means for moving said shafts longitudinally of themselves.

14. In a machine for cutting headings, the combination of a frame, cutters mounted on said frame, and means for advancing said frame in the heading at various angles to the direction of such heading, whereby headings of various dimensions may be cut with the same frame.

15. In a machine for cuting headings, the combination of a body, a frame pivoted thereto, cutters mounted on said pivoted frame, and means for yieldingly maintaining said pivoted frame at a desired elevation.

16. In a machine for cutting headings, the combination of a body, a frame pivoted thereto, cutters mounted on said pivoted frame, and means for yieldingly maintaining said pivoted frame at a desired elevation, said means consisting of a hydraulic jack having an accumulator in connection therewith.

17. In a machine for cutting headings, the combination of a frame provided with cutters from one end to the other thereof, said cutters being exposed for cutting throughout the length of said frame and means for advancing said frame in the heading at various angles to the direction of such heading, whereby headings of various dimensions may be cut with the same frame.

18. In a machine for cutting headings, the combination of supports for such machine, a swinging frame, shafts carried in the ends of said frame, sprocket-wheels carried by said shafts, cutting-chains carried by said sprocket-wheels, said cutting-chains being exposed for cutting throughout the length of said frame and means for moving said parts, except said supports, longitudinally of said shafts.

19. In a machine for cutting headings, the combination of a swinging frame, shafts carried in the ends of said frame, sprocket-wheels carried by said shafts, cutting-chains carried by said sprocket-wheels, and means for moving said shafts longitudinally of themselves.

20. In a machine for cutting headings, the combination of a wheeled frame, a frame pivoted to the forward end of said first-mentioned frame, shafts carried by the upper and lower ends of said frame and extending laterally beyond the limits of said first-mentioned frame, and cutting-chains passing about said shafts.

21. In a machine for cutting headings, the combination of a wheeled frame, a frame pivoted to the forward end of said first-mentioned frame, shafts carried by the upper and lower ends of said frame and extending laterally beyond the limits of said first-mentioned frame, cutting-chains passing about said shafts, and means for moving said frames in a direction substantially parallel to said shafts.

22. In a machine for cutting headings, the combination of a car-body, means for shifting said car-body laterally upon its axles, a frame pivoted to the forward end of said car-body, means for raising and lowering said pivoted frame, shafts carried by the upper and lower ends of said frame, sprocket-wheels on said shafts, and sprocket-chains carried by said wheels, said chains being provided with cutters.

23. In a machine for cutting headings, the combination of a car-body comprising parallel side beams, axles supporting said side beams, wheels on said axles adjacent to said side beams, all of said wheels being upon the same relative side of their respective side beams, means for moving said car-body laterally upon said axles, said axles extending beyond said frame in the direction of the sides of said side beams opposite to said wheels, a frame pivoted to the forward ends of said side beams, shafts carried by said frame, sprocket-wheels upon the outer ends of said shafts and at intermediate points thereon, cutters carried by said sprocket-chains, and means for raising and lowering said pivoted frame.

24. In a machine for cutting headings, the combination of a series of parallel cutters, a shield between but back of the extreme range of the cutters, and means for moving said cutters in the direction of their reach and laterally thereof.

25. In a machine for cutting headings, the combination of a car-body comprising parallel side beams, axles supporting said side beams, wheels on said axles adjacent to said side beams, all of said wheels being upon the same relative side of their respective side beams, means for moving said car-body laterally upon said axles, said means consisting of hydraulic jacks mounted on said side beams and having their plungers directed toward the side walls of the heading, said axles extending beyond said frame in the direction of the sides of said side beams opposite to said wheels, a frame pivoted to the forward ends of said side beams, shafts carried by said frame, sprocket-wheels upon the outer ends of said shafts and at intermediate points thereon, cutters carried by said sprocket-chains, and means for raising and lowering said pivoted frame.

26. In a machine for cutting headings, the combination of a series of cutters adapted to cut channels, a shield between said cutters, and extending transversely to the direction of feed of the cutters in cutting the said channels, and means for feeding said cutters in the direction of the plane of the shield, whereby the shield may be in contact with the uncut surface of the heading during said lateral feed.

27. In a machine for cutting headings, the combination of a series of cutters adapted to cut channels, a shield between said cutters and extending transversely to the direction of feed of the cutters in cutting the said channels, means for feeding said cutters in the direction of the plane of the shield, whereby the shield may be in contact with the uncut surface of the heading during said lateral feed, and wings on said chain to carry away the cut material.

28. In a machine for cutting headings, the combination of a series of cutters adapted to cut channels, a shield between said cutters, and wings adapted to engage the material cut by said cutters and confined by said shield, and to convey said material away.

29. In a machine for cutting headings, the combination of a car-body having a frame pivoted at the forward end thereof, upper and lower shafts carried by said frame, said shafts having sprocket-wheels, sprocket-chains passing over said sprocket-wheels, said sprocket-chains having lateral wings or cutters, and a shield beneath and supporting said sprocket-chains.

30. In a machine for cutting headings, the combination of a frame having upper and lower shafts, sprocket-wheels upon such shafts, sprocket-chains passing about said sprocket-wheels and pro-

vided with cutters, a shield beneath and supporting said sprocket-chains, and a lateral guide or rib on said shield for said chains.

31. In a machine for cutting headings, the combination of a car-body, sprocket-chains at the forward end of said body, said chains moving upward during the cutting operation, a shield beneath said chains, wings on said chains, whereby the coal that is cut is carried upward, a hopper to receive the coal carried up by said wings, said hopper having oppositely-feeding conveyers therein to convey the coal to a central point, and a conveyer directed upwardly and rearwardly that is adapted to receive said coal.

32. In a machine for cutting headings, the combination of a car-body, sprocket-chains at the forward end of said body, said chains moving upward during the cutting operation, a shield beneath said chains, wings on said chains, whereby the coal that is cut is carried upward, a hopper to receive the coal carried up by said wings, said hopper having oppositely-feeding conveyers therein to convey the coal to a central point, and a conveyer to receive the coal at such point and directed upwardly and rearwardly to deposit the coal in a car, said conveyer being provided with a pivoted spout.

33. In a machine for cutting headings, the combination of a car-body, sprocket-chains at the forward end of said body, said chains moving upward during the cutting operation, a shield beneath said chains, wings on said chains, whereby the coal that is cut is carried upward, a hopper to receive the coal carried up by said wings, said hopper having oppositely-feeding conveyers therein to convey the coal to a central point, and a conveyer to receive the coal at such point and directed upwardly and rearwardly to deposit the coal in a car, said conveyer being provided with a pivoted spout, having two opposite discharge-openings, whereby the coal can be discharged into either of two cars that are beside each other.

34. In a machine for cutting headings, the combination of a car-body, cutters mounted upon the forward end of said car-body, and yielding means carried by the rearward end of said car-body to engage the roof of the heading and prevent said end from being raised.

35. In a machine for cutting headings, the combination of a car-body, upwardly-moving cutters mounted upon the forward end of said car-body, and yielding means carried by the rearward end of said car-body to engage the roof of the heading and prevent said rearward end from being raised.

36. In a machine for cutting headings, the combination of a car-body provided with cutting mechanism at its forward end, wheels rearward of said cutting mechanism, but near the forward end of the machine, wheels at the rearward end of the machine, means for raising and lowering said car-body upon said last-mentioned wheels and yielding means carried by said car-body to engage the roof of the heading and prevent said rearward end from being raised by the action of the cutting mechanism.

37. In a machine for cutting headings, the combination of a car-body having a cutter at the forward end thereof, propelling means engaging the opposite walls of the heading, separate propelling means carried by the rear end of the car-body, and means for independently operating each of said separate means for propelling.

38. In a machine for cutting headings, the combination of a car-body having wheels at its forward and rear ends, cutters mounted upon the forward end of said car-body, the forward wheels of the car-body being located rearward of the cutters, and yielding means carried by the rearward end of said car-body to engage the roof of the heading and prevent said end from being raised.

39. In a machine for cutting headings, the combination of a car-body having wheels at its forward and rear ends, cutters mounted upon the forward end of said car-body, the forward wheels of the car-body being located rearward of the cutters, and yielding means carried by the rearward end of said car-body to engage the roof of the heading and prevent said end from being raised, said yielding means consisting of wheels on a spring-supported axle.

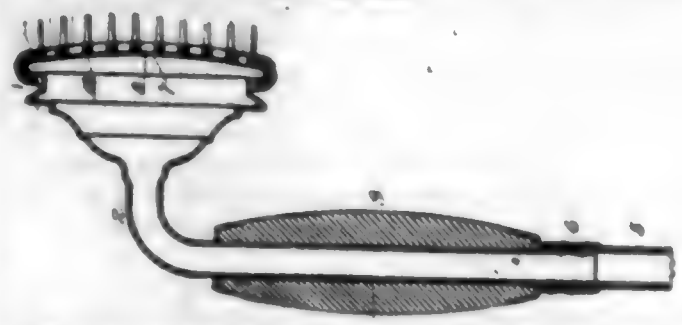
40. In a machine for cutting headings, the combination of a car-body, having a cutter at the forward end thereof, means for rotating said cutter and propelling means engaging the opposite walls of such heading, said propelling means being capable of actuation separately from each other, whereby the machine may be made to change its direction of cutting.

41. In a machine for cutting headings, the combination of a car-body having a cutter at the forward end thereof, and separate propelling means engaging the opposite walls of the heading, such means consisting of hydraulic jacks having plungers which are adapted to engage the said walls.

42. In a machine for cutting headings, the combination of a car-body having a cutter at the forward end thereof, of hydraulic jacks swiveled at the rear end of such body, one on each side thereof, said jacks having sharpened plungers that are adapted to engage the walls of the heading.

43. In a machine for cutting headings, the combination of a car-body having a cutter at the forward end thereof, means for rotating said cutter, and propelling means engaging the opposite walls of such heading, said propelling means being capable of actuation separately from each other, and separately from said means for rotating said cutter, whereby the machine may be made to change its direction of cutting.

816,924. **BATH-SPRAY.** ALBERT N. LATTIN, New York, N. Y., assignor to S. Sternau & Company, Brooklyn, N. Y., a Copartnership. Filed Feb. 2, 1905. Serial No. 243,818.



Claim.—1. A spray having a metal body, having a face with apertures therein, in combination with a reticulated rubber cover bearing against the face, and carrying elastic projections.

2. A spray having a metal body, having a face with apertures therein, in combination with a reticulated rubber cover bearing against the face, and carrying elastic projections, the projections being formed integral with the cover.

3. A spray having a metal body, with apertures therein, in combination with a reticulated rubber cover, carrying elastic projections, the openings being relatively large so as to form an open network or skeleton frame.

4. A spray having a metal body, with apertures therein, in combination with a reticulated rubber cover, carrying elastic projections, the projections being formed integral with the cover, the openings being relatively large so as to form an open network or skeleton frame.

5. A spray having a metal body, having a face with apertures therein, in combination with a reticulated rubber cover bearing against the face, and carrying elastic projections, the rubber cover having an annular portion forming a guard.

6. A spray having a metal body, with apertures therein, in combination with a reticulated rubber cover, carrying elastic projections, the metal body having an annular groove and the cover an annular enlarged portion which engages therewith and forms an attaching means for the cover.

7. A cover for a bath-spray, made of soft rubber having an annular portion with means for attachment to the spray and a reticulated body with integral projections thereon, located between the interstices, the openings being relatively large so as to form an open network or skeleton frame.

8. In a bath-spray, a metal spray with an apertured bottom having a pin thereon, in combination with a reticulated rubber cover having elastic projections, the pin engaging with an interstice in the cover.

9. In a bath-spray, a metal body with a tube, and a reticulated bottom having apertures therein in combination with a reticulated rubber cover having flexible projections between the interstices, the said body having a rigid handle, and a connection to the tube through the handle, whereby a rigid structure will be produced.

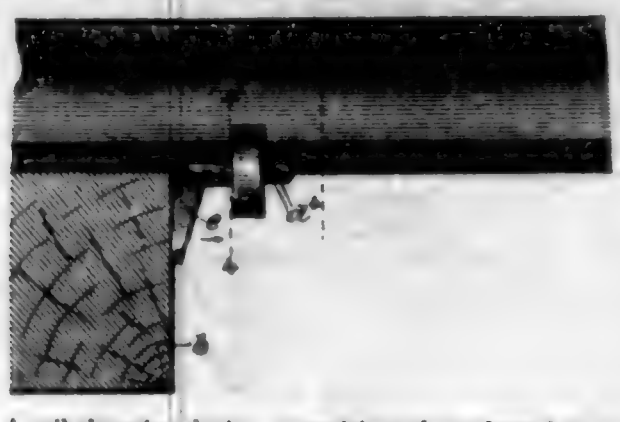
816,925. **MAGNESIUM PERBORATE.** OTTO LIEBKNECHT, Frankfort-on-the-Main, Germany, assignor to The Roessler & Hasslacher Chemical Company, New York, N. Y., a Corporation of New York. Filed Feb. 17, 1905. Serial No. 246,069.

Claim.—As a new product of manufacture magnesium perborate, a white, amorphous precipitate in treating which for some length of time with water acid magnesium perborate goes into solution leaving basic magnesium perborate.

816,926. **ANTICREEPER.** CHRISTIAN LUND, Salt Lake City, Utah. Filed Dec. 2, 1904. Serial No. 235,226.

Claim.—1. An anticreeping device for railroads, comprising a bar adapted to engage the base of a rail and having a passage, and a

key adapted to enter said passage and engage the rail and the tie of the road-bed.



2. A rail-clamping device, comprising a bar adapted to engage one edge of a rail-base and having a hook-shaped eye adapted to clear the other edge of the base, and a key adapted to pass into said eye and engage the rail, said key having a tailpiece for engaging a tie.

3. In an anticreeping device for rails, the combination of a clamp having means for engaging one edge of the base of a rail and an eye, and a key adapted to enter the eye and provided with grooves, one for engaging the opposite edge of the base, said eye being provided with a projection for engaging the other of said grooves and preventing the key from turning.

4. In an anticreeping device for rails, the combination of a clamp having means for engaging one edge of the base of a rail and an eye, and a key adapted to enter the eye and engage the other edge of the base, the eye being provided with means for preventing the key from turning, said key being tapered at one end and provided with a tailpiece at the other, projecting from the key at an angle thereto and adapted to engage a tie.

5. In an anticreeping device for rails, the combination of a clamp having a hook for engaging one edge of the base of a rail and an eye adapted to inclose a portion of the opposite edge of the rail-base, the distance between the extreme inner surface of the eye and the end of said hook being greater than the width of the base of the rail, and a key adapted to enter the eye and engaging the edge of the base of the rail located therein.

6. A rail-clamp having a hook at one end for engaging with one edge of the base of a rail, and an eye at the other end adapted to inclose a portion of the opposite edge of the rail-base, the distance between the extreme inner surface of the eye and the end of the hook being greater than the width of the base of the rail.

7. A rail-clamp having a hook adapted to engage one edge of the base of a rail and a hook-shaped eye at the other end adapted to inclose a portion of the opposite edge of the base, and a portion between the hook and the eye adapted to engage the bottom of the rail, said eye being provided with a space for the reception of a fastening-key and with a projection for preventing the key from turning, the distance between the inner surface of said hook and the end of said eye being less than the width of the base of the rail.

8. An anti-rail-creeper comprising a plate arranged to extend substantially parallel with the side of the tie, means for clamping the plate to the rail, and an abutment at one side of the longitudinal axis of the rail arranged to space the plate apart from the tie; substantially as described.

9. An anti-rail-creeper having a clip portion with a key arranged to abut against the tie and secure the device in place on the rail; substantially as described.

10. An anti-rail-creeper having opposite clip portions, and a key having an abutment portion arranged to contact with the tie; substantially as described.

11. An anticreeping device having opposite clip portions arranged to be spaced apart from the tie, and a key arranged to be driven into one clip portion and having an abutment arranged to fit against the tie between the tie and the clip portions; substantially as described.

12. An anticreeping device having clip portions at opposite ends, one clip portion being arranged to fit on the rail-base and the other being enlarged to receive a key, in combination with a key having an abutment portion arranged to fit against the side of the tie; substantially as described.

13. An anticreeping device, consisting of a plate having integral clips bent upwardly on opposite sides therefrom, and a key arranged to drive between one clip and the rail-base, said key having a tie-abutting portion; substantially as described.

14. An anti-rail-creeper having a clip portion and a key at one side of the center line of the rail and arranged to secure the device in place and abut against the tie; substantially as described.

15. An anti-rail-creeper having opposite clip portions, and a key arranged to fit between one clip portion and the rail-base and abut against the tie; substantially as described.

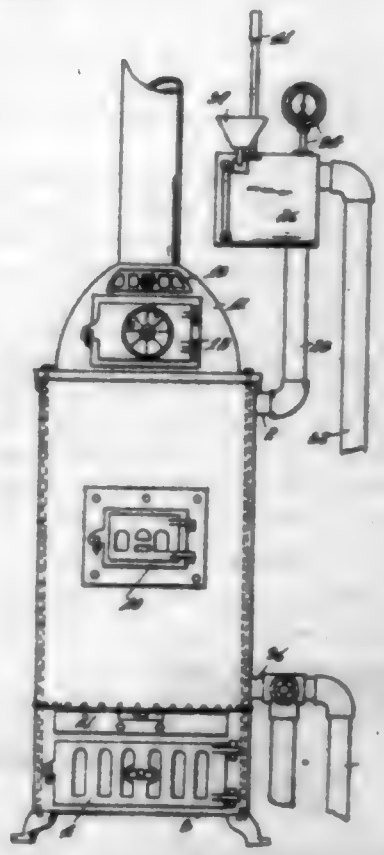
16. A device for preventing the creeping of rails comprising a looped clamp capable of being slipped from below over the flange of a rail, and wedging means abutting against a stationary part of the railway and bearing against a vertical side of the flange of said rail and against the inner side of a loop of said clamp.

17. In a device for preventing the creeping of rails, the combination of a looped clamp capable of being slipped from below over the flange of a rail, and a wedge abutting against a stationary part of the railway and bearing with one bearing-surface against a vertical side of the flange of the rail and with another bearing-surface against the bearing-face of a loop of said clamp.

18. In a device for preventing the creeping of rails, the combination of a rail, with a clamp capable of being slipped from below over the flange of the rail secured to its sleepers, and wedging means abutting against a stationary part of the railway and placed between a vertical side of the flange of the rail and the inner side of a loop of said clamp.

19. The combination with the flange of a rail, and a stationary part of the railway, of a clamp capable of being slipped over said flange from below, and wedging means abutting against said stationary part of the railway and working between a vertical side of said rail-flange and the inner side of a loop of said clamp.

816,927. HOT-WATER HEATING-FURNACE. STEPHAN LINDNER and MARSHAL G. ROBERTS, Detroit, Mich. Filed Nov. 10, 1904. Serial No. 232,146.

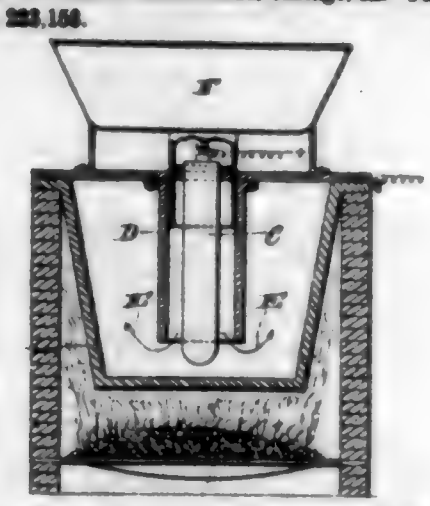


Claim.—1. In combination with a cylindrical casing and a water-heating coil therewithin and closely adjacent to the walls thereof, the lower portion thereof surrounding the fire-chamber and forming the fire-pot therefor, a magazine provided with a perforated duct and depending within the upper portion of said coil said perforations being closely adjacent to said coil and adapted to automatically feed fuel into the fire-chamber, a base portion beneath the fire-pot, an ash-pit within the same, and a removable grate-supporting frame located within the base portion and over the ash-pit, substantially as described.

2. In combination with a water-heating coil and an inclosing casing, a dome thereover, a magazine suspended on one side of said dome with its body portion curved to present its main portion substantially concentric with the casing and with the surrounding upper portion of the coil, a feed-door hinged to said dome at the upper end of said magazine, an annular duct within said magazine, the walls of the duct being perforated with air-holes adapted to deliver air into the casing adjacent to the upper portion of the coil, substantially as described.

3. In a hot-water furnace, in combination with an inclosing casing, a coil for water circulation therewithin, the lower portion of said coil serving as a fire-pot and to encircle the combustion-chamber, a dome closing the top of said furnace, a magazine suspended from one side of said dome, having its body portion fashioned to extend into said casing substantially concentric therewith and with the upper portion of said coil, a door closing the upper end of the magazine, and an air-duct within said magazine and opening at its top into the outer air, its walls being provided with air-holes adapted to deliver air into the upper portion of the casing closely adjacent to the upper portion of said coil, substantially as described.

816,928. PROCESS OF PRODUCING AMMONIA. JOHN A. LYONS and EDWARD C. BROADWELL, Chicago, Ill. Filed Sept. 2, 1904. Serial No. 223,158.



Claim.—1. The process of subjecting a fused bath of the borates of electropositive metals to electrolytic action and subjecting the anion produced thereby to a reducing agent at the anode in the presence of an intense heat and introducing nitrogen into said bath at the anode and then subjecting the boron nitrid thus produced to steam.

2. The process of producing boron from the borate of an electropositive metal by electrolysis and a reducing agent of intense heat at the anode, introducing nitrogen at the anode, and subjecting the boron nitrid while separated from the deposited metal to the action of steam at 600° centigrade or above.

3. The process of subjecting a fused bath of the borate of an electropositive metal to electrolysis and chemically reducing the boric anhydrid to boron at the anode, in the presence of an anode separated from the cathode by a jacket of resistive material introducing nitrogen between said anode and jacket and subjecting the boron nitrid thus produced to the action of steam at a sufficient temperature to cause the boron to revert to boric anhydrid.

816,929. FLY-CATCHER. FRANK I. MACAULEY, Alameda, Cal. Filed July 6, 1905. Serial No. 268,449.

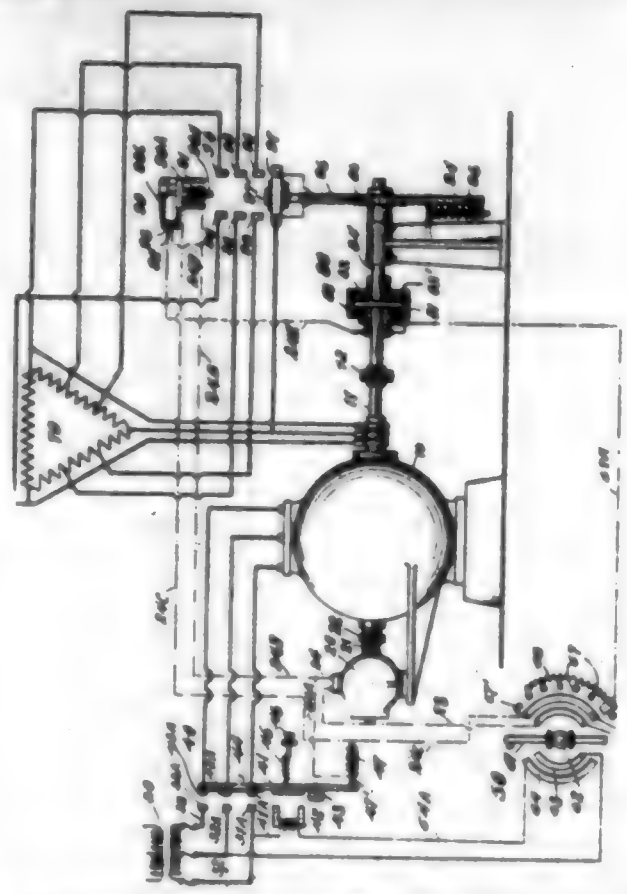


Claim.—1. A fly-catcher comprising a suspensible case having an aperture in its bottom, a store of sticky string contained in said case, the end of said string passing and being drawable through the apertured bottom of the case and depending therefrom, a gripper detachably suspended from the depending extremity of said string, and a drip-cup carried by the gripper.

2. A fly-catcher comprising a suspensible case having an aperture in its bottom, a store of sticky string contained in said case, the end of said string passing and being drawable through the apertured bottom of the case and depending therefrom, a pair of spring-nippers detachably engaging and normally suspended from the depending extremity of said string, said nippers having secured to one of its handles a drip-cup.

816,930. SYSTEM OF MOTOR CONTROL. AXEL MAGNUSON, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 12, 1903. Serial No. 161,362.

Claim.—1. A motor, a controlling device therefor, a generator connected to run with the motor, means dependent upon the action of the generator for causing the movement of the motor to actuate the controlling device.



2. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor.

3. A motor, a controlling device therefor, a generator connected to run with the motor arranged to generate a current proportional in strength to the speed of the motor, an electromagnetic clutch energized by said generated current and arranged to cause the controlling device to be actuated by the movement of the motor.

4. A motor, a controlling device therefor, a generator connected to run with the motor arranged to generate a current proportional in strength to the speed of the motor, an electromagnetic clutch energized by said generated current and arranged to cause the controlling device to be actuated by the movement of the motor and in proportion to the strength of the generated current.

5. A motor, a controlling device therefor, a generator driven by the motor arranged to generate a variable voltage in proportion to the speed of the motor, a rotating member, means for driving said rotating member, a second rotating member connected to the controlling device, and electromagnetic means actuated by the variable voltage for imparting motion from said first rotating member to said second rotating member.

6. A motor, a controlling device therefor, a generator driven by the motor arranged to generate a variable voltage in proportion to the speed of the motor, a rotating member, means for driving said rotating member, a second rotating member connected to the controlling device, and electromagnetic means actuated by the variable voltage for imparting motion from said first rotating member to said second rotating member in proportion to the variable voltage.

7. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and means for retarding the effect of the clutch on the controlling device.

8. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and adjustable means for retarding the effect of the clutch on the controlling device.

9. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor to automatically control the acceleration of the motor in starting, and means for holding the controlling device while the motor is running.

10. A motor, a controlling device therefor, a generator con-

nected to run with the motor, means dependent upon the action of the generator for actuating the controlling device, and means for cutting out said first means after the controlling device has been actuated.

11. A motor, a controlling device therefor, a generator connected to run with the motor, means dependent upon the action of the generator for actuating the controlling device, means for cutting out said first means after the controlling device has been actuated, and a magnetic holding device arranged to hold the controlling device while the motor is running.

12. A motor, a controlling device therefor, a generator connected to run with the motor, means dependent upon the action of the generator for actuating the controlling device, means for cutting out said first means after the controlling device has been actuated, and a magnetic holding device deriving current from the generator arranged to hold the controlling device while the motor is running.

13. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and means for cutting out the clutch after the controlling device has been actuated.

14. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor to automatically control the acceleration of the motor in starting, means for cutting out the clutch after the controlling device has been actuated, and means for holding the controlling device while the motor is running.

15. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and a circuit-closer for the motor.

16. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and a circuit-closer for the motor actuated by alternating currents.

17. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and a circuit-closer for the motor actuated by alternating currents and held by direct currents.

18. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, and a circuit-closer for the motor controlled by alternating and direct currents.

19. A motor, a controlling device therefor, a generator connected to run with the motor, an electromagnetic clutch dependent upon the action of the generator arranged to cause the controlling device to be actuated by the movement of the motor, a circuit-closer for the motor, and a manually-operated switch.

20. A motor, a controlling device therefor, a generator connected to run with the motor, means dependent upon the action of the generator for actuating the controlling device, and a manually-operated device for regulating said means.

21. A motor, a controlling device therefor, a circuit-closer for the motor, a generator driven by the motor and arranged to generate a variable voltage in proportion to the speed of the motor, means dependent upon said voltage for actuating the controlling device, and a manually-operated switch for controlling the circuit-closer and regulating the actuating means for the controller.

22. A motor, a controlling device therefor, a circuit-closer for the motor, a generator driven by the motor and arranged to generate a variable voltage in proportion to the speed of the motor, means dependent upon said voltage for actuating the controlling device, and a manually-operated switch for controlling the circuit-closer and regulating the actuating means for the controller.

23. A motor, a controlling device therefor, a circuit-closer for the motor, a generator driven by the motor and arranged to generate a variable voltage in proportion to the speed of the motor, an electromagnetic clutch dependent upon the variable voltage for causing the controlling device to be actuated by the movement of the motor but in proportion to said voltage, and a manually-operated switch for controlling the circuit-closer and for regulating the strength of the clutch.

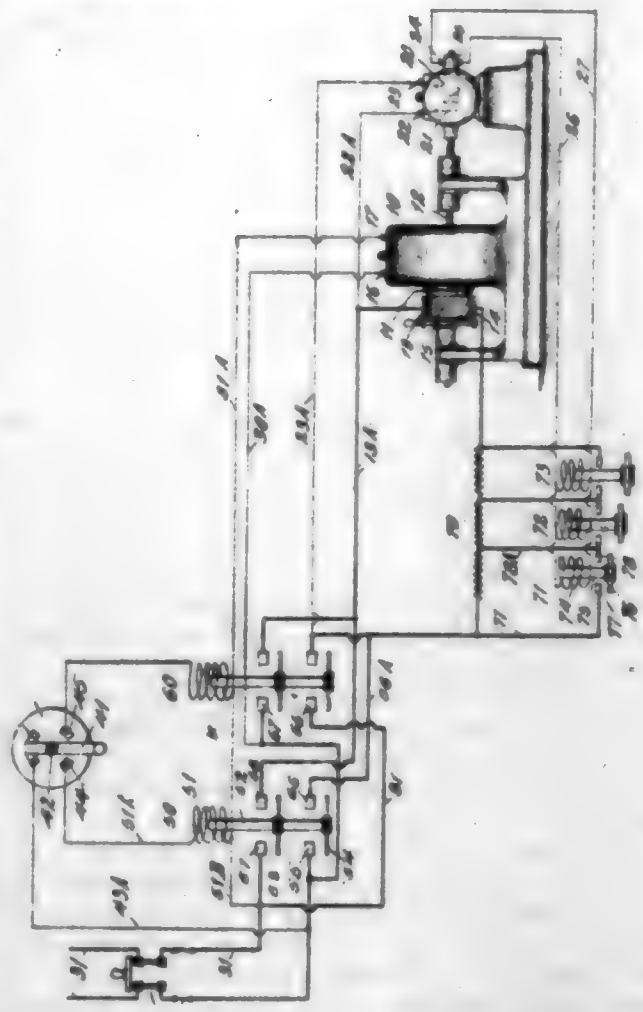
24. A motor, a controlling device therefor, a circuit-closer for the motor, a generator driven by the motor and arranged to generate a variable voltage in proportion to the speed of the motor, an electromagnetic clutch dependent upon the variable voltage for causing the controlling device to be actuated by the movement of the motor but in proportion to said voltage, lubricating means for the clutch, and a manually-operated switch for controlling the circuit-closer and for regulating the strength of the clutch.

25. A motor, a starting-switch therefor, a generator connected to run with the motor, an electromagnetic clutch in circuit with the generator so arranged that its strength will be proportional to the speed of the motor and generator, means for closing the circuit of the clutch, and automatic means for opening the circuit of the clutch while the motor is running.

26. A motor, a starting-switch therefor, a generator connected to run with the motor, an electromagnetic clutch in circuit with the generator so arranged that its strength will be proportional to the speed of the motor and generator, automatic means for opening the circuit of the clutch while the motor is running and manually-operated means for closing, regulating and opening said circuit.

27. A pulsating current-motor, an external source of alternating-current supply of practically constant value, for starting and running the motor, a generator driven by the motor and arranged to generate a direct current proportional in strength to the speed of the motor, a clutch having a winding in circuit with said generator, arranged to be magnetized thereby, the strength of such magnetization being proportional to that of the generated current, and automatic means for opening the clutch-circuit when the current in said circuit has risen to a predetermined strength.

816,931. SYSTEM OF MOTOR CONTROL. AXEL MAGNUSON, New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 16, 1905. Serial No. 287,555.



Claim.—1. An electric motor, a generator connected to run with the motor, a field for the generator, and a source of current-supply connected to the motor and to the field of the generator, and motor-controlling means separate from the field of the motor and operated by current from said generator.

2. An electric motor, a generator connected to run with the motor, a field for the generator, a source of current-supply, means for quickly exciting the generator-field when the current-supply is closed to the motor, and motor-controlling apparatus separate from the field of the motor and operated by current from the generator.

3. An electric motor, a starting-switch therefor, a generator connected to run with the motor, a field for the generator, and a

source of current-supply connected to the motor and to the field of the generator through the starting-switch, and a motor-controlling device separate from the field of the motor and operated by current from said generator.

4. An electric motor, a reversing-switch therefor, a generator connected to run with the motor, a field for the generator, a source of current-supply, contacts in said reversing-switch arranged to close a circuit to the motor and to the field of the generator, and means connected to the generator but separate from the field of the motor, for controlling the acceleration of the motor.

5. An electric motor, an electrically-actuated reversing-switch therefor, a generator connected to run with the motor, a field for the generator, a source of current-supply, contacts in said reversing-switch arranged to close a circuit to the motor and to the field of the generator, said generator arranged to control the acceleration of the motor, and a manually-operated circuit-closer.

6. An electric motor, having an armature and a field, a source of current-supply connected to the motor-field, a reversing-switch for the motor, a generator connected to run with the motor, a field for the generator, contacts in the reversing-switch to effect a reversal of the generator-field connections whenever the circuit through the motor-armature is reversed, and means operated by current from the generator to control the acceleration of the motor.

7. An electric motor, a generator connected to run with the motor, a field for the generator, a source of current-supply connected to the motor and to the field of the generator, an electroresponsive device arranged to control the acceleration of the motor, said electroresponsive device being actuated by the current of the generator.

8. An electric motor, a generator connected to run with the motor, a field for the generator, a source of current-supply connected to the motor-field and to the field of the generator, an electroresponsive device arranged to control the acceleration of the motor, said electroresponsive device being actuated, step by step, by the current of the generator.

9. An electric motor, a generator connected to run with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, a field for the generator and a source of current-supply connected to the motor and to the field of the generator, and a device separate from the field of the motor and dependent upon the variable voltage of the generator to control the movement of the motor.

10. An electric motor, an opposition element in the motor-circuit, a generator connected to run with the motor, a field for the generator, a source of current-supply connected to the motor and to the field of the generator, an electroresponsive device arranged to control the acceleration of the motor, said electroresponsive device being actuated by the current of the generator.

11. An electric motor having an armature and a field, an opposition element in the motor-armature circuit, a generator connected to run with the motor, a field for the generator, a source of current-supply connected to the motor-field and to the field of the generator, an electroresponsive device arranged to cut the opposition element out of the motor-armature circuit, said electroresponsive device being actuated step by step by the current of the generator.

12. An electric motor having an armature and a field, a resistance in the motor-armature circuit, a generator connected to run with the motor, a field for the generator, a source of current-supply connected to the motor-field and to the field of the generator, a plurality of electromagnets arranged to cut the resistance out of the motor-armature circuit, said electromagnets being actuated by the current of the generator.

13. An electric motor, having an armature and a field, a resistance in the motor-armature circuit, a generator connected with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, a field for the generator, a source of current-supply connected to the motor-field and to the field of the generator, a plurality of electromagnets arranged to short-circuit the resistance in the armature-circuit, said electromagnets being actuated one by one by the variable voltage of the generator.

14. An electric motor having an armature and a field, a resistance in the motor-armature circuit, an electrically-actuated reversing-switch for the motor, a generator connected with the motor and arranged to generate a voltage proportional in strength to the speed of the motor, a field for the generator, a source of current-supply connected to the motor-field and to the field of the generator, a plurality of electromagnets arranged to short-circuit the resistance in the armature-circuit, said electromagnets being actuated one by one by the variable voltage of the generator, and a manually-operated circuit-closer for the reversing-switch.

816,932. KEY-BOX FOR FIRE-ALARMS. DANIEL MCGLONE, Far Rockaway, N. Y. Filed Dec. 2, 1904. Serial No. 235,251.



Claim.—1. In combination a box, a door therefor, a lever within the box, a connection between the door and one end of the lever, a pawl on the lever, a cap-striking mechanism operated by the pawl of the lever, and means for firing a bomb from the cap-striking mechanism.

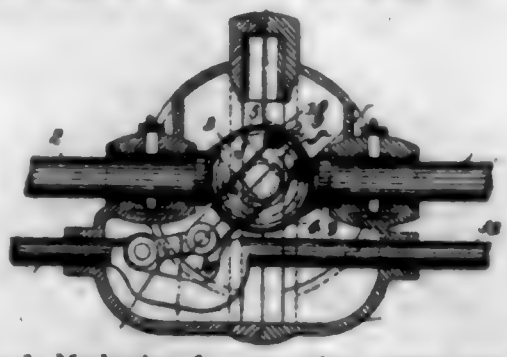
2. In combination a box, a door therefor, a lever within the box, a connection between the door and one end of the lever, a pawl on the opposite end of the lever, a stop carried by the lever for limiting the movement of the pawl, a cap-striking mechanism operated by the pawl of the lever, and means for firing a bomb from the cap-striking mechanism.

3. In combination a box, a door therefor, a lever within the box, a connection between the door and one end of the lever, a pawl on the opposite end of the lever, a spring secured at one end to the pawl and at its opposite end to the box, a cap-striking mechanism operated by the pawl of the lever, and means for firing a bomb from the cap-striking mechanism.

4. In combination a box, a door therefor, a lever within the box, a pawl on the lever, a connection between the door and one end of the lever, a cap-striking mechanism operated by the pawl of the lever, a spring secured at one end to the cap-striking mechanism and at the opposite end of the box.

5. In combination, a box, a door therefor, a lever within the box, a connection between the door and the lever, a pawl on the lever, means for limiting the movement of the pawl, a cap-striking mechanism operated by the pawl of the lever, and means for firing a bomb from the cap-striking mechanism.

816,933. MECHANISM FOR CONVERTING ROTARY MOTION INTO RECIPROCATORY MOTION. LUDWIG NEUMANN, Gleiwitz, Germany. Filed Apr. 8, 1904. Serial No. 202,161.



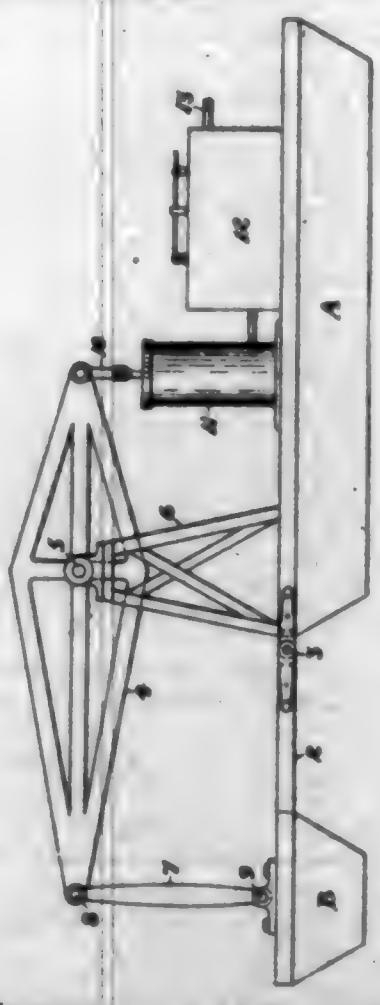
Claim.—1. Mechanism for converting motion, comprising in combination two disks mounted at an angle to their axes of rotation and parallel to each other, means connecting said disks with each other at the middle, an oscillating ring mounted between said disks, balls arranged between each side of said ring and each of said disks, cranks pivoted at one end to said oscillating ring, and a fixed frame to which the other ends of said cranks are pivoted, substantially as set forth.

2. Mechanism for converting motion, comprising in combination two disks mounted at an angle to their axes of rotation and parallel to each other, means connecting said disks with each other at the middle, an oscillating ring mounted between said disks, balls arranged between each side of said ring and each of said disks, cranks pivoted at one end to said oscillating ring, a frame to which the other ends of said cranks are pivoted, and means to alter the inclination of said disks, substantially as set forth.

3. Mechanism for converting motion, comprising in combination two disks mounted at an angle to their axes of rotation and parallel to each other, means connecting said disks with each other at the middle, an oscillating ring mounted between said disks, balls arranged between each side of said ring and each of said disks, cranks pivoted to a fixed support and to said oscillating ring, a toothed segment connected to one of said disks, a worm meshing with said toothed segment and means to turn said worm, substantially as set forth.

4. Mechanism for converting motion, comprising in combination two disks mounted at an angle to their axes of rotation and parallel to each other, means connecting said disks with each other at the middle, an oscillating ring mounted between said disks, balls arranged between each side of said ring and each of said disks, cranks pivoted at one end to said oscillating ring, a frame to which the other ends of said cranks are pivoted, a link connected to the end of said crank pivoted to said ring, and a rod pivoted to the opposite end of said link, substantially as set forth.

816,934. **WAVE-MOTOR.** CHARLES B. NEWELL, San Francisco, Cal., assignor of one-half to William L. Von, San Francisco, Cal. Filed June 19, 1905. Serial No. 265,926.

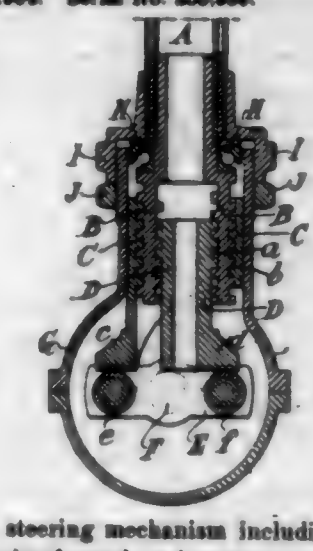


Claim.—1. In an apparatus of the character described, a main float, a supplemental smaller and lighter float, arms to the outer ends of which said float is fixed, said arms being loosely hinged to the main float, a walking-beam supported from the main float and projecting outwardly therefrom, a pitman connecting the outboard end of the walking-beam with the smaller float, and connection between the inboard end of the walking-beam and mechanism actuated thereby.

2. In a wave-utilizing apparatus, an approximately stationary main float having a frame fixed thereon, a walking-beam supported upon said frame with the outboard end projecting beyond the main float, a smaller float located at a distance from the main float, a pitman connecting the outboard end of the walking-beam with said smaller float, and distance-rods connecting the smaller float with the main float and mechanism actuated by the movement of the inner end of the walking-beam.

3. The combination in a wave-motor of a large main, heavily-ballasted float, a smaller float located at a distance from the main float, hinged distance-rods by which the relative positions of the floats are maintained, a frame mounted upon the main float, a walking-beam supported and tiltable upon said frame having the longer arm extending outwardly, a pitman connecting said walking-beam arm with the smaller float and mechanism connected with the inner end of the walking-beam through which the motion of the smaller float is transmitted.

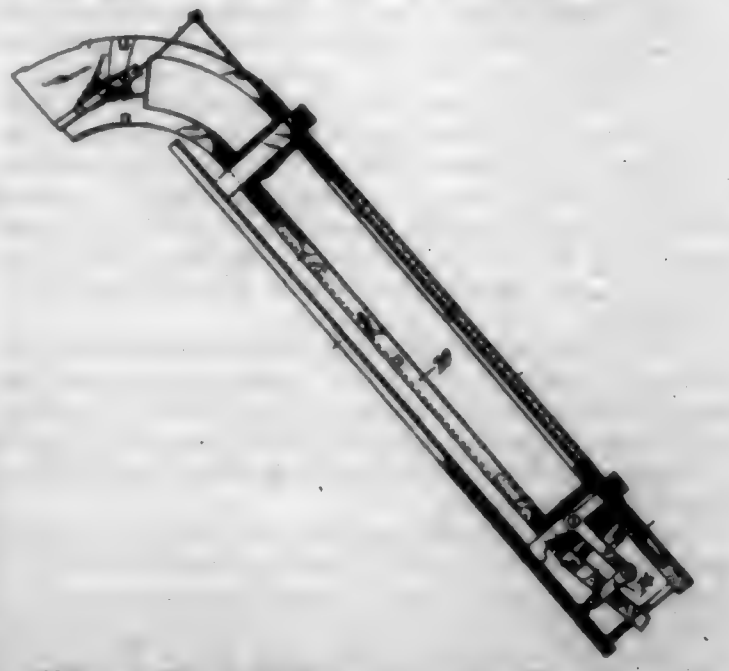
816,985. **STEERING MECHANISM FOR MOTOR-VEHICLES.** CHARLES M. J. PETIET, Villeneuve la Garenne, France, assignor to Société Anonyme des Automobiles Artès, Villeneuve la Garenne, France. Filed Dec. 8, 1904. Serial No. 235,836.



Claim.—1. A steering mechanism including in combination a rocking shaft, a pair of members bearing on opposite sides of said shaft respectively, each of said members having a complete screw-thread, the thread of one being in the opposite direction to the thread of the other, a third member having two screw-threads corresponding respectively to the threads upon the first two members, for pressing said members alternately forward, and threaded means for taking up play by adjusting the third member toward the shaft.

2. A steering mechanism for automobiles including in combination a pair of members *c* and *d* respectively, a rocking frame E, rollers *e* and *f* carried at opposite sides of said frame, in the line of movement of said members but unconnected thereto, an internal left-handed screw C carrying said member *c* and an external right-handed screw D carrying said member *d*, an intermediate double screw B engaging said screws C and D and adapted when rotated to move said screws C and D in opposite directions, and a nut I securing said screw B in place and adjustable to take up play between the members *c* and *d* and the rollers *e* and *f*.

816,936. **COIN-CONTROLLED APPARATUS.** MILBERT F. PRICE, Iowa City, Iowa. Filed June 8, 1904. Serial No. 210,954.



Claim.—1. The combination of a merchandise-chute, a coin-chute, two stops operating in the merchandise-chute individually to deliver the articles of merchandise, means at the discharge end of the coin-chute for operating one of said stops, and means including a spring connection at the upper end of the coin-chute for operating the other stop.

2. The combination of a merchandise-chute, a coin-chute, two

stops operating in the merchandise-chute individually to deliver the articles of merchandise, means at the discharge end of the coin-chute for operating one of said stops, means including a spring connection at the upper end of the coin-chute for operating the other stop, and means in connection with said means for operating the other or second stop to automatically return the first stop to protruded position upon the retraction of the second stop.

3. The combination of a merchandise-chute, a coin-chute, devices coacting with the merchandise-chute for individually delivering the articles of merchandise, and means for operating said devices, such means including a lever intermediately fulcrumed and having a spring-arm and a rigid arm, the rigid arm being arranged to be engaged by the coin.

4. The combination of a merchandise-chute, a coin-chute, two stops coacting with the merchandise-chute individually to deliver the articles of merchandise, an elbow-lever in connection with one stop, a link articulated to the elbow-lever, a second lever mounted on the coin-chute and connected with the link, one arm of the second lever lying across the receiving end of the coin-chute, a lever fulcrumed on the coin-chute and having a part forming a continuation of the coin-chute to be struck by the coin, and a connection between the last-named lever and the second or remaining stop.

5. The combination of a merchandise-chute, a coin-chute, two stops coacting with the merchandise-chute individually to deliver the articles of merchandise, an elbow-lever in connection with one stop, a link articulated to the elbow-lever, a second lever mounted on the coin-chute and connected with the link, one arm of the second lever lying across the receiving end of the coin-chute, a lever fulcrumed on the coin-chute and having a part forming a continuation of the coin-chute to be struck by the coin, and a connection between the last-named lever and the second or remaining stop, said second-named lever including a spring part.

6. The combination of a merchandise-chute, a coin-chute, two stops coacting with the merchandise-chute individually to deliver the articles of merchandise, an elbow-lever in connection with one stop, a link in connection with the elbow-lever, a second lever having connection with the link, and having a part extended across the receiving end of the coin-chute, a member movably mounted on the coin-chute, and forming a continuation thereof, a connection between said member and the second stop to operate the same, and a part in connection with the first stop and extending across the path of movement of said member which is mounted on the coin-chute.

7. The combination of a merchandise-chute, a coin-chute, two stops operating in the merchandise-chute individually to deliver the articles of merchandise, means at the discharge end of the coin-chute for operating one of the said stops, a member at the receiving end of the coin-chute and adapted to be engaged by the coin upon its insertion into the chute, a spring attached to said member, and a connection between the spring and the other stop to transmit operating movement thereto.

8. The combination of a merchandise-chute, a coin-chute, two stops operating in the merchandise-chute individually to deliver the articles of merchandise, means in connection with one stop and extending to the receiving end of the coin-chute to be engaged by the coin upon the insertion thereof into the chute whereby to operate the said stop, a lever in connection with the other stop, a link connected to the lever, and a movably-mounted member forming a continuation of the coin-chute and located at the discharge end thereof, said member being in connection with the link and adapted to be struck by the coin as it passes from the chute whereby to operate the second-named stop.

9. In a coin-controlled apparatus the combination with the merchandise-receptacle, of devices coacting therewith to control the merchandise movement and means for actuating said devices adapted to be engaged and set in motion by the coin, said means including a spring transmitting to said devices the movement imparted by the coin for the purpose set forth.

10. In a coin-controlled apparatus, the combination with a merchandise-receptacle, of devices coacting therewith to control the merchandise movement, a member adapted to be engaged and set in motion by the coin, a spring having one part attached to said member, and means in connection with another part of the spring for joining said spring with the said devices controlling the merchandise movement, whereby the spring transmits the movement of the coin from said member to said means.

11. In a coin-controlled apparatus, the combination of a merchandise-chute, two stops movable in and out of the merchandise-chute for the purpose set forth, means actuated by the coin retracting one stop, means for instantly returning or protracting said stop after the passage of the coin, means for protracting the other stop upon the retraction of the first stop, and means actuated by the coin after the actuation of the first-named means thereby, for retracting the second stop.

12. In a coin-controlled apparatus, the combination of a merchandise-chute, two independently-movable stops coacting therewith for the purpose specified, means actuated by the coin for moving one stop into inactive position, means for instantly returning said stop to active position, means for moving the other stop into active position upon the movement of the first stop into inactive position, and means actuated by the coin after the actuation of the first-named means thereby for returning the second stop to active position.

13. In a coin-controlled apparatus, the combination with the merchandise-receptacle, of devices coacting therewith to control the delivery of the merchandise, and means adapted to be engaged and set in motion by a coin, for transmitting to said devices their operating movement, said transmitting means including a movement-transmitting spring arranged to swing around a fixed center and connected at its ends with elements of said transmitting means.

816,937. FORMING OR MOLDING DEVICE. ISAAC A. ROHRER, Newark, N. J., assignor to National Biscuit Company, a Corporation of New Jersey. Filed May 17, 1904. Serial No. 208,360.



Claim.—1. In a forming or molding device, the combination, with an open frame, said frame being provided with inwardly-extending supporting projections, of a leaf or plate within the said frame and pivotally connected at its one end within said frame, so as to be capable of an oscillatory movement in the frame, said leaf or plate forming with said frame a forming-compartment, and means for raising said leaf or plate from said supporting projections and tilting the said leaf or plate at an angle for the removal of the formed or molded matter from said leaf or plate, substantially as and for the purposes set forth.

2. In a forming or molding device, the combination, with an open frame, said frame being provided with inwardly-extending supporting projections, of a pivoted leaf or plate within the said frame and pivotally connected at its one end within said frame, so as to be capable of an oscillatory movement in the frame, said leaf or plate forming with said frame a forming-compartment, means for raising said leaf or plate from said supporting projections and tilting the said leaf or plate at an angle for the removal of the formed or molded matter from said leaf or plate, and means for limiting the upward pivotal movement of said leaf, substantially as and for the purposes set forth.

3. In a forming or molding device, the combination, with an open frame, of a supporting means extending from said frame into the opening thereof, a leaf or plate having a portion resting upon said supporting means, said leaf or plate being pivotally connected at its one end with the said frame, so as to be capable of an oscillatory movement in the frame, and forming with said frame a forming-compartment, and means for raising the said leaf or plate from said supporting means and tilting the said leaf or plate at an angle for the removal of the formed or molded matter from said leaf or plate, substantially as and for the purposes set forth.

4. In a forming or molding device, the combination, with an open frame, of a series of leaves or plates forming with said frame forming-compartments, each leaf or plate being pivotally connected at its one end within the said frame, so as to be capable of an oscillatory movement in the frame, and a leaf or plate actuating member for raising the opposite end portions of said leaves or plates from said open frame, substantially as and for the purposes set forth.

5. In a forming or molding device, the combination, with a frame, of a central and longitudinally-extending rib, a series of leaves or plates forming with said rib and frame forming-compartments, each leaf or plate being pivotally connected at its one end within the said frame, so as to be capable of an oscillatory movement in the frame, and a leaf or plate actuating member slidably arranged upon said rib, all arranged for raising the opposite end portions of said leaves or plates from said open frame, substantially as and for the purposes set forth.

6. In a molding or forming device, the combination, with a frame, of a central and longitudinally-extending rib, a series of piv-

oted leaves or plates forming with said rib and frame forming-compartments, each leaf or plate being pivotally connected at its one end within the said frame, so as to be capable of an oscillatory movement in the frame, and a leaf or plate actuating member slidably arranged upon said rib, all arranged for raising the opposite end portions of said leaves or plates from said open frame, substantially as and for the purposes set forth.

7. In a forming or molding device, the combination, with a frame, of a central and longitudinally-extending rib, a series of leaves or plates forming with said rib and frame forming-compartments, each leaf or plate being pivotally connected at its one end within the said frame, so as to be capable of an oscillatory movement in the frame, a leaf or plate actuating member slidably arranged upon said rib, an actuating-slide movably arranged against the under edge of said rib, and a connecting means between said slide and the leaf or plate actuating member, all arranged for raising the opposite end portions of said leaves or plates from said open frame, substantially as and for the purposes set forth.

8. In a forming or molding device, the combination, with a frame, of a central rib, a series of pivoted leaves or plates forming with said rib and frame forming-compartments, a leaf or plate actuating member slidably arranged upon said rib, an actuating-slide movably arranged against the under edge of said rib, and a connecting means between said slide and the leaf or plate actuating member, substantially as and for the purposes set forth.

9. In a forming or molding device, the combination, with a frame having pintle-receiving perforations, a plate or leaf in said frame forming with said frame a forming-compartment, pintles connected with said plate or leaf for pivotally arranging said leaf or plate in said frame, and means arranged to permit of the removal of the plate or leaf from the said frame, substantially as and for the purposes set forth.

10. In a forming or molding device, the combination, with a frame having pintle-receiving perforations, a plate or leaf in said frame forming with said frame a forming-compartment, pintles connected with said plate or leaf for pivotally arranging said plate or leaf in said frame, and a finger-piece connected with said plate or leaf arranged to permit of the removal of said plate or leaf from the said frame, substantially as and for the purposes set forth.

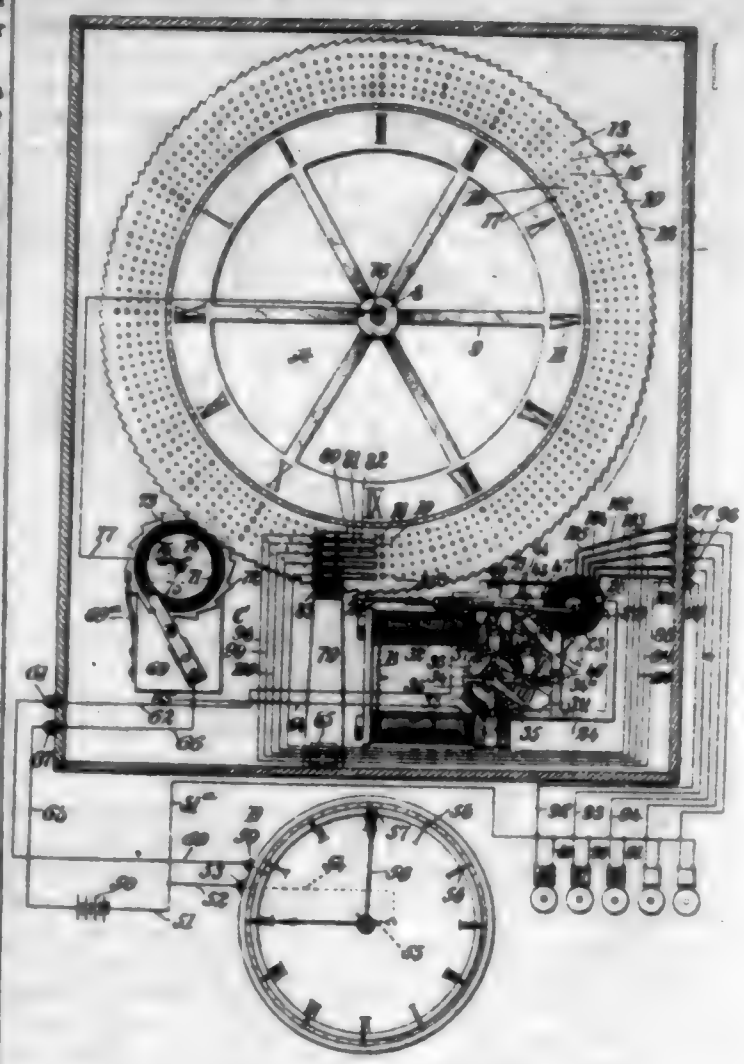
11. In a forming or molding device, the combination, with a frame, of a central rib, a series of pivoted leaves or plates, forming with said rib and frame forming-compartments, a leaf or plate actuating member slidably arranged upon said rib, an actuating-slide movably arranged against the under edge of said rib, a connecting means between said slide and the leaf or plate actuating member, and means connected with said slide arranged to permit of the removal of the plates or leaves from said frame, substantially as and for the purposes set forth.

12. In a forming or molding device, the combination, with a frame, of a central rib, a series of pivoted leaves or plates, forming with said rib and frame forming-compartments, a leaf or plate actuating member slidably arranged upon said rib, an actuating-slide movably arranged against the under edge of said rib, a connecting means between said slide and the leaf or plate actuating member, a finger-piece connected with said slide, and means connected with said finger-piece arranged to permit of the removal of the plates or leaves from the said frame, substantially as and for the purposes set forth.

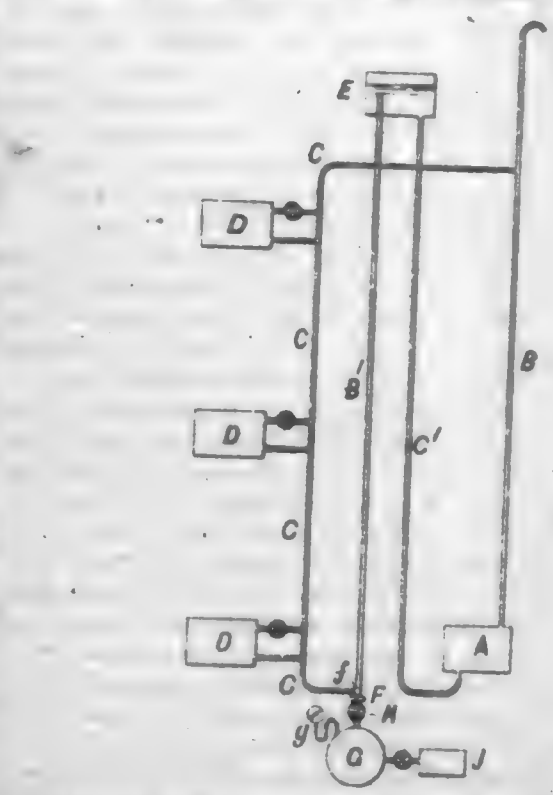
816,938. ELECTRIC PROGRAM-CLOCK. AUGUST L. ROSELL, Forest City, Iowa. Filed Mar. 10, 1905. Serial No. 249,330.

Claim.—1. The combination of time-controlled mechanism, contacts to be opened and closed thereby, electric motor mechanism to be energized and deënergized by the opening and closing of said contacts, said motor mechanism being provided with a revoluble shaft, disks of insulating material mounted upon said shaft and revoluble therewith, contact members mounted upon said disks, a metallic bridge connecting a contact member of one disk with a contact member of another disk so as to establish electrical connection between the contact members of said disks, separate brushes to be engaged by said contact members thus brought into electrical communication with each other, and separate alarm mechanisms respectively connected with said brushes.

2. The combination of electric motor mechanism provided with an armature having, when at rest, a certain normal position, a spring for bringing said armature into such position of rest, gearing connected with said armature and provided with a revoluble member having contacts, separate alarms connected with said contacts and adapted to be energized thereby when said revoluble member is rotated, means for temporarily restraining said revoluble member, mechanism connected with said armature for effecting the release of said revoluble member at predetermined intervals, and time-controlled electric mechanism for actuating said motor mechanism at said predetermined intervals.



816,939. WATER-CIRCULATING APPARATUS. JOSEPH N. RUSSELL, London, England. Filed Oct. 3, 1904. Serial No. 226,997.

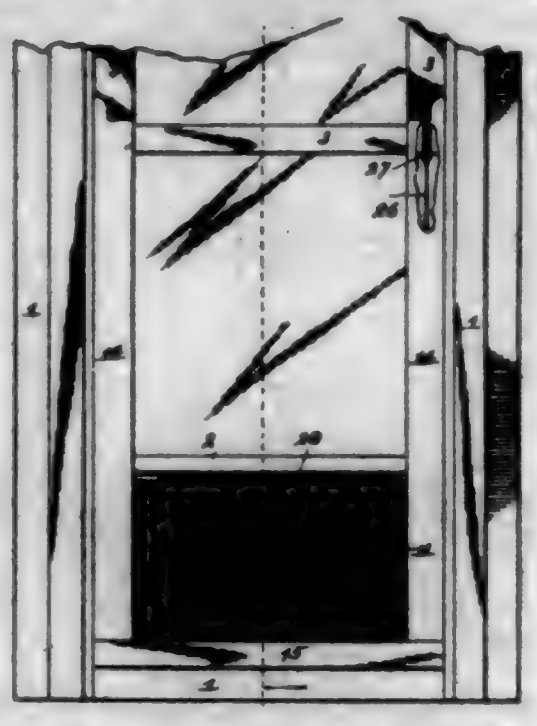


Claim.—1. A water system comprising an ascension-pipe, a service-pipe connected thereto at an elevated point, a pair of auxiliary pipes communicating respectively with said first pipes near the lower portions thereof, and in communication above, and means for developing an upward current of gas in one of said auxiliary pipes.

2. A water system comprising an ascension-pipe, a service-pipe connected thereto at an elevated point, an elevated tank, a secondary ascension-pipe delivering to said tank and communicating with said service-pipe at the lower portion thereof, means for developing an upward current of gas in said secondary ascension-pipe, and a pipe

leading down from said tank and communicating with said ascension-pipe at the lower portion thereof.

816,940. SELF-ADJUSTING WINDOW-SCREEN. WILLIAM H. SAWYER, Kansas City, Mo. Filed July 18, 1905. Serial No. 270,180.



Claim.—1. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, and arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms.

2. The combination with a window-frame and a sash operatively arranged therein, of a bracket secured to said sash and provided with bearings, a roller journaled in said bearings, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, and arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms.

3. The combination with a window-frame and a sash operatively arranged therein, of a roller, drums forming the ends of said roller, a screen secured at its ends to said roller and the window-frame, cables attached to the drums to rotate the roller while the sash is being closed, side pieces secured to the window-frame, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, and arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms.

4. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms, and a hood secured to the sash a slight distance above the roller, substantially as described.

5. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to the roller and the window-frame, side pieces secured to the window-frame, springs secured to said side pieces, cables attached to the roller and the springs, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, and arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms.

6. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, retainers which automatically engage the longitudinal edges of the screen and hold them against the side pieces, arms suitably connected to the side pieces and yieldingly held in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms, and a small roller 16 for holding the screen in contact with the side pieces.

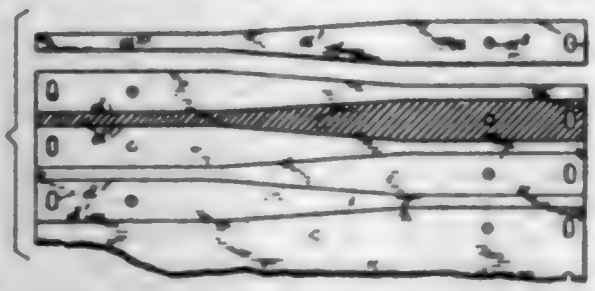
7. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, arms pivotally secured to said side pieces, means for normally holding said arms in the path of the roller, rocker-bars mounted upon the side pieces, hooks carried by said rocker-bars and adapted to engage and hold the longitudinal edges of the screen in contact with the side pieces, and means connecting said rocker-bars to the arms whereby the hooks will be disengaged from the screen when the arms are forced out of the path of the roller.

8. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at itsends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, arms pivotally secured to said side pieces, means for normally holding said arms in the path of the roller, rocker-bars mounted upon the side pieces, hooks carried by said rocker-bars and adapted to engage and hold the longitudinal edges of the screen in contact with the side pieces, crank-arms carried by the rocker-bars, and means connecting the crank-arms to the pivoted arms whereby the hooks will be disengaged from the screen when said pivoted arms are forced out of the path of the roller.

9. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to the window-frame, arms pivotally secured to said side pieces, means for normally holding said arms in the path of the roller, rocker-bars mounted upon the side pieces, hooks carried by said rocker-bars and adapted to engage and hold the longitudinal edges of the screen in contact with the side pieces, crank-arms carried by the rocker-bars, and links connecting said crank-arms to the pivoted arms whereby the hooks will be disengaged from the screen when said pivoted arms are forced out of the path of the roller.

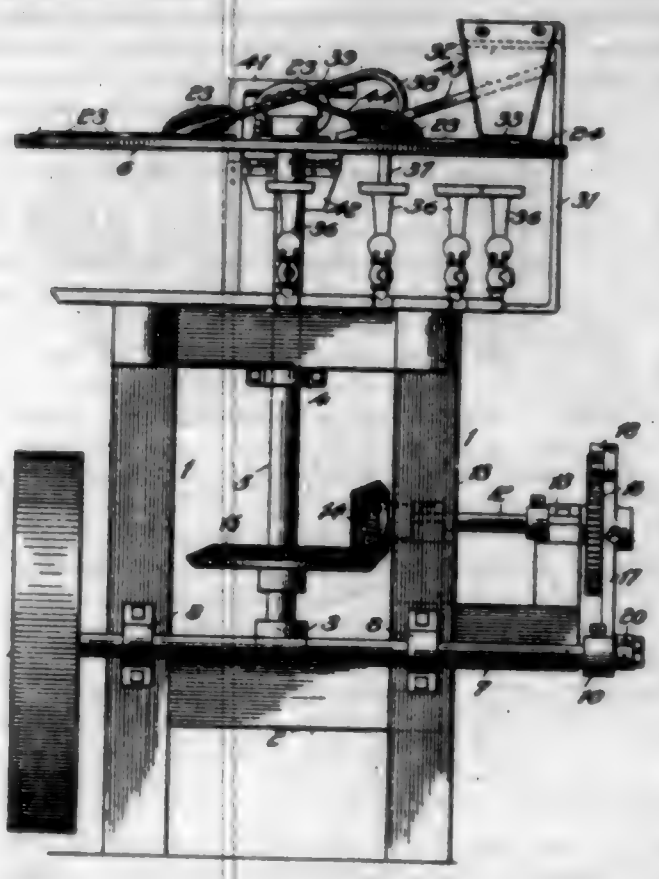
10. The combination with a window-frame and a sash operatively arranged therein, of a roller, a screen secured at its ends to said roller and the window-frame, cables attached to the roller to rotate the latter while the sash is being closed, side pieces secured to to the window-frame, retainers for engaging the screen, arms pivotally secured to said side pieces and tapering toward their opposite ends, and means for normally holding said arms in the path of the roller, said arms being arranged to swing the retainers out of engagement with the screen when the roller contacts with said arms.

816,941. EAVES-TROUGH HANGER. ALBERT E. SCHEIER, Glenville, Ohio. Filed July 12, 1904. Serial No. 216,451.



Claim.—An eaves-trough cross-bar and loop-hanger made of a single piece, and comprising a wide portion at one end for the rigid cross-bar, a narrower portion at the other end to provide a flexible part for interlocking with the cross-bar and a tapering mid-portion of a length to afford sufficient support to the free edge of the eaves-trough, said end portions being of the same length so that successive pieces, inverted end for end, may be struck from a sheet at a single operation without waste.

816,942. MACHINE FOR SECURING SOLDER RINGS TO METAL CAPS. FREDERICK W. SCHULTZ, Baltimore, Md. Filed May 8, 1905. Serial No. 259,561.



Claim.—1. A machine for attaching previously-formed rings of solder to the upper surface of metal caps, comprising a mold to hold the cap and the unattached ring of solder, said mold having means which enable it to be tilted; means for heating the ring of solder after it has been seated on top of the cap, and means for tilting the mold to eject the cap with the solder attached.

2. A machine for attaching previously-formed rings of solder to the upper surface of metal caps, comprising a series of molds each to receive and hold a cap stationary while the unattached ring of solder rests thereon; means for heating the molds sufficiently to cause the rings of solder to fuse to the caps; means for tilting the molds successively one after the other to eject the cap, and means for restoring the molds to their normal position.

3. A machine for attaching previously-formed rings of solder to the upper surface of metal caps, comprising a series of molds to receive the metal caps and unattached rings of solder—said molds being arranged in an endless path and each mold being pivoted so as to permit of being tilted as it advances; means for heating the molds, and means for tilting the pivoted molds to eject the caps.

4. A machine for attaching previously-formed rings of solder to the upper surface of metal caps, comprising a series of molds to receive the caps and unattached rings of solder; means for advancing the molds while the caps and rings of solde are held stationary with respect to said molds; means for heating the molds; means for tilting the molds as they advance to eject the caps, and means for returning the molds to their normal positions after the caps have been ejected.

5. A machine for attaching rings of solder to the edge of metal caps comprising a movable perforated table, a plurality of molds to receive the caps and pivoted to said movable table so as to move independently of the latter, means for heating the molds, means for swinging the molds in a direction at right angles with respect to the table while they and the table are advancing and means for swinging the molds to their normal positions after the caps have been ejected.

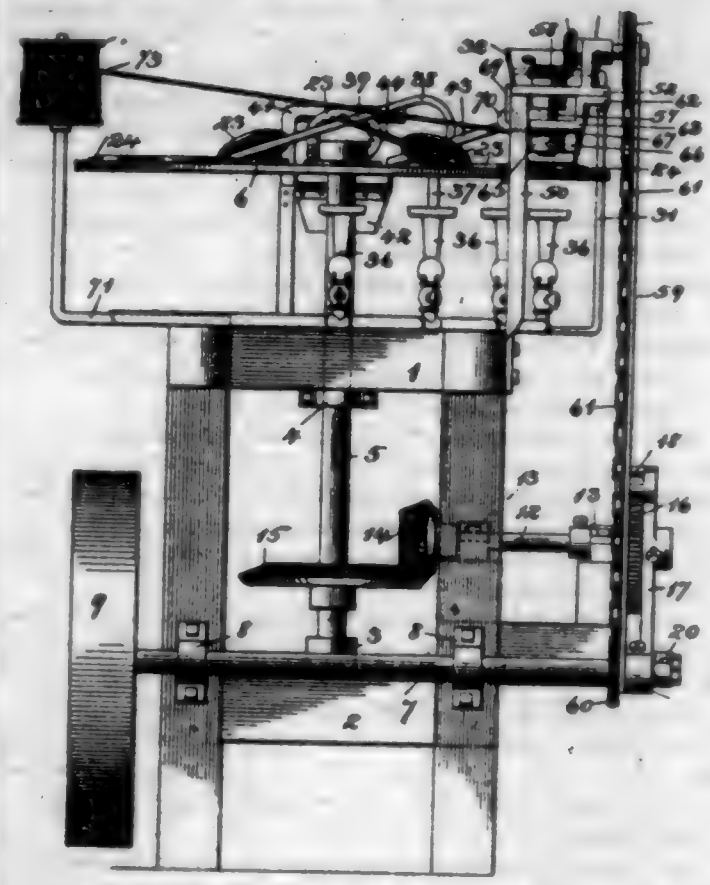
6. A machine for applying solder to metal caps having a circular table provided with a plurality of perforations, a mold hinged to said table adjacent each of said perforations, means for revolving the table intermittently to advance the molds, means for moving the molds on their hinges while the table is revolved to eject the caps, and means for returning the molds to their normal positions after the caps are ejected.

7. A machine for applying solder to metal caps having a circular table provided with a plurality of perforations, a mold hinged to said table adjacent each of said perforations, a stationary bar projecting over the table in the path of the molds, means for heating said molds, and means for revolving said table to cause the molds to be upset by the said bar.

8. A machine for applying solder to metal caps having a circular table, a plurality of molds hinged to said table, means for heating the molds, means for revolving said table to advance the molds, means for upsetting the molds to discharge the cap, and stationary arms for righting the molds after the caps are discharged.

9. A machine for applying solder to metal caps having a table, a plurality of molds on said table and each mold having a circular depression with an annular groove in which the flange of the cap fits and which forms a mold to shape the solder on the cap, means for heating the molds and means for revolving the table to upset the molds to eject the caps.

816,943. MACHINE FOR FORMING AND SECURING SOLDER TO METAL CAPS. FREDERICK W. SCHULTZ, Baltimore, Md. Filed Sept. 7, 1905. Serial No. 277,284.



Claim.—1. A machine for forming wire-solder rings and applying them to metal caps, comprising a wire-solder supply; means for shaping the wire-solder to the form of a ring; means for cutting the ring of solder from the supply, and means for placing the wire-solder ring upon the top surface of the cap.

2. A machine for forming wire-solder rings and applying them to can-caps, comprising a cap-holder; means for imparting to a strand of wire-solder the shape of a ring, means for placing the wire-solder ring on the top surface of the cap; and means for applying heat to cause the solder ring to fuse sufficiently to become attached to said top surface of the cap.

3. A machine for supplying wire-solder for attachment to metal caps comprising a wire-solder supply, a mandrel around which the solder is wrapped to shape it and means whereby one wrap of solder on the mandrel is cut while another is being wound.

4. A machine for forming and applying solder to metal caps comprising a cap-holder, a wire-solder supply; a mandrel around which the solder is wrapped to shape it; means for cutting the shaped solder in a predetermined length and depositing it on the cap in the holder, and means for heating the shaped solder after it is in position on the cap.

5. A machine for forming wire-solder rings and applying them to can-caps, comprising a plurality of cap-holders; means for imparting to a strand of wire-solder the shape of a ring; means for successively presenting the said cap-holders to the position where each cap will receive on its upper surface a ring of solder, and means for fusing the solder rings sufficiently to attach them to said caps.

6. A machine for applying solder to metal caps comprising a plurality of cap-holders, a wire-solder supply; means for cutting the wire-solder in predetermined lengths, and means for presenting the cap-holders and caps successively to receive the holder as it is cut.

7. A machine for applying solder to metal caps comprising a plurality of cap-holders, a wire-solder supply; means for depositing the wire-solder on the caps in the holders in predetermined lengths; means for presenting the holders successively to receive the solder,

and means for heating the lengths of solder after they have been deposited on the caps.

8. A machine for applying solder to metal caps comprising a wire-solder supply, a mandrel around which the solder is wrapped to shape it; a plurality of cap-holders; means for presenting the cap-holders to the mandrel successively; means for cutting the shaped solder and depositing it on the caps in the holders, and means for heating the solder after it has been deposited on the caps.

9. A machine for applying solder to metal caps comprising a wire-solder supply, a mandrel around which the solder is wrapped to shape it; a plurality of movable cap-holders; means for successively presenting the holders to the mandrel; means whereby as each holder is presented to the mandrel the wire-solder will be cut and deposited on the cap therein, and means for heating the cut solder after it has been deposited on the cap.

10. A machine for supplying wire-solder rings for attachment to metal caps comprising a wire-solder supply; a pendent mandrel around which the solder is wrapped in a plurality of coils; a cutter-blade attached to the mandrel; and means for forcing one coil of wire against the cutter-blade while another coil is being wound on the mandrel, whereby each coil as soon as cut will drop from said mandrel.

11. A machine for supplying wire-solder rings for attachment to metal caps comprising a wire-solder supply; a pendent mandrel around which the solder is wrapped in a plurality of coils; stationary arms about the upper part of the mandrel, and a cutter-blade attached to the mandrel below said arms, whereby the wire-solder winds on the mandrel beneath said arms and the coils of wire-solder will be pressed toward the cutter-blade.

12. A machine for supplying solder for attachment to metal caps comprising a wire-solder supply; a pendent mandrel around which the solder is wrapped in a plurality of coils; a cutter-blade at one side of the mandrel and revolving with the latter; and means for partly cutting one coil in order to hold it on the mandrel before the coil next below is completely severed.

13. A machine for supplying solder for attachment to metal caps comprising a wire-solder supply, a mandrel around which the solder is wrapped in a plurality of coils; a cutter-blade rigidly secured to and revolving with the mandrel; a stationary cam-surface at one side of the mandrel and adjacent which the cutting end of the cutter-blade passes whereby as the wire-solder is wound around the mandrel the several coils will be moved longitudinally along the mandrel to effect the cutting of one coil at a time.

14. A machine for supplying solder for attachment to metal caps comprising a wire-solder supply, a mandrel around which the solder is wound in a plurality of coils; a cutter-blade rigidly secured to and revolving with the mandrel and having a cutting-notch, and means for forcing the coils successively into the notch of the cutter as the mandrel revolves.

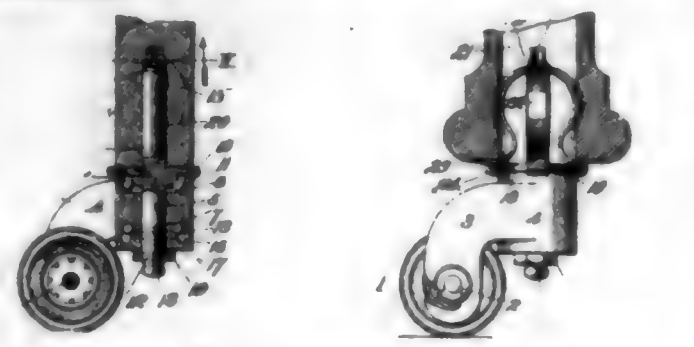
15. A machine for supplying solder for attachment to metal caps comprising a wire-solder supply, a revoluble mandrel around which the solder is coiled; a cutter-blade secured to the mandrel and extending in a crosswise direction with respect to the coils of solder; means whereby the solder coils may be moved along the mandrel as the latter revolves to effect the cutting of one coil and to secure the remaining coils to prevent their unwinding.

16. A machine for applying solder to metal caps comprising a carrier, a plurality of cap-holders on said carrier; means for supplying wire-solder; means adjacent the carrier for cutting the wire-solder in predetermined lengths to be delivered successively on the caps in the holders, and means for moving the carrier to present the holders and caps thereon in succession to receive the cut solder.

17. A machine for applying solder to metal caps comprising a carrier, a plurality of cap-holders sustained by said carrier; means for supplying wire-solder; means adjacent the carrier for cutting the wire-solder in predetermined lengths to be delivered successively on the caps in the holders; means for moving the carrier intermittently to present the holders and caps thereon successively to receive the cut solder, and means for heating the cut solder after it is in position on the cap.

816,944. **BALL-BEARING CASTER.** JOHN W. SELF, Kansas City, Mo. Filed Jan 19, 1905. Serial No. 241,725.

Claim.—1. A ball-bearing caster, comprising a roller, arms carrying the same and provided with an integrally-formed vertically-disposed head having ball-races at its upper and lower ends; a stem extending loosely through said head and provided with a rigid bearing-cone disposed downwardly and having a flange overlying said head; said stem having its lower end threaded and terminating below the latter in a head of smaller diameter than the threaded portion; a threaded cone engaging the threaded portion of the stem; a series of balls occupying each ball-race and engaged therein by their respective cones; a lock-nut engaging the threaded stem and the proximate cone; and a skeleton portion projecting from the upper end of the stem.

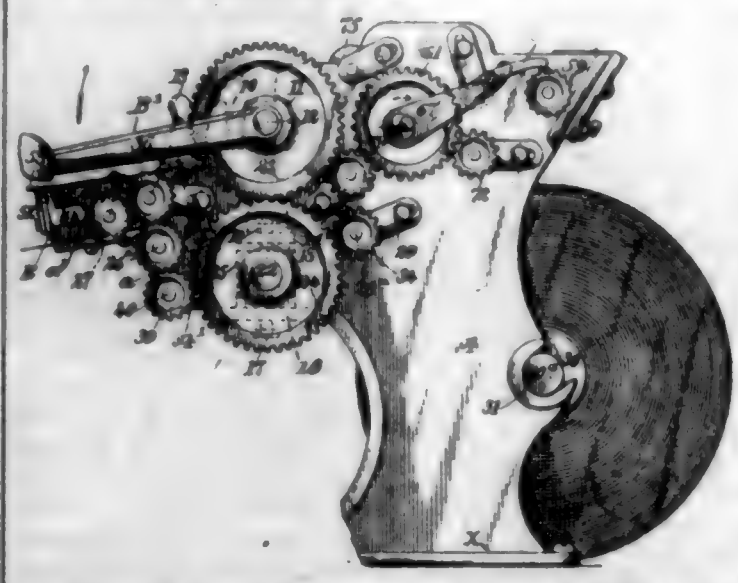


2. The combination of a roller, arms carrying the same, a head rigid with said arms and having recesses at its upper and lower ends, and a vertical passage connecting with said recesses, a stem extending through said passage and above and below said head and threaded at its lower end and provided with a skeleton portion at its extreme upper end, a cone rigid with the stem and depending into the upper recesses of the head, a cone screwed upon the lower portion of the stem and projecting up into the lower recess of the head, a lock-nut on the stem bearing against the lower side of the lower cone, and balls in said recesses engaged by said cones.

3. The combination with a vertical stem provided with a rigid horizontal flange, a caster having a head rotatably mounted upon the lower portion of the stem, below said flange and of smaller diameter than the latter, and a resilient frame fitting slidingly at its upper end on the stem and provided at its lower end with inwardly-disposed hooks engaging said flange peripherally and with a bowed portion between said hooks and the point of engagement with the stem.

4. The combination of a vertical stem provided with a rigid horizontal flange, a caster having a head rotatably mounted upon the lower portion of the stem below said flange and of smaller diameter than the latter, and a resilient frame, consisting of a pair of crossed springs each of knob shape in side view, and having their crossed or upper ends fitting slidingly on said stem, and their lower ends terminating in inwardly-disposed hooks engaging the periphery of said flange outward of the head of the caster.

816,945. **CUTTING ATTACHMENT FOR PRINTING-PRESSES.** JOHN W. SMITH and GEORGE U. HARN, Jr., Columbus, Ohio. Filed Feb. 29, 1904. Serial No. 196,772.



Claim.—1. In a printing-press, a main frame, a printing-cylinder mounted in the frame, a paper-feed device also mounted in the frame, a sliding and spring-pressed auxiliary frame mounted in the main frame, a knife mounted for cutting and withdrawal movements on the said auxiliary frame, which movements are at an angle to the sliding movement of the auxiliary frame in the main frame, an actuating device for the said auxiliary frame controlled by the said feed, a tension device for holding the knife in one position, and means for forcing the knife to another or cutting position from the printing-cylinder, as described.

2. In printing-presses, a main frame, feed devices for the paper

mounted in the main frame, an auxiliary frame having sliding and tension-controlled movement in the main frame, a knife connected with the said frame by links, one of the links being provided with an extension, a spring bearing on the extension-link, normally holding the knife in an upper position, means for engaging the extension from the supporting-link of the knife to force the knife down to cutting position, and means for imparting an advance movement to the auxiliary frame at the time the knife is in its lowermost or cutting position and at practically the same speed as the speed at which the paper is fed, as described.

3. In printing-presses, a main frame, feed devices for the paper, a sliding and spring-pressed auxiliary frame mounted in the main frame, a support over which the paper is adapted to pass, cams arranged for advancing the said auxiliary frame and releasing the same at intervals, a driving connection between the said cams and the feed devices, a tension-controlled knife mounted to slide on the auxiliary frame, links pivoted to the auxiliary frame and to the knife, one of the links having an extension, and a movable member for engaging the extension of the link to move the knife into cutting position, as described.

4. In printing-presses, a main frame, a tension-controlled auxiliary frame mounted to slide in the main frame, means for operating the auxiliary frame, a knife carried by the auxiliary frame, links in parallel order pivoted at one of their ends to the auxiliary frame and at their other ends to the knife, guides for the knife, an extension from one of the said links, for the purpose described, a movable member for engaging the extension of the link to operate the knife, a spring for returning the knife to inoperative position.

5. In printing-presses, a main frame, a tension-controlled auxiliary frame mounted to slide in the main frame, a knife carried by the auxiliary frame, links in parallel order pivoted at one of their ends to the auxiliary frame and at their other ends to the knife, guides for the knife, an extension from one of the said links, a printing-cylinder mounted in the said frame, an arm from the printing-cylinder arranged for engagement with the extension from the said link, a spring having downward bearing on the said extension, the lower edge of the extension of the link being beveled for engagement with the said arm from the said printing-cylinder, whereby to raise and lower the knife, as set forth.

6. In printing-presses, a main frame, a tension-controlled auxiliary frame mounted to slide in the main frame, a knife carried by the auxiliary frame, links in parallel order pivoted at one of their ends to the auxiliary frame and at their other ends to the knife, guides for the knife, an extension from one of the said links having a beveled edge, a crank-arm adapted for engagement with the extension from the said link, a spring having downward bearing on the said extension of the link, feed devices and means for imparting an intermittent movement to the auxiliary frame from the feed devices, as specified.

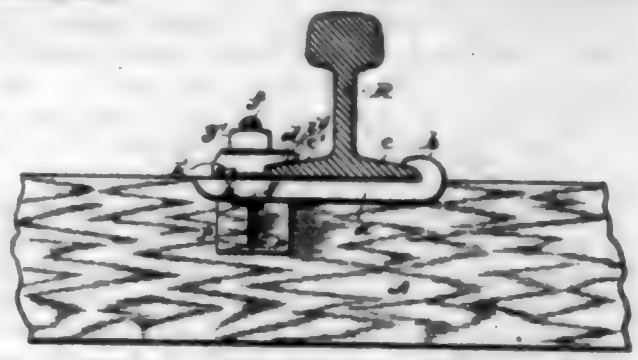
7. In a printing-press, a main frame, a tension-controlled auxiliary frame mounted to slide in the main frame, a feed device for the material, cams for operating the auxiliary frame, means for operating the cam from the feed device, a knife having sliding and guided movement on the auxiliary frame, links pivoted to the knife and to the auxiliary frame, one of the links having an extension, a crank-arm adapted to engage the extension of the link to operate the knife, and a spring engaging the said extension of the link.

8. In a printing-press, a main frame, a knife-frame carried thereby, a knife having guided movement on its frame, links pivoted to the knife-frame and to the knife, one of the links having an extension, a spring engaging the extension of the link, and a crank-arm adapted to engage the said extension of the link to operate the knife.

9. In a printing-press, a main frame, feed-rollers mounted in the frame an auxiliary frame mounted to slide in the main frame in front of the feed-rollers and provided with projections at its sides, a spring secured to the main frame and to the auxiliary frame, cams engaging the projections of the auxiliary frame, means for operating the cams from the feed-rollers, and a reciprocating knife carried by the auxiliary frame.

816,946. RAILWAY-RAIL STAY. HIRAM H. SPONSELLER, Wadsworth, Ill., assignor of one-half to Edward Lass, Ottumwa, Iowa. Filed Sept. 11, 1905. Serial No. 277,861.

Claims.—1. The improved rail-stay consisting of a bar extending across the bottom of the rail and provided on one end with a rail-griping jaw, a jaw mounted adjustably on the opposite end of the bar, means formed separate from the bar for clamping the jaw in its position a lateral extension on one end of the bar and a tie abutment on said extension.



2. A rail-stay consisting of a bar extending across the bottom of the rail and provided on one end with a rail-griping jaw, and on the opposite end with ribbed rail-bearings, a jaw disposed over said rail-bearings, and means for adjustably clamping said jaw to the bar.

3. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw and at the opposite end with grooves in its top, hard-metal plates seated in said grooves and provided with ribs on their tops, a jaw disposed over the said plates, and means for adjustably clamping said jaw to the bar.

4. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw, and at the opposite end with a longitudinal slot, a jaw mounted adjustably on said slotted end of the bar, and a bolt passing through the said slot and clamping the jaw in its adjusted position.

5. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw, a longitudinal slot in the opposite end of the bar, ribbed rail-bearings on the bar at opposite sides of the slot, a jaw mounted on the slotted end of the bar, and a bolt passing through the slot and clamping the jaw in its adjusted position.

6. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw, a longitudinal slot in the opposite end of the bar, grooves in the bar at opposite sides of the slot, rail-bearing plates seated in said grooves, a jaw mounted adjustably on the slotted end of the bar, and a bolt passing through the aforesaid slot and clamping the jaw in its adjusted position.

7. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw, reinforcing-ribs extending around the back and onto the top of said jaw, a longitudinal slot in the opposite end of the bar, grooves in the bar at opposite sides of said slot, rail-bearing plates seated in said grooves, a jaw mounted adjustably on the slotted end of the bar, a ribbed hard-metal plate secured to the under side of the overhanging lip of the adjustable jaw, and a bolt passing through the aforesaid slot and clamping the jaw in its adjusted position.

8. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw and at the opposite end with a longitudinal slot, a lateral extension on the slotted portion of the bar, a tie abutment depending from said extension, rail-bearings disposed at opposite sides of the slot and provided with rail-griping ribs disposed parallel with the bar, a jaw mounted adjustably on the slotted portion of the bar, and a bolt passing through the aforesaid slot and clamping the jaw in its adjusted position.

9. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw and at the opposite end with a longitudinal slot, longitudinal grooves in the bar at opposite sides of the slot, a lateral extension on the slotted portion of the bar, a tie abutment depending from said extension, plates seated in the aforesaid grooves and formed with rail-griping ribs disposed parallel with the bar, a jaw mounted adjustably on the bar, and a bolt passing through the aforesaid slot and clamping the jaw in its adjusted position.

10. In combination with a rail and a bar disposed at the base of said rail, a jaw fulcrumed at one end on said bar and bearing at its opposite end upon the top of the flange of the rail, and means depressing said jaw onto its said bearings.

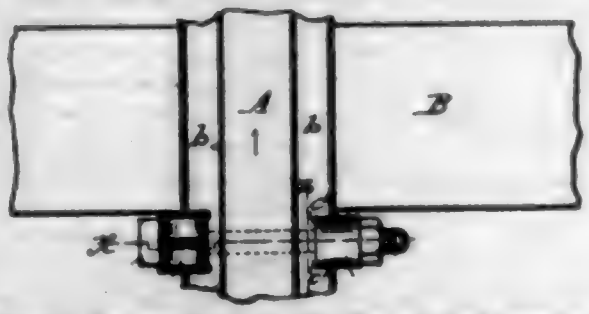
11. A rail-stay consisting of a bar extending across the bottom of the rail and formed at one end with a rail-griping jaw and at the opposite end with a longitudinal slot, grooves in the bar at opposite sides of the slot, rail-bearing plates seated in said grooves and provided on their tops with ribs disposed parallel with the bar, a lateral extension on the slotted portion of the bar, a tie abutment depending from said extension, a jaw provided on the under side of its outer portion with a transverse bearing-rib and on the under side of its inner overhanging portion with a ribbed hard-metal plate, and a bolt pass-

ing through the aforesaid slot and clamping the jaw in its adjusted position as set forth and shown.

12. A rail-stay consisting of a bar extending across the bottom of the rail and provided at one end with a jaw adapted to grip one of the rail-flanges, a jaw mounted adjustably on the opposite end of the bar for griping the other rail-flange and provided with a transverse rib on its under side by which it is fulcrumed on the bar, and means for clamping the latter jaw in its position as set forth.

13. A rail-stay consisting of a bar extending across the bottom of the rail and provided at one end with a jaw adapted to grip one of the rail-flanges, a jaw mounted longitudinally adjustable on the opposite end of the bar for griping the other rail-flange and provided with a transverse groove in its under side, a hard-metal rib secured in said groove and affording a fulcrum for the jaw on said bar, and means for clamping the latter jaw in its position as set forth.

816,947. RAILWAY-RAIL STAY. HIRAM H. SPONSELLER, Wadsworth, Ill., assignor of one-half to Edward Lass, Ottumwa, Iowa. Filed Nov. 16, 1905. Serial No. 287,553.



Claim.—1. The combination with the rail and cross-tie, of a rail-stay comprising two separately-formed jaws applied to opposite sides of the rail and disposed normally in a line parallel with the side of the cross-tie, one of said jaws engaging the side of the cross-tie and the other jaw free therefrom, and means clamping the jaws in their positions and permitting the free jaw to be forced toward the cross-tie by the creeping action of the rail and maintaining the jaws at right angles to the rail as set forth.

2. The combination with the rail, and underlying cross-tie, of a rail-stay comprising two separately-formed jaws gripping the opposite rail-flanges and disposed normally in a line parallel with the side of the cross-tie, one of said jaws abutting against the side of the cross-tie and the other jaw free therefrom, and a bolt extending across the bottom of the rail and contiguous thereto and operative for clamping said jaws in their positions, said bolt being adapted to swing laterally whereby the free jaw is permitted to move toward the cross-tie as the rail tends to creep and thereby increase the gripe of the two jaws on the said rail-flanges as set forth.

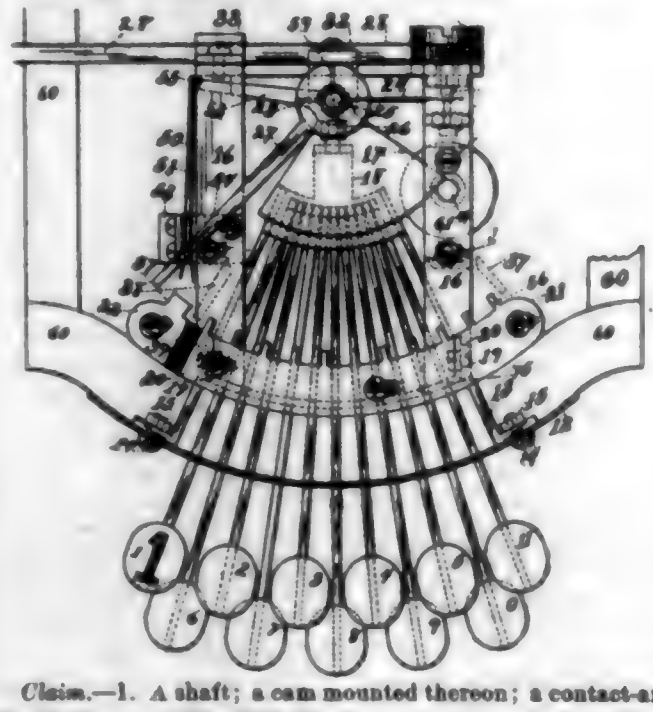
3. The combination with the rail and cross-tie, of a rail-stay comprising two separately-formed jaws gripping the respective flanges of the rail and disposed normally in a line parallel with the side of the cross-tie, one of the jaws abutting against the cross-tie and the other jaw free therefrom, and a bolt extending contiguously across the bottom of the rail and clamping the jaws in their positions, said bolt having a swinging connection with the tie-abutting jaw to permit the free jaw to move toward the cross-tie as the rail tends to creep and to maintain the two jaws at right angles to the rail-flanges as set forth.

4. The combination with the rail and cross-tie, of a rail-stay consisting of two separately-formed jaws, each provided with a vertical back extending above the edge of the rail-flange and with a transverse aperture, the top of which is in line with the bottom of the rail, a bolt passing through said apertures and provided with a head and a nut, each of which bears on the back of a jaw and has its bearing extending above the rail-flange as set forth.

5. A railway-rail stay comprising two separately-formed jaws, one of which is provided with a horizontal groove receiving one of the rail-flanges and with a breast abutting against the side of the cross-tie, and the other provided with a horizontal groove receiving the other rail-flange, and disposed free from the cross-tie, said jaws being provided with coinciding apertures, and a bolt passing through said apertures and extending across and contiguous to the bottom of the rail and clamping said jaws in their positions, the aperture of the abutting jaw being tapered inwardly and the aperture of the free jaw tapered outwardly whereby the said bolt is adapted to swing laterally to permit the latter jaw to be forced toward the cross-tie by the creeping action of the rail to cause the two jaws to increase their grip on the rail as set forth.

6. A railway-rail stay comprising two separately-formed jaws provided with horizontal grooves receiving the respective rail-flanges and with serrated flange-gripping plates confined in said grooves, one of the jaws provided with a breast abutting against the side of the cross-tie and the other jaw free therefrom, coinciding apertures in said jaws intersecting the bottoms of the grooves, a bolt passing through said apertures and extending across the bottom of the rail and clamping the jaws in their positions and having a fulcrumed connection with the tie-abutting jaw whereby the said bolt is adapted to swing laterally to permit the other jaw to be forced toward the cross-tie by the creeping action of the rail and thereby increase the gripe of the two jaws on the rail as set forth.

816,948. CONTROLLER FOR AUTOMATIC TELEPHONE SYSTEMS. ALTON B. STEVENS, Fall River, Mass. Filed July 13, 1905. Serial No. 269,429.



Claim.—1. A shaft; a cam mounted thereon; a contact-arm; a series of contacts with which the contact-arm may be moved successively into engagement; a series of manually-operated parts operatively connected with said cam, whereby said contact-arm may be moved into engagement with one or more of said series of contacts.

2. A shaft; a contact-arm fixed thereon; a cam fixed to said shaft; a pivoted member engaging said cam; a series of parts, any one of which may be moved into engagement with, and move said pivoted member, all being so designed that each part moves said member a different amount and causes a corresponding difference in the movement of the cam, shaft, and contact-arm.

3. A shaft; a contact-arm fixed thereto; a cam mounted thereon; a pivoted member engaging the cam; a series of levers to engage and move said pivoted member.

4. A shaft; a contact-arm fixed thereto; a cam fixed to said shaft; a pivoted member engaging the cam; a series of levers, all of which are capable of equal movements, and each of said levers having an extension thereon differing in length from that of any other, and engaging said pivoted member, whereby the pivoted member, cam, and shaft may give to the contact-arm movements of corresponding lengths.

5. A shaft; a contact-arm fixed thereto; a series of levers having uniform movements, and provided with extensions of different lengths; means operatively connected with said shaft, and designed to be engaged by the extensions on said levers, whereby a full movement of any lever will cause the shaft, and hence the contact-arm, to move a distance peculiar to the lever moved, but different from that peculiar to any other lever.

6. A shaft; a gear fixed thereto, in combination with a governor, which comprises a gear, meshing with said gear fixed to the shaft; a ratchet-wheel integral with said gear, and loose on the shaft; a disk fast to said shaft; a pawl pivoted to said disk; arms pivoted to said disk, and provided with shoes to engage a friction-disk fast to the governor-frame; all being designed to regulate the speed with which the shaft moves in one direction, and to provide a regulator which is self-contained.

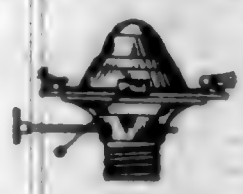
7. A series of levers; a shaft; a lock-bar in locking engagement with said levers; a hook-lever; means whereby a movement of said lever causes the lock to become disengaged from said levers, and leaves each one free to be operated; means whereby a movement of the shaft out of its normal position, caused by a movement of any one

of the levers, causes the lock again to lock all of the other levers; and permits the used lever, on its return to normal position, to become locked also.

8. In a controller, a shaft provided with a metal contact-arm; a metal piece loosely mounted upon the shaft, but in frictional engagement with the shaft; two points, between which the free end portion of the metal piece is free to move, one of said points being electrically connected with ground.

9. In a controller, a frame, having a governor mounted therein; a shaft and a gear fixed thereto; said frame being pivoted, and provided with means whereby the mechanism of said governor may be adjusted and secured in engagement with said gear on the shaft.

816,949. CHIMNEY-FASTENER FOR LAMPS. JOHN STEWART, Tarentum, Pa. Filed Sept. 26, 1905. Serial No. 280,113.



Claim.—In a lamp-burner, the combination with a flat flange carried by the burner, two hooked-shaped inwardly-projecting lugs carried by said flange, of a third lug, a resilient member secured in said third lug and extending part way around the edge of the flange coincident therewith, a loop formed on said resilient member, said loop being disposed in a plane parallel with the flange, and said loop extending inwardly over the flange, said loop being formed with an inversely-arc-shaped portion corresponding in curvature to the periphery of the base of a chimney, and said loop being adapted to bear against the chimney and maintain the same in engagement with the first-named lugs.

816,950. RAILROAD-TIE. HENRY W. TAYLOR, AURORA, and DULA M. RUSSELL, Naperville, Ill. Filed May 1, 1905. Serial No. 258,254.



Claim.—1. In a railway-tie the combination of the body of the tie provided with recesses in the upper side thereof and having rigid lips overhanging said recesses, cushion-blocks situated in said recesses, rails having flanges located in said recesses upon said blocks and beneath said lips, said blocks being movable longitudinally lengthwise of the rails in the spaces beneath the bottoms of the rails and above the bottoms of the recesses and while seated in the bottoms of said recesses, whereby they may be driven out without lifting the rails or depressing the tie, and removable positive holding means for holding the blocks against longitudinal movement.

2. In a railway-tie the combination of the body of the tie having recesses provided with overhanging lips, blocks situated in said recesses, rails having flanges situated in the recesses upon said blocks and beneath said lips, and clamps secured to the sides of the body of the tie and overlapping the ends of said blocks for holding them against longitudinal movement.

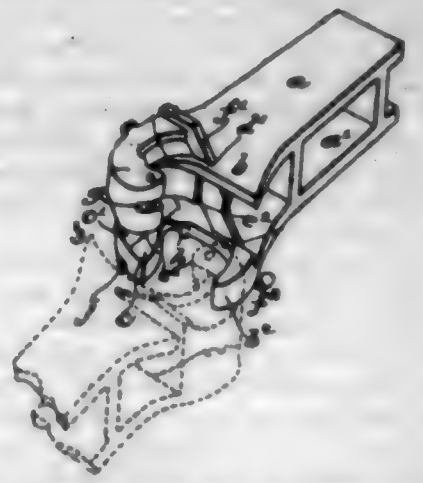
3. In a railway-tie the combination of the body of the tie having recesses and overhanging lips, cushion-blocks situated in said recesses, the rails having flanges arranged in said recesses upon said blocks and beneath said lips, and clamps having side flanges secured to the sides of the body of the tie and overlapping the ends of said blocks, and lips overlapping the flanges of the rails.

816,951. CAR-COUPLING. JOHN B. WADE, New York, N. Y. Filed Dec. 14, 1904. Serial No. 236,798.

Claim.—1. A car-coupling comprising a draw-bar, a draw-head, an inclined seat thereon, an oppositely-disposed side horn, a non-rotary slidable locking-jaw having a countour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.

2. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, guides or ways in said draw-head rearwardly of said guides or buffers and disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.

3. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.



8. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, guides or ways in said draw-head rearwardly of said guides or buffers and disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and a flange and an extension thereon moving in said ways respectively whereby the drawing strains on said locking-jaw are transmitted to said draw-head and said draw-bar.

4. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, said horns projecting both above and below said lower guide or buffer, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.

5. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, guides or ways in said draw-head rearwardly of said guides or buffers and disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling, mounted and having direct movement on said seat or way, and having a flange and an extension thereon moving in said ways respectively whereby the drawing strains are transmitted to said draw-head and said draw-bar, and means limiting the extent of movement of said locking-jaw from impact with an opposed coupling.

6. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, upper and lower guides or buffers spaced apart, said lower guide or buffer connecting said horns, a spur projecting from said upper buffer, and guides or ways in said draw-head disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat and below said spur, a flange and an extension thereon moving in said ways respectively whereby the drawing strains are transmitted to said draw-head and said draw-bar, and means limiting the extent of movement of said locking-jaw from impact with an opposed coupling.

7. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, upper and lower guides or buffers spaced apart, said lower guide or buffer connecting said horns, a spur projecting from said upper buffer, an overhung incline thereon, guides or ways in said draw-head disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat and below said spur, a flange and an extension thereon moving in said ways respectively whereby the drawing strains are transmitted to said

draw-head and said draw-bar, and means limiting the extent of movement of said jaw from impact with an opposed coupling.

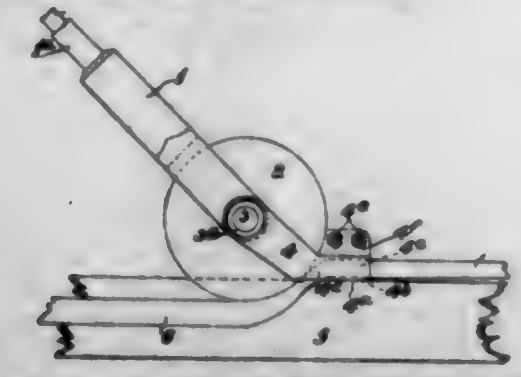
8. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, said horns projecting both above and below said lower guide or buffer, opposed stops carried by said side horn, and on the bottom of said guide or buffer respectively, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.

9. A car-coupling comprising a draw-bar, a draw-head, comprising a side horn on the lower portion thereof, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, said lower guide or buffer having a bulged portion adapted to engage said first-mentioned side horn, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way, and means carried by said jaw whereby the drawing strains are transmitted to said draw-head and said draw-bar.

10. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, a ledge or seat thereon, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, guides or ways in said draw-head rearwardly of said guides or buffers and disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said seat or way and said rest or ledge, and having a flange and an extension thereon moving in said said ways respectively whereby the drawing strains thereon are transmitted to said draw-head and said draw-bar, and means limiting the extent of movement of said locking-jaw from impact with an opposed coupling.

11. A car-coupling comprising a draw-bar, a draw-head comprising a side horn on the lower portion thereof, a ledge or seat thereon, an inclined seat or way thereon, an oppositely-disposed lower side horn, an upper guide or buffer within said horns, a lower guide or buffer connecting said horns, guides or ways in said draw-head rearwardly of said guides or buffers and disposed on opposite sides of the center line of said draw-bar, a non-rotary slidable locking-jaw having a contour like that of the Janney type of coupling mounted and having direct movement on said rest or ledge and said seat or way and having a flange and an extension thereon moving in said ways respectively whereby the drawing strains thereon are transmitted to said draw-head and said draw-bar, means limiting the extent of movement of said locking-jaw from impact with an opposed coupling, and a rabbet and fillet on said inclined seat and said slidable locking-jaw respectively.

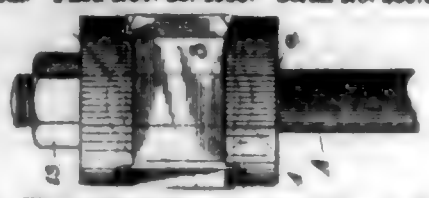
816,952. CALKING-TOOL. ROBERT J. WEBSTER, Jarrow, England. Filed Oct. 20, 1905. Serial No. 283,593.



Claim.—1. In a calking-tool, the combination, with a tool-holder shank provided with a forked end and a pin, of a calking-disk journaled on the said pin, and a guide for the oakum provided with a forked portion mounted on the said pin, said guide having also a slot the end portion of which conforms closely to the edge of the said disk, and a bearing-surface for resting on the planks arranged at an angle to the said shank.

2. In a calking-tool, the combination, with a tool-holder shank provided with a forked end and a pin, of a calking-disk journaled on the said pin, and a guide for the oakum formed of two separable longitudinal sections secured together and provided with a forked portion mounted on the said pin, said guide having also a slot the end portion of which conforms closely to the edge of the said disk, and a bearing-surface for resting on the planks arranged at an angle to the said shank.

816,953. CUTTER-HEAD FOR SHAPERS. CHARLES BACKMAN, Alameda, Cal. Filed Nov. 22, 1905. Serial No. 288,096.



Claim.—1. The combination of a rotatable spindle, clamp members thereon, an intermediate substantially tangentially disposed cutter, and means carried by the members permitting the cutting angle of the cutter to be changed.

2. The combination of rotatably-supported clamp members, a tangentially-arranged cutter, and rockable bearings carried by said members and supporting said cutter.

3. The combination of rotatably-supported clamp members, a knife intermediate of said clamp members, and substantially tangentially disposed rockable seats carried by the clamp members and supporting the knife, and said knife having a lengthwise adjustment in said seats.

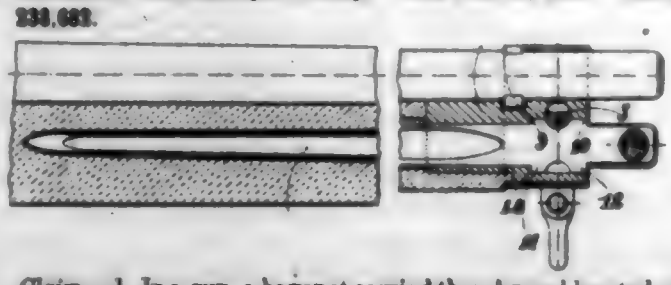
4. The combination of a spindle, collars thereon, rockable knife-seats carried by the collars, a knife supported by said seats, and arranged tangential to the spindle, and means for clamping the collars and knife.

5. The combination of a rotatable spindle, collars thereon, segmental seats carried by said collars and turnable in planes at right angles to the adjacent faces of the collars, knives supported by said seats, said knives arranged substantially tangential to the spindle and means for clamping the collars and knife together.

6. The combination of a rotatable spindle, collars having transversely-extending grooves on their opposed faces, segmental knife-seats fitting the said grooves, means for holding the seats in position in the grooves, tangentially-arranged knives between opposed seats, and means for locking the collars and knives in operative position.

7. The combination of a rotatable spindle, collars thereon, opposed rockable knife-seats on the adjacent faces of the collars, a tangentially-arranged knife supported by said seats and having a lengthwise adjustment in the seats to project more or less beyond the collars, and means for locking the knife and collars in operative position.

816,954. ARRANGEMENT FOR FIXING BAYONETS. ANDRÉ BERTHIER, Constantinople, Turkey. Filed Dec. 28, 1904. Serial No. 238,682.

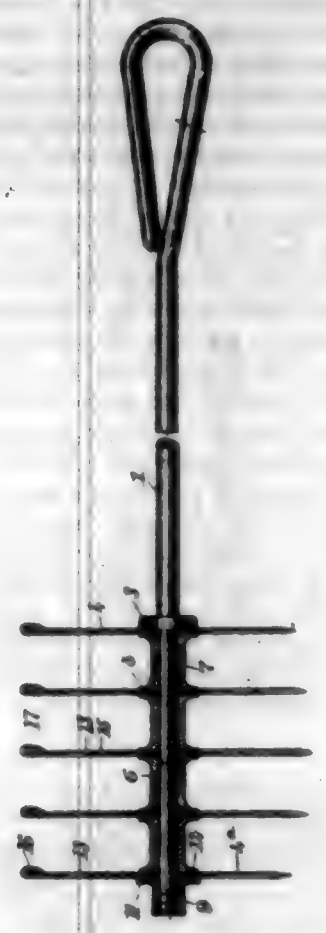


Claim.—1. In a gun, a bayonet carried thereby and located when not in use as a weapon in a chamber in the gun-stock with the point of the bayonet toward the gun-breech, said bayonet provided with a recess, and an adjustable means carried by the gun and cut away to form a passage, and said means adapted when moved to one position to engage in the recess of the bayonet, thereby securing it from movement and when moved to another position, permitting of the bayonet being withdrawn through said passage.

2. A bayonet arranged in the gun-stock under the gun-barrel, the point of the bayonet being directed toward the gun-breech, and means for securing the bayonet in position when used as a weapon or not, said means consisting of a rotatable bolt formed of a cylinder with a flat portion which permits the blade to pass through it at the required moment, the said bolt also securing the upper band to the gun barrel and stock, the heel of the bayonet acting as a cover and engaging in its two positions with projections provided in a sleeve arranged below the gun-barrel, substantially as described.

816,955. MEAT-TENDERER AND VEGETABLE-CHOPPER. FRANK BEUCKMAN, East St. Louis, Ill. Filed July 14, 1905. Serial No. 269,611.

Claim.—1. A device of the class described, comprising a bar having a fixed collar, a plurality of blades having openings disposed upon said bar, a plurality of sleeves disposed between said blades and maintaining the same apart, and means for clamping said blades to said collar, said blades having auxiliary openings near the edges thereof, to receive said bar.



2. A device of the class described, having a rod with a fixed collar, a plurality of blades mounted upon said rod, a plurality of thimbles disposed between said blades and maintaining the same apart, said rod having a threaded extremity, a nut adapted to screw upon said extremity, and interlocking means between said nut and the outermost of said blades.

3. A device of the class described, comprising a bar having a fixed collar, a plurality of blades having alining openings receiving said bar, thimbles disposed between said blades and maintaining the same apart, said blades having cutting edges on three sides and butt edges for pounding, on the opposite side, said blades having auxiliary alining openings which may receive said bar, said bar having a threaded extremity and a nut mounted upon said extremity and having projecting pins on the inner face thereof, the outermost blade having openings receiving said pins.

816,956. **HAIR-PIN.** GEORGE H. BIGELOW, San Francisco, Cal. Filed Apr. 10, 1905. Serial No. 254,894.

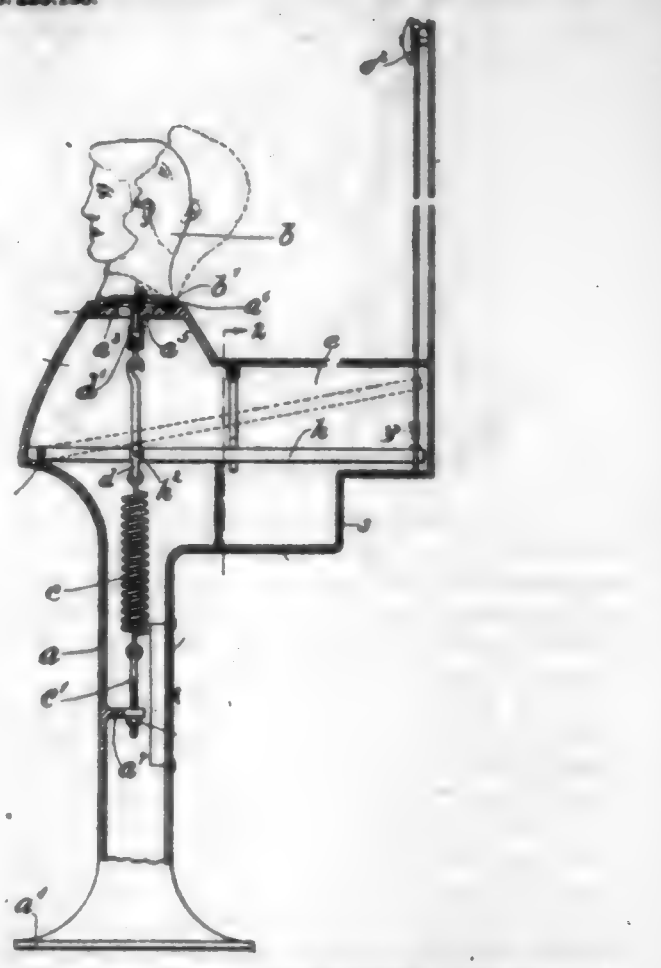


Claim.—1. A hair-pin comprising a single piece of wire doubled to form a loop and diverging sides and having the sides or legs overlapping at a point between the ends of the pin and having the diverging guiding-fingers below the said overlapping portions, the loop at the top of the pin having one arm made longer than the other whereby to provide an offset in connection with one of the legs of the pin to set the latter in rear of the other leg, substantially as set forth.

2. A hair-pin bent between its ends and having its legs overlapping between their ends, and having at its bend an offset whereby one leg of the pin is arranged in rear of the other to permit the legs to extend parallel with each other and to operate alongside of each other, substantially as described.

3. A hair-pin consisting of a single piece of wire doubled to form a loop at its upper end and diverging side members, the upper portion of the loop being bent outward to form a finger-hold one side of which is lower than the other, which lower side projects beyond the opposite leg of the pin to allow the leg in connection therewith to pass over the other leg and one of the legs of the pin having an inwardly-projecting crimp and the other leg having an inwardly-projecting bend with the point of the bend overlapping the crimp of the opposite member, and diverging guiding-fingers below the crimp and bend, substantially as set forth.

816,957. **EXERCISING-MACHINE.** ROBERT W. BLAISDELL, Beverly, Mass., assignor to Garden City Strength Testing Machine Company, Beverly, Mass., a Corporation of Maine. Filed Sept. 8, 1904. Serial No. 223,130.



Claim.—1. An exercising-machine comprising a support, and a spring-tensioned head or member, said head or member having a neck portion resting upon said support and constructed and arranged whereby said head may be rocked in any direction about the outer edge of the neck.

2. An exercising-machine comprising a support having a top, a laterally oscillatory member having an annular outer edge resting on said top, and a spring exerting a pull on said member to hold it against said top, whereby, by a blow, said member may be rocked about its outer edge.

3. An exercising-machine comprising a support having a recessed top, a member having a concave bottom resting in said top, and a spring connected to said member through an aperture in said top.

4. An exercising-machine comprising a body-shaped support, a rocking member supported thereon, a lever pivoted on said body, a universal joint connecting said lever with said member, a spring exerting its tension to maintain said member on said body, and an indicating device in operative relation to the free end of said lever.

5. A machine of the character described comprising a support, a laterally-rocking member thereon, a lever connected to said member and raised by the rocking thereof, a spring which opposes the rocking of said member, a gong, and a free striker resting on the free end of said lever and adapted to be thrown thereby toward said gong.

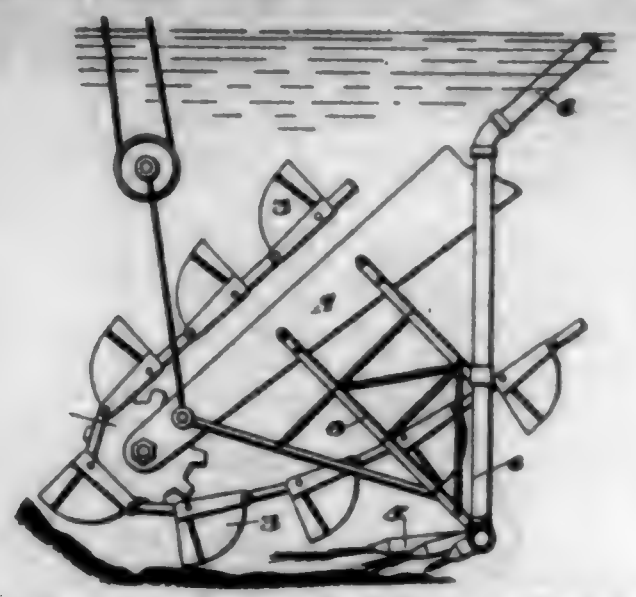
816,958. **DREDGER AND BED-ROCK CLEANER.** PIERRE BOUREY, Weaverville, Cal. Filed Aug. 9, 1905. Serial No. 273,467.

Claim.—1. The combination with a bucket-dredge, of a jet apparatus whereby the gold and sand is ejected from the crevices of the bed-rock and delivered into the path of travel of the buckets.

2. An endless-chain bucket-dredge, means by which the buckets are caused to travel over the submerged bottom, jet-tubes disposed in the angle between the bottom and the path of travel of the buckets before reaching said bottom, and means for supplying a medium under pressure to be discharged through said jet-tubes and in the direction of travel of the buckets.

3. The combination with an endless-bucket dredge and the sup-

port thereof, of nozzles located in an angle between the bottom and the point at which the buckets reach the bottom and discharging against the bottom and in the direction of travel of the buckets, a pipe through which the fluid under pressure is discharged through said nozzles, and supporting-braces extending from the pipe and nozzles to the bucket-chain support.

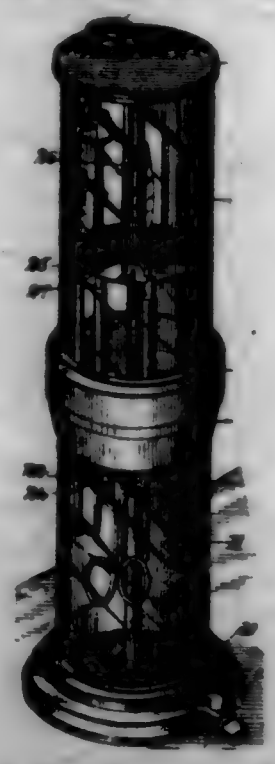


4. A device for ejecting material from the cavities of a submerged bottom and into the path of travel of a chain of dredge-buckets, said device consisting of nozzles disposed in an arc substantially inclosing the path of travel of the buckets, said nozzles discharging forwardly and inwardly, and a pipe for supplying a fluid under pressure to said nozzle.

5. A device for ejecting gold and material from the cavities of submerged bed-rock, said device consisting of nozzles extending transversely across the path of travel of dredger-buckets and in the rear and behind the point where said buckets reach the bottom, other nozzles extended in front of the transverse nozzles and discharging inwardly to intersect the discharge of the first-named nozzles, and means for supplying fluid under pressure to said nozzles.

6. A device for ejecting material from the cavities of a submerged rock bottom, said device consisting of a pipe extending transversely and having arms or branches extending upon each side and inwardly from the transverse portion, nozzles made in the transverse portion increasing in diameter from the center outward of the device, other nozzles of increased diameter made in the side arms or branches, all of said nozzles convergent to a common point in advance of the device.

816,959. **STERILIZING AND ANTISEPTIC CASE WITH STAND FOR SURGICAL INSTRUMENTS.** PASQUALE BRISANTI, New York, N. Y. Filed Sept. 25, 1905. Serial No. 279,968.



Claim.—1. An antiseptic case, comprising a pair of sections, one of said sections having a base provided with a passage for liquid and means for closing said passage, the other section being provided with a removable plug, whereby an antiseptic liquid can be introduced and discharged, and means within the casing for supporting instruments.

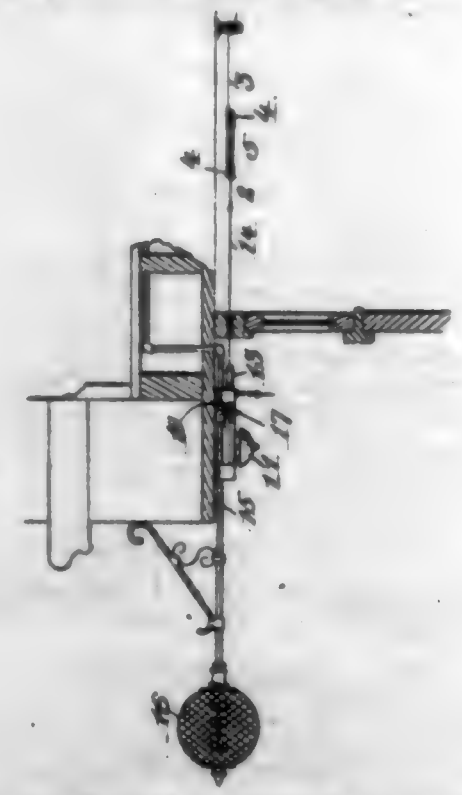
2. An antiseptic case, comprising a pair of sections removably secured together by a hermetic joint, one of said sections being provided with a base, and a stand removably mounted on said base for supporting instruments.

3. An antiseptic case comprising a pair of sections removably secured together, one of said sections having a base, a rod removably mounted on said base, a tube fitting over said rod, a rod at the top of said tube engaging the top of the other section, whereby the rods and tube are held in position between the sections, and means on said tube for supporting instruments.

4. The combination of a pair of sections secured together and constituting a casing, one of said sections having a base, a rod removably mounted on said base, a second rod having a hollow portion fitting over the first-mentioned rod and engaging said base at one end, said rod also engaging the top of the other section, whereby it is securely held between the sections when they are secured together, said second rod being provided with means for holding instruments.

5. A case having a pair of sections in combination with a stand mounted therein, said stand being held in position by said sections and being removably mounted with respect thereto, a pair of plates mounted at a distance from each other on the stand, one of said plates having a series of slots for the reception of instruments, and the other plate having two series of slots, one series being adapted to receive the ends of the instruments held by the other plate and the other series being adapted to support instruments independently, and a series of springs mounted on the first plate and projecting over said slots for the purpose of securing instruments therein.

816,960. **FIRE-ALARM APPARATUS.** LOUIS H. BRITTON, Lisbon, Ohio, assignor of one-half to George B. Harvey and one-fourth to Harry V. George, Lisbon, Ohio. Filed Mar. 23, 1905. Serial No. 251,633.



Claim.—1. A connector for use in fire-alarm apparatus, involving a plurality of sections, each having a lateral eye, the lateral eye of one embracing the other at the juncture between said sections, to provide a sliding joint and a loop, and fusible substance filling said loop.

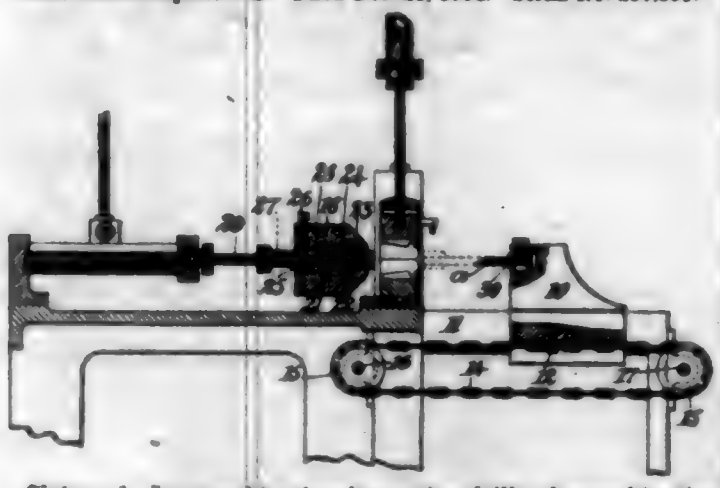
2. In a fire-alarm apparatus, the combination of audible and visual alarms, an extensible connector, a support to which one end of the extensible connector is jointed, the opposite end thereof being directly coöperative with said alarms, and the connector normally holding the alarms out of action and involving a fusible substance to hold it in contracted relation, the fusible substance, when melted, serving to permit the simultaneous action of the alarms.

3. The combination of a connector involving movably-connected sections, a fusible substance to hold the connector normally in contracted relation, a shank, a sleeve frictionally embracing said shank, one end of the connector being coiled about said sleeve and the opposite end of the connector being directly coöperative with an alarm.

4. The combination of an alarm a connector involving movably-connected sections, a fusible substance to hold the connector normally contracted, a shank, and a split sleeve upon the shank, the sleeve having a projection and the shank a groove to receive the projection, one end of the connector being coiled around the sleeve and the other end thereof being directly coöperative with an alarm.

5. The combination of a bell and an actuator therefor, a light normally out of action, a lever arranged, when thrown, to put the light into action, the actuator having a striker to operate the lever to cause the action of the light, an extensible connector united with said actuator and consisting of movably-connected sections, a fusible substance to hold the connector normally contracted, and a fixed support with which the connector is joined.

816,961. **DRILL-SHARPENING MACHINE.** JAMES J. BROSSART, Grand Rapids, Wis. Filed Dec. 30, 1904. Serial No. 239,599.

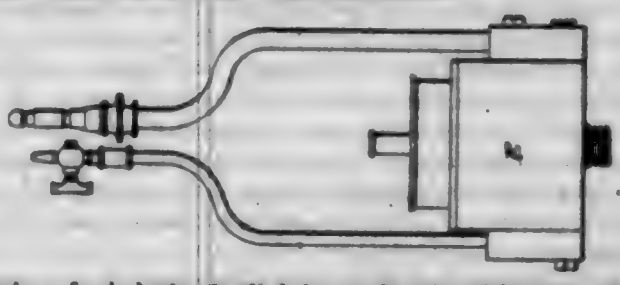


Claim.—1. In a machine for sharpening drills, the combination of a housing having a passage therethrough and a shoulder in the passage, a die arranged to move in the passage and having a shoulder coacting with the shoulder thereof, a collar secured in the housing, through which collar the die moves, a spring bearing between the shoulder on the die and said collar, and means for operating the die.

2. A machine for sharpening drills comprising a housing having an opening therein, a die movable in the opening, a collar located in the opening, through which collar the die passes, a spring bearing between the collar and die, and a pin engaged in the housing and projected through the collar, and engaged in a longitudinal groove in the die, for the purpose specified.

3. A machine for sharpening drills comprising a housing having an opening therein, and an interior shoulder, a die movable in the opening and having a shoulder coacting with the shoulder of the housing, a collar located in the housing and through which collar the die is movable, a spring acting between the collar and the shoulder on the die, a pin passed through the housing and through the collar and entered into a longitudinal groove in the die, for the purpose specified.

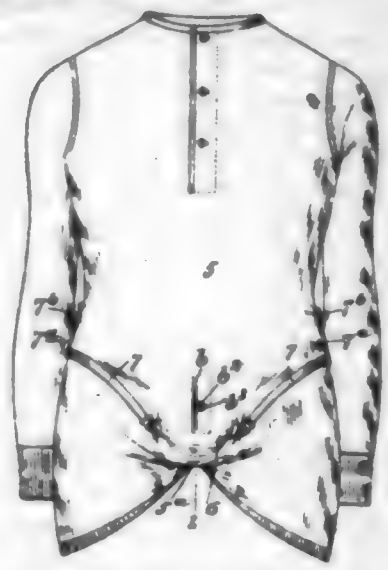
816,962. **AUTOMATIC LIGHTER AND EXTINGUISHER FOR GAS-BURNERS.** JOHN L. BRUCE, Kogarah, New South Wales, Australia. Filed Dec. 21, 1904. Serial No. 237,798.



Claim.—1. A device for lighting and extinguishing street and other gas-burners from a distance, comprising a structure in communication with a gas-main, having a well containing mercury, together with a gas-passage leading from the well to a burner supply-pipe, a gasometer-bell, means for controlling the admission of gas to said supply-pipe by displacement of the mercury within said well, connections for operating the same by the rise and fall of the bell, and means for actuating the bell on variations of pressure in the gas-main.

2. A device for lighting and extinguishing street and other gas-burners from a distance, comprising a structure in communication with a gas-main, having a well containing mercury, together with a gas-passage leading from the well to a burner supply-pipe, a gasometer-bell, means for controlling the admission of gas to said supply-pipe by displacement of the mercury within said well, connections for operating the same by the rise and fall of the bell, and means for actuating the bell on variations of pressure in the gas-main, embodying a displacer-plunger working in the well.

816,963. **COMBINED UNDERGARMENT AND TESTES-SUPPORTER.** WILLIAM C. A. BULLOCK, Jackson, Miss. Filed Aug. 19, 1905. Serial No. 274,912.



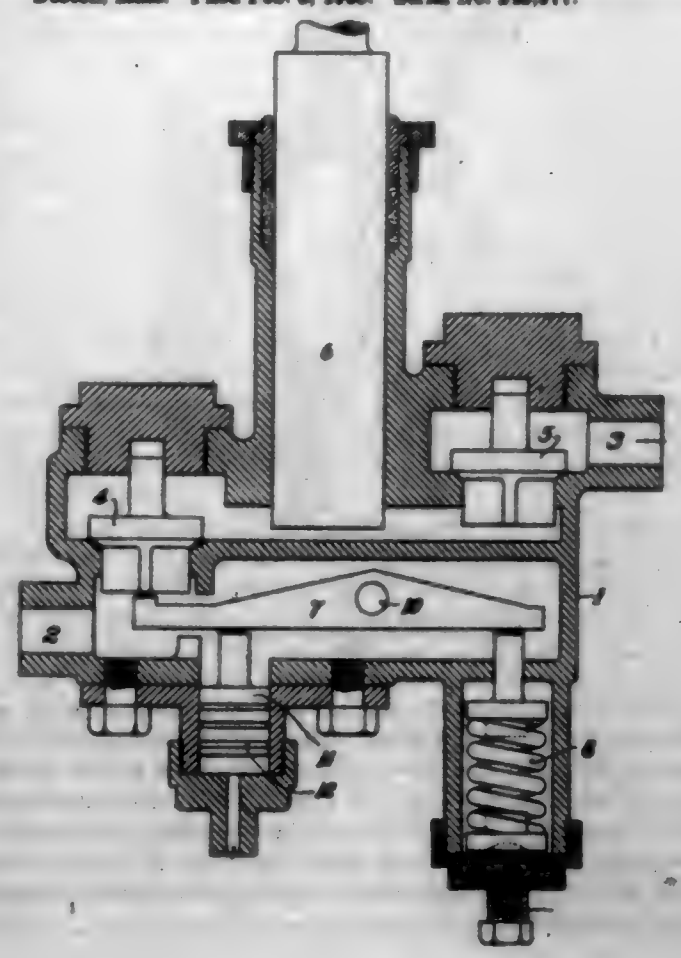
Claim.—1. The combination with a shirt, and a sack on the inner side of the front flap thereof, of a hip-band mounted upon the front flap near its lower edge, and means for securing ends of said band on the front of the garment.

2. The combination with a shirt, and a sack on the inner side of the front flap thereof, of a hip-band mounted upon the front flap near the lower edge thereof, and a clasp on each end of the hip-band adapted for detachably engaging the front portion of the garment.

3. In a supporter of the character described, the combination with the lower front flap of a shirt, of a sack open at the upper edge and secured upon the inner surface of said flap, and means for holding the front flap closely against the abdomen of the wearer.

4. In a supporter of the character described, the combination with the front flap of a shirt having a closable slit therein, of a sack on the inner side of said flap below and near the slit, and means for holding the front flap closely against the abdomen of the wearer.

816,964. **ADJUSTABLE PRESSURE-PUMP.** EDWARD S. CLARK, Boston, Mass. Filed Feb. 3, 1905. Serial No. 243,977.



Claim.—1. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means for actuating said lever by the accumulation of pressure caused by said plunger, and means for opposing the action of said accumulated pressure.

2. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means such as a piston actuating said lever by the accumulation of pressure caused by said plunger, and means for opposing the action of said accumulated pressure.

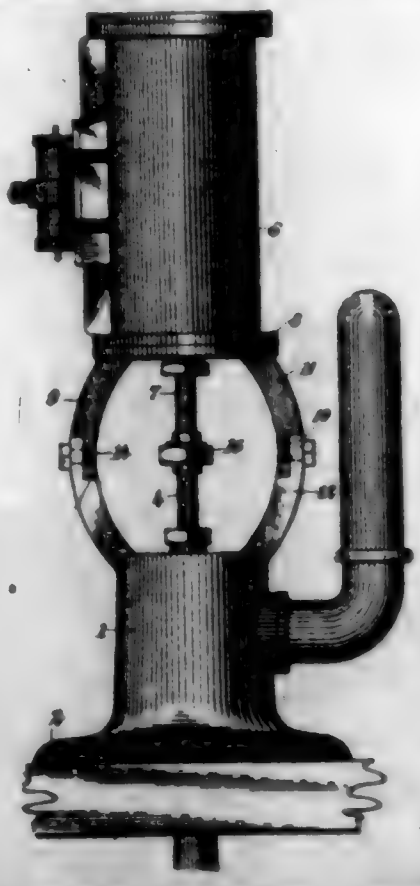
3. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means for actuating said lever by the accumulation of pressure caused by said plunger, and a spring opposing the action of said accumulated pressure.

4. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means for actuating said lever by the accumulation of pressure caused by said plunger, and an adjustable spring opposing the action of said accumulated pressure.

5. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means such as a piston actuating said lever by the accumulation of pressure caused by said plunger, and an adjustable spring for opposing the action of said accumulated pressure.

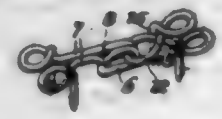
6. In a pressure-pump, the combination with an operative plunger, in a pump-case provided with an inlet and outlet valve and a compartment beneath the inlet-valve, of a lever fulcrumed in said compartment adapted to lift the inlet-valve, means for actuating said lever by the accumulation of pressure caused by said plunger, and means for opposing the action of said accumulated pressure, at a predetermined amount.

816,965. **LIFT-PUMP.** HERBERT M. CROW, Oakdale, Cal. Filed May 1, 1905. Serial No. 258,239.



Claim.—In a lift-pump, in combination, a pump-cylinder, an engine-cylinder disposed in axial alinement thereabove, a piston-rod extending downwardly from said engine-cylinder, a second piston-rod extending upwardly from said pump-cylinder, arms projecting upwardly from said pump-cylinder and bowed outwardly, legs projecting downwardly from said engine-cylinder, also bowed outwardly, and forming joints with said arms, and a coupling connecting said piston-rods.

816,966. **HOOK AND EYE.** ANN B. DARNEY, Washington, D. C. Filed Oct. 25, 1905. Serial No. 284,372.



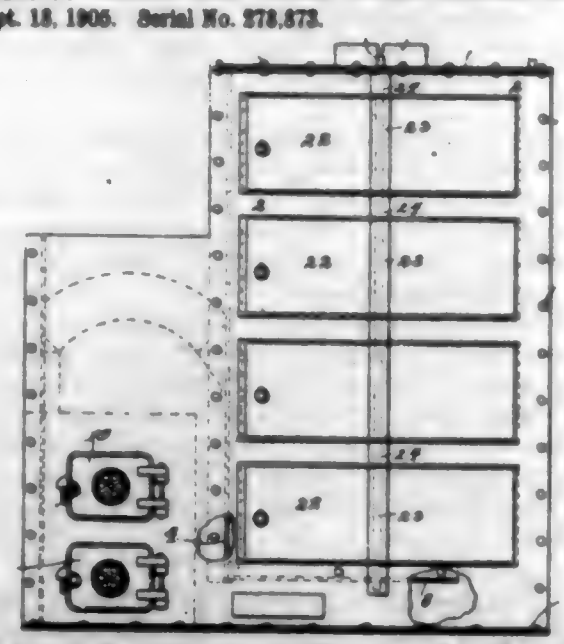
Claim.—1. A hook, comprising a doubled wire having side arms and a bill that overhangs and is integral with the side arms at one end, said side arms having the portions opposite the bill looped into flat eyes, and having their free terminals disposed outside the eyes and offset to provide holding-prongs located adjacent to said eyes and disposed in a plane that intersects the plane of the eyes.

2. A hook, comprising a doubled wire having side arms, one end of the doubled wire being bent to form a bill that overhangs the side arms and is integral at one end therewith, the intermediate portions of said side arms being looped into substantially flat closed eyes, and the free terminals being angularly offset outside the eyes to form holding-prongs, said prongs being disposed adjacent to the eyes and substantially at right angles to the plane in which the eyes are located.

3. An eye, comprising a doubled wire provided at one end with a flat closed loop, said loop having side arms that are crossed at the rear of the loop, said side arms outside the crossing-point being furthermore looped into eyes, and said side arms having their free terminals outside the eyes angularly offset to form holding-prongs that are disposed in a plane substantially at right angles to the plane of the eyes.

4. An eye formed of a wire bent into a closed loop, having side arms that are crossed at the rear of the loop, said side arms having free terminals outside the crossing-point that are angularly offset and form fabric piercing and holding prongs disposed in a plane substantially at right angles to the plane of the loop.

816,967. **CORE-OVEN.** ALFRED B. DAY, Knoxville, Tenn. Filed Sept. 18, 1905. Serial No. 278,872.



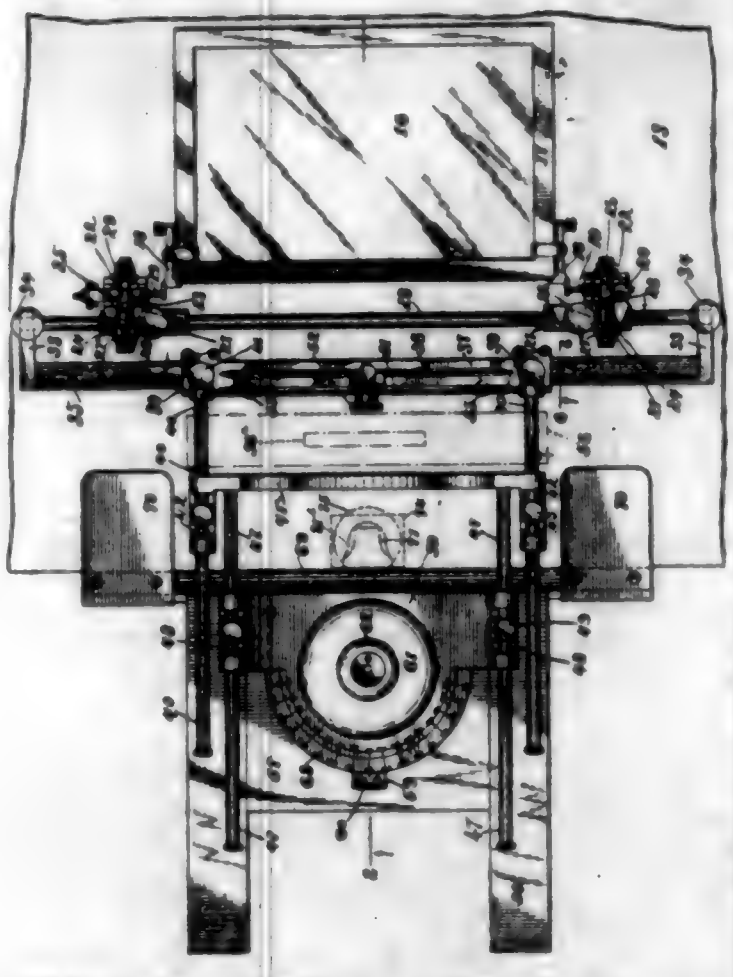
Claim.—1. In an apparatus of the nature described, the combination of front, rear, top, bottom, right-hand, and left-hand walls forming an oven-chamber, one of said walls having an outlet for the products of combustion, said left-hand wall extending downward nearly to the bottom wall, a false floor extending from the lower edge of said left-hand wall toward said right-hand wall and filling the space between the front and rear walls, and a furnace located beside said chamber and having a flue extending downward to and communicating with the space beneath said false floor, substantially as described.

2. In an apparatus of the nature described, the combination of front, rear, top, bottom, right-hand, and left-hand walls forming an oven-chamber, one of said walls having an outlet for the products of combustion, said left-hand wall extending downward nearly to the bottom wall, and a furnace located beside said chamber and having a flue extending downward to and communicating with the space beneath the lower edge of said left-hand wall, substantially as described.

3. In an apparatus of the nature described, the combination of front, rear, top, bottom, right-hand, and left-hand walls forming an oven-chamber, one of said walls having an outlet for the products of combustion, said left-hand wall extending downward nearly to the bottom wall, the lower portions of said front and rear walls being

extended laterally beyond said left-hand wall, walls located between said extended portions of said front and rear walls, forming, with said extensions, a furnace-chamber having a flue extending downward to the space beneath said left-hand wall, substantially as described.

816,968. UNIVERSAL ADJUSTER FOR PRINTING-FILMS. BENJAMIN DAY, West Hoboken, N. J. Filed Aug. 18, 1904. Serial No. 221,240.



Claim.—1. The combination of a printing-film frame, a rod provided with mechanism for revolubly supporting the same, a sliding bar connected with said rod and adapted to move horizontally of its support, and means for clamping said sliding bar in different positions as thus slidably moved.

2. The combination of a printing-film frame, means for allowing the same to swing upon a center, a protractor, and extensible mechanism connecting said protractor and said printing-film frame together.

3. The combination of a board, means for slidably mounting the same so as to allow it to move vertically, a printing-film frame, mechanism connecting said board and said printing-frame together, a supporting member intermediate of said board and said printing-film frame for supporting said mechanism, and means controllable at will for adjusting said mechanism relatively to said supporting member.

4. The combination of a printing-film frame, a revoluble board with various angles noted thereon, means for holding the revoluble board in a fixed position at any given angle while printing, and a printing-film with a stipple or other design in relief on its printing-face, to produce by printing the design on itself at noted angles, combinations forming practically new tints which can only be copied by noting said angles and printing the design on itself at the exact angle at which the original was printed.

5. The combination of a printing-frame adapted to assume a definite position for printing the design, a member movable to different angles relatively to said frame when the said frame occupies said definite positions, means for indicating said angles, for the purpose of enabling a record thereof to be kept, and mechanism for temporarily securing said revoluble member at said different angles.

6. The combination of a printing-frame film, means for supporting said printing-frame film so as to allow the same to move pivotally upon a center and to approach the surface upon which the design is to be printed, a revoluble member supporting said surface and free to turn angularly in a plane substantially parallel with said surface, and means for determining the different angles to which said revoluble member is turned.

7. The combination of a printing-film frame, means for supporting said printing-film frame so as to allow the same to move pivotally upon a center and to approach the surface upon which the design is to be printed, a revoluble member supporting said surface and free to turn angularly in a plane parallel therewith, means for holding said revoluble member fixedly in different angular positions, and a protractor for indicating said positions.

8. The combination of a printing-frame provided with a printing-film, extensible mechanism for supporting the same, and a protractor for turning said printing-frame to different angles for the purpose of superimposing tints at different angles relatively to each other.

9. The combination of a printing-frame, spacing-blocks for revolubly supporting the same, and means controllable at will for moving said spacing-blocks angularly in relation to each other.

10. The combination of a rod, means for supporting the same, spacing-blocks slidably mounted upon said rod and provided with centering-pins, and means for adjusting said spacing-blocks angularly in relation to each other upon said rods.

11. The combination of a printing-frame, means for revolubly supporting the same, a table disposed below said printing-frame, and a board mounted upon said table and revoluble independently of said printing-frame.

12. The combination of a table, a revoluble board mounted thereupon, means for clamping said revoluble board in different angular positions, a printing-film frame mounted adjacent to said revoluble board and adapted to engage work resting thereupon, said frame being provided with a printing-film, and means for adjusting said printing-film frame to different angles relatively to said table.

13. The combination of a frame, a printing-film mounted thereupon, mechanism for adjusting said frame to different angular positions, a revoluble member disposed adjacent to said frame, and means for adjusting said revoluble member to different positions independently of the positions assumed by said frame.

14. The combination of a frame, a printing-film mounted thereupon, means for supporting said frame so as to allow the same to move pivotally upon a center, and a revoluble member disposed adjacent to said frame and adapted to move to different angles relatively thereto.

15. The combination of a frame, a printing-film mounted thereupon, means for adjusting said frame to different angles reckoned from a common center, a protractor for indicating said angles, a revoluble member disposed adjacent to said frame and adapted to move to different angles relatively thereto, and means for determining said last-mentioned angles.

16. The combination of a rod, means for supporting the same, spacing-blocks mounted upon said rod and provided with set-screws, leaf-washers mounted within said spacing-blocks and engaged by said set-screws, means for adjusting said spacing-blocks to different angles upon said rod, and a frame provided with a printing-film and supported by said spacing-blocks.

17. The combination of a rod, spacing-blocks mounted thereupon and movable to different angles upon the rod as a central axis, a registering apparatus connected with said spacing-blocks, extension apparatus connected with said rod for moving the same toward and from a predetermined point, and means for securing said rod in a predetermined position.

18. The combination of a backwardly forwardly sideably and circumferentially movable printing-film over a revoluble drawing-board with divisions on its periphery, means for holding this board in a given position while printing a stipple or other design on the work attached to the drawing-board from this printing-film, a protractor for noting the exact position of the printing-film and of the print made therefrom, and means for changing the positions of both printing-film and revoluble board so as to again print the design in a different relative position.

19. The combination of a readily attachable and detachable and slidable board or skirting-piece held in position at any desired place on the edge of a table by means of its two clamping-plates impinging on the upper edge, and its binding-screw and washer impinging on the under edge at a central point between the two clamping-plates as described, of a bracketed shelf secured to this board or skirting-piece by the slideways forming a part of it, and by means of which the shelf can be raised, lowered and held in any desired position at a level with, or at a level above the level of the table to which the board is clamped by means of a clamping-nut and a threaded stud fixed to the board and passing through the slotted lower member of the bracketed shelf; of a pivoted protractor-plate secured centrally on the upper surface of the bracketed shelf by means of a threaded stud, binding-nut and gong-shaped washer which permits the swerving of

the protractor-plate to any recorded angle; of an extension-framework attached to and forming part of the protractor-plate to which it is attached by two three-membered studs drilled to receive two sliding rods, the central member of each stud being furnished with a set-screw to clamp the two rods in any desired position these rods in turn to carry a flying bridge furnished similarly with two three-membered studs and set-screws through which studs two other rods slide and carry a bridged clamping member steadied at its central part by a slotted plate attached to it by a threaded stud and set-screw which permits of its adjustment to the level of the bracketed shelf when raised above the level of the table, this bridged clamping member moving backward or forward by means of the sliding rods to and from the bracketed shelf having two bearing-boxes with set-screws; of a sliding I-shaped bar moving laterally forward or backward in the bearing-boxes of the clamping member and held fixed in any position by means of its set-screws; of arms at either end of the I-shaped bar projecting at right angles therefrom; of a rod carried by these arms in a position parallel with the I-shaped bar and secured by set-screws to the arms at the points where the rod passed through the arms at the drilled bearings, of right and left hand boxes slidably and revolubly movable on the rod, each box having drilled bearings at either end, and a central set-screw with a leaf-washer fitted to the rod to hold the boxes in position on the rod at the three bearing-points of each of them; of slotted recesses in these two boxes to receive the registering apparatus for holding a printing-film frame with its printing-film in position over the work.

20. The combination of a horizontally, laterally, angularly and perpendicularly movable and extensible framework device as described, carrying a printing-film and its frame by means of a registering apparatus affixed therein and holding it in position to be printed from, and a pivoted revoluble circular drawing-board secured to a table by a socket in which the pivot enters and by a clamping device bearing against its periphery and holding the circular drawing-board and the drawing upon a flat surface placed thereon in position to be embellished in such portions as may be required by printing thereon such portions of an inked printing-film as may be necessary to perfect the drawing when pressing on the back of the printing-film by means of a stylus or other pressing instrument.

816,969. POMPADOUR-WAVE. FREDERICK M. DELAVAN and SOPHIA B. DELAVAN, Chicago, Ill. Filed Feb. 6, 1905. Serial No. 244,294.



Claim.—1. In a pompadour-form, the combination with a flexible non-resilient wire extending transversely of the form, of a fabric secured to and surrounding said wire, hair extending beneath said wire and upwardly over the same, and stitches securing the hair to said fabric.

2. In a pompadour-form, the combination with a flexible wire extending transversely of the form, of a fabric secured to said wire, and hair sewed to said fabric and extending upwardly and rearwardly with respect to the supporting-wire.

3. In a pompadour-form over which the natural hair is adapted to be dressed, the combination with a flexible strip extending transversely of the form, of hair extending transversely across said strip thence upwardly and backwardly over the same, and means for securing the hair to such strip.

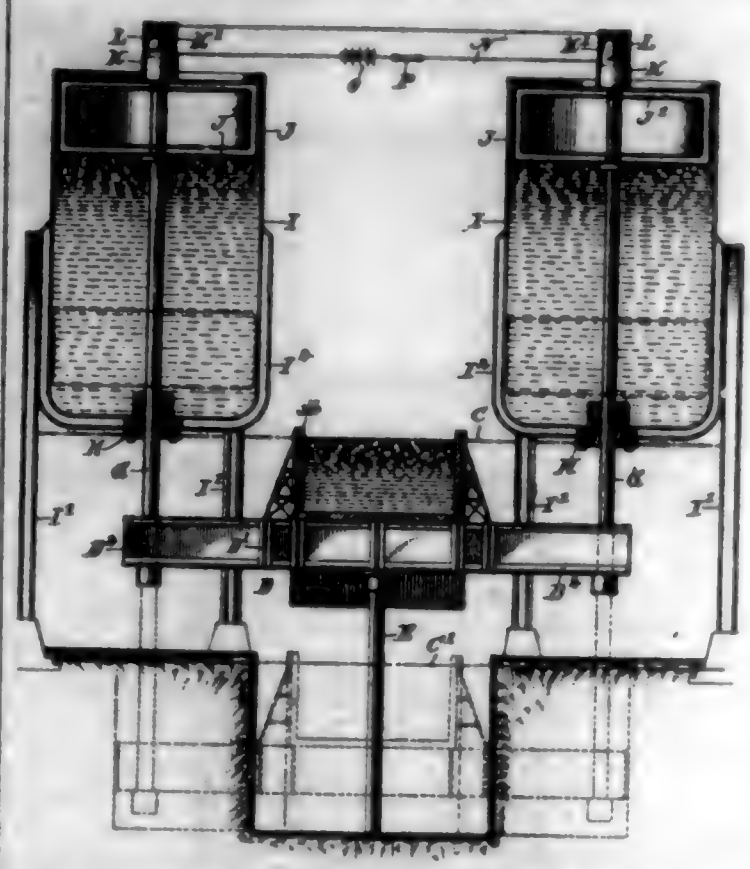
816,970. MARINE LOCK. JOHN DIAMANT, New York, N. Y. Filed Oct. 24, 1905. Serial No. 284,141.

Claim.—1. A marine lock, comprising a cradle for the marine vessel to be raised or lowered, means for raising the cradle, and floats connected with the said cradle and moving up and down in water with the rise and fall of the cradle.

2. A marine lock, comprising a cradle for the marine vessel to be raised and lowered, means for raising the cradle, and floats connected with the said cradle and moving up and down in water with the rise and fall of the cradle, the lifting force of the said floats being less than the weight of the cradle and its load.

3. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, and floats on which the cradle is hung, the lifting force of the floats being less than the weight of the cradle and its load, to allow the cradle and load to sink to a low level by gravity.

4. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, floats on which the cradle is hung, the lifting force of the floats being less than the weight of the cradle and its load to allow the cradle and load to sink to a low level by gravity and reservoirs filled with a liquid and containing the said floats.



5. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, the cradle being in the form of a tank having gates at the ends, means for raising the said cradle, a platform having transverse girders supporting the cradle, reservoirs filled with a liquid, floats in the said reservoirs, and rigid connections between the floats and the said girders.

6. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, and floats on which the cradle is hung, each float having an interior pressure-chamber to exert pressure against the shell in an outward direction, to counterbalance the pressure of the liquid against the outside of the float on submerging the latter.

7. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, floats on which the cradle is hung, and means for locking the floats when in an uppermost position.

8. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, floats connected with the said cradle, and a magnetic locking device for locking the floats when in an uppermost position.

9. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, floats on which the cradle is hung, and reservoirs filled with a liquid and containing the said floats, the said reservoirs being arranged above the high-water level.

10. A marine lock comprising a cradle for the reception of the marine vessel to be raised or lowered, the cradle being in the form of a tank having gates at the ends, means for raising the said cradle, a platform having transverse girders supporting the cradle, reservoirs filled with a liquid, floats in the said reservoirs, rods rigidly connecting the said floats with the said girders, and stuffing-boxes in the bottom of the said receptacles for the passage of the said rods.

11. A marine lock, comprising a cradle for the reception of the marine vessel to be raised or lowered, the cradle being in the form of a tank having gates at the ends, means for raising the said vessel, a platform having transverse girders supporting the cradle, reservoirs filled with a liquid and arranged in pairs on opposite sides of the said cradle, floats in the said reservoirs, and rods rigidly connecting the floats in a pair of reservoirs with the ends of a girder.

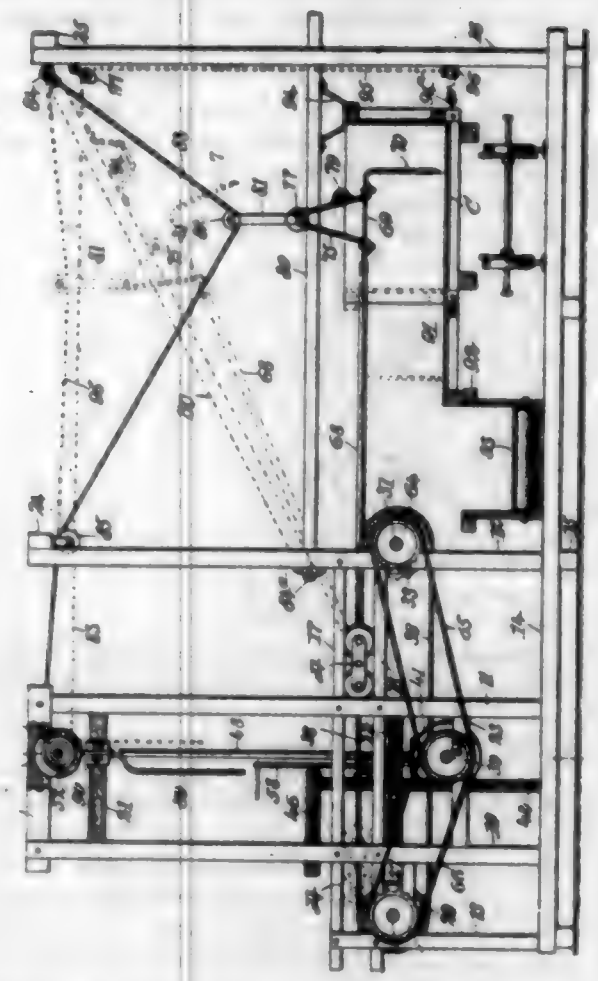
12. A marine lock comprising a tank filled with a liquid for the reception of the vessel to be raised or lowered, gates at the ends of the said tank, transverse girders supporting the tank, and a plurality of float suspensions connected with the ends of the said girders and arranged in pairs, the float suspension of each pair being located on opposite sides of the tank.

13. A marine lock comprising a cradle for the vessel to be raised

or lowered, a float suspension for the said cradle and having floats rigidly connected with the cradle, and reservoirs filled with a liquid and containing the said floats.

14. A marine lock comprising a cradle for the vessel to be raised or lowered, a float suspension for the said cradle and having floats rigidly connected with the cradle, and reservoirs filled with a liquid and containing the said floats, the reservoirs having an exterior pressure-chamber to counteract the pressure exerted against the inside of the reservoir by the liquid contained therein.

816,971. **FEEDER FOR SUGAR-CANE CARRIERS.** LOUIS M. DILL, Avoca, La. Filed July 7, 1905. Serial No. 268,637.



Claim.—1. In a feeder for sugar-cane carriers, a truck, track-bars for the truck, a driving mechanism for automatically moving the truck backward and forward, a rake connected with the truck, and guide and lifting devices for the rake.

2. In a feeder for sugar-cane carriers, a frame, parallel track-bars at the sides of the frame, a truck, the wheels of which travel between and in engagement with the track-bars, parallel shafts below the track-bars and sprocket-wheels carried thereby, chain belts passed over said sprocket-wheels, which chain belts are secured to the forward and rear portions of the truck, a rake pivotally mounted upon the truck, and a driving mechanism which imparts alternate forward and rearward movement to the truck.

3. In a feeder for sugar-cane carriers, a frame, parallel track-bars at the side portions of the frame, a truck provided with a central bar, the wheels of which truck travel between and in engagement with the track-bars, shafts mounted to turn in the frame below the track-bars, sprocket-wheels carried by the shafts, chain belts passed over the sprocket-wheels, having their ends secured to the front and rear of the truck, a rake pivotally mounted upon the bar of the truck, means for raising and lowering the rake, a driven shaft, separate belt connections between the driven shaft and the shafts carrying the truck-belts, a drive-shaft, and a connecting-shaft driven from the drive-shaft, the said connecting-shaft having a bevel-gear at its lower end and sleeves mounted to slide upon the driven shaft and to turn therewith, bevel-gears secured to the sleeve, one at each side of the said gear on the connecting-shaft, and a shifting device for the sleeve.

4. In a feeder for sugar-cane carriers, a frame, track-bars at the sides of the frame, shafts journaled in the frame below the track-bars, the said shafts being in parallelism, a truck the wheels of which travel between and in engagement with the said track-bars, sprocket-wheels upon the said shafts, chain belts secured to the front and the rear portions of the truck, being also passed over the said sprocket-wheels, a rake pivotally carried by the said truck, a guide-frame located on the rake-head, having upper and lower friction-rollers, track-bars pivoted to the frame and passed between the friction-rollers of the said guide-frame for the rake, means for alternately moving the said truck backward and forward, a drive-shaft, a drum loosely mounted on the said shaft, a clutch adapted for engagement with the drum, means for operating the clutch, and a cable secured to the frame and having supporting engagement with the rake-head, the said cable being attached to the said drum.

5. In a feeder for sugar-cane carriers, a frame, track-bars at the sides of the frame, parallel shafts journaled in the said frame, sprocket-wheels carried by the said shafts, a truck, the wheels whereof travel between and in engagement with the track-bars, the truck being provided with a central bar, a rake pivotally mounted on the bar of the truck, chain belts secured to the forward and rear portions of the truck, being passed over the said sprocket-wheels, a drive-shaft, a driven shaft, a connecting-shaft between the driven and the drive shafts, reversing-gear carried by the driven shaft and operating in connection with the connecting-shaft, a guide-frame attached to the rake-head, upper and lower friction-rollers carried by the said guide-frame, track-bars pivoted to the frame, which track-bars are passed between the said friction-rollers of the said guide-frame, stirrups secured to the pivoted track-bars near their outer ends, a bail pivotally mounted on the guide-frame of the rake, a drum loosely mounted on the drive-shaft, a clutch for the said drum and means for operating it, a cable attached to the frame and passed to a supporting engagement with the said bail and to an attachment to the said drum.

6. In a feeder for sugar-cane carriers, a frame, track-bars at the sides of the frame, parallel shafts journaled in the said frame, sprocket-wheels carried by the said shafts, a truck the wheels whereof travel between and in engagement with the track-bars, the truck being provided with a central bar, a rake pivotally mounted on the bar of the truck, chain belts secured to the forward and rear portions of the truck, being passed over the said sprocket-wheels, a drive-shaft, a driven shaft, a connecting-shaft between the driven and the drive shafts, reversing-gear carried by the driven shaft and operating in connection with the connecting-shaft, a guide-frame attached to the rake-head, upper and lower friction-rollers carried by the said guide-frame, track-bars pivoted to the frame, which track-bars are passed between the said friction-rollers of the said guide-frame, stirrups secured to the pivoted track-bars near their outer ends, a bail pivotally mounted on the guide-frame of the rake, a drum loosely mounted on the drive-shaft, a clutch for the said drum and means for operating it, a cable attached to the frame and passed to a supporting engagement with the said bail, and to an attachment to the said drum, a carrier which crosses the frame, a car having drop sides, adapted to receive the rake-head, one side of the car being adapted to engage with the frame of the carrier, a cable attached to the car, roller-guides for the cable carried by the frame, and a drum on the drive-shaft, over which the cable is loosely passed.

7. In a feeder for sugar-cane carriers, a truck, means for moving the truck backward and forward, a rake connected with the truck to be moved back and forth thereby, and a track upon which the outer end of the rake travels.

8. In a feeder for sugar-cane carriers, a truck, means for moving the truck backward and forward, a rake connected with the truck and partaking of the movements thereof, a hinged track upon which the rake travels, and means for raising and lowering the track and rake.

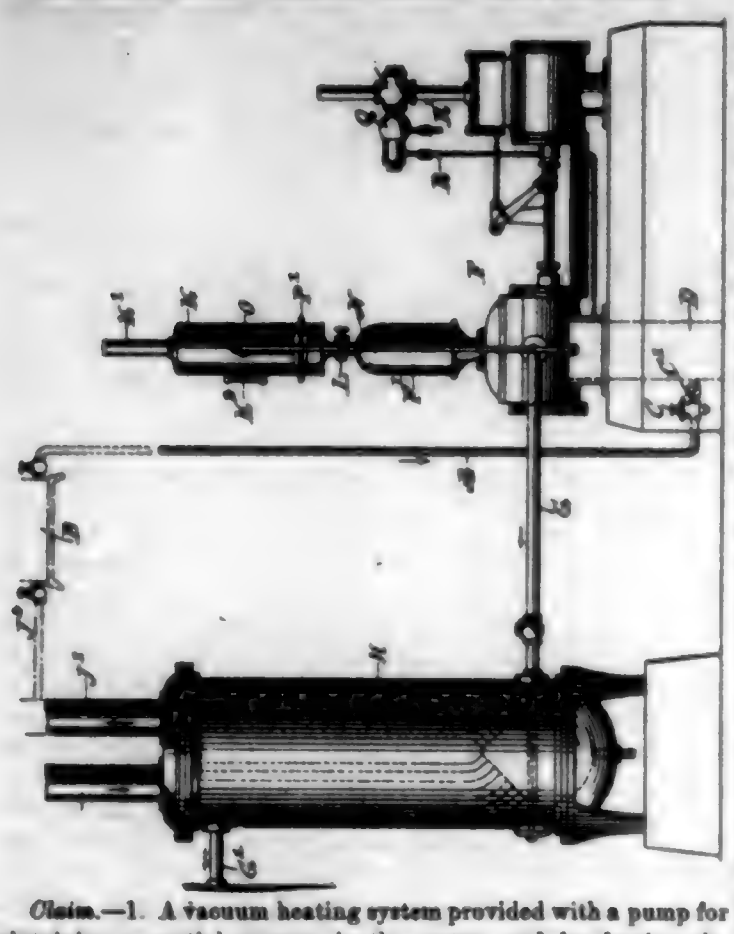
9. In a feeder for sugar-cane carriers, a track, means for moving the truck backward and forward, a rake connected with the truck to partake of the movements thereof, a hinged track upon which the rake travels, a lifting device for the rake, and means whereby the track will be raised with the rake.

10. In a feeder for sugar-cane carriers, a rake, means for moving the same backward and forward, a frame carried by the rake-head and provided with rollers, and a track upon which the said rollers travel.

11. In a feeder for sugar-cane carriers, a rake, means for moving the rake backward and forward, a frame carried by the rake-head and provided with rollers spaced apart, a hinged track extending between the said rollers, and a lifting device connected with the said frame.

12. In a feeder for sugar-cane carriers, a rake, means for moving the rake backward and forward, a frame carried by the rake-head, parallel shafts mounted in the frame and each provided with grooved pulleys, hinged track-bars extending between the pulleys of the said shafts, a bail secured to the frame, and a lifting device connected with the bail.

816,972. VACUUM HEATING SYSTEM. CLAYTON A. DUNBAR, Marshalltown, Iowa. Filed Mar. 16, 1905. Serial No. 250,402.



Claim.—1. A vacuum heating system provided with a pump for maintaining a partial vacuum in the system and for forcing the water of condensation back into the boiler, and an air-separating chamber connected with the air-chamber of the pump and with the suction-chamber of the pump, whereby the air will be separated from the water of condensation prior to the discharge of the water from the pump and the pump kept primed.

2. A vacuum heating system provided with a pump for maintaining a partial vacuum in the system and for forcing the water of condensation back into the boiler, an air-separating chamber connected with the air-chamber of the pump, for separating the air from the water of condensation prior to discharging the water from the pump, a valve in the connection between the said air-separating chamber and the said pump air-chamber, and a valved connection between the separating-chamber and the suction-chamber of the pump.

3. A vacuum heating system provided with a pump for maintaining a partial vacuum in the system and for forcing the water of condensation back into the boiler, an air-separating chamber connected with the air-chamber of the pump, for separating the air from the water of condensation prior to discharging the water from the pump, and an automatic valve controlled by the pressure of the water in the said air-separating chamber and connected with the suction-chamber of the said pump.

4. A vacuum heating system provided with a pump for maintaining a partial vacuum in the system and for forcing the water of condensation back into the boiler, an air-separating chamber connected with the air-chamber of the pump, for separating the air from the water of condensation prior to discharging the water from the pump, a connection between the said air-separatng chamber and the suction-chamber of the said pump, a valve in the said connection, and a diaphragm connected with the said valve and controlled by the pressure of the water in the said air-separating chamber.

5. A vacuum heating system provided with a pump, an expansion steam-trap receiving the water of condensation from the radiators, a water-receiving chamber connected with the steam-trap and connected with the suction-chamber of the said pump, an air-separating chamber connected with the pump air-chamber, a connection between the said air-separating chamber and the suction-chamber of the said pump, a valve in the said connection, a diaphragm controlling the said valve and actuated by the pressure of the water in the said air-separating chamber, and a heater through which extends the discharge-pipe leading from the pump to the boiler, the heater being heated by the steam previous to the latter passing to the radiators.

6. A vacuum heating system provided with a pump, an expansion steam-trap receiving the water of condensation from the radiators, a water-receiving chamber connected with the steam-trap and connected with the suction-chamber of the said pump, an air-separating chamber connected with the pump air-chamber, a manually-controlled graduating-valve between the said pump air-chamber and the air-separating chamber, a connection between the said air-separating chamber and the suction-chamber of the said pump, a valve in the said connection, a diaphragm controlling the said valve and actuated by the pressure of the water in the said air-separating chamber, and a heater through which extends the discharge-pipe leading from the pump to the boiler, the heater being heated by the steam previous to the latter passing to the radiators.

7. A vacuum heating system comprising a radiator connected with a steam-supply, a receiver for the water of condensation, a connection between the radiator and the receiver, a steam-trap in the said connection, a vacuum-pump having its suction-chamber connected with the said receiver, a boiler connected with the discharge-pipe of the said pump, and an air-separating chamber connected with the air-chamber and the suction-chamber of the pump.

8. A vacuum heating system comprising a radiator connected with a steam-supply, a receiver for the water of condensation, a connection between the radiator and the receiver, a steam-trap in the said connection, a vacuum-pump having its suction-chamber connected with the said receiver, a boiler connected with the discharge-pipe of the said pump, an air-separating chamber connected with the air-chamber of the pump, a pipe connecting the said air-separating chamber with the suction-chamber of the said pump, a valve in the said pipe, and a diaphragm controlling the said valve and controlled by the water-pressure in the said air-separating chamber.

9. In a vacuum heating system, a receiver for connection with a radiator, a pump with the suction-chamber of which the receiver is connected, an air-separator, a valved connection between the separator and the air-chamber of the pump, a valved connection between the separator and the suction-chamber of the pump, and means controlled by the height of the water in the separator for controlling the valve in the connection between the separator and the suction-chamber of the pump.

10. In a vacuum heating system, the combination with a pump, and an air-separating chamber, of a connection between the separating-chamber and the pump, a valve in said connection, a casing connected with the air-separating chamber, and a diaphragm in the casing and connected with the said valve.

11. In a vacuum heating system, the combination with an air-separating chamber, and a pump, of a connection between the separating-chamber and the pump, a valve in said connection, a casing connected with the separating-chamber, a diaphragm in the casing, and provided with a stem, a coupling between the stem of the diaphragm and the valve-stem, and a weighted lever connected with said coupling.

816,973. GAS PRODUCING AND CONSUMING APPARATUS. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Feb. 3, 1905. Serial No. 243,893.

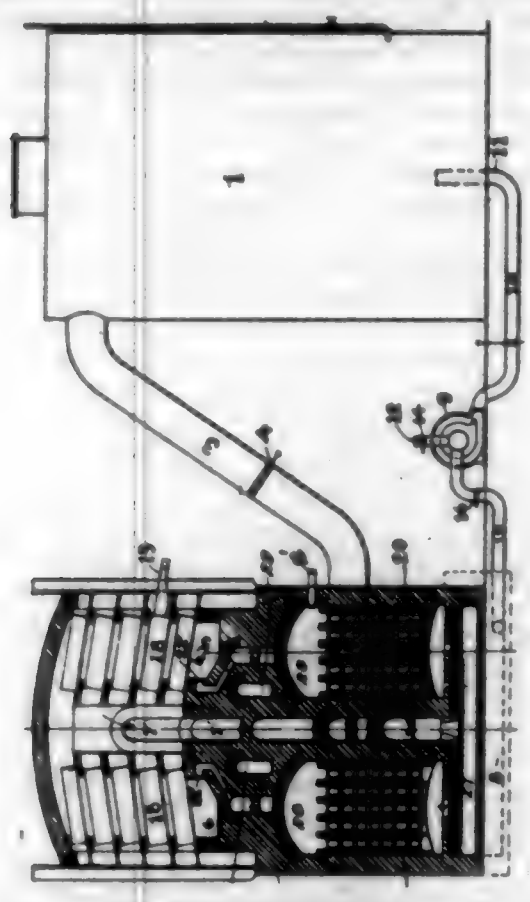
Claim.—1. In apparatus for reducing and distilling metals, the combination of a gas-fired furnace provided with metal-distilling retorts of refractory material, a gas-producer supplying gas to the furnace, means for abstracting products of combustion from the furnace and delivering the same, admixed with air, into the producer, and means for regulating the relative proportions of air and products of combustion.

2. In an apparatus for reducing and distilling metals, the combination of a gas-fired furnace provided with metal-distilling retorts of refractory material, a gas-producer supplying gas to the furnace, regenerative devices transferring waste heat of products of combustion to entering gas and air, a conduit provided with a fan abstracting a portion of the products of combustion and delivering the same to the gas-producer, means for supplying air to said conduit, and means for regulating the relative proportions of air and of products of combustion delivered by said conduit.

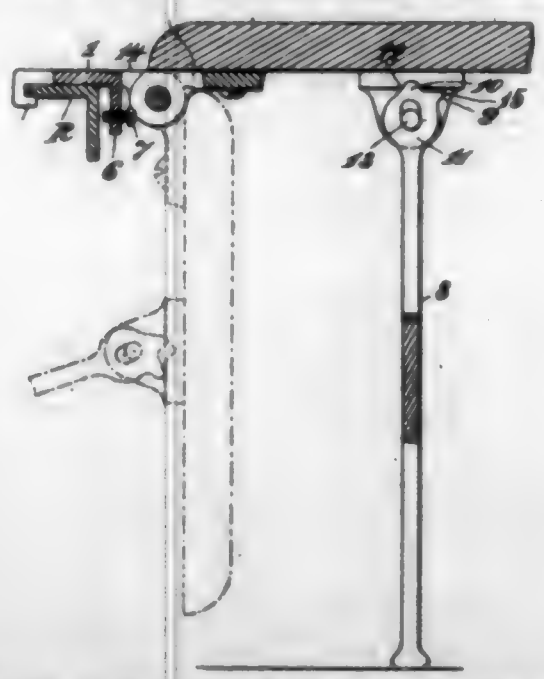
3. In apparatus for reducing and distilling zinc, the combination of a gas-fired furnace provided with zinc-distilling retorts of refractory material, a gas-producer supplying gas to the furnace, a continuous regenerator having passages in heat-transferring relation for the products of combustion from the furnace and the air entering the furnace, respectively, a conduit provided with a fan abstracting a portion of the products of combustion and delivering the same into the gas-producer, means for supplying air to said conduit, and means for regulating the relative proportion of air and of products of combustion delivered by said conduit.

4. In apparatus for reducing and distilling metals, the combi-

nation of a gas-fired furnace provided with metal-distilling retorts of refractory material, with means for producing and for feeding said furnace with dry producer-gas, substantially free of hydrogen and steam.



816,974. FOLDING SEAT FOR METAL BEDS. MARTIN FAAS, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,762.

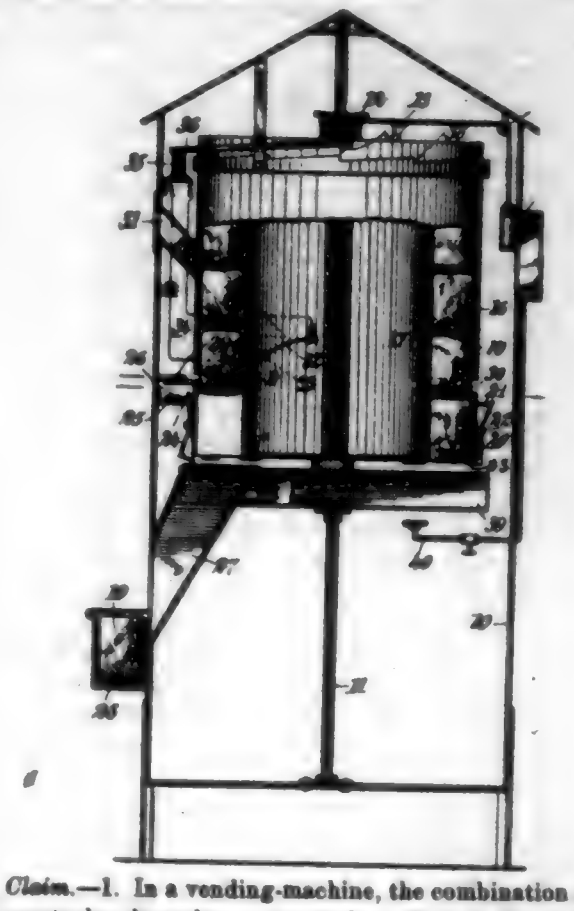


Claim.—1. A folding seat for the purpose specified, having a clip provided with two retaining-lugs to take under the inner margin of the rail, a body portion disposed between said lugs, to rest on the rail, hinging-lugs on said body portion, a seat-board coupled to said hinging-lugs, and a supporting-leg hinged to the under side of said board.

2. A folding seat for the purpose specified, having a clip provided with two retaining-lugs to take under the inner margin of the rail, a body portion disposed between said lugs, to rest on the rail, hinging-lugs on the outer margin of the body portion, a pendent lug 6 between said hinging-lugs, a screw 7, in said pendent lug and adapted to be set against the rail, a seat-board hinged to said hinging-lugs, and a supporting-leg hinged to the under side of said seat-board.

3. In a folding seat, the combination with the hinged seat, provided with hinging-lugs 9 on its under side, of the leg 8, hinged thereto, said leg having a hinge-boss 11, provided with a slot for the hinge-bolt, a projection 10 to engage a recess in the lug 9, and a stop-shoulder 15 to engage said lug when the leg is upright, and the hinge-bolt 13, substantially as set forth.

816,975. VENDING DEVICE. SIDNEY C. GILBERT, Jackson, Ohio. Filed Feb. 25, 1905. Serial No. 247,267.



Claim.—1. In a vending-machine, the combination of a rotatable receptacle adapted to support the articles to be vended, means on the receptacle for holding the articles therein, means for releasing said last-named means to deposit an article, means for holding other articles in the receptacle while one is being deposited, means for heating the receptacle, and means located between the heating means and the receptacle for distributing the heat evenly to the various parts of the receptacle.

2. A vending device, comprising a rotatable receptacle having an inner wall and an outer wall and a series of compartments between them, said compartments being open at the bottom, a casing in which said receptacle is mounted, a spring fixed to said casing and projecting through the outer wall of the receptacle, a rotatable shaft upon which the receptacle is mounted, and means for rotating the shaft.

3. A vending device, comprising a rotatable receptacle provided with a slot, a spring mounted in fixed position and extending through said slot to engage the articles to be vended, means for dropping an article from the receptacle at a predetermined point, means for rotating the receptacle, and means for confining the motion of rotation to an intermittent one; said last-named means comprising a ratchet connected with the receptacle, a tooth for engaging the ratchet, a lever upon which said tooth is mounted, an electromagnet for moving said lever, and means for controlling said electromagnet.

4. A vending apparatus, comprising a movable receptacle having means for preventing the discharge of material from the receptacle, means for rendering said first-named means inoperative, and means for preventing the discharge of more than one article from the machine, said last-named means comprising a spring fixed to a stationary part of the machine and projecting into the receptacle to engage articles therein, said spring being located adjacent to said second means.

5. A vending apparatus, comprising a movable receptacle having a series of catches located thereon and provided with projections for preventing the discharge of material from the receptacle, and means in the path of said catches for releasing them from operative position.

6. A vending apparatus, comprising a movable receptacle having a series of catches located thereon and provided with projections for preventing the discharge of material from the receptacle, means in the path of said catches for releasing them from operative position, and means for preventing the discharge of more than one article from the machine.

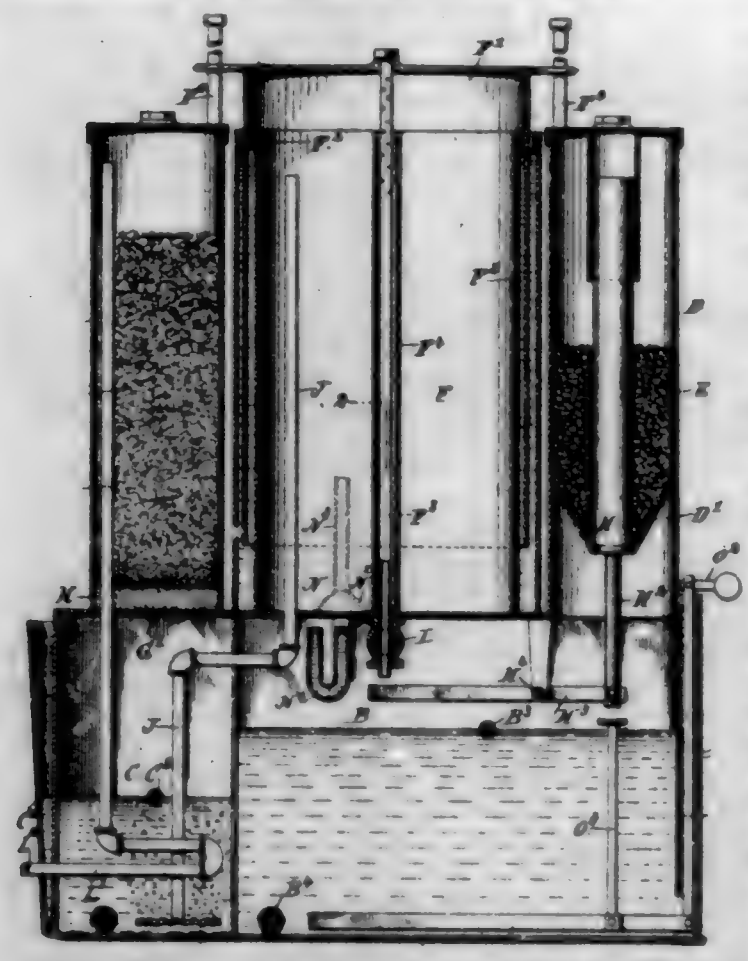
7. A vending apparatus, comprising a movable receptacle having a series of catches located thereon and provided with projections for preventing the discharge of material from the receptacle, means for normally holding the catches in operative position, a cam pivoted to a stationary part of the machine in the path of said catches and

adapted to release them from operative position, and means for preventing the discharge of more than one article from the machine.

8. A vending apparatus, comprising a movable receptacle having a series of catches located thereon and provided with projections for preventing the discharge of material from the receptacle, means for normally holding the catches in operative position, a cam pivoted to a stationary part of the machine in the path of said catches and adapted to release them from operative position, and means for preventing the discharge of more than one article from the machine; said means comprising a spring fixed to a stationary part of the machine and projecting through said receptacle to engage articles held therein, said spring being located adjacent to said means for operating the catches.

9. A vending device comprising a rotatable receptacle having an inner wall and an outer wall and a series of compartments between them, said compartments being open at the bottom, a catch pivoted to the outside of the outer wall adjacent to each of the compartments and provided with a projection extending inwardly under each compartment, each of said catches being provided with a spring for normally holding the projection in its innermost position, a casing in which said receptacle is mounted, a bracket on said casing, a cam pivoted to said bracket in the path of said catches, a stop on the bracket for preventing the cam from moving beyond a certain point, a spring fixed to said casing adjacent to said bracket and projecting through the outer wall of the receptacle, a rotatable shaft upon which the receptacle is mounted, and means for intermittently rotating the shaft.

816,976. **ACETYLENE-GAS GENERATOR.** LOUIS C. GILMORE, San Pedro, Cal. Filed June 22, 1905. Serial No. 266,580.



Claim.—1. An acetylene-gas generator comprising a base having a water-tank, a carbid-magazine on top of the said water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a gas-holder arranged on top of the said water-tank and having a bell provided with a tube for the passage of the gas from the said water-tank to the gas-holder, the said tube controlling the said magazine-valve, a manually-controlled valve for closing the communication between the said water-tank and the gas-holder, and a gas-conducting pipe leading from the said gas-holder.

2. An acetylene-gas generator, comprising a water-tank, a carbid-magazine connected with the water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a gas-holder having a bell provided with a tube for the passage of the gas from the water-tank to the gas-holder, a lever connected with the valve of the carbid-magazine, the said tube being adapted to actuate the lever to move said valve from its seat, and means for conducting the gas from the said gas-holder.

3. An acetylene-gas generator comprising a base having a water-tank, a carbid-magazine on top of the said water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a gas-holder arranged on top of the said water-tank and having a bell provided with a tube for the passage of the gas from the said water-tank to the gas-holder, the said tube controlling the said magazine-valve, a manually-controlled valve for closing communication between the said water-tank and the gas-holder, a gas-conducting pipe leading from the said gas-holder, and an agitator in the said water-tank and manually controlled from the outside of the gas-generator, the said agitator being arranged to actuate the magazine-valve.

4. An acetylene-gas generator comprising a base having a water-tank, a carbid-magazine on top of the said water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a gas-holder arranged on top of the said water-tank and having a bell provided with a tube for the passage of the gas from the said water-tank to the gas-holder, the said tube controlling the said magazine-valve, a manually-controlled valve for closing communication between the said water-tank and the gas-holder, a gas-conducting pipe leading from the said gas-holder, and an agitator in the said water-tank and manually controlled from the outside of the gas-generator, the said agitator having a member adapted to engage the stem of the said magazine-valve to lift the latter off its seat.

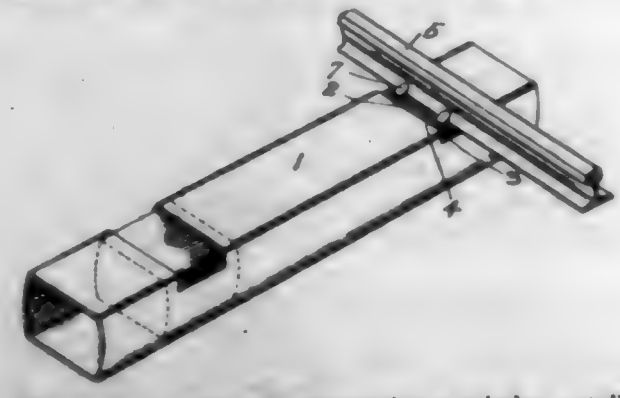
5. An acetylene-gas generator provided with a magazine, a water-tank, a gas-holder provided with a bell, a gas-tube attached to the bell and moving with the same, and a valve in the said water-tank and adapted to be opened and closed from the outside of the water-tank, the said valve being engaged by the lower end of the said tube to lock the valve against turning until the bell has risen.

6. An acetylene-gas generator, comprising a base having a water-tank, a carbid-magazine on top of the said water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a gas-holder arranged on top of the water-tank and provided with a bell, a gas-tube attached to the bell and moving with the same, a valve in the said water-tank and adapted to be opened and closed from the outside of the water-tank, the said valve being engaged by the lower end of the said tube to lock the valve against turning when the bell is in the lowermost position, the said tube when the bell is in the lowermost position controlling the magazine-valve.

7. An acetylene-gas generator comprising a base having a water-tank, a carbid-magazine on top of the said water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, a lever pivotally connected at one end with a stem extending from the magazine-valve, a gas-holder arranged on top of the water-tank and provided with a bell, a gas-tube attached to the bell and moving with the same, and adapted to engage the said lever to open the magazine-valve, and a manually-controlled valve for closing communication between the water-tank and the gas-holder.

8. In an acetylene-gas generator, a water-tank, a carbid-magazine connected with the water-tank and having a valve for allowing the carbid to feed by gravity into the said water-tank, the valve having a stem extending into the water-tank, a gas-holder for receiving the gas from the water-tank and provided with a bell, a manually-controlled valve for closing communication between the water-tank and the gas-holder and an agitator in the water-tank and having an operating member extending to the outside of said tank, the said agitator being provided with an upwardly-extending arm adapted to engage the end of the stem of said magazine-valve to lift the valve from its seat.

816,977. **RAILROAD COMPOSITE TIE.** WILLIAM GOLDIE, Wilkinsburg, Pa. Filed Dec. 8, 1903. Serial No. 183,969.



Claim.—1. A railway-tie comprising a tubular metallic body and rail-supporting blocks of insulating material secured to said

body in such manner as to support the rail and its fastening means out of contact with all parts of the metal body.

2. A railway-tie comprising a metallic hollow body having openings in its upper surface near its ends, said openings being of sufficient size to prevent the rail and its fastening means from contacting with any portion of the metallic tie-body, and rail-supporting blocks of insulating material in said body opposite said openings with their upper surfaces projecting above the sides of the openings in the metallic body.

3. A railway-tie comprising a tubular metallic body having openings in its upper face near each end, said openings extending down into the side walls of the body and being of sufficient size to prevent the rail or its fastening means from contacting with any portion of the metallic tie-body, and rail-supporting blocks of insulating material in said body underneath said openings with their upper faces above the tops of the side walls at the openings.

4. A railway-tie comprising a metallic tube flattened on its top and bottom faces at its ends at least and having openings in its upper face near each end, said openings extending down into the walls of the tube and being of sufficient size to prevent the rail or its fastening means from contacting with any portion of the metallic tie-body, and rail-supporting blocks of insulating material in said body underneath said openings with their upper faces above the tops of the side walls at the openings.

5. A railway-tie comprising a hollow metallic body having openings in its upper face near each end, and rail-supporting and spike-receiving blocks consisting of fiber compressed to a density sufficient to hold spikes and being placed in said hollow body underneath said openings.

6. A railway-tie comprising a hollow metallic body having openings in its upper face near each end, said openings extending down into the side walls of said hollow body, and rail-supporting and spike-receiving blocks consisting of fiber compressed to a density sufficient to hold spikes and being placed in said body underneath said openings with their upper faces above the top of the side walls of the hollow body at the openings.

7. A railway-tie comprising a metallic body consisting of a tube having flattened top and bottom faces at its ends at least and having openings formed in its top face near its ends, said openings extending down into the side walls of the tube, and rail-supporting and spike-receiving blocks consisting of compressed wood inserted in said tube underneath said openings with their upper faces above the top edges of the side walls of the tube at the openings.

8. A railway-tie having spike-receiving portions of fiber compressed to a density sufficient to hold spikes and means for holding the same in compressed condition.

9. A railway-tie comprising a metallic body, and spike-receiving portions consisting of fiber compressed to a density sufficient to hold spikes and suitably secured to said body.

10. A railway-tie comprising spike-receiving portions of compressed chemically-treated wood, and means for holding the same in compressed condition.

11. A railway-tie comprising a hollow metallic body having openings in its upper face near its ends, and spike-receiving blocks of compressed chemically-treated wood inserted in said body opposite said openings.

12. A railway-tie comprising a hollow metallic body having openings in its upper face near each end, said openings extending down into the side sills of said tube, and spike-receiving blocks of compressed chemically-treated wood placed in said body opposite said holes with their upper faces bearing against the top of said tube.

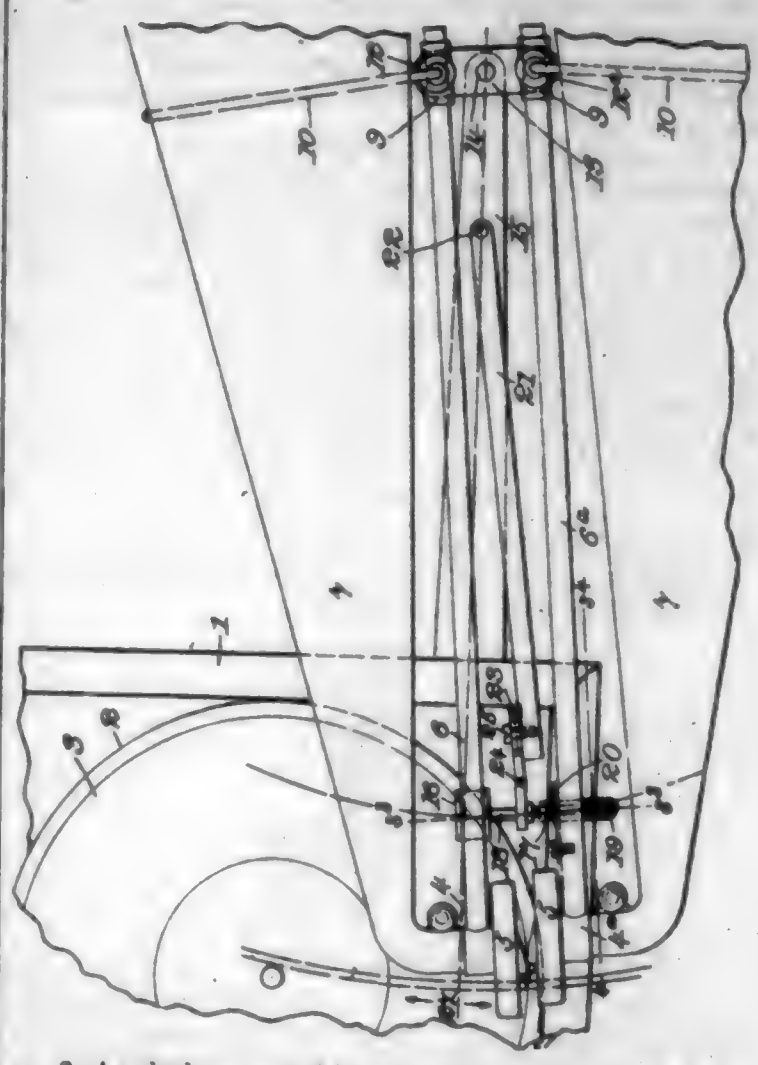
13. A railway-tie comprising a hollow metallic body having its lower face flattened at the ends and the intermediate portion round, said body having openings in its upper face, and spike-receiving blocks in said body opposite said openings.

14. A railway-tie comprising a body having its lower face flattened transversely at the ends and the intermediate portion convex.

15. A railway-tie comprising a metallic tube flattened at its ends at least and having openings cut in its upper face, and spike-receiving blocks of chemically-treated fibrous material compressed to a density sufficient to hold spikes and positioned in said tube opposite said holes.

816,978. TALKING-MACHINE. HENRY J. HAGEN, Orange, N. J., assignor to Universal Talking Machine Manufacturing Company, a Corporation of New York. Filed Mar. 28, 1905. Serial No. 252,542.

Claim.—1. A polyphone comprising a sound-record, a plurality of reproducers coöperating therewith, and means connecting the reproducers and operating substantially parallel with the face of the record to adjust and maintain the reproducers in such position that their styluses track in the same record-groove.



2. A polyphone comprising a sound-record, a plurality of reproducers movable independently of each other and means for transmitting requisite motion from one reproducer to the other to maintain them in operative alinement.

3. A polyphone comprising a disk sound-record, a plurality of reproducers, and requisite guides movable with the reproducers for maintaining them in alinement relatively to the record when out of engagement therewith.

4. A polyphone comprising a sound-record, a plurality of reproducers, and means for effecting an automatic adjustment of the reproducers toward and from each other.

5. A polyphone comprising a sound-record, a plurality of reproducers coöperating therewith, a support common to the several reproducers for moving them in and out of engagement with the record, and means carried by the reproducers for automatically adjusting them toward and from each other.

6. A polyphone comprising a sound-record, a plurality of reproducers coöperating therewith, a cam and a cam-engaging device mounted respectively upon adjoining reproducers and arranged to cause said reproducers to move in such direction as to maintain them in operative alinement.

7. A polyphone comprising a sound-record, a plurality of reproducers coöperating therewith, requisite guides for the reproducers, and a cam coacting with the guides to effect an automatic adjustment of the reproducers.

8. A polyphone comprising a sound-record, a plurality of reproducers, requisite guides movable with the reproducers, and a cam cooperating with the guides to effect an automatic adjustment of one of the reproducers.

9. A polyphone comprising a sound-record, two reproducers normally disconnected during their reproducing movement, means for raising and lowering the reproducer, and means for positively connecting the reproducers when raised clear of the record.

10. A polyphone comprising a disk sound-record, a plurality of reproducers coöperating therewith, an arm movable with the reproducers, requisite guides carried by the arm, and means for adjusting the guides to raise and lower the several reproducers relatively to the record.

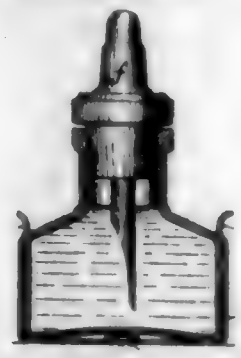
11. A polyphone comprising a disk sound-record, two reproducers coöperating therewith, a movable arm operatively connected with one of the reproducers, guides carried by the arm, and a cam coacting with the guides to effect an automatic adjustment of the other reproducer.

12. A polyphone comprising a rotatable sound-record, two reproducers, coöperating therewith, said reproducers being movable horizontally in substantially concentric arcs, a pivoted arm operatively connected at its free end to one of the reproducers, guides for retaining the reproducers in definite relation, and means carried by the arm for moving the guides to raise or lower the several reproducers.

13. A polyphone comprising a rotatable sound-record, two reproducers coöperating therewith, requisite guides for the reproducers, a support for the guides, an adjustable connection interposed between the guides and the support, and a cam coacting with the guides to effect an automatic adjustment of the reproducers relatively to each other.

14. A polyphone comprising a sound-record, two reproducers normally disconnected during their reproducing movement, means for raising and lowering the reproducers, means for positively connecting the reproducers, and a device coacting with said connecting means to give the reproducers motion toward and from each other.

816,979. SOCKET FOR BOTTLES. HENRY F. HAVILAND, East Orange, N. J., assignor of one-half to Arthur W. Fox, Brooklyn, N. Y. Filed Feb. 27, 1905. Serial No. 247,509.



Claim.—A socket for bottles, comprising a shell, having sides slit at intervals, fitted to the shape of the bottle, and provided with means for securing it to a table, the portions of the shell between the slits being formed into springs to clamp a bottle when set in the socket.

816,980. REVERSIBLE HANDLE ATTACHMENT FOR PLANES. ROBERT HUNTER, Spokane, Wash. Filed Mar. 28, 1905. Serial No. 252,506.



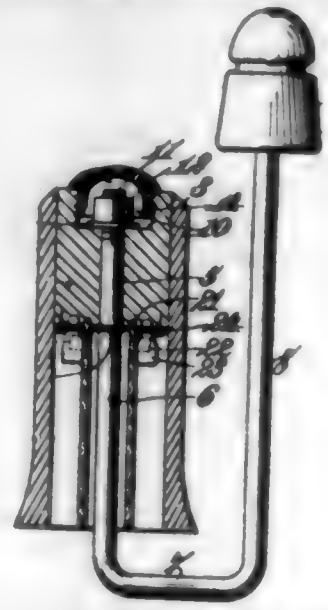
Claim.—1. In a plane of the class indicated, the combination, with the body of the same, of a fixed base-piece having its upper side formed upon the arc of a circle extending between the sides of the plane and described from a point outside the body of the plane, and having upturned end portions which are undercut, a movable piece fitted to the curved surface of the base-piece and having projecting end portions adapted to fit and slide in such upturned undercut portions, means for locking the two parts together, and a handle secured to said movable piece, substantially as described.

2. In a plane of the class indicated, the combination with the fixed base-piece having its upper side curved corresponding to a segment of a cylinder, and provided with upturned end flanges, one of which has a series of notches, the movable piece fitted and adapted to slide upon the curved base-piece, a spring-catch secured to the movable piece and adapted to engage any of the said notches, and a handle secured to the movable base-piece, substantially as described.

816,981. CROSS-ARM FOR ELECTRIC OR SIGNAL WIRES. ANTHONY H. ILLOHAN, Oakland, Cal. Filed Mar. 21, 1905. Serial No. 251,333.

Claim.—1. In a cross-arm for the purpose set forth, a body, a continuous pin having one extremity removably secured in the body and depending below the latter to one side and above the same and having an insulator on its free terminal, the secured end of the pin in the body being accessible from the top of the latter and also withdrawable downwardly through the body, and an insulating-cap removably applied over the end of the pin secured in the body and accessible from the upper side of said body.

2. A cross-arm for the purpose set forth having a body with a protective covering surrounding the sides and ends of the same and depending therebelow to form a skirt, a pin having one terminal removably secured in the body and extending downwardly within the skirt and below the end of the latter and then upwardly above the body, and an insulator on the free terminal of the pin.



3. In a cross-arm for the purpose set forth, an insulating-body having cavities formed in the upper portion thereof and openings extending therethrough and communicating with the cavities, continuous pins having screw-threaded extremities projected upwardly through the openings into the cavities and removably secured to the body, the pins depending below the body and to one side of the latter and then vertically above said body, insulators on the free terminals of the pins above the body, securing devices applied to the extremities of the pins projecting into the cavities, and insulating-caps removably inserted in the cavities over the securing devices and the extremities of the pins engaging the body, said insulating-caps bearing on the upper edge of the body and rendering the securing means for the pins accessible.

4. In a cross-arm of the class set forth, an insulating-body, pins secured in and depending below and to one side of the body and having insulators on their free extremities, and tubular insulating-inclosures separably applied to the under side of the body around portions of the pins.

5. In a cross-arm of the class set forth, an insulating-body, pins secured in and depending below and to one side of the body and having insulators on their free extremities, and insulating-inclosures removably applied to the under side of the body around portions of the pins.

6. In a cross-arm of the class set forth, an insulating-body, pins secured in and depending below and to one side of the body and having insulators on its free extremities, and insulating-inclosures surrounding the portions of the pins depending from the body and having projections at their terminals and spring locking devices with which the said projections removably engage.

7. In a cross-arm of the class set forth, an insulating-body, continuous pins secured in and depending below and to one side of the body and having insulators on their free extremities, insulating-inclosures removably surrounding portions of the pins depending below the body and having their upper terminals inserted in the body, the upper extremities of the inclosures having projections, and means with which said projections detachably engage.

8. In a cross-arm for the purpose set forth, the combination of a body having a protective covering surrounding the sides and ends of the same and depending therebelow in the form of a skirt, tubular insulating-inclosures applied to the under side of the body within the skirt, and continuous pins or bolts secured in the body and extending downwardly through the inclosures below the skirt and outwardly from the latter, the free terminals of the pins having insulators applied thereto.

9. In a cross-arm, an insulating-body, continuous pins or bolts secured in the said body and depending below the latter, the secured terminals of the pins or bolts being exposed at the upper side of the body, insulators on the free extremities of the pins or bolts, insulating-caps removably applied to the upper side of the body over the secured terminals of the pins or bolts, and tubular insulating-inclosures removably applied to the under side of the body around portions of the pins or bolts.

10. In a cross-arm, an insulating-body, pins or bolts secured in the said body and depending below the latter, the secured terminals

of the pins or bolts being exposed at the upper side of the body, insulators on the free extremities of the pins or bolts, insulating-caps removably applied to the upper side of the body over the secured terminals of the pins or bolts, and a protective covering applied to the sides and ends of the body and extending below the latter in the form of a skirt.

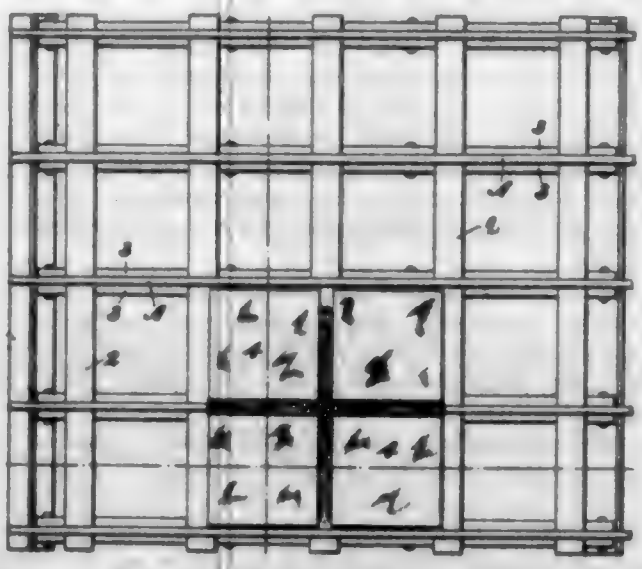
11. In a cross-arm, an insulating-body having openings extending therethrough and cavities in the upper portion communicating with said openings, continuous pins or bolts inserted through the said openings and having stop means thereon to contact with the under side of the body, the pins or bolts being continued below the body and having insulators secured to their free terminals, the pins or bolts being placed in position and withdrawn from the under side of the body, nuts applied in the cavities over the terminal portions of the pins or bolts engaging the body, insulating-inclosures removably surrounding the portions of the pins below the body, and protective insulating-caps applied to the cavities over the nuts and adjacent ends of the pins or bolts.

12. In a cross-arm, an insulating-body having openings extending therethrough and a skirt depending from the sides and ends thereof, continuous pins or bolts inserted through the openings of the body from the under side of the latter, means for securing the pins or bolts in the body, the said pins or bolts projecting below the lower edge of the skirt and having insulators on their free ends, and insulating-inclosures removably applied around the portions of the pins within the skirt.

13. In a cross-arm, an insulating-body having openings therethrough, pins or bolts inserted in the said openings and depending below the body to receive insulators, spring lock devices secured in opposite positions against the under side of the body and having jaws separable at their lower extremities, and tubular insulating-inclosures surrounding portions of the pins or bolts extending below the body and provided with projections to removably enter between the said jaws and hold the inclosures in close relation to the under side of the body.

14. In a cross-arm of the class set forth, an insulating-body, pins secured in and depending below the body and having insulators on their free extremities, tubular insulating-inclosures removably applied to the under side of the body around portions of the pins, and a skirt depending from the body, the lower ends of the tubular inclosures terminating flush with the lower edge of the said skirt.

816,982. ILLUMINATING-TILE CONSTRUCTION. PETER H. JACKSON, San Francisco, Cal. Filed Jan. 17, 1905. Serial No. 241,476.

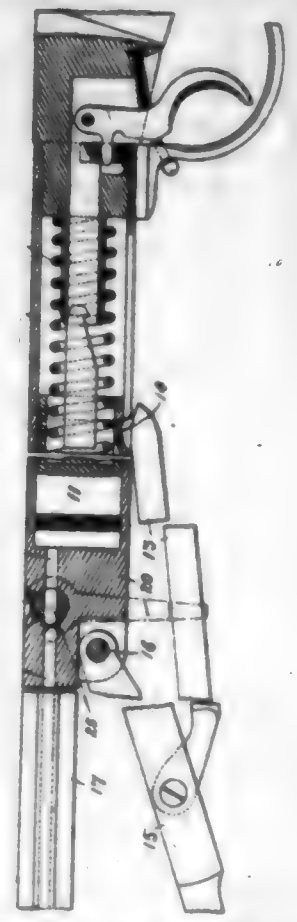


Claim.—1. In a sidewalk, floor and roof construction, metal bars set vertically on edge and having horizontal slots in line, flat bars passing transversely through said slots, other bars parallel and contiguous and upon each side of the first-named bars, and rivets by which they are secured thereto, said bars having channels in their upper edges to fit the transverse bars and provide a substantially level support for the edges of illuminating-tiles.

2. In a sidewalk, floor, and roof construction, main supports consisting of flat metal bars set vertically on edge, having slots made therethrough and flat horizontal bars extending transversely through the slots, other flat bars riveted to the first-named bars and standing on edge on each side of the main bars, said last-named bars having slots fitting the flat transverse bars and forming therewith continuous level supports, and flat illuminating-tiles having all their edges resting upon said supports.

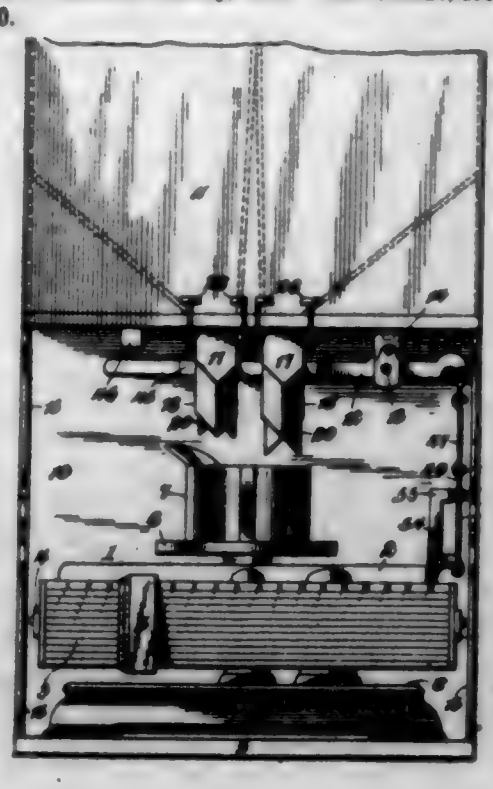
3. Metal frames for illuminating-tiles, said frames comprising flat bars set vertically on edge, other bars of less width and length riveted to the first-named bars, angle or T bar supports having their webs slotted to receive the ends of the first-named bars, and against which the shorter bars abut, slots in the main bars and in the upper edges of the bars fixed thereto, and flat bars extending through the slots to form supports for illuminating-tiles.

816,983. SPRING AIR-GUN. LINCOLN JEFFRIES, Birmingham, England. Filed June 20, 1905. Serial No. 265,566.



Claim.—An air-gun comprising a cylindrical body connected to the stock, a stationary barrel connected with said body, a plunger operating in the air-chamber, a spring arranged in the air-chamber for impelling said piston forwardly, a shiftable link engaging with the piston and adapted when shifted in one direction to move the piston rearwardly, thereby compressing said spring, means for retaining the spring under a state of compression and adapted when operated to release the spring, causing thereby the impelling forward of the piston, and a lever independent of the barrel and pivoted to said body and to said link and adapted when operated to shift the link to compress the spring.

816,984. AUTOMATIC WEIGHING AND COMPUTING SCALE. THOMAS A. KILLMAN, Liberty, Tenn. Filed Jan. 27, 1905. Serial No. 242,910.



Claim.—1. A scale of the class described embodying upper and lower beams in unstable equilibrium, a connection between the beams, and means for steadying the beams during a portion of their movement.

2. A scale of the class described embodying upper and lower beams in unstable equilibrium, a connection between the beams, and means carried by one of the beams for engaging the connection for steadying the beams during a portion of their movement.

3. A scale of the class described embodying upper and lower beams, a connection between the beams, and means carried by the lower beam for engaging the connection to steady the beams during a portion of their movement.

4. A scale of the class described, embodying spaced beams arranged in unstable equilibrium, a connection between the beams pivotally connected with the same, said connection having an intermediate pivot, and an arm carried by one of the beams and arranged to engage the connection at the intermediate pivot during a portion of the movement of the beams.

5. A scale of the class described embodying upper and lower beams, a connection between the beams, and means carried by one of the beams for engaging the said connection, the latter being also provided at such point of engagement with a joint.

6. In a scale of the class described, the combination of a beam, a vertically-movable supply-gate adapted to close by gravity, and a latch for holding the gate in its open position, said latch being arranged beneath and in the path of the beam and adapted to be disengaged from the gate by the said beam.

7. In a scale of the class described, the combination of a beam, a supply-gate, a depressible key connected with the supply-gate for opening the same, and means for holding the gate in an open position, said means being arranged in the path of the beam.

8. In a scale of the class described, the combination of a beam, a supply-gate, means arranged in the path of the beam and operated by the same for holding the gate entirely open while the scale is receiving the bulk of the charge and for permitting a partial closing of the supply-gate after the scale has received the bulk of the charge, and means for checking the supply-gate in its partially-closed position.

9. In a scale of the class described, the combination of a beam, a supply-gate, and a latch having yieldable means for limiting the opening movement of the gate, said latch being arranged in the path of the beam and adapted to prevent the gate from being entirely opened, when the pressure exerted by the beam is insufficient to overcome the pressure of the latch.

10. In a scale of the class described, the combination of a beam, a supply-gate, and a latch having means for limiting the opening movement of the gate and provided also with supporting means for holding the gate open, said latch being also provided with a movable member arranged in the path of the beam and adapted to be operated by the same when the pressure on the beam is sufficient to overcome the weight of the movable member.

11. In a scale of the class described, the combination of a beam, a supply-gate, a latch having arms arranged respectively to limit the opening movement of the gate, and to support the same in its opened position, said latch being also provided with a weighted arm coöperating with the said arms and adapted to operate the same when the pressure of the beam is sufficient to raise the weighted arm.

12. In a scale of the class described, the combination of a beam, a supply-gate, a latch composed of movable members having engaging portions for limiting the opening movement of the gate and for supporting the same in its opened position said members being provided with arms arranged adjacent to each other, one of the arms being weighted and provided with means for engaging the other, said weighted arm being arranged in the path of the beam, and means controlled by the member having the weighted arm for engaging the other member with the gate when the pressure of the beam is sufficient to raise the weighted arm.

13. In a scale of the class described, the combination of a beam, a supply-gate, a latch composed of two movable members having engaging portions and provided with arms, one of the arms being weighted and having means for engaging the other, and a normally inactive spring arranged to be placed under tension by the member having the weighted arm for engaging the other member with the gate.

14. In a scale of the class described, the combination of a beam, a supply-gate, a lower latch arranged in the path of the beam and arranged to support the gate in a partially-opened position, and an upper latch having means for yieldably limiting the opening movement of the gate and provided also with means for supporting the gate in its opened position, said upper latch being operable by the beam when the pressure thereof is in excess of the pressure exerted by the said upper latch.

15. In a scale of the class described, the combination of a beam, a spout, a guide, a sliding cut-off arranged in the guide and provided with upper and lower slots, and upper and lower latches arranged above and below the beam in the path of the same.

16. In a scale of the class described, the combination of a beam, a spout, opposite guides, a slide mounted in the guides, latches located above and below the beam for supporting the gate in an opened position and operated by the beam for successively releasing the gate, and means for manually opening the gate.

17. In a scale of the class described, the combination of a beam, a vertically-movable gate, a lower latch arranged in the path of the beam for supporting the gate in a partially-opened position, and an upper latch for supporting the gate open, said latches beingarranged to be successively operated by the beam for reducing the size of and cutting off the stream.

18. In a scale of the class described, the combination of a spout having oppositely-inclined bottom portions extending downward from the sides of the spout to the median line of the bottom thereof, a supply-gate located at the discharge end of the spout and having a substantially V-shaped notch coöperating with the oppositely-inclined portions of the spout to form a substantially rectangular discharge-opening, and means for operating the gate.

19. In a scale of the class described, the combination of a plurality of compartments having discharge-spouts, supply-gates arranged at the discharge ends of the spouts, a beam having spaced actuating members arranged adjacent to the gates, and latch mechanism located in the path of the beam for holding the gates open and adapted to be tripped by the beam.

20. In a scale of the class described, the combination of a plurality of compartments having discharge-spouts, supply-gates arranged at the discharge ends of the spouts, a beam having spaced actuating members arranged adjacent to the gates, latch mechanism located in the path of the beam for holding the gates open and adapted to be tripped by the beam, and keys connected with the gates for opening the same.

21. In a scale of the class described, the combination of upper and lower beams arranged in unstable equilibrium, a connection between the beams pivoted to the same, means for steadying the beams during a portion of their movement, a stop arranged to be engaged by the upper beam for limiting the upward movement thereof, a spout, a supply-gate, and means located in the path of the beam for holding the gate open, said means being arranged to be tripped by the beam for closing the spout.

22. In a scale of the class described, the combination of a frame, a hopper mounted on the frame and having front and rear compartments provided with spouts, said spouts being spaced apart and having inclined portions, guides extending upward from the spouts, supply-gates arranged in the guides, latches for holding the gate in an opened position, a beam having an open portion, the sides of which are arranged to operate the latches, and means for opening the gates.

23. A scale of the class described embodying parallel beams, a connection between the beams having an intermediate joint, and means carried by one of the beams for engaging the connection at the intermediate joint for steadying the beams during a portion of their movement.

24. A scale of the class described embodying parallel beams, a connection between the beams pivotally connected to the same, said connection being provided with an intermediate joint, and means carried by one of the beams for engaging the connection to steady the beams during a portion of their movement, said means when in engagement with the connection also serving to shift the effective pivotal point from one end of the same to the intermediate joint.

25. A scale of the class described embodying spaced beams, a connection between the beams, and an arm carried by one of the beams and arranged to engage the connection during a portion of the movement of the beams to steady the latter.

26. The combination of a scale, a vertically-slidable supply-gate, a plurality of devices located at different points for supporting the gate in different positions to vary the size of the stream of material, and means for successively tripping the said devices.

27. The combination of a scale, a gate or cut-off, upper and lower devices for supporting the gate or cut-off in an open position, and means for automatically tripping the upper device to effect a partial closing of the cut-off before the scale has received its full charge.

28. In a scale of the class described, the combination of a beam, a vertically-movable gate or cut-off, and upper and lower devices for holding the gate or cut-off in an open position, said devices being arranged to be successively tripped by the beam.

29. In a scale of the class described, the combination of a beam, a supply-gate, and a weighted device having means for limiting the opening movement of the gate, said device being arranged in the path of the beam and adapted to prevent the gate from being entirely opened when the pressure exerted by the beam is less than that of the weight of the device.

30. The combination with a scale, of a supply-gate, latch mechanism for limiting the opening movement of the gate and provided with means for retaining the gate in its open position, and means for automatically operating the latch mechanism to permit the gate to open and also for permitting a closing movement.

31. The combination with a scale, of a cut-off manually-operated means for opening the cut-off, and means automatically operable by the scale for controlling the opening movement of the cut-off.

32. The combination with a scale, of a cut-off, manually-operated means for opening the cut-off, and a gravity device automatically operable by the scale for limiting the opening movement of the cut-off when the amount to be weighed is less than a predetermined weight.

33. In a scale of the class described, the combination of a beam, a vertically-movable gate, manually-operated means for opening the gate, and upper and lower devices for supporting the gate in its open position, the lower device being operable by the said gate-opening means, and the upper device being automatically controlled by the beam for limiting the opening movement of the gate when the amount to be weighed is less than a predetermined weight.

34. In a scale of the class described, the combination of a beam, a vertically-movable gate, manually-operated means for opening the gate, and upper and lower devices for supporting the gate in its open position, the lower device being operable by the said gate-opening means, and the upper device being automatically controlled by the beam for limiting the opening movement of the gate when the amount to be weighed is less than a predetermined weight, said devices being arranged in the path of the beam and adapted to be tripped by the same.

35. In a scale of the class described, the combination of a beam, a vertically-movable gate, manually-operated means for opening the gate, and upper and lower devices for supporting the gate in its open position, the lower device being operable by the said gate-opening means, and the upper device being automatically controlled by the beam for limiting the opening movement of the gate when the amount to be weighed is less than a predetermined weight, said devices being arranged in the path of the beam and adapted to be successively tripped by the same, whereby the size of the stream will be automatically reduced.

36. The combination with a scale, of a cut-off, manually-operable means for opening the cut-off, a plurality of catches for supporting the cut-off in different positions, and a gravity device automatically operated by the scale for controlling the opening movement of the cut-off.

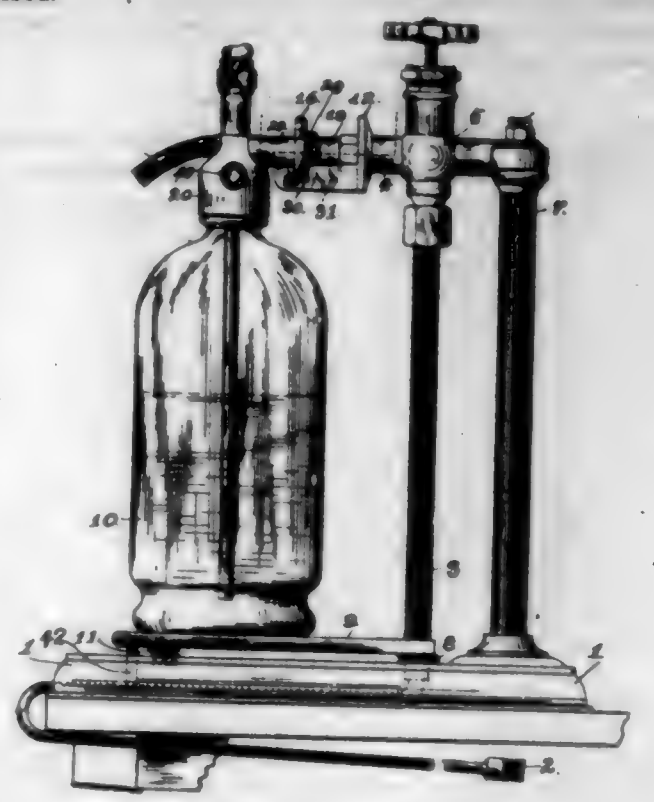
816,985. STAND AND CHARGING APPARATUS FOR SIPHONS.

DEWIS LANDAU, San Francisco, Cal. Filed Aug. 1, 1905. Serial No. 272,941.

Claim.—1. A charging apparatus for siphons comprising a base, a stand-pipe thereon, a supply-pipe connected with the stand-pipe, means for controlling the liquid in the supply-pipe, said supply-pipe being provided with a tubular terminal adapted to abut against the terminal of the siphon-inlet, and a lever having a pivotal connection with the supply-pipe and adapted to engage a part of a charging-pipe of a siphon and hold said pipes together, substantially as described.

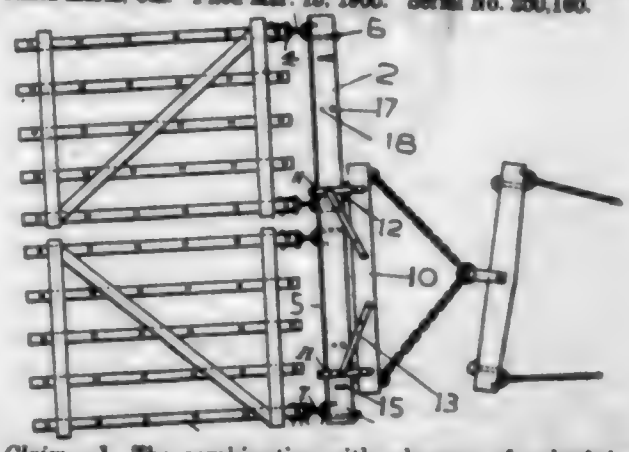
2. A charging apparatus for siphons comprising a supply-pipe having a terminal, a cross-head on the supply-pipe, a barrel secured to said cross-head, a plunger moving in said barrel, a spring pressing said plunger inward, a lever pivoted to said plunger and having a recess adapted to engage a part carried by a charging-pipe of a siphon, and means for securing the other end of the lever, whereby said charging and supply pipes are held tightly together, substantially as described.

3. An apparatus for charging siphons comprising a supply-pipe, a valve controlling the same, a cross-head thereon having a tubular guideway, a plunger sliding therein through one end of the guideway and also revoluble about its axis, a spring around said plunger tending to press the plunger toward the other end, a lever pivoted upon the end of the plunger extending outside the guideway, an arm extending from the opposite side of the cross-head and having a recess adapted to be engaged by said lever and a terminal for the supply-pipe between said guideway and arm, substantially as described.



816,986. SIDEHILL-HARROW DRAFT ATTACHMENT.

MANUEL C. MACHADO, Morrow, Cal., assignor of one-half to A. H. Froom, Santa Maria, Cal. Filed Mar. 15, 1905. Serial No. 250,160.



Claim.—1. The combination with a harrow of a draft-bar connecting to and extending across the top of the harrow, said bar having a double series of perforations, a bar for the attachment of the draft means, guiding means carried by one bar and embracing the other bar, said second bar being slidable lengthwise on the draft-bar, and means to vary the movement of the sliding bar on the draft-bar, said last-named means including pins fitting one of said series of perforations and having lateral projections fitting the perforations of the other series.

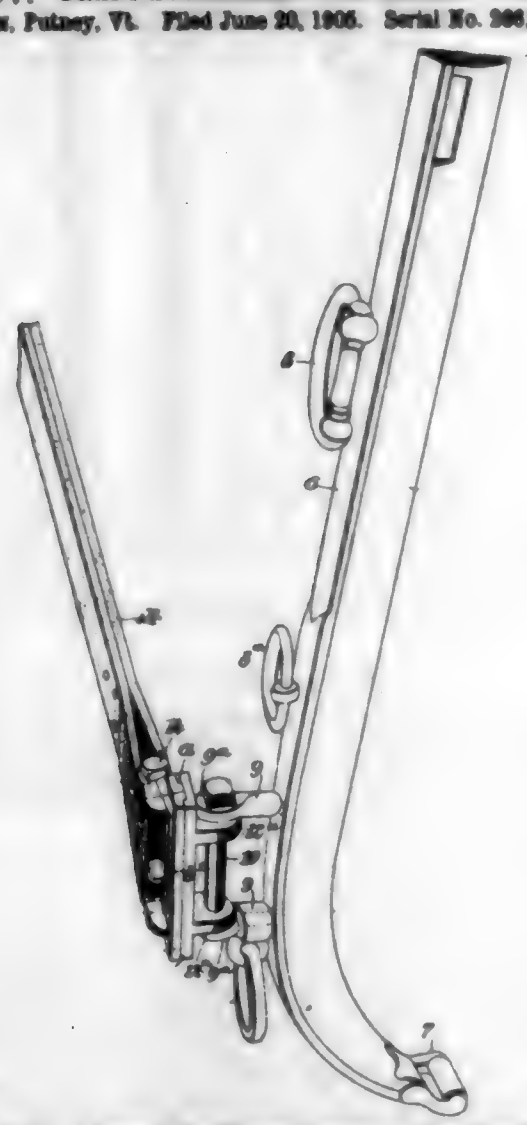
2. The combination with a draft-bar, of a member parallel with and supported by the draft-bar for the attachment of a draft means, guiding means between the bars and by which the second bar is slidable on the draft-bar, said draft-bar having a double series of perforations, and pins fitting one of said series of perforations, to limit and vary the sliding movement of said member, said pins having lateral projections with inturned ends fitting the other series of perforations in the draft-bar.

3. The combination of a draft-bar having a double series of perforations, a second bar for the attachment of a draft means, means carried by one bar and engaging the other bar whereby the second bar is slidable lengthwise of a draft-bar, and means to limit said sliding movement, said last-named means including pins fitting one series of perforations and provided with lateral extensions fitting the other series of perforations.

4. The combination of a draft-bar, a sliding bar carried by the draft-bar for the attachment of the draft means, said sliding bar having brackets proximate to its ends embracing the draft-bar, said brackets having reversible bearings on the back of the draft-bar, and means to limit the sliding movement of said sliding bar on the draft-bar.

5. The combination of a draft-bar, a sliding bar carried thereby and to which the draft means is attached, said draft-bar having a plurality of perforations on each side of the center, pins fitting said perforations and limiting the movement of the sliding bar on the draft-bar, said pins having lateral curved projections, and said draft-bar having perforations to receive the ends of said projections to hold said pins against turning.

816,987. **DRAFT ATTACHMENT FOR HAMES.** FREDERICK J. MARTIN, Putney, Vt. Filed June 20, 1905. Serial No. 266,096.



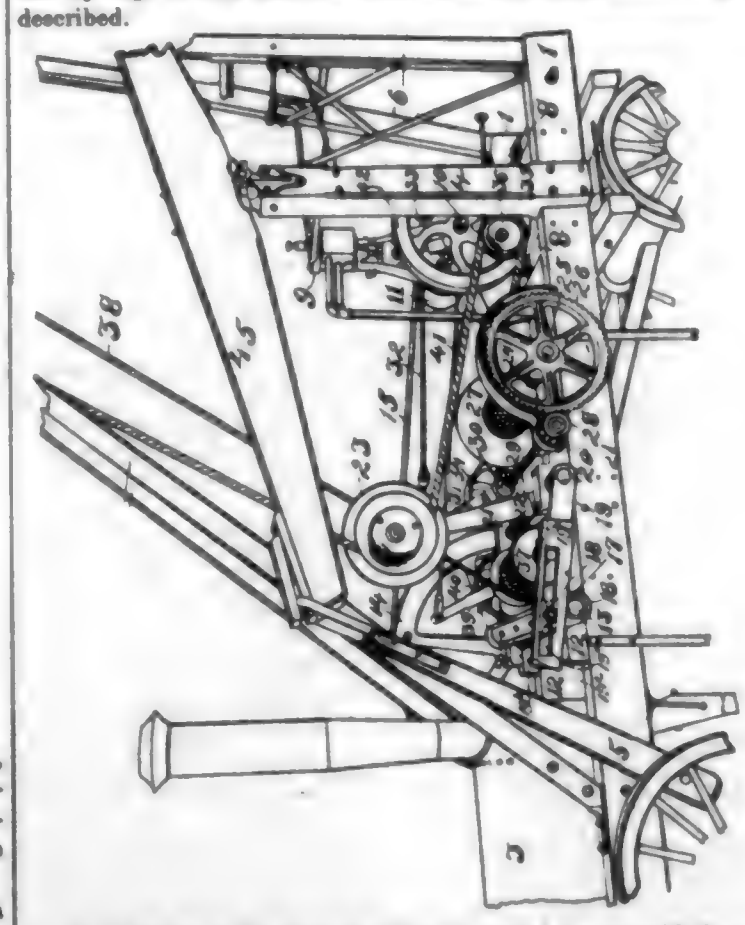
Claim.—1. A hame attachment, comprising a bracket-plate, means for securing said plate on a hame, a mating bracket-plate having lugs thereon, means for holding the plate having the lugs adjusted endwise on the mating plate, and means for rockably securing the end of a tug-strap or the like upon the lugs.

2. A hame attachment, comprising a bracket-plate, having a channel formed longitudinally in one flat face, a mating bracket-plate having a tongue on one face, that loosely occupies said channel, means for holding the plates secured together and permitting longitudinal adjustment of one plate on the other, means for loosely connecting one of said bracket-plates with a tug-strap or the like, and means for securing the other bracket-plate on a hame.

3. The combination with a hame, a reinforcing metal strap-plate thereon, a pair of spaced eyebolts projected from the strap-plate and a pintle-bolt engaging the eyes of said bolts, of a bracket-plate grooved in one side and having ears projected from the other side thereof, said ears having perforations engaged by the pintle-bolt, a mating bracket-plate having a tongue engaging the groove and a longitudinal slot in the tongue and body of said plate, a clamping-bolt engaging the slot and screwing into the grooved bracket-plate, lugs projecting laterally from the slotted bracket-plate and having alined perforations therein, and a coupling-bolt passing through the lugs and engaging the looped end of a tug-strap.

816,988. **WELL-DRILLING MACHINE.** JOHN W. MILLER, Akron, Ohio. Filed May 23, 1905. Serial No. 261,781.

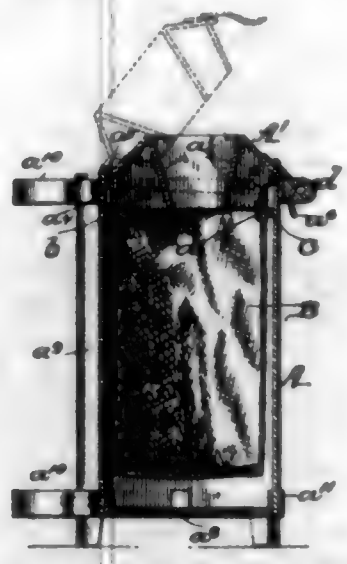
Claim.—1. A device of the class described, comprising a portable frame, a boiler carried thereby, an engine carried by the frame, connections between the boiler and the engine, a transversely-extending shaft mounted above the top edge of said frame, a pulley mounted on one end of said shaft, a belt connection between said pulley and said engine, a crank-arm secured to the opposite end of said shaft and provided with a plurality of perforations, a transversely-extending second shaft mounted above the top edge of said frame at one side of said first-mentioned shaft, a two-part crank-arm the parts of which are separable from each other fixedly secured to one end of said second shaft and provided with an elongated slot, a wrist-pin detachably mounted in any one of said perforations and extending through said slot, a pair of shoes carried by the free end of the wrist-pin and engaging the longitudinal walls of said slot for operating said separable crank-arm when the perforated crank-arm is operated, said perforations in said crank-arm permitting of the adjusting of the wrist-pin to vary the stroke imparted to the separable crank-arm, a single and upwardly-extending oscillatory arm fixedly secured on said second shaft intermediate the sides of said frame, an open spudding cable-receiving sheave mounted on one side of said oscillatory arm, movable in unison therewith and adapted to permit of the detaching of the cable without removing the said oscillatory arm, a cable-reel mounted for rotation above the top edge of said frame, a derrick at one end of said frame, a cable on said reel extending therefrom to and partially around said cable-receiving sheave to the top of the derrick and adapted to be actuated by the oscillations of said cable-receiving sheave, and a supporting means mounted upon the top edge of said frame for said shafts and reel, substantially as described.



2. A device of the class described, comprising a portable frame, a boiler carried thereby, an engine carried by the frame, connections between the boiler and the engine, a transversely-extending shaft mounted above the top edge of said frame, a pulley mounted on one end of said shaft, a belt connection between said pulley and said engine, a crank-arm secured to the opposite end of said shaft and provided with a plurality of perforations, a transversely-extending second shaft mounted above the top edge of said frame at one side of said first-mentioned shaft, a two-part crank-arm the parts of which are separable from each other fixedly secured to one end of said second shaft and provided with an elongated slot, a wrist-pin detachably mounted in any one of said perforations and extending through said slot, a pair of shoes carried by the free end of the wrist-pin and engaging the longitudinal walls of said slot for operating said separable crank-arm when the perforated crank-arm is operated, said perforations in said crank-arm permitting of the adjusting of the wrist-pin to vary the stroke imparted to the separable crank-arm, a single and upwardly-extending oscillatory arm fixedly secured on said second shaft intermediate the sides of said frame, an open spudding cable-receiving sheave mounted on one side of said oscillatory arm, movable in unison therewith and adapted to permit of the detaching of the cable without removing the said oscillatory arm, a cable-reel mounted for rotation above the top edge of said frame, a derrick at one end of said frame, a third shaft extending transversely of and above said frame, a sand-line reel mounted on said third shaft, a pulley mounted on the end of said third shaft and arranged in operative relation with respect to the pulley on said first-mentioned

shaft, means for throwing said pulley on said sand-line-reel shaft into frictional engagement with the inner face of the pulley on said first-mentioned shaft, a fourth shaft extending transversely of and above said frame, said cable-reel mounted on said fourth shaft, a spur-gear mounted on said fourth shaft and arranged exteriorly of one side of said frame, a pinion adapted to engage said spur-gear, a fifth shaft extending transversely of and above said frame for supporting said pinion, a pulley mounted on said fifth shaft and arranged in operative relation with respect to the periphery of the pulley on the first-mentioned shaft, means for throwing the said pulley on the fifth shaft into operative engagement with the periphery of the pulley on said first-mentioned shaft, a cable arranged on said reel carried by the fourth shaft and extending therefrom to and partially around said sheave to the top of said derrick, whereby said cable is actuated by the oscillations of said sheave, and means mounted upon the top edge of said frame for supporting all of said shafts, substantially as described.

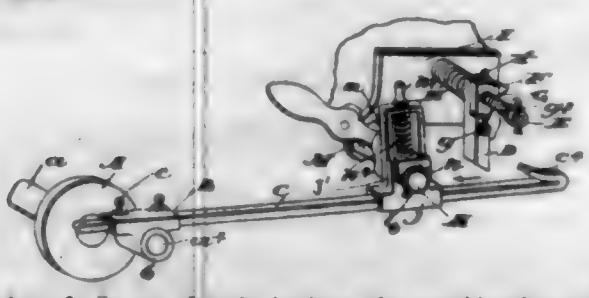
816,989. GARBAGE-CAN. JESSE R. MOLER, HARRY E. INSLEY, and SAMUEL L. PHILLIPS, Denver, Colo. Filed Apr. 15, 1905. Serial No. 255,723.



Claim.—1. As an improved article of manufacture, the garbage-can comprising the hollow sheet-metal body having an open top and bottom, and an inturned top flange a^4, hooks arranged interiorly below the said flange, for suspending a sack within the can proper, and the removable hollow top A′ having a central converging mouth and an outer flange a^3, that projects downward and inward within the can-body and over the sack-hooks, and is provided with upper and under flanges, one resting upon the flange a^4 of the body and the other projecting below the same when the can is in normal position, as shown and described.

2. The combination, with the hollow can-body having an inturned top flange and sack-suspending hooks arranged interiorly of the can-body directly below said flange, of the removable cover A′ having a central opening, and upper and under flanges adapted to engage the flange of the can-body, and means applied to the opposite side of the top for fastening the latter, substantially as described.

816,990. SPARKING IGNITER FOR GASOLENE-ENGINES. JOHN C. MCLACHLAN, Toronto, Canada. Filed Oct. 31, 1904. Serial No. 230,871.



Claim.—1. In an electric igniter, the combination with the movable electrode having the actuating-arm adapted to have free movement in one way, of the sparker-bar provided with a contacting end adapted to engage with the arm, the crank-wheel suitably driven and connected to the sparker-bar, a supplemental sleeve through which the sparker-bar extends provided with a guiding-bracket, a bearing-block located in the guiding-bracket and provided with an upwardly-extending stem projecting through the top of the same, a spring between the bearing block and the upper end of the bracket, a pin extending between the bearing-block and the sleeve and means for supporting the pin as and for the purpose specified.

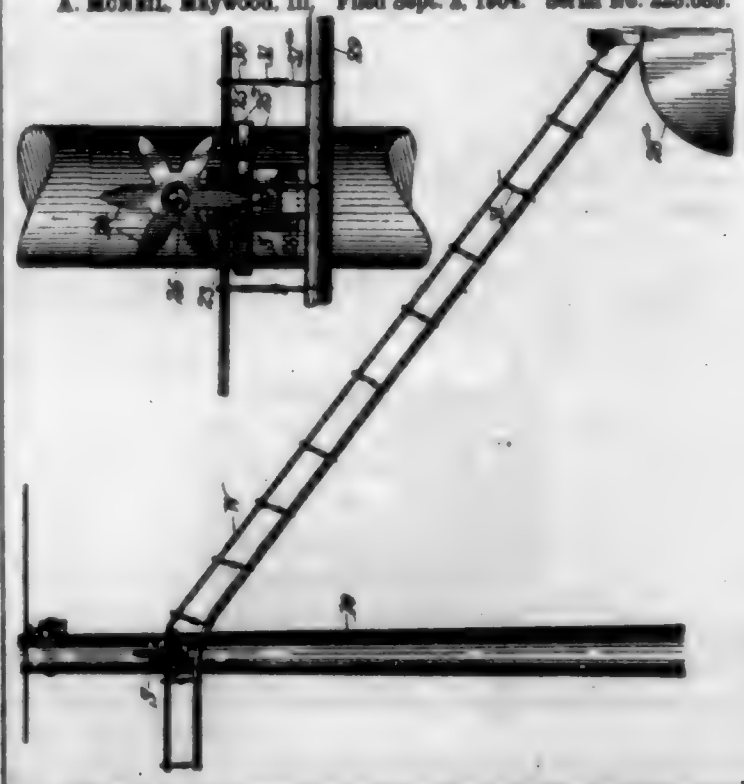
2. In an electric igniter, the combination with the movable electrode having the actuating-arm adapted to have free movement in one way, of the sparker-bar provided with a contacting end adapted to engage with the arm, the crank-wheel suitably driven and connected to the sparker-bar, a supplemental sleeve through which the sparker-bar extends provided with a guiding-bracket, a bearing-block located in the guiding-bracket and provided with an upwardly-extending stem projecting through the top of the same, a spring between the bearing-block and the upper end of the bracket, a pin extending between the bearing-block and the sleeve, a pin projecting outwardly from the cylinder end, a slotted arm secured on the pin, a lever connected to the stud or pin extending between the bearing-block and sleeve and pivoted on the aforesaid pin which projects from the cylinder and a pin on the lever extending through the slot in the arm and a thumb-nut secured on the end of the last-mentioned pin as and for the purpose specified.

3. The combination with the sparker-bar and means for imparting a longitudinal movement to the same and the electrode having an arm adapted to have free movement in one way, of the supplemental sleeve through which the sparker-bar extends having an upwardly-extending guiding-bracket, a bearing-block located within the guiding-bracket, a pin extending between the bearing-block and the bearing on the sleeve and means for adjusting such pin as and for the purpose specified.

4. The combination with the sparker-bar and means for imparting a longitudinal movement to the same and the electrode having an arm adapted to have free movement in one way, of the supplemental sleeve through which the sparker-bar extends having an upwardly-extending guiding-bracket, a bearing-block located within the guiding-bracket, a pin extending between the bearing-block and the bearing on the sleeve, a lever for supporting the pin, a pin suitably supported on which the lever is fulcrumed and means for holding the lever in any position to which it may be swung as and for the purpose specified.

5. The combination with the sparker-bar and means for imparting a longitudinal movement to the same and the electrode having an arm adapted to have free movement in one way, of the supplemental sleeve through which the sparker-bar extends having an upwardly-extending guiding-bracket, a bearing-block located within the guiding-bracket, a pin extending between the bearing-block and the bearing on the sleeve, a lever for supporting the pin, a pin suitably supported on which the lever is fulcrumed and an arm secured on the main supporting-pin and provided with a slotted end and a pin extending from the lever through the slotted end and a thumb-nut on the pin as and for the purpose specified.

816,991. ART OF SUSPENDING AERIAL CABLES. LEONARD A. MCNEIL, Maywood, Ill. Filed Sept. 2, 1904. Serial No. 223,063.



Claim.—1. A support for aerial cables including two intermeshing toothed wheels, a suspension member supported by said wheels and having means for connection with the cable, said connecting

means being movable on the suspension member and adapted to coact with the teeth of the wheels to turn and pass the same.

2. A support for aerial cables including two intermeshing toothed wheels situated substantially at right angles to one another, a suspension member supported by said wheels and having means for connection with the cable, said connecting means being movable on the suspension member and adapted to coact with the teeth of the wheels to turn and pass the same.

3. A support for aerial cables comprising a block having a recess at its outer side adapted to receive a suspension-wire and also having an inclined face at its inner side, and a carrier-arm furnishing a temporary support for the suspension-wire and having a correspondingly-inclined face which may coact with that upon the block.

4. The combination with a series of poles, of a support carried by each pole, a continuous suspension member mounted upon the supports and being encircled thereby, a cable, hangers secured to the cable and surrounding the suspension member and being movable through the supports, and means for drawing the hangers over the suspension member.

5. The combination with a series of supports, of intermeshing toothed wheels carried by each support, a suspension-wire supported by said wheels, a cable, and hangers movable on the suspension-wire and secured to the cable, the said hangers being adapted, when the cable is drawn, to contact with the teeth of said wheels thereby rotating the wheels and passing the same.

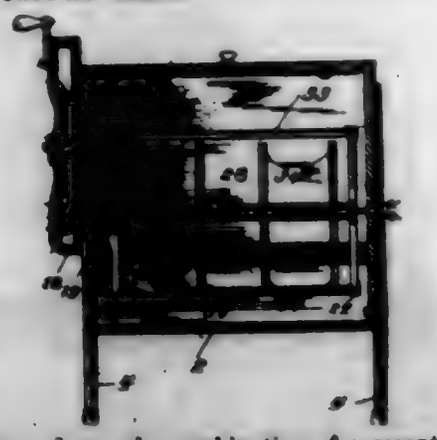
6. The combination with a series of supports, of intermeshing toothed wheels carried by each support, the wheels on each support being situated substantially at right angles to one another, a suspension-wire supported by said wheels, a cable, and hangers movable on the suspension-wire and secured to the cable, the said hangers being adapted, when the cable is drawn, to contact with the teeth of said wheels, whereby the wheels are rotated to permit the hangers to pass.

7. A support for aerial cables comprising a block having an opening for a securing device, the said block being provided in its outer face with an angular recess adapted to receive a suspension-wire, the said recess having a front wall partially closing the recess, and a set-screw extending through the said front wall for retaining the suspension-wire in place in the recess, the said block having at its inner side upwardly and outwardly inclined faces, adapted to coact with correspondingly-inclined faces on a carrier-arm.

8. A support for aerial cables including a horizontally-extending carrier-arm having an end portion extending upwardly, intermeshing toothed wheels mounted to rotate on the carrier-arm, one of said wheels being mounted at the under side of the carrier-arm and the other upon the outer face of the upwardly-extending end portion of said arm, a suspension-wire extending through an opening, between the wheels and hangers for connection with the cable, the said hangers being movable on the suspension-wire and adapted to engage the teeth of the wheels and rotate the same thereby permitting the hangers to pass between the intermeshing wheels.

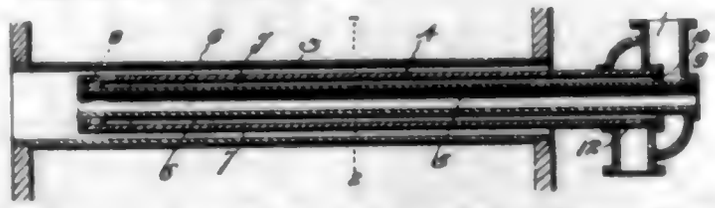
9. The combination with a series of poles, of a support carried by each pole and comprising two intermeshing rotatable members, a suspension member mounted upon said supports and encircled thereby, a cable, hangers secured to the cable and having closed loops encircling the suspension member, and means for drawing the cable and moving the closed loops along the suspension member, the said loops engaging and turning the rotatable members and passing between the same.

816,992. CHURN. John C. McVey, Kansas City, Mo. Filed Jan. 27, 1904. Serial No. 190,800.



Claim.—In a churn, the combination of a receptacle having a plate secured upon the exterior of one of the end walls thereof, said plate being provided with an outwardly-projecting integral stub-shaft and an inwardly-projecting sleeve extending through said wall, a tubular stem revolubly mounted within the sleeve and having a squared head at its inner end, a rod revolubly mounted within the tubular stem and having a rectangular head at its inner end, a shaft journaled at one end upon the casing and formed at its opposite end with a socket receiving the head of the rod, a dasher-frame revoluble on said shaft and having a squared socket receiving the squared end of the tubular stem, a small gear-wheel upon the outer end of the rod, a relatively larger gear-wheel upon the outer end of the tubular stem and located between said small gear-wheel and the plate and close to the latter, and a drive-gear comprising a hub mounted upon the stub-shaft and provided with radial arms having their outer ends turned inward toward the receptacle, a large toothed ring integral with the inbent ends of the arms and meshing with the gear on the tubular sleeve, a smaller toothed ring integral with the arms and disposed thereon between the hub and inturned ends, said smaller ring being arranged in a plane outside the plane of the large toothed ring and meshing with the gear on the rod, the arms being curved outwardly beyond the small toothed ring and their inbent outer ends to form a space for the reception of the gear on the rod, the construction being such that the drive-gear incloses the associated shaft and dasher-gears and mountings and lies in close proximity to the wall of the casing, and a crank fixed to one of the arms and its inturned portion, substantially as described.

816,993. SUPERHEATER. Naum Notkin, Moscow, Russia. Filed Sept. 29, 1905. Serial No. 280,622.



Claim.—1. A superheating-tube comprising an inner tube and an outer tube, intermediate ribs forming steam-channels, said tube being suspended within a fire-tube leading from the fire-box, said tube being closed at its inner end and partially open at the outer end, and means to admit steam to the one portion of its outer end and discharge the same on the opposite portion of its outer end.

2. A superheating-tube comprising an outer tube having a series of longitudinal ribs extending from its inner wall, a hollow inner tube, steam-chambers between the ribs and tubes, said superheating-tubes being suspended within a fire-tube, or placed in any smoke-channel or smoke-box, said superheating-tube being provided with inlet-openings near one end of one portion of the steam-chambers and discharge-openings on the same end in the opposite portion of chambers.

3. A superheating-tube comprising an inner tube and an outer tube, intermediate ribs forming restricted steam-channels, said tube being suspended within a fire-tube leading from the fire-box, said tube being closed at its inner end, and open at the upper portion of its outer end, and means to admit steam to the upper portion of its outer end and discharge the same at the lower portion of its outer end, substantially as described.

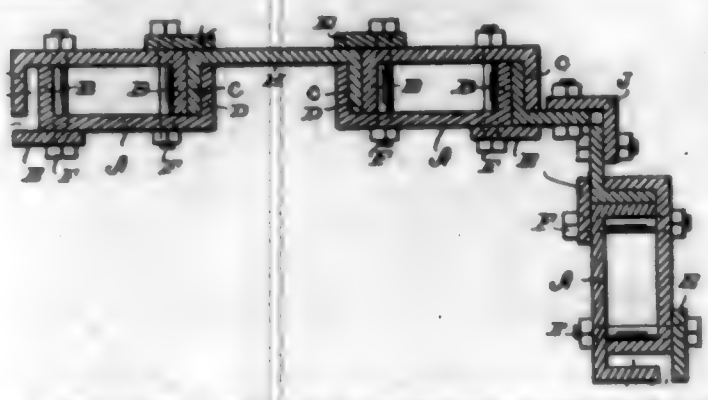
4. A superheating-tube comprising an outer tube having a series of longitudinal ribs extending from its inner wall, a hollow inner tube, restricted steam-chambers between the ribs and tubes, said superheating-tubes being suspended within a fire-tube, said superheating-tube extending through the fire-tube and provided with an inlet-opening near one end of its upper portion, and discharge-openings near the lower portion of the same end, substantially as described.

816,994. INTERLOCKING SHEET-PILING. George E. Nye, Chicago, Ill., assignor to Luther P. Friestedt, Chicago, Ill. Filed Aug. 7, 1903. Renewed Sept. 8, 1905. Serial No. 277,588.

Claim.—1. An interlocking unit for sheet-piling comprising two channel-beams relatively so set that one flange of each extends between the flanges of the other and adjacent one flange thereof, plates secured to the outer faces of the webs of said channel-beams along one edge and projecting beyond said edge to overhang the free flange of the other channel-beam, thereby forming L-shaped recesses at the sides of the unit, and bolts or the like passing through the webs of said channel-beams and through said plates for securing the latter in place and securing said channel-beams in relative position.

2. An interlocking unit for sheet-piling comprising two parallel channel-beams relatively so secured that one flange of each extends

between the flanges of the other, leaving a space practically equal to the thickness of one flange between the free flange of one beam and the contained flange of the other beam, a plate secured to the outer face of the web of each of said beams along one edge and overhanging the free flange of the other beam, thereby forming L-shaped recesses in the side edges of said unit adapted to receive the free flange and free portion of the web of the next adjacent unit to interlock therewith.

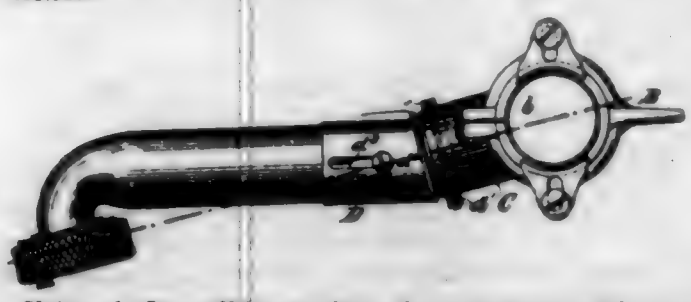


3. Sheet-piling comprising in combination a series of units each comprising two parallel channel-beams relatively so secured that one flange of each extends between the flanges of the other, leaving a space practically equal to the thickness of one flange between the free flange of one beam and the contained flange of the other beam, a plate secured to the outer face of the web of each of said beams along one edge and overhanging the free flange of the other beam, thereby forming L-shaped recesses in the side edges of said unit adapted to receive the free flange and free portion of the web of the next adjacent unit to interlock therewith.

4. Sheet-piling comprising in combination a unit consisting of two parallel channel-beams relatively so secured that one flange of each extends between the flanges of the other, leaving a space practically equal to the thickness of one flange between the free flange of one beam and the contained flange of the other beam, a plate secured to the outer face of the web of each of said beams along one edge and overhanging the free flange of the other beam, thereby forming L-shaped recesses in the side edges of said unit and a unit consisting of a single channel-beam the flanges and adjacent portions of the web of which are adapted to enter and fit said L-shaped recesses of said first-named unit and interlock therewith.

5. Sheet-piling comprising in combination a unit consisting of two parallel channel-beams relatively so secured that one flange of each extends between the flanges of the other, leaving a space practically equal to the thickness of one flange between the free flange of one beam and the contained flange of the other beam, a plate secured to the outer face of the web of each of said beams along one edge and overhanging the free flange of the other beam, thereby forming L-shaped recesses in the side edges of said unit and a corner unit consisting of three angle-irons secured together to form a W, the free flanges and adjacent portions of the web of which are adapted to enter said L-shaped recesses of said first-named units and interlock therewith.

816,995. **TALKING-MACHINE.** EDWIN A. PANCOAST, Montclair, N. J., assignor of one-third to Ellsworth A. Hawthorne, Springfield, Mass., one third to Horace Sheble, Philadelphia, Pa., and one-third to John O. Prescott, Montclair, N. J. Filed Apr. 12, 1905. Serial No. 255,123.



Claim.—1. In a talking-machine, the combination with a movably-mounted tubular support, of a tone-arm, an angular sleeve connecting the tone-arm and said support and arranged to permit movement of the tone-arm relatively to the support, and a sound-box connected to said tone-arm, substantially as described.

2. In a talking-machine, the combination with a movably-mounted tubular support, of an angular sleeve pivotally connected to said support, a tone-arm detachably secured to said sleeve, and a sound-box connected to said tone-arm, substantially as described.

3. In a talking-machine, the combination with a movably-mounted tubular support, of a two-part sleeve attached to said support, one of its parts being at an angle to the other part, and an attached sound-box and tone-arm, said tone-arm being secured to said sleeve, substantially as described.

4. In a talking-machine, the combination with a movably-mounted tubular support, of a two-part sleeve pivotally attached to said support, one of its parts being at an angle to the other part and an attached sound-box and tone-arm, said tone-arm being detachably connected with said sleeve, substantially as described.

5. In a talking-machine, the combination with a movably-mounted tubular support, of a two-part sleeve pivotally connected to said support, one of its parts being at an angle to the other part, a sound-box, and a tone-arm connecting the sound-box and said sleeve, substantially as described.

816,996. **ELECTRIC-LIGHT FITTING.** HERBERT E. PLAM, New York, N. Y., assignor to Howard Miniature Lamp Company, a Corporation of New York. Filed June 9, 1905. Serial No. 264,291.



Claim.—1. In an electric-light fitting, the combination with a lamp-socket, means whereby suitable electrical connections may be made therewith, and a lamp-bulb, of a frame inclosing said bulb, a translucent decorative covering therefor, and means secured to said frame whereby it may be slipped over said lamp-bulb and said socket, and removably secured to said socket.

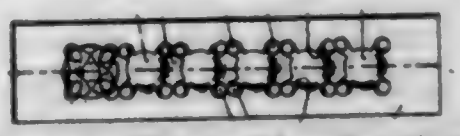
2. In an electric-light fitting, the combination with a lamp-socket, means whereby suitable electrical connections may be made therewith, and a lamp-bulb, of a frame inclosing said bulb, a translucent covering therefor, a band secured to said frame whereby said frame and said band may be slipped over said lamp-bulb and said socket and removably secured to said socket, and decorative flowers petals or sheets secured to or dressed about said frame and said band.

3. In an electric-light fitting, the combination with a lamp-socket, means whereby suitable electrical connections may be made therewith, and a lamp-bulb, of a frame inclosing said bulb, a translucent covering therefor, a band secured to said frame whereby said frame and said band may be slipped over said lamp-bulb and said socket, means locking the ends of said band together whereby it may be removably attached to said socket, and decorative flowers, petals or sheets secured to or dressed about said frame and said band.

4. In an electric-light fitting, the combination with a lamp-socket, means whereby suitable electrical connections may be made therewith and a lamp-bulb, of a frame inclosing said bulb, a translucent decorative covering therefor, a circular band of spring metal secured to said frame whereby said frame and said band may be slipped over said lamp-bulb and said socket, the opposite ends thereof being respectively bent inwardly to form a shoulder, and outwardly to form a coöperating lip, said shoulder and said lip when the band is closed being extended substantially radially of the band, and a protruding end or tongue whereby said band may be unlocked, and decorative flowers, petals or sheets secured to or dressed about said frame and said band

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816,997. **GEM-SETTING.** ALBERT POLLARD, Providence, R. I. Filed Nov. 25, 1904. Serial No. 234,396.

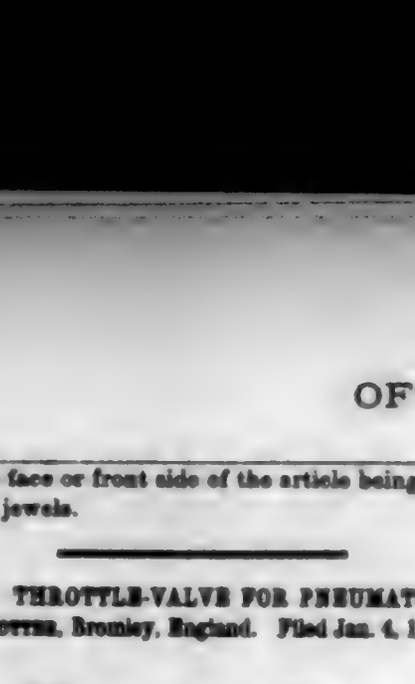


Claim.—1. A gem-setting comprising a sheet of metal having a perforated concave seat with edges projecting beyond the face of the sheet on one side and integral prongs projecting beyond the opposite face of the sheet.

2. An article of jewelry comprising a body portion of relatively thin material formed with sockets therein, the bottoms of the sockets being pressed away from the reverse surface of the article, forming protuberances thereon and jewels set in the sockets, portions of the

material on the face or front side of the article being crowded over portions of the jewels.

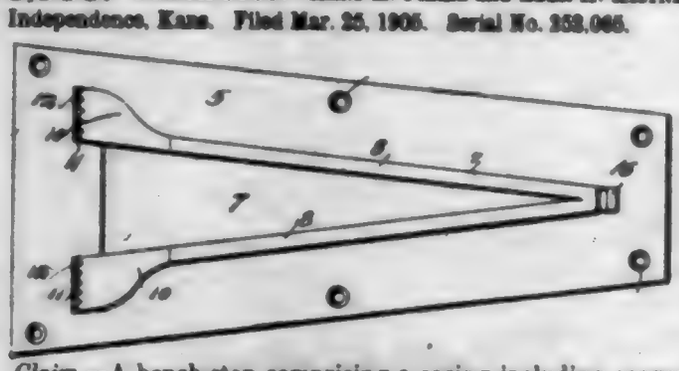
816,998. THROTTLE-VALVE FOR PNEUMATIC HAMMERS. HENRY S. POTTER, Bromley, England. Filed Jan. 4, 1905. Serial No. 239,661.



Claim.—1. The combination, with a power-cylinder having a closed rear end, of an oscillatory hand-operated sleeve encircling the front end portion of the said cylinder, means for preventing the said sleeve from moving longitudinally, a supply-valve arranged at the rear end of the said cylinder, and a rod connection between the said sleeve and supply-valve.

2. The combination, with a power-cylinder having a closed rear end, of an oscillatory hand-operated sleeve encircling the front end portion of the said cylinder and provided with a toothed rack, a plug-valve at the rear end of the cylinder for controlling the supply of pressure fluid, a toothed pinion gearing into the said rack, and a rod connection between the said plug-valve and pinion.

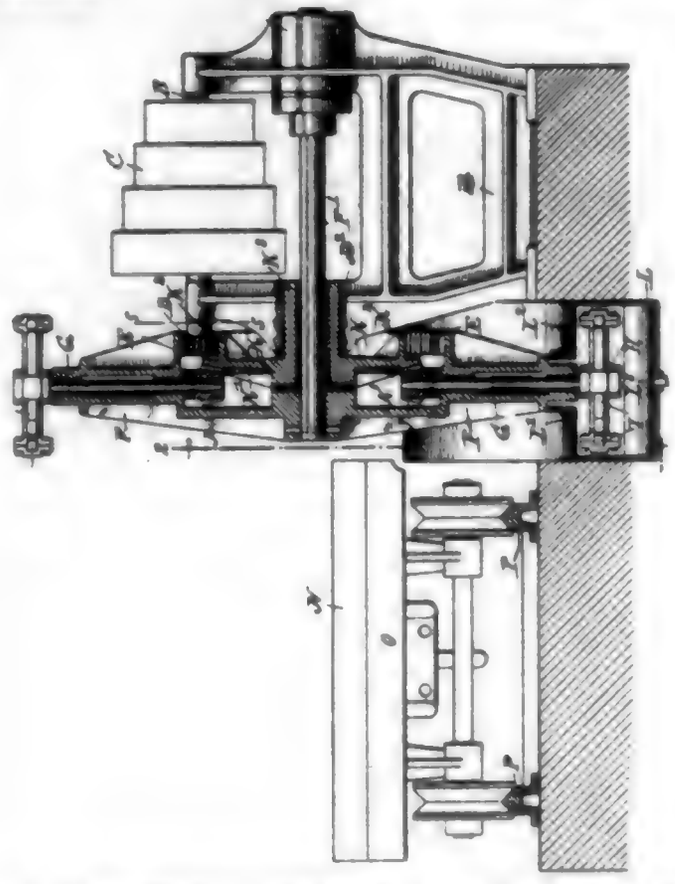
816,999. BENCH-STOP. HANS H. PRAHL and EBER H. KISTNER, Independence, Kans. Filed Mar. 25, 1905. Serial No. 252,065.



Claim.—A bench-stop comprising a casing including converging side plates, rear and front walls joining said side plates, and a face-plate secured to the upper ends of said side and end plates, said face-plate being formed with an opening, a V-shaped dog slidably mounted in said opening and provided with a forward opening, holding members recessed into the upper edges of the walls of the dog and widened and projected beyond the vertical edges of the V-walls, and vertical strips secured to the front wall of the casing and spaced from the converging walls thereof, said strips receiving the free ends of the dog and serving to prevent injury to the walls thereof and to guide the dog in its movement.

817,000. CUTTING-MACHINE. WILLIAM C. QUINLAN, Barre, Vt. Filed May 2, 1905. Serial No. 258,782.

Claim.—1. A cutting-machine comprising a revoluble wheel, a plurality of cutter-heads, each having a plurality of cutters, shafts on which the cutter-heads are mounted, said shafts extending radially and journaled on the said wheel, and means for rotating the said shafts.



2. A cutting-machine comprising a wheel, a plurality of cutter-heads having their shafts arranged radially and journaled in the said wheel, each cutter-head having a plurality of cutters disposed in the same plane, means for rotating the said wheel, and means for rotating the said shafts at a higher rate of speed than that given to the said wheel.

3. A cutting-machine, comprising a revoluble wheel, a plurality of radial shafts mounted in the wheel, cutter-heads on the outer ends of the shafts and each carrying a plurality of cutters, and means for rotating the shafts.

4. A cutting-machine, comprising a revoluble wheel, a plurality of radial shafts mounted in the wheel, cutter-heads on the outer ends of the shafts and each carrying a plurality of cutters, a driven shaft, and means for revolving the wheel and rotating the said shafts from the driven shaft.

5. A cutting-machine, comprising a revoluble wheel, a plurality of radial shafts mounted in the wheel, cutter-heads on the outer ends of the shafts, a driven shaft geared with the wheel, and gearing between the driven shaft and the inner ends of the radial shafts.

6. A cutting-machine, comprising a revoluble wheel provided with a gear-wheel, a plurality of radial shafts mounted in the wheel, cutter-heads on the outer ends of the shafts, pinions on the inner ends of the shafts, a double gear-wheel meshing with the pinion, and a driven shaft provided with a pinion meshing with the gear-wheel of the said wheel and with the double gear-wheel.

7. A cutting-machine comprising revoluble cutter-heads having a plurality of sockets for the cutting-tools, shafts carrying the said cutter-heads, a wheel in which the said shafts are journaled and arranged radially, means for rotating the said wheel, pinions secured on the said shafts, and a gear-wheel driven by the said means and in mesh with the said pinions.

8. A cutting-machine comprising a revoluble wheel, a plurality of revoluble cutter-heads mounted on the said wheel, and a tank for containing a liquid and provided with a segmental apron having a longitudinal opening, said tank being open at the top for the passage of the cutter-heads through the liquid between the apron and the bottom of the tank.

9. A cutting-machine comprising revoluble cutter-heads having a plurality of sockets for the cutting-tools, shafts carrying the said cutter-heads, a wheel in which the said shafts are journaled and arranged radially, means for rotating the said wheel, pinions secured on the said shafts, a gear-wheel driven by the said means and in mesh with the said pinions, and a tank for containing a liquid and open at the top for the passage of the said cutter-heads and their cutters through the liquid in the said tank.

10. A cutting-machine comprising revoluble cutter-heads having a plurality of sockets for the cutting-tools, shafts carrying the said cutter-heads, a wheel in which the said shafts are journaled and arranged radially, a spur gear-wheel fixed on the said wheel, a double gear-wheel having a spur gear-wheel and a bevel gear-wheel and arranged concentric to the said spur gear-wheel, a driving-pinion in mesh with the said spur gear-wheels, and bevel-pinions on the said shafts and in mesh with the said bevel gear-wheel.

817,001. CAR-COUPLING. FRANCIS A. RAMEY, Woodstock, Va., assignor of one-half to George W. Koontz, Woodstock, Va. Filed Oct. 31, 1905. Serial No. 285,258.



Claim.—1. The combination substantially as herein described, of the main draw-head section provided with a top plate, and a bottom plate, spaced apart and provided in their inner faces with grooves forming a track curving from side to side and equally on opposite sides of the central line of the draw-head, an oscillating section provided with ribs fitting in said grooves, a pivoted knuckle on said oscillating section and having a projecting tailpiece, a dog for securing said tailpiece, a carrier-bar for said dog having means for engagement with the dog, and a portion projecting downwardly below the oscillating section, and cams on the main portion of the draw-head on opposite sides of the central line thereof and adapted for engagement by said downwardly-projecting portion of the carrier-bar when the oscillating section is moved to one or the other side of a central line, and spring-operated devices for holding the oscillating section yieldingly in normal position, substantially as set forth.

2. A car-coupling having an oscillating draw-head section having a coupling-knuckle, devices for locking the coupling-knuckle in locked position when the oscillating section is in normal position, and means for automatically releasing said locking devices when the oscillating section is moved laterally in either direction out of its normal position.

3. The combination in a car-coupling, with the main or body section, and the oscillating section held thereto, of a king-bolt in the nature of a rod connection extending longitudinally through the main or body portion of the draw-head and engaged with the oscillating head, the latter being movable transversely across the king-bolt, substantially as set forth.

4. The combination in a car-coupling, with a main draw-head section, of a draw-head section oscillating bodily relatively to the main section and provided with coupling devices, means for locking the said coupling devices when the oscillating section is in normal position, and means for releasing the locking devices when the said section is shifted out of normal position, substantially as set forth.

5. The combination of the oscillating draw-head section having a coupling-knuckle, the main draw-head section having cam-surfaces, a dog for locking the knuckle in coupled position, and means operated from the cams of the main section for releasing said dog.

6. The combination of the main draw-head section having curved ways, the oscillating section having means held in said ways whereby such section may be oscillated bodily in connection with the main section, coupling devices, devices for locking the coupling devices, and means for automatically releasing said locking devices when the oscillating section is shifted out of normal position.

7. The combination of the main draw-head section, the oscillating draw-head section, having coupling means, devices for locking said means in coupled position when the oscillating section is in normal position, spring-operated devices for holding the oscillating section yieldingly in normal position, and means for releasing the locking devices by the lateral movement of the oscillating section.

8. The combination of the main draw-head section, the oscillating draw-head section, having a knuckle provided with a tailpiece, the dog for securing the tailpiece, the carrier for releasing said dog, and cams on the main draw-head section for operating said carrier, substantially as set forth.

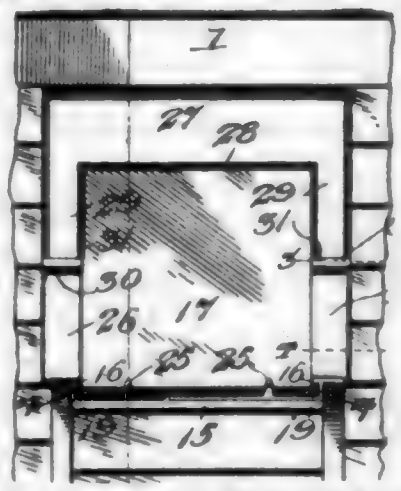
9. The combination of the main draw-head section, the oscillating draw-head section, having a knuckle provided with a tailpiece, the dog fitting loosely in the oscillating section and having an inclined surface for engagement by the said tailpiece, and a carrier for bodily shifting the dog to release the tailpiece substantially as set forth.

10. The combination of the main draw-head section provided with ways curving from side to side for the oscillating section and having in advance of its lower way a depressed seat for the carrier-bar, and cams on opposite sides thereof, the oscillating draw-head section having means operating in the ways of the main draw-head section and provided with a knuckle having a tailpiece, a dog for securing said tailpiece and a carrier for said dog, resting normally in the seat of the main draw-head section and arranged to engage with the cams on opposite sides thereof, when the oscillating section is shifted from normal position, substantially as set forth.

11. A car-coupling comprising a main draw-head section, an oscillating draw-head section provided with coupling devices and oscillating bodily in the main draw-head section, means for locking the coupling devices in coupled position when the oscillating section is in normal position and means for releasing the said locking means when the oscillating section shifts out of normal position substantially as set forth.

12. The combination of the main draw-head section, the oscillating draw-head section, provided with a coupling-knuckle, devices for locking the said knuckle in coupled position in the normal position of the oscillating section, means for releasing the said locking devices when the oscillating section is moved laterally out of normal position, and spring-operated devices for holding the oscillating section yieldingly in normal position, substantially as set forth.

817,002. VENTILATOR. ANDERS RASMUSSEN, New Albany, Ind. Filed Apr. 3, 1905. Serial No. 253,505.



Claim.—1. In a ventilator for horticultural structures, a sash-frame comprising side and end pieces, said side and one of the end pieces being provided with beads or flanges, a glass pane overlapped by and resting against the under faces of said beads or flanges, stop projections on the other cross-piece to retain the pane in place, and clamps on the side pieces adjustable to force the pane upward against the beads.

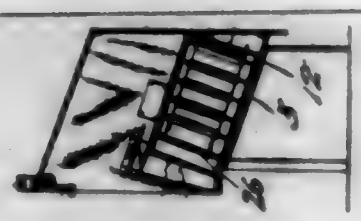
2. In a ventilator for horticultural structures, a swinging sash, a transverse joint-plate at the lower end of the sash-pane, said joint-plate having a flange projecting over the adjacent glass of the structure, the edge of the ventilator-sash frame being recessed to receive and fit over said plate and flange and having its upper face disposed below the level of the upper surface of the sash-pane and provided with spaced stop projections to engage the edge of the pane, substantially as described.

3. In a ventilator for horticultural structures, a sash-frame comprising side and end pieces, said side pieces having upwardly-extending ears and flanges covering the joints below said ears, bracket-plates secured to the rafters of the structure and provided with upwardly-projecting portions carrying pintles engaging said ears, and a shield-plate extending between the ridge-beam of the structure and the upper edge of the sash-opening and having a depressed lower edge to lap over the upper end piece of the sash and provided with downwardly-extending parallel portions covering the joints above the pivotal connections of the sash, said portions being provided at their lower ends with semicircular hoods covering the brackets and partially cut away to permit the sash to swing.

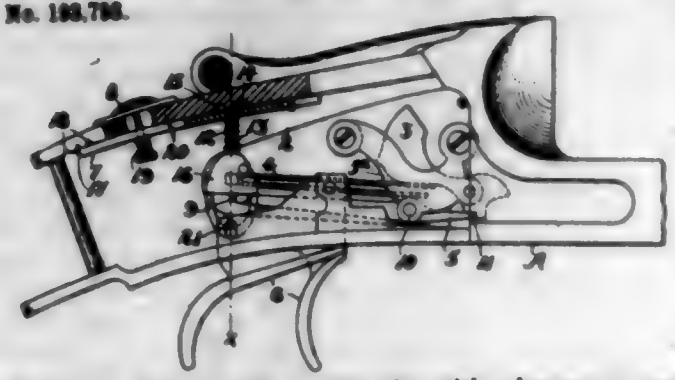
817,003. MAIL-CASE. ARTHUR ROBINSON, Clear Lake, Minn. Filed Oct. 16, 1905. Serial No. 283,055.

Claim.—In a device of the class described, a letter-receiving compartment having a front transparent portion, a pressure device arranged in rear of said portion and comprising a pair of irregularly-bent springs and bearing members connecting said springs adapted to travel over the adjacent walls of the compartment.

817,003.



817,004. SAFETY-LOCK FOR GUN-LOCKS. MORGAN P. ROGERS, and HENRY C. ROGERS, San Jose, Cal. Filed Feb. 16, 1904. Serial No. 193,786.



Claim.—1. In a gun, the combination with a hammer, a mainspring, a sear and a trigger, of an oscillating stud pivoted to the trigger and having a part interposable in the path of the sear to lock the latter against movement.

2. In a gun the combination with a hammer, a mainspring, a sear and a trigger, of a stud pivoted to the trigger and adapted to have a limited oscillating and a limited reciprocating movement, said stud having a projection interposable in the path of the sear, and means for operating the stud to cause it to lock the sear against movement.

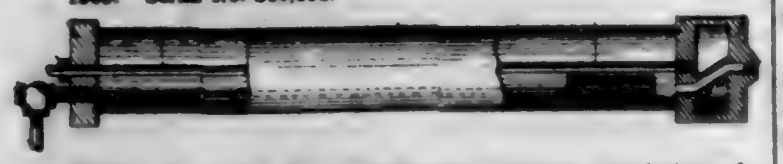
3. In a gun the combination with a hammer, a mainspring, a sear and a trigger, of a depressible part carried by the trigger and having a part interposable in the path of and engageable with the sear to lock the said sear against movement, and means for releasing the depressible part to cause it to restore the sear into operative condition.

817,005. SCARF-HOLDER. ARNE ROSLAND, New Orleans, La. Filed May 4, 1905. Serial No. 258,329.



Claim.—As a new article of manufacture, a necktie-holder composed of a single length of spring metal bent into shape and comprising a central spring-coil, duplex button-engaging arms arranged to converge from their inner toward their outer free ends and a pair of forwardly-projecting tie-engaging fingers disposed at substantially right angles to the arms and having sharpened terminals, said spring-coil forming a part of and serving to connect the lower ends of the arms and the material of the latter being returned upon itself in the formation of the outer side portions of the arms and finally bent outward at the lower ends of the arms to form the tie-engaging fingers.

817,006. TRAP. EDWARD J. RYAN, Danville, Ill. Filed July 1, 1905. Serial No. 267,891.

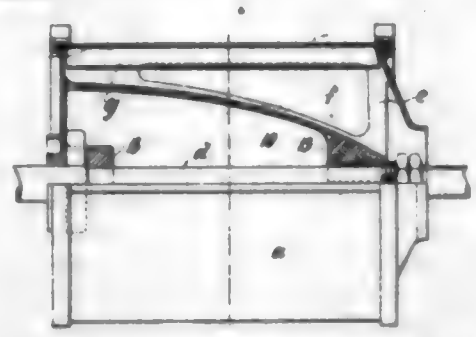


Claim.—1. A trap for steam-heating systems consisting of a casing, a mercury-well located in the lower portion of said casing, connections between the lower end of the casing and the steam-generator below its water-line, a pipe communicating with the mercury-well and extending through the upper end of the casing, an expansible pipe extending down into the mercury-well to near its bottom, said expansible pipe extending upwardly within the casing to near its upper head and having a valve-seat at its upper end, a valve adjustably secured in said upper head adjacent to the upper end of the expansible pipe, the valve-seat at the upper end of the expansible pipe adapted to engage the aforesaid valve and be closed thereby upon expansion of said pipe, and a connection between the interior of the casing and the air-space of the radiators, coils, &c., of the heating system.

2. A trap for steam-heating systems consisting of a casing provided with upper and lower caps, connection between the lower end of the casing and the steam-generator below its water-line, a pipe communicating with the mercury-well and extending through the upper end of the casing, an expansible pipe extending from near the lower wall of the mercury-well to near the upper end of the casing, a valve located adjacent to the upper end of said pipe, a float within the casing, a stem extending upwardly from the float, a valve carried at the upper end of said stem, a pipe connection between the interior of the casing and the steam-supply, a valve-seat within said connection adapted to receive the valve carried by the stem, and connections between the interior of the trap and air-space of the radiators, &c.

3. A steam-heating system comprising a generator, radiators and connections between the generator and the radiators, a trap into which the air of the radiators may exhaust, which trap communicates from its lower end with the generator below its water-line, said trap consisting of a casing, upper and lower heads, a mercury-well therein, an expansible pipe, a valve adjustably secured in the upper head of the casing adjacent to the valve-seat at the upper end of the expansible pipe, and adapted to seal said pipe upon expansion thereof, and a connection between the interior of the casing and the air-space of the radiators, &c.

817,007. OSCILLATING CYLINDRICAL PULP-STRAINER. HERBERT SANGUINETTI, London, England. Filed Sept. 18, 1905. Serial No. 278,960.



Claim.—1. The combination of an oscillatory cylindrical pulp-strainer having a central axis, and a conical-shaped element surrounding said axis and forming a central chamber and provided with perforated partitioning-webs engaging the inner face of the strainer.

2. The combination of an oscillatory cylindrical pulp-strainer having a central axis, a conical-shaped element surrounding said axis and forming a central chamber and provided with perforated partitioning-webs engaging the inner face of the strainer, and blades connected with the inner face of the strainer and interposed between the partitioning-webs carried by the conical-shaped element.

3. The combination of an oscillatory cylindrical pulp-strainer formed of a plurality of hinged plates and having a central axis, means for securing said plates together, and a conical-shaped element forming a central chamber surrounding said axis and provided with perforated peripheral partitioning-webs engaging the inner face of said cylindrical strainer.

4. The combination of an oscillatory cylindrical pulp-strainer formed of a plurality of hinged plates and having a central axis, means for securing said plates together, a conical-shaped element forming a central chamber surrounding said axis and provided with perforated peripheral partitioning-webs engaging the inner face of said cylindrical strainer, and blades connected with the inner face of the strainer and interposed between the webs of said element.

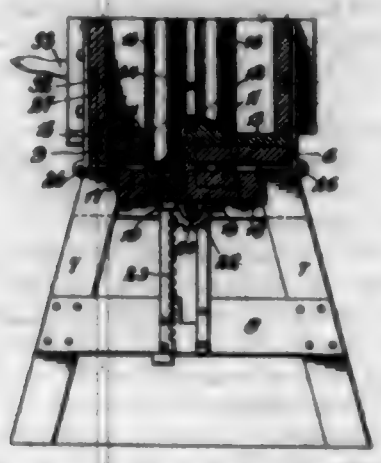
5. An oscillatory cylindrical pulp-strainer having a central axis and formed of a plurality of hinged sections, an adjustable clamping device for connecting the said sections together, and blades secured to the inner face of said sections.

6. The combination with an oscillatory perforated cylindrical element having a central axis, of a conical-shaped element surrounding and connected to said axis and provided with peripheral perforated ribs engaging with the inner face of said cylinder substantially the entire length thereof.

817,008. MOLDING-MACHINE. DAVID A. SCHOENEMAN, George, Iowa. Filed July 20, 1905. Serial No. 270,563.

Claim.—1. In a molding-machine, the combination with a support, of side walls movably mounted thereon, a stationary core member mounted on the support between the side walls, another core member movably associated with the stationary member, means for moving the movable member, and a pallet removably mounted on

the support, said pallet being independent of and removably associated with the core members.



2. In a molding-machine, the combination with a support, of side walls movably mounted thereon, a longitudinally-disposed stationary core member mounted on the support between the side walls, a transverse core member sliding through the stationary member, means for moving the movable member through the longitudinal member, a pallet removably mounted on the support, said pallet being independent of and removably associated with the core members, and movable mold-walls mounted on the support.

3. In a molding-machine, the combination with a support, of mold-walls, a longitudinally-disposed stationary upstanding core member mounted on the support and located inside the walls, said member terminating short of the mold side walls and having transverse openings, a pallet removably mounted on the support and extending on opposite sides of the core member between the same and the side walls and a plurality of upright movable core members operating through the openings and being movable into and out of the space inclosed by the walls.

4. In a molding-machine, the combination with a supporting-bed having openings, of a longitudinally-disposed stationary core member mounted on the bed and having openings alined with the openings of the bed, a removable pallet mounted on the bed and having an opening through which the core member projects, a plurality of upright cores slidably mounted in the alined openings, means mounted beneath the bed for raising and lowering the cores, and walls hinged to the bed and arranged to inclose the core members.

5. In a molding-machine, the combination with a bed, of a pallet removably mounted thereon, angularly-disposed side walls all hinged to the bed independently of the pallet and movable to set-up position with their lower edges resting upon the margins of the pallet, and means for holding said walls in set-up condition.

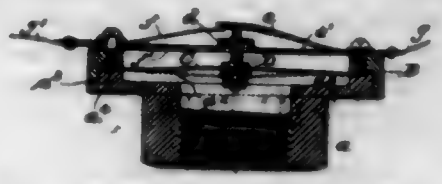
6. In a molding-machine, the combination with a bed, of a pallet removably mounted thereon and having an opening, a core supported by the bed and projecting through the opening, angularly-disposed side walls all hinged to the bed independently of the pallet and movable to positions upon the pallet, and means connecting the walls for holding said walls in set-up condition.

7. In a molding-machine, the combination with a bed having openings therethrough, of a stationary longitudinally-disposed core member mounted on the bed and having openings through its opposite side portions, said openings being alined with the openings in the bed, a pallet removably mounted on the bed and surrounding the core member, said core member projecting above the pallet, side walls hinged to the bed and movable to set-up positions with their lower edges in spaced relation to said bed, said lower edges resting upon the pallet, means for connecting the walls to maintain the same in set-up condition, a plurality of upright core members slidably mounted through the openings in the bed and longitudinal core member, a base supporting said upright core members, a shaft journaled on the base and having pinions, and upright stationary racks mounted beneath the bed and having the pinions in mesh therewith.

8. In a molding-machine, the combination with a bed, of angularly-disposed walls hinged thereto and movable to set-up position, certain of said walls projecting beyond the others and having grooves that receive the ends of the other walls, said other walls having terminal hooks that extend through openings in the projecting walls, and holding-levers pivoted on said projecting walls and engaging the portions of the hooks that extend therethrough.

9. In a molding-machine, the combination with a bed having openings therethrough, of a stationary longitudinally-disposed core member mounted on the bed and having openings through its opposite side portions, said openings being alined with the openings in the bed, a pallet removably mounted on the bed and surrounding the core member, said core member projecting above the pallet, side walls hinged to the bed and movable to set-up positions with their lower edges in spaced relation to said bed, said lower edges resting upon the pallet, means for connecting the walls to maintain the same in set-up condition, a plurality of upright core members slidably mounted through the openings in the bed and longitudinal core member, and means for operating the upright core members.

817,009. AUTOMATIC ALARM FOR GAS-PIPES. AUGUST L. SCHULTZ, Cleveland, Ohio, assignor of one-half to John H. Collister, Cleveland, Ohio. Filed Nov. 28, 1904. Renewed Nov. 11, 1905. Serial No. 286,913.



Claim.—In an automatic alarm for gas-pipes the combination of a base adapted to be screwed onto a service-pipe, a chamber within said base with access thereto from the pipe, a flexible diaphragm across said chamber, a member adapted to be moved by said diaphragm, a flange on said member, an electrical spring contact-finger with its free end bearing upon and overhanging the end of said member and another finger electrically connected with the first and having its free end beneath and in the path of the flange on said member, with another pair of spring contact-fingers electrically connected to each other but insulated from the base, &c., the free end of one lying below but in the path of the first finger herein mentioned while the free end of the other lies below but in the path of the flange on the diaphragm member, all of said contact being connected in an electric circuit and adapted when the diaphragm and its member move to make several independent closures of the said electric circuit, substantially as and for the purpose hereinbefore set forth.

817,010. METHOD OF CRYSTALLIZING SUGAR, &c. VICTOR H. SCHÜTTE, Riga, Russia. Filed Apr. 24, 1905. Serial No. 257,280.



Claim.—The method of obtaining crystals from a hot saturated solution, which consists in causing said solution to slowly travel under the influence of a vacuum through an elliptical vessel which is steadily rocked and simultaneously causing a cooling liquid to travel in a helical path around the outside of said vessel in the opposite direction to the flow of said solution, substantially as described.

817,011. FODDER-BUNDLE BINDER. REUBEN C. SMITH, Nashville, Mich. Filed Aug. 19, 1905. Serial No. 274,897.

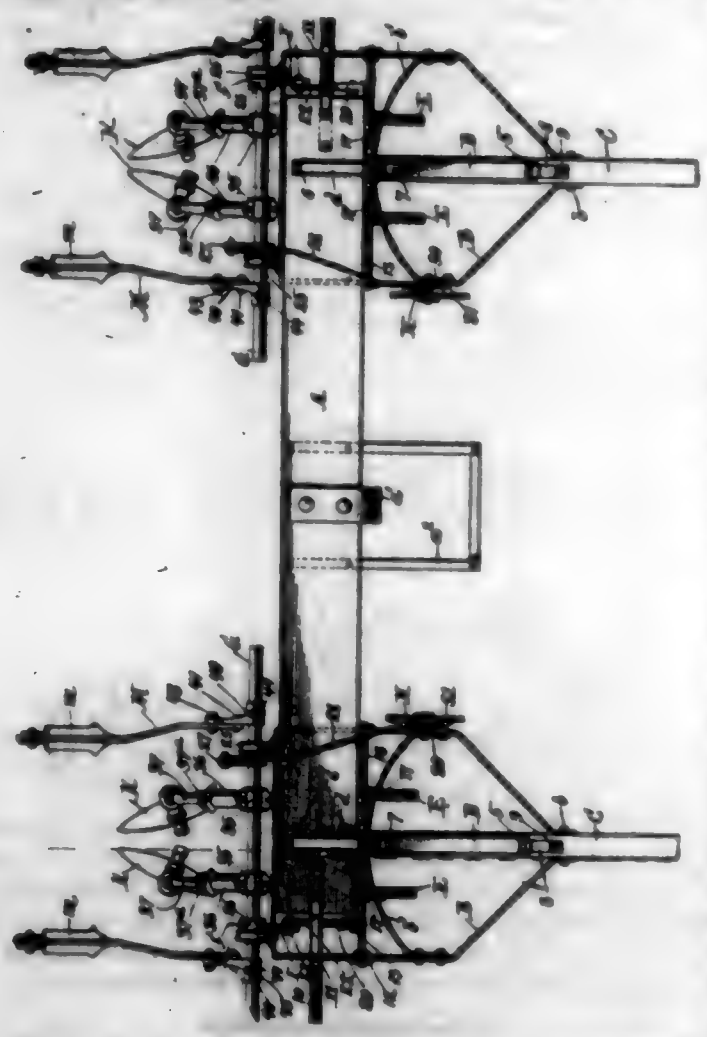


Claim.—1. In a binder of the class described, the combination with a low frame having a seat at one end, and a shock-support at the other, of a platform located on an intermediate portion of the frame

in spaced relation to both the seat and support, said platform being low enough to permit an operator seated on the seat to reach over the same and secure the material on the support, and a binding device and twine-holding means located on the portion of the platform that is adjacent to the seat, said shock-support including an upstanding rear member that inclines downwardly toward the platform to direct the material toward said platform.

2. In a binder of the class described, the combination with a frame comprising spaced longitudinal bars and legs supporting the same, of rearwardly-inclined stakes mounted on one end of the frame and projecting above the bars forming therewith a shock-support, a seat located on the other end of the frame, a platform located on the bars between the shock-support and seat, said platform having a slot, a compressing-strap secured at one end to the platform and having a stirrup at its free end that is movable through the slot, and twine-holding means mounted beneath the platform and including devices for maintaining the twine upon said platform longitudinally of the bars, said strap and twine-holding means being located between the bars.

817,012. CULTIVATOR. WILLIAM SOBEY, Racine, Wis., assignor to J. I. Case Plow Works, Racine, Wis., a Corporation. Filed Sept. 26, 1903. Serial No. 174,712.



Claim.—1. In a double-row cultivator, the combination of a seat-plank, cultivator-frames at the ends of said seat-plank provided with transverse bars and with tongues secured to the rear bars of said cultivator-frames and secured to the front thereof and pivot-bars pivotally connecting the seat-plank and the cultivator-frames, said pivot-bars resting upon the transverse bars of the cultivator-frames.

2. In a double-row cultivator, the combination of a seat-plank, cultivator-frames at the ends of said seat-plank, comprising metal side and end bars and cross-bars, tongues secured to the end bars and to the converging forward ends of the side bars of the cultivator-frames, and pivot-bars pivotally connected to the seat-plank and extending forwardly therefrom above the cross-bars of the cultivator-frames, the forward ends of said pivot-bars being connected to said tongues.

3. In a double-row cultivator, the combination with a seat-plank, of cultivator-frames at the ends of said seat-plank comprising metal side and end bars united by curved cross-bars and pivot-bars resting upon said curved cross-bars, said pivot-bars being pivotally connected to the seat-plank and projecting forwardly therefrom and pivoted to the frame at the center of curvature of said curved cross-bars.

4. In a double-row cultivator, the combination with a seat-plank, of cultivator-frames and tongues at the ends of said seat-plank, said plank being provided at its ends with outwardly-projecting bars resting upon the cultivator-frames and being provided with retaining-straps extending beneath said cultivator-frames, and pivot-bars connecting said seat-plank with the tongues of said cultivator-frames.

5. In a double-row cultivator, the combination with the spreader-board and the separate cultivator-frames at the ends thereof, of bars pivoted at their inner ends to said spreader-board and extending forwardly therefrom and pivoted at their forward ends to said frames, and curved cross-bars on said frames for supporting said pivot-bars between their ends, said cross-bars being concentric with the forward pivots of said pivot-bars, substantially as described.

6. In a double-row cultivator, the combination with separate cultivator-frames, of a spreader-board extending across said frames bars pivoted at their forward ends to said frames and extending rearwardly below said spreader-board, straps connected to said bars and extending above said spreader-board and pivot-bolts connecting said bars and straps and extending through said spreader-board.

7. In a double-row cultivator, the combination with separate cultivator-frames, of a spreader-board extending across said frames, bars pivoted to the forward ends of said frames and extending rearwardly above the cultivator-frames and beneath said spreader-board, pivot-bolts connecting said bars and said spreader-board and metal bars projecting from the ends of said spreader-board and resting on said cultivator-frames.

8. A cultivator comprising a cultivator-frame provided with a rock-shaft, cultivator appliances mounted upon said rock-shaft, a rock-arm on said rock-shaft, an operating hand-lever connected to said rock-arm, carrying-wheels mounted beneath the cultivator-frame, a second rock-shaft for sustaining said carrying-wheels and connections between the axles of said carrying-wheels and said first-mentioned rock-shaft.

9. A cultivator comprising a cultivator-frame provided with a rock-shaft, cultivator appliances laterally adjustable upon said rock-shaft, a rock-arm on said rock-shaft, an operating hand-lever connected to said rock-arm, a second rock-shaft mounted beneath the cultivator-frame, laterally-adjustable arms on said second shaft, carrying-wheels sustained by said laterally-adjustable arms and connections between said laterally-adjustable wheel-carrying arms and said first-mentioned rock-shaft.

10. A cultivator comprising a cultivator-frame provided with a rock-shaft, cultivator appliances mounted upon said rock-shaft, a rock-arm on said rock-shaft, an operating hand-lever connected to said rock-arm, carrying-wheels mounted beneath the cultivator-frame, a second rock-shaft for sustaining said carrying-wheels, arms depending from said second shaft having lateral extensions whereon said carrying-wheels are journaled and adjustable connections between said wheel-carrying arms and said first-mentioned rock-shaft.

11. A cultivator comprising a cultivator-frame provided with a rock-shaft, cultivator appliances mounted upon said rock-shaft, an upwardly-extending rock-arm on said rock-shaft, an operating hand-lever connected to said upwardly-extending rock-arm, a second rock-shaft journaled in advance of said first-mentioned rock-shaft and beneath the cultivator-frame, arms connected to said second shaft and provided with axles whereon said carrying-wheels are journaled, shift-bars projecting downwardly from said first-mentioned rock-shaft and connections between the lower ends of said shift-bars and the axles of the carrying-wheels.

12. A cultivator comprising a cultivator-frame provided with a rock-shaft having cultivator appliances mounted thereon, a rock-arm for shifting said rock-shaft, an operating hand-lever connected to said rock-arm, a second rock-shaft journaled in advance of said first-mentioned rock-shaft, arms connected to said second shaft and provided with axles whereon carrying-wheels are journaled, shift-bars projecting downwardly from said first-mentioned rock-shaft and connections adjustably uniting the lower ends of said shift-bars to the axles of the carrying-wheels.

13. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame, one in front of the other, cultivating devices adjustably mounted on the rear shaft, depending arms adjustably mounted upon the forward shaft, carrying-wheels journaled on said arms, connections between said arms and the rear rock-shaft, a shift-lever and connections independent of said first-mentioned connections between said shift-lever and one of said rock-shafts, substantially as described.

14. A cultivator comprising a suitable frame, a rock-shaft journaled at the rear of said frame, cultivating devices adjustably mounted thereon, a second rock-shaft journaled on said frame intermediate

its front and rear ends, depending arms adjustably mounted on said second rock-shaft, connections between the rear rock-shaft and said arms, carrying-wheels journaled on said arms, a shift-lever and connections independent of said first-mentioned connections between said shift-lever and said rear rock-shaft.

15. A cultivator comprising a suitable frame, separate rock-shafts journaled thereon one in front of the other, cultivating devices mounted on the rear shaft, carrying-wheels mounted on the forward rock-shaft, means for adjustably connecting said rock-shafts and a shift-lever connected to one of said shafts independently of said connecting means, substantially as described.

16. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame, one in front of the other, cultivating devices mounted on the rear shaft, depending arms mounted on the forward rock-shaft, carrying-wheels journaled on said arms, connecting-toggles extending between said arms and the rear rock-shafts and a shift-lever connected to one of said shafts independent of one of said toggles, substantially as described.

17. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame one in front of the other, cultivating devices mounted on the rear shaft, depending arms on the forward rock-shaft, carrying-wheels journaled on the lower ends of said arms, rock-arms fixed to said rear shaft, links pivotally connected at their ends to said rock-arms and to the lower ends of said wheel-supporting arms, said links and rock-arms being arranged to extend substantially in line when said cultivating devices are in working position, and a shift-lever for simultaneously shifting said cultivating devices and carrying-wheels, substantially as described.

18. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame one in front of the other, cultivating devices mounted on the rear rock-shaft, depending arms mounted on the forward rock-shaft, carrying-wheels journaled on the lower ends of said arms, rock-arms mounted upon the rear rock-shaft, links each pivotally connected at its rear end to one of said rock-arms and at its forward end to the lower end of one of said wheel-supporting arms and means for simultaneously shifting said cultivating devices and said carrying-wheels, substantially as described.

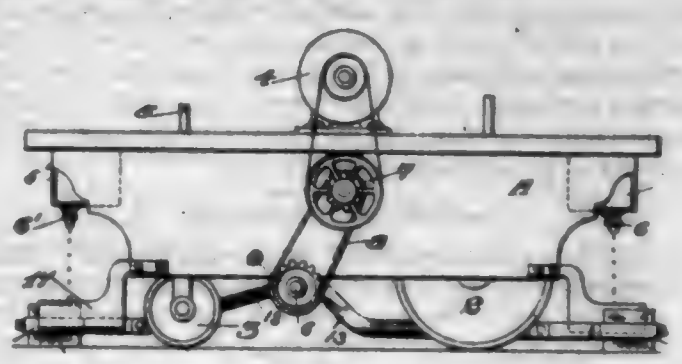
19. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame one in front of the other, cultivating devices mounted on the rear rock-shaft, depending arms mounted on the forward rock-shaft, carrying-wheels journaled on the lower ends of said arms, rock-arms mounted upon the rear rock-shaft, each of said rock-arms being connected to one of said wheel-supporting arms by a link that is pivoted at its forward end to the lower end of the wheel-supporting arm and adjustably pivoted at its rear end to the rock-arm and means for simultaneously shifting said cultivating devices and said carrying-wheels, substantially as described.

20. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame one in front of the other, cultivating devices mounted on the rear rock-shaft, depending arms mounted on the forward rock-shaft, carrying-wheels journaled on the lower ends of said arms, rock-arms mounted upon the rear rock-shaft, each of said rock-arms being connected to one of said wheel-supporting arms by a link that is pivoted at its forward end to the wheel-supporting arm and at its rear end to the rock-arm, each link and arm being arranged to shift on opposite sides of their line of centers, whereby the rearward thrust on the supporting-wheels will hold the cultivators in the ground and also assist in raising them from such position, and a shift-lever connected to one of said shafts for simultaneously moving said cultivating devices and said carrying-wheels, substantially as described.

21. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame, one in front of the other, cultivating devices mounted on the rear rock-shaft, depending arms mounted on the forward rock-shaft, carrying-wheels journaled on the lower ends of said arms, rock-arms mounted upon the rear rock-shaft, links connecting said rock-arms with the lower ends of said wheel-supporting arms, a shift-lever and means independent of said links for connecting said lever with one of said rock-shafts, substantially as described.

22. A cultivator comprising a suitable frame, separate rock-shafts journaled on said frame one in front of the other, cultivating devices mounted on the rear shaft, depending arms mounted on the forward rock-shaft and provided at their lower ends with stub-axles, carrying-wheels journaled on said axles, rock arms on said rear rock-shaft, adjustable connecting-links pivoted at their forward ends to said stub-axles and rearwardly extending therefrom, the rear ends of said links being connected respectively to said rock-arms, a shift-lever, and means independent of said links for connecting said shift-lever to one of said shafts, substantially as described.

817,018. SURFACING AND POLISHING MACHINE. AARON T. SPENCE, JOHN H. PRUDE, and SAMUEL B. ZIMMER, San Francisco, Cal. Filed Aug. 12, 1905. Serial No. 273,942.



Claim.—1. In a surfacing and polishing machine, a frame supported with relation to the surface to be acted upon, a crank-shaft journaled transversely across said frame having contiguous cranks with opposite throw, a motor and connections by which the shaft is revolved, abrading-surfaces and containers therefor located at opposite ends of the frame or carriage, connecting-rods between said containers and the cranks, bearing-wheels for said frame, and driving connections between the motor and said wheels whereby the frame is advanced in either direction by the motor.

2. In a surfacing and polishing machine, a frame supported with relation to the surface to be acted on, wheels upon which the frame is supported, reciprocating polishers located at opposite ends of the frame, means for guiding the polishers, a shaft having contiguous cranks of opposite throw, connections between said cranks and the polishers whereby the reciprocating movements of the polishers are balanced, a motor and connections for driving the shaft, and connections between the motor and the wheels whereby the frame is advanced in either direction by the motor.

3. In a portable surfacing and polishing machine, a wheeled frame supported with relation to the surface to be acted upon, guided slidable polishers carried at opposite ends of the frame, a transversely-journaled shaft upon the frame having contiguous cranks of opposite throw, and the intermediate arm of said cranks common to both, connecting-rods extending from the cranks and communicating motion to the polishers, said connections being offset so that the portions connecting with the polishers are substantially in line with the central arm of the cranks.

4. In a portable surfacing and polishing machine, a wheeled frame supported with relation to the surface to be acted on, a motor-driven shaft journaled upon the frame having contiguous cranks with opposite throw, and the intermediate arm of said cranks common to both, guided slidable polishers located upon opposite sides of the crank-shaft, arms fixed centrally to said polishers extending in line with the central arm of the cranks from opposite sides, and connecting-rods from the cranks offset from said polisher-carrier arms.

5. In a portable surfacing and polishing machine, a wheeled frame supported with relation to the surface to be acted on, a motor-driven shaft journaled upon the frame having contiguous cranks of opposite throw with a common intermediate arm, means whereby the frame is advanced in either direction by the motor, slidable polishers upon opposite sides of the crank-shaft, one connected with each of the cranks, said connections having an offset by which the opposite lines thrust and pull are substantially in line with the intermediate arm of the crank-shaft, and guides fixed upon the frame between which the ends of the polishers are movable.

6. In a portable surfacing and polishing machine, a wheeled frame supported with relation to the surface to be acted on, a motor and means whereby the frame is advanced in either direction thereby, polishers comprising open containing-frames having stones locked therein with their lower surfaces projecting to contact with the surface to be polished and extending transversely of the carriage, a shaft having cranks of opposite throw, and offset rods connecting said cranks with the center of inertia of the polishers, and guides between which the polishers are reciprocated.

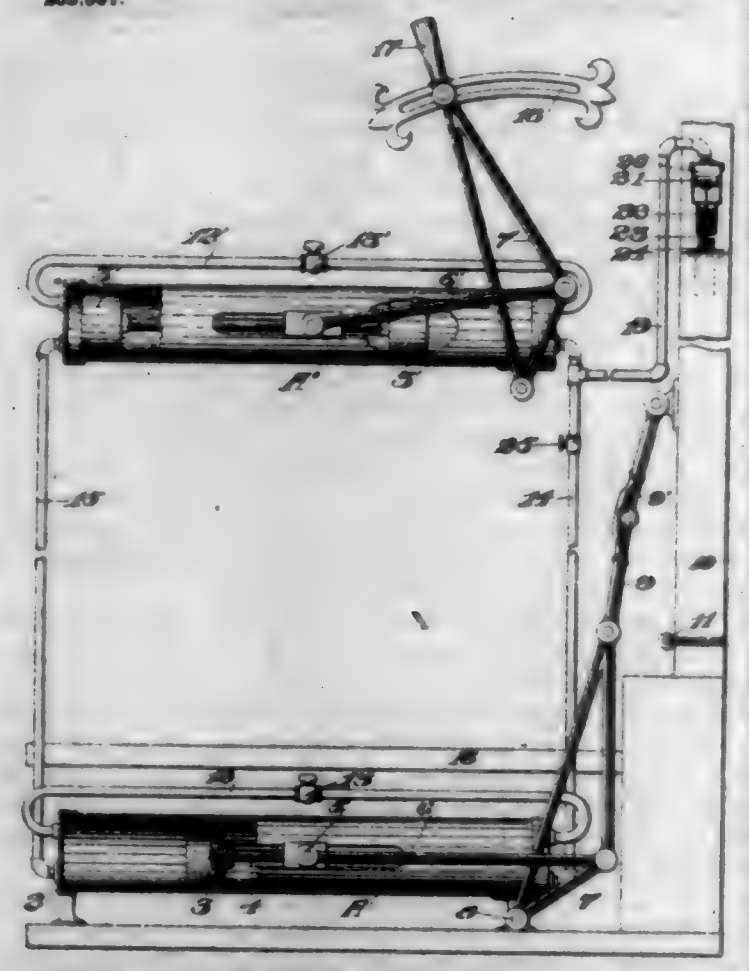
7. In a portable surfacing and polishing machine, a wheeled frame supported with relation to the surface to be acted on, a motor and means whereby the frame is advanced in either direction thereby, guided polishers carried by the frame and means by which an opposed and balanced reciprocation of said polishers is effected.

8. In a portable surfacing and polishing machine, a wheeled frame having a double opposed crank-shaft journaled thereon, slidable polishers connected with the cranks of said shaft, bearing and steering wheels upon which the frame is mounted, a motor and driving connections between the same and the bearing-wheels whereby

the frame may be moved in either direction over the surface being polished.

9. In a surfacing and polishing machine, guided slidable polishers resting upon the surface, a wheeled frame carrying a journaled shaft with double opposed cranks, connections between the polishers and the cranks, mechanism including a motor and connections therefrom by which the driving-wheels of the car are propelled in either direction, and a steering mechanism whereby the direction of the car and the travel of the polishers may be changed.

817,014. **FLUID-PRESSURE DOOR OPENER AND CLOSER.** ARTHUR M. SPINK, San Francisco, Cal. Filed Oct. 20, 1905. Serial No. 283,807.



Claim.—1. In a door closing and opening means, the combination with a hinged door, of a cylinder slotted intermediate of its ends, a double piston in the cylinder, a pitman operating in the slot in the cylinder and connected with the piston, a lever connected with said pitman, a link pivotally connecting the door and lever, and means including a second cylinder and pipe connections between the ends thereof and corresponding ends of the first cylinder, for admitting fluid under pressure alternately into opposite ends of the cylinder to open and close the door.

2. In door closing and opening means, the combination with a hinged door, of a fluid-pressure cylinder, a double-ended piston in said cylinder, a pitman connected with the piston, a lever fulcrumed to a fixed point of support and pivoted to the pitman, a link connecting the lever and door, and fluid-pressure mechanism connected with opposite ends of said cylinder for operating the piston to open and close the door, said mechanism including a second cylinder and double-ended piston and pipes connecting the ends of one cylinder with corresponding ends of the other cylinder.

3. In door opening and closing means, the combination with a hinged door, of a fluid-pressure cylinder, a piston operating in each end of the cylinder, a piston-rod connecting the two pistons, said cylinder slotted intermediate of said pistons, a pitman exterior to the piston and connected to the piston-rod through said slot, a lever of the third class connected with the pitman, a link connecting the door and lever, fluid connections between the opposite ends of the cylinder, and means for operating the piston to open and close the door, said mechanism including a second cylinder and double-ended piston and pipes connecting the ends of one cylinder with corresponding ends of the other cylinder.

4. In a door opening and closing means, the combination of two fluid-pressure cylinders, a piston operable in each cylinder, means connecting one end of one cylinder with the same end of the other cylinder whereby the fluid expelled from one end of one cylinder by the piston of that cylinder is delivered into the same end of the other cylinder to move the piston thereof in a direction opposite to the movement of the first-named piston, and means connected with each piston said last-named means including a pitman, and a lever to which said pitman is connected, and connections between one of the levers and the door.

5. In door opening and closing means, the combination with a hinged door having a latch-bolt, and a keeper for the latter, of two fluid-pressure cylinders, a piston in each cylinder, a pitman connected with each piston, an operating-lever connected with one piston, connections between the other piston, and the door to open or close the latter on the reciprocation of said piston, fluid connections between the corresponding ends of the two cylinders, and fluid-pressure means controlled by said operating-lever to release the latch to allow the door to open.

6. In door opening and closing means, the combination with a door having a latch-bolt, of two fluid-pressure cylinders, fluid connections between corresponding ends of the two cylinders, valved connections between the opposite ends of one of the cylinders, a piston in each cylinder, an operating-lever connected with one piston, and connections between the other piston and the door to open or close the latter on the oscillation of the operating-lever, and fluid-pressure means controlled by the lever to release the latch-bolt to allow the door to open.

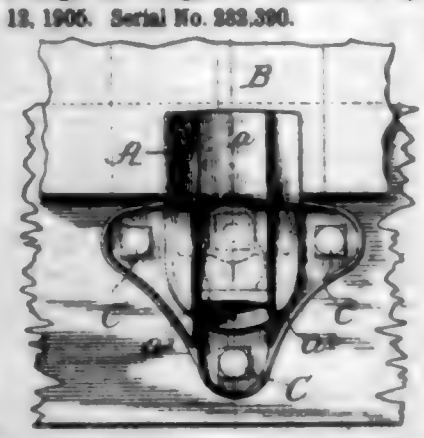
7. In door opening and closing means, the combination with a door, the latch thereof, and a keeper, of two fluid-pressure cylinders, fluid connections between corresponding ends of said cylinders, a piston in each cylinder, an operating-lever connected with one piston, connections between the other piston and the door, and fluid-pressure-actuated mechanism connected with the cylinders to release the latch.

8. In door opening and closing means, the combination with a door, of a cylinder, a piston therein, a lever connected with the piston, and spring-actuated articulated connections between the lever and door, and means for reciprocating the piston.

9. In door opening and closing means, the combination with a door, of a cylinder, a piston therein, a lever, a jointed link connecting the lever and door, means operating on the link to tend to straighten the sections thereof, and means for reciprocating the piston.

10. In door opening and closing means, the combination with a door, of a cylinder, a piston therein, a lever connected with the piston, means for reciprocating the latter, and resilient connections between the lever and door, said connections causing the door to move in unison with the lever on the reciprocation of the piston in one direction and permitting a limited movement of the door independent of the movement of the piston.

817,015. **SAFETY-BRACKET FOR CAR-DOORS.** OSCAR M. STIBSON, Chicago, Ill., assignor to James M. Hopkins, Chicago, Ill. Filed Oct. 12, 1905. Serial No. 282,390.



Claim.—1. A device of the character described, comprising a locking-bar adapted to be secured to the car-wall, and a bracket having a back plate formed with a non-circular hole therein to admit the locking-bar and to enable the back plate to revolubly engage therewith, said hole extending at an angle to the length of the locking-bar when the bracket is turned to position for use.

2. A device of the character described, comprising a locking-bar adapted to be secured to the car-wall, said locking-bar having a hub from which a portion is offset, and a bracket having a back plate provided with a non-circular hole therein to admit the locking-bar and to permit the offset portion of the locking-bar to engage with said back plate, said hole extending at an angle to the length of the locking-bar when the bracket is turned to position for use.

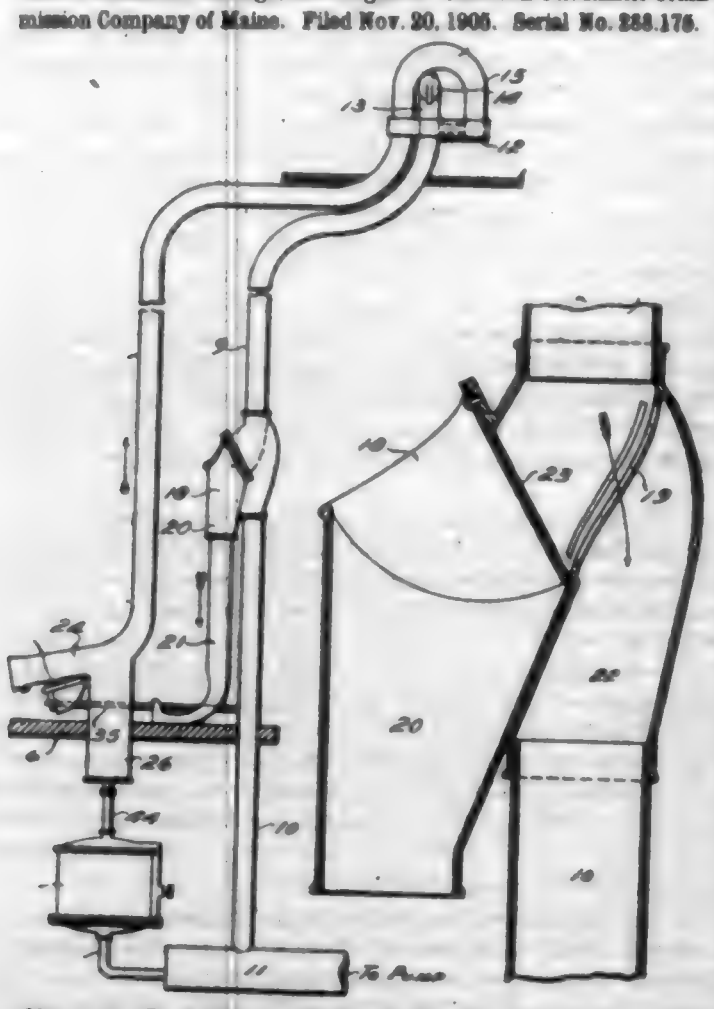
3. A device of the character described, comprising a locking-bar having one or more spurs to hold it against revolution, a screw for uniting said bar to the car-wall and a bracket having a back

plate provided with a non-circular hole therein to admit the locking-bar and to enable the back plate to revolubly engage therewith, said bracket being provided with a portion on the outer face of the back plate extending over said hole.

4. A device of the character described, comprising a locking-bar provided with means whereby it may be attached to the car-wall, an offset to engage the bracket, in combination with the bracket having a back plate provided with a hole adapted to receive the offset portion of the locking-bar, when the bracket is turned away from position for use, the portions of the back plate adjacent said hole being adapted to interlock with the locking-bar when the bracket is turned into position for use.

5. A device of the character described, comprising a bracket having a back plate formed with a hole therein having a contracted upper portion, in combination with a locking-bar having an offset part adapted to engage said back plate when the bracket is turned to position for use, said locking-bar being provided with a hub having flattened portions adapted to enter the contracted upper portion of the hole in the back plate of the bracket.

817,016. PNEUMATIC-DESPATCHING-TUBE SYSTEM. Joseph J. Stoetzel, Chicago, Ill., assignor to Universal Pneumatic Transmission Company of Maine. Filed Nov. 20, 1905. Serial No. 288,176.



Claim.—1. In a pneumatic-despatch-tube system, the combination of a normally closed transit-tube through which carriers are transmitted, a sending-station arranged to permit a carrier to be inserted into the tube, means for exhausting air from the tube, and a valve adapted to admit air into the tube for driving carriers, said valve being adapted to open through a fluctuation of the pressure within said tube, means normally urging the closing of said valve, and means for timing the closing of said valve.

2. In a pneumatic-despatch-tube system, the combination of a normally closed transit-tube through which carriers are transmitted, an air-inlet valve at one end of the tube and being normally closed, means for exhausting air from the tube near its other end, a plurality of receiving-stations through which carriers may be inserted into the tube, and mechanism for opening said air-valve to admit air for driving a carrier along the tube when the carrier is inserted at either of said receiving-stations.

3. In a pneumatic-despatch-tube system, the combination of a normally closed transit-tube through which carriers are transmitted, an air-inlet valve at one end of the tube and normally closed, means for exhausting air from the tube near its other end, a plurality of receiving-stations through which carriers may be inserted into the tube, and pneumatic means for opening said air-valve to admit air for driving a carrier along the tube when a carrier is inserted at either of said receiving-stations.

4. In a pneumatic-despatch-tube system, the combination of a pair of normally closed transit-tubes connecting two stations and having their receiving and delivery terminals at respectively opposite stations, an air-passage connecting said tubes at one of said stations, suction apparatus communicating with the delivery-terminal at the other station, an air-inlet valve communicating with the receiving-terminal at said other station, said air-valve being normally closed, and mechanism adapted to open said air-valve when a carrier is inserted into either of said transit-tubes.

5. In a pneumatic-despatch-tube system, the combination of a pair of normally closed transit-tubes connecting two stations and having their receiving and delivery terminals at respectively opposite stations, an air-passage connecting said tubes at one of said stations, suction apparatus communicating with the delivery-terminal at the other station, an air-inlet valve communicating with the receiving terminal at said other station, said air-valve being normally closed, and mechanism adapted to open said air-valve through a change of the pressure in the transit-tubes.

6. In a pneumatic-despatch-tube system, the combination of a pair of normally closed transit-tubes connecting two stations and having their receiving and delivery terminals at respectively opposite stations, an air-passage connecting said tubes at one of said stations, suction apparatus communicating with the delivery-terminal at the other station, an air-inlet valve communicating with the receiving-terminal at said other station, said air-valve being normally closed, and mechanism adapted to open said air-valve when air is admitted to the transit-tubes at either of said stations.

7. In a pneumatic-despatch-tube system, the combination of a transit-tube through which carriers are transmitted, a receiving-terminal arranged to permit the insertion of carriers into said transit-tube, a gate adapted to normally close the tube against the admission of air at the receiving-terminal, said gate being arranged to open inwardly of the tube to permit the passage of a carrier, and pneumatic means controlled by a carrier and adapted to open said gate in advance of the carrier and close said gate when the carrier has passed.

8. In a pneumatic-despatch-tube system, the combination of a transit-tube through which carriers are transmitted, a receiving-terminal arranged to permit the insertion of carriers into said transit-tube, a gate adapted to normally close the tube against the admission of air at the receiving-terminal, said gate being arranged to open inwardly of the tube to permit the passage of a carrier, a trip extending into said terminal in front of said valve and adapted to be engaged by a carrier when inserted into the tube, and pneumatic means controlled by said trip and adapted to close said gate when the carrier has passed.

9. The combination of a transit-tube through which carriers are transmitted, a gate extending across the tube and normally closed to prevent the passage of air through the tube, pneumatic means for opening said gate, a trip extending into the path of the carriers in front of said gate, and said trip being adapted when engaged by a carrier to cause the operation of said pneumatic means for opening the gate to permit the free passage of the carrier.

10. The combination of a transit-tube through which carriers are transmitted, a receiving-terminal at one end of said tube, a gate extending across said tube near the terminal and being normally closed to prevent the entrance of air through said terminal, a piston connected with said gate, a casing inclosing said piston, suction apparatus for exhausting the air from said transit-tube, and means controlled by the insertion of a carrier into said terminal and adapted to alternately connect said casing at opposite sides of said piston with the suction apparatus to cause said gate to open in advance of the passage of a carrier and to close immediately thereafter.

11. The combination of a transit-tube through which carriers are transmitted, a gate extending across said tube to prevent the passage of air therethrough, said gate being pivotally mounted and adapted to swing in the direction of the travel of the carriers to permit the passage of a carrier, a piston connected with said gate, pneumatic means for controlling the position of said piston-gate, and a trip controlling the action of said pneumatic means and extending into the tube in front of said gate, said trip being adapted when engaged by a carrier to cause said means to open the gate.

12. The combination of a transit-tube through which carriers are transmitted, a gate extending across the tube for controlling the passage of air therethrough, said gate being pivoted at one side of the tube and adapted to swing to permit the passage of a carrier along the tube, a sector of a cylinder secured outside of the tube and arranged concentrically with the pivotal axis of the gate, a piston rigidly connected with said gate and adapted to swing in said sector for controlling the position of the gate and pneumatic connections with said sector at opposite sides of said piston for operating said piston.

13. The combination of a transit-tube through which carriers are transmitted, a gate extending across the tube for controlling the passage of air therethrough, said gate being pivoted at one side of the tube and adapted to swing to permit the passage of a carrier along the tube, a sector of a cylinder secured outside of the tube and arranged concentrically with the pivotal axis of the gate, a piston connected with said gate and adapted to swing in said sector for controlling the position of the gate, pneumatic connections with said sector at opposite sides of said piston for operating said piston, valves controlling said pneumatic connections, and a trip extending into the tube in front of said gate and adapted to operate said valves to open the gate when said trip is engaged by a carrier.

14. The combination of a transit-tube through which carriers are transmitted, a gate extending across the tube for controlling the passage of air therethrough, said gate being pivoted at one side of the tube and adapted to swing to permit the passage of a carrier along the tube, a sector of a cylinder secured outside of the tube and arranged concentrically with the pivotal axis of the gate, a piston connected with said gate and adapted to swing in said sector for controlling the position of the gate, suction apparatus for exhausting the air from said tube, said sector being adapted to be connected with said suction apparatus at each side of said piston or with an air-inlet at each side of said piston, one or more valves controlling said air-inlets and suction connections and normally urged into position for closing said gate, and a trip extending into the tube in front of said gate and adapted when engaged by a carrier to operate said valve or valves to open the gate, substantially as described.

15. The combination of a transit-tube through which carriers are transmitted, a branch passage communicating with said tube and extending toward one side of the path of the carriers and having therein an opening for admitting air to the tube for driving a carrier along the same, suction apparatus for exhausting the air in advance of the carrier, a valve controlling the opening in said branch passage, said valve being normally urged to its closed position, means controlled by a change of air-pressure in said passage for causing said air-valve to open, and means for timing the closing of said air-valve.

16. The combination of a transit-tube through which carriers are transmitted; a valve adapted to admit air into the tube for driving the carriers; a cylinder and piston for controlling the opening and closing of said valve; suction apparatus for exhausting the air from said tube and cylinder; a by-pass connecting the spaces in said cylinder which are at opposite sides of said piston; and an air-passage connecting one end of said cylinder with the interior of said transit-tube and adapted, when air is admitted to the transit-tube, to permit said air to enter the cylinder and shift said piston for opening said air-valve.

17. The combination of a transit-tube through which carriers are transmitted; a valve adapted to admit air into the tube for driving carriers; a cylinder and piston for controlling the opening and closing of said valve; suction apparatus for exhausting the air from said tube and cylinder; a by-pass connecting the spaces in said cylinder which are at opposite sides of said piston; an air-passage connecting one end of said cylinder with the interior of said transit-tube, to permit said air to enter the cylinder and cause said piston to shift for opening said air-valve; and a valve controlling the flow of air from the transit-tube into the cylinder, said valve being normally open and being adapted to be closed by a current of air entering the transit-tube from said air-inlet valve.

18. The combination of a transit-tube through which carriers are transmitted; a valve adapted to admit air into the tube for driving carriers; a cylinder and piston for controlling the opening and closing of said valve; suction apparatus for exhausting the air from said tube and cylinder; a by-pass connecting the spaces in said cylinder which are at opposite sides of said piston; an air-passage connecting one end of said cylinder with the interior of said transit-tube and adapted, when air is admitted to the transit-tube, to permit said air to enter the cylinder and cause said piston to shift for opening said air-valve; and a check-valve adapted to prevent a return-flow of air from said cylinder toward the transit-tube.

19. The combination of a transit-tube through which carriers are transmitted; a branch passage communicating with said tube and extending toward one side of the path of the carriers and having therein an opening for admitting air to the tube for driving a carrier along the same; suction apparatus for exhausting the air in advance of the carrier; a valve controlling the opening in said branch passage; a hollow rod extending into said branch passage through said valve and adapted to open and close said valve; a piston and cylinder for shifting said rod; suction connection for exhausting the air from said cylinder at one side of said piston, the interior of said cylinder on the other side of the piston being in communication with the interior of said branch passage through said hollow rod; and a by-pass connecting the opposite ends of said cylinder, all arranged to cause said air-valve to open through an increase of air-pressure in said branch passage and to time the closing of said air-valve, substantially as described.

20. The combination of a transit-tube through which carriers are transmitted; a downwardly-disposed branch tube communicating with the interior of said transit-tube and open at its lower end; a vertically-disposed cylinder below said branch and in alinement therewith; a piston movably mounted in said cylinder and having a hollow rod extending upwardly into said branch tube, said rod having an opening at its upper end communicating with the interior of said tube and having an opening communicating with the interior of the cylinder above the piston; means for exhausting the air from said cylinder below the piston; a by-pass connecting the ends of said cylinder; a valve mounted on said rod and movable into and out of position for closing the open end of said branch tube through the movement of said piston; and a valve adapted to close the opening at the upper end of said rod, said last valve being normally urged to an open position and being adapted to be closed by a current of air flowing upwardly through said branch tube.

21. The combination of a transit-tube through which carriers are transmitted; a downwardly-disposed branch tube communicating with the interior of said transit-tube and open at its lower end; a vertically-disposed cylinder below said branch tube and in alinement therewith; a piston movably mounted in said cylinder and having a hollow rod extending upwardly into said branch tube, said rod having an opening communicating with the interior of said branch tube and having an opening communicating with the interior of the cylinder above the piston; means for exhausting the air from said cylinder below the piston; a by-pass connecting the ends of said cylinder; an air-inlet valve mounted on said rod and movable into and out of position for closing the open end of said branch tube through the movement of said piston; and a check-valve adapted to cut off the communication between said cylinder and branch tube when the pressure in said branch tube falls below that in the upper end of the cylinder.

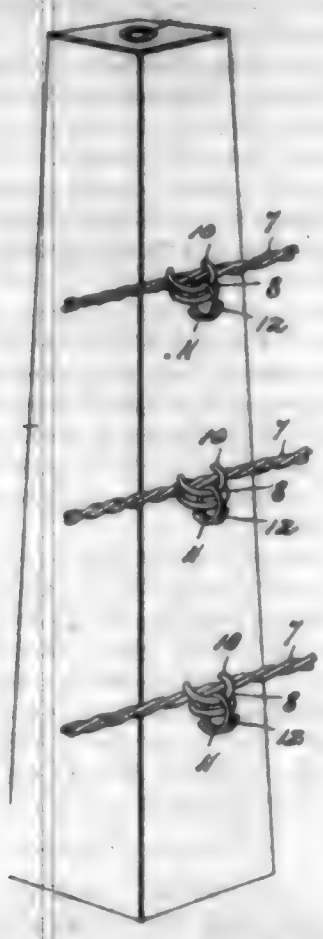
22. The combination of a transit-tube through which carriers are transmitted; a valve adapted to admit air into the tubes for driving carriers; a cylinder and piston for controlling the opening and closing of said valve; suction apparatus for exhausting the air from said tube and cylinder; a by-pass connecting the spaces in said cylinder which are at opposite sides of said piston; an air-passage connecting one end of said cylinder with the interior of said transit-tube and adapted, when air is admitted to the transit-tube, to permit said air to enter the cylinder and shift said piston for opening said valve; a rod connecting said piston and air-valve, said rod having sliding connection with said valve to permit of considerable movement of said piston before the opening of said valve; and stops for limiting the relative sliding of said rod and valve.

23. The combination of a transit-tube through which carriers are transmitted; a downwardly-disposed branch tube communicating with the interior of said transit-tube and open at its lower end; a vertically-disposed cylinder below said branch tube and in alinement therewith; a piston movably mounted in said cylinder and having a hollow rod extending upwardly into said branch tube, said rod having an opening communicating with the interior of said branch tube and having an opening communicating with the interior of said cylinder above the piston; means for exhausting the air from the cylinder below the piston; a by-pass connecting the ends of said cylinder; an air-inlet valve having a limited longitudinal movement on said rod and adapted to open and close the open end of said branch tube through the movement of said piston; a second valve located within said branch tube, having a limited longitudinal sliding movement on said rod and adapted to control the communication between said branch tube and cylinder; said second valve being normally urged by gravity to open such communication and being adapted to be carried upward to cut off such communication by the inrushing air-current when said air-inlet valve is open, and a spring normally urging said piston upward to close said air-inlet valve.

817,017. CEMENT FENCE-POST. JOHN A. STRANEBY, Pukwana, S. D. Filed Aug. 18, 1904. Renewed Feb. 27, 1906. Serial No. 302,200.

Claim.—1. A fence-post comprising a body portion having a reinforcing-core, a plurality of supporting-clips engaging said core

and provided with spaced spring-jaws adapted to receive the longitudinal wires in a line of fencing, and removable retaining-rings engaging the jaws of the supporting-clips.



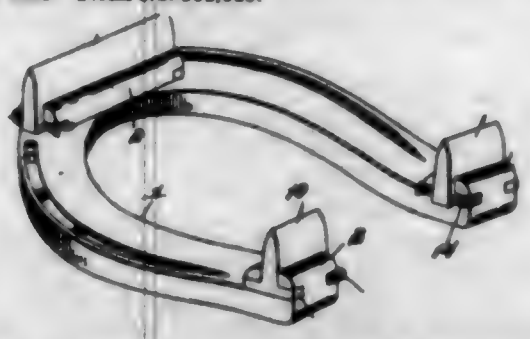
2. A fence-post comprising a body portion having a reinforcing-core, a plurality of wire-supporting clips each having an intermediate portion thereof, coiled to form a pair of spring-jaws and its opposite ends engaging the core, and retaining members engaging the spring-jaws of the clips.

3. A fence-post comprising a body portion having a reinforcing-core, a plurality of wire-supporting clips each having an intermediate portion thereof coiled to form a pair of spring-jaws and its opposite ends bearing against said core, and a split ring engaging said spring-jaws.

4. An artificial-stone fence-post comprising a body portion provided with a reinforcing-core, and a plurality of wire-supporting clips each having an intermediate portion thereof coiled to form a pair of spring clamping-jaws extending beyond the general plane of the post and its opposite ends bent laterally and engaging said core, a portion of the intermediate coil of each clip being embedded in the body of the post.

5. A fence-post having a body portion formed of plastic material, a reinforcing-core extending longitudinally of the body portion, a plurality of wire-supporting clips each provided with horizontally-disposed clamping-jaws having laterally-extending terminal anchors straddling the core, and a split ring engaging the spring-jaws of said supporting-clips.

817,018. **HORSESHOE.** JOHN SWISHER, Rossmoyne, Ohio. Filed Feb. 17, 1906. Serial No. 301,618.



Claim.—1. A horseshoe comprising a body provided with a socket-piece depending therefrom, said socket-piece being formed with a slot extending longitudinally thereof, and grooves extending transversely thereof, in combination with a fork having a body to fit the slot in the socket-piece and with a projecting lug to fit the groove in the socket-piece.

2. A horseshoe comprising a body formed with a depending socket-piece, said socket-piece being formed with a dovetailed slot extending transversely thereof, and with end grooves extending longitudinally thereof and communicating with the slot, in combination with a calk having a body to fit within the slot in the socket-piece and formed with oppositely-projecting lugs to engage the groove at one end of the socket-piece, said calk being formed with an opening to register with the remaining groove in the socket-piece.

3. A horseshoe comprising a body formed with a depending socket-piece, said socket-piece being formed with a dovetailed slot extending transversely thereof, and with end grooves extending longitudinally thereof and communicating with the slot, in combination with a calk having a body to fit within the slot in the socket-piece and formed with oppositely-projecting lugs to engage the groove at one end of the socket-piece, said calk being formed with an opening to register with the remaining groove in the socket-piece, and a split key to engage said opening and rest within the registering groove.

817,019. **ELASTIC WOVEN FABRIC.** HARRY T. STERN, London, England. Filed Feb. 26, 1906. Serial No. 302,206.



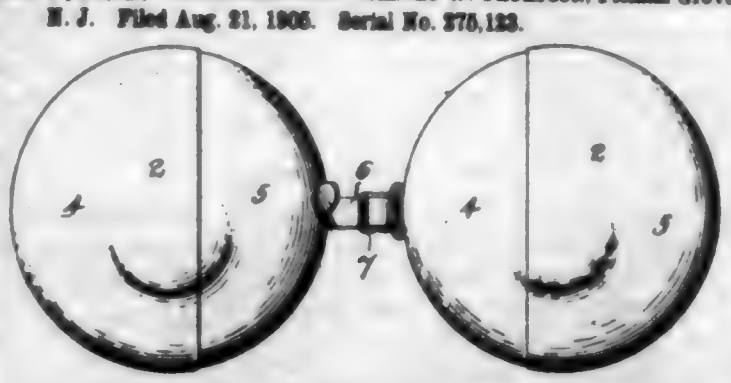
Claim.—1. An elastic fabric adapted to fit bodies of irregular shape, composed of elastic warp-threads of different strength suitably disposed in series across the breadth of the fabric, and weft-threads interwoven therewith.

2. An elastic fabric adapted to fit bodies of irregular shape, consisting of elastic warp-threads of different diameters suitably disposed in series across the breadth of the fabric, and weft-threads interwoven therewith.

3. An elastic fabric adapted to fit bodies of irregular shape, consisting of elastic warp-threads of different diameters suitably disposed across the breadth of the fabric, and weft-threads interwoven therewith.

4. An elastic fabric adapted to fit bodies of irregular shape, consisting of elastic warp-threads of different strength, the elastic warp-threads being formed by varying the number of strands of elastic threads in the elastic warp-threads and weft-threads interwoven therewith.

817,020. **APPAREL-PAD.** HARVEY W. THOMPSON, Pitman Grove, N. J. Filed Aug. 21, 1905. Serial No. 275,123.

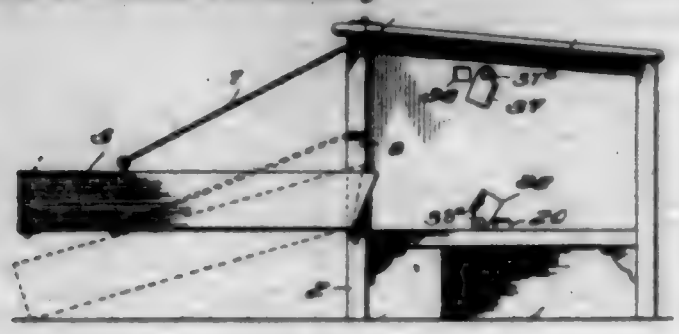


Claim.—A device of the character described consisting of the pads, each formed of a resilient, light, non-absorbent material formed in the desired shape, a covering to receive said pads, said covering each consisting of a back piece, fulled front pieces secured at their inner edges to said back piece to overlap at their front edges thereby forming a closure to securely hold the pad, an elastic strap secured to one side of said pockets, and means secured to the adjacent side of the other pad-pocket to receive one end of said elastic strap, whereby said pads are adjustable and yieldingly connected together, substantially as described.

817,021. **BROODER.** CLARENCE A. TUCK, Watertown, S. D. Filed June 26, 1905. Serial No. 267,056.

Claim.—1. A brooder comprising a casing having an elevated floor, a runway having one edge arranged on a level with said floor, and means, adapted to engage the body of said casing, for adjusting said runway level or inclined from the floor of the casing to the ground.

2. A brooder comprising a casing having an elevated floor, and provided with eyes secured thereto, and a runway carrying hooks adapted to engage said eyes whereby the runway may be supported on a level with the floor of said casing.



3. A brooder comprising a casing having an elevated floor and provided with two sets of eyes secured thereto, and a runway having one edge arranged on a level with said floor, said runway carrying hooks adapted to engage either of said sets of eyes to support the runway level with the floor of the casing or inclined from said floor to the ground.

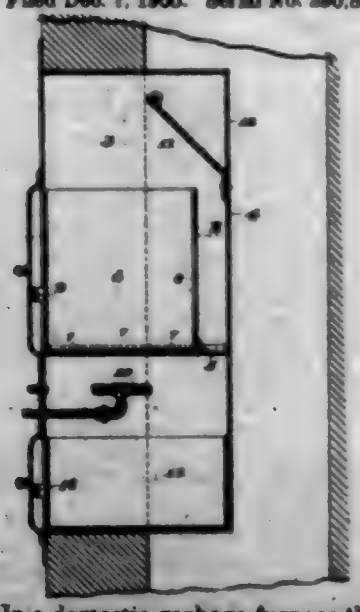
4. A brooder comprising a casing provided in its floor with an opening designed to be placed over a heater, a reservoir arranged over said opening, said reservoir having concentric walls, the inner wall closed at the top, pipes extending through the outer wall of the reservoir and opening on the interior of the inner wall, branch pipes connected to the first-mentioned pipes, and sections of pipe fitted over the ends of said branch pipes and having their extremities restricted in diameter and passing through the sides of the casing near the corners thereof.

5. A brooder comprising a casing provided in its floor with an opening designed to be placed over a heater, a reservoir arranged over said opening, said reservoir having concentric walls, the inner wall closed at the top, pipes extending through the outer wall of the reservoir opening on the interior of the inner wall, branch pipes connected to the first-mentioned pipes, and sections of pipe fitted to telescope over the ends of said branch pipes and having their extremities restricted in diameter and passing through the sides of the casing near the corners thereof.

6. A brooder comprising a casing, having a double floor with passages therebetween and an opening designed to be placed over a heater, a heating-drum extending through the opening in the upper floor and resting on the lower floor over said opening, air-inlet tubes arranged at the sides of said drum and forming continuations of the passages between the floors.

7. A brooder comprising a casing having a double floor with passages therebetween and an opening designed to be placed over a heater, a heating-drum extending through the opening in the upper floor and resting on the lower floor over said opening, air-inlet tubes arranged at the sides of said drum and forming continuations of the passages between the floors, and air-exit tubes extending from near the floor and provided with outlets near the top of said casing.

817,022. DOMESTIC APPARATUS FOR CONSUMING GARBAGE. ELIZABETH T. VALE, Sheridanville, Pa., assignor of one-half to Gottfred Mecklensel, Sheridanville, Pa., and one-half to John W. Vale, Oakdale, Pa. Filed Dec. 7, 1905. Serial No. 290,821.



Claim.—1. In a domestic garbage-furnace the combination of a combustion-chamber formed of a casing set in the brickwork of the chimney, a removable garbage-can adapted to be placed within the combustion-chamber, a gas-burner situate below the garbage-can in the combustion-chamber, a passage connecting the combustion-chamber with the chimney-flue, and a door in the combustion-chamber casing; substantially as specified.

2. In a domestic garbage-furnace the combination of a combustion-chamber formed of a casing set in the brickwork of the chimney, a removable garbage-can adapted to be placed within the combustion-chamber, a gas-burner situate below the garbage-can in the combustion-chamber, a passage connecting the combustion-chamber with the chimney-flue, a door in the combustion-chamber casing, and a receptacle for the drippings from the garbage-can; substantially as specified.

3. In a domestic garbage-furnace the combination of a combustion-chamber formed of a casing set in the brickwork of the chimney, a removable garbage-can having openings in the bottom and in one or more sides and adapted to be placed within the combustion-chamber, a gas-burner situate below the garbage-can in the combustion-chamber, a passage connecting the combustion-chamber with the chimney-flue, and a door in the combustion-chamber casing; substantially as specified.

4. In a domestic garbage-furnace the combination of a combustion-chamber formed of a casing set in the brickwork of the chimney, a removable garbage-can adapted to be placed within the combustion-chamber, said garbage-can being of less depth and width than the depth and width of the combustion-chamber thereby forming flues at the back and sides of the garbage-can, a gas-burner situate below the garbage-can in the combustion-chamber, a passage connecting the combustion-chamber with the chimney-flue, and a door in the combustion-chamber casing; substantially as specified.

817,023. IRONING-BOARD. ALEXANDER WALLACE, Salt Lake City, Utah. Filed July 28, 1904. Serial No. 217,671.



Claim.—In a device of the class described, a pair of boards, standards connecting the same, a block secured to one board, and having a guiding-opening, and a narrow board slidable through said opening, the board being tapered in width and binding against the side walls of the opening to hold it from movement when in use.

817,024. CLASP. HARRY WATSON, Brandon, Miss. Filed July 24, 1905. Serial No. 271,083.



Claim.—1. A ribbon-clasp comprising a front member having one end bent rearwardly to form a hook, a back member hinged to the front member at the hooked end thereof with the hinged end of the back member normally closing the entrance to the hook, and ribbon-receiving loops carried by the inner sides of the front and back members.

2. A clasp made up of mutually-coöperating front and back members, one of the members having longitudinal side flanges and the other member being pivoted upon and between the flanges, a loop upon one side of said other member, and a cross-bar carried by and extending between the flanges.

3. A clasp made up of pivotally-connected front and back members and loops upon the inner faces of the members combined with a flexible element having one end passed through one of the loops and both ends passed through the other loop, whereby the flexible member holds the clasp members closed.

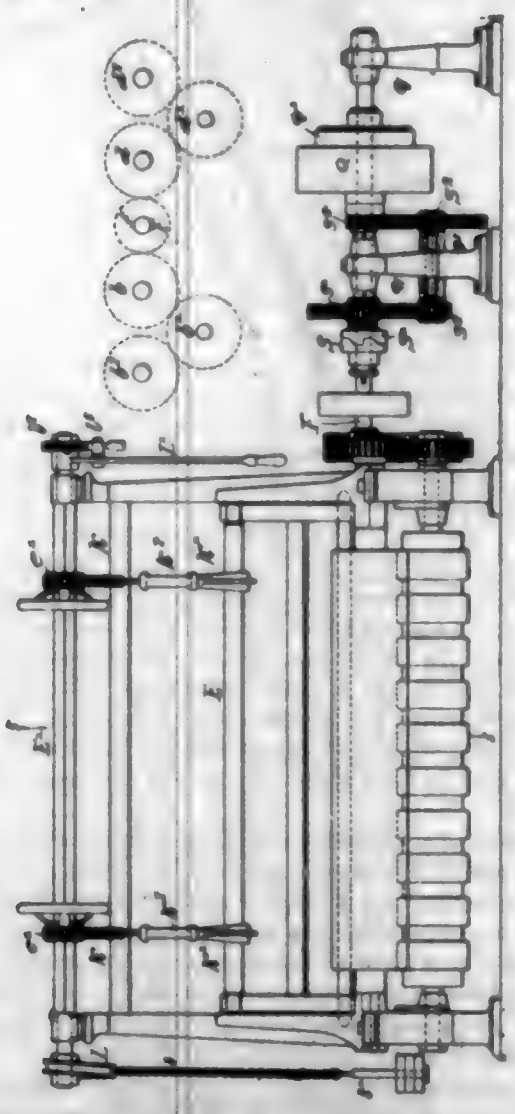
4. A clasp made up of a pair of pivotally-connected front and back members provided upon their inner sides with loops, combined with a ribbon having one end passed through one of the loops and both of its ends passed through the other loop, whereby the clasp members are held closed by the ribbon.

5. A ribbon-clasp made up of front and back members, one of the members having opposite longitudinal flanges and the other

member being pivoted to and between the flanges, loops upon the inner sides of the clasp members, the loop of the first-mentioned member being below the other loop, combined with a ribbon having one end passed through said other loop and both ends passed downwardly through the loop of the first-mentioned member.

6. A clasp made up of front and back members, the front member terminating at its upper end in a hook and provided at its opposite edges with longitudinal flanges, the back member of the clasp being pivoted between and upon the flanges with its upper end normally closing the hook, a hanger-link removably engaged with the hook, loops upon the inner sides of the clasp members, combined with a ribbon having one end passed through the loop of the back member and both ends passed downwardly through the loop of the front member.

817,025. PAPER-WINDING MACHINE. JOSEPH A. WHITE, Philadelphia, Pa., assignor to The Moore & White Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 21, 1904. Serial No. 233,681.



Claim.—1. The combination in a paper-winding machine, of a pair of rolls for supporting the paper to be rolled, a series of belts for guiding the paper under one of the rolls, guides for directing the paper between the rolls, and means for supporting the mandrel upon which the paper is to be rolled, substantially as described.

2. The combination of two sets of rolls, two mandrels, one above each set of rolls, endless belts carrying the paper, and guides for directing the paper between each set of rolls, the guides being so set that one portion of the paper will be passed between one set of rolls and wound upon one mandrel and other portions of paper will be guided between the other pair of rolls mounted upon the other mandrel, substantially as described.

3. The combination in a paper-winding machine, of two sets of winding mechanism, a roll around which the strips of paper pass to both sets of winding mechanism, a separator-bar situated in advance of said roll so as to separate the paper in order that the paper intended for the first set of winding mechanism will pass on that side of the separator next to the roll, substantially as described.

4. The combination in a paper-winding machine, of two sets of rolls, an endless belt arranged to feed the paper to the rolls, a guide for directing the paper to the first pair of rolls, and a separator-bar for separating the paper as it is fed to the machine, the said guides being adjustable, substantially as described.

5. The combination in a paper-winding machine, of two sets of rolls, means for driving the rolls, a series of endless belts passing under the rolls, adjustable guides for the first pair of rolls, guides for the second pair of rolls, means for supporting the mandrels upon which the paper is to be wound, guides for the mandrel, and a separator-bar for separating the paper so that the paper intended for the first pair of rolls will be on one side of the bar and the paper intended for the second pair of rolls will be on the other side of the bar, substantially as described.

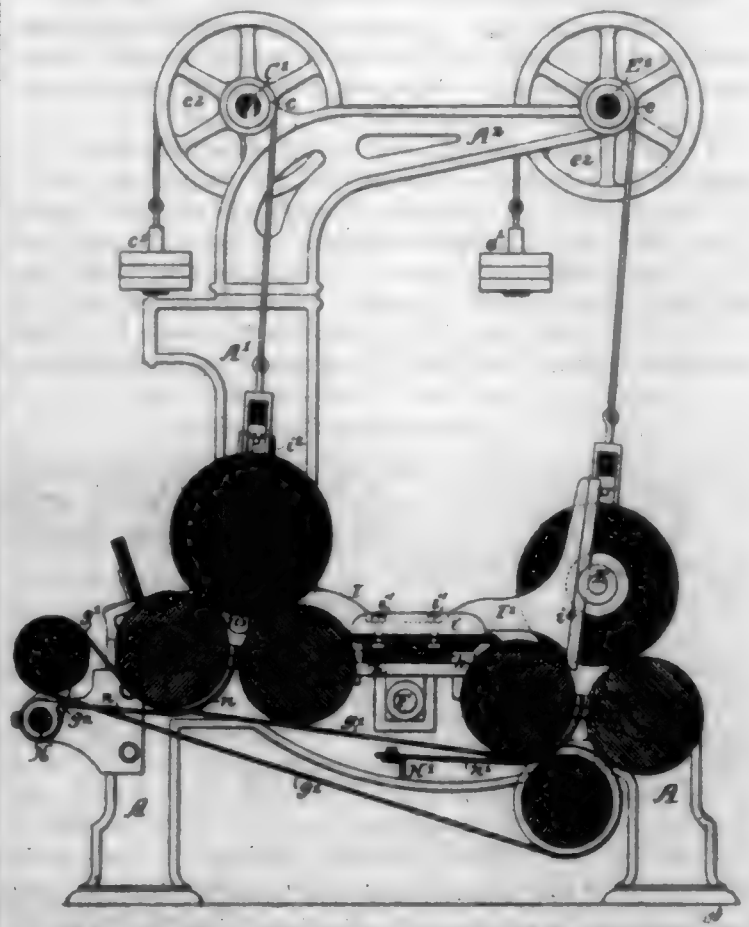
6. The combination in a paper-winding machine, of a pair of rolls upon which the paper is fed, a mandrel upon which the paper is wound, a shaft, means for supporting the mandrel from the shaft, a scroll-wheel on one end of the shaft, and a weight suspended from the wheel, substantially as described.

7. The combination in a paper-winding machine, of means for slitting the paper, two winding mechanisms, one situated in advance of the other and each consisting of two sets of rolls, the paper passing around the roll of the first set of winding mechanism, a separator-bar situated between the said roll and the slitting mechanism so as to separate the slit paper, the portions intended for the first roll passing on that side of the separator next to the said roll, substantially as described.

8. The combination in a winding-machine, of a pair of supporting-rolls, two or more cores independently mounted upon said rolls and arranged to turn independently, means for maintaining said cores in position against longitudinal movement, the paper being independently wound upon the cores by friction from the supporting-rolls, substantially as described.

9. The combination in a winding-machine, of a pair of supporting-rolls, two or more cores independently mounted upon said rolls, a mandrel passing through said cores, said cores arranged to turn independently, means for guiding said mandrel and for maintaining said cores in position against longitudinal movement, the paper being independently wound upon the cores by friction from the supporting-rolls, substantially as described.

817,026. PAPER-WINDING MACHINE. JOSEPH A. WHITE, Philadelphia, Pa., assignor to The Moore and White Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 21, 1905. Serial No. 292,857.



Claim.—1. The combination in a paper-rewinding machine of a pair of rolls, the bearing of one roll being below the bearing of the other roll so that the weight of the paper being rolled will be carried by the lower roll, with means for positively driving the lower roll, substantially as described.

2. The combination in a paper-rewinding machine of two rolls situated side by side, one roll being mounted lower than the other so that the paper being rolled will be carried by the lower roll, the other roll acting as a guide, means for positively driving the lower

roll, the other roll being loosely mounted so as to turn freely with the roll of paper as it is wound, substantially as described.

3. The combination in a paper-rewinding machine of two sets of winding mechanism, each set consisting of two rolls, one roll of each set being lower than the other roll, the lower roll of each set being driven, the other roll of each set being loosely mounted, cores upon which the paper is to be wound, one core mounted above each set of rolls, and guides for the cores, substantially as described.

4. The combination in a rewinding-machine, of two rolls, cores mounted above the rolls, a platform, a bracket mounted on the platform and arranged to guide the cores, substantially as described.

5. The combination in a rewinding-machine of two rolls, cores mounted above the rolls, a platform, a bracket mounted on the platform and arranged to guide the cores, and means carried by the bracket for preventing the cores moving longitudinally, substantially as described.

6. The combination in a paper-rewinding machine of two rolls, means for driving one of said rolls, cores above the rolls upon which the paper is to be wound, a transverse platform; a bracket on the platform, said bracket having a rib, the cores having a groove formed by a flange into which the ribs of the bracket extend so as to prevent the said cores moving longitudinally, substantially as described.

7. The combination in a paper-rewinding machine of two sets of rolls, one roll of each set being loosely mounted, a driving-shaft, a gear-wheel on said driving-shaft, said gear-wheel meshing directly with the gear-wheel on the driven roll of one set, and indirectly meshing with the driven roll of the other set through two gears, substantially as described.

8. The combination in a paper-rewinding machine of two sets of rolls, one roll of each set being loosely mounted, a driving-shaft, a gear-wheel on the driving-shaft, said gear-wheel meshing directly with the gear-wheel on the driven roll of one set, and indirectly meshing with the driven roll of the other set through two gears, one of said gears being mounted on the shaft carrying a belt-drum, belts leading from said drum to a belt-drum at the front of the machine so as to carry the paper to be rewound to one or the other set of rolls, substantially as described.

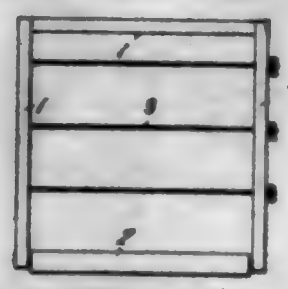
9. The combination of two rolls, one roll mounted above the other, so that the weight will be carried by the lower roll, a bracket laterally adjustable on the frame of the machine and having a standard inclined forward, substantially as described.

10. The combination in a paper-rewinding machine of a pair of rolls, a core above the rolls, said core having a grooved end, a bracket laterally adjustable on the frame of the machine having a standard inclined, substantially as described.

11. The combination of a pair of rolls for supporting and winding a roll of paper, cores upon which the rolls of paper are wound, a bracket laterally adjustable on the frame of the machine, said bracket having an inclined standard, said standard having a rib on each side so as to engage with two cores to prevent them moving laterally and guiding them as the roll is being formed, substantially as described.

12. The combination in a paper-rewinding machine of two rolls, one roll being driven, said roll having a surface consisting of a series of eccentric sections, substantially as described.

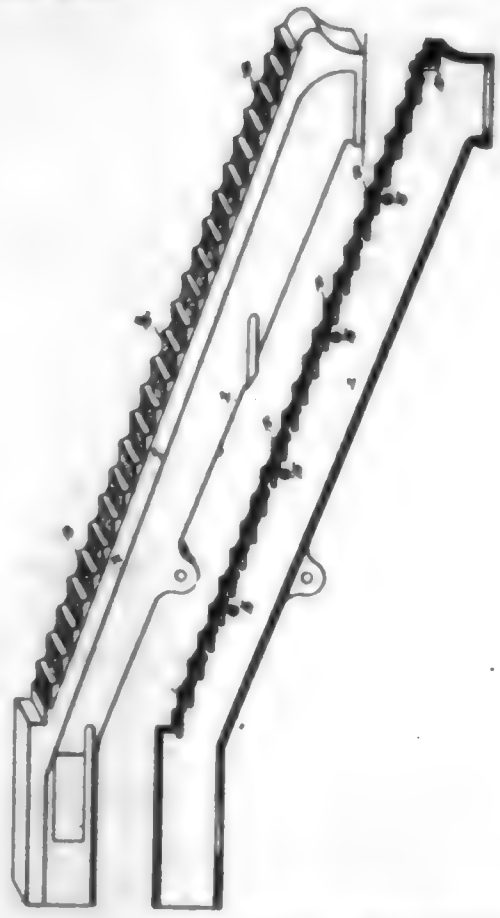
817,027. **MEANS FOR CUTTING UP LARGE BLOCKS OF BUTTER INTO SMALLER BLOCKS OF PREDETERMINED SIZES.** THOMAS H. H. WIDDICOMBE, Hobart, Tasmania, Australia. Filed Nov. 21, 1905. Serial No. 288,458.



Claim.—1. A device for cutting butter comprising a frame, wires stretched between the sides of the frame and a guiding-roller forming a cross-piece between the sides of the frame, said roller having its bearings held stationary in the frame and its periphery contacting with one surface of the block of butter.

2. The combination with a cross-piece or roller 4, of side pieces 5, 5, and wires stretched between the side pieces on either side of the cross-piece, one wire being about twice the distance from said cross-piece as the other wire, bolts in the ends of the side pieces that mesh with nuts recessed therein, said wires taking into the bolt's ends, and pegs set in the side pieces which are adapted to wind in the wires, as specified and set forth.

817,028. **GRATE-BAR.** ALFRED WILKINSON, Bridgeport, Pa., assignor to The Wilkinson Manufacturing Company, Incorporated, Bridgeport, Pa., a Corporation of Pennsylvania. Filed Apr. 28, 1905. Serial No. 258,660.



Claim.—1. A grate-bar comprising a trough-shaped body portion open at the top and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate being prevented from moving either longitudinally or transversely in a horizontal plane by engagement with the sides of the body portion of the bar, substantially as specified.

2. A grate-bar comprising a trough-shaped body portion open at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate, except the lowermost, being locked in position against horizontal displacement by engagement with the plate below and also by engagement of a portion of it with the sides of the body portion of the bar, substantially as specified.

3. A grate-bar comprising a trough-shaped body portion open at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate, except the uppermost, being locked in position against vertical displacement by engagement with the plate above and also by engagement with the sides of the body portion of the bar, substantially as specified.

4. A grate-bar comprising a trough-shaped body portion open at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate, except the lowermost, being locked in position against vertical displacement by engagement with the plate below, and also by engagement with the sides of the body portion of the bar, substantially as specified.

5. A grate-bar comprising a trough-shaped body portion open at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate, except those at the ends of the series, being locked in position against vertical displacement by engagement with the plates above and below it, and also by engagement with the sides of the body portion of the bar, substantially as specified.

6. A grate-bar comprising a trough-shaped body portion open

at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each plate, except the lowermost, having a front flange resting upon the top of the twyer-plate below and the latter having lugs for engaging said flange, substantially as specified.

7. A grate-bar comprising a trough-shaped body portion open at the top, and a fuel-supporting portion consisting of a series of perforated twyer-plates independently mounted upon said body portion of the bar so as to overlap, and extending across the open top of said body portion, each twyer-plate, except the lowermost, having a front flange resting upon the top of the twyer-plate below, and the latter plate having lugs for engaging said flange and being also provided with means for locking it to the sides of the body portion of the bar against horizontal displacement, substantially as specified.

8. A grate-bar comprising a trough-shaped body portion open at the top, and having side walls with inclined tops and grooves in the inner faces of said side walls extending rearwardly from the inclined tops, and a fuel-supporting portion consisting of a plurality of twyer-plates, each extending across the open top of the body portion of the bar and engaging certain of said grooves, and each having side flanges with beveled lower edges resting upon the inclined tops of the side walls, substantially as specified.

9. A grate-bar comprising a trough-shaped body portion open at the top and having side walls with grooves in the inner faces said grooves having notched bottoms, and a fuel-supporting portion consisting of a plurality of twyer-plates extending across the top of the body portion of the bar, and each engaging the notched bottoms of certain of said grooves, substantially as specified.

10. A grate-bar comprising a trough-shaped body portion open at the top and having side walls with grooves in their inner faces, and a fuel-supporting portion consisting of a plurality of twyer-plates extending across the open top of the body portion of the bar, and each having a front portion with flanges resting upon the tops of the side walls and a rear portion of contracted width engaging with grooves in the inner faces of said walls, substantially as specified.

817,029. **CUSPIDOR.** ELMER T. WILLMOTT, Woodruff, Mo. Filed May 19, 1905. Serial No. 261,230.

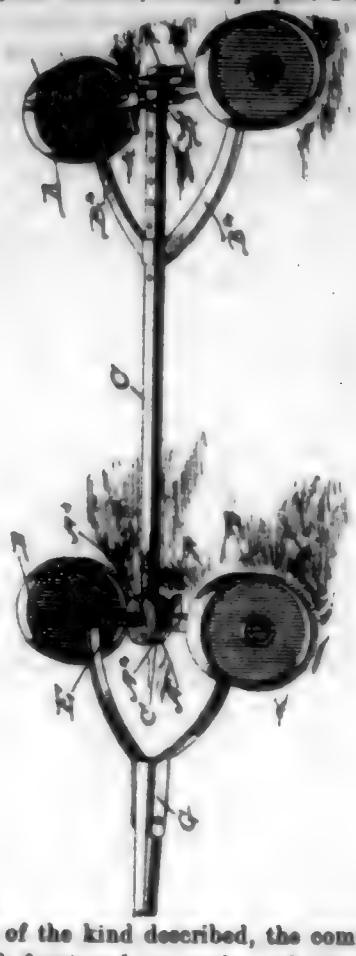


Claim.—The combination with the spaced vertical walls of the car-body, each being formed with an opening out of alinement transverse the car-body, of a cuspidor comprising a metallic casing closed at the upper end and open at the lower end, said cuspidor being arranged between said walls and being formed with openings to register with the respective openings in the walls, a door hinged to the inner wall of the car-body and opening within the car, said door being adapted to close the opening in the inner wall, a valve hingedly secured to the casing and adapted to close the lower opening thereof, and a link-rod connecting said valve and door, the connection being such as to cause reverse closing and opening operations of said valve and door.

817,030. **STOVE LIFTER AND MOVER.** JOHN WOOD, Cincinnati, Iowa. Filed July 28, 1905. Serial No. 271,886.

Claim.—1. In a device of the kind described, the combination with a pair of axles having screw-threaded openings, of power-screws having blocks pivotally mounted on their upper ends working in said openings, and means for operating said screws as set forth.

2. In a device of the kind described, the combination with a truck provided with screw-threaded sockets, of power-screws secured in said sockets provided with adjustable grooved heads and means for operating said screws, for the purpose described.



3. In a device of the kind described, the combination with a truck provided with front and rear axles, wheels secured on said axles, screw-threaded openings formed in said axles, of power-screws secured in said openings, provided with adjustable heads, and means for raising and lowering said heads, for the purpose described.

4. In a device of the kind described, the combination with a truck provided with front and rear axles carrying wheels, of an adjustable reach connecting said axles, screw-threaded openings formed in the enlarged portions of said axles, power-screws mounted in said openings provided with reduced ends, circular grooved blocks provided with openings formed therein, through which the reduced ends of the screws are adapted to pass and a tongue secured to the front axle, for the purpose described.

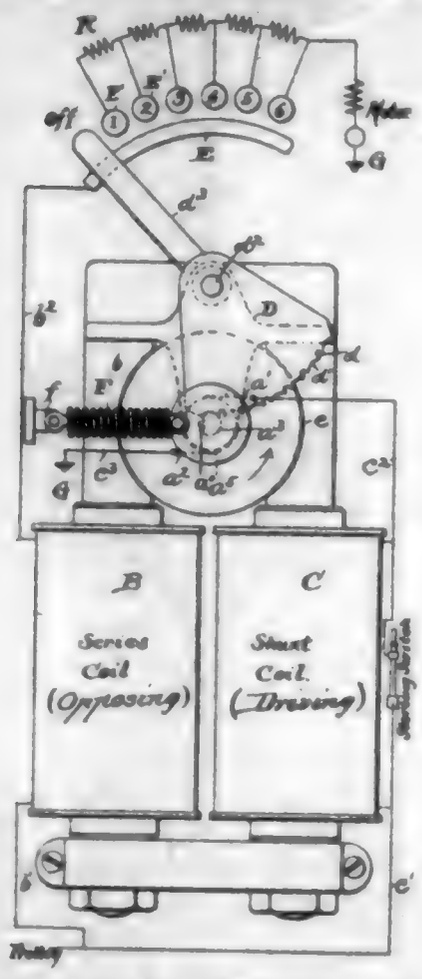
5. In a device of the kind described, the combination with a truck provided with front and rear axles, spaced enlargements formed on the rear axle provided with threaded openings, a central enlarged portion formed, on the front axle provided with a threaded opening, a reach connecting said axles, power-screws mounted in said openings provided with reduced ends, circular grooved blocks provided with openings through which the reduced ends of the screws are adapted to pass, and means for locking said blocks on said screws, for the purpose described.

6. In a device of the kind described, the combination with a truck provided with front and rear axles, provided with wheels, the rear axle being provided with hounds and a central opening, enlarged portions provided with screw-threaded openings formed on said axle on each side of the opening, a central enlarged slotted portion formed on the front axle provided with a screw-threaded opening, of a reach provided with spaced openings adjacent one end adapted to fit in the reach and the opening of the rear axle, an enlarged apertured portion formed on the other end of the reach adapted to fit in the slotted portion of the front axle, a power-screw provided with an adjustable block adapted to pass through the opening in the enlarged portion of the reach and the screw-threaded openings, of the front axle, power-screws provided with adjustable blocks mounted in the screw-threaded openings of the rear axle, and a pin adapted to pass through a vertical opening in the walls of the central opening of the rear axle, and one of the openings in the reach, for the purpose described.

817,031. **CONTROLLER.** THORSTEN VON ZWEIGBERGK, Preston, England. Filed May 15, 1903. Serial No. 157,288.

Claim.—1. The combination of a motor, a controlling-switch therefor, and electric means for actuating the controller step by step, said means being automatically governed by the counter electromotive force of the motor and including an armature whose cycle of movement corresponds to a step in the control.

2. The combination of a motor, a controlling-switch therefor, and electric means for actuating the controller step by step, said means being automatically governed by the counter electromotive force of the motor and including a rotatable armature whose cycle of movement corresponds to a step in the control, and shunt and series wound coils tending to rotate the armature in opposite directions.



3. A controller comprising a switch, an armature for moving the same step by step, a pair of coils tending to move the armature in opposite directions, a motor which said switch is adapted to govern, one of said coils being in series on the main line to the motor and the other being on a shunt of such line.

4. A controller comprising a switch, an armature for moving the same, a coil in series with the switch tending to operate the armature in one direction, a coil in a shunt around the switch but in series with the armature tending to operate the armature in the other direction.

5. A controller comprising a switch, an armature for moving the same step by step, a pair of coils tending to move the armature in opposite directions, a motor which said switch is adapted to govern, one of said coils being in series on the main line to the motor and the other being on a shunt of such line, said shunt-coil tending to operate the switch in the direction to cut out resistance in the main line, and said series coil tending to retard such movement.

6. In a controller, the combination of a switch, a motor, gearing between the armature of said motor and the switch to move the switch from one contact to the next for each rotation of the armature, and means tending to retard one portion of the rotation of the armature and accelerate another portion.

7. In a controller, the combination of a switch, a rotatable armature, gearing between said armature and the switch to move the switch from one contact to the next for each rotation of the armature, and means tending to retard one portion of the rotation of the armature and accelerate another portion, and a pair of coils operating one to rotate the armature in one direction and the other to counteract such rotation.

8. In a controller, the combination of a switch, a rotatable armature, a geared connection between the same and the switch, whereby a rotation of the armature corresponds to a step of the switch, means for rotating said armature, and a spring acting on the armature and tending to return it to a given position.

9. In a controller, the combination of a switch, a rotatable armature, an operative connection between the armature and the switch, means for rotating said armature, a crank-pin carried by the armature, and a spring connected with the crank-pin and thus tending to retard one portion of the rotation to the armature and accelerate another portion.

10. In a controller, the combination of a switch, a rotatable armature, a connection between the same and the switch, a pair of field-coils coöperating with the armature, one coil being series and the other on a shunt, and a spring tending to return the armature periodically to the same position for the successive steps of the switch.

11. In a controller, in combination, a rotatable armature, a switch, an operative connection between the armature and switch, a pair of field-coils tending to rotate said armature in opposite directions, one coil being on a shunt, a crank secured to the armature, and a spring secured to the crank and operating to retard half the rotation of the armature and assist the next half.

12. In a controller, the combination of a switch, a motor having a rotatable armature, and gearing connecting said armature and switch, said gearing including a mutilated pinion rotatable with the armature and a notched member connected with the switch, said notched member having between its notches surfaces adapted to bear on the pinion and lock the notched member without locking the pinion.

13. A controller comprising a switch, a motor having an armature and gearing connecting the switch with the armature, said gearing comprising a one-tooth pinion operated by the armature, and a segmental gear consisting of alternate notches and concave surfaces connected with the switch, the concave surfaces locking the segmental gear in place when the pinion-tooth is not in mesh with a notch.

14. In a controller, the combination of a switch, a rotatable armature, gearing between said armature and the switch to move the switch from one contact to the next for each rotation of the armature, and means tending to retard one portion of the rotation of the armature and accelerate another portion, a power-motor, resistances therefor adapted to be cut out by said switch, a pair of coils for rotating the armature of the controller, one coil being on a shunt and tending to rotate the armature of the controller in the direction to cut out resistance and the other coil being in series with said motor and tending to counteract the movement of the armature which the shunt gives.

15. A controller comprising a switch and a relay-motor for operating it step by step, said relay-motor having shunt and series magnets connected with the main line, combined with a power-motor, resistance, a series of local magnets for cutting such resistance in or out, and operative circuits from said switch to said local magnets.

16. The combination of a power-motor, resistance therefor, contacts for controlling such resistance, a series of local magnets for controlling said contacts, said magnets being arranged with coils adapted to buck each other, and a controller adapted to unbuck successive magnets by changing the direction of the current therethrough.

17. A series of magnets each consisting of a pair of coils, all the coils being on a permanently-closed circuit, combined with a controller, and conductors leading therefrom to different portions of said closed circuit whereby the controller may reverse some of the coils of the magnets, causing the magnets to be neutralized or energized, as desired.

18. A series of magnets each comprising a pair of coils, all the coils being on a permanently-closed circuit, combined with a controller, and conductors leading therefrom to different portions of said closed circuit, enabling the controller to successively direct current through the coils of each magnet in the same direction or in opposite direction to energize or neutralize it without disturbing the condition of the preceding magnet.

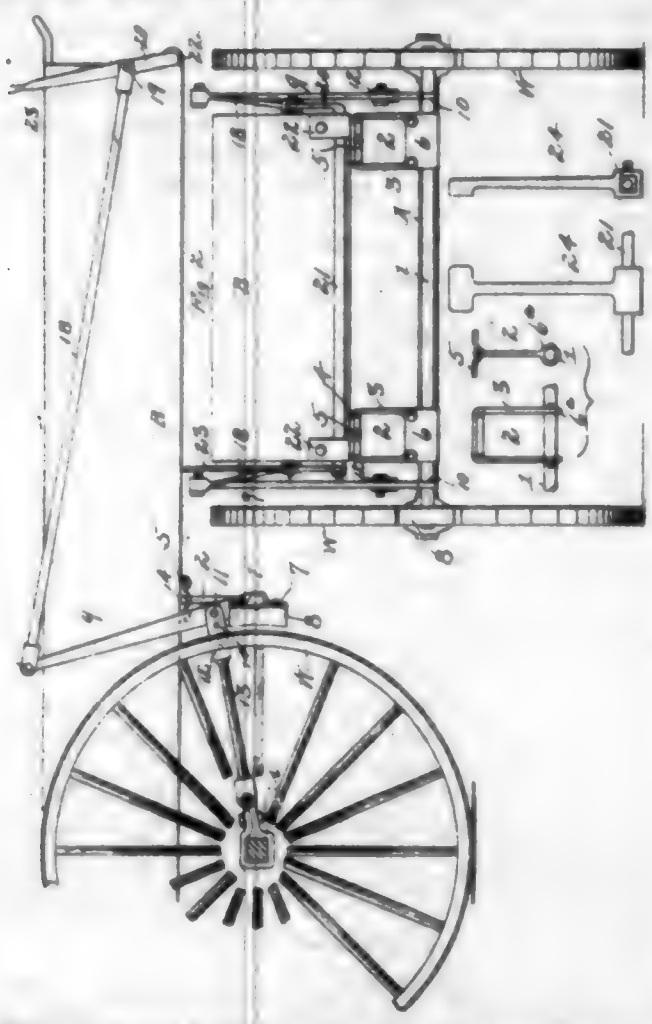
19. A power-motor, resistance, a series of local magnets for cutting such resistance in or out, said local magnets each consisting of a pair of coils, all the coils being on a closed local circuit, combined with a controller, and circuits leading therefrom to different portions of said local circuit, whereby the controller may cause various coils to buck each other.

20. The combination of a power-motor, resistance therefor, contacts for controlling such resistance, a series of local magnets for controlling said contacts, said magnets being arranged with coils adapted to buck each other, a controller, circuits therefrom to said magnets, said controller having a pair of coils for operating it, one coil being in series with the power-motor, and the other coil being on a shunt of the power-line and tending to operate the controller in a direction to unbuck successive magnets, said series coil tending to retard such movement.

21. A power-motor and a set of resistance, a series of local magnets for cutting such resistance in or out, said local magnets each consisting of a pair of coils, all of the coils being on a closed local circuit, combined with a controller having a switch, an armature connected therewith and a pair of coils for operating said armature, one coil being in series with the power-motor and the other on a shunt-

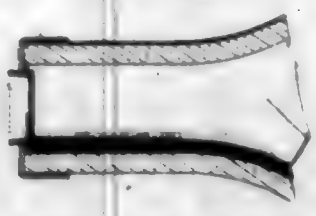
coil tending to operate the armature in the direction to cause successive magnets to cut out resistance, and the series coil tending to retard such movement.

817,032. WAGON-BRAKE. GILBERT L. ADAMS, Altoona, Pa. Filed Oct. 7, 1905. Serial No. 281,764.



Claim.—A wagon-brake comprising a pair of swinging hanger-links pivotally suspended from the bottom of the vehicle-body and each carrying a rod-holding stirrup, a straight horizontally-swinging brake-rod embraced by said stirrups, axle-clips having supporting-plates, forwardly-extending fulcrum-rods fastened at their rear ends to said supporting-plates and provided with bifurcated front ends, upstanding swinging braking-levers fitted at their lower ends on the brake-rod, and at an intermediate point pivotally and adjustably mounted in the bifurcated front ends of the fulcrum-rods, and lever-controlled side pull-rods connected to the upper ends of the braking-levers.

817,033. BOTTLE. JAMES C. ANDERSON, Highland Park, Ill. Filed Oct. 14, 1905. Serial No. 282,826.



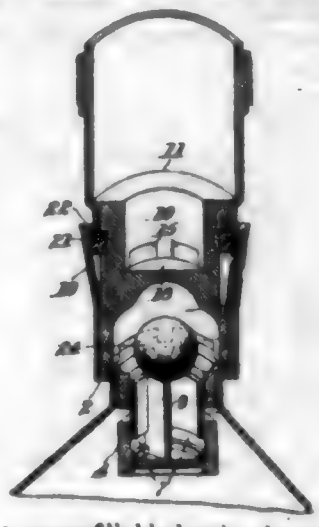
Claim.—1. A bottle having the extremity of its neck protected by and provided with a hard-metal cap with a central passage-way therethrough and extending within the inner boundary of the neck of the bottle, in combination with a closure device composed of expansible metal and expanded against the circumferential wall of the cap and beneath the lower edge of the same, substantially as and for the purpose set forth.

2. A bottle having a hard metal cap with a central passage-way therein, welded to the extremity of the neck of the bottle and with the horizontal portion extending within the inner wall of the bottle-neck, in combination with a cup-shaped closure device composed of expansible metal extending below the interior wall of the cap and adapted to be expanded against said wall and beneath its lower extremity, whereby tight joints are produced between the neck of the bottle and the cap, and between said cap and the closure device, substantially as hereinbefore set forth.

3. In a bottle such as described and provided with a metal cap having a central passage-way therethrough, an expansible metal closure device having its outer end extended in a flare above the plane of the cap, and adapted to be removed by a suitable tool interposed between said flared portion of the closure device and the cap, substantially as hereinbefore set forth.

4. In a bottle such as described, a hard-metal cap secured to the extremity of the neck and formed with a central passage-way, the horizontal surfaces of the cap diverging toward the central passage-way, in combination with an expansible metal closure device located within the passage-way of the cap and secured in place, substantially as and for the purpose set forth.

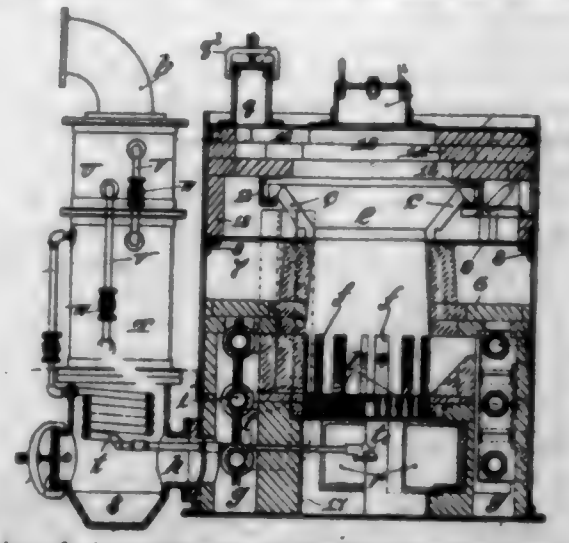
817,034. NON-REFILLABLE BOTTLE. ORESTE E. S. ASSONI, Philadelphia, Pa. Filed Apr. 19, 1905. Serial No. 256,441.



Claim.—1. In a non-refillable bottle, the combination with the bottle-neck having an internal recess extending around the same and terminating in a shoulder at the upper portion, a casing, a valve slidably mounted therein, a guard structure above and covering the upper end of the casing provided with a groove around its outer surface, a compressible ring in said groove adapted to expand into the enlargement of the bottle-neck and engage with the shoulder, said guard structure having a recess therein, and a locking-bar having its lower end seated in said recess with its upper end clamped between said ring and the bottle-neck, substantially as described.

2. In a non-refillable bottle, the combination with a bottle-neck having an internal recess therein, of a casing, a valve, a guard structure above said structure, having a groove around its upper portion and posts extending downwardly from the upper portion, one of said posts having a recess therein, a locking-bar in the recess of the bottle-neck and having its lower end resting in the bottom of the recess in the post of the guard structure, and a compressible ring seated in said groove and clamping the upper end of the locking-bar in the bottle-neck, substantially as described.

817,035. GAS-GENERATOR. JOHANN G. L. BORMANN, Charlottenburg, Germany. Filed Nov. 28, 1905. Serial No. 289,582.



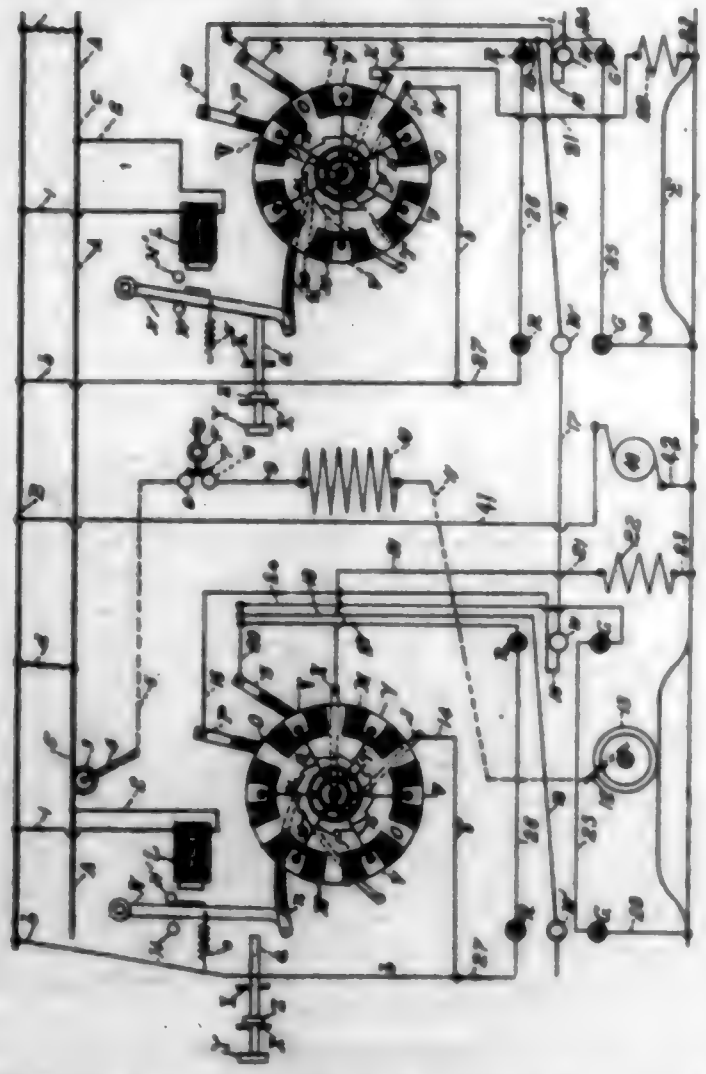
Claim.—1. A gas-generator of the class described having a shaft with a lower grate and an upper grate, a reservoir around the shaft, channels connecting the reservoir and shaft immediately above the lower grate, and air-conduits leading from the outer air, extending into the reservoir and discharging thereinto.

2. A gas-generator of the class described, having a shaft provided with a lower grate and an upper grate, a reservoir around the shaft, channels connecting the reservoir and shaft immediately

above the lower grate, air-conduits leading from the outer air, extending into the reservoir and discharging thereinto, and means to discharge steam or vapor below the lower grate.

3. A gas-generator of the class described, having a shaft provided with a lower grate and an upper grate, a reservoir around the shaft, the generator connecting the reservoir and shaft immediately above the lower grate, air-conduits leading from the outer air, extending into and through the reservoir and discharging into the generator, a vaporizer, a duct extending from below the lower grate through the vaporizer, and a serpentine pipe in and heated by the heated products discharged through the lower grate on their way to and through the vaporizer.

817,036. AUTOMATIC BLOCK-SIGNAL SYSTEM. ABRAM L. BOWER, Boyertown, Pa. Filed Jan. 31, 1902. Serial No. 141,355.



Claim.—1. In a signaling system for electric railways, a main signal-conductor extending between stations located at intervals along the railway, signals at said stations connected in circuit with said main conductor, feed-wire and return terminals at each station, a switch at each station arranged to connect the said main signal-conductor alternately to said feed-wire and to said return, a trolley-conductor having an insulated section at each station, an electromagnet at each station for operating the switch thereat and having its coils connected in circuit from the feed-wire to the insulated section of the trolley-wire, means operated by said magnet to operate said switch, and means carried by an electric car to complete the circuit from said insulated section to the return, substantially as described.

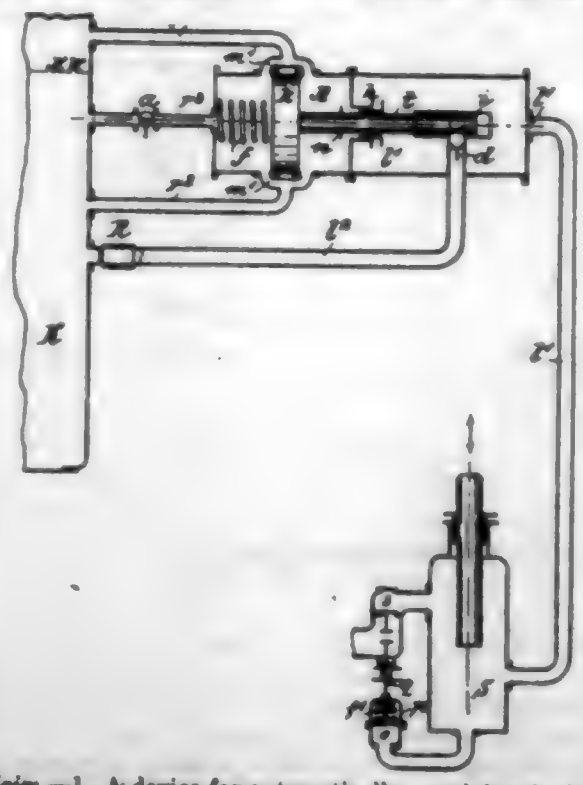
2. In a signaling system for electric railways, a main signal-conductor extending between stations located at intervals along the railway, signals at said stations connected in circuit with said main conductor, feed-wire and return terminals at each station, local branch circuits at each station connected respectively to said feed-wire and return, a switch at each station arranged to connect the said main conductor and local branch signal-circuits alternately to said feed-wire and to said return, a trolley-conductor having an insulated section at each station, an electromagnet at each station for operating the switch thereat and having its coils connected in circuit from the feed-wire to the insulated section of the trolley-wire, means operated by said magnet to operate said switch, and means carried by an electric car to complete the circuit from said insulated section to the return, substantially as described.

3. In a signaling system for electric railways, a main signal-conductor extending between stations located at intervals along the railway, signals at said station connected in circuit with said main conductor, feed-wire and return terminals at each station, local branch circuits at each station connected respectively to said feed-wire and return, a rotary switch at each station arranged to connect the said main conductor and local branch signal-circuits alternately to said feed-wire and to said return, a trolley-conductor having an insulated section at each station, an electromagnet at each station for operating the switch thereat and having its coils connected in circuit from the feed-wire to the insulated section of the trolley-wire, means operated by said magnet to operate said switch means carried by an electric car to complete the circuit from said insulated section to the return, and means to operate said switch manually, substantially as described.

4. In a signaling system for electric railways, a main signal-conductor extending between stations located at intervals along the railway, signals at said stations connected in circuit with said main conductor, feed-wire and return terminals at each station, a rotary switch having a plurality of insulated segments, alternate segments connected to said feed-wire and the remaining segments connected to said return, a pair of brushes arranged to be brought into engagement with successive segments and so spaced apart that the two will not at the same time engage segments of the same set, one of said brushes being connected alone to one end of a main signal-conductor, and the other connected to a terminal of a main signal-conductor and branches from the feed-wire and return, automatic means operated electrically and controlled by an electric circuit through a car to impart step-by-step motion to said commutator, and signals connected in said branch circuits, substantially as described.

5. In a railway signal system, the combination of relay L, lever N, pawl a, ratchet-wheel *f*, and commutator M, alternate segments being connected respectively to the two poles of a source of electric energy, brushes P and S in relation to the commutator-segments, a signal-circuit containing signals *w* and *w'*, said signal-circuit consisting of a line-wire 17, terminating in brush P at one end of the block and in brush S at the other end of the block, substantially as described.

817,037. APPARATUS FOR AUTOMATICALLY FEEDING BOILERS. GEORG BRANDSTETTER, Gratz, and RICHARD FREUND, Vienna, Austria-Hungary. Filed Nov. 15, 1905. Serial No. 287,543.



Claim.—1. A device for automatically supplying feed-water to boilers comprising a suction and force pump, a conduit leading from the forcing end of the pump to the boiler, a forcing-valve in said conduit, a cylinder in communication with the boiler, said cylinder being arranged at the height of the normal water-level, a piston working in the cylinder and means adapted to cut off the flow of water from the pump to the forcing-valve when the normal water-level is reached in the boiler, said means being connected with the piston as and for the purpose described.

2. A device for automatically supplying feed-water to boilers comprising a suction and force pump, a conduit leading from the forcing end of the pump to the boiler, a forcing-valve in said conduit, a cylinder in communication with the boiler, said cylinder being ar-

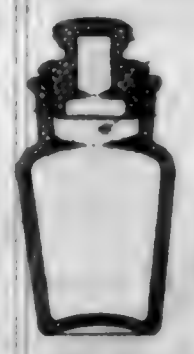
ranged at the height of the normal water-level, a piston working in the cylinder and means adapted to cut off the flow of water from the pump to the forcing-valve, said means being connected with the piston, a chamber in free communication with the pump-cylinder, an elastically-yielding wall in such chamber and means adapted to make the pump inactive when the normal water-level in the boiler has been reached, said means being operated by the elastically-yielding wall, when the water-pressure in the pump rises as and for the purpose described.

3. A device for automatically supplying feed-water to boilers comprising a suction and force pump, a conduit leading from the forcing end of the pump to the boiler, a forcing-valve in said conduit, a cylinder in communication with the boiler and arranged at the height of the normal water-level, a piston working in said cylinder, means adapted to cut off the flow of water from the pump to the forcing-valve said means being in connection with the piston, a chamber in free communication with the pump-cylinder, an elastically-yielding wall in such chamber and means for opening the suction-valve of the pump, said means being operated by the elastically-yielding wall when the water-pressure in the pump rises as and for the purpose described.

4. A device for automatically supplying feed-water to boilers comprising a suction and force pump, a conduit leading from the forcing end of the pump to the boiler, a forcing-valve in said conduit, a cylinder in communication with the boiler and arranged at the height of the normal water-level, a piston working in said cylinder, means adapted to cut off the flow of water from the pump to the forcing-valve said means being in connection with the piston, a chamber in free communication with the pump-cylinder, an elastically-yielding wall in such chamber and means for stopping the motor operating the feed-pump by the cutting off of the motor medium said means being actuated by the elastically-yielding wall when the water-pressure in the pump rises as and for the purpose described.

5. A device for automatically supplying feed-water to boilers comprising a suction and force pump, a conduit leading from the forcing end of the pump to the boiler, a forcing-valve in said conduit, a cylinder in communication with the boiler and arranged at the height of the normal water-level, a piston working in said cylinder, means adapted to cut off the flow of water from the pump to the forcing-valve, said means being in connection with the piston, a chamber in free communication with the pump-cylinder, an elastically-yielding wall in such chamber and means adapted to make the pump inactive, said means being operated by the elastically-yielding wall, one or more pipes leading from the cylinder in communication with the boiler to the latter and obturating member or members in said pipe or pipes whereby the supply of feed-water to the boiler may be continued even after the normal water-level has been reached substantially as and for the purpose described.

817,038. **BOTTLE-STOPPER.** HARRY O. BRAWNER, Baltimore, Md. Filed Dec. 20, 1905. Serial No. 292,581.



Claim.—1. The combination with a bottle having a neck whose internal surface is downwardly tapered, of a stopper having a rim adapted to seat upon the mouth of said neck, a nipple having a slightly-tapered upper portion, corresponding to the taper of the neck and provided with a groove therein, and a yielding gasket or ring seated in said groove with its lower edge flush with the surface of the nipple and its upper portion of slightly-greater taper than the taper of the bottle-neck, substantially as described.

2. The combination with a bottle having a neck whose internal surface is downwardly tapered, of a stopper having a rim adapted to seat upon the mouth of said neck, a nipple having a slightly-tapered upper portion, corresponding to the taper of the neck and provided with a groove therein, and a yielding gasket or ring seated in said groove with its lower edge flush with the surface of the nipple and its upper portion of slightly-greater taper than the taper of the bottle-neck, the lower portion of the nipple being of slightly-greater taper than the taper of the interior surface of the bottle-neck, thereby forming a free space between the nipple below the gasket or ring and the bottle-neck, substantially as described.

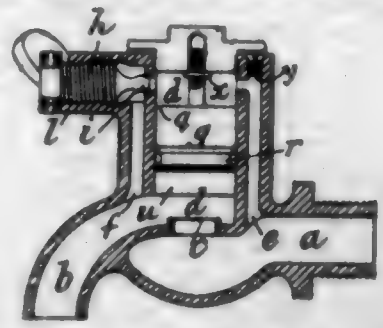
817,039. **SASH-CORD FASTENER.** LEWIS H. BROOKS, Jersey City, N. J. Filed Mar. 7, 1906. Serial No. 305,846.



Claim.—1. The combination with a cord or chain of means for forming a knot therein comprising a strip of pliable metal, which strip is bent upon itself to form an upper member and overlapping bottom members, the upper member being provided with an aperture and one of the lower members with an alining aperture, the other lower member being provided with an aperture at its bend, the said sash cord or chain being passed through the alining apertures and carried through the aperture in the bend, the terminal of the cord or chain being clamped between the upper and lower members of the said knot-forming device.

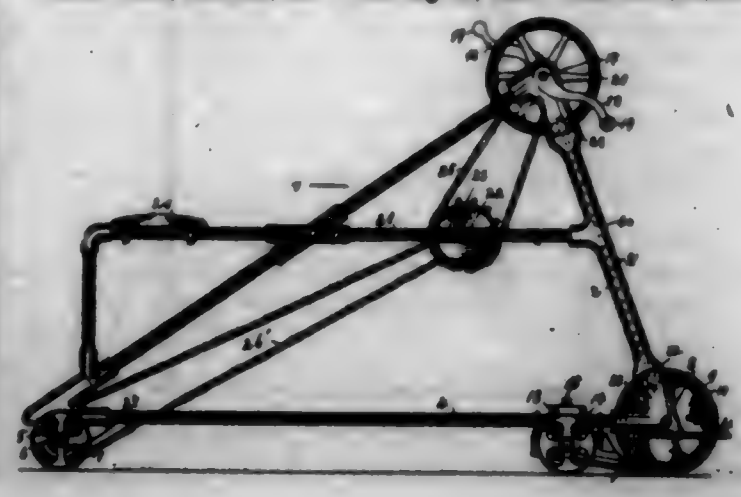
2. In combination with a sash-cord, means for forming a knot therein comprising a strip of pliable metal bent upon itself to form an upper member and overlapping bottom members, the upper member and one of the lower members being provided with alined apertures to receive the cord, and the other lower member being provided with an aperture at its bend to receive the free end of the cord.

817,040. **VALVE AND COCK.** FRANK C. BUCK, Prahran, Victoria, Australia. Filed May 13, 1905. Serial No. 260,230.



Claim.—A cock or faucet provided with a casing, having a central valve-chamber, an inlet and an outlet therefor, a cap fitting in said chamber, a by-pass formed in the wall of said casing, the lower portion of said by-pass communicating with said inlet and the upper portion communicating with said valve-chamber, a supplemental cap fitting in said inlet by-pass, said valve-chamber cap having a flange adapted to lap over said supplemental cap, when the latter is inserted in said inlet by-pass, a second by-pass formed in the wall of said casing, the lower portion of which communicates with said outlet, and the upper portion of which communicates with said valve-chamber, the mouths of the upper portions of both the inlet and outlet by-passes, communicating with the valve-chamber, being disposed opposite one another, in combination with a valve operating in said valve-chamber between said inlet and outlet, and an auxiliary valve controlling said outlet by-pass, substantially as described.

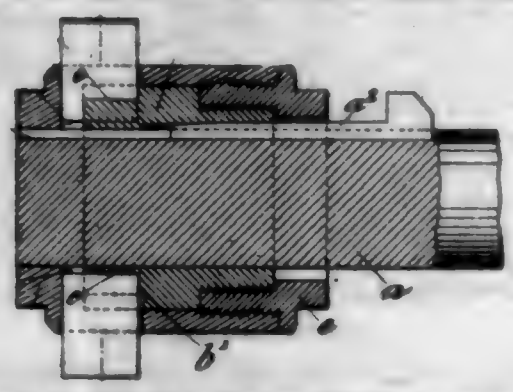
817,041. **FLOOR-DRESSING MACHINE.** FRED R. BUMPUS and JOHN KYLE, Franklin, Pa. Filed Aug. 31, 1905. Serial No. 276,562.



Claim.—1. In a floor-dressing machine, the combination with a frame having supporting-wheels at the rear end thereof, and a supporting-truck connected with the forward part of same, a floor-dressing roller journaled in the front end of the frame, means connected with the truck for changing the elevation of the forward part of the frame and means for simultaneously operating the dressing-roller and propelling the machine.

2. The combination in a floor-dressing machine, of a frame having supporting-wheels at the rear thereof, a truck and means whereby the forward part of the frame is adjustably connected therewith, a shaft journaled in the frame in advance of the truck having mounted thereon dressing-rollers, one of which being located between the sides of the frame and the others upon each end outside of the frame, a driving-shaft and separate means for transmitting motion from said shaft to propel the machine and operate the floor-dressing rollers thereof, as set forth.

817,042. BORING-TOOL, REAMER, AND THE LIKE. THOMAS BURNS, Leeds, England. Filed Feb. 6, 1905. Serial No. 244,363.



Claim.—1. In tools for boring or widening holes, a spindle, a seating rotating with the said spindle, a bush surrounding the said spindle and having radial longitudinal slots, cutters passing through said slots and having their inner ends resting on said seating, and a locking-sleeve engaging the seating and bush to draw them together to clamp the cutters, substantially as described.

2. In tools for boring or widening holes such as herein described, radial cutters, seatings for said cutters consisting of cam-surfaces, a bush surrounding said seatings and rotatable with relation thereto, said bush being formed with radial slots to receive the cutters, and a screw-threaded locking-sleeve engaging the said seatings and bush and adapted to draw them together; substantially as described.

3. A boring or widening tool comprising a spindle, a sleeve keyed thereon and having part of its surface formed as a plurality of symmetrical volute cams, and another part externally screw-threaded, radial cutters having their inner ends seated on said volute cams, a bush surrounding said sleeve and having radial slots through which said radial cutters extend, said bush being internally screw-threaded at one end, a locking-sleeve screw-threaded externally and internally and adapted to engage the said bush and sleeve to draw them together and lock the said cutters, substantially as described.

817,043. MOUNT. ESTON S. CHENEY, East Oakland, Cal. Filed July 24, 1905. Serial No. 271,021.



Claim.—1. A mat comprising top and bottom unbeveled perforated layers of relatively stiff material, the perforation in one layer being larger than the perforation in the other, and an open-center surface sheet stretched over the top layer and over the inner edges of the two layers, said surface sheet having its edges suitably secured underneath the bottom sheet.

2. A mat comprising a plurality of perforated relatively stiff sheets laid one on the other, the perforation in the lowermost sheet having a smaller diameter than the perforation in the topmost sheet, and a perforated surface sheet having inwardly-projecting side and end flap portions substantially as described, laid over the topmost sheet and having its outside edges suitably anchored, said side and end flap portions being stretched over the inside edges of said first-named sheets and secured beneath the undermost one.

3. A mat comprising top and bottom perforated boards, the perforation in the bottom board being smaller than the perforation in the top board, and a perforated surface sheet stretched across the top board and over the inside edges of the two boards and beneath the bottom board and secured thereto, the portion of said surface sheet forming the walls of the mat-opening presenting a bevel appearance.

4. A mat comprising top and bottom perforated boards, the perforation in the bottom board being smaller than the perforation in the top board, and a perforated surface sheet stretched across the top board and over the inside edges of the two boards and beneath the bottom board and secured thereto, the portion of said surface sheet forming the walls of the mat-opening presenting a bevel appearance, and said bevel portion being unsupported between the top edge of the top board and the bottom edge of the bottom board.

5. A mat comprising top and bottom perforated boards, the bottom board being longer and wider than the top board, and a perforated surface sheet longer and wider than either of said boards and having its perforations corresponding in shape to but smaller than the perforations in said boards, said surface sheet cut diagonally at its inside corners to form side and end flaps, said surface sheet being stretched across the topmost board and over both the outside and inside edges of both boards and secured underneath the bottom board.

6. A new article of manufacture comprising a mat formed of perforated upper and lower boards, the perforation in the lower board being smaller than the perforation in the top board, a perforated surface sheet stretched over the top board and around the inside edges of the boards and secured therebeneath, and a backing-sheet to which said mat is affixed.

7. A new article of manufacture comprising a mat formed of perforated upper and lower boards, the perforation in the lower board being smaller than the perforation in the top board, a perforated surface sheet stretched over the top board and around the inside edges of the two boards and secured therebeneath, and a backing-sheet hinged to the under side of the mat and adapted to permit the insertion of a print or the like between the backing and mat.

817,044. LAND-ANCHOR. WILLIAM B. CHENA, Mount Vernon, Ind. Filed Aug. 29, 1905. Serial No. 276,300.



Claim.—1. In an earth-anchor of the character described, the combination of separable arms having the upper ends overlapping provided with flukes, with a center piece to operate between the flukes to separate them and means for operating the center piece.

2. In an earth-anchor of the character described, the combination of arms pivotally connected and overlapping at their upper

ends, with a center piece for operating between the arms, and means for operating the center piece.

3. An earth-anchor, consisting of a pair of arms pivotally connected and overlapping at their upper ends, and provided with flukes on their lower ends, combined with means for separating and bringing together their lower ends.

4. The combination, of the arms pivotedly connected and overlapping at their upper ends, with a center piece operatively arranged between the arms.

5. The combination, of the arms pivotedly connected and overlapping at their upper ends, and provided with flukes on their lower ends, with a center piece operatively arranged between the arms, and means for operating the center piece.

6. The combination, with the arms, each slotted vertically, of the center piece provided on its opposite sides with means to engage the said slots, the said arms being pivoted together at their upper ends, and a vertically-movable rod engaging the said center piece.

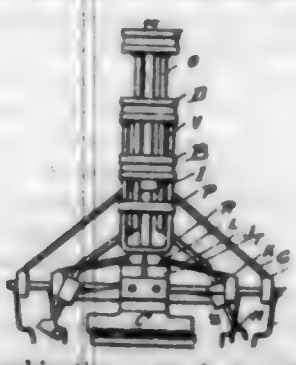
7. The combination, with the arms each slotted vertically, of the center piece provided on its opposite sides with shanks and transversely-arranged heads to engage the said slots, the said arms being pivoted together at their upper ends, and a vertically-movable rod engaging the said center piece.

8. The combination, with the arms having flukes at their lower ends, each slotted vertically, of the center piece provided on its opposite sides with means to engage the said slots, the said arms being pivoted together at their upper ends and provided with eyes in their pivotal parts and a vertically-movable rod engaging the said center piece and extending upward between the arms and through the said eyes.

9. The combination, with the arms pivoted together at their upper ends and provided with eyes in their pivotal parts, of a center piece arranged between the arms and provided at its center with a hole, a thimble-like projection extending upward around the hole, and a vertically-movable rod engaging the said center piece in said hole and extending upward through the thimble-like projection between the arms and through the eyes.

10. The combination, with the arms having their upper ends overlapping, provided with eyes, and pivoted together, and outwardly-extending flukes on their lower ends, of a center piece arranged between the arms and provided at its center with a hole, a thimble-like projection extended upward around the hole, and a vertically-movable rod engaging the said center piece in said hole and extending upward through the said thimble-like projection between the arms and through the eyes.

817,045. **MACHINE FOR FLANGING, SOCKETING, OR OTHERWISE SHAPING EARTHENWARE PIPES, &c.** RICE O. CLARK, Jr., Hobsonville, New Zealand. Filed Aug. 15, 1904. Serial No. 220,843.



Claim.—1. In combination, a retainer, a shaper, a compressor device, and independent mechanisms for causing the action of the same to form a flange on the pipe.

2. In a pipe-flanging machine, the combination of a vertical shaft, independent mechanisms slidably mounted thereon, compressors carried by a part of said mechanisms, and retainers and shapers coöperating therewith.

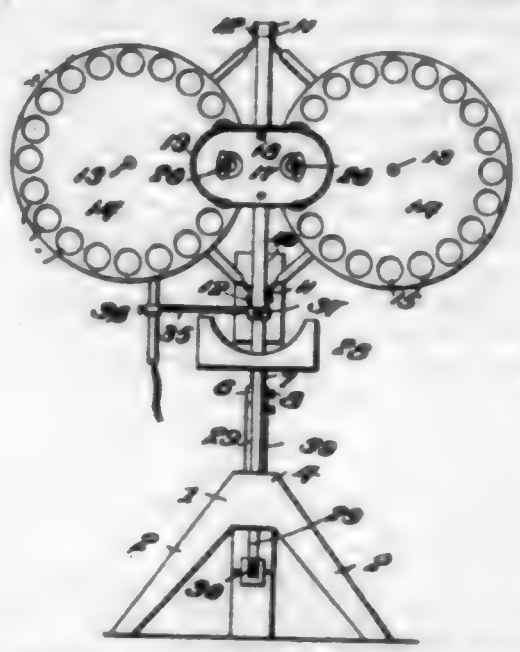
3. In a pipe-flanging machine, the combination of a driving device, mechanism having compressors slidably mounted on said driving device, independent mechanisms having retainers and shapers slidable on the driving device and means for actuating said device.

4. A machine of the class described involving a rotary shaft having head-gears slidably mounted thereon, vertical rods carried thereby, diagonal rods secured to the vertical rods, guides for said rods, means connected to the diagonal rods to form a flange on a pipe and means for imparting motion to the head-gears.

5. A machine involving a rotary vertical shaft having a plurality of head-gears slidably mounted thereon, series of rods carried by each of the head-gears, guides for the said rods, compressors secured to the free ends of one series of rods and retainers and shapers secured to another series of rods for the purpose described.

6. In a pipe-flanging machine, the combination of a vertical shaft having a head-gear slidably mounted thereon, rods carried thereby having diagonal extensions, compressors supported on the ends of the extensions, a second head-gear slidable on said shaft, rods secured on said second head-gear and extended outwardly beyond the first-mentioned rods, retainers carried by said outwardly-extended rods, a further head-gear slidably mounted on said shaft and having rods provided with shapers, means for guiding the rods and means for actuating the head-gears.

817,046. **OCULOMETROSCOPE.** HARRY I. COWAN and BERNARD ABEL, Woburn, Mass. Filed Sept. 21, 1905. Serial No. 279,431.



Claim.—1. In an instrument of the character described, the combination of a base, an adjustable standard rising therefrom, arms on the standard, lens-disks mounted to revolve on the arms, plates secured to the standard, one on each side of the disks, a sight-hood secured to one of said plates, a pair of apertured disks provided with lines and mounted to revolve in bearings on the other plate, said bearings provided with indicating-marks, an adjustable chin-rest on one side of the lens-disks, and an adjustable light upon the opposite side thereof, substantially as described.

2. In an instrument of the character described, the combination of a base, an adjustable standard rising therefrom, outwardly-bent arms connected to said standard, lens-disks mounted to revolve on said arms, plates secured to the standard, one on each side of the disk, a sight-hood secured to one of said plates, a pair of apertured disks mounted to revolve in bearings on the other plate and provided with lines extending across said disk, said bearings provided with indicating-marks, a chin-rest vertically adjustable toward and from the sight-hood, and a light located upon the opposite side of the lens-disk, substantially as described.

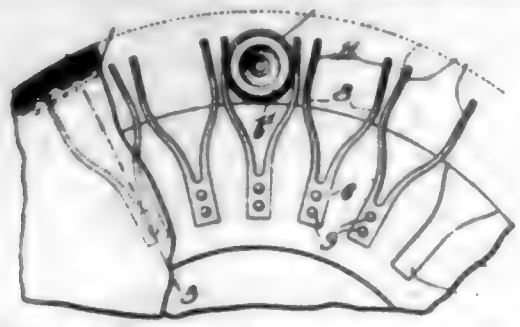
817,047. **HOPPER FOR FILLING-REPLENISHING LOOMS.** EDWARD CUNNIFF, New Bedford, Mass., assignor to Draper Company, Hopedale Mass., a Corporation of Maine. Filed Aug. 2, 1905. Serial No. 272,203.

Claim.—1. A hopper for automatic looms, comprising a series of circularly-arranged, rigidly-connected holding devices adapted each to engage and detachably retain the butt of a filling-carrier, a rotatable carrier on which the holding devices are mounted, the longitudinal axes of the filling-carriers being parallel to the axis of rotation of the carrier; and a fixed support adjacent the latter and upon which the outer ends of the butts of the filling-carriers slide during rotative movement of the carrier.

2. A hopper for automatic looms, comprising a rotatably-mounted, circular disk, a series of radially-extended spring-acting holding devices thereon to engage and detachably retain the butts of a series of filling-carriers with their axes parallel to the axis of the disk, and a fixed support upon which the outer ends of the butts slide when the carrier is rotated.

3. A hopper for automatic looms, comprising a carrier mounted to rotate about a substantially horizontal axis, a series of radially-extended spring-acting holders thereon to engage the butts of a plu-

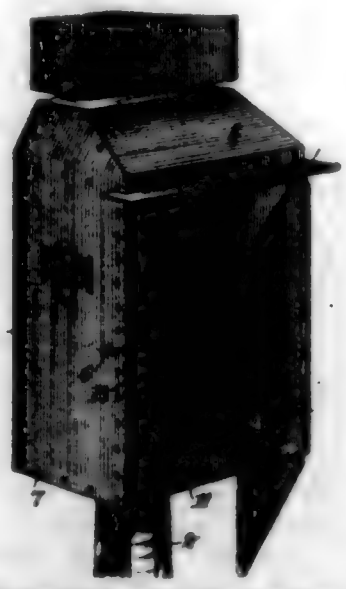
rality of filling-carriers and hold them in parallelism with the carrier-axis, and means to act upon the outer ends of the butts and coöperate with the holders in properly positioning the filling-carriers.



4. In a loom, in combination, an upright, stationary head having a horizontal stud fixed thereto, a disk rotatably mounted on the stud and provided with a series of pairs of spring-jaws grooved on their inner faces, each pair being adapted to engage and detachably hold the annularly-ribbed butt of a filling-carrier, and sustain the same with its tip unsupported, the outer ends of the butts resting upon the adjacent face of the head, and a filling-end holder fixedly-connected with the disk beyond the tips of the filling-carriers.

5. A hopper for automatic looms, comprising a rotatably-mounted, circular disk, a series of pairs of spring-jaws mounted thereon and projecting beyond its periphery, to engage and detachably hold by their butts only a series of filling-carriers, the edge of the disk positioning the same radially, and a fixed stop against which the outer ends of the butts rest, to longitudinally position the filling-carriers and prevent tilting thereof in the jaws.

817,048. LETTER-CARRIER'S MAIL-DEPOSIT BOX. THOMAS VAN METER DAVIS, Portland, Oreg. Filed June 1, 1905. Serial No. 263,261.

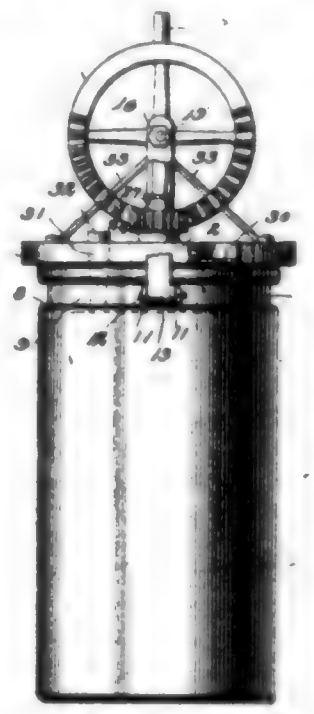


Claim.—A mail-deposit box for letter-carriers comprising a rectangular structure provided with a hinged closure at one side, means for securing the structure to a supporting-post therefor, embodying upper and lower staples adapted to embrace the post and having the extremities thereof extending through the rear side of the structure and secured, and a block carried by the upper staple for interposition between said rear side of the structure and said post.

817,049. CHURN. FRANK L. DECKER, Sand Fork, W. Va. Filed Nov. 4, 1905. Serial No. 285,886.

Claim.—1. A churn comprising a casing provided with an annular groove, a cover, bearing-brackets carried by the cover and having outwardly-extending horizontal arms secured thereto, a dasher carried by the cover, gearing associated with said bearing-bracket for operating the dasher, a retaining-band occupying the recess in the casing and composed of sections having their adjacent ends outturned to form lugs, pivot members connecting said lugs, L-shaped bearing-brackets having their vertical arms pivotally engaging said pivot members and their horizontal arms arranged to overlie the horizontal arms of the brackets, and clamping-screws carried by said horizontal arms of the clamping-brackets to engage the arms of the bearing-brackets.

2. A churn comprising a casing, a cover therefor having a bearing-opening, a hollow journal extending through said bearing-opening and provided with a pinion and above the pinion with diametrically opposite slots, drive-gearing carried by the cover for actuating said pinion, a dasher having a stem extending upward through the journal and pinion and slotted at its upper end, and a key pivoted to fold within said slot and adapted when projected to engage the notches in the journal to lock the stem thereto.



817,050. DENTAL-FLOSS HOLDER. JOSEPH C. DE LA COUR, Conshohocken, Pa., assignor to Johnson and Johnson, New Brunswick, N. J., a Corporation of New Jersey. Filed Jan. 18, 1906. Serial No. 296,676.



Claim.—1. A holder for dental floss, &c., comprising a bottle having a reel and floss therein, in combination with a cap and means on the cap whereby the floss may be cut at the desired length, as drawn out.

2. A holder for dental floss, &c., comprising a bottle having a reel and floss therein, in combination with a cap, a double washer in said cap, and means on the cap whereby the floss may be cut at the desired length, as drawn out.

3. A holder for dental floss, &c., comprising a bottle having a reel and floss therein, and a cushion in the bottom of said bottle, in combination with a cap, a double perforated washer therein having a hard surface against which the reel turns, the second washer and cap being perforated through which the floss is drawn out.

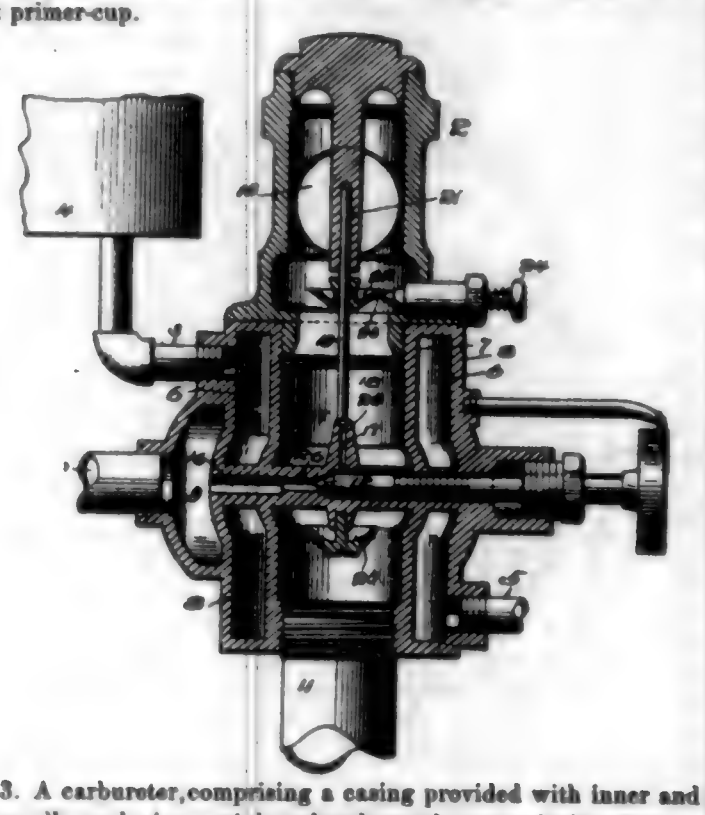
4. A holder for dental floss, &c., comprising a bottle having a reel and floss therein, and a cushion in the bottom of said bottle, in combination with a cap, a washer therein having a hard surface against which the reel turns, said cap and washer being perforated whereby the floss may be removed, and means on the cap whereby the floss may be cut at the desired lengths, when drawn out.

5. A holder for dental floss, &c., comprising a bottle having a reel and floss therein, in combination with a cap, a double washer therein consisting of a disk of rubber and a second disk having a hard smooth surface against which said reel turns, said washer and cap being perforated, and a punched-up tongue on the cap whereby the floss may be cut at the desired length, when drawn out.

817,051. CARBURETER FOR EXPLOSIVE MOTORS AND ENGINES. HERMAN C. DOMAN, Oshkosh, Wis. Filed March 10, 1905. Serial No. 249,417.

Claim.—1. A carbureter, comprising a casing provided with inner and outer walls, said casing provided with a central, mixing or vaporizing chamber, said casing provided with a water-jacket formed between said inner and outer walls, said casing provided with a reservoir formed upon the outer wall intermediate its ends, a cross-pipe integral with said casing and communicating with the reservoir, a valve positioned within said pipe, a priming-cup depending from said pipe, said pipe provided with an outlet formed above said cup, a movable valve positioned upon said casing and normally closing said outlet, and a primer for moving said valve.

2. A carbureter, comprising a casing provided with a mixing-chamber, a water-jacket and a reservoir, a horizontal transverse pipe extending through said mixing-chamber and water-jacket and communicating with said reservoir, a valve threaded into said pipe, a primer-cup removably secured to the lower portion of said transverse pipe, and outlet-valved means formed upon said pipe above said primer-cup.



3. A carbureter, comprising a casing provided with inner and outer walls producing a mixing-chamber and a water-jacket, the water-jacket formed between said inner and outer walls, said casing provided with a gasolene-reservoir formed upon the outer wall intermediate the ends of said water-jacket, a transverse pipe extending across said water-jacket and mixing-chamber and opening into said reservoir, mixing-chamber, and outer atmosphere, a needle-valve threaded into said pipe, said pipe provided with a vertical outlet, a removable primer-cup threaded upon the lower portion of said pipe, a vertically-movable valve carried by said casing and adapted to normally close the outlet of said pipe, said valve provided with a shoulder having an annular base, and means for engaging said base for lifting said valve.

4. A carbureter, comprising a casing provided with an inlet-pipe, a slidable valve provided with a stem carried by said casing and adapted to normally rest upon said inlet-pipe, a shoulder provided with an annular, upwardly-inclined base fixedly secured to the stem of said valve, and a beveled member carried by said casing and adapted to engage the base of said shoulder for lifting said valve.

5. A carbureter, comprising a casing provided with a transverse inlet-pipe, said pipe provided with a downward extension, a primer-cup threaded into said extension, a vertically-movable valve carried by said casing and normally engaging said pipe, a shoulder provided with an upward extension fixedly secured to said valve, and means carried by said casing and adapted to engage the extension of said shoulder and being capable of lifting said valve off of said inlet-pipe.

6. A carbureter, comprising a casing provided with an inlet-pipe, a vertically-movable valve carried by said pipe, said valve provided with an inclined portion, and a member capable of engaging the inclined portion of said valve and being moved at substantially right angles to the vertical plane of movement of said valve for lifting said valve from engagement with said inlet-pipe.

7. A carbureter, comprising a casing provided with a mixing-chamber, an inlet-pipe extending transversely of said casing and provided with an upward extension, said extension provided with a valve-seat, said pipe provided with a downward extension, a removable primer-cup carried by said downward extension of the pipe, a vertically-movable valve seated upon the outward extension of said pipe, a shoulder provided with an upwardly-inclined portion carried by said valve, and a cushioned primer carried by said casing and adapted to engage the inclined portion of said shoulder for lifting said valve from its seated position.

8. A carbureter, comprising a casing provided with inner and outer walls, said casing provided with a central mixing or vaporizing chamber, said casing provided with a water-jacket formed between said inner and outer walls, said casing provided with a reservoir formed upon the outer wall intermediate its ends, a cross-pipe integral with said casing and communicating with the reservoir, a valve positioned within said pipe, said pipe provided with an outlet formed in its upper surface, and valve means for normally closing said outlet.

9. A carbureter, comprising a casing provided with inner and outer walls producing a mixing-chamber and a water-jacket, the water-jacket formed between said inner and outer walls, said casing provided with a gasolene-reservoir formed upon the outer wall intermediate the ends of said water-jacket, a transverse pipe extending across said water-jacket and mixing-chamber and opening into said reservoir, mixing-chamber, and outer atmosphere, a needle-valve threaded into said pipe, said pipe provided with an outlet, a vertically-movable valve carried by said casing and adapted to normally close the outlet of said pipe, and vertically-movable valve means carried by said casing and adapted to normally close the outlet of said pipe.

10. A carbureter, comprising a casing provided with a mixing-chamber, an inlet-pipe extending transversely of said casing and provided with an upward extension, said extension provided with a passage and a valve-seat, a vertically-movable valve normally seated upon said extension, a shoulder provided with an upwardly-inclined portion, said shoulder carried by said valve, and a spring-actuated primer carried by said casing and adapted to engage the inclined portion of said shoulder for lifting said valve from its seated position.

11. A carbureter, comprising a casing, provided with mixing-chamber, and a water-jacket surrounding said chamber, said casing provided with a gasolene-reservoir formed upon said jacket, said casing provided with a hollow pipe or tubing extending transversely of said mixing-chamber and water-jacket and opening at one end into said gasolene-chamber at its opposite end into the outer atmosphere, said pipe provided with an outlet, opening into said mixing-chamber, valve means positioned within said pipe, and movable valve means for normally closing the outlet formed in the pipe and opening into said mixing-chamber.

12. A carbureter, comprising a casing provided with a mixing-chamber, and a water-jacket of substantially the same length as and entirely surrounding said mixing-chamber, said casing provided with a gasolene-reservoir formed upon the sides and intermediate the ends of said water-jacket, a hollow member extending at one end into said reservoir and extending across said water-jacket and mixing-chamber and opening at its opposite end into the outer atmosphere, said hollow member provided with an outlet-opening into said mixing-chamber, and valve means for controlling the supply of material from the reservoir through said member and into said mixing-chamber.

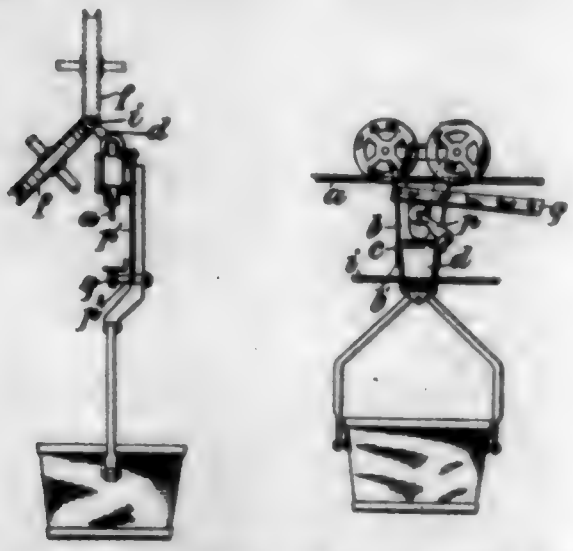
13. A carbureter, comprising a casing provided with a mixing-chamber, and a water-jacket entirely surrounding said mixing-chamber, said water-jacket and mixing-chamber of substantially the same length, said casing provided with a reservoir formed upon the side of said water-jacket, a hollow member opening at one end into said reservoir and extending entirely across said water-jacket and mixing-chamber, said hollow member provided with an outlet, and valve means for normally controlling the flow of liquid from said reservoir through said hollow member and outlet.

817,052. **WEEDER AND CULTIVATOR.** JAMES E. ELDER and FREDERICK L. ELDER, Dayton, Wash. Filed Oct. 5, 1905. Serial No. 281,668.



Claim.—A weeder and cultivator comprising a pair of beams, downwardly and forwardly curved standards formed integral with the rear ends of said beams, diagonally-disposed, crossed brace-bars to connect said beams together near their front ends, a V-shaped inclined weeding and cultivating blade b removably connected to the forwardly-curved ends of said standards, a supporting-bar connected to said crossed brace-bars to support the forward end of said blade, a downwardly and rearwardly curved clevis-bar formed on the forward ends of said beams, said clevis-bar having formed therein a series of apertures whereby a draft-bar may be adjustably connected therewith, a draft-bar connected with the clevis of said beams and forming a brace for said beams, hooks connected with said beams, and a spacing-rod connected with said hooks to hold said weeders and cultivators apart, substantially as described.

817,053. CABLE-GRIP FOR CABLE-HAULED TRUCKS AND THE LIKE. WILHELM BLEIBERN, Cologne, Germany, and FRITZ DOEBLE, Geneva, Switzerland, assignors to J. Pohlig, Aktien-Gesellschaft, Cologne-Zollstock, Germany. Filed Jan. 25, 1904. Serial No. 190,497.



Claim.—1. The combination with a carriage and an axially-movable pivot mounted thereon; of a cable-grip comprising gripping-jaws revoluble on said pivot and means actuated by the axial movements of the pivot to actuate the jaws.

2. In a ropeway-carriage, a traction-rope grip pivoted to the carriage, an axially-movable pivot to actuate the jaws of the grip and means to automatically move the pivot and hold it in its moved position, substantially as described.

3. In a ropeway-carriage, a traction-rope grip having a jaw hooked at its end, one or more coöperating jaws, an axis around which the jaws are movable, and axially-movable means to clamp the jaws, substantially as described.

4. In a ropeway-carriage having carrier-rope wheels, a swinging grip below them to engage the traction-rope and a counterweight below the grip substantially equal to the weight of the carriage above the traction-rope, for the purpose set forth.

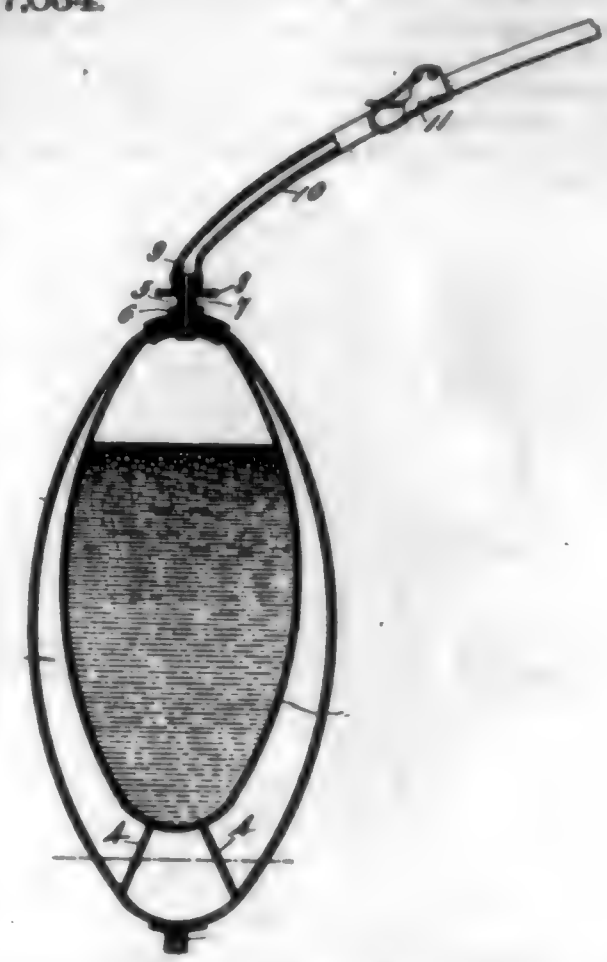
5. A grip for ropeways comprising pivoted jaws to engage the rope, said jaws movable about a divided axis on the ropeway-carriage and means to axially move each part of the divided axis to and from each other, substantially as described.

6. A grip for ropeways comprising jaws pivoted together to engage the traction-rope, said jaws revoluble about an axis on the rope-carriage, oppositely-directed screws supporting the axis, a gear-wheel on each screw and a suitably-operated rack-bar to actuate the gear-wheels, whereby the portions of the axis may be moved to and from each other in alinement to open and close the jaws, substantially as described.

817,054. SYRINGE. DANIEL G. GAY, Prosswater, Oreg., assignor of one-half to James W. Lynd, Prosswater, Oreg. Filed Nov. 10, 1904. Serial No. 232,220.

Claim.—The herein-described syringe consisting of an inner flexible liquid-container and a casing surrounding said container and provided with a nipple and plug passing through the container and casing and connected to a tube, a valve or air-inlet whereby when air is forced into said casing said liquid-container will be compressed to cause its contents to be expelled through said plug and tube, and a plurality of flexible stays connecting the liquid-container to the air-casing, substantially as described.

817,054.



817,055. EYE MECHANISM FOR DOLLS. SQUIRE D. GIFFORD, Terra Alta, W. Va., assignor of one-half to Jacob P. Shafer, Terra Alta, W. Va. Filed May 1, 1905. Serial No. 258,230.

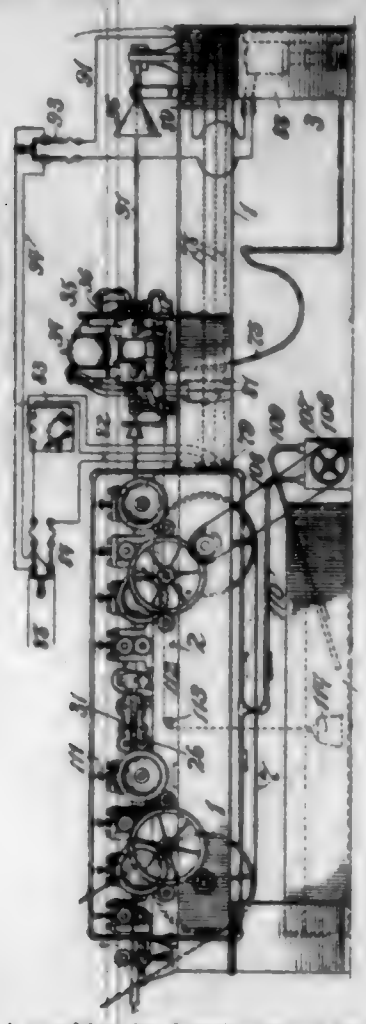


Claim.—1. In eye mechanism for dolls, the combination with the head provided with eye-sockets, of eyes mounted in said sockets and adapted for rotary movement in all directions therein, a weight secured to and controlling the movements of said eyes, a weighted lever fulcrumed in said head on a plane in the rear of the axis of movement of said eyes and eyelids carried by the end of said lever, as and for the purpose set forth.

2. In eye mechanism for dolls, the combination with the head provided with eye-sockets, of eyes mounted in said sockets and having rotary movement in all directions therein, a weighted arm controlling the movements of said eyes, a lever fulcrumed in said head between its ends in a plane in the rear of the axis of movement of said eyes, eyelids carried by one end of said lever and loops extending around the weighted arm and said lever and designed to limit the movements of the two said parts, as and for the purpose set forth.

3. In eye mechanism for dolls, the combination with the head provided with eye-sockets, of eyes mounted in said sockets and having rotary movement in all directions therein, a weighted arm controlling the movements of said eyes, a weighted lever fulcrumed in said head between its ends in a plane in the rear of the axis of movement of said eyes, eyelids carried by one end of said lever and wire loops extending around said arm and lever, said loops being spaced from the walls of the head whereby to limit the movement of the two said parts and prevent the weights thereof from contacting with the walls.

817,056. **MACHINE FOR FORMING METAL TUBES.** EDWIN T. GREENFIELD, Monticello, N. Y. Filed Aug. 5, 1904. Serial No. 219,606.



Claim.—1. A machine for forming tubes from a strip of metal embracing tube-forming means and means for forcing the strip continuously forward therethrough; in combination with means for cutting the completed tube into relatively short lengths and additional means for automatically effecting connection between the cutting means and the moving tube itself as it is fed forward.

2. In a tube-forming machine pairs of tube-forming rolls; means for cutting the completed tube successively into relatively short lengths; in combination with means for causing the cutting means to always move at the same speed with which the strip and completed tube are advanced whereby the tube is continuously formed and simultaneously cut into short lengths.

3. A tube-forming machine embracing tube-forming means and means for forcing a strip of metal therethrough; in combination with cutting means for cutting the completed tube into relatively short lengths, and additional means for connecting the cutting means directly to the tube so that it will move at the same rate of speed as the tube and be propelled thereby; together with an independent source of energy for effecting the operation of the cutting means.

4. A tube-forming machine embracing forming-rolls and interconnected driving-gearing therefor; in combination with means for embedding a supply of brazing material in the outer surface of the tube as it is formed.

5. A tube-forming machine embracing forming-rolls and driving-gearing therefor; in combination with one or more cutters for forming a groove or grooves in the outer face of the tube and additional means for embedding a supply of brazing material in said groove or grooves.

6. A machine for making tubes embracing tube-forming rolls; interconnected driving-gearing; a traveling car carrying power-impelled cutting mechanism; together with means for automatically connecting the car directly to the tube and additional means for actuating the cutting mechanism for a predetermined time whereby tubing is continuously made and cut into predetermined lengths.

7. A machine for making tubes embracing power-driven rolls; automatic cutting mechanism for severing the completed tube into predetermined lengths and interconnecting means between the cutting means and the tube itself whereby the operation of the machine is continuous and the severed tubes all have a definite or predetermined length.

8. A machine for making tubes embracing the following elements—power-driven tube-forming rolls; power-impelled cutting mechanism for severing the completed tubes into predetermined lengths; and interconnected means between the tube-forming and tube-severing means whereby the severing act is accomplished while the tube is being formed and fed forward.

9. In a tube-forming machine power-impelled tube-forming rolls; power-impelled severing mechanism adapted to be operatively connected to and moved with the completed tube; in combination with automatic mechanism for effecting such connection and additional mechanism located in the path of the end of the completed tube for controlling the application of power to the cutting mechanism.

10. In a tube-forming machine means for giving a strip of metal tubular form and additional means for forcing said strip therethrough; in combination with cutting mechanism supported or sustained in close proximity to the completed tube; together with automatically-controlled means for causing the cutting mechanism to be connected to and moved with the tube.

11. In a tube-forming machine tube-severing mechanism driven by a source of power and provided with means for connecting it directly to the completed tube so as to move therewith; together with means for automatically restoring the severing mechanism to its normal position after each severing operation, the arrangement being such that the severing mechanism travels back and forth while the tube is moved continuously in the same direction.

12. In a tube-forming machine means for giving a strip of metal tubular form; additional means driven by a source of power for forcing said strip through the tube-forming means; in combination with severing mechanism driven by an independent source of power; together with automatically-controlled mechanism for connecting the severing mechanism directly to the completed tube so that it will move therewith as the tube is advanced, and automatic releasing and restoring mechanism therefor, the arrangement being such that the severing mechanism travels back and forth while the tube is moved continuously in the same direction.

817,057. **FLEXIBLE METALLIC TUBE.** EDWIN T. GREENFIELD, Monticello, N. Y. Filed Oct. 24, 1904. Serial No. 229,723.



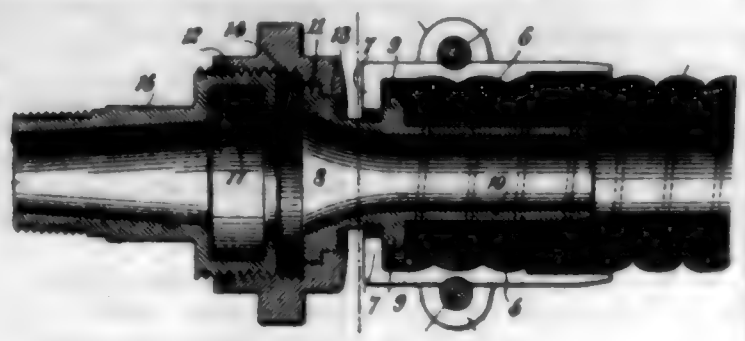
Claim.—1. A flexible tube constructed of spirally-wound interlocking strips of metal, one of which is convex and the other concave in the direction of its length, and each having a central convex strengthening-corrugation extending also in the direction of its length, said strengthening-corrugations being disposed in interlocking relation.

2. A flexible tube constructed of interlocking metal strips one of which is convex and the other concave and each of which is provided with a convex centrally-located corrugation extending in the direction of its length, said strips having a fixed set which prevents them from unwinding and the centrally-located corrugations being disposed in interlocking relation.

817,058. **COUPLING FOR ARMORED HOSE.** EDWIN T. GREENFIELD, Monticello, N. Y. Filed Jan. 12, 1905. Serial No. 240,782.

Claim.—1. A hose-coupler for a spirally-armored hose consisting of a two-part coupling-ring screw-threaded internally so as to conform to the spiral armor, each part being provided with an internally-projecting shoulder; in combination with a connecting-sleeve having an integral ring-shaped part adapted to bear against the internally-projecting shoulders and the end of the hose.

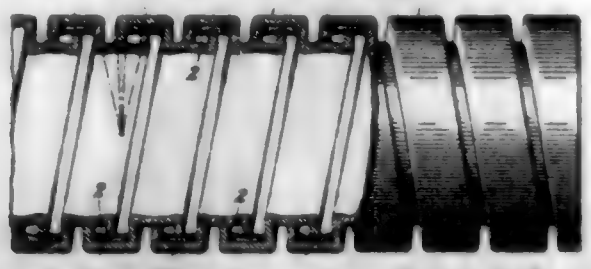
2. A hose-coupler for a spirally-armored hose consisting of a two-part coupling-ring screw-threaded internally so as to conform to the spiral armor, each part being provided with an internally-projecting shoulder; in combination with a connecting-sleeve having an integral ring-shaped part; together with means for attaching the connecting-sleeve to an additional connecting-ring.



3. A hose-coupler for a spirally-armored hose consisting of a two-part coupling-ring screw-threaded internally so as to conform to the spiral armor, each part being provided with an internally-projecting shoulder at one end; together with lugs or ears, bolt-holes and bolts for securing the parts together; in combination with an internally-disposed connecting-sleeve provided with integral means for securing it within the hose and in locked relation to the internally-projecting shoulders.

4. A hose-coupler for spirally-armored hose consisting of a two-part coupling-ring screw-threaded internally, each part being provided with an internally-projecting shoulder at one end; lugs or ears; bolt-holes and bolts; in combination with a connecting-sleeve provided with an internally-disposed ring-shaped part adapted to form a connection between the end of the hose and the internally-projecting shoulders, said sleeve having also additional shoulders at one end; a connecting-ring screw-threaded internally and provided with shoulders adapting it to be secured to the exterior end of the before-mentioned sleeve; a coupling connection provided with screw-threads for securing the before-mentioned ring, and a gasket adapted to make a water-tight connection between the connecting-sleeve and the coupling connection, all of said parts being constructed substantially as and for the purpose set forth.

817,059. FLEXIBLE TUBE. EDWIN T. GREENFIELD, Monticello, N. Y. Filed Apr. 12, 1905. Serial No. 255,148.



Claim.—1. A flexible tube constructed of a spirally-wound metal strip having interlocking edges and a sealing-gasket located between the outer surface of the inner interlocking edge and the entire inner surface of the outer tubular part of the strip.

2. A flexible tube constructed of a spirally-wound metal strip of substantially S cross-section; in combination with a sealing-gasket located between the entire inner surface of one part of the strip and the outer or locking edge of the other part thereof.

3. A flexible tube constructed of a spirally-wound strip of metal having interlocking edges and a flexible metallic gasket located between the entire inner surface of one part and the interlocking edge of the next adjacent part.

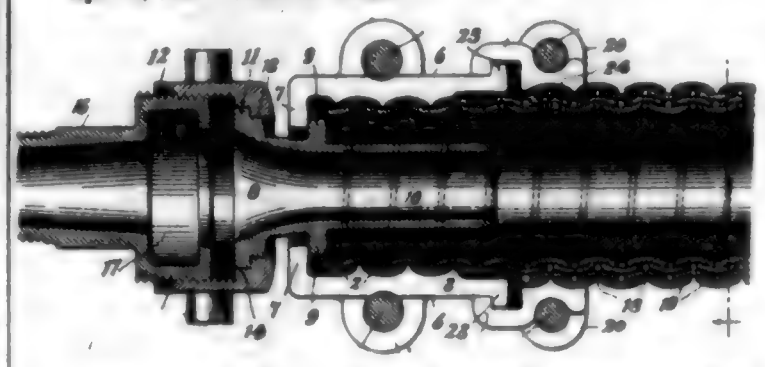
4. A flexible tube constructed of a spirally-wound strip of metal having a cross-section of substantially S form; in combination with a spirally-wound gasket filling the space between the interlocking edges of the inner part and the interlocking inner surface of the outer part of the strip.

5. A flexible tube constructed of a spirally-wound strip of metal having a cross-section of substantially S form, one part thereof being curved exteriorly; in combination with a spirally-wound yielding gasket between the outer surface of the locking edge of said part and the entire inner surface of the other part.

6. A flexible tube constructed of spirally-wound interlocking parts and a spirally-wound gasket located between the outer surface of the locking edge of said part and the entire inner surface of the other part.

7. A flexible tube made of spirally-disposed strip metal having interlocking edges; in combination with a spring-gasket located between the entire bearing-surfaces of the successive spirals, so that the outward pressure of the confined liquid or gas holds all of the parts of the tube in firm contact and renders the same practically liquid and gas tight.

817,060. HOSE. EDWIN T. GREENFIELD, Monticello, N. Y. Filed Apr. 24, 1905. Serial No. 257,071.

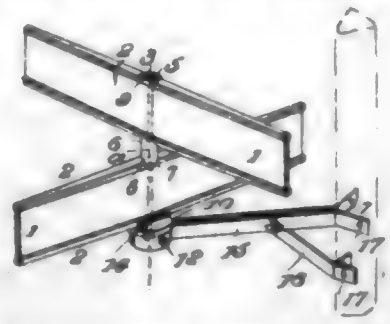


Claim.—1. A flexible armored hose provided with coupling means for securing it to a point of attachment; in combination with a flexible metal sleeve surrounding the armor and a second coupler which binds the sleeve to the armor and connects it to the first-named coupler.

2. A hose having an armor of interlocking flexible metallic strips; in combination with a strengthening-sleeve composed of similar surrounding interlocking metallic strips, said sleeve being located at a point where the hose is subjected to frequent severe bending strain.

3. A flexible hose having a spirally-disposed armor; in combination with a coupler embracing a connecting-sleeve and a two-part coupling-ring screw-threaded internally; together with a spirally-disposed strengthening-sleeve surrounding the armor and a second two-part coupler adapted to secure the sleeve around the armor and to the first-named coupler.

817,061. STREET-SIGN. BURDETT W. GRIFFIN, Toledo, Ohio, assignor to The American Street Sign Company, Toledo, Ohio, a Corporation of Ohio. Filed July 12, 1905. Serial No. 269,403.



Claim.—1. In a street-sign, the combination with a central stem or bolt, two sign-plates curved in opposite directions and arranged back to back upon opposite sides of the stem or bolt, separable bindings U shape in cross-section and corresponding to the curvature of the sign-plates located over the longitudinal edges of the sign-plates and extending from end to end of said plates, and means for holding the sign-plates and bindings in fixed relation with the central stem or bolt, substantially as hereinbefore set forth.

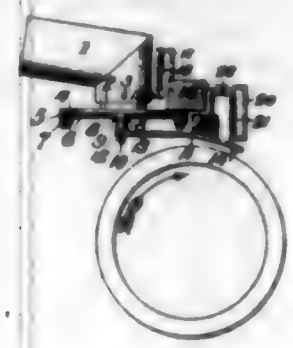
2. In a street-sign two separable, curved sign-plates arranged back to back and two marginal bindings U shape in cross-section, curved longitudinally to correspond with the curvatures of the sign-plates and extending from end to end of the latter, whereby the sign-plates are held against longitudinal movement with reference to one another, substantially as shown and described.

3. In a street-sign, two sets or pairs of sign-plates curved longitudinally and arranged back to back, means for holding each pair of plates in fixed relation with one another, a saddle intermediate of the two sets or pairs of sign-plates and formed with diametric grooves or recesses adapted to receive the longitudinal bindings of the sign-plates, and means for clamping the two sets of sign-plates and the saddle together whereby the said sets of sign-plates may be arranged and held at various angles to one another, substantially as hereinbefore set forth.

4. In a sign such as described, separable sign-plates curved longitudinally and removable bindings located upon the longitudinal edges of said sign-plates, said bindings being of U shape in cross-

section and curved longitudinally to correspond with the curvatures of the sign-plates and extending from end to end of said plates, substantially as and for the purpose set forth.

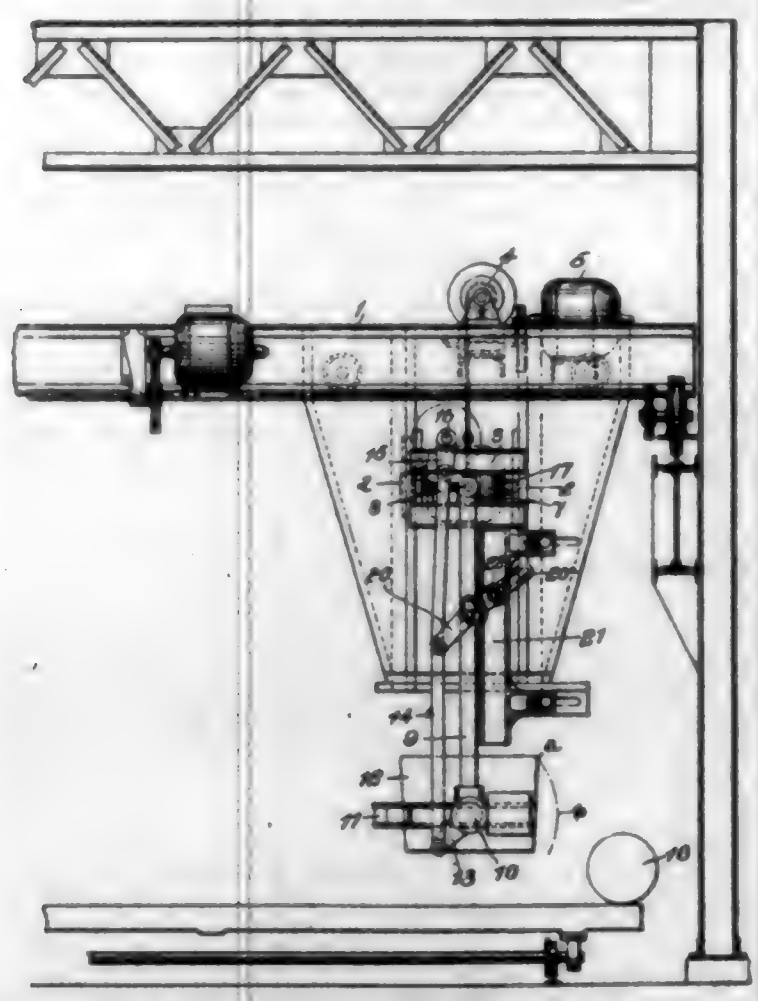
817,062. GRAPHOPHONE-REPRODUCER. WILLIAM HART, Kirksville, Mo. Filed Aug. 14, 1905. Serial No. 274,146.



Claim.—1. In a reproducer of the character described, a diaphragm, a hub secured centrally thereto, a stylus-lever connected to said hub, a horn-intake, and a tube pivotally connected to said horn-intake, and disposed above the upper end of said hub, substantially as described.

2. A reproducer for graphophones comprising a sound-box, a weight thereon, a spring connected to said weight and to the horn-intake, a weight supported upon the stylus-lever, and a spring connected to said weight at one end and having its opposite end connected to an arm depending from the first-mentioned weight, substantially as described.

817,063. APPARATUS FOR TEEMING METAL. HERMAN S. HEICHERT, Pittsburg, Pa. Filed July 24, 1905. Serial No. 271,084.



Claim.—1. In an apparatus for teeming metal, a ladle provided with suitable trunnions mounted on and in combination with mechanism for turning the ladle, and means operative by the turning mechanism for shifting the ladle during the turning movement.

2. In an apparatus for teeming metal, the combination of a trunnion-supported ladle, mechanism for turning the ladle and means for so shifting the ladle that the final position of the pouring lip or edge will be at or forward of the rear of a vertical plane passing through the lip or edge in its initial position.

3. In an apparatus for teeming metal, the combination of a supporting-head, rods pivotally connected to the head, a ladle pivotally mounted on the rods, means for turning the ladle and mechanism operated by the turning means for swinging the suspensory-rods and ladle.

4. In an apparatus for teeming metal, the combination of suspensory-rods, a ladle pivotally mounted on said rods, ladle-turning pitmen and means operated by said pitmen for shifting the ladle during its turning movement.

5. In an apparatus for teeming metal, the combination of suspensory-rods, a ladle pivotally mounted on the rods, ladle-turning pitmen, a lever pivotally connected to the suspensory-rod and the pitmen, a guide and a projection from the lever and engaging the guide.

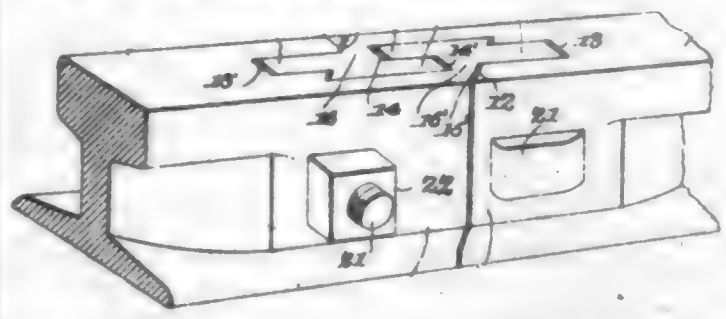
6. In an apparatus for teeming metal, the combination of suspensory-rods, a ladle pivotally mounted on said rods, ladle-turning pitmen, a guide, a lever pivotally connected to the rod and pitmen and provided with means for engaging the guide.

7. In an apparatus for teeming metal, the combination of suspensory-rods, a ladle pivotally mounted on said rods, ladle-turning pitmen, a guide, levers pivotally connected to the rods and pitmen provided with an adjustable section and means on the adjustable section for engaging the guide.

8. In an apparatus for teeming metal, the combination of suspensory-rods, a ladle pivotally mounted on the rods, ladle-turning pitmen, adjustably-mounted guides, levers pivotally connected to the rods and pitmen and provided with adjustable means for engaging the guides.

9. In an apparatus for teeming metal, the combination of a pivotally-mounted ladle, mechanism for turning the ladle and means for shifting the ladle back and forth while turning without reversing the turning movement.

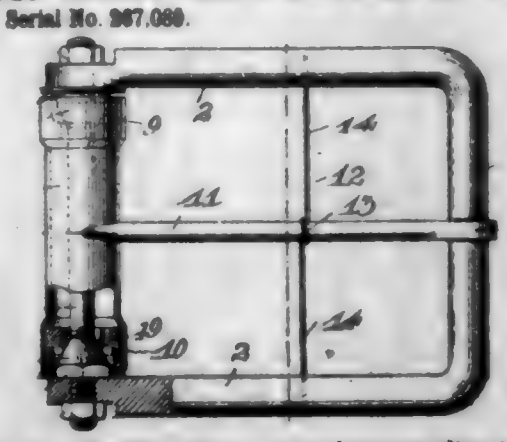
817,064. RAIL-JOINT. WILLIAM A. HILL, St. Paul, Ark. Filed Sept. 26, 1905. Serial No. 280,313.



Claim.—1. A rail-joint comprising similar rail ends provided with similar mortises communicating with the exterior by reduced openings and with similar tenons carried upon reduced necks and proportioned to engage within the mortises, and means for securing the ends together to permit a movement of the tenons within the mortises longitudinally of the rails.

2. A rail-joint comprising similar rail ends provided each with a mortise transecting the upper and lower surfaces of the rail and communicating with the exterior by a cut oblique to the side of the rail, similar tenons carried by rail ends and engaged within the mortises, a bolt passing through both rail ends, and a nut upon the bolt and so arranged that the bolt-head and nut bear against opposite sides of the same rail and to permit a movement of the tenons within the mortises longitudinally of the rails.

817,065. BUCKLE. SETH M. HOLT, Grays, Ky. Filed June 26, 1905. Serial No. 267,089.

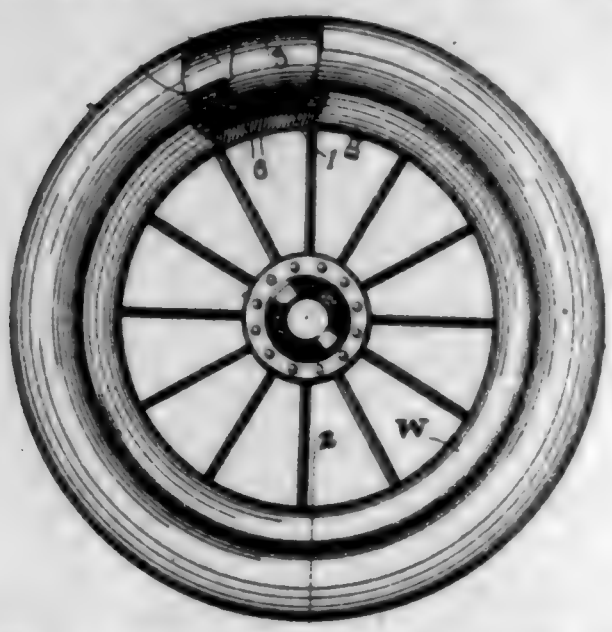


Claim.—1. A buckle having a cross-bar extending through and connecting the sides of its frame and provided with bearing-cones to bear against the inner surfaces of the sides of the frame, said cross-bar having screw-threaded ends, and nuts on said threaded ends, a sleeve revoluble on the cross-bar and having enlarged ends, collars in

said enlarged ends and countersunk in their outer sides to form recesses at the ends of the sleeve, to form ball-races around the bearing-cones, and bearing-balls in the said ball-races.

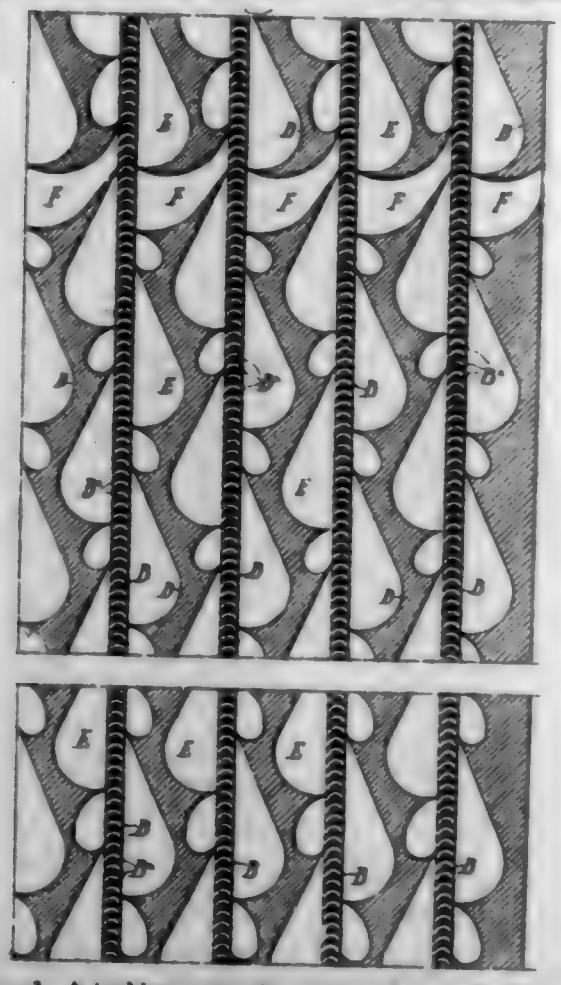
2. A buckle having notches in its sides, a pivoted tongue, and a spring comprising a wire coiled at its center around the tongue and having its ends engaging the notches in the sides of the frame, substantially as described.

817,086. PNEUMATIC TIRE. SIDNEY HUNTER, St. Louis, Mo. Filed Sept. 21, 1905. Serial No. 279,436.



Claim.—A pneumatic tire comprising an inner rubber section, an outer rubber section, and an intermediate section composed of an outer metal sheath encircling the inner section and embracing the outer portion of its peripheral surface, elastic extensions secured to the edges of the sheath, and suitable lacing for uniting the extensions and drawing them tightly about the inner section, substantially as set forth.

817,087. TURBINE. JOHN T. JENNINGS, Kings Norton, near Birmingham, England. Filed Jan. 14, 1905. Serial No. 241,057.



Claim.—1. A turbine consisting of a casing, a shaft extending therethrough, a series of vane-wheels on said shaft having radially-projecting vanes, disks fixed to the casing and respectively projecting between successive pairs of the vane-wheels, and a disk for the vane-wheel at each end of the series, there being passages in the faces of each pair of disks adjacent to a vane-wheel formed to cause motive fluid to alternately pass from one side to the other of the vane-wheel in a substantially circumferential direction, with another passage through each of the disks between the vane-wheels, said passages being placed to conduct motive fluid from one vane-wheel to the next after it has passed completely around the same, substantially as described.

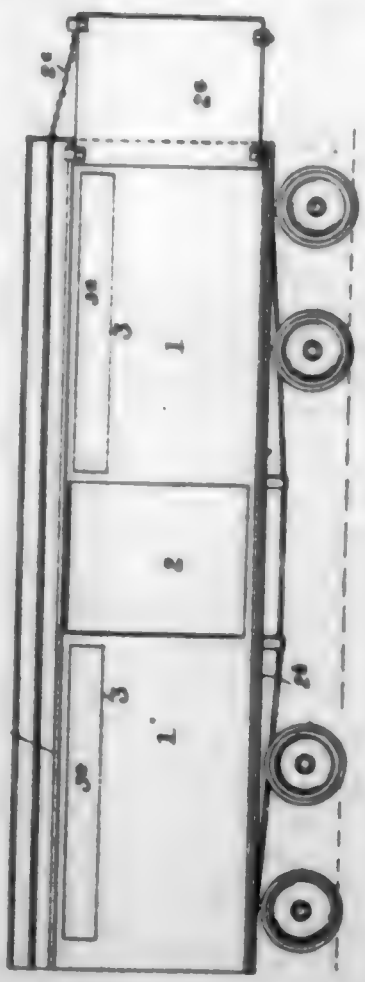
2. The combination in a turbine, of a casing having an inlet and an outlet for motive fluid, and a series of disks carried in said casing and spaced to have annular chambers between them, the adjacent faces of each pair of disks being provided with a circular line of recesses, with vane-wheels within said annular chambers, and a shaft carrying said wheels, said passages being formed to cause a current of motive fluid to pass alternately from one side to the other of the vane-wheel in a generally circumferential direction and finally to pass to the next adjacent vane-wheel and to the passages in the disks thereof, the vanes of the first vane-wheel and the corresponding faces of the disks being of less radial dimensions than those of the next vane-wheel, substantially as described.

3. The combination of a substantially cylindrical casing, a shaft extending therethrough, a series of disks in said casing spaced apart to form a series of annular chambers, each of said disks having series of passages in its two faces, a series of vane-wheels mounted in the annular chambers between successive disks, and a shaft carrying said vane-wheels, there being a passage through each disk whereby successive vane-wheel chambers are connected, substantially as described.

4. The combination in a turbine, of a casing, a shaft extending therethrough, there being a vane-wheel on the shaft, disks each having a face adjacent to said wheel and provided with recesses whereby motive fluid is conducted circumferentially around the disk and caused to flow alternately from one side thereof to the other, certain of said passages having in them center pieces for directing the motive fluid, said center pieces being independent of the material of the disks, substantially as described.

5. The combination in a turbine, of a casing having a shaft, a vane-wheel carried by said shaft, and a structure on each side of said vane-wheel and each provided with a circular line of recesses formed in its face adjacent to the wheel, with removable pieces in said recesses forming channels to direct motive fluid from a source of supply circumferentially around said wheel and to cause it to flow alternately from one side to the other thereof, substantially as described.

817,088. RAILWAY-CAR. JAMES R. JONES, Dunmore, Pa. Filed Nov. 20, 1905. Serial No. 288,304.

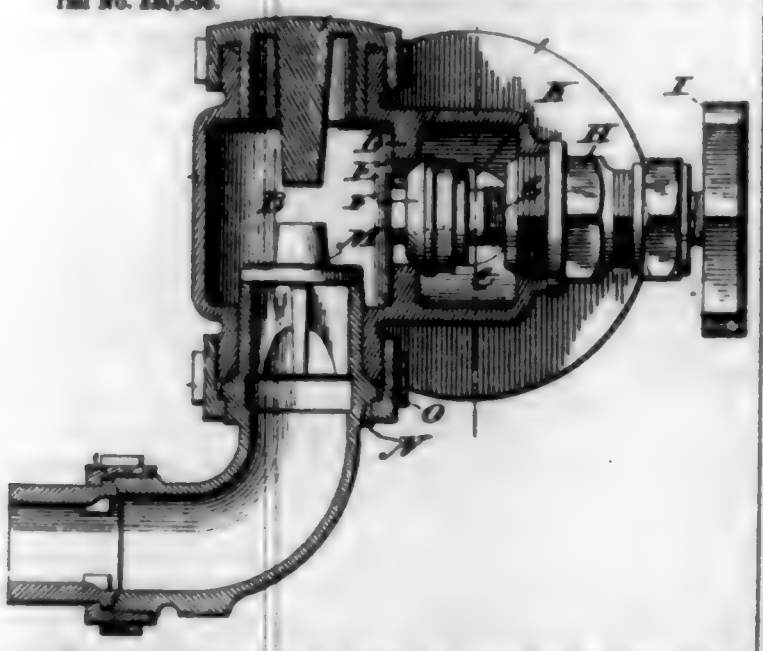


Claim.—1. A box-car equipped with opposite central doorways and a closure or door for each of the latter, and, upon each side of each of said doorways, with a door-opening arranged in the upper part of each side of the car, said central doors also being adapted to be disposed clear at the end of the car, out of the range of any of the doorways for the purpose set forth.

2. A box-car equipped with opposite central doorways and a closure or door for each of the latter, and, upon each side of each of said doorways, with a door-opening arranged in the upper part of each side of the car, said car having upper and lower rails upon its sides for the movement thereon of said central door or closure, and means for suspending or upholding the latter in its extreme or projected position.

3. A box-car equipped with opposite central doorways and closures or doors therefor, and provided upon each side of each of said doorways with an upper door-opening arranged well up near the top edge of the car, inward and upward swinging closures for the latter door-openings, the first-noted doors or closures being movable along the car sides, to the extreme ends of the car, and retaining means for holding said first-noted doors projected from the car ends.

817,069. **COMBINED STOP AND CHECK VALVE.** LEOPOLD KACHANDER, New York, N. Y., assignor to Nathan Manufacturing Company, New York, N. Y., a Corporation. Filed Sept. 21, 1904. Serial No. 225,336.



Claim.—1. In a combined stop and check valve and in combination, a check-valve chamber having symmetrical threaded open ends, a check-valve seat applied to one of the ends, and a cap applied to the opposite end, the seat and the cap being removable and interchangeable, the one with the other, substantially as and for the purposes hereinbefore set forth.

2. In a combined stop and check valve, and in combination, a valve-body comprising a vertical check-valve chamber with clear opening all the way through and symmetrical threaded ends, and a stop-valve chamber exterior to, and at about right angles with, the check-valve chamber, a check-valve seat and a cap removably applied to the ends of the check-valve chamber and interchangeable, the one with the other, for the purposes stated, and a stop-valve and seat therefor in the stop-valve chamber, substantially as hereinbefore set forth.

817,070. **DOOR FOR HOT-BLAST STOVES AND FURNACES.** JULIAN KENNEDY, Pittsburg, Pa. Filed Feb. 1, 1905. Serial No. 243,671.

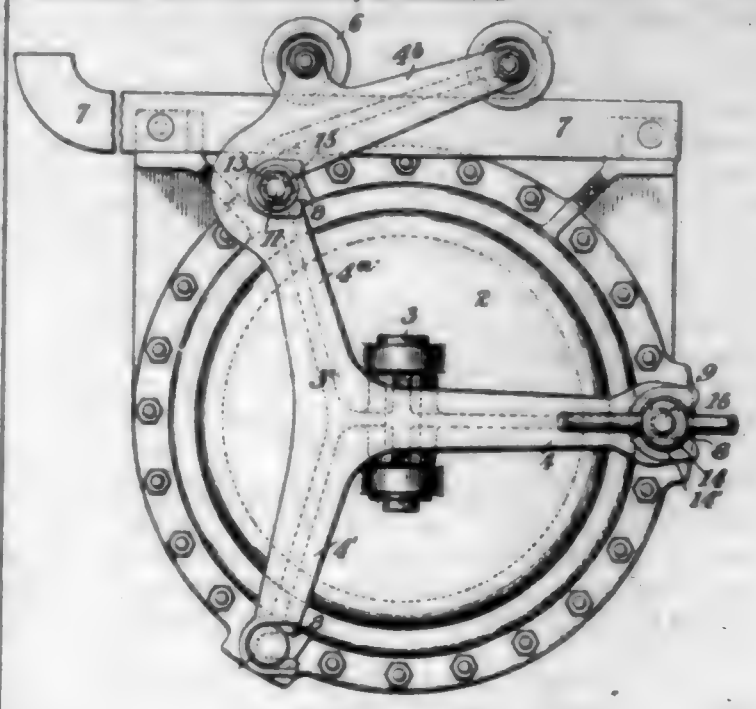
Claim.—1. A furnace-door having a sliding frame, said frame being flexibly connected to the door substantially at its center, said flexible connection constituting a pivotal support; substantially as described.

2. A furnace-door having a sliding frame, said frame having open sockets to receive fastening devices by which the door is pressed to its seat; substantially as described.

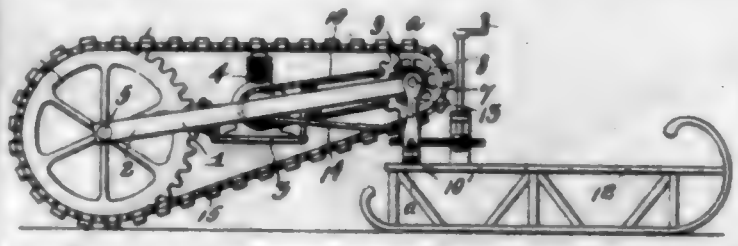
3. A furnace-door having a frame to which it is hinged, said frame being mounted on movable bearings and having open slots to receive fastening devices; substantially as described.

4. A furnace-door having a frame to which it is hinged, said frame being mounted on rollers on a track, and means acting directly on the frame to indirectly press the door to its seat; substantially as described.

5. A furnace-door having a sliding frame to which the door is flexibly connected, and a bolt projecting from the furnace-casing for securing the door, said bolt provided with a nut having a tapering seat in the frame; substantially as described.



817,071. **SLED-PROPELLING MECHANISM.** WILLIAM C. KING and HERMANN ESTORFF, Colfax, Cal. Filed May 11, 1905. Serial No. 259,940.



Claim.—A vehicle having a pivotally-mounted element thereon to swing in a horizontal plane, a shaft having its bearings in said element and provided with sprocket-wheels, a frame extending rearwardly from said vehicle and having side bars, the front ends of which are pivoted on said shaft, supporting traction-wheels having their bearings in the rear ends of said side bars, an engine carried by the frame and connected to the shaft, to drive the latter, and an endless flexible traction element engaging and connecting the sprocket-wheels on the shaft with those at the rear of the frame.

817,072. **NATURAL-DRAFT REGENERATOR FOR FURNACE-FLUES.** FREDERICK C. KNIGHT and HAROLD V. PEARCE, Denver, Colo.; said Knight assignor of one-third of his right to said Pearce. Filed Oct. 15, 1904. Serial No. 228,625.



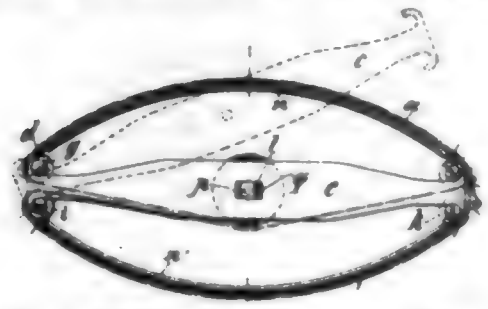
Claim.—1. A natural-draft regenerator for furnace-flues, comprising a stack transversely closed hermetically near its base, and a flue for conveying away the gases and other wastes from a furnace, said flue passing through the stack below its closure and shut off from direct communication with the outlet in said stack by said closure and entering the stack again above said closure through a series of intercommunicating chambers.

2. A natural-draft regenerator for furnace-flues, comprising a stack, a furnace-flue opening into the stack, a permanent hermetical arch in the stack above the flue, a return-flue entering the stack above the arch and communicating with its outlet, and a series of intercommunicating chambers interposed between the stack and the return-flue and forming a tortuous passage for the gases from the furnace.

3. A natural-draft regenerator for furnace-flues, comprising a stack permanently and hermetically stopped near its base, a fur-

nace-flue entering the stack below its stopped portion and serving to create and maintain a hot zone within the stack adjacent its stopped portion, and a tortuous flue extending from the stack and communicating with the furnace-flue and returning and opening into the stack in the hot zone therein above the stopped portion.

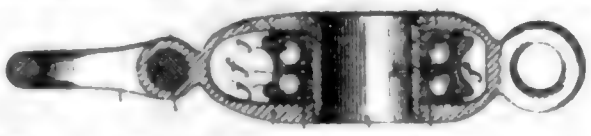
817,073. BLOTTER OR BLOTTING-PAD. HERMANN KRANDT, Berlin, Germany. Filed July 2, 1904. Serial No. 215,161.



Claim.—1. A blotting-pad having blotting-surfaces and a paper roll mounted between the same and means for guiding the paper over the said surfaces consecutively and for turning the paper over between the said surfaces so that different sides of the said paper will be outmost on each surface, and means for clamping the free end of the paper fast.

2. A blotting-pad, having two blotting-surfaces and a paper-roll mounted between the same, guide-rolls at each end of the said surfaces, a clamping device at one end of one surface, said rolls being adapted to guide the paper in the form of an S over and between the two blotting-surfaces, so that opposite sides of the paper will be outside at each surface.

817,074. BALL-BEARING PULLEY-BLOCK. EUGENE B. LA ROSA, New Bedford, Mass. Filed July 3, 1905. Serial No. 268,069.



Claim.—1. A sheave, comprising an annular rim, a hub, and antifriction-balls between the rim and the hub, the bearing-faces of the rim and hub having a relative hardness in substantial inverse proportion to their respective contact-surfaces with the balls, whereby wear on the rim and hub is equalized.

2. A sheave, comprising an annular rim, a hub, each having raceways formed therein, and antifriction-balls in said raceways, the respective raceways having faces of a hardness in substantial inverse proportion to the contact-surfaces of each with the balls, whereby wear on the rim and hub is equalized.

3. A sheave, comprising an annular resilient rim capable of temporary deformation, a hub, and antifriction-balls between the rim and hub, said rim being adapted to yield under shocks or strains to distribute the pressure and prevent the balls being crushed.

4. A sheave, comprising a thin annular grooved rim capable of deformation, a hub, and antifriction-balls between the rim and hub, the resiliency of the rim permitting the latter to yield to distribute the pressure and prevent crushing the balls.

5. A sheave, comprising a grooved annular rim of resilient metal having a raceway on its interior face, a hub having a raceway on its outer face, and antifriction-balls in said raceways, the relative hardness of the rim and hub being inversely proportional to their contact-surfaces with the balls, whereby the wear on the rim and hub is equalized and the rim will yield under shocks and strains to avoid crushing the balls.

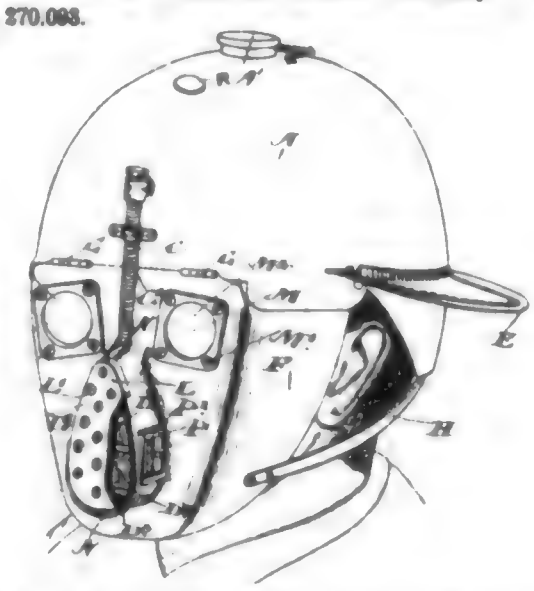
6. A pulley-block, comprising a shell or body portion, a transverse bearing-pin, a hub having a circumferential raceway on said pin, an annular resilient rim having a raceway on its interior face, and antifriction-balls in said raceways, said rim being adapted to yield under shocks and strains to relieve the balls from rupturing-pressure.

7. A pulley-block, comprising a shell or body portion, a hollow bearing-pin removably supported in the sides of said shell, a hub formed of telescoping sections mounted on said pin, a resilient rim, raceways formed in said hub and rim, and antifriction-balls between said rim and hub, said rim being adapted to yield under shocks and strains to relieve the balls from rupturing-pressure.

8. A pulley-block, comprising a shell or casing, a relatively large hollow bearing-pin removably supported in the sides of said shell, a circumferentially-divided hub provided with telescoping sections supported on said pin, an annular rim formed of resilient metal and having a relatively thin body portion, raceways in said hub and rim, and antifriction-balls in said raceways, the several parts being so constructed and arranged that the rim will yield under shocks and strains to relieve the balls from rupturing-pressure.

9. A pulley-block, comprising a shell or casing, a bearing-pin removably supported in the sides of said shell, a circumferentially-divided hub provided with telescoping sections supported on said pin, an annular rim formed of resilient metal surrounding said hub, antifriction-balls between said rim and hub, and guard-washers between the hub and rim to exclude foreign material in the bearing-surfaces and to retain lubricant in the bearings.

817,075. COMBINED HELMET AND FACE-PROTECTOR. SAMUEL J. LAVER, Bowmanville, Canada. Filed July 17, 1905. Serial No. 270,093.



Claim.—1. In a combined helmet and face-protector, the combination with a crown, of a tank in the upper portion thereof, a face-piece hinged to said crown, having suitable eyeholes therein, an inner channel connecting said tank to the nose-piece, an outer flexible spiral-spring covering for said channel, and means for admitting and regulating the air-supply to the wearer as and for the purpose specified.

2. In a combined helmet and face-protector, the combination with the crown, having a tank therein, of face-piece hinged to said crown, and having suitable eyeholes therein, a suitably-formed nose-piece on said face-piece, a perforated covering for the nose-piece, a correspondingly-perforated shutter sliding under and within the covering, means for manipulating said sliding shutter, and a flexible channel connecting the tank to the nose-piece as and for the purpose specified.

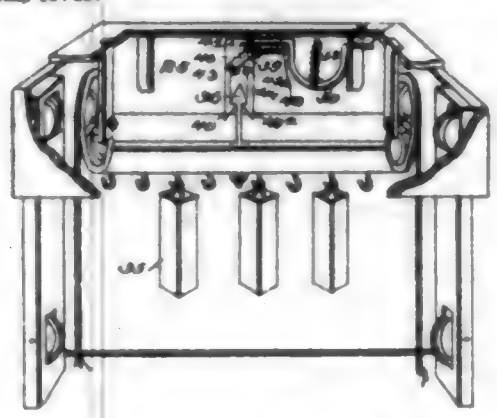
3. In a combined helmet and face-protector, the combination with the crown portion having a tank therein, of a face-piece hinged to said crown, and having suitable eyeholes therein, a suitably-formed nose-piece on said face-piece, a perforated covering for the nose-piece, a correspondingly-perforated shutter sliding under and within the covering, means for manipulating said sliding shutter and supplemental air-valves on the sides of the nose-piece as and for the purpose specified.

4. In a combined helmet and face-protector, the combination with the crown portion, of a tank secured therein, a face-piece hinged to said crown, a flexible channel connecting the tank to the nose-piece of said face-piece, means for admitting and regulating the air-supply to the wearer and rods fastened within said nose-piece as and for the purpose specified.

817,076. ELEVATOR. JOHN LEHRMAN, Allentown, Pa., assignor to John G. Seidel, Reading, Pa. Filed Feb. 14, 1905. Serial No. 245,563.

Claim.—1. In a device of the character described, the combination with a frame, a waiter positioned within said frame, of pulleys carried by said frame, weighted means assembled with said pulleys, flexible means passed around said pulleys and connected at one end to said waiter and at the opposite to said weighted means, an arrow-head secured to said weighted means, a locking mechanism carried by said frame adapted to engage said arrow-head for retaining said waiter in a fixed position, said locking mechanism comprising a bell-crank lever provided with a recess and a hooked end, a

coacting movable member assembled with said lever, comprising a body portion having a recess and a hooked end, link means connecting said bell-crank lever and said movable member, and expansible means secured to said frame and connected to said movable member and bell-crank lever.



2. In a mechanism of the class described, the combination with a waiter, of weighted means for lifting the same, a locking mechanism for retaining said waiter and weighted means in a fixed position, said mechanism comprising a pair of pivotally-mounted hooked members, a link connecting said members upon opposite sides of their pivot-point, a lever secured to one of said members, expansible means connected with the outer end of said lever and secured to a suitable support, an expansible member secured to one of said members near the upper end thereof and to a support, and means carried by said weighted means and adapted to engage said locking mechanism.

3. In a mechanism of the class described, the combination with a frame, a waiter mounted therein, weighted means assembled with said frame and connected to said waiter, of a locking mechanism secured to said frame, said mechanism comprising a lever pivotally connected to said frame, said lever comprising an arm provided with a curved extension, a right-angled extension provided with a recess and a hooked end formed integral with said arm, a coacting, movable member assembled with said lever, said movable member comprising a body portion having a recess and a hooked end, a link pivotally connected to said lever and coacting member, expansible means connected to said coacting member and lever, and means secured to said weighted means and adapted to engage the locking mechanism for holding the waiter in an adjusted position.

4. In a device of the character described, the combination of a frame provided with a pair of substantially parallel beams, grooved rolls journaled in each of said beams, means connecting said beams and capable of adjusting the same, a waiter mounted within said frame, said waiter provided with guide-rails secured upon opposite faces thereof, said guide-rails movably mounted within the grooved portion of said rolls, weighted means coacting with said frame, and waiter, and locking means for said waiter.

5. In a mechanism of the class described, the combination with a frame, of a waiter mounted therein, guiding means formed upon the sides of said waiter, parallel extensions provided with rolls carried by said frame, said rolls adapted to engage the guiding means, a bar mounted upon the lower end of said parallel extensions, and provided with means for adjusting said extensions, a locking mechanism mounted upon said frame, said mechanism comprising a pair of pivotally-mounted members, each member provided with a hooked end, expansible means normally retaining said pivotally-mounted members in substantially parallel position, weighted means assembled with said frame and secured to said waiter, and means carried by said weighted means and engaging said locking mechanism for retaining said waiter in an adjusted position.

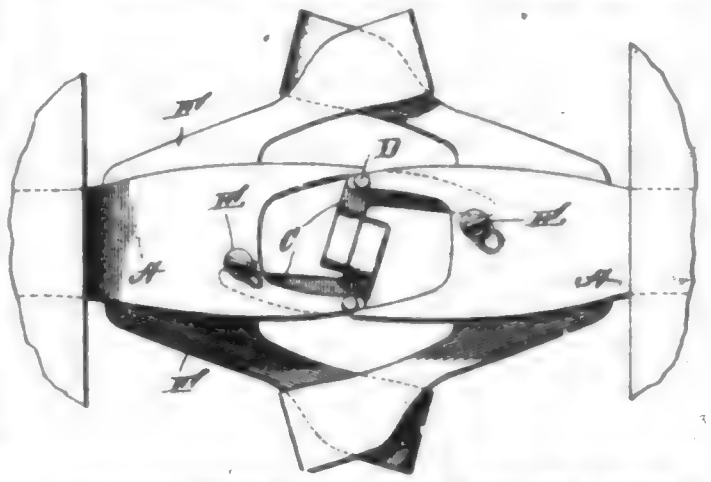
6. In a mechanism of the class described, the combination of a frame provided with adjustable rolls, a waiter mounted within said frame and normally in engagement with said rolls, cushioning means carried by said waiter, weighted means secured to said waiter for causing movement thereof, a fastening mechanism for locking said waiter in a fixed position, said mechanism comprising a bell-crank lever provided with a hook formed at one end and an angular extension formed upon its opposite end, expansible means connected to said lever near one end and secured to said frame, a movable member secured to said frame and coacting with said bell-crank lever, said movable member provided with a hooked end, connecting means secured to said lever and member, expansible means connected to said member and frame, and means carried by said weighted means and adapted to be engaged by said fastening mechanism.

7. In a mechanism of the class described, the combination with a movable waiter, means for lifting said waiter, of a locking mechanism coacting with said lifting means for retaining said waiter in an adjusted position, said locking mechanism comprising movable jaws, a lever fixedly secured to one of said jaws, movable means connecting said jaws, and means movable with said waiter and adapted to engage said jaws for locking said waiter in an adjusted position.

8. In a mechanism of the class described, the combination with a support, a movable supporting member carried by said support, of a locking mechanism carried by said support, comprising a pair of pivotally-mounted jaws, a link connecting said jaws, a lever fixedly secured to one of said jaws, and means carried by said supporting member and adapted to be positioned between said jaws for securing said member in an adjusted position.

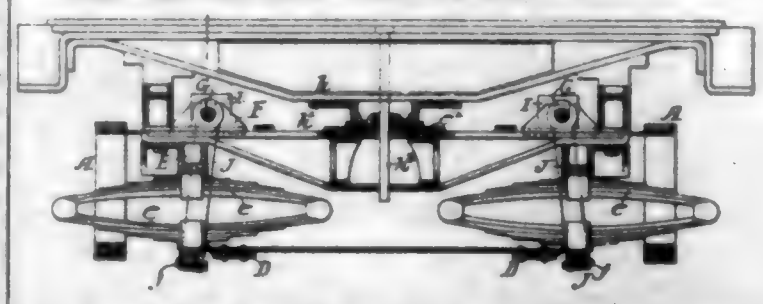
9. In a mechanism of the class described, the combination with a support, a movable supporting member carried by said support, of a locking mechanism carried by said support, said locking mechanism comprising a pair of pivotally-mounted jaws, a link connected to one of said jaws near its pivot-point and to the other jaw above its pivot-point, lever means fixedly secured to one of said jaws, yielding means for retaining said jaws in their normal position, and means carried by said supporting member and adapted to be positioned between said jaws for retaining said member in an adjusted position.

817,077. **CAR-COUPLING AND DRAW-HEAD.** ARTHUR W. LEWIS, Moscow, Ky. Filed Nov. 23, 1905. Serial No. 288,761.



Claim.—A car-coupler comprising two heads, each having a recessed end, and a chambered portion in the edge thereof, an angled coupling pivotally mounted within each chambered portion, wings projecting from the opposite edges of each coupler-head and in alinement with each other and spirally arranged, each of said wings having a contracted shank portion midway of its length and the free end of each wing widened and beveled in opposite directions, as set forth.

817,078. **MEANS FOR ADJUSTING THE HEIGHT OF SPRING-PLANKS FOR RAILWAY-TRUCKS.** MORRIS LIPTON, Moorestown, N. J., assignor to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed Jan. 8, 1906. Serial No. 295,114.



Claim.—1. The combination of a car-truck, a spring-plank, blocks mounted on the car-truck, and connections between the blocks and the spring-plank so that on turning the blocks the spring-plank can be adjusted in height, substantially as described.

2. The combination of a truck-frame, a spring-plank, a saddle by which the spring-plank is suspended from the frame, blocks carrying the saddle, said blocks being so formed that different adjustments of the spring-plank can be made by turning the blocks, substantially as described.

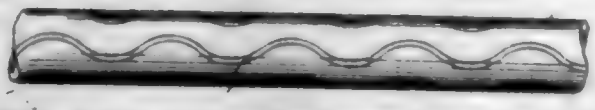
3. The combination of a truck-frame, a spring-plank, a suspension-bar, means connecting the suspension-bar with the spring-plank, blocks in which the suspension-bars are mounted, the openings in the blocks being such that they will be nearer one side of the block than the other so that on turning the block different adjustments of the spring-plank can be made, substantially as described.

4. The combination of a car-truck frame, a spring-plank, boxes carried by the frame, blocks mounted in the boxes, openings in the blocks at one side of the center of each block, suspension-bars mounted in the openings in the blocks, and saddles hung from the suspension-bars and supporting the spring-plank, substantially as described.

5. The combination of a car-truck frame, a spring-plank, bearing-boxes mounted on the frame, each bearing-box having two side members, one side member being recessed, blocks mounted in the said boxes and laterally confined therein by the side members of the box, an opening in each block, a suspension-bar having each end mounted in the openings in the block and extending through the slotted portions of the boxes, the solid side members of the boxes preventing the longitudinal movement of the suspension-bar, and connections between the suspension-bar and the spring-plank, substantially as described.

6. The combination of a car-truck frame, a spring-plank, quadrangular blocks carried by the truck-frame, suspension-bars mounted in the blocks and connections between the suspension-bars and the spring-plank, the opening in each block for the reception of the bar being so situated that the distance between the opening and the ends of the block will vary so that on turning the block the spring-plank can be adjusted to different heights, substantially as described.

817,079. STRIPED RUBBER TUBING. JEREMIAH L. MAHONEY, Naugatuck, Conn., assignor of one-half to Frederick F. Schaffer, Naugatuck, Conn. Filed July 29, 1905. Serial No. 271,810.

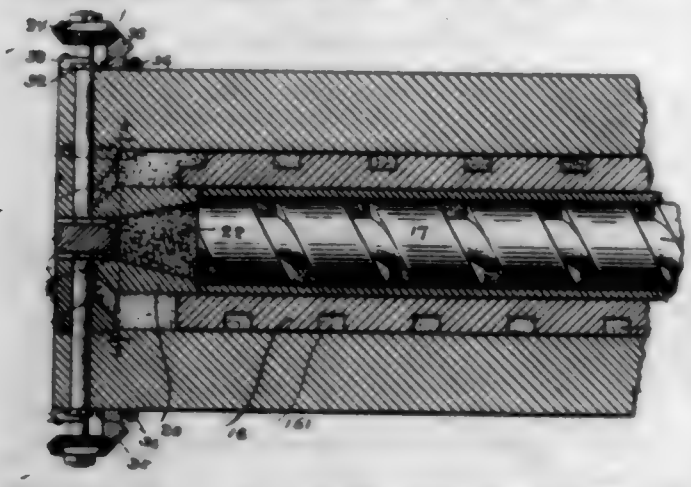


Claim.—1. As a new article of manufacture, tubing composed of differently colored or shaded rubber compounds of uniform thickness alternating with each other to form stripes extending from the outer face to the inner face of the tubing.

2. As a new article of manufacture, rubber tubing having contrasting stripes lengthwise thereof, extending from the outer face to the inner face of the tubing.

3. As a new article of manufacture, rubber tubing having contrasting serpentine stripes lengthwise thereof, the said stripes being of the same thickness as the material between the stripes.

817,080. METHOD OF AND APPARATUS FOR MAKING STRIPED FABRIC FROM PLASTIC MATERIAL. JEREMIAH L. MAHONEY, Naugatuck, Conn., assignor of one-half to Frederick F. Schaffer, Naugatuck, Conn. Filed July 29, 1905. Serial No. 271,811.



Claim.—1. The method of making ornamental fabric from plastic material, which consists in simultaneously forming stripes of material of different appearance and of substantially uniform thickness and assembling said stripes edge to edge.

2. The method of making ornamental fabric from plastic material, which consists in simultaneously forming stripes of material of substantially uniform thickness from differently colored or shaded compounds and automatically assembling said stripes edge to edge.

3. The method of making ornamental fabric from plastic material, which consists in simultaneously forming stripes of material of substantially uniform thickness from differently colored or shaded compounds and automatically assembling said stripes edge to edge in tubular form.

4. The method of making ornamental fabric from plastic material, which consists in simultaneously forming stripes of material from differently colored or shaded compounds and automatically assembling said stripes in tubular form, and then slitting said tube.

5. The method of making ornamental fabric from plastic material, which consists in simultaneously forming stripes of material of substantially uniform thickness from differently colored or shaded compounds and with irregular edges, and then assembling said stripes.

6. The method of making ornamental tubes from plastic compounds of contrasting appearance, consisting in forming a plurality of separated stripes from one compound and simultaneously forming a plurality of stripes from another compound and introducing them between the first-mentioned stripes with their edges abutting each other.

7. The method of making ornamental tubes from plastic compounds of contrasting appearance, consisting in forming a plurality of separated stripes of serpentine form from one compound and simultaneously forming a plurality of stripes of serpentine form from another compound and introducing them between the first-mentioned stripes.

8. The method of making ornamental fabric from plastic material, which consists in continuously molding a hollow tube of substantially uniform thickness and of alternating colors or shades.

9. The method of making ornamental fabric from plastic material, which consists in continuously molding the material in the form of a tube having serpentine stripes of a color or shade contrasting with the body of the tube.

10. An apparatus of the character described comprising die members having spaces of substantially uniform thickness for the continuous molding of plastic compounds into strip form, separated chambers for different compounds, and means for forcing the compound from one chamber through one set of die-spaces and the compound from the other chamber through another set of die-spaces, means being provided for assembling the stripe edge to edge.

11. An apparatus of the character described having separated chambers for plastic compounds, die members having separated forming spaces or channels of substantially uniform thickness communicating with one of said chambers, means for conducting the compound from the other chamber to points to alternate the compounds with each other, and means for feeding the compounds to and through the chambers and forming-spaces.

12. An apparatus of the character described, comprising a casing, a central chamber and an annular chamber for plastic compounds, a die-carrier having forming-passages of substantially uniform thickness leading from said chambers, said passages converging to deliver both compounds in the form of a single tube, and means for feeding different compounds to and through the chambers and passages.

13. An apparatus of the character described, comprising a casing, a tubular feeder mounted to rotate therein, an inner feeder mounted to rotate within the tubular feeder, a die-holder having a hollow hub portion abutting the feeders, and a plug-die mounted in said holder, separated passages of substantially uniform thickness being formed through the holder and to the space around the plug-die.

14. An apparatus of the character described, comprising means for continuously forming and assembling stripes of substantially uniform thickness and of different moldable compounds, and means whereby said stripes are joined edge to edge in tubular form.

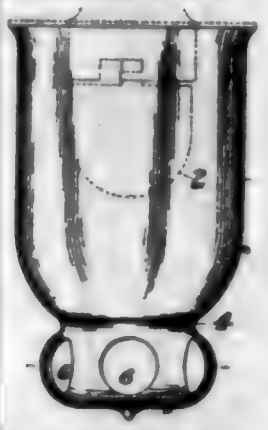
15. An apparatus of the character described, comprising means for continuously forming stripes of different moldable material and assembling them to form a tube, and a knife extending across the space from which the tube exudes to slit said tube.

16. An apparatus of the character described, comprising a casing having a central chamber and an annular chamber, means for feeding different compounds to said chambers, a die-holder at one end of the casing and having a central opening, a plug-die within said opening, means for dividing the annular space around said die, oscillatory dies extending into said annular space, passage-ways being formed for a compound from the annular chamber through the oscillatory dies to the annular space, and mean for actuating said oscillatory dies.

817,081. INCANDESCENT GAS-LIGHT. SIDNEY MASON, Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J., a Corporation of New Jersey. Filed Dec. 8, 1905. Serial No. 290,879.

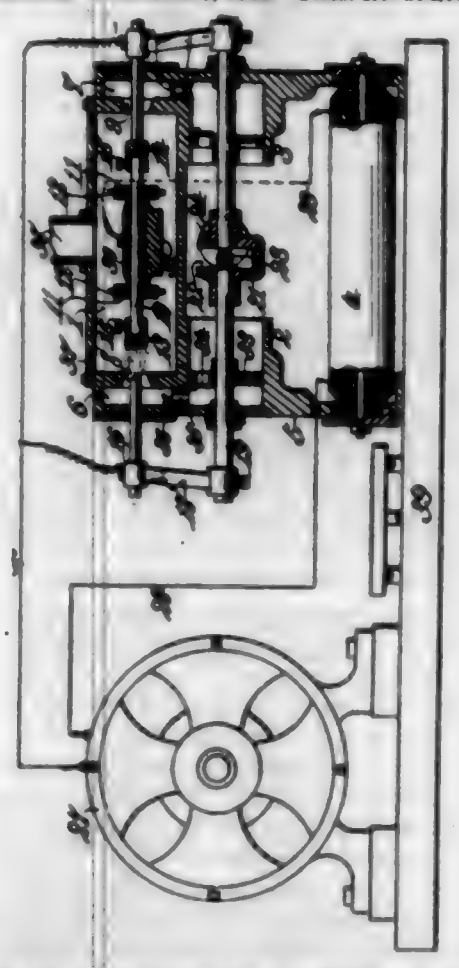
Claim.—1. A glass globe for inverted incandescing mantles having in the lower part of the body portion a constricted central passage of smaller diameter than the body, and opening into a lower chamber having lateral air-openings.

2. A glass globe for inverted incandescing mantles having at its lower end a chamber with a closed bottom and lateral air-openings, said chamber communicating with the body of the globe through a constricted central air-passage.



3. A glass globe for inverted incandescing mantles provided at its lower end with a chamber having a closed bottom and air-openings in its side portions, said chamber connecting with the globe-body through a constricted central air-passage.

817,082. **APPARATUS FOR SUBJECTING AIR TO ELECTRIC DISCHARGES.** JOHN B. MITCHELL and DENNIS PARES, St. Louis, Mo., assignors to Alsop Process Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 3, 1906. Serial No. 294,202.



Claim.—1. In an apparatus for modifying air by the electric discharge, in combination with a yieldably-mounted electrode, a pair of electrodes reciprocable into and out of contact with opposide ends thereof, said electrodes being connected with a suitable source of electricity.

2. In an apparatus for modifying air by the electric discharge, in combination with a slidably-mounted electrode, a pair of electrodes reciprocable into and out of contact with opposite ends thereof, said electrodes being connected with a suitable source of electricity.

3. In an apparatus for modifying air by the electric discharge, in combination with a yieldably-mounted electrode, a pair of synchronously-movable electrodes reciprocable into and out of contact alternately with opposite ends of said electrode, said electrodes being connected with a suitable source of electricity.

4. In an apparatus for modifying air by the electric discharge, in combination with a slidably-mounted electrode, a pair of electrodes reciprocable into and out of contact with opposite ends thereof, and means for connecting up said electrodes with a source of electricity involving a shoe loosely mounted on said slidable electrode.

5. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber having an end wall provided with an aperture and having an outlet, an electrode mounted in said chamber, a second electrode, and means for reciprocating it through said aperture into and out of contact with said first-named electrode, said electrodes being connected with a source of electricity, and means for forcing a blast of air through said aperture.

6. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber having an end wall provided with an aperture and having an outlet, an electrode mounted in said chamber, a second electrode, and means for reciprocating it through said aperture into and out of contact with said first-named electrode, said electrodes being connected with a source of electricity, and means for forcing a blast of air through said aperture simultaneously with the outward or separating movement of said last-named electrode.

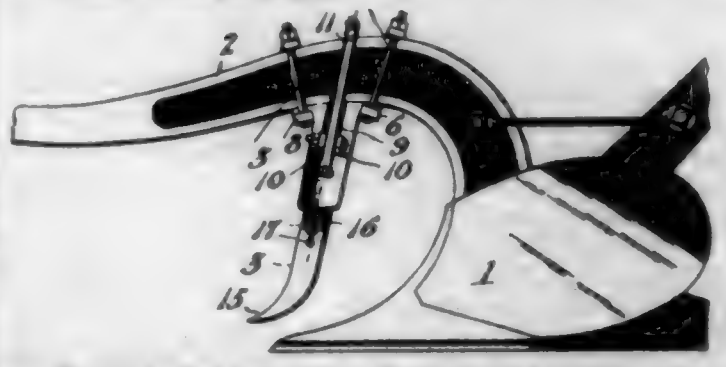
7. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber having oppositely-disposed apertures and provided with an outlet, an electrode mounted in said chamber in line with said apertures, a pair of electrodes reciprocable through said apertures into and out of contact with opposite ends of said first-named electrode, said electrodes being connected with a source of electricity, and means for forcing a blast of air through said apertures simultaneously with the outward or separating movement of the respective reciprocable electrodes.

8. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber having oppositely-disposed apertures, a pair of pump-cylinders having valve-controlled communication with said apertures, plungers in said cylinders, an electrode in said electrifying-chamber, a pair of electrodes reciprocable through said apertures into and out of contact with opposite ends of said electrode, and means for simultaneously operating said pair of electrodes and said plungers.

9. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber, an electrode yieldably mounted therein, a pair of air-pumps having pistons, a pair of electrodes operatively connected to said pistons, means for reciprocating said pistons alternately in opposite directions whereby said pair of electrodes are also reciprocated in opposite directions into and out of contact with said yieldable electrode, and ducts provided in said apparatus for conveying air from said pumps into the presence of the electric discharges produced at opposite ends of the latter electrode.

10. In an apparatus for modifying air by the electric discharge, in combination with an electrifying-chamber, a pair of electrodes connected with a suitable source of electricity and one of which is reciprocable into and out of contact with the other within said chamber, and an air-pump for forcing air into the presence of the electric discharges occurring between said electrodes, said reciprocable electrode being connected to and movable simultaneously and in unison with a movable member of the air-pump.

817,083. **COLTER.** JOHN MOELLER, Bay Port, Mich. Filed Oct. 7, 1905. Serial No. 281,819.

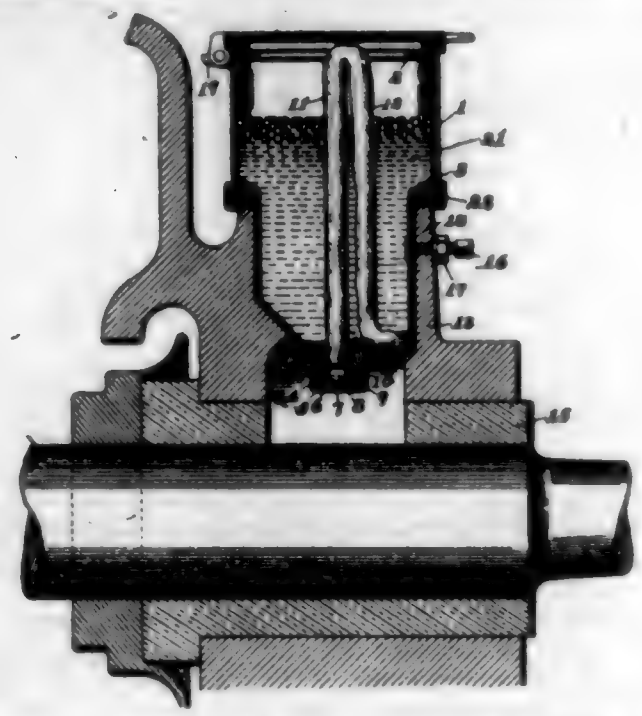


Claim.—1. In a device of the class described, a tubular bearing member adapted for connection thereto and provided with projecting lugs having inclined lower faces, clip-plates having correspondingly-inclined upper faces designed to bear on the inclined faces of the lugs, connecting-bolts engaged with the clip-plates and operatively engaged with the beam for attaching the bearing member thereto, a colter-shank arranged for longitudinal adjustment in said member, and means for fixing the shank in its adjusted positions.

2. In a device of the class described, a beam, a tubular bearing member connected therewith and having a longitudinal groove, an operating-lever pivoted to said bearing member, a locking-key extended transversely through the latter and connected with the lever, a shank arranged for longitudinal movement in the bearing member and provisioned with a plurality of openings to receive the locking-

key, a spring seated in the groove and designed to act on the lever for maintaining the key normally in locking position, and a spring-retaining pin extended transversely of the groove and terminally engaged with the wheels thereof.

817,084. LUBRICATING DEVICE. WILLIAM B. MOORE, Connellsville, and JAMES W. BRIDGE, Newhavit, Pa. Filed June 6, 1905. Serial No. 263,820.



Claim.—1. An oil-cup having a non-supporting integral projecting lug on the bottom of the cup and an oil-outlet therethrough leading from the interior of said cup, a valve controlling said oil-outlet, a wick-feed to deliver oil to said valve, and an annular ledge on the exterior of the body of the cup adapted to support said cup.

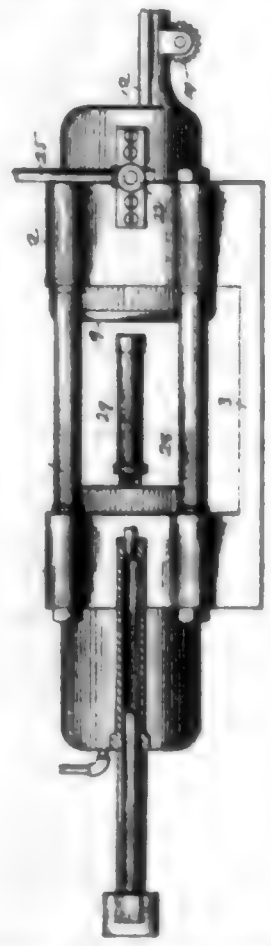
2. The combination with a casing provided with a journal-bearing portion having a receptacle therein and a passage leading from the interior of said receptacle to the journal, of an oil-cup adapted to fit bodily into said receptacle and to extend above the same, the said cup being provided at its lower end with a non-supporting extension 4 adapted to pass through said passage and into proximity to the journal and having an oil-outlet therethrough leading from the interior of said cup, a valve controlling said oil-outlet, a wick-feed controlling the supply of oil to said valve, and an integral supporting-ledge extending around the exterior of the body of the cup.

3. The combination with a casing provided with a journal-bearing portion having a receptacle therein and a passage leading from the interior of said receptacle to the journal, of an oil-cup adapted to fit bodily into said receptacle, to extend above said receptacle and provided at its lower end with an extension adapted to pass through the bottom of said receptacle into said passage and into proximity to the journal and with an oil-outlet through said extension, a valve controlling said oil-outlet, a wick-feed controlling the supply of oil to said valve, an annular supporting-ledge around the outside of said cup, adapted to rest on the upper edges of said receptacle, and an oil-guard flange extending around the interior of the cup near its top.

4. The combination with a casing provided with a journal-bearing portion having a receptacle therein and a passage leading from the interior of said receptacle to the journal, of an oil-cup adapted to fit bodily into said receptacle and having an aperture through its lower end, a hollow plug fitting tightly into said aperture and provided with an oil-outlet, a ball-valve within said hollow plug controlling said outlet, a screen within said aperture over said valve, a tube fitting tightly into said aperture above said screen and extending upward to a point near the top of the cup, and a wick extending down into said tube from the interior of the cup.

817,085. MACHINE FOR MAKING METAL BARS OR RODS. JAMES W. MOORHEAD, Waterbury, Conn., assignor to The Chase Rolling Mill Co., Waterbury, Conn., a Corporation. Filed July 15, 1905. Serial No. 269,902.

Claim.—1. In a machine for making metal bars or rods, the combination of a cross-head, a recess formed in the rear end thereof, a pocket located in said recess, a sleeve extending through said pocket, a ring of non-heat-conducting material arranged between said sleeve and pocket, a die at the forward end of said sleeve, a plunger, and means adapted to force the same into said sleeve, substantially as described.

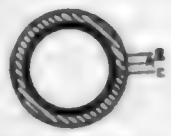


2. In a machine for making metal bars or rods, the combination with a cross-head formed with a recess in its rear end, the walls of which taper from the outer end inward, a pocket located in said recess and closely fitting the same, said pocket having a centrally-arranged opening at its inner end, a sleeve passing through said pocket and through the opening in the end thereof, a ring of non-conducting material between said sleeve and pocket, and a cap secured to the rear end of the said cross-head and surrounding the outer end of the sleeve, substantially as described.

3. In a machine for making metal bars or rods, the combination with a cross-head, a recess formed in the rear end thereof, a pocket located in said recess, a sleeve extending through said pocket, non-conducting material between said sleeve and pocket, a passage extending through said cross-head from the inner end of the pocket, a die-carrier arranged in said opening, a die secured to the inner end of said carrier, and slides mounted in the opposite sides of said cross-head and adapted to engage with said carrier whereby it is locked in its closed position, substantially as described.

4. In a machine for making metal bars or rods, the combination with a cross-head formed at its rear end with a chamber, a pocket located in said chamber, a sleeve passing through said pocket, a ring of non-heat-conducting material between said sleeve and pocket, a hydraulic ram arranged in line with said cross-head and connected therewith, a plunger hinged to the piston of said ram and adapted to enter said sleeve in the cross-head which sleeve it closely fits, substantially as described.

817,086. CONDUIT FOR ELECTRIC WIRES. DANIEL H. MURPHY, Milwaukee, Wis., assignor to Safety Armorite Conduit Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 5, 1902. Serial No. 110,719.



Claim.—1. As a new article of manufacture, a metal pipe having a metallic coating on one surface and a flexible enamel coating applied directly to the other surface; substantially as described.

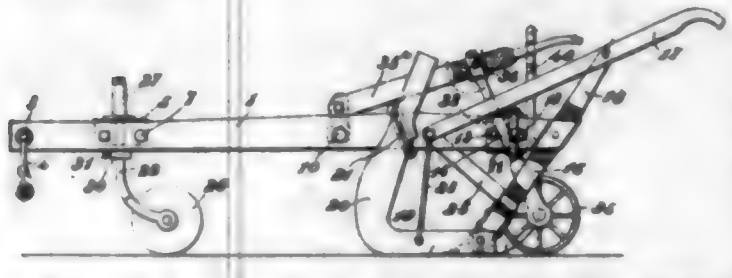
2. As a new article of manufacture, a metal pipe having a metallic coating on its outer surface and a flexible enamel coating applied directly to its inner surface; substantially as described.

3. As a new article of manufacture, a metal pipe having an electrogalvanized metallic coating on its outer surface and a flexible

enamel coating applied directly to its inner surface; substantially as described.

4. A tube of iron, electroplated on the outside with zinc and having a flexible inside coating of enamel applied directly to the iron of the tube, substantially as described.

817,087. ROAD-WORKING MACHINE. WILLIAM J. MCBRIDE and JOHN J. ALFORD, Fort Worth, Tex. Filed July 17, 1905. Serial No. 270,081.

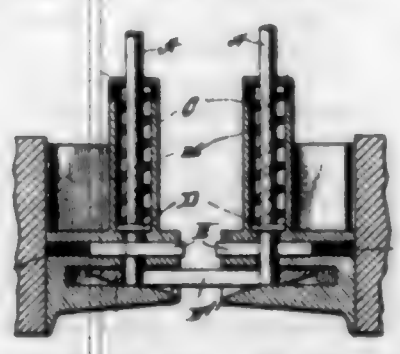


Claim.—1. In a road-working machine, a main beam having a standard, a cutting member connected with said beam and standard and supported thereby in a vertical plane, and a scraper supported by the standard to move the dirt loosened by the cutter in an outward direction, in combination with an auxiliary supporting-beam connected with the main beam at its front end, spaced therefrom at its rear end, and provided with rotary supporting means.

2. In a road-working machine, a beam having a laterally-extending bracket, a wheel-carrying member extending through a slot in said bracket whereby said wheel is spaced laterally from the beam, an adjusting-lever connected with the wheel-carrying member for adjustment of the latter, a standard connected with the beam, a cutting member supported by the beam and the standard, a scraper carried by the latter, and an auxiliary beam connected with the front end of the main beam and provided at its rear end with a bracket connected with the bracket extending laterally from the main beam; and rotary supporting means for the auxiliary beam.

3. A main beam and an auxiliary beam secured together at their front ends, spacing and connecting means including a rung interposed between said beams about midway of their lengths and brackets near the rear ends of said beams, a wheel-carrying shank extending through one of said brackets, an operating-lever pivoted upon the rung and having loose connection with the wheel-carrying shank, means for securing said lever at various adjustments, and rotary supporting means connected with the auxiliary beam and with a spacing member near the front ends of the beams.

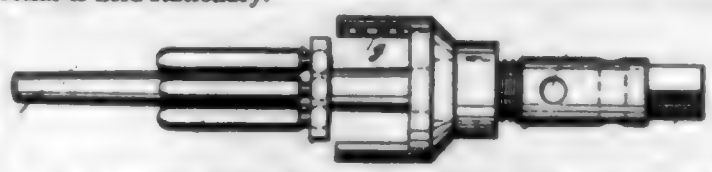
817,088. CAR-COUPLING. WILLIAM B. MCDONALD, Tuscumbia, Mo. Filed Aug. 3, 1905. Serial No. 272,620.



Claim.—A car-coupler, comprising, in combination with a coupler-head, having an opening for the reception of a link, a casing or housing extending upward from the top of the coupler-head, an apertured cap having threaded connection with the top of said casing, a rod passing through said cap and a shoulder upon said rod, a spring pressing between said shoulder and said cap, a spring-pressed rod-supporting member, having a shank portion extending through an opening into the recessed part of the coupler-head, the inner end of said member having an offset adapted to contact with a shoulder formed in the recess in which said member is positioned, and a spring bearing against said member and upon which offset a rod is held in a raised position, as set forth.

817,089. TUBE-EXPANDER. WILLIAM NICHOLSON, Jr., Wilkes-Barre, Pa., assignor to Wm. H. Nicholson & Co., Wilkes-Barre, Pa., a Firm. Filed Sept. 18, 1905. Serial No. 278,642.

Claim.—1. In a tube-expander, the combination, with a tapered arbor provided with a screw-threaded portion, of a slidable retaining-disk, a series of expanding-rollers for engaging the tube, said rollers being carried by the said disk around the said arbor, and a releasing-collar engaging with the said screw-threaded portion and provided with means for engaging the tube-plate whereby the said collar is held stationary.



2. In a tube-expander, the combination, with a tapered arbor having a screw-threaded portion at its larger end, of a retaining-disk slidable on the said arbor, a series of expanding-rollers carried by the said disk, and a releasing-collar engaging with the said screw-threaded portion and provided with arms which project longitudinally over the tapering part of the arbor.

3. In a tube-expander, the combination, with a tapered arbor provided with a screw-threaded portion at its larger end, of a retaining-disk slidable on the arbor and provided with a series of radial slots, a series of expanding-rollers provided with bearings which are journaled in the said slots, and a releasing-collar engaging with the said screw-threaded portion and provided with arms which project longitudinally over the tapering part of the arbor.

4. In a tube-expander, the combination, with a tapered arbor provided with a screw-threaded portion, of a slidable retaining-disk, a series of expanding-rollers for engaging the tube, said rollers being connected with the said disk by ball-and-socket joints, and a releasing-collar engaging with the said screw-threaded portion and provided with means for engaging the tube-plate whereby the said collar is held stationary.

817,090. BOOT-CALK. CHRISTIAN PFEIFFER, New Britain, Conn., assignor to The North & Pfeiffer Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Nov. 15, 1904. Serial No. 232,847.



Claim.—1. As a new article of manufacture, a boot-calk having a dished stop-disk, a screw-threaded shank extending from the concave side thereof, and a spike extending from the convex side of the disk, said spike tapering toward its lower end, the surface of the disk from which the spike extends having strengthening-ribs extending from the spike toward the periphery of the disk, and adapted also to be engaged by the chuck of an inserting-tool, the ribs terminating short of the point of the spike, substantially as described.

2. A boot-calk comprising a dished disk having radiating ribs on its convex side, a spike projecting beyond the ribs, and a threaded shank extending from the concave side of the disk.

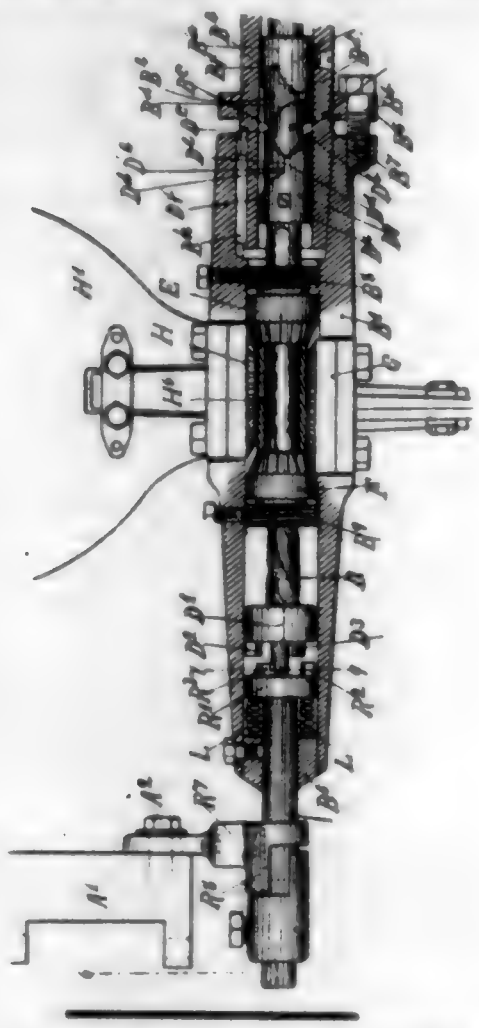
3. A boot-calk comprising a dished disk having radiating ribs on its convex side, a cone-shaped spike projecting beyond the ribs, and a threaded shank extending from the concave side of the disk.

817,091. PROPELLING MECHANISM. DANIEL W. RAWTINE, New York, N. Y. Filed Feb. 11, 1905. Serial No. 245,283.

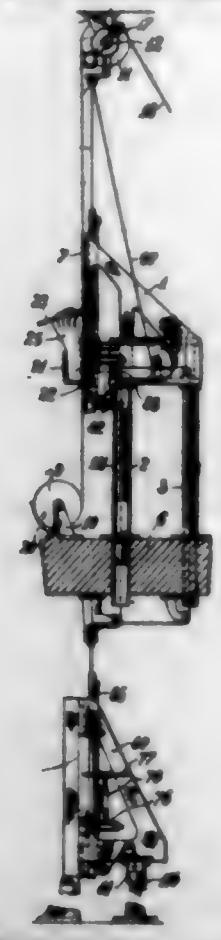
Claim.—1. In a universal propeller a tubular propeller-head fixed to a tubular main shaft, a supplemental threaded inner tubular main lock secured within the main shaft, and on the threaded inner shaft having two opposite lock-bushings with two opposite projecting points of different diameter on the end of each lock-bushing, corresponding V-shaped notch or recesses of a different diameter in the periphery of each said lock-bushing to engage the aforesaid projecting points, the side faces or steps diametrically different on the two opposing sides of each lock-bushing arranged to lock the threaded inner shaft to the tubular main shaft and the threaded stop-rings B^3 and B^2, in combination with each other and with the distance-piece H^4 and with the small bevel-gears E and F all substantially as herein shown and described for purposes specified.

2. In combination a universal propeller of a tubular propeller-head fixed to a tubular main shaft, a supplemental threaded inner shaft, a stern-lock shaft in fixed position partly received within the rear end of the propeller-head a tooth-face or flange on the inner end

of this said lock-shaft, two sets of teeth or laps diametrically different on this tooth-face, to receive the engagement of the corresponding teeth of the rear end of the threaded inner shaft, the two adapted parts R^5 and R^7 and the teeth or laps R^6 and R^8 on the rear end of this said lock-shaft all arranged to serve substantially herein shown and described.



817,092. ILLUSION DEVICE. FRANK H. REEVES, New York, N. Y. Filed Jan. 20, 1906. Serial No. 296,937.



Claim.—1. In an illusion device, a surface adapted to receive visible impressions, a mechanically-disconnected body freely movable over said surface, magnetic means to impart motion to said body, and a marking device carried by said body and adapted to make visible impressions on said surface.

2. In an illusion device, a surface adapted to receive visible impressions, a mechanically-disconnected body freely movable over said surface and consisting of a mechanical representation of a human hand, magnetic means to impart motion to said body, and a marking device carried by said body and adapted to make visible impressions on said surface.

3. In an illusion device, a surface adapted to receive visible impressions, a marking device freely movable in front of said surface and adapted to make visible impressions thereon, and magnetic means comprising an armature operatively attached to said marking device and a magnet on the opposite side of said surface from said marking device to operate said marking device.

4. In an illusion device, a surface adapted to receive visible impressions, a mechanically-disconnected body freely movable by magnetic attraction in front of said surface, a marking device carried by said body, and a magnet movable on the opposite side of said surface from said marking device and body to impart motion to said marking device over said surface and to control the operation of the same.

5. In an illusion device, a surface adapted to receive visible impressions, a mechanically-disconnected body freely movable by magnetic attraction in front of said surface, said body comprising a mechanical representation of a human hand, a marking device carried by said body, and a magnet movable on the opposite side of said surface from said marking device and body to impart motion to said marking device over said surface and to control the operation of the same.

6. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body freely movable by magnetic attraction over said plane surface, a marking device carried by said body and adapted to make visible impressions on said plane surface, magnets on the opposite side of said plane surface to impart movement to said body and to control the marking device carried thereby, and mechanical means to support and move said magnets.

7. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body freely movable by magnetic attraction over said plane surface, a marking device carried by said body and adapted to make visible impressions on said plane surface, electromagnets on the opposite side of said plane surface to impart movement to said body and to control the operation of the marking device carried thereby, mechanical means to support and move said magnets, and electric means included therein to control the operation of said magnets.

8. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body freely movable by magnetic attraction over said plane surface, a marking device carried by said body and adapted to make visible impressions on said plane surface, magnets on the opposite side of said plane surface to impart movement to said body and to control the marking device carried thereby, and pantographic apparatus operatively connected to said magnets.

9. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body in the form of a mechanical representation of a human hand freely movable by magnetic attraction over said plane surface, a marking device carried by said body and adapted to make visible impressions on said plane surface, magnets on the opposite side of said plane surface to impart movement to said body and to control the marking device carried thereby, and pantographic apparatus operatively connected to said magnets.

10. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body freely movable over said surface and provided with a fulcrum movable therewith and adapted to engage said surface whereby a rocking motion may be imparted to said body, a marking device carried by said body and adapted to be brought into contact with said surface and removed therefrom by the rocking motion of said body, and magnetic means to control said rocking motion and to move said body over said surface.

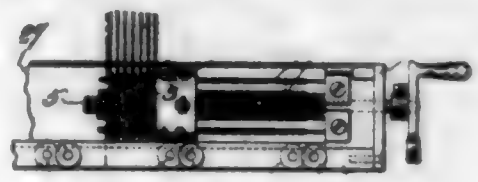
11. In an illusion device, a plane surface adapted to receive visible impressions, a mechanically-disconnected body freely movable over said surface and comprising a mechanical representation of a human hand having an ink-reservoir therein, a fountain-pen carried by said hand and adapted to receive ink from said reservoir, armatures carried by said body, casters also carried by said body to form a support therefor against said surface and to form a fulcrum whereby a rocking motion may be imparted to said body to bring said fountain-pen into engagement with and withdraw the same from said surface, and magnets to control said rocking motion and to move said body over said surface.

12. In an illusion device, a plane surface, a mechanically-disconnected body freely movable by magnetic attraction in front of said surface, a marking device carried by said body and adapted to make a visible impression on said surface, a backing behind said plane surface, a frame supporting said backing, guideways carried by said frame, a carriage movable vertically on said frame, an auxiliary carriage mounted to travel longitudinally on said first-named carriage, magnets carried by said auxiliary carriage to impart movement to said body and to control the marking device carried thereby, a second frame, a plane surface carried thereby, a carriage mounted to travel vertically in said frame, an auxiliary carriage mounted to travel longitudinally on said last-named vertically-movable carriage, a tracing device carried by said last-named auxiliary carriage, flexible connections between said vertically-movable carriages and between said longitudinally-movable carriages and counterweights whereby movements of said tracing device are conveyed to said magnets for the manipulation of said marking device.

13. In an illusion device, a plane surface, an impression-receiving surface movable in front of said plane surface, a frame supporting said plane surface, guideways on said frame, a carriage mounted to travel vertically on said guideways, an auxiliary carriage mounted to travel longitudinally on said first-named carriage, electromagnets carried by the second-mentioned carriage, a plurality of hollow supports for said frame, a plurality of pulleys, a cord passing from said vertically-movable carriage over said pulleys, weights suspended within certain of said hollow supports from cords, a second plane surface and supporting-frame therefor, guideways on said second frame, a carriage mounted to travel vertically on said guideways, an auxiliary carriage mounted to travel horizontally on the second-mentioned vertically-traveling carriage, a pivoted arm mounted on the last-mentioned auxiliary carriage, a stylus carried by said arm, a plurality of hollow supports for said last-mentioned frame, a plurality of pulleys, a cord passing over said pulleys to form an operative connection between the vertically-movable carriages, cord connections between said horizontally-movable carriages whereby the movement of one of said carriages may be imparted to the other, a plurality of pulleys on the vertically and horizontally movable carriages over which said cords pass, counterweights suspended from said last-mentioned cords in certain of said hollow supports, an electric circuit and a switch therein for the energization of one of said magnets, an electric circuit for the energization of the other of said magnets, a switch in said last-mentioned circuit operated by the pivoted arm carrying the said stylus, a mechanically-disconnected body freely movable over said impression-receiving surface and having caster-bearings adapted to engage said surface and on which said body is adapted to rock as a fulcrum, armatures carried by said body, and a marking device also carried by said body and adapted to make visible impressions on said impression-receiving surface.

14. In an illusion device, a plane surface, an impression-receiving surface movable in front of said plane surface, a frame supporting said plane surface, guideways on said frame, a carriage mounted to travel vertically on said guideways, an auxiliary carriage mounted to travel longitudinally on said first-named carriage, electromagnets carried by the second-mentioned carriage, a plurality of hollow supports for said frame, a plurality of pulleys, a cord passing from said vertically-movable carriage over said pulleys, weights suspended within certain of said hollow supports from cords, a second plane surface and supporting-frame therefor, guideways on said second frame, a carriage mounted to travel vertically on said guideways, an auxiliary carriage mounted to travel horizontally on the second-mentioned vertically-traveling carriage, a pivoted arm mounted on the last-mentioned auxiliary carriage, a stylus carried by said arm, an electromagnet also carried by the last-mentioned auxiliary carriage, a plurality of hollow supports for said last-mentioned frame, a plurality of pulleys, a cord passing over said pulleys to form an operative connection between the vertically-movable carriages, cord connections between said horizontally-movable carriages whereby the movement of one of said carriages may be imparted to the other, a plurality of pulleys on the vertically and horizontally movable carriages, over which said cords pass, counterweights suspended from said last-mentioned cords in certain of said hollow supports, an electric circuit and a switch therein for the energization of one of the first-named magnets and the last-named magnet, an electric circuit for the energization of the other of said first-mentioned magnets, a switch in said last-mentioned circuit operated by the pivoted arm carrying the said stylus, a plurality of mechanically-disconnected bodies freely movable over said impression-receiving surface and having caster-bearings adapted to engage said surface and on which said bodies are adapted to rock as a fulcrum, armatures carried by said bodies, a marking device also carried by each of said bodies, and a plurality of telltale-blocks arranged for operation by the second-mentioned electromagnet.

817,093. **WARPER-COMB.** ALONZO E. RHOADES, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 31, 1905. Serial No. 271,882.



Claim.—1. In a warper-comb, an elongated stand comprising upright end pieces, a connecting base-bar, a two-part cover, means to connect the cover parts and the base-bar at intervals, leaving discharge-openings between said connecting means, and upright warp guides or dents sustained within the stand and projecting upward through the cover.

2. In a warper-comb, an elongated stand comprising upright end pieces, a narrow, central base-bar connecting the end pieces and forming a guide for the feet of the dents, a cover, means to rigidly connect it with the base-bar with clearance-openings therebetween, upright dents, and means to sustain and laterally position the same.

3. In a warper-comb, an elongated stand comprising upright end pieces, a narrow, central base-bar connecting the end pieces and forming a guide for the feet of the dents, a two-part cover, spacing-collars interposed between the cover parts and the base-bar on opposite sides of the latter, connecting-screws passing through the collars into the bar, and warp guides or dents supported in the stand and extended upward between the two parts of the cover.

4. In a warper-comb, an elongated stand comprising a cover, end pieces, a narrow central member rigidly connecting them near their lower ends and having clearance-openings between it and the lower portions of the cover, warp guides or dents, and controlling means therefor mounted in the stand.

5. An elongated stand for warper-combs, comprising end pieces, a narrow, central base-bar connecting them, and a sheet-metal cover spaced from the base-bar and rigidly secured thereto at intervals, to leave discharge-openings in the bottom of the stand.

6. In a warper-comb, upright warp guides or dents, means to sustain and laterally position them, and a stand therefor comprising end pieces, front and back cover portions, a narrow, central base-bar attached to the end pieces, annular spacing devices arranged in pairs on opposite sides of the base-bar and interposed between it and the cover portions, said pairs of devices being laterally offset, and attaching-screws connecting the cover portions and the base-bar and passing through the said spacing devices.

7. In a warper-comb, upright warp guides or dents, means to sustain and laterally position them, and a stand therefor, comprising end pieces, a central, connecting base-bar having a longitudinal dent-guide in its top, a metallic cover, and means to connect the latter and the base-bar at intervals and maintain the cover at a fixed distance from the base-bar.

8. In a warper-comb, upright warp guides or dents, means to sustain and laterally position them, and a stand therefor, comprising end pieces, a central, connecting base-bar, a metallic cover, connections arranged in laterally-offset pairs to connect the base-bar and the front and back portions of the cover, and annular spacing-collars interposed between the said parts of the cover and the base-bar and retained in place by the said connections.

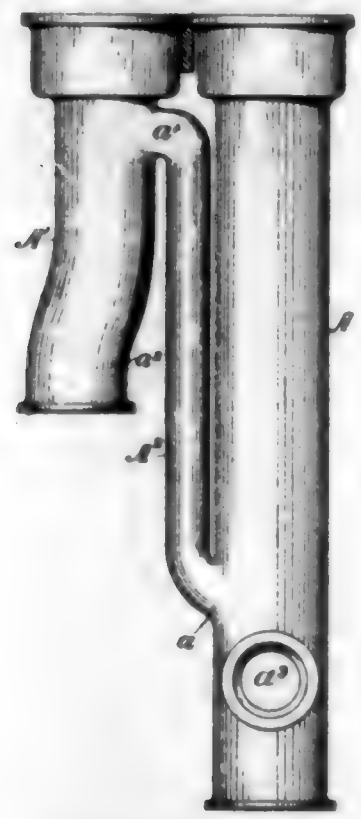
9. In a warper-comb, upright warp guides or dents, means to sustain and laterally position them, and a stand therefor, comprising end pieces, a central, connecting base-bar having a longitudinal dent-guide in its top, and downwardly beveled at each side of the guide, a metallic cover having an opening or clearance through which the dents project, and means to rigidly connect the cover and the base-bar and leave clearance or discharge openings at each side thereof from one to the other of said end pieces.

10. A stand for warper-combs, comprising end pieces, a narrow, central bar connecting them at their bases, and a cover spaced from the bar and rigidly connected therewith at intervals, to leave discharge-openings in the bottom of the stand.

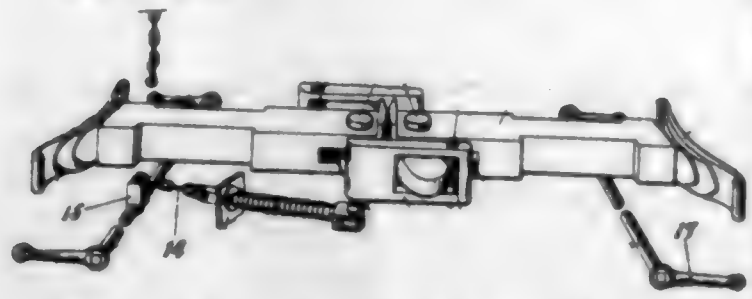
817,094. **COMBINED WASTE AND VENT FITTING.** GEORGE F. RYAN, Chicago, Ill. Filed Mar. 13, 1905. Serial No. 249,915.

Claim.—A plumber's fitting comprising a pipe oppositely curved at its upper and lower ends, respectively, and parallel, verti-

cal, vent and waste sections spaced from each other and from said pipe, and communicating, by integral T connections, with the latter, respectively, at the upper and lower ends thereof, said waste-section having a lateral waste-inlet disposed in its vertical length below its T connection.



817,095. AUTOMATIC CAR-COUPLING. CARL R. SALMEN, Montreal, Canada, assignor of one-fifth to John Fisher and one-fifth to Francis Sarbay, Catasauqua, Pa., and one-fifth to John Mramay and one-fifth to Edward Finnen, Montreal, Canada. Filed Nov. 10, 1905. Serial No. 286,636.



Claim.—1. In a car-coupler, oppositely-disposed jaws, pivotally mounted on the draw-bars, slotted links rigidly attached to one side of the jaws, recesses formed in the opposite side of said jaws, and spring-actuated levers adapted to retain said links in position.

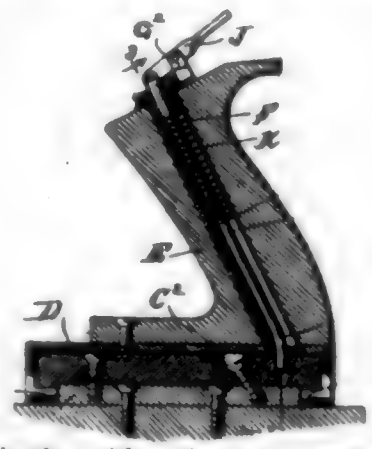
2. In a car-coupler, oppositely-disposed jaws rigidly mounted on square pins journaled on the draw-bars, recesses formed in one side of the jaws, slotted links formed integral with the opposite side of said jaws, stop-lugs adapted to limit the motion of the jaws, spring-actuated levers coacting with said coupling-jaws, and a manually-operated lever for throwing the coupler out of operation.

3. In a car-coupler, oppositely-disposed jaws rigidly attached to square pins pivotally mounted on the draw-bars, recesses and stop-blocks formed on one side of the jaws, slotted links rigidly atached to the opposite side of said jaws, vertical rollers mounted in said slots, spring-actuated levers mounted on the coupler-pins, manually-operable levers coacting with said spring-actuated levers, and means for retaining the coupling-jaws in operative position.

4. An automatic car-coupler comprising oppositely-disposed, pivotally-mounted jaws, recesses formed in one side of the jaws, slotted links carrying vertical rollers formed integral with the opposite side of said jaws, stop-blocks mounted on said jaws, spring-actuated levers coacting with said jaws, manually-operated levers adapted to throw the jaws out of grip, and means for maintaining the coupler in inoperative position.

817,096. ADJUSTABLE PLANE-HANDLE. FRED A. SHOUTZ, Eureka, Utah. Filed Feb. 27, 1906. Serial No. 303,535.

Claim.—1. A device of the kind described comprising a semi-cylindrical block having a plurality of radial bores therein, a rocker-plate pivotally connected to each end of the block and adapted to rock laterally thereon, said plate having an aperture adapted to aline with the bores of the block, a plane-handle carried by the plate, a sleeve having its inner end in engagement with the aperture of the plate, a plunger-rod working in the sleeve, and means for operating the plunger-rod.

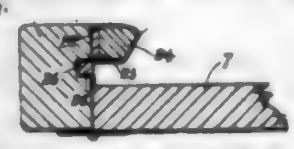


2. The combination with a plane, of a semicylindrical block carried thereon and having radial bores parallel to the ends of the block, a plate curved on its under face and having inwardly-extending pintles at its ends, the block having notches at the ends to receive the said pintles, the said plate having an aperture adapted to aline with the bores of the block, a handle carried by the plate, a sleeve downwardly and rearwardly inclined and carried by the handle, the lower end of said sleeve engaging the aperture of the plate, and a plunger-rod working in the sleeve and curved adjacent its lower end, the said lower portion of the rod working through the aperture of the plate and engaging one of the said bores of the block.

3. The combination with a plane, a block semicylindrical in cross-section carried by the plane, and having apertures adapted to receive screw-heads and notched at the ends, the said block having a plurality of radial bores, a plate flat on its upper face and curved on its lower face, and having downwardly-extending ends, pintles carried by the said ends adapted to engage the notches of the block, the said plate being recessed on one side edge, said recesses alining with the screw-receiving apertures of the block, and the plate being apertured in alinement with the radial bores of the block, a handle carried by the plate, and a plunger working through the handle and adapted to engage the bores of the block as and for the purpose set forth.

4. The combination with a plane, a block having radial bores, a plate having the pivot-pins at each end in engagement with the ends of the block and apertured in alinement with the bores, a handle carried by the plate, an inclined sleeve passing longitudinally through the handle, a plate on the upper end of the handle apertured to aline with the upper end of the sleeve, vertical arms carried by the plate, a lever pivoted between said arms, a headed, tubular screw passing through the plate on the handle and into the sleeve, the aperture of the plate and the interior of the upper end portion of the sleeve being threaded, a plunger-rod curved adjacent its lower end and having its upper end portion projecting through the tubular nut and pivotally connected to the lever, a pin on the plunger, and a coil-spring in the sleeve between the pin and inner end of the nut, as and for the purpose set forth.

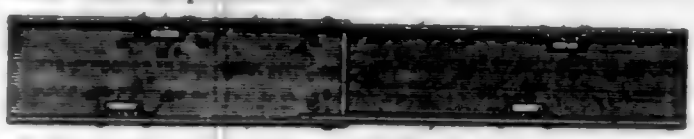
817,097. COMBINED DINING AND BILLIARD TABLE. WILLIAM STEVENSON, Devonport, New Zealand. Filed Sept. 26, 1904. Serial No. 225,230½.



Claim.—For the purpose indicated in combination a table-top, rails upon the ends and sides thereof, hinged thereto in such manner that they may be caused to project above the edges of the table or turned beneath the same, elastic cushions upon the inner faces of said rails, and corner-pocket brackets each pivotally connected at one end to one of the end rails a beveled stud projecting from its other end, a plate countersunk into one of the side rails there being a hole in the plate adapted to receive the projecting stud, and a spring secured to the plate and pressing upon the beveled stud substantially as set forth.

817,098. RAILROAD-TIE. JAMES F. BAILEY, Valdosta, Ga. Filed July 6, 1905. Serial No. 268,374.

Claim.—1. In combination a railroad-tie adapted to support a rail and to be connected thereto by means of spikes, and comprising a plurality of sections, each composed of a plate having its longitudinal edges bent to form depending flanges, the flanges on the adjacent ends of the sections overlapping, rivets securing the overlapping flanges, a transverse depending flange formed on the inner end of one of the sections, pockets secured to the inner face of the flanges of each section, in positions corresponding to the position of the spikes, each comprising a plate having its longitudinal edges bent downwardly to form the sides of the pocket, and outwardly to form a flange for engaging the inner face of the flanges of the sections, rivets for securing the pockets in place, an inwardly-projecting flange at the bottom of the pocket, and a block of wood frictionally retained within the pocket.



2. In combination a railroad-tie adapted to support a rail and to be connected thereto by means of spikes, and composed of a plurality of sections each comprising a plate provided with depending flanges, a hinge-joint connecting the adjacent ends of the sections, means for limiting the movement of the sections with respect to each other, a transverse support beneath the hinge connection, a plurality of pockets secured to the tie in positions corresponding to the positions of the spikes, and blocks of wood frictionally retained within the pockets.

3. In combination, a railroad-tie adapted to support a rail, and to be connected thereto by means of spikes, and comprising a plurality of plates provided with depending longitudinal flanges, a hinge-joint connecting the adjacent ends of the sections, means for limiting the movement of the sections with respect to each other, a plurality of pockets secured to the tie in positions corresponding to the positions of the spikes, and blocks of wood frictionally retained within the pockets.

4. In a railroad-tie the combination of a plurality of plates provided with depending flanges on their longitudinal edges, and with openings in their upper faces, a hinge connection between adjacent ends of the plates, means for limiting the motion of the plates with respect to each other, a plurality of pockets secured to the faces of the longitudinal flanges beneath the openings, and blocks of wood frictionally retained within the pockets.

5. In a railroad-tie, the combination of a plurality of plates provided with depending flanges on their longitudinal edges, a hinge connection between the adjacent ends of the plates, a plurality of pockets secured to the flanges, and blocks of fibrous material frictionally retained within the pockets.

6. In combination a railroad-tie comprising a plurality of sections hinged together, means for limiting the motion of the sections with respect to each other, a plurality of pockets opening on the face of the tie, and blocks of fibrous material frictionally retained within the pockets.

7. A railroad-tie, comprising alined sections connected by a hinge-joint, means beneath the joint for supporting the same, and means for limiting the motion of the sections with respect to each other.

8. A railroad-tie comprising alined sections connected by a hinge-joint, a plurality of openings in the face of the tie, and blocks of fibrous material frictionally retained within the openings.

9. A railroad-tie comprising alined sections, hinged together at their adjacent ends, the sections being provided with openings in their upper faces, and blocks of fibrous material frictionally retained within the openings.

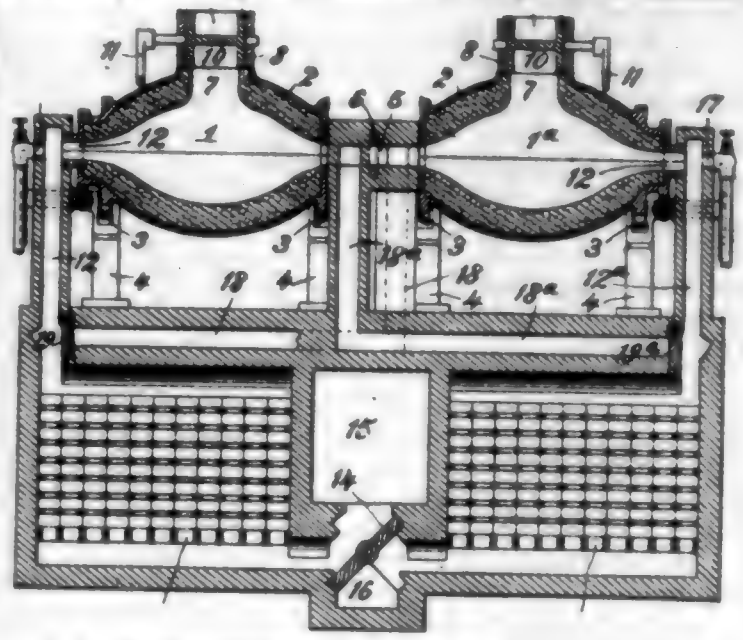
817,099. METALLURGICAL FURNACE. GEORGE H. BENJAMIN, New York, N. Y. Filed Sept. 18, 1905. Serial No. 279,059.

Claim.—1. A furnace comprising a plurality of rotatable receptacles, regenerative chambers coöperating therewith, and means for connecting one or more of the receptacles in series relation with the regenerative chambers.

2. A furnace comprising a plurality of rotatable receptacles, regenerative chambers coöperating therewith, and means for closing communication between one or more of the receptacles and the regenerative chambers.

3. A furnace comprising a plurality of rotatable receptacles provided with requisite inlets and outlets, regenerative chambers common to the several receptacles, and means for opening and closing communication between one or more of the receptacles and the regenerative chambers.

4. A furnace comprising a plurality of receptacles arranged end to end and independently rotatable, coöperating regenerative chambers, and requisite flues and valves for connecting one or more of the receptacles in series relation with the regenerative chambers.



5. A furnace comprising a plurality of rotary receptacles arranged end to end and each provided with a valved charging-opening, coöperating regenerative chambers, requisite flues leading to and from the regenerative chambers, and controlling-valves for connecting one or more of the receptacles in series relation with the regenerative chambers.

6. A furnace comprising a plurality of rotary receptacles arranged end to end and communicating through a valved passage, coöperating regenerative chambers, flues leading from the ends of said receptacles to the regenerative chambers, and valves controlling the flues.

7. A furnace comprising a plurality of rotatable receptacles, means for heating the receptacles, coöperating regenerative chambers, and means for connecting one or more of the receptacles in series relation with the regenerative chambers.

8. A furnace comprising a plurality of communicating receptacles mounted to be rotated independently of each other, means for heating the receptacles, coöperating regenerative chambers, and means for connecting the receptacles individually in series relation with the regenerative chambers.

9. A furnace comprising a plurality of rotatable receptacles, means for heating the receptacles, means for feeding material into said receptacles while maintaining the same effectively closed against the escape of gas therefrom, regenerative chambers coöperating with said receptacles, and means for connecting one or more of the receptacles in series relation with the regenerative chambers.

10. A furnace comprising a plurality of rotatable receptacles, means for heating the receptacles, means for holding material to be charged into said receptacles, regenerative chambers coöperating with said receptacles, and means for connecting one or more of the receptacles in series relation with the regenerative chambers.

817,100. SCREW-CAP FOR CANS. FRANK A. BERGMAN, Chicago, Ill. Filed Dec. 27, 1904. Serial No. 238,374.



Claim.—1. As a new and useful article of manufacture, a screw-cap for receptacles consisting of the hollow metallic threaded body with the recesses formed in the top so as to produce abutments on the opposite sides thereof beneath the plane of the top, a flange located within the cylindrical surface of the threads and forming an annular abutment against which the packing-disk is adapted to be pressed by the top of the neck on the can, and the packing-disk in connection with the cap suitably located beneath the annular abutment, for the purpose described.

2. As a new and useful article of manufacture, a screw-cap for receptacles consisting of a hollow metallic threaded body with the recesses formed in the top so as to produce abutments on the opposite sides thereof beneath the plane of the top, a flange located within

the cylindrical surface of the threads and forming an annular abutment against which the packing-disk is adapted to be pressed by the top of the neck on the can, the packing-disk located beneath the annular abutment, and the metallic disk between the packing-disk and the abutment.

3. As a new and useful article of manufacture, the screw-cap for receptacles consisting of a hollow metallic threaded body *d* with the flange *f* forming an abutment, and the top *g* having the channel *l* cut across the top thereof, and the packing-disk *e* beneath the flange *f*, for the purpose described.

4. As a new and useful article of manufacture, the screw-cap for receptacles consisting of a hollow metallic threaded body *d* with the inwardly-projecting horizontal flange *f* forming an abutment, the vertical flange *j*, and the top *g* having the channel *l* cut across the top thereof, and the packing-disk *e* beneath the flange *f* for he purpose described.

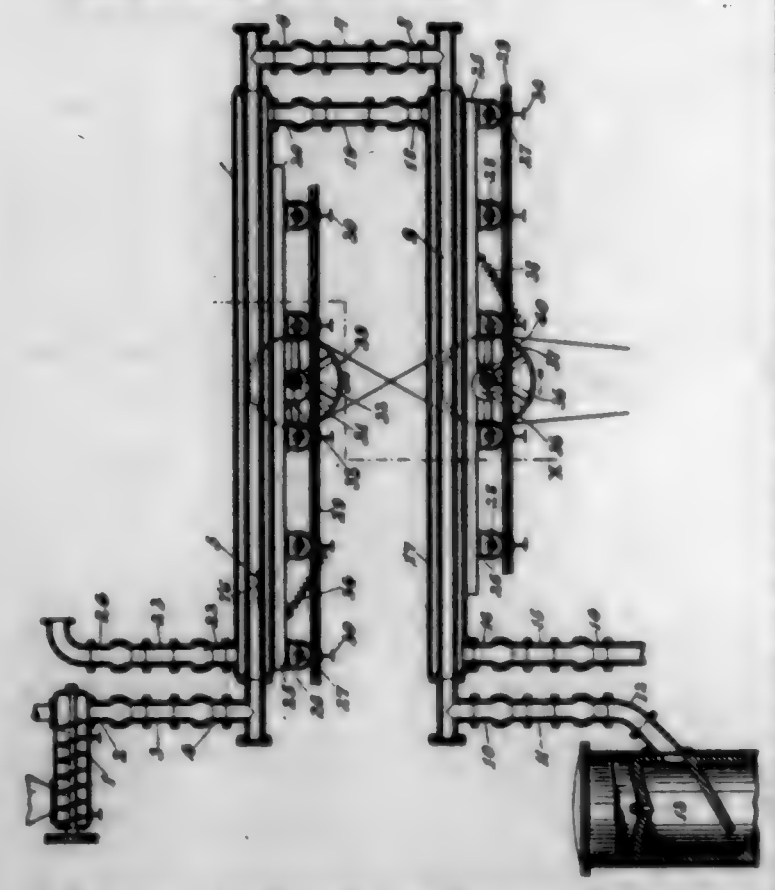
5. As a new and useful article of manufacture, the screw-cap for receptacles consisting of a hollow metallic threaded body *d* with the inwardly-projecting horizontal flange *f* forming an abutment, the vertical flange *j*, and the top *g* having the channel *l* with the downturned sides *s* cut across the top thereof, and the packing-disk *e* beneath the flange *f*, for the purpose described.

6. As a new and useful article of manufacture, the screw-cap for receptacles consisting of a hollow metallic threaded body *d* with the inwardly-projecting horizontal flange *f* forming an abutment, the vertical flange *j*, and the top *g* having the channel *l* cut across the top thereof, the packing-disk beneath the flange *f* and the metallic disk directly above the packing-disk, for the purpose described.

7. As a new and useful article of manufacture, the screw-cap for receptacles consisting of a hollow metallic threaded body *d*, with the inwardly-projecting horizontal flange *f* forming an abutment, the vertical flange *j*, and the top *g* having the channel *l* with the downturned sides *s* cut across the top thereof, the packing-disk beneath the flange *f*, and the metallic disk directly above the packing-disk, for the purpose described.

8. As a new and useful article of manufacture a closure for cans comprising the threaded neck *b*, with the cap coöperating therewith and consisting of the threaded body portion, the packing abutment-flange within the circumference of the threads, the slitted top piece having the abutment edges *s*, said cap being formed from a single piece of sheet metal, and the flat cylindrical packing-disk adapted to be clamped between the neck and packing abutment-flange when the cap is screwed on.

817,101. TRANSPORTING AND HEAT-INTERCHANGING APPLIANCE. EDUARD R. BERENFELDER, Charlottenburg, Germany. Filed Oct. 28, 1905. Serial No. 284,900.



Claim.—1. A transporting and heat-interchanging apparatus for solid and pasty materials, comprising in its construction a metallic conduit open at both ends, a jacket surrounding the said conduit along the greater part of its length and forming a rigid body with the same, means for supplying the said conduit at one end with the material to be treated, means for continuously admitting heat-interchanging fluid to and discharging it from the jacket, means for supporting the said conduit and jacket and for imparting to it a longitudinal to-and-fro motion, substantially as described.

2. A transporting and heat-interchanging apparatus for solid and pasty materials, comprising in its construction a metallic tube open at both ends and surrounded by a jacket on the greater part of its length, means for continuously supplying the said conduit at one end with material to be treated, means for supplying heat-interchanging fluid to the jacket and for discharging it from the same, means for supporting the jacketed tube and mechanism for imparting to it a longitudinal to-and-fro motion, substantially as described.

3. A transporting and heat-interchanging apparatus for solid and pasty materials comprising in its construction a metallic tube open at both ends and surrounded by a jacket on the greater part of its length, means for supplying one end of the tube with material to be treated and for discharging it at the other end, means for supplying heat-interchanging fluid to the jacket at one end and for discharging it at the other end, a supporting-base and a set of supporting and guide rollers adapted to support the jacketed tube and to guide it horizontally in a vertical plane passing through the axis of the tube, and mechanism for imparting to the jacketed tube a longitudinal to-and-fro motion, substantially as described.

4. A transporting and heat-interchanging apparatus for solid and pasty materials, comprising in its construction a metallic conduit open at both ends and provided in its interior with teeth adapted to thrust the contents of the tube toward the discharge end, if the tube is subjected to a longitudinal to-and-fro motion, a jacket surrounding the said tube on its greater part of its length and forming a rigid body with the same, means for supplying the said conduit at one end with material to be treated, means for continuously admitting heat-interchanging fluid to the jacket at one end and for discharging it at the other end, means for supporting and guiding the said conduit, and mechanism for imparting to it a longitudinal to-and-fro motion, substantially as described.

5. A transporting and heat-interchanging apparatus for solid and pasty material, comprising in its construction a series of metallic conduits placed one above the other, and communicating with each other at the ends along a broken zigzag line commencing at the feed end of the uppermost tube and ending at the discharge end of the lowest tube, each conduit being provided with a jacket and supported by rollers allowing a longitudinal motion to the conduit, means for supplying material to be treated to the uppermost conduit at one end of the same and for discharging it from one end of the lowest conduit, means for supplying heat-interchanging fluid to one end of the jacket of the lowest conduit and for conducting it through the jackets of the conduits in a broken zigzag line and for discharging it from the jacket of the uppermost conduit near the inlet end of the conduit, and means for imparting to each conduit longitudinal to-and-fro motion, substantially as described.

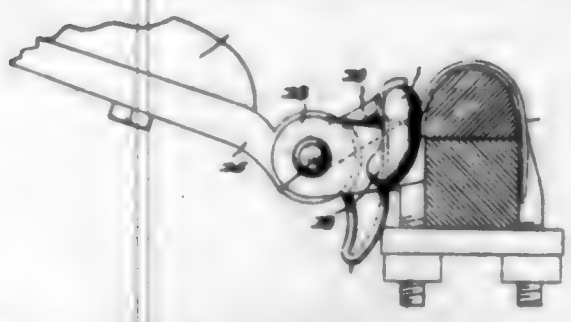
6. A transporting and heat-interchanging apparatus for solid and pasty material, comprising in its construction a series of metal tubes placed one above the other, each tube being open at the ends and supported by rollers allowing a longitudinal motion of the tube, connecting-tubes adapted to establish communication between consecutive tubes of the series in a zigzag line and allowing a longitudinal to-and-fro motion of each tube between limits, means for introducing the material to be treated into one end of the uppermost tube and for discharging it from the tail end of the lowest tube, and means for establishing communication between the jackets of consecutive tubes at the ends of the same so as to form a zigzag line, means for admitting heat-interchanging fluid to the jacket of the lowest tube near the discharge end of the same and for discharging the heat-interchanging fluid from the jacket of the uppermost tube near the inlet end of the same, substantially as described.

7. Transporting and heat-interchanging apparatus for solid and pasty materials, comprising in its construction a metallic conduit open at both ends and armed on its inside with teeth pointing toward the discharge end, a jacket surrounding the said conduit along the greater part of its length and forming a rigid body with the same, means for supplying the said conduit at one end with the material to be treated, means for continuously admitting heat-interchanging fluid to and discharging it from the jacket, means for supporting the said conduit and jacket and for imparting to it a longitudinal to-and-fro motion, substantially as described.

8. Transporting and heat-interchanging apparatus for solid and pasty materials, comprising in its construction a metallic tube

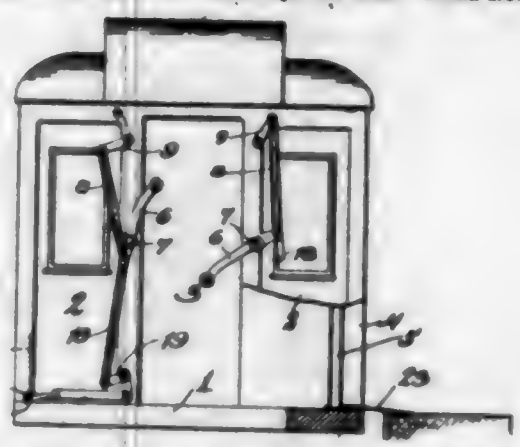
open at both ends and surrounded on the greater part of its length with a jacket containing deflecting-plates, means for supplying the said conduit at one end with material to be treated, means for supplying heat-interchanging fluid to the jacket and for discharging it from the same, means for supporting the jacketed tube, and mechanism for imparting to it a longitudinal to-and-fro motion, the said deflecting-plates in the jacket being adapted to direct the heat-interchanging fluid, so as to increase the length of its travel from the inlet to the discharge-opening, substantially as described.

817,102. THILL-COUPLING. CHARLES F. BLAIR and GEORGE S. JACKSON, Webb City, Mo. Filed Apr. 12, 1905. Serial No. 255,259.



Claim.—The combination with the clip having the spaced apertured ears and the knuckle member for position between said ears and having an aperture for alinement with the aperture in the same, of a coupling member substantially U shape with one of its legs for passage through said alined apertures and the other of its legs for passage transversely above said ears in the rear of said knuckle member and with its free end bent laterally and inwardly for yieldable engagement with the adjacent surface of the clip, and a spring substantially in V shape with outwardly-curving terminals for bearing respectively against said knuckle member and said rearward coupling-leg member and overhanging the same.

817,103. RAILROAD-CAR ATTACHMENT. STEVENSON CONSTABLE, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,019.



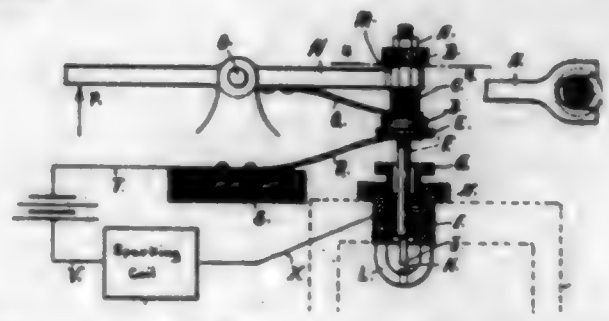
Claim.—1. The combination with a railroad-car, a sliding door or gate therefor, a hand-lever, and means for operating said door from said hand-lever, of an extension member movably positioned in proximity to the dorway, and means connecting said extension member to said hand-lever, whereby said member will be moved to a position projecting beyond the body-line of the car when the door is slid open, and substantially horizontal with respect thereto, and whereby said member will be retracted to a position substantially within the body-line of the car, when the said door is closed.

2. The combination with a railroad-car, a sliding door or gate therefor, a hand-lever, and means for operating said door from said hand-lever, of an extension-plate pivoted to the car in proximity to the doorway, and means connecting said pivoted extension-plate to said hand-lever whereby said plate will be swung down to a substantially horizontal position, and extending beyond the body-line of the car, when the door is slid open; and whereby said plate will be swung up to a substantially vertical position, against the door, when said door is closed.

3. The combination with a railroad-car, and a pivoted extension-plate therefor, and means for operating same, of a portion pivoted to said extension-plate, and adapted to further extend said plate when same is in operative position.

4. The combination with a railroad-car, a pivoted extension-plate therefor, and means for operating same, of side wings pivoted to said extension-plate, adapted to further extend same.

817,104. IGNITER FOR INTERNAL-COMBUSTION ENGINES. ARTHUR R. CURTIS, Golden, Colo. Filed Apr. 10, 1905. Serial No. 254,886.



Claim.—1. In an igniting device for explosive or internal-combustion engines, the combination of two electrodes, one stationary and the other movable, the movable electrode consisting of a plunger, connections for passing the electric current through the electrodes when they are in contact, a weak spring acting on one electrode to normally separate the electrodes, and an electrode-actuating lever, a second spring mounted on the lever and through which the latter acts to close the electrodes, the last-named spring also acting on the lever to effect a separation of the electrodes and simultaneously reacting on an electrode to hold the two electrodes in contact until the instant of separation.

2. In a device of the class described, the combination of a stationary body part carrying an electrode, a plunger passing through the body part and insulated therefrom, the said plunger carrying the other electrode or contact-point, an electric circuit in which the electrodes are located, a weak spring acting on one electrode to normally separate the electrodes, an electrode-actuating lever, a second spring mounted on the lever and through which the latter acts to close the electrodes, the last-named spring also acting on the lever to effect a separation of the electrodes and simultaneously reacting on an electrode to hold the two electrodes in contact until the instant of separation.

3. An igniter for explosive or internal-combustion engines, including two electrodes, one stationary and the other movable, an electric circuit in which the electrodes are located, the movable electrode being mounted to permit both longitudinal and rotary movement, a weak spring acting on one electrode to normally separate the electrodes, an electrode-actuating lever, a second spring mounted on the lever and through which the latter acts to close the electrodes, the last-named spring also acting on the lever to effect a separation of the electrodes and simultaneously reacting on an electrode to hold the two electrodes in contact until the instant of separation.

4. An igniter comprising two electrodes, one stationary and the other movable, a spool mounted on one electrode, a lever adapted to engage one head of the spool, a spring mounted on the lever and adapted to engage the other head of the spool whereby as the lever is actuated, it acts through the spring to bring the electrodes into engagement, the spring also acting on the lever to separate the electrodes and simultaneously reacting on one electrode to hold the electrodes in contact until the instant of separation.

5. In an igniter, the combination of two electrodes suitably mounted, one electrode protruding beyond the cylinder with which the igniter is connected, the protruding electrode being adjustable to regulate the arcing-space between the electrodes, and accessible outside of the cylinder for purposes of adjustment, a weak spring acting on one electrode to normally separate the electrodes, an electrode-actuating lever, a second spring mounted on the lever and through which the latter acts to close the electrodes, the last-named spring also acting on the lever to effect a separation of the electrodes and simultaneously reacting on an electrode to hold the two electrodes in contact until the instant of separation.

6. The combination of two electrodes, a weak spring acting on one electrode to normally separate the electrodes, an electrode-actuating lever, a second spring mounted on the lever and through which the latter acts to close the electrodes, the last-named spring also acting on the lever to effect a separation of the electrodes and simultaneously reacting on an electrode to hold the two electrodes in contact until the instant of separation.

817,105. MOISTENING DEVICE. JOSEPH H. DE NIKE, Albany, N. Y. Filed June 22, 1905. Serial No. 266,491.

Claim.—1. A moistener comprising a support, a moistener-cup having a moistening-surface on the support, and means for radially turning the cup to alter the operative position of the moistening-surface.

1. A moistener comprising an overhanging support mounted on a base, a moistener and means for turning the moistener to alter the operative position of the moistening-surface independently of the base.



3. A moistener comprising a support, a moistening-cup having a moistening-surface at the outer end of the support, and a set-screw securing the cup to the support, the set-screw permitting of the cup being turned to change the position of the moistening-surface.

4. A moistener-cup having a moistening-surface extending downwardly from the cup, means supporting the cup, and means between the support and the cup, whereby the operative moistening-surface may be turned upwardly to retain the moisture.

5. A moistener comprising a base, a standard extending from the base, said standard being bent at its top to form an overhanging support, a moistening-cup adjustably secured to the overhanging support, and means fixing the position of the cup after it is adjusted.

6. A moistening-cup having a moistening-surface, a cover for the moistener-surface when the latter is not in use to preserve the moisture, a support and means whereby the position of the cup may be adjusted to alter the operative position of the moistening-surface.

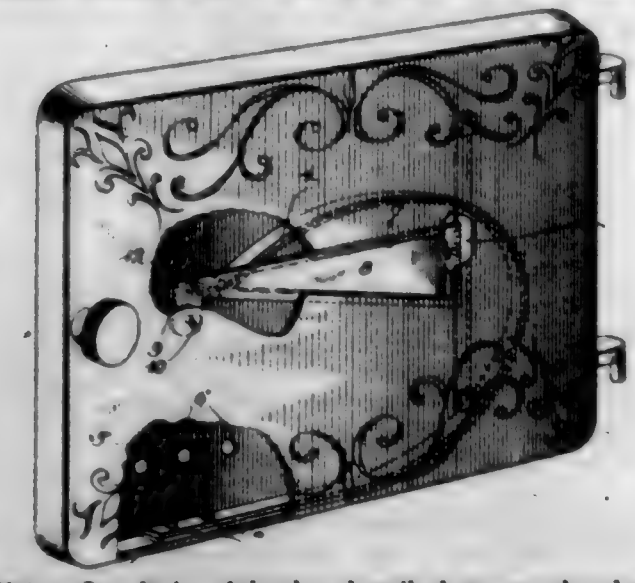
7. A moistener comprising a support, a moistener carried by the support, and means whereby the position of the operative surface of the moistener may be changed without moving the support.

8. A moistener comprising an inverted moistening-surface with means for supplying moisture, a support, means for inclining the moistening-surface at an angle to the support, and means for holding the moistener in its altered position.

9. A moistener comprising a base, a moistener having an exposed operative moistening-surface, adapted to be turned to alter the position of the exposed surface, and means for fastening the moistener in position after it has been turned.

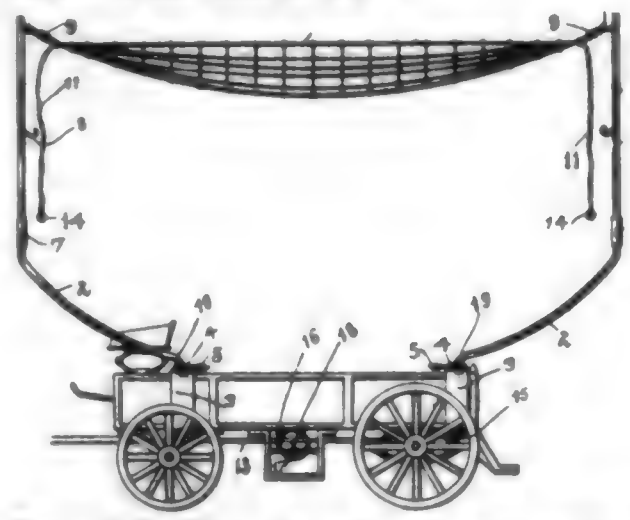
10. A moistener adjustable to position it at varying angles above and below a horizontal plane, and means for holding the moistener after it is adjusted.

817,106. AUTOMATIC REGULATOR FOR OVENS. JOHN P. FARMER, Portland, Oreg. Filed Aug. 31, 1904. Serial No. 223,887.



Claim.—In a device of the class described, an oven-door having a ledge or flange and provided with an aperture, a damper supported pivotally adjacent to the aperture and normally covering the same, said damper being provided with a projection, a thermostat secured upon the ledge of the oven-door, extending into the path of the projection of the damper and supporting the latter, a strip connected with the oven-door and confining and guiding the free end of the damper, and a lining consisting of an apertured plate combining with the door to form a casing for the thermostat.

817,107. LIFE-NET. FRED S. FARRINGTON, New York, N. Y. Filed Dec. 20, 1904. Serial No. 237,712.



Claim.—1. In a life-net, the combination with a vehicle, of stanchions mounted at the sides of said vehicle to rotate in a substantially horizontal plane, and having extensions with upturned ends, a net secured to the upturned ends of said stanchions and means for rotating said stanchions to stretch said net.

2. In a life-net, the combination with a vehicle, of stanchions located at the sides of said vehicle to rotate in a substantially horizontal plane, a net secured to said stanchions and means for rotating said stanchions to stretch said net.

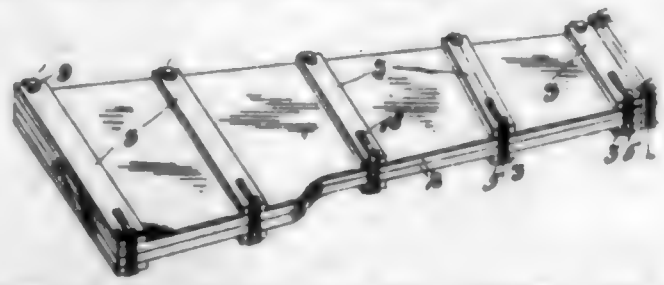
3. In a life-net, the combination with a vehicle of crank-shaped stanchions journaled to rotate in a substantially horizontal plane at the sides of said vehicle and having extensible upper ends, of a net mounted on said upper ends and means for rotating said stanchions to stretch said net.

4. In a life-net, the combination with a vehicle, of stanchions mounted to rotate in a substantially horizontal plane at the sides of said vehicle, a net mounted on said stanchions and means for rotating said stanchions to stretch said net.

5. In a life-net, the combination with a vehicle, of crank-shaped stanchions mounted to rotate in a substantially horizontal plane at the sides of said vehicle, a net mounted on said stanchions and means for rotating said stanchions to stretch said net.

6. In a life-net, the combination with a suitable support, of crank-shaped rotatable stanchions mounted in and perpendicular to said support, a net mounted on the offset ends of said stanchions and means for rotating said stanchions.

817,108. TROUSERS-PRESS. IRVIN R. FENNER, San Francisco, Cal. Filed June 22, 1905. Serial No. 266,478.

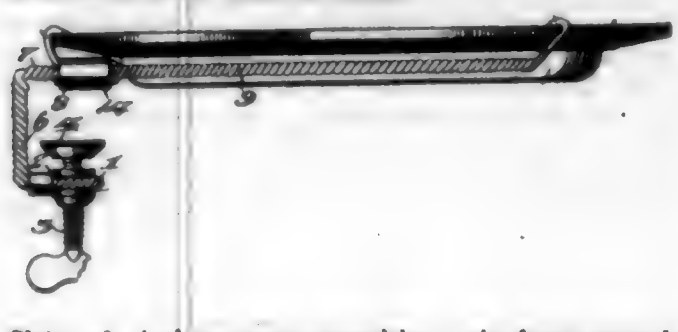


Claim.—1. In a trousers-press, the combination with two hingedly-connected half-sections, of a spring-catch comprising two members, one being secured upon one of said half-sections and formed with a stud, and the other being secured upon the other of said half-sections and consisting of two parts having an adjustable slot and screw connection, the latter member of the catch being formed with an opening to receive the stud upon the first-mentioned member.

2. A trousers-press, comprising two half-sections, hinges connecting said sections along one of their side edges, spring-catches for securing said sections along their opposite edges, a trousers-bottom clamp comprising a stationary member secured upon one end of said sections, said stationary member having notches in the ends thereof, screw-bolts pivoted in said notches, a removable clamp member pro-

vided with notches in its ends to receive said screw-bolts and winged nuts upon the latter, substantially as described.

817,109. PLATE-SECURER. THOMAS FRASIER, Hiawatha, Kans. Filed June 21, 1905. Serial No. 266,337.



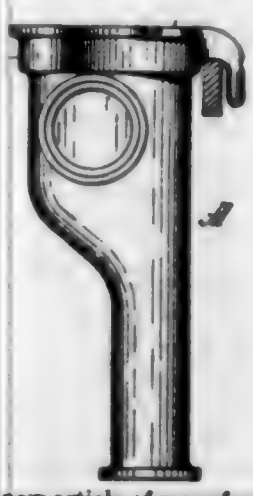
Claim.—1. A plate-securer comprising a wire frame secured intermediate its ends to a clamp-screw, the arms of the frame extending vertically from the screw in parallel relation and being connected by a keeper provided with a hook, the terminals of the frame being projected in the form of curved arms, and hooks connected with the terminals of said arms.

2. A plate-securer comprising a clamp-screw, a wire frame connected to said screw and comprising two lengths of wire twisted together, the frame being projected from the screw in parallel relation and secured by a keeper, being bent therebeyond to provide divergent clamping-arms, one of the wires forming a frame being extended beyond the terminals of the arms and bent to provide hooks.

3. A plate-securer comprising a clamping-screw, a wire frame secured thereto, said frame comprising intertwisted wire lengths, the frame wires being projected in parallel relation for a short distance from the clamp-screw and secured by a tie-bar, said frame being projected beyond said tie-bar to provide divergent clamping-arms, hooks secured to the terminals of said arms, and a hook secured to the frame adjacent said tie-bar.

4. A plate-securer comprising a clamping-screw, divergent clamping-arms arranged in a plane above said screw, said arms being connected above the screw by a keeper, and a connection between said keeper and screw, hooks projecting upwardly from the terminals of said arms, and a hook projecting from the keeper.

817,110. COMBINED PLUMBER'S FITTING AND PIPE-SUPPORT. JOHN L. FRUIN, New York, N. Y. Filed Mar. 13, 1905. Serial No. 249,856.

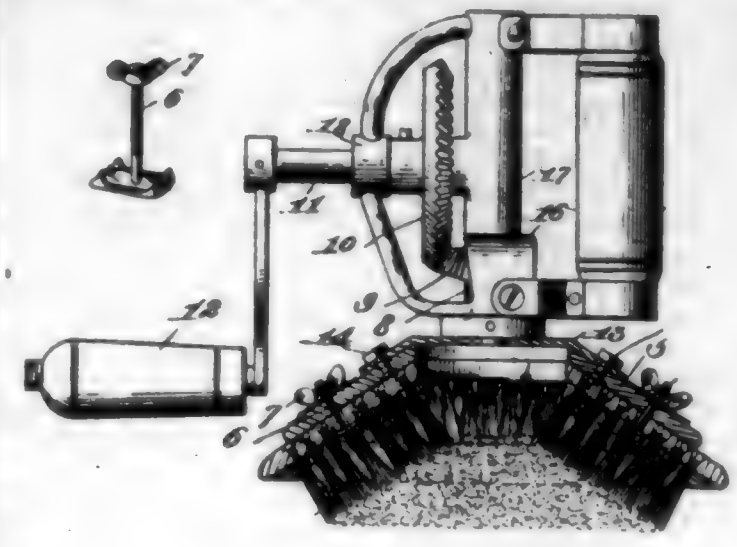


Claim.—1. As a new article of manufacture, a plumber's fitting composed of a metal casting having waste and vent apertures, and having a peripheral flange, and, extending therefrom, a projection with means for removably, and securely, supporting external pipes.

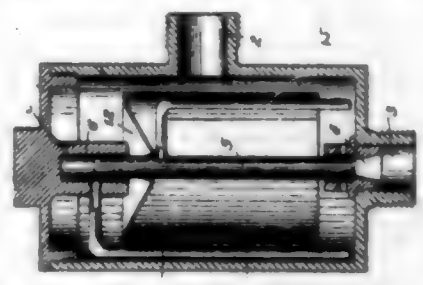
2. As a new article of manufacture, a plumber's fitting composed of a metal casting having waste and vent apertures, and having a peripheral flange, and, extending therefrom, a sustaining-hook; and a projection also extending from said flange with means for removably, and securely, supporting external pipes.

817,111. BARBER'S APPLIANCE. GEORGE W. HALE, Norfolk, Va. Filed Nov. 26, 1904. Serial No. 234,245.

Claim.—A device of the character described, comprising a conical-shaped brush having a clearance-opening at the top thereof, a conical-shaped coupling mounted upon said brush and having an opening at the top thereof, headed screws bearing against the back of the brush and extending through the coupling, thumb-nuts engaging said screws for connecting the coupling and brush together, a rotatable shaft, a pinion carried thereby, arms connected with the shaft and secured to the coupling, means for suspending the shaft, and means engaging with the pinion for rotating the shaft.



817,112. AUTOMATIC RELIEF-VALVE AND TRAP. AMOS HARRISON, Chicago, Ill. Filed July 29, 1905. Serial No. 271,740.



Claim.—1. A device of the kind described, comprising an inclosing casing provided with an inlet and an outlet opening, a recess formed in said casing opposite said outlet-opening, and means for connecting said casing into a steam system, in combination with a tubular valve-seat positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess, adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, and an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing.

2. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing into a steam system, in combination with an open tubular valve-seat arranged to control said outlet-opening, a tubular valve adapted to coöperate with said valve-seat and by its position control the flow of fluid therethrough, a float provided with a seal at its top attached to said valve and arranged to control its position by the amount of liquid in said casing.

3. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing into a steam system, in combination with an open tubular valve-seat positioned to control said outlet-opening, a tubular valve arranged to coöperate with said valve-seat and by its position partially controlling the flow of fluid therethrough, an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for constantly directing a portion of the liquid in said casing into said valve.

4. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and a recess formed in said casing opposite to said outlet-opening, in combination with an open tubular valve-seat provided with one or more openings in its side, positioned to control said outlet-opening, a tubular valve open at both ends extending from said valve-seat into said recess, adapted to coöperate with said valve and by its position to control the flow of liquid therethrough, and an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing.

5. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing into a steam system, in combination with an open tubular valve-seat provided with one or more openings through its side, positioned to control said outlet-opening, a tubular valve open at both ends adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, and a float provided

with a seal at its top attached to said valve and arranged to control its position by the amount of liquid in said casing.

6. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing to a steam system, in combination with an open tubular valve-seat, provided with one or more openings through its side, positioned to control said outlet-opening, a tubular valve arranged to coöperate with said valve-seat and by its position to partially control the flow of liquid therethrough, an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for constantly directing a portion of the liquid in said casing into said valve.

7. A device of the kind described, comprising an inclosing casing provided with an inlet and outlet opening, a recess provided with a depending wall formed in said casing opposite said outlet-opening, and means for connecting said casing into a heating system, in combination with a tubular valve-seat provided with one or more openings through its side and positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess, adapted to coöperate with said valve-seat and by its position to control the flow of liquid therethrough, an inverted-cup-shaped float attached to said valve and arranged to control its position and provided with a cup at its top adapted to coöperate with said wall to form a seal for the upper end of said valve.

8. A device of the kind described, comprising an inclosing casing provided with an inlet and outlet opening, a recess provided with a depending wall formed in said casing opposite said outlet-opening, and means for connecting said casing into a steam system, in combination with a tubular valve-seat provided with one or more openings through its side, positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess and adapted to control the flow of fluid therethrough, an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for maintaining a seal at the top of said float and constantly directing a portion of liquid in said casing into said valve.

9. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing into a heating system, in combination with an open tubular valve-seat provided with one or more openings in its side, and positioned to control said outlet-opening, a tubular valve adapted to coöperate with said valve-seat and by its position control the flow of fluid therethrough, a float provided with a seal at its top attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for constantly directing a portion of the liquid in said casing into said valve.

10. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, a recess provided with a depending wall formed in said casing opposite said outlet-opening, and means for connecting said casing into a steam system, in combination with a tubular valve-seat provided with one or more openings through its side, and positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess, adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, a float attached to said valve and arranged to control its position by the amount of liquid in said casing, a cup provided at the upper end of said float adapted to coöperate with said wall to seal the upper end of said valve, and means for constantly directing a portion of the liquid in said casing into said valve.

11. A device of the kind described, comprising an inclosing casing provided with an inlet and outlet opening, a recess provided with a depending wall formed in said casing opposite said outlet-opening and means for connecting said casing into a steam system, in combination with a tubular valve-seat positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess, adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, a float attached to said valve and arranged to control its position by the amount of liquid in said casing, and a cup provided at the top of said float adapted to coöperate with said depending wall to seal the upper end of said valve.

12. A device of the kind described, comprising an inclosing casing provided with an inlet and an outlet opening, a recess formed in said casing opposite said outlet-opening, and means for connecting said casing into a steam system, in combination with a tubular valve-seat positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess and adapted to coöperate with said valve-seat, and by its position to control the flow of fluid therethrough, an inverted-cup-shaped float attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for constantly directing a portion of the liquid in said casing into said valve.

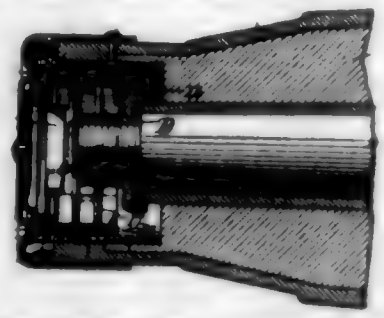
13. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, and means for connecting said casing into a steam system, in combination with an open tubular valve-seat arranged to control said outlet-opening, and tubular valve adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, and an inverted-cup-shaped float provided with a seal near its top attached to said valve and arranged to control its position by the amount of liquid in said casing, and means for constantly directing a portion of the liquid in said casing into said valve.

14. A device of the kind described, comprising an inclosing casing provided with inlet and outlet openings, a recess provided with a depending wall formed in said casing opposite said outlet-opening, and means for connecting said casing into a steam system, in combination with a tubular valve-seat positioned to control said outlet-opening, a tubular valve extending from said valve-seat into said recess and adapted to coöperate with said valve-seat and by its position to control the flow of fluid therethrough, a float attached to said valve and arranged to control its position by the amount of liquid in said casing, a cup formed at the upper end of said float adapted to coöperate with said depending wall to seal the upper end of said valve, and means for constantly directing a portion of the liquid in said casing into said valve.

15. A device of the kind described, comprising a casing provided with inlet and outlet ports and means for connecting the same into a steam system, in combination with a balanced valve arranged to control the flow of fluid from said casing, and a float provided with a water seal at its top arranged to control the flow of fluid through said valve.

16. In a device of the kind described, a balanced valve, a float attached to the movable portion of said valve, and a water seal at the top of said float to reduce leakage through said valve.

817,113. HUB-ATTACHING DEVICE. EDWIN HETHERINGTON, Cedar Rapids, Iowa. Filed May 27, 1905. Serial No. 262,678.



Claim.—1. In a device of the class specified, a ring having an inwardly-projecting annular flange, concentric with the ring, lugs projecting from said flange, a wrench-ring having notches for the reception of the lugs, and a locking-cup having straight wall-pockets in which said lugs are locked to prevent independent rotative movement of any of the parts in either direction.

2. In a device of the class specified, an outer ring having a flange formed concentric therewith and provided with terminal lugs having widened base portions or fillets, a wrench-ring having notches for the reception of said lugs, a spring arranged within the ring and bearing against the lugs, and a locking-cup notched for the passage of the lugs and having straight wall-pockets in which said lugs are locked to prevent independent rotative movement of any of the parts in either direction.

3. In a device of the class specified, a lug-carrying member, a wrench-ring notched for the reception of the lugs and provided at its inner end with a plurality of independent lugs, a spring arranged within the wrench-ring and having one end secured thereto, the opposite end of the spring bearing against said inturned lugs, and a manually-adjustable locking-cup having stepped straight wall-recesses for the reception of the lugs, said shoulders serving to prevent independent movement of any of the parts in either direction under stress of the spring.

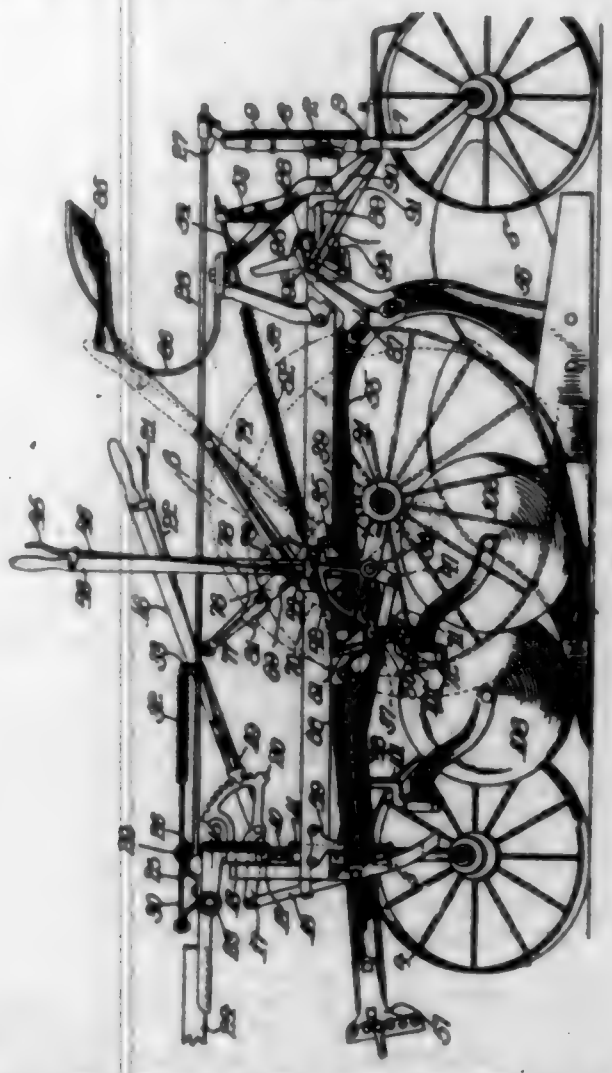
4. In a device of the class specified, a hub-attaching ring having an inturned annular flange provided with inwardly-projecting lugs, a wrench-ring notched for the reception of the lugs, a spring arranged within said wrench-ring and bearing against the lugs, a locking-cup fitting between the wrench-ring and the flange and having pockets for the reception of the lugs, the base or outer face of the cup being

stamped out to form finger-engaging portions, and an auxiliary finger-plate extending thereover and provided with terminal lugs that are attached to the base of the cup.

5. In a device of the class specified, a hub-attaching ring having an inwardly-extending annular flange provided with projecting lugs, a wrench-ring recessed for the reception of the lugs, a spring arranged within said ring and bearing on the lugs, a locking-cup having straight wall-notches for the reception of the lugs and fitting snugly within said flange, the outer face of the nut being stamped out to form finger-holds, and an auxiliary finger-piece riveted to the base of the cup and provided with projecting arms having terminal lugs that extend through openings formed in the base of the cup.

6. In a device of the class specified, a hub-attaching ring having an inwardly-extending annular flange that is provided with an annular groove, a wrench-ring, and a cup extending over the wrench-ring, connecting means between the wrench-ring and cup and the hub-ring, and a metallic split ring seated within said annular groove and held in place by its expansive tendency, said ring forming a guard to prevent the entrance of dust between the flange and the cup.

817,114. PLOW. EDWARD M. HEYLMAN, Janesville, Wis., assignor to The Janesville Machine Company, Janesville, Wis., a Corporation. Filed Jan. 20, 1905. Serial No. 241,823.



Claim.—1. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, of a lug connected to the rear end of the plow and shifting therewith, a shiftable stop on the frame arranged normally in the path of movement of said lug to hold up the heel of the plow as the latter is lowered, and means engaging said stop for shifting it out of engagement with said lug, substantially as described.

2. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, of a member connected to and shifting with the rear end of the plow and a shiftable stop on the frame normally held in stationary position and arranged to engage said member and hold up the heel of the plow as the latter is lowered, whereby the plow will enter the ground point first, and means engaging and shifting said stop to release said member and to level the plow in the ground, substantially as described.

3. In riding-plows, the combination with the frame, of a plow shiftably mounted on the frame, a shiftable stop on the frame normally held in stationary position and arranged to hold up the heel of the plow as the latter is lowered and means engaging and shifting said stop to release the heel of the plow, substantially as described.

4. In riding-plows, the combination with the frame, of a plow shiftably hung on the frame, means for raising and lowering the plow, a lug connected to and shifting with the rear end of the plow, a shiftable stop on the frame normally held in stationary position arranged to engage said lug and hold up the heel of the plow as the latter is lowered, and means engaging and shifting said stop out of the path of said lug on the continued downward movement of the plow, substantially as described.

5. In riding-plows, the combination with the frame, of a plow shiftably hung on the frame, means for raising and lowering the plow, a lug connected to and shifting with the rear end of the plow, a stop on the frame normally spring-held in stationary position arranged to engage said lug and hold up the heel of the plow as the latter is lowered, and means for tripping said spring-held stop, substantially as described.

6. In riding-plows, the combination with the frame, of a plow, a swinging support for carrying the plow on the frame, a lug connected to and shifting with the rear end of the plow, a movable stop on the frame normally held in stationary position and arranged to engage said lug as the plow is lowered, whereby the plow will enter the ground point first, and means automatically acting on the continued downward shift of the plow for shifting said stop from beneath said lug to level the plow in the ground, substantially as described.

7. In riding-plows, the combination with the frame, the plow mounted thereon and means for raising and lowering the plow, of a member having a lost-motion connection with the rear end of the plow and a stop arranged to engage and arrest said member to hold up the heel of the plow as the latter is lowered, substantially as described.

8. In riding-plows, the combination with the frame, the plow mounted thereon and means for raising and lowering the plow, of a member having a lost-motion connection with the rear end of the plow, a stop on the frame arranged to engage and arrest said member to hold up the heel of the plow as the latter is lowered and means for releasing said member from said stop, substantially as described.

9. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, a swinging arm having a lost-motion connection with the plow, a stop arranged to engage and arrest said arm as the plow is lowered and means for tripping said stop, substantially as described.

10. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, a swinging arm having a lost-motion connection with the plow, a shiftable stop arranged to engage and arrest said arm as the plow is lowered and a lug connected to and shifting with the plow arranged to shift said stop and release said arm, substantially as described.

11. In riding-plows, the combination with the frame and plow, of a swinging bail for carrying the plow on the frame, a bracket fixed to the rear end of the plow-beam, a swinging arm pivoted to the rear end of the frame and having a bolt-and-slot connection with said bracket, a stop pivoted on the frame arranged to engage and arrest said arm as the latter is lowered and a lug on said bracket for tripping said stop, substantially as described.

12. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, of a stop on the frame for holding up the rear end of the plow in its lowermost position, and a second movable stop on the frame above said first-mentioned stop arranged to momentarily hold up the heel of the plow as the latter is lowered, whereby the plow will enter the ground point first, substantially as described.

13. In riding-plows, the combination with the frame, the plow carried thereby and means for raising and lowering the plow, of a fixed stop on the frame for holding up the rear end of the plow in its lowermost position, a shiftable stop on the frame above said fixed stop arranged to hold up the heel of the plow as the latter is lowered and means for automatically tripping said shiftable stop on the continued downward movement of the plow, substantially as described.

14. In riding-plows, the combination with the frame and plow, of a swinging support for carrying the plow on the frame, a swinging arm having a lost-motion connection with the rear end of the plow, a fixed stop on the frame for upholding the heel of the plow in lowermost position, a shiftable stop for arresting said arm at an intermediate point as the plow is lowered and a lug connected to the plow for tripping said shiftable stop, substantially as described.

15. In riding-plows, the combination with the frame, plow carried thereby and means for raising and lowering the plow, of a lug connected to and shiftable with the rear end of the plow, a fixed stop on the frame engaging said lug and supporting the rear end of the

plow in its lowermost position and a yielding stop on the frame for engaging said lug at an intermediate point as the plow is lowered and momentarily hold up the heel of the plow, substantially as described.

16. In riding-plows, the combination with the frame, the bail journaled on the frame, and the plow hung on the bail, of an arm pivotally mounted on the frame and connected to the rear end of the plow, a stop arranged to engage said arm and hold up the heel of the plow as the latter is lowered, and means for disengaging said arm and stop on the continued downward shift of the plow, substantially as described.

17. In riding-plows, the combination with the frame, the bail journaled on the frame, and the plow hung on the bail, of an arm pivoted on the frame and having a lost-motion connection with the rear end of the plow, a stop on the frame arranged to engage said arm and hold up the heel of the plow as the latter is lowered, and a trip device for shifting said stop on the continued downward movement of the plow to release said arm, substantially as described.

18. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, a shaft journaled on the frame, a foot-lever for raising the plow connected to the shaft and extending rearwardly therefrom toward the rider's seat, an arm on said shaft and a link directly connecting said arm with one of the crank-arms of the plow-bail, substantially as described.

19. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, a shaft journaled on the frame, an arm on said shaft, a link directly connecting said arm and one of the crank-arms of said bail and a pair of foot-levers mounted on said shaft, substantially as described.

20. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, a shaft journaled on the frame, an arm on said shaft, a link directly connecting said arm and said bail, oppositely-extending foot-levers connected to said shaft, and means for locking said lift mechanism in raised and lowered positions, substantially as described.

21. In riding-plows, the combination with the frame and with the plow carried thereby, of foot mechanism for raising and lowering the plow comprising a shaft journaled on the frame and connected to the plow, a pair of foot-levers connected to said shaft, a locking-dog connected to one of said levers and a series of lugs on the frame with which said locking-dog automatically engages to hold the plow in raised position, substantially as described.

22. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, foot mechanism for raising and lowering the plow, comprising a shaft journaled on the frame and connected directly to said bail, a pair of foot-levers connected to said shaft and a locking-dog connected to said foot mechanism for holding the plow in raised position and arranged to be released by the shift of one of said foot-levers, substantially as described.

23. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, foot mechanism for raising and lowering the plow, comprising a shaft journaled on the frame, an arm on said shaft, a link directly connecting said arm and said bail, a pair of oppositely-extending foot-levers connected to said shaft, one of said foot-levers being jointed, a locking-dog on the outer section of said jointed lever, and a segment on the frame having a series of lugs with which said dog automatically engages to hold the plow in raised position, substantially as described.

24. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, a shaft journaled on the frame, an arm on said shaft, a link directly connecting said arm and said bail, said link and arm being arranged to form a dead-center lock to hold the plow in the ground, a lug on the bail and an adjustable stop on said link arranged to engage said lug to hold said link and arm off of the dead-center locking position and foot-levers connected to said shaft, substantially as described.

25. In riding-plows, the combination with the frame, of a bail journaled thereon, a plow carried by the bail, a shaft journaled on the frame, an arm on said shaft, an arm on said bail, a link pivotally connected to said arms, the point of connection between said link and the arm on said bail being in front of and below the bail and foot-levers connected to said shaft, substantially as described.

26. In riding-plows, the combination with the frame, the bail journaled thereon and the plow pivoted to the bail, of means for momentarily holding up the heel of the plow as the latter is lowered arranged to be tripped on the continued downward movement thereof and foot mechanism for raising and lowering the plow comprising a shaft journaled on the frame, a crank-arm on said shaft, a link connecting said arm to the plow and a pair of foot-levers fixed on said shaft, substantially as described.

27. In riding-plows, the combination with the frame, the bail journaled thereon and the plow pivoted to the bail, of means for momentarily holding up the heel of the plow as the latter is lowered arranged to be tripped on the continued downward movement thereof and foot mechanism for raising and lowering the plow comprising a shaft journaled on the frame, a crank-arm on said shaft, a link connecting said arm to the bail of the plow, a pair of foot-levers fixed to said shaft and extending in opposite directions, locking devices automatically controlled by said foot mechanism for holding the plow in raised and lowered positions, substantially as described.

28. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a foot-lever for raising the plow pivoted on the frame and extending rearwardly from its pivot, an arm connected to the foot-lever and extending forwardly from the pivot thereof, and a link connecting said arm to the plow-bail, substantially as described.

29. In riding-plows, the combination with the frame, the bail pivoted thereon, and the plow hung on the bail, of a foot-lever pivoted on the frame for raising the plow, said foot-lever extending rearwardly from its pivot-point, an arm connected to the foot-lever at its pivot-point and extending forwardly therefrom, an arm fixed to the plow-bail, and a link connecting said arms, the point of connection between said link and the arm on the plow-bail being in front of and below the bail, substantially as described.

30. In riding-plows, the combination with the frame, the bail pivoted thereon, and the plow hung on the bail, of a rock-shaft journaled on the frame, a rearwardly-extending lift-lever, and a forwardly-extending depressing-lever on said shaft, a forwardly-extending arm on said shaft, a link connecting said arm to the plow-bail, said depressing foot-lever being formed of separate sections pivoted together, a pawl on the outer section, and a lug on the frame with which said pawl engages to hold the plow in raised position, said arm and link being arranged to form a dead-center lock to hold the plow in lowered position, substantially as described.

31. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a rock-shaft journaled on the frame and having a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever, a forwardly-extending arm on said shaft, a bracket fixed to one of the side arms of the bail, a link pivoted to the arm on said rock-shaft and to said bracket, the point of connection between said link and bracket being in front of and below the bail, said arm and link being arranged to form a dead-center lock for holding the plow in lowered position, a stop on said link, and a lug on said bracket with which said stop engages, substantially as described.

32. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a stop device for upholding the heel of the plow as the latter is lowered, means for automatically tripping said stop on the further downward movement of the plow, a rock-shaft journaled on the frame and having a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever, a forwardly-extending arm on the rock-shaft, and a link connecting said arm with the plow-bail, substantially as described.

33. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a stop device for momentarily upholding the heel of the plow as the latter is lowered, a rock-shaft on the frame provided with a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever, a forwardly-extending arm on said shaft, a bracket on the side arm of the bail, a link pivoted to said rock-shaft arm and to said bracket, the point of connection between said link and bracket being in advance of and below the bail, a stop device for arresting said link and arm in dead-center position to hold the plow in the ground, and a catch for holding the plow in raised position, said catch being automatically shifted into and out of operative position by the operation of the foot-levers in raising and lowering the plow, substantially as described.

34. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of means for holding up the heel of the plow as the latter is lowered, a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever pivoted on the frame, and a rock-arm and link connecting said foot-levers to the plow, substantially as described.

35. In riding-plows, the combination with the frame, the bail journaled on the frame, and the plow hung on the bail, a swinging arm mounted on the frame and having a lost-motion connection with

the rear end of the plow, a stop for engaging said arm to hold up the heel of the plow as the latter is lowered, means for tripping said stop, a pair of foot-levers for raising and lowering the plow, and means controlled by said foot-levers for holding the plow in its raised and lowered position, substantially as described.

36. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a stop for holding up the rear end of the plow in its lowermost position, a second stop arranged to momentarily hold up the heel of the plow as the latter is lowered, a pair of foot-levers mounted on the frame and connected to the plow, and means controlled by the foot-levers for holding the plow in its raised and lowered position, substantially as described.

37. In riding-plows, the combination with the frame, the bail journaled thereon, and the plow hung on the bail, of a swinging arm mounted on the frame and connected to the rear end of the plow, a stop for upholding the rear end of the plow in its lowermost position, a second stop arranged to engage said arm and momentarily hold up the heel of the plow as the latter is lowered, a pair of oppositely-arranged foot-levers mounted on the frame, a rock-arm and link connecting said foot-levers with the plow-bail and arranged to form a dead-center lock to hold the plow in its lowermost position, and a latch controlled by said foot-levers for holding the plow in its raised position, substantially as described.

38. In riding-plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow carried by the bail, an arm adjustably fixed on the bail-shaft, a land-side wheel on said arm, a main lift spring connected to said plow, a supplemental lift-spring connected to said land-side wheel, foot-levers for raising and lowering the plow, and means for upholding the rear end of the plow as the latter is lowered.

39. In riding-plows, the combination with the frame, of the bail-shaft journaled thereon, the plow hung on the bail, an arm fixed to but adjustable on the bail-shaft, a land-side wheel carried by said arm, a main lift-spring connected to the plow, a supplemental spring connected through intermediate means to the land-side wheel, a stop device for upholding the heel of the plow as the latter is lowered, means automatically tripping said stop device to level the plow in the ground, a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever journaled on the frame, connections between said foot-levers and the plow, and means for holding the plow in its raised and lowered positions, substantially as described.

40. In riding-plows, the combination with the frame, of the bail-shaft journaled thereon, the plow hung on the bail, an arm hung on the bail-shaft, a land-side wheel carried by said arm, means for adjustably connecting said arm and bail-shaft, a main lift-spring connected to the plow, a supplemental lift-spring connected through intermediate means to the land-side wheel, a swinging arm on the frame connected at its rear end to the plow, a stop device on the frame for upholding the heel of the plow as the latter is lowered, means engaging and shifting said stop device to level the plow in the ground, a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever journaled on the frame, a rock-arm and link connecting said foot-levers to the plow-bail and arranged to form a dead-center lock for holding the plow in the ground, and a locking-pawl controlled by said foot-levers for holding the plow in its raised position.

41. In riding-plows, the combination with the frame, of the bail journaled thereon, a plow carried by the bail, a cross-shaft journaled on the frame, an arm on said shaft, a link directly connecting said arm and said bail, a lift-spring connected at one end to said bail and at the opposite end to the plow-frame and foot-levers connected to said shaft, substantially as described.

42. In riding-plows, the combination with the frame, of a bail-shaft journaled thereon, a plow carried by the bail, a sleeve on said shaft, an arm on said sleeve, a land-wheel carried by said arm, means for adjustably locking said sleeve to said shaft and a lift-spring connected to said sleeve for balancing the land-wheel, substantially as described.

43. In riding-plows, the combination with the frame, of a bail-shaft journaled thereon, a plow carried by the bail, a sleeve on said shaft, an arm on said sleeve, a land-wheel carried by said arm, means for adjustably locking said sleeve to said shaft, a second arm on said sleeve and a lift-spring connected to said second arm and to the plow-frame, said arms being so disposed that said spring is placed under tension when the land-wheel is shifted on either side of its upright position, substantially as described.

44. In riding-plows, the combination with the frame, of the bail-shaft journaled thereon, the plow carried by the bail, an arm journaled on said shaft, a land-wheel carried by said arm, means for adjustably locking said land-wheel arm and said shaft together, a main lift-spring connected to said bail to balance the weight of the plow and a supplemental lift-spring connected to said arm to balance the weight upon the land-wheel, substantially as described.

45. In riding-plows, the combination with the frame, of the bail-shaft journaled thereon, a plow mounted on the bail, foot-levers for raising and lowering the plow, an arm journaled on said bail-shaft, a land-wheel on said arm, means for locking said arm and shaft in different positions, a main lift-spring connected to the plow and a supplemental lift-spring connected to the land-wheel, substantially as described.

46. In riding-plows, the combination with the frame, of the front and rear furrow-wheels and vertical furrow-wheel standards, an arm on the rear standard, a slotted arm on the front standard, a rod connected to said arms and having an upturned end slidably engaging said slot, a bracket connected to said front standard, a draft-tongue connected to said bracket, an arm pivoted to said bracket in front of said standard and having slot engaging the upturned end of said rod and a spring connecting said arm and said rod, said arm and spring being arranged to hold the upturned end of said rod in line with the vertical standard of the front furrow-wheel, substantially as described.

47. In wheeled plows, the combination with the plow and means for raising and lowering the same, of an arm mounted on a suitable support and connected to the rear end of the plow, a shiftable stop for engaging and arresting said arm as the plow is lowered to uphold the heel of the plow and means for automatically tripping to level the plow in the ground, substantially as described.

48. In wheeled plows, the combination with the plow and means for raising and lowering the same, of an arm pivoted to a suitable support and having a lost-motion connection with the rear end of the plow, a stop device for engaging and arresting said arm to uphold the heel of the plow as the latter is lowered, and means for automatically tripping said stop device on the continued downward movement of the plow, substantially as described.

49. In wheeled plows, the combination with a plow, of a shaft having a cranked portion on which the plow is hung, a land-side wheel on said shaft, means for raising and lowering the plow, a shifting-arm mounted on a suitable support and connected to the rear end of the plow, a stop device for engaging and arresting said arm as the plow is lowered and means for automatically tripping on the continued downward movement of the plow, substantially as described.

50. In wheeled plows, the combination with the plow, of a shaft having a cranked portion to which the plow is hung, a land-side wheel on said shaft, foot-levers for shifting the plow and land-side wheel together to and from operative position, means for independently adjusting the land-side wheel, means for upholding the heel of the plow as the latter is lowered, a main lift-spring for the plow, and a supplemental lift-spring connected to the land-side wheel and arranged to coöperate with said main spring to raise the plow, substantially as described.

51. In wheeled plows, the combination with the plow and land-side wheel, of means for shifting the plow and land-side wheel together to and from operative position, means for independently adjusting the land-side wheel, means for momentarily upholding the heel of the plow as the latter is lowered, a main lift-spring for the plow and a supplemental lift-spring connected to the adjustable land-side wheel and coöperating with the main lift-spring to raise the plow, substantially as described.

52. In wheeled plows, the combination with the plow, of a shaft having a cranked portion whereon the plow is hung, a land-side wheel on said shaft, means for shifting the plow and land-side wheel together to and from operative position, means for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a main lift-spring for the plow and a supplemental lift-spring connected to the land-side wheel and coöperating with the main lift-spring to raise the plow, substantially as described.

53. In riding-plows, the combination with the plow, of the bail whereon the plow is hung, means for momentarily upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a lifting and a depressing foot-lever connected together and mounted to swing upon a common pivot, said lifting foot-lever extending rearwardly from said pivot toward the rider's seat and said depressing foot-lever extending forwardly therefrom, connections between said

foot-levers and the plow-bail and a lift-spring also connected to the bail, whereby the plow is free to swing on said bail, substantially as described.

54. In wheeled plows, the combination with the frame, of the plow hung on said frame foot-levers for raising and lowering the plow, a part connected to and shifting with the rear end of the plow, and a normally stationary, shiftable stop mounted on the frame in the path of movement of said part and arranged to engage and arrest the same as the plow is lowered and means for automatically tripping said stop on the continued downward movement of the plow, substantially as described.

55. In wheeled plows, the combination with the frame, of a plow hung thereon, a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, means for shifting the plow and land-side wheel together to and from working position, means for independently adjusting the land-side wheel, a main lift-spring for the plow and a supplemental lift-spring connected to the adjustable land-side wheel and arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

56. In wheeled plows, the combination with the frame, of a plow hung thereon, a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, means for shifting the plow and land-side wheel together to and from working position, means for independently adjusting the land-side wheel, means for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a main lift-spring for the plow and a supplemental lift-spring connected to the adjustable land-side wheel arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

57. In wheeled plows, the combination with the frame, of a plow hung thereon, a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, means for shifting the plow and land-side wheel together to and from working position, means for independently adjusting the land-side wheel, foot-levers for shifting the plow and land-side wheel together, means for independently adjusting the land-side wheel, a stop device for momentarily upholding the heel of the plow as the latter is lowered and a lift-spring extending between the land-side wheel and the plow-frame, substantially as described.

58. In plows, the combination with the frame, of a shaft journaled on the frame having a cranked portion to which the plow is hung, an arm on the shaft a land-side wheel on said arm, means for adjustably locking said arm and shaft together and a lift-spring connected to said arm and to a fixed point on the main frame, substantially as described.

59. In plows, the combination with the frame, of a shaft journaled on the frame having a cranked portion to which the plow is hung, an arm on the shaft a land-side wheel on said arm, means for adjustably locking said arm and shaft together, and a lift-spring connected to said arm and arranged to be placed under tension when said land-side wheel is shifted on either side of its upright position, so that said spring tends to pull the land-side wheel to upright position when the latter is swung either forwardly or rearwardly of such position, substantially as described.

60. In wheeled plows, the combination with the frame, a bail-shaft journaled on the frame, a plow hung on the bail, means for raising and lowering the plow, a land-side wheel connected to said bail-shaft to shift therewith as the plow is raised and lowered, means for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a main lift-spring for the plow and a supplemental lift-spring connected to the land-side wheel and to the plow-frame and arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

61. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel connected to said bail-shaft to shift therewith as the plow is raised and lowered, means for momentarily upholding the heel of the plow as the latter is lowered, foot-levers for shifting the plow and land-side wheel together, means for independently adjusting the land-side wheel, a main lift-spring for the plow and a supplemental lift-spring connected to the adjustable land-side wheel arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

62. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel connected to said bail-shaft to shift therewith as the plow is raised and lowered, foot-levers pivoted to the plow-frame and extending in opposite directions and connected to the plow-bail to shift said plow and land-side wheel together, means for independently adjusting the land-side wheel, a main lift-spring for the plow and a supplemental lift-spring connected to the land-side wheel and coöperating with said main lift-spring to raise the plow, substantially as described.

63. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel connected to said bail-shaft to shift therewith as the plow is raised and lowered, foot-levers for shifting the plow and land-side wheel together, an arm mounted on the frame and connected to the rear end of the plow, a movable stop on the frame for engaging said arm as the plow is lowered, means for automatically tripping said stop on the continued downward movement of the plow, a main lift-spring connected to the plow and a supplemental lift-spring connected to the land-side wheel and arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

64. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel connected to said bail-shaft to shift therewith as the plow is raised and lowered, a forwardly-extending depressing foot-lever and a rearwardly-extending lifting foot-lever, both pivoted on the frame and connected to shift said plow and land-side wheel together, means for independently adjusting the land-side wheel, means for momentarily upholding the heel of the plow as the latter is lowered, a main lift-spring for the plow and a supplemental lift-spring connected to the land-side wheel and to a fixed point on the plow-frame, substantially as described.

65. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm and a lift-spring connected to said arm and to a fixed point on the plow-frame, substantially as described.

66. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, means for shifting said plow and land-side wheel together to and from working position, a main lift-spring for the plow and a supplemental lift-spring connected to the arm of the land-side wheel and coöperating with said main lift-spring to raise the plow, substantially as described.

67. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, foot-levers for shifting said plow and land-side wheel together to and from working position to automatically level the plow, a main lift-spring for the plow and a supplemental lift-spring connected to the arm of the land-side wheel and arranged to coöperate with said main lift-spring to raise the plow, substantially as described.

68. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, a land-side wheel on said arm, means for shifting said plow and land-side wheel together to and from working position, means for upholding the heel of the plow as the latter is lowered, a main lift-spring for the plow and a supplemental lift-spring connected to and balancing the land-side wheel and arranged to coöperate with the main lift-spring to raise the plow, substantially as described.

69. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, foot-levers for shifting the plow and land-side wheel to and from working position to automatically level the plow, means for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a main lift-spring for the plow and a supplemental spring connected to the adjustable arm of the land-side wheel and to a fixed point on the plow-frame, substantially as described.

70. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, a rearwardly-extending lifting foot-lever and a forwardly-extending depressing foot-lever pivoted on the frame and connected to shift the plow and land-side wheel together to and from working position, a main lift-spring for the plow and a supplemental lift-spring connected to the arm of the land-side wheel

and arranged to coöperate with said main lift-spring to raise the plow, substantially as described.

71. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, means for shifting the plow and land-side wheel together to and from working position to automatically level the plow, an arm pivoted on the frame and connected to the rear end of the plow, a stop device for engaging said arm to uphold the heel of the plow as the latter is lowered, means for automatically tripping said stop on the continued downward movement of the plow, a main lift-spring for the plow and a supplemental lift-spring connected to the arm of the land-side wheel and to the plow-frame, substantially as described.

72. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, foot-levers pivotally mounted on the frame and connected to shift the plow and land-side wheel together to and from working position to automatically level the plow, a stop device for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a main lift-spring connected to the plow and a supplemental lift-spring connected to the arm of the land-side wheel and coöperating with the main lift-spring to raise the plow, substantially as described.

73. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, a pair of oppositely-extending foot-levers pivoted on the frame and connected to the plow-bail to shift the plow and land-side wheel to and from working position, means for upholding the heel of the plow as the latter is lowered, a main lift-spring connected to the plow-bail and a supplemental lift-spring connected to the arm of the land-side wheel and to the plow-frame, substantially as described.

74. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on said bail, an arm on said shaft, means for adjustably locking said arm and shaft, a land-side wheel on said arm, means for shifting the plow and land-side wheel together to and from working position to automatically level the plow, a main lift-spring for the plow, an arm connected to the arm of the land-side wheel, a spring connected to said first-mentioned arm and to a fixed point on the plow-frame, said arms being so disposed that said supplemental spring is placed under tension when said land-side-wheel arm is shifted on either side of its upright position, substantially as described.

75. In wheeled plows, the combination with the frame and the plow hung on the frame, of a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, a lifting foot-lever pivoted at one end to the frame and extending rearwardly from its pivot toward the rider's seat and a link connecting said lever to one of the crank-arms of the plow-bail to shift the plow and land-side wheel together, substantially as described.

76. In wheeled plows, the combination with a frame and the plow hung on the frame, of a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, means for momentarily upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, a lifting foot-lever and a depressing foot-lever connected together, a common pivot bolt or shaft on the frame whereon said foot-levers are movable, said lifting foot-lever extending rearwardly from the pivot-bolt and the depressing foot-lever extending forwardly therefrom, said foot-levers being connected to shift the plow and the land-side wheel together to and from working position and means for independently adjusting the land-side wheel, substantially as described.

77. In wheeled plows, the combination with the frame and the plow hung on the frame, of a land-side wheel connected to shift with the plow as the latter is raised and lowered to automatically level the plow, foot-levers shifting the plow and land-side wheel together to and from working position, means for independently adjusting the land-side wheel, an arm on the frame connected to the rear end of the plow and a stop on the frame arranged to engage said arm and uphold the heel of the plow as the latter is lowered, substantially as described.

78. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, lifting foot-lever pivoted at one end to the frame and extending rearwardly from its pivot toward the rider's seat and a link connecting said lever to the cranked part of the bail-shaft to shift the plow and land-side wheel together to and from working position, substantially as described.

79. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, a pair of foot-levers, a common pivot bolt or shaft whereon said foot-levers are mounted, said foot-levers extending in opposite directions from said pivot bolt or shaft, a link connected to said foot-levers and to the cranked part of the bail-shaft to shift the plow and land-side wheel to and from working position and a lift-spring connected to said cranked part, substantially as described.

80. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, a stop device on the frame arranged to momentarily uphold the heel of the plow as the latter is lowered, a lifting foot-lever and a depressing foot-lever, said foot-levers being connected together, a common pivot bolt or shaft on the frame whereon said foot-levers are mounted, said lifting foot-lever extending rearwardly from said pivot-bolt and said depressing foot-lever extending forwardly therefrom and a link connecting said levers to the crank part of the bail-shaft to shift said plow and land-side wheel together to and from working position, substantially as described.

81. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, a stop device on the frame arranged to uphold the heel of the plow as the latter is leveled, means for tripping said stop device on the continued downward movement of the plow, a lifting foot-lever, a pivot bolt or shaft on the frame above the journal of said bail-shaft whereon said foot-lever is mounted at its forward end, said foot-lever extending rearwardly toward the rider's seat and a link connecting said lever to the cranked part of said bail-shaft to shift the plow and land-side wheel together, substantially as described.

82. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, a pair of foot-levers connected together, a common pivot bolt or shaft on the frame whereon said foot-levers are mounted, said foot-levers extending in opposite directions from said pivot bolt or shaft and means connecting said foot-levers to the cranked part of the bail-shaft and a stop device for momentarily upholding the heel of the plow as the latter is lowered, substantially as described.

83. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft, means for adjustably locking said arm and shaft, a pair of foot-levers for shifting the plow and land-side wheel together to and from working position, an arm on the frame connected to the rear end of the plow, and a stop device on the frame for engaging said arm to uphold the heel of the plow as the latter is lowered, substantially as described.

84. In wheeled plows, the combination with the frame and bail-shaft journaled thereon, of a plow hung on the bail, an arm on the bail-shaft a land-side wheel on said arm, means for adjustably locking said arm and shaft, foot-levers connected to the bail for shifting the plow and land-side wheel together to and from working position, a stop on the frame for upholding the rear end of the plow in lowermost position and a movable stop device for upholding the heel of the plow as the latter is lowered arranged to be automatically tripped on the continued downward movement of the plow, substantially as described.

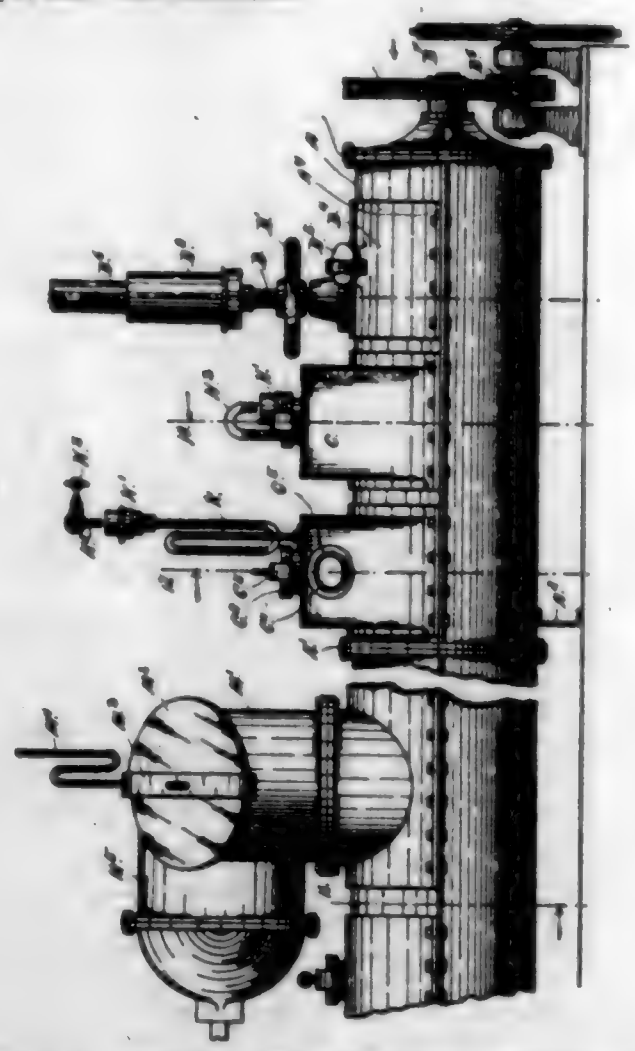
85. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel mounted on said bail-shaft, means for shifting the plow and land-side wheel together to and from working position, a main lift-spring for said parts and a supplemental lift-spring therefor, the leverage of which increases as that of the main lift-spring diminishes when the plow is lowered, substantially as described.

86. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a land-side wheel mounted on said bail-shaft, means for shifting the plow and land-side wheel togther to and from working position, a main lift-spring connected at its rear end to the frame and at its forward end to the bail, an arm on the bail-shaft, a supplemental lift-spring connected at its rear end to said arm and at its forward end to the frame, said arm being so arranged that the leverage and tension of the supplemental lift-spring is greatest when the plow is in its lowered working position, substantially as described.

87. In wheeled plows, the combination with the frame, of the bail-shaft journaled on the frame, a plow hung on the bail, a main lift-spring for the plow, a sleeve on the bail-shaft, an arm on said sleeve, a land-side wheel carried by said arm, means for shifting the plow and land-side wheel together to and from working position, means for adjustably locking said sleeve to said shaft, a second arm on said sleeve, a supplemental lift-spring connected to said second arm, said arms being so disposed that the tension and leverage of the supplemental spring will be greatest when the plow is in its lowered working position, substantially as described.

88. In wheeled plows, the combination with the frame, of a bail-shaft journaled on the frame, a plow hung on the bail, a main lift-spring for the plow connected at its rear end to the frame, a sleeve on said bail-shaft, an arm on said sleeve, a land-side wheel on said arm, means for adjustably locking said sleeve to said shaft, means for shifting the plow and land-side wheel together to and from working position, a second arm on said sleeve and a supplemental lift-spring connected at its rear end to said second arm and at its forward end to the plow-frame, said arms being so disposed that the leverage of said supplemental lift-spring increases as the plow is lowered to working position, substantially as described.

817,115. CONVEYER. RICHARD C. HILLS, Denver, Colo. Filed July 8, 1905. Serial No. 268,259.



Claim.—1. A structure of the class described, composed of a screw conveyer provided at its discharge extremity with a normally closed yieldingly-retained head.

2. A conveyer composed of a hollow stationary cylinder, a feed-screw located therein, a normally closed yieldingly-retained head located at the discharge extremity of the cylinder, and means for sealing the discharge end of the cylinder during the exit of the material under treatment.

3. A conveyer composed of a hollow cylinder having a normally closed yieldingly-retained discharge-head, means for feeding the material to be treated, to the forward extremity of the cylinder, means for sealing the discharge extremity of the cylinder during the exit of the material therefrom, and means located between the feed and discharge for introducing the necessary binding material.

4. A conveyer composed of a cylinder having a normally closed yeildingly-retained cone at its discharge extremity.

5. A conveyer composed of a cylinder having a normally closed yieldingly-retained cone-shaped disk at its discharge end, said disk having its apex projecting into the cylinder, means for introducing the pulverized material to the cylinder at its forward extremity, means for causing the material to travel rearwardly within the cylinder, means located in the rear of the feed for introducing the necessary binding material, and means for sealing the discharge extremity of the cylinder during the exit of the treated material.

6. A conveyer comprising a hollow cylinder, a feed-screw located therein, the rear extremity of the cylinder being provided with a yieldingly-retained cone-shaped disk, means for feeding the material to be treated at the forward extremity of the cylinder, means located near the rear extremity of the cylinder for removing the gases therefrom, and means introduced between the feed and the gas exit, for introducing the necessary binding material.

7. A conveyer composed of a stationary cylinder having a normally closed yieldingly-retained head at its discharge extremity, a feed-screw located within the cylinder, feed mechanism located at the forward extremity of the cylinder for introducing the pulverized material, means located in the rear of the feed for introducing the necessary binding material at suitable intervals, and means also located in the rear of the feed for introducing water to the cylinder, substantially as described.

8. A conveyer composed of a stationary cylinder, a feed-screw located therein and composed of a shaft to which is attached a ribbon-screw thread extending the greater proportion of the length of the cylinder, and a force-feed screw-thread section located near the discharge extremity of the cylinder, feed mechanism located at the forward extremity of the cylinder, and suitable means located in the rear of the feed for introducing the necessary binding material, substantially as described.

9. A conveyer composed of a cylinder having a normally closed yieldingly-retained discharge-head at its rear extremity, a feed-screw located in the cylinder and composed of a shaft journaled in the heads of the cylinder and also in intermediate bearings supported by the cylinder, a ribbon-screw thread connected with the shaft and extending the greater portion of the length of the cylinder, a force-feed screw-thread section connected with the shaft near the discharge extremity of the cylinder, and suitable means for feeding the pulverized material to be treated, to the forward extremity of the cylinder.

10. A conveyer composed of a cylinder having a normally closed yieldingly-retained head at its discharge extremity, a feed-screw located within the cylinder whereby the material is caused to travel from the forward to the rear extremity thereof, and a feed-conduit connected with the forward extremity of the cylinder and protruding into the latter, the said conduit being vertically adjustable for the purpose set forth.

11. A conveyer composed of a cylinder, a conveyer-screw located therein, and a feed-conduit located at the forward extremity of the cylinder and consisting of a conduit exteriorly threaded and engaging a nut mounted on the cylinder, a hopper connected with the upper extremity of the conduit, the latter being provided with a hand-wheel for purposes of rotation whereby the conduit may be raised and lowered according as it is necessary to increase or diminish the quantity of material supplied to the cylinder.

12. A conveyer composed of a hollow cylinder, a feed-screw located therein, a normally closed yieldingly-retained disk located at the rear extremity of the cylinder, means connected with the forward extremity of the cylinder for feeding the pulverized material thereto, and means located in the rear of the feed and at predetermined intervals for introducing the necessary binding material to the cylinder, substantially as described.

13. A device of the class described, consisting of a cylinder provided with a conveyer-screw having a shaft, and a yieldingly-retained normally closed head slidably mounted on the screw-shaft at the discharge extremity of the cylinder.

14. A device of the class described, consisting of a cylinder provided with a conveyer-screw having a shaft, a yieldingly-retained normally closed head slidably mounted on the screw-shaft at the discharge extremity of the cylinder, and suitable means for preventing the head from rotating with the screw-shaft.

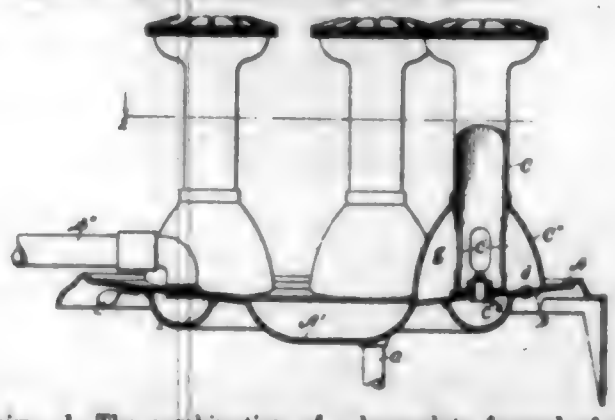
15. A device of the class described composed of a stationary cylinder, a conveyer-screw located therein and having a shaft suitably journaled, a yieldingly-retained head slidably mounted on the screw-shaft at the discharge extremity of the cylinder, an arm rigidly connected with the said head, and a guide mounted on the cylinder and engaging the arm to lock the head against rotation with the screw-shaft.

16. In a device of the class described, the combination of a cylinder, a conveyer-screw located therein, a cone-shaped disk slidably mounted on the screw-shaft at the discharge extremity of the cylinder and adapted to close the same, weights connected with the said disk whereby the latter is normally held in the closed position, a

cross-piece attached to the disk and slidable therewith on the shaft, an arm connected with the cross-piece and projecting outwardly from the shaft, and a guide attached to the cylinder and arranged with reference to the arm to prevent the disk from rotating with the shaft.

17. A device of the class described, comprising a cylinder, a conveying-screw located therein and provided with a shaft, one extremity of which passes beyond the rear extremity of the cylinder, a cone-shaped disk slidably mounted on the shaft and adapted to close the rear extremity of the cylinder, a cross-piece secured to the said disk, rods connected with the cross-piece and engaging guides with which the cylinder is provided, chains connected with the rods, and pulleys over which the chains pass, the latter being provided with weights whereby the cone-shaped disk is normally held in the closed position.

817,116. **WATER-HEATER.** HERBERT S. HUMPHREY, Kalamazoo, Mich., assignor to Humphrey Company, Kalamazoo, Mich. Original application filed Apr. 24, 1904, Serial No. 204,776. Divided and this application filed Feb. 20, 1905. Serial No. 246,535.



Claim.—1. The combination of a base-plate formed of sheet metal, having a depressed central portion or well, and having an annular trough-like depression therein; a top plate for said annular depression, having threaded openings therein, coacting therewith to form a gas-delivery pipe; threaded delivery-nozzles adapted to be secured in the threaded openings in said top plate; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming air-chambers about said ports; air-ports in said base-plate opening into said chambers; and a ring having openings therethrough adapted to be brought into register with the air-ports in said base-plate, adjustably secured thereto, for the purpose specified.

2. The combination of a base-plate formed of sheet metal, having a depressed central portion or well and having an annular trough-like depression therein; a top plate for said annular depression, having threaded openings therein, coacting therewith to form a gas-delivery pipe; threaded delivery-nozzles adapted to be secured in the threaded openings in said top plate; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming air-chambers about said ports; and air-ports in said base-plate opening into said chambers, for the purpose specified.

3. The combination of a base-plate formed of sheet metal, having a depressed central portion or well, and having an annular depression therein; a top plate for said annular depression coacting therewith to form a gas-deli ery pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming chambers about said ports; air-ports in said base-plate opening into said chambers; a ring having openings therethrough adapted to be brought into register with the air-ports in said base-plate, adjustably secured thereto, for the purpose specified.

4. The combination of a base-plate formed of sheet metal, having an annular depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming chambers about said ports; air-ports in said base-plate opening into said chambers; a ring having openings therethrough adapted to be brought into register with the air-ports in said base-plate, adjustably secured thereto, for the purpose specified.

5. The combination of a base-plate formed of sheet metal, having a depressed portion or well at the center, and having an annular depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe; suitable burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming chambers about said ports; air-ports in said base-plate opening into said chambers; and a valve common to all of said air-ports in said base-plate, for the purpose specified.

6. The combination of a base-plate formed of sheet metal, having an annular depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming chambers about said ports; air-ports in said base-plate opening into said chambers; and a valve common to all of said air-ports in said base-plate, for the purpose specified.

7. The combination of a base-plate formed of sheet metal, having a depressed portion or well at the center and having an annular depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes and contacting with said plate, forming inclosed chambers about said ports; and air-ports in said base-plate opening into said inclosed chambers, for the purpose specified.

8. The combination of a base-plate formed of sheet metal, having an annular depression therein; a top plate for said annular depression, coacting therewith to form a gas-delivery pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes and contacting with said plate, forming inclosed chambers about said ports; and air-ports through said base-plate opening into said inclosed chambers, for the purpose specified.

9. The combination of a base-plate; a gas-supply pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming inclosed chambers about said ports; air-ports in said base-plate opening into said inclosed chambers; a ring having openings therethrough adapted to be brought into register with said ports in said base-plate, adjustably secured thereto, for the purpose specified.

10. The combination of a base-plate; a gas-supply pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes forming inclosed chambers about said ports; air-ports through said base-plate, openings into said inclosed chambers; and a valve common to all of the said air-ports in said base-plate, for the purpose specified.

11. The combination of a base-plate; a gas-supply pipe; burner-tubes having air-ports in their lower ends; hoods or casings arranged about the lower ends of said burner-tubes, forming inclosed chambers about said ports; and air-ports in said base-plate opening into said inclosed chambers, for the purpose specified.

12. The combination of a base-plate formed of sheet metal, having a central depressed portion or well, and having an annular trough-like depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe having threaded openings therein; threaded delivery-nozzles adapted to be secured in the threaded openings in said plate; and burner-tubes arranged on said delivery-nozzles, for the purpose specified.

13. The combination of a base-plate formed of sheet metal, having an annular trough-like depression therein; a top plate for said annular depression coacting therewith to form a gas-delivery pipe; and burner-tubes mounted on said top plate, for the purpose specified.

14. In a water-heater, the combination of a base-plate, a gas-supply passage; burner-tubes connected with said gas-supply and extending above the said base-plate, and having air-spaces in their lower ends and above said plate; casings around the lower ends of said gas-burners, extending down to the said plate forming an inclosed space around the air-ports; and air-passages through the said plate into the said inclosed chambers, for the purpose specified.

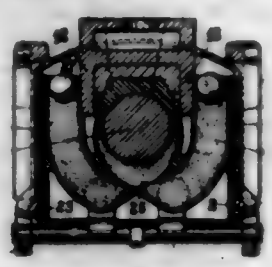
817,117. **BRUSH.** IRVING C. ISAACS, Chicago, Ill. Filed Feb. 13, 1904. Serial No. 193,257.



Claim.—A brush comprising a top plate having a solid circular boss formed integral therewith and on the bottom thereof and projecting downwardly therefrom, a ledge contiguous with the boss and

surrounding the same, a rubber ring detachably and independently mounted on the ledge adjacent the surrounding wall of the boss, so that its lower surface will be flush with the lower surface of said boss, and said ring having its peripheral edge projecting beyond the peripheral edge of said plate, a lower plate having bristles therein, arranged to contact flush with the lower surfaces of the boss and ring, and means for securing the two plates and ring together, substantially as specified.

817,118. BEARING WITH WEIGHT-CONTROLLED LUBRICANT. MAX KEMMERICH, Aix-la-Chapelle, Germany. Filed Sept. 7, 1905. Serial No. 277,365.



Claim.—1. A bearing having a lower bearing-box provided with a chamber arranged beneath the journal or shaft to be lubricated and communicating with said journal or shaft, channels for the reception of the lubricant arranged sidewise of said journal or shaft and communicating at their lower upward-sloping end with said chamber, and an independent weight in each lateral channel for automatically ejecting the lubricant from the channel containing it and pressing it into and through said chamber upward against the under side of said journal or shaft.

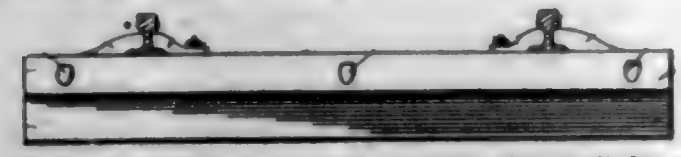
2. In a bearing the combination with the journal or shaft to be lubricated of a lower bearing-box having a chamber communicating with the under side of said journal or shaft, channels for the reception of the lubricant arranged sidewise of said journal or shaft and communicating at their lower upward-sloping end with said chamber, and an independent weight in each channel to eject the lubricant contained therein and press it into and through said chamber upward against the under side of said journal or shaft.

3. In a bearing the combination with the journal or shaft to be lubricated of a lower bearing-box having a chamber communicating with the under side of said journal or shaft, channels arranged sidewise of said journal or shaft and communicating at their lower upward-sloping end with said chamber, an exchangeable lubricant cartridge in each channel, and an independent weight on each lubricant-cartridge to eject the lubricant from the cartridge-mantle and press it into and through said chamber upward against the under side of said journal or shaft.

4. In a bearing the combination with the lower bearing-box having a chamber communicating with the under side of the journal or shaft to be lubricated and channels for the reception of the lubricant arranged laterally of said journal or shaft and communicating at their lower upward-sloping end with said chamber, of a casing containing and guiding said lower bearing-box, and an eccentric locking-pin held in its locking position by a spring-catch.

5. As a new article of manufacture a lubricant-cartridge comprising a curved tubular metallic mantle, inwardly-pointing projections at the lower end of said mantle, and a lubricant held by said mantle.

817,119. RAILWAY-TIE. JOHN KEANY, Amherst, Canada. Filed June 23, 1905. Serial No. 266,626.



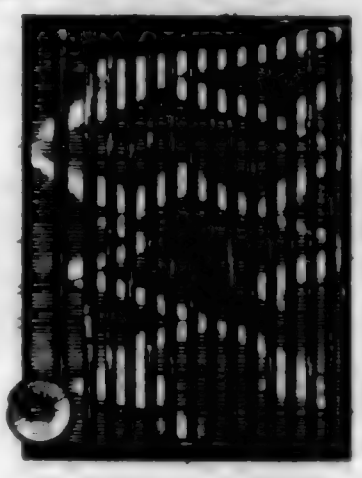
Claim.—1. A tie having a metal protecting-plate applied to and wholly covering its upper face, said plate being provided with downturned portions designed to engage the side faces of the tie, and fastening members entered through said downturned portions into the tie.

2. A tie, a protecting-plate applied to the upper face thereof and provided with longitudinally-extending downturned flanges bearing upon the side faces of the tie, and fastening members entered through said flanges into the tie.

3. A tie, a protecting-plate applied to the upper face thereof, means for securing the plate in place, fixed rail-engaging members provided on said plate, and removable rail-engaging members designed for coöperation with the first-named members to secure the rails in place.

4. A tie, a plate applied to the upper face thereof, a fixed rail-engaging member provided on said plate, a removable rail-engaging member designed for coöperation with the first-named member, and a fastening member entered through the tie and plate for securing the removable member in place.

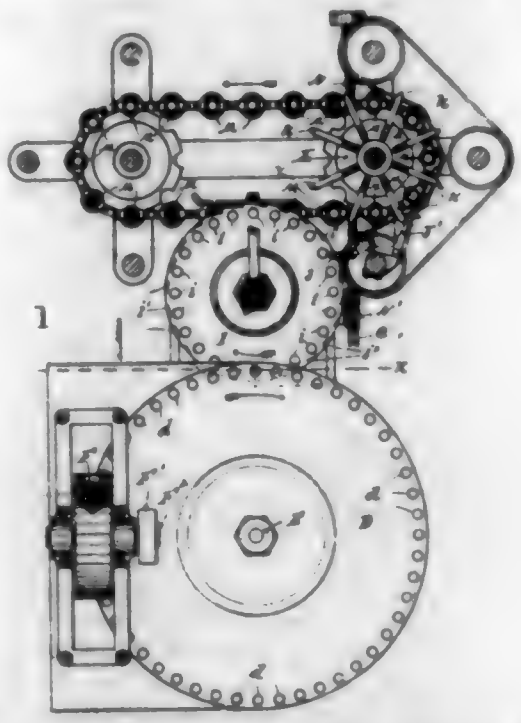
817,120. DISH-DRYING DEVICE. ASBURY S. KING, Lancaster, Pa. Filed Sept. 13, 1905. Serial No. 278,269.



Claim.—1. In a device of the character described, the combination with a tray, of a plurality of spring-bars arranged in pairs and secured to said tray, said bars having flanges located at the ends thereof which form closures for the ends of the compartments formed between said bars.

2. In a device of the character described, the combination with a tray, of a plurality of bars having horizontal flanges secured to said tray and having upstanding spring portions adapted to receive dishes therebetween, said bars having flanges located at the ends thereof which close the ends of the compartments formed between said bars.

817,121. BUTTON-BLANK GRINDING AND FEEDING MACHINE. WARREN E. KNOTT, Erie, Pa., assignor of one-fourth to Clara Walker, Erie, Pa. Filed Mar. 20, 1905. Serial No. 251,060.



Claim.—1. The combination in a button-blank-feeding machine, of mechanism for finishing the backs of button-blanks, mechanism for moving button-blanks to and past said finishing mechanism, receiving and delivering mechanism adapted to receive and deliver button-blanks into the open chucks of an associate button-finishing machine with their finished backs down, and actuating mechanism adapted to operate the said mechanisms synchronically with each other and with the chucks of an associate button-finishing machine, substantially as set forth.

2. In a button grinding and feeding machine, a horizontal table a ledge at one side thereof, a horizontal disk revoluble on the top of said table having button-blank openings therethrough operating to

move button-blanks over the edge of said ledge whereby they are turned over, and mechanism below the ledge to receive the turned-over button-blanks and move them into chucks of an associate button-finishing machine, substantially as set forth.

3. In a button-blank grinding and feeding machine, a horizontal table, a horizontal disk revolving thereon having button-blank openings therethrough, a second horizontal table extending under the edge of the first-named table, a horizontal disk having button-blank openings therethrough revolving thereon with one edge thereof extending under the edge of the disk revolving upon the first-named table, substantially as set forth.

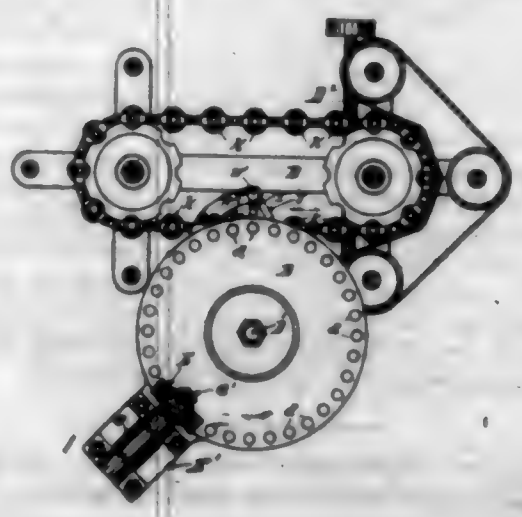
4. In a button-blank-feeding machine, a horizontal table, a ledge at one edge thereof, a horizontal disk revoluble on the top of said table having button-blank openings therethrough and operating to move button-blanks over the edge of said ledge whereby they are turned over, mechanism below the ledge to receive the turned-over button-blanks and carry them to the chucks of a button-machine, substantially as set forth.

5. In a button-blank grinding and feeding machine, a horizontal table, a horizontal disk rotatable on said table having button-blank openings therethrough, a grinding mechanism operating over the upper surface of said rotatable disk and upon the upper surfaces of button-blanks placed in the openings therein as they pass under the grinding mechanism, a ledge at one edge of the table over the edge of which the button-blanks are carried by said disk after being faced off on their upper surfaces, and whereby the button-blanks are turned over as they pass off of the edge of the ledge, and mechanism to receive the turned-over button-blanks and deliver them to chucks of a button-machine, and mechanism adapted to operate said mechanisms in synchronism with each other and with the chucks of an associate button-finishing machine, substantially as set forth.

6. In a button-blank grinding and feeding machine, a horizontal table, a ledge at one edge thereof, a horizontal disk revolving thereon having button-blank openings therethrough means for vertically adjusting said table and disk, a grinding-wheel operating over one side of and adjacent to the upper surface of said disk, means for continuously rotating said disk, a second horizontal table one edge of which extends under one edge of the first-named table, a horizontal disk having button-blank openings therethrough intermittently revolving thereon in the same direction as the first-named disk and extending under the edge thereof so that the button-blank openings in both disks will coincide at one point, and mechanism for intermittently operating said second-named disk synchronically with the first-named disk, substantially as set forth.

7. In a button-blank grinding and feeding machine, a horizontal table cut away at one side so as to leave a ledge projecting from the upper surface thereof, a horizontal disk revolving thereon and extending over the part of the table cut away and having button-blank openings around the same near the edge thereof, mechanism for continuously revolving said disk, a second horizontal table, one edge of which extends under the ledge on the first-named table, a horizontal disk having button-blank openings therethrough intermittently revolving thereon in the same direction as the first-named disk and extending under the ledge on the first-named table so that the holes in the two disks will coincide at that point, and means for intermittently rotating said second-named disk synchronically with the first-named disk, substantially as set forth.

817,122. BUTTON-BLANK GRINDING AND FEEDING MACHINE. WARREN E. KNOTT, Erie, Pa., assignor of one-fourth to Clara Walker, Erie, Pa. Filed Apr. 10, 1905. Serial No. 254,777.



Claim.—1. In a button-blank grinding and feeding machine, a horizontal table, a ledge at one edge thereof, a horizontal disk revoluble on the top of said table having button-blank openings therethrough operating to move button-blanks over the edge of said ledge whereby they are turned over, a plate below said ledge to receive the turned-over button-blanks, and reciprocating mechanism to move said turned-over button-blanks from said plate into the chucks of an associated button-machine as said chucks pass under said plate, and means for operating said reciprocating mechanism, substantially as set forth.

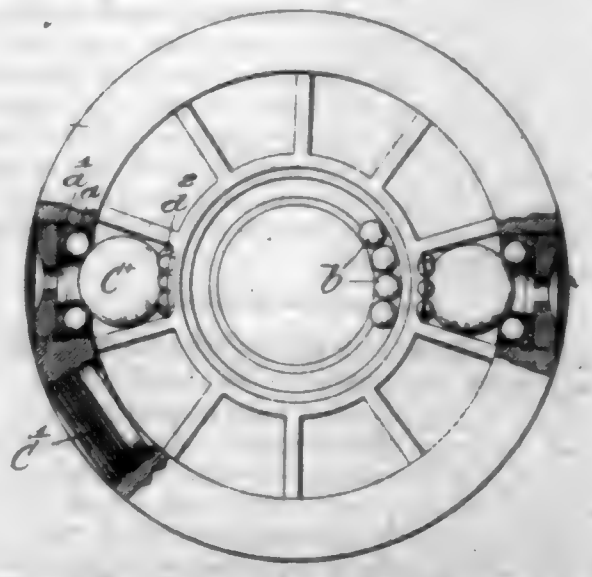
2. In a button-blank grinding and feeding machine, a horizontal table, a horizontal rotative disk on the top of said table having button-blank openings therethrough, a grinding mechanism adapted to grind the upper surfaces of button-blanks placed in the openings in said disk, a ledge at one side of said table over the edge of which button-blanks are carried by said disk after they pass under the grinding mechanism, whereby the button-blanks are turned over bottom side up, a fixed plate under said ledge upon which the turned-over button-blanks fall, and a reciprocating plate having an opening therethrough to receive the turned-over button-blanks as they fall from the table-ledge into the opening in said reciprocating plate, and upon said fixed plate, and means for operating said reciprocating plate forward and back to carry the button-blanks, received into the opening therethrough, off of the edge of said fixed plate, substantially as set forth.

817,123. ICE-PITCHER. JOSEPH KRAKAUER, New York, N. Y. Filed Sept. 16, 1905. Serial No. 278,713.



Claim.—In a pitcher or the like, a liquid-holding receptacle having a pouring-lip, an integral ice-holding pocket formed within the same and situated so as to be surrounded by the liquid, said pocket having a contracted opening on the exterior wall of the pitcher at a point opposite said pouring-lip, and being inclined forwardly and downwardly, whereby the ice is retained therein.

817,124. BALL-BEARING. FRITZ LOEFFLER, New York, N. Y. Filed Aug. 19, 1903. Serial No. 169,965.



Claim.—1. In a thrust-bearing, a rotatable cage, a series of main balls therein, a series of ball-tracks in said cage, and a series of smaller balls in said ball-tracks contacting with said main balls.

2. In a thrust-bearing, a rotatable cage, a series of main balls therein, a series of ball-tracks in said cage, and a series of small balls in said ball-tracks contacting with said main balls, and means for adjusting said tracks.

3. In a thrust-bearing, a rotatable cage, a series of main balls therein having their peripheries exposed at the sides of said cage, plane-faced tracks meeting said main balls at a tangent and over

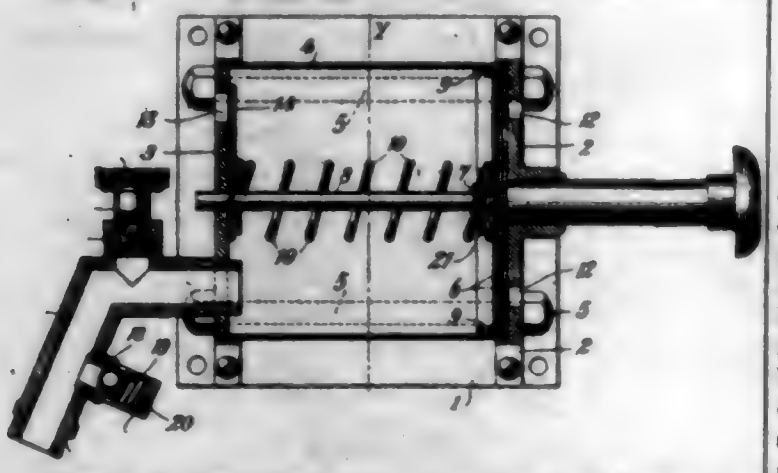
which said balls roll in the rotation of said cage, a series of ball-tracks located at the periphery of said cage and provided with balls contacting with said main balls and serving to resist the outward movement of said main balls with relation to said cage.

4. In a thrust-bearing, a rotatable cage, a series of main balls, a series of ball-tracks of different diameters and a series of balls in each of said ball-tracks, said balls contacting with said main balls, the balls in the track of least diameter being smaller than those in the larger track.

5. A thrust-bearing comprising a cage, a series of main balls, a series of ball-tracks, and a series of smaller balls in said ball-tracks and contacting with main balls, a series of balls located at the inner edge of said cage, and additional balls to sustain the weight of the cage and prevent the weight of said cage from being carried wholly by the balls in said ball-tracks.

6. A thrust-bearing comprising a cage, a series of main balls, a series of ball-tracks, and a series of smaller balls in said ball-tracks and contacting with main balls, two sets of ball-tracks and balls therein, said balls sustaining the main balls at opposite sides of a diameter through said main balls.

817,125. MEANS FOR BLOWING AUTOMOBILE-HORNS. GEORGE W. LORIMER, Piqua, Ohio. Filed Dec. 12, 1904. Serial No. 236,564.

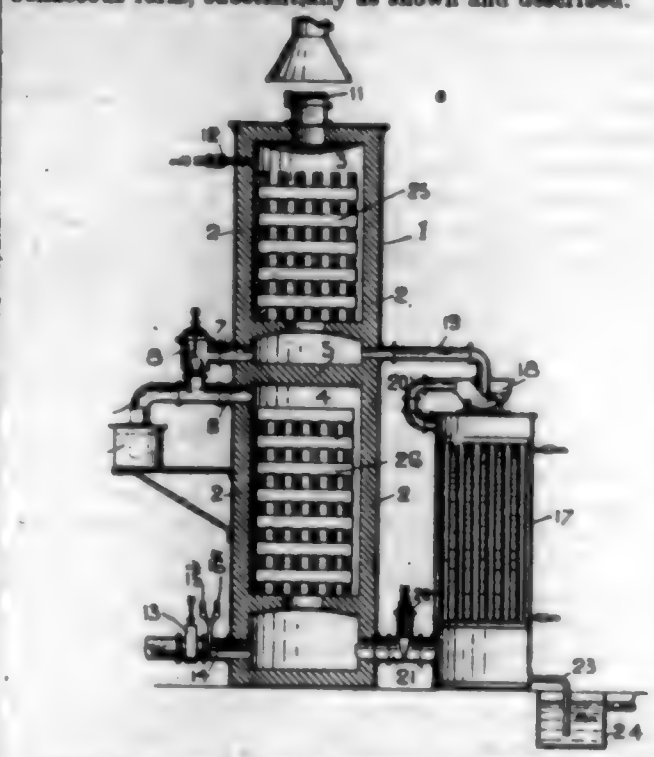


Claim.—An automobile-alarm embracing the following elements: an air-pump having a cylinder open at both ends; two heads therefor provided with longitudinal bolts adapted to secure said heads firmly against the ends of the cylinder, said heads being provided with legs or extensions for securing the pump in place; a piston located within the cylinder and secured at the approximate center of a plunger one end of which extends through one cylinder-head and constitutes operating means for the foot of the user, the other end thereof extending through the opposite cylinder-head; a spiral spring surrounding the latter portion of the plunger and resting one end against the cylinder-head and the other against the piston; an air-inlet in one cylinder-head and air-outlets in the other; in combination with a reed-horn connected to the cylinder by an outlet-pipe having a ball-valve seated in a valve-seat connected with the outlet-pipe and provided with adjustable means for varying the flow of air therethrough; together with a regulating-screw located also in the outlet-pipe, the arrangement being such that the reed of the horn will vibrate for sudden pressures of the piston and the loudness thereof may be regulated as desired.

817,126. METHOD OF MANUFACTURING GAS. LEON P. LOWE, San Francisco, Cal. Filed Mar. 4, 1902. Serial No. 96,622.

Claim.—1. The process of manufacturing gas, which consists in highly heating a mass of suitable refractory material, subsequently bringing into contact therewith suitable hydrocarbons and carbonaceous substances, preferably in the form of petroleum-oils, the heat being so great as to convert the same into a mixture of gases, solid carbonaceous substances and condensable hydrocarbon compounds, simultaneously admitting steam in sufficient quantity to combine with substantially the whole of said carbonaceous substances and form carbon monoxid and hydrogen, and subsequently recovering the fixed gases, and condensable compounds in their separate forms, substantially as described.

2. The process of manufacturing gas, which consists in highly heating a mass of refractory substance contained within a gas-generator, and subsequently bringing into contact with a portion thereof hydrocarbon vapors, subjecting the same to only a sufficient degree of heat to convert the vapors into fixed gases and condensable hydrocarbon substances, subsequently removing the condensable hydrocarbons and resubjecting the remaining gases to a degree of heat sufficient for breaking down a portion of same into solid carbonaceous form, substantially as shown and described.



3. The process of manufacturing gas, which consists in highly heating a mass of refractory substance contained within a gas-generator, and subsequently bringing into contact with a portion thereof hydrocarbon vapors, subjecting the same to only a sufficient degree of heat to convert the vapors into fixed gases and condensable hydrocarbon substances, subsequently removing the condensable hydrocarbons and resubjecting the remaining gases to a degree of heat sufficient for breaking down a portion of same into solid carbonaceous form, simultaneously admitting steam for the purpose of decomposing same in contact with the solid carbons formed as described, and mingling the water and oil gases formed, substantially as shown and described.

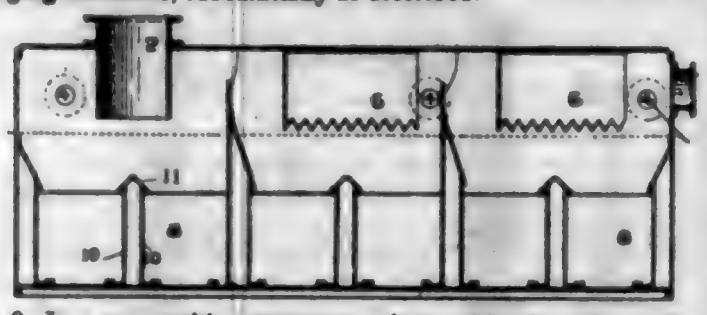
4. The process of manufacturing gas, which consists in highly heating masses of refractory substances contained within a gas-generator and subsequently bringing hydrocarbon vapors into contact with a portion thereof at its coolest part, passing the vapors downward over the heated refractory substances in a direction opposite to that in which it was heated, converting the vapors into fixed gases and condensable hydrocarbons, subsequently removing the condensable hydrocarbons and resubjecting the gas to a high degree of heat by bringing it into contact with the surfaces of a portion of the said refractory substances by passing over same in the direction in which it was heated, thus breaking down a portion of the heavy hydrocarbons of the gas into solid carbonaceous form, substantially as shown and described.

5. The process of manufacturing gas, which consists in highly heating masses of refractory substances contained within a gas-generator and subsequently bringing hydrocarbon vapors into contact with a portion thereof at its coolest part, passing the vapors downward over the heated refractory substances in a direction opposite to that in which it was heated, converting the vapors into fixed gases and condensable hydrocarbons, subsequently removing the condensable hydrocarbons and resubjecting the gas to a high degree of heat by bringing it into contact with the surfaces of a portion of the said refractory substances by passing over same in the direction in which it was heated, thus breaking down a portion of the heavy hydrocarbons of the gas into solid carbonaceous form, simultaneously admitting steam for the purpose of effecting its decomposition in contact with the solid carbon formed, as described, mingling the water and the oil gases formed, substantially as shown and described.

6. The process of manufacturing gas which consists in highly heating two masses of refractory material by passing hot gases in succession therethrough, then passing fluid hydrocarbon through the masses of refractory material last heated, condensing the heavy vapors therefrom, commingling the gas, so freed, with steam, and passing the mixed steam and gas through the other mass of refractory material in the same direction as the heating thereof.

817,127. GAS-WASHING DEVICE. LEON P. LOWE, San Francisco, Cal. Filed May 17, 1904. Serial No. 208,343.

Claim.—1. In a gas-washing apparatus, the combination of a casing, means for washing gas therein, and removable boxes in said casing for the tarry residues, partitions between the boxes and overhanging deflectors, substantially as described.

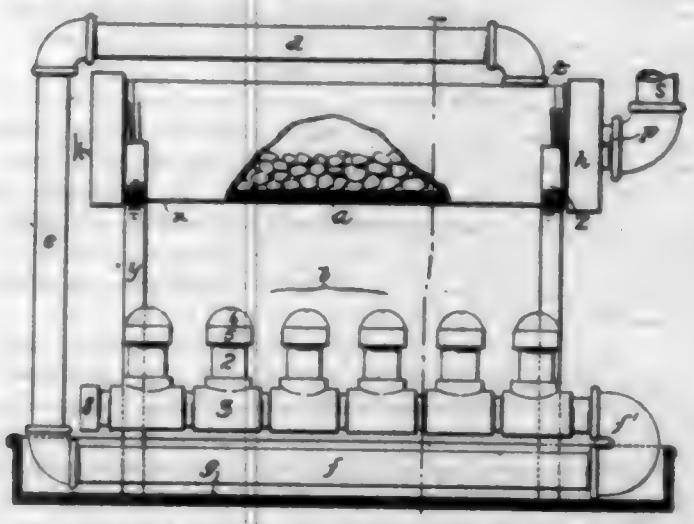


2. In a gas-washing apparatus, the combination of a casing, means for washing gas therein, and removable boxes in said casing for the tarry residues, double walls between the boxes and overhanging deflectors over the walls, substantially as described.

3. In a gas-washing apparatus, the combination of the casing, the transverse partitions extending upward from the bottom thereof, the washer-plates extending downward to a level below the top of the partitions, the casing having openings in the sides between the partitions, and the removable boxes arranged to be passed through said openings, substantially as described.

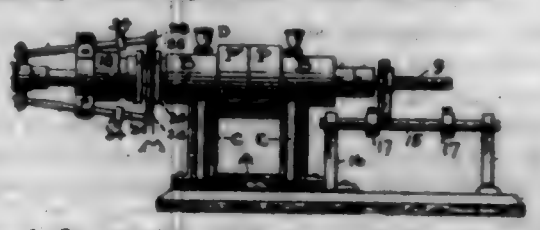
4. In a gas-washing apparatus, the combination of the casing, the transverse partitions extending upward from the bottom of the casing, the washer-plates extending downward to a level below the top of said partitions, the double transverse walls between the partitions, the copings for said walls, and the boxes inserted between said walls and partitions through openings in the side of the casing, substantially as described.

817,128. OIL-BURNER. MICHAEL H. MACRATH, San Francisco, Cal., assignor to himself and John A. Toomey, trustees, San Francisco, Cal. Filed Sept. 20, 1904. Serial No. 225,228.



Claim.—A hydrocarbon-burner consisting of a gas-generating cylinder containing a mass of refractory material and having open ends, removable caps for said ends, an inlet in one cap for coupling an oil-feeding pipe to the cylinder, an outlet from the generating-space in the cylinder above the refractory material, a gas-conducting pipe extending from the outlet longitudinally of and over the cylinder, thence downwardly, thence in a horizontal portion standing below said cylinder, a burner-tube connected by an elbow with said horizontal portion and standing above and parallel with it, and a plurality of burners in said tube, each comprising a T-joint coupling threaded internally in its arms, a removable cap with an aperture, and a pillar connecting said cap with the stem of said T-joint, as and for the purpose described.

817,129. BOTTLE-CAPPING MACHINE. SAMUEL C. MILLER, Louisville, Ky. Filed Aug. 8, 1904. Serial No. 219,890.



Claim.—1. In a machine of the type set forth, a hollow spindle, a chuck-sleeve thereon capable of rotary and longitudinal movement and provided with a double collar, links having one end attached to said collar, a chuck mounted on said spindle, arms supported by said chuck, spinning-rollers on said arms, the opposite ends of said links being attached to said arms, and means for revolving said spindle.

2. In a machine of the type set forth, a hollow spindle and bearings therefor, a chuck secured to the forward end of said spindle, and being formed with a shoulder, a chuck-sleeve movably mounted on said spindle and between said shoulder and one of the spindle-bearings, arms pivoted to said chuck and carrying spinning-rollers at their outer ends, connections between the inner ends of said arms and said chuck-sleeve, and means for rotating said spindle.

3. In combination with a spindle, a chuck thereon, a chuck-sleeve on the spindle capable of rotary and longitudinal movement, arms pivoted to the chuck and carrying spinning-rollers, means for rotating said spindle, means connecting said arms to said chuck-sleeve, and counterweights on said arms between their fulcrum-points and their connection with said chuck-sleeve.

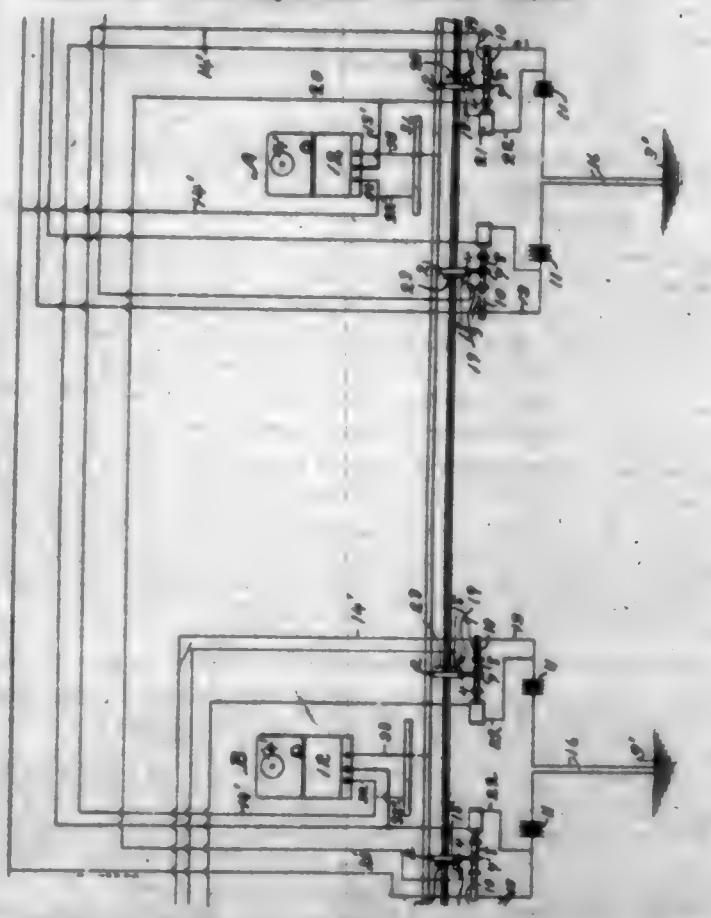
4. In combination with a spindle, a chuck secured thereto, and formed with a shoulder, a chuck-sleeve on said spindle and having its outward movement restricted by said shoulder, counterweighted arms pivoted to said chuck intermediate their ends, spinning-rollers on the front end of said arms, links pivoted to the rear ends of said arms and to said sleeve, and means for rotating said spindle.

817,130. SUBMARINE BOAT. MICHEL NALETOFF, St. Petersburg, Russia. Filed Aug. 23, 1905. Serial No. 275,250.



Claim.—A submarine boat having the external shape of a geometrical solid traced out in revolution and similar to a cigar and pointed at both ends in combination with a superstructure placed on the front part of the solid and having a deck which in plan somewhat resembles the solid, while the sides of the superstructure lead to the surface of the solid by means of curved surfaces, the center of gravity of the whole being on the front side of the middle.

817,131. AUTOMATIC RAILWAY-SIGNAL. JOHN NEUMAIER, Milwaukee, Wis., assignor of three-fourths to George L. Baldauf, Milwaukee, Wis. Filed July 8, 1905. Serial No. 268,791.



Claim.—1. In an automatic electric signal system for railways, the combination with each of the several stations along the railway, of two electric switches, one located upon the respective sides of each station in close proximity to the track of the railway, each provided with a contact-bearing adapted to be actuated by the wheels of a passing train; means connected with one of the switches upon one side of any given station for closing an electric circuit through said

switch; a battery and a signal located in the next succeeding station along the line, whereby a signal will be given in such station, of an approaching train; and means connected with the electric switch upon the other side of such first-named station for closing an electric circuit through said switch; a battery and a signal located in the preceding station, whereby as a train passes the two switches of any given station, a signal will be communicated both to the next succeeding station ahead of such approaching train and back to the preceding station, giving notice that the track is clear, from such preceding station.

2. In an automatic electric signal system for railways, an electric switch mechanism comprising a water-tight receptacle located below the track, provided with an insulating-lining; an electromagnet located within and insulated from said receptacle; an electric switch-bar, one end of which is normally retained in close proximity to said electromagnet; electric terminals located in close proximity to the opposite end of said switch-bar; a contact-arm pivotally supported at one end from said receptacle in close proximity to the track of a railway; an arm-supporting shaft revolubly supported from the walls of said receptacle, one end of said shaft being extended through the walls of said receptacle and connected with said contact-arm; means for yieldingly retaining said contact-arm in a vertical position preparatory to being inclined in either direction by contact of the wheels of a passing train; a switch-actuating arm suspended from the inner end of said shaft in connection with said switch-bar; electric conductors communicating with the terminals at one end of said switch-bar for closing an electric circuit with a signal at a station upon one side of said switch mechanism and electric conductors connected with the switch-actuating arm for closing an electric circuit with a station upon the other side of said switch mechanism, substantially as set forth.

3. In an automatic electric signal system of the class described, the combination with a railway-track, of an electric switch adapted to receive its initial action from the wheels of a passing train; electric signals located in the railway-stations upon the respective sides of said switch mechanism; electric conductors communicating between said switch mechanism and said signals; electric signals located in the locomotives upon the railway-tracks of said system; contact-rails in the electric circuit connected through suitable conductors with said switch mechanism and one pole of an electric battery; electric conductors communicating between said electric signal in the locomotive including the axle, and wheels of the locomotive, the track and wire or ground circuits with the other pole of the battery and an electric conductor communicating with said signal, which conductor is adapted to be brought in connection with said contact-rails as the locomotive is passing the same, whereby the electric circuit between the battery and said signal will be closed and the signal in the locomotive actuated as the same is passing said contact-rails, substantially as specified.

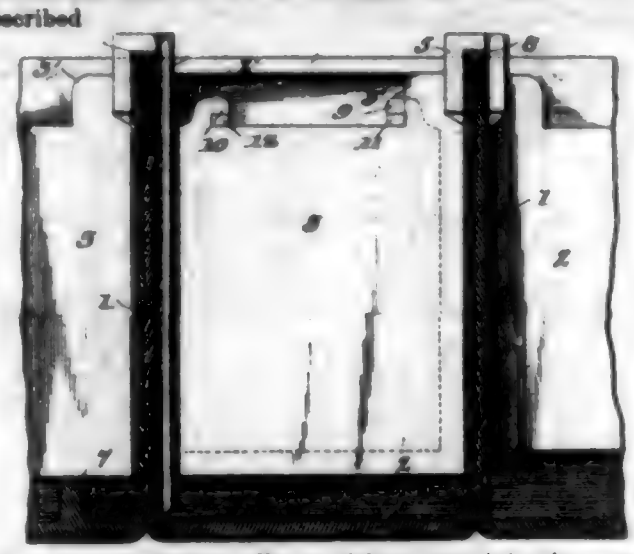
4. In a railway signal system, the means herein described for simultaneously setting the air-brakes and actuating the signal in a locomotive comprising a winding-drum, a drum-actuating weight; a flexible connection for suspending such weight from the drum; an electromagnet; an armature slidably supported in close proximity to said electromagnet; a drum-retaining pawl connected with said armature; an air-controlling valve; means for actuating said valve from said weight-actuated drum; an electric generator; electric conductors communicating between said generator and said electromagnet and means for automatically closing the electric circuit between said generator and electromagnet, whereby the same electric current which is used to actuate the signal in the locomotive at a distance may also cause the air-brakes to be simultaneously actuated, substantially as, and for the purpose specified.

817,132. STORAGE BATTERY. WILLIAM H. PALMER, JR., New York, N. Y. Filed Feb. 14, 1905. Serial No. 245,605.

Claim.—1. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, the two groups supported from opposite ends of the jar, and means at the upper edges of the plates constructed to provide additional mutual supporting means, substantially as described.

2. A storage-battery cell comprising a containing jar, a series of positive and negative plates alternately disposed therein, the two groups supported from opposite ends of the jar, a hooked lug on the upper edge of each plate and a bar resting on the plates beneath said hooked lugs.

3. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately arranged therein, the two groups supported from opposite ends of the jar, a hooked lug on the upper edge of each plate near its free end and a bar resting on the plates beneath each of the series of lugs thus formed, substantially as described



4. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, means for supporting the plates of each group independently of the other, and means for securing additional support for each group by the other group, substantially as described.

5. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, means at one end of the group of positive plates and at the opposite end of the group of negative plates for supporting each group independently of the other and means at the free ends of the plates of each group for securing mutual support, substantially as described.

6. In a storage-battery cell comprising a containing-jar, and a plurality of positive and negative plates alternately disposed therein, means at one end of the group of positive plates and at the opposite end of the group of negative plates for suspending each group independently of the other and means at the free ends of the plates of the positive group adapted to cause them to be further supported by the negative group, substantially as described.

7. In a storage-battery cell comprising a containing-jar and a series of positive and negative plates alternately disposed therein, means for connecting and suspending the positive plates consisting of a combined connecting and suspending strap attached to said positive plates at their upper edges and constructed to rest upon and be supported by the wall of the containing-jar and a cover constructed to fit against the said strap and secure it in position, substantially as described.

8. A series of storage-battery cells, each comprising a containing-jar and a series of positive and negative plates alternately disposed therein, combined connecting and supporting straps between the group of positive plates in one cell and the group of negative plates in an adjacent cell, and a distance-piece or brace between each pair of straps, substantially as described.

9. A series of two or more storage-battery cells each comprising a containing-jar and a plurality of positive and negative plates alternately disposed therein; a combined connecting and suspending strap constructed to rest upon the end walls of two adjacent jars and the positive plates in the one jar and the negative plates in the adjacent jar attached to and suspended from the said strap by their respective upper edges and means for securing an even bearing for the said strap between it and the jar-walls, substantially as described.

10. In a series of two or more storage-battery cells each comprising a containing-jar and a plurality of positive and negative plates alternately disposed therein; a combined connecting and suspending strap constructed to rest upon the end walls of two adjacent jars and the positive plates in the one jar and the negative plates in the adjacent jar attached to and suspended from the said strap by their respective upper edges and a pad of yielding material for forming an even bearing for said strap between the said strap and the jar-walls, substantially as described.

11. A storage-battery cell comprising a containing-jar, a series of plates of opposite polarity alternately arranged therein, the side edges of the plates of one polarity being staggered with relation to the side edges of the plates of the other polarity, means of supporting each group of plates from opposite ends of the jar, a hooked lug on the upper edge of each plate, and a bar resting across the plates beneath each of the series of hooked lugs thus formed, substantially as described.

12. A storage-battery cell comprising a containing-jar, a series

of positive and negative plates alternately arranged therein, both the bottom and side edges of the plates of one polarity being staggered with relation to the corresponding edges of the plates of the other polarity, means for supporting each group of plates from opposite ends of the jar, a hooked lug on the upper edge of each plate, and a bar resting across the plates beneath each of the series of hooked lugs thus formed, substantially as described.

13. A storage-battery cell comprising a containing-jar, a series of plates of opposite polarity alternately arranged therein, the side edges of the plates of one polarity being staggered with relation to the corresponding edges of the plates of the other polarity, a combined connecting and supporting strap for the positive plates at one end of the jar, a combined connecting and supporting strap for the negative plates at the other end of the jar, means at the free ends of the plates for mutually supporting each other, the length of each plate being equal to the length of the jar, minus the thickness of one strap and minus a suitable clearance, substantially as described.

14. A storage-battery cell comprising a containing-jar, a series of plates of opposite polarity alternately arranged therein, both the side and bottom edges of the plates of one polarity being staggered with relation to the corresponding edges of the plates of the other polarity, a combined connecting and supporting strap for the positive plates at one end of the jar, a combined connecting and supporting strap for the negative plates at the other end of the jar, means at the free ends of the plates for mutually supporting each other, the length of each plate being equal to the length of the jar minus the thickness of one strap and minus a suitable clearance, substantially as described.

15. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, the side edges of the positive plates being staggered with relation to the corresponding edges of the negative plates, a connecting-strap for the negative plates at one end of the jar, a combined connecting and supporting strap for the positive plates at the other end of the jar to which the positive plates are connected by their upper edges constituting suspending means for said positive plates, and the length of each plate equal to the length of the jar, minus the thickness of one strap and minus a suitable clearance, substantially as described.

16. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, both the side and bottom edges of the negative plates being staggered with relation to the corresponding edges of the positive plates, a connecting-strap for the negative plates at one end of the jar, a combined connecting and supporting strap for the positive plates at the other end of the jar to which the positive plates are connected by their upper edges constituting suspending means for said positive plates, and the length of each plate equal to the length of the jar minus the thickness of one strap and minus a suitable clearance, substantially as described.

17. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, the side edges of the positive plates being staggered with relation to the corresponding edges of the negative plates, a connecting-strap for the negative plates at one end of the jar, a combined connecting and supporting strap for the positive plates at the other end of the jar constituting suspending means for said positive plates, a hooked lug on the free ends of each positive plate engaging with a bar placed across the negative plates, the length of each plate being equal to the length of the jar minus the thickness of one strap and minus a suitable clearance, substantially as described.

18. A storage-battery cell comprising a containing-jar, a series of positive and negative plates alternately disposed therein, both the bottom and side edges of the positive plates being staggered with relation to the corresponding edges of the negative plates, a connecting-strap for the negative plates at one end of the jar, a combined connecting and supporting strap for the positive plates at the other end of the jar constituting suspending means for said positive plates, a hooked lug on the free end of each positive plate engaging with a bar placed across the negative plates, the length of each plate being equal to the length of the jar minus the thickness of one strap and minus a suitable clearance, substantially as described.

19. A series of two or more storage-battery cells each comprising a containing-jar and a plurality of positive and negative plates alternately disposed therein; means for connecting and suspending the negative plates in one cell and the positive plates in an adjacent cell consisting of a combined connecting and suspending strap constructed to rest upon the end walls of the jars and attached to and suspending the said negative plates in the one jar and the said positive plates in the adjacent jar by their respective upper edges, substantially as described.

817,133. HELICAL SPRING. ROBERT SIBLEY, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Original application filed May 28, 1903. Serial No. 159,672. Divided and this application filed Jan. 3, 1906. Serial No. 294,410.



Claim.—1. A helical spring comprising a plurality of convolutions of which no two adjacent convolutions are concentric.

2. A helical spring comprising a plurality of convolutions the locus of the centers of curvature of which constitutes a helix.

3. A helical spring comprising a plurality of convolutions all adjacent convolutions of which are displaced laterally with respect to each other.

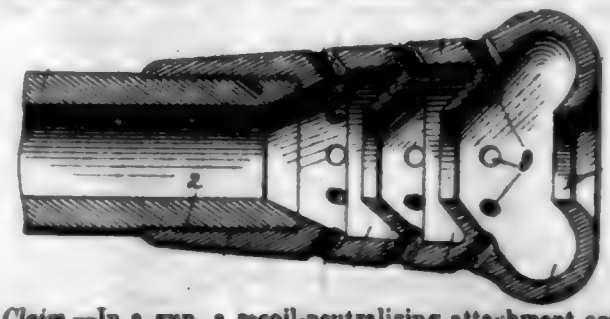
4. A helical spring having a plurality of mutually eccentric convolutions.

5. A spring-cylinder comprising a series of convolutions that are uniformly spaced apart and at least a portion of which are mutually eccentric.

6. A helical spring the adjacent turns of which are relatively displaced, in combination with an inclosing and an inclosed cylinder with which the spring makes contact along three lines substantially one hundred and twenty degrees apart.

7. A helical spring having its adjacent convolutions laterally displaced and having interior and exterior bearing-points along lines that are substantially one hundred and twenty degrees apart.

817,134. GUN. MORRIS F. SMITH, Philadelphia, Pa., assignor of three-fourths to William Davidson Condit, Des Moines, Iowa. Original application filed Feb. 21, 1903. Serial No. 144,547. Divided and this application filed Nov. 5, 1903. Serial No. 179,957.



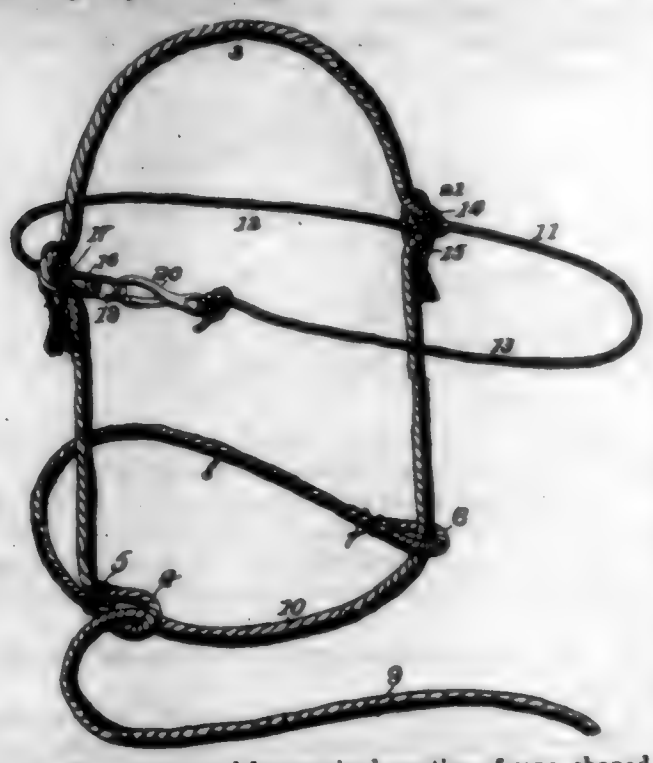
Claim.—In a gun, a recoil-neutralizing attachment consisting of a cap adapted for attachment to the forward end of the gun, and contructed with a central bore intersecting chambers increasing in size toward the outer end, and formed with inclined walls and rearwardly-inclined discharge-openings.

817,135. HALTER. WILLIAM J. SNOUER, Cedar Rapids, Iowa. Filed June 13, 1905. Serial No. 265,015.

Claim.—1. A halter constructed of an integral section of rope, and shaped to form cheek portions and an intermediately-disposed crown-strap, one of said cheek portions being provided with a continuation which serves as a halter-rope, and the other of said cheek portions being provided with a continuation which serves to form a nose-loop, and which embraces the continuation carried by said first-named cheek portion, and a brow-strap and throat-piece formed of an integral section of rope, adjustably carried by said halter at a point adjacent the junction of said crown-strap and cheek portions and means embracing said cheek portions and said brow-strap and throat-piece for holding the latter at adjusted positions.

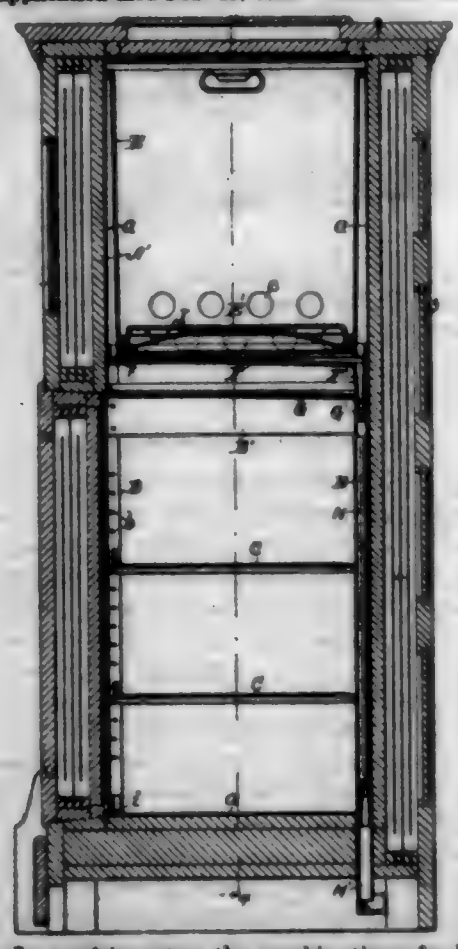
2. A halter constructed of an integral section of rope, shaped to form cheek portions and an intermediately-disposed crown-strap, a continuation carried by one of said cheek portions which serves as a halter-rope, and a continuation carried by the other cheek portion, and looped around said first-named cheek portion, which is shaped to form a nose-loop, and a brow-strap and throat-piece formed from an integral section of rope, and adjustably secured to said cheek portions at the junction of said crown-strap, said brow-strap and

throat-piece being looped about said cheek portions and being held in position by looped fastenings.



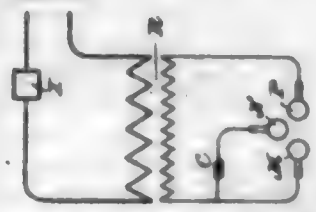
3. A halter constructed from a single section of rope, shaped to form cheek portions and an intermediately-disposed crown-strap, a continuation carried by one of said cheek portions, serving as the halter-rope, and a continuation carried by the other cheek portion and loosely embracing said first-named cheek portion, and shaped to form a nose-loop, and a brow-strap and throat-piece formed from an integral section of rope, and having their free ends detachably connected, said brow-strap and throat-piece being adjustably secured upon said cheek portions at a point adjacent to the junction of the crown-strap therewith, and looped fastenings embracing said cheek portions, and said brow-strap and throat-piece.

817,186. **REFRIGERATOR.** GEORGE W. WALLICK, Sturgis, Mich. Original application filed Nov. 6, 1902, Serial No. 130,274. Divided and this application filed Feb. 19, 1903. Serial No. 144,068.



Claim.—In a refrigerator, the combination of a box-like structure; removable interior standards retained at their bottoms by suitable pins; detachable shelves on the said standards; cross-bars coupling the tops of said standards together in pairs forming ledges for the drip-trays; an ice-pan supported on said standards, all constituting for the purpose specified.

817,187. **APPARATUS FOR PRODUCING ELECTRIC WAVES.** ALESSANDRO ARTOM, Turin, Italy. Original application filed Jan. 3, 1903, Serial No. 137,992. Divided and this application filed July 6, 1904. Serial No. 215,519.



Claim.—1. The combination with means to produce electrical current; of two discharge-terminals supplied with current therefrom and a third discharge-terminal arranged with respect to the other two at the vertex of a triangle, means to electrically connect said terminal in parallel with one of the other terminals and means to produce capacity in the electrical connection of the third terminal.

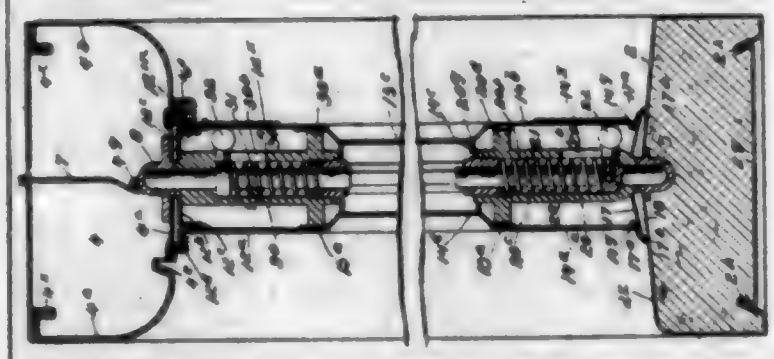
2. The combination with means for producing two oscillations out of phase; of discharge-terminals each of which is electrically connected to said means and supplied with current differing in phase from that in the other terminals, substantially as described.

3. The combination with means for producing three-phase current; of discharge-terminals arranged at the vertices of a triangle and means to supply the discharge-terminals at each vertex with current of different phase, substantially as described.

4. The combination with means to produce electrical current; of two discharge-terminals electrically connected thereto and a third discharge-terminal arranged at the vertex of a right isosceles triangle and electrically connected in parallel with one of the other terminals, and means to throw the current therein out of phase, substantially as described.

5. The combination with three discharge-terminals; of means to supply each with current differing in phase from that in the others, and aerial conductors connected thereto and disposed at right angles to each other, substantially as described.

817,188. **FIREPROOF WINDOW AND CASING.** PAUL F. BRANDSTEDT, Washington, D. C., assignor to American Standard Fire-Proofing Co., Washington, D. C. Filed Mar. 24, 1904. Serial No. 199,717.



Claim.—1. A window construction of the character stated, comprising a casing having sill, top and side portions, said top, side and sill portions each being constructed of a plurality of separate sheet-metal parts securely interlocked with each other, said sides having grooved portions, a window mounted in said casing and including a frame, said window-frame having portions for coöperating with said grooved portions of the casing to interlock therewith when the window is closed, said window-frame having weather or sealing strips on its lower edges, and means for causing said strips to tightly engage the sill when the window is closed, said means including rollers carried by said strips and a ridge on the sill for coöperating therewith.

2. In a fireproof window construction, a sheet-metal casing comprising a sill portion, side portions and a top portion, said sill portion comprising a main body and a bottom closure-plate, said main body and closure-plate being interlocked with each other, and a cement filling for said sill, said side portions each being composed of three parts interlocked with each other and secured to the sill portion, said side portions each having a groove and a pocket, a washer held in said pocket, and a window pivotally mounted in said casing and having portions for coöperating with said grooves in the casing side portions, for the purposes specified.

3. In a fireproof window construction, a sheet-metal casing comprising a sill portion, side portions and a top portion, said sill portion comprising a main body and a bottom closure-plate for said body, said main body and closure-plate being interlocked with each

other to form a hollow chamber, and a cement filling for said chamber, said side portions each being composed of three parts interlocked with each other and secured to the sill, said top portion being composed of a top plate, side plates and the bottom plate, said top, side and bottom plates of the top portion being interlocked with each other and said side plates of the top portion being secured to the frame sides, a stiffener-rib for said top portion, said side portions each having a groove and a pocket, a packing held in said pocket, said top having grooved portions, a window pivotally mounted on said sill and top in the casing, said window having flange portions for coöperating with the groove in the casing sides, and flange portions for coöperating with the groove in the casing-top at predetermined times, for the purposes specified.

4. A window construction of the character stated, comprising a sheet-metal frame comprising a sill portion, a top and side portions, said sill portion having a ridge, said side portions each having a groove, said top having a pair of grooves on its under side, and a third groove near the outer edge of its under face, a window including a sheet-metal frame fulcrumed midway its sides to the sill and top portions of the casing, and adapted to be turned at right angles to said casing, said window-frame side portions including strips for entering the groove in the casing side portions when the window is closed, and said frame top portion including flanges for entering the first-mentioned pair of grooves in the casing-top when the window is closed.

5. A window construction of the character stated, comprising a sheet-metal frame including a sill portion, a top portion, and side portions, said sill portion having a ridge, said side portions each having a groove and a pocket, a washer or packing held in said pocket, said top having a pair of longitudinal grooves on its under side and a third longitudinal groove near the outer edge of its under face, a window including a sheet-metal frame fulcrumed midway its sides to the sill and top portions of the casing and adapted to be turned at right angles thereto in one direction only, said window-frame side portions including strips for entering the groove in the casing side portion when the window is closed, and said side portions adapted to abut the washer or packing held in the casing-pocket, said frame top portions including flanges for entering the first-mentioned pair of grooves in the casing-top when the window is closed.

6. In a window-casing including a sill portion, side portions and a top portion, said side portions each comprising interlocking sheet-metal stripe 3^b 3^c and a joining-plate 3^e interlocking with said stripe 3^b 3^c, said strip 3^b including a straight face 3^g and a face 3^m at right angles to the face 3^g, said strip 3^b including a groove 3^n, a window centrally fulcrumed in said casing and including a frame having projecting strips to enter the groove 3^n when the window is closed, for the purposes specified.

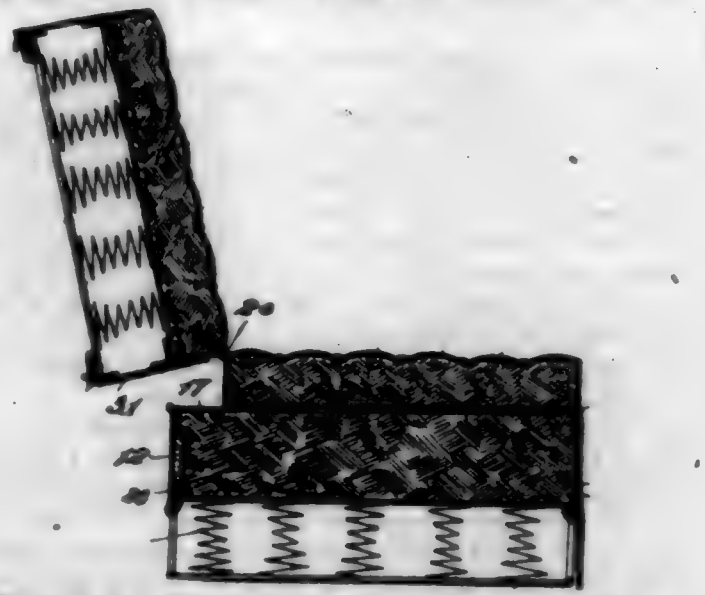
7. In a window construction, including a casing having a sill portion, side portions and a top portion, said side portions each comprising interlocking sheet-metal strips 3^b 3^c and a joining-plate 3^e interlocking with said stripe 3^b 3^c, said strip 3^b including a straight face 3^g and a face 3^m at right angles to the face 3^g, said strip 3^b including a groove 3^n and a pocket, a weather-strip packing held in said pocket with its free end projecting and overlapping the face 3^m, a window centrally fulcrumed in said casing and including the frame having projecting strips to enter the grooves 3^n when the window is closed, said top portion of the casing comprising the members 4^a 4^b, the bottom connecting member 4^c and the top connecting member 4^d, said members 4^a 4^b each being interlocked with the member 4^d and being interlocked with the member 4^c in such manner as to provide grooves and flange portions 4^f extending about half-way across the top and arranged diagonally opposite and parallel with each other, said member 4^a being provided with a groove 4^e, and said window-frame being provided with top flanges to coöperate with the groove and flange portions 4^f when the window is closed.

8. In a window construction, including a casing having a sill portion, side portions and a top portion, said side portions each comprising interlocking sheet-metal stripe 3^b 3^c and a joining-plate 3^e interlocking with said stripe 3^b 3^c, said strip 3^b including a straight face 3^g and a face 3^m at right angles to the face 3^g, said strip 3^b including a groove 3^n and a pocket, a weather-strip packing held with its free end projecting and overlapping the face 3^m, a window centrally fulcrumed in said casing and including a frame having projecting strips to enter the grooves 3^n when the window is closed, said top portion of the casing comprising the members 4^a 4^b, the bottom connecting member 4^c and the top connecting member 4^d, said members 4^a 4^b each being interlocked with the member 4^d and being interlocked with the member 4^c in such manner as to provide grooves and flange portions 4^f extending about half-way across the top and arranged diagonally opposite to and parallel with each other, said member 4^a being provided with a groove 4^e, and said window-frame being provided with top flanges to coöperate with the groove and flange portions 4^f when the window is closed, said portions 4^f serving as stops to limit the opening swing of the window.

9. In a fireproof construction for windows, a hollow casing comprising a sill portion, side walls and a top portion, each of which portions is separately composed of a plurality of sheet-metal parts having portions for interlocking with each other, a socket secured to said sill midway its ends and sides, a second socket likewise secured to the top and in alinement with the socket and sill, a window including a hollow frame, comprising the side, top, bottom, and intermediate sections, each of which sections is separately composed of a plurality of sheet-metal parts interlocked with each other and formed with glass-receiving portions, a socket mounted in the top and bottom of the window-frame midway the sides thereof, a spring-pressed bolt carried by each of said last-named sockets for projecting into the socket of the sill and casing-top to form a fulcrum for the window.

10. In a fireproof construction for windows, a hollow casing comprising a sill portion, side walls and a top portion, each of which portions is separately composed of a plurality of sheet-metal parts having portions for interlocking with each other, a socket secured to said sill midway its ends and sides, a second socket likewise secured to the top and in alinement with the socket and sill, a window including a hollow frame, comprising the side, top, bottom, and intermediate sections, each of which sections is separately composed of a plurality of sheet-metal parts interlocked with each other and formed with glass-receiving portions, a socket mounted in the top and bottom of the window-frame midway the sides thereof, a spring-pressed bolt carried by each of said last-named sockets for projecting into the socket of the sill and casing-top to form a fulcrum for the window, said window and said casing having interlocking longitudinal grooves adapted to interlock with each other when the window is closed, substantially as shown and described.

817,139. DAVENPORT-PAD. RUDOLPH COOPERSMITH, St. Louis, Mo. Filed Mar. 23, 1905. Serial No. 251,562.



Claim.—1. In a davenport-pad substantially as described, the combination of the rigid seat portion having a bed-surface, the back portion having a davenport-surface and movable into horizontal position in front of the seat portion, and the reversible portion having a davenport-surface upon one side and a bed-surface upon the other and hinged to the front edge of the seat portion and forming therefor the davenport-surface and to be folded over upon the back portion in front of the seat portion to coöperate with the seat portion to form the entire bed-surface, as set forth.

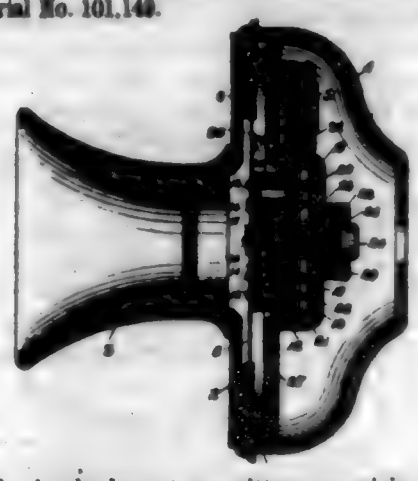
2. In a davenport-pad: a seat portion; a reversible portion hinged to the front edge of the seat portion, and adapted to lie upon the seat portion; and a back portion hinged at its lower edge to rear edge of the reversible portion.

3. In a davenport-pad: a seat portion; a reversible portion hinged at its front edge to the front edge of the seat portion; a back portion hinged at its lower edge to the rear edge of the reversible portion; and a flap extending from the front edge of the seat portion.

4. In a davenport-pad: a seat portion; a reversible portion hinged at its front edge to the front edge of the seat portion; a back portion hinged at its lower edge to the rear edge of the reversible portion, a flap extending from the lower edge and one from the upper edge of the back portion; and the hooks carried by the flaps.

5. In a davenport-pad, a seat portion, a reversible portion hinged at its front edge to the front edge of the seat portion, a back portion hinged at its lower edge to the rear edge of the reversible portion, flaps at the upper and lower edges of the back portion, and hooks carried by said flaps and by the front and rear edges of the seat portion.

817,140. TELEPHONE-TRANSMITTER. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Original application filed Jan. 27, 1902. Serial No. 91,456. Divided and this application filed Apr. 3, 1902. Serial No. 101,149.



Claim.—1. A telephone-transmitter comprising a flat main diaphragm, a ring secured to the back of said main diaphragm, a supplemental diaphragm secured to the back of said ring, said ring constituting a medium of non-yielding connection between the two diaphragms, a solid backing and non-yielding connection between said back and the middle portion of said supplemental diaphragm, front and back electrode-surfaces within the chamber provided between the two diaphragms, the front electrode-surface being movable with the main diaphragm, and the back electrode-surface being stationary and rigidly connected with said backing, and granular carbon interposed between said electrode-surfaces, substantially as described.

2. In a telephone-transmitter, the combination of a body or casing, a flat main diaphragm, a ring secured to the back of said main diaphragm, a supplemental diaphragm, suitable means for securing said supplemental diaphragm to the back of said ring, said ring constituting a medium of non-yielding connection between the two diaphragms, front and back carbon blocks secured respectively to the main and supplemental diaphragms, granular carbon interposed between said carbon blocks, a bridge back of all said diaphragms, and non-yielding connection between said bridge and said supplemental diaphragm, the front carbon block being vibratory with the main diaphragm, and the said back carbon block being stationary or rigid with the said bridge, substantially as described.

3. In a telephone-transmitter, the combination of a body or casing, a flat main diaphragm, a ring secured to the back of said diaphragm, a carbon block secured to said main diaphragm, a supplemental mica diaphragm secured to the back of said ring, the said ring constituting a medium of non-yielding connection between the two diaphragms, a carbon block secured to said supplemental diaphragm, granular carbon interposed between the two carbon blocks, a bridge, and a non-yielding connection between said bridge and said supplemental diaphragm, said first-mentioned carbon block being vibratory with the main diaphragm, and said last-mentioned carbon block being stationary or rigid with the said bridge, substantially as described.

4. A telephone-transmitter comprising a flat main diaphragm, an open non-flexible ring, a flexible auxiliary diaphragm, suitable means for securing the auxiliary diaphragm to one side of the ring to form a cup, the auxiliary diaphragm forming the bottom of the cup, oppositely-arranged electrodes secured to said diaphragms within the cup, granular carbon between the two electrodes, means for securing the main diaphragm to the said cup, and a bridge rigidly connected with the electrode associated with the auxiliary diaphragm, substantially as described.

5. In a telephone-transmitter, the combination of a suitable body or casing, a flat main diaphragm suitably secured to said casing, a hollow member having its open end projecting from the back of said diaphragm, said hollow member being rigid with the diaphragm, a supplemental diaphragm having its marginal portion secured around the perimeter of said member, the said member constituting medium of non-yielding connection between the two diaphragms, front and back electrodes, within the chamber provided by said member and supplemental diaphragm, the central portion of said main diaphragm constituting the front wall of said chamber, and the supplemental diaphragm the rear wall thereof, both electrodes being thereby adapted to have some movement or vibration relative to the said hollow member, granular carbon between said electrodes, a bridge back of said diaphragms, a non-yielding connection between said bridge and the middle portion of said supplemental diaphragm, the front electrode being rigidly connected to and vibratory with the main diaphragm, and the back electrode being stationary or rigid with said bridge.

817,141. NON-INFLAMMABLE PAINT AND VARNISH REMOVER. CARLETON ELLIS, New York, N. Y., assignor to Chadeloid Chemical Company, New York, N. Y., a Corporation of West Virginia. Original application filed Feb. 10, 1903. Serial No. 93,468. Divided and this application filed Dec. 2, 1904. Serial No. 235,206.

Claim.—1. An uninflammable paint-remover comprising a waxy body and an uninflammable mixture of volatile organic solvents.

2. An uninflammable paint-remover comprising a waxy body and a mixture of an uninflammable volatile solvent with inflammable volatile solvents of such nature and in such proportions as to give a predominant evaporative tendency to the former solvent.

3. An uninflammable paint-remover comprising a waxy body and a mixture of an uninflammable volatile solvent with other volatile solvents of not greater vapor tension.

4. An uninflammable paint-remover comprising a waxy body and a mixture of an uninflammable volatile solvent with other volatile solvents of less vapor tension.

5. An uninflammable paint-remover comprising a waxy body and a mixture of an uninflammable volatile solvent with a volatile solvent of approximately half its vapor tension.

6. An uninflammable paint-remover comprising not to exceed eight per cent. of a waxy body; an uninflammable volatile solvent and other solvents of such nature and in such proportions as to give a dominating evaporative tendency to the former solvent.

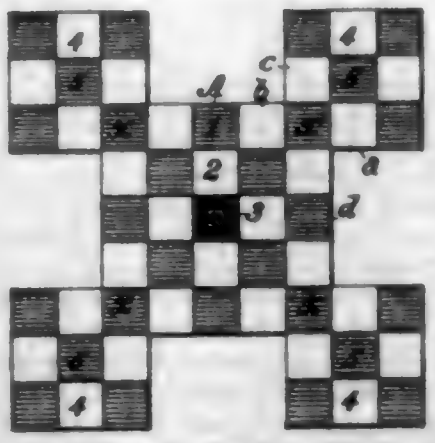
7. An uninflammable paint-remover, comprising not to exceed eight per cent. of a waxy body; carbon tetrachlorid in such proportions as to give a dominating vapor tension, and other solvents.

8. An uninflammable paint-remover comprising not to exceed eight per cent. of a waxy body; carbon tetrachlorid and grain-alcohol.

9. An uninflammable paint-remover comprising not to exceed eight per cent. of a waxy body, carbon tetrachlorid, grain-alcohol and amyl acetate.

10. An uninflammable paint-remover comprising two parts of a waxy body, fifteen parts of carbon tetrachlorid, ten parts grain-alcohol, and one part amyl acetate.

817,142. GAME-BOARD. HENRY W. FISHER, Pittsburg, Pa., assignor of one-half to Joseph W. Marsh, Pittsburg, Pa. Filed July 26, 1904. Serial No. 218,001.



Claim.—1. A game-board having in combination an equilateral main or central area divided into squares or spaces and wing or supplemental areas divided into squares or spaces, one or more of the corner squares or spaces of the main area forming a corresponding number of the squares or spaces of the wing areas or fields, the wing areas or fields having two or more rows of squares or spaces in each direction outside of the periphery of the main area, substantially as set forth.

2. A game-board having in combination an equilateral main or central area divided into squares or spaces and wings or supplemental areas divided into squares or spaces, the corner squares or spaces

of the main area forming a corner square or space of each of the wing areas or fields, substantially as set forth.

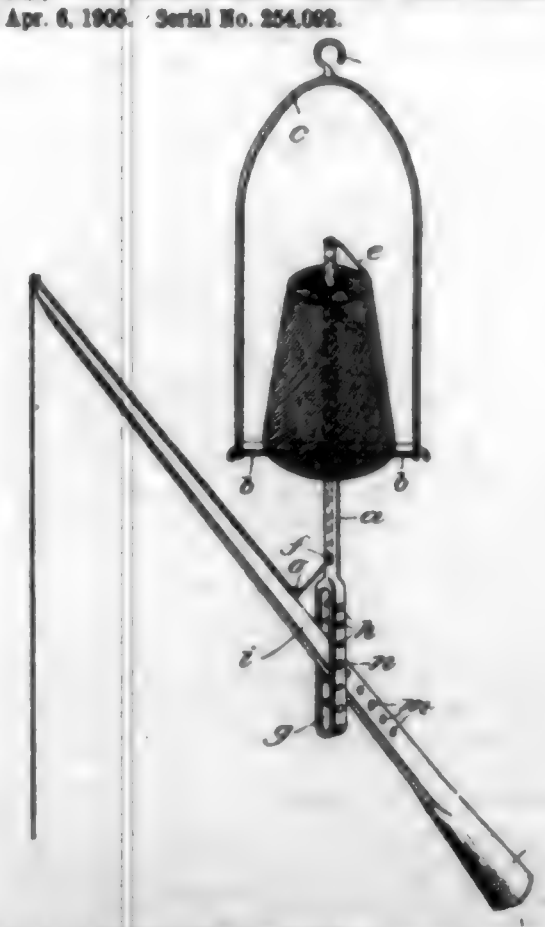
3. A game-board having in combination an equilateral main or central area divided into squares or spaces and wings or supplemental areas divided into squares or spaces, the corner squares or spaces of the main area forming a corner square or space of each of the wing areas, the wing areas having two or more rows of squares or spaces in each direction outside of the periphery of the main areas substantially as set forth.

4. A game-board having in combination a main or central area divided into squares or spaces and wing or supplemental areas divided into squares or spaces, one or more of the corner squares or spaces of the main area forming a corresponding number of the squares or spaces of the wing areas or fields, the wing areas having two or more rows of squares or spaces in each direction outside of the periphery of the main area.

5. A game-board having in combination a main or central area divided into squares or spaces and wings or supplemental areas divided into squares or spaces, the corner squares or spaces of the main areas forming a corner square or space of each of the wing areas or fields, substantially as set forth.

6. A game-board having in combination a main or central area divided into squares or spaces and wings or supplemental areas divided into squares or spaces, the corner squares or spaces of the main area forming a corner square or space of each of the wing areas, the wing areas having two or more rows of squares or spaces in each direction outside of the periphery of the main area, substantially as set forth.

817,143. **TWINE-HOLDER.** OSCAR S. GAGE, Tecumseh, Okla. Filed Apr. 6, 1905. Serial No. 254,092.



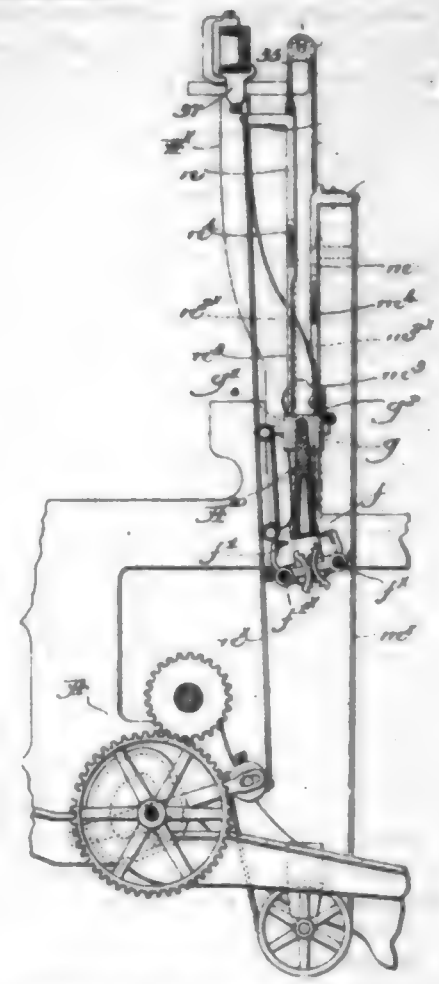
Claim.—1. A twine-holder comprising a tube, arms projecting therefrom and forming a support for a ball of twine on the tube, a suspension-loop connected with said arms, and a take-up lever pivotally connected with the tube below said arms, the tube having an opening below the arms for the passage of twine to the take-up lever.

2. A twine-holder comprising a bracket having a support for the twine, and a weighted lever adjustably connected to said bracket, said holder having means for varying the limit of the oscillations of the lever according to its adjustment relatively to the bracket.

3. A twine-holder comprising a bracket having a support for the twine, and a weighted lever pivotally connected with the bracket, means being provided to vary the position of the pivot vertically in relation to the bracket and longitudinally of the lever.

817,144. **SELVAGE STOP-MOTION FOR LOOMS.** ERNST G. GUSTAFSON and HJALMAR G. OLSSON, North Grosvenor Dale, Conn., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 4, 1905. Serial No. 272,634.

Claim.—1. In a selvage-motion for looms, two reciprocating, oppositely-movable harness members each consisting of an elongated bar and one or more detector-heddles sustained by each bar and having a limited vertical movement relative thereto, a flexible overhead connection between said bars, means to reciprocate the harness members, and stop-motion-controlling feelers adapted to coöperate with released heddle, or with one of said bars upon breakage of the overhead connection.


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fitted over a range-opening, supports in said base a considerable distance above the bottom thereof, a draft-opening in the base extending above the level of said supports, an opening in the flange-cover registering therewith and extending downward together with means for adjusting the cover to vary the amount of fresh air admitted to the chamber, for the purpose described.

2. A broiling apparatus adapted to be removably applied to the top of ranges of usual construction comprising base and cover sections the former having an opening in the bottom thereof, a draft-opening for supplying air to the upper portion of said chamber, said draft-opening extending downwardly from the upper edge of said base-section, supports for the material to be broiled located substantially midway of the height of said chamber and means for adjusting the cover-section to vary the amount of air admitted, substantially as described.

3. A broiling apparatus adapted to be removably applied to the top of ranges of usual construction comprising a bottom section having an opening in the bottom thereof and adapted to closely fit a cooking-range, means in said base for supporting the material to be broiled a considerable distance above the bottom thereof and at different distances therefrom to vary the intensity of the broiling action, a cover-section provided with a flange and an opening or slot extending from the edge of said flange upwardly.

4. A broiling apparatus adapted to be removably applied to the top of ranges of usual construction comprising a base-section having a wide bottom plate provided with an opening to the fire, sides of considerable height compared with the diameter of said opening; and a cover-section consisting of a top plate and a deep flange extending down over the base-section a considerable distance, said parts being provided with registering openings extending in opposite directions from a horizontal line approximately midway of the sides of the base and the flange of the cover.

5. A broiling apparatus adapted to be removably applied to the top of a range of usual construction, comprising the combination of a base-section having an opening to the fire through the bottom thereof and having sides of considerable height as compared with the thickness of the material to be heated and a top section of substantially the same area provided with flanges adapted to fit over said bottom section and supporting means above the bottom of said base in combination with means for holding the cover in partially-elevated position.

6. A broiling apparatus adapted to be removably applied to the top of a range of usual construction, comprising the combination of a base-section having an opening to the fire through the bottom thereof and having sides of considerable height as compared with the thickness of the material to be heated and a top section of substantially the same area provided with flanges adapted to fit over said bottom section and supporting means above the bottom of said base in combination with means for holding the cover in partially-elevated position, the sides of said bottom section being provided with an opening extending downwardly from the upper edge thereof to a point above the lower edge thereof.

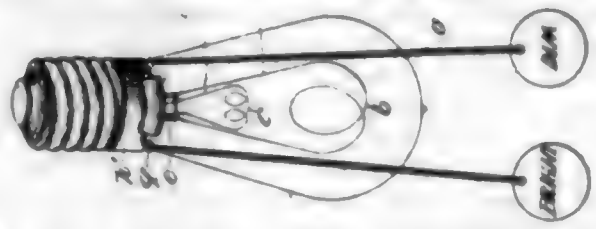
7. A broiling apparatus adapted to be removably applied to the top of a range of usual construction, comprising the combination of a base-section having an opening to the fire through the bottom thereof and having sides of considerable height as compared with the thickness of the material to be heated and a top section of substantially the same area provided with flanges adapted to fit over said bottom section and supporting means above the bottom of said base in combination with means for holding the cover in partially-elevated position, the flange of said cover-section being provided with an opening extending upwardly from the free edge thereof for the purpose described.

8. A broiling apparatus adapted to be removably applied to the top of a range of usual construction, comprising the combination of a base-section having an opening to the fire through the bottom thereof and having sides of considerable height as compared with the thickness of the material to be heated and a top section of substantially the same area provided with flanges adapted to fit over said bottom section and supporting means above the bottom of said base in combination with means for holding the cover in partially-elevated position, the sides of said bottom section being provided with an opening extending downwardly from the upper edge thereof to a point above the lower edge thereof.

9. A broiling apparatus adapted to be removably applied to the top of ranges of usual construction comprising a base-section provided with an opening to the fire, sides of considerable height compared with the diameter of said opening; and a cover-section consisting of a top plate and a deep flange extending down over the base-section a considerable distance, said parts being provided with registering draft-opening extending in opposite direction from a horizontal line approximately midway of the sides of the base and the flange of the cover.

10. A broiling apparatus adapted to be removably applied to the top of a range of usual construction, comprising a base-section open at the bottom and having sides of considerable height as compared with the thickness of the material to be heated, one of said sides being provided with a slot, opening from the upper edge thereof and extending part of the distance to the bottom thereof and supports within said base-section a considerable distance above the bottom thereof in combination with a movable top section of sufficient area to permit insertion and removal of the material to be heated substantially as described.

817,146. SWITCHING DEVICE FOR ELECTRIC LAMPS. JOHN MCCULLOUGH, Newark, N. J. Filed June 23, 1903. Serial No. 162,749.



Claim.—1. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube carried by the collar, a contact part contained within the tube, and means extending through the tube adapted to close the circuit between the collar and contact part, substantially as described.

2. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube carried by the collar, a contact part contained within the tube, and means movable axially in the tube adapted to close the circuit between the collar and contact part, substantially as described.

3. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube within the collar, a contact part contained within the tube, and a cord, passing through the tube and having a part thereon adapted to close the circuit between the collar and contact part, substantially as described.

4. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube within the collar, a contact part contained within the tube, and connected to a lamp-filament, a second contact part adjacent to the first-named contact part and connected to the lamp-collar, and means extending through the tube, adapted to close the circuit between the two contact parts, substantially as described.

5. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube within the collar, a contact part contained within the tube, and connected to a lamp-filament, a second contact part adjacent to the first-named contact part and connected to the lamp-collar, and means movable axially in the tube itself, adapted to close the circuit between the two contact parts, substantially as described.

6. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, a tube within the collar, a contact part contained within the tube, and connected to a lamp-filament, a second contact part adjacent to the first-named contact part and connected to the lamp-collar, and a cord passing through the tube and having a part thereon, adapted to close the circuit between the two contact parts, substantially as described.

7. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof having a portion of its skirt struck up to form a tube, a contact part forming a part of the circuit of the lamp contained in the said tube, and insulated from the collar, and means extending through the tube adapted to close the circuit between the collar and contact part, substantially as described.

8. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof having a portion of its skirt struck up to form a tube, a contact part forming a part of the circuit of the lamp contained in the said tube, and insulated from the collar, and means movable axially in the tube adapted to close the circuit between the collar and contact part, substantially as described.

9. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof having a portion of its skirt struck up to form a tube, a contact part forming a part of the circuit of the lamp contained in the said tube, and insulated from the collar, and a cord passing through the tube and having a part thereon, adapted to close

the circuit between the collar and contact part, substantially as described.

10. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, an insulating-plate located between the collar and bulb, a contact-spring forming a part of the circuit of the lamp, carried by the said plate, and located in the tube, and a cord passing through the tube and having a part thereon adapted to close the circuit between the collar and contact part, substantially as described.

11. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, an insulating-plate located between the collar and bulb, the end of the struck-up portion of the collar engaging the said plate, and forming a contact thereon, a contact-spring forming a part of the lamp carried by the plate and located in the tube above the contact upon the plate, and a cord passing through the tube and having a part thereon adapted to close the circuit between the spring and contact on the plate, substantially as described.

12. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, an insulating-plate located between the collar and bulb, the end of the struck-up portion of the collar engaging the said plate, and forming a contact thereon, a contact-spring forming a part of the lamp carried by the plate and located in the tube above the contact upon the plate, and a cord passing through the tube and having a metal contact part thereon, adapted itself to connect the spring with the collar and also to force the spring against the contact on the plate, substantially as described.

13. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, an insulating-plate located between the collar and the bulb, a contact-spring forming a part of the circuit of the lamp carried by the said plate, and located in the tube, and a cord passing through the tube and having a metal contact part thereon, adapted itself to connect the spring with the collar, substantially as described.

14. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, the said tube having a swelled portion, an insulating-plate located between the collar and the bulb, a contact-spring forming a part of the circuit of the lamp carried by the said plate and located in the tube, and a cord passing through the tube and having a metal contact part thereon, adapted itself to connect the spring with the collar, substantially as described.

15. In an electric lamp, the combination with a lamp-bulb, a collar upon the base thereof, a tube restricted at one end, located within the collar, a contact part contained within the tube, and a cord passing through the tube and having a part thereon adapted to close the circuit between the collar and contact part, substantially as described.

16. In an electric lamp, the combination with a lamp-bulb, of a collar upon the base thereof, having a portion of its skirt struck up to form a tube, with a restricted end, a contact part forming a part of the circuit of the lamp contained in the said tube and insulated from the collar, and means extending axially of the tube, adapted to close the circuit between the collar and contact part, substantially as described.

17. In a switch mechanism for incandescent electric lamps, the combination with a base having a tubular guide upon the exterior thereof, a plurality of contact-points within the guide, a part movable within the guide and adapted to bring the contacts together, and a flexible actuating means for the movable part passing through the said guide.

18. The combination with the metallic thimble of an incandescent lamp, of an insulated contact-piece projecting therefrom, a movable slide and supports therefor, and a metallic surface connected to the thimble, between which and the said contact-piece the slide may be shifted.

19. In an electric incandescent lamp, the combination with a base or cap therefor having socket-engaging means, of a casing having walls of conducting material mounted upon the lower end of said base, an insulated contact in the side wall of said casing, a flexible cord extending through said casing and a conducting metal switch member fixed to said cord within said casing and arranged to make and break connection between the conducting-walls thereof and said contact.

20. In an electric lamp, the combination with a base therefor, of a projecting casing on said base, contacts in the walls of said casing, a coöperation switch member shiftable within said casing and actuating-cords therefor extending through said casing.

21. In an electric lamp, the combination with a base therefor having means for suitably engaging a lamp-holder, of a projecting casing on the lower end of said lamp-base, contacts in the walls of said casing, a flexible cord extending through openings in ends of said casing and a suitable switch member mounted on said cord within said casing.

22. In an electric incandescent lamp, the combination with a base therefor, of a projecting casing on the lower end of said base, an insulated contact on the inner wall of said casing, a guide-shield forming the outer wall of said casing, a switch member in said casing and sliding between the inner and outer walls thereof, and flexible non-conducting cords extending through said casing and connected to said switch member.

23. In an electric incandescent lamp, the combination with a base therefor having means for engaging a suitable lamp-holder, of an insulated contact at the lower normally projecting end of said base, a guide-shield of conducting material on said base and extending over said contact, a switch member shiftable within and in contact with the walls of said shield and arranged to make and break connections with said contact and flexible operating-cords extending through openings in the end of said guide-shield and connected to said switch member.

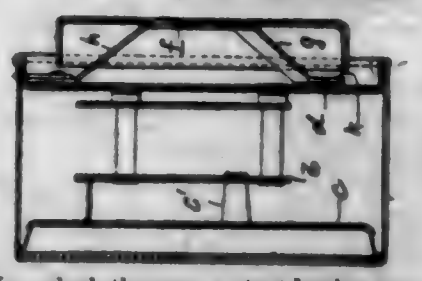
24. In an electric incandescent lamp, the combination with a base therefor having a socket-engaging means, of a casing having walls of conducting material mounted upon the lower normally projecting end of said base, an insulated contact in the said wall of said casing, a flexible cord extending through said casing and a conducting metal switch member fixed to said cord within said casing and arranged to make and break connection between the conducting-walls thereof and said contact.

25. In an electric lamp, the combination of a base thereof having socket-engaging means, an insulated contact mounted at the lower normally projecting end of said base, a projecting guide-shield on said base and extending over said contact, flexible cords extending through openings in the end of said shield and a shiftable switch member connected to said cords and guided within said shield.

26. In an electric lamp, the combination of a base therefor, comprising a metal shell having socket-engaging means and forming one of the terminals for the reception of current, a rivet extending through and opening in the lower end of said shell, but insulated therefrom, a metal shield formed on and in electrical connection with said shell and extending over said rivet, a flexible cord extending lengthwise through said shield and a metal switch member fixed upon said cord within said shield and arranged to make and break connection between the same and said rivet.

27. A switch for electric lamps comprising a casing having a wall of conducting material, an insulated contact in the side wall of said casing, a shiftable switch member guided within said casing and arranged to make and break connection between the conducting-wall thereof and said contact, and flexible operating-cords extending through said casing and connected to said switch member.

817,147. CLOCK. ARTHUR W. OWEN, Winsted, Conn., assignor to The Wm. L. Gilbert Clock Company, Winsted, Conn., a Corporation of Connecticut. Filed Mar. 11, 1905. Serial No. 249,557.



Claim.—1. In a clock the case, a strut having two or more legs whose ends take into openings in the side walls of said case, and a bell mounted on said strut at the rear of the case.

2. In a clock the case, a strut having two or more legs, tenons formed at the ends of said legs and adapted to enter openings in the side walls of the case, and a bell mounted on said strut.

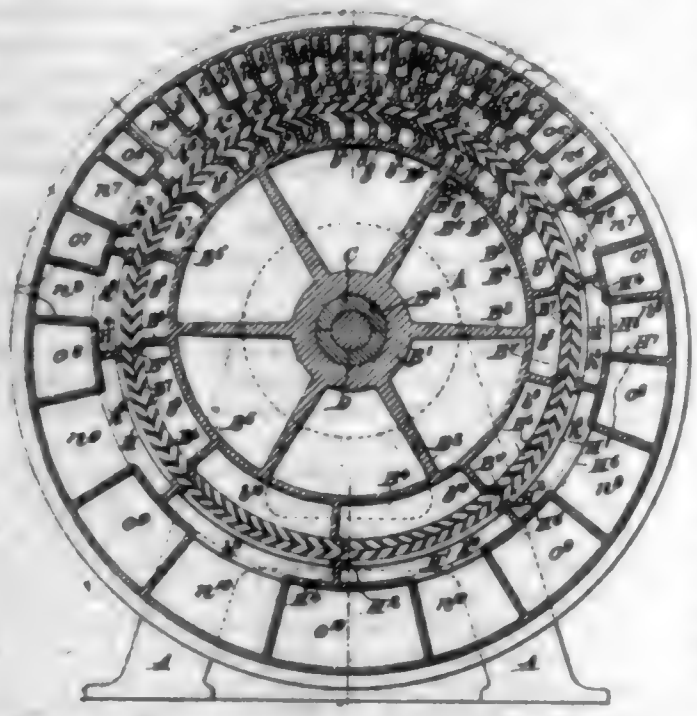
3. In a clock the case having apertures through its side walls, the movement-frame located in said case, the dial and back of the case secured to said frame, a strut having legs with their ends located in apertures in the side walls of the case, said legs bearing against the back of the clock-case, and a bell supported on said strut.

4. A clock-case, bell and support for said bell, said case including side and rear parts, and also a movement-frame carried by said rear part; the said support acting to secure together said side and rear parts.

5. The combination with a clock-case and the movement-frame contained therein, of a strut arranged at the rear of said case supported from the side walls thereof and providing means for securing said movement-frame in place, and a bell mounted on said strut at the rear of said case, substantially as described.

REISSUES.

12,469. EXPANSIBLE-FLUID TURBINE. BENJAMIN S. CHURCH, New York, N. Y., assignor to James K. Lanning, trustee, Boston, Mass. Filed Mar. 5, 1906. Serial No. 304,415. Original No. 753,855, dated Mar. 8, 1904.



Claim.—1. A turbine for expansible fluids having a wheel provided with a circumferentially-arranged series of buckets, in combination with a casing having a multiple series of chambers and directing-ports, each port leading through the bucket to a succeeding chamber, the ports being progressively of increasing area corresponding to the increasing expansion of the fluid and each adapted to give passage to the same weight of fluid in the same time, and the chambers being progressively of increasing area and of materially greater area than the volume of the steam actually passing through the turbine at the pressures existing in the chambers whereby the velocity of the entering steam is checked and the velocity of the steam passing out through the ports regulated by the pressure in the chambers.

2. A turbine for expansible fluids having an admission-port and an exhaust-port on opposite sides of the center, a circumferentially-arranged series of buckets on the wheel proper and two series of chambers and directing-ports leading from the admission to the exhaust port, one series arranged on each side of the wheel and said chambers and ports communicating with each other through the buckets of the wheel.

3. A turbine for expansible fluids having an admission-port and an exhaust-port on opposite sides of its center, a circumferentially-arranged series of buckets on the wheel proper, two series of chambers, one arranged on each side of the wheel between the admission and exhaust ports, said chambers being progressively larger and each of area sufficient to check the velocity of the steam passing through it, a series of ports, one leading into each chamber from the buckets of the wheel and a series of directing-ports, one leading from each chamber to the buckets of the wheel said directing-ports being progressively larger and each adapted to pass a uniform weight of the progressively-expanding fluid at uniform velocities.

4. A turbine for expansible fluids having a disk-like wheel secured to its main shaft and provided with buckets around its circumference in combination with a wheel-casing having parallel plates forming a nice fit with the sides of the disk-like center of the turbine, said casing-plates having a series of fluid-packing grooves on their faces lying opposite to the disk, admission and exit ports situated on opposite sides of the wheel-center and two series of chambers and directing-ports, one series extending on each side of the wheel from the admission to the exhaust ports, the chambers of each series communicating with each other in series through the directing-ports and the buckets of the wheel.

5. A turbine for expansible fluids having a disk-like wheel secured to its main shaft and provided with buckets around its circumference in combination with a wheel-casing having parallel plates forming a nice fit with the sides of the disk-like center of the turbine, said casing-plates having a series of fluid-packing grooves on their faces lying opposite to the disk, said grooves extending across the face of the casing and substantially at right angles to the line connecting the inlet and exhaust ports, admission and exit ports situated on opposite sides of the wheel-center and two series of chambers and directing-ports, one series extending on each side of the wheel from the admission to the exhaust ports, the chambers of each series communicating with each other in series through the directing-ports and the buckets of the wheel.

6. A turbine for expansible fluids having a disk-like wheel secured to its main shaft and provided with buckets, around its circumference in combination with a wheel-casing having parallel plates forming a nice fit with the sides of the disk-like center of the turbine, said casing-plates having a series of fluid-packing grooves on their faces lying opposite to the disk, said grooves extending across the face of the casing and substantially at right angles to the line connecting the inlet and exhaust ports and said casing having openings through its edges leading into chambers on the sides of the turbine and into which openings the fluid-packing grooves open, admission and exit ports situated on opposite sides of the wheel-center and two series of chambers and directing-ports one series extending on each side of the wheel from the admission to the exhaust ports, the chambers of each series communicating with each other in series through the directing-ports and the buckets of the wheel.

7. A turbine for expansible fluids having in combination a wheel provided with two circumferentially-arranged sets of buckets arranged side by side, a casing having inlet and exhaust ports set opposite to each other, partitions arranged in the casing to divide it into two sets of chambers of increasing size, one set extending from the inlet to the exhaust port on each side of the wheel, and directing-ports leading from each chamber to the successive one through the buckets of the wheel and alternately through buckets of the separate sets of buckets.

8. A turbine for expansible fluids having in combination a wheel provided with two circumferentially-arranged sets of radial buckets arranged side by side, a casing having inlet and exhaust ports set opposite to each other, partitions arranged in the casing to divide it into two sets of chambers of increasing size, one set extending from the inlet to the exhaust port on each side of the wheel and radially-arranged directing-ports leading from each chamber to the successive one through the buckets of the wheel and alternately through buckets of the separate sets of buckets.

9. A turbine for expansible fluids having in combination a wheel provided with two circumferentially-arranged sets of buckets set side by side, a casing having inlet and exhaust ports, a series of fluid-chambers formed in the casing between the inlet and exhaust ports connected in series through the buckets of the wheel and arranged to successively deliver the fluid alternately to buckets of the two series.

10. A turbine for expansible fluids having in combination a wheel provided with two circumferentially-arranged sets of radial buckets set side by side, a casing having inlet and exhaust ports, a series of fluid-chambers formed in the casing between the inlet and exhaust ports connected through buckets of the alternate series, and directing-ports one leading from each chamber to the buckets and all arranged to deliver the fluid to the inner edges of the radially-arranged buckets.

11. A turbine for expansible fluids having in combination a wheel provided with two circumferentially-arranged sets of buckets, a casing having inlet and exhaust ports arranged on opposite sides of the wheel-center, two series of fluid-chambers formed in the casing connecting the inlet and exhaust ports on opposite sides of the wheel, said series of chambers being connected in series through the buckets of the wheel, and arranged to successively deliver the fluid alternately to buckets of the two series.

12. In an apparatus designed for the passage therethrough of a fluid of progressively-changing density, the combination with a wheel, of a series of buckets arranged thereon concentrically with reference thereto, and a fluid-conducting casing operatively related to the buckets, said casing being adapted to pass the fluid through said bucket series a plurality of times and having a series of chambers provided each with a receiving-port and a separate discharging-port, said chambers and their respective ports being arranged with

progressively-varying capacity and size in accordance with the progressively-varying volume of said fluid.

13. In an apparatus designed for the passage therethrough of a fluid of progressively-changing density, the combination with a wheel, of a series of buckets arranged thereon concentrically with reference thereto and a fluid-conducting casing operatively related to the buckets, said casing being adapted to pass the fluid through said bucket series a plurality of times and having a series of chambers provided each with a receiving-port and a separate discharging-port, said chambers and their respective ports being arranged with progressively-varying capacity and size in accordance with the progressively-varying volume of said fluid and said chambers intermediate the respective ports thereof being of relatively greater cross-section than said ports, and constituting thereby successive fluid-reservoirs.

14. In an apparatus designed for the passage therethrough of a fluid of progressively-changing density, the combination with a wheel, shaft and bearings therefor, of a series of buckets carried by said wheel and concentric with reference thereto and a plurality of fluid-conducting casings in operative relation to said buckets and having each a primary inlet-port and a terminal outlet-port with intervening fluid-chambers, the high-pressure ports and chambers of one series being adjacent circumferentially in the concentric arrangement to the high-pressure ports and chambers of another series.

15. A turbine for expansible fluids having a wheel provided with a circumferentially-arranged series of buckets, a fluid-conducting casing operatively related to the buckets and adapted to pass the fluid from a primary inlet-port to a terminal outlet-port, said casing having a series of chambers provided each with a receiving-port and a separate discharging-port, said chambers being arranged with progressively-increasing capacity and size in accordance with the progressively-increasing volume of said fluid and said chambers being so arranged successively that each successive receiving-port is operatively related to the preceding discharge-port through the bucket-path.

16. A turbine for expansible fluids having a wheel provided with a circumferentially-arranged series of buckets, a fluid-conducting casing operatively related to the buckets and adapted to pass the fluid from a primary inlet to a terminal outlet through said bucket series a plurality of times, said casing having a series of chambers provided each with a receiving-port and a separate discharging-port, said chambers being arranged with progressively-increasing capacity and size in accordance with the progressively-increasing volume of said fluid and so arranged successively that each successive receiving-port is operatively related to the preceding discharge-port through the bucket-path, said chambers intermediate the respective ports thereof being of greater cross-section than said ports.

17. A turbine for expansible fluids provided with a wheel, shaft and bearings therefor, and having buckets arranged upon said wheel concentric therewith, and a plurality of fluid-conducting casings operatively related to said buckets and having each a primary inlet-port and terminal outlet-port with intervening fluid-chambers, the high-pressure ports and chambers of one series being adjacent circumferentially in the concentric arrangement to the high-pressure ports and chambers of another.

12,470. **MANUFACTURE OF ACID-PROOF AND IMPERMEABLE CEMENTS.** RICHARD LIEBOLD, Weimar, Germany. Filed Feb. 7, 1906. Serial No. 300,015. Original No. 771,050, dated Sept. 27, 1904.

Claim.—1. A process of making acid-proof and impermeable cements, which consists in adding to ready-burnt but not ground cement a mixture of wax and caustic potash dissolved in boiling water, and then grinding the same.

2. A process for making acid-proof and impermeable cements, which consists in adding to every one hundred kilograms of ready-burnt but not ground cement a mixture of three hundred grams of Japan vegetable or berry wax, and twenty grams of caustic potash dissolved in eight liters of boiling water, and then grinding the same.

DESIGNS.

37,931. **HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES.** CHARLES M. PRIOR, New York, N. Y., assignor to International Silver Co., Meriden, Conn., a Corporation of New Jersey. Filed Feb. 6, 1906. Serial No. 299,841. Term of patent 7 years.

37,931.



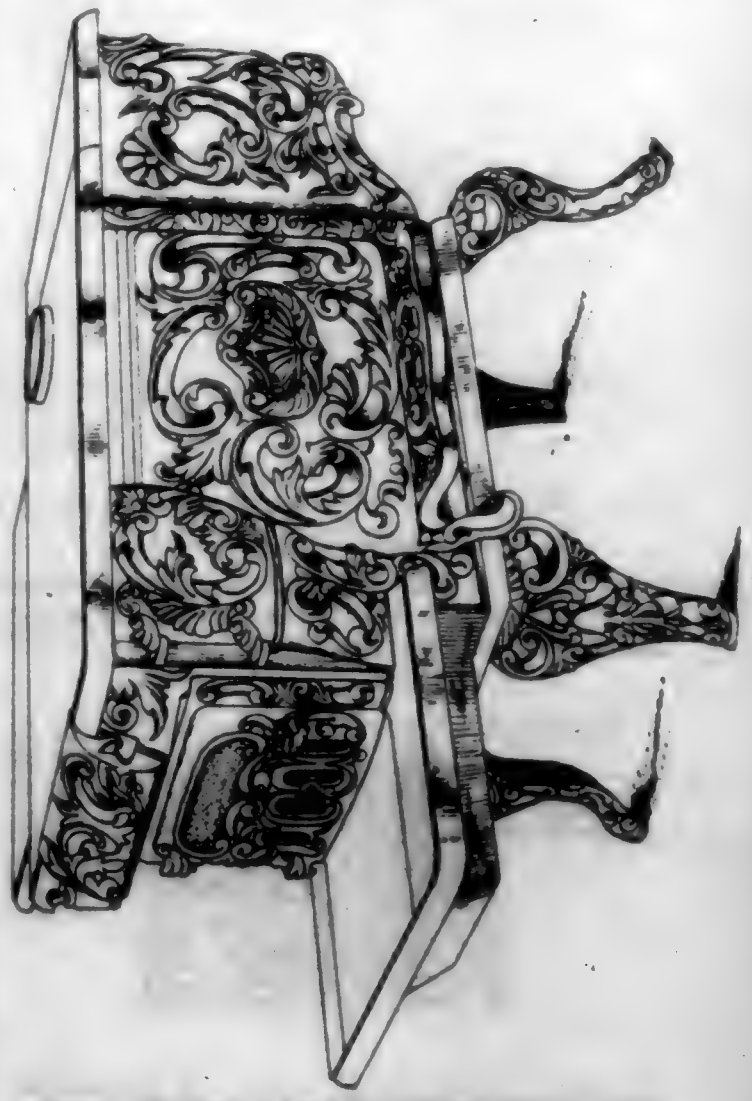
Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

37,932. **HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES.** CHESTER B. SHEPARD, Melrose, Mass., assignor to George E. Feagans, Joliet, Ill. Filed Feb. 28, 1906. Serial No. 303,540. Term of patent 3½ years.



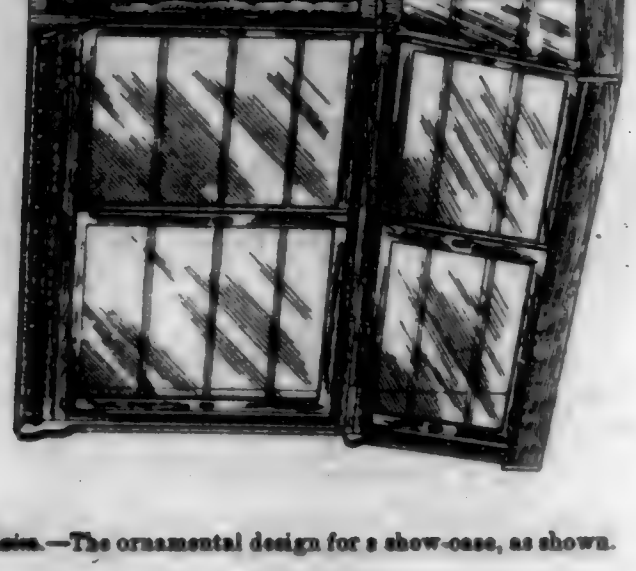
Claim.—The ornamental design for a handle of a spoon, fork, or similar article, as shown.

37,933. **STOVE.** RUDOLPH THIEM, Hamilton, Ohio, assignor to The Sanford Day Iron Works, Knoxville, Tenn. Filed Feb. 2, 1906. Serial No. 299,216. Term of patent 14 years.



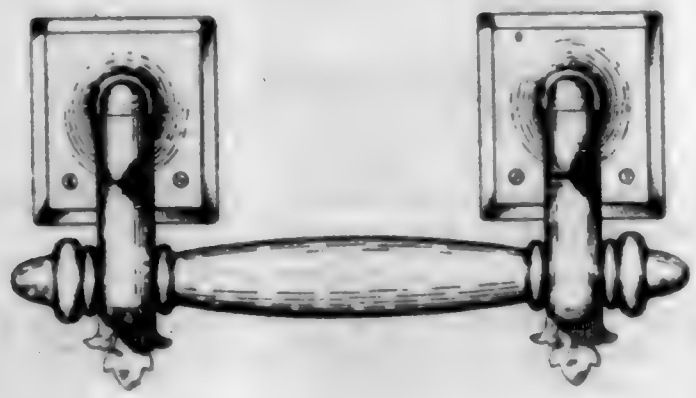
Claim.—The ornamental design for a stove, as shown.

37,934. SHOW-CASE. WALTER M. MCLEAN, Pittsburg, Pa. Filed Feb. 6, 1906. Serial No. 300,190. Term of patent 14 years.



Claim.—The ornamental design for a show-case, as shown.

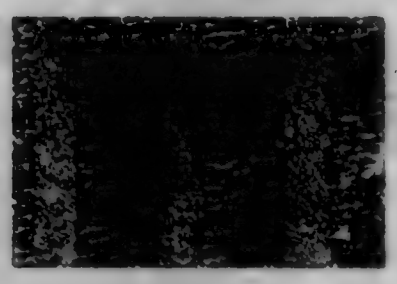
37,935. DROP-HANDLE. GEORGE A. SCHERR, Cincinnati, Ohio. Filed Jan. 31, 1906. Serial No. 298,533. Term of patent 14 years.





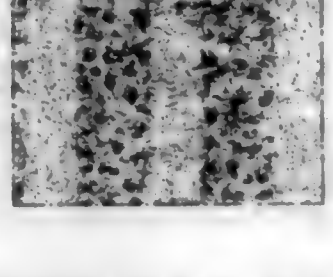
Claim.—The ornamental design for a drop-handle as shown.

37,936. KNIT FABRIC. CHARLES H. FRENCH, Canton, Mass., assignor to French & Ward, New York, N. Y., a Firm. Filed Jan. 31, 1906. Serial No. 298,531. Term of patent 14 years.



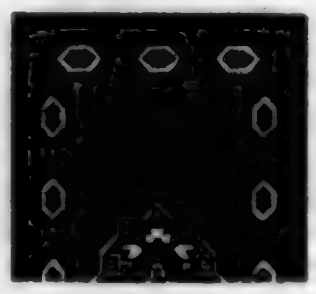
Claim.—The ornamental design for a knit fabric, as shown.

37,937. KNIT FABRIC. CHARLES H. FRENCH, Canton, Mass., assignor to French & Ward, New York, N. Y., a Firm. Filed Jan. 31, 1906. Serial No. 298,532. Term of patent 14 years.



Claim.—The ornamental design for a knit fabric, as shown.

37,938. RUG. ERNEST H. BENNETT, East Orange, N. J., assignor to John H. Bromley and Edward Bromley, Copartners, trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 13, 1905. Serial No. 291,854. Term of patent 3½ years.



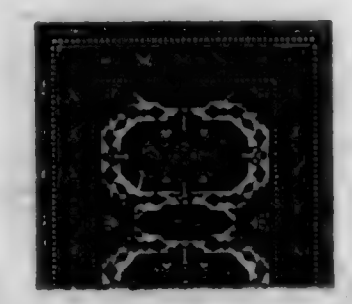
Claim.—The ornamental design for a rug, as shown.

37,939. RUG. ERNEST H. BENNETT, East Orange, N. J., assignor to John H. Bromley and Edward Bromley, Copartners, trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 13, 1905. Serial No. 291,855. Term of patent 3½ years.



Claim.—The ornamental design for a rug, as shown.

37,940. RUG. ERNEST H. BENNETT, East Orange, N. J., assignor to John H. Bromley and Edward Bromley, Copartners, trading as John Bromley & Sons, Philadelphia, Pa. Filed Dec. 13, 1905. Serial No. 291,856. Term of patent 3½ years.



Claim.—The ornamental design for a rug, as shown.

TRADE-MARKS

PUBLISHED APRIL 3, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 63. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Apr. 1, 1905. Used ten years.

PLZEŇSKÉ
MÝDLO

The designation "PLZEŇSKÉ MÝDLO."

SER. No. 67. LINIMENTS AND OINTMENTS, EXTERNALLY AND INTERNALLY APPLIED PAIN CURES, RHEUMATISM REMEDIES AND PILE REMEDIES, KIDNEY CURES, AND A TONIC. K K K MEDICINE COMPANY, Keokuk, Iowa. Filed Apr. 1, 1905.

KKK

The letters "K K K."

SER. No. 267. VEGETABLE COMPOUND TO BE USED FOR MEDICAL PURPOSES AS A CURE FOR MALARIA, CHILLS, AND FEVERS. KLOCKEWELL & CO., Washington, D. C. Filed Apr. 3, 1905.

SER. No. 267.

BABEK.

The word "BABEK."

SER. No. 531. LEAD-PENCILS, DRAWING-PENCILS, AND DRAWING-CHARCOAL. EDWARD G. SOLTMANN, New York, N. Y. Filed Apr. 6, 1905.

"DRAGON"

The word "DRAGON," printed with quotation-marks.

SER. No. 1,007. COATS, VESTS, TROUSERS, AND OVERALLS. O'BRYAN BROS., Nashville, Tenn. Filed Apr. 10, 1905.



The representation of a duck's head inclosed in a circular border.

SER. No. 1,012. MEDICINE FOR THE CURE OF NERVOUS HEADACHE, NEURALGIA, RHEUMATIC PAIN, AND NERVOUS DISEASES. CEPHALGINE COMPANY, Spencer, Mass. Filed Apr. 10, 1905.

CEPHALGINE

The word "CEPHALGINE."

SER. No. 1,334. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio and Indianapolis, Ind. Filed Apr. 13, 1905.

The letter "I" inclosed in the representation of a Maltese cross.

SER. No. 1,477. LUBRICATING-OILS. VALVOLINE OIL COMPANY, Edgewater, N. J., and New York, N. Y. Filed Apr. 14, 1905.

VALVOLINE

The word "VALVOLINE."

SER. No. 1,688. FRUITS AND VEGETABLES IN TINS OR GLASS. WM. NUMSEN & SONS, INC., Baltimore, Md. Filed Apr. 15, 1905.

LITTLE JAP



The words "LITTLE JAP," associated with the design comprising a dark background or panel, which appears upon branches of leaves and flowers. Upon the background is centrally produced within a circular field the representation of a Japanese lady holding over her head a parasol in the foreground of a landscape comprising water, mountains, flowers, foliage, and a diminutive boat in the distance.

SER. No. 1,923. WHISKY. A. A. WOLF & Co., Pittsburg, Pa. Filed Apr. 17, 1905.

Chautauqua Club

The words "CHAUTAUQUA CLUB."

SER. No. 2,334. WHISKY. PHILIP FRELER, Elgin, Ill. Filed Apr. 20, 1905. Used ten years.

ROSEDALE

The word "ROSEDALE."

SER. No. 3,160. KERSEYS AND CASSIMERES. W. J. DICKEY & SONS, INCORPORATED, Baltimore, Md. Filed Apr. 26, 1905. Used ten years.

The representation of two sheep, one in a standing posture and the other couchant.

SER. No. 3,425. TONICS, BLOOD, HEART, AND NERVE MEDICINES. THE DR. MILES MEDICAL CO., Elkhart, Ind. Filed Apr. 28, 1905. Used ten years.

DR. MILES'

The words "DR. MILES."

SER. No. 3,453. WHEAT-FLOUR. J. B. CAMORS & CO., New Orleans, La. Filed Apr. 28, 1905.

EL GALLITO



The words "EL GALLITO" arranged above the representation of a rooster.

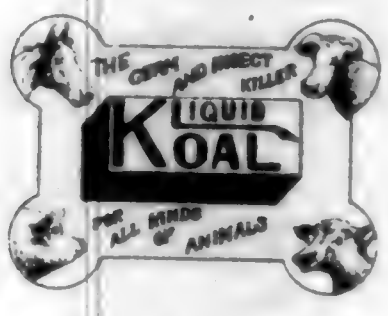
SER. No. 3,579. BRUSHES OF ALL KINDS. JOHN L. WHITING & SON CO., Boston, Mass. Filed Apr. 29, 1905. Used ten years.

DICTATOR

The word "DICTATOR."

SER. No. 3,880. ANTISEPTIC GERM, INSECT, AND WORM DESTROYER. NATIONAL MEDICAL COMPANY, Sheldon, Iowa. Filed May 1, 1905.

SER. No. 3,880.



The words "LIQUID KOAL" imprinted upon one face of the representation of an oblong rectangular block in perspective, the whole being surrounded by a marginal line drawn to the general contour of an oblong rectangle, but bowing outwardly at each corner. Within each of the rounded corners of the rectangle is placed the head of an animal, respectively of a horse, a cow, a sheep, and a hog. The phrase "THE GERM AND INSECT KILLER" is inscribed within the marginal line above the representation of the oblong block, and the phrase "FOR ALL KINDS OF ANIMALS" is inscribed within the marginal line below such representation of the block.

SER. No. 3,889. BUTTER. WILLIAM P. SUMNER, Jacksonville, Fla. Filed May 1, 1905. Used ten years.



The words, letters, and figure "SUMNER'S FANCY X X X X CREAMERY 4 X," placed in the shape of a diamond, with "SUMNER'S" on the upper left-hand side, "FANCY" on the upper right side, "X X X X" on the lower left side, and "CREAMERY" on the lower right side, with "4 X" in the center.

SER. No. 3,951. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 2, 1905. Used ten years.

ANGEL BACKS

The words "ANGEL BACKS."

SER. No. 3,904. HARROWS. ROCKFORD LEAN MANUFACTURING CO., Mansfield, Ohio. Filed May 1, 1905.

SER. No. 3,904.



The representation of the sun rising from a bank of clouds and having shafts of light radiating therefrom Located above the representation of the sun is an eagle with outstretched wings, the eagle carrying or supporting a spiked-tooth harrow-frame folded in the shape of a letter Z. The mark bears the legend "IN USE WHEREVER THE SUN SHINES," formed in an arc between the sun and the Z-shaped article.

SER. No. 3,975. SPICES. B. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.

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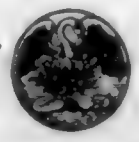
The letters "X X."

SER. No. 3,976. SPICES. B. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.

X

The letter "X."

SER. No. 3,984. SPICES AND MUSTARD. B. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.



The representation of a swan with outstretched wings and a water-lily and leaves upon the surface of a sheet of water, all inclosed within a circle.

SER. No. 3,985. SPICES AND MUSTARD. B. R. DURKEE & CO., New York, N. Y. Filed May 2, 1905.



The representation of a bee surrounded by a wreath of flowers and leaves.

SER. No. 4,008. ROASTED AND GROUND COFFEE. NEW ORLEANS COFFEE CO. LTD., New Orleans, La. Filed May 2, 1905.



The words "WHITE RABBIT" and the representation of a white rabbit inclosed within a border.

SER. No. 4,030. SILVER TABLE-CUTLERY. CURTIN & CLARK HARDWARE COMPANY, St. Joseph, Mo. Filed May 2, 1905.

C C C

Four letters "C" arranged in a horizontal line, the second letter inclosing the third.

SER. No. 4,044. HORSESHOE-STUDS. LEONHARDT & Co., Schoeneberg, Germany. Filed May 2, 1905.



The letter "H," above the bar of which is the letter "L" and below the bar the abbreviation "Co."

SER. No. 4,268. COCOA. ENDERS AND MECKENNER, Seattle, Wash. Filed May 4, 1905.



A rectangular panel upon which are arranged two curved panels forming an elliptical space within which is disposed the monogram "E & M."

SER. No. 4,431. BREWERS' PITCH. JACOB B. HIMES, Kansas City, Mo. Filed May 5, 1905.

20th Century

The symbol and word "20TH CENTURY."

SER. No. 4,732. LEATHER AND CLOTH BOOTS, SLIPPERS, AND SHOES. HANAN & SON, New York, N. Y. Filed May 8, 1905. Used ten years.



A representation of an ideal female head of heroic type, with the hair blown about the face by the wind, within the horns of a crescent and associated with the words "HANAN & SON NEW YORK."

SER. No. 4,795. FIRE-PROOF STARCH. PRICE FIREPROOFING COMPANY, Poughkeepsie, N. Y. Filed May 9, 1905.



The words "FIRE-FOR," associated with the pictorial representation of a girl holding a lighted candle in one hand under a portion of her dress elevated with the other hand and the words "LOOK! MY DRESS WON'T BURN."

SER. No. 4,954. GROUND WOOD AND WOOD-PULP. ASPDORN & Co., New York, N. Y. Filed May 10, 1905.

AURORA

The word "AURORA."

SER. No. 5,097. HAND-BEATEN LEAF METALS. MATHILDE SPIEGELBERGER, Fürth, Kingdom of Bavaria, Germany. Filed May 11, 1905.



The representation of a lion rampant, the fore paws resting upon a shield upon which appear the characters "L. S." and the representation of crossed hammers.

SER. No. 5,111. CHEWING-GUM. THE H. D. SMITH CO., Cincinnati, Ohio. Filed May 11, 1905.

BIG-LONG

The arbitrary hyphenated words "BIG-LONG."

SER. No. 5,141. WHISKY. THE HOFFHEIMER BROS CO., Cincinnati, Ohio. Filed May 11, 1905. Used ten years.



The word "LYNNDALE," associated with the representation of the head of a barrel having thereupon a panel bearing the word "LYNNDALE," scrolls appearing at the sides of the barrel, and sprays of grain rising from the scrolls.

SER. No. 5,489. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CANTON STEEL COMPANY, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

CANTON

The word "CANTON."

SER. No. 5,500. STEEL RODS, BARS, BILLETS, BLOOMS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

SANDERSON

The word "SANDERSON."

SER. No. 5,541. WHISKY. ALBERT H. GELLENBECK, Cincinnati, Ohio. Filed May 13, 1905.



The words "OLD PINE," beneath which is a representation of several pine trees and mountains.

SER. No. 5,634. CULINARY UTENSILS MADE OF TINWARE. REED MANUFACTURING CO., Newark, N. Y. Filed May 15, 1905. Used ten years.

REED

The word "REED."

SER. No. 5,679. POCKET-KNIVES. CARL F. BOKER, New York, N. Y. Filed May 15, 1905.



The representation of a standing Indian carrying a spear in his left hand and with a robe thrown over his right shoulder, the whole being arranged within a circular border.

SER. No. 5,771. PHOSPHATIC POWDERS SUITABLE TO BE USED IN PLACE OF CREAM OF TARTAR FOR CULINARY PURPOSES. RUMFORD CHEMICAL WORKS, Providence, R. I. Filed May 16, 1905.

Cream Phosphate

The words "CREAM PHOSPHATE."

SER. No. 5,772. ARTIFICIAL FERTILIZERS. RASIN-MONUMENTAL COMPANY, Baltimore, Md. Filed May 16, 1905.



The word "MONUMENTAL" inclosed within concentric circles, the circles forming a border for the pictorial representation of the Washington monument at Baltimore.

SER. No. 5,830. MEN'S, WOMEN'S, CHILDREN'S, AND INFANTS' KNITTED HOSIERY, UNDERSHIRTS, AND DRAWERS IN WOOL, LISLE, SILK, AND COTTON. CARSON PIRIE SCOTT & CO., Chicago, Ill. Filed May 16, 1905.



The representation of the Eiffel tower in the foreground of buildings flanked by trees and the word "EIFFEL."

SER. No. 5,808. LINIMENT FOR RHEUMATISM AND SPRAINS. CHARLES E. STONE, Barre, Vt. Filed May 17, 1905.

O Pepper Oil

The words "O PEPPER OIL."

SER. No. 6,279. WHISKY. ASHER GUCKENHEIMER & BROS., Pittsburg, Pa. Filed May 23, 1905. Used ten years.



The name "A. GUCKENHEIMER & BROS." and the words "FREEPORT DISTILLERY."

SER. No. 6,298. WHISKY. LOUIS J. ADLER, Pittsburg, Pa. Filed May 22, 1905. Used ten years.

PITTSBURGH CLUB

The words "PITTSBURGH CLUB" and a monogram of the letters "P C" on a dark circular background.

SER. No. 6,326. NIPPLES FOR NURSING-BOTTLES. THE SEAMLESS RUBBER CO., New Haven, Conn. Filed May 22, 1905.

AAA

The letters "A A A" arranged side by side and inclosed by an oval band, at each end of which is a horizontal band, all inclosed within a diamond, the greater axis of which is horizontal.

SER. No. 6,416. WOOLEN AND WORSTED PIECE GOODS. SHACKAMAXON WORSTED CO., Philadelphia, Pa. Filed May 23, 1905.

Shackamaxon

The fanciful and arbitrary word "SHACKAMAXON."

SER. No. 6,447. LEATHER FOR HARNESS AND SADDLERY. THE AMERICAN OAK LEATHER COMPANY, Cincinnati, Ohio. Filed May 24, 1905.

Rock Oak

The words "ROCK OAK."

SER. No. 6,549. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal. Filed May 24, 1905.

RED LETTER

The words "RED LETTER," associated with the representation of the red letter "P."

SER. No. 6,707. WHEAT-FLOUR. PHOENIX FLOUR MILL, Evansville, Ind. Filed May 26, 1905. Used ten years.



GOLD DUST

The words "GOLD DUST," associated with the conventional representation of a phenix.

SER. No. 6,710. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D. Filed May 26, 1905. Used ten years.

DACOTAH

The word "DACOTAH."

SER. No. 6,711. WHEAT-FLOUR. MISSOURI VALLEY MILLING COMPANY, Mandan, N. D. Filed May 26, 1905. Used ten years.



The words "GOLD BELT" surrounded by the pictorial representation of a belt.

SER. No. 6,726. UNDERVESTS, JERSEYS, AND DRAWERS. LEVI STRAUSS AND COMPANY, San Francisco, Cal. Filed May 26, 1905.

EL RÉAL.

The words "EL RÉAL."

SER. No. 6,770. MIXED PAINTS. SEYMOUR MANUFACTURING CO., Chicago, Ill. Filed May 27, 1905. Used ten years.

SER. No. 6,770.

MONARCH MIXED-PAINT

The words "MONARCH MIXED-PAINT."

SER. No. 6,826. POLISH AND DRESSING FOR RUSSET AND TAN SHOES AND LEATHER ARTICLES. WORLD POLISH M'F'G. CO., York, Pa. Filed May 27, 1905.

TANOLA

The coined word "TANOLA."

SER. No. 6,890. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass. Filed May 29, 1905. Used ten years.

CAPE ANN STANDARD

The words "CAPE ANN STANDARD."

SER. No. 7,021. WHISKY. THE OLD LEXINGTON CLUB DISTILLING CO., Newport, Ky. Filed May 26, 1905. Used ten years.

OLD LEXINGTON CLUB

The words "OLD LEXINGTON CLUB."

SER. No. 7,042. SOLID-FUEL-BURNING HEATING, AND COOKING STOVES. JOHN WHITE & SON, Memphis, Tenn. Filed May 29, 1905.

MAGNOLIA

The arbitrary word "MAGNOLIA."

SER. No. 7,135. REMEDY FOR THE TREATMENT OF RHEUMATISM, MALARIA, LA GRIPPE, BLOOD AND SKIN DISEASES, URIC-ACID DIATHESIS, AND GENITO-URINARY DISEASES IN THE FORM OF A POWDER. JOSEPH COOPER DENSTEN, Scranton, Pa. Filed June 1, 1905.

SALIODIN

The word "SALIODIN."

SER. No. 7,192. GAS-STOVES. THE GEM CITY STOVE CO., Dayton, Ohio. Filed May 29, 1905.

SUCCESS

The word "SUCCESS."

SER. No. 7,260. SILK THREAD. A. H. RICE & CO., Pittsfield, Mass. Filed June 2, 1905. Used ten years.

RICE'S SEWING SILK
SMOOTHEST STRONGEST

The phrase "RICE'S SEWING SILK," the letter "R" in the word "RICE'S" and the letter "S" in the same word being much larger than the other letters, the letter "S" serving also as the initial letter for the word "SEWING" and the word "SILK" and also as the initial letter for the word "SMOOTHEST" and the word "STRONGEST," read in connection with the phrase "RICE'S SEWING SILK."

SER. No. 7,318. NON-IRRITANT GERMICIDE AND AN ANTISEPTIC COMPOUND FOR INTERNAL AND EXTERNAL AND HYPODERMIC ADMINISTRATION. JAMES F. BALLARD, St. Louis, Mo. Filed June 3, 1905.



A crest and shield printed in red. The crest represents a griffin's head supported on a heraldic roll with crossed spears in front of the same, the shield showing four quarterings, alternate chevrons, and roses, and below the shield is a scroll bearing the words "CAMPHO-PHÉNIQUE."

SER. No. 7,470. SODA-ASH AND CAUSTIC SODA. MICHIGAN ALKALI COMPANY, Ford City, Mich. Filed June 5, 1905. Used ten years.

SER. No. 7,470.

WYANDOTTE



The representation of a North American Indian with drawn bow and arrow, associated with the word "WYANDOTTE."

SER. No. 7,513. LINIMENT. GOODRICH & JENNINGS, Anoka, Minn. Filed June 5, 1905. Used ten years.

HOFF'S German

The words "HOFF'S GERMAN" and a shaded circular field upon which are shown the letters and character "G & J" and the representation of a hand holding a pair of balanced scales, said circular field being surrounded by a shaded annulus.

SER. No. 7,742. REFINED ASPHALTUM. SOUTHERN REFINING COMPANY, Los Angeles, Cal. Filed June 9, 1905.

DX

The letters "D X."

SER. No. 7,750. CHOCOLATES AND BONBONS. R. L. PERRY CO., Boston, Mass. Filed June 9, 1905.



The representation of an Indian paddling a canoe in water with a background of land, trees, and sky, there appearing upon the prow of the canoe the letter "S" inside a circle from which extend wings, and which representation is inclosed within two concentric circles forming a circular band surrounding the same.

SER. No. 7,766. TEA. JOHN MCFARONEY, Brooklyn, N. Y. Filed June 9, 1905.



The representation of a harp formed of a figure representing an armless woman having a rearwardly-extending wing and strings stretched from the wing to a bar extending from the foot of the figure to the tip of the wing. Below this harp are located crossed sprays of shamrock, while above the harp and overlapping said sprays is a curved band containing the words "IRISH ASSAM TEA."

SER. No. 8,013. BOOT-PROTECTORS OF METAL AND OF METAL AND RUBBER TOGETHER. BLAKEY'S BOOT PROTECTORS, LIMITED, Leeds, England. Filed June 13, 1905.



The representation of a last on which is the representation of a boot. On the left of the boot is a boy and on the right of the boot a girl each in the act of driving protectors into the boot. On the lower portion of the last is the word "PARAGON" and the name "BLAKEY'S."

SER. No. 8,014. BOOT-PROTECTORS OF METAL. BLAKEY'S BOOT PROTECTORS, LIMITED, Leeds, England. Filed June 13, 1905.



The representation of the sole and heel of a boot. On the heel, toe, and each side of the sole are representations of protectors, each bearing the name "BLAKEY." Horizontally across the sole of the boot have been displayed the name and words "BLAKEY'S PATENT BOOT PROTECTORS."

SER. No. 8,251. TOBACCO-PIPES, CIGAR AND CIGARETTE TUBES NOT OF PRECIOUS METALS OR OF IMITATION PRECIOUS METALS. ADOLPH FRANKAU & Co. LTD. London, England. Filed June 15, 1905.

GLOKAR

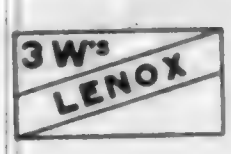
The word "GLOKAR."

SER. No. 8,186. COMPOUND USUALLY PUT UP IN POWDERED FORM AND USED AS A FOOD AND MEDICINE FOR CATTLE AND OTHER LIVE STOCK. DR. HESS & CLARK, Ashland, Ohio. Filed June 15, 1905.



The representation of a platform-scale with a broken balance-beam and with a horse, cow, sheep, and pig standing on the platform and a chicken over the beam, the whole being inclosed in a circle and associated with the words "USE DR. HESS STOCK FOOD AND POULTRY PANACEA" and also the words "THIS WILL BE YOUR REWARD."

SER. No. 8,289. MISSES', CHILDREN'S, INFANTS', AND LITTLE GENTS' LEATHER AND CANVAS SHOES. WEBBER, WRIGHT & WATKIN, Philadelphia, Pa. Filed June 15, 1905.



A rectangular panel crossed by a diagonal band with the figure and letters "3 W's" on the panel and the word "LENOX" on the band.

SER. No. 8,440. PREPARATION OF HYPOPHOSPHITES. THE FELLOWS MEDICAL M'F'G CO., LIMITED. New York, N. Y. Filed June 17, 1905.



The words "COMPOUND SYRUP OF HYPOPHOSPHITES" upon a yellow background or wrapper.

SER. No. 8,442. ORE-SMELTING AND ORE-MILLING MACHINERY. COLORADO IRON WORKS CO., Denver, Colo. Filed June 17, 1905.



A monogram of the letters "C I W"

SER. No. 8,472. ANTISEPTICS OR GERMICIDES. JAMES F. BALLARD, St. Louis, Mo. Filed June 19, 1905.



The letter "H" mounted upon a disk printed in black surrounded by a black circular line and the letters "AVANA" in smaller type upon the cross-bar of the "H."

SER. No. 8,473. ANTISEPTICS OR GERMICIDES. JAMES F. BALLARD, St. Louis, Mo. Filed June 19, 1905.

BOROZONE

The word "BOROZONE."

SER. No. 8,512. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass. Filed June 19, 1905. Used ten years.



The words "RIFLE CARTRIDGE."

SER. No. 8,647. SPICES AND MUSTARD. HULMAN & CO., Terre Haute, Ind. Filed June 21, 1905.



The word "SPHINX" placed above a picture of a winged sphinx resting upon a base-line and partly inclosed in a black disk surrounded by an annular border touching the base-line, and a detached fan-shaped ornament to either side of the disk.

SER. No. 8,672. CASH-REGISTERS AND AUTOGRAPHIC REGISTERS. NATIONAL CASH REGISTER CO., Jersey City, N. J., and Dayton, Ohio. Filed June 21, 1905. Used ten years.

NATIONAL

The word "NATIONAL."

SER. No. 8,708. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 21, 1905. Used ten years.



The representation of a bunch of vanilla-beans.

SER. No. 8,789. MEDICAL COMPOUNDS FOR INTERNAL USE AS A REMEDY FOR CONSTIPATION. JOHN J. BRENNAN, Worcester, Mass. Filed June 22, 1905.

REPOSIA

The word "REPOSIA."

SER. No. 8,797. GREEN SALVE. HARRY J. BAKER, Fulton, N. Y. Filed June 23, 1905.



A circular panel bearing the portrait and facsimile signature of the applicant and the words "NONE GENUINE WITHOUT MY SIGNATURE, BAKER'S GREEN SALVE. HEALS ALL WOUNDS, FOR EXTERNAL USE ONLY, 25 CENTS," as shown in the accompanying drawing.

SER. No. 8,949. WHISKY. FRIEDMO & KAHN, Cincinnati, Ohio. Filed June 24, 1905.

Old Fisherman



The words "OLD FISHERMAN" and a shield design bearing a monogram of the letters "F & K" and surmounted by a crown inclosed in a segmented circle.

SER. No. 8,961. CHEMICAL AND VEGETABLE SUBSTITUTE FOR EGG-WHITES COMPOUNDED WITH CHOICE FLAVORING EXTRACTS AND FRESH CRUSHED FRUITS IN ALL FLAVORS TO BE USED ESPECIALLY FOR CAKE FROSTINGS OR ICINGS, ICE-CREAM, AND SHERBETS. FROSTLENE MANUFACTURING COMPANY, Boston, Mass. Filed June 24, 1905.



A disk containing the representation of a frosted cake upon a tray, which is supported by the figures of two cupids, surrounded by a circular black border upon which appear in white letters the words "FROSTLENE" and "PERFECT FROSTING."

SER. No. 9,100. BITTERS. VALENTINE FRANZ Co., Philadelphia, Pa. Filed June 26, 1905. Used ten years.



The word "KELLARS" and the representation of a draped helmet, below which appears a shield having thereon fleur-de-lis, the letter "K," a heraldic roll, and a red Greek cross.

SER. No. 9,302. CERTAIN PROPRIETARY MEDICINE FOR EXTERNAL APPLICATION IN THE RELIEF OF SUNDRY AILMENTS. THE BRANDRETH CO., Ossining-on-Hudson, N. Y. Filed June 27, 1905. Used ten years.

HOMOCEA

The word "HOMOCEA."

SER. No. 9,408. SUGAR SYRUP AND MAPLE SYRUP. CHICAGO CONCENTRATING COMPANY, Chicago, Ill. Filed June 27, 1905.



The bust portion of the figure of a boy in the act of pouring syrup from a pitcher in his left hand onto a plate of cakes before him, while in his right hand he is carrying a portion of a cake on a fork to his mouth, associated with the word "BELMONT."

SER. No. 9,833. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa. Filed July 3, 1905. Used ten years.



The words "BRADDOCK OLD STYLE."

SER. No. 9,738. SAWS. J. H. ESSELE & Co., Augsburg, Germany. Filed July 3, 1905.



The representation of an anchor, the vertical shaft of which is provided with two spreaded wings and embraced in a symmetrical arrangement by two serpents, and the top of the shaft is crowned by a fir cone.

SER. No. 9,747. WOMEN'S COMBINATION UNDERGARMENTS CONSISTING OF OR INCLUDING COMBINED SKIRT AND DRAWERS. LEONA GARMENT COMPANY, Chicago, Ill. Filed July 8, 1905.

LEONA

The word "LEONA."

SER. No. 9,862. ANODYNE POSSESSING ANALGESIC AND ANTIPYRETIC QUALITIES. ALICE E. STROMBERG. Denver, Colo. Filed July 8, 1905.



The word "ANALGEDYNE" arranged on a field of clouds across which is a vertical strip vanishing at its ends therein and a square panel overlying said strip across which the word is printed.

SER. No. 10,194. EARTHENWARE MADE FROM A SEMI-PORCELAIN BODY WITH A TRANSLUCENT GLAZE. WARWICK CHINA CO., Wheeling, W. Va. Filed July 12, 1905.



A representation of a helmet with two crossed swords underneath, a scroll crossing the swords at the point of intersection, associated with the word "IOGA," the word "WARWICK" being shown upon the scroll.

SER. No. 10,202. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905.

COLIBRI

The word "COLIBRI."

SER. No. 10,206. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

MASCOT

The word "MASCOT."

SER. No. 10,207. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

SANTA CLAUS

The words "SANTA CLAUS."

SER. No. 10,208. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

ARK

The word "ARK."

SER. No. 10,220. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

LAKE SIDE

The word "LAKESIDE."

SER. No. 10,334. RAZORS. A. GRAEF, New York, N. Y. Filed July 14, 1905.



The arbitrarily-selected word "DOGONGOOD," associated with the representation of a dog lying on his legs.

SER. No. 10,481. VALUABLE ALKALINE ANTISEPTIC AND DEODORANT MOUTH AND TOOTH WASH. H. K. MULFORD COMPANY, Philadelphia, Pa. Filed July 17, 1905.

Thym-Alka

The hyphenated word "THYM-ALKA."

SER. No. 10,530. COTTON PIECE GOODS WITH A MOIRÉ FINISH. GILBERT MANUFACTURING COMPANY, New York, N. Y. Filed July 18, 1905.



The hyphenated words "Duo-Moiré" in script letters and having an accent over the "é."

SER. No. 10,620. WALL-TIES. JESSE PRESCOTT, Webster, Mass. Filed July 20, 1905. Used ten years.

MORSE

The word "MORSE."

SER. No. 10,663. HATS. Lourie Bros., New York, N. Y. Filed July 21, 1905.

KNICKERBOCKER

The word "KNICKERBOCKER."

SER. No. 10,676. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.

SANITAS

The word "SANITAS."

SER. No. 10,679. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany. Filed July 21, 1905.

REVELATION

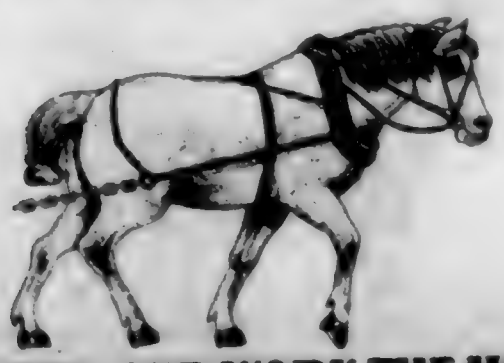
The word "REVELATION."

SER. No. 10,688. TOOTH-BRUSHES. CHARLES LOOKER, Paris, France. Filed July 21, 1905.



The representation of a unicorn issuant on a heraldic bar.

SER. No. 10,692. SALVE. BICKMORE GALL CURE COMPANY, Old Town, Me. Filed July 22, 1905. Used ten years.



The words "BE SURE AND WORK THE HORSE," in connection with and combined with the representation of a working horse.

SER. No. 10,770. SMOKING AND CHEWING TOBACCO IN TWIST FORM. FLUHRER TOBACCO COMPANY, Boonville, Ind. Filed July 24, 1905.



A representation of a disk having thereon the letters "O. N. T." and the name and address "FLUHRER TOB. CO. BOONVILLE. IND."

SER. No. 10,936. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.

NEPTUNE

The word "NEPTUNE."

SER. No. 10,941. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass. Filed July 28, 1905.



The representation of a globe having the words "THE VERY BEST" arranged on a band across the same and surrounded by a circular rope border. Between the rope border and the globe is a black circular band on which appear the words "BLUE SEA BRAND ABSOLUTELY BONELESS."

SER. No. 10,942. MEDICATED OINTMENT FOR THE ALLEVIATION AND CURE OF DISEASES OF THE SKIN. WILLIAM HOLLOWAY, Philadelphia, Pa. Filed July 28, 1905. Used ten years.

HEISKELL'S
OINTMENT

The words "HEISKELL'S OINTMENT."

SER. No. 11,050. SALVE OR OINTMENT FOR USE IN CURING MINOR WOUNDS AND SORES OF ANIMALS. BICKMORE GALL CURE COMPANY, Old Town, Me. Filed July 31, 1905.

BICKMORIN

The word "BICKMORIN."

SER. No. 11,058. DRESS-SHIELDS. C. F. HOVEY & Co., Boston, Mass. Filed July 31, 1905.

PEARL

The word "PEARL."

SER. No. 11,253. LINEN THREAD. L. LICHTENSTEIN'S SONS, Richmond, Va. Filed Aug. 4, 1905.



The representation of a lion rampant inclosed within the border representing one mesh of seine.

SER. No. 11,347. VALVES. DUNHAM, CARRIGAN & HAYDEN Co., San Francisco, Cal. Filed Aug. 7, 1905.

EMPIRE

The word "EMPIRE."

SER. No. 11,350. CONCERTINAS AND ACCORDIONS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

MAJESTIC

The word "MAJESTIC."

SER. No. 11,355. MUSICAL BOXES AND TUNE-DISKS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905.

EVPHONIA

The word "EUPHONIA."

SER. No. 11,360. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905. Used ten years.

Marquette

The word "MARQUETTE."

SER. No. 11,364. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905. Used ten years.

SER. No. 11,364.

COLUMBUS

The word "COLUMBUS."

SER. No. 11,430. COTTON SHEETINGS, SHIRTINGS, DRILLS, AND TICKINGS. SIEMSSEN & Co., Hamburg, Germany. Filed Aug. 8, 1905.

禅臣洋行

Four Chinese characters, the phonetic pronunciation of which is Zay Zuenn, which characters are placed one below the other and which mean "Siem shen"—foreign house.

SER. No. 11,512. BUTTER. BLUE VALLEY CREAMERY COMPANY, St. Joseph, Mo. Filed Aug. 10, 1905.



The representation of a print of butter upon a plate and the letters "B V" upon the print of butter.

SER. No. 11,536. RAZORS. F. A. CLAUBERG & Co., New York, N. Y. Filed Aug. 11, 1905. Used ten years.

TONSORIAL GEM

The words "TONSORIAL GEM."

SER. No. 11,560. PLASTERS. ALLCOCK MANUFACTURING Co., New York, N. Y. Filed Aug. 12, 1905. Used ten years.



The representation of a shield with printed matter thereon. The printed matter reads: "THE BRANDRETH PLASTER, MANUFACTURED AT THE BRANDRETH WORKS."

SER. No. 11,714. FINANCIAL-NEWS BULLETINS. ROBERT EDWARD EDMONDSON, New York, N. Y. Filed Aug. 16, 1905.

SER. No. 11,714.



The outline of a steering-wheel, across the center of which appear the words "NEW YORK FINANCIAL BUREAU" and on the rim the words "HELMA FORTUNA PULSUS MERCATUS."

SER. No. 11,903. WINES. JOHN R. SCHNEIDER, Augusta, Ga. Filed Aug. 22, 1905.



The representation of an anchor upon which the letter "S" appears.

SER. No. 11,905. FLAVORING EXTRACTS. ROYAL BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 22, 1905. Used ten years.

ROYAL

The word "ROYAL."

SER. No. 11,910. CIGARS. DUNCAN & MOORHEAD, INC., Philadelphia, Pa. Filed Aug. 23, 1905.



The word "DUNMOORA" and the representation of a fanciful coat of arms comprising a shield obliquely divided by a chevron or-band into a field of black and a field of red bearing centrally thereon a deer rampant, the shield being surmounted by an armor-like crest flanked by an ornamental scroll of harmonizing design, the whole being surrounded by an ornamental scroll and medal border, which also forms a border for a minor land and water scene in the background. Upon the lower part of the shield a scroll appears bearing the motto "FACILE PRINCEPS."

SER. No. 11,988. WRITING-PAPER OF ALL KINDS WHETHER IN LOOSE SHEETS OR CONNECTED TOGETHER. SIR ISAAC PITMAN & SONS, LTD., Bath, England. Filed Aug. 25, 1905.

FONO

The word "FONO."

SER. No. 12,148. SUPPOSITORIES FOR THE TREATMENT OF HEMORRHOIDS AND ANALOGOUS AFFLICTIONS. WILHELM ERNST, Hannover, Germany. Filed Sept. 1, 1905.

Anusol

The word "ANUSOL."

SER. No. 12,194. WHEAT-FLOUR. GEO. T. EVANS & SON, Indianapolis, Ind. Filed Sept. 2, 1905.

ADONIS

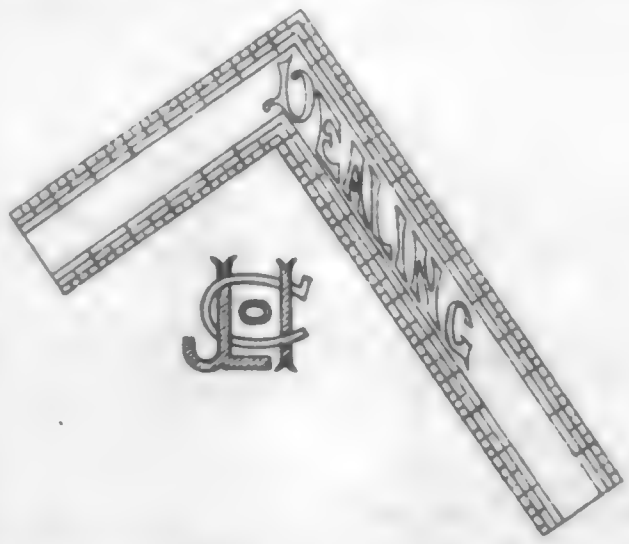
The word "ADONIS."

SER. No. 12,201. WHEAT-FLOUR. BAY STATE MILLING COMPANY, Winona, Minn., and Boston, Mass. Filed Sept. 2, 1905.

BOSS

The word "BOSS."

SER. No. 12,221. WHEAT AND GRAHAM FLOUR. J. L. ILES CO., Davenport, Iowa. Filed Sept. 5, 1905.



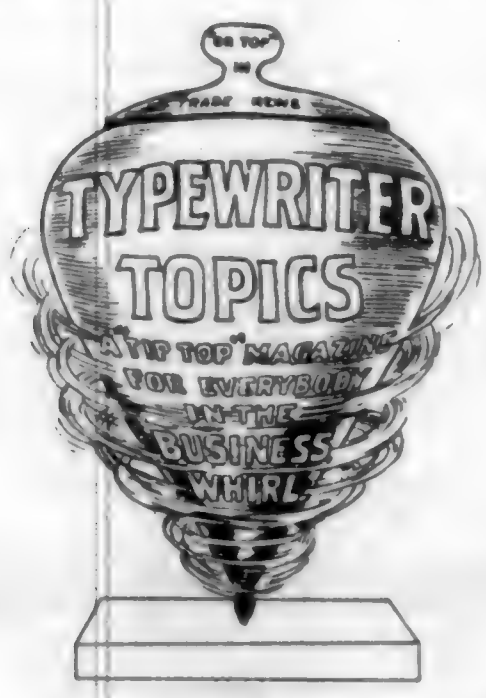
The representation of a carpenter's square having the word "DEALING," associated with the monogram "J L I Co."

SER. No. 12,415. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 9, 1905.

Ambrosia

The arbitrarily-selected word "AMBROSIA."

SER. No. 12,500. MAGAZINE. ERNST M. BEST, New York, N. Y. Filed Sept. 12, 1905.



The representation of a top spinning on a base with the words "'ON TOP' IN TRADE NEWS TYPEWRITER TOPICS A 'TIP TOP' MAGAZINE FOR EVERYBODY IN THE BUSINESS WHIRL," the words "ON TOP" and "TIP TOP" being inclosed in quotation-marks.

SER. No. 12,577. WHISKY. H. OBERNAUER & Co., Pittsburg, Pa. Filed Sept. 14, 1905.

Emerald Club

The words "EMERALD CLUB."

SER. No. 12,697. ROLLING-BALL PUZZLES. JOHN BIGHAM, Pittsburg, Pa. Filed Sept. 16, 1905.

THE
RED RACER

The words "THE RED RACER."

SER. No. 12,729. LINIMENT. CACO CHEMICAL CO, Baltimore, Md. Filed Sept. 18, 1905.

CA-CO

The word "CA-CO."

SER. No. 12,738. LUBRICATING-OIL. E. O. HALL AND SON LTD., Honolulu, Hawaii. Filed Sept. 18, 1905.

TROPIC

The word "TROPIC."

SER. No. 12,856. WAX. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

CROWN

The word "CROWN."

SER. No. 12,857. TOOTH-PASTE. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

ORALINE

The word "ORALINE."

SER. No. 12,860. INVESTMENT AND IMPRESSION COMPOUNDS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

SUMP

The word "SUMP."

SER. No. 12,864. DENTAL RUBBER. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

BOW-SPRING

The word "BOW-SPRING."

SER. No. 12,865. GUTTA-PERCHA TOOTH-FILLING. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905. Used ten years.

SER. No. 12,865.

PREMIUM

The word "PREMIUM."

SER. No. 12,866. GUTTA-PERCHA TOOTH-FILLING. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

EXCELSIOR

The word "EXCELSIOR."

SER. No. 12,868. CAVITY-LININGS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

CAVITINE

The word "CAVITINE."

SER. No. 12,869. INVESTMENT AND IMPRESSION COMPOUNDS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

FYRITE

The word "FYRITE."

SER. No. 12,871. SOLID COMPOSITION ERASER FOR CLEANING SURFACE DIRT FROM LEATHER, CLOTH, PAPER, AND THE LIKE. FRANK A. WEEKS, New York, N. Y. Filed Sept. 21, 1905.

"RUBOFF"

The word "RUBOFF" inclosed in quotation-marks and arranged within a diamond-shaped figure.

SER. No. 12,952. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 25, 1905.



A transversely-elongated red panel having a narrowed center and rounded ends and having a gold border. Upon the panel appears in script letters the word "EDELWEISS" and in block letters the word "MALTINE," located somewhat below the word "EDELWEISS." Above the red panel is a segmental gold-bordered blue panel having in its center a medallion bust portrait of a woman with edelweiss flowers in her hair, and around the portrait are vines, grain, &c. Within the upper panel appear the words "A SUPERIOR EXTRACT OF BARLEY MALT & IMPORTED HOPS." Below the red panel is a lower rounded panel having a yellow center and a blue exterior with a gold border. Within the lower panel appear the words "BOTTLED ONLY BY THE MALT EXTRACT DEP'T. OF THE P. SCHOENHOFEN BREWING CO. CHICAGO."

SER. No. 12,969. CIGARETTES. TEOFANI & CO., London, England. Filed Sept. 25, 1905.



A vertical panel bearing a representation of Minerva with an owl perched on one hand and holding with the other hand a shield and spear, and on each side of the vertical panel is an ornamental wreath-entwined shield, one shield bearing the words "MANUFACTURE DE CIGARETTES GROS ET EXPORTATION," and the other the words "TOUTES LES CIGARETTES SONT MARQUEES TEOFANI & CO." Above the vertical panel is a band bearing the name TEOFANI & CO." and below the panel a band bearing the words "CIGARETTES EGYPTIENNES." Beneath this band are the words "MANUFACTURED IN LONDON," the whole being inclosed in an ornamental scroll-like border.

SER. No. 12,988. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.



A marine scene showing a steamship in the foreground and a representation of the Rock of Gibraltar and the words "GIBRALTAR BRAND" in the background.

SER. No. 13,011. MATTRESSES. THE COLORADO BEDDING CO., Pueblo, Colo. Filed Aug. 17, 1905.



The word "MONOBAT" on the representation of a section of a block.

SER. No. 13,017. METALLIC BRAZING COMPOUND, WELDARINE MANUFACTURING COMPANY, Topeka, Kans. Filed Sept. 25, 1905.

WELDARINE

The arbitrary word "WELDARINE."

SER. No. 13,032. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 26, 1905.



A red, white, and blue shield bearing thereon the letter "S" entwined with a Mercury staff and partially inclosed in a wreath.

SER. No. 13,057. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed Sept. 27, 1905. Used ten years.

NEWARK

The word "NEWARK."

SER. No. 13,058. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed Sept. 27, 1905. Used ten years.

WAYNE BRAND

The words "WAYNE BRAND."

SER. No. 13,059. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed Sept. 27, 1905. Used ten years.

Burnham

The word "BURNHAM."

SER. No. 13,060. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING CO., Newark, N. Y. Filed Sept. 27, 1905. Used ten years.

FAULTLESS

The word "FAULTLESS."

SER. No. 13,078. CIDER. BARRETT & BARRETT, St. Paul, Minn. Filed Sept. 27, 1905.

BARRETT
&
BARRETT

The words "BARRETT & BARRETT," the two words being arranged one above the other with the initial letter "B" and the final "T" common to both words, the intermediate letters being arranged in oppositely-curved lines with the character "&" intermediate of the small letters of the two words.

SER. No. 13,099. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 28, 1905.



A rectangular panel bearing a representation of a red, white, and blue striped shield inclosing the letter "S" entwined with a Mercury staff, partially inclosed with a wreath, and associated with the name "P SCHOENHOFEN BREWING CO. CHICAGO."

SER. No. 13,161. REMEDY FOR CURING DISEASES OF SWINE AND PARTICULARLY HOG-CHOLERA. SOUTHERN HOG REMEDY CO., Fort Worth, Tex. Filed Sept. 30, 1905.



The representation of a sick hog shedding tears and of the words "I NEED HAMPTON'S HOG REMEDY" impriated on the side of the hog.

SER. No. 13,175. HOSIERY. CHARLES CHIPMAN'S SONS, Easton, Pa. Filed Sept. 30, 1905.



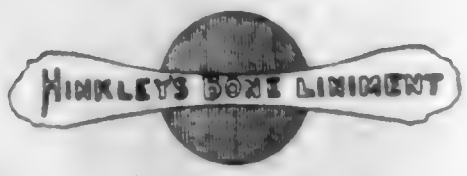
The words "HUMPTY DUMPTY" and the representation of a grotesque figure of a man whose head and body outline have the form of an egg, the said figure being perched upon the top of a wall between the words "HUMPTY" and "DUMPTY," which are in an upright position on top of said wall, and having one arm about the last letter of the former and the other about the first letter of the latter word.

SER. No. 13,176. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 30, 1905.



A representation of a medallion bearing a representation of a shield having a yellow border and diagonally-arranged red, white, and blue stripes thereon and in the center a mercury staff with the letter "S" coiled thereon, associated with the words "EXPORT P SCHOENHOFEN BREWING CO. CHICAGO, U. S. A."

SER. No. 13,327. LINIMENT FOR INTERNAL AND EXTERNAL USE, SUCH AS FOR RHEUMATISM, NEURALGIA, WOUNDS, CUTS, BRUISES, SORE THROAT, SPRAINS, DIPHTHERIA, COLIC, DIARRHEA, INTERNAL PAINS, TOOTHACHE, CHILBLAINS, COLDS, COUGHS, CHOLERA MORBUS, DYSENTERY, ASTHMA, AND CHILLS. HINKLEY BONE LINIMENT COMPANY, Saginaw, Mich. Filed Oct. 5, 1905.



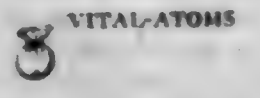
The representation of a disk of red color, superimposed across which is the representation of a bone in black, the representation of the bone bearing the words "HINKLEY'S BONE LINIMENT."

SER. No. 13,392. CIGARS. CUESTA, REY & CO., West Tampa, Fla. Filed Oct. 6, 1905.



The bust picture of a young woman clad in evening dress having red roses in her hair and violets at her shoulder and representations of medals, coats of arms, scroll ornamentation appearing on a background of palm-leaves and associated with the words "LA FLOR DE CUESTA, REY & CO. HABANA HECHOS ESPECIALMENTE PARA PERSONAS DE GUSTO."

SER. No. 13,403. BLOOD REMEDIES AND TONICS. LOUIS GASTON DELABOTHE, East Syracuse, N. Y. Filed Oct. 7, 1905.



The words "VITAL-ATOMS" and the representation of a bag shown as containing a quantity of material and tied below its mouth.

SER. No. 13,539. LEATHER SHOES. F. MAYER BOOT & SHOE CO. Milwaukee, Wis. Filed Sept. 25, 1905.

Martha Washington

The words "MARTHA WASHINGTON."

SER. No. 13,603. BEER PUT UP IN BOTTLES, KEGS, BARRELS, OR CASKS. PAUL WEIDMANN BREW. CO., New York, N. Y. Filed Oct. 14, 1905.



A foliated wreath, in the center of which is an irregular fanciful shield on which is placed a heraldic lion wearing a crown. The haft and point of a sword or rapier project from behind the shield, and a bannerette, also projecting from behind the shield, is shown at an upper corner thereof. Above the wreath are the words "OLD HEIDELBERG" and below is the word "BREW." Two ends of a waving scroll project from behind the wreath. The whole is surrounded by an oval border.

SER. No. 13,646. SELF-CARBURETING LAMPS. GEORGE H. HOLGATE, Philadelphia, Pa. Filed Oct. 16, 1905.

PETROLITE

The word "PETROLITE."

SER. No. 13,692. SEWING-COTTON WOUND ON SPOOLS OR REELS. J. & P. COATS, LIMITED, Paisley, Scotland. Filed Oct. 17, 1905. Used ten years.



A representation of a bear standing on a heraldic roll.

SER. No. 13,722. HEAT-REGULATORS FOR USE ON BOILERS, FURNACES, AND STOVES. THE FULTON COMPANY, Knoxville, Tenn. Filed Oct. 18, 1905.

SER. No. 13,732.

SYLPHON

The word "SYLPHON."

SER. No. 13,797. CANNED PINEAPPLE. THE BOOTH PACKING COMPANY, Baltimore, Md. Filed Oct. 21, 1905. Used ten years.

A hexagonal panel and parallel ribbons, said ribbons being represented as passing through the upper and lower portions of the said panel and appearing to be tied in bow-knots at points on the face of the said panel.

SER. No. 13,918. SHEEP, KID, CALF, AND GOAT LEATHER. A. B. CLARK CO., New York, N. Y. Filed Oct. 25, 1905.



The words "HICKORY KID" and the representation of a barefooted boy with outstretched hands standing on the limbs of a tree.

SER. No. 13,937. HEADACHE CURE. THE CELERO DRUG COMPANY, Boston, Mass. Filed Oct. 25, 1905.



The word "CELERO," associated with the words "LAXATIVE HEADACHE LOZENGE" placed upon a blue rectangular background.

SER. No. 13,953. WHITE, PRINTED, OR DYED TEXTILE FABRICS OF COTTON, WOOL, OR SILK. ARNOLD PRINT WORKS, North Adams, Mass. Filed Oct. 26, 1905. Used ten years.

ARNOLD

The word "ARNOLD."

SER. No. 14,021. KATHAIRO CHEMICAL CO., New York, N. Y. Filed Oct. 28, 1905.

SER. No. 14,021.

ΚΑΘΑΙΡΩ

The word "KATHAIRO" printed in Greek characters and inclosed within a diamond-shaped figure.

SER. No. 14,050. GIN. THE GINTER GROCERY COMPANY, Boston, Mass. Filed Oct. 30, 1905.

ROYAL
WIKSTAF

The words "ROYAL WIKSTAF."

SER. No. 14,051. GIN. THE GINTER GROCERY COMPANY, Boston, Mass. Filed Oct. 30, 1905.

HARLEQUIN

The word "HARLEQUIN."

SER. No. 14,087. JELLY-POWDER. S. J. VALK & BRO., New York, N. Y. Filed Oct. 30, 1905.

FALCONJEL

The fanciful word "FALCONJEL" and the representation of a falcon perched upon a limb within a circular border formed of a belt.

SER. No. 14,102. TOILET SOAP. GEO. A. SCHMIDT CO., Chicago, Ill. Filed Oct. 30, 1905.



An open doorway with overhanging vines and having the words "A HAPPY HOME" above the same, an old man wearing a cap and gown standing in front of the doorway and holding in one hand a cake of soap on which appears the name "ASCAGE." The words "IT" and "ASCAGE" appear at one side of the doorway.

SER. No. 14,181. WHISKY. E. EMMET & Co., New York, N. Y. Filed Oct. 31, 1905. Used ten years.

OLD DOMINION

The arbitrarily-selected words "OLD DOMINION."

SER. No. 14,216. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS Co., New Haven, Conn. Filed Nov. 2, 1905.

S.L.

The letters "S. L."

SER. No. 14,229. OILSTONES, WATERSTONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL COMPANY, Scranton, Pa. Filed Nov. 3, 1905.



The words "GREEN TURTLE" and the representation of a green turtle appearing on the representation of a keystone, which is superimposed upon a serrated seal.

SER. No. 14,230. OILSTONES, WHETSTONES, HONES, WATERSTONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL Co., Scranton, Pa. Filed Nov. 3, 1905.



The word "FOR-GET-ME-NOT" and the representation of a bunch of forget-me-nots appearing on the representation of a keystone, which is superimposed upon a serrated seal.

SER. No. 14,238. NON-EXPLOSIVE FIRE AND SMOKE EMITTING FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed Nov. 3, 1905.

Blizzard of the Rockies

The words "BLIZZARD OF THE ROCKIES."

SER. No. 14,303. WHEAT-FLOUR. SENECA MILL & ELEVATOR COMPANY, Seneca, Mo. Filed Nov. 4, 1905.

SER. No. 14,308.



The words "WHITE ELK" and the pictorial representation of a white elk.

SER. No. 14,304. WHEAT-FLOUR. SENECA MILL & ELEVATOR COMPANY, Seneca, Mo. Filed Nov. 4, 1905.

USONA

The word "USONA."

SER. No. 14,306. MINERAL WATER. DIE ACTIENGESELLSCHAFT APOLLINARIS BRUNNEN, Neuenahr, Germany. Filed Nov. 4, 1905.

Apollinaris

The arbitrary word "APOLLINARIS" in black letters, associated with a triangular figure in solid red on an orange or yellow surface.

SER. No. 14,357. SPIRIT-VARNISH. THE BALL CHEMICAL CO., Allegheny, Pa. Filed Nov. 6, 1905.



The hyphenated word "GUM-LAC" appearing on a colored triangle having rounded corners, the heights of the letters conforming to the sides of the triangle.

SER. No. 14,500. COLOR PASTES. JOSEPH BURNETT CO., Boston, Mass. Filed Nov. 11, 1905. Used ten years.

BURNETT'S

The word "BURNETT'S."

SER. No. 14,754. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG-CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 17, 1905.

BRAVO

The word "BRAVO."

SER. No. 14,880. MEDICINAL TABLETS FOR THE CURE OF LA GRIPPE, CONSTIPATION, COUGHS, COLDS, AND BRONCHIAL TROUBLES. FREDERIC HENRY PUTNAM, Boston, Mass. Filed Nov. 21, 1905.



The abbreviation "B," bearing the numeral "3" and the abbreviations "B B."

SER. No. 14,932. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va. Filed Nov. 23, 1905.



The representation of two cords extending at right angles to each other and covered at their crossing-point with a red-wax seal having an irregular outline on the face of which appear the words "THE SEAL OF PUBLIC APPROVAL" and diagonally across the face of which appears the arbitrarily-spelled word "NUSHU."

SER. No. 14,936. REMEDIES FOR CANINES. LAMUEL G. ATWOOD, Franklin, N. H. Filed Nov. 23, 1905.

KANIKURA

The word "KANIKURA."

SER. No. 14,988. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va. Filed Nov. 25, 1905.

JUANITA

The word "JUANITA."

SER. No. 15,031. DESSERT-JELLY. BUCKMAN & VANDERPOEL, New York, N. Y. Filed Nov. 27, 1905.

TIP TOP

The words "TIP TOP."

SER. No. 15,065. DRY SOLUBLE ALKALI POWDERS FOR CLEANING, CLEANSING, AND WASHING, FOR HOUSEHOLD, FACTORY, AND OTHER PURPOSES. THE J. B. FORD COMPANY, Ford, Mich. Filed Nov. 29, 1905.



The representation of a North American Indian with drawn bow and arrow, associated with the word "WYANDOTTE."

SER. No. 15,167. HYDRAULIC CEMENT. UTICA HYDRAULIC CEMENT CO., Utica, Ill. Filed Dec. 4, 1905. Used ten years.

J. CLARK

The name "J. CLARK."

SER. No. 15,216. BURNISHING-INK FOR FINISHING AND POLISHING HEELS, SHANKS, AND EDGES OF BOOTS, SHOES, AND SLIPPERS, &c. WHITTEMORE BROTHERS AND COMPANY, Cambridge, Mass. Filed Dec. 5, 1905. Used ten years.

LYNN BURNISHING INK

The words "LYNN BURNISHING INK."

SER. No. 15,246. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Dec. 7, 1905.

SER. No. 15,246.



The arbitrary word-symbol "WILSEL" on a light background of leaves and flowers and below the word the representation of a seal having on it a roll of toilet-paper in a circle charged with the monogram "S P Co" and a wreath.

SER. No. 15,248. COTTON PIECE GOODS. F. W. POE MFG. CO., Greenville, S. C. Filed Dec. 7, 1905.



The representation of a tea-plant in bloom.

SER. No. 15,274. WASHING-MACHINES. HENRY S. JUDD, Chicago, Ill. Filed Dec. 8, 1905.



Two concentric ellipses crossed horizontally by a panel with concave upper and lower edges. In the middle of the said panel are the words "ITS CO." In the middle of the space and between the concentric circles above the panel is the word "IT," and in the corresponding space below the panel is the word "CHICAGO." In the space between the upper edge of the panel and the inner ellipse are the words "MADE BY."

SER. No. 15,310. TWINE. JAMES E. REYNOLDS, East Orange, N. J. Filed Dec. 9, 1905. Used ten years.

EUREKA

The arbitrarily selected word "EUREKA."

SER. No. 15,326. RUBBER PACKING. GIBBENS & STERAM, New Orleans, La. Filed Dec. 11, 1905.



The letters "A L L A." The first "L" is about twice the size of the others and is placed between the "A" and an "L." The second "A" is placed beneath the first "L," and the whole surrounded by two concentric circles.

SER. No. 15,379. CONFECTIONERY HAVING CHOCOLATE AS A PRINCIPAL INGREDIENT. JAMES DE FREMERY & COMPANY, San Francisco, Cal. Filed Dec. 13, 1905.



The representation within a panel of a standing infant upon a colored surface looking up toward an outstretched female hand holding a package.

SER. No. 15,393. TROUSERS. I. L. PEARL & Co, Johnson, Vt. Filed Dec. 13, 1905. Used ten years.

CAST IRON

The words "CAST IRON."

SER. No. 15,418. RECONSTRUCTIVE FOOD AND TONIC FOR INVALIDS AND CONVALESCENTS. THE NORWICH PHARMACAL COMPANY, Norwich, N. Y. Filed Dec. 14, 1905.

NUTROZOME

The word "NUTROZOME."

SER. No. 15,414. LAWN-MOWERS AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Dec. 14, 1905.

SER. No. 15,414.



A representation of a rooster with the word "CRUSO" appearing across the body thereof.

SER. No. 15,432. VERMIFUGE. THE PARKER BLAKE CO LTD., New Orleans, La. Filed Dec. 15, 1905.



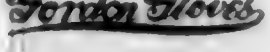
The word "CREOLE," associated with the pictorial representation of a vase supporting ferns and flowers.

SER. No. 15,442. WHISKY. PARDRIDGE & BLACKWELL, Detroit, Mich. Filed Dec. 15, 1905.

RED AND BLUE

The words "RED AND BLUE."

SER. No. 15,496. GLOVES. BROWN, DURRELL & CO., Boston, Mass., assignors to Brown, Durrell Co., Boston, Mass., a Corporation of Massachusetts. Filed Dec. 18, 1905. Used ten years.



The words "GORDON GLOVES."

SER. No. 15,520. DOLLS. STRAWBRIDGE & CLOTHIER, Philadelphia, Pa. Filed Dec. 19, 1905.



The words "THE PRINCESS DOLL" printed on a streamer.

SER. No. 15,541. BOTTOM-DUMPING BUCKETS. GUSTAVUS L. STURGESS, Long Island City, N. Y. Filed Dec. 20, 1905.

EXCELSIOR

The word "EXCELSIOR."

SER. No. 15,528. MONTHLY MAGAZINES. CHRIST. SCOTT & PARSHALL, Cooperstown, N. Y. Filed Dec. 20, 1905.

AMERICAN MOTHERHOOD

The words "AMERICAN MOTHERHOOD."

SER. No. 15,564. BOILER COMPOUNDS FOR PREVENTING OR REMOVING INCRUSTATION. AMERICAN CHEMICAL WORKS, Chicago, Ill. Filed Dec. 21, 1905.



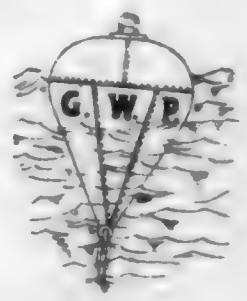
The letters "S B C" and the words "SAFETY BOILER COMPOUND" inclosed in a trefoil.

SER. No. 15,567. HOSIERY. BROWN KNITTING CO. Philadelphia, Pa. Filed Dec. 21, 1905.

"SOCKER"

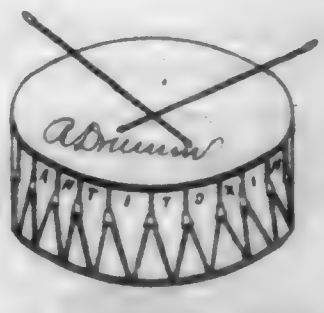
The word "SOCKER" within quotations.

SER. No. 15,571. MIXED PAINTS. GEORGE W. PIPER, New York, N. Y. Filed Dec. 21, 1905.



The representation of a buoy floating on water and bearing the initials "G. W. P."

SER. No. 15,578. POISON FOR INSECTS. ROBERT DRUHE, Fort Worth, Tex. Filed Dec. 16, 1905.



The representation of a drum with sticks on the head and the signature of the registrant also on the head and the word "ANTITOXIN" on the side of the drum.

SER. No. 15,584. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga. Filed Dec. 22, 1905.

DIAMOND

The arbitrary word "DIAMOND."

SER. No. 15,589. HORSESHOES. BRYDEN HORSE SHOE COMPANY, Catasauqua, Pa. Filed Dec. 22, 1905. Used ten years.

FEATHER-WEIGHT

The hyphenated word "FEATHER-WEIGHT."

SER. No. 15,591. HORSESHOES. BRYDEN HORSE SHOE COMPANY. Catasauqua, Pa. Filed Dec. 22, 1905.

BANNER

The word "BANNER."

SER. No. 15,601. CANNED CORN, PEAS, PINEAPPLES, HOMINY, TOMATOES, SAUER-KRAUT, WHITE CHERRIES, PEARS, APRICOTS, AND PEACHES. LOUIS LANDAU & Co., St. Louis, Mo. Filed Dec. 22, 1905.

MAJESTIC

The word "MAJESTIC."

SER. No. 15,616. BAKING-POWDER, CREAM OF TARTAR, SALERATUS, AND BICARBONATE OF SODA. E. R. DURKEE & Co., New York, N. Y. Filed Dec. 23, 1905.



The representation of two ostriches and an egg, one of the ostriches being represented as standing and the other in a sittin position.

SER. No. 15,642. VERMIFUGE. THE PARKER BLAKE CO LTD., New Orleans, La. Filed Dec. 26, 1905. Used ten years.

LASTRAPES'

FRENCH VERMIFUGE

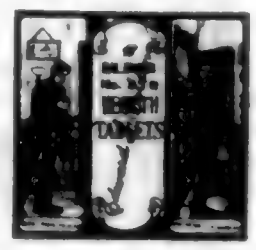
The words "LASTRAPES' FRENCH VERMIFUGE."

SER. No. 15,657. TOOTH-POWDER CONTAINING PHENOL. CUMMINGS-MACRATE CO., INC., Boston, Mass. Filed Dec. 26, 1905.

DENTAPHENE

The word "DENTAPHENE."

SER. No. 15,746. PREPARATION FOR INTERNAL USE FOR THE CURE OF CHRONIC CONSTIPATION, HEADACHE, BILIOUSNESS, TORPID LIVER, SALLOW SKIN, AND KINDRED COMPLAINTS. EDWARD L. BALDWIN CO., San Francisco, Cal. Filed Dec. 29, 1905.



The words, abbreviation, number, and letter "BALDWIN'S No. 25 B HEALTH TABLETS" and the signature of "EDWARD L. BALDWIN," a picture representing a sick man holding a package in his hand and having his head bandaged and the words "TAKE THEM TO-NIGHT, and a picture representing a well man passing through a doorway and the words "AND BE WELL TO-MORROW."

SER. No. 15,760. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED. San Francisco, Cal. Filed Dec. 29, 1905. Used ten years.



A representation of a cupid flying above the clouds, the figure of the cupid being encircled by a sash, drapery flowing behind the head and body, the right arm extended upward with a bow in the right hand, the left hand bearing an arrow, the whole giving the impression of the cupid having just shot an arrow from the bow.

SER. No. 15,769. BUTTER. THE D. E. WOOD BUTTER CO., Elgin, Ill. Filed Dec. 30, 1905.



The representation of a fouled anchor inclosed within a circular ornamental border and associated with the words "ANCHOR BRAND BUTTER ELGIN, ILLINOIS."

SER. No. 15,782. MEDICINAL TABLETS AND GRANULES. THE ABBOTT ALKALOIDAL CO., Chicago, Ill. Filed Dec. 30, 1905. Used ten years.

ABBOTTS
ALKALOIDAL
TABLETS.

The words "ABBOTT'S ALKALOIDAL TABLETS."

SER. No. 15,788. BREAD. PAUL FLEISCHMANN, East Boston, Mass. Filed Dec. 30, 1905.



A pictorial representation of an elderly woman holding in her hands a loaf of bread, said representation associated with the words "GRANDMOTHER'S BREAD."

SER. No. 15,831. PRESERVATIVES AND FILLERS FOR BELTS. CLING-SURFACE COMPANY, Buffalo, N. Y. Filed Jan. 2, 1906.

CLING-SURFACE

The hyphenated word "CLING-SURFACE."

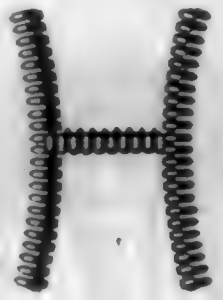
SER. No. 15,878. CORDIAL. SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France. Filed Jan. 4, 1906.



A series of rectangular panels, the upper central panel containing the words "VÉRITABLE BÉNÉDICTINE LIQUEUR DE L'ANCIENNE ABBAYE DE FÉCAMP" in block letters with the representation of the coat of arms of the Abbey of Fécamp at the right and a seal bearing the representation of the Holy St. Benoit bearing a crozier at the left, a lower series of vertical panels containing reading matter in various languages, at either side of the central body of panels a larger vertical panel containing a representation of the well-known squat bottle in which the cordial benedictine is sold, said bottle bearing the labels and seals thereon.

SER. No. 15,894. STRIPS OF UNITED STAPLES FOR FASTENING TOGETHER PAPERS, &c., WHEN INDIVIDUALLY SEVERED OR SEPARATED. THE E. H. HOTCHKISS CO., Norwalk, Conn. Filed Jan. 4, 1906.

SER. No. 15,894.



Three strips of interconnected staples arranged in the manner shown, so as to constitute the letter "H."

SER. No. 15,909. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

MOQUIN

The word "MOQUIN."

SER. No. 15,911. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

SONGO



The representation of a flying eagle, associated with the word "SONGO."

SER. No. 15,918. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

TACON



The word "TACON," associated with the representation of the figure of an Indian holding a gun in one hand and disposed in partial kneeling position upon a cliff overlooking a waterfall.

SER. No. 15,933. RUBBER WATER-BOTTLES, RUBBER FOUNTAIN-SYRINGE BAGS, RUBBER ICE-CAPS, AND RUBBER INVALID-RINGS. THE FAULTLESS RUBBER CO., Akron, Ohio. Filed Jan. 5, 1906.

wearever

The word "WEAREVER."

SER. No. 15,981. WHEAT-FLOUR. WATSON MILL COMPANY, Wichita, Kans. Filed Jan. 5, 1906.



The phrase "U KNEAD IT" inclosed in a wreath of wheat.

SER. No. 16,019. CIGARS. LEAVITT P. BURNELL, Suffield, Conn. Filed Jan. 8, 1906.

THE STUDY

The words "THE STUDY."

SER. No. 16,046. CHEWING-GUM. AMOS MAYNARD LYON, New York, N. Y. Filed Jan. 8, 1906.

TOOTHSOMES

The word "TOOTHSOMES."

SER. No. 16,093. LAUNDRY SOAP. ELLICK H. GOLLINER, Chicago, Ill. Filed Jan. 10, 1906.

YOURS TRULY

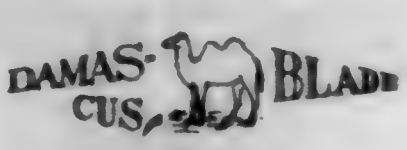
The words "YOURS TRULY."

SER. No. 16,126. CIGARS. HENRY TONIAS AND COMPANY, New York, N. Y. Filed Jan. 11, 1906.

PRIMIDAD

The arbitrary word "PRIMIDAD."

SER. No. 16,175. RAZORS. A. J. HAGUE & CO, New York, N. Y. Filed Jan. 13, 1906.



The representation of a camel of the Bactrian variety and the word "DAMASCUS" arranged at one side and "BLADE" at the other side of the same.

SER. No. 16,128. LEATHER BOOTS AND SHOES. GEO D WITT SHOE CO, Lynchburg, Va. Filed Jan. 11, 1906.



The word "CLANSMAN," the figure or representation of a Scotch Highlander fully arrayed with sword in hand shown on an oval background with a shield over each of his shoulders, one of which shields contains thereon heraldic bars and a single lion passant and the other of which contains three lions passant. Within the "C" of the word "CLANSMAN" and before the "L" of the same appears a Scotch thistle in bloom. The letter "N" of the word referred to concludes with a flourish, which forms a paraph beneath almost the entire word.

SER. No. 16,199. VELVETS AND VELVETEENS. HENRY KUPFER & CO., New York, N. Y. Filed Jan. 15, 1906. Used ten years.



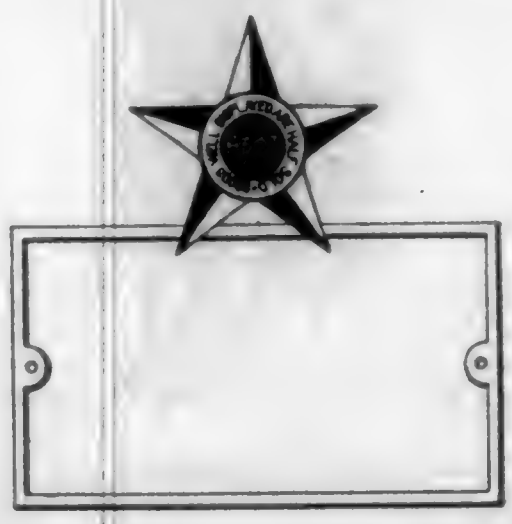
A panel bearing the name "MANCHESTER," scrolls having thereon the words "THE VELVET," a circular panel bearing the representation of a public building and arranged on an oblong panel having at each end thereof representations of leaves and flowers, and at each end of the main panel a coat of arms comprising a shield bearing a ship and striped lower portion and surmounted by a heraldic wreath and globe.

SER. No. 16,203. WHISKY. PH. HAMBURGER COMPANY, Pittsburg, Pa. Filed Jan. 15, 1906. Used ten years.



The words "FAYETTE COUNTY DOUBLE COPPER DISTILLED RYE THE FAYETTE DISTILLING CO. BROWNSVILLE, PA." inclosed in a circle and on either side of the word "RYE" a fancy scroll and immediately below the words "DISTILLING CO." a five-pointed star with a fancy scroll on either side.

SER. No. 16,261. DISPLAY-RACKS. JOHN H. BEST, Galva, Ill. Filed Jan. 17, 1906.



The representation of a star arranged above a rectangular frame, said star having one side of each of its points shaded and two concentric circles inscribed on its central portion with the word "BEST" arranged within the inner circle and the words "GOODS WELL DISPLAYED ARE HALF SOLD" arranged in between the two circles.

SER. No. 16,266. HAMS, SHOULDERS, AND BACON. GOLDEN AND COMPANY, Washington, D. C. Filed Jan. 18, 1906.



The words "GOLDEN ROD" arranged upon a black ornamental panel beneath which are two sprays of golden-rod fastened by a ribbon with scroll-like flowing ends.

SER. No. 16,281. BEER. UNITED STATES BREWING COMPANY OF CHICAGO, Chicago, Ill. Filed Jan. 18, 1906.

UR-BRÄU

The arbitrary word "UR-BRÄU."

SER. No. 16,293. CHILDREN'S SUITS. CHARLES W. KLEHM, Bloomington, Ill. Filed Jan. 18, 1906.

Jack and Jill

The words "JACK AND JILL."

SER. No. 16,341. LEATHER SHOES FOR LADIES, MEN, AND CHILDREN. A. J. BATES CO. Webster, Mass. Filed Jan. 20, 1906. Used ten years.

Webster

The word "WEBSTER."

SER. No. 16,367. COMBINATION OF PAPAYA, PINEAPPLE, AND SUGAR. TROPIC FRUIT COMPANY, LTD., Colony of Wahiawa, Hawaii. Filed Jan. 22, 1906.

PAPAINA

The coined word "PAPAINA."

SER. No. 16,368. MIXTURE OF THE JUICE OF THE GUAVA AND SUGAR. TROPIC FRUIT COMPANY, LTD., Colony of Wahiawa, Hawaii. Filed Jan. 22, 1906.

GUAVELLA

The coined word "GUAVELLA."

SER. No. 16,380. SOAP FOR GENERAL CLEANSING PURPOSES AND FOR LAUNDRY AND FAMILY USE. THEO. B. ROBERTSON SOAP CO., Chicago, Ill. Filed Jan. 22, 1906.

20th Century
Soap

The words "20TH CENTURY SOAP."

SER. No. 16,384. HEADACHE MEDICINE. KEF CHEMICAL CO., Washington, D. C. Filed Jan. 22, 1906.

KEF

The word "KEF."

SER. No. 16,387. REMEDY FOR DYSPEPSIA, INDIGESTION, CONSTIPATION, SOUR STOMACH, FOUL BREATH, AND ALL DISORDERS OF THE STOMACH, LIVER, AND BOWELS. FRANK J. HARTMILLER, Lebanon, Mo. Filed Jan. 22, 1906.

PEPTO-LAX

The hyphenated word "PEPTO-LAX."

SER. No. 16,437. CURE FOR TETTER. HOOPER MEDICINE COMPANY, Hillsboro, Tex. Filed Jan. 23, 1906.



The representation of a black cat sitting on its haunches reaching up and scratching the side of a plank with its fore paws.

SER. No. 16,507. MEDICINES FOR THE RELIEF AND CURE OF EPILEPSY, ST. VITUS DANCE, AND ALL NERVOUS DISORDERS. EDWARD P. MERTZ, Washington, D. C. Filed Jan. 25, 1906.

ELIXIR KOSINE

The words "ELIXIR KOSINE."

SER. No. 16,508. MEDICINES FOR THE CURE OF ALCOHOLIC AND DRUG HABITS. THE ORRINE COMPANY OF THE DISTRICT OF COLUMBIA, Washington, D. C. Filed Jan. 25, 1906.

ORRINE

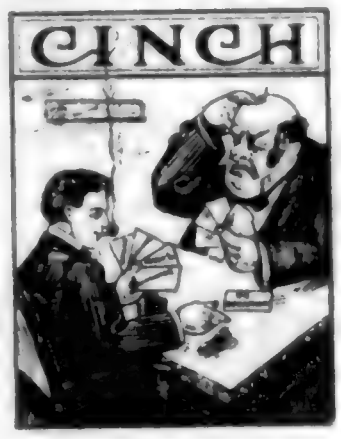
The word "ORRINE."

SER. No. 16,563. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE CO, Chicago, Ill. Filed Jan. 27, 1906.

INTERLOCK

The word "INTERLOCK."

SER. No. 16,515. SMOKING AND CHEWING TOBACCO. INDEPENDENT SNUFF COMPANY, Chicago, Ill. Filed Jan. 26, 1906.



A panel bearing the word "CINCH" and the representation of two men seated at a table playing cards. Upon the table is a card bearing the word "CO-OPERATION," and upon the cards held in the hand of one of the men are the words "DEALER," "GROWER," "MANF'R," and "CONSUMER."

SER. No. 16,541. LEATHER BOOTS, SHOES, AND SLIPPERS. PRESTON B KEITH SHOE COMPANY, Brockton, Mass. Filed Jan. 26 1906.



The picture of a mail-clad knight having on his breast a Maltese cross and holding aloft a shoe in his right hand, the knight being mounted upon a spirited horse wearing a breastplate upon which are a lion rampant and the words "KEITH'S KONQUEROR."

SER. No. 16,564. SEWING-MACHINES AND PARTS THEREOF. UNION SPECIAL MACHINE CO, Chicago, Ill. Filed Jan. 27, 1906. Used ten years.

DOUBLE LOCK

The words "DOUBLE LOCK."

SER. No. 16,598. LIQUID MEDICINAL COMPOUND OR REMEDY TO BE TAKEN INTERNALLY FOR DISEASES SUCH AS GONORRHEA, GLEET, AND ALL OTHERS ATTENDANT WITH UNNATURAL DISCHARGES. DAVID MICHAELS, Boston, Mass. Filed Jan. 29, 1906.

SHAWMUT

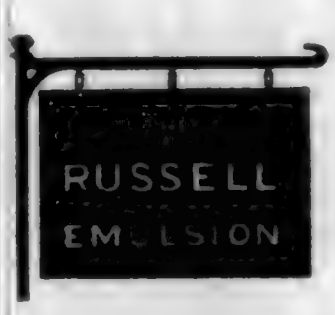
The word "SHAWMUT."

SER. No. 16,600. LINIMENT FOR THE CURE OF CUTS AND FLESH WOUNDS. WILLIAM H. COX, Stuart, Iowa. Filed Jan. 20, 1906.

USE OUR WORLD
WONDER WORKER

The conventional representation of the world with the lines of latitude and longitude marked thereon, also a portion of a barbed-wire fence and a horse near the fence having a cut in its breast and blood flowing from the wound. Above the figure are the words "USE OUR WORLD" and below the figure the words "WONDER WORKER." On each side of the representation is a conventional scroll. The words are printed in red ink, the representation of the world and the scroll in light-blue, and the horse in black.

SER. No. 16,633. EMULSIONS FOR USE IN ALL CONDITIONS OF MALNUTRITION. STANDARD EMULSION CO., New York, N. Y. Filed Jan. 30, 1906.



The representation of a swinging sign-board hung from the arm of a vertical support and displaying in white letters on a red background the words "THE RUSSELL EMULSION."

SER. No. 16,699. VOTING-MACHINES. TRIUMPH VOTING MACHINE COMPANY, Pittsfield, Mass. Filed Feb. 2, 1906.

TRIUMPH

The word "TRIUMPH."

SER. No. 16,791. WHISKY. THE UNION DISTILLING COMPANY, Cincinnati, Ohio. Filed Feb. 6, 1906. Used ten years.

HILLSDALE

The word "HILLSDALE."

SER. No. 16,970. WHISKY. CHAS. M. PFEIFER & CO., Cincinnati, Ohio. Filed Feb. 12, 1906.

B
B B
Billy Baxter's
Best

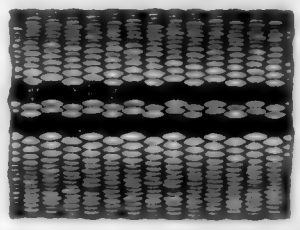
The words "BILLY BAXTER'S BEST" represented in script, the words "BILLY BAXTER'S" extended at an angle to the horizontal and terminating in the paraph extended under the word "BAXTER'S," the word "BEST" being thereunder, the whole surmounted by three capital letters "B" arranged in pyramid form and intertwined with sprigs of rye.

SER. No. 17,221. HOSE-SUPPORTERS. GEORGE FROST COMPANY, Boston, Mass. Filed Feb. 21, 1906. Used ten years.

RUBBA

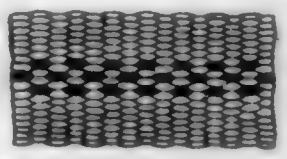
The word "RUBBA."

SER. No. 17,260. FABRIC HOSE. RUBBA FIRE HOSE COMPANY, Jersey City, N. J. Filed Feb. 23, 1906.



Parallel longitudinal lines of red, white, and blue colors in the order named and produced upon a piece of woven fabric hose.

SER. No. 17,261. FABRIC HOSE. RUBBA FIRE HOSE COMPANY, Jersey City, N. J. Filed Feb. 23, 1906.



Red, white, and blue lines running longitudinally upon the exterior of the hose, composed of two broken red lines formed by warps of hat color incorporated in the fabric and one broken blue line formed in a similar way intermediate between the two red lines and separated therefrom by narrow intervals of the body fabric which form the white lines.

SER. No. 17,309. SUSPENDERS FOR TROUSERS. WELD, COLBURN & WILCKENS, New York, N. Y. Filed Feb. 24, 1906. Used ten years.

WC&W

The letters and character "W C & W" inclosed by a plain elongated border.

SER. No. 17,310. CIGARS, STOGIES, AND CHEROOTS. INDEPENDENT TOBACCO MANUFACTURERS PROMOTING COMPANY, Chicago, Ill. Filed Feb. 24, 1906.



A representation of a tobacco-leaf bearing the letters "F. A. L. C." and a crossed pipe and cigar.

SER. No. 17,397. CURRENT-DISTRIBUTING CUT-OUT BOARDS. H. T. PAIGE CO., Philadelphia, Pa. Filed Feb. 23, 1906.

PANELETTES

The word "PANELETTES."

SER. No. 17,409. MINERAL WATER. JAMES A. HORN, Horn Springs, Tenn. Filed Feb. 26, 1906.



The representation of a pair of horns gracefully mounted within a fanciful scroll with floral leaves disposed thereon and another representation of a horn above with a landscape in perspective surrounded by a circle, associated with the words "HORN MINERAL WATER," which are arranged as follows: The word "HORN" appears at the top of the circle. Below the same are the words "MINERAL WATER," printed across the scroll, and within the lines of the circle appear the words "HORN MINERAL WATER HORN SPRINGS, TENN."

SER. No. 17,454. TOOTH AND NAIL BRUSHES. WILLIAM L. MARTIN, New York, N. Y. Filed Mar. 1, 1906.

Marguerite

The word "MARGUERITE."

SER. No. 17,458. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Mar. 2, 1906.



A star surrounded by circles, associated with the word "STAR."

SER. No. 17,515. TYPE-WRITER RIBBONS. FRANK O. MITTAG, Park Ridge, N. J. Filed Mar. 5, 1906. Used ten years.

CLIMAX

The word "CLIMAX."

SER. No. 17,516. TYPE-WRITER RIBBONS. FRANK O. MITTAG, Park Ridge, N. J. Filed Mar. 5, 1906. Used ten years.

ROUND BOX

The words "ROUND BOX."

SER. No. 17,545. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala., Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

VICTOR

The word "VICTOR."

SER. No. 17,546. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

20TH CENTURY

The figures and word "20TH CENTURY."

SER. No. 17,548. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

SCOCO

The word "Scoco."

SER. No. 17,557. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

ASHLEY PHOSPHATE CO'S

The words and abbreviation "ASHLEY PHOSPHATE CO.'S."

SER. No. 17,558. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

DAVIE & WHITTLE'S

The words and character "DAVIE & WHITTLE'S."

SER. No. 17,559. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

CHICORA

The word "CHICORA."

SER. No. 17,561. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years

POMONA

The word "POMONA."

SER. No. 17,562. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

EDISTO

The word "EDISTO."

SER. No. 17,563. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

CHEROKEE

The word "CHEROKEE."

SER. No. 17,564. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

GREENVILLE FERTILIZER CO.'S

The words and abbreviation "GREENVILLE FERTILIZER Co.'s."

SER. No. 17,566. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

BLUE RIDGE

The words "BLUE RIDGE."

SER. No. 17,568. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

MONTGOMERY

The word "MONTGOMERY."

SER. No. 17,581. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

SOUTHERN FERTILIZER CO.'S

The words and abbreviation "SOUTHERN FERTILIZER Co.'s."

SER. No. 17,582. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

OGLETHORPE

The word "OGLETHORPE."

SER. No. 17,583. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

PORT ROYAL

The words "PORT ROYAL."

SER. No. 17,584. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

ROME

The word "ROME."

SER. No. 17,585. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

SCOTT'S

The word "SCOTT'S."

SER. No. 17,586. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

OLYMPIC

The word "OLYMPIC."

SER. No. 17,587. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

OCMULGEE

The word "OCMULGEE."

SER. No. 17,588. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

RESCUE

The word "RESCUE."

SER. No. 17,589. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C. and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

MOBILE

The word "MOBILE."

SER. No. 17,596. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

WANDO

The word "WANDO."

PRINTED LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED APRIL 3, 1906.

50,804. ROPE-CLIPS. American Hoist & Derrick Company St. Paul, Minn.
The word "Crosby." Used ten years.
Filed October 16, 1905. Serial No. 13,648. PUBLISHED FEBRUARY 6, 1906.

50,805. SPECTACLE AND EYEGLASS FRAMES. Bay State Optical Company, Attleboro, Mass.
The word "Besto."
Filed October 11, 1905. Serial No. 13,492. PUBLISHED FEBRUARY 6, 1906.

50,806. HAIR-CLIPPERS. Brown & Sharpe Manufacturing Company, Providence, R. I.
The word "Figaro."
Filed January 6, 1906. Serial No. 15,954. PUBLISHED FEBRUARY 6, 1906.

50,807. PHOTOGRAPHIC FILMS. Compagnie Générale de Phonographes Cinématographes et Appareils de Précision, Paris, France.
The representation of a rooster.
Filed December 16, 1905. Serial No. 15,738. PUBLISHED FEBRUARY 6, 1906.

50,808. BABBITT AND ANTIFRICTION METAL. Cotton States Belting & Supply Co., Atlanta, Ga.
The word "Arctic" and the representation of a polar bear on a floe of ice.
Filed January 8, 1906. Serial No. 16,036. PUBLISHED FEBRUARY 6, 1906.

50,809. NON-INTOXICATING MALT BEVERAGE. Dallas Brewery, Dallas, Tex.
The representation of a steer's head surrounded by a circular band on which the word "Non Intoxicating" is placed, associated with the words "Long Horn" arranged on an oblong panel surrounded by scrollwork.
Filed July 26, 1905. Serial No. 10,836. PUBLISHED FEBRUARY 6, 1906.

50,810. WOOD AND CABINET SCRAPERS. E. C. Atkins & Company, Indianapolis, Ind.
The word "Ram's-Horn."
Filed January 6, 1906. Serial No. 15,962. PUBLISHED FEBRUARY 6, 1906.

50,811. CARRIAGES. H. H. Babcock Company, Watertown, N. Y.
The word "Babcock." Used ten years.
Filed January 11, 1906. Serial No. 16,130. PUBLISHED FEBRUARY 6, 1906.

50,812. BASE-BALL BATS. J. F. Hillerich & Son, Louisville, Ky.
The words "Louisville Slugger Made by J. F. Hillerich & Son, Louisville, Ky." inclosed within an oval-shaped border. Used ten years.
Filed December 26, 1905. Serial No. 15,666. PUBLISHED FEBRUARY 6, 1906.

50,813. GAME-BOARDS. Louis Hudgin, Nogales, Ariz. Ter.
The words "Yaqui Troubles."
Filed October 12, 1905. Serial No. 13,519. PUBLISHED FEBRUARY 6, 1906.

50,814. COAL. Hull Coal & Coke Corporation, Roanoke, Va.
The representation of a circular coal-screen bearing the words, character, and abbreviation "Circular Screened Hull Coal & Coke Corporation, Roanoke, Va." On the front of the screen is a diamond-shaped red panel bearing the words "Red Jacket Coal."

Filed January 4, 1906. Serial No. 15,887. PUBLISHED FEBRUARY 6, 1906.

50,815. SHEET-METAL ROOFING-PLATES. Robert J. Hyndman, Cincinnati, Ohio.
The word "Protector," associated with the representation of steam sailing vessels.
Filed August 19, 1905. Serial No. 11,798. PUBLISHED FEBRUARY 6, 1906.

50,816. FIRE-ENGINES. International Power Company, Providence, R. I.
The word "Amoskeag." Used ten years.
Filed January 11, 1906. Serial No. 16,131. PUBLISHED FEBRUARY 6, 1906.

50,817. BABBITT METAL AND ANTIFRICTION AND BEARING METALS. John Finn Metal Works, San Francisco, Cal.
The word "Sequoia."
Filed August 7, 1905. Serial No. 11,206. PUBLISHED FEBRUARY 6, 1906.

50,818. BABBITT METAL AND ANTIFRICTION AND BEARING METALS. John Finn Metal Works, San Francisco, Cal.
The word "Aidion."
Filed August 7, 1905. Serial No. 11,207. PUBLISHED FEBRUARY 6, 1906.

50,819. ANTIFRICTION AND BEARING METALS. John Finn Metal Works, San Francisco, Cal.
A disk surrounded by a circular border and bearing the letters "M" and "W" and a monogram composed of the letters "J F."
Filed August 7, 1905. Serial No. 11,208. PUBLISHED FEBRUARY 6, 1906.

50,820. CHAMPAGNE. Robert H. Jones, Bath, N. Y.
The words "White Pearl."
Filed October 2, 1905. Serial No. 13,215. PUBLISHED FEBRUARY 6, 1906.

50,821. SOLDERING FLUID. Non-Corrosive Coating Co., Connellsville, Pa.
The coined word "La-Patacin" surrounded by a rectangular panel.
Filed August 22, 1905. Serial No. 11,922. PUBLISHED FEBRUARY 6, 1906.

50,822. SASH-PULLEYS. Norris Sash Pulley Company, Baltimore, Md.
The word "Norris." Used ten years.
Filed October 28, 1905. Serial No. 14,022. PUBLISHED FEBRUARY 6, 1906.

50,823. TICKET ISSUING AND RECORDING MACHINES. Ohmer Fare Register Co., Dayton, Ohio.
The coined word "Ohmergraph."
Filed November 13, 1905. Serial No. 14,566. PUBLISHED FEBRUARY 6, 1906.

50,824. INSULATED WIRE AND INSULATED-WIRE CABLES. Phillips Insulated Wire Co., Pawtucket, R. I.
The representation of a globe encircled by two coils of cable, between which appears the word "Ideal" inclosed in quotation-marks.
Filed August 7, 1905. Serial No. 11,226. PUBLISHED FEBRUARY 6, 1906.

50,825. INSULATED CONDUCTING-WIRES. Phillips Insulated Wire Co., Pawtucket, R. I.
The letters "O. K." inclosed in quotation-marks on a black disk surrounded by concentric circles.

Filed August 7, 1905. Serial No. 11,329. PUBLISHED FEBRUARY 6, 1906.

50,826. TOOLS FOR CLEANING STEAM-BOILERS. POWER SPECIALTY CO., Detroit, Mich.

The word "DIAMOND" and a wreath arranged on a diamond-shaped figure.

Filed October 6, 1905. Serial No. 13,282. PUBLISHED FEBRUARY 6, 1906.

50,827. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass.

The word "MASSACHUSETTS." Used ten years.

Filed January 2, 1906. Serial No 15,311. PUBLISHED FEBRUARY 6, 1906.

50,828. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass.

The word "SAMSON."

Filed January 2, 1906. Serial No. 15,312. PUBLISHED FEBRUARY 6, 1906.

50,829. ACETYLENE-GAS GENERATORS. JUAN DE DIOS TEJADA, New York, N. Y.

The word "ASTRAL."

Filed August 29, 1905. Serial No. 12,081. PUBLISHED FEBRUARY 6, 1906.

50,830. AUTOMOBILES AND THEIR COMPONENT PARTS. THE BIRMINGHAM SMALL ARMS CO. LTD., Birmingham, England.

The representation of three stacked rifles.

Filed January 4, 1906. Serial No. 15,386. PUBLISHED FEBRUARY 6, 1906.

50,831. CATAMENIAL BANDAGES. THE BORATED SPECIALTY COMPANY, New York, N. Y.

The representation of a lunar crescent having seated therein a partially-draped female figure holding in its hands an irregularly-disposed streamer bearing the inscription "CRESCENT BRAND B. S. N."

Filed January 5, 1906. Serial No. 15,924. PUBLISHED FEBRUARY 6, 1906.

50,832. FARM, CHURCH, AND SCHOOL BELLS. THE C. S. BELL CO., Hillsboro, Ohio.

The word "CRYSTAL." Used ten years.

Filed January 12, 1906. Serial No. 16,157. PUBLISHED FEBRUARY 6, 1906.

50,833. ASBESTOS SOCK-SOLES. THE DR. HÖGYES' ASBESTOS SOCK COY., London, England.

A representation of a human foot in outline and skeleton above an asbestos sock-sole surrounded by parallel ellipses containing between them the inscription "DR. HOGYES ASBESTOS HYGIENIC SOCKS" and an ornamental stop between the first and last words.

Filed July 14, 1905. Serial No. 10,226. PUBLISHED FEBRUARY 6, 1906.

50,834. EARTH-SCRAPERS. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "COLUMBUS." Used ten years.

Filed September 20, 1905. Serial No. 12,824. PUBLISHED FEBRUARY 6, 1906.

50,835. COUNTER-SHAFTS AND APPURTENANCES THERETO. THE MOSSBERG WRENCH COMPANY, Central Falls, R. I.

The word "MULTI-PULL."

Filed January 4, 1906. Serial No. 15,385. PUBLISHED FEBRUARY 6, 1906.

50,836. INTERNAL-COMBUSTION ENGINES. THE PROGRESSIVE MFG. CO., Torrington, Conn.

The word "EAGLE."

Filed September 27, 1905. Serial No. 13,070. PUBLISHED FEBRUARY 6, 1906.

50,837. STORAGE BATTERIES. THE STORAGE BATTERY SUPPLY CO., New York, N. Y.

The representation of a large and a small bottle and the conventional representation of Satan appearing standing on the bottles and holding his trident over the mouth of the large bottle, from which mouth extend conventional flashes, the letters "S B S" and the abbreviation "Co." appearing on the large bottle and the whole being inclosed by an ornamental border.

Filed September 21, 1905. Serial No. 12,877. PUBLISHED FEBRUARY 6, 1906.

50,838. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.

The arbitrary word "CHAMPION."

Filed November 15, 1905. Serial No. 14,669. PUBLISHED FEBRUARY 6, 1906.

50,839. HOT-AIR FURNACES. THE WISE FURNACE CO., Akron, Ohio.

The representation of an owl sitting upon the limb of a tree, in connection with the word "WISE."

Filed September 26, 1905. Serial No. 13,039. PUBLISHED FEBRUARY 6, 1906.

50,840. SHIP-LOGS AND SOUNDING-MACHINES. THOMAS WALKER & SON, LTD., Birmingham, England.

The word "CHERUBAL."

Filed August 12, 1905. Serial No. 11,757. PUBLISHED FEBRUARY 6, 1906.

50,841. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo.

The word "ROYAL."

Filed September 13, 1905. Serial No. 12,525. PUBLISHED FEBRUARY 6, 1906.

50,842. WRENCHES. WALWORTH M'F'G. CO., Boston, Mass.

The word "STILLSON." Used ten years.

Filed October 31, 1905. Serial No. 14,144. PUBLISHED FEBRUARY 6, 1906.

50,843. WAGONS. WEBER WAGON COMPANY, Chicago, Ill.

The representation of a Maltese cross having thereon the words and figures "WEBER KING OF ALL ESTABLISHED 1845."

Filed August 9, 1905. Serial No. 11,452. PUBLISHED FEBRUARY 6, 1906.

50,844. TYPE-WRITING MACHINES. WELLINGTON TYPEWRITER COMPANY, New York, N. Y.

The word "WELLINGTON." Used ten years.

Filed May 17, 1905. Serial No. 16,111. PUBLISHED FEBRUARY 6, 1906.

50,845. CLUTCHES. T. B. WOOD'S SONS, Chambersburg, Pa.

The words "UNIVERSAL GIANT."

Filed October 12, 1905. Serial No. 13,541. PUBLISHED FEBRUARY 6, 1906.

50,846 BUILDING, ROOFING, AND SHEATHING PAPER. BARRETT MANUFACTURING COMPANY, New York, N. Y.

The letter "B" upon a diamond-shaped background. Used ten years.

Filed August 21, 1905. Serial No. 11,870. PUBLISHED FEBRUARY 6, 1906.

50,847. SPRING-WATER. THEODORE C. BATES, North Brookfield, Mass.

The word "QUABAUG" and the picture of the head of the Indian chief King Philip wearing a feather headdress, the words "KING PHILIP" appearing beneath the picture.

Filed October 28, 1905. Serial No. 14,029. PUBLISHED FEBRUARY 6, 1906.

50,848. SCOURING-SOAP. BON AMI COMPANY, New York N. Y.

The words "BON AMI." Used ten years.

Filed November 7, 1905. Serial No. 14,266. PUBLISHED FEBRUARY 6, 1906.

50,849. READY FELT ROOFING. BUCHANAN FOSTER COMPANY, Philadelphia, Pa.

The representation of two monkeys seated upon a roll of roofing-felt, one end of which is unrolled and held above their heads as a weather-shield, the whole surmounted by the word "CONGO."

Filed January 2, 1906. Serial No. 15,358. PUBLISHED FEBRUARY 6, 1906.

50,850. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY CAGUAS TOBACCO COMPANY, New York, N. Y., and Porto Rico.

A representation of a strip-band with a beaded edge, top and bottom, the spaces between said beaded edges being divided by four diagonal panels, the two inner panels sloping in opposite directions and the two outer panels sloping in opposite directions, the alternate panels being parallel to each other, each of said four panels containing a star. Between the two inner panels is the word "DIADONA."

Filed October 6, 1905. Serial No. 13,287. PUBLISHED FEBRUARY 6, 1906.

50,851. LUBRICATING-OILS. CREW LEVICK Co., Philadelphia, Pa.

[The arbitrary word "CREWLEVICK."

Filed August 12, 1905. Serial No. 11,611. PUBLISHED FEBRUARY 6, 1906.

50,852. ALIMENTARY PRODUCTS. ERSTE WIENER EXPORT MALZFABRIK HAUSER & SOBOTKA. Stadlau, near Vienna, Austria-Hungary.

The word "CANDOL."

Filed August 19, 1905. Serial No. 11,792. PUBLISHED FEBRUARY 6, 1906.

50,853. SONG-BIRDS. MAX GEISLER, Omaha, Nebr.

The words "LIVING MUSIC BOX."

Filed December 18, 1905. Serial No. 15,482. PUBLISHED FEBRUARY 6, 1906.

50,854. ASPHALTIC WATERPROOFING COMPOUND. HYDREX FELT & ENGINEERING Co., Portland, Me.; East Walpole, Mass.; New York, N. Y., and Chicago, Ill.

The word "HYDREX."

Filed July 31, 1905. Serial No. 11,683. PUBLISHED FEBRUARY 6, 1906.

50,855. PREPARATION FOR SCOURING, CLEANSING, AND WASHING. INDIA ALKALI WORKS, Boston, Mass.

The word "SAVOGRAN." Used ten years.

Filed November 28, 1905. Serial No. 15,034. PUBLISHED FEBRUARY 6, 1906.

50,856. SOAP. MAPLE CITY SOAP WORKS, Monmouth, Ill.

The words "MAPLE CITY," associated with and superimposed upon the representation of maple-leaves.

Filed September 21, 1905. Serial No. 12,845. PUBLISHED FEBRUARY 6, 1906.

50,857. CHEWING-TOBACCO IN CIGAR FORM. ALFRED MARSCHNER, Omaha, Nebr.

The word "DRYSMOKANCHU" within the outline of a cigar.

Filed December 18, 1905. Serial No. 15,491. PUBLISHED FEBRUARY 6, 1906.

50,858. COAL. MERCHANTS COAL COMPANY, Baltimore, Md.

The word "ORENDA."

Filed September 30, 1905. Serial No. 13,160. PUBLISHED FEBRUARY 6, 1906.

50,859. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J.

The words and abbreviation "THE BRADLEY WHITE LEAD Co. NEW YORK." Used ten years.

Filed August 19, 1905. Serial No. 11,813. PUBLISHED FEBRUARY 6, 1906.

50,860. WINES. SARA B. SMITH, Livermore, Cal.

The representation of a shield having thereon a monogram composed of the letters "J P S," the shield being surrounded by grapes and leaves and having over the same the words "OLIVINA-IDEAL VINTAGES."

Filed August 21, 1905. Serial No. 11,838. PUBLISHED FEBRUARY 6, 1906.

50,861. LITHIA-WATER. WILLIAM G. TAYLOR, Richmond, Va.

The word-symbol "FONTICELLO." Used ten years.

Filed November 15, 1905. Serial No. 14,694. PUBLISHED FEBRUARY 6, 1906.

50,862. PORTLAND CEMENT. THE GLENS FALLS PORTLAND CEMENT Co., Glens Falls, N. Y.

The word "INVICTA."

Filed August 5, 1905. Serial No. 11,288. PUBLISHED FEBRUARY 6, 1906.

50,863. WOOD BLOCKS FOR PAVING. UNITED STATES WOOD PRESERVING COMPANY, New York, N. Y.

The representation of an eagle with arrows in its talons and with its wings outspread in circular form and associated with the letters "U S."

Filed July 29, 1905. Serial No. 11,019. PUBLISHED FEBRUARY 6, 1906.

50,864. COCOA. C. J. VAN HOUTEN & ZOON, Weesp, Netherlands.

The words "VAN HOUTEN." Used ten years.

Filed July 22, 1905. Serial No. 10,704. PUBLISHED FEBRUARY 6, 1906.

50,865. CANDIES AND CHOCOLATE OF ALL KINDS. STEPHEN F. WHITMAN & SON, Philadelphia, Pa.

The word "WHITMAN'S." Used ten years.

Filed November 6, 1905. Serial No. 14,365. PUBLISHED FEBRUARY 6, 1906.

50,866. CANDIES AND CHOCOLATES OF ALL DESCRIPTIONS. STEPHEN F. WHITMAN & SON, Philadelphia, Pa.

The word "WHITMAN'S" in heavy script with a paraph extending from the terminal letter backward and beneath the entire word.

Filed November 8, 1905. Serial No. 14,402. PUBLISHED FEBRUARY 6, 1906.

50,867. VARNISHES. JOHN BABCOCK & Co., Boston, Mass.

A rectangular panel bearing thereon the words "BABCOCK'S VARNISH," the word "VARNISH" appearing on a horizontally-curved panel, with another curved panel above the same and a rectangular ornamental panel below the same. Used ten years.

Filed June 13, 1905. Serial No. 8,050. PUBLISHED FEBRUARY 6, 1906.

50,868. POCKET-KNIVES. HEINRICH BÖKER & Co., Solingen, Germany.

The representation of a leafless tree.

Filed June 7, 1905. Serial No. 7,608. PUBLISHED FEBRUARY 6, 1906.

50,869. PULLEYS, BLOCKS, AND PARTS THEREOF. BOSTON & LOCKPORT BLOCK COMPANY, Boston, Mass.

The designation of a star either by word or symbol.

Filed June 2, 1905. Serial No. 7,232. PUBLISHED FEBRUARY 6, 1906.

50,870. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y.

The words "HORSE GUARDS."

Filed June 23, 1905. Serial No. 8,828. PUBLISHED FEBRUARY 6, 1906.

50,871. SNUFF. BYFIELD SNUFF Co., Byfield, Mass.

The words "RED TOP" inclosed in a series of concentric circles, in connection with the representation of a frame inclosing a fanciful bust picture of a girl and the words "PEARSON'S MILLS" on an elliptical panel, together with the words "PEARSON'S RED TOP SNUFF BYFIELD, MASS." at the left. Used ten years.

Filed May 13, 1905. Serial No. 5,564. PUBLISHED FEBRUARY 6, 1906.

50,872. TRIMMINGS FOR FREIGHT-CAR DOORS. CAMEL COMPANY, Chicago, Ill.

The word "CAMEL."

Filed June 10, 1905. Serial No. 7,804. PUBLISHED FEBRUARY 6, 1906.

50,873. BAGS OF PAPER, CLOTH, AND LIKE MATERIALS. EAGLE PAPER Co., Richmond, Va.

A rectangular panel bearing the words "RAW HIDE" and the words "BAGS UNEXCELLED. EXTRA STRONG. FULL COUNT." Said panel also contains the representation of a butcher in a butcher-shop in the act of removing a hide from a suspended beef. The words "RAW HIDE" also appear on the beef.

Filed June 2, 1905. Serial No. 7,266. PUBLISHED FEBRUARY 6, 1906.

50,874. CIGARS AND CHEROOTS. OTTO EISENLOHR & BROS., Philadelphia, Pa.

The word "CINCO" and the representation of an oval-shaped panel showing a tropical scene, with an ostrich in the foreground holding a horseshoe in its mouth, on one side of which panel is a woman in the costume of a Quaker standing in front of a spinning-wheel in front of an open fireplace, and on the other side is a man in the Quaker costume walking along the street and holding in one hand an umbrella. Used ten years.

Filed June 16, 1905. Serial No. 8,355. PUBLISHED FEBRUARY 6, 1906.

50,875. STOVES, RANGES, AND FURNACES AND CASTINGS THEREFOR. GOHMANN BROS. & KAMLER Co., New Albany, Ind.

A representation of a shield, upon which are displayed the words "ANTLER STOVES & RANGES," a monogram comprising the characters "G B & K Co," a representation of a pair of antlers partly surrounding said monogram, and the words "NEW ALBANY, IND.," a scroll being disposed across the top of the representation of the shield and the words "GOHMANN BROS. & KAMLER Co." being displayed on the scroll.

Filed June 6, 1905. Serial No. 7,555. PUBLISHED FEBRUARY 6, 1906.

50,876. STEEL. HOWE BROWN & Co. LTD., Pittsburg, Pa.

The word "MEXMINE."

Filed May 13, 1905. Serial No. 5,492. PUBLISHED FEBRUARY 6, 1906.

50,877. PORTLAND CEMENT. KANSAS PORTLAND CEMENT Co., Iola, Kans.

The representation of a sunflower, associated with the word "SUNFLOWER" and surrounded by two concentric circles, with the words "KANSAS PORTLAND CEMENT CO. IOLA, KANSAS." between the two circles.

Filed July 13, 1905. Serial No. 10,266. PUBLISHED FEBRUARY 6, 1906.

50,878. POLISHING-SOAP. KENDALL MFG. Co., Providence, R. I.

The word "SUNORIA" and the representation of a landscape with sun-rays appearing above the horizon, there being in the foreground lines of trees and the representation of a stone fence with a gate therein through which a road passes.

Filed May 23, 1905. Serial No. 6,399. PUBLISHED FEBRUARY 6, 1906.

50,879. SOAP. KENDALL MFG. Co., Providence, R. I.

The words "FRENCH LAUNDRY SOAP" appearing within the upper corner of a rectangular border, which also incloses a river scene, with trees, houses, a bridge, and a boat in the background and in the foreground the representation of a woman kneeling on the margin of the river in the act of washing clothes. Around the inside border is a second border, between which and the inside border representations of frogs in different positions appear.

Filed May 23, 1905. Serial No. 6,401. PUBLISHED FEBRUARY 6, 1906.

50,880. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

The letters and abbreviation "N. F. Co."

Filed June 12, 1905. Serial No. 7,890. PUBLISHED FEBRUARY 6, 1906.

50,881. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

The legend "NICHOLSON FILE Co." Used ten years.

Filed June 12, 1905. Serial No. 7,891. PUBLISHED FEBRUARY 6, 1906.

50,882. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

A representation of two crossed files, associated with the word "NICHOLSON" above and the letters "U. S. A." below the files.

Filed June 12, 1905. Serial No. 7,892. PUBLISHED FEBRUARY 6, 1906.

50,883. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

A representation of two crossed files, associated with "N. F." above and "Co." below.

Filed June 12, 1905. Serial No. 7,893. PUBLISHED FEBRUARY 6, 1906.

50,884. CIGARS. CHARLES B. PERKINS, Boston, Mass.

The words "MONTE ROSA" and the representation of the head and shoulders of a young woman of the brunette type wearing upon her shoulders a mantle of red, white, and yellow, the whole being inclosed within a circular ornamental border superimposed upon a panel of gold having a border of white and gold and having produced thereon sprays of apple-blossoms, and the representation of medals, which appear below the panel on either side of the figure.

Filed May 26, 1905. Serial No. 6,905. PUBLISHED FEBRUARY 6, 1906.

50,885. TOILET SOAP. MEDICAL LAKE SALTS MFG. Co., Spokane Wash.

The words "INDIAN HEAD" and the representation of an Indian's head.

Filed June 2, 1905. Serial No. 7,226. PUBLISHED FEBRUARY 6, 1906.

50,886. CIGARS. CHARLES B. PERKINS, Boston, Mass.

The word "GINTA" and the representation of the head of a young woman of brunette type wearing upon her head a band of pink and upon her neck a necklace of pearls, and a bodice of shady blue, the figure being partially surrounded by a border of harmonizing ornamental design comprising lilies, bluebells, and other flowers and medals.

Filed May 29, 1905. Serial No. 6,907. PUBLISHED FEBRUARY 6, 1906.

50,887. HAVANA CIGARS. ROTHENBURG & SCHLOSS, Kansas City, Mo.

The representation of the head of a woman of the brunette type surrounded by an ornamental border flanked by scroll-like figures, there being an ornamental panel above the border and a centrally-located winged figure and the words "LA BELLE SUPREME," which appear within the panel.

Filed May 13, 1905. Serial No. 5,570. PUBLISHED FEBRUARY 6, 1906.

50,888. STOVES, RANGES, AND GAS-STOVES, AND ATTACHMENTS AND PARTS AND REPAIRS THEREFOR. SILL STOVE WORKS, Rochester, N. Y.

The words "HAS NO EQUAL." Used ten years.

Filed July 18, 1905. Serial No. 10,546. PUBLISHED FEBRUARY 6, 1906.

50,889. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y.

The word "STANDARD." Used ten years.

Filed June 16, 1905. Serial No. 8,335. PUBLISHED FEBRUARY 6, 1906.

50,890. CYCLES, MOTOR-CYCLES, AND PARTS THEREOF. THE BIRMINGHAM SMALL ARMS CO. LD., Birmingham, England.

The representation of three stacked rifles.

Filed May 19, 1905. Serial No. 6,106. PUBLISHED FEBRUARY 6, 1906.

50,891. WITHDRAWN.

50,892. CAPS AND CORKS. THE PHOENIX CAP COMPANY, New York, N. Y.

The word "PHOENIX."

Filed May 20, 1905. Serial No. 6,166. PUBLISHED FEBRUARY 6, 1906.

50,893. CIGARETTES. THE MILLER, DU BEUL & PETERS MFG. Co., Cincinnati, Ohio.

The word "BROWNIE" and the representation of brownies smoking cigarettes arranged on a panel.

Filed April 15, 1905. Serial No. 1,748. PUBLISHED FEBRUARY 6, 1906.

50,894. CIGARETTE-HOLDERS. ARTHUR QUINTON WALSH, New York, N Y.

The hyphenated word "X-PELLER."

Filed May 4, 1905. Serial No. 4,272. PUBLISHED FEBRUARY 6, 1906.

50,895. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.

The words "FAUST'S OWN" and the pictorial representation of the head of the character known as "Faust," the said pictorial representation being located within a circular border upon which the words "FAUST'S OWN" appear.

Filed July 3, 1905. Serial No. 9,758. PUBLISHED FEBRUARY 6, 1906.

50,896. FREIGHT-CAR DOOR HANGERS, FASTENERS, AND GUIDE-BRACKETS. CAMEL COMPANY, Chicago, Ill.

The pictorial representation of a camel.

Filed June 10, 1905. Serial No. 7,805. PUBLISHED FEBRUARY 6 1906.

50,897. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The word "MONARCH." Used ten years.

Filed May 13, 1905. Serial No. 5,512. PUBLISHED FEBRUARY 6, 1906.

50,898. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The characters "X P." Used ten years.

Filed May 13, 1905. Serial No. 5,515. PUBLISHED FEBRUARY 6, 1906.

50,899. STEEL. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa.

The characters "T X." Used ten years.

Filed May 13, 1905. Serial No. 5,517. PUBLISHED FEBRUARY 6, 1906.

50,900. LUBRICATING-OILS. GALENA-SIGNAL OIL COMPANY, Franklin, Pa.

The representation of a five-pointed star upon which appears the letter "G."

Filed July 14, 1905. Serial No. 10,314. PUBLISHED FEBRUARY 6, 1906.

50,901. BLUING. GRIGGS, COOPER AND COMPANY, St. Paul, Minn.

The word "WHYNOT."

Filed July 3, 1905. Serial No. 9,650. PUBLISHED FEBRUARY 6, 1906.

50,902. CHOCOLATES. GRIGGS, COOPER AND COMPANY, St. Paul, Minn.

The word "WHYNOT."

Filed July 3, 1905. Serial No. 9,651. PUBLISHED FEBRUARY 6, 1906.

50,903. TOILET AND LAUNDRY SOAP. HASKINS BROS. & Co., Sioux City, Iowa, and Omaha, Nebr.

The words "BEAT 'EM ALL" inclosed within an ornamental border, the words "HASKINS BROS. & CO. OMAHA & SIOUX CITY" being arranged above the mark and within the border and the word "SOAP" beneath the mark. Used ten years.

Filed June 23, 1905. Serial No. 8,848. PUBLISHED FEBRUARY 6, 1906.

50,904. POCKET-KNIVES. F. KÖLLER & Co., Solingen, Germany.

The words "MAGNA WEXL."

Filed June 17, 1905. Serial No. 8,435. PUBLISHED FEBRUARY 6, 1906.

50,905. FILES AND RASPS AND HANDLES AND HOLDERS THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

Two crossed files, associated with the word "NICHOLSON" and the characters "U. S. A." arranged longitudinally or tandem fashion.

Filed June 12, 1905. Serial No. 7,894. PUBLISHED FEBRUARY 6, 1906.

50,906. FILES AND RASPS AND HOLDERS AND HANDLES THEREFOR. NICHOLSON FILE COMPANY, Providence, R. I.

A representation of two crossed files, associated with the word "NICHOLSON" below.

Filed June 12, 1905. Serial No. 7,895. PUBLISHED FEBRUARY 6, 1906.

50,907. MALT EXTRACT. PARAGON MALT EXTRACT COMPANY, New York, N. Y.

The word "PARAGON."

Filed June 29, 1905. Serial No. 9,401. PUBLISHED FEBRUARY 6, 1906.

50,908. CHOCOLATES, BONBONS, AND SIMILAR CANDIES. RUSSELL & Co., Cambridge, Mass.

The word "RUSSELL'S" written in script and upwardly inclined, the final "s" having a long wide flourish. An ornamental border surrounds this word, consisting of a series of dots and circles, and within the border, following the word "RUSSELL'S," are the words "OLD FASHIONED," while within the upper right-hand corner of said border is the word "ORIGINAL" surmounting a scroll ornament.

Filed April 6, 1905. Serial No. 647. PUBLISHED FEBRUARY 6, 1906.

50,909. ESPECIALLY HIGH GRADE OF PLUG-TOBACCO. RYAN-HAMPTON TOBACCO Co., Newburg, Ind.

The letters "R" and "B's" with the character "&" between, associated with the word "GREENVILLE" beneath, all arranged on a rectangular figure.

Filed July 11, 1905. Serial No. 10,112. PUBLISHED FEBRUARY 6, 1906.

50,910. CHEWING-TOBACCO. RYAN-HAMPTON TOBACCO Co., Newburg, Ind.

The letters "R & B" appearing between two horizontal lines in a barrel-shaped figure. Used ten years.

Filed July 11, 1905. Serial No. 10,113. PUBLISHED FEBRUARY 6, 1906.

50,911. ANTIFRICTION METALS. ELMER S. SHIMER, Milton, Pa.

The word "SHIMER" written in script, with the initial letter "S" peculiarly joined to the following letter "H" and the final letter "R" concluding with a flourish, with the coined word "ANTIFRIK" appearing within a diamond-shaped figure before and after the said word "SHIMER."

Filed July 1, 1905. Serial No. 9,565. PUBLISHED FEBRUARY 6, 1906.

50,912. STOVES, RANGES, GAS-STOVES, AND ATTACHMENTS AND PARTS AND REPAIRS THEREFOR. SILL STOVE WORKS, Rochester, N. Y.

The word "RADIX."

Filed July 18, 1905. Serial No. 10,548. PUBLISHED FEBRUARY 6, 1906.

50,913. LOCKS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.

An annular-shaped figure and a pointed bar projected partly through the same.

Filed June 17, 1905. Serial No. 8,795. PUBLISHED FEBRUARY 6, 1906.

50,914. MACHINES FOR CUTTING STENCILS. THE DIAGRAPH COMPANY, St. Louis, Mo.

The word "DIAGRAPH."

Filed July 10, 1905. Serial No. 10,001. PUBLISHED FEBRUARY 6, 1906.

50,915. ENAMEL. THE HAMRICK TANK & BARREL HARD SHELL ENAMELING Co., Philadelphia, Pa.

The representation of a tortoise upon the ground carrying a barrel upon its back, and the word "HAMRICK'S" on the barrel, and the words "HARD-SHELL ENAMEL" on the back of the tortoise. Used ten years.

Filed July 1, 1905. Serial No. 9,593. PUBLISHED FEBRUARY 6, 1906.

50,916. STEEL FISHING-RODS. THE HORTON MFG. Co., Bristol, Conn.

The word "BRISTOL." Used ten years.

Filed May 12, 1905. Serial No. 5,257. PUBLISHED FEBRUARY 6, 1906.

50,917. ALE. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa.

The fanciful title "TIGER HEAD" and the representation of a tiger's head.

Filed April 5, 1905. Serial No. 416. PUBLISHED FEBRUARY 6, 1906.

50,918. WASHING-BLUE. THE SAWYER CRYSTAL BLUE COMPANY, Boston, Mass.

The facsimile signature "H. SAWYER." Used ten years.

Filed July 17, 1905. Serial No. 10,443. PUBLISHED FEBRUARY 6, 1906.

50,919. FLEXIBLE WATERPROOF FABRIC. THE STANDARD PAINT COMPANY, New York, N. Y.

The word "RUBEROID." Used ten years.

Filed April 11, 1905. Serial No. 1,166. PUBLISHED FEBRUARY 6, 1906.

50,920. FILES. VAUTIER FRÈRES, Carouge, Switzerland.

A representation of a tobacco-pipe.

Filed June 27, 1905. Serial No. 9,204. PUBLISHED FEBRUARY 6, 1906.

50,921. FILTERING APPARATUS AND FILTER-CYLINDERS. BERKEFELD-FILTER GESELLSCHAFT, G. M. B. H., Celle, Germany.

The representation of two serpents having their heads directed to opposite sides and being each twisted about a stick, the words "BERKEFELD-FILTER" appearing between the two serpents.

Filed June 20, 1905. Serial No. 8,805. PUBLISHED FEBRUARY 6, 1906.

50,922. REMEDIES FOR CERTAIN NAMED DISEASES. HENRY A. BLAIR, San Antonio, Tex.

The words "MOTHER SUPERIOR," associated with the fanciful portrait of a woman wearing the conventional garb of a mother superior. At one side of the mark is arranged a vertical strip of red and at the other side a vertical strip of green.

Filed April 21, 1905. Serial No. 2,549. PUBLISHED FEBRUARY 6, 1906.

50,923. RAZORS. CHALLENGE CUTLERY CORP., Bridgeport, Conn.

The word "SPEED," the letters "W. B." with a period after each letter, and the representation of a running hare.

Filed April 15, 1905. Serial No. 1,781. PUBLISHED FEBRUARY 6, 1906

50,924. COTTON PIECE GOODS. CLIFTON MANUFACTURING Co., Clifton, S. C.

The representation of two running horses with jockeys thereon and the representation of a clubhouse with a banner flying therefrom, associated with the word "FOXHALL."

Filed May 22, 1905. Serial No. 6,382. PUBLISHED FEBRUARY 6, 1906.

50,925. ADVERTISING-CARTONS. COLE LITHOGRAPHING COMPANY, Chicago, Ill.

The representation of an advertising-carton surrounded by a circular border and having the word "ADBOX" impressed across its face.

Filed May 12, 1905. Serial No. 5,360. PUBLISHED FEBRUARY 6, 1906.

50,926. HATS, CAPS, AND BONNETS. COLLINS & FAIRBANKS COMPANY, Boston, Mass.

A scroll or ribbon crossed upon itself and with its ends reversed. Used ten years.

Filed April 24, 1905. Serial No. 2,878. PUBLISHED FEBRUARY 6, 1906.

50,927. COLLARS, COLLAR-PADS, AND BACK-BANDS. COUCH BROTHERS & J. J. EAGAN Co., Atlanta and East Point, Ga.

A representation of a man in a vehicle resembling a tricycle with goats behind as a means of propulsion.

Filed May 20, 1905. Serial No. 6,160. PUBLISHED FEBRUARY 6, 1906.

50,928. FLAVORING-SYRUP FOR BEVERAGES. JNO. B. DANIEL, Atlanta, Ga.

The words "DANIEL'S PASSIFLORA KOKO-KOLO SYRUP." Used ten years.

Filed May 13, 1905. Serial No. 5,989. PUBLISHED FEBRUARY 6, 1906.

50,929. OINTMENTS. FOSTER-MILBURN Co., Buffalo, N. Y.

The portrait of James Doan arranged within two encircling bands or rings, having between said bands two segmental fields—one arranged above and the other below said portrait—with the words "DOAN'S OINTMENT" in the upper field and having scrolls or ribbons extending from each side of said portrait across the lower ends of the upper field.

Filed May 18, 1905. Serial No. 5,943. PUBLISHED FEBRUARY 6, 1906.

50,930. LIQUID MEDICINE FOR ORGANIC AND NERVOUS DISEASES. THE GIN-SENG-GIN COMPANY, Cincinnati, Ohio.

The picture of the root, stalk, and flower of a plant and simulations of Chinese characters, accompanied by the hyphenated syllables "GIN-SENG-GIN."

Filed April 21, 1905. Serial No. 2,602. PUBLISHED FEBRUARY 6, 1906.

50,931. PHOTOGRAPHIC DRY-PLATES. HAMMER DRY PLATE COMPANY, St. Louis, Mo.

The representation of a hammer, the words and abbreviation "HAMMER DRY PLATE Co." appearing upon the handle.

Filed April 26, 1905. Serial No. 3,163. PUBLISHED FEBRUARY 6, 1906.

50,932. TOOL-STEEL AND STEEL BARS, RODS, AND SHEETS. HAWKRIDGE BROS., Boston, Mass.

The pictorial representation of a hawk perched on a ridge with water and distant land in the background.

Filed April 11, 1905. Serial No. 1,151. PUBLISHED FEBRUARY 6, 1906.

50,933. WHISKY. JOHN BARDENHEIER WINE AND LIQUOR Co., St. Louis, Mo.

The word "MOONLIGHT."

Filed May 3, 1905. Serial No. 4,173. PUBLISHED FEBRUARY 6, 1906.

50,934. WHISKY. FRANK JONES, Kansas City, Mo.

The words "KANSAS CITY CLUB" and a monogram composed of the letters "F. J." in white on a dark circular design.

Filed April 10, 1905. Serial No. 932. PUBLISHED MAY 9, 1905.

50,935. WHISKY. W. H. JONES AND Co., Boston, Mass.

The word "HANOVER." Used ten years.

Filed April 3, 1905. Serial No. 248. PUBLISHED FEBRUARY 6, 1906.

50,936. CORSETS, CORSET-WAISTS, AND CORSET-STEELS. KOPS BROS., New York, N. Y.

The word "NEMO."

Filed May 11, 1905. Serial No. 5,086. PUBLISHED FEBRUARY 6, 1906.

50,937. ELECTRIC BATTERIES. LECLANCHÉ BATTERY Co., New York, N. Y.

The representation of a triumphal arch bearing the words "GONDA" and "TRIUMPH OF THE LECLANCHÉ BATTERY Co." and under which is passing a procession, the arch, as well as the banners carried in the procession, bearing also words and clauses descriptive of the goods and their merits, and people viewing said procession. Used ten years.

Filed April 18, 1905. Serial No. 2,101. PUBLISHED FEBRUARY 6, 1906.

50,938. GOLD, SILVER, AND PLATED SPOONS. MILLIE B. LOGAN, Rochester, N. Y.

A portrait of Susan B. Anthony, associated with the name "SUSAN B. ANTHONY."

Filed May 23, 1905. Serial No. 6,384. PUBLISHED FEBRUARY 6, 1906.

50,939. CORDIALS. MARIANI & Co., New York, N. Y.

The word "MARIANINE."

Filed October 26, 1905. Serial No. 13,957. PUBLISHED JANUARY 30, 1906.

50,940. HAIR COLOR-RESTORER OR HAIR-DYE. HENRY A. MAYOR, Kansas City, Mo.

The words "MAYOR'S WALNUT OIL," associated with a portrait of Henry A. Mayor, beneath which is placed the signature of Henry A. Mayor, said portrait and signature being surrounded by a rectangular border.

Filed May 1, 1905. Serial No. 3,931. PUBLISHED FEBRUARY 6, 1906.

50,941. WHISKY. MICHAEL F. MCDONOUGH, Philadelphia, Pa.

A player standing by a wicket in the attitude of a bowler, a circle substantially encompassing the player, and a bat on either side of the circle.

Filed April 12, 1905. Serial No. 1,222. PUBLISHED FEBRUARY 6, 1906.

50,942. REMEDIES FOR THE CURE OF BLOOD DISEASES AND RHEUMATISM. CHAS. B. MUMFORD, Kansas City, Mo.

The words "MUMFORD'S UNITED STATES NAVY" and a picture representing a sign-board bearing the words and character "UNITED STATES NAVY," "BLOOD & RHEUMATIC REMEDY." and a man on crutches with one foot bandaged and apparently reading the sign. Diagonally across the picture and the words "UNITED STATES NAVY," above said picture, is printed a facsimile of the signature of the proprietor—viz., "CHAS. B. MUMFORD." Used ten years.

Filed April 10, 1905. Serial No. 899. PUBLISHED FEBRUARY 6, 1906.

50,943. HOSIERY. ONEIDA HOSIERY COMPANY, Oneida, N. Y.

The word "CADET" in block letters, with a bust of a boy in uniform and wearing a military cap within the large letter "C" of the word.

Filed May 16, 1905. Serial No. 5,847. PUBLISHED FEBRUARY 6, 1906.

50,944. VELVETEENS, CORDUROYS, AND OTHER COTTON-VELVET FABRICS. WM. OPENHYM & SONS, New York, N. Y.

The word "ELSENOM." Used ten years.

Filed May 11, 1905. Serial No. 5,072. PUBLISHED FEBRUARY 6, 1906.

50,945. METALLIC PAINT. PRINCE'S METALLIC PAINT COMPANY, Allentown, Pa.

The representation of a circular band printed in dark color bearing the words and abbreviation "PRINCE'S METALLIC PAINT Co." printed in a lighter contrasting color, the said band forming a central circular field bearing the words, figures, and abbreviation "ESTABLISHED 1858, WARRANTED GENUINE," "LBS."

Filed April 15, 1905. Serial No. 1,691. PUBLISHED JULY 25, 1905.

50,946. HEALING PINE-OIL. MARION W. SAVAGE, Minneapolis, Minn.

The representation of a pine forest and the words "INTERNATIONAL SILVER PINE HEALING OIL."

Filed May 12, 1905. Serial No. 5,314. PUBLISHED FEBRUARY 6, 1906.

50,947. COUGH-DROPS. WILLIAM W. SMITH, Poughkeepsie, N. Y.

The representation of two bust portraits of male figures representing the Smith brothers arranged on a rectangular panel, the portrait on the left representing William W. Smith and on the right Andrew Smith, deceased. Above the portraits the words "SMITH BROTHERS" are printed, and between the portraits appear the letters "S. B.," the words "COUGH DROPS," the letters "S. B." with hands pointing thereto, and the words "STAMPED ON EACH DROP. POUGHKEEPSIE, N. Y."

Filed May 12, 1905. Serial No. 5,969. PUBLISHED FEBRUARY 6, 1906.

50,948. BEARING METAL. THE FAIRBANKS CO., New York, N. Y.

The arrangement in concentric circles of the words "FAIRBANKS" and "BEARING" arranged between the circles and with the word "METAL" inclosed within the inner circle. Used ten years.

Filed April 17, 1905. Serial No. 1,967. PUBLISHED FEBRUARY 6, 1906.

50,949. WHISKY. THE J. J. DOUGLAS CO., Louisville, Ky.

A rectangular panel bearing the name and words "JIM DOUGLAS HAND MADE SOUR MASH WHISKEY" and a central circular figure inclosing the words "JIM DOUGLAS HAND MADE SOUR MASH OLD STYLE KENTUCKY WHISKEY," surrounded by an annular band on which appear the words "SUPERIOR QUALITY" with rays radiating from said band. In connection with the above are also used the name and place of business of the applicant, "THE J. J. DOUGLAS CO. INCORPORATED LOUISVILLE KY.," written in script. Used ten years.

Filed May 1, 1905. Serial No. 3,735. PUBLISHED FEBRUARY 6, 1906.

50,950. CERTAIN NAMED TOOLS. THE J. M. CARPENTER TAP & DIE CO., Pawtucket, R. I.

The letter "C," associated with a figure approximating the letter "V," the "C" being placed between the arms of the "V."

Filed April 21, 1905. Serial No. 2,635. PUBLISHED FEBRUARY 6, 1906.

50,951. VERTICAL-PLANE CAR-COUPLINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio.

The word "ATLAS."

Filed April 13, 1905. Serial No. 1,337. PUBLISHED FEBRUARY 6, 1906.

50,952. VERTICAL-PLANE CAR-COUPLINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio.

The word "CLIMAX."

Filed April 13, 1905. Serial No. 1,339. PUBLISHED FEBRUARY 6, 1906.

50,953. WHIP-CENTERS. THE STERLING WHIP COMPANY, Westfield, Mass.

The representation of a whale.

Filed May 19, 1905. Serial No. 6,066. PUBLISHED FEBRUARY 6, 1906.

50,954. PRINTED BOOKS. VEDANTA SOCIETY, New York, N. Y.

A body of water ruffled by the winds, the sun rising from the horizon, a full-blown lotus-flower rearing its head above two floating leaves, and a swan sailing on the troubled waters. A serpent in circular form and with upraised hood and outstretched fangs incloses the design. In the middle portion of the snake, below the design, are Sanskrit words meaning "MAY THE SELF INSPIRE AND GUIDE US." Below this is a scroll bearing the words "VEDANTA SOCIETY" in the middle and on one side the words "EST. 1894" and on the other side the words "INC. 1898."

Filed June 16, 1905. Serial No. 8,376. PUBLISHED FEBRUARY 6, 1906.

50,955. SALVES. WONDERFUL DREAM SALVE CO., Detroit, Mich.

The portrait of Hannah D. McDonald and her facsimile signature, associated with the words "WONDERFUL DREAM" in the arc of a circle following the outline of the circular border which incloses the whole trade-mark.

Filed April 17, 1905. Serial No. 2,020. PUBLISHED FEBRUARY 6, 1906.

50,956. RAILROAD LAMPS AND LANTERNS. ARMSPEAR MANUFACTURING COMPANY, New York, N. Y.

The word-symbol "ARMSPEAR."

Filed June 8, 1905. Serial No. 7,658. PUBLISHED FEBRUARY 6, 1906.

50,957. WATCH-GLASSES. ALBERT BERGER & CO., New York, N. Y.

The letters, character, and abbreviation "W. B. & CIE."

Filed July 13, 1905. Serial No. 10,257. PUBLISHED FEBRUARY 6, 1906.

50,958. CERTAIN NAMED MEDICAL COMPOUND. HERBERT F. BISHOP, Washington, D. C.

The word "CASSAPINE."

Filed July 6, 1905. Serial No. 9,848. PUBLISHED FEBRUARY 6, 1906.

50,959. LIQUID VEGETABLE COMPOUND FOR THE CURE OF RHEUMATISM. FRANK G. BLAND, Clarksburg, W. Va.

The letters "V R C" upon a shaded field inclosed in a rectangular panel with a surrounding circular border.

Filed June 20, 1905. Serial No. 9,013. PUBLISHED FEBRUARY 6, 1906.

50,960. WHISKY. HARRY E. BLOCK, St. Louis, Mo.

The words "HIGH LIFE."

Filed June 26, 1905. Serial No. 9,126. PUBLISHED FEBRUARY 6, 1906.

50,961. HATS. BOOCHER, FORCE & GOODBAR HAT COMPANY, St. Louis, Mo.

The word-symbol "MOUND CITY." Used ten years.

Filed May 8, 1905. Serial No. 4,774. PUBLISHED FEBRUARY 6, 1906.

50,962. LEATHER BOOTS AND SHOES. H. H. BROWN & CO., Boston, Mass.

The word "GORILLA."

Filed July 26, 1905. Serial No. 10,847. PUBLISHED FEBRUARY 6 1906.

50,963. DISINFECTANT, PRESERVATIVE, AND BACTERICIDE. CARNO CHEMICAL CO., Jersey City, N. J.

The word "CARNO."

Filed July 14, 1905. Serial No. 10,331. PUBLISHED FEBRUARY 6 1906.

50,964. UNDERWEAR, DRAWERS, TIGHTS, VESTS, AND UNION SUITS. CHAS. A. STEVENS & BROS., Chicago, Ill.

The word "FORMODA."

Filed June 27, 1905. Serial No. 9,206. PUBLISHED FEBRUARY 6 1906.

50,965. MEDICINAL TEA. JOHN T. DAVISON, Pueblo, Colo.

The words "THE ST. CRISPIN REMEDIES" arranged upon a St. Crispin cross, having in the background the rays of the sun.

Filed June 5, 1905. Serial No. 7,486. PUBLISHED FEBRUARY 6, 1906.

50,966. WATCHES. ELGIN NATIONAL WATCH COMPANY, Elgin and Chicago, Ill.

The words and abbreviation "ELGIN WATCH CO." Used ten years.

Filed April 11, 1905. Serial No. 1,115. PUBLISHED FEBRUARY 6, 1906.

50,967. CERTAIN NAMED MEDICINE. FAIRCHILD BROS. & FOSTER, New York, N. Y.

The word "LECIBRIN."

Filed August 4, 1905. Serial No. 11,247. PUBLISHED FEBRUARY 6, 1906.

50,968. PREPARATION OF HYDROCHLORIC ACID IN COMBINATION WITH PROTEID. FAIRCHILD BROS. & FOSTER, New York, N. Y.

The word "OXYNTIN."

Filed August 4, 1905. Serial No. 11,249. PUBLISHED FEBRUARY 6, 1906.

50,969. ANESTHETIC. ISAAC FEIBSTEIN, Hopkinsville, Ky.

The word "YUKATOL" with a paraph.

Filed July 29, 1905. Serial No. 11,014. PUBLISHED FEBRUARY 6, 1906.

50,970. LEATHER AND CLOTH BOOTS, SHOES, AND SLIPPERS. HANAN & SON, New York, N. Y.

The word "HANAN" within an ellipse, the words and character "HANAN & SON" appearing above the ellipse, and the words "NEW YORK" appearing below the ellipse. Used ten years.

Filed May 8, 1905. Serial No. 4,750. PUBLISHED FEBRUARY 6, 1906

50,971. COATS, VESTS, TROUSERS, AND OVERCOATS. CHARLES C. HAUGER, Indianapolis, Ind., and Dayton and Columbus, Ohio.

A device comprising a circular figure having a panel across its face, said circular figure being located between upper and lower angular panels, associated with which is the word "HAUGER'S" arranged in the upper angular panel and the word "HOUSE" arranged in the lower angular panel, the character and numerals "20.00," followed by a scroll figure, arranged in the panel across the face of the circular figure, the word "SUIT" and the words "OVER COAT" arranged upon said circular figure above and below said panel, and the words "NO MORE" and "NO LESS" also arranged upon said circular figure.

Filed June 16, 1905. Serial No. 8,353. PUBLISHED FEBRUARY 6, 1906.

50,972. SOLE AND HARNESS LEATHER. MAGNUS HESSBERG, Richmond, Va.

The representation of a steer having on its side an oblong panel bearing the word "LEATHER," the steer appearing within a border formed by concentric circles, between which and above the figure the words "QUAKER CITY" appear.

Filed April 24, 1905. Serial No. 2,792. PUBLISHED OCTOBER 10, 1905.

50,973. WRAPPING-PAPERS. HUBBS & CORNING Co., Baltimore, Md.

The word "ORIOLE," associated with the pictorial representation of an oriole bird resting on the limb of a tree.

Filed June 29, 1905. Serial No. 9,296. PUBLISHED FEBRUARY 6, 1906.

50,974. PAPERS MADE FROM WOOD-PULP. INTERNATIONAL PAPER COMPANY, New York, N. Y.

A circular landscape in the foreground of which appears a spruce-tree and in the background other spruce-trees and a hill, the picture being surrounded by a wreath tied at the bottom with a ribbon. Said ribbon is inscribed with the words "INTERNATIONAL PAPER CO.," and concentric circles around the wreath.

Filed April 20, 1905. Serial No. 3,670. PUBLISHED FEBRUARY 6, 1906.

50,975. MEN'S NEGLIGÉE AND DRESS SHIRTS. J. M. ROBINSON, NORTON & Co., Louisville, Ky.

The representation of a tiger's head inclosed in two concentric circles, between which appear the words, letters, character, and abbreviation "TIGER BRAND J. M. R. N. & Co."

Filed June 14, 1905. Serial No. 8,137. PUBLISHED FEBRUARY 6, 1906.

50,976. BOILER-CLEANING COMPOUNDS. JOHN CALLAHAN AND CO., INC., Seattle, Wash.

The picture or representation of Uncle Sam as he is commonly depicted and the arbitrarily-selected word "YANKEE."

Filed June 6, 1905. Serial No. 7,561. PUBLISHED FEBRUARY 6, 1906.

50,977. MEDICINE FOR THE TREATMENT OF ALCOHOLISM. THOMAS JOHNSTON, Freeport, N. Y.

The representation of a box containing a number of bottles and with the lid thrown open and a portion of one side of the box removed, together with a bottle and a glass outside of the box at one end thereof. The lid of the box bears the inscription "THE JOHNSTON HOME TREATMENT CURES DRUNKENNESS," and the bottles are labeled with the inscription "THE JOHNSTON HOME TREATMENT FOR ALCOHOLISM," and the glass has a measuring-scale thereon and is inscribed with the words "TABLE," "DESSERT," and "TEA."

Filed June 22, 1905. Serial No. 8,787. PUBLISHED FEBRUARY 6, 1906.

50,978. PACKING MATERIALS FOR USE IN STUFFING-BOXES AND THE LIKE. RICHARD KLINGER, Gumpoldskirchin, Austria-Hungary.

The word "KLINGERIT."

Filed July 27, 1905. Serial No. 10,918. PUBLISHED FEBRUARY 6, 1906.

50,979. HAIR-TONICS. LANMAN & KEMP, New York, N. Y.

The representation of a woman in a room dressing her hair in front of a mirror, upon the support of which appear various toilet accessories, associated with the words "ORIENTAL TONIC."

Filed May 5, 1905. Serial No. 4,376. PUBLISHED FEBRUARY 6, 1906.

50,980. GOLD RINGS. SAMUEL W. LINDSAY, Omaha, Nebr.

The representation of a watchcase with the letter "L" in the center of the watchcase.

Filed July 22, 1905. Serial No. 10,705. PUBLISHED FEBRUARY 6, 1906.

50,981. STRINGS FOR VIOLINS AND GUITARS. LYON & HEALY, Chicago, Ill.

The word "SUPERLATIVE." Used ten years.

Filed August 7, 1905. Serial No. 11,371. PUBLISHED FEBRUARY 6, 1906.

50,982. HOSIERY. MARIETTA KNITTING Co., Marietta, Ga.

The word "RADIUM."

Filed July 6, 1905. Serial No. 9,832. PUBLISHED FEBRUARY 6, 1906.

50,983. CHEMICAL PREPARATION. MCKESSON & ROBBINS, New York, N. Y.

The word "BLENNOSTASINE."

Filed May 10, 1905. Serial No. 4,892. PUBLISHED FEBRUARY 6, 1906.

50,984. KNIVES, FORKS, AND SPOONS MADE OF BRITANNIA METAL. GEBR. NOELLE, Lüdenscheid, Germany.

The representation of a steering-wheel inclosed within an equilateral triangle, the respective sides of which touch a handle of the wheel.

Filed July 1, 1905. Serial No. 9,592. PUBLISHED FEBRUARY 6, 1906.

50,985. WALL-PAPER. PENN WALL PAPER COMPANY, Pittsburg, Pa.

The letter "P" surrounded by a wreath.

Filed June 30, 1905. Serial No. 9,527. PUBLISHED FEBRUARY 6, 1906.

50,986. STEEL, FOUNTAIN, AND STYLOGRAPHIC PENS AND PENHOLDERS. PERRY & COMPANY LIMITED, Birmingham, England.

A rectangular panel divided obliquely by a band into two trapezoidal figures, of which the left-hand figure incloses the word "PERRY," while the right-hand figure is divided obliquely by a narrower band and contains in its upper portion a diamond-shaped design surrounding the monogram "J P & Co."

Filed August 2, 1905. Serial No. 11,169. PUBLISHED FEBRUARY 6, 1906.

50,987. TOILET WATERS. ELISE PINET, Minneapolis, Minn.

The pictorial representation of a female head with the words "FRENCH HYGIENIC WATER" arranged thereabout in the form of a circle.

Filed June 27, 1905. Serial No. 9,203. PUBLISHED FEBRUARY 6, 1906.

50,988. PANTS, OVERALLS, COATS, AND VESTS. RICHARDSON, ROBERTS DRY GOODS Co., St. Joseph, Mo.

The representation of a hunter wearing a cap and having on a hunting-suit and leggings and holding a gun in his hands.

Filed July 18, 1905. Serial No. 10,540. PUBLISHED FEBRUARY 6, 1906.

50,989. MEN'S AND BOYS' HATS AND CAPS. FRANK SCHOBLE & Co., Philadelphia, Pa.

The word "CHESWICK," associated with the representation of a lozenge-shaped figure having three feathers thereon, and above which are a Maltese cross and the words "ICH DIEN," while on the opposite sides of the figure are the head of a unicorn and the head of a lion supported by scroll-like figures, and beneath the word "CHESWICK" are the words "PALAIS ROYAL LONDON."

Filed June 14, 1905. Serial No. 8,115. PUBLISHED FEBRUARY 6, 1906.

50,990. COMBS. SCHRADER & EHLERS, New York, N. Y.

The words "OLIVE DORÉ."

Filed June 27, 1905. Serial No. 9,279. PUBLISHED FEBRUARY 6, 1906.

50,991. OINTMENT FOR THE CURE OF ECZEMA. NATHANIEL N. SHIRE, New York, N. Y.

The word "ITCHIKILL," which is arranged on the representation of a freckled leaf surrounded by a circular border having inwardly-projecting ornamental spurs, said leaf and border being surrounded by a concentric circle forming a circular band, the words "ITCHIKILL" and "ECZEMA OINTMENT" being arranged on the circular band respectively above and below said leaf.

Filed July 1, 1905. Serial No. 9,594. PUBLISHED FEBRUARY 6, 1906.

50,992. GINGHAMS. SMITH, HOGG & Co., New York, N. Y.

The word "CLASSICS."

Filed May 10, 1905. Serial No. 5,000. PUBLISHED FEBRUARY 6, 1906.

50,993. OIL-CLOTHS. STANDARD TABLE OIL CLOTH CO., New York, N. Y.

The letters "T O C," the letter "T" occupying the middle position and having the top extending over the letters "O" and "C," and the surrounding elliptical-shaped figure.

Filed June 27, 1905. Serial No. 9,296. PUBLISHED FEBRUARY 6, 1906.

50,994. ORNAMENTAL POTTERY-WARE. THE AMERICAN TERRA COTTA AND CERAMIC COMPANY, Chicago, Ill.

The word "TECO" displayed with the "T" having a long stem and a cross-line extending farther to the right than to the left of said stem, the letters "E," "C," and "O" being arranged below the right-hand portion of the cross-line in vertical arrangement, reading from top to bottom.

Filed May 10, 1905. Serial No. 4,946. PUBLISHED FEBRUARY 6, 1906.

50,995. CHEMICAL COMPOUNDS. THE BIRD-ARCHER COMPANY, New York, N. Y.

A representation of a screw-propeller.

Filed June 6, 1905. Serial No. 7,550. PUBLISHED FEBRUARY 6, 1906.

50,996. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

The words "CLOISONNÉ EFFECTS."

Filed June 30, 1905. Serial No. 9,481. PUBLISHED FEBRUARY 6, 1906.

50,997. WHISKIES. THE J. C. MARKS LIQUOR CO., Birmingham, Ala.

A design showing three red barrels of different size piled one upon the other, the largest at the bottom, the medium in the center, and the smallest on the top. The center barrel bears the words "THREE RED BARRELS."

Filed June 15, 1905. Serial No. 8,279. PUBLISHED FEBRUARY 6, 1906.

50,998. COVERS FOR CORSETS, LADIES' PANTS AND VESTS. THE MALINE MILLS COMPANY, Salem, N. C.

The word "MALINE" inclosed in quotation-marks within a diamond-shaped border upon which appear the words "PERFECT FITTING UNDERWEAR," together with ornamental stars.

Filed May 4, 1905. Serial No. 4,255. PUBLISHED FEBRUARY 6, 1906.

50,999. STICKY FLY-PAPER. THE MIDGET FLY PLATE COMPANY, San Francisco, Cal.

The word "MIDGET."

Filed June 19, 1905. Serial No. 8,618. PUBLISHED FEBRUARY 6, 1906.

51,000. MATTRESSES AND PILLOWS AND FEATHERS. THE RANDALL MATTRESS COMPANY, Cleveland, Ohio.

A white letter "R" on a dark background and the whole inclosed in a circular panel.

Filed June 21, 1905. Serial No. 8,743. PUBLISHED FEBRUARY 6, 1906.

51,001. PRINTING-INK. THE STANDARD PRINTING INK COMPANY, Cincinnati, Ohio, and Chicago, Ill.

The representation of a crow perched upon a branch and the word "CROW" across the breast of the crow.

Filed June 10, 1905. Serial No. 7,884. PUBLISHED FEBRUARY 6, 1906.

51,002. SHIRTINGS AND SHEETINGS. WAMSUTTA MILLS New Bedford, Mass.

The words "WAMSUTTA MILLS" and the representation of the corporation's factory at New Bedford.

Filed July 11, 1905. Serial No. 10,005. PUBLISHED FEBRUARY 6, 1906.

51,003. SHIRTINGS AND SHEETINGS. WAMSUTTA MILLS, New Bedford, Mass.

A pictorial representation of an Indian seated upon a rugged eminence in the foreground of a marine scene comprising water, boats, and mountains in the distance, the Indian being shown as pointing upward with his right hand and holding in the other hand a weapon of war, there being also a shield lying at his feet, and the word-symbol "TUSCARORA."

Filed July 11, 1905. Serial No. 10,006. PUBLISHED FEBRUARY 6, 1906.

51,004. REMEDY FOR CERTAIN NAMED DISEASES. CLARENCE L. WELLS, Troy, N. Y.

The words "STODDARD'S CHOLERA SPECIFIC." Used ten years.

Filed June 22, 1905. Serial No. 8,783. PUBLISHED FEBRUARY 6, 1906.

51,005. CERTAIN NAMED GARMENTS. WETZEL, New York, N. Y.

The representation of a shield carrying a gauntlet in the dexter and a shoe in the sinister half and surmounted by a helmet and surrounded by a formal scroll and having a crest consisting of the representation of the upper part of the body of a sheep facing the right, its left foot raised and its right leg arched, its right foot resting on a bar, which bar passes under the upper part of the body of the sheep, and having below the whole an elongated scroll.

Filed May 3, 1905. Serial No. 4,223. PUBLISHED FEBRUARY 6, 1906.

51,006. PIANOS. A. M. MCPHAIL PIANO CO., Boston, Mass.

The word "MCPHAIL." Used ten years.

Filed October 10, 1905. Serial No. 13,470. PUBLISHED FEBRUARY 6, 1906.

51,007. TEA. ACKER, MERRALL & CONDIT COMPANY, New York, N. Y.

The representation of several mountains, at the foot of which is a body of water. In the foreground is the representation of a tea-field in which are several native women picking tea, one of whom is standing erect with a tea-basket on her head. In the center of the said representation are the words "PERIA WATTEE," the whole representation being surrounded by a fancy border, near the base of the main panel being a fancy ornamentally-bordered panel and in the lower corners of the main panel being the representation of an elephant's head holding a package of tea in his trunk.

Filed October 24, 1905. Serial No. 13,903. PUBLISHED FEBRUARY 6, 1906.

51,008. WHISKY. ALBANY WINE & LIQUOR CO., Albany, N. Y.

The word "EVERMORE," associated with a monogram of the letters and character "A W & L Co" inclosed in a circle surmounted by a crown, and the number "18" appearing on the left of the circle and the number "97" on the right thereof.

Filed October 18, 1905. Serial No. 13,717. PUBLISHED FEBRUARY 6, 1906.

51,009. PRODUCT OF INDIAN CORN IN FLAKE FORM. AMERICAN HOMINY COMPANY, Indianapolis, Ind.

The word "CEREALINE."

Filed May 11, 1905. Serial No. 5,026. PUBLISHED FEBRUARY 6, 1906.

51,010. SHORTENING FOR PASTRY. AMMON & PERSON, Jersey City, N. J.

The hyphenated word "BA-KO" imprinted in white letters upon a substantially rectangular dark background or panel.

Filed October 12, 1905. Serial No. 13,514. PUBLISHED FEBRUARY 6, 1906.

51,011. REMEDY FOR THE NERVES. B. H. BACON CO., Rochester, N. Y.

The representation of a crown, in combination with the words "CELERY KING."

Filed September 30, 1905. Serial No. 13,155. PUBLISHED FEBRUARY 6, 1906.

51,012. CHOCOLATE, COCOA AND SWEET CHOCOLATE. WILLIAM H. BAKER, Winchester, Va.

The words "FLEUR DE LIS."

Filed July 15, 1905. Serial No. 10,374. PUBLISHED FEBRUARY 6, 1906.

51,013. INCANDESCENT MANTLES FOR GAS-LAMPS. BLOCK LIGHT COMPANY, New York, N. Y.

The word "NOKIK."

Filed December 22, 1905. Serial No. 15,596. PUBLISHED FEBRUARY 6, 1906.

51,014. INKSTANDS. CENTURY INKSTAND COMPANY, New York, N. Y.

The word "CENTURY."

Filed December 21, 1905. Serial No. 15,566. PUBLISHED FEBRUARY 6, 1906.

51,015. LIQUID MEDICAL COMPOUND. JOHN JAY CHAMBERS, Seattle, Wash.

The word "PEDALINE."

Filed July 10, 1905. Serial No. 10,000. PUBLISHED FEBRUARY 6, 1906.

51,016. FEATHER DUSTERS. CHICAGO FEATHER DUSTER CO., Chicago, Ill.

The letters "I. B. T.," in connection with a running ostrich and the words "FEATHER DUSTER."

Filed Dcember 20, 1905. Serial No. 15,542. PUBLISHED FEBRUARY 6, 1906.

51,017. PLATE, DRY-PLATE, AND WINDOW GLASS. FELIX CONRAD & COMPANY, New York, N. Y.

The letters "F. C. & Co." surrounded by an elliptical band, above which appears a crown surmounted by three ostrich plumes and having ornamental streamers attached thereto.

Filed December 20, 1905. Serial No. 15,535. PUBLISHED FEBRUARY 6, 1906.

51,018. COFFEE. CONSUMERS SUPPLY COMPANY, St. Louis, Mo.

The word "PURETA."

Filed September 8, 1905. Serial No. 12,400. PUBLISHED FEBRUARY 6, 1906.

51,019. BUTTER. CURRIER-TODD CO., Lawrence, Mass.

A broken circle inclosing the words "OUR C. T. CO. LAWRENCE, MASS. DANISH CREAMERY" arranged one above the other.

Filed October 11, 1905. Serial No. 13,485. PUBLISHED FEBRUARY 6, 1906.

51,020. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.

The word "MIKADO."

Filed December 20, 1905. Serial No. 15,539. PUBLISHED FEBRUARY 6 1906.

51,021. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and medals and the words and character "EAGLE & PHENIX MILLS COLUMBUS, GEORGIA." and the letters "D D."

Filed August 22, 1905. Serial No. 11,899. PUBLISHED FEBRUARY 6, 1906.

51,022. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and a number of medals and the words "EAGLE & PHENIX MILLS COLUMBUS, GEORGIA." and the letters "B B."

Filed August 22, 1905. Serial No. 11,901. PUBLISHED FEBRUARY 6, 1906.

51,023. COTTON PLAIDS AND STRIPES. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "RESCUE PLAIDS," the representation of a bird's nest containing young birds and apparently resting on a cluster of wild-rose leaves and blossoms and surrounded by a circular border, and the representation of a bird resembling a robin perched upon a limb in the foreground of a rural scene comprising a stream, hills, woods, and flowers.

Filed September 14, 1905. Serial No. 12,567. PUBLISHED FEBRUARY 6, 1906.

51,024. FOOD-STUFF. EWA PLANTATION CO., Honolulu, Territory of Hawaii.

An elongated diamond inclosing a circle or disk within which appears a picture of the sugar houses and mill of the Ewa Plantation Company, while the words "SUGAR BRAN" are printed in the elongated portions of the said diamond.

Filed January 11, 1906. Serial No. 16,123. PUBLISHED FEBRUARY 6, 1906.

51,025. POWDERED LAUNDRY STARCH. FAULTLESS STARCH CO., Kansas City, Mo.

The representation of a star with rays radiating therefrom and associated with the words "FAULTLESS STARCH."

Filed July 18, 1905. Serial No. 10,549. PUBLISHED FEBRUARY 6, 1906.

51,026. CANNED FRUITS. GENNERICH & VON BREMEN, New York, N. Y.

A representation in cherry-red color of a diamond composed of four bars intersecting each other and of the word-symbol "CHERRY DIAMOND" set upon a representation of a ribbon stretched across the upper part of the diamond.

Filed January 10, 1906. Serial No. 15,992. PUBLISHED FEBRUARY 6, 1906.

51,027. SUSPENDERS FOR TROUSERS. GORDON MANUFACTURING COMPANY, New Rochelle, N. Y.

A circle surmounted by a Maltese cross. Within the circle is inscribed the word "GORDON."

Filed September 27, 1905. Serial No. 13,048. PUBLISHED FEBRUARY 6, 1906.

51,028. CRACKERS AND BISCUITS. GREEN GREEN & CO., Dayton, Ohio.

A monogram of the letters "G G & Co.," with the capital letters "G G" face to face and the words "& Co." between the letters and with the word "GOOD" above and the word "GOODS" below the monogram, the whole being inclosed in a circle.

Filed September 30, 1905. Serial No. 13,172. PUBLISHED FEBRUARY 6, 1906.

51,029. VINEGAR. H. J. HEINZ COMPANY, Allegheny, Pa.

The words "REX AMBER."

Filed December 27, 1905. Serial No. 15,678. PUBLISHED FEBRUARY 6, 1906.

51,030. FACE-LOTION. RICHARD T. HARDY, Baltimore, Md.

The letters and characters "R.U."

Filed October 5, 1905. Serial No. 13,317. PUBLISHED FEBRUARY 6 1906.

51,031. ORGANS. OSCAR HERMANN, New York, N. Y.

The word "CONCERTO."

Filed October 16, 1905. Serial No. 13,668. PUBLISHED FEBRUARY 6, 1906.

51,032. AUTOMOBILE-HORNS. GABRIEL HORN MFG. CO., Cleveland, Ohio.

The word "GABRIEL."

Filed October 11, 1905. Serial No. 13,506. PUBLISHED FEBRUARY 6, 1906.

51,033. WHISKY. HARRY KAHN, Cincinnati, Ohio.

The word "COTTONDALE."

Filed June 1, 1905. Serial No. 7,198. PUBLISHED FEBRUARY 6, 1906.

51,034. DRESS GOODS AND LININGS. MARTIN L. COHN CO., New York, N. Y.

A representation of a wax seal bearing the words "RITEKIND SILKS," the words "RITEKIND PRICES" appearing below the representation.

Filed September 7, 1905. Serial No. 12,208. PUBLISHED FEBRUARY 6, 1906.

51,035. PEPPER-SAUCE. E. MCILHENNY'S SON, Avery's Island, La.

The word "TABASCO."

Filed June 22, 1905. Serial No. 8,778. PUBLISHED DECEMBER 19, 1905.

51,036. WHEAT-FLOUR. NEW LONDON MILLING COMPANY, New London and Willmar, Minn.

The word "KNEADED" surrounded by an annular border which contains in the upper section the words and abbreviation "NEW LONDON MILLING CO.," in the lower section the word and abbreviation "WILLMAR, MINN.," and on either side a star.

Filed October 13, 1905. Serial No. 13,550. PUBLISHED FEBRUARY 6, 1906.

51,037. BRANDY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "MINERVA" and a shield bearing the monogram "P J B L Co" ornamented with grapes and grape leaves and vines.

Filed June 30, 1905. Serial No. 9,484. PUBLISHED FEBRUARY 6, 1906.

51,038. BRANDY. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "FORTUNA" and a shield bearing the monogram "P J B L Co" ornamented with grapes and grape leaves and vines.

Filed June 30, 1905. Serial No. 9,485. PUBLISHED FEBRUARY 6, 1906.

51,039. CANNED CORN. P. HOHENADEL, JR., Co., Janesville, Wis.

The words "PRIDE OF JANESVILLE" and the picture of a castle with its surrounding landscape, which comprises a body of water in the foreground, foliage in the mid-ground, and hills in the background.

Filed July 12, 1905. Serial No. 10,165. PUBLISHED FEBRUARY 6, 1906.

51,040. CANNED CORN. P. HOHENADEL, JR., CANNING CO., Rochelle, Ill.

The words "PRIDE OF ROCHELLE" and the representation of a boating scene in which two girls handling oars appear to be seated in one end of a boat, or shell used as such, in the other end of which is shown a basket containing ears of corn and other vegetables.

Filed July 12, 1905. Serial No. 10,166. PUBLISHED FEBRUARY 6, 1906.

51,041. SALVE. JOHN H. PATTEN, Butler, Mo.

The words "PATTEN'S LIGHTNING SALVE."

Filed September 22, 1905. Serial No. 12,921. PUBLISHED FEBRUARY 6, 1906.

50,042. SAUCE FOR SPAGHETTI. ELVIRA PICCHIANTI, Chicago, Ill.

The word "LUCULLUS" and thereunder the picture of a man eating spaghetti with a fork from a dish in front of him.

Filed August 1, 1905. Serial No. 11,109. PUBLISHED FEBRUARY 6, 1906.

51,043. CANNED FRUITS AND VEGETABLES. PRATT-LOW PRESERVING CO., San Jose, Cal.

Crossed horizontal and vertical arms each of red color and having enlarged keystones at opposite ends and upper and lower segments of a contrasting color extending across the keystones of the vertical arm and having their ends extending to the keystones of the horizontal arm.

Filed April 12, 1905. Serial No. 1,256. PUBLISHED FEBRUARY 6, 1906.

51,044. LAUNDRY SOAP. PROUTY-BOWLER SOAP COMPANY, Des Moines, Iowa.

A rectangular figure on which are a vertical and horizontal panels and ornamental scrollwork, the words and name "WHITE LAUNDRY SOAP PROUTY-BOWLER SOAP CO., DES MOINES, IOWA." appearing on the horizontal panels, and a diamond-shaped figure bearing a four-leaf clover having on its petals the letters and abbreviation "P B S Co" on the vertical panel. Used ten years.

Filed May 9, 1905. Serial No. 4,535. PUBLISHED FEBRUARY 6, 1906.

51,045. WHISKY. CHARLES ROTH, Cincinnati, Ohio.

The words "WAR EAGLE."

Filed October 12, 1905. Serial No. 13,536. PUBLISHED FEBRUARY 6, 1906.

51,046. WHISKY. ROTH & Co., San Francisco, Cal.

The word "LAWTON'S." Used ten years.

Filed December 6, 1905. Serial No. 15,231. PUBLISHED FEBRUARY 6, 1906.

51,047. WHISKY. SAMPLE & Co., New York, N. Y.

The word "ANGLER," associated with a water scene, in which there are a man standing upon a rock fishing, an Indian holding a dip-net, and a man in a canoe.

Filed May 6, 1905. Serial No. 4,514. PUBLISHED FEBRUARY 6, 1906.

51,048. SPICES OF ALL VARIETIES AND MUSTARD. SCHWABACHER BROS. & CO. INC., Seattle, Wash.

The representation of a shield having thereon the words "SILVER SHIELD BRAND."

Filed August 21, 1905. Serial No. 11,826. PUBLISHED FEBRUARY 6, 1906.

51,049. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y.

The representation of an arrow, upon the shaft of which the Japanese characters "SHO-RI," meaning victory, are shown and which is crossed by a double-headed arrow or spear, along the shaft of which appears the word "VICTORY."

Filed July 1, 1905. Serial No. 10,124. PUBLISHED FEBRUARY 6, 1906.

51,050. WHISKY. STEINHARDT BROS. & Co., New York, N. Y.

The representation of the head of an old man with white hair and white flowing beard inclosed in a circular frame, together with fancy scrollwork, associated with the words "OLD METHUSALEM."

Filed December 26, 1905. Serial No. 15,722. PUBLISHED FEBRUARY 6, 1906.

51,051. LARD AND LARD COMPOUNDS. SWIFT AND COMPANY, Chicago, Ill.

A conventionalized representation of a cut jewel and rays radiating therefrom.

Filed August 26, 1905. Serial No. 11,908. PUBLISHED FEBRUARY 6, 1906.

51,052. GARDEN, TRUCKING, AND FLOWER SEEDS AND BULBS. GEORGE TAIT & SONS, Norfolk, Va.

A serrated disk or seal containing a scroll bearing the words "THOROUGHBRED SEEDS," having a thistle bloom and leaves in the background, the whole being inclosed in a circle and associated with the words "GEORGE TAIT & SONS, NORFOLK, VA." arranged in circular form around the outside of the ring.

Filed October 17, 1905. Serial No. 13,061. PUBLISHED FEBRUARY 6, 1906.

51,053. MAGAZINE OR PERIODICAL. GEORGE F. TERRY Waterville, Me.

The words "THE AMERICAN HOME."

Filed September 27, 1905. Serial No. 13,079. PUBLISHED FEBRUARY 6, 1906.

51,054. POULTRY-FOOD. THE ALBERT DICKINSON COMPANY, Chicago, Ill.

The word "CRESCENT."

Filed December 26, 1905. Serial No. 15,717. PUBLISHED FEBRUARY 6, 1906.

51,055. WHEAT-FLOUR. THE CENTRAL KANSAS MILLING COMPANY, Lyons, Kans.

The words "KANSAS PRIDE."

Filed January 2, 1906. Serial No. 15,808. PUBLISHED FEBRUARY 6, 1906.

51,056. SELF-RISING FLOUR. THE DAVIS MILLING COMP., St. Joseph, Mo.

The representation of the head of a negress and the words "AUNT JEMIMA'S" associated therewith. Used ten years.

Filed September 6, 1905. Serial No. 12,280. PUBLISHED FEBRUARY 6, 1906.

51,057. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.

A diamond-shaped figure bearing the representation of the head and a portion of the body of a dog arranged within an ornamental scroll frame and associated with the words "FRIENDLY STYLES."

Filed August 1, 1905. Serial No. 11,115. PUBLISHED FEBRUARY 6, 1906.

51,058. BUTTER. THE D. E. WOOD BUTTER CO., Elgin, Ill.

The words "MONOGRAM BRAND," associated with a monogram composed of the word "THE," the letters "D E W B,' and the abbreviation "Co," said monogram being inclosed within a circular border with scrolls extending therefrom. Used ten years.

Filed December 30, 1905. Serial No. 15,768. PUBLISHED FEBRUARY 6, 1906.

51,059. CRUSHED OATS. THE GREAT WESTERN CEREAL Co., Chicago, Ill.

The word "MOTHER'S."

Filed July 24, 1905. Serial No. 10,737. PUBLISHED FEBRUARY 6, 1906.

51,060. LEATHER BOOTS AND SHOES. THE JOHNSON WATSON CO., Greensboro, N. C.

The word "BILTMORE."

Filed July 26, 1905. Serial No. 10,848. PUBLISHED FEBRUARY 6, 1906.

51,061. LEATHER BOOTS AND SHOES. THE MANES SHOE MANUFACTURING COMPANY, Cincinnati, Ohio.

The word-symbol "URFIT."

Filed October 3, 1905. Serial No. 13,263. PUBLISHED FEBRUARY 6, 1906.

51,062. BAKING-POWDER. THE SOUTHERN MANUFACTURING Co., Richmond, Va.

The representation of a horseshoe with the words "GOOD LUCK." These words appear on the arc of a circle above the representation of a horseshoe. The words "ONE SPOON" are located inside the horseshoe, and the words "BAKING POWDER" are run through the bottom of the horseshoe, the word "BAKING" being inclined upward and the word "POWDER" downward. On each side of the horseshoe are several representations of the four-leaf clover.

Filed December 4, 1905. Serial No. 15,181. PUBLISHED FEBRUARY 6, 1906.

51,063. FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.

The representation of a capital letter "M" above the word

"STRAIGHT" and bearing the words "SWEET SPRINGS MILLING Co. SWEET SPRINGS, Mo."

Filed September 2, 1905. Serial No. 12,190. PUBLISHED FEBRUARY 6, 1906.

51,064. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo.

The representation of the capital letter "S" bearing upon the upper arm the words and abbreviation "SWEET SPRINGS MILLING Co." in a curved line, upon the middle section "BEAUTIFUL ROLLER PATENT," upon the lower arm the words and abbreviation "SWEET SPRINGS Mo.," and at intervals the letter "S" inclosed in a circle.

Filed September 2, 1905. Serial No. 12,193. PUBLISHED FEBRUARY 6, 1906.

51,065. WHISKY. TROST BROS., Louisville, Ky.

The words "GOOD CHEER."

Filed May 6, 1905. Serial No. 4,522. PUBLISHED FEBRUARY 6, 1906.

51,066. PREPARATIONS OF MEAT-JUICE AND COMPOUND OF MEAT-JUICE AND GLYCERIN. VALENTINE'S MEAT JUICE COMPANY, Richmond, Va.

The letter "V" formed by two twigs crossed at the bottom, with a bird's nest resting between the arms of the letter.

Filed August 1, 1905. Serial No. 11,110. PUBLISHED FEBRUARY 6, 1906.

51,067. CORN-STARCH. WARNER SUGAR REFINING COMPANY, Waukegan, Ill.

The letter "W" on a black background inclosed within a circle, from which radiate three ears of corn appearing on black panel-like figures, being joined by arcs of bands arranged concentrically with and around the circle around the letter "W," and the entire back being inclosed within two circles concentric with the first-named circle.

Filed July 10, 1905. Serial No. 9,981. PUBLISHED FEBRUARY 6, 1906.

51,068. CHILDREN'S LEATHER SHOES. WATSON-PLUMMER SHOE COMPANY, Chicago, Ill.

The representation of a little district school-house having painted across one side thereof the words and numeral "DISTRICT No. 3," set in the midst of a landscape scene, the foreground of which consists of a playground with school children at play therein, while the background is a perspective of meadow, trees, and hills, the whole being inclosed in a solid-black oval-shaped border, on which appear in white letters the words "WATSON-PLUMMER SHOE Co." and "RED SCHOOL HOUSE SHOES."

Filed September 5, 1905. Serial No. 12,237. PUBLISHED FEBRUARY 6, 1906.

51,069. RUBBER BOOTS, SHOES, AND SANDALS. BENTLEY & OLMSTED COMPANY, Des Moines, Iowa.

The representation of two diamond-shaped figures, one inclosing the other, the sides being parallel and the inner diamond inclosing two stars, associated with the words "BLUE LABEL LINE."

Filed June 5, 1905. Serial No. 7,458. PUBLISHED FEBRUARY 6, 1906.

51,070. LEAD-PENCILS. EAGLE PENCIL COMPANY, New York, N. Y.

The word "RADIUM," having rays radiating therefrom.

Filed September 16, 1905. Serial No. 12,713. PUBLISHED FEBRUARY 6, 1906.

51,071. MOLASSES. EGERTON BROS., Baltimore, Md.

A red disk upon which are printed the words "No. 1 PORTO RICO MOLASSES," associated with the words "WM. M. POWELL & Co. BALTIMORE, MD." arranged in a circle around the aforesaid words, all the words being printed in stenciled lettepe of plain type. Used ten years.

Filed April 12, 1905. Serial No. 1,190. PUBLISHED FEBRUARY 6, 1906.

51,072. PAPER AND ENVELOPS. FITZ ALLEN FLINN, New York, N. Y.

The representation of a male figure attired to resemble an American colonist. The figure is depicted as carrying a musket in one hand, and the attire of the figure is substantially that worn by the male American colonists at the time of the Revolutionary war between the American colonists and Great Britain.

Filed October 25, 1905. Serial No. 13,945. PUBLISHED FEBRUARY 6, 1906.

51,073. REMEDY FOR CERTAIN NAMED DISEASES. G. C. HANFORD MANUFACTURING Co., Syracuse, N. Y.

The words "BALSAM OF MYRRH." Used ten years.

Filed November 13, 1905. Serial No. 15,225. PUBLISHED FEBRUARY 6 1906.

51,074. MEDICINE FOR KIDNEY AFFECTIONS. MABEL ALICE HAMILTON, Boston, Mass.

The hyphenated word "Yo-Yo."

Filed September 22, 1905. Serial No. 12,898. PUBLISHED FEBRUARY 6, 1906.

51,075. MEN'S OUTER SHIRTS. HANNACH & STIFFEL, Memphis, Tenn.

A picture of a steamboat with the word "ROSALIE" extending diagonally across it.

Filed November 11, 1905. Serial No. 14,498. PUBLISHED FEBRUARY 6, 1906.

51,076. LADIES', MEN'S, AND CHILDREN'S LEATHER SHOES. SIMON HIRSHBERG, Boston, Mass.

The words "PAUL REVERE SHOE" and a picture representing Paul Revere on horseback riding through a country village.

Filed September 25, 1905. Serial No. 12,964. PUBLISHED FEBRUARY 6, 1906.

51,077. STIFF FUR HATS. S. C. HOLLEY & Co., Danbury, Conn.

The word "MONTAUK."

Filed November 15, 1905. Serial No. 14,650. PUBLISHED FEBRUARY 6, 1906.

51,078. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The representation of an ornamental circular scroll-shaped figure, associated with the words "SUPERIOR SILVER Co," inclosed in concentric circles.

Filed November 10, 1905. Serial No. 14,476. PUBLISHED FEBRUARY 6, 1906.

51,079. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The representation of three stars, associated with the words "EUREKA SILVER Co QUADRUPLE PLATE," inclosed in a circle.

Filed November 10, 1905. Serial No. 14,478. PUBLISHED FEBRUARY 6, 1906.

51,080. CANNED FRUITS AND VEGETABLES. JOHN EDWARD KRIETE, Dunnsville, Va.

The words "OLD DOMINION." Used ten years.

Filed May 31, 1905. Serial No. 7,121. PUBLISHED FEBRUARY 6, 1906.

51,081. GINS. CARL F. LAUBER, Philadelphia, Pa.

The representation of an arbor of lattice-work over which trail grape-vines bearing fruit. Upon the top of the front arch of the arbor is an enlarged wine-cup mounted on a pedestal, and on the ground at the base of said arch, on either side of the opening therein, stand groups of bottles. Within the archway stands a male child unclad and leaning against a barrel mounted on a trestle, his left hand holding a wine-cup raised above his head, the head of the barrel being marked with my last name, "LAUBER," and the letters "C F" in monogram form above said name.

Filed December 27, 1905. Serial No. 15,670. PUBLISHED FEBRUARY 6, 1906.

51,082. BRANDIES AND FRUIT BRANDIES. CARL F. LAUBER, Philadelphia, Pa.

The representation of an arbor of lattice-work over which trail grape-vines bearing fruit. Upon the top of the front arch of the arbor is an enlarged wine-cup mounted on a pedestal, and on the ground at the base of said arch, on either side of the opening therein, stand groups of bottles. Within the archway stands a male child unclad and leaning against a barrel mounted on a trestle, his left hand holding a wine-cup raised above his head, the head of the barrel being marked with my last name, "LAUBER," and the letters "C F" in monogram form above said name.

Filed December 27, 1905. Serial No. 15,671. PUBLISHED FEBRUARY 6, 1906.

51,083. MEDICAL TABLET. WARREN M. MACLEOD, Philadelphia, Pa.

The picture of a mosquito pierced through by an arrow, associated with the words "MALARIA-ANTITOXIN."

Filed September 25, 1905. Serial No. 12,954. PUBLISHED FEBRUARY 6, 1906.

51,084. OUTER AND DRESS SHIRTS. HUGH H. MCCLELLAN, Troy, N. Y.

The word "PEERLESS." Used ten years.

Filed September 25, 1905. Serial No. 12,956. PUBLISHED FEBRUARY 6, 1906.

51,085. CARPETS. MORRIS AND COMPANY, Yardville, N. J.

A red triangle.

Filed November 13, 1905. Serial No. 14,560. PUBLISHED FEBRUARY 6, 1906.

51,086. SOAP. EDWARD A. OLDS, New York, N. Y.

A stand of flags and a shield, the flags extending on opposite sides of the shield.

Filed October 27, 1905. Serial No. 13,973. PUBLISHED FEBRUARY 6, 1906.

51,087. RIBBONS. PASSAVANT & Co., New York, N. Y.

The word "EDISON" printed in script upwardly slanting toward the right and crossing the figure of a woman holding in her right hand an electric lamp from which rays of light are represented as radiating. The woman is represented as standing upon a pictorial illustration of lightning.

Filed November 9, 1905. Serial No. 14,451. PUBLISHED FEBRUARY 6, 1906.

51,088. RHEUMATIC REMEDIES. PHILLIPS DRUG CO., Warren, Pa.

A circular band and the figures "1900" and beneath the same the figures "7-10-6-10," associated with the words "CROCKER'S RHEUMATIC REMEDY" appearing on the band.

Filed November 24, 1905. Serial No. 14,959. PUBLISHED FEBRUARY 6, 1906.

51,089. CREAM FOR THE TREATMENT OF THE SKIN. POND'S EXTRACT COMPANY, New York, N. Y.

The words "POND'S EXTRACT CREAM." Used ten years.

Filed September 20, 1905. Serial No. 12,810. PUBLISHED FEBRUARY 6, 1906.

51,090. CERTAIN MEDICAL COMPOUND. POND'S EXTRACT COMPANY, New York, N. Y.

A pictorial device or landscape having in its foreground a tall shrub that extends from the lower left-hand corner to and nearly filling the upper part of the device. The shrub is of a peculiar form and has blossoms as well as leaves. In the middle ground is a meandering river, and beyond it are men with axes felling shrubs or small trees and a wagon laden with trees or shrubs and drawn by horses. In the background is a high hill, near the base of which is a mill or distillery with smoke ascending from its chimney. Used ten years.

Filed September 20, 1905. Serial No. 12,812. PUBLISHED FEBRUARY 6, 1906.

51,091. CERTAIN MEDICAL COMPOUND. POND'S EXTRACT COMPANY, New York, N. Y.

The words "POND'S EXTRACT." Used ten years.

Filed September 20, 1905. Serial No. 12,813. PUBLISHED FEBRUARY 6, 1906.

51,092. OINTMENTS. POND'S EXTRACT COMPANY, New York, N. Y

The words "POND'S EXTRACT OINTMENT.' Used ten years.

Filed September 20, 1905. Serial No. 12,814. PUBLISHED FEBRUARY 6, 1906.

51,093. CERTAIN MEDICAL COMPOUND. POND'S EXTRACT COMPANY, New York, N. Y.

A rectangular figure formed by the duplicated words "POND'S EXTRACT," said duplicated words being arranged parallel to each other and connected by two elongated lines at the sides, the "P's" in the words "POND'S" connected by one line and the last "T's" in the words "EXTRACT" connected by another line. Used ten years.

Filed September 20, 1905. Serial No. 12,815. PUBLISHED FEBRUARY 6, 1906.

51,094. CATARRH REMEDIES. POND'S EXTRACT COMPANY, New York, N. Y.

The words "POND'S EXTRACT CATARRH CURE." Used ten years.

Filed September 20, 1905. Serial No. 12,816. PUBLISHED FEBRUARY 6, 1906.

51,095. VETERINARY REMEDIES FOR HORSES AND ALL DOMESTIC ANIMALS. POND'S EXTRACT COMPANY, New York, N. Y.

The words "POND'S EXTRACT VETERINARY REMEDY." Used ten years.

Filed September 20, 1905. Serial No. 12,817. PUBLISHED FEBRUARY 6, 1906.

51,096. WASHES OR LOTIONS TO RID ANIMALS OF VERMIN. PRATT FOOD CO., Philadelphia, Pa.

The representation of a serrated seal and a crescent, associated with the word "PRATTS" and the words "OF PHILADELPHIA" on a flourish underneath the same, all appearing on the representation of the crescent and the words "ANIMAL DIP" on the representation of the serrated seal.

Filed September 15, 1905. Serial No. 12,657. PUBLISHED FEBRUARY 6, 1906.

51,097. SOOTHING-SYRUP. PRESTO PHARMACAL COMPANY, Reading, Pa.

The words "GRAND MA'S SECRET" and the pictorial representation of an old lady wearing a cap and shawl.

Filed September 20, 1905. Serial No. 12,802. PUBLISHED FEBRUARY 6, 1906.

51,098. SKIRTS. PUNCH BROTHERS, St. Louis, Mo.

The words "PROGRESS BRAND" inclosed in a rectangle.

Filed September 26, 1905. Serial No. 13,043. PUBLISHED FEBRUARY 6, 1906.

51,099. LUMBERMEN'S RUBBERS AND RUBBER BOOTS. LEWIS PRATT ROSS, Rochester, N. Y.

The representation of the bust of a conventional picture or cut of a Quaker, above which appears the word "QUAKER" on a curve and below which appears the word "QUALITY" on a curve, the bust and the words being inclosed in a nearly-oval border, containing within said border at either side two ornamental scrolls and three small dots or dashes.

Filed December 19, 1905. Serial No. 15,513. PUBLISHED FEBRUARY 6, 1906.

51,100. CAP-MANTLES. WILLIAM H. SCHAEFER, Toledo, Ohio.

The words "ROYAL BLUE" in large-sized bold-faced capitals, having associated therewith the name "SCHAEFER'S" arranged across the face thereof in open-faced capitals and the words "CAP MANTLES" in capitals arranged below the same, the whole being inclosed within a fanciful scroll border.

Filed December 18, 1905. Serial No. 15,492. PUBLISHED FEBRUARY 6, 1906.

51,101. BUTTON PARTS. CHARLES HENRY SCHOTT, New York, N. Y., and Providence, R. I.

The words "SCHOTT BROS." Used ten years.

Filed November 20, 1905. Serial No. 14,841. PUBLISHED FEBRUARY 6, 1906.

51,102. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa.

The word "PEMLEY."

Filed September 15, 1905. Serial No. 12,664. PUBLISHED FEBRUARY 6, 1906.

51,103. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa.

The word "MARSHDALE."

Filed September 15, 1905. Serial No. 12,665. PUBLISHED FEBRUARY 6, 1906.

51,104. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa.

The word "SILKSMOOTH."

Filed September 15, 1905. Serial No. 12,667. PUBLISHED FEBRUARY 6, 1906.

51,105. WHISKY. JOSEPH H. SCHWARTZ, Plymouth, Pa.

The word "YUGETA."

Filed September 15, 1905. Serial No. 12,668. PUBLISHED FEBRUARY 6, 1906.

51,106. MEN'S VESTS AND WAISTCOATS. FRED'K H. SPRAGUE CO., Orange, Mass.

The words "RUSSIAN VESTS." Used ten years.

Filed September 21, 1905. Serial No. 12,874. PUBLISHED FEBRUARY 6, 1906.

51,107. MAINSPRINGS. SWARTCHILD & Co., Chicago, Ill.

A shield that is black except for a white border-line and a white letter "S" in the center of the shield, an eagle surmounting the shield, a streamer upon which appear the words "ACCURACY" and "DISPATCH," and the words "BLACK SHIELD" underneath the shield.

Filed October 20, 1905. Serial No. 13,782. PUBLISHED FEBRUARY 6, 1906.

51,108. GENUINE MINED AND CUT TURQUOISE. THE AZTEC TURQUOIS COMPANY, New York, N. Y.

A monogram of the letters "A Z T" above a horizontal line.

Filed September 28, 1905. Serial No. 13,006. PUBLISHED FEBRUARY 6, 1906.

51,109. COFFEE. THE H. G. TOMBLER GROCERY CO., Easton, Pa.

The words "BLUE KNOT" arranged on a background consisting of the representation of a shield of solid color draped with a ribbon forming a double bow or knot at the top.

Filed April 3, 1905. Serial No. 280. PUBLISHED FEBRUARY 6, 1906.

51,110. MATTRESSES. THE JOHN BREUNER COMPANY, San Francisco, Cal.

The word "KAPOKEEN."

Filed October 24, 1905. Serial No. 13,898. PUBLISHED FEBRUARY 6, 1906.

51,111. TYPE-WRITING MACHINES. THE OLIVER TYPEWRITER COMPANY, Chicago, Ill.

A red circle surrounding an Oliver type-writing machine.

Filed September 18, 1905. Serial No. 12,754. PUBLISHED FEBRUARY 6, 1906.

51,112. TONICS. WINTERSMITH MEDICINE CO., Louisville, Ky.

The words "VINO TONICO DE WINTERSMITH" arranged within a rectangular panel containing the facsimile signature "C. H. WINTERSMITH" near its lower end and surmounted by a substantially triangular ornamental figure, the said figure having the general appearance of an oblong body supported by two flowering stems and having scrolls rising from its upper edge and having a fan-like figure at its lower edge.

Filed September 23, 1905. Serial No. 12,926. PUBLISHED FEBRUARY 6, 1906.

51,113. WHISKY. A. D. KERR CO., Buffalo, N. Y.

The words "OLD AMBER" and the representation of a round dial representing the proof of the goods framed in scrolls and ears of rye.

Filed June 15, 1905. Serial No. 8,285. PUBLISHED FEBRUARY 6, 1906.

51,114. PRODUCT OF CORN IN FLAKE FORM. AMERICAN HOMINY COMPANY, Indianapolis, Ind.

The words "QUICK MALT."

Filed May 11, 1905. Serial No. 5,025. PUBLISHED FEBRUARY 6, 1906.

51,115. BIRD-FOOD. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania.

The representation of a canary bird on a twig, circular panels on the right and left thereof, a singing bird on a twig on one panel, a parrot on a perch on the other panel, a field at bottom on which said birds and panels appear, a field on top, a bar on the latter field, and the words "BIRD FOOD COMPANY" on said bar. Used ten years.

Filed July 8, 1905. Serial No. 9,929. PUBLISHED FEBRUARY 6, 1906.

51,116. FLAVORING EXTRACTS AND PREPARATIONS. BAKER EXTRACT COMPANY, Portland, Me., and Springfield, Mass.

The representation of a bivalve-shell of an approximately circular contour and having a scalloped edge.

Filed April 24, 1905. Serial No. 2,862. PUBLISHED FEBRUARY 6, 1906.

51,117. WOVEN CARPETS AND RUGS. BIGELOW CARPET COMPANY, Boston, Mass.

The word "LANCASTER." Used ten years.

Filed September 11, 1905. Serial No. 12,445. PUBLISHED FEBRUARY 6, 1906.

51,118. WHISKY. BLUTHENTHAL & BICKART, Atlanta, Ga.

The words "MARK ROGERS" and the portrait of the head of an old man having a white beard and wearing a slouch hat, holding a whisky-glass in one of his hands, and inclosed in a circle. Used ten years.

Filed April 28, 1905. Serial No. 3,354. PUBLISHED FEBRUARY 6, 1906.

51,119. BUTTERIN OR OLEOMARGARIN. BRAUN & FITTS, INC., Chicago, Ill.

The words "GILT EDGE." Used ten years.

Filed April 12, 1905. Serial No. 1,207. PUBLISHED FEBRUARY 6, 1906.

51,120. CIDER-VINEGAR. CHAS. E. MEYER & Co., Freeport, Ill.

The arbitrary word-symbol "SEEK NO FARTHER."

Filed July 3, 1905. Serial No. 9,665. PUBLISHED FEBRUARY 6 1906.

51,121. FINISHED OR DRESSED LEATHER. CORONA KID COMPANY, Boston, Mass., assignor to Corona Kid Manufacturing Company, Boston, Mass., a Corporation of Massachusetts.

The words "CORONA COLT," in connection with a pictorial representation of a colt, the whole surrounded by an oval border.

Filed August 19, 1905. Serial No. 11,802. PUBLISHED FEBRUARY 6, 1906.

51,122. FINISHED OR DRESSED LEATHER. CORONA KID COMPANY, Boston, Mass., assignor to Corona Kid Manufacturing Company, Boston, Mass., a Corporation of Massachusetts.

The words "CORONA KID," in connection with the pictorial representation of a crown, the whole surrounded by an oval border.

Filed August 19, 1905. Serial No. 11,803. PUBLISHED FEBRUARY 6, 1906.

51,123. MILK-COOLERS. DAIRYMENS SUPPLY COMPANY Philadelphia, Pa.

The representation of a clover-leaf in front of a circular disk, associated with the word "BESTOV."

Filed May 11, 1905. Serial No. 5,216. PUBLISHED FEBRUARY 6, 1906.

51,124. HATS OF ALL KINDS. DANBURY HAT COMPANY New York, N. Y.

The representation of a shield having two panels crossing the same, two winged griffins rampant against the shield, radiating rays above the outstretched claws of the griffins, and a panel crossing said rays, associated with the words "EXTRA QUALITY DANBURY HAT COMPANY INCORPORATED NEW YORK" and the facsimile signature of F. W. Clinton, president. Used ten years.

Filed May 6, 1905. Serial No. 4,555. PUBLISHED FEBRUARY 6, 1906.

51,125. HATS AND CAPS OF ALL KINDS. DUNLAP & Co., New York, N. Y.

The representation of an elongated panel composed of two irregular-shaped shields united by an intermediate panel, on which panel and shields appear the words "DUNLAP & Co." and below the latter "N. Y." Over the center of the shield stands a Maltese cross, on which is a stag's head, and above the Maltese cross, in curved lines, appear the words "EXTRA QUALITY."

Filed May 29, 1905. Serial No. 6,849. PUBLISHED FEBRUARY 6, 1906.

51,126. CURED MEATS. DUNLEVY & BROTHER, Pittsburg, Pa.

A string or rope formed of strands of contrasting color, the body of the same being of light color and one of the strands of red.

Filed May 8, 1905. Serial No. 4,695. PUBLISHED FEBRUARY 6, 1906.

51,127. SALAD-DRESSING AND SAUCES. E. R. DURKEE & Co., New York, N. Y.

The word "CHALLENGE."

Filed May 2, 1905. Serial No. 3,979. PUBLISHED FEBRUARY 6, 1906.

51,128. TICKINGS. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "PREMIUM EXCELSIOR TICKINGS" and the representation of a heroic female figure wearing upon her head a crown and clothed in red and blue flowing garments and holding in one hand a flag and in the other a sword, the scabbard of which hangs at her side. The figure is surrounded by ornamental scrolls and panels and medals and the words "EAGLE & PHENIX MILLS COLUMBUS, GEORGIA." and the letters "A O A."

Filed August 22, 1905. Serial No. 11,900. PUBLISHED FEBRUARY 6, 1906.

51,129. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga.

The representation of a female wearing a plumed helmet and the armor of a knight, bearing upon her shoulder a blue flag, and the representation of an ornamental quartered coat-of-arms, associated with the word "BEAUVAIS."

Filed September 14, 1905. Serial No. 12,568. PUBLISHED FEBRUARY 6, 1906.

51,130. HAMS. F. P. GARRETTSON & Co., Newport, R. I., and New York, N. Y.

The words "THE VIRGINIA VINTAGE."

Filed May 6, 1905. Serial No. 4,577. PUBLISHED FEBRUARY 6, 1906.

51,131. WHISKY. JOHN A. GILL, Philadelphia, Pa.
The word "VICTOR."
Filed April 15, 1905. Serial No. 1,702. PUBLISHED AUGUST 1, 1905.

51,132. SYRUP. GRIGGS, COOPER & COMPANY, St. Paul, Minn.
The word "WEYNOT."
Filed July 3, 1905. Serial No. 9,648. PUBLISHED FEBRUARY 6, 1906.

51,133. CRACKER-MEAL. GRIGGS, COOPER & COMPANY, St. Paul, Minn.
The word "WEYNOT."
Filed July 3, 1905. Serial No. 9,652. PUBLISHED FEBRUARY 6, 1906.

51,134. WHISKY. H. WEBSTER COMPANY, New York, N. Y.
The words "KENTUCKY FAVORITE" printed above upon a curved panel and also around the representation of a horseshoe, which representation of a horseshoe, together with the figures "1860," are printed upon a banner bordered and decorated with elaborate scrollwork and similar ornamentation, the banner being suspended above the representation of a barrel having the representation of a horseshoe and the words "KENTUCKY FAVORITE" upon its head and resting upon a pedestal in the shape of a rectangular parallelepipedon with scroll-shaped supports bearing the words "PURE WHISKY," beneath which is the representation of a vase containing a spray of leaves and having a scarf attached to either side, the whole being inclosed in a rectangular border.
Filed April 28, 1905. Serial No. 3,410. PUBLISHED FEBRUARY 6, 1906.

51,135. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "ARCOSTOOK," associated with the representation of a steamboat. Used ten years.
Filed January 5, 1906. Serial No. 15,905. PUBLISHED FEBRUARY 6, 1906.

51,136. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "CORROSSER." Used ten years.
Filed January 5, 1906. Serial No. 15,906. PUBLISHED FEBRUARY 6, 1906.

51,137. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "TACONNET." Used ten years.
Filed January 5, 1906. Serial No. 15,907. PUBLISHED FEBRUARY 6, 1906.

51,138. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "WINSLOW." Used ten years.
Filed January 5, 1906. Serial No. 15,908. PUBLISHED FEBRUARY 6, 1906.

51,139. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "ALQUIN."
Filed January 5, 1906. Serial No. 15,910. PUBLISHED FEBRUARY 6, 1906.

51,140. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "ALGO," associated with the representation of the head of an ox.
Filed January 5, 1906. Serial No. 15,912. PUBLISHED FEBRUARY 6, 1906.

51,141. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "KADJO," associated with the representation of an eagle at rest.
Filed January 5, 1906. Serial No. 15,913. PUBLISHED FEBRUARY 6, 1906.

51,142. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "IRQUO."
Filed January 5, 1906. Serial No. 15,915. PUBLISHED FEBRUARY 6, 1906.

51,143. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "OWL," associated with the representation of an owl.
Filed January 5, 1906. Serial No. 15,916. PUBLISHED FEBRUARY 6, 1906.

51,144. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "FORT," associated with the representation of a colonial fort.
Filed January 5, 1906. Serial No. 15,917. PUBLISHED FEBRUARY 6, 1906.

51,145. WRITING PAPER. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass.
The word "SEBO."
Filed January 5, 1906. Serial No. 15,920. PUBLISHED FEBRUARY 6, 1906.

51,146. SHIRTS, SHIRT-WAISTS, AND BLOUSES. HUTCHINSON, PIERCE & Co., New York, N. Y.
The word "STAR" and a representation of a star, used singly or together. Used ten years.
Filed April 22, 1905. Serial No. 2,710. PUBLISHED FEBRUARY 6, 1906.

51,147. COCOA-OATMEAL PREPARATIONS. M. MICHAELIS & SONS, New York, N. Y.
The word "COCOVENA."
Filed April 20, 1905. Serial No. 3,550. PUBLISHED FEBRUARY 6, 1906.

51,148. PILLS FOR BILIOUSNESS AND CONSTIPATION. MUNYON'S HOMŒOPATHIC HOME REMEDY CO., Philadelphia, Pa.
The representation of a pawpaw-tree having a sign-board projecting across the same and the words "MUNYON'S PAW-PAW PILLS" on said sign-board.
Filed September 14, 1905. Serial No. 12,565. PUBLISHED FEBRUARY 6, 1906.

51,149. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. NATH'L FISHER & Co., New York, N. Y.
The word "OROPAX."
Filed October 31, 1905. Serial No. 14,138. PUBLISHED FEBRUARY 6, 1906.

51,150. LEATHER BOOTS AND SHOES. WILLIAM J. NEWMAN, Boston, Mass.
The words "NEWMAN THE SHORMAN." Used ten years.
Filed November 8, 1905. Serial No. 14,405. PUBLISHED FEBRUARY 6, 1906.

51,151. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLMES & COMPANY, Boston, Mass.
The word "AUROCHS."
Filed January 9, 1906. Serial No. 16,066. PUBLISHED FEBRUARY 6, 1906.

51,152. SOLID-GOLD FINGER-RINGS. PECKHAM SEAMLESS RING MFG. CO., New York, N. Y.
The letter "S" inclosed within a diamond-shaped figure.
Filed April 24, 1905. Serial No. 2,904 PUBLISHED FEBRUARY 6, 1906.

51,153. BREAKFAST-FOODS PREPARED FROM CEREALS. POSTUM CEREAL CO., LIMITED, Battle Creek, Mich.
The compound word "GRAPE-NUTS" represented in ornamental letters of one color upon a background of another color.
Filed May 3, 1905. Serial No. 4,101. PUBLISHED FEBRUARY 6, 1906.

51,154. OVERALLS, COATS, AND TROUSERS. RED DIAMOND CLOTHING CO., St. Louis, Mo.
The word "DIAMOND" in script upon a diamond-shaped figure printed in red.
Filed April 10, 1905. Serial No. 1,046. PUBLISHED FEBRUARY 6, 1906.

51,155. COFFEE. RIDENOUR-BAKER GROCERY COMPANY Kansas City, Mo.
The representation of a bunch of colored flowers usually described as morning-glories, which are interspersed with green

morning-glory leaves. Above the representation of the flowers are the words "MORNING GLORY," while below are the words "ROASTED COFFEE."

Filed June 12, 1905. Serial No. 7,975. PUBLISHED FEBRUARY 6, 1906.

51,156. WHISKY. SAMUEL WERTHEIMER & SON WHOLESALE LIQUOR COMPANY, St. Joseph, Mo.

The words "SILVER KING."

Filed May 16, 1905. Serial No. 5,765. PUBLISHED FEBRUARY 6, 1906.

51,157. BREAKFAST-FOOD MADE FROM WHEAT. MARION W. SAVAGE Minneapolis, Minn.

The representation of an apple, the word "MINNE" on one side and the letters "LIB" on the other side.

Filed June 30, 1905. Serial No. 9,526. PUBLISHED FEBRUARY 6, 1906.

51,158. TEA AND COFFEE POTS AND COFFEE-URNS. SILVER & COMPANY, New York, N. Y.

The inscription "THE MARION HARLAND TEA & COFFEE POT" surrounded by an oval border. Used ten years.

Filed January 6, 1906. Serial No. 15,940. PUBLISHED FEBRUARY 6, 1906.

51,159. PAPER FOR WRAPPING FOOD PRODUCTS. GEORGE STABER, New York, N. Y.

The word "PEARL."

Filed January 10, 1906. Serial No. 16,093. PUBLISHED FEBRUARY 6, 1906.

51,160. BLANK BOOKS. THOMAS D. TAYLOR, Boston, Mass.

The words "CASH CREDIT."

Filed January 12, 1906. Serial No. 16,145. PUBLISHED FEBRUARY 6, 1906.

51,161. SELF-PLAYING PIANOS AND PIANO-PLAYERS. THE AUTOPIANO COMPANY, New York, N. Y.

The word "PIANISTA."

Filed May 8, 1905. Serial No. 4,705. PUBLISHED FEBRUARY 6, 1906.

51,162. WHEAT-FLOUR. THE KENNEWEG COMPANY, Cumberland, Md.

The word "IVORY," associated with the words "THE KENNEWEG CO. FANCY PATENT CUMBERLAND, MD." and the letters and dots "·X·X·X·" and figures "24½," all inclosed in an ornamental border.

Filed April 17, 1905. Serial No. 1,929. PUBLISHED FEBRUARY 6, 1906.

51,163. LAUNDRY STARCH. THE S. W. NOGGLE WHOLESALE & MFG. CO., Kansas City, Mo.

The word "ECLIPSE."

Filed June 23, 1905. Serial No. 8,809. PUBLISHED FEBRUARY 6, 1906.

51,164. WHISKY. THE UNION DISTLG. CO., Cincinnati, Ohio.

The picture of a yacht-race, comprising a large yacht in the center with sails set and other yachts and vessels following closely in the rear, all inclosed in a circle or panel and associated or in combination with the words "OLD YACHT CLUB" arranged in the form of an arc above the picture.

Filed April 26, 1905. Serial No. 3,165. PUBLISHED FEBRUARY 6, 1906.

51,165. SILK PIECE GOODS. CLARENCE WHITMAN & CO., New York, N. Y.

The representation of two entwined winged serpents having griffin-like heads, with a shuttle interposed between the bodies thereof.

Filed September 14, 1905. Serial No. 12,547. PUBLISHED FEBRUARY 6, 1906.

51,166. TAR AND PITCH. BARRETT MANUFACTURING COMPANY, New York, N. Y.

The letter "B" upon a diamond-shaped background. Used ten years.

Filed August 21, 1905. Serial No. 11,871. PUBLISHED FEBRUARY 6, 1906.

51,167. CORSETS. BIRDSEY & SOMERS, New York, Y. Y.

The word "SULTANA."

Filed November 9, 1905. Serial No. 14,430. PUBLISHED FEBRUARY 6, 1906.

51,168. COTTON PIECE GOODS. EAGLE & PHENIX MILLS, Columbus, Ga.

The words "CABLE COTTONADES" and the pictorial representation of the company's mills.

Filed September 14, 1905. Serial No. 12,566. PUBLISHED FEBRUARY 6, 1906.

51,169. CURE FOR CONSUMPTION. PERRY M. FORD, Columbus, Ohio.

The word "FIFOR" printed as a hyphenated word, "FI-FOR," and as a monogram.

Filed August 25, 1905. Serial No. 12,003. PUBLISHED FEBRUARY 6, 1906.

51,170. SKIRT-DISTENDERS. ALEXANDER M. GREAN, New York, N. Y.

The hyphenated word "NOT-A-HOOP."

Filed December 28, 1905. Serial No. 15,724. PUBLISHED FEBRUARY 6, 1906.

51,171. REMEDY FOR CERTAIN NAMED DISEASES. J. EDWARD HANSON, Pass Christian, Miss.

The hyphenated words "PRUN-AMMONIA."

Filed September 11, 1905. Serial No. 12,440. PUBLISHED FEBRUARY 6, 1906.

51,172. SOOTHING-SYRUP. CHARLES ROBERT KOPP, York, Pa.

The words "KOPP'S 'BABY'S FRIEND,'" the words "BABY'S FRIEND" being inclosed in quotation-marks. Used ten years.

Filed August 21, 1905. Serial No. 11,842. PUBLISHED FEBRUARY 6, 1906.

51,173. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word "WOODBERRY." Used ten years.

Filed September 14, 1905. Serial No. 12,621. PUBLISHED FEBRUARY 6, 1906.

51,174. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER HOLMES & COMPANY, Boston, Mass.

The word "FASHIONDALE."

Filed August 14, 1905. Serial No. 11,645. PUBLISHED FEBRUARY 6, 1906.

51,175. CHEMICALLY-PURE BORAX. SARA B. SMITH, Livermore, Cal.

The signature of the firm—to wit, "SMITH BROS."—and beneath the same on a scroll the monogram composed of the letters "S B" fancifully arranged, with a bar projecting from opposite sides of said scroll and having the word "CHEMICALLY" on one side and the words "PURE BORAX" on the other, there being also beneath said words the words "NONE GENUINE WITHOUT THIS TRADE MARK," the whole being inclosed by a rectangular figure.

Filed August 21, 1905. Serial No. 11,837. PUBLISHED FEBRUARY 6, 1906.

51,176. GERMICIDES. ARTHUR H. SWANK, Fremont, Ohio.

The words "ELECTRO=GEN" separated by hyphens.

Filed August 17, 1905. Serial No. 11,738. PUBLISHED FEBRUARY 6, 1906.

51,177. SHEETINGS. THE COURTENAY MFG. CO., Newry, S. C.

The allegorical representation of Neptune arranged within a frame on which is the word "TRIDENT" and the representation of shells at the corners. Also arranged within the frame is the representation of seahorses and a fish.

Filed November 8, 1905. Serial No. 14,421. PUBLISHED FEBRUARY 6, 1906.

51,178. EMBALMING FLUIDS. THE VENUS CHEMICAL CO., New York, N. Y.

The word "VENO."

Filed September 8, 1905. Serial No. 12,369. PUBLISHED FEBRUARY 6, 1906.

51,179. LEATHER BOOTS AND SHOES. WERTHEIMER-SWARTS SHOE CO., St. Louis, Mo.

The representation of a clover-leaf bearing upon its leaflets the letters "W S S C" inclosed within a circular border having two lateral extensions, in one of which appear the words "CLOVER BRAND SHOES" and in the other the words "ALWAYS JUST CORRECT."

Filed August 22, 1905. Serial No. 11,908. PUBLISHED FEBRUARY 6, 1906.

51,180. ANTIMALARIAL TONICS. WINTERSMITH MEDICINE CO., Louisville, Ky.

The word "TROPICTONE," associated with the letter "R" having an oblique straight line across its tail and having behind its center a representation of a bottle from which rays radiate. A dash appears below the word "TROPICTONE," and the word "TROPICTONE" appears on the letter "R."

Filed September 9, 1905. Serial No. 12,410. PUBLISHED FEBRUARY 6, 1906.

LABELS

REGISTERED APRIL 3, 1906.

12,743.—*Title:* "PLUMSURE." (For Cigars.) O. L. SCHWENCKE LITHOGRAPHIC Co., New York, N. Y. Filed March 13, 1906.

12,744.—*Title:* "LA GARON." (For Cigars.) MOSES P. GARONZIK, Baltimore, Md. Filed March 10, 1906.

12,745.—*Title:* "SANTO COLORADO." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed March 10, 1906.

12,746.—*Title:* "SANTA HUMO." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed March 10, 1906.

12,747.—*Title:* "SWISSESS." (For Cigars.) SCHMIDT & Co., New York, N. Y. Filed March 10, 1906.

12,748.—*Title:* "ARABIAN COFFEE PHOSPHATE." (For a Beverage.) GIRARD SPRING WATER Co., North Providence, R. I. Filed March 7, 1906.

12,749.—*Title:* "RED FEATHER." (For Beer.) F. JOSEPH TRAUNMILLER, St. Louis, Mo. Filed November 22, 1905.

12,750.—*Title:* "ARMY AND NAVY EXPORT BEER." (For Bottled Beer.) ROBERT PORTNER BREWING COMPANY, Alexandria, Va. Filed March 12, 1906.

12,751.—*Title:* "HAVARYE." (For Whisky.) THE PEDERSON MERCANTILE COMPANY, Moorhead, Minn. Filed March —, 1906.

12,752.—*Title:* "GOOD OLD AGE BOURBON." (For Bourbon Whisky.) THE PEDERSON MERCANTILE COMPANY, Moorhead, Minn. Filed March 7, 1906.

12,753.—*Title:* "DETROIT LAKE RYE." (For Rye Whisky.) THE PEDERSON MERCANTILE COMPANY, Moorhead, Minn. Filed March 7, 1906.

12,754.—*Title:* "GOOD-SHOT RYE." (For Rye Whisky.) THE PEDERSON MERCANTILE COMPANY, Moorhead, Minn. Filed March 7, 1906.

12,755.—*Title:* "TROWBRIDGE'S CHOCOLATE TROWCO PUFFS." (For Confectionery.) TROWBRIDGE CHOCOLATE CHIP Co., Meadville, Pa. Filed March 7, 1906.

12,756.—*Title:* "CANON CRACKER." (For Popcorn.) WILLIAM SCHROEDER, Dubuque, Iowa. Filed March 5, 1906.

12,757.—*Title:* "DIAMOND C BRAND CALIFORNIA PEACHES." (For Peaches.) CASTLE BROTHERS—INCORPORATED, San Francisco, Cal. Filed March 3, 1906.

12,758.—*Title:* "OUR PRIDE CALIFORNIA PEACHES." (For Peaches.) CASTLE BROTHERS—INCORPORATED, San Francisco, Cal. Filed March 3, 1906.

12,759.—*Title:* "FLORA BRAND CALIFORNIA MOOR-PARK APRICOTS." (For Apricots.) CASTLE BROTHERS—INCORPORATED, San Francisco, Cal. Filed March 3, 1906.

12,760.—*Title:* "CLIMAX BRAND APRICOTS." (For Apricots.) CASTLE BROTHERS—INCORPORATED, San Francisco, Cal. Filed March 3, 1906.

12,761.—*Title:* "LAUREL BRAND CALIFORNIA APRICOTS." (For Apricots.) CASTLE BROTHERS—INCORPORATED, San Francisco, Cal. Filed March 3, 1906.

12,762.—*Title:* "COWBOY BRAND SELECTED CALIFORNIA PRUNES." (For Prunes.) CASTLE BROTHERS—INCORPORATED. San Francisco, Cal. Filed March 3, 1906.

12,763.—*Title:* "SOUVENIR BRAND CALIFORNIA PRUNES." (For Prunes.) CASTLE BROTHERS—INCORPORATED. San Francisco, Cal. Filed March 3, 1906.

12,764.—*Title:* "MAYWOOD BRAND." (For Prunes.) MAYWOOD PACKING Co., LTD., Corning, Cal. Filed February 10, 1906.

12,765.—*Title:* "OLD SETTLERS." (For Canned Peas.) THE PIONEER CANNING & PICKLING Co., St. Nazianz, Wis. Filed March 13, 1906.

12,766.—*Title:* "THE BARNETT HOG REMEDY AND STOCK FOOD." (For a Combined Food and Condition-Powder for Live Stock.) CHARLES H. WINTERSTEEN, Cameron, Mo. Filed March 12, 1906.

12,767.—*Title:* "GYP-C-QURE." (For Horse Remedy.) HARRY QUIRK, Boston, Mass. Filed February 17, 1906.

12,768.—*Title:* "DR. BENT'S NO. 1." (For Medicine.) DAKIN DRUG Co., Randolph, Mass. Filed March 12, 1906.

12,769.—*Title:* "C. W. C. CAMPS WONDERFUL CURE." (For Medicine.) THE C. W. C. MEDICINE COMPANY, Carrollton, Ga. Filed March 5, 1906.

12,770.—*Title:* "BEST IN THE WORLD SALVE." (For a Salve.) PETER DIEHL, Syracuse, N. Y. Filed March 5, 1906.

12,771.—*Title:* "BEAU TIENT, CRÊME TACOMA, A PERMANENT COLD CREAM." (For Cold-Cream.) THE TACOMA CHEMICAL Co., Pittsburg, Pa. Filed March 6, 1906.

12,772.—*Title:* "LAURENT'S HONEY AND GLYCERINE JUJUBES." (For a Preparation of Honey and Glycerin.) F. LAURENT & SONS, Philadelphia, Pa. Filed March 3, 1906.

12,773.—*Title:* "ORIENTAL TOILET POWDER." (For Toilet Powder.) THE GRAY LITHOGRAPH Co., New York, N. Y. Filed March 6, 1906.

12,774.—*Title:* "A 2 Z." (For a Liquid Cleaner.) NORMAN L. SIMMONS Schenectady, N. Y. Filed March 10, 1906.

12,775.—*Title:* "THE IDEAL WASHING FLUID." (For a Washing Fluid.) CHAS. A. MOOSBRUGGER, Newark, N. J. Filed January 30, 1906.

12,776.—*Title:* "STARCHLUSTER." (For Starch-Luster.) COLUMBIA WAX WORKS, New York, N. Y. Filed March 13, 1906.

12,777.—*Title:* "U. S. ARMY STANDARD, UNCLE SAM." (For Seamless Half-Hose.) WESLEY B. BEYER, Birdsboro, Pa. Filed March 10, 1906.

12,778.—*Title:* "HICKORY CARBON PAPER." (For Carbon-Paper.) WARNER CARY LEWIS, Chicago, Ill. Filed March 12, 1906.

PRINTS

REGISTERED APRIL 3, 1906.

1,615.—*Title:* "THE SECOND MUNDY." (For Hats.) SAMUEL MUNDHEIM Co., Brooklyn, N. Y. Filed March 10, 1906.

1,616.—*Title:* "THE MUNDY HAT." (For Hats.) SAMUEL MUNDHEIM Co., Brooklyn, N. Y. Filed March 10, 1906.

1,617.—*Title:* "THE PELL VONA SEAMLESS COAT." (For Coats.) PELL VONA, Pittsburg, Pa. Filed February 17, 1906.

1,618.—*Title:* "STEVENS." (For Firearms.) J. STEVENS ARMS & TOOL Co., New York, N. Y. Filed March 8, 1906.

1,619.—*Title:* "REFRIGERATORS." (For Refrigerators.) FREDERICK TETTENBORN, Cincinnati, Ohio. Filed March 12, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE EINSTEIN.

Decided February 1, 1906.

ABANDONMENT OF APPLICATION—MERE REQUEST FOR RECONSIDERATION—INSUFFICIENT ACTION.

Where claims are rejected a mere request, for reconsideration filed within the year allowed by law, unaccompanied by some statement or argument which controverts the ruling of the Examiner or throws light upon the facts of the case, is not sufficient to save the application from abandonment for failure to prosecute.

ON PETITION.

ACETYLENE-GAS GENERATOR.

Mr. Geo. H. Knight and *Messrs. Knight Bros.* for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner holding that the above-entitled application is abandoned because of the applicant's failure to take proper action in the prosecution thereof within one year after the rejection of September 27, 1904.

The rejection referred to was the first action in the case, and on September 27, 1905, the applicant filed a paper, saying:

> A reconsideration of claims 1, 2 and 4 is requested, inasmuch as it is believed that said claims are allowable over the references cited.

He did not "distinctly and specifically point out the supposed errors in the Examiner's action," as required in Rule 69. His letter amounted to nothing more than a request for reconsideration, and under the express provisions of the rule was insufficient to call for reconsideration or to save the case from abandonment.

It is clear that a request for reconsideration is useless unless accompanied by some statement or argument which controverts rulings made by the Examiner or throws light upon the facts of the case. Its purpose is not, as applicant seems to suppose, to permit him to appeal, since if this were the purpose the statute would have made no provision for reconsideration, but would have permitted an appeal from the first action. The purpose of reconsideration, therefore, is to enable the applicant and the Examiner to reach an agreement or to come to an issue in the light of argument.

The action of September 27, 1905, was clearly insufficient, and therefore the case is abandoned. The petition is denied.

EX PARTE SCHMID.

Decided February 1, 1906.

FINAL REJECTION—EXAMINER'S EXPLANATION NOT A NEW REASON FOR REJECTION.

Where the Examiner rejects the claims on the ground of inoperativeness and the applicant files a letter and an affidavit seeking to show that the device is operative and asks for a reconsideration, which is given, and the claims are finally rejected for the same reasons, *Held* that the final rejection cannot be considered premature simply because the Examiner in his final rejection entered into an explanation to meet the arguments of the applicant.

ON PETITION.

DEVICE FOR INDICATING ATMOSPHERIC VARIATIONS AND DETECTING THE SOURCE AND DIRECTION OF SUBTERRANEAN WATERS.

Mr. James Hamilton for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner finally rejecting the claims in the above-entitled case on November 16, 1905.

The petitioner contends that the final rejection was premature and irregular and should be set aside. It appears that the claims were rejected on November 3, 1904, on the ground that the device disclosed was inoperative, and on November 3, 1905, applicant filed a letter and an affidavit seeking to show that the device was operative and asking reconsideration. The Examiner was not convinced by the argument and affidavit and, being still of the opinion that the device was inoperative, repeated his action rejecting the claims and made his action final. The petitioner contends that new reasons were given for the rejection; but the record fails to support that contention. The Examiner rejected the claims for the same reason given before. An explanation such as here given by the Examiner, why the arguments made by the applicant do not change his opinion as previously announced, clearly cannot be regarded as a change of view by the Examiner. On the contrary, it unmistakably indicates that the Examiner has not changed his views and insists upon the rejection of the claims for the reason originally given.

The final rejection was regular, and therefore the petition is denied.

EX PARTE KOPS BROTHERS.

Decided March 10, 1906.

TRADE-MARKS—MARK DESCRIPTIVE.

The words "In Curve" as a trade-mark for corsets *Held* descriptive of the goods and registration denied.

ON APPEAL.

TRADE-MARK FOR CORSETS, ETC.

Mr. Harold Serrell for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the words "In Curve" as a trade-mark for corsets.

The Examiner's refusal to register is based on the ground that the mark is descriptive. The appellants contend that the words are merely fanciful in their application to the goods mentioned. He attempts to make a distinction between the condition of the goods when on sale and their condition when in use. I think the distinction is of no consequence here. "In Curve" is believed to be clearly descriptive of the goods designated.

The decision of the Examiner of Trade-Marks is affirmed.

THE WINDSOR MILLING AND ELEVATOR COMPANY *v.* BRUNNER.

Decided March 14, 1906.

TRADE-MARKS — INTERFERENCE — MOTION TO DISSOLVE — CONSENT OF PARTIES.

Where the trade-marks involved in an interference include as their dominating feature the same name by which the goods would be known, it is immaterial that there are differences in the appearance of the actual labels, and a motion to dissolve the interference on the ground of non-interference infact must be denied, notwithstanding both parties consent to it.

ON APPEAL.

TRADE-MARK FOR FLOUR.

Mr. P. H. Gunckel for The Windsor Milling and Elevator Company.

Mr. Hiram A. Sturges for Brunner.

ALLEN, *Commissioner:*

This is an appeal by The Windsor Milling and Elevator Company from the decision of the Examiner of Trade-Marks refusing to dissolve the above-entitled interference. A motion for dissolution was made on the ground that there is no interference in fact, and both parties urge that the motion should be granted. The appellant's trade-mark is described in its application as follows:

The trade-mark consists of the words "Blue Bell" and the representation of bluebell leaves and flowers.

Brunner's mark is described in his application as follows:

My trade-mark consists of the words "Blue Bell" associated with the representation of a swinging bell being suspended by a ribbon, and flowers and stalk of the bluebell imprinted thereon, all inclosed in concentric circles.

It thus appears that both parties use the words "Blue Bell," and an examination of the specimens of the marks as actually used shows that these words appear on both in large type. They constitute an essential feature of the mark, and it is believed that the goods of both parties will undoubtedly be known as the "Blue Bell Flour." In the case of marks like these, including as their predominating feature a name by which the goods would be known, it is immaterial that there are differences in the appearance of the actual labels. The goods will be identified by the name, and consequently purchasers will be misled and deceived.

It must be held that the marks are so nearly alike as to be likely to deceive purchasers and mislead the public, and therefore I cannot grant the motion for dissolution, notwithstanding the fact that both parties consent to it.

The decision of the Examiner of Trade-Marks is affirmed.

SCHNEIDER *v.* THE UNION DISTILLING CO.

Decided March 14, 1906.

1. TRADE-MARK INTERFERENCE—DISSOLVED ON MARK REGISTERED UNDER ACT OF 1870.

Where an interference declared between two applications for the registration of a trade-mark was dissolved on reference to a mark registered by a third party on March 14, 1871, *Held* that the registration under the act of 1870, and over thirty years ago, is a proper reference until overcome in some way by the applicant.

2. SAME—SAME—REFERENCE TO BE OVERCOME NOT BY INTERFERENCE PROCEEDING, BUT BY AFFIDAVITS.

Where reference is made to an expired registration, applicant's remedy is not by an interference proceeding with the registered mark, since interferences can be declared only as to applications and existing marks, but by a showing in the form of affidavits to overcome the presumption that this registrant under the act of 1870 is still the owner of the mark.

3. SAME—SAME—IF REFERENCE OVERCOME, PRESENT INTERFERENCE TO CONTINUE.

Where in a trade-mark interference a reference is found in the form of an expired registration under the act of 1870, *Held* that if a showing is made overcoming the presumption of ownership raised by the reference the interference should continue.

ON APPEAL.

TRADE-MARK FOR WHISKY.

Mr. Titian W. Johnson for Schneider.

Mr. Arthur E. Wallace for The Union Distilling Co.

ALLEN, *Commissioner:*

This is an appeal by The Union Distilling Co. from the decision of the Examiner of Trade-Marks dissolving the above-entitled interference on the ground that the mark of the issue is a known trade-mark which was adopted and used by another prior to the date of adoption alleged by the present applicants.

As evidence of such prior adoption and use the Examiner calls attention to the mark registered by Mills, Johnson and Company on March 14, 1871.

The appellant calls attention to the fact that the registration cited was made under the unconstitutional act of 1870 and to the further fact that the period of thirty years for which the registration was granted has expired. It therefore urges that such registration is not a valid reference, since it is not *prima facie* evidence of ownership by the registrant. The question here raised was considered and decided in the case of the *Star Distillery Company*, (119 O. G., 964,) wherein it was held that registrations under the act of 1870 are to be regarded as proper references until overcome in some way by the applicant. The appellant asks that, if the ruling in the above-cited case is adhered to, it be permitted to overcome the registration as a reference by an interference proceeding. It is clear, however, that there can be no interference, since interferences can be declared only as to applications and existing registrations. The appellant's remedy would seem to be not an interference, but a showing in the form of affidavits tending to overcome the presumption that the registrant under the act of 1870 is still the owner of the mark. If such affidavits are filed, a continuance of the present interference will necessarily follow.

The Examiner was right in dissolving the interference in the absence of a showing tending to overcome the reference cited, and therefore his decision is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE MYGATT.

Decided December 12, 1905.

1. DESIGNS—REFUSAL OF CLAIMS—APPEAL.

Where an applicant for a design patent presents a claim and the Patent Office rules that the applicant cannot have the

claims presented and can have no claim but a suggested one, *Held* that such ruling is, in effect, a rejection of the claim presented and when twice refused is appealable to the Examiners-in-Chief under section 4909 of Revised Statutes.

2. SAME—DESCRIPTION—APPEAL.

Held that the question whether the description in a design case is a proper one is not reviewable by the court of appeals except in an extraordinary case.

3. SAME—CLAIMS—DESCRIPTION OF SALIENT FATURES.

While many if not a large majority of designs can be sufficiently disclosed by a drawing and a claim for the ornamental design as shown is in general the better form of claim, *Held* that the design in this case relates to that class where a description is not only proper, but necessary, and thatthe claim should carry a description of the salient features of the design.

Mr. Melville Church for the appellant.

Mr. John M. Coit for the Commissioner of Patents.

DUELL, *J.*:

This purports to be an appeal from the decision of the Commissioner of Patents refusing to allow Letters Patent to the appellant for a new and original design for reflectors.

At the threshold we are met by the contention that the decision appealed from was not a rejection of the claim but rather that it was a requirement that certain descriptive matter in the specification be canceled and the claim changed as to form.

The record discloses that the Examiner, referring to the claim, in his action upon the application notified appellant that—

> It is also unnecessary to furnish a description of a design, in view of the decision of the Commissioner in *ex parte Goldsmith, supra*. It has been held that the claim should be for the article as shown. Applicant's claim omits the words as shown and is improper as being in specific terms, and therefore is not a proper claim in a design case. The claim should be amended to read as follows: *The ornamental design for the reflector as shown.*
>
> In the further prosecution of this application exhibit is required.

The applicant thereupon took issue with the Examiner, insisting upon a claimed statutory right to describe his design and that his claim complied with the law. A model was thereafter filed as required and the Examiner again acted upon the case, saying in part:

> All the description of the design following the brief description of the figure of the drawing should also be canceled in view of the decision cited above.
>
> All of the preamble to the claim, except the words "I claim" should be canceled.
>
> The claim should be amended to read as follows:
>
> "The ornamental design for a reflector, as shown."

Applicant made reply, amending to cure certain formal defects, but still insisting that no line drawing could correctly illustrate his design, and that he had endeavored to describe his design as he considered the statute required. The Examiner replied:

> The amendment of the 8th instant curing certain formal objections has been incorporated. The other objections, fully set forth in Office letter of the 2nd instant, not having been cured are repeated.
>
> The application is in condition for petition to the Commissioner.

This brings us face to face with the question whether applicant's remedy was by petition to the Commissioner of Patents as provided by Rule 145 of the Rules of Practice of the Patent Office or by appeal to the Examiners-in-Chief in accordance with section 4909 of the Revised Statutes and Patent Office Rules 133 and 134. That there had been the two actions prerequisite to the right to petition the Commissioner is admitted by the Examiner, and just as certainly there had been the two actions prerequisite to an appeal to the Examiners in-Chief, provided those two actions were rejections of the claim as the amendment of the claim as originally presented was not an amendment in matter of substance.

The applicant, contending that the actions were rejections of his claim as presented, took an appeal to the Examiners-in-Chief. That tribunal dismissed the appeal on the ground that it was not taken from a second rejection of the claim but from certain objections to the description, etc., made by the Examiner.

Applicant thereupon appealed to the Commissioner in person, who, holding that the action of the Examiners-in-Chief seemed to him well founded, nevertheless proceeded to decide the matter as though it had come to him by way of petition and not by appeal. Making no reference to the claim he affirmed the action of the Examiner that a description in the case was unnecessary.

We consider that the Examiners-in-Chief erred in not entertaining the appeal. When an applicant for a design patent presents a claim and the Patent Office says you cannot have that claim, and you can have no claim but the one we suggest, such ruling is in effect a rejection of the claim presented, and if the applicant persists in his demand for the claim as presented by him he is, if the Patent Office persists in refusing the claim, entitled to an appeal to the Examiners-in-Chief under section 4909 of the Revised Statutes. It is of no moment what the actions are called.

The Examiner in effect rejected the claim twice for a claim was presented and insisted upon, and twice the Examiner refused it, and said you must take a claim reading—

> The ornamental design for a reflector, as shown

Such an insistence, at least in a design application, is something more than an objection to the form of the proposed claim. It may be, and if we were called upon to decide, we doubtless would hold that the claim proposed by the Examiner, or one that included the words "and described" to be better in form in most cases and one that gives an applicant greater protection. (*Ex parte Freeman*, 23 App. D. C., 226.) Such a form of a claim has been held good in a design case by the Supreme Court. (*Dobson* v. *Bigelow Carpet Co.*, 114 U. S., 439; *Dobson* v. *Dornan*, 118 U. S., 10.) We however do not construe these cases as holding that such claims are the only ones permissible, or that the Commissioner of Patent's action in insisting upon such a form is not reviewable by appeal. Manifestly a descriptive claim in some cases is better, and a refusal to allow such a claim is a rejection of a claim and reviewable on appeal. As we have said, we think the Examiners-in-Chief erred in not entertaining the appeal, and while the better practice would be to require the Commissioner by proceedings duly taken to direct them to entertain the appeal we have decided to entertain the appeal for the double reason that a question of general public interest is involved and because by so doing we can save unnecessary time, expense and labor to the parties involved, as we are so clearly of the opinion that the actions of the Examiner were rejections of the claim. No good purpose would be subserved by dismissing the appeal when in the end we would take jurisdiction.

Turning now to a consideration of the merits of the appeal we find on an examination of the specification that there is set forth therein at considerable length a description of the design. We shall not consider the contention between appellant and the Patent Office as to whether the description is a proper one. That question, except in an extraordinary case would not be reviewed by us. If we find that the statutes require, or permit a written description of a design in the specification we do not question but

that applicants for design patents and those charged by law with the examination of their applications will ordinarily agree without much trouble as to the propriety of the offered description and that the Commissioner of Patents will do exact and impartial justice to all.

It appears that the specification forming a part of the application when filed contained a description of the design and the claim pointed out with a considerable degree of particularity the parts which taken together constitute the design. It is not questioned that the uniform practice of the Patent Office and its rules, from 1836, the date of the enactment of the first statute providing for the grant of patents for designs, down to 1904 permitted and provided for a description of the design, and that for the most of the time down to at least 1897 the form of claim recommended included a description of the design, or of a portion thereof.

It would seem that this practice was in consonance with the statutes relating to the grant of design patents.

Section 4929 of the Revised Statutes, as amended in 1902, was in force when the application in question was filed. It is as follows:

Sec. 4929. Any person who has invented any new, original, and ornamental design for an article of manufacture, not known or used by others in this country before his invention thereof, and not patented or described in any printed publication in this or any foreign country before his invention thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law and other due proceeding had, the same as in cases of invention or discoveries covered by section forty-eight hundred and eighty-six, obtain a patent therefor.

In addition to the section last quoted, and to section 4886 therein referred to, section 4933 provides as follows:

Sec. 4933. All the regulations and provisions which apply to obtaining or protecting patents for inventions or discoveries not inconsistent with the provisions of this title, shall apply to patents for designs.

This section is the same as section 76 of the act of 1870.

It is contended by appellant that in view of the above requirement a written description of a design is required and that the applicant must particularly point out and distinctly claim his invention; and in this connection he refers to section 4888 as justifying his contention. The section reads as follows:

Sec. 4888. Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. The specification and claim shall be signed by the inventor and attested by two witnesses.

That the law applicable to design patents "does not materially differ from that in cases of mechanical patents," Mr. Justice Brown, then district judge for the eastern district of Michigan, held in *Northrup* v. *Adams*, (12 O. G., 430,) and he then referred to section 4933 above quoted. His ruling was referred to with approval by the Supreme Court in *Smith* v. *Whitman Saddle Co.*, (148 U. S., 674.) It will be noted that Mr. Justice Brown did not expressly state that section 4888 was applicable to design applications. Nor as we read the decision of the Supreme Court in *Dobson* v. *Dornan* (118 U. S., 10) did the Supreme Court hold that section 26 of the act of 1870, which is now section 4888 of the Revised Statutes, was not applicable to design applications. It did however hold that the description and claim of the design patent then before it sufficiently complied with the requirements of that section of the statute. The description and claim held to be sufficient read:

The nature of my design is fully represented in the accompanying photographic representation, to which reference is made. I claim as my invention—The configuration of the design hereto annexed, when applied to carpeting.

Of this the Court said:

The purport of the description is, that what the photographic illustration represents as a whole is the invention. It is that which is claimed when applied to carpeting. The design is a pattern to be worked into a carpet, and is within the statute. Claiming "the configuration of the design" is the same as claiming the design, or the figure, or the pattern. It is better represented by the photographic illustration than it could be by any description, and a description would probably not be intelligible—without the illustration.

We understand this decision to hold that in the case before it the Court considered that a reference in the specification to the photographic illustration, forming a part of the application, and the claim for the design for the carpet was a sufficient description of the design and that the claim pointed out with sufficient particularity the invention. It does not hold that no further description is permissible at the election of the applicant, or that he may not more particularly point out his invention in his claim. Nor does it hold that if he had done so his patent would have been for that reason void. Nor does it state that in every case it would hold such a description and such a claim a sufficient compliance with the statute.

In the prior case of *Dobson* v. *Bigelow Carpet Co.* (114 U. S., 439) the Court did not hold a design patent void, even when the design related to a carpet, because it contained a fuller description of the design. It did hold that a claim which used the words "as shown" referred to the description as well as to the drawing.

That many, if not a large majority of designs can be sufficiently disclosed by a drawing, as before stated, we do not question, nor that a claim of the nature suggested to applicant is in general the better form of claim, nevertheless we are not prepared to hold that this is so in every case.

Attention has been called to the present rules of the Patent Office relating to designs and to the suggested form for the specification and claim of applications for designs. If these rules are to be construed as holding that in no case is any further or other description or form of claim permissible than there stated and as set forth in the suggested forms, then it would seem that the rules would be in conflict with the sections of the statute relating to design patents. We do not understand that the Patent Office so construe them. The Examiner seemed to recognize the propriety of a more detailed description than provided in the forms and evidently considered that the form of claim suggested by him was sufficient in the present case. But such suggestion, and a refusal to allow a claim because it contains descriptive matter, cannot be held not to go to the merits of a case and not to be a rejection of the claim proffered by the applicant.

An examination of the model of the design and the drawing leads us to the conclusion that the design in question relates to that class where a description is not only proper, but necessary, and that the claim should carry a description of the salient features of the design. The Examiner in calling for a model and in consenting to a certain latitude of description, must have considered that the drawing did not sufficiently disclose the design. What is a full, clear, concise and exact description of a design depends upon what the design is. The same is true of the claim. What is a sufficient compliance with the statute which requires that a

claim shall particularly and distinctly point out the invention, depends upon the character of the design.

The fiscal reason advanced by counsel for the Patent Office is not entitled to much consideration. The description of a design is short, even when considerable latitude of description is allowed, and undue expansion is within the control of the Office. The claim at the most is but a few lines in length. It follows from what we have said that some designs require more extended written description than others in order to comply with the statute, and that claims for such designs may carry into them the salient features of the design. While a claim for a design reciting substantially as shown, or, as shown and described, in a large class of cases is sufficient, we do not think it is in all, and whether or not it be so cannot, under the statutes applicable to the grant of design patents, be held to be within the discretion of the Examiner to the extent of depriving an applicant of a review of such action by means of the appeals provided by law.

The claim presented in the case at bar sets out the salient features of the design. It gives due notice to the public as to what the applicant claims as his invention. It may be that it unnecessarily limits applicant's monopoly, but he evidently thinks not, and in the absence of any pertinent reference the claim, we think, is allowable. A description in accordance with the claim should be permitted.

We think that the decision of the Commissioner of Patents refusing to allow the appealed claim should be, and it is hereby reversed.

The clerk of the court will certify this opinion, and the proceedings of the court in the premises, to the Commissioner of Patents according to law. Reversed.

Supreme Court of the United States.

EX PARTE NATIONAL ENAMELING AND STAMPING COMPANY AND LALANCE & GROSJEAN MANUFACTURING COMPANY.

Decided March 19, 1906.

1. APPEALS—FROM INTERLOCUTORY DECREE BY CIRCUIT COURT—MANDAMUS TO COMPEL CIRCUIT COURT OF APPEALS TO ENTERTAIN.

Where the circuit court in a suit upon a patent held part only of the claims valid and a part only of the valid claims infringed and referred the cause to a master to take and state an account, and granted an injunction against further infringement, and defendant took an appeal from that part of the decree granting the injunction, a writ of mandamus from the Supreme Court of the United States commanding the circuit court of appeals to entertain a cross-appeal by complainants from that part of the decree adverse to them will not be granted, since the decree is merely interlocutory and not final.

2. SAME—SAME—INSEPARABLE CONTROVERSY—DECREE PARTIALLY ADVERSE NOT A DISMISSAL.

Where suit is brought on a single patent against a single defendant and a decree is entered holding a part of the claims invalid and a part of the valid claims not infringed, granting an injunction, and referring the cause to a master, such decree does not amount to a dismissal of the bill from which appeal may be taken, as the controversy is not separable either as to parties or subject-matter.

3. SAME—SAME—DISMISSAL OF BILL.

Where an appeal is taken in a patent case from an interlocutory order granting an injunction and the appellate court is satisfied that the patent is void on its face, it may dismiss the bill and end the litigation, as it would be a waste of time and an unnecessary continuance of litigation simply to enter an order setting aside the injunction and remanding the case for further proceedings.

STATEMENT OF THE CASE.

In March, 1903, the petitioners filed their bill in the Circuit Court of the United States for the Southern District of New York against the New England Enameling Company, to restrain the further infringement by that company of Letters Patent of the United States, No. 527,361, for improvements in enameling metal ware, and to recover damages for past infringement. After answer and proofs the case came on for hearing, and on July 8, 1905, a decree was entered, reciting that nine of the twelve claims in the patent were good and valid, that three were invalid and void by reason of the fact that the patentee was not the original or first inventor or discoverer, that five of the nine valid claims had been infringed by the defendant, but the remaining four had not been. As to the claims held invalid and those found to have been not infringed, it was ordered that the bill of complaint be dismissed. As to the remaining five claims, those held to be infringed, it was ordered that the plaintiffs recover the gains, profits, savings and advantages which the defendant had derived by reason of the infringement, and that the case be referred to a master to report the amount thereof, and also that an injunction issue against further infringement. On August 1, 1905, the defendant appealed from said decree to the court of appeals and filed its assignment of errors. On August 8 the plaintiffs also appealed to the circuit court of appeals and assigned as errors the rulings in the decree adverse to them. On January 3, 1906, this cross-appeal of the plaintiffs was dismissed by the court of appeals, on the ground that it had no jurisdiction thereof. Thereupon the plaintiffs filed in this Court this petition for a writ of mandamus commanding the judges of the circuit court of appeals to take jurisdiction of said cross-appeal, and to dispose of it simultaneously with the appeal of the defendant.

Mr. Arthur v. Briesen, *Mr. Louis Marshall*, and *Mr. Walter D. Edmonds* for the appellants.

Mr. Robert N. Kenyon and *Mr. Walter F. Rogers* for the appellees.

Mr. Justice BREWER delivered the opinion of the Court.

The decree entered by the circuit court was interlocutory and not final. (*Barnard* v. *Gibson*, 7 How., 650; *Humiston* v. *Stainthorp*, 2 Wall., 106, and cases cited in note; *Estey* v. *Burdett*, 109 U. S., 633, 637; *McGourkey* v. *Toledo & Ohio Railway Company*, 146 U. S., 536, [in this case is a full discussion of the differences between an interlocutory and a final decree;] *Hohorst* v. *Hamburg-American Packet Company*, 148 U. S., 262; *Smith* v. *Vulcan Iron Works*, 165 U. S., 518.)

Plaintiffs brought one suit upon a single patent. The findings of the circuit court that three of the twelve claims were invalid and that the remaining nine were valid, but that four of them had not been infringed by the defendant, did not break this one suit into twelve. They were a guide to the master in his ascertainment of the damages and indicated the scope of the final decree.

In the Federal courts no appeal can, as a general rule, be taken, except from a final decree. As said by Mr. Chief Justice Taney in *Forgay* v. *Conrad* (6 How., 201, 205:)

> In this respect the practice of the United States chancery courts differs from the English practice. For appeals to the House of Lords may be taken from an interlocutory order of the chancellor, which decides a right of property in dispute. * * * But the case is otherwise in the courts of the United States, where the right of appeal is by law limited to final decrees. (See also *McLish* v. *Roff*, 141 U. S., 661, 665.)

In the latter case this was held persuasive against extending the right of review given by section 5 of the Circuit Court of Appeals Act of March 3, 1891, (26 U. S. Stat., 826,) to other cases than those in which there was a final judgment or decree, although the word "final" is omitted in some of the clauses of the section.

By section 7 of that act, however, an appeal was provided from certain interlocutory orders or decrees. That section has been twice amended. (28 U. S. Stat., 666; 31 U. S. Stat., 660.) As it now stands it reads:

Sec. 7. That where, upon a hearing in equity in a district court or in a circuit court, or by a judge thereof in vacation, an injunction shall be granted or continued or a receiver appointed, by an interlocutory order or decree, in a cause in which an appeal from a final decree may be taken under the provisions of this act to the circuit court of appeals, an appeal may be taken from such interlocutory order or decree granting or continuing such injunction or appointing such receiver to the circuit court of appeals: *Provided*, that the appeal must be taken within thirty days from the entry of such order or decree, and it shall take precedence in the appellate court; and the proceedings in other respects in the court below shall not be stayed, unless otherwise ordered by that court, or by the appellate court or a judge thereof, during the pendency of such appeal: *Provided, further*, that the court below may in its discretion require as a condition of the appeal an additional bond.

It will be noticed that the appeal is allowed from an interlocutory order or decree granting or continuing an injunction, that it must be taken within thirty days, that it is given precedence in the appellate court, that the other proceedings in the lower court are not to be stayed, and that the lower court may require an additional bond. Obviously that which is contemplated is a review of the interlocutory order, and of that only. It was not intended that the cause as a whole should be transferred to the appellate court prior to the final decree. The case, except for the hearing on the appeal from the interlocutory order, is to proceed in the lower court as though no such appeal had been taken, unless otherwise specially ordered. It may be true, as alleged by petitioners, that—

it is of the utmost importance to all of the parties in said cause that there shall be the speediest possible adjudication by the United States circuit court of appeals as to the validity of all of the claims of the aforesaid Letters Patent which are the subject-matter thereof.

But it was not intended by this section to give to patent or other cases in which interlocutory decrees or orders were made any precedence. It is generally true that it is of importance to litigants that their cases be disposed of promptly, but other cases have the same right to early hearing. And the purpose of Congress in this legislation was that there be an immediate review of the interlocutory proceedings and not an advancement generally over other litigation.

Petitioners rely mainly on *Smith* v. *Vulcan Iron Works*, (165 U. S., 518.) In that case it was held that when an appeal is taken from an interlocutory order granting or continuing an injunction, the whole of the order is taken up, and the appellate court may (if upon an examination of the record as thus presented it is satisfied that the bill is entirely destitute of equity) direct a dismissal, and is not limited to a mere reversal of the order granting or continuing the injunction. Take an ordinary patent case. If an injunction is granted by an interlocutory order and the order is taken on appeal to the circuit court of appeals, and that court is of opinion that the patent is on its face absolutely void, it would be a waste of time and an unnecessary continuance of litigation to simply enter an order setting aside the injunction and remanding the case for further proceedings. The direct and obvious way is to order a dismissal of the case, and thus end the litigation. And such is the scope of the opinion in that case. After noticing the general rule that appeals will not lie until after final decree, and that an order or decree in a patent case granting an injunction and sending the cause to a master for accounting is interlocutory only, and therefore not reviewable on appeal before the final decree in the case, it referred to the provision of section 7, and said, (p. 525:)

The manifest intent of this provision, read in the light of the previous practice in the courts of the United States, contrasted with the practice in courts of equity of the highest authority elsewhere, appears to this court to have been, not only to permit the defendant to obtain immediate relief from an injunction, the continuance of which throughout the progress of the cause might seriously affect his interests; but also to save both parties from the expense of further litigation, should the appellate court be of opinion that the plaintiff was not entitled to an injunction because his bill had no equity to support it.

But nowhere in the opinion is it intimated that the plaintiff was entitled to take any cross-appeal or to obtain a final decree in the appellate court. This view of the scope of section 7 was reaffirmed in *Mast, Foos & Co.* v. *Stover Manufacturing Company*, (177 U. S., 485, 494, 495.)

It is suggested that, as to the claims held to be invalid and those held to be valid but not infringed, the bill was dismissed; that thus, in fact, a final decree was entered which entitled the plaintiff to an appeal. *Forgay* v. *Conrad, supra*, and *Hill* v. *Chicago & Evanston Railroad Company* (140 U. S., 52) are cited as authorities. In both these cases there were several defendants and the decrees were adjudged final only in respect to certain of the defendants. In the first the circuit court passed a decree declaring sundry deeds to be fraudulent and void and directing the lands and slaves therein mentioned to be delivered up to the complainant, and also directing one of the defendants named in the decree to pay him $11,000, and "that the complainant do have execution for the several matters aforesaid in conformity with law and the practice described by the Supreme Court of the United States." The court refused to dismiss the appeal, holding that, while the decree was not final in the strict technical sense of the term, yet in view of the effect of the orders entered and the fact that unless review was granted at once there might be irreparable injury, the decree must be regarded as final to that extent. At the same time it criticised the terms of the decree, said that the final orders should have been delayed until the master's report was received, and added, after its comments upon the procedure below, (p. 206:)

These remarks are not made for the purpose of censuring the learned judge by whom this decree was pronounced, but in order to call the attention of the circuit courts to an inconvenient practice into which some of them have sometimes fallen, and which is regarded by this Court as altogether inconsistent with the objects and policy of the act of Congress in relation to appeals, and at the same time needlessly burdensome and expensive to the parties concerned, and calculated, by successive appeals, to produce great and unreasonable delays in suits in chancery. For it may well happen that, when the accounts are taken and reported by the master, this case may again come here upon exceptions to his report, allowed or disallowed by the circuit court, and thus two appeals made necessary, when the matters in dispute could more conveniently and speedily, and with less expense have been decided in one.

In the subsequent case of *Beebe* v. *Russell*, (19 How., 283,) in which the rule in reference to the finality of decrees was further considered, it was said, in explanation of the decision in the *Forgay Case*, (p. 287:)

In *Forgay's Case*, it [the question] was made upon the decree given by the court below, and it was adjudged by this Court to be final to give this Court jurisdiction of it. But it was so, upon the ground that the whole merits of the controversy between the parties had been determined, *that execution had been awarded*, and that the case had been referred to the master merely for the purpose of adjusting the accounts. The fact is, *the order of the court in that case for referring it to a master was peculiar*, making it doubtful, if it could in any way control or qualify the antecedent decree of the court upon the whole merits of the controversy, or modify it in any way, *except upon a petition for a rehearing*.

In *Hill* v. *Chicago & Evanston Railroad Company, supra*, there had been an order of dismissal in favor of some of defendants, together with a reference to a master of a separable controversy between the plaintiff and other parties, and the Court observed, (p. 54:)

But there was no adjudication as to the payment of the amount to be ascertained by the master; that remained unsettled. It was, however, a severable matter from the other subjects of controversy and did not affect their determination. The fact that it was not disposed of did not change the finality of the decree as to the defendants against whom the bill was dismissed; that amount, or to whom made payable, did not concern them. They were no longer parties to the suit for any purpose. The appeal from the subsequent decree did not reinstate them. All the merits of the controversy pending between them and the complainant were disposed of, and could not be again reopened, except on appeal from that decree. As to the other parties, it remained to ascertain the amount of one item and to determine as to its payment.

But as held in *Hohorst* v. *Hamburg-American Packet Company, supra*, that rule does not apply to cases where the liability of the defendant is alleged to be joint; and, therefore, cannot to a case in which there is but a single defendant.

The rule is discharged, and the application for a writ of mandamus is denied.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 6. TUESDAY, APRIL 10, 1906. PRICE—$5 per year.

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Designs	13	No. 37,941 to No. 37,953, inclusive.
Trade-Marks	187	No. 51,181 to No. 51,367, inclusive.
Labels	2	No. 12,779 to No. 12,780, inclusive.
Prints	1	No. 1,620.
Reissues	1	No. 12,471.
Total issue	796	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	Nevada	1	.....
Alaska, District of	.....	.....	New Hampshire	2	1
Arizona Territory	1	.....	New Jersey	27	11
Arkansas	3	1	New Mexico Ter't y	.....	.....
California	29	3	New York	87	35
Colorado	3	.....	North Carolina	.....	3
Connecticut	19	8	North Dakota	1	.....
Delaware	1	1	Ohio	42	10
District of Columbia	14	6	Oklahoma Territ'y	4	.....
Florida	.....	2	Oregon	1	.....
Georgia	7	4	Pennsylvania	58	30
Hawaii Territory	.....	.....	Philippine Islands	.....	.....
Idaho	1	.....	Rhode Island	6	1
Illinois	49	11	South Carolina	1	1
Indian Territory	2	.....	South Dakota	3	1
Indiana	13	4	Tennessee	5	5
Iowa	12	2	Texas	7	.....
Kansas	3	1	Utah	2	.....
Kentucky	4	3	Vermont	.....	1
Louisiana	2	1	Virginia	4	2
Maine	1	.....	Washington	9	5
Maryland	5	5	West Virginia	7	.....
Massachusetts	24	11	Wisconsin	13	1
Michigan	22	6	Wyoming	2	.....
Minnesota	3	2	U. S. Army	.....	.....
Mississippi	1	.....	U. S. Navy	.....	.....
Missouri	11	5			
Montana	3	.....	Total to citizens of the United States	536	186
Nebraska	5	1			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	1	.....	Netherlands	.....	.....
Austria-Hungary	1	1	Newfoundland	.....	.....
Belgium	1	.....	New South Wales	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	13	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	.....	.....	South Australia	1	.....
Ecuador	.....	.....	Spain	.....	.....
England	22	2	Sweden	.....	.....
France	5	.....	Switzerland	.....	.....
Germany	24	1	Transvaal, South Africa	.....	.....
India	.....	.....	Victoria	1	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	.....			
Java	.....	.....	Total to citizens of foreign countries	69	4
Mexico	.....	.....			

Close of Weekly Issue of Patents.

The weekly issue of patents will close on Thursday, and the patents of that issue will bear date as of the third Tuesday thereafter.

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 9, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 3, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock. Fishing and Trapping, Stationery, Stone-Working.	Mar. 27	Feb. 10	257
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Mar. 22	Feb. 5	417
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 22	Dec. 16	305
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 21	Mar. 7	232
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 20	Jan. 15	333
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Mar. 20	Jan. 2	305
332	X. Carriages and Wagons.....	Mar. 20	Nov. 8	940
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 20	Aug. 14	410
	Under one month.			
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 19	Mar. 5	248
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 19	Nov. 13	740
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 18	Feb. 14	360
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 17	Sept. 27	715
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 15	Jan. 11	578
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 14	Feb. 12	340
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Mar. 14	Oct. 21	707
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 13	Nov. 23	651
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Mar. 12	Oct. 16	644
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 8	Dec. 16	458
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 8	Dec. 4	409
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 8	Aug. 25	757
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 8	Aug. 15	708

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 7	Dec. 5	303
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 6	Jan. 15	449
327	XVIII. Steam-Engineering, etc ...	Mar. 5	Dec. 14	477
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 3	Sept. 12	635
	Between one and two months.			
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 2	Nov. 13	620
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 1	Feb. 5	253
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 1	Oct. 7	697
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 1	July 20	1213
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Feb. 28	Feb. 28	367
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Feb. 26	Jan. 13	534
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Feb. 19	Oct. 30	526
109	XVI. Telegraphy and Telephony..	Feb. 15	Jan. 4	329
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 10	Oct. 12	763
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Feb. 6	Nov. 14	493
	Between two and three months.			
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 29	Oct. 21	348
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Jan. 29	Sept. 12	625
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 22	June 29	1108
	Total number of applications awaiting action			20,263
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks.....	Mar. 5	Feb. 2	2374
	Under fifteen days.			
	Designs.....	Mar. 30	Mar. 8	63
	Labels and Prints.....	Mar. 23	Mar. 22	31

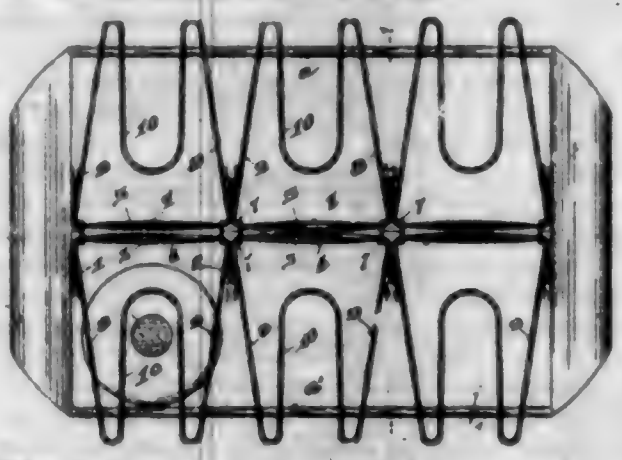
Communications to the Patent Office.

RULE 9. A separate letter should in every case be written in relation to each distinct subject of inquiry or application. Assignments for record, final fees, and orders for copies or abstracts must be sent to the Office in separate letters.

PATENTS

GRANTED APRIL 10, 1906.

817,148. **TRAY FOR GLASSES.** DAVID H. ALLEN, Miamisburg, Ohio. Filed July 28, 1905. Serial No. 271,894.



Claim.—1. In a tray, a base provided with a beaded edge, spring glass-holders secured to the tray and provided with stem-receiving yokes extended outwardly over the said beaded edge, substantially as described.

2. A tray, having a wire resiliently secured thereto and bent to form a series of stem-receiving yokes, having U-limbs which engage over the bases of the glasses and clamp them against the tray, substantially as described.

3. In a tray, a base, provided with a beaded edge, resilient glass-holders secured to the tray and bent upwardly and outwardly to form stem-receiving yokes overlying the beaded edge of the tray, and adapted to clamp the glasses against the base of the tray, substantially as described.

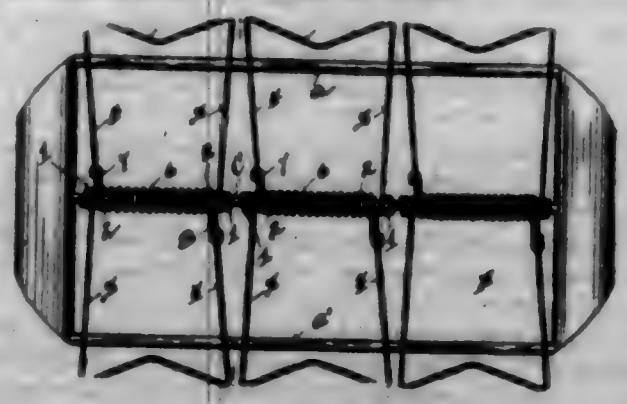
4. In a tray, a base provided with a beaded edge, resilient glass-holders secured to the tray and bent upwardly and outwardly to form stem-receiving yokes, the outer receiving ends of the yokes having a yielding engagement with the beaded edge and the inner loop ends of the yokes being bent downwardly to yieldingly engage the base of the tray, substantially as described.

5. A tray, having a series of stem-receiving yokes spring-hinged at their inner ends to the tray, the limbs of said yokes adapted to clamp the bases of the glasses against the tray, substantially as described.

6. In a tray, a base provided with a beaded edge, a resilient wire the ends of which are secured to the tray, the intermediate portion of the wire being bent to form a series of outwardly-extending stem-receiving yokes, the outer ends of which overlie the said beaded edge, substantially as described.

7. A tray, having a series of stem-receiving wire yokes resiliently attached at their inner ends to the tray, their outer, yielding ends being adapted to straddle the stems and clamp the bases of the glasses against the tray, substantially as described.

817,149. **TRAY FOR GLASSES.** DAVID H. ALLEN, Miamisburg, Ohio. Filed July 28, 1905. Serial No. 271,895.



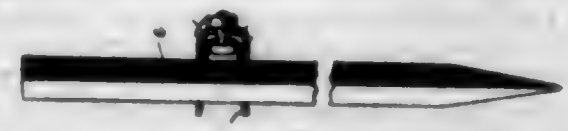
Claim.—1. In a tray, glass-holders consisting of spring members, the inner ends of which are secured to the tray, the outer ends being shaped to engage the tops of the tumblers and clamp the same downwardly on the tray, substantially as described.

2. In a tray, glass-holders having a hinged coil-spring connection with the tray, the ends of the holders being shaped to engage into the mouths of the tumblers and clamp them down on the tray, substantially as described.

3. In a tray, a central rod, glass-holders, the inner ends of which have a hinged, coil-spring connection with said rod, the ends of the holders being inwardly bent to engage into the mouths of the glasses, substantially as described.

4. In a tray, having a beaded edge, glass-holders having a hinged coil-spring connection with the tray at their inner ends, the outer ends of said holders overlying said beaded edge and being bent to engage the tops of the glasses, substantially as described.

817,150. **HARROW-TOOTH FASTENER.** LEMUEL B. ALLEN, Canton, Ohio, assignor to The Bucher & Gibbs Plow Company, Canton, Ohio, a Corporation of Ohio. Filed Apr. 15, 1905. Serial No. 255,764.



Claim.—1. In a harrow-tooth fastener, the combination of a U-bar, a clip consisting of yielding diverging members, the inner end of the clip proper adapted to be located in the channel of the U-bar, and the diverging members provided with tooth-apertures, said apertures arranged to be partially closed by the members of the U-shaped bar, and the clip adjustably attached to the U-bar, and means for holding the clip in fixed adjustment, substantially as and for the purpose specified.

2. In a harrow-tooth fastener, the combination of a U-bar, clips consisting of yielding diverging members, and the diverging members provided with angled apertures and one angle of each aperture of the clips located adjacent the edges of the U-bar and the clips located in the channel of the U-bar and adjustable with reference to said U-bar and means for holding the clips in fixed adjustment, and teeth located through the apertures of the clip members, and one corner of each tooth located against the edges of the U-bar and the opposite corner of each tooth located against the angled faces of the aperture, substantially as and for the purpose specified.

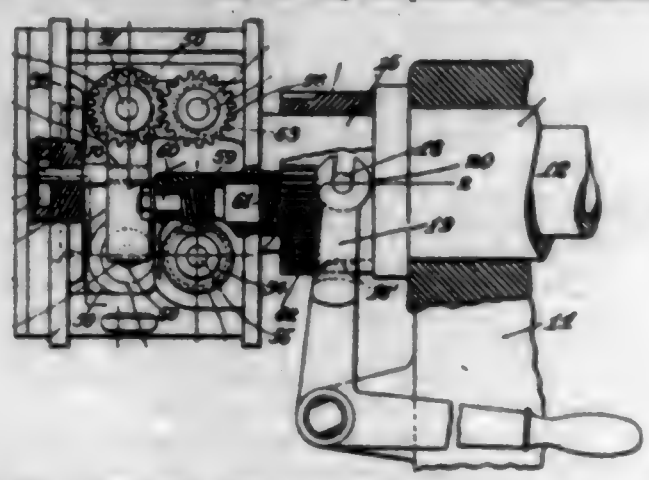
817,151. **ROLLER-FEED MECHANISM.** WALTER M. ALLEN, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 2, 1905. Serial No. 248,011.

Claim.—1. The combination with a rotary head, of a pair of feed-rolls each having a shaft, means for carrying said shaft comprising a bearing therefor and a sleeve, a shaft upon which the sleeve is mounted, and gearing between the roll-shafts and said latter shaft for rotating the rolls.

2. The combination with a frame having bearings, of a sleeve mounted in such bearings, a shaft in said sleeve, means for rotating said shaft, a feed-roll, a shaft on which the same is fast, a sleeve supporting said shaft and having a sleeve fast therewith and mounted upon said former sleeve, a train of gear between said shafts, and means for pressing said feed-roll to its work.

3. The combination with a rotary head of a shaft fast therewith for rotating the same, a feed-roll for feeding stock through said head, a train of gear embodying a pinion and connected with said roll, said pinion being revoluble with said head, an axially-shiftable gear-

wheel held from rotation, and means for holding said gear-wheel from rotation and for axially shifting the same into and out of mesh with said pinion for intermittently rotating said pinion and said feed-roll.



4. The combination with a rotatable member having a plurality of radial slideways, of a series of work-centering slides located therein, each of said slides having a diagonal channel across it, a rotatable plate mounted upon said member and having pins engaging said channels, and means for rotating the plate for adjusting the slides.

5. In a roller-feed, the combination with a frame pivoted on an axis disposed transversely to the line of feed movement, a roller carried by the frame, a yoke having a universal connection with the frame, a spring-plunger carried by the yoke, and a pin for moving the frame and in engagement with the plunger.

6. In a roller-feed, the combination with a head, of a driving-shaft mounted therein, a frame embodying a pair of parallel sleeves, one of these being mounted on the driving-shaft, a feed-roller shaft mounted in the other of said sleeves, gears connecting said shafts, a feed-roller on said shaft, said frame having a spherical bearing portion, a yoke having a bearing mounted on said spherical bearing, said yoke having an opening, a plunger carried by the yoke means for spring-pressing the plunger toward said opening, a pin entering said opening and engaging said plunger, and means for shifting said pin for controlling said feed-roller.

7. In a roller-feed, the combination with a head, of a driving-shaft mounted therein, a feed-roller shaft carried thereby and disposed parallel to and oscillatory about the axis of the driving-shaft, gearing connecting said shafts, a plate carried by the head and oscillatory about an axis transverse to the driving-shaft, a pin carried by said plate, a yoke connecting the roller-shaft with said pin, said yoke having a ball-joint connection with one and a spring connection with the other of these.

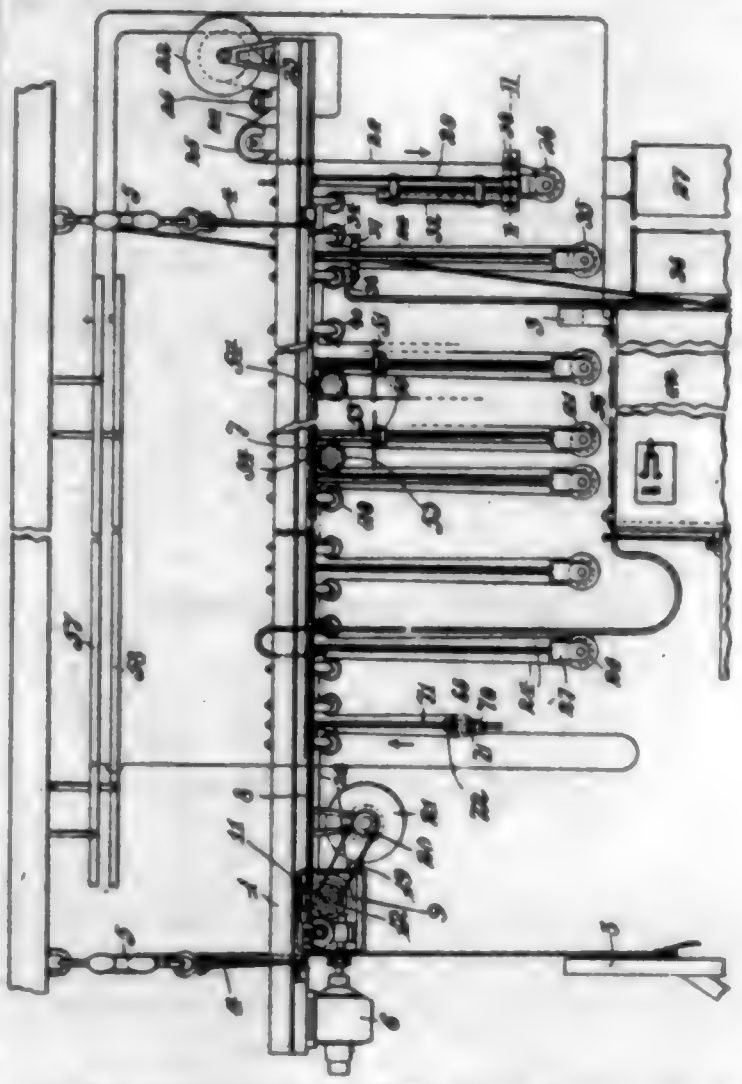
8. In a device of the character specified, the combination with a plate having a worm-gear upon its perimeter, a worm in mesh therewith, a shaft carrying the worm, said shaft having a shoulder upon it, a member having a socket for receiving said worm and shaft and screw-threaded upon its interior, a screw-bushing entering therein and engaging said shoulder, and an adjustable spring-brake bearing upon said shaft.

9. In a roller-feed, the combination with a feed-roller, of a shaft carrying the same and oscillatory about an axis parallel with its axis, means for rotating the roller-shaft, means for oscillating said shaft and comprising a pin and means for oscillating the same about an axis transverse to the axis of oscillation of the roller-shaft, a yoke connecting the roller-shaft with said pin, said yoke having a ball-joint connection with one and a spring connection with the other of these.

817,152. APPARATUS FOR NICKEL-PLATING. JONAS W. AYLSWORTH, East Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Sept. 17, 1904. Serial No. 224,822.

Claim.—1. In an apparatus for the plating of a continuous strip, the combination of a support, means for sustaining and moving a continuous strip relatively to the support, a cleaning-tank in which the strip may be normally submerged, means for raising and lowering the support, and an occluding chamber carried by the support and normally partially submerged in the solution, substantially as set forth.

2. In an apparatus for the plating of a continuous strip, the combination of a supporting-beam, means for raising and lowering said beam, a motor, a take-up reel operated by said motor, supporting-pulleys carried by the beam and over which runs the strip to be plated and connections between said motor and one of said pulleys, substantially as set forth.



3. In an apparatus for the plating of a continuous strip, the combination of a support, means for sustaining and moving the strip to be plated with respect to the support, a plating-bath in which the strip may be submerged and through which it may pass, means for applying current to a section of the strip after leaving the plating-bath, whereby said section will be heated for the purpose of drying the same, and means for regulating the length of the heated section, substantially as set forth.

4. In apparatus for continuously drying a long moving strip of metal, the combination of two rollers over which the strip is adapted to pass, means for moving the strip with respect to said rollers, means for applying current to said rollers to include the section of the strip between them in the circuit and means for adjusting the rollers with respect to each other to regulate the length of the heated section, substantially as set forth.

5. In an apparatus for the plating of a continuous strip, the combination of a plating-bath, a series of hangers immersed therein and over which the strip to be plated is adapted to pass and guide-bars carried by said hangers for guiding the strip, substantially as set forth.

6. In an apparatus for the plating of a continuous strip, a support, a bracket carried by the support, an idler mounted on said bracket and over which the strip to be plated is adapted to pass and removable contact-brushes carried by the support and adapted to make contact with the strip on each side of the idler, substantially as set forth.

7. In an apparatus for the plating of a continuous strip, the combination of a sustaining-beam, a plating-bath, means for supporting the strip to be plated with respect to the beam, a take-up reel to which the strip may be applied, a motor, and frictional connections between the motor and said take-up reel, substantially as set forth.

8. In an apparatus for the plating of a continuous strip, the combination of a sustaining-beam, a plating-bath, means for supporting the strip to be plated with respect to the beam, a take-up reel to which the strip may be applied, a motor, and adjustable frictional connections between the motor and said take-up reel, substantially as set forth.

9. In an apparatus for the plating of a continuous strip, the combination of a plating-bath, a series of hangers immersed therein and over which the strip to be plated is adapted to pass, and guide-

bars of insulating material carried by said hangers for guiding the strip, substantially as set forth.

10. In an apparatus for the plating of a continuous strip, the combination of a tank containing a plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, means adapted to progressively move such a strip through the bath, and means for raising and lowering said support, substantially as set forth.

11. In an apparatus for the plating of a continuous strip, the combination of a tank containing a plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, means carried by said support adapted to progressively move such a strip through the bath and means for raising and lowering said support, substantially as set forth.

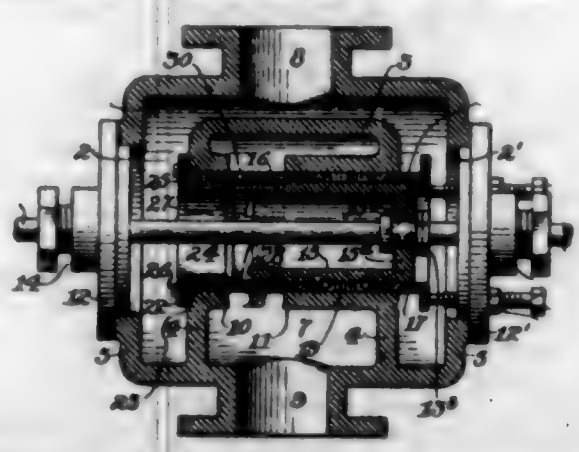
12. In an apparatus for the plating of a continuous strip, the combination of a tank containing a plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, a take-up reel on said support, means for driving said reel, and means for raising and lowering said support, substantially as set forth.

13. In an apparatus for the plating of a continuous strip, the combination of a tank containing a plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, a take-up reel and driving-motor mounted on said support and means for raising and lowering said support, substantially as set forth.

14. In an apparatus for the plating of a continuous strip, the combination of a tank containing the plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, means for driving one or more rollers of the upper set and means for raising and lowering said support, substantially as set forth.

15. In an apparatus for the plating of a continuous strip, the combination of a tank containing a plating-bath, a support carrying upper and lower sets of rollers and adapted to receive a strip extending alternately around the rollers of each set, a driving-motor mounted on said support, driving connections for one or more of the rollers of the upper set and means for raising and lowering said support, substantially as set forth.

817,153. **BALANCED THROTTLE-VALVE.** NORMAN S. BARR, Tombstone, Ariz. Filed June 21, 1905. Serial No. 266,213.



Claim.—1. A valve comprising outer and inner casings formed with outer and inner chambers provided with inlet and outlet connections, a tubular valve-support extending within the inner chamber and having lateral ports opening into the said inner chamber, a valve slidably mounted in the said tubular valve-support to close and open said ports, the outer chamber extending to each end of the tubular valve-support and of the valve, to expose both ends of the valve to the pressure in said chamber, and an operating-rod connected to said valve and extending through the wall of the outer chamber.

2. A valve comprising outer and inner casings formed with outer and inner chambers provided with inlet and outlet connections, a tubular valve-support extending within the inner chamber and having ports opening into the said chamber, a valve slidably mounted in the said tubular valve-support to close and open said ports, an operating-rod connected to said valve and extending through the wall of the outer chamber, a tubular valve-seat within said valve-support and engaged end abutting the valve when the latter is closed to reduce the endwise pressure in one direction on the valve and enable the excess of pressure in the other direction to hold the valve closed.

3. A valve-chamber having lateral ports, and a valve sliding in said chamber and exposed at both ends to the pressure in said chamber to balance the pressure on the valve when the valve is open, and a seat in said chamber, said valve having a portion abutting said seat when the valve is closed to relieve the pressure in one direction on the valve and cause excess of pressure in the direction tending to hold the valve closed.

4. A valve-cylinder having lateral ports and a tubular seat member, in combination with a valve sliding in said cylinder and closing said lateral ports and engaging said seat member, and an outer chamber surrounding said valve-cylinder and extending to both ends of the valve to produce pressure on each end thereof.

5. A valve-cylinder having lateral ports and a tubular seat member, in combination with a valve sliding in said cylinder and closing said lateral ports and engaging said seat member, an outer chamber surrounding said valve-cylinder and extending to both ends of the valve to produce pressure on each end thereof, and a valve-rod operatively connected to said valve and extending through the walls of the outer chamber.

6. A valve-cylinder having lateral ports and a tubular renewable seat member, in combination with a valve sliding in said cylinder and closing said lateral ports and engaging said seat member, an outer chamber surrounding said valve-cylinder and extending to both ends of the valve to produce pressure on each end thereof, and having an opening for removal of the seat member, and a detachable closure for said opening.

7. The combination of outer and inner valve-chambers, the inner valve-chamber having a cylindrical passage extending therethrough and communicating at its ends with the outer chamber, a tubular bushing in one end of said passage having ports opening to the inner chamber, a gland in the other end of said passage, a valve sliding within said bushing and gland, and packing between the bushing and gland.

8. The combination of outer and inner valve-chambers, the inner valve-chamber having a cylindrical passage extending therethrough and communicating at its ends with the outer chamber, a tubular bushing in one end of said passage having ports opening to the inner chamber, a gland in the other end of said passage, a valve sliding within said bushing and gland, packing between the bushing and gland, and means for adjustably pressing said gland toward said bushing.

9. The combination of outer and inner valve-chambers, the inner valve-chamber having a cylindrical passage extending therethrough and communicating at its ends with the outer chamber, a tubular bushing in one end of said passage having ports opening to the inner chamber, a gland in the other end of said passage, a valve sliding within said bushing and gland, packing between the bushing and gland, and means for adjustably pressing said gland toward said bushing consisting of screws engaging with said gland and with the end wall of the outer chamber.

10. A valve-cylinder formed of a bushing and a gland with intervening packing, a valve within said cylinder, an inner chamber formed with a passage therethrough containing said bushing, gland and packing, a valve-seat member detachably secured to a wall of said inner chamber and extending within the bushing and holding the bushing in place, and an outer chamber extending to both ends of the inner chamber and to both ends of the valve, and having an opening opposite the detachable valve-seat, and a detachable closure-plate for said opening.

817,154. **MACHINE FOR LINING CAN-COVERS.** JULIUS BRENNINGER, New York, N. Y., assignor to The Max Ams Machine Company, New York, N. Y., a Corporation of New York. Filed July 14, 1903. Serial No. 166,180.

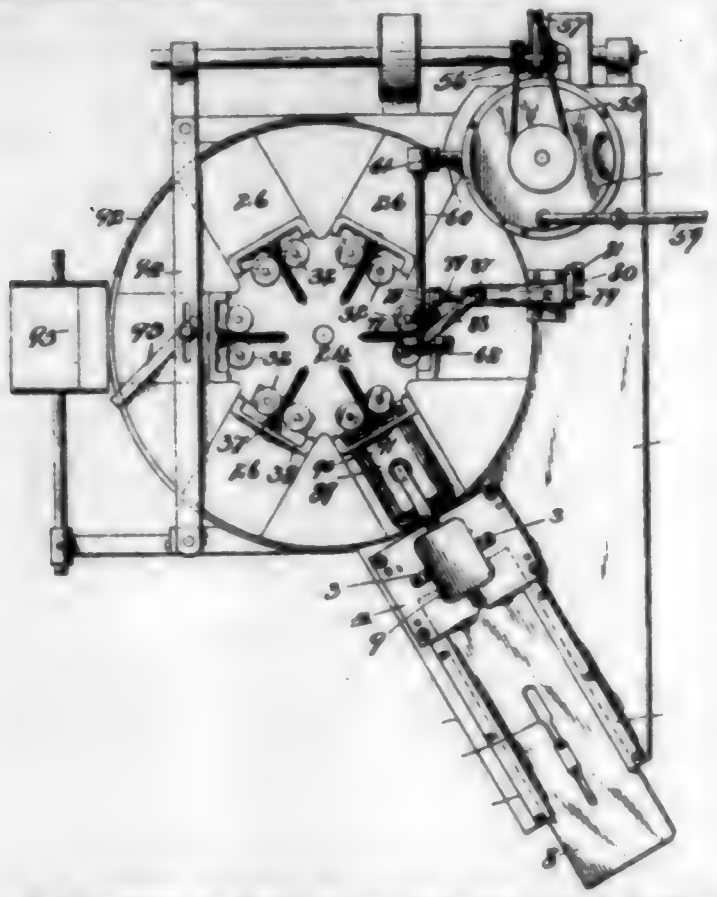
Claim.—1. A machine for lining can-covers having fixed means for applying a composition to a cover, clamping-rollers for engaging said cover, a movable cover-carrier, means for automatically presenting said carrier to said composition-applying means and means for automatically rotating said clamping-rollers, when the cover is presented thereto, substantially as described.

2. A machine for lining can-covers having an automatic feed mechanism, a cover-carrier, a fixed composition-applying mechanism, and a rotatable positively-gripping cover-holding device separate from said composition-applying mechanism, and means for rotating said device, substantially as described.

3. A machine for lining can-covers having an automatic feed mechanism, a cover-carrier, a plurality of sets of clamping-rollers, a composition-applying mechanism, means to rotate said rollers and means to successively present said sets of rollers to said composition-applying mechanism, substantially as described.

4. A machine for lining can-covers having clamping-rollers,

one of said rollers being relatively movable, means to automatically move said roller into clamping relation, and means to automatically release said roller, and a separate means for applying a lining composition to the covers substantially as described.



5. A machine for lining can-covers having clamping-rollers, yielding pressure means for said rollers, another roller coacting with said first rollers, means to carry said last roller into coacting engagement with said first rollers to engage a cover, and means to release said roller from said engagement and lining mechanism independent of said rollers, substantially as described.

6. A machine for lining can-covers having a cover-carrier, a vertically-movable clamping-roller, means to carry said cover over said roller, a shaft carrying said roller, means to intermittently rotate said shaft, means to raise and lower the same and coöperating clamping means, substantially as described.

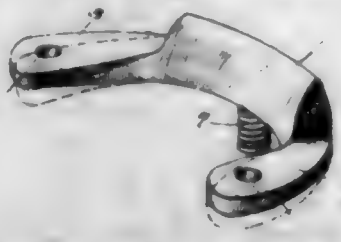
7. A machine for lining can-covers having clamping means consisting of a vertically-movable milled roller, means to rotate the same, horizontally-slidable spring-pressed coöperating rollers, and means to raise and lower said milled roller, substantially as described.

8. A machine for lining can-covers having a traveling carrier, a composition-applying mechanism, horizontally-slidable spring-pressed clamping-rollers, a coöperating milled roller, a shaft on which said roller is mounted, a pulley on said shaft, a belt tangential to the line of travel of the pulley, a cam, and a spring engaging said shaft, substantially as described.

9. A machine for lining can-covers having a clamping-roller, a cam for moving said roller out of clamping engagement, said cam provided with a hinged section and means for swinging said section to release the roller, substantially as described.

10. A machine for lining can-covers having a composition-applying mechanism comprising a source of supply, a valve-box, a valve therein, a spring for forcing said valve upward, a hooked lever for holding said valve downward and means actuated by the cover to release said lever, substantially as described.

817,155. **HORSESHOE-CALK.** WILLIAM F. BUDENBACH, Scranton, Pa. Filed June 15, 1905. Serial No. 265,414.



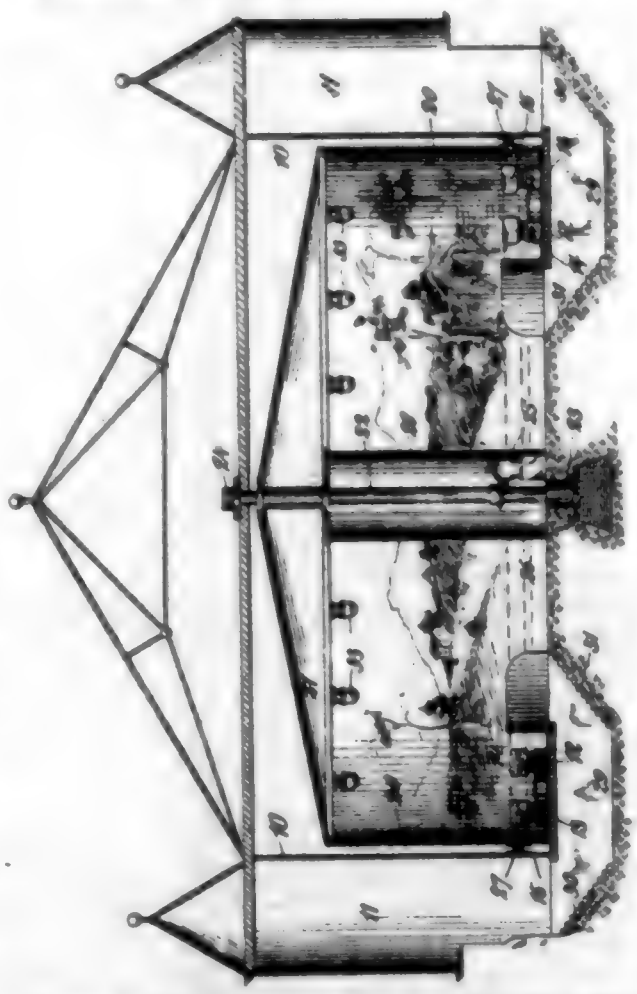
Claim.—1. A calk embodying a threaded attaching-stud and a securing-shank obliquely disposed relatively to the stud.

2. A calk embodying a threaded attaching-stud, and a securing-shank obliquely disposed relatively to the stud and provided with a bolt-receiving orifice.

3. A toe-calk embodying a threaded attaching-stud, and a pair of securing-shanks curved to conform to the shoe and being obliquely disposed to the stud.

4. A calk embodying a threaded attaching-stud and a securing-shank, that face of the shank which will be the under one in use having a portion of its length disposed obliquely to the stud and the remaining portion at right angles thereto.

817,156. **AMUSEMENT APPARATUS.** CHARLES A. CARLSON and DANIEL H. HAYWOOD, New York, N. Y.; said Haywood assignor to said Carlson. Filed Jan. 6, 1906. Serial No. 294,874.



Claim.—1. In an apparatus of the class described, the combination with an endless track, and an endless train of cars thereon, the driving means for the cars being self-contained therein, of couplers for the cars, and means for adjusting the length of the couplers to adjust the circumferential length of the ring of cars with respect to the track upon which they are run.

2. In an apparatus of the class described, the combination with an endless track, and an endless train of free and independent cars thereon, of couplers for the cars, and means for adjusting the length of the couplers to adjust the circumferential length of the ring of cars with respect to the track upon which they are run.

3. In an apparatus of the class described, the combination with an endless track and an endless train of free and independent cars thereon, of couplers for the cars comprising universal joints and adjustable members, and means for adjusting the length of the couplers to adjust the circumferential length of the ring of cars with respect to the track upon which they are run.

4. In an apparatus of the class described, the combination with a circular track, and a complete ring of free and independent cars thereon, of couplers for the cars, and means for adjusting the same to vary the distance between the cars, thereby adjusting the circumferential length of the ring of cars with respect to the track upon which they run.

5. In an apparatus of the class described, the combination with a plurality of endless tracks arranged one within the other, of endless trains of free and independent cars upon the tracks, couplers for the cars, and means for adjusting the length of the couplers to adjust the circumferential length of the rings of cars with respect to the tracks upon which they run.

6. In an apparatus of the class described, the combination with a plurality of concentric circular tracks, and endless trains of cars upon the said tracks, of couplings for the cars of each train, and

means for adjusting the length of the couplings to adjust the circumferential length of each train of cars with respect to the track upon which they run.

7. In an apparatus of the class described, the combination of a stationary endless track, an endless train of free and independent cars thereon arranged to travel upon said track in one direction, a movable wall surrounding the said track and cars thereon, and means for imparting movements to the wall in a direction opposite to the direction of movement of the cars.

8. In an apparatus of the class described, the combination of a stationary circular track and an endless ring of free and independent cars thereon arranged to travel upon said track in one direction, a cylindrical rotatable wall surrounding the said track and cars thereon, and means for rotating the wall in a direction opposite to the direction of movement of the car.

9. In an apparatus of the class described, the combination of an endless track, an endless train of cars thereon arranged to travel in one direction, a movable wall surrounding the said track and cars thereon, a central shaft and overhead connections therefrom to the said movable wall, a motor for driving the shaft, and thereby rotating the wall, and a concentric tube surrounding the motor and shaft.

10. In an apparatus of the class described, the combination of a plurality of concentric stationary circular tracks, and endless trains of free and independent cars upon the tracks arranged to travel upon said tracks in one direction, the two said trains being also independent of each other, a movable wall surrounding the said tracks and cars thereon, and means for rotating the wall in a direction opposite to the direction of movement of the cars.

11. In an apparatus of the class described, the combination with an endless track of a movable wall surrounding same, a stationary wall surrounding the movable wall, and a passage beneath the stationary and movable walls from the exterior to the interior thereof.

12. In an apparatus of the class described, the combination with a circular track, of a cylindrical wall surrounding same, means for rotating the wall, a stationary wall surrounding the movable wall, and a passage beneath the stationary and movable walls from the exterior to the interior thereof.

13. In an apparatus of the class described, the combination with a plurality of concentric circular tracks, of a movable wall surrounding same, means for rotating the wall, a stationary wall surrounding the movable wall, and a passage beneath the stationary and movable walls leading from the exterior to the interior thereof.

14. In an apparatus of the class described, the combination with an endless track, and an endless train of cars thereon arranged to travel in one direction, of a movable wall surrounding the said track and cars thereon, means for imparting movements to the wall in a direction opposite to the direction of movement of the cars, a stationary wall surrounding the movable wall, and a passage beneath the stationary and movable walls leading from the exterior to the interior thereof.

15. In an apparatus of the class described, the combination with an endless track, and a train of cars thereon, of a movable wall surrounding same, a motor for the train of cars, a motor for the movable wall, and means for controlling both the motors from the train of cars.

16. In an apparatus of the class described, the combination with an endless track, and an endless train of cars thereon, of a movable wall surrounding same, a motor for driving the train of cars in one direction, a motor for rotating the movable wall in the opposite direction, and means for controlling both the motors from the train of cars.

17. In an apparatus of the class described, the combination with an endless track, a car thereon, a movable wall entirely surrounding the track, means for rotating the car in one direction and the wall in the other direction, and controlling means for both said driving means arranged upon the car.

18. In an apparatus of the class described, the combination with an endless track, and a car thereon, of a movable wall surrounding same, illuminating means carried by the wall, means for rotating the car in one direction and the wall in the other, and controlling means for the illuminating means, arranged upon the car.

19. In an apparatus of the class described, the combination with an endless track and a car thereon, of a movable wall surrounding the same, illuminating means carried by the wall, a motor for the car, a motor for the movable wall, and means for controlling both the motor and the illuminating means from the car.

20. In an apparatus of the class described, the combination with a plurality of concentric circular tracks, and endless trains of cars upon the tracks, of a concentric circular wall surrounding same, motors for operating the two trains of cars independently of each other, a motor for rotating the movable wall, illuminating means carried by the movable wall, and means for controlling the illuminating means from one of the cars.

21. In an apparatus of the class described, the combination with a plurality of concentric tracks, and endless trains of cars thereon, of a concentric circular wall surrounding the tracks, motors for the trains of cars carried thereby, a motor for the movable wall, and means for controlling the motor for the movable wall from one of the cars.

22. In an apparatus of the class described, the combination with a plurality of concentric circular tracks, and endless trains of cars thereon, of a rotatable circular wall surrounding same, illuminating means carried by the wall, driving means for the trains of cars, a motor for the movable wall, and means for controlling the said motor and the illuminating means from one of the cars.

23. In an apparatus of the class described, the combination with a plurality of endless tracks, and cars thereon for independently driving the cars on the different tracks, of means for controlling the cars on all the tracks from a car on one of the tracks.

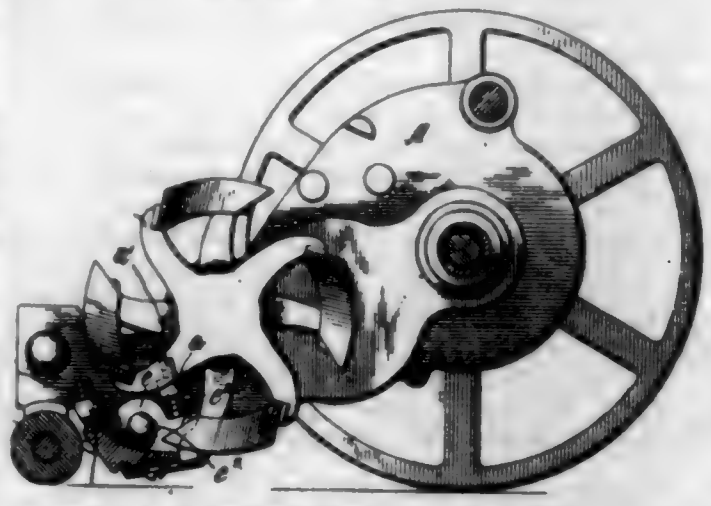
24. In an apparatus of the class described, the combination with a plurality of endless tracks, and endless trains of cars thereon, of driving means for driving the several trains independently of each other, and means for controlling the driving means from one of the trains of cars.

25. In an apparatus of the class described, the combination with a plurality of concentric circular tracks, and cars with self-contained motors arranged to run upon the tracks, of controlling means arranged in one of the cars, for controlling the motors of the cars upon the several tracks.

26. In an apparatus of the class described, the combination with a plurality of concentric endless tracks, cars upon the several tracks, and a movable wall surrounding same, of means for driving the cars upon one track independently of the cars upon another track, controlling means upon one of the cars for controlling the cars upon the several tracks, a motor for rotating the movable wall, and controlling means upon one of the cars for controlling the motor of the movable wall.

27. In an apparatus of the class described, the combination with a plurality of concentric endless tracks, cars upon the tracks, and a movable wall surrounding same, of motors for the cars arranged to drive the cars on one track independently of the cars upon another track, a motor for rotating the movable wall, illuminating means carried by the movable wall, controlling means arranged upon one of the cars for controlling the motors of the cars on the several tracks, controlling means on one of the cars for controlling the illuminating means, and controlling means upon one of the cars for controlling the wall-motor.

817,157. LAWN-MOWER. WILLIAM H. COLDWELL, Newburgh, N. Y. Filed Dec. 11, 1905. Serial No. 291,339.



Claim.—1. A reversible stationary knife for lawn-mowers consisting of a channel-shaped blade having upwardly-extending longitudinal edge portions forming cutting edges at opposite sides of the blade, and at the same time stiffening said blade, the central flat portion of said channel-blade, between said upturned cutting edges being provided at intervals with means for securing said blade to the stationary knife-bar of a lawn-mower, substantially as described.

2. A reversible stationary knife-blade for lawn-mowers consisting of a channel-shaped blade having upturned longitudinal edge portions disposed at an obtuse angle to the central portion of the blade, the top faces of said upturned portions being substantially

parallel to the central portion of the blade, and forming acute-angled cutting edges at each edge of the blade, and also stiffening the blade, said central portion of the blade being provided at intervals throughout the length of the blade with apertures to receive retaining devices for securing the blade to the stationary knife-bar of a lawn-mower, substantially as described.

3. In a lawn-mower, the combination with the knife-bar provided with a recessed portion adjacent to its rear part and a channel-shaped knife-blade having upturned longitudinal edge portions forming cutting edges, one of said edges being adapted to lie within the recessed portion of the knife-bar and attaching devices engaging the said blade and knife-bar at intervals throughout their length, substantially as described.

4. In a lawn-mower, the combination with a knife-bar provided with a series of apertures at intervals throughout its length, of a channel-shaped knife-blade having its longitudinal edges upturned to form cutting edges and its central portion provided with securing-apertures arranged in pairs and at intervals corresponding to the intervals of the apertures in the knife-bar and detachable securing devices for engaging apertures in said blade and knife-bar to secure the parts together, substantially as described.

5. In a lawn-mower, the combination with the knife-bar having its bottom face provided with plane portions to receive a stationary knife-blade, and having a longitudinally-extending recess in rear of said plane portion, of a channel-shaped knife-blade having its longitudinal edges upturned to form cutting edges, one of which is adapted to lie in said recess of the knife-bar, said blade being provided with securing-apertures arranged in pairs transversely of the blade and at intervals throughout its length and detachable securing devices engaging certain of said apertures in the blade and also engaging a series of apertures in the knife-bar, substantially as described.

817,158. TREATMENT OF BLAST-FURNACE SLAG FOR PRODUCTION OF MATERIAL SIMILAR TO TRASS, &c. Heinrich Collorius, Berlin, Germany. Filed Aug. 14, 1905. Serial No. 274,159.

Claim.—1. The process of manufacturing trass-like material from blast-furnace slag, which consists in introducing into the stream of molten liquid slag small amounts of chemically-inactive liquid successively in quantities sufficient for immediate evaporation of the liquid in contact with the hot molten material.

2. The process of manufacturing trass-like material from blast-furnace slag, which consists in embodying with the molten liquid slag suitable quantities of milk of lime in amounts sufficient for immediate evaporation when in contact with the molten material.

3 The process of manufacturing trass-like material from blast-furnace slag, which consists in injecting and incorporating milk of lime into and with the stream of molten liquid slag in amounts sufficient for immediate evaporation of the same when in contact with the molten material.

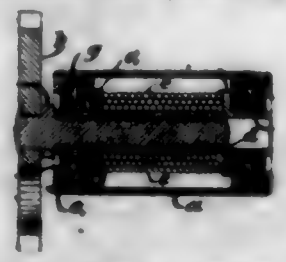
817,159. PROCESS OF MAKING DIALKYLBARBITURIC ACIDS. Max Conrad, Aschaffenburg, Germany. Filed May 16, 1905. Serial No. 260,723.

Claim.—1. A process for preparation of dialkylbarbituric acid which consists in heating dialkyl-cyanacetyl urea with acid.

2. A process for preparaton of dialkylbarbituric acid which consists in heating idalkyl-malon-uramicacid amid with an acid until the dialkylbarbituric acid is formed.

3. A process for preparation of dialkylbarbituric acid which consists in heating idalkyl-cyanacetyl urea with acid until it is converted into dialkyl-malon-uramic amid and then continuing the heating until dialkylbarbituric acid is formed.

817,160. HEAT-COIL. Frank B. Cook, Chicago, Ill. Filed Nov. 14, 1902. Renewed Feb. 6, 1906. Serial No. 244,218.



Claim.—1. In a heat-coil, the combination of a hollow, heat-conducting element, heat-producing means, a conducting-pin inserted into the said element, fusible material securing the conducting-pin to the said element, and means whereby, when the fusible material is softened, the said pin is turned in the said element.

2. In a heat-coil, the combination of a hollow, heat-conducting element, heat-producing means inclosing the said element, a conducting-pin inserted into the said element, fusible material securing the conducting-pin to the said element, and means apart from the heat-coil whereby, when the fusible material is softened, the said pin is turned in the said element.

3. In a heat-coil, the combination of a hollow, cylindrical, heat-conducting core, a heat-producing element inclosing the said core, a conducting-pin inserted into the said core and secured thereto by fusible material, a conducting member secured to the said pin, and means apart from the heat-coil by which the said pin is turned in the said core, when the fusible material is softened.

4. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing coil wound around the said core, a conducting-pin inserted into the said core and secured thereto by a fusible material, a wheel secured to the said pin, and means apart from the heat-coil by which the said pin is turned in the said core, when the fusible material is softened.

5. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing coil wound upon the said core, a conducting-pin inserted into the said core and secured thereto by fusible material, a toothed wheel secured to the said pin, and means apart from the heat-coil by which the said pin is turned in the said core, when the fusible material is softened.

6. In a heat-coil, the combination of a hollow cylindrical core provided with annular projections thereon, one near each end, a heat-producing winding wound around the said core between the said annular projections, an annular, insulating-washer for each end of the said core and placed thereon, a metal casing supported by the said washers and inclosing the latter and the heat-producing winding, a conducting-pin inserted through the hollow core and secured thereto by fusible material, a toothed wheel secured to the said pin, and means apart from the heat-coil by which the toothed wheel and pin are rotated, relatively to the said core, when the fusible material is softened, substantially as described.

7. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing winding wound around the said core, annular insulating-washers placed upon the said core, a metal casing supported by the said washers and inclosing the latter and the heat-producing winding, a conducting-pin inserted through the hollow core and secured thereto by fusible material, a toothed wheel secured to the said pin, and means apart from the heat-coil by which the toothed wheel and pin are rotated, relatively to the said core, when the fusible material is softened, substantially as described.

8. In a heat-coil, the combination of a hollow, cylindrical core, heat-producing means inclosing the said core, a pin inclosed by the said core and secured thereto by fusible material, a toothed wheel secured to the said pin, and a spring adapted to engage the toothed wheel to turn same and the pin, relatively to the said core, when the fusible material is softened, substantially as described.

9. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing element inclosing the said core, a pin inclosed by the said core and secured thereto by fusible material, a toothed wheel secured to the said pin, and a spring adapted to engage the toothed wheel to turn same and the pin, relatively to the said core, when the fusible material is softened, and thereby release itself from the toothed wheel, substantially as described.

10. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing element inclosing the said core, a pin inclosed by the said core and secured thereto by fusible material, a toothed wheel secured to the said pin, and springs adapted to engage the toothed wheel to turn same and the pin, relatively to the said core, when the fusible material softens, and thereby release themselves from the toothed wheel, substantially as described.

11. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing element inclosing the said core, insulating-washers slipped on and secured to the said core, a casing supported by the said washers and inclosing the heat-producing element and the said washers, a pin inclosed by the said core and secured thereto by a fusible material, a toothed wheel secured to the said pin, a suitable support to which the said casing is secured, springs adapted to engage the toothed wheel to turn same and the pin, the said pin turning in the hollow core, when the fusible material is softened, and thereby release themselves from the toothed wheel, substantially as described.

12. In a heat-coil, the combination of a hollow, cylindrical core, a heat-producing element inclosing the said core, insulating-washers,

one for each end of, and secured to, the said core, a casing supported by the said washers and inclosing the heat-producing element and the said washers, a pin inclosed by the said core and secured thereto by fusible material, a toothed wheel secured to the said pin, a spring, one end of which is formed so as to inclose, and grasp, the said casing therein, a second spring provided with a hole therein and adapted to engage a tooth of the said wheel, and a third spring adapted to rest between two teeth of the said wheel, the said second and third springs both tending to turn the toothed wheel in the same direction, and causing the toothed wheel and pin to rotate when the fusible material is softened, thereby releasing themselves from the toothed wheel, substantially as described.

13. In a heat-coil, the combination of a hollow, cylindrical core, a winding wound around the said core, a pin inserted into the hollow core and secured thereto by fusible material, and means for rotating the pin within the hollow core, when the fusible material is softened.

14. In a heat-coil, the combination of a hollow, cylindrical, heat-conducting core, a heat-producing coil wound around the said core, insulating-washers placed upon the said core, a conducting-casing supported by the said washers and inclosing the said heat-producing coil and washers, the said core and casing being terminals for the heat-producing winding, a conducting-pin contained in the hollow core and secured thereto by fusible material, a toothed wheel of conducting material secured to the said pin, and means for causing the toothed wheel and pin to turn, relatively to the hollow core, when the fusible material is softened

15. In a heat-coil, the combination of a hollow, heat-conducting core, a heat-producing winding wound upon the said core, insulating-washers placed upon the said core, a conducting-casing supported by the said washers and inclosing the said winding and washers, the said core and casing being terminals for the said winding, a conducting-pin contained in the hollow core and secured thereto by fusible material, a toothed wheel of conducting material secured to the said pin, a spring adapted to engage the toothed wheel, and a suitable support for the said casing, the fusible material becoming softened by the heat conducted thereto by the said core when an abnormally large current traverses the said winding, thus causing the said spring to turn the toothed wheel and pin, the pin turning within the core, and thereby become released from the toothed wheel, the fusible material again becoming hardened, after the toothed wheel has released the said spring therefrom, thereby again securing the said pin to the hollow core, substantially as described.

16. In a heat-coil, the combination of a hollow, heat-conducting core, a heat-producing winding inclosing the said core, a pin inclosed by the said core and secured thereto by fusible material, and means for rotating the pin within the hollow core when the fusible material is heated and softened, the said pin being again secured to the said core when the fusible material cools and hardens.

17. In a heat-coil, the combination of a toothed wheel, a pin secured thereto, a hollow core into which the pin is inserted, fusible material securing the pin to the core, a heat-producing element inclosing the core, and a spring adapted to engage a tooth of the toothed wheel, the said spring causing the wheel and pin to turn, and thereby becoming released from the said wheel, when the fusible material is heated and softened, the said pin being again secured to the hollow core, by the fusible material cooling and hardening, after the toothed wheel has released the spring therefrom.

18. In a heat-coil of the character described, the combination of a hollow, cylindrical, heat-conducting core provided with annular projections therearound, one near each end, a heat-producing winding wound around the said core between the said annular projections, insulating-washers for the said core, one for each end, and placed thereon, a casing of conducting material supported by the said washers and inclosing the said core and washers, the ends of the said winding being secured to the core and casing, respectively, a pin of conducting material inserted into the hollow core, a fusible material securing the said pin to the said core, a toothed wheel secured to one end of the said pin, the said wheel being of conducting material, a spring, one end of which is split and formed into a hollow cylinder for holding and grasping the said casing, a second spring adapted to engage the toothed wheel at two places, at one place a tooth of the wheel engaging a hole in the said spring and at the other place a portion of the spring resting between two teeth of the wheel, both engagements of the said second spring with the toothed wheel tending to turn the latter in the same direction, a third spring, and a suitable support upon which the said springs are mounted, the fusible material being heated and softened by the heat conducted thereto by the heat-conducting core when an abnormally large current traverses the heat-producing winding, thus allowing the second-mentioned spring to cause the toothed wheel and pin to turn, the pin turning within the hollow core, and thereby release itself from the toothed wheel and come in contact with the third-mentioned spring, the action of this second-mentioned spring breaking the circuit of the said winding, at the toothed wheel, the said pin being again secured within the hollow core, by the fusible material becoming cooled and hardened, substantially as described.

19. In a heat-coil, the combination of a hollow, heat-conducting element, heat-producing means, a pin inserted into the said element, fusible material securing the pin to the said element, and means whereby, when the fusible material is softened, a relative turning is produced between the pin and the said element.

20. The combination with a heat-coil comprising a toothed wheel and a casing adapted to inclose the inner portions of the heat-coil, of a support formed into a thimble for holding and grasping the said casing, and a conducting member adapted to engage the toothed wheel, the said support preventing the heat-coil from being turned by the said conducting member, but allowing the heat-coil to be turned, or removed, by a greater force.

21. The combination with a heat-coil comprising a toothed wheel and a casing adapted to inclose the inner portions of the heat-coil, of a spring-support formed into a thimble for holding and grasping the said casing, and a spring adapted to engage the toothed wheel, the said spring-support preventing the heat-coil from being turned by the said spring, but allowing it to be turned within, or removed from, the said spring-support by a greater force, the said spring becoming released from the toothed wheel when the heat-coil operates, substantially as described.

22. In a cut-off for electric circuits the combination of heat-concentrating means, a rotary portion secured within the heat-concentrating means by heat-susceptible material, and means for turning the rotary portion when the heat-susceptible material softens.

23. In a cut-out for electric circuits, the combination of heat-producing means and a conductive portion, for inclusion in the circuit, one being secured within the other by heat-susceptible material, and means for turning one with respect to the other when the heat-susceptible material is softened.

24. In apparatus of the class specified, the combination of a heat-concentrating device, a rotary detent secured within the said device by heat-susceptible material, and circuit-controlling means adapted to engage the said detent and tending to rotate same, the heat-susceptible material becoming softened under abnormal current conditions and permitting the said means to turn the detent and open the circuit.

25. In apparatus of the class specified, the combination of heat-concentrating means, a rotary detent provided with a plurality of engaging devices and secured within the heat-concentrating means by heat-susceptible material, and circuit-controlling means arranged to engage one of the engaging devices and adapted to turn the detent and bring the said engaging devices into engaging position, one after another, when the detent is released by the softening of the heat-susceptible material.

26. In apparatus of the class specified, the combination of heat-producing means, a rotary detent normally held against rotation by heat-susceptible material, and circuit-controlling means adapted to produce a relative turning between the heat-producing means and the rotary detent, one within the other, when the heat-susceptible material is softened.

27. In a device of the class specified, a coil of wire for producing heat, a rotary detent normally held against rotation by heat-susceptible material, and means adapted to produce a relative turning between the said coil and the rotary detent one within the other when the heat-susceptible material is softened.

28. In a device of the character described, a conductive portion, a coil of wire wound upon the conductive portion, a rotary detent secured to the conductive portion by heat-susceptible material and circuit-controlling means adapted to produce a relative turning between the detent and the said coil one within the other, under abnormal current conditions.

29. In a device of the character described, a metal spool, a resistance-wire wound upon the said spool, a toothed wheel secured to the said spool by heat-susceptible material, and circuit-controlling means adapted to engage the toothed wheel and to produce a relative turning between the latter and the resistance-wire one within the other, upon an abnormally large current in the device, the operation of the latter bringing the teeth of the wheel successively into engaging position for their engaging means.

30. In an excess-current-operable device, a conducting-spool, a resistance-wire wound upon the spool, a rotary detent secured to the said spool by heat-susceptible material, and means for engaging the

detent to produce a relative turning between the latter and the said spool one turning within the other, to open the circuit through the device, upon an excess current in the latter.

817,161. RAIL-JOINT CHAIR. HEZEKIAH H. CRAWFORD, El Paso, Tex. Filed July 13, 1905. Serial No. 270,260.



Claim.—1. An integral-rail-joint chair and a lever external of the chair to clamp the chair upon the rail.

2. An integral-rail-joint chair and a lever pivoted externally of the chair to clamp the chair upon the rail.

3. A rail-joint chair and a lever pivoted upon the chair to clamp the chair upon the rail.

4. A rail-joint chair and a lever pivoted upon and externally of the chair to clamp the chair upon the rail.

5. An integral-rail-joint chair having one side made rigid by a brace and means external of the chair engaging the opposite side to clamp the chair upon the rail.

6. A rail-joint chair having one side made rigid by a brace and a lever external of the chair engaging the opposite side to clamp the chair upon the rail.

7. A rail-joint chair having one side made rigid by a brace and a lever pivoted upon and external of the chair and engaging the side opposite to the base to clamp the chair upon the rail.

8. An integral-rail-joint chair having transverse slits formed from the base to the side plate and the material between the slits struck up and forming a brace extending obliquely from the base to the side plate.

9. An integral-joint chair having a longitudinal opening conforming in cross-section to a cross-section of the rail and having an integral brace struck from the material of the chair and extending obliquely from the base to the side plate.

10. In a rail-joint chair, a side plate having a portion of the material struck inwardly forming an inwardly-extending lug engaging an opening in the rail.

11. An integral-rail-joint chair having a portion of the material of each side plate struck inwardly forming integral inwardly-extending lugs engaging an opening in the rail from opposite sides.

12. In a rail-joint chair a lever arranged to clamp the chair upon the rail and to extend across and engage the opposite rail.

13. In a rail-joint chair a pivoted lever arranged to clamp the chair upon the rail and to extend across and engage the opposite rail.

14. In a rail-joint chair a lever pivoted upon the chair and arranged to clamp the chair upon the rail and to extend across and engage the opposite rail.

15. In a rail-joint chair a lever pivoted upon and externally of the chair and arranged to clamp the chair upon the rail and to extend across and engage the opposite rail.

16. A rail-joint having one rigid side plate and a lever pivoted upon the chair arranged to clamp the other side plate upon the rail and to extend across and engage the opposite rail.

17. A rail-joint chair having one rigid side plate and a lever pivoted to the base of the chair and arranged to clamp the opposite side plate upon the rail.

18. A rail-joint chair having one rigid side plate and a lever pivoted to the base of the chair and arranged to clamp the opposite side plate upon the rail.

19. A rail-joint chair having one rigid side plate, an ear outstanding from the base of the chair and a lever pivoted in the ear and arranged to clamp a side plate opposite the rigid side and to extend across and engage the opposite rail.

20. A rail-joint chair having a longitudinal opening proportioned to fit the rail and with one of the sides rigid, an ear outstanding from the base and a lever pivoted in the ear and arranged to clamp the side opposite the rigid side and extending across and engaging the opposite rail.

21. A rail-joint chair having a longitudinal opening proportioned to fit the rail, a portion of the material struck up to form an integral brace upon one side, an integral ear outstanding from the base, a lever pivoted in the ear and arranged to engage and clamp the chair upon the side opposite the brace and extending across and engaging the opposite rail.

22. A rail-joint chair having a longitudinal opening proportioned to fit the rail, a portion of the material struck inwardly forming inwardly-extending integral lugs engaging within openings of the rail, means for holding one side of the chair rigid, an ear outstanding from the base, and a lever pivoted in the ear and arranged to engage and clamp the chair upon th side opposite the rigid side.

23. An integral-rail-joint chair having a longitudinal opening proportioned to fit the rail, a portion of the material struck up to form an integral brace upon one side extending from the base to the side, a portion of each side struck inwardly forming inwardly-extending integral lugs engaging openings in the rail and from opposite sides, an integral ear outstanding from the base on the side opposite the base, and a lever pivoted in the ear and arranged to engage and clamp the chair on the side opposite the brace and extending across and tying the opposite rail.

24. A rail-joint chair comprising a base, side plates one of which is rigid with the base, an ear outstanding from the base, a lever having a curved short end extending upward and pivotally through the ear and formed to engage and clamp the side of the chair opposite the rigid side and a long end extending across and tying the opposite rail.

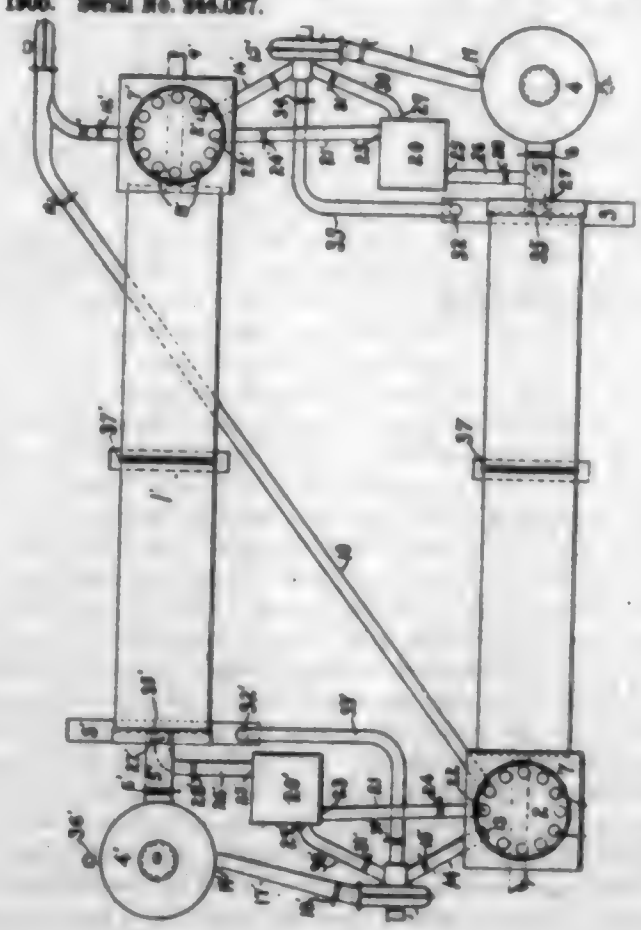
25. A rail-joint chair comprising a base, side plates one of which is rigid with the base, an ear cut from the material of the chair and outstanding from the side opposite the rigid side, portions of the material struck inwardly forming inwardly-extending integral lugs, and a lever having its short end bent and passed upwardly through the ear and engaging and clamping the side of the chair opposite the rigid side and extending across and tying the opposite rail.

817,162. PROCESS OF TREATING ALKALINE STORAGE BATTERIES. THOMAS A. EDISON, Llewellyn Park, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Sept. 20, 1904. Serial No. 226,467.

Claim.—1. The process of treating, prior to shipment, an alkaline storage battery, the negative mass of which contains when charged, finely-divided iron and metallic mercury, which consists in completely discharging the negative mass so as to fully oxidize the same and prevent atmospheric oxidation, substantially as and for the purposes set forth.

2. The process of treating, prior to shipment, an alkaline storage battery, the negative mass of which contains, when charged, finely-divided iron and metallic mercury, which consists in sending a reversing-current through the cell to completely oxidize the negative mass and prevent atmospheric oxidation, substantially as and for the purposes set forth.

817,163. APPARATUS FOR MANUFACTURING CEMENT. CARLETON ELLIS, New York, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Feb. 3, 1905. Serial No. 244,087.



Claim.—1. A cement-making apparatus comprising a gas-fired kiln, a gas-producer, a valved pipe connection discharging waste kiln-gases into the producer in controlled amount, means for introducing controlled amounts of air into said pipe connection, a heating-stove, means for returning and burning in the kiln the gas produced in the producer, and means for feeding to the burning means air heated by waste kiln heat and further heated by the stove.

2. A cement-making apparatus comprising a gas-fired kiln, a gas-producer, a valved pipe connection discharging waste kiln-gases into the producer in controlled amounts, means for introducing regulated amounts of air into said pipe connection, a heating-stove, means for also introducing a regulated amount of products of combustion from the stove into the pipe connection, means for returning and burning in the kiln the gas produced in the producer, and means for feeding to the burning means air heated by waste kiln heat and also further heated by the stove.

3. A cement-making apparatus comprising a kiln, a chimney-stack, a gas-producer, a valved pipe connection between stack and producer discharging stack waste gases into the producer in controlled amounts, means for introducing regulated amounts of air into said pipe connection, means for returning and burning in the kiln the gas produced in the producer, an air-heater in the stack, and means for feeding to the burning means air heated in said heater.

4. A cement-making apparatus comprising a kiln, a chimney-stack, a gas-producer, a valved pipe connection between stack and producer discharging stack waste gases into the producer in controlled amount, means for introducing regulated amounts of air into said pipe connection, means for returning and burning in the kiln the gas produced in the producer, a heating-stove, an air-heater in the stack and means for feeding to the burning means air heated in the stack-heater and further heated in the stove.

5. A cement-making apparatus comprising a kiln, a chimney-stack, a gas-producer, a valved pipe connection between the stack and producer discharging stack waste gases into the producer in controlled amount, means for introducing regulated amounts of air into said pipe connection, means for returning and burning in the kiln the gas produced in the producer, a heating-stove, means for also introducing products of combustion from said stove into the pipe connection, an air-heater in the stack, and means for feeding to the burning means air heated in the stack-heater and further heated in the stove.

6. A cement-making apparatus comprising a pair of inclined rotary kilns arranged side by side with the higher end of the one opposite the lower end of the other, a gas-producer for each kiln, valved pipe connections for feeding the waste gases of one kiln into the producer of the other kiln in controlled amounts, mechanical means for creating a flow through each pipe connection, means for introducing controlled amounts of air into each pipe connection, and means for returning and burning in each kiln the gas from its producer.

7. A cement-making apparatus comprising a pair of inclined rotary kilns arranged side by side with the higher end of the one opposite the lower end of the other, a gas-producer at the lower end of each kiln, a chimney-stack at the higher end of each kiln, pipe connections for introducing regulated amounts of waste gases from each stack into the opposite producer, means for introducing regulated amounts of air into each pipe connection, means for returning and burning in each kiln the gas produced in its producer, and an air-heater in each stack delivering heated air to assist in the combustion of gas in the opposite kiln.

8. A cement-making apparatus comprising a pair of inclined rotary kilns arranged side by side with the higher end of the one opposite the lower end of the other, a gas-producer at the lower end of each kiln, a chimney-stack at the higher end of each kiln, pipe connections for introducing controlled amounts of waste gases from each stack into the opposite producer, means for introducing regulated amounts of air into each pipe connection, means for returning and burning in each kiln the gas produced in its producer, an air-heater in each stack, a heating-stove for each kiln, means for conveying the air heated in each stack through a stove and thence to the opposite kiln to assist in burning the gas, and means for introducing regulated amounts of the products of combustion from the stoves into the pipe connections.

817,164. BENZOYLALKYLAMINOETHANOLS AND PROCESS OF MAKING SAME. THADDAEUS EHRLWICH, Berlin, Germany, assignor to Chemische Fabrik auf Actien, (vorm. E. Schering,) Berlin, Germany. Filed Sept. 18, 1905. Serial No. 278,900. (Specimens.)

Claim.—1. As new chemical products the benzoylalkylaminoethanols, the constitution of which answers the formula



in which R_1 is meant for an alkyl group and R_2 for a hydrogen atom which can be replaced by an alkyl group; said compounds in the form of the free bases are insoluble in water and decompose upon boiling with alkalies into benzoic acid and the corresponding aminoalcohol, and combine with inorganic and organic acids to form the corresponding salts which have anesthetic properties.

2. The process of producing the herein-described new compounds, which consists in reacting on alkylaminoethanols with benzoylating agents and separating the product of the reaction, substantially as set forth.

817,165. CORN-CRIB. JOSEPH W. ENGELKE, Modale, Iowa. Filed Oct. 16, 1905. Serial No. 283,972.



Claim.—1. In combination with a building having substantially vertical walls; a series of boards of substantially equal lengths; of a series of angle-irons and swivels mounted thereon; each of said angle-irons having a series of similar recesses formed thereon; each of said recesses having similar lengthwise-extending and similar angularly-extending walls; said lengthwise-extending walls of said recesses being disposed substantially vertical and said angularly-extending walls extending at substantially right angles therefrom; said similar and angularly extending walls of said recesses being of substantially equal lengths; said similar and angularly-extending walls of said recesses being spaced apart in a manner substantially equal, and a wall formed therebetween adapted to support said swivels; said angle-iron having terminating ends formed substantially parallel with said substantially vertical wall of said recesses; said series of boards being removably mounted within said recesses, substantially as set forth and described.

2. An improvement in corn-cribs, comprising a series of wall-covering members, and a series of holding members and the swivels pivotally mounted thereon; said holding members being formed of an integral band of iron, angularly formed to form similar parallel recesses occupying substantially the same vertical planes; said recesses being spaced apart substantially equal and adapted to contain said wall-covering members, as shown and described.

3. A member consisting of an integral band of metal having terminating ends and angularly formed to form a central and two outer recesses occupying substantially similar vertical planes with said central recess, said recesses being substantially of equal lengthwise extent and having vertical walls; said central recess from said outer recesses being lengthwise spaced apart by laterally-extending loops; one of said laterally-extending loops being interposed between the said central and each outer recess; each of said loops being formed with an angular wall formed substantially parallel with said vertical walls of said recesses; a swivel pivotally mounted upon each loop, said terminating ends being formed to occupy a plane substantially parallel with and oppositely disposed to said vertical walls of said recesses; in combination with a series of wall members, and substantially vertical walls of a corn-crib; said members being rigidly mounted upon said substantially vertical walls, and said series of wall members being adapted to be positioned, removably, within said recesses at will, substantially as and for the purposes set forth and described.

4. An improvement in corn-cribs, in combination; comprising the posts 1, the series of board lengths 4, the angle-irons 5; said angle-irons 5 having the recesses 9, and terminating and angularly-extending ends 12, the angularly-formed wall 8, and the swivels 11 pivotally mounted thereon; said angle-irons 5 being rigidly mounted upon said posts 1, said recesses 9 being adapted to receive therein the board lengths 4 and to be confined therein by use of the swivels 11, as shown and described.

817,166. DISINFECTING COMPOUND. JOSEPH W. ENGLAND, Philadelphia, Pa., assignor to Smith, Kline & French Co., Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 20, 1904. Serial No. 225,137. (Specimens.)

Claim.—A lithiomercuric-iodid compound consisting of mercuric iodid and lithium iodid in chemical combination forming lemon-yellow crystals, and characterized by deliquescence, and solubility, without decomposition, in water, in alcohol, or in ether.

817,167. CAP FOR CAP SPINNING AND TWISTING. FREDERICK A. FLATHER, Lowell, Mass., assignor to Lowell Machine Shop, Lowell, Mass., a Corporation of Massachusetts. Filed May 27, 1905. Serial No. 262,552.



Claim.—1. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from being shaken apart or broken by ordinary usage; and having a socket whereby it is supported upon the spindle, the socket having a surface for contact with the spindle that is hard, whereby that surface is prevented from becoming materially deformed through use.

2. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from being shaken apart or broken by ordinary usage; and having a socket whereby it is supported upon the spindle, the socket having a surface for contact with the spindle that is hard, whereby the surface is prevented from becoming materially deformed through use; and having a tougher body portion contiguous to the surface or socket.

3. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from being shakenapart or broken by ordinary usage; having a part whereby it is supported upon the spindle; and having a thread-guiding edge which is hard, whereby it is prevented from becoming accidentally nicked.

4. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from becoming shaken apart or broken by ordinary usage; having a socket whereby it is supported upon the spindle; and having a thread-guiding edge which is hard, whereby it is prevented from becoming accidentally nicked.

5. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal whereby it is prevented from being shaken apart or broken by ordinary usage; having a socket whereby it is supported upon the spindle; having a thread-guiding edge that is hard, whereby it is prevented from being deformed with ease; and having a tougher portion between the thread-guiding edge and the socket.

6. As a new article of manufacture: a cap adapted for cap-spinning and a single piece of metal, whereby it is prevented from being shaken apart or broken by ordinary usage; having a socket whereby it is supported upon the spindle, the socket having a surface of contact with the spindle that is hard, whereby that surface is prevented from becoming materially deformed through such contact and having a thread-guiding edge which is hard, whereby is is prevented from becoming accidentally nicked.

7. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from being shaken apart or broken by ordinary usage; having a part whereby it is supported upon the spindle, that part having a surface for contact with the spindle that is hard whereby that surface is prevented from being deformed with ease; and having a tougher portion between the thread-guiding edge and that part.

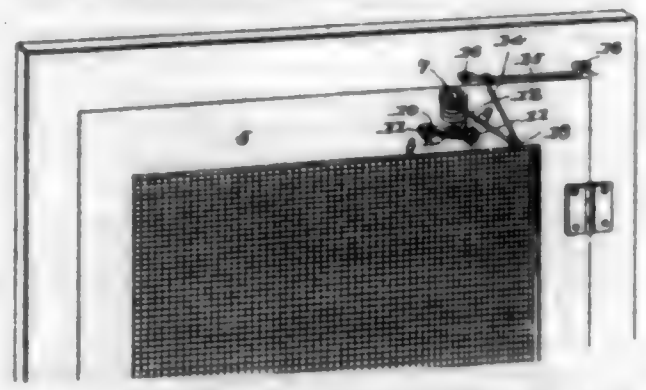
8. As a new article of manufacture: a seamless cap for spinning or twisting, made of a single piece of wrought-steel, having a part whereby it is supported upon the spindle, and having a hardened thread-guiding edge.

9. As a new article of manufacture: a cap adapted for spinning or twisting and of a single piece of metal, whereby it is prevented from being shaken apart or broken by ordinary usage; having a socket whereby it is supported upon the spindle, the socket having a surface for contact with the spindle that is hard, whereby that surface is prevented from becoming materially deformed through such contact; having a thread-guiding edge that is hard, whereby it is prevented from being deformed with ease; and having a tougher part between the thread-guiding edge and the socket.

10. As a new article of manufacture: a cold-swaged cap adapted for spinning and twisting, made of five per cent. (5%) nickel-steel; having a part by which it is supported upon the spindle, and having hardened, both its surface for contacting with the spindle and its thread-guiding edge.

11. As a new article of manufacture: a cold-swaged cap adapted for spinning and twisting, made of five per cent. (5%) nickel-steel; having a socket by which it is supported upon the spindle, having hardened both its surface for contacting with the spindle and its thread-guiding edge; and having a tougher portion between that surface and that edge.

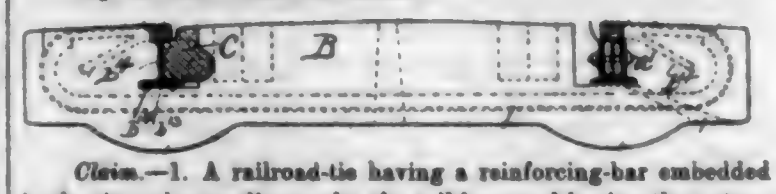
817,168. DOOR-SPRING. DANIEL S. FLORY, North English, Iowa. Filed June 26, 1905. Serial No. 267,071.



Claim.—1. The combination with a casing, of a door hinged thereto, a coiled spring secured to the door and having its free end extended laterally to form a projecting arm having a terminal hook, a guide-loop secured to the casing and arranged at substantially right angles to the longitudinal axis of the spring, and a link slidably mounted on the loop and pivotally connected with the terminal hook of the projecting arm.

2. A spring formed of a single piece of wire, an intermediate portion of which is bent to form a coil having its upper convolution extended at right angles to the longitudinal axis of the coil to form a laterally-projecting arm having a terminal hook, the lower convolution of the coil being extended laterally to form a loop and the end of the wire twisted around the lower convolution and bent to form a second loop.

817,169. RAILROAD-TIE. JOSEPH FREUND, Beaver, Pa., assignor to Henry Hoenigsberger, Bensonhurst, Long Island, N. Y. Filed Aug. 12, 1904. Serial No. 220,536.



Claim.—1. A railroad-tie having a reinforcing-bar embedded in the tie and extending under the rail-base and having the upturn outside said base the tie and upturn being arranged to extend up to the upper part of the rail.

2. A railroad-tie, having a reinforcing-bar embedded in the tie, and extending under the rail-base, and having an upturn outside said base, said bar including the upturn being arranged to contact the outside of the upper part of the rail for bracing the rail.

3. A railroad-tie having a reinforcing-bar embedded in the tie and extending under the rail-base, and having its outer end bent up in the tie to the level of the upper part of the rail and inwardly along the upper part of the tie toward the rail.

4. A railroad-tie having a reinforcing-bar embedded in the tie and extending under the rail-base and having its outer end bent up and inwardly toward the rail, the inturn being provided with a projection extending within the turn and forming a brace for the end of the bar.

5. A railroad-tie having a reinforcing-bar embedded in the tie and extending under the rail-base, and having its outer end bent up and inwardly toward the rail, the inturned portion having a part split from it and extending within the turn to form a brace.

6. A railroad-tie, having a reinforcing-bar embedded therein and arranged flush with the surface of the tie and extending from the edge of the rail.

7. A railroad-tie, having a bar embedded therein at the edges of the tie and extending from the rail flush with the surface of the tie.

8. A railroad-tie, having a reinforcing-bar embedded in the tie and extending under the rail-base, and having an upturn outside said base and an inturn extending toward the rail along the surface of the tie.

9. A railroad-tie having a reinforcing-bar B′ embedded therein extending under the rail-base, and having the upturned portion b' and inturned portion extending to the rail, the surface b^3 coming flush with the upper surface of the tie.

10. A railroad-tie having a reinforcing-bar B′ embedded therein extending under the rail-base, and having the upturned portion b' and inturned portion extending to the rail, the surface b^3 coming flush with the upper surface of the tie, and having the brace b^4 projecting from the under part of the inturned portion into the turn for bracing the end of the bar.

11. A railroad-tie having a reinforcing-bar extending under the rail-base and upwardly outside of said base, said tie being provided with a groove for the reception of the rail; and means for locking the rail in the groove.

12. A railroad-tie having the groove b for the reception of the rail, the offset b^9 for the reception of the fish-plate, and a groove b^{10} in the offset for the reception of the heads of bolts in fish-plates.

13. A railroad-tie having the grooves b for the reception of the rail, the offset b^9 for the reception of the fish-plate, and the groove b^{10} in the offset for the reception of the heads of the bolts in the fish-plate, said offset b^9 extending entirely through the tie for the purposes described.

14. A railroad-tie having the grooves b for the reception of the rail, the offset b^9 for the reception of the fish-plate, and the groove b^{10} in the offset for the reception of the heads of the bolts in the fish-plate, the offset b^9 and groove b^{10} extending entirely through the tie.

15. A railroad-tie having a groove for the reception of the rail; and a channel extending from the groove to the outer surface of the tie for draining the groove.

16. A series of railroad-ties, forming a continuous bed, said ties being provided with a groove for the reception of the rails, and channels for draining said grooves.

17. A railroad-tie formed of artificial composition having a groove therein for the reception of the rail; a tie-plate secured to the tie in the process of formation, the surface of the tie-plate extending above the bottom of the groove.

817,170. **BUTTON.** ALBERT HALL, Jersey City, N. J. Filed July 27, 1904. Serial No. 218,314.



Claim.—1. A pronged button struck up from sheet metal, having a head, a shank, and downwardly-projecting prongs, all made of a single and continuous piece of sheet metal, slots extending inward from the rim of the head, the upper ends of the prongs being coincident with the inner ends of said slots, substantially as set forth.

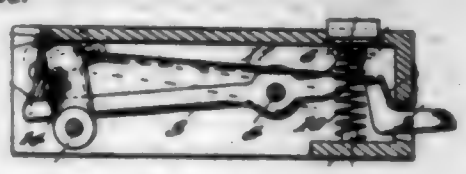
2. A pronged button struck up from sheet metal, having a head, a shank and prongs, projecting downward from the shank, all made of a single and continuous piece of metal, the head and shank having radial arms extending inward from the rim to the prongs, coincident which latter are located between the inner ends of said arms, substantially as set forth.

3. In a metal button, the combination with a head, a shank and prongs projecting downward from the shank, composed of a single piece of sheet metal, the head having radial arms extending from the rim inward, the prongs being located between the inner ends of said arms, and a metal cap clamped on said head, substantially as set forth.

4. In a metal button, the combination with a head, a shank and prongs projecting downward from the shank, composed of a single and continuous piece of sheet metal the head having radial arms extending inward from the rim of the head, and the prongs projecting from between the inner ends of said arms, the shank having a central hole in its bottom, substantially as set forth.

817,171. **FOOT-SCRAPER.** GEORGE F. HIEBER, Concordia, Kans. Filed Apr. 21, 1905. Serial No. 256,764.

Claim.—1. In a foot-scraper, the combination of a support, a scraping-blade normally shielded thereby, actuating means for projecting the scraping-blade into operative position, a detent for holding the blade when projected, and a release for said detent to admit of the scraping-blade automatically returning to normal position when liberated.



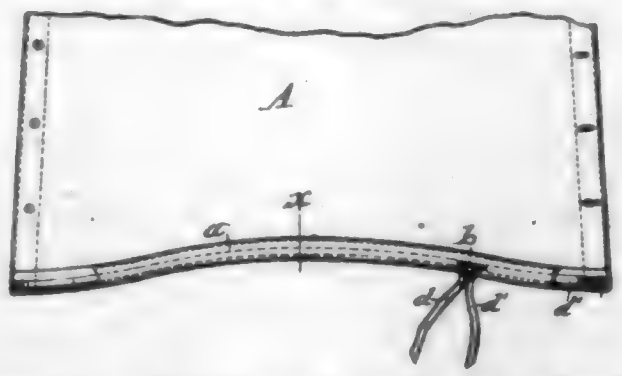
2. In a foot-scraper, the combination of a support, a scraping-blade normally shielded thereby, means for positively holding the scraping-blade out of action, means for projecting the scraping-blade into operative position, a detent for holding the scraping-blade projected against the force tending to return it to normal position, and means for releasing the detent to admit of the automatic return of the scraping-blade to normal position.

3. In a foot-scraper, the combination of a casing, a scraping-blade, a lever fulcrumed between its ends within said casing and having one end attached to the scraping-blade so that said scraping-blade may be raised by depressing the other end of said lever, a spring to hold the scraping-blade normally in lowered position, and a catch adapted to hold the blade in a raised position.

4. In a foot-scraper, the combination of a casing a scraping-blade, a lever fulcrumed between its ends within said casing and having one attached to the scraping-blade so that said scraping-blade may be raised by depressing the other end of said lever, a spring to hold the scraping-blade normally in a lowered position, a catch adapted to hold the blade in a raised position, and means to release the catch to lower the blade.

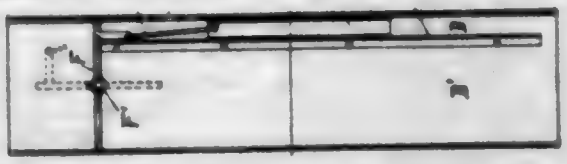
5. In a foot-scraper, the combination of a casing, a scraping-blade, a lever fulcrumed between its ends within said casing and having one end attached to the scraping-blade so that said scraping-blade may be raised by depressing the other end of said lever, a spring to hold the scraping-blade normally in a lowered position, a catch adapted to hold the blade in a raised position, and a trigger passing through the casing and adapted to release said catch.

817,172. **BLOUSE.** ALBERT G. HUTH, Onondaga Valley, N. Y. Filed Oct. 2, 1905. Serial No. 280,861.



Claim.—The improved blouse formed with a hollow hem extending around the bottom and to the vertical edges of the front opening of the blouse and provided with a single slot in the said hem remote from the front of the blouse, and two shirr-strings disposed in the hem and sewed at their inner ends to the blouse at the bottom button and buttonhole of the front of the blouse, the free ends of the strings passing out through the single slot and retained thereby in proximity to each other for tying them together at the exterior of the blouse substantially as described and shown.

817,173. **HEATING APPARATUS.** CHARLES F. JENKINS, Washington, D. C. Filed May 11, 1905. Serial No. 260,039.

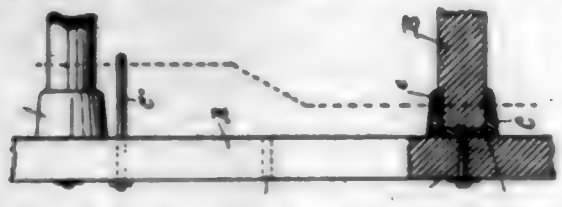


Claim.—1. In the flue of heat-producing apparatus, the combination of an air-duct, located in said flue, air-inlets therefor, a damper for controlling the rising gases and for opening and closing the upper end of said air-duct, and means connected to the damper for opening and closing the air-inlets.

2. A stovepipe-section having a longitudinally-extending air-duct therein, air-inlets therefor, a damper for restricting the sectional area of said pipe and simultaneously closing an end of said air-duct.

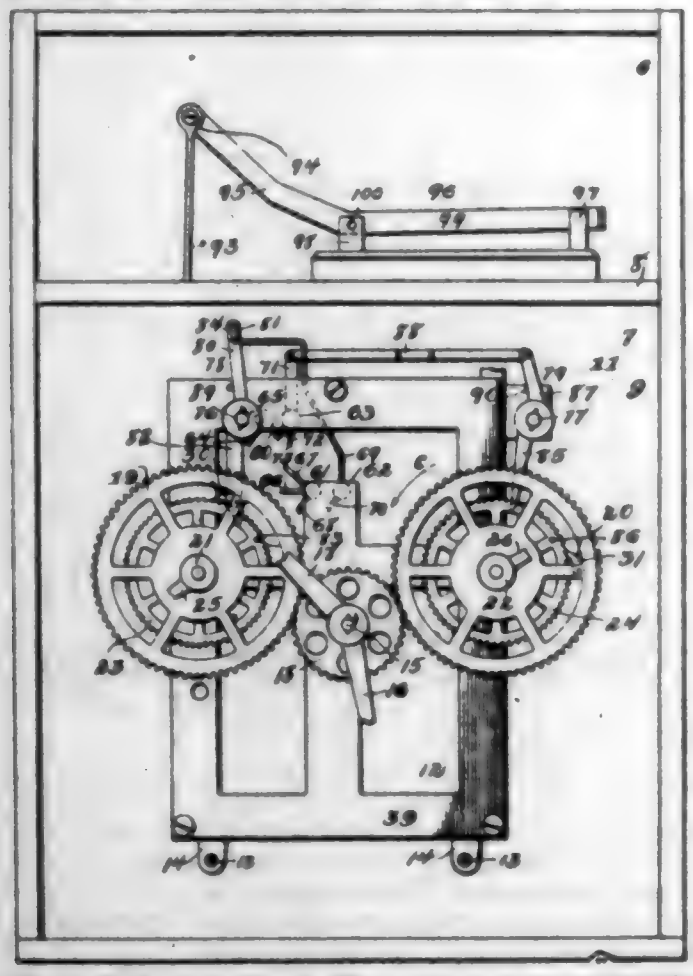
3. A stovepipe-section having a longitudinally-extending air-duct therein, air-inlets therefor, a damper for restricting the sectional area of said pipe and simultaneously closing an end of said air-duct, and means for controlling the supply of air to said duct.

817,174. LADDER AND BRACKET CONSTRUCTION. JOHN M. JONES, Utica, N. Y. Filed Nov. 21, 1903. Serial No. 183,065.



Claim.—In a ladder, side rails with a plurality of transverse openings, rungs and rung-sockets, the said sockets embodying recesses for engaging the ends of the rungs and means for securing the said sockets to the rails, the said means engaging the sockets through certain of the transverse openings to arrange the rungs with suitable spaces therebetween, means connecting the rails rigidly, in combination, substantially as described.

817,175. ELECTRIC TIME-SWITCH. CHARLES E. KATSCH, New Haven, Conn. Filed Mar. 15, 1905. Serial No. 250,189.



Claim.—1. In a switch-controlling mechanism, the combination with a motor mechanism, of a shaft driven by said motor mechanism, a switch-controlling member carried by said shaft, tripping mechanism for alternately arresting and releasing said motor mechanism, a clock mechanism, gear-wheels driven by said clock mechanism, ratchet-wheels driven by said gear-wheels and contact-pins carried by said ratchet-wheels.

2. In a switch-controlling mechanism, the combination with a clock mechanism, of a gear-wheel driven by said clock mechanism and rotative once in twelve hours, gear-wheels meshing with the aforesaid gear-wheel and rotative once in twenty-four hours, ratchet-wheels driven by said gear-wheels and movable with relation thereto, trip-actuating pins carried by said ratchet-wheels, tripping mechanisms with which said pins alternately engage, a motor mechanism and a switch-controlling member driven by said mechanism adapted to be alternately arrested and released by said tripping mechanisms.

3. In a switch-controlling mechanism, the combination with a motor mechanism, of a shaft driven by said motor mechanism, a switch-controlling member carried by said shaft, tripping mechanism for alternately arresting and releasing said motor mechanism, a clock mechanism, gear-wheels driven by said clock mechanism, ratchet-wheels driven by said gear-wheels and movable with relation thereto, pointers carried by said ratchet-wheels and dials with which said pointers coact and contact-pins also carried by said ratchet-wheels adapted to alternately engage said tripping mechanism.

4. In a switch-controlling mechanism, the combination of a motor comprising a rotary cam-carrying shaft, cams mounted upon said shaft and having diametrically-disposed recesses, a trip-wheel in gear with said motor, tripping-lugs carried by said trip-wheel, a plurality of oscillatory spindles, springs for tending to turn said spindles in one direction, tripping-levers carried by said spindles, time-controlled setting mechanisms, means for varying the movement of said setting mechanisms with relation to each other and means controlled by said setting mechanisms whereby at a predetermined time the tripping-levers will be actuated to thereby arrest and release the motor mechanism by being thrown into engagement with or drawn from engagement with the tripping-lugs of the gear-wheel and the recesses of the cam.

5. In a switch-controlling mechanism, the combination with a rotary spring-driven gear-wheel, of a shaft carrying a pinion which meshes with said gear-wheel, a switch-controlling member mounted upon said shaft, cams mounted upon said shaft, a gear-wheel mounted upon said shaft and meshing with a pinion carried by a second shaft, a trip-wheel mounted upon said second shaft, trip-lugs carried by said trip-wheel, oscillatory spindles, springs for tending to turn said spindles in one direction, tripping-levers carried by said spindles, a time-controlled opening mechanism and a time-controlled closing mechanism, means for varying the movement of said opening and closing mechanisms with relation to each other and pins carried by said opening and closing mechanisms, oscillatory levers, the lower ends of which lie in the path of said pins and connections between said oscillatory levers and the spindles whereby at a predetermined time, said spindles will be rocked to thereby throw the tripping-levers into or from engagement with the lugs of the trip-wheel and the cam to thereby permit the said spring-actuated gear to impart an intermittent movement to the cam-carrying shaft.

6. In a switch-controlling mechanism, the combination with a clock-frame comprising a pair of plates, of a clock mechanism mounted therein, a motor mechanism also mounted therein, a shaft rotated by said motor mechanism, a switch-controlling member carried by said shaft, a pair of gear-wheels driven by the clock mechanism, ratchet-wheels driven by said gear-wheels and movable with relation thereto, pointers carried by said ratchet-wheels, dials with which said pointers coact, pins carried by said ratchet-wheels, oscillatory levers mounted upon the clock-frame, the lower ends of which lie in the path of movement of said pins, oscillatory spindles mounted in the clock-frame and carrying trip-levers and connections between said oscillatory spindles and said oscillatory levers whereby when said levers are oscillated, said spindles will likewise be oscillated to thereby alternately actuate the tripping-levers and permit the motor mechanism to impart an alternate movement to the switch-controlling member.

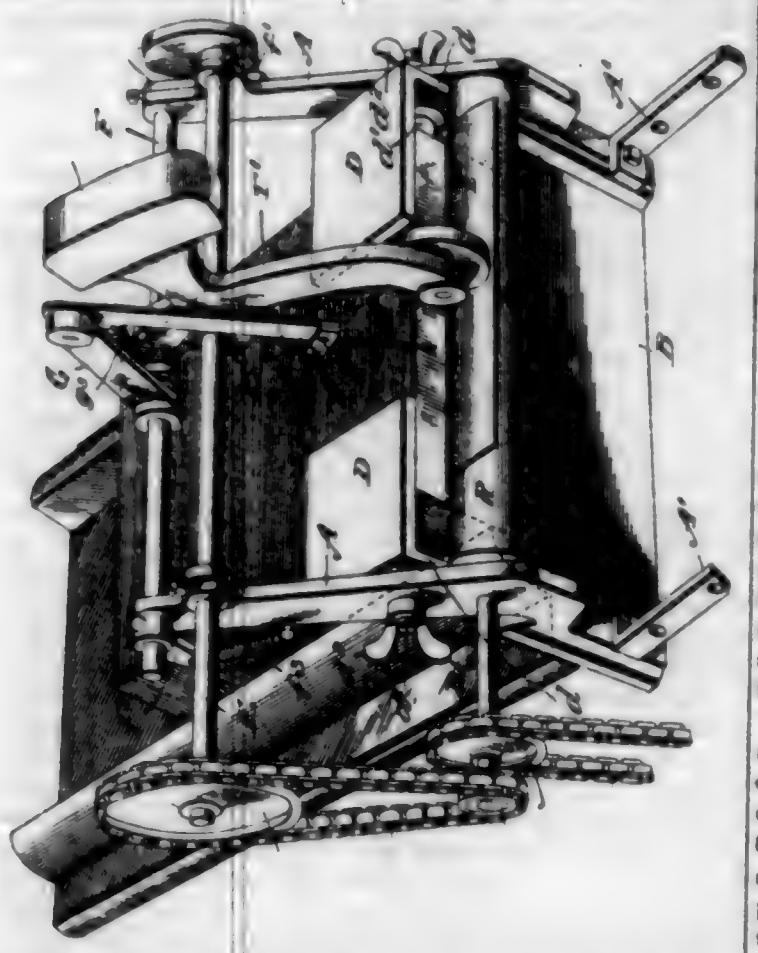
817,176. AUTOMATIC FEEDING DEVICE FOR SHEETS, CARDS, ENVELOPS, AND LIKE ARTICLES. ROBERT B. KEMPER and ARTHUR KEMPER, Rensselaer, N. Y. Filed Mar. 10, 1905. Serial No. 249,494.

Claim.—1. In a feeding device for sheets, cards, envelops and the like, the combination with means for holding a plurality of articles to be fed, of feeding-rollers adjacent to said holding means and a separating device movable transversely across the edge of the first of said articles, and constructed to engage the said edge and bend the article into engagement with said feeding-rollers, substantially as described.

2. In a feeding device for sheets, cards, envelops and the like, the combination with means for holding a plurality of articles to be fed, of a feeding-roller, adjacent to said holding means, a separating device movable transversely across the edge of the first of said articles and constructed to engage said edge and bend the article into engagement with the said feeding-roller, and a movable pressure-roller adapted to clamp said separated article against the feeding-roller, substantially as described.

3. In a feeding device for sheets, cards, envelops and the like, the combination with means for holding a plurality of articles to be fed, of a feeding-roller, adjacent to the first of said articles, a pressure-roller, movable toward and from said feeding-roller, means for driving one of said rollers, and a separating device movable transversely across the edge of the first of said articles and constructed to

engage said edge and bend a portion of the article into position to be engaged between the said rollers, substantially as described.



4. In a feeding device for sheets, cards, envelops and the like, the combination with a hopper comprising an inclined feed-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the first of the articles held in said hopper, a pressure-roller movable toward and from said feed-roller, and a vertically and forwardly movable separating device provided with a tooth or projection for engaging the first of the articles in the hopper and bending it forwardly between the feeding-roller and said pressure-roller, substantially as described.

5. In a feeding device for sheets, cards, envelops and the like, the combination with a hopper comprising an inclined feed-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the first of the articles held in said hopper, a pressure-roller movable toward and from said feed-roller, a separating device for engaging the article in the hopper nearest the feeding-roller and bending it forwardly between said roller and the pressure-roller, and means for retaining the other articles in said hopper from displacement, substantially as described.

6. In a feeding device for sheets, cards, envelops and the like, the combination with a hopper comprising an inclined feed-plate, a stop adjacent to the lower end of said plate, a feeding-roller, adjacent to said stop, adapted to engage the first of the articles held in said hopper, a pressure-roller movable toward and from said feed-roller, a separating device for engaging the article in the hopper nearest the feeding-roller and bending it forwardly between said roller and the pressure-roller, and retaining devices for engaging the upper edges of the next adjacent articles in the hopper to prevent their vertical displacement as the article nearest the roller is withdrawn, substantially as described.

7. In an automatic feeding device for sheets, cards, envelops and the like, the combination with means for supporting a plurality of articles to be fed, of feeding mechanism located adjacent thereto, and a separating device having a transverse movement across an edge of the first of said articles and constructed to engage said edge and bend the article into position to be engaged by said feeding devices, substantially as described.

8. In an automatic feeding device for sheets, cards, envelops and the like, the combination with a support for the articles to be fed having a part constructed to engage a portion only of the front face of the first of said articles, feeding mechanism located adjacent to said support, and a separating device movable transversely across the free edge of the first of said articles and constructed to engage said edge, to bend said first article away from the remaining articles, and into position to be engaged by the feeding devices, substantially as described.

9. In an automatic feeding device for sheets, cards, envelops and the like, the combination with a support for the articles to be fed, having a part constructed to engage a portion only of the front face of the first of said articles, feeding mechanism located adjacent to said support, a separating device movable transversely across the free edge of the first of said articles and constructed to engage said edge to bend said first article into position to be engaged by said feeding devices, and retaining devices for preventing the removal of all of said articles except the one so separated substantially as described.

10. In an automatic feeding device for sheets, cards, envelops and the like, the combination with means for supporting a plurality of articles, feeding mechanism located adjacent thereto, and a separating device provided with a tooth or projection for engaging an edge of the first of said articles, and movable transversely of said edge, for bending it into position to be engaged by said feeding devices, substantially as described.

11. In an automatic feeding device for sheets, cards, envelops and the like, the combination with means for supporting a plurality of articles, feeding mechanism located adjacent thereto, a separating device, disposed angularly to the first of the said articles and provided with a tooth for engaging the edge of the same said separating device being movable transversely of said edge, for bending it into engagement with the feeding devices, and means for moving said separating device, said separating device being provided with means for permitting it to yield outwardly, substantially as described.

12. In an automatic feeding device for sheets, cards, envelops and the like, the combination with means for supporting a plurality of articles, feeding mechanism located adjacent thereto, a separating device, pivotally supported and provided with a tooth or projection to engage the edge of the first of said articles, means for moving said separating devices transversely of said edge to bend it forwardly into position to be engaged by said feeding devices, and a retracting-spring connected to said separating device, substantially as described.

13. In an automatic feeding device for sheets, cards, envelops and the like, the combination with means for supporting a plurality of articles, feeding mechanism located adjacent thereto, a rock-shaft, an operating-arm connected therewith, a separating device pivotally connected to said arm and provided with a series of teeth or projections for engaging an edge of the first of said articles, and bending it into position to engage said feeding devices and a retracting-spring for said separating device, substantially as described.

14. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, and means for adjusting said supporting-plate vertically with respect to said feeding devices, substantially as described.

15. In an automatic feeding device for sheets, cards, envelops and the like, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device movable transversely across an edge of the first of the articles held in the hopper, and constructed to engage said edge and bend the article into position to engage the feeding devices, and adjustable guides secured to the upper side of said supporting-plate to accommodate devices of varying width, substantially as described.

16. In an automatic feeding device for sheets, cards and envelops, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, means for adjusting said supporting-plate vertically with respect to said feeding devices and adjustable side guides secured to the upper face of said supporting-plate, substantially as described.

17. In an automatic feeding device for sheets, cards and envelops, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, retaining devices for engaging the upper edges of the articles held on said supporting-plate, and means for adjusting said supporting-plate vertically with respect to the feeding devices and said retaining devices, substantially as described.

18. In an automatic feeding device for sheets, cards, and envelops, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device for engaging the first of the

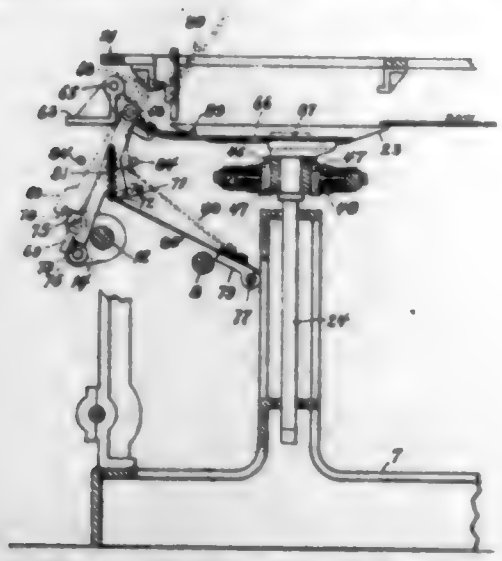
articles held in the hopper and bending it into position to engage said feeding devices, vertically-adjustable retaining devices, for engaging the upper edges of the articles held on the supporting-plate, and means for adjusting said supporting-plate vertically with respect to the feeding devices and said retaining devices, substantially as described.

19. In an automatic feeding device for sheets, cards and envelops, the combination with a hopper, including a supporting-plate, of a stop adjacent to one end of said supporting-plate, feeding devices adjacent to said stop, a separating device for engaging the first of the articles held in the hopper and bending it into position to engage said feeding devices, retaining devices for engaging the upper edges of the articles supported in said hopper and means for adjusting said retaining devices vertically with respect to said feeding devices, substantially as described.

20. In an automatic device for feeding sheets, cards, envelops and the like, the combination with the hopper, and a feeding-roller located adjacent to one end of the same, of a pressure-roller movable toward and from the feeding-roller, a pivoted arm carrying said pressure-roller, a rock-shaft, an operating-arm carried thereby, a separating device pivotally connected to said arm, and provided with teeth or projections, a retracting-spring for said separating device, a cam-shaft and cams on said shaft for operating said pressure-roller-carrying arm, and said rock-shaft, substantially as described.

21. In an automatic device for feeding sheets, cards, envelops and the like, the combination with the inclined feeding-plate, the stop-plate, means for adjusting said feeding-plate vertically with respect to said stop-plate, and lateral adjustable guides on said feeding-plate, of a feeding-roller above said stop-plate, a pressure-roller, movable toward and from the feeding-roller, a swinging arm carrying said pressure-roller, and provided with a weight, a rock-shaft, an operating-arm carried thereby, a separating device pivotally connected to said arm and provided with a series of fine teeth or projections, a retracting-spring for said separating device, means for operating said rock-shaft and said pressure-roller-carrying arm, and vertically-adjustable retaining devices provided with portions for engaging the top edges of articles supported on said feeding-plate, substantially as described.

817,177. SHINGLE-MACHINE. WILLIAM H. KRATSCH and CHARLES G. DAUBER, Oshkosh, Wis. Filed May 7, 1904. Serial No. 206,799.



Claim.—1. In combination with a shingle-machine provided with a tilt-table, a pivoted discharging device extending below the plane of the supporting-pieces of the tilt-table, and means for turning said device upwardly on its pivot to thereby engage the under side of the waste block of wood supported by the supporting-pieces of the tilt-table, and raise said block upwardly and eject the same from the machine.

2. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, and means for turning said device upwardly on its pivot and thereby discharging said block of wood contained thereon.

3. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, mechanism for turning said discharging device upwardly on its pivot, said mechanism being normally in a non-operative position, but adapted to be adjusted so as to be operated by the mechanism of the shingle-machine, and when so operated to be moved so as to effect the turning of the discharging device upwardly on its pivot and thereby effect the discharge of the block of wood contained on said discharging device, the said discharging device after the discharging operation adapted to return to normal position, and means for returning the operating mechanism of the discharging device to normal non-operative position.

4. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, means for turning said discharging device upwardly on its pivot so as to effect the discharge of said block of wood therefrom, and a spring having its free end bearing on the discharging device, and adapted for returning said discharging device to normal position.

5. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, means for turning said discharging device upwardly on its pivot and thereby discharging said block of wood therefrom, means for returning the discharging device to normal position, and a stop for limiting the return movement of the discharging device.

6. In combination with a shingle-machine having a reciprocable carriage adjustable longitudinally of the frame of the machine, and a saw toward and from which the carriage, in its reciprocations, is adapted to be moved, and also provided with a tilt-table, a frame, a pivoted discharging device carried by said frame and extending below the plane of the supporting-pieces of the tilt-table, and adapted to receive thereon the waste block of wood resulting from the sawing operation, means for turning said discharging device upwardly on its pivot to thereby engage the under side of the waste block of wood supported by the supporting-pieces and raise said block upwardly and eject the same from the machine, and means for adjustably connecting the discharging-device frame to the main frame of the shingle-machine, so that said discharging-device frame may be adjusted longitudinally of the main frame, when the longitudinal position of the reciprocable carriage with relation to the saw is adjusted.

7. In combination with a shingle-machine, a pivoted discharging device, consisting of two connected arms adapted to receive thereon the waste block of wood resulting from the sawing operation, and means for turning said discharging device upwardly on its pivot and thereby discharging said block of wood therefrom.

8. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, the pivot being so disposed as to provide for an up-and-down turning of the discharging device on said pivot, an arm connected to and extending from the discharging device, said arm being normally in such position as not to be acted upon by the operating mechanism of the shingle-machine, but when moved out of its normal position to be acted upon by said operating mechanism and thereby actuated in a direction to cause a turning of the discharging device upwardly on its pivot to thereby discharge said block of wood from said discharging device, and means for throwing the arm into and out of position to be acted upon by the operating mechanism of the shingle-machine.

9. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation the pivot being so disposed as to provide for an up-and-down turning of the discharging device on said pivot, an arm connected to and extending from the discharging device, said arm being normally in such position as not to be acted upon by the operating mechanism of the shingle-machine, but when moved out of its normal position to be acted upon by said operating mechanism and thereby actuated in a direction to cause a turning of the discharging device upwardly on its pivot to thereby discharge said block of wood from said discharging device, means for throwing the arm into position to be acted upon by the operating mechanism of the shingle-machine, and means for automatically throwing the arm out of position to be acted upon by said operating mechanism, after the discharging device has effected the discharge of the waste block of wood.

10. In combination with a shingle-machine having a shaft mounted in the frame thereof, said shaft provided with a projection, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, an arm pivotally connected to and extending from the discharging device, one of the longitudinal edges of said arm provided with shoulders, one of said shoulders projecting outwardly a greater distance than the other, a catch-bar normally engaging the shoulder of the pivoted arm which projects outwardly the greatest distance from said arm, a rock-shaft from which the catch-bar extends, said shaft when rocked in one di-

rection adapted to release the catch-bar from the farthest-projecting shoulder, to thereby permit the pivoted arm to swing on its pivot in a direction to allow the catch-bar to engage with the other or least projecting shoulder, whereby the pivoted arm is in position to be engaged by the projection from the shaft of the shingle-machine, and when so engaged to be actuated in a direction to cause a turning of the discharging device on its pivot in order to effect the discharge of the waste block of wood from said discharging device, and means after the waste block of wood is discharged for returning the several parts to normal position.

11. In combination with a shingle-machine, having a shaft mounted in the frame thereof, said shaft provided with a projection, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, an arm pivotally connected to and extending from the discharging device, one of the longitudinal edges of said arm provided with shoulders, one of said shoulders projecting outwardly a greater distance than the other, a catch-bar normally engaging the shoulder of the pivoted arm which projects outwardly the greatest distance from said arm, a rock-shaft from which the catch-bar extends, said shaft when rocked in one direction adapted to release the catch-bar from the farthest-projecting shoulder to thereby permit the pivoted arm to swing on its pivot in a direction to allow the catch-bar to engage with the other or least projecting shoulder, whereby the pivoted arm is in position to be engaged by the projection from the shaft of the shingle-machine, and when so engaged to be actuated in a direction to cause a turning of the discharging device on its pivot and the discharge of the waste block of wood from said discharging device, means after the said block of wood has been discharged for returning the pivoted arm to normal position out of the path of movement of the projection from the shaft of the shingle-machine, and a spring adapted to act on the catch-bar in order to bring said catch-bar again in engagement with the farthest-projecting shoulder of the pivoted arm, after said pivoted arm is returned to its normal non-operative position.

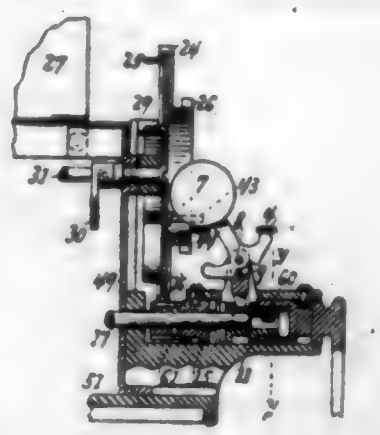
12. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, an arm pivotally connected to and extending from the discharging device, said arm provided on one of its longitudinal edges with a lug having a beveled or inclined edge, said arm being normally in such position as not to be acted upon by the operating mechanism of the shingle-machine, but when moved out of its normal position to be acted upon by said operating mechanism and thereby actuated in a direction to cause a turning of the discharging device on its pivot in order to effect the discharge of the waste block of wood from said discharging device, means for throwing the arm in a position to be acted upon by the operating mechanism of the shingle-machine, and projections between which the pivoted arm, when actuated to operate the discharging device, is adapted to move, one of said projections acting on the inclined lug of the arm and thereby swinging said arm out of position to be acted upon by the operating mechanism of the shingle-machine.

13. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, an arm pivotally connected to and extending from the discharging device, said arm provided on one of its longitudinal edges with a lug having a beveled or inclined edge, said arm being normally in such position as not to be acted upon by the operating mechanism of the shingle-machine, but when moved out of its normal position to be acted upon by said operating mechanism and thereby actuated in a direction to cause a turning of the discharging device on its pivot so as to effect the discharge of the waste block of wood from said discharging device, means for throwing the arm in a position to be acted upon by the operating mechanism, and projections, one adjustable toward the other, and between which projections the pivoted arm, when actuated to operate the discharging device, is adapted to move, one of said projections acting on the inclined lug of the arm and thereby swinging said arm out of position to be acted upon by the operating mechanism of the shingle-machine.

14. In combination with a shingle-machine having a shaft mounted in the frame thereof, the said shaft provided with a projection, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, an arm pivotally connected to and extending from the discharging device, said arm provided on one of its longitudinal edges with a lug having an inclined edge, the said lug provided with a shoulder at its lower edge, and another shoulder being formed below the lug, a catch-bar engaging the shoulder at the lower end of the lug, a rock-shaft from which said catch-bar extends, said catch-bar when the rock-shaft is rocked in one direction adapted to be disengaged from the shoulder at the lower end of the lug to engage under the shoulder formed by the lower edge of said lug, whereby the pivoted arm is permitted to turn on its pivot, and thereby be in line to be acted upon by the projection of the shaft of the shingle-machine, and when so acted upon to cause a turning of the discharging device on its pivot, whereby the discharge of the waste block of wood contained on said discharging device is effected, and projections between which the pivoted arm is disposed, one of said projections adapted to act on the inclined edge of the projecting lug of the pivoted arm, when said arm is moved between the projections, and to thereby turn the pivoted arm out of the path of movement of the projection of the shaft of the shingle-machine, and means, when the pivoted arm is so turned out of operative position for again engaging the catch-bar with the shoulder of the projecting lug of the arm.

15. In combination with a shingle-machine, a pivoted discharging device located to receive thereon the waste block of wood resulting from the sawing operation, the said discharging device provided with a projection having a series of teeth adapted to engage the waste block of wood, and means for turning said discharging device upwardly on its pivot and thereby discharging said waste block of wood contained thereon.

817,178. CLUTCH MECHANISM FOR EXHIBITING-MACHINES. JULIUS C. LIEBHARDT, Belleville, N. J., assignor, by mesne assignments, to Globe Exhibiting Company, New York, N. Y., a Corporation of New York. Filed Nov. 14, 1904. Serial No. 232,700.



Claim.—1. The combination with a lever, of a weighted shouldered lever engaged by the first-named lever, a coupling-lever extended into the path of the shoulders of the weighted lever, a clutch member actuated by the coupling-lever, and a winding mechanism adapted to be engaged and actuated by the clutch member.

2. The combination with a pair of levers, of a clutch-actuating lever actuated by one of said levers, a clutch, a gear, and a returning-lever actuated by the gear to uncouple the clutch.

3. A clutch and clutch-actuating lever combined with a tilting lever to set the clutch-actuating lever, oppositely-located levers for moving the tilting lever, and a gear actuated by the clutch for moving one of the oppositely-located levers.

4. A clutch and clutch-actuating lever combined with a tilting lever to set the clutch-actuating lever, and a spring or friction finger to prevent accidental movement of the tilting lever.

5. A pair of levers extended from a common fulcrum-point, a clutch actuated by one of the levers, a shaft actuated by the clutch, a motor wound by the shaft, a gear rotated by the shaft, and a lever actuated by the gear and made to engage one of the levers on the common fulcrum-point to move the latter in one direction, and means for throwing said last-named lever in the opposite direction.

6. The combination with a crank having a tubular axle portion with shoulders therein, of a movable clutch portion extended into the tubular axle portion, and a double-ended ratchet-pawl engaging the shoulders for connecting the crank-axle with the clutch portion.

7. A clutch mechanism comprising a crank with shoulders or projections, a movable clutch member in this crank, a double-ended ratchet-pawl to engage the shoulders for connecting the crank with the movable clutch member, a shaft on which the clutch member is mounted, and a second or stationary clutch member to coact with the movable clutch member.

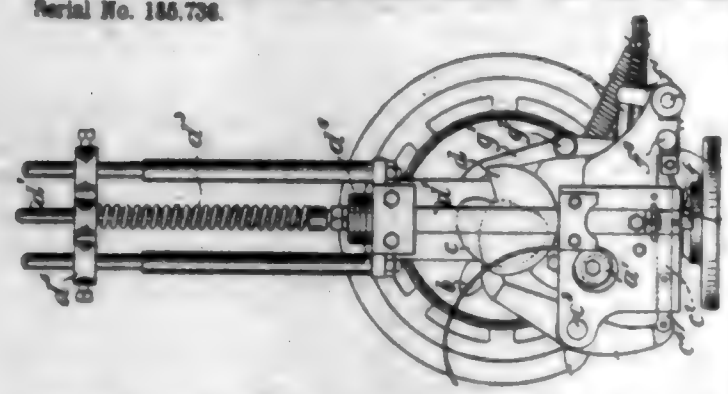
8. A clutch mechanism comprising a crank having shoulder portions in its hub or axle, a sliding clutch portion extended into the crank, a double-ended ratchet-pawl for connecting the crank and movable clutch portion so as to rotate together while leaving the clutch member free to slide in the crank, a shaft having a clutch member to coact with the movable clutch portion, and levers having

a common axis or fulcrum and made to engage or set the movable clutch into or out of action.

9. A clutch mechanism comprising a weighted lever adapted to drop to one side or another of a fulcrum-point, a second lever having a common fulcrum with the first-named lever and extended in the opposite direction from and actuated by the same as such first lever drops to one side or another, a clutch member actuated by said second lever, and a transmission-shaft adapted to be engaged and actuated by the clutch.

10. A clutch mechanism comprising an upwardly-extended weighted lever having laterally-extended arms, means for engaging the arms to tilt the lever back and forth, a clutch and clutch-actuating lever actuated by the tilting lever, a winding-shaft engaged by the clutch, and a motor put into action by the winding-shaft, one of the tilting means being actuated by said motor.

817,179. NAILING, SLUGGING, OR LIKE MACHINE FOR USE IN BOOT AND SHOE MANUFACTURE. WILLIAM E. MADDISON and WALTER DOWNS, Irthlingborough, England. Filed Dec. 18, 1902. Serial No. 135,736.



Claim.—1. In a machine for nailing boots or shoes, the herein-described means for feeding forward the work; same comprising a bracket whereon is mounted a bell-crank lever provided with a spur and having its pivot mounted to slide in a slot formed in said bracket, a cam and spring, a lever vibrated by the said cam and spring, a link for connecting the last-mentioned lever with the bell-crank lever and a stop on the bell-crank lever for limiting the extent of its rotative movement.

2. In a machine for nailing boots or shoes, the herein-described means for feeding the wire; same comprising a roller and toothed wheel by which the wire is engaged, a spindle to which the toothed wheel is secured, a rotatably-mounted sleeve in which the spindle is eccentrically mounted, a hand-lever for rotating the sleeve, a spring on the hand-lever for keeping the toothed wheel in engagement with the wire, a ratchet-wheel secured to the toothed-wheel spindle, a ratchet-lever loosely mounted on the spindle and provided with one or more pawls for engaging the ratchet-wheel, a cam and spring for vibrating the ratchet-lever and an adjustable stop for regulating the movement of the ratchet-lever.

3. In a machine for nailing boots or shoes, the herein-described means for feeding forward the work; same comprising a bell-crank lever provided with an adjustable spur, a bracket supporting the bell-crank lever, a slot in the bracket, a bolt which serves as a pivot for the bell-crank lever and passes through the said slot in the bracket, a spring and washer on the bolt, whereby the bell-crank lever is maintained in contact with the bracket; a pivoted lever for operating the bell-crank lever, a cam and spring for vibrating the said pivoted lever, a link for connecting the last-mentioned lever with the bell-crank lever, a pin on the bell-crank lever and a second slot in the bracket in which slot the said pin engages.

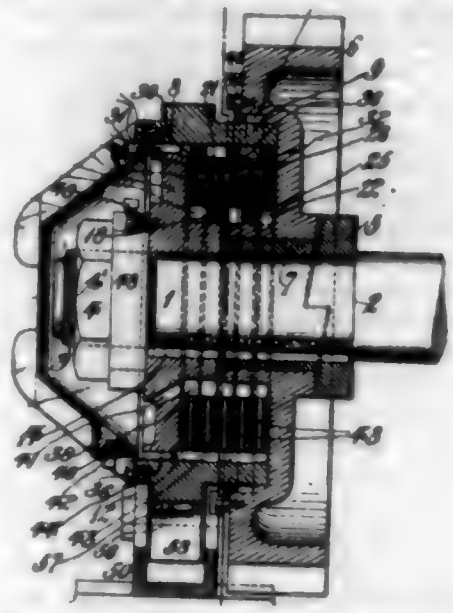
817,180. COOLING SYSTEM FOR BRAKING AND CLUTCH MECHANISMS. JOHN F. METTLER, Philadelphia, Pa. Filed Apr. 15, 1905. Serial No. 255,830.

Claim.—1. In a device of the character described, the combination of a braking device, a casing therefor and a wholly-confined centrifugally-actuated fluid-circulating, cooling system therefor.

2. In a device of the character described, a driving member, a driven member, means for containing a fluid wholly within the casing of said members, and metallic means for distributing the heat generated from the friction within the device.

3. In a device of the character described, the combination of a driving member, a driven member, a fluid-circulating cooling system contained wholly within the casing of said members and a metal radiating system.

4. In a hoist-brake, a driving member, a driven member, disks between said members, a casing supported in proximity to said members and a liquid contained wholly within said casing.



5. In a hoist-brake, the combination of a driving part, a driven part, intermediate friction-plates and fluid means confined wholly within the casing of said members for distributing the heat generated from the friction thereof.

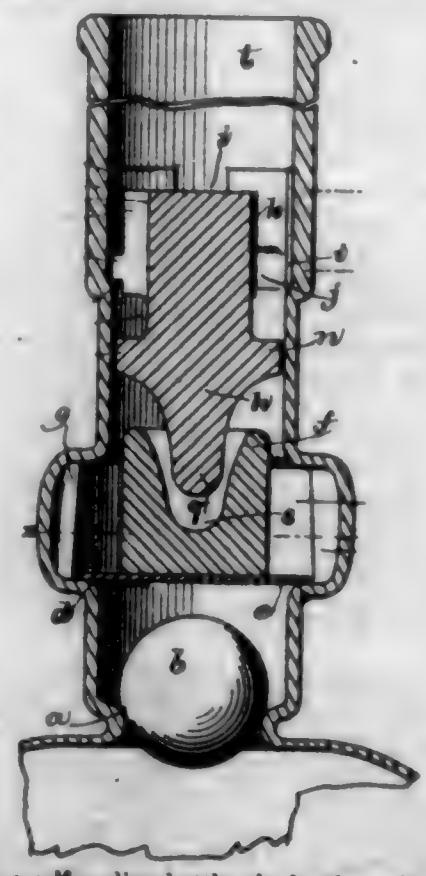
6. In a hoist-brake, a driving member, a driven member, plates intermediate said members, apertures in said plates and fluid means for distributing the heat arising from the friction of said plates.

7. In a device of the character described, a driving member, a driven member, an intermediate member transversely recessed, relatively movable plates attached to different members, and means for retaining a fluid within the device and maintaining access of said fluid to opposite ends of the transverse apertures.

8. In combination with a braking apparatus, a fluid-retaining casing secured to the ratchet-wheel thereof angularly-disposed vanes upon the surface of the casing with an opening therein between said vanes, and means for securing the casing to the apparatus.

9. The combination of a braking device, a plurrlity of plates therefor, a casing adapted to contain a cooling fluid, and means for causing by centrifugal action a constant radial flow of said fluid through each individual plate.

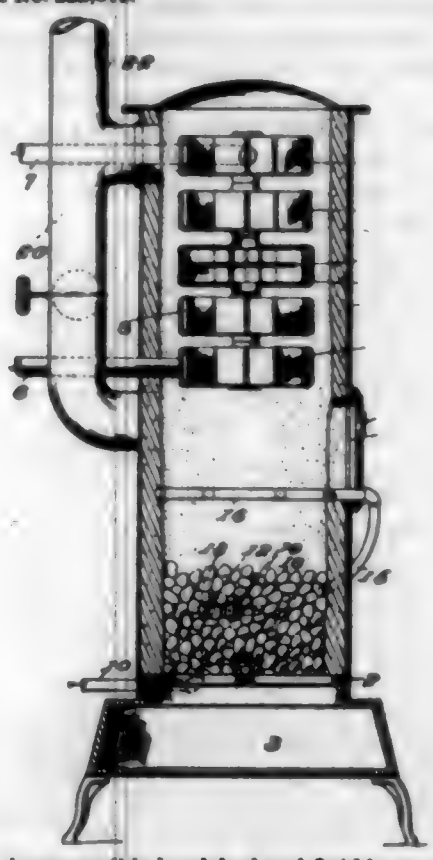
817,181. SELF-SEALING BOTTLE. WILLIAM A. MILLER, Boston, Mass. Filed May 4, 1905. Serial No. 258,868.



Claim.—In a self-sealing bottle, the bottle-neck, means within the bottle-neck permitting escape but preventing inflow of fluid to the bottle, and devices in the neck of the bottle constituting one mem-

ber of a bayonet-joint, combined with a plug in the neck of the bottle, teeth radiating from the plug toward the wall of the bottle-neck, lugs projecting from the teeth arranged to register with the devices in the bottle-neck completing the bayonet-joint, baffles radiating from the plug out of the plane of the teeth and spaced longitudinally between the teeth forming thereby irregular passages through the plug for the passage of liquor, substantially as described.

817,182. STOVE. FRANK D. MOORE, Trenton, N. J. Filed Aug. 25, 1904. Serial No. 222,079.



Claim.—1. A convertible hard-fuel and fluid burner comprising a stove-casing, a water-heater arranged at the top of said casing and consisting of a series of hollow Maltese-cross-shaped bodies internally provided with baffle-plates, said casing having a firing-opening and grate arranged beneath the water-heater and slideways mounted in proximity with said opening, a shutter carrying a burner and adapted to hang on said slideways, and a two-part gas connection whereof one part is attached to the stove and the other to the shutter, substantially as described.

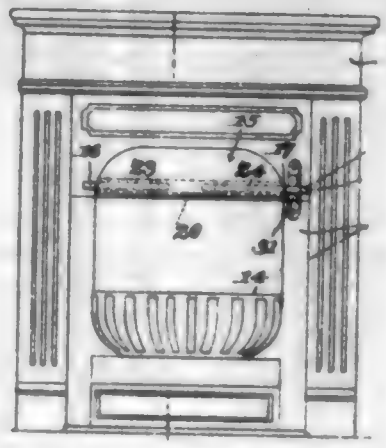
2. A stove provided in the upper part of its interior with a water-heater and in the lower part of its interior with a fuel-space, with a firing-opening arranged between the water-heater and fuel-space, slideways mounted in proximity with said firing-opening a shutter provided with a laterally-projecting gas-burner and arranged to hang in said slideways, and a two-part gas connection whereof one part is carried by the stove and the other by the shutter, substantially as described.

3. The combination of a stove provided with a grate and internally at its top with a water-heater and with an offtake, a dampered by-pass from below the water-heater to the offtake, a firing-opening arranged beneath the water-heater and above the grate-space, a shutter provided with a laterally-projecting gas-burner and shiftable with relation to the firing-opening, and a two-part gas connection whereof one part is carried by the stove and the other by the shutter, substantially as described.

817,183. DAMPER. JAMES R. MCCORD, Jackson, Ga. Filed May 8, 1905. Serial No. 259,486.

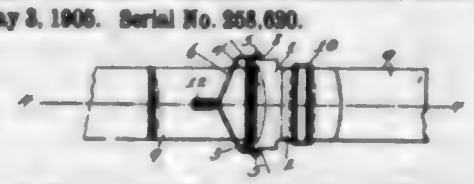
Claim.—1. In a fireplace-heater, a semicircular hood having alined bearings in its ends, sleeves rotative in said bearings and with stop-ribs on the inner ends bearing against the inner faces of the hood and with rectangular longitudinal apertures, a damper extending across the discharge-flue of said fireplace and provided with spaced keepers having rectangular apertures, rectangular pintles extending through the apertures in said sleeves and keepers, and an operating-handle attached to one of said pintles.

2. In a fireplace-heater, a semicircular hood having alined bearings in its ends, sleeves rotative in said bearings and with stop-ribs on the inner ends bearing against the inner faces of the hood and with rectangular longitudinal apertures, a damper extending across the discharge-flue of said fireplace and provided with spaced keepers having rectangular apertures and with spaced threaded apertures through the body of the damper, rectangular pintles extending through the apertures in said sleeves and in said keepers and provided with recesses for registering with said threaded apertures, stop-screws disposed in said threaded apertures and extending into the recesses in said pintles and an operating-handle upon one of said pintles.



3. In a fireplace-heater, a semicircular hood having alined bearings in its ends, sleeves rotative in said bearings and with stop-ribs on the inner ends bearing against the inner faces of the hood and with rectangular longitudinal apertures, a damper extending across the discharge-flue of said fireplace and provided with spaced keepers having rectangular apertures, rectangular pintles extending through the apertures in said sleeves and keepers, an operating-handle attached to one of said pintles and provided with a spring-actuated pawl, and a segmental frame attached to said fireplace and provided with ratchet-teeth in the path of said pawl.

817,184. BUCKLE. EDWARD A. MCMILLIN, North Adams, Mass. Filed May 3, 1905. Serial No. 258,690.



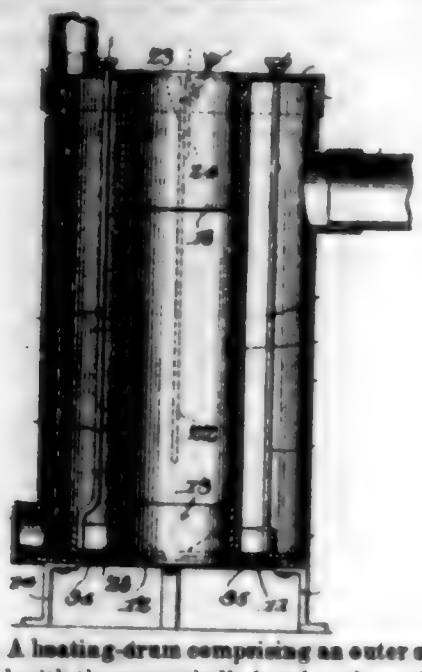
Claim.—1. In a buckle, the combination with a base-plate having on one end a hook and on the opposite end a resistance-bar, and on its sides oppositely-disposed journals respectively adjacent to the ends of the resistance-bar and provided with a strap-aperture located intermediately of the journals and adjacent to the resistance-bar between such bar and the hook; of a clamping-frame formed of an integral piece of wire comprising a clamping-bar and a pair of loops at opposite ends of said bar adapted to loosely embrace and turn upon said journals on the base-plate, substantially as described.

2. The combination with a buckle base-plate having oppositely-disposed journals, a strap-aperture located intermediately of the journals and a resistance-bar extending along one side of the plate from one journal to the other, adjacent to said strap-aperture, and a clamping-frame formed of an integral piece of wire comprising a clamping-bar, and a pair of loops at opposite ends of said clamping-bar adapted to loosely embrace and turn upon said trunnions; of a strap having one of its ends inserted beneath said resistance-bar through the strap-aperture in the base-plate around said clamping-bar and back through said aperture beneath said resistance-bar; and means for connecting the other end of said strap with said base-plate.

3. In a buckle, the combination with a base-plate formed of a single piece of sheet metal having on one end a hook and on the opposite end a resistance-bar and on its sides oppositely-disposed journals and provided with a strap-aperture located intermediately of and in line with the journals and between the resistance-bar and hook; of a clamping-frame comprising a clamping-bar and at opposite ends thereof a pair of loops adapted to loosely receive and turn upon said journals, substantially as described.

4. The combination with a buckle comprising a sheet-metal base-plate, 1, having the upturned edge flange, 3, journals, 5, 5, adjacent to such flange and hook, 2, and provided with a strap-aperture, 4, located intermediately of the journals, and the clamping-frame comprising the cross-bar, 7, loops, 8 8, loosely embracing the respective journals on the base-plate and an operating-handle 12; of a strap having one end provided with an eye adapted to engage said hook on the base-plate and having its other end passed beneath the base-plate and flange, 3, up through the strap-aperture around the clamping-bar, 7, and back through said aperture beneath said flange.

817,185. HEATING-DRUM. JAMES M. J. KANE, Maddock, N. D.
Filed Apr. 20, 1903. Serial No. 153,077.



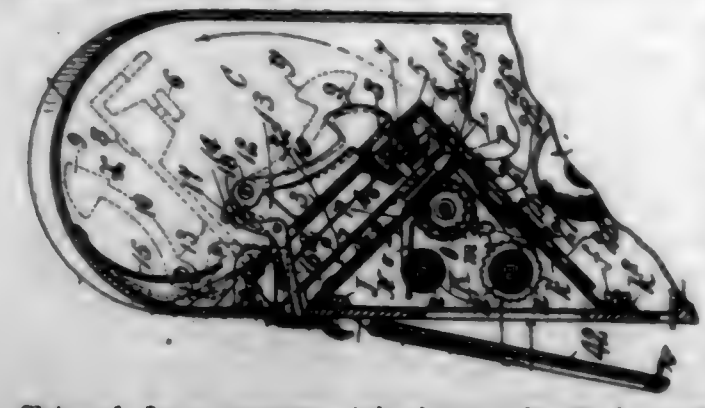
Claim.—1. A heating-drum comprising an outer and inner shell spaced apart and with the outer shell closed at the ends and with an intake-flue at one side and a discharge-flue at the other side of the outer shell near the top, deflector-wings within said outer shell and extending from the closed top downwardly, segmental scrapers disposed within said outer shell at opposite sides of said wings and normally upon the bottom of the shell, and rods connected to said scraper members and extending through the closed top of said outer shell.

2. A heating-drum comprising an outer and inner shell spaced apart and with the outer shell closed at the ends and with an intake-flue at one side and a discharge-flue at the other side of the outer shell near the top, deflector-wings within said outer shell and extending from the closed top downwardly, segmental scrapers disposed within said outer shell at opposite sides of said wings with their terminals bent downwardly, and rods connected to said scraper members and extending through the closed top of said outer shell.

3. A heating-drum comprising an outer and inner shell spaced apart and with the outer shell closed at the ends and with an intake-flue at one side and a discharge-flue at the other side of the outer shell near the top, deflector-wings within said outer shell and extending from the closed top downwardly, segmental scrapers disposed within and normally at the bottom of said outer shell at opposite sides of said wings, and rods connected to said scraper members and extending through the closed top of said outer shell and jointed intermediately.

4. A heating-drum comprising an outer and inner shell spaced apart and with the outer shell closed at the ends and with an intake-flue at one side and a discharge-flue at the other side of the outer shell near the top and with a "clean-out" flue leading through the wall of said outer shell at the bottom, deflector-wings within said outer shell and extending from the closed top downwardly, segmental scrapers disposed within and normally substantially at the bottom of said outer shell at opposite sides of said wings, rods connected to said wings and extending through said upper closure member with knobs upon the upper ends, the apertures for said rods being relatively large and covered by the knobs when the scraper members are not in use.

817,186. MAILING-BOX. GEORGE A. OWEN, Springfield, Mass.
Filed Jan. 20, 1905. Serial No. 242,021.



Claim.—1. In an apparatus of the character described, a mail-box having a slanting mailing-slot, and an outwardly-opening mailing-slot lid, a stationary mail-slideway on the inside of the mail-box, leading, downwardly inclined, from the mailing-slot, postmarking and canceling means on the slideway, a platen movable against and away from said slideway, and platen-operating mechanism in engagement with and actuated by the mailing-slot lid.

2. In an apparatus of the character described, a mail-box having a slanting mailing-slot, a mail-slideway on the inside of the box and stationary therein, downwardly leading from the mailing-slot, postmarking mechanism relatively to which the letters are guided by the slideway, and means exteriorly of the letter-box for actuating the postmarking mechanism.

3. In an apparatus of the character described, a mail-box having a slanting mailing-slot, and a slanting-mailing-slot lid, a mail-slideway on the inside of the mail-box, and stationary therein, leading, downwardly inclined, from the mailing-slot, postmarking and canceling means on the slideway, a platen, and platen-operating mechanism, actuated by the mailing-slot lid, and a letter-stop movable adjacent a lower portion of the slideway, and means for changing the positions of said stop.

4. In an apparatus of the character described, a mail-box having a mailing-slot extending diagonally across one side thereof, and having apertures therethrough, an externally-located lid downhanging over said slot, provided with upwardly and angularly extended hinge-arms projecting through said apertures, and pivotally supported within said box, a downwardly-inclined slideway within the letter-box, a swinging plate, operably engaged by the lid, a stop-plate arranged for a reciprocatory movement across the lower portion of the slideway, spring-pressed for its letter-intercepting position, and retired from such position by the swinging plate.

5. In an apparatus of the character described, a letter-box having a mailing-slot, a mailing-slot lid, a mail-slideway, postmarking characters on the slideway, a movable platen, and platen-operating mechanism comprising a swinging plate and gear connections between the swinging plate and the letter-box.

6. In an apparatus of the character described, a mail-box having a mailing-slot extending diagonally across one side thereof, and having apertures therethrough, a downhanging outside lid provided with upwardly and angularly extended hinge-arms projecting through said apertures, and pivotally supported within said box, a mail-slideway on the inside of the letter-box leading from the mailing-slot, postmarking and canceling means on the slideway, a platen and platen-operating mechanism mounted on a hinged plate above the slideway, said plate being pivotally supported adjacent the pivotal support of the said mailing-slot lid, and gear connection between said plate and said mailing-slot lid.

7. In an apparatus of the character described, a mail-box having a mailing-slot extending diagonally across one side thereof, a casing inside the mail-box removably attached thereto, a downwardly and inwardly inclined top or letter-slide portion formed in said casing, the upper edge portion of which is parallel with, and joined to, the lower edge of the letter-slot, a postmarking and stamp-canceling sign in relief on said letter-slide, and a dating-stamp wheel supported below said letter-slide, the upper edge of said dating-wheel extending up through an aperture in the postmark portion of said slide, an ink-ribbon passed over said postmarking, dating and canceling relief designs and the spools therefor, and pawl-and-ratchet devices for advancing the ribbon.

8. In an apparatus of the character described, a letter-box having a mailing-slot, a mailing-slot lid, the mail-slideway, postmarking means on the slideway, the swinging plate, gear connected with the lid, and having a platen supported thereon and movable independently thereof, a hammer for the platen, and means for causing a striking thereof on the return of the swinging plate.

9. In an apparatus of the character described, a mail-box, a casing in the mail-box, removably attached, and comprising as a part thereof a letter-slide, having a portion thereof adjoined to the letter-slot, stamp designs on the slide and a dating-wheel peripherally projecting through the slide, and means for operating the dating-wheel.

10. In an apparatus of the character described, a letter-box having a slot through the wall thereof, a letter-slide downwardly inclined from the slot, and having printing means, an externally-located lid for closing the mailing-slot, a swinging plate pivotally mounted within the letter-box, connected with, and to be actuated by, the lid, a platen carried by the swinging plate and movable relatively thereto, a hammer pivotally mounted on the swinging plate, a lever also pivotally mounted on the swinging plate and coöperating with the mailing-slot lid, and operable to engage and disengage the hammer on the movements of the swinging plate.

11. In an apparatus of the character described, the combination with a letter-box having a slot, a downwardly-inclined slideway, a

swinging plate pivotally mounted above the slideway, and gear connected with the lid, a platen carried by, and movable independently relatively to, the swinging plate, a hammer pivotally mounted on the swinging plate and having the hook 18 and the projected portion 14, a trigger or angular lever also pivotally connected with the swinging plate, having a hook-ended member coacting with the hammer-hook, and also coöperating with the lid.

12. In an apparatus of the character described, the combination with a letter-box having a slot, a downwardly-inclined slideway, a swinging plate pivotally mounted above the slideway, and gear connected with the lid, a platen carried by, and movable independently relatively to, the swinging plate, a hammer pivotally mounted on the swinging plate, and having the hook 18 and the projected portion 14, a trigger or angular lever also pivotally connected with the swinging plate, having a hook-ended member coacting with the hammer-hook, and also coöperating with the lid, and the spring-abutment 15 located in the path of movement of the hammer projection 14, and constituting a yielding resistance against the movement thereof.

13. In an apparatus of the character described, a mailing-box having a mailing-slot, an externally-located lid therefor, an internally-located downwardlly-inclined slideway having postmarking characters thereon, the stop-plate movable across the lower end of the slideway, and having a spring for forcing it to its position across the slideway, the swinging plate gear-connected with the mail-slot lid, and carrying a platen and adapted to engage for retiring the said stop-plate from its letter-intercepting position, and platen-actuating mechanism

14. In an apparatus of the character described, a letter-box having a mailing-slotway, a lid externally located for covering said slot, a slideway for letters, stationary, and located within the letter-box, downwardly inclined from the slot, postmarking and canceling mechanism combined in, and coacting with, the slideway, and in engagement with and actuated by said lid, a hinged door through the wall of the letter-box to permit the withdrawal of the mailed and postmarked matter therefrom, having an internally-located lock-catch 63, a suitable lock provided in the letter-box wall, and operable, through the manipulation of its key, to engage and disengage the lock-catch 63.

15. In an apparatus of the character described, a letter-box having a letter-mailing compartment, and a bulk-mailing compartment, and having mail-withdrawal openings through the side of the box and one above the other, hinged doors for the respective mail-withdrawal openings having inward extensions, a single link, vertically arranged between, and pivotally connected to, said door extensions, and one of each doors having a lock-catch, and the letter-box wall having a lock fitted therein and engaging the said lock-catch, substantially as and for the purposes set forth.

16. In an apparatus of the character described, a letter-box having a mailing-slot, an externally-located lid therefor, and having an opening for the withdrawal of the mailed and postmarked matter and a door for said opening, having a lock therefor, a normally open electric circuit, having a generator therein the connections of which are located within the mail-box, a push-button for closing said circuit located within the box and accessible only as the aforesaid door is unlocked, and an electrically-actuated signaling or alarm device, connected in the circuit.

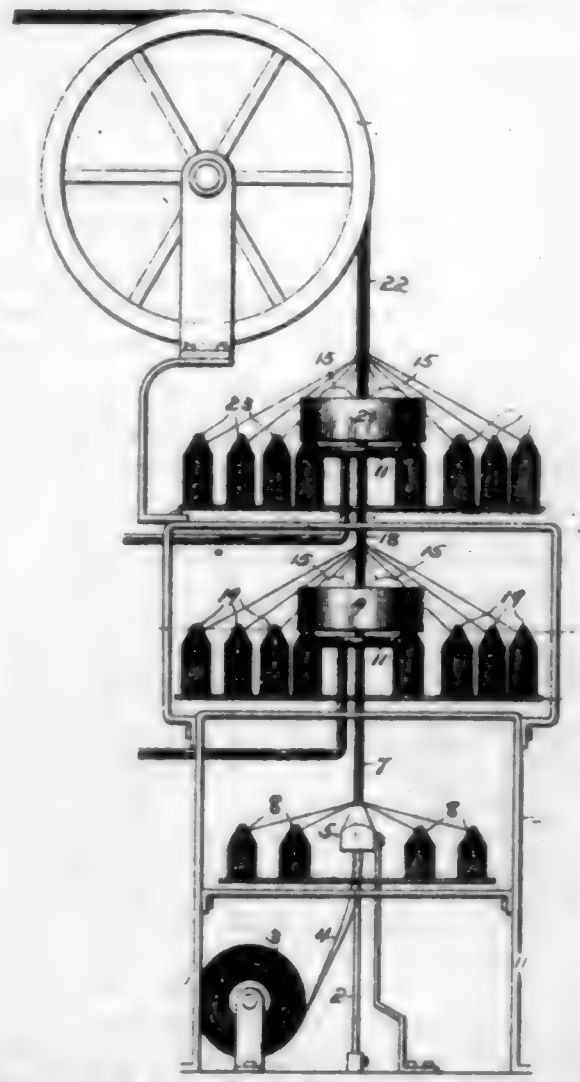
17. In an apparatus of the character described, the combination with a letter-box having in its front a mailing-slot, an opening K′ thereunder, and the door 60 for the withdrawal of mailed and postmarked matter from the letter-box, a casing K located within the letter-box having an inclined top plate *k* which constitutes a letter-slideway, postmarking character-imprinting means on the slideway, a dating-wheel supported by said casing and peripherally projecting through said plate *k*, the ribbon-spools and ribbon, arranged as shown, in the casing, a platen and platen-operating means controlled by the mailing-slot lid, a hinge-plate overlying the said front opening K′, and having a spring-latch 43 adapted to engage through an aperture in the letter-box wall, the internally-located catch-ledge 44, and a suitable lock securing the door closed, and permitting, by the manipulation thereof, the opening of said door for the withdrawal of the mail and also enabling the disengagement of the spring-latch 43, whereby said closing-plate for the front opening may be swung away to disclose, and give access to, the mechanism mounted within said casing K.

18. In an apparatus of the character described, a letter-box having a letter-mailing compartment, with a mailing-slot, and postmarking mechanism therein, and having a bulk-mail compartment H provided with a mailing-opening 50, and having above the said opening the ribs 56, 57, an intermediate groove, having at the bottom of the mailing-opening the downwardly-inclined ledge 51 and the lid 53, hinged at its bottom to the letter-box wall, having near its upper edge portion the longitudinal groove 55 matching with the rib 56, and provided with the inwardly-extending counterweighted arm, substantially as described and shown.

19. In an apparatus of the character described, the combination with the letter-box having a slanting mailing-slot and an internal hook-shaped rib J thereunder, of a casing having the rib *i* to engage said rib J, and having the depending portion *k*³ disposed against the inner side of the letter-box wall, and the thumb-screws fastening therefor, together with postmarking mechanism supported by the said casing, and bodily removable, with the same, from the letter-box.

817,187. APPARATUS FOR MAKING FIBROUS CONDUITS.

WILLIAM G. PALMER, executor of Stephen Palmer, deceased, and MARCUS M. WATERMAN, Troy, N. Y., assignors of one-half to Marcus M. Waterman, one-fifth to James K. P. Pine, one-tenth to George W. Daw, one-tenth to James J. Child, and one-tenth to Herbert E. Northrup, Troy, N. Y. Filed May 19, 1905. Serial No. 261,211.



Claim.—1. In an apparatus of the character described, the combination of a longitudinally grooved or serrated mandrel, a former constructed to bring the longitudinal edges of a tape together around said mandrel to form a tube, means for feeding the tube so formed longitudinally of the mandrel, means in the former to prevent turning or twisting of the tube, and means for applying layers or coatings of braiding and pitch to the tube as it is fed along the mandrel.

2. In an apparatus of the character described, the combination of means for forming a tube and feeding it longitudinally, of a pitch-pot through which the tube is passed, and wheels in said pot having their peripheries against the tube and turned by the movement of the tube to supply pitch thereto.

3. In an apparatus of the character described, the combination with means for forming a tube and feeding it longitudinally, of a pitch-pot through which the tube is fed, means for heating the pitch in said pot, and toothed wheels in said pot engaging the tube to apply a coating of hot pitch thereto.

4. In an apparatus of the character described, the combination with means for forming a tube and feeding it longitudinally, of a pitch-pot having a central opening through which the tube is passed, a steam-chamber in the bottom of said pot, a series of brackets supported in grooves in the pot, wheels having concave and toothed peripheries supported by said brackets and engaging the tubes and

springs connecting the brackets and holding the wheels in engagement with the tube.

5. In an apparatus of the character described, the combination with a vertical mandrel and means for forming a tape around the mandrel, of means for braiding the tape on the mandrel and means for elevating pitch from a receptacle and depositing it on the braided tube, substantially as set forth.

6. In an apparatus of the character described, the combination with a mandrel, of a former provided with a guide whereby the edges of the strip are guided and the strip is formed into a tube which is restrained against rotary movement, substantially as set forth.

7. In an apparatus of the character described, the combination with a mandrel, and means for forming a tape around the mandrel, of a pitch-pot and wheels mounted on yielding bearings for feeding or applying pitch to the tube, substantially as set forth.

817,188. PROCESS OF MAKING ACETYLENE CHLORID. HEINRICH PRECHT, Neustassfurt, Germany. Filed May 22, 1905. Serial No. 261,063.

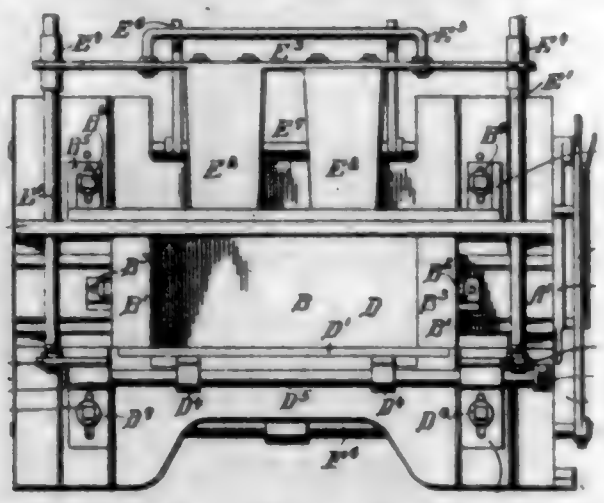
Claim.—1. The process of chlorinating acetylene, which consists in reacting upon a mixture of chlorid of sulfur and a contact substance with acetylene, substantially as described.

2. The process of chlorinating acetylene, which consists in reacting upon a mixture of chlorid of sulfur and finely-divided iron, with acetylene, substantially as described.

3. The process of chlorinating acetylene, which consists in reacting upon a mixture of chlorid of sulfur and a contact substance with acetylene at a temperature sufficient to produce the chlorid required, substantially as described.

4. The process of chlorinating acetylene, which consists in reacting upon a mixture of chlorid of sulfur and a contact substance alternately with acetylene and chlorin, substantially as described.

817,189. CONVERTIBLE MOLDING-MACHINE. ELMO H. REED, Wichita, Kans. Filed July 12, 1905. Serial No. 269,396.



Claim.—1. In a block-molding machine, the combination with a fixed frame, of a core, a mold having sides and a bottom plate, the bottom plate and one of the sides being tiltable together and away from the remaining side, means for adjusting the tiltable bottom and side laterally relative to said core, means for laterally adjusting the remaining side relative to said core, end plates for the mold, and means for adjusting said end plates toward and from said core, whereby the relative position of the core to the walls of the mold may be maintained in molding blocks of different sizes.

2. In a block-molding machine, the combination with a fixed frame, of a mold having a tilting side and bottom plate, a relatively fixed side, a sliding core adapted to pass through an aperture in the non-tiltable side wall and to extend to the opposite side, means for shifting said core towards and from said tiltable side wall, means for adjusting the tiltable bottom and side laterally relative to said core, means for adjusting the remaining side wall laterally relative to said core, end plates for the mold, and means for adjusting said plates toward and from said core, whereby the relative position of the core to the walls of the mold may be maintained in blocks of different sizes.

3. In a device of the class described, a mold-box having an apertured side wall and insertible members adapted to enter said apertures, supporting-rods for said members at opposite ends of the machine, a bar carrying said members and slidably mounted upon said rods, a rock-shaft and operating-handle, a slotted arm carried by said rock-shaft to engage a member carried by said bar, an outwardly-swinging bottom and side wall to said mold, a rock-shaft for said swinging walls, an operating-handle carried by said rock-shaft, means for adjusting said side walls toward and from each other, and insertible slotted molding-walls extending above said side and end walls of the mold.

4. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, and a vertically-adjustable follow-board disposed in said mold.

5. In a device of the character described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, and an operating-lever carried by said rock-shaft.

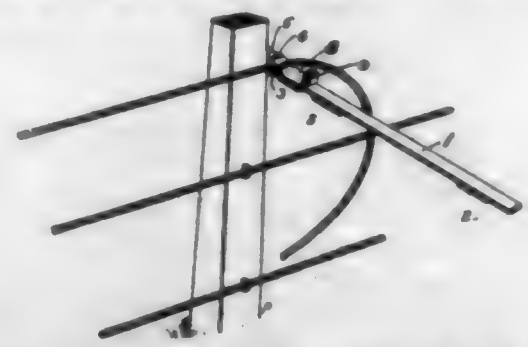
6. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, an operating-lever carried by said rock-shaft, a telescoping rod extending within said stem, and an adjustable set-collar carried by said rod for retaining the stem in adjusted position.

7. In a device of the class described, a mold-box comprising side walls adjustable toward and from each other, insertible molding-walls extending above the top of said side walls and there provided with a series of slots, division-plates connected together and disposed in said slots, a vertically-adjustable follow-board disposed in said mold, a depending stem from said follow-board, a rock-shaft provided with an arm, a pivoted link extending between said arm and stem, an operating-lever carried by said rock-shaft, a latch carried by said operating-lever and engaging projections extending from the end of the machine to coöperate with said lever.

8. In a device of the class described, a mold-box comprising opposite end walls, a rock-shaft extending at one side thereof, a bottom and side wall pivotally mounted upon said rock-shaft, bearings for said rock-shaft provided with upwardly-extending standards, supporting-rods beyond the ends of the box and mounted in said standards, an insertible member carried by said rods, and an opposite side wall of the box.

9. In a device of the class described, a mold-box comprising opposite end walls, a rock-shaft extending at one side thereof, a bottom and side wall pivotally mounted upon said rock-shaft, bearings for said rock-shaft provided with upwardly-extending standards, supporting-rods beyond the ends of the box and mounted in said standards, an opposite side wall of the box having apertures through which said rods extend, and a carrier-bar slidably mounted upon said rods and carrying insertible members adapted to pass within the mold-box.

817,190. WIRE-STRETCHER. GEORGE W. RIKER, Russell, Iowa. Filed Nov. 4, 1905. Serial No. 285,808.



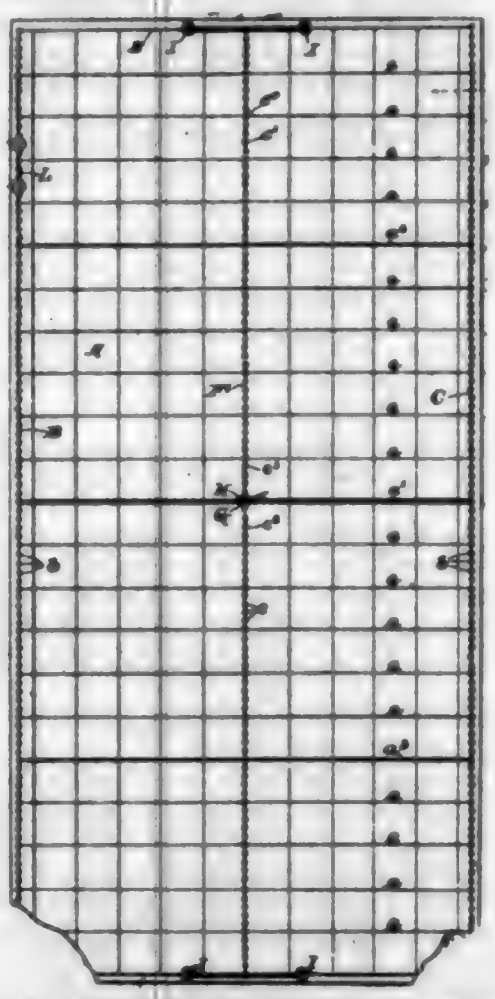
Claim.—1. A wire-stretcher, consisting of a bar provided at its end with a transverse rib portion and an arm or jaw portion, and a second coacting gripping or jaw portion slidably mounted thereon.

2. A wire-stretcher, consisting of a bar provided at its ends with a transverse portion and an arm or jaw portion, and a second coacting gripping or jaw portion slidably mounted thereon, and provided with a similarly-shaped transverse rib portion adapted to form a recess between it and the said rib portion of said first-mentioned arm for the reception of the wire to grip the same.

3. In a wire-stretcher, the combination with a bar provided at its end with a transverse rib portion; of a second coacting portion slidably mounted thereon, and provided with a transverse rib portion adapted to grip the wire.

4. In a wire-stretcher, the combination with a bar provided at its end with a transverse rib portion, and an arm or jaw portion; of a second coacting gripping arm or jaw portion slidably mounted thereon and provided with a similarly-shaped transverse rib portion adapted to form a recess between the rib portions of said jaws for the reception of the wire.

817,191. FOOT-BALL CARD GAME. LEONARD G. ROBINSON, New York, N. Y. Filed Apr. 20, 1905. Serial No. 256,630.



Claim.—1. A foot-ball-game apparatus, comprising a diagram laid out to represent a foot-ball field, a miniature foot-ball, means for detachably locating the ball in any part of said field, a single pack of cards having printed thereon the different modes or means for putting the ball in play, a signal-card containing scrimmage plays, and signals for said plays with corresponding signals on the cards of the pack, for the purpose set forth.

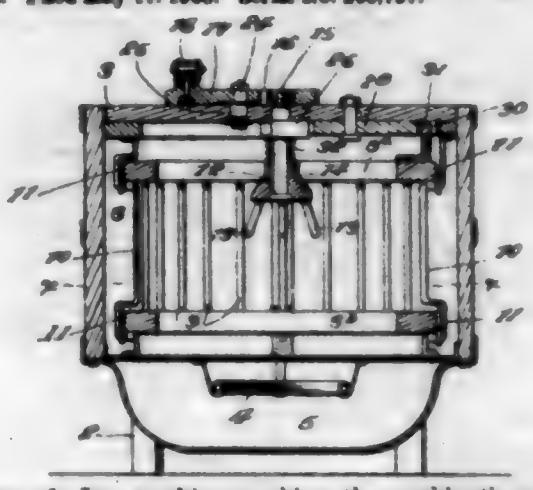
2. In a foot-ball-game apparatus, a diagram representing a gridiron or foot-ball field, a movable miniature foot-ball detachably located thereon, a signal-card, a pack of cards adapted to be divided between opposing forces of persons representing opposing teams, each card containing five modes of putting the ball in play, each mode being divided into its offensive and defensive results, said cards adapted to be promiscuously distributed among the players and to be played at any stage of the game when called for by the signal-card, for the purpose set forth.

3. In a foot-ball game, a diagram representing a gridiron or foot-ball field, a miniature foot-ball adapted to be moved over said field and be detachably located thereon, a pack of team-cards adapted to be divided between two opposing forces or persons representing opposing teams, said cards divided into suits, a signal-card having printed thereon a number of plays or modes of attack, signals connected with each of said plays or modes of attack, the suits of the team-cards having corresponding signals thereon, for the purpose set forth.

4. In an apparatus for a game of foot-ball, a pack of team-cards adapted to be divided between two opposing forces or persons representing opposing teams, each card containing five plays or modes of putting the ball in play, viz: "kick-off," "punt," "goal after touchdown," "goal from field" and "rushing," around each of these plays being grouped the possible results of said plays, both offensive and defensive, for the purpose set forth.

5. A foot-ball-game apparatus comprising a signal-card having a plurality of signals thereon and a single pack of playing-cards having corresponding signals divided into as many suits as there are signals on the signal-card, for the purpose set forth.

817,192. WASHING-MACHINE. CHARLES L. ROCK, Fall River, Kans. Filed May 17, 1905. Serial No. 260,797.



Claim.—1. In a washing-machine, the combination of a washing-receptacle, an outer rubber arranged in said receptacle, guide means supporting said rubber, a shaft passing through the top of the receptacle, a rubber mounted upon said shaft and arranged in the first-mentioned rubber, a lever pivoted to the top of the receptacle and operably connected at one end with the shaft aforesaid, the opposite end of said lever being connected with the outer rubber, and means for actuating the shaft.

2. In a washing-machine, the combination of a washing-receptacle, an outer rubber arranged in said receptacle and comprising upper and lower frames or rims, guide means supporting said rubber, a shaft passing through the top of the receptacle, a rubber mounted upon said shaft and arranged in the first-mentioned rubber, a lever pivoted at a point between its ends to the top of the receptacle, an eccentric carried by the shaft aforesaid and operably connected at one end with the lever, the opposite end of the lever being connected with the outer rubber, and means for actuating the shaft.

3. In a washing-machine, the combination of a washing-receptacle, an outer rubber arranged in said receptacle and comprising upper and lower frames or rims, guide means supporting said rubber, a shaft passing through the top of the receptacle, a rubber mounted upon said shaft and arranged in the first-mentioned rubber, a lever pivoted at a point between its ends to the under side of the receptacle and having one of its ends bifurcated, an eccentric carried by the shaft aforesaid and operating between the bifurcate portions of the lever, and an extension projected from the outer rubber and connected with the opposite end of the lever for actuation thereby.

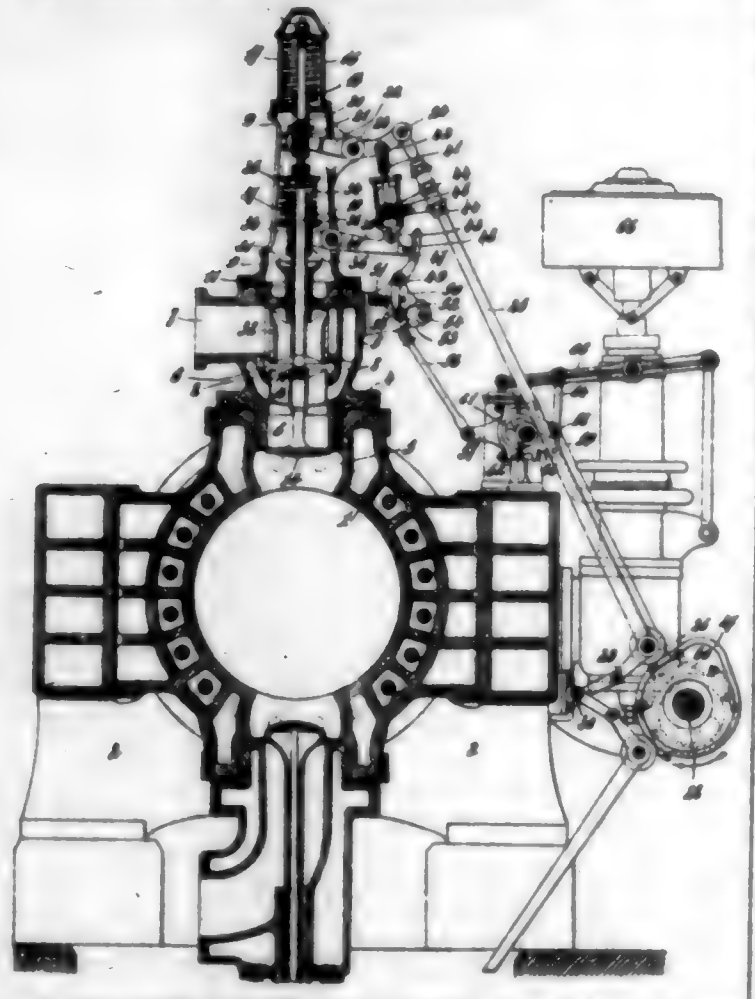
4. In a washing-machine, the combination of the receptacle 1, the rubber 8 located therein and comprising the upper and lower frames 8^a and 8^b, the guide-bars 10 arranged in the receptacle 1 and having the portions 11 receiving the frames 8^a and 8^b as specified the shaft 14, the vertically-movable rubber carried thereby, the eccentric 26, the spring 32 interposed between the eccentric 26 and the vertically-movable rubber, the lever 28 connected at one end with the eccentric 26, the extension 31 connected with the opposite end of the lever, and means for actuating the shaft 14.

817,193. SUPPLY-CONTROLLING MECHANISM FOR GAS-ENGINES. FRÉDÉRIC K. DE LA SAULX, Seraing, near Liege, Belgium. Filed May 17, 1904. Serial No. 208,424.

Claim.—1. In a supply-controlling mechanism for gas-engines the combination with the cylinder, of an inlet-opening in said cylinder, a mixture-inlet valve closing said inlet-opening, an air-supply valve rigidly connected to the mixture-inlet valve, a gas-valve arranged concentrically with the mixture-inlet valve, a governor, means for controlling the moment of opening of the gas-valve by the governor and a connection between the gas-valve and the mixture-inlet valve so as to limit the amount of opening of the gas-valve according to the amount of opening of the mixture-inlet valve, substantially as described and for the purpose set forth.

2. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve closing said inlet-opening, an air-supply valve rigidly connected to the mixture-inlet valve, a gas-valve arranged concentrically with the mixture-inlet valve, a governor, means for controlling the moment of opening of the gas-valve by the governor.

and a device connecting the gas-valve and the mixture-inlet valve in such a manner that the said valves may be opened independently and closed simultaneously the amount of opening of the gas-valve being limited by the amount of opening of the mixture-inlet valve, substantially as described and for the purpose set forth.



3. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve closing said inlet-opening, a rod carrying said mixture-inlet valve, an air-supply valve mounted on said rod, a swing-lever actuating the rod, means for oscillating the said swing-lever, a spring holding normally the valve in its closed position, a gas-valve, a spring adapted to move said gas-valve rod downward when the mixture-inlet valve is moved downward, a swing-lever acting on the gas-valve rod, a governor, means acted upon by the governor and acting on the said swing-lever to prevent the downward movement of the gas-valve when the mixture-inlet valve is moved downward and a connection between the two swing-levers whereby the mixture-inlet valve and the gas-valve may be opened separately and independently but are closed simultaneously when the mixture-inlet valve closes, substantially as described and for the purpose set forth.

4. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve closing said inlet-opening, a rod carrying said mixture-inlet valve, an air-supply valve mounted on said rod, a swing-lever actuating the mixture-valve rod, a spring holding normally the mixture-inlet valve in its closed position, means acting on the swing-lever and adapted to open the mixture-inlet valve, a gas-valve arranged concentrically with the mixture-inlet valve, a hollow rod through which passes the rod of the mixture-inlet valve, a spring acting on said hollow rod and adapted to be compressed when the mixture-inlet-valve rod is moved downward, a second swing-lever acting on the said hollow rod, a hook adapted to hold the second swing-lever in a given position, a governor, a transmitting device between the governor and the hook to disengage the hook from the swing-lever under the action of the governor, a rod pivoted to the swing-lever actuating the mixture-inlet valve, a piston carried by the said rod and a dash-pot cylinder pivoted on the swing-lever actuating the gas-valve substantially as described and for the purpose set forth.

5. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve closing said opening, an air-supply valve moved simultaneously with the mixture-inlet valve, a gas-valve adapted to be opened independently but closed simultaneously with the mixture-inlet valve, means whereby the amount of opening of the gas-valve is limited by the amount of opening of the mixture-inlet valve, actuating means for the mixture-inlet valve, a governor and means controlled by the governor for varying the moment of opening of the gas-valve substantially as described and for the purpose set forth.

6. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve, closing said opening, an air-supply valve moved simultaneously with the mixture-inlet valve, a gas-valve adapted to be opened independently but closed simultaneously with the mixture-inlet valve, means whereby the amount of opening of the gas-valve is limited by the amount of opening of the mixture-inlet valve, means actuating the mixture-inlet valve so as to hold said valve in its open position during the whole of the suction-stroke, a transmitting device acting on the gas-valve to open said valve at a given moment of the suction-stroke, a governor and means controlled by said governor and acting on the said transmitting device in order to cause the opening of the gas-valve to take place sooner or later according to the action of the governor, substantially as described and for the purpose set forth.

7. In a supply-controlling mechanism for gas-engines, the combination with the cylinder of an inlet-opening in said cylinder, a mixture-inlet valve closing said inlet-opening, an air-supply valve moved simultaneously with the mixture-inlet valve, a gas-valve adapted to be opened independently but closed simultaneously with the mixture-inlet valve, means whereby the amount of opening of the gas-valve is controlled by the amount of opening of the mixture-inlet valve, a swing-lever acting on the gas-valve to hold said valve upon its seat, a hook adapted to engage with the said swing-lever, a cam acting on the said hook to disengage the same from the swing-lever, a shaft carrying the said cam, a lever adapted to partially rotate the cam-shaft, a rod connected at one end to the said lever, a swing-lever connected to the said rod, means actuating the swing-lever, an eccentric on which the said swing-lever is mounted, a governor and means controlled by the governor, to vary the position of the eccentric so as to cause a variation in the position of the center of oscillation of the swing-lever, substantially as described and for the purpose set forth.

817,194. INSECTICIDE. ADELHEID SCHULZ, New York, N. Y. Filed Oct. 3, 1905. Serial No. 281,136.

Claim.—1. An improved insecticide and germicide compound, containing borax, talcum and sesquicarbonate of ammonia, substantially and for the purpose as specified.

2. An improved insecticide and germicide compound, containing one part borax, one part talcum and two parts sesquicarbonate of ammonia, substantially and for the purpose as specified.

817,195. HAND-STAMP. LOUIS K. SCOFFORD, Chicago, Ill., assignor to Independent Manufacturing Company, Muskegon, Mich., a Corporation of Illinois. Filed Nov. 2, 1905. Serial No. 285,569.



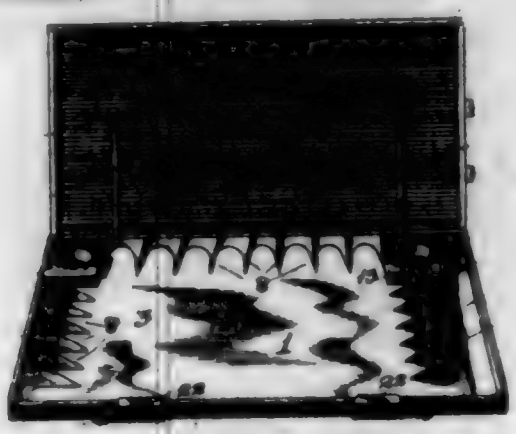
Claim.—1. In a hand-stamp, the combination of a frame formed in two parts, a type-base or bridge supported therein, screws for adjusting said type-base or bridge located in line with the division between the two parts of said frame, and a hard plate interposed between said screws and said frame and covering the dividing-line between the parts thereof, whereby the screws are prevented from sinking into the soft-metal frames or passing between the two parts of the frames and prying them apart, substantially as described.

2. In a hand-stamp, the combination of a frame formed of two parts, a type-base or bridge supported within said frame and having a recess or depression therein, screws for adjusting said type-base or bridge located in line with the division between the two parts of said frame, a hard-metal spring-plate having a portion fitting within the recess or depression in said bridge and connected to the bridge and having its ends interposed between said screws and said frame and covering the dividing-line between the parts thereof, whereby the screws are prevented from sinking into the soft-metal frames or passing between the two parts of the frames and prying them apart, substantially as described.

817,196. ARTIST'S PALETTE. DRA C. SMITH, Mexico, Mo., assignor of one-half to Charles A. Buckner, Mexico, Mo. Filed Mar. 24, 1905. Serial No. 251,732.

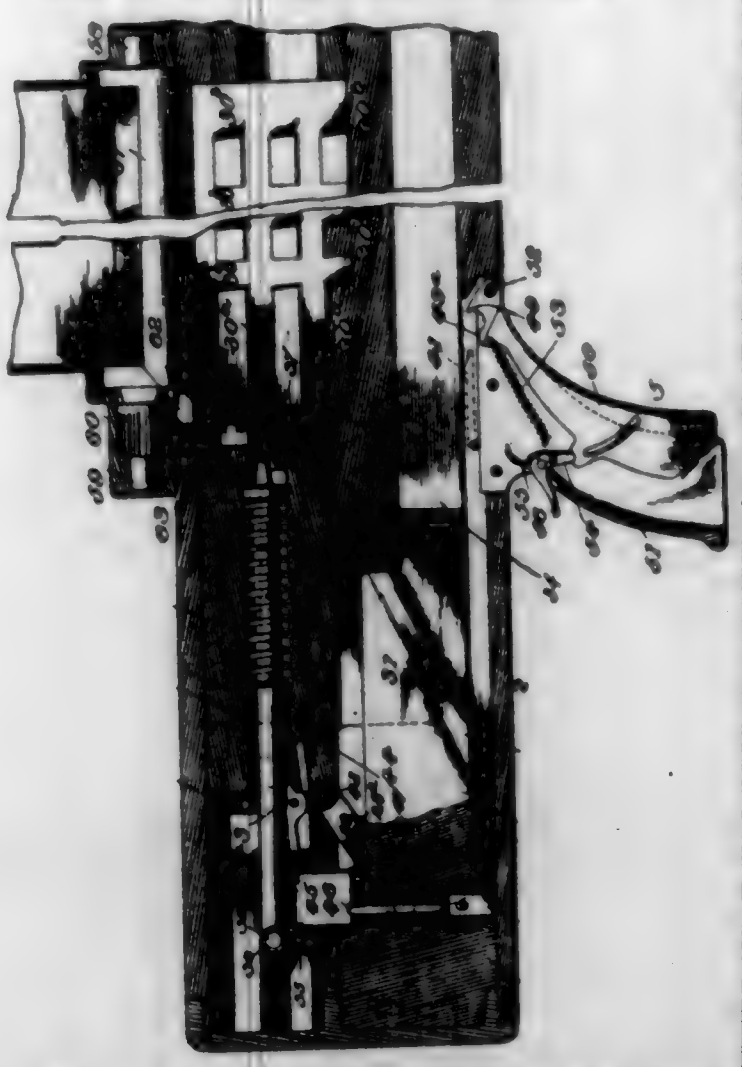
Claim.—1. A palette provided in its center with an open space

for the mixing of pigments and provided along its edge with a series of compartments open toward the center and closed at the sides for the reception of the pigments prior to their mixture, and a removable cover provided with a bracket for the support of studies, substantially as described.



2. A palette provided in its center with an open space for the mixing of pigments and provided along the edge with a series of compartments open toward the center and closed at its sides for the reception of the pigments prior to their mixture, a removable cover provided with a supporting device for holding studies, and further provided with a supporting-brace for holding the cover in a substantially upright position as an easel, substantially as described.

817,197. GAS-OPERATED MACHINE-GUN. MORRIS F. SMITH, Philadelphia, Pa. Filed Feb. 21, 1903. Serial No. 144,547.



Claim.—1. In a gas-operated machine-gun, a cylinder containing a piston which actuates working mechanism in the gun, and having communication with the barrel through a plurality of gas-transmitting apertures arranged one in advance of another longitudinally of the gun and increasing in number toward the muzzle, whereby the admission of gas is graduated.

2. In a gas-operated machine-gun, a pressure-cylinder into which gas is introduced from the gun to perform work, having communication with the barrel through a plurality of circumferential series of openings or apertures.

3. In a gas-operated machine-gun, a cylinder in which gas is admitted for the performance of work, having communication with the barrel through a plurality of circumferential series of apertures arranged one series in advance of the other, and with the apertures in the several series increasing in number toward the forward end of the gun.

4. In a gas-operated machine-gun, a cylinder communicating with the barrel of the gun, and receiving gas-pressure therefrom to perform work; such communication being effected through a longitudinal series of apertures, and the cylinder being provided with a lining having corresponding apertures but movable longitudinally to regulate the opening of the apertures from the gun.

5. In a gas-operated machine-gun, a cylinder containing a piston having connections for actuating gun mechanism, ports through which the gas is delivered to said cylinder from the barrel of the gun, a lining in said cylinder formed with ports circumferentially distant from the ports leading from the gun-barrel, and circumferential grooves affording communication between the ports in the lining and those leading from the gun-barrel.

6. In a gas-operated machine-gun, a cylinder containing a piston operated by gas-pressure to perform work; said cylinder communicating with the gun-barrel through suitable ports and having arranged therein a longitudinally-adjustable lining formed with circumferential grooves corresponding to the ports, and openings through the lining connecting the grooves with the interior of the cylinder.

7. In a gas-operated machine-gun, a cylinder containing a piston, communicating with the barrel of the gun to receive gas-pressure therefrom to perform work; such communication being through the medium of forwardly-inclined apertures in the gun-barrel, rearwardly-inclined circumferential channels surrounding the gun-barrel, into which said apertures discharge, and ports leading from said channels to the cylinder.

8. In a gas-operated machine-gun, the combination of the gun-barrel, having forwardly-inclined apertures for the escape of gas, rearwardly-inclined circumferential channels with which said apertures communicate, and a surrounding sleeve or jacket closing said channels; a spacing-block having ports communicating with said channels, and a cylinder containing a piston operative under gas-pressure, communicating with said ports.

9. In a machine-gun, the combination with the breech-bolt having a yoke, with cam-grooves therein, and a reciprocating bar having cams working in said grooves; the cams being substantially coextensive with the grooves, whereby the breech-bolt is prevented from tipping relatively to the bar.

10. In a machine-gun, the combination of the reciprocating and transversely-moving breech-bolt having locking means symmetrically disposed on opposite sides thereof, and having a yoke projecting in an intermediate position from said breech-bolt, with cam-grooves in the yoke, and a reciprocating bar having cams engaging in the cam-grooves and coextensive therewith transversely and longitudinally of the grooves.

11. In a gun, the combination with a breech-bolt, a drive-bar and a cam connection between the bolt and the bar causing them to move toward and from one another transversely to cause a locking of the breech-bolt in closed position, of means carried by the drive-bar and engaging the breech-bolt after their relative movement to unlock the breech-bolt, to form a positive connection between the drive-bar and the breech-bolt upon the return movement of the breech-bolt and prevent a wedging action of said parts in the gun-frame.

12. In a machine-gun, the combination of a breech-bolt having longitudinal movements and transverse movements toward and from the path of the longitudinal movements; a reciprocating bar; a cam connection between said bar and said breech-bolt for imparting transverse movements to and from the same by relative movement of said bar; a shoulder or abutment on said bar for imparting movement to the breech-bolt after completion of transverse movement of the bolt in one direction; and means imparting longitudinal movement to the breech-bolt in the other direction independently of the cam action.

13. In a machine-gun, the combination of the breech-bolt provided with a firing-pin and having longitudinal movements and transverse movements toward and from the path of the longitudinal movements, a reciprocating bar having a horn through which said firing-pin projects for the purpose specified, a cam connection between said bar and the breech-bolt imparting to same transverse movements to and from the bar by opposite movements of the bar relatively to the breech-bolt, a shoulder or abutment carried by said bar adapted to engage said bolt upon completion of its transverse movement in one direction, and a yielding or releasing means imparting movement to the breech-bolt independently of the cam and in a longitudinal direction as the bar moves longitudinally in the opposite direction.

14. In a machine-gun, the combination of the breech-bolt adapted to move longitudinally in opposite directions, a reciprocating bar provided with a cam connection with said breech-bolt for imparting transverse movements thereto, to and from the bar, and a releasable dog carried by said bar for imparting longitudinal movement to the breech-bolt independently of the cam action.

15. In a machine-gun, the combination of the breech-bolt capable of longitudinal movements and transverse movements to and from the path of the longitudinal movements, a reciprocating bar, a cam connection between the bar and the block through which transverse movement is imparted to said breech-bolt, a releasable dog carried by the reciprocating bar for imparting longitudinal movement to the breech-bolt in one direction, and a tripping means for said dog.

16. In a machine-gun of the character described, the combination of the breech-bolt capable of longitudinal and transverse movements and having a firing-pin, a reciprocating bar having connection with said breech-bolt for moving same, and a horn on said bar having an opening through which the firing-pin projects and engaged by said firing-pin for the purpose set forth.

17. In a machine-gun, the combination of the breech-bolt having transverse and longitudinal movements, a reciprocating bar imparting movement to the breech-bolt, and having a horn with an opening therein elongated in the direction of the transverse movement of the breech-bolt and the firing-pin in said breech-bolt projecting through said opening and engaging with the horn.

18. In a machine-gun, the combination of the breech-bolt having the firing-pin and a sear, a reciprocating bar adapted to move said breech-bolt and provided with a horn through which the firing-pin projects for the purpose specified, a push-rod adapted to engage said sear, and means for controlling said push-rod.

19. In a machine-gun, the combination of a breech-bolt, having a firing-pin, and a sear, a reciprocating bar adapted to move said bolt and provided with a horn for engaging said firing-pin as specified, and a push-pin mounted on a part with which the bolt has relative movement and in a position which brings it in controlling relation to the sear, as said breech-bolt arrives in locked position.

20. In a machine-gun, the combination of a breech-bolt having a firing-pin, and a sear mounted thereon, a push-pin also mounted on a moving part and moving into controlling relation with the sear as the parts approach firing position, and means for moving said push-pin brought into controlling relation therewith as the parts reach said firing position.

21. In a machine-gun the combination of a breech-bolt and a firing-pin and a sear, a reciprocating bar for moving said breech-bolt and provided with means for setting the firing-pin, a push-pin for said sear mounted on a moving part and brought into controlling relation therewith as the breech-bolt reaches its dropped position, and a trigger device controlling said push-pin.

22. In a machine-gun, the combination of a breech-bolt reciprocating in the gun, and carrying a firing-pin and a controlling-sear, a push-pin controlling said sear, and also mounted on a reciprocating part, and a device in the path of said push-pin causing it to release the sear as the breech-bolt reaches its locked position.

23. In a machine-gun, the combination of a reciprocating breech-bolt, a reciprocating bar controlling the movement of said breech-bolt, a firing-pin and sear mounted on the breech-bolt, a push-pin mounted on the reciprocating bar, and brought into controlling relation with the sear by the movement of said bar, and means for causing the push-pin to release the sear.

24. In a gun, the combination with the breech-block and a drive-bar for operating the breech-block movable relatively to the same, of a firing-hammer carried by the breech-bolt, a sear for the hammer carried by the breech-bolt, a trigger mounted on the frame, and means carried by the drive-bar forming a connection between the trigger and the sear.

25. In a gun, the combination with the breech-block and a drive-bar movable relatively to one another to unlock the breech-block, of a firing-hammer carried by the breech-block, a sear also carried by the breech-block, a trigger for the sear, and means carried by the drive-bar forming a connection between the sear and the trigger and moved out of connection with the sear on the relative movement of the drive-bar and the breech-block.

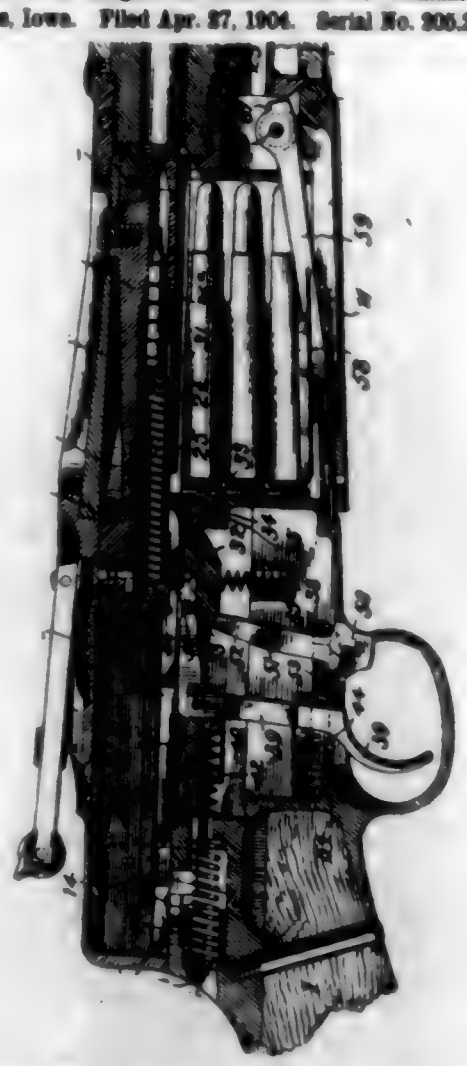
26. In a gun, the combination with the breech-block and an automatically-operated part movable relatively to one another, of a hammer carried by the block, a sear for the hammer carried by the breech-block, a trigger mounted on the frame for operating the sear when the breech-block is in closed position, and means carried by the automatically-operated part for connecting the trigger with the sear, said means being moved with the automatically-moving part out of connection with the trigger when the breech is opened.

27. In a gun, the combination with the breech-block and a drive-bar, movable relatively to one another to unlock the block, of a hammer carried by the breech-block, a sear for the hammer also carried by the breech-block, a trigger mounted on the frame in a position to operate the sear when the breech-block is in closed position, and means carried by the drive-rod acting as a connector between the sear and the trigger when the breech is in closed position and moved with the drive-bar out of connection with the sear and with the trigger when the drive-bar is moved to open the breech.

28. In a gun the combination with the breech-bolt, the firing-hammer, the sear, a sear-tripping means and a reciprocating part setting the firing-hammer and moving the sear-tripping means, of a trigger having two movements, one of which causes the operation of the sear through the tripping means on separate pulls of the trigger only, and the other of which causes the tripping of the sear through the tripping means on every return of the parts to firing position.

29. In a gun, the combination with the firing-hammer, the sear, a trigger, and a sear-tripping means, of a part movable to set the firing-pin and move the sear-tripping means, and a stop for the trigger in one position permitting the trigger to operate the sear through the tripping means on separate pulls of the trigger only and in another position to permit the trigger to move to a position so as to actuate the sear through the tripping means on every return of the parts to firing position.

817,198. **GAS-OPERATED FIREARM.** MORRIS F. SMITH, Philadelphia, Pa., assignor of three-fourths to William D. Condit, Des Moines, Iowa. Filed Apr. 27, 1904. Serial No. 205,226.



Claim.—1. In a gas-operated firearm, the combination with the magazine, a breech-bolt movable toward and from the breech across the magazine, and a gas-operated drive-rod, of hand-operated means normally out of engagement with the breech-bolt and adapted to be thrown into connection with the breech-bolt to move it, and means for limiting the rearward movement of the breech-bolt to prevent a feed from the magazine but to permit a hand-feed into the breech.

2. In a magazine-firearm, the combination with the magazine, the breech-bolt, and means for moving the bolt, of a stop movable to one position to prevent a feed from the magazine and to another position to hold the breech open.

3. In a gun, the combination with the breech-bolt, of an oscillatory and sliding retracting-bar, and a pin through which the breech-bolt is moved by the bar, eccentrically pivoted on said retracting-bar and movable into and out of controlling relation with said bolt on the oscillation of the retracting-bar.

4. In a gun, the combination with the breech-bolt, and the magazine, of an oscillatory and sliding retracting-bar, a stop and a pin through which the breech-bolt is moved by the bar, eccentrically mounted on said retracting-bar and movable into and out of controlling relation with said bolt on the oscillation of the retracting-bar, said stop movable to a position to permit a feed from the magazine and to a position to limit the rearward movement of the breech-bolt to prevent a feed from the magazine.

5. In a gun, the combination with the breech-bolt, of an oscillatory and sliding retracting-bar, and a pin through which the breech-bolt is moved by the bar, eccentrically mounted on said retracting-bar and movable into and out of controlling relation with said bolt on the oscillation of the retracting-bar, and means engaging the retracting-bar to hold the breech open.

6. In a gun, the combination with the breech-bolt, of an oscillatory and sliding retracting-bar, a pin through which the breech-bolt is moved by the bar, eccentrically mounted on said retracting-bar and movable into and out of controlling relation with said bolt on the oscillation of the retracting-bar, and a stop movable to a position to limit the sliding movement of the retracting-bar and to another position to engage the bar to hold the breech open.

7. In a gun, the combination with the magazine, and the breech-bolt, of hand-operated means normally out of connection with the breech-bolt but adapted for connection with the same, and means movable to one position to engage the hand-operated means and limit its rearward movement to prevent a feed from the magazine and to another position to permit the feed.

8. In a gun, the combination with the magazine and the breech-bolt, of hand-operated means normally out of connection with the breech-bolt but adapted for connection with the same, and means movable to and from a position to limit the rearward movement of the hand-operated means, said means being movable to another position to engage the hand-operated means and hold the breech open.

9. The combination of the breech-bolt provided with slots on opposite sides, a firing-pin, a locking-bar fulcrumed on the forward portion of said bolt and its rear end forming the locking-abutment, wings extending downwardly on opposite sides of the breech-bolt, provided with cam-slots, and a bifurcated connecting-rod, each member of which carries a stud which engages in one of the cam-slots to control the locking-bar, and a stud which enters one of the slots on the side of the bolt and engages the firing-pin.

10. The combination with the receiver and the breech-bolt having guide-faces guided between upper and lower tracks in the receiver; of a locking-bar fulcrumed on the forward portion of the breech-bolt, fitted in a recess in said breech-bolt and having its rear end movable upward out of said recess and into engagement with an offset in the receiver when the breech-bolt is in its closed position; and wings on the locking-bar extending downward on opposite sides of the breech-bolt and forming guide-faces which aline with the guide-faces of the breech-bolt to maintain the alinement of the locking-bar with the breech-bolt.

11. In combination with the breech-bolt, the firing-pin mounted therein and the projecting-spring for the firing-pin; of a bushing secured on the breech-bolt forming the rear abutment for the spring, and having a limited movement in the breech-bolt and an abutment on the frame with which the bushing contacts near the end of the movement of the breech-bolt to cushion the latter at its rearward limit.

12. In combination with the breech-bolt, the firing-pin mounted therein and the projecting-spring for the firing-pin; of a bushing secuerd on the breech-bolt by a slot-and-pin connection forming the rear abutment for the spring, and having a limited movement in the breech-bolt, and an abutment on the gun with which the bushing contacts near the end of the movement of the breech-bolt, to cushion said bolt.

13. In combination with the firing-pin, and means for cocking the same; a sear having a bifurcated forward end introduced longitudinally into suitable bearings and a pin engaging in rear of the sear holding it in its bearings.

14. The combination of the breech-bolt having a firing-pin and an extractor, an ejector-post, and a sear formed with a bifurcated forward end seated in bearings on opposite sides of the ejector-post.

15. In an automatic gun actuated by firing, the combination with the breech-bolt having a firing-pin, the sear, the trigger, and a sliding block in which the trigger is mounted, projecting into the path of a part moved by the firing of the gun.

16. In an automatic gun actuated by firing, the combination of the breech-bolt, the operating-rod for reciprocating the breech-bolt, the sear, the trigger, and a movable block in which the trigger is mounted, having lateral projections in the path of the operating-rod.

17. In combination with the breech-bolt, a bifurcated operating-rod for reciprocating it, consisting of the cross-head, the side members fitted by dovetailed sockets to the cross-head, and the taper pin passing through the side members and the cross-head.

18. In combination with the breech-bolt, a bifurcated operating-rod for reciprocating it, consisting of the cross-head, the side members fitted by dovetailed sockets to the cross-head, and the taper pin passing through the side members and the cross-head and the piston-rod screwed into the cross-head and having a taper end seated in the taper pin.

19. The combination of a breech-bolt provided with locking means movable to and from the breech and having cam-slots disposed on opposite sides thereof, and a bifurcated connecting-rod each member of which is located on one side of the breech-bolt and carries an inwardly-extending stud engaging in one of the cam-slots to cause the locking and unlocking of the breech-bolt when the rod is moved.

20. The combination with the breech-bolt, of a locking-dog carried thereby and provided with cam-slots on opposite sides thereof, and a bifurcated connecting-rod each member being located on one side of the breech-bolt and having an inwardly-extending stud engaging in one of the cam-slots to cause the locking and unlocking of the breech-bolt.

21. The combination of the breech-bolt movable to and from the breech to close it and having cam-slots disposed on opposite sides thereof, the forward portions of the slots being of low pitch, and the end portions being recessed to provide a shoulder; and a bifurcated connecting-rod having each member located on one side of the breech-bolt and engaging in the forward portion of the slot to lock and unlock the bolt, and in the recess behind the shoulder to move the bolt longitudinally.

22. In combination with the gun-barrel and the gas-chamber longitudinally slidable therefrom, the spring-pressed catch carried by the front end of said gas-chamber and movable transversely of the barrel into and out of a seat on the barrel.

817,199. DOOR-FRAME. SAMUEL P. STEVENSON, Chester, Pa. Filed Sept. 20, 1901. Serial No. 76,718.



Claim.—1. A new and useful article of manufacture and sale consisting of a door-frame having jambs connected at the lower ends by one or more bars adapted to be embedded in a concrete floor for the purpose of bracing said jambs to each other and securing the frame in buildings suitable for air-tight and refrigerating storage as set forth.

2. A new and useful article of manufacture and sale consisting of a door-frame having jambs connected at the lower ends by one or more bars and a door suspended in said frame, the lower edge of said door being arranged at a substantial distance above said bar or bars whereby a free space is left below the lower edge of the door to permit the formation of a concrete threshold of substantial thickness above said bars.

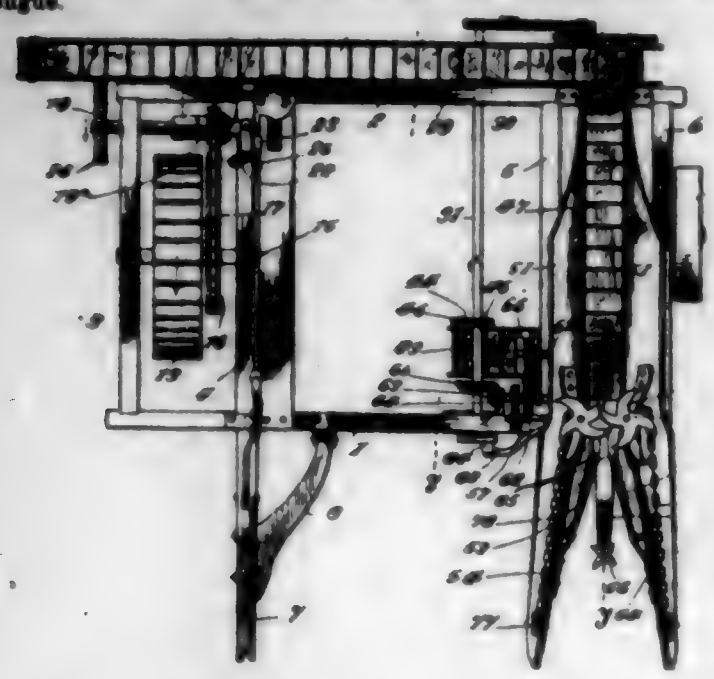
817,200. CORN-HARVESTING MACHINE. CHARLES E. STORM, Trowbridge, Ill. Filed Apr. 12, 1905. Serial No. 255,191.

Claim.—1. In a corn-harvester, the combination of side guards for directing the stalks to the husking mechanism, guide-rollers arranged at the inner end of the space formed between said guards, and brackets attached to said guards and supporting the forward ends of the guide-rollers and each having a portion inclined forward toward its guard to prevent lodging of the stalks upon the front ends of the guide-rollers.

2. In a corn-harvester and in combination with the husking and ear-detaching mechanisms, side guards, and a tongue arranged between said side guards and adapted to have a yielding vertical movement.

3. In a corn-harvester and in combination with the husking and

ear-detaching mechanisms, side guards, a tongue arranged between said side guards, and a star-wheel mounted upon the front end of said tongue to direct the stalks into the space formed at either side of said tongue.

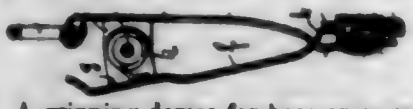


4. In a corn-harvester and in combination with the husking mechanism and means for directing the stalks thereto, a cutting mechanism comprising a fixed plate having fingers extended forward therefrom and curved in their length from a horizontal plane and a reciprocating cutter having teeth conforming to and coöperating with the said forward-extended and longitudinally-curved fingers.

5. In a corn-harvester, the combination of means for stripping the ears from the stalks, spaced side guards for directing the stalks to said ear-stripping means, and a tongue arranged between the said side guards and adapted to have a yielding vertical movement.

6. In a corn-harvester, the combination of husking and ear-detaching mechanisms, the latter including a stripper element, side guards, a transverse shaft 57 having a crank portion between its ends connected to the said stripper element, other shafts 71 and 73 arranged at an angle and geared to each other, the shaft 71 being geared to the shaft 57, reels attached to the shafts 71, and toothed chains coöperating with the guards and deriving motion from the shafts 73.

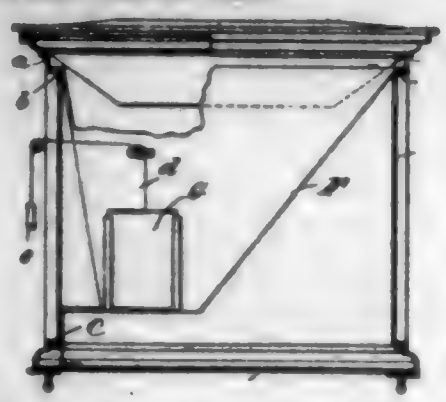
817,201. **HOSE-SUPPORTER.** MOSES M. STURM and JOSEPH SILVERSTEIN, New York, N. Y. Filed Dec. 31, 1905. Serial No. 293,730.



Claim.—1. A gripping device for hose or garment supporters, comprising a slotted or cut-out base member, the lower portion of which is curved outward, a loop at the upper end thereof for its attachment to the elastic, a flattened jaw at its lower end, a second member pivoted to the said base member, and curved rearward to pass through the slot of the base member, a recess in the jaw of said second member, a rubber knob fitted in the said recess, indentations in the edges of the latter, clasps projecting from the edges of the said jaw and bent over the back of the knob, both the indentations and clasps serving to engage the knob and secure it in its position, a recessed bend or offset at the lower end of the said second member forming a jaw of a corresponding shape as that of the base member, a spring between the two members tending to press them away from and their jaws against each other, substantially and for the purpose as specified.

2. A gripping device for hose-supporters or the like comprising a recessed or slotted base member and a second member pivoted to the latter, the lower portion of the second member projecting rearward through the base member, the lower extremities of both members being flattened to form jaws, and recessed, a rubber knob in the recessed jaw of the upper member, said knob projecting forward through the recess of the jaw of the base member and having a flange covering the entire back of the jaw in which it is fitted, indentations in the recess and clasps projecting from the edges of the jaw holding the knob, both, the indentations and clasps serving to secure the knob in position, and a central rearward projection or cushion at the back of the knob, substantially and for the purpose as specified.

817,202. **KITCHEN-CABINET.** CARL G. SWAHN, New York, N. Y. Filed Apr. 14, 1905. Serial No. 255,504.



Claim.—1. In a kitchen-cabinet having a door in front, the combination with the casing of an interior removable coal-pocket provided with a sliding door, and means for operating the sliding door from the exterior, substantially as and for the purposes explained.

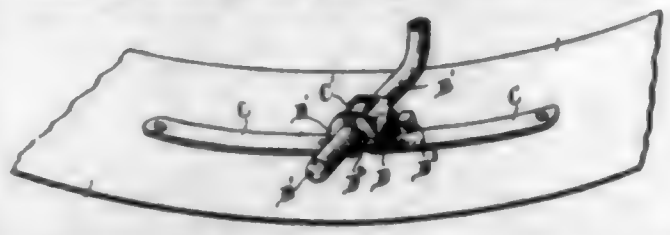
2. In a kitchen-cabinet, the combination with the casing, of a removable coal-pocket and a removable dish or utensil receptacle located in the upper end of said pocket, and the cabinet-cover, substantially as and for the purposes set forth.

3. In a kitchen-cabinet, the combination with the casing having the doors, of an interior removable coal-pocket provided with a sliding door, the front and end walls of the pocket being inclined and the pocket serving to divide the interior of the cabinet into separate compartments for coal and wood, substantially as and for the purposes set forth.

4. In a kitchen-cabinet, the combination with the casing having the doors, of an interior removable coal-pocket having an inclined front wall and a sliding door mounted in said wall, and a plate extending from the front wall of the coal-pocket to the front wall of the cabinet for receiving the coal as it passes from the coal-pocket, substantially as and for the purposes set forth.

5. The herein-described kitchen-cabinet, the same being composed of the vertical walls having doors, a removable top, the upper portion of the cabinet being supplied with ledges to receive flanges on the tops of the interior removable vessels or receptacles, and the interior vessels arranged to be supported on the ledges, the parts being combined and arranged substantially as shown and for the purposes set forth.

817,203. **MUD-GUARD FASTENING.** BERT E. THOMPSON, Detroit, Mich., assignor to The Wilson & Hayes Mfg. Co., Detroit, Mich. Filed Oct. 17, 1904. Serial No. 228,688.



Claim.—1. The combination with a mud-guard, of a bracket having an end extending across the guard, a loop secured to the guard and embracing the end of the bracket, and a bifurcated clamp embracing the loop and provided with openings to receive said end.

2. The combination with a mud-guard, of a bracket having an end extending transversely of the guard, a strap extending longitudinally of the guard and secured thereto and provided with a loop intermediate its ends to receive and embrace the end of the bracket, a clamp having ears embracing the loop, said ears being provided with openings to receive said bracket end, and a set-screw extending through the screw-threaded opening in the clamp between said ears to engage the loop.

817,204. **FASTENER FOR FENDERS.** BERT E. THOMPSON, Detroit, Mich., assignor to Hayes Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed July 22, 1905. Serial No. 270,290.



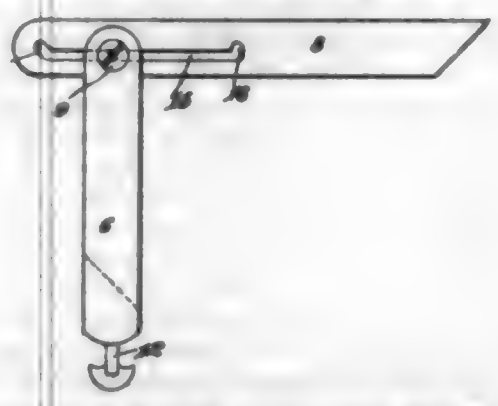
Claim.—1. The combination with a fender and an arm to support the same, of a fastener comprising a socket lying flat against said fender and split longitudinally on one side, lugs projecting from the edges of the split side of said socket, bolts extending through said fender and said lugs and adapted to clamp the socket securely on said arm when the engaged end of said arm is parallel to the fender, and a projecting plate on said socket adapted to be secured to said fender.

2. The combination with a fender and an arm to support the same, of a longitudinally-split metal socket adapted to receive the end of said arm and lying flat against the fender, pairs of lugs projecting from the edges of the split side of the socket, a plate projecting from said socket and adapted to be secured to the fender, and bolts passing through said lugs and adapted to secure the fastener, arm and fender together.

3. The combination with a fender, of an arm to support the same, a fastener to secure the fender on said arm and comprising a U-shaped socket lying flat against the fender, a plate whereby said socket may be secured to said fender, bolts to clamp the socket onto the arm, and a stiffening device secured to the fender and fitting over said plate, said plate being provided with a slot to permit adjustment.

4. The combination of a fender, of a fastening device comprising a plate secured flat against the fender, said plate having an extension bent upward and back parallel to the plate to form a U-shaped socket, a supporting-arm for the fender adapted to rest within the socket, and bolts passing through the fender, plate and projecting extension of the plate and adapted to secure the fender, arm and fastener together.

817,205. **MEASURING INSTRUMENT.** FRANK L. TRAUT, New Britain, Conn. Filed Oct. 31, 1904. Serial No. 230,632.

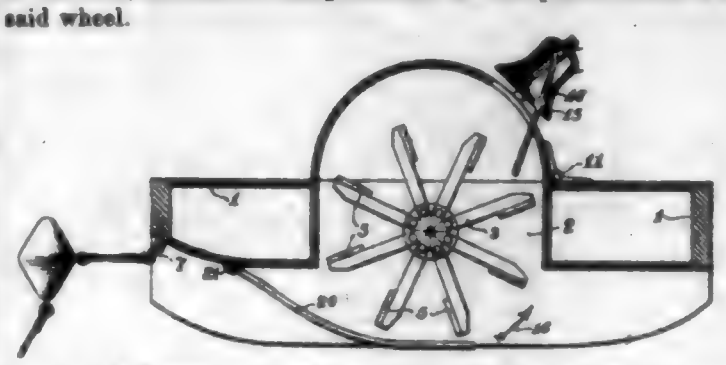


Claim.—1. In a device of the character specified the combination with a stock, of a blade, having parallel edges, and provided with a slot nearer one of its edges than the other and parallel with one of said edges, said slot being offset at both of its terminals, the offsetting of one terminal being substantially at right angles and the other substantially oblique to the longitudinal axis of said blade, a screw carried by the stock and traversing said slot for causing the stock to bear against the blade and thereby lock the latter in any given position with respect to the stock, means for actuating the screw, said slot permitting the edge of said blade to be relatively adjusted with respect to the stock extremity both within and without the boundaries of said extremity.

2. In a device of the character specified, the combination of a blade and stock of substantially equal width, the blade having parallel edges and provided with a slot parallel with one of said edges and nearer to said edge than to the other, a screw carried by the stock and occupying a position in the central longitudinal line thereof and traversing said slot for clamping the blade and stock in positions of relative adjustment, said blade also having a slot offset inwardly of the blade from said parallel slot for said screw to traverse for permitting lateral shifting of the blade and positioning the same with the axis of the screw in the longitudinal central line of the blade for permitting said longitudinal central lines to meet at the axis of said screw and for permitting the edge of said blade to be relatively adjusted with respect to the stock extremity both within and without the boundaries of said extremity.

817,206. **BELL-BUOY.** THOMAS WEBER, Egg Harbor City, N. J. Filed May 6, 1905. Serial No. 259,127.

Claim.—1. A bell buoy comprising an air chamber or reservoir, the said air chamber or reservoir having a passageway for the water extending therethrough, a rotatable wheel mounted on the said air chamber or reservoir, which wheel projects into the said passageway, whereby rotation of the said wheel is occasioned by the action of the water of the flowing tide passing through the said passageway, rods secured at one end of the said passage way and extending longitudinally thereof underneath the said wheel, a bell mounted upon the said air chamber or reservoir, a rod pivotally mounted within the said bell and having an enlargement thereon intermediate its ends, the said rod being extended into the path of travel of the said wheel.



2. A bell buoy comprising a boat-shaped air chamber or reservoir, the said air chamber or reservoir having a passageway extending from end to end of the bottom portion of the said air chamber or reservoir, and the said air chamber or reservoir being provided with a transverse vertical opening extending therethrough, a rotatable wheel mounted in the said transverse opening, the said wheel projecting into the longitudinal passageway, rods secured at one end of the said passageway and extending underneath the said wheel, a bell supported upon the said air chamber or reservoir, and means interposed between the said rotatable wheel and the said bell to occasion the ringing of the latter.

817,207. **CAMERA-SUPPORT.** HAROLD L. WHEELER, Buffalo, N. Y. Filed Oct. 19, 1905. Serial No. 283,371.



Claim.—1. In a camera-support, a belt adapted to be worn about the waist of the user, a plate slidably mounted on said belt, a brace composed of rods telescopically arranged, and having a pivotal connection with said plate, a coupling comprising a universal joint, secured to said brace, means for attaching a camera to said coupling, an adjustable sling adapted to be worn about the shoulders of the user, and means for loosely connecting said sling with said coupling.

2. In a camera-support, a belt adapted to be worn about the waist of the user, a plate adjustably mounted on said belt, an extensible brace pivoted on said plate, and means for removably connecting a camera with said brace.

3. In a camera-support, in combination with a belt, a plate adjustable on the belt, a brace pivotally connected with said plate, a coupling connected with said brace, and means for removably attaching a camera to said coupling.

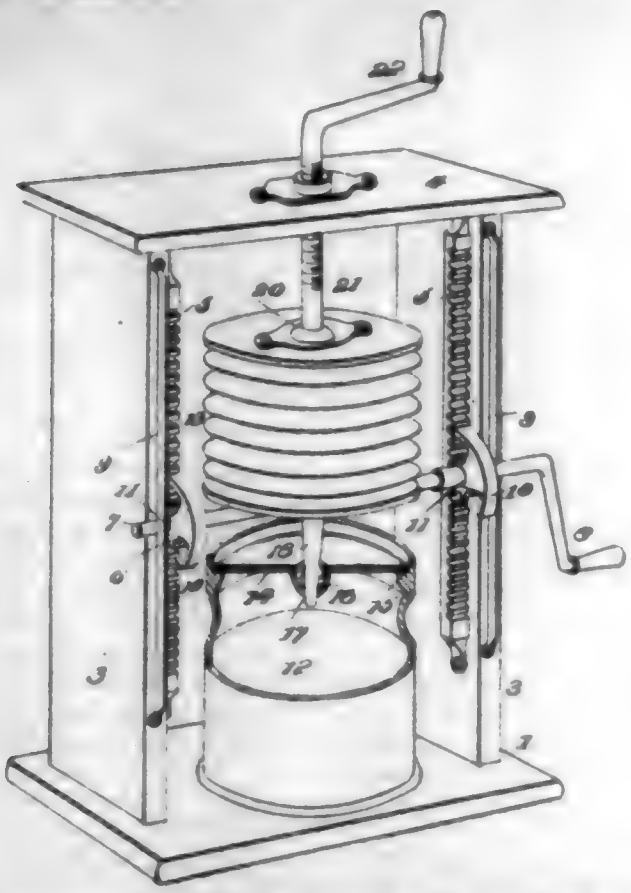
817,208. **PRESERVING APPARATUS.** THOMAS WIDDOP, Encetree, Wyo. Filed June 27, 1905. Serial No. 267,267.

Claim.—1. In means of the character described, the combination of a support, a movable exhaust-tube arranged in said support, a shaft operably connected with the tube for raising and lowering the same, air-suction means connected with the tube, and means for locking the tube to prevent movement thereof while exhausting therethrough.

2. In means of the character described, the combination of a support, a vertically-movable exhaust-tube arranged in said support, a shaft operably connected with the tube to raise and lower the same, rack-and-pinion devices coacting with the shaft, and air-suction means connected with the tube.

3. In means of the character described, the combination of a

support embodying a supporting-frame, rack-bars mounted in said frame, a shaft, pinions carried by the shaft and engaging the rack-bars, means for turning the shaft, an exhaust-tube operably connected with the shaft for actuation thereby, and air-suction means connected with said tube.



4. In means of the character described, the combination of a support embodying a supporting-frame, rack-bars mounted in said frame, a shaft, pinions carried by the shaft and engaging the rack-bars, means for turning the shaft, an exhaust-tube operably connected with the shaft for actuation thereby, bellows connected with the exhaust-tube to create a suction therethrough, and a screw mounted in the frame of the support for actuating the bellows.

5. In means of the character described, the combination of a support embodying a supporting-frame, rack-bars mounted in said frame, a shaft, pinions carried by the shaft and engaging the rack-bars, means for turning the shaft, an exhaust-tube operably connected with the shaft for actuation thereby, bellows connected with the exhaust-tube to create a suction therethrough, a screw mounted in the frame of the support for actuating the bellows, guide-bars mounted upon the frame of the support to hold the shaft aforesaid in proper relative position with regard to the rack-bars, and pawls pivotally mounted upon the shaft and coacting with the rack-bars to hold the shaft at a predetermined adjustment.

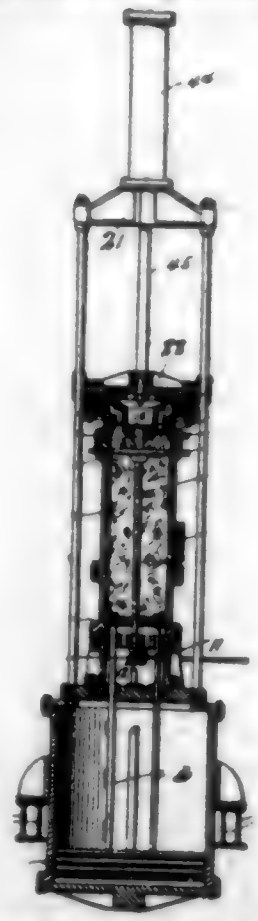
817,209. MACHINE FOR MAKING PIPES. Harry A. Williams, Akron, Ohio, assignor, by direct and mesne assignments, of three-twelfths to Samuel J. Cole and two-twelfths to David A. Messner, both of Akron, Ohio. Filed Feb. 24, 1904. Renewed Apr. 21, 1905. Serial No. 256,709.

Claim.—1. A clay-receptacle, a plunger therein, a piston connected to said plunger and located in a steam-cylinder; an expansible die and former movable relative to the clay cylinder or receptacle, said die consisting of segments of a cylinder located within a ring, a rack on the ring, and a gear engaging therewith to rotate the ring and close the segments, and suitable guides and supports for said die and former.

2. A clay-receptacle having a reducing-ring in one end, a plunger in the receptacle, a piston connected to said plunger and located in a steam-cylinder; an expansible die and former movable relative to the clay-cylinder or receptacle, said die consisting of segments located within a ring, a rack on the ring and gear adapted to engage therewith to rotate said ring and close the segments, and suitable guides and supports for said die and former.

3. The combination of a clay-receptacle, a plunger therein, with an expansible die consisting of segments located within a ring, said ring and segments adapted to frictionally engage and movable relative to the clay-receptacle, a rack on the ring and a gear-wheel for closing and opening said die.

4. A clay-receptacle, a reducing-ring located therein, a plunger in said receptacle and operated to reciprocate therein, and an expansible die and former movable relative to the clay cylinder or receptacle, said die consisting of segments located within a ring, projections on the segments and cam-surfaces on the ring adapted to engage therewith, a rack on the ring and a gear-wheel engaging therewith, and means connected with the segments for opening the die.



5. A clay-receptacle, a perforated obstruction-plate adjustable therein, a plunger in said receptacle and operating means therefor, an expansible die consisting of a ring, segments therein and means for turning said ring to close said segments and means for opening the die connected to said segments; and a former movable relative to the clay-receptacle.

6. A clay-receptacle, a reducing-plate located therein, a plunger in said receptacle and operated to reciprocate therein, and an adjustable obstruction-plate in said receptacle, combined with an expansible die, said die consisting of segments of a cylinder provided with projections a ring having cam-surfaces inclosing said segments and means for turning said ring.

7. A clay-receptacle, a reducing-plate located therein, a plunger, and an obstruction-plate in said receptacle, combined with an expansible die consisting of a ring provided with cam-surfaces, segments inclosed therein each provided with a projection and means for opening and closing said die.

8. The combination of a clay-receptacle, a plunger therein, with an expansible die, said die consisting of segmental blocks each block having a projection thereon, and a ring surrounding said die having cam-surfaces for engagement with said projections, a rack on said ring and a pinion engaging therewith for rotating said ring to close the die and means connecting said ring and blocks whereby the die is opened by the reverse movement of the ring.

9. The combination with a clay-receptacle, a plunger therein, with an expansible block or die, said die consisting of segments each having a projection thereon, and a ring surrounding said die provided with cam-surfaces adapted to engage with said projections, a rack on said ring, and a suitably-driven pinion for rotating said ring by its engagement with the rack and means connecting said ring and blocks whereby the die is opened by the reverse movement of the ring.

10. An expansible die consisting of segments each having a projection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage with said projections, a second ring having eccentric connection with said segments and means for rotating said rings to close or open the die.

11. An expansible die consisting of segments each having a projection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage with said projections, a rack on the ring and a pinion suitably driven, adapted, by its engagement with the rack to close the die.

12. An expansible die consisting of segments each having a pro-

jection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage with said projections, combined with a guide-plate having slots therein, and projections on the segments adapted to travel in said slots.

13. An expansible die consisting of segments each having a projection thereon, a holder surrounding said die and provided with surfaces for engagement with said projections, combined with a guide-plate having slots therein located eccentrically to the center of the die, and projections on the die-segments for engagement with said slots.

14. An expansible die consisting of segments each having a projection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage said projections, combined with a guide-plate having eccentric slots therein, projections on the segments for engagement with said slots; and a rack on said ring and suitably-driven pinion for rotating said ring by its engagement with the rack.

15. A clay-receptacle having a reducing-ring in one end, a cutter in the receptacle adapted to sever the formed pipe therein, a plunger in the receptacle, a piston connected to said plunger and located in a steam-cylinder, an expansible die and former movable relative to the clay-receptacle, said die consisting of segments located within a ring, a rack on the ring and gear adapted to engage therewith to rotate said ring and close the segments, and suitable guides and supports for said die and former.

16. An expansible die consisting of segments each having a projection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage with said projections, combined with a guide-plate having eccentric slots therein; projections on the segments for engagement with said slots, and means for rotating the ring for opening or closing the die.

17. An expansible die consisting of segments each having a projection thereon, a ring surrounding said die and provided with cam-surfaces adapted to engage with said projections, a rack on the ring and a pinion for engagement with said rack, combined with a reciprocating head to which the die and former are connected, and means for reciprocating said die and former.

18. In a pipe-making machine the combination of a steam-cylinder and piston therein, a clay-receptacle and plunger therein connected with said piston, an expansible die and former, a shaft extending through the clay-receptacle, a cutter on the shaft and operating means therefor, and means acting as resistance to regulate the movement and compress the clay of the pipe produced by the plunger.

19. A pipe-making machine consisting of a clay-receptacle and a plunger therein, an expansible die and former in the clay-receptacle, a shaft extending through the clay-receptacle, a disk cutter on said shaft, and means for operating said shaft.

20. The combination of a clay-receptacle and plunger therein, means for operating the same, an expansible die movable relatively to the clay-receptacle, said die consisting of segments of a cylinder located within a ring, a rack on the ring, a gear engaging therewith, and a perforated reducing-ring located in the clay-receptacle.

21. A clay-receptacle and plunger therein, means for operating the same, an expansible die movable relatively to the clay-receptacle, said die consisting of segments of a cylinder located within a ring, a rack on the ring, a gear engaging therewith, and a perforated reducing-ring located in the clay-receptacle, acting as a resistance to regulate the movement of the clay in the receptacle.

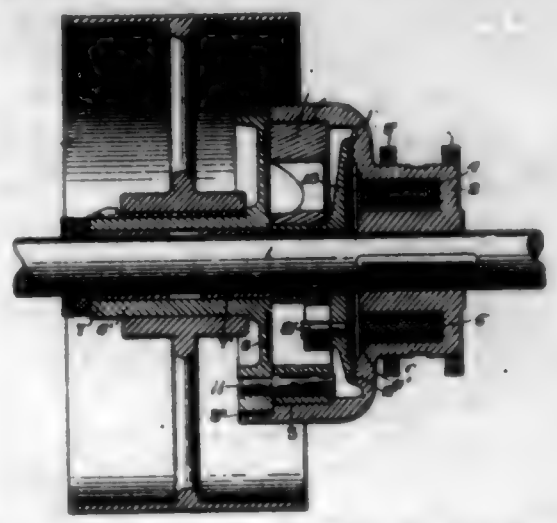
22. A clay-receptacle and plunger therein, a steam-cylinder and piston therein connected with said plunger, an expansible die consisting of segments of a cylinder located within a ring, a rack on the ring and a gear engaging therewith, and means acting as a resistance to regulate the movement of the clay in the receptacle.

23. A clay-receptacle and plunger therein, a steam-cylinder and piston connected with the plunger, a segmental cylinder and ring inclosing the same, a rack on the ring and a gear engaging therewith, a perforated reducing-ring, means acting as a resistance to regulate the movement of the clay in the receptacle, a shaft in the receptacle, a cutter-disk and cutter on said shaft, and means for operating said shaft.

24. A clay-receptacle, an expansible die and plunger therein, a steam-cylinder and piston to operate the plunger, a water-cylinder and piston therein connected with the die, and means on the die adapted to engage with connections to limit movement of the die.

817,210. MAGNETIC FRICTION-CLUTCH. HARRY A. WILLIAMS, Akron, Ohio, assignor to The Williams Electric Machine Company, Akron, Ohio. Filed May 26, 1905. Serial No. 262,371.

Claim.—1. The combination of a shaft, a driving member rigid therewith and a driven member loose thereon, an expansible member carried by the driven member, adapted to engage the driving member a magnetic coil carried by the driving member, and means operated by said coil to expand the expansible member and engage the driving and driven members.



2. The combination with a shaft of a clutch mechanism consisting of a driving member and a driven member; an expansible member on the driven member, a friction member operatively connected therewith, and electrical connections for engaging said frictional member with the driving member.

3. In a clutch mechanism, a driving-disk carrying a magnetic coil, a driven disk carrying an expansible member, a friction member operatively connected with the driven disk, and electrical connections for engaging said friction member with the driving-disk.

4. In a clutch mechanism a driving-disk carrying a magnetic coil, a driven disk carrying an expansible member, a friction member, a lever connecting said expansible member and friction member, and electrical connections for engaging said friction member with the driving-disk.

5. In a clutch mechanism, a driving-disk, a driven disk carrying an expansible member, a rotatable member adapted to be engaged by the driving-disk to rotate therewith, and means connecting said rotatable member with the expansible member to engage the latter member with the driving-disk.

6. The combination of a driving-disk, a rotatable disk adapted to be engaged by the driving member to rotate therewith, a driven disk and an expansible member carried thereby, and a lever connected with the rotatable disk adapted to expand the expansible member into operative contact with the driven disk.

7. A driving-disk having a drum portion, a rotatable disk inclosed therein and adapted to rotate therewith; a driven disk, an expansible ring carried thereby and adapted to engage the drum, and a lever connected with the rotatable disk adapted to expand the expansible ring.

8. The combination of a driving-disk carrying a magnetic coil, a driven disk, a pulley rigid therewith, an expansible ring connected with the driven disk, a lever, and electrical connections whereby said ring is expanded by said lever.

9. The combination of a driving member carrying a magnetic coil, a friction-disk adapted to engage and rotate with said member, a driven member carrying an expansible broken ring, and a lever carried by said friction-disk having a head located between the ends of the expansible broken ring.

10. The combination of a driving member carrying a magnetic coil, a friction-disk adapted to engage and rotate with said member, a driven member carrying a broken ring, a pin on the friction-disk, and a slotted lever engaging said pin at one end and having its head between the ends of the broken ring.

11. The combination of a driving member, a rotatable disk adapted to engage and rotate with said member, a driven member carrying a broken ring, a slotted lever having its head between the ends of the broken ring, and a pin on the rotatable disk engaging said slotted lever.

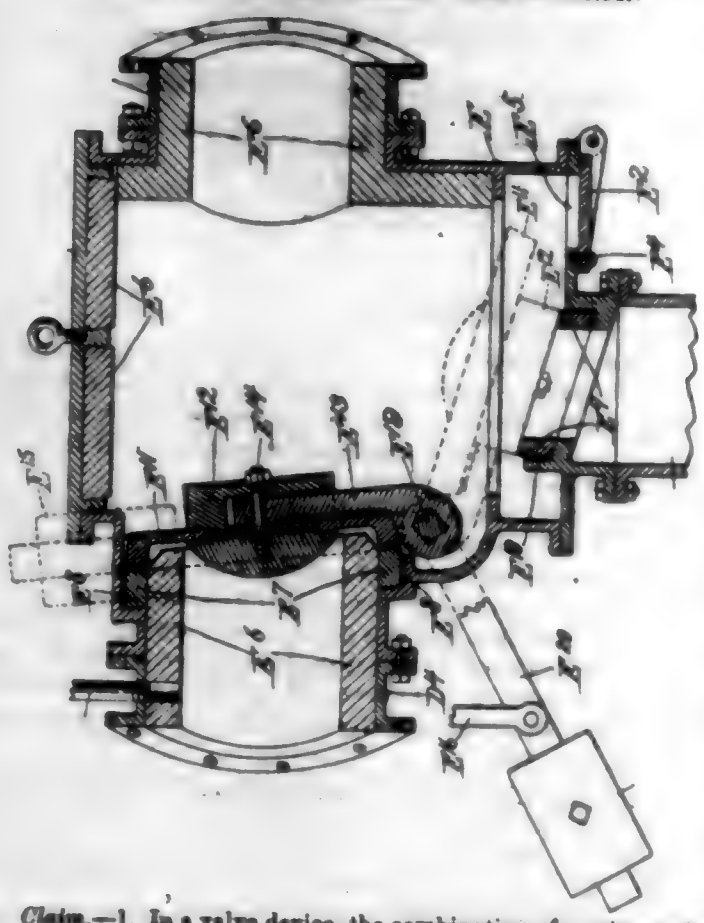
12. The combination with a driving member having a drum portion, a rotatable disk within said drum adapted to engage and rotate with the driving member, a broken ring within the drum and adapted to engage the interior thereof, a slotted lever having a head in said broken ring, and a pin on the rotatable disk engaging said slotted lever.

13. The combination with a driving member carrying a magnetic coil, a drum formed on said member, a friction-disk within the drum adapted to engage and rotate with the driving member, a

broken ring within the drum adapted to engage the interior thereof, a slotted lever having a head in said ring, and a pin on the rotatable disk engaging said slotted lever.

14. The combination of a driving member having an annular recess therein, a coil in said recess, a plate covering the opening to said recess, a driven member, an expansible ring carried thereby, a friction-plate, and an operating-lever connecting said plate with the expansible ring.

817,211. VALVE FOR WATER-GAS PLANTS. JOHN WILLIAMSON, Chicago, Ill. Filed Mar. 11, 1905. Serial No. 249,547.



Claim.—1. In a valve device, the combination of a valve-casing with an opening therein, a valve-seat surrounding said opening, fireproofing extending around said opening within the valve-seat and projecting beyond the seat so as to protect the same, and a valve to close said opening.

2. In a valve device, the combination of a valve-casing with an opening therein, a valve-seat surrounding said opening, a protecting-lining in said opening and extending beyond the seat so as to protect the same, and a valve comprising a dish-shaped rim part to engage the seat.

3. In a valve device, the combination of a valve-casing with an opening therein, a valve-seat surrounding said opening, a protecting-lining in said opening and extending beyond the seat so as to protect the same, and a valve comprising a removable central disk, and a dish-shaped rim part to engage the valve-seat.

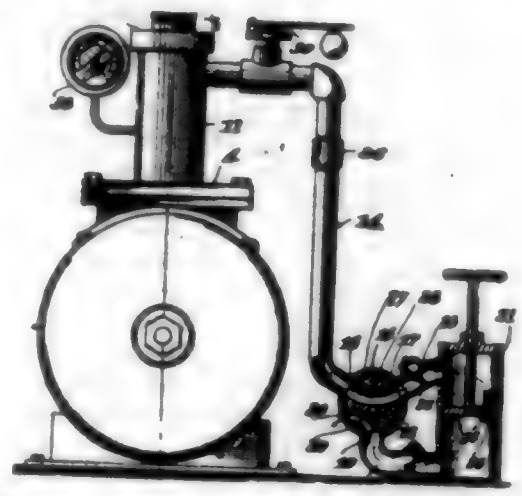
4. In a valve device, the combination of a valve-casing with an opening therein, a valve-seat surrounding said opening, a protecting-lining in said opening and extending beyond the seat so as to protect the same, a hinged flat valve comprising a supporting part, a removable central disk, an annular dish-shaped rim part, and means for securing such rim and disk to the supporting part.

5. In a valve device, the combination of a valve-casing having an inlet and an outlet, a valve to close the inlet, a valve-seat surrounding said inlet, and a fireproof lining for the inlet extending beyond the valve-seat.

6. In a valve device, the combination of a valve-casing having two inlets and an outlet, a double-run valve adapted to close one or the other of the inlets, valve-seats at said inlets, and a fireproof lining in one of said inlets projecting beyond the valve-seat.

817,212. ELECTRIC FURNACE. CHARLES O. WEIGREN, Pasadena, Cal. Filed Aug. 21, 1905. Serial No. 275,154.

Claim.—1. The combination of a metallic air-tight casing composed of a body portion and a removable cover secured thereto, said cover being provided with an upwardly-extending dome; electrodes insulated from and secured to said body; resistance material in said casing between said electrodes; a crucible in said resistance material between said electrodes; heat-insulating material within said casing and surrounding said electrodes and crucible except at and near the dome; a viewing-pipe extending from the crucible upwardly through the heat-insulating material and terminating near the dome; and air-exhaust mechanism connected to said dome whereby the air may be exhausted from the crucible.



2. The combination of a metallic air-tight casing composed of a body portion and a removable cover secured thereto, said cover being provided with an upwardly-extending dome, a portion of the top of said dome being transparent; electrodes insulated from and secured to said body; resistance material in said casing between said electrodes; a crucible in said resistance material between said electrodes; a heat-insulating material within said casing and surrounding said electrodes and crucible except at and near the dome; a viewing-pipe extending from the crucible upwardly through the heat-insulating material and terminating near the dome; and air-exhaust mechanism connected to said dome whereby the air may be exhausted from the crucible.

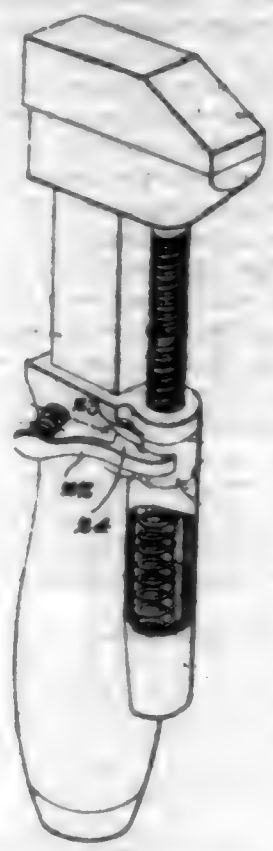
3. The combination of a metallic air-tight casing composed of a body portion and a removable cover secured thereto, said cover being provided with an upwardly-extending dome; electrodes insulated from and secured to said body; resistance material in said casing between said electrodes; a crucible in said resistance material between said electrodes; heat-insulating material within said casing and surrounding said electrodes and crucible except at and near the dome; a viewing-pipe extending from the crucible upwardly through the heat-insulating material and terminating near the dome; an air-compression mechanism connected to said dome whereby pneumatic pressure may be placed upon the material in the crucible.

4. An electric furnace composed of an outer casing of heavy imperforate material; electrodes secured to said casing and insulated therefrom and having binding-posts secured thereto, said binding-posts projecting through said casing; resistance material between said electrodes; a smelting-crucible in said resistance material, said crucible having an observation-tube connected thereto; heat-insulating material in said casing surrounding said electrodes, resistance material and smelting-crucible; a dome secured to said casing; a viewing-glass in said dome; a valve-casing provided with a plurality of ports; a pipe connecting one of said ports to said dome; an air-pump; a pipe connecting said pump with one of the ports of the valve-casing; a clack-valve in said pipe opening toward said pump, said pipe being connected to said pump above the piston therein; a second pipe connecting the bottom of said pump with another of the ports of said valve-casing; a clack-valve in said last pipe opening away from said pump; a downwardly-opening check-valve in the piston of said pump; and a valve-stopper in said valve-casing having two channels therein, one of said channels being adapted to connect either of the pipes leading to the pump with the pipe leading to the dome and the other of said channels being adapted to connect the other pipe with the outside air through ports in the valve-casing.

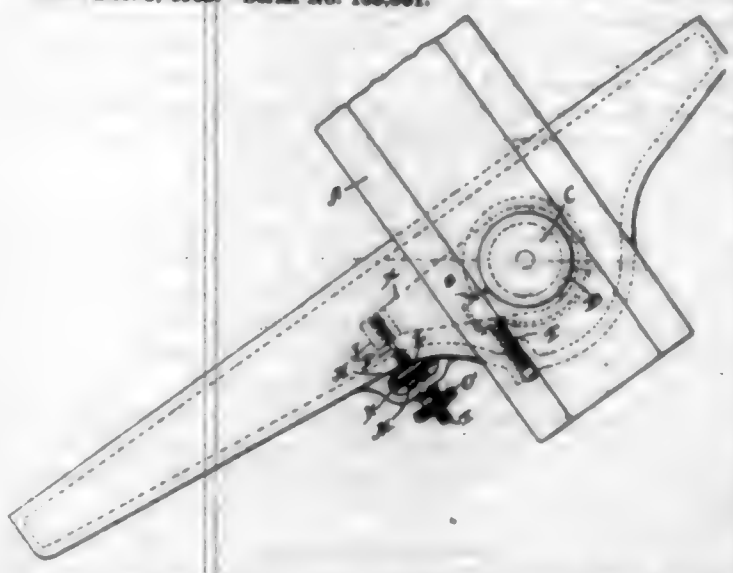
817,213. WRENCH. WILLIAM H. ZACHARY, Maysville, Ind. Ter., assignor of one-half to David R. Mitchell, Maysville, Ind. Ter. Filed Sept. 20, 1905. Serial No. 279,321.

Claim.—A wrench comprising a rigid shank and outer jaw, a handle mounted upon the shank and provided with a socket a movable jaw slidably mounted upon the shank and having a rigid threaded rack extending slidably within the socket a spring within the socket and bearing against the end of the screw and disposed to force the movable jaw to the outer extreme of its movement, a pivoted half-nut arranged to engage and hold the screw and a spring-pressed lever

pivoted to the side of the handle and arranged to manipulate the half-nut.



817,214. T-SQUARE. THOMAS EISENHAUER, Springfield, Ohio. Filed Dec. 3, 1903. Serial No. 183,861.



Claim.—1. In a T-square, a head and blade, a spindle pivotally mounted in the head and secured to the blade, said spindle having an arm, and an adjusting-screw secured in fixed relation to the arm, mounted in the head so as to be fed longitudinally relatively thereto, and provided adjacent to the arm with a portion of reduced diameter, whereby said adjusting-screw is made flexible to compensate for the changes in the angular relations of the head and arm arising from such adjustment, substantially as described.

2. In a T-square, the combination, with a head having a bearing, of a blade having a spindle rotatably mounted in said bearing and provided with an arm, an adjusting-screw secured in fixed relation to the arm and slidably mounted in the head, and an adjusting-nut mounted to rotate without longitudinal movement in the head, the adjusting-screw passing through said nut and being provided between the head and arm with a portion of reduced diameter, whereby said adjusting-screw is rendered flexible, substantially as described.

3. In a T-square, a head and blade pivotally connected, and an adjusting-screw for regulating their angular position, said screw being connected in fixed relation to the blade at one end eccentrically with respect to the pivotal axis of the blade and head and arranged at an angle to a radius passing through its connection with the blade, said adjusting-screw having a reduced portion adjacent to its connection with the blade, whereby it is rendered flexible, the other end of said adjusting-screw being slidably mounted in the head, said head having a recess with opposite bearing-faces through which the adjusting-screw passes, a nut mounted on said screw in said recess and fitting between the bearing-faces, and means for taking up lost motion between said nut, screw and bearing-faces, substantially as described.

4. In a T-square, a head and blade pivotally connected, and an adjusting-screw for regulating their angular position, said screw being connected in fixed relation to the blade at one end eccentrically with respect to the pivotal axis of the blade and head and arranged at an angle to a radius passing through its connection with the blade, said screw having a reduced portion adjacent to its connection with the blade whereby it is rendered flexible, the other end of said screw being slidably mounted in the head, said head having a recess with opposite bearing-faces through which the adjusting-screw passes, a nut mounted on said screw in said recess and fitting between the bearing-faces, said nut having reduced end portions and a central body of larger diameter than said end portion, and a spring-washer bearing against the body of said nut at one of its margins and against one of the bearing-faces at its other margin, said washer having a central aperture for the passage of the reduced end portion of the nut, substantially as described.

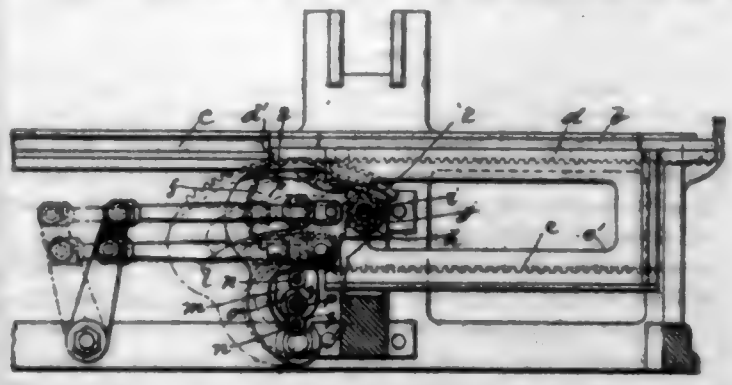
5. In a T-square, a blade, a spindle connected thereto and having an arm, a head having a contractible bearing, means carried by the head to contract the bearing, and other means to adjust the arm to different positions.

6. In a T-square, a blade, a spindle carried thereby and having an arm, a head having a bearing, a portion of the wall of which is yielding, a screw carried by the head to adjust said portion of said wall, and another screw and its nut carried by the head, said latter screw engaging with said arm.

7. In a T-square, a blade, a spindle carried thereby and having an arm, a head having a bearing a portion of the wall of which is yielding, the wall being slotted to leave a portion of it free, a screw carried by the head and adapted to adjust said part of the wall, and another screw and its nut carried by the head, said latter screw being connected to the arm and having a flexible portion, whereby the blade may be adjusted relatively to the head and lost motion between the head and blade may be taken up.

8. In a T-square, a head having a bearing whose wall is slotted circumferentially and radially to leave a yielding portion, and a screw carried by the head and working against said yielding portion in the wall.

817,215. RECIPROCATING BED-ACTUATING APPARATUS FOR PRINTING-PRESSES AND OTHER MACHINES. ANDERS ANDERSON, Plainfield, N. J. Filed Feb. 8, 1906. Serial No. 300,705.



Claim.—1. The combination with the reciprocating bed, toothed racks for operating it, spur-wheel for alternately engaging said racks and driving the bed in opposite directions, and means for shifting said wheel from one to the other of said racks, of the reversing toothed racks overlapping the end portions respectively of the upper bed-actuating rack, and the toothed segment arranged to engage said reversing rack prior to the escape of said spur-wheel from the said upper and lower racks, and means for rocking said segment.

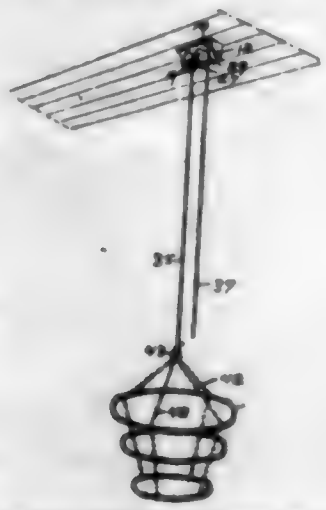
2. The combination with the reciprocating bed having the upper and lower toothed racks for moving it in opposite directions, the wheel for operating the bed and means for shifting said wheel for alternately engaging said racks, of the short reversing racks along the respective end portions of the upper bed-shifting rack, the toothed segment for coacting therewith for reversing the bed at each end of its range of movement, and means for rocking the said segment in unison with the movements of the bed, said bed-actuating wheel running out of engagement of the racks respectively, and said segment engaging the short racks before such disengagement of said driving-wheel and said segment controlling the bed while said driving-wheel is disengaged therefrom.

3. The combination with the reciprocating bed, toothed racks for operating it, spur-wheel for automatically engaging said racks and driving the bed in opposite directions, said wheel running onto

and off the racks at their ends, and means for shifting said wheel from one to the other of said racks, of the reversing toothed racks overlapping the end portions respectively of the upper bed-actuating rack, and the toothed segment arranged to engage said reversing racks prior to the escape of said spur-wheel from the said upper and lower racks and means for rocking said segment.

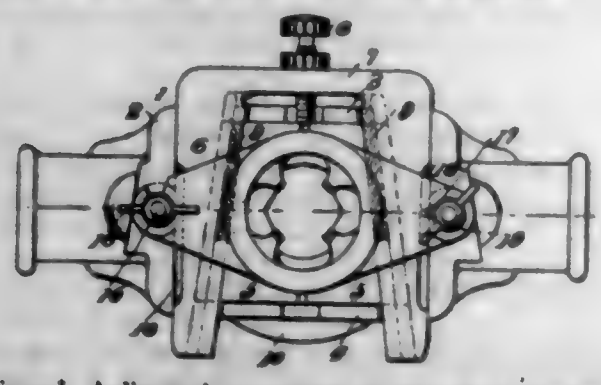
4. The combination with the reciprocating bed, toothed wheel for operating it, spur-wheel for automatically engaging said racks and driving the bed in opposite directions, means for shifting said wheel from one to the other of said racks, of the reversing toothed racks overlapping the end portions respectively of the upper bed-actuating rack, the toothed segment engaging said reversing racks prior to the escape of said spur-wheel from the said upper and lower racks, and means for rocking said segment, said means for shifting said rack-driving spur-wheel consisting of the vibrating arm carrying the shaft of the spur-wheel, slotted plate pendent from said arm, cam-shaft engaging the slot of said plate and controlling it, and the cam on said shaft actuating said pendent plate.

817,216. DISPLAY-RACK. EDDIE BOLLINGER, Colfax, Iowa. Filed Sept. 1, 1904. Serial No. 223,837.



Claim.—In a device of the class described, the combination of a frame to be secured to an elevated support, a pawl pivotally supported by the frame, a drum comprising a short shaft, two disks spaced apart and fixed to the short shaft, a disk-shaped ratchet-wheel between them to be engaged by the said pawl, said disks serving as guides for the pawl, a tube connected with one of said disks and formed with openings, a sleeve formed with an opening and mounted upon said tube, a cord passed through one of said openings in the tube and through the opening in the sleeve and wound upon the sleeve, a disk mounted upon the tube and in engagement with the end of said sleeve, a second sleeve formed with an opening mounted upon said tube with one end in engagement with the said disk, a cord passed through an opening in the tube and through the opening in the second sleeve and wound upon the second sleeve in a direction opposite from the first cord, a disk mounted upon the tube in engagement with the latter sleeve, a cap formed with a disk-shaped extension and a short shaft connected with the said tube and having its disk-shaped extension engaging the latter disk, the said short shaft supported in the said frame and a display-rack fixed to one of said cords.

817,217. ADJUSTABLE DIE-STOCK. BRADFORD BORDEN, Warren, Ohio, assignor to The Borden Company, Warren, Ohio, a Corporation of Ohio. Filed May 19, 1905. Serial No. 261,220.



Claim.—1. A die-stock comprising an open-front housing, sectional dies within the housing, a free-sliding adjuster for such dies, a locking-plate secured at its ends to said housing and extended transversely of the dies and adjuster, and means carried by said plate for limiting the outward movements of the adjuster.

2. A die-stock comprising an open-front housing, sectional dies within the housing, a free-sliding adjuster for such dies, having a groove in its outer face adjacent one side thereof, a locking-plate secured at its ends to said housing and extended transversely of the dies and adjuster, and a lug carried by said plate extending into said groove for limiting the outward movements of the adjuster.

3. A die-stock comprising an open-front housing, sectional dies within the housing, a free-sliding adjuster for such dies, having a groove in its outer face adjacent one side thereof, a locking-plate secured at its ends to said housing and extended transversely of the dies and adjuster, said housing having a groove in its face adjacent one end of said plate, and a lug carried by said plate extending into said groove of the adjuster when the plate is located transversely of the latter and into said groove of the housing when the plate is out of its normal position.

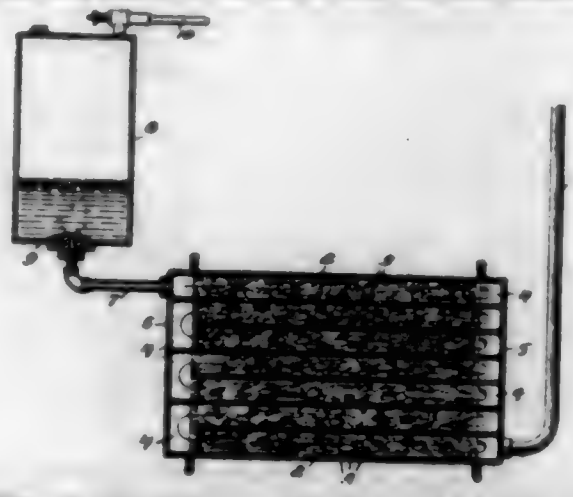
4. A die-stock comprising an open-front housing, sectional dies within the housing, said dies being reversible face for face, an adjuster having means for engaging said dies for moving the same, said adjuster being also reversible, and means for preventing outward deflection of the dies.

5. A die-stock comprising an open-front housing, sectional dies within the housing, said dies being reversible face for face, an adjuster having means for engaging said dies for moving the same, said adjuster being also reversible, and a locking-plate pivotally secured at one end to the housing and designed to extend transversely of said dies and adjuster, and means for engaging and holding the free end of said locking-plate.

6. A die-stock comprising an open-front housing, sectional dies within the housing, the threads of said dies being tapered, both dies being capable of being reversed within the housing, a free-sliding adjuster for said dies having grooves on its inner and outer faces adjacent the edges of its side members, said adjuster being also reversible, a locking-plate pivotally secured at one end to said housing and designed to be secured at its other end when extended transversely of said dies and adjuster, and a lug extending from said locking-plate into said groove for limiting the outward movements of the adjuster.

7. A die-stock comprising an open-front housing, sectional dies within the housing, the threads of said dies being tapered, a free-sliding adjuster for said dies having a groove on its outer face adjacent the edge of one side member, a locking-plate pivotally secured at one end to said housing and designed to be secured at its other end when extended transversely of said dies and adjuster, said housing having a curved groove in its front face adjacent to the pivoted end of said plate, and a lug extended from said plate adjacent the pivoted end thereof for extending into the groove of the adjuster when the plate is extended transversely of the latter, said lug working in said curved groove when the plate is swung out of the way.

817,218. CARBURETER. WILLIAM BROWN and JAMES BROWN, Vancouver, Canada. Filed Oct. 20, 1905. Serial No. 283,654.



Claim.—1. In a carburetor, a casing provided with a plurality of elongated passages running from end to end, absorbent material held in said passages, header-plates for each of said ends, and provided with connecting-passages for said elongated passages of the casing to connect them in a serial arrangement, means for introducing atmospheric air to the said passages at the beginning of the series, means for conveying off the gas from the end of the series of passages, an oil-reservoir for containing hydrocarbon liquid having a valve-controlled inlet in its bottom, said means for conveying off the

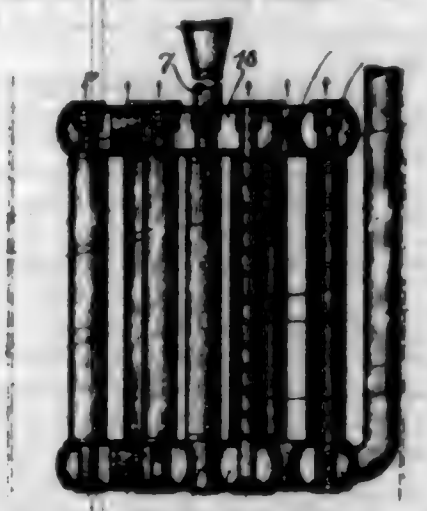
gas being also connected to the valve-inlet of the oil-reservoir, means for withdrawing the gas from the upper end of the oil-reservoir, and a spring-controlled air-valve opening inward in the withdrawal-pipe.

2. The combination with an oil-reservoir having a valve-controlled aperture in its bottom, an offtake-pipe connected through the top of said reservoir, of a carbureter comprising a casing having a plurality of parallelly-arranged elongated passages, means at the end of said casing for connecting said passages in serial arrangement, means connecting one end of said series of passages with the valved aperture in the bottom of the oil-reservoir, and means for admitting air into the other end of said series of passages.

3. The combination with an oil-reservoir having a valve-controlled aperture in its bottom, an offtake-pipe connected through the top of said reservoir, of a carbureter comprising a casing having a plurality of parallelly-arranged elongated passages, means at the end of said casing for connecting said passages in serial arrangement, means connecting one end of said series of passages with the valved aperture in the bottom of the oil-reservoir, means for admitting air into the other end of said series of passages, absorbent material within the elongated passages of said casing only, substantially as shown and described.

4. In a carbureter, an open-ended rectangular chamber divided by horizontal and vertical partitions into a series of elongated passages, covers for the ends of the chamber having recesses which will connect adjacent passages to form a continuous passage from an inlet in one of the lower ones to an outlet from one of the upper ones, means for delivering atmospheric air to the inlet and means for connecting the outlet to the lower end of an oil-tank.

817,219. GAS WATER-HEATER. DANIEL J. F. BUCK, Chicago, Ill. Filed Feb. 18, 1905. Serial No. 246,215.



Claim.—1. In a water-heating device, the combination with a storage-tank, of a combustion-chamber disposed below said tank, a primary heater in said combustion-chamber, a pipe passing through the interior of said tank for leading the heated water from the primary heater to the upper part of the storage-tank and to the distributing system, said pipe being surrounded by the water in the tank, and means for maintaining a layer of water adjacent to said pipe at a higher temperature than the surrounding water.

2. In a water-heating device, the combination with a storage-tank, of a combustion-chamber disposed below said tank a primary heater in said combustion-chamber, a pipe passing through the interior of said tank for leading the heated water from the primary heater to the upper part of the storage-tank and to the distributing system, said pipe being surrounded by the water in the tank, and means for causing the residual heat from the combustion-chamber to heat a layer of water adjacent to said pipe to a higher temperature than the surrounding water.

3. In a water-heating device, the combination with a storage-tank, of a combustion-chamber disposed below said said tank, a primary heater in said combustion-chamber, a pipe passing through the interior of said tank for leading the heated water from the primary heater to the upper part of the storage-tank and to the distributing system said pipe being surrounded by water, and flues passing through the interior of the tank and connecting said combustion-chamber with the atmosphere at the upper end of the tank, said flues being arranged closely about said pipe to form a protecting-jacket therefor and to further heat the water about said pipe and therein.

4. In a water-heating device, the combination with a tubular vertical tank or boiler, of a combustion-chamber below the tank, a primary heater in said combustion-chamber, a pipe passing through the center of the tank for leading the heated water from the primary heater to the upper part of the tank and to the distributing system, said pipe being surrounded by the water in the tank, a plurality of flues connecting the combustion-chamber with the atmosphere at the upper end of the tank, said flues being arranged around and adjacent to said pipe to form a heating-jacket therefor, and a shell surrounding the lower parts of said flues and said pipe for confining about said pipe the water heated by said flues.

5. In a device for heating water, the combination with a tubular vertical storage tank or boiler, of a combustion-chamber below said boiler, a primary heater within said combustion-chamber, a pipe passing through the interior of the boiler for leading the heated water in said primary heater to the upper part of the boiler and to the distributing system, the part of said pipe passing through the boiler being of increased diameter to form a primary storage-compartment for the water heated in the heater, said pipe being surrounded by water, and a plurality of flues passing through the interior of the boiler and connecting the combustion-chamber with the atmosphere, said flues being arranged adjacent to said pipe to form a heating-jacket therefor to heat the water adjacent to said pipe.

6. In a device for heating water, the combination with a tubular vertical storage tank or boiler, of a combustion-chamber below said boiler, a primary heater within said combustion-chamber, a pipe passing through the interior of the boiler for leading the heated water in said primary heater to the upper part of the boiler and to the distributing system, the part of said pipe passing through the boiler being of increased diameter to form a primary storage-compartment for the water heated in the heater, a plurality of flues passing through the interior of the boiler and connecting the combustion-chamber with the atmosphere, said flues being arranged adjacent to said pipe to form a heating-jacket therefor, and a shell or pipe closely surrounding said flues, whereby the heat passing through the flues is confined and directed toward the pipe of increased diameter.

7. In a device for heating water, the combination with an outer and an inner heating-frame, each frame having an upper and a lower annular heater-section connected by pipes, a connection between said frames, and a flue passing through the interior of each of said pipes and through said annular sections.

8. In a device for heating water, the combination with an outer and an inner heating-frame, each frame having an upper and a lower annular heater-section connected by pipes, a connection between said frames, a flue passing through the interior of each of said pipes and through said annular sections, and means for retarding the water-flow through said pipes.

9. In a device for heating water, the combination with an outer and an inner heating-frame, each frame having an upper and a lower annular heater-section connected by pipes, a connection between said frames, a flue passing through the interior of each of said pipes and through said annular sections, and wires spiraled about said flues for retarding the flow of water through said pipes.

10. In a device for heating water, the combination with outer and inner cylindrical heater-frames arranged concentric, each frame comprising an upper and a lower flat annular section or chamber, pipes connecting the annular sections of each frame, connections between the corresponding sections of the frames, a water-inlet for said frames, an outlet for the water from said frames, flues extending through the interior of said pipes and sections, and a burner below said frames, the heat from said burner passing upwardly through said flues and around the exterior of said pipes for heating the water therein.

11. In a device for heating water, the combination with outer and inner cylindrical heater-frames arranged concentric, each frame comprising an upper and a lower flat annular section or chamber, pipes connecting the annular sections of each frame, connections between the corresponding sections of the frames, a water-inlet for said frames, an outlet for the water from said frames, flues extending through the interior of said pipes and sections, a burner below said frames, the heat from said burner passing upwardly through said flues and around the exterior of said pipes for heating the water therein, and obstructions for retarding the flow of water through said pipes.

12. In a device for heating water, the combination with a storage-tank, of a combustion-chamber below said tank, a burner at the bottom of said combustion-chamber, a heater-frame over said burner, an upper and a lower flat annular heater section or chamber for said frame, pipes connecting said annular sections, a water-inlet to the lower section, an outlet of reduced cross-section from the upper annular section, a pipe of enlarged diameter leading through the boiler

with the lower end of which said outlet of reduced cross-section connects, and flues passing through the interior of the pipes of the heater-frame, and through the annular sections, the heat from the burner passing through said flues and about said pipes, and the heated water from the heater-frame passing upwardly through the reduced outlet and into the enlarged pipe to be conveyed to the upper part of the storage-tank and to the distributing system.

13. In a device for heating water, the combination with a tubular storage-tank, of a combustion-chamber arranged below said tank, a burner at the bottom of the combustion-chamber, a primary heater arranged above the burner, said primary heater being composed of a plurality of cylindrical heater-frames assembled concentrically, an upper and a lower flat annular section or chamber for each heater-frame, pipes connecting the upper and lower annular sections of each frame, a water-inlet for supplying water to the lower sections of the frames, an outlet-pipe for leading the heated water from the upper sections and through the interior of the boiler to convey the heated water to the top thereof and to the distributing system, and flues passing through the interior of the pipes of the primary heater, the heat from said burner passing through said flues and about said pipes and sections.

14. In a device for heating water, the combination with a tubular storage-tank, of a combustion-chamber arranged below said tank, a burner at the bottom of the combustion-chamber, a primary heater arranged above the burner, said primary heater being composed of a plurality of cylindrical heater-frames assembled concentrically, an upper and a lower flat annular section or chambr for each heater-frame, pipes connecting the upper and lower annular sections of each frame, a water-inlet for supplying water to the lower sections of the frames, an outlet-pipe for leading the heated water from the upper sections and through the interior of the boiler to convey the heated water to the top thereof and to the distributing system, flues passing through the interior of the pipes of the primary heater, the heat from said burner passing through said flues and about said pipes and sections, and main flues passing through the interior of the boiler for leading the products of combustion from the combustion-chamber to the atmosphere at the top of the boiler, said main flues closely surrounding the outlet-pipe through said boiler to form a heating-jacket therefor.

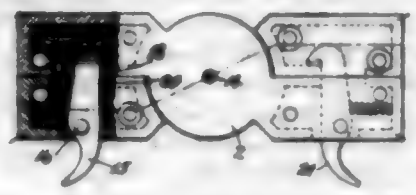
15. In a device for heating water, the combination with a tubular storage-tank, of a combustion-chamber arranged below said tank, a burner at the bottom of the combustion-chamber, a primary heater arranged above the burner, said primary heater being composed of a plurality of cylindrical heater-frames assembled concentrically, an upper and a lower flat annular section or chamber for each heater-frame, pipes connecting the upper and lower annular sections of each frame, a water-inlet for supplying water to the lower sections of the frames, an outlet-pipe for leading the heated water from the upper sections and through the interior of the boiler to convey the heated water to the top thereof and to the distributing system, flues passing through the interior of the pipes of the primary heater, the heat from said burner passing through said flues and about said pipes and sections, main flue passing through the interior of the boiler for leading the products of combustion from the combustion-chamber to the atmosphere at the top of the boiler, said main flues closely surrounding the outlet-pipe through said boiler to form a heating-jacket therefor, and a shell closely surrounding the lower half of said flues for confining and directing the heat therefrom toward the outlet-pipe.

16. In a device for heating water, the combination with an upper and a lower annular heater-section, of a plurality of pipes connecting said sections and having engagement with the inner walls of said sections, flues extending through said pipes having threaded engagement at one end with the outer wall of one section and secured at their other ends to the outer wall of the other section by thimbles, said thimbles having threaded engagement with the outside of the flues and threaded engagement with openings in the outer wall, and a burner for directing heat through said flues and about said pipes.

817,220. SASH-CENTER. CHARLES J. CALBY, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, a Corporation of Connecticut. Filed Nov. 14, 1905. Serial No. 287,227.

Claim.—1. In a sash-center, the combination of a pair of members pivotally mounted with relation to one another, a hollow sleeve carried by one member, and projecting through the other member at its center, an adjusting-nut for said sleeve and a centering-screw passing through said sleeve for the purpose specified.

2. In a sash-center, two members relatively pivoted, spring-pressed means for yieldingly holding them in position, a hollow sleeve projecting from one member through the center of the other, an adjusting-nut for regulating the friction, and a centering-screw passing entirely through said sleeve and projecting beyond for the purpose specified.



3. In a sash-center, two relatively pivoted members, a pivoted spring-pressed locking-latch carried by one member adapted to automatically engage and lock the other member only when the parts are closed.

4. In a sash-center, the combination of a pair of members pivoted together, each comprising a central portion and two extending arms, a latch carried by one of the arms of one member having a beveled end adapted to automatically engage one of the arms of the other member when the parts are brought into their closed position, and having an extension-piece for digital engagement.

5. A pivot for window-sash and the like, comprising two members pivoted together, a latch pivotally carried by one member adapted to have a locking engagement with the other member, and an extension-piece carried by the latch for digital engagement.

6. In a sash-center, two relatively pivoted members and similarly-positioned oppositely-disposed automatically-operable latch members.

7. A sash-center comprising two relatively pivoted members, a manually-operable latch pivotally supported by one member, a shoulder carried by said member, a spring for normally holding said latch against said shoulder when the parts are opened, a shoulder carried by the other member, and a beveled hook end carried by said latch for the purpose specified.

8. A device of the character described, comprising two relatively pivoted members, and a locking-latch carried by each member adapted to engage a shoulder carried by the other member.

9. In a device of the character described, two similarly-formed members relatively pivoted together, and two independent latch members adapted to hold the parts in their closed position.

10. A pivot for window-sash and the like, comprising relatively pivoted members, a pivoted latch carried by one member adapted to automatically engage the other when the parts are closed.

11. In a center or pivot for window-sash and the like, two relatively pivoted members, and a latch pivotally carried by one member having its axis eccentric to but parallel with the axis of said members.

12. In a pivot or center for window-sash and the like, two relatively pivoted members, and a pair of manually-releasable latches adapted to lock said members in their closed position.

817,221. WEIGHING-MACHINE. EWAN CAMERON, Brooklyn, N. Y., assignor to United States Recording Automatic Scales Company, New York, N. Y., a Corporation of New York. Filed Oct. 26, 1904. Serial No. 230,008.

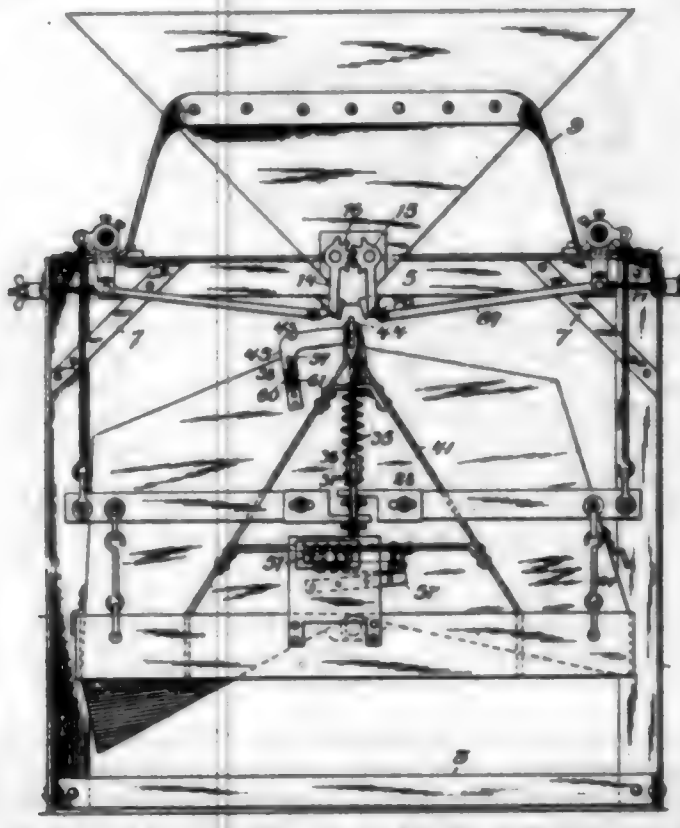
Claim.—1. In a weighing-machine, the combination with a hopper and a gate for controlling the discharge thereof, of a receptacle arranged to receive from the hopper-discharge, the said receptacle being pivotally mounted so that it may empty when filled, a lock for preventing oscillation of the receptacle, and connections between the receptacle and gate for gradually closing the latter as the receptacle becomes filled.

2. In a weighing-machine, the combination with a hopper, a gate therefor for controlling the discharge therefrom, a receptacle arranged to receive from the hopper-discharge, a pivotal mounting for the receptacle to permit it to oscillate and empty when filled, and a lock for preventing oscillation of the receptacle, a supporting-arm for the receptacle, and connections between the arm and the gate for gradually closing the latter as the receptacle becomes filled and means for opposing the closing of the gate.

3. In a weighing-machine, the combination with a hopper and means for controlling its discharge, of a receptacle adapted to receive from the hopper-discharge, means for emptying the receptacle after a predetermined weight of material has been deposited within it, and means connecting the receptacle and the hopper-discharge-controlling means, for gradually reducing the discharge from the hopper as the receptacle becomes filled.

4. In a weighing-machine, the combination with a hopper and

means for controlling the discharge therefrom, of a receptacle arranged to receive from the hopper-discharge, the said receptacle being pivotally mounted so that it may empty when filled, a lock for preventing oscillation of the receptacle and means connecting the receptacle and the hopper-discharge-controlling means, for gradually reducing the discharge from the hopper as the receptacle becomes filled.



5. In a weighing-machine, the combination with a hopper and a gate therefor for controlling its discharge, a receptacle arranged to receive from the hopper-discharge, means for emptying the receptacle after it has received a predetermined weight of material from the hopper, a latch for preventing emptying of the receptacle, a lever supporting the receptacle and connected to the latch and spring-controlled connections between the lever and the gate for gradually closing the latter as the receptacle becomes filled.

6. In a weighing-machine, the combination with a hopper and a gate for controlling the discharge therefrom, of a spring-supported receptacle and connections between the receptacle and the gate for gradually closing the latter as the receptacle becomes filled and the spring becomes extended, and means for emptying the receptacle when filled with a predetermined weight of material.

7. In a weighing-machine, the combination with a hopper and discharge-controlling gate, of a lever, one end of which is supported by a spring and connected to the gate, a receptacle mounted upon the lever, whereby the gate will be gradually closed as the receptacle becomes filled, a lock for preventing emptying of the receptacle, the other end of the lever being connected to the lock, and a spring, the said lock being moved against the tension of the spring.

8. In a weighing-machine, the combination with a hopper, gates thereon, a pivoted receptacle, a weighing device moving with the receptacle, and means for supporting the receptacle, such means being connected to the gates for closing the latter by the descent of the receptacle and locking means for controlling the oscillation of the receptacle, the said locking means being controlled by the weighing device.

9. In a weighing-machine, the combination with a hopper, gates thereon, a pivoted receptacle, a weighing device moving with the receptacle, and means for supporting the receptacle, such means being connected to the gates for closing the latter by the descent of the receptacle, the said gates being so constructed and arranged that when closed the outlet of the hopper will be partially open, and locking means for controlling the oscillation of the receptacle, the said locking means being controlled by the weighing device.

10. In a weighing-machine, the combination with a hopper, gates thereon for controlling the outlet thereof, a receptacle below the hopper, the said receptacle having a plurality of compartments, and being so pivoted as to move to bring its compartments successively below the outlet of the hopper, means for permitting the receptacle to oscillate and independent means for supporting the receptacle, the supporting means being connected to the gates for closing the latter, as a compartment in the receptacle becomes filled.

11. In a weighing-machine, the combination with a hopper and a pivoted receptacle having a plurality of compartments, means for supporting the receptacle to permit it to oscillate and bring the compartments successively below the outlet of the hopper, a lock for preventing oscillation and means for controlling the lock to release it after a predetermined weight of material has entered a compartment, gates for closing the outlet of the opening, and connections independent of the lock-controlling means for gradually closing the gates as the hopper becomes filled.

12. In a weighing-machine, the combination with a hopper and a pivoted receptacle having a plurality of compartments, means for supporting the receptacle to permit it to oscillate and bring the compartments successively below the outlet of the hopper, a lock for preventing oscillation and means for controlling the lock to release it after a predetermined weight of material has entered a compartment, gates for closing the outlet of the opening, and connections independent of the lock-controlling means for gradually closing the gates as the hopper becomes filled, the said gate-actuating mechanism being moved by the descent of the receptacle.

13. In a weighing-machine, the combination with a hopper having a discharge-opening, of a receptacle below the same, shafts, means connecting the receptacle to the shafts so that the weight of the receptacle and its contents will tend to rotate the shafts, pivoted gates for controlling the hopper-opening, and connections between the shafts and gates for closing the latter as the receptacle becomes filled.

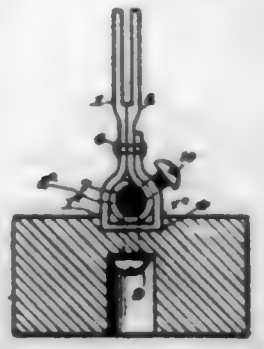
14. In a weighing-machine, the combination with a frame, of a tilting receptacle suspended thereon, the said receptacle carrying an arc provided with notches, and a lever engaging with a notch, means actuated by the weight of the material being weighed to disengage the lever and permit the tilting of the bucket, and means for adjusting the arc in relation to the lever.

15. In a weighing-machine, the combination with a frame, of a tilting receptacle suspended thereon, the said receptacle carrying an arc provided with notches, and a lever carrying a roller, engaging with a notch, means actuated by the weight of the material being weighed to disengage the roller and permit the tilting of the bucket, and means for adjusting the arc in relation to the roller.

16. In a weighing-machine, the combination with a frame, a receptacle pivoted thereon, levers supporting the frame, the free ends of the levers being adjacent, a common support for the free ends of the levers, and means for adjusting the point of support toward or away from the pivoting-point of one of the levers.

17. In a weighing-machine, the combination with a hopper having a discharge-opening and gates, of a receptacle below the hopper, shafts carrying arms upon which the receptacle is supported and which tends to rotate the shafts, additional arms upon the shafts, connections between these arms and the gates, and means for adjusting the angularity of the arms.

817,222. ELECTRIC SWITCH. HAROLD B. CASE, Bridgeport, Conn. Filed Mar. 24, 1904. Serial No. 199,738.



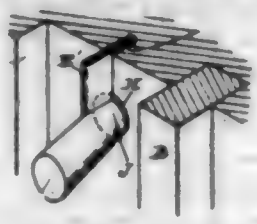
Claim.—1. A knife-switch having an insulating-base provided with an alining groove or channel-way, a contact comprising blades of different lengths, the lower end of one blade enveloping the lower end of the other blade with a chair-like formation adapted to be seated in said channel-way and be secured therein, means on the lower end of the other blade to embrace the contact-wire, means for securing said blades together at a point above said contact-wire, for the purpose set forth.

2. In a knife-switch, the combination with an insulating-base having a channel-way, of a contact comprising blades of unequal lengths, and having the upper ends in parallel relation to receive the knife and form the contact, a chair formed of the lower end of the longest blade adapted to be secured in said channel-way, means for securing the end of said long blade to the vertical body portion of both blades and above said chair, the lower end of the shortest blade

adapted to embrace a contact-wire and within said chair, for the purpose set forth.

3. A contact for a knife-switch comprising brush-blades of unequal lengths, the lower end of the shorter blade having a seat for a contact-wire, a chair formed of the longer blade adapted to embrace said seat, means for securing the extreme lower end of the longest blade to the vertical body portion of both blades, for the purpose set forth.

817,223. WEATHER-STRIP. THOMAS S. CHRISTIE, Detroit, Mich., assignor to Z and Z Company, Detroit, Mich., a Corporation of Michigan. Filed Dec. 2, 1903. Serial No. 183,543.



Claim.—1. The combination with the window-casing having a vertical groove formed in its side extending from one of the casing ends into proximity to the middle thereof and terminating at said central portion in a recess, of a flat metallic weather-strip arranged within the groove and projecting slightly within said recess, a plug fitted within said recess and engaging the strip end, and the window-sash within the casing having its stile opposite the weather-strip recessed vertically to receive the strip.

2. The combination with the window-casing having a vertical groove formed in its side extending from one end of the casing into proximity to the middle thereof and terminating at said central portion in a recess, of a flat metallic weather-strip arranged within the groove and projecting slightly within said recess, and a plug arranged to fit in said recess and receive the projecting end of said strip.

3. The combination with the window-casing having a vertical groove formed in its side extending from one end of the casing into proximity to the middle thereof and terminating at said middle portion in a recess, of a flat metal weather-strip arranged within the groove and projecting slightly within said recess, and a plug provided at its end with a tapering portion arranged to be driven in said recess and to engage the projecting end of said strip.

817,224. FOLDING CAR-STEP. THOMAS G. CLIFFORD, Hoboken, N. J., assignor of one-third to William McGrath, Hoboken, N. J., and one-third to George F. D. Trask, Orange, N. J. Filed Nov. 2, 1905. Serial No. 285,564.

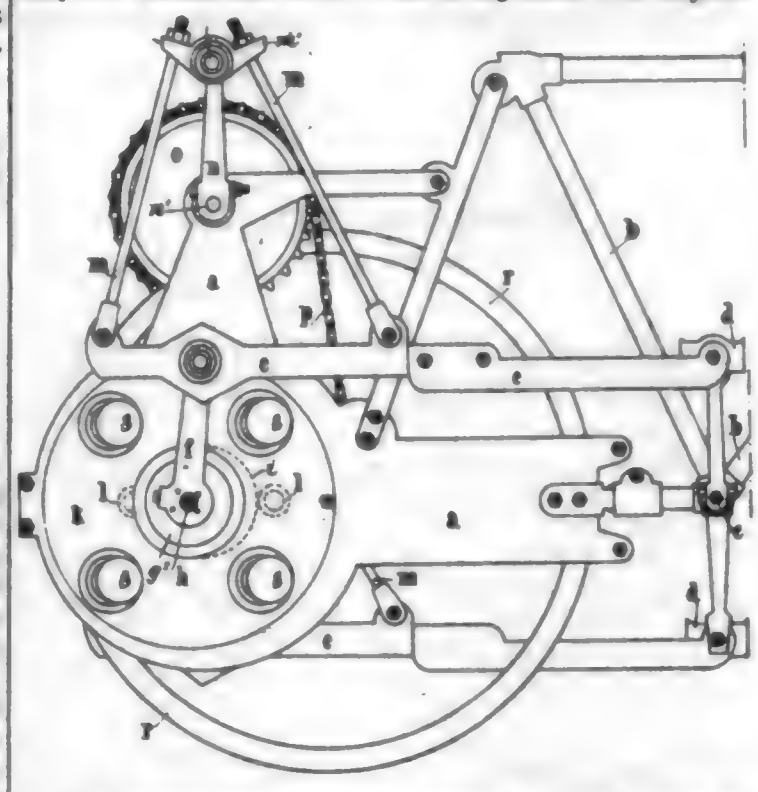


Claim.—1. The combination with car-steps including the side frames thereof, of a transverse shaft mounted between said frames and extending beyond the outer face of one of said frames, a riser connected with said shaft, a tread hinged to said riser, connections between said tread and the lower car-step, and means connected with the said shaft for holding the same against rotation, substantially as described.

2. The combination with car-steps including the side frames thereof, of a transverse shaft mounted between said frames and extending beyond the outer face of one of said frames, a riser connected with said shaft, a tread hinged to said riser, connections between said tread and the lower car-step, a crank-arm secured to the projecting end of said shaft, and a spring-pin mounted in the outer end of said arm and adapted to engage with holes formed for it in said frame whereby the auxiliary step may be locked in its projected or retired positions.

817,225. POWER-TRANSMITTING MECHANISM FOR BICYCLES. LOUIS COMBET, Paris, France. Filed Apr. 8, 1905. Serial No. 254,455.

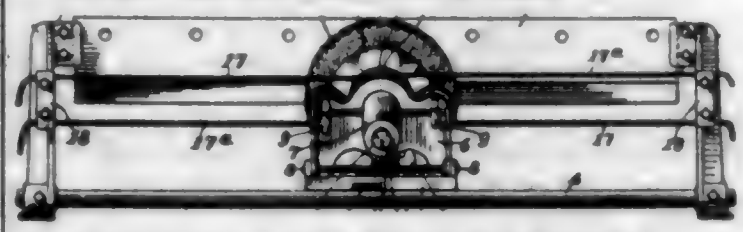
Claim.—1. In a power-multiplying mechanism for bicycles and the like, a pedal mechanism including pedal-cranks, lever-bars connected with and operated by said cranks, rear cranks rotatively connected with the lever-bars, shifting-cams driven by said rear cranks, rollers engaged by said cams, power-transmission cranks and connections therefrom to the lever-bars aforesaid, and connections from the power-transmission cranks to the driving-wheel of the bicycle.



2. In a power-multiplying mechanism for bicycles and the like, a pedal mechanism including pedal-cranks, lever-bars connected with and operated by said cranks, rear cranks rotatively connected with the lever-bars, shifting means operated by said rear cranks, power-transmission cranks and connections therefrom to the lever-bars aforesaid, and connections from the power-transmission cranks to the driving-wheel of the bicycle.

3. In a power-multiplying mechanism for bicycles, and the like, a pedal mechanism including pedal-cranks mounted upon eccentrics, lever-bars connected with and operated by said cranks, rear cranks rotatively connected with the lever-bars, shifting means for the rear cranks, connected with the pedal-eccentrics, and power-transmission connections from the lever-bars to the driving-wheel of the bicycle.

817,226. KNIFE-SHARPENER. ALBERT L. DAVIS, Grand Rapids, Mich. Filed June 8, 1905. Serial No. 264,221.



Claim.—1. The combination of a movable carriage, a hanger adjustably mounted on the carriage, a spindle journaled in the hanger, a pulley and a grinding-wheel mounted on the spindle, a bow-string engaging the pulley and oppositely extended therefrom, and means for holding the ends of the bow-string stationary.

2. The combination of a movable carriage, a hanger pivoted to the carriage and having an arm and journal-bearing, a spindle rotative in the bearing, a pulley and a grinding-wheel on the spindle, a slotted standard on the carriage, a bolt connecting the arm and standard, and a bow-string engaging the pulley and oppositely extended therefrom.

3. The combination of a carriage, a hanger pivoted at its lower side to the carriage, a slotted arm and a journal-bearing on the hanger, a slotted standard on the carriage, a bolt connecting the arm and standard, a spindle rotative in the bearing, a pulley and a flange on the spindle, a grinding-wheel attached to the spindle, a bow-string engaging the pulley and oppositely extended therefrom, and means for holding the ends of the bow-string.

4. The combination of a carriage, a hanger adjustably mounted on the carriage, a spindle journaled in the hanger, a pulley and a grinding-wheel on the spindle, ways traversed by the carriage, standards on the ways, clamps on the standard to engage a knife, a

bow-string engaging the pulley and oppositely extended therefrom, and clamps on the standards to hold the bow-string.

5. The combination of a carriage, a hanger pivoted to the carriage, an arm and a journal-bearing on the hanger, a slotted standard on the carriage, a bolt connecting the arm and standard, a spindle rotative in the bearing, a pulley and a grinding-wheel on the spindle, a bow-string engaging the pulley and oppositely extended therefrom, ways traversed by the carriage, standards adjustable on the ways, clamps on the standards to engage a knife, and clamps on the standards to hold the bow-string.

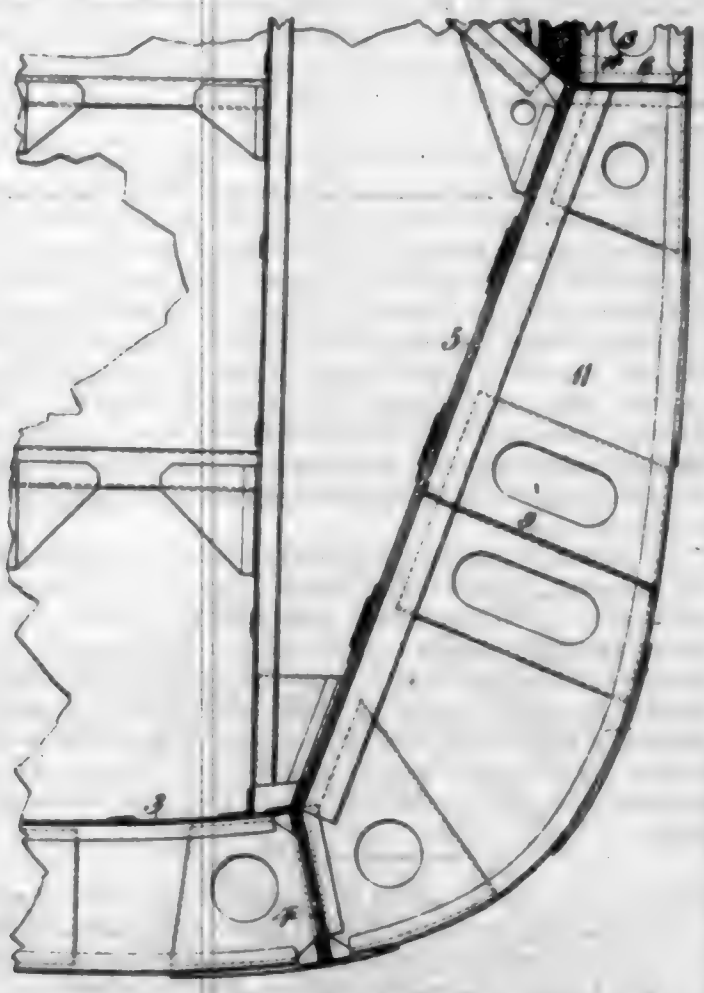
6. The combination of a carriage, ways traversed by the carriage, a slide attached to the carriage and traversing the ways, a spindle mounted on the carriage, a grinding-wheel and pulley on the spindle, a bow-string engaging the pulley and oppositely extended therefrom, and means for holding the opposite ends of the bow-string stationary.

7. The combination of a carriage, a slide on which the carriage is movable, ways traversed by the carriage and slide, a spindle mounted on the carriage, a pulley and a grinding-wheel on the spindle, a bow-string engaging the pulley, and oppositely extended, and means for holding the respective ends of the bow-string stationary.

8. In a grinder, the combination of a carriage, a spindle mounted on the carriage, a grinding-wheel, and a pulley on the spindle, an idler-pulley near the spindle-pulley, a bow-string engaging the said pulleys and thence extended in opposite directions, and means for holding the respective ends of the bow-string stationary.

9. In a grinder, the combination of a spindle, two pulleys on the spindle, an idler-pulley opposite each spindle-pulley, bow-strings extending nearly around the respective idler-pulley and spindle-pulley and thence oppositely, and means for holding the respective ends of the bow-strings stationary.

817,227. ANTITORPEDO CONSTRUCTION FOR MEN-OF-WAR VESSELS. WILLIAM A. DOBSON, Philadelphia, Pa. Filed Nov. 7, 1904. Serial No. 231,039.



Claim.—1. In a device of the character described, a downwardly and inwardly sloping armored bulkhead and means for directing the force of an explosive along it.

2. In a device of the character described, a downwardly and inwardly extending armored bulkhead and an exterior hull forming, between it and the bulkhead, a path of less resistance to explosives than that of the bulkhead, the direction of which path is external to the main plane of the bulkhead.

3. In a device of the character described, an armored hull and an external hull of lighter material whose distance from the armored hull varies with the distance below the water-line.

4. In a device of the character described, a light external hull of ordinary shape and an internal armored hull of such shape that the distance between the hulls differs with the distance below the water-line.

5. In a device of the character described, a plurality of hulls extending at different angles and forming a path for explosives between them, one of said hulls being armored.

6. In a device of the character described, an outer hull of sufficient strength to withstand ordinary stresses and explode a projectile and an inner armored hull at an angle thereto.

7. In a device of the character described, the combination of an armored bulkhead at an angle to the direction of relative movement of the vessel and an explosive and an outer hull at an angle to the bulkhead.

8. The method of protecting vessels from explosives which consists in providing for the gases of explosion, a space of such dimensions between the armor and the hull of the vessel, as will permit a substantial expansion of said gases whereby the force of explosion against the armor is materially diminished.

9. The method of protecting vessels from explosives which consists in providing a space of less resistance than the water and of such dimensions as to permit substantial expansion of the gases for the distribution of the gaseous products of explosion between the outer hull and the armor of the vessel.

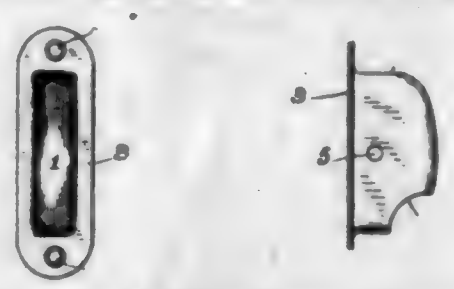
10. The method of protecting vessels from explosives which consists in providing for the explosive gases, a path of less resistance than the armor and surrounding water of such dimensions as to permit substantial expansion of the gases, the direction of which is exterior to the main plane of the armor.

11. The method of protecting vessels from explosives which consists in providing for the explosive gases a path of less resistance than that of the armor or surrounding water, of such dimensions as to permit substantial expansion of the gases, the plane of direction of which path is at an angle to the vertical.

12. The method of protecting vessels from explosives which consists in causing the impact for exploding the projectile to occur beyond the plane of the main hull of the vessel and forming a path of low resistance between the main hull and the point of impact which path is of such dimensions as to permit substantial expansion of the gases.

13. The method of protecting vessels from explosives, which consists in causing the explosion to occur at a substantial distance from the main armor and in making the resistance to the explosive gases lower than that of the water between the point of explosion and a considerable area of the armor in order that the force of the explosion may be instantly distributed over a large area of armor.

817,228. SHEET-METAL PULLEY-HOUSING. PETER DOSCH, Bridgeport, Conn. Filed Nov. 3, 1905. Serial No. 285,736.

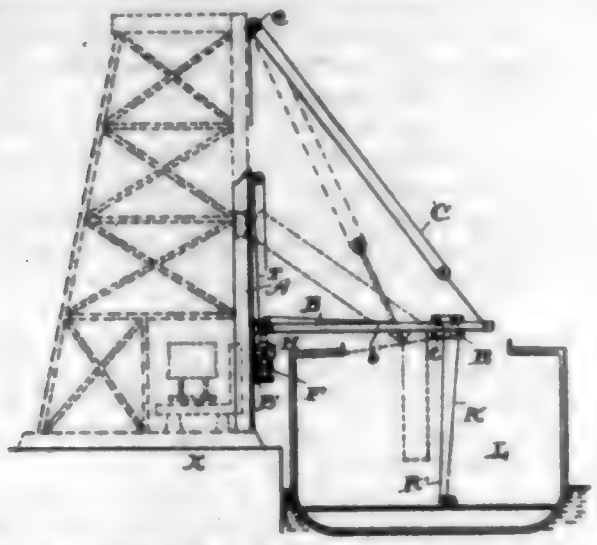


Claim.—As a new article of manufacture, a sheet-metal pulley-housing formed of a single blank having a face-plate and an integral housing proper formed by drawing the same from said blank, the lower end of the closed portion of said housing proper being cut away in the form of an arc to provide a passage for the pulley-rope.

817,229. VESSEL-TRIMMER. JOSEPH P. DOYLE, Cleveland, Ohio. Filed Nov. 16, 1904. Serial No. 232,941.

Claim.—1. In a vessel-trimmer, the combination of a dock, a boom hinged to a device secured to the dock, means for sustaining the outer end of said boom, a motor, and a reversible shaft driven thereby, both of which are mounted upon some device which is supported upon the dock, two drums secured to said shaft, a trolley movable upon said boom, lead-blocks mounted on said trolley, two lead-blocks secured in the hold of a vessel below one of the hatchways, other lead-blocks secured in the hold of the vessel and located respectively forward and aft of the lead-blocks first mentioned, cables whose ends are wound in opposite directions upon said drums and which extend over the said lead-sheaves and around the blocks be-

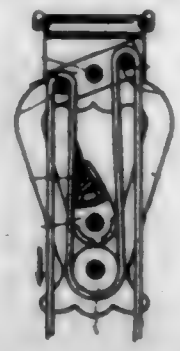
low the hatch, and which extend respectively around the forward lead-block and the aft lead-block, and a scraper connected with said cables, between said fore-and-aft lead-blocks.



2. In a vessel-trimmer, the combination of a dock, a post fixed to the dock, a vertically-movable slide having a guided connection with said post, a boom, and an intermediate piece pivoted both to the slide and to the boom by means of pivots of which one is horizontal and the other vertical, means for sustaining the outer end of said boom, a pair of reversible drums and their motor which are mounted upon some device which is supported from the dock, lead-sheaves carried by the boom, two lead-blocks secured in the hold of the vessel below one of the hatchways, other lead-blocks secured in the hold of the vessel and located respectively forward and aft of the lead-blocks first mentioned, cables whose ends are wound in opposite directions upon said drums and which extend over the said lead-sheaves and around the blocks below the hatch and then respectively to forward lead-block and to the aft lead-block, and a scraper connected with said cable between said fore-and-aft lead-blocks.

3. In a vessel-trimmer, the combination of a dock, a post fixed to the dock, a vertically-movable slide having a guided connection with said post, a boom, and an intermediate piece pivoted both to the slide and to the boom by means of pivots of which one is horizontal and the other vertical, means for sustaining the outer end of said boom, a trolley movable lengthwise of said boom, a sheave mounted on said trolley, a winding-drum and its operating mechanism supported from the dock, and a cable wound upon said drum and extended out around the sheave upon the trolley.

817,230. MACHINE FOR STROPPING RAZORS. JAMES DUGMORE, Quinton, England. Filed Feb. 14, 1905. Serial No. 245,903.

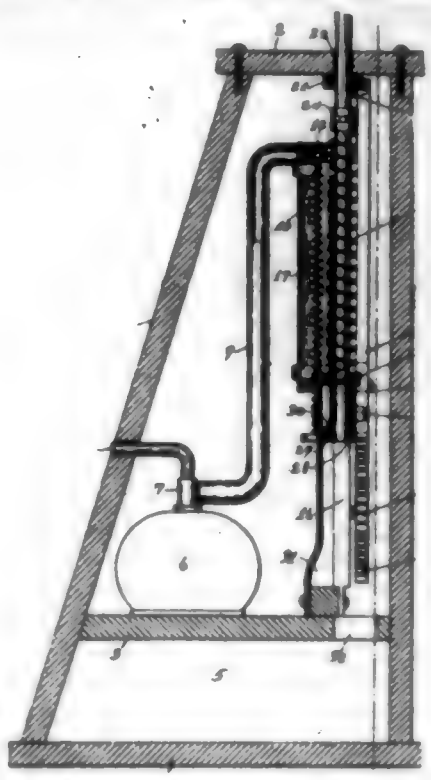


Claim.—1. In a razor-stropping machine, a frame, a razor-holder journaled in said frame, a driving-roller rotatable in the frame, the rear of the razor-holder and the front of the driving-roller being in frictional contact, an operating-strop passing immediately around and in contact with the driving-roller, and means for bringing the operating portion of the strop toward the razor.

2. In a razor-stropping machine, the combination of a frame, a movable razor-holder journaled in said frame, a strop, a rocking frame for bringing the operating portion of the strop toward the razor, two rollers journaled in said rocking frame and around which the strop passes, and means for operating the razor-holder.

3. In a razor-stropping machine, the combination of a frame, a razor-holder journaled in said frame, a driving-roller rotatable in the frame, the rear of the razor-holder and front of the driving-roller being in frictional contact, a rocking frame pivoted on said frame for bringing the operating portion of the strop toward the razor, two rollers in said rocking frame, and a strop engaging and operating said driving-roller and said rocking frame.

817,231. COIN-CONTROLLED ATOMIZER. PIERCE A. DUNN, Green Island, N. Y. Filed Nov. 21, 1904. Serial No. 233,634.



Claim.—1. In a machine of the class described, and in combination, spring-actuated ejecting mechanism; a movable coin-holder connected with and adapted to operate said ejecting mechanism in opposition to its actuating-spring; a plunger adapted to be connected with said coin-holder through the medium of a coin inserted therein; a stationary toothed rack adjacent to the path of the coin-holder; a lever having thereon a toothed rack adjacent to the path of the coin-holder at the end of said fixed rack; a dog on the coin-holder engageable with said racks successively, means for releasing the coin from the holder at the end of the holder movement; and means for locking said lever during the plunger-induced movement of the coin-holder and releasing the same upon release of the coin from the holder.

2. In a machine of the class described, and in combination, spring-actuated ejecting mechanism; a movable coin-holder connected with and adapted to operate said ejecting mechanism in opposition to its actuating-spring; a plunger adapted to be connected with said coin-holder through the medium of a coin inserted therein; a stationary toothed rack adjacent to the path of the coin-holder; a lever having thereon a toothed rack adjacent to the path of the coin-holder at the end of said fixed rack; a dog on the coin-holder engageable with said racks successively; means for releasing the coin from the holder at the end of the holder movement; a detent automatically movable into the path of said lever; and an offset on said plunger engageable with said detent to remove the same from the path of said lever.

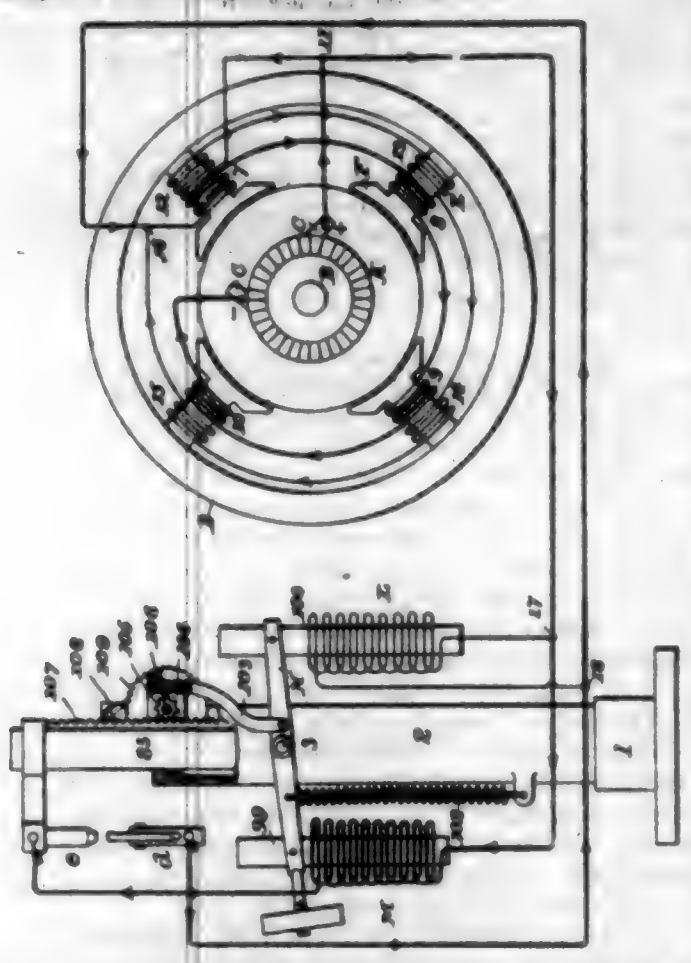
3. In a machine of the class described, and in combination, ejecting mechanism; a movable coin-holder connected with the ejecting mechanism and having a coin-supporting reciprocatory pin; a spring adapted to remove said pin from the path of a coin in the holder; a plunger adapted to be connected with said holder through the medium of a coin supported therein; and a slideway adjacent to the path of said holder adapted to engage and hold said pin in opposition to the force of said spring, and provided with a recess adapted to receive said pin at the end of the plunger-induced movement of the holder.

817,232. REGULATION OF ELECTRIC CIRCUITS. EDGAR A. EDWARDS, Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee, a Corporation of Illinois. Filed Mar. 7, 1902. Renewed Feb. 13, 1906. Serial No. 300,695.

Claim.—1. The combination with a normally open constant-current circuit and a regulating-magnet in shunt thereto, of a differentially-wound dynamo for supplying current thereto, and means for automatically closing said circuit by current from the dynamo, substantially as described.

2. The combination with a dynamo having differential shunt and series field-windings, of an arc-lamp provided with regulating magnets, one in series with the series field winding and another in shunt to the shunt field-winding of the dynamo, substantially as described.

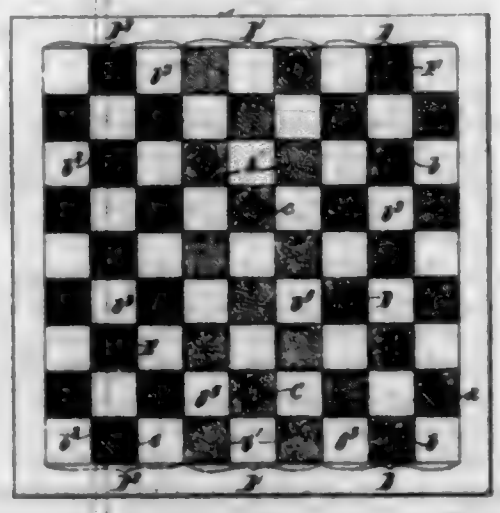
3. The combination with a dynamo having differential shunt and series field-windings, of an arc-lamp provided with regulating-magnets, one in a normally open circuit with the series field-winding, and another in a normally closed shunt to the shunt field-winding of the dynamo, substantially as described.



4. The combination with a dynamo having differential shunt and series field-windings, of an arc-lamp provided with normally open electrodes, and regulating-magnets for the lamp, one in series with the normally open electrodes and the series field-winding, and another in a normally closed shunt about the armature of the dynamo, substantially as described.

5. The combination with a constant-current circuit, of a differentially-wound dynamo for supplying current thereto, an arc-lamp in said constant-current circuit, said lamp having normally open electrodes, a regulating-magnet in series with said electrodes and one of the windings, and another regulating-magnet in shunt about the armature of the dynamo, substantially as described.

817,233. GAME APPARATUS. JOHN V. EMMERLING, Buffalo, N. Y. Filed Oct. 30, 1905. Serial No. 284,978.



Claim.—1. A game apparatus, comprising a board divided into a plurality of fields each subdivided into squares or spaces, alternating squares of each field being of the same color but distinguished by different colors from those of the other field or fields, and a set of pieces for each field, the pieces of each set being provided on one portion thereof with a mark corresponding to the companion field and on other portions thereof with marks corresponding to their own field and one or more of the other fields, substantially as set forth.

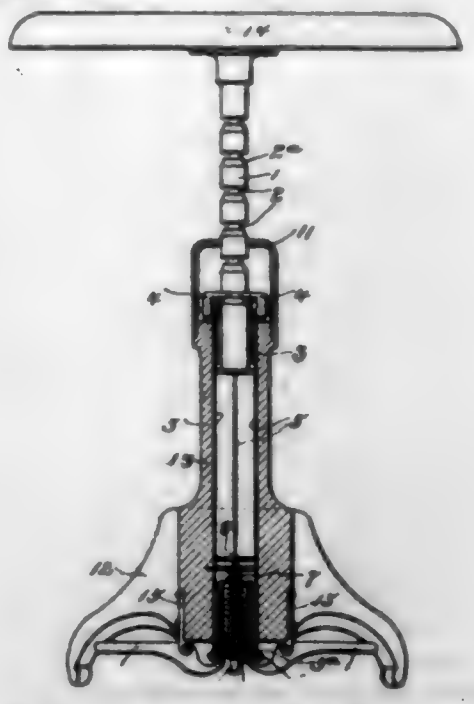
2. A game apparatus, comprising a board divided into a plurality of fields each subdivided into squares or spaces, alternating squares of each field being of the same color but distinguished by different colors from those of the other fields, and a set of pieces for each field, the pieces of each set each having one face colored to match the squares of the corresponding field, another face provided with stripes corresponding to its own field and the other fields, and a third face bearing stripes corresponding to its own field and one of the other fields, substantially as set forth.

3. A game apparatus, comprising a board divided into a plurality of fields each subdivided into squares or spaces, alternating squares of each field being of the same color but distinguished by different colors from those of the other fields, and a set of pieces for each field, the pieces of one set each having a face colored to match the squares of the corresponding field, another face provided with stripes corresponding to its own field and the other fields, and two additional faces each bearing a stripe corresponding to the field to which the piece belongs and a stripe corresponding to one of the other fields, the pieces of the other sets each having one face colored to match the squares of the corresponding field, another face provided with stripes corresponding to its own field and the other fields and a third face bearing stripes corresponding to its own field and one of the other fields, substantially as set forth.

4. A game apparatus, comprising a board divided into a plurality of fields each subdivided into squares or spaces, alternating squares of each field being of the same color but distinguished by different colors from those of the other fields, and a set of pieces for each field, the pieces of each set each having one face colored to match the squares of the corresponding field, another face provided with stripes corresponding to its own field and the other fields, a third face bearing stripes corresponding to its own field and one of the other fields, and a fourth face bearing the representation of a star, substantially as set forth.

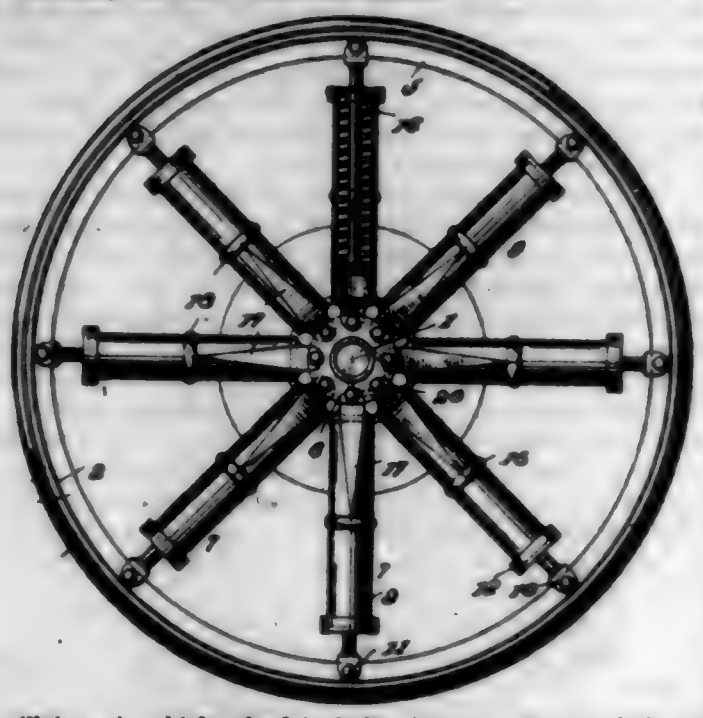
5. A game apparatus, comprising a board divided into three fields each subdivided into a plurality of squares or spaces, alternating spaces of each field being of the same color but distinguished by different colors from those of the other fields, a set of pieces for the middle field each having a face colored to match the squares of said field, another face provided with stripes corresponding to the middle field and both of the other fields, and two additional faces each bearing stripes corresponding to the middle field and one of the other fields, the pieces belonging to the side fields each having one face colored to match the squares of the corresponding field, another face having three stripes corresponding to the respective fields, and a third face bearing stripes corresponding to its own field and the middle field, substantially as set forth.

817,234. STOOL. VICTOR A. FAGERSTROM, Rockford, Ill., assignor of one-half to Carl S. Gustafson, Rockford, Ill. Filed July 31, 1905. Serial No. 272,812.



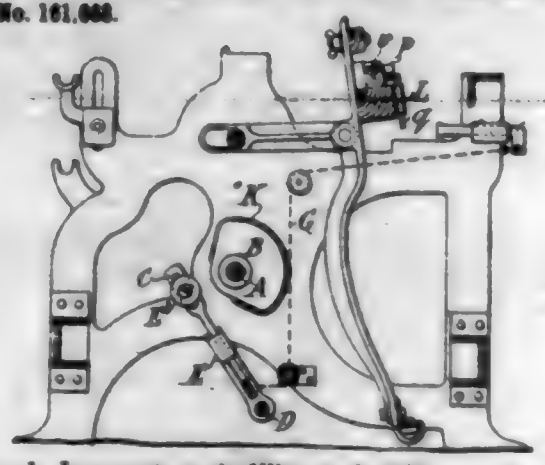
Claim.—The combination with a tubular standard, and a seat having a grooved spindle in the standard, of a dog pivoted on the standard and engageable with the grooves, a piece movable up and down in the bottom of the standard and connected to the dog, a spring bearing down upon said piece, and a lever bearing under said piece and arranged to lift the same.

817,235. SPRING-WHEEL. DUDLEY FARRAND, Newark, N. J. Filed May 20, 1905. Serial No. 261,331.



Claim.—A vehicle-wheel including a rim, a flanged hub and spokes pivotally connected to the rim and hub, each of said spokes comprising a cylinder having external strengthening-webs extending lengthwise of the cylinder and projecting at the base thereof and pivoted to the hub-flange; a stem pivoted to the rim, and provided with a piston mounted in the cylinder; a spring-cushion above the piston and a pneumatic cushion beneath the piston within the cylinder.

817,236. FILLING-REPLENISHING MECHANISM FOR LOOMS. NORBERT FORESTER and DANIEL J. CAREY, New York, N. Y.; said Carey assignor of one-fifth of his right to said Forester and four-fifths of his right to American Textile Specialty Machinery Company, New York, N. Y., a Corporation of New York. Filed June 16, 1903. Serial No. 161,668.



Claim.—1. In an automatic filling-replenishing mechanism for looms the combination of a member carried by a driven shaft and normally disconnected from the complementary parts of the mechanism, controlling means for bringing the same into operative relation with the complementary parts of said mechanism, an actuator carried by the lay adapted when in its operative position to transmit the movement of the lay to the controlling means, and a detector carried by the shuttle and adapted on exhaustion of the thread to a predetermined extent to cause a movement of said actuator to its operative position.

2. In an automatic filling-replenishing mechanism for looms the combination of a continuously-driven cam, an arm adapted to be actuated by said cam to replenish the filling, and means for transmitting a movement of the lay to a portion of said arm to move the same into the path of said cam upon the first beat up of the lay after the exhaustion of the thread to a predetermined extent.

3. In an automatic filling-replenishing mechanism for looms, the combination of a continuously-driven cam, an arm adapted to be actuated by said cam to replenish the filling, means for transmitting the movement of the lay to a portion of said arm to move the same into the path of said cam upon the first beat up of the lay after the exhaustion of the thread to a predetermined extent, and a spring tending to withdraw the arm from the path of the cam to render the mechanism inoperative.

4. In an automatic filling-replenishing mechanism for looms the combination of a continuously-driven cam, an arm adapted to be actuated by said cam to replenish the filling, means for transmitting a movement of the lay to said arm to move the latter into the path of said cam upon the first beat up of the lay after the exhaustion of the thread to a predetermined extent, a spring tending to withdraw the arm from the path of the cam, and means for holding the arm in engagement with the cam until the movement of the cam is completed.

5. In an automatic filling-replenishing mechanism for looms the combination of a continuously-driven cam, an arm adapted to be actuated by said cam to replenish the filling, means for transmitting a movement of the lay to said arm to move the arm laterally into the path of said cam upon the first beat up of the lay after the exhaustion of the thread to a predetermined extent, a spring tending to withdraw the arm laterally from the path of the cam, and a flange holding the arm in engagement with the cam throughout the effective movement thereof.

6. In an automatic filling-replenishing mechanism for looms the combination of a member carried by a driven shaft, and resilient controlling means for bringing the same into operative relation with the complementary parts of the mechanism automatically on exhaustion of the thread to a predetermined extent.

7. In an automatic filling-replenishing mechanism for looms the combination of a member carried by a driven shaft, resilient controlling means for bringing the same into operative relation with the complementary parts of the mechanism, and means for transmitting the movement of the lay to said controlling means automatically on exhaustion of the thread to a predetermined extent.

8. In an automatic filling-replenishing mechanism for looms the combination of a member carried by a driven shaft and normally disconnected from the complementary parts of the mechanism, controlling means for bringing the same into operative relation with the complementary parts of said mechanism, an actuator adapted to be projected from the lay automatically on exhaustion of the thread to a predetermined point and when so projected to strike and operate said controlling means.

9. In an automatic shuttle-exchanging mechanism for looms the combination of a receptacle for full shuttles having a rear plate *g*, a vertically-movable shuttle-box below said receptacle, means for raising said shuttle-box to said receptacle to receive a full shuttle therefrom, a normally closed cover for said box, and cams *a* comprising parallel bent rods attached to said plate *g* and engaging said cover to open the same as the box is raised.

10. In an automatic shuttle-exchanging mechanism for looms, the combination of the lay, a movable shuttle-box at one end of said lay, an auxiliary box adapted to be moved into the normal position of said shuttle-box, a swell carried by said auxiliary box, said swell being in operative position when said auxiliary box is moved to the normal position of said shuttle-box, and means for withdrawing said swell as said auxiliary box is moved from said position.

11. In an automatic filling-replenishing mechanism for looms, the combination of the lay, a movable shuttle-box at one end of said lay, an auxiliary box, means for moving said shuttle-box to a position to receive a fresh shuttle, and simultaneously moving said auxiliary box to a position to receive the running shuttle, a swell carried by each of said boxes, the box which receives the running shuttle having its swell always free to act, and means for always holding the other swell fixedly open.

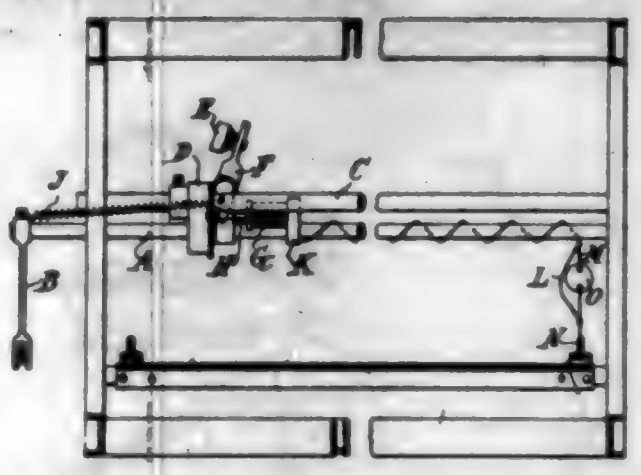
12. In an automatic shuttle-exchanging mechanism for looms, the combination of a receptacle for full shuttles, forked levers engaging the ends of the shuttles and connected together, and a counterweight comprising a bar W connecting them together at their outer ends.

13. In an automatic shuttle-exchanging mechanism for looms, the combination with an auxiliary shuttle-box for receiving the exhausted shuttle, of a bottom plate *b* therefor hinged at its edge and having a projecting arm *c*, a spring *d* for holding said bottom closed, and means for engaging said arm and opening said bottom when the box is moved to position to discharge the shuttle.

14. In an automatic shuttle-exchanging mechanism for looms, the combination of a vertically-movable shuttle-box, an arm *y* and means for rocking the same, a rod b^3 connected to said shuttle-box, a link *z* connected to said arm *y* and slidably connected to said rod b^3, and springs d^3 and d^4 on said rod yieldingly pressing said link *z* in opposite directions.

817,237. WEFT-REPLENISHING MECHANISM FOR LOOMS. NORBERT FORESTER, New York, N. Y. Original application filed June 5, 1903, Serial No. 160,144, renewed Aug. 30, 1905, Serial No. 276,392. Divided and this application filed Aug. 4, 1903. Serial No. 168,171.

Claim.—1. In a weft-replenishing mechanism for looms, in combination a motor device comprising a member carried by a driven shaft, an electrical means for bringing said motor device into operative relation with the complementary parts of the mechanism automatically on exhaustion of the weft to a predetermined extent.



2. In a weft-replenishing mechanism for looms, the combination of a motor device comprising a member carried by a driven shaft, electrical means for bringing the same into operative relation with the complementary parts of the mechanism, including an electric circuit passing to and from a shuttle-box, and means for completing said circuit automatically on exhaustion of the weft-thread to a predetermined extent

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817,288. **HAIR AND HAT SECURING DEVICE.** ISAAC FRÉCHETTE, Montreal, Canada. Filed Mar. 13, 1905. Serial No. 249,714.



Claim.—1. In a device of the character described, a tubular bridge member, a hook in convenient proximity thereto, slidable approximately parallel securing means for said tubular member, and means for locking said slidable means in engagement with the hair.

2. In a device of the character described, a tubular bridge portion having guide-openings near the termini thereof, longitudinally-slidable locking-pins adapted to be projected through said openings, and means for locking said pins in position.

3. In a device of the character described, a tubular bridge portion, means for locking the same in position, and hook portions projecting from said bridge portion.

4. In a device of the character described, a tubular bridge portion having openings near the termini thereof, in combination with longitudinally-slidable and approximately parallel locking means formed from a single sheet of metal, with a pintle-bearing projecting upwardly therefrom, and a locking-tongue held in said pintle-bearing.

5. In a device of the character described, a tubular member, a hook in convenient proximity thereto, and slidable securing means for said tubular member.

6. In a device of the character described, a tubular member open at its ends, said tubular member terminating in downwardly-bent passages separate from the interior of said tube, and combs co-operating therewith, said combs being slidable in said passages.

7. In a device of the character described, a tubular member open at its ends, means for securing the same in position, and a hat-pin-securing hook projecting upwardly from said tubular member, near the end thereof.

8. In a device of the character described, a tubular member having depending portions, forming comb-guides, slidable combs in said guides, and a projecting hooked portion.

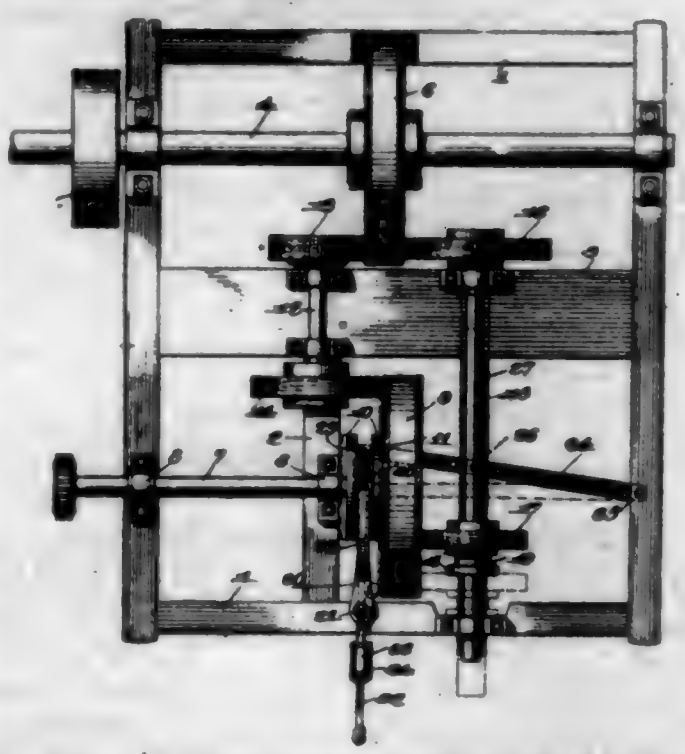
9. In a device of the character described, approximately parallel comb members, and means for locking said comb members together, in combination with a curved tubular member, the curvature of which is adapted to bend a hat-pin projected therethrough.

10. In a device of the character described, approximately parallel concavo-convex comb members, means for locking said comb members together, in combination with a curved tubular bridge adapted for holding a hat-pin.

11. In a device of the character described, a curved tubular pin-receptacle, comb-guides formed at the end portions of said receptacle, separable combs comprising a plurality of superposed concavo-convex teeth, and means for locking said superposed teeth in relatively close contact.

12. In a device of the character described, a curved tubular pin-receptacle, comb-guides formed at the end portions of said receptacle, separable combs comprising a plurality of superposed concavo-convex teeth, and a rockable cam for locking said superposed teeth in relatively close contact.

817,289. **GRARING.** SPENCER GRAVES, Poulan, Ga. Filed June 27, 1905. Serial No. 267,274.



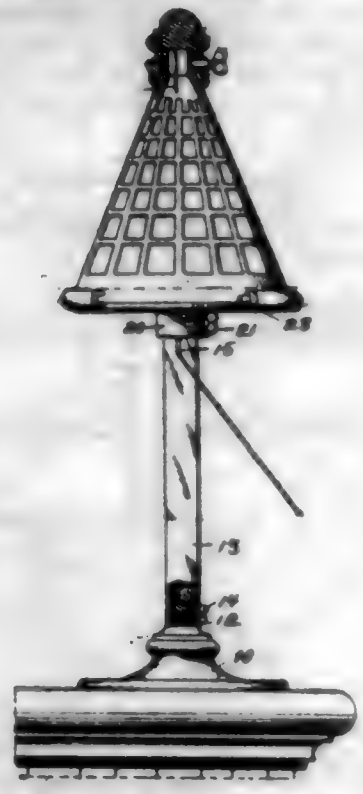
Claim.—1. In a feed-works for sawmills and the like, a driving-shaft, a final transmitting-shaft parallel with the driving-shaft, a friction-disk rigidly mounted upon the driving-shaft, a disk mounted upon the transmitting-shaft and longitudinally movable thereon, means for driving the transmitting-shaft comprising an auxiliary driving-shaft mounted transverse to the driving-shaft, a disk rigidly mounted thereon and in contact with one face of the driving-disk and a second disk longitudinally movable thereon and arranged for contact with one face of the transmitting-disk means for reversing the movement of the transmitting-shaft comprising a shaft parallel to the auxiliary driving-shaft, a disk thereon in contact with the driving-disk on its face opposite the auxiliary driving-disk and a disk arranged to contact with the transmitting-disk diametrically opposite and upon the opposite face from the auxiliary driving-disk and a means for moving the transmitting-disk and the movable reversing-disk.

2. A feed-works for sawmills and the like, comprising a frame, a main driving-shaft, a final transmitting-shaft parallel with the main driving-shaft, a friction-disk rigidly mounted upon the main driving-shaft, a disk mounted upon the transmitting-shaft and longitudinally movable thereon, means for driving the transmitting-shaft comprising an auxiliary driving-shaft mounted transverse to the main driving-shaft, a disk rigidly mounted thereon and in contact with one face of the driving-disk, a second disk longitudinally movable thereon and arranged for contact with one face of the transmitting-disk, means for reversing the final transmitting-shaft comprising a reverse-shaft parallel with the auxiliary driving-shaft, a disk thereon in contact with the face of the main driving-disk opposite the auxiliary driving-disk and a disk arranged to contact with the transmitting-disk diametrically opposite and upon the face opposite the movable auxiliary driving-disk, a lever mounted upon the frame, means connected with the lever for shifting the transmitting-disk into contact with the auxiliary driving-disk and the reverse-disk and means connected with the lever for moving the auxiliary driving-disk diametrically to the transmitting-disk.

817,240. **TWINE-HOLDER.** HARRY W. GRAY, Des Moines, Iowa. Filed Jan. 16, 1905. Serial No. 241,339.

Claim.—1. The combination of a tube formed with twine-openings at opposite sides of its upper end, a weight formed with an eye slidingly and non-rotatably mounted in the tube, a base detachably secured to one end of the tube and shaped to be capable of detachable

connection with the other end of the tube and a cap detachably secured to one end of the tube and shaped to be capable of detachable connection with the other end of the tube.



2. The combination of a tube, a weight formed with an eye slidingly and non-rotatably mounted in the tube, said tube formed with slots at its upper end and a twine-cup detachably secured to the upper end of the tube and when in position closing the upper ends of said slots.

3. The combination of a tube formed with a slot at its upper end, a weight slidingly and non-rotatably mounted in the tube and formed with an eye and a sleeve designed to overlap the top of the tube and cover the upper end portions of said slot.

4. The combination of a tube formed with slots at its upper end, a weight slidingly and non-rotatably mounted in the tube and formed with an eye, a twine-cup having a sleeve on its under surface designed to overlap the top of the tube and cover the upper end portions of said slots, said twine-cup formed with an open top and a slot at one side of its top and a cap detachably mounted on the top of the cup covering the upper end of said slot.

5. The combination of a tube formed with slots at its upper end, a twine-cup detachably secured to said upper end and when in position overlapping the upper portions of said slots, a weight formed with an eye slidingly and non-rotatably mounted in the tube, a base, means for securing the base to the bottom of the tube and means for securing the base to the top of the twine-cup.

6. The combination of a tube angular in cross-section, its top slotted on two sides, an angular weight formed with an eye and slidingly mounted in the tube, a base, means for detachably securing the base to the bottom of the tube, a twine-cup comprising a base formed with an angular sleeve to overlap the top of the angular tube and a cup detachably secured to the base and formed with an angular extension at its top and with a slot at one side of its top, a cap designed for detachable connection to the top of the cup or to the bottom of the tube and means for detachably securing the base to the bottom of the tube and means for securing the base to the top of the cup.

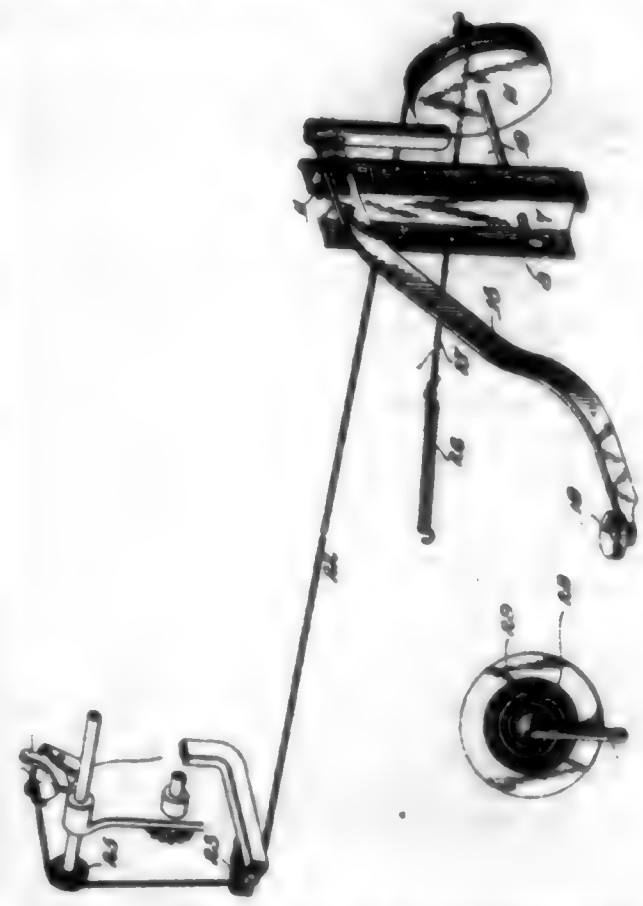
817,241. BUILDING-COLUMN. THEODORE L. GREEN, Memphis, Tenn. Filed Jan. 25, 1905. Serial No. 242,053.



Claim.—1. A column composed of sections united by joints the contacting faces of which are curved throughout their entire extent.

2. As a new article of manufacture, a stave for building-columns having one edge concave and its other edge convex, the surfaces of the two edges being curved throughout their entire extent.

817,242. CONTROLLING ATTACHMENT FOR TYPE-WRITERS. SHANNON A. HARDMAN, Elkins, W. Va. Filed Mar. 2, 1905. Serial No. 248,114.



Claim.—1. The combination with a type-writer having a longitudinally-movable carriage, a rotatable platen, and a platen-operating lever; of a key-lever pivoted to the type-writer, a sleeve secured to the type-writer, a rack slidably mounted therein, guides for retaining the rack within the sleeve, a sliding connection between the lever and rack, a shaft journaled within the sleeve, a gear secured thereon and within the sleeve and meshing with the rack, a drum secured to the shaft, a flexible connection between the drum and the platen-lever, said connection movably engaging the carriage, and means for holding said connection normally taut.

2. In a device of the character described the combination with a key-lever having a fixed pivot at one end; of a stationary sleeve, a rack slidably mounted therein, guides for holding the rack within the sleeve, a sliding connection between the key-lever and rack, a shaft journaled within the sleeve, a gear upon the shaft and within the sleeve and meshing with the rack, a drum upon the shaft, and flexible means connected to the drum and adapted to be secured to the carriage of a type-writer.

817,243. POCKET-CAMERA. FRANK HEATH, National City, Cal. Filed Nov. 7, 1904. Renewed Oct. 4, 1905. Serial No. 281,248.

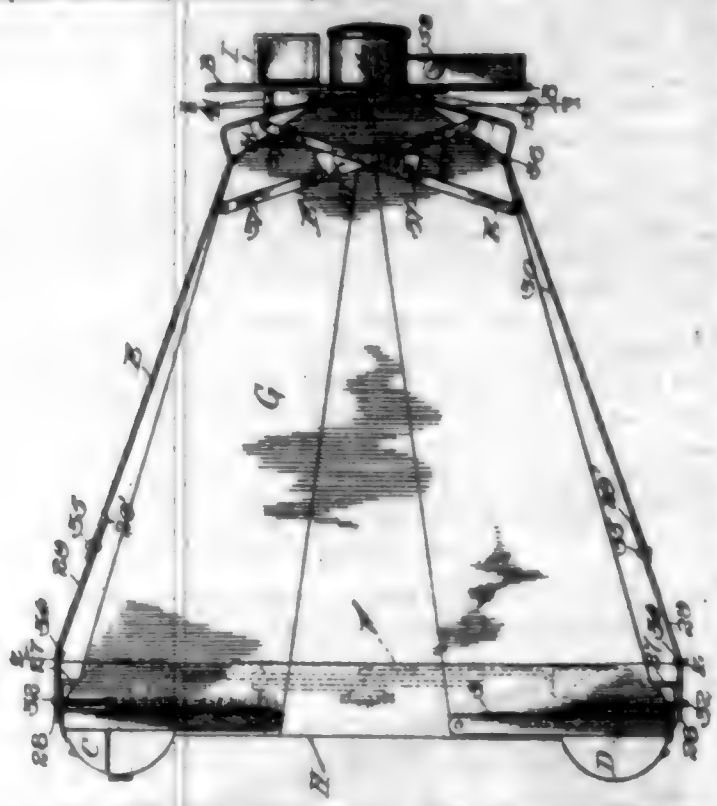
Claim.—1. In a pocket or folding camera, a lens-plate, in combination with independent film-roll cases and metallic means collapsibly connecting said cases and also connecting the cases to said plate, said means permitting said cases to be moved together or apart and also permitting said plate to be moved into the plane of said cases, and a flexible light-excluding closure, substantially as described.

2. In a folding or pocket camera a lens-plate and foldable members, extending rearwardly therefrom in combination with film-roll cases, each movable with relation to said plate, and connected with said members, parallel-motion means extending between said cases, suitable bellows and film-rolls arranged in said cases, substantially as described.

3. In a folding or pocket camera, a lens and bellows, in combination with film-roll cases, and associated parts, closing the large end of said bellows, said cases being equipped with film-holding parts and being collapsible, substantially as described.

4. In a folding or pocket camera, a lens plate or support, in

combination with bellows extending rearwardly therefrom, relatively movable film-cases and a flexible part, closing the rear end of said bellows, and foldable bellows-distending members joining said support and cases, substantially as described.



5. In a folding or pocket camera, relatively movable film-cases, maintained in parallel relation and equipped with film-holding devices, in combination with a lens and collapsible lens-sustaining and light-excluding means, substantially as described.

6. In a folding or pocket camera, film-cases connected by parallel-motion means, in combination with film-rolls provided therein, said cases arranged to be opened for the removal and insertion of a film, the whole constituting the rear-end mechanism of the camera, substantially as described.

7. In a folding or pocket camera, independently-movable film-rolls, in combination with containing parts maintained parallel to each other, a lens, and a closure foldably connected with said parts, substantially as described.

8. In a folding or pocket camera, a lens-plate, in combination with collapsible, distensible film-holding means and focal-distance-maintaining means, joining the first-mentioned means and said plate, substantially as described.

9. In a folding or pocket camera, a lens-plate and film-holding means, including supply and take-up rolls, in combination with suitable flexible bellows and a manual film-punch adjacent to the supply-roll, normally out of engagement with the film and operable by pressure upon said bellows, substantially as described.

10. A folding camera-back, comprising parallel film-roll cases, in combination with a flexible closure attached thereto, parallel-motion means connecting said cases, a spring-resisted supply and retake roll arranged in one of said cases and a take-up roll arranged in the other case, substantially as described.

11. A folding camera-back, comprising metallic roll-cases composed of hinged parts, in combination with rolls in said cases and a parallel-motion mechanism joining said cases and adapted to be collapsed or extended laterally, substantially as described.

12. In a folding or pocket camera, parallel roll-cases adapted for relative lateral movement, in combination with a lens-plate, a lazy-tongs-like frame connecting said cases and plate and adapting said plate to be folded or collapsed to a position adjacent to the ends of said cases, substantially as described.

13. In a camera for taking pictures of different lengths, a laterally-distensible bellows, in combination with film and lens holding members in the ends of said bellows and parallel-motion mechanism joining said members, substantially as described.

14. In a folding or pocket camera, film-roll cases, parallel-motion mechanism joining the same for relative lateral movement, and suitable film-holding means, in combination with parts having distant hinges on said cases, said parts being joined by a flexible bellows portion, and when opened furnishing internal access spaces, substantially as described.

15. In a folding or pocket camera, the parallel laterally-separable film-roll cases, in combination with a lens-plate, a suitable bellows or closure and a finder, having parts movably indicating thereon the extent of the variable distance between said cases, substantially as described.

16. In a folding or pocket camera, the parallel laterally-separable film-roll cases and the mechanism joining the same, in combination with a lens-plate, focal-distance-maintaining mechanism joining said cases and plate, a finder and indicators upon said finder, actuated by said focal-distance-maintaining mechanism, substantially as described.

17. In a folding or pocket camera, the relatively separable film-roll cases and parallel-motion mechanism connecting said cases in combination with a film-punching device arranged on one of the said cases and movable therewith and film-supply and take-up means arranged in said cases, substantially as described.

18. In a folding camera of the kind described, a bellows, in combination with film-roll cases, partly framing the rear end of said bellows, each said casing comprising two parts having flanges and grooves to receive said flanges, substantially as and for the purpose specified.

19. An automatic film-tension-maintaining and retake-roll mechanism, comprising a suitable frame or casing, in combination with a roll containing a spring, a spur-wheel connected with said spring, a detent normally engaging said wheel, and a detent-disengaging disk movable longitudinally and having a pin or lug to engage said wheel, substantially as and for the purpose specified.

20. In a folding camera, the parallel film-roll cases, in combination with a rack-guide, racks therein, a pinion joining said racks and parallel-motion lazy-tongs levers connecting said cases and having their middle pivots connected respectively to said guide and racks, substantially as described.

21. In a folding camera, a lens-plate, in combination with oppositely-extending link members, 31, pivoted upon said lens-plate, side bars pivoted to said link members and extending rearwardly, distensible film-holding means at the rear ends of said side bars, diagonal members, 37, joining each side bar to the opposite link member, each said diagonal member being provided with a flat or cam surface and a pin or lug to engage the flat of the other diagonal member, whereby the effect of the lateral movement of the side bars upon the lens-plate is corrected and the focal distance between said lens-plate and the film-holding means is maintained, substantially as described.

22. In a folding camera, a lens-plate, in combination with link members, 31, pivoted thereon, side bars extending rearwardly from the said link members respectively, each said bar comprising pivotally-connected parts, film-holding means whereto the rear ends of said side bars are pivotally connected, whereby the lens-plate may be collapsed or folded to a position adjacent to the film-holding means, and suitable focal-distance-maintaining means, substantially as described.

23. In a folding or pocket camera, a lens-plate, in combination with side bars pivotally connected with said lens-plate, distensible film-holding means whereto said side bars are pivotally connected, said side bars comprising a plurality of pivotally-connected parts whereby said lens-plate may be collapsed or folded to a position adjacent to said film-holding means, substantially as described.

24. In a folding or pocket camera, a lens-plate, in combination with film-roll cases, each adapted to contain a film-roll, means joining said plate and cases, parallel-motion means connecting said film-roll cases, each of said film-roll cases having a hinged back, a flexible bellows portion joining the hinged backs of said cases and the bellows proper connecting said film-roll cases and said lens-plate, substantially as described.

25. In a camera, two film-holding cases comprising semicylindrical parts having distended hinge parts, and a flexible closure joining the outer portions of the two cases, substantially as described.

26. In a folding or pocket camera, the parallel, laterally-separable film-holding cases and the mechanism joining the same, in combination with a lens-plate, focal-distance-maintaining mechanism joining said cases and said plate and a suitable bellows or closure, substantially as described.

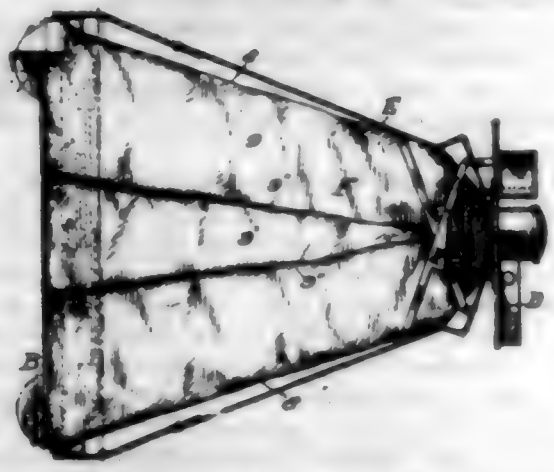
27. In a folding or pocket camera, parallel film-roll cases and parallel-motion mechanism connecting the same, in combination with a lens-plate, a flexible bellows or closure and means maintaining the focal distance between said plate and cases and permitting said lens-plate to be folded or collapsed to a position adjacent to said cases, substantially as described.

28. In a camera, a lens-plate, in combination with bellows attached to said plate, distensible film-holding means occupying and closing the rear end of said bellows, and means automatically varied in length by the movement of the film-holding means and adapted to maintain said means and said plate in parallel relation and fixed and

maintaining the focal distance between the same, substantially as described.

29. In a camera, a lens-plate, in combination with a bellows attached thereto, film-holding means closing the rear end of said bellows and adapted to be collapsed and distended in a plane parallel with said lens-plate, and means operated by the movement of said film-holding means adapted to maintain the focal distance between the said means and said plate, substantially as described.

817,244. POCKET-CAMERA. FRANK HEATH, National City, Cal. Filed Apr. 27, 1905. Serial No. 257,722.



Claim.—1. In a camera of the class described, a lens-plate, in combination with a collapsible film-holding mechanism, means connecting said plate and mechanism, bellows composed of flexible material, the front end of said bellows being attached to said lens-plate, and portions of the rear edges of the bellows being fastened to said mechanism, leaving portions thereof free, and means carried by said mechanism for folding the free portions of said bellows when said mechanism is collapsed, substantially as described.

2. In a camera of the class described, a lens-plate, in combination with suitably-joined relatively collapsible film-roll cases, means connecting the said plate with said film-roll cases, a bellows having its rear edges secured upon said film-roll cases, and having its front end secured to said lens-plate, and means arranged between said film-roll cases for supporting and folding the intermediate portions of said bellows, substantially as described.

3. In a camera of the class described, a lens-plate, in combination with a bellows attached to the plate and film-holding mechanism collapsibly arranged in the rear end of said bellows, and means upon said film-holding mechanism for stretching said bellows uniformly and folding the same, substantially as described.

4. In a camera of the class described, a lens-plate, in combination with film-roll cases, parallel-motion mechanism joining said cases, suitable means connecting said cases to said lens-plate, bellows composed of flexible material and extending between said plate and said cases, a suitable back portion for said bellows and means upon said parallel-motion mechanism within the bellows for supporting and folding the otherwise free portions of said bellows, substantially as described.

5. In a camera of the class described, a lens-plate, in combination with film-roll cases, parallel-motion mechanism joining said cases, suitable means connecting the said cases with said plate, a pyramidal bellows having its front end attached to said plate, and suitable bellows holding and folding clips upon said parallel-motion mechanism, substantially as described.

6. In a camera of the class described, a lens-plate, in combination with relatively movable parallel film-roll cases, suitable mechanism joining said cases, means holding said cases and said plate in parallel planes, a bellows having its front end attached to said plate and its rear end attached to said cases, and means relatively movable between said cases for supporting and folding the intermediate portions of the bellows, substantially as described.

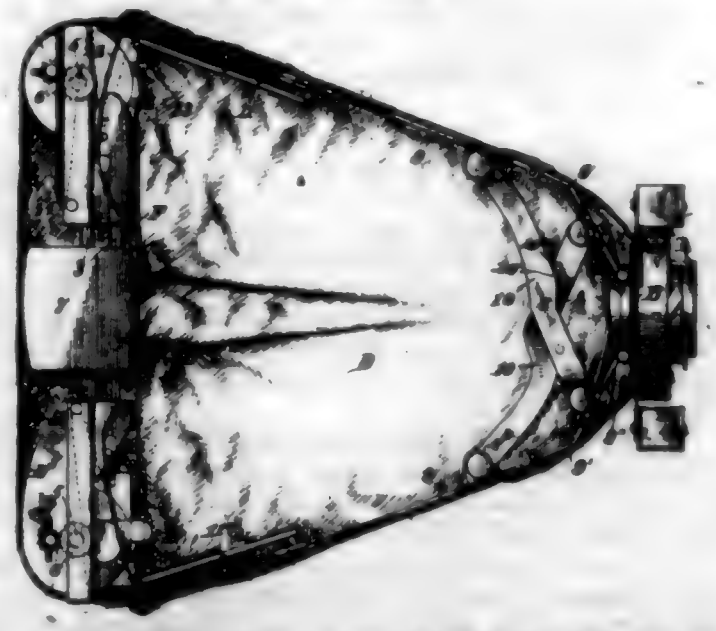
7. In a camera of the class described, a lens-plate, in combination with film-roll cases, lens-plate-supporting means connected with said cases, parallel-motion mechanism joining said film-roll cases, bellows attached to said lens-plate and composed of flexible material, portions of the rear edges of said bellows being attached to said film-roll cases, and U-shaped bellows holding and supporting clips upon said parallel-motion mechanism, substantially as described.

8. In a camera of the class described, a lens-plate, in combination with film-roll cases having extension hinge parts, parallel-motion mechanism joining said cases, suitable means connecting said plate to said cases, bellows attached to said lens-plate and composed of flexible material and having a suitable back portion, the rear edges of said bellows being attached to said film-roll cases and the hinge parts thereof, and means upon said parallel-motion mechanism substantially in the plane of said hinge parts, parallel therewith, and adapted to sustain the intermediate portions of the bellows and regularly fold the same, substantially as described.

9. In a camera of the class described, a lens-plate, in combination with film-roll cases, means joining the plate and cases, a pyramidal bellows composed of flat, flexible material attached to the lens-plate and to said cases and U-shaped clips upon said parallel-motion mechanism substantially in the plane of said cases and adapted to support and fold the intermediate portions of said bellows, substantially as described.

10. In a camera of the class described, a lens-plate and collapsible film-holding means transversely movable with respect to the lens-axis and suitably connected with said plate, in combination with a light-excluding bellows extending between said plate and said means, and comprising a plurality of flat portions, and means provided in connection with said film-holding means for folding said bellows, substantially as and for the purpose specified.

817,245. POCKET-CAMERA. FRANK HEATH, National City, Cal. Filed July 24, 1905. Serial No. 271,023.



Claim.—1. In a folding camera, distensible film-holding means and a lens-plate normally parallel with said means, but adapted to be positioned at the end thereof, in combination with foldable lens-plate-supporting mechanism hinged upon the film-holding mechanism parallel therewith, said supporting mechanism being adapted for folding movements in planes parallel with and also transverse to the plane of the film-holding mechanism, substantially as described.

2. In a folding camera, a lens-plate, in combination with collapsible film-holding mechanism, foldable means, composed of hinged parts connecting said plate and said mechanism, a pyramidal bellows composed of flexible material and extending between said plate and mechanism, and means for taking up the slack in the sides of said bellows, substantially as described.

3. In a folding camera, a lens-plate, in combination with collapsible film-holding mechanism, foldable means composed of hinged parts connecting said plate and said mechanism, a pyramidal bellows composed of flexible material and extending between said plate and mechanism, and automatic means for taking up the slack in the top of said bellows, substantially as described.

4. In a camera of the class described, a lens-plate, in combination with relatively movable film-roll cases, foldable means connecting said plate and cases, bellows composed of flexible material, and springs engaging said bellows and automatically taking up the slack therein when said bellows is in open position, substantially as described.

5. In a camera of the class described, a lens-plate, in combination with film-roll cases and a parallel-motion mechanism connecting the same, hinges attached to said film-roll cases and adapted to fold against the front thereof, and bars transversely pivoted upon the forward leaves of said hinges, and supporting said lens-plate in both folded and open position, substantially as described.

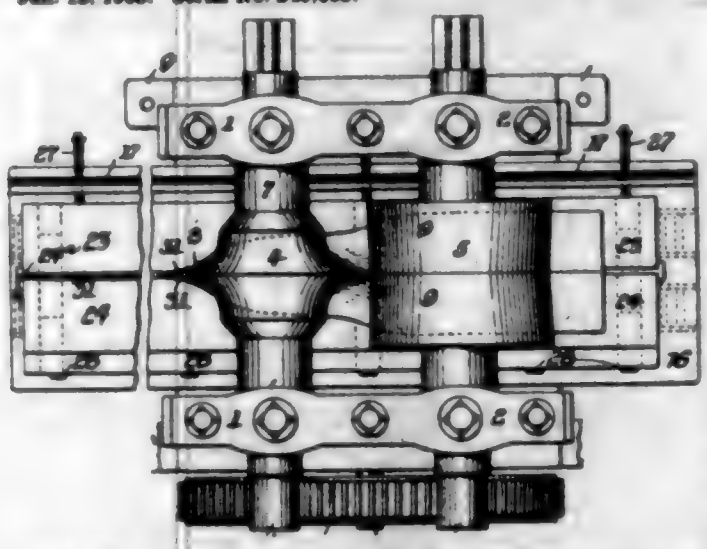
6. In a camera of the class described, a lens-plate, in combination with distensible, collapsible film-holding mechanism, hinges

pivoted upon said mechanism, supplementary hinges thereon and serving as stiffening-flanges when the hinges are opened, and suitable means pivotally connecting said lens-plate to said hinges, substantially as described.

7. In a camera of the class described, suitable film-holding mechanism in combination with hinges pivotally attached thereto, bars transversely pivoted upon the forward ends of said hinges, supplementary hinge parts adapted to stiffen and lock said hinges and bars in certain positions, and a lens-plate attached to said bars and movable therewith, substantially as described.

8. In a camera of the class described, a lens-plate, in combination with collapsibly-connected film-roll cases, inwardly-collapsible hinges pivoted upon said cases, supplementary hinges thereon adapted to fold outward and lock the hinges when opened, suitable pivotal means connecting said hinges to said lens-plate, and suitable bellows inclosing said film-holding means and the hinged members, the latter being adapted to be collapsed by pressure upon the sides of said bellows, substantially as described.

817,246. METAL-BENDING MACHINE. ALBERT W. HEINLE, Crafton, Pa., assignor of one-half to John Noland, Pittsburg, Pa. Filed Jan. 12, 1905. Serial No. 240,685.



Claim.—1. The combination with suitable housings, of rolls journaled therein, a movable table mounted beneath said rolls, adjustable dies mounted upon said table, an adjustable guide carried by said table and means for producing an angular tapering bar or plate from material carried by said table, substantially as described.

2. In a machine of the type described, the combination with suitable housings of rolls, a movable table, dies carried by said table, a stop carried by one of the dies, an adjustable guide mounted upon said table and means for producing angular tapering bars from material carried by said table, substantially as described.

3. In a machine of the type described, the combination with suitable housings of rolls, one of said rolls being of a substantially doubled-coned shaped, the other of said rolls having annular tapering surfaces, means for supporting and moving material beneath said rolls to produce angular bars, substantially as described.

4. In a machine of the type described, the combination with a suitable housing, of horizontally-alined rolls journaled in said housings, a movable table mounted beneath said rolls, dies carried by said table, a guide carried by said table and means for forming an angular tapering bar of material carried by said table beneath said rolls, substantially as described.

5. In a machine of the type described, a movable table, dies carried by the table, the inner face of each die having its lower edge cut away, a guide mounted on the table, and positioned in the cut-away portions of the dies, and means for producing angular bars from material carried by the table.

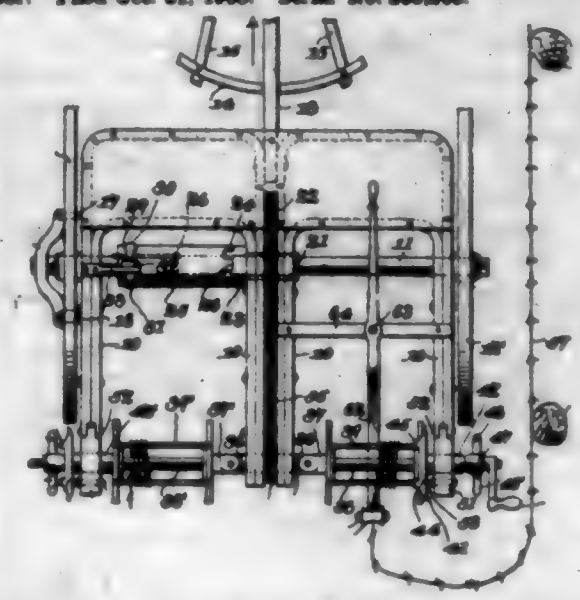
817,247. BOTTLE-NECK. TILGHMAN A. HUFFER, Lewisville, Tex. Filed May 27, 1905. Serial No. 262,689.



Claim.—1. A bottle or jar provided in its rim edge with two diametrically opposite well-defined notches or recesses designed to expose the cork on two opposite sides for the fingers of the operator to grasp it when withdrawing it.

2. A bottle or jar provided in its rim edge with well-defined notches the walls of which are beveled, said bevels increasing from the top to the bottom of the notches, as and for the purpose set forth.

817,248. WIRE REELING TRUCK. EDWARD H. JACOT, Bassett, Nebr. Filed Oct. 31, 1905. Serial No. 285,268.



Claim.—1. A wire-reeling truck embodying, a frame, an axle mounted to rotate in the frame, supporting-wheels arranged to operate the axle, a trunnion journaled in the frame, means to rotate the trunnion from the axle, a spindle hinged to the trunnion and rotatable therewith, and means to secure a spool removably upon the spindle.

2. A wire-reeling truck embodying, a frame, a sprocket provided with trunnions journaled in the frame, means to drive the sprocket from the truck-wheels, a separable bearing carried by the frame, a spindle hinged to and carried at one end by the trunnion and journaled in the separable bearing, a spool-engaging member mounted upon and rotatable with the spindle and means to clamp the spool-engaging member upon a spool.

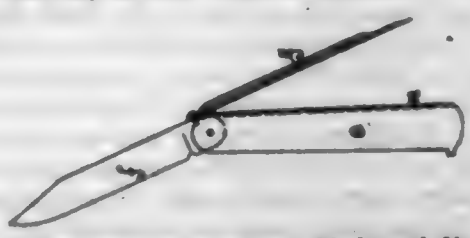
3. In a wire-reeling truck the combination with a trunnion, and mechanism for rotating the trunnion, of a spindle hinged to the trunnion, a spool removably mounted on the trunnion, and means for holding the spindle and trunnion normally in alinement.

817,249. POCKET-KNIFE. ERNST KAUFMANN, Solingen, Germany. Filed May 8, 1905. Serial No. 259,623.



Claim.—In a pocket-knife the combination with the casing and a blade carried thereby having a notch or recess, of scales at the sides of said casing, solid rivets passed entirely through said casing and said scales at the central longitudinal line thereof, one of said rivets being in proximity to the aforesaid notch or recess when the blade is closed, a spring within said casing, and rivets passed through said casing, but not through the scales, in a position to keep the spring in place.

817,250. KNIFE-CASING. ERNST KAUFMANN, Solingen, Germany. Filed July 11, 1905. Serial No. 269,185.

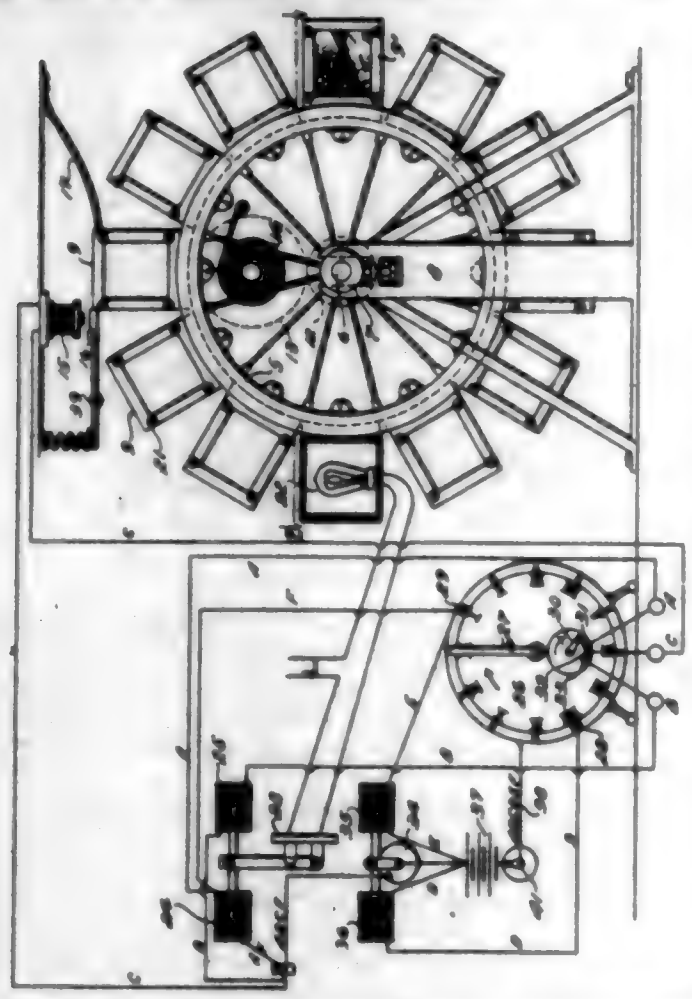


Claim.—A knife-casing carrying a blade and file, said casing having a projecting front lug *b* and a projecting rear lug *c*, said lugs adapted to engage the file and hold the blade in its open and closed position.

817,251. AUTOMATIC STEREOPTICON APPARATUS. MARCUS H. KELLER, Chicago, Ill., assignor of one-half to Mark L. Kline. Filed Apr. 26, 1905. Serial No. 257,525.

Claim.—1. The combination of a lantern of the class described having a space for lantern-slides in alinement with its lenses, a sup-

porting-frame, a member movably mounted in said frame and having thereon a series of slide-frames lying substantially in the same plane and each adapted to hold a lantern-slide, means for intermittently moving said member to bring said slide-frames successively into said space, and means for adjusting each of said slides laterally of its plane and independently of the other slides.



2. The combination of a lantern of the class described having a space for lantern-slides in alinement with its lenses, a supporting-frame, a member movably mounted in said frame and having thereon a series of slide-frames lying substantially in the same plane and each adapted to hold a lantern-slide, means for intermittently moving said member to bring said slide-frames successively into said space, means for adjusting each of said slides laterally of its plane and independently of the other slides, said slide-frames being arranged to permit slides to be removed and replaced therein without affecting the setting of said adjusting means.

3. In a device of the class described, the combination of a rectangular frame having its side and end bars grooved for loosely holding a glass plate, spring-clips adapted to bear on one face of said plate near its edges for clamping the plate in position, and a set-screw near each corner of the plate on the side opposite said clips and adapted for adjusting the plate laterally of the plane of said frame, all arranged to permit said plate to be readily removed and replaced in the frame without affecting the setting of said set-screws.

4. The combination of a lantern of the class described having lenses, a space for lantern-slides, and an electric light in optical alinement with each other; a slide-supporting member having thereon a series of lantern-slides, means urging the shifting of said member to move said slides in succession through said space, an electromagnet escapement device for intermittently stopping the movement of said member to successively bring each slide to rest in said space; a light-circuit, a switch controlling said light-circuit, electromagnetic means for opening and closing said switch; and clockwork mechanism for timing the operation of said means and escapement device whereby said member will be shifted at predetermined intervals and whereby said light will be exposed while said member is at rest and cut off while said member is in motion.

5. The combination of a lantern of the class described having lenses, a space for lantern-slides, and an electric light in optical alinement with each other; a slide-supporting member having thereon a series of lantern-slides, means urging the shifting of said member to move said slides in succession through said space, an electromagnet escapement device for intermittently stopping the movement of said member to successively bring each slide to rest in said space; a light-circuit, a switch controlling said light-circuit, electromagnetic means for opening and closing said switch; individual circuits controlling the opening of said switch, the operation of said escapement device, the closing of said switch; and clockwork mechanism for successively closing and breaking said circuits to shift said member at predetermined intervals of time and respectively cut off and expose said light before and after the shifting of said member.

6. The combination of a lantern of the class described having lenses, a space for lantern-slides, and an electric light in optical alinement with each other; a slide-supporting member having thereon a series of lantern-slides, means urging the shifting of said member to move said slides in succession through said space, an electromagnet escapement device for intermittently stopping the movement of said member to successively bring each slide to rest in said space; a light-circuit, a switch controlling said light-circuit, electromagnetic means for opening and closing said switch; individual circuits controlling the opening of said switch, the operation of said escapement device, the closing of said switch; a second switch for breaking said individual circuits, electromagnetic means having separate circuits for opening and closing said second switch; and clockwork mechanism having contact devices connected with said circuits and arranged to close said second switch, then to successively cut off the light, operate the escapement device, and turn on the light, and to repeat such successive operations at intervals during a certain predetermined period of time, and then to open both of said switches.

817,252. **FILTER.** GEORGE M. KREUPER, New York, N. Y. Filed Aug. 13, 1904. Serial No. 220,450.



Claim.—A filter consisting of a cylindrical relatively rigid wall having perforations, and a cylindrical lining of compressed pulp applied to said wall and provided with a pulp bottom integral with the pulp-cylinder.

817,253. **FILTER.** GEORGE M. KREUPER, New York, N. Y. Filed Nov. 30, 1904. Serial No. 234,858.



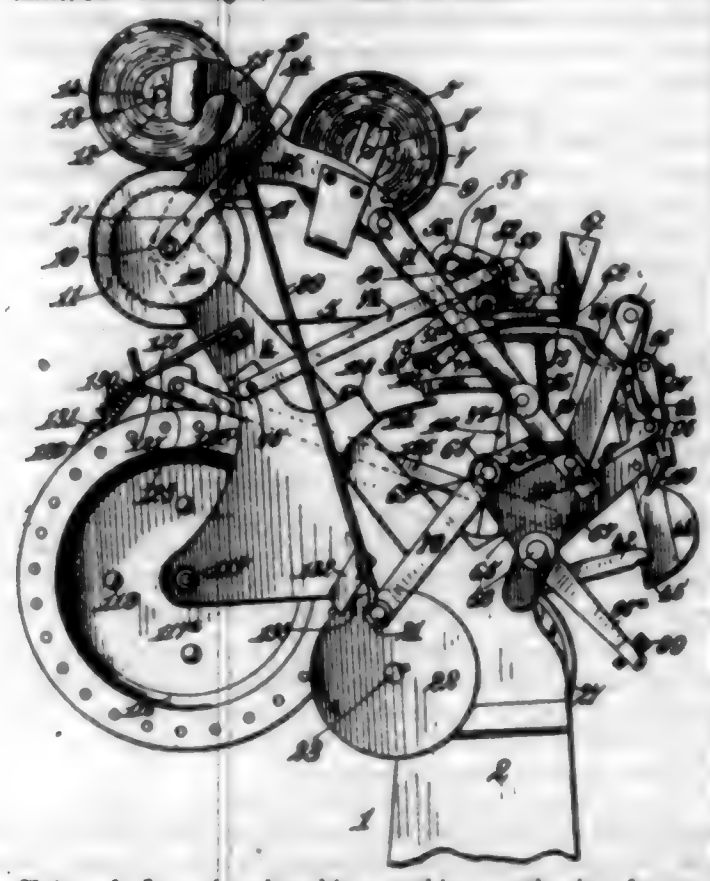
Claim.—1. A filtering material consisting of a porous flexible carrier, which on one half of one of its surfaces, is provided with a coating containing a filtering substance, and on the other half of the other surface is provided with a porous flexible material of greater density than the carrier proper.

2. A filtering material consisting of a porous flexible carrier, coated with a compound containing charcoal and gum-tragacanth.

3. A filtering material consisting of a porous, flexible carrier A,

coated on one half only of one surface with a compound B containing a filtering substance and adapted when coiled to have the carrier A embrace the compound B on both sides.

817,254. CIGAR-BUNCHING MACHINE. ALFRED S. KOCH, Lancaster, Pa. Filed Aug. 5, 1902. Serial No. 118,220.



Claim.—1. In a cigar-bunching machine, mechanism for presenting a continuous web of tobacco, means for automatically separating the web into binders of predetermined lengths, bunch-making mechanism embodying an oscillatory bunch-making table to receive the binder, means to oscillate the table and means actuated by the oscillations of the bunch-making table to apply an adhesive to the binder.

2. In a cigar-bunching machine, means for supporting a roll, web or sheet of binders, means for feeding the binders through the machine, and pressure mechanism coacting with the binders embodying a plurality of independently-yieldable rollers.

3. In a cigar-bunching machine, mechanism for presenting and feeding a roll, web or sheet of binders through the machine, and pressure-exerting mechanism coacting with the binders embodying a shaft, and a plurality of rollers mounted upon the shaft and vertically yieldable thereon independent of each other.

4. In a cigar-bunching machine, mechanism for presenting and feeding a roll or web of binders, means for feeding the binder through the machine, a bunch-making table, paste-applying mechanism, and means for imparting a slight oscillation to the bunch-making table to effect application of the paste to the binder.

5. In a cigar-bunching machine, a strip of fabric designed to inclose a web or sheet of binders, means for feeding the binders through the machine and for separating them in predetermined lengths, paste-applying mechanism, and means for stripping the binder from the fabric.

6. In a cigar-bunching machine, the combination with a strip of fabric designed to inclose a web, roll or sheet of binders, of mechanism for cutting the binders into predetermined lengths, paste-applying mechanism, and means for separating the elements of the cutting mechanism to prevent the binders from adhering thereto.

7. In a cigar-machine, a bunch-making table, a bunching-apron, means for feeding binders to said apron, means for applying paste to the binders, a bunching-roller, a pivoted plate to which one terminal of the apron is secured, and means for tripping the plate at the limit of the forward stroke of the bunching-roller, thereby to straighten out the apron and effect discharge of the bunch.

8. In a cigar-bunching machine, the combination with bunch-making mechanism, of means for compressing and rolling the bunches, comprising a plurality of rollers, a belt to hold the bunches between the rollers, and means to permit the belt to yield to compensate for variation in the sizes of the bunches.

9. In a cigar-bunching machine, a bunch compressing and shaping mechanism comprising a plurality of driven rollers, a belt to hold the bunches between the rollers, and a shield or guard partially encircling said mechanism and yieldable to prevent injury to the bunches.

10. In a cigar-bunching machine, a bunch compressing and shaping mechanism comprising a plurality of driven rollers, a belt to hold the bunches between the rollers, and a yieldable shield or guard partially encircling the mechanism.

11. In a cigar-bunching machine, a bunch carrying and rolling device embodying a plurality of rollers, a belt forming pockets between the rollers to receive the bunch, a shield or guard partially encircling the mechanism, and means for yieldingly and detachably connecting the shield or guard with the machine.

12. In a cigar-bunching machine, a bunch carrying and rolling drum embodying a pair of heads, rollers carried by the heads and provided each with a gear, a toothed fixed disk meshing with the gears, means for imparting a step-by-step motion to the drum to cause turning of the rollers, a belt encircling the drum, and a shield or guard partially encircling the drum.

13. In a cigar-bunching machine, bunch-making mechanism, a bunch carrying and rolling drum, a belt encircling the drum and held in yielding relation therewith, a chute to receive the bunches from the bunch-making mechanism, and means coacting with the chute to form a pocket in the belt and to deposit the bunch therein.

14. In a cigar-bunching machine, mechanism for presenting and feeding a web, sheet or roll of binders, compressing, cutting and pasting mechanism, bunch-making mechanism, a bunch carrying and rolling element, and means for forcing a bunch from the bunch-making mechanism to the bunch carrying and rolling element.

15. In a cigar-bunching machine, a binder-compressing, cutting and pasting mechanism, bunch-making mechanism, means for elevating the compressing, cutting and pasting mechanism during the operation of the bunch-making mechanism, and means for cushioning the descent of the compressing, cutting and pasting mechanism.

16. In a cigar-bunching machine, the combination with bunch-making mechanism, of a rolling and compressing drum including an encircling belt yieldably supported with relation to the drum, means for transferring a bunch from the bunch-making mechanism to the drum and for forming a pocket within the belt, and means coacting with the belt to hold the bunches within the pockets.

17. In a cigar-bunching machine, a bunch-making table, a bunching-apron and a bunching-roller coacting therewith, paste-applying mechanism and means for imparting a slight oscillatory movement to the bunching-table to cause proper application of the paste to a binder.

18. In a cigar-bunching machine, the combination with mechanism for presenting and feeding a web or roll of binders, embodying a strip of fabric between which the binders are included, of means for stripping the binders from the fabric, means for exerting pressure on the binders, means for cutting the binders into predetermined lengths, and means for applying an adhesive thereto.

19. In a cigar-bunching machine, the combination with bunch-making mechanism, of a bunch rolling and compressing mechanism embodying an endless belt and means for transporting the bunches from the bunch-making to the bunch rolling and compressing mechanism and for forming pockets within the belt for receiving the bunches.

20. In a cigar-bunching machine, the combination with binder-feeding, bunch-making and bunch rolling and compressing mechanism embodying a plurality of rollers and a belt encircling the same, of actuating mechanism therefor embodying a positively-driven gear, clutch mechanism for locking the gear upon the shaft, and a trip-lever for controlling the operation of the clutch mechanism.

21. In a cigar-bunching machine, a bunch rolling and compressing drum, means for imparting a step-by-step movement thereto, a belt encircling the drum and having yielding connection therewith, a shield or guard partially encircling the drum, and resilient connections between the free end of the shield or guard and the machine.

22. In a cigar-bunching machine, the combination with a bunch-making table, of a bunching-apron and bunching-roller, means for feeding binders to the bunching-apron, means for applying paste to said binders, and means for exerting tension on the bunching-apron when the formation of a bunch is completed thus to insure its proper discharge.

23. In a cigar-bunching machine, the combination with bunch-making mechanism, of binder feeding, cutting and pasting mechanisms, means for elevating the latter mechanism during the operation of the bunch-making mechanism, and means for gradually returning the said mechanisms to their normal position.

24. In a cigar-bunching machine, a frame supporting a roll or web of fabric and adapted to have tobacco included in its plies, means for cutting the tobacco into predetermined lengths, means for applying an adhesive to the tobacco, bunch-making mechanism, and means for moving the frame, cutting and paste-applying mechanisms to and from the bunch-making mechanism.

25. In a cigar-bunching machine, a frame supporting a roll or web of fabric, means carried by the frame for cutting the tobacco into predetermined lengths, means for applying an adhesive to the tobacco, oscillatory bunch-making mechanism, and means for moving the frame, cutting and paste-applying mechanisms to and from the bunch-making mechanism.

26. In a cigar-bunching machine, a bunching-table, paste-applying mechanism, and means for applying a slight oscillatory motion to the table to cause the paste-applying mechanism to perform its function.

27. In a cigar-bunching machine, the combination with mechanism for presenting and feeding a continuous web of tobacco, and bunch-making mechanism coacting therewith, of bunch rolling and compressing mechanism embodying a plurality of driven compressing elements, a belt, and means for holding the bunches within the pockets formed by the belt between the compressing elements.

28. In a cigar-bunching machine, the combination with mechanism for presenting and feeding a continuous web of tobacco, of means for severing the web into predetermined lengths and for applying an adhesive thereto comprising a frame embodying an under knife, an upper knife supporting a paste-cup and a paste-applying roller, means for bodily lifting the frame, and means for separating the members of the knife.

29. In a cigar-bunching machine, mechanism for presenting a continuous web of tobacco, a bunch-making table, and means for oscillating the same, and mechanism for severing predetermined lengths of tobacco from the web and for applying a paste thereto comprising two knives, one of which is movable with relation to the other, a paste-cup carried by one of the knife-supports, and a corrugated paste-applying roller carried by the cup.

30. In a cigar-bunching machine, a bunch carrying and rolling drum embodying a plurality of rollers, each provided with a gear, a fixed toothed disk meshing with the gears, and means for imparting motion to the drum to cause turning of the rollers.

31. In a cigar-bunching machine, a bunch carrying and rolling drum embodying a plurality of rollers each provided with a gear, a fixed toothed disk meshing with each of the gears, and means for imparting step-by-step motion to the drum to cause turning of the rollers.

32. In a cigar-bunching machine, a bunch carrying and rolling drum embodying a plurality of rollers each provided with a gear, a fixed toothed disk meshing with each of the gears, means for imparting a step-by-step motion of the drum to cause turning of the rollers, a belt encircling the drum, and a shield or guard partially encircling the drum.

33. In a cigar-bunching machine, a bunching-table, paste-applying mechanism, means for oscillating said mechanism, and means for imparting an oscillatory motion to the table to cause the paste-applying mechanism to perform its function.

34. In a cigar-bunching machine, a bunch rolling and compressing drum, means for imparting movement thereto, an endless apron of greater diameter than that of the drum, automatically-operating means for taking up the slack of the apron, and a shield or guard partially surrounding the drum and coacting with the belt.

35. In a cigar-bunching machine, bunch-making mechanism, a bunch carrying and rolling drum including an endless apron, and an oscillatory plunger for conveying a bunch from the bunch-making mechanism and forcing it into a pocket formed by the belt.

36. In a cigar-bunching machine, a binder compressing, cutting and pasting mechanism, bunch-making mechanism, means for elevating the compressing, cutting and pasting mechanism during the operation of the bunch-making mechanism, and a vibratory lever provided with means for engaging a part of the compressing, cutting and pasting mechanism to check its descent.

37. In a cigar-bunching machine, the combination with bunch-making mechanism and a rolling and compressing drum, of a plate supported by a fixed part of the machine, and adapted to receive the bunch when discharged from the bunch-making mechanism, an oscillatory plunger coacting with the plate to force the bunch to the rolling and compressing mechanism.

38. In a cigar-bunching machine, a bunching-apron, a bunching-roller coacting therewith, a pivoted plate to which one end of the apron is secured, a spring engaging said plate and an oscillatory lever adapted to contact with the plate to move said pivoted plate against the tension of the spring coöperating therewith and effect stretching of the apron at the limit of the operative stroke of the bunching-roller, to effect discharge of a bunch.

39. In a cigar-bunching machine, a bunching-apron, a bunching-roller coacting therewith, a pivoted plate to which one end of the apron is secured, and an oscillatory lever adapted to contact with the plate to effect stretching of the apron at the limit of the operative stroke of the roller, said lever being provided with adjustable means whereby to vary the throw of the plate.

40. In a cigar-bunching machine, the combination with mechanism for presenting and feeding a continuous web of tobacco, of means for severing the web into predetermined lengths comprising a frame embodying an under knife and an upper knife, means for bodily lifting the frame, and means for separating the members of the knife.

41. In a cigar-bunching machine, the combination with mechanism for presenting and feeding a continuous web of tobacco, of means for severing the web into predetermined lengths comprising a frame embodying an under knife and upper knife, means for bodily lifting the frame, means for separating the knife members, and paste-applying mechanism actuated by the upper knife.

42. In a cigar-bunching machine, a bunch rolling and compressing drum, means for imparting movement thereto, an endless apron of greater diameter than that of the drum, automatically-operating means for taking up the slack of the apron, and a yielding shield or guard partially surrounding the drum and coacting with the belt.

43. In a cigar-bunching machine, a bunch carrying and rolling drum including an endless apron, an oscillatory plunger for conveying a bunch from the bunch-conveyor mechanism and forcing it into a pocket formed by the belt, and a shield or guard operating to hold the bunches in the pockets thus formed.

44. In a cigar-bunching machine, a binder cutting and pasting mechanism, bunch-making mechanism, means for lifting the cutting and pasting mechanisms during the operation of the bunch-making mechanism, and means for cushioning the descent of the cutting and pasting mechanisms.

45. In a cigar-bunching machine, the combination with bunch-making mechanism and a rolling and compressing drum, of means to receive a bunch when discharged from the bunch-making mechanism, and oscillatory mechanism to force the bunch to the rolling and compressing mechanism.

46. In a cigar-making machine, the combination with means for supporting a web of tobacco, means for cutting such web into wrappers, bunch-forming mechanism, bunch rolling and compressing mechanism, and means for transferring the bunches from the bunch-forming to the bunch rolling and compressing mechanism, substantially as described.

47. In a machine for manufacturing cigars, the combination with means for supporting a web of tobacco, means for severing the web into wrappers, paste-applying mechanism, bunch-forming mechanism, bunch rolling and compressing mechanism, and means for transferring the bunch from the forming to the rolling and compressing mechanism, substantially as described.

48. In a machine for manufacturing cigars, the combination with means for supporting a web of tobacco, means for severing the web into wrappers, means for applying paste to the wrappers, a bunch-forming mechanism comprising a table, a table-traversing roll, and an apron, bunch rolling and compressing mechanism, means for dislodging a bunch from the forming mechanism, and means for transferring a bunch from the forming to the rolling and compressing mechanism, substantially as described.

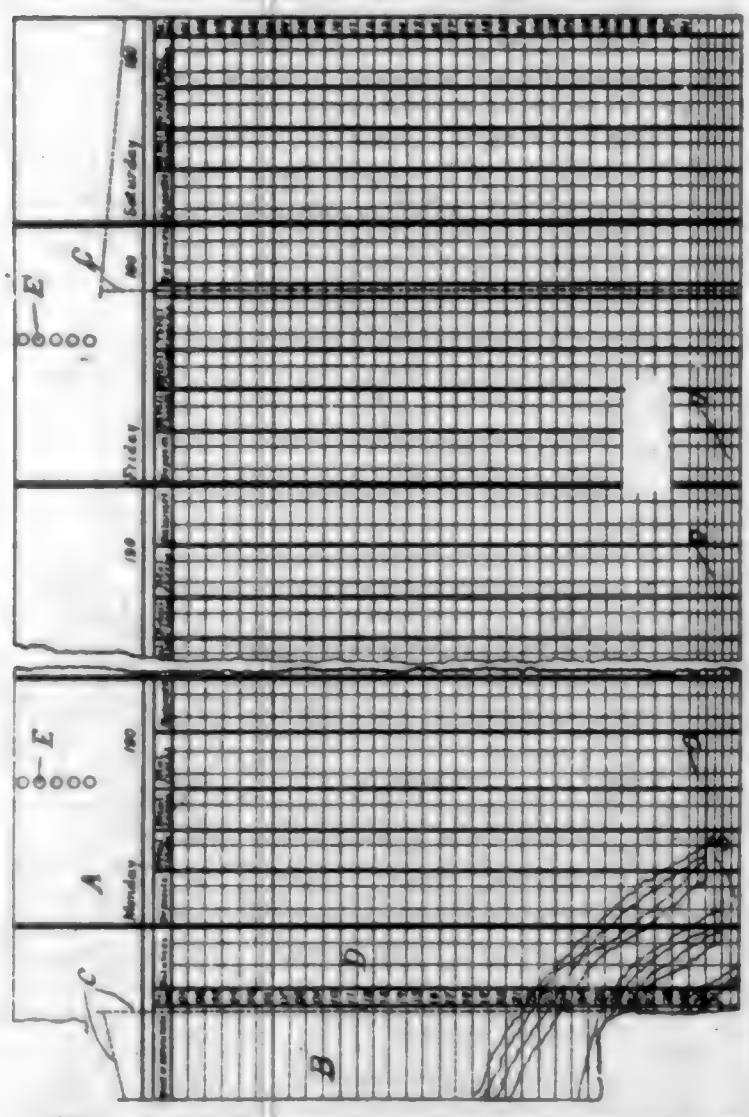
49. In a cigar-making machine, the combination with means for supporting a web of tobacco, means for severing the web into wrappers, pasting mechanism bunch-forming mechanism comprising a table, a traversing roll and an apron, means for lifting the bunch severing and pasting mechanism to permit operation of the traversing roll, means for feeding the web to the severing mechanism and apron, means for dislodging a bunch from the bunch-forming mechanism, bunch rolling and compressing mechanism, means for actuating said latter mechanism, and means for transferring a bunch from the forming to the rolling and compressing mechanism, substantially as described.

50. In a cigar-bunching machine, a frame designed to support a plurality of rollers, a roll of fabric carried by one of the rollers and designed to inclose a web, roll or sheet of binders between its plies, a second roller on which the free end of the fabric is wound, a drum in contact with the fabric, and means for imparting motion to said

drum to cause the unwinding of the fabric and the presentation of the binders.

51. In a cigar-bunching machine, a vibratory frame carrying a plurality of rollers, a strip of fabric wound upon one roller and adapted to have tobacco included in its plies, the free end of the fabric being wound upon the other roller, a drum in contact with the fabric, and means for imparting a step-by-step motion to the drum to effect the unwinding of the fabric from the first-named roller and its storage upon the second-named roller.

817,255. LOOSE-LEAF LEDGER. LARS M. LANDING, Glenwood, Minn. Filed Mar. 31, 1906. Serial No. 308,986.



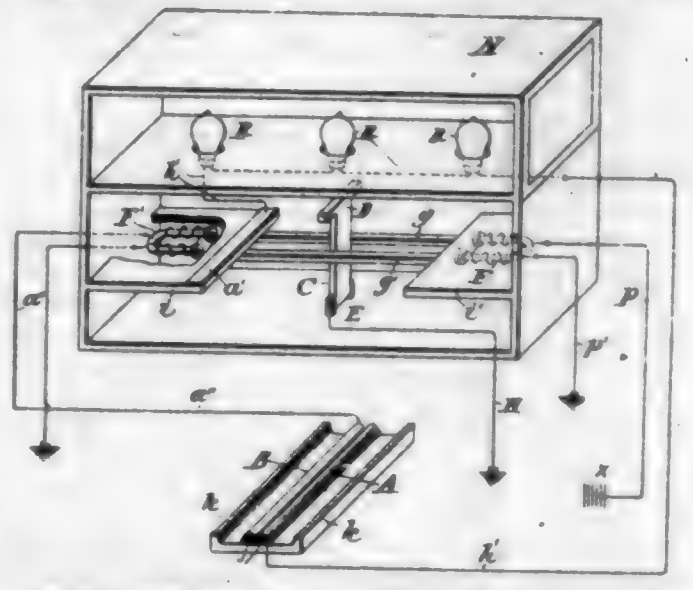
Claim.—1. A ledger comprising a binder and a series of sheets of the same size, said sheets having blanks on one edge suitably designated for the depositors' names and being divided into blank spaces suitably designated to receive the entries for each day of the week and the edges of said sheets being adjustable in said binder to cause the lower edge of an under sheet to lap by the corresponding edge of the sheet above, substantially as described.

2. A ledger comprising a plurality of sheets having blanks on their left-hand edges suitably designated to receive the depositors' names and vertical columns suitably designated to receive the balances at the end of the week, and blanks to receive entries for the business of each day of the week, and the ends of the upper sheet being folded in under the remaining portion thereof to expose the ends of the sheet immediately beneath whereby Saturday's balance of each depositor's account can be ascertained and taken from the Saturday account of the sheet beneath to the balance-column at the left-hand end of the upper sheet without turning the sheets or transferring balances or rewriting the depositors' names, substantially as described.

3. A ledger comprising a series of sheets having suitably-designated blanks at their left-hand ends to receive the names of depositors, and vertical columns suitably designated for the balances and blanks suitably designated to receive the entries of each day of the week, and the right-hand end of each sheet being provided with a vertical row of perforations and a horizontal row intersecting said vertical row and extending inwardly from the end of the sheet whereby when said horizontal row is torn the end of each sheet bounded by said perforations can be folded in under the remaining portion to expose the end of the sheet beneath, substantially as described.

4. A ledger comprising a series of sheets having suitably-designated blanks at their left-hand ends to receive the names of the depositors, and suitable columns suitably designated for the balances, and blanks suitably designated to receive the entries of each day of the week, and the right-hand end of each sheet being provided with a horizontal row of perforations extending inwardly from the end of the sheet whereby when said sheet is torn along the line of said horizontal row of perforations the end can be folded in under the remaining portion to expose the work on the sheet beneath, substantially as described.

817,256. ELECTRIC SIGNALING FOR TROLLEY-RAILROADS. EDWARD W. LEE, South Atlanta, Ga. Filed Jan. 31, 1905. Serial No. 243,564.



Claim.—1. The combination of two short copper strips, mechanically, with the two oval-shaped sides of a strip of wood fiber or other good insulation, to form a circuit maker and breaker, with the under side of a short plank or block of insulation which will act as a water-shed.

2. In a railway signal-box, the combination of a comparatively long armature, T-shaped; with the foot of said armature pivoted to the base of the signal-box, thus allowing said armature to assume a forward and backward motion when acted upon by certain energized magnets; which acts as a ground-conductor, with the outer edge of a shelf *i*, thereby completing a circuit which will light the signal-lamps, substantially as described.

3. In a railway signal-box, the combination of the pivoted armature C D, with a shelf, *i'*, located in one end of a signal-box, operated by means of the energized magnet, F, thereby breaking the circuit which lights the signal-lamps, substantially as described.

817,257. REVOLVING SPINNING BAIT. JOHN H. LEE, Peckham, England. Filed May 1, 1905. Serial No. 258,330.

Claim.—1. A spinning bait which consists of a helical spinner and a skeleton frame comprising two hinged members adapted to be opened and closed and to receive and hold the said helical spinner, substantially as described.

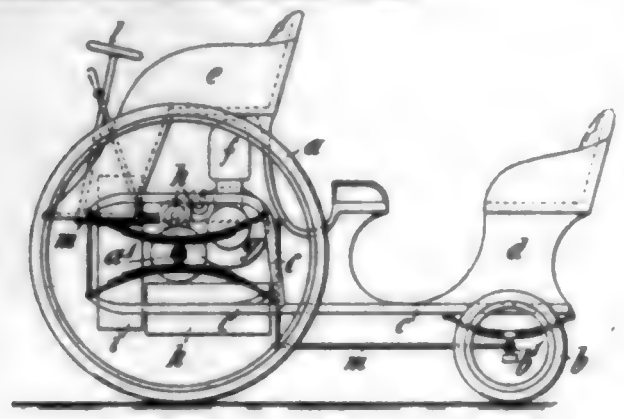
2. In a spinning bait of the kind described a skeleton frame comprising hinged members having the jaws or blades *g*, *h*, and having an eye at each end, substantially as described.

3. In a spinning bait of the kind described, a separable frame, and a helical blade removably held by said separable frame, substantially as described.

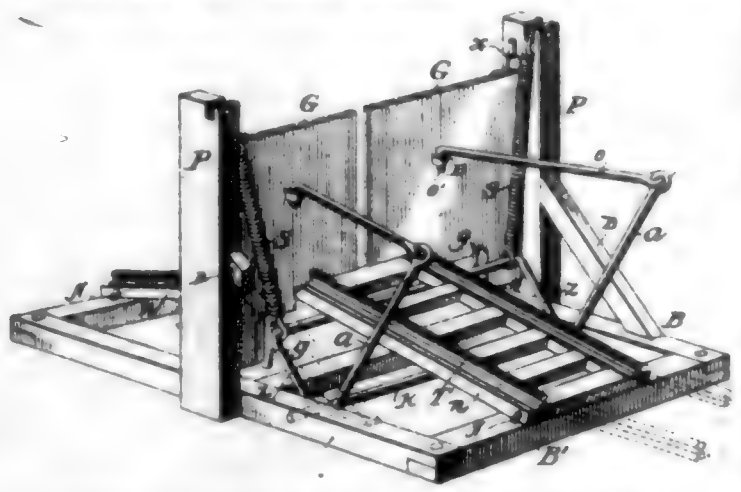
817,258. MOTOR-DRIVEN VEHICLE. OTTO G. A. LITTMANN, Charlottenburg, Germany. Filed Mar. 1, 1904. Serial No. 196,001.

Claim.—In a motor-driven vehicle, the combination of two relatively large front driving-wheels, two hind steering-wheels of small size relatively to said front wheels, an elevated axle for the front wheels serving as a driving and braking axle for the vehicle, a motor located between the front wheels, gearing between the motor and the driving-axle of the vehicle, a water-receptacle located between the front wheels with cooling arrangement for the motor, a store-receptacle located between the front wheels and below the front axle, a car-body over the rear axle, a driver's seat located over the front-wheel

axle and above the plane of the car-body, and means for operating the small hind wheels from the driver's seat.



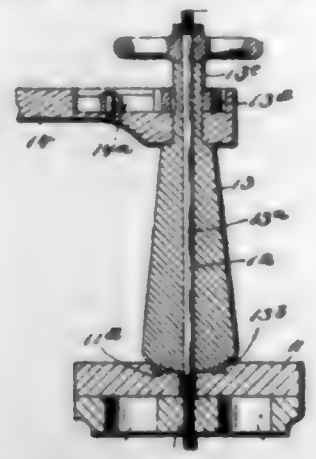
817,259. RAILWAY-GATE. WILLIAM M. LOWE, Appleby, Tex. Filed Oct. 16, 1905. Serial No. 283,040.



Claim.—1. In a device of the character described, the combination of oppositely-disposed posts, of gates hinged to said posts, a frame pivoted adjacent said posts, springs secured to said posts and engaging a portion of said frame in such manner as to actuate said frame in one direction, connections between said frame and the gates and movable sections of rails which overlie a portion of said frame.

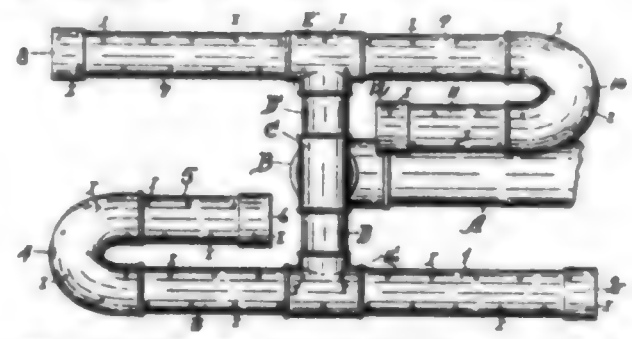
2. In a device of the character described, the combination with oppositely-disposed posts, of a pair of gates hinged to said posts, an oscillatory frame pivoted adjacent said posts springs carried by said posts and engaging a portion of said frame, links connected to upwardly-extending portions of said frame and to said gates, pivoted sections of rails which overlie a portion of said frame in such manner as to have one end of one of said sections elevated by said frame when the gates are closed and means for causing the two pivoted sections of rails to move in unison.

817,260. VALVE-SEAT-DRESSING DEVICE. DANIEL E. LYNAM, Chicago, Ill. Filed Oct. 4, 1905. Serial No. 281,252.



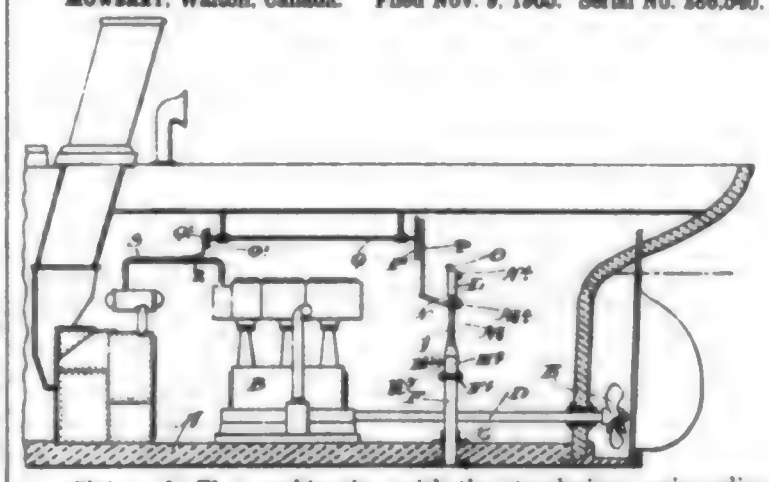
Claim.—A valve-seat-dressing device comprising a rod threaded at one end to engage the work and at the other to receive a nut, a plate on the rod having cutting edges on its face and notches in its back, an elongated handle-post sleeved on the rod behind the plate and having projections at its lower end engaging the notches and a reduced stem at its upper end provided with a ratchet-wheel, and a handle fitting upon said stem and having a pawl engaging the ratchet.

817,261. GAS-BURNER. ADAM C. MOUSER, Richmond, Ind. Filed Apr. 8, 1905. Serial No. 254,516.



Claim.—In combination with a supply-pipe, a terminal tubular part B extending upward therefrom, a transverse tubular part C coupled at its middle to said part B, two main complementary burner-tubes having discharge-perforations on their upper sides and connected at their middle parts to the ends of the said tubular parts C, these burner-tubes being provided with similarly-perforated inwardly-bent ends which are diametrically opposed to each other, the said ends being rotatably adjustable on the ends of said burner-tubes in order that the flame may be angularly adjusted in relation to the flame from the main burner-tubes.

817,262. GOVERNOR FOR MARINE ENGINES. JAMES W. MOWBRAY, Walton, Canada. Filed Nov. 9, 1905. Serial No. 286,540.



Claim.—1. The combination with the stand-pipe, main cylinder, supplemental cylinder, air-cock at the upper end thereof, piston-rod having the main piston at one end and the supplemental piston at the opposite end, and the lever pivotally connected to the piston and suitably pivoted in the frame and operating means connecting such lever to the valve in the steam-pipe leading to the engine, as specified.

2. A governor for steam-engines comprising a stand-pipe extending through the bottom of the vessel, a cylinder secured to the top of the same, a piston having longitudinal movement in such cylinder, a piston-rod extending through the head of the cylinder, a supplemental cylinder supported above the main cylinder, a supplemental piston secured at the upper end of the piston-rod and means connected to the piston-rod for operating the valve in the steam-pipe leading from the engine as and for the purpose specified.

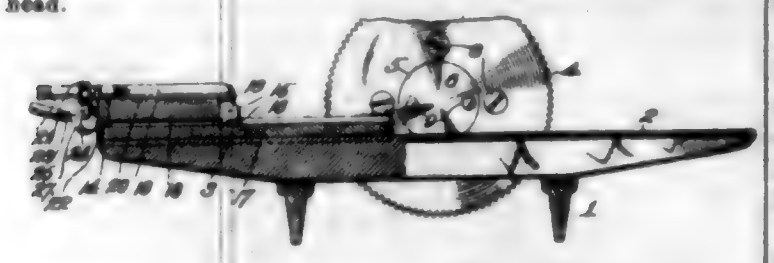
3. A governor for steam-engines comprising a stand-pipe extending through the bottom of the vessel, a cylinder secured to the top of the same, a piston having longitudinal movement in such cylinder, a piston-rod extending through the head of the cylinder, and a supplemental cylinder supported above the main cylinder, a supplemental piston secured at the upper end of the piston-rod and a check-valve communicating with the upper end of the supplemental cylinder as and for the purpose specified.

4. The combination with the stand-pipe, main cylinder, supplemental cylinder, piston-rod having the main piston at one end and the supplemental piston at the opposite end and the lever pivotally connected to the piston and suitably pivoted in the frame and operating means connecting such lever to the valve in the steam-pipe leading to the engine as and for the purpose specified.

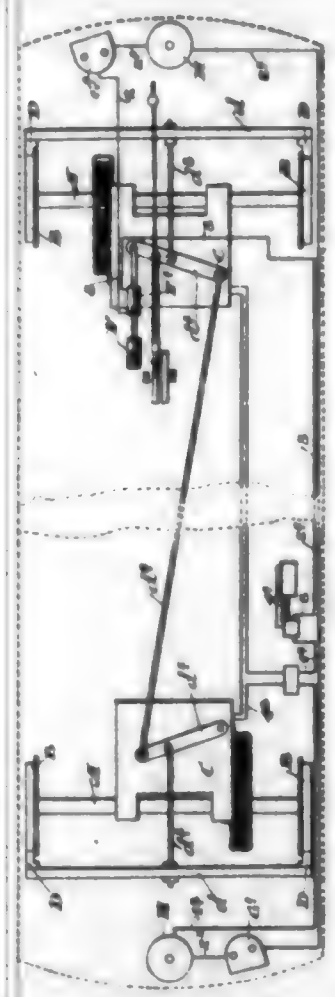
817,263. METAL CUTTING AND TRIMMING MACHINE. CHARLES T. MURRAY, Kansas City, Mo., assignor to Murray Machinery Co., a Corporation of Missouri. Filed Sept. 27, 1904. Serial No. 226,161.

Claim.—The combination of a shaft, a cutter-head mounted thereon, a circular boss projecting centrally from the face of the cut-

ter-head, stud-cutters projecting from the face of the boss parallel with the axis of the shaft, a saw seated on the periphery of the boss flush with the face of the same and bearing against the face of the cutter-head, and fastenings inserted through the saw into the cutter-head.



817,264. **ELECTRIC CONTROLLING DEVICE FOR CARS.** JAMES H. K. MCCOLLUM, Toronto, Canada. Filed Mar. 1, 1905. Serial No. 247,951.



Claim.—1. In an electric controlling device for cars, in combination a compound-wound motor, a suitable controller, a variable resistance therefor, automatic means used in connection therewith for reversing the relation of the armature to the fields, means for short-circuiting the motors and a regulator located in the local or short circuit and designed to throw the resistance in or out of the local or short circuit as and for the purpose specified.

2. In an electric controlling device for cars, in combination a compound-wound motor, a suitable controller, a variable resistance therefor, automatic means used in connection therewith for reversing the relation of the armature to the fields, means for short-circuiting the motor and an automatic regulator located in the local or short circuit and designed to throw the resistance in or out of the local or short circuit as and for the purpose specified.

3. In an electric controlling device for cars, in combination a compound-wound motor, a variable resistance therefor located in the shunt-circuit, a suitable controller, means for short-circuiting the fields of the motor, a regulator located in the local circuit, means for reversing the relation of the armature to the fields, means for forming a local or short circuit through the motors and a regulating apparatus for reversing the relation of the fields to the armature and the controller as and for the purpose specified.

4. In an electric controlling device for cars, in combination a compound-wound motor, a variable resistance therefor located in the shunt-circuit, a suitable controller, means for short-circuiting the series fields of the motor, a regulator located in the local circuit, means for reversing the relation of the armature to the fields, means for forming a local or short circuit through the motors, a regulating apparatus for reversing the relation of the fields to the armature and the controller and an auxiliary controller provided with a set of fingers and contact-plates to throw in the shunt-circuit, a set of fingers and contact-plates to variably short-circuit the series fields and a set of fingers and contact-plates to complete the series circuit from the trolley to the ground as and for the purpose specified.

5. In an apparatus of the class described, an auxiliary controller provided with a set of fingers and contact-plates to throw in the shunt-circuit, a set of fingers and contact-plates to variably short-circuit the series fields and a set of fingers and contact-plates to complete the series circuit from the trolley to the ground as and for the purpose specified

6. In an electric controlling device for cars, in combination a compound-wound motor, a variable resistance therefor located in the shunt-circuit, a suitable controller, means for short-circuiting the fields of the motor, a regulator located in the local circuit, means for reversing the relation of the armature to the fields, means for forming a local or short circuit through the motors, a regulating apparatus for reversing the relation of the fields to the armature and the controller, and an auxiliary controller provided with a set of fingers and contact-plates to throw in the shunt-circuit, a set of fingers and contact-plates to variably short-circuit the series fields, a set of fingers and contact-plates to complete the series circuit from the trolley to the ground and a set of fingers and contact-plates to form a local or short circuit after the connection from the trolley has been broken as and for the purpose specified.

7. In an apparatus of the class described, the combination with the brake-lever and rack connected to the same and pinion, ratchet-wheel and pawl and brake-wheel and band-releasing magnet as described, of an electric motor connected to the same and the auxiliary controller provided with a coacting finger and contact-plate for throwing the current in and out of the motor as and for the purpose specified.

8. In an apparatus of the class described, the combination with the brake-lever and holdfast device and motor for controlling such holdfast device, of the auxiliary controller provided with a finger and contact-plate for throwing the current in and out of the motor as and for the purpose specified.

9. In an apparatus of the class described, an auxiliary controller provided with the coacting fingers and contact-plates located in the shunt-circuit and designed to open the same prior to the reversal of the armature-terminals and to close the shunt-circuit after the reversal of the armature-terminals as and for the purpose specified.

10. In an apparatus of the class described, an automatic regulator located in the local circuit comprising a series of contacts connected to the series circuit through a suitable resistance, a lever designed to have one end coact with the contacts, and solenoid located in the circuit and operating the opposite end and means for normally holding the lever raised at the solenoid end as and for the purpose specified.

11. In an apparatus of the class described, an automatic regulator located in the local circuit comprising a series of contacts connected to the series circuit through a suitable resistance, a lever designed to have one end coact with the contacts and solenoid located in the circuit and operating the opposite end and an adjustable spring connected to the opposite end of the lever and acting against the solenoid as and for the purpose specified.

12. In an apparatus of the class described, an automatic regulator located in the local circuit comprising a series of contacts connected to the series circuit through a suitable resistance, a lever designed to have one end coact with the contacts and solenoid located in the circuit and operating the opposite end, means for normally holding the lever raised at the solenoid end, a contact-plate located on the lever and insulated from the same and coacting fingers located in the circuit of the brake-operating solenoid as and for the purpose specified.

13. In the apparatus described, a device for reversing the relation of the field to the armature comprising an arm suitably pivoted and provided with magnets located in the shunt-circuit, stationary coacting magnets located in the series circuit and designed to coact with the aforesaid magnets on the arm, a set of pairs of movable contacts supported on the upper end of the arm and insulated therefrom, coacting sets of contact-plates located in the series circuit and means for normally holding the arm, so that the contacts at one side are normally in contact with one set of stationary plates and the contacts on the opposite side out of contact with the opposite set of stationary plates as and for the purpose specified.

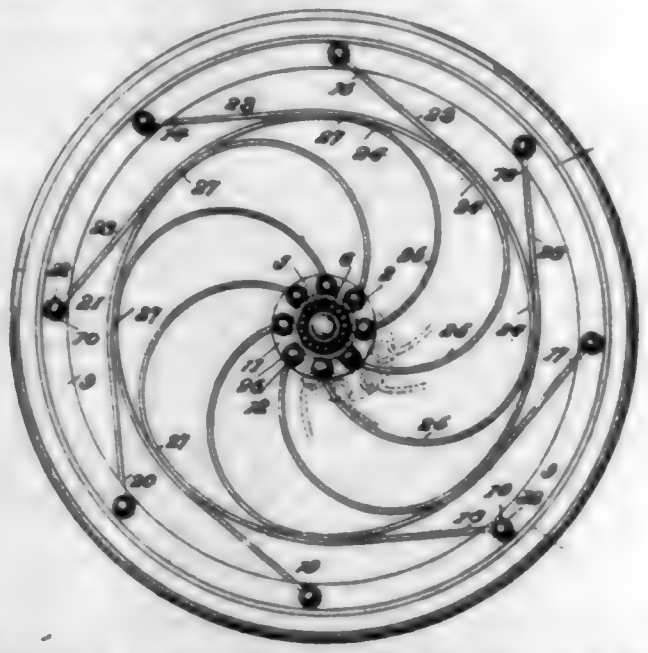
14. In the apparatus described, a device for reversing the relation of the field to the armature comprising an arm suitably pivoted and provided with magnets located in the shunt-circuit, stationary

coacting magnets located in the series circuit and designed to coact with the aforesaid magnets on the arm, a set of pairs of movable contacts supported on the upper end of the arm and insulated therefrom, coacting sets of contact-plates located in the series circuit and a spring connected to the arm and to a suitable portion of the frame as and for the purpose specified.

15. In the apparatus described, a device for reversing the relation of the field to the armature comprising an arm suitably pivoted and provided with magnets located in the shunt-circuit, stationary coacting magnets located in the series circuit and designed to coact with the aforesaid magnets on the arm, a set of pairs of movable contacts supported on the upper end of the arm and insulated therefrom, coacting sets of contact-plates located in the series circuit, means for normally holding the arm, so that the contacts at one side are normally in contact with one set of stationary plates and the contacts on the opposite side out of contact with the opposite set of stationary plates, and a pair of movable contacts connected to and suitably insulated from the arm, and their corresponding contact-plates located in the resistance short-circuit when contacting as and for the purpose specified.

16. The combination with the motors, main controller and auxiliary controller and apparatus for reversing the relation of the field to the armature, of means for forming the local circuit and an automatic regulator located in such circuit and means for breaking the local circuit and for completing the series circuit between the trolley and the ground as specified.

817,265. SPRING-WHEEL. Warren W. McKee, Belleville, N. J. Filed May 20, 1905. Serial No. 261,330.



Claim.—1. A wheel comprising a rim, a hub, and resilient curved connection between the rim and hub and directly connecting said rim and hub, said connections being in yielding contact with each other for a portion of their lengths.

2. A wheel comprising a rim, a hub, and curved spring-spokes joining the rim and hub, each of said spokes being in yielding contact with the next successive spoke.

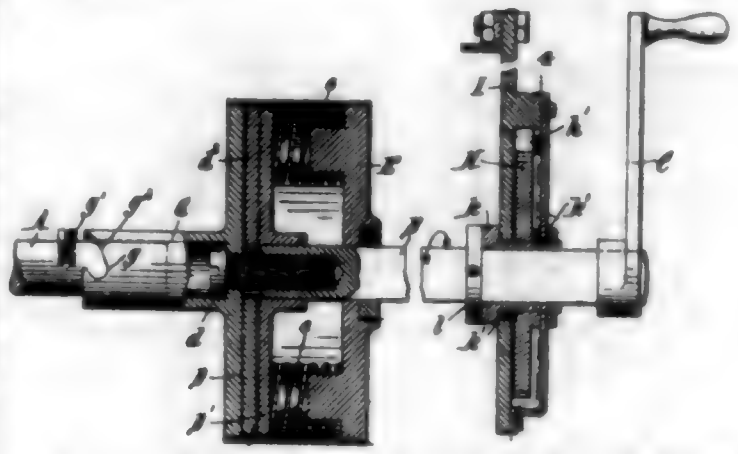
3. A wheel comprising a rim, a hub, and spring-spokes joining the hub and rim, each of said spokes being in yielding contact with the next successive spoke and the respective terminal connections of said spokes being in alinement diametrically with respect to the wheel.

4. A wheel comprising a rim, a hub, and spring-spokes connecting the hub and rim, each of said spokes being in yielding contact with the next successive spoke and the end connections of said spokes being in alinement diametrically with respect to the wheel on opposite sides of the wheel-center.

5. A wheel comprising a rim, a hub, and spring-spokes connecting the rim and hub, each of said spokes having a variable curve intermediate between its rim and hub connection and the curved portion of one spoke being in yielding contact with the next succeeding spoke.

6. A wheel comprising a rim provided with inwardly-projecting flanges spaced apart, bolts secured in said flanges, a hub provided with outwardly-projecting flanges spaced apart, bolts joining the hub-flanges, and spring-spokes terminally coiled to engage said bolts, each of said spokes being in yielding contact with the next succeeding spoke.

817,266. STARTING DEVICE FOR EXPLOSIVE-ENGINES. Gilbert H. McMillan, Buffalo, N. Y. Filed Dec. 3, 1904. Serial No. 235,394.



Claim.—1. The combination of an engine-shaft, a starting-shaft, means connecting said shafts and constructed to cause them to turn together in one direction and having a part movable in a direction endwise of said starting-shaft to release the engine-shaft and allow it to rotate in the opposite direction independently of the starting-shaft, and means for positively holding the starting-shaft from rotation with the engine-shaft in said opposite direction, substantially as set forth.

2. The combination of an engine-shaft, a starting-shaft, means connecting the engine and starting shafts and constructed to cause the former to turn with the latter in one direction and to release the engine-shaft and allow it to rotate in the opposite direction independently of the starting-shaft, means for positively holding the starting-shaft from rotation in said opposite direction, said starting-shaft being movable relative to said positive holding means to allow the independent rotation of the engine-shaft, substantially as set forth.

3. The combination of an engine-shaft, a starting-shaft, a clutch connecting said shafts and consisting of a member connected to each of said shafts and constructed to cause said shafts to turn together in one direction, means for positively holding the starting-shaft from rotation in the opposite direction, one of said clutch members being movable endwise of the starting-shaft to release said engine-shaft and allow it to rotate independently in said opposite direction, substantially as set forth.

4. The combination of an engine-shaft, a starting-shaft rotatable in one direction, means for positively holding the starting-shaft from rotation in the opposite direction, a clutch member connected to said starting-shaft, a coöperating clutch member releasably coupled to said engine-shaft, and means for releasably holding said clutch members in driving relation, said starting-shaft being movable endwise relative to said positive holding means to release said second clutch member from the engine-shaft, substantially as set forth.

5. The combination of an engine-shaft, a starting-shaft rotatable in one direction, an operating-handle fixed thereto, a ratchet-and-pawl mechanism for positively holding the starting-shaft from rotation in the opposite direction, a clutch-disk which is connected with said engine-shaft, a coöperating clutch-disk which turns with and is slidable on the starting-shaft to release said engine-shaft, and springs for yieldingly holding said clutch-disks in driving relation, substantially as set forth.

817,267. BLEACHING COMPOSITION. August R. Nienstadt, Newark, N. J., assignor of fifty-one one-hundredths to George W. Kuehler, New Rochelle, N. Y. Filed June 7, 1904. Serial No. 211,474.

Claim.—1. As a new article of manufacture a novel composition of matter composed of one part of peroxid of the alkali metals and four parts of anhydrous carbonate of the alkali metals and existing in the form of powder.

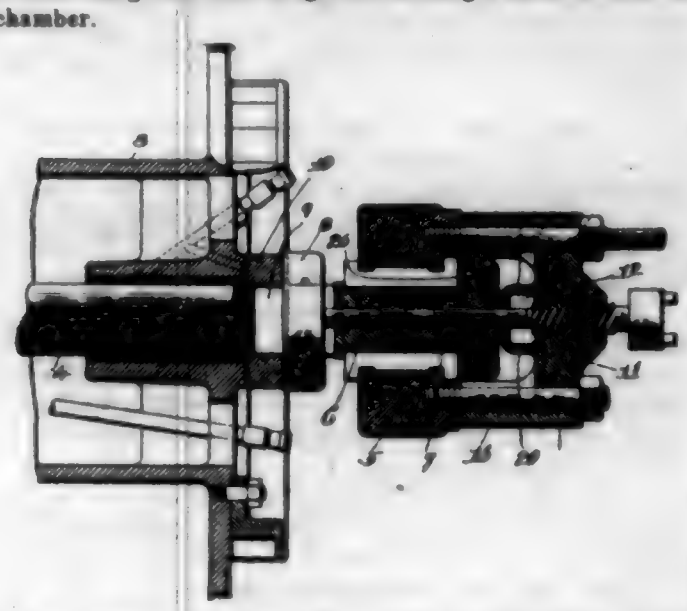
2. As a new article of manufacture a novel composition of matter composed of one part of peroxid of sodium and four parts of anhydrous carbonate of alkali metals and existing in form of powder.

3. As a novel composition of matter a dry powder composed of one part of peroxid of sodium and four parts of anhydrous carbonate of sodium.

817,268. HOISTING-DRUM. Almon B. Norris, Cambridge, Mass. Filed Jan. 31, 1906. Serial No. 298,734.

Claim.—1. In a hoisting-drum, a shaft-bearing, a shaft rotatable therein, a screw-bearing supported by the shaft-bearing, said

screw-bearing having forwardly-extending arms to engage the shaft-bearing, a web or flange connecting said arms and extending forwardly into engagement with the side of the shaft-bearing, and vertical walls rising from said flange and forming a lubricant-containing chamber.



2. In a device of the class described, a shaft-bearing, a shaft therein having a collar thereon outside of said bearing, a screw-bearing supported by the shaft-bearing, said screw-bearing having forwardly-extending arms to engage the shaft-bearing, a parti-cylindrical web or flange connecting said arms and extending forwardly into engagement with the side face of the shaft-bearing, and two longitudinal walls and a transverse wall rising from said flange and forming between them a lubricant-containing chamber, said transverse wall having an aperture for the thrust-pin and being situated beyond the collar on the shaft.

3. In a device of the class described, a shaft-bearing, a shaft therein having a collar thereon outside of said bearing, a screw-bearing supported by the shaft-bearing, and a screw extending through the screw-bearing and adapted to engage a thrust-pin in the end of the shaft, said screw-bearing having formed integral therewith a lubricant-containing chamber situated on the inner side of the screw-bearing but located exterior to the collar on the shaft, one wall of said chamber containing an aperture through which the thrust-pin projects.

817,269. **FIREPROOF WINDOW.** OTTO M. OTTE, Pittsburg, Pa. Filed Sept. 3, 1904. Serial No. 223,220.

Claim.—1. In a house or building structure, wherein the wall of the building at the window-opening at each or either side extends up flush to the window-opening, window-sash guides secured to the side walls of the window-opening, projecting therefrom, and structurally a part thereof, substantially as described.

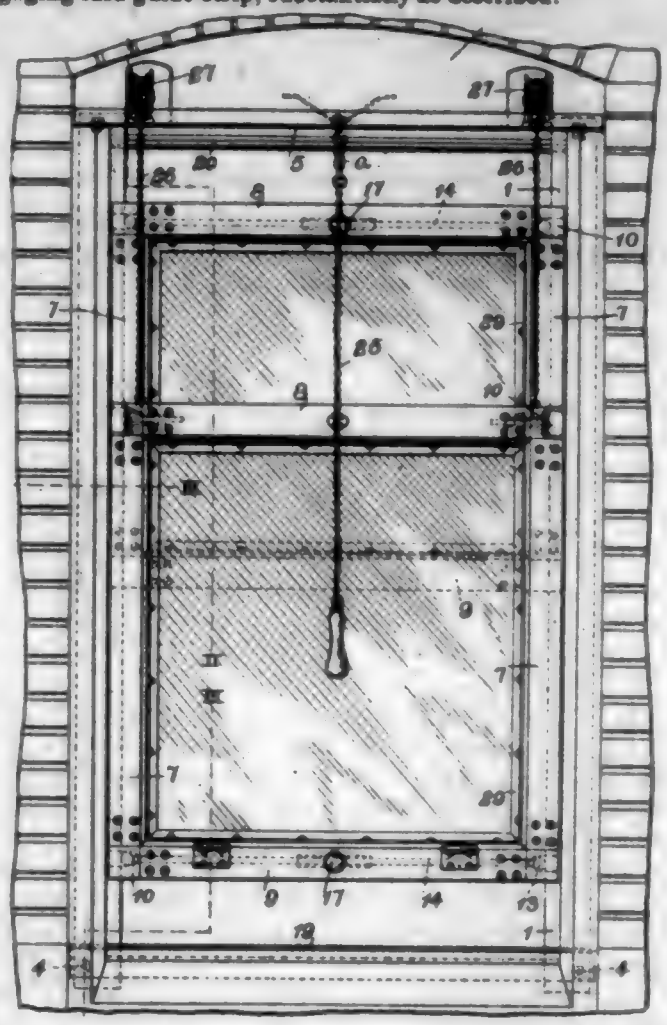
2. In a house or building structure, wherein the wall of the building at the window-opening at each or either side extends up flush to the window-opening, a window-sash-guide fixture secured to such wall, projecting therefrom, and structurally a part thereof, and a window-sash extending at each or either side to the edge of such window-opening and engaging said guide-fixture, substantially as described.

3. In a house or building structure, wherein the wall of the building at the window-opening at each or either side extends up flush to the window-opening, a window-sash-guide fixture secured to such wall, projecting therefrom, and structurally a part thereof, and a window-sash formed of channel-irons and corner-pieces, the said window-sash extending at each or either side to the edge of the said window-opening and engaging the said guide-fixture, substantially as described.

4. In a window structure, the combination of a window-opening provided with guides or structural parts of the side walls of the said opening, a window-sash having the side portions channeled and a yielding abutment contained within said channel and bearing upon said guides, substantially as set forth.

5. In combination with a wall of a building provided with a window-opening, guiding-strips projecting from opposite edges of the window-opening and a movable sash having the side portions channeled for the reception of the guiding-strips and spring-plates arranged in the channels of the sash and engaging said guiding-strips, substantially as described.

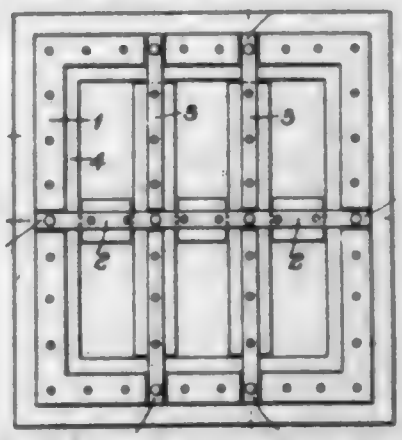
6. In a window structure the combination of a window-opening provided with a guide-strip, a window-sash provided with a peripheral channel, and a spring-plate arranged within said channel and engaging said guide-strip, substantially as described.



7. The combination of a window-opening provided with a rigid bearing-surface, a window-sash provided with a yielding bearing-surface, and ball-bearings engaging said surfaces, substantially as described.

8. In combination with a window-opening provided with opposite bearing-surfaces and a window-sash, oppositely-arranged ball-bearings carried by said sash and engaging said bearing-surfaces, an adjustable spring-block placed between said oppositely-arranged ball-bearings, and two rods each bearing at one end upon one of said ball-bearings and at the other end upon said spring-block, substantially as described.

817,270. **WINDOW-SASH.** OTTO M. OTTE, Pittsburg, Pa. Filed Dec. 3, 1904. Serial No. 235,397.



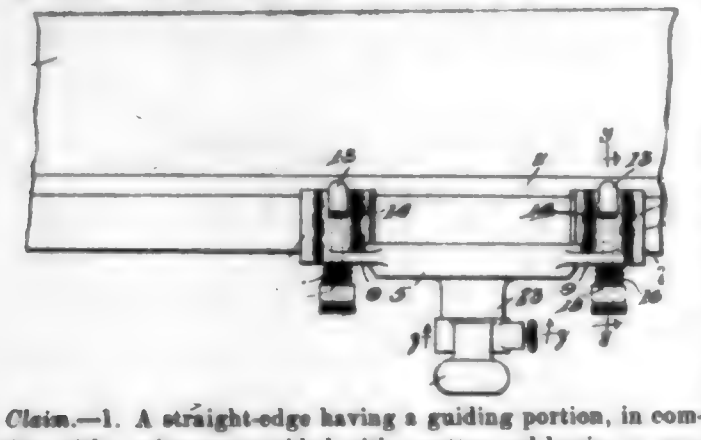
Claim.—1. A window-sash having in combination a frame, muntins and cross-bars formed of T-shaped bars, the flanges on one side of said bars, forming glazing-strips, and glazing-strips detachably secured to the frame, cross-bars and muntins, substantially as set forth.

2. In a window-sash, the combination of a frame, muntins, cross-bars formed of T-shaped bars and interlocked at their points of intersection, and glazing-strips detachably secured to the frame, cross-bars and muntins, substantially as set forth.

3. A window-sash having in combination, a frame, muntins and cross-bars formed of T-shaped bars, the flanges on one side of said bars forming glazing-strips and glazing-strips detachably secured to the frame, cross-bars and muntins, the glazing-strips on the frame extending beyond the core of the latter and forming with the outer flanges of the frame, guides for the frame, substantially as set forth.

4. A window-sash having in combination a frame formed of T-shaped bars, cross-bars and muntins secured in said frame and glazing-strips secured to the frame, cross-bars and muntins and extending beyond the core of the frame and forming with the outer flanges of the frame, guides for the frame, substantially as set forth.

817,271. PAPER-TRIMMER. ALBERT J. PERKS, Springfield, Ohio, assignor to Webster and Perks Tool Company, Springfield, Ohio, a Copartnership. Filed Dec. 21, 1905. Serial No. 292,695.



Claim.—1. A straight-edge having a guiding portion, in combination with a trimmer provided with a cutter and having a gage portion fitting the guiding portion and constructed and arranged to grip the same laterally with a yielding frictional pressure, substantially as described.

2. A straight-edge having a guiding portion provided with opposite lateral bearing-surfaces, in combination with a trimmer comprising a head having a cutter, and a gage portion fitting the guiding portion of the straight-edge, said gage portion comprising a spring-actuated friction member bearing against one of the lateral bearing-surfaces of said guide portion, substantially as described.

3. A straight-edge having a guiding portion provided with opposite lateral bearing-surfaces, in combination with a trimmer comprising a head having a cutter, said trimmer having gage portions at its opposite ends fitting the guiding portion of the straight-edge, each gage portion comprising a spring-actuated friction member bearing against one of the lateral bearing-surfaces of said guide portion, substantially as described.

4. A straight-edge having a guiding portion provided with opposite lateral bearing-surfaces, a top bearing-surface, and a contact-surface oppositely disposed, in combination with a trimmer comprising a head having a cutter, and a gage portion supported on the top bearing-surface of the guiding portion of the straight-edge and having members which bear against the lateral bearing-surfaces thereof, one of said members being spring-actuated to cause it to bear against its coöperating bearing-surface with a yielding frictional pressure, said gage portion engaging the under surface of the guiding portion, substantially as described.

5. A straight-edge having a guiding portion provided with opposite lateral bearing-surfaces, a top bearing-surface, and a contact-surface oppositely disposed, in combination with a trimmer comprising a head having a cutter, and a gage portion supported on the top bearing-surface of the guiding portion of the straight-edge and having members which bear against the lateral bearing-surfaces thereof, one of said members being spring-actuated to cause it to bear against its coöperating bearing-surface with a yielding frictional pressure, said spring-actuated member engaging under the downwardly-disposed contact-surface of the guide, substantially as described.

6. A straight-edge having a metallic guide comprising a vertical and a horizontal member, the latter having a free marginal portion, in combination with a trimmer having a head having a cutter, and a gage portion adapted to fit against the outer face of the vertical portion of the guide and the upper face of the horizontal portion thereof, said gage portion comprising a spring-actuated member extending around the free margin of the horizontal portion of the guide and bearing against the edge thereof, substantially as described.

7. A straight-edge having a guiding portion, in combination with a trimmer provided with a cutter and having a gage portion fitting the guiding portion and constructed and arranged to grip the same laterally with a yielding frictional pressure, said gage portion being provided with means for regulating the frictional pressure, substantially as described.

8. A straight-edge having a guiding portion provided with a free lateral margin, in combination with a trimmer comprising a head having a cutter, and gage portions located at the ends of said head and adapted to bear against the top and outer faces of the guide, each gage portion having mounted to slide therein a friction guide-block slotted to receive the free margin of the guide, each block having a projecting threaded stem, an adjusting-nut thereon, and a spring thereon controlled by the adjusting-nut, substantially as described.

9. A straight-edge having a guiding portion, in combination with a trimmer comprising a head mounted to slide thereon and having otherwise fixed relations thereto, said head having a rotary cutter, an actuating-handle for the head movable relatively thereto about the center of the cutter, and means whereby said cutter is depressed and raised in unison with said handle, substantially as described.

10. A straight-edge having a guide, in combination with a trimmer comprising a head fitted to slide longitudinally on said guide, a rotatory member mounted in said head and provided with a handle, and a rotary cutter carried by said rotatory member and having its axis eccentrically arranged relatively thereto, substantially as described.

11. A straight-edge having a guide, in combination with a trimmer comprising a head fitted to slide longitudinally on said guide, a rotatory member mounted in said head and provided with a handle, and a rotary cutter carried by said rotatory member and having its axis eccentrically arranged relatively thereto, the connection between said rotatory member and handle being adjustable to vary the angular relation between said handle and the eccentricity of the cutter-axis, substantially as described.

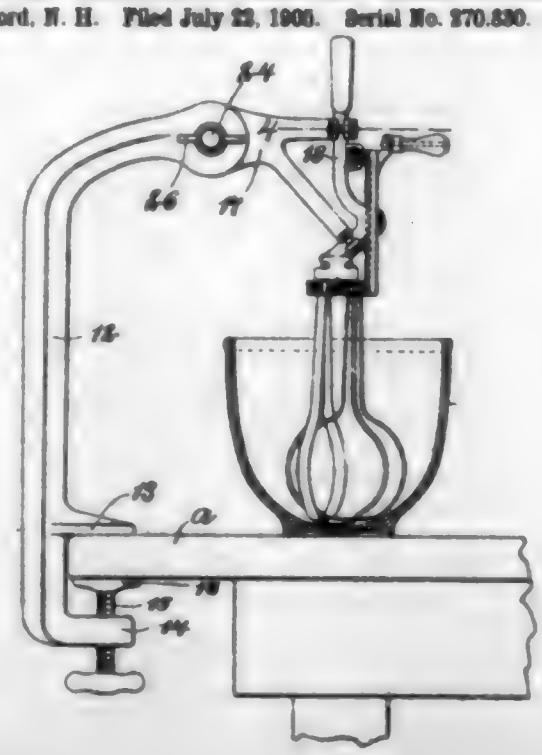
12. A straight-edge provided with a guide, in combination with a trimmer comprising a body fitted to slide thereon and having a bearing-sleeve, a shaft mounted in said bearing-sleeve, a handle for operating said shaft, an arbor eccentrically mounted in said shaft, and a rotary cutter mounted on said arbor, substantially as described.

13. A straight-edge provided with a guide, in combination with a trimmer comprising a body fitted to slide thereon and having a bearing-sleeve, a shaft mounted in said bearing-sleeve, a handle for operating said shaft, an arbor eccentrically mounted in said shaft, and a rotary cutter mounted on said arbor, said body constituting a housing for said cutter, substantially as described.

14. In a paper-trimmer, a body comprising a housing having a bearing-sleeve, a shaft mounted in said sleeve and projecting beyond the same at each end, a rotary cutter eccentrically mounted on one end of said shaft, and a handle mounted on the other end of said shaft and adjustable to different angular positions relatively thereto, substantially as described.

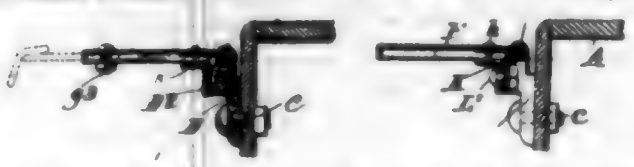
15. The combination, with a straight-edge having a guide with bearing or contact surfaces on four sides thereof, of a trimmer comprising gage portions adapted to contact with the four sides of the guide and bearing frictionally with a yielding contact on the lateral portions thereof, and a head rigidly connected with said gage portions and comprising a housing and bearing, a shaft mounted in said bearing, a rotary cutter eccentrically supported by said shaft, and an operating-handle secured to said shaft, substantially as described.

817,272. EGG-BEATER HOLDER. ERNEST L. PERSONS, West Concord, N. H. Filed July 22, 1905. Serial No. 270,830.



Claim.—An egg-beater holder comprising a standard having means for engagement with a table or shelf, an arm jointed to the standard and having means for detachable engagement with the frame of an egg-beater, and means for detachably securing the arm to the standard in different inclined positions, relatively to the standard whereby an egg-beater engaged with the arm may be supported at different heights.

817,273. THREAD-BOARD FOR SPINNING-FRAMES. JOHN B. PRIEST, Worcester, Mass. Filed June 28, 1905. Serial No. 267,381.



Claim.—1. In a machine of the character described, bearings adapted to be attached to the roller-beam, a rod sustained in said bearings, a series of thread-guide holders hinged on said rod, a lifting-bar mounted beneath said holders and parallel with said rod, whereby individual holders may be swung upward on said rod, and the entire series may be swung upward on said rod by raising said lifting-bar.

2. In a machine of the character described, bearings adapted to be attached to the roller-beam, a rod sustained in said bearings, a series of thread-guide holders hinged on said rod, a lifting-bar beneath said holders and fulcrumed on said rod whereby individual holders may be swung upward on said rod, and the entire series may be swung upward on said rod by raising said lifting-bar.

3. In a machine of the character described, bearings adapted to be attached to the roller-beam, a rod sustained in said bearings, a series of thread-guide holders hinged on said rod, a lifting-bar mounted beneath said holders and parallel with said rod, whereby individual holders may be swung upward on said rod, and the entire series may be swung upward on said rod by raising said lifting-bar, a stop to limit the downward movement of said lifting-bar, causing the lifting-bar to maintain the holders in operative position.

4. In a machine of the character described, bearings adapted to be mounted on the roller-beam, a rod sustained in said bearings, a series of thread-guide holders, each presenting separated hinged loops embracing said rod, a lifting-bar, a series of yokes mounted on said lifting-bar and embracing said rod between said hinged loops, a stop to limit the downward movement of said lifting-bar.

5. In a machine of the character described, bearings adapted to be longitudinally adjustably mounted on the roller-beam, a rod sustained in said bearings, a series of thread-guide holders, each presenting separated hinged loops embracing said rod, a lifting-bar, a series of yokes mounted and longitudinally adjustable on said lifting-bar and embracing said rod between said hinged loops, a stop to limit the downward movement of said lifting-bar.

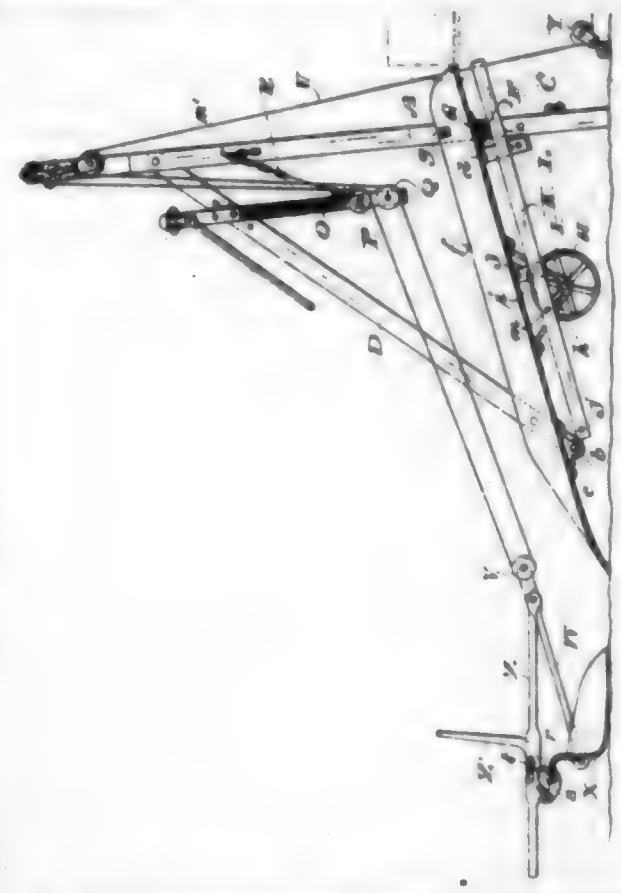
6. In a machine of the character described, a series of bearings adapted to be adjustably mounted on the roller-beam, a rod sustained in said bearings, a lifting-bar having a series of yokes adjustably mounted on and embracing said rod, a series of thread-guide holders, each provided with two separated hinged loops embracing said rod and adapted to span one of the said bearings or one of the said yokes, a stop to limit the downward swinging movement of said lifting-bar.

817,274. LOADING APPARATUS. EDMUND RING, Kingston, Wis. Filed Jan. 15, 1906. Serial No. 296,047.

Claim.—1. A loading apparatus convertible to a conveyance and comprising standards, rearwardly-extending inclined braces in pivotal connection with the standards, a platform in like connection with the braces and in detachable connection with said standards, wheels hung underneath the platform, and means in connection with said platform for connection therewith of a draft-tongue, the standards being supported by the aforesaid platform clear of the ground when said loading apparatus is converted into a conveyance.

2. A loading apparatus convertible to a conveyance and comprising standards, a beam connecting the standards adjacent to their lower ends, rearwardly-extending inclined braces in pivotal connection with said standards, a platform in like connection with the braces and in detachable connection with the aforesaid standards, wheels hung underneath the platform, and means in connection with said platform for connection therewith of a draft-tongue, the aforesaid beam being engageable with recesses in side flanges of said platform when said loading apparatus is converted into a conveyance.

3. A loading apparatus convertible to a conveyance and comprising standards, rearwardly-extending inclined braces in pivotal connection with the standards, a platform in like connection with the braces and in detachable connection with said standards, wheels hung beneath the platform, a hanger and bracket suspended from said platform, and a draft-tongue having adjustable support in the hanger and bracket, the standards being supported by the aforesaid platform clear of the ground when said loading apparatus is converted into a conveyance.



4. A loading apparatus convertible to a conveyance and comprising standards, rearwardly-extending inclined braces in pivotal connection with the standards, a platform in like connection with the braces, and in detachable engagement with said standards, a head-piece connecting the standards, a yoke in pivotal connection with said braces, means limiting rearward swing of the yoke, and a carrier having a swing-bail in tackle connection with said head-piece and yoke.

5. A loading apparatus comprising standards, rearwardly-extending inclined braces in connection with the standards, a platform in inclined connection with said standards and braces, a head-piece connecting the aforesaid standards, a yoke in pivotal connection with the aforesaid braces, means limiting rearward swing of the yoke, and a carrier having a swing-bail in tackle connection with said head-piece and yoke.

6. A loading apparatus comprising standards rearwardly-inclined braces in connection with the standards, a platform in adjustable inclined connection with said standards and braces, a head-piece connecting the aforesaid standards, a yoke in adjustable pivotal connection with said braces, means limiting rearward swing of the yoke, and a carrier having a swing-bail in tackle connection with said head-piece and yoke.

7. A loading apparatus comprising standards, rearwardly-inclined braces in connection with the standards, a platform in inclined connection with said standards and braces, a head-piece connecting the aforesaid standards, a yoke in pivotal connection with said braces, means limiting rearward swing of the yoke, a carrier having a swing-bail in tackle connection with said head-piece and yoke, and an automatic release mechanism for locking the bail forward over the carrier for a time in the ascent of said carrier on the platform.

8. A loading apparatus comprising standards, rearwardly-inclined braces in connection with the standards, a platform in inclined connection with said standards and braces, a head-piece connecting the aforesaid standards, a yoke in pivotal connection with said braces, means limiting rearward swing of the yoke, a carrier having a swing-bail in tackle connection with said head-piece and yoke, a lever in connection with the bail and having latch connection with the carrier to lock said bail forward over said carrier, a trip-lever in connection with the aforesaid carrier and latch-lever, and a device in connection with the aforesaid yoke in the path of the trip-lever when said carrier has ascent on said platform.

9. A loading apparatus comprising standards, rearwardly-inclined braces in connection with the standards, a platform in adjustable inclined connection with said standards and braces, a head-piece connecting the aforesaid standards, a yoke in adjustable pivotal connection with said braces, means limiting rearward swing of the yoke, a carrier having a swing-bail in tackle connection with said head-piece and yoke, a lever in connection with the bail and having latch connection with the carrier to lock said bail forward over said carrier, a trip-lever in connection with the aforesaid carrier and latch-lever, and a device having adjustable connection with the aforesaid yoke to be in the path of the trip-lever when said carrier has ascent on said platform.

817,275. WAX-HOLDER. KATHRINE ROHRDANTZ, Buffalo, N. Y. Filed Feb. 16, 1905. Serial No. 247,710.



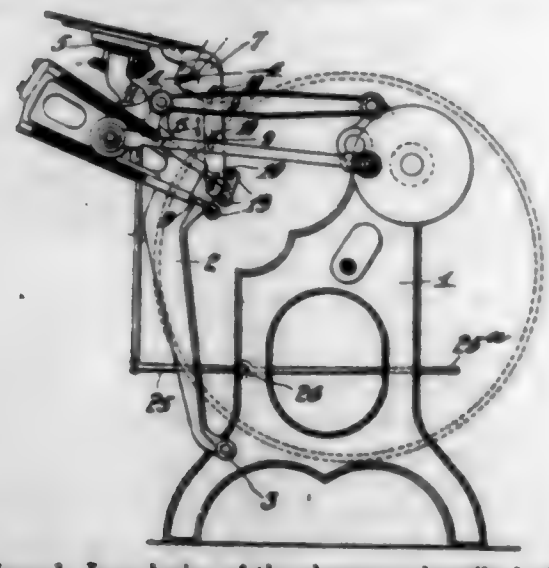
Claim.—1. A wax-holder comprising a wax-receptacle having an opening in its bottom, and means for fastening said receptacle to a support and adjusting the wax in the same, comprising a clamp constructed to grip a support and carrying a head which enters said opening and bears against the wax in the receptacle, substantially as set forth.

2. A wax-holder comprising a wax-receptacle having an opening in its bottom, and means for fastening said receptacle to a support and adjusting the wax in the same, comprising a pair of connected spring-jaws adapted to grip a support and a head arranged on one of said jaws and entering the opening in said receptacle, substantially as set forth.

3. A wax-holder comprising a wax-receptacle having an opening in its bottom, a disk arranged loosely in the receptacle underneath the cake of wax, and an attaching-clamp for the receptacle having an adjusting-head extending through said opening and not affixed to said disk, substantially as set forth.

4. A device for securing a wax-receptacle to a support and adjusting the wax in the receptacle, consisting of a continuous strip of metal which has one end bent to form upper and lower clamping-jaws and a bow connecting corresponding ends of said jaws while its opposite end is bent to form a rectangular head consisting of a flat top, a straight side connecting one end of the top with the upper jaw and another straight side extending from the opposite end of said top toward said upper jaw, substantially as set forth.

17,276. PRINTING-PRESS. JOSEPH B. ROY, Montreal, Canada. Filed June 19, 1905. Serial No. 266,837.

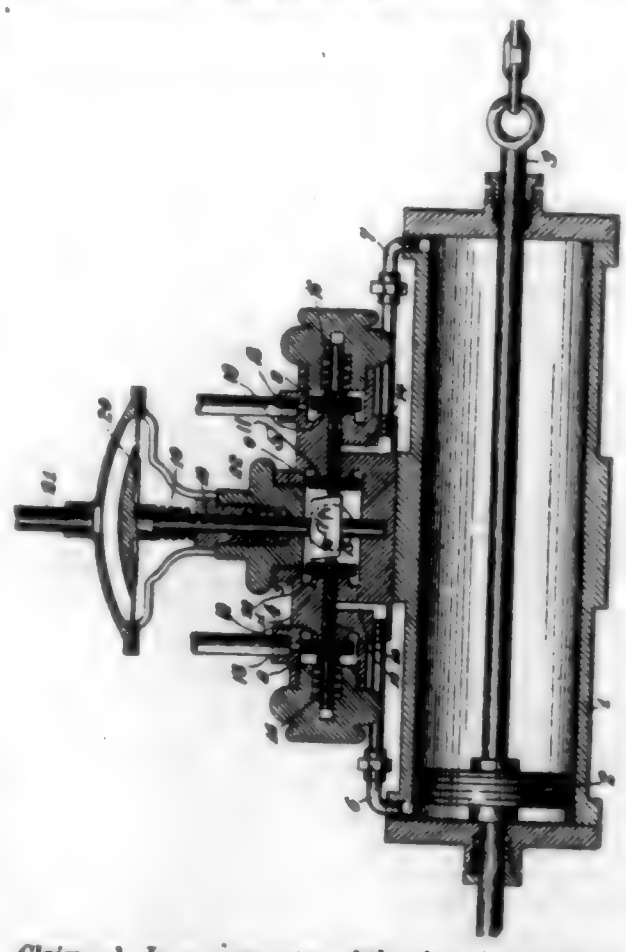


Claim.—1. In a device of the character described, the combination comprising a type-bed, movable bearer-plates disposed on the bed and provided with a plurality of cam-shaped slots, ink-rolls adapted to travel on the bearer-plates, guide-pins on the bed disposed to project into the cam-shaped slots, and means for moving the bearer-plates.

2. In a device of the character described, the combination comprising a type-bed, movable bearer-plates disposed on the bed and provided with slots in their upper ends, ink-rolls adapted to travel on the bearer-plates, guiding means disposed on the bed and coöperating with the bearer-plates, a shaft disposed adjacent the bed, means connecting the shaft with the slots in the bearer-plates, and means for rocking the shaft.

3. In a printing-press, a type-bed, pins projecting laterally in proximity to said type-bed, plates having cam-shaped slots into which said pins project, their being approximately horizontal slots in said plates, a shaft approximately parallel with the face of said type-bed, eccentric means thereon projecting into said horizontal slots, a lug rigidly connected with said shaft, a bell-crank lever, a link connecting said bell-crank lever with said lug, a rod connected with said bell-crank lever, and a pivoted lever connected with said rod.

817,277. DAMPER-REGULATOR AND MOTOR THEREFOR. OLAF SAUGSTAD, Plainfield, N. J., assignor to William B. Wadsworth, Plainfield, N. J. Filed Apr. 13, 1905. Serial No. 255,175.



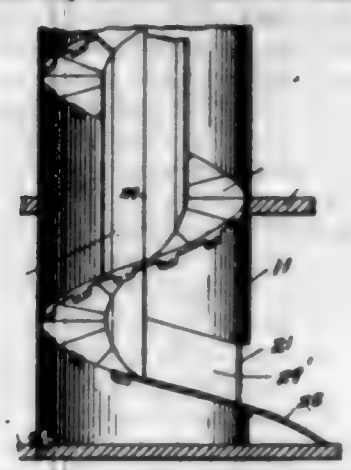
Claim.—1. In an apparatus of the class described, the combination with a cylinder and a piston therein, of two sets of opposed inlet and exhaust valves, arranged axially in a line, one set for each end of the cylinder, and fluid-pressure-actuated means for operating the said valves, said means including an operating-head located between the two sets of valves, and engaging same, substantially as set forth.

2. In an apparatus of the class described, the combination with a cylinder and a piston therein, of two sets of opposed inlet and exhaust valves for the opposite ends of the cylinder, an exhaust-chamber in which the exhaust-valves are located, an operating-head arranged in said exhaust-chamber and engaging said exhaust-valves, and pressure-operated means for actuating the said operating-head.

3. In an apparatus of the class described, the combination with a cylinder and a piston therein, of two sets of opposed inlet and exhaust valves arranged axially in a line, one set for each end of the cylinder, springs pressing the valves in one direction, an operating-head arranged between the valves, arranged upon a movement in one direction to move one of the sets of valves against the spring tension, and upon a movement in the other direction to move the other set of valves against their spring tension, and means controlling movements of the operating-head.

4. In an apparatus of the class described, the combination with a cylinder and a piston therein, of two sets of valves 4 and 5, arranged axially in a line, one set for each end of the cylinder, each set of valves comprising an inwardly-opening exhaust-valve 9 and an outwardly-opening inlet-valve 8, inlet connections 13 for the inlet-valves, distributing-passages 14 connecting with points between the valves, a discharge-chamber 15 in which the exhaust-valves are mounted, an operating-head mounted in the chamber 15, and means for controlling movements of the said operating-head.

817,278. GRAVITY-CONVEYER. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyor Company, a Corporation of New York. Filed May 20, 1905. Serial No. 262,234.



Claim.—1. The combination with a spiral blade in sections, of a sectional interior wall for said spiral blade, and an outer wall for the same.

2. The combination with a spiral blade in sections, of a sectional core, and an outer wall for the spiral surface.

3. The combination with a spiral blade composed of plates with interlocking lips, vertically-extending portions on said plates to form an interior wall for the spiral surface, and an outer wall for the spiral.

4. A spiral gravity-conveyer comprising a spiral blade composed of plates having interlocking lips, projections on the inner ends of said plates to form an inner wall for the conveying spiral, and a casing inclosing said spiral blade.

5. The combination with an outer casing, of a spiral blade composed of plates with interlocking lips on their edges, vertically-extending projections on the inner ends of said plates to form an inner spiral wall for the spiral blade, and means for securing the plates to the outer casing.

6. The combination with a sectional spiral blade, of a sectional inner core, and an outer shell.

7. The combination with a spiral blade made up of a plurality of plates, additional plates at the inner ends of said first-named plates to form an inner core, and a casing for the spiral blade.

8. The combination with a spiral blade composed of formed plates, of parts extending vertically from the inner ends of said plates to form an inner core, and an outer shell for the blade.

9. The combination with an outer shell, of a spiral blade having a continuous surface and being composed of formed plates attached to the outer shell, and raised portions on the inner ends of said plates.

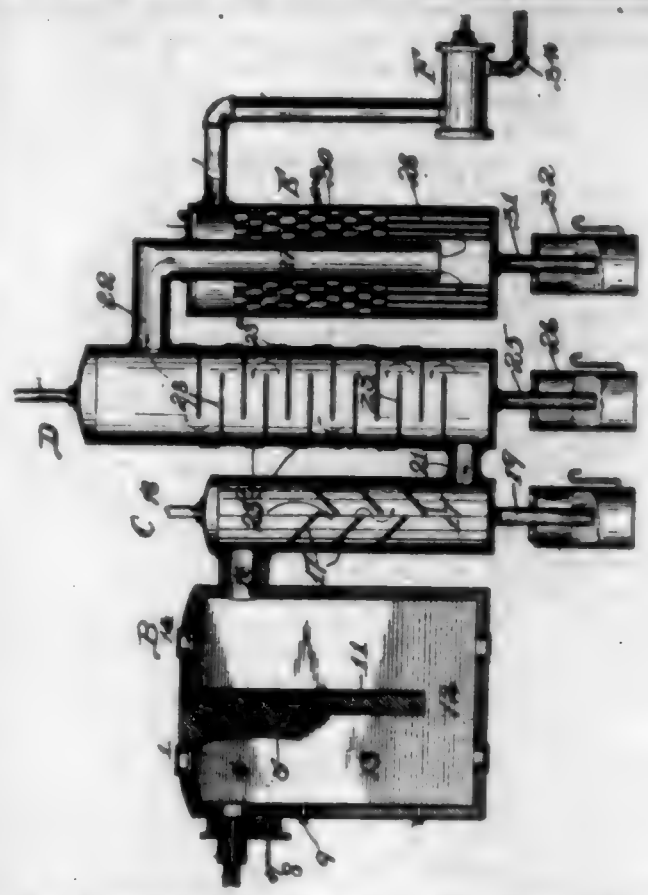
10. In a spiral gravity-conveyer, the combination with an outer shell, of a spiral blade composed of formed plates attached to the outer shell, and upwardly-extending members at or near the inner ends of said plates to form a guiding-wall for the conveyer.

817,279. APPARATUS FOR PRODUCING GAS. JACOB S. SMITH, Chicago, Ill. Filed Feb. 8, 1906. Serial No. 300,790.

Claim.—1. In a gas-producing apparatus, a gas-generator, a breaker-wall located therein across the entire path traversed by the gas-producing materials discharging into said generator, means uniformly maintaining the breaker-wall in a highly-heated condition and a decomposing degree of heat in the vicinity thereof, and means discharging gas-producing materials through said decomposing degree of heat and against said breaker-wall with a forcible impact, finely dividing said materials in the presence of a heat, dissociating substantially all of the gaseous elements of said materials into fixed gases, immediately reassociated mechanically and chemically within the confines of the generating-chamber, substantially as described.

2. In a gas-producing apparatus, a generator, a breaker-wall located therein across the entire path traversed by the gas-producing materials discharging into said generator, means continuously and uniformly maintaining the breaker-wall in a highly-heated condition, and a decomposing degree of heat in the immediate vicinity thereof, and means continuously discharging gas-producing materials through said decomposing degree of heat and against said breaker-wall with a forcible impact, finely dividing said materials in the presence of heat, dissociating substantially all of the gaseous elements of said materials into fixed gases immediately reassociated mechanically and chemically within the confines of the generating-chamber, substantially as described.

3. In a gas-producing apparatus, a gas-generator, a breaker-wall located therein, means for uniformly maintaining said wall in a highly-heated condition, means for discharging gas-producing materials against said wall with forcible impact and in the presence of a decomposing degree of heat, in combination with a supplemental steam-supply pipe discharging steam within the heats of primary generation and across the path traversed by the gases at the point of their discharge from the generator, substantially as described.



4. In a gas-producing apparatus, a gas-generator, a resisting-surface therein and means maintaining said surface in a highly-heated condition, in combination with means directing gas-producing materials against said resisting-surface with forcible impact in the presence of a decomposing degree of heat and means whereby the generated gases are discharged in a direct line downwardly out of the generating-chamber, substantially as described.

5. In an apparatus for manufacturing gas, a gas-generating chamber, a resisting-surface therein located within the heats of generation, and means maintaining said surface in a highly-heated condition, in combination with means directing gas-producing materials against said resisting-surface with forcible impact in the presence of a decomposing degree of heat and means for conducting the gases directly downwardly out of the generating-chamber and while in a highly-heated condition in contact with the rear of said resisting-surface, whereby the impact of the gas-producing materials shall be against a uniformly and continuously highly heated surface throughout their continuous supply thereto, substantially as described.

6. In an apparatus for manufacturing gas, a gas-generating chamber, a resisting-surface therein, means maintaining said surface in a highly-heated condition, means directing gas-producing materials against said resisting-surface with forcible impact against a decomposing degree of heat, means discharging the gases of initial generation downwardly and out of the generating-chamber, and means discharging steam within the influence of the direct heats of primary generation at a point next below the line on which the materials therefor are discharged into the generating-chamber and in the path of the line traversed by the gases of initial generation in their discharge from the gas-generating chamber, substantially as described.

7. In an apparatus for manufacturing gas, a generating-chamber, a resisting-surface located therein, means maintaining said surface in a highly-heated condition, means directing gas-producing materials against said surface with forcible impact in the presence of a decomposing degree of heat, means discharging additional gas materials into the generating-chamber with forcible impact against said resisting-surface within the confines of the generator, in direct contact with the heats of initial generation and across the path of the latter during their discharge downwardly out of the generating-chamber, in combination with means for conducting the combined gases as generated in a highly-heated condition to and in contact with the rear face of said resisting-surface, whereby the combined heat of initial supplemental generation is utilized to maintain said

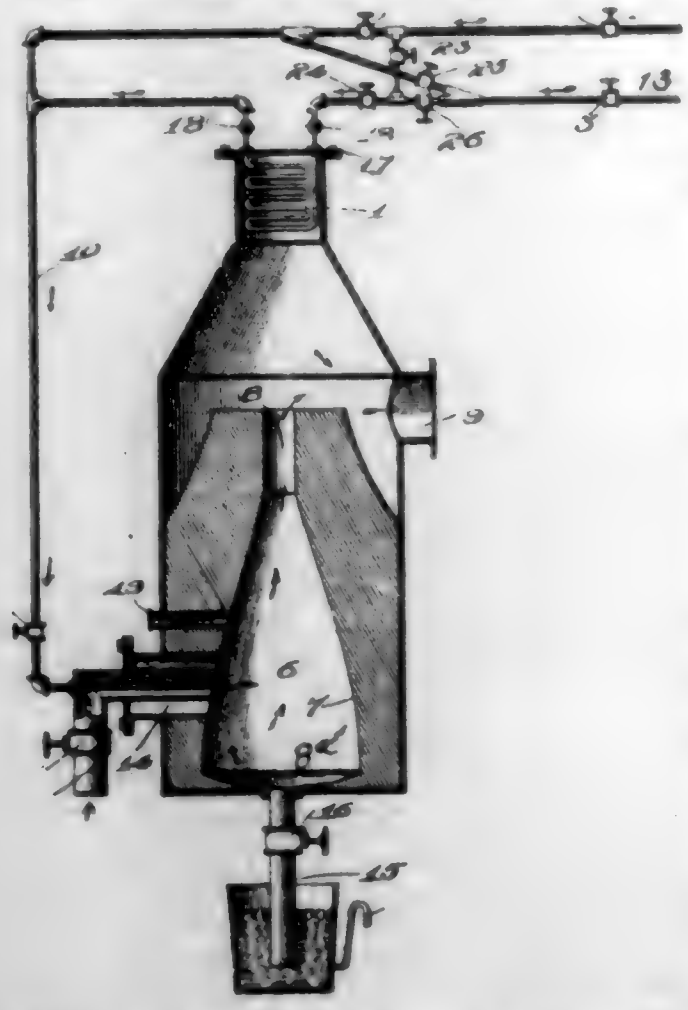
resisting-surface continuously in a uniformly highly heated condition, substantially as and for the purposes described.

8. In an apparatus for manufacturing gas, a gas-generating chamber, an imperforate breaker-wall arranged therein, means maintaining said breaker-wall throughout in a uniformly highly heated condition continuously, means for discharging gas-producing materials with forcible impact directly against said wall in the presence of a decomposing degree of heat, means for removing heavy hydrocarbons therefrom, means for dehydrating the fixed gases thereof, and means for delivering said gases in a compressed condition into either a fixed or moving storage vessel or receptacle, substantially as described.

9. In a gas-producing apparatus, a gas-generating chamber, a resisting-surface located therein, means maintaining said surface in a highly-heated condition, means directing gas-producing materials against said resisting-surface with forcible impact in the presence of a decomposing degree of heat in the initial generation of gases therein, means supplying additional steam to said generating-chamber in the presence of decomposing degree of heats of generation, and in the path of the discharge of the gases of initial generation from the generating-chamber, means for removing heavy hydrocarbons and other unvaporized materials from the fixed gases discharging from the generating-chamber and means for dehydrating the said fixed gases, substantially as and for the purpose described.

10. In a gas-producing apparatus, a gas-generating chamber, an imperforate resisting-surface located therein, means maintaining said surface in a highly-heated condition, means directing gas-producing materials against said resisting-surface with forcible impact in the presence of a decomposing degree of heat in the initial generation of gases therein, means supplying additional steam to said generating-chamber in the presence of a decomposing degree of heat resulting from initial generation and in the path of the discharge of the gases of initial generation from the generating-chamber, means for removing heavy hydrocarbons and other unvaporized materials from the fixed gases discharging from the generating-chamber and means for delivering said fixed and dehydrated gas to a storage vessel, substantially as described.

817,280. METHOD OF PRODUCING GAS. JACOB S. SMITH, Chicago, Ill. Filed June 10, 1905. Serial No. 264,562.

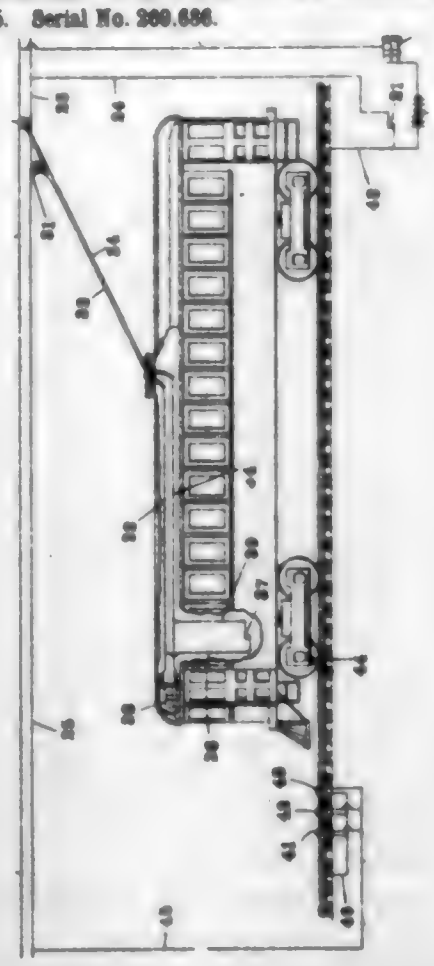


Claim.—1. The herein-described method of generating fixed gases from oil, steam and air for heating or illuminating purposes and separating the by-products therefrom, the same consisting in first heating the oil while in rapid circulation, then mixing the oil so heated with steam, discharging the oil and steam in the presence of air continuously into and through an area of sustained decomposing heat in a generator-chamber and with a resisted force finely dividing tomizing, dissociating and reassociating the gaseous elements of said materials, and then simultaneously therewith conducting the gases so generated upwardly out of the generating-chamber and the ungasified heavy hydrocarbons downwardly therefrom by gravity into a receptacle external of the generator, whereby gas-producing materials are continuously converted into fixed gases and the heavy hydrocarbons removed therefrom and from a generating-chamber without interfering with the continuous production of gases and heavy hydrocarbons therefrom, substantially as described.

2. The herein-described method of generating fixed gases from oil, steam and air for heating or illuminating purposes, and securing the by-products of such generation, which consists in first heating the oil while in rapid circulation, then mixing the oil so heated with steam, discharging the oil and steam in the presence of air without interruption into a sustained decomposing degree of heat and with a resisted force, finely dividing, atomizing, dissociating and reassociating the gaseous elements thereof and concurrently therewith conducting the generated gases upwardly in a generating-chamber, while in an expanded condition and simultaneously therewith the ungasified hydrocarbons continuously downwardly and out of the generating-chamber into a suitable storage-receptacle and finally contracting the volume of the gases during their escape from the generating-chamber into a swiftly-moving upward current whereby fixed gases and heavy hydrocarbons are continuously produced and entirely discharged from a generator, substantially as described.

3. The herein-described method of concurrently producing fixed gas and lubricating-oils from crude petroleum and which consists in heating the oil, mixing the heated oil with steam, and an excess of steam, and in the presence of air igniting and discharging the oil and steam violently and continuously against resistance into a self-sustained decomposing degree of heat within a generating-chamber, then conducting the resultant gases, the ash of combustion and excess of steam in a swiftly-moving contracted current out of said chamber and discharging the precipitated hydrocarbons downwardly by their gravity into an external receptacle, whereby the volatile elements of the oil are released combined and discharged in fixed gases for use, and the heavy hydrocarbons are withdrawn in liquid form, and whereby the decomposition and heats of said generating-chamber are controlled by the supply of the steam and an excess of steam thereto, and whereby the withdrawal of liquid hydrocarbons and the generation of gas are constant and continuous, substantially as described.

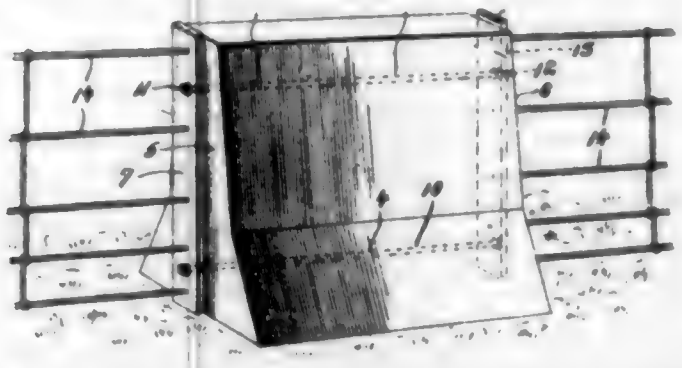
817,281. AUTOMATIC INTERCOMMUNICATING TRAIN-REPORTING SYSTEM. ELMER E. STEINER, Knightstown, Ind. Filed July 14, 1905. Serial No. 269,686.



Claim.—1. In an automatic intercommunicating train-reporting system, two trolley-wires running along the line, an instrument on each train to be communicated with, connections from said wires to an instrument on each of said trains, a signaling apparatus adapted to be operated automatically by each train as it passes, a central station, and circuits connecting said several sets of apparatus, whereby all signals given from whatever point shall be communicated to each other train and point equipped with such apparatus.

2. In an automatic intercommunicating train-reporting system, an electrical circuit including two trolley-wires, a central station having a transmitting and a receiving instrument, connections from said instruments to said trolley-wires, a car having a receiving instrument, connections from said instrument to said trolley-wires, a station-signaling apparatus located alongside the track, an electrical circuit including one of said trolley-wires leading to said signaling apparatus, and means carried by the car whereby said signaling apparatus is operated as the car passes, whereby a complete system of communication is established between the central office and the cars, and whereby the passage of each car thus equipped is automatically reported from the station-signaling apparatus both to the central station and to each other similarly equipped car on the line.

817,282. COMPOSITION FENCE-POST. DAVID C. STEWART, Payne, Ohio. Filed Feb. 10, 1906. Serial No. 300,533.



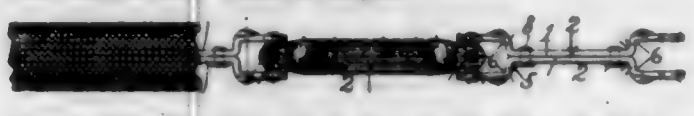
Claim.—1. A fence-post comprising a composition surface block, standards at opposite sides of the post, and tie-rods passing through the post and adjustably securing the standards to the post.

2. A fence-post comprising a composition surface block consisting of a large base tapering toward its upper end and having transverse openings therethrough, standards on opposite sides of the post opposite the openings and to which the fence is secured, tie-rods passing through the standards and the openings in the post, and having heads on the outside of one standard and nuts screwed upon the opposite end of the rods on the outside of the other standard.

3. A fence-post, comprising a composition surface block having transverse openings therethrough, standards on the opposite side of the post opposite the openings and to which the fence is secured, bolts passing through the standards and the post and having heads on one end on the outside of one standard and screw-threaded ends passing through the other standard, and nuts on the said screw-threaded portion on the outside of the standard.

4. A fence-post, comprising a composition surface block having openings extending therethrough at right angles to each other, standards at opposite sides of the post opposite the openings, and tie-rods passing through the post and adjustably securing the standards to the post at right angles to each other.

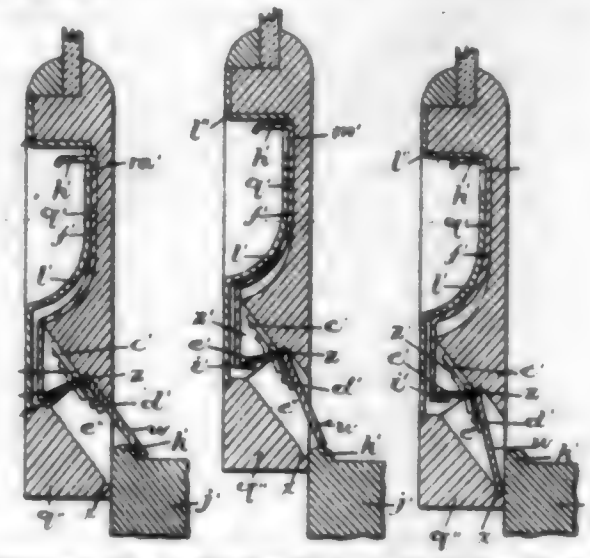
817,283. FLEXIBLE SHAFT. JOHN K. STEWART, Chicago, Ill. Filed Oct. 30, 1905. Serial No. 284,973.



Claim.—1. A flexible shaft comprising forked links and intervening pivot-blocks to which the links are pivoted on lines transverse to each other, each link being composed of twin members extending side by side and having outwardly-offset terminals, each of which has an outwardly-convex boss protruding laterally beyond the body of the link.

2. A flexible shaft comprising forked links and intervening pivot-blocks to which the forks of the links are pivoted on lines transverse to each other, each link comprising twin members secured together, and each member having at each end one member of the fork for that end, each such fork member having an outwardly-convex boss protruding beyond the pivot.

817,284. SLIDING WINDOW. WILLIAM J. D. THOMPSON and WILLIAM BENTLEY, Toronto, Canada. Filed June 16, 1904. Serial No. 212,846.



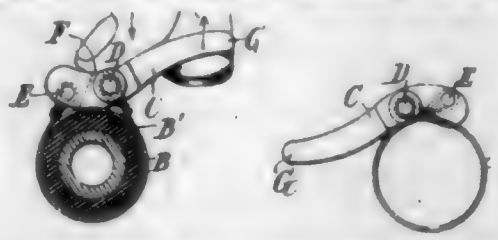
Claim.—1. The herein-described article of manufacture comprising a sliding window having a longitudinally-disposed groove in one of the horizontal sash-rails, extending from one side to the other thereof, a weather-shield contained in and extending from end to end of said groove, spring-tensioned hinges connecting said weather-shield to the window-sash within said groove and a pull-rod to position the weather-shield within the groove during the sliding movement of the window-sash.

2. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge, spring-tensioned hinge members contained in said recess, a weather-shield secured to the hinge members, a pull-rod to engage the weather-shield, a covering-plate for the pull-rod attached to the window-sash having at its upper end a slot through which projects the upper end of the pull-rod, said slot being of a sufficient depth to permit of the movement of the pull-rod when positioning the weather-shield.

3. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge, a weather-shield contained within said recess and connected to the window-sash by spring-tensioned hinges, projecting arms for the weather-shield, and pull-rods having hand-grips and hooked-shaped ends to engage the projecting arms.

4. In a sliding window the combination of the window-sash having a recess along its outer surface contiguous to its lower edge, spring-tensioned hinge members contained in said recess, a weather-shield secured to the hinge members, a pull-rod to engage the weather-shield, a covering-plate for the pull-rod attached to the window-sash having at its upper end a slot through which projects the upper end of the pull-rod, said slot being of a sufficient depth to permit of the movement of the pull-rod when positioning the weather-shield.

817,285. DETACHABLE CLAMP FOR GAS-TUBING OR THE LIKE. THEODORE VOGT, Grand View, and MAX HERIG, Jersey City Heights, N. J. Filed July 3, 1905. Serial No. 268,809.

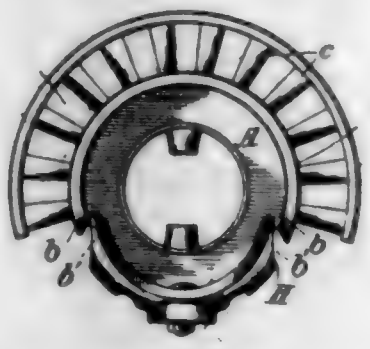


Claim.—1. A device for clamping gas-tubing on a tapered nipple, including in combination a pair of spring-wires A and B, each passing twice around the tubing so as to provide a convolution hugging the tubing closely at all points in its circumference, and a lever C provided with a pair of arms H and J, and a pivotal pin K between said arms, and a pivotal pin L projecting outside of said arms at a different point, one end of each of said wires being pivoted directly on the pin K, and one end of each of said wires being pivoted directly on a corresponding end of the pin L, whereby each arm swings freely between the two ends of one of said wires, said lever adapted to be inverted to clamp the tubing on the nipple, said pins K and L being a substantial distance outside of the inner face of the lever in the clamped position so as to cross the ends of the wires and thereby tighten them and automatically hold the lever in position, said lever having an inner curved face F lying close to the tubing in the tight-

ened position and affording a good thumb-hold in the loose position, and said lever having a reversely-curved tail or handle G for affording a good finger-hold in the loose position, whereby the lever may be securely grasped and strongly turned in tightening it.

2. A device for clamping gas-tubing on a tapered nipple, including in combination a pair of spring-wires A and B, and a lever C provided with a pair of arms H and J, and a pivotal pin K between said arms, and a pivotal pin L projecting outside of said arms at a different point, one end of each of said wires being pivoted directly on the pin K, and one end of each of said wires being pivoted directly on a corresponding end of the pin L, whereby each arm swings freely between the two ends of one of said wires, said lever adapted to be inverted to clamp the tubing on the nipple, said pins K and L being a substantial distance outside of the inner face of the lever in the clamped position so as to cross the ends of the wires and thereby tighten them and automatically hold the lever in position.

817,286. SEGMENTAL RACK. WILLIAM H. VOSS, Davenport, Iowa. Filed Jan. 2, 1906. Serial No. 294,160.



Claim.—1. In a segmental rack for mechanical movements a bracket between the ends of the rack having suitable bolt-openings therein; and a reversing-plate having a depressed seat in its inner surface into which said bracket is fitted, and suitable bolts extending through the openings in said bracket and through said reversing-plate for fastening the latter to the former.

2. In a segmental rack for mechanical movements a bracket between the ends of the rack; a reversing-plate having a depressed seat in its inner surface into which said bracket is fitted; and means for securing said reversing-plate to said bracket.

3. In a segmental rack for mechanical movements a bracket between the ends of the rack; a reversing-plate having a depressed seat in its inner surface into which said bracket is fitted; and means passing through said bracket and reversing-plate for securing the latter to the former.

4. In a segmental rack for mechanical movements a bracket consisting of a vertically-disposed rectangular plate located between the ends of the rack; a reversing-plate having a depressed seat in its inner surface into which said bracket is fitted; and means for securing said reversing-plate to said bracket.

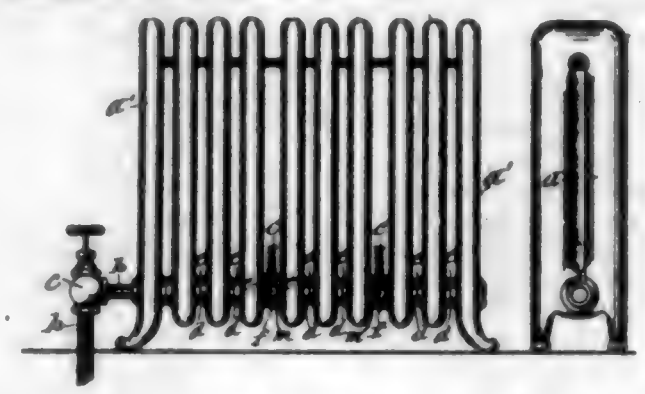
5. In a segmental rack for mechanical movements a bracket between the ends of the rack; a reversing-plate having a depressed seat in its inner surface corresponding in shape to the contour of said bracket into which the latter is fitted; and means for securing said reversing-plate to said bracket.

6. In a segmental rack for mechanical movements a bracket consisting of a vertically-disposed rectangular plate located midway between the ends of the rack; a reversing-plate having a depressed seat in its inner surface corresponding in shape to the contour of said plate into which the latter is fitted; and means for securing said reversing-plate to said rectangular plate.

7. In a segmental rack for mechanical movements a bracket consisting of a vertically-disposed rectangular plate located midway between the ends of the rack; a reversing-plate having a depressed seat in its inner surface corresponding in shape to the contour of said plate into which the latter is fitted; and means passing through said bracket and reversing-plate for securing the latter to the former.

8. In a segmental rack for mechanical movements a bracket consisting of a vertically-disposed rectangular plate located between the ends of the rack and having suitable bolt-openings therein; a reversing-plate having a depressed seat in its inner surface having bolt-openings therein registering with those in said rectangular plate, said seat corresponding in shape to the contour of said rectangular plate into which the latter is fitted; and suitable bolts extending through the openings in said bracket and said reversing-plate for fastening the latter to the former.

817,287. RADIATOR. JAMES V. WASHBURNE, Syracuse, N. Y. Filed Feb. 17, 1905. Serial No. 245,968.



Claim.—1. A radiator composed of a series of loops provided with corresponding ports, tubular couplings detachably connected to said ports, a similar coupling interchangeable with the other couplings, and a cut-off valve disposed in the said interchangeable coupling as set forth.

2. The combination with two adjacent radiator-loops communicating with each other through ports in the sides thereof, of a collar interposed between the loops and provided with nipples inserted in the ports, and a cut-off valve disposed in said collar as set forth.

3. The combination with two adjacent radiator-loops communicating with each other through ports in the sides thereof and provided with annular external faces surrounding the ports, of an interposed collar seated on said faces, a tube passing through the collar and into the ports, and a cut-off valve disposed in the tube central of the plane of the collar and having the valve-stem passing through said collar as set forth and shown.

4. The combination with two adjacent radiator-loops communicating with each other through ports in the sides thereof, and provided with annular external faces surrounding the ports, of an interposed collar seated on said faces, a tube passing through the collar and into the ports, a disk valve disposed in said tube, semicircular valve-seats on the interior of the tube at opposite sides of the disk valve, the valve-stem secured diametrically across said disk valve and pivoted to the collar and having one end extending through the collar and provided with means for turning it as set forth.

5. The combination with two radiator-loops disposed side by side and communicating with each other through ports in the sides thereof and provided with annular external faces surrounding the ports, an interposed collar seated on said faces, a tube passing through the collar and into the ports, a disk valve disposed in said tube central of the plane of the collar, a bifurcated valve-stem embracing the valve diametrically and detachably secured thereto, one end of said valve-stem pivoted in the aforesaid collar and the opposite end extending through the collar, a sleeve secured to the collar and embracing the valve-stem, a lug projecting from the side of the valve-stem at the outer end of the sleeve, and a cap connected to the sleeve, said cap and sleeve receiving between them the aforesaid lug as and for the purpose set forth.

6. The combination with two adjacent radiator-loops communicating with each other through ports in the sides thereof, of a collar interposed between the ports and provided with nipples inserted into said ports, a cut-off valve between said nipples and having the valve-stem extending radially through the aforesaid collar, and a vent-valve attached to said collar and communicating with the interior of one of the nipples as set forth and shown.

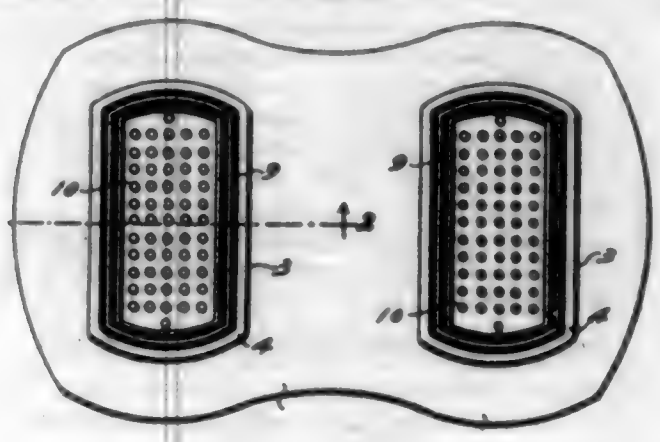
7. The combination with two adjacent radiator-loops communicating with each other through ports in the sides of the loops, a collar interposed between the ports, a tube extending through said collar and into the ports, a disk valve in the tube and having its stem extending radially through the collar, a detent attached to the valve-stem, and stops on the collar limiting the movement of the detent as and for the purpose set forth.

817,288. MEDICAL APPLIANCE. JAMES P. WHEDON, Chicago, Ill. Filed Jan. 5, 1905. Serial No. 239,795.

Claim.—1. A medicine-receptacle of the class described, formed of rubber or similar material and comprising a shallow-cupped body part having a flanged rim, and means for securing all parts of said rim into close contact with the skin of the wearer, said rim having an annular groove in its face, substantially as described.

2. A medicine-receptacle of the class described, formed of rubber or similar material and comprising a shallow-cupped body part having a flanged rim, said body part having protuberances extending

from the bottom of the cup to points flush with the plane of said rim, and means for securing all parts of said rim into close contact with the skin of the wearer, substantially as described.



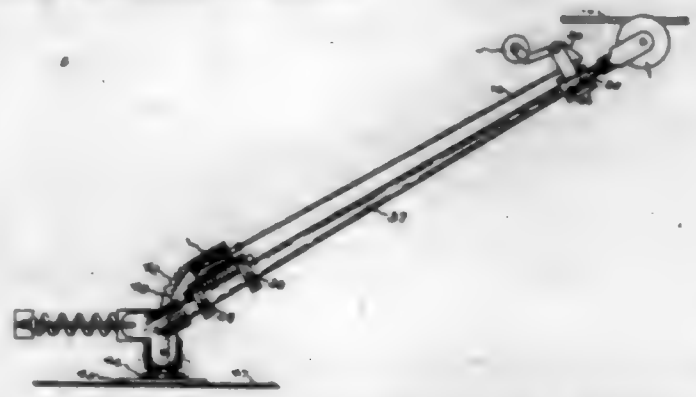
817,289. STRAW-RACK FOR THRESHING-MACHINES. CHARLES R. WHITNEY, Webster, S. D., assignor of one-fourth to Eugene E. Pratt and one-fourth to Frank L. Dean, Webster, S. D. Filed Apr. 20, 1905. Serial No. 256,524.



Claim.—A framework, rock-shafts supported therein and having forwardly and rearwardly extending arms, hangers depending from said arms, two independently-movable straw-rack members supported by the hangers depending respectively from the forwardly and from the rearwardly extending arms, a driven shaft having oppositely-extending cranks, pitmen connecting said cranks with the straw-rack members, slotted arms depending from the rock-shafts, a link-rod connected adjustably with said slotted arms to transmit motion between the rock-shafts of variable extent, and a pitman connecting one of the slotted arms adjustably with a crank upon the driven shaft.

817,290. ELECTRIC RAILWAY SWITCHING MECHANISM. HARRY L. YOUNG, Pueblo, Colo. Filed Oct. 5, 1905. Serial No. 281,470.

Claim.—1. In an electric railway switching mechanism, the combination with a railway-track, a movable switch-point, and a supply-conductor, of electromagnetic means for operating said switch-point, a supplemental conductor having a connection to said electromagnetic means, a car-carried main trolley to engage said supply-conductor, a pivotally-mounted auxiliary trolley adapted to engage and electrically connect said supply and supplementary conductors, and electromagnetic means for controlling said auxiliary trolley, substantially as described.



2. In an electric railway switching mechanism, the combination with a track-switch and electromagnetic means for operating the same, of a supply-conductor extending along the way and a supplementary conductor in proximity to the switch and connected to said electromagnetic means, a pivotally-mounted car-carried trolley adapted to engage and electrically connect said supply and supplementary conductors, and electromagnetic means under control of the motorman for controlling said auxiliary trolley, substantially as described.

3. In an electric railway switching mechanism, the combination with a movable switch-point, of an operating-bar therefor, a lever pivotally mounted and connected to said bar, two electromagnets operatively related to said lever, a supply-conductor, two supplementary conductors each connected to one of said electromagnets, and an electromagnetically-controlled car-carried trolley adapted to engage said conductors and supply current to either of said electromagnets at will, substantially as described.

4. The combination with a car, of a trolley-pole carrying a main trolley mounted thereon, an electrically-operated auxiliary bridging-trolley pivotally mounted on but insulated from said trolley-pole, substantially as described.

5. The combination with a car, of a trolley-pole carrying a main trolley mounted thereon, an auxiliary bridging-trolley in proximity to said main trolley and pivotally mounted on but insulated from said trolley-pole, and an electromagnetic operating device also mounted on said trolley-pole and connected to said auxiliary bridging-trolley, substantially as described.

6. In an electric railway switching mechanism, the combination with an electrically-operated railway-switch, of a supply-conductor, a supplemental conductor connected to the switch-operating mechanism, a car-carried main trolley to engage said supply-conductor, and a pivotally-mounted electrically-operated auxiliary trolley adapted to bridge and electrically connect said supply and supplemental conductors, substantially as described.

7. Means for controlling electrically-operated railway-switches, said means comprising a trolley-pole in combination with a trolley pivotally mounted near the upper end thereof but insulated therefrom; an electromagnet mounted on said pole and operatively connected with said trolley, and a switch under control of the motorman in electrical connection with said electromagnet, substantially as described.

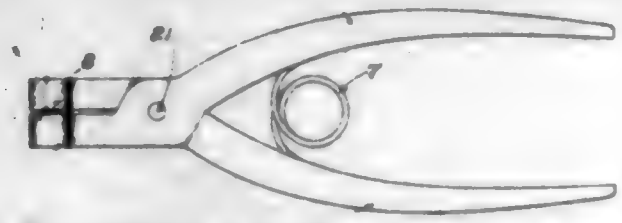
8. Means for controlling electrically-operated railway-switches, said means comprising a trolley-pole swivelly mounted upon a car, said pole having a base provided with laterally-exposed contact-strips, springs fixedly mounted to engage said strips, connections from said springs to a source of electrical supply, an electromagnet mounted upon said pole connected to said strips, and a trolley pivotally mounted on said pole and operatively connected to the movable element of said electromagnet, substantially as described.

9. The combination with a car, of a trolley-pole swivelly mounted thereon, said pole having a base provided with laterally-exposed contact-strips, springs fixedly mounted to engage said strips, connections from said springs to a source of electrical supply, an electromagnet mounted upon said pole connected to said strips, a trolley pivotally mounted on said pole and operatively connected to the movable element of said electromagnet, and a controlling-switch for said electromagnet, substantially as described.

817,291. PUNCHING AND PRINTING SYSTEM. EDWARD C. ALLEN, Swampscott, Mass. Filed Mar. 28, 1905. Serial No. 252,496.

Claim.—1. The combination of canceling means adapted to record a value upon a spaced card by obliterating one of a series of characters upon the said card and printing means impressing upon

the said card a new set of characters beginning at the point just canceled.



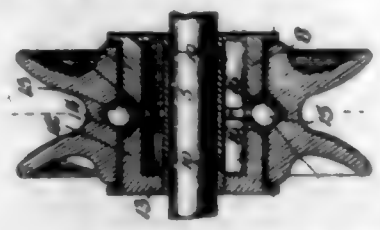
2. The combination of canceling means adapted to record the value upon a spaced card by obliterating one of a series of characters upon the said card and printing means impressing upon the said card a new set of characters consecutive with those before the cancellation-mark.

3. The combination of canceling means adapted to record a value upon a spaced card by obliterating one of a series of characters upon the said card, printing means impressing upon the said card a new set of characters, the said canceling means and the said printing means being positioned with relation to each other so that the printing means impress the characters in the spaces next beyond the space occupied by the character obliterated by the said canceling means.

4. The combination of canceling means adapted to record a value upon a spaced card by obliterating one of a series of characters upon the said card, and printing means impressing upon the said card a new set of characters, said canceling means and said printing means being so placed with relation to each other that the first of this new set of characters is in the space next beyond the mark made by the canceling means and in the row adjacent the row in which the cancellation-mark is located.

5. The combination with a spaced record-card provided with a set of characters in consecutive spaces thereon, whereby the said card is adapted to record a value by the obliteration of one of the said series of characters, canceling means for obliterating one of the said series of characters, and printing means operatively connected with the said canceling means whereby a new set of characters consecutive with the characters before the cancellation-mark is impressed on the card in spaces thereon.

817,292. **TROLLEY-WHEEL.** MARTIN L. AMANN, Warren, Pa., assignor of one-half to Charles Amann, Warren, Pa. Filed Mar. 10, 1904. Serial No. 197,563.



Claim.—1. A wheel, comprising inner and outer independently-rotatable members, the inner member including an inner bearing-sleeve and a sectional outer bearing-sleeve connected together to rotate in unison.

2. A wheel, comprising inner and outer independently-rotatable members, the inner member including an inner bearing-sleeve and a sectional outer bearing-sleeve, one section of the outer bearing-sleeve being rigid with the inner sleeve and the other section of the outer sleeve being adjustable on the inner sleeve.

3. A wheel, comprising inner and outer independently-rotary members, the inner member including an inner bearing-sleeve, and a sectional outer bearing-sleeve the sections of which are adjustable toward and from each other.

4. In combination, an axle, and a wheel including an inner member rotatable on the axle and an outer member rotatable on the inner member, said inner member comprising inner and outer bearing-sleeves separated by an annular cavity and connected together to rotate in unison.

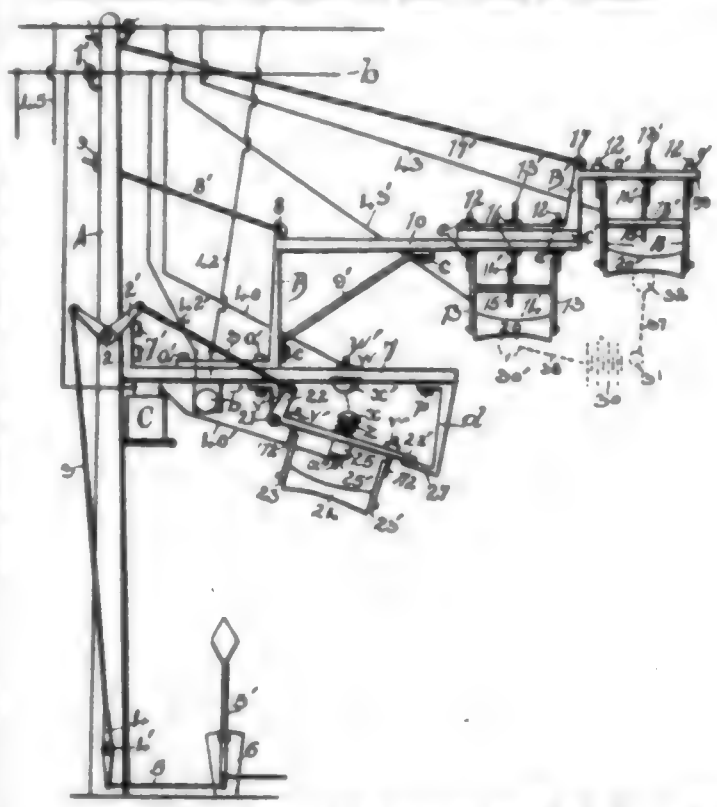
5. In combination, an axle, and a wheel including an inner member rotatable on the axle and an outer member rotatable on the inner member, said inner member comprising inner and outer sleeves spaced apart and connected to rotate in unison, the outer sleeve being composed of relatively adjustable sections.

6. In combination, an axle, and a wheel including an inner member rotatable on the axle and an outer member rotatable on the inner member, the inner wheel being made up of inner and outer bearing-sleeves, the outer sleeve comprising relatively adjustable sections connected to the inner sleeve for rotation therewith, said sections being formed with flanges to confine the outer wheel member in proper position.

7. A trolley-wheel, comprising independently-rotary inner and outer wheel members, the inner member comprising an inner bearing-sleeve and a sectional outer bearing-sleeve, one section of the outer bearing-sleeve being screwed upon the inner bearing-sleeve.

8. A trolley-wheel, comprising independently-rotary inner and outer wheel members, the inner wheel member being made up of separated inner and outer bearing-sleeves, the outer bearing-sleeve comprising separate relatively adjustable sections, both of which are connected to the inner bearing-sleeve and each of which is provided with a flange designed for the retention of the outer wheel member, and antifriction bearing elements interposed between the wheel members and retained between the opposed ends of the sections of the outer bearing-sleeve.

817,293. **AUTOMATIC RAILROAD-SIGNAL.** JAMES S. ANDERSON, Ames, Nebr. Filed Dec. 26, 1905. Serial No. 293,299.



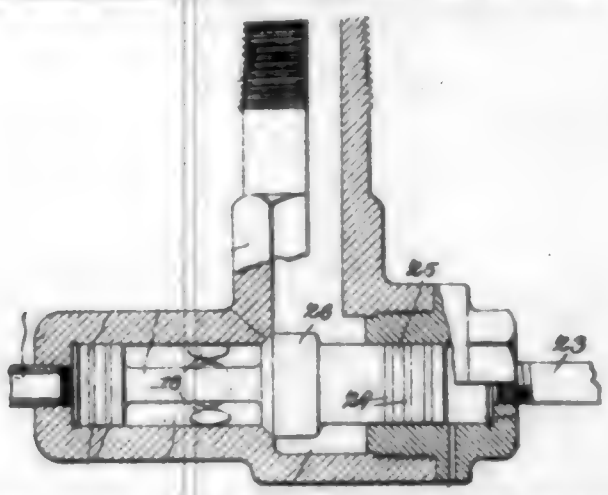
Claim.—1. In a signal of the character described, the combination with a suitable pole, of two electric conductors supported by said pole, a bracket extending from said pole, an electric bell secured to said bracket, a connecting-wire extending from each post of said bell, one connecting-wire being led to one of said conductors the remaining connecting-wire being led to the other electric conductor, a pivotally-held receiving-roller connected to said bracket, a connecting-wire extending from said receiving-roller to one of said electric conductors, a spring to normally hold said receiving-roller in a pendent condition, an arm supported by said bracket, but insulated therefrom, a pendent pivotally-held transmitting-roller supported by said insulated arm, a spring to normally hold said transmitting-roller in a pendent position, a connecting-wire leading from said transmitting-roller to the remaining electric conductor so that the receiving-roller is connected to one electric conductor and the transmitting-roller to the other electric conductor, a contact-making rail carried by a suitable car adapted to come into contact with said receiving-roller, a second contact-making rail carried by said car adapted to come into contact with said transmitting-roller, a battery-provided electric bell within said car, a connecting-wire led from one post of said last-mentioned electric bell to said first-mentioned contact-making rail, and a second connecting-wire led from the remaining post of said last-mentioned electric bell to said last-mentioned contact-making rail.

2. In a device of the character described, the combination with a suitable pole, of two electric conductors supported by said pole, a bracket extending from said pole, an ear supported by said bracket, a stop-bar depending from said bracket, a rock-bar pivotally secured to said ear, and held by said stop-bar, a bell-crank pivotally secured to said pole, a connecting-rod extending from one end of said bell-crank to said rock-bar, a pivotally-held lever secured to said pole, a connecting-rod extending from the remaining end of said bell-crank to the upper end of said lever, said lever being adapted to be normally held in a vertical position, a bar extending from the

lower end of said lever and being secured to the lever of a suitable switch, a contact-making button secured to said bracket, a connecting-wire extending from said button to one of said electric conductors, a spring-pressed button secured to said rock-bar and adapted to come into contact with said first-mentioned button, a suitable battery, a connecting-wire extending from one post of said battery and being secured to said spring-pressed button, a frame secured to said rock-bar, a roller secured within said frame, and a connecting-wire extending from the remaining post of said battery and being led to one of said electric conductors said connecting-wires being so arranged that said last-mentioned connecting-wire is secured to one of said electric conductors while said connecting-wire extending from said first-mentioned button, is secured to the remaining electric conductor, all arranged substantially as and for the purposes set forth.

3. In a device of the character described, the combination with a plurality of cars, of two distinct contact-making rails secured to each car all of said contact-making rails being in electric connection, the rails upon the first car being curved downward and being provided with a buffer such as a rubber cushion all arranged substantially as and for the purposes set forth.

817,294. DRAIN-COCK FOR STEAM-CYLINDERS. SWAN ANDERSON, Ottumwa, Iowa, assignor of one-sixth to Isaac N. Funk and one-sixth to William A. Kelly, Ottumwa, Iowa, and one-sixth to Joseph B. Roach, Aurora, Ill. Filed Oct. 2, 1905. Serial No. 281,044.



Claim.—1. A cylinder drain-cock including a casing provided with draining-openings and having a valve-seat in advance of said openings, a direct seating-valve arranged to close against the seat and there held in part by the pressure of the piston-actuating fluid in the cylinder, said casing being provided, also, with a pair of alining cylinders, pistons arranged in said cylinders and connected to the valve, and valved connections leading to said cylinders to permit the operation of either piston and the opening or closing of the valve.

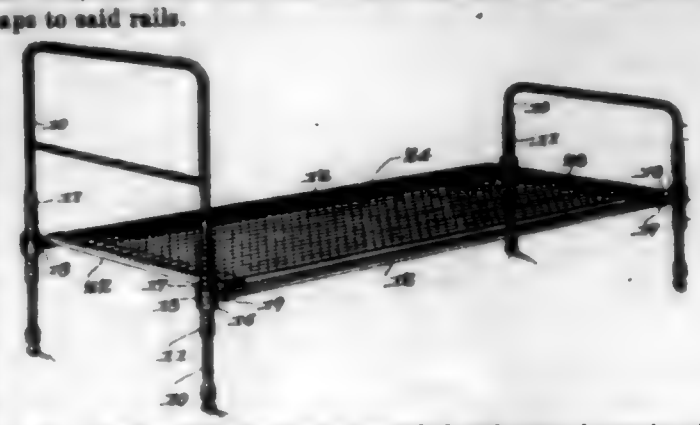
2. A cylinder drain-cock comprising a casing including a pair of alined cylinders, said casing being provided with drain-openings and having a valve-seat in advance of said openings, a pair of pistons arranged in the cylinders, a stem connecting the pistons, a direct seating-valve carried by the stem and arranged to be held to its seat in part by the pressure of the piston-actuating fluid in the cylinder, and valved connections leading to the cylinders to permit operation of either piston and the opening or closing of the valve.

3. The combination with a source of steam-supply and a source of compressed-air supply, of a drain-cock provided with opposed and alined cylinders and an inlet communicating with the cylinders one of said cylinders being provided with an exhaust-aperture and with a valve-seat at its inner end, a valve proportioned to close the end of the cylinder and the exhaust-aperture and carrying alined pistons, movable within the cylinders and to open and close the valve, and means to selectively admit steam or compressed air to either cylinder to move the valve in either direction.

817,295. ADJUSTABLE BEDSTEAD. EDMUND A. BARNES, Bryan, Idaho. Filed July 17, 1905. Serial No. 270,047.

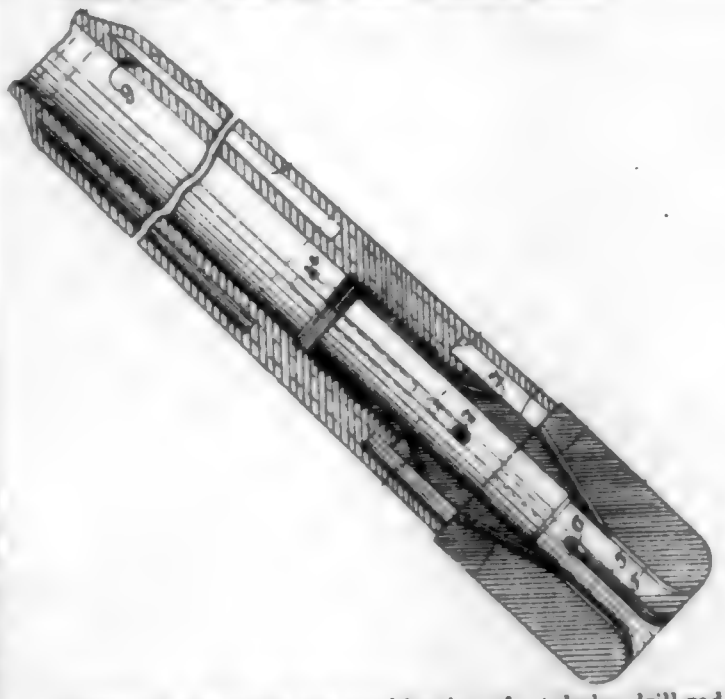
Claim.—1. A bedstead having posts provided with spaced annular channels, the side rails having half-bearings provided with means for engaging said channels at one side, and caps detachably connected to said rails provided with means for engaging the channels on the other side.

2. A bedstead having posts provided with spaced annular channels, the side rails having half-bearings provided with means for engaging said channels at one side, caps swinging from said side rails and provided with means for engaging said channels from the opposite side, and means for detachably coupling the free ends of said caps to said rails.



3. A bedstead having posts provided with spaced annular channels, the side rails having half-bearings provided with means for engaging said channels at one side and offset laterally therefrom, and caps detachably connected to said rails provided with means for engaging the channels on the other side, whereby the rails may be spaced nearer together or farther apart by reversing in position upon the posts.

817,296. TUBULAR ROCK-BORING DRILL. WILLIAM BERSON, Duluth, Minn. Filed Mar. 31, 1905. Serial No. 253,037.



Claim.—1. In a drill, the combination of a tubular drill-rod, a reservoir formed on and around said rod at its lower end, a tubular drill-point secured to the lower end of said rod, and having passages formed therein connecting the central passage of said drill-point with said reservoir.

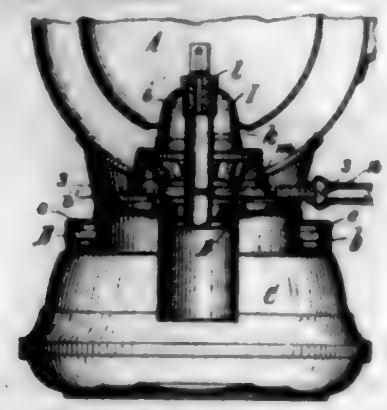
2. In a drill, the combination of a tubular drill-rod, a reservoir mounted on said rod at its lower end, a tubular drill-point secured to the lower end of said drill-rod and forming an approximate closure for said reservoir and having passages formed in its wall connecting its central passage with said reservoir and having other passages formed in its wall connecting said reservoir with said central passage at a plane below the first said wall-passages, said drill-point being enlarged in external diameter and reduced in internal diameter at its lower end, said drill-point having a series of interior and exterior grooves formed in said lower end, substantially as described.

3. The combination of a tubular drill-rod, a bit carried thereby, a reservoir for loose abrasive carried by said rod and communicating with the central passage of said rod and bit, the construction being such that a supply of loose abrasives may flow from said reservoir to the central passage of said bit.

4. A drill-rod provided with an abrasive-storing reservoir, and a drill-point removably secured to said rod and forming part of the inclosing wall of said reservoir and provided with passages adapted to conduct water from said drill-rod to said reservoir and with other passages adapted to conduct water and loose abrasives from said reservoir to the lower end of said point.

5. A tubular drill-rod, a tubular drill point or bit engaging said drill-rod, a housing carried by said drill-rod and surrounding the lower end of said drill-rod and the upper end of said bit and in connection therewith forming a reservoir for the storage of loose abrasives.

817,297. LAMP OR LANTERN. CHARLES L. BETTS, Brooklyn, N. Y., assignor to R. E. Dietz Company, New York, N. Y. Filed Jan. 24, 1906. Serial No. 297,542.



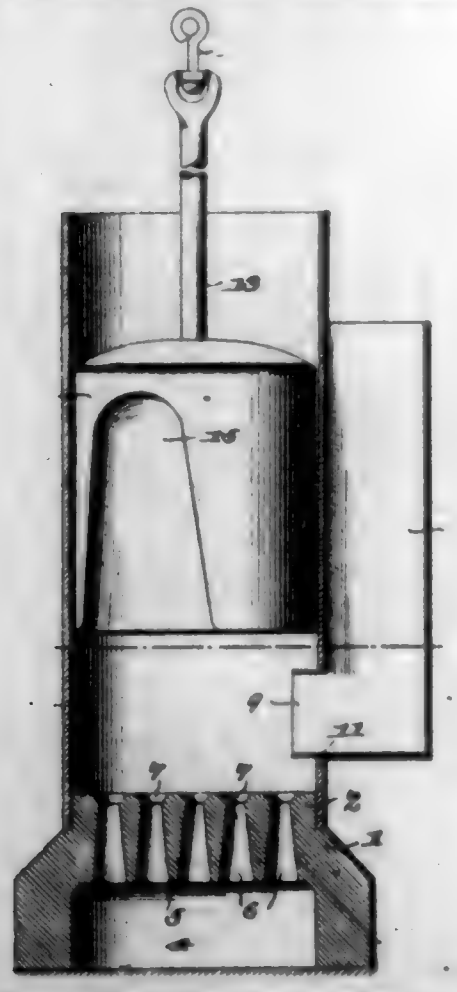
Claim.—1. The combination with the body of a lamp or lantern having in its lower portion an opening, of a base portion detachably secured to said body, and a gas-burner mounted on said base portion and having a laterally-projecting gas-inlet pipe which enters said opening upon securing the base portion to the body, substantially as set forth.

2. The combination with the body of a lamp or lantern having in its lower portion an angular slot comprising upright and horizontal portions, of a base portion detachably secured to said body, and a gas-burner mounted on said base portion and having a laterally-projecting gas-inlet pipe which enters the upright portion of said slot upon connecting the base portion to the body and is engaged in the horizontal portion of said slot by turning the base with reference to the body in securing the base to the body, substantially as set forth.

3. The combination with the base portion of a lamp or lantern having in its top a burner-socket and outside of said socket fastening devices for the burner, of a gas-burner seated in said socket and provided with a lateral gas-inlet pipe and with a base adapted to engage with said fastening devices, substantially as set forth.

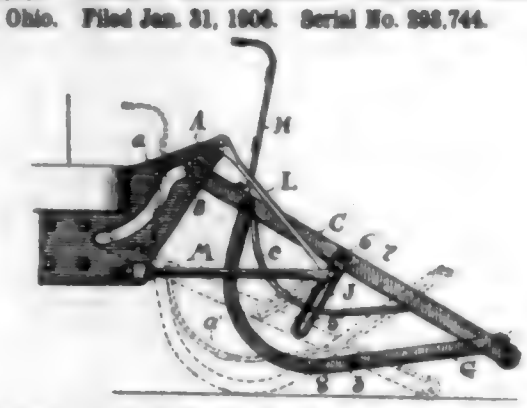
4. The combination with the base portion of a lamp or lantern having inwardly-overhanging fastening-lips for the burner, of a gas-burner mounted on said base portion and provided with a lateral gas-inlet pipe and with a notched base-flange adapted to engage underneath said lips, substantially as set forth.

817,298. ROCK-CRUSHER. JOHN Y. BYERS and JAMES W. MYER, San Diego, Cal. Filed Apr. 19, 1905. Serial No. 256,444.



Claim.—In a machine of the class described, the combination with a die provided with cone-shaped escape-openings having their upper ends countersunk, of a mortar having a feed-chute in its side, and a pestle arranged within the mortar and provided on one side with a pocket all the walls of which are curved.

817,299. SAFETY CAR-FENDER. FREDERICK CUSHMAN, Cleveland, Ohio. Filed Jan. 31, 1906. Serial No. 298,744.



Claim.—1. A safety-fender for motor-cars comprising a carrier and a guard therefor adapted to rise across its front, and fixed fulcrums for the carrier at about its middle and sides on which the carrier is adapted to be shifted back and forth.

2. A safety-fender for motor-cars comprising a suitable carrier and a movable guard across the front thereof, in combination with supports on which the rear of the carrier is adapted to move up and down and fixed fulcrums on which the carrier is adapted to rock to higher or lower positions.

3. A safety-fender for motor-cars comprising a carrier having a basket portion at its middle and a shifting-guard at the front supported on said carrier, in combination with fixed rear supports in which the carrier is adapted to slide up and down, links engaged with the sides of the carrier substantially midway their length and fixed fulcrums for said links.

4. A safety-fender for motor-cars comprising a carrier having a basket portion and a pivoted guard adapted to rise in front of said basket portion when the fender drops, in combination with fixed supports constructed to permit the rear of carrier to rise and fall therein, and slotted links at the sides of the carrier and fixed fulcrums engaged in said links.

5. In safety car-fenders, a carrier, a guard member pivoted thereon at its rear and adapted to rise above the carrier and having rocker-shaped sides adapted to support said member when the fender is down, in combination with slotted links pivotally connected with the sides of the carrier near its middle and a fixed fulcrum in the slots of said links.

6. A safety-fender for motor-cars provided with a carrier having wires bent to form a basket and a guard member to rise to an inclined position at the front of said basket when the fender strikes an obstruction and drops, in combination with slotted links at the sides of said carrier and fixed fulcrums on which said links are pivotally and slidably engaged.

7. A fender for cars comprising a carrier adapted to drop at both ends when it strikes an obstruction and to retire in its supports, and a guard pivoted on said carrier and adapted to rise to inclined position above the front portion thereof, thus serving to intercept and confine a body that may be thrown upon the carrier, in combination with slotted links at the sides of the carrier and fixed fulcrums for the carrier engaged in said slots.

8. In car-fenders, a carrier and supports therefor upon which the carrier is adapted to drop to a lower plane and to retire within limits when it strikes an object, in combination with a guard member pivoted on said carrier and provided with runners to ride upon the ground when said carrier is lowered, slotted links engaged with the sides of the carrier and fixed supports for the middle of the carrier engaged in said slotted links.

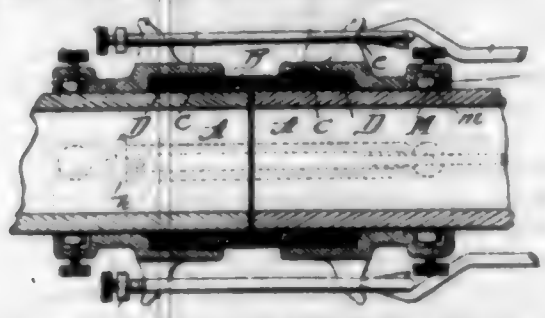
9. In fenders for cars, a carrier-frame and a basket, in combination with a guard member having rocker-bars at its sides and wires across its front between said bars, said wires terminating at their rear substantially at the front of the said basket, brackets at the rear upon which said carrier is slidable up and down, fixed side supports and slotted links pivotally connecting the middle of the carrier with said supports.

10. In car-fenders, a carrier-frame and hangers having retreating guideways in which the carrier is engaged at its rear and means to sustain the elevation of the front of the carrier from said hangers, said means comprising fixed braces and supporting-rods providing fixed fulcrums at their ends, and slotted links engaged on said fulcrums and pivotally connected with the carrier.

11. The carrier having a basket and a guard member pivoted at its rear behind said basket and free at its front to rise above the carrier, said guard member having rocker-bars at its sides beneath the plane of said basket in their bent portion, and fixed supports for said carrier at its rear and middle on which the carrier is adapted to be held in a raised position and guided to a lower position.

12. The carrier and slotted links pivoted at the sides and middle thereof, in combination with slotted guides for the rear of the carrier and fixed fulcrums at its sides engaged in the slots of said links, and the said links constructed to maintain a definite space between said fulcrums and the pivots of said links on the carrier, thus providing for a rocking movement of the carrier on its fulcrums.

817,300. PIPE-COUPLING. ORLANDO E. DAVID, Bradford, Pa. Filed Apr. 28, 1905. Serial No. 257,550.



Claim.—1. In a pipe-coupling, the combination with the pipes, the sleeves secured thereto and lugs carried by said sleeves, of a link a set-screw carried thereby and adapted to engage one of said lugs and a cam-shaped lever carried by said link and engaging the other of said lugs, substantially as described.

2. In a pipe-coupling, the combination with the pipes, the sleeves secured thereto and lugs carried by said sleeves, of a link engaging one of said lugs, a cam-shaped lever carried by said link and engaging the other lug and means for adjusting the length of said link, substantially as described.

3. A pipe-coupling comprising the sleeves, the jaws carried thereby, the lugs on said sleeves, the thimble surrounding the ends of the pipes and in contact therewith, the link engaging said lugs and the cam-shaped lever carried by said link, substantially as described.

4. In a pipe-coupling, the combination with the pipes and the lugs carried by the abutting ends thereof, of a link adapted to engage said lugs, said link comprising a detachable U-shaped bar, locking means carried thereby and means distinct from said locking means for adjusting the length of the link, substantially as described.

5. In a pipe-coupling the combination with the pipes and the lugs carried by the abutting ends thereof, of a link adapted to engage said lugs, said link comprising a detachable U-shaped bar, a plate across the open end thereof, a set-screw carried by said plate for adjusting the length of said link and a cam-lever carried by said U-shaped bar, substantially as described.

6. In a pipe-coupling, the combination with the pipes, of the sleeves mounted thereon, said sleeves having tapered recesses therein, jaws carried in said recesses, and means for connecting said sleeves, substantially as described.

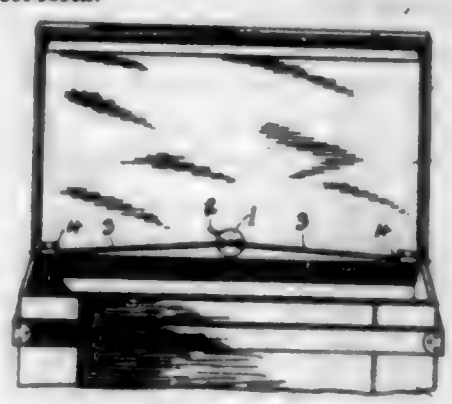
7. In a pipe-coupling, the combination with the pipes, of the sleeves mounted thereon, said sleeves having recesses therein of less depth at the outer end than at the inner end thereof, jaws carried in said recesses, said jaws having a beveled upper surface, and means for connecting said sleeves, substantially as described.

8. In a pipe-coupling, the combination of the pipes, the sleeves mounted thereon and having recesses in the opposite ends thereof, an outwardly-flaring portion between said recesses, and means for connecting said sleeves, substantially as described.

9. In a pipe-coupling, the combination with the pipes, the sleeves mounted thereon and having recesses in the opposite ends thereof, an inwardly-tapered portion between said recesses, of a thimble surrounding the ends of said pipes and entering the recesses in the inner ends of said sleeves, said thimble being tapered from the center toward the ends thereof, and means for connecting said sleeves, substantially as described.

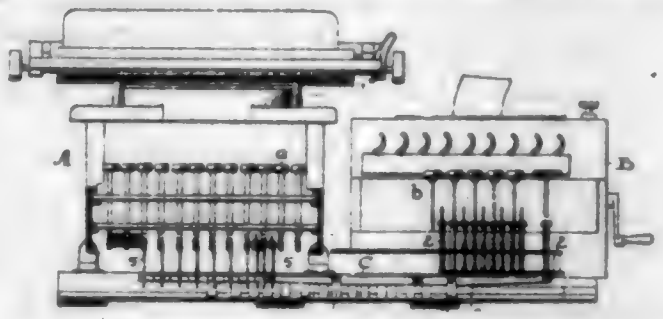
817,301. TRAY-SUPPORT. FRANK L. DEMARTINI, St. Louis, Mo. Filed Oct. 30, 1905. Serial No. 285,136.

Claim.—1. In combination with a swinging trunk-tray, a member rotatably mounted to the bottom of said tray adjacent to the rear edge thereof, rods pivotally secured thereto at points diametrically opposite to one another and extending in opposite directions along said tray, suitable tubular bearings for the free ends of said rods secured to the tray, the ends of the rods being adapted to be forced outwardly and overlap the edges of the adjacent trunk-walls for an oscillation of the rotatable member in one direction, and to be retracted inwardly for an oscillation thereof in the opposite direction, substantially as set forth.



2. In combination with a swinging trunk-tray, a disk rotatably mounted to the bottom of the tray adjacent to the rear edge thereof, rods pivotally secured at their inner ends to the disk on opposite sides of the center thereof, guide bearings or loops for the free ends of the rods carried by the tray, the upper edges of the vertical walls of the trunk adjacent to the outer ends of the rods being provided with sockets for the reception of said rods, the parts operating substantially as, and for the purpose set forth.

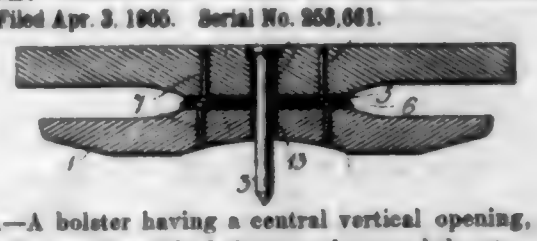
817,302. COMBINED TYPE-WRITER AND ADDING-MACHINE. ADOLPHUS S. DENNIS, Cleveland, Ohio, assignor, by mesne assignments, to The National Adding Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 29, 1903. Serial No. 163,487.



Claim.—1. A type-writer and an adding-machine, and corresponding key-levers therein, in combination with a set of compound levers connecting the key-levers of one machine with the corresponding key-levers of the other machine.

2. A type-writer and an adding-machine and corresponding key-levers therein, in combination with a line of mechanism connecting the key-levers of one machine with the corresponding key-levers of the other machine, said mechanism comprising a set of pivoted levers operatively connected, a vertical stem engaged with the free end of one of said pivoted levers, and a link engaged with the other of said pivoted levers.

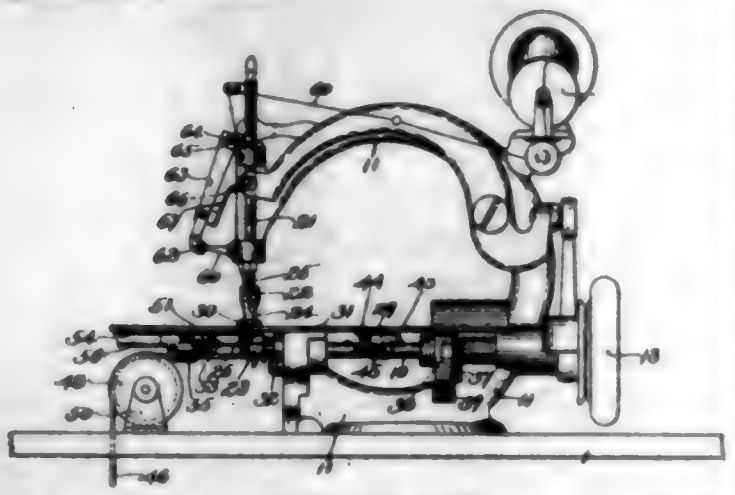
817,303. KING-BOLT. THOMAS W. DONAHOO, Tishomingo, Ind. Ter. Filed Apr. 3, 1905. Serial No. 253,661.



Claim.—A bolster having a central vertical opening, a wear-plate on the lower side of the bolster, and secured thereto, a boxing in the opening in the bolster, having its upper end provided with an outwardly-projecting annular flange, countersunk in the bolster and provided with an internal countersink, the lower end of the boxing being secured to the wear-plate; a sand-board having a wear-plate on its upper side, secured thereto, a boxing extending through the center of the said board and having its upper end secured to the last-mentioned wear-plate, and a king-bolt extending through and connecting the boxings and having a head at its upper end in the countersink of the bolster-boxing, substantially as described.

817,304. SEWING-MACHINE FEED. WILLIAM DUCHEMIN, Somerville, Mass. Filed Apr. 22, 1905. Serial No. 256,894.

Claim.—1. In a sewing-machine, a reciprocatory feed-slide, a stud, a lever connected to said slide and pivoted upon said stud, mechanism to rock said lever upon said stud, said stud adjustable longitudinally of said lever, a treadle, and means connecting said treadle to said adjustable stud, whereby different lengths of movement are imparted to said feed-slide.



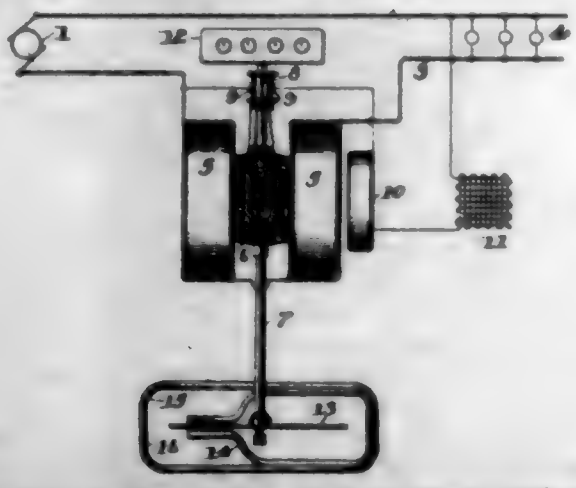
2. In a sewing-machine a reciprocatory feed-slide, a lever connected to said feed-slide, mechanism to rock said lever, a stud to which said lever is pivoted projecting through a slot extending longitudinally of said lever, ways formed in a stationary portion of said machine extending at an angle to said slot, a slide movable longitudinally of said ways, said stud fast to said slide, and mechanism to move said last-named slide in said ways.

3. In a sewing-machine, a reciprocatory feed-slide, a lever connected to said feed-slide, mechanism to rock said lever, a stud to which said lever is pivoted projecting through a slot extending longitudinally of said lever, ways formed in a stationary portion of said machine extending at an angle to said slot, a slide movable longitudinally of said ways, said stud fast to said slide, mechanism to move said last-named slide in said ways, and means to lock said stud in a stationary position.

4. In a sewing-machine, a reciprocatory feed-slide, a lever connected to said feed-slide, mechanism to rock said lever, a stud to which said lever is pivoted projecting through a slot extending longitudinally of said lever, ways formed in a stationary portion of said machine extending at an angle to said slot, a slide movable longitudinally of said ways, said stud fast to said last-named slide, and a treadle connected to said stud.

5. In a sewing-machine a reciprocatory feed-slide, a work-plate, a lever connected to said feed-slide, mechanism to rock said lever, a stud to which said lever is pivoted projecting through a slot extending longitudinally of said lever, ways formed in a stationary portion of said machine extending at an angle to said slide, a slide movable longitudinally of said ways, said stud fast to said slide, mechanism to move said last-named slide in said ways, an index-lever operated by said last-named mechanism, said work-plate provided with a slot through which an index-line upon said index-lever may be observed.

817,805. **ELECTRIC METER.** THOMAS DUNCAN, La Fayette, Ind. Filed June 6, 1904. Serial No. 211,246.



Claim.—1. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet including a permanent magnet, and a substantially continuous band of soft iron defining a path for lines of force and within which the permanent magnet is contained, substantially as described.

2. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet including a permanent magnet, and a substantially continuous band defining a path for lines of force and within which the permanent magnet is contained, substantially as described.

3. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing iron element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

4. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an iron element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

5. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing element of magnetic material establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

6. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an element of magnetic material establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

7. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

8. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

9. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing iron element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

10. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an iron element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

11. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing element of magnetic material serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

12. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an element of magnetic material serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

13. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

14. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

15. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing soft-iron element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

16. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and a soft-iron element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

17. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and an inclosing soft-iron element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

18. An electric meter having a damping-disk upon its spindle and a damping-magnet in whose field the disk rotates, said damping-magnet comprising a permanent magnet, and a soft-iron element substantially coextensive with the permanent magnet and establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

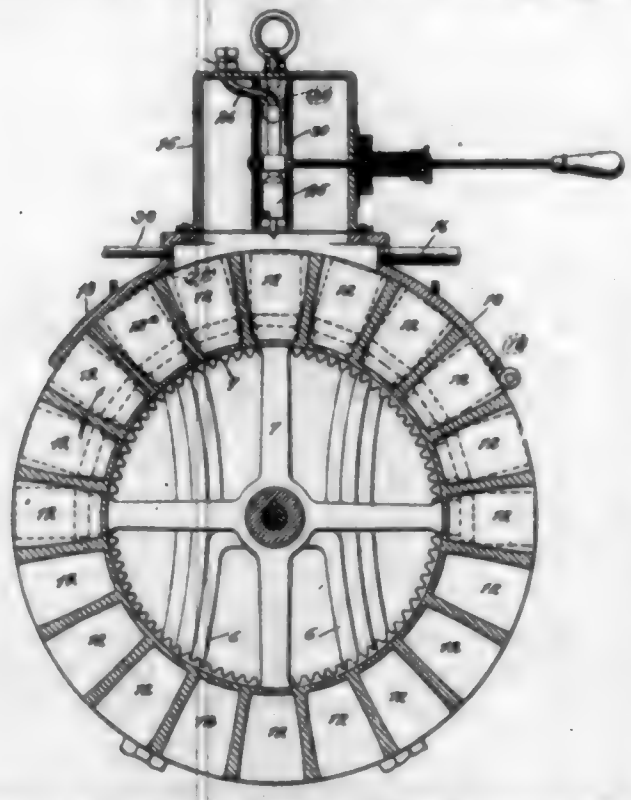
19. A permanent magnet having an inclosing soft-iron element serving to direct and confine leakage lines of force due to the permanent magnet to the main flux-circuit, substantially as described.

20. A permanent magnet in combination with a substantially continuous band of soft iron defining a path for lines of force and within which the permanent magnet is contained, substantially as described.

21. A permanent magnet having an inclosing soft-iron element establishing a portion of the main flux-circuit parallel to the portion of the main flux-circuit established by the permanent magnet, substantially as described.

22. A permanent magnet associated with a soft-iron element that is substantially coextensive therewith, substantially as described.

817,306. VACUUM SOLDERING-MACHINE. HOLTON HAGHUS, Chicago, Ill., assignor to Fairbank Canning Company, Chicago, Ill., a Corporation of Illinois. Filed May 8, 1905. Serial No. 259,207.



Claim.—1. The combination with a movable carrier having a plurality of compartments, and a plate adapted to cover two or more of said compartments successively as said carrier moves and having a suitable opening therein, of a vacuum-chamber covering said opening, grooves in said plate connecting with said vacuum-chamber and adapted to expose said compartments successively to the action of the vacuum as said carrier moves them under said plate, and means for soldering the vent in the caps of the cans contained in said compartments as they pass under said vacuum-chamber, substantially as described.

2. The combination with a movable carrier having a plurality of compartments, and a plate adapted to cover two or more of said compartments successively as said carrier moves and having a suitable opening therein, of a vacuum-chamber covering said opening, grooves in said plate connecting with said vacuum-chamber and adapted to expose said compartments successively to the action of the vacuum as said carrier moves them under said plate, grooves in said plate adapted to gradually admit air into said compartments successively as said carrier moves them beyond the said vacuum-chamber, and means for soldering the vent in the caps of the cans contained in said compartments as they pass under said vacuum-chamber, substantially as described.

3. The combination with a rotary carrier provided with a plurality of compartments each adapted to contain a can, of a plate adapted to cover successively two or more of said compartments as said carrier rotates and having a suitable opening, a vacuum-chamber covering said opening, grooves in said plate connected with said vacuum-chamber and adapted to gradually expose said compartments successively to the action of the vacuum in said chamber as said carrier rotates, and means for soldering the vent-holes in said cans in said compartments as they are successively moved into the action of said vacuum-chamber, substantially as described.

4. The combination with a rotary carrier provided with a plurality of compartments each adapted to contain a can, of a plate adapted to cover successively two or more of said compartments as said carrier rotates and having a suitable opening, a vacuum-chamber covering said opening, grooves in said plate connected with said vacuum-chamber and adapted to gradually expose said compartments successively to the action of the vacuum in said chamber as said carrier rotates, grooves in said plate adapted to gradually admit air into said compartments successively as said carrier rotates them beyond said vacuum-chamber, and means for soldering said cans in said compartments as they are successively moved into the influence of said vacuum-chamber, substantially as described.

5. The combination with a rotary carrier adapted to rotate in a vertical plane about a horizontal axis and being provided with a plurality of radial compartments opening upon the periphery of said carrier each compartment being adapted to contain a can, of as plate adapted to cover successively two or more of said compartments as said carrier rotates and having a suitable opening, a vacuum-chamber covering said opening, grooves in said plate connected with said vacuum-chamber and adapted to gradually expose said compartments successively to the action of the vacuum in said chamber as said carrier rotates, and means adapted to solder said cans in said compartments as they are successively moved into the influence of said vacuum-chamber, substantially as described.

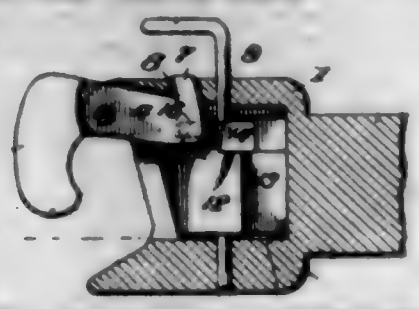
6. The combination with a rotary carrier adapted to rotate in a vertical plane abou. a horizontal axis and being provided with a plurality of radial compartments opening upon the periphery of said carrier each compartment being adapted to contain a can, of a plate adapted to cover successively two or more of said compartments as said carrier rotates and having a suitable opening, a vacuum-chamber covering said opening, grooves in said plate connected with said vacuum-chamber and adapted to gradually expose said compartments successively to the action of the vacuum in said chamber as said carrier rotates, grooves in said plate adapted to gradually admit air into said compartments successively as said carrier rotates them beyond said vacuum-chamber, and means adapted to solder said cans in said compartments as they are successively moved into the influence of said vacuum-chamber, substantially as described.

7. The combination with a rotary carrier adapted to rotate in a vertical plane about a horizontal axis and being provided with a plurality of radial compartments opening upon the periphery of said carrier each compartment being adapted to contain a can, of a plate adapted to cover successively two or more of said compartments as said carrier rotates and having a suitable opening, a vacuum-chamber covering said opening, grooves in said plate adapted to gradually admit air into said compartments successively as said carrier rotates them beyond said vacuum-chamber, and means adapted to solder said cans in said compartments as they are successively moved into the influence of said vacuum-chamber, substantially as described.

8. The combination with a vacuum-chamber, and a carrier provided with separate compartments and adapted to move said compartments successively under said vacuum-chamber, of a flexible socket upon the outside of said vacuum-chamber, a rod passing through said socket into said chamber and movable longitudinally of itself in said socket, and a soldering-tool within said vacuum-chamber and connected with said rod, substantially as described.

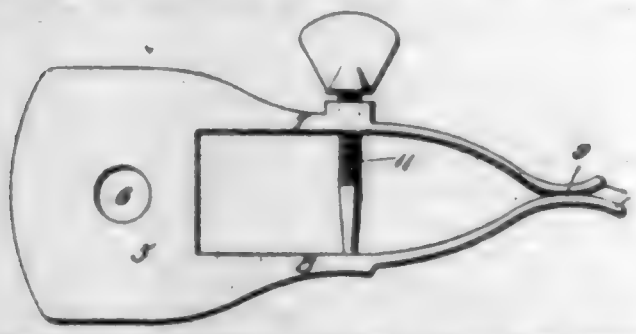
9. The combination with a vacuum-chamber and a carrier adapted to contain cans and to convey the same successively into the action of said vacuum-chamber, of a flexible socket secured to the exterior of said vacuum-chamber, a packing in said socket, means for securing said packing in said socket, a rod passing through said packing and socket into said chamber and movable longitudinally of itself through said packing and socket, and a soldering-tool within said chamber and connected with said rod.

817,307. CAR-COUPLING. WILLIAM A. ENGEL, Split Rock, Wis. Filed Nov. 9, 1905. Serial No. 286,606.



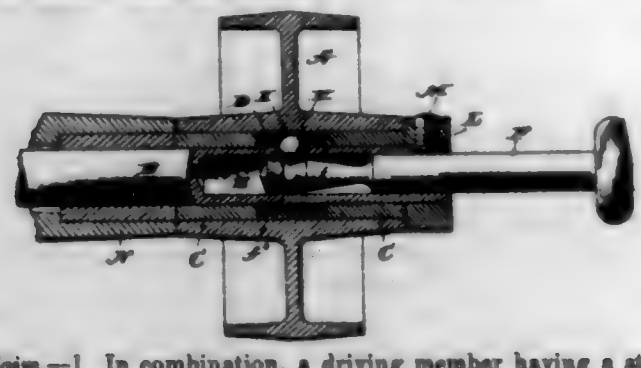
Claim.—In a car-coupler, the combination with a hollow draw-head, of a knuckle 3 pivoted to swing horizontally therein, a locking-finger 7 formed on said knuckle, said finger having in its inner end a recess b and an inclined wall 6, a locking-dog 12 pivotally mounted on a horizontal axis in said draw-head, and a crank-shaft 9 connected to said locking-dog to move the same to an unlocked position, substantially as described.

817,308. MAIL-BAG CLAMP. JOSEPH A. ENGLE, Claremont, Ill. Filed Sept. 24, 1905. Serial No. 280,183.



Claim.—A mail-bag clamp comprising a main body, oppositely-disposed spring-fingers extending outwardly therefrom and meeting at their front ends, and a thumb-screw threaded through one of the fingers and bearing on the other finger for springing said fingers apart.

817,309. CLUTCH. LOUIS W. G. FLYNT, Rochester, N. Y., assignor to Quentin W. Booth and Irving E. Booth, Rochester, N. Y. Filed June 7, 1905. Serial No. 264,081.



Claim.—1. In combination, a driving member having a steel bush provided with a plurality of holes, and a brass bush at each side of said steel bush, a driven member having a hole adapted to register with the holes in the steel bush, a movable coupling-ball operatively associated with said members, and an operating device for shifting said coupling-ball into engagement with the walls of alined openings in the driving and driven members whereby said members are positively connected.

2. In combination, a driving member having a steel bush provided with a hole, a driven member having a hole adapted to register with the hole in the steel bush, a movable coupling-ball operatively associated with said member, and an operating device for shifting said coupling-ball into engagement with the walls of alined openings in the driving and driven members whereby said members are positively connected.

3. In combination, a driving member, a driven member, said members having recessed portions, a movable coupling-ball operatively associated with said members, and an operating device for shifting the said coupling-ball into engagement with alined recessed portions in the driving and driven members, the wall of the recess in the driving member which is engaged by the ball when coupling being abrupt to afford an abutment for the ball.

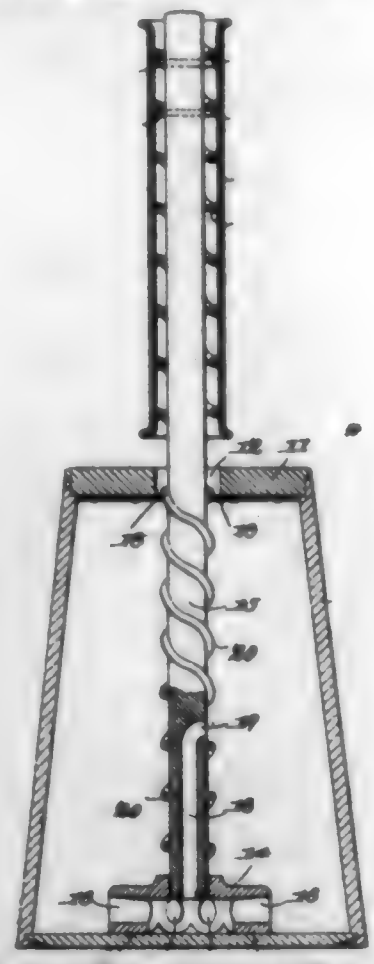
4. In combination, a driving member, a driven member, said members having recessed portions, a movable coupling-ball operatively associated with said members, and an operating device for shifting the said coupling-ball into engagement with alined recessed portions in the driving and driven members, the recess in the driving member being substantially circular and of a diameter less than that of the ball.

5. The combination of a shaft having a ball-hole therein, a ball fitting loosely in said hole, the hole being so deep that the ball need not extend beyond the periphery of the shaft, a key longitudinally movable in said shaft behind said ball to force the same outward, and a driving member mounted on the shaft, said member being provided with a substantially circular internal opening arranged to register with the ball-hole in the shaft, and said opening being of less diameter than the diameter of the ball.

6. The combination of a shaft having a ball-hole therein, a ball fitting loosely in said hole, the hole being so deep that the ball need not extend beyond the periphery of the shaft, a key longitudinally movable in said shaft behind said ball to force the same outward, and a driving member mounted on the shaft, said bar being provided with an internal opening arranged to register with the ball-hole in the shaft and the surrounding wall of said ball-hole with which the ball engages when coupling being abrupt to afford an abutment for said ball.

7. In combination, a driving member, a driven member, the driving member having a plurality of internal recesses, and the driven member having a recess adapted to be brought into registration with any one of the recesses in the driving member, a movable coupling-ball in the recess of the driven member, and an operating device for shifting said coupling-ball into engagement with alined recessed portions in the driving and driven members whereby said members are positively connected.

817,310. CHURN. JAMES L. FORBES, Pine Apple, Ala. Filed July 22, 1905. Serial No. 271,677.



Claim.—1. A churn-dasher having a hollow interior opening downwardly and with spaced apertures leading laterally through the side walls, the combined area of the apertures being greater than the internal area of the dasher member, a hollow rod extending from said dasher member and communicating with said hollow interior, and means for simultaneously rotating said dasher member and moving the same longitudinally of the body of the milk, whereby a partial vacuum is produced within the hollow dasher and a quantity of air forced through the milk at each stroke of the dasher.

2. In a churn, a downwardly-opening hollow dasher having spaced apertures through its side walls, a dasher-rod connected to said dasher and provided with a longitudinal recess communicating with the same and terminating in a lateral branch leading therefrom, and means for simultaneously reciprocating and reversely rotating said dasher and its connected dasher-rod.

3. In a churn, a hollow churn-dasher opening downwardly and having spaced lateral apertures through its side walls, a hollow stem connected to said dasher and communicating with the interior of the same and provided with an internally-threaded longitudinal cavity and spaced lateral pins, a sleeve slidably engaging said dasher-rod and provided with an internal screw-thread for engaging said transverse stop-pins, and a rod having means for supporting in stationary position and provided with lateral pins for engaging the internal thread of said dasher-rod.

4. In a churn, a hollow dasher opening downwardly and having spaced lateral apertures through its side walls, a hollow stem connected to said dasher and communicating with the interior of the same and provided with a threaded portion, a threaded sleeve slidably engaging said rod, and laterally-extending stop-pins for engagement by said threaded members.

817,311. **BUTTON.** WILLIAM H. FORSYTH, Bristol, England, assignor to The "Nercunoff" Button Company, Limited, Bristol, England. Filed Sept. 10, 1903. Serial No. 172,631.



Claim.—1. The herein-described one-piece button consisting of a head provided with a peripheral bead, a depressed upper surface, a tapering shank projecting from the back of the head, and provided with thread-openings, a bridge-piece formed between the thread-openings, the latter converging within the shank, said bridge-piece being on a plane below the depressed upper surface of the button-head, and the shank being hollow below the bridge, essentially as described.

2. A one-piece button comprising a head, a tapering shank projecting from the back of the head and provided with thread-openings, a bridge-piece formed between the thread-openings, the latter converging within the shank, said bridge-piece being on a plane below the upper surface of the button-head, and the shank being hollow below the bridge.

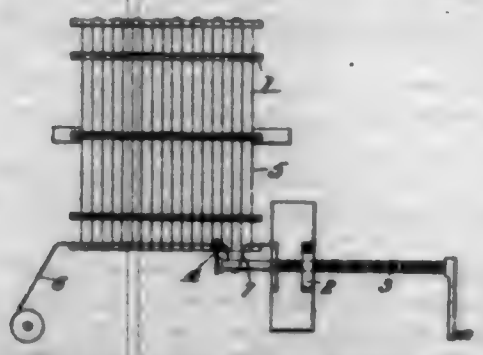
3. A one-piece button consisting of a head, a tapering shank projecting from the back of the head and provided with thread-openings, a bridge-piece formed between the thread-openings, the latter converging within the shank, and the shank being hollow below the bridge, substantially as described.

817,312. **LID-HOLDING TIE.** ALEXANDER W. GADDUM, Cincinnati, Ohio., assignor to Cincinnati Butchers Supply Co., Cincinnati, Ohio, a Corporation of Ohio. Filed July 20, 1905. Serial No. 270,437.



Claim.—The combination of a can having slotted handles, a cover and a tie for securing the cover on the can, said tie consisting of a strip of metal having a hook at one end and a slot near its other end, said tie being adapted to be hooked in one of the slotted handles, to pass over the top of the cover and thence through the slot in the other handle, the free end being adapted to be bent back on itself and inserted through the slot near such end.

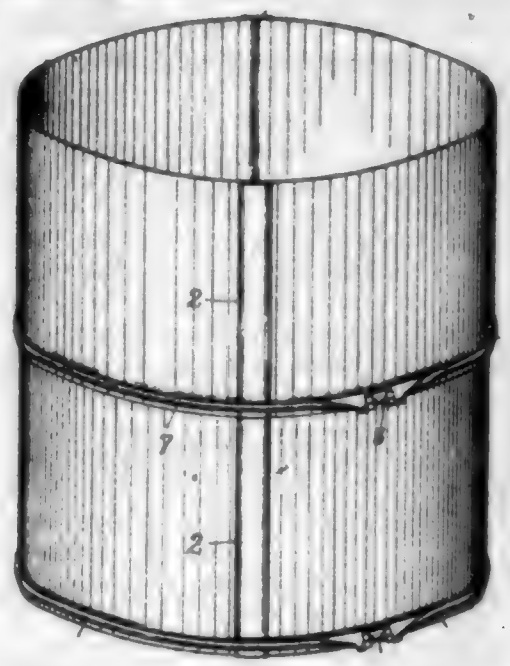
817,313. **METHOD OF TAPESTRY-YARN PRINTING.** BENJAMIN H. GLEDHILL, Philadelphia, Pa. Filed Oct. 5, 1904. Serial No. 227,218.



Claim.—1. The improvement in the method of tapestry-yarn printing, which consists in laying the yarn in a skein composed of pairs of parallel threads, looping connecting-threads through the bends of the pairs at opposite ends of the skein, laying the looped skein upon a printing-drum of greater circumference than the length of the skein and fastening the skein to the drum, and then applying the color in any usual way.

2. The improvement in the method of tapestry-yarn printing, which consists in reeling the yarn to form a skein, looping threads through the alternating bends of the skein at opposite points thereof, independently supporting the loops, laying the looped skein thus formed upon a printing-drum of greater circumference than the length of the skein, connecting the loops' supports under tension so as to hold the skein upon the printing-drum, and then applying color to the yarn in any usual way.

817,314. **TANK.** ANDREW HAHN, Chicago, Ill. Filed Nov. 21, 1903. Serial No. 182,056.



Claim.—1. A transverse seam in a sheet-metal tank comprising an interior exteriorly-grooved reinforcing element; body elements whose marginal portions overlap the groove of the reinforcing element; a clamping-hoop in the zone of the groove of the reinforcing element and the marginal portions of the body elements, and means contracting the hoop to sink the marginal portions in the groove of the reinforcing element.

2. A knockdown sheet-metal cylindrical tank comprising a body whose sections are joined up endless by a locked longitudinal seam, the transverse seams being formed by the adjacent portions of the elements at such seams lodged one within the other; an internal reinforcing element peripherally channeled, located within the zone at which the transverse seam elements are lodged, and an exterior hoop which encompasses the other parts at the zone of the channel in the reinforcing element, and means for contracting the hoop for sinking it, together with the encompassed parts, in the channel.

3. A knockdown sheet-metal cylindrical tank comprising a body whose sections are each joined up endless by a locked longitudinal seam, the transverse seams being formed by the adjacent portions of the elements at such seams lapped one within the other; a packing interposed between the lapped edges of such elements; a channeled reinforcing element within the inner of the elements thus lapped, having its channeled side facing outwardly against the inwardly-facing surface of the inner of the said lapped elements; a metal hoop encompassing the lapped parts at the zone of the channel in said interior reinforcing element, such hoop having its opposite ends extending in substantially opposite directions, and means connecting the ends for drawing them in the opposite directions in which they respectively extend to reduce the periphery encompassed by the hoop and sink it, together with the encompassed parts, in the channel of the reinforcing element.

4. A knockdown sheet-metal cylindrical tank comprising a body which is joined up endless by a locked longitudinal seam; an end or bottom element having a peripheral flange extending in cylindrical form, the said flange and the adjacent end of the cylindrical body being lapped one within the other; a peripherally-channeled element lodged within the inner of said two lapped elements; a hoop encompassing said lapped elements at the zone of the channel in the reinforcing element, and means for contracting the hoop to sink it, together with the encompassed parts, in the channel.

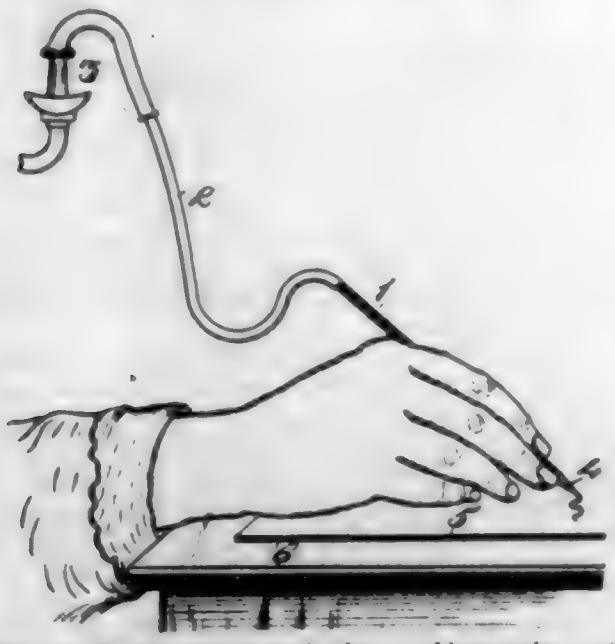
5. A knockdown sheet-metal tank structure which comprises, when assembled ready for tightening the transverse seam, two elements to be united at such a seam, each closed up endless by a locked

longitudinal seam, telescoped one within the other at their adjacent ends; an annular reinforcing element peripherally channeled, located within the zone at which the two similar elements are so telescoped; an exterior hoop which encompasses the other parts at the zone of the channel in the reinforce, and means for contracting the hoop for sinking it and the encompassed sheet-metal parts by means of it into the channel.

6. A knockdown sheet-metal tank structure which comprises, when assembled ready for tightening the transverse seam between the body and the bottom, a body element which is joined up endless by a locked longitudinal seam; a bottom element having a marginal cylindrically-formed flange, said flange and one end of the cylindrical body element being telescoped one with the other; an interior reinforcing element which is peripherally channeled and located at the zone of the interlap of said telescoped parts; a hoop which encompasses said telescoped parts at the zone of the peripheral channel of the reinforce, and means for contracting the hoop.

7. A knockdown sheet-metal cylindrical tank comprising a body whose sections are each joined up endless by means of a longitudinal seam, such seam being formed by means of interlocking flanges on the edges united thereat, each transverse seam being formed by the adjacent portions of the elements at the seam lapped one within the other; an annular interior reinforce peripherally grooved within the zone at which the transverse seam elements are so lapped, and an exterior hoop which encompasses the other parts at the zone of the channel in the reinforce, and means for contracting the hoop for sinking it, together with the encompassed parts, in the channel.

817,315. METHOD FOR WRITING OR PRINTING WITH METALLIC LEAF. FRANK S. HALL, Akron, Ohio. Filed Oct. 30, 1905. Serial No. 285,093.



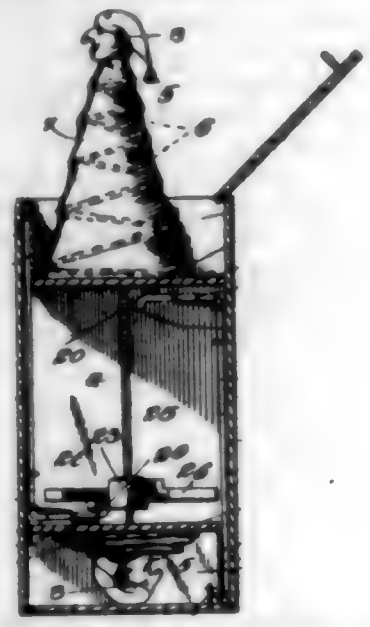
Claim.—1. That improvement in the art of impressing metallic leaf on articles, which consists in placing the metallic leaf with a backing adhering thereto upon the article, and then subjecting said backing to heat and pressure from a manually-operated continuously-heated needle, whereby said leaf is caused to detach from said backing and adhere to said article.

2. That improvement in the art of impressing metallic leaf on articles, which consists in placing the metallic leaf with a backing adhering thereto upon the article, placing on said backing a suitable pattern or copy, and then subjecting said backing along the lines of said pattern or copy to heat and pressure from a manually-controlled continuously-heated needle, whereby said leaf is caused to detach from said back and adhere to said article.

817,316. TOY. MELVIN L. HARDING and ALBERT I. HOXWORTH, Mannington, W. Va. Filed Jan. 17, 1906. Serial No. 296,542.

Claim.—1. A toy of the character described comprising a box or casing divided into two end compartments and a middle compartment, spring-projected figures in each of said end compartments, doors designed to hold said figures contracted and within the respective compartments, and means located in the middle compartment for alternately and automatically releasing the said doors.

2. A toy of the character described comprising a box or casing divided into two end compartments and a middle compartment, spring-projected figures in each of said end compartments, doors designed to hold said figures contracted and within the respective compartments, and means for alternately and automatically releasing said doors, said means being operated by gravity.



3. A toy of the character described comprising a box or casing divided into two end compartments, and an intermediate compartment, spring-projected figures in said end compartments, doors arranged to hold said figures contracted in the respective compartments against the action of their springs, an unlatching device for each door, a spiral rod in said intermediate compartment and a weight or plunger mounted on said rod and arranged to move thereon by gravity and to turn thereon also, said plunger being designed to effect the release of said doors, as and for the purpose set forth.

4. A toy of the character described, comprising a box or casing divided into two end compartments and a middle compartment, spring-projected figures in the end compartments, doors arranged to hold said figures in contracted condition, latches for holding said doors locked, an unlatching-rod for each door, the said rods being arranged for actuation at the end of the middle compartment opposite the door controlled by the respective rods, and a weight or plunger arranged for free movement from end to end of said middle compartment, and means for rotating said plunger in its movement, the said plunger being designed to engage with the respective unlatching-rods, as and for the purpose set forth.

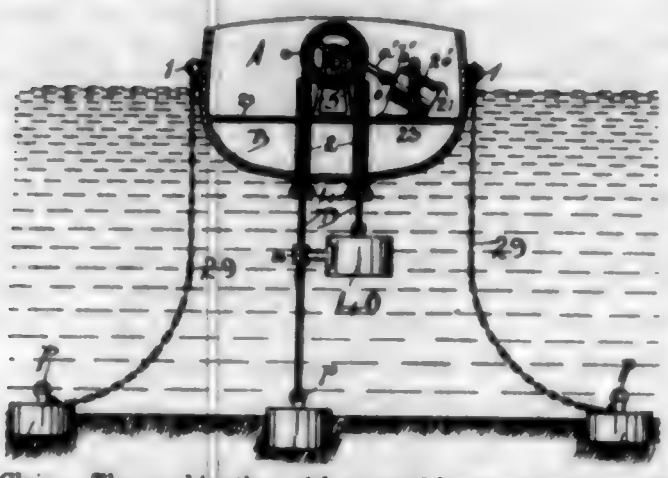
5. A toy of the character described, comprising a box or casing divided into two end compartments and a middle compartment, spring-projected figures in the end compartments, doors for holding said figures in contracted condition, unlatching-rods arranged to release the respective doors and each of said rods provided with a bent end located near the middle compartment contiguous to that partition which is farthest away from the door controlled by said rod, a spring secured to each of said rods and designed to hold the same in one position whereby to hold the doors in locked position, a spiral rod mounted centrally of the middle partition and a weight or plunger provided with a spiral opening receiving said rod and with wings extending in opposite directions, the said plunger being designed to move by gravity on said rod and to turn into engagement with the said unlatching-rods whereby to release the doors.

6. A toy of the character described, comprising a box or casing divided into two end compartments and a middle compartment, spring-projected figures in said end compartments, doors hinged to the casing and designed to hold said figures in contracted condition, the free end of said doors being provided with keepers, latches projecting into the said compartments for engagement with said keepers, unlatching-rods mounted in the middle compartment and designed to rock therein each rod being secured to a latch at one end and having its other or opposite end bent and provided with an offset extremity, cleats secured to the end walls of the compartments and provided with recesses receiving the bent ends of said unlatching-rods whereby to limit the movement thereof, springs secured to said rods and arranged to rock the same so as to project the latches into engagement with their respective keepers, a spiral rod mounted in the middle compartment and extending longitudinally thereof, and a plunger provided with a spiral opening by which it is mounted to move on said spiral rod and also provided with two oppositely-extending wings and with lugs designed to contact with the offset extremities of the unlatching-rods.

7. A toy of the character described, comprising a box or casing, a spring-projected figure in said casing, a door hinged to the casing

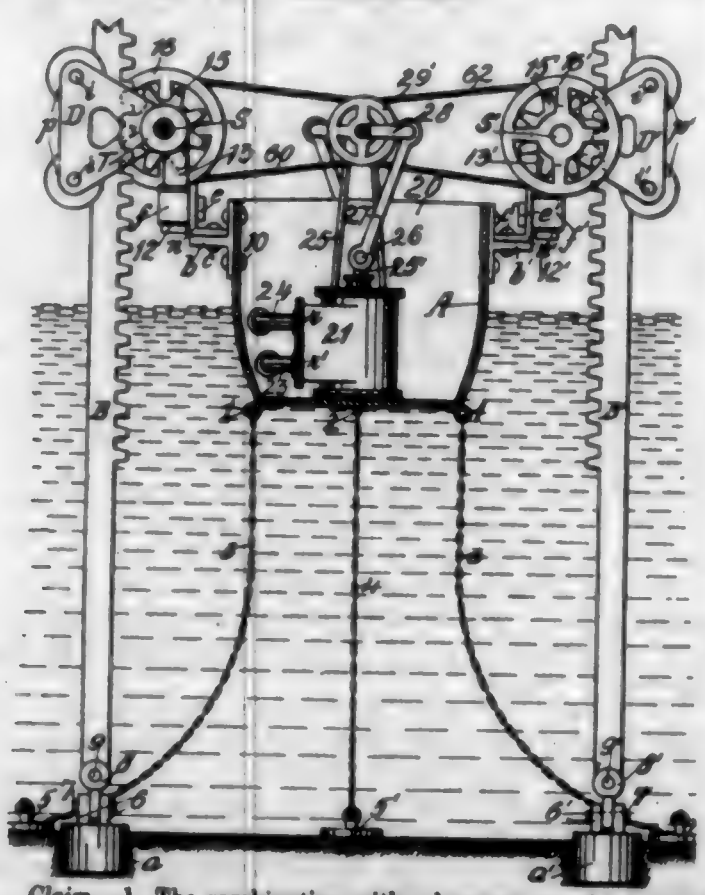
and arranged to hold said figure in contracted condition, a latch for holding said door closed, a rocking unlatching-rod mounted in the casing and operatively secured to said latch, a longitudinally-extending spiral rod in the casing, and a gravity-plunger mounted to move longitudinally and to turn on said rod, and arranged for operative engagement with the unlatching-rod, substantially as set forth.

817,317. TIDE AND WAVE MOTOR. GEORGE W. HASEL, Aurora, Ill. Filed Aug. 9, 1904. Serial No. 220,110.



Claim.—The combination with a round buoyant body provided with a lower air-chamber, open-ended tubes passing through said body, a suitably-supported crank-shaft carried by said body, air-pumps communicating with said chamber secured to said cranks, a drum upon said shaft, a cable passing over said drum, both ends of said cable being carried downward through said tubes, one end of said cable being anchored below, and a weight secured to the remaining end of said cable.

817,318. TIDE OR WAVE MOTOR. GEORGE W. HASEL, Aurora, Ill. Filed Aug. 9, 1904. Serial No. 220,111.



Claim.—1. The combination with a buoyant vessel, of a slack anchor-chain securing said buoyant vessel, a standard movably secured to said vessel, a driving-shaft held by said standard, a pinion upon said driving-shaft, an air-compressor secured to said driving-shaft, and a movably-anchored rack-bar held adjacent said buoyant vessel and actuating said pinion.

2. In a device of the character described, the combination with a suitably-anchored and movably-held rack-bar of a buoyant vessel, of a power mechanism within said vessel, a holder movably secured to said vessel, a shaft held by said holder, a pinion mounted upon said shaft and engaging said rack-bar, a means to connect said pinion to said power mechanism.

3. The combination with a suitable anchor, of slack chains extending from said anchor, a buoyant body secured to said slack chains, a power mechanism within said buoyant body, a rack-bar swiveled to said anchor, a holder movably secured to said vessel, a shaft held by said holder, a pinion mounted upon said shaft and meshing with said rack-bar, and a power transmission extending from said pinion to said power mechanism, all arranged as and for the purpose set forth.

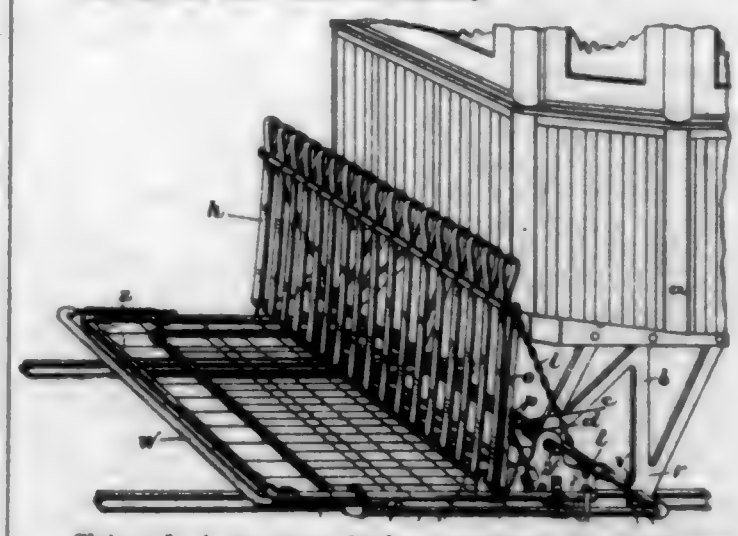
817,319. FLUE-CUTTER. WILLIAM HOFVA, St. Paul, Nebr. Filed Nov. 5, 1905. Serial No. 286,567.

Claim.—1. A flue-cutter comprising a body portion having a squared end for a ratchet handle or wrench, an aperture in the body of the tool for a cutter-blade, a cutter-holder extending through said aperture and through the cutter, a spring for holding said tool-holder in place, and a set-screw secured to the spring, substantially as described.

2. A flue-cutter comprising a body portion having a recess therein, a cutter having diverging cutting edges seated in said recess, and a spring-seated holder for holding said cutter in place and for permitting it to be reversed in position, substantially as described.

3. A flue-cutter comprising a body portion having one end reduced in size and the opposite end squared for the engagement of a handle or ratchet-wrench, an intermediate enlarged portion provided with shoulders to bear against the ends of the flues, a recess in the reduced portion, a double-edged cutter-blade seated in said recess, a square cutter-holding rod extending into the body of the tool and through the cutter, a spring for holding said cutter-holder in place, and a set-screw for holding said spring, substantially as described.

817,320. STREET-CAR FENDER. DENIS HOULAHAN, Toronto, Canada, assignor of one-half to John O'Connor, Toronto, Canada. Filed Apr. 21, 1905. Serial No. 256,730.



Claim.—1. A street-car fender comprising two platform-sections carried one above the other, the upper section arranged to pass over and to be upwardly displaced by an obstacle lying in the path of the fender and the lower section arranged to move by gravity into contact with the pavement when the upper section is displaced and means connected to the upper section to slidably support the lower section in a horizontal position and permit it to lower as the upper section is upwardly displaced.

2. A car-fender comprising two platform-sections to be normally carried in a substantially horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the car structure, and means connected to the upper platform-section to slidably support the lower platform-section, said means permitting it to lower it as it moves between its normal and operative positions.

3. A car-fender comprising two oscillating platform-sections arranged to be normally carried in a substantially horizontal plane, means to oscillatingly connect the platform-sections to the car structure, and means carried by the upper platform-section to normally support the lower section in a substantially horizontal plane and permit it to lower by gravity as it moves into an inclined position.

4. A car-fender comprising two platform-sections to be normally carried in a substantially horizontal plane, one above the

other, a rock-shaft for the upper platform-section by which it is to be oscillatingly connected to the car structure, links connected to the upper platform-section in a horizontal plane to normally support the lower platform-section and allow it to move between its normal and operative positions, and a fender-back articulatingly connected to the upper platform-section and arranged to be carried either in a horizontal or a vertical plane.

5. A car-fender comprising two platform-sections to be normally carried in a substantially horizontal plane, one above the other, a rock-shaft for the upper platform-section by which it is to be oscillatingly connected to the car structure, links connected to the upper platform-section in a horizontal plane to normally support the lower platform-section and allow it to move between its normal and operative positions, a fender-back articulatingly connected to the upper platform-section and arranged to be carried in a horizontal or a vertical plane, and means to hold the fender-back in its upright position.

6. A car-fender comprising two platform-sections to be normally carried in a substantially horizontal plane one above the other, a rock-shaft for the upper platform-section by which it is to be oscillatingly connected to the car structure, links connected to the upper platform-section in a horizontal plane to normally support the lower platform-section and allow it to move between its normal and operative positions, a fender-back articulatingly connected to the upper platform-section and arranged to be carried in a horizontal or a vertical plane, means to hold the fender-back in its upright position, and means for adjusting the vertical inclination of the fender-back relatively to the fender-platform.

7. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its normal and operative positions and means for oscillatingly connecting the lower platform-section to the fender-supporting means.

8. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its normal and operative positions, means for oscillatingly connecting the lower platform-section to the fender-supporting means, a fender-back articulatingly connected to the upper platform-section and arranged to move between its horizontal and vertical positions, and means for holding the fender-back in its upright position.

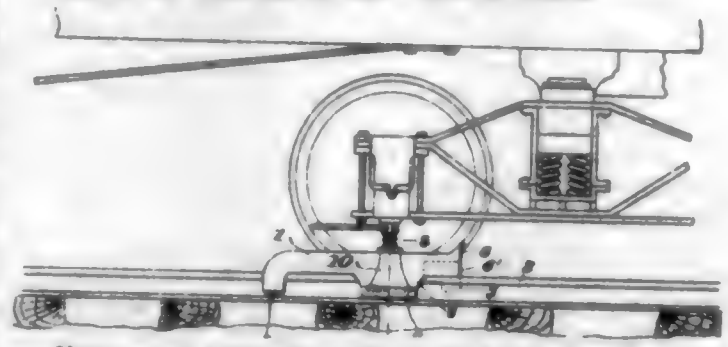
9. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its normal and operative positions, means for oscillatingly connecting the lower platform-section to the fender-supporting means, a fender-back articulatingly connected to the upper platform-section and arranged to move between its horizontal and vertical positions, means for holding the fender-back in its upright position, and means for adjusting the inclination of the fender-back relatively to the fender-platform.

10. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its normal and operative positions, means for oscillatingly connecting the lower platform-section to the fender-supporting means, a fender-back articulatingly connected to the upper platform-section and arranged to move between its horizontal and vertical positions, means for holding the fender-back in its upright position, and a spring-tensioned buffer for the forward edge of the upper platform-section.

11. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its nomal and operative positions, means for oscillatingly connecting the lower platform-section to the fender-supporting means, a fender-back articulatingly connected to the upper platform-section and arranged to move between its horizontal and vertical positions, means for holding the fender-back in its upright position, and a spring-tensioned buffer for the forward edge of the upper platform-section.

12. The combination of a car structure having a fender-supporting means, and a car-fender comprising two platform-sections to be normally carried in a horizontal plane one above the other, a rock-shaft for the upper platform-section by which it can be oscillatingly connected to the fender-supporting means, means connected to the upper platform-section to slidably support the lower platform-section and to allow it to oscillate as it moves between its normal and operative positions, means for oscillatingly connecting the lower platform-section to the fender-supporting means, a fender-back articulatingly connected to the upper platform-section and arranged to move between its horizontal and vertical positions, means for holding the fender-back in its upright position, means for adjusting the inclination of the fender-back relatively to the fender-platform, and a spring-tensioned buffer for the forward edge of the upper platform-section.

817,821. CAR-WHEEL JACK-STAND. LOUIS C. HOUSTON, Parkersburg, W. Va., assignor of one-half to Frank P. Houston, Parkersburg, W. Va. Filed May 18, 1905. Serial No. 261,044.



Claim.—1. A jack-stand having a wheel-rim-engaging shoulder and provided with depending lugs adapted to engage opposite sides of a rail.

2. A jack-stand having a wheel-rim-engaging shoulder, a depending bracket portion having a laterally-extending platform, and depending lugs, one at each end, and adapted to engage opposite sides of a rail.

3. A jack-stand consisting of a bar having a wheel-rim-engaging shoulder, a depending bracket portion having a laterally-extending platform, a depending lug at one end of the bar, and a rail-head-engaging bracket extending laterally at the opposite end of the bar and provided with a depending lug for engagement with the inner side of the rail.

4. A jack-stand consisting of a bar having a wheel-rim-engaging shoulder, a depending bracket portion having a laterally-extending platform, a depending lug at one end of the bar, a laterally-extending bracket at the opposite end of the bar adapted to rest upon the rail-head and provided with an upper curved wheel-tread-engaging surface, and a lug depending from said bracket.

5. A jack-stand having a wheel-rim-engaging shoulder, a depending bracket portion having a laterally-extending flanged platform, and depending lugs, one at each end, and adapted to engage opposite sides of a rail.

6. A jack-stand having a wheel-rim-engaging shoulder and a wheel-engaging arm or hook member, and provided with depending lugs adapted to engage opposite sides of a rail.

7. A jack-stand having a wheel-rim-engaging shoulder, a wheel-engaging arm or hook member, a depending bracket portion having a laterally-extending platform, and depending lugs, one at each end, and adapted to engage opposite sides of a rail.

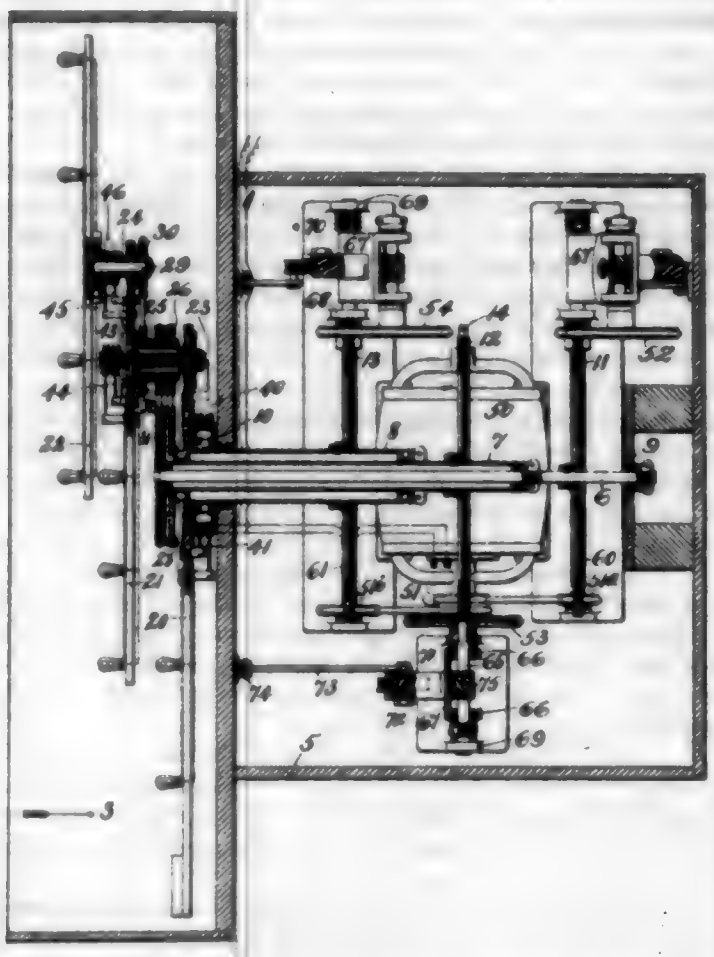
817,822. DISPLAY APPARATUS. CALVIN JACKSON, Reading, Pa., assignor to Howard J. Potts, Reading, Pa. Filed May 31, 1905. Serial No. 262,999.

Claim.—1. A display apparatus comprising concentric shafts, carriers coöperatively rotated by said shafts, and mechanism for driving the latter with constantly-changing relative speeds.

2. A display apparatus comprising concentric shafts, carriers coöperatively rotated by said shafts, and mechanism for driving the latter with constantly-changing relative directions of rotation.

3. A display apparatus comprising concentric shafts, carriers

coöperatively rotated by said shafts, and mechanism for driving the latter with constantly-changing relative speeds and directions of rotation.



4. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, and a main drive-shaft mechanism arranged to operate said friction-gears.

5. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, and a main drive-shaft mechanism arranged to operate said friction-gears at different speeds of rotation.

6. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, means for shifting one of said friction-gears to vary the speed imparted to the engaging concentric shaft, and a main drive-shaft mechanism arranged to operate said friction-gears.

7. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, means for shifting each of said friction-gears in different times to differently vary the speeds imparted to the several engaging concentric shafts, and a main drive-shaft mechanism arranged to operate said friction-gears.

8. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, means for shifting one of said friction-gears to vary the speed and direction of rotation imparted to the engaging concentric shaft, and a main drive-shaft mechanism arranged to operate said friction-gears.

9. In a display apparatus comprising concentric shafts, a friction drive-gear for each of said concentric shafts, means for shifting each of said friction-gears in different times to differently vary the speeds and directions of rotation imparted to the several engaging concentric shafts, and a main drive-shaft mechanism arranged to operate said friction-gears.

10. The combination with a driven shaft having a friction-wheel, of a variable-speed driving mechanism therefor comprising a friction drive-disk, a movable frame in which said drive-disk is journaled, and means operated by the drive-disk to impart a reciprocating movement to said frame crosswise of said friction-wheel.

11. In a display apparatus comprising multiple concentric shafts each provided with a friction-wheel, separate variable-speed driving mechanisms for said shafts each comprising a friction drive-disk journaled in a movable frame and disk-operated means for reciprocating said frames crosswise of the engaging friction-wheel, and a common drive-shaft for said separate driving mechanisms.

12. In a display apparatus comprising multiple concentric shafts each provided with a friction-wheel, separate variable-speed driving mechanisms for said shafts each comprising a friction drive-disk journaled in a movable frame and disk-operated means for reciprocating said frames crosswise of the engaging friction-wheel, and a common drive-shaft for said separate mechanisms, the several frames being reciprocated in different times.

13. The combination with a driven shaft having a friction-wheel, of a variable-speed driving mechanism therefor comprising a friction drive-disk, a swinging frame in which said drive-disk is journaled, a crank-shaft also journaled in said swinging frame and arranged in gear with said drive-disk, and a crank connection whereby reciprocating movement is imparted to said swinging frame crosswise of said friction-wheel.

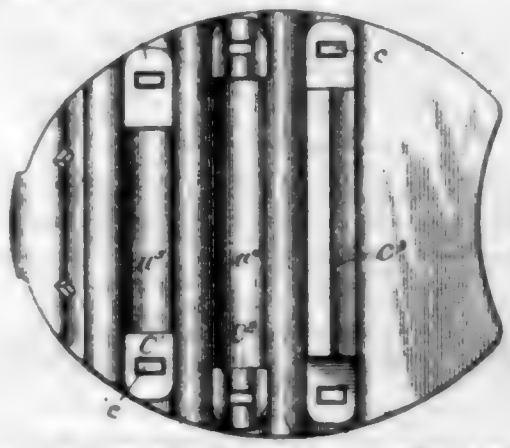
14. The combination with a series of concentric shafts each provided with a friction-wheel, of separate drive-disks for each of said shafts, separate swinging frames for each of said drive-disks, separate means for reciprocating each of said frames, and coöperating drive-shafts substantially as set forth.

15. In a display apparatus comprising concentric shafts, a main carrier fixed to one of said shafts and rotated thereby, and a secondary carrier eccentrically mounted on said main carrier and simultaneously rotated on its own axis by another of said shafts.

16. In a display apparatus comprising concentric shafts, a series of pivotally-connected carriers rotated together about the main axis by one of said concentric shafts and simultaneously rotated about their own axes by the other shafts.

17. An electric display apparatus comprising concentric shafts, a main carrier fixed to one of said shafts and rotated thereby, a secondary carrier eccentrically mounted on said main carrier and simultaneously rotated on its own axis by another of said shafts, lights on said carriers, and an electric circuit embracing axial contact-rings, and contact-fingers rotated with the carriers.

817,323. HORSESHOE. GEORGE W. JOHNSON, Chicago, Ill. Filed Apr. 18, 1904. Serial No. 203,557.



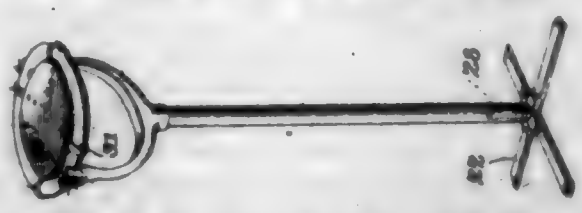
Claim.—1. A horseshoe comprising a resilient pad the toe of which is of less thickness than the heel portion, and a metallic toe-plate comprising a horizontal flange through which securing-nails pass and a vertical flange projecting flush with the heel portion.

2. In a horseshoe, the combination with a transversely-corrugated resilient pad, the toe portion of which is of less thickness than the heel, and a metallic toe-plate comprising a horizontal flange through which securing-nails pass and a vertical flange projecting flush with the ribs of the corrugations.

3. A horseshoe comprising a resilient pad the toe of which is of less thickness than the heel portion, washers on the under surface of the pad having holes through which the nails pass, and a toe-plate through which the securing-nails pass.

4. In a horseshoe, the combination with a transversely-corrugated resilient pad, the toe portion of which is of less thickness than the heel, of metallic washers located within the grooves of the corrugations through which securing-nails pass, and a metallic toe-plate through which securing-nails pass.

817,324. COMBINED WALKING-CANE AND STOOL. WILLIAM R. JONES, North Enid, Okla. Filed Mar. 1, 1905. Serial No. 247,977.



Claim.—1. A combined cane and stool consisting of a standard having a yoke-frame at one end, an annular member swinging within said yoke-frame, and a flexible member detachably united to said annular member.

2. A combined cane and stool consisting of a standard in two parts detachably united with a yoke at the free end of one of said members, an annular member swinging within said yoke-frame, and a flexible member detachably connected to said annular member.

3. A combined cane and stool consisting of a standard in two parts detachably united and with a yoke-frame at the free end of one of said parts, a seat member swinging within said yoke-frame and means for clamping said seat member parallel with or at right angles to said standard members.

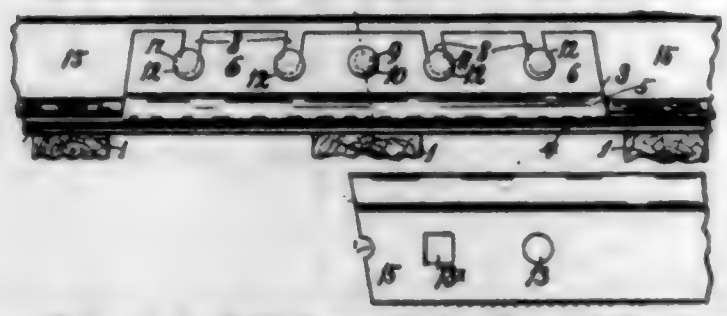
4. A combined cane and stool comprising two tubular members detachably united, an annular member connected to swing from the free end of one of said tubular members, means for clamping said annular member parallel with or at right angles to said tubular members, a base member formed of bars crossing at right angles and clamped by a transverse bolt having a tubular stud between the bars and the nut of the bolt and forming a step for the tubular member which is provided with the annular member.

5. A combined cane and stool formed of two tubular members detachably united, a yoke-frame connected to the free end of one of said tubular members, an annular member having threaded studs extending through the terminals of said yoke-frame, wing-nuts upon said studs and bearing against said yoke-frame members, and a fabric member for detachable attachment to said annular member.

6. A combined cane and stool formed of two tubular members detachably united, a yoke-frame connected to the free end of one of said tubular members, and with spaced recesses in the terminals of the same, an annular member for bearing alternately in said recesses and with threaded studs extending through said yoke-frame members, wing-nuts upon said studs exteriorly of said yoke-frame, and a fabric member for detachably engaging said annular member.

7. A combined cane and stool comprising two tubular members detachably united, an annular member connected to swing from the free end of one of said tubular members, means for clamping said annular member parallel with or at right angles to said tubular members, and a fabric member having spaced hooks for detachably engaging said annular member.

817,325. RAIL CHAIR AND JOINT COMBINED. JOSEPH JOHNSON, Rock Springs, Wyo. Filed July 31, 1905. Serial No. 272,015.



Claim.—1. A rail-chair comprising an elongated plate securable upon the ties of the road-bed and having the inclined flanges 5 and the vertical flanges 6 extending upwardly therefrom, said flanges 6 having the notches 8 inclining at the top toward the middle of the flange.

2. A rail-chair comprising an elongated plate securable upon the ties of the road-bed and having the inclined flanges 5 and the vertical flanges 6 extending upwardly therefrom, said flanges 6 having the notches 8 inclining at the top toward the middle of the flange and being enlarged at the bottom

3. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having near their ends the base-flanges cut away and in their webs holes corresponding with the said notches, notches in the ends of the webs, nutless bolts or locking members inserted in the holes in the webs and reduced at both sides of the web so as to admit them downward into the notches, and a locking-bolt through the middle of the flanges and through the notches in the adjacent ends of the webs of the rails.

4. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having near their ends the base-flanges cut away and in their webs holes corresponding with the said notches, notches in the ends of the webs, nutless bolts or locking members inserted in the holes in the webs and reduced at both sides of the web so as to admit them downward into the notches, and a locking-bolt through the middle of the flanges and through the notches in the adjacent ends of the webs of the rails, said locking members having heads taking outside the notched flanges.

5. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having near their ends the base-flanges cut away and in their webs holes corresponding with the said notches, notches in the ends of the webs, nutless bolts or locking members inserted in the holes in the webs and reduced at both sides of the web so as to admit them downward into the notches and a locking-bolt through the middle of the flanges and through the notches in the adjacent ends of the webs of the rails, said locking members having heads taking outside the notched flanges, and said notches in the vertical flanges being enlarged at the bottom and inclined at the top toward the middle of the chair.

6. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having near their ends the base-flanges cut away and in their webs holes corresponding with the said notches, notches in the ends of the webs, nutless bolts or locking members inserted in the holes in the webs and reduced at both sides of the web so as to admit them downward into the notches, and a locking-bolt through the middle of the flanges and through the notches in the adjacent ends of the webs of the rails, said locking members having heads taking outside the notched flanges, and said notches in the vertical flanges being enlarged at the bottom and inclined at the top toward the middle of the chair, the ends of said rails being inclined or beveled substantially as and for the purpose set forth.

7. A rail-chair comprising an elongated plate securable upon the ties of the road-bed and having the inclined flanges 5 and the vertical flanges 6 extending upwardly therefrom, said flanges 6 having the notches 8 inclining at the top toward the middle of the flange, said plate being extended in length beyond the flanges for the purpose set forth.

8. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having adjacent their ends the foot-flanges cut away and in their webs transversely-inserted members adapted to engage in said notches, and suitable means for keeping the web down between said flanges.

9. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having adjacent their ends the foot-flanges cut away and in their webs transversely-inserted members adapted to engage in said notches, and suitable means for keeping the web down between said flanges, said chair also having the spaces 7 for the base-flanges of rails having such flanges, substantially as and for the purpose set forth.

10. The combination with a rail-chair having vertical parallel flanges with notches therein, of rails having adjacent their ends the foot-flanges cut away and in their webs transversely-inserted members adapted to engage in said notches, and suitable means for keeping the web down between said flanges, said means consisting of a bolt through the flanges engaging notches in the ends of the rails and a cotter-pin transversely through said bolt to keep it in place.

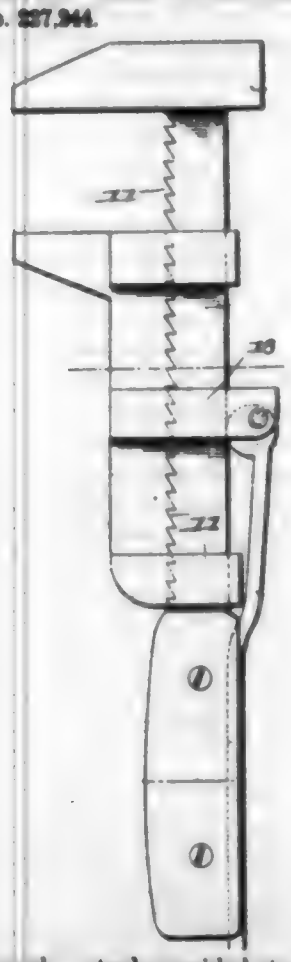
817,326. RECUPERATOR. ROBERT R. LADD, Cleveland, Ohio. Filed Apr. 14, 1905. Serial No. 255,505.



Claim.—1. The combination with a furnace, of a recuperator located in one side wall of the furnace and having primary and secondary flues feeding air respectively to the fire-box and the combustion-chamber of the furnace, the said primary and secondary flues being each divided by horizontal division-walls into separate and independent sets.

2. The combination with a furnace, of a recuperator set in one side wall thereof and having upper secondary and lower primary cross-flues separated by a division, said primary cross-flues being connected by horizontal side flues, separated by a division, to form two sets of independent tortuous passages having intakes at one end and an outlet at the other end to the fire-box, and said secondary cross-flues being connected in alternation by vertical side flues forming two independent sets of tortuous passages having an intake at the lower end and an outlet to the combustion-chamber at the upper end.

817,327. **WRENCH.** HENRY C. LAND, Altman, Tex. Filed Oct. 5, 1904. Serial No. 227,944.



Claim.—In a wrench, a stock provided at one end with a jaw, at its other end with a handle having in its rear side a channel, and on its front face with teeth, in combination with a movable jaw provided with a shank having teeth to interlock with those of the stock, with two pairs of disconnected keepers disposed at the terminals of the shank and embracing the sides of the stock, and with a third approximately U-shaped keeper disposed intermediate of the ends of the shank, and having its bend spaced from the stock, and a lever carrying a cam pivoted between the bend of the intermediate keeper and engaging at its lower end with the channel and projecting beyond the terminal of the handle.

817,328. **METHOD OF FORMING WIRE CABLES.** CYRUS S. LLOYD, Minneapolis, Minn. Filed Dec. 21, 1903. Serial No. 186,013.

Claim.—1. The method of producing wire cables consisting in, first, forming a series of wires into parallel helical coils, and, second, elongating said coils and thereby reducing their diameter.

2. The method of producing hollow wire cables consisting in, first, forming a series of wires into parallel helical coils; second, elongating said coils and thereby reducing their diameter and separating the series of wires; and, third, still further elongating said coils and thereby further reducing their diameter and bringing the series of wires closely together.

3. The method of producing hollow wire cables consisting in first, forming a series of wires into parallel helical coils lying closely against each other, and, second, elongating said coils and thereby reducing their diameter.

4. The method of producing wire cables containing suitable cores consisting in first, forming a series of wires into parallel helical coils; second, inserting within the hollow cable formed by said helical coils a core of less diameter than the internal diameter of said coils; and, third, elongating said coils and thereby reducing their diameter and bringing them in contact with the surface of said core.

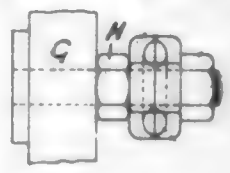
5. The method of producing wire cables containing insulated electrical conductors consisting in, first, forming a series of wires into parallel helical coils; second, inserting within said helical coils a suitable core containing a series of insulated electrical conductors, the diameter of said core being less than the internal diameter of said coils; and, third, elongating said coils, thereby reducing their diameter and bringing them in contact with the surface of said core.

6. In the production of wire cables the method of securing hollow cable-sections together which consists in inserting within the ends of said hollow sections, cable-sections of smaller diameter, and then elongating the coils and reducing the diameter of said hollow sections.

7. The method of producing wire cables consisting in, first, forming a series of wires into parallel helical coils; second, elongating said coils and thereby reducing their diameter; third, inserting a section of the reduced cable into a section of hollow cable whose diameter has not been reduced; fourth, elongating the coils and reducing the diameter of the combined cables.

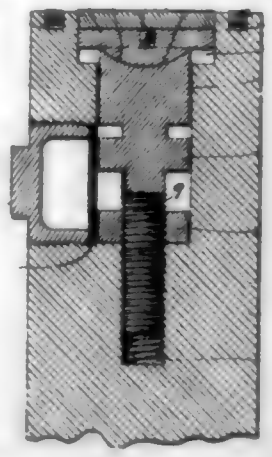
8. The method of producing wire cables which consists in, first, forming two hollow cables, one of which is composed of a less number of wires than the other; second, elongating the coils and thereby reducing the diameter of the hollow cable that is formed of the less number of wires; third, inserting this reduced cable into the other hollow cable; fourth, elongating the coils and reducing the diameter of the combined cables.

817,329. **TERMINAL OR COUPLING FOR ELECTRIC CABLES.** WILLIAM MIDDLETON and JOHN Y. MIDDLETON, Newcastle-upon-Tyne, England. Filed June 5, 1905. Serial No. 263,846.



Claim.—A coupling for electric cables comprising a plurality of disks having their inner or adjacent faces each provided with an annular groove for reception of the cable or cables, said groove having parts of its outer wall cut away, and means for connecting said disks together substantially as described.

817,330. **PISTON.** EDWARD MORAN, Lowell, Wash. Filed July 17, 1905. Serial No. 270,060.



Claim.—1. In combination a piston-head having a peripheral groove, a radial aperture communicating with the groove an opening intermediate the center and circumference communicating with the aperture, an expansible wear-ring mounted in the groove and provided with a conical bearing-plate, means disposed in the aperture and engaging the bearing-plate for expanding the ring and arranged to be manipulated through the opening, and a closure for the opening.

2. In combination, a piston-head having a peripheral groove, an expansible wear-ring disposed within the groove and provided upon its inner surface with spaced bearing-plates, and means disposed within the head proportioned to engage the bearing-plates and to exert a radial pressure upon the ring.

3. In combination, a piston-head having a peripheral groove and openings in the face, an expansible wear-ring disposed within the groove provided upon its inner surface with spaced conical bearing-plates, and means disposed within the head proportioned for engagement with the conical plates for manipulation through the face-openings to exert a radial pressure upon the ring.

4. In combination, a piston-head having a peripheral groove and openings through the face communicating with the groove, an expansible wear-ring disposed within the groove and provided upon its inner surface with spaced conical bearing-plates, screws disposed radially within the head and provided with cupped extremities proportioned to engage with the bearing-plates and to be manipulated through the openings, jam-nuts upon the screws disposed for manipulation through the openings and closures for the openings.

817,331. RIFLE-SIGHT. JOHN M. OLSON, Butte, Mont. Filed July 3, 1905. Serial No. 268,160.

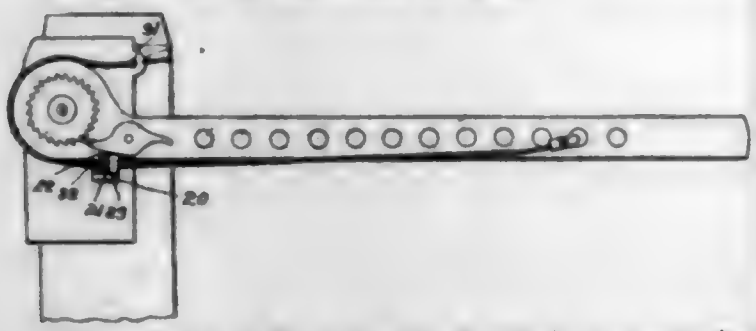


Claim.—1. A rifle-sight consisting of a triangularly-shaped block having in its edges a series of oppositely-disposed notches forming graduated, parallel, horizontally-disposed surfaces arranged one above the other, horizontally-disposed, graduated range-marks arranged on the front side of said block in line with and connecting the opposite horizontally-disposed surfaces of said notches and a vertical, centrally-disposed line-mark also arranged on said front surface of the sight, substantially as described.

2. A rifle-sight consisting of a triangularly-shaped block having in its edges a series of oppositely-disposed notches forming graduated, parallel, horizontally-disposed surfaces arranged one above the other, horizontally-disposed, graduated range-marks arranged on the front side of said block in line with and connecting the opposite horizontally-disposed surfaces of said notches and a vertical, centrally-disposed line-mark also arranged on said front surface of the sight, said marks being formed by inlaid stripe of material of a contrasting color to that of the sight, substantially as described.

3. A rifle-sight consisting of a triangularly-shaped block having in its edges a series of oppositely-disposed notches forming graduated, parallel, horizontally-disposed surfaces arranged one above the other, a surface-forming layer of material other than that of which the sight is formed secured to and shaped to conform to the outline of the front face of said sight, graduated horizontally-disposed range-marks and a central line-mark arranged on said surface-forming layer, substantially as described.

817,332. POST-RETAINING BAND. OLOF OLSON, Bancroft, Iowa. Filed May 23, 1905. Serial No. 261,796.



Claim.—1. In a device of the class described, a post-engaging member, a handle pivoted thereto, a rope passing around one end of the handle, secured at one end to the post-retaining member and secured at its other end to the handle, a ratchet secured to the post-retaining member on the opposite side of the handle from it, and a pawl secured to the handle for retaining the handle against movement in one direction.

2. In a device of the class described, a post-engaging member, a handle pivoted thereto, a rope passing around one end of the handle, secured at one end to the post-retaining member and secured at its other end to the handle, a ratchet secured to the post-retaining member on the opposite side of the handle from it, a spring-actuated pawl secured to the handle for retaining the handle against movement in one direction.

3. In a device of the class described, a post-engaging member, a handle having a series of openings extending through it, a rounded head having a groove in it at one end of the handle, means for pivotally securing the curved head of the handle to the post-retaining member, and a cable secured to the post-engaging member, passing around the curved head and detachably secured to the handle.

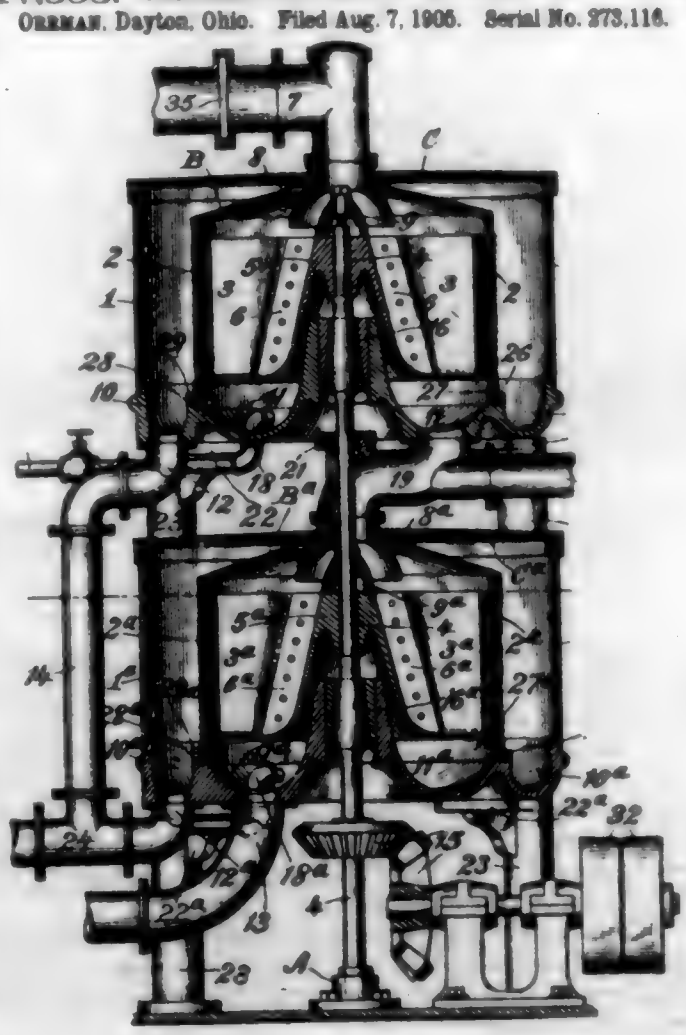
4. In a device of the class described, a post-engaging member, a handle having a series of openings extending through it, a rounded head having a groove in it at one end of the handle, means for pivotally securing the curved head of the handle to the post-retaining member, a cable secured to the post-engaging member, passing around the curved head, and a hook on the free end of the cable designed to be inserted into any one of the openings in the handle.

5. In a device of the class described, a post-engaging member, a handle having a series of openings extending through it, a rounded head having a groove in it at one end of the handle, means for pivotally securing the curved head of the handle to the post-retaining member, a cable secured to the post-engaging member, passing around the curved head, a hook on the free end of the cable designed to be inserted into any one of the openings in the handle, a ratchet-wheel non-rotatably secured to the post-engaging member, and a spring-actuated pawl mounted on the handle and designed to engage the ratchet for maintaining the handle in position against the drawing force of the rope when it is drawn tight around a post.

6. A post-engaging member having a concave surface designed to engage a post and a convex outer surface, a bearing extending outwardly from the convex surface, a handle pivotally mounted on the bearing, a squared member extending outwardly from the bearing, a ratchet-wheel secured to the squared member, a spring-actuated pawl pivoted to the handle, designed to engage the ratchet, a rope secured to one side of the post-engaging member and passing through the other side of the handle, and passing around the end of the handle adjacent to the ratchet-wheel, and a hook secured to the free end of the rope, designed to enter any one of the openings in the handle, for the purposes stated.

7. A post-engaging member having a concave surface designed to engage a post and a convex outer surface, a bearing extending outwardly from the convex surface, a handle pivotally mounted on the bearing, a squared member extending outwardly from the bearing, a ratchet-wheel secured to the squared member, a spring-actuated pawl pivoted to the handle, designed to engage the ratchet, a rope secured to one side of the post-engaging member and passing through the other side of the handle, and passing around the end of the handle adjacent to the ratchet-wheel, and a hook detachably secured to the free end of the rope and designed to enter any one of the openings in the handle.

817,333. CENTRIFUGAL SIEVING APPARATUS. HJALMAR L. ORRMAN, Dayton, Ohio. Filed Aug. 7, 1905. Serial No. 273,116.



Claim.—1. A centrifugal sieving apparatus for paper-stock, wood-pulp, and other substances, consisting of a set of rotating beaters for receiving and discharging the material to be acted upon, a sieve-drum surrounding the beaters for receiving the material discharged from the beaters, troughs at the foot of said drum and located respectively inside and outside of the same for receiving respectively the tailings and screened portion of the material, a second set of beaters, a drum, and two troughs like the first named, a common delivery-pipe for the troughs that are for the screened material from the two drums, a pipe connecting the first-named trough for the tailings with the second-named set of beaters for feeding the tailings to these last-mentioned beaters, a discharge-pipe for the second-named trough for the tailings, a shaft for driving both sets of beaters which are rigidly connected to said shaft, and a driver for said shaft.

2. The combination of a vertical shaft, a driver therefor, an upper and lower set of beaters connected to and driven by said shaft, screens opposite the beaters for receiving any material thrown off by centrifugal action by said beaters, a pipe connection for conveying the tailings from the upper machine to the beaters of the lower machine, and a pipe for conveying the screened material from the upper machine to join the screened material from the lower machine.

3. The combination of a vertical shaft, a driver therefor, an upper and lower set of beaters connected to and driven by said shaft, screens opposite the beaters for receiving any material thrown off by centrifugal action by said beaters, a pipe connection for conveying the tailings from the upper machine to the beaters of the lower machine, a pipe for conveying the screened material from the upper machine to join the screened material from the lower machine, casings surrounding both machines, posts, and brackets on the posts supporting the respective machines.

4. The combination of a vertical shaft, a driver therefor, an upper and lower set of beaters connected to and driven by said shaft, screens opposite the beaters for receiving any material thrown off by centrifugal action by said beaters, a pipe connection for conveying the tailings from the upper machine to the beaters of the lower machine, a pipe for conveying the screened material from the upper machine to join the screened material from the lower machine, sieve-drums for said machine, rings supporting said drums, castings having rims for holding one of said rings in each machine, and locking devices connecting said drums to said rims.

5. In a centrifugal sieving apparatus the combination of a casting having a bearing, a sieve-drum in said bearing, a pin fastened to the drum, said casting having a notch, a projection over a portion of the notch, and said pin extending into said notch.

6. In a centrifugal sieving apparatus, the combination of two casings, one directly above the other, a sieve-drum within each casing, a set of rotating beaters within each sieve-drum, for receiving the material to be acted upon and delivering the same by centrifugal action to the said sieve-drums respectively, a vertical shaft common to both sets of beaters, the said beaters being fixed upon and driven by said shaft, a frame common to and supporting both of said casings and having bearings for said shaft, an inlet in the top of the upper casing, for delivering the material to within the sieve-drum and to the upper set of beaters, a pipe for delivering the tailings from the upper sieve-drum to the beaters within the lower casing and sieve-drum, another pipe joining the first named, for supplying additional water to the tailings therein, a final outlet in the lower casing for the tailings from the lower sieve-drum, an outlet in the lower casing for the screened material, and a pipe for conveying the screened material from the upper casing and adding it to the screened material issuing from the outlet of the lower casing.

7. In a centrifugal sieving apparatus, the combination of a casing, a sieve-drum within the casing, a set of rotating beaters within the sieve-drum, a second group of elements like the above named, the two groups being located one above the other, a common shaft upon which said two sets of beaters are fixed and by which they are driven, a frame common to and supporting both said casings and having bearings for the said shaft, an initial inlet for supplying material to the upper set of beaters, a passage for conveying the tailings from the upper sieve-drum to the lower set of beaters, a final outlet for the tailings from the lower sieve-drum, means for conveying the screened material from the upper sieve-drum to join that from the lower sieve-drum, and a common delivery for the admixture of screened material from the two sieve-drums.

8. The combination of a shaft, a driver therefor, an upper and lower set of beaters connected to and driven by said shaft, screens opposite the beaters for receiving any material thrown off by centrifugal action from said beaters, a pipe for conveying the tailings from the upper machine to the beaters of the lower machine, an offset pipe from the first-named pipe for receiving water to thin the tailings, from the upper machine, and outlet-pipes for the lower machine.

9. The combination of two screening-machines, rotating beaters for both machines, a pipe for conveying the tailings from one machine to the beaters of the second machine, and an offset from said pipe for receiving water.

817,334. **TEMPLE FOR LOOMS.** FREDERICK OTT, Woonsocket, R. I., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Sept. 3, 1904. Serial No. 223,178.



Claim.—1. In a loom-temple, the combination of three contiguous rollers with their axes set in the same horizontal plane, each roller being provided with a surface of soft rubber, and means for adjusting the relation between the two outermost rollers in the line of the plane in which the three rollers lie, substantially as set forth.

2. In a loom-temple, a lower jaw carrying a cylindrical roller; an upper jaw divided into two members each carrying a conical roller; means for adjusting the distance between the two members of the upper jaw; and means for uniting the two jaws so as to bring the axes of the three rollers in a plane parallel to the fabric, substantially as set forth.

3. In a loom-temple, the combination of three rollers having their axes substantially in the same horizontal plane, and each provided with a clothing of soft rubber; a lower jaw by which the middle roller is carried; an upper jaw divided into two members each carrying one of the outermost rollers; and independent means for adjusting the distance between the two members of the upper jaw at both of their extremities whereby the distance between the outermost rollers may be accurately adjusted with corresponding regulation of the pressure between the rollers, any inequality of pressure at one point being distributed by the yielding nature of the clothing of the rollers, substantially as set forth.

817,335. **WHIFFLETREE-COUPLING.** JOHN R. PRINE, Shawnee, Okla. Filed Apr. 17, 1905. Serial No. 255,934.



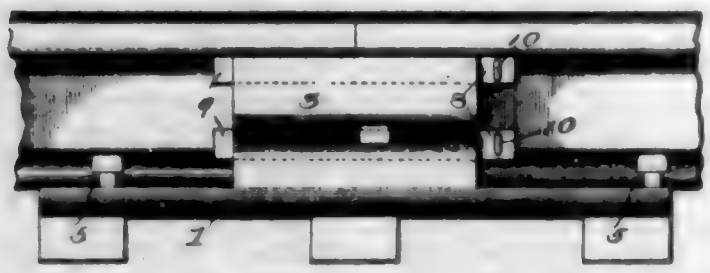
Claim.—1. In a coupling of the class described, a base member provided with a raised circular bearing-boss, a crown member having a bearing-face resting and working on said boss and provided

with an annular flange surrounding the boss and further provided with a rabbeted circular opening, a disk washer removably fitted in said rabbeted opening and provided with a circular boss which projects through the crown member and rests on the bearing-boss of the base member, and a bolt passing through the disk washer and base member and having its head seated flush in a recess in the disk washer.

2. In a coupling of the class described, a base member provided with a raised bearing-boss and stop-lugs located at opposite sides thereof, a crown member working on said base and having an annular flange which embraces the boss, a bolt, a disk washer pivotally connecting said members and recessed to receive the head of said bolt, and wings extending outward from said flange and lying on opposite sides of the stop-lugs, said wings forming stop-shoulders which coöperate with the stop-lugs to limit the pivotal movement of the members.

3. In a coupling of the class described, base and crown members connected for relative pivotal movement, coöperating lugs and shoulders on said members for limiting such relative pivotal movement, and one or more spring-buffers associated with the limiting means, substantially as and for the purpose described.

817,336. RAIL-JOINT. JOHN R. PRINO, Shawnee, Okla., assignor of one-sixth to Charles McCormick, Shawnee, Okla. Filed Oct. 18, 1905. Serial No. 283,297.



Claim.—1. A boltless rail-joint consisting of a chair adapted to rest upon a plurality of ties and embodying a bottom plate, and braces located at opposite sides thereof, one brace being formed to bear against the head, web and base-flange of the rail ends at one side of the joint, and the other brace being provided with a rabbet extending throughout the length thereof opposite one of the angles formed between the web and base-flange of the rail, and a tapering key fitting into the rabbet and forming a bearing between the brace and the base-flange and web of the rail.

2. A boltless rail-joint consisting of a chair embodying a bottom plate, braces located at opposite sides thereof, one brace being formed to bear against the head, web and base-flange of the rail and the other brace being rabbeted in line with the angles between the web, head and base of the rail, and tapering keys fitting the rabbets and forming bearings between said brace and rail at the points named.

3. A boltless rail-joint consisting of a chair, braces located at opposite sides thereof, one brace being formed to bear against the head, web and base-flange of the walls, and the other brace being rabbeted along its upper and inner corner or angle, a tapering key fitted in the rabbet and forming a bearing between said brace and the head or web of the rail, and key-retaining means.

817,337. EXPANSIBLE BRUSH. DANIEL J. PURDY, White Plains, N. Y. Filed Nov. 15, 1905. Serial No. 287,453.

Claim.—1. In combination with a supporting member, a spring mounted therein; a rod extending into the supporting member, bearing upon the spring and normally protruded thereby; a bottom brush-section pivotally connected at substantially its mid-length to the outer end of the rod; a long side brush pivotally connected at one end to one end of said bottom brush and at its opposite end to the supporting member; a short brush pivotally connected to the opposite end of the bottom brush; a link connecting the other end of said short brush to the rod; a second short brush pivotally connected to the upper end of the supporting member; and a link connecting the outer end of said second short brush to the rod.

2. In combination with a supporting member; a rod; a spring for projecting said rod; a long side brush pivotally connected at one end to the supporting member; a short side brush pivotally connected to said member; a bottom brush pivotally connected to the end of the rod and to the upper end of the long brush; a second short side brush pivotally connected to the bottom brush; and means for throwing said short side brushes out into alinement with each other when the other brushes are brought into operative position.

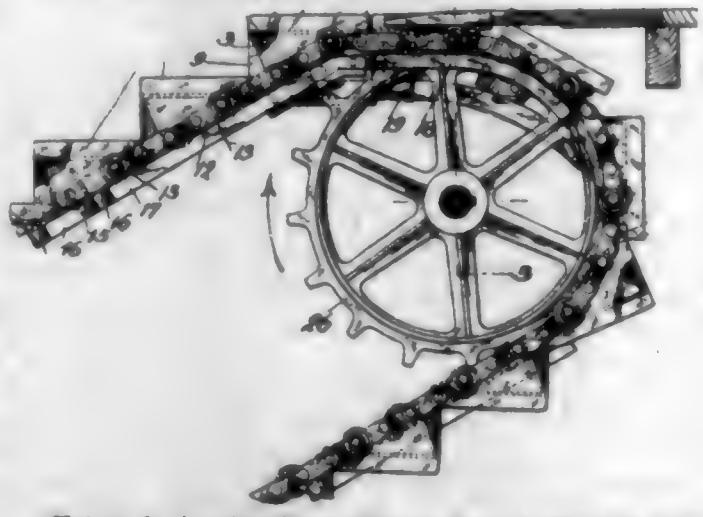


3. In combination with a supporting member; a spring-projected rod carried thereby; a brush pivoted at one end to said supporting member; and a second brush pivoted at substantially its mid-length to the outer end of the rod and likewise connected at one end to the outer end of the first-mentioned brush.

4. In combination with a supporting member; a spring-projected rod carried thereby, the outer end of said rod being curved to one side; a brush pivoted at one end to the supporting member; a second brush provided with an opening into which the curved end of the rod passes; a pivotal connection between said rod and brush; and a pivotal connection between the adjacent ends of the brushes.

5. In combination with a hollow supporting member provided at its upper end with a pair of oppositely-disposed slots; a spring mounted in said member; a rod bearing at one end on the spring; a collar carried by the rod and making a working fit with the inner face of the supporting member; fingers extending out from the collar into the slots in the supporting member; a relatively long brush pivotally connected to said member; a brush pivotally connected at one end to the upper end of the first brush and likewise connected at its mid-length to the upper end of the rod; a short brush pivotally connected to the other end of said second brush; a link pivotally connected to the opposite end of said short brush and the rod; a second short brush pivoted to the upper end of the supporting member; and a link pivotally connected to the upper end of said brush and the rod.

817,338. INCLINED ELEVATOR. JESSE W. RENO, New York, N. Y. Filed Jan. 11, 1906. Serial No. 295,501.



Claim.—1. A series of movable steps for an inclined elevator operatively connected together, the riser of each step being provided with slots adapted to register with projections formed on the tread of the adjacent step.

2. A step for inclined elevators having its tread portion composed of ribs, and having vertical grooves in its riser adapted to receive the ends of the ribs of an adjacent step.

3. A step for inclined elevators having longitudinal grooves in its tread-surface, and vertical grooves in its riser in staggered relation to the grooves in said tread-surface.

4. A step for inclined elevators having longitudinal ribs on its tread, and grooves in its riser in line therewith, said grooves increasing in depth from the upper front edge of the step downwardly.

5. A step for inclined elevators having a main horizontal web, a web joined to the front edge thereof, extending downwardly and inclined under said horizontal web and vertical ribs secured thereto to form a riser for said step.

6. A step for inclined elevators having its tread-surface formed of longitudinal ribs secured to a horizontal web, and having its riser formed of triangular-shaped ribs joined to an inclined transverse web.

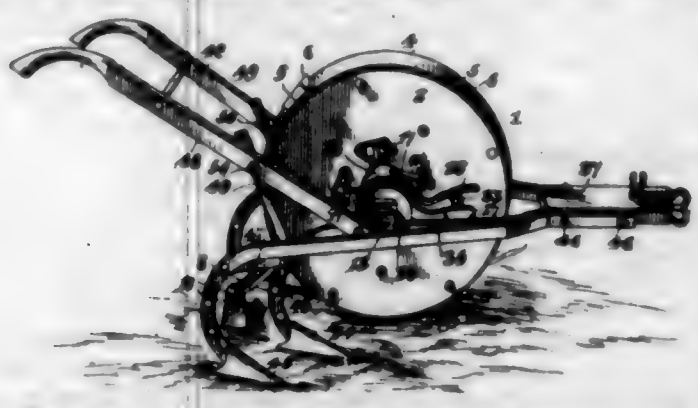
7. A step for inclined elevators formed of a horizontal web for the tread, a transverse web for the riser, and webs joining said horizontal and transverse webs, and a pair of truck-wheels at either end of said step, one of each pair of truck-wheels being mounted outside of said end web, and one of each pair inside thereof.

8. A step for inclined elevators having a horizontal web for its tread-support, an inclined front web for its riser, and end webs joining said horizontal web and said riser, a pair of truck-wheels secured to the inside of said end webs, a pair of truck-wheels secured to the outside thereof, and chains in pivotal connection with the journals of said outside truck-wheels.

9. In an inclined elevator a series of steps in pivotal connection with an endless chain, and engaging means on the front and rear portions of said steps to limit the turning of said steps upon their pivots.

10. In an inclined elevator a series of steps in pivotal connection with a chain having extensions upon their front and rear portions adapted to mutually engage to limit the turning of said steps upon their pivots.

817,339. COTTON-CHOPPER. GEORGE R. ROBINSON, Bienville, La. Filed Aug. 2, 1905. Serial No. 272,411.



Claim.—1. A machine of the class described provided with a drum or wheel having crushing portions and provided also with openings, and extensible means movable inwardly and outwardly through the openings for protecting the plants.

2. In a machine of the class described, the combination with cultivating means, of a crushing drum or wheel provided with extensible plant-protecting means arranged to cover and protect the plants during the crushing and cultivating operations.

3. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with openings, and extensible cups movable inwardly and outwardly through the openings.

4. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with peripheral openings and having crushing portions between the openings, cups arranged at the openings, extensible connections between the cups and the drum or wheel, and means for operating the extensible connections.

5. In a machine of the class described, the combination of a crushing drum or wheel, a cup, extensible connecting means mounted on the drum or wheel and carrying the cup for moving the same inward and outward, an operating-lever for the extensible connection, and means for actuating the lever automatically.

6. In a machine of the class described, the combination of a crushing drum or wheel, an extensible cup, an extensible connection for the cup embodying inner and outer bars or members pivotally connected, an operating-lever for the extensible connection, and a cam arranged in the path of and adapted to actuate the operating-lever.

7. In a machine of the class described, the combination of a crushing drum or wheel, an extensible cup, an inner bar or member pivotally mounted within the drum or wheel, a pair of outer bars or members pivotally connected to the inner bar or member and the cup, and means for automatically actuating the inner bar or member.

8. In a machine of the class described, the combination of a crushing drum or wheel, a cup, an extensible connection mounted on the drum or wheel and carrying the cup, an operating-lever, and a cam arranged in the path of the operating-lever for moving the cup inward, said cam being also arranged to permit a free outward movement of the cup during a portion of the revolution of the drum or wheel.

9. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connections mounted on the drum or wheel and carrying the cups, operating-levers for actuating the extensible connection to move the cups inward, and a cam arranged in the path of the operating-levers for positively moving the cups inward and for holding the cups within the drum or wheel during a portion of the revolution of the same.

10. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connections mounted on the drum or wheel and carrying the cups, operating-levers for actuating the extensible connection to move the cups inward, and a cam arranged in the path of the operating-levers for positively moving the cups inward and for holding the cups within the drum or wheel during a portion of the revolution of the same, said cam being also arranged to permit a free outward movement of the cups during the other portion of the revolution of the drum or wheel.

11. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connecting means mounted on the drum or wheel and carrying the cups to permit the latter to move inwardly and outwardly, operating-levers mounted on the drum or wheel, a cam arranged to engage the levers during a portion of the revolution of the drum or wheel for retracting the cups and for holding the same within the drum or wheel, and a movable member coöperating with the cam and adapted to engage the levers during the remaining portion of the rotation of the drum or wheel for preventing the cups from moving outwardly.

12. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, and a movable member mounted on the fixed cam for completing the peripheral portion thereof.

13. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, a movable member mounted on the fixed cam for completing the peripheral portion thereof, and a latch for locking the movable member in either of its positions.

14. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, a movable member mounted on the fixed cam for completing the peripheral portion thereof, a handle or grip extending from the movable member, and a spring-actuated latch mounted on the handle or grip for locking the movable member in either of its positions.

15. In a machine of the class described, the combination of a crushing drum or wheel, a cup, an extensible connection consisting of inner and outer bars pivotally connected, an operating-lever provided with a substantially U-shaped interiorly-arranged arm connected with the inner bar or member, said lever being also provided with an exteriorly-arranged arm, and means arranged in the path of the exteriorly-arranged arm for operating the said lever.

817,340. ARTIFICIAL LIMB. RUDOLF ROSENKRANZ, Pittsburg, Pa. Filed Mar. 1, 1905. Serial No. 247,356.

Claim.—1. An artificial limb comprising a leg portion and a foot portion and an intermediate rubber portion continuous in outer contour with the other two said portions and entirely separating them, and a universal ball-and-socket joint connecting the two solid

3. A step for inclined elevators having longitudinal grooves in its tread-surface, and vertical grooves in its riser in staggered relation to the grooves in said tread-surface.

4. A step for inclined elevators having longitudinal ribs on its tread, and grooves in its riser in line therewith, said grooves increasing in depth from the upper front edge of the step downwardly.

5. A step for inclined elevators having a main horizontal web, a web joined to the front edge thereof, extending downwardly and inclined under said horizontal web and vertical ribs secured thereto to form a riser for said step.

6. A step for inclined elevators having its tread-surface formed of longitudinal ribs secured to a horizontal web, and having its riser formed of triangular-shaped ribs joined to an inclined transverse web.

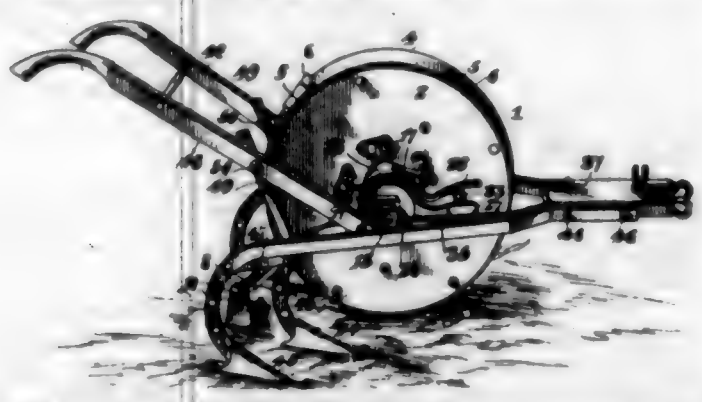
7. A step for inclined elevators formed of a horizontal web for the tread, a transverse web for the riser, and webs joining said horizontal and transverse webs, and a pair of truck-wheels at either end of said step, one of each pair of truck-wheels being mounted outside of said end web, and one of each pair inside thereof.

8. A step for inclined elevators having a horizontal web for its tread-support, an inclined front web for its riser, and end webs joining said horizontal web and said riser, a pair of truck-wheels secured to the inside of said end webs, a pair of truck-wheels secured to the outside thereof, and chains in pivotal connection with the journals of said outside truck-wheels.

9. In an inclined elevator a series of steps in pivotal connection with an endless chain, and engaging means on the front and rear portions of said steps to limit the turning of said steps upon their pivots.

10. In an inclined elevator a series of steps in pivotal connection with a chain having extensions upon their front and rear portions adapted to mutually engage to limit the turning of said steps upon their pivots.

817,339. **COTTON-CHOPPER.** GEORGE R. ROBINSON, Bienville, La. Filed Aug. 2, 1905. Serial No. 272,411.



Claim.—1. A machine of the class described provided with a drum or wheel having crushing portions and provided also with openings, and extensible means movable inwardly and outwardly through the openings for protecting the plants.

2. In a machine of the class described, the combination with cultivating means, of a crushing drum or wheel provided with extensible plant-protecting means arranged to cover and protect the plants during the crushing and cultivating operations.

3. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with openings, and extensible cups movable inwardly and outwardly through the openings.

4. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with peripheral openings and having crushing portions between the openings, cups arranged at the openings, extensible connections between the cups and the drum or wheel, and means for operating the extensible connections.

5. In a machine of the class described, the combination of a crushing drum or wheel, a cup, extensible connecting means mounted on the drum or wheel and carrying the cup for moving the same inward and outward, an operating-lever for the extensible connection, and means for actuating the lever automatically.

6. In a machine of the class described, the combination of a crushing drum or wheel, an extensible cup, an extensible connection for the cup embodying inner and outer bars or members pivotally connected, an operating-lever for the extensible connection, and a cam arranged in the path of and adapted to actuate the operating-lever.

7. In a machine of the class described, the combination of a crushing drum or wheel, an extensible cup, an inner bar or member pivotally mounted within the drum or wheel, a pair of outer bars or members pivotally connected to the inner bar or member and the cup, and means for automatically actuating the inner bar or member.

8. In a machine of the class described, the combination of a crushing drum or wheel, a cup, an extensible connection mounted on the drum or wheel and carrying the cup, an operating-lever, and a cam arranged in the path of the operating-lever for moving the cup inward, said cam being also arranged to permit a free outward movement of the cup during a portion of the revolution of the drum or wheel.

9. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connections mounted on the drum or wheel and carrying the cups, operating-levers for actuating the extensible connection to move the cups inward, and a cam arranged in the path of the operating-levers for positively moving the cups inward and for holding the cups within the drum or wheel during a portion of the revolution of the same.

10. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connections mounted on the drum or wheel and carrying the cups, operating-levers for actuating the extensible connection to move the cups inward, and a cam arranged in the path of the operating-levers for positively moving the cups inward and for holding the cups within the drum or wheel during a portion of the revolution of the same, said cam being also arranged to permit a free outward movement of the cups during the other portion of the revolution of the drum or wheel.

11. In a machine of the class described, the combination of a crushing drum or wheel provided at intervals with cups, extensible connecting means mounted on the drum or wheel and carrying the cups to permit the latter to move inwardly and outwardly, operating-levers mounted on the drum or wheel, a cam arranged to engage the levers during a portion of the revolution of the drum or wheel for retracting the cups and for holding the same within the drum or wheel, and a movable member coöperating with the cam and adapted to engage the levers during the remaining portion of the rotation of the drum or wheel for preventing the cups from moving outwardly.

12. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, and a movable member mounted on the fixed cam for completing the peripheral portion thereof.

13. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, a movable member mounted on the fixed cam for completing the peripheral portion thereof, and a latch for locking the movable member in either of its positions.

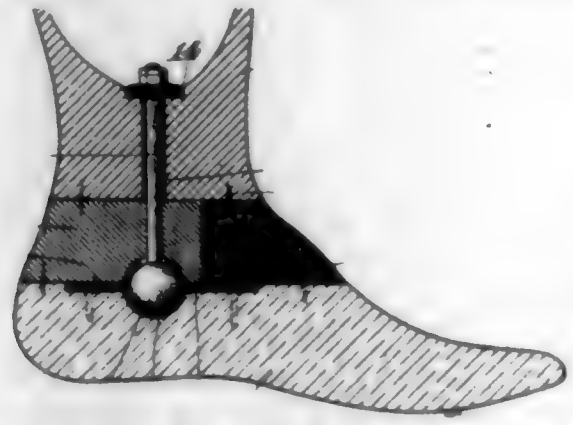
14. In a machine of the class described, the combination of a crushing drum or wheel, cups arranged at intervals, extensible connections mounted on the wheel and carrying the cups, operating-levers for actuating the extensible connections, a fixed cam arranged in the path of the operating-levers and having a concentric peripheral portion for engaging the same, a movable member mounted on the fixed cam for completing the peripheral portion thereof, a handle or grip extending from the movable member, and a spring-actuated latch mounted on the handle or grip for locking the movable member in either of its positions.

15. In a machine of the class described, the combination of a crushing drum or wheel, a cup, an extensible connection consisting of inner and outer bars pivotally connected, an operating-lever provided with a substantially U-shaped interiorly-arranged arm connected with the inner bar or member, said lever being also provided with an exteriorly-arranged arm, and means arranged in the path of the exteriorly-arranged arm for operating the said lever.

817,340. **ARTIFICIAL LIMB.** RUDOLF ROSENKRANZ, Pittsburg, Pa. Filed Mar. 1, 1905. Serial No. 247,856.

Claim.—1. An artificial limb comprising a leg portion and a foot portion and an intermediate rubber portion continuous in outer contour with the other two said portions and entirely separating them, and a universal ball-and-socket joint connecting the two solid

portions by parts passing through the rubber portion, substantially as described.



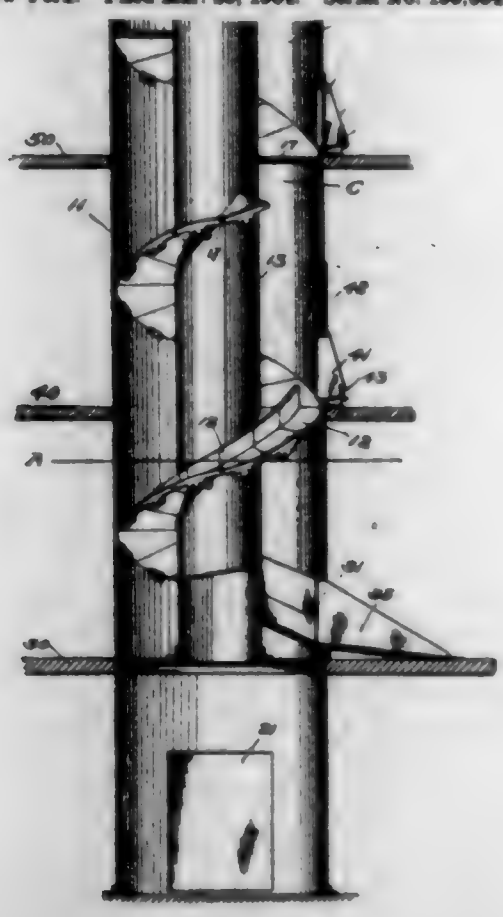
2. In an artificial leg the combination with a leg portion and a foot portion, and connecting means to hold them together each portion having a flat joint surface, of a rubber cushion between said portions extending over the entire area of said flat surfaces and being flush with the outline of the foot on the outside and forming part of the contour, said rubber cushion having an integral part more dense than the rest, at the forward side, substantially as and for the purpose described.

3. In an artificial leg the combination with a leg portion having a flat end, a foot portion having a flat top, a rubber cushion between two said parts extending over the entire area of said flat portions and its outer surfaces continuous with the outline of the foot, a rod fixed in the leg portion, extending through the said rubber portion, a ball on the same and an engaging socket on the foot portion, said rubber cushion having the forward end made of denser rubber than the rest, to afford greater resistance to compression, substantially as described.

4. An artificial leg having a leg portion and a foot portion of solid material, an intervening block of rubber entirely covering the surfaces of said portions and being continuous with the other parts in outline, whereby there is no moving joint between the foot and leg portion, and a non-metallic sheath and a rod therein having a head making a universal joint between the foot and leg portions allhaving free compression of said rubber pad, substantially as described.

5. In an artificial limb a cushion for spacing apart the foot and leg portions composed of soft rubber which has an integral forward part of it made more dense than the rest to afford greater resistance at the forward side of the foot, substantially as described.

817,841. SPIRAL CHUTE. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyer Company, New York, N. Y., a Corporation of New York. Filed Mar. 28, 1904. Serial No. 199,664.



Claim.—1. In a spiral chute, the combination of an outer shell, and a spiral having a continuous surface and being composed of formed plates attached to the outer shell, said plates being provided with a raised portion on their upper side.

2. In a spiral chute, the combination of an outer shell, and a spiral composed of formed plates attached to the outer shell, said plates being provided with a raised portion on their upper side to have a plurality of conveying-surfaces.

3. In a spiral chute, the combination of an outer shell, an inner core and a spiral composed of formed interlocking plates attached to the outer shell and to the inner core.

4. In a chute, a conveying-spiral having its surface divided into parallel paths.

5. In a spiral chute, a conveying-spiral, and a rib to divide the spiral surface into parallel paths.

6. In a spiral chute, the combination of an outer shell, a spiral composed of formed plates attached to the shell, said plates being provided with ribs on their conveying-surfaces.

7. In a spiral chute, the combination of an outer shell, an inner shell, and a spiral composed of formed interlocking plates attached to the outer shell and to the inner shell, the surface of said spiral being divided into parallel paths.

8. In a spiral chute, the combination with an outer shell, of an inner shell, a spiral between said shells, said spiral comprising formed plates with interlocking lips, and a rib on said plates to divide the spiral surface into parallel paths.

9. In a gravity-conveyer, the combination with a tubular shaft provided with an intake-opening, a spiral, an inner core, a landing at said opening, and an inclined shelf adjoining the lower portion of said opening above the spiral surface.

10. As an article of manufacture, a plate arranged to form a portion of a spiral, and interlocking means for said plate.

11. As an article of manufacture, a plate of a shape conforming to a spiral, interlocking lips on said plate, and means for attachment to a suitable support.

12. As an article of manufacture, a plate having a surface to form a section of a spiral of a gravity-conveyer, ribs attached to said plate on said surface to divide the spiral into two parallel paths.

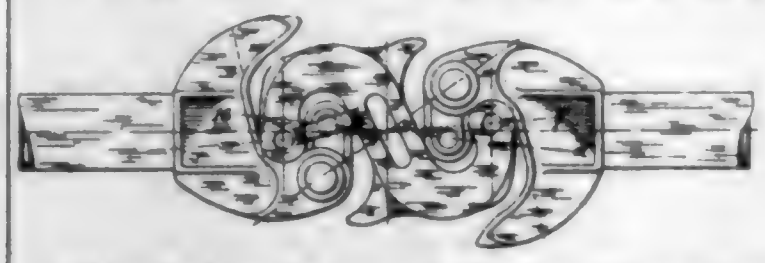
13. As an article of manufacture, a plate formed for a section of a spiral of a gravity-conveyer, a rib attached to its inner end and arranged to form a portion of the support for the spiral, and securing means for said rib.

14. As an article of manufacture, a plate arranged to form a section of a spiral of a gravity-conveyer, interlocking lips at the edges of said plate, and means at the ends of said plate for securing the same to suitable supports.

15. As an article of manufacture, a plate arranged to form a portion of a spiral of a gravity-conveyer, interlocking lips at the edges of said plate, means at the ends of said plate for attaching the same to suitable supports, and a rib on said plate to divide the spiral surface into parallel paths.

16. As an article of manufacture, a plate arranged to form a portion of a spiral of a gravity-conveyer, interlocking lips at the edges of said plate, and means at the ends of said plates for attachment of the same to the outer shell and inner core of the conveyer.

817,842. AUXILIARY COUPLING DEVICE. GEORGE W. SCOTT, Chicago, Ill., assignor to Railway Appliances Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 25, 1903. Serial No. 144,943.



Claim.—1. A coupling device consisting of a hollow casting formed in a general S-shape and provided with an integral strap thereon for fitting over the pivoted finger of a coupler head.

2. A coupler provided with two hooked ends integrally connected, each of said hooked ends being designed to fit in a Master Car Builders type of coupler head and being longer and of sharper curves so as to depart from the lines of the head in all contact points except the rounded ends of the said hook, when the coupling devices are all in alinement.

3. A coupling device consisting of a body with parallel sides and

two integral hooked ends, said hooked ends being designed to fit in a Master Car Builders type of coupler head and the hooked end being longer than the pivoted knuckle of said coupler.

4. An auxiliary coupling consisting in a body portion and a hooked end portion longer than the standard coupler knuckle, said body portion being designed to fit upon the outside of the closed knuckle and head of a standard coupling in one position and capable of fitting the inside face when in another position.

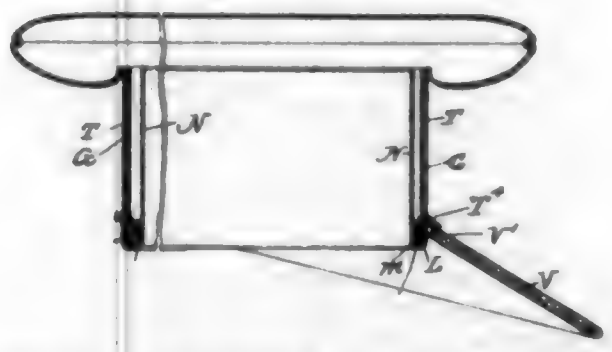
5. A rigid coupling of a general S-shape formed with two hooked ends designed to revolubly engage a pivoted knuckle of the Master Car Builders type of coupler, and having a fixed supporting strap 15 thereon adapted to engage the pivoted knuckle.

6. An auxiliary coupling device provided with a hooked end which differs from the contour of a Master Car Builders type of coupler when the knuckle is closed, by having a longer finger with a re-entrant curve inside thereof, and the outside face being at greater angle with the line of draft than the corresponding face of the coupler head, substantially as described.

7. An auxiliary coupling having a face contour departing from the contour of the Master Car Builders standard type of coupler head, when in alinement therewith, only by leaving small spaces inside the jaw, at the round end of the knuckle, and outside the front knuckle face, substantially as described.

8. An auxiliary coupling device consisting of a rigid body of a general S-shape, the hooked ends of which have outside faces about perpendicular to the center line between the rounded ends and curves inside said ends re-entrant from the perpendicular, and the side body faces being at an angle less than the perpendicular with said center line.

817,343. CAP. ORA D. SHAW, Boston, Mass. Filed Mar. 9, 1903. Renewed July 6, 1905. Serial No. 268,554.



Claim.—1. A cap comprising a body-band, a sweat-band, an outer band having its lower portion bent around the bottom edge of the body-band and upwardly between the body and sweat bands, a connecting-strip attached to the lower portion of the sweat-band, extending parallel therewith and secured a part of its length to said upwardly-extending portion of the outer band, and against said body-band, a vizor arranged below said detached portion of the outer band, and stitching penetrating through the vizor, the body-band and the upwardly-extending portion of the connecting-strip for securing the vizor in position.

2. A cap comprising a body-band having a reinforcement, a sweat-band having a connecting-strip, an outer band extending around the lower edge of the body-band and attached a portion of its length to said connecting-strip, a vizor arranged against the reinforcement of the body-band and below the detached portion of the outer band, and stitching penetrating the vizor, the body-band, the reinforcement thereof and the upwardly-extending portion of the connecting-strip for securing the vizor in position.

3. A cap comprising a body-band, a sweat-band, an outer band having a bead intermediate its edges and a part of the portion below the bead extending around the lower edge of the body-band and connected a portion of its length with said sweat-band, a vizor abutting against the body-band, and stitching penetrating the vizor and the body-band and adapted to secure said vizor in position.

4. A cap comprising a body-band, a sweat-band, an outer band having a bead intermediate its edges and a part of the portion below the bead extending around the lower edge of the body-band and connected a portion of its length with said sweat-band, a crown secured to said body and outer bands, a vizor abutting against the body-band, and stitching penetrating the vizor and the body-band and adapted to secure said vizor in position.

5. A cap comprising a body-band having a reinforcement, a sweat-band, an outer band extending around the lower edge of the body-band and attached a portion of its length to said sweat-band, a crown attached to said body and outer bands, a vizor arranged against the reinforcement of the body-band and below the detached portion of the outer band, and stitching penetrating the vizor, the reinforcement and body-band.

6. A cap comprising a body-band, a sweat-band, an outer band having its lower portion bent around the bottom edge of the body-band and upwardly between the body and sweat bands, a connecting-strip attached to the lower portion of the sweat-band, extending parallel therewith and secured a part of its length to said upwardly-extending portion of the outer band, a vizor arranged below said detached portion of the outer band and against said body-band, and stitching penetrating at an inclination through the vizor, the body-band and the connecting-strip for securing the vizor in position.

7. A cap comprising a crown, an extension on said crown, an outer band having its lower portion bent inwardly and upwardly, a sweat-band, a connecting-strip forming a hinge, one side attached to the lower portion of the sweat-band, the other side secured to the upwardly-extending portion of the outer band, the outer band being secured to the extension in such a manner as to leave a marginal opening, and a vizor secured in the marginal opening.

8. A cap comprising a crown, an extension on said crown, an outer band having its lower portion bent inwardly and upwardly, a sweat-band, a connecting-strip attached to the lower portion of the sweat-band and to said upwardly-extending portion of the outer band, the outer band being secured to the extension in such a manner as to leave a marginal opening, a vizor in the opening, and stitching penetrating through the vizor and the extension, for securing the vizor in position.

9. A cap comprising a crown, an extension on said crown, a reinforcement at one edge thereof, an outer band having its lower portion secured to said reinforcement, a sweat-band, a connecting-strip attached to the lower portion of the sweat-band and to said upwardly-extending portion of the outer band, the outer band being secured to the reinforcement in such a manner as to leave a marginal opening, and a vizor secured in the marginal opening.

10. A cap comprising a sweat-band having its entire lower portion attached to a connecting-strip, a vizor, an outer band having its lower portion bent inwardly and upwardly and from one end of the vizor around the back of the cap to the other end of the vizor, and stitching penetrating from the inner side of the connecting-strip through the vizor to the inner side of the outer band.

11. A cap having a foundation structure therefor, with a covering connected a distance with stitches to the inner side thereof, a vizor arranged intermediate the detached portion of the covering and the lower edge of the foundation and against the exterior face of the latter, and stitching penetrating through the vizor and the foundation for securing the vizor in position.

12. A cap having a foundation therefor, with a covering connected a distance with stitches to the inner side thereof, a sweat-band, a connecting-strip attached to the lower portion of the sweat-band, extending parallel therewith and secured to the connected portion of the covering, a vizor arranged below the detached portion of the covering and against the foundation, and stitching penetrating through the vizor, the foundation and the detached portion of the connecting-strip for securing the vizor in position.

13. A cap having a body structure and an outer finishing band or cover, the latter being unattached at the fore part of the cap, and a vizor inserted in the opening or gap at the fore part of the cap and against exterior face of the body structure and secured to the latter, the unattached portion of the finishing-band extending loosely over the attached part of the vizor.

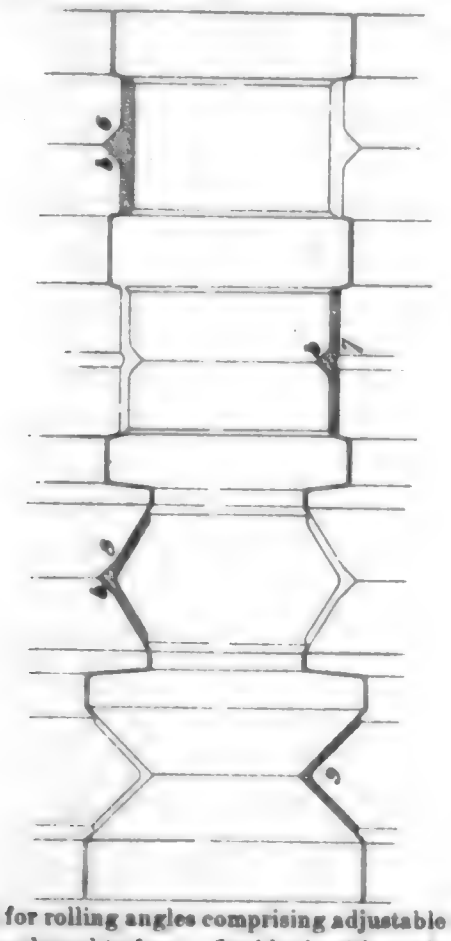
14. A cap having a body structure, an outer finishing-cover, and a vizor inserted exteriorly under the fore part of the finishing-cover and against exterior face of the body structure and secured solely to the latter.

817,344. ROLLING-MILL. EDWIN E. SLICK, Pittsburg, Pa. Filed Aug. 31, 1903. Serial No. 170,588.

Claim.—1. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

2. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side

and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, means for adjusting the rolls in repeating the operation on other blanks, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.



3. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, means for adjusting the rolls in repeating the operation on other blanks, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

4. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, rolls having passes forming a groove in the flat side of the blank opposite the ridge, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

5. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an adjustable edging-pass, in which the width of the blank is fixed, and a separate set of rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

6. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, separate rolls in which the thickness of the blank and the cross-sectional area of the ridge and flange portions are further reduced, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

7. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge one one side and lateral legs or flanges, one of which is wider than the other, and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

8. A mill for rolling angles comprising adjustable rolls, having separate passes shaped to form a flat blank with a ridge on one side and flat legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

9. A mill for rolling angles comprising rolls adapted to form a flat blank having a ridge with flat legs or flanges, successive rolls having an edging-pass in which the width of the blank is fixed and further rolls having passes in which the blank is further reduced and final rolls in which the flat blank is bent into angle form; substantially as described.

10. A mill for rolling angles comprising rolls having open passes and adapted to form a flat blank having a ridge with flat legs or flanges, successive rolls having an edging-pass in which the width of the blank is fixed, and further rolls having passes in which the blank is further reduced and final rolls in which the flat blank is bent into angle form; substantially as described.

11. A mill for rolling angles comprising adjustable rolls, having open passes shaped to form a flat blank with a ridge on one side and flat legs or flanges, and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

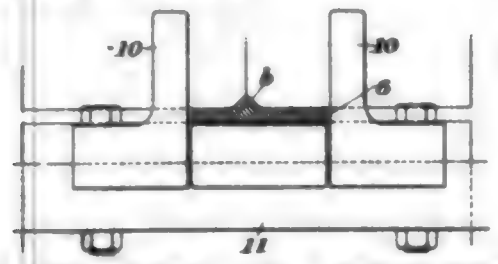
12. A mill for rolling angles comprising adjustable rolls, having open passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges, one of which is wider than the other, and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

13. A mill for rolling angles comprising adjustable rolls, having open passes shaped to form a flat blank with a ridge on one side and lateral legs or flanges and to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, while reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions, rolls having an edging-pass, in which the width of the blank is fixed, and rolls having passes in which blanks of different thicknesses and widths are bent into angle form along the line opposite to the ridge, without changing the roughing-rolls; substantially as described.

817,345. METHOD OF ROLLING ANGLES. EDWIN B. SLICK, Pittsburg, Pa. Filed July 22, 1903. Serial No. 166,326.

Claim.—1. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having separate passes shaped to substantially preserve

the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging this flat blank to fix its width, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.



2. The method of rolling angles of different thicknesses, consisting in first forming a flat blank having a ridge on one side and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having passes shaped to preserve the proportionate areas of the ridge and flange portions and to maintain the flanges in substantially the same plane, adjusting the rolls and repeating the operation upon other blanks, and finally bending the blanks into angle form along the line opposite the ridge, whereby angles of different thickness may be produced by the same roughing-rolls; substantially as described.

3. The method of rolling angles of different thicknesses, consisting in first forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having passes shaped to preserve the proportionate areas of the ridge and flange portions and to maintain the flanges in substantially the same plane, adjusting the rolls and repeating the operation upon other blanks, edging the blank to fix its width, and finally bending the blanks into angle form along the line opposite the ridge, whereby angles of different thickness may be produced by the same roughing-rolls; substantially as described.

4. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having separate passes shaped to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging this blank to fix its width, forming a groove in the flat side of the blank opposite the ridge, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

5. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having separate passes shaped to substantially preserve the proportionate areas of the ridges and flange portions and maintain the flanges in substantially the same plane, then edging this flat blank in an adjustable pass to fix its width, and then bending the blank in a separate set of rolls into angle form along the line opposite to the ridge, wherein angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

6. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having separate passes shaped to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging this flat blank to fix its width. then reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions in at least one separate pass, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

7. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, one of which is wider than the other, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having separate passes shaped to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging the flat blank to fix its width, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

8. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and flat legs or flanges, reducing the blank by passing it through separated successive passes in adjustable rolls, while substantially preserving the proportionate areas of the ridge and flange portions, then edging the flat blank to fix its width, and then bending the blank into angle form by passing it through a roll pass or passes, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

9. The method of rolling angles, consisting in forming a flat blank having a ridge with flat legs or flanges, edging the flat blank to fix its width, then reducing the blank, and then bending it into angle form; substantially as described.

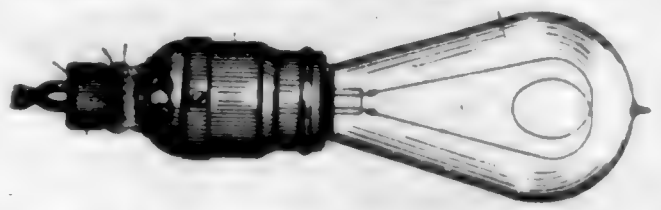
10. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having open passes shaped to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging this flat blank to fix its width, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

11. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and lateral legs or flanges, one of which is wider than the other, reducing the thickness of the blank and the cross-sectional area of the ridge and flange portions by passing the blank between adjustable rolls having open passes shaped to substantially preserve the proportionate areas of the ridge and flange portions and maintain the flanges in substantially the same plane, then edging the flat blank to fix its width, and then bending the blank into angle form along the line opposite to the ridge, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

12. The method of rolling angles, consisting in forming a flat blank having a ridge on one side, and flat legs or flanges, reducing the blank by passing it through successive open passes in adjustable rolls, while substantially preserving the proportionate areas of the ridge and flange portions, then edging the flat blank to fix its width, and then bending the blank into angle form by passing it through a roll pass or passes, whereby angles of different thicknesses and widths may be produced without changing the roughing-rolls; substantially as described.

13. The method of rolling angles, consisting in forming a flat blank having a ridge with flat legs or flanges in open passes, edging the flat blank to fix its width, then reducing the blank, and then bending it into angle form; substantially as described.

817,346. **ELECTRIC HAND-LAMP.** HERMAN F. STAEHLBECK, Philadelphia, Pa. Filed Aug. 9, 1905. Serial No. 273,366.



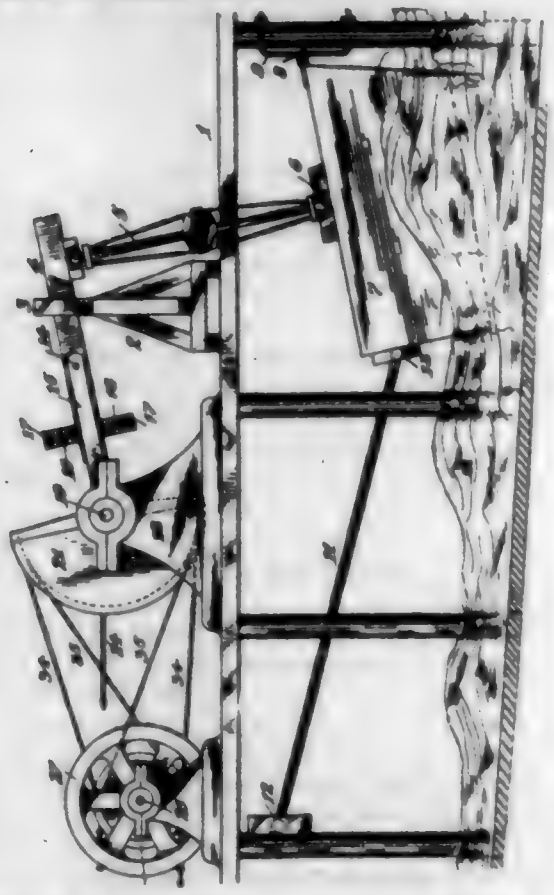
Claim.—1. In an electric hand-lamp, in combination, a lamp, a socket carrying said lamp, said socket being interiorly threaded at its base, and a two-part plug furnished upon its interior with grooves to receive each one of the line-wires leading to the lamp-terminals, and being exteriorly threaded so as to be screwed into the base of said socket.

2. In an electric hand-lamp, in combination, a lamp, a socket carrying said lamp, said socket being interiorly threaded at its base and a two-part plug furnished upon its interior with two grooves to receive each one of the line-wires leading to the lamp-terminals, said plug being exteriorly threaded at one end so as to be screwed into the base of said socket and furnished at the other end with a collar to serve as a handle.

3. In an electric hand-lamp, in combination, a lamp, a socket carrying said lamp, said socket being interiorly threaded at its base,

a two-part plug furnished upon its interior with two grooves to receive each one of the line-wires leading to the lamp-terminals, said plug being externally threaded so as to be screwed into said socket, and means for removably securing one of the parts of said plug to the other so as to insure the proper relation of said parts.

817,347. WAVE-MOTOR. FRED STARR, San Francisco, Cal. Filed July 28, 1905. Serial No. 270,684.



Claim.—1. In a wave-motor, a stationary structure, a driving-shaft thereon having a double clutch mechanism, a float exposed to the waves, a member universally jointed to the float and movable vertically in relation to the structure, and a loose or flexible connection between said member and the clutch, all constructed and arranged so that the power-shaft derives a continuous rotation in the same direction from the erratic movement of the float transmitted through said freely-moving member.

2. In a wave-motor, a stationary structure, a driving-shaft thereon having a double clutch mechanism, a float exposed to the waves, a member universally jointed to the float so as to have both reciprocating motion and free oscillation in all directions, and a loose or flexible connection between said member and the clutch, all constructed and arranged so that the power-shaft derives a continuous rotation in the same direction from the erratic movement of the float transmitted through said freely-moving member.

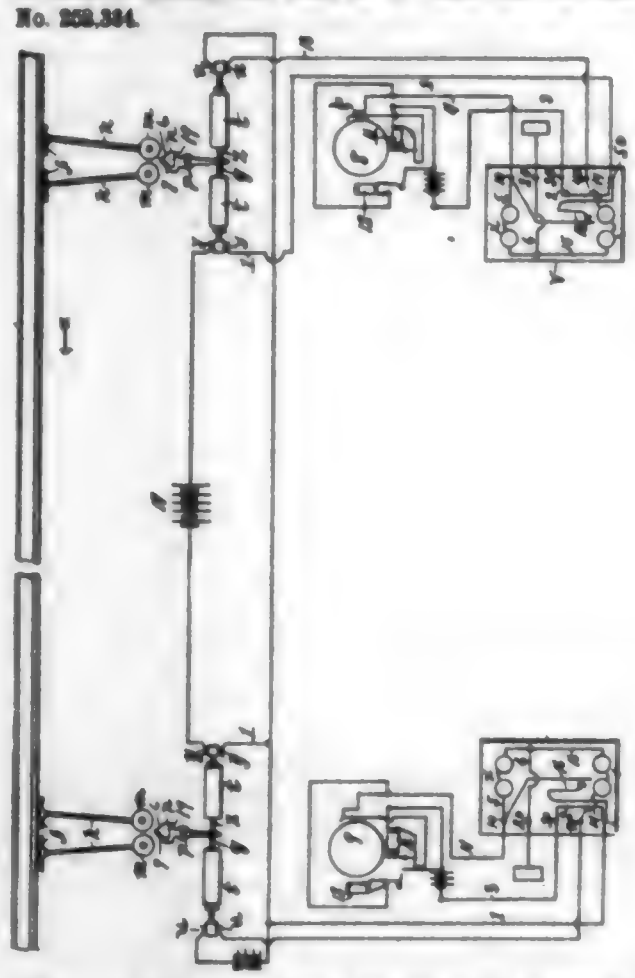
3. In a wave-motor, a stationary pier or structure, a float beneath the same exposed to wave action, a substantially rectangular frame having a universal-joint connection with the float and being freely movable in all directions, a power-shaft on the structure, separate loose pulleys on said shaft inclosed by said frame, and a double-acting clutch upon said shaft; whereby the motions of the float transmitted through said frame, cause said shaft to rotate continuously in the same direction.

4. In a wave-motor, a float having its seaward end provided with a V-shaped recess having inclined sides whereby the water is collected and exerts a wedging and lifting action within said recess.

5. In a wave-motor, a float, a motor-shaft provided with a rigid member, a two-part flanged casing loosely mounted on the shaft and inclosing said member, each of the casing parts being adapted to engage with the rigid member while the other casing part is rotating in the opposite direction, a frame flexibly connected with the float at one end and having its sides upon opposite sides of the casing, and cables connected with the ends of the frame and encircling said casing parts in opposite directions and retained thereon by the flanges of he casing.

6. In a wave-motor, a float, a motor-shaft provided with a rigid member, a two-part flanged casing loosely mounted on the shaft and inclosing said member, each of the casing parts being adapted to engage with the rigid member while the other casing part is rotating in the opposite direction, a frame flexibly connected with the float at one end and having its sides upon opposite sides of the casing, cables connected with the ends of the frame and encircling said casing parts in opposite directions and retained thereon by the flanges of the casing, and eyebolts for adjusting the tension of the cables independently of each other.

817,348. TRACK INSTRUMENT FOR AUTOMATIC RAILWAY BLOCK-SIGNALING. ALFRED J. STROKER, Detroit, Mich., assignor to Helen P. Nichols, New York, N. Y. Filed Mar. 27, 1905. Serial No. 252,334.



Claim.—1. In a railway track instrument an oscillatory device adjacent to a railway-rail arranged to swing vertically toward and from the railway-rail and a circuit-breaker actuated by said device.

2. In a railway track instrument a vertically-oscillatory device adjacent to the railway-rail arranged to swing toward and away from the rail, a circuit-breaker, and a rod actuated by the movement of said device to actuate the circuit-breaker.

3. In a railway track instrument, an oscillatory device adjacent to a railway-rail arranged to swing toward and away from the railway-rail, an oscillatory lever actuated by said device, and a circuit-breaker actuated by the movement of said lever.

4. In a railway track instrument an oscillatory device adjacent to the railway-rail, an oscillatory lever actuated by said device, and a reciprocatory contact-bar actuated by the movement of said lever.

5. In a railway track instrument, an oscillatory device adjacent to the railway-rail, an oscillatory lever actuated by said device, and contact-bars actuated in opposite directions by the movement of said lever.

6. In a railway track instrument, oscillatory devices adjacent to the railway-rail, an oscillatory lever actuated by each of said devices, and circuit-breaking mechanism actuated by said lever.

7. In a railway track instrument oscillatory devices located adjacent to a railway-rail, an oscillatory lever, a rod connected with each of said devices to actuate said lever, and circuit-breaking mechanism actuated by said lever.

8. In a railway track instrument, oscillatory devices located adjacent to a railway-rail, an oscillatory lever having converging lateral surfaces at one end thereof, and means actuated by said devices to contact with said surfaces of the lever on opposite sides thereof.

9. In a railway track instrument, an oscillatory device located adjacent to a railway-rail arranged to swing toward and away from the rail, a contact circuit-breaking bar, and mechanism actuated by said device to actuate said bar.

10. In a railway track instrument, a clamping device, an oscillatory device located adjacent to a railway-rail, fulcrumed to said clamping device and arranged to swing toward and away from the rail, and circuit-breaking mechanism actuated by said oscillatory device.

11. In a railway track instrument, a clamping device constructed to be clamped upon a railway-rail, an oscillatory device fulcrumed to the clamping device to swing toward and from the the rail, and circuit-breaking mechanism actuated by said oscillatory device.

12. In a railway track instrument, a vertically oscillatory device adjacent to the railway-rail to swing toward and from the rail, circuit-breaking mechanism actuated by said device, and means to restore said device to normal position.

13. In a railway track instrument, a clamping device, constructed to be clamped upon a railway-rail, an additional clamping-arm on the opposite side of the rail and secured to said clamping device, an oscillatory device fulcrumed to the clamping device arranged to swing toward and away from the rail, circuit-breaking mechanism, means actuated by the oscillatory device to actuate the circuit-breaking mechanism, and means to restore the oscillatory device to normal position.

14. In a railway track instrument, a clamping device to engage a railway-rail, a clamping-arm to engage the rail on the opposite side thereof and secured to the clamping device, an oscillatory device fulcrumed to the clamping device, a yielding bolt passed through the web of the rail and engaging the oscillatory device, circuit-breaking mechanism, and means actuated by said oscillatory device to actuate the circuit-breaking mechanism.

15. In a railway track instrument, two oscillatory devices located adjacent to the railway-rail, an oscillatory lever, rods connected with said oscillatory devices respectively to contact with opposite sides of said lever at one end thereof to actuate the lever in opposite directions, and circuit-breaking mechansims actuated by the movement of said lever.

16. In a railway track instrument, an oscillatory device located adjacent to a railway-rail, an oscillatory lever, means actuated by said device to actuate said lever, circuit-breaking mechanism actuated by said lever, and means to restore the circuit-breaking mechanism to normal position.

17. In a railway track instrument, two oscillatory devices located adjacent to the railway-rail, an oscillatory bar connected with each of said devices respectively to engage one end of said lever to actuate the lever in opposite directions, oppositely-arranged circuit-breaking bars actuated in opposite directions by said lever, and means to restore each of said bars to normal position.

18. In a railway signaling system the combination of registering mechanism comprising electromagnets and an electric circuit connected therewith, signaling mechanism electrically connected with the registering mechanism, and a track instrument to control the electric circuit connected with the registering mechanism, said track instrument comprising an oscillatory device located adjacent to a railway-rail to swing toward and from the rail, and circuit-breaking mechanism actuated by said oscillatory device.

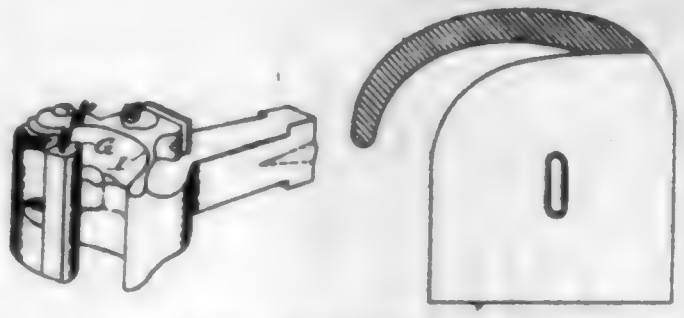
19. In a railway signaling system the combination of registering mechanisms located at desired distances the one from the other, an electric circuit connected with each of said mechanisms, a signaling mechanism electrically connected with each of the registering mechanisms, track instruments located at desired distances apart the one from the other to control the circuits connected with said track instruments, each comprising an oscillatory device located adjacent to a railway-rail to swing toward and from the rail, and a circuit-breaker actuated by each of said oscillatory devices.

20. A railway block-signal system comprising two track instruments arranged at each end of the block and adjacent to a railway-rail, each arranged to be actuated by each car-wheel passing on the adjacent rail, a circuit-breaker for each track instrument, an electric circuit normally connected with each of the circuit-breakers, and two sets of registering mechanisms arranged to be actuated by said circuits, the registering mechanisms being actuated in opposite directions by the change of the direction of the car-wheel.

21. A railway block-signal system comprising two track instruments arranged at each end of the block and adjacent to a railway-rail, each arranged to be actuated by each car-wheel passing on the adjacent rail, a circuit-breaker for each track instrument, an electric circuit normally connected with each of the circuit-breakers, and two sets of registering mechanisms arranged to be actuated by said circuits, the registering mechanisms being actuated in opposite directions by the change of the direction of the car-wheel, and electromagnetic signaling mechanisms arranged to be actuated by said registering mechanism.

817,349. EMERGENCY KNUCKLE-SLEEVE. WILLIAM F. TAYLOR, Superior, Wis. Filed Mar. 17, 1905. Serial No. 250,682.

Claim.—1. A knuckle-sleeve having a square or flat portion and an extended curved portion, and a horizontal top or flap extended from or connected with the flat portion, but separate and distinct from the curved portion, substantially as and for the purpose specified.

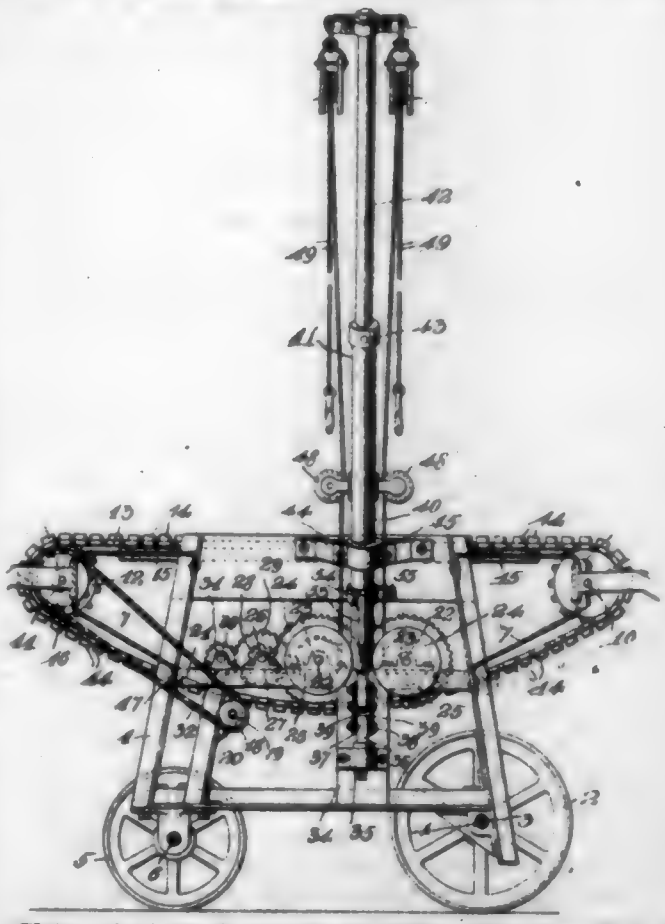


2. A knuckle-sleeve having a square or flat portion and an extended curved portion, the flat portion being thicker than the curved portion, and a horizontal top or flap extended from or connected with the flat portion, but separate and distinct from the curved portion; substantially as and for the purpose specified.

3. A knuckle-sleeve having a square or flat portion and an extended curved portion, and a horizontal top or flap extended from or connected with the flap portion, but separate and distinct from the curved portion, and a loop attached to the top portion of the top with chain attached to loop, the other end of chain being provided with hook: substantially as and for the purpose specified.

4. A knuckle-sleeve having a curved portion with a top or flap extended from or connected with the sleeve horizontally at its upper end where the sleeve fits onto the interior side of the knuckle.

817,350. TRUCK. PATRICK TWOMEY, New York, N. Y. Filed Dec. 18, 1905. Serial No. 292,371.

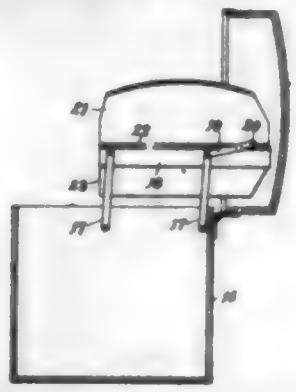


Claim.—1. A truck having a flexible endless traveling platform, a vertically-disposed pivot-pin mounted on one side of the truck, a bracket-arm projecting from the same side of the truck, and a derrick comprising a lower member and an upper member, the latter slidably connected to the lower member, said lower member being pivotally connected to the upper end of the pivot-pin and detachably secured to the bracket-arm and held thereby in an inclined position, said pivot-pin and the connection between the same and the lower member of the derrick adapting the derrick to be disposed in substantially a horizontal position and lowered from the truck.

2. A truck having a flexible endless traveling platform, a vertically-disposed pivot-pin mounted on one side of the truck, a bracket-arm projecting from the same side of the truck, a derrick having its lower portion pivotally connected to the said pivot-pin for move-

ment in a vertical plane and detachably connected to the bracket-arm, and a supporting-leg having its upper end pivotally connected to the lower portion of the derrick, substantially as described.

817,351. TRUNK. JOHN A. H. VILLMOW, Milwaukee, Wis. Filed Nov. 12, 1904. Serial No. 232,287.



Claim.—1. In combination with a trunk having a hinged cover, a supporting means mounted to move within the trunk and having connection with the cover whereby the opening of the cover will raise the supporting means, and a pair of trays mounted on said supporting means, said supporting means constituting a support for the upper tray and a support for the lower tray rigid in their relations to each other so that the lower tray may be normally held beneath the upper tray immovable with relation thereto during the movements of the trunk-cover but when the trunk-cover is open the lower tray may be moved from beneath the upper tray by sliding on its support.

2. In combination with a trunk having a hinged cover, a pair of links pivoted to each end of the trunk-body, a support carried by each pair of links comprising a pair of supporting-surfaces fixed in their relation to each other, means for connecting the supports with the trunk-cover so that the supports will be moved by the movements of the trunk-cover, and a pair of trays mounted on the supporting-surfaces of the pair of supports one arranged beneath the other and immovable with relation thereto during the movements of the trunk-cover but capable of sliding on its supporting-surfaces from beneath the other tray.

3. In combination with a trunk having a hinged cover, a pair of links pivoted to the trunk-body at each end thereof, a support carried by each pair of links and comprising an upper and a lower supporting-surface fixed in their relation to each other, connecting-links connecting the supports with the cover whereby the supports are raised from and lowered into the trunk-body with the opening and closing of the cover respectively, a pair of trays mounted on the respective supporting-surfaces of the supports, one tray being positioned beneath the other and immovable with relation thereto during the opening and closing of the trunk but capable of being slid upon the supporting-surfaces of the supports to a position in advance of the upper tray when the trunk is open.

4. In combination with a trunk having a hinged cover, a pair of links pivoted to each end of the trunk, a support carried by each pair of links comprising an upper and a lower supporting-surface fixed in their relation to each other, connecting-links connecting the supports with the cover of the trunk so that the supports will be raised and lowered as the trunk-cover is opened and closed, a pair of trays mounted on the respective supporting-surfaces of each support, one arranged beneath the other, and means for locking the lower tray to the supports whereby the relation of the two trays to each other is fixed during the movements of the trunk-cover, said lower tray being adapted to disengage its locking means, and be moved from beneath the upper tray while the trunk is open.

5. In combination with a trunk having a hinged cover, a pair of links pivoted to each end of the trunk-body, a support pivoted to each pair of links and comprising an upper and a lower supporting-surface fixed in their relation to each other, connecting-links connecting the supports with the trunk-cover whereby the supports are raised and lowered by the opening and closing of the trunk-cover, a pair of trays mounted on the respective supporting-surfaces of the supports, and lugs on the trays engaging notches in their supporting-surfaces whereby the trays remain fixed in their relation to each other during the movements of the trunk-cover, the lower tray being adapted to have its lug released from its engagement with its supporting-surface and capable of being moved on its supporting-surface from its position beneath the upper tray while the trunk cover is open.

6. In combination with a trunk having a hinged cover, a pair of links pivoted to the trunk-body at each end thereof, a support mounted on each pair of links, connecting-links connecting the supports with the trunk-cover, and a pair of trays supported by the supports, said supports each comprising a track-plate J-shaped in cross-section with a hooked flange on the lower edge of the upper tray engaging its straight upper portion and a hooked flange on the upper edge of the lower tray engaging its hooked lower portion and slidably mounting the lower tray beneath the upper tray.

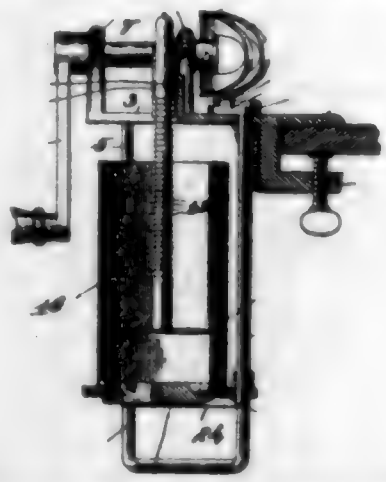
7. In combination with a trunk having a hinged cover, a pair of links pivoted to the trunk-body at each end thereof, a support mounted on each pair of links, connecting-links connecting the supports with the trunk-cover, and a pair of trays supported by the supports, said supports each comprising a track-plate J shape in cross-section with a hooked flange on the lower edge of the upper tray engaging its straight upper portion and a hooked flange on the upper edge of the lower tray engaging its hooked lower portion and slidably mounting the lower tray beneath the upper tray, and lugs formed on the hooked flanges of both trays engaging notches in the edges of the track-plate.

8. In combination with a trunk having a hinged cover, a pair of links pivoted to the trunk-body at each end thereof, a support mounted on each pair of links, connecting-links connecting the supports with the trunk-cover, and a pair of trays supported by the supports, said supports each comprising a track-plate J shape in cross-section with a strip of sheet metal on the lower edge of the upper tray bent to form a hook engaging the straight upper portion of the track-plate and a strip of sheet metal secured to the upper edge of the lower tray and bent to form a hook engaging the hooked lower portion of said track-plate and slidably mounting the lower tray beneath the upper tray, and downwardly-bent lugs formed on each of the metal strips adapted to releasably engage notches formed in the edges of the track-plate.

9. In a trunk having a lid hinged thereto, a folding tray-support comprising a pair of vertically-swinging arms pivoted to the opposite trunk-walls, a tray-supporting member pivotally coupled to the upper ends of said arms, a tray connecting each member with the lid, and suitable formations on the tray-supporting members for the support of a second tray beneath the top tray, substantially as set forth.

10. In a trunk having a lid hinged thereto, a folding tray-supporting frame comprising upper angle-pieces, a pair of vertically-swinging arms pivotally coupled thereto and to the opposite trunk-walls, a linked stay connecting each angle-piece with the lid, and ledges deflected inwardly from the horizontal walls of said angle-pieces, and disposed in a plane relatively below said horizontal walls, for the support of a second tray, substantially as set forth.

817,352. MACHINE FOR FORMING BUTTER PATTIES. GUSTAV A. WALSTEAD, Chicago, Ill. Filed Sept. 26, 1903. Serial No. 174,706.



Claim.—1. In a device of the class described a containing vessel, having in its bottom a plurality of apertures, means for exerting pressure axially of said apertures and means acting to direct the pressure in the upper portions thereof radially of the same at non-connected points in their circumferences.

2. In a device of the class described a containing vessel having a plurality of cylindric molding-apertures in the bottom thereof and curved channels opening into the top of said apertures.

3. In a device of the class described the combination with a containing vessel having an aperture at the bottom thereof, of means for exerting pressure in axial alinement with said aperture and a curved channel opening through the side of said aperture eccentrically

thereof and adapted to direct a part of said pressure in a line at an angle with the axis of said aperture.

4. The combination with a receptacle, having apertures in the bottom thereof provided with outwardly and upwardly directed non-connected channels adapted to deflect pressure in independent lines at angles to the axes of said apertures, a plunger-rod therein, a weighted detent adapted to engage said rod, cutting means beneath said receptacle and a cam adapted to operate said cutting means.

5. In a device of the class described the combination with a containing vessel having parallel sides of an apertured bottom therein, the sides of said aperture being parallel with the walls of the vessel, means for exerting pressure longitudinally of the vessel and means for deflecting a portion of said pressure in lines at an angle to the axes of said apertures, separated a distance from each other.

6. The combination with a containing vessel having cylindric apertures in the bottom thereof, of channels in the upper surface of said bottom opening into said apertures near the top thereof, said channels being directed to one side of the axes of said apertures, a plunger and means for operating said plunger to force material through said apertures.

7. The combination with a containing vessel having an apertured bottom of a frame adapted to support said vessel, a shaft journaled in said frame, a plunger in said vessel, detents carried on said shaft and adapted to operate said plunger, a cam on each end of said shaft and cutting means operated thereby.

8. The combination with a frame, of an apertured vessel thereon, a shaft journaled on said frame, a plunger in said vessel, a rod thereon provided with a plurality of notches and eccentric on said shaft, a detent thereon adapted to engage said rod, a cam on said shaft and cutting means on the bottom of said vessel operated thereby.

9. The combination with a frame, an apertured vessel removably engaged therein, a plunger in said vessel adapted to force material into said apertures, a drive-shaft journaled on said frame and eccentric thereon, a weighted detent operated by said eccentric and adapted to force plunger downwardly, a shaft carried on said frame, cutting means on the lower end thereof, a crank-arm on the upper end and a cam on said drive-shaft adapted to engage said crank-arm and operate said cutting means.

10. The combination of a containing vessel provided with molding-apertures, a plunger within said vessel and provided with pawl-engaging means, a reciprocating pawl in operative relation to said plunger, a cutter movable across the lower face of said bottom, and a grooved cam intermittently and alternately operating said pawl and cutter.

11. The combination of an apertured containing vessel, a crank-shaft, a reciprocating weighted pawl operated by an eccentric on said shaft, a plunger intermittently operated by said pawl, a laterally-bent cam mounted upon said shaft, and a cutter intermittently operated by said cam.

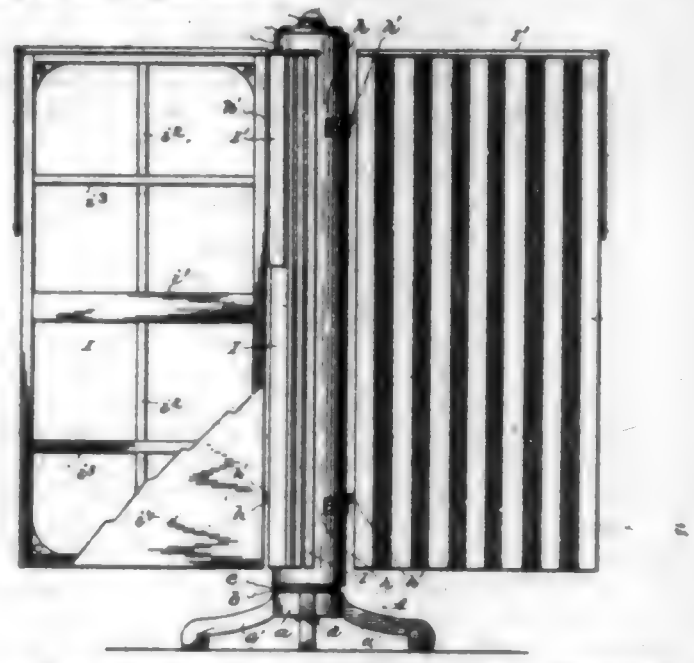
12. The combination of a containing vessel having an apertured bottom, imperforate portions of said bottom being channeled toward the exterior edge of an aperture, a plunger within said vessel and provided with pawl-engaging means, a reciprocating pawl in operative relation to said plunger, a cutter movable across the lower face of said bottom, a shaft thereon extending above said vessel and a laterally-bent cam adapted to rotate said shaft alternately in opposite directions and operate said cutter.

13. The combination of an apertued containing vessel, imperforate portions of the apertured wall inclining to the edge of an aperture, a crank-shaft, a reciprocating pawl operated by an eccentric on said shaft, a plunger intermittently operated by said pawl, a cam mounted upon said shaft, a shaft extending below said vessel, a crank-arm thereon adapted to engage said cam, and a cutter on said last-named shaft adapted to be intermittently operated by said cam.

817,353. DISPLAY-STAND. CHARLES H. WHEELER, Lincoln, Ill. Filed Jan. 30, 1905. Serial No. 243,276.

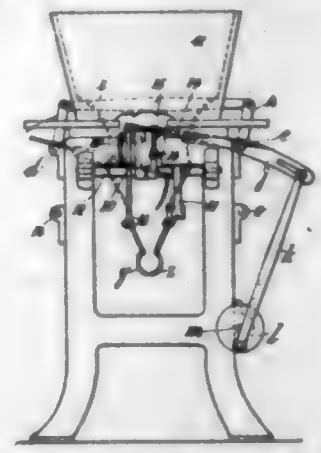
Claim.—1. In a display-stand for wall and ceiling papers, the combination with a rotary standard, of vertical frames for the wall-papers hinged thereto at one of their longitudinal edges, eyes secured transversely to the upper edges of said frames, leaves or wings having eyes in engagement with the aforesaid eyes and by which said leaves or wings may be swung to either side of the vertical frames, the leaves or wings carrying the ceiling-papers, and means for supporting the leaves or wings at substantially right angles to the frames, substantially as set forth.

2. In a display-stand for wall and ceiling papers, the combination with a rotary standard, of vertical frames for the wall-papers hinged to said standard, elongated eyes secured transversely to the upper edge of said frames to project beyond opposite sides thereof, leaves or wings having ceiling-papers pasted to opposite sides thereof and hinged to the vertical frames by eyes in loose engagement with the aforesaid elongated eyes, whereby said leaves or wings may be swung to either side of said frames and dropped down alongside the same, eyes at the outer edge of the vertical frames, and hooked rods pivoted to the leaves or wings and adapted to engage said eyes to support the leaves or wings at substantially right angles to the vertical frames, for the purpose set forth.



3. In a display-stand for the purposes set forth, the combination, of a support comprising a base having a bearing-plate, a tube or pipe rising from said base, a rod or bolt passed through the tube and base and having a washer or disk at its upper end, and a hollow post or standard rotatably mounted on the tube below the washer or disk and having a disk and plate bearing against the tube at the upper and lower ends thereof, respectively, together with vertically-disposed frames hinged to the hollow post or standard, leaves or wings hinged to the upper ends of the frames and adapted to be disposed at either side thereof, and means for supporting the leaves or wings in a horizontal position, as herein shown and described.

817,354. MACHINE FOR LOOSENING CUT-UP TOBACCO. JAKOB WOJCIECHOWSKI, Warsaw, Russia. Filed June 16, 1903. Serial No. 161,731.



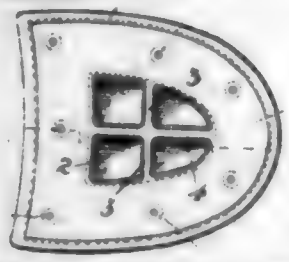
Claim.—1. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and adapted to coöperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of the said arms together, and means for rocking the said shafts.

2. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake adjustably secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and adapted to coöperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of the said arms together, and means for rocking the said shafts.

3. In a machine of the character described, the combination with a hopper, of means for loosening the cut-up tobacco comprising parallel rock-shafts, a rake secured at one end to each of the shafts and the opposite ends of the rakes projecting toward each other and

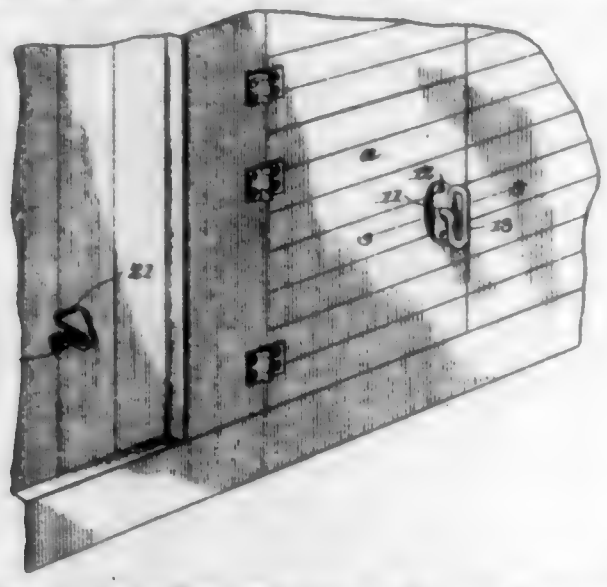
adapted to coöperate in the manner described, an arm secured at one end to each of the shafts, a rod connecting the other ends of the said arms together, means for rocking the said shafts, further rock-shafts arranged below the first-mentioned rock-shafts, a rake secured at one end to each of said second rock-shafts and their opposite ends projecting toward each other and adapted to coöperate as set forth, the last-mentioned drakes being below the first-mentioned rakes, and jointed arms connecting the sets of rock-shafts together in the manner and for the purpose specified.

817,355. RUBBER HEEL FOR BOOTS AND SHOES. CHARLES YARRAUS and FRANK A. HAMMER, Woonsocket, R. I. Filed Nov. 14, 1904. Serial No. 232,710.



Claim.—A heel for boots and shoes consisting of an elastic body portion provided with a series of nail-holes therein and having formed on its inner face a depression having an upwardly-projecting sealing-flange formed around the edge of said inner face, a rubber-coated plate seated in said depression and vulcanized into the body of the heel, said plate having formed therein a series of nail-holes which aline with the nail-holes in the body of the heel, substantially as described.

817,356. DOOR-HOLDING CATCH. GUST YOUNG, Hallock, Minn. Filed Apr. 14, 1905. Serial No. 255,583.



Claim.—1. In a device of the class specified, a locking member having an operating-handle, and a retaining-catch comprising a loop of yieldable material arranged for frictional engagement with the handle and provided with an inclined portion forming a cam for turning the handle to proper position before engagement with the retaining-surface of the catch.

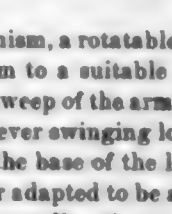
2. In a device of the class specified, a locking member having a revoluble handle, and a retaining-catch for engaging the handle, said catch having a cam-face for turning the handle to engaging position.

3. In a device of the class specified, a locking member having a revoluble handle, and a retaining-catch formed of a loop of spring metal, the side arms of the loop serving to receive the handle when the latter is in one position, said loop having a cam-face to engage with and turn the handle when the latter is presented to said catch at an angle to the side arms of the loop.

817,357. GAGE-LINE HOLDER. FREDERICK G. BUCKLEIN, Gunnison, Colo. Filed May 29, 1905. Serial No. 262,279.

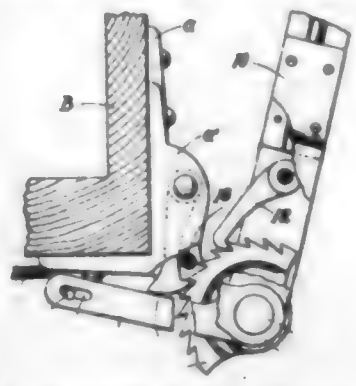
Claim.—1. A gage-line holder, comprising two wall-embracing members joined at right angles, one of said members having a line-attaching projection, and a guide-opening formed in said member at a point below the under face of the other member, and said other member having a wall-engaging terminal at its outer end provided with a guide-notch for the gage-line, substantially as described.

2. A gage-line holder, comprising two wall-embracing members joined at right angles, one of said members being provided with a line-attaching projection having a binding-notch therein, and a guide-opening formed in said member at a point below the under face of the other member, and said other member having a wall-engaging terminal notched to receive the gage-line, substantially as described.



3. A gage-line holder, comprising two wall-embracing members joined at right angles and having wall-engaging terminals, one member having at one end an outwardly-extending, struck-up portion formed with a tapering notch therein, and at its other end provided with a line-opening, and said other member having a notch in its wall-engaging terminal, substantially as and for the purpose set forth.

817,358. WAGON-BRAKE. HENRY ZWILLING and JOSEPH T. DROSTE, St. Louis, Mo. Filed June 24, 1905. Serial No. 266,783.



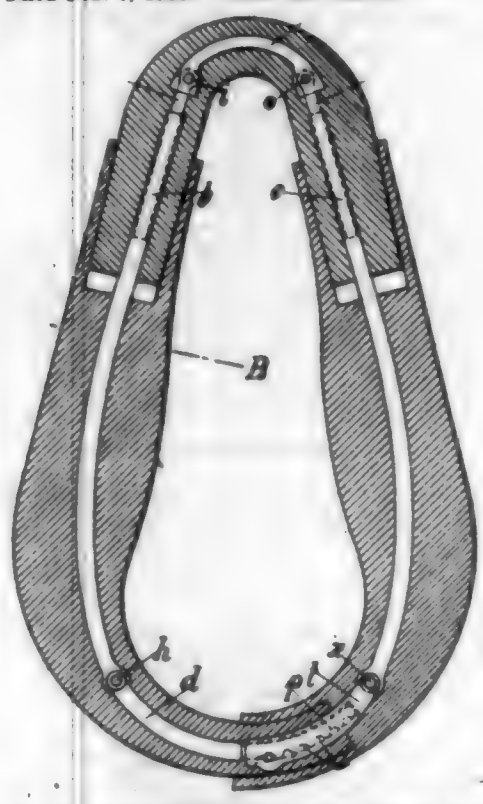
Claim.—1. In a brake mechanism, a rotatable shaft, an operating-lever swinging loosely about the axis of the shaft, a pawl pivoted at the base of the lever, a ratchet-disk carried by the shaft adjacent to the lever and adapted to be advanced by the pawl aforesaid, a locking-pawl normally engaging the ratchet-disk and having an axis of suspension above the arc described by the free end of the advancing pawl, the latter being adapted to trip the locking-pawl upon oscillation of the operating-lever in proper direction, substantially as set forth.

2. In a brake mechanism, a rotatable shaft, an arm on the same, a link connecting the arm to a suitable brake member, means for limiting or arresting the sweep of the arm for the released position of the brake, an operating-lever swinging loosely about the axis of the shaft, a pawl pivoted at the base of the lever, a ratchet-disk on the shaft adjacent to the lever adapted to be advanced by the pawl upon the tilting of the lever in one direction, means for automatically returning the operating-lever to its original position after any particular advance of the ratchet-disk, a locking-pawl normally engaging the ratchet-disk and having an axis of suspension above the arc described by the free end of the advancing pawl, the latter being adapted to trip the locking-pawl upon the oscillation of the lever from its normal position, in the opposite direction, substantially as set forth.

3. In a brake mechanism, a rotatable shaft, an arm on the same, a link connecting the arm to a suitable brake member, means for limiting the sweep of the arm for the released position of the brake, a bent operating-lever swinging loosely about the axis of the shaft, a pawl pivoted to the lever above its axis of oscillation, a ratchet-disk on the shaft in position to be engaged by the pawl and advanced thereby upon oscillation of the lever in one direction, a spring having one end fixed, and a free end passing loosely through the bent arm of the operating-lever for restoring the latter and its pawl to engaging position after any particular advance of the ratchet by the lever, substantially as set forth.

4. In a brake mechanism, a rotatable shaft, an operating-lever swinging loosely about the axis of the same, a pawl pivoted at the base of the lever, a ratchet on the shaft adapted to be engaged by the pawl, a locking-pawl normally engaging the ratchet and having an axis of suspension above the arc described by the free end of the advancing pawl, and means for guiding the free end of the advancing pawl into engagement with the locking-pawl for tripping the latter out of engagement with the ratchet upon oscillation of the operating-lever in proper direction, substantially as set forth.

817,359. **HORSE-COLLAR.** JOHANNES AHRENDT, Hamburg, Germany. Filed Feb. 7, 1905. Serial No. 244,559.

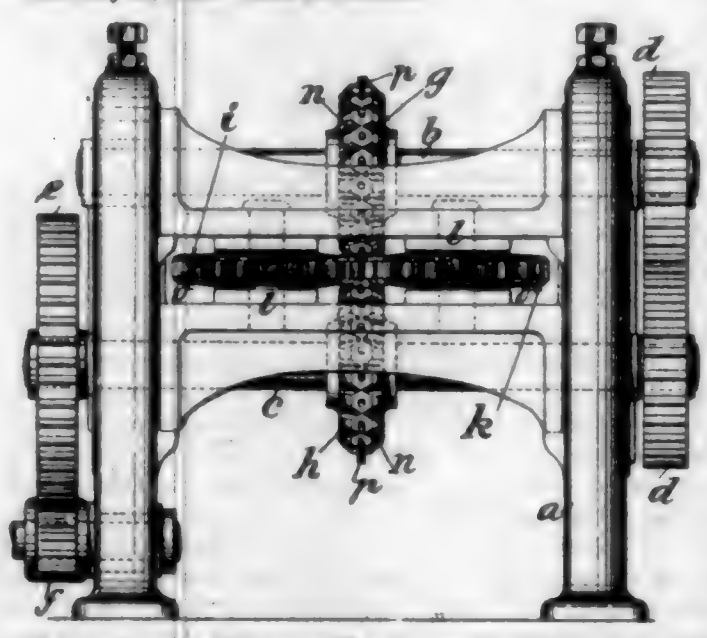


Claim.—1. In a horse-collar the combination of a sectional pad, sectional hames embedded therein, the pad-sections and hame-sections being mutually adjustable upon each other.

2. In a horse-collar the combination of a pad made in sections longitudinally and laterally, adjustable sectional hames embedded therein which are correspondingly adjustable.

3. In a horse-collar a sectional pad, sectional hames embedded therein, the parts being made telescoping and adjustable.

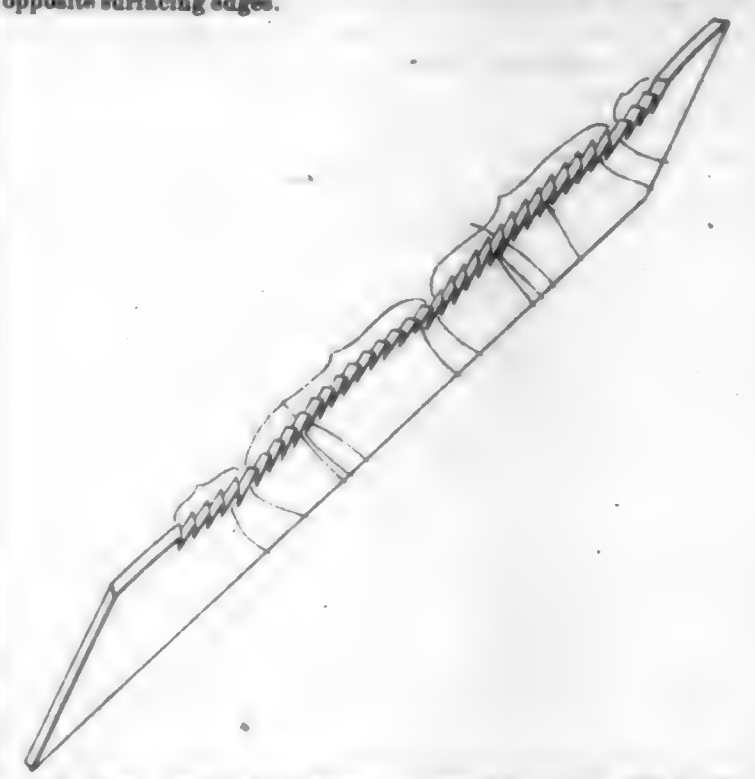
817,360. **MACHINE FOR ROLLING SCREW-NUT BLANKS.** THOMAS M. ANDERSON and ROSCOE WORNALD, Oldham, England. Filed May 15, 1905. Serial No. 260,467.



Claim.—In a machine for rolling screw-nut blanks, the combination of two pairs of rolls mounted at right angles to each other, one of the said pair of rolls having in the middle peripherally flat faces corresponding in outline with the nut-blanks to be rolled and between them V-recesses inclining from the middle to each side of the roll and the other pair of rolls V projections straight in the middle and continuing at an incline to each side of the roll, the inclined parts of the said projections engaging in the said recesses from the sides to the middle of the respective rolls and gearing the four rolls in themselves together and the straight part of the said projections being adapted to indent the nut-blank bar at each edge which indents meet each other and form two adjacent nut-blanks sides, all substantially as and for the purpose set forth.

817,361. **SAW.** ROBERT H. BROWN and JOSEPH HIRSCH, Los Angeles, Cal. Filed July 25, 1905. Serial No. 271,146.

Claim.—1. In a reciprocatory handsaw, a series of teeth having faces sloping equally to the apex, both the faces of the same tooth being parallel transversely of the saw-blade and the opposing faces of adjacent teeth throughout said series, also being parallel transversely of the saw, the teeth of said series terminating in diagonally opposite surfacing edges.



2. A saw provided with a convex section furnished with a series of contiguous teeth, all of the teeth of said series being provided with diagonally opposite surfacing edges, said teeth all being adapted to surface one and the same side of the kerf when the saw is moved forwardly, the rearward surfacing edges of said teeth adapted to surface the other side only of the kerf when the saw is moved rearwardly; and an adjacent convex section alike in all respects to the first-named section except that at each movement of the saw the teeth of the last-named section surface the side of the kerf opposite to that being surfaced by the first-named section.

3. In a reciprocatory handsaw, a continuous series of teeth, sloping equally to the apex, the teeth of said series provided with diagonally opposite surfacing edges, the forward surfacing edges of all the teeth in said series adapted to surface one side of the kerf when the saw is moved forwardly, and the rearward surfacing edges of the teeth in said series adapted to surface the other side of the kerf when the saw is moved rearwardly.

4. In a saw having an alternately concaved and convexed edge, the combination of a continuous series of teeth occupying the convex portion of an undulation, said teeth having their cutting-faces sloped to cut into one side only of the kerf, with a series of teeth occupying an adjacent convex portion of the saw edge, said last-named teeth having their cutting-faces sloped to cut into the other side of said kerf only.

5. A saw provided with a cutting edge divided into convex sections each made up solely of teeth having their cutting-faces sloping toward only one side of the saw, the teeth of alternate sections having reversely-sloped cutting-faces.

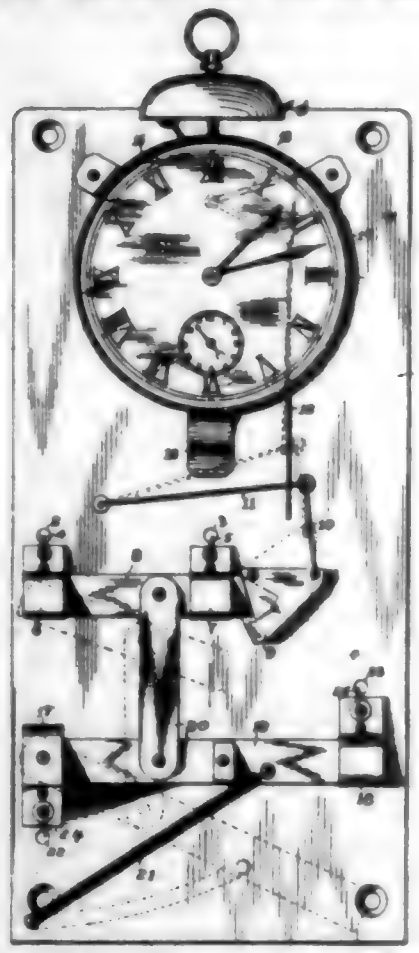
6. A saw provided with a cutting edge divided into sections, the teeth of alternate sections having reversed surfacing edges, whereby each section surfaces one side of the kerf when the saw is moved forwardly and the other side of the kerf when the saw is moved rearwardly, adjacent sections surfacing opposite sides of the kerf at each movement of the saw.

7. A saw provided with a cutting edge divided into convex sections, the teeth of alternate sections having reversed surfacing edges whereby each section surfaces one side of the kerf when the saw is moved forwardly and the other side of the kerf when the saw is moved rearwardly, adjacent sections surfacing opposite sides of the kerf at each movement of the saw.

8. A saw provided with teeth having diagonally opposite chisel-shaped cutting edges one on each side of the blade, one of said edges acting only as a surfacing or clearing edge, the other acting both as a surfacing-tool and a cutting edge for deepening the kerf, all of the teeth of each section having diagonally opposite surfacing edges, all the forward surfacing edges of the teeth in a series being adapted to surface one side of the kerf when the saw is moved forwardly, and all the rearward surfacing edges of the teeth in the seam series adapted to surface the other side of the kerf when the saw is moved rearwardly, the teeth of each series having their points sloped to deepen

one side of the kerf only, and the teeth of an adjacent series having all their points sloped to deepen the other side of the kerf.

817,362. AUTOMATIC TIME CIRCUIT-BREAKER. EDMOUND T. BROWNING, Stockton, Cal., assignor of one-half to William B. Brown, Stockton, Cal. Filed Feb. 8, 1905. Serial No. 244,696.



Claim.—1. In a device of the kind described the combination of a switchboard having the holes 2 and 3, the spring-plates 6 and 7, the conductive connecting-bar 8 pivotally connected under the plate 6 and adapted to also be inserted under the plate 7, and means for locking said bar 8 under the plate 7, means for releasing said locking means and for automatically pulling said bar 8 out of engagement with said plate 7, as set forth.

2. In a device of the kind described, the combination of a switchboard proper provided with the holes 2 and 3, the plate 6 and 7, the bar 8 pivotally connected under the plate 6 and adapted to engage with the plate 7, the plates 17 and 18, the bar 19 pivotally connected under the plate 17 and adapted to engage with the plate 18, the non-conductive link 20, connecting the bars 8 and 19, means for holding the bars 8 and 19 in engagement with the plates 7 and 18 respectively, and means for automatically pulling them out of engagement with said plates, as set forth.

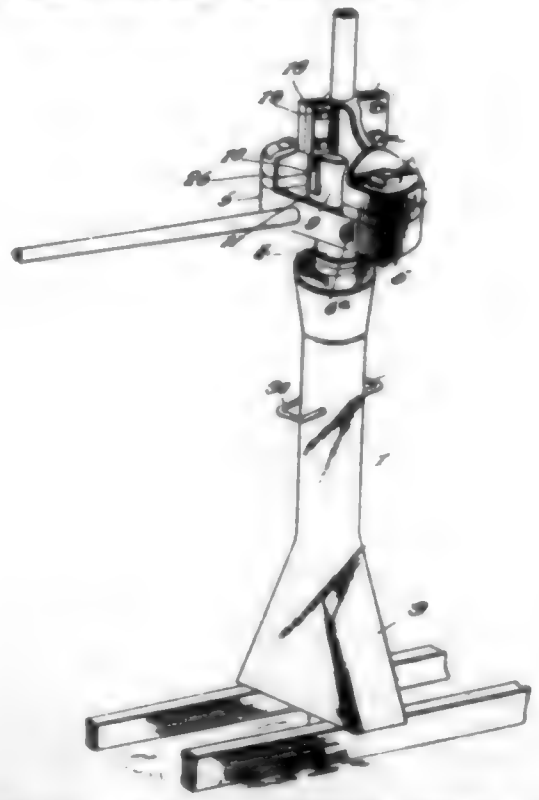
3. In a device of the kind described the combination of a switchboard proper, an alarm-clock removably attached to said board, a lever secured to the alarm-shaft of said alarm-clock, a link depending downward from said lever and engaging with a lever 11 fulcrumed on the said board below said clock, the non-conductive catch 9 pivotally secured to the board 1, the link 10 connecting said catch to said lever 11, and a circuit-breaking mechanism arranged on said board and adapted to be held in connection by the catch 9, said circuit-breaking mechanism comprising spring-plates 6 and 7, pivoted plate 8, non-conducting-link 20, pivoted bar 19, and spring 21 and means for releasing it automatically from such engagement, as set forth.

4. In a device of the kind described, the combination of the board 1, provided with the holes 2 and 3, the spring-plates 6 and 7, the bar 8 pivotally connected under the plate 6 and adapted to engage with the plate 7, the non-conductive catch 9 pivotally secured to the board 1 and adapted to hold the bar 8 in engagement with the plate 7, and means for automatically releasing said catch from said bar, and means for pulling said bar out of engagement with said plate when so released.

5. In a device of the kind described the combination of the board 1, the spring-plates 6 and 7 secured to the board 1, the conductive bar 8 pivotally secured under the spring-plate 6 and adapted to engage with the spring-plate 7, the non-conductive catch 9 pivotally secured to the board 1 and adapted to hold the bar 8 in engagement with the spring-plate 7, the lever 11 fulcrumed on the board 1 and connected to the catch 9 by means of a link 10, the clock 14 removably secured to the board 1, the lever 13 secured to the alarm-shaft of the said clock, and the link 12 removably connecting the lever 13 to the lever 11, as set forth.

6. In a device of the kind described the combination of the board 1, the spring-plates 6 and 7, the connecting-bar 8 pivotally secured under the plate 6 and adapted to engage with the plate 7, the non-conductive catch 9 pivotally secured to the board 1 and adapted to hold the bar 8 in engagement with the plate 7, the lever 11 fulcrumed to the board 1 and connected to the catch 9 by means of the link 10, the spring-plates 17 and 18 secured to the board 1 below the plates 6 and 7, the bar 19 pivotally secured between the plate 17 and adapted to engage with the plate 18, the link 20 pivotally connecting the bar 19 to the bar 8, and the spring 21 secured to the board 1 at one end and to the bar 19 at the other end, as set forth.

817,363. PIPE-PULLING JACK. HUGH B. CUNNINGHAM, Arnot, Pa. Filed Dec. 11, 1905. Serial No. 291,342.



Claim.—1. A device of the character described, comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of the rod will effect a longitudinal movement thereof with respect to the standard, a clamp arranged to be secured to a pipe or the like above said rod, and means for connecting said clamp to said rod, and a swivel-head mounted on the rod below the clamp.

2. A device of the character described, comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of the rod will effect a longitudinal movement thereof with respect to the standard, a clamp arranged to be secured to a pipe or the like above the rod, and a swivel-head mounted on the rod and designed to support the clamp.

3. A device of the character described comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of said rod will effect a longitudinal movement thereof with respect to the standard, the said rod carrying a yoke, a clamp constructed in two sections designed to be clamped together around a pipe or casing, and an adjustable connection between said clamp and said yoke.

4. A device of the character described comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of said rod will effect a longitudinal movement thereof with respect to the standard, said rod being provided with a vertically and transversely apertured yoke, the transverse apertures being designed to receive a turning-tool, a sectional clamp designed to embrace a pipe or casing and provided with clamping means, and bolts working in the vertical apertures of the yoke and connected to said clamping-sections as and for the purpose set forth.

5. A device of the character described comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of said rod will effect a longitudinal movement of the same with respect to the standard, a clamp carried by said rod, the upper end of said rod being formed with an annular groove, and a head surround-

ing the upper end of the rod and provided with a latch-lug working in said groove to connect the head to the rod.

6. A device of the character described comprising a hollow post or standard, a hollow rod mounted therein, means whereby a rotation of said rod will effect a longitudinal movement of the same with respect to the standard, a clamp carried by said rod, the upper end of said rod being formed with an annular groove, and a head surrounding the upper end of the rod and provided with a latch-lug working in said groove to connect the head to the rod, the upper face of said head being provided with radial notches or recesses.

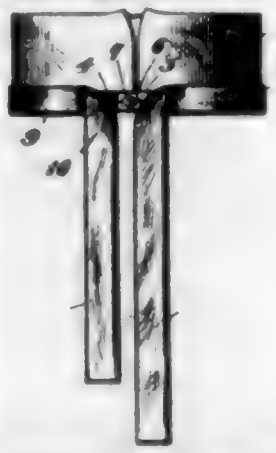
7. A device of the character described comprising a hollow post or standard, a rod mounted therein, means whereby a rotation of the rod will effect a longitudinal movement thereof with respect to the standard, the upper end of the rod being provided with a yoke which is formed at its opposite end with apertures, a sectional clamp designed to embrace a pipe or casing and provided with clamping means for binding itself thereto, each section of said clamp being provided with a downwardly-extending finger having a vertical aperture therein, and bolts working through the apertures in the yokes and the aperture in said finger, whereby to secure the clamp to the head, as and for the purpose set forth.

8. A device of the character described comprising a hollow post or standard, a hollow rod mounted therein, means whereby a relative rotation of said parts will effect a longitudinal movement of the rod with respect to the standard, a clamp arranged to be secured to a pipe or the like above the rod, and a swivel-head supported on said rod and provided in its upper surface with notches, as and for the purpose set forth.

9. A device of the character described, comprising a hollow post or standard, a rod mounted therein, means whereby a rotation of the rod will effect a longitudinal movement thereof with respect to the standard, the upper end of the rod being provided with a yoke, a sectional clamp designed to embrace a pipe or casing and provided with clamping means for binding itself thereto, each section of said clamp being provided with a downwardly-extending finger, means for connecting said fingers to the said yoke, and filler-pieces arranged to be inserted between the said fingers and yoke, as and for the purpose set forth.

10. A device of the character described, comprising a hollow post or standard, a rod mounted therein, means whereby a rotation of the rod will effect a longitudinal movement thereof with respect to the standard, a sectional clamp provided with laterals designed to embrace a pipe or casing with the laterals abutting against each other, means for connecting said laterals together to bind and clamp them to a pipe or casing, and means for connecting said clamp to said rod.

817,364. **NECKTIE.** CHARLES W. T. DAVIES, New York, N. Y., assignor to The Good Form Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Mar. 5, 1904. Renewed Mar. 9, 1906. Serial No. 305,132.



Claim.—1. The combination with a necktie having superposed plies and provided with an opening extending completely through both of said plies, of a fastening member having means for engaging the collar-button, said fastening member having a portion located between the plies of the necktie and anchored or secured to the necktie and which is adapted to be brought through the opening in the necktie to project from either side of said necktie.

2. The combination with a necktie having superposed plies and an opening extending entirely through said plies from side to side of the necktie, of a tab having an eyelet or opening for engagement with the collar-button, said tab having a portion thereof secured or anchored between the plies of the necktie, and said tab being adapted to be brought through the opening in the necktie to either side of said necktie.

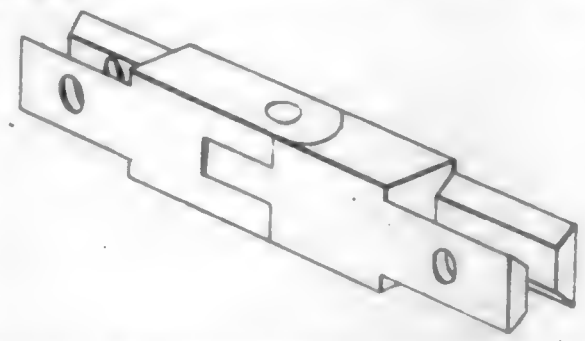
3. The combination with a necktie consisting of superposed plies, each having an opening therethrough, of a tab having an opening to engage the collar-button, said tab having a portion thereof located between the plies of the necktie and anchored or fastened to the necktie and having a free portion adapted to be brought out through either of the openings aforesaid.

4. A necktie having openings or eyelets located substantially at the junction of the neckband and its respective tying ends, and fastening-tabs which are respectively secured or anchored to the necktie adjacent the eyelets or openings aforesaid and each having a free portion, for engagement with the front collar-button, adapted to be passed through the openings or eyelets so as to lie on either side of the necktie.

5. A necktie having buttonhole-tabs at its neckband portion and slits for the tabs to be passed to either side of the tie, said tab being sewed within the plies of the tie to conceal their ends.

6. A necktie having buttonhole-tabs at its neckband portion and slits for the tabs to be passed to either side of the tie, said tabs being sewed within the plies of the tie to conceal their ends, and being made elastic to secure a proper fit for the tie.

817,365. **SWITCH-POINT CONNECTOR.** WILLIE E. DAVIS and WILLIAM W. NORMAN, Wyndal, W. Va. Filed Jan. 2, 1906. Serial No. 294,195.



Claim.—1. Means for connecting a switch-point to its lead-rail, comprising two hinged members each of which is provided with a solid portion and at its outer end with two longitudinally-extending spaced-apart side straps beveled at its upper and lower edges and designed to embrace the web of the rail and switch-point and snugly fitting under and upon the head and base flanges respectively of the same, and means for securing said straps to the said switch-point and rail.

2. Means for connecting a switch-point to its lead-rail, comprising two hinged members each of which is provided with longitudinally-extending straps designed to embrace the web of the rail and switch-point and means for securing said straps to the same.

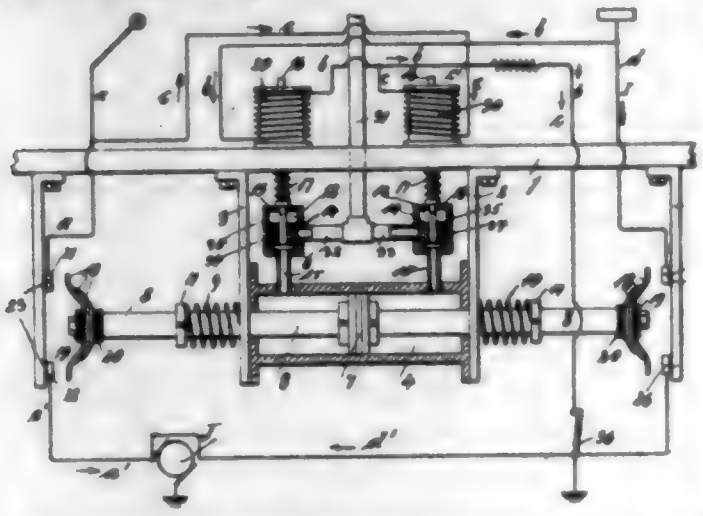
3. Means for connecting a switch to its lead-rail, comprising two members provided with solid portions hinged together by a knuckle-joint to swing in a longitudinal plane and each provided at its ends with spaced-apart side straps designed to embrace the rail-webs, and bolts extending through said straps and webs, as and for the purpose set forth.

4. Means for connecting a switch-point to its lead-rail, comprising two members provided with solid portions hinged together by a knuckle-joint and provided with correspondingly-curved meeting edges and provided at their ends with spaced-apart longitudinally-extending side straps beveled at their upper and lower edges and designed to embrace the webs of the switch-point and rail and fit snugly underneath and above the head and base flanges respectively of the same, and bolts passing through said straps and webs to secure the same together, the solid portions of said members having their upper surfaces flush with the treads of the switch-point and rail, as and for the purpose set forth.

817,366. **ELECTRIC SWITCH FOR ELECTRIC-RAILROAD CARS.** OTTO FRANK and PETER J. MCCAFFREY, Brooklyn, N. Y. Filed Apr. 1, 1905. Serial No. 253,209.

Claim.—1. An electric switch for electric-railroad cars which are driven partly by overhead and partly by underground power, comprising an air-cylinder, a piston in the latter, a piston-rod projecting outward through both sides of the cylinder, electric contact-pieces mounted on the free ends of the piston-rod, stationary contact-pieces opposite thereto, electrically-operated valves controlling the inlet and outlet of the compressed air of the cylinder, pipe connections conveying the compressed air from a certain source into the valves, electric connections of the underground and overhead re-

spectively with the stationary contact-pieces, electric connections of the latter with the incandescent light or motor and the ground, and electric means for the automatic operation of the valves, substantially and for the purpose as specified.



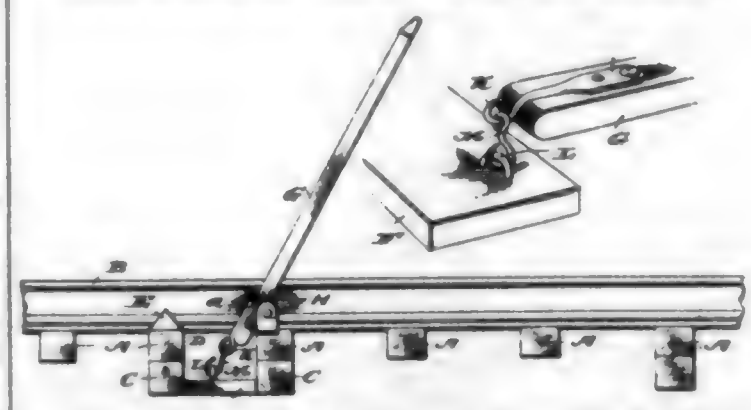
2. An electric switch for electric-railroad cars which are driven partly by overhead and partly by underground power, comprising an air-cylinder, a piston therein, a piston-rod projecting outward through both sides of the cylinder, electric contact-pieces upon the free ends of the piston-rod insulated from the latter, stationary contact-pieces opposite thereto, electrically-operated valves controlling the inlet and outlet of the compressed air of the cylinder, electromagnets arranged opposite the valves, the valve-rods being adapted to work as armatures in said electromagnets, electric connections of the electromagnets with the underground and overhead respectivley and the ground, electric connections of the stationary contact-pieces with the underground and overhead respectively and the incandescent light or motor and the ground, and pipe connections conveying the compressed air from a certain source into the valves, substantially and for the purpose as specified.

3. An electric switch for electric-railroad cars which are driven partly by overhead and partly by underground power, comprising an air-cylinder, a piston therein, a piston-rod projecting outward through both sides of the cylinder, suitable packings for the piston and the piston-rod, contact-springs upon the free ends of the piston-rod and means for insulating said contact-springs from the rod, stationary contact-shoes opposite the contact-springs, said shoes and springs being adapted when in engagement to close the circuit passing through the incandescent light or motor, electric connections of the stationary contact-pieces with the underground and overhead respectivly and electric connections of said stationary contact-pieces with the incandescent light or motor and the ground, electrically-operated valves controlling the inlet and outlet of compressed air of the cylinder, pipe connections conveying the compressed air from a certain source to the valves, electric means for automatically operating the valves and means for the automatic discharge of the compressed air from the cylinder, substantially and for the purpose as specified.

4. An electric switch for electric-railroad cars which are driven partly by overhead and partly by underground power, comprising an air-cylinder, brackets supporting said air-cylinder from the car, a piston working in said air-cylinder, a piston-rod projecting inward through both sides of the cylinder, springs tending normally to press the piston inward, contact-springs upon the free ends of the piston-rod, insulating means for said contact-springs, brackets opposite the two ends of the cylinder, a pair of contact-shoes attached to each of said brackets, and means for insulating the contact-shoes from the latter, electrically-operated valves automatically controlling the inlet and outlet of the compressed air of the cylinder, electric means for operating the valves and electric connections for the stationary contact-shoes with the overhead and underground and electric connections for the same with the incandescent light or motor and ground, means for conveying the compressed air from a certain source into the valves and means for the automatical discharge of the compressed air from the cylinder, substantially and for the purpose as specified.

5. An electric switch for electric-railroad cars which are driven partly by overhead and partly by underground power, comprising an air-cylinder, brackets supporting said air-cylinder from the car, a piston working in said air-cylinder, a piston-rod projecting inward through both sides of the cylinder, springs tending normally to press the piston inward, contact-springs upon the free ends of the piston-rod, insulating means for said contact-springs, brackets opposite the two ends of the cylinder, a pair of contact-shoes attached to each of said brackets, and means for insulating the contact-shoes from the latter, electrically-operated valves automatically controlling the inlet and outlet of the compressed air of the cylinder, electromagnets operating the air-valves, the valve-rods working as armatures in said electromagnets, springs tending normally to keep the valves closed, electric connections for the stationary contact-shoes with the overhead and underground and electric connections for the same with the incandescent light or motor, means for conveying the compressed air from a certain source into the valves and means for the automatical discharge of the compressed air from the cylinder, substantially and for the purpose as specified.

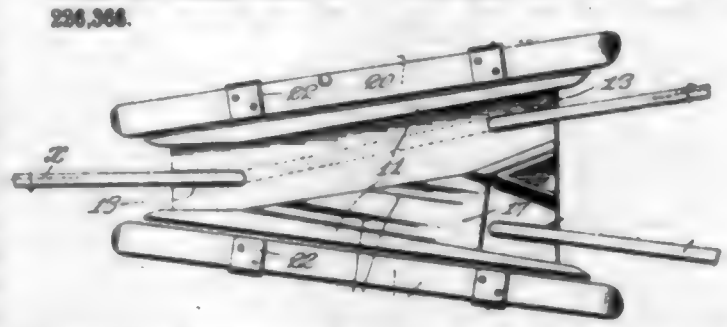
817,367. CATTLE-GUARD. JOHN W. GORSUCH and DAVID A. BOGUE, La Junta, Colo. Filed Aug. 28, 1905. Serial No. 275,971.



Claim.—1. In a railway cattle-guard, the combination of a platform movable bodily in a vertical direction in the space between two sleepers or ties of a railway and having eyes on its upper side, vertically-swinging pickets extending in the direction of the length of the railway and having comparatively short rear arms the ends of which are disposed above the platform and also have hooks at the said ends, and links having eyes interlocked with the eyes of the platform and the hooks of the pickets.

2. In a railway cattle-guard, the combination of a platform movable bodily in a vertical direction in a space or pit between two sleepers or ties of a railway and having eyes on its upper side, bars E, triangular in cross-section arranged at the crossing side of the said space or pit and also arranged with their apices uppermost, sections of vertically-swinging pickets extending in the direction of the length of the railway and having comparatively short rear arms the ends of which are disposed above the platform and also have hooks at the said ends, standards arranged at one side of the said space or pit, rocking bars fixed to the pickets and journaled in the said standards, and links having eyes interlocked with the eyes of the platform and the hooks of the pickets.

817,368. OVERHEAD-TROLLEY SUPPORT AND SWITCH. BYRON E. GREEN, Ilion, N. Y. Filed Sept. 28, 1904. Serial No. 226,366.



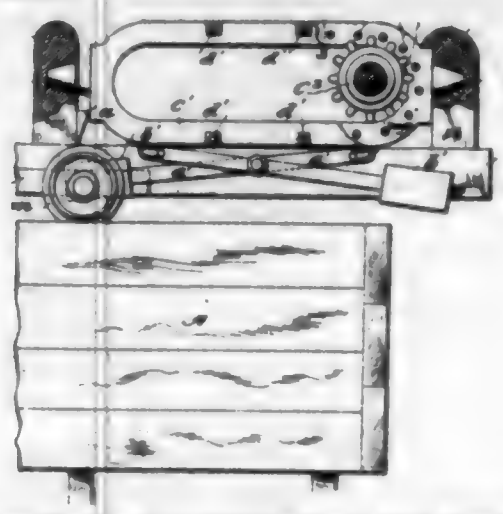
Claim.—An overhead-trolley fixture comprising a main plate having at its ends wire-receiving recesses provided with inclined inner walls against which bear bent-up portions of the trolley-wire, and means carried by said plate for clamping a continuous wire and also wire ends to the latter, said clamping means including tongue members registering in said recesses and having inclined portions adapted to engage said bent-up portions of the trolley-wire

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817,369. RACK-AND-PINION MECHANISM. JOSEPH C. HAMES, Colorado City, Colo. Filed Dec. 20, 1904. Serial No. 237,694.

Claim.—1. The combination of a pinion having a fixed center of movement, a reciprocatory and laterally-movable open rack having upper and lower and end series of teeth arranged to be engaged by the pinion, posts arranged adjacent to the ends of the rack, and

coacting means on the rack and posts for yieldingly retaining the ends of the former.



2. The combination of a pinion having a fixed center of movement, posts having lower and upper locking-brackets, respectively, and an open rack carried by the posts and interposed between and movable vertically with respect to said posts and having upper and lower and end series of teeth arranged to be engaged by the pinion, yielding connections between the open rack and the posts, and means for yieldingly holding the rack parallel to its travel.

3. The combination of a pinion having a fixed center of movement, posts having lower and upper locking-brackets, respectively, an open rack interposed between and movable vertically with respect to said posts and having upper and lower and end series of teeth arranged to be engaged by the pinion, coiled springs connecting the ends of the rack and the posts, and levers pivotally connected together and having upper arms connected to the lower portion of the rack, and lower arms bearing weights.

4. The combination of a pinion having a fixed center of movement, traveling wheels, and an open rack carried by and movable vertically with respect to said wheels and receiving and arranged to be engaged by the pinion.

5. The combination of a pinion, an open rack containing and arranged to be engaged by the pinion and comprising side frames detachably connected together and teeth interposed and secured between the connected frames and adapted to be removed therefrom when the frames are disconnected, posts arranged adjacent to the ends of the rack, and coacting means on the rack and posts for yieldingly retaining the ends of the former.

6. A pinion having a fixed center of movement, in combination with a reciprocatory and laterally-movable open rack receiving the pinion and having longitudinal and end series of teeth arranged to engage the same, means for yieldingly holding the said rack parallel to its travel, means for temporarily holding the ends of the rack against lateral movement, and yielding connections between said rack and the holding means.

817,370. **SHOCK-LOADER.** WILLIAM HECKART, Bradner, Ohio. Ohio. Filed May 3, 1905. Serial No. 259,406.

Claim.—1. In a shock-loader, the combination of a support, a horizontal arm supported thereby, means for elevating the arm, and a shock-carrying bar movably mounted upon said arm.

2. In a shock-loader, the combination of a support, a vertical upright arranged to turn upon the support, a horizontal arm carried by the said upright, means for elevating the arm, and a shock-carrying bar movably mounted upon said arm.

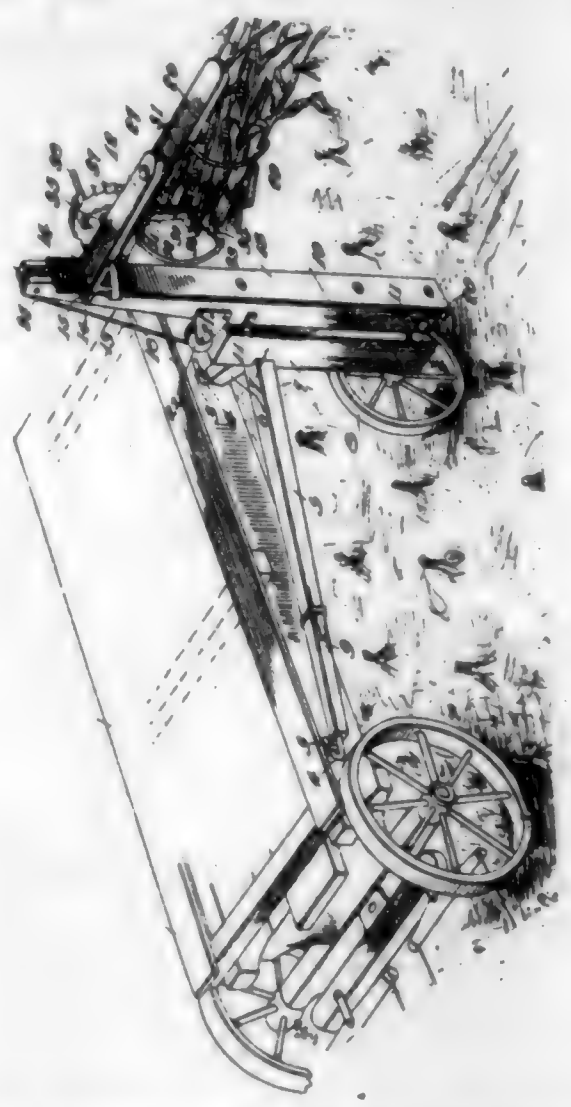
3. In a shock-loader, the combination of a support, a horizontal arm supported thereby, means for elevating the arm, and a reversible shock-carrying bar mounted upon said arm.

4. In a shock-loader, the combination of a support, a horizontal arm supported thereby, means for elevating the arm, and a shock-carrying bar pivotally mounted upon said arm.

5. In a shock-loader, the combination of a support, a horizontal arm supported thereby, means for elevating the arm, a shock-carrying bar pivotally mounted upon said arm, shock-engaging fingers projected from the shock-carrying bar, and operating mechanism for said fingers mounted upon the bar.

6. In a shock-loader, the combination of a support, a horizontal arm supported thereby, means for elevating the arm, a shock-carrying bar pivotally mounted upon said arm, shock-engaging fingers projected from the shock-carrying bar, means normally tending to separate said fingers, means for forcing the fingers together to embrace the shock, and means for locking the fingers together.

7. In a shock-loader, the combination of a supporting-frame embodying bars, a post carried by said bars, a ground-wheel mounted on said post, pivoted members carried by the bars of the frame for connection with a vehicle or the like, said pivoted members being adapted to be lowered to form legs, and shock-carrying means mounted upon the post aforesaid.



8. In a shock-loader, the combination of a supporting-frame, a vertical upright pivoted to said frame, a horizontal arm movable vertically of said upright, means carried by the supporting-frame for raising and lowering said arm, a shock-carrying bar movably mounted upon the arm, shock-engaging fingers carried by said bar, spring means normally tending to separate said fingers, means for locking the fingers closed, and operating means for permitting separation of the fingers under the tension of the spring means aforesaid.

9. In a shock-loader, the combination of a supporting-frame, a vertical upright pivotally mounted upon said frame, a horizontal arm vertically movable upon said upright, means for raising and lowering said arm, a stock-carrying bar pivoted to the horizontal arm, shafts journaled upon the shock-carrying bar, shock-engaging fingers projected from said shafts, crank-arms extending from the shafts, a windlass-shaft carried by the shock-carrying bar, and connecting means between the crank-arms and the windlass-shaft aforesaid.

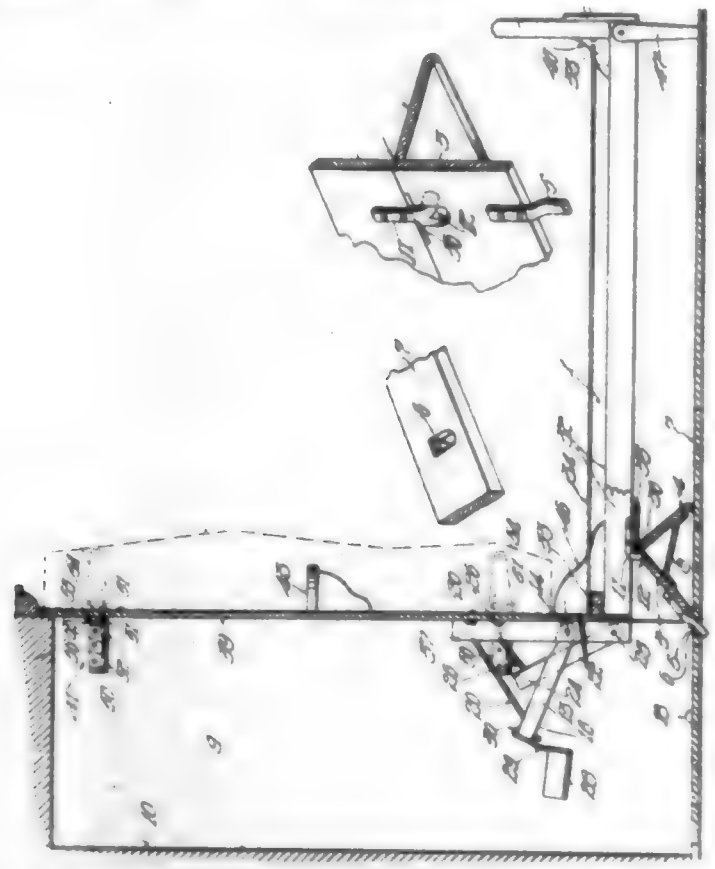
10. In a shock-loader, the combination of a supporting-frame, a vertical upright pivoted thereto, a horizontal arm movable vertically of the upright, means for raising and lowering said arm, a shock-carrying bar movably mounted upon the arm, shock-engaging fingers projected from the shock-carrying bar, and a plurality of teeth or tines extending from said shock-carrying bar and arranged to overturn a shock with which they come into contact.

817,371. **FOLDING BED.** WILLARD C. JAMES, Los Angeles, Cal. Filed Sept. 29, 1904. Serial No. 226,510.

Claim.—1. A folding bed comprising a pivotal support mounted to turn on its lower end and provided with means to arrest its pivotal movement and a bed-frame pivotally mounted on said pivotal support the bed-frame resting on the said support, and the latter resting on its pivotal mounting, when the bed is in raised position.

2. A folding bed comprising a rigid angle member mounted to turn on the lower end of one leg of the angle and to be arrested by the other leg of said angle and a bed-frame pivotally mounted on said angle member at the angle thereof.

3. A folding bed comprising a base having sockets, an angle member having sockets at its angle and provided with projections on the lower end of one leg engaging the sockets in the base, the angle member turning on said end and the other leg of the angle member serving to arrest the turning movement of the member and a bed-frame having projections engaging in the sockets in the angle member.



4. A folding bed comprising an angle member, one leg of which extends normally in a vertical position to serve as a support and the other leg extends normally in a horizontal position to serve as a shelf, means for pivotally supporting the lower end of the vertical leg and a bed-frame vertically connected at the angle of the angle member and having a part normally resting directly on said angle member independent of the pivotal connection.

5. A folding bed comprising a pivotal support mounted to turn on its lower end and resting on its pivotal mounting when the bed is raised and having means to arrest its pivotal movement and a bed-frame resting, when in raised position on said pivotal support and movable to turn therewith in the initial movement of said pivotal support, said bed-frame engaging with the pivotal support by a connection allowing the bed-frame to turn on the pivotal support after the movement of the latter has been arrested.

6. In a folding bed the combination with a pivotally-supported bed-frame, of a counterweight-lever operatively connected to the bed-frame to tend to tip the same forward when in raised position.

7. In a folding bed the combination with a pivotally-mounted bed-frame, of a counterweight means connected to the bed-frame to oppose the descent thereof and means engaging said counterweight means to reverse the action thereof when the bed is raised to cause forward pressure on the bed-frame.

8. In a folding bed, the combination with a pivotally-mounted bed-frame of a counterweight-lever pivotally connected thereto and a flexible connection between said counterweight-lever and the bed-frame to cause the bed-frame to pick up the counterweight-lever in its pivotal movement.

9. In a folding bed the combination with a pivotally-mounted bed-frame of a counterweight device pivotally connected thereto, a flexible connection between said counterweight device and the bed-frame to cause the bed-frame to pick up the counterweight device in its pivotal movement, and means engaging said counterweight device between the weighted portion thereof and a pivotal connection with the bed-frame to reverse the action of the counterweight device when the bed is raised.

10. In a folding bed, the combination with a pivotally-mounted bed-frame, of a plurality of counterweight-levers pivotally connected thereto and flexible connections between said counterweight-levers and the bed-frame having different amounts of slack so that the bed-frame will pick up the counterweight-levers successively in its downward movement.

11. In a folding bed a combination with a pivotally-mounted bed-frame of a counterweight device connected thereto, and an additional counterweight device having arms normally free of engagement with the aforesaid counterweight device but engaging therewith after a definite amount of pivotal movement thereof, to cause the counterweight devices to be brought into action accumulatively.

12. In a folding bed, the combination, with a bed-frame mounted on a pivot, of a main counterweight device and an additional counterweight having means engaging with the main counterweight device to hold additional counterweight in a position farther from said pivot than the main counterweight device, said means adapted to pick up said additional counterweight after a definite movement of the main counterweight device.

13. A wall-casing having a recess, a base-piece extending across the front of the recess and provided with means for removably holding the same in position and a folding bed pivotally mounted on said base-piece to fold into the recess.

14. A wall-casing having a recess, a base-piece extending across the front of the recess and provided with means for removably holding the same in position and a folding bed detachably mounted on said base-piece to fold into the recess.

15. A casing, and a folding bed adapted to fold into said casing, said bed provided with a pivotal support formed with two members, one of which always rests on the floor of the casing, and the other of which is movable toward and from said floor.

16. A casing, and a folding bed adapted to fold into said casing, said bed provided with a pivotal support having two legs, one of which is pivotally mounted on the floor of the casing, and the other of which is movable toward and from said floor.

17. A casing provided with a floor having a socket therein, and a folding bed adapted to fold into said casing, said bed provided with a pivotal support having two legs, one of which is provided with means engaging said socket, the other leg being movable toward and from said floor.

18. A casing provided with a floor having a socket therein, and a folding bed adapted to fold into said casing, said bed provided with a pivotal support having two legs, one of which is provided with a claw engaging said socket, the other leg being movable toward and from said floor.

19. A combination of a pivotal support, mounted to turn on its lower end and provided with means for arresting its pivotal movement, a bed-frame provided with a cross-piece extending across the bottom thereof, and normally resting on said pivotal support, and provided with means engaging with the pivotal support whereby the bed-frame will turn with the pivotal support until the pivotal movement of the latter is arrested, and will then continue to turn on the pivotal support and said bed-frame being provided with a cross-piece forming a part of the headboard, said cross-piece when the bed is lowered extending to the same height as the aforementioned cross-piece when the bed is raised, and a headboard member pivotally mounted at one side of the bed-frame independent of the mounting of the bed-frame, with its lower edge coming in a closed position to adjoin the tops of the cross-pieces aforesaid when the bed is in open or closed position.

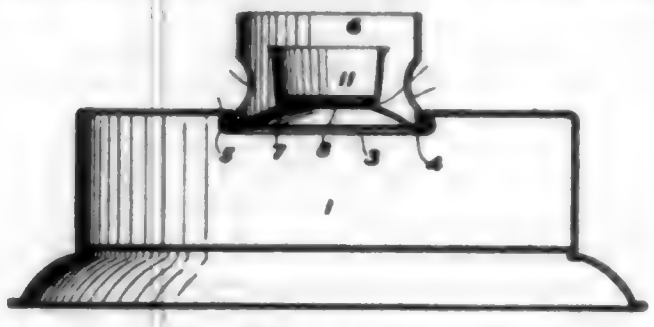
20. The combination with a pivotally-mounted folding bed having head corner-posts and a headboard-base extending between the lower part of said posts, cords extending between the upper part of said posts, and a movable headboard member pivotally mounted independent of the bed to swing above the headboard-base.

21. A casing and a folding bed therein comprising a member having a leg member pivotally resting on the floor of the casing, a bed-frame pivotally supported on said leg member and having a member extending across its bottom and resting on the aforesaid leg and a closure member hinged at one side of said casing and adapted to rest on said cross member when the bed is closed, the three said members being all in one plane when in closed position.

22. A casing forming a recess and a folding bed in said casing provided with closure members for the lower part of said recess and a closure member for the upper part of the recess connected to the casing by spring-hinges tending to close said closure member.

23. A casing forming a recess and a folding bed in said casing provided with closure members for the lower part of said recess and a closure member for the upper part of the recess connected to the casing by spring-hinges tending to close said closure member, said spring-hinges each comprising a horizontal pin slidably supported on the casing and having a vertically upwardly extending portion, a hinge portion on the closure member having an eye engaging said upwardly-extending portion of the pin and spring means on the horizontal portion of the pin and means for adjusting the pressure of said spring.

817,372. TUBULAR LANTERN. JOSEPH E. JOHNSON, Rochester, N. Y., assignor to The Pritchard-Strong Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 20, 1906. Serial No. 296,970.

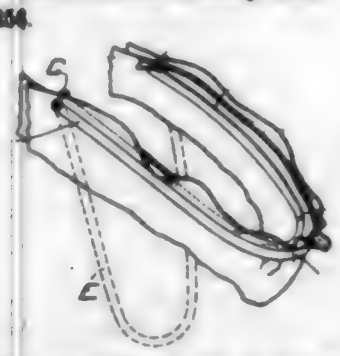


Claim.—1. The combination of a lantern-font having a perforation in its top and a bead formed adjacent to said perforation, a gallery having a perforated bottom, a peripheral bead around said bottom fitting in the bead in the top of the lantern-font, and a burner-holder attached to the edge of the perforation in the bottom of said gallery.

2. The combination of a lantern-font having a perforation in its top and a bead formed adjacent to said perforation and below the top of the font, a tubular gallery having a perforated bottom and air-tube holes in its sides, and a peripheral bead around said bottom fitting in the bead in the top of the lantern-font the said two beads being crushed together whereby the air-tube holes are brought into registry with the top surface of the lantern-font.

3. The combination of a lantern-font having a perforation in its top and a bead formed adjacent to said perforation and below the top of the font, a tubular gallery having a perforated bottom and air-tube holes in its sides, a peripheral bead around said bottom fitting in the bead in the top of the lantern-font the said two beads being crushed together whereby the air-tube holes are brought into registry with the top surface of the lantern-font, and a burner-holder attached to the edge of the perforation in the bottom of said gallery.

817,373. UPPER-HOLDING CLAMP FOR LASTING BOOTS AND SHOES. JOAB O. JONES, Beverly, Mass. Filed Oct. 20, 1904. Serial No. 229,256.



Claim.—1. An upper-holding device for lasting boots and shoes, comprising a clamp, consisting of two curved jaws; said jaws being set in the same plane, one within the other, when closed, with their compressing-surfaces approximately at right angles to said plane and arranged to compress the upper and lining radially between them; there being a bearing between the two jaws in the same plane at their rear.

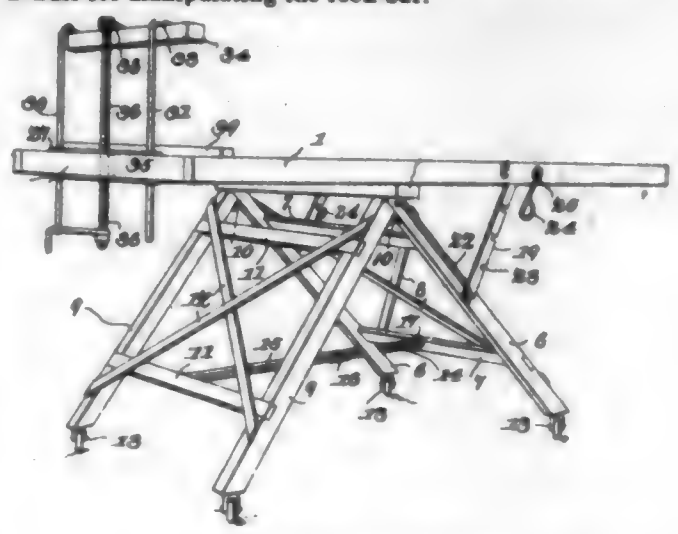
2. An upper-holding device for lasting boots and shoes, comprising a clamp consisting of two curved jaws, one being set at a fixed distance within the other when closed, said jaws being pivoted together at their rear ends, whereby the stress upon each when closed is balanced by the stress upon the other at said pivot.

3. An upper-holding device for lasting boots and shoes, comprising a clamp having a pair of curved jaws pivoted together, in combination with a stay attached to the inner side of the upper and adapted to serve as a rest for the inner jaw.

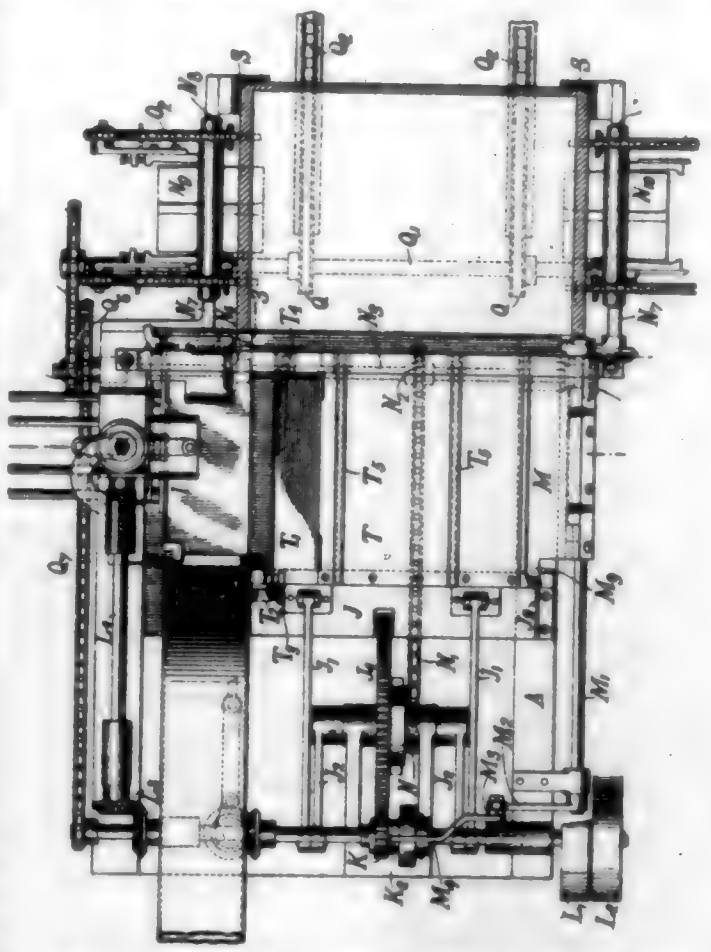
817,374. DISPLAY-RACK. OCIE JUSTUS and ORA JUSTUS, Clarksburg, W. Va. Filed June 15, 1905. Serial No. 265,415.

Claim.—1. A display-rack comprising a table, upwardly-converged legs and props upon which the table is hinged, a rock-bar carried transversely by the table, braces carried by the rock-bar for adjustable engagement with the legs, and a handle for controlling the rock-bar.

2. A display-rack comprising a table, upwardly-converged legs and props upon which the table is hinged, yoke-shaped guard-bars carried by the legs, a rock-bar carried transversely across the table, braces carried by the rock-bar and working between the respective guard-bars and legs, each brace being provided with a series of notches for engagement with one end of the adjacent guard-bar, and a handle for manipulating the rock-bar.



817,375. PACKING-MACHINE. JAMES A. KEYES, New York, N. Y. Filed July 17, 1903. Serial No. 166,940.



Claim.—1. In packing-machines, a table having a runway adjacent thereto, a feed-plunger to feed a row of articles along said runway, a transfer-plunger mounted adjacent said runway and provided with a trigger to be engaged by said articles, a reciprocating slide adjacent said transfer-plunger to be connected therewith by said trigger to transfer said row of articles to said table, an insert-plunger and operating mechanism adjacent said table, means actuated by said articles connected with said operating mechanism to operate said plunger, and box-feeding means adjacent said table to support and feed forward boxes as articles are inserted therein.

2. In packing-machines, a table having a runway adjacent thereto, means to feed a series of articles along said runway, a reciprocating transfer-slide adjacent said runway, a transfer-plunger disengageably connected with said slide, a transfer-trigger to be engaged by said articles on said runway to connect said plunger and said slide to transfer said articles upon said table, means to support a box adjacent said table, an insert-plunger adjacent said table, disengageable operating mechanism connected therewith and means actuated by said articles to connect said operating mechanism and said plunger to insert said articles on said table into said box.

3. In packing-machines, a table having a runway adjacent thereto, means to successively feed a series of articles along said runway to form a row, transfer mechanism actuated by said articles to

transfer each completed row of articles from said runway to said table to form a layer, means to support a box adjacent said table and means actuated by the complete layer of articles on said table to insert said layer into said box.

4. In packing-machines, a table having a runway adjacent thereto, means to successively feed a series of articles along said runway to form a row, a reciprocating slide adjacent said runway, a transfer-plunger coöperating with said slide, a trigger movably mounted on said plunger and normally in the path of said row to be engaged by the leading article of a completed row and to connect said slide and said plunger to transfer said row from said runway to said table and means to hold said trigger in operative position to maintain the engagement between said slide and said plunger until they move into rearward position.

5. In a packing-machine, a runway, means to successively feed a series of articles upon said runway to form a layer, a reciprocating slide adjacent said runway, a plunger to coöperate with said slide, a trigger movably mounted on said plunger and normally in the path of said row to be engaged by the leading article of a completed row to connect said plunger and said slide to discharge said row from said runway, a movable gate on said plunger and a gate-cam to withdraw said gate from the path of an article entering said runway as said plunger is moved backward.

6. In packing-machines, a runway, means to successively feed a series of articles upon said runway to form a row, a plunger, means to reciprocate said plunger, a movable gate connected with said plunger and means to withdraw said gate from the path of an article entering said runway as said plunger is moved rearward.

7. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plunger formed with a cover coöperating with said table, a movable cover-flap mounted on said cover, means to feed articles from said runway upon said table, means to reciprocate said plunger to insert said articles into said box and means to lower said cover-flap as said articles are inserted into said box.

8. In packing-machines, a table, means to support a box adjacent said table, an insert-plunger coöperating with said table to insert articles into said box, a trigger-rod adjacent said table and connected with a trigger, means to reciprocate said plunger comprising a pawl in the path of said trigger, and means to feed articles to said table to engage said trigger-plate to actuate said plunger and means to hold said trigger in operative position until said plunger is withdrawn.

9. In packing-machines, a table, a plunger coöperating with said table to discharge articles therefrom, a trigger-plate adjacent said table to be engaged by said articles, means to operate said plunger disengageably connected therewith and controlled by said trigger-plate and means on said plunger to engage said trigger-plate and to hold the same in operative position until said plunger is retracted.

10. In packing-machines, a table, means to feed a series of articles upon said table, a trigger-plate adjacent said table, an edge guide adjacent said table, a plunger coöperating with said table to discharge articles therefrom, actuating means to be engaged by said articles to operate said plunger and means connected with said plunger to maintain said actuating means in operative position until said plunger is withdrawn.

11. In a packing-machine, a table, a plunger to feed a series of articles from said table, box-feeding means adjacent said table provided with supports spaced apart at a less distance than the width of a box, means to operate said box-feeding means from said plunger to move said box as articles are inserted therein and a box-discharge to remove a filled box from said feeding means and to bring another box into engagement with another set of supports.

12. In packing-machines, box-guides, box-feeders adjacent said guides, movable supports on said box-feeders spaced apart at a different distance than the width of the box, means adjacent said box-feeders to feed articles into a box and to simultaneously operate said box-feeders and a box-discharge to remove a box from said box-feeders and to bring another box into engagement with the supports thereon.

13. In packing-machines, box-guides, box-chains adjacent said guides, pivoted spring-pressed supports on said chains spaced apart at a less distance than the width of a box, means adjacent said chains to feed articles into a box and to simultaneously operate said chains and a box-discharge to remove a filled box from said supports and to allow another box to engage another series of said supports.

14. In packing-machines, a table having a runway adjacent thereto to guide a series of articles, transfer mechanism actuated by said articles to transfer each completed row of articles from said runway to said table to form a layer, means to support a box adjacent said table and means actuated by the complete layer of articles on said table to insert said layer in said box.

15. In packing-machines, a runway to guide a series of articles to form rows, transfer mechanism actuated by said articles to transfer each completed row of articles from said runway to form a layer and means actuated by the complete layer of articles to discharge said layer.

16. In packing-machines, a runway to guide a series of articles, transfer mechanism to transfer each completed row of articles from said runway to form a layer and separate means to discharge each complete layer of artictes.

17. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plunger, means to feed rows of articles from said runway upon said table to form a layer and means directly engaged and actuated by said layer to reciprocate said plunger to insert said layer of articles into said box.

18. In packing-machines, a table, means to feed a series of articles upon said table, a trigger-plate adjacent said table, a plunger coöperating with said table to discharge articles therefrom, actuating means to be engaged by said articles to operate said plunger and means connected with said plunger to maintain said actuating means in operative position until said plunger is withdrawn.

19. In packing-machines, a table, a plunger coöperating with said table to discharge articles therefrom, actuating means to be directly engaged by said articles, means to operate said plunger disengageably connected therewith and controlled by said actuating means and means to hold said actuating means and trigger-plate in operative position until said plunger is retracted.

20. In packing-machines, transfer means to engage and transfer articles, actuating means to be directly engaged by said articles, means to operate said transfer means disengageably connected therewith and controlled by said actuating means and devices engaging said transfer means to hold said actuating means in operative position until said transfer means is retracted.

21. In packing-machines, article-feeding means to feed a series of articles into a box, box-feeding means provided with supports spaced apart at a different distance than the width of a box, means to operate said box-feeding means from said article-feeding means to move said box as articles are inserted therein and a box-discharge to remove a filled box from said feeding means and to bring another box into engagement with another set of supports.

22. In packing-machines, box-feeders, supports on said box-feeders spaced apart at a different distance than the width of a box, means adjacent said box-feeders to feed articles into a box, means to operate said box-feeders and a discharger to remove a box from said feeders and to allow another box to move into engagement with the supports thereon.

23. In packing-machines, box-feeders, means to operate said feeders, alining lugs on said feeders spaced apart at different distances than the width of a box and means to discharge a box from said feeders and to allow another box to move relatively to said feeders to engage the supports thereon.

24. In packing-machines, box-chains, means to operate said box-chains, alining lugs on said box-chains spaced apart at a different distance than the width of a box, and means to move unfilled boxes relatively to said chains after a filled box has been removed from said chains to bring said unfilled box into alinement against said alining lugs.

25. In packing-machines, a runway to guide a series of articles, transfer mechanism to transfer separately each completed row of articles from said runway to form a layer and means to discharge each completed layer of articles.

26. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plunger, means to feed rows of articles from said runway upon said table to form a layer, said plunger mounted to move in the same plane as the layer of articles, and means engaged and actuated by said layer to reciprocate said plunger and insert said layer of articles in said box.

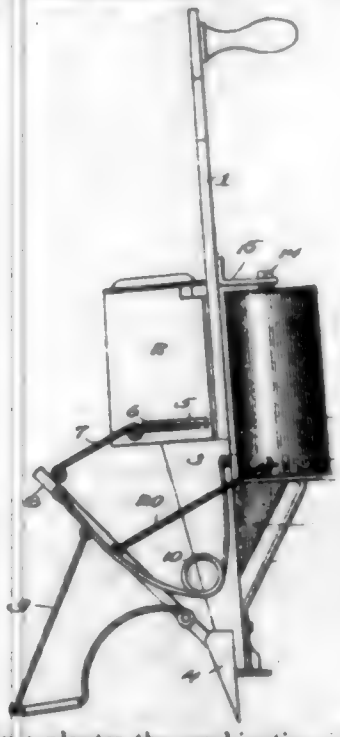
27. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plunger, adapted to move in a horizontal plane, means to feed rows of articles from said runway upon said table to form a layer, said layer adapted to be moved in a horizontal plane by the insert-plunger and means engaged and actuated by said layer to reciprocate said plunger and insert said layer of articles into said box.

28. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plun-

ger, means to feed rows of articles from said runway upon said table to form a layer, said plunger mounted to move in the same plane as the layer of articles and means directly engaged and actuated by said layer to reciprocate said plunger and insert said layer of articles in said box.

29. In packing-machines, a runway having a table adjacent thereto, means to support a box adjacent said table, an insert-plunger, adapted to move in a horizontal plane, means to feed rows of articles from said runway upon said table to form a layer, said layer adapted to be moved in a horizontal plane by the insert-plunger and means directly engaged and actuated by said layer to reciprocate said plunger and insert said layer of articles into said box.

817,376. PLANTER. HENRY P. KLINE, Randolph, Ohio. Filed Sept. 2, 1905. Serial No. 276,827.



Claim.—1. In a planter the combination with a base-strip, an operating-lever, a grain-receptacle, a chute therefor and means operated by the lever for discharging grain into the chute; of a fertilizer attachment comprising an oscillatable receptacle having an outlet, said receptacle being connected to the operating-lever, means for oscillating the receptacle by actuating the operating-lever, a chute extending from said receptacle into the grain-chute, and a stationary cut-off device within the oscillatable receptacle.

2. A fertilizer attachment for hand-operated planters comprising brackets, an oscillatable receptacle mounted therebetween, said receptacle having an outlet normally closed by one of the brackets, a discharge-chute extending from the receptacle, and a stationary cut-off within the receptacle and secured to the bracket.

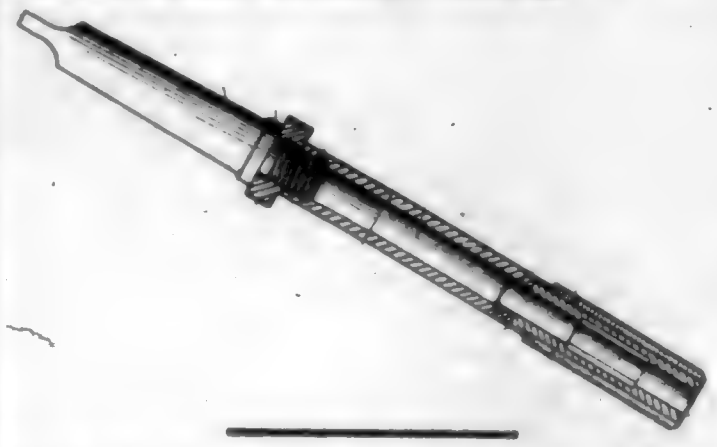
3. A fertilizer attachment for hand-operated planters comprising brackets, an oscillatable receptacle mounted between the brackets and having an outlet normally closed by one of the brackets, a chute extending from the receptacle adjacent the outlet thereof, a stationary cut-off blade within the receptacle and adapted, with said bracket, to alternately assume a position over the outlet, and means for connecting the cylinder to the base-strip of a hand-planter.

4. A fertilizer attachment for hand-operated planters comprising brackets, an oscillatable cylindrical receptacle mounted therebetween and having a series of openings in the bottom thereof, all of said openings being normally closed, a chute adapted to receive material from any of the openings, a stationary cut-off within the cylinder and adapted to close any of the openings when the same is in position over the chute, and means adjustably connected to the cylinder and adapted to be secured to the base-strip of a hand-planter.

817,377. BORING-TOOL AND ARBOR. ALBERT KOOTZ and CHARLES F. FISHER, Parkersburg, W. Va. Filed Mar. 11, 1905. Serial No. 249,643.

Claim.—1. An arbor having a shank and a shoulder, a threaded portion under said shoulder, a sleeve having a threaded portion for engagement with the threaded portion of the arbor and arranged to permit one end of the sleeve to abut against the shoulder, a cutting-tool arranged to be passed on the arbor, the said cutting-tool and the sleeve having interlocking engagement, whereby the cutting-tool may be rotated by the sleeve.

2. An arbor having a shank and a shoulder, a threaded portion below said shoulder, a sleeve having a threaded portion for engagement with the threaded portion of the arbor and arranged to permit one end of the sleeve to abut against the shoulder, a cutting-tool arranged to be passed on the arbor and abutting against the end of the sleeve, means for forming a positive engagement between the cutting-tool and the sleeve, whereby the said cutting-tool may be rotated by said sleeve and the tool forced from the arbor by rotating said sleeve on the arbor, substantially as described.



817,378. MOTOR-SPRING. ALMERON M. LANE, Meriden, Conn. Filed Dec. 16, 1905. Serial No. 292,100.



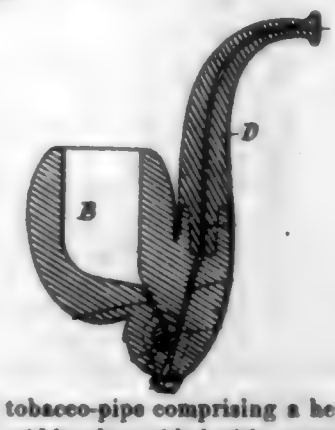
Claim.—1. A spring having a smooth surface on one side, and a surface having points or projections on its opposite side, said surfaces being in contact when the spring is coiled, and preventing adherence of the convolutions.

2. A spring having a polished surface on one of its sides and a roughened surface on its opposite side.

3. A coiled motor-spring having an externally-polished surface, and an internally-roughened surface.

4. A motor-spring having a polished surface on one of its sides, and an unpolished surface on its other side, said surfaces being in contact when the spring is coiled.

817,379. SMOKING-PIPE. GUSTAF L. LUNDIN, East Boston, Mass., assignor of one-third to Theodore von Rosenvinge and one-third to Edward J. O'Brien, Boston, Mass. Filed Apr. 21, 1905. Serial No. 256,700.



Claim.—1. A tobacco-pipe comprising a head forming a bowl and a stem-holder, said head provided with converging conduits, one extending from the end of the stem-holder through the head and ending in an outlet at the base thereof, the other extending from the base of the bowl and intersecting the first-mentioned conduit in the base of the head near the outlet, a valve seated at the point of intersection of the two conduits, and means exterior of the pipe for actuating the valves, said means acting as a secondary closing means for the valve.

2. A tobacco-pipe comprising a head, forming a bowl and stem-holder, said head provided with converging conduits, one extending from the end of the stem-holder through the head and ending in an outlet at the base thereof, the other extending from the base of the bowl and intersecting the first-mentioned conduit in the base of the head near the outlet, a valve seated at the point of intersection of the two conduits, means exterior of the pipe for actuating the valves,

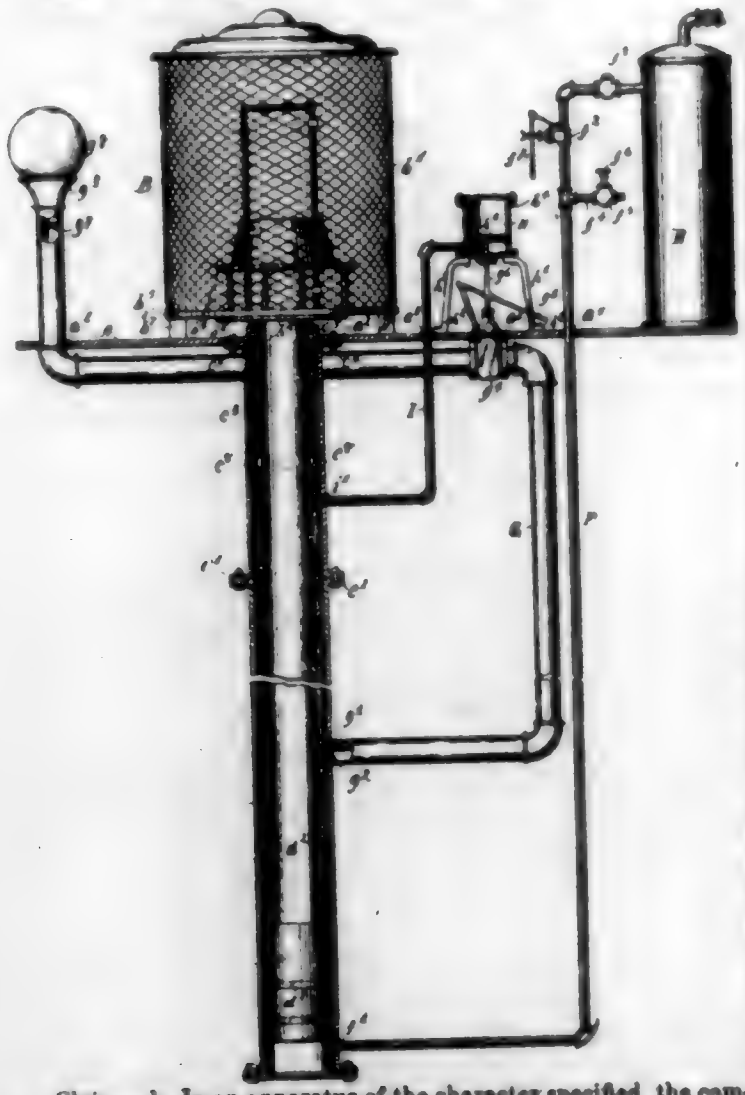
said means acting as a secondary closing medium for the valve, and stops on said holder for limiting the movement of said means.

817,380. **BOTTLE-STOPPER.** JUAN MADER, Frankfort-on-the-Main, Germany. Filed Sept. 8, 1904. Serial No. 223,780.

Claim.—1. The combination in a bottle-stopper of a cap having a recess within it, in the side of which recess longitudinal channels are provided for the escape of air, and a cork adapted to fit within the recess of said cap, substantially as described.

2. In a bottle-stopper, the combination of a cap having a recess therein, projections on the side of said recess, and a cork, said cork being adapted to fit into said recess and to be retained therein by said projections, substantially as described.

817,381. **AMUSEMENT APPARATUS.** CHARLES I. MATSON, Chicago, Ill. Filed Sept. 8, 1905. Serial No. 277,571.



Claim.—1. In an apparatus of the character specified, the combination of a vertical cylinder, a piston adapted to slide in said cylinder, a passenger-car mounted upon said piston, means for causing the said piston to move upward in said cylinder, means for automatically causing a sudden descent of the piston, and means for bringing said piston and car to a gradual stop.

2. In an apparatus of the class described, the combination of a vertical cylinder, a piston adapted to slide within said cylinder and having a passenger-car attached thereto, means for causing said piston to move vertically in said cylinder, means for automatically causing a sudden descent of the piston, a vent-pipe for the escape of the confined air, and a signal adapted to be operated by the descent of the piston.

3. In apparatus of the class specified, the combination of a vertical cylinder, a piston adapted to slide therein, a car for passengers attached to said piston, a storage-tank for compressed air, a tube connecting the storage-tank with the cylinder, valves in said tube both automatic and manual, a valved vent-tube, means for automatically opening the valve in said tube, and a signaling apparatus operated by the escape of air through the vent-tube.

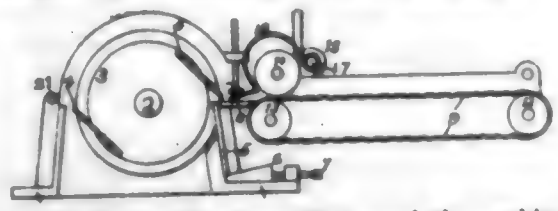
4. In apparatus of the character specified, the combination of a vertical cylinder, a piston adapted to slide therein, a car for passengers attached to said piston, a storage-tank for compressed air, a tube connecting the storage-tank with the cylinder, valves both automatic and manual attached to said tube, a vent-tube, a valve for said vent-tube both manually and automatically operated and an indicating device operated by the escape of air through the vent-tube.

5. In apparatus of the character specified, the combination of a vertical cylinder, a piston slidably mounted therein, a passenger-car attached to said piston, means for moving said piston longitudinally in the cylinder, means for causing a rapid descent of said piston, means for automatically preventing the piston from passing above a certain predetermined point in said cylinder, a vent-tube and a signaling apparatus operated by the escape of air through the vent-tube.

6. In apparatus of the class described, the combination of a vertical cylinder, air inlet and outlet pipes communicating with said cylinder, manually and automatically controlled valves arranged in said pipes, signaling devices supported by one of said outlet-pipes and adapted to be operated by the air escaping from said cylinder, a piston and piston-rod slidably mounted in said cylinder and having an air-tight fit therein, a car mounted upon said rod, and means for introducing air under pressure to said cylinder inlet-pipes.

7. In apparatus of the class described, a cylinder having induction and eduction openings therein, a piston slidably mounted in said cylinder, antifrictional means for centering and guiding said piston, a passenger-holding car secured to said piston, means for controlling the admission of a motive fluid to said cylinder, means for controlling the emission of the motive fluid from said cylinder, and a sounding device operatable by the escape of the motive fluid from said cylinder.

817,382. **WOOD-CUTTING MACHINE.** WILLIAM MERRILL, Saginaw, Mich., assignor to Mitts & Merrill, Saginaw, Mich., a Corporation of Michigan. Filed Dec. 16, 1905. Serial No. 292,091.



Claim.—1. In a machine for cutting wood, the combination of a cylinder carrying V-shaped knives with opposing V-shaped bed-knives and a front plate with its upper surface even with the top edges of the bed-knives substantially as described and for the purpose set forth.

2. In a wood-cutting machine, the combination of a cylinder carrying V-shaped knives, the opposing V-shaped bed-knives, the front plate 8, and a chain-table running in close contact with the front plate substantially as described and for the purpose set forth.

3. In a wood-cutting machine, the combination of a cylinder carrying V-shaped knives, opposing V-shaped bed-knives, a front plate, a traveling chain-table, and a flexibly-supported top pressure-roll, all substantially as described and for the purpose set forth.

4. In a wood-cutting machine, the combination of a cylinder carrying V-shaped knives, a set of V-shaped bed-knives, a front plate, a traveling chain-table, a top pressure-roll, and a set of pressure-fingers flexibly attached to the pressure-roll substantially as described, and for the purpose set forth.

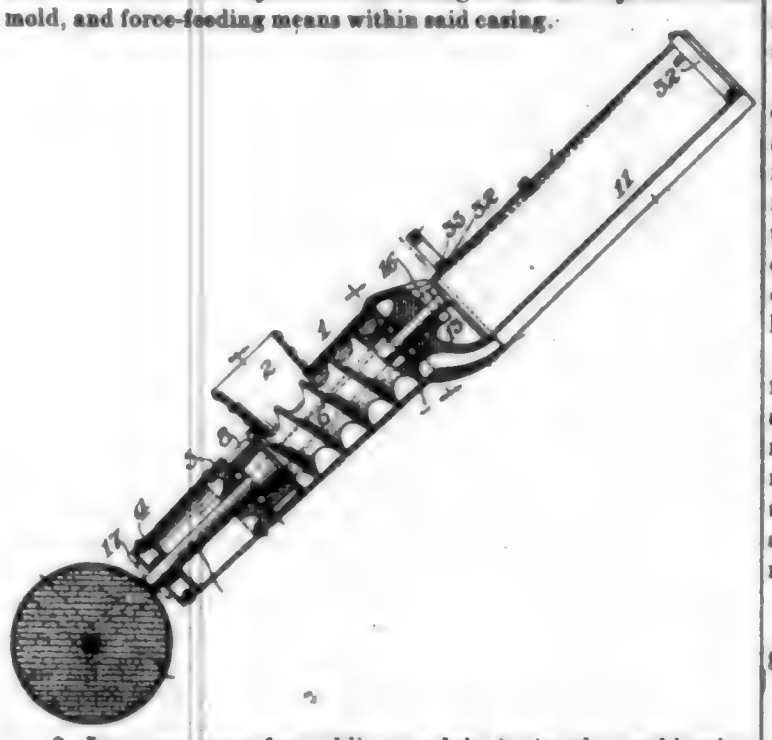
5. In a wood-cutting machine, the combination of a cylinder carrying V-shaped knives, a set of V-shaped bed-knives, a front plate, a traveling chain-table, a top pressure-roll, a set of pressure-fingers flexibly attached to the pressure-roll, each pressure-finger having above it a pressure-bar substantially as described and for the purpose set forth.

6. In a wood-cutting machine, the combination of a cylinder carrying V-shaped knives, with opposing V-shaped bed-knives and supporting-wedges under the bed-knives substantially as described and for the purpose set forth.

817,383. **APPARATUS FOR MOLDING PLASTICS.** GEORGE T. MCINTYRE, Riverside, Cal. Filed Feb. 17, 1905. Serial No. 246,141.

Claim.—1. A machine for molding plastics comprising a casing, having a charging-opening at one end and a discharge-opening at the other end, said casing flaring from the charging to the discharging end, a force-feed device within said casing, and a mold connected to the discharging end of the casing.

2. In an apparatus for molding conduits *in situ*, the combination with a mold, of a feed device for feeding and forcing plastic material thereinto, the same comprising a tubular casing of less cross-sectional area than the mold, and an intermediate guiding means connecting the said casing with the mold, said guiding means increasing in area from the end adjacent to the casing to the end adjacent to the mold, and force-feeding means within said casing.



3. In an apparatus for molding conduits *in situ*, the combination with a mold, of a feed device for feeding and forcing plastic material thereinto, the same comprising a tubular casing of less cross-sectional area than the mold, an intermediate guiding means connecting the said casing with the mold, said guiding means increasing in area from the end adjacent to the casing to the end adjacent to the mold and descending from the feed device to the mold, and force-feeding means within said casing.

4. In an apparatus for molding plastics, in combination, a feeding-machine having a substantially horizontal casing, means for forcing plastic material longitudinally through said casing, a substantially horizontal mold, and a downwardly-inclined guiding member for conducting material from the feeding-machine to the mold.

5. In a machine for forming and laying plastic material *in situ*, the combination of a mold, a casing of smaller cross-sectional area than the mold and having a charging-opening, intermediate guiding means connecting said casing with the mold, said casing and guiding means increasing in area from the charging-opening to the mold.

6. In an apparatus adapted to form and lay conduits *in situ*, in combination, a substantially horizontal mold having an open bottom, a force-feed device having a substantially horizontal casing supported by a roller at its forward end, and a downwardly-inclined guiding member adapted to conduct material from the rear end of the feeding-machine to the forward end of the mold.

7. In a machine for molding plastics, a tubular casing provided with a charging-hopper, a hollow screw extending longitudinally thereof and rotatable therein, a shaft extending longitudinally of said casing and supported rigidly therein, and provided with bearings for the respective ends of the hollow screw.

8. In a machine for molding plastics, a tubular casing provided with a charging-hopper, a hollow screw extending longitudinally thereof and rotatable therein, a shaft extending longitudinally of said casing and supported rigidly therein and provided with bearings for the respective ends of the hollow screw, a guiding device at the discharge end of the casing having inner and outer members, the inner member having a longitudinal bore to receive such shaft, and fastening means securing said inner member to the shaft.

9. In an apparatus for molding cement conduits *in situ*, the combination with a feeding device, of a mold having its cross-sectional axis located below the cross-sectional axis of the feed device and descending guide means extending from the feeding device to the mold, the upper portion of the mold being in the direct line of thrust from the feeding device, and being supported by a roller.

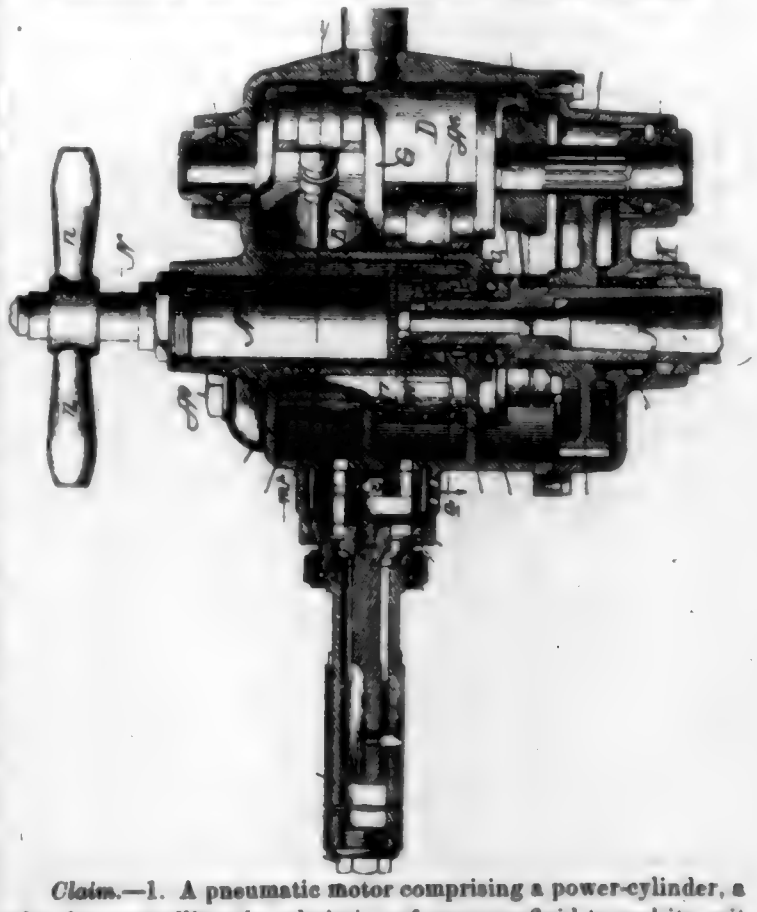
10. In a machine for molding pipe, a casing provided with a charging-opening, a shaft extending longitudinally of said opening, a hollow feed-screw mounted to rotate on said shaft, a pipe-forming mold comprising an outer member connected to the casing, and an inner member connected to the said shaft and supported at its forward end thereon, leaving a free annular space between said members.

11. In a machine for molding pipe, a casing provided with a charging-opening, a shaft extending longitudinally of said opening, a hollow feed-screw mounted to rotate on said shaft, a pipe-forming mold comprising an outer member connected to the casing, an inner member connected to the said shaft and supported at its forward end thereon, leaving a free annular space between said members, the connection of the said mold to the casing and shaft consisting of outer and inner guiding members.

12. In a machine for molding pipe, a casing provided with a charging-opening, a shaft extending longitudinally of said opening, a hollow feed-screw mounted to rotate on said shaft, a pipe-forming mold comprising an outer member connected to the casing, an inner member connected to the said shaft and supported at its forward end thereon, leaving a free annular space between said members, the connection of the said mold to the casing and shaft consisting of outer and inner guiding members, the mold members having their longitudinal axis below the axis of the feed-screw.

13. In an apparatus adapted to mold conduits *in situ*, force-feeding and guiding means provided with a downwardly-inclined annular delivery increasing progressively in cross-sectional area, a roller supporting the forward end of said means, and a pipe-forming mold adapted to receive material from said delivery and comprising an outer and an inner member having an annular space therebetween, said old being open-ended and of a size sufficient to cause the apparatus to move forward as the cement is forced thereinto.

817,384. **PNEUMATIC MOTOR.** REINHOLD A. NORLING, Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill., a Corporation of Illinois. Filed July 20, 1904. Serial No. 217,372.



Claim.—1. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve embracing a valve-casing with which said supply-pipe is connected, said valve-casing being provided with an outwardly-facing valve-seat having two ports, both of which are in communication with said cylinder by supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing on said seat and adapted for bringing either of said ports in communication either with the air-supply pipe or with the outer air, a valve-operating stem connected with the valve and extending into said supply-pipe, and a sleeve mounted to turn on said pipe and forming a hand-grip, said sleeve being connected with said valve-stem by operating means extending through a slot in said pipe.

2. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve embracing a valve-casing with which said supply-pipe is connected and which is provided with an outwardly-facing valve-seat having two ports, both of which are in communication with the cylinder by supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing

on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, and means for operating said valve-disk from the exterior of said pipe, said valve-operating means being loosely connected with said valve-disk so that the pressure in the supply-pipe tends to hold the valve-disk against the seat.

3. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, with a central recess and with passages leading from said central recess and communicating with the outer air, and the said valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat by turning the disk, and said disk being provided in its bearing-face with a radial groove or recess adapted to connect the said central recess of the valve-seat with either of said ports in the valve-seat.

4. A portable pneumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe and a reversing-valve comprising a valve-casing attached to the said motor-casing and with which said supply-pipe is connected, a stationary valve-seat disk located within the casing and provided with two eccentrically-arranged ports which communicate with cylinder supply and exhaust passages in the motor-casing that are controlled by the cylinder-valve, said valve-seat disk being also provided in its bearing-face with a central recess and with radial passages leading outwardly from said central recess and opening to the outer air, and a rotative valve-disk bearing against said seat-disk and provided with an eccentric port adapted to register with either of said ports in the said seat-disk and having in its inner face a radial groove or passage adapted to bring said central recess of the seat-disk into communication with either of said ports in said seat-disk.

5. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe, and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with a stationary valve-seat disk and a rotative valve-disk bearing on said seat, said valve-seat disk being provided with two eccentrically-arranged ports which are in communication with the cylinders, supply-passages controlled by said cylinder-valve, with a central recess and with passages leading outwardly from said central recess, and said valve-casing being provided outside of said valve-seat disk with an annular exhaust-passage with which the outer ends of said radial passage in the seat-disk communicate and which opens to the outer air, and the said rotative valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat-disk by turning the disk, and said valve-disk being provided in its bearing-face with a radial groove or recess adapted to connect the said central recess of the valve-seat with either of said ports in the seat-disk.

6. A portable pneumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports which are in communication with the cylinder and supply-passages controlled by said cylinder-valve, with a central recess and with passages leading from said central recess and communicating with the outer air, and the said valve-disk being provided with two eccentrically-arranged ports extending therethrough and in its bearing-face with two radial grooves or recesses joined at the center of the disk and adapted to connect said central recess of the valve-seat with either of said ports therein.

7. A portable pneumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve comprising a valve-casing attached to said motor-casing and with which said supply-pipe is connected, a stationary valve-seat disk located within the valve-casing and provided with two eccentrically-arranged ports which communicate with cylinder supply and exhaust passages in the motor-casing that are controlled by the cylinder-valve, said valve-casing being provided with a cap having an inwardly-extending flange which bears against the marginal part of said valve-seat disk and holds the same against the inner wall of the casing, said valve-disk being provided in its bearing-face with a central recess and with radial passages leading outwardly from said central recess and opening to the outer air, and a rotative valve-disk bearing against said seat-disk and provided with an eccentric port adapted to register with either of said ports in the seat-disk and having in its inner face a radial groove or passage adapted to bring said central recess of the seat-disk into communication with either of said ports in said seat-disk.

8. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe and a reversing-valve embracing a valve-casing with which said supply-pipe is connected, said valve-casing being provided with a valve-seat having two ports both of which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, a valve-operating stem connected with the valve and extending into said supply-pipe, a sleeve mounted to turn on said pipe and forming a hand-grip, said sleeve being connected with said valve-stem, and a shiftable stop mounted on said supply-pipe and adapted to engage said sleeve to limit the turning movement thereof.

9. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve embracing a valve-casing with which said supply-pipe is connected, said valve-casing being provided with a valve-seat having two ports both of which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, a valve-operating stem connected with the valve and extending into said supply-pipe, a sleeve mounted to turn on said pipe and forming a hand-grip, said sleeve being connected with said valve-stem, and a sliding ring mounted on said air-pipe adjacent to one end of the sleeve and provided with a non-rotative stop projection adapted to engage stop-surfaces on said sleeve to limit the turning movemnt of the latter.

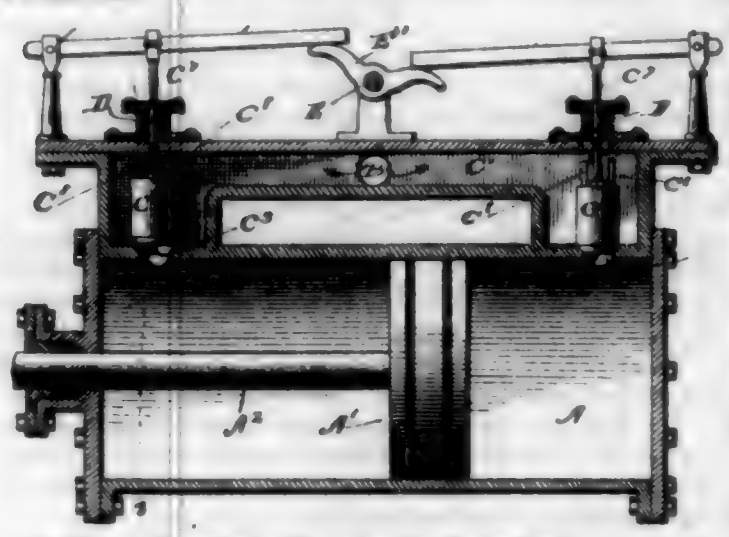
10. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a combined reversing and throttle valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat having two ports both of which are connected with said cylinder by cylinder supply and exhaust passages controlled by the cylinder-valve, a rotative valve-disk which rests against said seat and is adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, and also for closing communication between both of said ports and said air-supply pipe, a valve-operating stem connected with said valve-disk and extending into said air-supply pipe and a rotative hand-grip mounted on the air-supply pipe and connected by means extending through a slot in the said pipe with said valve-disk for turning the latter.

11. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a combined reversing and throttle valve embracing a valve-casing with which the supply-pipe is connected, and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports, which are in communication with the cylinder-supply passages controlled by said cylinder-valves, with a central recess and with passages leading from said central recess to the outer air, and the said valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat by turning the disk, and said disk being provided in its bearing-face with a radial groove or recess adapted to connect said central recess of the valve-seat with either of said ports in the valve-seat, said disk being adapted to close both of said ports in the valve-seat when turned to an an intermediate position.

817,885. STEAM-VALVE. ROBERT OWENS and RUSSELL BLACK, Catlettsburg, Ky., assignors of one-third to L. T. Everett, Catlettsburg, Ky. Filed Nov. 8, 1904. Serial No. 231,963.

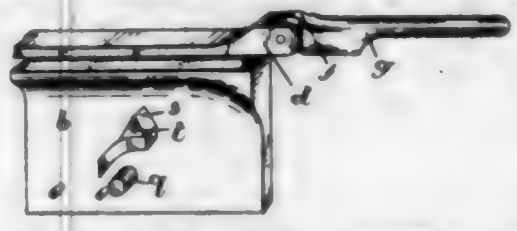
Claim.—1. An engine-valve comprising a cylindrical casing upwardly and downwardly open, having a web at the top and beveled

at its lower end, a piston therein, guide-rods carried by the piston and extending upwardly through the web, and a valve-stem connected to the web.



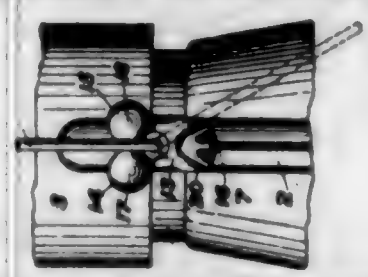
2. The combination with a steam-cylinder having ports adjacent each end, a steam-chamber having communication with each of said ports, said steam-chamber being divided longitudinally into two compartments, each compartment having communication with two of said ports, a steam-supply pipe opening into one compartment, an exhaust-pipe leading from the other compartment, elongated valves arranged in each compartment and adapted to close the said ports, each valve being open at each end, a web being formed at the outer end of each valve, a piston arranged in each valve adapted to prevent passage of steam through the valve, valve-stems extending outwardly through the walls of the steam-chamber, pivoted levers carried by the said chamber, means for connecting the valve-stems to said levers, and the rock-shaft adapted to move the levers and actuate the valves oppositely with respect to each other and independent of movement of the pistons in the valve.

817,886. METAL-BENDING APPLIANCE. Charles E. Pickrell, Georgetown, Canada. Filed Jan. 11, 1905. Serial No. 240,631.



Claim.—A metal-bending appliance comprising a rigid body portion having in one face a groove extending from one side to the other of the body portion, a lever fulcrumed to one end of the body portion and adapted to be extended into a plane parallel with the groove or to be moved into a position to lie at right angles across the same and having a groove to receive the material to be bent, and a holding-block on the reverse side of the body portion to be engaged by the holding device.

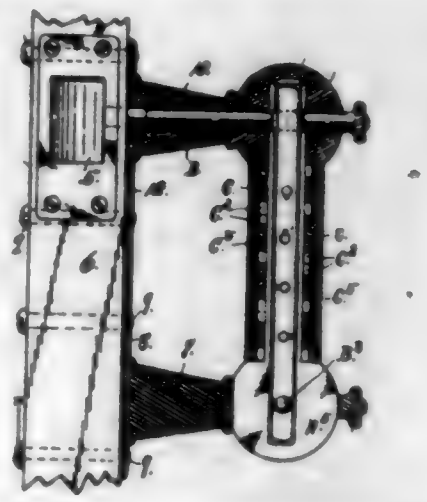
817,887. BAIL-SUPPORT FOR LANTERNS. Albert R. Pritchard, Rochester, N. Y. Filed Sept. 14, 1905. Serial No. 278,282.



Claim.—In a bail-support for lanterns, a lantern-frame having a perforation, a plate having a pair of projections thereon over which the lantern-frame may spring and between which the lantern-bail is held in a vertical position and a pair of stops against which the bail may strike when in a lowered position, an eyelet passing through said plate and the perforation in said frame, and a bail having an end passing through said eyelet.

817,888. COMBINATION-LOCK. Elsworth E. Quaintance, Como, Colo. Filed Jan. 17, 1906. Serial No. 241,450.

Claim.—1. The combination with a bolt to be operated, of a hollow spindle having enlarged extremities provided with separated supporting-pedestals, a locking-bar transversely movable in the hollow spindle and provided with pins, tumblers revolubly mounted on the hollow spindle and having recesses adapted to receive the pins of the locking-bar, and a spindle journaled in one knob and its pedestal, its inner extremity engaging the bolt in operative relation, the bolt-operating spindle being connected with the locking-bar intermediate its extremities whereby the last-named spindle is locked when the locking-bar is in one position and unlocked when the said bar is in the other position.



2. The combination with a bolt to be operated, of a hollow spindle having enlarged extremities provided with pedestals suitably mounted, the spindle being composed of two parts, one of the enlarged extremities being composed of parts formed integral with the adjacent extremities of the spindle parts, one of the spindle parts being also provided with orifices, a transversely-movable locking-bar located within the hollow spindle and having pins passing through the orifices of the said spindle part, tumblers revolubly mounted on the spindle intermediate its enlarged extremities, the tumblers having recesses adapted to receive the pins of the locking-bar when the tumblers are properly adjusted, and a bolt-manipulating spindle journaled in one of the enlarged extemities of the divided spindle, the inner extremity of the bolt-operating spindle being connected in operative relation with the bolt while its opposite extremity protrudes from the enlarged extremity of the divided spindle, the bolt-operating spindle being connected intermediate its extremities with a locking-bar whereby when the latter is in one position the bolt-operating spindle is locked against movement, while when the locking-bar is in the other position the last-named spindle is allowed to turn to operate the bolt, substantially as described.

3. The combination of a hollow spindle having enlarged shouldered extremities, tumblers located between the extremities of the spindle and revolubly mounted thereon, each tumbler having a number of recesses, a spring-actuated locking-bar located within the spindle and having a pin for each tumbler, the pins being adapted to enter one recess of each tumbler, each tumbler having also a circumferential groove surrounding the spindle and a number of recesses formed in the outer wall of the groove, and a number of oppositely-disposed leaf-springs corresponding with the number of the tumblers, the said springs being attached to the spindle and protruding into the said grooves for the purpose set forth.

4. The combination of a hollow spindle having enlarged shouldered extremities, tumblers located between the extremities of the spindle and revolubly mounted thereon, each tumbler having a number of recesses, a spring-actuated locking-bar located within the spindle and having a pin for each tumbler, the pins being shaped to enter one recess of each tumbler, each tumbler having also a pair of circumferential grooves surrounding the spindle, and a number of recesses formed in the outer wall of each groove, the spindle being provided with a number of oppositely-disposed leaf-springs corresponding with the number of tumblers and adapted to enter one groove of each tumbler, the two grooves of each tumbler being so formed that the tumblers are reversible whereby their grooves may be alternately employed to receive the springs of the spindle for the purpose set forth.

817,889. COIN-CONTROLLED TELEPHONE SYSTEM. Robert A. Reynolds, New York, N. Y., assignor to Iron Telephone Company, New York, N. Y., a Corporation of South Dakota. Filed Aug. 19, 1904. Serial No. 221,361.

Claim.—1. In a coin-controlled telephone instrument, the combination with contact-points, a coin-holder and a receiver-hook, of

on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, and means for operating said valve-disk from the exterior of said pipe, said valve-operating means being loosely connected with said valve-disk so that the pressure in the supply-pipe tends to hold the valve-disk against the seat.

3. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, with a central recess and with passages leading from said central recess and communicating with the outer air, and the said valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat by turning the disk, and said disk being provided in its bearing-face with a radial groove or recess adapted to connect the said central recess of the valve-seat with either of said ports in the valve-seat.

4. A portable pneumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe and a reversing-valve comprising a valve-casing attached to the said motor-casing and with which said supply-pipe is connected, a stationary valve-seat disk located within the casing and provided with two eccentrically-arranged ports which communicate with cylinder supply and exhaust passages in the motor-casing that are controlled by the cylinder-valve, said valve-seat disk being also provided in its bearing-face with a central recess and with radial passages leading outwardly from said central recess and opening to the outer air, and a rotative valve-disk bearing against said seat-disk and provided with an eccentric port adapted to register with either of said ports in the said seat-disk and having in its inner face a radial groove or passage adapted to bring said central recess of the seat-disk into communication with either of said ports in said seat-disk.

5. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe, and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with a stationary valve-seat disk and a rotative valve-disk bearing on said seat, said valve-seat disk being provided with two eccentrically-arranged ports which are in communication with the cylinders, supply-passages controlled by said cylinder-valve, with a central recess and with passages leading outwardly from said central recess, and said valve-casing being provided outside of said valve-seat disk with an annular exhaust-passage with which the outer ends of said radial passage in the seat-disk communicate and which opens to the outer air, and the said rotative valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat-disk by turning the disk, and said valve-disk being provided in its bearing-face with a radial groove or recess adapted to connect the said central recess of the valve-seat with either of said ports in the seat-disk.

6. A portable pneumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a reversing-valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports which are in communication with the cylinder and supply-passages controlled by said cylinder-valve, with a central recess and with passages leading from said central recess and communicating with the outer air, and the said valve-disk being provided with two eccentrically-arranged ports extending therethrough and in its bearing-face with two radial grooves or recesses joined at the center of the disk and adapted to connect said central recess of the valve-seat with either of said ports therein.

7. A portable penumatic motor comprising an exterior casing provided with a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve comprising a valve-casing attached to said motor-casing and with which said supply-pipe is connected, a stationary valve-seat disk located within the valve-casing and provided with two eccentrically-arranged ports which communicate with cylinder supply and exhaust passages in the motor-casing that are controlled by the cylinder-valve, said valve-casing being provided with a cap having an inwardly-extending flange which bears against the marginal part of said valve-seat disk and holds the same against the inner wall of the casing, said valve-disk being provided in its bearing-face with a central recess and with radial passages leading outwardly from said central recess and opening to the outer air, and a rotative valve-disk bearing against said seat-disk and provided with an eccentric port adapted to register with either of said ports in the seat-disk and having in its inner face a radial groove or passage adapted to bring said central recess of the seat-disk into communication with either of said ports in said seat-disk.

8. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe and a reversing-valve embracing a valve-casing with which said supply-pipe is connected, said valve-casing being provided with a valve-seat having two ports both of which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, a valve-operating stem connected with the valve and extending into said supply-pipe, a sleeve mounted to turn on said pipe and forming a hand-grip, said sleeve being connected with said valve-stem, and a shiftable stop mounted on said supply-pipe and adapted to engage said sleeve to limit the turning movement thereof.

9. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a reversing-valve embracing a valve-casing with which said supply-pipe is connected, said valve-casing being provided with a valve-seat having two ports both of which are in communication with the cylinder supply and exhaust passages controlled by said cylinder-valve, a rotative valve-disk bearing on said seat and adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, a valve-operating stem connected with the valve and extending into said supply-pipe, a sleeve mounted to turn on said pipe and forming a hand-grip, said sleeve being connected with said valve-stem, and a sliding ring mounted on said air-pipe adjacent to one end of the sleeve and provided with a non-rotative stop projection adapted to engage stop-surfaces on said sleeve to limit the turning movemnt of the latter.

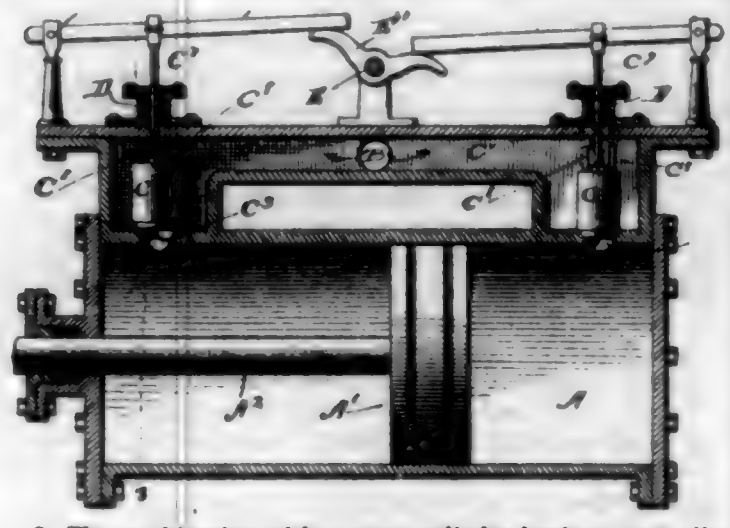
10. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, a supply-pipe, and a combined reversing and throttle valve embracing a valve-casing with which the supply-pipe is connected and which is provided with an outwardly-facing valve-seat having two ports both of which are connected with said cylinder by cylinder supply and exhaust passages controlled by the cylinder-valve, a rotative valve-disk which rests against said seat and is adapted for bringing either of said ports into communication either with the air-supply pipe or with the outer air, and also for closing communication between both of said ports and said air-supply pipe, a valve-operating stem connected with said valve-disk and extending into said air-supply pipe and a rotative hand-grip mounted on the air-supply pipe and connected by means extending through a slot in the said pipe with said valve-disk for turning the latter.

11. A pneumatic motor comprising a power-cylinder, a valve for controlling the admission of pressure fluid to and its exit from said cylinder, an air-supply pipe and a combined reversing and throttle valve embracing a valve-casing with which the supply-pipe is connected, and which is provided with an outwardly-facing valve-seat, and a rotative valve-disk bearing on said seat, said valve-seat being provided with two eccentrically-arranged ports, which are in communication with the cylinder-supply passages controlled by said cylinder-valves, with a central recess and with passages leading from said central recess to the outer air, and the said valve-disk being provided with an eccentrically-arranged port extending therethrough and adapted to register with either of said ports in the seat by turning the disk, and said disk being provided in its bearing-face with a radial groove or recess adapted to connect said central recess of the valve-seat with either of said ports in the valve-seat, said disk being adapted to close both of said ports in the valve-seat when turned to an an intermediate position.

817,885. STEAM-VALVE. ROBERT OWENS and RUSSELL BLACK, Catlettsburg, Ky., assignors of one-third to L. T. Everett, Catlettsburg, Ky. Filed Nov. 8, 1904. Serial No. 231,963.

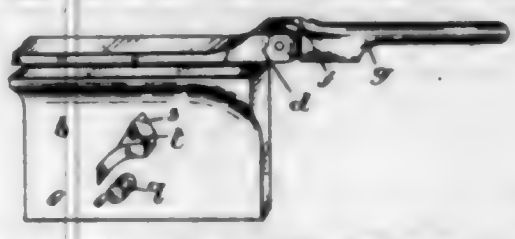
Claim.—1. An engine-valve comprising a cylindrical casing upwardly and downwardly open, having a web at the top and beveled

at its lower end, a piston therein, guide-rods carried by the piston and extending upwardly through the web, and a valve-stem connected to the web.



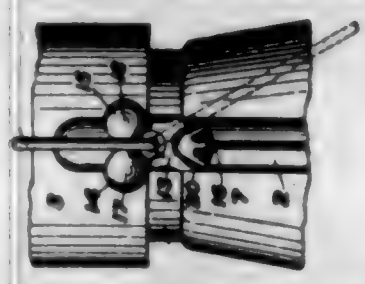
2. The combination with a steam-cylinder having ports adjacent each end, a steam-chamber having communication with each of said ports, said steam-chamber being divided longitudinally into two compartments, each compartment having communication with two of said ports, a steam-supply pipe opening into one compartment, an exhaust-pipe leading from the other compartment, elongated valves arranged in each compartment and adapted to close the said ports, each valve being open at each end, a web being formed at the outer end of each valve, a piston arranged in each valve adapted to prevent passage of steam through the valve, valve-stems extending outwardly through the walls of the steam-chamber, pivoted levers carried by the said chamber, means for connecting the valve-stems to said levers, and the rock-shaft adapted to move the levers and actuate the valves oppositely with respect to each other and independent of movement of the pistons in the valve.

817,886. **METAL-BENDING APPLIANCE.** CHARLES E. PICKERELL, Georgetown, Canada. Filed Jan. 11, 1905. Serial No. 240,631.



Claim.—A metal-bending appliance comprising a rigid body portion having in one face a groove extending from one side to the other of the body portion, a lever fulcrumed to one end of the body portion and adapted to be extended into a plane parallel with the groove or to be moved into a position to lie at right angles across the same and having a groove to receive the material to be bent, and a holding-block on the reverse side of the body portion to be engaged by the holding device.

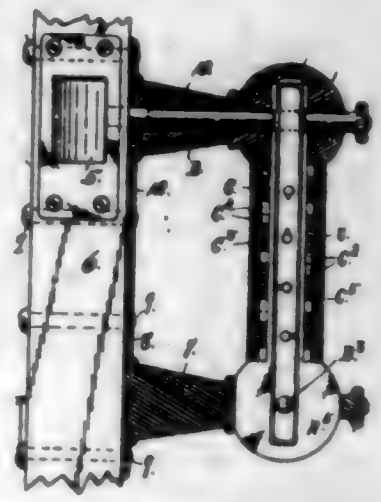
817,887. **RAIL-SUPPORT FOR LANTERNS.** ALBERT R. PRITCHARD, Rochester, N. Y. Filed Sept. 14, 1905. Serial No. 278,209.



Claim.—In a bail-support for lanterns, a lantern-frame having a perforation, a plate having a pair of projections thereon over which the lantern-frame may spring and between which the lantern-bail is held in a vertical position and a pair of stops against which the bail may strike when in a lowered position, an eyelet passing through said plate and the perforation in said frame, and a bail having an end passing through said eyelet.

817,888. **COMBINATION-LOCK.** ELSWORTH E. GUASTAVINO, Como, Colo. Filed Jan. 17, 1905. Serial No. 241,450.

Claim.—1. The combination with a bolt to be operated, of a hollow spindle having enlarged extremities provided with separated supporting-pedestals, a locking-bar transversely movable in the hollow spindle and provided with pins, tumblers revolubly mounted on the hollow spindle and having recesses adapted to receive the pins of the locking-bar, and a spindle journaled in one knob and its pedestal, its inner extremity engaging the bolt in operative relation, the bolt-operating spindle being connected with the locking-bar intermediate its extremities whereby the last-named spindle is locked when the locking-bar is in one position and unlocked when the said bar is in the other position.



2. The combination with a bolt to be operated, of a hollow spindle having enlarged extremities provided with pedestals suitably mounted, the spindle being composed of two parts, one of the enlarged extremities being composed of parts formed integral with the adjacent extremities of the spindle parts, one of the spindle parts being also provided with orifices, a transversely-movable locking-bar located within the hollow spindle and having pins passing through the orifices of the said spindle part, tumblers revolubly mounted on the spindle intermediate its enlarged extremities, the tumblers having recesses adapted to receive the pins of the locking-bar when the tumblers are properly adjusted, and a bolt-manipulating spindle journaled in one of the enlarged extemities of the divided spindle, the inner extremity of the bolt-operating spindle being connected in operative relation with the bolt while its opposite extremity protrudes from the enlarged extremity of the divided spindle, the bolt-operating spindle being connected intermediate its extremities with a locking-bar whereby when the latter is in one position the bolt-operating spindle is locked against movement, while when the locking-bar is in the other position the last-named spindle is allowed to turn to operate the bolt, substantially as described.

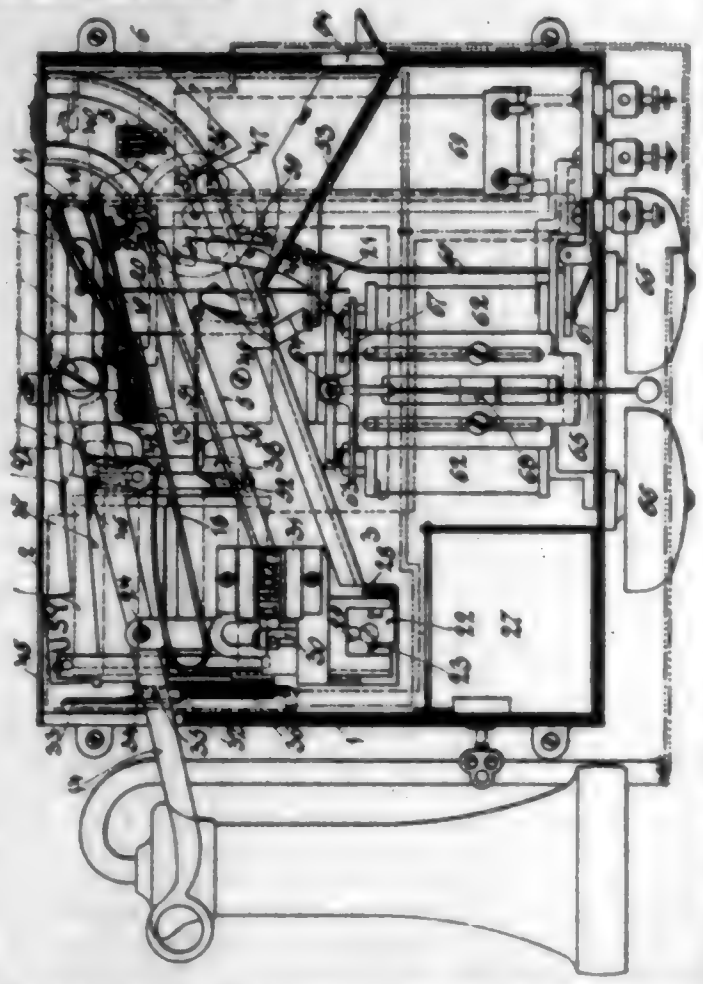
3. The combination of a hollow spindle having enlarged shouldered extremities, tumblers located between the extremities of the spindle and revolubly mounted thereon, each tumbler having a number of recesses, a spring-actuated locking-bar located within the spindle and having a pin for each tumbler, the pins being adapted to enter one recess of each tumbler, each tumbler having also a circumferential groove surrounding the spindle and a number of recesses formed in the outer wall of the groove, and a number of oppositely-disposed leaf-springs corresponding with the number of the tumblers, the said springs being attached to the spindle and protruding into the said grooves for the purpose set forth.

4. The combination of a hollow spindle having enlarged shouldered extremities, tumblers located between the extremities of the spindle and revolubly mounted thereon, each tumbler having a number of recesses, a spring-actuated locking-bar located within the spindle and having a pin for each tumbler, the pins being shaped to enter one recess of each tumbler, each tumbler having also a pair of circumferential grooves surrounding the spindle, and a number of recesses formed in the outer wall of each groove, the spindle being provided with a number of oppositely-disposed leaf-springs corresponding with the number of tumblers and adapted to enter one groove of each tumbler, the two grooves of each tumbler being so formed that the tumblers are reversible whereby their grooves may be alternately employed to receive the springs of the spindle for the purpose set forth.

817,889. **COIN-CONTROLLED TELEPHONE SYSTEM.** ROBERT A. REYNOLDS, New York, N. Y., assignor to Iron Telephone Company, New York, N. Y., a Corporation of South Dakota. Filed Aug. 19, 1904. Serial No. 221,361.

Claim.—1. In a coin-controlled telephone instrument, the combination with contact-points, a coin-holder and a receiver-hook, of

means operated jointly by a coin in such holder and by movement of said receiver-hook, for bringing said contact-points together, said contact-points adapted to connect the telephone instrument in talking-circuit with the line.



2. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of circuit-closing contacts arranged to connect the instrument in talking-circuit with the line, a receiver-hook, and means operated by the receiver-hook and controlled by the coin when so arrested in the chute for closing the said contacts.

3. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of contact-springs arranged above the point at which the coin is arrested and normally out of electrical contact with each other, a receiver-hook, and means carried thereby operating to engage the said contact-springs upon the upward or release movement thereof, and by coaction with a coin in the chute, to cause the said contact-springs to engage each other.

4. In a coin-controlled telephone instrument, the combination with a coin-chute and a finger for temporarily arresting a coin therein, of a contact-spring arranged above the coin-chute and provided with an insulating-block arranged to engage the periphery of a coin retained in the chute, another contact-spring arranged in proximity thereto, and a telephone-hook having a projecting stud 17 arranged to press the said contact-springs together upon release movement of the telephone-hook, provided the lower spring is supported by a coin in the chute, but adapted to move the springs without electrically connecting them should the lower spring be unsupported.

5. In a coin-controlled telephone instrument, the combination with a coin-chute and a finger adapted to temporarily arrest a coin in the chute, of means connected to the receiver-hook and operated by the movement thereof in one direction for tripping the said finger to release the coin, said means yielding to avoid moving the finger when the receiver-hook moves in the other direction.

6. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of circuit-closing contacts arranged to connect the instrument in talking-circuit with the line, a receiver-hook, means operated by the receiver-hook and controlled by the coin when so arrested in the chute for closing the said contacts, and means connected with the telephone-hook for tripping the said coin-arresting means.

7. In a coin-controlled telephone instrument, the combination with a circuit-closer and a receiver-hook, of means arranged to be controlled by a coin for operating said circuit-closer upon release movement of said receiver-hook, and other means for controlling the operation of said circuit-closer upon a similar release movement of said receiver-hook.

8. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of a circuit-closer, a receiver-hook, and means carried by said receiver-hook for operating the said circuit-closer during release movement thereof when a coin is in position in the chute, and means arranged for temporary substitution for the coin for controlling the circuit-closing operation upon such release movement of the receiver-hook.

9. In a coin-controlled telephone instrument, the combination with a coin-chute, means for temporarily arresting a coin therein, and a contact-spring arranged to be pressed upon the periphery of a coin so arrested in said chute, of a gravity device pivoted in proximity to the point in the chute in which the coin is held, said gravity device arranged normally out of the path of movement of the said spring, but adapted, when desired to be swung in the path thereof, to support same in substitution for the coin.

10. In a coin-controlled telephone instrument, the combination with a coin-controlled circuit-closer, of a gravity device and means for operating same to control the circuit-closer in substitution for the coin-controller.

11. In a coin-controlled telephone instrument, the combination with a coin-controlled circuit-closer, of a gravity device, signaling means, and means operated by the signaling means for operating said gravity device arranged to control the circuit-closer in substitution for a coin.

12. In a telephone instrument, the combination with a coin-controlled circuit-closer for the talking-circuit thereof, ringer-coils in the ringing-circuit thereof, a gravity device arranged to control the circuit-closer independent of a coin, and means operated by the ringer-coils for operating the gravity device.

13. In a coin-controlled telephone instrument, the combination with a coin-controlled circuit-closer and a signaling device, of means operated by the signaling device for also controlling the said circuit-closer.

14. In a telephone system and apparatus, the combination with a subscriber's telephone instrument including a coin-receiver, and a circuit-closer for closing circuit in the line controlled by a coin received therein, of electromagnetic means for discharging the coin from the receiver and returning same to the subscriber, said means including a circuit-closer arranged in series with another circuit-closer at central, between the return leg of the line and ground, whereby closing of circuit through both said circuit-closers is necessary to operate the said coin-discharging means, and same will be operated regardless of whether the line-circuit is open or closed.

15. In a telephone system and apparatus, the combination with a subscriber's telephone instrument including a coin-receiver, and a circuit-closer for closing talking-circuit in the line controlled by a coin received therein, of means under the joint control of the central operator and the subscriber for expelling and returning the coin from the coin-chute, said means included in one side only of the line.

16. In a telephone system and apparatus, the combination with a subscriber's telephone instrument, including a coin-receiver and a circuit-closer for closing talking-circuit in the line, controlled by a coin received therein, of means under the joint control of the central operator and the subscriber for expelling and returning the coin from the coin-chute while talking-circuit is closed in the line.

17. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of a pivoted gate forming a part of the said coin-chute, a locking device for normally holding said gate in position, said gate arranged to be overbalanced by a coin when arrested in said coin-chute, means for tripping said locking device to permit said coin to overbalance the pivoted gate, whereby said coin may be expelled from the chute and returned.

18. In a coin-controlled telephone instrument, the combination with a coin-chute and means for temporarily arresting a coin therein, of a pivoted gate forming a part of the said coin-chute, a locking device for normally holding said gate in position, said gate arranged to be overbalanced by a coin when arrested in said coin-chute, means for tripping said locking device to permit said coin to overbalance the pivoted gate, whereby said coin may be expelled from the chute and returned, said gate arranged to return to its normal position when the coin is discharged, by gravity.

19. In a coin-controlled telephone instrument, the combination with a coin-chute and coin-controlled mechanism for closing electric circuit when a coin is inserted in the chute, of a privacy device and means for rejecting the coin from the chute when the privacy device is operated.

20. In a coin-controlled telephone instrument, the combination with a coin-chute and coin-controlled mechanism for closing electric contacts, of a privacy device arranged upon its operation to prevent closing of said electric contacts.

21. In a coin-controlled telephone instrument, the combination with a coin-chute and coin-controlled mechanism for closing electric contacts, of a privacy device arranged upon its operation to prevent closing of said electric contacts and for rejecting and returning the coin employed for such control.

22. In a telephone system and apparatus, the combination with a normally open line-circuit, of coin-controlled means for closing circuit in the said line, and means for preventing the closing of said circuit if a circuit has already been closed in the line.

23. In a telephone system and apparatus, the combination with a normally open line-circuit, of coin-controlled means for closing circuit in the said line, and means for preventing the closing of said circuit if circuit has already been closed in the line, and for rejecting and returning the coin used for such control.

24. In a coin-controlled telephone instrument, the combination with a coin-chute provided with a pivoted gate and a coin-controlled circuit-closer, of a privacy device including an electromagnet, and means operated by said electromagnet for tripping the said gate.

25. In a coin-controlled telephone instrument, the combination with a coin-chute provided with a pivoted gate for rejecting and returning a coin deposited therein, and a coin-controlled circuit-closer, of means for locking the said gate in position, a privacy device including an electromagnet and an armature therefor, and means operated by the armature in its movement for releasing the gate-locking means.

26. In a coin-controlled telephone instrument, the combination with a coin-controlled circuit-closer, of a privacy device including an electromagnet, a busy-signal controlled by said electromagnet, and means operated by the electromagnet synchronously with the operation of the privacy device for rejecting and returning the coin.

27. In a telephone system and apparatus, the combination with a coin-controlled circuit-closer, a privacy device, and means for rejecting a coin upon operation of the privacy device, of a hand-operated circuit-closer arranged in multiple with the coils of the privacy device.

28. In a telephone system and apparatus, the combination with a coin-controlled circuit-closer, a privacy device, and means for rejecting a coin upon operation of the privacy device, of a hand-operated circuit-closer arranged in multiple with the coils of the privacy device, and means at the central station for completing circuit through the privacy-device coils and the hand-operated circuit-closer.

29. In a coin-controlled telephone instrument, the combination with a receiver-hook and a coin-chute, of a slide connected to the receiver-hook and adapted to receive a coin thereon from the chute, a coin-counter and means operated by the slide in its movement for operating the coin-counter.

30. In a coin-controlled telephone instrument, the combination with a receiver-hook, a coin-chute and a slide connected with said receiver-hook adapted to receive coins from the said chute, of a coin-counter, means operated by said slide in its movement when a coin is therein for operating said counter and for rejecting the coin after it has been employed for control of said counter.

31. In a coin-controlled telephone instrument, the combination with a coin-chute and a receiver-hook, of a reciprocating slide connected with said receiver-hook and arranged to take its movement therefrom, said slide arranged to receive coins from said coin-chute, a coin-counter, operating means therefor in proximity to the said slide, said operating means engaged by a coin when contained in the slide and upon reciprocating movement thereof.

32. In a coin-controlled telephone instrument, the combination with a coin-chute and a pivoted receiver-hook, of a slide connected to said receiver-hook, said slide provided with a slot, a coin-counter, an operating-lever therefor, one end of which is received within the said slot in the slide, said slide having means for supporting a coin thereon in a position to partially cover the said slot, whereby the portion of the lever received therein is confined between the periphery of the coin and the end of the said slot, substantially as and for the purpose specified.

33. In a coin-controlled telephone instrument, the combination with a coin-chute of a reciprocating slide adapted to receive coins therefrom, and means for causing the said slide to pass through a different path of movement when moving in one direction to the path of movement it passes through when moving in the other direction, substantially as specified.

817,890. PRIVACY DEVICE AND BUSY-SIGNAL FOR TELEPHONE APPARATUS AND SYSTEMS. ROBERT A. REYNOLDS, New York, N. Y., assignor to Iron Telephone Company, New York, N. Y., a Corporation of South Dakota. Filed Aug. 19, 1904. Serial No. 221,360.



Claim.—1. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a privacy device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby circuit will only be completed through the privacy branch of one instrument and the talking-switch of another instrument.

2. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a privacy device for each instrument, including an electromagnet, and means, operating when the line-circuit is connected to the generator, for energizing the privacy device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

3. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a privacy device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, and an insulator controlled by said electromagnet, adapted to be inserted between the contacts of said switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby circuit will only be completed through the privacy branch of one instrument and the talking-switch of another instrument.

4. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a privacy device for each instrument, including an electromagnet, and an insulator controlled thereby adapted to be inserted between the contacts of said switch, and means, operating when the line-circuit is connected to the generator, for energizing the privacy device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

5. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a busy-signal device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby circuit will only be completed through the busy-signal branch of one instrument and the talking-switch of another instrument.

6. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a busy-signal device for each instrument, including an electromagnet, and means, operating when the line-circuit is connected to the generator, for energizing the busy-signal device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

7. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a busy-signal device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, and an insulator controlled by said electromagnet adapted to be inserted between the contacts of said switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby circuit will only be completed through the busy-signal branch of one instrument and the talking-switch of another instrument.

8. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a busy-signal device for each instrument, including an electromagnet, and an insulator controlled thereby adapted to be inserted between the contacts of said switch, and means, operating when the line-circuit is connected to the generator, for energizing the busy-signal device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

9. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a busy-signal and privacy device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby said circuit will only be completed through the busy-signal and privacy branch of one instrument and the talking-switch of another instrument.

10. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a busy-signal and privacy device for each instrument, including an electromagnet, and means, operating when the line-circuit is connected to the generator, for energizing the busy-signal and privacy device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

11. In a telephone system, the combination with a generator and a conductor arranged to connect therewith, of a plurality of telephone instruments, each provided with a switch for connecting same in talking-circuit with the conductor and having a common return to said generator, of a busy-signal and privacy device for each instrument including an electromagnet arranged in a normally open branch in series with said talking-switch, and an insulator controlled by said electromagnet, adapted to be inserted between the contacts of said switch, said branch, when closed, also constituting a return-path from the said switch to the generator, and means for momentarily closing and then opening the branch of any one instrument prior to the closing of the talking-switch thereof, whereby circuit will only be completed through the busy-signal and privacy branch of one instrument and the talking-switch of another instrument.

12. In a telephone system, the combination with a central-energy generator, a line-circuit, and a plurality of telephone instruments arranged to be connected in said circuit, of a busy-signal and privacy device for each instrument, including an electromagnet, and an insulator controlled thereby, adapted to be inserted between the contacts of said switch, and means, operating when the line-circuit is connected to the generator, for energizing the busy-signal and privacy device of any one instrument only with the attempted operation of its own instrument concurrently with another said instrument.

13. In a telephone system, the combination with a privacy device, a circuit-closer therefor, and a receiver-hook, of means operated by the receiver-hook during its upward movement, and upon upward movement only thereof, to momentarily operate the circuit-closer.

14. In a telephone system, the combination with a privacy device, a circuit-closer therefor, and a receiver-hook, of means connected with the receiver-hook for momentarily closing the said circuit-closer upon upward movement thereof, said means failing to operatively engage the circuit-closer upon return movement of the hook.

15. In a telephone system, the combination with a busy-signal, a circuit-closer therefor, and a receiver-hook, of means operated by the receiver-hook during its upward movement, and upon upward movement only thereof, to momentarily operate the circuit-closer.

16. In a telephone system, the combination with a busy-signal, a circuit-closer therefor, and a receiver-hook, of means connected with the receiver-hook for momentarily closing the said circuit-closer upon upward movement thereof, said means failing to operatively engage the circuit-closer upon return movement of the hook.

17. In a telephone system, the combination with a privacy device and busy-signal, a circuit-closer therefor, and a receiver-hook, of means operated by the receiver-hook during its upward movement, and upon upward movement only thereof, to momentarily operate the circuit-closer.

18. In a telephone system, the combination with a privacy device and busy-signal, a circuit-closer therefor, and a receiver-hook, of means connected with the receiver-hook for momentarily closing the said circuit-closer upon upward movement thereof, said means failing to operatively engage the circuit-closer upon return movement of the hook.

19. In a telephone apparatus, the combination with a telephone-hook and an electromagnet arranged to be energized upon the upward movement of the said telephone-hook, of a detent carried by said telephone-hook, and a busy-signal, said detent arranged to be shifted to a position to engage said busy-signal upon upward movement of the telephone-hook, when the said electromagnet is energized.

20. In a telephone apparatus, the combination with a telephone-hook, and an electromagnet adapted to be energized upon the upward movement of the said hook, of a pivoted detent carried by said hook, a connection therefrom to the armature of said electromagnet, and a busy-signal arranged to be engaged by said detent during the upward movement of the telephone-hook, when said electromagnet has been energized.

21. In a telephone apparatus, the combination with a pivoted telephone-hook, an electromagnet, and a circuit-closer therefor operated by the telephone-hook in its upward movement, of a busy-signal loosely pivoted coincidently with said telephone-hook, a detent carried by said telephone-hook, said detent arranged to be operated by the said electromagnet, and, when so operated, to engage the busy-signal upon upward movement of the said hook to set the busy-signal.

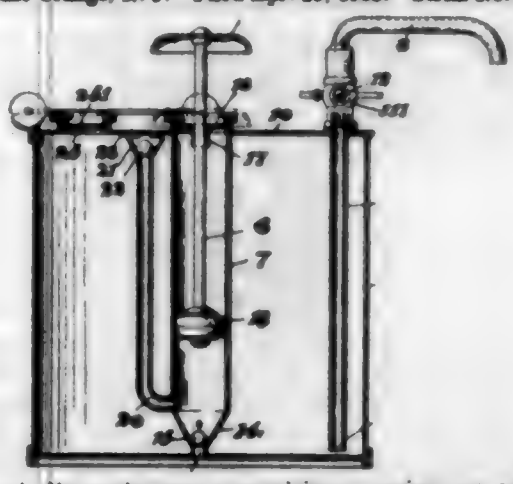
22. In a telephone system, the combination with a generator, two conductors arranged to connect with opposite poles thereof, and a plurality of telephone instruments each provided with a switch for bridging same in talking-circuit across the said conductors, of a privacy device for each instrument having an electromagnet arranged in a normally open branch connected at its opposite ends to one of the said conductors at two points therein, and means for momentarily closing and then opening the branch of any one instrument prior to the operating of the said switch thereof.

23. In a central-energy telephone system, the combination with a central-energy generator, two conductors arranged to connect with opposite poles thereof, a ground connection for one pole, and a plurality of telephone instruments each provided with a switch for bridging same in talking-circuit across the said conductors, of a privacy device for each instrument arranged in a normally open branch connected at one end to a point between the said switch and the

grounded side of the generator, and at the other end connected with ground, and means for momentarily closing and then opening the said branch of any one instrument prior to operating the said switch thereof.

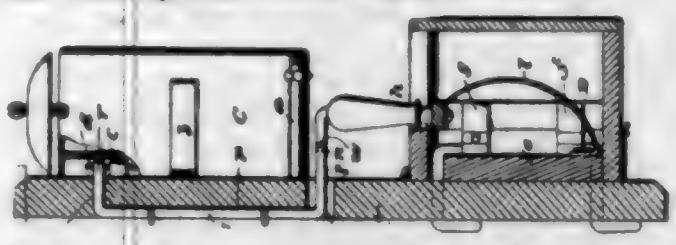
24. In a central-energy telephone system, the combination with a line-circuit and a generator in normal connection therewith, of a plurality of telephone instruments and privacy devices therefor each including an electromagnet, and means for electrically connecting the electromagnet for the privacy device of any one instrument with the line, only while another instrument is in use.

817,391. GASOLENE-DISPENSING CAN. WILLIAM HY ROBERTSHAW, East Orange, N. J. Filed Apr. 20, 1905. Serial No. 257,993.



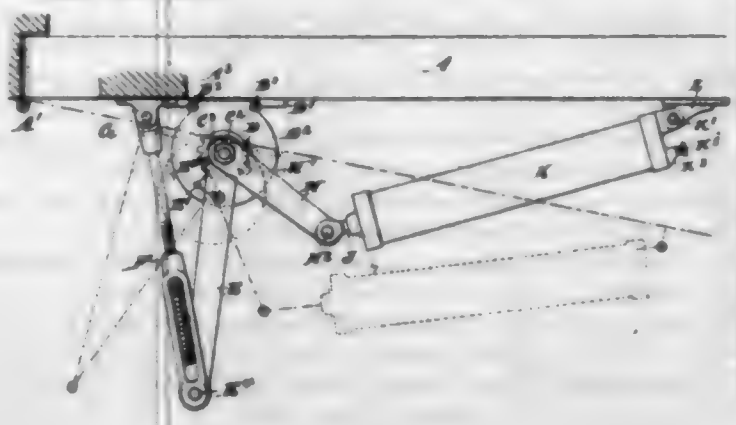
Claim.—A dispensing-can comprising a casing, an outlet-pipe extending from the interior to the exterior of the can, a valve in the outlet, a pump extending from the top to the bottom of the can and having a plunger therein, a tight closure at the top of the pump between the pump and the can, a narrow neck on the pump extending through the bottom of the can, a ball in the neck of the pump; a pipe parallel with the pump and entering the pump above the neck of the pump, a flaring mouth on the pipe in close proximity to the top of the can, and a ball in the mouth of the pipe larger in diameter than the space between the top of the pipe and the top of the can.

817,392. ELECTRIC TIME-SWITCH. JOHN B. ROGERS, Elkhart, Ind. Filed July 10, 1905. Serial No. 269,064.



Claim.—A device for the purpose described comprising a body, a switch-lever supported on the front of the body and provided with a toe, a spring for pressing said lever forwardly, a rock-shaft journaled in a suitable bearing at the back of the body and having arms extending forwardly through openings in the body and also having a toe on one of the arms arranged to engage that of the switch-lever, and a clock supported on the body and having a shaft and a short tappet on said shaft arranged to engage the other arm of the rock-shaft at predetermined times.

817,393. DOOR CLOSER AND CHECK. ALBERT J. ROSENTRETER, Boonton, N. J., assignor to himself, and Thomas Hannah, Pittsburg, Pa., and Gerald Hannay, Newark, N. J. Filed Mar. 30, 1905. Serial No. 253,799.



Claim.—1. In a door-closer, a casing adapted to be mounted on a door, a spindle mounted in said casing and having an operating-arm having notches on opposite sides of the spindle and pivoted to a link adapted to be secured to the door-frame, a coiled spring in said casing having axial portions within which said spindle is received, means coöperating with said spring to increase the tension of the latter by the turning of said spindle in either direction by the opening movement of either a right or left hand door, a checking-lever constructed to engage the notches of said operating-arm and be moved thereby, and means operated by said lever for checking the closing movement of such door.

2. In a door-closer, a casing adapted to be mounted on a door, a spindle mounted in said casing and having an operating-arm having notches on opposite sides of the spindle and pivoted to a link adapted to be secured to the door-frame, a coiled spring in said casing having axial portions within which said spindle is received, means coöperating with said spring to increase the tension of the latter by the turning of said spindle in either direction by the opening movement of either a right or left hand door, a checking-lever constructed to engage the notches of said operating-arm and be moved thereby, a piston pivoted to said lever, and a cylinder receiving said piston and adapted to be pivotally connected to the door for checking the closing movement of such door.

3. In a door-closer, a casing adapted to be mounted on a door, a spindle mounted in said casing and having an operating-arm having notches on opposite sides of the spindle and pivoted to a link adapted to be secured to the door-frame, a coiled spring in said casing having axial portions within which said spindle is received, means cooperating with said spring to increase the tension of the latter by the turning of said spindle in either direction by the opening movement of either a right or left hand door, a checking-lever constructed to engage the notches of said operating-arm and be moved thereby, a piston pivoted to said lever, a cylinder receiving said piston and adapted to be pivotally connected to the door for checking the closing movement of such door, and means for controlling the escape of air or other checking medium from said cylinder to govern such closing movement.

4. In a door-closer, a casing adapted to be mounted on a door, a spindle mounted in said casing, a coiled spring in said casing, means coöperating with said spring to increase the tension of the latter by the turning of said spindle in either direction by the opening movement of either a right or left hand door, an operating-arm having notches on opposite sides of the spindle and mounted on said spindle, a pawl on said arm, a ratchet-plate secured to said spindle and arranged to serve with said pawl in adjusting the normal tension of said spring in either direction, a link pivoted to said arm and adapted to be secured to the door-frame, a checking-lever mounted on said spindle angularly to said arm and constructed to be engaged and moved thereby, an air-cylinder adapted to be pivotally secured to the door, and a piston in said cylinder pivoted to said checking-lever.

5. In a door closer and check, a casing adapted to be secured to a door, a spring therein arranged to serve in closing either a right or left hand door, a spindle mounted in said casing and connected to said spring, an operating-arm having notches on opposite sides of the spindle and connected to said spindle, a link pivoted to said arm and adapted to be secured to a door-frame on either side of said spindle, a ratchet-plate on said spindle for adjusting the normal tension of said spring in either direction, a checking-lever moving with said arm and constructed to engage the notches in said operating-arm and be moved thereby, and a checking means adapted to be secured to said door on either side of said casing and operated by said checking-lever.

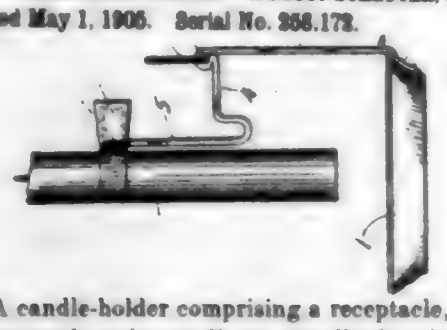
6. In a door-closer, a casing, a spring therein arranged to serve in closing either a right or left hand door, a spindle mounted in said casing and connected to said spring, an operating-arm connected to said spindle and having notches therein on opposite sides of said spindle, a link pivoted to said arm and adapted to be secured to a door-frame, a checking-lever mounted above said arm on said spindle and extending outwardly and downwardly, a lug on said lever adapted to engage in either of said notches, a piston pivotally secured to said lever, and a checking-cylinder inclosing said piston and adapted to be pivotally secured to the door on either side of said casing.

7. In a door closer and check, a casing adapted to be secured to a door, a spring therein arranged to serve in closing either a right or left hand door, a spindle mounted in said casing and connected to said spring, an operating-arm mounted on said spindle, a pawl on said arm, a ratchet-plate secured to said spindle and arranged to serve with said pawl in adjusting the normal tension of said spring in either direction, notches in said arm on opposite sides of said spin-

dle, a link pivoted to said arm and adapted to be secured to a door-frame on either side of said spindle, a checking-lever mounted on said spindle above said arm and extending outwardly and downwardly, a lug on said lever adapted to engage in either of said notches, a piston pivotally secured to said lever, a cylinder inclosing said piston and adapted to be pivotally secured to the door on either side of said casing, and means for controlling the escape of air from said cylinder.

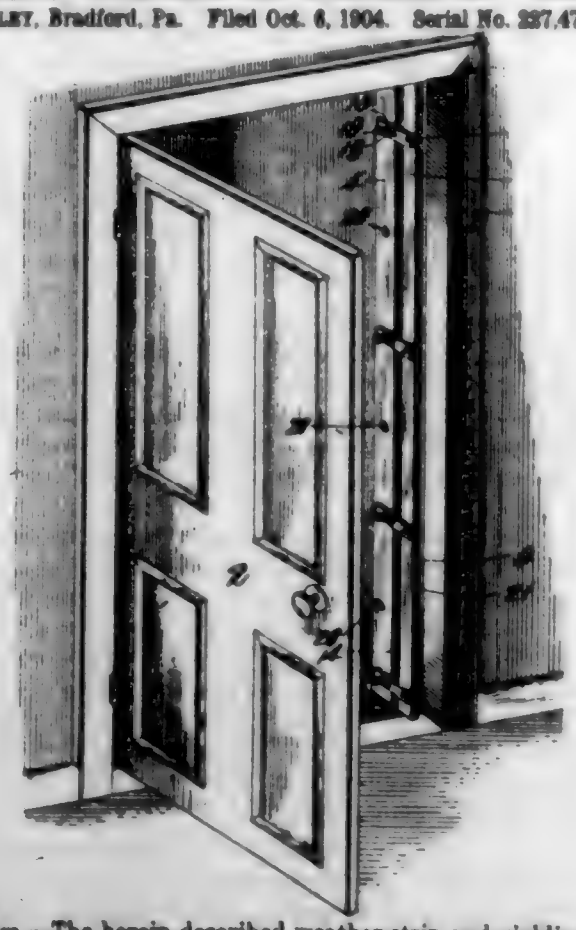
8. In a door closer and check, a casing adapted to be secured to a door, a spindle mounted in said casing, a spring in the latter actuating said spindle in the direction to close such door, an operating-arm having notches on opposite sides of the spindle and secured to said spindle and connected by a link to the door-frame, a ratchet-plate on said spindle and means coöperating therewith for adjusting the normal tension of said spring in either direction, a checking-lever constructed to engage the notches of said operating-arm and be moved thereby, a checking-cylinder adapted to be pivotally secured to said door, and a piston inclosed in said cylinder and pivotally connected to said lever.

817,394. CANDLE-HOLDER. AUGUST SCHLUTER, Jr., New York, N. Y. Filed May 1, 1905. Serial No. 258,172.



Claim.—A candle-holder comprising a receptacle, a handle secured to the receptacle and extending upwardly therefrom, said handle being bent upon itself adjacent its middle to form an eye, a supporting member engaged in said eye, the remainder of said handle extending at right angles to its main portion and having its end extended upwardly in a plane parallel to the first-named portion, the last-named portion having its extreme end reduced to form a squared pintle, clamping members provided with ears mounted upon said pintle, the ears of one of said members being provided with rectangular apertures to prevent turning of the same upon said pintle and the other of said members being formed with circular apertures to allow pivotal movement of the said member upon said pintle.

817,395. DOOR-JAMB AND WEATHER-STRIP. CHARLES B. SEELEY, Bradford, Pa. Filed Oct. 6, 1904. Serial No. 227,475.



Claim.—The herein-described weather-strip and yielding door-jamb, complete in itself and attachable to any door or frame without modification of the latter, and consisting of two strips 3, 4, of like thickness, each rabbeted to overlap and mutually guide each other and to bring the lateral surface of each into the same plane as the corresponding surface of the other, registering openings 10, 11, in said strips, one of said openings 10, passing entirely through the strip and provided with a countersunk shoulder 12, the other alining opening extending partially through the other strip, a screw passing through said opening 10 and secured in the bottom of the opening 11, a spring surrounding the screw and bearing at its opposite ends against the shoulder 12 with the head of the screw resting against the countersunk portion, slotted plates each secured to the outer surface of one of the strips and connected to the like surface of the other strip by a screw passing through the slot in the plate to prevent the separation of the plates, and a strip of felt secured to the edge of the outer strip, substantially as described.

817,396. RECEPTACLE FOR INCANDESCENT ELECTRIC LAMPS. ALBERT P. SEYMOUR, Syracuse, N. Y., assignor to Pass & Seymour, Incorporated, Solvay, N. Y., a Corporation of New York. Filed Jan. 30, 1905. Serial No. 243,274.



Claim.—1. In an incandescent-electric-lamp receptacle, the combination with a porcelain cap and body, having channels for the conductors, and in combination therewith, wire-terminal pieces secured between the cap and body and fitting the channels, an outer lamp-terminal on the body, screws connecting said outer terminal to one terminal piece, a single screw forming the central lamp-terminal and engaging with the opposite terminal piece, and also securing the body to the cap, and pointed screws arranged in the ends of the respective terminal pieces, adapted to make connection with the conductors arranged in the channels and to secure the receptacle in position.

2. In an incandescent-electric-lamp receptacle for temporary use, the combination with a porcelain cap and body, the cap being domed on its upper surface, and on its lower surface having a depending margin, parallel channels for the conductors, and in combination therewith, wire-terminal pieces secured between the cap and body and fitting to correspond to the channels, an outer lamp-terminal on the body, screws connecting said outer terminal to one terminal piece, a single screw forming the central lamp-terminal and engaging with the opposite terminal piece, and also securing the body to the cap, and pointed screws arranged in the ends of the respective terminal pieces and adapted to make connection with the conductors arranged in the channels and to secure the receptacle in position.

3. In an incandescent-electric-lamp receptacle for temporary use, the combination with a porcelain cap and body, the cap on its lower surface having parallel channels on opposite sides for the conductors, recesses for the terminal pieces and an angular wall between said recesses, the body being beveled on its upper portion parallel to the channels and having cut-outs and an abutment to fit said wall and with a mouth for the lamp-terminals, and in combination therewith, wire-terminal pieces secured between the cap and body and fitting the respective channels and recesses, an outer lamp-terminal in the mouth, screws connecting said outer terminal to one terminal piece, having its forked ends arranged in said cut-outs, said screws securing said terminal and terminal piece in position, a single screw forming the central lamp-terminal and engaging with the opposite terminal piece arranged on the abutment and also engaging with the cap, and pointed screws arranged in the ends of the respective terminal pieces and adapted to make connection with the conductors arranged in the channels and to secure the receptacle in position, substantially as described and shown.

4. In an incandescent-electric-lamp receptacle for temporary use, the combination with a porcelain cap and body, the cap being domed on its upper surface, and having a depending margin on its lower, parallel channels on opposite sides for the conductors, grooves in the margin for the connecting-screws, recesses registering with said grooves for the terminal pieces and an angular wall between said recesses, the body being beveled on its upper portion parallel to the channels and having cut-outs and an abutment to fit said wall and with a mouth for the lamp-terminals, and in combination therewith, wire-terminal pieces secured between the cap and body and fitting the respective recesses, an outer lamp-terminal in the mouth, screws connecting said outer terminal to one terminal piece having forked ends arranged in said cut-outs, said screws securing said terminal and terminal piece in position, a single screw forming the central

lamp-terminal and engaging with the opposite terminal piece arranged on said abutment and also engaging with a nut arranged in depression in the upper surface of the cap to secure the body to the cap, and pointed connecting-screws arranged in the ends of the respective terminal pieces and adapted to make connection with the conductors arranged in the channels and to secure the receptacle in position, substantially as described and shown.

5. In a receptacle, the combination with a porcelain cap and body having channels for the line-wires, of lamp-terminals on the body, wire-terminals on the body, screws connecting the lamp-terminals respectively to the wire-terminals, one of said screws being adapted to engage with the cap, and screws on the wire-terminals to engage with the line-wires.

6. In a receptacle, the combination with a porcelain cap and body, formed with opposite channels for the line-wires, means to connect the cap and body, said channels having openings extending downwardly and outwardly between the cap and body whereby the wires may be arranged in the respective channels without changing the relation of the cap and body, of screws secured on the porcelain parts and adapted to engage with the line-wires.

7. In a receptacle, the combination with a cap and body of insulating material, the cap being of larger diameter than the body and having a depending margin, and said cap being formed with side channels opening downwardly and outwardly to receive the line-wires, lamp-terminals on the body, wire-terminals arranged adjacent respectively to the channels and connected respectively to the lamp-terminals, and screws on the wire-terminals to engage with the line-wires.

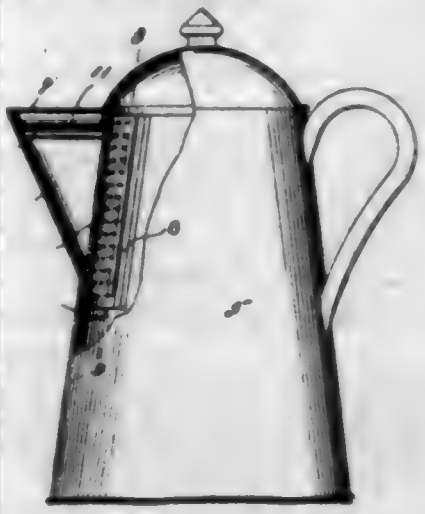
8. In a receptacle, the combination with a porcelain supporting portion having downwardly and outwardly inclined, parallel, open channels for the conducting-wires, said channels being arranged at a right angle to the axis of the receptacle, lamp-terminals on the porcelain portion, and screws connected to the respective lamp-terminals and adapted to engage with the wires, whereby the wires can be laid freely in the channels when the screws are turned back.

9. In a receptacle, the combination with a cap and body of insulating material, lamp-terminals on the body, means to secure the cap to the body, said device being provided with laterally-open channels between the cap and body to receive the conducting-wires after the cap and body have been connected in operative position and without disturbing their relation, and screws connected to the respective lamp-terminals to engage with the respective wires.

10. In a device of the character described, the combination with a base of insulating material formed with two externally-open, straight, parallel channels, arranged one on each side of the base to receive the respective line-wires, and to prevent the device twisting on the wires, of wire-terminals arranged one adjacent to each channel, means for connecting the wire-terminals to a translating device, and screws supported in the wire-terminals and adapted to be turned to engage by their tips with the line-wires, whereby the device is supported in position and connection made with the line-wires.

11. In a device of the character described, the combination with a cap and body of insulating material forming a two-part supporting-base, having outwardly-open, parallel channels formed between the cap and the body to receive the line-wires, of means to secure the body to the base, wire-terminals arranged one on each side adjacent to the respective channels and within the periphery of the base, and of screws arranged in the wire-terminals and adapted to engage by their tips with the line-wires, whereby the device is simultaneously supported in position and electrical connection is made with the line-wires.

817,397. STRAINER. NANCY E. SKINNER, West Lorne, Canada. Filed Oct. 27, 1905. Serial No. 284,084.



Claim.—The combination with a vessel having a pouring-spout, and a removable strainer over the spout-inlet, said spout having a groove adjacent its outlet, which groove opens at its rear end into the spout-inlet, of a strainer slidable into and out of the aforesaid groove through the spout-inlet.

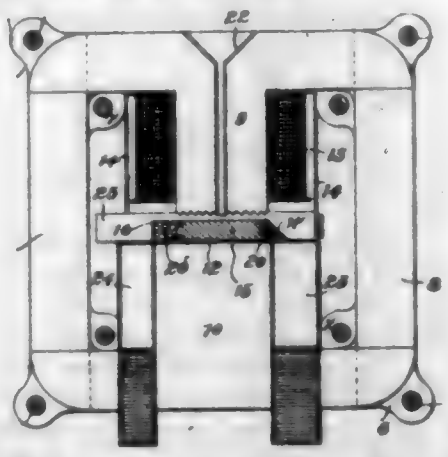
817,398. DRILL-ROD COUPLING. VOORHEES G. SMITH, Iola, Kans., assignor of one-fourth to Daniel B. D. Smeltzer and one-fourth to George D. Smeltzer, Iola, Kans. Filed Apr. 20, 1905. Serial No. 256,618.



Claim.—1. In a rod-coupling, a rod having at one end a recess tapered for the greater portion of its length and provided with an internal thread, said rod being further provided with a radially-disposed set-screw-receiving opening and having at its periphery a recess surrounding the wall of the opening, the wall of said recess being provided with a plurality of notches, a second drill-rod section having a threaded stem tapered for the greater portion of its length and provided near its extreme inner end with an annular groove, a set-screw extending through the radial opening and entering said groove, the head of the set-screw having a diametrical opening, and a cotter-pin arranged in said diametrical opening and movable in the direction of its length to introduce one of its ends into locking engagement with any one of the notches, the pin when free from the notches having unrestricted revoluble movement to permit adjustment of the set-screw.

2. In a drill-rod coupling, a rod-section having at one end a tapering recess provided with an internal thread, a second section having a threaded stem entering said recess and provided with an annular groove, a set-screw extending through an opening in the first section and entering said groove, the periphery of said second section being provided with a recess through which the head of the set-screw extends, and the wall of said recess being notched, and a cotter-pin carried by the head of the set-screw and movable in the direction of its length into locking engagement with said notch, the pin when moved in the opposite direction being freely revoluble within said recess to permit adjustment of the set-screw.

817,399. PROCESS OF MAGNETIC SEPARATION. FREDERICK T. SNYDER, Oak Park, Ill., assignor, by mesne assignments, to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 20, 1902. Serial No. 136,006.



Claim.—1. The process of magnetic separation, which consists in causing a differential reciprocating movement of materials to be separated, attracting the more permeable materials toward a relatively stationary magnet-pole during the movements in one direction, and releasing the attracted materials during the movements in the reverse direction, whereby the attracted materials are given a net movement in one direction, and the non-attracted materials are given a net movement in another direction.

2. The process of magnetic separation, which consists in causing a differential reciprocating movement between materials to be separated, and a convergence of a magnetic flux, decreasing the density of the flux through the convergence during the movements in one direction, and increasing the density of the flux through the convergence during the movements in the reverse direction, whereby the attracted materials are given a net movement in one direction, and the non-attracted materials are given a net movement in another direction.

3. The process of magnetic separation, which consists in causing a differential reciprocating movement between materials to be separated, and a convergence of a magnetic flux, decreasing to zero the density of the flux through the convergence during the movements in one direction, and increasing the density of the flux through the convergence during the movements in the reverse direction, whereby the attracted materials are given a net movement in one direction, and the non-attracted materials are given a net movement in another direction.

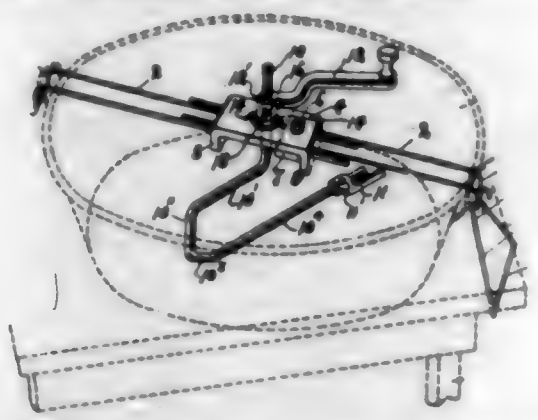
4. The process of magnetic separation, which consists in causing a differential reciprocating movement between materials to be separated, and a convergence of a magnetic flux, reversing the polarity of the flux through the convergence during the movements in one direction, whereby the attracted materials are given a net movement in one direction, and the non-attracted materials are given a net movement in another direction.

5. The method of magnetically separating ores, which consists in differentially reciprocating the ores within the influence of a magnet, periodically energizing and deënergizing the magnet, and maintaining synchronism between the reciprocations and the changes in the field of the magnet.

6. The process of magnetic separation, which consists in causing a relative differential reciprocating movement of materials to be separated with respect to the place of convergence of a magnetic flux, reversing the polarity of the flux to said place of convergence during the movements in one direction, and maintaining the continuity of the flux to said place of convergence during the movements in the reverse direction, whereby the attracted materials are given a net movement in one direction and the non-attracted materials are given a net movement in another direction.

7. The process of magnetic separation, which consists in imparting to the mass of materials a differential reciprocating motion, and establishing a periodic magnetic field through said mass in synchronism with the reciprocations thereof and in such phase relation thereto as to retard the more permeable particles during each movement of the mass in the direction of its travel, and to allow said materials to move with the mass during its reverse movement.

817,400. DOUGH OR BREAD MIXER. IRVING STANLEY, New York, N. Y. Filed Apr. 15, 1905. Serial No. 255,781.



Claim.—1. In a dough-mixer the combination of a bridge member comprising two pairs of parallel rods or wires, each pair having at its outer end catches adapted to fit over the edges of the receptacle and the other ends passing through a bearing-piece, the bearing-piece itself, a shaft mounted upon the bearing-piece, a hand-crank for operating the shaft, a dough-pan with which the bridge member is adapted to engage and means for securing the bridge member to the table or support.

2. In a dough-mixer the combination of a bearing-piece, a bridge member comprising two rods or wires each bent upon itself so as to form two parallel ends or members, each having catches at their outer ends adapted to fit over the edge of the receptacle, the inner ends of said wires engaging with the bearing-piece, means for clamping said bearing-piece and bridge member together in any adjusted position of the parts, a hand-crank, a shaft and a mixer-arm extending from the shaft.

3. In a dough-mixer the combination of a bridge member consisting of two rods or wires each bent upon itself and formed with a transversely-extending catch at its end, holding means adapted to engage with one of said catches and with the pan-support, a bearing-piece with which the rods or wires of said bridge member have a slidable connection, a binding-strap mounted on the bearing-piece, a tightening-screw and a mixer-arm.

4. In a dough-mixer the combination of a bridge member, a bearing-piece, a shaft mounted in said bearing-piece and provided with a mixer-arm, a hand-crank with the bore of whose hub said shaft has a longitudinal adjustable connection, means for holding said shaft in its position of longitudinal adjustment in the bore of said hub and means extending from said bridge member confining said crank to a rotary movement and preventing its movement axially of said shaft.

5. In a dough-mixer the combination of a bridge member, a bearing-piece, a mixer-arm shaft mounted in said bearing-piece, a hand-crank through the bore of whose hub said shaft is slidably adjustable and means comprising a radially-extending lip rigid with the hand-crank and a keeper on the bearing-piece for confining the hand-crank and the attached shaft to a rotary movement, the hub of said crank being laterally removable from under said keeper when said shaft has been removed from the crank-hub.

6. In a dough-mixer the combination of a shaft provided with a mixer-arm, a bearing-piece in which the axial portion of said shaft is mounted, a hand-crank whose hub portion is provided with a radially-extending lip and a keeper on the bearing-piece coöperating with said lip, said keeper lying substantially on one side of a diameter and a shaft having a sliding connection with the hand-crank whereby the mixer-arm may be adjusted depthwise and the hand-crank disconnected after the withdrawal of the shaft.

7. In a dough-mixer the combination of a shaft provided with a mixer-arm, a bridge member consisting of two reversely-bent wires formed with catches at the ends of the bridge member, a link connection with one of said catches adapted to engage with a corner of the supporting-table, a bearing-piece provided with a keeper and a hand-crank through the bore of whose hub said shaft is slidable and whose hub is provided with a radial lip adapted to coöperate with said keeper.

8. In a dough-mixer the combination with a hand-crank, a shaft, and a mixer-arm, of a bearing-piece, and a bridge member comprising two rods or wires each bent upon itself and engaging with said bearing-piece, one rod at one side of the bearing-piece and the other rod at the opposite side thereof.

9. In a dough-mixer the combination with a hand-crank, a shaft, and a mixer-arm, of a bearing-piece, a bridge member comprising two rods or wires each bent upon itself and slidably engaging with said bearing-piece, one rod at one side of the bearing-piece, the other rod at the opposite side thereof, and means for clamping said rods and said bearing-piece together in the adjusted position of the parts.

10. In a dough-mixer the combination with a hand-crank, a shaft and a mixer-arm, of a bearing-piece provided with laterally-extending edges at opposite sides thereof, a bridge member comprising two rods or wires each bent upon itself and slidably engaging with said laterally-extending edges of the bearing-piece and means for clamping said rods and the bearing-piece together in the adjusted position of the parts.

11. In a dough-mixer the combination of a hand-crank, a shaft, a mixer-arm, a bridge member, a bearing-piece and a link adapted to engage with two sides of a table or like structure adjacent to a corner thereof, said link comprising a horizontally-disposed cross-bar adapted to engage with the under side of the table, and angularly-extending members integral with the cross-bar and projecting therefrom at each end, one of which engages with one side of the table adjacent to the corner and the other with an adjoining side thereof adjacent to the same corner.

817,401. AMUSEMENT DEVICE. MELVILLE STOLTZ, New York, N. Y., assignor to The Acme Novelty Company, of New York. Filed Aug. 3, 1905. Serial No. 272,604.

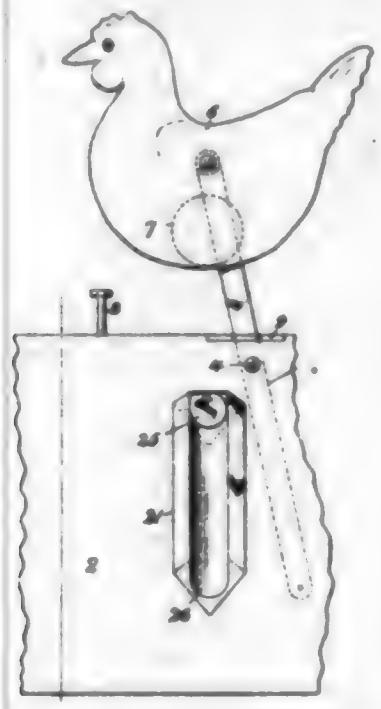
Claim.—1. In an amusement device, a lever adapted to swing automatically in one direction, detent means for holding said lever from swinging, an inclined trough, and gates for said trough adapted to be actuated by said lever.

2. In an amusement device, a lever adapted to swing automatically in one direction and having a limited movement at right angles thereto, a catch for holding said lever from swinging, a conduit, and a gate for said conduit adapted to be actuated by said lever.

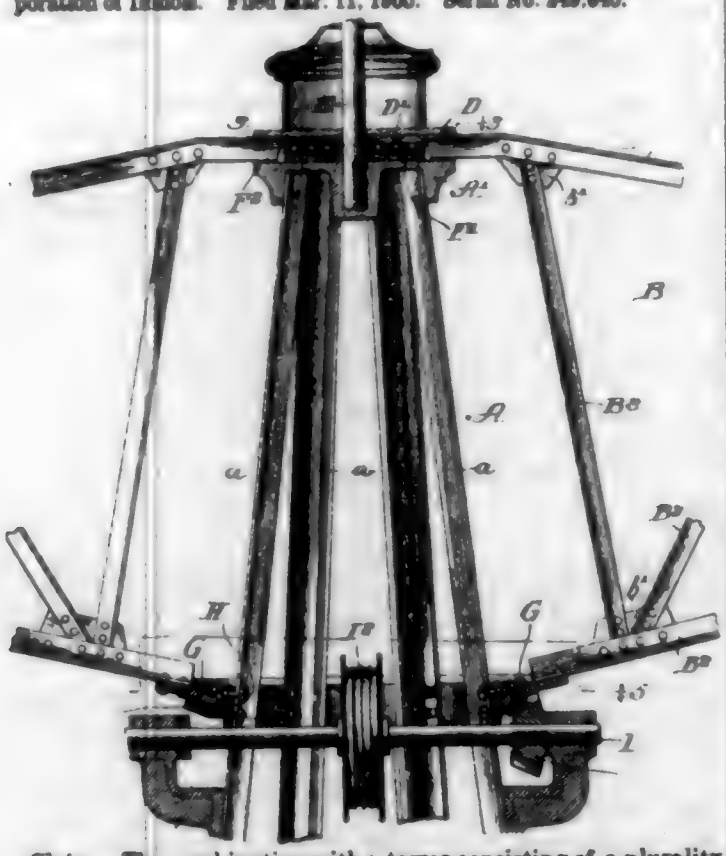
3. The combination of a gravity-lever, a catch for said lever, a target on said lever, a plunger adapted to be engaged by said target, a trough, and gates for said trough adapted to be actuated by said plunger.

4. The combination of a gravity-lever, a catch for said lever, a target on said lever, a plunger adapted to be engaged by said target, a trough, a shaft, gates for said trough projecting from said shaft, and an arm connecting said plunger to said shaft.

817,401.



817,402. AMUSEMENT APPARATUS. WILLIAM H. STRICKLER, Chicago, Ill., assignor to Federal Construction Co., Chicago, Ill., a Corporation of Illinois. Filed Mar. 11, 1905. Serial No. 249,640.

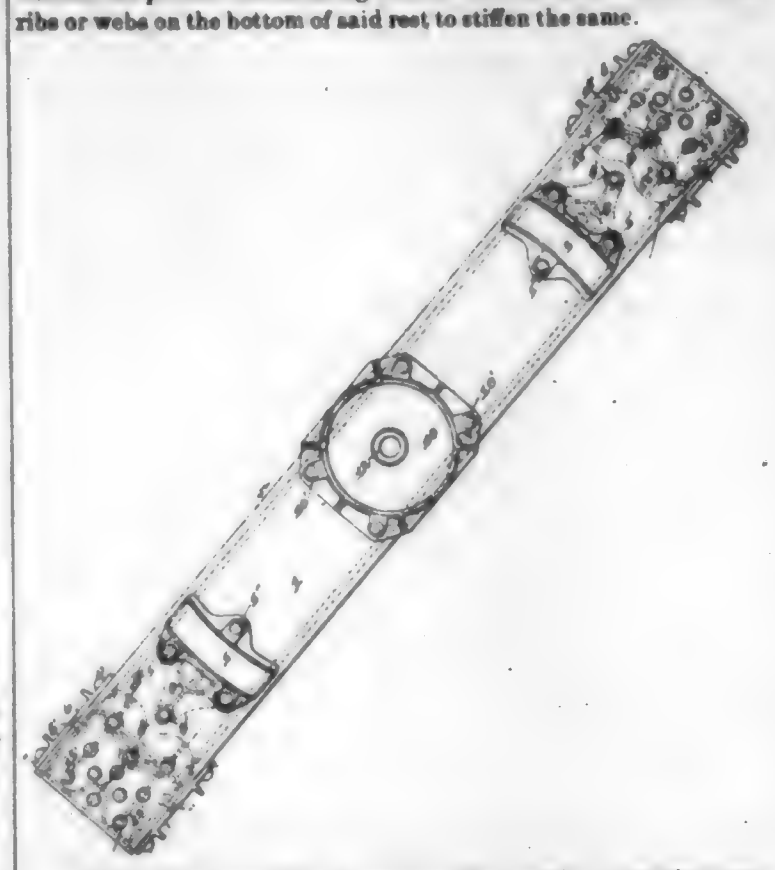


Claim.—The combination with a tower consisting of a plurality of upwardly-converging posts, a cap-plate to which said posts are secured at their upper ends and a bearing-ring located at a distance below said cap-plate and surrounding and rigidly connecting with each other the said posts, said ring having a cylindric exterior bearing-surface, of a revolving truss-frame or crown embracing a plurality of radial truss-arms having upper and lower, outwardly-convergent, rigid, longitudinal truss members, braces rigidly connecting said truss members with each other, a central connecting-plate to which said upper truss members are rigidly attached at their inner ends, and a ring to which the said lower truss members are rigidly attached at their inner ends; said truss-frame or crown surrounding the upper portion of the tower with its central connecting-plate in bearing engagement with the cap-plate of the tower and with its said ring surrounding and engaging the cylindric outer bearing-surface of said bearing-ring on the tower.

817,403. TRUSSED CAR-BOLSTER. ARNOLD STUCKI, Allegheny, Pa. Filed June 9, 1905. Serial No. 264,422.

Claim.—1. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having pockets formed therein, and means within said pockets for securing the rest and members together.

2. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having pockets formed therein, means within said pockets for securing the rest and members together, and ribs or webs on the bottom of said rest to stiffen the same.



3. A bolster comprising a compression member, a tension member, a strut, a bolster having pockets formed therein, means within said pockets for securing the rest and members together, and end walls on said rest to finish off the same.

4. A bolster comprising a compression member, a tension member, a strut, a bolster having pockets formed therein, means within said pockets for securing the rest and members together, and side ribs or webs on the bottom of said rest to finish off the space between said bottom and compression member.

5. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having cylindrical and semicylindrical pockets formed therein, and means within said pockets for securing the rest and members together.

6. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having cylindrical and semicylindrical pockets formed therein, and ribs or webs on the bottom of said rest to stiffen the same.

7. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having cylindrical and semicylindrical pockets formed therein, and end walls on said rest to finish off the same.

8. A bolster comprising a compression member, a tension member, a strut, a bolster-rest having cylindrical and semicylindrical pockets formed therein, and side ribs or webs on the bottom of said rest to finish off the space between said bottom and compression member.

817,404. CAR-TRUCK BOLSTER. ARNOLD STUCKI, Allegheny, Pa. Filed June 9, 1905. Serial No. 264,453.

Claim.—1. A cast-metal car-truck bolster formed of an inverted, trough shape in cross-section.

2. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having the lower flanges thereof thickened up at their central portions.

3. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section, guides on the sides of said bolster and near the ends thereof and the inner one of said guides being connected to the bottom flange of the bolster sides.

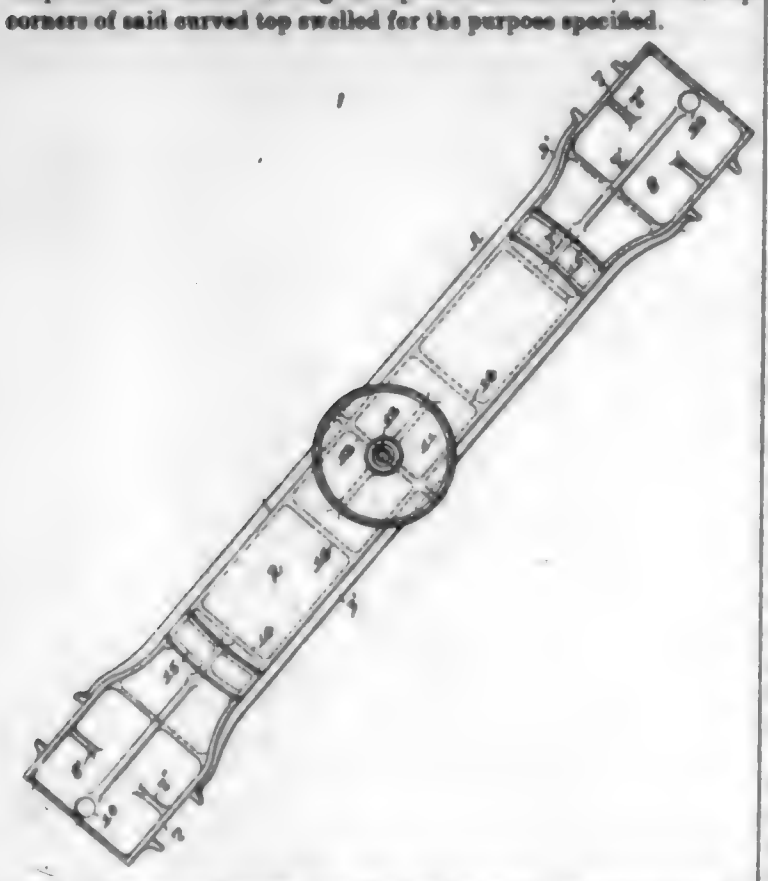
4. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having a series of continuous ribs extending around the interior face of said bolster.

5. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having its top corners swelled for the purpose specified.

6. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having its top curved crosswise for the purpose specified.

7. A cast-metal car-truck bolster formed of an inverted-trough

shape in cross-section having its top curved crosswise, and the top corners of said curved top swelled for the purpose specified.



8. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section having its top curved crosswise, and the top corners swelled, said corners having a tapered inner face for the purpose specified.

9. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having a spring-seat cast integral at each end.

10. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section having a spring-seat cast integral at each end thereof and provided with drain-holes in the spring-plate thereof.

11. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section having a spring-seat cast integral at each end, and webs on said spring-seat.

12. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section having a spring-seat cast integral at each end, and webs connecting the sides of said spring-seat and the spring-plate.

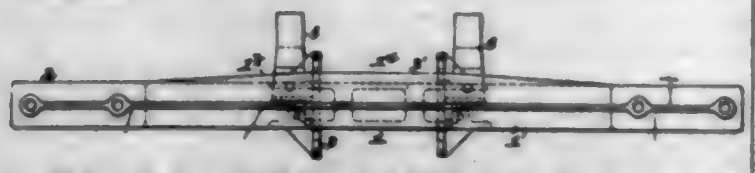
13. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section having a spring-seat cast integral at each end, and a web connecting the inner end wall of said seat and the spring-plate.

14. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having a king-bolt pocket therein, and brackets on said bolster and connecting the said pocket to stiffen the said pocket.

15. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having a king-bolt pocket therein, and brackets extending from the sides of said pocket and connecting the inner face of the bolster to stiffen the said pocket.

16. A cast-metal car-truck bolster formed of an inverted-trough shape in cross-section and having a king-bolt pocket therein, and lateral and longitudinal brackets connecting the sides of said pocket with the inner face of the bolster to stiffen said pocket.

817,405. **SIDE FRAME FOR RAILWAY-CAR TRUCKS.** ARNOLD STUCKI, Allegheny, Pa. Filed June 26, 1905. Serial No. 267,385.



Claim.—1. In a truck the combination of a side frame, and a spring-plank formed in two sections at its ends and adapted to be attached to the vertical portions of said frame.

2. In a truck, the combination of a side frame, and a spring-plank formed in two sections by splitting the same at its ends and adapted to be attached to the vertical portions of said frame.

3. In a truck, the combination of a side frame having recesses formed in the vertical portions thereof, and a spring-plank formed in two sections and adapted to be attached to said vertical portions on each side of said recesses.

4. In a truck, the combination of a side frame having recesses formed in the vertical portions thereof, and a spring-plank formed in two sections by splitting the same at its ends, which are adapted to be attached to said vertical portions on each side of said recesses.

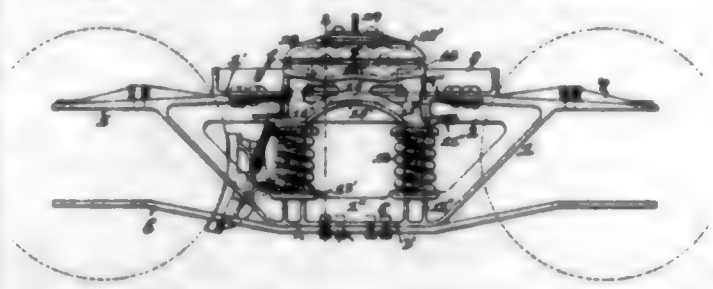
5. A cast integral truck side frame consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming journal-box portions, and said upper portion having its upper flange tapered to a greater width at or near the center thereof than at its end pieces for the purpose specified.

6. A cast integral truck side frame consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming journal-box portions, and a web on the top face of said upper portion for the purpose specified.

7. In a truck, the combination with a bolster, a cast integral side frame, the same consisting of upper and lower portions which are joined by vertical portions and said vertical portions being provided with an inwardly-extending web, and a brake-hanger bracket secured to said extending web and to the inside flange of the top member and forming a wide wearing-surface for the bolster to abut against.

8. In a truck, the combination with a bolster, of a cast integral truck side frame, the same consisting of upper and lower portions which are joined by vertical portions and which terminate in end pieces for forming journal-box portions and said vertical portions being provided with an inwardly-extending web thereon, and a brake-hanger bracket secured to said web and to the flange of the said upper portion and forming bearing-surfaces for the bolster to abut against.

817,406. **TRUCK FOR RAILWAY-CARS.** ARNOLD STUCKI, Allegheny, Pa. Filed July 14, 1905. Serial No. 269,663.



Claim.—1. In a car-truck, the combination of a truck cast side, and an antifriction side bearing on the top of the same for transmitting the weights of the car directly to the truck side and tending to center the truck.

2. In a car-truck, the combination of a truck cast side and a roller side bearing on the top of the same for transmitting the weight of the car directly to the truck side and tending to center the truck.

3. In a car-truck, the combination of a truck cast side, and a roller side bearing for transmitting the weight of the car to the truck-springs supported directly by the cast truck side and tending to center the truck.

4. A car-truck having the side frame provided with exterior guides to receive the side-bearing base and to allow same to move vertically.

5. In a car-truck, the combination of a side frame having exterior guides, and a side-bearing base arranged to drop into said guides and to have a vertical movement as specified.

6. In a car-truck, the combination of a cast side frame, and two cross-tie bars arranged diagonally on top of said frame, for the purpose specified.

7. In a car-truck, the combination of a side frame, and a side-bearing base on top of said frame provided with inclined bearing-surfaces, substantially as specified.

8. In a car-truck, the combination of a side frame, a side-bearing base on top of said frame having inclined bearing-surfaces, and rollers within said base and engaging with said inclined bearing-surfaces.

9. In a car-truck, the combination of a side frame, a side-bearing base on top of said frame having inclined bearing-surfaces, rollers within said base and engaging with said bearing-surfaces, and a cap fitting above said base and having inclined bearing-surfaces for engaging with said rollers.

10. In a car-truck, the combination of a side frame, a side-bear-

ing base on top of said frame, and extensions on said frame for forming guides to receive said base and permit the same to move vertically.

11. In a car-truck, the combination of a side frame, a side-bearing base on top of said frame, and stops on said frame for holding said base against longitudinal movement and for permitting the same to move vertically.

12. In a car-truck, the combination of a side frame, a side-bearing base on top of said frame, extensions on said frame for forming guides to receive said base and permit the same to move vertically, and flanges or webs on said extensions.

13. In a car-truck, the combination of a side frame, a side-bearing base on top of said frame, extensions on said frame for forming guides to receive said base and permit the same to move vertically, and lips on said guides for holding the base against any lateral movement and for permitting the same to move vertically.

14. In a car-truck, the combination of a side frame, truck-springs carried by said frame, a side-bearing base on top of said frame, and end bearing portions on said base for engaging directly with said truck-springs.

15. In a car-truck, the combination of a side frame, spring-caps on said springs, a side-bearing base on top of said frame, and end bearing portions on said base for engaging directly with said caps.

16. In a car-truck, the combination of a side frame, truck-springs, spring-caps on said springs, a side-bearing base on top of said frame having end bearing portions thereon, and guides on said caps for fitting around said end portions to hold said caps in place.

17. In a car-truck, the combintion of a cast side frame, a center-pin casting, and two cross-tie bars extending diagonally from the center-pin casting to said frame and secured on top of the same.

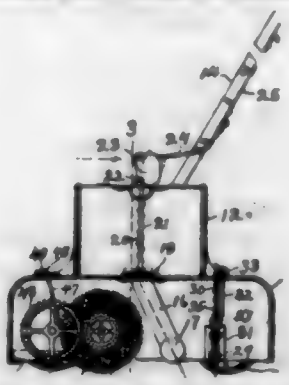
18. In a car-truck, the combination of a side frame, cross-tie bars arranged diagonally on said frame, and brake-hanger brackets secured to said bars.

19. In a car-truck, the combination of a side frame, cross-tie bars arranged diagonally on said frame, and brake-hanger brackets secured to said bars by a single rivet.

20. In a car-truck, the combination of a cast side frame, a side-bearing base on top of said frame, rollers within said base, and inclined bearing-surfaces within said base and extending upwardly on each side of the normal position of said rollers.

21. In a car-truck, the combination of a cast side frame, a side-bearing base on top of said frame, rollers within said base, a cap fitting above said base and rollers, and inclined bearing-surfaces on said base and cap and extending upwardly on each side of the normal position of said rollers.

817,407. **FLOOR-DRESSING DEVICE.** Carl W. Swanson, Chicago, Ill. Filed Jan. 25, 1905. Serial No. 242,690.



Claim.—1. In a floor-dressing device, the combination with an open-bottomed casing mounted on wheels and a pivoted handle for moving the same over the floor, of a delivery-chamber contained in said casing, a receptacle for floor-dressing material mounted directly upon said casing and communicating with said delivery-chamber, a valve controlling such communication, and flexible valve-operating means mounted on said handle, substantially as described.

2. In a floor-dressing device, the combination with an open-bottomed casing, of a delivery-chamber contained therein, a receptacle for floor-dressing material carried thereby having valve-controlled communication with said delivery-chamber, a bodily-movable spring-pressed wiper-bar also contained in said casing engaging the floor and coöperating with said delivery-chamber to distribute and rub into the floor the material discharged upon the latter, and a handle for moving said casing over the floor, substantially as described.

3. In a floor-dressing device, the combination with an open-bottomed casing, of a delivery-chamber contained therein, a receptacle for floor-dressing material carried thereby having valve-controlled communication with said delivery-chamber, a rotatable brush mounted in said casing to operate on the material discharged from said delivery-chamber, and a handle for operating said casing, substantially as described.

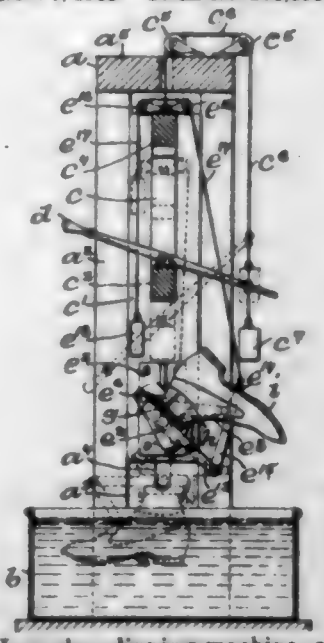
4. In a floor-dressing device, the combination with an open-bottomed casing, of a delivery-chamber contained therein, a receptacle for floor-dressing material carried thereby having valve-controlled communication with said delivery-chamber, a rotatable brush mounted in said casing to operate on the material discharged from said delivery-chamber, a pan or tray in rear of said brush to catch the sweepings from the latter, and a handle for operating said casing, substantially as described.

5. In a floor-dressing device, the combination with an open-bottomed casing, of a transversely-disposed delivery-chamber therein, a receptacle for floor-dressing material carried thereby having valve-controlled communication with said delivery-chamber, a distributing-bar mounted in said casing on one side of said delivery-chamber, a rotatable brush mounted in said casing on the other side of said delivery-chamber, means whereby either said distributing-bar or said brush may be rendered inoperative when the other is operative, and a handle whereby said casing may be operated in either direction, substantially as described.

6. In a floor-dressing device, the combination with an open-bottomed casing, of a transversely-disposed delivery-chamber therein having a plurality of separated discharge-apertures in its under side, a superposed receptacle for floor-dressing material carried by said casing having valve-controlled communication with said delivery-chamber, a distributing-bar mounted in said casing on one side of said delivery-chamber, a rotatable brush mounted in said casing on the other side of said delivery-chamber, a pan or tray in rear of said brush to catch the sweepings from the latter, means whereby either said distributing-bar or said brush may be rendered idle while the other is active, and a handle whereby said casing may be operated in either direction, substantially as described.

7. A floor-dressing device comprising in combination the following instrumentalities: an open-bottomed casing mounted on wheels or rollers, a receptacle for material to be distributed surmounting said casing, a transversely-disposed delivery-chamber in said casing having valve-controlled communication with said receptacle, a vertically-movable distributing-bar mounted in said casing on one side of said delivery-chamber, a vertically-movable spring-pressed rotatable brush mounted in said casing on the other side of said delivery-chamber and geared to one of the wheels of the casing, a pan or tray in rear of said brush, means whereby either said distributing-bar or said brush may be bodily raised and supported out of operative position, an operating-handle pivotally connected to said casing, and valve-actuating means mounted on said handle, substantially as described.

817,408. **SHOE-DIPPING MACHINE.** John H. Wall, Bristol, R. I. Filed Nov. 7, 1905. Serial No. 286,190.



Claim.—1. In a shoe-dipping machine, a peg-bar for supporting a plurality of shoes, means for securing the shoes to the peg-bar, mechanism for rotatably supporting the peg-bar, and a tank adapted to hold varnish or similar liquid.

2. In a shoe-dipping machine, a support for a peg-bar, a peg-bar carrying a plurality of shoes, means for automatically locking the shoes to the peg-bar, means carried by the support for rotating the peg-bar, and a tank adapted to hold varnish or similar liquid.

3. In a shoe-dipping machine, a frame, a tank adapted to hold varnish or similar liquid in the frame, a slide supported in vertical ways in the frame, means for counterbalancing the slide, means for lowering and elevating the slide, a rotating mechanism on the slide, means in the rotating mechanism for holding a plurality of shoes, and means for partly revolving the rotating mechanism, whereby a plurality of shoes are coated with varnish or similar liquid in one operation of the machine.

4. In a shoe-dipping machine, a frame, a tank adapted to hold varnish or a similar liquid supported in the frame, a slide supported in vertical ways in the frame, means for counterbalancing the slide, means for lowering and elevating the slide, a rotating mechanism on the slide, a bar, a plurality of shoe-lasts, a plurality of shoes on the lasts, means for holding the shoe-lasts on the bar, means in the rotating mechanism for holding the bar, and means for partly revolving the rotating mechanism, whereby a plurality of shoes are coated with varnish or similar liquid in one operation of the machine.

5. In a shoe-dipping machine, a frame having a base and vertical end supports, a tank supported on the base and adapted to hold varnish or a similar liquid, a slide supported in vertical ways in the end supports, means for counterbalancing the slide, means for lowering and elevating the slide, a rotating mechanism on the slide, a bar, a plurality of shoe-lasts holding a plurality of rubber shoes, means for holding the shoe-lasts on the bar, means in the rotating mechanism for holding the bar and for locking the bar in the reverse position, means for automatically locking the lasts and shoes to the bar in the reverse position, and means for partly revolving the rotating mechanism, whereby a plurality of rubber shoes are coated with varnish or a similar material in one operation of the machine.

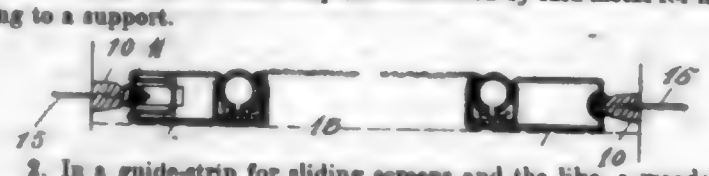
6. In a shoe-dipping machine, a frame a having the base a', the vertical end supports a^2 a^3 and the top bar a^5, a tank d adapted to hold varnish or similar liquid on the base a', a slide c supported in vertical ways in the end supports a^2 a^3, pulleys c^5 c^5 on the top bar a^5, a cord c^6 secured to the slide c and running over the pulleys, a weight c^7 secured to the end of the cord c^6, a lever d pivotally secured to the slide c and to the cord c^6, a rotating mechanism e on the slide c, a crank f operatively connected with the rotating mechanism e, a bar g having the pegs g' g', a plurality of lasts having coinciding holes for the legs g' g', a plurality of rubber shoes on the lasts, means in the rotating mechansim e for holding the bar g, and means for automatically locking the lasts and shoes to the bar in the reverse position, whereby on lowering the slide c by the lever d and partly revolving the rotating mechanism e by the crank f, a plurality of rubber shoes are coated with varnish or a similar material in one operation.

7. In a shoe-dipping machine, the combination of a frame a, a tank b adapted to hold varnish or a similar liquid, a slide c supported in vertical ways in the frame a, means for lowering or elevating the slide c, a rotating mechanism e consisting of the bearings c' c' each formed on a plate c^3 secured to the slide c and having a member c^4 shaped to have the semicircular concave portion c^9, the outwardly-extending lip c^8, the stop c^7, and the rearwardly-extending arm c^6, the rock-shafts c^3 c^3 supported in the bearings c' c' and each having the enlarged end c^9 in which is the elongated recess c^{10} having the closed end c^{11} and the open end c^{12}, and an arm c^{13} adapted to engage with the stop c^7, a locking-bar c^{14} bent at each end to form the arms c^{15} c^{15} which are pivotally secured at their ends to the ends of the arms c^{13} c^{13} in a position to engage with the ends of the arms c^6 c^6, pulleys c^{16} c^{16} pivotally secured to the top of the slide c, cords c^{17} c^{17} secured to the bar c^{14} and extending upward over the pulleys, weights c^{18} c^{18} secured to the ends of the cords, a crank f secured to rock-shaft c^3, a bar g, a plurality of shoe-lasts holding a plurality of rubber shoes, and means for holding the shoe-lasts on the bar, whereby on placing the ends of the bar g in the recesses c^{10} c^{10} in the rotating mechanism e and operating the slide c and the crank f a plurality of rubber shoes are coated with varnish or similar liquid in one operation of the machine.

8. In a shoe-dipping machine the combination of a frame a, a tank b adapted to hold varnish or a similar liquid, a slide c, a lever d on the slide, a rotating mechanism e, a crank f operatively connected with the rotating mechanism e, a bar g, a plurality of shoe-lasts h h on which are a plurality of rubber shoes, means for holding the lasts h h on the bar g, and means in the rotating mechanism e for holding the bar g, whereby a plurality of rubber shoes are coated with varnish or a similar liquid in one operation of the machine.

817,409. GUIDE-STRIP FOR SLIDING SCREENS. HENRY W. WATSON and WILLIAM W. WATSON, Jamestown, N. Y. Filed Dec. 15, 1905. Serial No. 291,826.

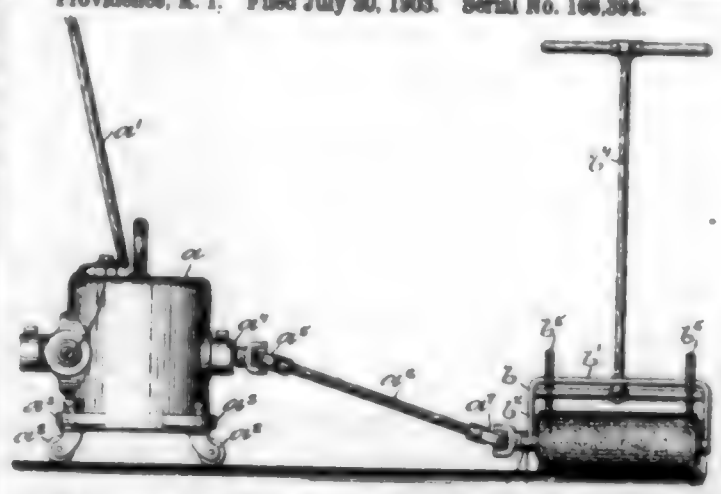
Claim.—1. In sliding ways for screens and the like, a wooden strip, a metal covering for one edge of said strip and attached to the same, and a portion of said strip left uncovered by said metal for fitting to a support.



2. In a guide-strip for sliding screens and the like, a wooden strip having a round beaded edge and a supporting-base, and a close sheet-metal covering pressed onto said beading, substantially as and for the purpose set forth.

3. A guide-strip for sliding screens comprising a wooden strip 10, a bead 11 on one edge of said strip and a base portion 17, a sheet-metal covering 12 for said bead having holes 13 therein for attaching said guide-strip to a support.

817,410. FLOOR-DRESSING MACHINE. CYRA B. WATTLES, Providence, R. I. Filed July 20, 1903. Serial No. 166,394.



Claim.—1. In a floor-dressing machine, a dressing-roller covered with an abrasive or polishing material rotatably mounted in a frame having two arms for supporting the roller, a motor connected to the dressing-roller by a flexible shaft to rotate the dressing-roller, a handle to the frame and cross-bars in the frame, intermediate the dressing-roller and the handle, acting as a fulcrum on the floor to lift the dressing-roller by depressing the handle and stop the operation of the dressing-roller on the floor without stopping the motor, as described.

2. In a floor-dressing machine, the combination with a motor and a flexible shaft, of the frame b' having the arms b^3 b^3 with the bearings b^4 b^4, the T-shape handle b^1, the cross-bars b^5 b^5 and the dressing-roller b^6 secured on the shaft b^7 connected to the flexible shaft and rotating in the bearings b^4 b^4, all for the purpose as described.

817,411. PROCESS OF TREATING ORES OF THE PRECIOUS METALS. ADA C. ATWATER, Manchester, Iowa. Filed Aug. 6, 1904. Serial No. 219,771.

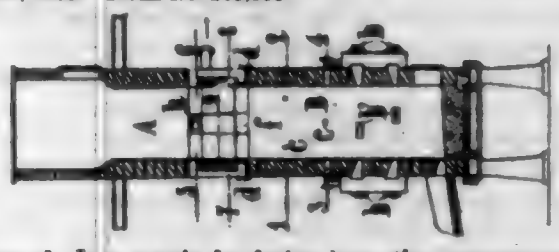
Claim.—1. The process of treating ores of the precious metals containing selenium consisting in mixing the ores with carbonaceous material and gradually heating the mixture to a low red heat while protected from air thereby driving off the selenium.

2. The process of treating ores of the precious metals containing selenium consisting in mixing the ores with a relatively small quantity of granulated carbonaceous material and subjecting the mixture to a low degree of heat while protected from air, which heat is gradually increased until it reaches a clear red.

3. The process of treating ores of the precious metals containing selenium consisting in first subjecting the ores to a low degree of heat in the presence of carbonaceous material while protected from air and gradually increasing the heat until it reaches a clear red thereby driving off the selenium.

4. The herein-described process for extracting metals from their respective ores containing selenium, by volatilization, consisting in mixing the ores in granulated form with a theoretical proportion of carbonaceous material, say from one (1) to ten (10) per cent., according to the nature of the ore being treated, heating the materials so mixed while protected from the air, to a temperature sufficient to volatilize the selenium, which may be present and eliminating it in the form of vapor, thereby separating such element from the precious metals, after which allowing it to cool while the air is still excluded.

817,412. **CUPOLA.** ALPHONSE BAILLOT, Haybes, France. Filed June 6, 1905. Serial No. 263,955.



Claim.—1. In a cupola for fusing iron, the arrangement of fusion-twyers, windows for the latter, small air-twyers in stages according to quincunx fashion at a suitable height above the bottom of the furnace, means permitting a double circulation of fluids around the upper part of the central core of the cupola and a regulated admission of air and means for forcing the mixture of hot air and gases produced in the cupola through the fusion-twyers into the fusion zone, substantially and for the purpose as specified.

2. In a cupola for fusing iron the arrangement of fusion-twyers, windows for the latter, small air-twyers in stages at a suitable height above the bottom of the furnace, auxiliary twyers permitting the admission of atmospheric air, a heater comprising interposed hollow sections communicating with each other, baffles, inlets in one set of said hollow sections for the ascending fluids and controllable inlets for atmospheric air to the heater, said heater permitting a circulation of fluids around the upper part of the central core of the cupola and means for forcing the mixture of hot air and gases produced in the cupola through the fusion-twyers into the fusion zone, substantially and for the purpose as specified.

3. In a cupola for fusing iron, the arrangement of fusion-twyers, windows for the latter, small air-twyers in stages at a suitable height above the bottom of the furnace, auxiliary twyers permitting the admission of atmospheric air, a heater comprising interposed hollow sections communicating with each other, baffles, inlets in one set of said hollow sections for the ascending fluids and controllable inlets for atmospheric air to the heater, said heater permitting a circulation of fluids around the upper part of the central core of the cupola a ventilator comprising a suction-pipe terminating in one of the hollow sections of the heater, a suction and forcing fan, and a force-pipe terminating into the chamber of the fusion-twyers, substantially and for the purpose as specified.

4. In a cupola for fusing iron, a heater comprising four hollow sections *g* and four other hollow sections *f* interposed between the latter, a cylindrical mantle R' surrounding said sections, openings *h* at the upper part of the sections *f*, baffle-plates *f'* in the sections *f*, openings *k* communicating with the sections *g* and an opening in one of the sections *g*, a suction-pipe T' communicating with said opening in the section *g*, and a ventilator W connected with the said suction-pipe and adapted to draw the mixture of air and the gases from the heater and force the same through the twyers into the furnace, substantially and for the purpose as specified.

817,413. **SILL AND LINTEL MACHINE.** FRANK A. BORST, South Bend, Ind., assignor to The Ideal Concrete Machinery Company, South Bend, Ind., a Corporation of Indiana. Filed Dec. 18, 1905. Serial No. 292,179.

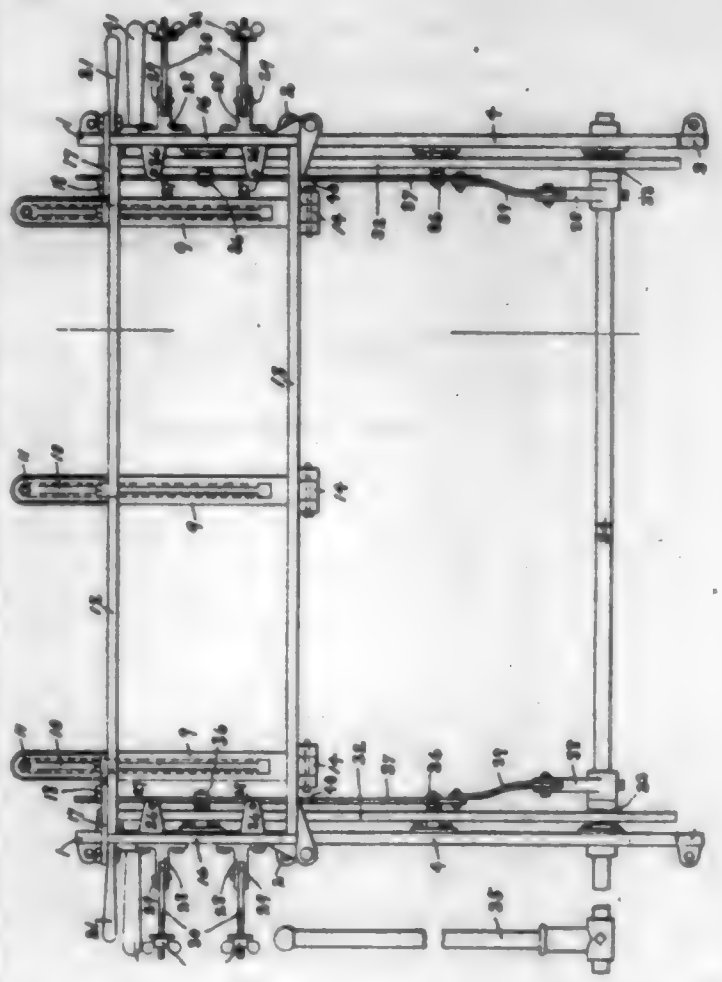
Claim.—1. In a concrete-molding machine, the combination of a frame, a top for the same, and a knockdown mold comprising a rear side plate adjustably secured to the top, a front side plate hinged to the top, end plates hinged to the front side plate, and a bottom plate carried by the end plates.

2. In a concrete-molding machine, the combination of a frame, a top for the same, a mold comprising a rear side plate adjustably secured to the top, a front side plate hinged to the front of the top, end plates hinged to the ends of the front side plate, and a bottom carried by the end plates, and means for securing the parts together.

3. In a concrete-molding machine, the combination of a frame, a mold mounted on said frame comprising a front plate hinged to the frame, a back plate secured to the frame and adjustable with reference to the front plate, end plates and a bottom plate carried by the end plates.

4. In a concrete-molding machine, the combination of a frame, a top for the same, and a knockdown mold comprising a rear side plate, a front side plate hinged to the top, end plates, and a bottom plate carried by the end plates.

5. In a concrete-molding machine, the combination of a frame, and a mold mounted on said frame comprising a front plate hinged to the frame, a back plate secured to the frame and adjustable with reference to the front plate, end plates, a removable bottom plate mounted on the end plates, and means to adjust the position of the bottom plate.



6. In a concrete-molding machine, the combination of a frame, and a mold mounted on said frame comprising a front plate hinged to the frame, a back plate secured to the frame, end plates hinged to the front plate, and a removable bottom plate, and means adjustably secured to the end plates for carrying said bottom plate.

7. In a concrete-molding machine, the combination of a frame, a mold mounted thereon; projecting side bars connected to said frame, a shaft mounted in the forward ends of the side bars, and carrier-bars pivoted to the frame at their rear ends and adjustably supported at the front ends by said shaft, said mold in part adapted to be turned to discharge the molded article onto the carrier-bars.

8. In a concrete-molding machine, the combination of a frame, a mold mounted thereon, projecting side bars connected to said frame, a shaft mounted in the forward ends of the side bars, carrier-bars pivoted to the frame at their rear ends and adjustably supported at the front ends by said shaft, said mold in part adapted to be turned to discharge the molded article onto the carrier-bars, and means connected to said shaft and adapted to move the molded articles forward.

9. In a concrete-molding machine, the combination of a frame having a main and a forwardly-projecting portion, a shaft journaled in said forwardly-projecting portion, a hinged mold mounted on said main portion and adapted to be swung forward to discharge the molded article onto the forwardly-projecting portion, and means connected to said shaft for conveying the article forward.

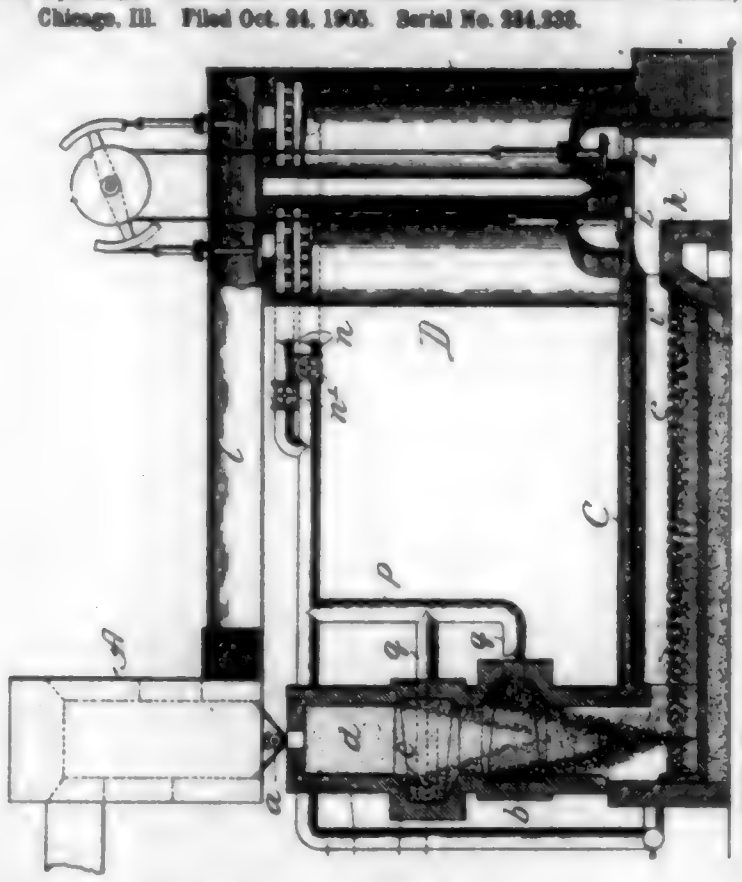
10. In a concrete-molding machine, the combination of upright legs, a top connecting the same, a hinged mold mounted on said top, said mold adapted to be swung forward to discharge the molded article onto side bars, side bars connected to said legs, a shaft mounted in the forward ends of the side bars, and means connected to said shaft and carried by said side bars for conveying the article forward.

11. In a concrete-molding machine, the combination of an upright frame, a hinged mold mounted thereon, projecting side frames connected to said upright frame, a shaft mounted therein, and vertically-movable bars pivoted at one end on the frame and supported at the other end by said shaft and adapted to receive the molded article from the mold when the same is turned to discharging position, and lower the article onto the side frames.

12. In a concrete-molding machine, the combination of an upright frame, a mold mounted on the same comprising a stationary back plate, and front, end and bottom plates adapted to be swung to carry the molded articles to discharging position, said end plates provided with means to secure the pallet to the mold, forwardly-extending frames connected to the main frames, a shaft carried by

said forwardly-extending frames, cams carried by said shaft, carrier-bars mounted on pins on said upright frame and resting on said cams and adapted to receive the molded articles from said mold and lower the same onto the forwardly-extending frames, and means connected to said shaft for conveying said molded articles forward.

817,414. PROCESS OF REDUCING ORES. HORACE F. BROWN, Chicago, Ill. Filed Oct. 24, 1905. Serial No. 284,238.



Claim.—1. The process of treating finely-divided ore, containing a metal readily oxidizable in the molten state, which consists in subjecting the ore while in atmospheric suspension to a reducing-atmosphere, then causing the reduced metal to pass, without subjection to an oxidizing influence, beneath the surface of a molten bath which protects the metal against oxidation while separating from the slag-making constituents of the ore.

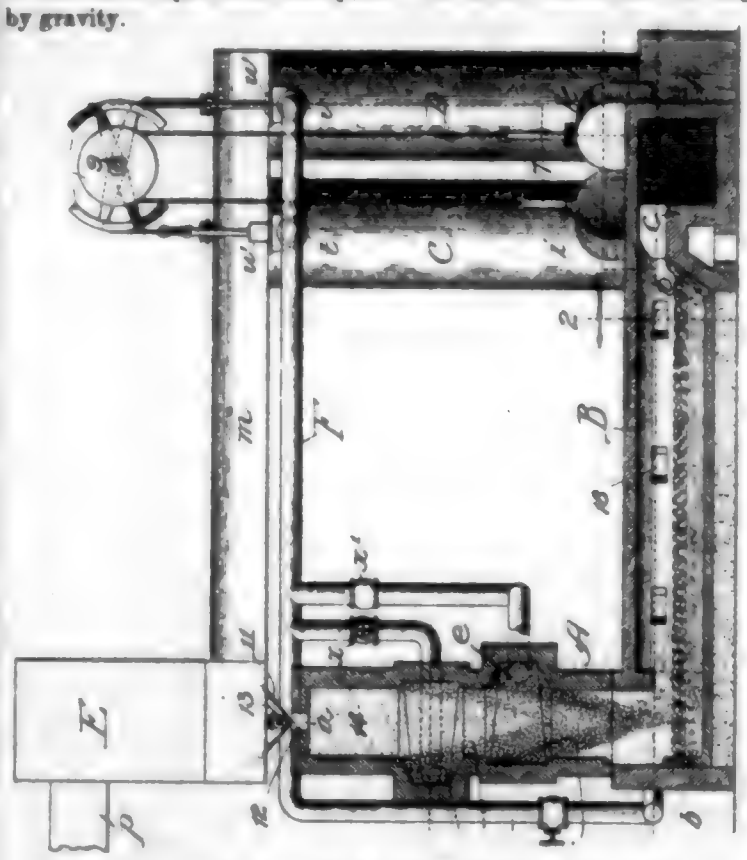
2. The process of treating finely-divided ore, containing a metal readily oxidizable in the molten state, which consists in subjecting the ore while in atmospheric suspension to a preliminary heating atmosphere and then to a reducing-atmosphere, and at the same time bringing the particles of ore into approximate physical contact, then causing the reduced metal to pass without subjection to an oxidizing influence beneath the surface of a molten bath which protects the metal against oxidation while separating from the slag-making constituents of the ore.

3. The process of treating a finely-divided mixture of metallic oxids and slag-making impurities, which consists in subjecting the material while in atmospheric suspension to the action of a reducing-gas moving in the same direction, and during such subjection bringing the particles of the mixture into approximate physical contact, then causing the reduced material to pass without subjection to an oxidizing influence into a molten slag-covered bath, and at the same time causing the reducing-gas to mix over the surface of the bath with an excess of oxygen to further its combustion and heat the bath, then permitting separation by gravity of the metal from the slag-making impurities while protected by the said slag covering from the oxidizing atmosphere.

817,415. ORE-REDUCING FURNACE. HORACE F. BROWN, Chicago, Ill. Filed Oct. 24, 1905. Serial No. 284,239.

Claim.—1. In a furnace for treating finely-divided ore, the combination of a downdraft-stack including, in series, an ore-feed opening, an enlarged combustion-chamber and a heat-concentrating chamber reduced in cross-section relative to said combustion-chamber, means for maintaining a fusing temperature in the combustion-chamber from which the ore and gases pass through said concentrating-chamber, wherein they are confined against lateral expansion, and a reverberatory forehearth into which said concentrating-chamber discharges and in which separation takes place of the metal values from the slag by gravity.

2. In a furnace for treating finely-divided ore, the combination of a downdraft-stack including, in series, a preliminary-heating chamber, an enlarged combustion-chamber and a heat-concentrating chamber reduced in cross-section relative to said combustion-chamber, means for feeding ore into said preliminary chamber, means for maintaining a fusing temperature in the combustion-chamber from which the ore and gases pass through said concentrating-chamber, wherein they are confined against lateral expansion, and a reverberatory forehearth into which said concentrating-chamber discharges and in which separation takes place of the metal values from the slag by gravity.



3. In a furnace for treating finely-divided ore, the combination of a downdraft-stack including, in series, an ore-feed opening, enlarged upper and lower combustion-chambers with a restricted passage between them, and a heat-concentrating chamber reduced in cross-section relative to said lower combustion-chamber, means communicating with each combustion-chamber for maintaining a fusing temperature therein, and a reverberatory forehearth into which said concentrating-chamber discharges and in which separation takes place of the metal values from the slag by gravity.

4. In a furnace for treating finely-divided ore, the combination of a downdraft-stack including, in series, a preliminary-heating chamber, enlarged upper and lower combustion-chambers with a restricted passage between them, and a heat-concentrating chamber reduced in cross-section relative to said lower combustion-chamber, means for feeding ore into said preliminary chamber, means communicating with each combustion-chamber for maintaining a fusing temperature therein, and a reverberatory forehearth into which said concentrating-chamber discharges and in which separation takes place of the metal values from the slag by gravity.

5. In a furnace for treating finely-divided ore, the combination of a downdraft ore-reducing stack provided in its upper end portion with an ore-feed opening and a reducing-atmosphere inlet beneath said opening, a forehearth into which the stack discharges, and means for maintaining a molten protecting-bath in said forehearth into which the reduced ore falls on entering and whereby the deoxidized metal is protected against oxidation while separating from slag-making impurities.

6. In a furnace for treating finely-divided ore, the combination of a downdraft ore-reducing stack provided in its upper end portion with an ore-feed opening and a reducing-atmosphere inlet beneath said opening, a forehearth into which the stack discharges, means for maintaining a molten protecting-bath in said forehearth into which the reduced ore falls on entering and whereby the deoxidized metal is protected against oxidation while separating from slag-making impurities, and means for supplying an oxidizing atmosphere to the forehearth beyond the path of entrance of ore from the stack to mix with and further combustion of the reducing-gases from the stack.

7. In a furnace for treating finely-divided ore, the combination of a downdraft ore-reducing stack provided in its upper end portion with an ore-feed opening, a preliminary-heating chamber beneath

said opening and a reducing-atmosphere inlet beneath said chamber, a forehearth into which the stack discharges, and means for maintaining a molten protecting-bath in said forehearth into which the reduced ore falls on entering and whereby the deoxidized metal is protected against oxidation while separating from the slag-making impurities.

8. In a furnace for treating finely-divided ore, the combination of a downdraft ore-reducing stack provided in its upper end portion with an ore-feed opening and an enlarged combustion-chamber beneath said opening, a burner extending into the combustion-chamber at an angle to the center thereof, operating to direct a whirling reducing atmosphere into the stack, a forehearth into which the stack discharges, and means for maintaining a molten protecting-bath in said forehearth into which the reduced ore falls on entering and whereby the deoxidized metal is protected against oxidation while separating from slag-making impurities.

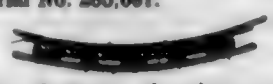
9. In a furnace for treating finely-divided ore, the combination of an ore-storage receptacle, a downdraft ore-reducing stack provided in its upper end portion with an ore-feed opening communicating with said receptacle, and a reducing fusing atmosphere inlet beneath said opening, a forehearth into which the stack discharges, means for maintaining a molten protecting-bath in said forehearth into which the reduced ore falls on entering and whereby the deoxidized metal is protected against oxidation while separating from slag-making impurities, regenerating means through which the forehearth gases pass, a gas-conduit extending from the said regenerating means into contact with the said receptacle to dehydrate the ore contents of the said receptacle, and means for passing air through the regenerating apparatus to the said reducing fusing atmosphere inlet and into the forehearth beyond the path of entrance of the ore from the stack, whereby a highly-heated oxidizing reverberatory atmosphere is caused to mingle in the forehearth with the reducing-gases from the stack.

817,416. SLEEVE-PROTECTOR. Charles B. Cather and Louis H. Buckley, Worcester, Mass. Filed Oct. 19, 1903. Serial No. 177,523.



Claim.—As an article of manufacture, a sleeve-protector, consisting of a sheet of cardboard having divergent ends, a series of guide-lines extending transversely across said sheet and contiguous to and parallel with one of its divergent ends, and a narrow strip of adhesive material on the opposite side of said sheet contiguous to and parallel with its opposite end.

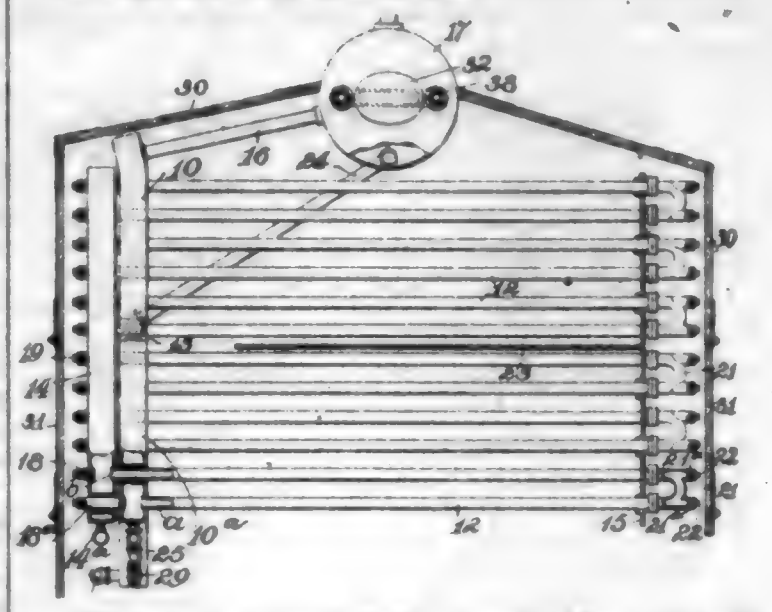
817,417. SKIRT AND WAIST RETAINER. Mary E. Clarke, Syracuse, N. Y., assignor to Sarah F. Clarke, Syracuse, N. Y. Filed Nov. 3, 1905. Serial No. 285,657.



Claim.—A combined skirt and waist retainer comprising a pliable strip permanently secured across the exterior of the back of the waist by lines of stitching extending throughout its longitudinal margins and provided at its ends with vertical exterior pockets, a flexible elongated metallic plate having its ends inserted removably in said pockets, a guard consisting of a strap fastened at its ends to the strip and passing across the outer face of the plate and serving to relieve the pockets from strain and to prevent accidental withdrawal of the plate therefrom, and hooks secured to the skirt and detachably engaging the top edge of the plate as set forth.

2. A combined skirt and waist retainer comprising a pliable strip permanently secured across the exterior of the back of the waist by lines of stitching extending throughout its longitudinal margins and having its end portions folded transversely, said folds being stitched along the margins of the strip to form vertical exterior pockets open toward each other, an elongated flexible metallic plate extending substantially the entire length of the strip and having its ends inserted removably in said pockets, a guard disposed intermediate the pockets and consisting of a transverse strap secured at its ends to said margins and passing across the outer face of the plate for the purpose described, and hooks secured to the skirt and engaging the top edge of the plate at points intermediate the guard and pockets as set forth.

817,418. STEAM-BOILER. Harry Del Mar, New York, N. Y. Filed Apr. 22, 1905. Serial No. 256,534.



Claim.—1. A water-tube boiler, comprising inner and outer headers arranged at one end of the boiler, water-tubes arranged in couples with each couple connected to both series of headers, vertical mud-drums at the sides of one series of headers, connections between the mud-drums and the headers, a steam-drum, connections between a series of headers and the steam-drum, and connections between the steam-drum and the mud-drums.

2. In a water-tube boiler, the combination of the inner and outer headers forming one wall of the boiler, the inner headers being in separate upper and lower series, and water-tubes arranged in couples, each couple having one tube connected to an inner header and the other tube connected to the outer header.

3. In a water-tube boiler, the combination of the tube-banks, and the steam-drum having indirect connection therewith, of the vertical mud-drums at the sides of the tube-banks, and water-legs connecting the mud-drums and steam-drum.

4. In a water-tube boiler, the headers forming one wall, one set of headers being placed inside the other, forming a double wall, and water-tubes arranged in couples, one tube of each couple being connected to an inner header and the other tube connected to the outer header, return-bends on the other ends of the tubes and connecting the tubes of each couple, and a projecting nipple on each return-bend and in line with each tube, said nipple being constructed to receive an inner plug, and provided with an external screw-thread.

5. In a water-tube boiler, the combination of the tube-banks, an external header, a pair of headers arranged on the inner side of the external header and having no connection with one another, water-tubes arranged in couples, each couple having one tube connected to an inner header and the other tube connected to the outer header, and return-bends on the ends of the tubes opposed to the headers the return-bends having projections in line with the tubes, said projections being arranged to receive a plug or a cap.

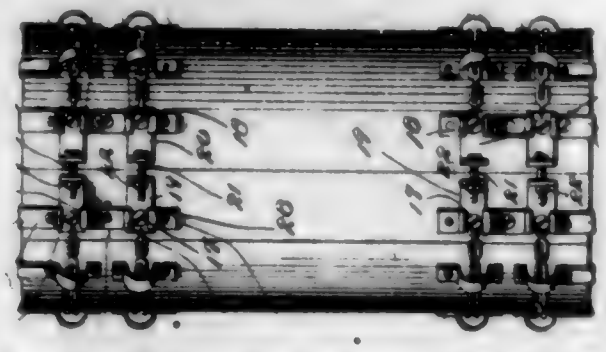
6. In a water-tube boiler, the combination with the water-tube arranged in couples, of the return-bends connecting the couples, each bend having a projection in alinement with the tubes, the projection extending beyond the body of the return-bend and having a plug in each projection and an external screw-thread on the projections for the affixing of a plugging-tool.

817,419. PROCESS FOR THE ELECTROLYTIC MANUFACTURE OF METAL TUBES. Otto Diefenbach, Darmstadt, Germany. Filed Jan. 9, 1906. Serial No. 295,320.

Claim.—The process of producing galvanic deposits, which consists in mixing comminuted kieselguhr with a suitable electrolyte, passing an electric current through the mixture and simultaneously producing a relative movement between the electrolyte and the cathode to dislodge the hydrogen bubbles and to smooth the metallic deposit by the action of the kieselguhr.

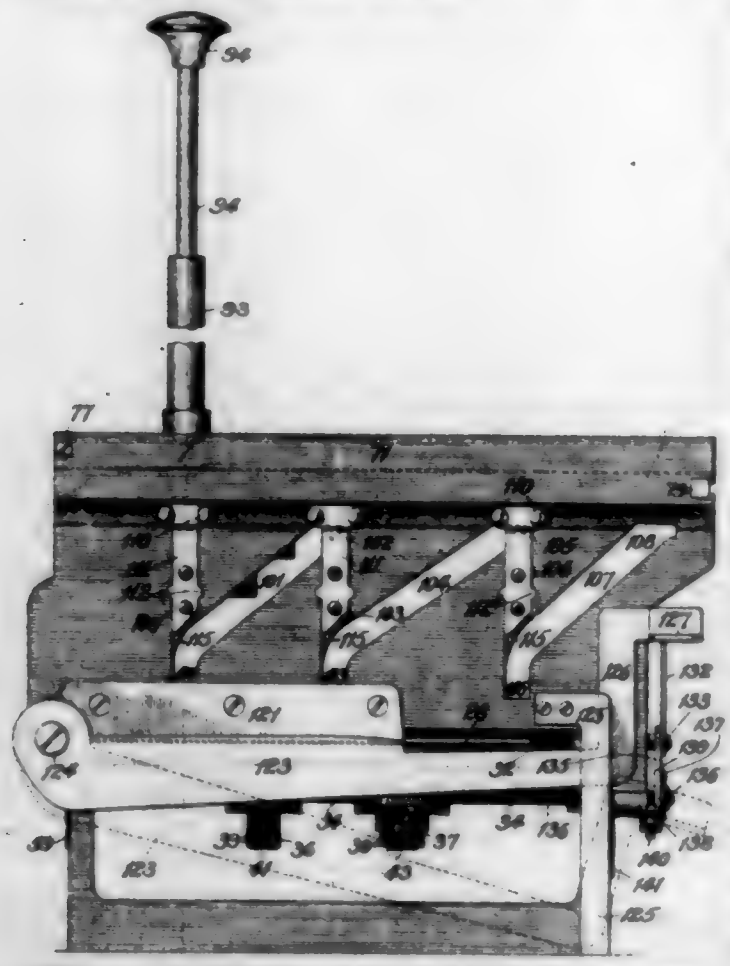
817,420. COLLAPSIBLE BARREL. Joseph H. Durant, Marlboro, N. H. Filed Apr. 8, 1904. Renewed Oct. 11, 1905. Serial No. 282,394.

Claim.—1. In a collapsible receptacle, the combination with a body comprising staves and heads embraced by the staves, of guide-plates secured to two mutually-adjacent staves, the endmost guide-plates being continued over the ends of the staves, looped guide-plates secured to the remaining staves and extending over the ends of such staves, tension devices engaging with the first-named guide-plates, and chains connected with the tension devices and passed slidably through the loops.



2. In a collapsible receptacle, the combination with a body comprising staves and heads embraced by the staves, of a series of guide-plates secured to each of two mutually-adjacent staves at each end thereof, the endmost guide-plates being bent around the ends of their respective staves and the mutually-adjacent ends of the guide-plates of each series being bent upwardly from the staves and then toward each other and lying in spaced relation to form guides, angular tension-plates slidably engaged in the guides, tension-bolts engaged with the tension-plates, loop-guide plates secured to the remaining staves and chains attached to the tension-plates and passed laterally through the loops.

817,421. TICKET PRINTING AND ISSUING MACHINE. JOHN P. EASTMAN, Chicago, Ill., and TRACY F. HAWLEY, Milwaukee, Wis. Filed Mar. 20, 1905. Serial No. 251,122.



Claim.—1. In mechanism of the class described, the combination of a support adapted to have paper moved over it, a paper-cutting knife mounted adjacent to said support, and mechanism operated by the movement of the knife for advancing the paper along the support to the knife.

2. In mechanism of the class described, the combination of a support for the paper, adapted to have the paper moved over it, a paper-cutting knife mounted adjacent to the support, and mechanism operated by the movement of the knife for advancing the paper along the support to the knife, and a handle connected to the knife adapted to be taken hold of by the operator.

3. In mechanism of the class described, the combination of a table, a pair of shears mounted with the opening between the jaws of the shears in a position to receive paper from the table, and a paper-feed mechanism for moving paper along the table through the shears adapted to be operated by the movement of one moving shearing knife or blade of the shears as the shears are opened, and adapted to allow the paper to remain at rest when the shearing blade or knife is moved in the opposite direction to cut the paper.

4. In mechanism of the class described, the combination of a table, a pair of shears mounted with the opening between the jaws of the shears in a position to receive paper from the table, and a paper-feed mechanism for moving paper along the table through the shears adapted to be operated by the movement of one moving shearing knife or blade of the shears as the shears are opened, and adapted to allow the paper to remain at rest when the shearing blade or knife is moved in the opposite direction to cut the paper, and a handle on the shear blade or knife connected to the operating mechanism adapted to be grasped by the operator to move it as described.

5. In mechanism of the class described, the combination of a table adapted to have paper move over it, a paper-cutting knife mounted adjacent to the table adapted to cut off paper as it comes from the table, a feed-roller adjacent to the table adapted to move the paper along the table, a ratchet-wheel in operative connection with the feed-roller, and a lever connected with the cutting-knife having a pawl engaging the ratchet-wheel, the whole so arranged that the paper is only moved while it is being moved to the position in which it is ready to be cut off, substantially as described.

6. In mechanism of the class described, the combination of a table for the paper, a shaft adjacent to the table, a feed-roll on the shaft adapted to move paper along the table, a pinion on the shaft, another pinion suitably mounted meshing with the first pinion, a larger gear meshing with the second pinion, a ratchet-wheel in rigid connection with the last-mentioned wheel, a lever journaled on the same axis as the ratchet-wheel and gear having a pawl upon it engaging the ratchet-wheel, a cutting-knife adjacent to the table adapted to be moved by the operator to cut off paper as it comes from the table, and a connection between said knife and lever whereby moving the knife to the position where it is ready to cut off the paper operates said gearing to advance the paper along the table and whereby the paper remains at rest while the knife is moving in the opposite direction to cut off the paper.

7. In mechanism of the class described, the combination of a table for the paper, means for feeding one sheet of paper along the table, means for cutting said paper along its length, means for cutting off crosswise of the table one of said longitudinal portions of the paper without cutting the other portion, and mechanism connecting the feed and lengthwise-cutting mechanism with the crosswise-cutting mechanism, so that operating the crosswise mechanism automatically moves the other mechanisms.

8. In mechanism of the class described, a table for the paper, means for feeding one sheet of paper along the table, means for cutting said paper along its length, adjustable means for varying the pressure of the paper in contact with said feed and lengthwise-cutting mechanism, means for cutting off crosswise of the table one of said lengthwise portions of the paper without cutting the other portion of the paper, and mechanism connecting the feed and lengthwise-cutting mechanism with the crosswise-cutting mechanism whereby operating the crosswise-cutting mechanism operates said feed and lengthwise-cutting mechanism.

9. In mechanism of the class described, the combination with a table having feed-rollers below the table extending through slots therein to engage the paper, a shaft mounted above the table, supplemental pressure-rollers eccentrically mounted for rotation upon said upper shaft, a lever upon said shaft adapted to be moved by the operator to change the position of the centers of said supplemental pressure-rollers with reference to the main feed-rollers, and a rack adapted to be engaged by said lever-handle to hold it in different positions, substantially as described.

10. In mechanism of the class described, in combination with a table adapted to have the paper move over it, the lever-arms 20 pivoted to the frame of the table and resting on suitable supports 21, and the paper spool or roll 25 journaled at the ends of the supporting-levers 20, the whole being arranged to allow the paper to be supported behind the table, as described, for ordinary working and to be swung up over the table for packing or storage purposes.

11. In mechanism of the class described, in combination with a table, means for feeding paper along the table, a pair of shears located in the path of the paper having one jaw secured in stationary position and another jaw or knife pivoted thereto, a handle on said

jaw or knife adapted to be grasped by the operator and mechanism so connecting the handle with the feed-operating mechanism that opening the shears by removing the movable jaw feeds the paper through the shears and also so arranged that while the movable knife of the shears is being closed the paper remains at rest.

12. In mechanism of the class described, in combination with a table, means for feeding paper along the table, a pair of shears having one jaw 121 secured in stationary position and another jaw 123 pivoted thereto, said cutting jaw or knife 123 extending across the device and being adapted to travel up and down between the guide 125 and the table, said cutting-knife having an upturned portion 126, and a handle 127, adapted to be grasped by the operator; and mechanism so connecting the handle with the feed-operating mechanism of the machine, so that opening the shears by moving the jaw or knife 123 feeds the paper through the shears and the paper remains at rest while the knife 123 is being closed upon the knife 121, all of the parts being arranged and described substantially as shown and described for the purposes set forth.

13. In mechanism of the class described, the combination of a table, a shaft below the table, carrying a feed-roll adapted to move paper along the table, a pinion upon said shaft adapted to rotate the shaft when worked upon by a train of gearing connecting it with a source of power, and means by which said pinion may be moved along said shaft out of mesh with said gearing whereby the shaft may be rotated to adjust the position of the paper upon the table, substantially as described.

817,422. **SELF-INKING STAMP.** JOHN P. EASTMAN, Chicago, Ill., and TRACY P. HAWLEY, Milwaukee, Wis. Filed Mar. 20, 1905. Serial No. 251,123.



Claim.—1. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type held normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type and a curved flat spring having one end rigidly connected to the roller and the other end rigidly connected to the frame adapted to hold the roller in rolling contact with the type as the stamp-base is moved toward printing position.

2. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type held normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, spring mechanism connecting the roller with the frame adapted to hold the roller in rolling contact with the type as the stamp-base is moved toward printing position, a pinion positively connected to the ink-roller, and a rack on the stamp-base adapted to have the pinion move over it as the stamp-base is moved to and from printing position.

3. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type held normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, spring mechanism connecting the roller with the frame adapted to hold the roller in rolling contact with the type as the stamp-base is moved toward printing position, a pinion positively connected to the ink-roller, and a track along the stamp-base over which the pinion is adapted to travel as the stamp-base is moved toward and from printing position, said track being composed of a rack for the length of the type on the base and made smooth beyond the end of the type.

4. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type held normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, spring mechanism connecting the roller with the frame adapted to hold the roller in rolling contact with the type as the stamp-base is moved toward printing position, a pinion positively connected to the ink-roller, and a track along the stamp-base over which the pinion is adapted to travel as the stamp-base is moved toward and from printing position, said track being composed of a rack for the length of the type on the base and made smooth beyond the end of the type, the smooth portion of the track being curved out of the plane of the type-face so that the ink-roller while traveling on it is moved away from the plane of the type-face, as described.

5. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, a U-shaped clip or guide in which the roller is journaled extending upward on the opposite sides of the stamp-base, and a curved flat spring connecting the base of said U-shaped clip with the stamp-carriage adapted to hold the ink-roller in rolling contact with the type.

6. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type normally held adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, a U-shaped clip or guide in which the roller is journaled extending upward on the opposite sides of the stamp-base, a curved spring connecting the U-shaped clip with the stamp-carriage adapted to hold the ink-roller in rolling contact with the type, a pinion positively connected to the roller inside said U-shaped clip, and a rack along the stamp-base adapted to have the pinion move over it.

7. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, a U-shaped clip or guide in which the roller is journaled extending upward on the opposite sides of the stamp-base, a curved spring connecting said U-shaped clip with the stamp-carriage adapted to hold the ink-roller in rolling contact with the type, a pinion positively connected to the ink-roller inside said U-shaped clip, and a track along the stamp-base over which the pinion is adapted to travel, said track being composed of a rack for the length of the type in the base and made smooth beyond the end of the type.

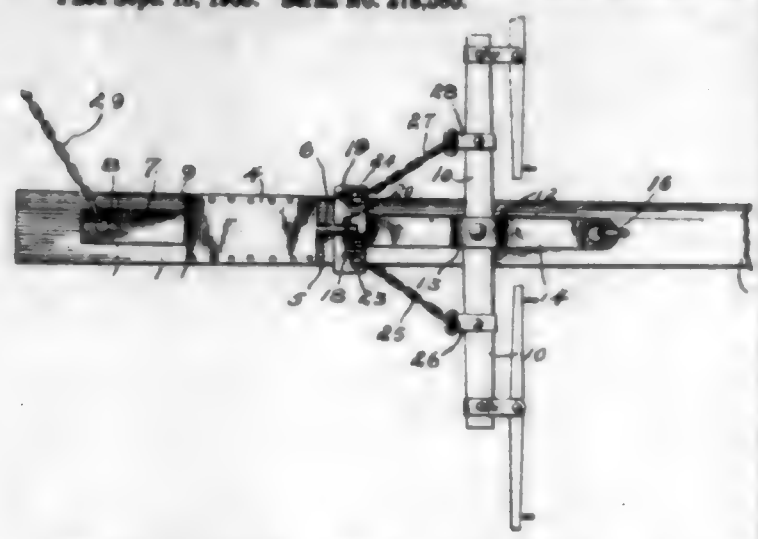
8. In mechanism of the class described, the combination of a stamp carriage or frame, a stamp-base carrying type normally adjacent to the frame and adapted to be moved away from it to print, an ink-roller bearing on the type, a U-shaped clip or guide in which the roller is journaled extending upward on the opposite sides of the stamp-case, a curved spring connecting said U-shaped clip with the stamp-carriage adapted to hold the ink-roller in rolling contact with the type, a pinion positively connected to the ink-roller inside said U-shaped clip, and a track along the stamp-case over which the pinion is adapted to travel, said track being composed of a rack for the length of the type in the base and made smooth beyond the end of the type, the smooth portion of said track being curved out of the plane of the type-face so that the ink-roller traveling on it is moved away from the plane of the type-face, as described.

9. In a self-inking stamp, in combination with a suitable support 46 therefor; an inking-roller 52, of material through which printing-ink may pass, mounted on a rotatable hollow shaft or tube 47, said tube having in it perforations 49 inside the roller proper 52 and a pipe 48, adapted to contain a supply of printing-ink, rigidly secured to said support and having one end forming a journal-bearing for one end of said rotatable tube 47 as described.

10. In mechanism of the class described, the combination of a stamp carriage or frame suitably supported, a stamp-rod adapted to slide up and down in the frame, a stamp-base 21 mounted on the lower end of said stamp-rod, said stamp-base having printing-type upon its lower surface, a track upon said stamp-base 21 composed of a rack 51 extending along the base the length of the type-face, and an upwardly-curved portion 54 in line with the rack 51, as described.

a spring 43 having one end connected to the stamp frame or carriage, and an ink-roller journaled on the other end adapted to pass over the type upon said stamp-base 21, and a pinion 50 rigidly connected to the inking-roller adapted to travel along said track, all of the parts being shaped, arranged and disposed substantially as shown and described for the purposes set forth.

817,423. HORSE-DETACHER. LEO P. FARROW, Golconda, Nev. Filed Sept. 15, 1905. Serial No. 278,580.



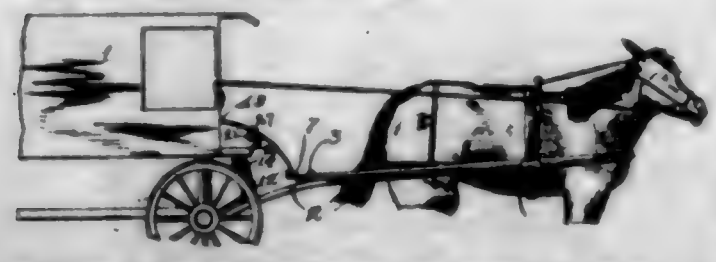
Claim.—1. In a device of the class described, the combination with a tongue, of a plate hinged to the tongue and extending over said doubletree and arranged at one of its ends for the passage of a keeper, a keeper upon the tongue, a slotted plate arranged for disposal upon said first-named plate and receiving the said keeper therethrough, a bolt slidably mounted upon said tongue for engagement with said keeper above said plates, and connections between said last-named plate and said doubletree.

2. In a device of the character described, the combination with the vehicle-tongue and a doubletree, of a casing mounted upon the tongue, a spring-actuated bolt working through said casing, a link pivoted at one end to the tongue and provided at its opposite end with a slot, the link having an upwardly-directed bend intermediate its ends for engagement over the doubletree, a guide mounted upon the tongue in advance of the casing for the reception of the slotted end of said link, a plate provided with a slot for engagement over said guide, flexible connections between the doubletree and the said plate, a spring mounted in the tongue beneath said link, and means constructed and arranged whereby a pull may be exerted upon the aforesaid bolt to release it from said guide and through it movement of the said link and said plate from over the guide to permit of a detachment of the doubletree from the tongue.

3. In a device of the class described, the combination with a tongue having a recess formed in its upper face, and a doubletree, of a plate hinged to said tongue and disposed above said doubletree, means for holding said plate in position to retain said doubletree upon the said tongue and for relasing the said plate, and a spring seated in said recess in said tongue and in engagement with the under side of said plate.

4. In a device of the class described, the combination with a tongue, and a doubletree, of a plate hinged to the said tongue, a pin carried by the tongue and extending upwardly therefrom, a second pin carried by the said plate and extending downwardly therefrom in position to abut the upper end of the first-named pin, the said pins being engaged through the said doubletree, means for holding the said plate in position to retain the said doubletree upon the tongue, and means for releasing the said plate.

817,424. HORSE-DETACHER. JAMES GREECH, Uniontown, Pa. Filed June 20, 1905. Serial No. 265,569.



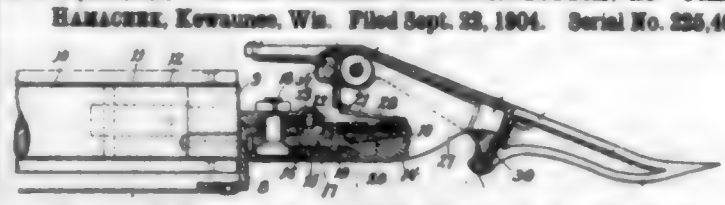
Claim.—1. In a vehicle, the combination with the shafts and a swingletree, the latter provided with a longitudinal slot and a cut-away portion, of a trace-carrying rock-shaft rotatably mounted in the slot and provided with a bail in alinement with the cut-away portion, a rod engaging the bail and controlled by the driver on the wagon, said rod being constructed and arranged for forward movement, only, in rocking the shaft to release the traces therefrom, and means for connecting the holdback-straps to the shafts and constructed and arranged to permit automatic disengagement from the shafts of the holdback-straps by forward movement of the animal upon disengagement of the traces from the swingletree.

2. In a vehicle, the combination with the shafts and a swingletree, the latter provided with a longitudinal slot and a cut-away portion, of a trace-carrying rock-shaft rotatably mounted in the slot and provided with a bail in alinement with the cut-away portion, a rod engaging the bail and controlled by the driver on the wagon, said rod being constructed and arranged for forward movement, only, in rocking the shaft to release the traces therefrom, a sleeve rigidly secured around each shaft, and removable means engaging each sleeve and adapted for removable engagement, also, with the holdback-straps.

3. In a vehicle, the combination with the shafts and a swingletree, the latter provided with a longitudinal slot and a cut-away portion, of a trace-carrying rock-shaft rotatably mounted in the slot and provided with a bail in alinement with the cut-away portion, a rod engaging the bail and controlled by the driver on the wagon, said rod being constructed and arranged for forward movement, only, in rocking the shaft to release the traces therefrom, a sleeve rigidly secured around each shaft, and a removable pin slidably mounted in the sleeve and with which the holdback-straps removably engage.

4. In a vehicle, the combination with the shafts and a swingletree, the latter provided with a longitudinal slot and a cut-away portion, of a trace-carrying rock-shaft rotatably mounted in the slot and provided with a bail in alinement with the cut-away portion, a rod engaging the bail and controlled by the driver on the wagon, said rod being constructed and arranged for forward movement, only, in rocking the shaft to release the traces therefrom, a sleeve rigidly secured around each shaft, a removable pin slidably mounted in the sleeve and with which the holdback-straps removably engage, and a connection between the pin and a portion of the harness of the horse other than the holdback-straps.

817,425. GUARD-FINGER FOR HARVESTERS, &c. FRANK HAMACHER, Kewaunee, Wis. Filed Sept. 22, 1904. Serial No. 225,408.



Claim.—1. In combination with the finger-bar and sickle of a cutting mechanism, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upstanding part on the body portion, a movable member pivotally mounted on the upstanding part with its pivot over the sickle, and a guide-finger carried by the movable member to lead the cut material over the cutting mechanism.

2. In combination with the finger-bar and sickle of a cutting mechanism for harvesters, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upstanding part on the body portion, a movable member pivotally mounted on the upstanding part with its pivot over the sickle, and a guide-finger carried by the movable member to lead the cut material over the cutting mechanism onto the apron of the harvester.

3. In combination with the finger-bar and sickle of a cutting mechanism, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upwardly-extending web on the body portion, a movable member pivotally mounted on the web with its pivot over the sickle, and a guide-finger integral with the movable member to lead the cut material over the cutting mechanism.

4. In combination with the finger-bar and sickle of a cutting mechanism for harvesters, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upwardly-extending web on the body portion, a movable member pivotally mounted on the web with the pivot over the sickle, and a guide-finger integral with the movable member and extending over he cutting mechanism and adapted to lead the cut material over said cutting mechanism and onto the apron of the harvester.

5. In a finger-guard, a body portion adapted to be connected to the finger-bar of the cutting mechanism of a harvester, a transverse

flange on the body portion to engage said finger-bar and hold the guard-finger in position, a second transverse flange on the body portion, a cutting-blade secured thereto, said body portion being provided with a recess to receive the point of the cutting-blade, a second cutting-blade bearing on the first-mentioned cutting-blade, a sickle-bar secured thereto, a guide-plate secured to the finger-bar and arched over the sickle-bar forming a thrust-bearing therefor, an upwardly and rearwardly extending web on the body portion forming an overhanging wall for the recess, a movable member pivotally mounted on the web and having a groove therein, an enlarged head on the front end of the web contained within the groove of the movable member, a stop-lug on the movable member to limit the movements thereof by engaging said head, said movable member being pointed on its front end and having a lower bearing-surface slightly to the rear of said end adapted to rest on the ground, and a rearwardly-extending guide-finger integral with and projecting from the rear end of the movable member adapted to support the cut material and convey it over the cutting mechanism and onto the moving apron of the harvester.

6. In combination with the finger-bar and sickle of a cutting mechanism, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upwardly and rearwardly extending web on the body portion overhanging the cutting mechanism, a movable member pivotally mounted on the web with its pivotal point above the sickle, and a finger on the movable member extending rearwardly to beyond the finger-bar and adapted to support and convey cut material over the cutting mechanism and deposit it in the rear thereof.

7. In combination with the finger-bar and cutting-teeth of a cutting mechanism, a guard-finger comprising a body portion adapted to be connected to the finger-bar, an upstanding part on the front of the body portion extending rearwardly over the cutting mechanism, a spring-pressed movable member pivotally mounted on the upstanding part with its pivot above and to the rear of the cutting edges of the cutting-teeth, and a guide-finger carried by the movable member and extending so far to the rear as to lead cut material entirely over the cutting mechanism.

8. In combination with the finger-bar and cutting-teeth of a cutting mechanism, a guard-finger comprising a body portion adapted to be connected to the finger-bar, an upwardly-extending web on the front of the body portion, a movable member having side ears pivotally mounted on the web with the pivot directly above the cutting-teeth, a guide-finger on the movable member extending rearwardly sufficiently to lead cut material over the cutting mechanism, and a coil-spring with its coil housed between the ears of the movable member with one end extending beneath the guide-finger and passing through the end thereof and the other end extending downwardly and secured to the web

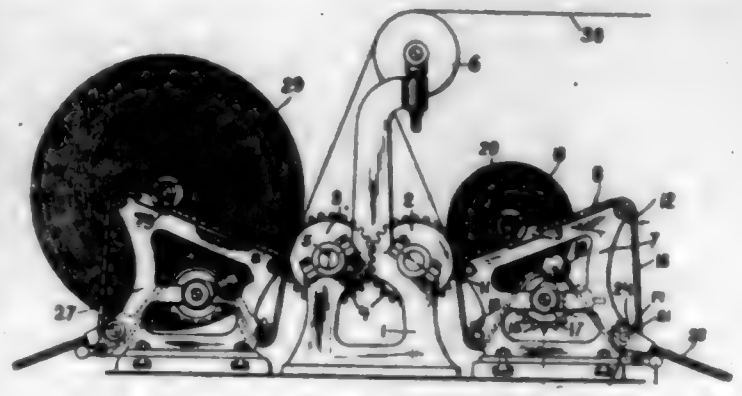
9. In combination with the finger-bar and cutting-teeth of a cutting mechanism, a guard-finger comprising a body portion having means for connecting it to the finger-bar, an upstanding part on the front of the body portion, and a movable member pivotally mounted on the upstanding part with its pivot located to the rear of the cutting edges of the cutting-teeth and having means adapted to lead cut material to the rear of the cutting mechanism.

10. In combination with the finger-bar and cutting-teeth of a cutting mechanism, a guard-finger comprising a body portion having means for connecting it to the finger-bar of the cutting mechanism, an upstanding part on the body portion extending rearwardly over the cutting-teeth, an inclined movable member pivotally connected to the upstanding part with its pivot located to the rear of the cutting edges of the cutting-teeth, and a guide-finger carried by the movable member for depositing cut material in the rear of the cutting mechanism.

817,426. **WINDER.** James W. Harris, Hamilton, Ohio, assignor, by mesne assignments, to The Black & Clawson Company, Hamilton, Ohio. Filed Aug. 28, 1905. Serial No. 276,042.

Claim.—1. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls arranged to be driven at equal peripheral rates of speed, a drum-shaft mounted parallel with said driving-rolls and arranged to move to and from the driving-rolls and adapted to support a winding-roll of paper or other fabric with its peripheral surface in contact with the periphery of one of said driving-rolls, and a second similarly-mounted drum-shaft adapted to support its winding-roll in peripheral contact with the other one of said driving-rolls.

2. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls geared together to turn at equal peripheral rates of speed, a drum-shaft mounted parallel with said driving-rolls and arranged to move to and from the driving-rolls and adapted to support a winding-roll of paper or other fabric with its peripheral surface in contact with the periphery of one of said driving-rolls, and a second similarly-mounted drum-shaft adapted to support its winding-roll in peripheral contact with the other one of said driving-rolls.



3. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls arranged to be driven in relatively opposite directions at equal peripheral rates of speed, a drum-shaft mounted parallel with said driving-rolls and arranged to move to and from the driving-rolls and adapted to support a winding-roll of paper or other fabric with its peripheral surface in contact with the periphery of one of said driving-rolls, and a second similarly-mounted drum-shaft adapted to support its winding-roll in peripheral contact with the other one of said driving-rolls.

4. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls geared together so as to turn in opposite directions at equal peripheral rates of speed, a drum-shaft mounted parallel with said driving-rolls and arranged to move to and from the driving-rolls and adapted to support a winding-roll of paper or other fabric with its peripheral surface in contact with the periphery of one of said driving-rolls, and a second similarly-mounted drum-shaft adapted to support its winding-roll in peripheral contact with the other one of said driving-rolls.

5. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls, a pair of housings disposed at one side thereof in planes at right angles to said rolls, journal-boxes carried by said housings and adapted to support a drum-shaft, a second pair of housings on the opposite side of the pair of driving-rolls in planes differing from those of the first-mentioned housings but also at right angles to said rolls, and journal-boxes carried by the second pair of housings

6. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls, a pair of housings disposed at one side thereof, journal-boxes carried by said housings and adapted to support a drum-shaft, a second pair of housings on the opposite side of the pair of driving-rolls, and journal-boxes carried by the second pair of housings, said housings being adjustable longitudinally of the driving-rolls.

7. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls, a pair of housings disposed at one side thereof in planes at right angles to said rolls, journal-boxes carried by said housings and adapted to support a drum-shaft, a second pair of housings on the opposite side of the pair of driving-rolls in planes differing from those of the first-mentioned housings but also at right angles to said rolls, journal-boxes carried by the second pair of housings, and a guide-roll disposed parallel with the driving-rolls to serve in guiding webs of paper or other fabric to opposite sides of the driving-rolls.

8. In a winder, the combination, substantially as set forth, of a pair of driving-rolls, and a plurality of drum-shafts adapted to support winding-rolls of paper or other fabric, each of the driving-rolls coöperating with one of the drum-shafts.

9. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, connections between the journal-boxes to cause them to move in unison, hand operating mechanism for moving the journal-boxes from the driving-roll, and a disconnecting device interposed in said connections for severing the connection between the journal-boxes so as to permit of their independent movement to and from the winding-roll.

10. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at

right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, and adjustable weights independently connected with each journal-box and serving to urge the box toward the driving-roll.

11. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, and adjustable weights independently connected with each journal-box and serving to urge the box from the driving-roll.

12. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, and adjustable weights independently connected with each journal-box and serving to urge the box toward and from the driving-roll.

13. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, independent pivoted weight mounted on each housing, and connections between the individual weights and journal-boxes.

14. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, a weight pivoted upon each housing, connections between the weights and the journal-boxes, and means for angularly adjusting the weights independently of each other.

15. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, a weight pivoted upon each housing, connections between the weights and the journal-boxes, and means for angularly and radially adjusting the weights independently of each other.

16. In a winder, the combination, substantially as set forth, of a driving-roll, a pair of housings, guides supported by the housings at right angles to and declining toward the axis of the driving-roll, journal-boxes movable on said guides and adapted to support a drum-shaft, a chain at each housing and having its ends connected with the journal-box thereon, guide-wheels for the chains, a sprocket-wheel engaging each chain, and an adjustable weight carried by each sprocket-wheel.

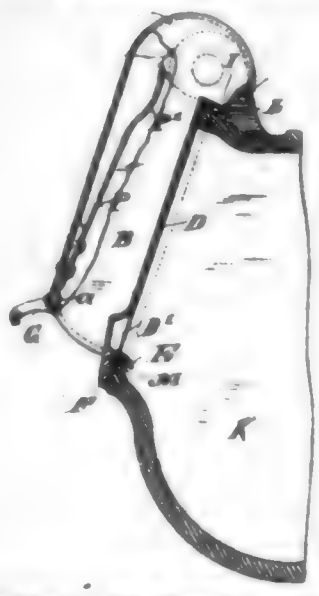
17. In a winder, the combination, substantially as set forth, of a pair of driving-rolls, mechanism connecting said rolls to cause them to turn in unison in relatively opposite directions, a pair of housings disposed at one side thereof and adapted to support a drum-shaft carrying a roll of paper or other fabric with its surface in contact with one of said driving-rolls, and a plurality of pairs of housings disposed on the other side of the pair of driving-rolls and adapted to each support a drum-shaft and a roll of paper or other fabric with its surface in contact with the other one of said driving-rolls.

18. In a winder, the combination, substantially as set forth, of a pair of parallel driving-rolls, mechanism connecting said rolls to cause them to turn in unison in relatively opposite directions, one or more paper-roll-supporting devices adapted each to support a roll of paper in contact with one of said driving-rolls, and one or more paper-roll-supporting devices adapted to support a roll of paper in contact with the other of said driving-rolls, and a guide-roll disposed parallel with said driving-rolls and adapted to direct the individual divisions of a web of paper or other fabric to the supported paper-rolls.

817,427. **JOURNAL-BOX.** GEORGE L. HARVEY, Chicago, Ill., assignor to Car Builders Supply Company, Chicago, Ill., a Corporation of New Jersey. Filed Mar. 7, 1904. Serial No. 196,809.

Claim.—1. In a journal-box, a lid adapted to open only by sliding upwardly, provided with top and bottom dust-excluding flanges, the top flange being adapted to engage the top of the journal-box and the bottom flange being adapted to engage the top of the lower side of the journal-box, and a recess D′ located immediately above said bottom flange and adapted to coöperate with the top of the journal-box and allow the lid to tilt backward when the lid is raised, substantially as described.

2. In a journal-box a lid, provided with rearwardly-extending dust-excluding flanges on four sides, all of the flanges projecting rearwardly beyond the outer face of the journal-box to which said lid is fitted, the lid being so arranged that it can be raised only by sliding, the bottom flange being arranged to serve as a tilting device when the lid is raised, substantially as described.

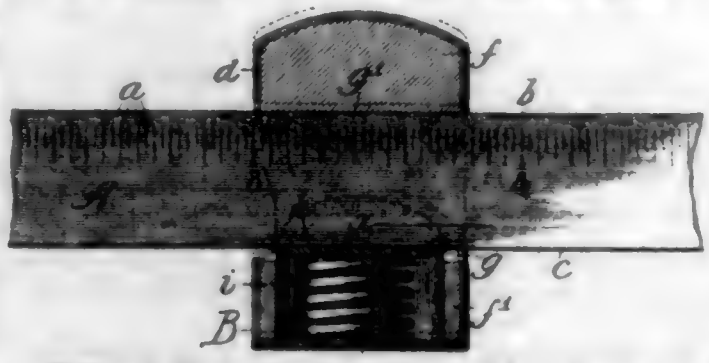


3. In a journal-box, a lid adapted to open by sliding, provided with a rearwardly-extending flange I, adapted to engage the top of the journal-box, and a rearwardly-extending dust-excluding flange E, adapted to engage the upper side of the bottom wall of the journal box, and a recess D′ located adjacent said flange E, substantially as described.

4. In a journal-box, a lid adapted to open only by sliding, having rearwardly-extending dust-excluding flanges on four sides, the flange on the lower side being adapted to serve as a tilting device when the lid is raised, substantially as described

5. In a journal-box, a lid adapted to open only by sliding, having rearwardly-extending dust-excluding flanges on four sides, a recess D′ located above the lower flange, said lower flange being adapted to act as a tilting device when the lid is raised and to cause said recess to coöperate with the upper wall of said journal-box, substantially as described.

817,428. **SCALE-BEAM FOR WEIGHING-SCALES.** ISAAC HIRSCH, Chicago, Ill. Filed Mar. 9, 1905. Serial No. 249,195.



Claim.—1. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting said beam and having vertical play thereon, said weight carrying a yielding plunger in frictional engagement with the under surface of the beam.

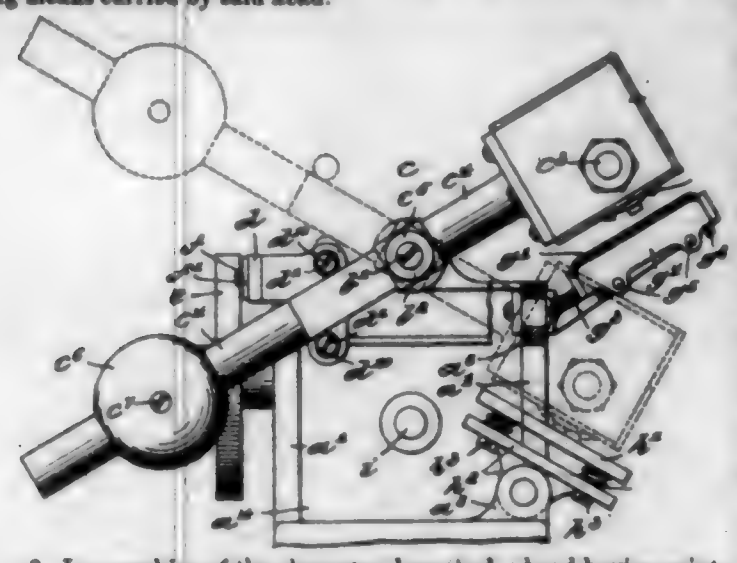
2. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting around said beam and having vertical play thereon, the said weight carrying a spring-pressed plunger-disk in frictional engagement with the under surface of the beam.

3. The combination with a scale-beam having smooth upper and lower edges, of a sliding weight fitting around said beam and having vertical play thereon, the weight having a chamber beneath the beam closed at its lower side, a friction-disk, and a spring in the chamber pressing the said disk against the under surface of the beam.

817,429. **NUMBERING AND STAMPING MACHINE.** JAMES D. HUMPHREY, Towanda, Pa. Filed May 5, 1905. Serial No. 259,987.

Claim.—1. In a machine of the character described, a head having printing means, a weight, means adapted to connect said head with said weight; means adapted to support said connecting means to permit said weight to balance said head, means engaging said connecting means adapted to impart to said head an oscillatory move-

ment, and inking means adapted to permit of the inking of the printing means carried by said head.



2. In a machine of the character described, a head having printing means, a weight, means adapted to connect said head with said weight, means adapted to support said connecting means to permit said weight to balance said head, means engaging said connecting means adapted to impart to said head an oscillatory movement, inking means adapted to permit of the inking of the printing means carried by said head, and means adapted to shift said inking means into and out of the path of said head.

3. In a machine of the character described, a head having printing means, a weight, means adapted to connect said head with said weight, means adapted to detachably support said connecting means to permit said weight to balance said head, a table adapted to receive an article, inking means adapted to ink the printing means carried by said head, and means adapted to bring said head and its printing means alternately into engagement with said inking means and the article placed on said table.

4. In a machine of the character described, a head having printing means, a weight, means adapted to connect said head with said weight, means adapted to detachably support said connecting means and to permit said weight to balance said head, inking means adapted to be shifted alternately below and away from said head, an adjustable table, means adapted to actuate said head by engaging said connecting means to bring the same and its printing means alternately into engagement with said inking means and said table, and means supporting a portion of said actuating means and adapted to permit of adjustment in the length of travel of said head.

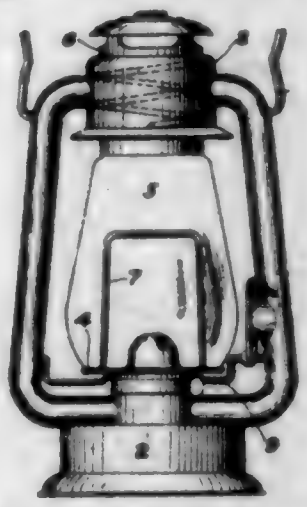
5. In a machine of the character described, a head having printing means, a weight, means adapted to connect said head with said weight, means adapted to detachably support said connecting means and to permit said weight to balance said head, means adapted to actuate said head by oscillating said connecting means, means supporting a portion of said actuating means and adapted when adjusted to permit said portion to increase or decrease the length of oscillations of said head, inking means adapted to be shifted alternately below and away from said head and its printing means, means adapted to raise and lower said inking means and to hold the same in varying angular positions with respect to said head, a table, means adapted to hold said table in varying angular positions with respect to said head, said inking means and table arranged to be brought into their proper operative positions by the regulation of the length of travel of the said head.

6. In a machine of the character described, a head having printing means, an arm, a weight adjustably arranged on said arm and adapted to counterbalance said head, a shaft adapted to detachably support said arm and head, inking means adapted to be shifted below and away from said head, a table, a lever adapted to engage said arm, and a cam adapted to oscillate said lever and by the same said arm and head to bring the same with its printing means alternately into engagement with said inking means and table.

7. In a machine of the character described, a head having printing means, an arm, a weight adjustably arranged on said arm, a shaft adapted to detachably engage said arm intermediate of said head and weight to permit the same to balance said head, an inking-pad, means adapted to hold and to shift said pad below and away from said head, means adapted to raise, lower and to hold said pad in varying angular positions with respect to said head, a table, means adapted to hold said table in varying angular positions with respect to said head, a lever adapted to engage said arm, and a cam adapted to oscillate said lever and by the same said arm and head to bring the head first into engagement with said pad and then with said table.

8. In a machine of the character described, a head having printing means, an arm, a weight adjustably arranged on said arm, a shaft adapted to detachably support said arm intermediate of said head and weight to permit the same to balance said head, a lever adapted to engage said arm, a double-throw cam adapted to oscillate said lever and to impart to said head movements of varying length during a revolution of said cam, means supporting said lever and adapted when adjusted to permit of an increase or decrease in the length of movement of said lever and head, an inking-pad, means adjustably supporting said inking-pad, an adjustable and yielding table, and means coöperating with said cam adapted to engage said inking-pad holder to shift the inking-pad below said head to transmit ink to its printing means and to move the same out of the path of said head to permit the same to be brought into engagement with said table and the article placed thereon.

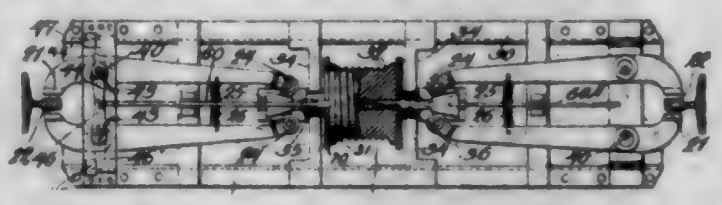
817,480. LEVER-LIFT FOR LANTERN-GLOBES. DAVID C. KLINE, Rochester, N. Y., assignor to The Pritchard-Strong Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 20, 1906. Serial No. 296,980.



Claim.—1. In a lever-lift device for lantern-globes, the combination of a lantern-frame, a globe-plate, means for yieldingly holding the globe on the globe-plate, a longitudinally-compressible crank-lifter attached to the globe-plate and having terminals socketed in the frame; a lever-arm attached to said lifter, and a catch-plate formed in a substantially circular curve and having an edge formed in a substantially circular curve along which edge said arm slides in rocking said lifter and against the exterior convex surface of which plate the said arm springs into a position tangential thereto.

2. In a lever-lift device for lantern-globes, the combination of a lantern-frame, a globe-plate, means for yieldingly holding the globe on the globe-plate, a longitudinally-compressible crank-lifter attached to the globe-plate and having terminals socketed in the frame, a bent lever-arm attached to said lifter, and a catch-plate formed in a substantially circular curve and having an edge formed in a substantially circular curve along which edge one portion of said arm slides in rocking said lifter radially to the curvature in said plate and against the exterior convex surface of which plate the other portion of said arm springs into a position tangential thereto.

817,481. SAFETY DEVICE FOR ELEVATORS. FRITZ LUNDSTEN, Corona, N. Y., assignor of one-half to Theodor Eskilson, Astoria, N. Y. Filed Nov. 16, 1905. Serial No. 287,564.



Claim.—1. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, supports for said jaws and means for shifting the position of said supports.

2. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for said jaws, means for shifting the position of the pivots and the jaws and additional means for moving the jaws.

3. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, means for shifting the position of said pivots toward the guides, and additional means for tightening the jaws upon the guides.

4. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, means for shifting the position of the pivots toward the guides quickly and additional means for tightening the jaws upon the guides more slowly with greater force.

5. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, spring-actuated means for shifting the position of the pivots toward the guides quickly and a screw for tightening the jaws upon the guides more slowly with greater force.

6. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the guides, spring-actuated means for quickly shifting the position of the pivots toward the guides, a locking device for said spring-actuated mechanism and a screw mechanism arranged to tighten the jaws upon the guides.

7. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device and a screw mechanism arranged to tighten the jaws upon the guides.

8. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, a screw mechanism arranged to tighten the jaws upon the guides and means for actuating the cam and the screw by the motion of the car.

9. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, a screw mechanism arranged to tighten the jaws upon the guides, means for actuating the cam and the screw by the motion of the car when the speed of the car has reached a predetermined limit.

10. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, a screw mechanism arranged to tighten the jaws upon the guides, means for actuating the cam and the screw by the motion of the car when the speed of the car has reached a predetermined limit, and means for actuating the cam and the screw by hand.

11. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, a screw mechanism arranged to tighten the jaws upon the guides and a governor connected to run with the car and arranged to actuate the cam and the screw when the car has reached a predetermined limit.

12. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, mechanism to shift the position of the pivots toward the guides, a normally compressed spring arranged to actuate said mechanism, and a screw for tightening the jaws upon the guides.

13. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, mechanism to shift the position of the pivots toward the guides, a normally compressed spring arranged to actuate said mechanism, means for releasing said springs and a screw for tightening the jaws upon the guides.

14. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, means for turning said eccentric pivots, a spring arranged to actuate said pivot-turning means and to thereby move the jaws toward the guides and to positively hold them in their moved position and further means for positively tightening the jaws upon the guides.

15. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, pivots for the jaws, spring-actuated means for shifting the position of the pivots toward the guides quickly and right and left hand screws for tightening the jaws upon the guides more slowly with greater force.

16. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device and right and left hand screws arranged to tighten the jaws upon the guides.

17. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, right and left hand screws arranged to tighten the jaws upon the guides and means for actuating the cam and the screws by the motion of the car.

18. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device, for said spring-actuated mechanism, a cam for releasing said locking device, right and left hand screws arranged to tighten the jaws upon the guides, means for actuating the cam and the screws by the motion of the car when the speed of the car has reached a predetermined limit.

19. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism, for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, right and left hand screws arranged to tighten the jaws upon the guides and a governor connected to run with the car and arranged to actuate the cam and the screws when the car has reached a predetermined limit.

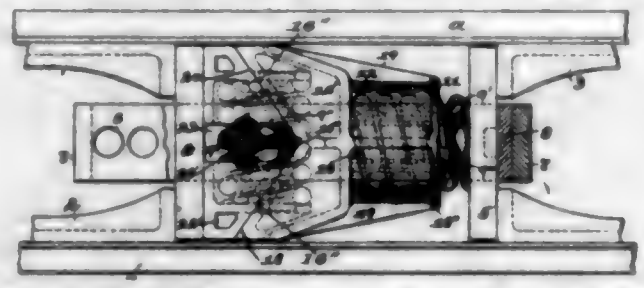
20. In a safety device for elevators, the combination of a car, guides for the car, gripping-jaws upon the car, eccentric pivots for the jaws, spring-actuated mechanism for turning said eccentric pivots, a locking device for said spring-actuated mechanism, a cam for releasing said locking device, right and left hand screws arranged to tighten the jaws upon the guides, a governor connected to run with the car and arranged to actuate the cam and the screws when the car has reached a predetermined limit, and means for actuating the cam and the screws by hand.

817,432. **WOOD-CLIP.** GEORGE F. MARTIN, Pittsburg, Pa., assignor of one-half to William B. Clark, Wilkinsburg, Pa. Filed Apr. 14, 1905. Serial No. 255,512.



Claim.—In combination with a girder and cross-beam, a clip formed in angular overlapping sections to embrace the beam and bind against the girder and means passing through the overlapping portions of the sections and engaging the beam, to hold the clip to the beam.

817,433. **DRAFT-GEAR FOR RAILWAY-CARS.** LEWIS P. MATHER, Pittsburg, Pa. Filed June 21, 1906. Serial No. 322,210.



Claim.—1. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a spring structure, and a hollow forked casting provided with two converging bearing-surfaces and movable longitudinally in both directions, said casting having its walls partially inclosing said spring structure.

2. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a spring structure, and a single forked casting provided with a pair of inwardly-inclined bearing-surfaces and formed by the walls thereon located above and below said spring structure.

3. In a draft-gear for railway-cars, the combination of the draw-bar, followers, spring structures, and a longitudinally-movable single-forked casting provided with a pair of inwardly-inclined bearing-surfaces formed by the walls thereon located above and below one of said spring structures and forming a seat for the other spring structure.

4. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a spring structure, and a casting provided with a pair of inclined bearing-surfaces formed by walls extending along the spring structure and located above and below said spring structure, said bearing-surfaces beyond the end of the spring structure extending across said ends.

5. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a spring structure, and a spring-cap composed of side walls, spring-seats and diagonal bearing-surfaces, said bearing-surfaces along the spring structure being formed of walls located above and below said spring structure and such bearing-surfaces beyond the spring-seats extending across the ends of said spring structure.

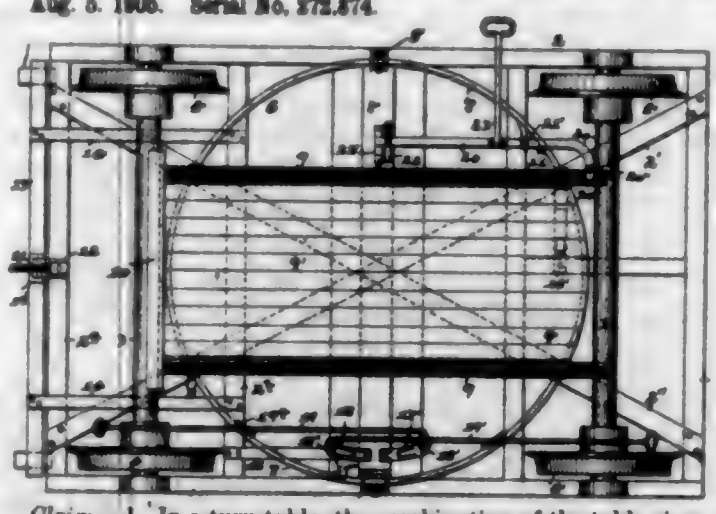
6. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a spring structure, a single casting provided with a pair of inclined bearing-surfaces, and spring-caps having inclined bearing-surfaces for engaging with the inclined bearing-surfaces on said casting and the top and bottom walls of said caps partially inclosing said spring.

7. In a draft-gear for railway-cars, the combination of a draw-bar, followers, a spring structure, spring-caps having two spring-seats and bearing-surfaces, said bearing-surfaces being formed by walls located above and below said spring structure, and a single-forked casting having bearing-surfaces for mating with the bearing-surfaces of said cap members.

8. In a draft-gear for railway-cars, the combination of the draw-bar, followers, a lateral spring element, and spring-caps for confining said spring element and having bearing-surfaces located above and below said spring element.

9. In a draft-gear for railway-springs, the combination of the draw-bar, followers, a lateral spring element, and a spring-cap composed of side walls, spring-seats and diagonal bearing-surfaces, said bearing-surfaces along the spring being formed of walls located above and below the spring element and said bearing-surfaces beyond the spring-seats extending across the ends of the spring element.

817,434. TURN-TABLE. CASPER P. MAYER, Bridgeville, Pa. Filed Aug. 5, 1905. Serial No. 272,874.



Claim.—1. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, and means on said ring for engaging with said standard to lock said table from movement in either direction.

2. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, a lug on said standard, and means on said ring for engaging with said standard and lug to lock the table from movement in either direction.

3. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, a lug on said standard, a bar on said ring, and means on said ring for engaging with said lug and said bar being permitted to engage with said standard to lock the table from movement in either direction.

4. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, a lug on said standard, a bar on said ring, and a hinged plate on said ring for engaging with said lug and said bar being permitted to engage with said standard to lock the table from movement in either direction.

5. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, a lug on said standard, a bar on said ring, a hinged plate on said ring, a lip on said plate for engaging with said lug and said bar being permitted to engage with said standard to lock the table from movement in either direction.

6. In a turn-table, the combination of the table-ring, a frame, a standard on said frame, a lug on said standard, a bar on said ring, a hinged plate on said ring, a lip on said plate for engaging with said lug and said bar being permitted to engage with said standard to lock the table from movement in either direction, and a rod connected to said hinged plate for raising the same and lip to allow the movement of said table.

7. In a turn-table, the combination with the table-ring, of the rails on said ring, and means carried by said ring for engaging with one of the rails to prevent the car from running off said rails.

8. In a turn-table, the combination with the table-ring, of the rails on said ring, and a movable bar mounted on said ring for engaging with one of the rails to prevent the car from moving off said rails.

9. In turn-table, the combination with the table-ring, of the rails on said ring, and a bar pivoted on said ring for engaging with one of said rails to prevent the car from moving off said rails.

10. In a turn-table, the combination with the table-spring, of the rails on said ring, a bar pivoted on said ring, and a shoe on one end of said bar for engaging with the rails to prevent the car from moving off said rails.

11. In a turn-table, the combination with the table-ring, of the rails on said ring, a bar pivoted on said ring, a shoe on one end of said bar for engaging with the rails to prevent the car from moving off of said rails, and a spring engaging with the opposite end of said bar to hold the same in place.

12. In a turn-table, the combination with the table-ring, of the rails on said ring, a bar pivoted on said ring, a shoe on one end of said bar for engaging with the rails to prevent the car from moving off said rails, a bearing-block on said ring for engaging with the opposite end of said bar, and a spring engaging with said bar to hold the same in place in said block.

13. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, and means on said frame for engaging with the rails to lock said truck on said rails.

14. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, shoes carried by said frame, and means on said frame for lowering said shoes to engage with the rails and lock said truck on said rails.

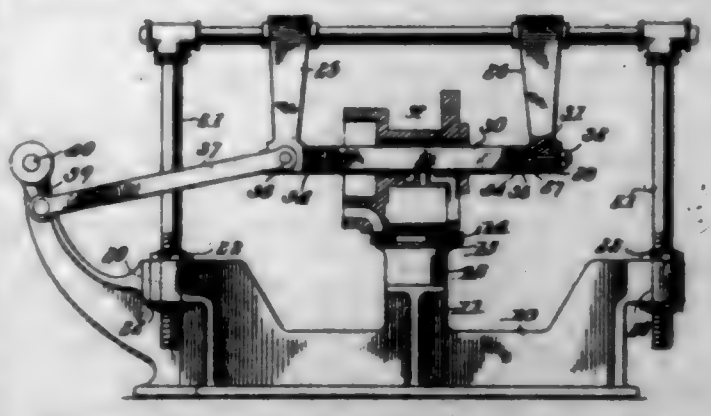
15. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, a spring beam or bar connected to said frame, shoes on said bar, and means on said frame for engaging with said bar to lower the same and shoes thereon and permit the latter to engage with the rails and lock said truck on said rails.

16. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, a spring beam or bar connected to said frame, shoes on said bar, and a cam-lever on said frame for engaging with said bar to lower the same and shoes thereon and permit the latter to engage with the rails and lock said truck on said rails.

17. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, a spring beam or bar connected to said frame, shoes on said bar, a bearing-block on said frame, and cam-lever pivoted to said block for engaging with said bar to lower the same and shoes thereon and permit the latter to engage with the rails and lock said truck on said rails.

18. In a turn-table and truck, the combination with the rails for the truck, of a truck-frame, a spring beam or bar connected to said frame, shoes on said bar, a bearing-block on said frame, a cam-lever pivoted to said block for engaging with said bar to lower the same and shoes to permit the latter to engage with the rails and lock the truck on said rails, and a stop on said block for engaging with said lever in its raised position.

817,435. MACHINE FOR GRINDING VALVE-SEATS. HENRY MEYNERS, Palestine, Tex. Filed July 28, 1905. Serial No. 271,676.



Claim.—1. The combination with a frame, of a work-support, a guide-bar, hangers depending from said guide-bar at points beyond the opposite sides of said work-support, a block carried by the

hangers and provided with clamping members for the reception of an abrading member, and means for effecting reciprocatory movement of the hangers and block.

2. In apparatus of the class described, the combination with a frame, of a guide-bar, a pair of hangers mounted for sliding movement on said guide-bar, and a reversible block supported by the hangers and having on one side a pair of clamping members for the reception of an abrading-strip.

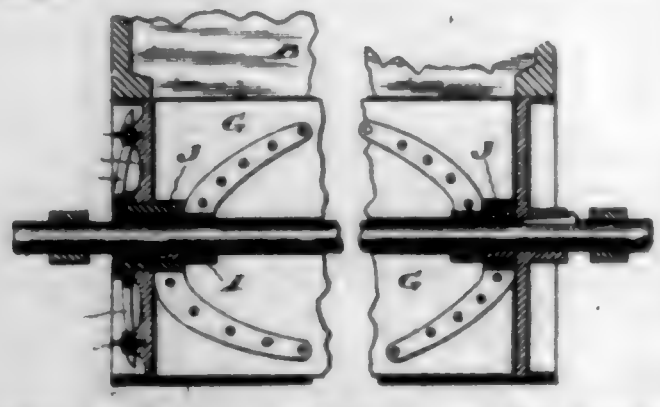
3. In apparatus of the class described, the combination with a frame, of a guide-bar supported by the frame, a pair of hangers slidably mounted on the guide-bar and provided with openings, the adjacent faces of the hangers being recessed at the inner ends of the openings, a block having reduced end portions arranged to extend through said openings and threaded for the reception of the nuts, there being fillets or enlargements at the bases of the reduced end portions, and arranged to enter the recesses of the hangers, and an abrading-strip-clamping means supported by the block.

4. In apparatus of the class described, the combination with a frame having a pair of vertically-disposed sockets, vertical bars passing through said sockets and provided with threaded peripheries, adjusting and locking nuts on the threaded portions of the bars, a guide-bar carried by the upper ends of said vertical bars, hangers slidably mounted on said guide-bar, a block secured to the hangers, a bifurcated link embracing one of the vertical bars, and pivotally connected to one of the hangers, a crank to which the opposite end of the link is secured, and an abrading-strip-clamping means carried by the block.

5. In an apparatus of the class described, the combination with a pair of standards, of a longitudinally-adjustable base bar or tube carried thereby, means for clamping the bar in position, an upper frame carried by the base-bar, an abrading block or strip supported by the frame, and work-carriers supported by said standards.

6. In a device of the class specified, the combination with a pair of spaced standards, of a frame supported thereby and adjustable with respect to the standards, an abrading member guided by the frame, a guide-bar carried by one of the standards and extending transversely of the frame, a slide mounted on said guide-bar, and a work-supporting standard carried by said slide.

817,436. **MEASURING DEVICE FOR CONCRETE-MIXERS.** JOHN MUIR, Brantford, Canada. Filed Sept. 28, 1905. Serial No. 280,434.

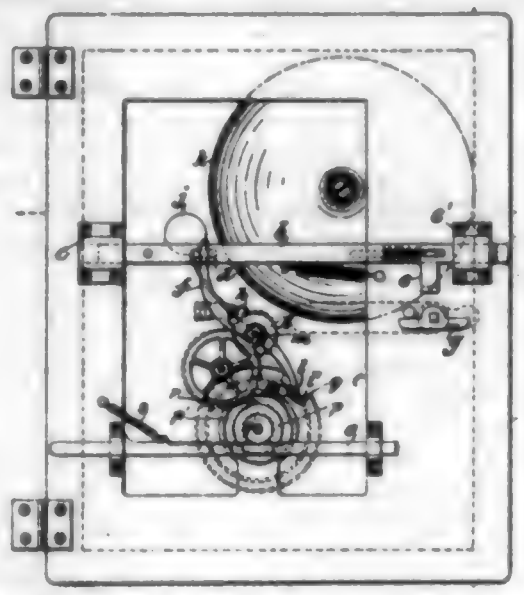


Claim.—In measuring and feeding apparatus the combination of a hopper; a hollow rotary cylinder closing the lower end of the hopper and having an opening in its side; a shaft extending through the cylinder; two radial partitions hinged on the shaft; two concentric sleeves journaled on the shaft secured respectively to the radial partitions and each extending out through end of the cylinder; an index-arm secured to each sleeve outside the cylinder; and means for clamping the index-arms to the end of the cylinder at varying angles to one another, substantially as described.

817,437. **FIRE-ALARM SIGNAL-BOX.** MICHAEL J. MCGOWAN, Jr., Newark, N. J. Filed Jan. 16, 1904. Renewed Nov. 13, 1905. Serial No. 287,184.

Claim.—1. In a fire-alarm signal-box, an alarm, means for actuating said alarm, a stop arranged on said actuating means, a bar for releasing said actuating means, a projection on said bar, and a lever contacting with the projection on said bar and engaging with the stop on said means for releasing and stopping the movement for actuating said alarm.

2. In a fire-alarm signal-box, the combination of an alarm, means for actuating said alarm, a combined timing device and stop mechanism in operative relation with said actuating means, a spring-actuated bar for releasing said stop mechanism and permit said timing device to contact with said stop mechanism after a predetermined period of operation to arrest said actuating means, and thus stop the alarm.

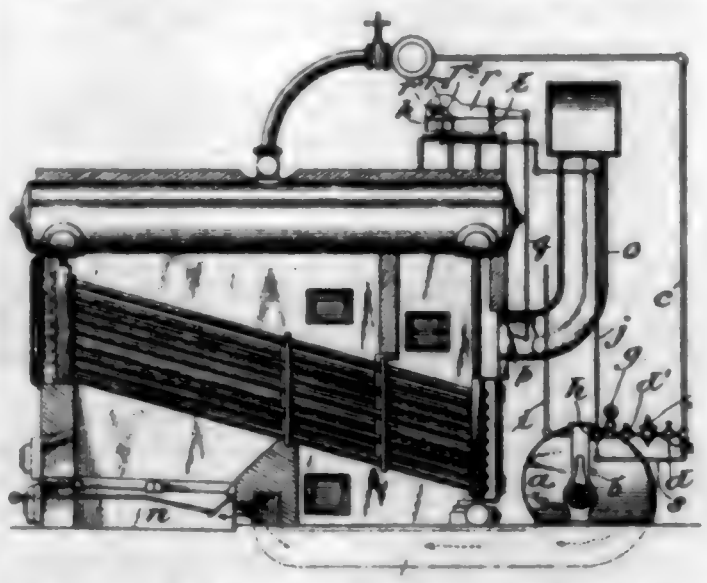


3. In a fire-alarm signal-box the combination of a swinging door, forming a casing, alarm mechanism located within said casing, comprising an alarm means for actuating said alarm, a latch-bar for locking said door or casing and provided with means for releasing said actuating means and timing mechanism for arresting said actuating means after a predetermined period of operation.

4. In a fire-alarm signal-box, the combination of an alarm, means for actuating said alarm, a combined timing device and stop mechanism in operative relation with said actuating means, a spring-actuated bar for releasing said stop mechanism and permit said timing device to contact with said stop mechanism after a predetermined period of operation to arrest said actuating means, and thus stop the alarm, and automatic winding means for winding up said actuating means.

5. In a fire-alarm signal-box, the combination of a swinging door, forming a casing, alarm mechanism located within said casing, comprising an alarm means for actuating said alarm, a latch-bar for locking said door or casing and provided with means for releasing said actuating means and timing mechanism for arresting said actuating means after a predetermined period of operation, and automatic winding means for winding up said actuating means.

817,438. **REGULATION OF FURNACES.** ESBURY MCLEAN, New York, N. Y. Filed May 23, 1904. Serial No. 209,356.



Claim.—1. The combination with a combustion-chamber of a blower for supplying air thereto and means for establishing therein a predetermined pressure and for automatically maintaining substantially constant said pressure under varying rates of combustion.

2. The combination with a combustion-chamber of a blower for supplying air thereto and means for establishing therein a substantially atmospheric pressure and for automatically maintaining substantially constant said pressure under varying rates of combustion.

3. The combination with a combustion-chamber, of a blower for supplying air thereto, and means for establishing therein a predetermined pressure and for automatically maintaining substantially

constant said pressure under varying rates of combustion, which means comprise apparatus which varies the supply of air to the furnace from the blower and substantially simultaneously varies the exhaust of gases from the furnace in quantities substantially corresponding to the quantities of air supplied by the blower.

4. The combination with a furnace, a blower, means for varying the supply of air to the furnace from said blower, means for varying the exhaust of gases from the furnace in quantities substantially corresponding to the quantities of air supplied by the blower, the parts being automatically controlled and so proportioned that a substantially atmospheric pressure is maintained in the furnace.

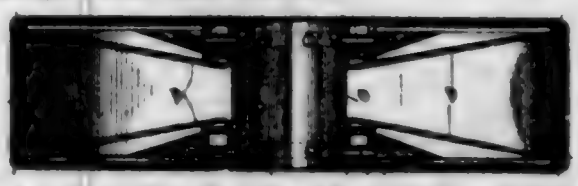
5. In combination with a furnace, a blower, means for varying the supply of air to the furnace from said blower in quantities graduated between the extremes, means for varying the escape of gases from the furnace in quantities graduated between the extremes, and substantially corresponding to the graduated quantities of air supplied to the furnace by the blower, the parts being automatically controlled and so proportioned that a substantially uniform pressure is maintained in the furnace.

6. In combination with a furnace, a blower, means for varying the supply of air to the furnace from said blower in quantities graduated between the extremes, means for varying the escape of gases from the furnace in quantities graduated between the extremes, and substantially corresponding to the graduated quantities of air supplied to the furnace by the blower, the parts being automatically controlled and so proportioned that a substantially atmospheric pressure is maintained in the furnace.

7. In a furnace, the combination with a combustion-chamber, of a blower for supplying air thereto, and means for establishing therein a predetermined pressure and for automatically maintaining substantially constant said pressure under varying rates of combustion, said means being controlled by a function of the furnace, as steam-pressure.

8. In combination with a furnace, a blower and means controlled by a function of the furnace, as steam-pressure, for automatically varying the rate of combustion while maintaining a substantially atmospheric pressure in said furnace, thereby maintaining the function of the furnace substantially constant.

817,439. **BELT-PULLEY.** DANIEL T. MCNEIL, Ann Arbor, Mich. Filed Apr. 1, 1904. Serial No. 201,157.



Claim.—1. A belt-pulley comprising a sheet-metal rim having its outer edges formed with inwardly-extending beads, and a suitable hub, in combination with pulley-arms connecting the hub and rim, the outer ends of the several arms being positioned in notches formed in the beads in the rim and engaging with the beads, and means for securing the pulley to a shaft.

2. A split pulley comprising sheet-metal rim-sections adapted to form the complete rim, and having its outer edges provided with inwardly-extending beads having notches, a separable hub, and means for securing the hub to a shaft, in combination with pulley-arms connecting the hub-sections with the rim-sections, the outer ends of the several arms being positioned in the notches formed in the beads therefor and engaging with the beads.

3. A split pulley consisting of substantially duplicate sections, each comprising a semicircular rim and a hub-section, in combination with two convergent sets of arms formed of an integral piece of sheet metal the arms of each set being connected by an integral web, each set secured at one end near the outer edge of the rim and at the other to the hub-section, means for securing the sections together, and means for securing the pulley to the shaft.

4. A belt-pulley comprising a suitable rim, composed of sheet metal, with a volute bead formed upon each of its edges, and a hub, in combination with two sets of sheet-metal arms attached at one end to said rim by means of the beads, and at the other to the hub, and means for securing said pulley on the shaft.

5. A split pulley consisting of substantially duplicate sections, each comprising a semicircular rim-section, composed of sheet metal, with a volute bead formed upon each of its edges and a hub-section, in combination with two sets of sheet-metal arms attached at one end to said rim-section by means of the beads, and at the other to the hub-section, means for securing the sections together, and means for securing the pulley to the shaft.

6. A belt-pulley comprising a suitable rim, composed of sheet metal, with a volute bead formed upon each of its edges, and a hub, in combination with rods, two sets of sheet-metal arms, whose outer ends are formed upon said rods and adapted to be partially inclosed in said beads, to attach said arms to said rim, and whose inner ends are attached to said hub, and means for securing said pulley on the shaft.

7. A split pulley, consisting of substantially duplicate sections, each comprising a semicircular rim-section, composed of sheet metal, with a volute bead formed upon each of its edges, and a hub-section, in combination with rods, two sets of sheet-metal arms whose outer ends are formed upon said rods and adapted to be partially inclosed and retained in position in said beads, to attach said arms to said rim-sections, hub members attached to said arms, means for securing the sections together, and means for securing said pulley to the shaft.

8. In a pulley, sheet-metal pulley-arms formed in two integral convergent sets, the ends of the arms of each set being adapted for attachment near the edge of a pulley-rim, and having an outwardly-projecting flange formed at the hub, adapted to connect with and be secured to other hub members, the flanges of the two sets being integrally connected by an axially-disposed return-bend.

9. In a split pulley, sheet-metal arms formed in integral sets two sets being required in each half-pulley, the ends of the arms of each set being adapted for attachment near the edge of a pulley-rim section, the sets converging toward the hub and each having an outwardly-projecting flange adapted to connect with and be secured to other hub members, and the flanges of the opposite sets being integrally connected by an axially-disposed return-bend.

10. In a split pulley, sheet-steel pulley-arms formed in two integral converging sets, the ends of the arms of each set being adapted for attachment near the edge of a pulley-rim, and having an outwardly-projecting flange formed at the hub, adapted to connect with and be secured to other hub members, and the flanges of the opposite sets being integrally connected by an axially-disposed return-bend.

11. A pulley provided with a rim having beads at its edges, and oppositely-arranged series of spoke-arms diverging outwardly and having complementary beads at their outer ends, fitting the beads of the rim.

12. A pulley provided with a rim having beaded portions, and oppositely-arranged series of spoke-arms diverging outwardly and having complementary beaded outer ends fitting said beaded portions, of the rim.

13. A pulley provided with a rim having notched beaded portions and spoke-arms fitting said beaded portions of the rim and confined against edgewise movement by the walls of the notches.

14. A pulley provided with a rim having notched beaded portions and spoke-arms having complementary beaded outer ends fitting said beaded portions of the rim and confined against edgewise movement by the walls of the notches.

15. A pulley provided with a rim having beaded portions and spoke-arms having complementary beaded outer ends fitting said beaded portions of the rim, in combination with securing means auxiliary to the beads in engagement with the beaded outer ends of the arms.

16. A pulley provided with a rim having beaded portions and spoke-arms having complementary beaded outer ends fitting said beaded portions of the rim, in combination with a securing-rod in engagement with the beaded outer end of each arm.

17. A pulley provided with a rim having beaded portions and spoke-arms having complementary beaded outer ends fitting said beaded portions of the rim, in combination with a securing-rod in engagement with the beaded outer end of each arm and inclosed by the beaded portions of the rim.

18. A pulley provided with a rim having its edges inwardly flanged with the margins bent inwardly and notched to receive the ends of spoke-arms, in combination with spoke-arms having the outer ends formed to seat upon the flanges and secured thereto, and confined against edgewise movement by the walls of the notches.

19. A split pulley comprising sheet-metal rim-sections adapted to form the complete rim, each having the outer edges inwardly flanged and notched, a separable hub, and means for securing the hub on a shaft, in combination with pulley-arms connecting the hub-sections with the rim-sections, the outer ends of the several arms being positioned in the notches and secured to the flanges.

20. A split pulley comprising metal rim-sections adapted to form a complete rim and having the outer edges inwardly flanged with the margins inwardly turned and provided with notches to receive the ends of the spoke-arms, a separable hub, and means for securing the hub on a shaft, in combination with pulley-arms connect-

ing the hub-section to the rim-section the outer ends of the several arms being positioned in the notches, and firmly secured to the flanges.

21. A pulley provided with a metal rim having its edges inwardly flanged and notched to receive the ends of the spoke-arms, in combination with spoke-arms having the outer ends formed to seat upon the inner face of the rim and the flanges and secured thereto, and confined against edgewise movement by the walls of the notches.

22. A metal pulley provided with a rim having its edges inwardly flanged with the margins inwardly bent and notched to receive the ends of the spoke-arms, in combination with metal spoke-arms having the outer ends formed to seat upon the flanges and thence to extend in contact with the inner face of the rim and secured in such position and confined against edgewise movement by the walls of the notches.

23. A split pulley comprising sheet-metal rim-sections adapted to form the complete rim, each having the outer edges inwardly flanged and notched, a separable hub, and means for securing the hub on a shaft, in combination with pulley-arms connecting the hub-sections to the rim-section, the outer ends of the several arms being positioned in the notches and having portions bent inward and in contact with the inner face of the rim, said arms being secured to the flanges.

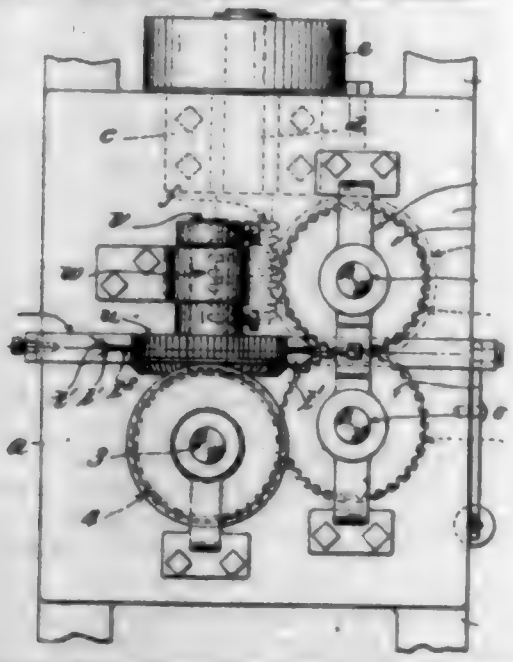
24. A pulley of the character described comprising a rim, a hub, and sheet-metal spokes, said spokes having outwardly-turned flanges secured to the hub and extending outwardly to the edges of the rim and also having inwardly-turned flanges secured to said rim, the spokes at one side of the pulley converging inwardly toward those of the opposite side thereof.

25. A pulley of the character described comprising a rim, a hub, and sheet-metal spokes secured to the hub and extending outwardly to the edges of the rim and having inwardly-turned flanges secured to said rim, the spokes at one side of the pulley converging inwardly toward those of the opposite side thereof.

26. A pulley of the character described composed of a plurality of sections, each section comprising a rim portion, a hub portion, and oppositely-disposed series of sheet-metal spokes, the spokes of each series being integrally formed and connected at their inner ends to the hub portion, and the oppositely-disposed series of spokes diverging outwardly relative to each other, to the outer edges of the rim portion and secured thereto.

27. In a pulley of the character described, a hub, a rim, and oppositely-disposed series of sheet-metal spokes the spokes of each series being integrally formed and connected at their inner ends to the hub, and the oppositely-disposed series of spokes diverging outwardly relative to each other to the outer edges of the rim and secured thereto.

817,440. SAW-SETTING MACHINE. CHARLES NAPIER, Springfield, Mass., assignor of one-half to Edward S. Bradford, Jr., Springfield, Mass. Filed Sept. 3, 1904. Serial No. 223,218.

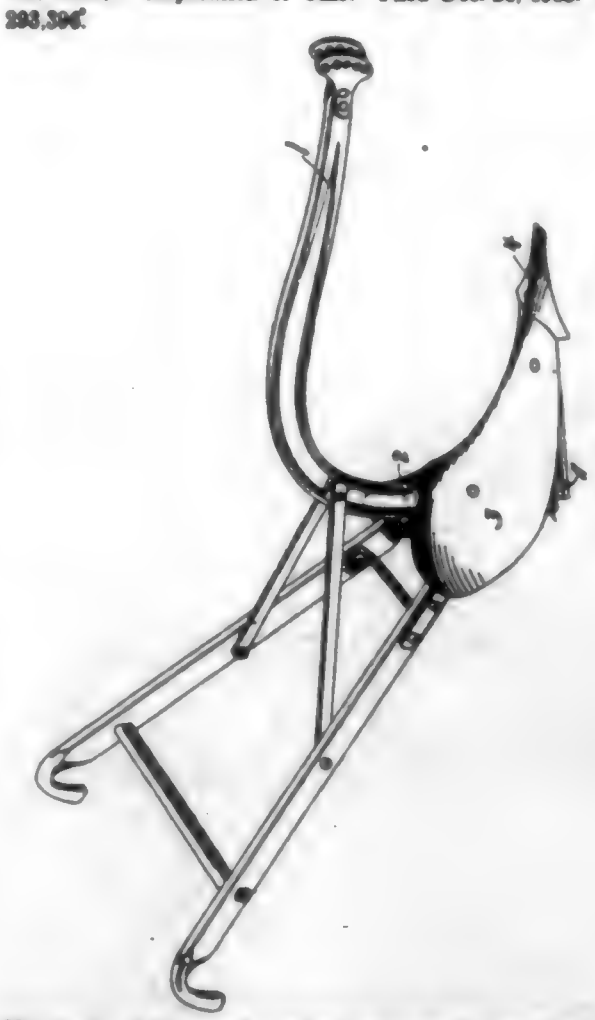


Claim.—1. In a saw-setting machine, a pair of rotatable setting members provided with plain saw-holding disk portions, and toothed portions, the toothed portions of said members having an intermeshing relation and provided at their inner ends with setting-bevels deflected toward and leading to said plain or untoothed portions, and a guide and abutment located at one side of the untoothed portions of said members and arranged to support the saw against the setting-bevels.

2. In a saw-setting machine, a pair of rotatable setting members provided with plain saw-holding portions, and with toothed portions, the toothed portions of said members having an intermeshing relation and provided at their inner ends next to the untoothed portions with setting-bevels, and a yielding guide and abutment located at one side of the untoothed portions of said members, and arranged to support the saw against the setting-bevels.

3. In a saw-setting machine, a pair of rotatable disks provided with plain saw-holding portions of one diameter and intermeshing toothed portions of a larger diameter than said plain portions, and intermeshing teeth extending entirely across the portions of greater diameter and provided at their inner ends with setting-bevels, and a yielding guide and abutment arranged to yieldingly hold the saw through the space between the untoothed portions of the disks and against the setting-bevels.

817,441. PLOW. FRANKLIN B. NIESS and JONATHAN M. STEWART, Canton, Ohio, assignors to The Bucher & Gibbs Plow Company, Canton, Ohio, a Corporation of Ohio. Filed Dec. 28, 1905. Serial No. 293,396.



Claim.—1. A plow and a suitable standard therefor, a converging flanged plate secured thereto, a flanged block or head secured to the lower forward and under portion of the converging flanged plate, a runner pivotally attached to the flange of the head or block, said runner adapted to be interchanged endwise, and a knife adjustably secured between the runner members and a double moldboard and share secured to the converging flanged plate, substantially as and for the purpose specified.

2. In a plow, the combination with the standard, share and moldboard, a converging flanged plate, of a depth runner adapted to be interchanged endwise, a flanged block secured in fixed position upon the under side of the converging flanged plate, a double-edged knife adapted to be clamped in fixed position with reference to the runner, and means for adjusting the double-edged knife in a horizontal plane, substantially as and for the purpose specified.

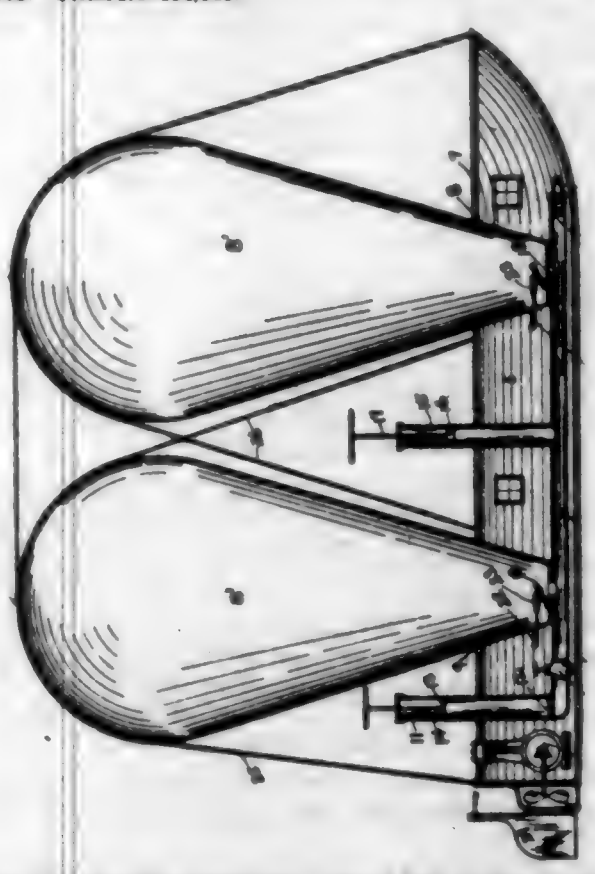
3. In a plow the combination with a standard, share and double moldboard, of a converging flanged plate, of a depth runner and a flanged block, said depth runner pivotally attached at its forward end to the flanged block, means for holding the runner in fixed adjustment, and means for adjusting the double-edged knife relative to the runner, substantially as and for the purpose specified.

4. A double-moldboard plow comprising a standard, a converging flanged plate secured tothe standard, and a share secured to the converging flanged plate, a flanged block secured to the converging

flanged plate, a depth runner formed of sections or members and adapted to be reversed lengthwise, and their forward ends pivotally attached to the flange of the flanged plate, a knife adjustably attached between the sections of the runner, means for holding the runner-sections and the knife in fixed adjustment, substantially as and for the purpose specified.

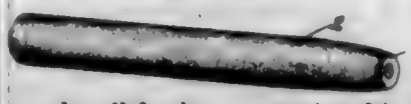
5. In a plow the combination with a suitable standard, a mold board and share, a converging flanged plate and a flanged block secured thereto, a depth runner pivotally attached to the flange of the flanged plate, said depth runner adapted to be interchanged endwise, a double-edged knife provided with a slot intermediate its ends, a bolt located through the depth runner and the slot of the depth runner and means for clamping the double-edged knife back of the rear end of said knife, substantially as and for the purpose specified.

817,442. AIR-SHIP. CHARLES F. PAGE, Pineville, La. Filed Apr. 24, 1903. Serial No. 154,045.



Claim.—An air-ship comprising a closed hull having means for propelling it, means for steering the hull, the top of the said hull having openings therethrough, gas-bags having their lower ends reduced and passed through the openings into the hull, a tubing arranged longitudinally of and within the hull near the bottom thereof, an upwardly-directed pipe passed through the top of the hull and communicating with the said tubing, the bottom of the said bags having a valve for registration and for operation with corresponding openings in the aforesaid tubings, a valve arranged within the tubing at the juncture between the longitudinal tubing and the upwardly-directed pipe, the latter having a piston mounted for operation therein, a pump communicating with the tubing intermediate its ends and extending upwardly through the top of the hull between said bags, and ropes connected with the hull and passing over the said bags to hold the latter rigidly with respect to the former.

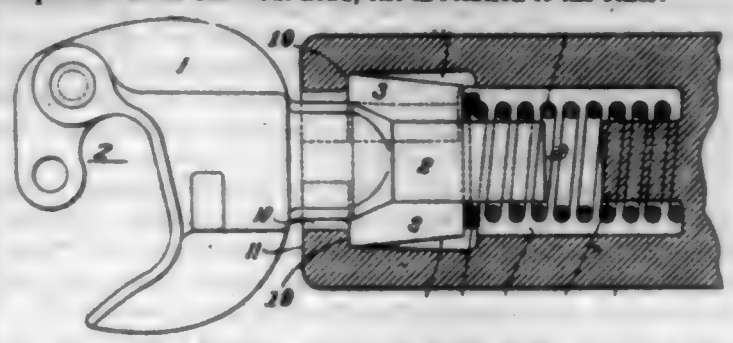
817,443. TEMPLE-ROLL. ISAAC E. PALMER, Middletown, Conn. Filed Dec. 23, 1904. Serial No. 238,630.



Claim.—A temple-roll having a gripping friction-surface for pressing against the fabric as distinguished from a surface provided with spurs or points for piercing the fabric.

817,444. RAILWAY COUPLING AND DRAW-BAR. FRANCIS W. PARSONS, Osterville, Mass. Filed Mar. 8, 1905. Serial No. 249,132.

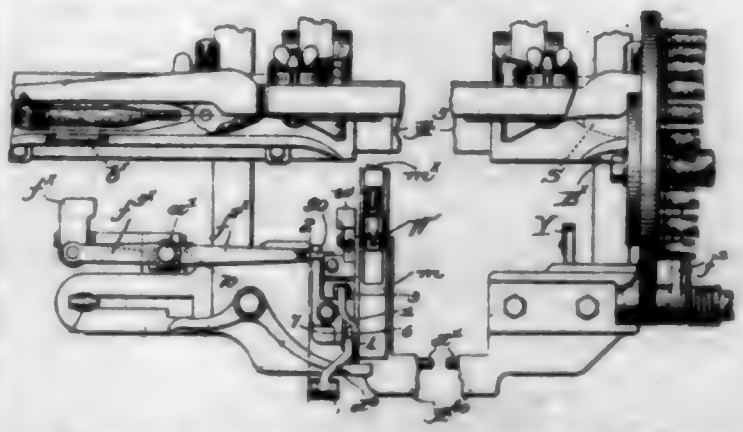
Claim.—1. In a car-coupling device, the combination of a coupler-head having a shank with a draw-bar head having in its outer end a chamber to receive said shank; the shank and chamber being respectively formed with complementary means whereby the coupler-head shank and draw-bar head are interlocked when the coupler-head shank is inserted and turned in the chamber; said interlocking means permitting movement in a horizontal direction of the coupler-head and draw-bar head, one in relation to the other.



2. The combination with a chambered draw-bar head having within the chamber horizontal shoulders, extending in the direction of the length of the draw-bar, and vertical bearings at the front end of the chamber of a coupler-head having a shank provided with diametrically opposite wings which engage with said shoulders and bearings; and a spring operatively mounted between the inner end wall of the chamber and the inner ends of said wings; the coupler-head shank being turnable in and thereby withdrawable from the draw-bar head.

3. The combination of coupler-head having a shank with a draw-bar having a chamber; interlocking devices on said shank; within the chamber, means adapted to interlock with said devices when the shank is inserted; within the chamber, means adapted to coöperate with said devices, when the shank is in working position, for holding the coupler-head and draw-bar head in pulling connection; the coupler-head and draw-bar head then being movable one in relation to the other in a horizontal plane; and a spring within the chamber between the inner end of the chamber and the coupler-head.

817,445. FEELER STOP-MOTION FOR AUTOMATIC LOOMS. JOHN A. PERKINS and AIME A. ST. LAURENT, Salem, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Massachusetts. Filed July 20, 1905. Serial No. 270,497.



Claim.—1. In a loom provided with automatic filling-replenishing mechanism, in combination, a feeler to intermittingly engage the filling in the running shuttle, means controlled by said feeler to normally effect the operation of said mechanism when the filling has been substantially exhausted, and means adapted to effect the actuation of a stopping instrumentality upon two successive indications of filling exhaustion by the feeler without filling replenishment.

2. In a loom, mechanism to indicate predetermined exhaustion of the filling in the running shuttle, a shipper, a releasing device therefor, and means to operate said device by or through two successive indications of filling exhaustion by said mechanism.

3. In a loom, mechanism to indicate predetermined exhaustion of the filling in the running shuttle, said mechanism including a feeler to intermittingly engage the filling in the shuttle, a shipper, and means to effect release thereof by or through two successive indications of the feeler of substantial exhaustion of the filling.

4. In a loom, filling-exhaustion-indicating mechanism to indicate predetermined exhaustion of the running filling, and means adapted to effect the operation of a stopping instrumentality by or through two successive indications of said mechanism.

5. In a loom, mechanism to indicate predetermined exhaustion of the filling in the running shuttle, said mechanism including a feeler to intermittingly engage and be moved by the filling in the running shuttle until substantial exhaustion of such filling, and means adapted to effect the operation of a stopping instrumentality by or through two successive indications of filling exhaustion by the feeler.

6. In a loom provided with automatic filling-replenishing mechanism, in combination, a feeler to intermittingly engage the filling in the running shuttle, means controlled by said feeler to normally effect the operation of said mechanism when the filling has been substantially exhausted, means to prevent the operation of the replenishing mechanism when the shuttle is improperly positioned, a shipper, and means to effect release thereof by or through a second indication of filling exhaustion by the feeler following failure of the replenishing mechanism to operate.

7. In a loom provided with automatic filling-replenishing mechanism, means, including a feeler to intermittingly engage the filling in the shuttle, to normally cause the operation of said mechanism upon substantial exhaustion of the running filling, a shipper, a releasing device therefor, and means to effect the operation of said device upon a double detection of substantial exhaustion of filling by said feeler after failure of the replenishing mechanism to operate.

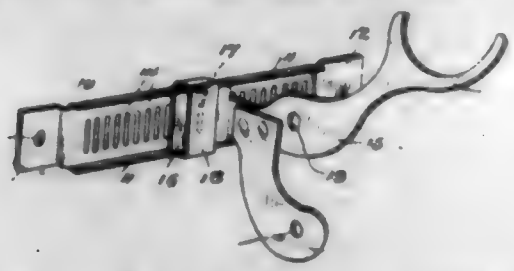
8. In a loom provided with automatic filling-replenishing mechanism, means, including a feeler to intermittingly engage the filling in the shuttle, to normally cause the operation of said mechanism upon substantial exhaustion of the running filling, a shuttle to contain a supply of filling, a shuttle-feeler to prevent filling replenishment when the shuttle is improperly positioned therefor, and means adapted to effect the operation of a stopping instrumentality by or through a double detecting action of the filling-feeler upon prevention of filling replenishment.

9. In a loom, filling-exhaustion-indicating mechanism, including a feeler to intermittingly engage the filling in the running shuttle, a shipper, a knock-off lever therefor, a latch operatively moved by or through the feeler upon detection of substantial exhaustion of filling, a dog carried by said latch, and means to cause the dog to cooperate with and move the knock-off lever to release the shipper upon two successive detections by the feeler that the filling is substantially exhausted.

10. In a loom, filling-exhaustion-indicating mechanism, including a feeler intermittingly engaged and moved by the filling in the running shuttle until substantial exhaustion of such filling, a shuttle to contain a supply of filling, a shipper, and means to effect release thereof by or through two successive indications of the feeler that the same filling-supply is substantially exhausted.

11. In a loom, filling-exhaustion-indicating mechanism, including a feeler to engage the filling in the running shuttle on alternate picks, filling-replenishing mechanism adapted to operate upon substantial filling exhaustion when detected by the feeler, a shipper, and means to effect release thereof by or through detection of filling exhaustion by the said feeler on two successive detecting-picks.

817,446. CURTAIN-BRACKET. GEORGE E. QUITTENTON, Bridgeport, Conn. Filed Feb. 5, 1906. Serial No. 299,430.

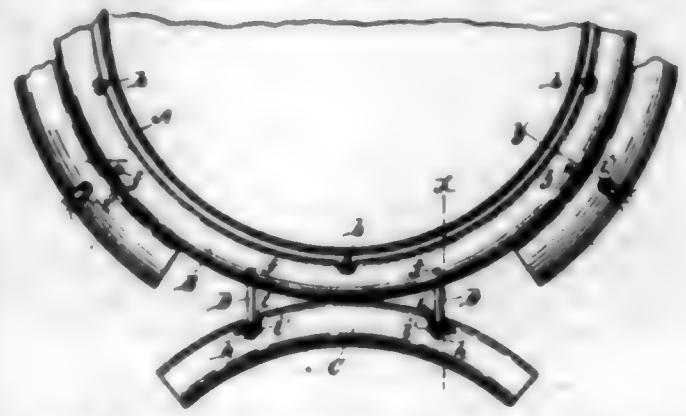


Claim.—1. An adjustable curtain-bracket comprising an attaching-plate having side flanges and transverse grooves, a bracket having a base adapted to lie between said flanges and a lug adapted to engage either of the grooves and a slide adapted to be moved over the base to lock the base and bracket to the attaching-plate.

2. An adjustable curtain-bracket comprising an attaching-plate having backwardly-offset attaching-lugs, side flanges and transverse grooves, a bracket having a base adapted to lie between said flanges and a lug adapted to engage either of the grooves, and a slide upon the attaching-plate which is adapted to be moved over the base to lock said base and the bracket rigidly to the attaching-plate.

817,447. FOOT-REST FOR STOVES. WILLIAM REID, Geneva, N. Y. Filed Aug. 11, 1905. Serial No. 273,743.

Claim.—1. The combination, with a stove provided with a stationary ledge, of stationary arms projecting outward from said ledge and provided with shoulders on their free ends, and a foot-resting plate hinged at one of its edges on the free ends of said arms and supported in its projecting position on said shoulders, said plate being foldable over the arms and of a width to rest when folded with its free edge on the aforesaid ledge as set forth and shown.

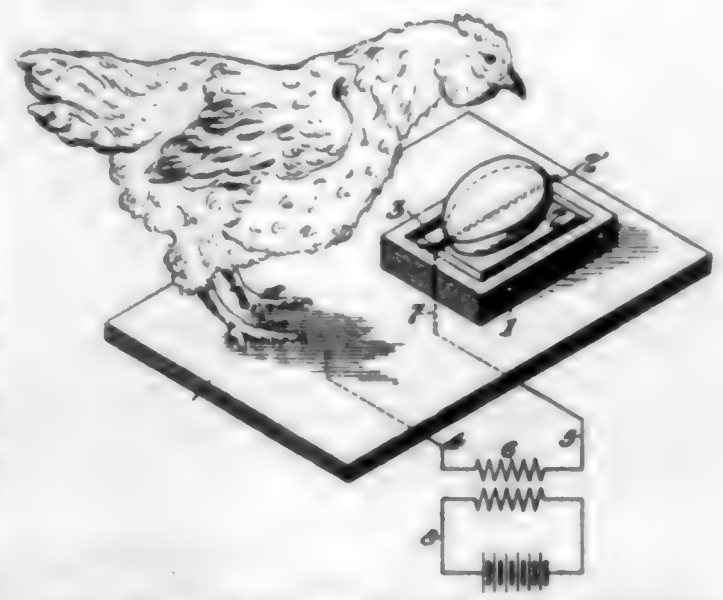


2. The combination, with a stove provided with a stationary ledge, of stationary arms projecting outward from said ledge and terminating in upwardly-projecting hooks and shoulders below said hooks, and a foot-resting plate provided with slots for reception of said hooks and with fixed bars engaging the hooks, said plate being supported in its projecting position on the shoulders and foldable over the arms and of a width to rest when folded with its free edge on the aforesaid ledge as set forth and shown.

3. A stove provided with a circular fire-pot and an annular ledge surrounding the fire-pot, stationary arms projecting outward from the ledge and provided with shoulders on their free ends, segmental foot-resting plates hinged near their outer peripheral edge to the free ends of the arms and supported in their projecting position on the aforesaid shoulders, said plates being foldable over the arms and resting when folded with their free edges on the ledge and concentric therewith as set forth and shown.

4. The combination, with a stove having a stationary ledge on its exterior, of arms detachably secured to said ledge and projecting outward therefrom and terminating in upwardly-projecting hooks and shoulders below the said hooks, and a foot-resting plate hung at one of its edges removably on the hooks and supported in its projecting position on the shoulders and foldable over the arms and to position to rest with its free edge on the exterior of the bottom portion of the ledge substantially as set forth and shown.

817,448. POULTRY APPLIANCE. EDWARD J. SHANAHAN, Tribes Hill, N. Y. Filed July 7, 1905. Serial No. 268,703.



Claim.—1. In a device of the class described, in combination, a plate of conducting material, means adapted to receive an egg insulated from said plate, a source of electric supply, and leads extending from said source of supply to said plate and also to said egg-receiving means.

2. In a device of the class described, in combination, a plate of conducting material, means adapted to support an egg arranged upon said plate and insulated therefrom, a source of electric supply, and leads extending from said source of supply to said plate and also to said egg-supporting means.

3. In a device of the class described, in combination, a plate of conducting material, a device adapted to receive an egg, a source of electric supply, leads extending therefrom to said plate and also to said egg-receiving means, the arrangement being such that a circuit

will be closed through the body of a fowl when standing upon said base-plate and engaged in eating said egg.

4. In a device of the class described, in combination, a plate of conducting material, a metallic egg-receiving shell insulated from said plate, a source of electric supply, leads extending therefrom to said plate and also to said egg-supporting shell, the arrangement being such that a circuit will be closed through the body of a fowl when standing on said plate and engaged in eating said egg.

5. In a device of the class described, in combination, a plate of conducting material, a block of non-conducting material arranged thereon, a metallic egg-receiving receptacle positioned upon said block, a source of electric supply, leads extending from opposite poles thereof to said plate and to said receptacle respectively, the arrangement being such that a circuit will be closed through the body of a fowl when standing upon said base-plate and attempting to eat an egg in said receptacle.

6. In a device of the class described, in combination, a plate of conducting material, a device adapted to receive an egg, means carried by said device adapted to enter the interior of an egg supported therein, a source of electric supply, leads extending from opposite poles thereof to said plate and also to said last-mentioned means, the arrangement being such that a current of induced electricity will flow through the body of a fowl standing upon said plate and attempting to eat an egg supported in said device.

7. In a device of the class described, in combination, a plate of conducting material, a block of non-conducting material arranged thereon, a device adapted to receive an egg positioned upon said block, means adapted to extend through said shell and also through an egg contained therein, a source of electric supply, leads extending from opposite poles thereof to said plate and also to the means extending within the egg supported in said egg-receiving device, the arrangement being such that a current of electricity will flow through the body of a fowl standing on said plate and engaged in eating an egg in said device.

8. In a device of the class described, in combination, a plate of conducting material, a block of non-conducting material supported thereon, a metallic shell carried by said block said shell being adapted to receive an egg therein, a source of electric supply, a connection between said plate and one pole of said source of supply, a connection between the opposite pole thereof and said metallic receptacle, the whole being so arranged and constructed as to cause a circuit to be closed through the body of a fowl while standing upon said base-plate and engaged in eating an egg in said metallic receptacle.

9. In a device of the class described, in combination, a source of electric supply, an electrode connected therewith, and a second electrode also connected therewith and comprised by a metallic receptacle adapted to receive an egg, said electrodes being so arranged that a circuit will be closed through the body of a fowl standing upon said first-mentioned electrode and attempting to eat the contents of an egg in said second-mentioned electrode.

10. In a device of the class described, in combination, an electrode adapted to be arranged within a nest, a second electrode comprised by a metallic egg-receiving receptacle also adapted to be arranged within said nest, an insulating-body arranged between said electrodes, leads extending from opposite poles of said source of supply to said electrodes, the arrangement being such that a circuit will be closed through the body of a fowl standing upon the first-mentioned electrode and attempting to eat an egg in said second-mentioned electrode.

11. In a device of the class described, in combination, a metallic base-plate, a block of conducting material provided with a surrounding recess in its upper surface supported by said base-plate, an egg-receiving receptacle arranged upon said block, a source of electric supply, said base-plate and said egg-receiving receptacle being connected to opposite poles of said source of supply, the arrangement being such that an induced current of electricity will flow through the body of a fowl standing upon said base-plate and attempting to eat an egg in said egg-receiving receptacle.

12. In a device of the class described, in combination, a metallic base-plate, a block of non-conducting material provided with a surrounding groove in its upper surface, an egg-receiving receptacle arranged upon said block, means carried by said receptacle adapted to extend within an egg contained therein, a source of electric supply, said base-plate and said last-mentioned means being connected respectively to opposite poles of said source of supply, the arrangement being such that a fowl standing upon said base-plate and attempting to eat an egg in said receptacle will close an electric circuit.

13. In a device of the class described, in combination, a metallic plate connected with one pole of a source of electric supply, a metallic shell adapted to receive an egg connected to the opposite pole of said source of supply, said plate and said egg-receptacle being adapted to be arranged within a nest.

14. In a device of the class described, in combination, a metallic plate connected with one pole of a source of electric supply, a block of insulating material arranged thereon, a metallic substantially egg-shaped receptacle positioned upon said block, said receptacle being adapted to receive an egg therein, said plate being adapted to be inserted within a nest.

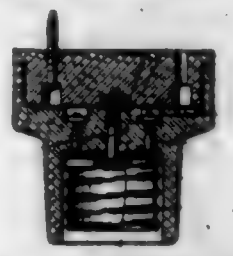
15. In a device of the class described, in combination, a metallic plate connected to one pole of a source of electric supply, a block of insulating material having a groove in its upper surface, a metallic substantially egg-shaped shell supported by said block within said surrounding groove, said shell being connected to the opposite pole of said source of supply, the arrangement being such that a circuit will be closed through the body of a fowl standing upon said plate and attempting to eat the contents of an egg contained within said shell.

16. In a device of the class described, in combination, a plate of conducting material connected with one pole of a source of electric supply, a block of insulating material arranged thereon, said block being provided with a recess extending entirely about the upper surface thereof, a metallic egg-receiving shell arranged upon said block within the inclosure outlined by said recess, a pin carried by said shell and adapted to extend therethrough and also through an egg contained therein, said pin being connected to the opposite pole of said source of supply, said plate and the devices supported thereon being adapted to be positioned within a nest.

817,449. RECEPTACLE FOR INCANDESCENT ELECTRIC LAMPS.

ALBERT P. SEYMOUR, Syracuse, N. Y., assignor to Pass & Seymour, Incorporated, Solvay, N. Y., a Corporation of New York.

Filed Mar. 15, 1905. Serial No. 250,164.



Claim.—1. In an electric receptacle, the combination with a porcelain base having end tips of unequal width, of wire terminals on the base, a curved wall separating the wire terminals, screws to secure the base to the support, a porcelain cover to cover and protect the base, lamp-terminals on the cover, a connection between one of said lamp-terminals and one of the wire terminals, and a single screw forming the opposite lamp-terminal and engaging with the opposite wire terminal to make connection therewith and to secure the cover to the base, said cover having notches in its ends of unequal size to engage with the end tips on the base.

2. In an electric receptacle, the combination with a porcelain base, of wire terminals secured on the base, a screw, or screws, to secure the base independently in position, a porcelain cover adapted to fit around the base having a mouth to receive the lamp-base, an outer terminal arranged in said mouth, screws securing said outer terminal in position, a resilient contact-piece secured in position by one of said screws on the upper surface of the cover to make contact with one of said wire terminals, and a single screw forming the central lamp-terminal and adapted to engage with the opposite wire terminal to make electric connections therewith and firmly to secure the cover to the base.

3. In an electric receptacle, the combination with a substantially rectangular porcelain receptacle of greatest thickness at its central portion, having projections on each side and thin tips at each end of different widths, wire terminals secured in recesses on the base and having their binding-screws and outer ends supported on the respective projections, said outer ends being bent slightly upwardly, screws to secure the base on its support, a porcelain cover having a margin surrounding the base, said margin having end notches adapted respectively to fit the base-tips, an outer lamp-terminal on the cover, screws securing said lamp-terminal on the cover, a resilient contact-piece secured to the inner end of one of said lamp-terminal screws and adapted to make contact with one of the wire terminals when the parts are assembled, a central lamp-terminal on the cover, and a single screw adapted to secure said central lamp-terminal in place to engage with one of the lamp-terminals, the cover and base on their adjacent surfaces being formed with corresponding projections and

depressions positively to insulate the metallic parts, and the cover and base being so proportioned as to leave open channels between the inner surface of the cover and the side projections on the base.

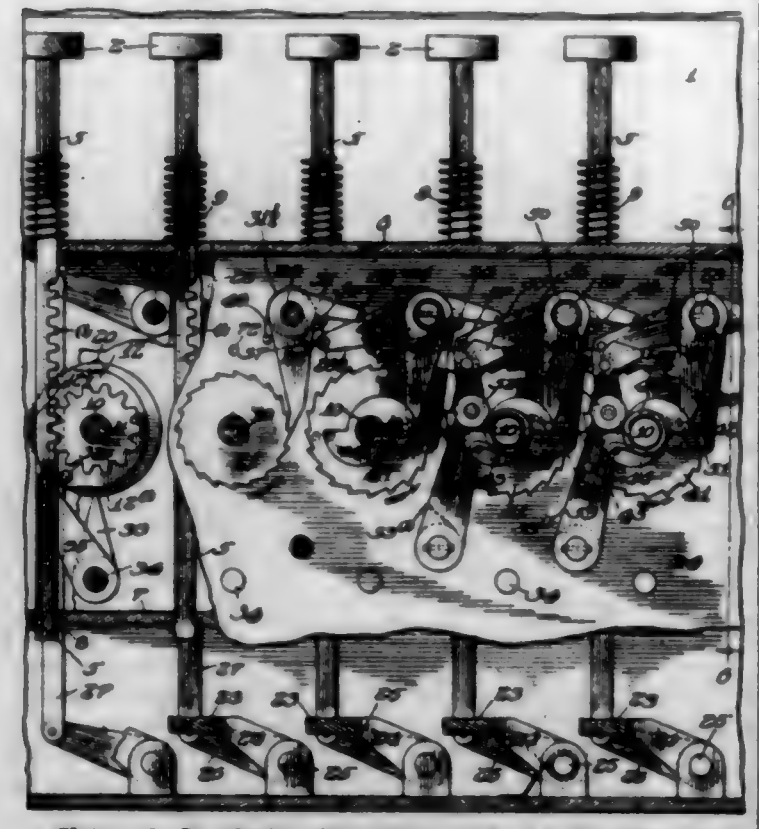
4. In a device of the character described, the combination with a base of insulating material, of a cover of insulating material to fit over the base, said cover having side margins extending substantially flush with the upper surface of the base, wire terminals on the base and metallic parts on the cover for making connection between the wire terminals and the translating device, and air-channels between the margins of the cover and the sides of the base, open from end to end, to insulate the wire terminals and the wires from the support.

5. In an electric receptacle, the combination with a porcelain base, of a porcelain cover substantially equal in length to the base and having marginal side walls to cover and protect the sides of the base, open, insulating, air-channels between said walls and the base, wire terminals on the base, lamp-terminals on the cover, and metallic connections between the lamp-terminals and the wire terminals, said metallic connections being adapted to secure the cover to the base.

6. In a device of the character described, the combination with a base of insulating material, of a cover of insulating material having side margins to extend along the sides of the base, open, insulating air-channels between the margins of the cover and the sides of the base, wire terminals on the base extending over said air-channels, lamp-terminals on the cover, and metallic parts for securing the cover on the base and for making connection between the lamp-terminals and the wire terminals.

7. In an electric receptacle, the combination with an elongated porcelain base, of wire terminals secured on the base, a screw, or screws, to secure the base in position, a porcelain cover provided with a margin to fit substantially around the base and having a mouth to receive the lamp-base, an outer terminal arranged in said mouth, screws securing said outer terminal in position, a contact-piece secured in position by one of said screws on the upper surface of the cover to make contact with one of said wire terminals, and a single screw forming the central lamp-terminal and adapted to engage with the opposite wire terminal to make electric connection therewith and firmly to secure the cover to the base.

817,450. COMPUTING-MACHINE. DANIEL W. SHIRK, Chicago, Ill., assignor of one-half to Walter L. Millikren, Indianapolis, Ind. Filed Sept. 1, 1904. Serial No. 223,014.



Claim.—1. In a device of the kind described, a plurality of movable keys each provided with a cog-rack, in combination with a pinion for each key meshing with the cog-rack, a ratchet-plate carried by each pinion and a pawl for each plate operative in either direction, maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the key but engaging therewith at intermediate points.

2. In a device of the kind described, one or more rows of movable keys, computing and indicating mechanism, and intermediate connections between the keys and said mechanism, in combination with locking means comprising a rockable ratchet-plate for each key operated thereby and moving synchronously therewith, and a pawl maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the key but engaging therewith at intermediate points.

3. In a device of the kind described, a rotatable shaft, a plurality of movable keys each provided with means operatively engaging a member loosely mounted upon said shaft, and resilient driving mechanism between said members and the shaft, in combination with a ratchet-plate for each member and operated thereby, a pawl for each plate maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the coöperating key but engaging therewith at intermediate points.

4. In a device of the kind described, a shaft, computing and indicating mechanism, intermediate mechanism connecting the shaft with the computing and indicating mechanism, a plurality of movable keys and means for transmitting the movement of the several keys to rotate the shaft varying distances depending upon the particular key operated, in combination with locking mechanism for each key comprising a rockable ratchet-plate for each key, moving synchronously therewith, and a pawl maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the coöperating key but engaging therewith at intermediate points.

5. In a device of the kind described, a plurality of rotatable shafts, a row of movable keys for each shaft, an engaging member for each key loosely mounted on a shaft, and resilient driving mechanism between each of said members and the shaft, in combination with a rockable ratchet-plate for each member and operated thereby, a pawl for each plate maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the coöperating key but engaging therewith at intermediate points.

6. In a device of the kind described, a row of movable keys, a shaft, indicating means, intermediate mechanism connecting the shaft and indicating means, and means for resiliently transmitting the movement of the several keys to rotate the shaft varying distances depending upon the particular key operated, in combination with locking mechanism for the several keys inoperative upon the keys at either limit of their movement but controlling the movement of a moved key as well as all others in the row at all intermediate points in its movement, whereby upon moving a key in either direction it is locked against retraction and when moved in its operative direction all other keys in the row are locked against movement until the operated key reaches its limit of movement.

7. In a device of the kind described, a shaft, a rotating member loosely mounted thereon, and resilient connecting mechanism arranged to transmit the movement of said member to rotate the shaft in one direction only, in combination with a movable key engaging the rotating member and by its movement operating the latter.

8. In a device of the kind described, a shaft, a plurality of rotating members loosely mounted thereon, and resilient connecting mechanism arranged to transmit the movement of any of said members to rotate the shaft in one direction only, in combination with movable keys engaging the several rotating members and by their movement operating the latter, and locking mechanism coöperating with the rotating members and so arranged that when the member is rotated in either direction it will be locked against reverse movement until the key reaches its limit of movement.

9. In a device of the kind described, a shaft, a plurality of rotating members loosely mounted thereon, connecting mechanism arranged to transmit the movement of each of said members to the shaft, and stop mechanism fro each member arranged to limit the rotation of the shaft and to vary the rotation according to the particular member operated, in combination with a movable key for each rotating member engaged therewith and by its movement adapted to rotate the same.

10. In a device of the kind described, a shaft, a plurality of rotating members loosely mounted thereon, resilient connecting mechanism arranged to transmit the movement of each of said rotating members to the shaft, and stop mechanism for each member arranged to limit the rotation of the shaft and to vary the rotation according to the particular member operated, in combination with a movable key for each rotating member engaged therewith, and by its movement adapted to rotate the latter.

11. In a device of the kind described, a shaft, a rotating member loosely mounted thereon, and connecting mechanism arranged to transmit the movement of said member to rotate the shaft in one direction only, in combination with a movable key engaging the rotat-

ing member and by its movement operating the same, a pawl and ratchet, and a stop arranged in the path of said pawl arranged to simultaneously arrest the movement of the pawl and lock the ratchet.

12. In a device of the kind described, a shaft, a rotating member loosely mounted thereon, and resilient connecting mechanism arranged to transmit the movement of said member to rotate the shaft in one direction only, in combination with a movable key engaging the rotating member and by its movement operating the latter, a pawl and ratchet, and a stop arranged in the path of said pawl arranged to simultaneously arrest the movement of the pawl and lock the ratchet.

13. In a device of the kind described, a shaft, a plurality of pinions loosely mounted thereon, resilient connecting mechanism arranged to transmit the movement of said pinions to rotate the shaft in one direction only, a pawl and ratchet for each pinion, and a stop arranged in the path of each pawl to simultaneously arrest the movement of the latter and lock the ratchet, said stops being arranged at varying points in the travel of the parts dependent upon the pinion coöperating therewith whereby the rotation of the shaft is varied, in combination with a movable key for each pinion provided with a cog-rack engaging therewith.

14. In a device of the kind described, a shaft, a plurality of rotatable members loosely mounted thereon, connecting mechanism arranged to transmit the movement of each of said members to the shaft, a ratchet for each member adapted to control the rotation of the shaft, a pawl coöperating with the ratchet and concentrically rotatable therewith, and a stop arranged in the path of the pawl and adapted to simultaneously arrest the movement of the same and lock the ratchet, in combination with movable keys engaging the several rotating members, and by their movement operating the latter, and locking mechanism coöperating with the rotating members, and so arranged that when a member is rotated in either direction it will be locked against reverse movement until the key reaches its limit of movement.

15. In a device of the kind described, a shaft, a plurality of rotating members loosely mounted thereon, connecting mechanism arranged to transmit the movement of each of said members to the shaft, a ratchet for each member adapted to control the rotation of the shaft, a pawl coöperating with the ratchet and concentrically rotatable therewith, and a stop arranged in the path of the pawl and adapted to simultaneously arrest the movement of the pawl and lock the ratchet, in combination with a plurality of keys engaging the rotating members and by their movement operating the latter, locking mechanism for the several keys inoperative upon the keys at either limit of their movement but controlling the movement of the moving key as well as all others in the row at all intermediate points in its movement, whereby upon moving a key in either direction it is locked against retraction, and when moved in its operative direction all other keys in the row are locked against movement until the operated key reaches its limit of movement.

16. In a device of the kind described, a shaft provided with a plurality of pinions loosely mounted thereon and arranged to rotate the shaft, each pinion carrying therewith a ratchet provided with a broken section, and carrying one or more pins 32, a pawl and stop connected to operate together, loosely mounted upon a shaft in proximity to the first-named shaft, the pawl coöperating with the ratchet and the stop with the stop 32 of the adjacent ratchet members, in combination with a key 5 for each pinion, provided with a cog-rack meshing with said pinion and imparting motion thereto.

17. In a device of the kind described, a shaft provided with a plurality of pinions 11 each carrying a ratchet 12½, a drum 14 arranged in proximity to each pinion loosely mounted on said shaft and resiliently connected with said pinion, a ratchet-wheel 19 fixed upon the shaft in proximity to each drum and operated by a pawl carried by said drum, and a stop 20 for each ratchet 19, the several stops being arranged at different points to vary the rotation of the shaft and in line with the pawls 17, whereby the latter in contacting with the stop, will be arrested in its movement and the ratchet be locked against further rotation, in combination with a movable key for each pinion 11; provided with a cog-rack meshing with said pinion, substantially as described.

18. In a device of the kind described, a plurality of substantially parallel shafts 10, a row of movable keys for each shaft, a plurality of rotatable members loosely mounted on each shaft and adapted to be operated by the movement of the keys, a locking mechanism for the several keys inoperative upon them at either limit of their movement but controlling the movement of a moved key as well as all others in the row at all intermediate points in its movement, in combination with resilient means connecting the rotatable members with the shaft, and means for communicating a complete cycle of movement of one shaft to a corresponding movement to the next shaft to the left.

19. In a device of the kind described, a shaft, a plurality of movable keys, and intermediate mechanism resiliently transmitting the movement of the keys to the shaft, in combination with mechanism locking the shaft against rotation and releasing means operated by the movement of a key.

20. In a device of the kind described, a ratchet-wheel and means for rotating the same, in combination with a bell-crank lever arranged in proximity to the ratchet-wheel, one arm of the lever carrying an indicator-section and the other provided with a pawl coöperating with the ratchet, and a trip arranged in the path of the pawl and adapted to disengage the same from the ratchet.

21. In a device of the kind described, a ratchet-wheel and means for rotating the same, in combination with a bell-crank lever arranged in proximity to the ratchet-wheel, one arm of the lever carrying an indicator-section and the other provided with a bell-crank lever one end of which operates as a pawl coöperating with the ratchet and a trip arranged in the path of the free end of the pawl-lever adapted to disengage the pawl from the ratchet.

22. In a device of the kind described, a plurality of rows of keys, a ratchet-wheel for each row of keys and intermediate mechanism arranged to transmit the movement of the several keys in a row to its ratchet-wheel and to rotate the same a distance dependent upon the particular key operated, in combination with a bell-crank lever arranged in proximity to each ratchet-wheel one arm of the lever carrying an indicator-section and the other provided with a pawl coöperating with the ratchet and a trip arranged in the path of the pawl and adapted to disengage the same from the ratchet.

23. In a device of the kind described, a plurality of movable keys in combination with a shaft provided with mechanism for each key comprising a rotatable member loosely mounted on the shaft and provided with a spring having one end attached thereto and the other end attached to the rotatable member, a pawl 17 carried by the drum, a ratchet 19 fixed upon the shaft, and a stop 20 arranged in the path of the pawl and adapted to simultaneously arrest the movement of the pawl and lock the ratchet, the location of the several stops 20 being regulated to vary the rotation of the shaft in accordance with the character borne by the particular key operated.

24. In a device of the kind described, a plurality of movable keys resiliently maintained in their normal position, in combination with a shaft provided with mechanism for each key comprising a rotatable member loosely mounted on the shaft and actuated by the key, a drum loosely mounted on the shaft in proximity to the rotatable member and provided with a spring having one end attached thereto and the other end attached to the rotatable member, a pawl 17 carried by the drum, a ratchet 19 fixed upon the shaft, and a stop 20 arranged in the path of the pawl and adapted to simultaneously arrest the movement of the pawl and lock the ratchet, the location of the several stops 20 being regulated to vary the rotation of the shaft, and means locking the shaft against reverse rotation on the reverse movement of the parts to assume their normal positions.

25. In a device of the kind described, a plurality of keys resiliently maintained in their normal positions, in combination with a shaft provided with mechanism for each key comprising a rotatable member loosely mounted on the shaft and actuated by the key, a drum loosely mounted on the shaft in proximity to the said member provided with a spring having one end attached to the drum and the other to the rotatable member, a pawl 17 carried by the drum, a ratchet fixed upon the shaft operated by the pawl, a stop 20 arranged in the path of the pawl adapted to arrest the movement of the pawl and lock the ratchet against further advance movement, the location of the several stops being regulated to vary the rotation of the shaft, and locking mechanism for each key, inoperative at either limit of its movement but controlling at intermediate points, whereby upon moving a key in either direction it is locked against retraction until it reaches its limit of movement.

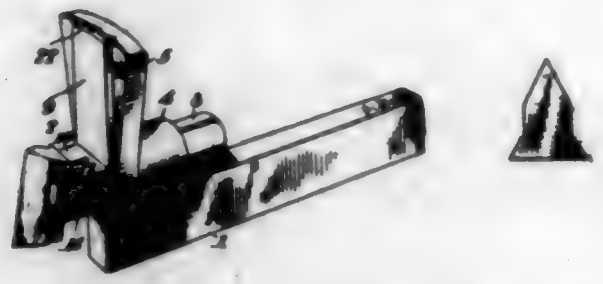
26. In a device of the kind described, a plurality of resiliently-maintained keys 5, each provided with a cog-rack a, in combination with a shaft 10 provided with mechanism for each key comprising a pinion 11 loosely mounted on the shaft and provided with a double ratchet 12½ with release parts 12ª and a stop 32, and a drum 14 loosely mounted on the shaft in proximity to the pinion and resiliently connected thereto by a spring 15, a pawl 17 carried by the drum, a ratchet-wheel 19 secured to the shaft and actuated by the pawl 17, a stop 20 arranged in the path of the pawl adapted to arrest the movement of the pawl and the ratchet, and a pawl 33, coöperating with the ratchet 12½ and operating an arm 35 to prevent the rotation of

the ratchet 13½ and associated parts for all other keys in the same row.

27. In a device of the kind described, a plurality of substantially parallel shafts and a plurality of keys for each shaft, in combination with mechanism for each key on the shafts except the shaft representing the highest order, comprising a rotatable member loosely mounted on the shaft and actuated by the key, a drum loosely mounted on the shaft and resiliently connected to the rotatable member, a pawl 17 carried by the drum, a ratchet 19 fixedly mounted on the shaft, a stop 20 arranged in the path of the pawl and adapted to simultaneously arrest the movement of the pawl and lock the ratchet, the location of the several stops 20 being regulated to vary the rotation of the shaft, and means for advancing the shaft representing a higher numerical order one interval for a predetermined measured rotation of the shaft of the next lower order, whereby the carrying of the tens in computation is effected.

28. In a device of the kind described, a plurality of movable keys each provided with a cog-rack, a rotatable shaft, a pinion for each key meshing with said cog-rack, loosely mounted on said shaft, and resilient driving mechanism between said pinions and the shaft, in combination with a ratchet-plate for each pinion and operated thereby, a pawl for each plate maintained in the path of the ratchet-plate out of engagement therewith at either limit of movement of the codperating key by engaging therewith at intermediate points.

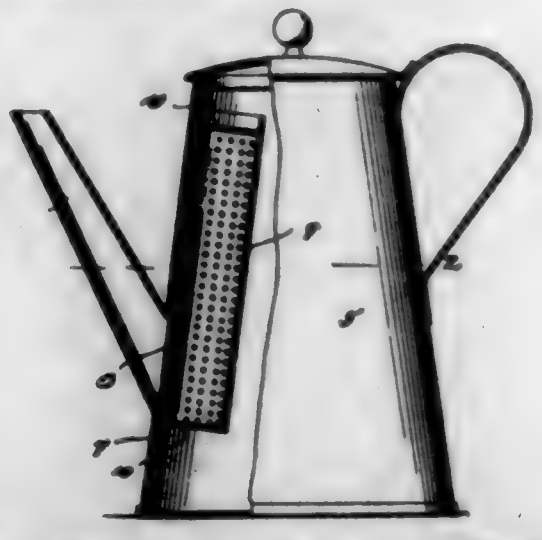
817,451. THREAD-CUTTING TOOL FOR LATHES. OLIVER G. SIMMONS, Washington, D. C. Filed Mar. 14, 1905. Serial No. 250,108.



Claim.—1. A tool of the class described comprising a cutter-support embodying a shank, a head, and a graduated sector disposed at right angles to the shank, and a cutter-holder embodying a stem rotatably secured in the head, a graduated scale-arm coacting with the sector, and a cutter-clamp.

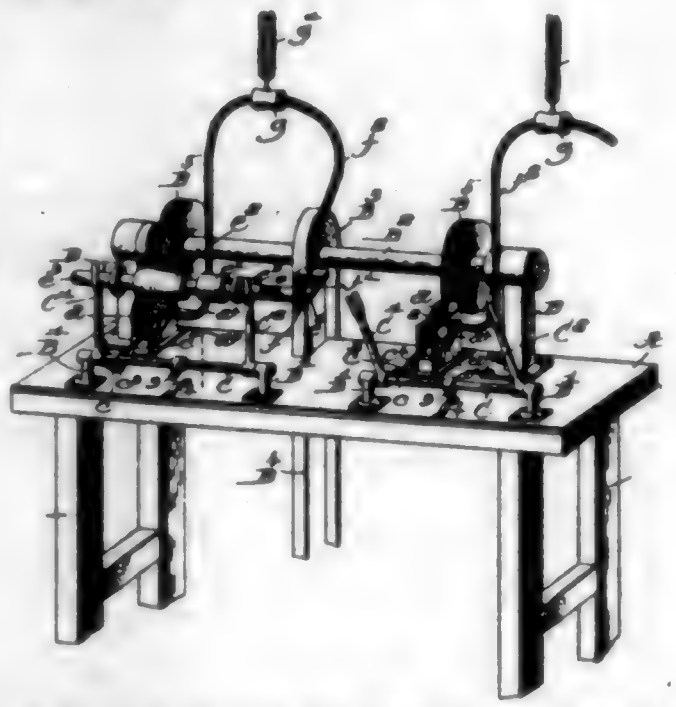
2. A cutter-holder comprising a shank, a tool-clamping device mounted in the shank and angularly adjustable thereon on an axis parallel with the shank, and provided with means for holding a bit or cutter transversely of the axis, a graduated sector at right angles to the shank, and an arm on the tool-clamping device having a vernier thereon.

817,452. STRAINER. NANCY E. SKINNER, West Lorne, Canada. Filed Oct. 27, 1905. Serial No. 284,662.



Claim.—The combination with a vessel having a pouring-spout, of guide-strips inside the pot, a strainer supported by said guide-strips and extending over the spout-inlet, and a second and bow-shaped strainer supported by the aforesaid guide-strips, and having at the top and bottom perforated plates extending from said strainer over against the wall of the pot.

817,458. APPARATUS FOR RUBBING OR TREEING BOOTS AND SHOES. MARTIN J. SMITH, Brockton, Mass., assignor of one-half to Frederick L. Smith, Brockton, Mass. Filed Dec. 1, 1904. Serial No. 234,962.



Claim.—1. In apparatus for rubbing or treeing stock in boots and shoes, a shaft having a rubbing device and a gear, handholds loose on said shaft, one of said handholds having a bearing, a flexible shaft having a gear engaging the gear on said first-named shaft, another gear having its shaft fast on one end of said flexible shaft, a bearing to sustain the shaft of said other gear, an actuator, and means to effect the engagement of said other gear with said actuator when the flexible shaft and the shaft having the rubbing members are to be rotated.

2. In apparatus for rubbing or treeing stock in boots and shoes, a shaft having a rubbing device and a gear, handholds loose on said shaft, one of said handholds having a bearing, a flexible shaft having a gear engaging the gear on said first-named shaft, another gear having its shaft fast on one end of said flexible shaft, a bearing to sustain the shaft of said other gear, an actuator, means to effect the engagement of said other gear with said actuator when the flexible shaft and the shaft having the rubbing members are to be rotated, and means to lock said other gear in driving engagement with said actuator.

3. In apparatus for rubbing or treeing stock in boots and shoes, a shaft having a rubbing device and a gear, handholds loose on said shaft, one of said handholds having a bearing, a flexible shaft having a gear engaging the gear on said first-named shaft, another gear having its shaft fast on one end of said flexible shaft, a bearing to sustain the shaft of said other gear, bearings to sustain the latter shaft, means to sustain said bearing loosely, an actuator, and means to slide said bearing in its sustaining means to effect the engagement or disengagement of said other gear with said actuator according as it is desired to rotate said rubbing members or maintain the same at rest.

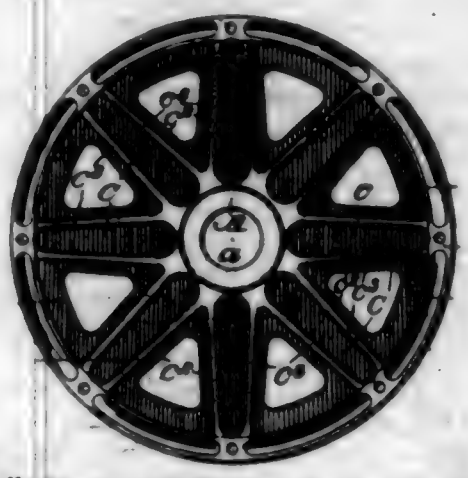
4. In an apparatus of the class described, a continuously-rotatable actuator, a shaft having a rubbing device, handholds loose thereon and a gear at one end thereof, a gear to be driven by said actuator, a flexible shaft connecting said driven gear and the shaft having the rubbing-surfaces, a movable bearing sustaining the axis of the driven gear, means to sustain said bearing, a movable holder shaped to sustain said handholds, and means connecting said holder with said bearing whereby when said holder occupies one position the bearing sustaining the shaft of said driven gear is placed in position to render said driven gear inoperative, and in its other position, as when the shaft having the rubbing members is being used, will be rotated.

817,454. CAR-WHEEL. JOHN TAYLOR, Troy, N. Y., assignor to The Taylor Electric Truck Company, Troy, N. Y. Filed Sept. 7, 1905. Serial No. 277,285.

Claim.—1. A malleable-iron wheel-center, having a hub, felly and spokes formed integral, the spokes being approximately H-shaped in cross-section.

2. A malleable-iron wheel-center, having a hub, felly and spokes formed integral, the felly being approximately T-shaped in

cross-section, and the spokes being approximately H-shaped in cross-section.



3. A malleable-iron wheel-center, having a hub, radially-extending spokes, and a felly having an interior web portion, all formed integral, the web portion of the felly being provided, intermediate the spokes, with radial ribs, substantially as described.

4. A malleable-iron wheel-center, having a hub, radially-extending ribbed spokes, and a felly having an interior web portion, all formed integral, the web portion of the felly being provided intermediate the spokes with radial ribs, substantially as described.

5. A car-wheel comprising a malleable-iron wheel-center, having a hub, felly and spokes formed integral, the spokes being approximately H-shaped in cross-section; and a steel tire secured to said center, substantially as described.

6. A car-wheel comprising a malleable-iron wheel-center, having a hub, felly and spokes formed integral, the felly being approximately T-shaped in cross-section, and the spokes being approximately H-shaped in cross-section; and a steel tire secured to the felly, substantially as described.

7. A car-wheel comprising a malleable-iron wheel-center having a hub, radially-extending spokes, and a felly having an interior web portion, all formed integral, the web portion of the felly being provided, intermediate the spokes, with radial ribs; and a steel tire attached to said center, substantially as described.

8. A car-wheel comprising a malleable-iron wheel-center having a hub, radially-extending ribbed spokes, and a felly having an interior web portion, all formed integral, the web portion of the felly being provided intermediate the spokes with radial ribs; and a steel tire secured to said center, substantially as described.

9. A malleable-iron wheel-center of uniform composition or constituency throughout, substantially as described.

10. As an article of manufacture, a homogeneous malleable-iron wheel-center for car-wheels having a hub felly and connections formed integral, substantially as described.

11. A car-wheel comprising a homogeneous malleable-iron wheel-center, and a separately-formed tire secured to said center, substantially as described.

12. A car-wheel comprising a homogeneous one-piece malleable-iron wheel-center, and a steel-tire removably secured to said center.

13. As an article of manufacture, a homogeneous malleable-iron wheel-center having its hub felly and connections formed integral, the felly being approximately T-shaped in cross-section.

14. A car-wheel comprising a homogeneous malleable-iron wheel-center having its hub felly and spokes formed integral; and a steel tire secured to said center, substantially as described.

15. A car-wheel comprising a homogeneous malleable-iron wheel-center having its hub felly and connections formed integral, the felly being approximately T-shaped in cross-section; and a steel tire secured to said felly, substantially as described.

16. A wheel comprising a homogeneous malleable-iron wheel-center having its felly provided with recesses in line with the heads of the tire-fastenings, a tire encircling the center, and tire-fastening bolts, substantially as described.

17. A wheel comprising a malleable-iron wheel-center having a hub felly and spokes all formed integral, said felly having recesses in line with the center of the spokes to receive the heads of the tire-fastening bolts; a tire encircling the center, and tire-fastening bolts, substantially as described.

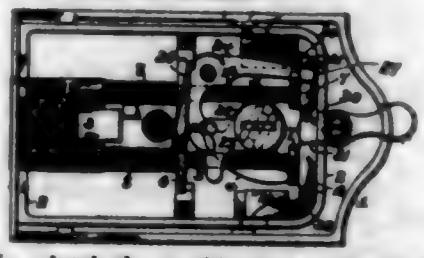
18. In a car-wheel, the combination of a wheel-tire having its inner periphery bored to fit the periphery of the center and also having an integral flange dressed to fit against the edge of the center felly; with a homogeneous malleable-iron wheel-center having its felly provided with recesses in the side of the felly opposite the tire-flange, and fastening devices transfixing the felly and tire-flange and having their heads in said recesses, substantially as described.

19. In a car-wheel, the combination of a wheel-tire having its inner periphery bored to fit the periphery of the center and also having an internal flange dressed to fit against the edge of the center felly; with a homogeneous malleable-iron wheel-center having its hub spokes and felly formed integral, and provided with recesses in the side of the felly opposite the tire-flange, and fastening-bolts transfixing the felly and tire-flange and having their heads in said recesses, substantially as described.

20. A malleable-iron wheel-center having its hub, felly and spokes all formed integral, and the spokes longitudinally ribbed.

21. A malleable-iron wheel-center having a hub, a felly angular in cross-section, and spokes connecting the felly and hub and formed integral therewith, said spokes being longitudinally ribbed.

817,455. LATCH. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed Apr. 6, 1905. Serial No. 254,196.



Claim.—1. In a latch the combination with a bolt, means for deadlocking the bolt in its outward position, means on the inside of the door whereby said deadlocking means may be shifted to its operative or inoperative positions, and yielding means for retaining said deadlocking means in either of said positions, of key-actuated mechanism which when turned in one direction first shifts the deadlocking mechanism to its inoperative position and retracts the bolt.

2. In a latch, the combination with a casing, and a spring-actuated latch, of means for connecting the latching mechanism with a knob or handle, key-actuated means for actuating the latch, a deadlocking-slide and means operated by the key mechanism of the latch for moving the slide out of the path of the latch, and also for positively moving said slide in a position to deadlock the latch, substantially as set forth.

3. In a latch, the combination with a casing and a spring-actuated latch, of a knob for actuating the latch, key-actuated mechanism for actuating the latch, a deadlocking-slide, means for setting the slide to deadlock the latch, and means actuated by the key mechanism for moving the slide out of the path of the latch, and for returning the slide to its deadlocking position.

4. The combination with a casing and a spring-latch therein, of a deadlocking-slide, means on the inner side of the latch-casing for throwing the slide, and key-actuated mechanism for throwing off the deadlock from the outside of the door for retracting the latch and for positively deadlocking the latch.

5. The combination with a casing and a spring-latch, of a deadlocking-slide for the latter and key mechanism for moving the slide out of the path of the latch, for retracting the latch and for resetting the deadlocking mechanism.

6. The combination with a casing and a spring-latch, of a deadlocking-slide, means on the inner side of the casing for shifting the slide, and mechanism actuated from the outside of the door for moving the slide out of the path of the latch for retracting the latch and for resetting the deadlocking mechanism.

7. The combination with a casing and a spring-latch, of a deadlocking-slide for the latter, a key-actuated cam for retracting the latch, and means actuated by said cam for moving the slide out of the path of the latch.

8. The combination with a casing and a spring-latch, of a deadlocking-slide, means projecting from the inner side of said casing for moving the slide, a key-actuated cam for retracting the latch and a lever actuated by said cam and engaging the slide for moving the latter out of the path of the latch.

9. The combination with a casing and a spring-latch, of a deadlocking-slide, a cam for retracting the latch and means actuated by said cam for moving the slide out of the path of the latter, and for resetting the slide after the latch has been released.

10. The combination with a casing and a spring-latch, of a deadlocking-slide, a cam for retracting the latch and a lever actuated by said cam and engaging the slide for moving it out of the path of the latch and for returning it to a position to deadlock the latch after the latch has been released.

11. The combination with a casing and a spring-latch, of a dead-locking-slide, means for holding the latter against accidental movement, a cam for retracting the latch and a lever actuated by the cam and engaging the slide for moving the latter out of the path of the latch.

817,456. LOCK. CHARLES B. TURNER and ROBERT L. HYMAN, Macon, Ga. Filed Dec. 3, 1904. Serial No. 235,339.

Claim.—1. A lock comprising a case, a member hinged upon the exterior thereof, a latch-post carried by said member and projected through an opening in the case, a keeper carried by the hinged member and received within an opening in the case, an endwise-movable bolt carried within the case for engagement with the keeper and provided upon one edge with a shoulder, and a spring frictionally bearing against the shouldered edge of the bolt for alternate engagement with opposite sides thereof to yieldably lock the bolt at opposite limits.

2. A lock comprising a case, a plate member hinged to the exterior of the case and projected at one edge thereof to form a finger-piece for the plate, a latch-post carried by the plate and projected through and beyond the case for engagement with the element to be locked, and means within the case to lock the plate against pivotal movements.

3. A lock comprising a case, a plate hinged upon the exterior of the case and terminated short of one end thereof, a latch-post carried by the plate and normally projected through an opening in the case, and means contained within the case for locking the plate, the case being provided with a keyway leading to the locking means and located beyond one end of the hinged plate.

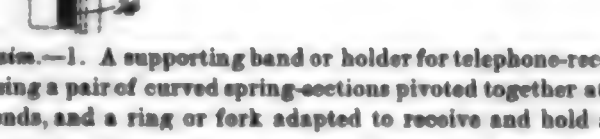
4. A lock comprising a case having an externally raised portion provided with a keyhole, a hinged plate carried externally by the case and substantially flush with the raised portion of the case, a latch-post carried by the hinged plate and normally projected through an opening in the case, and means contained within the case for locking the plate and accessible through the keyhole.

5. A lock comprising a case having a pair of openings therethrough, a plate hinged to the exterior of the case and provided with latch-posts working through the openings of the case, a keeper carried by the inner side of the plate and received within an opening in the case, an endwise-movable bolt contained within the case and disposed for engagement with the keeper, one side of the bolt being provided with a shoulder, a spring carried by the case and frictionally engaging the shouldered side of the bolt for alternate engagement with opposite sides of the shoulder to yieldably lock the bolt at opposite limits, the case being provided with a keyhole, and a key-post carried by the case adjacent the bolt and in alinement with the keyhole.

6. The combination with the jaw members of a satchel, the inner-jaw member being provided with an opening, of a lock-case mounted upon the top of the outer jaw and provided with an external hinged member, a latch-post carried by the inner side of said member and capable of projection through an opening in the case into engagement with the opening in the inner jaw of the satchel, and means contained within the case for locking the hinged member.

7. The combination with the jaw members of a satchel having corresponding openings therein, of a lock-case carried by the top of the outer jaw and provided with an opening in alinement with the openings in the jaws, a plate member hinged upon the exterior of the case and terminated short of one end thereof, said end of the case being provided with a keyhole, a latch-post carried by the inner side of the plate member and capable of being projected through the openings in the case and the jaws, a keeper carried by the inner side of the plate and received within an opening in the case, a shiftable bolt mounted within the case for engagement with the keeper, and a key-post carried within the case in alinement with the keyhole.

817,457. HEAD BAND OR SUPPORT FOR TELEPHONE-RECEIVERS. KELLEY M. TURNER, New York, N. Y. Filed Jan. 18, 1906. Serial No. 296,653.



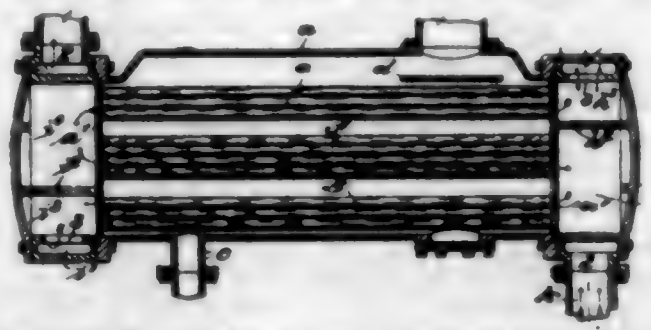
Claim.—1. A supporting band or holder for telephone-receivers comprising a pair of curved spring-sections pivoted together at their upper ends, and a ring or fork adapted to receive and hold a telephone-receiver and arranged to fold into the plane of said spring-sections.

2. A supporting band or holder for telephone-receivers comprising a pair of curved spring-sections joined together at their upper ends, so as to be capable of folding together, and a spring ring or fork pivoted to the terminal end of one of the sections and adapted to be moved into transverse relation thereto.

3. A supporting band or holder for telephone-receivers comprising a pair of spring-sections pivoted together at their upper ends, one of said sections having a bead and the other a cup or recess in alinement therewith, whereby the sections may be held in substantially rigid operative relation, and a spring ring or fork pivoted to the terminal end of one of the sections and capable of being folded into the plane thereof when not in use.

4. A supporting band or holder for telephone-receivers comprising a spring-section, a pad having a strap struck up thereon, and a spring retained by said strap and frictionally engaging said spring-section.

817,458. CONDENSER. CLIFTON H. WHEELER and JOSEPH J. MULLAN, Philadelphia, Pa., assignors, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 4, 1905. Serial No. 272,694.



Claim.—1. The combination with a cylindrical body and heads therefor, of series or banks of tubes extending through the cylindrical body and said heads, ends to the cylindrical body that are alike but reversed, and so arranged that the passage of cooling liquid is progressive through the series of tubes, and means forming part of said ends whereby the water in the ends is at a higher level than the water in the tubes.

2. In a condenser, an end comprising concentric walls forming an annular compartment, a partition dividing the interior into two compartments of varying sizes, an entrance opening into the annular compartment and an entrance opening from said compartment into one of the internal compartments.

3. In a condenser, an end comprising concentric walls forming an annular compartment, a partition dividing the interior into two compartments of varying sizes, and an entrance opening into the annular compartment and an entrance opening from said compartment into one of the internal compartments in combination with three banks of tubes, the one entering the smaller compartment of the end and the other two the larger compartment.

4. In a condenser the combination with a cylindrical body having an inlet-pipe for the spent steam and water of condensation and an exit-pipe for the feed-water, of ends connected to the cylindrical body that are alike but reversed, each end comprising concentric walls forming between them an annular compartment with an opening to this annular compartment, a partition dividing the interior into two compartments of different sizes with an opening from the annular compartment to the smaller of these interior compartments, three series of banks of tubes passing through the cylindrical body of the condenser, one of said banks opening into the smaller interior compartments of the ends and the other two opening into the larger interior compartments of the ends.

5. In a condenser, the combination with several independent horizontally-disposed series or banks of tubes, of cylindrical ends providing means for conveying and circulating the cooling-water first through the higher bank of tubes, then through the intermediate bank of tubes and finally through the lower bank of tubes, and means forming part of said ends whereby the water in the ends is maintained at a higher level than the water in the tubes.

6. In a condenser the combination with several independent series or banks of tubes, of cylinder ends providing means for conveying and circulating cooling-water first around and within the shell of one end and into a small internal compartment, thence through the higher of the bank of tubes, and into a large internal compartment of the other cylinder end and through the intermediate bank of tubes into a large compartment of the first end, thence into the lower of the bank of tubes and into the smaller internal compartment of the second end, thence around and within the shell of said end and away.

7. A surface condenser comprising a horizontally-placed condenser-body, heads for the same, tubes passing through said body and heads, ends for the said heads, and means forming part of said ends whereby the water in the ends is maintained at a higher level than the water in the tubes.

8. A surface condenser comprising a condenser-body, heads for the same, tubes passing through said body and heads, ends for the said heads, an internal wall in each of said heads conforming in outline therewith and providing a compartment between the same and the exterior wall of the end, an opening being provided in the exterior wall of each end and leading to the said compartment therein, and another opening provided in the interior wall of each end at the side opposite the aforesaid opening and leading from the said compartment to the interior chamber of the end.

9. In a condenser, the combination with a condenser and body, a series of tubes through the same, and heads therefor, of ends to the body that are alike, and each end comprising a wall surrounding the tubes at one end and forming a compartment, and a wall outside of appreciably greater diameter than the aforesaid wall, inclosing an outer compartment which with the inner compartment and tubes is filled at all times with the cooling liquid whereby the water-level in the ends is higher than in the tubes, insuring the tubes being full.

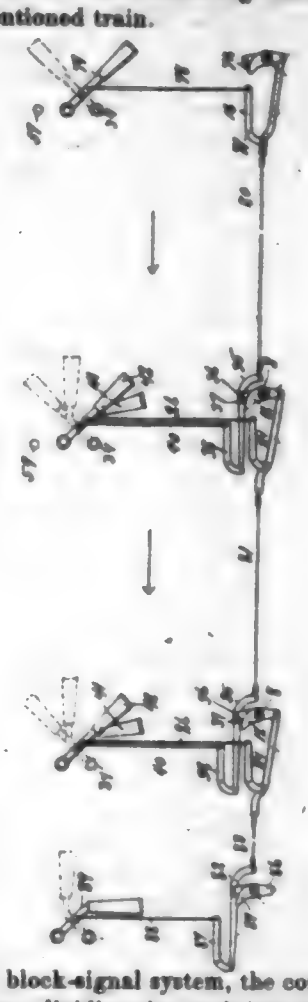
10. In a condenser, ends that are alike but reversed, and each end comprising inner and outer walls providing concentric compartments with an entrance opening into the outer compartment, and an opening providing communication between the respective compartments at the side opposite the aforesaid entrance-opening.

11. A surface condenser comprising a condenser-body, heads for the same, tubes passing through said body and heads, ends for the said heads, means forming part of said ends whereby the water-level in the ends is higher than in the tubes, insuring the tubes being full, and means contained within the aforesaid means forming part of said ends for dividing the tubes in the condenser into series of courses through which the cooling liquid is compelled to flow.

12. A surface condenser comprising a condenser-body, heads for the same, tubes passing through said body and heads, ends for the said heads, an internal wall in each of said heads conforming in outline therewith and providing a compartment between the same and the exterior wall of the end, an opening being provided in the exterior wall of each end and leading to the said compartment therein, and another opening provided in the interior wall of each end at the side opposite the aforesaid opening and leading from the said compartment to the interior chamber of the end, and means contained within the inner chambers of the said ends dividing the tubes in the condenser into series of courses through which the cooling liquid is compelled to flow.

817,459. RAILWAY SIGNAL APPARATUS. WILLIAM H. WILSON and SAMUEL A. WILSON, Flint, Mich. Filed Oct. 9, 1905. Serial No. 281,894.

Claim.—1. In a railway block-signal system, the combination of a plurality of signal-stations, each station having a plurality of movable signals, mechanism at each station for operating the signals adapted to be actuated by a passing train, the signal-operating mechanism for the several stations being connected mechanically to display a warning-signal a block ahead of the advancing train, and to display at the same station a signal indicating for said train a clear track, at the same time setting a warning-signal in the rear of the moving train, to prevent a train following entering the block occupied by the first-mentioned train.



2. In a railway block-signal system, the combination of a plurality of signal-stations dividing the track into blocks, movable signals for each station, mechanism connected with each station for operating its signals, the mechanism of the several stations being mechanically connected, and means connected with the signal-operating mechanism adapted to be actuated by a moving car, for setting a warning-signal in the rear of said car, and also in the block in advance thereof, and at the same time indicating a clear track in the block occupied by said car, and means actuated by the car in passing into the succeeding block for clearing the signals in the block last occupied by said car.

3. In a railway block-signal system, the combination of a plurality of signal-stations dividing the track into blocks, movable signals at each station, means at each station for operating said signals, means connecting the signals of the several stations, means connected with each set of signal-operating means at each station adapted to be actuated by a passing car moving in either direction for setting the signals in advance of the moving car, and in the rear thereof and for simultaneously clearing the signals from the block last occupied by said car.

4. In a railway block-signal system, the combination of a plurality of signal-stations dividing the track into blocks, each of said stations having a plurality of reciprocatory signals, means at each station for actuating said signals, means connecting mechanically the signal-actuating means of the several stations, track mechanism at each station connected with the signal-actuating means adapted to be actuated by a passing car to change the signals at the station whose mechanism is immediately actuated by the car in passing, and to set the signals at the stations in the rear and in advance of said car.

5. In a railway block-signal system, the combination of a plurality of stations dividing the track into blocks, each station having a plurality of signals, means at each station for operating said signals, track apparatus for actuating the signal-operating means at each station, said track apparatus being adapted to be actuated by a passing car, means connecting the signal-operating means of the several stations, operated by the actuation of the track apparatus at an intermediate station by a passing car or train, to cause a change of the signals at said intermediate station, and to simultaneously set the signals at the stations on opposite sides of said intermediate station.

6. In a railway block-signal system, the combination with a plurality of signal-stations, of movable signals in said stations, means for actuating said signals, track mechanism for operating the signal-actuating means adapted to be operated by a passing car, means connecting said signal-stations operated by a passing car at any one station to set a signal in the station which the car is passing, and also in the station in advance, and to operate said signals to show a clear track at both stations by the actuation of the mechanism at the station in which the advance signal was set when the car passes said advance station.

7. In a railway block-signal system, the combination with a signal-station, of two sets of signals therein, means for operating said signals independently, a track mechanism for each set of signal-operating means, a movable member in each track mechanism, through the medium of which it is operated by a passing car, and means connecting said movable members to withdraw one from action when the other is actuated to operate a set of signals.

8. In a railway block-signal system, the combination with a signal-station having two sets of signals therein, means for operating each set of signals independently, a track apparatus connected with each set of signal-operating means having a movable member adapted to be engaged by the wheel of a car to operate said apparatus, each of said movable members being slidable out of the path of said wheels, means connecting said members to slide one out of operative position when the other is depressed.

9. In a railway block-signal system, the combination of a signal-station, two sets of signals therein, means for independently operating said signals, track mechanism connected with the signal-operating means, adapted to be actuated by the wheels of a car, one part of said mechanism operating one set of signals when the car is passing in one direction, the other mechanism operating the other set of signals when the car is passing in the opposite direction, and means for preventing the actuation of but one set of signals by the passage of the car in either direction.

817,460. TAG OR LABEL. MARJORIE H. WEIR, New York, N. Y. Filed Apr. 28, 1905. Serial No. 257,537.



Claim.—1. A label comprising a clip provided with three upwardly-extending tongues, the two outer of which have their lower ends in a lower plane than the middle tongue, and means for securing a slip to the clip.

2. A label comprising a clip provided with tongues and a display member and a slip having its ends retained between the opposing edges of one of said tongues and said display member.

3. A label comprising a clip provided at its sides with retaining portions, and a middle portion, the side portions at their bends being in a lower plane than the lower end of the middle portion, and a slip secured to said middle portion and extending around underneath the same, the bends of the retaining portions constituting feet for the purpose of protecting the slip from abrasion.

4. A label comprising a clip provided with tongues and a display member and a slip having its end portions held between one of said tongues and said display member.

5. A label comprising a clip provided with a middle and two side tongues and a display member integral therewith and a slip passing around the middle tongue and having its end portions retained between the latter and said display member.

6. A label comprising a clip provided with a middle tongue and two side tongues and a display member facing the same and a slip having its ends held between the middle tongue and said display member.

7. A label comprising a clip provided with attaching means including a tongue and a slip having one end passed around the edge of said tongue and its other end passed around the opposite edge of the clip and retained therebetween.

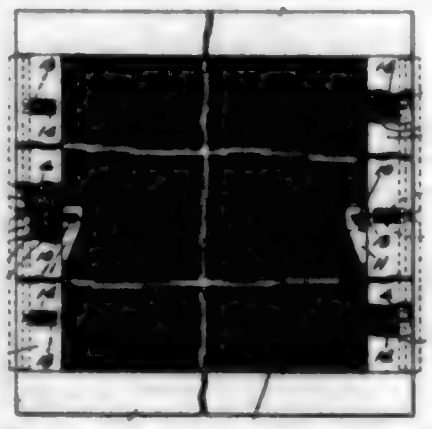
8. A label comprising a clip provided with a middle tongue and two side tongues projecting above the first-named tongue and a display member whose edge is parallel with the edge of the middle tongue and a slip having one end turned over the edge of said middle tongue and passed around the same with its other end turned over the opposite edge of the clip, said slip being retained between the two.

9. A label comprising a clip provided with three upwardly-extending tongues, substantially in line with each other and a display member also extending upwardly substantially parallel to the tongues, and a slip passed around the middle portion of the clip with its ends pinched between the middle tongue and said display member.

10. A label comprising a clip provided with three upwardly-extending tongues, the two outer of which have their lower ends in a lower plane than the middle tongue, and means for securing a slip to the clip over the middle tongue for the purpose specified.

11. A label comprising a one-piece clip formed with an upwardly-extending member or lip 3, a middle upwardly-extending tongue 5, and two outer upwardly-extending tongues 4, all of said tongues facing said display member and a slip having one end turned inwardly over the upper edge of the tongue 5 passing around underneath said tongue and upwardly over the face of the lip 3 with its upper end inturned around the upper edge of said lip, the two ends of the slip being held between said coacting edges.

817,461. WINDOW-SCREEN. JOSEPH W. ADAMS, Pasadena, Cal. Filed July 18, 1905. Serial No. 270,201.



Claim.—1. The combination with a window having a vertical groove, of a screen-frame, having a furrow along its vertical edge, a rigid strip mounted in the furrow and engaging within the groove of the window, a spring within the screen-frame arranged to hold the strip normally in engagement with the groove, a link engaging the strip and extending transversely through the screen-frame, a cam engaging the link and the face of the screen-frame and means whereby the cam may be manipulated to draw the strip out of the groove and retain it wholly within the furrow of the screen.

2. A window-screen comprising a frame having furrows formed along its opposite vertical edges, a rigid strip mounted and laterally movable within each furrow and with a longitudinal edge protruding normally beyond the lines of the frame, a spring mounted in the frame and exerting pressure against the inner edge of the strip, a link connected with the strip and extending transversely through the frame and an eccentric connected with the link and extending opposite the strip and arranged upon manipulation to draw and hold the strip wholly within the furrow and against the tension of the spring.

817,462. POLISHING OR BUFFING WHEEL. CLARENCE G. RACKUS, New York, N. Y., assignor to Bucher & Levett & Loeb Company, New York, N. Y., a Corporation of New York. Filed May 9, 1905. Serial No. 259,596.



Claim.—1. In a polishing or buffing wheel, a polishing-pad, oppositely-disposed detachable side members adapted to clamp said

pad between their inner faces, one of said members being provided with detachable balancing-weights, substantially as described.

2. In a polishing or buffing wheel, a polishing-pad, a detachable side member adapted to clamp one side of the same and provided with an annular groove, and pockets spaced throughout the said groove for receiving balancing-weights, substantially as described.

3. In a polishing or buffing wheel, a polishing-pad, a detachable side member adapted to clamp one side of the same, and provided with pockets for carrying balancing-weights, substantially as described.

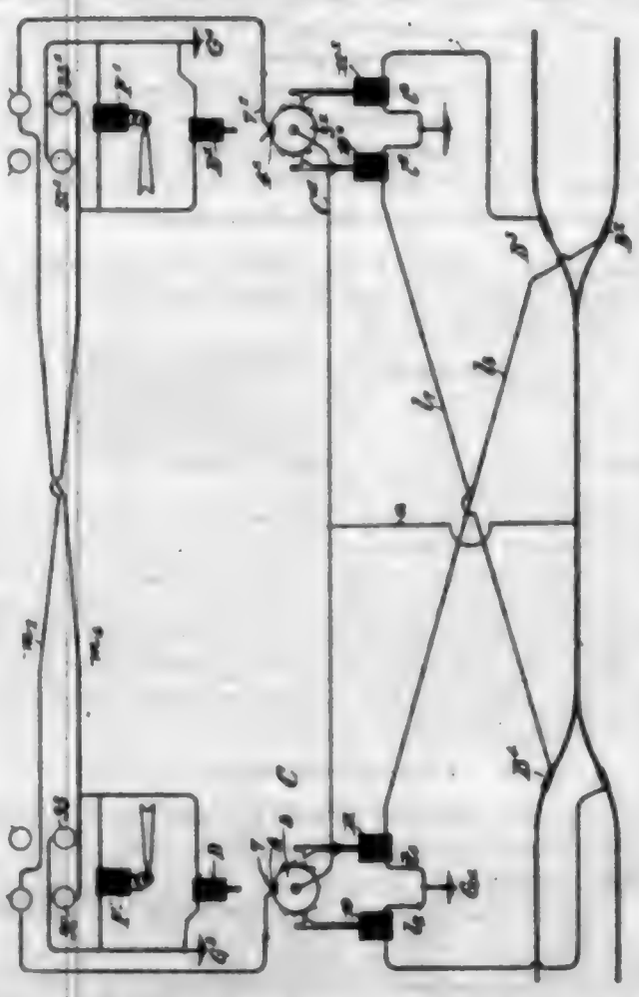
4. A polishing or buffing wheel comprising a detachable side member having an annular groove in one of the faces thereof, balancing-weights, and means for retaining said balancing-weights in said groove at a number of points throughout its length, substantially as described.

5. A polishing or buffing wheel comprising a detachable side member having an annular groove in one of the faces thereof, a ring fitting in said groove and adapted to turn therein, pockets formed in said ring and balancing-weights in said pockets, substantially as described.

6. A polishing or buffing wheel comprising a detachable side member having an annular groove in one of the faces thereof, a series of connected pockets fitted in said groove and adapted to turn therein, and balancing-weights carried in the said pockets, substantially as described.

7. A polishing or buffing wheel comprising a detachable side member having an annular groove therein, a series of connected pockets fitted in said groove, balancing-weights carried in said pockets, openings in said side member and in said pockets, adapted to coincide with each other, for the purpose of removing or inserting balancing-weights, substantially as described.

817,483. **RAILROAD SIGNAL SYSTEM.** ROLLIN A. BALDWIN and GEORGE D. FOOTE, New Haven, Conn., assignors to Baldwin & Rowland Switch & Signal Co., a Corporation of Connecticut. Filed Aug. 10, 1905. Serial No. 273,504.



Claim.—1. In a block-signal system, a wheel or disk, a signal-circuit arranged to be completed by movement of said wheel or disk in either direction, a pair of operating-magnets for moving said disk in either direction, and a locking-magnet for holding said wheel or disk against rotation.

2. In a block-signal system, a wheel or disk, oppositely-directed ratchet-teeth secured thereto, a pair of feeding-pawls acting on the respective ratchet-teeth, a pair of magnets having operative connections to said feeding-pawls, and a locking-magnet arranged to hold said disk against rotation.

3. In a railroad signal system, a wheel or disk having an insulated section thereon, a pair of oppositely-directed ratchet-wheels connected to said disk, feeding-pawls for the respective ratchet-wheels, a rocking lever having detents thereon to engage each of said ratchet-wheels, and a locking-magnet for moving said rocking lever into engaging position.

4. In a railroad signal system, a wheel or disk, means for moving said wheel or disk step by step in either direction, a circuit completed by said movement of said wheel or disk, said circuit including a telltale-signal, and means whereby the completion of said circuit displays a danger-signal and actuates a locking-magnet.

5. In a block-signal system, a disk having an insulated section thereon, a contact bearing on said insulated section and having included in circuit therewith a telltale-signal, a danger-signal and a semaphore-operating means, means for charging the said disk from a trolley-wire, a ground-return for said circuit, and a pair of solenoid-magnets having armatures acting on said disk to turn the same in opposite directions.

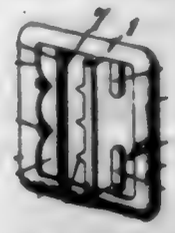
6. In a block-signal system, a disk having an insulated section thereon, a contact bearing on said disk and included in a circuit having a semaphore-operating means and danger-signal therein, means for charging said disk by connection to the trolley-wire, a pair of magnets arranged to step said disk around in opposite directions, and a pair of circuit-closing devices opposite the ends of a block-section included in circuits with said respective magnets.

7. In a block-signal system, a disk having an insulated section thereon, a pair of solenoid-magnets arranged to step around said disk in opposite directions, circuit-closing devices upon the trolley-wire at opposite ends of the block-section in circuit with the respective magnets, and a circuit including a telltale-signal at one end of the section and a danger-signal at the opposite end arranged to be completed by the rotation of said disk.

8. In a block-signal system, a disk having an insulated section thereon, a pair of solenoid-magnets arranged to step around said disk in opposite direction, circuit-closing devices upon the trolley-wire at opposite ends of the block-section in circuit with the respective magnets, a circuit including a telltale-signal at one end of the section and a danger-signal at the opposite end arranged to be completed by the rotation of said disk, and a locking-magnet for said disk.

9. In a block-signal system, a pair of double-track sections connected by an intermediate single-track section, circuit-closing devices upon the trolley-wires of both double-track sections, a pair of disks charged from the trolley-wire also opposite such points and each having an insulated section thereon, magnets for stepping around said disks respectively connected with said circuit-closing devices, a pair of contacts bearing on said disks, and a pair of series circuits each including one of said contacts and also including telltale and danger signals at the respective entrances to the single-track section.

817,484. **DETACHABLE BUCKLE.** MIECZYSLAW BARABASZ, Baltimore, Md. Filed Nov. 27, 1905. Serial No. 289,146.



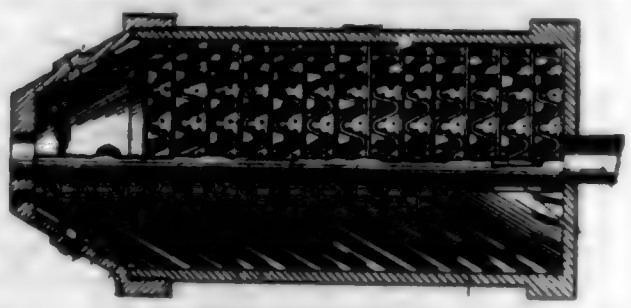
Claim.—1. A single-piece buckle having side bars connected by end bars, and one of the end bars provided with inwardly-inclined teeth while the other end bar is plain and smooth, and also having a cross-bar, 7, adjacent said toothed end bar—said cross-bar having ends which form an angle with respect to both the cross-bar itself and also the side bars, whereby the cross-bar projects outwardly in a plane beyond the end bars, and that side of the cross-bar which confronts the said inclined teeth being rounded and curved inwardly, and said buckle also having another cross-bar which also projects outwardly in a plane beyond the end bars and is provided with teeth which project toward the first-named cross-bar.

2. A single-piece buckle having side bars connected by end bars, and one of the end bars provided with teeth while the other end bar is plain and smooth, and also having a cross-bar, 7, adjacent said toothed end bar—said cross-bar having ends which form an angle with respect to both the cross-bar itself and also the side bars, whereby the cross-bar projects outwardly in a plane beyond the end bars, said buckle also having another cross-bar which also projects out-

wardly in a plane beyond the end bars and is provided with teeth which project toward the first-named cross-bar: and a bar adjacent the plain smooth end bar and depressed inwardly in a plane beyond the inner surfaces of the said two cross-bars.

3. A single-piece buckle having side bars connected by end bars, and one of the end bars provided with teeth while the other end bar is plain and smooth; two parallel cross-bars one only of which is provided with teeth; and two short bars extending toward each other and adjacent the said plain smooth end bar, and depressed inwardly in a plane beyond the inner surfaces of said two cross-bars.

817,465. CENTRIFUGAL LIQUID-SEPARATOR. GEORGE J. BRAGG, Newark, N. J. Filed Sept. 22, 1905. Serial No. 279,648.



Claim.—1. In a centrifugal liquid-separator, the combination with a separator-bowl and a top therefor having an inclined surface and having an outlet for the heavier liquid in such inclined surface, of a removable tapering cap within the top, fitting closely to the inclined surface of the top above the heavy-liquid outlet and provided with means forming a passage to direct the heavy liquid to the outlet.

2. In a centrifugal liquid-separator, the combination with a separator-bowl and a top therefor having an inclined surface and having an outlet for the heavier liquid in such inclined surface, of a liner for said bowl and a removable cap surmounting the liner and fitting closely to the inclined surface of the top above the heavy-liquid outlet and provided with means forming a passage to direct the heavy liquid to the outlet.

3. In a centrifugal liquid-separator, the combination with a separator-bowl and a top therefor having an inclined surface and having an outlet for the heavier liquid in such inclined surface, of a liner for said bowl and a removable cap surmounting the liner, said cap being formed of thin sheet metal and arranged to be pressed up against the inner surface of the top above the heavy-liquid outlet and being provided with means forming a passage to direct the heavy liquid to the outlet.

4. In a centrifugal liquid-separator, the combination with a separator-bowl and a top therefor having an inclined surface and having an outlet for the heavier liquid in such inclined surface, of a removable liner-cap within the bowl and fitting closely to the inclined surface of the top above the heavy-liquid outlet and separated from such inclined surface below the outlet by a space forming a liquid-passage, said cap being provided with projections engaging the top and serving to maintain the passage.

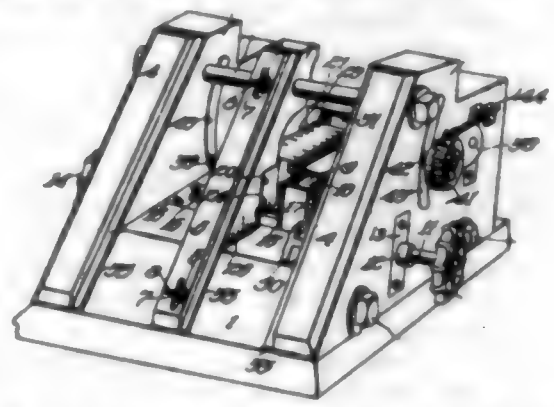
5. In a centrifugal liquid-separator, the combination with a separator-bowl of skimming means therein comprising a plurality of hollow truncated cones arranged one above the other within said bowl, alternate cones having corrugated and plane surfaces, the corrugated cones being perforated at the upper apices of the corrugations.

6. In a centrifugal liquid-separator, the combination with a separator-bowl of skimming means therein comprising a plurality of hollow truncated cones arranged one above the other within said bowl, alternate cones being corrugated and the others plane-surfaced, the corrugated cones having perforations at about the bottoms of their corrugations and also perforations near the tops of such corrugations.

7. In a centrifugal liquid-separator, the combination with a separator-bowl of skimming means therein comprising a plurality of hollow truncated cones arranged one above the other within said bowl, certain of said cones being corrugated at an angle to the radius of the bowl and having perforations permitting inflow of cream particles and outflow of blue milk, and others of said cones being plane-surfaced.

8. In a centrifugal liquid-separator, the combination with a separator-bowl of skimming means therein comprising a plurality of hollow truncated cones arranged one above the other within said bowl, alternate cones being corrugated at an angle to the radius of the bowl and the others plane-surfaced, said corrugated cones being provided with perforations permitting inflow of cream particles and outflow of blue milk.

817,466. PICTURE-FRAME JOINTER. JOHN H. BRAGDON, Los Angeles, Cal. Filed Mar. 25, 1905. Serial No. 251,993.



Claim.—1. A jointer for picture-frame moldings comprising a base member having a transverse slot, and wall members, the forward faces of said members being oblique to said base member, a clamp-arm movable in said slot in the base member and extending upwardly into the space between the wall members, a screw in said slot engaging said clamp-arm to adjust the same toward a wall member for clamping a molding, handle means on said screw, a lever pivoted to one of the wall members, a shaft journaled on said lever and having a hand-wheel thereon for operating the same, the said wall member being slotted for the passage and movement of said shaft, and a rotary feeding device on the inner end of the shaft extending into the space between the said wall member and the intermediate member to engage and feed the molding.

2. A device for the purpose set forth comprising a base member, two side-wall members, an intermediate member, the forward faces of all of said members being oblique to the base member, clamp-arms movable transversely in the space between the intermedate member and the side-wall members, means for adjusting said clamp-arms toward and from the side-wall members, and jaws fitting over said arms, said jaws having faces of different thickness on opposite sides.

3. In a jointer for picture-frame moldings a base, two walls projecting therefrom, a scale member between such walls, a gage device slidable upon such scale member, a pointer pivoted upon such slidable gage and adapted to be swung toward either wall.

817,467. SPIRIT-LEVEL. NEWTON D. CHASE, Henley, Cal., assignor of one-half to Willis H. Roberts, Henley, Cal. Filed Aug. 4, 1905. Serial No. 272,676.



Claim.—An instrument of the character described comprising a stock provided with a transverse opening intermediate its ends and edges, a lining for said opening, a circular tube arranged within the opening midway of its edges, a backing-plate and a dial-plate detachably secured together with their peripheries engaging the inner periphery of the circular tube, the said stock having a graduated scale surrounding its transverse opening and the dial having an indicator-finger for coöperation with said scale.

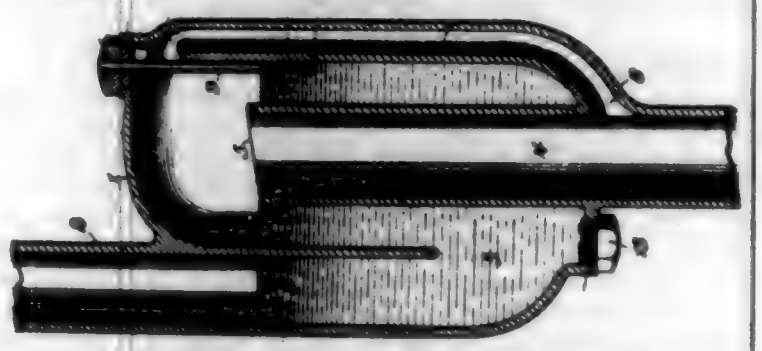
817,468. WRENCH. HOWARD M. CLARK, New Paynesville, Minn. Filed Mar. 13, 1904. Serial No. 197,817.



Claim.—A wrench comprising a stock having a transverse jaw at one end and having rack-teeth formed on its front and rear sides, a second jaw having a passage formed therethrough for the passage of said stock, the front and rear walls of the passage being inclined inwardly from the ends thereof to form long and short parallel wall portions diagonally in opposition to each other, the meeting-point of

the inclined portions of the rear wall lying above the longitudinal axis of the said last-named jaw, and the meeting-point of the inclined portion of the front wall lying below the said longitudinal axis, and a spring carried by said jaw and engaging the said stock.

817,469. NON-SIPHONING TRAP. EDWARD A. CLELAND, Lynchburg, Va. Filed June 29, 1905. Serial No. 267,574.



Claim.—1. A trap of the class described, comprising a body having inlet and discharge pipes, and an air-passage communicating with the interior of the body of the trap and connected with the discharge-pipe at a point below the body of the trap.

2. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, a discharge-pipe extending into the body and terminating at a point above the lower end of the inlet-pipe, and an air-passage extending from the discharge-pipe and communicating with the body of the trap at a point above the upper end of the said discharge-pipe.

3. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, a discharge-pipe extending into the body and terminating at a point above the lower end of the inlet-pipe, and an exteriorly-arranged air-passage communicating at its upper end with the top of the body of the trap and connected at its lower end with the discharge-pipe at a point below the body of the trap.

4. A trap of the class described, comprising a body having inlet and discharge pipes, and an air-passage communicating with the interior of the body of the trap and connected with the discharge-pipe at a point below the body of the trap, said discharge-pipe being extended into the body and provided at its upper end at one side with a projecting portion located above the normal line of the water and adapted to cause water flowing through the discharge-pipe to pass along the side opposite that at which the projecting portion is arranged.

5. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, and a discharge-pipe extending into the body and having its upper end located at a point above the lower end of the inlet-pipe, the upper end of the discharge-pipe being inclined to provide a projecting portion, said projecting portion being located above the normal line of the water, and adapted to cause water flowing through the discharge-pipe to pass along the side opposite that at which the projecting portion is arranged, whereby the air-space is maintained at the side having the projecting portion.

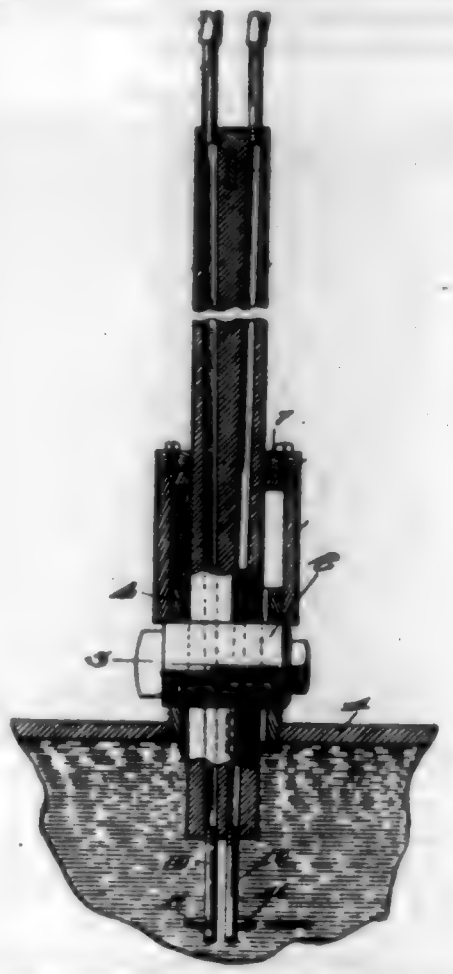
6. A trap of the class described, comprising a body having inlet and discharge pipes, a main air-passage communicating with the body of the trap and with the discharge-pipe, said body having an aperture, a closure for the aperture, and a supplemental air-pipe carried by the closure and extending through the same, the inner end of the supplemental air-pipe being extended below the upper end of the discharge-pipe so as to be submerged in the water seal.

817,470. PITOT-TUBE CONNECTION. JOHN A. COLE, Chicago, Ill., and EDWARD S. COLE, Upper Montclair, N. J. Filed Mar. 15, 1906. Serial No. 306,314.

Claim.—1. A device of the class specified, comprising a rigid holder in the form of a bar or rod, a pair of tubes held by said holder and having laterally-extending portions which project from the holder and whose ends open in opposite directions so as to form oppositely-facing orifices.

2. A Pitot-tube connection, comprising a pair of tubes having their ends bent laterally to form orifices and a rigid holder therefor in the form of a bar or rod, the tubes being arranged to fold together when in one position, and to rotate to cause the orifices to point in opposite directions when in the other position.

3. A device of the class specified, comprising a rigid holder in the form of a bar or rod, and a pair of tubes extending through said holder and having their lower ends projecting from the lower end of the holder, the tubes being constructed with laterally-extending portions having outwardly-opening ends which provide oppositely-facing orifices.



4. A device of the class specified, comprising a rigid holder in the form of a bar or rod, a pair of tubes extending through said holder and having their lower ends projecting from the lower end of the holder, said tubes having laterally-extending portions whose ends open outwardly to provide oppositely-facing orifices, said tubes being rotatable in the holder, and locking means for locking said tubes against rotation.

5. A Pitot-tube connection, comprising a rigid holder in the form of a bar or rod having longitudinally-extending bores or passages, a pair of tubes extended through said bores or passages, and having their lower ends bent laterally, the tubes being rotatable in said holder to permit their orifices to be turned so as to fold together in one position or to point in the opposite direction in another position.

6. A Pitot-tube connection comprising a bar or rod having longitudinally-extending bores or passages, a pair of tubes extended through said bores or passages, said tubes having their lower ends bent laterally, stuffing-boxes for said tubes, at the upper end of said bar or rod, a collar on said bar or rod and locking devices comprising clips on said tubes, having upturned ends and notches or slots in said collar.

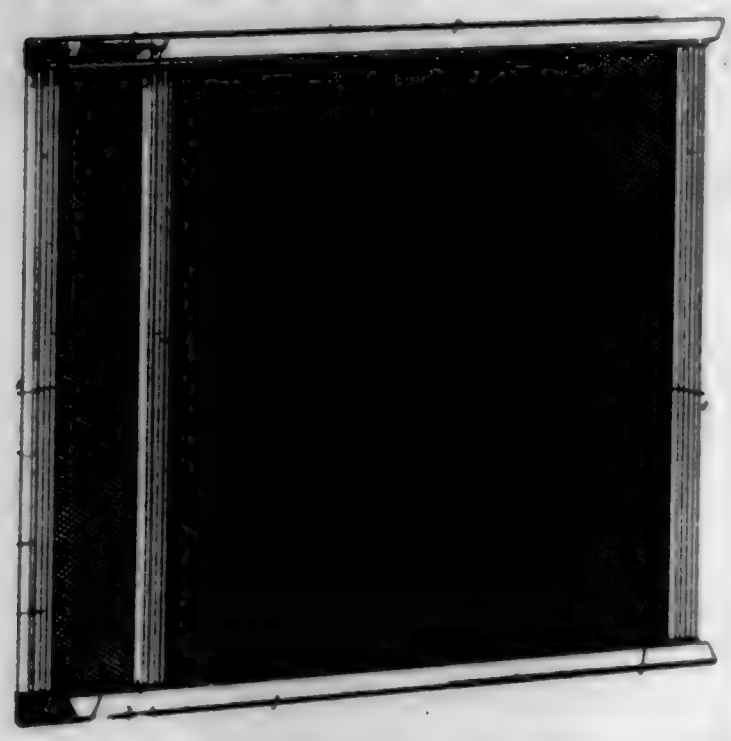
817,471. SLIDING EXTENSIBLE SCREEN. ALBERT A. DAY, New York, N. Y. Filed Jan. 13, 1906. Serial No. 295,890.

Claim.—1. A window-screen having a metallic frame comprising a pair of bars each formed of sheet metal folded longitudinally upon itself, and a second pair of bars, each composed of sheet metal folded longitudinally upon itself, and having its folded end portions inclosing the folded end portions of the other bars, said second pair of bars being bent longitudinally where they inclose the other bars, thereby bending the inclosed folded portions thereof transversely and forming the corners of the frame, substantially as described.

2. A window-screen having a metallic frame comprising a pair of bars each formed of sheet metal folded longitudinally upon itself, and a second pair of bars each formed of sheet metal folded longitudinally upon itself, the folded ends of said first pair of bars extending within the folded ends of the second pair of bars, and engaging the fold thereof, said second pair of bars being bent longitudinally throughout their length, thereby bending the folded end portions of the other bars transversely and forming the corners of the frame, substantially as described.

3. A window-screen having a metallic frame comprising a pair of bars formed of sheet metal, and a second pair of bars each formed

of sheet metal folded longitudinally upon itself, and inclosing the ends of said first pair of bars, the folded portions of said second pair of bars which inclose the ends of said first pair of bars being given a plurality of longitudinal bends, thereby giving the inclosed portions of the other bars a plurality of transverse bends and locking said bars together, substantially as described.



4. A window-screen comprising among its members, a section of screen fabric, a pair of bars engaging opposite edges of said fabric, each consisting of a strip of metal folded longitudinally on itself and inclosing marginal portions of the fabric, and a second pair of bars, similarly formed, and inclosing marginal portions of the fabric and the folded end portions of said first-named bars, and disposed perpendicularly thereto, said second pair of bars being each bent longitudinally throughout their length, substantially as described.

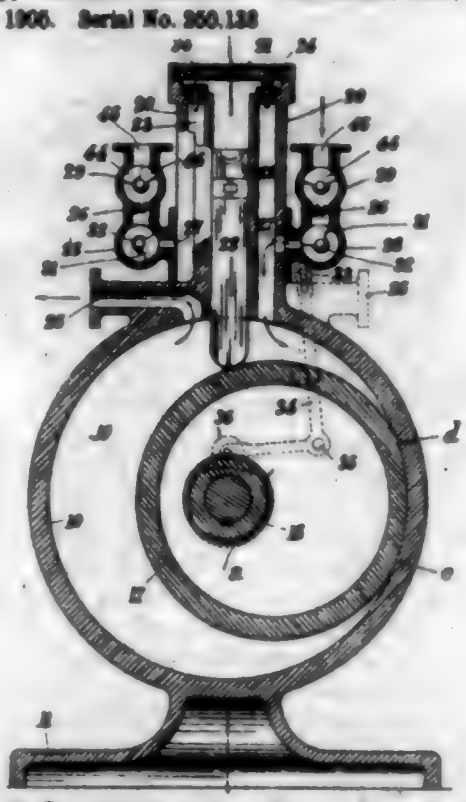
5. A window-screen comprising among its members, a section of screen fabric, a pair of bars engaging opposite edges thereof, each consisting of a strip of metal folded longitudinally and inclosing marginal portions of the fabric, said bars being longitudinally bent, to secure the fabric therein, and a second pair of bars, similarly formed, inclosing marginal portions of the fabric and the folded end portions of said first-named bars, and disposed perpendicularly thereto, said second pair of bars being each bent longitudinally throughout their length to secure them to the fabric and to said first-named bars, substantially as described.

6. A sliding extensible metallic screen, comprising two screen-sections, each composed of a section of screen fabric, vertical bars of sheet metal secured thereto, and horizontal bars each consisting of a strip of sheet metal folded longitudinally and inclosing the ends of said vertical bars, said horizontal bars being given a plurality of bends longitudinally throughout their length to form retaining and guiding portions, and to secure the vertical bars thereto, the retaining and guiding portions of one screen-section having a sliding engagement with the retaining and guiding portions of the other screen-section, substantially as described.

7. A sliding extensible metallic screen comprising two screen-sections each composed of a section of screen fabric, vertical bars engaging opposite edges of said fabric each consisting of a strip of metal folded longitudinally and inclosing marginal portions of said fabric, said bars being bent longitudinally to unite them to said fabric, and a pair of horizontal bars of similar form inclosing marginal portions of the fabric and the folded ends of said vertical bars, said horizontal bars being given a plurality of bends longitudinally throughout their length to form retaining and guiding portions, the retaining and guiding portions of one screen-section having a sliding engagement with the retaining and guiding portions of the other section, substantially as described.

8. A sliding extensible metallic screen, comprising two screen-sections each composed of a section of screen fabric, vertical bars engaging opposite edges of said fabric each consisting of a strip of metal folded longitudinally and inclosing marginal portions of said fabric, said bars being bent longitudinally to unite them to said fabric, and a pair of horizontal bars of similar form inclosing marginal portions of the fabric and the folded ends of said vertical bars, said horizontal bars being bent longitudinally throughout their length into substantially tubular form, the tubular portions of one screen-section having a sliding engagement with those of the other screen-section, substantially as described.

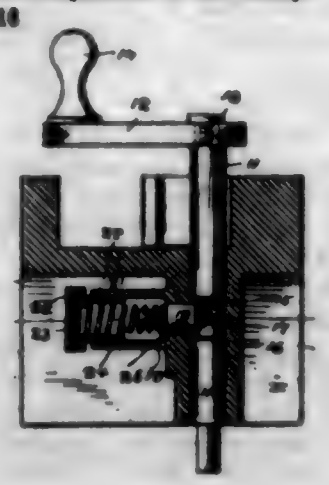
817,472. **ROTARY ENGINE.** PAUL DÉCOR, Oran, Algeria. Filed Mar. 15, 1905. Serial No. 250,138.



Claim.—1. In a rotary engine, the combination with a cylinder divided into two compartments in which are located two eccentric pistons keyed upon the driving-shaft and obturators 22 applied upon the pistons by the pressure of the motor fluid, of a distributing-chamber 20 communicating with the two cylinders, two conduits 23 on each side of the said chamber and discharging on one part into the compartments of the cylinder and on the other part into the upper portion of the said chamber, a distributing valve-chest 26 on each side of the chamber 20 communicating with the conduits 23 through the orifices 27, alternately-moving valves 31 located in the said distributing valve-chest, a series of cams *a*, *b*, *c* keyed upon the driving-shaft to control the said valves 31 by means of appropriate levers, a regulating-valve 44, 46 movable alternately in each distributing-chest 26 and having two parts of unequal size, a screw-shaft bearing each regulating-valve, a centrifugal regulator actuating each of said shafts, and means for compelling the fluid to flow in one or the other of said distributing-chests 26 according to the direction of rotation desired, substantially as described and for the purposes specified.

2. In a rotary engine, the combination with a cylinder divided into two compartments in which are located two eccentric pistons keyed upon the driving-shaft, of two distributing-chests communicating respectively with the said compartments, two discharge-conduits for each compartment arranged in opposition, two three-way cocks 64, 65 operated by gears and communicating respectively with the said chests 26 and the said conduits 25, substantially as described and for the object specified.

817,473. **FRICTION DEVICE FOR VOTING-LEVER SHAFTS.** WILLARD M. DELAVAN, Pittsfield, Mass., and WILLIAM I. T. FOSDICK, Bridgeport, Conn., assignors to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed Sept. 18, 1905. Serial No. 278,016.



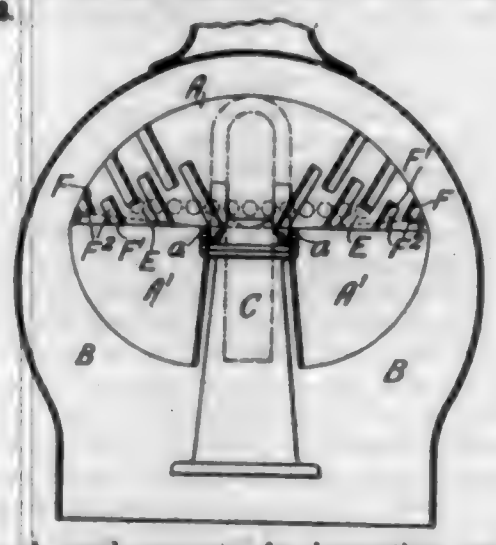
Claim.—1. The combination with a voting-lever shaft having bearing-surfaces which meet in a ridge, of a spring-actuated plunger adapted to engage either of said bearing-surfaces to retain the shaft at either the voting or non-voting position and to carry said shaft to either the voting or non-voting position when the ridge has been carried past the mid-width of the end of the plunger.

2. The combination with a voting-lever shaft having bearing-surfaces which meet in a ridge and a hardened plug inserted in said bearing-surfaces and the ridge, of a spring-actuated plunger adapted to engage said bearing-surfaces and the ridge, substantially as described, for the purpose specified.

3. The combination with a voting-lever shaft having bearing-surfaces which meet in a ridge, of a plunger adapted to engage either of said bearing-surfaces or the ridge and having a shank and a shoulder and a spring surrounding said shank and bearing against the shoulder, whereby the plunger is forced forward.

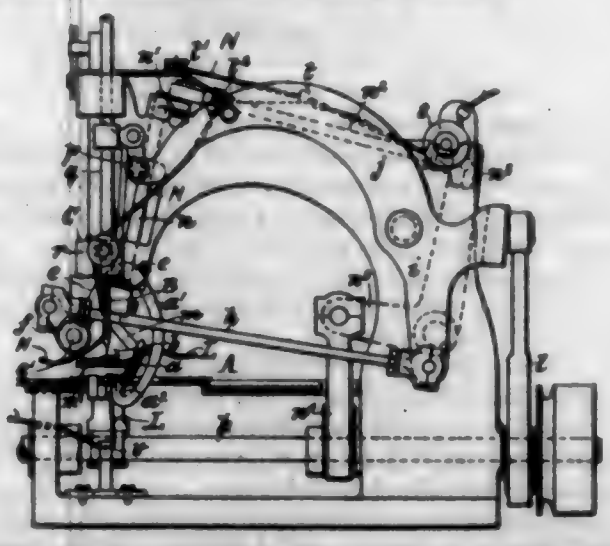
4. The combination with a voting-lever shaft having bearing-surfaces meeting in a ridge, of a plunger adapted to engage said bearing-surfaces and ridge and having a shank and a shoulder, a spring surrounding the shank and bearing against the shoulder, a hub which incloses the spring and a screw-plug having a socket which receives the outer end of the spring by which the tension of the spring is adjusted.

817,474. **SPARK-PREVENTER FOR LOCOMOTIVES.** DUGALD DRUMMOND, Surbiton, England. Filed Dec. 12, 1905. Serial No. 291,372.



Claim.—A spark-preventer for locomotives comprising, in combination, with the smoke-box and blast-pipe and wings pivoted on either side of the latter, of stationary side wings located above said pivoted wings and connected together by baffle-plates set at an inclination to cause the fire-gases flowing toward the chimney to traverse a sinuous course.

817,475. **SEWING-MACHINE.** ERNEST F. DURAND, London, England. Filed Mar. 17, 1904. Serial No. 198,066.



Claim.—1. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying looper adapted to move in the arc of a circle whose center of motion is situate at a point above the cloth-plate, the thread-carrying portion of said looper having a range of movement in the path of said arc across the edge of the work and extending from a point below the cloth-plate to a point above it and adapted to both enter and cast off the needle-thread loop below said cloth-plate, said thread-carrying portion of said looper acting to move through said needle-thread loop in entering and casting it off so as to always maintain it below said cloth-plate at the same time carrying its looper-thread loop above said cloth-plate, an oscillating spreader adapted to engage the looper-thread loop and to spread the same upon the work for the said needle to enter it, means for taking up said needle-thread after being cast off the looper, and means for actuating said looper and spreader.

2. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying looper mounted on a pivot situate above the cloth-plate and on that side of the needle which is remote from the edge of the work under treatment, said looper comprising a pair of limbs united by a throat-piece and having one of said limbs adapted to carry the thread and being so curved that it always lies and operates in the arc of a circle whose center is coincident with the axis of said pivot, said looper being adapted to both enter and cast off the needle-thread loop below the cloth-plate, and a spreader engaging and spreading said looper-thread for the needle to enter it, and means for operating said looper and spreader.

3. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying looper mounted on a pivot situate above the cloth-plate and on that side of the needle which is remote from the edge of the work under treatment, said looper comprising a pair of limbs a and a', throat-piece a^3 uniting said limbs and the limbs being so curved that they always lie and operate in the arcs of circles with whose curvature they correspond and whose center is coincident with one another and with the axis of said pivot, said looper being adapted to both enter and cast off the needle-thread loop below the cloth-plate, a spreader for engaging and spreading said looper-thread for the needle to enter it, and means for operating said looper and spreader.

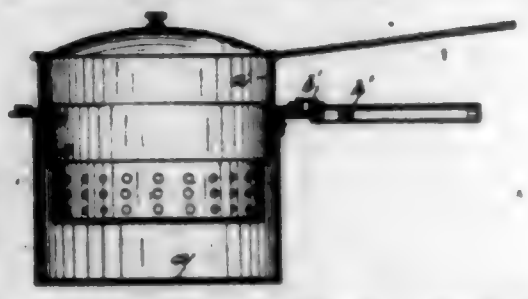
4. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying curved looper of a U shape and comprising a short limb provided with an eye near its point, a long limb and a throat uniting it with said short limb, the said looper having its center of motion above the cloth-plate; the curvatures of said looper-limbs being substantially coincident with arcs struck from said center of motion and the said looper-limbs reciprocating on said arcs and the said short limb thereby entering the needle-thread loop below the cloth-plate and substantially normal to the plane of the loop and at the begining of the upstroke of said looper, and subsequently casting it off on its downstroke below said cloth-plate, to maintain it below the level of said cloth-plate and to prevent lengthening said needle-thread loop, an oscillating spreader adapted to engage the looper-thread loop and spread the same upon the work for the said needle to enter it, means for taking up said needle-thread after being cast off the looper, and means for actuating said looper and spreader.

5. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying looper engging the needle-thread loop and passing its thread-carrying end through said loop below the work and then casting off said loop below the work so as to maintain said loop always below the work, an oscillating spreader engaging the looper-thread loop above the needle-thread loop after the looper has passed through the latter and serving to spread such looper-thread loop above the work for the needle to enter said loop, means for taking up said needle-thread after it is cast off the looper, and means for operating said looper and spreader, whereby said needle-thread loop on the under side of the work is drawn into the same plane with the needle-thread upon the upper side and the needle-stitches are maintained in the said same plane.

6. An overseam sewing-machine provided with a reciprocating needle and means for operating it, a depending oscillating thread-carrying looper adapted to move in the arc of a circle whose center of motion is situate at a point above the cloth-plate, the thread-carrying end of said looper having a range of movement in the path of said arc extending from a point below said cloth-plate to the side of the needle opposite to that on which the edge of the work is caused to travel to a point above the cloth-plate and adapted to both enter and cast off the needle-thread loop below said cloth-plate and to maintain said needle-thread loop below said cloth-plate, the point of said looper being directed upwardly on the end of its upstroke and directed substantially horizontally on the end of its downstroke, an oscillating spreader adapted to engage the looper-thread loop when passed through and raised above said needle-thread loop and spread the looper-thread loop upon the work for the said needle to enter it, means for taking up said needle-thread after being cast off the looper, and means for actuating said looper and spreader.

7. An overseam sewing-machine provided with a reciprocating needle and means for operating it, an oscillating thread-carrying looper moving in the arc of a circle whose center of motion is situate at a point above the cloth-plate and adapted to both enter and cast off the needle-thread loop below said cloth-plate and to maintain said needle-thread loop below said cloth-plate at the same time carrying its looper-thread loop above said cloth-plate, a spreader adapted to engage said looper-thread when raised to spread it over the work and comprising a bent arm m, a forked end m′ on said arm, and an inclined spindle a to which said bent arm is secured, and means for operating said looper and spreader.

817,476. COOKING UTENSIL. HERMANN BLEMER, Irvington, N. J. Filed Apr. 4, 1905. Serial No. 253,777.

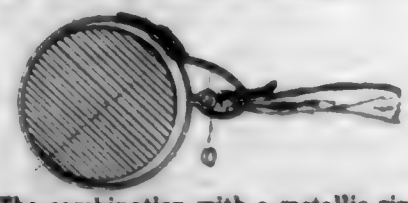


Claim.—1. A cooking utensil comprising outer and inner vessels, a pair of semicircular gripping members pivoted together and pivotally secured to the outer vessel at its upper edge for supporting the inner vessel from the upper edge of the outer vessel at varying heights, stops arranged on the upper edge of the outer vessel to limit the outward movement of the gripping members and means for separating said gripping members.

2. A cooking utensil comprising an outer vessel provided with a flange at its upper edge, two semicircular gripping members pivoted together, and pivotally secured to and resting on said flange, means for opening and means for closing said gripping members, and an inner vessel having offsets upon its sides for direct engagement with said gripping members when closed.

3. A cooking utensil, comprising an outer vessel provided with a flange at its upper edge, a gripping device pivotally secured to said vessel at its upper edge said gripping device consisting of two semicircular members, pivoted together and resting upon said flange, an inner vessel provided with offsets upon its sides for engagement with said gripping members, to support said inner vessel upon the flange of said outer vessel.

817,477. CURTAIN-FASTENER. NANA A. FERRIS, Johnstown, N. Y. Filed Apr. 4, 1905. Serial No. 253,884.

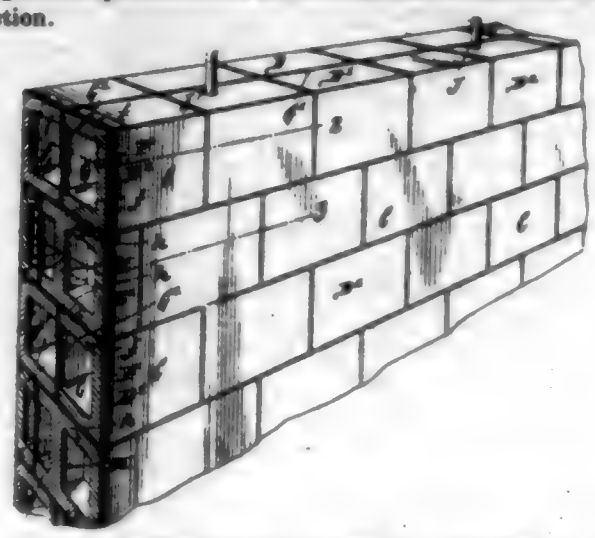


Claim.—1. The combination with a metallic ring having portions bent to form aliming loops, of a pin having an eye at one end disposed with its eye between the loops, a pivot-pin engaged in the loops and in the eye for pivotal movement of the first-named pin with respect to the ring, and a retainer carried by the ring and arranged for the reception of the first-named pin to hold the latter against pivotal movement.

2. A device of the class described comprising a ring formed of metal and having a longitudinal slot therein, the metal on opposite sides of the slot being bent outwardly to form loops, a pin having an eye at one end disposed with its eye between the loops, a pivot-pin engaged in the loops and in the eye for pivotal movement of the first-named pin with respect to the ring, and a retainer slidably engaged with the ring and having a portion bent to form a rib and resultant passage, said passage being arranged for the reception of the free end portion of the first-named pin, to hold the latter against movement.

817,478. BUILDING CONSTRUCTION. GEORGE F. FISHER, North Tonawanda, N. Y. Filed Jan. 30, 1905. Serial No. 243,316.

Claim.—1. A hollow building-block consisting of a plurality of sections, each block comprising facing sections having depressions on their inner sides, and an intermediate section having depressions on both sides, the depressions of the intermediate section being in opposing relation to the depressions in the facing sections, thereby forming an air-space between the intermediate section and each facing section.



2. A hollow building-block consisting of a plurality of sections, each block comprising two facing sections having depressions on their inner sides, and a plurality of intermediate sections having depressions on both sides, thus forming a plurality of air-spaces separated by vertical walls.

3. A hollow building-block consisting of a plurality of sections, each block comprising two facing sections, and an intermediate section having depressions on both sides, thus forming two air-spaces separated by a vertical wall.

4. A hollow building-block consisting of a plurality of sections, each block comprising two facing sections having depressions on their inner sides, and an intermediate section, thus forming two air-spaces separated by said intermediate section.

5. In a building, a wall formed of hollow separable blocks and having the blocks in alternate courses formed of a different number of sections to provide for proper bonding.

6. In a building, a wall formed of hollow separable blocks set in courses, the blocks in every alternate course being divided into any desired number of sections, and the blocks of intermediate courses being divided into a different number of sections.

7. In a building, a wall formed of hollow separable blocks set in courses, the blocks of one course comprising two sections having depressions in opposing faces, and the blocks of the contiguous courses comprising two facing sections having depressions on their inner sides, and an intermediate section having depressions on both sides.

8. In a building, a wall formed of hollow separable blocks set in courses, every alternate course being constructed of blocks formed in two sections having opposing depressions and a sheet of paper between said sections, and the intermediate courses being constructed of blocks comprising two facing sections having depressions on their inner sides, an intermediate section having depressions on both sides, and a sheet of paper between the intermediate section and one of said facing sections.

9. In a building, a wall formed of hollow separable building-blocks set in courses, each block comprising a plurality of sections having opposing depressions bounded by marginal walls to form completely-closed hollow blocks, the blocks in alternate courses being set lengthwise and crosswise of the wall; thereby forming disconnected dead-air spaces in the wall.

10. In a building, a wall formed of hollow separable blocks arranged in courses and having depressions in the opposing sides thereof, the blocks of each course having a different number of sections than the blocks in the courses above and below.

11. In a building, a wall formed of hollow separable building-blocks, each block having a different number of sections than the blocks above and below the same.

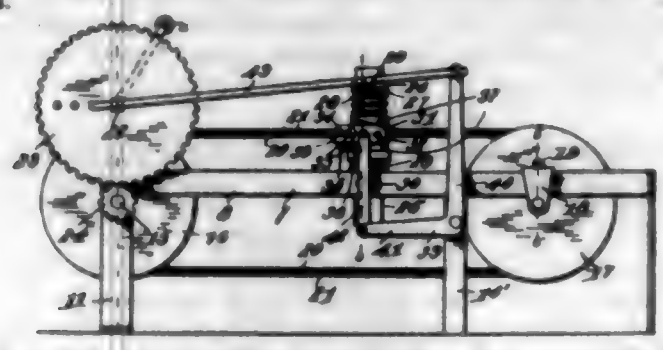
12. A hollow separable building-block having an interlining held between the hollow sections to form an air-space.

13. A hollow separable building-block closed on all sides and having an interlining held between the sections thereof to form a dead-air space in one of said sections.

14. In a building, a wall consisting of superposed blocks, every alternate block being separable and comprising a plurality of chambered parts forming a hollow block closed on all sides, and suitable intermediate blocks, said intermediate blocks providing a proper bond for the separable blocks.

817,479. RAZOR-SHARPENER. HAMILTON P. FOWLER, Simpsonville, S. C. Filed Aug. 19, 1905. Serial No. 274,330.

Claim.—1. In a sharpener, the combination with spaced pulleys adjustable toward and away from each other, of means for holding the pulleys at different points of their movement, belts engaged with the pulleys, one within the other, and means for holding a blade between the belts, said blade-holding means being arranged for movement to bring the blade into successive engagement with the two belts.

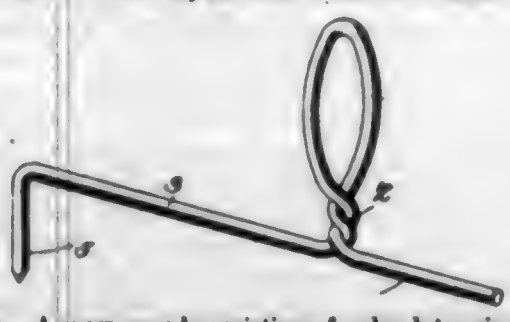


2. A sharpener comprising spaced pulleys, belts engaged in the pulleys, one within the other, means for holding a blade between the belts, said means being movable to bring the blade into engagement with the belts successively, means for revolving the pulleys to move the belts, said means being arranged for operation to move the belts in one direction only, and connections between the blade-holder and the belt-moving means for simultaneous operation thereof.

3. In a sharpener, the combination with sharpening-surfaces, of a blade-holder arranged to hold a blade between the sharpening-surfaces, said holder being movable bodily to move the blade toward and away from sharpening-surfaces, means for holding the blade-holder yieldably against such movement, said holder being also arranged for pivotal movement to bring the blade into engagement with the sharpening-surfaces successively, and means for limiting the pivotal movement of the holder.

4. A sharpener comprising spaced sharpening-surfaces, an upright, a sleeve slidably mounted upon the upright, means for holding the sleeve yieldably against movement in both directions, a blade-holder pivoted to the sleeve, means for varying the pivotal movement of the holder, said holder being arranged to hold a blade between the sharpening-surfaces and when moved pivotally, to bring the plate into engagement with the sharpening-surfaces successively, an angle-lever, connections between the angle-lever and the blade-holder to move the latter when the angle-lever is moved, a revoluble shaft, and connections between the shaft and the angle-lever for oscillation of the latter when the shaft is revolved.

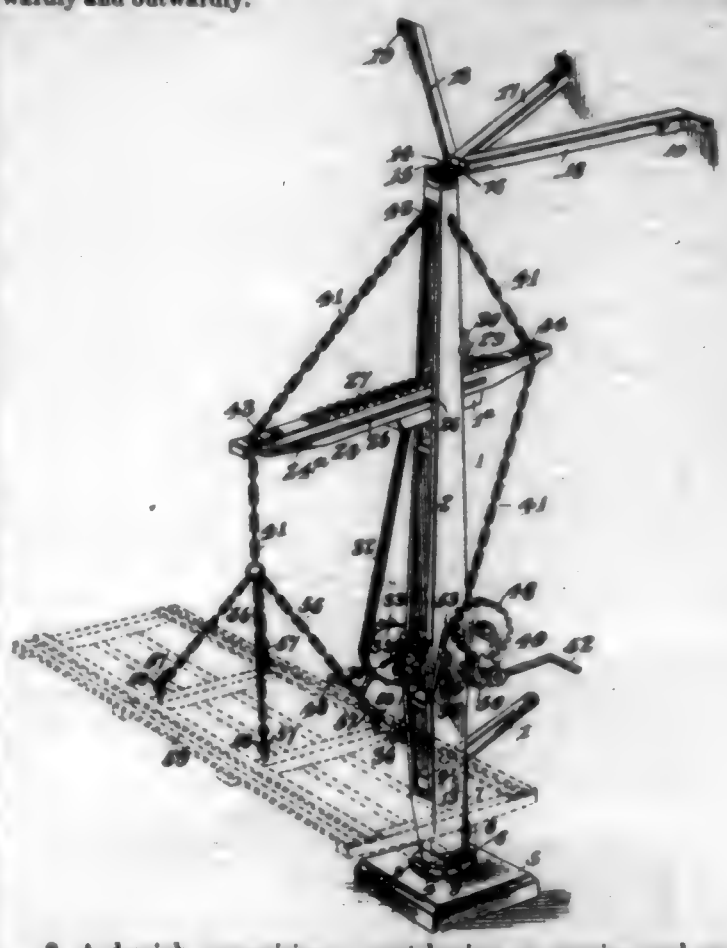
817,480. SNOW-GUARD FOR ROOFS. JOSEPH H. FULMER, Nazareth, Pa. Filed July 21, 1905. Serial No. 270,728.



Claim.—A snow-guard consisting of a shank terminating at one end in a laterally-directed fastening-prong and having an intermediate portion of the shank twisted upon itself to form a rigid stem disposed at substantially right angles to the shank and terminating at its outer end in a loop set transversely of the shank, the stem and the loop being upon one side of the shank, and the prong upon the other side of the shank.

817,481. REVOLVING DERRICK. JOSEPH A. GLANCEY, Sexton, Ill. Filed Aug. 12, 1905. Serial No. 273,919.

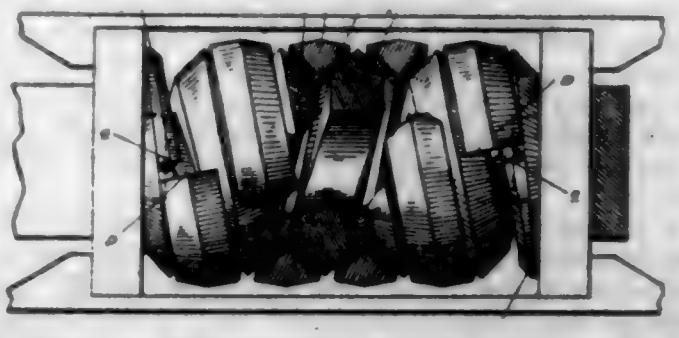
Claim.—1. A derrick, comprising a mast, a shiftable load-carrying beam projecting from opposite sides of the mast and movable inwardly and outwardly, guide-pulleys mounted on the beam and located in advance and in rear of the mast, a guide-pulley mounted on the mast and located above the shiftable load-carrying beam, hoisting mechanism embodying a flexible connection arranged on the pulley of the mast and having downwardly-extending side portions arranged on the pulleys of the beam and located at opposite sides of the mast, whereby when one side of the flexible connection is moved away from the mast, the other side will be carried toward the mast to prevent the shifting of the beam from raising or lowering a load carried by the hoisting mechanism, and means operable independently of the hoisting mechanism for moving the load-carrying beam inwardly and outwardly.



2. A derrick, comprising a mast having an opening and provided at opposite sides thereof with guide-flanges, a shiftable load-carrying beam extending through the opening and provided with grooves or ways receiving the said flanges, and hoisting mechanism embodying a flexible connection having side portions extending downward from the load-carrying beam at opposite sides of the mast, means carried by one of the side portions for holding a load, and winding mechanism mounted on the mast and connected with the other side portion of the flexible connection.

3. A derrick, comprising a mast having an opening, a shiftable load-carrying beam mounted in the opening and provided with a rack, operating mechanism having a gear meshing with the rack for moving the beam inwardly and outwardly, hoisting mechanism having a flexible connection carried by the shiftable beam, and guiding means mounted on the mast above the shiftable beam for holding the flexible connection clear of the gearing for shifting the beam.

817,482. SPRING. GEORGE L. HARVEY, Chicago, Ill. Filed July 10, 1905. Serial No. 269,065.



Claim.—1. The combination of an inner and an outer coiled spring, of means for preventing the creeping comprising an integral shoulder on one spring against which the end of the other spring abuts.

2. The combination of inner and outer coiled springs, one spring having its ends projecting beyond the ends of the other, and stops formed on the extensions of the longer spring against which the ends of the shorter spring will strike to limit creeping.

3. The combination of inner and outer coiled springs, of stops on one spring against which portions of the other spring are adapted to abut, to limit creeping, such stops being so placed as to allow a limited movement of one spring on the other.

4. The combination of inner and outer coiled springs, one spring having its ends projecting beyond the ends of the other, stops formed on the extensions of the longer spring, and against which the

ends of the shorter spring are adapted to abut, to limit creeping, such stops being a slightly-greater distance apart than the length of the shorter spring.

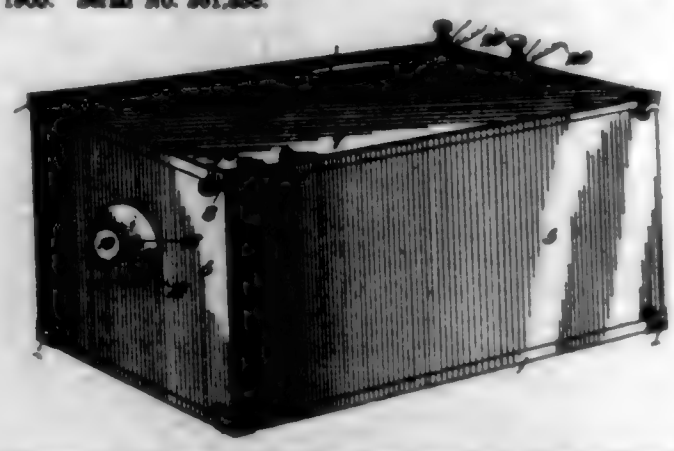
5. The combination of inner and outer coiled springs, having complementary inclined contacting surfaces, one spring having extensions beyond the end of the other, and lugs on the inclined faces of such extensions against which the ends of the shorter spring are adapted to abut.

6. The combination of inner and outer coiled springs, having complementary inclined contacting surfaces, the inner spring having shouldered tapering extensions beyond the ends of the outer spring, the ends of the outer spring adapted to abut against the shoulders on the extensions to limit creeping.

7. The combination of inner and outer coiled springs having complementary inclined contacting surfaces, the inner spring having extensions beyond the ends of the outer spring, the shoulders *c* formed on one of the inclined surfaces of the extensions, and the inclined face *d* extending from said shoulder toward the end of the extension, substantially as and for the purpose set forth.

8. In a friction device, inner and outer coiled resilient members and means on said members for limiting the creeping thereof in relation to each other, substantially as described.

817,483. ELECTRIC-FUSE-IGNITING APPARATUS. JAMES W. HOWARD, Connellsville, Pa., assignor to Howard Electric Blasting Machine Company, Connellsville, Pa., a Corpartnership. Filed May 23, 1905. Serial No. 261,332.



Claim.—1. In apparatus of the class described, the combination with a casing, of a battery located therein, a key-switch carried by the casing, connections for the line fuse-wires also carried by the casing, and an electric circuit including the battery, the connections and the switch.

2. In apparatus of the class described, the combination with a casing, of a battery located therein, a key-switch carried by the casing and having an actuating-key projecting from said casing, a spark-coil also located in the casing, connections for the line fuse-wires located on the casing, and an electric circuit including the battery, the connections, the spark-coil, and the switch.

3. In apparatus of the class described, the combination with a casing, of a battery arranged within the casing, a key-switch located in the casing, an actuating-key for the switch projecting from the casing and also detachable therefrom, binding-posts mounted on the casing and adapted to have the line fuse-wires connected thereto, and an electric circuit including the battery, the binding-posts and the switch.

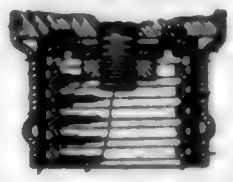
4. In apparatus of the class described, the combination with a casing having side walls, of a battery located within the casing, a spark-coil also located within the casing, binding-posts located upon the casing, a key-switch carried by one of the side walls and located within the casing, said wall having a key-receiving opening alined with the switch, a detachable key passing through the opening and coöperating with the switch, and an electric circuit including the battery, the switch, and the binding-posts.

5. In apparatus of the class described, the combination with a casing having side walls, a top, and a bottom, of a handle secured to the top, binding-posts mounted on said top, a battery located within the casing and terminating short of the top, a spark-coil arranged between the battery and the top of the casing, a key-switch mounted on one of the side walls of the casing and arranged within said casing, a detachable key arranged to be passed through said side walls and coöperating with the switch, and an electric circuit including the battery, the switch, the spark-coil, and the binding-posts.

6. In apparatus of the class described, the combination with a casing, of a battery located therein, a spark-coil also arranged within the casing, a key-switch mounted on the casing, and including a removable key, connections for the line fuse-wires carried by the casing, and an electric circuit including the battery, the switch, the spark-coil, and said connections.

7. In apparatus of the class described, the combination with a casing, of a battery located therein, connections for the line fuse-wires mounted on the casing, a key-switch carried by the casing and including a detachable key which when removed makes said switch inoperative, and an electric circuit including the battery, the switch, and the connections.

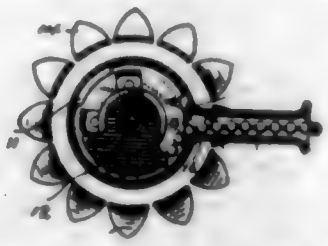
817,484. INSULATING SCREW-SHELL. HARVEY HUBBELL, Bridgeport, Conn. Filed June 28, 1905. Serial No. 267,267.



Claim.—1. An insulating screw-shell of the character described, comprising a screw-shell which receives an externally-threaded lamp-base, an insulating-disk having an opening to receive the center screw of an internally-threaded lamp-socket, a washer to engage the disk, a nut which engages the center screw and bears upon the washer and an external insulating-sleeve secured to the screw-shell.

2. The combination with a socket-shell having an unlined neck, of an insulating screw-shell comprising a screw-shell which receives an externally-threaded lamp-base and is provided with a contact-flange, an insulating-disk lying in contact with the flange and having an opening for a center screw, an external insulating-sleeve secured to the screw-shell, a washer lying in contact with the insulating-disk and a nut engaging a center screw to retain the insulating screw-shell in place, said contact-flange having a central opening of greater diameter than said center screw.

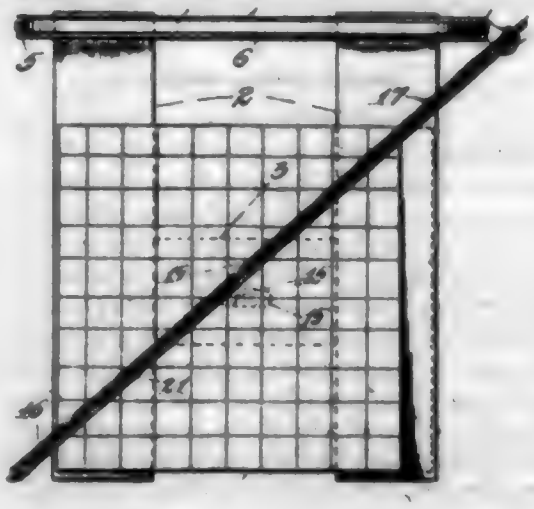
817,485. CHAIN-GUIDE FOR PULL-SOCKETS. HARVEY HUBBELL, Bridgeport, Conn. Filed July 14, 1905. Serial No. 269,635.



Claim.—1. A chain-guide for pull-sockets comprising a base having a shoulder adapted to engage the outer side of a socket-shell, a hub adapted to be passed through a socket-shell and closed down upon the inner side thereof and a screw-thread at its outer end and a top having a corresponding screw-thread by which it may be attached to the base after the latter is attached to a socket-shell.

2. The combination with a pull-socket shell and a husk, of a chain-guide comprising a base having a shoulder adapted to engage the outer side of the socket-shell and a hub adapted to be passed through the shell and closed down upon the inner side thereof and a top adapted to be passed through the husk and engage the base.

817,486. BUTTER-CUTTER. ARTHUR C. HUMMEL, Seattle, Wash. Filed Dec. 14, 1905. Serial No. 291,784.



Claim.—1. A butter-cutter comprising means for supporting a body of butter for rotation and adjustment laterally relatively to its axis, and a cutter movable into the butter for producing a cut at an angle to the line of adjustment of the butter.

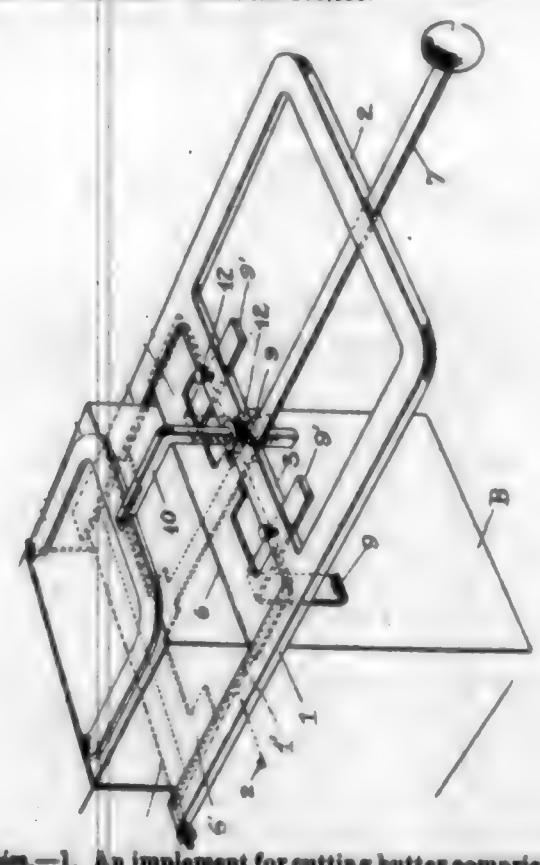
2. A butter-cutter comprising a rotatable means for supporting a body of butter, and a cutting means movable into the butter for producing a cut, one of said means being adjustable laterally relatively to the axis of the body of butter, whereby said cutting means can be moved into the body of butter to make a second cut parallel with the first cut.

3. A butter-cutter comprising a means for supporting a body of butter, and a cutter movable toward and from the same, said means being mounted for rotation and bodily adjustment laterally of said cutter.

4. A butter-cutter comprising a movable frame, cutters spaced apart on the frame, and means for supporting a body of butter for rotation and adjustment laterally of said frame.

5. A butter-cutter comprising a base having an elongated recess, a rotatable platform having its pivot engaged in said recess of the base, and a cutter movable toward and from said platform.

817,487. **BUTTER-CUTTER.** ARTHUR C. HUBNER, Seattle, Wash. Filed Jan. 26, 1906. Serial No. 298,037.



Claim.—1. An implement for cutting butter comprising a frame including members spaced apart to embrace freely the body of butter to be operated upon, means disposed over the space between said members and secured to the frame for engagement with said body to guide the implement in cutting, a second guiding means arranged intermediate said members at an angle to said first guiding means, and cutting means carried by said frame intermediate the planes in which said guiding means respectively lie.

2. An implement for cutting butter comprising a frame including members spaced apart to embrace freely the body of butter to be operated upon, means disposed over the space between said members for engagement with said body to guide the implement in cutting, a second guiding means arranged at an angle to said first guiding means, and cutting means carried by said frame intermediate the planes in which the said guiding means respectively lie, said guiding means being movably secured to said frame for adjustment relatively to said cutting means.

3. An implement for cutting butter comprising a frame including members spaced apart to embrace freely the body of butter to be operated upon, a cutter connected with said members for producing a cut by movement of the frame, means secured to the frame and disposed over the space between said members for engagement with said body to limit the depth of said cut, and a second cutter movable on said frame for producing a second cut intersecting said first cut when said first cutter is in the butter.

4. An implement for cutting butter comprising a frame including members spaced apart to embrace freely the body of butter to be operated upon, a cutter carried by said members for producing a cut by movement of the frame, means secured to said frame for engagement with said body to guide the implement in producing said cut, and a second cutter movable on said frame for producing a second cut intersecting said first cut when said first cutter is in the butter.

5. An implement for cutting butter comprising a frame including members spaced apart to embrace freely the body of butter to be operated upon, a cutter connected with said members for producing a cut by movement of the frame, means arranged on said frame and moving therewith for engagement with said body to guide the implement in producing said cut and to limit its cutting movement, and a second cutter movable on said frame for producing a second cut intersecting said first cut.

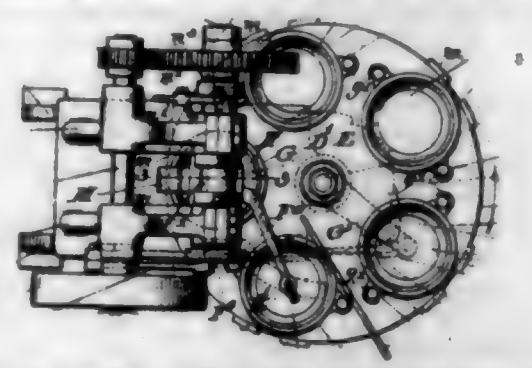
6. An implement for cutting and removing from a body of butter portions thereof, said implement comprising a frame, including members spaced apart to embrace freely the body of butter to be operated upon, a cutter connected with said members for producing a cut by movement of the frame, means arranged on said frame and moving therewith for engagement with said body to guide the implement in producing said cut and to limit its cutting movement, a second cutter movable on said frame for producing a second cut intersecting said first cut, and means movable in the plane of cut of said second cutter for engagement with the portion of butter cut to support the same for removal with the frame.

7. An implement for cutting and removing from a body of butter portions thereof, said implement comprising a frame, cutting means carried thereby for severing a portion from said body, and means movable on said frame for engagement with said portion to support the same for removal and for disengagement relatively to said portion to release the same.

8. An implement for cutting and removing from a body of butter portions thereof, said implement comprising a frame including members spaced apart to freely embrace said body, cutting means carried by said members for severing a portion from said body, and means movable on said frame for engagement with said portion to support the same for removal with the frame and for disengagement relatively to said portions to release the same.

9. An implement for cutting and removing from a body of butter portions thereof, said implement comprising a frame including members spaced apart to freely embrace said body, a cutting means connected with said members for movement therewith to produce a cut, a second cutting means movable toward said first means for producing a second cut intersecting said first cut, and means movable relatively with said second cutting means for engagement with the portion of butter cut to support the same for removal with said frame.

817,488. **MACHINE FOR MAKING PIES.** JOSEPH C. HUTCHISON, Philadelphia, Pa. Filed Aug. 14, 1905. Serial No. 274,055.



Claim.—1. A machine of the character specified, comprising an upper movable die, a plurality of lower dies mounted upon a rotatable carrier, and provided with movable bottom plates and a cam adapted to raise said bottom plates to eject a pie.

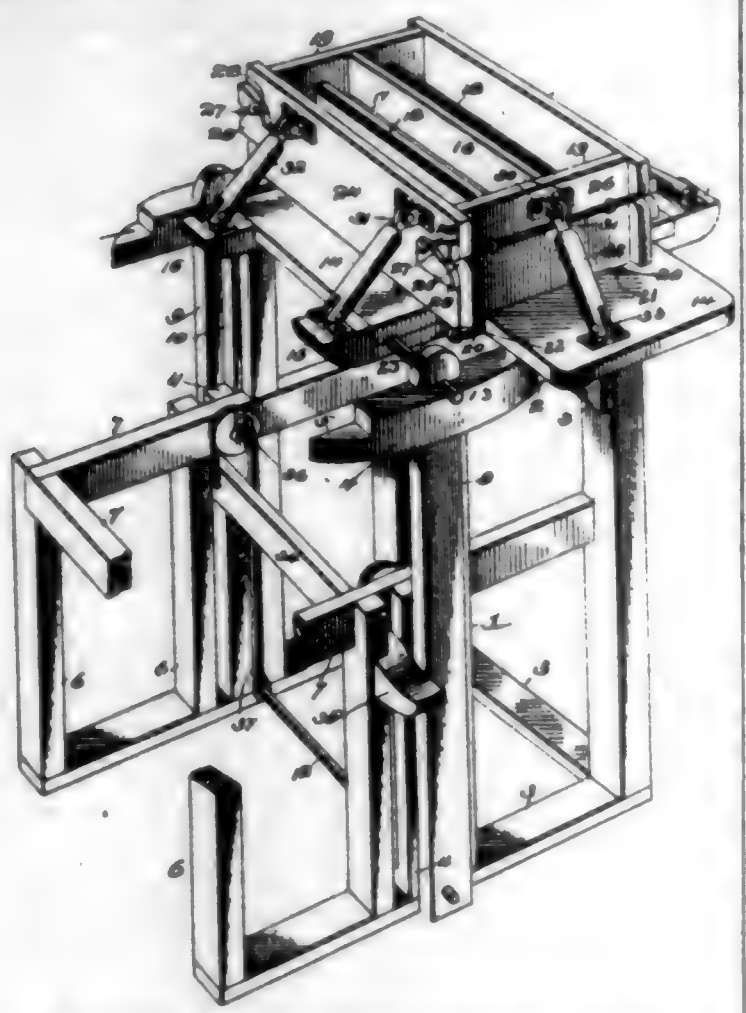
2. A machine of the character specified, comprising a movable crust-forming die, a plurality of lower dies mounted upon a rotatable carrier, bottom plates arranged to move within the lower dies, a cam adapted to move the bottom plates and an arm adapted to move the crusts away from the lower dies.

817,489. **MOLDING-MACHINE.** ORION D. W. INMAN, Beloit, Wis. Filed May 1, 1905. Serial No. 258,267.

Claim.—1. A machine of the character described the combination with the walls of an invertible mold and a core; of means for moving the core and laterally moving the walls at one operation, successively, while the mold is inverted.

2. In a machine of the character described the combination with an invertible mold having laterally-movable walls and a core within

the mold; of means for successively moving the core and walls while the mold is inverted.



3. In a machine of the character described the combination with an invertible mold comprising laterally-movable walls and a core adapted to be removed from between the walls; of means for successively moving the core and walls at one operation while the mold is inverted.

4. In a machine of the character described the combination with a table and means for raising the same; of an invertible mold comprising laterally-movable walls and telescopic connections between the walls and table and constituting supports for the mold when inverted.

5. In a machine of the character described the combination with a table; of an invertible mold thereon comprising laterally-movable walls, and longitudinally-extensible connections between the walls and table and constituting supports for the mold when inverted and raised.

6. In a machine of the character described the combination with a table; of an invertible mold thereon comprising laterally-movable walls and telescopic means connecting said walls with the table and secured to said walls and table by fixed pivots.

7. In a machine of the character described the combination with a table; of an invertible mold comprising laterally-movable walls, means for detachably securing the walls together and telescopic connections between the walls and table and constituting supports for the mold when inverted and raised.

8. In a machine of the character described the combination with an invertible table; of a mold comprising laterally-movable and telescopic connections between the walls and the table.

9. In a machine of the character described the combination with an invertible table; of a mold having laterally-movable walls, means detachably securing the walls together, and telescopic connections between the walls and the table.

10. In a machine of the character described the combination with an invertible table and means for raising the same, of a mold having laterally-movable walls and means connecting said walls and the table for moving the walls during the upward movement of the table.

11. In a machine of the character described the combination with an invertible table and means for raising the same, of a mold comprising laterally-movable connected walls, and telescopic connections between the walls and table for operating said walls during the upward movement of the table.

12. In a machine of the character described the combination with an invertible table having a core thereon; of laterally-movable connected walls normally surrounding the core and telescopic connections between the walls and the table.

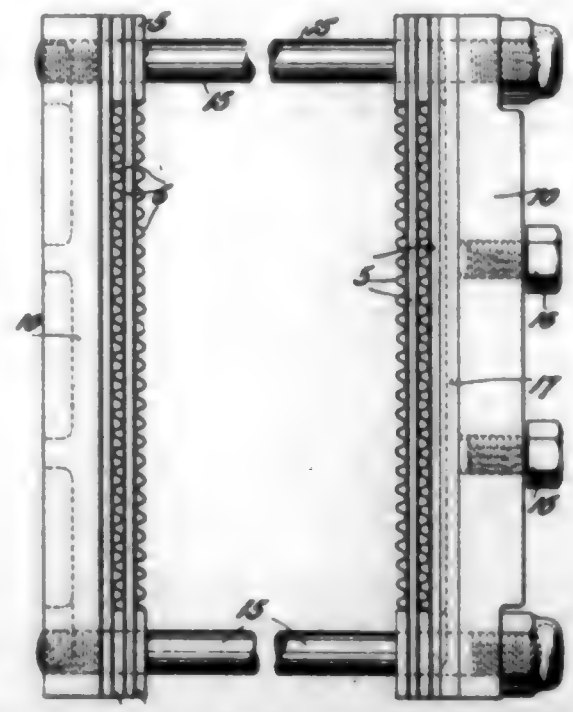
13. In a machine of the character described the combination with a supporting-frame; of an invertible table adapted to assume a position thereabove; a mold having laterally-movable walls adapted to assume a position above the frame and telescopic connections between the walls and the table.

14. In a machine of the character described the combination with a frame and supports adjacent thereto; of a vertically-movable invertible table mounted upon the supports and adapted to assume a position above the frame, means for raising the table, connected laterally-movable walls constituting a mold-box, means for detachably binding the walls together, a core upon the table and normally surrounded by the walls and slidable connections between the table and walls.

15. In a machine of the character described the combination with a frame and supports adjacent thereto; of a vertically-movable invertible table upon the supports and adapted to assume a position above the frame, a mold having laterally-movable walls, and slidable connections between said walls and the table for automatically moving the walls after the table has been properly raised, and means for raising the table.

16. In a machine of the character described the combination with an invertible table; of a mold upon, and invertible with the table and having laterally-movable walls, means for securing the walls together, and means operated by gravity for moving the walls of the inverted mold laterally when released from each other.

817,490. **SURFACE HEATING OR COOLING APPARATUS.** GEORGE F. JARVIS, Dartmouth, England. Filed Dec. 21, 1905. Serial No. 293,734.



Claim.—1. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of a distance-frame located between the plain margins of said plates and equal in size thereto, each frame having a hole at each corner coinciding with the holes in the corrugated plates, two opposite members of each frame being solid and flat while the two other members are corrugated, end clamping-plates corresponding in size and shape to the corrugated plates and having holes at the corners thereof to correspond in position with the holes in said corrugated plates and frames, and bolts passing through the holes of the clamping-plates, corrugated plates and frames to clamp the structure together.

2. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of distance-frames located between the plain margins of the said plates, each distance-frame consisting of two separate oppositely-located flat strips equal in thickness to the distance between the plain margins of the adjacent plates and having holes at the ends of each strip coinciding with the holes through the margins of the plates, and two separate oppositely-located strips completing the frame, each of said oppositely-

located strips being corrugated transversely of its length, the height of the corrugations being equal to the thickness of the plain strips, means for interlocking the ends of the corrugated strips with the inner facing edges at the ends of each plain strip, and bolts to pass through the holes of the corrugated plates and frames for clamping the structure together.

3. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of distance-frames located between the plain margins of said plates, each distance-frame consisting of two separate oppositely-located flat strips equal in thickness to the distance between the plain margins of the adjacent plates and having holes at the ends of each strip coinciding with the holes through the margins of the plates and having recesses at the inner facing edges at the ends of each plain strip, two separate oppositely-located strips completing the frame, each of said oppositely-located strips being corrugated transversely of its length, the height of the corrugations being equal to the thickness of the plain strips, and having the ends of the corrugated strips formed to engage in the recesses of the opposite plain strips, and bolts to pass through the holes of the corrugated plates and frames for clamping the structure together substantially as set forth.

4. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of distance-frames located between the plain margins of said plates, each distance-frame consisting of two separate oppositely-located flat strips equal in thickness to the distance between the plain margins of the adjacent plates and having holes at the ends of each strip coinciding with the holes through the margins of the plates and having recesses at the inner facing edges at the ends of each plain strip, two separate oppositely-located strips completing the frame, each of said strips being corrugated transversely of its length, the height of the corrugations being equal to the thickness of the plain strips, and having the ends of the corrugated strips formed to engage in the recesses of the opposite plain strips, and clamping-plates corresponding in size and shape to the corrugated plates and frames, and having holes at the corners thereof, and bolts to engage the end clamping-plates and to pass through the holes of the corrugated plates and frames for clamping the structure together, substantially as set forth.

5. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of distance-frames located between the plain margins of the said plates, one such distance-frame composed of two separate flat side strips equal in thickness to the distance between the plain margins of the adjacent plates and having a hole at each end coinciding with the holes through the margins of the plates and having recesses at the inner facing edges at the ends of each of said side strips, and two separate end strips completing the frame, each corrugated transversely of its length, the height of the corrugations being equal to the thickness of the plain strips and having the ends of the corrugated end strips formed to engage in the recesses at the ends of the plain side strips, a second distance-frame composed of plain end strips having holes at their ends and corrugated side strips, the said frame being located alternately between the margins of the superposed plates to form alternate chambers for the passage of fluid in opposite directions and clamping-plates corresponding in size and shape to the corrugated plates and frames and having holes in the corners thereof, and bolts to engage the end clamping-plates and to pass through the holes of the corrugated plates and frames for clamping the structure together substantially as set forth.

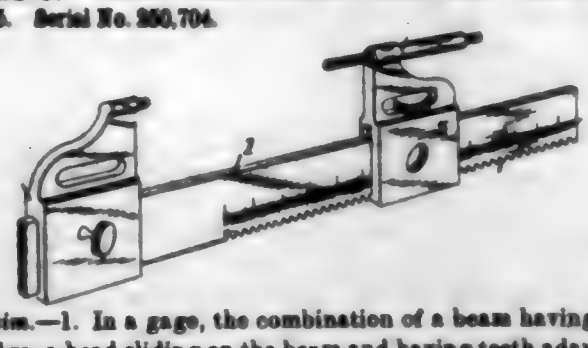
6. In surface heating or cooling apparatus; the combination with a number of superposed corrugated plates equal in size, each plate having a plain flat margin at all its edges and having a hole through each corner of such plain margin; of distance-frames located between the plain margins of said plates, each distance-frame consisting of two separate oppositely-located flat strips equal in thickness to the distance between the plain margins of the adjacent plates and having holes at the ends of each strip coinciding with the holes through the margins of the plates and having recesses at the inner facing edges at the ends of each plain strip, two separate oppositely-located strips completing the frame, each of said strips being corrugated transversely of its length, the height of the corrugations being equal to the thickness of the plain strips, and having the ends of the corrugated strips formed to engage in the recesses of the opposite plain strips, a clamping-plate for each end of the structure, each clamping-plate consisting of a steel plate corresponding in size and shape to the corrugated plates and frames and having corresponding holes at the corners thereof, and a casing of non-corrosible metal covering the surfaces of said steel plate, and bolts to engage the end clamping-plates and to pass through the holes of the corrugated plates and frames for clamping the structure together substantially as set forth.

817,491. SASH-BALANCE. CHARLES LAUNER, Fitzgerald, Ga. Filed Oct. 16, 1905. Serial No. 283,065.



Claim.—The herein-described sash-balance, consisting of a cord or rope connected at its ends to the lower sash and provided with a loop intermediate its ends, a window-frame, guide-eyes 5, 6, secured to said window-frame to receive said cord, a cord connected in a like manner to the upper sash, and the looped ends of said cords being connected together, and a weight 14 mounted to slide on the double cord of the upper sash, substantially as described.

817,492. GAGE. PETER LAYMAN, Akron, Ohio. Filed Mar. 14, 1905. Serial No. 250,704.

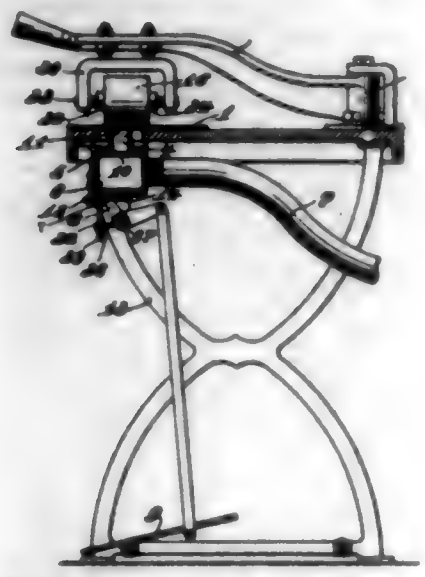


Claim.—1. In a gage, the combination of a beam having teeth on its edge, a head sliding on the beam and having teeth adapted to engage the teeth on the beam, a spring-pressed plate mounted in the opening in the head through which the beam passes, a thumb-screw carried by the head and bearing on said plate, a micrometer carried by said head, a second head mounted on the beam and having openings in its side walls, the beam being provided with openings located at a fixed distance apart, said openings being V-shaped on one side, and a tapering pin adapted to pass through the openings in the last-named head and the openings in the beam, said pin having sides corresponding in angle to the V-shaped sides of the openings in the beam.

2. In a device of the character described, the combination of a beam having teeth on one edge, a head having an opening therein to receive the beam and having teeth meshing with the teeth on the beam, means for locking the teeth in the opening in mesh with the teeth on the beam, a second head slidably mounted on the beam, and a tapering pin having angular sides adapted to pass through openings formed in said head and through openings corresponding in shape to said pin located at regular distances apart in the beam.

3. In a gage, the combination of a beam having teeth on its edge, a head having an opening to receive the beam and sliding on the beam and having teeth on the lower wall of said opening adapted to engage the teeth of the beam, a spring-pressed plate mounted in the opening in the head through which the beam passes and a thumb-screw carried by the head and bearing on said plate.

817,493. CIGAR-ROLLING TABLE AND WRAPPER-CUTTER. BERNARD LIEBERMAN, Philadelphia, Pa. Filed Aug. 8, 1905. Serial No. 272,270.



Claim.—1. In a cigar-wrapper cutter, the combination of a knife having the contour of one side of the wrapper only, a wrapping-table having a continuous fixed surface provided with a slit conforming to the contour of the knife, and provided with apertures upon one side of the slit, and exhaust means connected with said apertures beneath the table.

2. In a cigar-wrapper cutter, the combination of a knife conforming to the contour of the exposed side of the cigar-wrapper only, said knife being beveled at each end of its cutting extension, and a roller for coöperating with said knife.

3. In a cigar-wrapper cutter and rolling-table, the combination of a knife adapted to cut the exposed edge of the wrapper only, a continuous or integral rolling and wrapping table provided with a slit conforming to the contour of the knife and having on one side thereof a plurality of suction-apertures.

4. In a cigar-wrapper cutter and rolling-table, the combination of a knife-body having a knife formed and adapted to cut the exposed edge of the wrapper only, an integral wrapping and rolling table provided with a slit conforming to the contour of the knife-edge, and suction-apertures approximate the slit, a reciprocating suction-box for supporting and moving the knife-body, having communication with the interior of said knife-body, and means for maintaining an air seal between the knife-body and the suction-apertures.

5. In a cigar-wrapper cutter and rolling-table, the combination of a knife-body having a knife-edge formed and adapted to cut the exposed edge of the wrapper only, a continuous rolling and wrapping table provided with a slit conforming to the cutting edge of the knife, and suction-apertures approximate said slit, a reciprocating suction-box adapted to support said knife-body and having communication through said knife-body with the suction-apertures, and a semisleeve or collar secured to the under side of the table for maintaining in connection with the slit, a movable seal between table and knife-body.

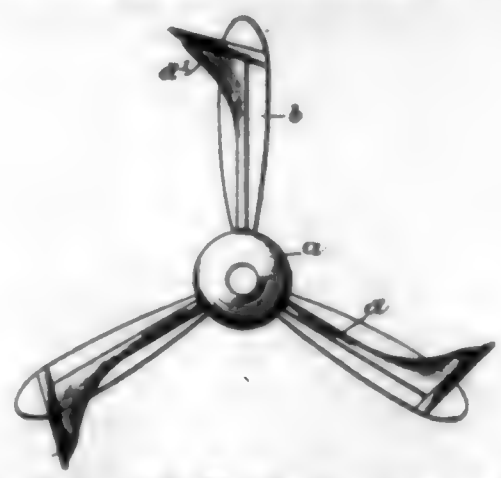
6. In a cigar-wrapper cutter and rolling-table, the combination of a knife-body having a cutting-knife formed and adapted to cut the exposed edge of the wrapper only, a continuous rolling and wrapper table having a slit conforming to the cutting edge of the knife, and suction-apertures approximate thereto, a reciprocating suction-box adapted to support said knife-body and having communication through said knife-body with the suction-apertures, a semisleeve connected with the under side of the table and forming, in conjunction with the slit of the table, a movable seal between the knife-body and the table, means for moving the reciprocating suction-box and means for limiting its downward movement.

7. A cigar-wrapper cutter and rolling-table, comprising a cutting-knife formed and adapted to cut the exposed edge of the wrapper only, and a roller, for coöperating with the cutting-knife, loosely mounted so as to permit an inclination of the roller from the knife toward the table, the elevation of the knife above the table being such with respect to the position and extension of the roller from the knife toward the table, as to secure a beveled cut of the wrapper.

8. In a cigar-wrapper cutter, the combination of a knife having the contour of one side of the wrapper only, a wrapping-table recessed to fit the knife and to permit its elevation above the surface thereof, and a roller journaled and disposed so as to lie at an inclination between the knife and the table to coöperate with the knife in causing a beveled cut.

9. In a cigar-wrapper cutter, the combination of a knife having the contour of one-half the wrapper only, a wrapping-table recessed to fit the knife and to permit its elevation above the surface thereof, a roller for coöperating with the knife and a shaft for supporting the roller, the roller provided with a tapered recess for receiving the shaft, said roller, shaft and knife being so proportioned and positioned relatively as to cut the wrapper with a beveled edge.

817,494. PROPELLER-WHEEL. ALBERT H. LITTLE, New York, N. Y. Filed July 29, 1905. Serial No. 271,782.



Claim.—1. A propeller-blade having a scoop provided with a concave outer face projecting from its rear surface.

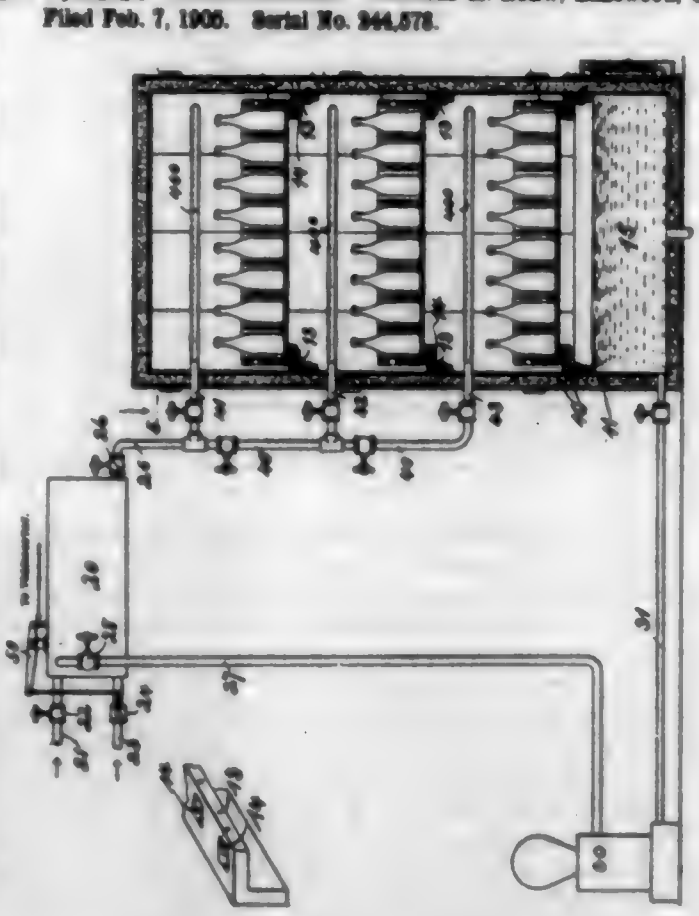
2. A propeller-wheel having a series of blades provided with scoops projecting therefrom, and means located adjacent to the blades for transmitting strains from the scoops directly to the hub of the wheel.

3. A propeller-wheel having a series of blades, each being provided with a rib on the rear surface thereof, said rib gradually increasing in thickness from the hub out, and a scoop resting on the end of said rib and near the end of the blade.

4. A propeller-wheel having a blade provided with a rib on the rear surface thereof extending longitudinally with respect to the blade, and a scoop resting on the end of said rib and near the end of the blade, whereby any pressure on the scoop will be transmitted to the hub of the wheel through said rib.

5. A propeller-wheel having a hub, a blade projecting therefrom, and a scoop mounted at a distance from the end of said blade, said scoop projecting in an angular direction and terminating at substantially the same distance from the hub as the end of said blade.

817,495. PASTEURIZER. CHARLES H. LOEW, Lakewood, Ohio. Filed Feb. 7, 1905. Serial No. 244,578.



Claim.—1. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow.

2. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow, consisting of a water-tempering chamber provided with a steam-supply pipe.

3. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow, consisting of a water-tempering chamber provided with a steam-supply pipe, and means, as a thermostat, adapted to control and regulate the steam-supply.

4. An appartus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow, until a predetermined temperature for the spray is arrived at and means for maintaining said temperature a suitable length of time.

5. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow, until a predetermined temperature for the spray is arrived at and means for maintaining said temperature a suitable length of time, consisting of a water-tempering chamber, a steam-supply pipe and a thermostat regulated by the temperature within the water-tempering chamber and controlling the steam-supply accordingly.

6. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto, means for gradually heating the water so supplied without interrupting its flow, means for collecting the said water after use, and means for restoring its temperature and returning it to the spraying mechanism.

7. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto, means for gradually heating the water so supplied without interrupting its flow, means for collecting the said water after use, and means for restoring its temperature and returning it to the spraying mechanism, consisting of a drip-tank, a pump, a water-tempering chamber provided with a steam-pipe.

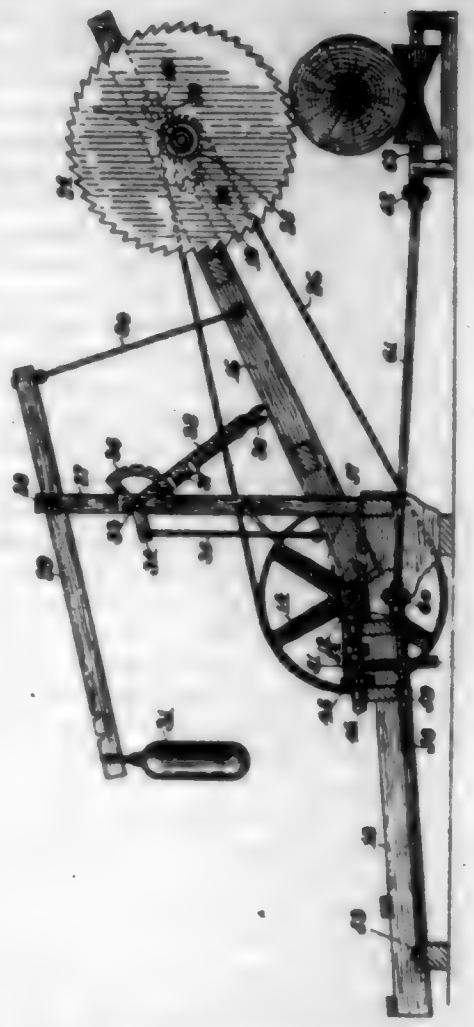
8. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, means for supporting bottles therein, a plurality of spraying devices each arranged above a suitable number of bottles, a common means for supplying the spraying devices with heated water and means for heating the water.

9. In an apparatus of the kind described, a pasteurizing-chamber, a plurality of spraying devices arranged one above another within the chamber, means intermediate for supporting the bottles under each spraying device, each support being adapted to allow the water to pass through the same, a drip-tank at the bottom of the chamber and means whereby the water from the drip-tank is conveyed to the spraying devices under pressure.

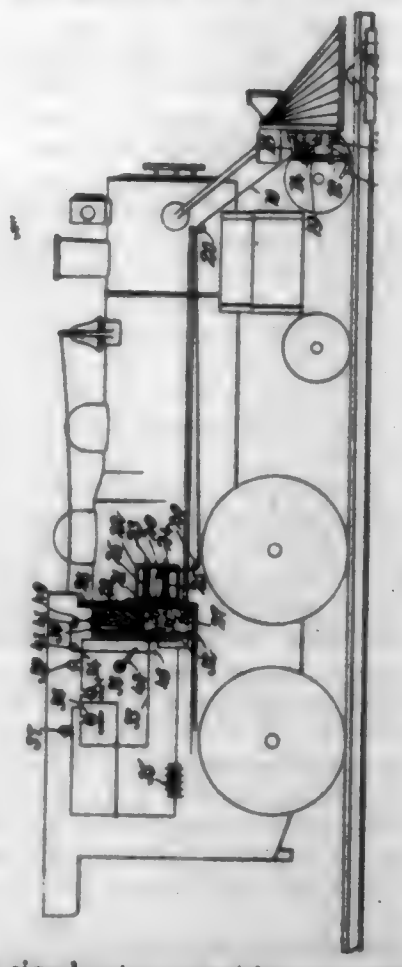
10. An apparatus for pasteurizing beer in bottles comprising a pasteurizing-chamber, a spraying mechanism within the chamber, means for supplying water thereto and means for gradually heating the water so supplied without interrupting its flow, until a predetermined temperature for the spray is arrived at and means for maintaining said temperature a suitable length of time, and means for finally reducing the temperature.

817,498. MACHINE FOR SAWING LOGS. DANIEL A. LUNT, Newburyport, Mass., assignor to Lunt, Moss & Co., Boston, Mass., a Firm. Filed July 7, 1904. Serial No. 215,655.

Claim.—In a machine for sawing logs, a stationary frame, a transversely-disposed driving-shaft carried by said frame, a pivoted frame mounted on said stationary frame, a circular saw mounted on said pivoted frame, means for imparting motion to said saw from said driving-shaft, a beveled gear mounted on said driving-shaft, two parallel shafts disposed longitudinally on said stationary frame, said last-named shaft being provided with intermeshing gears and each with a loose gear and a clutch coacting therewith, a beveled gear carried by one of said shafts and meshing with the beveled gear on the driving-shaft, a third shaft longitudinally disposed on said frame, a gear-wheel carried on said third shaft and meshing with the said two loosely-mounted gear-wheels, a pivoted lever connected to both said clutches and adapted when moved to engage the clutches alternately with the loosely-mounted gear-wheels, and means connected to said third shaft for moving a log beneath said saw.



817,497. SIGNAL SYSTEM. JOSEPH H. LYNCH, Red Bank, N. J. Filed Oct. 25, 1905. Serial No. 284,314.



Claim.—1. A signal system comprising a movable body, means for holding the body in a certain position, means for releasing the body to allow it move into another position, a signal device, means operable by the movement of said body for operating said signal, a flexible connection secured to said body, and a lever for controlling an air-brake system connected with said connection.

2. A signal system comprising a weight, means for supporting the weight, means for withdrawing the supporting means, a signal device, electric means for operating said signal device when the weight descends, and a flexible connection for controlling an air-brake system.

3. An automatic signal system for railways and the like, comprising a weight, means for supporting the weight, means for releasing the weight, an open contact adapted to be closed by the descent of the weight, an electric circuit in connection with the contact and having a signal device, a flexible connection secured to said weight, and a lever for an air-brake system connected with said flexible connection.

4. An automatic signal system for railways and the like, comprising a movable body, means for holding the body in a certain position, means for releasing the body to allow it to move to another position, an open contact adapted to be closed by the movement of the body, an electric circuit in connection with said contact and having a signal device, a flexible connection secured to said body, and a lever for controlling an air-brake system connected with said connection.

5. A signal system comprising a weight, a plurality of bars adapted to project into the path of the weight, said bars being at different heights, and being adapted to support the weight, a pair of signals, and means connected with each signal for operating it when the weight descends into certain positions.

6. An automatic signal system for railways and the like, comprising a weight, means for supporting the weight, means for releasing the weight, an open contact adapted to be closed by the descent of the weight, an electric circuit in connection with the contact and having a signal device, a second open contact adapted to be closed by said weight, and a second circuit connected with the second contact and having a signal device.

7. An automatic signal system, comprising a weight, a plurality of bars adapted to project into the path of said weight, said bars being of different lengths, and means for closing a plurality of electrical circuits by the descent of said weight.

8. An automatic signal system, comprising a weight, a plurality of bars adapted to project into the path of said weight, said bars being of different lengths, and means for closing a plurality of electrical circuits by the descent of said weight; said means comprising a series of open contacts located in the path of said weight, the weight having means for closing certain of said contacts when resting on any of said bars.

9. An automatic signal system, comprising a well, a weight mounted therein, a bar adapted to project into the well for holding the weight in elevated position, a second bar adapted to project into the well for holding the weight in a lower position, means for removing the first bar, and a series of electrical contacts located opposite said bars and adapted to be closed by the weight.

10. An automatic signal system, comprising a well, a weight mounted therein, a bar adapted to project into the well for holding the weight in elevated position, a second bar adapted to project into the well for holding the weight in a lower position, means for removing the first bar, and a series of electrical contacts located opposite said bars and adapted to be closed by the weight; said weight having a conducting-surface for engaging said contacts, and an insulating-surface located above the conducting-surface for insulating such contacts from each other as are located above the conducting-surface.

11. A signal system comprising a movable body, a bar adapted to engage said body and prevent its movement beyond a certain point, a second bar also adapted to engage the body, the second bar being longer than the first, and means for simultaneously withdrawing the first bar and partially withdrawing the second.

12. A signal system comprising a pair of bars of unequal length, a contact device adapted to be supported by said bars, springs for forcing said bars into operative position, and means for withdrawing either or both of said bars from operative position.

13. A signal system comprising a pair of bars of unequal length, a contact device adapted to be supported by said bars, springs for forcing said bars into operative position, and means for withdrawing either or both of said bars from operative position; said means comprising a movable shoe and connections from the shoe to the bars.

14. A signal system comprising a pair of bars of unequal length, a plate upon which said bars are mounted, and means for moving said bars; said means comprising a pivoted shoe, a reciprocating bar connected with the shoe, and a flexible connection between the bar and said plate.

15. A signal system comprising a pair of bars of unequal length, a plate upon which said bars are mounted, means for moving said bars, said means comprising a pivoted shoe, a reciprocating bar connected with the shoe and a flexible connection between the bar and said plate, and means located along a road-bed for raising said shoe to a plurality of different heights.

16. A signal system comprising a pair of bars of unequal length, a plate upon which said bars are mounted, means for moving said bars, said means comprising a pivoted shoe, a reciprocating bar connected with the shoe and a flexible connection between the bar and said plate, a series of vertically-reciprocable bars located along a road-bed, and means connected with each bar for raising it to a plurality of different heights, said bars being adapted to engage said shoe and raise it.

17. A signal system comprising a pair of bars of unequal length, a plate upon which said bars are mounted, means for moving said bars, said means comprising a pivoted shoe, a reciprocating bar connected with the shoe and a flexible connection between the bar and said plate, and means for operating said shoe, said means comprising a pair of reciprocable bars each having a projection thereon, the projections on one bar being higher than those on the other, means for reciprocating said bars, a frame resting on the projections of said bars, and means on said frame for engaging said shoe.

18. An operating device for a signal system, comprising a pair of bars having projections thereon, the projections of one bar being higher than those of the other, means for reciprocating said bars, a frame located above said bars and having downwardly-extending lugs adapted to engage the projections on the bars, a plurality of signals, and electrical connections between said bars and said signals for operating the signals when the bars are reciprocated.

19. An operating device for a signal system, comprising four solenoids arranged in pairs, two rods, each rod entering two of said solenoids and located between them, said rods constituting armatures for the solenoids, a pair of bars one connected with each of said rods, an obstruction, and means connected with said bars for raising said obstruction to different heights.

20. In an electric system, the combination of an open circuit adapted to be closed by the passage of a train, an operating device connected with said circuit, said operating device having a pair of bars provided with lugs projecting upwardly to different heights, and means connected with said circuit for moving one of said bars.

21. In an electric system, the combination of a plurality of circuits, a frame having an obstruction thereon, means connected with one of said circuits for raising and lowering said frame, and means connected with another of said circuits for raising said frame to a different height.

22. In an electric system, the combination of a plurality of open circuits adapted to be closed by the passage of a train, a vertically-movable frame having an obstruction located adjacent to a track and to each of said circuits, means connected with one of the circuits for raising the bar to its highest position when a train passes and closes the adjacent circuit, and means for lowering the bar to an intermediate position when the train passes the next circuit.

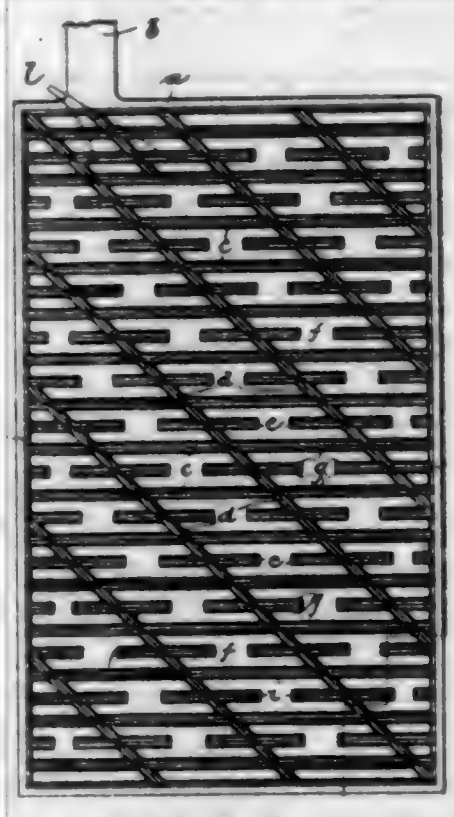
23. In an electric system, the combination of a railway-track having a plurality of contacts adapted to be closed by the passage of a train, an electric circuit in connection with each contact, a frame located adjacent to each contact and adapted to be raised into two different positions, means for raising said frame to its highest position when a train passes the contact located adjacent to it, means for lowering the frame to an intermediate position when a train passes the contact next beyond, and means for completely lowering the frame when a train passes the third contact.

24. In an electric signal system, the combination of a railway-track having a series of open contacts adapted to be closed by the passage of a train, an electric circuit connected with each contact, a pair of signals controlled by each of said circuits, a vertically-movable frame located adjacent to said track and to the signals, means for raising said frame to its highest position and displaying both signals when a train passes the adjacent contacts, means for lowering one of said signals and lowering said frame to an intermediate position when a train passes the next contact, and means for lowering the other signal and completely lowering the frame when the train passes the third contact.

817,498. **STORAGE BATTERY.** JAMES R. MACMILLAN, Menomonie, Wis., assignor to Northwestern Storage Battery Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 1, 1905. Serial No. 253,207.

Claim.—1. In a storage-battery grid unit, the combination of an

inclosing frame, a plurality of horizontal ribs extending across said frame, a plurality of transverse ribs extending across said frame and intersecting said horizontal ribs to form compartments for lodgment of active material, projections on said transverse ribs extending into said compartments, said ribs and projections being quadrilateral, the top and lower edges thereof being disposed in a common vertical plane, and a web on said ribs and projections, disposed in said vertical plane, substantially as described and for the purpose set forth.



2. In a storage-battery grid unit, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, a plurality of transverse ribs extending across said frame and intersecting said horizontal ribs to form compartments for lodgment of active material, projections on said transverse ribs extending horizontally into said compartments, said ribs and projections being quadrilateral, the top and lower edges thereof being disposed in a common vertical plane, and a web on said ribs and projections, disposed in said vertical plane, substantially as described and for the purpose set forth.

3. In a storage-battery grid unit, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, a plurality of transverse parallel ribs extending across said frame and intersecting said horizontal ribs to form compartments for lodgment of active material, projections on said transverse ribs extending horizontally into said compartments, said ribs and projections being quadrilateral, the top and lower diagonal edges thereof being disposed in a common vertical plane, and a web on said ribs and projections disposed in said vertical plane, substantially as described and for the purpose set forth.

4. In a storage-battery grid unit, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, a plurality of transverse parallel ribs extending across said frame and intersecting said horizontal ribs to form compartments for lodgment of active material, alternate horizontal ribs being partly interrupted between said transverse ribs to form projections on said transverse ribs, said ribs and projections being quadrilateral, the top and lower diagonal edges thereof being disposed in a common vertical plane, and a web on said ribs and projections, disposed in said vertical plane, substantially as described and for the purpose set forth.

5. In an electric storage-battery plate, in combination, a grid unit having an inclosing frame, a plurality of horizontal ribs, and a plurality of transverse parallel ribs intersecting said horizontal ribs at an angle to form compartments, a projection from each transverse rib into each compartment, said ribs and projections being quadrilateral, the top and lower diagonal edges thereof being disposed in a common vertical plane, webs on said ribs and projections disposed in said vertical plane, and active material supported in said compartments and surrounding said ribs and projections, substantially as described.

6. In a storage-battery grid, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, and a plurality of parallel ribs extending diagonally across said frame and intersecting said horizontal ribs to form compartments for lodgment of active material, alternate horizontal ribs being partly interrupted between said diagonal ribs to leave projections on said diagonal ribs, substantially as described.

7. In a storage-battery grid unit, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, and a plurality of parallel ribs extending diagonally across said frame and intersecting said horizontal ribs to form compartments for the lodgment of active material, the ribs being quadrilateral, the top and lower diagonal edges thereof being disposed in a common vertical plane, said edges being slightly extended to form thin webs disposed in said vertical plane, substantially as described.

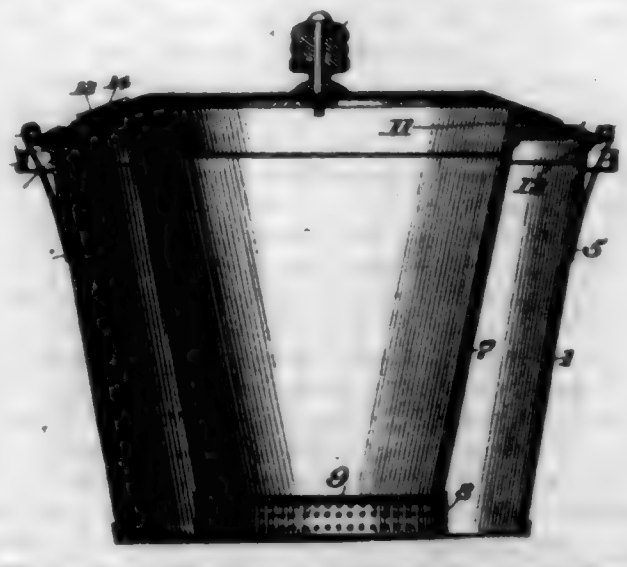
8. In a storage-battery grid unit, the combination of an inclosing frame, a plurality of horizontal ribs extending across said frame, a plurality of parallel ribs extending diagonally across said frame and intersecting said horizontal ribs to form compartments for the lodgment of active material, alternate horizontal ribs being partly interrupted between said diagonal ribs to leave projections on said diagonal ribs, all the ribs and projections being quadrilateral, the top and lower diagonal edges thereof being disposed in a common vertical plane, said edges being slightly extended to form thin webs disposed in said vertical plane, substantially as described.

9. A storage-battery plate composed of a plurality of similar grid units having rims, said rims being securely electrically connected together, horizontal ribs for each unit, transverse ribs for each unit, alternate horizontal ribs being interrupted to form extensions, said ribs and extensions being quadrilateral, the upper and lower diagonal edges of the ribs of each unit lying in a common vertical plane, the ribs and projections of all the units coöperating to retain active material in position on the plate.

10. A storage-battery plate composed of similar grid units, firmly electrically connected only at their rims, of horizontal ribs for each unit, diagonally intersecting ribs for each unit, said ribs being quadrilateral and the upper and lower edges of the ribs of each unit being disposed in a common vertical plane, all of said ribs coöperating to form compartments for lodgment of active material, and thin webs extending from the edges of said ribs in the vertical planes.

11. A storage-battery plate composed of a plurality of grid units held together in electrical contact, each unit having horizontal ribs and transverse ribs, alternate horizontal ribs being interrupted to form extensions, said ribs and extensions being quadrilateral with the upper and lower diagonal edges thereof in each unit lying in a common vertical plane, the ribs and projections of all the units coöperating to retain active material in position on the plate.

817,499. **BREAD-RAISER.** CHARLES H. MARSHALL, Brockwayville, Pa. Filed Sept. 2, 1905. Serial No. 276,822.



Claim.—1. In a bread-raiser, a plurality of concentric pans and a cover common to said pans having tapered flanges thereon centering and closing all of said pans.

2. In a bread-raiser, a plurality of pans arranged one within another and separated from each other at the bottom and sides, a lid common to all of said pans, clips for said lid secured at one end to the outer pan and handles for the outer pan, restraining excessive movement of the clips.

3. In a bread-raiser, an outer pan, an inner pan, a perforated collar secured to the bottom of the inner pan, a lid for the outer pan and depending tapered flanges from said lid closing the pans.

4. In a bread-raiser, an outer pan, an inner pan, a lid common to said pans, a clip secured to the outer pan for retaining said lid in engagement with said pans, and a handle for the outer pan embracing the clip and restricting its movement.

817,500. NON-REFILLABLE BOTTLE. John Merrhams, Cleveland, Ohio. Filed Nov. 27, 1905. Serial No. 289,286.



Claim.—1. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged centrally between the upper and lower ends and extending transversely of the stopper; a chamber formed in one side of the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the opposite side of the stopper and extending from the upper end of the stopper to the opposite end of and in communication with and downwardly below the transverse passage-way, which groove is enlarged circumferentially of the stopper a suitable distance below the transverse passage-way, and a filling occupying the circumferentially-enlarged portion of the groove and extending into the neck of the bottle.

2. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged at a suitable point between the upper and lower ends and extending transversely of the stopper; a chamber formed in the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the exterior of the stopper and extending from the upper end of the stopper to the opposite end of and into communication with and downwardly below the transverse passage-way, which groove is enlarged circumferentially of the stopper a suitable distance below the transverse passage-way, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

3. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way arranged at a suitable point between the upper and lower ends and extending transversely of the stopper; a chamber formed in the lower portion of the stopper at one end of and in communication with the said passage-way, which chamber is provided in its bottom with a perforation which is in communication with the interior chamber of the body portion of the bottle; a valve normally closing the said perforation; a groove formed in the exterior of the stopper and extending from the upper end of the stopper to the opposite end of and into communication with and downwardly below the transverse passage-way, and a filling occupying the groove below the transverse passage-way and extending into the neck of the bottle.

4. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved passage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way, which groove is gradually reduced transversely below the transverse passage-way and toward its lower end and is enlarged at the said end circumferentially of the stopper, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

5. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved passage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and downwardly below the transverse passage-way, which groove is enlarged at its lower end circumferentially of the stopper in opposite directions, and a filling occupying the enlargement of the groove and extending into the neck of the bottle.

6. The combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends and extending transversely of the stopper; a valved passage-way extending downwardly from one end of the transverse passage-way and communicating with the interior chamber of the body portion of the bottle; a groove formed in and exteriorly of the stopper at the opposite end of the transverse passage-way and extending from the upper extremity of the stopper into communication with and dowdwardly below the transverse passage-way, and a filling occupying the said groove below the transverse passage-way and extending into the neck of the bottle.

7. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper; a groove formed in and exteriorly of one side of the stopper and extending from the upper extremity of the stopper downwardly into communication with the aforesaid passage-way; a chamber formed in the lower portion of the stopper at and extending to the exterior surface of the opposite side of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and a cross-bar extending over the valve and transversely of the aforesaid chamber in the stopper, all relatively arranged substantially as and for the purpose set forth.

8. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower portion of the stopper at the opposite end of the aforesaid passage-way and extending to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and the aforesaid chamber in the stopper having two opposite side walls and a central outwardly-facing inner wall which has a groove extending downwardly from the aforesaid transverse passage-way, and a cross-bar extending over the valve and transversely of the last-mentioned chamber, which is supported from the aforesaid opposite walls of the last-mentioned chamber, all relatively arranged substantially as and for the purpose set forth.

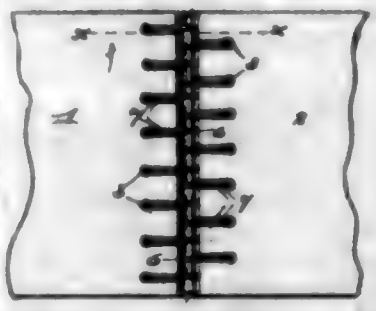
9. In a non-refillable bottle, the combination, with a bottle having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower portion of the stopper at the opposite end of the aforesaid passage-way and extending to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and the aforesaid chamber in the stopper having two opposite side walls provided with recesses extending to the exterior surface of the stopper, and a cross-bar extending over the valve and transversely of the last-mentioned chamber and engaging the said recesses, which bar extends at the ends flush with the exterior surface of the stopper, all relatively arranged substantially as and for the purpose set forth.

10. In a non-refillable bottle, the combination, with a bottle

having a neck, of a stopper within the neck, which stopper is provided with the following: a passage-way formed at a suitable point between the upper and lower ends of and extending transversely of the stopper, which passage-way has an outlet at one end; a chamber formed in the lower portion of the stopper at the opposite end of the aforesaid passage-way and extending to the exterior surface of the stopper, which chamber has a bottom provided with a perforation communicating with the interior chamber of the body portion of the bottle; a ball-valve seated upon the said bottom and normally closing the said perforation, and the aforesaid chamber in the stopper having two opposite side walls provided with recesses extending to the exterior surface of the stopper, and a cross-bar extending over the valve and transversely of the last-mentioned chamber and engaging the aforesaid recesses, all relatively arranged substantially as and for the purpose set forth.

11. A non-refillable bottle having a neck and provided interiorly of the said neck with a stopper provided with the following: a chamber formed in the lower portion of the stopper, with the bottom wall of the chamber provided with a perforation communicating with the interior chamber of the body portion of the bottle; a valve contained within the chamber and normally closing the said perforation, and a groove formed in one of the side walls of the chamber and extending from the valve-seat upwardly a suitable distance, and a passage-way communicating at one end with the said groove and formed in and extending transversely of the stopper, said passage-way being provided at its other end with an outlet.

817,501. **BELT-FASTENER.** JOHN MILLAR, Cincinnati, Ohio. Filed July 25, 1905. Serial No. 271,201. (Model.)

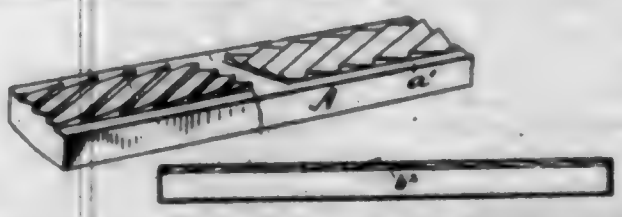


Claim.—1. A belt-fastener comprising a set of hooks, each hook being made of a single piece of metal to form a loop, a pair of arms projecting in the same direction from the top of the hook, an arm portion extending from each of said arms under the latter toward the loop and terminating in clenching-points, and a suitable pin extending through the loops to connect the hooks.

2. A belt-fastener comprising two sets of independent loops, a pair of arms projecting side by side in the same direction from their loop, a pair of arm portions extending side by side under said arms toward said loop and terminating in a pair of inturned clenching-points, and a suitable pin extending through the loops to connect them.

3. In a belt-fastener, the combination, with a suitable key, of the hooks reversed alternately on the belt and having loops intervening the adjoining belt ends, arms extending from the loops on one side of the belt, through the latter, arm portions extending toward the loops on the opposite side of the belt and terminating in inturned piercing-points.

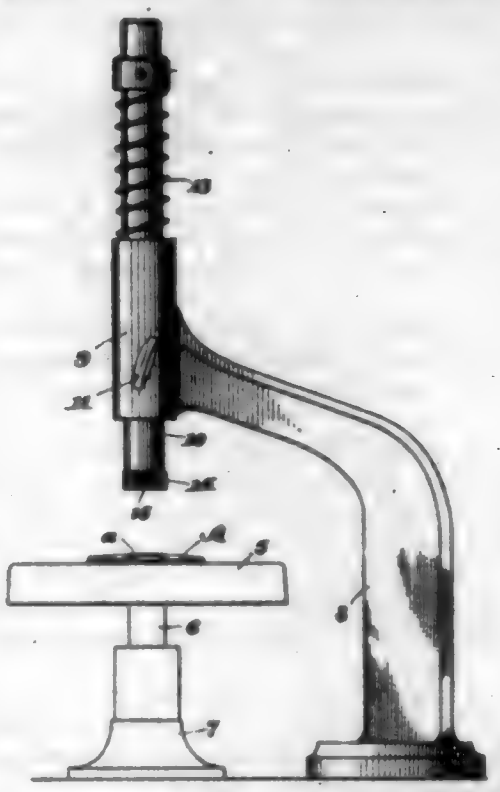
817,502. **FACING-TOOL.** JAMES D. MITCHELL, Lakewood, Ohio. Filed Aug. 13, 1904. Serial No. 220,454.



Claim.—1. A facing-tool comprising a block having a clear space across its face and diagonal ribs arranged parallel in two groups on opposite sides of said clear space and projecting out of the plane thereof, said clear space extending diagonally across the center of the face of the block, whereby acute cutting-points are provided.

2. A facing-tool comprising a block having a clear space across its face and diagonal ribs arranged in two groups on opposite sides of said clear space and projecting out of the plane thereof, said clear space extending diagonally across the center of the face of the block and of such width and at such an angle that the points of the two groups overhang the center.

817,503. **MACHINE FOR MAKING BIFOCAL LENSES.** THEODORE MUNDORFF, New York, N. Y. Filed Feb. 15, 1905. Serial No. 245,982.



Claim.—1. The combination of a work-holder, means for stopping out a portion of a lens adapted to be fixed to said holder, and a grinding member movable across the surface of a lens on said holder.

2. The combination of a rotary work-holder, means for attaching a lens in fixed position on said holder, and a grinding member movable across a surface of a lens on said holder, said grinding member being reciprocable in a plane substantially parallel to the plane of rotation of the work-holder.

3. The combination of a revoluble work-holder, adapted to give rotary motion in a fixed plane to work carried thereon and an abrasive member adapted to rest on said holder and reciprocable at will across the surface of a lens on said holder.

4. The combination of a work-holder and a grinding member, one of said parts being revoluble in a fixed plane for giving rotary motion to a lens fixed thereto and the other being movable relatively to the first part in a plane substantially parallel to the plane of rotation.

5. The combination of a revoluble work-holder, means for affixing the lens to said holder and a grinding member movable relatively to the work-holder and in a plane parallel to the plane of rotation of said work-holder.

6. The combination of a revoluble work-holder, means for stopping out a portion of a lens on said holder, and an abrasive member movable relatively to the work-holder and the stopping-out means.

7. The combination of a revoluble work-holder, means for stopping out a portion of a lens on said holder, and an abrasive member movable relatively to the work-holder and the stopping-out means, said abrasive member being shiftable at will across the surface of a lens on said holder.

8. The combination of a work-holder and a grinding member, one rotating in a fixed plane and the other having movement relative to the first member, and means for stopping out a portion of the work on said holder.

9. The combination of a movable work-holder, a stopping-out device, means for presenting said device to work in said holder, and means for treating the work on said holder.

10. The combination of a revoluble work-holder, a stopping-out device, means for holding said stopping-out device opposite to work on said holder, and means for treating the exposed surface of work on said holder.

11. The combination of a revoluble work-holder, a stopping-out device, and a support for maintaining the stopping-out device in a stationary position opposite to the work-holder.

12. The combination of a revoluble work-holder, a stopping-out device, and adjustable means for presenting the stopping-out device to work on said holder.

13. The combination of a work-holder, means for presenting a stopping-out device to said holder, and a stopping-out device connected detachably to said presenting means.

14. The combination of a work-holder, a support movable in a predetermined path relative to said work-holder, a stopping-out de-

vice on the support, and an abrasive member movable relative to the holder and spindle.

15. The combination of a work-holder, a support movable toward the holder, a stopping-out device on the support, and an abrasive member.

16. The combination of a work-holder, a support movable toward the holder, a stopping-out device carried detachably by the support and adapted for use interchangeably with different stopping-out devices, and an abrasive member.

17. In a machine for grinding lenses, an abrasive member adapted to be moved relative to a lens and having a working surface of a predetermined radius extending longitudinally and transversely thereof.

18. In a machine for grinding lenses, an abrasive member having a working surface of a given radius and controllable at will relative to the lens upon the surface of which the member is adapted to operate.

19. In a machine for grinding lenses, the combination with a work-holder, of an abrasive member having a working surface of a given radius and movable relative to said work-holder.

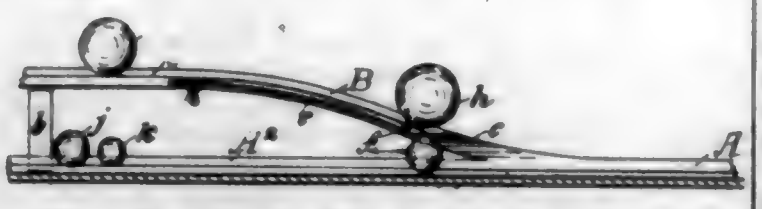
20. In a machine for grinding lenses, the combination with a work-holder, of an abrasive member having a working surface of a given radius and movable relative to said work-holder, said member being disconnected from and movable independently of the work-holder.

21. In a machine for grinding lenses, the combination with a work-holder, of a stopping-out device for a lens, and a grinding member, the working surface of which has an opening to accommodate the stopping-out device.

22. In a machine for grinding lenses, a grinding member provided with a vertical slot and on its bottom side with a working surface of a desired radius.

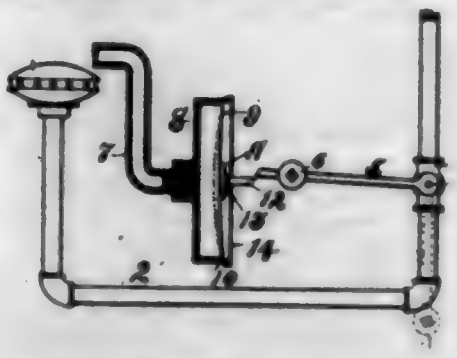
23. The combination of a work-holder, a slotted grinding member, and a stopping-out support fitted to the slot in said member.

817,504. **BOWLING-ALLEY.** DENNIS F. MCCARTHY, Lowell, Mass., assignor to the Brunswick-Balke-Collender Company, New York, N. Y., a Corporation of Ohio. Filed Sept. 22, 1905. Serial No. 279,574.



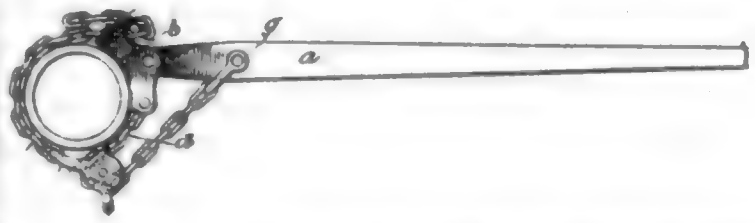
Claim.—In combination, with a bowling-alley ball return-way, formed or provided with any proper form of "ball-separator," means for rendering inoperative, the separator, to thereby cause the balls of all sizes to roll home onto the same terminal, or ball-rack, whenever this may be desired; substantially as hereinbefore set forth.

817,505. **AUTOMATIC GAS SHUT-OFF.** CHARLES J. MCCORMICK, Akron, Ohio. Filed Nov. 5, 1904. Serial No. 232,067.



Claim.—The combination in a device of the class described, of a fluid-fuel burner, a closed pipe having one end thereof situated within the influence of the heat of said burner, a box on the opposite end of said pipe, an air-tight sensitive diaphragm extending across said box, a rigid plate extending across the end of said box outside of said diaphragm, a projecting stem attached to said sensitive diaphragm and passing through a suitable opening in said rigid plate, a spring on said stem engaging said rigid plate to assist the movements of said diaphragm, a valve in the service-pipe of said burner, an arm capable of actuating said valve and attached to the valve-stem thereof of sufficient length to engage said stem when said diaphragm is under compression, whereby said arm is sustained against movement, and an adjustable weight on said arm.

817,506. **WRENCH.** MICHAEL J. MCGINN, Proctor, Minn. Filed July 29, 1905. Serial No. 271,784.



Claim.—1. The combination of a handle, a jaw pivoted thereto, a chain connected to the jaw and to the handle, a block through which the chain runs, and a second chain connected to the block and adapted to be connected with the jaw.

2. The combination of a handle, a jaw, one end of the handle being pivoted to the jaw intermediate its ends, a chain connected to one end of the jaw and to the handle at a point removed from the pivoted end thereof, a block through which the chain runs, and a second chain connected to the block and adapted to be connected with the jaw.

3. The combination of a handle, a jaw, one end of the handle being pivoted to the jaw intermediate its ends, a chain connected to one end of the jaw and to the handle at a point removed from the pivoted end thereof, a block through which the chain runs, and a second chain connected to the block and adapted to engage the jaw, the jaw having a claw removably to hold the second chain.

4. The combination of a handle, a jaw pivoted thereto, a chain connected to the jaw and to the handle a block through which the chain runs, and a second chain connected to the block and adapted to engage the jaw, the jaw having a claw adapted removably to hold the second-named chain.

5. In a pipe-wrench, the combination of a handle, a jaw pivoted thereto, a chain in connection with the handle and said jaw, a block engaged by the chain, and a second chain connected to the block and adapted to engage the said jaw.

6. In a pipe-wrench, the combination of a handle, a jaw pivoted thereto, a chain adapted to engage said jaw, a pulley in connection with the chain, and a second chain running over the pulley and connected with and adapted to be operated by the handle, for the purpose specified.

7. In a pipe-wrench, the combination of a handle, a jaw pivoted thereto, a chain connected to the jaw and handle, a block through which the chain runs, and a second chain in connection with the block and adapted to engage the jaw.

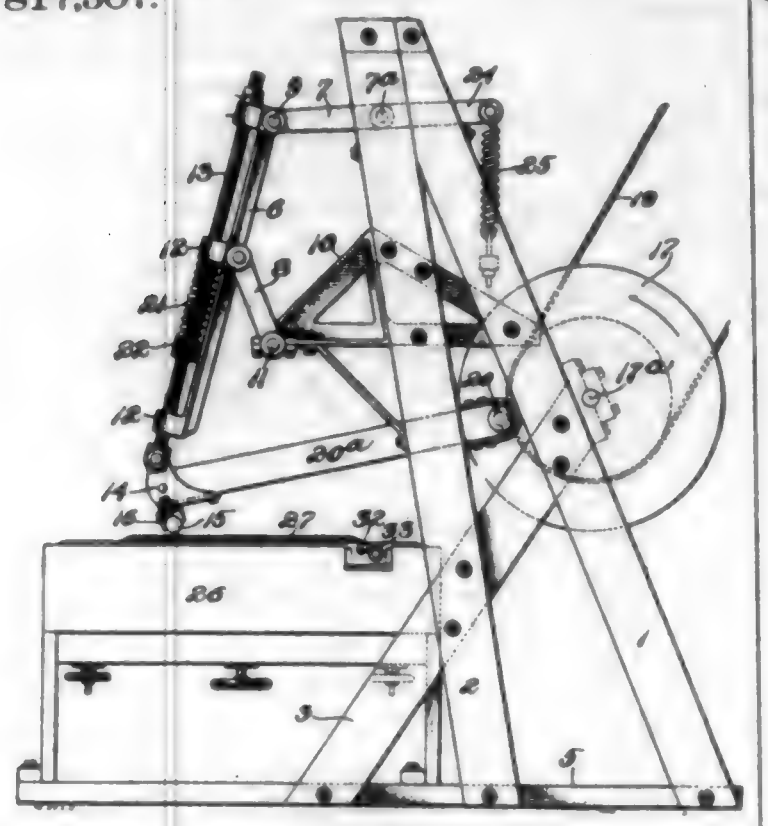
8. The combination of a handle, an intermediately-pivoted jaw mounted at one end thereof, a chain in connection with one end of the jaw and with the handle, the other end of the jaw having a claw, a chain adapted to engage said claw, and a block in connection with the last-named chain, the first-named chain running through the block.

817,507. **GLAZING OR ROLLING MACHINE.** BENJAMIN MCKEEN and GORDON MCKEEN, Peabody, Mass. Filed Sept. 28, 1905. Serial No. 280,468.

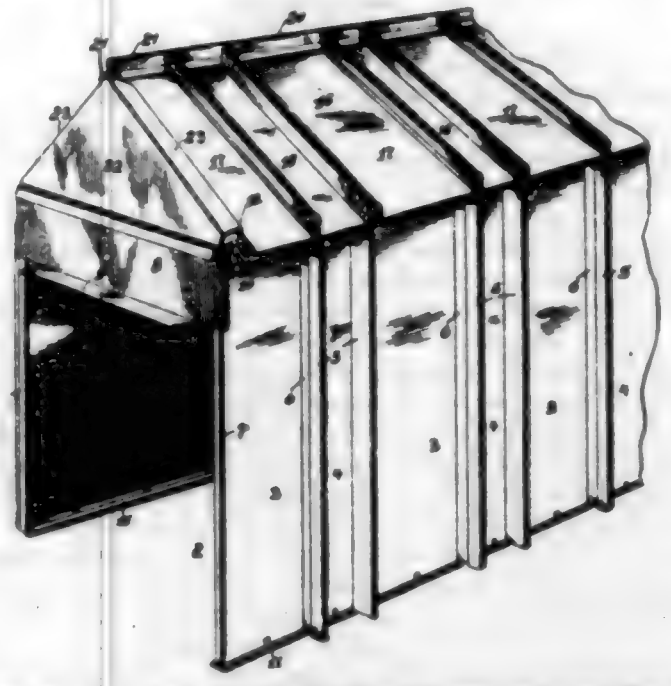
Claim.—1. In a machine of the character described, the combination with the frame, work-bed, oscillating pendulum and links connecting the pendulum with the frame, of a slideway upon the pendulum, a plunger mounted to slide in the slideway, a coil-spring surrounding the plunger abutting at one end against a shoulder rigid with the pendulum and at the other end against an adjustable collar on the plunger and normally urging the plunger toward the work-bed, a tool-holder or head-piece pivoted at the end of the plunger, and actuating means comprising a crank and a crank-shaft journaled at one end on the crank and rigidly secured at the other end to the head-piece.

2. In a machine of the character described, the combination with the frame, work-bed, oscillating pendulum and links connecting the pendulum with the frame, of lugs upon the pendulum provided with apertures adapted to receive a sliding plunger, a plunger mounted to slide in said lugs, a spring urging the plunger toward the work-bed, a head-piece adapted to hold a tool or worker pivoted at the lower end of the plunger, a crank-shaft rigidly secured at one end to the head-piece, a crank to which said crank-shaft is journaled at its other end, and means to actuate the crank.

817,507.



817,508. METALLIC STRUCTURE. Valentine J. Nebel, Pittsburg, Pa. Filed Nov. 4, 1905. Serial No. 285,829.



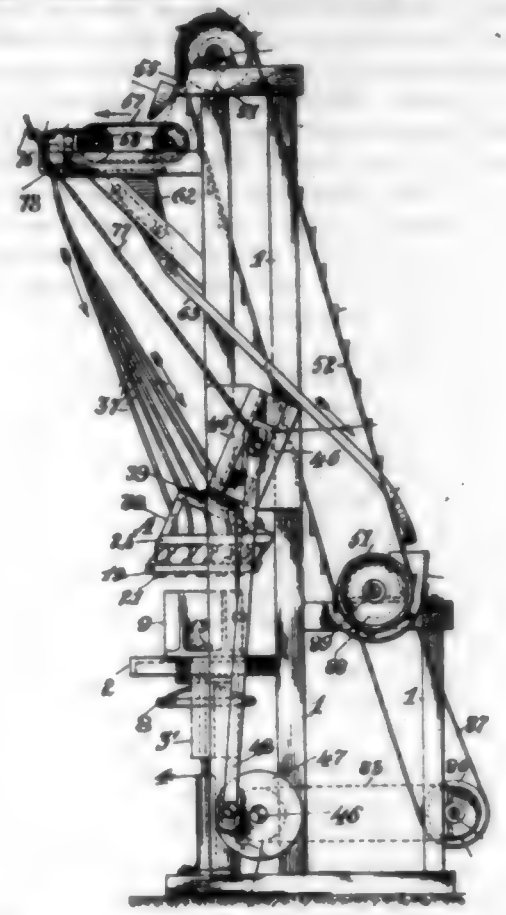
Claim.—1. A structure built of sheets of metal and consisting of side walls, lintels, plates, a roof, said walls and roof being composed of sheets of metal having their edges interlocked together to form ribs, girders carried by the upper edges of said walls and supporting said roof, said lintels being formed of sheet metal and flanged to engage said walls, said plates being flanged to engage said roof, a cleat mounted upon the apex of said roof, substantially as described.

2. A structure of the character described consisting of side walls, a roof, said walls and roof being composed of a plurality of sheets of metal having interlocking edges forming ribs, girders carried by said walls and supporting said roof, lintels connecting said walls together, plates supported by said roof, a cleat mounted upon the apex of said roof, substantially as described.

3. A structure built of sheet metal and consisting of side walls, a roof, said walls and roof being composed of a plurality of sheets of metal having interlocking edges forming vertically-disposed ribs, said ribs extending from the edge of the roof to the bottoms of the walls, and means to support said roof upon said side walls, substantially as described.

4. A structure of the character described consisting of walls of sheet metal having interlocking edges, said interlocking edges forming ribs which are disposed vertically and which extend from the top to the bottom edges of the walls, a roof of sheets of metal having interlocking edges, lintels engaging said walls, plates supported by said roof, and resting upon said lintels, substantially as described.

817,509. BOX-NAILING MACHINE. Elmer C. Northrup, San Jose, Cal. Filed Aug. 8, 1904. Serial No. 219,879.



Claim.—1. In a box-nailing machine, a hammer comprising a chuck-head, a nail-chuck carried thereby, a driver-head, a driver carried thereby, a yieldable suspension connection between the two heads, end contacts to limit the approach of the two heads, a reciprocating cross-head, and a spring connecting the cross-head with the driver-head.

2. In a box-nailing machine, a hammer comprising a chuck-carrying head, nail-chucks adjustably fitted to said head, a driver-carrying head, nail-drivers adjustably fitted to said head, a yieldable suspension connection between the two heads, end contacts to limit the approach of the two heads, a reciprocating cross-head, and a spring connecting the cross-head with the driver-carrying head.

3. In a box-nailing machine, a hammer comprising a chuck-carrying head, nail-chucks adjustably fitted to said head, a driver-carrying head, nail-drivers adjustably fitted to said head, slip-bolts connecting the two heads and suspending the chuck-carrying head from the driver-carrying head, end contacts to limit the approach of the two heads, a reciprocating cross-head, and a spring connecting the cross-head with the driver-carrying head.

4. In a box-nailing machine, the combination of a chuck-carrying head, nail-chucks fitted to said head, a driver-carrying head, nail-drivers fitted to said head, slip-bolts connecting said heads and suspending the chuck-head from the driver-head, end contacts to limit the approach of the two heads, a reciprocating cross-head, a spring connecting the cross-head with the driver-carrying head, nail-tubes for supplying the nails to the chucks, and telescopic extensions on the ends of said tubes secured to the driver-carrying head.

5. In a box-nailing machine, a nail-adjuster comprising pairs of separated terminal pulleys, traveling, parallel, spaced ribbons mounted on said pulleys, and adapted to suspend the nails by their heads between them, and means for relatively adjusting said pulleys to vary the width of the space between the ribbons.

6. In a box-nailing machine, a nail-adjuster comprising endless, traveng, parallel-spaced ribbons adapted to suspend the nails by their heads between them, a stationary extension of said adjuster comprising parallel-spaced plates overlapping the traveling ribbons at their descending bights, and means for relatively and correspondingly adjusting the ribbons and the plates to vary the space between each, to suit the size of nails.

7. In a box-nailing machine, the combination of the adjuster comprising the traveling parallel, adjustably-spaced ribbons adapted to suspend the nails by their heads between them and to advance the line of suspended nails, the stationary adjustably-spaced extension-plates to receive the advancing nail-line, and the cut-off consisting of the rotary disk at the end of the extension-plates having a peripheral portion disposed to check the nail-line, an indentation to free the line and to receive the leading nail and permit it to drop

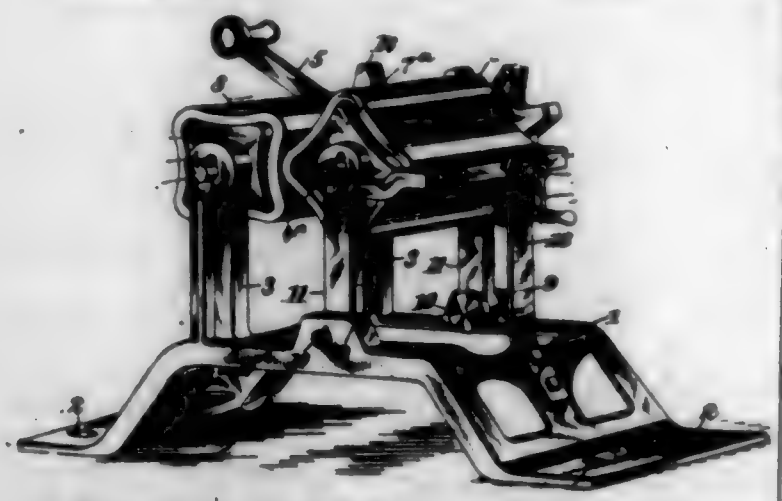
through and a tooth disposed to cut off said leading nail from the line and direct it into the indentation.

8. In a box-nailing machine, the combination of the adjuster comprising the traveling, parallel, adjustably-spaced ribbons adapted to suspend the nails by their heads between them and to advance the line of suspended nails, the stationary adjustably-spaced extension-plates to receive the advancing nail-line, the cut-off consisting of the rotary disk at the end of the extension-plates having a peripheral portion disposed to check the nail-line, an indentation to free the line and to receive the leading nail and permit it to drop through, and a tooth disposed to cut off said leading nail from the line and direct it into the indentation, the funnel beneath the indentation of the cut-off disk adapted to receive the nail and the tube to direct the nail to its destination.

9. In a box-nailing machine, the combination of the adjuster comprising the traveing, parallel, adjustably-spaced ribbons adapted to suspend the nails by their heads between them, and to advance the line of suspended nails, the stationary adjustably-spaced extension-plates to receive the advancing nail-line, the cut-off consisting of the rotary disk at the end of the extension-plates having a peripheral portion disposed to check the nail-line, an indentation to free the line and to receive the leading nail and permit it to drop through, and a tooth disposed to cut off said leading nail from the line and direct it into the indentation, the funnel beneath the indentation of the cut-off disk adapted to receive the nail, the tube to direct the nail to its destination, a chuck to which the nail is destined, and a driver to send it home.

10. In a box-nailing machine, the combination of an initial nail-hopper, a traveling elevator with cross-buckets operating to pick up and elevate the nails from the hopper, separate distributing-chutes receiving the nails from the buckets, nail-adjusters below the chutes comprising traveling parallel adjustably-spaced ribbons adapted to suspend the nails by their heads between them and to advance the suspended nail-line, receiving-hoppers below the ribbons for returning to the initial hopper the nails which fail to be suspended between the ribbons, the stationary adjustably-spaced extension-plates to receive the advancing nail-line, the cut-off consisting of the rotary disk at the end of the extension-plates having a peripheral portion disposed to check the nail-line, an indentation to free the line and to receive the leading nail and permit it to drop through, and a tooth disposed to cut off said leading nail from the line and direct it into the indentation, the funnel beneath the indentation of the cut-off disk adapted to receive the nail, the tube to direct the nail to its destination, a chuck to which the nail is destined, and a driver to send it home.

817,510. **MEAT ROLLER OR WRINGER.** BENJAMIN L. PACKARD, Denver, Colo. Filed Apr. 30, 1904. Renewed Sept. 30, 1905. Serial No. 280,822.

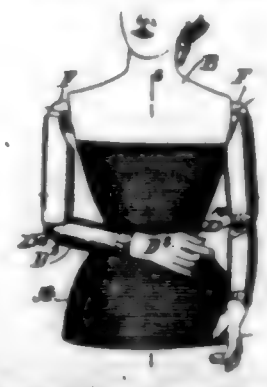


Claim.—1. The combination in a structure of the character specified of a base, a pair of rigid standards on the base, a roller journaled in the upper ends of said standards, a pair of standards pivoted on the base adjacent to the rigid standards, a roller rotatably mounted in the pivoted standards, a bail carried by said pivoted standards and projecting therefrom in the direction away from the rigid standards, a spring secured at its lower end to the base and at its upper end exerting pressure upon said bail at about the middle thereof to force said rollers normally into contact, and means for regulating the pressure of said spring upon said bail, said means comprising a cranked screw, threaded in the upper end of said spring and extending from the spring into engagement with the bail.

2. The combination in a structure of the character specified, of a rigid supporting structure, a shaft journaled therein, blocks mounted on said shaft near the ends, a fluted shell mounted on said blocks and spaced from said blocks upon two opposite sides thereof, a pivoted supporting structure, a shaft journaled in said pivoted supporting structure, a shell mounted on said shaft and corresponding in shape and construction to the first-mentioned shell, and means for yieldably pressing said pivoted supporting structure toward the rigid supporting structure.

3. The combination in a structure of the character specified, of a pair of intergeared quadrilateral rollers normally held yieldably in contact, said rollers comprising quadrilateral blocks, parallel shafts on which said blocks are carried, and fluted shells mounted on said blocks and spaced from their respective blocks on two opposite sides thereof and having concave faces and rounded corners and being so arranged that a corner upon one roller will always correspond to a concave face of the other.

817,511. **GARMENT-FORM.** EMIL T. PALMENBERG, New York, N. Y. Filed July 6, 1905. Serial No. 268,267.



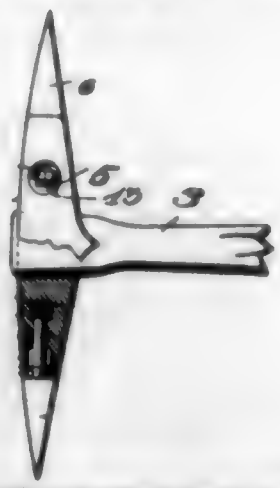
Claim.—1. A garment-form comprising a body, arm-supports secured to the body, arms movably connected with the arm-supports, means for fixing the arms with respect to the supports, and a removable head and shoulder piece for inclosing and concealing the supports and fixing means.

2. A garment-form comprising a body, an arm-support secured to the said body and having rising bearings, arms having a ball-and-socket-joint connection with the said bearings, and fastening devices for holding the arms to the said bearings and for holding the balls with more or less friction in place in the sockets.

3. A garment-form comprising a body, an arm-support secured to the top of the said body and provided with rising bearings, each having a socket, arms having balls at their upper ends for engaging the said sockets, a bolt projecting from each ball and extending through the said bearing, and a spring interposed between each bearing and the nut of the corresponding bolt.

4. A garment-form comprising a body, an arm-support secured to the said body and provided with rising bearings, arms removably held on the said bearings, and a shoulder and head piece seated on the said body and having a metallic lining fitting the said bearings.

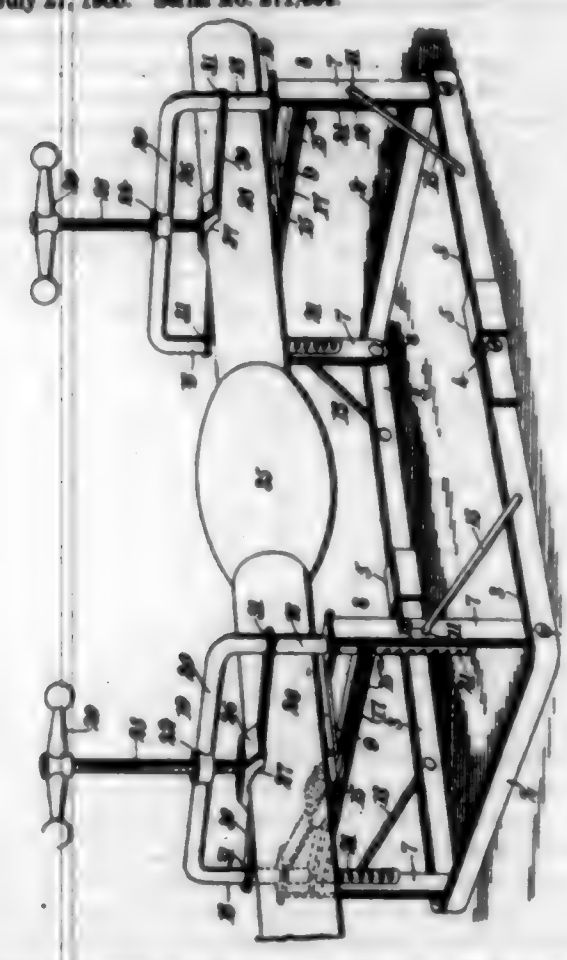
817,512. **MINER'S PICK.** WILLIAM S. PALMER, Blairsville, Pa. Filed Dec. 18, 1905. Serial No. 292,311.



Claim.—A miner's pick comprising a head provided with a longitudinal bore in the opposite ends thereof, said bore having grooves at opposite sides thereof and provided with a transverse opening 5 intersecting the terminal end of said bore, a detachable point having a reduced stem to enter said bore, and radial flanges to engage said

grooves, a reduced threaded shank to project into said transverse opening, and a thumb-nut mounted upon the threaded shank of the stem, substantially as described.

817,513. PLUMBER'S CLAMP. RALPH PARKER, Lakewood, N. J. Filed July 27, 1905. Serial No. 271,464.

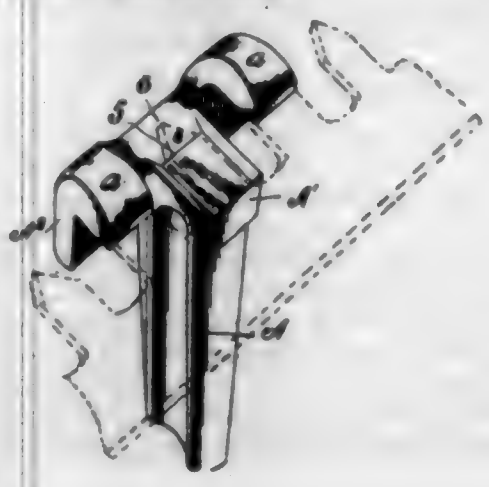


Claim.—1. A structure of the character described, comprising a base-frame, clamps mounted thereon for securing in position two lengths of pipe, while joining together adjacent ends of the latter, said base-frame embodying members having sets of limbs movably joined together, and means for securing the limbs of the two sets in parallel relation to each other.

2. A structure of the character described, comprising a base-frame, clamps mounted thereon, for securing in position two lengths of pipe, while joining together adjacent ends of the latter, and embodying a stationary member having a cross-piece provided with a jaw, and having openings therein, a movable member having legs working in said openings, and provided with corresponding notches, a cross-brace movable on said legs, and also supporting a jaw; a screw for operating the latter jaw, and a locking-plate pivoted to the cross-piece, the ends of which are received in opposite ones of the notches.

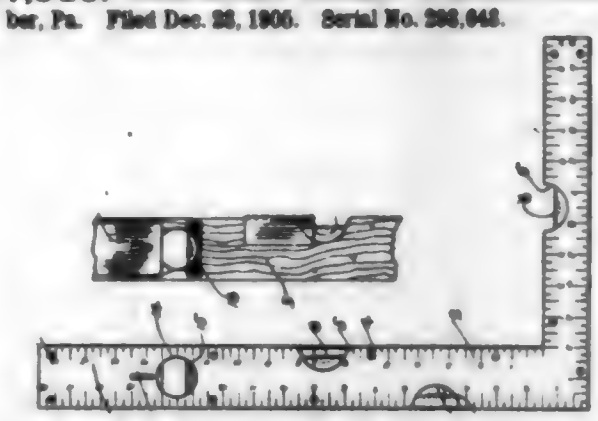
3. A structure of the character described, comprising a base-frame constructed of collapsible members, pipe-clamps collapsible with reference to each other, and directly collapsible with reference to said base-frame, and braces for securing the clamps in vertical relation to the base-frame, in the parallel relation of said collapsible members to each other.

817,514. SAW-SET. ROBERT B. POINDEXTER, Indianapolis, Ind. Filed May 2, 1903. Serial No. 155,241.



Claim.—As an article of manufacture a saw-set formed in a single piece comprising a handle having a head on one end formed with a straight flat anvil-face on its outer surface to support the main body of the tooth and having an angle at a suitable point, over which to bend the point of a tooth, wings extending each way from the head transversely of said handle against which the saw-teeth may abut and thus to act as a gage, said wings being provided with wide overhanging parts which extend forward to a point which will bring their inner faces in front and substantially parallel with the anvil-face, whereby said parts are adapted to engage with the opposite side of the saw from that which rests upon said anvil and to hold it steady thereon while a tooth is being set, substantially as set forth.

817,515. CARPENTER'S SQUARE. DOMENICK POLIERNI, Windber, Pa. Filed Dec. 26, 1905. Serial No. 293,643.



Claim.—1. An instrument of the type described embodying two parallel plates conforming to carpenters' squares, said plates having their edges cut away, level-glasses mounted between said plates adjacent to the cut-away portions thereof, casings slidably mounted between said plates and adapted to inclose said level-glasses, means to secure said plates together, and means to retain said level-glasses between said plates, substantially as described.

2. An instrument of the type described embodying two carpenters' squares secured together side by side, said squares being cut away, level-glasses mounted between said squares adjacent to the cut-away portions of said squares, casings mounted between said squares and adapted to slide over said level-glasses, means to move said casings, means to support said glasses between said squares, substantially as described.

3. An instrument of the type described embodying two parallel metallic carpenters' squares, wooden strips arranged between said squares, level-glasses mounted between said squares, means to support said glasses in said strips, means to secure said squares and said strips together, and means carried by said strips to shield said glasses, substantially as described.

4. An instrument of the type described embodying two carpenters' squares secured together side by side, glasses mounted between said squares, and movable means carried by the instrument to shield said glasses, substantially as described.

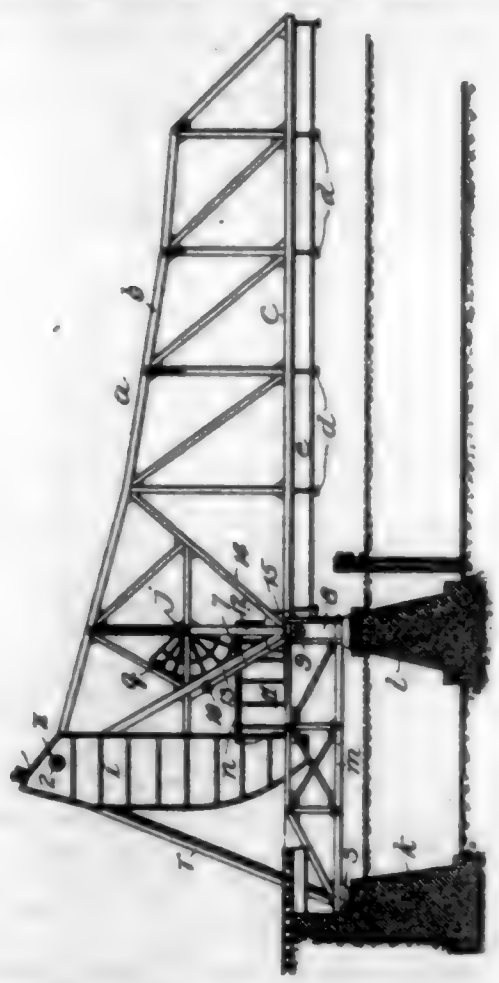
817,516. MOVABLE BRIDGE. THEODOR RALL, Chicago, Ill. Filed Sept. 26, 1905. Serial No. 280,142.

Claim.—1. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, a supporting-track mounted upon such stationary support, movable supporting mechanism mounted upon such track and pivotally connected with the span, and movable anchor-arms pivotally connected with a stationary part and operatively connected with the span.

2. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, mechanism mounted upon the stationary support and pivotally connected with the span for supporting it, anchor mechanism pivotally connected with a stationary part, and rack-and-pinion mechanism operatively connected with such anchor mechanism and with the span for raising and lowering the span.

3. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, movable supporting mechanism mounted upon the stationary support and pivotally connected with the span, oscillating anchor-arms pivotally connected with a stationary part, mechanism operatively connected with the anchor-arms and with the span for raising and lowering the swinging end of the span, and links pivotally connected with a stationary part and with the span for controlling the movements of the span.

4. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, movable supporting mechanism mounted upon the stationary support and pivotally connected with the span, oscillating anchor-arms connected with a stationary part, mechanism operatively connected with the anchor-arms and with the span for raising and lowering the swinging end of the span, and means for supporting the span when in lowered position independently of the movable supporting mechanism.



5. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, movable supporting mechanism mounted upon the stationary support and pivotally connected with the span, oscillating anchor-arms pivotally connected with a stationary part, rack-and-pinion mechanism operatively connected with the anchor-arms and with the span for raising and lowering the swinging end of the span, and links pivotally connected with a stationary part and with the span for controlling the movements of the span.

6. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support, movable supporting mechanism mounted upon the stationary support and pivotally connected with the span, oscillating anchor-arms connected with a stationary part, mechanism operatively connected with the anchor-arms and with the span for raising and lowering the swinging end of the span, means for supporting the span when in lowered position independently of the movable supporting mechanism, and links pivotally connected with a stationary part and with the span for controlling the movements of the span.

7. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end and provided with a counterweight, a stationary support, a track mounted upon such stationary support, supporting-segments movably mounted upon the track and pivotally connected with the span, links pivotally connected with a stationary support and with the span, and rack-and-pinion mechanism for raising and lowering the span.

8. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end and provided with a counterweight, a stationary support, a track mounted upon such stationary support, supporting-segments movably mounted upon the track and pivotally connected with the span, links pivotally connected with a stationary support and with the span, anchor-arms pivotally connected with a stationary part and movable adjacent to the span, and rack-and-pinion mechanism connected with the anchor-arms and with the span for raising and lowering the span.

9. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end and provided with a counterweight, a stationary support, a track mounted upon such stationary support, supporting-segments movably mounted upon the track and pivotally connected with the span, links pivotally connected with a stationary part and with the span, rack-and-pinion mechanism for raising and lowering the span, and means for supporting the span independently of rotary supporting mechanism when in lowered position.

10. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support upon which such span is mounted, anchor-arms pivotally connected to a stationary part and provided with racks thereon, and pinions mounted on the span engaging with the racks and adapted to be connected with a suitable source of power.

11. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support for supporting such span, anchor-arms pivotally connected to a stationary part and provided with racks thereon, pinions mounted on the span engaging the racks, and means for holding the pinions in engagement with the racks.

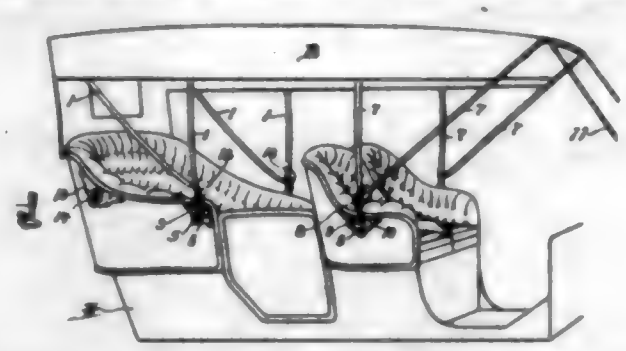
12. In a bascule-bridge, the combination of a span having an upwardly and downwardly movable end, a stationary support for supporting such span, anchor-arms pivotally connected to a stationary part and provided with racks thereon, pinions mounted on the span engaging the racks and adapted to be connected with a suitable source of power, and connecting-arms mounted upon the span and movably connected with the anchor-arms for holding the pinions in engagement with the racks.

13. In a bascule-bridge, the combination of a span, a stationary support, a track mounted upon such stationary support, rotatable supporting mechanism mounted upon the track and pivotally connected with the span at substantially its center of gravity, anchor-arms pivotally connected to a stationary part and provided with racks thereon, and pinions mounted on the span engaging the racks and adapted to be connected with a suitable source of power.

14. In a bascule-bridge, the combination of a span, a stationary support, a track mounted upon such stationary support, rotatable supporting mechanism mounted upon the track and pivotally connected with the span for supporting the span during its movements to open and closed position, anchor-arms pivotally connected to a stationary part and provided with racks thereon, pinions mounted on the span engaging the racks and adapted to be connected with a suitable source of power, and means for supporting the span when in lowered closed position independently of the rotatable supporting mechanism.

15. In a bascule-bridge, the combination of a span, a stationary support, a track mounted upon such stationary support, rotatable supporting mechanism mounted upon the track and pivotally connected with the span for supporting it during its movements to open and closed position, anchor-arms pivotally connected to a stationary part and provided with racks thereon, pinions mounted on the span engaging the racks and adapted to be connected with a suitable source of power, means for supporting the span when in lowered closed position independently of the rotatable supporting mechanism, and links pivotally connected with a stationary part and with the span for controlling the movements of the span.

817,517. MEANS FOR ATTACHING CANOPY-TOPS. William C. Ramm, Detroit, Mich. Filed Aug. 2, 1905. Serial No. 272,304.



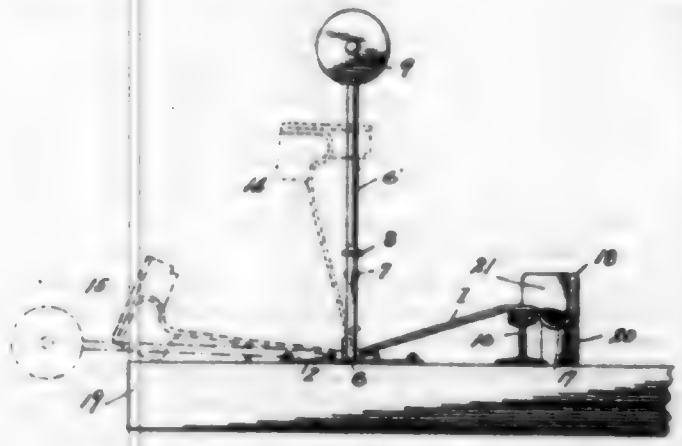
Claim.—1. The combination of a plate adapted to be secured to the outer surface of a vehicle-body and formed to conform to the shape of said surface, a socket on said plate, a hook-shaped bracket formed with a wedge-shaped end to engage the socket, and a seat for the bows of a vehicle-top formed at the bottom of the hook.

2. The combination of a plate adapted to be secured to the outer surface of a vehicle-body and formed to conform to the shape of said surface, outwardly-extending angle-flanges on the plate with a space between their adjacent edges and forming an open socket, and a

downwardly and outwardly extending hook-shaped bracket provided with a wedge-shaped end to engage the socket and formed with an eye at one end to receive a strap.

3. The combination of a plate adapted to be secured to the outer surface of a vehicle-body and formed to conform to the shape of said surface and provided with holes for screws, outwardly-extending angle-flanges on the plate with a space between their adjacent edges and forming an open tapering socket, a hook-shaped bracket adapted to extend outwardly and downwardly from the socket when secured therein, a wedge-shaped end on the bracket to engage the socket, a loop on the outer end of the hook, and laterally-extending portions on the hook forming a seat for the bows of a vehicle-top.

817,518. CAR-DERAILER. WILLIAM ROACH, Roswell, S. D. Filed July 26, 1905. Serial No. 271,253.



Claim.—1. A car-derailer comprising a base-plate and a hinged member; said hinged member having a wheel-guiding groove therein, and provided with an extension beyond the line of the rail adapted to support the derailer.

2. In a car-derailer, an integral hinged member formed with a wheel-guiding groove therein, and provided with an upward extension from the groove, and said extension being turned over and projected downwardly to rest on a railway-tie and support the derailer.

3. The combination with a pivoted derailer, of a signal device arranged at an angle thereto, the parts being so connected that the derailer may be independently turned out of operative position, and by a further movement said derailer is adapted to carry the signal into inoperative position, substantially as described.

4. The combination with a pivoted derailer, of a signal device arranged at an angle thereto, a rock-shaft, and means on said rock-shaft so that the derailer may be moved independently out of operation and by a further movement thereof carry the signal into inoperative position.

5. The combination with a hinged derailer of a rock-shaft and signal device connected thereto, and means on the rock-shaft whereby the derailer may be moved out of operative position and by a further movement of the derailer the signal device is moved to inoperative position.

6. The combination with a hinged derailer of a rock-shaft and signal device connected thereto, said signal device being jointed and capable of a folding movement, and the parts being so connected that the derailer may be moved out of operative position and by its movement move the signal to inoperative position.

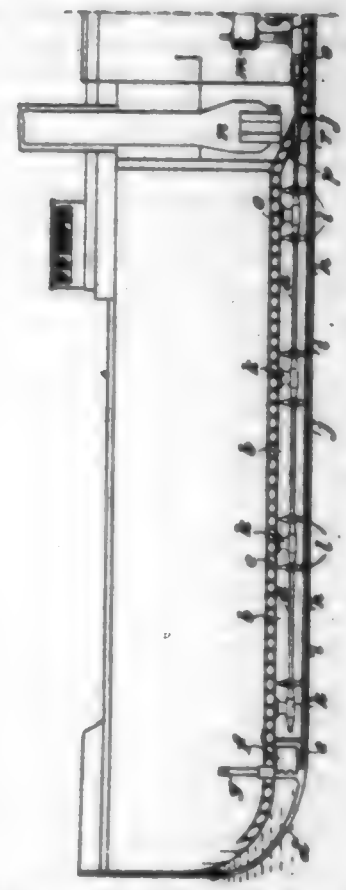
7. The combination with a hinged derailer of a rock-shaft and signal device connected thereto, and an obstruction on the rock-shaft in the path of movement of the derailer, whereby the derailer in its turning movement is adapted to ride down the signal device.

8. The combination with a derailer, of a rock-shaft and signal device connected thereto, said signal device consisting essentially of a jointed rocker-arm and means for temporarily holding said arm rigid, and an obstruction located on the rocker-shaft in the path of movement of the derailer, whereby the derailer may be thrown out of operative position and by a continued movement throw the signal out of operative position.

9. The combination with a derailer, of a rock-shaft and a signal device connected thereto, a collar on the rock-shaft and a pair of lugs secured to said collar, whereby the movement of the derailer to operative position or inoperative position will carry the signal device to a similar position.

10. The combination with a derailer of a signal device having a pivoted arm and temporary means for securing said arm in operative position.

817,519. VESSEL PROPELLED BY STEAM. ERNEST C. ROBINSON, West Hartlepool, England. Filed Oct. 23, 1905. Serial No. 283,945.



Claim.—1. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom consisting of metal plates wherein, throughout the entire length of the tunnel, openings are provided; and extending throughout the entire length of said tunnel, bars or girders that are riveted to and adapted to support said plates, substantially as set forth.

2. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom formed of metal plates provided with openings throughout the entire length of the tunnel, and with a roof that forms part of the vessel's bottom and is composed of extreme portions, a middle portion located at a lower level than said extreme portions, and, intermediate between said extreme portions and middle portion, walls that are upwardly inclined toward the respective ends of the vessel, substantially as set forth.

3. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom formed of metal plates provided with openings throughout the entire length of the tunnel, and with a roof that forms part of the vessel's bottom and is composed of extreme portions, a middle portion located at a lower level than said extreme portions, and, intermediate between said extreme portions and middle portion, walls that are upwardly inclined toward the respective ends of the vessel, and extending throughout the entire length of said tunnel, bars or girders that are riveted to and adapted to support said plates, substantially as set forth.

4. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom formed of metal plates provided with openings throughout the entire length of the tunnel; bars or girders that extend throughout the entire length of said tunnel and that are riveted to and adapted to support said plates; and within said tunnel propellers adapted to be actuated by steam or other motive power, substantially as set forth.

5. A navigable vessel comprising a tunnel that extends from end to end of the lower part thereof and is furnished with a bottom formed of metal plates provided throughout the entire length of the tunnel with openings, and with a roof that forms part of the vessel's bottom, and is composed of extreme portions, a middle portion located at a lower level than said extreme portions, and, intermediate between said extreme portions and middle portion, walls that are upwardly inclined toward the respective ends of the vessel; within said tunnel a propeller-shaft; propellers on said shaft; and, in said inclined walls, glands through which said shaft extends, substantially as set forth.

6. A navigable vessel comprising a tunnel that extends from

end to end of the lower part of said vessel and is furnished with a bottom consisting of metal plates wherein, throughout the entire length of the tunnel, openings are provided; extending throughout the entire length of said tunnel, bars or girders that are riveted to and adapted to support said plates; at each end of said vessel a stem-post or frame that extends to the bottom of said tunnel and has formed in it an opening adjacent to the corresponding mouth of said tunnel; and rudders mounted within said openings in the frame or stem-post, substantially as set forth.

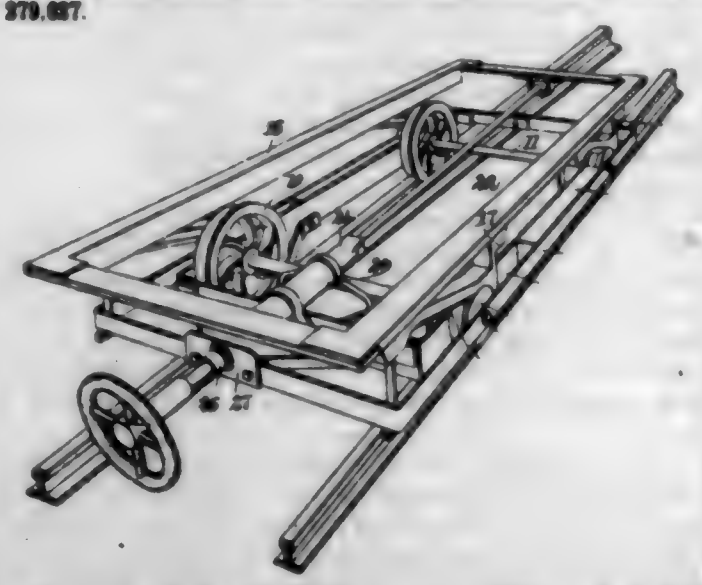
7. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom formed of metal plates provided with openings throughout the entire length of the tunnel, and with a roof that forms part of the vessel's bottom, and is composed of extreme portions, a middle portion located at a lower level than said extreme portions, and intermediate between said extreme portions and middle portion, walls that are upwardly inclined toward the respective ends of the vessel, at each end of said vessel a stem-post or frame that extends to the bottom of said tunnel and has formed in it an opening adjacent to the corresponding mouth of said tunnel; and rudders mounted within said openings in the frame or stem-post, substantially as set forth.

8. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom consisting of metal plates wherein, throughout the entire length of the tunnel, openings are provided; extending throughout the entire length of said tunnel, bars or girders that are riveted to and adapted to support said plates; at each end of said vessel a stem-post or frame that extends to the bottom of said tunnel and has formed in it an opening adjacent to the corresponding mouth of said tunnel; and rudders mounted within said openings in the frame or stem-post and inwardly turned toward the midship section of said vessel.

9. A navigable vessel comprising a tunnel that extends from end to end of the lower part of said vessel and is furnished with a bottom formed of metal plates provided with openings throughout the entire length of the tunnel, and with a roof that forms part of the vessel's bottom and is composed of extreme portions, a middle portion located at a lower level than said extreme portions, and, intermediate between said extreme portions and middle portion, walls that are upwardly inclined toward the respective ends of the vessel; at each end of said vessel a stem-post or frame that extends to the bottom of said tunnel and has formed in it an opening adjacent to the corresponding mouth of said tunnel; and rudders mounted within said openings in the frame or stem-post and inwardly turned toward the midship section of said vessel.

10. In a navigable vessel, a propeller-tunnel, that extends from end to end of the vessel, metal plates forming the bottom of said tunnel arranged so as to provide openings at intervals throughout the length of the tunnel-bottom, and longitudinally-arranged iron members supporting said plates, substantially as set forth.

817,520. BRICK-TRUCK. MARTIN K. SACHS, Houston, Tex., assignor to Mike Butler, Austin, Tex. Filed Sept. 23, 1905. Serial No. 279,627.



Claim.—1. A truck comprising a frame, a pair of shafts journaled on said frame, a roller-bearing mounted upon each of said shafts, and a movable frame mounted above the main frame and provided with dowawardly-extending brackets, said brackets having tracks for receiving said roller-bearings.

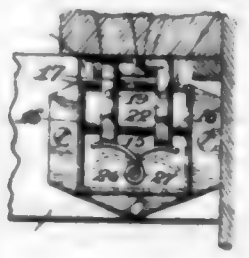
2. A truck comprising a frame, a pair of shafts journaled on said frame, a roller-bearing mounted upon each of said shafts, a movable frame mounted above the main frame and provided with downwardly-extending brackets, said brackets having tracks for receiving said roller-bearings, and means for moving said movable frame comprising a screw connected with the main frame, and a nut connected with the movable frame and coöperating with the screw for moving the latter.

3. A truck comprising a frame, a pair of shafts journaled on said frame, a roller-bearing mounted upon each of said shafts, a movable frame mounted above the main frame and provided with downwardly-extending brackets, said brackets having tracks for receiving said roller-bearings, means for reciprocating said movable frame, and a series of stops on the movable frame, each stop comprising a hook adapted to engage the stationary frame.

4. A truck, comprising a main frame consisting of two rectangular structures separated from each other, a set of axles upon which the main frame is mounted, a roller-bearing upon each end of each axle, located between said structures, a movable frame mounted on the main frame and provided with a bracket having an inclined surface located over each of said bearings, a screw connected with the main frame, and a nut connected with the movable frame and coöperating with the screw for moving the movable frame.

5. A truck, comprising a main frame consisting of two rectangular structures separated from each other, a set of axles upon which the main frame is mounted, a roller-bearing upon each end of each axle, located between said structures, a movable frame mounted on the main frame and provided with a bracket having an inclined surface located over each of said bearings, a screw connected with the main frame, a nut connected with the movable frame and coöperating with the screw for moving the movable frame, and a set of stops each having a hook and mounted on the movable frame, said hooks being adapted to engage the stationary frame when the frame is in its highest position.

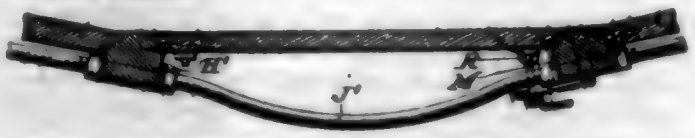
817,521. SASH-FASTENER. DANIEL G. SAUNDERS, Jr., Kansas City, Mo. Filed June 19, 1905. Serial No. 265,943.



Claim.—1. In a sash-fastener, the combination with a toothed plate secured to the upper sash, and having one edge upwardly turned and outwardly bent, of a housing secured to the opposite sash, a spring-actuated pin for engaging the teeth of the first-mentioned plate, a second spring-actuated pin arranged in the housing, and a lug integral with the forward end of said last-mentioned pin for engaging beneath the upwardly-turned outwardly-bent edge of the toothed plate; substantially as specified.

2. In a sash-fastener, the combination with a toothed plate fixed to one of the sash and having an upwardly-bent and outwardly-turned edge, of a housing secured to the opposite sash, a pair of spring-actuated pins arranged in said housing, one of which pins engages beneath the teeth of the plate, a lug integral with the point of the opposite pin for engagement beneath the upwardly-bent and outwardly-turned edge, and operating-pins seated in the spring-actuated pins and passing upwardly through slots formed in the top of the housing for withdrawing the spring-actuated pins; substantially as specified.

817,522. SILO. RUDOLF F. SCHLICHTER, Philadelphia, Pa., assignor to Harvey T. Schlichter, Philadelphia, Pa. Filed Jan. 8, 1903. Serial No. 138,218.



Claim.—1. A silo having a doorway provided at one side with a socket and at its other side with a beveled abutting face, a door having a beveled abutting face at one side thereof to contact with the abutting face of the doorway, whereby the inner faces of said door and said doorway may be brought into substantial alinement the other end of said door being adapted to enter said socket, and means for drawing outwardly the side of said door adjacent the said beveled abutting face.

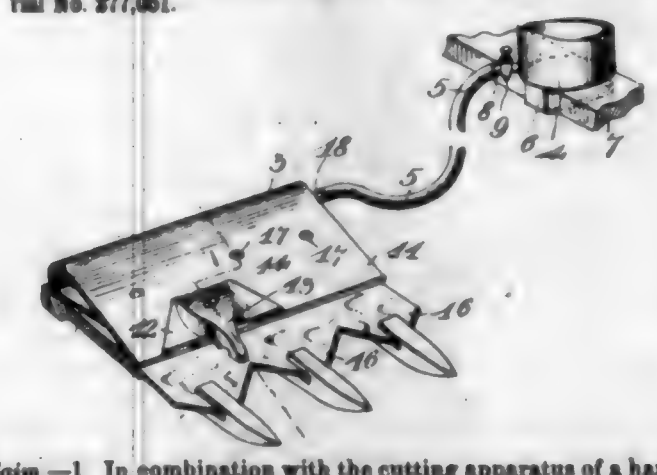
2. A silo having a doorway provided at one side with a socket and at its other side with a beveled abutting face, a door having a beveled abutting face at one side thereof to contact with the abutting face of the doorway, whereby the inner faces of said door and said doorway may be brought into substantial alinement the other side of said door being adapted to enter said socket, and coacting means situated upon the side portion of the door adjacent said abutting face and upon the adjacent door-post for drawing said door outwardly and holding said abutting faces in contact under pressure.

3. A silo having a doorway, a door fitting said doorway, the engagement between said doorway and door at one side thereof serving to prevent the door from moving either outwardly or inwardly, the engagement between said door and doorway at the other side thereof serving to prevent the door from moving outwardly only, and means for drawing said door outwardly consisting of a movable bolt carried by the door and provided with a nut and a slotted lug mounted upon the door-post.

4. A silo having a doorway, a door fitting said doorway, the engagement between said doorway and door at one side thereof serving to prevent the door from moving outwardly or inwardly, the engagement between said door and doorway at the other side thereof serving to prevent the door from moving outwardly only, and means for drawing said door outwardly consisting of a movable bolt carried by the door and provided with a nut and a slotted lug mounted upon the door-post, the outer end of said slot being situated at the bottom of the lug and said slot having a socket at one end to receive said bolt.

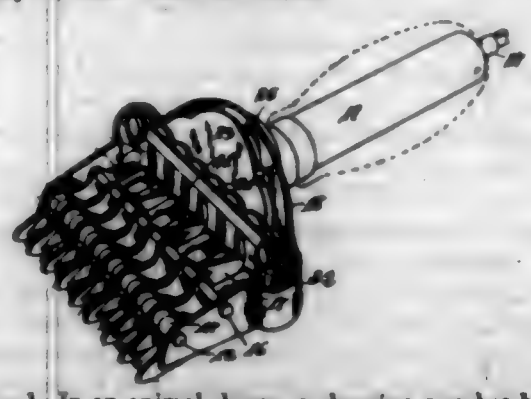
5. A silo having a doorway, a door fitting said doorway, the engagement between said doorway and door at one side thereof serving to prevent the door from moving either outwardly or inwardly, the engagement between said door and doorway at the other side thereof serving to prevent the door from moving outwardly only, said door being substantially flush with the doorway at both sides, a movable bolt secured to the end portion of the door incapable of moving outwardly only, said bolt being provided with a nut, and a lug upon the door-post adapted to be engaged by said nut.

817,528. **WATER-DISTRIBUTER FOR SICKLES.** SIDNEY C. SCOTT and JOHN C. WATSON, Marion, Kans. Filed Sept. 5, 1905. Serial No. 277,051.



Claim.—1. In combination with the cutting apparatus of a harvester or mower, the herein-described distributer-head bearing on the finger-bar and comprising the chamber, wedge-shaped in transverse section, having the inclined upper side formed with a forwardly-extending flange to bear on the finger-bar and provided with bolt-openings, the upper side of the chamber being provided with openings for the discharge of water.

817,524. **ANIMAL-SHEARS.** JAMES D. SCOVEL, Detroit, Mich. Filed May 29, 1905. Serial No. 262,739.



Claim.—1. In an animal-shears, a shearing member having in combination a tubular part notched and with the edges of the notch sharpened for cutting purposes, an oscillating part adapted to oscillate within the tubular part and provided with a cutting projection adapted to oscillate in engagement with the sharpened edges of the notch, and means for producing the oscillation of the said oscillating part, substantially as described.

2. In an animal-shears, a cutting section thereof having in combination a split tubular member, means for supporting said member intermediate its extremities, the part in front of the support being notched and with the edges of the notch sharpened, and a part at the rear of the support extending and being resilient, an oscillating member adapted to coact with the tubular member provided with a cylindrical bearing to engage the tubular member in front of the support and with a second cylindrical bearing to engage the rear extension of the tubular member, and with a resilient connection between the two tubular bearing parts, substantially as described.

3. In an animal-shears, in combination with the main frame, tubular shearing members supported on a cross-bar in said main frame, oscillating shearing members bearing in said tubular shearing members and having a second bearing in said frame, and means for oscillating said cylindrical shearing members, substantially as described.

4. In an animal-shears, in combination with a framework, tubular shearing members pivotally supported in said frame, cylindrical shearing members journaled in said tubular shearing members and in said frame, means whereby said cylindrical shearing members may shift and thereafter in connection with the tubular members swing on said pivotal bearings, substantially as described.

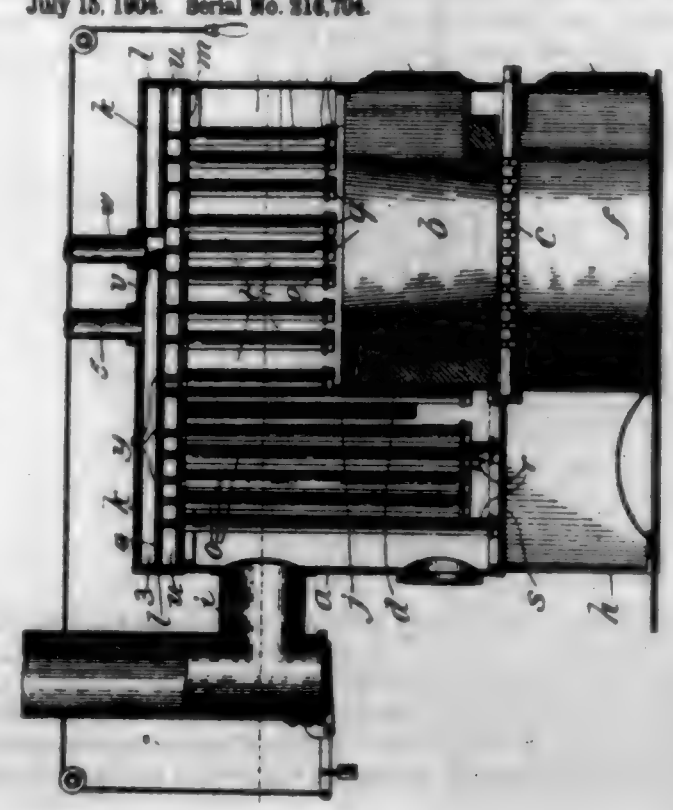
5. In an animal-shears, in combination with a main frame, a plurality of cutting members having oscillating blades journaled in the main frame, means for shifting the cutting members unitedly to disengage the journals from the frame and swing the cutting members with respect to the main frame, substantially as described.

6. In an animal-shears, in combination with a plurality of cutting shear members, a plurality of parting-strips, tie-rods uniting the parting-strips, alternate parting-strips being provided with rear extensions that engage the main case, and with oval perforations engaging over a tie-rod, all of said parting-strips being provided with registering circular holes to engage a tie-bolt, whereby upon withdrawing the said last-mentioned tie-bolt the said alternate parting-strips may be shifted out of engagement with the frame, substantially as described.

7. A cutting member for an animal-shears, having in combination a two-part tubular blade and a cylindrical blade engaging in the tubular blade, the cutting edge of the two-part tubular blade being curved, substantially as described.

8. A cutting member for an animal-shears, having in combination a two-part tubular blade and a cylindrical blade engaging in the tubular blade, the cutting edge of the two-part tubular blade being curved and provided with clearance behind the curved cutting edge, substantially as described.

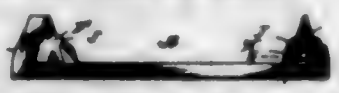
817,525. **WATER-HEATER.** DANIEL SHAFFER, Aurora, Ill. Filed July 15, 1904. Serial No. 216,704.



Claim.—1. In an apparatus of the class described, the combination of metallic walls forming a receiving-chamber and a heating-chamber, a fire-box, a series of pipes arranged over such fire-box having closed lower ends and open upper ends communicating with the heating-chamber, a series of relatively long pipes having closed lower ends extending below the level of the lower ends of the pipes over the fire-box and forming supports for the receiving and heating chambers, and feed-pipes open at both ends and having their upper ends connected with the receiving-chamber and their lower ends extending into the closed pipes, respectively.

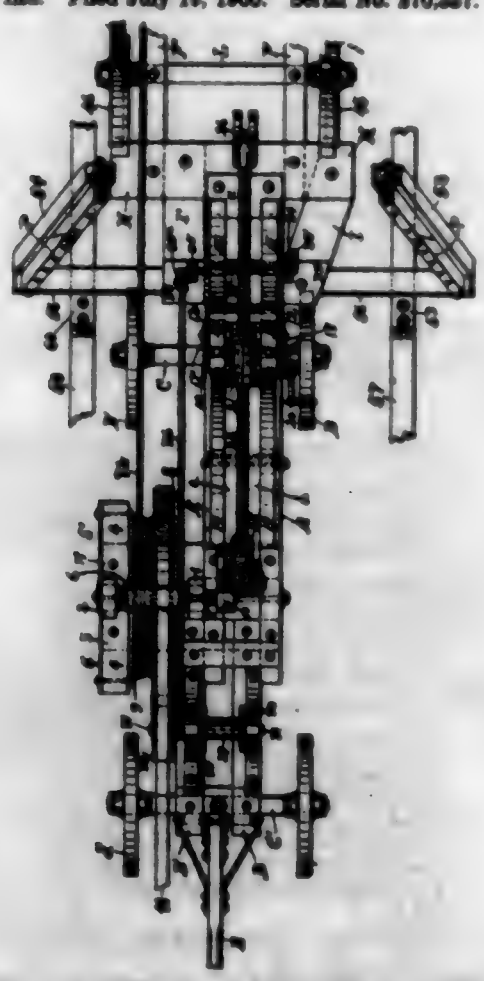
2. In an apparatus of the class described, the combination of metallic walls forming a receiving-chamber and a heating-chamber, a fire-box, a series of pipes arranged over such fire-box having closed lower ends and open upper ends communicating with the heating-chamber, a series of relatively long pipes having closed lower ends extending below the level of the lower ends of the pipes over the fire-box and forming supports for the receiving and heating chambers, feed-pipes open at both ends and having their upper ends connected with the receiving-chamber and their lower ends extending into the closed pipes, respectively, and a baffle arranged back of the fire-box and extending below the level of the lower ends of the pipes which are over the fire-box for diverting the heated gases from the fire-box downward to the lower portions of the relatively long pipes.

817,526. HORSESHOE. JOHN B. SHAFFER, Cumberland, Md., assignor to James J. Burns, Cumberland, Md. Filed Jan. 6, 1905. Renewed Mar. 10, 1906. Serial No. 305,312.



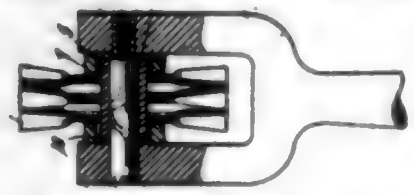
Claim.—A horseshoe having projections at its heel and toe portions, mortised seats in said projections, said toe projection being elongated and having a kerf in the inner vertical wall of the seat therein, calks formed with tapered tenons adapted to fit in said seats, a spring-tongue formed on the toe-calk adapted to engage said kerf, and shoulders on said calks adapted to abut against the face of the projections on the shoe.

817,527. WELL-DRILLING MACHINE. JOHN W. SHAWVER, Portland, Ind. Filed July 19, 1905. Serial No. 270,337.



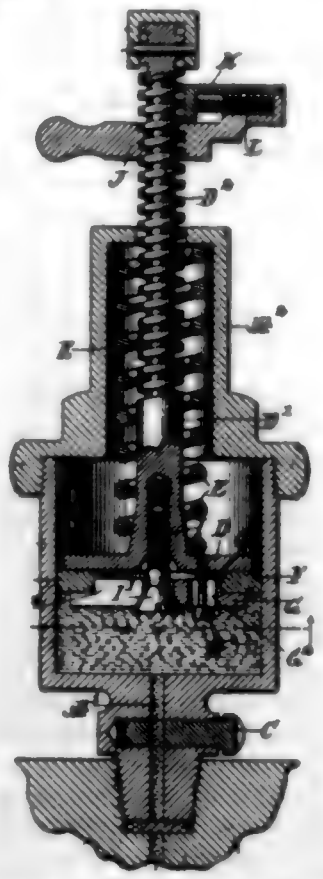
Claim.—In a well-drilling machine having in combination, two main frame-sections, ground-wheels on which the said main frame-sections are mounted, an axle for each pair of ground-wheels, the forward section having a walking-beam mounted thereon, the frame of said front section being formed of a pair of main sills spaced apart and extending to the rear beyond the rear wheels of said front section and forwardly terminating in the rear of the front wheels thereof, auxiliary sills extending from the sides of the main sills forward and being pivotally mounted to the axle of the front wheels, a derrick extending over and above the sections, means for securing the derrick in position, and means for raising and lowering the derrick by power transmitted through the mechanisms located on the machine, all substantially as shown and described and for the purposes set forth.

817,528. TOOL FOR TRUING EMERY-WHEELS. LOUIS A. SEIBMAN, Detroit, Mich. Filed Nov. 16, 1905. Serial No. 287,567.



Claim.—In a truing-tool of the class described, in combination with a handle terminating in a forked portion, an arbor extending through the forked portions, a bushing journaled on the center portion of said arbor, its length being less than the distance between said forked portions, abrading-disks carried by said bushing and with it rotatable with respect to said arbor, and washers encircling said arbor at each end of the bushing, said washers having flanged portions engaging over the end of the bushing and against the outer of the disk members, and also being rotatable independently of said forked portions, bushing, and disks, substantially as described.

817,529. LUBRICATOR. GEORGE SLOAN, North Yakima, Wash. Filed Sept. 19, 1906. Serial No. 279,067.

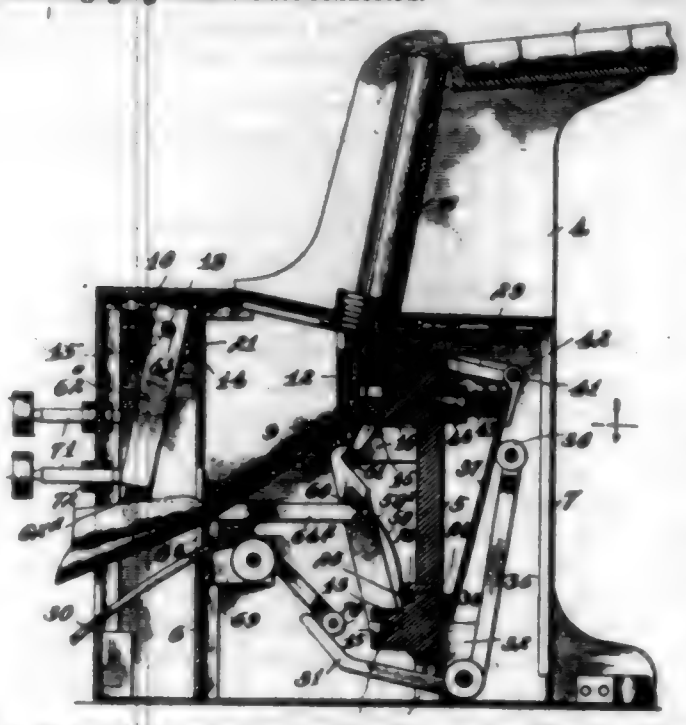


Claim.—A lubricator comprising a vessel for containing a lubricant and provided with a feed-passage for the discharge of the lubricant from the vessel, a spring-pressed plunger provided with a plunger-rod extending without the vessel, a handled nut screwing on the said extended portion of the plunger-rod, said nut having a raised portion provided with a radial groove having undercut edges, a retainer having a head for engaging the plunger-rod, and a body portion fitting in the groove, and a spring between the head and the raised portion.

817,530. CHANGE-MAKER. CHARLES C. SPENCER, Rockford, Ill. Filed July 15, 1905. Serial No. 269,856.

Claim.—1. In a change-maker, in combination, a plurality of coin-receptacles; a plurality of coin-engaging members; a member to which said coin-engaging members are pivotally connected; a cam for each of said coin-engaging members for moving it into operative position with relation to one of said coin-receptacles; means for

actuating said cams; and means for moving the member to which the coin-engaging members are connected.



2. In a change-maker, in combination, a plurality of coin-engaging members adapted to be lifted into operative position; and means for lifting said coin-engaging members comprising a setting-lever, a setting-key for each of said setting-levers for operating them, and another setting-key for operating a plurality of said setting levers.

3. In a change-maker, in combination, a plurality of coin-engaging members; a plurality of mechanisms for setting said coin-engaging members, each of said mechanisms comprising a pivoted lever, said levers being arranged side by side; a projection on one of said levers adapted to engage and move an adjacent one of said levers; and a setting-key for each of said levers.

4. In a change-maker, in combination, a coin-engaging member; means for placing said member in operative position; and means for causing said member to engage a coin, said member being adapted to restore said placing means to its initial position.

5. In a change-maker, in combination, a coin-engaging member; a rotatable cam for placing said member in operative position; and means for causing said member to engage a coin, said member being adapted to engage and restore said cam.

6. In a change-maker, in combination, a coin-engaging member; means for reciprocating said member; and means for placing said member in operative position, comprising a rotatable cam, said member being adapted to engage and restore said cam upon the movement of said member in one direction.

7. In a change-maker, in combination, a coin-engaging member; means for reciprocating said member; and means for placing said member in operative position, comprising a rotatable cam having a lifting-tooth, said member having a notch therein in which said tooth is adapted to engage upon the movement of said member in one direction.

8. In a change-maker, in combination, a reciprocable coin-engaging member; means for moving said member in one direction; a spring for moving said member in the opposite direction; a rotatable cam for placing said member in operative position; and a lever for rotating said cam in one direction, said coin-engaging member being adapted to engage and move said cam in the opposite direction.

9. In a change-maker, in combination, a coin-engaging member; a rotatable cam for setting said coin-engaging member; a member having a recess therein in which said cam is rotatably mounted, said cam having a groove in one of its sides; and a spring lying in said groove and bearing against said cam and the side wall of said recess.

10. In a change-maker, in combination, a coin-receptacle; a coin-engaging member; a cam for moving said member into operative position with relation to said coin-receptacle; a pivoted finger for moving said cam; a lever having a link connection with said finger; and a setting-key for moving said lever.

11. In a change-maker, in combination, a coin-engaging member; a cam for setting said member; a lug on said cam; a finger adapted to engage said lug; a pivoted lever; a link connecting said lever and said finger; and a setting-key for pivotally moving said lever.

12. In a change-maker, in combination, a coin-holder adapted to support a row of coin-stacks; a series of coin-engaging members slidably supported beneath said holder; means located beneath said series of coin-engaging members; or setting said members; a series of setting-keys arranged in front of and operatively connected with said setting means; a coin-chute arranged to discharge the coins substantially directly beneath said setting-keys; and a single delivery-lever for operating all of said coin-engaging members, the operating end of said lever extending to a point substantially directly beneath the discharge end of said coin-chute.

13. In a change-maker, in combination, a plurality of coin-engaging members; a tilting member to which said coin-engaging members are attached; means for moving said tilting member in one direction; a bell-crank lever for moving said tilting member in the opposite direction; and a hand-lever adapted to move said bell-crank lever.

14. In a change-maker, in combination, a plurality of coin-engaging members; a tilting member to which said coin-engaging members are pivotally connected; a spring for moving said tilting member in one direction; a bell-crank lever one arm of which is arranged to bear against said tilting member; and a hand-lever adapted to bear against the other arm of said bell-crank lever.

15. In a change-maker, in combination, a plurality of coin-engaging members; a tilting member to which said coin-engaging members are attached; means for moving said tilting member in one direction; and a pivoted delivery-lever operatively connected with said tilting member for moving said member in the opposite direction.

16. In a change-maker, in combination, a coin-engaging member; a rotatable cam for placing said member in operative position; a lug fixed to said cam; a pivoted finger adapted to engage said lug; a lever for moving said finger; a key for moving said lever; and means for actuating said coin-engaging member.

17. In a change-maker, in combination, a tilting member; a plurality of coin-engaging members pivotally connected with said tilting member; means for tilting said tilting member; and means for setting said coin-engaging members.

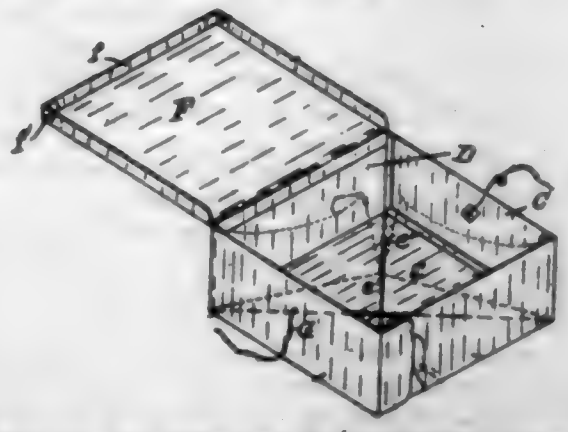
18. In a change-maker, in combination, a plurality of coin-delivery mechanisms; a plurality of keys for setting said mechanisms; a single delivery-lever for operating said coin-delivery mechanisms; and a lever arranged in position to be grasped together with said delivery-lever, which said lever is adapted to set one of said coin-delivery mechanisms.

19. In a change-maker, in combination, a plurality of coin-delivery mechanisms; a supporting member having a longitudinal groove and a plurality of transverse grooves therein; a pivot-rod supported in said longitudinal groove; and setting means for said coin-delivery mechanisms, said means comprising members mounted on said pivot-rod and lying in said transverse grooves.

20. The combination, with a coin-engaging member, of an adjusting-plate connected thereto at one end of said plate, and a screw having a screw-thread engagement with said coin-engaging member and adapted to support the other end of said adjusting-plate.

21. The combination, with a coin-engaging member, of an adjusting-plate secured thereto at one end of said plate, and a screw lying in said coin-engaging member, the head of said screw being arranged to support the free end of said plate, said plate having an opening therethrough registering with the head of said screw.

817,581. FOLDING BOX. HENRY W. STUART, Fernbank, Ohio. Filed May 20, 1905. Serial No. 261,429.



Claim.—1. In a folding box, the combination of four uncreased sides permanently secured to the bottom and at three of the corners; a detachable connection between the sides at the fourth corner; an inwardly-folding crease in the bottom, connecting the corners of the box adjacent to the open corner; and a crease in the bottom connect-

ing the other corners, said last-named crease being inwardly-folding in one portion and outwardly-folding in the other portion, substantially as specified.

2. In a folding box, the combination of four uncreased sides permanently secured to the bottom and at three of the corners; a detachable connection between the sides at the fourth corner; an inwardly-folding crease in the bottom, connecting the corners of the box adjacent to the open corner; and a crease in the bottom connecting the other corners, said last-named crease being inwardly-folding in the portion remote from the open corner, and outwardly-folding in the portion adjacent thereto, substantially as specified.

3. In a folding box, the combination of four uncreased sides permanently secured to the bottom and at three of the corners; a tongue-and-slot connection between the sides at the fourth corner; an inwardly-folding crease in the bottom, connecting the corners of the box adjacent to the open corner; and a crease in the bottom connecting the other corners, said last-named crease being inwardly-folding in the portion remote from the open corner, and outwardly-folding in the portion adjacent thereto, substantially as specified.

817,532. BOTTLE-CLOSURE. ALICE M. TAYLOR, Pittsburg, Pa. Filed Oct. 14, 1905. Serial No. 282,862.



Claim.—1. A bottle-closure embodying a metallic sealing-cap, and a member rigidly secured thereto, the free end of said member projecting in a plane parallel to and above the top surface of the cap and beyond the periphery of the cap for a short distance.

2. A bottle-closure embodying a metallic sealing-cap, and an attachment for removing the same from the bottle, comprising a wire member having one end rigidly secured to said cap and its other end projecting beyond the periphery of the same.

3. A bottle-closure embodying a metallic sealing-cap and an attachment for removing the same from the bottle, comprising a wire member having its one end secured thereto at a point beyond the center of said cap, and having its other end projecting beyond the periphery thereof.

4. A bottle-closure embodying a sealing-cap and an attachment for removing the same from the bottle, comprising a U-shaped wire member having its legs bent at an angle at their ends, the bent ends thereof being rigidly secured to said cap, and the free end of said member projecting beyond the periphery of said cap.

5. A bottle-closure embodying a metallic sealing-cap, and an attachment for removing the same from the bottle, comprising a U-shaped wire member having its legs rigidly secured to said cap at their ends, the other end of said member projecting beyond the periphery of the cap.

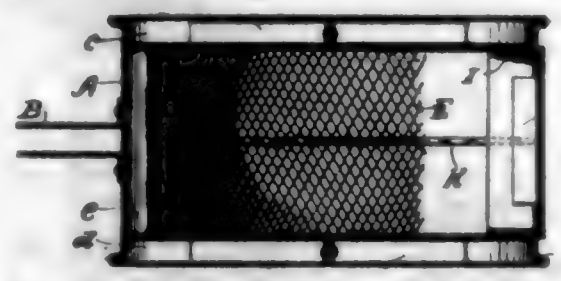
6. A bottle-closure embodying a metallic sealing-cap, and an attachment for removing the same from the neck of the bottle comprising a U-shaped wire member having its ends secured to said cap at a point beyond the center thereof, and having its free end projecting beyond the periphery of said cap.

7. A bottle-closure embodying a metallic sealing-cap, formed with an outwardly-extending member, an attachment for removing said cap from the bottle, comprising a wire member rigidly secured to said cap and having its free end projecting beyond the periphery thereof, and a wire connecting-link formed with hooked ends passing about said finger and said removing member to hold the latter to the cap.

8. A bottle-closure embodying a metallic sealing-cap formed adjacent its periphery with an outwardly-extending finger, an attachment for removing said cap from the bottle comprising a U-shaped wire member having the ends of its legs rigidly secured to said cap, the free end of said member projecting beyond the periphery of said cap, and a U-shaped yoke for holding said member to said cap, the ends of said yoke being bent, said yoke straddling said finger, and having the bent ends thereof hooked about the adjacent legs of said wire removing attachment.

817,533. COFFEE-ROASTER. PAUL E. J. THORBEN, New York, N. Y. Filed Apr. 14, 1906. Serial No. 311,445.

Claim.—1. In a coffee-roaster, the combination with an exterior sheet-metal shell, of an interior cage for the berries and a foraminated distributing-plate located in said cage, the cage having meshes and being arranged within the shell at a distance from its vertical wall and top and bottom, substantially as shown and described.



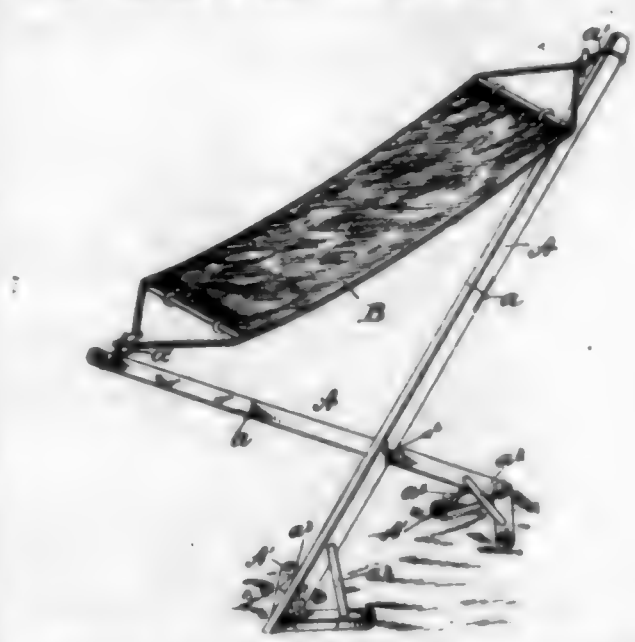
2. In a coffee-roaster, the combination of an exterior shell having an imperforate top and bottom, of an interior open-work cage for the berries, and spiders for maintaining the cage in position within the shell, substantially as shown and described.

3. In a coffee-roaster, the combination with the exterior shell having a hinged door, of an interior cage for the berries, said cage being supplied with a flange for surrounding the doorway, substantially as and for the purposes set forth.

4. In a coffee-roaster, the combination with the cage for containing the berries, of a foraminated distributing-plate, the same being located within the cage and arranged to operate substantially in the manner and for the purposes set forth.

5. In a coffee-roaster, the combination with the sheet-metal shell having a fixed bottom and a removable top, of an interior removable open-work cage and the spiders for sustaining the latter at a distance from the wall of the shell and from the top and bottom thereof, substantially as shown and for the purposes set forth.

817,534. HAMMOCK-SUPPORT. JOHN M. TROSELL, Baltimore, Md. Filed Dec. 12, 1905. Serial No. 291,548.



Claim.—1. A hammock-support comprising a frame, composed of two legs, each of which is formed in two parts hinged together and at its lower end has a hinged foot extending transversely each way therefrom, and a brace adapted to engage between each of said feet and the side of the leg, substantially as set forth.

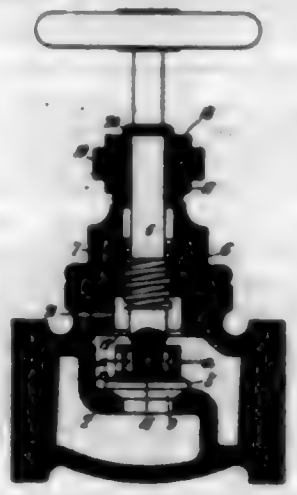
2. A hammock-support comprising a frame, composed of two legs pivoted together, each of said legs being composed of two parts hinged together and having a foot-piece hinged to each side thereof at its lower end, a brace connected with each foot-piece and extending back to engage with the side of said leg, and a hammock-support at the top end of said leg, substantially as set forth.

817,535. VALVE AND FAUCET. JAMES WALSH, Jr., Philadelphia, Pa. Filed Feb. 13, 1906. Serial No. 300,448.

Claim.—1. The combination of the valve-stem, the valve, a plurality of screws carried by one of said elements and a chambered socket on the other element for receiving the heads of the screws, which fill said chamber from top to bottom, said socket having an opening in its wall of substantially the same cross-section as the heads of the screws and through which said screws may pass, substantially as specified.

2. The combination of the valve-stem, the valve, a plurality of

screws carried by one of said elements and a chambered socket on the other element for receiving the heads of the screws, which fill said chamber from top to bottom the screw-carrying element having a bearing on the base of the socket independent of the screws, said socket having an opening substantially the same in cross-section as the heads of the screws and through which said screws may pass, substantially as specified.

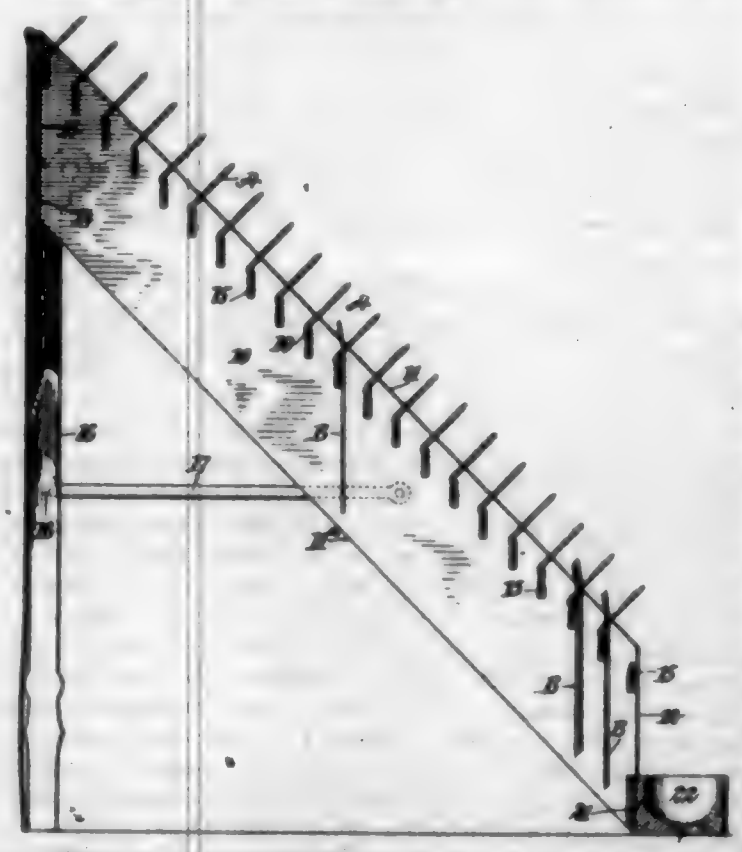


817,536. COLLAR-BUTTON. GEORGE X. WENDLING, San Francisco, Cal. Filed Nov. 2, 1905. Serial No. 285,624.



Claim.—A collar-button consisting of the members A, B, C, the member B having a threaded stem and disk with serrations at the edge, the member A having a hollow threaded stem and disk at one end, and the member C having a head and socketed stem with internal threads all substantially as set forth.

817,537. ACCOUNT-FILE. JAMES O. WILHELM, Limaville, Ohio. Filed Aug. 18, 1905. Serial No. 274,709.

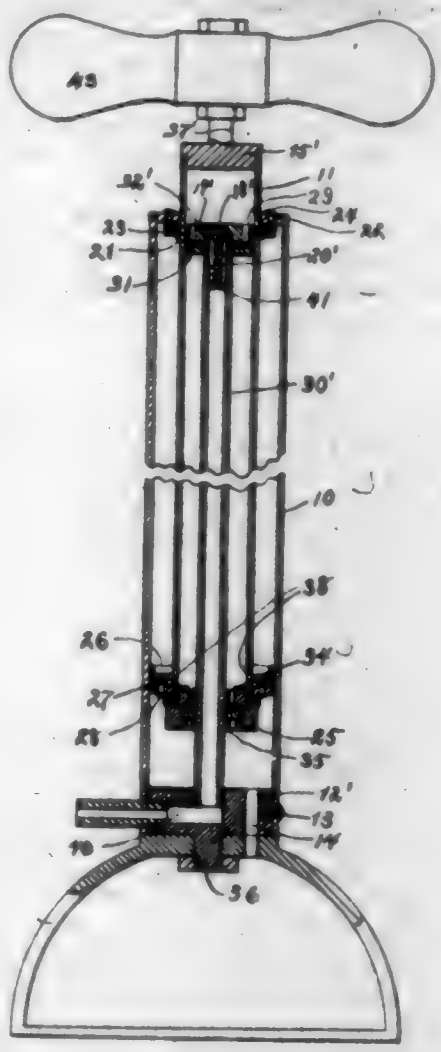


Claim.—1. An account-file, consisting of inclined side pieces connected at each end by cross-bars and intermediate of their ends by a series of spaced cross-bars, legs hinged to the upper ends of the side pieces, hooks hinged to the side pieces and engaging the legs to hold them in position, and pins having angular shanks secured to the intermediate cross-bars, whereby the pins will occupy an oblique position relative to the said cross-bars, the pins being arranged in rows.

2. An account-file, comprising inclined side pieces connected together at their upper ends and supported at said end by legs, a series of spaced cross-bars arranged in parallel vertical planes between the inclined side pieces with their upper edges a short distance below the upper edges of said side pieces, and pins having angular shanks secured to said cross-bars, whereby the pins will stand at right angles to the inclined side pieces.

3. An account-file, comprising inclined side pieces connected together at their ends by cross-bars and intermediate of their ends by a series of spaced cross-bars arranged in parallel vertical planes, a plurality of pins secured to each cross-bar and standing at angles thereto, legs hinged to the upper ends of the side pieces, and means for holding the legs in a vertical position.

817,538. COMPOUND AIR-PUMP. HOWARD WILCOX, Chicago, Ill. Filed July 1, 1904. Serial No. 214,890.



Claim.—1. A compound pump comprising an outer, low-pressure cylinder having an internal packing at its end, a high-pressure cylinder working through said packing and having an external piston working in said outer cylinder, a piston carried by said outer cylinder and working within said inner, high-pressure cylinder, said cylinders being in unobstructed communication at a point between said pistons, substantially as described.

2. A compound pump comprising an outer, low-pressure cylinder provided with an internal packing at its end and carrying a central rod having a piston thereon, an inner, high-pressure cylinder working between said packing and said piston, said high-pressure cylinder having a piston working in said outer cylinder and communicating at its inner end with the annular space between said cylinders, said pistons being one-way yielding and oppositely acting respectively to initially and finally compress air in the annular spaces between said cylinders and in the outer end of said inner cylinder, substantially as described.

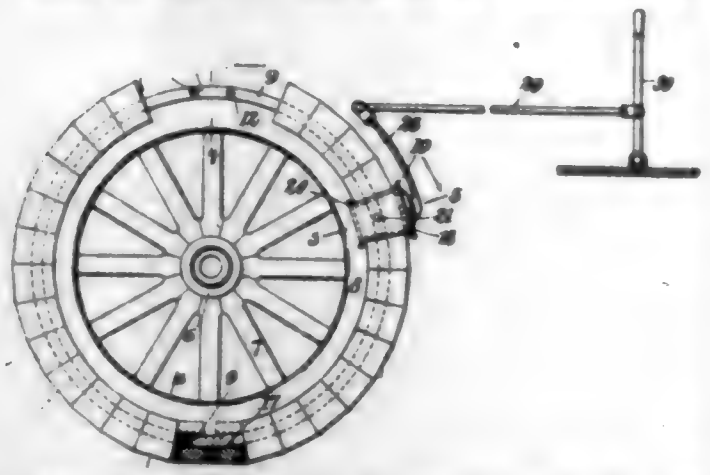
3. A compound pump comprising a stationary outer low-pressure cylinder having an inlet at its lower end and an internal packing at its upper end and carrying a central rod with a piston thereon, and an inner, high-pressure cylinder shiftable between said packing and said piston and carrying at its lower end a piston working in said outer cylinder and a packing engaging said rod, said inner, high-pressure cylinder having an unobstructed port in its side wall adjacent its lower end, and said pistons being one-way yielding and oppositely acting respectively to initially and finally compress air in the annular space between said cylinders and in the upper end of said inner cylinder, whereby the initial compression takes place on the upper stroke and the final compression on the downstroke, and said

piston-rod having a discharge-outlet passage extending therethrough, substantially as described.

4. A compound pump comprising an outer, low-pressure cylinder having at its upper end a downturned flanged packing-ring and an upturned flanged piston supported upon a central rod and an inner, high-pressure cylinder shifting between said packing and said piston and carrying on its lower end an upturned, flanged piston working in said outer cylinder and an upturned, flanged packing-ring engaging said rod, said inner, high-pressure cylinder having a port opening thereinto from the space between said cylinders, and said pistons and packing-rings being formed of yielding, flexible material, substantially as described.

5. A compound pump comprising a stationary, outer low-pressure cylinder, a reciprocating inner, high-pressure cylinder communicating therewith and provided at its lower end with a one-way yielding piston of flexible material working in said low-pressure cylinder, a rod carried by said outer, low-pressure cylinder and extending through the lower end of said high-pressure cylinder, and an upturned, one-way yielding piston of flexible material fixed to the upper end of said rod and working in said high-pressure cylinder, whereby the air is finally compressed on the downstroke, substantially as described.

817,539. NON-SLIPPING TIRE AND BRAKE. JOSEPH A. YOUNG, New York, N. Y. Filed May 12, 1905. Serial No. 260,152.



Claim.—1. The combination of a wheel provided with a felly and with a tire wider than said felly, and a plurality of sector-like shoes each partially encircling said tire, said shoes being loose relatively to said tire.

2. The combination of a wheel and a plurality of shoes disposed loosely upon the periphery thereof and disconnected from each other, said shoes being provided with tread portions for engaging the earth and with bearing portions for engaging said wheel.

3. The combination of a wheel provided with a tire and a plurality of sector-like shoes entirely disconnected from each other and loosely connected with said tire, each of said shoes having a convex bearing-surface for engaging said tire, and having means whereby it is maintained in proper working relation to said tire.

4. The combination of a wheel, shoes mounted loosely thereupon and movable relatively thereto for the purpose of forming a tread for said wheel, said shoes being disconnected from each other and adapted to move apart by gravity at the upper portion of the wheel.

5. The combination of a wheel provided with a felly and with a comparatively wide tire, sector-like shoes each provided with a slot slightly wider than said felly and with a recess slightly wider than said tire, each of said shoes being further provided with a tread portion, and means for cushioning the movements of said shoes relatively to each other.

6. The combination of a tire provided with a comparatively narrow portion, blocks connected with said tire for the purpose of filling said portion, said block being flush with the edges of said tire, and shoes to be threaded upon said tire, said shoes each being provided with a slot slightly wider than said narrow portion of said tire.

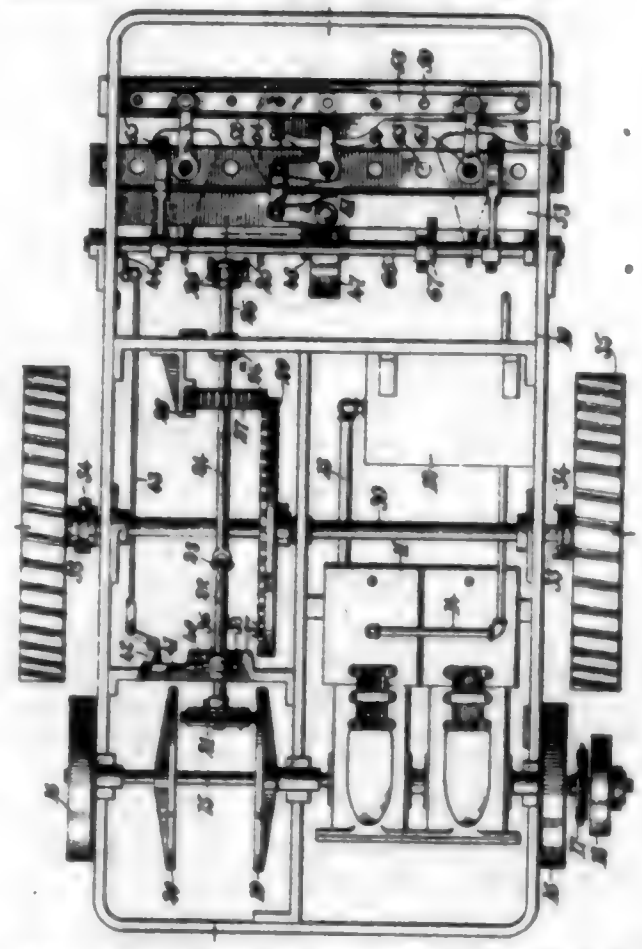
7. The combination of a wheel provided with a tire, a sector-like shoe provided with a convex portion for engaging said tire and with a portion for partially encircling said tire in order to roll said shoes thereupon, and mean for placing said shoes upon said tire and for removing the same therefrom.

8. The combination of a wheel provided with a plurality of separate shoes mounted loosely upon its periphery and movable bodily in relation to said wheel, and a brake for engaging said shoes so as to cause the same to bind upon said wheel and check the rotation thereof.

9. The combination of a wheel provided with a tire, shoes loosely mounted upon said wheel and loosely engaging said tire, and brake mechanism for engaging said shoes, thereby causing the same to check the movements of said tire.

10. The combination of a wheel provided with a tire, shoes mounted loosely upon said tire and slidable in relation thereto, a brake partially encircling said shoes so as to cause the same to bind upon said tire, and means for actuating said brake.

817,540. AGRICULTURAL IMPLEMENT. CHARLES D. ADAMS, Sylvania, Ga. Filed Apr. 10, 1905. Serial No. 254,702.



Claim.—1. The combination of a main frame, a transverse frame comprising a pair of bars one located above the other, wheels upon which said main frame is mounted, a motor for propelling the frame on the wheels, cultivating devices depending from the transverse frame, an operating member connected with said bars and movably mounted with respect to the main frame, and means for swinging the operating member.

2. The combination of a main frame, a motor mounted thereon, traction-wheels, connections between the motor and the traction-wheels, a second frame on the main frame provided with vertical perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in opposite directions, a guide-wheel connected with one of said arms, a movable frame connected with the other arm, a plurality of cultivating implements mounted upon the transverse frame, and a link connected with each cultivating implement and pivotally connected with the third frame.

3. The combination of a main frame, a motor mounted thereon, traction-wheels, connections between the motor and the traction-wheels, a second frame on the main frame provided with vertical perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in opposite directions, a guide-wheel connected with one of said arms, a movable frame connected with the other arm, a plurality of cultivating implements mounted upon the transverse frame, and a link connected with each cultivating implement and pivotally connected with the third frame; said transverse frame comprising a pair of bars located at a distance from each other, an operating member mounted between said bars, and means for moving the operating member.

4. The combination of a main frame, a motor thereon, traction-wheels, connections between the motor and the traction-wheels, a transverse frame on the main frame provided with perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in two directions, a guide-wheel connected with one of said arms, a movable frame connected with the other, cultivating implements mounted on the transverse frame, a link rigidly connected with each cultivating implement and pivotally

connected with the third frame, and means for vertically moving the transverse frame.

5. The combination of a main frame, means for propelling it, a transverse frame mounted on the main frame, a rod pivotally mounted on said transverse frame, a lever connected with said rod and having arms extending in two directions, a guide-wheel connected with one of said arms, a movable frame connected with the other arm, a cultivating implement mounted on the transverse frame, and a link rigidly connected with the cultivating implement and pivotally connected with the third frame.

6. The combination of a frame, a pair of traction-wheels mounted thereon, means for operating the traction-wheels, a guide-wheel mounted to turn on a vertical axis, a lever connected with the guide-wheel and having an arm extending therefrom, a transverse frame on the first-mentioned frame, cultivating devices pivotally mounted on the last-named frame and connected with the second frame, and means for turning said lever.

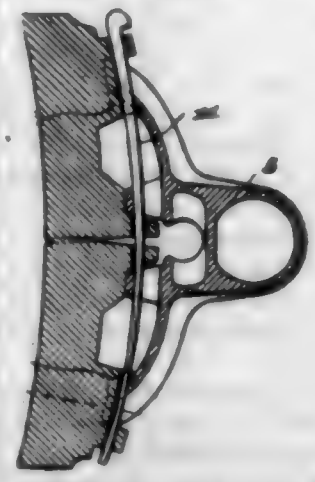
7. The combination of a main frame, a transverse frame thereon provided with vertical perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in opposite directions, a guide-wheel connected with one of said arms, a movable frame connected with the other, a series of cultivating implements mounted upon the transverse frame, and a link rigidly connected with each cultivating implement and pivotally connected with the third frame.

8. The combination of a main frame, a transverse frame thereon provided with vertical perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in opposite directions, a guide-wheel connected with one of said arms, a movable frame connected with the other, a series of cultivating implements mounted upon the transverse frame, a link rigidly connected with each cultivating implement and pivotally connected with the third frame, and means for vertically moving the transverse frame.

9. The combination of a main frame, a transverse frame thereon provided with vertical perforations, a rod mounted to turn in said perforations, a lever connected with said rod and having arms extending in opposite directions, a guide-wheel connected with one of said arms, a movable frame connected with the other, a series of cultivating implements mounted upon the transverse frame, and a link rigidly connected with each cultivating implement and pivotally connected with the third frame; said transverse frame comprising a pair of bars located at a distance from each other, a yoke mounted between said bars, and means for moving the yoke.

10. The combination of a main frame, a transverse frame comprising a pair of bars one located above the other, cultivating devices depending from said transverse frame, an operating member connected between said bars and pivotally mounted with respect to the main frame, and means for swinging the operating member upon its pivot.

817,541. **BRAKE-SHOE.** CHARLES W. ARNDORT, Chicago, Ill. Filed Nov. 9, 1905. Serial No. 286,571.



Claim.—1. A separable brake-shoe provided with spacing and filling means on the back thereof to engage the head, said means allowing the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, substantially as described.

2. A separable brake-shoe provided with spacing and filling lugs on the back thereof to engage the head, said lugs being of sufficient thickness to protect the head against contact with the wheel after the shoe-body proper has been entirely worn away even under uneven wear of the latter, substantially as described.

3. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe a sufficient distance to protect the head against wear even under uneven wear of the shoe, and further provided with one or more apertured lugs on said spacing and filling lugs for the purpose of connection with the head, substantially as described.

4. The combination with a head having one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having spacing and filling lugs between the back of the shoe and the head of sufficient thickness to permit the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, one or more apertured lugs on said spacing and filling lugs, and a key engaging said apertured lugs of the head and shoe, substantially as described.

5. The combination with a head having one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having integral spacing and filling lugs between the back of the shoe and the head, said brake-shoe also having at each end integral apertured lugs disposed both outwardly and inwardly of the end of the head, and a key engaging said apertured lugs of the head and shoe, substantially as described.

6. The combination with a head having forked ends and one or more apertured lugs on the face thereof adjacent to the brake-shoe, of a brake-shoe having integral spacing and filling lugs between the back of the shoe and the head, said brake-shoe also having on its back integral apertured lugs and guide-lugs engaging the forked ends of the head, and a key engaging said apertured lugs of the head and shoe, substantially as described.

7. A separable brake-shoe transversely weakened at a point between its ends, substantially as and for the purpose described.

8. A separable brake-shoe transversely scored at a point intermediate its ends, substantially as and for the purpose described.

9. A separable brake-shoe transversely weakened at its longitudinal center, substantially as and for the purpose described.

10. The combination with a head, of a brake-shoe separably connected thereto, said brake-shoe being transversely weakened at a point between its ends, substantially as and for the purpose described.

11. The combination with a head, of a brake-shoe separably connected thereto, said brake-shoe being transversely weakened at its central part, substantially as and for the purpose described.

12. The combination with a head, of a brake-shoe separably connected at each end to the head, said brake-shoe being transversely scored at its central part, substantially as and for the purpose described.

13. The combination with a head, of a brake-shoe separably connected to the head, said brake-shoe having filling and spacing lugs between its back and the adjacent face of the head and being transversely weakened at its central part, substantially as described.

14. The combination with a head, of a brake-shoe having on each longitudinal half thereof a plurality of devices whereby it is separably connected to the head, said brake-shoe being transversely scored at its central part, substantially as and for the purpose described.

15. A brake-shoe having on its back a keeper for each outer end of the shoe, a pair of central keepers, and a keeper disposed between the central keepers and the end keepers, substantially as described.

16. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe sufficiently to permit the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, and further provided with one or more apertured lugs on the back of the shoe-body for the purpose of connection with the head.

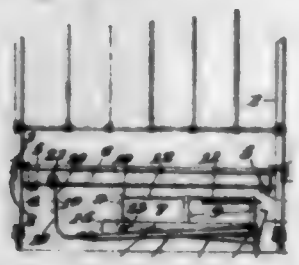
17. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe and adapted to engage the head, and further provided with one or more apertured lugs on the back of the shoe-body and on said spacing and filling lugs for the purpose of connection with the head, substantially as described.

18. A separable brake-shoe provided with spacing and filling lugs projecting beyond the back line of the shoe and adapted to engage the head, and further provided with two or more apertured lugs on the back of the shoe-body proper for the purpose of connection with the head, substantially as described.

19. A brake-shoe having on its back one or more combined spacing, guiding and fastening lugs.

817,542. **CRIB ATTACHMENT FOR BEDSTEADS.** HARRY T. BEALL and ISAIAH V. GUY, Fort Thomas, Ky. Filed Dec. 30, 1905. Serial No. 293,909.

Claim.—1. A crib attachment for bedsteads and the like comprising a bed-frame adapted to support bedding and provided with devices for detachable engagement with the side rail of the bedstead for supporting the bed-frame thereon and supporting means comprising parts connected with the bed-frame and having upturned ends located beneath the bedstead and devices adapted to be carried by the bedstead and with which the upturned ends of said parts are adapted for sliding engagement.



2. A crib attachment for bedsteads and the like comprising a bed-frame adapted to support bedding and provided with devices for detachable connection with the side rail of the bedstead for supporting the bed-frame thereon and supporting means comprising parts connected with the bed-frame and having upturned ends beneath the bedstead and provided with rollers and devices adapted to be carried by the bedstead and with which the rollers on the upturned ends of said parts have engagement.

3. A crib attachment for bedsteads and the like comprising a bed-frame adapted to support bedding and provided with devices for detachable engagement with the side rail of the bedstead for supporting the bed-frame thereon and supporting means comprising parts connected with the bed-frame with upturned ends beneath the bedstead and provided with rollers and bars adapted to be carried on the bedstead and with which the rollers on the upturned ends of said parts are adapted for rolling contact.

4. A crib attachment for bedsteads and the like comprising bars adapted to be extended transversely of the bedstead, hangers having hook-like parts for engagement with the side rails of the bedsteads and having lower ends adapted for connection with the bars for supporting the same, a bed-frame adapted to support bedding and provided with devices for detachable engagement with the side rail of the bedstead for supporting the bed-frame thereon and parts connected with the bed-frame with upturned ends beneath the bedstead and provided with rollers engaged for rolling contact with said transversely-extended bars.

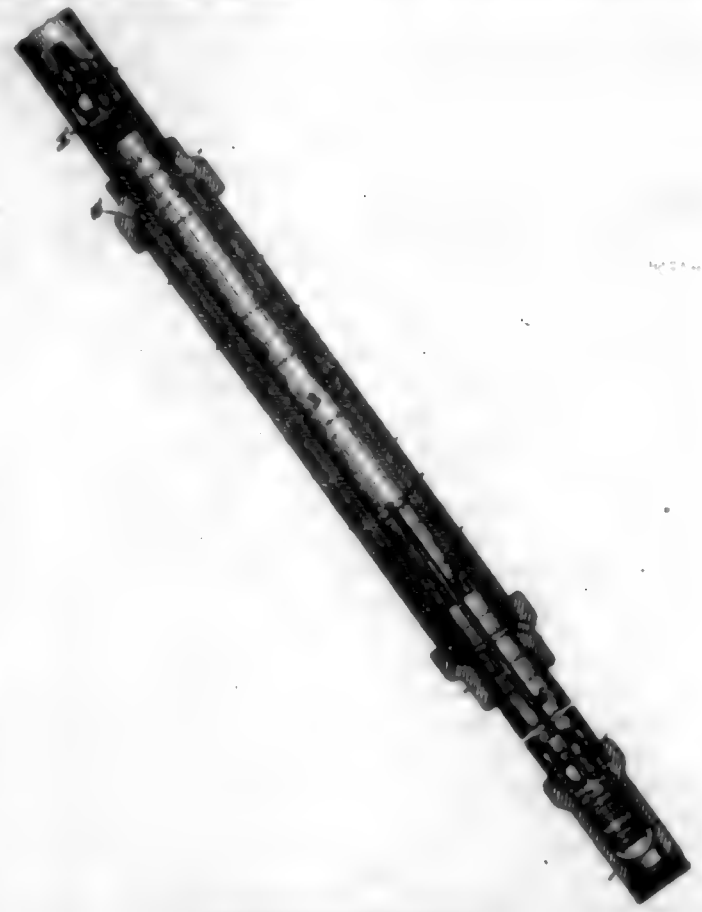
5. A crib attachment for bedsteads and the like comprising a bed-frame adapted to support bedding and provided with devices for detachable engagement with the side rail of the bedstead to support the bed-frame thereon, parts connected with the bed-frame and extended beneath the bedstead, devices adapted to be carried by the bedstead and along which said parts are adapted for movement and auxiliary parts having pivotal connection with the bed-frame and connected with the first-named parts to move in unison therewith and provided with casters for engagement on the floor.

6. A crib attachment comprising a bed-frame adapted to support bedding and provided with devices for detachable engagement with the side rail of a bedstead, parts connected with the bed-frame and having upturned ends beneath the bedstead, rails extended beneath the bedstead and with which the upturned ends of said parts have engagement for longitudinal movement, auxiliary braces having slotted connection with the ends of the bed-frame and having, at their central parts, pivotal connection with said parts for movement in unison therewith, a tie extended between the lower ends of the auxiliary braces and casters carried on said tie for engagement on the floor.

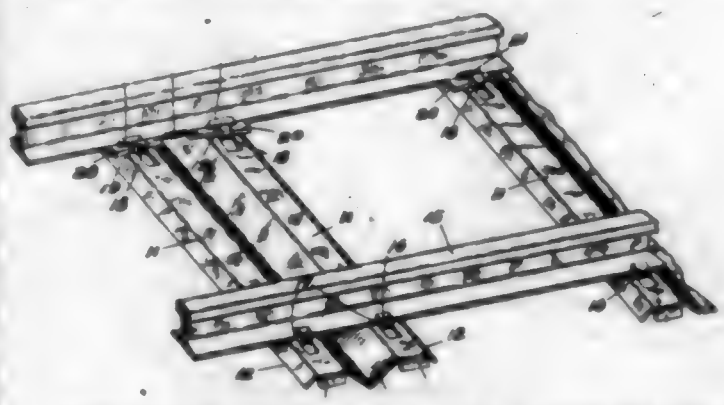
817,543. OIL-WELL PUMP. ROBERT E. BOLE, Bakersfield, Cal. Filed Mar. 10, 1905. Serial No. 249,285.

Claim.—1. In a pump, the combination with a plunger, of a cylinder which consists of an outer casing, a series of lining-sections in said casing fitted to each other and to the exterior of the plunger but having external dimensions such as to leave a space between them and the outer casing, the parts being constructed to permit fluid to flow into and out of said space, and a filling of fusible material which when molten, can be introduced into or allowed to run from said space.

2. In a pump-cylinder, the combination with an outer casing, of a series of lining-sections therein fitted endwise to each other and adapted to fit the plunger but having external dimensions such as to leave a space between them and the outer casing, the parts being constructed to permit fluid to flow into or out of said space, and a filling of fusible material which when molten can be introduced into or allowed to run from said space.



717,544. AUTOMATICALLY-TIGHTENING RAILWAY RAIL-HOLDER AND TIE. WILLIAM H. BROWN, Indianapolis, Ind. Filed Dec. 18, 1905. Serial No. 292,254.



Claim.—1. The combination, with a rail, of a support therefor, means carried by said support for engaging a rail against transverse displacement, a wedge for engaging said rail in opposition to said means, an abutment for said wedge carried by the support, and means for continuously urging said wedge between the rail and abutment.

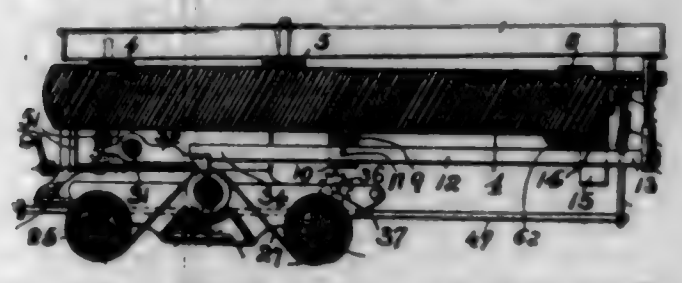
2. The combination, with a tie, of a pair of abutments between which a rail may ride, a wedge adapted to engage one of said abutments and the rail to urge the rail transversely toward the other abutment, and a spring for urging said wedge toward a tighter position.

3. A tie consisting of a metal plate having struck up therefrom at each end two pairs of abutments between which the rail may lie, a pair of wedges each adapted to engage one abutment of a pair to urge the rail transversely toward the other abutment of the pair, and a spring connecting the two wedges to urge them simultaneously toward tighter positions.

4. A tie provided at one end with two pairs of separated abutments between which a rail may lie, a pair of wedges each adapted to engage one abutment of a pair to urge the rail transversely toward the two abutments of the pair, and a spring connecting the two wedges to urge them simultaneously toward tighter positions.

5. A tie formed of a metallic plate creased medially with flanking horizontal portions and downturned edges and having struck up from intermediate portions of the horizontal portions near each end thereof a pair of coöperating inturned lips between which the rail may lie, of two pairs of wedges—one pair for each end of the tie, each wedge adapted to lie between the rail and an adjacent lip, and two springs, each for connecting the adjacent ends of a pair of wedges to urge them simultaneously to tighter positions.

817,545. SELF-PLAYING PIANO. GEORGE W. BURCHETT, Belleville, N. J. Filed Mar. 27, 1903. Serial No. 149,733.



Claim.—1. A self-playing attachment for pianos including a perforated music-sheet, in combination with a series of key-actuating levers fulcrumed on the under side of the keyboard, a rod transversely mounted on the rear end of the keyboard, a spring connecting said rod with each key-connected lever constantly exerting an upward tension on the latter, an adjustable key impact-rod connecting the inner end of each lever at the side of and parallel with the spring, and means engaging the front ends of the levers and the perforated music-sheet for controlling the levers in the way stated.

2. A self-playing attachment for pianos including a perforated music-sheet in combination with a series of key-actuating levers fulcrumed on the under side of the keyboard, a rod mounted transversely at the under side of the latter near its front, a series of oscillating arms fulcrumed on said rod, having their inner ends resting normally on the music-sheet and supporting the front ends of the key-actuating levers, the rear ends of the latter extending beyond the keyboard and having each an adjustable impact-rod, and a spring at the side of and parallel with the rod and connected to constantly elevate the inner end of each key-connected lever.

3. A self-playing piano including the keys in combination with a perforated music-sheet, a transverse bar on the under side of the keyboard and provided with a series of perforations, an extension at the rear end of the board provided with a series of slots, a series of key-actuating levers each pivotally mounted in a slot of said bar, adjustable rods for the keys, one connected to the rear end of each lever, an adjustable rod transversely mounted at the inner end of the keyboard, coil-springs each parallel with and at the inner side of the said adjustable rods and connected to said transverse rod and to said levers.

4. A self-playing attachment for pianos and the like, comprising a series of spring-actuated levers pivoted directly to the under side of the keyboard, the music-sheet mounted beneath the levers, the lever-controlling arms loosely mounted above the music-sheet the acting end of each arm underlying the end of each lever and engaging the note-openings of the music-sheet.

5. A self-playing attachment for pianos including in combination with a transverse bar provided with slots and fixed on the under side of the keyboard, an extension at the rear of the board provided with vertical perforations, guide-hangers 24 fixed to and depending from the under side of the keyboard, a series of key-actuating levers each fulcrumed in slots of said bar, adjustable rods one connected to the rear end of each lever and passing up through the extension perforations, a rod under said extension, coil-springs each connecting a lever with said rod, oscillating arms and the eccentric for raising them both mounted on the keyboard, a driving-pinion 36, all arranged and combined with the music-sheet holder slidable in said hangers and having the gear 35 whereby to engage the said pinion and form a stop to limit the inward movement of the music-sheet holder to stop the beveled points of the oscillating arms at the points for engagement with the music-sheet.

6. A self-playing attachment for pianos and the like, comprising a series of levers pivotally mounted on the under side of the keyboard and parallel with the keys, a series of oscillating levers, one of said series having a groove and the other a projection interlocking with said groove, adjustable connections between the keys and first-named levers, springs for actuating the first-named levers said springs being adjustable as to tension, a perforated sheet at the oscillating levers for controlling the movement thereof, and a hand-controlled bar for moving said oscillating levers to throw the attachment out of action.

7. A self-playing attachment for pianos comprising in combination the key-actuating levers fulcrumed on the under side of the keyboard, the oscillating arms provided with grooves interlocked with said levers, a slotted guide for the rear ends of the levers depending from the rear end of the keyboard, an upward-pulling spring and an impact-rod both attached to the end of each lever, a music-sheet and means for actuating it.

8. A self-playing attachment for pianos including, in combination with the music-sheet a bar having slots fixed to the under side of the keyboard about mediately of its width, a series of key-actuating levers, pivots for the levers in alinement each with the other in said bar, a spring connecting the inner end of each lever with the keyboard, a vertical impact-rod on the inner end of each lever terminating in a cushion for each key, and means actuated by the music-sheet for oscillating the key-actuating levers.

9. A self-playing attachment for pianos and including a music-sheet, in combination with a series of keys, levers for raising the inner ends of said keys, pivots for said levers in alinement each with the other, oscillating arms, one for actuating each lever, the meeting ends for each pair—a lever and an arm—interlocking by a groove, a yielding stop for the inner end of each lever, an impact-rod on the inner end of each lever forcing the inner end of the key upward thereby striking the blow to the string, and a guide for the inner end of each lever depending from the keyboard, whereby the levers and their interlocking arms are maintained in engagement and easy working.

10. A self-playing attachment for pianos including the music-sheet, in combination with a series of keys, levers for raising the inner ends of said keys, a bearing-bar for the levers, oscillating arms one for each lever the meeting ends of each pair—a lever and an arm—interlocking, a yielding stop for the inner end of each lever, a slotted guide for the inner end of each lever, an impact-rod on the inner end of the lever for raising the inner end of the key, and a guide for the free end of the impact-rod for the purpose stated.

11. In an attachment for playing pianos and in combination, the music-sheet, a series of key-actuating levers fulcrumed on the under side of the keyboard extending beyond the rear thereof the arms engaging the music-sheet and the levers, an extension of the keyboard overhanging the rear ends of the key-actuating levers and having openings, a rod mounted loosely on the rear end of each lever and passing through openings in said extension, a coil-spring located between said rod and the end of the keyboard, connecting the latter with said lever, and constantly tending to pull the latter up, the said levers being pivotally mounted at about one-third their length from their front ends and the springs and rods connected to the long rear ends of the levers.

12. In an attachment for playing pianos in combination, the perforated music-sheet, a series of key-actuating levers pivotally mounted on the under side of the keyboard, an adjustable coil-spring connecting the rear end of the lever with the rear end of the keyboard, an adjustable rod connected to the rear end of the lever at the outer side of the spring and engaging the rear end of the key and means operated by the movement of the perforated music-sheet to govern the lever and permit it to give the impact-blow.

13. In an attachment for playing pianos in combination, the perforated music-sheet, a series of key-actuated levers pivotally mounted on the under side of the keyboard, an adjustable coil-spring connecting the rear end of the lever with the rear end of the keyboard, an adjustable rod connected to the rear end of the lever at the outer side of the spring and terminating in a cushion engaging the rear end of the key, a cushion-stop secured on the under side of the keyboard to limit the upward movement of the key-actuating lever, and its impact-rod, and means operated by the movement of the perforated music-sheet to govern the lever and permit it to give the impact-blow.

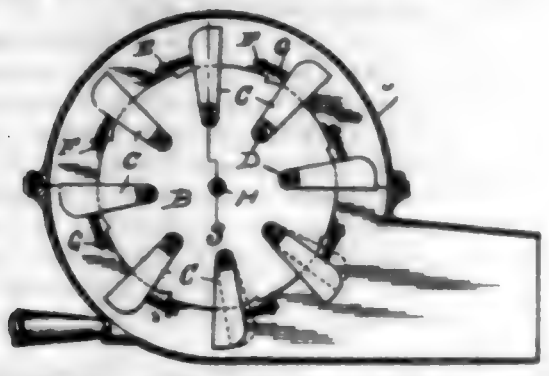
14. In a self-playing piano, and in combination with a music-sheet and the keys, the key-actuating levers fulcrumed on the under side of the keyboard, and terminating at the rear ends of the keys, slotted guides for the inner ends of the levers, a cushioned stop for the latter adjacent the guides, a spring connected to pull up the rear end of each lever, a key impact-rod connected to the rear end of each lever, and means for actuating the keys.

15. In a self-playing piano and in combination, the keys, key-actuating levers, oscillating arms for actuating the levers, guide-hangers fixed to and depending from the keyboard, a music-sheet holder slidable in the hangers, a gear carried by the slidable holder for moving the music-sheet, and a pinion for driving the gear of the holder and forming a stop to limit the inward sliding movement of the music-sheet holder at a point coincident with the engagement of the oscillating arms with the music-sheet.

16. A self-playing attachment for pianos and the like, comprising a series of levers pivoted directly to the under side of the keyboard, the music-sheet mounted beneath the levers, the arms loosely mounted above the music-sheet the acting end of each arm underlying the end of each lever and engaging the note-openings of the music-sheet, a cushion-stop on the under side of the keyboard for limiting the upward movement of the inner end of each lever, a spring con-

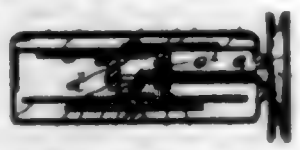
nected to effect such lever movement and a key impact-rod connected to the lever.

817,546. WATER-MOTER WHEEL. EMERSON B. BURR, Chicago, Ill. Filed Feb. 23, 1905. Serial No. 247,220.



Claim.—The combination, with the body of a wheel with a V-shaped edge, having mounted upon its periphery, a series of lugs, elongated, cup-shaped buckets, pivoted upon the sides of the wheel at their inner ends, bolts passing through the bottoms of the buckets, and threaded into said lugs, with springs upon the bolts, between the buckets and lugs, substantially as described.

817,547. TACHOMETER. ARTHUR C. BUTLER, Wollaston, Mass. Filed June 24, 1905. Serial No. 266,720.



Claim.—1. In an indicator of the character described, the combination of speed-registering means, a rotary screw, a traveler-wheel thereon, means actuated by said traveler-wheel whereby said registering means is actuated, a rotary disk engaging the periphery of said traveler-wheel, means actuated by said screw whereby said disk is frictionally driven, means whereby said disk is prevented from exceeding a predetermined speed, and means whereby said screw may be driven.

2. In an indicator of the character described, the combination of speed-registering means, a rotary screw, a traveler-wheel thereon, means actuated by said traveler-wheel whereby said registering means is actuated, a rotary disk engaging the periphery of said traveler-wheel, a driving-plate, a friction-pad thereon engaging said disk, means actuated by said screw driving said plate at variable speed, means whereby said disk is prevented from exceeding a predetermined speed, and means whereby said screw may be driven.

3. In an indicator of the character described, the combination of speed-registering means, a rotary screw, a traveler-wheel thereon, means actuated by said traveler-wheel whereby said registering means is actuated, a rotary disk engaging the periphery of said traveler-wheel, a rotary shaft carrying a driving-plate and a friction-pad engaging said disk, intermeshing gears carried by said shaft and said screw respectively, means whereby said disk is prevented from exceeding a predetermined speed, and means whereby said screw may be driven.

4. In an indicator of the character described, the combination of a case, a dial-plate, a rotary pivot therein carrying an indicator finger or hand and a pinion, a rotary screw, a traveler-wheel thereon, a rack having a forked arm straddling said traveler-wheel, in mesh with said pinion, a rotary disk engaging the periphery of said traveler-wheel, a rotary shaft carrying a driving-plate and a friction-pad engaging said disk, intermeshing gears carried by said shaft and said screw respectively, means whereby said disk is prevented from exceeding a predetermined speed, and means whereby said screw may be driven.

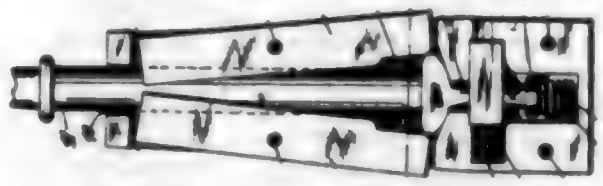
5. In an indicator of the character described, the combination of speed-registering means, a rotary member driven at variable speed, a frictionally-driven rotary member, means controlling the velocity of said frictionally-driven member comprising a driving-wheel, an oscillatory member, a balance-wheel, a coiled spring, the opposite ends of which are connected to said oscillatory member and said balance-wheel respectively, means whereby said driving-wheel is rotated by said frictionally-driven member, connections between said driving-wheel and said oscillatory member, and means actuated by the variance in the velocity of said variable-speed member and said frictionally-driven member whereby said speed-registering means is actuated.

6. In an indicator of the character described, the combination of speed-registering means, a rotary screw, a traveler-wheel mounted thereon, means actuated by said traveler-wheel whereby said registering means is actuated, a rotary disk engaging the periphery of said traveler-wheel, means whereby said disk is frictionally driven, means whereby said disk is prevented from exceeding a predetermined speed comprising a driving-wheel, an oscillatory member, a balance-wheel, a coiled spring the opposite ends of which are connected to said oscillatory member and said balance-wheel respectively, connections between said driving-wheel and said disk, and between said driving-wheel and said oscillatory member, and means whereby said screw may be driven.

7. In an indicator of the character described, the combination of speed-registering means, a rotary screw, a traveler-wheel mounted thereon, means actuated by said traveler-wheel whereby said registering means is actuated, a rotary disk engaging the periphery of said traveler-wheel, means whereby said disk is frictionally driven, a gear carried by said disk, means whereby said disk is prevented from exceeding a predetermined speed comprising a driving-wheel, an oscillatory member, a balance-wheel, a coiled spring, the opposite ends of which are connected to said oscillatory member and said balance-wheel respectively, a gear carried by said driving-wheel, and an idler meshing with the gear on said driving-wheel and on said disk, a crank connecting said driving-wheel and said oscillatory member, and means whereby said screw may be driven.

8. In an indicator of the character described, the combination of a case, a dial-plate, a rotary pivot therein carrying an indicator finger or hand and a pinion, a rotary screw, a traveler-wheel thereon, a rack having a forked arm straddling said traveler-wheel, in mesh with said pinion, a rotary disk engaging the periphery of said traveler-wheel, a rotary shaft carrying a driving-plate and a friction-pad engaging said disk, intermeshing gears carried by said shaft and said screw respectively, means whereby said disk is prevented from exceeding a predetermined speed comprising a driving-wheel, an oscillatory member, a balance-wheel, a coiled spring, the opposite ends of which are connected to said oscillatory member and said balance-wheel respectively, connections between said driving-wheel and said disk, and between said driving-wheel and said oscillatory member, and means whereby said screw may be driven.

817,548. WHIP-SOCKET. JOSEPH M. CLARK, Apollo, Pa., assignor of twenty-five one-hundredths to Peter Wise, Avonmore, Pa., and thirty-seven and one-half one-hundredths to J. F. Lambing, Paulton, Pa. Filed Feb. 9, 1905. Serial No. 244,969.

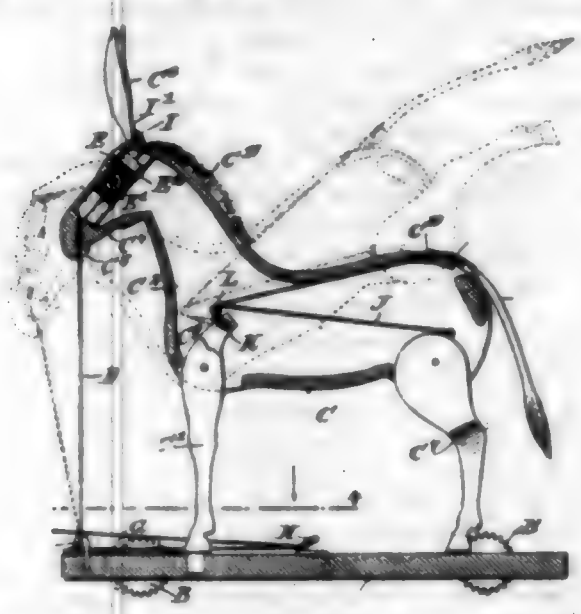


Claim.—1. In a whip-socket, the combination of two grooved sections riveted together and each formed with a cut-away portion at the top, forming an opening adapted to receive the stock of a whip, two straight longitudinally-grooved clamping members pivotally mounted in the grooves of said first-named members, said clamping members having each a beveled recess near its lower end, a vertically-movable latch adapted to enter the recesses in the clamping members, and having a notch on one side, a horizontally-movable substantially U-shaped locking member embracing the latch and having a tooth adapted to engage the notch in the latch, a spring bearing against said locking member, and forcing the same into engagement with the latch, and a spring arranged below the latch and adapted to impel the latter upwardly, one of said grooved sections being formed with a straight opening leading to a point adjacent said locking member, substantially as described.

2. In a whip-socket, the combination of two longitudinally-grooved members, two straight clamping members pivotally mounted at their center in said first-named members, a spring-impelled, vertically-movable, latch adapted to engage the lower ends of said clamping members, said latch being formed with a notch, a horizontally-slidable locking member having a tooth engaging said notch, a spring arranged to press the locking member against the latch and a spring arranged below the latch to force the same upwardly, said grooved members being formed with an opening, the inner end of which opens adjacent the slidable locking member, said opening being adapted to

receive a straight key, whereby the locking member may be pushed out of engagement with said latch, substantially as described.

817,549. TOY. HARRY B. COATES, Sacramento, Cal. Filed Oct. 14, 1905. Serial No. 282,736.



Claim.—1. A toy comprising a body having a fixed head and movable ears, tail and rear legs, fixed fore legs upon which the body is mounted to swing, an eye-slide in the head, a flexible connection leading from the eye-slide and means whereby traction upon the connection may move the eye-slide, swing the body upon the fore legs, and swing the rear legs, ears and tail upon the body.

2. A toy provided with a bucking animal, comprising a body, a head fixed on the body, fixed fore legs on which the body is mounted to swing, an operating flexible connection with the head of the body for imparting a swinging motion thereto, a fixed guideway for the flexible connection below the said head, a lever connected at its free end with the said flexible connection, and a second guideway for the said flexible connection arranged transverse to one side of the animal.

3. A toy provided with a bucking animal, comprising a body, a head fixed on the body, fixed fore legs on which the body is mounted to swing, rear legs mounted to swing on the said body, a tail mounted to swing on the body, a flexible connection between the said rear legs, tail and fixed fore legs, an eye-slide in the said head, and an operating flexible connection extending into the head and connected with the said eye-slide.

4. A toy provided with a bucking animal, comprising a body, a head fixed on the body, fixed fore legs on which the body is mounted to swing, rear legs mounted to swing on the said body, a tail mounted to swing on the body, a flexible connection between the said rear legs, tail and fixed fore legs, an eye-slide in the said head, an operating flexible connection extending into the head and connected with the said eye-slide, the ears of the said head being pivoted thereon, and a connection between the said ears and the eye-slide.

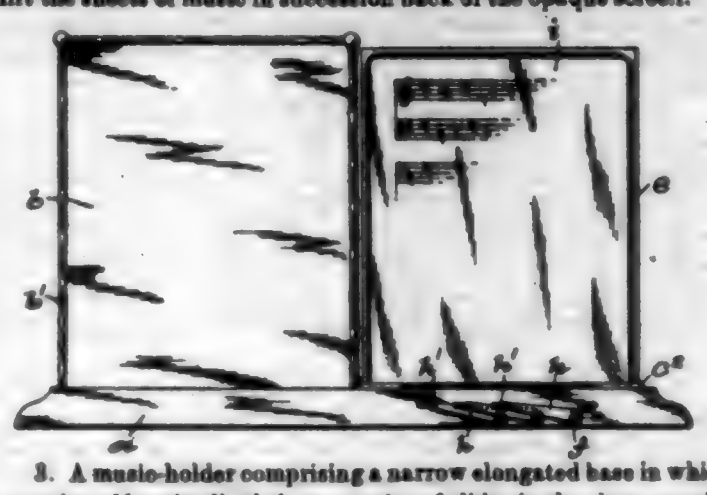
5. A toy provided with a bucking animal, comprising a body, a head fixed on the body, fixed fore legs on which the body is mounted to swing, an operating flexible connection with the head of the body for imparting a swinging motion thereto, and a rider straddling the said body and having spaced hands for engaging the mane on the animal's head.

6. A toy comprising a wheeled base, a bucking animal mounted on the said base, a flexible operating connection connected with the said animal, guideways on the said base for the passage of the flexible connection, and a lever fulcrumed on the said base and connected with the said flexible connection at a point between the said guideways.

817,550. MUSIC-HOLDER. JASPER L. DOBER, Providence, R. I., assignor of one-third to John Q. Bradish and one-third to Louis P. Bradish, Providence, R. I. Filed Jan. 25, 1906. Serial No. 297,906.

Claim.—1. A music-holder comprising a base, an opaque screen secured to the base, a series of spring-actuated slides in the base, means for securing a sheet of music to each of the slides, means for holding the slides under spring tension to expose the face of a sheet of music, and means for releasing the slides to automatically shift the sheets of music in succession back of the opaque screen.

2. A music-holder comprising a narrow elongated base having a series of longitudinal slots, a series of spring-actuated slides in the slots, means for operatively securing the slides in the slots, means for securing a sheet of music to each of the slides, a vertical opaque screen secured to the left-hand front of the base, means for holding the slides in their outward position under spring tension to expose the face of a sheet of music, and means for releasing the slides to automatically shift the sheets of music in succession back of the opaque screen.

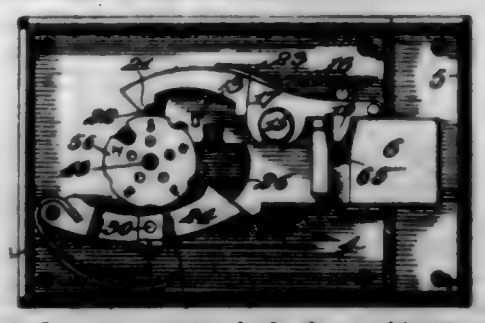


3. A music-holder comprising a narrow elongated base in which is a series of longitudinal slots, a series of slides in the slots, a series of coiled springs connected to the base and to the slides, means for operatively securing the slides in the slots, means for securing a sheet of music to each of the slides, a vertical opaque screen secured to the left-hand front of the base, a series of actuating-levers, and means intermediate the actuating-levers and the slides for holding the slides to the right beyond the opaque screen against the tension of the coiled springs to expose the face of a sheet of music, whereby on depressing the actuating-levers in succession the slides are released and automatically shift the sheets of music in succession back of the opaque screen, as described.

4. A music-holder comprising a base in which is a plurality of longitudinal slots, a plurality of spring-actuated slides in the slots each slide having a tooth on its under side, means for operatively securing the slides in the slots, means for securing a sheet of music to each of the slides, a vertical opaque screen secured to the left-hand front of the base, a plurality of actuating-levers secured to transverse shafts, and a plurality of arms having hook-shaped ends secured to the transverse shafts in a position for a hook-shaped end of an arm to engage with a tooth on a slide, whereby the slides are held to the right beyond the opaque screen against the tension of the coiled springs to expose the face of a sheet of music and may be released by depressing the actuating-levers in succession to automatically shift the sheets of music in succession back of the opaque screen, as described.

5. In a music-holder, the combination of an elongated base *a* having the longitudinal bars *a' a'* forming the longitudinal slots a^3 a^3, the longitudinal opening a^5 in the bottom and the oppositely-disposed holes a^4 a^4 in the front and back, an opaque screen *b* constructed preferably of sheet metal secured to a light frame *b'* which is rigidly secured to the left-hand front of the base, a plurality of slides *c c* each constructed to loosely fit the slots a^3 a^3 in the base and having a beveled tooth *c'* on its under side and the flanges c^2 c^2 on its upper edge for holding the slides in the slots, a plurality of coiled springs *d d* each secured at one end to the base and at the other end to a slide *c*, a plurality of spring-clips *e e* each constructed of two pieces of spring-wire bent substantially U shape inverted and the ends secured to the top of a slide *c*, a plurality of actuating-shafts *f f* each extending through holes a^4 a^4 in the base under the slides *c c*, a plurality of locking-pawls *g g* each constructed to have the upwardly-turned hook-shaped end *g'* and secured to an actuating-shaft *f* in a position to engage with a corresponding tooth *c'* on a slide *c*, and a plurality of actuating-levers *h h* each secured to an actuating-shaft *f* and shaped to bring the levers into a convenient position for a player, as described.

817,551. PERMUTATION-LOCK. GEORGE ELLER, St. Louis, Mo. Filed Nov. 19, 1904. Serial No. 233,584.



Claim.—1. In a permutation-lock, the combination of a bolt, a throw-bar movably fitted to said bolt, a throw-pin carried by said

throw-bar, a tumbler-arbor, a series of notched tumblers loosely mounted on said arbor and arranged to receive said throw-pin, means interposed between said tumblers for imparting rotation thereto, a driving-tumbler loosely fitted to said arbor and arranged in engagement with one of said tumblers, a driving-wheel fixed to said arbor and provided with means for engaging said driving-tumbler, and a click-wheel arranged in engagement with said driving-wheel, substantially as set forth.

2. In a permutation-lock, the combination of a bolt, a throw-bar movably fitted to said bolt, a throw-pin carried by said throw-bar, a tumbler-arbor, a series of notched tumblers loosely fitted to said arbor and arranged to receive said throw-pin, primary driving-rings carried by said tumblers and secondary driving-rings carried by said tumblers and arranged to be engaged by said primary driving-rings; said secondary driving-rings being arranged in engagement with tumblers adjacent to those by which they are carried, substantially as set forth.

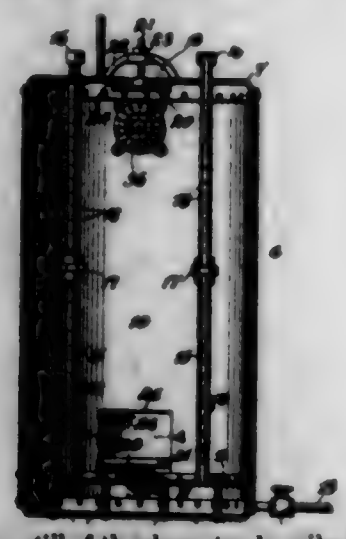
3. In a permutation-lock, the combination of a bolt, a throw-bar movably fitted to said bolt, a throw-pin carried by said throw-bar, a series of notched tumblers arranged for engagement with said throw-pin, an arbor on which said tumblers are loosely fitted, a tumbler-driving wheel fixed to said arbor, a click-wheel bearing against said driving-wheel, and a spring-controlled arm by which said click-wheel is carried, substantially as set forth.

4. In a permutation-lock, the combination of a case, a bolt slidably mounted in said case, a throw-bar carried by said bolt and movable with respect thereto, a throw-pin carried by said throw-bar, a series of tumblers arranged to be engaged by said throw-pin, an arbor on which said tumblers are mounted, a tumbler-barrel removably fitted in said case in which said arbor is fitted, a tumbler-driving wheel fixed to said arbor, a click-wheel engaging said tumbler-driving wheel, a spring-controlled arm carrying said click-wheel, and a stop projecting from said arm and arranged for engagement with said tumbler-barrel, substantially as set forth.

5. In a permutation-lock, the combination of a case provided with an opening, a tumbler-barrel removably seated in said opening and provided with lips, a latch-lever pivoted to said case and arranged for engagement with said barrel-lips, a release-arm having engagement with said latch, a tumbler-arbor fitted in said barrel, a series of tumblers carried by said arbor, a bolt, and bolt-controlling means carried by said bolt arranged to receive the engagement of said tumblers, substantially as set forth.

6. In a permutation-lock, the combination of a bolt provided with an inclined extension-arm, a spring-controlled pivotally-mounted click-wheel-carrying arm having an inclined free end opposing said inclined extension, a click-wheel journaled in said arm, a tumbler-arbor, a series of tumblers carried by said arbor, a tumbler-driving wheel fixed to said arbor and engaging said click-wheel, and bolt-controlling means carried by said bolt arranged for engagement with said tumblers, substantially as set forth.

817,552. STILL. LION E. FIVEASH, Rawlin Springs, Miss. Filed June 20, 1906. Serial No. 322,563.



Claim.—1. In a still of the character described, the combination with a body having a partition dividing the interior of said body into a retort-chamber and a steam-chest, of means for introducing steam into the chest, a tubular connection extending across the retort-chamber between the partition and the end of the body and connected to both, said connection constituting a stay therefor and having perforations that communicate with the retort-chamber, said connection also communicating with and receiving steam from the chest and delivering it into the chamber, and means communicating with the chamber to carry off the products therefrom.

2. In a still of the character described, the combination with a body having end walls and a partition dividing the interior of said body into a retort-chamber and a steam-chest, of means for introducing steam into the chest, a plurality of pipes extending across the chamber and secured to the partition and one of the end walls of the body and constituting stays therebetween, said pipes having perforations that communicate with the chamber and said pipes also communicating with the steam-chest, and an outlet-pipe communicating with the retort-chamber.

3. In a still of the character described, the combination with an upright tubular body having a top, a bottom, and a partition located contiguous to the bottom and dividing the interior of said body into an upper retort-chamber and a lower steam-chest, of upright perforated pipes connecting the partition and top, said perforations opening into the retort-chamber and said pipes constituting stays between the partition and top, means for introducing steam into the steam-chest, and a pipe leading from the retort-chamber.

4. In a still of the character described, the combination with a cylindrical body having a top and a bottom, of a partition located in the body contiguous to but being spaced from the bottom, forming an upper retort-chamber and a lower steam-chest, a steam-supply pipe connected to the chest, stay-bolts connecting the bottom and partition, perforated pipes connected to and extending from the partition longitudinally through the retort-chamber, said pipes being connected to the top and constituting stays between the top and partition, a screened outlet-pipe leading from the upper portion of the retort-chamber, and a condenser connected to said pipe.

5. In a still of the character described, the combination with a body having a partition dividing the same into an upper retort-chamber and a lower heater-chest, said body having doorways located just above the partition, a conveyer operating through the doorways and over the partition, said conveyer comprising a detachable section adapted to remain in the chamber, and doors for closing the doorways.

6. In a still of the character described, the combination with a body having a partition dividing the same into an upper retort-chamber and a lower steam-chest, of spaced perforated pipes connected to the partition and communicating with the chamber and chest, means for introducing steam into the chest, said body furthermore having doorways located just above the partition, a conveyer operating through the doorways and over the partition between the pipes, said conveyer comprising detachable sections adapted to remain in the chamber, and doors for closing the doorways.

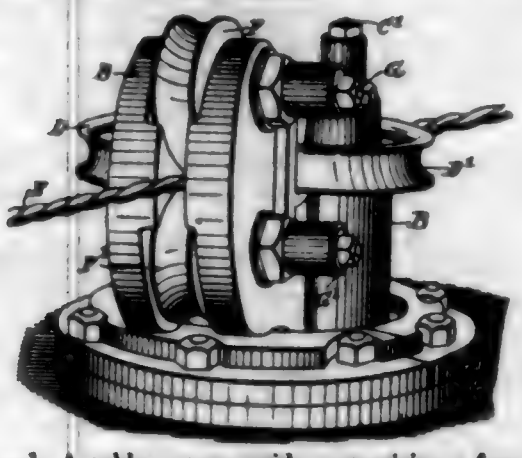
7. In a still of the character described, the combination with a retort-chamber having a doorway, of a conveyer operating through the doorway, a guide for the conveyer located outside the chamber and having a movable section arranged to be alined with the lower portion of the doorway, said section being movable to one side of the doorway, and a guide for closing the doorway.

8. In a still of the character described, the combination with a retort-chamber having a bottom, a charging-opening in its upper portion, and doorways in opposite sides of its lower portion, of means for directing material to the charging-opening, closures for the charging-opening and doorways, means for heating the chamber, and an endless conveyer that operates through the doorways and across the bottom of the chamber to carry off the refuse from the chamber, said conveyer comprising detachably-connected sections, all of which are movable through the chamber and doorways, and one of which may be detached from the others and remain within the chamber.

9. In a still of the character described, the combination with a retort-chamber, of means for heating the material in the chamber, means for directing the products therefrom, said chamber having doorways in its lower portion, doors for closing the doorways, a guide-trough projecting from one of the doorways, and a conveyer operating through the doorways, the chamber and the trough.

10. In a still of the character described, the combination with an upright tubular body having a top, a bottom, and a partition dividing the interior of said body into a lower steam-chest and an upper retort-chamber, said retort-chamber having doorways located just above the partition, doors for closing the doorways, perforated steam-pipes extending longitudinally through the retort-chamber and having inlet ends communicating with the steam-chest, a steam-supply pipe connected to said steam-chest, an outlet-pipe connected with the retort-chamber, a condenser connected to the pipe, and an endless conveyer operating through the retort-chamber upon the partition and through the doorways.

817,553. CABLE OR ROPE GUIDE. GERALD PERRY, Seattle, Wash., assignor to Washington Iron Works Company, Seattle, Wash. Filed Dec. 5, 1905. Serial No. 290,362.

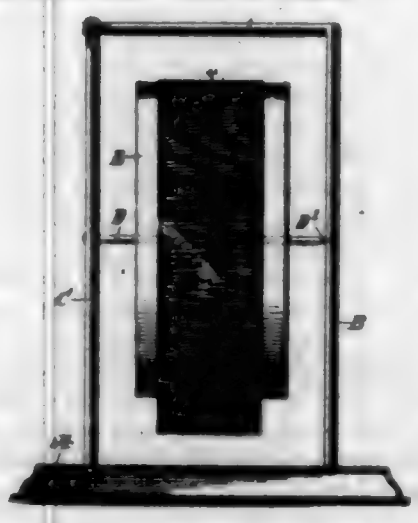


Claim.—1. A cable or rope guide, comprising a frame, sets of guide-pulleys journaled upon the frame, the sets being disposed at angles one to the other, said frame being mounted to turn in an axis parallel to the axis of one of the said sets of guide-pulleys.

2. A cable or rope guide, comprising a base, a frame mounted to turn in the said base, a set of guide-pulleys journaled in the said frame and having their axes parallel to the axis of the said frame and on opposite sides of the frame-axis, and a second set of guide-pulleys journaled in the said frame and having their axes at right angles to the axis of the said frame.

3. A cable or rope guide, comprising a base, a frame mounted to turn in the said base and having a vertical axis, a pair of horizontally-disposed guide-pulleys journaled in the said frame and having their axes arranged in a vertical plane somewhat in front of the axis of the said frame, and a set of vertically-disposed guide-pulleys journaled in the said frame and having their axes in a plane parallel to and somewhat in front of the plane passing through the axis of the first-named set of guide-pulleys.

817,554. RIBBON-HOLDER. RICHARD A. GLADNEY, Marion, Ark. Filed May 9, 1905. Serial No. 259,533.



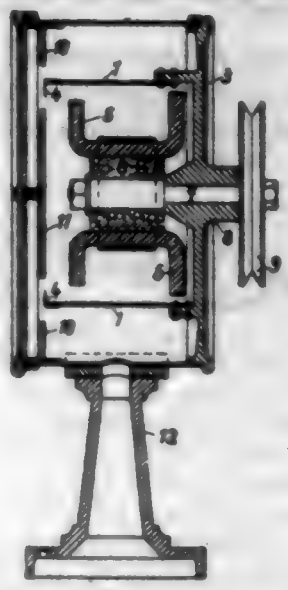
Claim.—A ribbon-holder provided with a base, a post fixed thereon and having a cross-arm, a post mounted to turn on the said base and the said cross-arm, and a spindle extending horizontally from the said turnable post, the spindle terminating at its free end in a point adapted to be seated in a recess on the said fixed post.

817,555. SPEED-INDICATOR. ROBERT HARTMANN-KEMPF, Frankfort-on-the-Main, Germany, assignor to The Firm of Hartmann & Braun A. G., Frankfort-on-the-Main, Germany. Filed June 27, 1905. Serial No. 267,242.

Claim.—1. In a speed-indicator the combination of a graduated scale, means for producing a continuous magnetic field, resonant bodies of magnetic material situated in said field and tuned to correspond with said scale, and means for displacing the lines of force of said field for the purpose of imparting periodic magnetic impulses to said resonant bodies.

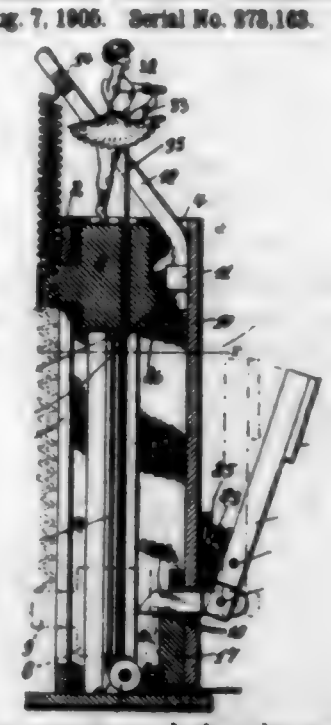
2. In a speed-indicator the combination of a graduated scale, means for producing a continuous magnetic field, resonant bodies of magnetic material situated in said field and tuned to correspond with said scale, means for displacing the lines of force of said field for the purpose of imparting periodic magnetic impulses to said resonant bodies and means for indicating the vibration of said resonant bodies.

3. In a speed-indicator, the combination with means for producing a magnetic field, of tuned resonant bodies of magnetic material situated in said field, and means for changing the lines of force of said field in proportion to the speed measured.



4. In a speed-indicator, the combination with means for producing a magnetic field, of tuned resonant bodies of magnetic material situated in said field, movable devices situated within said field for changing the lines of force thereof, and means for moving said bodies in proportion to the speed measured.

817,556. AMUSEMENT DEVICE. CHARLES F. HARTWAY, Alvy, W. Va. Filed Aug. 7, 1905. Serial No. 273,163.



Claim.—1. In an amusement device, the combination with a box-like structure, of a spring-supported block slidably mounted in said structure, a miniature figure carried by said block and having a pivoted limb, a cord attached to said limb, and to said structure, a spring-pressed pivoted lever carried by said structure, a latch slidably mounted in said structure and connected to said lever and adapted to engage said block when lowered, means to adjust the tension of the spring-supported block, and means to lower said block, substantially as described.

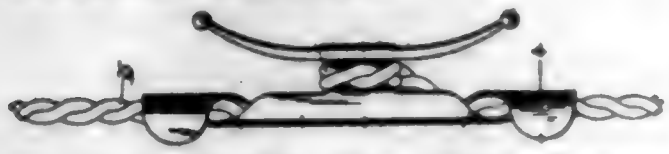
2. In an amusement device, the combination with a box-like structure, of a block slidably mounted in said structure, a miniature figure carried by said block, and having a pivoted limb, a cord attached to said limb and to said structure, a spring-pressed lever pivotally connected to said structure, a latch connected to said lever and adapted to engage said block, means to elevate said block when said lever is struck, and means to return said block to its normal position.

3. In an amusement device, the combination with a box-like structure, of a block slidably mounted within said structure, a limbed figure carried by said block, means to lock said block in the lower part of said structure, means to elevate said block when released, means to elevate one of the limbs of said figure, substantially as described.

4. An amusement device consisting of a box-like structure, a block slidably mounted in said structure, a miniature limbed figure

carried by said block, means to lock said block in the lower part of said structure, means to elevate said block when released, means to adjust the last-named means, means to elevate one of the limbs of said figure, and means to return said block to its normal position, substantially as described.

817,557. ADJUSTER FOR ELECTRIC-LIGHT CORDS. JAMES T. HATHERLY and THOMAS H. HATHERLY, New Westminster, Canada. Filed July 8, 1905. Serial No. 268,895.



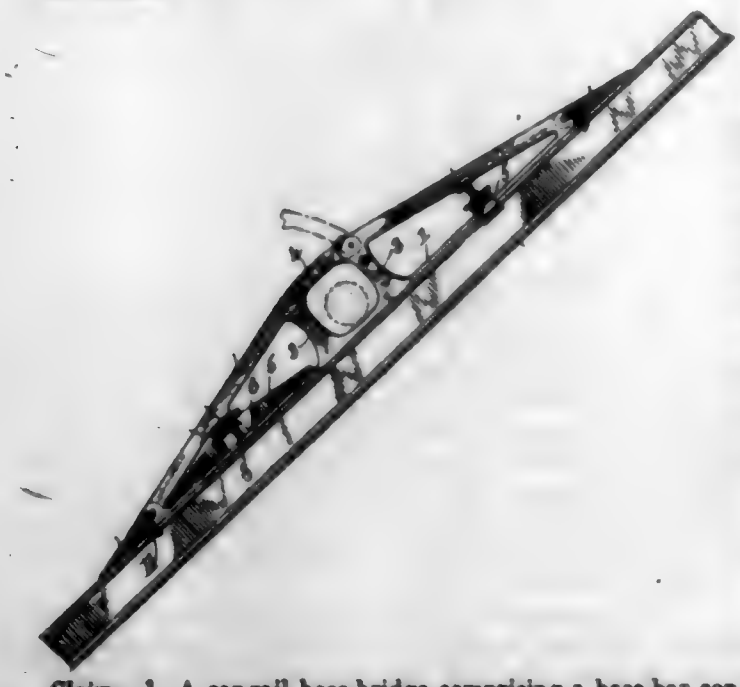
Claim.—1. An electric-light adjuster, consisting of a plate rolled so as to present a tubular body, said plate having an integral head projecting laterally from said body, said body being adapted to have an electric-light cord passed therethrough, said head being adapted to have said cord disposed in coils thereabout.

2. An electric-light adjuster, consisting of a plate rolled so as to present a tubular body, said plate having an integral head projecting laterally from said body at substantially the middle point thereof, and a horn attached to said head and disposed in a plane substantially parallel with said body, said body being adapted to have the electric-light cord passed therethrough, said head being adapted to have the cord wrapped thereabout.

3. A device of the class described consisting of a plate rolled into a body having substantially tubular form, said body having a laterally-projecting head, and a horn carried by said head and extending longitudinally of said body, said horn affording means for retaining the coils of the cord passed about said head.

4. A device of the class described, comprising a substantially tubular body having a slot in the wall thereof through which an electric-light cord may be passed, said body having a laterally-disposed head adapted to have coils of cords passed thereabout, and a horn attached to said head and disposed longitudinally of said body, said horn affording means for retaining said coils.

817,558. CAR-RAIL HOSE-BRIDGE. JOHN S. HEATON, Shelbyville, Ky., assignor of one-third to Harry McCreight and one-third to Charles McAfee Lewis, Shelbyville, Ky. Filed Oct. 24, 1905. Serial No. 284,144.

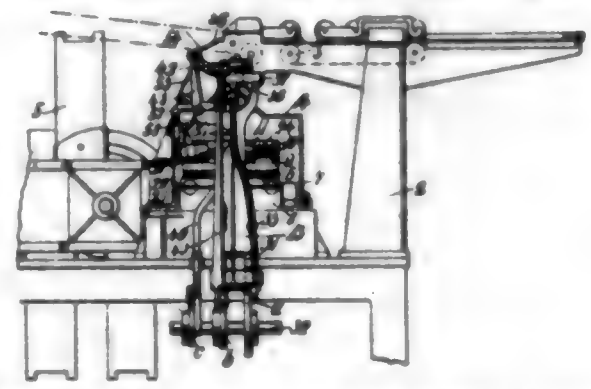


Claim.—1. A car-rail hose-bridge comprising a base-bar conformed at its under side to the upper surface of a track-rail, an arched rail mounted on the base-bar, uprights extended from the base-bar to said arched rail and spaced apart to form a passage-way for hose, a swinging rail-section for closing the outward opening of said space, points mounted to swing on the ends of the bridge, and anchoring-teeth carried by said points for engaging in a street-surface or the like, at opposite sides of the track-rail.

2. A car-rail hose-bridge comprising a base-bar adapted to rest upon a railway-rail, an arched rail mounted on said bar and having an opening to receive a hose, anchoring devices consisting of bars movable to a position transversely of the bridge and having recesses to receive said base-bar, the top wall of the recesses being perforated, screw-rods extending through said perforations and connecting with the base-bar and the arched rail, and adjusting-nuts on said screw-rods.

3. A car-rail hose-bridge comprising a base-bar, an arched rail thereon, and anchoring-bars movable to a position at right angles to the base-bar, and movable to a position parallel with the base-bar.

817,559. ADHESIVE-APPLYING DEVICE. OTTO HESSEL, Cannstatt, Germany. Filed May 4, 1905. Serial No. 258,314.



Claim.—1. In a machine of the class described, a sheet or bag support, a gum-applying member movable in the direction of said support, an operating-bar for transmitting movement to said member, a locking-pawl arranged to engage said bar, and a key or feeler arranged to engage the sheet or bag and control the locking or release of the pawl.

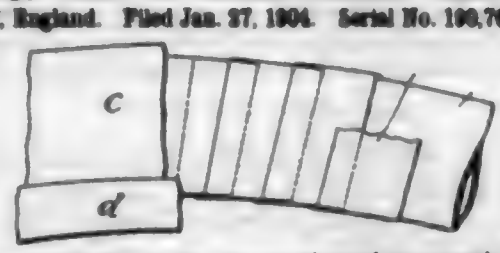
2. In a machine of the class described, a sheet or bag support, a gum-applying member, a reciprocating bar for transmitting movement thereto, a locking-pawl for said bar, means for releasing the pawl and a key or feeler movable over the paper and controlling the position of the pawl-releasing device.

3. In a machine of the class described, the combination with a sheet or bag support, of a gum-applying member, a reciprocatory bar for imparting movement thereto, a locking-pawl for the bar, a pawl-engaging slide having a slot for the reception of said pawl, a key or feeler for engaging the sheet or bag, and means connecting said feeler to the slide.

4. In a machine of the class described, a sheet or bag support, a gum-applying member, a reciprocatory bar for transmitting movement thereto, a locking-pawl for the bar, a pair of slides, one of which is mounted on the other, said slides being movable in the direction of the pawl to effect release of the same and one of said slides having a slot for the reception of the pawl when the latter is to remain inactive, and a sheet or bag engaging feeler or key controlling the movement of said slotted slide.

5. In a machine of the class described, the combination with a gum-receptacle, of a roller mounted therein, a shaft, a reciprocatory support for the shaft, a gum-applying member carried by the shaft and arranged to engage said roller, a rocker-arm carried by the shaft, a pin on said rocker-arm, a member having a continuous cam-slot into which said antifriction-roller enters, and an adjustable arm forming one wall of said cam-slot and serving to adjust the delivery position of the gum-applying member.

817,560. TIRE FOR VEHICLE-WHEELS. JAMES L. HEWARD, Cardiff, England. Filed Jan. 27, 1904. Serial No. 190,763.

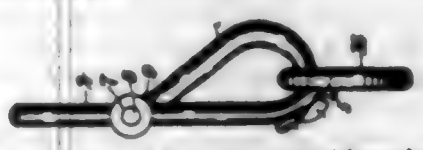


Claim.—A sheath for the inner tubes of pneumatic tires, comprising a thin resilient metallic ribbon spirally wound in the shape of a hollow ring, said ribbon being bent transversely to conform to the peripheral contour of the tire to which it is applied.

817,561. SNAP-HOOK. SAMUEL HOAR, Hibbing, Minn. Filed July 6, 1905. Serial No. 268,227.

Claim.—1. A snap-hook comprising a body of oblong form, and a hook having the shank thereof pivoted between the parallel side members of the body and provided with means for automatically engaging a portion of the body when carried in the direction

thereof, embodying a gravity-catch, said body being straight for its length and having an end thereof outwardly curved and including said mentioned portion.



2. A snap-hook comprising a body of oblong form, and a hook having the shank thereof pivoted between the parallel side members of the body and provided with means for automatically engaging a portion of the body when carried in the direction thereof, embodying a gravity-catch pivotally mounted within the bill of the hook, said body being straight for its length and having an end thereof outwardly curved and including said mentioned portion.

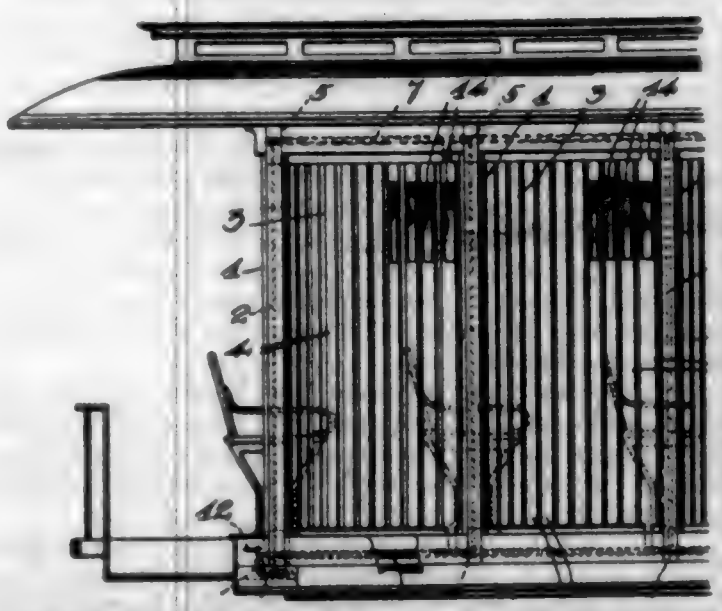
3. A snap-hook comprising a body of oblong form, and a hook having the shank thereof pivoted between the parallel side members of the body and provided with means for automatically engaging a portion of the body when carried in the direction thereof, embodying a gravity-catch pivotally mounted within the bill of the hook, the same being widened in the direction of the outer face of said bill.

4. A snap-hook comprising a body of oblong form, and a hook having the shank thereof pivoted between the parallel side members of the body and provided with means for automatically engaging a portion of the body when carried in the direction thereof, embodying a gravity-catch pivotally mounted within the bill of the hook, the same being widened in the direction of the outer face of said bill and having its outer edge curved.

5. A snap-hook comprising a body constructed with parallel members having end members intersecting the same in curvilineal angles, one of said end members being outwardly curved with respect to one of the faces of said parallel members, a hook, the shank of which is pivotally mounted between the parallel members, and the bill of which is provided with means for automatically engaging with said outwardly-curved end member when the bill of the hook is carried thereover, the portions of the said parallel members lying between the pivotal support of the shank of the hook and this outwardly-curved end member of the body constituting a mousing.

6. A snap-hook comprising a body constructed with parallel members having end members intersecting the same in curvilineal angles, one of said end members being outwardly curved with respect to one of the faces of said parallel members, a hook, the shank of which is pivotally mounted between the parallel members, and the bill of which is provided with means for automatically engaging with said outwardly-curved end member when the bill of the hook is carried thereover, the portions of the said parallel members lying between the pivotal support of the shank of the hook and this outwardly-curved end member of the body constituting a mousing, said means embodying a pivoted safety device supported by the bill of the hook.

817,562. STORM-CURTAIN FOR OPEN CARS. MARIA E. HOLDEN, Yonkers, N. Y. Filed Dec. 28, 1905. Serial No. 293,394.



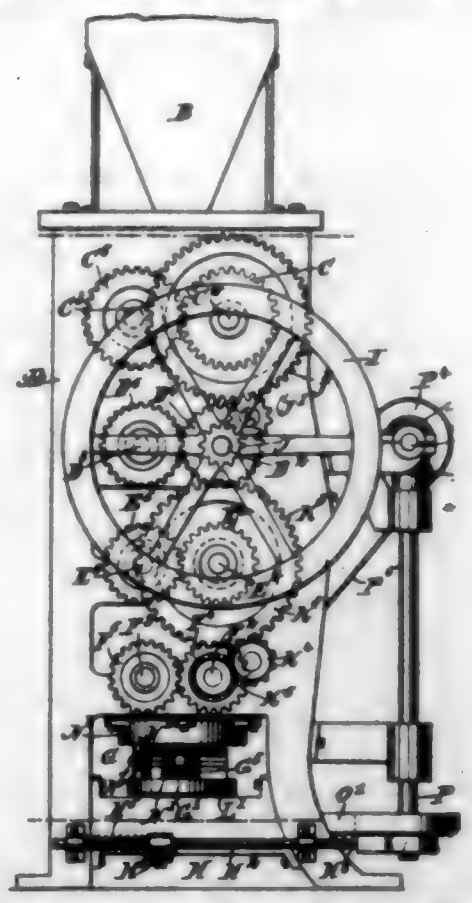
Claim.—1. In storm-curtains for cars, the combination with suitable casings, of vertically-winding posts arranged therein, horizontally-movable curtains adapted to be wound on said posts, and means operated at one end of the car to simultaneously open or close the curtains on either side of the car, substantially as described.

2. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, sprocket-gears mounted on the ends of the latter, sprocket-chains arranged on said gears and operating-gears arranged at one end of the car to simultaneously open or close the curtains on either side of the car, substantially as described.

3. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, transparent panels arranged in certain of the slats in said curtains, sprocket-gears mounted on the ends of said winding-posts, sprocket-chains arranged on said gears, operating-gears connected with the winding-post at one end of the car, and a crank-handle to operate said gears, substantially as described.

4. In storm-curtains for cars, the combination with suitable casings, of winding-posts pivotally mounted therein, slatted curtains adapted to be wound on said posts, transparent panels arranged in certain of the slats in said curtains, sprocket-gears mounted on the ends of said winding-posts, endless sprocket-chains arranged on sprocket-gears and connected to said curtains, guide-rollers to hold said chains in place, a bevel-gear mounted on the end winding-shafts at one end of the car, operating-gears connected with said bevel-gears, and a crank-handle to operate said gears, thereby winding or unwinding said curtains, substantially as described.

817,563. CANDY-FORMING MACHINE. JOHN A. HOLLOWELL, Memphis, Tenn. Filed Apr. 8, 1905. Serial No. 254,466.



Claim.—1. A candy-machine comprising a plurality of graduated pairs of drawing-rollers arranged in vertical alinement with each other, and each pair forming a feed for the following pair, means for rotating the rollers at a speed increasing in proportion to the reduction in size of the pairs, a pair of twisting-rollers arranged below the last pair of drawing-rollers, a delivery-tube adjacent to the twisting-rollers and a cutter below the delivery-tube, comprising a wiper, a slidable bar having an angular arm for engagement by the wiper, a spring connected to the slidable bar, and a knife-blade secured to the bar.

2. A candy-machine comprising a plurality of graduated pairs of drawing-rollers arranged in vertical alinement with each other, and each pair forming a feed for the following pair, means for rotating the rollers at a speed increasing in proportion to the reduction of the size of the pairs, a pair of twisting-rollers arranged below the last pair of drawing-rollers, means for rotating the twisting-rollers, means for revolving the rollers on a vertical axis, a delivery-tube, a cutter below the tube, a spring for moving the cutter in one direction, and means for positively moving the cutter in the opposite direction.

3. A candy-machine comprising a plurality of graduated pairs of drawing-rollers arranged in vertical alinement with each other,

and each pair forming a feed for the following pair, means for rotating the rollers at a speed increasing in proportion to the reduction of the size of the pairs, a pair of twisting-rollers arranged below the last pair of drawing-rollers, a cutter below the twisting-rollers, elastic means for moving the cutter in one direction, and positive means for moving the cutter in the opposite direction.

4. A candy-forming machine comprising a plurality of drawing-rollers arranged in vertical alinement with each other and each pair forming a feed for the following pair, means for rotating the rollers at a speed increasing in proportion to the reduction in size of the pairs, a twisting device arranged below the last pair of drawing-rollers, and comprising a revoluble delivery-tube provided with a disk, a pair of twisting-rollers geared together, a pinion secured on the shaft of one of the rollers, a gear-wheel in mesh with the said pinion and loose on the shaft of the other roller, a worm-wheel on the said gear-wheel, a worm in mesh with the said worm-wheel, means for revolving the delivery-tube, and means whereby the revolution of the tube may rotate the worm.

5. A candy-forming machine comprising a plurality of drawing-rollers arranged in vertical alinement with each other, and a twisting device comprising a revoluble delivery-tube provided with a disk, a pair of twisting-rollers geared together, a pinion secured on the shaft of one of the rollers, a gear-wheel in mesh with the said pinion and loose on the shaft of the other roller, a worm-wheel on the said gear-wheel, a worm in mesh with the said worm-wheel, means for revolving the delivery-tube, and means whereby the revolution of the said tube may rotate the worm.

6. In a candy-forming machine, a cutter comprising an endwise-slidable bar having an angular arm, a wiper for engaging the angular arm to move the bar in one direction, a spring for moving the bar in the opposite direction, and a knife-blade secured to the bar.

7. A candy-forming machine provided with a pair of final drawing-rollers, a twisting device provided with a pair of twisting-rollers receiving the stick of candy from the said pair of final drawing-rollers, means for rotating the said twisting-rollers and for imparting a bodily-turning motion to the same, and a delivery-tube rotating with the pair of twisting-rollers and receiving the twisted stick of candy from the same.

8. A candy-forming machine provided with a pair of final drawing-rollers, a twisting device provided with a pair of twisting-rollers receiving the stick of candy from the said pair of final drawing-rollers, means for rotating the said twisting-rollers and for imparting a bodily-turning motion to the same, a delivery-tube rotating with the pair of twisting-rollers and receiving the twisted stick of candy from the same, and a cutting device operating in conjunction with the delivery end of the said tube, to cut the twisted stick of candy into desired lengths.

9. A candy-forming machine provided with a twisting device comprising a revoluble delivery-tube provided with a disk, a pair of twisting-rollers geared together, and a gearing, controlled by the rotation of the said disk, for rotating one of the said twisting-rollers.

10. A candy-forming machine provided with a twisting device comprising a revoluble delivery-tube provided with a disk, a pair of twisting-rollers geared together, a pinion secured on the shaft of one of the rollers, a gear-wheel in mesh with the said pinion and loose on the shaft of the other roller, a worm-wheel on the said gear-wheel, a worm in mesh with the said worm-wheel, a fixed annular rack, and a pinion in mesh with the rack and secured on the shaft of the said worm.

817,564. TELEPHONE-RECEIVER SUPPORT. FRANK F. HOWE, Marietta, Ohio. Filed June 3, 1905. Serial No. 263,583.



Claim.—1. In telephone-receiver supports, the combination of a yoke having parallel arms, one arm being provided with a plurality of screw-threaded openings, a plate on the outer face of the arm and provided with openings registering with the screw-threaded openings, overhanging lugs on the free end of the arm and engaging the plate, an angular extension on the plate between the lugs, a receiver-carrying arm pivoted to the plate adjacent to the angular extension, screw-threaded bolts traversing the registered openings, a clamp pivoted to the inner ends of the bolts, locking-nuts on the bolts above the plates, an offset extension on the free end of the other arm, grooved slideways on the free end of the extension, a screw-threaded bolt provided with a head engaging the slideways, an angular bracket having an opening to receive the bolt, a locking-nut on the free end of the bolt, a screw-threaded bolt traversing the angular part of the bracket, a clamp pivoted to the free end of the bolt, and a locking-nut on the bolt.

2. In telephone-receiver supports, the combination of a yoke having parallel arms for engaging the opposite faces of one edge of the wall-board, one arm being provided with a plurality of screw-threaded openings, a plate on the outer face of the arm and provided with openings registering with the screw-threaded openings, overhanging lugs on the free end of the arm for engaging the plate, an angular extension on the plate between the lugs, a receiver-carrying arm pivoted to the plate adjacent to the angular extension, screw-threaded bolts traversing the registered openings, a clamp pivoted to the inner ends of the screw-threaded bolts, locking-nuts on the bolts above the plates, an offset extension on the free end of the other arm, means on the extension for engaging the opposite edge of the wall-board, and means for adjusting said means to and from the yoke.

3. In telephone-receiver supports, the combination of a yoke having parallel arms for engaging one edge of the wall-board, one of the arms being provided with a plurality of screw-threaded openings, a plate on the outer face of the arm and provided with openings registering with the screw-threaded openings, means for fixing the plate with respect to the arm, screw-threaded bolts traversing the registered openings, a clamp pivoted to the inner ends of the bolts, locking-nuts on the bolts above the plates, an extension on the free end of the other arm, means on the end of the extension for engaging the opposite edge of the wall-board, means for adjusting said engaging means, and a receiver-carrying arm pivoted to the plate.

4. In telephone-receiver supports, the combination of a yoke for engaging one edge of the wall-board, the yoke having a relatively short arm adapted to overlie said edge and a relatively long arm adapted to underlie the wall-board and extend beyond the opposite edge thereof, means on the opposite end of the long arm for engaging the edge of the wall-board adjacent thereto, means for adjusting said engaging means, means on the short arm for engaging the face of the wall-board, and a plate having means for supporting a receiver secured to the short arm.

5. A support for telephone-receivers, comprising a yoke for engaging an edge of the wall-board, an extension on the yoke adapted to underlie the wall-board and to extend therebeyond, means on the free end of the extension for engaging the edge of the wall-board adjacent thereto, means for adjusting the engaging means to and from the wall-board, means on the yoke for engaging the front of the wall-board at the side thereof, and a plate having means for supporting a receiver on the said engaging means.

6. A holder for telephone-receivers, having a back plate underlying the wall-board, means at one end thereof for engaging the front face of the wall-board, a plate having means for supporting a receiver secured to the said engaging means, means at the opposite end of the back plate for engaging the edge of the wall-board adjacent thereto, and means for adjusting the said engaging means.

7. A holder for telephone-receivers, comprising a back plate underlying the wall-board, and having the end thereof bent to overlie the adjacent side of the face thereof, a receiver-carrying arm supported by said bent end, means on the bent end for engaging the face of the wall-board, means on the opposite end of the plate for engaging the edge of the wall-board adjacent thereto, and means for adjusting said engaging means to and from the same.

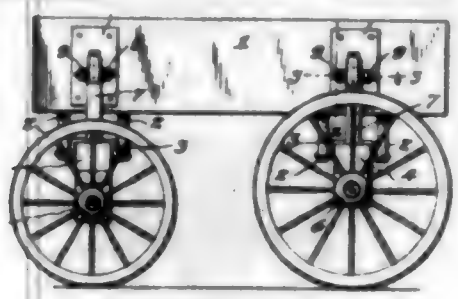
8. A holder for telephone-receivers, comprising a plate adapted to underlie the wall-board, means on the opposite ends of the holder for engaging the edges of the wall-board, means connected with one end of the holder for supporting the receiver, and means for adjusting the edge-engaging means.

9. A holder for telephone-receivers, comprising a yoke provided with an arm for underlying the wall-board, an arm for engaging the face of the same, a plate supported by the last-named arm, a receiver-carrying arm supported by the plate, and means for securing the holder to the wall-board.

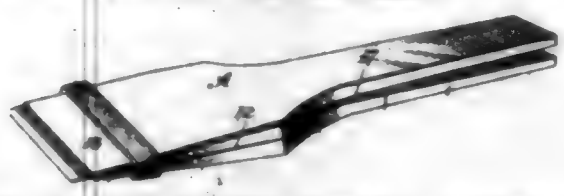
10. A holder for telephone-receivers, comprising a yoke having arms to engage the opposite faces of the wall-board, means for securing the wall-board to the yoke, and a plate having means for supporting a receiver on one arm of the yoke.

817,565. WAGON-BODY PROTECTOR. SIMEON HUFFAKER, Woodruff, Utah. Filed May 5, 1905. Serial No. 258,947.

Claim.—The combination of wagon-body, a metallic wear-plate secured upon its side, a wagon-standard disposed adjacent to said wear-plate, a bolt passed through said standard, sleeves upon said bolt having reduced bearing portions, friction-rollers upon said bearing portions and engaged with said wear-plate, washers upon the ends of said bolt, and a screw-nut upon the threaded end of said bolt, substantially as described.

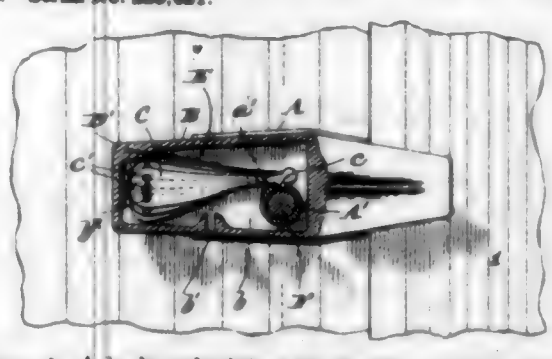


817,566. **RAZOR-BLADE HOLDER.** JAMES H. HUNT, Massillon, Ohio. Filed Sept. 6, 1905. Serial No. 277,214.



Claim.—A razor-blade holder, comprising a plurality of superimposed plates, each comprising a relatively wide carrying member, and a relatively narrow handle member, the proximate faces of the handle members diverging from each other and the remote faces being substantially parallel when the blades are in superimposed relation, and the opposite faces of the respective carrying members converging at the ends of said members, and an elastic band encircling the carrying members adjacent to the outer end thereof.

817,567. **LOCK.** MAURICE F. HUTCHESON, Floris, Va., assignor of one-fourth to Charles E. Riordon, Washington, D. C. Filed Sept. 7, 1904. Serial No. 223,631.



Claim.—1. A lock embodying the functions of a lock and of a turn-button, comprising an anchor-plate having a grooved post, and a recessed button pivoted between its ends on said post and provided with tumblers for automatically engaging the groove of the post.

2. A lock comprising an anchor-plate, a slotted post projecting at right angles therefrom and a button revoluble on said post and provided with spring-pressed tumblers adapted to engage the slot thereof.

3. A lock comprising a plate having a slotted post and a recessed button pivoted between its ends upon said post and provided with tumblers adapted to engage the slot thereof.

4. A lock comprising a plate having a slotted post, and a recessed button pivoted between its ends upon said post and provided with spring-pressed tumblers adapted to engage the slot thereof.

5. A lock comprising a plate having a slotted post, a button pivoted on said post having a recess provided with a pivot-pin and tumblers within the recess, each provided at one end with a toe and at the other end with a plurality of apertures adapted to engage the pivot-pin of the recess.

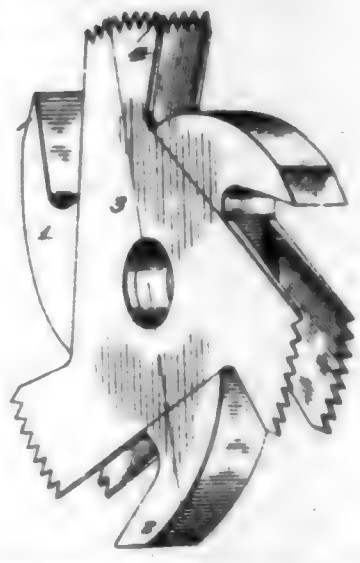
6. A lock comprising a plate having a slotted post, a button pivoted between its ends on said post and having hooks at its ends to engage a keeper; said button being recessed and provided with tumblers to engage the slot of the post.

7. A lock comprising a plate having a slotted post, a button pivoted between its ends on said post and having hooded hooks at its ends to engage a keeper; said button being recessed and provided with tumblers to engage the slot of the post.

8. In combination with a door-casing and a door provided with a keeper, a lock comprising a plate secured to the casing and provided with a slotted post, a button pivoted between its ends on said post and having hooked ends to engage said keeper; said button being recessed and provided with tumblers to engage the slot of the post.

9. In combination with a door-casing and a door provided with a keeper, a lock comprising a plate secured to the casing and provided with a slotted post, a button pivoted on said post and having hooded hooked ends to engage said keeper; said button being recessed and provided with tumblers to engage the slot of the post.

817,568. **CUTTING-HEAD.** WARREN B. HUTHER, Rochester, N. Y., assignor of one-half to Angus B. Huther, Rochester, N. Y. Filed Jan. 8, 1906. Serial No. 220,360.



Claim.—1. A rotary cutting-head comprising a major member having a recessed side face and provided with a plurality of teeth, integral and a coöperating cutting member fitting the recess and having its face lying in the plane of the lateral edges of the teeth, and provided with integral arms located between the teeth of the major member and alternating therewith each being provided with a plurality of teeth having their points lying in the plane of the outer edge of the arms.

2. In a rotary cutting-head, the combination with a major member having recessed side faces and a plurality of integral teeth thereon having transversely-extending cutting edges, of coöperating members secured in the recesses at opposite sides of the major member, integral arms thereon projecting between the teeth on the major member and alternating therewith and cutting-teeth on said coöperating members, said teeth on the respective members being arranged with their points located in the planes of the edges of the teeth on the major member.

3. In a cutting-head, the combination with a major member having a series of integral teeth having transversely-extending edges and provided with a recess in its side face opening between the teeth, of a coöperating member fitting said recess, a series of integral arms projecting therefrom between the teeth of the major member and alternating therewith and teeth on said arms having their cutting-points located at the outer faces of the arms in alinement with the lateral edges of the teeth on the major member.

817,569. **DIFFRACTION COLOR PHOTOGRAPH AND MODE OF MAKING SAME.** HERBERT E. IVES, Woodcliffe-on-the-Hudson, N. J. Filed Oct. 19, 1905. Serial No. 283,431.

Claim.—1. The mode herein described of making a diffraction color photograph, said mode consisting in projecting onto the sensitive surface, through three successive and differently-ruled diffraction-gratings, and three successive and different dispositions of clear spaces in a line-screen device, rays from three successive images, each representing one of the primary-color sensations, substantially as specified.

2. The mode herein described of producing a diffraction color photograph, said mode consisting in projecting onto the sensitive surface through three successive and differently-ruled diffraction-gratings and three successive and different dispositions of clear spaces of a line-screen device which are disposed at an angle to the diffraction-lines, rays from three successive images, each representing one of the primary-color sensations, substantially as specified.

3. The mode herein described of producing a diffraction color photograph, said mode consisting in projecting onto the sensitive surface, through three successive and differently-ruled diffraction-

gratings and a line-screen having opaque spaces twice as wide as its clear spaces, rays from three successive images, each representing one of the primary-color sensations, and shifting the line-screen, between successive exposures to the extent of the width of each of its clear spaces, substantially as specified.



4. The mode herein described of producing a diffraction color photograph, said mode consisting in projecting onto a sensitive surface, through three successive and continuously-ruled but differing diffraction-gratings and three successive and different dispositions of clear spaces of a line-screen device, rays from three successive images, each representing one of the primary-color sensations, substantially as specified.

5. The mode herein described of producing a diffraction color photograph, said mode consisting in projecting onto a sensitive surface, through three successive and continuously-ruled but differing diffraction-gratings, and a line-screen having opaque spaces twice as wide as its clear spaces, rays from three successive images, each representing one of the primary-color sensations, and shifting the line-screen between successive exposures to the extent of the width of each of its clear spaces, substantially as specified.

6. The mode herein described of producing a diffraction color photograph, said mode consisting in projecting onto a sensitive surface, through three successive and continuously-ruled but differing diffraction-gratings and a line-screen having opaque spaces twice as wide as its clear spaces and disposed at an angle to the diffraction-lines, rays from three successive images, each representing one of the primary-color sensations, and shifting the line-screen between successive exposures to the extent of the width of each of its clear spaces, substantially as specified.

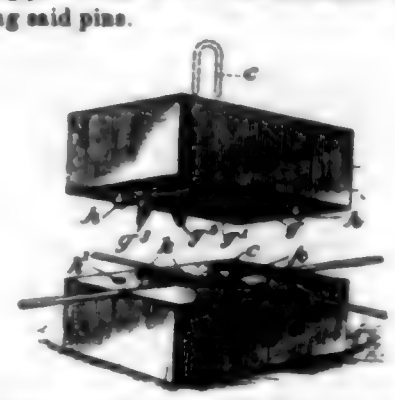
7. A diffraction color photograph composed of juxtaposed stripe of diffraction-lines, the lines of each strip being spaced differently from those of the other stripe, and being disposed at an angle to the direction of the strip, substantially as specified.

817,570. WIRE-WORKING DIE. SHELDON B. JACKSON and EPHRAIM B. LEE, Weston, Mich. Filed June 3, 1905. Serial No. 263,602.

Claim.—1. A wire-working die having a groove therein for receiving a wire, and means for bending said wire, said means comprising a series of pins located on two sides of the groove and adapted to engage the sides of the wire located in the groove.

2. A set of wire-working dies, comprising a main lower die having a groove therein for receiving a wire, a main upper die having a groove therein transverse to the first-mentioned groove for receiving a second wire, and means for bending said second wire; said means comprising a series of pins located adjacent to the last-mentioned groove and adapted to engage the wire located in said groove.

3. A set of wire-working dies, comprising a main lower die having a longitudinal straight groove for receiving a wire, and an upper main die having a transverse groove provided with an offset portion for receiving a second wire, said upper die being provided with a series of pins located adjacent to said second groove and adapted to engage the wire in the groove and form a bend therein, each of said pins being provided with a slanting lower surface for guiding the wire into bending position, and the first-mentioned die having openings for receiving said pins.



4. A set of wire-working dies, comprising a main lower die having a longitudinal straight groove for receiving a wire, and an upper main die having a transverse groove provided with an offset portion for receiving a second wire, said upper die being provided with a series of pins located adjacent to said second groove and adapted to engage the wire in the groove and form a bend therein, each of said pins being provided with a slanting lower surface for guiding the wire into bending position, and the first-mentioned die having openings for receiving said pins; said dies being provided with means for guiding them in straight lines toward each other.

5. A set of wire-working dies, comprising a main lower die having a longitudinal straight groove for receiving a wire, and an upper main die having a transverse groove provided with an offset portion for receiving a second wire, said upper die being provided with a series of pins located adjacent to said second groove and adapted to engage the wire in the groove and form a bend therein, each of said pins being provided with a slanting lower surface for guiding the wire into bending position, and the first-mentioned die having openings for receiving said pins; said dies also being provided with depressions having curved surfaces for bending a locking-wire about the two first-mentioned wires.

6. A set of wire-working dies, comprising a main lower die and a main upper die having a groove provided with an offset portion for receiving a wire, said upper die also being provided with a series of pins located adjacent to the groove and adapted to engage the wire in the groove and form a bend therein, each of said pins being provided with a slanting lower surface for guiding the wire into bending position, and the first-mentioned die having openings for receiving said pins.

7. A set of wire-working dies, comprising a main lower die and a main upper die having a groove provided with an offset portion for receiving a wire, said upper die also being provided with a series of pins located adjacent to the groove and adapted to engage the wire in the groove and form a bend therein.

8. A set of wire-working dies comprising a die having a groove for receiving a wire, and a second die having a groove provided with an offset portion for receiving a second wire, said second die being provided with a series of pins located adjacent to said second groove, each of said pins being provided with a slanting lower surface, and the first-mentioned die having openings for receiving said pins.

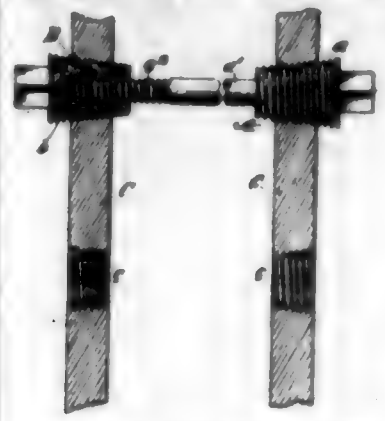
9. A set of dies comprising a die having a groove provided with an offset portion on each side of the groove for receiving a wire, and a second die having two grooves located at an angle to the said offset portion.

10. A set of dies comprising a die having a groove provided with an offset portion on each side of the groove for receiving a wire, and a second die having two grooves located at an angle to the said offset portion; said offset portions and grooves having curved surfaces at their ends to bend the wire into approximately circular form.

11. A set of dies comprising a die having a groove provided with an offset portion on each side of the groove for receiving a wire, a second die having two grooves located at an angle to the said offset portion, said first die having a perforation from its main groove between said offsets, and a third die adapted to operate in said perforation.

12. A wire-working die having a groove, an offset on each side of the groove, and a pin located partly to one side of each offset with its side projecting part way into the groove.

817,571. STAY-BOLT FOR BOILERS. NATHAN B. JARRIEL, Manassas, Ga. Filed Sept. 25, 1905. Serial No. 280,013.



Claim.—1. A stay-bolt, comprising a member having a threaded tapered head and a threaded shank formed integrally therewith, and a member which is tapered and threaded on its exterior and has a threaded bore or socket closed at its outer end to receive the said shank.

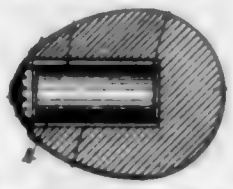
2. The combination with boiler sheets or plates having tapered threaded holes of a stay-bolt, comprising two members, one of which consists of a tapered, threaded head, provided with an angular boss and formed integrally with a threaded shank, and the other of which consists of a tapered plug threaded on its exterior and having a threaded socket to receive the threaded shank.

817,572. ATTACHMENT FOR JARS. JACOB H. JOHNSON, Pittsburg, Pa. Filed June 7, 1905. Serial No. 264,063.



Claim.—As a new article of manufacture, a top for receptacles, comprising an interiorly-threaded annular band or body portion adapted to be secured to the neck of a receptacle, and having an inturned flange at its upper end, said flange provided with a V-shaped cut-away portion extending substantially the width of the flange, and at the opposite end being slitted to form straps, a cover-plate carrying a pintle-pin around which said straps are wound to form a hinge, a substantially V-shaped lip at the side of the cover-plate opposite the hinge to lie over said V-shaped cut-away portion in the flange of a length sufficient to extend slightly beyond the top of said band or body, and a bail having its ends swiveled in said band or body portion, substantially as described.

817,573. MEDICATED NEST-EGG. GEORGE H. JONES, Los Angeles, Cal. Filed Aug. 2, 1905. Serial No. 272,336.



Claim.—1. A medicated nest-egg comprising a woody fiber, the pores whereof are impregnated with an insecticide.

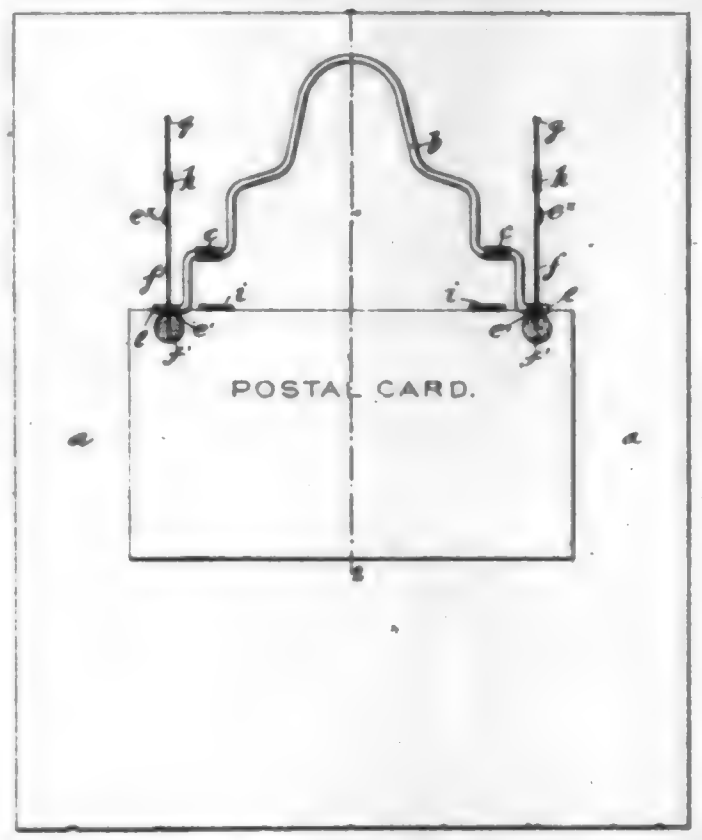
2. A medicated nest-egg having a body with a pocket formed therein and a core of woody fiber within said pocket, the pores of said core being impregnated with an insecticide.

3. A medicated nest-egg having a body with a pocket formed therein, a core of wood fiber within said pocket, the pores of said core being impregnated with an insecticide, and means for retaining the said core within said pocket.

4. A medicated nest-egg having a body with a pocket formed therein, a core of wood-bark held in said pocket, the pores of said core being impregnated with a liquid insecticide.

5. A medicated nest-egg having a body with a pocket formed therein, a core of absorbent material received within said pocket, said core having its pores impregnated with an insecticide, a cap closing said pocket and having a core-holder attached to the inner face thereof and engaging said core to retain the same.

817,574. PAPER-CLIP. JULIUS KÖSTER, Dortmund, Germany. Filed Dec. 7, 1904. Serial No. 235,870.



Claim.—1. A paper-clip comprising a foundation-board or base, clamping-springs attached at one end to said base and constituted by substantially straight spring-wires disposed parallel to each other and bearing at their free ends toward said base, and a lever arranged between said springs and having portions which are disposed beneath the same and at substantially right angles thereto.

2. A device such as described comprising a base *a*, clamping-springs *f* attached at one end to said base and constituted by substantially straight spring-wires bearing at their free ends toward said base, a clamping-button *f'* carried by the free end of each spring, and a pivoted lever *b* having its ends *e* disposed beneath said springs.

3. In a paper-clip, the combination, with a base or foundation-board, of springs constituted by substantially straight spring-wires attached at one end to said base and bearing toward the same at their free ends, a clamping-button carried at the free end of each of said springs and normally in engagement with said base, and a releasing-lever embodying intermediately-pivoted divergent legs the free ends of which are interposed between said base and said springs adjacent said buttons.

4. In a paper-clip, the combination, with a base or foundation-board, of springs attached at one end to the same and constituted by substantially straight spring-wires parallel to each other and to the sides of said base and bearing at their free ends toward said base, a clamping button or disk attached to the free end of each spring and having its face normally in engagement with said base, and a releasing-lever disposed between said springs and embodying intermediately-pivoted divergent legs having their ends bent outwardly toward the sides of said base and disposed beneath said springs adjacent said buttons.

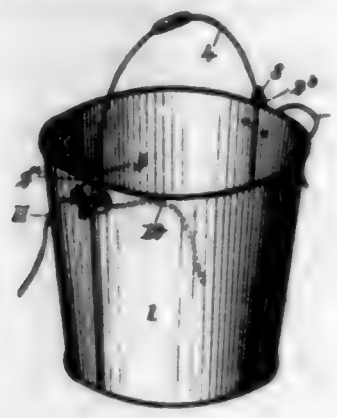
817,575. MILK-PAIL. JOHN LOWE, Hutchinson, Kans. Filed Aug. 30, 1905. Serial No. 276,237.

Claim.—1. A milk-pail having a supporting-yoke attached thereto, having an extended and a folded position, and means for resiliently maintaining said yoke in either of said positions.

2. A milk-pail having a supporting-yoke attached at the side thereof, having a folded position, and means for resiliently maintaining said yoke in said folded position.

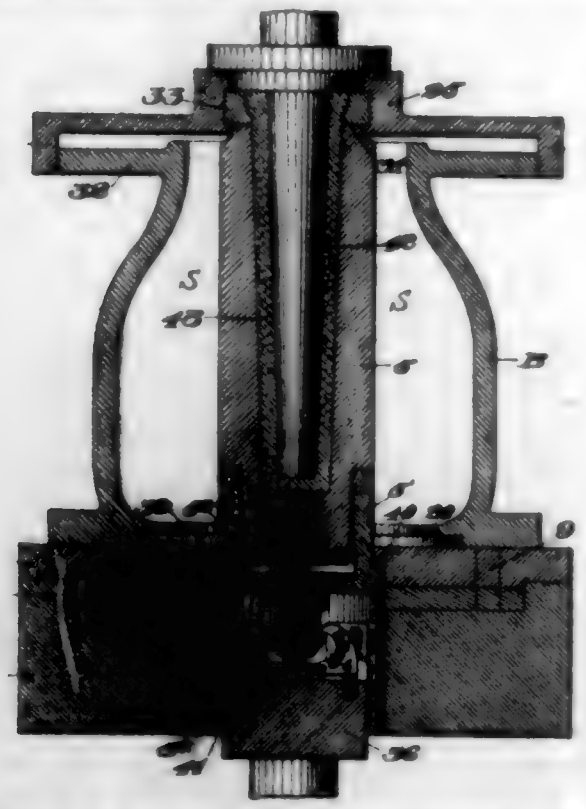
3. A milk-pail having a socket-plate attached to the body thereof, a yoke movably mounted in said socket-plate and adapted to assume a folded position and an extended position, and a spring engaging said yoke and resiliently resisting the movement thereof.

4. A milk-pail having a socket-plate attached thereto, a yoke having a shank mounted in said socket-plate and having a neck disposed adjacent to said shank, and a spring engaging said neck and yieldingly resisting the movement of said yoke.



817,576. APPARATUS FOR MOLDING GLASS ARTICLES.

FRANCIS J. MACKEN, San Francisco, Cal., assignor of two-thirds to Illinois-Pacific Glass Company, San Francisco, Cal., a Corporation of California. Filed Nov. 6, 1905. Serial No. 286,007.



Claim.—1. In apparatus of the character described, the combination of a sectional mold, means for opening and closing the mold, means for shifting the pivot of the mold-sections coördinately with the opening of the mold, a sectional neck-ring holder, and means for supporting said holder independent of the mold.

2. An apparatus of the character described having in combination a sectional mold, means for opening and closing the mold, means for giving one mold-section an accelerated opening movement, means for shifting the pivot of the mold-sections coördinately with the opening of the mold and a sectional neck-ring holder supported independently of the mold.

3. In apparatus of the character described, a mold comprising two hinged sections and a single lever for opening and closing the sections, means for shifting the pivot of the mold-sections coördinately with the opening of the mold, and means for causing one section to begin to open slightly in advance of the other.

4. In apparatus of the character described, a mold comprising two hinged sections and a single lever for opening and closing the sections, means for shifting the pivot of the mold-sections coördinately with the opening of the mold, means for causing one section to begin to open slightly in advance of the other, and means for giving the sections an eccentric motion during their opening and closing movements.

5. In apparatus of the character described, a mold made in two hinged sections, means for opening and closing the mold, means for shifting the pivot of the mold-sections coördinately with the opening of said mold, and means for giving one section an accelerated opening movement.

6. In apparatus of the character described, a mold made in two hinged sections, a support for said sections, means for opening and closing the sections, and means for shifting the pivot of the mold on said support during the opening movement.

7. In apparatus of the character described, a sectional mold, means for closing the mold, and means for opening the sections successively and coördinately.

8. In apparatus of the character described, a sectional mold, a single lever for operating the sections to open and close the mold, and means for giving one of the sections an accelerated initial opening movement.

9. In apparatus of the character described, a mold comprising two hinged sections turnable about a common pivot, a support for said pivot, means for opening and closing the sections, and means for shifting the pivot on said support during the opening movement.

10. In apparatus of the character described, a mold comprising two hinged sections turnable about a common pivot, a support for said pivot, means for opening and closing the sections, means for shifting the pivot on said support during the opening movement, and means for giving one of the sections an initial accelerated opening movement.

11. In apparatus of the character described, the combination of pivoted mold-sections, a slotted support therefor, means for shifting the pivot of the mold-sections coördinately with the opening of the mold, a slotted disk, projections on the mold-sections engaging the slots in said support and disk, the slots and the support and disk cooperating with said projections to open or close the mold-sections on the operation of the disk, and means for operating the disk, said slots arranged so that one mold-section is given an initial opening movement in advance of another.

12. In apparatus of the character described, the combination of a slotted bottom plate, a sectional mold resting thereon by gravity and having projections engaging and guided in said slots, said mold-sections hinged together and having a pivot-pin engaging suitable guides on the bottom plate, said pivot-pin being movable in said guides to permit the mold to be shifted back and forth, and means engaging the mold projections and coöperating with the slots in the bottom plate to open and close the mold.

13. In apparatus of the character described, the combination of a bottom plate having an opening, a mold comprising two hinged sections resting on the bottom plate and adapted to close said opening, said sections having a pivot-pin engageable with guides on the bottom plate, said guides arranged radially of said opening, and means for opening and closing the mold-sections.

14. In apparatus of the character described, the combination of a bottom plate having an opening, a mold comprising two hinged sections resting on the bottom plate and adapted to close said opening, said sections having a pivot-pin engageable with guides on the bottom plate, said guides arranged radially of said opening, means for opening and closing the mold, and means for moving the mold along said guides coördinately with the opening movement of the sections.

15. In apparatus of the character described, the combination of a bottom plate having an opening, a mold comprising two hinged sections supported on said plate and adapted to inclose the opening, means for opening and closing the mold-sections, and means for moving the mold to and from the opening coördinately with the closing and opening of the mold.

16. In apparatus of the character described, the combination of a bottom plate having an opening, a mold comprising coöperating hinged sections adapted to inclose said opening, means for opening and closing the mold, and means for moving the mold away from said opening in the bottom plate when the mold is open.

17. In apparatus of the character described, the combination of a bottom plate having an opening, a mold comprising hinged sections adapted to inclose said opening, means for opening and closing said mold and for giving one of the sections an initial opening movement in advance of the other, and means for shifting the pivot of the sections relative to the opening in the bottom plate when the mold is open.

18. In apparatus of the character described, the combination of a sectional mold comprising hinged sections, a slotted bottom plate having an opening within the mold, a slotted disk coaxial with said opening, projections on the mold-sections engaging the slots in the plate and disk, means for rotating the disk to open and close the mold, and means for shifting the pivot of the mold-sections coördinately with the opening of the mold.

19. In apparatus of the character described, the combination of a sectional mold comprising hinged sections, a slotted bottom plate

having an opening within the mold, a slotted disk coaxial with said opening, projections on the mold-sections engaging the slots in the plate and disk, means for rotating the disk to open and close the mold, means for shifting the pivot of the mold-sections coördinately with the opening of the mold, and means for giving one mold-section an initial opening movement in advance of the other.

20. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold surrounding the opening, means for opening and closing the mold, a cover for the bottom opening, and means for operating the cover coördinately with the closing of the mold.

21. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold surrounding the opening, means for opening and closing the mold, a blank-former reciprocal in said opening, pivoted dogs to support said former within the mold, and a clutch-head for releasing said dogs and for withdrawing the former from the mold.

22. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold surrounding the opening, means for opening and closing the mold, a blank-former reciprocal in said opening, pivoted dogs to support said former within the mold, and a clutch-head for releasing said dogs and for withdrawing the former from the mold, said former provided with an adjusting-screw to bear on the clutch-head and regulate the upward movement of the former by the clutch-head.

23. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold inclosing said opening, a rotatable disk, said plate and disk having slots, projections on the mold-sections coöperating with the slots to open and close the mold on the rotation of the disk, a blank-former reciprocal through the opening in the disk and bottom plate, and pivoted dogs arranged in the path of the former, said disk having notches to accommodate the dogs to permit the former to pass through said opening.

24. In apparatus of the character described, the combination of a mold and a sectional neck-ring holder supported independent of the mold, said neck-ring holder turnable in a vertical plane, and the sections thereof hinged to turn in planes at right angles to a vertical plane.

25. In apparatus of the character described, the combination of a mold and a neck-ring holder coöperating therewith, said neck-ring holder being supported independent of the mold and hinged to turn in a vertical plane, and a support for the mold on which the latter rests by gravity, said mold being removable independent of the neck-ring holder.

26. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold supported on the plate and inclosing the opening, meansfor operating the mold, a cover for said opening operable by the mold-closing means, a blank-former reciprocal through said opening, and an independently-supported hinged neck-ring holder coöperating with the mold and former.

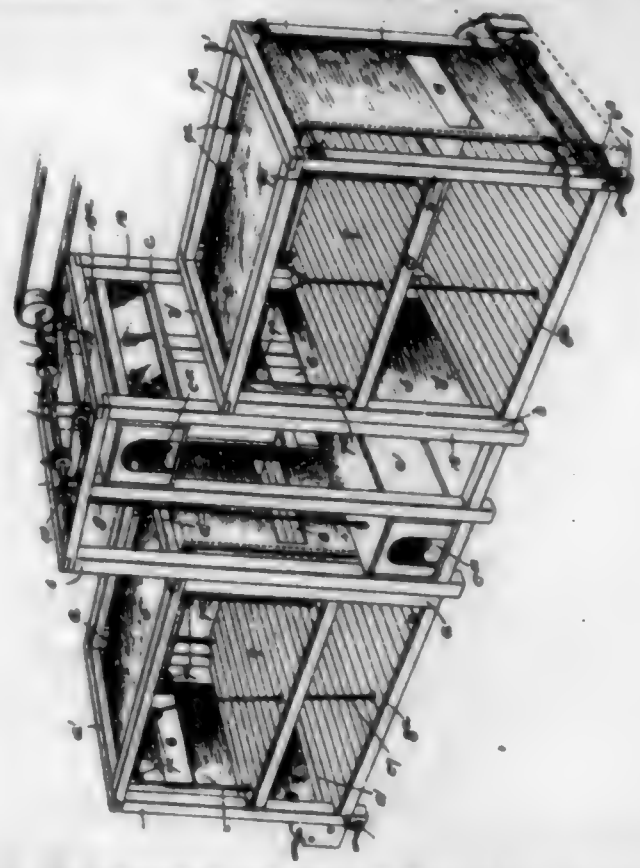
27. In apparatus of the character described, the combination of a bottom plate having an opening, a sectional mold supported on said bottom plate and inclosing said opening, a closure for the latter, means for operating the mold, a blank-former, a sectional neck-ring holder, and an oscillating carriage on which the holder is pivoted.

28. In apparatus of the character described, the combination with a suitably-supported mold, and means for operating the mold, of a neck-ring holder, a carriage to which the sections of the neck-ring holder are pivoted, slotted supports for said carriage in which the latter has a limited reciprocating and oscillating movement.

29. A mold comprising two coöperating hinged members, a supporting-plate therefor, means coöperating with the plate to open and close the mold, a neck-ring and neck-ring holder, latch mechanism carried by one of the mold-sections, and means on the other section coöperating with said latch mechanism to actuate the latter and lock the sections on the closing of the mold.

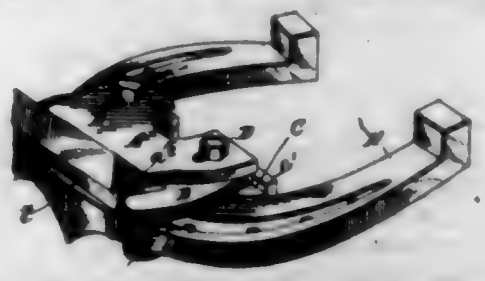
817,577. THEATRICAL SCENIC APPARATUS. GUSTAV A. MILLER, Wichita, Kans. Filed June 24, 1905. Serial No. 266,903.

Claim.—1. As an improvement in scenic theaters, the following elements in combination: a permanent stage, a vertically-adjustable stage, located above the permanent stage, means for raising or lowering the adjustable stage, an endless curtain that passes over the fronts of said stages and covers them, said curtains having scenic displays thereon and formed with horizontally-extended openings, means for actuating the endless curtains, an elevator-cage, said cage having an end entrance and one side open, means for sustaining said elevator-cage in front of the endless curtain and moving it vertically over the said curtain and an external body that covers the actuating parts having the representation of a house provided with an ingress-door located at the highest point of movement of the cage, and an outlet-door located at the lowest point of the cage, all being arranged substantially as shown and for the purposes described.



2. The hereinbefore-described improvement in scenic theaters, comprising the following elements in combination, a plurality of permanent stages, a plurality of vertically-adjustable stages, over the permanent stages, means for adjusting the movable stages, an endless curtain that passes over the fronts of the said stages and covers them, said curtains having scenic displays thereon and having horizontally-extended openings and means for actuating the curtains, a plurality of elevator-cages, one for each set of stages, said elevator-cages having an end entrance and having one side open, means for sustaining each cage in front of its adjacent endless curtain, and moving it vertically over said curtain, saidmeans including devices for lowering one cage as the other is being raised, and an external body that covers the actuating parts, having the representation of a house provided with ingress-doors, located at the highest point of movement of the cages and also having doors at the lowest point of movement of the cages, as set forth.

817,578. ADJUSTABLE HORSESHOE-CALK. THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Nov. 23, 1905. Serial No. 288,741.



Claim.—1. An adjustable horseshoe-calk, comprising a clamp-plate to be applied to the outside of the shoe and having hooks extending in front around and over the shoe, a clamp-plate to be applied to the inside of the shoe and having an overlapping edge extending over the rear inside edge of the shoe, an external calk-plate applied to the outside surface of the outside clamp-plate and means for locking the three plates together substantially as described.

2. An adjustable horseshoe-calk, comprising a clamp-plate to be applied to the outside of the shoe and having hooks extending in front and around the shoe, a clamp-plate to be applied to the inside of the shoe and having an overlapping edge extending over the rear inside edge of the shoe and having a curved surface abutting against the front interior edge of the shoe, an external calk-plate applied to the outside surface of the outside clamp-plate and two locking-bolts extended through the three plates on opposite sides of the middle line of the shoe substantially as described.

3. An adjustable horseshoe-calk, comprising a clamp-plate to be applied to the outside of the shoe and having hooks extending in front around and over the shoe and an open space between the hooks, a clamp-plate to be applied to the inside of the shoe and having an overlapping edge extending over the rear inside edge of the shoe, an external calk-plate having a locking-rib on its inner face adapted to enter the plane of the outer clamp-plate to lock the same against sliding movement and means for fastening the three plates together substantially as described.

4. An adjustable horseshoe-calk, comprising a clamp-plate to be applied to the outside of the shoe and having hooks extending in front, around, and over the shoe and an open space between said hooks, a clamp-plate to be applied to the inside of the shoe and having an overlapping edge extending over the rear inside edge of the shoe and having also a curved abutment fitting the interior of the shoe and outturned lugs, an external calk-plate having a locking-rib on the inner face adapted to enter the plane of the outer clamp-plate and two bolts connecting the three plates together on opposite sides of the middle line of the shoe substantially as described.

5. A detachable toe-calk consisting of a flat horisontal plate having at its front edge a calk on the outside and a recess on the inside adapted to inclose the rigid toe-calk of a rough-shod horseshoe, two vertical bolts arranged in the plate inside the calk and means for connecting the bolts to the horseshoe.

6. A detachable toe-calk consisting of a flat plate having an external calk at its front end and bolt-holes in rear of the same, vertical bolts passing through the holes, and a plate secured to the bolts and arranged inside of and fitting the curve of the front part of the shoe and having a flange overlapping the upper inside edge of the shoe.

817,579. **ADJUSTABLE HORSESHOE-CALK.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Nov. 23, 1905. Serial No. 288,742.



Claim.—1. An adjustable horseshoe-calk, comprising a calk-block having a hook-flange adapted to catch over the inner edge of the shoe, a bridge-block outside the shoe having lugs adapted to catch over the outer edge of the shoe and two bolts connecting these parts together substantially as described.

2. An adjustable horseshoe-calk, comprising a calk-block having a hook-flange adapted to catch over the inner edge of the shoe, a bridge-block outside the shoe extending across the toe and having lugs overlapping the shoe and perforated ends and two bolts passing through these perforated ends and bearing against the calk-block substantially as described.

3. An adjustable horseshoe-calk, comprising a calk-block having a hook-flange adapted to catch over the inner edge of the shoe, a bridge-block outside the shoe having lugs adapted to catch over the shoe, two bolts connecting the bridge-block and calk-block and means for causing the bolts to draw the parts together with a wedging action as described.

4. An adjustable horseshoe-calk, comprising a calk-block having a hook-flange adapted to catch over the inner edge of the shoe, a bridge-block outside of the shoe having lugs adapted to catch over the shoe, two bolts connecting the bridge-block and calk-block, said bolts having hook-shaped head and engaging the inner edge of the shoe substantially as described.

5. An adjustable horseshoe-calk, comprising a calk-block having a hook-shaped flange adapted to catch over the inner edge of the shoe, a bridge-block outside of the shoe having lugs adapted to catch over the shoe, two hook-bolts connecting the bridge-block and calk-block, the head of said bolts and the adjacent faces of the calk-block being shaped and fitted to form a dovetail joint substantially as described.

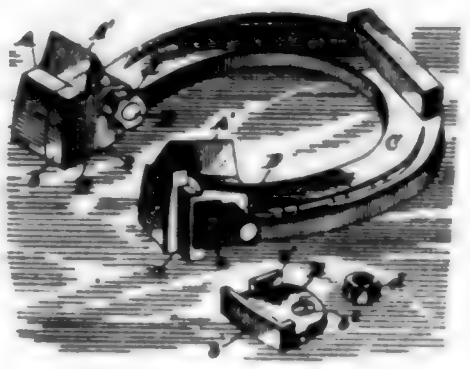
6. An adjustable horseshoe-calk comprising a calk-block, a clamp-block and horizontal locking-bolts having their screw-threaded ends extending forwardly and provided with tightening-nuts as described.

7. An adjustable horseshoe-calk comprising a calk-block having a recess adapted to lock over the rigid toe-calk of the shoe and a hook-flange adapted to catch over the inner edge of the shoe a clamp-block arranged to go in front of the shoe and means for connecting it to the recessed calk-block.

8. A detachable toe-calk having a recess to receive the toe-calk of a horseshoe and a forwardly-projecting flange to hook over the upper surface of the inside edge of the shoe and means for fastening it in front of the shoe.

9. A detachable toe-calk having a forwardly-projecting flange to hook over the upper surface of the inside edge of the shoe and means arranged at the front for fastening it on in front of the shoe.

817,580. **DETACHABLE HEEL-CALK FOR HORSESHOES.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Dec. 12, 1905. Serial No. 291,456.



Claim.—1. A detachable heel-calk for horseshoes, comprising separable housing-sections recessed to receive and completely inclose the heel-lug of a roughshod horseshoe and means for clamping the housing-sections together.

2. A detachable heel-calk for horseshoes, comprising separable housing-sections recessed to receive and completely inclose the heel-lug of a roughshod horseshoe and a transverse bolt passing through the housing-sections.

3. A detachable heel-calk for horseshoes, comprising separable housing-sections recessed to receive the heel-lug of a roughshod horseshoe, and a transverse bolt extending through the housing-sections in front of the recess for the heel-lug.

4. A detachable heel-calk for horseshoes comprising separable housing-sections recessed to receive the heel-lug of a roughshod horseshoe, and a transverse bolt having one side made wedge shape to tighten the heel-lug within the housing.

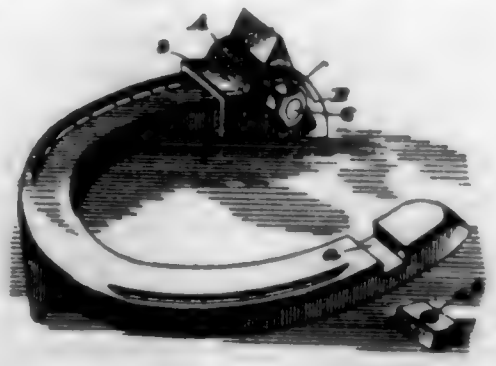
5. A detachable heel-calk for horseshoes, comprising separable housing-sections, one of which is recessed to receive and inclose three sides of the heel-lug of a roughshod horseshoe and the other of which is made as a separate detachable part inclosing the fourth side of the heel-lug, and a clamp-bolt for connecting the two together.

6. A detachable heel-calk for horseshoes, consisting of separable housing-sections recessed to receive the heel-lug of a roughshod horseshoe, a separate calk-piece arranged between the housing-sections and in front of the heel-lug of the shoe, and a clamping-bolt extending through the housing-sections and in front of the separate calk-piece to lock the calk-piece in the housing and the housing-sections to the heel of the shoe.

7. A detachable heel-calk for horseshoes, comprising a housing recessed to receive and inclose the heel-lug of a roughshod shoe and a transverse bolt having a wedge bearing for binding the housing to the shoe.

8. A detachable heel-calk for horseshoes, comprising a housing recessed to receive and inclose the heel-lug of a roughshod shoe, a transverse bolt having a wedge bearing and a separate calk-piece secured between the bolt and the heel-lug.

817,581. **DETACHABLE HEEL-CALK FOR HORSESHOES.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Dec. 12, 1905. Serial No. 291,458.



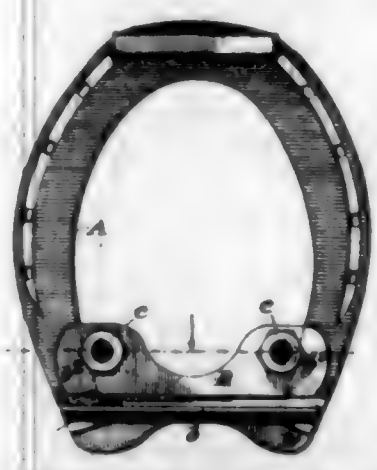
Claim.—1. A horseshoe-calk comprising a calk with a flat bearing fitting the top of the shoe and a side plate with a marginal flange, a perforated clamping-plate, a horizontal bolt passing outside the shoe and connecting the two parts of the calk, and a locking-lug extending transversely to the shoe and adapted to fit in a transverse recess of the shoe and lock the calk against longitudinal slipping.

2. A two-part detachable heel-calk, one part being formed with a locking-lug adapted to project into the cross-section of the shoe and to enter a recess in the shoe and means for clamping the parts together.

3. A detachable heel-calk for flat horseshoes, consisting of two clamp-sections each having flanges overlapping the top of the shoe, one of which sections is formed with an integral screw-threaded stem and a locking-lug adapted to enter a recess in the face of the shoe, and the other of which sections is perforated to receive the screw-threaded stem, and a nut adapted to be turned upon said screw-stem.

4. A detachable heel-calk for flat horseshoes, consisting of two clamp-sections, one section being formed in one piece with a calk proper, a broad bearing-plate fitting the outer face of the shoe, a side plate with a marginal flange, a lug projecting from the outer bearing-plate into the cross-section of the shoe and adapted to enter a recess therein and extended laterally in the form of a screw-threaded stem, a flanged and perforated clamp-plate and a retaining-nut.

817,582. **DETACHABLE HEEL-CALK FOR HORSESHOES.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Dec. 22, 1905. Serial No. 293,220.



Claim.—1. A detachable heel-calk for horseshoes, consisting of a bridge-piece formed with an outer calk edge and with two seats to receive the heel ends of the shoe and two vertical bolts having wedge-shaped shanks adapted to pass through the calk and lock over the upper inner edges of the shoe and bear with their inclined wedge faces directly against the inner edges of the shoe to make an expandible bridge connection between the heels.

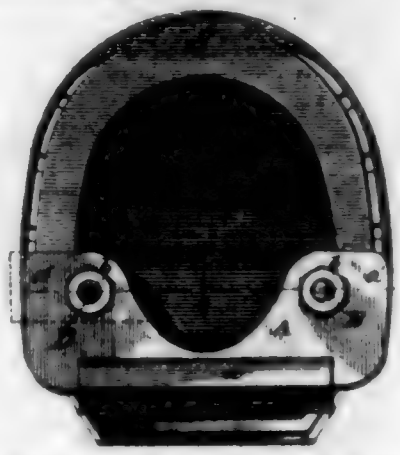
2. A detachable heel-calk for horseshoes, consisting of a bridge-piece formed with an outer calk edge and with two seats to receive the heel ends of the shoe, two vertical bolts clamping the calk to the shoe, and interlocking means for preventing the rear horizontal movement of the calk.

3. A detachable heel-calk for horseshoes, consisting of a bridge-piece formed with an outer calk edge having flanges extending outwardly past the rear ends of the heels of the shoe, flat horizontal and perforated flanges resting against the outer face of the shoe, abutting faces resting between the heels of the shoe and lying in the plane of the same, and two vertical bolts passing through the perforations of the horizontal flanges and having wedge-shaped shanks binding against the inner edges of the shoe.

817,583. **DETACHABLE HEEL-CALK FOR COMPOSITE RUBBER-PAD HORSESHOES.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Dec. 26, 1905. Serial No. 293,259.

Claim.—1. A detachable heel-calk for composite horseshoes, comprising a calk-plate extending across from heel to heel of the metal part of the shoe, interlocking means for preventing horizontal movement of the calk-plate on the shoe, two vertical bolts for clamping the calk-plate to the shoe, said calk-plate being extended rearwardly past the rear ends of the fractional metal part of the shoe and having a calk-lug in rear of the same adapted to rest below the rubber pad of the composite shoe substantially as described.

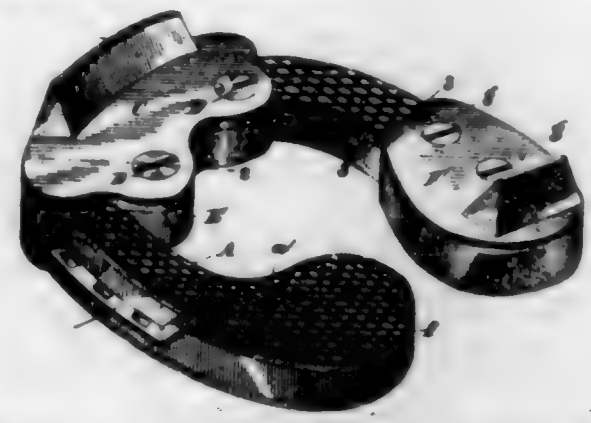
2. A detachable heel-calk for composite horseshoes, comprising a calk-plate extending across from heel to heel of the metal part of the shoe and having on each side a lug adapted to enter a recess in the metal part of the composite shoe, two vertical bolts for clamping the calk to the shoe, said calk-plate being extended rearwardly past the rear end of the fractional metal part of the shoe and having a calk-lug in rear of the same adapted to rest below the rubber pad of the composite shoe substantially as described.



3. A detachable heel-calk for composite horseshoes, comprising a calk-plate extending across from heel to heel of the metal part of a composite shoe, interlocking means for preventing horizontal movement of the calk-plate on the shoe, two vertical bolts passing through the calk-plate on the inner sides of the rear ends of the fractional metal part of the shoe, said calk-plate being extended rearwardly past the rear ends of the fractional metal part of the shoe and having a calk-lug in rear of the same adapted to rest below the rubber pad of the composite shoe substantially as described.

4. A detachable heel-calk for a horseshoe, comprising a calk-plate extending across from heel to heel, interlocking means for preventing horizontal movement of the calk-plate, two vertical bolts for connecting the calk-plates to the shoe, said bolts being arranged along the inner edges of the shoe, and clamp-plates secured by these bolts and having hooked portions extending along the outer edges of the shoe and over the upper edges of the same substantially as described.

817,584. **DETACHABLE CALK FOR RUBBER-PAD HORSESHOES.** THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Jan. 3, 1906. Serial No. 294,345.



Claim.—1. A detachable calk for that form of composite horse shoe having an elastic face and a rigid external nail-flange, said calk consisting of a plate having an outer rigid bearing-surface for the nail-flange, an external calk and vertical holes inside the calk, and two vertical screw-bolts arranged to pass through the holes of the plate to secure the same to the shoe.

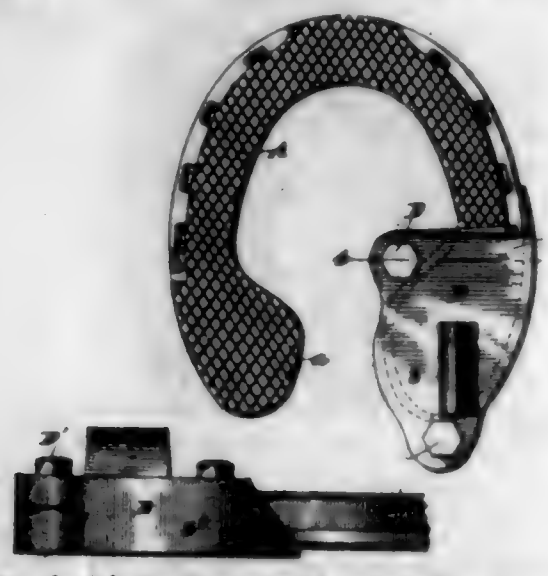
2. A detachable calk for horseshoes, consisting of an external calk-plate an internal clamp-plate fitting against the inner edges of the shoe and having a flange extending over the top of the inner edge of the shoe and a plurality of vertical screw-bolts arranged inside the shoe and on opposite sides of the middle line of the same.

3. A detachable calk for horseshoes, consisting of an external calk-plate having a plurality of bearing-surfaces arranged at different levels at the front outer edge of the shoe, a clamp-plate arranged inside the shoe and having a flange overlapping the upper edge of the inner part of the shoe and a plurality of vertical screw-bolts clamping the calk-plate to the clamp-plate on opposite sides of the middle line of the shoe.

4. The combination with a horseshoe having an elastic face and

a rigid nail-flange projecting outside the elastic face; of a detachable calk-plate having a bearing both against the elastic face and the rigid nail-flange and means for securing it thereto.

817,585. DETACHABLE HEEL-CALK FOR HORSESHOES. THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Jan. 5, 1906. Serial No. 294,748.



Claim.—1. A heel-calk adapted for a horseshoe having a laterally-enlarged heel and consisting of two plates forming a seat inclosing said enlarged heel, one of them bearing a calk-lug, and screws or bolts for fastening the plates together around said enlarged heel.

2. A heel-calk adapted for a horseshoe having laterally-enlarged heels and consisting of two plates one bearing a calk-lug and both recessed to form together an inclosing seat for the enlarged heel, with a relatively small outlet at the front end of the seat and screw-bolts for fastening the plates together.

3. A heel-calk adapted for a horseshoe having laterally-enlarged heels and consisting of two plates forming a seat inclosing said enlarged heel, one of them bearing a calk-lug and both having holes for screws or bolts outside of the heel-seat and clamping screws or bolts for fastening them together.

4. A heel-calk adapted for a horseshoe having laterally-enlarged heels, consisting of a plate B bearing a calk-lug, an inner flange b', a deeper outer flange b^2 with lip b^3, a plate C for the inner and rear edges of the shoe-heel having flange c and lip c', both said plates having registering holes for screws or bolts and clamping screws or bolts passing through the same.

5. A heel-calk adapted for a horseshoe having laterally-enlarged heels, consisting of a plate B bearing a calk-lug, an inner flange b', a deeper outer flange b^2 with lip b^3 and a front lug b^4, a plate C for the inner and rear edges of the shoe-heel having flange c and lip c', both said plates having registering holes for screws or bolts and clamping screws or bolts passing through the same.

817,586. DETACHABLE CALK FOR HORSESHOES. THOMAS W. J. MCGANN, Washington, D. C., assignor of one-half to Aeneas Collins, Washington, D. C. Filed Jan. 31, 1906. Serial No. 298,814.

Claim.—1. In a detachable calk device for horseshoes, the combination with the toe-calk and its plate, and the clamp-plate and screws securing the same to the calk-plate, the said clamp-plate having rearwardly-projecting lugs or extensions perforated for screws, the heel-plates provided at their front ends with lugs overlapping the lugs or extensions of the clamp-plate, and also provided at their outer and inner sides with the upwardly-projecting wings having at their free edges inwardly-extending flanges to overlie the inner face of the shoe, said wings and flanges being spaced apart at their adjacent ends whereby to permit the swinging of the heel-plates into interlocked connection with their respective arms of a horseshoe, said heel-plates being provided near their rear ends with outwardly-projecting ribs spaced apart, the heel-calk having a body portion and a side plate flanged at their upper edges to overlie a horseshoe, the said body portion having a bolt recessed and rabbeted to receive the ribs of the heel-plate, and a cross-bolt fitting in the recess of the body-section and between the ribs of the heel-plate.

2. In a calk device for horseshoes, a heel-plate provided at its front and rear ends at its outer and inner edges with upwardly-projecting wings having at their free edges inwardly-projecting flanges to engage above a shoe, and the wings being spaced apart at their adjacent ends in the direction of length of the plate whereby the plate may be fitted diagonally to a shoe and swung into interlocking connection therewith, a heel-calk, and means for securing the heel-calk to the said heel-plate.



3. In a calk device for horseshoes, a heel-plate provided in advance and rear of its middle portion at its outer and inner edges with opposing upwardly-projecting wings, provided at their upper free edges with inwardly-projecting flanges to overlie a horseshoe, the said wings being spaced apart at their adjacent ends whereby they may be applied diagonally to the arms of a horseshoe and swung into alinement therewith for interlocking with the shoe.

4. In a calk device for horseshoes, the combination of a toe-calk, heel-plates, means connecting the front ends of the heel-plates with the toe-calk, and heel-calks applied to the rear ends of the heel-plates.

5. The combination in a calk device with a heel-plate having outwardly-projecting transverse ribs, of a heel-calk having a body portion provided with a transverse recess rabbeted to receive the said transverse ribs, and the bolt fitting in said recess between the said ribs and the side plate held by the said bolt in connection with the body portion.

6. The combination in a calk device with a heel-plate having outwardly-projecting transverse ribs, of a heel-calk having a body portion engaging the said ribs, and a bolt for securing said heel-calk, the said bolt being also in engagement with the transverse ribs.

7. The combination in a calk device for horseshoes, of a heel-plate having an upwardly-projecting wing, provided at its free edge with an inwardly-projecting flange to overlie a horseshoe and notched from its inner edge between its ends, of a heel-calk applied to said plate and having an inwardly-projecting flange operating in the notch of the said heel-plate flange, whereby to overlie with said flange the inner face of a horseshoe.

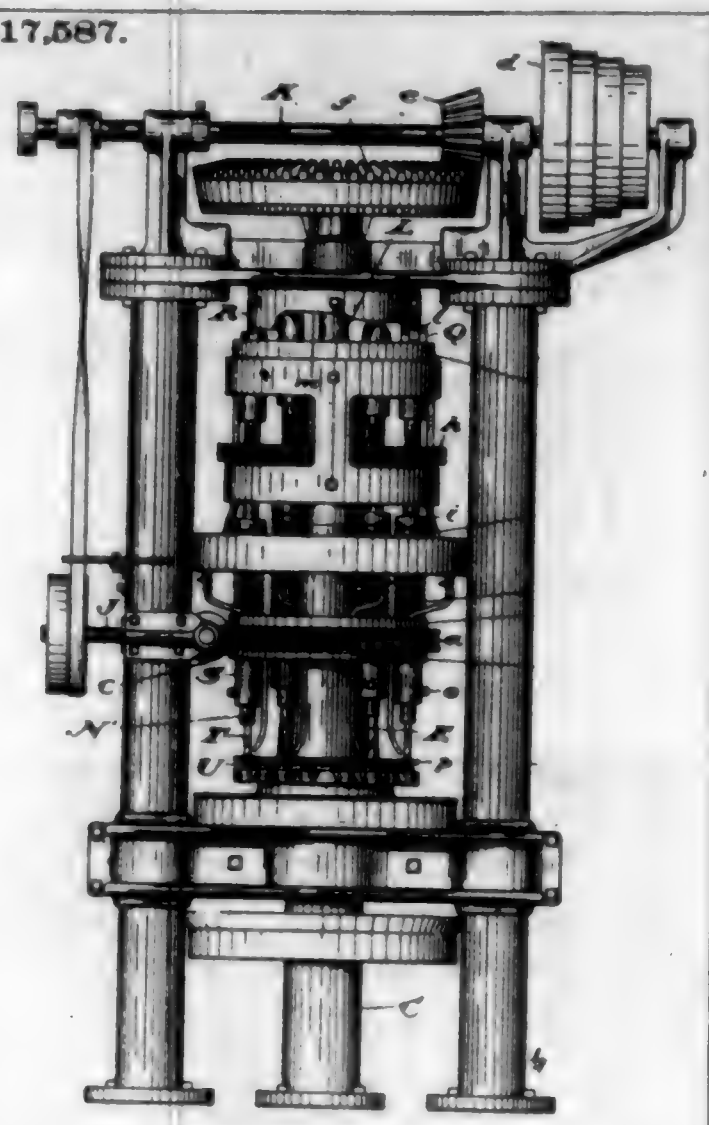
8. In a calk device for horseshoes, the combination of a heel-plate adapted to swing into interlocking engagement with its respective arm of a horseshoe, a heel-calk applied to said heel-plate, and means for securing the heel-calk when so applied.

9. In a calk device for horseshoes, a heel-plate having at one edge at its front end, and at its opposite edge at its rear end, upwardly-projecting wings provided at their free edges with inwardly-extending flanges to overlie the upper face of a horseshoe when the heel-plate is swung into engagement therewith.

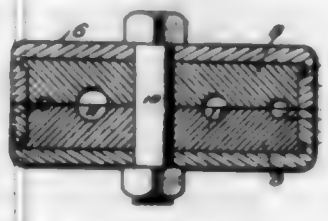
817,587. MACHINE FOR DRILLING NUTS AND THE LIKE. MARTIN NELSON, Toronto, Canada. Filed June 20, 1904. Serial No. 213,330.

Claim.—In a machine for boring nuts and the like the combination of a frame; a drill-frame rotatably supported thereon; means for rotating the drill-frame; a plurality of drill-spindles rotatably and slidably carried thereby; a head rotating with the drill-frame; slides vertically movable therein on feather-keys, one over each drill-spindle, a friction-roller carried by each slide at its upper end; a stationary cam with which the said friction-rollers engage; springs each engaging one of the drill-spindles and the frame and tending to maintain the drill-spindles in contact with the slides; means for rotating the spindles; and nut-sockets formed one below each spindle, substantially as described.

817,587.



817,588. WIRE-CLAMP. JOHN A. REESING, Aurora, Ill. Filed Apr. 13, 1905. Serial No. 255,328.



Claim.—1. A wire-connector, comprising opposite plates having a lining of soft metal grooved to receive wires, and means to clamp the plates together.

2. A wire-connector, comprising opposite plates having a lining of non-corrosive metal grooved to receive wires, and means to clamp the plates together.

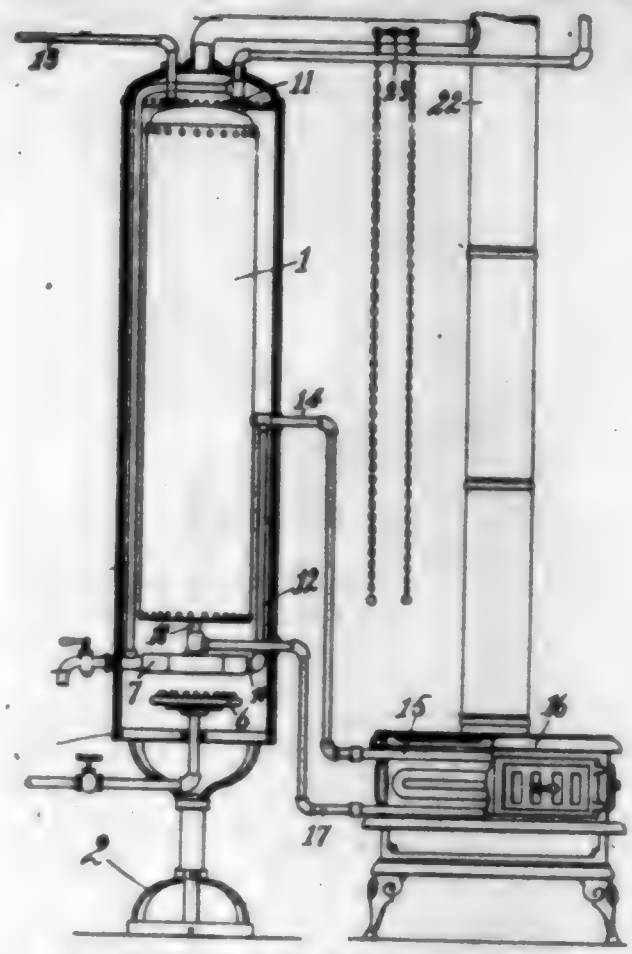
3. A wire-connector, comprising outer plates of comparatively rigid metal, and inner plates of soft metal grooved to receive wires and compressible to join their faces and entirely encircle the wires, and means to clamp the plates together.

4. A wire-connector, comprising an outer tube tapered, split and threaded at the ends, a lining of soft non-corrosive metal in the tube, having holes to receive the ends of wires, and nuts on the threaded ends of the tube.

5. A wire-connector, comprising a pair of similar outer plates of comparatively rigid metal, each of which is shaped to form two flanges at its side edges, and has a lining of soft metal secured thereto and fitting between the flanges, the linings having matching grooves extending from end to end thereof.

817,589. DOMESTIC WATER-HEATER. WILLIAM H. ROBERTS, Oakland, Cal., assignor to Roberts Water Heater Company, Oakland, Cal., a Corporation of California. Filed May 15, 1905. Serial No. 260,378.

Claim.—1. In an apparatus of the character described, the combination of a suitably-supported boiler, a housing therefor, spaced therefrom, a water-heating receptacle below the boiler comprising a flat box-like receptacle having symmetrically-arranged vertical flues therethrough for the passage of the products of combustion, the periphery of the receptacle being curved inward between each pair of adjacent flues to confine the water into close proximity with the flues, said receptacle having a water-supply pipe leading from the bottom of the boiler to the center of said receptacle, and hot-water pipes leading from opposite sides of the receptacle upward between the boiler and the housing, one leading to the center of the boiler, and the other to the hot-water system, and a burner beneath said receptacle in said housing, substantially as described.



2. In an apparatus of the character described, the combination of a suitably-supported boiler, a housing therefor, spaced therefrom, a water-heating receptacle having symmetrically-arranged vertical flues therethrough for the passage of the products of combustion, the periphery of the receptacle being curved between each pair of adjacent flues, to confine the water into close proximity with the flues, said receptacle having a water-supply pipe leading from the bottom of the boiler to the center of said receptacle, and hot-water pipes leading from opposite sides of the receptacle upward between the boiler and the housing, one leading to the center of the boiler, and the other to the hot-water system, a water-back in a stove, a pipe leading to the bottom of the water-back from the supply-pipe leading to the receptacle, a pipe leading from the top of the water-back to the pipe leading to the middle of the boiler, and a burner beneath said receptacle in said housing, substantially as described.

817,590. STEAM-TURBINE. UEL A. RUTLEDGE, Berkley, Va. Filed July 25, 1905. Serial No. 271,144.

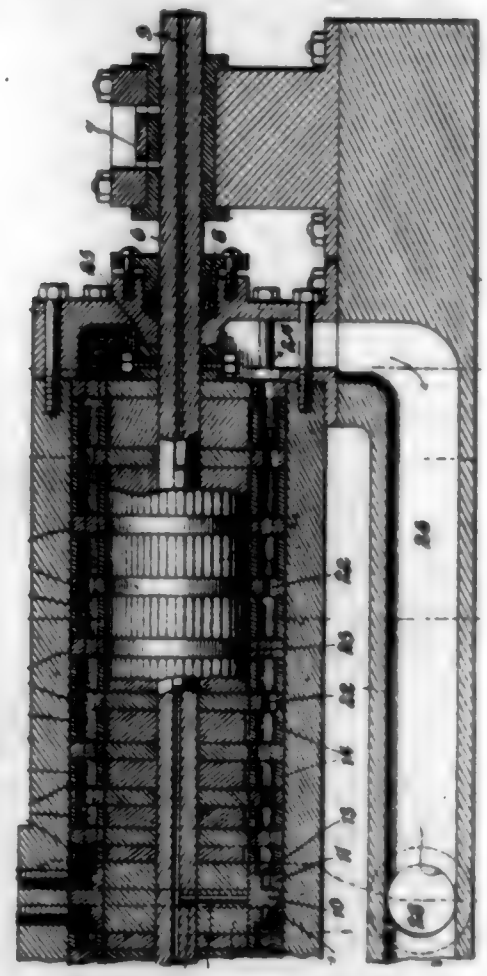
Claim.—1. In a turbine, a rotating piston, a collar surrounding and receiving said piston and fitting snugly about the entire periphery of the same, said collar having a fluid-medium-pressure compartment with a channel leading therefrom to the inner periphery of the collar, said collar also having a medium-conveying compartment with a channel leading thereto from the inner periphery of the collar.

2. In a turbine, a rotating piston, a collar surrounding and receiving said piston, said collar having a fluid-medium-pressure compartment with a channel leading therefrom to the inner periphery of the collar, said collar also having a medium-conveying compartment with a channel leading thereto from the inner periphery of the collar, the capacity of the last said channel being greater than that of the first said channel.

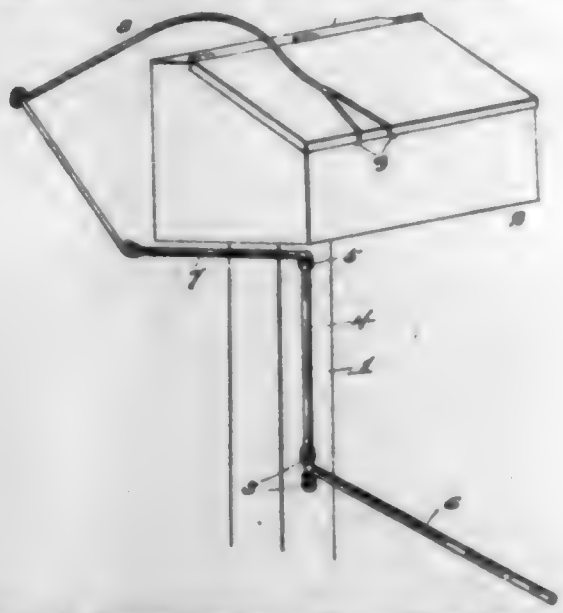
3. In a turbine, a rotating piston, a collar surrounding and receiving said piston and fitting snugly around the entire periphery of the same, said collar having a fluid-medium-pressure compartment with a channel leading therefrom to the inner periphery of the collar, said collar also having a medium-conveying compartment with a channel leading thereto from the inner periphery of the collar, the capacity of the last said channel being greater than that of the first said channel.

4. In a turbine, a series of rotating pistons, a collar receiving each piston, each said collar having a fluid-medium-pressure com-

partment with a channel leading therefrom to the inner periphery of the collar, each said collar also having a fluid-medium-conveying compartment with a channel leading thereto from the inner periphery of the collar, the pressure-compartments of one collar being located in alinement with the conveying-compartment of the next adjacent collar throughout the series and a means for passing the fluid medium from the conveying-compartment of one collar to the pressure-compartment of the next adjacent collar and so on throughout the series.



817,591. DEVICE FOR OPERATING MAIL-BOX LIDS. ANDREW SEATON, Osborn, Mo., assignor of one-half to Lelio E. Kelley, Osborn, Mo. Filed June 23, 1905. Serial No. 266,468.



Claim.—1. The combination, with a mail-box having a swinging lid, of means for operating the lid, comprising a pair of levers one of which is pivoted to swing horizontally and the other of which is connected to the lid to swing vertically, and a link connecting the levers.

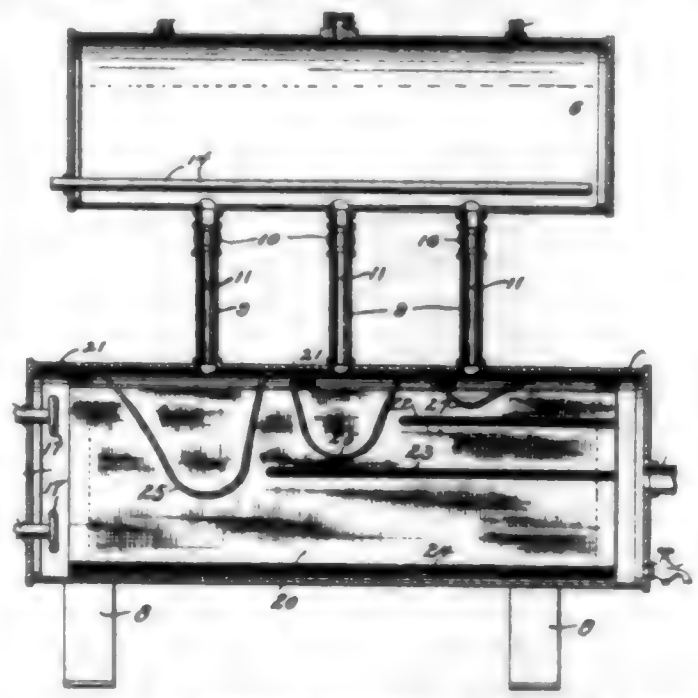
2. The combination, with a mail-box having a swinging lid, of a lever pivoted to swing horizontally and having arms projecting therefrom, a vertically-swinging lever attached to the lid and connected to one arm to open and close the lid according to the movement of the other arm.

3. The combination, with a mail-box, of a swinging lid, of a lever pivoted to swing perpendicular to the movement of the lid, a lever attached to the lid, and a link connecting said levers.

4. The combination, with a mail-box having a hinged lid, of a lever pivoted to swing horizontally and having long and short arms projecting therefrom at different angles, a lever attached to the lid, and a link connecting the lid-lever and the said short arm.

5. The combination, with a mail-box having a hinged lid, of a lever extending over the lid and having diverging arms terminating in hooks adapted to grasp the lid-flange, a lever pivoted to swing at right angles to the movement of the lid, and a link connecting said levers.

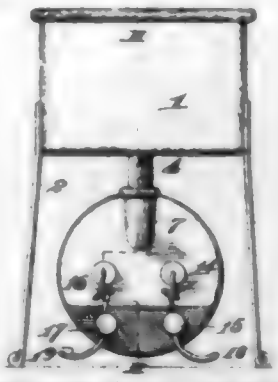
817,592. CARBURETER. ELDER B. SKINNER, Newport, Ark. Filed Aug. 7, 1906. Serial No. 272,164.



Claim.—1. A carbureter comprising an oil-tank, a horizontal carbureting-cylinder thereunder, containing a lining of capillary material and a series of horizontal transverse sheets of similar material, a series of pipes leading from the tank into the top of the cylinder, a splasher under each pipe, arranged to distribute the oil therefrom to a different sheet, and inlet and outlet pipes in opposite ends of the cylinder.

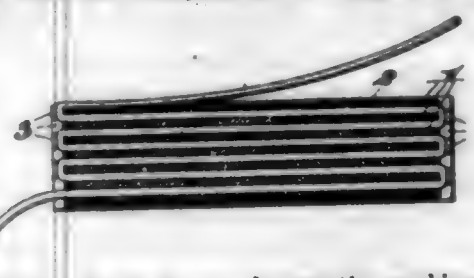
2. In a carbureter, the combination with a tank, a carbureting-chamber, and a series of feed-pipes connecting the same, of a series of capillary sheets extending across the chamber at different heights and located under the respective pipes, and a splasher arranged under each pipe and arranged to distribute oil therefrom onto each sheet respectively.

817,593. ELECTRIC WATER-HEATER. FREDERIC F. SHIPP, St. Louis, Mo., assignor of one-half to James A. Howse, St. Louis, Mo. Filed Aug. 10, 1903. Serial No. 168,882.



Claim.—An electric water-heater comprising a tank, a cylinder arranged beneath said tank, removable screw-caps located on the ends of said cylinder, tubular connections from each screw-cap to the water-tank, a second cylinder arranged within the first-mentioned cylinder and held therein so that a space is formed between the two cylinders, ends rigidly fixed in said inner cylinder, a tube passing longitudinally through the inner cylinder and having its ends seated in the ends of the inner cylinder, a heat-radiating core arranged upon the tube and having a spiral groove formed in its periphery, a heating-wire wound in said groove, a heat-radiating jacket surrounding the heating-wire and core, insulated plugs located in one of the ends of the inner cylinder, insulated plugs located on one of the removable ends of the outer cylinder through which plugs the terminals of the heating-wire pass, substantially as set forth.

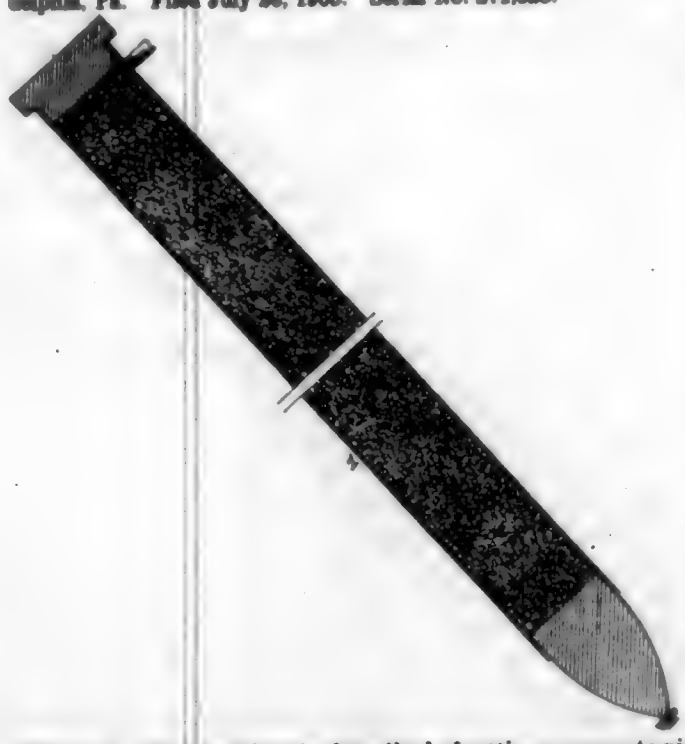
817,594. ELECTRICAL WATER-HEATER. FREDERIC F. SHIPP, St. Louis, Mo., assignor to The Electrical Heating & Manufacturing Company, St. Louis, Mo., a Corporation. Filed Sept. 16, 1904. Serial No. 224,714.



Claim.—1. In an electrical water-heater, the combination of a plurality of heat-radiating sections that are a non-conductor of electricity, and an electrical conductor-coil wound throughout said sections; said sections being provided with notches at their ends in which the folds of said coil are located, substantially as set forth.

2. In an electrical water-heater, the combination of a plurality of heat-radiating sections that are non-conductors of electricity and each of which is provided with longitudinal grooves at its sides and notches at its ends, and an electrical conductor-coil laid in said grooves and notches throughout the series of said sections, substantially as set forth.

817,595. SETTING CONCRETE PILES. FRANK SEUMAN, Philadelphia, Pa. Filed July 26, 1905. Serial No. 271,335.



Claim.—1. The mode herein described of setting a concrete pile, said mode consisting in first surrounding the mass of concrete with a pipe, driving the two as a unit, and then withdrawing the pipe.

2. The mode herein described of setting a concrete pile, said mode consisting in first filling a pipe with plastic concrete, preventing escape of the latter at the top of the pipe, driving the pipe thus filled, and then withdrawing the pipe and leaving the mass of concrete in the opening.

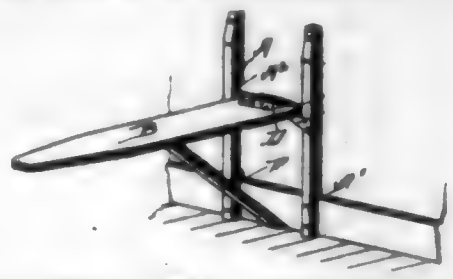
3. The mode herein described of setting a concrete pile, said mode consisting in first filling a pipe with plastic concrete, preventing escape of the latter at the top of the pipe, driving the filled pipe and then removing the pipe and forcing the plastic mass therefrom, as said pipe is being withdrawn.

4. The mode herein described of setting a concrete pile, said mode consisting in providing a removable plug at the bottom of the pipe, filling said pipe with concrete, preventing escape of the latter at the top of the pipe, driving said filled pipe, and then withdrawing the pipe and leaving the plug and the mass of concrete in the opening.

5. The mode herein described of setting a concrete pile, said mode consisting in filling with plastic concrete a pipe which is open or has a removable closure at its lower end, preventing escape of said concrete at the top of the pipe, driving said filled pipe, and then withdrawing the pipe and forcing the concrete therefrom by introducing fluid under pressure between the top of the mass of concrete and the closed top of the pipe.

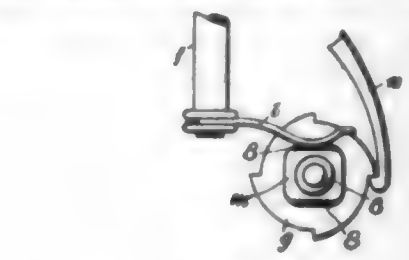
817,596. IRONING-BOARD. JACOB F. SIEBENTHAL, San Diego, Cal. Filed Aug. 2, 1904. Serial No. 219,201.

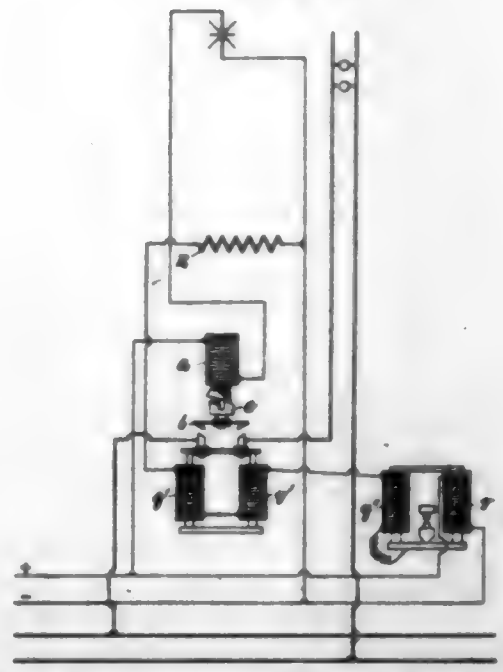
Claim.—1. The combination with the uprights, provided with recesses on their inner faces, of the inwardly-projecting arms connected to said uprights, the ironing-board having a cross-rod connected at one end by a clip, the ends of said rod working in the recesses in the upright, and the support pivotally connected to the under side of the board, for the purpose described.



2. The combination with the uprights, having recesses in their inner faces, midway their length, of an ironing-board having a cross-rod connected at one end by a clip, the ends of said rod working in the recess in the uprights, and the inwardly-projecting arms connected to said uprights, for the purpose described.

817,597. APPARATUS FOR COMMUTING ELECTRIC CURRENTS PASSING THROUGH LAMPS, &c. CAMPBELL SMART, Swansea, England. Filed Sept. 19, 1904. Serial No. 225,062.





Claim.—1. In a switching mechanism for a combined arc-lamp and incandescent-lamp system, means operating upon each alternate failure of current in the arc-circuit to close the incandescent circuit, and a controller therefor in the arc-circuit; substantially as described.

2. In a switching mechanism for a combined arc-lamp and incandescent-lamp system, a two-part switch for controlling the incandescent circuit adapted to close said circuit when the parts are in alinement, electromagnetic means in the arc-circuit for holding the switch open, and means for throwing the parts of said switch out of alinement; substantially as described.

3. In a switching mechanism for a combined arc-lamp and incandescent-lamp system, a two-part switch for controlling the incandescent circuit adapted to close said circuit when the parts are in alinement, electromagnetic means in the arc-circuit for holding the switch open, means for throwing the parts of said switch out of alinement, and auxiliary mechanism for rendering the last-named means ineffectual; substantially as described.

4. In a switching mechanism for a combined arc-lamp and incandescent-lamp system, a two-part switch for controlling the incandescent circuit adapted to close said circuit when the parts are in alinement, electromagnetic means in the arc-circuit for holding the switch open, means for throwing the parts of said switch out of aline-

ment, and auxiliary mechanism controlled by the potential across the arc-lamp circuit for rendering the last-named means ineffectual; substantially as described.

5. In a switching mechanism for a combined arc-lamp and incandescent-lamp system, a two-part switch for controlling the incandescent circuit adapted to close said circuit when the parts are in alinement, electromagnetic means in the arc-circuit for holding the switch open, means for throwing the parts of said switch out of alinement, and auxiliary mechanism controlled by the potential across the arc-lamp circuit for rendering the last-named means ineffectual and for inserting a resistance in the arc-circuit in shunt to the arc-lamp; substantially as described

6. A switch for electric circuits provided with contacts for electric conductors and having main and auxiliary blades arranged at an angle to each other, an electromagnet for moving said blades toward and from the contacts, and an electromagnet for moving said contacts toward and from said blades; substantially as described.

7. A switch for electric circuits provided with contacts for electric conductors and having main and auxiliary blades arranged at an angle to each other, means for placing said blades alternately in alinement with said contacts, an electromagnet for moving said blades toward and from said contacts, and an electromagnet for moving said contacts toward and from said blades; substantially as described.

8. A switch for electric circuits provided with contacts for electric conductors and having main and auxiliary blades arranged at an angle to each other, means for placing said blades alternately in alinement with said contacts, an electromagnet for moving said main blade into engagement with the contacts, and an electromagnet for moving said contacts into engagement with said auxiliary blade; substantially as described.

9. A switch for electric circuits provided with contacts for electric conductors and having main and auxiliary blades arranged at an angle to each other, an electromagnet for moving said blades toward and from the contacts, means coöperating therewith for rotating the blades, and an electromagnet for moving said contacts toward and from said blade; substantially as described.

10. A switch for electric circuits provided with contacts for the conductors of a main circuit and having main and auxiliary blades arranged at an angle to each other, an auxiliary controlling-circuit, an electromagnet in series therewith arranged to move said blades toward and from the contacts, and an electromagnet having a coil in shunt to said circuit arranged to move said contacts toward and from said blades; substantially as described.

11. A switch for electric circuits provided with contacts for the conductors of a main circuit and having main and auxiliary blades arranged at an angle to each other, an auxiliary controlling-circuit, an electromagnet in series therewith arranged to move said blades toward and from the contacts, and an electromagnet having a coil in shunt to said circuit arranged to move said contacts toward and from said blades and to close a shunt across said circuit through a resistance; substantially as described.

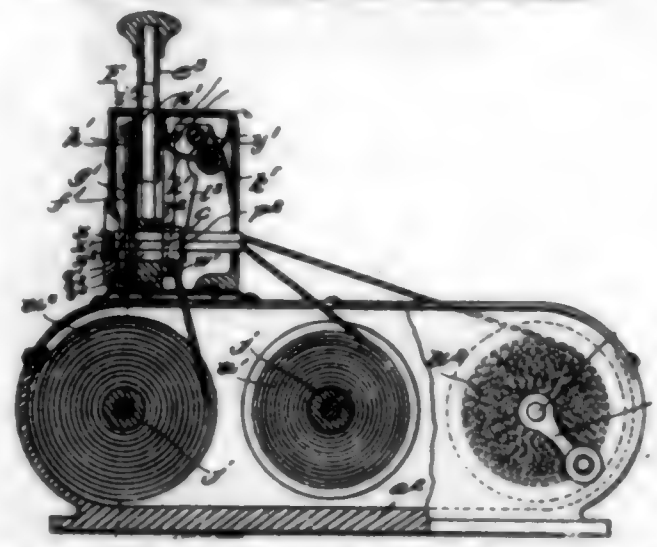
12. A switch for electric circuits provided with contacts for the conductors of a main circuit and having main and auxiliary blades arranged at an angle to each other, an auxiliary controlling-circuit, an electromagnet in series therewith arranged to move said blades toward and from the contacts, and an electromagnet having a coil in shunt to said circuit arranged to move said contacts toward and from said blades and to close a shunt across said circuit through a resistance and through an auxiliary coil on said shunt-magnet; substantially as described.

13. A switch for electric circuits provided with contacts for electric conductors, an electromagnet having a movable core carrying blades arranged at an angle to each other, a stationary cylinder or ring surrounding said core provided with projecting teeth, a transverse pin in the core adapted to engage said teeth, and a movable guide arranged to shift said pin from one tooth to another; substantially as described.

14. A switch for electric circuits provided with contacts for electric conductors, an electromagnet arranged to reciprocate said contacts, an electromagnet having a movable core carrying blades arranged at an angle to each other, a stationary cylinder or ring surrounding said core and provided with projecting teeth, and a movable guide arranged to shift said pin from one tooth to another; substantially as described.

15. A switch for electric circuits provided with contacts for electric conductors, an electromagnet having a movable core carrying blades arranged at an angle to each other, a stationary cylinder or ring surrounding said core and provided with projecting teeth, a transverse pin in the core adapted to engage said teeth, a movable guide arranged to shift said pin from one tooth to another, an electromagnet arranged to reciprocate said contacts and an auxiliary magnet for controlling the circuit thereof; substantially as described.

817,598. TWINE HOLDER AND CUTTER. HUGO STOLPE, Pankow, Germany. Filed May 25, 1905. Serial No. 262,186.



Claim.—1. The combination with a casing, of a pair of scissors therein, a twine-guide longitudinally guided in said casing, a depressor having movement parallel to the plane of said pair of scissors, and means controlled by said depressor for normally opening said pair of scissors and projecting the one end of said twine-guide between them without, so that the twine may be seized and drawn out and on depressing said depressor said twine-guide is first withdrawn from the scissors and afterward the twine is cut.

2. The combination with a casing, of a pair of scissors therein, a depressor guided in said casing parallel to the plane of said pair of scissors, a pair of toggle-levers pivotally connecting said pair of scissors with said depressor, a twine-guide longitudinally guided in said casing in a line at right angles to the plane of said pair of scissors, a pin in said casing, a lever mounted on said pin to turn and pivotally connected with said twine-guide and provided with a recess, a spring acting upon said lever for withdrawing said twine-guide from said pair of scissors, a mainspring tending to return said depressor into its normal position and adapted to overcome said spring, and an arm on said depressor and adapted to engage in the recess of said lever for projecting the one end of said twine-guide to without between said pair of scissors in its opened state and to withdraw from the recess during the first part of the stroke of said depressor when depressed.

3. The combination with a twine-holder, of a casing removably placed thereon, a pair of scissors in said casing, a twine-guide longitudinally guided in said casing, a depressor having movemen. parallel to the plane of said pair of scissors, and means controlled by said depressor for normally opening said pair of scissors and projecting the one end of said twine-guide between them to without, so that the twine may be seized and drawn out and on depressing said depressor said twine-guide is first withdrawn from the scissors and afterward the twine is cut.

4. In a twine holder and cutter, the combination with a tube-like twine-guide longitudinally guided on both ends in the casing and having about in its middle a hole and a bracket, of a pin in the bracket on said tube-like twine-guide, a twine-guiding roller, mounted to turn on said pin and adapted to introduce the twine into said tube-like twine-guide through its hole, and elastic means in said tube-like twine-guide for braking the twine.

5. In a twine holder and cutter, the combination with a casing, of a pair of scissors placed vertically therein, a depressor vertically guided in said casing, a pair of toggle-levers pivotally connecting said pair of scissors with said depressor, a twine-guide horizontally guided in said casing, a pin in said casing, a lever mounted on said pin to turn and pivotally connected with said twine-guide and provided with a recess, a spring acting upon said lever for withdrawing said twine-guide from said pair of scissors, a mainspring tending to return said depressor into its normal position and adapted to overcome said spring, and an arm on said depressor and adapted to engage in the recess of said lever for projecting the one end of said twine-guide to without between said pair of scissors in its opened state and to withdraw from the recess during the first part of the downward stroke of said depressor.

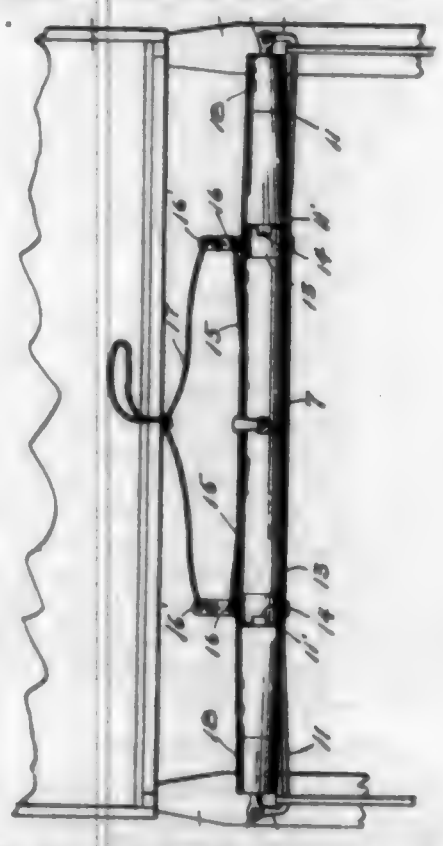
6. In a twine holder and cutter, the combination with a twine-holder, of a cutting device, a casing removably placed thereon and comprising the cutting device and a longitudinally-movable twine-guide, which normally projects with the one end to without, so that the twine may be seized and drawn out, while for the cutting operation the twine-guide is withdrawn for permitting the cutting device to operate, and a depresser guided in said casing.

7. In a twine holder and cutter, the combination with a tube-like twine-guide longitudinally guided on both ends in the casing and having about in its middle a hole and a bracket, of a twine-guiding roller mounted to turn on said pin and adapted to introduce the twine into said tube-like twine-guide through its hole, a leaf-spring within said tube-like twine-guide for braking the twine, and means for adjusting said leaf-spring.

8. In a twine holder and cutter, the combination with a twine-holder, of a casing removably placed thereon and comprising the cutting device and a longitudinally-movable twine-guide, which normally projects with the one end to without, so that the twine may be seized and drawn out, while for the cutting operation the twine-guide is withdrawn for permitting the cutting device to operate, said twine-holder having a lateral hole, through which a twine from without may be introduced upward to the cutting device.

9. In a twine holder and cutter, the combination with a box adapted to hold a plurality of twine balls or spools, of a detachable cover, a casing on said detachable cover, a pair of scissors in said casing, a plurality of superposed twine-guides longitudinally guided in said casing, elastic means in said plurality of superposed twine-guides for braking the twines coming from said box below, a depressor, and means controlled by said depressor for normally opening said pair of scissors and projecting between them said plurality of superposed twine-guides to without so that either twine may be selected and drawn out and on depressing said depressor said plurality of superposed twine-guides is first withdrawn from the scissors and afterward the selected twine is cut.

817,599. **HORSE-RELEASER.** JAIN B. S. P. TWANA, Spokane, Wash. Filed July 6, 1905. Serial No. 268,421.



Claim.—1. A horse-releaser comprising a swingletree, trace-engaging arms pivoted at one end to the swingletree and lying normally with their other ends against the swingletree, collars revolubly engaged with the swingletree and extending over the ends of the arms to hold the arms against pivotal movement, said collars having notches therein and being movable to bring their notches into position for the passage of the ends of the arms therethrough, means for holding the collars yieldably with their notches out of such position, fingers carried by the collars and devices connected with the fingers and adapted for operation to move the collars against the action of the holding means.

2. A horse-releaser comprising a swingletree, rods engaged in the ends of the swingletree and having spaced ears at their outer ends, trace-engaging arms having angular end portions pivoted between the spaced ears, said arms lying normally with their opposite ends against the swingletree, collars revolubly mounted upon the swingletree and extending over the ends of the arms to hold the latter in their normal positions, said collars having notches therein and being movable to bring their notches into position for the passage of the ends of the arms therethrough, eyes carried by the collars, spring-rods secured at one end to the swingletree and engaged at the other ends in the eyes, said rods being arranged to hold collars yieldably with their notches out of position for the passage of the ends of the arms therethrough, fingers carried by the collars and extending outwardly therefrom and cables secured to the fingers, said cables being adapted to be pulled to move the collars against the action of the spring-rods.

817,600. **TRUSS FOR HERNIA.** WILLIAM H. WASHBURN, Portland, Oreg. Filed Feb. 24, 1905. Serial No. 247,591.



Claim.—1. In a truss the combination of a back pad, a front pad, and a connecting-spring comprising two members united at the back end, and there affixed to the center of the back pad, said spring members diverging toward their front extremities, which are attached to the ends of the front pad, equidistant from the medial line of the latter, so as to evenly distribute the pressure of the spring to the front pad, substantially as described.

2. In a truss, the combination of a back pad, a front pad made with a medial hinge or flexible portion, and a connecting-spring comprising two members united at their back ends and there affixed to the center of the back pad, and said spring member diverging toward their front extremities, which are attached to the ends of the front pad, equidistant from the medial line of the latter, thereby allowing each spring member to independently adjust itself to the flexible ends of the front pad, and adapting the latter to accommodate itself to the movements of the body, without becoming displaced or releasing its pressure upon the orifice of protrusion.

3. In a truss, the combination of a back pad, a front pad having a cushioned bearing-surface, made with a medial depression, and hinged or flexible on the line of such depression, and a connecting-spring comprising two members united at their back ends and there affixed to the center of the back pad, and said spring members diverging toward their front extremities, which are attached to the ends of the front pad, equidistant from the medial line of the latter, thereby allowing each spring member to independently adjust itself to the flexible ends of the front pad, and adapting the latter to accommodate itself to the movements of the body, without becoming displaced or releasing its pressure upon the orifice of protrusion.

817,601. **TRAP.** WILLIAM B. WEED, Deer Lodge, Mont., assignor of one-half to Grant Wilson, Deer Lodge, Mont. Filed July 6, 1905. Serial No. 268,568.



Claim.—1. A trap, embodying a base-plate having a bowed end portion, a flat spring-bar having a similarly-bowed end portion seated and secured upon the bowed portion of the base-plate, a latching device on the base-plate adapted for holding the spring-bar de-

pressed and releasable by pressure, and a flexible connection secured by one end on the trap and having a slip-noose at the opposite end.

2. A trap, embodying a base formed of a flat metal bar, a cross-piece near one end thereof and a U-shaped bowed portion at the opposite end of said flat base-piece, a flat spring-bar having a similarly-bowed end portion seated and secured upon the bowed portion of the base-plate, a latching device on the base-plate adapted for holding the spring-bar depressed and releasable by pressure, and a flexible connection secured by one end on the trap and having a slip-noose at the opposite end.

3. A trap, embodying a base formed of a flat metal bar, a cross-piece near one end thereof and a U-shaped bowed portion at the opposite end of said flat base-piece, a flat-bodied spring-bar having a similarly-bowed end portion seated and secured upon the bowed portion of the base-plate, a latching device on the base-plate near its front end, adapted for holding the spring-bar depressed and releasable by pressure, a plurality of flexible connections all secured by one end of each upon the rear end of the base-plate, means for loosely supporting the flexible connections on the trap as they extend toward the forward end thereof, and a slip-noose on the forward end of each flexible connection.

4. A trap, embodying a base formed of a flat metal bar, a cross-piece near one end thereof and a U-shaped bowed portion at the opposite end of the flat base-piece, a flat-bodied spring-bar having a similarly-bowed end portion that is seated and secured upon the bowed portion of the base-plate, a latching device embodying a post on the base-plate passing through an opening in the front end of the spring-bar when said bar is depressed, a tripping-lever having a foot-plate thereon and pivoted on the post, and a pawl pivoted upon the tripping-lever and engaging a notch in the post when said post is passed through the opening in the depressed spring-bar, a plurality of rotatably-supported sheave-wheels mounted on the base-plate and spring-bar of the trap, the flexible connections extending forwardly over the sheave-wheels, and a slip-noose on the forward end of each flexible connection.

5. In a device of the character described, a plurality of flexible connections each having a slip-noose on one end, and clamping means for each slip-noose for preventing its release, said means consisting of an open ring, a circular head having a serrated edge, and a lateral arm on the ring having an opening at its outer end, said arm being pivoted between the ends of the open ring.

817,602. **WATER-HEATING APPARATUS.** WILLIAM S. WHITMORE, Cricklewood, England. Filed May 29, 1905. Serial No. 262,596.



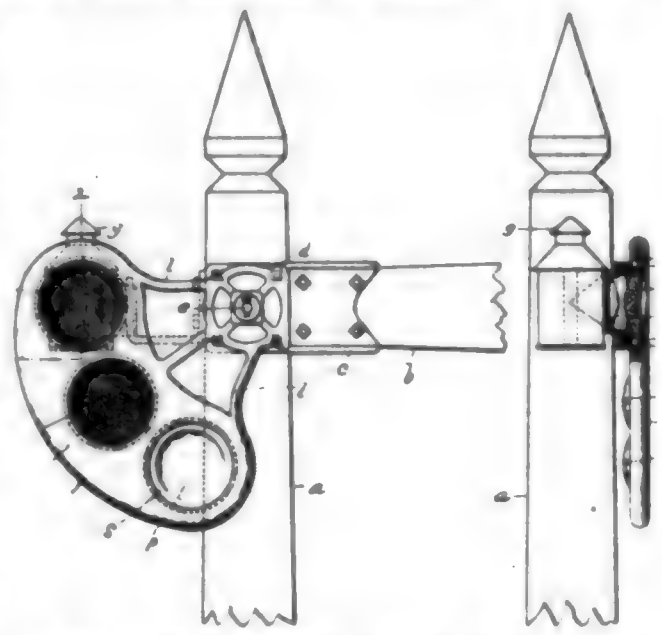
Claim.—1. In a water-heating apparatus, the combination of an inner inclined pipe with an outer inclined pipe, closed at its ends, a helical endless band upon the inner pipe leaving a space between the inside of the outer pipe and the outer edge of the helical band, a discharge-pipe leading from the upper end of the inner pipe, a chamber communicating with the lower end of the inner pipe, and a heating device located in said chamber adjacent one end of said pipes, substantially as described.

2. In a water-heating apparatus, the combination of an apertured casing forming a chamber for receiving a heating device, and a water-pipe having a part of one end cut away, said end being adapted to fit snugly within said casing, substantially as described.

817,603. **SEMAPHORE.** CHARLES H. WILLIAMS, Milton, Mass. Filed Dec. 1, 1905. Serial No. 289,742.

Claim.—1. In a semaphore, a lantern having a lens of only partial concentrating power, and two or more supplementary lenses with means to bring them successively in front of said lantern-lens, said lenses being also of partial concentrating power, whereby, by the combined action of the lantern-lens and the supplementary lens, the lantern-rays are properly focalized, substantially as specified.

2. In a semaphore, a lantern having a lens with one convex face, and a pivoted radius-arm mounted to swing in front of said lens, in which are mounted two or more lenses adapted to come in succession before the lantern-lens by the swinging of the radius-arm, said radius-arm lenses being of a curvature such as to supplement the lantern-lens in properly focalizing the illuminating-rays from the lantern, substantially as specified.



3. In a semaphore, a lantern having a lens of only partial concentrating power, and a semaphore-arm in which are mounted two or more lenses also of partial concentrating power, adapted to be brought by the movement of said arm successively in front of said lantern-lens and coöperate with the latter to properly focalize the lantern-rays, said supplementary lenses being of larger diameter than that of the lantern-lens, substantially as specified.

4. In a semaphore, a lantern-lens of partial condensing power and two or more supplementary lenses also of partial condensing power, mounted to come in succession before said lantern-lens, at a suitable distance therefrom to coöperate with the latter in properly focalizing the lantern-rays, substantially as specified.

5. In a semaphore, in combination with the lantern and lens thereof; a signal-arm, and lenses secured therein and thereby adapted to be swung up in front of the lantern-lens, said signal-lenses consisting of a central lens-shaped portion and an annular flange or rim plane on both surfaces or sides and integral with the said central portion, whereby the light may be focused partly by the lantern-lens and partly by the signal-lens.

6. In a semaphore, in combination with the lantern and lens thereof; a signal-arm, and lenses having one convex surface and secured therein and thereby adapted to be swung up in front of the lantern-lens, said signal-lenses consisting of a central lens-shaped portion and an annular flange or rim plane on both surfaces or sides and integral with the said central portion, whereby the light may be focused partly by the lantern-lens and partly by the signal-lens.

7. In a semaphore, in combination with the lantern and lens thereof; a signal-arm, and concavo-convex lenses secured therein and thereby adapted to be swung up in front of the lantern-lens, said signal-lens consisting of a central lens-shaped portion and an annular flange or rim plane on both surfaces or sides and integral with the said central portion, whereby the light may be focused partly by the lantern and partly by the signal-lens.

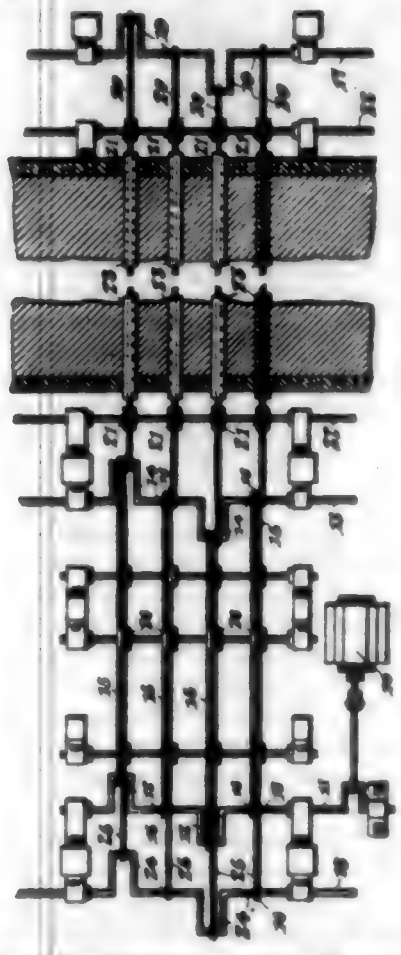
817,604. **POWER-TRANSMISSION SYSTEM.** ROBERT WILLIAMS, Coldale, Pa. Filed Jan. 11, 1906. Serial No. 240,582.

Claim.—1. In a power-transmission system, the combination with spaced shafts, each having a plurality of cranks, of connections between the cranks, and idlers located between the shafts, said connections operating against the idlers during the rotation of the cranks and preventing the lateral play of said connections.

2. In a power-transmission system, the combination with spaced shafts, each having a plurality of cranks, of flexible connections between the cranks, and idlers located between the shafts on opposite sides of the connections, said connections operating against the idlers during the rotation of the cranks and said idlers preventing the lateral play of said connections.

3. In a power-transmission system, the combination with spaced shafts, each having a plurality of cranks, of connections between the cranks of the shafts, idler-rollers located between and con-

tiguous to the shafts on opposite sides of the connections, said connections operating over the rollers and said rollers preventing the lateral play of the connections.



4. In a power-transmission system, the combination with spaced shafts, each having a plurality of angularly-disposed cranks, of cables connecting the corresponding cranks of the shafts, and idler-rollers located on opposite sides of the cables contiguous to the shafts, said cables operating over the rollers.

5. In a power-transmission system, the combination with spaced shafts, each having a plurality of cranks, of connections between the cranks, and rollers about which said connections operate.

6. In a power-transmission system, the combination with spaced shafts, each having a plurality of cranks, of sets of spaced rollers, and connections between the cranks operating over said rollers.

7. In a power-transmission system, the combination with a shaft having a plurality of cranks, of another shaft having a plurality of cranks, and connections between the corresponding cranks of said shafts, the connected cranks of said shafts being disposed in opposite relations at certain points in their paths of revolution and said shafts revolving in opposite directions.

8. In a power-transmission system, the combination with a shaft having a plurality of cranks, of another shaft having a plurality of cranks corresponding to those of the first-mentioned shaft, certain of said corresponding cranks being disposed in opposite relation, and connections between the corresponding cranks whereby upon the rotation of one shaft in one direction the other will be rotated in a reverse direction.

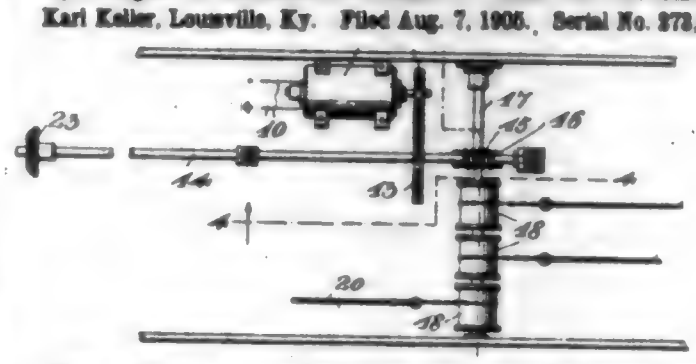
817,605. STEEL SLED. WILLIAM R. WILSON and CHARLES E. HOWE, Wabash, Ind. Filed Dec. 31, 1904. Serial No. 239,243.



Claim.—1. In a sled, the combination with runners, of oppositely-located platform-supports secured at the lower ends to the runners, said platform-supports meeting each other at the center of the sled and the adjacent part of one support being provided with a socket into which a projection from the opposite support extends, and a headed bolt, extending through the lower portion of the engaging parts of said supports and against which the upper portions of said engaging parts abut, for holding them together.

2. A sled with runners, a platform, a bolt extending downward from the platform, bars secured to the runners extending up to the platform and horizontally under the platform to said bolt, braces secured to the runners and at their upper ends secured to the horizontal portions of said bars and having holes through which said bolt extends and the end of one brace-shoulder abutting against the end of the other brace, and a nut on the bolt for securing the parts together.

817,606. ELECTRIC BRAKE. GEORGE R. YANCEY, Louisville, Ky., assignor of one-fourth to William A. Keller and one-fourth to Karl Keller, Louisville, Ky. Filed Aug. 7, 1905. Serial No. 273,018.



Claim.—1. A brake mechanism comprising brake-beams mounted on a car-truck and carrying shoes, an electric motor mounted on the same truck, drums connected with the motor, connections between the drums and the brake-beams, brake-beams mounted on an adjacent truck, a lever for operating the beams, a rod extending from the lever, and a detachable connection between the rod and one of the drums; substantially as described.

2. A brake mechanism comprising brake-beams mounted on a car-truck, an electric motor mounted on the same truck, drums arranged adjacent to the motor, a connection between the motor and the drums consisting of a shaft carrying a worm, gears connecting the shaft and the motor and a gear connecting the worm and the drums, connections between the brake-beams and the drums, brake-beams on an adjacent truck a lever for operating them, and a detachable connection between the lever and one of the drums; substantially as described.

3. A brake mechanism comprising brake-beams, an electric motor, a connection between the brake-beams and the motor including an elongated shaft, a shaft adapted to be rotated by hand, and a detachable connection between the two shafts, substantially as described.

4. A brake mechanism comprising brake-beams, an electric motor, drums connected with the brake-beams, a shaft interposed between the motor and the drums and connected to both by gearing, a shaft adapted to be rotated by hand and means for detachably connecting the two shafts; substantially as described

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817,607. GINNING OR BURRING MACHINE. WILLIAM YOULTEN, Westminster, England. Filed Aug. 17, 1903. Serial No. 169,836.

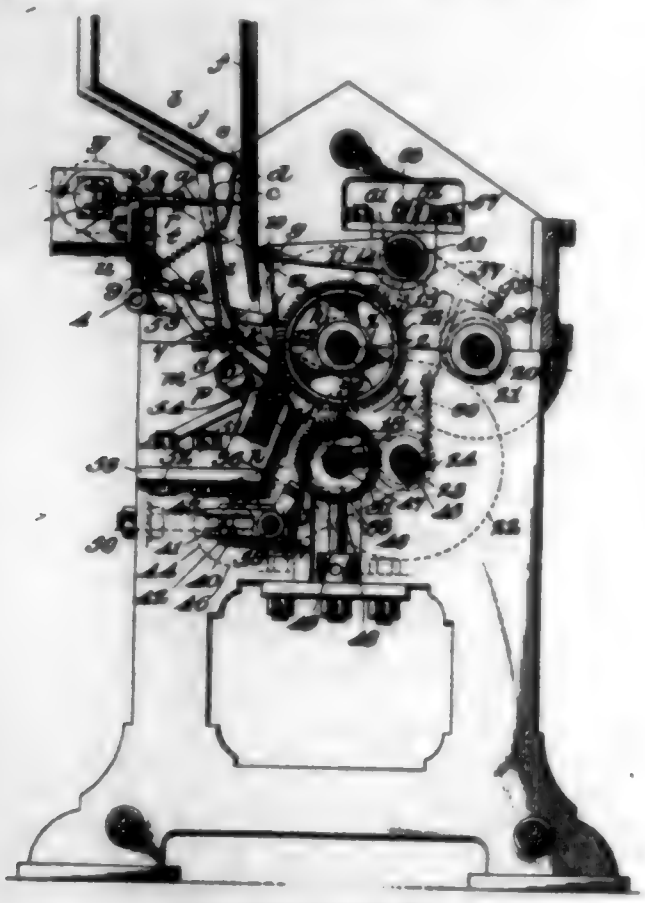
Claim.—1. In a machine of the character described, the combination of a hopper, oscillating feed rakes and combs, a ginning-roller and a pneumatic device for directing jets of air upon the fiber when it is brought in contact with said roller, substantially as described.

2. In a machine of the character described, the combination of a hopper, oscillating feeding-rakes, a ginning-roller, a feed-comb for said roller, means for oscillating said feed-comb, a bar arranged in proximity to said roller, a cam for moving said bar parallel to said roller, and springs for returning said bar to its initial position, substantially as described.

3. In a machine of the character described, the combination of a ginning-roller, a sliding bar arranged to coact therewith, means for reciprocating said sliding bar parallel to said roller, vibrating combs, means for actuating the same, and means for adjusting the height of the comb-teeth relatively to the sliding bar, substantially as described.

4. In a machine of the character described, the combination of a hopper, means for feeding the material under treatment down through the bottom of said hopper, a ginning-roller, a feed-comb for said roller, means for oscillating said feed-comb, a bar arranged adjacent to said roller, a cam for moving said bar parallel to said roller, and springs for returning said bar to its initial position, substantially as described.

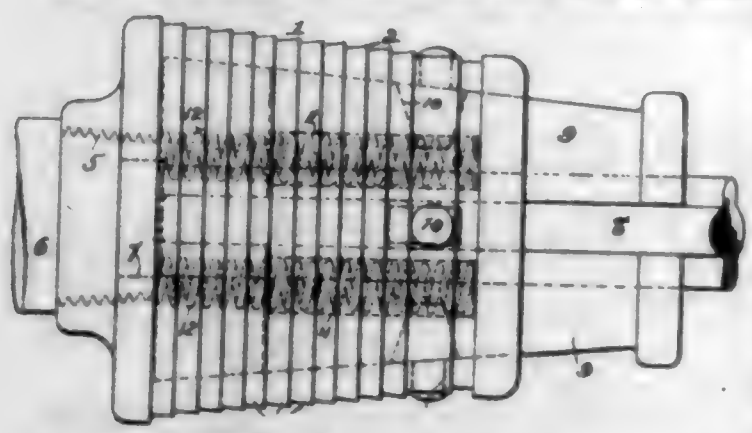
817,607.



817,608. PROCESS FOR DECORATING WOOD OR OTHER MATERIAL. EDWARD G. ADAMES, Caledonian Road, county of Middlesex, England. Filed Jan. 13, 1905. Serial No. 240,971.

Claim.—The process of decorating wood or other material, which consists of preparing the surface to be treated, applying to such surface a polish composed of shellac, gum mastic, and colophony, rubbing the surface with a composition of beeswax, Canada balsam and Russian tallow, applying tin-foil under pressure, cutting the tin-foil to any suitable design, removing the tin-foil except the design itself, washing off the composition exposed by said removal, decorating the underlying portion by painting or otherwise, fixing the decoration by varnishing, removing the design in tin-foil, and washing off the underlying composition, substantially as described.

817,609. CHUCK FOR ROCK-DRILLS. THOMAS R. ADAMS, Cleveland, Ohio, assignor to The Adams Drill Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 29, 1903. Serial No. 163,601.

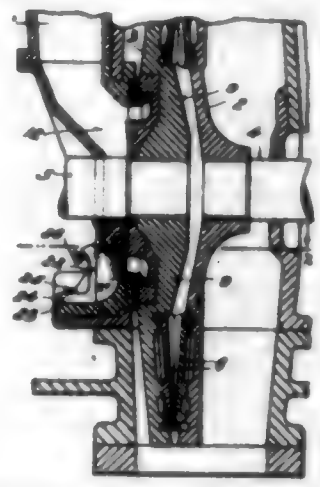


Claim.—1. A drill-chuck having a tapering exterior made with a continuous series of step-like ribs.

2. A drill-chuck comprising a body having a tapering interior, a series of tapering jaws in said drill-body, each jaw having a socket in its rear end, a separate spring for each jaw, said springs entering the sockets in the jaws, and a series of pins rigidly secured to the chuck-body, said pins projecting inwardly from the inner wall of the chuck-body and entering between adjacent jaws.

3. A drill-chuck having an exterior tapering from end to end, said exterior provided with a continuous series of step-like ribs, each having a wall at right angles to the axis of the chuck.

817,610. MILL. DOW L. ADELSPERGER, Springfield, Ohio, assignor to The Foos Manufacturing Company, Springfield, Ohio, a Corporation of Ohio. Filed Dec. 26, 1902. Serial No. 136,628.



Claim.—1. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat, the central plane of said rib being coincident with the vertical plane in which the axis of revolution of the head or disk lies, and the free edge of the rib being substantially in the vertical plane of the discharge-mouth of the throat, substantially as described.

2. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat and having a side wall inclined from the back of the throat toward the opening, the central plane of said rib being coincident with the vertical plane in which the axis of revolution of the head or disk lies, and the free edge of the rib being substantially in the vertical plane of the discharge-mouth of the throat, substantially as described.

3. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat, and having side walls converging from the back of the throat toward the opening, the central plane of said rib being coincident with the vertical plane in which the axis of revolution of the head or disk lies, and the free edge of the rib being substantially in the vertical plane of the discharge-mouth of the throat, substantially as described.

4. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat, and having side walls converging from the back of the throat toward the opening, said rib tapering or decreasing downwardly both in thickness and in width, the central plane of said rib being coincident with the vertical plane in which the axis of revolution of the head or disk lies, and the free edge of the disk being substantially in the vertical plane of the discharge-mouth of the throat, substantially as described.

5. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat, and having its free edge located in close proximity to the path of the adjacent faces of the spokes of the head, substantially as described.

6. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, and a central rib or projection extending longitudinally within said throat, and having side walls converging from the back of the throat toward the opening, the free edge of said rib being located in

close proximity to the path of the adjacent faces of the spokes of the head, substantially as described.

7. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, said feeding-throat being provided with an opening in its rear wall, and a central rib or projection extending longitudinally within said throat and having side walls converging from the back of the throat toward the feeding-eye, said central rib or projection being formed in a separate piece from the throat, and a frangible arm supporting said rib in position to normally close the opening in the rear wall of the feeding-throat, said rib being adapted to yield outwardly when said arm is broken, substantially as described.

8. In a mill of the character described, the combination, with a head or disk revolving in a vertical plane and having a feeding eye or opening near its center, and a shaft, of a feeding-throat having walls converging downwardly toward said opening and open on the side adjacent thereto, said feeding-throat being constructed in sections lying above and below the shaft respectively, the section below the shaft being provided with a central rib or projection, extending longitudinally thereof from the shaft to the bottom of the opening, and having side walls converging from the back of the throat toward the opening, substantially as described.

9. In a mill of the character described, the combination, with a revolving open head having an eye and spokes connecting the hub and annular body of the head, of a casing having a feed-throat provided with a scraping projection located at the receiving end of the eye, and adapted to loosen and force the material through the eye, substantially as described.

10. In a mill of the character described, the combination, with a revolving open head having an eye and spokes connecting the hub and annular body of the head, of a casing having a feed-throat the wall of which diverges from the outer edge of the eye, said feed-throat being provided with a scraping projection located at a point radially inward from the junction of the feed-throat wall and eye, substantially as described.

817,611. DIE FOR CUTTING OUT METAL PLATES. CHARLES B. AGAR, Camden, N. J., assignor to Benjamin P. Obdyke, Philadelphia, Pa. Filed Jan. 26, 1906. Serial No. 298,010.



Claim.—1. In a cutting-die of the character stated, a follower-die member, a head to which the latter is movably fitted, means for coupling said head and member and means for uncoupling the same.

2. In a cutting-die of the character stated, a follower-die member, a head thereon to which the latter is movably fitted and means for coupling said member with said head and for uncoupling the same and a cutter on said head, said cutter being movable independent of said follower member.

3. In a cutting-die of the character stated, a follower-die member and a head, a cutter on said head, means for coupling said member and head whereby they may advance in unison and means for uncoupling said member, whereby said cutter may advance independent of said follower-die member.

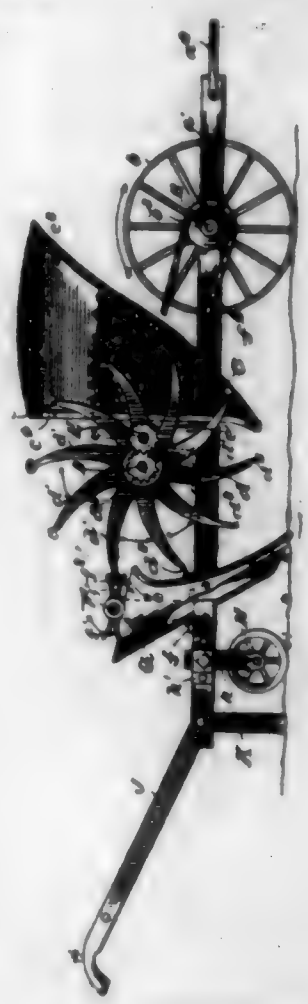
4. In a cutting-die of the character stated, a bed-die member, a follower-die member, a head adapted to be coupled to said follower-die member, a cam on said bed-die member and means on said follower-die member adapted to engage said cam, whereby said follower-die member may be disconnected from said head.

5. In a cutting-die of the character stated, a bed-die member, a head, means for coupling said member and head, a shoulder on said means, a follower-die member, and a cam on the latter adapted to engage said shoulder on the descent of said follower-die member and head, thus uncoupling said head and follower-die member.

6. In a cutting-die of the character stated, a follower member, a cutter-carrying head, a bolt in said head adapted to enter an end plate of said member, a bar on the outer portion of said bolt set out from said head, a cam and a base supporting the same, said cam being adapted to engage said bar on the descent of said member and thus withdraw said bolt from the latter.

7. In a cutting-die of the character stated, a follower member, a head, a bolt on said head adapted to engage said member, a spring bearing against said bolt to return the latter to its normal position, a bed member and a cam on the latter adapted to engage a shoulder on said bolt on the advance of said follower member and head, and thus disengage said bolt from said follower member.

817,612. POTATO DROPPER AND PLANTER. FRANCIS R. ALBRIGHT and JAMES S. JOSEPH, Norristown, Pa. Filed Aug. 10, 1905. Serial No. 273,543.



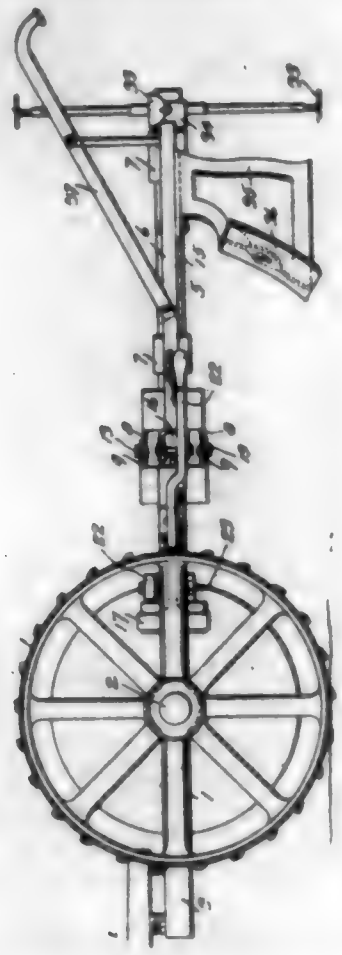
Claim.—1. In potato droppers and planters, the combination with the frame, of a shaft journaled in the frame, a supporting-wheel on the shaft, sprocket-wheels on the shaft, a hopper having a slot in its rear face supported behind the shaft, a shaft journaled in the frame behind the hopper, picker-arms on the shaft adapted to pass through the slot, needles on the ends of the picker-arms, a pinion on the end of the shaft, a stub-shaft in front of the picker-shaft and having a pinion meshing with the pinion thereof, a sprocket-wheel on the stub-shaft, a sprocket-chain connecting the sprocket-wheel with the sprocket-wheel of the supporting-wheel shaft, a shaft journaled behind the picker-shaft and provided with a sprocket-wheel on its outer end, oppositely-disposed pairs of vertically-spaced arms on the shaft, and adapted to register with and to receive the picker-arms therebetween, a sprocket-chain connecting the last-named sprocket-wheel and the sprocket-wheel of the supporting-wheel shaft, a leg below the last-named shaft, an adjustable wheel having a concave peripheral surface behind the leg, handles on the frame, and legs hinged to the frame and adapted to be folded thereupon.

2. In a potato dropper and planter, the combination with the frame, of a container supported on the frame, means for picking the potatoes from the container, comprising a shaft provided with a plurality of arms for engaging the potatoes, means for removing the potatoes from the picker comprising a shaft having oppositely-disposed pairs of arms spaced apart vertically from each other and adapted to receive the picker-arms therebetween, means for guiding the potatoes to the furrow, means for covering the potatoes, and means for supporting and actuating the parts.

817,613. COTTON-CHOPPER. JOHN M. ANDREWS, Columbia, Tenn., assignor of one-third to J. O. Check, Columbia, Tenn. Filed July 17, 1905. Serial No. 270,118.

Claim.—1. In a cotton-chopper, the combination with a wheeled supporting-frame, of a chopping-hoe frame hingedly connected thereto, a flexible drive-shaft revolubly mounted in said frames, chopping-hoes fixedly mounted on said shaft, a driving-gear slidably and revolubly mounted on the axle of the supporting-frame, a shift-

ing device whereby said drive-wheel is moved laterally on said shaft, a pinion slidably mounted on said drive-shaft to engage said drive-wheel and means whereby the speed of said pinion and drive-shaft may be varied, substantially as described.



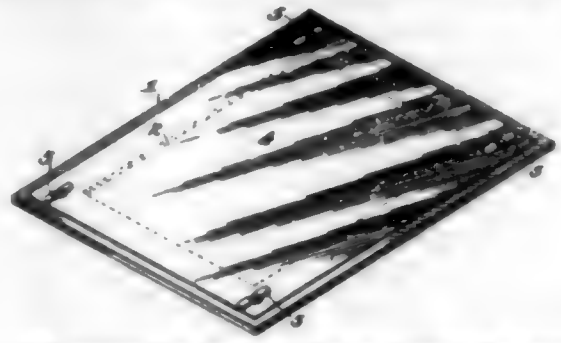
2. In a cotton-chopper, the combination with a wheeled supporting-frame, of a chopping-hoe frame hingedly connected thereto, a flexible drive-shaft revolubly mounted in said frames, chopping-hoes fixedly mounted on said shaft, a friction-disk slidably mounted on the axle of the supporting-frame, a shifting device to move said disk laterally on said axle, a friction-wheel slidably mounted on the drive-shaft to engage said friction-disk, a lever connected to said friction-wheel, whereby the latter may be shifted to engage said friction-disk, thereby causing said wheel and the drive-shaft to be driven at a greater or less speed, substantially as described.

3. In a cotton-chopper, the combination with a wheeled supporting-frame, of a chopping-hoe frame hingedly connected thereto, a flexible drive-shaft revolubly mounted in said frames, chopping-hoes fixedly mounted on said shaft, scrapers secured to said chopping-hoe frame, a friction-disk slidably mounted on the axle of the supporting-frame, a shifting device to move said disk laterally on said axle, a friction-wheel slidably mounted on said drive-shaft to engage said friction-disk, a shifting-lever connected to said friction-wheel whereby the latter may be shifted on said drive-shaft to engage said friction-disk at different points thereby varying the speed of said friction-wheel and shaft, substantially as described.

4. In a cotton-chopper, the combination with a supporting-frame having a revolubly-mounted axle to which are secured supporting-wheels of a chopping-hoe frame, a hinged connection between said frames, whereby said chopping-hoe frame is adapted to be swung laterally, a jointed drive-shaft revolubly mounted in said frames, chopping-hoes secured to said shaft, a friction-disk slidably mounted on the axle of said supporting-frame, a shifting-lever to slide said disk on said shaft, a friction-wheel slidably mounted on said drive-shaft to engage said friction-disk, a lever connected to said friction-wheel whereby the latter is shifted to engage said friction-disks at different points thus varying the speed of said friction-wheel and scraping-blades secured to the frame of said chopping-hoes, substantially as described.

817,614. **FILM-SUPPORT.** HARRY E. BAER, New York, N. Y., assignor of one-half to Henry M. Toch and one-half to Maximilian Toch, New York, N. Y. Filed Nov. 2, 1905. Serial No. 285,659.

Claim.—1. A film-support comprising an apertured frame adapted for insertion in a photographic holder, said frame having plane upper and lower surfaces and consisting of a material which is inert toward photographic baths, and means for detachably securing a film upon one of said surfaces, substantially as described.



2. A film-support comprising a frame adapted for insertion in a photographic holder, said frame having plane upper and lower surfaces, a central aperture, a plurality of marginal apertures, and means received by said marginal apertures for detachably securing a film upon one of said surfaces, substantially as described.

3. A film-support comprising an apertured frame adapted for insertion in a photographic holder, said frame having plane upper and lower surfaces and consisting of an absorbent material coated with a substance which is resistant to acids and alkalies, and means for detachably securing a film upon one of said surfaces, substantially as described.

4. A film-support comprising an apertured frame adapted for insertion in a photographic holder, said frame having plane upper and lower surfaces and consisting of cardboard coated with a substance which is resistant to acids and alkalies, and means for detachably securing a film upon one of said surfaces, substantially as described.

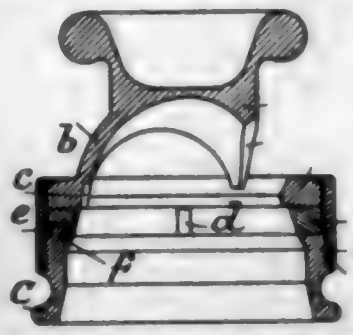
5. In combination, a film-support comprising a frame having plane upper and lower surfaces and having a central aperture and a plurality of marginal apertures, a film arranged on said support and fastening devices for said film in said marginal apertures, substantially as described.

817,615. **GARMENT-FASTENING.** PERCY A. C. BATES, London, England. Filed May 22, 1905. Serial No. 261,040.



Claim.—In a garment-fastener, a fastening member of one piece, comprising attaching-eyes, oppositely-disposed triangular loops bent up from said attaching-eyes and bent to form an opening adapted to receive the other member and a connecting base-piece bent from said triangular loops, in combination with a second fastening member adapted to be inserted between said triangular loops of the first member, substantially as described.

817,616. **AUTOMATIC SETTING-KEY FOR SETTING THE FIRING-CHARGE RINGS OF TIME-FUSES.** LEOPOLD BECK, Sömmerda, Germany. Filed Jan. 22, 1905. Serial No. 242,418.



Claim.—1. A key for setting the firing-charge ring of time fuses, comprising a setting member provided with means for engaging the firing-charge ring and rotatable in either direction, and means for registering a predetermined charge value, in combination with a second member provided with means for positively stopping the rotation of the first member in either direction when the position of the firing-charge ring is brought to correspond with the predetermined value.

2. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring, in combination with a second member provided

with means for engaging a fixed portion of the projectile, and movable concentrically relative to the setting member to an extent equal to the total width of the engaging means between the second member and the projectile.

3. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring and rotatable in either direction, in combination with a second member provided with a stud for engaging a stud carried by a fixed portion of the projectile, and movable concentrically relative to the setting member to an extent equal to the total width of the two studs.

4. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring, in combination with a second member provided with a stud for engaging a stud carried by a fixed portion of the projectile, and movable in either direction concentrically relative to the setting member to an extent equal to the total width of the two studs.

5. A key for setting the firing-charge ring of time-fuses, comprising a setting-ring provided with a recess for engaging a stud carried by the firing-charge ring, in combination with a second member provided with a stud for engaging a stud carried by a fixed portion of the projectile, and movable concentrically relative to the setting member in either direction to an extent equal to the total width of the two studs carried by the second member and the projectile.

6. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring, in combination with a second member provided with means for engaging a fixed portion of the projectile, the setting member and the second member connected by a slot and stud, the slot being of an extent equal to the total width of its stud and the engaging means between the second member and the projectile.

7. A key for setting the firing-charge ring of time-fuses, comprising a setting-ring provided with a recess for engaging a stud carried by the firing-charge ring, in combination with a second member provided with a stud for engaging another stud carried by a fixed portion of the projectile, the setting member and the second member connected for relative concentric movement by a slot and stud, the slot being of an extent equal to the aggregate width of its stud and the two studs carried by the second member and the projectile.

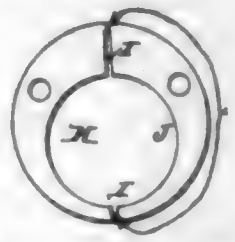
8. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring, a second member movable concentrically of the setting member and provided with means for engaging a fixed portion of the projectile, a third member in engagement with the second member by means permitting relative concentric movement to an extent equal to the total width of the engaging means between the second member and the projectile, and means for adjustably securing the setting member and the third member in fixed relation.

9. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with means for engaging the firing-charge ring, a second member movable concentrically of the setting member and provided with a stud for engaging another stud carried by a fixed portion of the projectile, a third member in engagement with the second member by means permitting of relative concentric movement in either direction to an extent equal to the total width of the two studs carried by the second member and the projectile, and means for adjustably securing the setting member and the third member in fixed relation.

10. A key for setting the firing-charge ring of time-fuses, comprising a setting member provided with a recess for engaging a stud carried by the firing-charge ring, a second member freely movable concentrically of the setting member and provided with a stud for engaging another stud carried by a fixed portion of the projectile, a third member in engagement with the second member by means of a slot and stud, the slot being of an extent equal to the aggregate width of its stud and the two studs carried by the second member and the projectile, and means for adjustably securing the setting member and the third member in fixed relation.

11. A key for setting the firing-charge ring of time-fuses, comprising a setting-ring provided with a recess for engaging a stud carried by the firing-charge ring, a second member freely movable concentrically of the setting-ring and provided with a stud for engaging another stud carried by a fixed portion of the projectile, another ring connected with the second member for concentric relative movement in either direction by means of an elongated slot and stud, the slot being of an extent equal to the aggregate width of its stud and the two studs carried by the second member and the projectile, a scale carried by the setting member corresponding to that carried by the projectile and means for adjustably securing the setting member and the third member in fixed relation.

817,617. **ECCENTRIC.** FRANCIS M. BENDER, Butte, Mont. Filed Sept. 29, 1905. Serial No. 280,633.



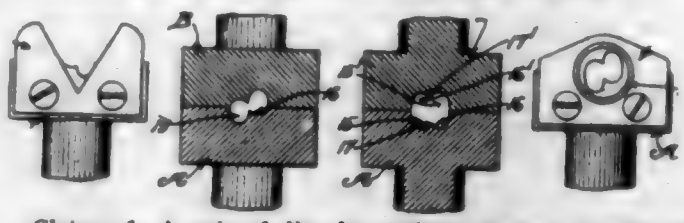
Claim.—1. An interchangeable throw device, consisting of a two-part disk having an eccentrically-arranged transverse opening therethrough and openings extending from aforesaid transverse opening to near the outer edge of the disk, substantially as described.

2. As an article of manufacture, a bushing or throw device, consisting of a disk having an eccentrically-arranged transverse opening therethrough, and openings extending into the body of the bushing or disk from aforesaid transverse opening, to near its outer edge, whereby to facilitate converting the disk into two separate parts, substantially as described.

3. The combination in an eccentric, of a hub, having a transversely-disposed flange at one end, a bushing on the hub, consisting of a disk, having a transverse opening therethrough, and openings extending from aforesaid opening, into the body portion of the disk to near its outer edge, and the disk divided into two parts, a two-part strap encircling the disk, a plate whereby to confine the two-part disk in place, and bolts extending through the hub-flange, disk, and confining-plate, substantially as described.

4. The combination in an eccentric, of a hub having a flange at one end, a two-part throw device on the hub, the throw device consisting of a body portion having an eccentrically-arranged transverse opening therethrough, and openings extending outwardly from aforesaid opening, a securing-plate having a lateral flange adapted to overlie the adjacent side of the throw device, a strap arranged encircling the throw device, and securing-bolts extended through the hub-flange, throw device and securing-plate, substantially as described.

817,618. **DIE FOR CURBING CHAINS.** FREDERICK R. BISHOP, Southbridge, Mass., assignor of one-half to Arthur S. Bishop, North Attleboro, Mass. Filed Apr. 14, 1906. Serial No. 311,450.



Claim.—1. A pair of dies for curbing chains, one die being fixed, and the other a plunger, each die having in its face two parallel grooves, the grooves in the plunger being similar to the grooves in the fixed die except being in reversed position, each groove being of varying depth in itself, and the two grooves varying from each other in depth, and a fin between the two grooves of each die which does not extend to the level of the face of the die so that when the faces of two dies are in contact the fins will not contact with each other.

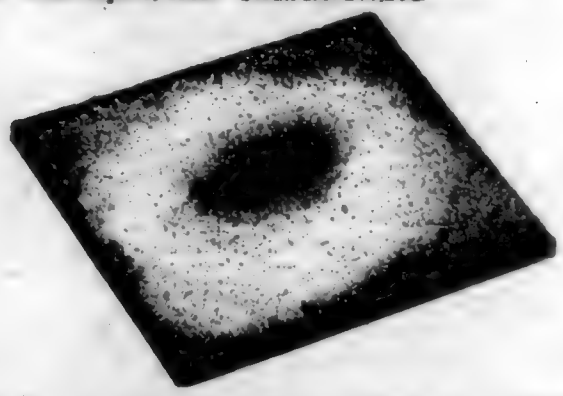
2. A pair of coöperating dies for curbing chains, one die being fixed, and the other a plunger, each die having in its face a groove which is formed in two parallel channels, each channel being of varying depth in itself, and each varying from the other in depth, the channels in the plunger-die being like those in the fixed die except in reverse position relative to the channels of the fixed die, a fin between the two channels of each die which does not extend to the level of the face of the die, a guide secured to one end of the fixed die having a passage oblong in cross-section, which is in alinement with the passage formed between the two dies when they are in contact with each other, to receive the entering end of the chain.

3. A pair of coöperating dies for curbing chains, one die being fixed and the other a plunger, each die having in its face a groove which is formed in two parallel channels each of varying depth in itself, and each varying from the other in depth, the channels in the plunger-die being like those in the fixed die except in reverse position relative to the channels of the fixed die, a fin between the two channels of each die which does not extend to the level of the face of

the die, a guide secured to one end of the fixed die having a passage oblong in cross-section, which is in alinement with the passage formed between the two dies when they are in contact with each other, to receive the entering end of the chain, and a guide attached to the exit end of the fixed die having a guide-passage in alinement with the groove in the die.

4. A pair of dies for curbing chains, each die being formed with two parallel grooves separated by a fin, the bottom of one of the grooves in each die decreasing in depth from the entrance end inward for a short distance, then increasing in depth, and then decreasing again to the exit end, the second channel decreasing in depth from the entrance end for a short distance then increasing to the exit end, the depth of both grooves being greater at the entrance than at the exit, and one of said grooves being of greater average depth than the other, said fin not extending to the surface of the bed, the grooves and fin of one die being similar to the grooves and fin of the other die except being in reverse position so that the grooves of differing form will mate with each other.

817,619. COMPOSITE ROOFING. GEORGE F. BISHOPRIC, Toronto, Canada, assignor to Bishopric & Company, Toronto, Canada, a Firm. Filed Sept. 6, 1905. Serial No. 277,264.

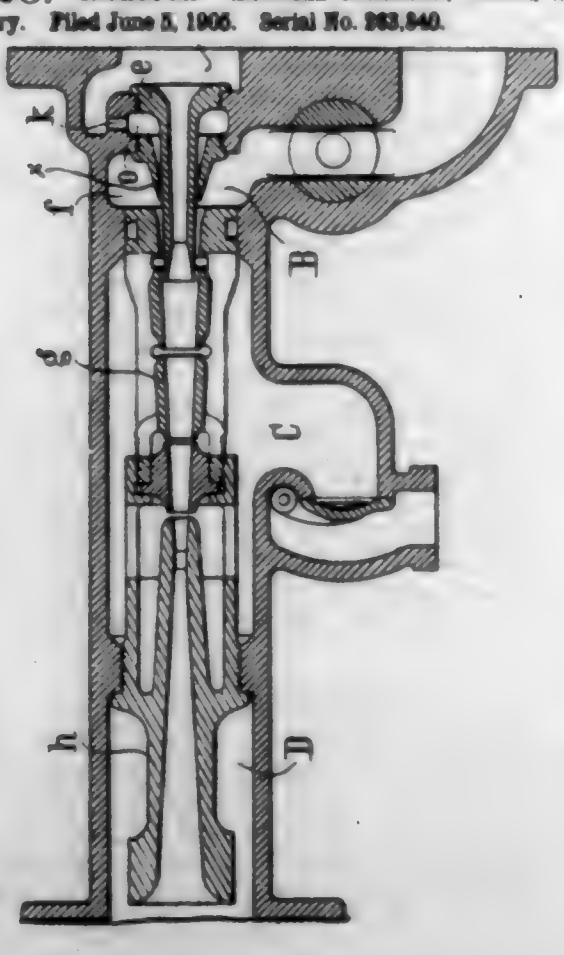


Claim.—1. A composite roofing comprising an under layer of suitable material and an upper layer of asbestos paper having a super and sub layer of asphalt-mastic material as and for the purpose specified.

2. A composite roofing comprising an under layer of suitable material and an upper layer of asbestos paper having a super and sub layer of asphalt-mastic material and a coating of sand for the superlayer of asphalt-mastic material as specified.

3. A composite roofing comprising a layer of asbestos paper, a super and sub layer of asphalt-mastic material and a lowermost layer of tar-paper and a suitable coating of sand or the like as and for the purpose specified.

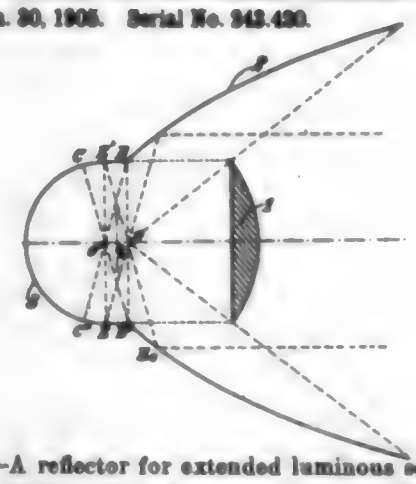
817,620. INJECTOR. EMANUEL BLAUHORN, Vienna, Austria-Hungary. Filed June 5, 1905. Serial No. 263,940.



Claim.—1. An injector having two concentric steam-nozzles separated to provide an annular steam-passage, a steam-inlet portion, and an annular space communicating with the steam-inlet portion and steam-passage respectively, the sectional area of said steam-inlet being fixedly not greater than the smallest sectional area of said annular steam-passage.

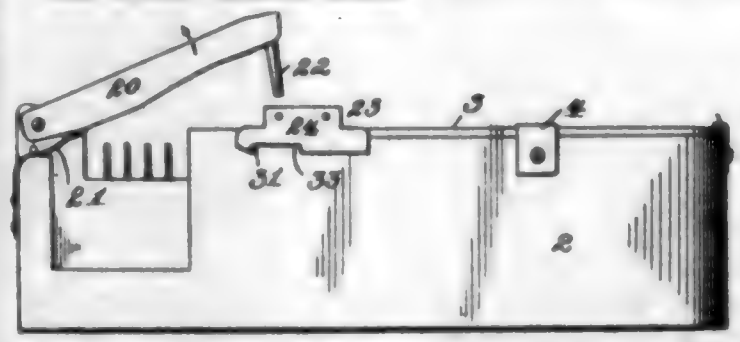
2. An injector having two concentric steam-nozzles separated to provide an annular steam-passage, a steam-inlet portion, and an annular space communicating with the steam-inlet portion and steam-passage respectively, the sectional area of said steam-inlet being fixedly not greater than the smallest sectional area of said annular steam-passage, the greatest sectional area of said annular space being considerably greater than the sectional area of the delivery end of said annular steam-passage.

817,621. APPARATUS FOR REFLECTING AND DIRECTING LIGHT. ALFRED BOAS and CAMILLE RODRIGUES-ELY, Paris, France. Filed Jan. 30, 1905. Serial No. 243,430.



Claim.—A reflector for extended luminous sources formed by two sources of light, said reflector comprising a mirror paraboidal in contour, a plano-convex lens, a mirror ellipsoidal in contour and having the two sources of light located at the foci thereof, the said mirrors intersecting each other on a circle of a diameter equal to that of the lens, the plane of the said circle passing through the front source of light.

817,622. APPARATUS FOR FILLING CAPSULES. CHRISTOPHER C. BOYKIN, Norfolk, Va., assignor to American Novelty Company, Incorporated, Norfolk, Va., a Corporation of Virginia. Filed June 6, 1905. Serial No. 264,352.



Claim.—1. The combination of capsule-holding means involving a yieldable support, and means for locking said yieldable support in a depressed position.

2. The combination of a perforated member, through a perforation in which a capsule-body may be passed, a yieldable support below the perforated member, and means for locking said yieldable support in a depressed position.

3. The combination of a plate for the mixture of powders, two strips separated from each other, the upper surfaces of which are in a common plane and in the plane of the upper surface of said plate, a perforated strip between the other strips, the upper surface of which is in the plane of the other strips, and depressible means located below the said perforated strip for supporting capsules.

4. The combination of a plate for the mixture of powders, two strips separated from each other, the upper surfaces of which are in a common plane and in the plane of the upper surface of said plate, a perforated strip between the other strips, the upper surface of which is in the plane of the other strips, depressible means located below the said perforated strip for supporting capsules, and means for locking said depressible means in a depressed position.

5. The combination of capsule-holding means involving a yieldably-mounted capsule-support, means for locking the said support in a depressed relation, and a plunger suitably mounted and arranged to enter a capsule while on said support.

6. The combination of a member having a series of perforations, capsule-body supports corresponding in number with said perforations and yieldably mounted, and means acting against one of the supports to jam them against each other to lock them in a depressed condition with the upper surfaces of the bodies of the capsules resting on the supports flush with the upper surface of said perforated member.

7. The combination of a member having a series of perforations, capsule-body supports corresponding in number with said perforations and yieldably mounted, and means acting against one of the supports to jam them against each other to lock them in a depressed condition with the upper surfaces of the bodies of the capsules resting on the supports flush with the upper surface of said perforated member, and a yieldably-mounted carrier having plungers to enter the capsule-bodies on said supports.

8. The combination of a plurality of yieldably-mounted capsule-supports, and means for jamming said supports against each other to hold them in a locked-down relation.

9. The combination of a member having a series of perforations to receive capsule-bodies, yieldable supports located below the perforated member and corresponding in number with the perforations, a fixed nut, a screw working through the said nut and adapted to engage the bodies of said supports to jam them together and thereby lock them in depressed relations.

10. The combination of means for supporting capsules and means for dividing a mass of material into predetermined charges and delivering the charges into appropriate capsules, said means consisting of a movably-mounted member having oppositely-disposed powder-receiving pockets.

11. The combination of means for supporting capsules, means for dividing a mass of material into predetermined charges and delivering the charges into appropriate capsules, said means consisting of a movably-mounted member having oppositely-disposed powder-receiving pockets, and provided with depending flanges at its opposite ends, and means to engage the flanges to limit the movement of said member.

12. The combination of a plate, a perforated member associated with said plate, the perforations of which are adapted to receive capsule-bodies, means for supporting the capsule-bodies with their upper edges flush with said perforated member and plate, and a slotted member arranged to travel back and forth on said plate and having in its slot opposing projections, thereby forming pockets in said slot, the said member being adapted to subdivide powder into charges and to pass the charges into the capsule-bodies.

13. The combination of a plate, a perforated member associated with said plate, the perforations of which are adapted to receive capsule-bodies, means for supporting the capsule-bodies with their upper edges flush with said perforated member and plate, and a slotted member arranged to travel back and forth on said plate and having in its slot opposing projections, thereby forming pockets in said slot, the said member being adapted to subdivide powder into charges and to pass the charges into the capsule-bodies, and means for separating the charge-forming member into two different portions.

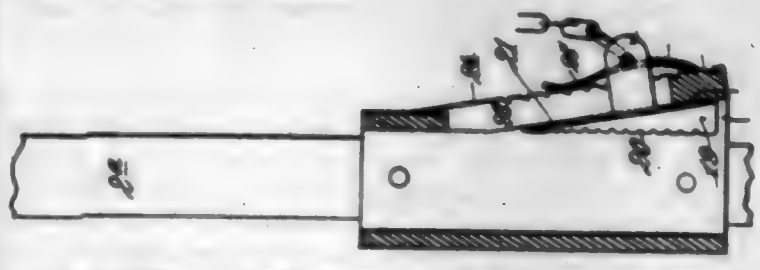
14. The combination of a perforated member, the perforations of which are adapted to receive capsule-bodies, means for delivering charges of powder into the capsule-bodies, depressible supports for the capsule-bodies, means for locking the depressible supports in depressed positions with the upper edges of the capsules flush with the upper surface of said perforated member, and plungers corresponding in number with the perforations, to enter the upper sides of the capsule-bodies.

15. The combination of a perforated plate, the perforations of which are adapted to receive capsules, yieldable supports located below the perforated plate, means for locking the yieldable supports in a depressed position with the upper edges of the capsules flush with said plate, and means for dividing a mass of material into predetermined charges and for delivering the same into appropriate capsules.

16. The combination of means for supporting capsules, means for dividing a mass of material into predetermined charges and delivering the charges into appropriate capsules, said means consisting of a movably-mounted member having oppositely-disposed powder-receiving pockets and provided with pendent notched flanges, and pins to enter the notches of the flanges to limit the back-and-forth motion of the member.

817,623. SAFETY-GEAR FOR SKIPS, CAGES, AND THE LIKE. JAMES W. CAMPBELL, Salem, Va. Filed Oct. 27, 1905. Serial No. 284,715.

Claim.—1. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, locking-wedges carried thereby, flexible members for moving the wedges to locking position, means for operating said members, and means carried by the wedges and adapted to engage with the shoes to prevent the moving of said wedges out of locking position.



2. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, locking-wedges carried thereby, flexible members for moving the wedges to locking position, means for operating said members, and an automatically-operating means engaging with the shoes for preventing the moving of said wedges out of locking position.

3. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, each having a recess, a locking-wedge in each of said recesses and having one face serrated and its other face studded, flexible members for moving said locking-wedges to locking position, thereby arresting the movement of the shoes, and means for operating said members.

4. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, each having a recess, a locking-wedge in each of said recesses and having one face serrated and its other face studded, flexible members for moving said locking-wedges to locking position, thereby arresting the movement of the shoes, means for operating said members, and means to prevent the displacement of said wedges from locking position.

5. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, each having a recess, a locking-wedge in each of said recesses and having one face serrated and its other face studded, flexible members for moving said locking-wedges to locking position, thereby arresting the movement of the shoes, means for operating said members, and an automatically-operating means for preventing the moving of said wedges out of locking position.

6. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, a locking-wedge mounted in each of said shoes and having one of the faces thereof studded, and flexible members for moving said wedges to locking position, thereby arresting the movement of the shoes.

7. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, a locking-wedge mounted in each of said shoes and having one of the faces thereof studded, flexible members for moving said wedges to locking position, thereby arresting the movement of the shoes, and means for retaining said wedges in locking position.

8. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, a locking-wedge mounted in each of said shoes and having a studded inclined face and a serrated straight face, a lug carried by each of the wedges and extending through its respective shoe, flexible members connected to the lugs and adapted when operated to move the wedges to locking position, thereby arresting the movement of the shoes, and means for operating the said members.

9. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, a locking-wedge mounted in each of said shoes and having a studded inclined face and a serrated straight face, a lug carried by each of the wedges and extending through its respective shoe, flexible members connected to the lugs and adapted when operated to move the wedges to locking position, thereby arresting the movement of the shoes, means for operating said members, and means mounted on the lugs for holding the wedges in sliding contact with the shoes and for retaining the wedges in locking position.

10. A safety-gear for the purpose set forth comprising a vertically-movable pair of shoes, a locking-wedge mounted in each of said shoes, flexible members for moving the wedges to locking position, thereby arresting the movement of the shoes, and means for holding the wedges in sliding contact with the shoes and for retaining the wedges in locking position.

11. A safety-gear for the purpose set forth comprising a vertically-movable pair of shoes each having one side thereof provided with a slot extending in the direction of the length of the shoe, wedges mounted in the shoes and arranged in operative relation with respect

to the slots, a toothed reinforcing member for the slotted side of each of the shoes, lugs carried by the wedges and extending through the slots and said members, flexible members connected with the lugs and adapted and operated to move the wedges to locking position, thereby arresting the movement of the shoes, operating means for said flexible members, and means mounted on the lugs and engaging the toothed reinforcing members for holding the wedges in sliding contact with the shoes and for retaining the wedges in locking position.

12. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, a toothed reinforcing member for each of the shoes, a locking-wedge mounted in each of said shoes, flexible members connected with said wedges for moving them to operative position, thereby arresting the movement of the shoes, operating means for said flexible members, and means engaging with said toothed reinforcing members for holding the wedges in sliding contact with the shoes and for retaining the wedges in locking position.

13. A safety-gear for the purpose set forth comprising a pair of vertically-movable shoes, locking-wedges carried thereby, flexible members for moving the wedges to locking position, thereby arresting the movement of the shoes, a pair of spring-actuated rock-shafts connected with said members for operating them, and means for holding said wedges in sliding contact with the shoes and for retaining the wedges in locking position.

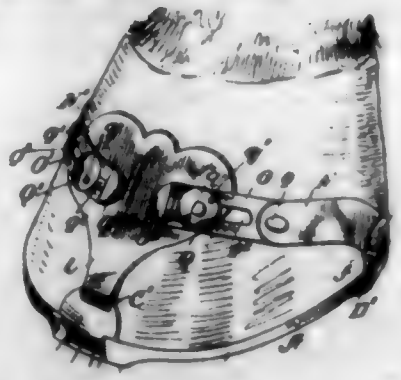
817,824. **PORTABLE TICKET-HOLDER.** JAMES D. CANTWELL, Milwaukee, Wis. Filed Feb. 13, 1905. Serial No. 245,408.



Claim.—1. In a ticket-holder, a case having a bottom with a rear upturned end and with upturned sides turned inwardly at their tops forming cover-retaining flanges, a front end projecting upwardly from the bottom but less wide than the width of the case and slightly less high than the height of the case, a lid having wings projecting from its longitudinal edges into the case alongside the side walls of the case the lid being adapted to slide under the flanges on the side walls and over the front end and the wings to slide past the lateral edges of the front end, means on the lid at its rear end to engage a ticket and carry it outwardly along with the lid, and means in the case for supporting tickets yieldingly upwardly against the lid.

2. In a ticket-holder, a case having a bottom with rigid sides and rear end having inwardly-projecting top flanges thereon, and a front rigid end projecting from the bottom, but shorter than the width of the case and less high than the height of the case, a lid having wings projecting inwardly of the case on and along its longitudinal edges, the lid being adapted to slide over the front end and the wings at and past the ends of the front end, and means on the lid for engaging a ticket and carrying it along with the lid.

817,825. **NAILLESS HORSESHOE.** CHARLES W. CRANNELL, Rocky Ford, Colo., assignor, by direct and mesne assignments, to The American Nail-Less Horse Shoe Company, a Corporation of Colorado. Filed Jan. 27, 1905. Serial No. 243,569.



Claim.—1. A horseshoe of the character described, comprising swinging heel and toe plates, calks holding said heel and toe plates to the shoe, and links connecting said heel and toe plates.

2. A horseshoe of the character described, comprising swinging heel and toe plates, calks holding said plates to the shoe, and means for connecting said heel and toe plates.

3. A horseshoe of the character described, comprising swinging heel and toe plates, removable calks holding said plates to the shoe and links connecting said heel and toe plates.

4. A horseshoe of the character described, comprising swinging heel and toe plates, removable calks holding said plates to the shoe, links connecting said heel and toe plates and means for holding said links together.

5. A horseshoe of the character described, comprising a shoe, swinging heel and toe plates carried thereby, links connecting said heel and toe plates, projections carried by said links for the engagement of an instrument for drawing said links together for tightening the heel and toe plates, and means independent of said projections for locking the plates in their tightened position.

6. A horseshoe of the character described, comprising a shoe, swinging heel and toe plates carried thereby, links connecting said heel and toe plates, projections carried by said links at their inner end for the engagement of a pair of forceps for drawing said links together for tightening the heel and toe plates, and means for holding the links in said positions.

7. A horseshoe of the character described, comprising a shoe having a downwardly-extending flange at its outer edge, said flange having cut-away portions, curved heel and toe plates passing through said cut-away portions of the flange and having horizontally-extending pivots carried thereby, and calks removably held upon the lower face of the shoe and having a recess adapted to receive said pivots of the toe and heel plates.

8. A horseshoe of the character described, comprising a shoe having downwardly-extending flanges at its inner and outer edges, swinging heel and toe plates carried by the shoe, links connecting said heel and toe plates, means for locking the links together, a rubber tread within said flanges and screw-bolts passing through the shoe from the upper face and screwed into plates embedded in the said rubber tread.

9. A horseshoe of the character described, comprising a shoe, detachable toe and heel plates carried thereby, removable calks holding said heel and toe plates to the shoe, and links for locking said heel and toe plates together.

10. A horseshoe of the character described, comprising a shoe, upwardly-extending studs carried thereby and adapted to enter the hoof, detachable swinging toe and heel plates carried thereby, removable calks holding said heel and toe plates to the shoe, links connecting said heel and toe plates and means for holding said links in their adjusted position while clamping the shoe to the hoof.

11. A horseshoe, comprising a shoe, heel and toe plates carried thereby, links connecting said heel and toe plates, means for taking hold of said links and drawing them together, and means for locking said links in their adjusted position independent of the holding or tightening means.

12. A horseshoe of the character described, comprising a shoe, heel and toe plates carried thereby, links connecting said heel and toe plates, lugs carried by the links and adapted to be engaged by a forcep, and drawing the links together, and disk-shaped nuts having openings for receiving a key and adapted to hold the links in their tightened positions.

13. A horseshoe of the character described, comprising a shoe, heel and toe plates carried thereby, an enlarged curved plate carried by the toe-plate, links connected to the heel-plates and extending over the curved plate, screw-threaded studs carried by the curved plates and extending through slots in the links and flat smooth disk-shaped nuts having openings adapted to receive a key and carried by the screw-threaded studs and adapted to clamp the links to the curved plates.

14. A horseshoe of the character described, comprising a plain shoe, heel and toe plates swingingly connected thereto, an enlarged curved plate carried by the toe-plate, links pivotally connected to the heel-plates, links having a key-hold connection with said pivoted links and having slotted ends passing over said curved plates, screw-threaded studs carried by the curved plate and extending through the slots of the links, and flat disk-shaped nuts on said studs and having openings adapted to receive a key, and the adjacent ends of the links having lugs by means of which a forcep may engage the same and draw them together.

15. A horseshoe of the character described, comprising a shoe having a downwardly-extending flange around its outer face, said flange having cut-away portions, at the heel and toe heel and toe plates passing through said openings and having enlarged ends below the shoe, and plates having recesses adapted to receive the said enlarged portion of the plates, and screws passing through the shoe into said plates.

16. A horseshoe of the character described, comprising a shoe having a downwardly-extending flange around its outer edge, said flange having cut-away portions at the heel and toe heel and toe

plates passing through said cut-away portions of the flange, and having enlarged ends below the shoe, links connecting said heel and toe portions, plates under the shoe and having recesses adapted to receive the enlarged portion of the heel and toe plates, screws passing loosely through the shoe and having their heads embedded in the shoe and screwed into said plates, and a rubber tread below said shoe and plates, and having bolts passing through the shoe from the upper face and screwed into plates embedded in said rubber tread.

17. A horseshoe of the character described, comprising a shoe, swinging toe and heel plates, removable plates holding said plates to the shoe, links connecting said plates, a rubber tread below said plates and having plates embedded therein, and screws passing downwardly through the shoe, the plate, and entering the rubber tread and screwed into the plates embedded therein.

18. A horseshoe of the character described, comprising a body portion, swinging heel and toe plates removably carried thereby, removable plates independently holding said swinging plates thereon, and links connecting said heel and toe plates.

19. A horseshoe of the character described, comprising a body portion, independently-swinging heel and toe plates carried thereby, removable calks independently holding said swinging plates thereon, links connecting said heel and toe plates, and means for holding said links together.

20. A horseshoe of the character described, comprising a plain shoe having a downwardly-extending flange cut away at the toe and heel portions, swinging heel and toe plates passing through said cut-away portion, removable calks secured to the under side of the shoe and swingingly holding said plates thereon, an enlarged curved plate carried by the toe-plate, links pivotally connected to the heel-plates, links removably connected to said first links, and having slotted ends passing over said curved plates, screw-threaded studs carried by the curved plate and extending through the slot of the links, flat disk-shaped nuts on said studs and having openings adapted to receive a key, and the adjacent ends of the links having lugs by means of which forceps may engage the same and draw them together while the nuts are being tightened.

21. A horseshoe, comprising a shoe, heel and toe plates carried thereby, links connecting said heel and toe plates, studs carried by said links whereby the links may be taken hold of by instruments for drawing them together and means for locking said links in their adjusted position.

22. A horseshoe of the character described, comprising swinging heel and toe plates, links detachably carried by the heel-plates, lugs carried by said links and adapted to be engaged by forceps for drawing the links together, and means for securing the links thereto.

23. A horseshoe of the character described, comprising swinging heel and toe plates, links detachably carried by the heel-plates, lugs carried by said links and adapted to be engaged by forceps for drawing the links together, studs carried by the toe-plate and adapted to pass through the links, and nuts carried by the studs for holding the links in their adjusted position.

24. A horseshoe of the character described, comprising swinging heel and toe plates, links connecting said heel and toe plates, a plate holding said swinging plates to the shoe, a rubber tread holding said plate in its relative position and screw-bolts passing through the shoe from the upper face and through the plates and screwed into plates embedded in the said rubber tread.

25. A horseshoe of the character described, comprising swinging heel and toe plates, and calks holding said heel and toe plates to the shoe.

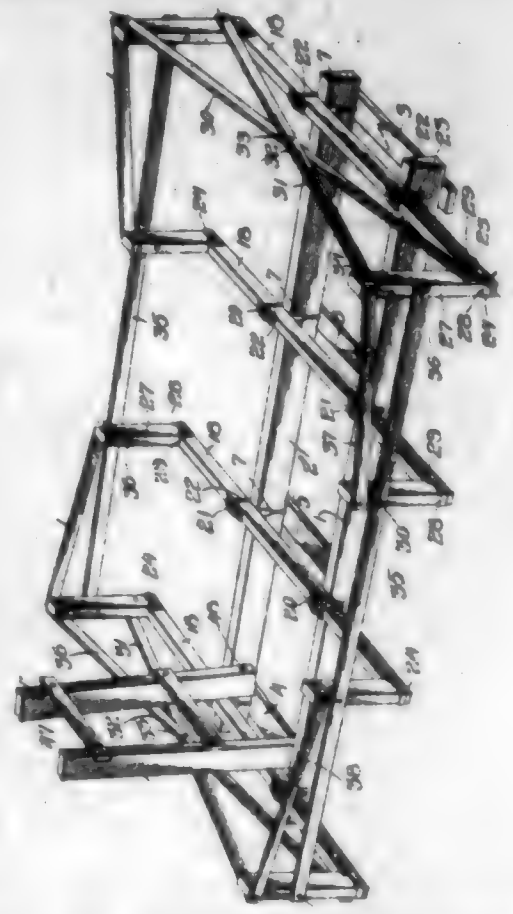
26. A horseshoe of the character described, comprising swinging heel and toe plates, plates holding the swinging plates to the shoe, and removable rubber calks holding said plates to the shoe.

27. A horseshoe of the character described, comprising swinging heel and toe plates, plates holding the plates to the shoe, rubber calks below the plates, and bolts passing through the plates and securing the plates and rubber calks to the shoe.

28. A horseshoe of the character described, comprising a plain shoe having a downwardly-extending flange cut away at the toe and heel portions, swinging heel and toe plates passing through said cut-away portion, removable calks secured to the under side of the shoe holding said plates thereon and links connecting said heel and toe plates, and means for adjustably holding said links together.

29. A horseshoe of the character described, comprising a shoe, swinging heel and toe plates carried thereby, removable calks holding said heel and toe plates to the shoe, links connecting said heel and toe plates, projections carried by said links for the engagement of an instrument for drawing said links together, for tightening the heel and toe plates, and means independent of said projections for locking the plates in their tightened position.

817,626. HAY-RACK. ALBERT B. CRAWFORD, Pollock, S. D. Filed May 10, 1905. Serial No. 259,704.

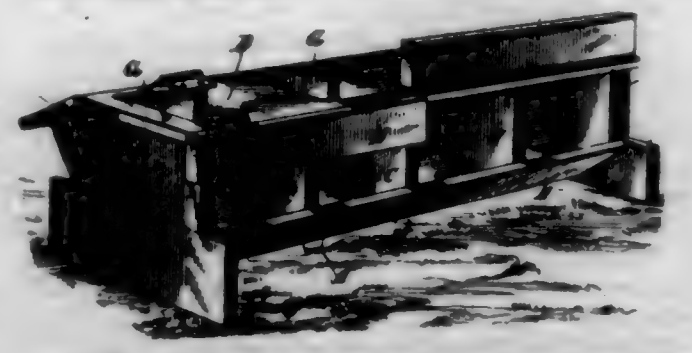


Claim.—1. In a hay-rack, the combination with longitudinal sills, of pieces disposed transversely of the sills therebeneath, hooks disposed with their shanks engaged in the pieces and extending inwardly of the sills, said hooks lying with their bights engaged over the sills and with their bills outwardly of the sills, fastening devices engaged in the hooks and in the sills, one of said fastening devices having an angular outer end, beams disposed transversely upon the sills above the hooks, transversely-curved plates disposed upon the beams longitudinally thereof, loops engaged with the beams and in the curves of the plates, said loops being engaged with the angular ends of the fastening devices, and a framework connected with the beams.

2. In a hay-rack, sills connected together, beams arranged transversely of the sills and disposed upon the upper surfaces of the latter, each sill being provided with a hook immediately beneath each beam, each beam having loops embracing the same, and adapted for engagement with the corresponding hooks of the sills, uprights detachably associated with the beams, connections arranged parallel with the sills for engagement with the uprights, connections between pairs of uprights above the aforesaid connection therebetween, connections between the end uprights of each side of the rack, the last-named connections crossing each other and secured together intermediate their ends, and a ladder detachably connected at its lower ends to the inner surfaces of said sills.

3. In a hay-rack, the combination with sills, of eyes carried by the sills, a cross-beam disposed upon the sills adjacent to the eyes, a ladder including uprights disposed at their lower ends between the sills and resting against the beam, and hooks carried by the uprights and removably engaged in the eyes.

817,627. HOG-TROUGH. JOHN CROSBY, Ava, Ill. Filed June 30, 1905. Serial No. 267,738.

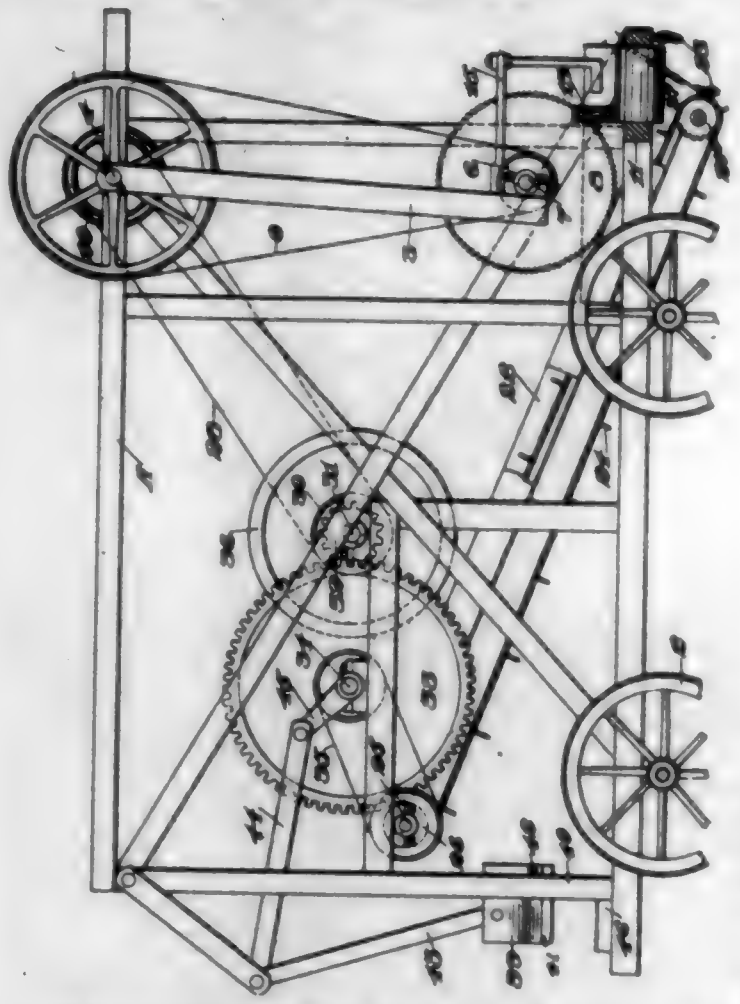


Claim.—1. A feed-trough having a series of compartments and doors hinged at their upper ends to the upper parts of said compart-

ments and arranged to fold down in front of said compartments to obstruct the upper part of the openings into the same.

2. A feed-trough comprising a longitudinal receptacle, vertical partitions in the same extending above said receptacle and corresponding end pieces, a horizontal roof arranged above the partitions, transverse triangular brackets on the roof, a laterally-projecting chute with hinged cover on one side and doors hinged upon the other side of the roof and arranged to fold down over and obstruct the upper portions of the feed-compartments.

817,628. SAWING-MACHINE. JAMES A. CUMMISKEY, Cloverdale, Cal. Filed Aug. 29, 1905. Serial No. 276,301.



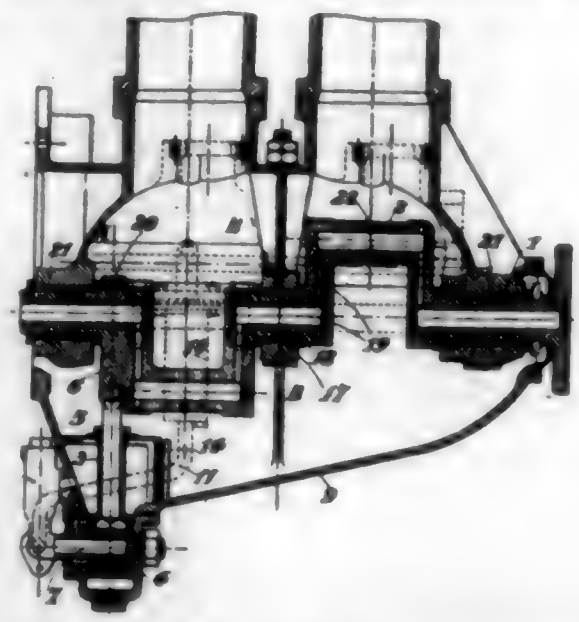
Claim.—1. The combination of a frame, a swinging saw-carrier mounted thereon, a saw on said carrier, an angular arm or guide attached to the saw-frame and by which the latter is oscillated, said arm consisting of horizontal and vertical portions said horizontal portions formed of sections adjustable one relative to the other, and said vertical portion provided with a stop member for the timber to be operated upon.

2. The combination of a frame, a swinging saw-carrier mounted thereon, a saw on said carrier, an angular arm or guide attached to the saw-frame and by which the latter is oscillated said arm consisting of horizontal and vertical portions said horizontal portions formed of sections adjustable one relative to the other, and said vertical portion provided with a stop member for the timber to be operated upon, and a removable bearing-block across which the stop is movable, said block being secured to the side of the frame opposite the point of entry into the machine of the timber to be cut.

817,629. DEVICE FOR LUBRICATING UNDER PRESSURE. LOUIS M. G. DELAUNAY-BELLEVILLE, Neuilly-sur-Seine, France. Filed Feb. 8, 1905. Serial No. 244,948.

Claim.—1. In a lubricating device for explosion-motors and transmission mechanisms the combination with the casing for the motor or the mechanism having the lower portion thereof inclined, thereby forming a channel, of a receptacle at the lowest end of said channel, an oscillating pump mounted in said receptacle, an eccentric on the motor-shaft for giving the motion to the piston and to the oscillating part of said pump, means for carrying the oil from said pump to the parts to be lubricated, means for preventing the impurities being drawn along, and means for relieving the excess of oil at the forcing-aperture of the pump and for again bringing this oil in the casing and to the suction-aperture of the pump, substantially as described.

2. In a lubricating device for explosion-motors and transmission mechanism the combination with the casing for the motor or the mechanism having the lower portion thereof inclined, thereby forming a channel, of a receptacle at the lowest end of said channel, an oscillating pump mounted in said receptacle, an eccentric on the motor-shaft for giving the motion to the piston and to the oscillating part of said pump, pipes carrying the oil from the forcing-aperture of the pump to the bearings of the motor-shaft, a pressure-gage branched on said pipes, a motor-shaft provided with channels through which the oil is carried from the bearings to the various parts being lubricated, means for preventing the impurities being drawn along, and means for relieving the excess of oil at the forcing-aperture of the pump and for again bringing this oil in the casing and to the suction-aperture of the pump, substantially as described.



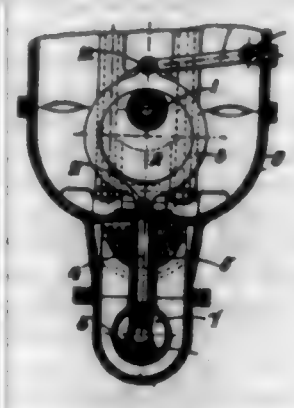
3. In a lubricating device for explosion-motors and transmission mechanisms the combination with the casing for the motor or the mechanism having the lower portion thereof inclined, thereby forming a channel, of a receptacle at the lowest end of said channel, an oscillating pump mounted in said receptacle, an eccentric on the motor-shaft for giving the motion to the piston and to the oscillating part of said pump, pipes carrying the oil from the forcing-aperture of the pump to the bearings of the motor-shaft, a pressure-gage branched on said pipes, a motor-shaft provided with channels through which the oil is carried from the bearings to the various parts being lubricated, a rose-head between the pump and the casing, a rose-head or filter mounted between the forcing-aperture of the pump and the distribution-pipe, and means for relieving the excess of oil at the forcing-aperture of the pump and for again bringing this oil in the casing and to the suction-aperture of the pump, substantially as described.

4. In a lubricating device for explosion-motors and transmission mechanisms the combination with the casing for the motor or the mechanism having the lower portion thereof inclined, thereby forming a channel, of a receptacle at the lowest end of said channel, an oscillating pump mounted in said receptacle, an eccentric on the motor-shaft for giving the motion to the piston and to the oscillating part of said pump, pipes carrying the oil from the forcing-aperture of the pump to the bearings of the motor-shaft, a pressure-gage branched on said pipes, channels in the motor-shaft from which the oil is carried from the bearings through said shaft to the various parts being lubricated, a rose-head between the pump and the casing, a rose-head or filter mounted between the forcing-aperture of the pump and the distribution-pipe, an exhaust-valve between the rose-head or filter and the forcing-aperture of the pump, and a pipe leading the excess of oil from the said valve to the casing, substantially as described.

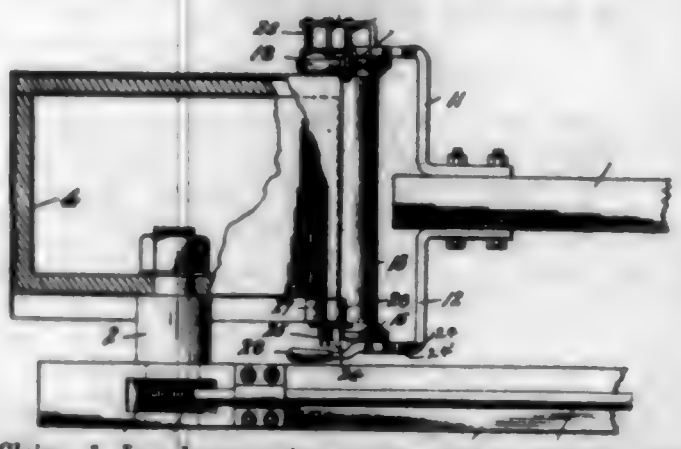
817,630. OIL-PUMP. LOUIS M. G. DELAUNAY-BELLEVILLE, Neuilly-sur-Seine, France. Original application filed Feb. 8, 1905, Serial No. 244,948. Divided and this application filed June 26, 1905. Serial No. 267,114.

Claim.—In a lubricating device, the combination with an oscillatory pump, of means for increasing the angle of oscillation of the said pump, said means consisting of an eccentric-strap mounted upon and driven by a shaft, means for connecting the strap to the piston of the pump, a pivoted link, and means for connecting the strap

to said link at a point diametrically opposite the connection between the strap and the piston.



817,681. BOX-COVERING MACHINE. GEORGE A. DIENER, Newburgh, N. Y. Filed July 3, 1905. Serial No. 268,175.



Claim.—1. In a box-covering machine, the combination with means for holding and means for rotating the box, of covering means comprising a main presser-roll engaging the side of the box during its rotation, said main presser-roll having beveled flanges on each end adapted to turn a covering-paper inwardly at the top and bottom of said side.

2. In a box-covering machine, the combination with means for holding and means for rotating the box, of covering means comprising a main presser-roll engaging the side of the box during its rotation, said main presser-roll having beveled flanges on each end adapted to turn a covering-paper inwardly at the top and bottom of said side, a supplemental presser-roll having an outstanding beveled flange and mounted on a bracket and supported by two springs adapted to engage the turned portion of the covering-paper at the lower end of the box and further turn and press the same against the bottom of said box.

3. In a box-covering machine, the combination with means for holding and means for rotating the box, of covering means comprising a presser-roll engaging the side of said box during its rotation, said presser-roll being provided with beveled flanges adapted to bend a covering-paper inwardly at the top and bottom of said side, a supplemental presser-roll having an outstanding beveled flange, adapted to engage the bent portion of the covering-paper at the lower end of the box and to press the same against the bottom of the said box, a grooved wheel adapted to engage the bent portion of the paper at the upper edge of the box and press the free end thereof within the box, and a pair of rolls disposed in proximity to each other and adjusted to engage the upper edge of the box on the inner and outer sides thereof and adapted to press the portion of the covering-paper within the box against the inner side thereof.

4. In a box-covering machine, the combination with means for holding and means for rotating the box, of covering means comprising a main presser-roll engaging the side of the box during its rotation, said main presser-roll having beveled flanges on each end adapted to turn a covering-paper inwardly at the top and bottom of said side, a supplemental presser-roll having an outstanding beveled flange and mounted on a bracket and supported by two springs adapted to engage the turned portion of the covering-paper at the lower end of the box and further turn and press the same against the bottom of said box, a grooved wheel mounted on an arm adapted to engage the turned portion of the paper at the upper edge of the box and turn the same within the box.

5. In a box-covering machine the combination with means for holding and means for rotating the box, of covering means comprising a main presser-roll engaging the side of the box during its rotation, said main presser-roll having beveled flanges on each end adapted to turn a covering-paper inwardly at the top and bottom of said side, a supplemental presser-roll having an outstanding beveled flange and mounted on a bracket and supported by two springs adapted to engage the turned portion of the covering-paper at the lower end of the box and further turn and press the same against the bottom of said box, a grooved wheel mounted on an arm adapted to engage the turned portion of the paper at the upper edge of the box and turn the same within the box, a pair of rolls disposed in proximity to each other and adjusted to engage the upper edge of the box on the inner and outer sides thereof and adapted to press the portion of the covering-paper within the box against the inner side thereof.

6. In a box-covering machine the combination with means for holding and means for rotating the box, of covering means comprising a main presser-roll engaging the side of the box during its rotation, said main presser-roll having beveled flanges on each end adapted to turn a covering-paper inwardly at the top and bottom of said side, a supplemental presser-roll having an outstanding beveled flange and mounted on a bracket and supported by two springs adapted to engage the turned portion of the covering-paper at the lower end of the box and further turn and press the same against the bottom of said box, a grooved wheel adapted to engage the turned portion of the paper at the upper edge of the box, a pair of rolls disposed in proximity to each other and adjusted to engage the upper edge of the box on the inner and outer sides thereof and adapted to press the portion of the covering-paper within the box against the inner side thereof, said pair of rolls and grooved wheel mounted on an adjustable arm whereby the said rolls and grooved wheel may be simultaneously disengaged.

817,682. SPROCKET-WHEEL. JAMES M. DODGE, Philadelphia, Pa. Filed May 23, 1904. Serial No. 209,467.

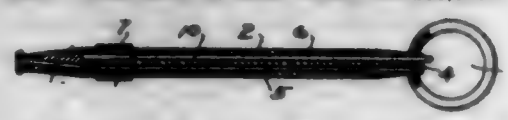


Claim.—1. The combination in a sprocket-wheel having a series of V-shaped teeth all lying in the same plane, with an open-link chain arranged to pass around said wheel, the teeth of the wheel extending into the open links of the chain and the transverse members of the chain bearing against the teeth, substantially as described.

2. The combination of a sprocket-wheel having a single series of teeth, each tooth having a plane bearing-surface inclined to the radius of the wheel, with an open-link chain arranged to bear upon the wheel in the arc of a circle and having its successive links so constructed that the transverse members of the links will bear against the plane surface of successive teeth, substantially as described.

3. The combination of a sprocket-wheel having a single series of teeth, each tooth having a plane bearing-surface inclined to the radius of the wheel, with an open-link chain arranged to pass around the wheel, the teeth of the said wheel passing through the open links of the chain and the bearing-points being on the pitch-line of the chain, substantially as described.

817,633. PIPE-STEM CLEANER. BENJAMIN F. ESHELMAN, Tacoma, Wash. Filed Nov. 10, 1905. Serial No. 286,717.

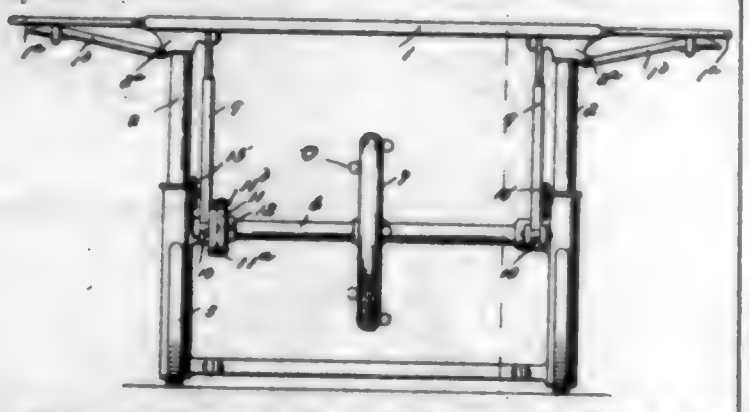


Claim.—1. In a pipe, the combination of a bowl, a stem having two spoke-passages therein, a mouthpiece having a single passage therein adapted to connect with either one of said smoke-passages, and a cleaner secured to said mouthpiece and adapted to enter and to dry out the smoke-passage with which said mouthpiece-passage is not connected.

2. In a pipe, the combination of a stem having smoke-passages therein arranged symmetrically of the center, and a rotatable mouthpiece having an eccentric passage therein adapted to connect with different passages in said stem in different positions thereof.

3. A pipe having a bowl, a stem with a plurality of symmetrical passages therein, a mouthpiece adapted to connect with any of said passages, a cleaner secured to said mouthpiece and lying within the unused passage in said stem.

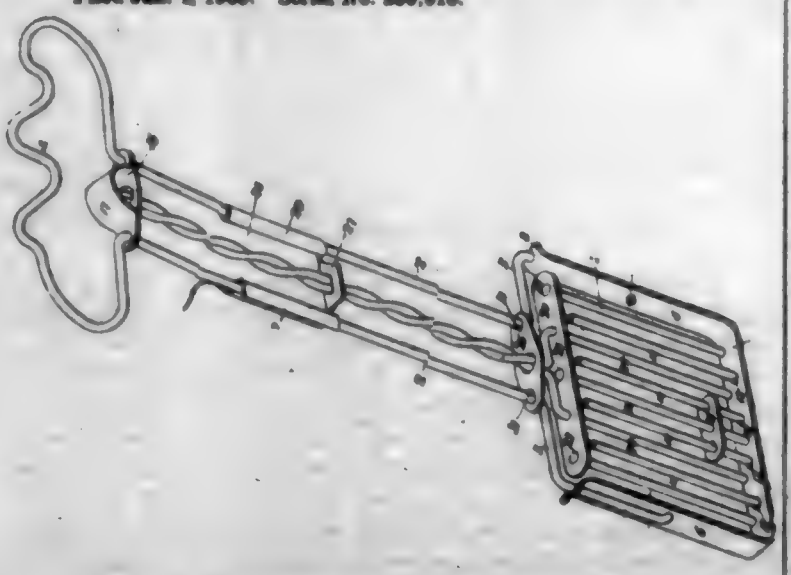
817,634. TABLE. VICTOR A. FAGERSTROM, Rockford, Ill., assignor of one-half to Carl S. Gustafson, Rockford, Ill. Filed Oct. 21, 1905. Serial No. 283,796.



Claim.—1. The combination, in an adjustable table, of foot-pieces having upright tubes and guide-rollers located between said tubes, standards depending from the table-top and slidable in the tubes, a shaft mounted at its ends in bearings on the tubes and carrying pinions, and links depending from the table-top and between the guide-rollers and having racks engaging the pinions.

2. In a table, the combination with a base, and a vertically-adjustable top thereon, of a shaft journaled at its ends on the base and having operative connections with the table-top, to raise or lower the same, a drum on the shaft near one end thereof, and a split brake-strap fixed to the base and extending around the drum, and a screw connecting the ends of the strap, to adjust the friction thereof against the drum.

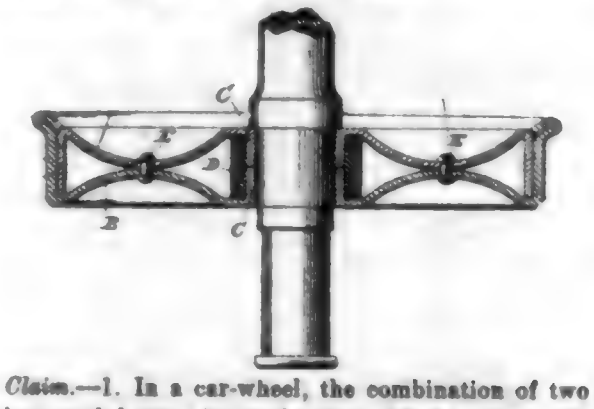
817,635. EGG-BEATER. GEORGE R. FLOWERS, Philadelphia, Pa. Filed Jan. 4, 1905. Serial No. 239,618.



Claim.—1. The combination, in an egg-beater, of a frame having parallel bars, a beater member having a screw-stem, and a slide-plate having elongated wings parallel with the screw-stem, and bent to slidably engage the parallel bars of the frame, and a slotted flange which engages the screw-stem and acts as a nut, substantially as specified.

2. An egg-beater having a fixed frame consisting of a wire waved or corrugated in a horizontal plane to form a handle and parallel bars outwardly bent at their lower portions and terminating in depending legs with inwardly-projecting legs at their lower ends, and a U-shaped member with side bars engaging said legs and having openings for the reception of the lugs thereon, upwardly-projecting fingers secured to the bottom bar of the said U-shaped member, a bearing-plate connecting the intermediate pair of said fingers, brace-plates connecting the upper and lower ends of the parallel bars, a slide-plate having bent wings guided on said parallel bars and having a slotted flange, and a beater member comprising a plate with depending fingers, the central finger having its bearing in the plate carried by the fingers of the fixed frame, and other fingers of the beater member being bent toward each other above the plate and twisted to form a screw-stem which has its bearing in the upper and lower brace-plates of the fixed frame and engages the slotted flange of the slide-plate, substantially as specified.

817,636. CAR-WHEEL. PERRY J. GARRISON, Three Rivers, Mich. Filed Sept. 13, 1905. Serial No. 278,266.



Claim.—1. In a car-wheel, the combination of two opposing members each having integral web and hub portions, the hub portions forming the bore or bearing for the axle, and a thimble surrounding the hub portions of both members.

2. A car-wheel comprising two opposing members, each having integral rim, web and hub portions, the web portions abutting and tied together intermediate the rim and the hub.

3. As a new article of manufacture, a car-wheel comprising two parts telescoping at their circumference to form the tread and abutting at their inner edges so as to form an axle-bearing.

4. In a car-wheel the combination of two opposing members, each having integral rim, web and hub portions, the rim portion being telescoped into binding relation, the hub portions being brought into abutment to form a hub and united by a surrounding thimble into which they are forced under pressure.

5. In a car-wheel the combination of two opposing members, each having integral rim, web and hub portions, the rim portions being telescoped into binding relation, the hub portions being brought into abutment to form a hub and united by a surrounding thimble into which they are forced under pressure; the web portions being also brought into abutment and tied together at points in an annulus intermediate the rim and the hub.

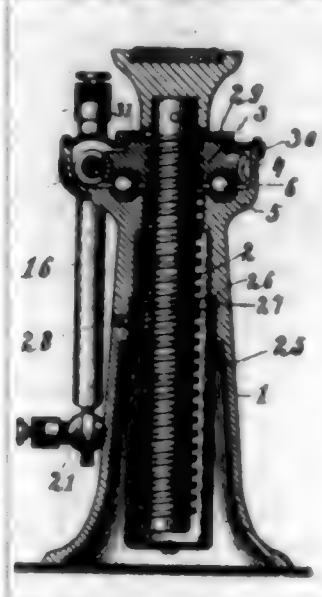
6. A metallic wheel comprising two members each constructed with integral rim, web and hub portions, the rim portions being telescoped into permanent binding relation to form a wheel-tread, the web portions extending radially inward from opposite edges of the tread thus formed, depressed into abutment and tied together intermediate of the rim and hub, and then spaced apart to meet the ends of the hub, and the hub portions extending inwardly from the web portions and brought into abutment, and tied together by a surrounding thimble into which they are forced.

817,637. LIFTING-JACK. WILLIAM B. GASTON, Pleasantville, N. Y. Filed Nov. 10, 1902. Serial No. 130,884.

Claim.—1. In a lifting-jack, the combination of a base-frame, a lifting-screw, a nut mounted in said base-frame for operating said screw, the opposing surfaces of said nut and frame having annular concave channels or grooves formed therein, annular concave ball-races removably mounted in and fitted to said channels or grooves, antifriction-balls confined between said ball-races, and means for rotating said screw.

2. In a lifting-jack, the combination of a base-frame, a lifting-screw, a worm-wheel mounted in said base-frame and forming a nut for said screw, the opposing surfaces of said worm-wheel and frame having annular concave channels or grooves formed therein, annular

concave pressed-steel ball-races removably mounted in and fitted to said channels or grooves, antifriction-balls confined between said ball-races, a worm for operating said worm-wheel, a shaft carrying said worm and journaled in the base-frame, and means for rotating said shaft.



3. In a lifting-jack, the combination of a base-frame, a lifting-screw, a worm-wheel journaled in said frame and forming a nut for said screw, a worm for driving said wheel, a shaft carrying said worm, a thrust-bearing for one end of said shaft, said bearing consisting of a removable ball-race between which and a ball-race on the shaft antifriction-balls are confined, and a bushing forming a bearing for the other end of said shaft, said bushing being removable to permit the withdrawal of said worm-shaft.

4. In a lifting-jack, the combination of a base-frame, a lifting-screw, a worm-wheel mounted in said base-frame and forming a nut for said screw, the opposing surfaces of said nut and frame having annular concave recesses formed therein, annular concave ball-races removably mounted in and fitted to said recesses, antifriction-balls confined between said ball-races, a worm for driving said wheel, a shaft carrying said worm, a thrust-bearing for one end of said shaft, said bearing consisting of a removable ball-race between which and a ball-race on the shaft antifriction-balls are confined, and a bushing forming a bearing for the other end of said shaft, said bushing being removable to permit the withdrawal of said worm-shaft in a direction away from said thrust-bearing.

5. In a lifting-jack, the combination of a hollow base-frame, a lifting-screw, means for operating said screw, a grease-cup removably secured within the lower part of said base and having a liquid-tight connection therewith, said cup and base being adapted to inclose the lower end of said screw.

6. In a lifting-jack, the combination of a hollow base-frame having an interior annular shoulder at an intermediate point, a lifting-screw, means for operating said screw, and a grease-cup removably fitted to the interior of the base with a packing between its open end and the shoulder on the base.

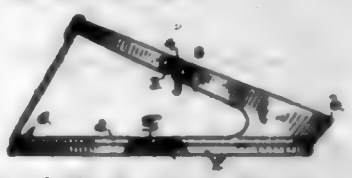
7. In a lifting-jack, the combination of a hollow base-frame having an interior shoulder at an intermediate point, a lifting-screw, a worm-wheel journaled in said base and forming a nut for said screw, a worm-shaft for operating said wheel, a cap inclosing said worm and worm-wheel, and a grease-cup removably fitted to the interior of the base with a packing between its open end and the shoulder on the base.

8. In a lifting-jack, the combination of a base-frame, a lifting-screw, a nut journaled on the base-frame for operating said screw, means for turning said nut, a head carried on said screw, said head having an undercut recess in its contact-surface, and a piece of yielding material pressed into said recess and projecting beyond the surface of said head.

9. In a lifting-jack, a base or standard having an opening extending vertically therethrough, a lifting-screw vertically arranged in said opening, a wheel threaded onto said screw and rotatable thereon, and a lubricating cup or receptacle extending upwardly into said opening from the base of the standard and surrounding the lower portion of the screw, said receptacle being closed at its lower end.

10. In a lifting-jack, the combination of a base-frame, a lifting-screw, a worm-wheel and means for driving said wheel including a worm, a shaft carrying said worm, a thrust-bearing for one end of said shaft, means for turning said shaft connected to the other end thereof, a bushing forming a bearing for said shaft between the worm and said means for turning the same, said bushing being larger in diameter than said worm and removably screw-threaded to the frame whereby the worm-shaft may be removed by simply screwing out the bushing, substantially as described.

817,638. **RAILLESS-HORSESHOE.** ROBERT H. GIBB, London, England, and JOHN D. W. ELLIOTT, Wanganui, New Zealand. Filed Dec. 5, 1905. Serial No. 290,440.



Claim.—1. In a device for securing shoes to horses' feet, a sole-plate having heel-cups with standing inner and outer walls on the ends and heel-bands formed integrally with the heel-cups and extending forward at an angle from opposite sides over the front of the sole-plate, and a toe-strap on the sole-plate, means for securing the ends of the heel-bands together and the end of the toe-strap to the heel-bands.

2. In a device for securing shoes to horses' feet, a sole-plate having heel-cups on the ends with inner and outer standing walls, heel-bands extending from the sides of the heel-cups forward and upward at an angle to the sole-plate, each heel-band being an extension or prolongation of the standing wall of the heel-cup on the outer side, a toe-strap extending upward from the sole-plate at the front, fastening means for drawing and securing together the ends of the heel-bands, and means for attaching the toe-strap to the heel-bands, in combination with a detachable wearing-plate on the bottom of the sole-plate.

3. A device for securing a shoe to a horse's foot, comprising a sole-plate having heel-cups with standing walls formed integrally with the sole-plate, heel-bands integral with the outer side walls of the heel-cups, a toe-strap on the toe of the sole-plate, studs on the sole-plate for detachably securing a wearing-plate to the sole-plate, and means for fastening together the ends of the heel-bands and the toe-strap.

4. A sole-plate conforming in shape generally to the bottom of a horse's hoof, having heel-cups with standing walls formed integrally with the sole-plate and provided with heel-bands integral with the outer walls of the heel-cups, screw-pegs in the sides of the heel-cups adapted to enter the hoof, a toe-strap on the front of the sole-plate integral therewith, and fastening devices for drawing and securing together the ends of the heel-bands and the toe-strap.

5. A sole-plate conforming in shape generally to the bottom of a horse's hoof having heel-cups with standing walls at the back and on the sides of the heel of the sole-plate, heel-bands formed by a prolongation of the outer side walls of the heel-cups, pegs in the outer sides of the heel-cups adapted to enter the hoof, fastening devices for drawing together and securing the ends of the heel-bands and means at the front connecting the heel-bands to the toe of the sole-plate.

6. In a device for securing a shoe to a horse's foot, the combination with a shoe, of a sole-plate having means for detachably fastening the shoe to the said plate, heel-bands integral with the sole-plate and extending from the heel of said plate at an angle upward and forward, heel-cups at the junction of said heel-bands with the sole-plate having inclined back walls and fastening means for securing the heel-bands together over the hoof.

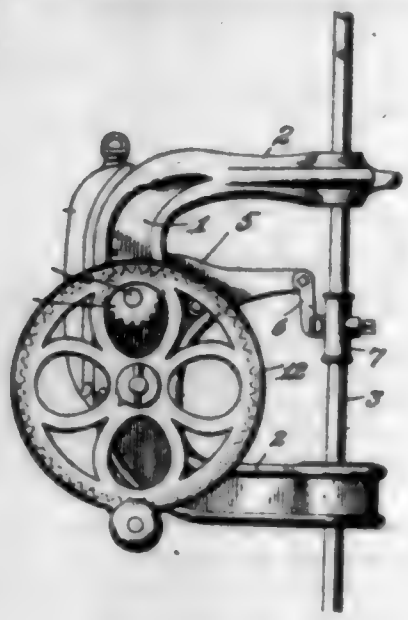
817,639. **PUMP-OPERATING MECHANISM.** WILLIAM GOBLE, Monon, Ind. Filed Oct. 12, 1905. Serial No. 282,456.

Claim.—1. The combination with the frame, of a driving-shaft mounted transversely therein, means for rotating the said shaft, a cam on the shaft, a forked lever pivoted in the frame and engaging the said cam, a pump-rod mounted to reciprocate in the frame, a sleeve secured on the pump-rod, and a link connecting the said sleeve and the end of the forked lever.

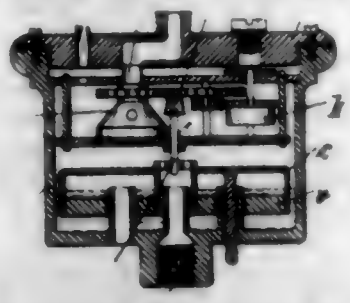
2. The combination of the hollow yoke having forwardly-extending arms, a driving-shaft therein, means for rotating said shaft, a cam on the said shaft, a pump-rod mounted in and guided by the arms of the yoke, connections between the said cam and the pump-rod, and a covering-plate hinged to the yoke and normally extending over the cam and the driving-shaft.

3. The combination of the yoke having forwardly-extending upper and lower arms, a driving-shaft mounted transversely therein, a pinion on one end of the said shaft, a pulley on the opposite end of the shaft, an internal gear-wheel mounted on the side of the yoke and meshing with the said pinion, a cam on the driving shaft within the

yoke, a pump-rod mounted in and guided by the yoke, a forked lever pivoted in the yoke and engaging the said cam, and a link having its opposite ends pivotally connected to the end of the lever and to the pump-rod.



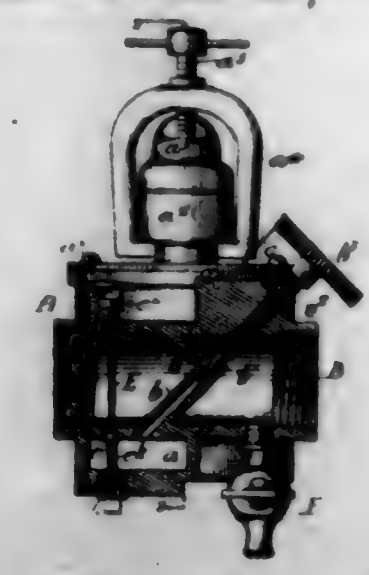
817,640. AUTOMATIC GAS-IGNITER. AUGUST B. HANDSCHUH, Kirchberg, Germany, assignor to The Firm of Gebrüder Jacob, Zwickau, Saxony, Germany. Filed Jan. 21, 1905. Serial No. 242,149.



Claim.—1. In an automatic gas-igniter for district-lamps, the combination with the gas-pipe of the lamp, of a hermetically-closed outer vessel provided with a gas-inlet screw-socket attached to the said gas-pipe, a liquid within the vessel, a floating bell dipping in said liquid, a vertical rod fixed to the top of the bell, a rotary valve controlling the gas-outlet in the top of the said vessel, and clock-work mechanism to operate said valve as stated.

2. In an automatic gas-igniter for street-lamps the combination with the burner-pipe in each lamp, of a timing apparatus consisting of an outer vessel fixed to said pipe with gas-inlet at bottom and gas-outlet at top, a liquid in the lower part of the vessel, a bell floating in the liquid, a notched rod projecting from the top of the bell, a rotary valve connected with the gas-outlet, a toothed wheel fast on the valve, stop-pins on said toothed wheel to engage said notched rod, and clock-work for the direct drive of the valve, as and for the purpose stated.

817,641. CARBURETER. COLEMAN B. HARRIS, Wilmington, Del. Filed Nov. 18, 1904. Serial No. 233,233.



Claim.—1. A carbureter including a substantially horizontal conduit connected to a source of air-supply and having means for the admission of liquid fuel, with a deflecting-partition in the conduit for directing the current of air toward the bottom of said conduit and causing it to take up liquid fuel therein, and a priming-valve in addition to said fuel-admission means, substantially as described.

2. A carbureter including a substantially horizontal conduit connected to a source of air-supply and having means for the admission of liquid fuel, a partition extending across the upper part of the conduit and inclined in the direction of flow of the air, for directing said flow toward the bottom of the conduit and causing it to take up liquid fuel therein, and a priming-valve in addition to said fuel-admission means placed to permit entrance of fuel to the conduit, substantially as described.

3. A carbureter including a substantially horizontal conduit connected to a source of air-supply, a tube connected to a source of supply for liquid fuel and projecting into said conduit, a partition extending across the upper portion of the conduit, said tube and said partition being both inclined in the direction of flow of the air, the partition serving to direct the air toward the bottom of the conduit and causing it to take up liquid fuel therein, substantially as described.

4. The combination of a container for liquid fuel, with a conduit connected to a source of fuel-supply, a supply-pipe connecting said container and said conduit, a valve for controlling the flow of liquid to said pipe, with a normally closed priming-valve between the container and the conduit, and means for opening said valve at will, substantially as described.

5. The combination in a carbureter of a container for liquid fuel, a conduit connected to a source of air-supply having a valve-controlled passage between it and said container, a priming-valve operative in an opening connecting the container and the conduit, a spindle extending through the conduit and attached to said valve, whereby the valve may be moved, and a spring normally maintaining said valve in a closed position, substantially as described.

6. A carbureter consisting of a single casting having a substantially horizontal conduit for connection to a source of air-supply and a chamber extending adjacent to said conduit, a float, and means co-acting therewith for controlling the quantity of liquid in said chamber, a pipe projecting into the conduit, said pipe being in connection with the float-chamber and provided with a valve whereby the flow of liquid into the conduit may be controlled, and a deflecting-partition extending across the upper portion of the conduit for directing the air-flow toward the bottom thereof, substantially as described.

7. A carbureter including a single casting having a conduit for connection to a source of air-supply and a chamber having within it a float, said chamber extending adjacent to the conduit and having an opening thereinto, a normally closed priming-valve for said opening and means whereby it may be operated at will, there being a supply-passage between the float-chamber and the conduit, and means for regulating the flow of liquid therefrom into the conduit, substantially as described.

8. A carbureter including a casting having a tubular portion and a relatively large chamber having an extension projecting under said tubular portion, there being two openings from said extension of the chamber into the tubular portion, a headed spindle extending through the tubular portion and having a valve operative in one of said openings, means for maintaining said valve in a normally closed position, and a threaded spindle projecting into the tubular portion and operative to control the flow of liquid from the second opening, substantially as described.

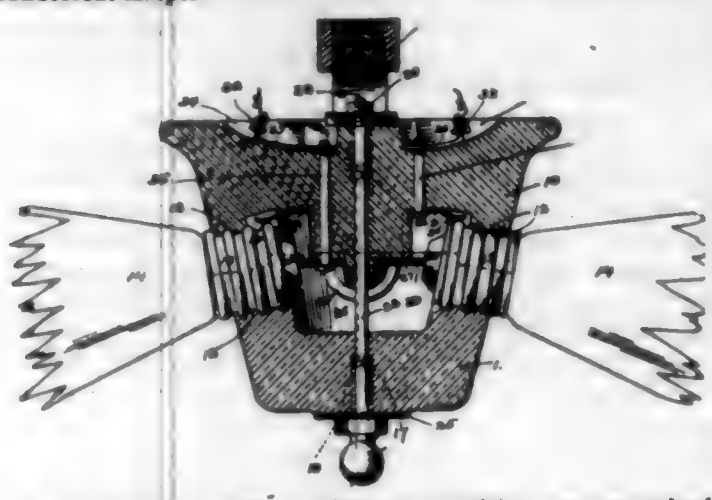
9. The combination of a structure having a chamber for a float and a conduit for connection to a source of air-supply, a main regulating-valve between the conduit and the chamber, a normally closed priming-valve also controlling an opening between the chamber and the conduit, a spring for holding said priming-valve closed and a removable plug for retaining said spring in position, substantially as described.

817,642. INCANDESCENT-LAMP CLUSTER. HARVEY HUBBELL, Bridgeport, Conn. Filed Sept. 1, 1905. Serial No. 276,736.

Claim.—1. A cluster for incandescent lamps made in two parts of insulating material, each part having formed therein threaded half-sockets which with the corresponding half-sockets in the other part form sockets to receive the screw-shells of incandescent lamps.

2. A cluster for incandescent lamps comprising a part made of insulating material and having contacts for engagement by the screw-shells and bases of incandescent lamps and threaded half-sockets formed therein, and another part also formed of insulating material and having threaded half-sockets which with the corresponding half-

sockets in the other part form sockets to receive the screw-shells of incandescent lamps.



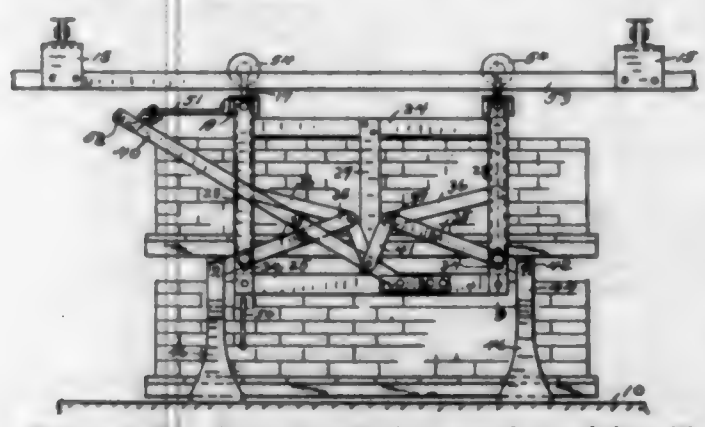
3. An incandescent-lamp cluster comprising two parts both formed from insulating material and having corresponding threaded half-sockets which together form sockets to receive the screw-shells of incandescent lamps one of said parts having a contact-plate for engagement by the lamp-bases and contacts for engagement by screw-shells.

4. An incandescent-lamp cluster comprising two parts both formed from insulating material and having corresponding threaded half-sockets which together form sockets to receive the screw-shells of incandescent lamps, said cluster having an internal recess and within said recess contacts for engagement by the screw-shells and bases of incandescent lamps.

5. An incandescent-lamp cluster comprising two parts both formed from insulating material and having corresponding threaded half-sockets which together form sockets to receive the screw-shells of incandescent lamps, one of said parts being provided with a ring and contacts projecting therefrom for engagement by the screw-shells of incandescent lamps, and a contact-plate for engagement by the bases of incandescent lamps.

6. An incandescent-lamp cluster consisting of two corresponding parts made of insulating material each part having corresponding threaded half-sockets which together form sockets to receive the screw-shells of incandescent lamps, contacts for engagement by said lamps and means for securing the parts together.

817,643. DRIER. JOHN R. HUSSEY, Indianapolis, Ind. Filed May 17, 1905. Serial No. 260,769.



Claim.—1. In a drier, a carrier for conveying and depositing loads therein, said carrier being arranged and conveyed to pass any or all loads.

2. In a drier, overhead tracks for conveying loads in and out of the drier, and a carrier running on said tracks for conveying said loads, said carrier being adapted when empty to pass any load which it has deposited.

3. In a drier, overhead tracks for conveying loads in and out of the drier, trays for the loads, and a carrier running on said tracks adapted to engage the sides of the tray from above.

4. In a drier, overhead tracks for conveying loads in and out of the drier, trays for supporting the loads, and a carrier running on said tracks with two sides extending downward and adapted to engage the sides of the trays, said sides of the carrier being far enough apart to pass longitudinally astride the loads.

5. In a drier, a plurality of overhead tracks therein for conveying loads, a transfer overhead track extending transversely of and at the ends of said drier, tracks from which a load may be passed to any of said drier-tracks, a loading overhead track leading to said transfer-track, and a carrier adapted to run on said overhead tracks.

6. In a drier, overhead tracks therein for conveying loads in and out of the drier, a transfer-track on each side of the drier extending transversely of said drier-tracks, an overhead loading-track leading to one transfer-track, and a carrier adapted to run on said overhead tracks.

7. The combination of an overhead traveling carrier, a tray, and a lever mechanism mounted in connection with said carrier adapted to engage or disengage said tray for elevating or lowering it.

8. The combination of an overhead traveling carrier consisting of a top portion and two downwardly-extending side portions, a tray, and means on one of said parts for causing the engagement or disengagement of the carrier and the sides of the tray in order to elevate or lower said tray.

9. The combination of an overhead traveling carrier consisting of a top portion and two downwardly-extending side portions, a tray, a lever mechanism mounted in connection with each side of said carrier adapted to engage or disengage said tray, and means for the simultaneous operation of the lever mechanism at both sides of said carrier.

10. The combination of an overhead traveling carrier consisting of a top portion and two side portions, a tray, means mounted in connection with each side portion for engaging or disengaging said tray to elevate or lower it, and a single hand-operated lever for simultaneously operating the lever mechanism on the two side portions of said carrier.

11. The combination of an overhead traveling carrier consisting of a top portion and two downwardly-extending side portions, a tray, a lever pivoted to the lower side of each side portion of said carrier, horizontally-disposed tray-carrying levers mounted in connection with each side portion and operatively connected with said hand-lever, means at the opposite ends of said tray-carrying levers for engaging or disengaging the tray, and means operated by the hand-lever for oprating the ends of said tray-carrying levers.

12. The combination of an overhead traveling carrier consisting of two cross-bars at the top, a downwardly-extending bar on each side of said cross-bars and a longitudinally-extending side bar at the lower end of said vertical bars being each provided with a vertical slot, a tray, a hand-lever pivoted to each side bar at each side of said carrier, a tray-lever fulcrumed in each of said vertical slots so the fulcrum thereof will be vertically movable, said tray-carrying levers extending in opposite directions, means on the opposite ends of said tray-carrying levers for engaging or disengaging the tray, vertically-extending toggle-levers pivoted at their upper ends to some part of the carrier and at their lower ends to said tray-carrying levers near the tray-carrying ends, connecting-bars pivoted to the middle of the toggle-levers and to the inner ends of the tray-carrying levers, and vertically-extending connecting-bars pivoted at one end to the inner ends of said toggle-connecting bars and said load-carrying levers and at the other end pivoted to said hand-lever.

13. The combination of an overhead traveling carrier with two downwardly-extending sides, a tray, means at each side of the carrier for engaging or disengaging the tray, a single lever for operating said means on both sides of said carrier, and means connected with said carrier for holding said hand-lever in position.

14. The combination of an overhead traveling carrier with two downwardly-extending sides, a tray, means at each side of the carrier for engaging or disengaging the tray, a single lever for operating said lever mechanism on both sides of said carrier, means connected with the carrier for holding the hand-lever in an elevated position, and means connected with the tray for holding the hand-lever in its lower position.

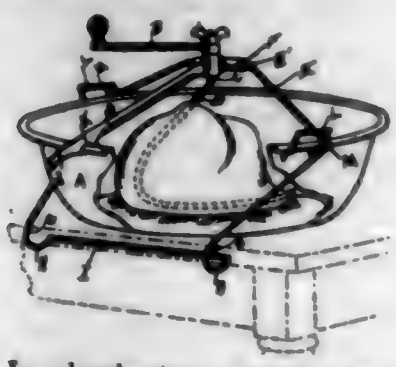
15. The combination of an overhead traveling carrier open at both ends, a tray that is narrower than said carrier whereby the carrier may be moved astride the load on the tray, and means on one of said parts for engaging the other part in order to elevate or lower said tray.

16. The combination of an overhead traveling carrier with the bottom and ends of said carrier open, a double-deck tray with the upper deck narrower than said carrier whereby said carrier may be moved astride said upper deck, and means on one of said parts for engaging the other part in order to elevate or lower said carrier.

17. The combination of an overhead traveling carrier, a tray, posts extending up at each side of said tray, and means for causing the engagement or disengagement of said posts and carrier to elevate and lower said tray.

18. The combination of an overhead traveling carrier, a tray, posts secured to the sides of said tray and extending upward, an upper tray mounted on the upper ends of said posts, and means mounted in connection with the sides of said carrier for engaging or disengaging said tray to elevate or lower the tray.

817,644. DOUGH-MIXER. ROBERT W. JAMESON, New York, N. Y., assignor to R. W. Jamieson Company, New York, N. Y. Filed Jan. 19, 1905. Serial No. 241,732.



Claim.—1. In a dough-mixer, a vessel, a supporting-arm comprising a vertical bearing, a horizontal bearing and a handle portion, said arm being hingeably mounted on a frame, said frame comprising a supporting portion over said receptacle, bent hooked clamping portions connected to said supporting portion by bends, said hooked portions joined by a connecting portion, a mixing member mounted to revolve in said vertical bearing and a means for revolving said mixing member, as and for the purpose set forth.

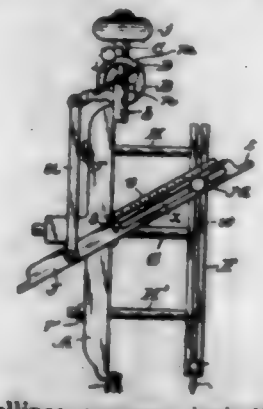
2. In a dough-mixer, a vessel, a supporting-arm comprising a vertical bearing and a horizontal bearing, a handle portion and a recess in said arm, said arm being hingeably mounted on a frame, said frame comprising a supporting portion over said receptacle, bent hooked clamping portions connected with said supporting portion by bends, said hooked clamping portions joined by a connecting portion, a mixing member mounted to revolve in said vertical bearing and a means for revolving said mixing member, as and for the purpose set forth.

3. In a mixer, a vessel, an arm comprising a vertical bearing, and a horizontal bearing, said arm being hingeably mounted on a frame, said frame comprising a supporting portion over said receptacle, two armed portions one at each side of said receptacle connected to the supporting portion by bends, said armed portions terminating in hooked portions, said hooked portions joined by a connecting portion, a mixing member mounted to revolve in said vertical bearing for the purpose set forth.

4. In a dough-mixer the combination with a mixing-receptacle, of a supporting-frame supported on the rim of said receptacle, of a vertical rotatable mixing member, of a tiltable arm on which the said mixing member is mounted said arm being hingeably connected to said frame as specified.

5. In a dough-mixer, the combination with a mixing-receptacle of a vertically-rotatable mixing member tiltably mounted on a frame over said receptacle, said frame comprising a horizontal supporting portion, arm portions, bent hooked clamping portions and a connecting portion for connecting said hooked portions, for the purpose specified.

817,645. ELLIPSE-COMPASSES. CHARLES B. KEEL, Indianapolis, Ind. Filed June 19, 1905. Serial No. 265,873.



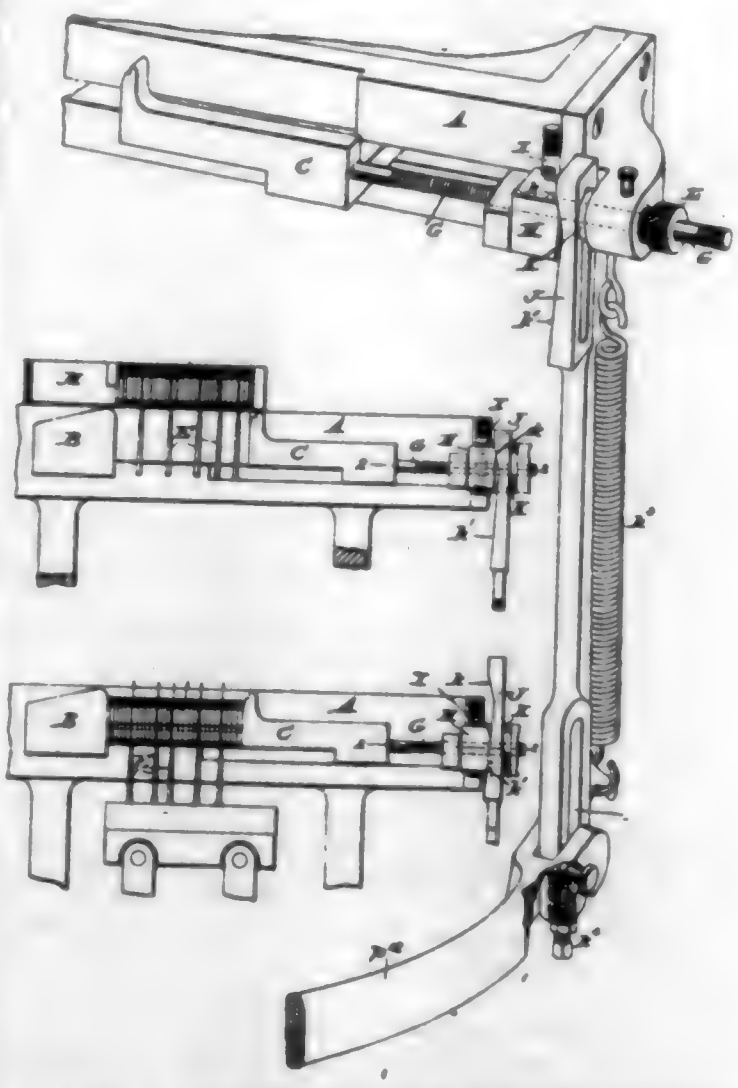
Claim.—1. An ellipse-compass including a centering-leg, a drawing-leg carried by and movable toward or away from the centering-leg, a head swiveled on the centering-leg and provided with an adjustable guide, a guide-arm pivoted to the centering-leg and controlled by the guide, a beam pivoted to the centering-leg and controlling the movements of the drawing-leg, and a connecting-rod pivoted to the guide-arm and also to the beam.

2. An ellipse-compass including a centering-leg having a head swiveled thereon, a guide mounted on the head and adjustable angularly with respect to the axis of the leg, a binding-screw for the guide, a guide-arm pivoted to the centering-leg in contact with the guide to be actuated thereby, a drawing-leg carried by the centering-leg and movable with respect thereto, a beam pivoted to the centering-leg controlling the movements of the drawing-leg and provided with a graduated scale, and a connecting-rod pivoted to the guide-arm and also to the beam.

3. An ellipse-compass including a centering-leg having a beam pivoted thereto, a drawing-leg carried by the centering-leg and movable with respect thereto, guides for the drawing-leg, a connecting-bolt secured adjustably to the beam and having movable connection with the drawing-leg longitudinally thereof, a head swiveled on the centering-leg and supporting a guide adjustably, and a guide-arm pivoted to the centering-leg and controlled by the guide and controlling the movements of the beam.

4. An ellipse-compass including a centering-leg having a slot therein, a guide-arm in the slot pivoted to the leg, a beam pivoted to the centering-leg, a connecting-rod pivoted to the guide-arm and also to the beam and maintaining the beam parallel to the guide-arm, a drawing-leg carried by the centering-leg and movable with respect thereto, a connection between the beam and the drawing-leg and controlling the movements of the leg, and a head swiveled to the centering-leg and having a plane-faced guide adjustably attached thereto in contact with the guide-arm and thereby controlling the movements of the beam and the drawing-leg when the head is held stationary and the centering-leg is rotated relatively thereto.

817,646. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Dec. 9, 1905. Serial No. 291,136.



Claim.—1. In a linotype-machine, the combination of two matrix-confining jaws, means for presenting the composed line of matrices between said jaws, and an automatic mechanism arranged to positively approximate the jaws to a distance less than the length of the required line, and hold them in such position during the presentation of the matrices, whereby the admission of tight or overset lines between the jaws is prevented.

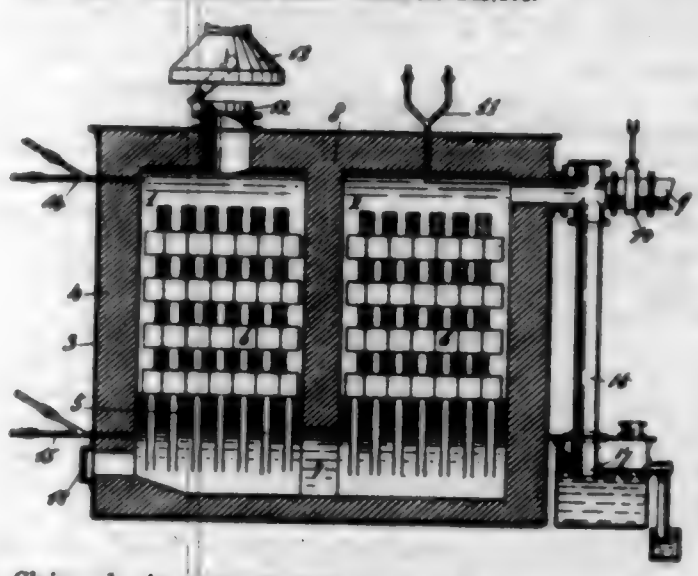
2. In a linotype-machine, the combination of two matrix-confining jaws, a composed line of matrices and spacers, means for seating the line between the jaws, means for closing the jaws to a distance less than the length of line demanded, and thereafter opening them to said length, and means for justifying the line after said separation.

3. In a linotype-machine, the combination of means for present-

ing composed lines of matrices and spacers, line-confining jaws, means for adjusting the spacers to justify the lines between the jaws, and means for setting the jaws: first, to a distance apart less than the required length of line, thereafter to a distance equal to the required length, and finally, to a greater distance apart to release the justified line.

4. In a linotype-machine, the two matrix-confining jaws, in combination with a wedge mechanism, acting to set the jaws, first, a distance apart less than the length or measure of the required line, and second, a distance apart equal to the length of the line.

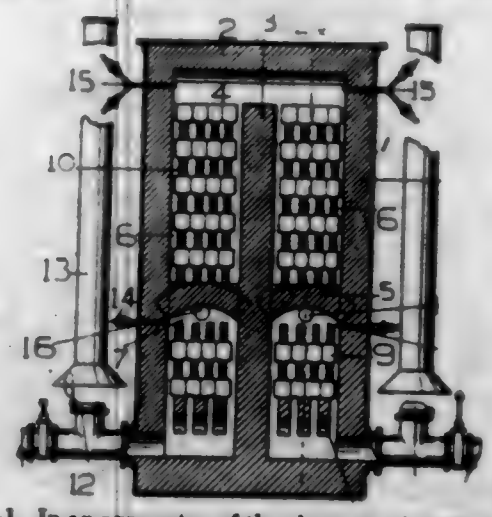
817,647. GAS-MAKING APPARATUS. LEON P. LOWE, San Francisco, Cal. Filed Jan. 30, 1905. Serial No. 243,170.



Claim.—1. An apparatus for generating gas comprising a casing, a wall having an opening at the bottom dividing the interior into two chambers connected at the bottom, arches at the bottom of each chamber and loosely-piled refractory material upon each arch, means for admitting air and oil at the top of the first chamber, a stack at the top of the second chamber, means for closing the passage for the air and the passage to the stack, a steam-inlet at the top of the second chamber, a gas-outlet at the top of the first chamber, and an oil-inlet at the bottom of one of said chambers, substantially as described.

2. An apparatus for generating gas comprising a casing, a wall having an opening at the bottom dividing the interior into two chambers connected at the bottom, arches at the bottom of each chamber and loosely-piled refractory material upon each arch, means for admitting air and oil at the top of the first chamber, a stack at the top of the second chamber, means for closing the passage for the air and the passage to the stack, a steam-inlet at the top of the second chamber, a gas-outlet at the top of the first chamber, an oil-inlet at the bottom of one of said chambers, and a suitably-controlled opening for drawing off coke from the bottom of the two chambers, substantially as described.

817,648. APPARATUS FOR MAKING GAS. LEON P. LOWE, San Francisco, Cal. Filed Mar. 27, 1905. Serial No. 252,294.



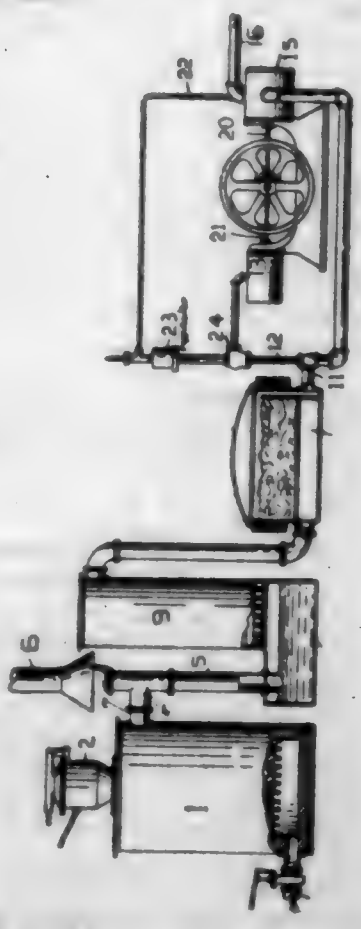
Claim.—1. In an apparatus of the character described, the combination of a casing, a wall extending from the bottom of the casing to a point near the top thereof and dividing the interior of the casing into two compartments, loosely-piled refractory material in each compartment, a flue and an air-blast selectively connected with the bottom of each compartment, a gas-outlet pipe connected with the interior of the casing at a point adjacent to a mediate point of each compartment, a steam-pipe connected thereto at a mediate point thereof, and an oil-pipe discharging into the combustion and generating chamber at the top of the casing, substantially as described.

2. In an apparatus of the character described, the combination of a casing, a wall extending from the bottom of the casing to a point near the top thereof and dividing the interior of the casing into two compartments, means for dividing each compartment into upper and lower chambers, loosely-piled refractory material in each of said four chambers, a flue and an air-blast selectively connected with the bottom of each lower chamber, a gas-outlet pipe connected with the interior of the casing at a point adjacent to the top of each lower chamber, a steam-pipe connected thereto at a point below each upper chamber, and an oil-pipe discharging into the combustion and generating chamber at the top of the casing, substantially as described.

3. In an apparatus of the character described, the combination of a casing, a wall extending from the bottom of the casing to a point near the top thereof and dividing the interior of the casing into two compartments, an arch in each compartment dividing the same into upper and lower chambers, loosely-piled refractory material in each of said four chambers, a flue and an air-blast selectively connected with the bottom of each lower chamber, a gas-outlet pipe connected with the interior of the casing at a point adjacent to the top of each lower chamber, a steam-pipe connected thereto at a point below each upper chamber, and an oil-pipe discharging into the combustion and generating chamber at the top of the casing, substantially as described.

4. In an apparatus of the character described, the combination of a casing, a wall extending from the bottom of the casing to a point near the top thereof and dividing the interior of the casing into two compartments, an arch in each compartment dividing the same into upper and lower chambers, loosely-piled refractory material in each of said four chambers, a flue and an air-blast selectively connected with the bottom of each lower chamber, a gas-outlet pipe connected with the interior of the casing at a point adjacent to the top of each lower chamber, a steam-pipe connected thereto at a point below each upper chamber, and an oil-pipe discharging into the combustion and generating chamber above each upper chamber, substantially as described.

817,649. APPARATUS FOR MANUFACTURING AND DELIVERING GAS. LEON P. LOWE, San Francisco, Cal. Filed Aug. 8, 1906. Serial No. 329,311.



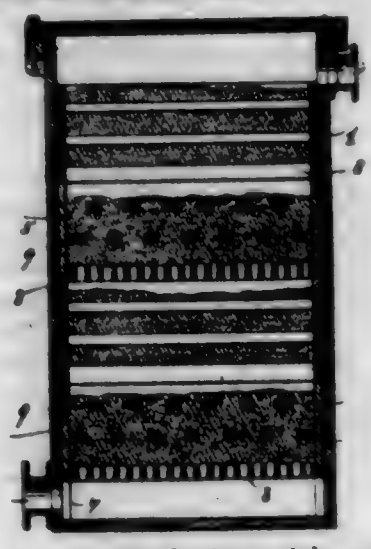
Claim.—1. In combination with an apparatus for manufacturing gas, a service-pipe, a compressor for supplying gas thereto, an engine for operating said compressor, a pipe leading from the gas-making apparatus to the compressor, a branch pipe leading from the latter pipe and supplying gas to operate said engine, a valve controlling the passage of gas in the branch pipe, a regulator for said valve and a pipe connecting said regulator with the service-pipe, whereby

the engine is operated in correspondence with the pressure in said service-pipe, substantially as described.

2. In combination with an apparatus for manufacturing gas, a service-pipe, a compressor for delivering the gas thereto, a pipe leading from said apparatus to said compressor, an engine for operating said compressor, a valve for controlling the motive fluid to said engine, a regulator for said valve, and a pipe connecting said regulator with the service-pipe, whereby the engine may be operated in correspondence with the pressure in said service-pipe, substantially as described.

3. In combination with an apparatus for manufacturing gas, a service-pipe, a compressor for delivering the gas thereto, a pipe leading from said apparatus to said compressor, an engine for operating said compressor, a valve for regulating said engine, a regulator for said valve, and a pipe connecting said regulator with the service-pipe, whereby the engine may be operated in correspondence with the pressure in said service-pipe, substantially as described.

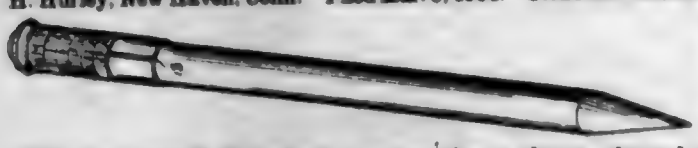
817,650. GAS-PURIFIER. LEON P. LOWE, San Francisco, Cal. Filed Dec. 13, 1905. Serial No. 291,641.



Claim.—1. A gas-purifier having an inlet and an outlet for the gas to be purified and provided with a series of trays or boxes between said inlet and outlet, each box being provided with means for supporting the purifying material while allowing the gas to escape therethrough, and being also provided with stationary bars extending into the purifying material to disintegrate the same by the motion due to changes of temperature, substantially as described.

2. A gas-purifier having an inlet and an outlet for the gas to be purified and provided with a series of trays or boxes between said inlet and outlet, each box being provided with means for supporting the purifying material while allowing the gas to escape therethrough, and being also provided with a plurality of rows of stationary bars extending into the purifying material to disintegrate the same by the motion due to changes of temperature, substantially as described.

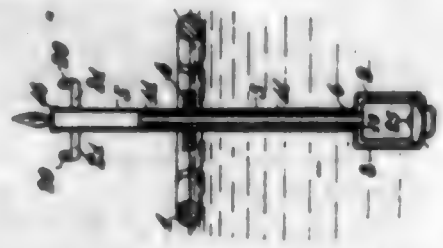
817,651. PENCIL-TIP CALENDAR. FRANK J. MATHEIS, New Haven, Conn., assignor, by direct and mesne assignments, to William H. Hurley, New Haven, Conn. Filed Mar. 5, 1904. Serial No. 196,668.



Claim.—A pencil-tip calendar comprising a sleeve adapted to engage the end of a pencil and provided at its outer end with a screw-thread and below the screw-thread with a shoulder and having marked thereon numerals corresponding with the days of the months, a ring mounted to turn on the sleeve and having marked thereon letters corresponding with the days of the week and a nut engaging the screw-thread whereby the ring may be locked in place by being clamped between the nut and the shoulder.

817,652. LIFE-BUOY. JOHANNES MELLER, Wandsbek, Germany. Filed May 19, 1905. Serial No. 261,260.

Claim.—1. The combination with a life-buoy, comprising a buoyant ring, a hollow mast in the center of said ring and means for maintaining the vertical position of said mast, of a cartridge holding the chemical agent or agents for the emission of light, when brought in contact with water, interchangeably secured to the lower end of the mast, said cartridge simultaneously steadying the vertical position of the mast and communicating with the latter above the water-line and of means for automatically ripping the cartridge open for the ingress of water when the life-buoy is slipped from its support at the ship's side, substantially as described and shown.

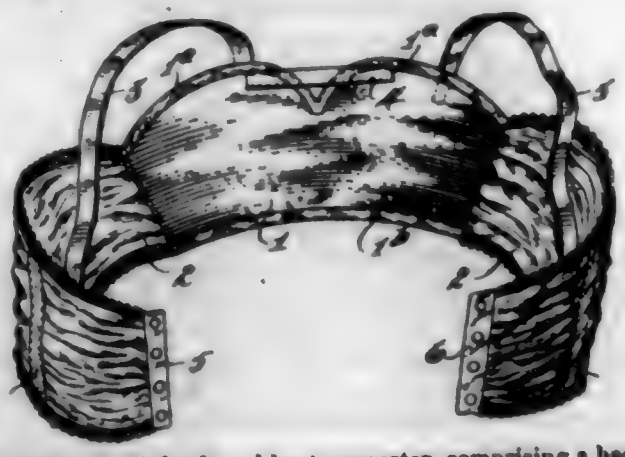


2. The combination with a life-buoy comprising a buoyant ring, a hollow mast in the center of said ring and means for maintaining the vertical position of said mast, of a cartridge holding the chemical agent or agents for the emission of light, when brought in contact with water, a receptacle at the lower end of the mast for housing the aforesaid cartridge, a bottom lid with openings for the circulation of water closing the said receptacle and means for automatically ripping the cartridge open for the ingress of water when the life-buoy is slipped from its support at the ship's side, substantially as described and shown.

3. A life-buoy comprising in combination a buoyant ring 1, a hollow mast 5 in the center of said ring, means for maintaining the vertical position of said mast, a receptacle 8 at the lower end of the mast, a bottom lid 7 with openings 26 for the circulation of water closing the said receptacle, a cartridge 9 holding the chemical agent or agents for the emission of light when brought in contact with water, an open tube 11 secured to and communicating with the interior of the cartridge entering the hollow mast 5 and terminating above the water-line of the buoy, and means for automatically ripping the cartridge open for the ingress of water, when the life-buoy is slipped from its support at the ship's side substantially as described and shown.

4. A life-buoy comprising in combination a buoyant ring 1, a hollow mast 5 in the center of said ring, means for maintaining the vertical position of said mast, a receptacle 8 at the lower end of the mast, a bottom lid 7 with openings 26 for the circulation of water closing the said receptacle, a cartridge 9 holding the chemical agent or agents for the emission of light when brought in contact with water, an open tube 11 secured to and communicating with the interior of the cartridge entering the hollow mast 5 and terminating above the water-line of the buoy, a rod 12 attached to a bracket 17 independently of the buoy and allowing a short fall by a chain 15, said rod 12 running through the hollow mast 5 and the tube 11 and having its detachable lower end 13 secured to the bottom 14 of the cartridge 9, so that by slipping the life-buoy from its point of support at the ship's side the cartridge 9 is automatically ripped open by the severing of the rod 13 from said bottom 14 under the weight of the falling buoy, substantially as described and shown.

817,653. BACK AND BUST SUPPORTER. SOPHIE MEYER, New York, N. Y., assignor to Arthur Frankenstein, Edwin Frankenstein, and Samuel Buyer, New York, N. Y. Filed May 10, 1905. Serial No. 259,725.



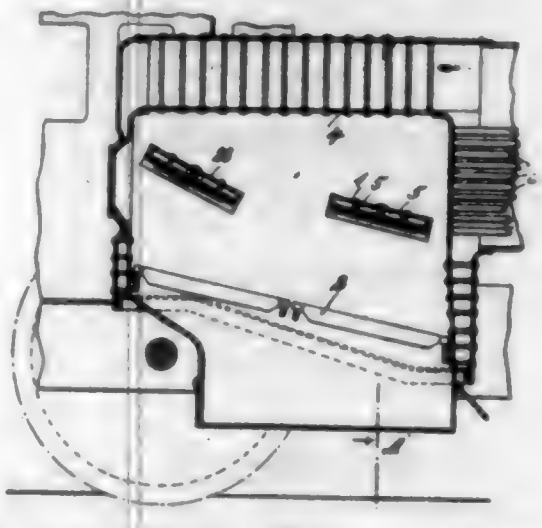
Claim.—1. A back and bust supporter, comprising a back-supporter formed of an elastic strip, means for rendering said strip non-elastic at its upper edge, bust-supporters secured to said back-supporter and means for securing said supporter as a whole about the body.

2. A back and bust supporter, comprising a back-supporter

formed of an elastic strip, a non-yieldable binding secured along the upper edge of the strip whereby same is rendered non-elastic at its top, bust-supporters secured to said back-supporter and means for securing said supporter as a whole about the body.

3. A back and bust supporter, comprising a back-supporter formed of an elastic strip having its upper portion formed of a pair of segments meeting centrally of the strip and provided along their edges with a non-yieldable binding whereby the upper portion of the elastic strip is rendered substantially non-yieldable, bust-supporters secured to said back-supporter and means for securing said support as a whole about the body.

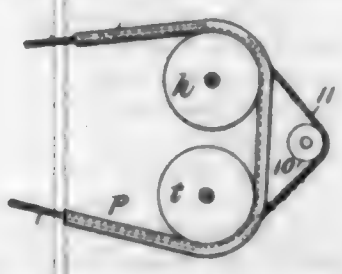
817,654. FIRE-SCREEN FOR LOCOMOTIVE-FURNACES. JOHANN MIENICK, Rummelsburg, near Berlin, Germany. Filed June 16, 1905. Serial No. 265,541.



Claim.—1. In combination with a fire-box having a water-jacket to either side, a hollow screen, hollow pins for pivoting the screen to the walls of the fire-box, said pins communicating with the interior of the screen and with the water-jackets, and flanges carried by the pins bearing against the screen.

2. In combination with a fire-box having a water-jacket to either side, a hollow screen, hollow pins for pivoting the screen to the walls of the fire-box, said pins communicating with the interior of the screen and with the water-jackets, and collars on the pins adapted to bind against the walls of the fire-box.

817,655. ORE-SEPARATOR. GEORGE MOORE, London, England. Filed Feb. 16, 1906. Serial No. 301,466.



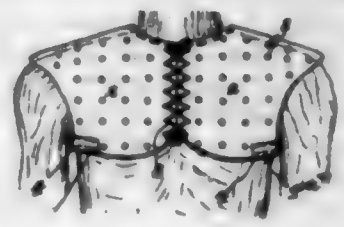
Claim.—1. In an ore-separator, the combination of a traveling endless belt provided with side flanges, operating means therefor, and a second belt lying upon said first-named belt, and composed of an under layer made of a wire screen, and an upper layer formed of burlap, substantially as described.

2. In an ore-separator, the combination of a traveling endless belt provided with side flanges, pulleys over which said belt runs, operating means for said belt, a second belt lying within said first-named belt and between the flanges thereof, said second belt being composed of two layers, the under layer being a wire screen and the upper layer being burlap, and an idler-pulley over which said second belt runs to separate it for an interval from said first-named belt, substantially as described.

817,656. FOOT-BALL-PLAYER'S SHOULDER-GUARD. JOHN B. MCCALLA, Knoxville, Tenn. Filed Oct. 12, 1905. Serial No. 282,430.

Claim.—1. In a device of the nature described, the portions, 1 and 2, built up of the outer leather sheet and two sets of strips of yielding, pliable material crossing each other and sewed to said leather and separated from each other by ventilating-spaces, substantially as described.

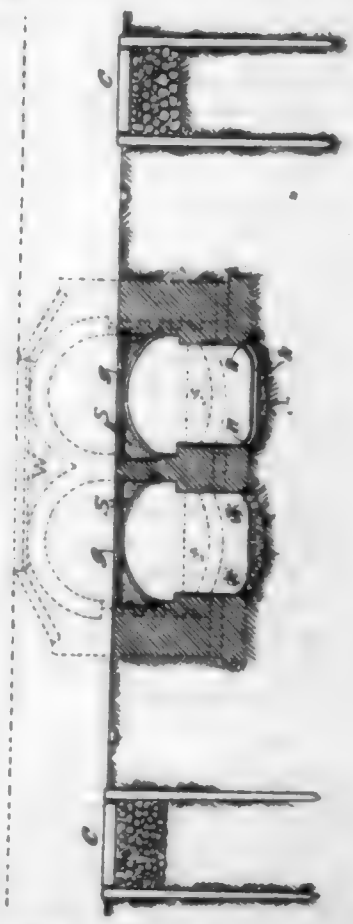
2. In a device of the nature described, the portions, 1 and 2, built up of the outer leather sheet and two sets of strips of yielding material crossing each other and sewed to said leather and separated by ventilating-spaces, and straps connecting said portions, 1 and 2, substantially as described.



3. In a device of the nature described, the portions, 1 and 2, built up of the outer leather sheet and two sets of strips of yielding material crossing each other and sewed to said leather and separated by ventilating-spaces, and perforations in said leather communicating with said ventilating-spaces, substantially as described.

4. In a device of the nature described, the portions, 1 and 2, built up of the outer leather sheet and two sets of strips of yielding material crossing each other and sewed to said leather and separated by ventilating-spaces, straps connecting said portions, 1 and 2, and perforations in said leather communicating with said ventilating-spaces, substantially as described.

817,657. ART OR PROCESS OF LOWERING RIVER-TUNNELS. PATRICK H. MCDONNELL, Sr., Chicago, Ill. Filed Dec. 16, 1905. Serial No. 292,113.



Claim.—1. In a tunnel structure, the combination with the side walls each having its inner upper portion recessed, a series of foot-plates resting on said recesses, transverse arches supported at their ends on the outer portions of said plates, braces secured at one of their ends to the arches and resting at their other ends on said plates near their inner edges, and concrete located on the arches between the walls, substantially as described.

2. In a tunnel structure, the combination with the side walls each having its inner upper portion recessed, a series of foot-plates resting on said recesses, transverse arches supported at their ends on the outer portions of said plates, braces secured at one of their ends to the arches and resting at their other ends on said plates near their inner edges, transversely and horizontally disposed beams located above said arches, and concrete located on the arches between the walls and embedding said beams, substantially as described.

3. In a tunnel structure, the combination with the walls and a roof therefor, of transversely-disposed beams located at the bottom and between the walls, foot-plates located at the ends of said beams, and concrete embedding the beams and plates, substantially as described.

4. In a tunnel structure, the combination with the walls, of transversely-disposed beams located at the bottom and between the walls, each of said beams having its ends upturned, foot-plates located at the ends of said beams, and concrete embedding the beams and plates, substantially as described.

5. In a tunnel structure, the combination with the side walls and a roof therefor, of a protecting-wall located on each side of the tunnel and extending at its upper end above the top of the tunnel-roof, substantially as described.

6. The herein-described step in the method of lowering river-tunnels, which consists in erecting a new roof within the tunnel at a suitable distance below the old roof while the latter is in place, substantially as described.

7. The herein-described steps in the method of lowering river-tunnels, consisting in cutting away a portion of the upper inner part of each of the side walls to form recesses therein at suitable distances below the old roof, supporting transverse arches at their ends on the bases of said recesses, and placing a mass of concrete on said arches, all while the old roof is in position, substantially as described.

8. The herein-described steps in the method of lowering river-tunnels, consisting in cutting away a portion of the upper inner part of each of the side walls to form recesses therein at suitable distances below the old roof, supporting transverse arches at their ends on the bases of said recesses, beginning at about the middle of the tunnel, and placing concrete on the arches in a continuous act toward each end of the tunnel, substantially as described.

9. The herein-described steps in the method of lowering river-tunnels, consisting in cutting away a portion of the upper inner part of each of the side walls to form recesses therein at suitable distances below the old roof, supporting transverse arches at their ends on the bases of said recesses, placing beams transversely and horizontally above the arches, beginning at about the middle of the tunnel, and placing concrete on the arches so as to embed the said beams and in a continuous act toward each end of the tunnel, substantially as described.

10. The herein-described steps in the method of lowering river-tunnels, which consists in erecting a new roof within the tunnel at a suitable distance below the old roof while the latter is in place, and removing the old floor to a suitable depth and placing a new one at the bottom of the side walls of the tunnel, substantially as described.

11. The herein-described method of lowering river-tunnels, which consists in erecting a coffer-dam from one side of the river to about its middle around the tunnel with a transverse wall over the old roof of the tunnel, cutting away a portion of the upper inner part of each of the side walls to form recesses therein at suitable distances below the old roof, supporting transverse arches at their ends on the bases of said recesses, placing a mass of concrete on said arches while the old roof is in position, exhausting the water from the coffer-dam, removing the old roof and the upper portion of the side walls within the coffer-dam, and extending the transverse wall of the coffer-dam from the top of the old wall of the tunnel down to the top of the new wall of the lowered tunnel, substantially as described.

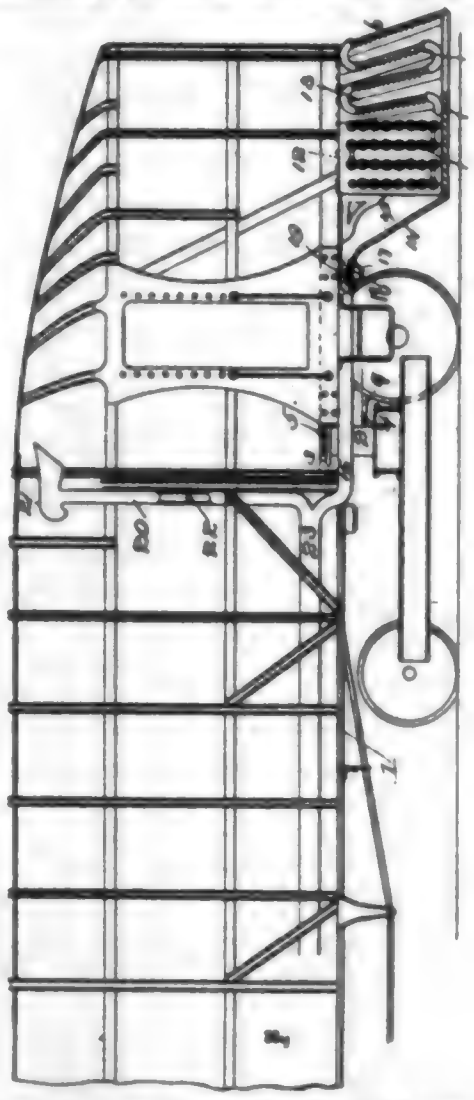
817,658. **HEATING AND VENTILATING SYSTEM.** WILLIAM R. MCKEEN, Jr., Omaha, Nebr. Filed June 1, 1905. Serial No. 263,315.

Claim.—1. In a heating system, in combination with a car, a tubular pilot thereon adapted to prevent obstructions from passing beneath said car, means for propelling said car adapted to heat said tubular pilot and means for conducting air contacting with said pilot to the interior of the car.

2. In a heating system, the combination with a car of a tubular pilot adapted to prevent obstructions from passing thereunder, means for propelling the car, a coil connected with said tubular pilot and interposed between the same and said propelling means, connections between said propelling means and said coil and pilot whereby the latter are heated by the former and means for directing air contacting with said tubular pilot and said coil to the interior of the car.

3. In a heating system, the combination with a car of a pilot, an internal-explosion engine adapted to propel the car, a water-jacket about said engine, connections between said water-jacket and said pilot, said pilot being adapted to prevent obstructions from passing under said car and circulate water from said jacket and means for directing air contacting with said pilot to the interior of the car whereby the jacket-water of said engine is cooled and the interior of of said car is heated.

4. In a heating system, the combination with a car of a tubular pilot therefor adapted to prevent obstructions from passing thereunder, means adapted to propel the car and adapted to heat said tubular pilot, means for conducting air contacting with said tubular pilot to the interior of the car and means for conducting relatively cold air from the exterior of the car to said last-mentioned means.



5. In a heating system, the combination with a car of an internal-explosion engine provided with a jacket adapted to propel said car, a pilot connected with the jacket of said engine and adapted to prevent obstructions from passing thereunder and adapted to be heated by water flowing therefrom, means adapted to conduct air from said pilot to the interior of the car and means adapted to conduct relatively cold air into said last-mentioned means.

6. In a heating system, the combination with a car of a tubular pilot adapted to prevent obstructions from passing thereunder, means upon said car adapted to heat said tubular pilot, means adapted to conduct air from the exterior of the car in contact with said tubular pilot and thence into said car in heated condition and means adapted to conduct relatively cold air into said last-mentioned conducting means.

7. In a heating system, the combination with a car of a tubular pilot adapted to prevent obstructions from passing thereunder, means upon said car adapted to heat said pilot, means adapted to conduct air from the exterior of the car in contact with said pilot and thence into said car in heated condition, means adapted to conduct relatively cold air into said last-mentioned conducting means and means adapted to vary the discharge through each of said conducting means.

8. In a heating system, the combination with a car of a pair of heating means mounted thereon, means upon said car adapted to maintain said heating means in operative condition, means adapted to concentrate air passing one of said heating means and direct said concentrated current of air against the other of said heating means and means adapted to conduct the heated air from said last-mentioned heating means to the interior of the car.

9. In a heating system, the combination with a car of a tubular pilot adapted to prevent obstructions from passing thereunder, a coil in the rear of said tubular pilot, heating means upon said car adapted to heat said coil and said tubular pilot, guiding means adapted to concentrate currents of air passing said tubular pilot and direct the same against said coil and means adapted to conduct air from said coil to the interior of the car.

10. In a heating system, the combination with a car of a tubular pilot adapted to prevent obstructions from passing thereunder, a

coil in the rear of said tubular pilot, an internal-explosion engine provided with a jacket adapted to propel said car, means adapted to conduct water from the jacket of said engine through said coil and said tubular pilot, guiding means adapted to concentrate currents of air passing said tubular pilot and direct the same against said coil and means adapted to conduct air from said coil to the interior of said car.

11. In a heating and ventilating system, the combination with a car and an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same of a pilot arranged outside said car and connected with the jacket of said engine adapted to prevent obstructions from passing thereunder and adapted to transmit water flowing therefrom and means for directing air contacting with said pilot at will either into or outside of the car.

12. In a heating and ventilating system, the combination with a car and an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same, of a pilot arranged outside of said car and connected with the jacket of said engine adapted to prevent obstructions from passing thereunder and adapted to transmit water flowing therefrom, and means for directing air contacting with said pilot at will either into or outside of the car.

13. In combination, a car, an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same, a tubular pilot mounted upon said car and adapted to prevent obstructions from passing beneath the same, means adapted to lead water from the jacket of said engine through said tubular pilot for cooling said water and means adapted to discharge air heated by said pilot into or adjacent said car.

14. In a heating system, in combination, a car, an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same, a tubular pilot upon said car, a coil mounted in the rear of said tubular pilot, said pilot being adapted to prevent obstructions from passing under said car, converging baffle-plates mounted adjacent said pilot adapted to direct air against said coil, connections between the jacket of said engine and said coil and pilot, and means adapted to conduct air from said coil into the interior of said car.

15. In a heating system, in combination, a car, an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same, a tubular pilot upon said car, a coil mounted in the rear of said tubular pilot, said pilot being adapted to prevent obstructions from passing under said car, converging baffle-plates mounted adjacent said pilot and adapted to direct air against said coil, connections between the jacket of said engine and said coil and pilot, and means adapted to conduct air from said coil at will either into or outside of said car.

16. In a heating system, in combination, a car, an internal-explosion engine provided with a jacket mounted thereon and adapted to propel the same, a tubular pilot upon said car, a coil mounted in the rear of said tubular pilot, said pilot being adapted to prevent obstructions from passing under said car, converging baffle-plates mounted adjacent said pilot adapted to direct air against said coil, connections between the jacket of said engine and said coil and pilot, means adapted to conduct air from said coil at will either into or outside of said car and means adapted to conduct relatively cold air from the exterior of said car into said first-mentioned conducting means.

17. In combination, a car, an internal-explosion engine mounted thereon and adapted to propel the same, a jacket about the cylinder of said engine, a tubular pilot mounted upon the forward end of said car and adapted to prevent obstructions from passing beneath the same, connections between said jacket and said tubular pilot whereby said pilot is adapted to transmit water from said jacket and cool the same said pilot being exposed to the air and moving relatively thereto and means adapted to discharge rearwardly the air passing in contact with said pilot and heated thereby.

817,659. **VETERINARY POCKET MOUTH-SPECULUM.** LACHLAN MCLEAN, Brooklyn, N. Y. Filed Dec. 1, 1905. Serial No. 289,859.

Claim.—1. A speculum of the class set forth involving hinged sections provided with outer longitudinally-concaved rests.

2. A speculum of the class set forth involving hinged sections of approximately elliptical form to provide an unobstructed central opening, the outer portions of the sections having longitudinally-concaved rests.

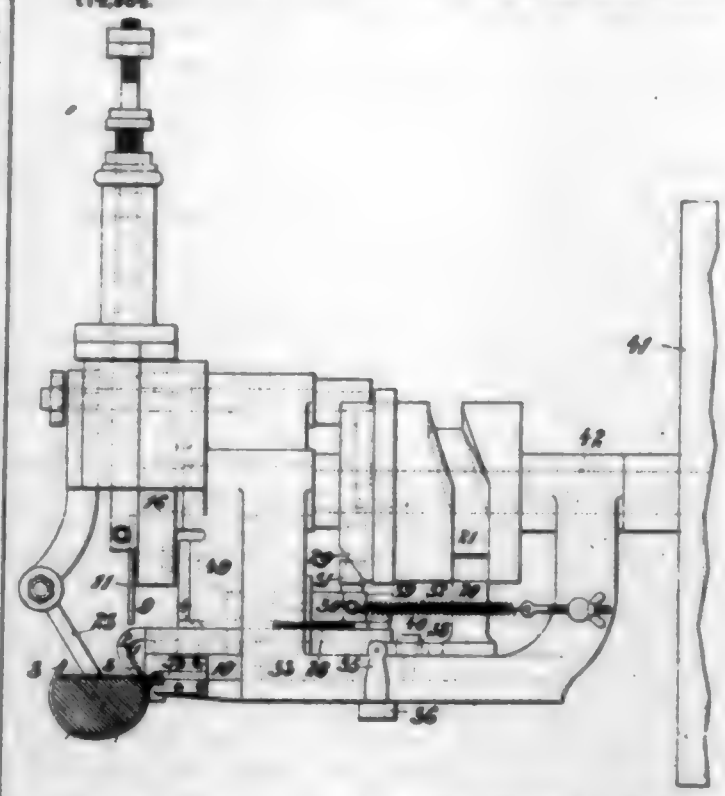
3. A mouth-speculum of the class set forth involving hinged sections having outer longitudinally-concaved rests with extremities projecting beyond the side members of the sections.

4. In a mouth-speculum of the class set forth, semi-elliptical sections having their inner ends connected by hinge means and also provided with outer longitudinally-concaved rests with extremities projecting outwardly beyond the side members of the sections.



5. A mouth-speculum of the class set forth involving sections hinged at their inner extremities and provided with projections at their outer portions extending beyond the side members of the sections.

817,660. **BOOT AND SHOE TACKING MACHINE.** ERNST NOLLE, Weissenfels, Germany. Filed Sept. 28, 1903. Serial No. 174,984.



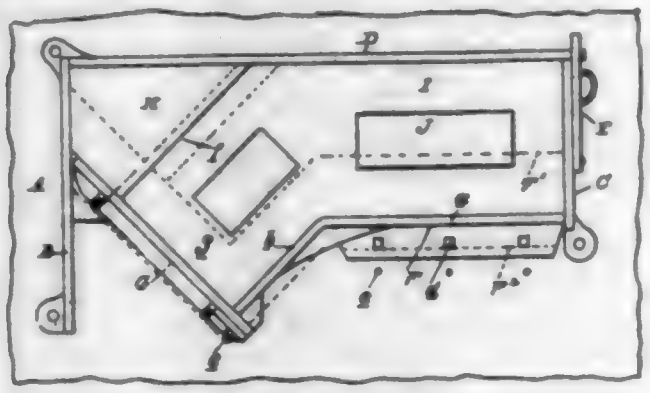
Claim.—1. In a machine of the class described, a slotted reciprocatory slide and a hook arranged for reciprocation transverse to the slide and working through the slot therein, said slot having lateral notches to receive the branches of a staple formed by the hook and the latter being arranged on one movement to form a wire extending across the slot into a staple.

2. In a machine of the class described, a slotted reciprocatory slide, a hook arranged for reciprocation transverse to the slide and working through the slot in said slide, said slot having notches at one end to receive the branches of a staple formed by the hook, and means for cutting the wire into determined lengths, said hook being arranged, on one movement, to form the wire into a staple after the cutting operation.

3. In a machine of the class described, a slotted reciprocatory slide, a hook arranged for reciprocation transverse to the slide and working through the slot therein, said slot having lateral notches to receive the branches of a staple formed by the hook, and wire-cutting means arranged for operation by the slide and adapted to cut wire into a determined length, the hook being arranged on one movement to form said wire into a staple after the cutting operation.

817,661. **MACHINE FOR MOLDING BUILDING-BLOCKS.** LEVI P. NORMANDIN, Jackson, Mich., assignor to William F. Cowham, Jackson, Mich. Filed Oct. 17, 1904. Serial No. 228,873.

Claim.—1. In a mold, the combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate adjacent to said sides, and a completing side rigidly attached to said bed and having a portion extending over said bottom plate, for the purpose described.



2. In a mold, the combination with a bed, of a rectangular mold-frame compriaing articulated sides, a bottom plate adjacent to said sides, and a complementary side for said frame having a portion extending over said bottom plate between the parallel articulated sides and adapted to be rigidly attached to said bed in different positions of adjustment in relation to the third side, substantially as described.

3. The combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate adjacent to said sides, and a complementary side formed by an angled plate having a portion extending over said bottom plate and adapted to be rigidly attached to said bed in different positions of adjustment.

4. The combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate adjacent to said sides, and a complementary side formed by an angled plate connecting the parallel articulated sides and having a portion extending over said bottom plate, for the purpose described.

5. The combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate adjacent to said sides, and a complementary side for said frame formed of a plate having one oblique and one right angle, having a portion extending over said bottom plate and rigidly attached to said bed, for the purpose described.

6. The combination with a bed, of a rectangular mold-frame partially formed of articulated sides, a bottom plate adjacent to said sides, a complementary side for said frame having a portion extending over said bottom plate and rigidly attached to said bed, and a filling-block resting upon said bottom plate adjacent to said frame, substantially as described.

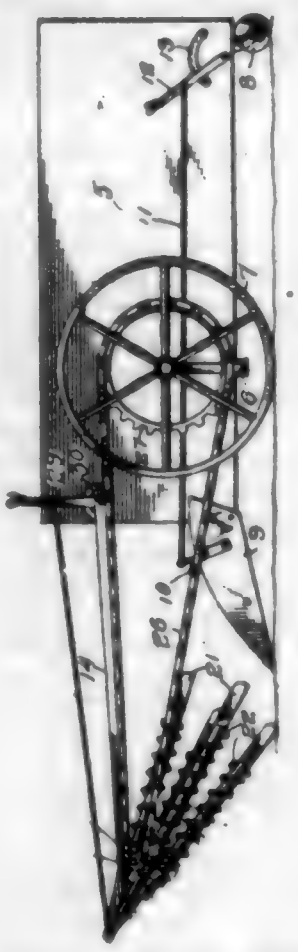
7. The combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate adjacent to said sides, a complementary side having a portion extending over said bottom plate and adapted to be rigidly attached to said bed in different positions of adjustment, and a filling-block within said frame, for the purpose described.

8. The combination with a bed, of a rectangular mold-frame comprising articulated sides, a bottom plate having a portion extending therebetween, a complementary side extending over said bottom plate and formed in three sections, forming an oblique and a right angle, and adapted to be rigidly attached to said bed in different positions of adjustment, and a filling-block extending between one of said articulated sides and one of said sections, for the purpose described.

9. The combination with a bed and an articulated rectangular mold-frame mounted thereon, of an angle-plate rigidly secured to said bed, a bottom plate 1 fitting against said plate F and within the rectangular sides of said mold-frame, the plate G secured to the plate F extending over the bottom plate, and the block J substantially as and for the purpose described.

10. The combination with a bed, an articulated rectangular mold-frame mounted thereon, of a plate rigidly secured to said bed having a portion perpendicular to the sides of said rectangular frame and two oppositely-angling portions having their lower edges slightly raised from the bed, a bottom plate fitting between the rectangular sides of said articulated frame and the perpendicular side of said rigid plate and extending beneath said angling sides and a triangular filling-block fitting the corner of the said rectangular frame and having a mold side perpendicular and parallel respectively with the two angling sides of said rigid plate.

817,662. **STREET-CLEANING MACHINE.** ELLIS S. PEARSON, Bradford, Ohio. Filed Jan. 3, 1906. Serial No. 294,396.



Claim.—1. A device of the class described comprising a receptacle arranged for travel, a pan carried by said receptacle, and a series of shovels arranged to discharge into said pan.

2. A device of the class described comprising a receptacle arranged for travel, a pan carried by said receptacle, and a series of yieldably-mounted shovels arranged to discharge into said pan.

3. A device of the class described comprising a receptacle, a pan carried by said receptacle, a series of shovels arranged to discharge into said pan, and means for raising and lowering said shovels.

4. A device of the class described comprising a receptacle arranged to travel, a pan carried by said receptacle, a crank-shaft mounted forwardly of said receptacle and a pan, and a series of shovels mounted upon said crank-shaft and arranged to discharge into said pan.

5. A device of the class described comprising a receptacle arranged for travel, a pan carried by said receptacle, a series of shovels arranged to successively collect dirt or the like and to discharge into said pan, and means for tilting said pan to discharge into said receptacle.

6. A device of the class described comprising a receptacle arranged for travel, a pan hinged to the forward end of said receptacle, a series of shovels arranged to discharge into said pan, and means for raising and lowering said shovel series and said pan.

7. A device of the class described comprising a receptacle arranged for travel, a crank-shaft mounted in advance of said receptacle, a rod mounted in advance of said crank-shaft, shovels including tubular shanks mounted upon said crank-shaft, rods pivoted to said first-named rod and engaged in said tubular shanks, and springs disposed upon said shanks intermediate said shovels and said crank-shaft.

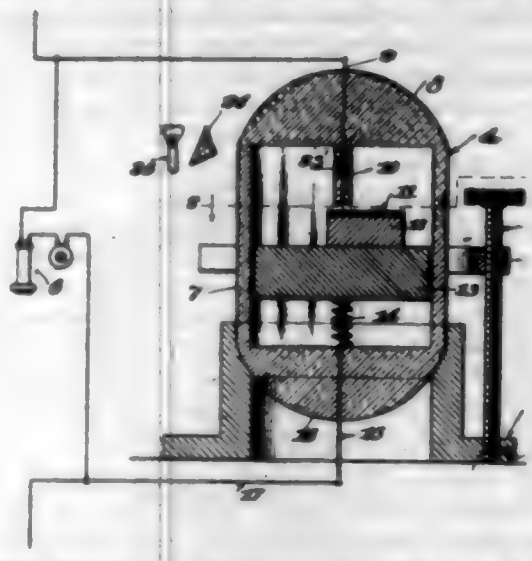
817,663. **PHOTOGRAPHIC POSTAL OR MAILING CARD.** GEORGE N. PIPER, Cleveland, Ohio. Filed July 20, 1904. Serial No. 217,375.



Claim.—A photographic postal or mailing card having throughout part of the area of one face of the same, an enameled surface pre-

senting a suitable background for the production of a positive picture by direct exposure in the camera, and on the corresponding portion of the other face of the card, a coating whereby the same is protected from being stained or injured by the solution or solutions used in developing and fixing the picture, the other portion of each face of the card retaining its normal surface, substantially as specified.

817,664. CONTACT DEVICE. ANDREW FISCHER, Los Angeles, Cal., assignor to The Pacific Wireless Telegraph Company, a Corporation of Washington. Filed Dec. 27, 1904. Serial No. 238,544.



Claim.—1. In a system of wireless telegraphy an aerial line; a contact device comprising a tubular body of quartz-glass having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an iron base-plate supporting said plate; a spring supporting said base-plate; electrical connections connecting said spring to ground and a magnet exterior said glass body.

2. In a system of wireless telegraphy an aerial line; a contact device comprising a quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an iron block below and forming the support of said silver plate; an iron base-block below and supporting said first iron block, said first iron block being smaller than the base-block and movable thereon; a spring supporting said base-block; electrical connections connecting said spring to ground; a magnet adjacent to said tubular body and adapted to control by its magnetic influence the position of the contact-plate in said tubular body; and means to move said magnet.

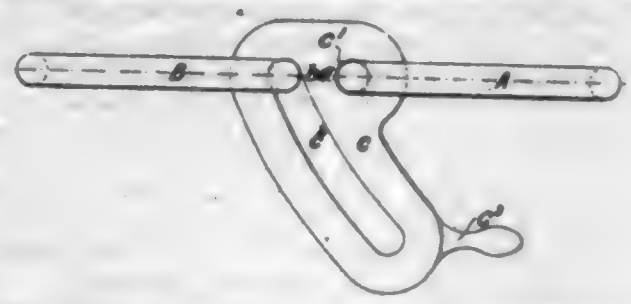
3. In a system of wireless telegraphy an aerial line; a contact device comprising a quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; an electrical connection connecting said plate to ground; and means to direct ultraviolet rays upon the point of engagement between said rod and said plate.

4. In a system of wireless telegraphy an aerial line; a contact device comprising a quartz-glass tubular body having its ends suitably closed and the air exhausted therefrom; a silver rod in said tubular body electrically connected to the aerial line; a silver plate in said tubular body having an oxidized or sulfurized surface in contact with said rod; a sulfur envelop; an iron block below and forming the support of said silver plate; an iron base-block below and supporting said first base-block, said first block being smaller than the base-block and movable thereon, a spring supporting said base-block; electrical connections connecting said spring to ground; a magnet exterior and adjacent to said tubular body and adapted to control by its magnetic influence the position of the contact-plate in said tubular body; means to move said magnet; and means to direct ultraviolet rays upon the point of engagement between said rod and said contact-plate; and a telephone connected in said aerial line in shunt on opposite sides of said contact device.

5. Means to intensify sound in a telephone comprising a contact device connected in the telephone-circuit, said contact device comprising a hollow glass body having a portion of its walls composed of quartz-glass and having the air exhausted from the interior thereof; a silver rod in said body electrically connected to the line leading into said telephone; a silver plate in said body having an oxidized or sulfurized surface in contact with said rod; electrical connections connecting said plate to the telephone-ground; and means to direct ultraviolet rays upon the point of engagement between said rod and said plate.

6. In an electrical circuit, a contact device therein comprising a silver wire connected in one side of the circuit and a silver plate connected in the other side of the circuit said wire resting upon the surface of said plate; and means to project ultraviolet rays upon the point engagement between said wire and plate.

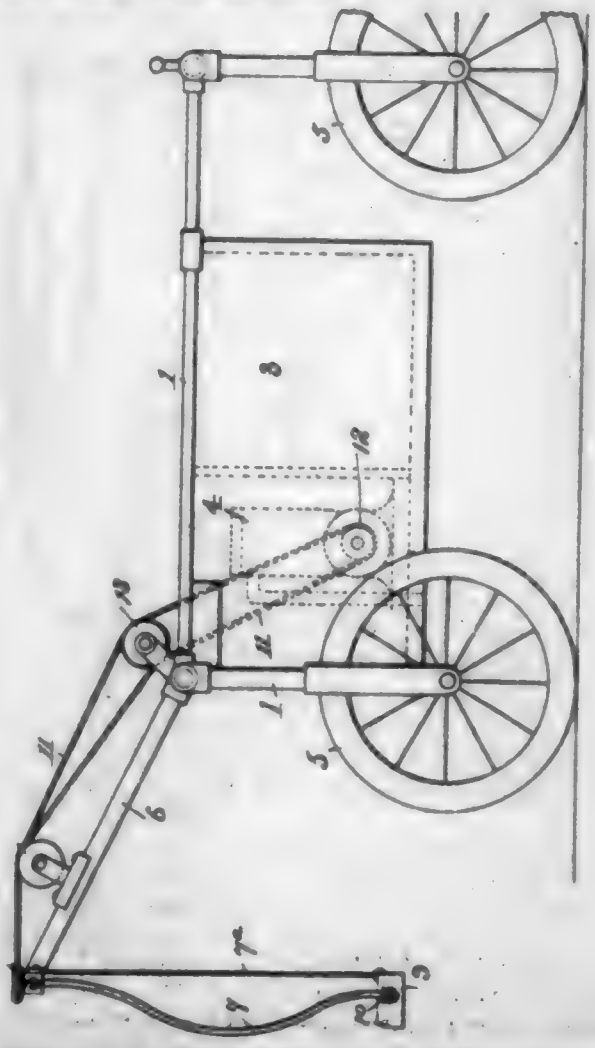
817,665. CAR-COUPLING. HENRY H. POYNTON, Seymour, Victoria, Australia. Filed June 12, 1905. Serial No. 264,865.



Claim.—1. A car-coupling comprising a central link having a hole or recess upon one side engaging a link, and a slot upon the other side engaging another link, said central link with its slot being so shaped that when not in tension and suspended, the said hole or recess is in a lower horizontal plane than the top of the said slot, substantially as set forth.

2. The combination in a car-coupling of a central link (such as C) having a hole or recess (such as C′) engaging a link (such as A) and having a slot (such as C^2) engaging a link (such as B) the said hole or recess and the said slot being so positioned that when not in tension the horizontal plane of the point of suspension from the link A is lower than the horizontal plane of the point of suspension from the link B in the top of the slot C^2, substantially as set forth.

817,666. COTTON-HARVESTER. THEODORE H. PRICE and WILLIAM P. QUENTELL, New York, N. Y., assignors to Utility Cotton Picker Company, New York, N. Y., a Corporation of New York. Filed Jan. 13, 1905. Serial No. 240,839.



Claim.—1. A picking instrument comprising a barrel, a picking-belt of the full width of the chamber of the barrel and projecting

therebeyond, having a plurality of longitudinal rows of picking-fingers located centrally of the picking-belt so as to leave plain carrying-surfaces upon opposite sides of the picking-fingers, and means for operating the picking-belt.

2. A picking instrument comprising a barrel, a picking-belt, having a plurality of longitudinal rows of picking-fingers located centrally of the picking-belt so as to leave plain carrying-surfaces upon opposite sides of the picking-fingers, the picking-fingers of the central row of picking-fingers being of greater length than the outer rows of picking-fingers, and means for operating the picking-belt.

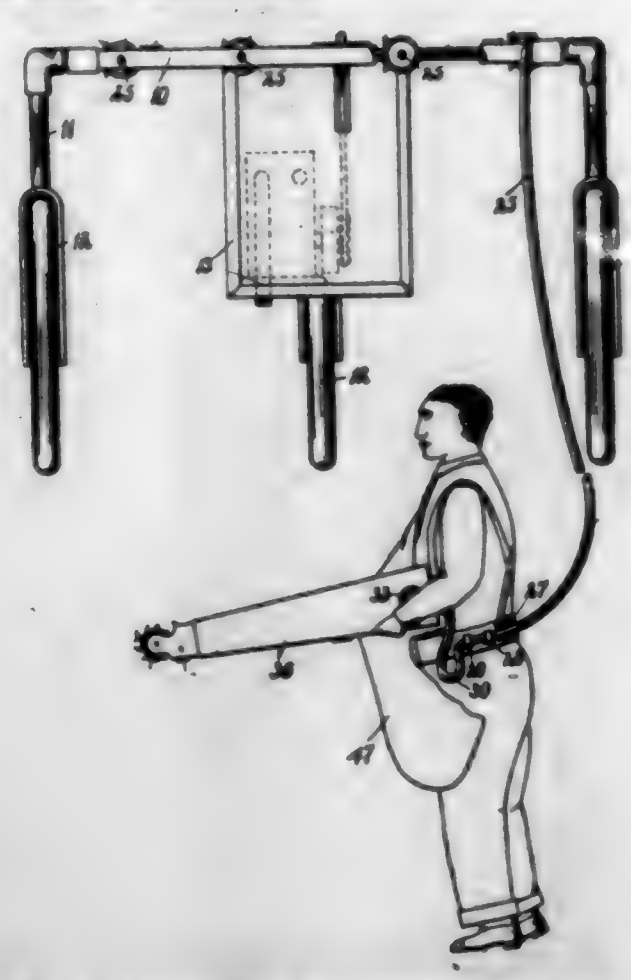
3. A picking instrument comprising a barrel, a picking-belt of the full width of the barrel and projecting therebeyond having a plurality of longitudinal rows of picking-fingers located centrally of the picking-belt so as to leave plain carrying-surfaces upon opposite sides of the picking-fingers, and means for operating the picking-belt consisting of intermeshing pinions, bevel gear-wheels, and a flexible driving-shaft mounted upon the barrel.

4. The combination of a vehicle, a power mechanism carried by the vehicle, a picking instrument comprising a barrel, a cotton-receptacle, a picking-belt having picking-fingers, and mechanism mounted upon the barrel for operating the picking-belt, means whereby the picking instrument is suspended from the vehicle and a flexible driving-shaft suspended from the vehicle and connecting the power mechanism with the mechanism of the picking-belt.

5. The combination of a vehicle, having upwardly-projecting inclined arms, a power mechanism carried by the vehicle, a picking instrument comprising a barrel, a cotton-receptacle, a picking-belt having picking-fingers and mechanism mounted upon the barrel for operating the picking-belt, means whereby the picking instrument is suspended from the inclined arms and a flexible driving-shaft suspended from the vehicle and connecting the power mechanism with the mechanism of the picking-belt.

6. The combination of a vehicle and power mechanism carried by the vehicle, a picking instrument comprising a barrel or casing, a belt mounted in said casing for conveying the cotton, driving mechanism for the belt mounted upon said casing, means whereby the casing is suspended from the vehicle, and a flexible driving-shaft connecting the power mechanism with the belt-driving mechanism on said casing.

817,667. COTTON-HARVESTER. THEODORE H. PRICE and WILLIAM P. QUENTELL, New York, N. Y., assignors to Utility Cotton Picker Company, New York, N. Y., a Corporation of New York. Filed Jan. 13, 1905. Serial No. 240,890.



Claim.—1. A cotton-harvester comprising a mechanical picking instrument having a conveying-belt, a flexible driving-shaft connected with the conveying-belt, a shaft-bearing for supporting the flexible driving-shaft and means for supporting the bearing upon the operator independently of the casing.

2. In a cotton-harvester, the combination with a movable source of power, and a cotton-picker carried by the operator and comprising a tubular casing, a rotary cotton-picking member and the cotton-conveying belt operating within and longitudinally of said casing; of power-conveying means operatively connecting the movable source of power with the said picking member and cotton-conveying belt.

3. In a cotton-harvester, the combination of a vehicle adapted to be moved from place to place, a motor for the picking instrument carried thereby, a picking instrument carried by the operator and having mechanical driving mechanism, a flexible power-shaft operatively connecting the motor with the said mechanical driving mechanism of the picking instrument, a shaft-bearing for supporting the flexible power-shaft, means for supporting the shaft-bearing upon the operator intermediate of the motor and picking instrument and separate from and independent of the latter.

4. In a cotton-harvester, the combination of a motor, a movable vehicle, a picking instrument carried by the operator and having a flexible driving device, a shaft-bearing for supporting said flexible driving device, means for supporting the shaft-bearing upon the operator intermediate of the picking instrument and motor and separate from and independent of the picking instrument, and a flexible power-shaft connecting said driving device to the vehicle and capable of yielding both longitudinally and laterally.

5. In a cotton-harvester, the combination with a movable source of power, a flexible shaft leading therefrom, a belt carried by the operator, and means for journaling the end of said flexible shaft on said belt; of a cotton-picker, a flexible shaft leading from said cotton-picker and adapted to operate the same by its rotation, means for journaling the end of the last-mentioned flexible shaft on said belt, and means on said belt for imparting the rotation of the first-mentioned flexible shaft to the other flexible shaft.

6. In a cotton-harvester, the combination with a vehicle, a source of power carried thereby, and a plurality of flexible driving-shafts operated by said source of power; of a plurality of cotton-pickers carried by the operators, belts having shaft-bearings and adapted to be worn by the operators and on which are journaled the ends of said flexible shafts, and means suitably connected with said ends for imparting the operating power to said cotton-pickers.

7. In a cotton-harvester, the combination with a vehicle, a suitable source of power carried thereby, a shaft driven by said source of power, and a plurality of flexible shafts to which rotation is imparted by said first-mentioned shaft; of a plurality of cotton-pickers carried by the operators, belts worn by the operators on which the ends of said flexible shafts are suitably journaled flexible shafts suitably journaled in and leading from said belts to said cotton-pickers, and power-transmission means suitably interposed between the respective ends of the first-mentioned flexible shaft and the second-mentioned shaft.

8. In a cotton-harvester, the combination with a vehicle, a source of power carried thereby, a single shaft driven by said source of power, a plurality of bevel gear-wheels mounted on said shaft, a plurality of bevel gear-wheels meshing with the same and suitably secured to flexible power-conveying shafts; of a plurality of cotton-pickers carried by the operators, belts worn by said operators and provided with journal-bearings for the ends of said flexible shafts, bevel gear-wheels on the ends of said flexible shafts, idle bevel-gears driven by the same, power-conveying flexible shafts leading from said cotton-pickers and suitably journaled in brackets on said belts, and bevel-gears on the ends of the same in mesh with said idle bevel-gears.

9. In a cotton-harvester, the combination of a motor, a movable vehicle, a picking instrument carried by the operator, a flexible power-conveying device supported at one end on said vehicle having operative connection with said motor and supported at its other end on the operator, and a more flexible power-conveying device operatively connecting the first-named power-conveying device with the picking instrument.

817,668. TIRE. JOHN C. RAYMOND, New York, N. Y. Filed June 9, 1905. Serial No. 264,428.

Claim.—1. The combination substantially as herein described, of the rim, the rim-plate thereon, and provided at one edge with an upturned flange and having its other opposite edge unobstructed, the base-plate adapted to slip over said unobstructed edge and having its inner edge unobstructed and its outer edge provided with an

upturned flange, the tire-frame having threaded openings for the securing-screws and provided at its outer edges with the outwardly-projecting inturned flanges for securing the cushion, and with the inwardly-projecting inturned flanges for engagement with the casing-ribs, said tire-frame being also provided with the central circumferential web having the outwardly-projecting flanges opposing the inwardly-projecting flanges at the outer edges of said frame, the casing provided along its edges with the circumferential ribs undercut for engagement with the outer inturned flanges of the tire-casing, and fitting in the circumferential undercut channels formed by said outer inwardly-turned flanges and the opposing web-flanges of the tire-frame, the cushion held to and extending around the outer side of the tire-frame, the inner tube within the casing and bearing against the outer side of the cushion, and the screws passed through the rim-plate and tire-plate and connected with the tire-frame, substantially as and for the purposes set forth.



2. The combination with the rim and the rim-plate thereon and having at one edge the outwardly-turned flange and its other edge unobstructed, the tire-frame, the casing held to the tire-frame, and the base-plate fitting in the casing and tire-frame and provided at one edge with the outwardly-turned flange and having its opposite edge unobstructed and slipped at such edge over the unobstructed edge of the rim-plate, and the screws for securing the rim, rim-plate, base-plate and tire-frame together, substantially as set forth.

3. The combination with the rim and the rim-plate thereon and provided at one edge with an outwardly-projecting flange and having its other edge unobstructed, the casing, the tire-frame, and the base-plate forming a carrier for said casing and tire-frame, and having at one edge the upturned flange and its other edge unobstructed and slipped over the unobstructed edge of the rim-plate, and means for securing the base-plate and tire-frame to the rim, substantially as set forth.

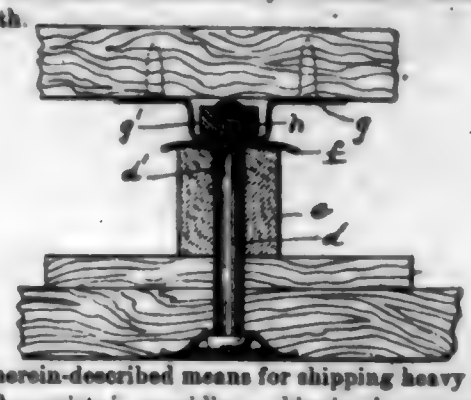
4. The combination substantially as herein described of the casing, the tire-frame and the cushion upon the tire-frame and within the casing, the tire-frame being provided on its outer side with inturned devices engaging with and securing the cushion, and upon its inner side with means engaging with and securing the casing.

5. The combination of the tire-frame, provided upon its inner side at its opposite edges with circumferential undercut channels and having at its outer side at its edges outwardly-projecting inturned flanges, the casing having at its edges the longitudinal ribs held in the channels of the tire-frame, and a cushion within the casing and held in the outwardly-projecting inturned flanges of the tire-frame, substantially as set forth.

6. The combination of the casing, the tire-frame securing the casing, the cushion on the tire-frame and within the casing, the base-plate forming a carrier for the casing and tire-frame, and the rim-plate adapted to receive said base-plate, substantially as set forth.

817,669. **SHIPPING BOXES OR CRATES.** CHARLES DE LOS RIOS, Hartford, Conn. Filed Feb. 25, 1905. Serial No. 247,350.

Claim.—1. The herein-described means for shipping heavy delicate articles which consists in providing a shipping box or crate larger as to its inside dimensions than the outside dimensions of the article whereby a clearance is provided on all sides of the article, bolts passing through a wall of the box, with their heads lying against the outer side of said wall, into the interior thereof and secured to the article located therein, elastic spacing devices located between the wall of the box through which the bolts pass and the article within the box, so that the article is held free from all sides of said box or crate, said bolts having yielding connection with the box-wall and the article to permit free movement of the latter in all directions independently of the former, substantially as described and for the purposes set forth.

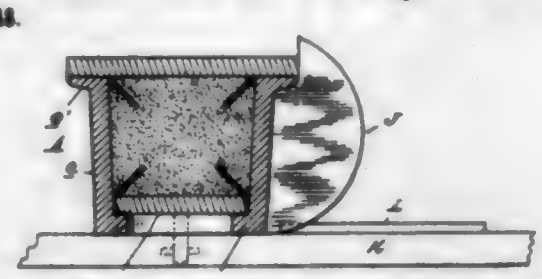


2. The herein-described means for shipping heavy and delicate articles which consists in providing a shipping box or crate larger as to its inside dimensions than the outside dimensions of the article whereby a clearance is provided on all sides of the article, bolts passing through a wall of the box into the interior thereof and secured to the article located therein to hold it free from all sides of said box or crate, said bolts having yielding connection with the box-wall and the article to permit free movement of the latter in all directions independently of the former, and elastic buffers surrounding said bolts and interposed between the article and the wall of the box, substantially as described and for the purposes set forth.

3. The combination with the box and the article to be shipped located therein, of washers located in recesses in the bottom of the box, bolts passing freely through said washers into the interior of the box, elastic buffers surrounding said bolts, recessed plates secured to the bottom of said article, and nuts loosely mounted in said recesses and adapted to be engaged by said bolts, substantially as described and for the purposes set forth.

4. The combination with the box and the article to be shipped located therein, of washers located in recesses in the bottom of the box, bolts passing freely through said washers into the interior of the box, elastic buffers surrounding said bolts, dished washers located on said bolts over said buffers, recessed plates secured to the bottom of said article, and nuts loosely mounted in said recesses and adapted to be engaged by said bolts, substantially as described and for the purposes set forth.

817,670. **METHOD AND MACHINE FOR FORMING CEMENT POSTS.** ALONZO P. ROBERTSON, Rochester, Mich., assignor to William F. Cowham, Jackson, Mich. Filed May 4, 1905. Serial No. 258,848.



Claim.—1. The herein-described process of forming composite cement and metal posts which consists in placing a layer of the cement in the bottom of a mold, tamping the cement to free the same from the sides and form inclines from the lower corner of the mold, then placing metallic strips upon said inclines, then completely filling the mold and striking off the same, whereby said metallic strips will be embedded in the cement so as to extend diagonally inward from the corners of the post.

2. The herein-described method of forming composite cement and metal posts which consists in partially filling a mold with plastic material, in tamping said material adjacent to opposite sides of the mold to form inclines, placing metallic strengthening-bars, so as to rest against the inclined faces of the cement, filling the mold and tamping to form downwardly-inclined surfaces from the upper corners of the mold and placing metallic strengthening-bars so as to rest against said inclined faces and in striking off the cement flush with the top of the mold.

3. A mold for cement posts comprising separated side walls, a connecting false bottom and a superposed bottom plate longitudinally movable in relation to said false bottom, the side walls and the molded post, and means for limiting said movement.

4. A mold for cement posts comprising separated side walls tapering toward one end, a false bottom connecting said side walls, and a bottom plate fitting between said side walls and arranged for longitudinal reciprocation in relation thereto to free from the molded post, and means for limiting said reciprocation.

5. A mold for cement bodies comprising separated side walls cross-connected to each other, and a bottom plate having a limited longitudinal and vertical reciprocation in relation to said side plates.

6. A mold for cement bodies comprising a reversible box-mold having separated side walls cross-connected to each other, a bottom plate fitting between said side walls, means whereby when said mold is reversed, said bottom plate may be reciprocated longitudinally to free the same from the cement surface, and means permitting said plate to rest upon the molded body during the lifting of said body-mold.

7. A mold for cement bodies comprising a reversible box-mold having separated side walls and a bottom plate fitting between said side walls and having a longitudinal and vertical reciprocation in relation thereto, means for limiting said reciprocation, for the purpose described.

8. A mold for cement posts comprising a tapering reversible box-mold having separated side walls, a bottom plate fitting between said side walls and having a longitudinal and vertical reciprocation in relation thereto, means for limiting said reciprocation, and a detachable end plate at the large end of said box-mold.

9. In a mold for cement bodies, a tapering box-mold, an end plate for the large end thereof and locking devices therefor comprising the swinging bars G pivoted to the ends of said box-mold, the cross-bar I and the wedge-shaped keeper H with which said bars G engage, for the purpose described.

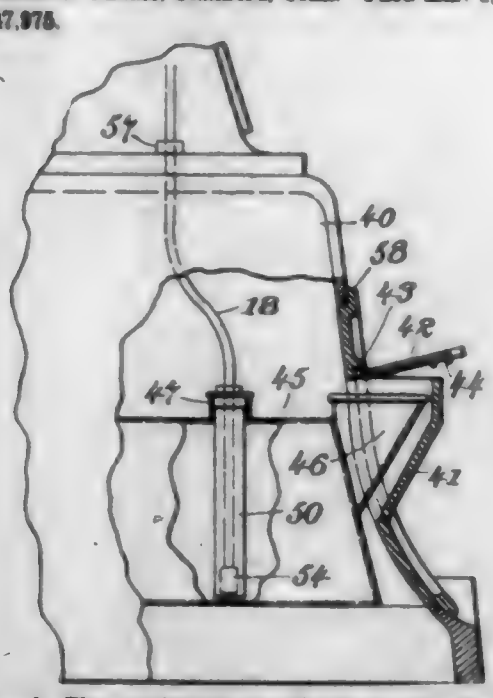
10. A mold for cement bodies comprising separated side walls cross-connected to each other, a bottom plate having a longitudinal and a vertical movement in relation to said side plates, and rockers on one side of said box-mold by means of which the mold may be reversed.

11. A mold for cement bodies comprising a reversible box-mold having separated side walls and a false bottom and top and bottom plates movable in relation thereto whereby the molded article may remain in contact with said plates while being loosened from the sides of the mold.

12. In a mold for cement bodies, the combination with separated side walls cross-connected to each other, of a removable top plate and a bottom plate longitudinally and vertically movable within limits in relation to said side walls, whereby the molded article may rest in contact with said plates while loosened from said side walls.

13. In a mold for cement bodies, the combination with side walls cross-connected to each other and end plates, of a removable top plate and a bottom plate longitudinally and vertically movable within limits in relation to said sides and ends, whereby the molded article may rest in contact with said movable plates while loosened from said sides and ends.

817,671. **OIL-ENGINE.** CAMFIELD J. ROUSSEAU, New York, N. Y., and ELMER C. PERRIS, Stamford, Conn. Filed Mar. 1, 1905. Serial No. 247,975.

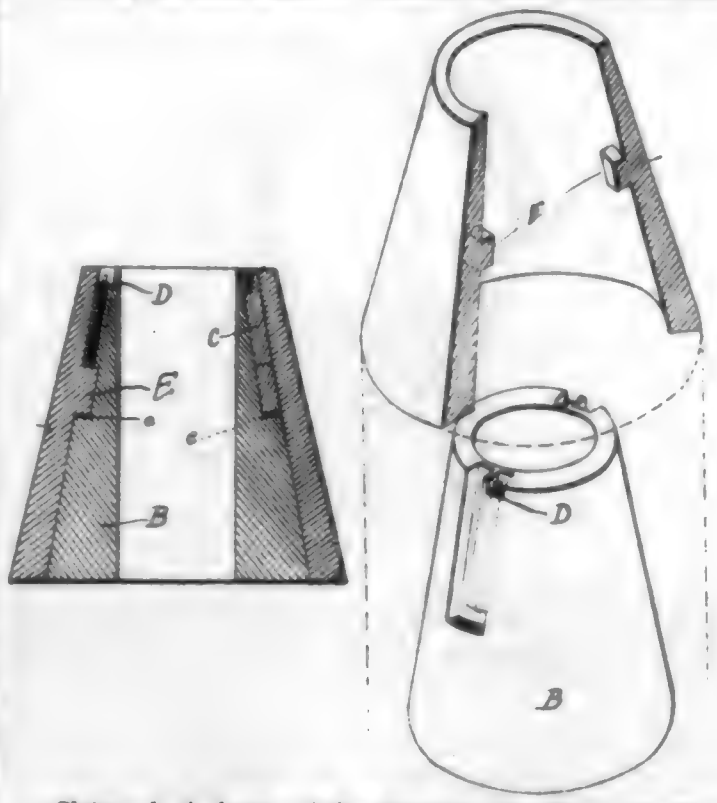


Claim.—1. The combination with the casting forming an engine-bed, of a projecting portion thereon, a removable cover therefor and an oil-tank adapted to be placed inside of said casting and provided with a projecting spout extending into the projecting portion of the casting.

2. The combination with the hollow casting forming an engine-bed of a door in the side thereof, a projecting portion thereon, a removable cover for said projecting portion, and an oil-tank adapted to be introduced into the hollow casting through said door and provided with a projecting spout extending into the projecting portion of the door when said door is in closed position

3. The combination with the casting forming an engine-bed, of a projecting portion thereon, a removable cover therefor and an oil-tank adapted to be placed inside of said casting and provided with a projecting spout extending into the projecting portion of the casting, said cover being provided with ribs on its under side engaging the upper edge of the projecting portion of the casting.

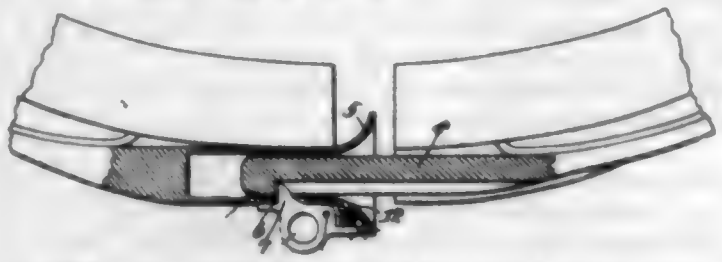
817,672. **ROCK AND ORE BREAKING MACHINE.** EDWARD H. SAMSON, Goodwick, England. Filed May 14, 1904. Serial No. 207,864.



Claim.—1. A device of the character described comprising a cone having recesses in its face, a mantle fitting over said cone, lugs on the mantle adjustably fitting in the recesses of the cone, bolts passing through the cone and bearing against the lugs of the mantle to hold said mantle in its adjusted positions and locking-pins to hold the mantles, said locking-pins having recesses in their ends, as and for the purpose described.

2. In combination, a hollow core having a plurality of L-shaped recesses, a mantle fitting over the core, lugs on the mantle riding in the L-shaped recesses, pins arranged with a portion of the L-shaped recesses to hold the mantle against movement independent of the core, and bolts threaded through the core and bearing against the lugs of the mantle.

817,673. **HAME-CLASP.** AUGUST SCHARPER, St. Louis, Mo. Filed July 31, 1905. Serial No. 271,955.

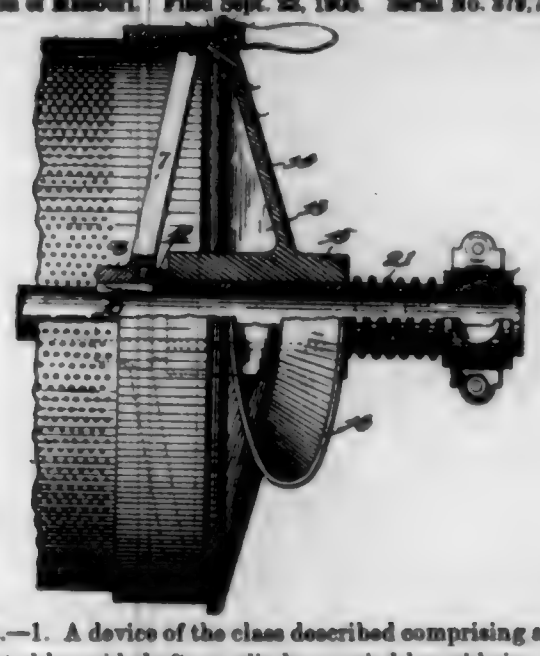


Claim.—1. A hame-clasp comprising a locking-bar rigidly connected to one hame, a funnel-shaped member rigidly attached to the other hame, a locking-snap having a catch pivotally connected to the funnel-shaped member and operating through an aperture, a hook formed on the locking-bar with which the catch comes in contact, and a spring carried in a recess formed in the funnel-shaped member, and communicating with the locking-snap, substantially as specified.

2. In a device of the class described, comprising a hame consisting of two sections hingedly connected together, a locking-bar carried by one section, a funnel-shaped member carried by the other section, a hook formed on the end of said locking-bar, a locking-snap provided with a catch 7 carried by the funnel-shaped member and

operating in a recess, said funnel-shaped member provided with an aperture through which the catch projects, a projection formed on the locking-snap, a spring located between said projection and the lower forward extremity of the funnel-shaped member for retaining the locking-snap in position against the hook of the locking-bar, substantially as specified.

817,674. COFFEE-ROASTER. LUDWIG SCHMIDT, St. Louis, Mo., assignor to Enamuller Mill Furnishing Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 22, 1905. Serial No. 279,736.



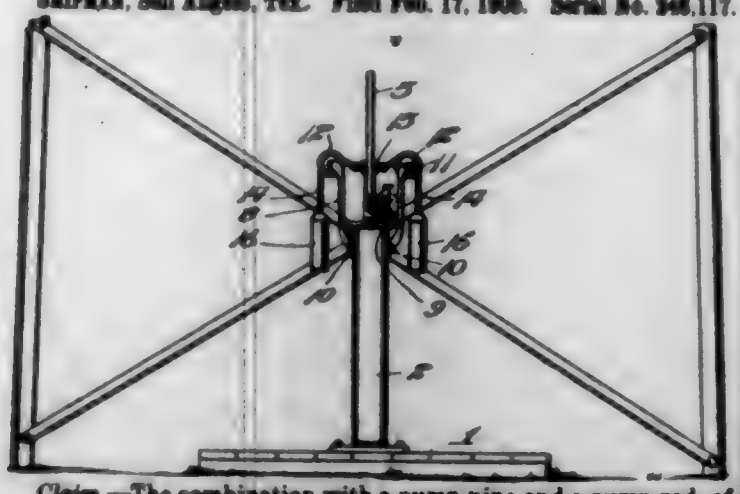
Claim.—1. A device of the class described comprising a shaft, a rim supported by said shaft, a cylinder carried by said rim, a sleeve mounted upon said shaft, a head mounted upon said sleeve, its edge coming in contact with said rim, a spring mounted upon said sleeve and located between the head and a bearing supporting said shaft, said spring to automatically retain the head in close contact with the rim, substantially as specified.

2. A coffee-roaster comprising a revolving drum, a shaft supporting said drum, a head, an elongated rectangular hub forming a part of said head, a sleeve located upon said shaft on which the head is mounted, a spacing-ring located between the hub and the hub of the rim, and a spring located around the sleeve and coming in contact with the front end of the head to automatically keep said head in close contact with the rim of the revolving member, substantially as specified.

3. A coffee-roaster comprising a suitable cylinder, a rim supporting the edge of the cylinder, a cylinder-head provided with a shoulder 17, a shoulder 18, an edge 19, and a recess 20, shoulders on the head contacting with the edge of the rim to prevent leakage during the expansion and contraction of the metals, substantially as specified.

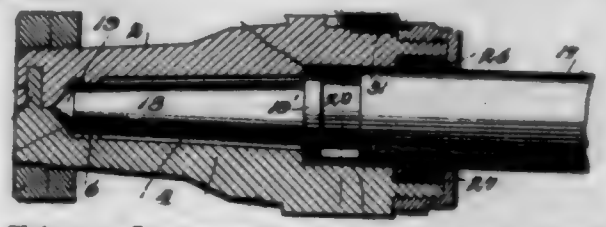
4. A coffee-roaster comprising a cylinder mounted upon a shaft, a sleeve located stationarily upon the said shaft, a cylinder-head mounted upon the said sleeve, the outer contacting edge of the cylinder-head provided with shoulders and a recess which contacts with the revolving edge of the cylinder, said contacting edge arranged to compensate the wear during the operation, and to prevent leakage during the expansion and contraction of the various parts of the coffee-roaster, substantially as specified.

817,675. EQUALIZING DEVICE FOR PUMP-RODS. JOHN D. SHIPMAN, San Angelo, Tex. Filed Feb. 17, 1906. Serial No. 301,117.



Claim.—The combination with a pump-pipe and a pump-rod, of arms having inwardly-curved ends attached to the pump-pipe below the upper end thereof and outwardly-curved upper ends, pulleys journaled upon the outwardly-curved upper ends of said arms, flexible elements connected with said pump-rod and extending over said pulleys, handles connected with said flexible elements and having annular members, and buckets connected with the annular members of said handles.

817,676. JOURNAL-BEARING. CHARLES SKIDMORE, Homer, Nebr., assignor of one-third to Daniel B. Stidworthy and one-third to Frank B. Buckwalter, Homer, Nebr. Filed Sept. 16, 1905. Serial No. 278,740.



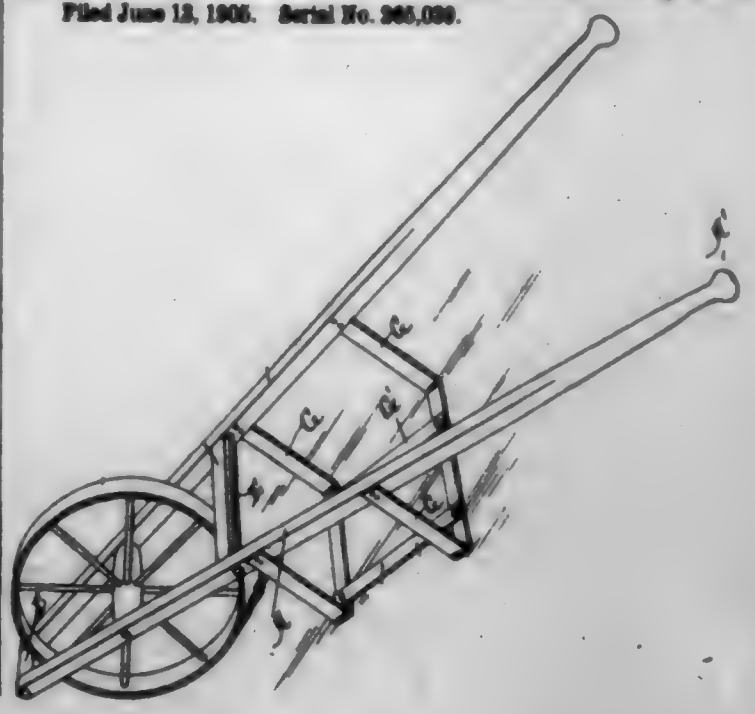
Claim.—1. In a journal-bearing, a box having an outer conical bearing-recess, a main lubricating-chamber and auxiliary lubricating-chamber, a wall of said auxiliary chamber forming a bearing-surface, a spindle having a conical end engaging said conical recess, and a bearing portion on the spindle disposed in the auxiliary chamber and engaging the bearing-surface thereof, the coacting bearing-surfaces serving to prevent endwise thrust of the turning part, thereby relieving the conical bearing-surfaces from excess wear.

2. In a journal-bearing, the combination of a box formed with a main lubricating-chamber, a conical bearing-recess at the outer end of said chamber and an enlarged auxiliary lubricating-chamber at the inner end thereof, a spindle having a conical end fitting in said recess and a bearing portion disposed in said auxiliary chamber and bearing against a wall thereof to limit the relative longitudinal movement of the parts and relieve the conical surfaces from endwise thrust, and a dust-proof closure for the inner end of the box.

3. In a journal-bearing, the combination of an axle, an axle-spindle, said spindle being provided with a conical outer end, a box receiving the axle and spindle and provided with main and auxiliary lubricating-chambers and an intervening bearing-surface, the outer end of the box being closed and formed with a conical recess to receive the conical end of the spindle, a dust-proof closure for the inner end of the box, and a bearing member on the axle-spindle disposed in the auxiliary chamber and engaging said bearing-surface of the box to hold the latter from endwise movement on the axle and spindle and thus relieve the conical bearing-surfaces from end thrust.

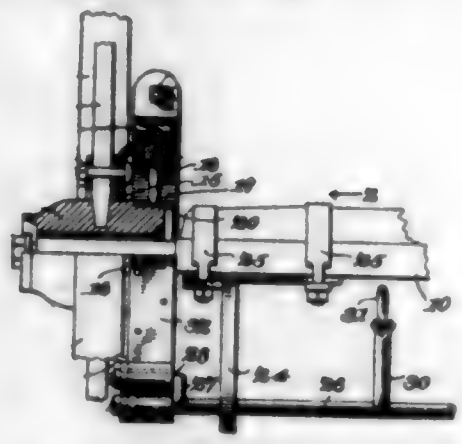
4. In a journal-bearing, an axle and spindle, the latter having a conical outer end, a box inclosing the same, said box having a closed outer end formed with a conical recess receiving the outer end of the spindle, and a threaded inner flange, an oil-chamber to receive the spindle, an auxiliary oil-chamber to receive the outer end of the axle, and a cap engaging said flange to close the inner end of the box, the spindle being provided with a bearing member within the auxiliary chamber, said bearing serving to hold the box against inward endwise movement on the spindle, whereby the bearing relation between the conical bearing-surfaces is maintained.

817,677. WHEELBARROW. ELON E. SMITH, Bainbridge, N. Y. Filed June 12, 1905. Serial No. 265,099.



Claim.—In a wheelbarrow, two handle-bars spread at one end and converging toward one another at the other end, handles formed upon the ends of the handle-bars at their widest end, a block secured between the ends of the handle-bars at their end, a bolt passing through the ends of the handle-bars and through the block, a wheel journaled between the handle-bars at the forward end, a bar secured between the handle-bars directly in the rear of the wheel, two U-shaped frames, their upper ends being secured to the handle-bars, one frame forward of the other, the forward frame in close proximity to the cross-bar, the lower portions or cross-pieces of the U-shaped frames being joined together to form a platform, as and for the purpose specified.

817,678. VEHICLE-BRAKE. WILBUR H. SMITH, Bar Harbor, Me. Filed Sept. 2, 1905. Serial No. 276,845.



Claim.—1. The combination with a vehicle-wheel of a band-rim secured to the spokes thereof and about the hub, and adjustable reinforcing and centering devices interposed between the rim and hub.

2. The combination with a vehicle-wheel, of a band-rim secured to the spokes thereof, and threaded arms detachably seated upon and radiating from the hub of the wheel, said arms adjustably engaging and centering and reinforcing the rim-band.

3. The combination with a vehicle-wheel, of a band-rim secured to the spokes of the wheel, threaded arms detachably seated upon and radiating from the hub of the wheel, said arms detachably engaging, and centering and reinforcing the band-rim, a resiliently-connected split band embracing the rim and means for clamping the band upon the rim.

4. The combination with a vehicle-wheel, of a band-rim secured to the spokes of the wheel, combined reinforcing and centering devices radiating from the hub of the wheel and surrounded by and detachably secured to the band-rim, a split band embracing the rim, a resilient connection between the parts of the band, and means for clamping the band upon the rim.

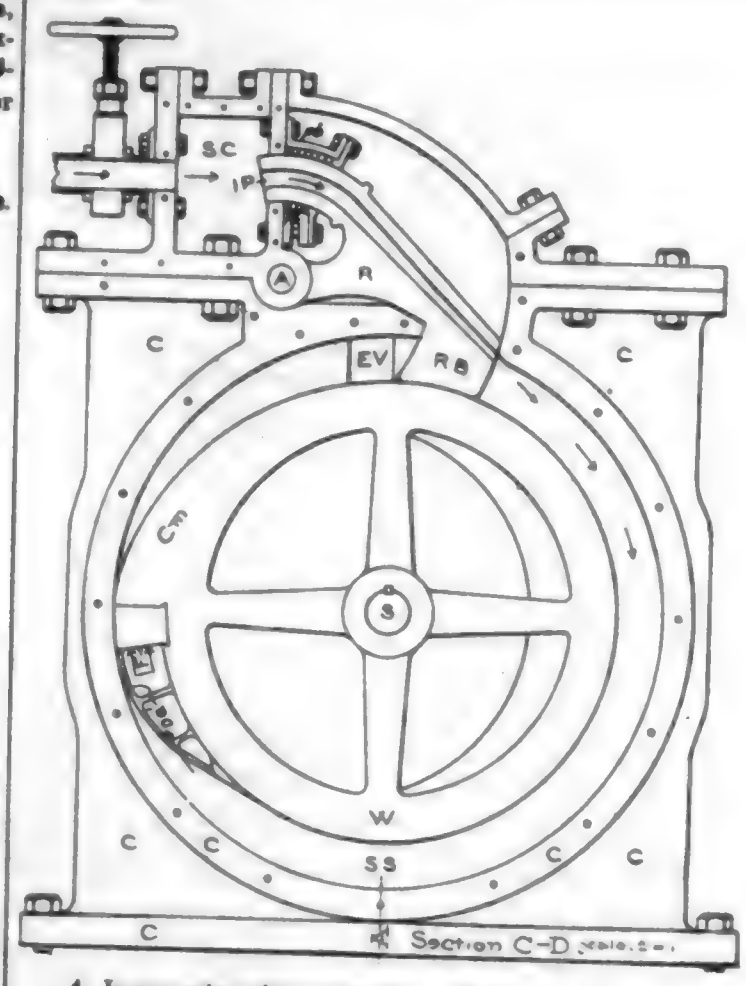
5. The combination with a wheeled vehicle, of rings upon opposite sides of the spokes of a wheel and about the hub, a band-rim carried by one of the rims and concentric therewith, screw-threaded arms disposed radially between the rim and hub, jam-nuts upon the arms and bearing against the rim, a band about the rim, a hanger rigidly secured to the axle, a bifurcated shaft journaled in the hanger and with its arms secured to the free ends of the band, a lever rigid with the shaft and means for moving the lever angularly.

817,679. ROTARY ENGINE. GEORGE C. STRALEY, Denver, Colo. Filed Mar. 21, 1903. Serial No. 148,962.

Claim.—1. In an engine, the combination with a piston-cylinder, and a rotary piston therein having an impact-face, of a swinging member having a curved portion and formed with a port for the admission of a pressure agent into the cylinder to act on the impact-face of the piston, and a pressure-agent chest into which the curved portion of said member extends, whereby it may be acted on by the pressure agent for moving said member into engagement with the piston, substantially as described.

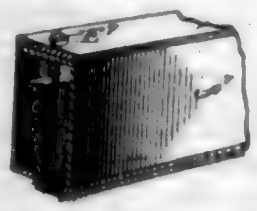
2. In an engine, the combination with a rotary piston having an impact-face, and its cylinder, of a movable inlet-port for admission of steam into the cylinder, a block movable with the inlet-port and adapted to be interposed periodically in the cylinder to prevent backward movement of the steam, and means for exerting an elastic pressure on the inlet-port concentrically to the piston to move the inlet-port and block into position, substantially as described.

3. In an engine, the combination with a rotary piston having an impact-face, and its cylinder, of a swinging member having an inlet-port for admission of steam into the cylinder and provided with a block to be periodically interposed in the cylinder to prevent backward movement of the steam, and a chamber for an elastic fluid to exert an elastic pressure upon said member concentrically to the piston for moving the inlet-port and block into position, substantially as described.



4. In an engine, the combination with a rotary piston having an impact-face and a peripheral cam, and its cylinder, of a swinging member formed with an inlet-port for the admission of steam into the cylinder and provided with a block adapted to rest upon the periphery of the piston and prevent backward movement of the steam, said member having a curved extension at one end through which the inlet-port extends, and a steam-chest into which the curved extension of a swinging member projects and with which the inlet-port communicates and in which chest the steam will exert an elastic pressure on the tubular extension of the swinging member for moving the inlet-port and block into position, substantially as described.

817,680. WIRE SCREEN. JAMES M. STEWART, Washington, D. C., assignor of one-fourth to Milford C. Massie, Washington, D. C. Filed Nov. 1, 1905. Serial No. 285,478.



Claim.—1. In a screen for windows and the like, the combination, with a frame, of a plurality of holding members adjustable relative to the frame, a screen-cloth attached to said holding members, and means for holding the holding members in any desired position to which they may be adjusted.

2. In a screen for windows and the like, the combination, with a frame, of a plurality of holding members, a screen-cloth attached to said holding members, and means intermediate the frame and said holding members for adjusting the latter to tighten the screen-cloth.

3. In a screen for windows and the like, the combination, with a channel-section and an angle-section, of a holding member, a screen-cloth attached to said holding member, and a screw passing through a flange of the angle-section, through a flange of the channel-section and engaging the holding member.

4. In a screen for windows and the like, the combination, with a hollow frame composed of two sections, of a screen-cloth, a plurality of holding members attached to the screen-cloth and arranged to

enter the hollow frame, and means for securing together the two sections of the frame and the holding members.

5. In a screen for windows and the like, the combination, with a hollow frame composed of two sections, one of which has a keyhole-slot and the other a screw-hole arranged to register with the hole of the keyhole-slot in the other, a screen-cloth and a holding member, of a screw having an enlarged collar passing through the screw-hole of one section, and through the hole of the keyhole-slot, said screw having its inner end connected to the holding member.

6. In a screen for windows and the like, the combination, with a frame and a holding member having a pocket, of a screen-cloth, a binder to which said screen-cloth is attached, said binder being inserted in the pocket in the holding device, and means for connecting the holding device to the frame.

7. In a screen for windows and the like, the combination, with a frame, and a holding member having one edge flanged and provided with screw-holes and the other edge bent to form a longitudinal pocket, of a screen-cloth, a binder having a V-shaped cross-section, and located in the pocket of the holding device, the screen-cloth being wrapped about the said binder, and means for securing the holding member to the frame.

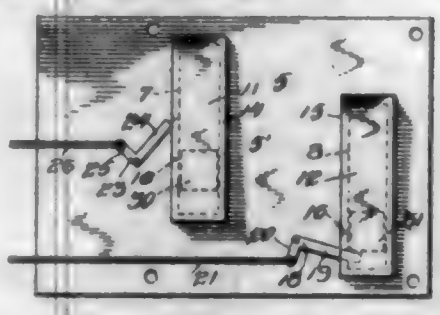
8. A screen for windows or the like comprising a frame, a plurality of holding members, and a screen-cloth, the cloth being assembled with the members prior to being combined with the frame, and means for adjusting and retaining the members relatively to the frame.

9. In a screen for windows, a frame, a plurality of holding members, a screen-cloth assembled therewith and disposed within the plane of the frame, and means for adjusting and retaining the members relatively to the frame.

10. In a screen for windows, a frame, a plurality of holding members marginally nested therein, a screen-cloth assembled with the members, and means for adjusting and retaining the members relatively to the frame.

11. A window-screen frame having its members provided with channels, a plurality of holding members having parts engaging the channels, a screen-cloth assembled with the holding members, and means for adjusting the members relatively to a wall of the channels whereby to place and retain the screen-cloth under requisite tension.

817,681. SASH-HOLDER. AVERY TOBEY, Los Angeles, Cal. Filed July 18, 1905. Serial No. 270,209.

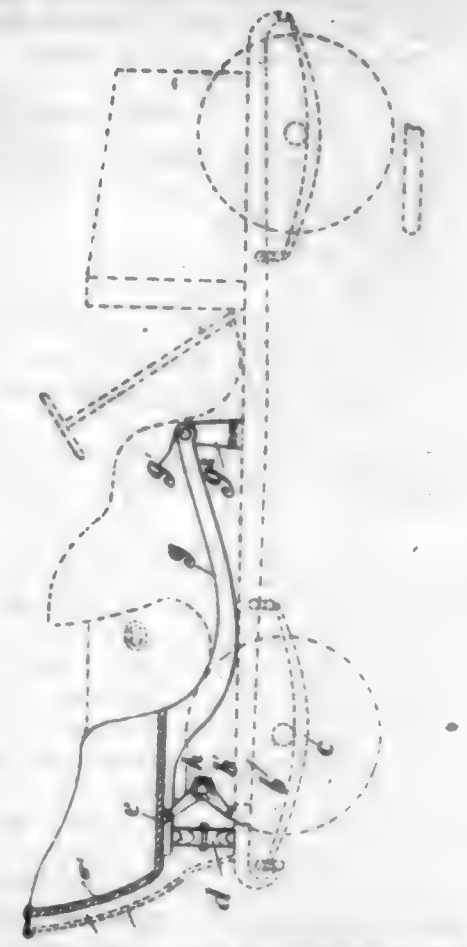


Claim.—A device of the class described comprising a face-plate having wedge-shaped casings connected therewith at its rearward face, said casings being disposed with their minor ends directed away from each other, one of said casings lying with its lower portion below that of the other, said face-plate having openings therein communicating with the casings longitudinally thereof, said casings having their slanting walls directed rearwardly, rollers loosely disposed within the casings with their peripheries extending outwardly beyond the face-plate, said casings having openings therein at one side, the opening of the lower casing being located in the portion thereof extending below the other casing, levers pivoted to the face-plate for movement into and out of position to hold the rollers against movement toward the minor ends of the casing, push-rods connected with the levers for movement of the latter and means for holding the push-rods with the levers out of operative position.

817,682. SEAT SUSPENSION FOR MOTOR-VEHICLES. OSCAR WERNER, New York, N. Y. Filed Sept. 16, 1905. Serial No. 278,736.

Claim.—1. In a motor-vehicle, a chassis, suspension-springs supporting said chassis upon the front and rear axles, a rear seat, a relatively light auxiliary spring supporting said seat from the chassis, a frame for said seat, and a localizing connection between said frame and the chassis, said connection being disposed in a transverse plane centrally between the front and rear zones of major vertical shock vibrations.

2. In a motor-vehicle, a chassis, suspension-springs supporting said chassis upon the front and rear axles, a rear seat, a relatively light auxiliary spring supporting said seat from the chassis, a frame for said seat, a localizing connection between said frame and the chassis, said connection being disposed in a transverse plane centrally between the front and rear zones of major vertical shock vibrations, and a shock-limiting device interposed between the rear seat and chassis.

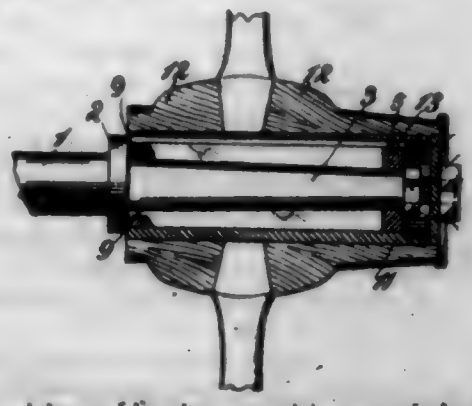


3. In a motor-vehicle, a chassis, suspension-springs supporting said chassis upon the front and rear axles, a rear seat, and resilient arms supporting said seat independently from the chassis, said resilient arms being mounted at their forward ends in a transverse plane centrally between the front and rear zones of major vertical shock vibrations.

4. In a motor-vehicle, a chassis, suspension-springs supporting said chassis upon the front and rear axles, a rear seat, resilient arms supporting said seat independently from the chassis, said resilient arms being mounted at their forward ends in a transverse plane centrally between the front and rear zones of major vertical shock vibrations, and a shock-limiting device interposed between the rear seat and chassis.

5. In a motor-vehicle, a chassis, suspension-springs supporting said chassis upon the front and rear axles, an independent rear seat, resilient means supporting said seat from the chassis, and a horizontally-resilient localizing connection between said seat and chassis, said connection being disposed in a transverse plane centrally between the front and rear zones of major vertical shock vibrations.

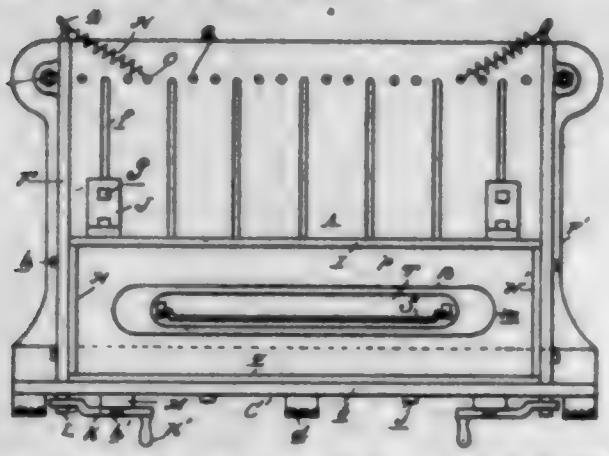
817,683. JOURNAL-BOX. MICHAEL H. WHALEN, New York, N. Y. Filed May 17, 1905. Serial No. 260,802.



Claim.—A journal-bearing comprising an axle having a tapered end, a grease-cage mounted thereon and having a longitudinal rib, a longitudinal tapered passage to receive the axle, a plurality of radial longitudinal slots extending through to the passage, and a plu-

rality of grooves formed at the inner end of the longitudinal passage and communicating with the inner ends of the slots, a nut for holding the grease-cage on the axle, a hub having a sleeve surrounding the grease-cage, said sleeve being formed with a spline-groove to receive the rib on the grease-cage, and a second nut for holding the hub in position.

817,684. MACHINE FOR MOLDING CEMENT BLOCKS. SIDNEY L. WILTSE, Jackson, Mich., assignor to William F. Cowham, Jackson, Mich. Filed May 20, 1905. Serial No. 261,434.



Claim.—1. A machine for molding cement blocks comprising a bed, a mold side hinged thereto to extend normally in a plane perpendicular to the plane of the bed, said side being provided with a projecting flange forming an extension of the bed.

2. A machine for molding cement blocks comprising a bed, a plurality of mold sides mounted thereon, and a complementary mold side hinged to the forward edge of said bed, being provided with a rearwardly-extending flange forming a complementary portion of the bed.

3. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, and an adjoining mold side pivoted to said bed to swing in a horizontal plane, with its forward end adjoining the inner face of the first-mentioned mold side, and means of laterally adjusting the pivotal point of the last-mentioned mold side.

4. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, an adjoining mold side pivoted to swing in a horizontal plane, and mold-plates of variable length detachably connected to said first-mentioned mold side and means for adjusting the pivot of said second-mentioned mold side, whereby said side may be arranged to abut against the end of plates of different length attached to the first-mentioned mold side.

5. In a machine for molding cement blocks, the combination with a bed, of adjoining mold sides mounted thereon, one of said sides being adjustable longitudinally of the other side a third side adjustable longitudinally of said adjustable side toward or from the other side, and the mold plates or panels of variable length detachably connected to the first two mentioned sides, the end of each detachable panel forming a shoulder against which the adjacent side abuts.

6. In a machine for molding cement blocks, the combination of a bed, of a plurality of open frame mold sides mounted upon said bed, two of said sides being pivoted to swing in a horizontal plane, and a third side being hinged to swing in a vertical plane and hinged adjacent to the edge of the bed, mold plates or panels of variable size detachably connected to said mold-frames, and a complementary side of variable length adjustably mounted upon the bed.

7. In a machine for molding cement blocks, the combination with a bed, of an open-frame mold side hinged to the edge of said bed to swing in a vertical plane, of an adjoining mold side pivoted to said bed to swing in a horizontal plane and having its pivot adjustable longitudinally of said first-mentioned side, a panel of variable length detachably connected to said first-mentioned mold side, and against the end of which said last-mentioned mold side is adapted to abut, a lug on said last-mentioned mold side projecting through said open frame, and locking means for engaging said lug adjustably secured to the outer side of said open frame.

8. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, a pair of mold sides pivotally mounted to said bed to swing in a horizontal plane and adjustable longitudinally of said first-mentioned mold side, and a complementary side of variable length mounted upon said bed, its opposite ends abutting against said horizontal swinging sides, and said complementary sides being adjustable toward or from the first-mentioned side.

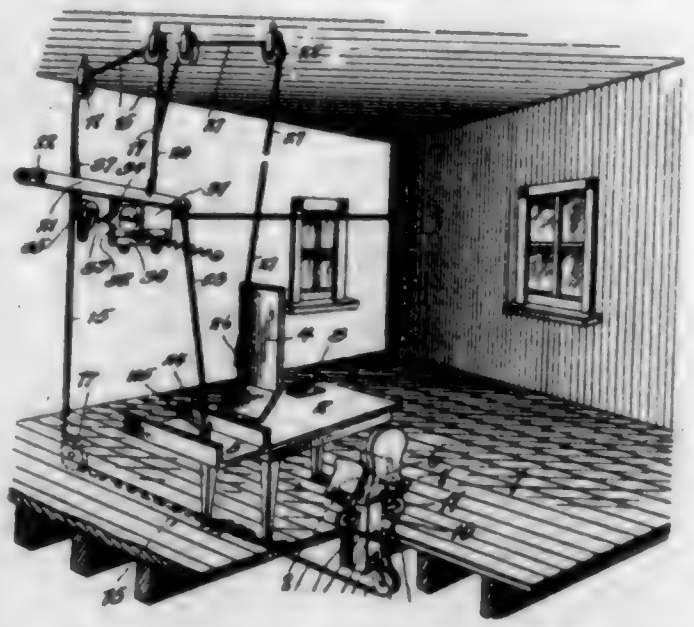
9. In a machine for molding cement blocks, the combination with a bed, of swinging mold sides adjustably mounted thereon, a complementary mold side of variable length extending between opposite swinging sides, and angle-brackets detachably connected to said complementary side and adjustably secured to said bed.

10. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, a pair of oppositely-arranged mold sides mounted on said bed to swing in a horizontal plane, their free ends abutting against the first-mentioned mold side, pivots for said oppositely-arranged mold sides adapted for engagement with a series of apertures in said bed, extending longitudinally of said first-mentioned mold side, a complementary mold side of variable length extending between said oppositely-arranged mold sides, and a clamping-bolt for said complementary side engaging a slot, whereby it may be adjusted toward or from said first-mentioned side.

11. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to one edge of said bed to swing in a vertical plane, a pair of oppositely-arranged mold sides pivotally mounted upon said bed to swing in a horizontal plane, means for locking the ends of said opposite mold sides to the first-mentioned mold side, and means whereby said opposite mold sides are automatically swung outward when unlocked from said first-mentioned side.

12. In a machine for molding cement blocks, the combination with the bed and a mold-side plate, of a pivot for said side plate adjustable in position upon said bed, and a tension device for swinging said side plate carried by said pivot in its adjustment.

817,685. RAILWAY-SIGNAL. JULIUS E. ADAIR, Galiff, Tenn. Filed Oct. 6, 1905. Serial No. 281,624.



Claim.—1. In a device of the character described, the same comprising an operator's chair, having collapsible sides, an operater's table, a hinged tray to coöperate therewith, and cable connections between the chair and tray to cause said tray and chair to operate in unison.

2. An attachment for train-order board signal systems, comprising an operator's chair, having collapsible sides, spring-actuated means therefor, an operator's table, a hinged tray to coöperate therewith, and cable and pulley devices connected between said tray and chair to cause the same to operate in unison.

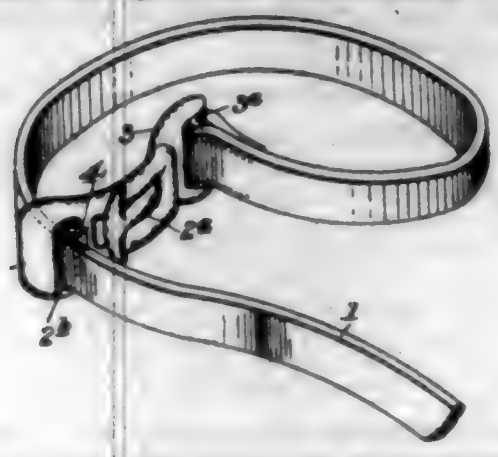
3. An attachment for train-order board signal systems, comprising an operator's chair, having collapsible sides, an operater's table, an order-box secured to one end of said table, a tray to coöperate between said box and said table, cable and pulley devices between said tray and said chair to cause the same to be operated in unison, hook devices at each end of each cable, and an eye to coöperate with said hook devices to hold the sides of the chair in collapsed position.

4. An attachment for train-order board signal systems, comprising an operator's chair, having collapsible sides and spring-actuated means therefor, an operator's table, a train-order box, a tray to cooperate between said order-box and said table, and cable and pulley devices to coöperate between said tray and said chair to cause the same to be operated in unison.

5. An attachment for train-order board signal systems, comprising in combination with an operator's chair, having collapsible sides,

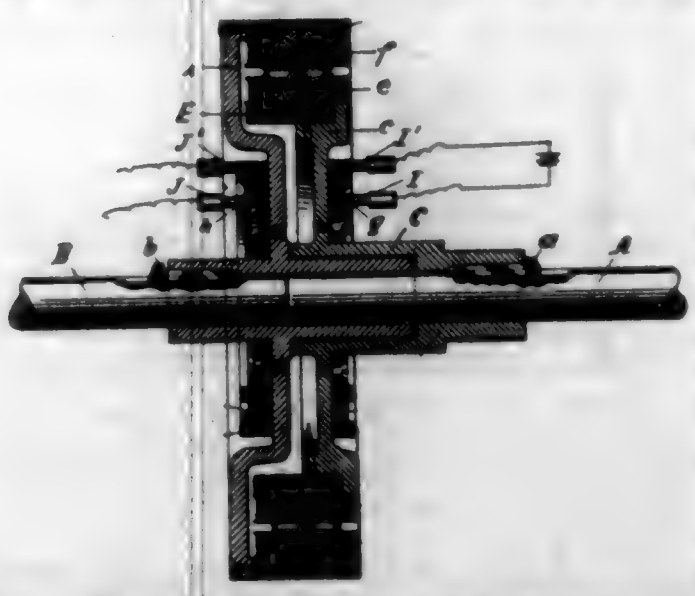
an operator's table, a hinged tray to coöperate therewith, and cable connections between the chair and tray to cause said tray and chair to operate in unison.

817,686. HITCHING-POST STRAP. JOSEPH A. ARMS, Chillicothe, Ohio. Filed Apr. 30, 1904. Serial No. 206,815.



Claim.—A device of the character described, comprising two interlocking members of arcuate or curved outline and thereby effective to conform to the outline of the hitching-post and to directly clasp or bind thereon, and having strap-receiving eye-ended terminals, whose axes are in relatively parallel lines, one member having an elongated opening whose axis is at a right angle to the axis of its strap-receiving eye-ended terminal, both of the openings in said member, however, being arranged in a common plane extending longitudinally or axially through said member, and the other member having also a practically T-formed terminal, the stem thereof being effective to pass through the elongated opening of the opposite member, and the arms of the cross-head thereof to engage the latter member.

817,687. MAGNETIC ACTUATOR. DANIEL BACON, Brooklyn, N. Y., assignor to Magnetic Control Company, New York, N. Y., a Corporation of New York. Filed Aug. 24, 1904. Serial No. 221,910.



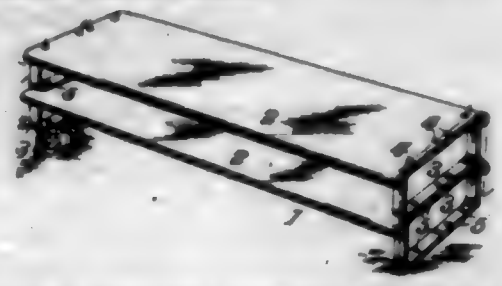
Claim.—A magnetic actuator comprising a driving-shaft and a driven shaft, said shafts having telescoping concentric sleeves capable of independent rotation, together with a radial web extending from each of said sleeves and a plurality of electromagnets supported at the periphery of each of said radial webs, the pole-faces of the magnets upon each periphery being in non-contacting magnetic relation, an electric circuit and means for energizing it.

817,688. FASTENING DEVICE FOR GAME APPARATUS. GEORGE H. BAILEY, Brooklyn, N. Y. Filed Feb. 26, 1904. Serial No. 195,435.



Claim.—A supporting device for game apparatus, embodying a rigid base-plate, flexible loops secured to the bottom of the base-plate and extending beyond the periphery thereof, and pins passing through the loops outside the periphery of the base-plate and adapted to secure the device to a carpet or the like, substantially as described.

817,689. BRICK-PALLET. FRANK BENTLEY, Niles, Ohio. Filed Oct. 18, 1905. Serial No. 283,305.

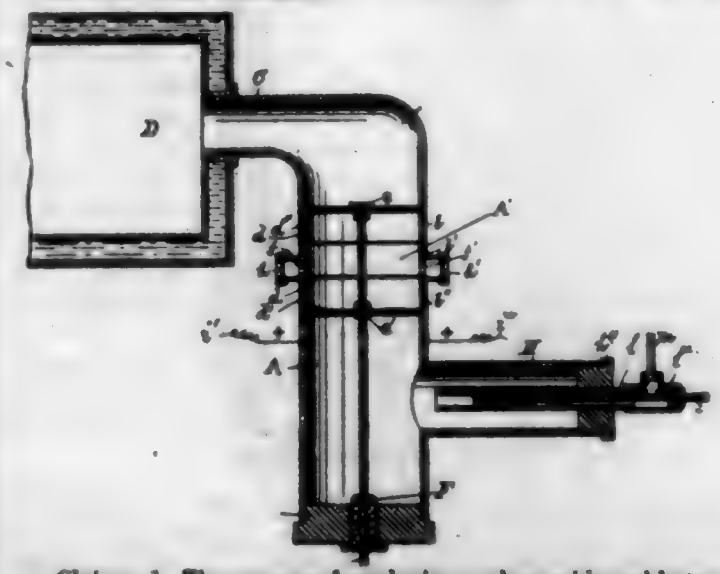


Claim.—1. A brick-pallet comprising a flat body portion, legs depending therefrom at each end, and means for securing such legs to the body portion, such means forming projections above the upper surface of such body portion, the legs being so constructed in their lower portions as to engage with the projecting portions of a pallet upon which it may be superposed so as to thereby prevent the pallets from slipping either laterally or longitudinally.

2. A pallet having a flat body portion, legs depending therefrom at each end, each leg being of approximately rectangular formation and having a series of holes formed in its lower portion, and a series of projections on the upper surface of said body portion, each projection being in line with one of said holes, said projections preventing superposed pallets from slipping either laterally or longitudinally.

3. The herein-described pallet having legs at each end, each leg being of approximately rectangular formation, the lower portion of each leg having a series of holes formed therein, and rivets in line with said holes for securing the upper portions of said legs to the pallet, the heads of said rivets projecting above the surface of the pallet.

817,690. PROCESS OF MAKING CARBON ACIDS AND KETONES. HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed July 27, 1900. Serial No. 25,087.



Claim.—1. The process of producing carbon acids and ketones, which consists in exposing hydrocarbon to the action of carbon dioxid at a temperature at which oxygen thereof has a selective affinity for the hydrogen content of the hydrocarbon.

2. The process of producing compounds containing carbon, hydrogen, and oxygen, which consists in exposing hydrocarbon to the action of carbon dioxid at a temperature at which carbon dioxid yields oxygen to the hydrogen of the hydrocarbon while maintaining the temperature below the dissociating-point of the product desired.

3. The process of producing carbon acid and ketone which consists in gradually supplying heat to carbon dioxid and hydrocarbon while in contact after having established a combining or reacting sphere of temperature and collecting and condensing the product thereof.

4. The process of producing carbon acids and ketones, which consists in inducing a union or reaction between carbon dioxid and hydrocarbon by supplying heat thereto and maintaining the temperature within the combining or reacting sphere below the dissociating-point of the product desired.

5. The process of producing acids and ketones, which consists in heating carbon dioxid to a point at which oxygen thereof has a selective affinity for hydrogen of the hydrocarbon, mixing the same with hydrocarbon and collecting and condensing the product produced thereby.

6. The process of producing acetic acid and acetone which consists in exposing methane to the action of carbon dioxid and heat.

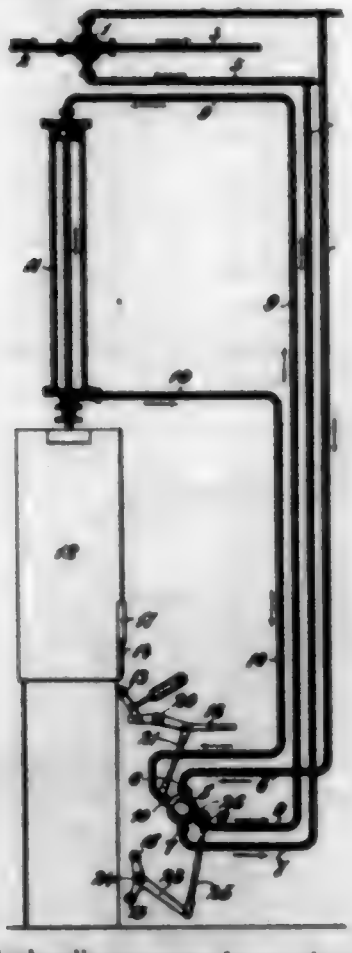
7. The process of producing acids and ketones, which consists in exposing hydrocarbon to the action of a carbon oxid at a temperature at which a union or reaction is induced and continuing the process by supplying heat and ingredients thereto while maintaining the temperature below the dissociating-point of the product desired.

8. The process of producing acids and ketones, which consists in establishing a sphere of reaction or combination within a fluid body containing hydrocarbon and carbon oxid and maintaining the reaction or combination by supplying heat thereto.

9. The process of making carbon acids and ketones, which consists in subjecting hydrocarbon to the action of an oxygen-yielding carbon compound at a reacting temperature maintained below the dissociating-point of the product desired.

10. The process of making carbon acids and ketones, which consists in subjecting hydrocarbon to the action of a carbon oxy-acid anhydrid at a reacting temperature maintained below the dissociating-point of the product desired.

817,691. **HYDRAULIC APPARATUS FOR OPENING AND SHUTTING BULKHEAD-DOORS.** HEINRICH O. BRANDT, Manchester, England. Filed Nov. 9, 1905. Serial No. 180,297.

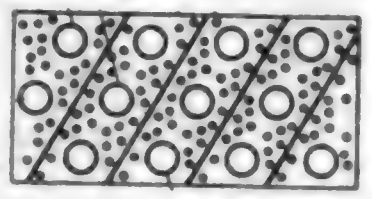


Claim.—1. In hydraulic apparatus for opening and closing bulkhead-doors, the combination with a door of a hydraulic cylinder with a hydraulic piston to which the door is attached, pipings connecting the ends of the cylinder with each other and with the water-supply and water-discharge pipes, a distributing cock or valve adapted to establish connection between the different pipings, and lever mechanism operated by the door for reversing the cock or valve, substantially as and for the purpose set forth.

2. In hydraulic apparatus for opening and closing bulkhead-doors, the combination with a door of a hydraulic cylinder with a hydraulic piston to which the door is attached, pipings connecting the ends of the cylinder with each other and with the water-supply and water-discharge pipes, a distributing-cock adapted to establish connection between the different pipings, and a lever system operated by the door for reversing the cock, said lever system being provided with a hand-lever adapted to reverse the cock independently of the movement of the door, substantially as and for the purpose set forth.

3. In hydraulic apparatus for opening and closing bulkhead-doors, the combination with a door of a hydraulic cylinder with a hydraulic piston, pipings connecting the ends of the cylinder with each other and with the water supply and discharge pipes, a distributing cock or valve adapted to establish connection between the different pipings, and a lever system operated by the door for reversing the cock, said lever system being provided with a hand-lever adapted to reverse the cock independently of the movement of the door, the distributing-cock being provided with a check-valve, substantially as and for the purpose set forth.

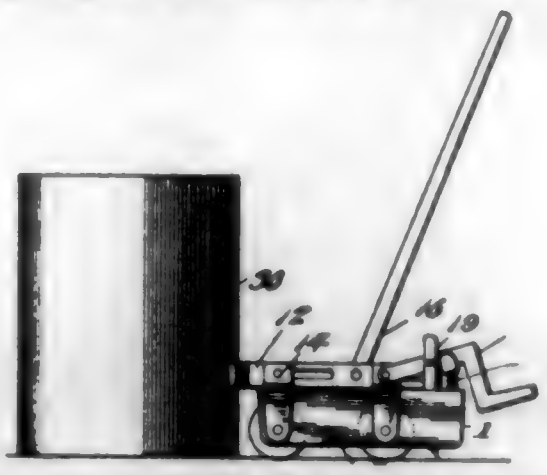
817,692. **RADIATOR.** FRANK BRIGGS, Detroit, Mich., assignor to Briggs Manufacturing Company, Detroit, Mich., a Corporation. Filed Mar. 24, 1905. Serial No. 251,730.



Claim.—1. A radiator comprising a plurality of rows of conduits with the individual conduits of adjacent rows staggered in relation to each other, gang-fins sleeved upon and connecting the conduits of adjacent rows, said fins together completing and substantially filling the rectangle surrounding said rows of conduits, whereby all available space for radiating-surface is utilized.

2. A radiator comprising a plurality of rows of conduits with the individual conduits of adjacent rows staggered in relation to each other, gang-fins of rhomboidal form sleeved upon and connecting the staggered conduits of adjacent rows, triangular fins sleeved upon conduits at opposite ends of the rows, said fins together filling the area of the rectangle, bonding said rows of conduits.

817,693. **PUSHING DEVICE.** LOUIS N. BROUILLARD, Hingart, Wis. Filed Mar. 1, 1905. Serial No. 247,978.

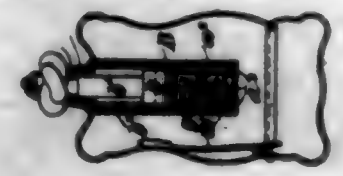


Claim.—1. In a device of the character described, a frame, a push-bar connected therewith, means for operating the push-bar, spur-rods for holding the frame against movement, a treadle for operating spur-rods and a spring for normally maintaining said spur-rods in inoperative position.

2. In a device of the character described a frame, a push-bar formed with elongated slots, means carried by the frame for engaging the slots to limit the movement of the bar, a lever pivotally connected at its lower end to the frame, and pivotally connected above said frame to the bar, spur-rods for holding the frame against movement, means for operating said rods, and means for returning the rods to normal position.

3. In a device of the character described a frame, a push-bar supported on the frame, means for guiding and limiting the movement of said bar, a lever connected to the frame and to the bar, spur-rods vertically mounted near one end of the frame, a treadle pivotally supported on the frame and operatively connected to said spur-rods, and a spring bearing on the frame and against the treadle.

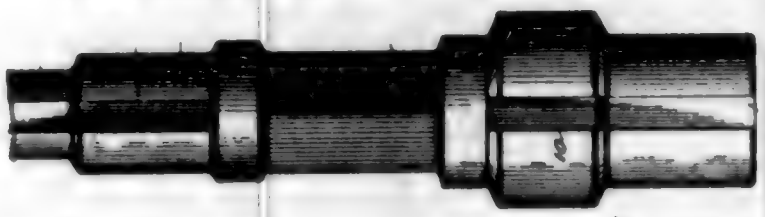
817,694. **POWDER BRUSH OR PUFF.** EPHRAIM CRAGUETTE, New Rochelle, N. Y. Filed May 25, 1905. Serial No. 262,160.



Claim.—1. In a toilet article, a powder-receptacle having an orifice, a tubular sheath adapted to fit slidably therein to form a stopper, said sheath being open at its inner end and provided with a contracted opening at its outer end, and a stem slidable through said contracted opening, said stem having a brush or puff at one end and a terminal enlargement at its opposite end, said enlargement forming a stop and a handle for the stem, and said stem, when pushed inwardly, exposing the brush or puff, and, when pulled outwardly, contracting and containing the brush or puff within the sheath.

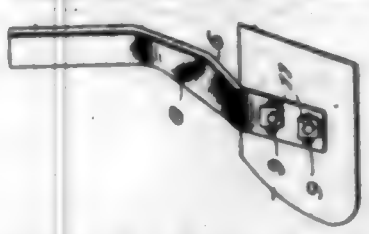
2. In a toilet article, a powder-receptacle having an orifice and an interior, perforated pocket, a tubular sheath adapted to fit slidably within said pocket, said sheath being open at its inner end and provided with a contracted opening at its outer end, and a stem slidable through said contracted opening, said stem having a brush or puff at one end and an enlargement at its opposite end; whereby, when said stem is extended inwardly the brush or puff is exposed beyond the sheath, and when said stem is extended outwardly the brush or puff is contracted and contained within the sheath.

817,695. **RADIATOR-VALVE UNION NIPPLE-WRENCH.** LOUIS W. DUERRSCHEIN and FRED ENGLE, Oshkosh, Wis. Filed Apr. 5, 1905. Serial No. 254,049.



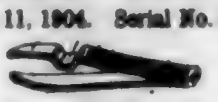
Claim.—A wrench comprising a shank formed with a coaxially-stepped head and diametrically-disposed continuous furrows formed longitudinally of the stepped head.

817,696. **COTTON-SCRAPER ATTACHMENT.** CHARLES O. DYE, McCrory, Ark. Filed June 27, 1905. Serial No. 267,252.



Claim.—In a cotton-scraper attachment for plows, a blade-supporting bar having its upper end secured in a mortise in the plow-beam in alinement with the beam and projecting below the latter the said bar being bent forwardly in a plane in alinement with the attached portion thereof whereby to give the proper slanting to the scraper-blade, and said bar being provided below the slanted portion with an intermediate portion offset therefrom at an angle of forty-five degrees and with the lowermost portion returned to the plane of the upper attached portion and the slanting portion, but twisted about its longitudinal axis at an angle of forty-five degrees whereby to give the proper angle to the blade so that it will readily free itself from the soil, said lowermost portion being provided with two transversely-extending elongated slots one above the other, and a scraper-blade provided with bolts mounted in said slots so as to secure the blade in both laterally and axially adjustable position with respect to the lowermost twisted portion of the bar.

817,697. **KEY-FASTENER.** WILLIAM T. EASTERDAY, San Francisco, Cal. Filed June 11, 1904. Serial No. 212,309.



Claim.—A key-fastener comprising a single strip of flat spring metal bent centrally to form a pair of independent spaced-apart arms having free ends curved toward each other, said arms being of equal lengths and arranged one above the other, one of said arms being straight and unobstructed, the other arm provided with a depending squared shouldered recess, said fastener serving to permit of its bent portion being inserted in the keyhole-slot with its curved free ends projecting outwardly therefrom so as to allow of the squared shouldered recess to contact with one edge of the escutcheon-plate, and said fastener being detachable from the key-slot and plate by means of pressing said curved free ends of the arms together, substantially as specified.

817,698. **DRYING APPARATUS FOR MALT.** EMIL ELLERMANN, Berlin, Germany. Filed June 1, 1905. Serial No. 263,347.



Claim.—1. In a drying apparatus, the combination of a casing, a shaft, a system of concentric pipe-coils surrounding the shaft, means for passing material between the shaft and coils, and means for returning the material exterior to the coils, substantially as and for the purpose described.

2. In a drying apparatus, the combination of a casing, a hollow rotatable shaft therein, a system of concentric pipe-coils surrounding the shaft and connected therewith; means for passing material between the shaft and coils, and means for returning the material exterior to the coils, substantially as and for the purpose described.

3. In an apparatus for drying material, the combination of a casing, a shaft, a passage surrounding the shaft, pipe-coils inclosing said passage, means for moving material through said passage, and means for returning the material through the casing exterior to the coils, whereby both the external and internal heat of the coils is utilized, substantially as described.

4. In an apparatus for drying material, the combination of a casing, a hollow shaft, a grain-passage surrounding the shaft, a concentric series of pipe-coils inclosing said grain-passage, a conveyer for moving material along said passage, and means for returning the material through the casing exterior to the coils, substantially as described.

5. In a drying apparatus, the combination of a rotatable shaft provided with steam-passages, a conveyer-helix on said shaft, a cylinder surrounding the helix and pipe-coils surrounding the cylinder, and communicating with the shaft at opposite ends.

6. In a drying apparatus, the combination of a rotatable shaft provided with steam-passages, a conveyer-helix on said shaft, a perforated cylinder surrounding the shaft and helix, and a series of concentric pipe-coils surrounding the cylinder, substantially as described.

7. In a drying apparatus, the combination of a rotatable shaft provided with steam-passages, a conveyer-helix on said shaft, a cylinder surrounding the helix and pipe-coils surrounding the cylinder, and communicating with the shaft at opposite ends; with a casing exterior to the pipe-coils, and a conveyer exterior to the coils and rotating therewith, substantially as and for the purpose described.

8. In a grain-drying apparatus, the combination of a casing, a rotatable shaft therein, a cylinder surrounding said shaft, a connected series of concentric coils surrounding the cylinder, means for feeding material into the cylinder and a conveyer for returning material through the casing exterior to the coils, substantially as described.

9. In a grain-drying apparatus, the combination of a casing, a rotatable shaft therein, a helix on said shaft, a perforated cylinder surrounding said helix, a connected series of concentric coils of successively-different diameters surrounding the cylinder, means for feeding material into the cylinder, and a conveyer rotating with the shaft for returning material through the casing exterior to the coils, substantially as described.

817,699. **INCLINED SUSPENDED RAILWAY.** ROLLIE B. FAGNOL, Des Moines, Iowa, assignor of one-half to J. C. Tate and Charles N. Bragg, Des Moines, Iowa. Filed Nov. 28, 1903. Renewed Sept. 21, 1905. Serial No. 279,507.

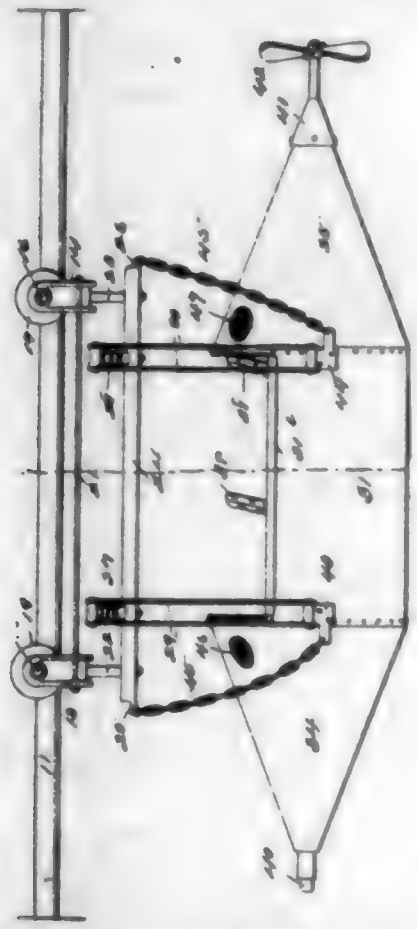
Claim.—1. An inclined suspended railway, comprising a rigid track suitably supported, rigid hangers, wheels on said hangers and adapted for travel on said track, and a cigar-shaped car flexibly suspended from and below said hangers.

2. An inclined suspended railway, comprising a suspended track, hanger-trucks on said track, a beam rigidly connecting said hanger-trucks, springs on said beam, and a car flexibly suspended from said springs.

3. An inclined suspended railway, comprising a suspended track, hanger-trucks on said track, hangers on said trucks, a beam connecting said hangers, springs on said beam, a car flexibly suspended from said springs, and auxiliary connections between said car and trucks.

4. An inclined suspended railway, comprising a suspended track, trucks on said track, hangers on said trucks, a beam connecting said hangers, springs above and transversely of said beam, bars depending from ends of said springs, a car pivotally suspended from

said bars, and chains forming auxiliary connections between said car and hangers.



5. The combination of a track, trucks on said track, hangers depending from said trucks, a beam suspended from said hangers, and a cigar-shaped car suspended from and below said beam and open intermediate of its ends.

6. A suspended track, rigidly-connected trucks on said track, hangers depending from said trucks, a beam suspended from said hangers and rigidly connected thereto, bars depending from said beam in pairs, a cigar-shaped car suspended between the lower ends of said bars and open at its center, seats in the open central portion of the suspended car, and chains forming an auxiliary connection between the end portions of the car and the beam.

7. An inclined suspended railway, comprising a suspended rigid track, hanger-trucks on said track, a beam rigidly connecting said hanger-trucks, springs on said beam, and a cigar-shaped car flexibly suspended from said springs.

817,700. NON-REFILLABLE BOTTLE. ANGELO FERARO, Brooklyn, N. Y. Filed Sept 21, 1905. Serial No. 279,447.



Claim.—1. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed weight, and a shield arranged above the valve.

2. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed weight, one of said disks being composed of buoyant material, and a shield arranged above the valve.

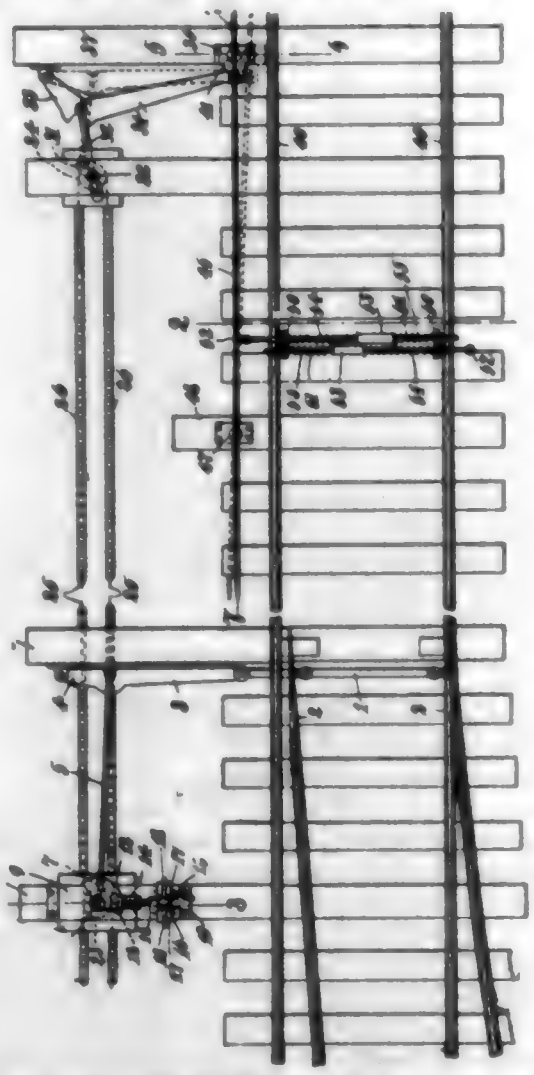
3. In a device of the class described, a bottle having a neck provided with a valve-seat, a valve designed to rest upon the seat and comprising a pair of disks and an interposed tubular weight, and a shield arranged above the valve.

817,701. WRENCH. WILLIAM H. FLOTO, Meyersdale, Pa. Filed Feb. 22, 1905. Serial No. 246,200.

Claim.—A wrench comprising a shank formed on its rear edge with notches, a fixed jaw on the shank, a movable jaw having a passage therethrough adapted to receive the shank, said passage being slightly wider than the shank and being so arranged as to lie at an angle with respect to the shank when the operating-faces of the fixed and movable jaws are in parallel relation with each other, a lever having angularly-disposed arms fitting around the shank, a pin connecting the arms on the rear side of the shank and adapted to engage the notches, a cross-piece connecting the arms on the opposite side of the shank, and a link pivotally mounted between the arms and pivotally connected with the movable jaw, substantially as described.



817,702. RAILWAY SAFETY DEVICE. SAMUEL A. GARDE, Chicago, Ill. Filed Sept. 23, 1905. Serial No. 279,880.



Claim.—1. The combination with brake-setting means carried by the locomotive, and switch-operating means disposed on the rail road, of a deflecting-rail disposed adjacent the rails and substantially

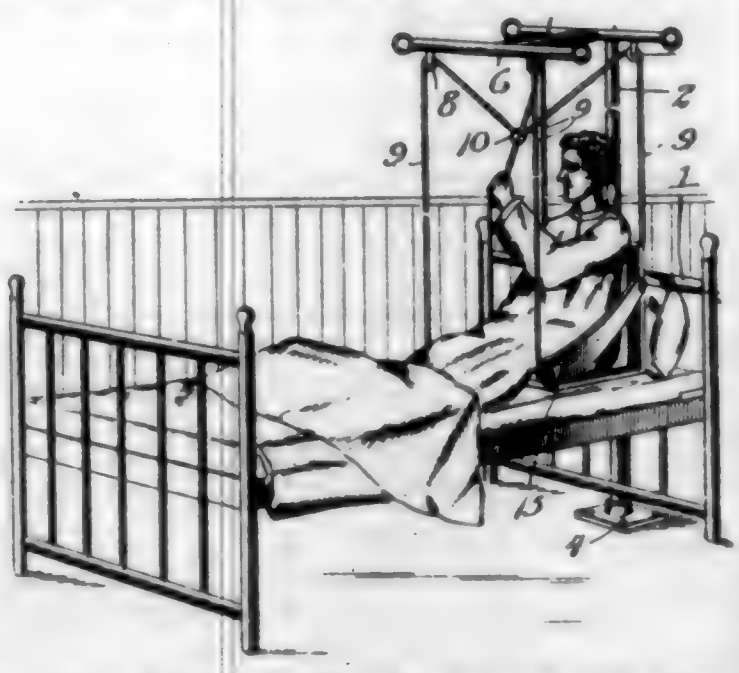
parallel therewith at a distance from said switch said rail being supported at one end on a fixed pivot and at its other end on a shoe movable laterally with relation to the rails, means disposed in operative relation to said shoe for imparting motion thereto to throw said rail into or out of the path of said brake-setting means, and connection between said last-named means and said switch-operating means for simultaneously operating said switch and said rail.

2. The combination with laterally-movable brake-setting means carried by the locomotive, and switch-operating means disposed on the railroad, of a horizontally-disposed deflecting-rail disposed on the railway at a distance from said switch and substantially parallel therewith, a shoe movable laterally relatively to the rails and supporting said rail at one end, actuating means disposed in operative relation to said shoe, and connection between said shoe-actuating means and said switch-operating means to throw said shoe toward the rails when the switch opened, whereby said deflecting-rail is thrown into the path of said brake-setting means.

3. The combination with a locomotive carrying brake-setting means, and a deflecting-rail disposed in the paths of and adapted to actuate said brake-setting means, of a switch, a toggle-lever for setting same, a crank-shaft actuating said toggle-lever, a crank geared to said crank-shaft, and locking means disposed in operative relation to said crank, and gearing between said crank-shaft and said deflecting-rail to set the latter simultaneously with the switch.

4. The combination with switch-operating means comprising toggle-levers connected with said switch, a crank-shaft connected by a link with said toggle-levers and means for actuating said crank-shaft, of a deflecting-rail disposed adjacent the rails at a distance from said switch and adapted to be swung parallel with or at an incline to said rails, toggle-levers connected with said rail at one end, gearing between said toggle-levers and said crank-shaft for actuating said deflecting-rail simultaneously with said switch, and brake-setting means carried by the locomotive and disposed in operative relation to said deflecting-rail to be actuated thereby when the switch is open.

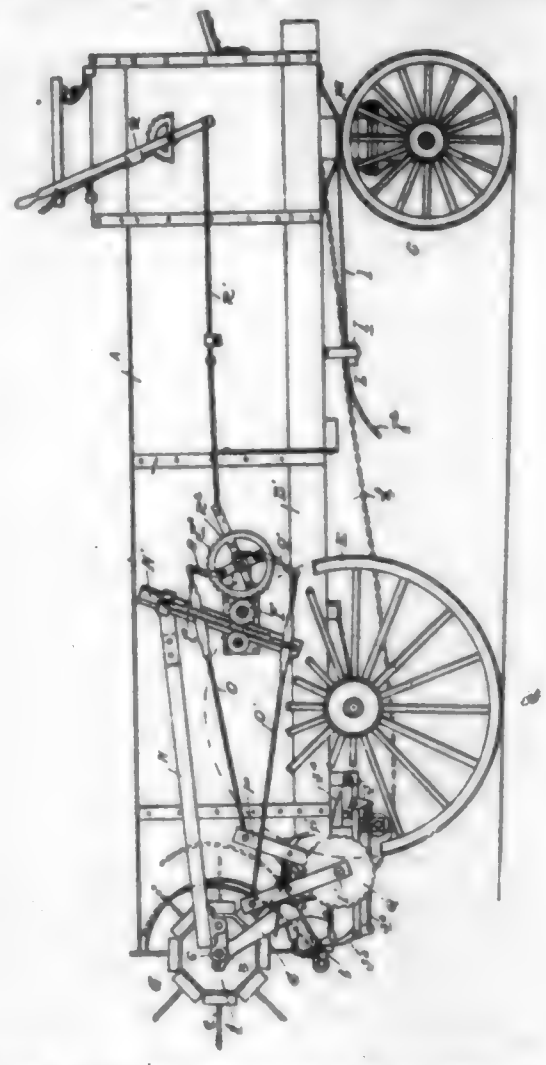
817,703. APPARATUS FOR MOVING INVALIDS. LOUISA GARAGHTY, Chester, Pa. Filed July 14, 1905. Serial No. 269,705.



Claim.—1. In a device of the character described, the combination of a rotatable supporting-post, a head-frame carried by said post, supporting-pulleys carried by said frame, a chair arranged below the head-frame, flexible suspending devices attached at their lower ends to the corner portions of the chair and extending upwardly and inwardly over the pulleys within the space between the chair and head-frame and bounded by said flexible suspending devices, and a handle connected with the upper ends of said suspending devices and arranged so as to be operated by a person seated in the chair, substantially as described.

2. In a device of the character described, the combination of a rotatable supporting-post, a head-frame carried by said post and comprising a pair of parallel cross-bars, one of said cross-bars being fixed to the post and the other arranged in advance thereof, a brace-bar extending between and connecting said parallel bars, the latter being provided on opposite sides of the line of the brace with a supporting-pulley, a chair arranged below the head-frame, flexible suspending devices secured at their lower ends to the corner portions of the chair and extending at their upper ends inwardly and over said pulleys, and a handle attached to the said upper ends of the suspending devices and depending therefrom in the space between the chair and head-frame and bounded by the suspending devices.

817,704. MANURE-DISTRIBUTER. STEPHEN H. GARST, Detroit, Mich., assignor to American Harrow Company, Detroit, Mich., a Corporation of Michigan. Filed Jan. 19, 1905. Serial No. 241,537.



Claim.—1. In a distributing-wagon, the combination with the box, provided with a bottom, of a traveling false bottom and means whereby portions of said bottom are permitted to rest upon the wagon-bottom when stationary and are lifted to clear the same during the feeding movement.

2. In a distributing-wagon, the combination with the box, provided with a bottom, of a false bottom comprising closely-arranged flexible longitudinal members and spaced angle-iron cross-bars and means for feeding said false bottom during the distribution of the load.

3. In a distributing-wagon, the combination with the box provided with a bottom, of a false bottom comprising closely-arranged longitudinal chains or flexible connections and spaced angle-iron cross-bars and separated bars projecting upward from said bottom forming supporting-tracks for said false bottom, with which the cross-bars thereof engage and hold the chains clear of said bottom.

4. In a distributing-wagon, the combination with the box, provided with a bottom, of separated bars arranged on edge and projecting above said bottom extending longitudinally thereof and a false bottom comprising longitudinal chains and connecting cross-bars, said cross-bars resting upon said tracks and said chains looping between said cross-bars when said false bottom is stationary and being straightened to clear said bottom during the feeding movement of said false bottom.

5. In a distributing-wagon, the combination with the wagon-box and a tined distributing-wheel at the end thereof, of a gate comprising a rock-shaft secured to said box and curved tines projecting over said shaft adapted to be swung alternatively between the tines of said wheel and into a position clearing the ends thereof, the latter position holding the material within said box out of contact with said wheel.

6. In a distributing-wagon, the combination with a frame comprising side sills and a forward end sill, a bottom extending between said side sills, terminating to leave a space between the same and said end sill, a false bottom arranged to travel over said bottom, chains for actuating said false bottom, idler-wheels around which

said chains pass at the forward end of said frame, a shaft on which said idler-wheels are mounted arranged in the space between said bottom and end sill, and supporting-rods for said shaft, adjustably engaging said end sill and forming the means for taking up the slack in said chains.

7. In a distributing-wagon, the combination with a body and a movable bottom therefor, of a truck, a bolster for supporting said body upon said truck, comprising the cross-bars m, m', the separated bars m^3 upon the bar m', leaving the spaces m^3 therebetween, for the purpose described.

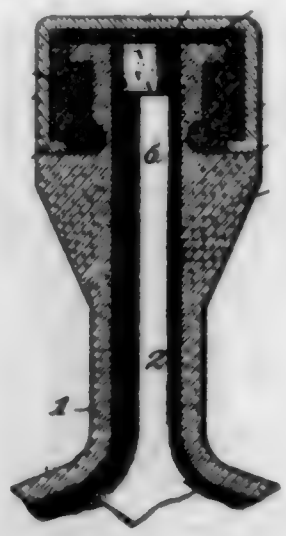
8. In a distributing-wagon, the combination with the body having a stationary bottom, of a false bottom adapted to travel over said stationary bottom, comprising cross-bars and the longitudinal chains, a sprocket for actuating said false bottom, a reversible drive connection for said sprocket, and a trip for reversing said drive connection, comprising the rock-arm u, the pivotal extension u' thereof, having the T-head u^3 and the fork r on the false bottom, for the purpose set forth.

9. In a distributing-wagon, the combination with the box, provided with a bottom, of a false bottom comprising a number of closely-arranged longitudinally-extending chains and cross-bars, of a drive-shaft at the rear end of said box, sprocket thereon for engaging said chains, to feed rearward and to return said false bottom, and guides for said chains preventing the sagging thereof, adjacent to said sprocket in the return feed movement.

10. In a distributing-wagon, the combination with the wagon-box comprising sides and bottom, said bottom being composed of a plurality of longitudinally-extending boards, and track-bars arranged between said boards and projecting upward above the same, of a false bottom formed principally of flexible members bearing widely-spaced angle-iron cross-bars.

11. In a distributing-wagon, the combination with a frame comprising side sills and a forward end sill, a bottom extending between said side sills, terminating to leave a space between the same and said end sill, a false bottom arranged to travel over said bottom, chains for actuating said false bottom, idler-wheels around which said chains pass at the forward end of said frame, a shaft on which said idler-wheels are mounted, arranged in the space between said bottom and end sill, supporting-rods for said shaft adjustably engaging said end sill and forming the means for taking up the slack in said chains, and tracks over which said false bottom travels secured to said bottom and bridging the space between the same and said end sill to brace the latter.

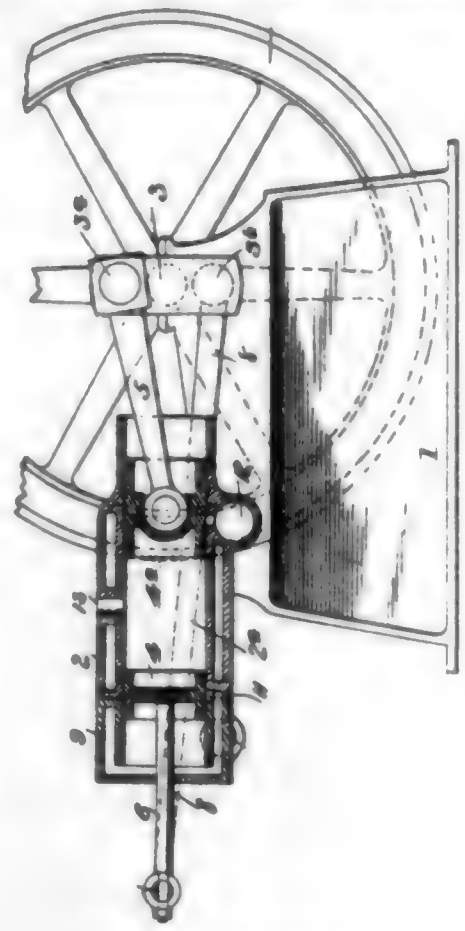
817,705. BOTTLE. INDE F. GORDON, Pittsburg, Kans. Filed Dec. 13, 1904. Serial No. 236,737.



Claim.—A bottle having the neck thereof provided with a seat and its extremity with a flange, said neck being provided also with a recess arranged immediately adjacent the seat, a cap fitting over the neck upon the seat and provided at its lower edge with an inwardly-directed flange, said cap being of a diameter greater than that of the neck and of a depth greater than the height of the neck above said seat, whereby to provide a space entirely around that portion of the neck inclosed by the cap, and a cement filling mounted within said space to secure the cap in applied position.

817,708. AIR AND GAS ENGINE. ALLEN O. HARRY, Shakespeare, Ind. Filed Dec. 21, 1904. Serial No. 237,778.

Claim.—An air and gas engine, employing a cylinder having an inner piston-chamber opening into the intake end of said cylinder, and oppositely-moving pistons, said piston-chamber having a single inlet-port also communicating with said cylinder-intake end and delivering the gas and air charge, after initial compression, to the opposing action of the pistons, said inlet-port also adapted to be shut off by one of said pistons in its forward or compressing movement, and said piston-cylinder also having a single exhaust-port adapted to be uncovered by the opposite piston, in its rearward movement, after the exploding of said charge, substantially as set forth.


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flame from the fixture, and a connection between said strip and sleeve.

3. The combination with a gas-fixture, and a valve therefor, of a rod projecting vertically from the valve and provided with a laterally-extending pin, a spring-controlled sleeve encircling the rod and formed with a slot to receive the pin, a plurality of stops formed on the sleeve, a locking-lever adapted for operative connection with either of said stops, said sleeve being turned to engage said lever and one of said stops on the opening movement of the valve, an expansible strip arranged adjacent the flame from the fixture, means between said strip and locking-lever adapted on the initial expansion of the strip to cause the locking-lever to engage the other of said stops on the sleeve, and means intermediate said strip and the locking-lever to wholly release the sleeve from said lever on the contraction of the strip.

4. The combination with a gas-fixture having a valve, of a rod projecting vertically from said valve, a pin projecting laterally from the rod, a spring-controlled sleeve encircling the rod and formed with a slot to receive the pin, said pin engaging one wall of the slot to move the sleeve in the opening movement of the valve, means for locking the sleeve in set position, and means to release the lock upon extinguishment of the flame from the fixture, the slot in the sleeve being of a length to permit manual movement of the valve without affecting the sleeve when the parts are in operative position.

5. The combination with a gas-fixture having a valve, of a valve-controlling sleeve having a partially-set position and a completely-set position, means for locking said valve-controlling sleeve in each of said positions, a connection between said valve-controlling sleeve and the valve whereby said sleeve is moved to the first position in the initial operation of the valve, and an expansible strip arranged adjacent the flame from the fixture and adapted on expansion to move the valve-controlling sleeve to the second or operative position.

6. The combination with a gas-fixture having a valve of a valve-controlling sleeve having a partially-set position and a completely-set position, means for locking said valve-controlling sleeve in each of said positions, a connection between said valve-controlling sleeve and the valve whereby said sleeve is moved to the first position in the initial operation of the valve, and an expansible strip arranged adjacent the flame from the fixture and adapted on expansion to move the valve-controlling sleeve to the second or operative position, the said valve being free for manual operation in both positions of the valve-controlling sleeve.

7. An automatic cut-off comprising a valve-controlling means, an expansible strip, and a second strip arranged between the valve-controlling means and the expansible strip, said second strip being of a less degree of expansibility than the expansible strip and secured directly to said expansible strip at the upper end, the lower end of the strips being fixed with relation to each other and spaced apart.

817,708. INHALER. GEORGE F. HARTE, Durant, Iowa. Filed Nov. 18, 1905. Serial No. 288,086.



Claim.—1. In an inhaler, a casing, a tube located within the casing, a screen applied over one end of the tube, and a member for retaining the screen in applied position and for securing the tube within the casing.

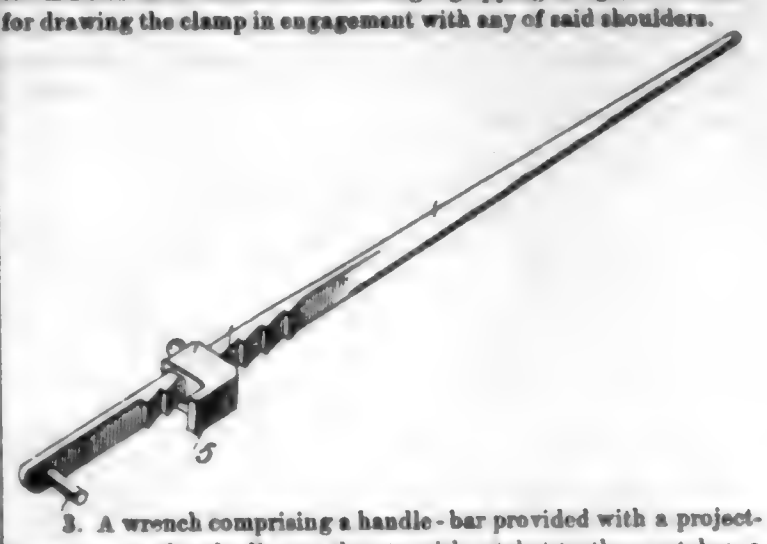
2. In an inhaler, a casing, a medicament-containing tube positioned within the casing, said tube being provided with a plurality of openings gradually increasing in number toward the end thereof adjacent the discharge-opening of the casing, a screen applied over one end of the tube and a member for securing the screen in applied position, and the tube within the casing.

3. In an inhaler, a casing, a tube located within the casing, a screen applied over one end of the tube, and a member, said member being adapted to retain the screen in applied position and to secure the tube within, and spaced from the inner wall of, the casing.

817,709. WRENCH. ALFRED HAYES, Coalville, Utah. Filed Oct. 16, 1905. Serial No. 282,952.

Claim.—1. A wrench for applying and removing flanged collars to and from pipes, comprising a handle-bar having a projecting pin or stud to fit an opening in the collar, a clamp adjustable on the bar and provided with a flange to grip the flange of the collar, and means for securing the clamp in adjusted position to the bar.

2. A wrench comprising a handle-bar provided with a projecting pin or stud to fit within an opening and in rear thereof with a series of ratchet-teeth or notches having forwardly-inclined faces and straight front shoulders, a clamp longitudinally adjustable on the bar toward and from said stud and having a gripping-flange, and means for drawing the clamp in engagement with any of said shoulders.

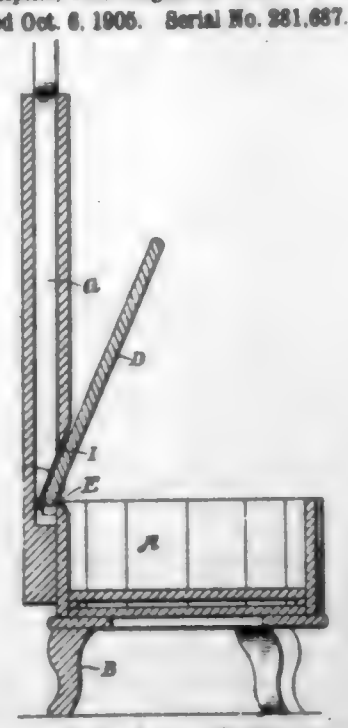


3. A wrench comprising a handle-bar provided with a projecting pin or stud and adjacent thereto with ratchet-teeth or notches, a clamp slidably mounted upon the toothed portion of the bar and having a gripping-flange, and means for holding the clamp in engagement with any of said ratchet-teeth or notches.

4. A wrench for applying flanged collars to and from pipes, comprising a handle-bar having a projecting pin or stud to fit an opening in the collar and a series of teeth or notches in the rear of said stud, a clamp adjustable on the bar and having a portion to engage the flange of the collar, and means for adjusting the clamp to draw the collar in engagement with the teeth.

5. A wrench for applying and removing flanged collars to and from pipes, comprising a handle-bar provided with a projecting pin or stud to fit within an opening in the collar, and means for clamping the bar to the flanged portion of the collar.

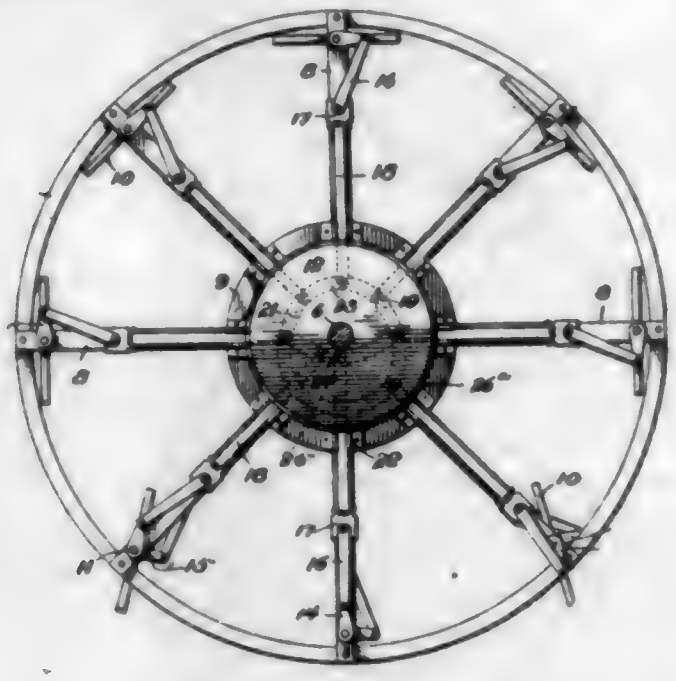
817,710. PORTABLE CABINET FOR CUSPIDORS. ARTHUR HEAGELE, Philadelphia, Pa., assignor of one-half to John Price, Philadelphia, Pa. Filed Oct. 6, 1905. Serial No. 281,687.



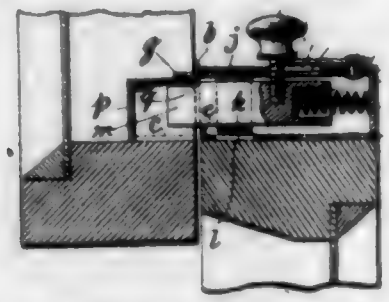
Claim.—As a new article of manufacture, a cabinet having a cover pivoted thereto, a hollow handle extending upward from one side of the cabinet, the inner face of the handle being flush with the side of the cabinet to which it is attached and in line with the pivotal points of said cover, said hollow handle having an opening in its inner face through which the cover extends, the said edges of the opening being beveled, a rod fitting within the hollow handle, the lower end of the rod being beveled on the side toward the cover on an incline equal to the beveled side edges of the opening of the handle and adapted to contact with the cover to elevate the same, the upward movement of the cover being limited by the edges of the opening whereby the bevel of the wedge-shaped end of said rod is adapted to lock said cover at the uppermost limit of its movement.

817,711. PADDLE-WHEEL. JOHN R. HEGEMA, Chicago, Ill. Filed Feb. 13, 1905. Serial No. 245,373.

Claim.—In a paddle-wheel, the combination with a frame, having pivoted paddles provided with cranks at their ends set at quarters with each other, of blocks fixed to the frame of the vessel at each side of the wheel, each block having a crossed cam-groove extending around the wheel-axis and shaped to accord with the different angularity of the cranks, and radially-movable rods at each side of the wheel, the inner ends of which travel in the grooves and the outer ends of which are connected to the cranks.



817,712. SASH-FASTENER. FREDERICK K. HEUPEL, Washington, D. C., assignor of one-third to Andrew Holloran and one-third to Gilmor Meredith Winship, Washington, D. C. Filed Feb. 23, 1906. Serial No. 302,646.



Claim.—1. In an automatic fastener, a casing, a slide-bolt within the casing, a spring for actuating said bolt, means at the forward end of said casing for retaining said bolt within said casing, and a trip consisting of a flat spring above said bolt and provided with a depending sleeve for releasing said bolt from engagement with said retaining means, substantially as described.

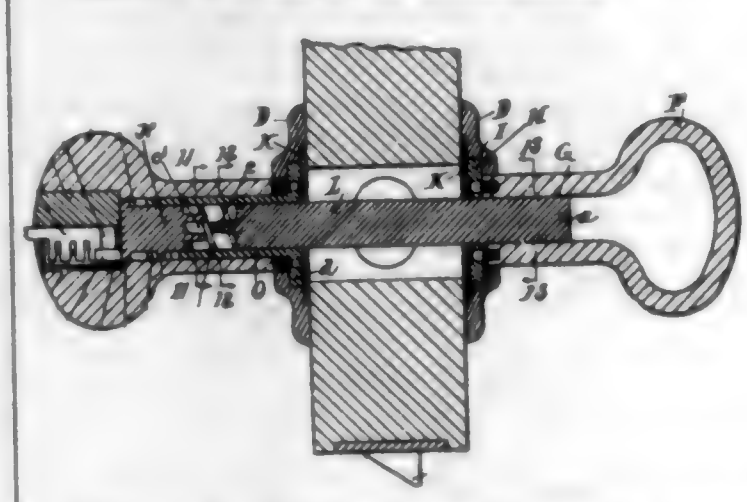
2. In an automatic sash-fastener, a casing, a slide-bolt within the casing, a spring for actuating said bolt, a flange across the forward end of said casing for retaining said bolt within said casing, and a spring-trip for releasing said bolt from engagement with said retaining-flange, substantially as described.

3. In an automatic sash-fastener, a casing, a slide-bolt within said casing, a spring for actuating said bolt, a flange across the forward end of said casing for retaining said bolt within said casing, and a trip consisting of a flat spring above said bolt and having a sleeve depending therefrom through which said bolt slides whereby when the window is closed said bolt is raised above said retaining-flange and released from engagement therewith, substantially as described.

4. In an automatic sash-fastener, a casing, a bottom therefor, a sliding bolt within said casing, a spring for actuating said bolt, a flange on the forward end of said casing and integral with said bottom for retaining said bolt within said casing, a knob for retracting said bolt to such position, a trip secured to the under side of the top of said casing consisting of a sleeve surrounding said bolt and a flat spring projecting beyond the end of said casing to which said sleeve is secured, and a socket adapted to engage said projecting spring when the window is lowered whereby the bolt is released from engagement with said retaining-flange and engages with said socket, substantially as described.

5. In a lock, in combination with a sliding bolt, an automatic spring-trip therefor, a knob secured to said bolt and a swinging stop-plate adapted to engage said knob to prevent the retraction of the bolt, substantially as described.

817,713. DOOR LOCK AND LATCH. WILLIAM H. HOPE, Providence, R. I. Filed Feb. 18, 1904. Serial No. 194,267.



Claim.—1. In a lock or latch, the combination of the sliding spring-actuated latch-bolt, the holding-tube for the latch-bolt, the bolt-actuating spindle squared at its inner end and provided at its outer end with means for clutch engagement, and also provided with an arm for operating the latch-bolt, the inner knob provided with a central opening adapted to loosely receive the bolt-actuating spindle, the recessed inner plate of the lock, the collar attached to the inner knob and held in the said recess of the inner plate, the recessed outer plate of the lock, the locking-tube provided at its outer end with an angular hook-formed slot-opening, and at its inner end with a peripheral flange loosely held within the recess of the said outer plate, the outer knob secured to the said locking-tube, the key-receiving case held in the outer knob, the sliding locking-piece held in the chamber formed between the inner end of the key-receiving case and the outer end of the bolt-actuating spindle within the bore of the locking tube, the said locking-piece being provided at its inner end with means for clutch engagement with the outer end of the bolt-actuating spindle, and with a guiding-pin adapted to traverse the angular slot-opening of the said locking-tube and hold the said sliding locking-piece in its clutch engagement with the end of the bolt-actuating spindle, and the spring arranged between the abutting ends of the locking-piece and the bolt-actuating spindle, and adapted to carry the said locking-piece outward to engagement with the end of the hook-formed slot-opening of the locking-tube.

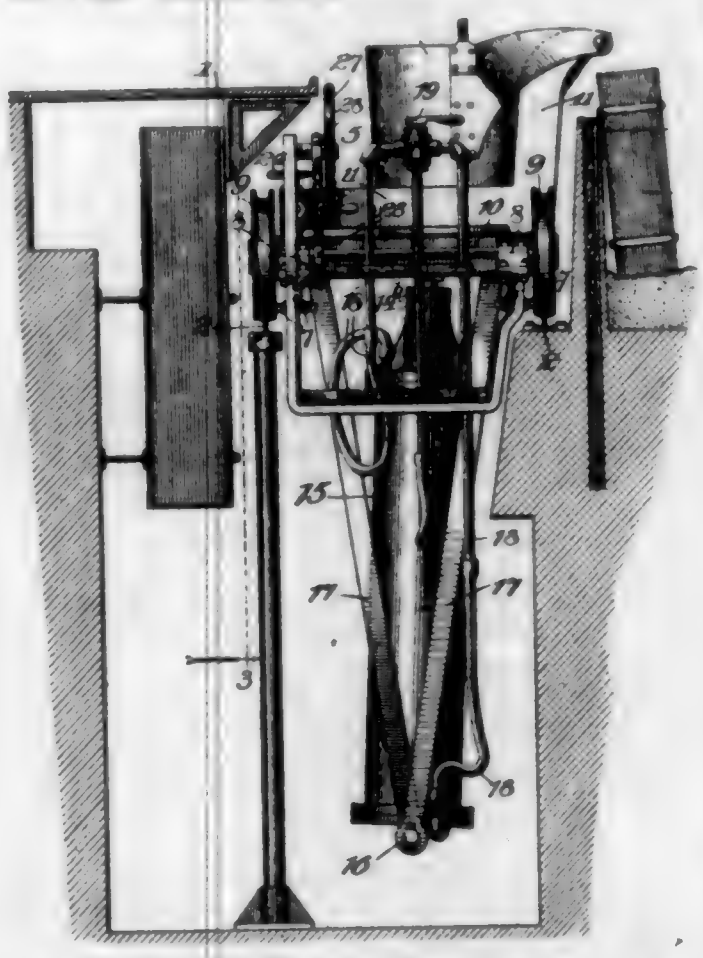
2. In a lock or latch, the combination of the latch-actuating spindle provided at its outer end with means for clutch engagement, the recessed outer plate of the lock, the locking-tube provided at its outer end with an angular hook-formed slot-opening, and at its inner end with a peripheral flange loosely held within the recess of the said outer plate, the outer knob secured to the said locking-tube, the key-receiving case held in the outer end of the outer knob, the sliding locking-piece held in the chamber formed between the inner end of the key-receiving case and the outer end of the bolt-actuating spindle within the bore of the locking-tube, the said locking-piece being provided at its inner end with means for clutch engagement with the end of the bolt-actuating spindle, and with a guiding-pin adapted to traverse the angular slot-opening of the locking-tube, and hold the said locking-piece in its clutch engagement with the bolt-actuating spindle, and the spring held in the bore of the locking-tube between the end of the locking-piece and the end of the bolt-actuating spindle.

3. In a lock or latch, the combination of the latch-actuating spindle provided at its outer end with means for clutch engagement, the recessed outer plate of the lock, the locking-tube provided at its outer end with an angular hook-formed slot-opening, and at its inner end with a peripheral flange loosely held within the recess of the said outer plate, the outer knob secured to the said locking-tube, the key-receiving case, made in two segmental parts in the outer end of the said knob, one of the said segments being provided with guard-pins, and also with the opening to receive the forwardly-projecting lip of the key, the sliding locking-piece held in the chamber formed between the inner end of the key-receiving case and the outer end of the bolt-actuating spindle within the bore of the locking-tube, the said locking-piece being provided at its inner end with means for clutch

engagement with the end of the bolt-actuating spindle, and with a guiding-pin adapted to traverse the angular slot-opening of the locking-tube, and hold the said locking-piece in clutch engagement with the bolt-actuating spindle, and the spring held in the bore of the locking-tube between the abutting ends of the locking-piece and the said bolt-actuating spindle.

4. In a lock or latch, the combination of the locking-tube provided with the angular hook-formed slot-opening at its outer end, the outer knob attached to the said locking-tube, and the sliding locking-piece provided with a guiding-pin adapted to traverse the said slot-opening of the locking-tube, with the key having a projecting lip, the key-receiving case made in two segmental parts and held in the end of the knob, one of the segments being provided with the guard-pins for the key and also with the offset opening to receive the offset forwardly-projecting lip of a key, by means of which the said sliding locking-piece is forced forward into locking engagement.

817,714. APPARATUS FOR CASTING CRUCIBLE STEEL. LESLIE B. HOWARD, La Grange, Ill., assignor to Simonds Manufacturing Company, Fitchburg, Mass., a Corporation of Massachusetts. Filed Dec. 3, 1904. Serial No. 235,282.



Claim.—1. The combination with a platform and a ladle-supporting frame thereon, of a ladle pivotally mounted in said frame and having its pouring-lip coincident with its axis of pivotal movement, and means for bodily and simultaneously shifting the pivots of the ladle with respect to the platform and without affecting their alinement with the pouring-lip, substantially as set forth.

2. The combination with a platform and a ladle-supporting frame, of a ladle pivotally mounted in said frame and having its pouring-lip substantially coincident with its axis of pivotal support, means connected to said frame for bodily and simultaneously shifting the pivots of the ladle with respect to the platform and without affecting their alinement with the pouring-lip, a cylinder pivotally mounted in proximity to the ladle and having its plunger-rod pivotally connected therewith, and means for supplying fluid-pressure to and exhausting it from the cylinder, for the purpose set forth.

3. The combination with a pivotally-mounted cradle, of a ladle pivotally supported in the cradle and formed with its pouring-lip substantially coincident with its axis of pivotal support, means for tilting the ladle, and means for adjustably tilting the cradle to vary the position of the pouring-lip of the ladle, substantially as described.

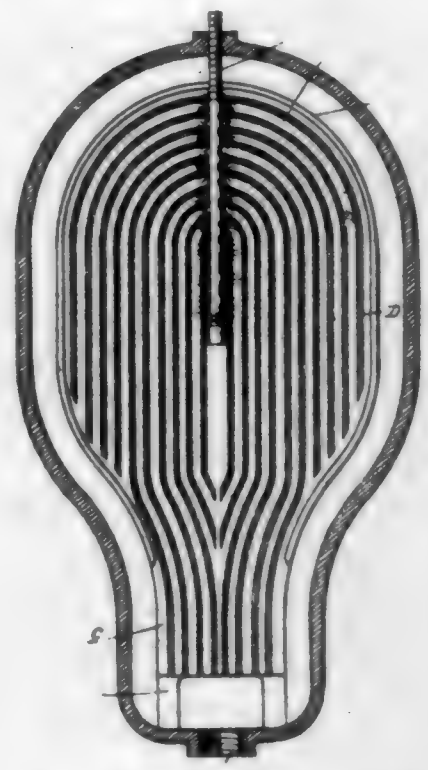
4. The combination with a carriage, of a cradle pivotally mounted on the carriage and consisting of a pair of L-shaped side frames pivotally connected at their angles to the carriage, an adjustable connection between the lower rear ends of the cradle-bars and the carriage to enable the cradle to be tilted on its pivots, and a ladle pivotally mounted between the upper ends of the L-shaped cradle-bars, substantially as described.

5. The combination with a rolling carriage, of a cradle pivotally mounted on the carriage, a ladle pivotally supported in the cradle and formed with a pouring-lip substantially coincident with its axis of pivotal support, means for adjustably tilting the cradle to vary the position of the supporting-lip on the carriage, and a cylinder trunnioned in the carriage beneath the ladle, with its plunger-rod engaging the ladle to tilt the latter, substantially as described.

6. In an apparatus of the class described, the combination of a track, a carriage mounted to run on said track and carrying a ladle-platform, an upright frame pivotally supported at one side of this platform, means for tilting this frame for the purpose set forth, a ladle pivotally connected to the upper end of said frame, the pouring-lip of this ladle being in line with its axis of pivotal movement, and means supported on the carriage for tilting the ladle.

7. In combination with a track, of a carriage mounted on said track, a ladle-supporting frame mounted on said carriage, a ladle pivotally mounted on said frame and adapted to tilt toward one side of the track, a frame depending from the carriage and carrying a pivotally-supported upright cylinder, a piston-rod working in this cylinder and pivotally connected to the bottom of the ladle, a valve and fluid-conducting pipes mounted on the carriage, and flexible connections between these pipes and the cylinder.

817,715. STEAM-SEPARATOR. HENRY H. HUMPHREY, Detroit, Mich., assignor to Austin Separator Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 16, 1905. Serial No. 278,711.



Claim.—1. In a steam-separator, the combination with an inclosing casing having opposed inlet and outlet ports, of a baffle-plate inclosed by and spaced from the walls of said casing, and a spray-pipe within said casing and extending substantially half the length of said baffle-plate, for the purpose described.

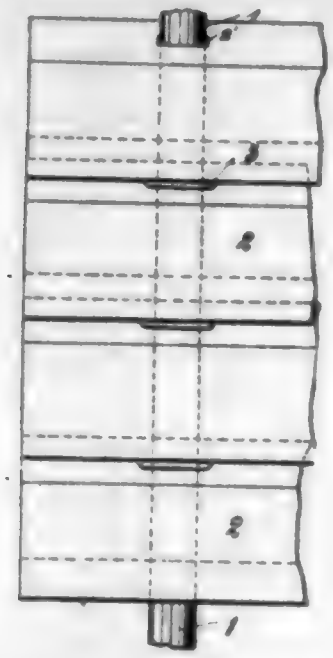
2. In a steam-separator the combination with an inclosing casing having inlet and outlet ports, of a baffle-plate between said ports, and a vertical spray-pipe within said casing in immediate proximity to and extending substantially half the length of said baffle-plate, for the purpose described.

3. In a steam-separator the combination with an inclosing casing having inlet and outlet ports, of a baffle-plate inclosed by and spaced from the walls of said casing, and a vertical water-pipe within said casing in proximity to the baffle having jet-openings arranged at angles on opposite sides to spray the entire surface of said baffle-plate, for the purpose described.

817,716. LATTICE. PAUL JAEGER, Esslingen, Germany. Filed Jan. 23, 1905. Serial No. 242,383.

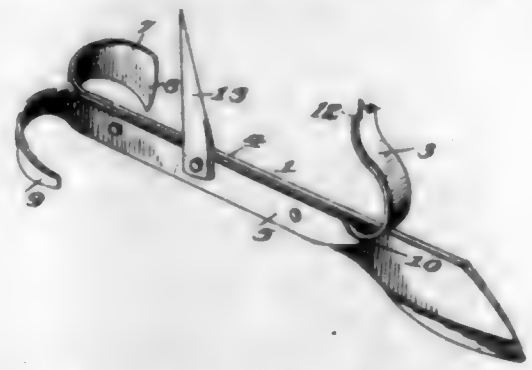
Claim.—1. A lattice composed of laths suspended on flexible steel bands bent or curved in cross-section and separating-bodies fitting said bands and adapted to space said laths.

2. A lattice composed of laths suspended on flexible steel bands bent or curved in cross-section and elastic rings for spacing said laths.



3. A lattice composed of laths strung on flexible steel bands bent or curved in cross-section and elastic rings fitting said bands and spacing said laths.

817,717. HOOF TRIMMER AND CLEANER. JOSEPH L. KOTTAS, Renfrow, Okla. Filed Jan. 24, 1906. Serial No. 297,604.



Claim.—1. In a device of the character described, the combination of a handle, a knife-blade at one end thereof, and laterally and oppositely disposed returned portions at the opposite end thereof which serve both as scraping-blades and finger-guards.

2. In a device of the character described, the combination of a handle, a cutting-blade at one end thereof, an upwardly-projecting cleaning-point at the same end of the handle as the cutting-blade, and laterally and oppositely disposed returned portions at the opposite end of the handle, said returned portions serving the double function of scraping-blades and finger-guards.

3. In a device of the character described, the combination of a handle formed of two separate members which are suitably fastened together, a knife-blade at one end of the handle, and laterally and oppositely disposed returned portions at the opposite end of the handle, said returned portions being formed by bending the two members constituting the handle upon themselves in opposite directions, and being so constructed as to perform the double function of scraping-blades and finger-guards.

4. In a device of the character described, the combination of a handle formed of two separate members which are suitably fastened together, a cutting-blade at the end of one of said members, an upwardly-projecting cleaning-point at the corresponding end of the opposite member, and laterally and oppositely disposed returned portions at the opposite end of the handle, said returned portions being formed by bending the ends of the two members constituting the handle back upon themselves in opposite directions, and being so constructed as to perform the double function of scraping-blades and finger-pieces.

5. In a device of the character described, the combination of a handle formed of two separate members which are suitably fastened together, a cutting-blade at one end of one of the members, an upwardly-projecting cleaning-point at the corresponding end of the opposite member, said cleaning-point being provided on its opposite sides with shoulders, and a pair of oppositely and laterally disposed scraping-blades at the opposite end of the handle, one of said scraping-blades being broadened while the oppositely-disposed scraping-blade is contracted, and both of the scraping-blades being formed by recurving the ends of the two members constituting the handle and being also adapted to serve as finger-guards.

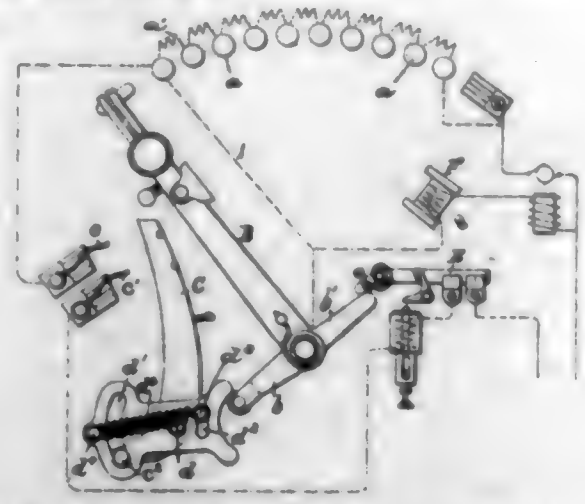
817,718. PANTALOONS-CREASER. JOHN KULHAWIK, Grand Rapids, Mich. Filed Aug. 21, 1905. Serial No. 275,160.



Claim.—1. In a creaser for pantaloons, two vertical bars, thick at one edge and very thin at the other edge, a rod projecting at right angles from each end of each bar, the outer end of each of said rods bent at right angles and slidingly engaged with the adjacent rod, and a spring-clamp connected to one rod in each pair and engage the other rod to automatically lock each pair of said rods.

2. In a pantaloons-creaser, two vertical bars each thick at one edge and very thin at the other edge, a rod projecting at right angles from each end of each bar and having the ends bent at right angles and engaging the adjacent bar slidingly, means for adjusting said bars edgewise and temporarily locking them to place, an adjustable wing connected with one of said bars, a pin at right angles from said wing and passing through the end of the bar, and means for temporarily locking said wing to position by coöperating with the pin.

817,719. ELECTRICAL-CIRCUIT CONTROLLER. HARRY W. LEONARD, Bronxville, N. Y. Filed Nov. 30, 1901. Renewed Dec. 20, 1904. Serial No. 237,653.



Claim.—1. The combination with a rheostat, of a separate switch, a device for causing a force to be suddenly applied at its full strength and thereby actuate said switch to either close or open the circuit, said switch and its operating device being capable of independent movement, and an arm on the rheostat contact-lever for operating said actuating device.

2. The combination of a rheostat, a separate switch, a device for causing a force to be suddenly applied at its full strength and thereby actuate said switch to either close or open the circuit, said switch

and its operating device being capable of independent movement, and an arm on the rheostat contact-lever arranged to engage said device at a predetermined point in the forward or backward movement of the lever.

3. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat, a device for causing a force to be suddenly applied at its full strength and thereby actuate said switch, and means whereby the movement of said device is caused by the movement of said rheostat-lever.

4. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat, means for controlling said switch comprising a hammer-blow device, and means on said contact-lever for controlling the movement of said hammer-blow device.

5. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat comprising stationary contacts and a pivoted switch-blade, an actuating device for said switch-blade comprising a pivoted hammer and a spring for moving the same, said hammer having a movement independent of the switch-blade, and means whereby the movement of said actuating device is controlled by the rheostat-lever.

6. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat comprising stationary contacts and a pivoted switch-blade, an actuating device for said switch-blade comprising a pivoted hammer and a spring for moving the same, said hammer having a movement independent of the switch-blade, and means on said contact-lever for engaging said hammer to start it in movement at a predetermined position of the contact-lever.

7. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat comprising stationary contacts, a pivoted switch-blade, auxiliary spring-metal contacts on each of the said stationary contacts and pins on said switch-blade for making contact with said springs, an actuating device for said switch-blade comprising a pivoted hammer and a spring for moving said hammer and having a movement independent of the switch-blade, and means whereby the movement of said actuating device is controlled by the rheostat-lever.

8. The combination with a rheostat, of a switch, a spring-actuated hammer for operating same, and means engaged by the rheostat-lever at the starting position to start said hammer and effect the closing or opening of the switch as said lever is moved forward or backward.

9. The combination with a rheostat, of a switch, an actuating device therefor, means whereby said switch is closed or opened by the forward or backward movement of the rheostat-lever at the starting position, and an automatic switch responsive to abnormal conditions in the circuit, arranged to be moved in one direction by said lever.

10. The combination with a rheostat, of a switch, an actuating device therefor, means whereby said switch is closed or opened by the forward or backward movement of the rheostat-lever at the starting position, and an automatic switch responsive to abnormal conditions in the circuit, said two switches being arranged for successive operation by said lever to close the circuit.

11. The combination with a rheostat and its contact-lever, of a separate switch, a device for actuating said switch to either close or open the circuit, said switch and its operating device being capable of independent movement, an arm on the rheostat contact-lever for operating said actuating device, and an electroresponsive device responding to abnormal conditions in the circuit to open the rheostat-circuit.

12. The combination with a rheostat and its contact-lever, of a separate switch, a device for actuating said switch to either close or open the circuit, said switch and its operating device being capable of independent movement, an arm on the rheostat contact-lever for operating said actuating device, an automatic switch controlled by an electroresponsive device responding to abnormal conditions in the circuit, and means whereby said automatic switch is closed by the movement of the rheostat-lever toward the starting position.

13. The combination with a rheostat and a spring-actuated contact-lever therefor, of an independent switch, means whereby said switch is closed and opened respectively through the forward and backward movement of the contact-lever, an electromagnet for holding said contact-lever in its final position, an automatic switch, an electroresponsive device controlling the opening movement of said switch, and means whereby said switch is closed by the backward movement of the contact-lever.

14. The combination with a rheostat and a spring-actuated contact-lever therefor, of a separate switch, an actuating device for said switch capable of movement independent thereof, means whereby said actuating device is operated to close or open said switch respectively by the forward or backward movement of the contact-lever, and an electroresponsive device for automatically releasing the contact-lever and permitting its return to the starting position under abnormal conditions in the circuit.

15. The combination of a hand-operated electric switch, a switch in series therewith, means for moving said second switch to the closed position, and means controlled by the movement of said hand-operated switch for suddenly applying a force at its full strength and thereby control the closing movement of said second switch.

16. The combination of a hand-operated electric switch, a switch in series therewith, means for moving said second switch to the closed or open position, and means controlled by the movement of said hand-operated switch for suddenly applying a force at its full strength and thereby control the movement of said second switch.

17. The combination with a rheostat having a contact-lever for controlling the resistance, of a switch in series therewith, means for moving said switch to the closed position, and means controlled by the movement of said contact-lever for suddenly applying a force at its full strength and thereby control the closing movement of said switch.

18. The combination of a hand-operated electric switch, a switch in series therewith, and mechanical means caused to act by the movement of said hand-operated switch for suddenly applying a force at its full strength and thereby cause the movement of said second switch.

19. The combination with a rheostat having a contact-lever for controlling the resistance, of a switch in series therewith, and means caused to act by the movement of said contact-lever for causing a force to be suddenly applied at its full strength and thereby cause the movement of said switch.

20. The combination with a rheostat having a contact-lever for controlling the resistance, of a switch in series therewith, means for automatically moving said switch to the closed position, means operated by the movement of the contact-lever for controlling the closing movement of said switch, and an electroresponsive device responding to overload to effect the opening of the circuit.

21. The combination with a rheostat having a contact-lever for controlling the resistance, of a switch in series therewith, means for automatically moving said switch to the closed position, means operated by the movement of the contact-lever for controlling the closing movement of said switch, an electroresponsive device responding to overload, a switch whose opening movement is controlled by said device, and means for closing said switch through the movement of the rheostat contact-lever.

22. The combination with a rheostat and its contact-lever, of a switch for controlling the circuit to said rheostat, means for controlling said switch comprising a hammer-blow device, and means whereby the movement of said device is controlled mechanically by said rheostat-lever.

23. The combination of a resistance having a movable element adapted to control said resistance, a switch for controlling the circuit to said resistance, means for controlling said switch having a movement independent of the switch, and means controlled by said movable element for causing the movement of said first-named means to thereby cause a force to be suddenly made effective at its full strength to move said switch.

24. The combination of a resistance having a movable element adapted to control said resistance, a switch for controlling the circuit to said resistance, and means comprising a movable part caused to act by the movement of said movable element for causing a force to be suddenly made effective at its full strength for quickly moving said switch.

25. The combination of a hand-operated electric switch, a switch in series therewith, and means caused to act by said hand-operated switch for causing a force to be suddenly made effective at its full strength for quickly opening said second switch so that the current through said hand-operated switch will be interrupted by said second switch.

26. The combination with a rheostat having a movable element for controlling the resistance, of a switch in series therewith, and means caused to act by the movement of said movable element for causing a force to be suddenly applied at its full strength for controlling the opening movement of said switch.

27. The combination with a rheostat having a movable element for controlling the resistance, of a switch in series therewith, means

for causing the automatic movement of said switch to the open position, means operated by the movement of said movable element for controlling the opening movement of said switch, and an electroresponsive device responding to overload to protect the circuit under all operating conditions.

28. The combination with a supply-circuit, of a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the opening of said switch, said means being controlled by said movable element, and means for causing said circuit to be opened upon the occurrence of overload, said overload means comprising an additional electromagnetic switch.

29. The combination with a supply-circuit, of a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the opening of said switch, said means being controlled by said movable element, and means responding to overload and no voltage for causing said circuit to be opened, said overload means being effective independently of the position of said element.

30. The combination with a supply-circuit, of a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the opening of said switch, said means being controlled by said movable element, a second series switch, and means for opening said second switch upon the occurrence of overload.

31. The combination with a supply-circuit, of a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the opening of said switch, said means being controlled by said movable element, a second series switch, means for closing said second switch by the movement of said movable element, and means for opening said second switch upon the occurrence of abnormal conditions in the circuit.

32. The combination with a supply-circuit, of a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the opening of said switch, said means being controlled by said movable element, a second series switch, means for closing said second switch by the movement of said movable element, means for opening said second switch upon the occurrence of overload, and means for causing said circuit to be opened upon the occurrence of no voltage.

33. The combination of a resistance having a movable element adapted to vary said resistance, a switch for controlling the circuit to said resistance, means for causing the opening of said switch, said means comprising a movable part controlled by said movable element and having a movement independent of the movement of said switch, and means for causing said circuit to be opened upon the occurrence of overload.

34. The combination of a resistance having a movable element adapted to vary said resistance, a switch for controlling the circuit to said resistance, means for causing the opening of said switch, said means comprising a movable part controlled by said movable element and having a movement independent of said switch, and means for causing said circuit to be opened upon the occurrence of no voltage.

35. The combination of a resistance having a movable element adapted to vary said resistance, a switch for controlling the circuit to said resistance, means for causing the opening of said switch, said means comprising a movable part controlled by said movable element and having a movement independent of the movement of said switch, and means responsive to overload and to no voltage for causing said circuit to be opened.

36. The combination of a resistance having a movable element adapted to vary said resistance, a switch for controlling the circuit to said resistance, means for causing the opening of said switch, said means comprising a movable part controlled by said movable element and having a movement independent of said switch, a second switch, means for closing said second switch by the movement of said movable element, and means for opening said second switch upon the occurrence of abnormal conditions in the circuit.

37. The combination of a supply-circuit, a resistance having a movable element adapted to vary said resistance, a switch for controlling the circuit to said resistance, means for causing the opening of said switch, said means comprising a movable part controlled by said movable element and having a movement independent of the movement of said switch, a second switch, means for causing the closing of said second switch by the movement of said movable element, means for causing the opening of said second switch upon the occurrence of overload, and means for causing said circuit to be opened upon the occurrence of no voltage.

38. The combination with a supply-circuit, of a resistance, means for varying said resistance, a switch in series with said resistance, means for causing the opening of said switch, said latter means being controlled by said resistance-varying means so that said switch interrupts the current through said resistance-varying means, and an electroresponsive means for causing said circuit to be opened upon the occurrence of overload.

39. The combination of a rheostat having a movable element for controlling the resistance, an automatic switch in series with said resistance, means for causing said switch to be opened automatically when the resistance-controlling element is in a certain position so as to interrupt the current in said element, and an electroresponsive device which effects the opening of the circuit upon the occurrence of predetermined overload-current.

40. The combination of a rheostat having a movable element by the movement of which the resistance in circuit can be varied from a certain minimum to a certain maximum, a circuit-opening automatic switch in series with said resistance, means for causing said switch to be opened automatically when the movable element is moved to a certain position and to cause said switch to interrupt the current through said element, and means responsive to a predeterminable maximum energy in the circuit for effecting the opening of the circuit.

41. The combination of a resistance, an element for controlling said resistance but which cannot open the circuit in which said resistance is connected, a circuit-opening switch in series with said resistance, means for automatically opening said switch when the said controlling element is in a certain position, and means for protecting the circuit upon the occurrence of no voltage and upon the occurrence of overload-current.

42. The combination of a motor having a shunt field-winding, an automatic switch for controlling the current to both the armature and field winding of said armature, a resistance in the armature-circuit of said motor, a hand-operated device for controlling the amount of said resistance in the armature-circuit, means for causing the said automatic switch to open the circuit when the said device is in a certain position so as to interrupt the current through said device, and means for protecting the armature-circuit upon the occurrence of no voltage and overload conditions.

43. The combination with a rheostat having a movable element for controlling the resistance, of a switch in series therewith, means for causing the closing of said switch, said means comprising a device actuated by the movement of said movable element, and said device acting to control the closure of said switch, and an electroresponsive device responding to overload to effect the opening of the circuit independently of the position of said movable element.

44. The combination of a supply-circuit, a resistance having a movable element for varying said resistance, a switch in series therewith, means for causing the closing of said switch, said means being controlled by said movable element so that the current through said movable element is interrupted by said switch, and means for causing said circuit to be opened upon the occurrence of overload.

45. The combination of a motor-rheostat having a movable element for controlling the resistance, an electromagnetic overload circuit-breaker in series with said rheostat, the said circuit-breaker and movable element being mounted independently, means for normally restraining said movable element and for releasing the same upon the occurrence of an abnormal condition, and means functionally relating the said circuit-breaker and movable element whereby the circuit-breaker is closed only when there is a protective amount of resistance in circuit.

46. The combination of a motor-controlling resistance, a movable element for varying the amount of said resistance in circuit, an automatic switch in series therewith, said switch and movable element being functionally related, and a second automatic switch in series therewith for automatically protecting the circuit upon the occurrence of abnormal conditions.

47. The combination of a motor-controlling resistance, a movable element for varying the amount of said resistance in circuit, an automatic switch in series therewith, said switch and said movable element being functionally related for opening and closing said switch so that the said switch will establish and interrupt the current through said movable element, means for protecting the circuit upon the occurrence of no voltage and means for protecting the circuit upon the occurrence of overload.

48. The combination with a motor-rheostat having a movable element for controlling the resistance, two automatic switches in series with each other and with said rheostat, and means for controlling the closing movement of at least one of said switches whereby the

movable element must be in a protective position when said automatic switch or switches are closed.

49. The combination of a resistance, a contact device for varying said resistance, an auxiliary quick-acting switch for opening the circuit functionally related to said contact device, a magnetic circuit-breaker for opening the circuit upon the occurrence of an abnormal condition of the circuit comprising an additional electromagnetic switch, and means whereby the closing of the circuit-breaker when the resistance is in a non-protective condition is avoided.

50. The combination with a supply-circuit, of a resistance, means for varying said resistance, a switch in series with said resistance, means for causing said switch to be opened, said latter means being controlled by said resistance-varying means, and means for causing said circuit to be opened upon the occurrence of overload, said overload means comprising an additional electromagnetic switch.

51. The combination with a supply-circuit, of a resistance, means for varying said resistance, a switch in series with said resistance, means for causing said switch to be opened, said latter means being controlled by said resistance-varying means so that said switch will interrupt the current through said resistance-varying means, and means for causing said circuit to be opened upon occurrence of overload, said overload means comprising an additional electromagnetic switch.

52. The combination with a motor-controlling rheostat having a movable element for controlling the resistance, two automatic switches electrically connected therewith, the said switches being independently closable, and means for controlling the closing movement of at least one of said switches whereby the movable element must be in a proper position when said automatic switch or switches are closed.

53. The combination with a motor-rheostat having a movable element for controlling the resistance, two automatic switches in circuit therewith, the said switches being independently closable, and means for controlling the closing movement of at least one of said switches whereby the movable element must be in a protective position when said automatic switch or switches are closed.

54. The combination with a motor-rheostat having a movable element for controlling the resistance, two automatic switches in series with each other and with said rheostat, the said switches being closable in succession, and means for controlling the closing movement of at least one of said switches whereby the movable element must be in a protective position when said automatic switch or switches are closed.

55. The combination of a resistance-controlling arm, a switch moved thereby to a certain position, means for restraining the switch in said position, a second switch, and means controlled by said arm for moving said second switch to its closed position when the said resistance-controlling arm is moved away from its initial position.

56. The combination of a rheostat, two switches in series with each other closable successively, means for automatically opening the switch first closed if an excessive current flows in the circuit when the second switch is closed, and means for insuring the closure of said two switches only when the rheostat is in a desired starting condition.

57. The combination of a resistance having a movable contact device, two switches in series with each other closable successively, means for automatically opening one of said switches upon the occurrence of predetermined overload-current, means for retaining said contact device normally in a certain position and for releasing said device upon the occurrence of an abnormal condition in the circuit, means for moving said device to a protective position when released, and means for insuring the closing of said overload-switch only when said contact device is in a protective position.

58. The combination of a motor, a rheostat for said motor having a movable element, a switch, means for causing the movement of said element to control the movement of said switch in two directions, an electroresponsive winding the current in which is controlled by said switch, and a switch in series with the motor-armature controlled by said electroresponsive winding.

59. The combination of a motor, a rheostat for said motor having a movable element, means for causing an auxiliary electrical contact to be made when said element is moved to a certain position and to be broken when moved to another position, an electroresponsive winding the current in which is affected by the making and breaking of said contact, and a switch in series with the motor-armature controlled by said electroresponsive winding.

60. The combination of a circuit-controlling rheostat having a movable element, means for causing an auxiliary electrical contact to be made when said element is moved to a certain position and to be broken when said element is moved to another position, an electroresponsive winding the current in which is affected by the making and breaking of said contact, and an automatic switch controlled by said winding.

61. The combination of a circuit-controlling rheostat having a movable element, means for causing an auxiliary electrical contact to be made when said element is moved to a certain position and to be broken when said element is moved to another position, an electroresponsive winding the current in which is affected by the making and breaking of said contact, an automatic switch controlled by said winding, and means for protecting the circuit upon the occurrence of no voltage.

62. The combination of a motor, a rheostat in circuit with the armature thereof, a switch in series with the armature, electroresponsive means which respond to effect the movement of said switch to a protective position under abnormal conditions, a switch which controls the current to said electroresponsive means, and means for causing the control of said latter switch only when said rheostat is in a proper condition.

63. The combination of a resistance, a movable element for varying the resistance, two switches in series with each other, at least one of said switches being so functionally related to said movable element that the circuit through said two switches can be closed only when said movable element is in a proper starting position.

64. The combination of two independently-movable switches and a rheostat, a motor to which said switches and rheostat are functionally related, means for functionally relating at least two of said devices so that they cannot both be closed except when the third device is in a proper starting position, and means for causing at least two of said devices to be moved automatically in response to abnormal circuit conditions.

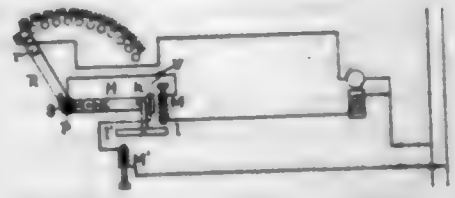
65. The combination of a hand-controlled device, a switch in series therewith, and means controlled by the movement of said device for causing a force to be suddenly made effective at its full strength for quickly closing said switch when said device has been moved to a certain position independently of the rate of movement of said device.

66. The combination of a manually-controlled device, a switch in series therewith, and means controlled by said device for causing a force to be suddenly applied at its full strength to quickly open and quickly close said switch independently of the rate of movement of said device.

67. The combination of an electric motor, a controlling-rheostat having a manually-controlled element, a switch in series with said rheostat, and means controlled by said element for causing a force to be suddenly made effective at its full strength for quickly opening and quickly closing said switch independently of the rate of movement of said element.

817,720. AUTOMATIC ELECTRIC-CIRCUIT CONTROLLER.

HARRY W. LEONARD, Bronxville, N. Y. Filed Jan. 26, 1903. Serial No. 140,506.



Claim.—1. In an automatic circuit-controller, the combination with a shunt-wound motor, a rheostat contact-lever, a spring-actuated arm, means which under normal conditions holds said arm in a definite position, and two electroresponsive devices arranged to release said arm under abnormal conditions, one of the said electroresponsive devices being responsive to the motor-armature current, and the other electroresponsive device being in series with the motor shunt-field, substantially as set forth.

3. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated arm, a pivoted locking device for said arm having two lateral arms, a solenoid whose core is normally up and arranged to drop on one of said arms to trip the locking device, a second solenoid whose core is normally down and arranged to strike a blow upon the other arm to trip said latch, substantially as set forth.

3. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated arm, a pivoted locking device for said arm having two lateral arms, a solenoid above one arm and whose core is normally up and arranged to drop on said arm to trip the latch, a second solenoid below the other arm and whose core is normally down and arranged to be drawn upward to strike the second arm of the latch to trip it, substantially as set forth.

4. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated hammer-arm, a locking device for holding said arm in its normal position, and two electroresponsive devices arranged to release said arm under abnormal conditions to impart a blow to the rheostat-lever and drive it to its starting position, substantially as set forth.

5. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated hammer-arm arranged to impart a blow to said rheostat-lever and drive it to the starting position, a pivoted locking device for said arm having two lateral arms, a solenoid whose core is normally up and arranged to drop on one of said arms to trip the latch, a second solenoid whose core is normally down and arranged to strike a blow upon the other arm to trip said latch, substantially as set forth.

6. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated arm pivotally connected thereto, a locking device for holding said arm in its normal position, and two independent electroresponsive devices for releasing said arm one of which responds to predetermined overload-current, and the other of which is independent of the current, and responds to abnormally low voltage, substantially as set forth.

7. In an automatic circuit-controller, the combination with a rheostat contact-lever, a spring-actuated arm pivotally connected thereto, a pivoted locking device for holding said arm in its normal position, and two independent electroresponsive devices for releasing said arm, one of which responds to predetermined overload-current, the other of which is independent of the current, and responds to abnormally low voltage, substantially as set forth.

8. An electric motor having a shunt field-winding, two switches in series with each other, and in series with the motor-armature, the first switch being a hand-actuated resistance-controlling switch, and the other switch being an automatic switch normally held closed against the action of a spring by a latch, a solenoid-magnet in series with the two switches and motor-armature which releases the latch on the occurrence of a predetermined overload-current, and a solenoid having a plunger which acts directly upon the same latch on the occurrence of "no current" substantially as set forth.

9. An electric motor having a shunt field-winding, two pivotally-connected switches in series with each other and in series with the motor-armature, the first switch being a hand-actuated resistance-controlling switch, mechanical restraining means for normally holding the other switch closed against the action of a force, a magnet in series with the two switches and the motor-armature which releases the said restraining means on the occurrence of a predetermined overload-current, and electroresponsive means which releases the same restraining means on the occurrence of abnormally reduced voltage.

10. A constant electromotive-force-supply current, and two pivotally-connected switches in series across the said constant electromotive-force circuit, one switch being a resistance-controlling switch, and the other switch being an automatic circuit-breaker responsive to independent magntic means, the said means acting upon overload and no-voltage conditions in the circuit respectively.

11. An automatic circuit-breaker having in combination, a switch, a spring constantly tending to open the switch, a latch for normally maintaining the switch closed against the action of the spring, and two solenoids, the plungers of which act directly upon the said latch to release it one upon the occurrence of a predetermined overload-current, and the other upon the occurrence of "no voltage," substantially as set forth.

12. An automatic circuit-breaker having in combination a switch acted upon by a force tending to open the switch, mechanical restraining means for normally maintaining the switch closed against the action of the force, and two electroresponsive devices, one of which releases the restraining means on a predetermined overload-current, and the other upon the occurrence of an abnormal reduction in voltage, and a hand-actuated resistance-controlling switch which, when it is moved in the direction of inserting resistance, closes the circuit-breaker.

13. A shunt-wound electric motor, an automatic switch in series with the armature of the motor normally acted upon by a force constantly tending to open said switch, mechanical restraining means for holding said switch closed against the action of said force, electroresponsive means in series with the motor-armature which, upon the occurrence of a predetermined overload-current releases the said restraining means, electroresponsive means in series with the shunt field-winding of the motor which releases the said restraining means upon abnormal diminution of current in the motor shunt field-winding, and a resistance-controlling switch in series with said automatic switch and with the motor-armature, the two switches being so arranged that the resistance-controlling switch must be placed in a protective position before the automatic switch can be closed.

14. An electric motor connected to a constant electromotive-force-supply circuit, an automatic circuit-breaker in series with the armature of the motor and having in combination a switch, a spring constantly tending to open the switch, a latch for normally maintaining the switch closed against the action of the spring, and two solenoids, the plungers of which act directly upon the said latch to release it, one solenoid being responsive to excessive current through the motor-armature, and the other solenoid being responsive to abnormally low voltage at the armature-terminals, substantially as set forth.

15. A source of practically constant electromotive force, an automatic switch in series therewith, a spring tending constantly to open said switch, a latch which normally holds said switch closed, and two independent electroresponsive devices having plungers which act directly upon said latch, one of which releases said latch and thereby causes the opening of the automatic switch, when an excessive current is passed through the said switch, and the other of which releases the said latch, and thereby causes the opening of the automatic switch whenever the line electromotive force becomes abnormally low, substantially as set forth.

16. The combination with a motor having a field-winding energized by a current independent of its armature-current, of a resistance-controlling switch, an automatic switch normally acted upon by a force tending to move it, means which under normal conditions holds said automatic switch in a definite position, and two electroresponsive devices arranged to release said automatic switch under abnormal conditions, one of said electroresponsive devices being responsive to current in the motor-armature and the other electroresponsive device being dependent for its action upon current in the field-circuit of the motor.

17. The combination with a motor having a field-winding energized by a current independent of its armature-current, of a resistance-controlling switch, an automatic arm acted upon by a force tending to move it, means for holding said arm under normal conditions in a definite position, and two independent electroresponsive devices arranged to release said arm upon conditions of no voltage and overload-current respectively.

18. An electric motor having a shunt field-winding, two switches in series with each other and with the motor-armature, the first switch being a hand-actuated resistance-controlling switch, and the other switch being an automatic switch normally held closed against the action of a force, means for holding said automatic switch closed, a magnet in series with the two switches and motor-armature for releasing the said means on the occurrence of a predetermined overload-current, and a magnet having a movable element affected thereby, which element acts directly upon the said means upon predetermined reduction of current in said magnet.

19. An automatic circuit-breaker having in combination a switch, a spring constantly tending to open said switch, a latch for normally maintaining the switch closed against the action of said spring, and two magnetic devices which act directly upon the said latch to release it, one upon the occurrence of a predetermined overload-current, and the other upon the occurrence of no voltage.

20. An electric motor having a field-winding energized by a current independent of its armature-current, a supply-circuit of constant electromotive force, an automatic switch in series with the armature of the motor, mechanical restraining means for normally holding said switch closed against a force constantly tending to move said switch, electroresponsive means in series with the motor-armature which upon predetermined overload-current releases said restraining means, electroresponsive means responding independently of the armature-current for releasing said restraining means upon abnormal conditions in the supply-circuit, and a spring-actuated resistance-controlling switch, which when moved in the direction of inserting resistance closes the said automatic switch.

21. An electric motor and constant-electromotive-force-supply circuit, an automatic circuit-breaker in series with the armature of the motor and having in combination a switch, a spring constantly tending to open the switch, a latch for normally maintaining the

switch closed against the action of the spring, and two electromagnetic devices which act directly upon the said latch to release it, one of said devices being responsive to excessive current to the motor-armature, and the other of said devices being responsive to abnormally low voltage at the armature-terminals.

22. A source of practically constant electromotive force, an automatic switch in series therewith acted upon by a force tending to open the same, mechanical restraining means for normally holding said switch closed, and two independent electroresponsive devices having plungers which act directly upon said restraining means, one of which releases said restraining means when an excessive current is passed through the said switch, and the other of which releases the said restraining means when the line electromotive force becomes abnormally low.

23. In an automatic circuit-controller, the combination with a resistance-controlling switch, of a spring-actuated hammer-arm, a locking device for holding said arm in its normal position, and two electroresponsive devices arranged to release said arm under abnormal conditions to impart a blow to the said switch and drive it to its starting position.

24. In an automatic circuit-controller, the combination with a switch, of a spring-actuated hammer-arm, mechanical restraining means for holding said arm in its normal position, and an electroresponsive device for releasing said arm upon the occurrence of abnormal no voltage in the circuit to impart a blow to move said switch.

25. In an automatic circuit-controller, the combination with a switch, of a spring-actuated hammer-arm, mechanical restraining means for holding said arm in its normal position, and an electroresponsive device for releasing said arm upon the occurrence of either of two different abnormal conditions of the circuit to impart a blow to move said switch.

26. In an automatic circuit-controller, the combination of a resistance and a resistance-controlling switch, a spring-actuated hammer-arm, mechanical restraining means for holding said arm in its normal position, and an electroresponsive device for releasing said arm upon the occurrence of either of two different abnormal conditions of the circuit to impart a blow to move said switch.

27. The combination of an electric motor, an armature resistance, a resistance-controlling switch, a spring-actuated hammer-arm, mechanical restraining means for holding said arm in its normal position, and an electroresponsive device for releasing said arm upon the occurrence of either of two different abnormal conditions of the motor-circuit.

28. A constant-electromotive-force-supply circuit, an electric motor, a switch for controlling the armature-circuit, a movable arm, means for normally holding said arm in a fixed position and for releasing said arm on the occurrence of no voltage and overload-current, means for moving said arm when so released and causing the same to engage said switch and move the latter to a protective position.

29. A constant-electromotive-force-supply circuit, an electric motor, a variable resistance in circuit with one element of said motor, a switch for controlling the said resistance, a movable arm, means for normally holding said arm in a fixed position and for releasing said arm on the occurrence of no voltage and overload-current, means for moving said arm when so released and causing the same to engage said switch and move the latter to a protective position.

30. In an automatic circuit-controller, two pivotally-connected arms, one of said arms being a resistance-controlling arm which can be moved to a position so as to include any desired portion of resistance, the other arm being a spring-actuated arm normally held in a certain position, two electroresponsive devices affecting the release of the said spring-actuated arm under different abnormal conditions, and means whereby the said spring-actuated arm when released moves the resistance-controlling arm.

31. The combination of an electric motor, two pivotally-connected arms, one being a resistance-controlling arm which can be moved to a position so as to include any desired portion of resistance, the other arm being a spring-actuated arm normally held in a certain position, two electroresponsive devices affecting the release of the said spring-actuated arm under abnormal conditions, one of said devices being connected in series with the motor-armature and the other of said devices in series with the motor-field, and means whereby the said spring-actuated arm when released moves the resistance-controlling arm.

32. The combination of an electric motor, two pivotally-connected arms, one being a resistance-controlling arm which can be moved to a position so as to include any desired portion of resistance, the other arm being a spring-actuated arm normally held in a certain position, two electroresponsive devices affecting the release of the said spring-actuated arm under abnormal conditions, one of said devices being connected in series with the motor-armature, and the other of said devices being connected in a circuit independent of the armature-current, and means whereby the said spring-actuated arm when released moves the resistance-controlling arm.

33. The combination of two pivotally-connected movable electric-circuit-controlling elements, and means for automatically controlling one of said elements, said means comprising two electroresponsive devices which respond independently of each other.

34. The combination of a circuit-controlling element, means for automatically controlling the movement of said element comprising two electroresponsive devices which respond independently of each other, and a second movable element through the movement of which said first-named element is caused to assume its normal operative position.

35. The combination of an electric motor having a field-winding energized by a current independent of its armature-current, two independently-movable switches in series with each other and with the motor-armature, a single means for controlling the closing movement of said switches, and means for controlling the automatic movement of one of said switches comprising two electroresponsive windings, one of said windings being in series with the motor-armature and the other of said windings being in series with said field-winding.

36. The combination of a motor having a field-winding energized by a current independent of its armature-current, two switches in series with the motor-armature, means whereby said switches can be closed only in definite sequence, and means for causing the automatic protective movement of one of said switches comprising two electroresponsive windings, one of said windings being in series with the motor-armature and the other in series with said field-winding.

37. The combination of two independently-movable switches in series with each other, a single means for controlling the closing movement of said switches, and means protectively related to one of said switches comprising two independent electroresponsive windings.

38. The combination of an electric motor, an automatic switch in series therewith, a non-automatic switch also in series therewith whose movement effects the closing of said automatic switch, and means for automatically and independently protecting the circuit under two different abnormal conditions, said means comprising two independent electromagnetic windings.

39. The combination of a controlling-switch, a mechanical detent for holding said switch in its restrained position, a current-controlling device the movement of which effects the movement of said switch to its restrained position, and two electroresponsive devices for effecting the release of said restraining means upon the occurrence of abnormal current and voltage.

40. The combination of an electric motor, a protective switch, a mechanical detent for holding said switch in a restrained position, a current-controlling device the movement of which effects the closure of said switch, and means for automatically protectively controlling said detent comprising two electroresponsive windings, one of said windings being in series with the motor-armature and the other of said windings being in a circuit other than that of said motor-armature.

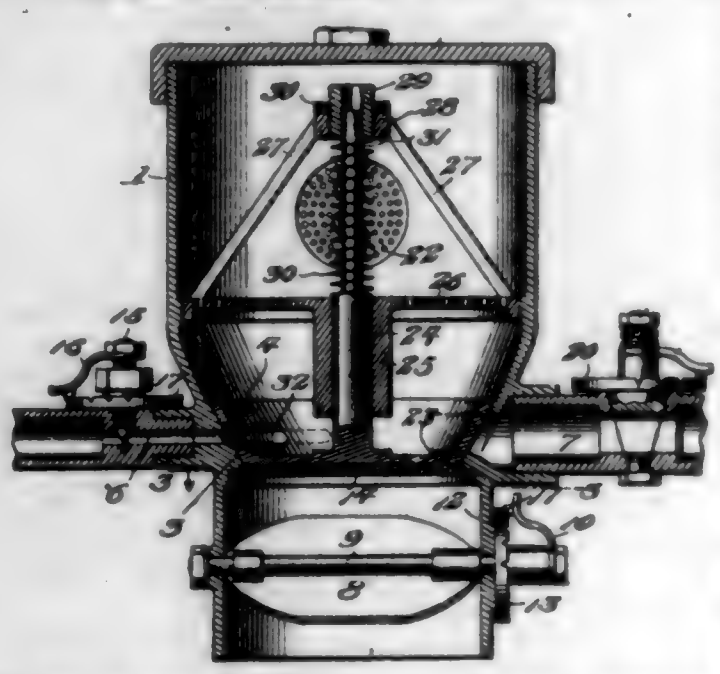
41. The combination with an automatic circuit-breaker comprising two independently-functioning electroresponsive windings controlling the automatic operation of the circuit-breaker in response to two different circuit conditions, of a current-controlling device by the operation of which the closure of said circuit-breaker is effected.

42. The combination of an electric motor, an automatic circuit-breaker and a resistance-controlling switch in series therewith, means for effecting the closure of the circuit-breaker by the movement of said switch, and means for effecting the automatic opening of the circuit-breaker when the current through the motor-armature exceeds a certain amount and when the supply electromotive force becomes abnormally low, said means comprising two electroresponsive windings each having a magnetic mass moved by the resultant effect of gravity and magnetism.

43. The combination with an automatic circuit-breaker comprising two electromagnetic windings, each of said windings having a magnetic mass automatically movable under the resultant influence of magnetism and gravity, of a current-controlling device in-

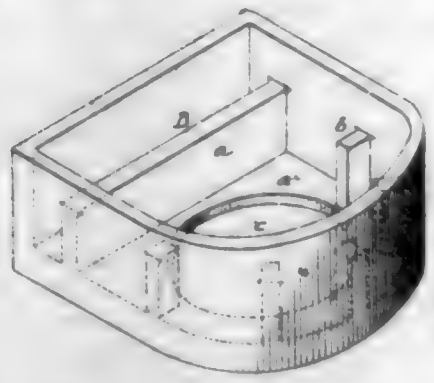
dependently movable and by the movement of which the circuit-breaker is moved to its normal protective position.

817,721. CARBURETER. JAY C. LEWIS, Shelby, Ohio. Filed Feb. 10, 1905. Serial No. 245,122.



Claim.—A carbureter comprising a casing, a coned valve-seat therein, a valved air-inlet communicating with said valve-seat and having a perforated diaphragm therein, a valved hydrocarbon-liquid inlet communicating with said valve-seat, a valved gas-inlet communicating with said valve-seat, a perforated diaphragm in said casing having a bushing, a coned valve coöperating with said coned valve-seat and controlling the three inlets, a stem connected with said coned valve and projecting through the bushing of said perforated diaphragm, supporting-arms on said last-mentioned diaphragm, a collar supported by said arms, a bushing connected with said collar and surrounding the upper end of said valve-stem, and an outlet from said casing having a perforated diaphragm therein.

817,722. SAGGAR FOR BAKING POTTERY. JOHN W. LYONS, Philadelphia, Pa. Filed Dec. 20, 1905. Serial No. 293,840.



Claim.—1. A saggar having a body portion, and a pocket, substantially as described.

2. A saggar having a body portion and a partition at one side forming a pocket, substantially as described.

3. A saggar having a body portion and a partition extending from one side of the body portion to the other forming a pocket closed at the bottom, substantially as described.

4. A saggar having a body portion, a bottom and a partition forming a pocket on one side of the partition, the bottom being open on the opposite side of the partition, substantially as described.

5. In a saggar, the combination of a body portion having a partition at one side forming a pocket closed at the bottom, and projections at the opposite side with a slab supported by the partitions and projections.

6. In a saggar, the combination of a body portion, a bottom having an opening therein, a partition at one side of the opening forming a pocket, a series of projections, with a slab mounted on the partitions and projections and less in width than the body portion so that the back of a washstand-form resting on the slab can project into the pocket.

7. In a saggar, the combination, of a body portion, having a bottom, a partition and projections, the side walls of the body portion projecting above the partition and projections, and a slab mounted within the body portion, the side walls being of such height as to support another saggar clear of its contents, substantially as described.

8. In a saggar, the combination, of a body portion having a partition forming, a pocket and sand in said pocket in which the article to be baked is embedded, substantially as described.

9. In a saggar for holding corner-washstand forms, of a body portion having two pockets therein, one at an angle to the other and united at the angle, and having an opening in the bottom to allow the bowl of another washstand-form to project therethrough, substantially as described.

817,723. LINE-GUIDE. WILLIAM R. MCGOWEN, Knoxville, Ill., assignor of one-half to Augustus I. Kelley, Bushnell, Ill. Filed June 15, 1905. Serial No. 265,307.

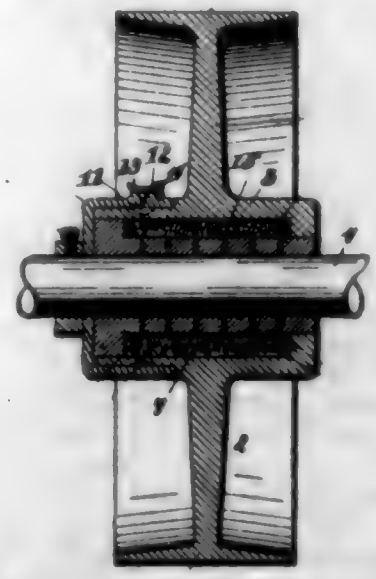


Claim.—1. As a new article of manufacture, a line-guide comprising a base portion from which extend vertical fingers separated from each other to form an elongated vertical slot, the said fingers bearing upwardly and diagonally in opposite directions and having their upper ends inturned and carried parallel with each other between which is an open way communicating with the slot aforesaid.

2. As a new article of manufacture, a line-guide comprising a base portion having a flange and a depending threaded stem, of a pair of vertically-extended fingers integral with the said base and separated from each other to form an elongated slot, the said fingers bearing upwardly and diagonally in opposite directions and having their upper ends inturned and carried parallel with each other between which is an open way communicating with the slot aforesaid.

3. As a new article of manufacture, a line-guide comprising a base portion having an annular flange and a depending threaded stem, of a pair of vertically-extended fingers integral with the said base and separated from each other to form an elongated slot between the same, the upper wall of the said slot consisting of inturned and oppositely-carried extensions of the said fingers which lie parallel and apart from each other to form an open way communicating with the slot aforesaid, the said fingers extending upwardly from the said base and in diagonal lines opposite to each other, substantially for the purposes specified.

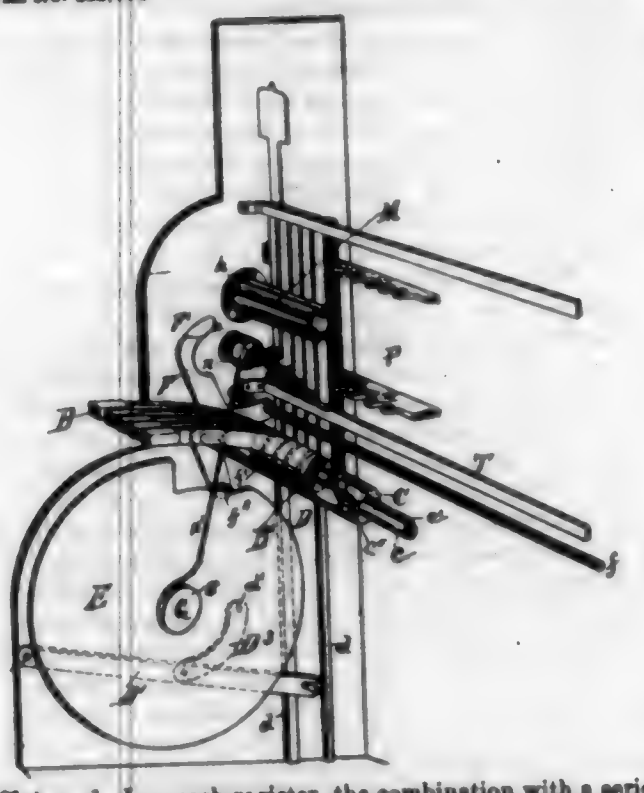
817,724. LOOSE PULLEY. RICHARD C. NUGENT, Cincinnati, Ohio, assignor to Nicholas Paul Penner, Jr., Cincinnati, Ohio. Filed Jan. 23, 1904. Renewed Aug. 19, 1905. Serial No. 274,864.



Claim.—In loose-pulley construction, the hub provided with a counterbore to receive a bushing, a bushing fitted within said hub serving to center the pulley on the shaft and provided with perforations extending through the same from the counterbore in the hub to

the shaft, said bushing having an enlarged head at one end to fill the counterbore in the end of the hub, its opposite end fitting in the bore of the hub, a cap loose upon the end of the hub and covering the same and the enlarged end of the bushing, there being a filling-hole in said cap communicating with a circumferential groove in the end of the hub, and perforations from said circumferential groove into the space of the counterbore between the hub and bushing, and absorbent material surrounding the bushing within the counterbore of the hub, whereby said absorbent material can be charged with lubricant at any time without stopping the running of the pulley, substantially as decribed.

817,725. CASH-REGISTER. FRANCIS C. OSBORN, Detroit, Mich., assignor, by mesne assignments, to National Cash Register Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 23, 1891. Serial No. 412,791.



Claim.—1. In a cash-register, the combination with a series of keys, of a series of indicators, a movable member for moving the indicators into exposed positions, a series of movable indicator-engaging devices carried by said movable member and adapted to be set by the keys to coöperate with their respective indicators, and means for operating the movable member.

2. In a cash-register, the combination with a series of indicators, of a movable member for moving the indicators into exposed positions, a series of movable indicator-engaging devices carried by said movable member, a series of keys arranged to be moved into the paths of the indicator-engaging devices so that when the movable member is operated said devices will be brought into engagement with their respective indicators and means for operating the movable member.

3. In a cash-register, the combination with sales-indicators normally inexposed, a lifting device for moving the indicators into exposed position, an actuator for moving the lifting device, and a key arranged to be engaged by the lifting device in its movement, whereby the latter will engage the indicator corresponding to the key to expose said indicator, substantially as set forth.

4. In a cash-register, the combination with an indicating mechanism, a series of keys, an operating-bar for said indicating mechanism provided with movable connections between it and the indicating mechanism, said connections being arranged to engage said keys and to be moved thereby into position to act upon said indicating mechanism when the bar is elevated, and means for operating said bar, substantially as set forth.

5. In a cash-register, the combination with a tablet-rod, of a key, a lifting-bar, and a movable dog on said lifting-bar adapted when the lifting-bar is elevated to intermesh with said key and to be moved thereby into position to engage with and lift said tablet-rod, substantially as and for the purpose described.

6. In a cash-register, the combination of a tablet-rod, a supporting-bar upon which said tablet-rod rests when in its lowermost position, a key extending to the outside of the case, a lifting-bar movable vertically, and a movable dog adapted to be supported by and moved with said lifting-bar and to be moved on said lifting-bar into position to intermesh with said key, and adapted to be moved by its mesh with said key into a position to lift said tablet-rods, substantially as and for the purpose described.

7. In a cash-register, the combination of a tablet-rod vertically movable, a lifting-bar vertically movable in a path parallel to the path of said tablet-rod, a movable dog on said lifting-bar, an arm or projection on said movable dog adapted to be moved into position to catch under and raise said tablet-rod, and a key extending through the walls of the case of said register, having an inner arm adapted to be brought into mesh with said movable dog and to move the same, and thereby move said arm into position to engage with said tablet-rod, substantially as and for the purpose described.

8. In a cash-register, the combination of a lifting-bar vertically movable, a key, a tablet-rod, a dog movable on said lifting-bar adapted to intermesh successively with said key and said tablet-rod and to pass out of mesh with said key by continued vertical movement with said tablet-rod, substantially as and for the purpose described.

9. In a cash-register, the combination of a tablet-rod, a lifting-bar movable vertically, a dog movable on said lifting-bar, an arm or projection from said dog adapted to engage with said tablet-rod and lift the same with the upward motion of said lifting-bar, and a stationary readjusting-bar adapted to throw said arm out of engaging position as the lifting-bar is dropped, substantially as and for the purpose described.

10. In a cash-register, the combination of a tablet-rod, a lifting-bar vertically movable and circular in cross-section, a setting-dog capable of rotary motion partially around said lifting-bar, a feather adapted to act as a stop in either direction, and a key normally out of contact with said dog, but adapted to move into position to mesh with and cause a partial rotation of said dog, and throw an arm extending from said dog into position to engage with and lift said tablet-rod, substantially as and for the purpose described.

11. In a cash-register, in combination with a tablet-rod, a lifting-bar, means for lifting said bar in a path parallel to the axis of said tablet-rod, an arm movable on said lifting-bar, means for turning said arm outward from said bar, into position to engage with and lift said tablet-rod, when the bar is elevated substantially as described.

12. In a cash-register, a series of tablet-rods adapted to move vertically, a horizontal bar parallel with the line of tablet-rods, arms movable upon said bar, and adapted to be turned thereon into position to engage with said tablet-rods, when the bar is elevated, and means for elevating said bar, substantially as specified.

13. In a cash-register, the combination of a tablet-rod, a key, a lifting-bar, a movable dog on said lifting-bar, adapted when lifted to engage said key and to be moved thereby into position to engage with and lift said tablet-rod, substantially as set forth.

14. In a cash-register, the combination of a tablet-rod, a lifting-bar movable vertically, a dog movable with and on said lifting-bar, an arm or projection from said dog, adapted when elevated to engage with said tablet-rod and lift the same, and means for moving said arm out of engaging position effected by the dropping movement of said lifting-bar, substantially as described.

15. In a cash-register, the combination with a tablet-rod provided with a rack, a pinion adapted to mesh with said rack, a register mechanism, the said pinion being movable axially into clutch with said registering mechanism, and means substantially such as described for giving axial movement to said pinion.

16. In a cash-register, in combination with a series of tablet-rods, each of which is provided with a rack, a pinion common to all the tablet-rods of said series, movable longitudinally along its axis and normally free to rotate in either direction, a clutch adapted to engage with said pinion and to be brought into clutching engagement by such longitudinal movement, and means for moving the pinion axially, substantially as and for the purpose specified.

17. In a cash-register, the combination with a series of tablet-rods, each provided with a rack, a pinion common to all rods of said series, free to rotate in either direction and movable axially into engagement with a clutch, and a clutch adapted to engage with said pinion and prevent backward rotation of said pinion, substantially as and for the purpose described.

18. In a cash-register, the combination of a cash-recording pinion, a pinion movable endwise in its bearings, a clutch mechanism adapted to engage said pinion when moved endwise, tablet-rods provided with racks and adapted to mesh with said pinion, and a wedge adapted to enter between the end of said pinion and its bearing and force it endwise, substantially as and for the purpose described.

19. In a cash-register, the combination with a pinion and its bearings, of a clutch mechanism adapted to engage with said pinion,

a tablet-rod provided with a rack and adapted to mesh with said pinion, a swinging wedge adapted to force the pinion and clutch into engagement, and a key extending through the walls of the inclosing case, adapted to move said wedge out of engagement between the pinion and its clutch, substantially as and for the purpose described.

20. In a cash-register, the combination of a case, an inclosed till, a till-cover forming part of said case and having a rotary movement in opening and closing, a tablet-rod provided with a rack, a pinion rotatable in either direction, a clutch adapted to prevent backward rotary motion of said pinion, a lever interposed between said pinion and said till-cover and actuated by said till-cover, and adapted to force said pinion into engagement with the holding-clutch, substantially as and for the purpose described.

21. In a cash-register, two or more pinions adapted to rotate backward and forward, two or more registering-wheels adapted to rotate forward only, a clutch connection between each of said pinions and its proper registering-wheel, and mechanism operated by a moving part of the machine for simultaneously engaging and positively locking together all of said pinions and their proper registering-wheels, substantially as set forth.

22. In a cash-register, the combination with a pinion and its bearings, clutch mechanism adapted to engage with said pinion, means for rotating said pinion, a wedge adapted to force the parts of said clutch into engagement, and a key adapted to move said wedge and disengage the parts of said clutch, substantially as described.

23. In a cash-register, in combination with a pinion, a tablet-rod adapted to actuate said pinion, register-wheels axially concentric to said pinion and adapted to be clutched with said pinion by endwise movement of the same, substantially as and for the purpose described.

24. In a cash-register, in combination with a pinion and tablet-rods provided with racks adapted to actuate said pinion, stops located on said pinion and on the supporting-case, to hold said pinion normally in position to be engaged by said rack arranged to prevent more than a single revolution of said pinion, and a retracting-spring, substantially as and for the purpose described.

25. In a cash-register, the combination of a pinion movable axially, register-actuating wheels axially concentric with said pinion, a clutch between said pinion and the register-actuating wheels, a spring-detent adapted to prevent backward movement of said register-actuating wheels, an actuating-lever adapted to move the parts into clutch, and means for rotating said pinion backward and out of clutch when released from said actuating-lever, substantially as and for the purpose specified.

26. In a cash-indicator, the combination with indicating mechanism, of a manually-operated part moving such mechanism, and a speed-varying connection between said indicating mechanism and the manually-operated part acting to translate a constant movement of the manually-operated part into a movement of the indicating mechanism which continuously and gradually decreases to a nullity without abrupt changes in the speed thereof, whereby movement of the indicating mechanism will cease before that of the manually-operated part so as to prevent overthrow of the indicating mechanism, substantially as set forth.

27. In a cash-indicator, the combination with indicating mechanism, of a manually-operated part moving said indicating mechanism, and a speed-varying connection between said indicating mechanism and said manually-operated part having as one of its elements a connecting-link which passes over a center of rotation as the manually-operated part reaches the end of its movement to arrest movement of the indicating mechanism, whereby a constant speed of said manually-operated part will be translated into a gradually-decreasing speed of said indicating mechanism, and the overflow of the indicating mechanism will be prevented, substantially as set forth.

28. In a cash-indicator, the combination with movable tablet-rods, of keys controlling and selecting the tablet-rods to be moved, and an actuator for moving the tablet-rods having a gradually-decreasing speed toward the end of its movement whereby movement of the tablet-rod toward indicating position ceases before that of the actuator, substantially as set forth.

29. In a cash-indicator, the combination with movable tablet-rods, of keys controlling and selecting the tablet-rods to be moved, a lifting-bar for moving the tablet-rods which are selected by the keys, a manually-operated part for moving said lifting-bar, and a speed-varying connection between said lifting-bar and the manually-operated part acting to translate a constant movement of the manually-operated part into a gradually-decreasing movement of the lifting-bar whereby movement of the tablet-rods toward indicating position will cease before that of the lifting-bar, substantially as set forth.

30. In a cash-register, the combination with the registering mechanism, of a manually-operated part moving said register, and a speed-varying connection between said register and the manually-operated part acting to translate a constant movement of the manually-operated part into a movement of the register, which continuously and gradually decreases to a nullity without abrupt changes in the speed thereof, whereby overthrow of the register-wheels is prevented, substantially as set forth.

31. In a cash-register, the combination with the registering mechanism, of a manually-operated part moving said register, and a speed-varying connection between said register and said manually-operated part having as one of its elements a connecting-link which passes over the center of rotation as the manually-operated part reaches the end of its movement, whereby a constant speed of said manually-operated part will be translated into a gradually-decreasing speed of said register and the overthrow of the register will be prevented, substantially as set forth.

32. In a cash-register, the combination with the registering mechanism, of movable tablet-rods engaging said register and moving it, a manually-operated part for moving said tablet-rods, and a speed-varying connection between said tablet-rods and the manually-operated part acting to translate a constant speed of the manually-operated part into a gradually-decreasing speed of the tablet-rods, whereby the overthrow of the register-wheels will be prevented, substantially as set forth.

33. In a cash-register, the combination with sales-indicators, of an operating device therefor, a rotatable till-cover, a system of links connected between said operating device and said till-cover, the pin connecting said links and said till-cover being located on a diameter thereof that is approximately horizontal when said till-cover is closed, whereby the opening of said till-cover imparts a rapid initial motion and a slow final motion to said operating device, substantially as and for the purpose described.

34. In a cash-register, the combination with a device for operating the register mechanism, of a till-cover or lever, a system of links connecting said till-cover and said device, the pin connecting said links and said till-cover being located on a diameter thereof that is horizontal when said till-cover is closed, whereby the opening of said till-cover imparts, from a constant motion of said till-cover, a rapid initial motion to said lifting-bar, and a slow final motion, substantially as and for the purpose described.

35. In a cash-register, the combination of a till-cover having a circular rotary end, a lifting-bar having a vertical movement, a system of links between the end of said till-cover and said lifting-bar, a wrist-pin connecting one of said links to the rotary end of said cover on a diameter of said till-cover that is horizontal when said till-cover is closed, whereby a constant rotary motion of said till-cover produces a rapid initial motion of said lifting-bar and a slow final motion, whereby the tendency of said lifting-bar and tablet-rods lifted thereby to "overthrow" is prevented, substantially as and for the purpose described.

36. In a cash-register, the combination of the rotary end E of the till-cover, the lifting-bar C, and the connecting-links D, D', D^2, said link D having a vertical movement, said link D' having an angular movement, and said link D^2 having a rotary movement, on the wrist-pin d', and circular movement at its point of attachment with link D', the said wrist-pin d' being located on a diameter of said end e that is horizontal when the till-cover is closed, substantially as and for the purpose described.

37. In a cash-register, the combination with a printing or embossing mechanism, a manually-operated part for moving said mechanism, and a speed-varying connection between said mechanism and the manually-operated part, acting to translate a constant movement of the manually-operated part, to a movement of said mechanism which continuously and gradually decreases to a nullity without abrupt changes in the speed thereof, whereby overthrow of the printing or embossing mechanism is prevented, substantially as set forth.

38. In a cash-register, the combination with a printing or embossing mechanism, of a cash-receptacle, having a movable part or member, and a speed-varying connection between said mechanism and the movable part, acting to translate a constant movement of the movable part into a movement of the printing or embossing mechanism, which continuously and gradually decreases to a nullity without abrupt changes in the speed thereof, whereby overthrow thereof is prevented, substantially as set forth.

39. In a cash-receptacle, the combination with a money-receptacle, of independent latches, one for holding the receptacle in its extreme open position and the other for holding the receptacle in a

closed condition and independent devices for operating the respective latches at will.

40. In a cash-register, the combination with a money-receptacle, of independent latches one for holding the receptacle in an open condition and the other for holding the receptacle in a closed condition, a spring for closing the receptacle and independent devices for operating the respective latches.

41. In a cash-register, the combination with a money-receptacle, of a latch adapted to hold said receptacle open, a spring for closing it, an automatic catch adapted to lock it in its closed position, register-keys, and means adapted to be actuated by any one of the register-keys for unlocking said last-mentioned catch, substantially as described.

42. In a cash-register, the combination with a money-receptacle, of means for locking the same closed, finger-keys, each of which is severally adapted to unlock said receptacle when closed, and a locking-bar adapted to lock the receptacle when open, said locking-bar being a spring-actuated horizontal bar adapted to move both vertically and horizontally into locking engagement, and horizontally and vertically out of locking engagement, substantially as described.

43. In a cash-register, in combination with an inclosing case, an arched till-cover rotating on a central bearing, a locking-bolt for holding said cover in its open position, consisting of a horizontal bar with diagonal slots and slidingly secured to said case by means of pins passing through said slots, whereby both vertical and horizontal motion of said bar are produced by a vertical motion, substantially as and for the purpose described.

44. In a cash-register, in combination with tablet-rods and a lifting-bar, of a dog moving with and movable on said lifting-bar, a key arranged to engage with said dog and move it into position to engage with and lift said tablet-rods, a lever adapted to actuate said lifting-bar, means for actuating said lever, a self-setting lock adapted to prevent the action of said lever, and a key-lever adapted to release said lock, substantially as and for the purpose described.

45. In a cash-register, the combination of the inclosing case, the arched till-cover rotating on a central bearing, the locking-bolt L, held to said case by means of pins and the described diagonal slots, and adapted to lock the cover in its open position, substantially as and for the purpose described.

46. In a cash-register, the combination with an arched till-cover rotating on a central bearing, of a locking-hook *k* on the register-case, a locking-catch K on the till-cover, the swinging bar *f'* and depending arm F^3 adapted to be operated by the key B and to throw the locking-hook *k* and the locking-catch K out of engagement, substantially as and for the purpose described.

47. In a cash-register, the combination with a money-receptacle having a removable cover provided with a handle, of a latch adapted to hold said cover in its open position, a spring adapted to close said cover, a lock adapted to hold said cover in its closed position, register-keys, means adapted to be operated by any of the register-keys for unlocking said last-mentioned latch, and a complete throw mechanism whereby said cover is prevented from having backward movement after starting to either open or close, substantially as and for the purpose specified.

48. In a cash-register, the combination with a money-receptacle, of a latch adapted to hold said receptacle open, a spring for closing it, an automatic catch adapted to lock in its closed position, register-keys, means adapted to be actuated by any of the register-keys for unlocking said last-mentioned catch, and a complete throw mechanism whereby a backward movement either in opening or closing said receptacle is prevented until a complete throw has been made, substantially as described.

49. In a cash-register, the combination with a series of keys, of a registering mechanism, a cash-receptacle having a movable part for operating the registering mechanism, a latch for holding the movable part of the cash-receptacle closed adapted to be operated by said keys, and means mounted on the movable part and engaged by said latch whereby the opening of said part is prevented unless a key is operated and remains in operated position.

50. A cash-register including a cash-receptacle, a movable part for said receptacle, a latch for the movable part and means for preventing the opening of the movable part unless the latch is held tripped during a portion of the opening movement of the movable part.

51. In a cash-register, a series of register-operating rods, an actuator for the rods, a series of intermediate elements for connecting the actuator with the rods, and a five-cent bar for connecting certain of the intermediate elements with the intermediate element connecting the actuator and five-cent register-rod, substantially as described.

52. In a cash-register, in combination with a registering mechanism, a series of keys, a series of register-actuating elements arranged to be selected by said keys but operatively actuated independently of the movement of said keys, and a five-cent bar arranged to connect certain of said actuating elements with the element effecting the registration of five-cent amounts, substantially as described.

53. In a cash-register, in combination with a suitable registering mechanism, a series of keys arranged to effect the registration of five-cent amounts and multiples thereof, a series of register-actuating elements arranged to be selected by said keys but operatively actuated independently of the movement of said keys, and a five-cent bar arranged to connect the five-cent-actuating element with the actuating elements for the odd multiples of five cents, substantially as described.

54. In a cash-register registering amounts of five cents and multiples thereof, the combination with a suitable registering mechanism, of a series of keys, a series of register-actuators arranged to be selected by said keys but operatively actuated independently of the movement of said keys, and a five-cent bar arranged to effect the registration of a five-cent amount and an even multiple thereof by the operation of a key representing an odd multiple of five above the first power, substantially as described.

55. In a cash-register for registering five-cent amounts and multiples thereof, the combination of a suitable registering mechanism, of a series of keys, a series of register-actuators, an actuating-bar for said actuators, a series of connecting elements mounted upon said actuating-bar arranged to operatively engage said actuators and said bar, and a five-cent bar arranged to connect the connecting element between the five-cent actuator and the actuator-bar with the connecting elements between the bar and the actuators representing amounts which are odd multiples of five above the first power, substantially as described.

56. In a cash-register, the combination of a five-cent register-wheel, a ten-cent register-wheel, a series of keys indicating both even and odd multiples of five above the first power, separate actuators for said wheels operating independently of the movement of said keys, and a five-cent bar between the actuating mechanism of the ten-cent wheel and the five-cent wheel, whereby the operation of any one of said keys secures the registration of the tens of its value on the ten-cent wheel and the five on the five-cent wheel, substantially as described.

57. In a cash-register, the combination of a five-cent register-wheel, a ten-cent register-wheel, a series of keys indicating both even and odd multiples of five above the first power, separate actuators for said wheels operated independently of the movement of said keys, and a five-cent bar between the actuating mechanism of the ten-cent wheel and the five-cent wheel, whereby the operation of any one of said keys indicating odd multiples of five secures the registration of the tens of its value on the ten-cent wheel and the five on the five-cent wheel, substantially as described.

58. In a cash-register, the combination of a five-cent register-wheel, a ten-cent register-wheel, a series of keys indicating odd multiples of five above the first power, separate actuators for said wheels operated independently of the movement of said keys, and a five-cent bar between the actuating mechanism of the ten-cent wheel and the five-cent wheel, whereby the operation of any one of said keys secures the registration of the tens of its value on the ten-cent wheel and the five-cent wheel, substantially as described.

59. In a cash-register, the combination with a printing or embossing mechanism and a single tape or strip on which an impression is made, of a cash-receptacle having a movable part or member, and means operated by the movable part of said receptacle for setting the printing or embossing mechanism, substantially as set forth.

60. In a cash-register, the combination with a printing or embossing mechanism, of a cash-receptacle having a movable part or member, and means operated by the movable part of said receptacle for setting and operating the printing or embossing mechanism, substantially as set forth.

61. In a cash-register, the combination with a printing or embossing mechanism, of a cash-receptacle having a movable part or member, means for setting said mechanism, controlled by the opening movement of the movable part of said cash-receptacle, and mechanism for effecting the printing or embossing action of said printing or embossing mechanism, controlled by the opening movement and effected at the end of such movement, substantially as set forth.

62. In a cash-register, the combination with a printing or embossing mechanism and a paper-feeding mechanism, of a cash-receptacle having a movable part or member, means for setting the printing or embossing mechanism, controlled by the opening movement

of the movable part of said receptacle, mechanism for operating said printing or embossing mechanism, and controlled by the opening movement and effected at the end of such movement, and means for operating the paper-feeding mechanism, and controlled by the closing movement of the movable part of said receptacle, substantially as set forth.

63. In a cash-register, the combination with a printing or embossing mechanism and a paper-feeding mechanism, of a cash-receptacle having a movable part or member, means for setting the printing or embossing mechanism, means operated by the movable part of the cash-receptacle for operating said printing or embossing mechanism, and means for operating the paper-feeding mechanism controlled by the closing movement of the movable part of said receptacle, substantially as described.

64. In a cash-register, the combination with a printing or embossing mechanism and a paper-feeding mechanism, of a cash-receptacle having a movable part or member, means for setting the printing or embossing mechanism, means operated by the movable part of the cash-receptacle for operating said printing or embossing mechanism, means for operating the paper-feeding mechanism, and controlled by the closing movement of the movable part of said receptacle, and mechanism for cutting off checks from the paper strip, and operated directly by the movable part of said receptacle, substantially as set forth.

65. In a cash-register, the combination with a printing or embossing mechanism and a paper-feeding mechanism, of a cash-receptacle having a movable part or member, means for setting the printing or embossing mechanism, controlled by the opening movement of the movable part of said receptacle, mechanism for operating said printing or embossing mechanism, and controlled by the opening movement of the movable part and effected at the end of such movement, means for operating the paper-feeding mechanism, and controlled by the closing movement of the movable part of said receptacle, and mechanism operated directly by the movable part of said receptacle for cutting off checks from the paper strip, substantially as set forth.

66. In a cash-register, the combination with a printing or embossing mechanism and a paper-feeding mechanism, of a cash-receptacle having a movable part or member, means for setting the printing or embossing mechanism, means operated by the movable part of the cash-receptacle for operating said printing or embossing mechanism, means for operating the paper-feeding mechanism, and mechanism for cutting off checks from the paper strip operated directly by the movable part of said receptacle, substantially as described.

67. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of type-carriers, a series of oscillatory members connected to the type-carriers so that when moved in one direction they will set the carriers, and when moved in the opposite direction will return the same to their normal positions and means intermediate the movable part of the cash-safe and the oscillatory members for moving the latter positively in one direction for changing the positions of the types.

68. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of type-carriers, a series of keys, a series of oscillatory members connected to the type-carriers and controlled in their movements in one direction by said keys, so that when moved in one direction they will set the type-carriers according to the values of the keys operated, and when moved in the opposite direction will return said carriers to normal positions and means intermediate the movable part of the cash-safe and the oscillatory members for moving the latter positively in one direction for changing the positions of the types.

69. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of type-carriers, a series of oscillatory members connected to said type-carriers, means intermediate the movable part of the cash-safe and the oscillatory members for moving the latter positively in one direction and devices governed by said movable part of the cash-safe for controlling the movements of the oscillatory members in the opposite direction.

70. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of type-carriers, a series of oscillatory members connected to said type-carriers, means intermediate the movable member of the cash-safe and the members for moving the latter positively in one direction, means for securing the members against movement in the opposite direction and devices governed by said movable part for controlling said securing means and the movement of the members in the opposite direction.

71. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of movable members, a series of indicators connected to said members, means intermediate the movable part of the cash-safe and the movable members for controlling the latter, a latch for holding the indicators in their set positions, a latch for the movable part of the cash-safe and a common means for operating said latches; the construction being such that the indicators may return to their normal positions independently of the operation of the movable part of the cash-safe.

72. In a cash-register the combination with a series of controlling elements, of a series of indicators connected thereto, a cash-safe having a part movable to expose the cash at will, means intermediate the controlling elements and the movable part of the cash-safe for controlling the movements of the elements to set the indicators, means for latching the indicators in their set positions and devices for tripping the said latches to allow the indicators to return independently of the operation of the movable part of the cash-safe.

73. In a cash-register the combination with a counter, of type-carriers, a common means for operating the counter and setting the type-carriers, a cash-receptacle arranged to be exposed at will, means dependent upon the full exposure of the receptacle for controlling the movements of the common operating means and impression devices dependent upon the full exposure of the cash-receptacle for operation.

74. In a printing mechanism of a cash-register, the combination of a feed-wheel, the clipping-shears 110 and 111, closing-lever 114, actuating end E of the till-cover, and the key 115 adapted to be interposed between the end E of the till-cover and the lever 114 and cause the till-cover to actuate the said lever, substantially as and for the purpose described.

75. In the printing mechanism of a cash-register, the combination of the movable till-cover, rotary rod n carrying the fixed disk 102, the printing-wheels, printing-platen having an arm 112, pin 113 fixed in the disk 102, adapted to raise said platen-arm and force said platen against the printing-wheel, and means for actuating said rod n by the movement of the till-cover, substantially as and for the purpose described.

76. In a cash-register, in combination with a till-cover having a rotary movement, a winding-drum at the axis of rotation, a rotary arbor carrying crank-pin, a winding-chain between said drum and said rotary arbor, a recovering-spring adapted to be placed under tension by the rotation of said arbor printing-wheels, and a printing-platen actuated by said crank-pin, substantially as and for the purpose described.

77. In a cash-register, the combination of a movable till-cover, an arbor supported by the case of said register and actuated by the movement of the till-cover, a disk secured to said arbor, a feed-roller journaled on said arbor, a ratchet-wheel and pawl connecting the said disk and feed-roll, and a mask adapted to regulate the engagement between the ratchet-wheel and pawl, substantially as and for the purpose described.

78. In a cash-register, the combination of a movable till-cover, an arbor supported by the case of said register and actuated by the movement of the till-cover, a disk secured to said arbor, a feed-roll journaled on said arbor, a ratchet-wheel and pawl connecting the said disk and feed-roll, and an adjustable mask adapted to regulate the engagement between the ratchet-wheels and pawl, substantially as and for the purpose described.

79. In a cash-register, the combination with a printing mechanism, of a paper-feed-actuating pawl having a uniform length of stroke at each operation of the machine; and means for holding the pawl out of operation throughout any desired extent of such uniform movement.

80. In a cash-register, the combination with a cash-safe having a member movable to expose the cash at will, of printing devices; a pivoted platen cooperating therewith; a revoluble operating-disk connected with said movable cash-safe member arranged to be rotated forward and backward by the opening and closing movements of said member; and means operated by said revoluble disk for striking said pivoted platen and forcing the same against said printing devices.

81. In a cash-register, the combination with a cash-safe having a member movable to expose the cash at will, of printing devices; a revoluble operating-disk connected with said movable cash-safe member arranged to be rotated forward and backward by the opening and closing movements of said member; and a paper-feed device having a one-way connection with said revoluble disk whereby to operate said feed during one direction of rotation of said disk.

82. In a cash-register, the combination with a cash-safe having

a member movable to expose the cash at will, of printing devices; a revoluble operating-disk connected with said movable cash-safe member arranged to be rotated forward and backward by the opening and closing movements of said member; and a ratchet and pawl paper-feed device comprising a pawl carried upon said revoluble disk and engaging a notched wheel connected with said paper-feed device whereby the feed will take place in only one direction of movement of said movable cash-safe member.

83. In a cash-register, the combination with a cash-safe having a member movable to expose the cash at will, of printing devices; a revoluble operating-disk connected with said movable cash-safe member arranged to be rotated forward and backward by the opening and closing movements of said member; a pivoted platen for taking an impression from said printing devices; means connected with said revoluble disk for striking against said platen for forcing the same against said printing devices; and a paper-feeding device having a one-way ratchet connection with said revoluble disk so as to be operated in only one direction of movement of said movable cash-safe member, and said feeding device also being constructed to be actuated by said disk subsequent to the actuation of said platen.

84. In a cash-register, the combination with a cash-safe having a member movable to expose the cash at will, of a series of oscillatory type-carriers; a series of keys for predetermining the setting positions of said type-carriers; a series of oscillatory members connected to said type-carriers so that when moved in one direction they will set the carriers and when moved in the opposite direction they will return the carriers to normal position; means intermediate the movable cash-safe member and the said oscillatory members for controlling the movements of the latter to setting position; a revoluble operating-disk connected with said movable cash-safe member and oscillated forward and backward with the opening and closing movements of said cash-safe member; a pivoted platen; means connected with said revoluble disk for forcing said platen against said type-carriers subsequent to the setting movement of the type-carriers under the control of said movable cash-safe member; a paper-feed mechanism, and an actuating-pawl connected with said revoluble disk and coöperating with said paper-feed mechanism to actuate a paper-feed in only one direction of revolution of said disk and subsequently to the movement of said platen by said disk.

85. In a cash-register, the combination with a cash-safe having a part movable to expose the cash at will, of a series of movable members, and a series of indicator instrumentalities one for each of said members and each adapted to variously expose a plurality of indicia; means intermediate the movable part of the cash-safe and the movable members for controlling the latter; latching devices for holding said indicator instrumentalities in their set positions; a latch for the movable part of the cash-safe; a common means for operating said latches, the construction being such that the indicator instrumentalities may return to normal positions independently of the operation of the movable part of the cash-safe; and means operated by said movable part of the cash-safe for positively restoring the indicator-latching devices to latching condition.

86. In a cash-register, the combination with a cash-safe having a part movable to expose the cash at will, of a series of oscillatory members bearing on their periphery a plurality of transaction-indicia; means for predetermining the setting positions of said oscillatory members; means intermediate the movable part of the cash-safe and said oscillatory members for controlling the latter; latching devices for holding said oscillatory members in their set positions; a latch for the movable part of the cash-safe; and a common means for operating said latches, the construction being such that the oscillatory members may return to their normal positions independently of the operation of the movable part of the cash-safe.

87. In a cash-register, the combination with a cash-safe, having a movable part to expose the cash at will, of a series of oscillatory members bearing on their periphery a plurality of transaction-indicia; means for predetermining the setting positions of said oscillatory members; means intermediate the movable part of the cash-safe and said oscillatory members for controlling the latter; latching devices for holding said oscillatory members in their set positions; a latch for the movable part of the cash-safe; a common means for operating said latches, the construction being such that the oscillatory members may return to their normal positions independently of the operation of the movable part of the cash-safe; and means connected with said movable part of the cash-safe for positively restoring said latching devices for the oscillatory members to latching condition.

88. In a cash-register, the combination with a cash-safe having a movable part to expose the cash at will, of a series of movable members, and a series of indicator instrumentalities one for each member and each adapted to variously expose a plurality of indicia; means intermediate the movable part of the cash-safe and said movable members for controlling the latter; latching devices for holding said indicator instrumentalities in their set position; a latch for the movable part of the cash-safe; and a manipulative controlling device and means operated thereby for releasing the latch for said movable part and the indicator-latches at one and the same operation.

89. In a cash-register, the combination with a cash-safe having a movable part to expose the cash at will, of a series of oscillatory members bearing on their periphery a plurality of transaction-indicia; means for predetermining the setting positions of said oscillatory members; means intermediate the movable part of the cash-safe and said oscillatory members for controlling the latter; latching devices for holding said oscillatory members in their set positions; a latch for the movable part of the cash-safe; and a manipulative controlling device and means operated thereby for releasing the latch for said movable part and the latches for the oscillatory members at one and the same operation.

90. In a cash-register, the combination with a cash-safe having a movable part to expose the cash at will, of a series of oscillatory members bearing on their periphery a plurality of transaction-indicia; means for predetermining the setting position of said oscillatory members; means intermediate the movable part of the cash-safe and said oscillatory members for controlling the latter; latching devices for holding said oscillatory members in their set positions; means for releasing said latching devices to permit the oscillatory members to return to normal position; and means connected with said movable part of the cash-safe for positively restoring said latching devices for the oscillatory members to latching condition.

91. In a cash-register, the combination with a cash-safe having a movable part to expose the cash at will, of a series of oscillatory members bearing on their periphery a plurality of transaction-indicia; means for predetermining the setting positions of said oscillatory members; means intermediate the movable part of the cash-safe and said oscillatory members for controlling the latter; latching devices for holding said oscillatory members in their set positions; a latch for the movable part of the cash-safe; a manipulative controlling device and means operated thereby for releasing the drawer-latch and the latches for the oscillatory members at one and the same operation; and means connected with said movable part of the cash-safe for positively restoring said latching devices for the oscillatory members to latching condition.

92. In a cash-register the combination with a cash-safe having a part movable to expose the cash at will, of a series of type-carriers, means for controlling the degrees of movement of the type-carriers, means for positively moving the type-carriers by the movable part of the cash-safe in one direction and a series of keys for releasing said type-carriers to permit them to move in the opposite direction.

93. In a cash-register the combination with a cash-receptacle which may be exposed at will, of a series of oscillatory type-carriers, a series of oscillatory members connected to the type-carriers, a series of keys controlling the movements of said members and means for moving the members to set the type-carriers as an accompaniment to the exposure of the cash-receptacle.

94. In a cash-register the combination with a cash-receptacle arranged to be exposed at will, of a series of oscillatory type-carriers, a series of oscillatory members positively connected to said carriers for movement in both directions therewith, and means for moving the members to set the type-carriers as an accompaniment to the exposure of the cash-receptacle.

95. In a cash-register the combination with a cash-receptacle arranged to be exposed at will, of a series of oscillatory type-carriers, a series of indicators, a series of oscillatory members connected to the type-carriers and indicators for simultaneously operating the same, a series of keys controlling the movements of the oscillatory members in one direction and means for operating said oscillatory members as an accompaniment to the exposure of the cash-receptacle.

96. The combination with a type-carrier and means for differentially adjusting the same to present different types to be printed; of a normally retracted platen, an oscillatory shaft controlling the operation of the platen, a spring for turning the shaft one way, and a manipulative operating member for turning the shaft the opposite way.

97. The combination with a type-carrier and means for differentially adjusting the same to present different types to be printed; of a normally retracted platen, an oscillatory shaft controlling the operation of the platen, a spring for turning the shaft one way, a manipulative operating member for turning the shaft the opposite way, and a latch for holding the shaft against turning by the spring with provisions for unlatching the shaft dependent upon the adjustment of the manipulative member.

98. The combination with a type-carrier and means for differentially adjusting the same to present different types to be printed; of a reciprocatory platen, an oscillatory shaft controlling the operation of the platen, a spring for turning the shaft one way, and a manipulative operating member for turning the shaft the opposite way.

99. The combination with a type-carrier and means for differentially adjusting the same to present different types to be printed; of a reciprocatory platen, an oscillatory shaft controlling the operation of the platen, a spring for turning the shaft one way, a manipulative operating member for turning the shaft the opposite way, and a latch for holding the shaft against turning by the spring with provisions for unlatching the shaft dependent upon the adjustment of the manipulative member.

100. In a cash-register the combination with printing mechanisms and means for differentially setting the same, of oscillatory impression-taking means therefor; rotary means controlling the movements of advancement and retraction of said impression means; a spring for actuating the means controlling movement of the impression means in one direction; and manipulative hand-operated devices for actuating the means controlling movement of the impression means in the reverse direction.

101. In a cash-register the combination with a type-carrier and keys controlling the differential adjustments of the same, of a pivoted platen; devices controlling the movement of the platen to advance and retract the same; a spring for actuating the devices for controlling one movement of the platen; and a hand-operated means for actuating the devices for controlling movement of the platen in the opposite direction.

102. In a cash-register the combination with a printing device and means for differentially setting the same to printing position, of an oscillating platen for taking impressions therefrom; a spring controlling movement of the platen in one direction; and an oscillating hand-operated shaft controlling movement in the reverse direction.

103. In a cash-register the combination with type-carriers and means for differentially setting the same, of an oscillatory platen therefor; an oscillatory member controlling the movements of the platen; manipulative means for turning said member in one direction; and a spring tensioned thereby for returning said member to its previous position.

104. In a cash-register the combination with type-carriers and means for setting the same, of an oscillating platen therefor; an oscillating member; a spring connected thereto; manipulative means for moving said member in one direction and thereby tensioning the spring; and means operated from said member and controlling the movement of the platen.

105. In a cash-register the combination with type-carriers and means for differentially setting the same, of a reciprocatory platen; an oscillatory shaft controlling the operation of the platen; a spring for turning the shaft one way; a manipulative operating member for turning the shaft the other way; and a check-severing knife controlled in operation by said operating member.

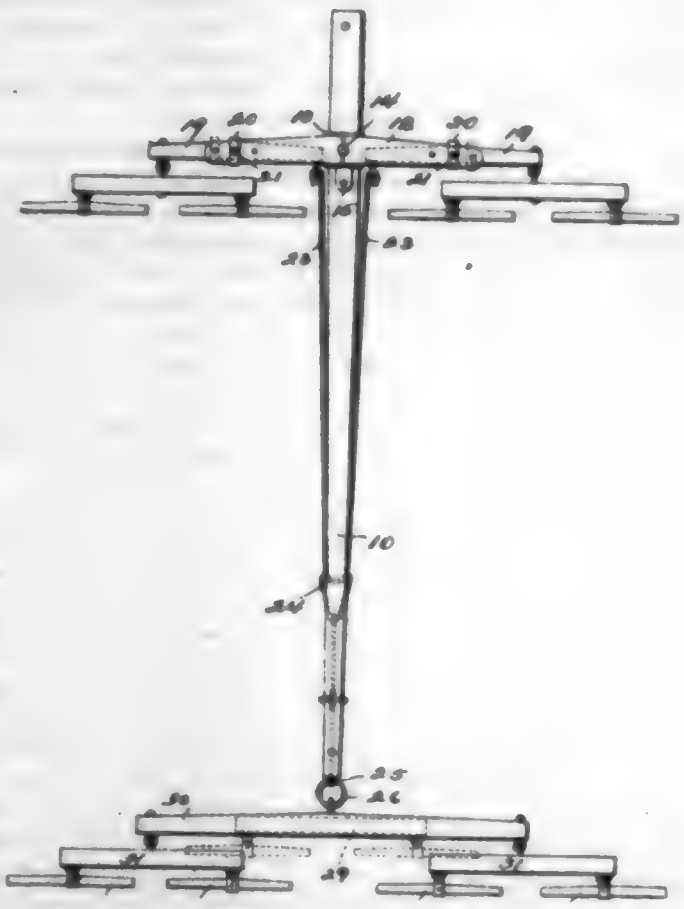
106. In a cash-register the combination with type-carriers and means for differentially setting the same, of a reciprocatory platen; an oscillatory shaft controlling the operation of the platen; a spring for turning the shaft one way; a manipulative operating member for turning the shaft the opposite way; and a check-severing knife operated by said operating member to sever a check at the final portion of the stroke of the operating member.

107. In a cash-register the combination with type-carriers and means for differentially setting the same, of a reciprocatory platen; an oscillatory shaft controlling the operation of the platen; a spring for turning the shaft one way; a manipulative operating member for turning the shaft the opposite way; a paper-feed device controlled by said oscillatory shaft; and a check-severing knife controlled in operation by said operating member.

108. In a cash-register the combination with type-carriers and means for differentially setting the same, of a platen and an operating device therefor; a paper-feed device; means for varying the length of said feed; a check-severing device; and means for enabling and disabling said severing device to cause the paper to be severed when a long feed obtains but to leave the paper unsevered when the short feed obtains.

817,726. TRANSFORMABLE DRAFT-EQUALIZER. WILLIAM M. RICE, Cooper, Iowa, assignor of one-half to Edgar Allen, Cooper, Iowa. Filed Sept. 29, 1905. Serial No. 281,069.

Claim.—1. In a transformable draft-equalizer, a doubletree composed of two overlying parts pivotally connected at their centers with a pole, collars on their end portions and auxiliary eveners between the end portions of the overlying parts extended through the collars and pivotally connected therewith.



2. In a transformable draft-equalizer, an evener consisting of two overlying parts having coinciding perforations at their centers, a flanged plate between them and provided with a perforation and a forward extension and the three parts bolted together and jointly pivoted to a pole.

3. In a transformable draft-equalizer, an evener consisting of two overlying parts having coinciding perforations at their centers, a flanged plate between them and provided with a perforation and a forward extension and the three parts bolted together and jointly pivoted to a pole and auxiliary eveners adjustably connected with the free end portions of the two overlying parts of the main evener.

4. In a transformable draft-equalizer, an evener consisting of two overlying parts having coinciding perforations at their centers, a flanged plate between them and provided with a perforation and a forward extension and the three parts bolted together and jointly pivoted to a pole, and auxiliary eveners adjustably connected with the free end portions of the two overlying parts of the main evener by means of a collar and bolt, as shown.

5. In a transformable draft-equalizer, an evener consisting of two overlying parts having coinciding perforations at their centers, a flanged plate between them and provided with a perforation and a forward extension and the three parts bolted together and jointly pivoted to a pole, and auxiliary eveners adjustably connected with the free end portions of the two overlying parts of the main evener by means of a collar and bolt and a loop.

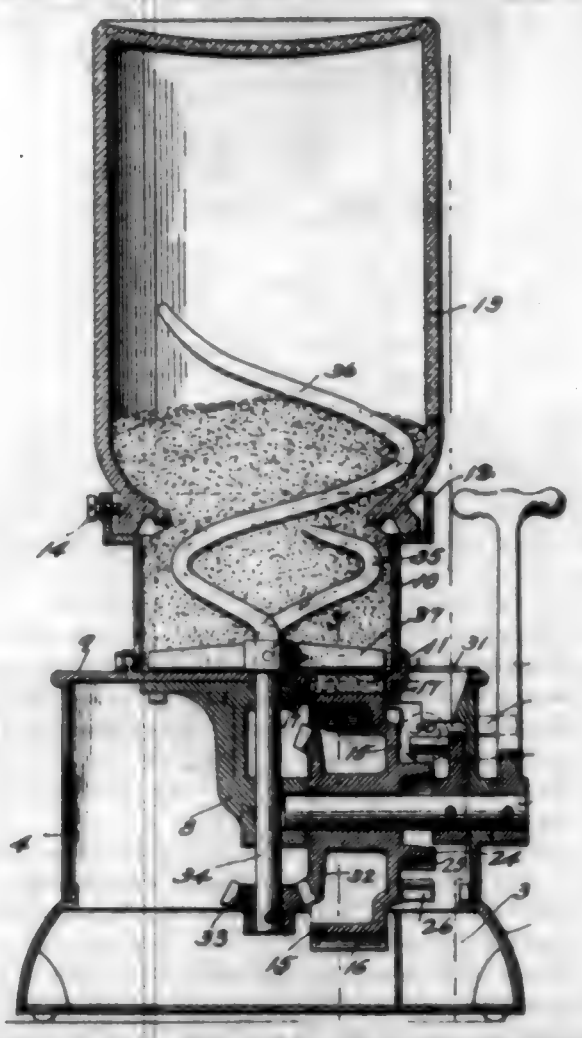
6. In a transformable draft-equalizer, an evener consisting of two overlying parts having coinciding perforations at their centers, a flanged plate between them and provided with a perforation and a forward extension and the three parts bolted together and jointly pivoted to a pole, and auxiliary eveners adjustably connected with the free end portions of the two overlying parts of the main evener by means of a collar, bolt and loop and means extended from the inner end of the auxiliary eveners to the front end of the pole for connecting eveners therewith.

7. In a transformable draft-equalizer, a pole, a main evener composed of overlying parts pivoted to the pole, auxiliary eveners between the end portions of the overlying parts pivotally and adjustably connected with the main evener, collars on the auxiliary eveners, rods connected with the inner ends of the auxiliary eveners and a single rod flexibly connected with their front ends, a ring on the front end of the rod, a doubletree connected with the ring and a swingletree with each end of the doubletree, to operate as set forth.

8. A transformable draft-equalizer comprising an evener composed of overlying parts pivoted to a pole, collars on the end portions of the overlying parts, auxiliary eveners adjustably pivoted to the

ends of the said main evener and within said collars, doubletrees connected with the outer ends of the auxiliary eveners, swingletrees on the ends of the doubletrees, rods connected with the inner ends of the auxiliary eveners and their front ends connected with a single rod provided with a ring on its free end, an evener connected with the ring and doubletrees connected with its ends and swingletrees with the ends of the doubletrees, to operate in the manner set forth.

817,727. **VENDING-MACHINE.** OSCAR K. SLETTE, Blackduck, Minn., assignor of one-half to C. H. Allen, Blackduck, Minn. Filed Feb. 21, 1905. Serial No. 246,648.



Claim.—1. In a vending-machine, the combination with a casing having a delivery-opening in its side wall, of a feed-wheel having a series of recesses in its periphery and projecting through said opening to deliver the contents of said recesses outside of said casing, a receptacle near said delivery-opening and wherein the material is discharged from the recesses in said wheel, means for operating said feed-wheel, and a hopper adapted to contain a ground or pulverized material and having a discharge-opening arranged to register successively with the recesses in said wheel as it revolves, substantially as described.

2. The combination with a suitable casing having a delivery-opening, of a feed-wheel having a series of recesses in its periphery, a hopper adapted to contain a ground or pulverized material and having a discharge-opening to coincide with the recesses in said wheel, and the upper edge of said hopper terminating in a horizontal outwardly-projecting flange and means for securing a snuff-jar or similar vessel in an inverted position on said horizontal flange, substantially as described.

3. In a vending-machine, the combination, with a hopper having a discharge-opening in its bottom and an open top provided with means for securing a snuff-jar in an inverted position thereon, a feed-wheel operating below said discharge-opening, and having a series of peripheral recesses, mechanism for operating said feed-wheel and agitating-arms serpentine in form connected with said operating mechanism and projecting up through said hopper and the open top thereof into a jar thereon, substantially as described.

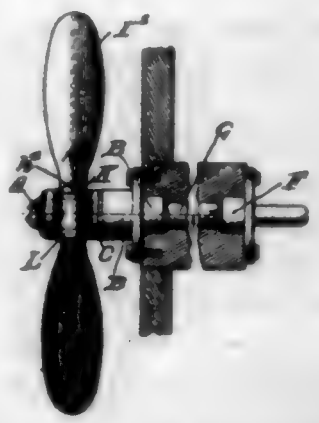
4. In a vending-machine, the combination, with a hopper having a discharge-opening in its bottom and an open top provided with means for securing an inverted jar thereon, of a member having pockets or recesses operating below said discharge-opening, mechanism for operating said member and a sweep connected with said delivery device and arranged to operate over the bottom of said hopper and across said discharge-opening and said pockets, for the purpose specified.

5. The combination with a casing having a delivery-opening, of a feed-wheel having recesses in its periphery, a hopper mounted on said casing and having a discharge-opening arranged to coincide with the recesses in said wheel as it is revolved, means for revolving said wheel, means provided on the top of said hopper for supporting and securing a jar or similar vessel in an inverted position thereon, and agitating devices projecting vertically through and above said hopper and operated by said revolving means, for the purpose specified.

6. In a vending-machine, the combination, with a casing having a hopper provided with a discharge-opening in its bottom, of a rock-shaft, a wheel mounted thereon and having a series of recesses in its periphery arranged to coincide successively with said hopper discharge-opening, and said casing having an opening through which said pockets are exposed, one at a time, after leaving said discharge-opening to allow the removal of the commodity sold, agitators operating in said hopper, and mechanism for revolving said wheel step by step and operating said agitators, substantially as described.

7. In a vending-machine, the combination with a hopper having a discharge-opening and terminating at its upper edge in an outwardly-projecting flange having a vertical extension and set-screws adapted to secure a snuff-jar in an inverted position on said horizontal flange, a feed-wheel located beneath said discharge-opening and having a series of peripheral recesses arranged to coincide successively with said opening, a rock-shaft whereon said wheel is mounted, and means for operating said shaft and wheel, substantially as described.

817,728. **REVERSIBLE PROPELLER-WHEEL.** FRANK M. SPAULDING, St. Joseph, Mich., assignor to William H. Hull, St. Joseph, Mich. Filed Mar. 16, 1904. Serial No. 198,338.



Claim.—1. A reversible propeller-wheel comprising a thrust-bearing, a rotary hub, a split ring screwed into the thrust-bearing and seated in a groove in said hub, blades adjustably mounted on said hub, and a longitudinally-adjustable shaft suitably connected for adjusting said blades.

2. A reversible propeller-wheel comprising a rotary hub, a thrust-bearing, a ball-bearing interposed between the hub and the thrust-bearing, blades adjustably mounted on the hub and provided with slotted crank-arms, and a longitudinally-adjustable shaft provided with a pin engaging and working in the slots of said arms.

3. The combination of a rotary but axially-stationary hub, blades adjustably mounted on said hub, the stems of said blades being provided with crank-arms and each crank-arm having a longitudinally-extending slot; an endwise-adjustable shaft provided with a pin engaging and working in said slots and adapted to rotate said hub and slide longitudinally therein; a bearing in which said propeller-wheel shaft is mounted and which sustains the thrust of the propeller-wheel; an engine-shaft having a telescoping connection with the end of said propeller-wheel shaft; and manually-operated means for shifting said propeller-wheel shaft endwise for the purpose of reversing the said blades.

4. The combination of a rotary but axially-stationary hub, a thrust-bearing in which said hub is mounted for rotation, propeller-wheel blades adjustably mounted on said hub and provided with slotted crank-arms, a propeller-wheel shaft provided with a flattened end portion engaging said hub, said flattened end portion being provided with a pin engaging and working in the slots of said arms, an engine-shaft telescopically coupled to the end of the propeller-wheel shaft, and means for shifting said propeller-wheel shaft endwise to reverse said blades.

5. A reversible propeller-wheel comprising a rotary hub, blades adjustably mounted upon said hub and provided with crank-arms having slots, a longitudinally-adjustable shaft provided with a pin

working in said slots, and oppositely-arranged cover-plates secured to said hub and covering said crank-arms, the axes about which said blades are adjusted or reversed being non-coincident with each other and located at opposite sides of the axis about which the wheel rotates.

6. A reversible propeller-wheel comprising a rotary hub, blades adjustably mounted on said hub, a longitudinally-adjustable shaft, the hub being held against axial movement, slotted crank-arm connections between the shaft and blades, and a pair of cover-plates removably secured to said hub and inclosing or covering said connections, the axes about which said blades are adjusted or reversed being non-coincident with each other and located at opposite sides of the axis about which the wheel rotates.

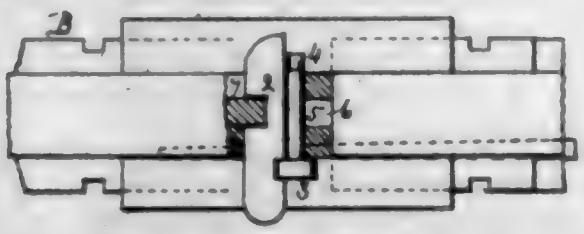
7. A reversible propeller-wheel comprising a thrust-bearing, a rotary hub, a split ring screwed into the thrust-bearing and seated in a groove in said hub, blades adjustably mounted on said hub, and a longitudinally-adjustable shaft suitably connected for adjusting said blades, the axes about which said blades are adjusted or reversed being non-coincident with each other and located at opposite sides of the axis about which the wheel rotates.

8. A reversible propeller-wheel comprising a rotary hub, blades adjustably mounted upon said hub and provided with crank-arms having slots, a longitudinally-adjustable shaft provided with a pin working in said slots, and oppositely-arranged cover-plates secured to said hub and covering said crank-arms, whereby said blades are adjustable or reversible about axes which are non-coincident with each other and which have a fixed relation to each other and to the axis about which the wheel rotates.

9. A reversible propeller-wheel comprising a rotary hub, blades adjustably mounted on said hub, a longitudinally-adjustable shaft, the hub being held against axial movement, slotted crank-arm connections between the shaft and blades, and a pair of cover-plates removably secured to said hub and inclosing or covering said connections, whereby said blades are adjustable or reversible about axes which are non-coincident with each other and which have a fixed relation to each other and to the axis about which the wheel rotates.

10. A reversible propeller-wheel comprising a thrust-bearing, a rotary hub, a split ring screwed into the thrust-bearing and seated in a groove in said hub, blades adjustably mounted on said hub, and a longitudinally-adjustable shaft suitably connected for adjusting said blades, whereby said blades are adjustable or reversible about axes which are non-coincident with each other and which have a fixed relation to each other and to the axis about which the wheel rotates.

817,729. RAILWAY-JOINT. REUBEN B. SWANK, Dayton, Ohio. Filed Apr. 13, 1905. Serial No. 255,270.



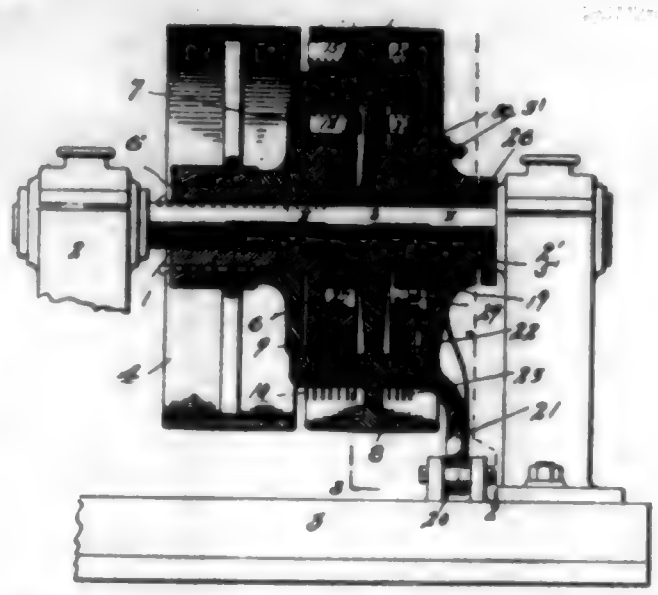
Claim.—1. In a railway-joint the combination of the chair provided with a longitudinal slot near its center, the notched round and flat-headed bolt, the locking-key to engage said bolt, to bind the top parts of said chair, and the rails adapted to enter the space in said chair, substantially as described.

2. In a railway-joint the combination of the chair provided with a longitudinal slot, the bolt and its key adapted to bind the upper parts of said chair, the rails adapted to enter the space in said chair, and the side key to further bind said parts, substantially as described.

3. In a railway-joint the combination of the rails, the chair adapted to inclose the ends of said rails, said chair provided with vertical and horizontal inclined bearings, the key having corresponding inclines to act as a wedge in binding said parts, substantially as described.

817,730. ELECTRICAL FRICTION-CLUTCH. HARRY A. WILLIAMS, Akron, Ohio. Filed Oct. 22, 1904. Serial No. 229,022.

Claim.—1. The combination of a shaft, a driving-pulley, a driving-disk having an elongated hub and carrying non-magnetic retaining-blocks, a series of recessed contact-rings engaging said blocks, and a pressure-disk movable on said elongated hub adapted to bear against said rings; with a driven pulley carrying non-magnetic retaining-blocks, a series of recessed contact-rings engaging said blocks, said series of rings forming part of a magnetic circuit, and electrical connections whereby said pressure-disk is moved to press the contact-rings into frictional contact to drive the driven pulley.



2. The combination of a shaft carrying a driving-pulley and driving-disk, contact-rings carried by said disk, a driven pulley carrying retaining-blocks of non-magnetic material, a pressure-disk, a series of recessed rings to engage said blocks and arranged alternately between said driving-rings, said series of rings forming part of a magnetic flux, and electrical connections whereby said pressure-disk is moved to press said rings into frictional contact.

3. The combination of a shaft carrying a driving-disk provided with retaining-blocks of non-magnetic material, a series of recessed rings to engage said blocks, a pressure-disk, a driven pulley carrying retaining-blocks, a series of recessed rings engaging said blocks, said series of rings forming part of a magnetic flux, and electrical connections whereby the pressure-disk brings the rings into frictional contact.

4. A shaft and driving-disk, retaining-blocks of non-magnetic material on the disk and a series of recessed rings engaged by said blocks, said rings forming part of a magnetic flux, a pressure-disk, and a magnet carried by the driving-disk, combined with a driven pulley carrying non-magnetic retaining-blocks, a series of recessed rings engaging said blocks, a commutator on the driven pulley, and electrical connections to bring the rings into frictional contact.

5. In a clutch, a shaft, a driving-pulley carrying contact-plates, a driven pulley carrying contact-plates, combined with brake mechanism having contact-plates, contact-plates on the driven pulley adapted to frictionally engage with said brake contact-plates, and an electrical circuit with a switch therein to change the magnetic flux from the clutch-circuit to the brake-circuit.

6. In a clutch, a shaft, a driving-pulley rotatable thereon carrying contact-plates, a driven pulley carrying contact-plates adapted to frictionally engage said driving-plates, combined with a movable non-rotatable pressure member carrying contact-plates, contact-plates carried by the driven pulley adapted to contact with the last-mentioned or brake plates, and an electrical circuit with a switch therein to change the current from the clutch-circuit to the brake-circuit.

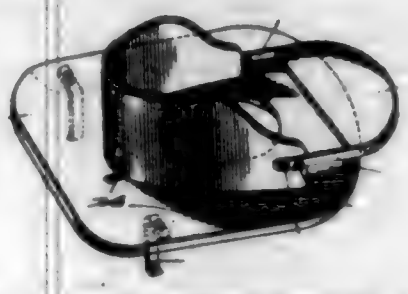
7. In a clutch, a shaft, a driving-pulley carrying contact-plates, a driven pulley carrying contact-plates adjacent said driving-plates combined with a movable non-rotatable pressure-disk having retaining-blocks and contact recessed rings to engage said blocks, contact-plates carried by the driven pulley adapted to engage with said last-mentioned plates, and an electrical circuit with a switch therein to change the current from the clutch-circuit to the last-mentioned series of rings.

8. In a clutch, the combination with a driven pulley carrying two series of contact-rings, a driving-pulley carrying a series of rings adapted to frictionally engage one of said series, a non-rotatable brake member having contact-rings to engage the rings of the other series and electric connections with a switch therein to change the current from the clutch-circuit to the brake-circuit.

9. In a clutch, the combination with a driven pulley carrying two series of contact-rings and a commutator, a driving-pulley carrying a magnet and a series of rings adapted to frictionally contact with one of said series, a non-rotatable brake member having a magnet and contact-rings adapted to engage the other series of rings on

the driven pulley, and electrical connections with a switch therein to change the current from the clutch-circuit to the brake-circuit, whereby the clutch may be driven or the said clutch disengaged and the brake engaged.

817,781. DETACHABLE CLOSET-SEAT. JOSIAH T. BAILY, Chicago, Ill., assignor to Edith B. Baily, Chicago, Ill. Filed Nov. 21, 1904. Serial No. 233,712.



Claim.—In a detachable auxiliary closet-seat, a base member having a seat-aperture, a continuous back and side rest of flexible material extending vertically from said base and inclosing said aperture except at one side, spaced clips connecting said rest detachably and adjustably to said base, and means for detachably connecting said base menmber to an ordinary closet-seat.

817,782. ELECTRIC INCANDESCENT LAMP. WERNER VON BOLTON, Charlottenburg, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Original application filed May 31, 1902, Serial No. 109,793. Divided and this application filed Dec. 28, 1905. Serial No. 293,610.



Claim.—1. An incandescing body for electric glow-lamps, consisting of substantially pure metallic tantalum.

2. An incandescing body for electric glow-lamps, consisting of a wrought metal of the vanadium group.

3. An incandescing body for electric glow-lamps, consisting of a wrought filament of metallic tantalum.

4. An incandescing body for electric glow-lamps, consisting of a drawn wire of metallic tantalum.

5. A filament for use as a glower for an incandescent electric lamp, composed of ductile tantalum.

6. An incandescing body for electric glow-lamps, consisting of a homogeneous metallic wrought filament of tantalum.

817,783. HOMOGENEOUS BODY OF HIGHLY-REFRACTORY METALS. WERNER VON BOLTON, Charlottenburg, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Original application filed Jan. 5, 1904, Serial No. 187,830. Divided and this application filed Sept. 29, 1905. Serial No. 280,639.

Claim.—1. A metal derived from tantalum compounds and possessing the quality of being homogeneous and ductile.

2. Substantially pure metallic tantalum possessing the qualifications of homogeneousness and ductility.

817,784. INCANDESCING BODY FOR LIGHTING PURPOSES. WERNER VON BOLTON, Charlottenburg, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Filed May 31, 1902. Serial No. 109,793.

Claim.—1. A homogeneous metallic glower for incandescent lights containing ductile metal of the vanadium group, the light-emitting properties of the glower being due to the presence of this metal.

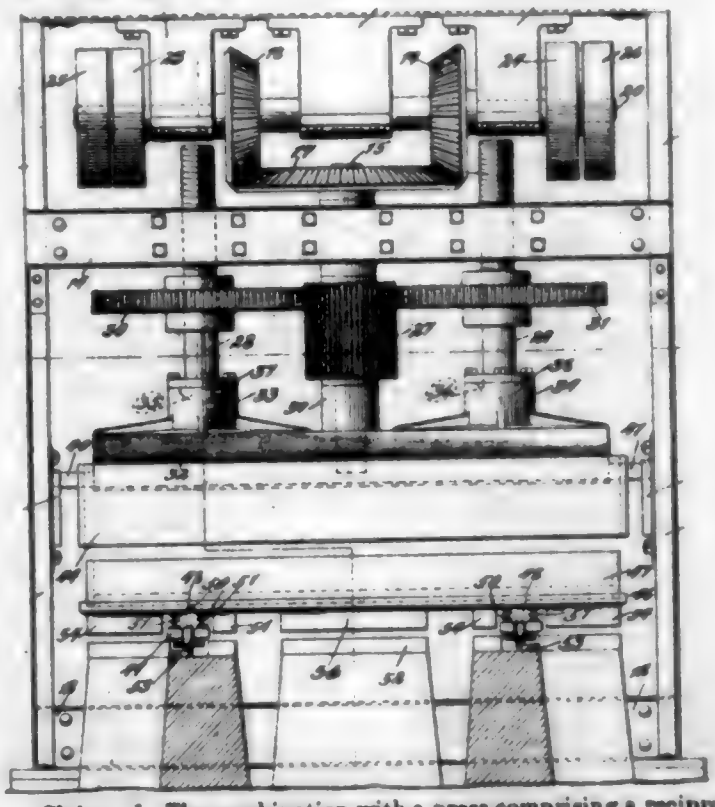
2. A glower for incandescent lights containing homogeneous ductile alloy of metals of the vanadium group, the light-emitting properties of the glower being due to the presence of such alloy.



3. A glower for incandescent lights consisting of an alloy of metals of the vanadium group.

4. A glower for electric glow-lamps composed of a wrought filament of an alloy of metals of the vanadium group.

817,785. PRESS. ROBERT B. CAMPBELL, Joliet, Ill., assignor of one-half to Alexander F. Banks, Evanston, Ill. Filed Oct. 13, 1905. Serial No. 282,618.



Claim.—1. The combination with a press comprising a reciprocating head and means for operating the same, of a carriage adapted to be moved under and away from said head, yielding supports for said carriage, and a solid support on which said carriage rests while under said press when said carriage has been forced down, substantially as specified.

2. The combination with a press comprising a reciprocating head and means for operating the same, of a carriage adapted to be moved under and away from said head, spring-supports under said carriage, and a solid support on which said carriage rests while under said press when said spring-supports have been compressed, substantially as specified.

3. The combination with a press comprising a reciprocating head and means for operating the same, of a carriage adapted to be moved under and away from said head, spring-supports under said carriage, blocks dependent from said carriage, and a solid support on which said carriage rests while under said press and against which said blocks are adapted to bear when said spring-supports have been compressed, substantially as specified.

4. The combination with a press comprising a reciprocating head and means for operating the same, of a wheeled carriage adapted to be moved under and away from said head, springs interposed between the wheeled supports and the body of the carriage, blocks dependent from said carriage-body, and a solid support on which said carriage rests while under said press and against which said blocks are adapted to bear when said springs have been compressed, substantially as specified.

5. The combination with a press comprising a reciprocating

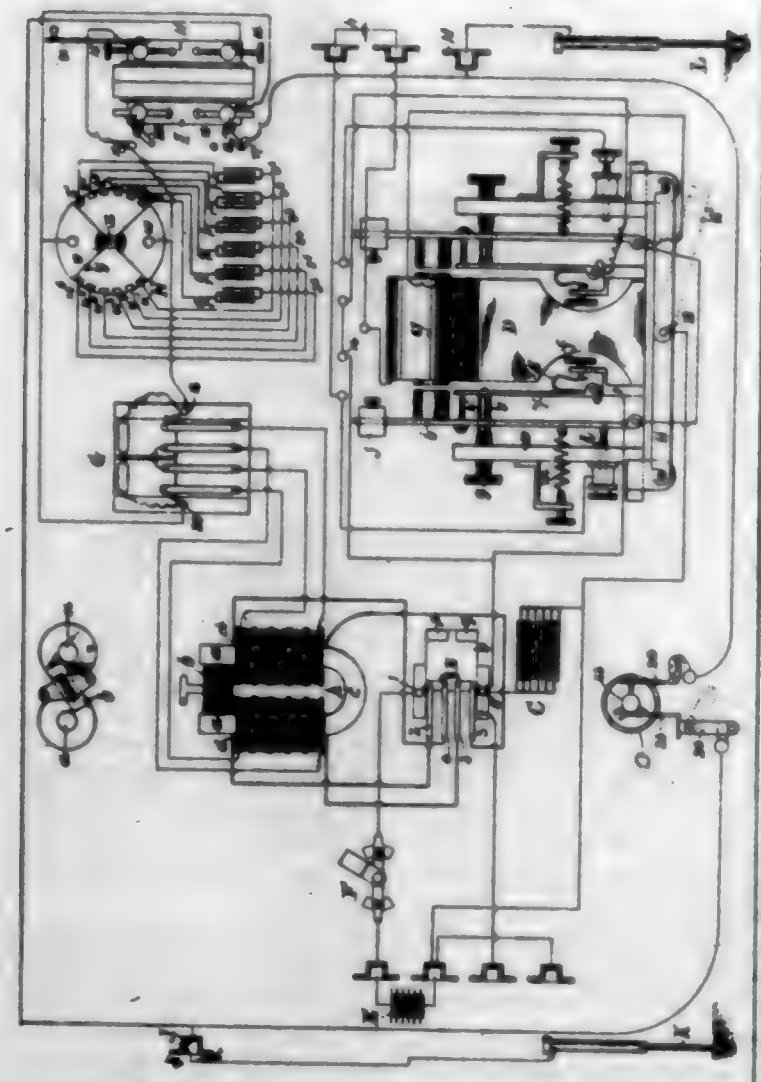
head and means for operating the same, of a carriage adapted to be moved under and away from said head and adapted to support material thereon to be pressed, and a frame carried by said head and movable relative thereto, said frame being adapted to surround the material on the carriage during the pressing operation, substantially as specified.

6. The combination with a press comprising a reciprocating head, a movable frame and means for moving said frame around the material to be pressed in advance of the contact of the head with the material, substantially as specified.

7. The combination with a press comprising a reciprocating head, of a movable frame slidingly connected with said head, and means for moving said frame around the material to be pressed in advance of the contact of the head with the material, substantially as specified.

8. The combination with a press comprising a reciprocating head, of a guide at opposite sides thereof, arms projecting from said head into said guides, a frame surrounding said head and having slots through which said arms project, and means for moving said head and attached frame, substantially as specified.

817,736. APPARATUS FOR DETECTING AND LOCALIZING MINERAL DEPOSITS. LEO DAFT, Ealing, and ALFRED WILLIAMS, Wimbledon, England, assignors to The Electrical Ore Finding Company Limited, London, England. Filed Oct. 14, 1902. Serial No. 127,261.



Claim.—1. An apparatus for locating mineral deposits consisting of a combination of a source of electricity, an inductor which is adapted to emit fluctuating electric impulses, two portable electrodes which are electrically connected, having the battery and inductor in series between them, two other portable electrodes which are electrically connected and a resonator which is in series between them, such resonator being adapted to produce audible sensations from electric impulses.

2. An apparatus for locating mineral deposits consisting of a combination of a source of electricity, an inductor consisting of the following parts namely, an electromagnet, doubly wound, the primary circuit of which is adapted to be traversed by the electricity from the above-mentioned source, a break for the primary circuit, a condenser having each of its two elements joined to the primary circuit with the break between the connections, two portable electrodes which are electrically connected, having the source of electricity and inductor in series between them, two other portable electrodes which are electrically connected and a resonator which is in series between them, such resonator consisting of a telephone-receiver to produce audible sensations from electric impulses.

3. An apparatus for locating mineral deposits consisting of a combination of a source of electricity, an inductor consisting of the following parts namely, an electromagnet, doubly wound, the primary circuit of which is adapted to be traversed by the electricity from the above-mentioned source, a break for the primary circuit, a condenser having each of its two elements joined to the primary circuit with the break between the connections, a sparking gap on the secondary circuit, a condenser having each of its two elements joined to the secondary circuit with the sparking gap between the connections, two portable electrodes which are electrically connected, having the source of electricity and inductor in series between them, two other portable electrodes which are electrically connected and a resonator which is in series between them, such resonator being adapted to produce audible sensations from electric impulses.

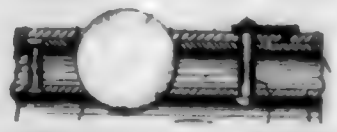
4. An apparatus for locating mineral deposits consisting of a source of electricity, an electromagnet, doubly wound, the primary circuit of which is adapted to be traversed by the electricity from the above-mentioned source, a break for the primary circuit, a sparking gap for the secondary circuit, a condenser for the secondary adapted to be graded in capacity, and two portable electrodes adapted to make earth contact, and a resonator and two other portable electrodes in series therewith, substantially as described.

5. An apparatus for locating mineral deposits consisting of a source of electricity, an electromagnet, doubly wound, the primary circuit of which is adapted to be traversed by the electricity from the above-mentioned source, an adjustable armature which is adapted to vary the air-gap of the poles of the magnet, a switch which is adapted to place the two primary coils in series or in parallel as desired, a duplicate break for the primary circuit independently operated by an electromagnet and armature, the two breaking-contacts of which are adapted to be placed in series or in parallel and adapted to be synchronous or discordant in their breaking, a condenser for the primary circuit, a second switch which is adapted to place the two secondary coils in series or in parallel as desired, a sparking gap for the secondary circuit, a condenser for the secondary circuit adapted to be graded in capacity, a motor-driven high-frequency break for the secondary, and two portable electrodes adapted to make earth contact and a resonator and two other portable electrodes in series therewith, substantially as described.

6. An apparatus for locating mineral deposits consisting of a source of electricity, an inductor which is adapted to emit fluctuating impulses, the secondary of said inductor being adjustable as to inductance and capacity, a condenser adjustable as to capacity, two portable electrodes which are electrically connected, having the battery and inductor in series between them, two other portable electrodes which are electrically connected and a telephone-receiver which is in series between them, substantially as described.

7. An apparatus for locating mineral deposits consisting of a source of electricity, an inductor which is adapted to emit fluctuating impulses, the secondary of said inductor being adjustable as to inductance and capacity, a condenser adjustable as to capacity, two portable electrodes which are electrically connected, having the battery and inductor in series between them, two other portable electrodes which are electrically connected and a telephone-receiver which is in series between them, said telephone-receiver being adjustable to accord with the adjustment of the other parts of the apparatus, substantially as described.

817,737. BALL-BEARING. BERT G. GOBLE, Allegheny, Pa. Filed Aug. 18, 1904. Serial No. 221,207.



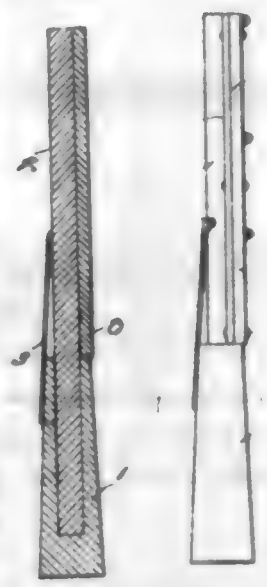
Claim.—1. The combination with an axle and its spindle portion, of a ball-bearing comprising three members surrounding the spindle of the axle, balls mounted in said members, the inner of which members is apertured to permit the balls to project therethrough into engagement with the spindle, and carries rivets, the intermediate of said members being mounted on said rivets, and having openings greater in diameter than the openings in the first-mentioned member, and the third of which members is sleeved onto the second-

mentioned member and has openings to allow the balls to project therethrough, substantially as described.

2. A ball-bearing comprising three elements or members, balls mounted in said members, the inner one of said members having openings of less diameter than the balls received in said openings, and the surrounding member having openings of larger diameter than the inner member, with the outer or third member sleeved onto the second-mentioned member and having openings to receive the balls, but of less diameter than said balls.

3. The combination with an axle and its spindle portion, of sleeves concentric with the spindle and with each other, the inner of said sleeves being provided with openings, balls mounted in said openings and of greater diameter than the openings, rivets carried by said inner sleeve, the intermediate of said sleeves being mounted on said rivets and having openings of a diameter equal to the diameter of the balls, the outer of said sleeves being sleeved onto the intermediate sleeve and having openings of less diameter than the balls, means for securing said outer sleeve against independent movement, and means on the spindle for holding all the sleeves against endwise movement thereon.

817,738. **FENCE-POST.** GEORGE H. KAUFMAN, Marionville, Pa., assignor of one-half to J. A. Grubbs, Marionville, Pa. Filed June 21, 1905. Serial No. 266,306.



Claim.—A fence-post comprising a plastic base, a metallic post having its lower end embedded in the base, a wooden post secured to the metallic post above said base, and a brace connecting the metallic post at both of its ends and spaced therefrom intermediate its ends, one end of said brace being directed inwardly and embedded in the base and the opposite end of the brace having ears for engagement with the metallic post.

817,789. **VEHICLE.** JOHN LOEFF, near Tacoma, Wash. Filed May 27, 1904. Serial No. 210,090.

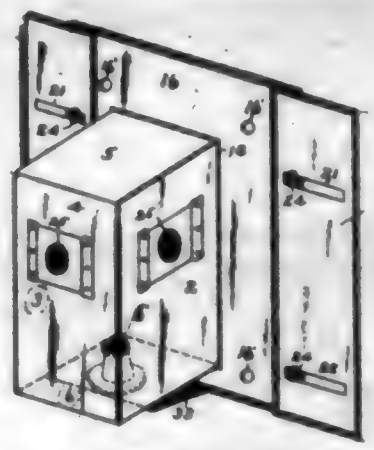


Claim.—A double vehicle-wheel extending in one body across the vehicle and formed with a continuous bearing-surface of constantly-varying diameter to present a double conical shape with rounded ends without angles or edges or corners.

REISSUES.

12,471. **WINDOW-KITCHEN.** IDA M. THOMPSON, Jamestown, N. D. Filed Feb. 5, 1906. Serial No. 299,635. Original No. 803,828, dated Nov. 7, 1905.

Claim.—1. A device of the character described, comprising a body portion, a shield projecting transversely at one side thereof, and an adjustable extension at one edge of the shield.



2. A device of the character described, comprising a body portion having ventilating-openings, a shield projecting transversely of the body portion, and extensions connected to the edges of the shield.

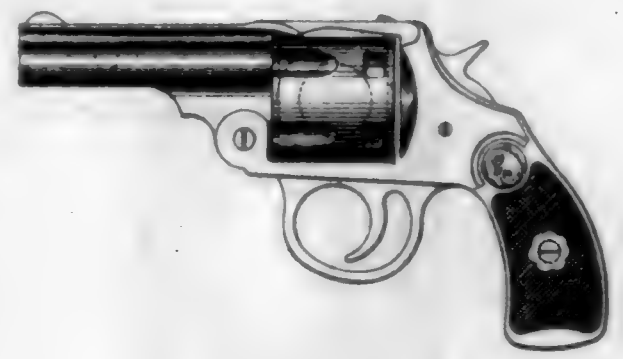
3. A device of the character described, comprising a rectangular body formed with openings in its respective walls, a shield projecting transversely of the body at one side thereof, and wings adjustably connected with the side edges of the shield.

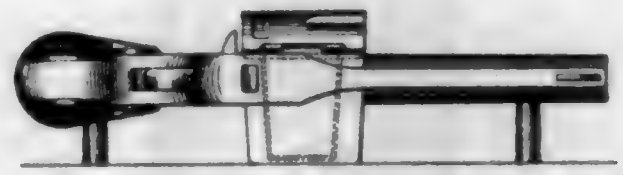
4. A device of the character described, comprising a body portion open at its front side, the walls of the body being formed with openings, dampers for said openings, the forward edges of the body-walls being bent to provide a face-flange, a door pivotally connected to said flange, a shield encircling the body in rear of the flange, means for removably connecting the shield and flange, and wings adjustably connected to said shield.

5. A device of the character described comprising a rectangular body formed with openings in its respective walls, a shield projecting transversely of the body at one side thereof, and wings adjustably connected with the side edges of the shield, and a shelf projecting from the shield and supporting the body portion.

DESIGNS.

37,941. **INKSTAND.** CEPHAS B. ROGERS, Danbury, Conn. Filed Mar. 9, 1905. Serial No. 249,282. Term of patent 3½ years.





Claim.—The ornamental design for an inkstand, as shown.

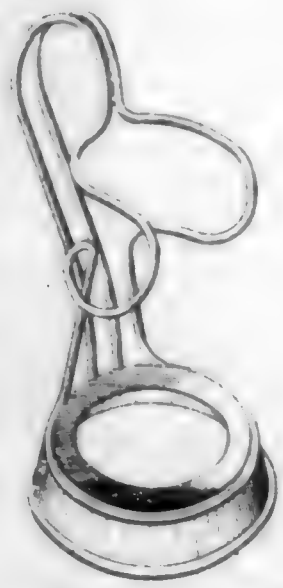
37,942. **HANDLE OF SPOONS OR SIMILAR ARTICLES.** SAMUEL J. LARGE, Bristol, Conn., assignor to American Silver Company, Bristol, Conn., a Corporation. Filed Feb. 14, 1906. Serial No. 301,063. Term of patent 7 years.

37,942.



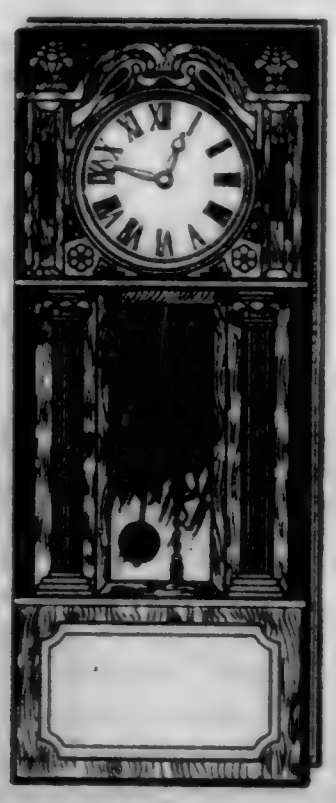
Claim.—The ornamental design for the handle of a spoon or similar article, as shown.

37,943. GLASS-HOLDER. JOHN F. CONLIN, Chelsea, Mass., assignor to American Soda Fountain Company, Boston, Mass., a Corporation of New Jersey. Filed Jan. 19, 1906. Serial No. 296,916. Term of patent 14 years.



Claim.—The ornamental design for a glass-holder as shown.

37,944. BOX. WILLIAM JONES, New York, N. Y. Filed Mar. 1, 1906. Serial No. 303,731. Term of patent 3½ years.



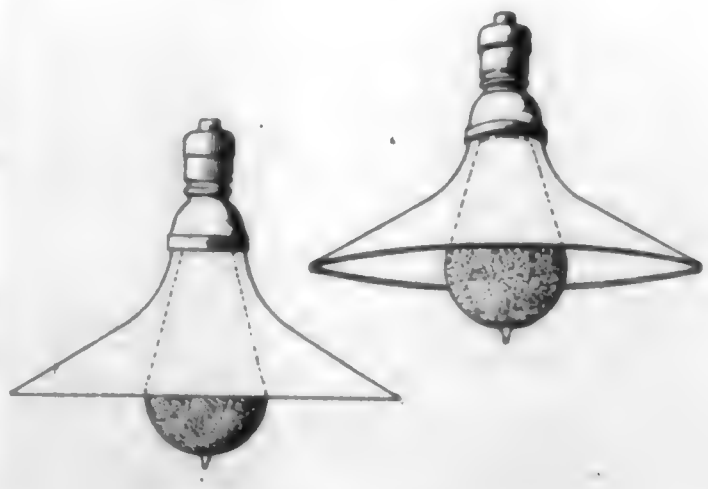
Claim.—The ornamental design for a box, as shown.

37,945. CARD-MOUNT. HOWARD A. STOSE, Philadelphia, Pa., assignor to A. M. Collins Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Feb. 23, 1906. Serial No. 302,643. Term of patent 3½ years.



Claim.—The ornamental design for a card-mount, as shown.

37,946. ILLUMINATOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,723. Term of patent 14 years.



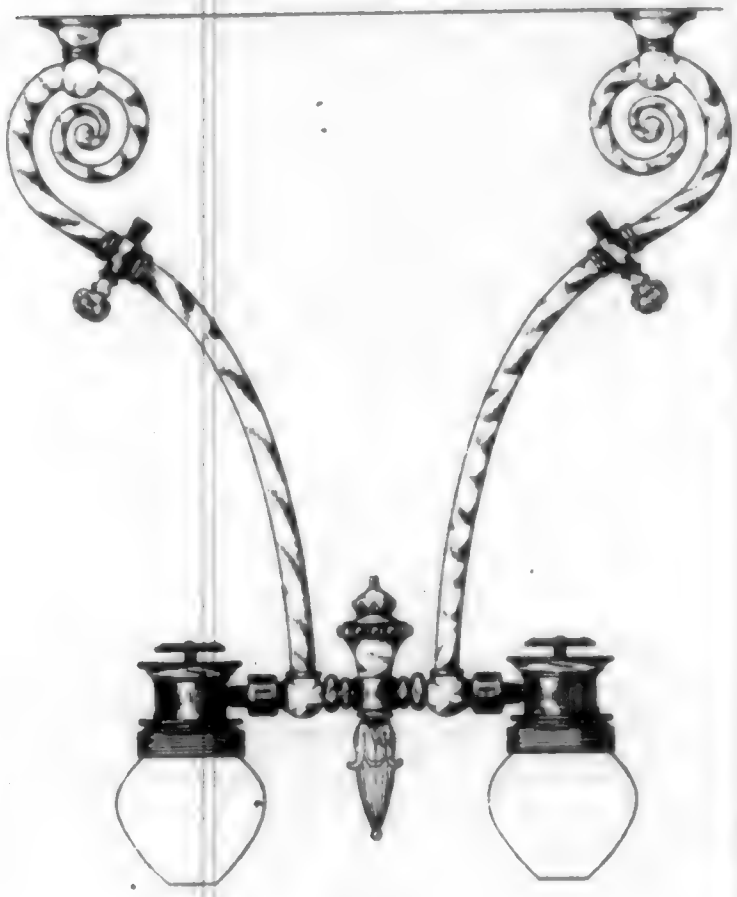
Claim.—The ornamental design for an illuminator, as shown and described.

37,947. WALL-LAMP HOLDER. JOHN F. GERAGHTY, New York, N. Y., assignor to William R. Hoe, East Orange, N. J. Filed Dec. 4, 1905. Serial No. 290,314. Term of patent 7 years.



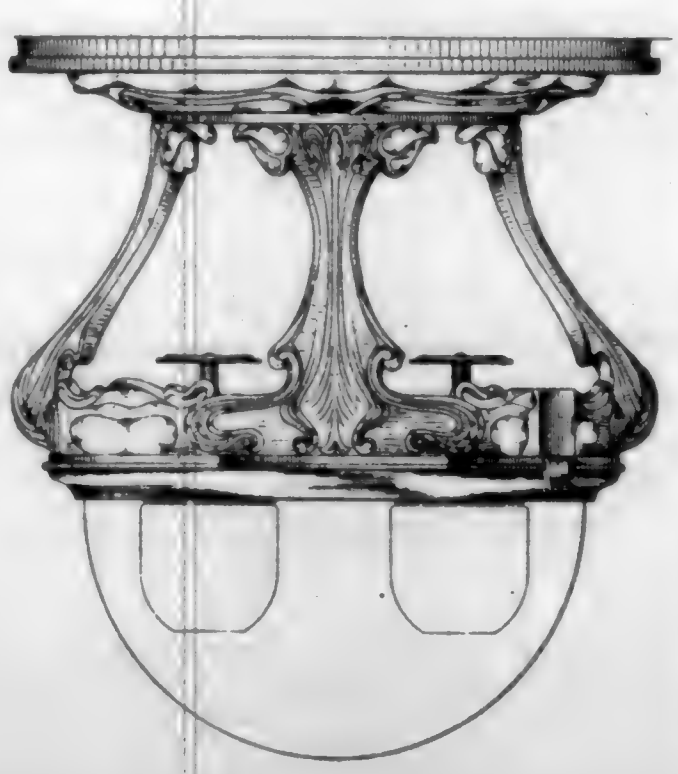
Claim.—The ornamental design for a wall-lamp holder as shown.

37,948. LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Dec. 14, 1905. Serial No. 291,803. Term of patent 14 years.



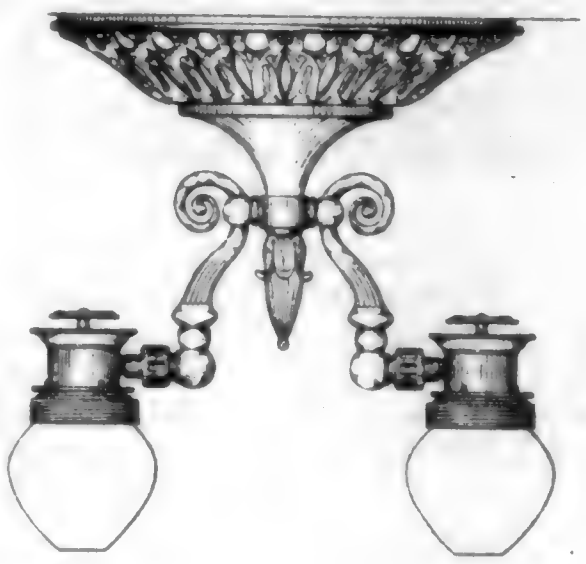
Claim.—The ornamental design for a lamp, as shown.

37,949. LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Dec. 14, 1905. Serial No. 291,804. Term of patent 14 years.



Claim.—The ornamental design for a lamp, as shown.

37,950. LAMP. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Dec. 14, 1905. Serial No. 291,805. Term of patent 14 years.



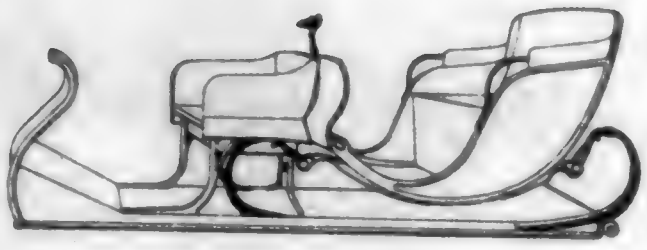
Claim.—The ornamental design for a lamp, as shown.

37,951. WHIP-SOCKET FOR AUTOMOBILES. CHARLES O. STERLING, Washington, D. C. Filed Feb. 6, 1906. Serial No. 299,842. Term of patent 3½ years.



Claim.—The ornamental design for a whip-socket for automobiles as shown.

37,952. AUTOMOBILE-BODY. WILLIAM Hooker ATWOOD, New Haven, Conn. Filed Mar. 12, 1906. Serial No. 305,722. Term of patent 14 years.



Claim.—The ornamental design for an automobile-body, as shown.

37,953. SHEET-GLASS. WILLIAM W. PILKINGTON, Prescot, England, assignor to Pilkington Brothers Limited, St. Helens, England. Filed Dec. 21, 1905. Serial No. 292,571. Term of patent 7 years.



Claim.—The ornamental design for sheet-glass, as shown.

TRADE-MARKS

PUBLISHED APRIL 10, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 185. BAR SOAP. SCHAEFFER BROS. & POWELL MANUFACTURING COMPANY, St. Louis, Mo. Filed Apr. 1, 1905. Used ten years.

MOTTLED

The word "MOTTLED."

Ser. No. 252. COCKTAILS AND PUNCH. W. H. JOHNS AND CO., Boston, Mass. Filed Apr. 3, 1905.

BON TON

The words "BON TON."

Ser. No. 773. GLOVES. PETIT SCHMIDT, New York, N. Y. Filed Apr. 8, 1905.



The arbitrary word "VALLIER" in fancy letters and printed in black in a horizontal line below the representation of a scroll bearing the words "WASHABLE GLOVE."

Ser. No. 1,089. MILLS FOR GRINDING ALL KINDS OF GRAIN, SEEDS, AND DRUGS. NEW WINONA MFG. CO., Winona, Minn. Filed Apr. 11, 1905.

DIAMOND

The word "DIAMOND."

Ser. No. 1,227. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland and Toledo, Ohio. Filed Apr. 12, 1905.



The letter "T," inclosed in a triangular-shaped figure.

Ser. No. 1,338. RAILWAY-CAR CASTINGS. THE NATIONAL MALLEABLE CASTINGS COMPANY, Cleveland, Ohio, and Sharon, Pa. Filed Apr. 13, 1905.



The letter "N," inclosed in a circle.

SER. No. 1,352. PRIMERS OR CAPS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING COY, New York, N. Y. Filed Apr. 13, 1905.

CHAMPION

The arbitrarily-selected word "CHAMPION."

SER. No. 1,616. METALLIC PENS. THE SPENCERIAN PEN CO., New York, N. Y. Filed Apr. 15, 1905.

Spencerian

The arbitrarily-coined word "SPENCERIAN" written in script.

SER. No. 1,626. PERFUMING EXTRACTS. FRIEDRICH ADOLF RICHTER, New York, N. Y., and Rudolstadt, Germany. Filed Apr. 15, 1905.

Pinon

The word "PINON."

SER. No. 2,009. PUMPS. F. E. MYERS & BRO., Ashland, Ohio. Filed Apr. 17, 1905. Used ten years.

MYERS

The word "MYERS."

SER. No. 2,090. BRAIDED CORD. SILVER LAKE CO., Boston, Mass. Filed Apr. 17, 1905. Used ten years.



Yellow spots spirally disposed around the surface of a braided cord.

SER. No. 2,273. LAGER-BEER. GEORGE EBERT, New York, N. Y. Filed Apr. 19, 1905. Used ten years.



Two intersecting equilateral triangles forming a six-pointed star and a monogram of the letters "G E" in the space inclosed by the triangles at the center of the star.

SER. No. 2,574. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

PATE SPRING

The words "PATE SPRING."

SER. No. 2,575. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

No. 3.

The arbitrary symbol "No. 3."

SER. No. 2,576. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

No. 4
COUNTER STOCK

The arbitrary words "No. 4 COUNTER STOCK."

SER. No. 2,577. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

EXTRA

The arbitrary word "EXTRA."

SER. No. 2,703. DUMB-WAITERS. JOHN GEORGE SPEIDEL, Reading, Pa. Filed Apr. 22, 1905.

JUMPER

The word "JUMPER."

SER. No. 3,029. RYE WHISKY. BAYER & CO., New York, N. Y. Filed Apr. 25, 1905.

BELLE OF MARYLAND

The words "BELLE OF MARYLAND."

SER. No. 3,218. COOKING UTENSILS MADE OF TINWARE. THE LISK MANUFACTURING CO. LIMITED, Canandaigua, N. Y. Filed Apr. 27, 1905. Used ten years.



The representation of a Maltese cross and the word "LISK."

SER. No. 3,607. LAGER-BEER. A. FINCK & SON, New York, N. Y. Filed Apr. 20, 1905. Used ten years.



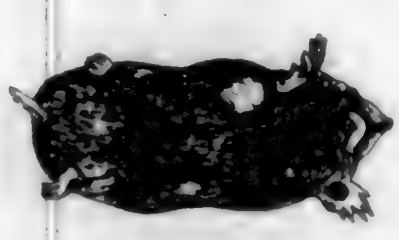
The representation of a fouled anchor.

SER. No. 3,958. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 2, 1905. Used ten years

No. 31.

The abbreviation and numerals "No. 31."

SER. No. 4,164. ANIMAL-TRAPS. WILLIAM A. REDDICK, Niles, Mich. Filed May 3, 1905.



The pictorial representation of a mole.

SER. No. 4,264. OVEN-TURNBUCKLES AND WROUGHT-IRON PIPE-STRAP. BERGER BROS. CO., Philadelphia, Pa. Filed May 4, 1905.

B. B.

The letters "B. B."

SER. No. 4,284. COTTON-SEED MEAL AND NUT-CAKE. HUMPHREYS, GODWIN & CO., Memphis, Tenn. Filed May 4, 1905.

SER. No. 4,284.



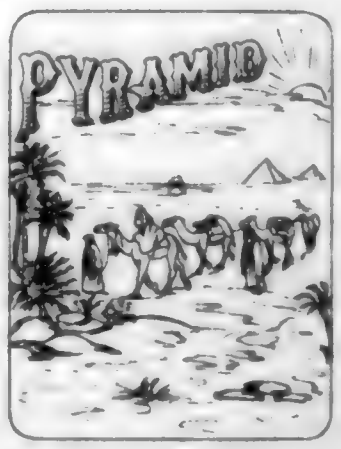
The representation of the head of a cow in the act of eating from a pail which is held in the hands of a negro boy. On the pail appear the words "DIXIE BRAND" in quotation-marks and below it the words "THE FEED YOU NEED," the whole being surrounded by two concentric circles, in the space between which are the words "DIXIE BRAND" in quotation-marks.

SER. No. 4,301. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 5, 1905. Used ten years.

No. 94

The abbreviation and numerals "No. 94."

SER. No. 4,513. WHISKY. SAMPLE & CO., New York, N. Y. Filed May 6, 1905.



The word "PYRAMID," associated with the representation of a desert scene, pyramids appearing in the background and palm-trees in the foreground with a group of camels approaching the same, together with the sun partly obscured by clouds.

SER. No. 4,572. TEA. F. P. GARRETTSON & CO., Newport, R. I., and New York, N. Y. Filed May 6, 1905.

Exposition Tea

The words "EXPOSITION TEA."

SER. No. 4,576. LAUNDRY SOAP. F. P. GARRETTSON & CO., Newport, R. I., and New York, N. Y. Filed May 6, 1905.

Ser. No. 4,576.

AQUIDNECK SOAP

The words "AQUIDNECK SOAP."

Ser. No. 4,692. WHISKY. W. P. IVES & Co., Norfolk, Va. Filed May 8, 1906.



The letters "T. P. A." arranged in a semicircle over a monogram formed by intertwining the letters and character "W P I & Co," inclosed in a circle.

Ser. No. 4,877. WHISKY. L. W. LEVY & Co., Galveston, Tex. Filed May 10, 1906.

Brookwood

The word "BROOKWOOD."

Ser. No. 4,885. PICKLES. SQUIRE DINSEE Co., Chicago, Ill. Filed May 10, 1906. Used ten years.

GOLD MEDAL

The arbitrarily-selected words "GOLD MEDAL."

Ser. No. 4,951. WHISKY. FRIEDMAN & WORTHE, Cincinnati, Ohio. Filed May 10, 1906.



The word "HIGHLAND" with shaded lines below the letters thereof and a mountainous scene having a distillery in the foreground and a representation of the sun in the background, with a shield thereon bearing a monogram of the letters "F & W."

Ser. No. 5,010. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed May 11, 1906. Used ten years.



The representation of an ace of spades having a dark center with light scrolls at the top and bottom and the number "69" in the middle between the scrolls. Surrounding the center and inclosed by two dark lines is a light band ornamented by scrolls at the top and bottom and displaying the words "CONSOLIDATED CARD COMPANY." On each side of the ace of spades is a scroll with conventional leaves springing from conventional stalk designs, which intertwine in the middle beneath the ace of spades. In each lower corner is a ribbon-like device hanging from the scroll above, which also supports a leaf-like loop, which is continued toward the middle into a chain-like loop, also hanging from the scroll above. On the ribbon-like device appear the words "N. Y. CONSOLIDATED CARD CO." At the top is a curved frame inclosing the word "MASCOTTE," and beneath said frame appear the words "THE NEW-YORK."

Ser. No. 5,115. SHEET TRANSLUCENT FABRIC COMPOSED OF A FOUNDATION OF RETICULATED OR PERFORATED MATERIAL AND A COVERING OR COATING OF TRANSLUCENT MATERIAL. TRANSLUCENT FABRIC Co., Quincy, Ill. Filed May 11, 1906.

FABOLEUM

The word "FABOLEUM," which is printed in block type, having the "F" capitalized and formed with its upper horizontal stroke extended above and throughout the length of the word.

Ser. No. 5,137. WHISKY. BEN J. GOLDMAN Co, San Francisco, Cal. Filed May. 11, 1906. Used ten years.



The words "MAGGIE MOORE."

Ser. No. 5,143. WHISKY. THE HOFFHEIMER BROS Co., Cincinnati, Ohio. Filed May 11, 1906. Used ten years.



The word "BRUNSWICK," associated with a monogram composed of the letters "H B" inclosed in a circle all within a diamond-shaped figure having concave sides.

SER. No. 5,144. WHISKY. THE HOFFHEIMER BROS. CO., Cincinnati, Ohio. Filed May 11, 1905.



The words "ARKANSAS TRAVELER" and a scene representing a log cabin, before which is a man on horseback and a man seated on a log playing a fiddle. Near him appears his family, a woman and five children. At the left is an old-fashioned still with a fire under it and an ax and firewood in front of it, and trees and mountains are shown in the background, and a coon-skin is stretched on the wall of the cabin. The entire picture is surrounded by a double circle, within which is the name of the brand.

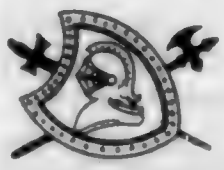
SER. No. 5,232. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 11, 1905. Used ten years.

LINDALE

The arbitrarily-selected word "LINDALE."

SER. No. 5,377. WHISKY. MAX FROHAUF & Co., Cincinnati, Ohio. Filed May 12, 1905.

HELMET



The word "HELMET" and the representation of a shield with the design of a helmet placed thereon and a sword and battle-ax crossed behind the shield.

SER. No. 5,514. STEEL RODS, BARS, BLOOMS, BILLETS, PLATES, SHEETS, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

Aliquippa

The word "ALIQUIPPA."

SER. No. 5,814. REMEDY FOR FEVERS, TUBERCULOSIS, COLDS, AND LOCAL AND CONSTITUTIONAL AFFECTIONS CAUSED BY GERM DISEASES. FRANCIS U. KAHLE, Buffalo, N. Y. Filed May 16, 1905.

PONSO

The arbitrary word "PONSO."

SER. No. 5,871. PILLS USED FOR THE CURE OF HEADACHE, DIZZINESS, BILIOUSNESS, TORPID LIVER, CONSTIPATION, AND SALLOW SKIN. CARTER MEDICINE COMPANY, New York, N. Y. Filed May 17, 1905.



The words "CARTER'S LITTLE LIVER PILLS," having a large capital "L" forming the common initial letter of the words "LITTLE" and "LIVER," the whole surrounded by a rectangular border.

SER. No. 5,966. WHISKY. SALLIE ALTMAYER, Macon, Ga. Filed May 18, 1905.



A monogram of the letters and abbreviation "A F L Co." and a representation of an ear of corn, associated with the words "OLD KENTUCKY CORN."

SER. No. 6,046. MILK AND CREAM. HARRY YATES, Buffalo and Orchard Park, N. Y. Filed May 18, 1905.



The representation of the head of a cow surrounded by an annular band, in which appear the words "HILLHURST FARM ORCHARD PARK, N. Y."

SER. No. 6,047. MAGNET-WIRE FOR TROLLEY USE. THE MAGNET WIRE COMPANY, New York, N. Y. Filed May 18, 1905.

SER. No. 6,047.



The representation of a horseshoe magnet and an armature held against its poles, with the words "THE MAGNET WIRE CO." appearing on the magnet and the words "NEW YORK" on the armature.

SER. No. 6,124. SOLUTION FOR SOLDERING AND CLEANSING METALS. BRUMER BROS., Clinton, Iowa. Filed May 20, 1905.

EUREMA



The word "EUREMA," associated with the numeral "1," upon which is imprinted the numeral "3" and flanked by clover-leaves.

SER. No. 6,257. SILVER-PLATED HOLLOW WARE. BERNARD RICE'S SONS, New York, N. Y. Filed May 22, 1905.



A fleur-de-lis inclosed in concentric circles, with the words "APOLLO SILVER CO." between the circles.

SER. No. 6,282. WHISKY. THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed May 23, 1905. Used ten years.

HANCOCK

The word "HANCOCK."

SER. No. 6,297. WHISKY. LOUIS J. ADLER, Pittsburg, Pa. Filed May 22, 1905.



The word "CAMEO" above the representation of a cameo showing a woman's head in a fanciful oval figure displayed on a fanciful shield design.

SER. No. 6,327. WHISKY. S. GRAEFENBERG & Co., Louisville, Ky. Filed May 22, 1905. Used ten years.

Echo Spring



The words "ECHO SPRING" and a circular design inclosing the picture of a woman dipping water from a spring.

SER. No. 6,475. WHISKY. HENRY CAMPE & Co, San Francisco, Cal. Filed May 24, 1905.



OLD CAMPE

The words "OLD CAMPE," above which is the portrait of Henry Campe surrounded by an oval.

SER. No. 6,519. LEATHER AND CLOTH SHOES. JOSEPH A. MANNING, Boston, Mass. Filed May 24, 1905.



The word "GLENDALE" arranged on a ribbon across the face of a shield having vertical bars. The ends of the ribbon hang down on each side, and the shield is surmounted by a conventional ornamentation somewhat resembling branches with leaves.

SER. No. 6,871. WHISKY. C. H. GRAVES & SONS, Boston, Mass. Filed May 29, 1905. Used ten years.



The representation of the head of a domestic cat and the words "WALNUT HILL."

SER. No. 7,013. WHISKY. REDMERE BROS & CO, Dubuque, Iowa. Filed May 29, 1905.

WINNESHEIK CLUB

The words "WINNESHEIK CLUB."

SER. No. 7,064. BALL-BEARINGS. THE HESS-BRIGHT MANUFACTURING CO., Philadelphia, Pa. Filed May 29, 1905.

HB

A monogram of the letters "HB."

SER. No. 7,076. AROMATIC FOOD PREPARATIONS FOR ANIMALS. HORATIO M. GRIFFIN, Galt, Canada. Filed May 31, 1905.

HERBAGEUM

The word "HERBAGEUM."

SER. No. 7,078. HAIR-INVIGORATORS AND COLOR-RESTORERS. JAMES W. WALKER, San Francisco, Cal. Filed May 31, 1905.



The representation of a star. Below the star are the words "THE STAR REMEDY CO." Back of the representation of the star and converging to the center thereof are lines indicating rays, and on each side are banks of clouds. The whole is inclosed in an oblong border.

SER. No. 7,386. MATTRESSES. SOUTHERN SPRING BED COMPANY, Atlanta, Ga. Filed June 3, 1905.



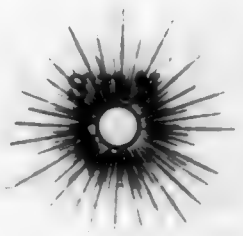
The words "RED CROSS" and the representation of a red Greek cross.

SER. No. 7,444. WHEAT-FLOUR. TERRYPOOT BROS & CO, Meridian, Miss. Filed June 5, 1905.



The words "RED ROSE" printed in the particular or distinctive style shown and arranged over the representation of a full-blown red rose with a bud at one side, below and at each side of which are arranged both the figure "3" and the representation of a human foot.

SER. No. 7,582. CANDY. PHILIP WUNDERLE, Philadelphia, Pa. Filed June 7, 1905.



The word "SUN" and a representation of the sun.

SER. No. 7,602. PLAYING-CARDS. ALEJO GABARRÓ Y CASTELLÓ, Igualada, Province of Barcelona, Spain. Filed June 7, 1905.



A representation of a crow sitting on the branch of a tree.

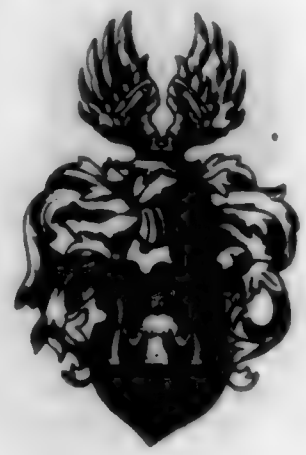
SER. No. 7,848. BEER. SPRINGFIELD BREWERIES COMPANY, Springfield, Mass. Filed June 10, 1905.

Ser. No. 7,843.



Representations of a medal of the Duke of Baden, Germany, showing the obverse and reverse sides of the medal side by side, but in separated relation, with a scroll-bordered shield between them bearing the words "GOLD MEDAL AWARDED AT THE INTERNATIONAL EXHIBITION AT BADEN-BADEN 1896." surmounted by the words "GOLD MEDAL TIVOLI" and also having associated therewith representations of hop-vines and barley-heads.

Ser. No. 8,083. RIBBONS. Vischer & Co. Basel, Switzerland, and New York, N. Y. Filed June 13, 1905.



The representation of a coat of arms comprising a shield bearing a mermaid and surmounted by a helmet and crest of two spread wings. The mermaid is represented as crowned emerging from the water and having three tails, two of which extend upward on either side of her and which she grasps with her two hands. The crest of the two spread wings issues out of a crown on the top of the helmet, and on each of said wings is displayed a fish. On either side of the helmet is ornamental scrollwork or an arabesque ornamentation.

Ser. No. 8,084. RIBBONS. VISCHER & Co., Basel, Switzerland, and New York, N. Y. Filed June 13, 1905.

SEMPER IDEM

The arbitrary words "SEMPER IDEM."

Ser. No. 8,145. CHEWING-GUM. AMERICAN CHICLE Co., New York, N. Y. Filed June 15, 1905.



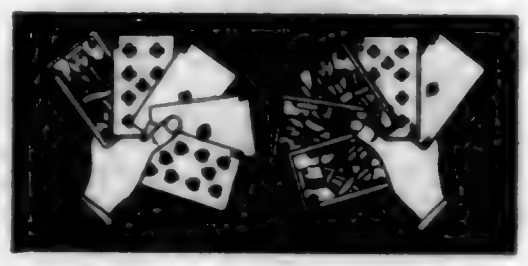
A medallion bearing a crescent with a human face between the horns thereof, with stars in front of the face, and with a scroll beneath having the words "KIS-ME" inclosed in quotation-marks and a background of flowers above the scroll and on each side of the medallion.

Ser. No. 8,147. CHEWING-GUM. AMERICAN CHICLE Co., New York, N. Y. Filed June 15, 1905. Used ten years.

YELLOW BAND

The words "YELLOW BAND" printed upon a band of yellow paper.

Ser. No. 8,155. CHEWING-GUM. AMERICAN CHICLE Co., New York, N. Y. Filed June 15, 1905. Used ten years.



The representation of two hands, each holding playing-cards. In one hand appear the jack of clubs, the nine of clubs, the ace of clubs, the ace of hearts, and the ten of hearts. In the other hand appear the jack of spades, the king of clubs, the queen of clubs, the ten of clubs, and the ace of diamonds. Between the hands and at the top appear the words "EUCHRE CLUBS TRUMPS." At the bottom appear the words "WHICH WINS?" All of these appear upon a dark rectangular background.

Ser. No. 8,160. CHEWING-GUM. AMERICAN CHICLE Co., New York, N. Y. Filed June 15, 1905. Used ten years.

The facsimile firm-signature "ADAMS & SONS Co.," the name of the applicant's predecessors in business.

Ser. No. 8,242. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905. Used ten years.

NORMANDY

The word "NORMANDY."

Ser. No. 8,243. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905.

DEW DROPS

The words "DEW DROPS."

SER. No. 8,245. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905. Used ten years.



The word "WOODBURY" surrounded by an oval design composed of the letters "X."

SER. No. 8,246. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905.



The words "KENTUCKY DEW," beneath which is a shield design with the monogram composed of the letters "O K D" on it and at either side stems, leaves, and heads of grain.

SER. No. 8,247. WHISKY. OLD KENTUCKY DISTILLERY, Louisville, Ky. Filed June 15, 1905. Used ten years.



The words "OLD WATERMILL."

SER. No. 8,560. WHISKY. REDMEDIE BROS & CO, Dubuque, Iowa. Filed June 19, 1905.

SAPHO

The word "SAPHO."

SER. No. 8,944. CIGARS. CIFUENTES, FERNANDEZ Y CA., Havana, Cuba. Filed June 24, 1905. Used ten years.



Two parallel ellipses, inclosed by the outer ellipse in the upper part thereof being the words "FLOR DE TABACOS" and in the lower part thereof the word "HABANA." In the inner ellipse are the words and letters "DE PARTAGAS Y CA," all being in block-faced capital letters.

SER. No. 8,988. CHEWING-GUM. BEST GUM CO., Louisville, Ky. Filed June 24, 1905. Used ten years.



The word "BEST" and the representation of a head of a woman in a rectangular frame and scrollwork, the whole inclosed in a square.

SER. No. 9,008. OLIVE-OIL. THE W. A. CASTLE CO., Springfield, Mass. Filed June 24, 1905.



The representation of a castle surrounded by a circular belt bearing the motto "PURISSIMUM ET OPTIMUM." Below the castle and within the belt also appears a monogram consisting of the letters "W A C."

SER. No. 9,143. SOAP. ENOS PALMER, New York, N. Y. Filed June 27, 1905. Used ten years.



The word "PALMER."

SER. No. 9,211. SILK DRESS GOODS IN THE PIECE. ROSENBERG & THOMPSON, New York, N. Y. Filed June 27, 1905.

LE JUNGLE

The words "LE JUNGLE."

SER. No. 9,301. MEDICAL COMPOUND FOR THE CORRECTION OF IRRITATION, INFLAMMATION, PAIN, AND OTHER DISORDERS. THE BRANDRETH CO., Cossing-on-Hudson, N. Y. Filed June 27, 1905. Used ten years.



The word-symbol "SALVA-CEA."

SER. No. 9,878. HAIR-RESTORATIVES. S. R. VAN DUSEN, New York, N. Y. Filed June 29, 1905. Used ten years.

WORLD'S

The word "WORLD'S."

SER. No. 9,600. BABBITT METAL. PEERLESS SMELTING & REFINING CO., Philadelphia, Pa. Filed July 1, 1905.



The word "RAINBOW" and the letters, character, and abbreviation "S. & R. Co." located within a field surrounded by a circle and the word and abbreviations "PEERLESS PHILADA. PA. U. S. A." surrounding the circle.

SER. No. 9,692. WHISKY. THE ULLMAN EINSTEIN CO., Columbus, Ohio. Filed July 3, 1905.



The words "WALNUT CREEK" above a monogram composed of the letters, character, and abbreviation "U E & Co." Below this is a wreath of grain.

SER. No. 9,726. WHISKY. JACOB KLEIN, South Omaha, Nebr. Filed July 3, 1905.

APEX



The word "APEX" and a rectangular figure bearing in one end a picture of a nurse standing by the bed of a patient and pouring medicine from a bottle into a glass.

SER. No. 9,843. LATHER-BRUSHES. THE RUBBER & CELLULOID HARDENS TRIMMING CO., Newark, N. J. Filed July 6, 1905.



The pictorial representation of a ribbon rosette.

SER. No. 9,994. TOILET AND BATH SOAP AND SOAP FOR CLEANING KITCHEN UTENSILS AND SIMILAR ARTICLES. THE ANDREW JERGENS CO., New York, N. Y., and Cincinnati, Ohio. Filed July 10, 1905.

Jergens'
Pumiss

The words "JERGENS' PUMISS" and the word "FOMO" appearing across the face of the word "PUMISS."

SER. No. 10,150. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y. Filed July 13, 1905.



A rectangular panel having an inner frame inclosing a dark ground covered by small light dots. Within said frame two ornamental fleur-de-lis extend from a central rosette toward the ends. Surrounding the inner frame is an elaborate scroll border having fleur-de-lis at the corner.

SER. No. 10,310. PRINTED AND DYED TEXTILE FABRICS. THE KEYSTONE MANUFACTURING COMPANY, Keystone and Philadelphia, Pa. Filed July 14, 1905.

JASPER EFFECTS

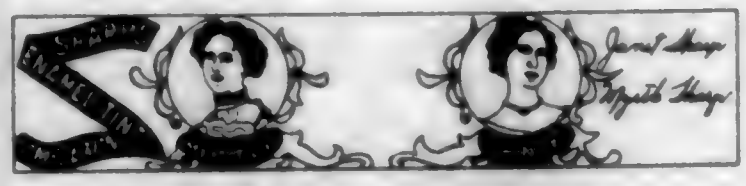
The arbitrary words "JASPER EFFECTS."

SER. No. 10,388. ALBUMEN PREPARATIONS FOR USE AS FOOD. ALTHEN & MEYER, Halle-on-the-Saale, Germany. Filed July 14, 1905.

TUTULIN

The arbitrarily-selected word "TUTULIN."

SER. No. 10,494. TOILET POWDERS AND TOILET CREAMS. EDWARD E. LANGAN, St. Louis, Mo. Filed July 17, 1905.



A rectangular panel having thereon bust portraits and facsimile signatures of "JANET" and "MYRTLE SHARP," the names "MYRTLE" and "JANET" being arranged below the respective pictures and the words "SHARPS ENAMEL TINT COMPLEXION" appearing on a scroll at one side of the panel.

SER. No. 10,501. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed July 18, 1905. Used ten years.

MT VERNON

The word and abbreviation "MT. VERNON."

SER. No. 10,508. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn. Filed July 18, 1905.



A rectangular field, on which appears, near the top, the word "KRABINA," and in the center of the field is a circle containing the monogram of the letters "J" and "R."

SER. No. 10,509. CARBONATED TONIC BEVERAGE. JACOB RIES, Shakopee, Minn. Filed July 18, 1905.



A monogram of the letters "J" and "R," appearing in white on a red disk, which is inclosed within concentric circles.

SER. No. 10,519. GINGER-ALE. HAGAN & DODD CO., Atlanta, Ga. Filed July 18, 1905.



The representation of an oval seal, on which appears a woman in the act of catching water from a cascade, the seal being partly inclosed in a diamond-shaped figure with vine ornamentation for a border, and across the center the words "RED ROCK GINGER ALE," and therebelow the words "HAGAN & DODD CO., ATLANTA, GA." Printed peripherally above the oval figure above referred to are the words "MADE FROM THE CELEBRATED RED ROCK BROMO LITHIA WATER."

SER. No. 10,523. CARBONATED TONIC BEVERAGE. CHARLES C. COPELAND, Milton, Mass. Filed July 18, 1905.



A rectangular field, within which, at the left, is a shield with involuted top and at the right the words "VITONA, A NERVE TONIC BEVERAGE," below which appear the words and abbreviations "BOTTLED AT THE MILTON SPRING BOTTLING WORKS, CHAS. C. COPELAND, MILTON, MASS.," and upon the shield the following inscription is shown: "COMPOUNDED WITH THE GREATEST CARE FROM VITAL PROPERTIES OF ROOTS, HERBS AND BARKS. IT HAS GREAT CURATIVE AND RESTORATIVE PROPERTIES. IS PARTICULARLY BENEFICIAL IN ALL LAN GUID OR DEBILITATED CONDITIONS, IMPROVES THE APPETITE, AIDS DIGESTION AND GIVES A TONE TO THE WHOLE SYSTEM."

SER. No. 10,635. PREPARED FOODS FOR INFANTS AND INVALIDS. WOOLRICH & CO., Palmer, Mass. Filed July 13, 1905. Used ten years.

DR. RIDGE'S
PATENT FOOD

The words "DR. RIDGE'S PATENT FOOD."

SER. No. 10,687. TOOTH-BRUSHES. CHARLES LOONEN, Paris, France. Filed July 21, 1905.



The symbol of a star inclosing the letter "L."

SER. No. 10,695. WHISKY. W. A. TAYLOR & CO., New York, N. Y. Filed July 22, 1905.

PIBROCH



The word "PIBROCH" and the representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll, upon which is the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co" upon the representation of a circular seal.

Ser. No. 10,697. JAMAICA RUM. W. A. TAYLOR & Co., New York, N. Y. Filed July 21, 1905.



The words "RED LION" and the representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll, upon which is the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co."

Ser. No. 10,698. WINES. W. A. TAYLOR & Co., New York, N. Y. Filed July 21, 1905.



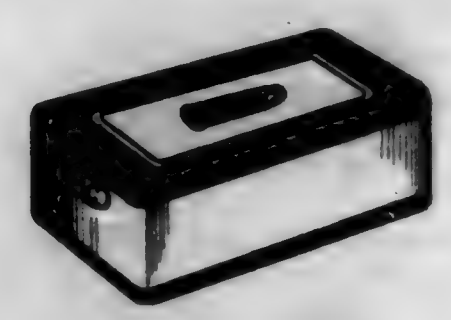
A representation of a lion rampant upon a heraldic roll and holding a crown between its paws, together with a scroll, upon which is displayed the motto "LABORE ET HONORE," and a monogram consisting of the letters, character, and abbreviation "W A T & Co."

Ser. No. 10,774. SPUN SILK. INDUSTRIE-GESELLSCHAFT FÜR SCHAPPE, Basel, Switzerland. Filed July 25, 1905.



A monogram of the letters "S I P L S" upon an ornamental square figure, each side of which has a semicircle.

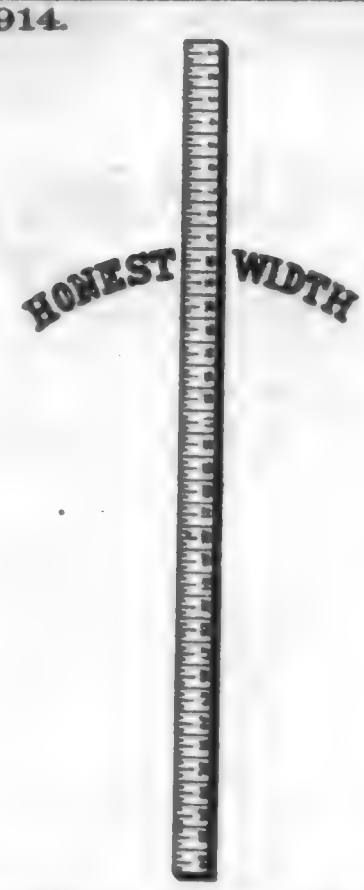
Ser. No. 10,817. GUN AND PISTOL CARTRIDGES AND PARTS THEREOF. THE UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn. Filed July 26, 1905. Used ten years.



The representation of an angular box with rounded corners and having a top label bearing the picture of a cartridge and a surrounding label bearing the inclosed initials "U. M. C." at one end.

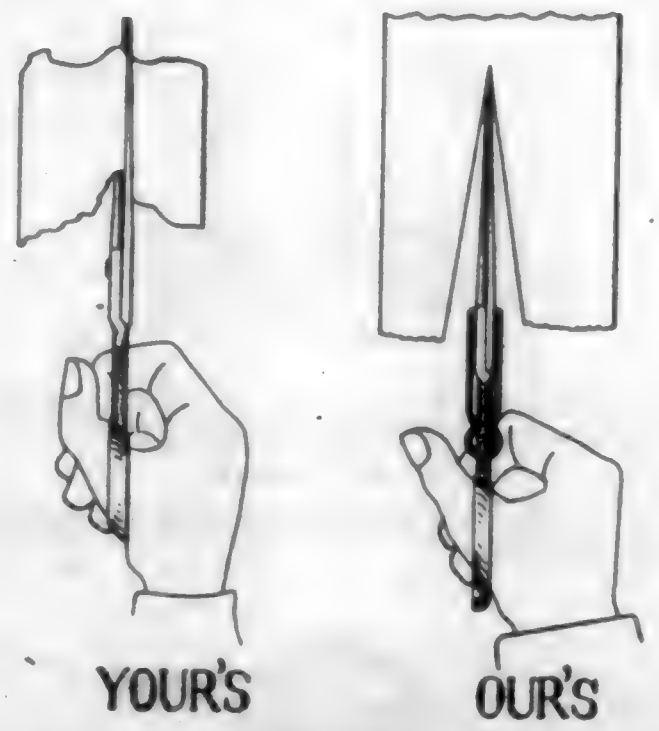
Ser. No. 10,914. COTTON SHEETINGS. EDWIN H. GREEN, executor of the estate of Albert W. Green, St. Louis, Mo., deceased. Filed July 27, 1905.

Ser. No. 10,914.



The representation of a yardstick and the words "HONEST WIDTH."

Ser. No. 10,926. SHEARS. SAWTELL CUT SHEAR CO., Chicago, Ill. Filed July 27, 1905.



A representation of two right hands, each hand grasping a pair of shears and in the act of cutting strips of fabric, one of the cuts representing a failure to cut the fabric and the other representing a clean cut, associated with the words "YOUR'S" and "OUR'S" below the representation.

Ser. No. 10,935. CURED FISH. (SMOKED, DRIED, OR SALTED.) GORDON H. PERKINS, Gloucester, Mass. Filed July 28, 1905.



The letters and word "X X X WALRUS" upon the representation of a fish.

Ser. No. 11,128. OILS USED IN THE MANUFACTURE OF PERFUME. HEINE & Co., New York, N. Y. Filed Aug. 2, 1905.



Two overlapping circular figures consisting of concentric circles separated by radial lines, the outer circle surrounded by another circle in red, the whole superposed upon a branch bearing leaves and fruit. A crown is placed above the figures between the leaves on the branches. The figure at the left bears a red band on which is a monogram consisting of the letters and character "H & Co." The figure at the right bears in its center on a red ground the word "HEINE."

Ser. No. 11,150. WHEAT-FLOUR. MARSH & RILEY, Pine Bluff, Ark. Filed Aug. 2, 1905.

NARRITA.

The word "NARRITA."

Ser. No. 11,158. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Aug. 2, 1905. Used ten years.



The conventional symbol of time, being a figure of an old man with scythe and hour-glass.

Ser. No. 11,282. LINIMENTS FOR MAN AND BEAST. CRACKER JACK LINIMENT COMPANY, Burkes Garden, Va. Filed Aug. 5, 1905.

CRACKER-JACK

The arbitrarily-selected word "CRACKER-JACK."

Ser. No. 11,357. GUITARS, MANDOLINS, ZITHERS, BANJOS, VIOLINS, VIOLINCELLOS, DOUBLE-BASS VIOLS, AND HARPS. LYON & HEALY, Chicago, Ill. Filed Aug. 7, 1905. Used ten years.

Ser. No. 11,357.

WASHBURN

The word "WASHBURN."

Ser. No. 11,458. MIXED TEAS. NEW ORLEANS IMPORT CO., LIMITED, New Orleans, La. Filed Aug. 8, 1905.

MONOGRAM

The arbitrary word "MONOGRAM."

Ser. No. 11,459. MIXED TEAS. NEW ORLEANS IMPORT CO., LIMITED, New Orleans, La. Filed Aug. 8, 1905.

STANDARD HY-NOON

The words "STANDARD HY-NOON."

Ser. No. 11,506. WHISKY. EDWARD BLOCK & Co, Kansas City, Mo. Filed Aug. 10, 1905

RED OAK

The words "RED OAK."

Ser. No. 11,523. HATS AND CAPS FOR MEN AND BOYS. KEITH BROTHERS & Co., Chicago, Ill. Filed Aug. 10, 1905. Used ten years.



The words "THE CHAMPION HAT," with a wreath partially surrounding the word "THE," a plumed helmet resting upon

crossed swords and spears, and a shield bearing a monogram of the letters and character "K B & Co," with ornamental scroll work on each side of the shield.

SER. No. 11,524. HATS AND CAPS FOR MEN AND BOYS. KEITH BROTHERS & CO., Chicago, Ill. Filed Aug. 10, 1906. Used ten years.

TIGER HAT



The arbitrary words "TIGER HAT," a monogram composed of the letters "K B" and abbreviations "& Co," and the figure of a tiger.

SER. No. 11,567. LIQUID LINIMENT FOR BOTH EXTERNAL AND INTERNAL USE. GOODRICH DRUG CO., Omaha, Nebr. Filed Aug. 12, 1906.

GOLDEN

ROD

OIL

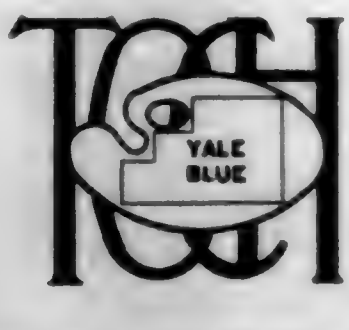
The words "GOLDEN ROD OIL."

SER. No. 11,568. LIQUID MEDICINE FOR A BLOOD PURIFIER AND TONIC, SKIN AND BLOOD DISEASES, AND RHEUMATISM. GOODRICH DRUG CO., Omaha, Nebr. Filed Aug. 12, 1906.

NUVITA

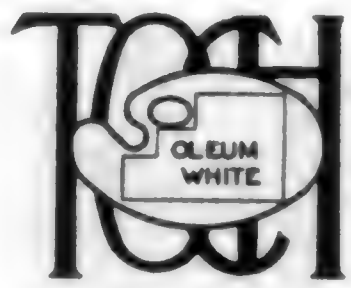
The word "NUVITA."

SER. No. 11,577. ARTISTS' BLUE COLORS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1906. Used ten years.



The representation of a palette on which appear the words "YALE BLUE" inclosed in a geometrical figure, the palette appearing against a background formed by the word "TOCH."

SER. No. 11,582. ARTISTS' WHITE COLORS. TOCH BROTHERS, New York, N. Y. Filed Aug. 12, 1906. Used ten years.



The representation of a palette upon which appear the words "OLEUM WHITE" inclosed in a geometrical figure, the palette appearing against a background consisting of the word "TOCH."

SER. No. 11,629. RHEUMATISM CURE. JAMES B. CROWLEY, New York, N. Y. Filed Aug. 14, 1906.



The word "SALAS" disposed in a horizontal and vertical position upon the outline figure of a four-leaf clover and surrounded by a circular border.

SER. No. 11,657. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y. Filed Aug. 15, 1906.

Red Devil

The words "RED DEVIL."

SER. No. 11,697. BLUING. ADAM PFROMM, Philadelphia, Pa. Filed Aug. 16, 1906. Used ten years.



A disk having a conventionalized vine border and having thereon the words "BARLOW'S INDIGO BLUE."

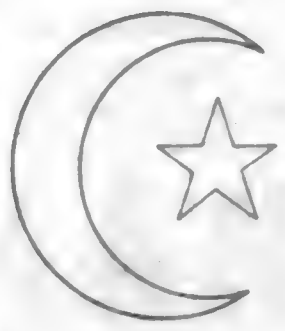
SER. No. 11,698. BLUING. ADAM PFROMM, Philadelphia, Pa. Filed Aug. 16, 1906. Used ten years.

SER. No. 11,698.



The representation of the interior of a room showing a woman washing clothes in a tub and the words "BARLOW'S INDIGO BLUE."

SER. No. 11,700. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. CRESCENT MACARONI & CRACKER CO., Davenport, Iowa. Filed Aug. 16, 1905.



A star and crescent, the star being placed partly within the crescent.

SER. No. 11,787. DANDRUFF CURE AND HAIR-DRESSING. THE DANDRUCIDE COMPANY, Phoenix, Miss. Filed Aug. 17, 1905.

DANDRUCIDE

The word "DANDRUCIDE."

SER. No. 11,876. TOOTH-PASTE. CHAS. M. DUNNE, Norwich, N. Y. Filed Aug. 21, 1905.

THYM-A-TOL

The word "THYM-A-TOL."

SER. No. 12,023. BROOCHES, SCARF-PINS, AND CUFF-PINS. KERRENTS & Co., Newark, N. J. Filed Aug. 26, 1905.



A figure having substantially the parts of an anchor, a shank, a stock, and two arms curled oppositely to each other.

SER. No. 12,115. BOILERS. UTICA HEATER CO., Utica, N. Y. Filed Aug. 31, 1905.

SER. No. 12,115.

IMPERIAL

The arbitrarily-selected word "IMPERIAL."

SER. No. 12,122. FIREPROOF AND ACID-PROOF COMPOSITION IN SHEET FORM FOR PROTECTING FURNITURE. THE RAESON & RANDOLPH CO., Toledo, Ohio. Filed Aug. 31, 1905.

RESISTO

The arbitrary word "RESISTO."

SER. No. 12,135. SODA-WATER. CANTRELL & COCHRANE, LIMITED, Dublin, Ireland, and New York, N. Y. Filed Sept. 1, 1905. Used ten years.



A rectangular figure with a band running diagonally across the figure containing thereon the words "CLUB SODA" ("SPECIALLY PREPARED.") In the upper left-hand corner are printed the words "CANTRELL & COCHRANE'S SUPER CARBONATED," and in the lower right-hand corner are printed the words "WORKS:—DUBLIN & BELFAST."

SER. No. 12,233. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 5, 1905.

Edelweiss-MALTINE

The words "EDELWEISS-MALTINE," the word "EDELWEISS" being written in script with a scroll thereunder and the word "MALTINE" being written in block letters, there being a hyphen between said words.

SER. No. 12,276. HATS AND CAPS. LOUIS KLINE & Co., San Francisco, Cal. Filed Sept. 6, 1905.



The word "GRIZZLY" arranged above the picture of a bear at the edge of a precipice over which he is gazing.

SER. No. 12,315. DRIED FRUITS. REISS & BRADY, New York, N. Y. Filed Sept. 7, 1905.

CERES

The word "CERES."

SER. No. 12,368. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 8, 1905.

Edelweiss

The arbitrarily-selected word "EDELWEISS," written in script letters and having a scroll thereunder.

SER. No. 12,408. CHEMICAL SOLUTION FOR PRESERVING MATERIALS WHICH ARE EXPOSED TO THE ATMOSPHERE FROM RUST, DECAY, AND SCALING. PATRICK KERRIN, New York, N. Y. Filed Sept. 9, 1905.

EXCELSIOR SOLUTION

A monogram of the letter "P" and the representation of a key inclosed in concentric circles, between which appear the words "EXCELSIOR SOLUTION," and double-headed arrows.

SER. No. 12,462. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 11, 1905.



The representation of a cork on which appears the word "SCHOENHOFENBRAU," the letters "HOFBRAU" being in large script, the letters "SCHOEN" being in small script within the loop of the letter "H," and the letters "EN" being in small script and located between the letters "F" and "B."

SER. No. 12,466. PACKING MATERIALS FOR STEAM AND WATER JOINTS. HENRY COOPER, Vienna, Austria. Filed Sept. 11, 1905.

COOPERIT

The arbitrary word "COOPERIT."

SER. No. 12,504. ALL SIZES OF CORK OF SUITABLE SHAPE TO BE USED IN CORKING BOTTLES OF VARIOUS SIZES AND SHAPES. JOHN ALBERTI, New York, N. Y. Filed Sept. 13, 1905.

SER. No. 12,504.



The representation of a cork-tree with men removing the bark therefrom, with the words "REMOVING THE CORK BARK," and ornamental scrollwork having thereon a panel inclosing the letter "A" beneath the tree.

SER. No. 12,539. ASPHALT. WARREN CHEMICAL & MANUFACTURING COMPANY, New York, N. Y. Filed Sept. 13, 1905.

EBANO

The word "EBANO."

SER. No. 12,587. STEEL IN VARIOUS FORMS. EDGAR ALLEN & Co. LIMITED, Sheffield, England. Filed Sept. 14, 1905. Used ten years.

AIR-HARDENING

The representation of a club spiked with the words "AIR-HARDENING" therein.

SER. No. 12,596. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 14, 1905.



The representation of a girl's head having entwined in her hair a number of edelweiss flowers.

SER. No. 12,636. COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md. Filed Sept. 15, 1905.

DRUID MILLS

The words "DRUID MILLS," in connection with an arbitrary device arranged below the same and intended to represent the rays of the sun.

SER. No. 12,699. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 16, 1905. Used ten years.



An oval-shaped panel having an ornamental border and inclosing the words "P. SCHOENHOFEN BREWING CO.'S SELECT CHICAGO" and ornamental scrollwork.

SER. No. 12,726. WHEAT-FLOUR. LAWRENCEBURG ROLLER MILLS COMPANY, Lawrenceburg, Ind., and Boston, Mass. Filed Sept. 18, 1905.



A circular panel bearing the word "ULTIMA" on scattered sprays of wheat and the words "LAWRENCEBURG ROLLER MILLS CO. PATENT FLOUR LAWRENCEBURG, IND."

SER. No. 12,759. HORSE AND MULE SHOES. AMERICAN HORSE SHOE COMPANY, Phillipsburg, N. J. Filed Sept. 18, 1905.

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The letter "A" inclosed in a circle.

SER. No. 12,779. UNDERWAISTS. EDWARD H. HORWOOD, New York, N. Y. Filed Sept. 19, 1905.

"L. B."

The arbitrarily-selected letters "L. B." inclosed in quotation-marks.

SER. No. 12,784. ELECTRIC AND GAS LIGHT REFLECTORS FOR STORE, SHOW-WINDOW, AND STAGE LIGHTING. I. P. FRINK, New York, N. Y. Filed Sept. 19, 1905. Used ten years.

FRINK'S

The word "FRINK'S."

SER. No. 12,854. POLISHING AND ABRADING STRIPS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905. Used ten years.

PERFECTION

The word "PERFECTION."

SER. No. 12,855. ABRADING DISKS, WHEELS, AND POINTS. THE S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Filed Sept. 21, 1905.

VULCARBO

The word "VULCARBO."

SER. No. 12,883. BLOOD AND NERVE TONICS. JAMES M. COLLINS, Salt Lake City, Utah. Filed Sept. 21, 1905.

CARBO

The coined word "CARBO."

SER. No. 12,925. EGGS. G. W. MARTIN & BRO. New York, N. Y. Filed Sept. 22, 1905.



The representation or symbol of a hen, a rooster, and an egg-box, all inclosed within a rectangular line-drawn figure and the egg-box showing partitions and an egg lying in the forward corner section of the same, the word "COLUMBO" appearing on the left side and the name and address "G. W. MARTIN & BRO. 3 & 5 HARRISON ST. NEW YORK." on the right side of the egg-box.

SER. No. 13,075. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed Sept. 27, 1905.



A network of lines, some of which form closed curves and others of which form undulating lines, simulating the effect seen in watered silk.

SER. No. 13,093. REMEDY FOR DISEASES OF THE LIVER, FOR DROPSY, COSTIVENESS, AND DYSPEPSIA. ORISTLE MEDICINE CO., Chattanooga, Tenn. Filed Sept. 28, 1905.



A representation of a woman gathering herbs and associated with the words "ST. JOSEPH'S LIVER REGULATOR."

SER. No. 13,170. MEDICINE FOR STOMACH DISEASES. THE L. J. SCHARINGER CO., Cleveland, Ohio. Filed Sept. 30, 1905. Used ten years.



The words "MAGEN HEIL" in one line and the same words in another line crossing the former at a right angle and a star at the center between the words.

SER. No. 13,193. FISH-HOOKS, ARTIFICIAL FLIES, AND ARTIFICIAL BAITS. HENRY MILWARD & SONS, LIMITED, Redditch, England. Filed Oct. 2, 1905.



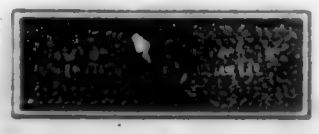
The vignette or representation of a unicorn rampant, around which are two lines constituting an oval.

SER. No. 13,216. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Oct. 3, 1905.



A rectangular panel bearing a representation of a shield having a yellow border and diagonally-arranged stripes of red, white, and blue and the letter "S" entwined with a mercury staff, below which is a wreath and associated with the name "P SCHOENHOFEN BREWING CO'S SCHOENHOFENBRAU CHICAGO, U. S. A.," barley-stalks appearing through said word.

SER. No. 13,252. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Oct. 3, 1905.



The representation on a yellow background of a gold-bordered shield having the national colors, red, white, and blue in diagonal stripes and having in the center of the shield a mercury staff with the letter "S" intertwined therewith and below the staff a wreath. To the left of the shield appear the words and character "RESTORING HEALTH & STRENGTH," and to the right of the shield appear the words and character "DELICIOUS IN TASTE & FLAVOR." The whole is surrounded by a rectangular gold border.

SER. No. 13,279. MAGAZINES ISSUED AT INTERVALS THROUGHOUT THE YEAR. THE OUTING PUBLISHING COMPANY, Deposit, N. Y. Filed Oct. 4, 1905.

OUTING

The word "OUTING."

SER. No. 13,284. TAFFETA SILK, CRÊPE DE CHINE, MOUSSELINE SILK, AND PEAU DE SOIE. MARCUS BROS., New York, N. Y. Filed Oct. 4, 1905.

MARQUISE

The word "MARQUISE."

SER. No. 13,462. LEATHER BOOTS AND SHOES. GEO. D. WITT SHOE CO, Lynchburg, Va. Filed Oct. 9, 1905.



The words "GIRL GRADUATE" and the picture or representation of a young lady seated on a lounge or divan in the midst of sofa-pillows and attired in her graduation-gown and holding before her a bunch of roses.

SER. No. 13,522. PRINTING AND LITHOGRAPHING INKS, PRINTING-INK VARNISHES, AND PRINTING-INK DRY COLORS. THE JAENECKE PRINTING INK CO., Newark, N. J. Filed Oct. 12, 1905.



The representation of an anchor with the letters "J P I Co," and the whole inclosed within a circle.

SER. No. 13,546. ELECTRICAL EXPLODERS. MASURITE EXPLOSIVE COMPANY, Masury, Ohio. Filed Oct. 13, 1905.

BLASTGO

The word "BLASTGO."

SER. No. 13,548. MEN'S, BOYS', LADIES', MISSES', AND CHILDREN'S HOSIERY. COLUMBIA KNITTING COMPANY, Milwaukee, Wis. Filed Oct. 13, 1905.



The representation of a horse's head and the words "HORSE HIDE."

SER. No. 13,618. CARPET-SWEEPERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

ECLIPSE

The word "ECLIPSE."

SER. No. 13,619. WRINGING-MACHINES. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

NEW HOME

The words "NEW HOME."

SER. No. 13,625. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

VICTOR

The word "VICTOR."

SER. No. 13,626. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

FALCON

The word "FALCON."

SER. No. 13,628. CLOTHES-WRINGERS AND PARTS THEREOF. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

CRESCENT

The word "CRESCENT."

SER. No. 13,629. CLOTHES-WRINGERS AND THE PARTS COMPOSING THE SAME. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

CONQUEROR

The word "CONQUEROR."

SER. No. 13,630. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

MAGIC

The word "MAGIC."

SER. No. 13,631. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

RELIEF

The word "RELIEF."

SER. No. 13,632. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

BANNER

The word "BANNER."

SER. No. 13,634. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

RIVAL

The word "RIVAL."

SER. No. 13,635. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

IMPERIAL

The word "IMPERIAL."

SER. No. 13,636. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

LEADER

The word "LEADER."

SER. No. 13,637. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

GARLAND

The word "GARLAND."

SER. No. 13,888. MEDICINE FOR GRAVES' DISEASE. VEREINIGTE CHEMISCHE WERKE AKTIENGESELLSCHAFT, Charlottenburg, Germany. Filed Oct. 24, 1905.

RODAGEN

The word "RODAGEN."

SER. No. 13,934. POMADE. JESSE D. BELL, Dawson, Ga. Filed Oct. 26, 1905.

Anti Curline

The words "ANTI CURLINE."

SER. No. 13,950. NOODLES AND VERMICELLI. THE JOHN BOEHM CO., Pittsburg, Pa. Filed Oct. 26, 1905.



The representation of a swan above which are arranged the words "WHITE SWAN," and arranged on the background bearing said representation and said words are groups of initials "J B Co," while in the upper left-hand corner of the background are the letters "E S T B" and in the upper right-hand corner of the background the figures "1882."

SER. No. 13,974. TOILET AND MEDICINAL LOTIONS. EDWARD A. OLDS, New York, N. Y. Filed Oct. 27, 1905. Used ten years.

PACKER'S CUTANEOUS CHARM

The words "PACKER'S CUTANEOUS CHARM." The initial letters "P" and "C" of the words "PACKER'S" and "CHARM" are provided with surrounding ornamentation, principally of scroll-work, part of the ornamentation of the letter "P" extending over the rest of the word "PACKER'S" and part of said ornamentation also partly inclosing the word "CUTANEOUS." The word "CHARM" appears to be resting upon a scroll, and said word and scroll, with the exception of one end, are inclosed in a beaded border. An oblong or somewhat elliptical figure extends below the letter "C" of the word "CHARM," said figure being provided with a central design.

SER. No. 14,017. ADHESIVE TAPE. THE OKONITE COMPANY, LIMITED, New York, N. Y. Filed Oct. 28, 1905. Used ten years.

MansonTape

The words "MANSON TAPE."

SER. No. 14,089. FRESH MINCE-MEAT. FREDERICK SAUNDERS, San Francisco, Cal. Filed Oct. 30, 1905.



The word "PURITAN," associated with a bust picture of a girl in Puritan costume surrounded by a wreath of grape vines and leaves and with two bunches of grapes. At the lower right-hand corner is a circle inclosing an ox-head design and at the lower left-hand corner a circle inclosing an apple branch with leaves and two apples.

SER. No. 14,143. LOOSE-LEAF LEDGERS, LOOSE-LEAF BINDERS, LOOSE-LEAF FILES, AND LEAVES THEREFOR. THE TRENWALL COMPANY, Chicago, Ill. Filed Oct. 31, 1905. Used ten years.

SER. No. 14,143.

Tengwall

The word "TENGWALL."

SER. No. 14,158. SUITS AND OVERCOATS FOR YOUNG MEN. STEIN & AD. KIRSCHBAUM & Co. New York, N. Y. Filed Nov. 1, 1905.

Student Styles

The words "STUDENT STYLES."

SER. No. 14,211. PATENT KID AND PATENT COLT SKINS. DENNIS T. KENNEDY, Haverhill, Mass. Filed Nov. 2, 1905.

PURITAN

The word "PURITAN."

SER. No. 14,333. BITTERS. SIGMUND HOCHSTADTER, New York, N. Y. Filed Nov. 4, 1905.



The representation of a star surrounded by the words "THE HOCHSTADTER CO. NEW YORK" arranged in a circle and associated with the words "HOCHSTADTERS STAR NUT TONIC BITTERS" and the whole inclosed by a border of irregular outline.

SER. No. 14,386. EGGS. BEYER BROTHERS COMMISSION COMPANY, Providence, R. I., Boston, Mass., and New York, N. Y. Filed Nov. 7, 1905.



An ovate border composed of spaced segmental sections and the representation of a rock within the border bearing the inscription "1620."

SER. No. 14,445. ALARM-CLOCKS. THE WESTERN CLOCK MFG. CO., La Salle, Ill. Filed Nov. 9, 1905.

STRENUOUS

The word "STRENUOUS."

SER. No. 14,497. REMEDY FOR CROUP, COUGHS, AND BRONCHIAL AFFECTIONS. CARRIE V. DORMAN, Washington, D. C. Filed Nov. 11, 1905. Used ten years.

SPONGIA TOSTA SYRUP

The words "SPONGIA TOSTA SYRUP."

SER. No. 14,509. ROCK-CANDY AND ROCK-CANDY SYRUPS. KNICKERBOCKER CHOCOLATE COMPANY, New York, N. Y. Filed Nov. 11, 1905.

D. & P.

The letters and character "D. & P."

SER. No. 14,544. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO. Lynchburg, Va. Filed Nov. 13, 1905.



The words "DRESS PARADE" and the representation of six men on parade fashionably dressed.

SER. No. 14,835. UPRIGHT AND GRAND PIANOS. LESTER PIANO COMPANY, Philadelphia, Pa. Filed Nov. 20, 1905. Used ten years.



The representation of a shield with the word "LESTER" arranged diagonally thereon.

SER. No. 14,545. LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va. Filed Nov. 13, 1905.



The words "FASHION QUEEN" and the representation of a fashionably-attired woman seated in an arm-chair.

SER. No. 15,082. DECORATED VASE-LAMPS MADE OF GLASS. THE PHOENIX GLASS CO., Pittsburg, Pa. Filed Nov. 28, 1905.



The word "PHOENIX" on a panel appearing across the representation of a phenix.

SER. No. 15,046. HOES. UNION HOE CO., Atlanta, Ga. Filed Nov. 28, 1905.



The representation of a reversible hoe-blade and ferrule, on the former of which appears a folded belt arranged in the form of a hoe with a tobacco-plant and a cotton-plant projecting from the edge of the same, the words "TOBACCOTTON HOE" appearing on the portion of the belt representing the handle, while the words "UNION HOE CO." are arranged on the blade portion thereof, the word and abbreviation "ATLANTA, GA." being located in one corner of the hoe-blade.

SER. No. 15,136. CEREAL SUBSTITUTE FOR COFFEE. DECATUR CEREAL COFFEE WORKS, Decatur, Ill. Filed Dec. 1, 1905.



A capital letter "D," in which is shown a portrait of Commodore Decatur wearing a naval coat and epaulets, the right side being shown, the words "COMMODORE DECATUR" being inscribed thereunder.

SER. No. 15,143. AXLE-GREASE. HILL TOP OIL CO. LTD., New Orleans, La. Filed Dec. 2, 1905.

HILL TOP

The words "HILL TOP."

SER. No. 15,196. CORSETS. ALFRED OTTENHEIMER, New York, N. Y. Filed Dec. 4, 1905.

LA BONITO

The arbitrary words "LA BONITO."

SER. No. 15,249. COTTON PIECE GOODS. F. W. POE MFG. CO., Greenville, S. C. Filed Dec. 7, 1905.

BUNCOMBE

The word "BUNCOMBE."

SER. No. 15,252. COTTON PIECE GOODS. NINETY SIX COTTON MILL, Ninety Six, S. C. Filed Dec. 7, 1905.



The numeral "96" inclosed within ornamental scrollwork.

SER. No. 15,259. COTTON PIECE GOODS. ANDERSON COTTON MILLS, Anderson, S. C. Filed Dec. 7, 1905.



The representation of a Chinaman playing with a ball.

SER. No. 15,266. PACKING FOR THE WEARING AND BEARING PARTS OF MACHINES AND MECHANICAL DEVICES. GREENE TWEED & Co., New York, N. Y. Filed Dec. 8, 1905. Used ten years.

PALMETTO

The word "PALMETTO."

SER. No. 15,416. SHOVELS, SPADES, SCOOPS, AND SPADING-FORKS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Dec. 14, 1905.



The representation of a rooster with the word "CRUSO" appearing across the body thereof.

SER. No. 15,427. BAKING POWDER. B. OTTENHEIMER & SONS, Louisville, Ky. Filed Dec. 14, 1905.



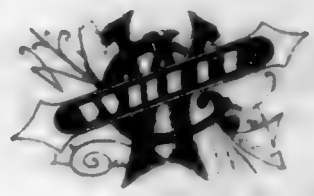
The representation of a layer cake with a piece cut out of it.

SER. No. 15,429. HOUSEHOLD ARTICLES MADE OF ENAMELED STEELWARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Dec. 15, 1905.

LISK

The word "LISK."

SER. No. 15,489. VERMIFUGE. JAMES F. BALLARD, St. Louis, Mo. Filed Dec. 18, 1905. Used ten years.



A monogram composed of the letters "W" and "G," surmounted by a panel with a central black ground upon which is the word "WHITE" in white lettering and ornamental scrollwork underlying the whole.

SER. No. 15,507. MEDICINE FOR USE IN THE VARIOUS FORMS OF FEVER, SUCH AS SWAMP, BILIOUS, FEVER AND AGUE, AND MALARIA IN ALL ITS FORMS. MALARINE MEDICAL COMPANY, Providence, R. I. Filed Dec. 19, 1905. Used ten years.

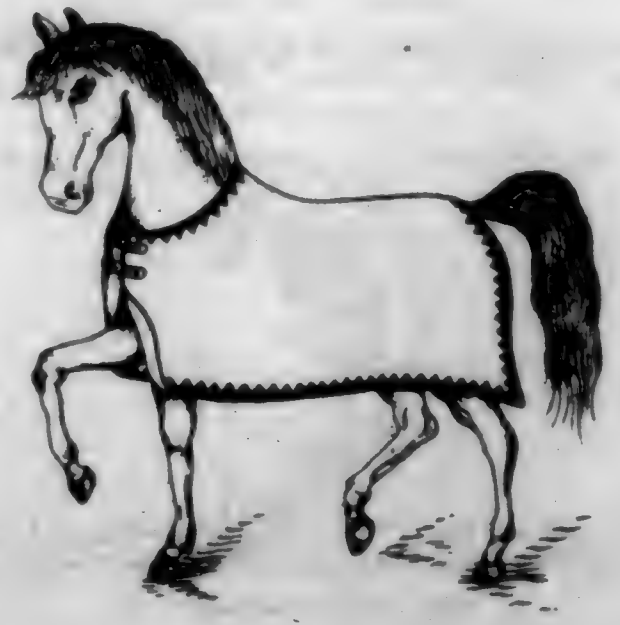
WALLING'S
MAL-A-RINE

The word "MAL-A-RINE" divided into syllables by means of hyphens between the parts of the word, in connection with the word "WALLING'S."

SER. No. 15,611. AMERICAN TURQUOISES. AZURE MINING CO., New York, N. Y. Filed Dec. 23, 1905. Used ten years.

A geometrical ring in intaglio.

SER. No. 15,622. HORSE-BLANKETS. WILLIAM AYRES & SONS, Philadelphia, Pa. Filed Dec. 23, 1905.



The representation of a blanketed horse.

SER. No. 15,726. RINGS. ADOLPH TAUBER, New York, N. Y. Filed Dec. 26, 1905.



A representation of two bells between which is arranged a rectangular figure containing the letter "T."

SER. No. 15,749. MIXED PAINT. MARINE PAINT CORPORATION, Norfolk, Va. Filed Dec. 29, 1905.



A disk divided into three equal sectors, one red, one blue, and the other white, each bearing one of the letters "M" "P" "C," and an endless center-bar link chain surrounding the disk.

SER. No. 15,774. PHOTOGRAPHIC DEVELOPERS. J. HAUFF & Co. G. M. B. H., Feuerbach, near Stuttgart, Germany. Filed Dec. 30, 1905.

METOL

The word "METOL."

SER. No. 15,775. PHOTOGRAPHIC DEVELOPERS. J. HAUFF & Co. G. M. B. H., Feuerbach, near Stuttgart, Germany. Filed Dec. 30, 1905.

AMIDOL

The arbitrarily-selected word "AMIDOL."

SER. No. 15,776. STOUT. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa. Filed Dec. 30, 1905. Used ten years.



The words and figures "ROBERT SMITH'S PHILA. ESTABLISHED 1774." and the representation of the head of a tiger.

SER. No. 15,777. STOUT. THE ROBERT SMITH ALE BREWING COMPANY, Philadelphia, Pa. Filed Dec. 30, 1905.

SER. No. 15,777.



The words "TIGER HEAD" and the representation of a tiger's head, a circle inclosing the latter, and a crescent-shaped figure on which said head, circle, and figure are imposed.

SER. No. 15,809. WATER-HARDENING COMPOUNDS. MAX WALLERSTEIN, New York, N. Y. Filed Jan. 3, 1906.



A circular field bearing a triangular-shaped figure bearing the letters "A B C," all inclosed in an annular band, said band having the words "AMERICAN BURTONIZING COMPANY" thereon.

SER. No. 15,822. CANDY. REYMER & BROTHERS INCORPORATED, Pittsburg, Pa. Filed Jan. 3, 1906. Used ten years.

REYMERS'

The word "REYMERS'."

SER. No. 15,824. DRESS AND SHIRT WAISTS FOR WOMEN. ROSEN & COMPANY, New York, N. Y. Filed Jan. 3, 1906.



The representation of the mythological goddess Diana holding a bow in one hand and an arrow in the other traversing the bow. Associated with said representation are the words "THE DIANA WAIST."

SER. No. 15,849. MERCERIZED COTTON BRAID. D. GOFF & SONS, Pawtucket, R. I. Filed Jan. 3, 1906.

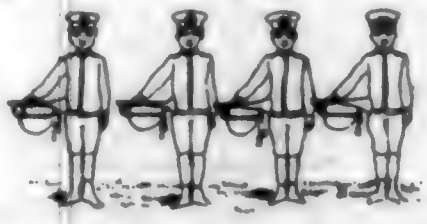
SER. No. 15,849.

D · G · & S·

The letters "D. G. & S." in capitals and printed in red.

SER. No. 15,883. STOCKINGS. TREFF WELLER COMPANY, New York, N. Y. Filed Jan. 4, 1906.

OUR BOYS' STOCKING



QUEEN'S OWN HOSIERY MILLS

The words "OUR BOYS' STOCKING," associated with the representation of boys in uniform standing at attention, each holding a bugle at his side, and the words "QUEEN'S OWN HOSIERY MILLS" below the representation of the boys in uniform.

SER. No. 15,884. STOCKINGS. TREFF WELLER COMPANY, New York, N. Y. Filed Jan. 4, 1906.

OUR GIRLS' STOCKING



QUEEN'S OWN HOSIERY MILLS

The words "OUR GIRLS' STOCKING," associated with a group of girls, one of whom is unpacking stockings from a box, the other trying one on, the third one buttoning her glove, the fourth holding a pair of stockings in her hands and talking with the fifth girl, in connection with the words "QUEEN'S OWN HOSIERY MILLS" below the group of girls.

SER. No. 15,914. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 5, 1906.

ATTEAN

The word "ATTEAN."

SER. No. 15,919. WRAPPING-PAPER, PAPER BAGS, AND PAPER SACKS. HOLLINGSWORTH & WHITNEY COMPANY, Boston, Mass. Filed Jan. 6, 1906.

SER. No. 15,919.

KINEO

The word "KINEO."

SER. No. 15,930. CANDY. MANUFACTURING COMPANY OF AMERICA, Philadelphia, Pa. Filed Jan. 6, 1906.

U ALL NO

The words "U ALL NO."

SER. No. 15,948. POPCORN. A. A. BERRY SEED COMPANY, Clarinda, Iowa. Filed Jan. 6, 1906.



The word "MISTLETOE" and the representation of a wreath of mistletoe, within which is shown a pair of andirons holding a blazing log, in the blaze from which appear the heads of a man and woman. Upon the wreath is tied a ribbon, on which appear the words "CHRISTMAS TIME ALL THE TIME."

SER. No. 15,949. POPCORN. A. A. BERRY SEED COMPANY, Clarinda, Iowa. Filed Jan. 6, 1906.



The letters "A A B S Co" arranged as a monogram within a circle.

SER. No. 16,032. GIN. THE J. J. DOUGLAS CO., Louisville, Ky. Filed Jan. 8, 1906.



The name "DOUGLAS" and the bust portrait of James Douglas inclosed in concentric circles.

SER. No. 15,956. COUNTER-SCALES. ANDERSON COMPUTING SCALE COMPANY, Anderson, Ind. Filed Jan. 6, 1906.

CLIMAX

The word "CLIMAX."

SER. No. 16,037. REFRIGERATORS. O M WHITMAN & Co, Boston, Mass. Filed Jan. 8, 1906. Used ten years.

WHITMAN REFRIGERATOR

The words "WHITMAN REFRIGERATOR."

SER. No. 16,038. PIANOS. EMERSON PIANO COMPANY, Boston, Mass. Filed Jan. 8, 1906. Used ten years.

Emerson.
BOSTON.
U.S.A.

The word "EMERSON" in old English letters surrounded by a scroll, except at the bottom, where is the word "BOSTON," and beneath the word "BOSTON" are the letters "U. S. A."

SER. No. 16,081. LARD. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Jan 10, 1906. Used ten years.



A representation of a tiger.

SER. No. 16,083. LARD. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed Jan. 10, 1906. Used ten years.



A representation of a buffalo.

SER. No. 16,085. ANILIN DYES. CASSELLA COLOR COMPANY, New York, N. Y. Filed Jan. 10, 1906.



A monogram consisting of three letters "C" overlapping and disposed one above another.

SER. No. 16,091. WIRE ROPE. MACOMBER & WHYTE ROPE COMPANY, Chicago, Ill. Filed Jan. 10, 1906.

KILINDO

The word "KILINDO."

SER. No. 16,104. MALT EXTRACTS. M K GOETZ BREWING Co, St. Joseph, Mo. Filed Jan. 10, 1906.



The capital letter "G" in red color, behind the central portion of which appears the representation of a hand holding a cluster of barley-sprigs, the stems of which extend radially to points below the letter "G," while the heads are exposed above the letter and spread radially. The background is circular and appears in gilt, with a narrow white inner circular line surrounded by a circular yellow band substantially midway between the white line and the outer margin.

SER. No. 16,132. WHEAT BREAD. R. A. WILLIAMS, INCORPORATED, Newark, N. J. Filed Jan. 11, 1906.



The representation of a red panel on which appears a white ellipse, across which and the panel is shown the word "PO-TA-TOE" separated by hyphens into syllables.

SER. No. 16,149. WINDOWS AND SKYLIGHTS. ARTHUR E. RENDLE, New York, N. Y. Filed Jan. 12, 1906.



The word "PARAGON" underscored and inclosed within concentric figures having outwardly-curved top and bottom and inwardly-curved sides from which extend rays.

SER. No. 16,151. ROOFING FELT AND PAPER. CHARLES T. CARROTH, Boston, Mass. Filed Jan. 12, 1906.



The word "ASTRALIT" arranged above a sunburst and associated with a tropical landscape, with the sun above at the right, the whole inclosed in two concentric circles.

SER. No. 16,174. TYPE-WRITING MACHINES. WYCKOFF, SEAMANS & BENEDICT, Ilion, N. Y. Filed Jan. 13, 1906.

Remtico

The word "REMTICO."

SER. No. 16,263. WATCHCASES. WILLIAM F. DOLL, New York, N. Y. Filed Jan. 17, 1906. Used ten years.

DOLL

The word "DOLL."

SER. No. 16,318. MILLS FOR GRINDING GRAIN, COFFEE, SPICES, CHOCOLATE, &c. THE C. S. BELL CO., Hillsboro, Ohio. Filed Jan. 19, 1906.

MOCTEZUMA

The word "MOCTEZUMA."

SER. No. 16,340. LEATHER SHOES FOR LADIES, MEN, AND CHILDREN. A. J. BATES CO., Webster, Mass. Filed Jan. 20, 1906. Used ten years.

The Bates Shoe

The words "THE BATES SHOE."

SER. No. 16,369. MIXTURE OF PULP OF THE GUAVA AND SUGAR. TROPIC FRUIT COMPANY, LTD., Colony of Wahiawa, Hawaii. Filed Jan. 22, 1906.

GUAVITA

The coined word "GUAVITA."

SER. No. 16,458. SOAP. THE ARTESIA CREAM COMPANY, Waco, Tex. Filed Jan. 24, 1906.

ARTESIA

The arbitrary and fanciful word "ARTESIA."

SER. No. 16,462. PREPARED COCOANUT. DUNHAM MANUFACTURING COMPANY, New York, N. Y. Filed Jan. 24, 1906. Used ten years.

DUNHAM'S

The word "DUNHAM'S."

SER. No. 16,472. WHEAT-FLOUR. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed Jan. 24, 1906.

Ferndell

The arbitrarily-selected word "FERNDELL."

SER. No. 16,580. CARBONATED WATER. FERDINAND W. BECKER, Philadelphia, Pa. Filed Jan 30, 1906.

Ser. No. 16,680.

KOSMOS-SPRINGS

The compound word "KOSMOS-SPRINGS."

Ser. No. 16,680. MEDICATED WINE. FREDERICK STEARNS & Co, Detroit, Mich. Filed Jan. 30, 1906. Used ten years.

Stearns' Wine

The words "STEARNS' WINE."

Ser. No. 16,681. CIGARS AND STOGIES. SIDNEY S. SMITH, Allegheny, Pa. Filed Jan. 30, 1906.

PAN AMERICAN
No. 2.

The words "PAN AMERICAN," associated with the abbreviation "No." and the numeral "2." arranged, as shown, between parallel top and bottom lines.

Ser. No. 16,692. WHEAT-FLOUR. JOSEPH H. HEISEL, Leetonia, Ohio. Filed Feb. 2, 1906.



A plan view of a pie with a scroll extending across the same and the words "PIE CRUST" appearing on said scroll.

Ser. No. 16,635. PULVERIZING-MACHINERY. GEORGE HOLT PRATER, New York, N. Y. Filed Jan. 31, 1906.

A circle having disposed therein three smaller circles tangential to the former and an arrow leading outward from the center of each of said tangential circles to a point beyond the periphery of the outer circle and in line with the center of the latter.

Ser. No. 16,636. PULVERIZING-MACHINERY. GEORGE HOLT PRATER, New York, N. Y. Filed Jan. 31, 1906. Used ten years.

KENT

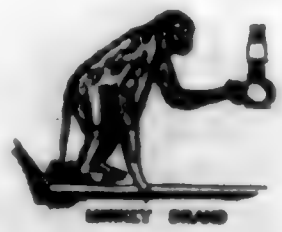
The word "KENT."

Ser. No. 16,769. CANDIES. THE ROCHESTER CANDY WORKS, Rochester, N. Y. Filed Feb. 5, 1906.



The words "THE ROCHESTER CANDY WORKS." inclosed in a circle, which is superimposed upon a ribbon, the ends of which show on either side of such circle, and the words "THE DELICIOUS ROCHESTER, N. Y."

Ser. No. 16,772. ILLUMINATING-OILS MANUFACTURED FROM PETROLEUM. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed Feb. 1, 1906.



The representation of a monkey standing on a table holding a lamp in its hand and the words "MONKEY BRAND."

Ser. No. 16,785. SCOTCH WHISKY. RUDOLPH M. HAAS, New York, N. Y. Filed Feb. 6, 1906.



The words "PRINCE OF WALES," together with a fanciful representation of a shield, in the center of which shield is a mono-

gram, "R M H," and above which shield is the representation of a crown and feathers, the whole inclosed in a square border.

SER. No. 16,805. WHISKY. ROBERT STEEL, Philadelphia, Pa. Filed Feb. 7, 1906.

GREEN SEAL

The words "GREEN SEAL."

SER. No. 16,857. BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed Feb. 8, 1906.



The representation of a group of factories and the figure "8" inclosed within a border flanked by stalks of broom-corn. Above this design is the representation of a seal inclosed within a circle flanked by ornamental scrolls bearing the words "USE THE LEE BROOM." Above the design also appear the words "USE THE LEE." Below said design appears the word "BROOM" and beneath this a panel having scroll ends and bearing the word "WEARWELL."

SER. No. 16,860. SOAP. LEVER BROTHERS COMPANY, Cambridge, Mass. Filed Feb. 9, 1906.

WHITE
RAVEN

The words "WHITE RAVEN."

SER. No. 17,142. TOILET-PAPER. SCOTT PAPER CO., Philadelphia, Pa. Filed Feb. 17, 1906. Used ten years.



The word "VICHY" in a medallion on a checkered background with an ornamental border, with the word "SEVERED" in the medallion below, and a ribbon extending across the whole containing the words "TOILET PAPER."

SER. No. 16,910. CORDIAL. SIDNEY FAIRCHILD COMPANY, New York, N. Y. Filed Feb. 10, 1906.

NARCISSUS

The word "NARCISSUS."

SER. No. 17,249. WHISKY. SWOPE & MARGOLD INCORPORATED, Dallas, Tex. Filed Feb. 22, 1906. Used ten years.

OLD PORT HALEY

The words "OLD PORT HALEY."

SER. No. 17,317. SEWING-MACHINES. WILLCOX & GIBBS SEWING MACHINE CO., New York, N. Y. Filed Feb. 24, 1906. Used ten years.



A representation of a head of a sewing-machine resembling the letter "G" combined with needles arranged to form the letter "W" in monogram style, all inclosed in a circular border, within which appear the words "WILLCOX & GIBBS SEWING MACH. CO. NEW YORK," together with representations of two stars, and the word "DESSAIX" above the monogram.

SER. No. 17,327. WHISKY. BRAND BROTHERS COMPANY, Chicago, Ill. Filed Feb. 24, 1906.



The arbitrary word "OZARKO" and the fanciful picture of the head and bust of a man wearing a slouch hat, said picture being inclosed in a fancy border.

SER. No. 17,368. CARTONS FOR LAMP-CHIMNEYS AND GLOBES. MACBETH-EVANS GLASS COMPANY, Pittsburg, Pa. Filed Feb. 26, 1906.

GEM

The fanciful word "GEM."

SER. No. 17,376. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 27, 1906. Used ten years.



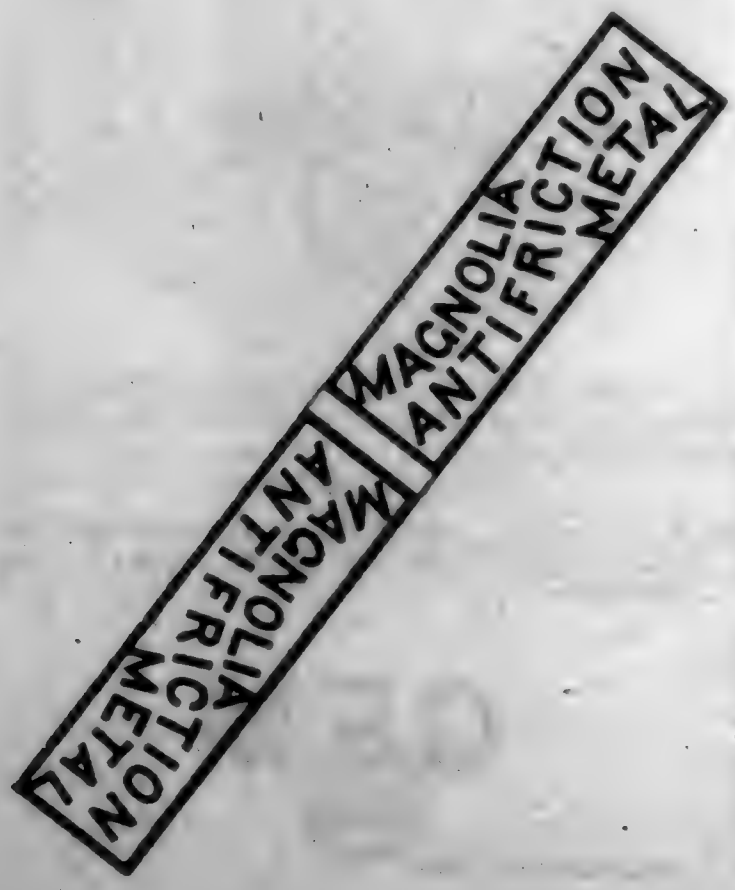
The representation of two interlooped bands with the words "LA ANTIGÜEDAD" thereon and of the words and abbreviations "DE SANTIAGO REFORMADA POR C. A." and "HABANA" below said representation of interlooped bands and above the representation of two outwardly-disposed tobacco branches.

SER. No. 17,377. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 27, 1906. Used ten years.



The words "LA FLOR DE CUBA" and "HABANA" arranged within the border of a double ellipse, and a monogram of the letters "D E" and word and abbreviations "M. VALLE Y CA." arranged within the inner ellipse.

SER. No. 17,390. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y. Filed Feb. 26, 1906. Used ten years.



Two oblong rectangular panels connected end to end and each surrounded by a border within which are the words "MAGNOLIA ANTIFRICTION METAL" in curved lines.

SER. No. 17,391. ANTIFRICTION METALS OR ALLOYS. MAGNOLIA METAL COMPANY, New York, N. Y. Filed Feb. 26, 1906. Used ten years.



The representation of a magnolia-blossom with two leaves and a short stem attached.

SER. No. 17,402. NEEDLES. EXCELSIOR NEEDLE COMPANY, Torrington, Conn. Filed Feb. 26, 1906.

<L>

The letter "L" between V-shaped lines.

SER. No. 17,414. BLASTING-FUSES. GOODALL, PERKINS & CO., San Francisco, Cal. Filed Feb. 26, 1906.



The words "GOLD BRAND SAFETY BLASTING FUSE," "WHITE COUNTERED GUTTA PERCHA," and a representation of a crossed pick and shovel on which rests a miner's pan bearing the words "GOLD BRAND," all inclosed in a rectangular border having ornamental scroll-like corners.

SER. No. 17,457. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Mar. 2, 1906.



The word "STAR" or a picture of a star, used either singly or together.

SER. No. 17,476. WHISKY. BENJAMIN W. LE COMPTE, Galveston, Tex. Filed Mar. 3, 1906.

ORTAGO

The word "ORTAGO."

SER. No. 17,484. WHISKY. SCHENLEY DISTILLING COMPANY, Schenley, Pa. Filed Mar. 3, 1906. Used ten years.



The words "SCHENLEY PURE RYE." Back of the letter "S" appear ornamental leaves and heads of grain, and in the lower curve of the letter "S" is the representation of a barrel-head bearing the words "SCHENLEY DISTILLING CO. PURE RYE WHISKEY SCHENLEY, PA."

SER. No. 17,487. WHISKY. MICHAEL WEINER, Milwaukee, Wis. Filed Mar. 3, 1906.



The word "POLICY," above which is the monogram "P R."

SER. No. 17,536. WHISKY. WOODFORD DISTILLING CO Chicago, Ill. Filed Mar. 5, 1906.

OLD FAITHFUL



The words "OLD FAITHFUL," used in connection with the word "WHISKEY."

SER. No. 17,539. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.



The word and figures "FORMULA 44" inclosed within a diamond-shaped figure.

SER. No. 17,547. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

V 3 C

The letters and figure "V 3 C."

SER. No. 17,552. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

OLD HICKORY

The words "OLD HICKORY."

SER. No. 17,553. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

IXL

The letters "I X L."

SER. No. 17,554. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.



The representation of an anchor inclosed within a diamond-shaped figure, there being at the top of the anchor the letter "S," on the left the letter "F," and on the right the letters "Co." At the left of the diamond-shaped figure is the word "ANCHOR" and at the right the word "BRAND," and above and below both words are scroll-lines.

SER. No. 17,585. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

Ser. No. 17,565.

MONT CLARE

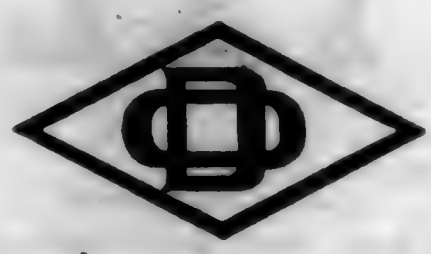
The words "MOUNT CLARE."

Ser. No. 17,569. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.



The words "CAPITAL CITY" and the representation of the State Capitol building of Alabama.

Ser. No. 17,573. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.



A monogram consisting of the letters "O" and "D" inclosed within a diamond-shaped figure.

Ser. No. 17,575. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

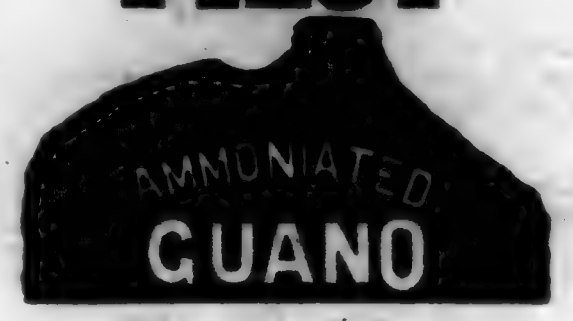
CAROLINA GOLDEN BELT

The words "CAROLINA GOLDEN BELT."

Ser. No. 17,577. FERTILIZERS, VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.

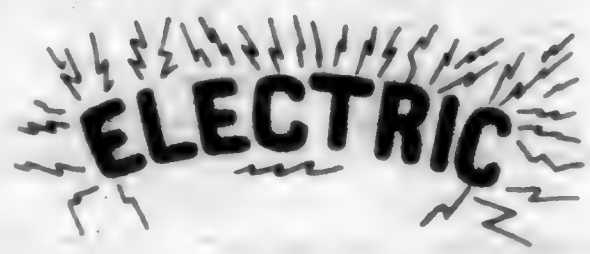
Ser. No. 17,577.

PILOT



The word "PILOT" and the representation of a rock on which appear the words "AMMONIATED GUANO."

Ser. No. 17,579. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.



The word "ELECTRIC" and the representation of electric darts.

Ser. No. 17,580. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906.



The word "COMET" and the representation of a comet.

Ser. No. 17,593. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.



The word "CHAMPION."

SER. No. 17,595. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

BEEF BLOOD & BONE
B.B.B.

The words and character "BEEF BLOOD & BONE," associated with the letters "B. B. B."

SER. No. 17,599. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass. Filed Mar. 6, 1906.



The numeral "5," inclosed in a heart-shaped figure.

SER. No. 17,602. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass. Filed Mar. 6, 1906.

3

The numeral "3," with horizontal lines above and below the numeral.

SER. No. 17,603. TOOTH-BRUSHES. FLORENCE MANUFACTURING COMPANY, Northampton, Mass. Filed Mar. 6, 1906.



The numeral "1," associated with two lines of equal length, which converge above the said numeral.

SER. No. 17,609. CHECKING-CRAYONS, SCHOOL-CRAYONS, AND MARKING-CRAYONS. JOSEPH M. HOYT, Danvers, Mass. Filed Mar. 6, 1906. Used ten years.

STANDARD

The word "STANDARD."

SER. No. 17,623. COMPUTING CHEESE-CUTTERS. ANDERSON COMPUTING SCALE COMPANY, Anderson, Ind. Filed Mar. 6, 1906.

CLIMAX

The word "CLIMAX."

SER. No. 17,644. NAIL-CLIPPERS. SMITH & HEMENWAY COMPANY, New York, N. Y. Filed Mar. 8, 1906.

RED DEVIL

The words "RED DEVIL."

SER. No. 17,645. RAZORS. SMITH & HEMENWAY COMPANY, New York, N. Y. Filed Mar. 8, 1906.

Liana
BO-RAS-IC

The words "LIANA BO-RAS-IC."

SER. No. 17,751. NAIL-SETS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio. Filed Mar. 12, 1906.



The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

SER. No. 17,752. END MILLS, LATHE-MILLS, AND HEADING-MILLS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio. Filed Mar. 12, 1906.



The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

SER. No. 17,791. WRENCHES. WALWORTH MANUFACTURING COMPANY. Boston, Mass. Filed Mar. 13, 1906.

STILLSON

The word "STILLSON," inclosed in a diamond.

SER. No. 17,806. COAL. EQUITABLE COAL & COKE COMPANY. Chicago and Duquoin, Ill. Filed Mar. 14, 1906.

MAJESTIC

The word "MAJESTIC."

SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED APRIL 10, 1906.

51,181. LEATHER BOOTS AND SHOES. BENTLEY & OLMSTED COMPANY, Des Moines, Iowa.

The representation of a buffalo charging through high grass, associated with the words "BUFFALO CALF."

Filed June 5, 1905. Serial No. 7,454. PUBLISHED FEBRUARY 13, 1906.

51,182. MEDICAL PREPARATIONS. BLACK DIAMOND MEDICINE COMPANY, Cowlesville, N. Y.

The words "BLACK DIAMOND," associated with the portrait of Eugene Austin inclosed in a diamond-shaped figure.

Filed June 5, 1905. Serial No. 7,480. PUBLISHED FEBRUARY 13, 1906.

51,183. WRITING-PAPER. CHAPIN & GOULD PAPER CO., Springfield, Mass.

The words "CRESCENT MILLS" and the representation of a crescent. Used ten years.

Filed June 3, 1905. Serial No. 7,343. PUBLISHED FEBRUARY 13, 1906.

51,184. VERMUTH. CHARLES JACQUIN ET CIE. INC., New York, N. Y.

The representation of an ermine bearing the inscription "VERMOUTH DI PIETRO RICCA, DA TORINO." and a crown surmounting said ermine. At the sides of said ermine are shown griffins, and below said ermine are three circular panels, the center of which bears a castle and the adjoining side panels the heads of griffins or eagles. Above said ermine are shown flags having shields superimposed thereon, and adjoining the upper ends of said flags are circular fields, each bearing a castle. Below the ermine and griffins is a substantially elliptical panel inclosing a group of houses and a body of water with ships thereon. At each side of said panel is arranged an irregular panel, one of which bears the inscription "VINO VERMOUTH" and the other the name "PIETRO RICCA." Below said elliptical panel appears the signature "PIETRO RICCA," together with the phrase "NONE GENUINE WITHOUT SIGNATURE OF," the whole device being inclosed by a plain rectangular border and the space intermediate the same and the parts above described filled in with scrollwork, grapes, and grape-leaves.

Filed July 12, 1905. Serial No. 10,158. PUBLISHED FEBRUARY 13, 1906.

51,185. RYE WHISKY. GILLIAMS, JONES & Co., Philadelphia, Pa.

The word "INSLEE" displayed in the field of a broken-line ornamental oblong panel. Used ten years.

Filed July 3, 1905. Serial No. 9,727. PUBLISHED FEBRUARY 13, 1906.

51,186. PENCILS. HANDBLEISTIFT CIE. C. WM. BOCK, Schweinau, near Nuremburg, Germany.

The representation of an open hand projecting from a cuff. Used ten years.

Filed May 20, 1905. Serial No. 6,948. PUBLISHED FEBRUARY 13, 1906.

51,187. SHOVELS, SCOOPS, AND SPADES. HAYDEN AUTOMATIC & EQUIPMENT COMPANY, New York, N. Y.

The word "NEVERFAIL."

Filed August 2, 1905. Serial No. 11,207. PUBLISHED FEBRUARY 13, 1906.

51,188. SILVER-PLATED HOLLOW WARE. INTERNATIONAL SILVER COMPANY, Meriden, Conn.

The words "GUARANTEED BY ROGERS, SMITH & Co MERIDEN, CT." inclosed within a shield. Used ten years.

Filed November 4, 1905. Serial No. 14,322. PUBLISHED FEBRUARY 13, 1906.

121 o c—6—i

51,189. RIVETS. LOW MOOR COMPANY LIMITED, Low Moor, near Bradford, England.

The word "LOWMOOR."

Filed December 5, 1905. Serial No. 15,210. PUBLISHED FEBRUARY 13, 1906.

51,190. PIANOS. LYON & HEALY, Chicago, Ill.

The word "WASHBURN." Used ten years.

Filed January 15, 1906. Serial No. 15,224. PUBLISHED FEBRUARY 13, 1906.

51,191. LIQUID RHEUMATIC REMEDY. MICHAEL W. MONAGHAN, Woodhaven, N. Y.

The letters "M R R" interwoven to form a monogram and in which the letter "M" is shaded with horizontal lines, one letter "R" being black with a thin white border and the remaining letter "R" being in outline.

Filed June 2, 1905. Serial No. 7,267. PUBLISHED FEBRUARY 13, 1906.

51,192. ROD-PACKING. MULCONROY CO. INC., Philadelphia, Pa.

The word "THOROBRED" upon a scroll-like design upon which is the representation of a horse's head, a horseshoe, and a sectional view of the packing inclosed in a horseshoe.

Filed October 9, 1905. Serial No. 13,425. PUBLISHED FEBRUARY 13, 1906.

51,193. RUBBER HOSE. MULCONROY CO. INC., Philadelphia, Pa.

The word "DYNAMITE."

Filed December 9, 1905. Serial No. 15,290. PUBLISHED FEBRUARY 13, 1906.

51,194. RUBBER HOSE. MULCONROY CO. INC., Philadelphia, Pa.

The word "PORTAL."

Filed December 9, 1905. Serial No. 15,291. PUBLISHED FEBRUARY 13, 1906.

51,195. WHISKY. LOUISA NELSON, Nashville, Tenn.

The words "BELLE MEADE."

Filed May 25, 1905. Serial No. 6,602. PUBLISHED FEBRUARY 13, 1906.

51,196. SOLID SALTS FOR MAKING BEVERAGES. JOSEPH PERSONENI, New York, N. Y.

The word "IMPERIALE," associated with the word "EFFERVESCENTE," the two words being arranged in a curved panel, below which is an ornamental scroll. Below the panel and scroll appears a shield having in its center a crown and at each side thereof the initials "J" and "P," respectively. A scroll protrudes from each side of the shield, and twigs of laurel and palm are represented as projecting at opposite corners of the shield.

Filed June 5, 1905. Serial No. 7,400. PUBLISHED FEBRUARY 13, 1906.

51,197. MATTRESSES. JOHN L. RADERMACHER, New York, N. Y.

A representation of a shield having a scroll-like border inclosing three spiral springs, with a scroll beneath, on which appear the words "RADERMACHER'S SOMELASTIQUE" inclosed in quotations, and associated with the name "JOHN L. RADERMACHER" above the shield.

Filed July 6, 1905. Serial No. 9,857. PUBLISHED FEBRUARY 13, 1906.

51,198. LEATHER BOOTS AND SHOES. BION F. REYNOLDS, Brockton, Mass.

The words "THE BION SHOE." Used ten years.

Filed October 22, 1905. Serial No. 13,863. PUBLISHED FEBRUARY 13, 1906.

51,199. CIGARETTE-PAPER. CHRISTIAN SCHÜTZ, Vienna, Austria-Hungary.

A cockade and the words "LA COCARDE."

Filed October 26, 1905. Serial No. 13,938. PUBLISHED FEBRUARY 13, 1906.

51,200. LEATHER BOOTS AND SHOES. A. W. TEDCASTLE & Co., Boston, Mass.

The word "EVERLASTING."

Filed October 30, 1905. Serial No. 14,042. PUBLISHED FEBRUARY 13, 1906.

51,201. MEDICINES FOR THE CURE OF FEMALE DISORDERS. LORINDA E. TRUMAN, Springfield, Mo.

The word "SANATIA."

Filed May 22, 1905. Serial No. 6,383. PUBLISHED FEBRUARY 13, 1906.

51,202. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The conventional representation of a king riding on a bicycle.

Filed July 14, 1905. Serial No. 10,296. PUBLISHED FEBRUARY 13, 1906.

51,203. IRON TONICS. ERNST BISCHOFF, New York, N. Y.

The word "VIOFERROSE."

Filed December 6, 1905. Serial No. 15,239. PUBLISHED FEBRUARY 13, 1906.

51,204. BELT-DRESSINGS. BLACK DIAMOND MANUFACTURING COMPANY, Cincinnati, Ohio.

The symbol or representation of a diamond-shaped figure in solid black.

Filed May 13, 1905. Serial No. 5,400. PUBLISHED FEBRUARY 13, 1906.

51,205. BELT-DRESSINGS. BLACK DIAMOND MANUFACTURING COMPANY, Cincinnati, Ohio.

The words "BLACK DIAMOND."

Filed May 13, 1905. Serial No. 5,401. PUBLISHED FEBRUARY 13, 1906.

51,206. BEER. THE CHRISTIAN MOERLEIN BREWING Co., Cincinnati, Ohio.

The word "MOERLEIN'S," beneath which is a paraph.

Filed November 13, 1905. Serial No. 14,562. PUBLISHED FEBRUARY 13, 1906.

51,207. SASH-PULLEYS. PETER DOSCH, Bridgeport, Conn.

The word "TRIPLE."

Filed June 8, 1905. Serial No. 7,677. PUBLISHED FEBRUARY 13, 1906.

51,208. WINES. J. S. DRAPER, Cincinnati, Ohio.

The words "EL CAPITAN." Used ten years.

Filed November 6, 1905. Serial No. 14,373. PUBLISHED FEBRUARY 13, 1906.

51,209. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "CLIFTON." Used ten years.

Filed July 3, 1905. Serial No. 9,631. PUBLISHED FEBRUARY 13, 1906.

51,210. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "LITHO."

Filed July 3, 1905. Serial No. 9,634. PUBLISHED FEBRUARY 13, 1906.

51,211. BITTERS. JOSEPH FÜGER, New York, N. Y.

The representation of an air-ship inclosed in an oval border and used in connection with the words "ABOVE ALL."

Filed December 2, 1905. Serial No. 15,149. PUBLISHED FEBRUARY 13, 1906.

51,212. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE Co., Providence, R. I.

The word "ADELAIDE."

Filed July 18, 1905. Serial No. 10,517. PUBLISHED FEBRUARY 13, 1906.

51,213. SHERRY. LUYTIES BROTHERS, New York, N. Y.

The word "CONOCEDOR."

Filed November 15, 1905. Serial No. 14,653. PUBLISHED FEBRUARY 13, 1906.

51,214. CHAMPAGNE. THOMAS MARTINDALE & Co., Philadelphia, Pa.

The phrase "SILVER KING."

Filed November 16, 1905. Serial No. 14,721. PUBLISHED FEBRUARY 13, 1906.

51,215. REMEDIES FOR ASTHMA. GEORGE RICHARDSON, Grayslake, Ill.

The words "SILVER CREAM."

Filed December 5, 1905. Serial No. 15,206. PUBLISHED FEBRUARY 13, 1906.

51,216. AXES AND HATCHETS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.

The words "BLUE JEANS" and a scroll-shaped bar inclosing the same and having inturned ends.

Filed October 21, 1905. Serial No. 13,827. PUBLISHED FEBRUARY 13, 1906.

51,217. ADZES, HATCHETS, AND AXES. SUPPLEE HARDWARE Co., Philadelphia, Pa.

The word "GLADIATOR" and the representation of an annulus and a bar-shaped figure on which said word appears, said figure being projected through said annulus and having pointed ends.

Filed November 13, 1905. Serial No. 14,368. PUBLISHED FEBRUARY 13, 1906.

51,218. REMEDIES FOR CONSUMPTION. U. S. CHEMICAL Co., Tampa, Fla.

The letter "U" crossed by two connected letters "C" facing in opposite directions, forming combinedly the letter "S," the letter "o" adjacent to the head of one "C" and a period adjacent to the head of the opposing "C."

Filed September 18, 1905. Serial No. 12,745. PUBLISHED FEBRUARY 13, 1906.

51,219. FOLDING CANVAS BOATS. GEORGE H. WINANS, Kalamazoo, Mich.

The word "KING."

Filed October 20, 1905. Serial No. 13 790. PUBLISHED FEBRUARY 13, 1906.

51,220. CERTAIN NAMED FABRICS. FRED S. BISBEE, Benton Harbor, Mich.

The word "SILKDOWN."

Filed September 30, 1905. Serial No. 13,171. PUBLISHED FEBRUARY 13, 1906.

51,221. HORSE-NAILS. THE CAPEWELL HORSE NAIL COMPANY, Hartford, Conn.

The word "CAPEWELL." Used ten years.

Filed June 5, 1905. Serial No. 7,427. PUBLISHED FEBRUARY 13, 1906.

51,222. VARNISHES. THE DAVID B. CROCKETT COMPANY, Bridgeport, Conn.

The words "NEW WATERPROOF FLOOR FINISH." Used ten years.

Filed July 28, 1905. Serial No. 10,961. PUBLISHED FEBRUARY 13, 1906.

51,223. STIFF-FELT, SOFT-FELT, AND STRAW HATS. DENZER, GOODHART & SCHEUER, New York, N. Y.

The word "GOTHAM" surmounted by an eagle with a scroll in its talons on which appear the words "FIDE CUM INDUSTRIA," and with the words "SUPERIOR MAKE" below the word "GOTHAM." Used ten years.

Filed July 29, 1905. Serial No. 11,017. PUBLISHED FEBRUARY 13, 1906.

51,224. STIFF-FELT, SOFT-FELT, AND STRAW HATS. DENZER, GOODHART & SCHEUER, New York, N. Y.

The words "THE EMPIRE CITY HAT QUALITY GUARANTEED" and the representation of a shield bearing a figure of a woman, with a smaller shield by its side, on which appears a monogram of the letters "D G S," inclosed in concentric circles, with the word "EXCELSIOR" between the circles. Used ten years.

Filed July 29, 1905. Serial No. 11,018. PUBLISHED FEBRUARY 13, 1906.

51,225. CIGARS. E. H. GATO CIGAR COMPANY, Key West, Fla.

The representation of the top part of a geographical globe showing North and Central America and the upper part of South America, the Atlantic and Pacific Oceans, Philippine and Sandwich Islands, and the West Indies. Resting on that part of the picture representing the United States is the picture of an eagle with outstretched wings standing erect. Immediately above the same and

arranged in a curved line are the words "EMPERADOR DEL MUNDO" in capital block-faced letters.

Filed July 7, 1905. Serial No. 9,884. PUBLISHED FEBRUARY 13, 1906.

51,226. WEIGHING-MACHINES AND PARTS THEREOF. E. AND T. FAIRBANKS AND COMPANY, St. Johnsbury, Vt.

The representation of a globe or sphere upon which meridians and parallels are delineated, the Western Hemisphere being shown on said representation and there being applied in the proper places the words "ATLANTIC OCEAN" and "SOUTH PACIFIC OCEAN."

Filed May 18, 1905. Serial No. 5,971. PUBLISHED FEBRUARY 13, 1906.

51,227. CERTAIN NAMED ARTICLES OF STATIONERY. EBERHARD FABER, New York, N. Y.

The letters "E. A. S." inclosed in an ellipse.

Filed November 11, 1905. Serial No. 14,506. PUBLISHED FEBRUARY 13, 1906.

51,228. NON-ALCOHOLIC CARBONATED BEVERAGES. FRANK M. FINLEY, Washington, D. C.

The letter "F" in a parallelogram or outline figure of a diamond.

Filed July 3, 1905. Serial No. 9,735. PUBLISHED FEBRUARY 13, 1906.

51,229. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The words "EMBLEM OLD STYLE"

Filed July 3, 1905. Serial No. 9,612. PUBLISHED FEBRUARY 13, 1906.

51,230. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The words "LIONEL OLD STYLE." Used ten years.

Filed July 3, 1905. Serial No. 9,613. PUBLISHED FEBRUARY 13, 1906.

51,231. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The words "ORBIT RE-DIPPED OLD STYLE." Used ten years.

Filed July 3, 1905. Serial No. 9,614. PUBLISHED FEBRUARY 13, 1906.

51,232. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "SHERWOOD." Used ten years.

Filed July 3, 1905. Serial No. 9,621. PUBLISHED FEBRUARY 13, 1906.

51,233. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "KENTON." Used ten years.

Filed July 3, 1905. Serial No. 9,622. PUBLISHED FEBRUARY 13, 1906.

1,234. NERVE AND NUTRITIVE TONIC. GEO. A. NEWMAN CO., Louisville, Ky.

The words "GLYCO PHOSPHO CALISO" and the word "(NEWMANS)" in parentheses.

Filed December 18, 1905. Serial No. 15,480. PUBLISHED FEBRUARY 13, 1906.

51,235. PORTLAND CEMENT. THE GLENS FALLS PORTLAND CEMENT CO., Glens Falls, N. Y.

The words "IRON CLAD."

Filed August 5, 1905. Serial No. 11,289. PUBLISHED FEBRUARY 13, 1906.

51,236. ALCOHOLIC PUNCH. C. H. GRAVES & SONS, Boston, Mass.

The words "HUB PUNCH." Used ten years.

Filed May 20, 1905. Serial No. 6,873. PUBLISHED FEBRUARY 13, 1906.

51,237. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y.

The words "LA COMMERCIAL" arranged within the upper half of the border of a double ellipse and the words "DE BENGOCHEA Y FERNANDEZ" arranged at the center of the mark. The word "HABANA" has also been arranged within the lower half of the border. Used ten years.

Filed September 13, 1905. Serial No. 12,517. PUBLISHED FEBRUARY 13, 1906.

51,238. GIN. SIGMUND HOCHSTADTER, New York, N. Y.

The representation of a bottle having displayed thereon the representation of a seal bearing a spray of juniper in its mouth and the word "SEAL" extending across its body portion. Above said representation are displayed the words "HOCHSTADTER'S CELEBRATED BLUE" and below said representation the word "GIN" arranged upon a band or ribbon, above which is shown a spray of juniper. Below said band or ribbon is displayed a shield of ornamental outline having an elliptical central panel or field and below said shield the signature "THE HOCHSTADTER CO." Upon the top of the bottle is shown a circular seal bearing the words "THE HOCHSTADTER CO. BLUE SEAL GIN."

Filed May 20, 1905. Serial No. 6,192. PUBLISHED FEBRUARY 13, 1906.

51,239. CORDIALS. SIGMUND HOCHSTADTER, New York, N. Y.

A representation of a banner inclosed in an ornamental circle, associated with the words "LIQUEUR DE ST. VINCENT C. SPILTOIR."

Filed May 20, 1905. Serial No. 6,197. PUBLISHED FEBRUARY 13, 1906.

51,240. POLISHES. J. A. WRIGHT & Co., Keene, N. H.

The words "SILVER CREAM."

Filed November 4, 1905. Serial No. 14,323. PUBLISHED FEBRUARY 13, 1906.

51,241. INSECTICIDES. C. E. LACEY & Co., Aberdeen, S. D.

The word "SWEETREPOSE."

Filed December 22, 1905. Serial No. 15,599. PUBLISHED FEBRUARY 13, 1906.

51,242. IRON BARS, RODS, SHEETS, PLATES, HOOPING, AND TIRES. LOW MOOR COMPANY LIMITED, Low Moor, near Bradford, England.

The word "LOWMOOR." Used ten years.

Filed May 26, 1905. Serial No. 6,744. PUBLISHED FEBRUARY 13, 1906.

51,243. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The word "FAIRBANK'S." Used ten years.

Filed October 17, 1905. Serial No. 13,683. PUBLISHED FEBRUARY 13, 1906.

51,244. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "MISSOURI COMPANY ST. LOUIS." Used ten years.

Filed July 27, 1905. Serial No. 10,868. PUBLISHED FEBRUARY 13, 1906.

51,245. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The letters and words "D. B. SHIPMAN CHICAGO." Used ten years.

Filed July 27, 1905. Serial No. 10,869. PUBLISHED FEBRUARY 13, 1906.

51,246. BELT-CEMENT. NEW YORK LEATHER BELTING CO. New York, N Y.

The word "VICTOR."

Filed July 20, 1905. Serial No. 10,619. PUBLISHED FEBRUARY 13, 1906.

51,247. METAL BEARINGS, BUSHINGS, AND JOURNALS. NORTH AMERICAN METALINE CO., Long Island City, N. Y.

The word "METALINE." Used ten years.

Filed May 20, 1905. Serial No. 6,132. PUBLISHED FEBRUARY 13, 1906.

51,248. RIBBONS. PASSAVANT & Co., New York, N. Y.

The words "VELOURS ENVERS SATIN," the abbreviation "PAT.," and the number "2020." Used ten years.

Filed November 9, 1905. Serial No. 14,452. PUBLISHED FEBRUARY 13, 1906.

51,249. LAGER-BEER. QUINN & NOLAN BEVERWYCK BREWING COMPANY, Albany, N. Y.

The word "BEVERWYCK."

Filed April 10, 1905. Serial No. 1,022. PUBLISHED MAY 10, 1905.

51,250. CERTAIN NAMED MEDICINE. REX CHEMICAL CO., Toledo, Ohio.

The word "KIDNOL" and the representation of a piece of sculptured statuary showing a reclining female figure upon the back of a griffin, the figure holding a branch of leaves in its uplifted hand.

Filed December 30, 1905. Serial No. 15,786. PUBLISHED FEBRUARY 13, 1906.

51,251. BELT-DRESSING. STEPHENSON MFG. CO., Albany, N. Y.

A figure made up of wheels, governor, boiler-jacket, and links placed together to represent the caricature of a man, in whose

hands is placed a stick of belt-dressing upon which is the name "STEPHENSON," which is held by the man in contact with a belt which passes over pulleys at the top and bottom of the picture.

Filed May 10, 1905. Serial No. 6,063. PUBLISHED FEBRUARY 13, 1906.

51,252. REMEDIES FOR THE CURE OF RHEUMATISM. JOHANNA W. VAN LISSEL, Pella, Iowa.

The word "VANLISSELINE."

Filed December 26, 1905. Serial No. 15,652. PUBLISHED FEBRUARY 13, 1906.

51,253. CERTAIN NAMED MEDICINE. W. W. GAVITT MEDICAL CO., Topeka, Kans.

The outlined letters composing the word "GAVITT'S," the central "VIT" being shorter than the others, and in the space thus provided is a portrait of W. W. Gavitt.

Filed December 28, 1905. Serial No. 15,727. PUBLISHED FEBRUARY 13, 1906.

51,254. SALVES. THE WARD SALVE CO., Washington, D. C.

The word "PUTON."

Filed December 22, 1905. Serial No. 15,600. PUBLISHED FEBRUARY 13, 1906.

51,255. CARD-HOLDER. GERTRUDE FOSTER WEDDERBURN, Chevy Chase, Md.

The words "DOUBLE-DUMMY."

Filed January 23, 1906. Serial No. 16,415. PUBLISHED FEBRUARY 13, 1906.

51,256. WHISKY. WHITE, HENTZ & Co., Philadelphia, Pa.

The word "TRIMBLE." Used ten years.

Filed May 20, 1905. Serial No. 6,144. PUBLISHED FEBRUARY 13, 1906.

51,257. SKIN-LOTIONS. FRANK S. WILLIAMS & Co., Washington, D. C.

The word "HANDOLINE."

Filed May 20, 1905. Serial No. 6,138. PUBLISHED FEBRUARY 13, 1906.

51,258. LUBRICATING-OIL FOR WATCHES AND CLOCKS. JOHN WING, New Bedford, Mass.

The name "EZRA KELLEY," a monogram of the letters "E K," and a facsimile signature of Ezra Kelley, deceased.

Filed June 2, 1905. Serial No. 7,279. PUBLISHED FEBRUARY 13, 1906.

51,259. WHISKY. JOHN H. BEAM, Early Times, Ky.

The words "EARLY TIMES," associated with the representation of a seal upon which appears the picture of an ox team and cart, together with the words "EARLY TIMES," inclosed in concentric circles. Used ten years.

Filed May 3, 1905. Serial No. 4,074. PUBLISHED FEBRUARY 13, 1906.

51,260. WHISKY. MARTIN J. BLIGH, Logansport, Ind.

The words "DAN DALTON."

Filed May 1, 1905. Serial No. 3,811. PUBLISHED FEBRUARY 13, 1906.

51,261. PULP-BOARD. ALFRED WELLS CASE, Manchester, Conn.

The word "BULLSIDE."

Filed December 27, 1905. Serial No. 15,687. PUBLISHED FEBRUARY 13, 1906.

51,262. FOUNTAIN-PENS. THE CENTURY PEN COMPANY, Whitewater, Wis.

The words "THE CENTURY PEN" inclosed in a circle with rays radiating therefrom.

Filed April 26, 1905. Serial No. 3,176. PUBLISHED FEBRUARY 13, 1906.

51,263. VARNISHES, FINISHES, JAPANS, AND FILLERS. CHAS. H. GILLESPIE & SONS, Jersey City, N. J.

The word "MONARCH."

Filed April 15, 1905. Serial No. 1,671. PUBLISHED FEBRUARY 13, 1906.

51,264. METALLIC AND ROOFING PAINT. ALBERT EDWARD COHN, Wilkinsburg, Pa.

A scene in a rubber-tree grove with men in the act of gathering the sap from rubber-trees, there being a background of water. In one corner of the scene is the representation of the roofs of buildings, with a man upon the roof of one building in the act of painting. A streamer is arranged in the foreground of the picture.

Filed December 9, 1905. Serial No. 15,201. PUBLISHED FEBRUARY 13, 1906.

51,265. WHIPS. ARTHUR J. COOK, Westfield, Mass.

A pictorial bust of William Penn and the words "WILLIAM PENN."

Filed January 8, 1906. Serial No. 16,062. PUBLISHED FEBRUARY 13, 1906.

51,266. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The word "PEACHTREE."

Filed December 26, 1905. Serial No. 15,631. PUBLISHED FEBRUARY 13, 1906.

51,267. CHEWING-GUM. FRANK H. FLEER & COMPANY, Philadelphia, Pa.

The word "CHICLETS" and the representation of a circular seal having serrated edges upon which appears the representation of a sunburst inclosing a circular panel having thereon the representation of a small sunburst.

Filed April 20, 1905. Serial No. 2,371. PUBLISHED FEBRUARY 13, 1906.

51,268. WHISKY. PHILIP FREILER, Elgin, Ill.

The name "DR. SCHENCK'S." Used ten years.

Filed April 17, 1905. Serial No. 1,998. PUBLISHED FEBRUARY 13, 1906.

51,269. WHISKY. JAS. R. ROSS & Co., Indianapolis, Ind.

The representation of a rectangular field provided with screw-heads, having a panel extending across the same, upon which appear the words "MARION CLUB." Used ten years.

Filed May 3, 1905. Serial No. 4,067. PUBLISHED FEBRUARY 13, 1906.

51,270. GLOVES AND MITTENS. THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill.

The word "ASBESTOL," which is inclosed in a diamond-shaped frame.

Filed April 13, 1905. Serial No. 1,354. PUBLISHED FEBRUARY 13, 1906.

51,271. SHEETINGS AND DRILLS. LORAY MILLS, Gastonia, N. C.

An Indian and an Indian pony, the Indian having in one hand an arrow and in the other a bow.

Filed May 10, 1905. Serial No. 4,845. PUBLISHED FEBRUARY 13, 1906.

51,272. TOILET SOAP. PARDRIDGE & BLACKWELL, Detroit, Mich.

A heart-shaped figure with a building shown thereon, and the words "THE HEART OF DETROIT" also thereon.

Filed June 22, 1905. Serial No. 8,855. PUBLISHED FEBRUARY 13, 1906.

51,273. CORSET-COVERS AND CORSET-WAISTS. CHAS. A. POWELL, Whitesboro, N. Y.

The words "ALLIANCE CUT."

Filed June 22, 1905. Serial No. 8,856. PUBLISHED FEBRUARY 13, 1906.

51,274. BONE RINGS. THE ROGERS & HUBBARD CO., Middletown, Conn.

The words "SITKA IVORY" appearing between quotation-marks. Used ten years.

Filed January 11, 1906. Serial No. 16,133. PUBLISHED FEBRUARY 13, 1906.

51,275. HATS AND CAPS. FRANK SCHOBLE & Co., Philadelphia, Pa.

The arbitrary word "DENNEY" in script letters slanting from left to right, with a paraph extending from the last letter "Y."

Filed June 14, 1905. Serial No. 8,111. PUBLISHED FEBRUARY 13, 1906.

51,276. YEAST-CAKE. STAR YEAST CAKE Co., Richmond, Va.

The representation of a star and the word "STAR," the latter being arranged over the star in a horizontally-curved line.

Filed September 23, 1905. Serial No. 12,945. PUBLISHED FEBRUARY 6, 1906.

51,277. BUTTER. BEYER BROS. Co., Rochester, Ind.

The letters "B. B." inclosed by curved lines arranged in the shape of an ellipse. Used ten years.

Filed July 12, 1905. Serial No. 10,185. PUBLISHED FEBRUARY 13, 1906.

51,278. BRONZE-GREEN PAINTS. JOHN BRIGGS & Co., Boston, Mass.

The arbitrary word "BRONZENE" and the representation of a griffin rampant within a circular border.

Filed January 10, 1906. Serial No. 10,097. PUBLISHED FEBRUARY 13, 1906.

51,279. WHISKY. KATE A. BUCKLEY, Washington, D. C.

The word-symbol or phrase "HOUSE OF DANIEL" inclosed in quotation-marks.

Filed June 3, 1905. Serial No. 7,304. PUBLISHED JANUARY 2, 1906.

51,280. CORN BRANDY. CHARLES JACQUIN ET CIE. INC., New York, N. Y.

A shield-shaped device of irregular outline having imposed thereon near its center an ermine bearing the inscription "FEINSTE QUALITÄT" and surmounted by a crown. Below said ermine appear the title "KORNBRANNTWEIN" and the signature "CHARLES JACQUIN ET CIE" and below the signature the abbreviation "INCORP." At each side of the ermine is shown a circular panel in which appears a sheaf of rye standing in a field.

Filed June 2, 1905. Serial No. 7,243. PUBLISHED FEBRUARY 13, 1906.

51,281. DRY GIN. CHARLES JACQUIN ET CIE. INC., New York, N. Y.

The representation of a circular panel imposed upon an ornamented band. In said panel is shown a spray of foliage with berries. Below said panel and band appears the title inscription "GRAHAM'S DRY GIN," below said inscription the signature "JOHN J. GRAHAM," and below said signature the name and description "CHARLES JACQUIN ET CIE INC. N. Y.," and the entire device inclosed by a plain border.

Filed June 2, 1905. Serial No. 7,247. PUBLISHED FEBRUARY 13, 1906.

51,282. HOOKS AND EYES. THE DE LONG HOOK & EYE COMPANY, Philadelphia, Pa.

The word "DE LONG." Used ten years.

Filed December 9, 1905. Serial No. 15,294. PUBLISHED FEBRUARY 13, 1906.

51,283. HOOKS AND EYES. THE DE LONG HOOK & EYE COMPANY, Philadelphia, Pa.

The words "DE LONG HOOK AND EYE." Used ten years.

Filed December 9, 1905. Serial No. 15,295. PUBLISHED FEBRUARY 13, 1906.

51,284. TEA. B. DESENBERG & Co., Kalamazoo, Mich.

The word "SWING," associated with the representation of a tree and with a swing suspended from one of its branches, with a Japanese maiden sitting in the swing and others standing by. A child is in the branches of the tree, and on the trunk of the tree are the letters and character "B. D & Co."

Filed April 18, 1905. Serial No. 2,124. PUBLISHED FEBRUARY 13, 1906.

51,285. LADIES' SHIRT-WAISTS AND SHIRT-WAIST SUITS. D. LEVY & SONS Co., Baltimore, Md.

The words "ALBION BRAND" and a monogram of the letters and character "D L & S," the monogram being inclosed within a curved figure formed by an irregular outline.

Filed April 17, 1905. Serial No. 2,059. PUBLISHED FEBRUARY 13, 1906.

51,286. TONICS. E. J. HART & Co., LIMITED, New Orleans, La.

The word "MORRHUVIN."

Filed August 5, 1905. Serial No. 11,295. PUBLISHED FEBRUARY 13, 1906.

51,287. BUTTER. THE E. O. WHITFORD COMPANY, Washington, D. C.

The representation of a clover blossom and leaf arranged within the center of a circular figure, the words "RED CLOVER" printed within a transverse band extending across the circular figure beneath the representation of the clover blossom and leaf, and the alliteral phrase "THE BUTTER THAT BETTERS THE BREAD" arranged outside of and beneath said circular figure.

Filed September 28, 1905. Serial No. 13,107. PUBLISHED FEBRUARY 13, 1906.

51,288. CANNED SALMON. FIDALGO ISLAND PACKING Co., Anacortes, Wash.

The representation of an orchid flower and leaf, associated with the words "ORCHID BRAND."

Filed September 25, 1905. Serial No. 12,979. PUBLISHED FEBRUARY 13, 1906.

51,289. PREPARATION OF GINGER. FREDERICK BROWN COMPANY, Philadelphia, Pa.

The words "BROWN'S ESSENCE OF JAMAICA GINGER." Used ten years.

Filed December 23, 1905. Serial No. 15,619. PUBLISHED FEBRUARY 13, 1906.

51,290. MONTHLY PUBLICATION. WELLS GOODRUE, Chicago, Ill.

The words "NATIONAL FINANCE."

Filed August 18, 1905. Serial No. 11,785. PUBLISHED FEBRUARY 13, 1906.

51,291. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, New York, N. Y.

The words "LA CAROLINA" arranged within the upper half of the border of a double ellipse, a monogram of the letters "D E" and words and abbreviation "BANCES Y SUAREZ" arranged within the inner ellipse, and the word "HABANA" within the lower half of the border. Used ten years.

Filed August 8, 1905. Serial No. 11,422. PUBLISHED FEBRUARY 13, 1906.

51,292. CAKES. JACOB HOCHBAUM, Little Rock, Ark.

The word "PRINCESS."

Filed January 18, 1906. Serial No. 16,299. PUBLISHED FEBRUARY 13, 1906.

51,293. BEER. J. L. HOERBER BREWING Co., Chicago, Ill.

The letter "H," on the uprights of which appear, respectively, the words "CREAM" and "OF MALT," associated with the representation of a gnome occupying the space between the uprights and holding a mug elevated in one hand. Below the letter is a representation of a hop-bud, and above and to the sides are representations of sprays of barley.

Filed June 5, 1905. Serial No. 7,484. PUBLISHED FEBRUARY 13, 1906.

51,294. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.

The representation of a tigress and cub near a low-spreading pine-tree.

Filed July 17, 1905. Serial No. 10,436. PUBLISHED FEBRUARY 13, 1906.

51,295. HAIR-TONICS. HENRY H. JOHNSON, East Orange, N. J.

A representation of the head of Frances M. Palmer, wife of Frank Palmer, of East Orange, N. J.

Filed September 7, 1905. Serial No. 12,309. PUBLISHED FEBRUARY 13, 1906.

51,296. WHISKY. W. H. JONES AND Co., Boston, Mass.

The words "ELM HILL."

Filed April 3, 1905. Serial No. 249. PUBLISHED FEBRUARY 13, 1906.

51,297. RANGES, COOKING-STOVES, AND HEATING-STOVES. KALAMAZOO STOVE Co., Kalamazoo, Mich.

The words "A KALAMAZOO DIRECT TO YOU" inclosed in quotation-marks.

Filed August 18, 1905. Serial No. 11,767. PUBLISHED FEBRUARY 13, 1906.

51,298. OLIVE-OIL. LOS ANGELES OLIVE GROWERS ASSOCIATION, Los Angeles, Cal.

The word "SYLMAR."

Filed April 25, 1905. Serial No. 2,984 PUBLISHED FEBRUARY 13, 1906.

51,299. STRINGS FOR VIOLINS. LYON & HEALY, Chicago, Ill.

The representation of a goat's head.

Filed August 7, 1905. Serial No. 11,375. PUBLISHED FEBRUARY 13, 1906.

51,300. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "THE UNION WHITE LEAD MANUFACTURING COMPANY."

Filed August 19, 1905. Serial No. 11,810. PUBLISHED FEBRUARY 13, 1906.

51,301. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words "JEWETT & SONS." Used ten years.

Filed August 19, 1905. Serial No. 11,814. PUBLISHED FEBRUARY 13, 1906.

51,302. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words and abbreviation "THE ULSTER LEAD Co." Used ten years.

Filed September 11, 1905. Serial No. 12,442. PUBLISHED FEBRUARY 13 1906.

51,303. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words and abbreviations "J. H. MORLEY & Co. CLEVELAND." Used ten years.

Filed September 11, 1905. Serial No. 12,443. PUBLISHED FEBRUARY 13, 1906.

51,304. FLOUR MADE FROM WHEAT. SILVERSON MILLING Co., New Ulm, Minn.

The representation of a landscape with a lake in the foreground, upon which is the representation of a swan, and the word "ELECTRICITY," all of which appear upon a panel which has on its lower portion the representation of electric flashes.

Filed April 8, 1905. Serial No. 830. PUBLISHED JANUARY 2, 1906.

51,305. TARRED ROOFING-FELT. W. H. RANKIN COMPANY, Elizabeth, N. J.

The word "VIGILANT," associated with the representation of the racing-yacht *Vigilant*. Used ten years.

Filed August 21, 1905. Serial No. 11,867. PUBLISHED FEBRUARY 13, 1906.

51,306. CANNED FRUITS AND VEGETABLES. THE WEIDEMAN COMPANY, Cleveland, Ohio; Chicago, Ill., and New York, N. Y.

The word "COMMODORE," partly inclosed in an ornamental scroll, and the representation of the monument of Commodore Oliver Hazard Perry erected in the city of Cleveland, State of Ohio.

Filed April 26, 1905. Serial No. 3,041. PUBLISHED FEBRUARY 13, 1906.

51,307. CANNED FRUITS AND VEGETABLES. THE WEIDEMAN Co., Cleveland, Ohio; Chicago, Ill., and New York, N. Y.

The representation of a corner building having a tower thereon and the number "1861" placed over the building, the tower dividing the number, "18" being on the left and "61" on the right side, The tower is provided with clock-dials and a flagstaff from which floats a pennant. In front of the building is a street scene showing drays filled with goods. Below the picture are two curvilinear panels with pointed ends, and on each side is an ornamental border. Used ten years.

Filed April 26, 1905. Serial No. 3,042. PUBLISHED FEBRUARY 13, 1906.

51,308. MEN'S COATS, TROUSERS, AND VESTS. JOSEPH YESKA, New York, N. Y.

Monograms representing the letters "J" and "Y," between which appear the representations of the obverse and reverse sides of a medal, one slightly overlapping the other. On the obverse side is the representation of a seated female figure holding a wreath and on the reverse side the words "PRIZE MEDAL" arranged around a circle that is crossed by lines radiating from the center of the medal. Used ten years.

Filed April 17, 1905. Serial No. 2,003. PUBLISHED FEBRUARY 13, 1906.

51,309. KNIT UNDERWEAR. ABRAHAM & STRAUS, Brooklyn, N. Y.

The word "ABRAST" arranged on the representation of a belt.

Filed May 4, 1905. Serial No. 4,584. PUBLISHED FEBRUARY 13, 1906.

51,310. CERTAIN NAMED TOOLS. THE ARMSTRONG MFG. Co., Bridgeport, Conn.

The monogram of the letters "F A" upon the representation of a shield.

Filed April 26, 1905. Serial No. 3,464. PUBLISHED FEBRUARY 13, 1906.

51,311. CORSETS. ARTISTS' MODEL CORSET Co., Cleveland, Ohio.

The words "ARTISTS' MODEL" arranged with two parallel lines under all except the first and last letters of said words.

Filed May 4, 1905. Serial No. 4,232. PUBLISHED FEBRUARY 13, 1906.

51,312. CRACKERS, CAKES, AND BREAD. AUSTIN, YOUNG & Co., Chelsea, Mass.

The representation of a figure resembling a fleur-de-lis inclosing a monogram of the letters and character "A Y & Co."

Filed November 6, 1905. Serial No. 14,431. PUBLISHED FEBRUARY 13, 1906.

51,313. CONDENSED MILK AND EVAPORATED CREAM. BORDEN'S CONDENSED MILK Co., Jersey City, N. J., and New York, N. Y.

The words "GILT EDGE."

Filed October 17, 1905. Serial No. 13,702. PUBLISHED FEBRUARY 13, 1906.

51,314. MEDICINAL PREPARATION. CALEB D. BRADHAM, Newbern, N. C.

The word "KOLADINE."

Filed June 12, 1905. Serial No. 7,979. PUBLISHED FEBRUARY 13, 1906.

51,315. CEREAL COFFEE. BUFFALO PURE FOOD COMPANY, Buffalo, N. Y.

The word "URABEST."

Filed November 29, 1905. Serial No. 13,984. PUBLISHED FEBRUARY 13, 1906.

51,316. WHISKY. GEORGE COHN, Louisville, Ky.

The words "LONE OAK."

Filed June 8, 1905. Serial No. 7,710. PUBLISHED FEBRUARY 13, 1906.

51,317. LIQUID WAX USED IN SHOEMAKING. CROWN OIL & WAX COMPANY, Wilmington, Del., and Baltimore, Md.

The representation of a crown.

Filed September 15, 1905. Serial No. 12,655. PUBLISHED FEBRUARY 13, 1906.

51,318. OBTUNDENT OR LOCAL ANESTHETIC. EUREKA CHEMICAL Co., Omaha, Nebr.

The letters "N A" and a conventional three-leaf figure comprising a central pendent leaf and side leaves, the letters being arranged in the spaces between said central leaf and the side leaves.

Filed July 26, 1905. Serial No. 10,850. PUBLISHED FEBRUARY 13, 1906.

51,319. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The word "CHAMPION."

Filed December 22, 1905. Serial No 15,587. PUBLISHED FEBRUARY 13, 1906.

51,320. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

A representation of a boy sitting astride a wall and blowing a trumpet, associated with the words "SOUTHERN STANDARD."

Filed December 26, 1905. Serial No. 15,630. PUBLISHED FEBRUARY 13, 1906.

51,321. CANNED SALMON. FIDALGO ISLAND PACKING Co., Anacortes, Wash.

The representation of a bunch of corn-flowers, associated with the words "CORN FLOWER BRAND."

Filed September 25, 1905. Serial No. 12,982. PUBLISHED FEBRUARY 13 1906.

51,322. CANNED SALMON. FIDALGO ISLAND PACKING Co., Anacortes, Wash.

The representation of a circular wreath of laurel leaves and berries containing two branches with crossed stems, associated with the words "LAUREL WREATH BRAND."

Filed September 25, 1905. Serial No. 12,983. PUBLISHED FEBRUARY 13, 1906.

51,323. TOOTH-PASTE. J. M. GROSVENOR & Co., Boston, Mass.

The word "KREMLIN." Used ten years.

Filed August 3, 1905. Serial No. 11,217. PUBLISHED FEBRUARY 13, 1906.

51,324. BAKING-POWDER. J. D. & R. S. CHRISTIAN Co., Richmond, Va.

The word "REX" and the pictorial representation of a spoon and of a page or child carrying a pan of cakes. Above the representation of the spoon are the words "ONE SPOON," and below are the words "BAKING POWDER."

Filed August 16, 1905. Serial No. 11,690. PUBLISHED FEBRUARY 13, 1906.

51,325. HAMS, SHOULDERS, AND BACON. THE J. & F. SCHROTH PACK. Co., Cincinnati, Ohio.

The word "FOUNTAIN" and a pictorial representation of a fountain comprising a statue supported upon a central column surrounded at the base by statues rising from a basin from which water discharges in streams into a larger basin or tank having statues located on the rim.

Filed October 24, 1905. Serial No. 13,902. PUBLISHED FEBRUARY 13, 1906.

51,326. CERTAIN NAMED TOILET PREPARATION. THE KNY-SCHEERER COMPANY, Brooklyn, N. Y.

The word "ZEOTOO."

Filed July 22, 1905. Serial No. 11,526. PUBLISHED FEBRUARY 13 1906.

51,327. FLAVORING EXTRACTS. THE LION EXTRACT CO., Winnsboro, S. C.

The words "RED LION," associated with the heraldic figure of a red lion rampant.

Filed October 5, 1905. Serial No. 13,302. PUBLISHED FEBRUARY 13, 1906.

51,328. CHILDREN'S UNDERWAISTS. NAZARETH WAIST CO., Reading, Pa., and New York, N. Y.

A keystone with the outlines of a waist therein and the word "NAZARETH" printed or woven over the waist within the keystone.

Filed April 8, 1905. Serial No. 861. PUBLISHED FEBRUARY 13, 1906.

51,329. WHEAT-FLOUR. O. W. PEIRCE COMPANY, La Fayette, Ind.

The words "RED RIBBON" inclosed in a circle having an ornamental border and the figure of a ribbon placed under said words, the ribbon having a bow-knot arranged midway of its length and crossing the horizontal diameter of said circle, its ends projecting at each side. Arranged within the upper arc of the circle, above the words "RED RIBBON," are the letters and words "O. W. PEIRCE Co.," and in the lower arc of the circle, below the figure of the ribbon, occur the words "HIGH PATENT FLOUR." Between the ribbon and these words is arranged an ornamental spacing mark.

Filed October 20, 1905. Serial No. 13,789. PUBLISHED FEBRUARY 13, 1906.

51,330. PRESS-BOARD OR PRESS-PAPER. THE ROGERS PAPER MFG. CO. INC'D, Manchester, Conn.

The conventional fleur-de-lis figure arranged within a rectangular field, the latter having at each upper corner thereof the figure of a shield upon which appears the letter "R," and the figures "1832" arranged within the upper part of the field and divided by the central leaf of the fleur-de-lis figure.

Filed August 23, 1905. Serial No. 11,947. PUBLISHED FEBRUARY 13, 1906.

51,331. MEDICINE FOR DISEASES PECULIAR TO FEMALES. ALEXANDER O. SCHMIDT, San Francisco, Cal.

The word "ANTEVITA."

Filed September 11, 1905. Serial No. 12,473. PUBLISHED FEBRUARY 13, 1906.

51,332. COFFEE. SCHWABACHER BROS & CO. INC., Seattle, Wash.

The representation of a gold shield hung by a chain from a gold rod. Above the shield are printed the words "GOLD SHIELD." Back of the shield is the representation of a red-brick wall, from which the rod bearing the gold shield extends out.

Filed August 21, 1905. Serial No. 11,834. PUBLISHED FEBRUARY 13, 1906.

51,333. TEA. WILLIAM E. SIBLEY, Freeport, Ill.

The word "EMPEROR."

Filed April 8, 1905. Serial No. 795. PUBLISHED FEBRUARY 13, 1906.

51,334. WHISKY. STERN BROTHERS, Kansas City, Mo.

The words "OLD DANIEL," associated with a picture of Daniel in the lion's den inclosed in a rectangular-shaped border surmounted by a semicircular panel.

Filed July 15, 1905. Serial No. 10,383. PUBLISHED NOVEMBER 7, 1905.

51,335. CHEMICAL COATING. TOCH BROTHERS, New York, N. Y.

The word "PLASTERTOX."

Filed August 12, 1905. Serial No. 11,590. PUBLISHED FEBRUARY 13, 1906.

51,336. COTTON DUCK. WILLIAM E. HOOPER & SONS CO. OF BALTIMORE CITY, Baltimore, Md.

The arbitrary word-symbol "HOOPERWOOD."

Filed April 26, 1905. Serial No. 3,170. PUBLISHED FEBRUARY 13 1906.

51,337. TOPICAL REMEDIES. JAMES F. BALLARD, St. Louis, Mo.

The word "SCROFONOL."

Filed June 19, 1905. Serial No. 8,474. PUBLISHED FEBRUARY 13, 1906.

51,338. CROUSTADES. FERDINAND BEAUMONT, New York, N. Y.

The letters "F. B."

Filed June 7, 1905. Serial No. 7,586. PUBLISHED FEBRUARY 13, 1906.

51,339. REMEDY FOR SKIN DISEASES. GEORGIE A. COLEMAN, Washington, D. C.

A portrait of Zella Shell, showing lilies at each of her shoulders and the word "LIBERTY" on a panel arranged on her breast.

Filed August 31, 1905. Serial No. 12,126. PUBLISHED FEBRUARY 13, 1906.

51,340. BAKING-POWDER. CRESCENT MANUFACTURING CO., Seattle, Wash.

The word "CRESCENT," associated with the representation of a crescent.

Filed April 26, 1905. Serial No. 3,068. PUBLISHED FEBRUARY 13, 1906.

51,341. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The words "ALL RIGHT." Used ten years.

Filed December 22, 1905. Serial No. 15,582. PUBLISHED FEBRUARY 13, 1906.

51,342. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The words "TRIUMPH OLD METHOD." Used ten years.

Filed July 3, 1905. Serial No. 9,608. PUBLISHED FEBRUARY 13, 1906.

51,343. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "RAYMOND." Used ten years.

Filed July 3, 1905. Serial No. 9,617. PUBLISHED FEBRUARY 13, 1906.

51,344. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "ALLEGHENY." Used ten years.

Filed July 3, 1905. Serial No. 9,618. PUBLISHED FEBRUARY 13, 1906.

51,345. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "OAKMONT." Used ten years.

Filed July 3, 1905. Serial No. 9,619. PUBLISHED FEBRUARY 13, 1906.

51,346. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "FAVORITE."

Filed July 3, 1905. Serial No. 9,623. PUBLISHED FEBRUARY 13, 1906.

51,347. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.

The word "DAISY."

Filed July 3, 1905. Serial No. 9,624. PUBLISHED FEBRUARY 13, 1906.

51,348. REMEDIES FOR SKIN AND SCALP DISEASES. OTTO J. HARTWIG, Chicago, Ill.

The hyphenated word "SKIN-A-FIRE."

Filed June 17, 1905. Serial No. 8,426. PUBLISHED FEBRUARY 13, 1906.

51,349. TOOL-STEEL AND STEEL BARS, RODS, AND SHEETS. HAWKRIDGE BROTHERS, Boston, Mass.

The word "HAWK." Used ten years.

Filed September 2, 1905. Serial No. 12,172. PUBLISHED FEBRUARY 6, 1906.

51,350. REMEDY FOR CATARRH, HAY-FEVER, AND COLD IN THE HEAD. THE HOME REMEDY CO., South Haven, Mich.

The compound word "FORMALDE-BALM" arranged upon a rectangular panel of a solid color surrounded by a rectangular border.

Filed May 8, 1905. Serial No. 4,673. PUBLISHED FEBRUARY 13, 1906.

51,351. VEGETABLE GERMICIDES. J. HUBBARD & Co., Boston, Mass.

The representation of a siphon having a spray projected from its nozzle, in connection with the words "DR. HUBBARD'S VEGETABLE DISINFECTANT & GERMICIDE."

Filed May 9, 1905. Serial No. 4,837. PUBLISHED FEBRUARY 13, 1906.

51,352. BITTERS. JOHN BARDENHEIER WINE & LIQUOR Co., St. Louis, Mo.

The words "DR. VAN DER BILT'S" and the representaton of the fanciful portrait of the head of a man with long hair, mustache, and goatee and wearing a broad-brimmed hat, associated with a monogram of the letters "J B." Used ten years.

Filed May 6, 1905. Serial No. 4,542. PUBLISHED FEBRUARY 13, 1906.

51,353. BICYCLES. HENRY KEIDEL, Baltimore, Md.

The arbitrary and fanciful word "ARDMORE" on a circular band surrounding the representation of the head of a horse.

Filed June 15, 1905. Serial No. 3,206. PUBLISHED FEBRUARY 13, 1906.

51,354. REMEDY FOR MALARIA, CHILLS, AND FEVER. FRANCIS S. OTT, Sacramento, Cal.

The numeral "3" with the words "DAY MALARIA CURE" arranged within the arms of the said numeral and inclosed in quotation-marks. Used ten years.

Filed May 3, 1905. Serial No. 4,153. PUBLISHED FEBRUARY 13, 1906.

51,355. FILLED GELATIN CAPSULES. JOHN RUTGERT PLANTEN, New York, N. Y.

The word "PERLOIDS." Used ten years.

Filed April 28, 1905. Serial No. 3,393. PUBLISHED FEBRUARY 13, 1906.

51,356. FILLED GELATIN CAPSULES. JOHN RUTGERT PLANTEN, New York, N. Y.

The words and character "PLANTEN'S C & C OR BLACK CAPSULES." Used ten years.

Filed April 28, 1905. Serial No. 3,395. PUBLISHED FEBRUARY 13, 1906.

51,357. POWDERED ACID PHOSPHATE OF LIME. PROVIDENT CHEMICAL WORKS, St. Louis, Mo.

The letters "B. C. T." Used ten years.

Filed April 20, 1905. Serial No. 2,355. PUBLISHED FEBRUARY 13, 1906.

51,358. REMEDY FOR CERTAIN NAMED DISEASES. R. SCHIFFMANN COMPANY, St. Paul, Minn.

The words "DR. R. SCHIFFMANN'S GERMAN ASTHMA CURE." Used ten years.

Filed April 26, 1905. Serial No. 2,900. PUBLISHED FEBRUARY 13, 1906.

51,359. WHISKY. CHARLES H. ROSS & Co., Baltimore, Md.

The words "THOMPSON PURE RYE WHISKEY."

Filed July 7, 1905. Serial No. 9,391. PUBLISHED NOVEMBER 7, 1905.

51,360. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The arbitrarily-selected word "TREMONT." Used ten years.

Filed May 10, 1905. Serial No. 4,968. PUBLISHED JANUARY 16, 1906.

51,361. LIQUID PREPARATION OF SODIUM PHOSPHATE. VOIGT & Co., Chattanooga, Tenn.

The word "SODAMEL."

Filed June 16, 1905. Serial No. 3,343. PUBLISHED FEBRUARY 13, 1906.

51,362. WITHDRAWN.

51,363. WITHDRAWN.

51,364. WITHDRAWN.

51,365. SOAP IN FORM OF CAKES OR BARS. CHAS. W. YOUNG & Co., Philadelphia, Pa.

The words "CYGNET SOAP" and the facsimile signature of the firm of "CHAS. W. YOUNG & Co.," associated with the representation of two cygnets floating upon the water with pond-lilies in the foreground.

Filed April 18, 1905. Serial No. 2,219. PUBLISHED FEBRUARY 13, 1906.

51,366. TOILET SOAP. CHAS. W. YOUNG & Co., Philadelphia, Pa.

The word "CYGNET."

Filed June 16, 1905. Serial No. 3,325. PUBLISHED FEBRUARY 13, 1906.

51,367. REMEDIES FOR THE RELIEF AND CURE OF ASTHMA, CONSUMPTION, AND PULMONARY DISEASES. BENNETT CRAMER SILVER, New York, N. Y.

The word "SACCO."

Filed September 2, 1905. Serial No. 12,174. PUBLISHED FEBRUARY 13, 1906.

LABELS

REGISTERED APRIL 10, 1906.

12,779.—*Title:* "KARDINAL." (For Beer.) ADOLF SCHMIDT'S KLOSTER BREWERY, Brooklyn, N. Y. Filed March 1, 1906.

12,780.—*Title:* "KAISER BEER." (For Beer.) WESTERN BREWING COMPANY, Belleville, Ill. Filed March 14, 1906.

PRINTS

REGISTERED APRIL 10, 1906.

1,620.—*Title:* "DRINK PEPSI-COLA." (For a Health-Drink.) THE PEPSI-COLA COMPANY, Newbern, N. C. Filed February 15, 1906.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

LINDSTROM *v.* LIPSCHUTZ.

Decided January 20, 1906.

1. INTERFERENCE—ACCESS NOT GRANTED TO APPLICATION NOT RELIED UPON IN INTERFERENCE.

Where in an interference proceeding one of the parties admits on cross-examination that an application has been filed on the matter disclosed in certain blue-prints offered in evidence, but the application is not introduced in evidence and is not relied upon for any purpose whatever, *Held* that a request by the other party to the proceeding for access to said application should be denied.

2. INTERFERENCE—TESTIMONY—OFFICE CANNOT COMPEL WITNESS TO ANSWER.

This Office has no machinery for compelling a witness to answer questions.

ON PETITION.

DUMPING-CARS.

Mr. William H. Finckel and *Messrs. Bakewell & Byrnes* for Lindstrom.

Mr. Charles G. Hawley and *Mr. Wallace Greene* for Lipschutz.

ALLEN, *Commissioner:*

This is a petition stating that petitioner is informed and believes that the opposing party filed an application in this Office bearing on the issue in controversy and requesting that if there is such an application access be granted to the same.

During the taking of the deposition of the junior party to this interference, Lindstrom, certain blue-prints were offered in evidence, and upon cross-examination deponent admitted that an application for patent had been filed on the matter disclosed in such blue-prints. Petitioner contends that the evident effort of the junior party is to connect such application with his application involved in this interference, and that, inasmuch as witness refused to answer on cross-examination any question relating to such application, petitioner is entitled to inspect the same, to the end that he may properly "prepare and conduct his defense."

That petitioner is not entitled on the showing made to any information regarding the application to which access is sought seems too clear for argument. The junior party is not attempting to rely upon his application for any purpose whatever. He has seen fit to rest his case on evidence outside of the application, and it is wholly immaterial that such evidence includes matter forming the subject-matter of an application. Such application might have been put in evidence; but it was not, and it is not relied upon by the applicant to show conception or anything else. For this reason the same should be preserved in secrecy, as provided by the statutes. (Sec. 908.)

The petitioner further requests that the witness Lindstrom be compelled to answer fully and truthfully certain interrogatories of petitioner's counsel. As stated in a recent decision rendered in this interference, (*Lindstrom* v. *Lipschutz*, 120 O. G., 904,) this Office has no machinery for compelling a witness to answer questions, and this request cannot, therefore, be granted.

The petition is denied.

LEVERING COFFEE COMPANY *v.* THE UNION PACIFIC TEA COMPANY.

Decided March 14, 1906.

INTERFERENCE—FAILURE TO PRINT TESTIMONY—JUDGMENT.

Where no motion to dispense with the printing of the testimony in interference proceedings was made and no excuse for failure to print was offered by the junior party, *Held* that judgment was properly entered in favor of the senior party.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR COFFEE.

Levering Coffee Company pro se.

Messrs. Munn & Co. for The Union Pacific Tea Company.

ALLEN, *Commissioner:*

This is an appeal by the Levering Coffee Company from the decision of the Examiner of Interferences adjudging The Union Pacific Tea Company to have been the first to adopt and use the trade-mark in issue.

It is said that both parties took testimony, and it appears that The Union Pacific Tea Company printed that taken in its behalf. The Levering Coffee Company failed to print its testimony, and it was because of that failure to print that judgment was entered against it and in favor of the senior party to the proceedings.

In the present appeal it is said:

> Our side of the case seems to have been determined adversely upon the fact that we failed to print our testimony. We have no knowledge of the fact that our opponents printed theirs, as we are not in possession of a copy of the same, and we do not think that our failure to comply with this rule, which does not seem to have been made compulsory by the act of February 20th, 1905, should act as a bar against us.

The act of February 20 says nothing as to printing testimony, but leaves that matter to be controlled by the rules of procedure established under section 26 of the act. Rule 44 says that—

> * * * proceedings on such interference will follow, as nearly as practicable, the practice in interferences between applications for patents.

It is the uniform rule that testimony in interferences will not be considered unless printed, except in those cases where for good cause shown printing is dispensed with and six type-written copies are accepted instead. In the present case no motion to dispense with printing was made and no excuse for the failure to print was offered. It is clear that this Office can enforce the rule in regard to printing only by refusing to consider testimony which is not printed.

The Union Pacific Tea Company having been the first to file application for registration is *prima facie* the owner of the mark, and therefore the judgment of the Examiner of Interferences in its favor is affirmed.

LEWIS & BROTHERS' COMPANY *v.* PHOENIX PAINT & VARNISH COMPANY *v.* NATIONAL LEAD COMPANY.

Decided March 14, 1906.

1. TRADE-MARK INTERFERENCE—ADMISSION OF AMENDMENTS AND DISCLAIMERS.

There is nothing in the trade-mark rules in regard to the admission of amendments and disclaimers, but under Rule 44 they may be entered in accordance with the provisions of Rule 107 of the rules relating to applications for patents.

2. SAME—SAME—PRACTICE.

Where a disclaimer is filed in a trade-mark application involved in an interference, *Held* that judgment should be entered disposing of the claims of the parties to the matter disclaimed.

3. SAME—SAME—SAME.

Where the disclaimer covers only a part of the issue, judgment should be entered as to that part, and if there is any question as to the existence of an interference as to what remains the cases should be referred to the Examiner of Trade-Marks for consideration.

ON APPEAL.

TRADE-MARK FOR PAINTS, STAINS, ETC.

Mr. William T. Norton for John T. Lewis & Brothers' Company.

Mr. T. W. Johnson for Phoenix Paint & Varnish Company.

Messrs. Britton & Gray for National Lead Company.

ALLEN, *Commissioner:*

This is an appeal by the Phoenix Paint and Varnish Company from the decision of the Examiner of Interferences refusing to admit an amendment and disclaimer filed by it in the above-entitled interference.

There is nothing in the trade-mark rules in regard to the admission of amendments and disclaimers, and therefore under the provisions of Rule 44 the authority for the admission of the amendment and disclaimer in this case must be found, if at all, in the rules relating to applications for patents. Rule 107 of those rules provides for the filing of a disclaimer and for the entry of judgment in view thereof. The appellant here does not wish judgment entered upon the disclaimer, but wishes the interference dissolved, and therefore it is not asking for action in strict accordance with Rule 107.

The appellant wishes to disclaim the right to use the mark upon the particular goods specified by the National Lead Company in its application and by amendment to confine its application to specific goods not mentioned by the National Lead Company. The Examiner of Interferences was of the opinion that the particular goods disclaimed and the particular goods to which claim is still made are of substantially the same descriptive properties and that unless and until all of the goods are disclaimed the interference must proceed.

It is unnecessary upon this appeal to determine whether the goods are substantially the same. The question here is as to the procedure rather than the merits. The appellant contends that the Examiner of Interferences should enter the disclaimer and amendment as a matter of course and forward the cases to the Examiner of Trade-Marks to determine whether or not there is an interference between the applications after amendment.

It is believed that after a disclaimer is filed there is no necessity for continuing the interference as to the matter disclaimed; but it is also believed that there should be a judgment entered disposing of the claims of the parties to that matter. Under Rule 107 a judgment is entered based upon the disclaimer, and no reason is seen why the same action should not be taken in trade-mark cases. Where, as in the present case, the disclaimer covers only a part of the issue, judgment should be entered as to that part, and if there is any question as to the existence of an interference as to what remains, the cases should be referred to the Examiner of Trade-Marks for consideration.

The Examiner's action refusing to enter the disclaimer is reversed, and the case is remanded for action in accordance with the views herein stated.

THE ULLMAN EINSTEIN COMPANY *v.* C. H. GRAVES & SONS.

Decided March 14, 1906.

TRADE-MARKS—INTERFERENCE—MOTION TO DISSOLVE—INTERFERENCE IN FACT—CONSENT OF PARTIES.

Where the trade-marks in interference include the words "Walnut Hill" and "Walnut Creek," respectively, but are entirely different in appearance, and the parties to the proceeding join in the request for dissolution, *Held* that doubts, if any exist, should be resolved in favor of their contentions.

APPEAL on motion.

TRADE-MARK FOR WHISKY.

Mr. Arthur E. Wallace for The Ullman Einstein Company.

Mr. Henry W. Williams and *Mr. Henry H. Bates* for C. H. Graves & Sons.

ALLEN, *Commissioner:*

This is an appeal by C. H. Graves & Sons from the decision of the Examiner of Trade-Marks refusing to dissolve the above-entitled interference.

A motion for dissolution was made by The Ullman Einstein Company on the ground that there was no interference in fact, and it thus appears that both parties wish the interference dissolved.

The mark disclosed by C. H. Graves & Sons includes the words "Walnut Hill" and that disclosed by The Ullman Einstein Company includes the words "Walnut Creek." Each mark, however, includes other things, and the two marks are entirely different in appearance. The word "Walnut" is therefore the only thing in common, and it is not believed that it is sufficient to warrant the holding that there would be confusion between the marks. Other words and features added to the word "Walnut" clearly distinguish the marks, and since the parties to this proceeding join in the request for dissolution it is believed that doubts, if any exist, should be resolved in favor of their contention.

The decision of the Examiner of Trade-Marks is reversed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ALEXANDER v. BLACKMAN.

Decided January 18, 1906.

1. INTERFERENCE — EVIDENCE — PRESUMPTION ARISING FROM SPECIAL KNOWLEDGE OF PARTIES.

As between two parties each claiming disclosure of the invention to the other, where one of such parties has a practical knowledge of the art and the other has not there is a strong presumption in favor of the one having such practical knowledge.

2. SAME—SAME—CIRCUMSTANCES INDICATING FALSITY OF TESTIMONY.

Where one of the parties to an interference testifies to a conversation between him and the other contestant relative to a disclosure of the invention by the former to the latter and a clerk in the store in which such alleged conversation took place testifies to precisely the same conversation twenty months after it took place and it appears that at the time the conversation took place such clerk was waiting upon a customer, the remarkable likeness in the two versions under the circumstances indicates a manufactured story, and the testimony is weakened rather than strengthened by the attempted corroboration.

3. SAME—SAME—FAILURE TO CALL WITNESS—PRESUMPTION.

The failure to call a witness who could clear up a number of doubtful points raises the inference that the testimony of such witness would be unfavorable.

4. SAME—SAME—WITNESS FALSIFYING A FACT—PRESUMPTION.

Where a witness falsifies a fact in respect of which he cannot be presumed liable to mistake, courts are bound "upon the principles of law, morality and justice to apply the maxim, '*falsus in uno, falsus in omnibus.*'"

Mr. G. D. Seymour, *Mr. H. A. Seymour*, and *Mr. W. Klingenstein* for the appellant.

Mr. Chester A. Weed for the appellee.

DUELL, *J.*:

A petition for rehearing was filed herein and a rehearing granted by a majority of the court, sitting at the original hearing of the case. Such rehearing was heard by the court, as now constituted, and we have, after a careful examination and consideration of the too-voluminous record, come to the conclusion that the former decision awarding priority to Alexander and reversing the Commissioner of Patents, should be set aside for the reasons, among others, hereinafter set forth.

There are no new or difficult questions of law to be determined, for the question to be passed upon is that of originality of invention, and not one of priority of invention. Its solution depends upon the facts disclosed by the record and it turns upon the credibility of the witnesses and the weight to be given to their testimony, and especially to Alexander and to his testimony. It will be unnecessary to restate the issue for there is no dispute as to its meaning, its patentability or to the right of the true inventor to make it. It is only necessary to say that the invention relates to the art of carpentry and is for a wood flooring made up of blocks composed of two sections interlocked by sliding one upon the other.

The Examiner of Interferences and the Commissioner of Patents found for Blackman, the Examiners-in-Chief for Alexander.

Each party claims to have disclosed the invention to the other at Alexander's clothing store in Meriden, Conn., on September 24, 1900.

Blackman makes no claim to have had even a conception of the invention before that day. Alexander on the contrary asserts a conception of the invention on September 12th; disclosure to others on the 15th; that a drawing was made on the 16th; that he made a block on the 16th and 17th and that wood blocks were made by Currier on the 17th, all these dates being prior to his conversation with Blackman. Blackman's case is a simple one and is clearly set forth; conception and disclosure on the 24th of September, further disclosures to others a few days thereafter, and a reduction to practice October 27, 1900. His application was filed January 14, 1901. Provided he disclosed the invention to Alexander as claimed and that Alexander up to that time had not disclosed the invention to any one, he is clearly entitled to a favorable judgment. It becomes necessary therefore to examine the case presented by Alexander, and to determine whether or not he was in possession of the invention prior to September 24, 1900, and on that day disclosed it to Blackman. In doing this we shall follow the rule laid down by this court in *Beals* v. *Finkenbiner*, (12 App. D. C., 23, 29:)

> In weighing testimony we are not bound to believe a particular fact, testified to by one or more witnesses, simply because they may not have been directly contradicted therein, or impeached generally by evidence tending to show a want of reputation for veracity. The inherent probability or improbability of such a fact is to be tested by the unquestioned circumstances that surround the main transaction or occurrence, as well as by "the ordinary laws that govern human conduct." (*Atlantic Works* v. *Brady*, 107 U. S., 192, 203; *Telephone Cases*, 126 U. S., 567.)

The "main occurrence" in the present case is that of the alleged disclosure of the invention by one to the other. That the conversation relative to the invention took place at the stated time and place is admitted by both.

The invention was in the woodworking art. Blackman was a carpenter, Alexander a clothier, and, as he says, knew very little about carpentry. Blackman says he had difficulty in making Alexander understand what he meant by a "dovetail joint," and it was quite natural that Alexander should have asked what it was. Even when testifying in this proceeding his practical knowledge of a dovetail does not seem to have greatly increased, as his definition that it means "a joint that spreads like a dove's tail" is not one that a man having practical knowledge would give. The strong probability is that a man having practical knowledge of an art to which an invention belongs is the one who makes the disclosure to the one unskilled in that art. The one asserting the contrary has to overcome the burden. We think that Alexander has failed to overcome the presumption existing against him. True Alexander says he had lost some money in backing his son-in-law in what he terms the "Mansfield block flooring," but there was nothing in that which would have suggested to a layman the invention in dispute. But to a carpenter it would be the most natural thing in the world to cure the defects in a floor-block composed of parts glued together, by providing the parts of the block with interlocking devices.

A careful consideration of all the facts and circumstances connected with the meeting of the two men, of their previous training and occupations, leads to but one conclusion and that is that Blackman was the one who naturally would have made the invention and disclosed it to Alexander. This presumption is strengthened by the fact that then and there it was arranged that Blackman should make fourteen or sixteen of the blocks and that when made Alexander should test them. Alexander did not give Blackman the block he claims to have made a week or so previous for a guide, nor the two blocks that he claims he had had made on September 17 by Currier. It would seem that if he had three blocks already in hand,

two made by a practical cabinet-maker, he would have said something to Blackman about them and given him one of them as a guide. His silence is suggestive. Alexander offers a corroborating witness in the person of one Hagner, a clerk in his employ. Hagner testifies that he was waiting on a customer and while doing so he overheard part of the conversation between the two men. Nothing to our minds proves more clearly the untruthfulness of Alexander's version of the conversation than the almost word-for-word correspondence between the evidence of the two men on this subject. Hagner was waiting upon a customer at the time, and his attention must have been directed mainly to her. He says that during the conversation he went to the bundle-counter to do up the packing of clothing the customer had purchased and on his return heard more of the conversation. It is a curious fact that he takes up the conversation as testified to by Alexander so there is no break in it. Compare the testimony of these men:

Alexander says:

Blackman haven't you told me that you were a carpenter at one time? He replied "I worked at it thirty-five years ago." * * * I want to get your opinion on it, I explained the block to him and I asked him whether he thought that through contraction and expansion of the wood whether that top would split or the dovetails would break off; on that he replied I don't think so but I'll find out for you, I then asked him how he could find out, he said, I have a niece here in Meriden she is married to a woodworker that works in the big shop which means the Britannia shop Meriden, his name is Kelsey, that he could find out from him. I wasn't satisfied with that so I told him that I would like to have it tested in my own house, I then said Blackman, you could do me a favor you are living so near Hartford the next time that you go into Hartford I wish you would go into one of those large mills and see if they have a dovetailing-machine that can make this block, as the only way I can get them made here is by hand and that is too expensive, if you can get them made there, order sixteen blocks as that would just make a square, he said I will do so if you want me to but the man I am stopping with is a carpenter and we can get them out for you by hand and it will not cost you much more, if any more, as if you had them made by a machine, on that * * * then he asked me for some clothes, he said that he was of about the same size as I am and wears about the same size clothes if I had any that I won't wear any more I should let him have it as the ones he had on were the only ones he had and they were looking shabby, I said I had and I walked to a still further part in the store and got a suit of clothes of mine from there and a pair of shoes of mine and I gave it to the young man that was standing there arranging the stock to put them up for Mr. Blackman, at the time Blackman remarked to him do them up strong as I can't take them with me where I am going I shall send them home by express, he then remarked that the winter is coming on and he did not have an overcoat, and if I had one that I wouldn't wear any more this winter to think of him, I told him he needn't bother about it, I would see that he gets one, something to that effect, he then thanked me and said any time that I can be of any assistance to you on that flooring I will be only too glad to do so."

Hagner says:

I heard Mr. Alexander ask Blackman if he wasn't a carpenter at one time. Mr. Blackman said I worked at it some thirty-five years ago. Mr. Alexander said "I've got something here I'd like to get your opinion on," and he went on explaining the idea of the block; Mr. Alexander asked Mr. Blackman if he thought the dovetails would break off or the top would split in any way, Mr. Blackman said "I don't know but I'll find out for you;" Mr. Alexander asked him "How could he find out;" Mr. Blackman said "A niece of mine is married to a man that works in the big shop and he's a woodworker, he could tell me:" Mr. Alexander said "I'd like to test them blocks myself, but the only way that I can have them made here is by hand, and that would cost too much. As you are living so near to Hartford I wish you would do me the favor and go into some of the mills up there where they would have such machines to do that kind of work, if so, I wish you would order me sixteen blocks, that would just make a square when laid;" Blackman said "I'll do so if you want me to but the man I am stopping with is a carpenter and between the both of us we can make them nights for you and it wouldn't cost you any more, if any more."

At this point Hagner says he went out and on his return he continued:

After I came back I heard Mr. Blackman say something about "old clothes;" he said: "Mr. Alexander, if you have got any clothes which you wouldn't wear any more I wish you would let me have them because this is about all I've got;" Mr. Alexander went over to a closet, he got out an old suit of his and a pair of shoes and gave them to me to do up; as I was doing them up Mr. Blackman remarked to me "Do them up good and strong" as he wanted to send them home by Adams Express because he wasn't going home from here; he also said something about an overcoat; if Mr. Alexander had an old overcoat that he wouldn't use any more to "think of him;" Mr. Alexander said "I won't forget you." As Mr. Blackman was leaving the department, he says to Mr. Alexander "If I can be of any assistance to you at any time on the subject of parquet flooring I will gladly do so for what you have done for me."

It appears therefore that Hagner, Alexander's clerk, remembers a conversation he chanced to overhear while waiting upon a customer, and repeats it twenty months after it occurred in almost the very words used by Alexander in giving his version of the conversation. It does not ring true. It bears the earmarks of a manufactured story. Alexander's testimony as to the conversation would have more weight were it not for the attempted corroboration.

The record further discloses that Alexander not only gave Blackman some of his cast-off clothes that day but in the following October he went to New Britain to see Alexander and gave him a new overcoat and a slightly-worn hat. When he wished to learn anything about wood floorings he seems to have turned to Blackman, and Greek-like bore gifts. Later on when the interference was declared he offered Blackman various sums to withdraw his application. Ordinarily an effort to end a litigation by compromise is to be commended, but when in an interference the question at issue is one of originality and not of priority, such offers as Alexander made are open to suspicion for Alexander's honor was involved in the proceeding, and if his story be true, he had a perfect case.

Again it seems quite improbable that Blackman would have given September 24 as his earliest date if Alexander had explained to him the invention on that very day by means of his so-called "sketch-block." If Alexander could prove that he was in the possession of the invention before the 24th of September (as he undoubtedly was if he then explained the invention to Blackman by means of the sketch-block) Blackman would have been beaten at the outset, as Blackman would well know.

We cannot believe that Alexander disclosed the invention to Blackman. If, however, we find that he had disclosed the invention to others before Blackman and he met on September 24, 1900, then we must admit that notwithstanding the inherent improbability of his story he is the true inventor.

We have carefully considered the testimony of Alexander and his witnesses as to his alleged prior possession of the invention. Unless we can credit Alexander's testimony we cannot credit that of his witnesses. His testimony is the corner-stone of the arch and if it falls the testimony of the others falls with it. We do not mean to say that his uncorroborated testimony as to prior possession of the invention would be sufficient. Rather, if his story is untrue the testimony of the others amounts to nothing, and they have either testified falsely, or have been persuaded into believing that the dates he gives are the correct ones, when, as a matter of fact, they are mistaken as to dates and have been led into very grave errors, to put it mildly. As Circuit Judge Wallace aptly put it in an analogous case, (*American Bell Tel. Co.* v. *Peoples Telephone Co.*, 22 F. R., 309:)

Thus Drawbaugh is corroborated by a cloud of witnesses whose testimony tends to substantiate his narrative. * * * In order to ascertain what effect is to be given to the corroborative proofs, it is necessary to determine whether Drawbaugh is an honest witness, or whether he has intentionally falsified collateral facts, and is therefore to be deemed discredited.

Alexander says that he conceived the invention on September 12, 1900; that he went to the store of one Rudolph where he ordered some groceries, and selected a box as his daughter wished to send a jar of preserves to a friend; that he took the box with him, and noticing its matched

corners it occurred to him that if dovetails could be arranged flatwise an interlocking block could be made that would hold without glue, that after thinking considerably about it he took a sample block of the old glued flooring that was lying on his desk and inked dovetails on it and put the date Sep. 12 on it in two places; that he did nothing further until the 15th when he showed it to his son-in-law Mansfield; that one of his salesmen Hagner came up at that time and picked up the block and noticed the date on it; that the same evening he disclosed the invention to Harris and Ahern; that from the former he borrowed some tools to use at his home in making a block; that on the 16th he started to make the block and on the 17th he finished it; that his son-in-law Mansfield, and his own wife and daughter saw him making the block; that on the 16th Mansfield, who is a draftsman made a drawing of the device; that on the 17th, the day he finished the block he gave an order to one Currier a carpenter in Meriden, to make two blocks, which were delivered to him about half-past six that evening; that he thinks he showed the blocks the same evening to Mansfield; and that the next day he showed the block he had himself made to one Hull.

There is much to cast doubt upon this story. Alexander was a merchant and it appears that he had boxes of all sizes in his store, and boxes with matched corners. Is it probable that having boxes in his own store he would, on his way to his own store order a box from another merchant? Is it probable that the box suggested to him the invention, when other boxes with matched corners had not led him to the invention—especially when it is shown that he had tables in his store, with drawers having "dovetail" corners, of which he was very proud, which had not helped him? His denial that he had such boxes and his mutilated ledger which it is claimed would have shown that he had not testified truthfully on this point bear very heavily against the truth of his story. His "sketch-block" could have been made as well after his interview with Blackman as on September 12—and better because we doubt whether he had enough knowledge of "dovetails" on the earlier date to make a sketch of the device. His alleged disclosures made on September 15 were made to parties whom ordinarily an inventor, as Alexander claims he was, would not have taken into his confidence. This leaves out of consideration Mansfield, his son-in-law. And here it may well be said that the failure to call Mansfield, or to give any reason for not calling him, puts Alexander's case in very bad light. Mansfield had gotten Alexander involved in a wood-flooring scheme, which Alexander says was known as the "Mansfield." He was versed in and interested in the subject. Alexander showed him the "sketch-block;" Alexander says that Mansfield had seen him making the block on September 16; had made a drawing of the invention for him on that date; had made the entry in the books by which Hagner had fixed the date of the disclosure to him. Mansfield could have cleared up many of the weak points in Alexander's case. He was not called. What is the logical conclusion from the failure to call such a witness; or to excuse his absence? The inference is not only unfavorable, but the presumption is that the testimony would be unfavorable. (*Graves* v. *United States*, 150 U. S., 118; *Ruete* v. *Elwell*, 15 App. D. C., 21; *Flora* v. *Powrie*, 23 App. D. C., 195; *Gallagher* v. *Hastings*, 21 App. D. C., 88.) His wife and daughter he says also saw him make the block. Neither is called. Had he sufficient evidence without them his omission to call them might have been excused, but under the circumstances of the case, it bears against him. Alexander claims to have completed his block on September 17. On that same day he says he ordered two blocks made by one Currier and that he received them about half after six that evening. It is to be noted that he had difficulty in making Currier understand what he wanted, and that finally he made a little sketch for him. Currier was a woodworker—a cabinet-maker—and as such he must necessarily have been familiar with "dovetails." The fact that Currier failed to understand Alexander argues rather that Alexander did not know enough to explain what he wanted. At the time he says he went to Currier he had a drawing, a sketch-block, and a regular block, all embodying his invention, and yet he did not take a single one of these with him. Comment seems unnecessary.

Alexander's story is plausible but there is enough in it to cast the gravest doubt upon it. It is a story that could easily be manufactured, and we cannot escape the conviction that it is not a truthful statement of facts.

The seeming inherent improbabilities of Alexander's testimony may be overcome by the proofs offered in corroboration, or it may be made to appear more plainly that the story is a made-up one. We cannot set forth at length this corroborating testimony. In the main we agree with the Commissioner of Patents, who has fully reviewed it, and with the conclusions drawn therefrom. We think it does not strengthen Alexander's case. Rudolph, the grocer, who attempts to fix the date of Alexander's getting a box from him by a sales-slip, knows nothing about the style of box, nor is there anything on the sales-slip which shows it. The place on the slip where the word box is written is not where it would appear if the story is true. We cannot go into details but the sales-slip and Rudolph's testimony are worthless as an aid to Alexander.

Ahern's testimony is not entitled to any credit, certainly not as fixing any correct date of disclosure to him. Hagner, Alexander's clerk, is also not entitled to credit. He could not have seen Ahern in Alexander's store on September 15 for there is no evidence that Ahern was there on that date. His testimony on that point is overcome by that of Gardner and Mrs. Lawton. The improbability of Harris's statement that he made a memorandum of the tools that Alexander wished to borrow from him on a sales-slip, which according to the custom of that store, (and in fact of nearly all other stores) was done up with the goods purchased, and his statement that he saw Alexander showing Ahern the "sketch-block" on the evening of September 15, when Ahern is not shown to have been in the store, are sufficient to rob his testimony of any weight. The Examiner of Interferences has carefully and fully reviewed Hull's testimony and shown that it is not entitled to any credit. We can apply to Hagner, Ahern and Harris the rule that where a witness falsifies a fact in respect of which he cannot be presumed liable to mistake, courts are bound "upon the principles of law, morality and justice to apply the maxim, *falsus in uno, falsus in omnibus.*" (*The Trinidad*, 7 Wheat., 283.) In fact the particularity of testimony of the various corroborating witnesses is such as to cast doubt upon their testimony, for none of the witnesses are men of trained minds who could hold in memory for a

period of a year and a half the petty details in reference to which they testify so positively.

This leaves for consideration the testimony of Ryan and Currier to be considered. It was their testimony, in connection with the book entries referred to by them, that was deemed sufficient by the court at the former hearing to prove that Alexander was in possession of the invention and had had two blocks made prior to September 24, 1900.

Let us review the proofs relating to and the circumstances surrounding the making of the two blocks by Currier. We must in view of what we have said disregard Alexander's testimony for we believe that he is not entitled to any credit.

Two witnesses are called to prove the making of the blocks by Currier. The important question is *when* they were made. James W. Ryan, a bookkeeper in the employ of Herman E. Hubbard until November 20, 1900, testifies that Alexander came to Hubbard's shop to have some work done and he, Ryan, directed him to Dewey and Currier who conducted the cabinet department of Hubbard's shop. Ryan in addition to his other duties kept Dewey and Currier's books. He went to Currier for the charge made against Alexander so that he could make out a bill. He thinks Currier opened a book and called off the items to him, and that he put them on the back of an envelop which he did not preserve. He entered the charges in the journal kept by Hubbard. The journal is produced and contains an entry of a charge against Alexander under date of September 17, 1900. Ryan cannot tell when he made the entry in the journal. He did not see the items that Currier read him from his book. He knows nothing about the date and so far as Hubbard's journal and ledger are concerned they are of no value in proving when Alexander came to the shop or when the work was done. They are not books of original entry. The charges against Alexander were copied from memoranda on the back of an envelop, and when so copied were items read off by Currier to Ryan. Ryan's testimony only shows that some time Alexander came to Hubbard's shop and had some work done. It appears further that Ryan changed the kind of pen he was writing with up to October 1, 1900, and that the Alexander entry was made after the change of pens, which leads Ryan to express the opinion that the entry was made not earlier than October 1, 1900, and might have been as late as the 6th or 7th. He is also of the opinion that as the entry was not made earlier than October 1 he could not have received it many days before. The bill against Alexander is made out under date of October 20, 1900. It was the custom to send out bills on the first of each month. He also admits that he might have written down 17 for 27. It is plain that Ryan wrote down what Currier told him and even at that he may have made a mistake. His testimony is of no value as proving the time when the blocks were made. Such proof rests therefore upon Currier's testimony and upon his memorandum-books. Currier produced his note-book from which the charges against Alexander were taken. The petition for the rehearing was largely based upon allegations of changes made in this book, the discrepancies in the book and the consequent unreliability of Currier's testimony—all these of course taken in connection with the testimony of Alexander and his other witnesses. An examination of the book, and the entries therein contained, and the order in which they appear, lead us to the conclusion that it is entitled to little probative force. It is apparent that the entries in this book were not made in the order in which the work they related to was done. The second and later entries on given pages often bear an earlier date than the first entry. This occurs so often that it is impossible to find that the entries were made in the regular course of business. They rather show that they were made at such times as suited the whim, convenience or memory of Currier. They were entered in pencil and could of course be easily altered if desired. It is charged that the entry of September 17 has been changed from September 29 to September 17. That the date has been changed is, we think, apparent. We are convinced that an erasure was made. The figures "17" are much heavier and darker than the balance of the Alexander entry. Using a magnifying-glass the figure "9" appears quite plainly. While we are not prepared to say that the figure preceding it is a "2," we are clearly of the opinion that it is apparent that erasures and changes have been made in the entry, which discredit it, and that the entry does not prove that the date when Currier made the blocks is correctly and truthfully given as September 17. Standing by itself we cannot give credit to this book. There is one fact that throws some light on the subject. Alexander under date of September 29 telegraphed Blackman not to make the blocks. Why was this telegram sent? Alexander says because he saw a bar in a café made by Ahern & Co. and he thought that it would be better to have the blocks made by machine. He did not know when he sent the telegram that Ahern & Co. had a dovetailing-machine. It is more likely that he sent it because Currier had made or was making some blocks. It is impossible at this time to set forth all the circumstances that cast discredit on Currier's testimony and on his book. It seems that he had two books. The second one he kept at home and copied into it the entries from the book he kept at the shop or with him. It is conclusively shown that the entries in the two books differ materially in many places. The two books, taken together, evidence more clearly how carelessly Currier kept his books. They are insufficient to overcome the probabilities in Blackman's favor, and the many incorrect and untruthful statements of Alexander and his witnesses. True Currier testifies that the work was done on or before September 17, but in so testifying he is obliged to rely upon the entries in his book which clearly show that erasures and changes have at some time and by some one been made. Even when a witness has sworn positively to an alleged fact the tribunal called upon to pass upon the testimony of such witness may, for good and sufficient reasons, refuse to credit it. (*Greenwood* v. *Dover*, 23 App. D. C., 251.) The circumstances of this case are such that, when taken in connection with Currier's two books and his testimony relating thereto, we are unable to give credit to his testimony.

There are many other phases of the case which we have considered but cannot with the time at our disposal make reference to. In the words of the Commissioner of Patents, "A very careful consideration of the voluminous records, taking into account the numerous circumstances tending to discredit Alexander's claims and support those of Blackman, leads to the conviction that Blackman is the one who originated the invention in controversy."

Believing that the former conclusion of the court was erroneous we are compelled to find that Blackman was the true inventor of the subject-matter in controversy and is entitled to a favorable award. So believing it follows that the decision of the Commissioner of Patents must be affirmed. It is accordingly so ordered. The clerk of the court will certify this opinion, and the proceedings in this court in the premises, to the Commissioner of Patents according to law. Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 7. TUESDAY, APRIL 17, 1906. PRICE—$5 per year.

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	1	Nevada	....	....
Alaska, District of	....	....	New Hampshire	3	....
Arizona Territory	2	....	New Jersey	33	10
Arkansas	3	1	New Mexico Ter't'y	....	....
California	26	6	New York	88	72
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Connecticut	19	6	North Dakota	2	....
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Illinois	65	31	South Carolina	1	5
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Argentina	....	....	Netherlands	....	....
Austria-Hungary	4	....	Newfoundland	....	....
Belgium	2	....	New South Wales	....	....
Brazil	....	....	New Zealand	2	....
British West Indies	....	....	Norway	....	....
Canada	7	....	Persia	....	....
Cape Colony	....	....	Queensland	....	....
Chile	....	....	Roumania	....	....
China	....	....	Russia	....	....
Costa Rica	....	....	San Salvador	....	....
Cuba	....	....	Scotland	1	1
Denmark	....	....	South Australia	....	....
Ecuador	....	....	Spain	....	....
England	23	6	Sweden	3	....
France	13	3	Switzerland	2	1
Germany	17	5	Tasmania	1	....
India	1	....	Transvaal, South Africa	2	....
Ireland	....	....	Victoria	1	....
Italy	....	....			
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Notice.

(ORDER No. 1,664.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 13, 1906.

The practice in regard to the hearing and decision of cases by two members of the Board of Examiners-in-Chief as announced in *Kyle* v. *Corner* (79 MS. Dec., 90) is modified as follows:

During the absence of one member of the Board of Examiners-in-Chief the other two members may hear and determine cases and are not required to continue them at the mere request of the parties. Where the two members hearing the case are unable to agree, they may set the case down for rehearing before three members either before or after announcing judgment.

F. I. ALLEN,
Commissioner.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 9, 1906.

Rufus D. Slosson, his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of E. R. Durkee & Company, of 540 Washington street, New York, N. Y., for registration of a trade-mark and a trade-mark registered to Rufus D. Slosson, of 475 Warren avenue, Chicago, Ill., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Rufus D. Slosson and also to his attorney of record, G. L. Chapin, 152 Dearborn street, Chicago, Ill., having been returned undelivered, notice is hereby given to the said Rufus D. Slosson, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents, in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 10, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
	In arrears under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 3	Feb. 20	265
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 2	Feb. 15	438
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Mar. 28	Mar. 15	232
309	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Mar. 27	Jan. 22	333
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Mar. 27	Sept. 2	420
	Under one month.			
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Mar. 26	Feb. 16	397
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Mar. 26	Nov. 13	720
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Mar. 24	Mar. 12	220
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Mar. 24	Jan. 8	290
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 24	Dec. 22	334
332	X. Carriages and Wagons.....	Mar. 24	Nov. 11	959
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Mar. 24	Sept. 27	730
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Mar. 22	Dec. 1	623
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Mar. 22	Oct. 16	685
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 22	Sept. 2	772
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 20	Feb. 14	339
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 15	Feb. 15	245
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 14	Dec. 21	431
370	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Mar. 14	Oct. 21	727
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 13	Sept. 1	748
337	XVIII. Steam-Engineering, etc ...	Mar. 12	Dec. 26	433
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bonding, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 12	Dec. 5	324

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Mar. 12	Sept. 12	632
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Aug. 14	1238
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 10	Jan. 26	466
	Between one and two months.			
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Mar. 9	Jan. 16	503
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 8	Mar. 8	381
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 8	Jan. 18	603
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 8	Dec. 4	438
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 6	Nov. 13	653
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 6	Oct. 12	750
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 3	Sept. 12	653
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 1	Oct. 30	525
109	XVI. Telegraphy and Telephony..	Feb. 24	Jan. 15	325
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 10	Oct. 14	783
	Between two and three months.			
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Feb. 6	Nov. 14	516
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Jan. 29	Oct. 21	346
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Jan. 29	June 29	1132

Total number of applications awaiting action 20,609

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Between one and two months.			
	Trade-Marks.....	Mar. 7	Feb. 8	2143
	Under fifteen days.			
	Designs.....	Apr. 4	Mar. 10	72
	Labels and Prints.....	Apr. 2	Apr. 3	32

Trade-Marks.

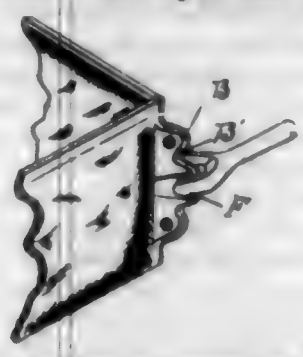
The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED APRIL 17, 1906.

817,740. LOCKING AND SQUARING DEVICE. EUGENE D. ALLEN, Detroit, Mich. Filed Aug. 17, 1905. Serial No. 274,581.



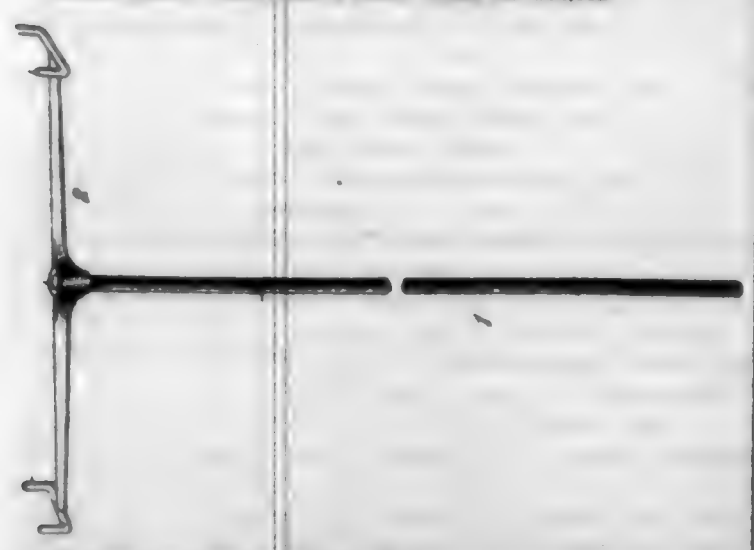
Claim.—1. In a locking and truing device for concrete-block molding flasks or machines, the combination of flanges projecting at angles from the meeting edges of mold-plates, of lugs upon one flange registering with openings in the adjacent flange, of a locking-lever divided at one end into two parts, one of which is pivoted to the flange on one of the plates while the other engages the flange of the adjacent plate, substantially as described.

2. In a device of the nature described, the combination with wings projecting at an angle from the meeting edges of mold-plates, of lugs on one of said wings registering with apertures in the adjacent wing, of a lever-lock consisting of a handle and two prongs, one of which is pivoted to one of said wings while the other engages the other wing, substantially as described.

3. A locking device of the nature described consisting of a lever separated at one end into two prongs, one of which is pivoted to the projecting wing of a mold-plate while the other engages the corresponding wing of a mold-plate, substantially as described.

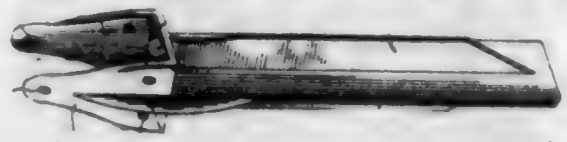
4. A locking device for concrete-molds consisting of a handle divided at one end into two prongs separated and lying in parallel planes, one of said prongs pivoted to one door while the other admits of an outward and inward motion, engaging and disengaging the adjacent door, substantially as described.

817,741. CURTAIN-POLE LIFTER. CLARA S. ARMSTRONG, Columbus, Ohio. Filed June 8, 1905. Serial No. 264,332.



Claim.—As an article of manufacture, a curtain-pole lifter composed of a pole, a lifting-head at one end of the pole and comprising a straight bar transversely widened intermediate its ends to form a socket receiving the end of the pole, the opposite extremities of the lifting-head being formed with integral U-shaped holders embodying spaced extensions equidistant from the point of connection of the holders with the head and adapted to receive a curtain-pole therebetween, the bottom of each holder being in the same plane as the upper surface of the straight bar of the lifting-head, whereby all strain is received on the head in the use of the device.

817,742. BASE FOR POSTS. JAMES W. BEARD and JAMES SALTER, Bienville, La. Filed Feb. 3, 1906. Serial No. 299,366.



Claim.—A bottom or base for posts comprising a socket member open upon two of its sides, the bottom of said socket member made up of two inclined surfaces meeting in a ridge at the center of the bottom, a pin projecting centrally through said ridge and designed to engage the bottom of a post, the portion of the base below said socket comprising wings which are disposed at right angles to each other, two of said wings being integral with the closed sides of the socket member, as set forth.

817,743. METHOD OF TREATING SURFACES TO BE PROTECTED FROM FOULING. ROBERT BELL, London, England. Filed May 17, 1905. Serial No. 260,880.

Claim.—1. A method of treating surfaces to be protected from fouling or to be rendered antiseptic consisting in coating the said surfaces with a layer of paint, varnish or the like and forcing sulfur into said layer, by the action of compressed air, before drying.

2. A method of treating surfaces to be protected from fouling or to be rendered antiseptic consisting in coating the said surfaces with a layer of paint, varnish or the like and blowing powdered sulfur on said layer so as to superpose a protecting crust on said layer, as described.

3. A method of treating surfaces to be protected from fouling or to be rendered antiseptic consisting in coating the said surfaces with an adhesive layer and superposing a layer of powdered sulfur on said adhesive layer.

4. An antifouling covering consisting of a layer of paint, varnish or the like and a superposed layer of powdered sulfur.

817,744. SHUTTLE FOR EMBROIDERING-MACHINES. ERNST BERGER, Rorschach, Switzerland, assignor to The Firm of Henri Levy, Rorschach, Switzerland. Filed June 26, 1905. Serial No. 267,054.

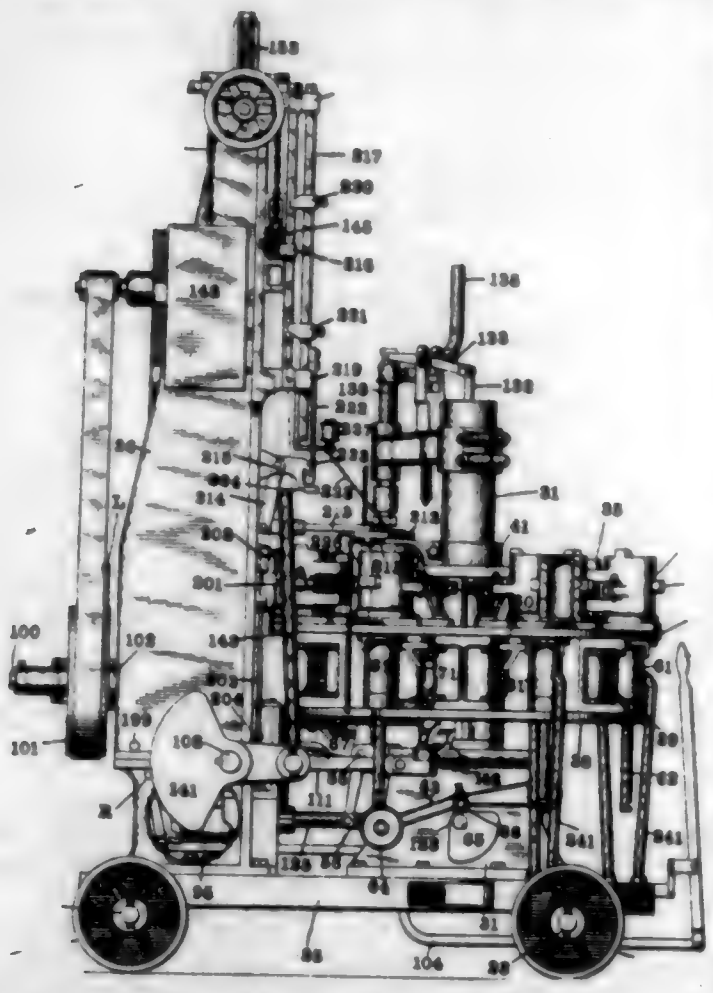


Claim.—1. A shuttle for embroidering-machines adapted to be mechanically filled, said shuttle having a rear end wall provided with an axial aperture forming a bearing for the reception of a revoluble cop or bobbin winding spindle and serving also as a means for stripping the bobbin formed within the shuttle from said spindle, said shuttle also provided with a thread-feed slot parallel to its longitudinal axis and of such length as to admit of the traversing of the thread along the spindle in the formation of the cop.

2. A shuttle for embroidering-machines adapted to be mechanically filled, said shuttle having a rear end wall provided with an axial aperture forming a bearing for the reception of a revoluble cop or bobbin winding spindle and serving also as a means for stripping the bobbin formed within the shuttle from said spindle, said spindle provided in one of its side walls with a thread-feed slot parallel to its longitudinal axis and of such length as to admit of the traversing of the thread along the spindle in the formation of the

cop, said slot merging into the aforesaid spindle-bearing, for the purposes set forth.

817,745. GLASS-BLOWING MACHINE. ALVAH L. BINGHAM, Muncie, Ind., assignor to Ball Brothers Glass Manufacturing Company, Muncie, Ind., a Corporation of Indiana. Filed Dec. 12, 1904. Serial No. 236,532.



Claim.—1. The combination, in a glass-blowing machine, of a revoluble table, a series of blowing-molds and a series of pressing-molds carried thereby, said pressing-molds being supported by a portion of the table below the point of support of the blowing-molds, guiding-stems extending downwardly from said pressing-molds through the table portion upon which they are mounted, which stems are provided with notches, means timed to contact with the lower end of each of said stems at the proper point in the rotation of the table and push the same upward, thus raising the pressing-mold to within the blowing-mold, said means being positioned to engage with a portion of the end of said stem only, an arm mounted to vibrate horizontally upon the central standard whereon the table is mounted and to pass beneath the remainder of the end of the said stem and support the stem while it is being carried forward to the next position, and locking means arranged at said next position for locking said stem during the pressing operation, and other means for withdrawing said stem and mold after the pressing operation is completed.

2. The combination, in a glass-blowing machine, of a revoluble mold-carrying table, molds comprising halves or side portions hingedly mounted on said table, a non-revoluble cam-plate secured adjacent thereto around which the molds pass as the table revolves, connections between said cam-plate and the mold halves, and radially-arranged guides on which said connections are mounted, whereby the movement thereof occasioned by the engagement with the cam-plate is caused to be radial and thus to open and close the mold halves.

3. The combination, in a glass-blowing machine, with a mold composed of hinged halves, of a yoke mounted behind the hinge-pintle, means for actuating said yoke toward and from the mold, and yielding adjustable connections between said yoke and the mold halves.

4. The combination, in a glass-blowing machine, with a mold composed of two halves hingedly connected together, of means for swinging said halves on the hinge-pintle, comprising a member movable toward and from said pintle and other members connecting said member with the sides of the mold halves; each said connecting member being composed of suitable ends, a tie-rod connecting said ends, and a spring interposed between said ends.

5. The combination, in a glass-blowing machine, with a mold comprising two halves hingedly connected together, of means for swinging said halves on the hinge-pintle, comprising a member movable toward and from said pintle, and other members connecting said member with the sides of the mold halves, each of said connecting members being composed of suitable ends, a screw-threaded and adjustable tie-rod connecting said ends, and a spring interposed between said ends.

6. The combination, in a glass-blowing machine, with a mold comprised of two halves hingedly connected together, of means for swinging said halves on the hinge-pintle comprising a member movable toward and from said pintle and other members connecting said member with the sides of the mold halves, each of said connecting members being composed of suitable ends, a tie-rod connecting said ends, and a spring interposed between said ends; said tie-rod being sleeved within one of said ends between the sides of which its head is held and threaded into the other end, whereby, by revolving one of said ends, the total length of the connection is adjusted.

7. The combination, in a glass-blowing machine, of a table, molds mounted thereon composed of sides and a bottom, said bottom being slidably mounted below said sides, a cam-operated lever whereby said bottoms are forced to below said mold at one point in the revolution of the table, and a cam whereby said bottoms are withdrawn from below said mold at another point in the revolution.

8. The combination, in a glass-blowing machine, of a table, molds mounted thereon comprising sides and a bottom, means for moving said bottom to and withdrawing it from beneath the mold, the means for moving it to beneath the mold consisting of a contact-piece, and mechanism for operating the same; said mechanism embodying a lever containing a yielding rule-joint whereby a yielding is provided for in case of obstruction.

9. The combination, in a glass-blowing machine, of a revolubly-mounted table, molds carried thereby, movable bottoms to said molds, a cam whereby at a point in the revolution of the table each mold-bottom is withdrawn from beneath its mold, a movable contact-piece whereby at another point in the revolution of the table said mold-bottom is moved to beneath its mold, and means connected with the table-revolving mechanism for actuating said contact-piece synchronously with the arrival of the mold at the predetermined point.

10. The combination, in a glass-blowing machine, of a revoluble table, molds mounted thereon, movable bottoms to said molds, means for moving said bottoms from beneath said molds at one point in the revolution of the table, means for moving said mold-bottoms back beneath said molds at another point in the revolution of the table, and means for yieldingly holding said mold-bottoms in place beneath the molds for a period after the operation of the last-mentioned means.

11. The combination, in a glass-blowing machine, of a revoluble table, a series of pressing-molds carried thereby, each pressing-mold being provided with a downwardly-extending stem, means for raising the pressing-molds arranged to come in contact with a portion only of the end surface of said stem, and other means for sustaining said pressing-mold during the succeeding forward movement arranged to engage with the other portion of the end surface of said stem.

12. The combination, in a glass-blowing machine, of a revoluble table, pressing-molds carried thereby, means for raising said pressing-molds at a predetermined point to their upper position, means for carrying said pressing-molds forward a certain distance after being raised, a vertically-moving member with which a stem on the mold will engage when moved to said last-named position, means for locking said member firmly during the pressing operation, means for withdrawing said locking devices after the pressing operation is completed, and means for forcing down the device which is connected to said stem and thereby withdrawing said pressing-mold to a position ready for the next forward movement.

13. The combination, in a glass-blowing machine, of a revoluble table, a series of pressing-molds mounted thereon, each mold being provided with a stem, means operating upon said stem for forcing said mold upwardly and downwardly, the means for forcing the same downwardly consisting of a sliding block containing a mortise and a vibrating bar one end of which enters said mortise, said end being provided with adjusting means whereby it is caused to bear tightly against the opposing surfaces within the mortise.

14. The combination, in a glass-blowing machine, with the pressing-molds, of a vertically-arranged shaft, a cross-head mounted and permitted a limited movement upon said shaft, a series of pressing-heads carried by said shaft, means for revolving said shaft and thus bringing said pressing-heads successively into operative rela-

tion with said pressing-molds, and a contact member carried by said cross-head arranged above the operative position of the pressing-heads and adapted to force each pressing-head downwardly at the predetermined time.

15. The combination, in a glass-blowing machine, with the pressing-molds, of a series of pressing-heads arranged to be brought successively into operative relation with the pressing-mold, a cross-head having a contact device arranged to come in contact with the pressing-head, said cross-head being movable in relation to said pressing-heads, and yielding contact devices interposed between the cross-head and the pressing-head.

16. The combination, in a glass-blowing machine, with a pressing-mold, of a series of pressing-heads arranged in operative relation thereto, a shaft on which said pressing-heads are mounted, a pawl-plate secured to said shaft, and a pawl-housing rotatably mounted on said shaft and provided with grooves having a spiral direction, pawls carried by said housing adapted to engage with said pawl-plate, an adjacent framework having projections which engage with said grooves whereby the shaft is given a step-by-step rotary movement as the same is reciprocated, and means for reciprocating said shaft.

17. The combination, in a glass-blowing machine, of a vertical shaft, means for reciprocating said shaft, a housing mounted on said shaft and adjustable both longitudinally of and rotatively upon said shaft, said adjustments being independent of each other, and a series of pressing-heads mounted in said housing.

18. The combination, in a glass-blowing machine, of a pressing-mold, a series of pressing-heads arranged adjacent thereto and rotatively mounted, locking devices arranged in suitable relation thereto, and mechanism connected with the mechanism for rotating the series of pressing-heads whereby the locking devices are operated at predetermined times and the pressing-heads thus held accurately to position during the pressing operation and released upon the completion thereof.

19. The combination, in a glass-blowing machine, of a revoluble table, molds mounted thereon, a shear positioned above one of said molds, a reciprocating bar arranged adjacent thereto, and a bell-crank lever connected to one of the shear-blades and arranged to be operated by said reciprocating part, said bell-crank lever and said reciprocating part having interengaging separable hook-like projections, whereby the reciprocating part may have a movement greater than that required to operate the shear.

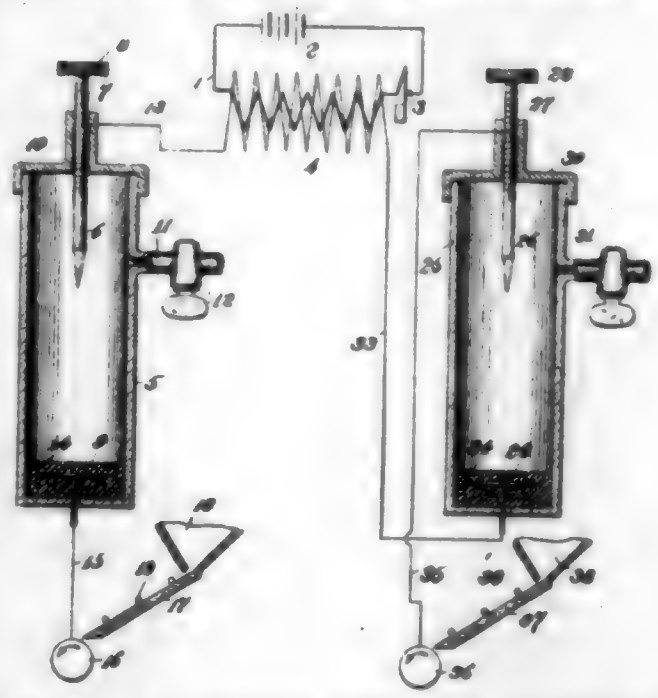
20. The combination, in a glass-blowing machine, of a horizontally-positioned revoluble table, a series of blowing-molds and a series of pressing-molds carried thereby, pressing-heads arranged to coöperate with the pressing-molds as they arrive respectively at a predetermined point, a rocking sleeve whose axis is the same as that of the table, an arm on said sleeve, a radially-movable latch carried by said arm and adapted to engage with notches in an adjacent surface of a table-rim, mechanism for actuating said latch, and mechanism connected to said sleeve having a movement equal to the distance between the respective molds, whereby, by the rocking of said sleeve, the table is given a step-by-step rotary movement and the molds thus brought successively into operative relation with the coöperating parts.

21. The combination, in a glass-blowing machine, of a pressing-mold provided with a perforation leading from its bottom end to the outer air, and a transverse opening passing therethrough, of a small valve seated in and forming part of the bottom of said mold and having its top portion formed to fill the perforation therein, and having recesses in its sides beginning shortly below its mold-surface and serving as air-passages, a support upon which the lower end of said valve rests when in its lowermost position, and a stop by which its upward movement is limited, substantially as and for the purposes set forth.

22. The combination, in a glass-blowing machine, of a revoluble table, a continuously-rotating shaft, an arm operated by said shaft to intermittently engage the table and drive the same step by step in one direction only, a series of blowing-molds carried on one member of said table and adapted to be opened and closed at successive points of the rotation, means for automatically causing said opening and closing, a series of pressing-molds carried by another member of said table and each adapted at a suitable point in the movement to be raised within a blowing-mold, means substantially as described for so raising said pressing-molds, means for automatically locking each of said pressing-molds in its raised position at the operative point, a vertically-moving plunger adapted to coöperate with said pressing-mold at said operative point, means for withdrawing said pressing-mold when the pressing operation has been completed, and means at the next operative point for automatically bringing the blowing-mold into operation.

23. The combination, in a glass-blowing machine, of a revoluble table, means for revolving said table, a series of blowing-molds carried by said table, a series of pressing-molds also carried thereby at a point below the blowing-molds, downwardly-extending stems on said pressing-molds, means connected with the table-revolving mechanism which automatically engages with the stems of said pressing-molds successively and raises each of them as it arrives at a predetermined point to a position within the corresponding blowing-mold, means for automatically locking said pressing-mold into position when raised during the pressing operation, and automatic means for releasing and automatic means for withdrawing said pressing-mold after the pressing operation is completed.

817,746. ELECTROSTATIC APPARATUS. LUCIEN I. BLAKE, Lawrence, Kans. Filed Jan. 22, 1906. Serial No. 297,235.



Claim.—1. In electrostatic apparatus, an induction-coil producing alternating high-potential impulses in its secondary winding and a convector comprising a casing a covered electrode and an exposed point-electrode within said casing and having a screw adjustment, one of said electrodes being connected to a terminal of said induction-coil.

2. In electrostatic apparatus, an air-tight convector-casing, a valved vacuum connection upon said casing, a covered electrode in said casing embedded in particles of insulating material and an adjustable exposed point-electrode in said casing.

3. In electrostatic apparatus, a casing, a covered electrode in said casing embedded in particles of insulating material and a coöperating exposed point-electrode adjustably mounted in said casing.

4. In electrostatic apparatus, a casing, a covered electrode within said casing and a coöperating exposed electrode adjustably mounted in said casing.

5. In electrostatic apparatus, a covered electrode and a coöperating exposed electrode.

6. In an electrostatic apparatus, a source of alternating high-potential electricity and means to allow the convective discharge of said electricity to produce unidirectional electric discharges.

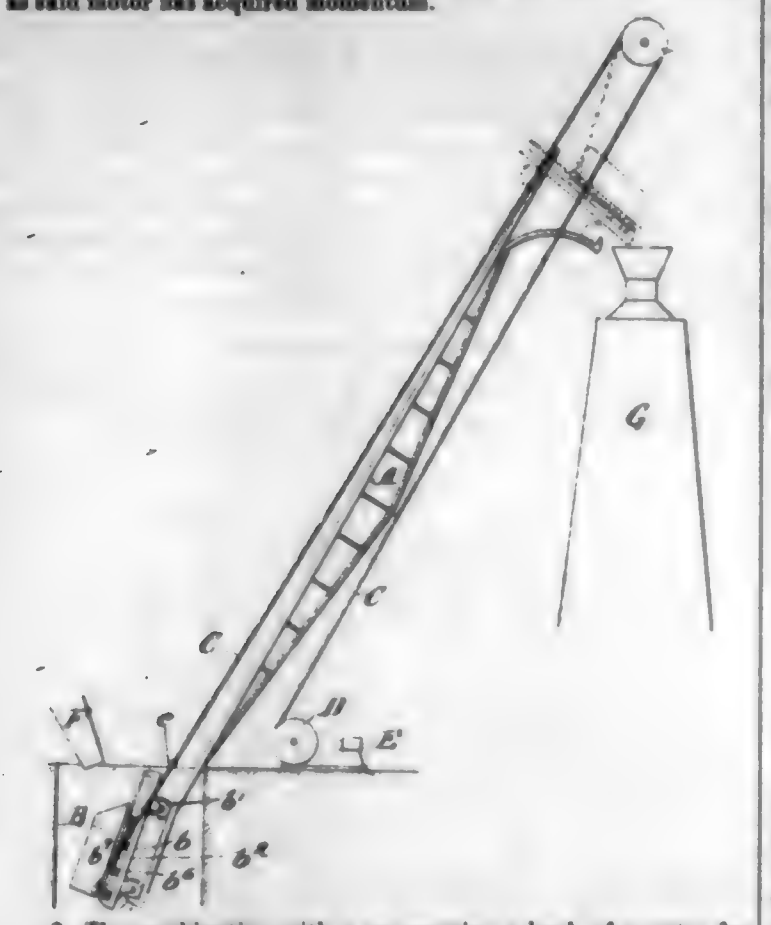
7. In electrostatic apparatus, a source of high-potential electricity having a varying potential and means to allow the convective discharge of said electricity to produce unidirectional discharges of substantially uniform tension.

817,747. HOIST. GEORGE W. BOLLMAN, Pittsburg, Pa., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed July 13, 1903. Serial No. 165,301.

Claim.—1. The combination with a car carrying a load, of a motor for moving said car and load and means for first overcoming the inertia of one or the other with less initial pull or strain than would otherwise be required and then placing the full pull or strain of the car and load on said motor as soon as the inertia of the former has been overcome.

2. The combination with a car carrying a load, of a motor for moving said car and load, and means for first overcoming the inertia of one or the other with less initial pull or strain than would otherwise be required while the motor is acquiring momentum, then plac-

ing the full pull or strain of the car and load upon said motor as soon as said motor has acquired momentum.



3. The combination with a car carrying a load, of a motor for moving said car and load and means wholly carried by said car for overcoming the inertia of said car and load with less initial pull than would otherwise be required and subsequently placing the full pull and strain of said car and load on the motor.

4. The combination of an incline, a car adapted for travel up and down the incline and comprising a body and a receptacle carried by the body, a cable and a motor for effecting the travel of the car on the incline, and means permitting of a relative movement between the body and the receptacle whereby the inertia of said body and receptacle is overcome with less initial pull than would otherwise be required.

5. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a cable and motor for effecting the travel of the car on the incline, said car comprising a body and a bucket capable of a movement independently of the body whereby the inertia of said body and bucket is overcome with less initial pull than would otherwise be required.

6. The combination in a hoist of an incline, a car adapted for travel up and down the incline, a cable and motor for effecting the travel of the car on the incline, said car comprising a body, a frame movable on said body and carrying a bucket whereby the inertia of said body and frame is overcome with less initial pull than would otherwise be required.

7. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a cable and motor for effecting the travel of the car on the incline, said car comprising a body, a frame movable on said body and carrying a bucket, whereby the inertia of said body and frame is overcome with less initial pull than would otherwise be required, and stops for limiting the movement of the frame on the body.

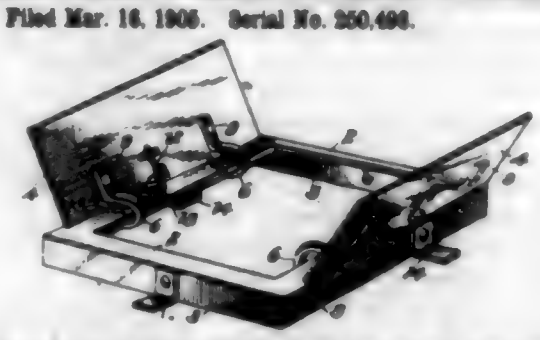
8. The combination of an incline, the lower end of which is in a steeper grade than the remainder of the incline, a car adapted for travel up and down the incline, a load carried by said car, a cable and motor for effecting the travel of the car on the incline, and means permitting of a relative movement between the load-bearing part and its support whereby the inertia of said load and its support is overcome with less initial pull than would otherwise be required when the car is on the steeper grade of the incline.

9. The combination of an incline, a car comprising a body and a receptacle carried thereby adapted for travel up and down the incline, a cable and a motor for effecting the travel of the car on the incline, said cable being connected with the receptacle, and means permitting of a relative movement between the body and the receptacle whereby the inertia of said body and receptacle is overcome with less initial pull than would otherwise be required.

10. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a cable and motor for effecting the travel of the car on the incline, said car comprising a body and frame movable on said body, and carrying a receptacle, to which the cable is connected whereby the inertia of said body and receptacle is overcome with less initial pull than would otherwise be required, and stops for limiting the movement of the frame on the body.

11. The combination with a car carrying a load, of a motor adapted to move said car and load from a starting-point, and means which are near the car and starting-point whenever said car and load is at the starting-point, and adapted to overcome the inertia of said car and load with less initial pull or strain than would otherwise be required and thereafter place the full pull and strain thereof on the motor.

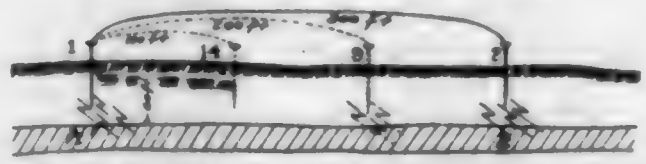
817,748. **DROP AND CELLAR-DOOR HINGE.** WILLIAM M. BOULDEN, WILLIAM I. BOULDEN, and HERBERT D. BOULDEN, Chester, Pa. Filed Mar. 16, 1905. Serial No. 250,498.



Claim.—1. In a device of the class described, the combination with a base or support, and a door, of an interiorly-disposed hinge arranged to swing the door in opening over the base or support, and a locking device mounted on the door and arranged to automatically engage the exterior of the base or support for locking the door in its open position.

2. In a device of the class described, the combination with a base or support, and a door, of a hinge connected with the door and arranged to swing the door in opening over the base or support, and a slidable bolt mounted on the door and arranged to engage the exterior of the base or support automatically when the door is open.

817,749. **ELECTRICAL APPARATUS FOR DETERMINING THE LOCATION OF METALLIC ORES.** FRED H. BROWN, Los Angeles, Cal. Filed Mar. 31, 1902. Serial No. 100,574.



Claim.—1. In an apparatus for locating metallic ores and similar substances in the earth, means for establishing two electrical circuits, one of which includes a variable resistance and the other is adapted to contain the portions of the earth to be tested, means for causing a divided current of electricity to pass over said circuits in unequal volumes, means for indicating the difference in said volumes, a contact for movably engaging with said resistance to equalize said volumes, and a telephone-receiver for determining when said volumes are equal said receiver being in the circuit having the variable resistance and connected with and forming a part of the means for indicating the difference in said volumes.

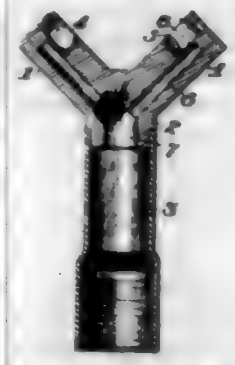
2. In an apparatus for locating metallic ores and similar substances in the earth, means for establishing two electrical circuits, one of which includes a variable resistance and the other is adapted to contain the portions of the earth to be tested, means for causing a divided current of electricity to pass over said circuits, a differentially-wound magnet in said circuits forming part of a telephone-receiver, and a contact connected with the armature of the magnet and adapted to be engaged with said resistance at different points.

3. In an apparatus for locating metallic ores and similar substances in the earth, means for establishing two electrical circuits, one of which is adapted to contain the portions of the earth to be tested, a box in the other circuit, a slide-wire scale of high resistance in said box forming a portion of said circuit, a stylus for engaging with said wire, a telephone-receiver magnet included in said circuits, the armature of which is connected with said stylus, and means for causing a current of electricity to pass over said circuits.

4. In an apparatus for locating metallic ores and similar substances in the earth, an electrical battery, a differentially-wound magnet forming part of a telephone-receiver, a divided wire for connecting one side of the battery with the respective coils of the mag-

net, means for connecting the other side of the battery with the earth and the armature of the magnet respectively, the means to the armature containing a variable resistance and said receiver, and means for connecting the coil of the magnet opposite the armature with the earth at a distance from the point of contact of the means from the other side of the battery.

817,730. ACETYLENE-GAS BURNER. JOHN B. CARROLL, Chicago, Ill. Filed June 22, 1905. Serial No. 266,475.



Claim.—1. An acetylene-gas burner, consisting of a body of refractory heat-insulating material, provided with a supply-conduit, a recessed flame-chamber of sufficient width to admit air to the base of the flame, and a duct extending from said conduit to said chamber, as set forth.

2. An acetylene-gas burner, consisting of a body of refractory heat-insulating material, provided with a supply-conduit, a cylindrical flame-chamber of sufficient width to admit air to the base of the flame, and a central duct extending from said conduit to said chamber, as set forth.

3. An acetylene-gas burner, consisting of a body of refractory heat-insulating material, provided with a supply-conduit, a cylindrical flame-chamber of sufficient width to admit air to the base of the flame, and a short central duct extending from said conduit to said chamber, as set forth.

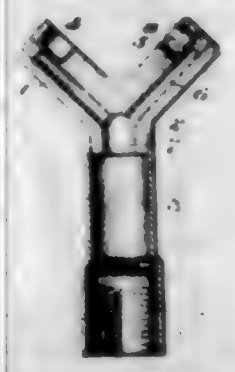
4. An acetylene-gas burner, consisting of a body of refractory heat-insulating material, provided with a supply-conduit, a cylindrical flame-chamber of sufficient width to admit air to the base of the flame, and a short duct extending from said conduit to said chamber, said duct and chamber being in axial alinement, as set forth.

5. An acetylene-gas burner, comprising tips of refractory heat-insulating material, two supply-conduits, two opposed recessed flame-chambers of sufficient width to admit air to the base of the flame, and ducts extending from said conduits to said chambers, as set forth.

6. An acetylene-gas burner, comprising tips of refractory heat-insulating material, two supply-conduits, two opposed cylindrical flame-chambers of sufficient width to admit air to the base of the flame, and short central ducts extending from said conduits to said chambers, as set forth.

7. An acetylene-gas burner, comprising tips of refractory heat-insulating material, two supply-conduits, two opposed cylindrical flame-chambers of sufficient width to admit air to the base of the flame, and short ducts extending from said conduits to said chambers, the corresponding ducts and chambers being in axial alinement, as set forth.

817,751. PROCESS OF BURNING ACETYLENE GAS. JOHN B. CARROLL, Chicago, Ill. Filed Oct. 24, 1905. Serial No. 284,206.



Claim.—1. The process of burning acetylene gas, which consists in projecting a jet of the gas through an orifice, burning the gas, and maintaining at the orifice a temperature above that which permits the accumulation of carbon or solid hydrocarbons.

2. The process of burning acetylene gas, which consists in projecting a jet of the gas through an orifice, causing the gas to burn with the base of the flame at or near said orifice, and heating the air supplied to the base of the flame, thereby maintaining at said orifice a temperature above that which permits the accumulation of carbon or solid hydrocarbons.

3. The process of burning acetylene gas, which consists in projecting a jet of the gas through an orifice, causing the gas to burn with the base of the flame at or near said orifice and shielding the base of the flame, thereby heating the air supplied to the base of the flame and maintaining at said orifice a temperature above that which permits the accumulation of carbon or solid hydrocarbons.

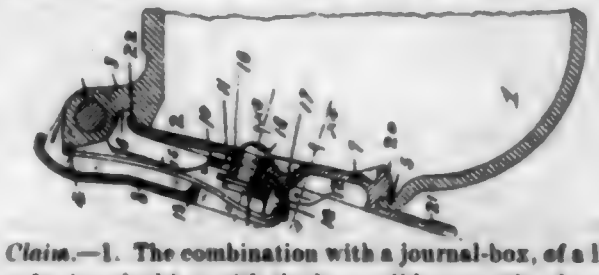
4. The process of burning acetylene gas, which consists in projecting a jet of the gas through an orifice, causing the gas to burn with the base of the flame at or near the orifice, heating the air supplied to and causing it to move toward the base of the flame, thereby maintaining at the orifice a temperature above that which permits the accumulation of carbon or solid hydrocarbons, and shielding the base of the flame and thereby restraining the escape of heat from the air which is moving toward the orifice.

817,752. CEMENT POST. LARS CHRISTENSEN, Sioux City, Iowa. Filed Jan. 10, 1906. Serial No. 295,462.



Claim.—A concrete or cement post of triangular shape with points removed so as to form a hexagon with sides of unequal length, said post having grooves on one face thereof for the insertion of fence-wires and openings extended through the post for the insertion of wires to secure said fence-wires, longitudinal wires reinforcing said post, in combination with a rod adapted to be secured against the face of said post and wires for securing the rod against the post, substantially as described.

817,758. AXLE-BOX COVER. EDWARD DENDERS, Chicago, Ill., assignor to McCord & Company, Chicago, Ill., a Corporation of New Jersey. Filed Dec. 5, 1903. Serial No. 183,847.



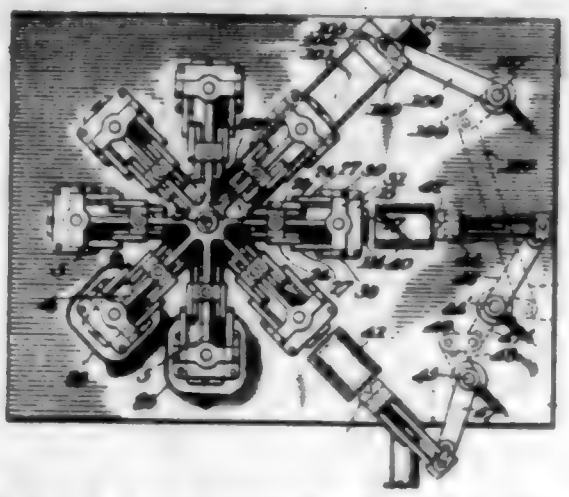
Claim.—1. The combination with a journal-box, of a lid having means for interlocking with the box, a lid-supporting lever pivoted to the box, and joint devices connecting the lid and the lever, with freedom for a limited sliding motion in respect to each other, whereby the lid may be made to interlock with the box in its closed position, substantially as described.

2. The combination with a journal-box, of a lid having a locking for engagement with the box, a lid-supporting lever pivoted to the box, joint devices connecting said lid and lever, with freedom for a limited sliding motion of the lid in respect to said lever, and a spring reacting between the box, the lever and said lid, and operative to force the lid lengthwise of the lever in the closing movement, whereby the lid will be automatically locked to the box under the action of said spring, substantially as described.

3. The combination with a journal-box, of a lid having a bev-

cled lock-lug for engagement with the lower lip or flange of the box-mouth, a lid-supporting lever pivoted to the box, joint devices connecting said lid and lever, with freedom for a limited universal movement of the lid in respect to the lever, and permitting a sliding movement lengthwise of the lever greater than the movement in any other direction, and a flat spring reacting between the box, the lever and the lid, and operative automatically to close the lid and to force the same into interlocking engagement with the box, and also operative to hold the lid in its open position, substantially as described.

817,754. CAN-SOLDERING MACHINE. HENRY DIECKS, Eastport, Me. Filed Oct. 25, 1904. Serial No. 229,838.



Claim.—1. In a can-soldering machine, a clamp, means for separately feeding parts of the can to the clamp, means for actuating said clamp to hold the parts in position, and means for applying solder to the meeting edges of the parts while the latter are held clamped together.

2. In a can-soldering machine, a clamping means, mechanism for separately feeding parts of a can thereinto, said clamping means serving to hold said parts properly assembled, and means for applying solder to the parts when so assembled.

3. In a can-soldering machine, a clamping means, independent mechanisms for successively feeding can parts to said clamping means, the latter serving to hold the parts assembled, and means for applying solder to the parts while in assembled position.

4. In a can-soldering machine, a clamping means, independent mechanisms for successively feeding can parts thereinto, means for centering the can parts in the clamp, means for applying a flux to the adjacent edges of the clamp parts, and means for applying solder to the flux-coated edges.

5. In a can-soldering machine, a movable carrier having a series of clamps, and a plurality of feeding mechanisms operating simultaneously, one to introduce a can-head into one clamp, and the other to introduce a can-body into a second clamp, means for revolving the carrier to present the clamps successively in alinement with said feeding mechanisms, and means for applying solder to the can parts while the latter are held by the clamps.

6. The combination with a revoluble clamp-carrier, of a series of clamps, a can-cover-feeding means for feeding single covers to the clamps, a can-body feeding, means for feeding single bodies to the clamps, means for operating the clamps, an acid-tank, means for elevating the same to apply acid to the clamped parts, a solder-tank, and means for elevating the solder-tank to apply solder to the acid-covered parts.

7. In a can-soldering machine, a revoluble carrier, a plurality of clamps carried thereby, a clamp-operating rod arranged on the carrier, an arcuate guide with which said rods successively engage, means for raising and lowering said guide, means for feeding parts of the can to the clamps, and mechanism for applying acid and solder to said can parts.

8. The combination with a revoluble carrier, of a plurality of can-clamps supported thereby, clamp-operating rods mounted on the carrier and having each a disk or block at its lower end, an arcuate guide into which said disks or blocks successively enter, means for raising and lowering said guides, means for feeding can parts to the clamps, and means for applying acid and solder to said can parts.

9. The combination with a revoluble carrier, of a plurality of can-clamps carried thereby, clamp-operating rods supported by the carrier and each having at its lower end a disk or block, an arcuate guide into which the disks or blocks successively enter, means for raising and lowering said guide, means for feeding can parts to the clamps, an acid-applying tank, means for elevating the same and effecting the immersion of portions of the can, a solder-tank, and means for raising said tank to apply solder to the acid-covered portions of the can.

10. In a can-soldering machine, a revoluble carrier having a plurality of radial arms, a lower clamp-plate rigidly secured to each arm, an upper clamp-plate, a guiding and supporting rod therefor, a series of toggle-levers connected to the upper clamp, and means for operating said toggle-levers to effect opening and closing movement of said clamps.

11. The combination in a can-soldering machine, of a carrier having a plurality of radially-disposed arms, a lower clamp member rigidly secured to each arm, an upper clamping-plate, a guiding and supporting rod therefor, a cross-bar arranged at the upper end of the rod, a system of toggle-levers, links connecting the block to the toggle-levers, a second series of links forming a second connection between the toggle-levers and each of the arms, and means for operating said toggle-levers to effect opening and closing movement of the clamp.

12. In can-soldering mechanism, an inverted cup arranged in the solder and adapted to be depressed by engagement with a can-carrier, said cup forming an air-cushion above the surface of the solder.

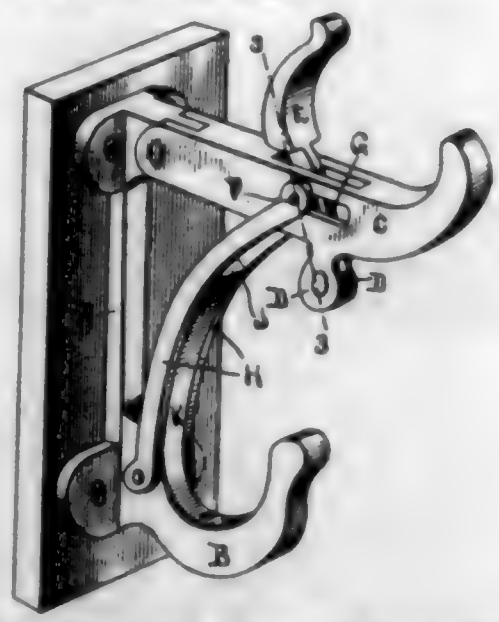
13. In a can-soldering mechanism, a solder-tank, an inverted cup arranged therein and forming an air-cushion between the solder-level and the top of the cup, and means for limiting the extent of upward movement of said cup.

14. In a can-soldering machine, a solder-tank, an inverted cup mounted in the solder-tank and forming an air-cushion above the level of the solder, a plurality of bolts forming guides for the cup, and nuts mounted in threaded portions of the bolts and serving to limit upward movement of the cup.

15. In a can-soldering machine, a revoluble carrier, means for imparting a step-by-step rotative movement thereto, a series of can-clamps on said carrier, vertically-guided rods operatively connected to said clamps and provided at their lower ends with disks or blocks, a series of vertically-movable operating-rods carried by the frame of the machine and provided at their upper ends with guides into which said disks or blocks successively enter, means for simultaneously raising and lowering the operating-rods, and means for simultaneously feeding parts of the cans to two of the clamps and for discharging a soldered can from a third clamp.

16. In a device of the class specified, a knock-off means including a pair of guide-rods having their end portions bent forwardly and spaced from each other, and a pair of clamps one of which is provided with a plurality of guiding-fingers for centering the body and bottom of the can.

817,755. COAT-HOLDER. WILLIAM DOYLE, West Lorne, Canada. Filed Mar. 23, 1904. Serial No. 200,506.



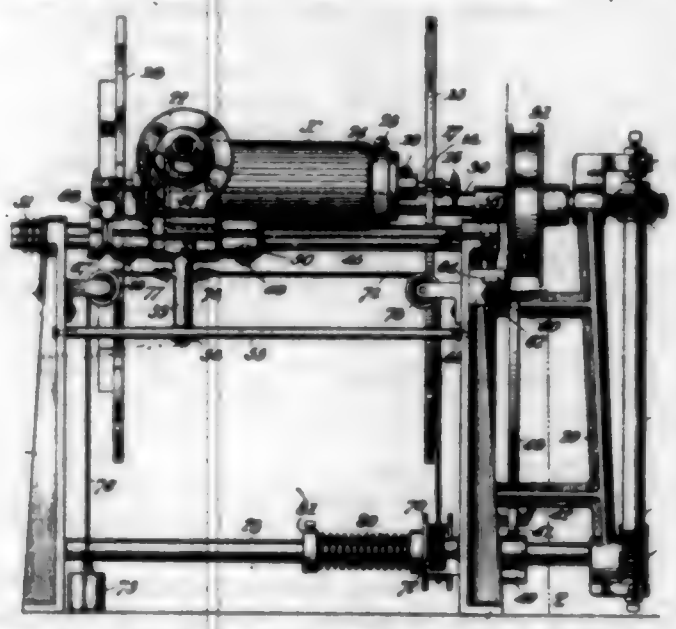
Claim.—1. In a coat-holder, the combination of a frame, a forwardly-extending hooked bar pivoted to said frame, gripping means pivoted to said hooked bar, and a link pivoted to said frame and connected to said gripping means to cause the same to swing toward the free end of the hooked bar.

2. In a coat-holder, the combination of a frame, a forwardly-extending hooked bar pivoted to said frame, gripping means pivoted to said hooked bar, a link pivoted to said frame and connected to

said gripping means to cause the same to wing toward the free end of the hooked bar, and a spring to return said parts to normal position.

3. In a coat-hanger, the combination of a frame, a forwardly-extending bar pivoted to the same having an upturned end and provided with a depending lug and a longitudinal slot, a gripping device pivoted to said lug and provided with a longitudinal slot, a pair of links pivoted to said frame, a pin secured to the free ends of said links and extending through the slots in said bar and gripping device, and a spring to return said parts to normal position.

817,756. PHONOGRAPH-MACHINE. BENJAMIN DUBINSKI, San Antonio, Tex. Filed June 5, 1905. Serial No. 263,856.



Claim.—1. In a sound-reproducing machine, the combination with a sound-box carriage, of a support on which said carriage is slidably mounted, a winding-drum, a flexible connection between the winding-drum and the carriage, means for operating said drum to feed the carriage in one direction, means operable on less than a complete rotation of the drum for stopping the winding operation, and means for restoring the carriage to initial position.

2. In a sound-reproducing machine, the combination with a slidably-mounted sound-box carriage, of a winding-drum, a flexible connection between the winding-drum and carriage, a drum-operating means, means operable on less than a complete rotation of the drum for stopping the winding operation, and mechanism for automatically releasing said drum from the operating means to permit unwinding of said flexible connection as the carriage is restored to initial position.

3. The combination in a sound-reproducing machine, of a slidably-mounted sound-box carriage, a winding-drum, a flexible connection between the drum and the carriage, an operating-shaft, a clutching means between the shaft and drum, and means for disconnecting the shaft from the drum at the completion of each reproducing operation.

4. In a sound-reproducing machine, the combination with a slidably-mounted sound-box carriage, of a winding-drum, a flexible connecting means between the drum and carriage, a shaft on which the drum is loosely mounted, a clutching means between the drum and shaft, and means operable in advance of a complete rotative movement of the drum for releasing the drum from the shaft and permitting its return to initial position.

5. In a sound-reproducing machine, a slidably-mounted sound-box carriage, a winding-drum, a flexible connecting means between the drum and carriage, said drum having a recess or opening at one of its ends, a shaft on which the drum is loosely mounted, a key or lug projecting from the shaft and adapted to enter said recess, a spring tending to force the drum in the direction of the lug or key, and intergaging cams carried one by the drum, and the other by the fixed frame of the machine and serving to disconnect the drum from the shaft at the end of each reproducing operation.

6. In a sound-reproducing machine, a slidably-mounted sound-box carriage, a winding-drum, a flexible connecting means extending between the drum and the carriage, a shaft on which said drum is mounted, means for automatically clutching the drum to and releasing it from the shaft, and a cam also mounted on said shaft and controlling the movement of the carriage toward and from the records.

7. In a sound-reproducing machine, a frame, a rock-shaft carried thereby and provided with a longitudinal groove, a sound-box carriage mounted on the shaft and having a member entering such groove, an operating-shaft, and means operated from said shaft for traversing the carriage lengthwise of the shaft during the reproducing operation, and for rocking said rock-shaft to move the sound-box away from the record at the completion of the reproducing operation.

8. In a sound-reproducing machine, a sound-box carriage, a support on which said carriage is slidably mounted, said support being movable to adjust the sound-box to operative and inoperative positions, and a single shaft operatively connected to the carriage and its support and serving to move the carriage to reproducing position at the beginning of an operation; to traverse the carriage along the record, and to move the carriage away from the record at the completion of the reproducing operation.

9. In a sound-reproducing machine, a sound-box carriage, a support on which the carriage is slidably mounted, a record-carrying mandrel having a friction-pulley, a movable frame, a friction driving-pulley supported thereby, and means connecting said movable frame to the carriage-support, whereby on movement of the driving-pulley into contact with the mandrel-pulley, the sound-box will be moved in the direction of the mandrel, and on disconnection of the friction-pulleys, the sound-box will be moved away from the mandrel.

10. In a sound-reproducing machine, a rock-shaft, a sound-box carriage slidably mounted thereon but held from independent rotative movement, a spring connected to the rock-shaft and tending through said shaft to force the sound-box in the direction of the record, and an adjustable means for limiting the extent of such movement.

11. In a sound-reproducing machine, a rock-shaft, a sound-box carriage free to slide thereon but held from independent rotative movement, a spring tending to move the sound-box in the direction of the record, a sleeve adjustably secured to the rock-shaft, a pin or arm extending from said sleeve, and an adjustable stop for engaging said pin or arm to limit the movement of the sound-box in the direction of the record.

12. In a sound-reproducing machine, a rock-shaft, a sound-box, a carriage slidably mounted thereon, but held from independent rotative movement, a spring tending to move the sound-box in the direction of the record, an adjustable sleeve secured to the shaft, a pin or arm depending from said sleeve, an adjustable stop for limiting the movement of the pin or arm, a rocking frame, a record-mandrel-driving pulley carried by the frame, and a bar pivotally connected to the frame and having a notch or recess in which said pin or arm is entered.

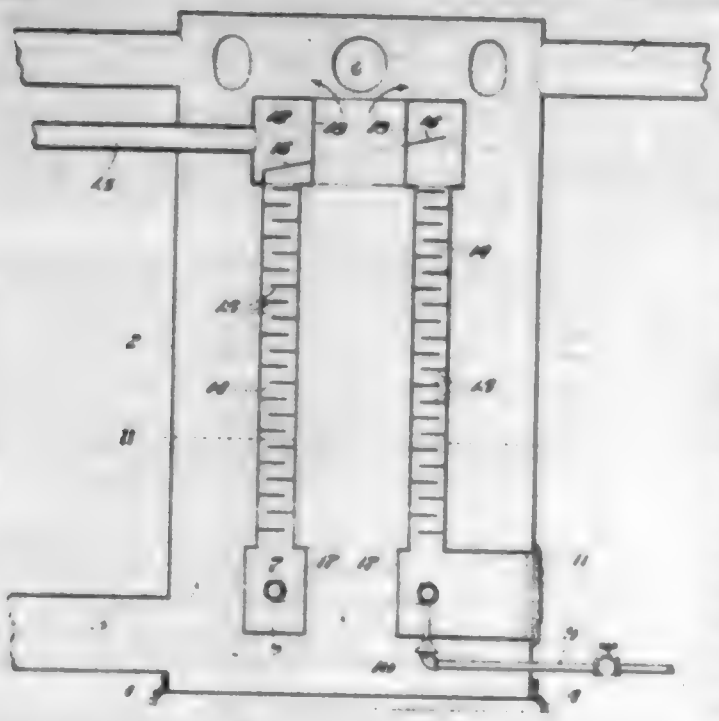
13. In a sound-reproducing machine, the combination with a rock-shaft having a longitudinal slot, of a sound-box carriage including a sleeve through which the rock-shaft passes, antifriction rollers carried by the sleeve and entered in said slot, an arm depending from the sleeve, a rigid bar, an antifriction-roller carried by the arm and serving by engagement with said rigid bar to limit movement of the carriage in one direction, a spring acting on the rock-shaft and tending to throw the sound-box in the direction of the record, an adjustable collar carried by the rock-shaft, a pin or arm depending from said collar, an adjustable stop engaging said pin or arm to limit movement of the sound-box in the direction of the record, a rocking frame, a record-mandrel-driving pulley supported by the frame, a bar pivoted to said frame and having a notch or recess in which said pin or arm is entered, a shaft on which the rocking frame is mounted, and a winding-drum carried by said shaft and having a flexible connection with the pendent arm of the carriage.

817,757. HEATER. JOHN J. ENGEL, Mount Oliver, Pa. Filed Oct. 24, 1904. Serial No. 229,733.

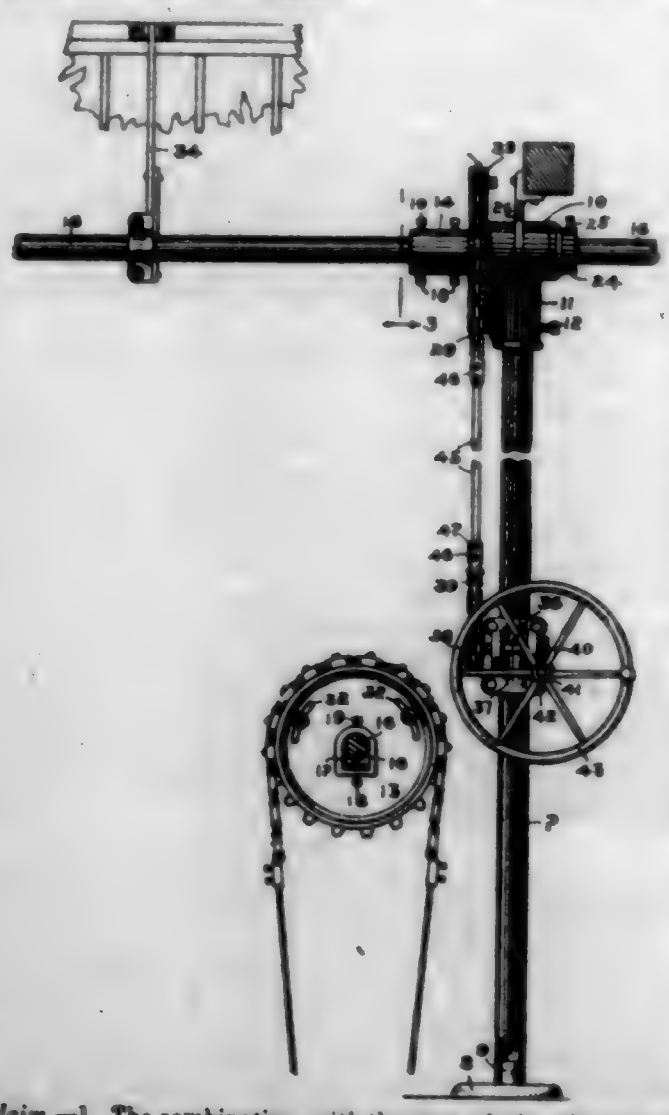
Claim.—1. A heater consisting of a rectangular burner-chamber provided with a central rectangular air-opening, a burner located in the burner-chamber, a series of closely-adjacent rectangular flues having parallel sides connected with the burner-chamber, series of alternately-arranged baffle-plates within the flues, an upper rectangular receiving-chamber for the products of combustion connected with the upper ends of the flues, provided with an interior baffle-plate, an outlet-flue, and a central rectangular air-opening, and an outer surrounding cylindrical casing provided with an air-inlet and one or more outlet openings, substantially as set forth

2. In a heater, the combination of a rectangular burner-chamber provided with a laterally-arranged door and a rectangular central air-opening, a burner located within the burner-chamber, a correspondingly-shaped upper receiving-chamber for the products of

combustion provided with a deflecting baffle-plate, an outlet-flue, and a central rectangular air-opening, series of rectangular flues extending from the burner-chamber to the receiving-chamber rectangularly arranged with closely-adjacent parallel walls and interior baffle-plates, and an outer cylindrical casing provided with an air-inlet and one or more hot-air-outlet openings, substantially as set forth.



817,758. GREENHOUSE-SASH OPENER. NEWTON R. EVANS, Richmond, Ind., assignor to John A. Evans, Richmond, Ind. Filed Feb. 13, 1905. Serial No. 245,553.



Claim.—1. The combination, with the post, of a bearing-box at the top of the post, a line-shaft passing through said box, a sprocket-wheel mounted on the line-shaft, said sprocket-wheel having a hub extension which passes through the bearing-box, cylindrical bearing-pins in annular series between the sleeve and bearing-box, a collar fastened to the projecting end of the hub extension and bearing against the bearing-box to hold the parts together, window-sashes, means for connecting said line-shaft with said window-sashes, means for regulating the extent of movement of said sprocket-wheel, and means connected with the said sprocket-wheel for operating said line-shaft.

2. A base having a toe, a tubular post engaging said toe and resting on said base, a bearing-box having a threaded sleeve into which the threaded top end of said post is screwed, means for holding a given adjustment of the sleeve with the post, a line-shaft passing through said bearing-box, a sprocket-wheel mounted in a fixed manner on the line-shaft and having a cylindrical hub extending into and through the bearing-box, cylindrical bearing-pins between the hub and bearing-box, means for retaining the pins in position between the hub and box, window-sashes means for connecting said line-shaft with said window-sashes, and means connected with said wheel for operating said line-shaft.

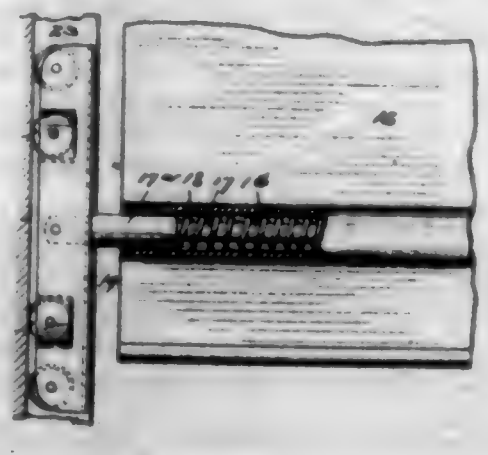
3. The combination, with a post, a bearing-box at the top of the post having a transverse vertical slot, a bracket attached to a fixed support entering the slot in said bearing-box said bracket having a perforation of the same diameter as the bore of the said box, a horizontal shaft passing through the bearing-box and bracket, a sprocket-wheel mounted on the shaft said wheel having a hub extension which passes through the bearing-box, and roller-bearings between the hub extension and the bearing-box.

4. In a device for the purposes specified, a post, a horizontal bearing-box at the top end of said post having a transverse slot between its ends, in combination with a line-shaft passing through said bearing-box, a bracket inserted in said slot of the bearing-box through which bracket said shaft also passes said bracket being attached to a fixed support, a sprocket-wheel mounted in a fixed manner on said shaft and having a cylindrical hub extending into said bearing-box, cylindrical bearing-pins between the hub and bearing-box, means for operating said sprocket-wheel, means for regulating the movement of the said sprocket-wheel hinged window-sashes and arms on the line-shaft connected with said window-sashes.

5. A post, a bearing-box having a threaded sleeve which is screwed onto the top of the post, a line-shaft passing through the bearing-box, a sprocket-wheel mounted on the line-shaft, said sprocket-wheel having a hub with an enlargement in the bore of the hub, a gib inserted in said bore enlargement of the hub, set-screws for locking the hub and gib to the shaft, said sprocket-wheel also having a cylindrical hub extension which enters the said bearing-box, cylindrical bearing-pins between the last hub extension and the bearing-box, the sleeve of said bearing-box having a flange adjacent to the sprocket-wheel, lugs on the side of the sprocket-wheel adjacent to said flange on the sleeve, said lugs being adjustable in distance from each other and being adapted to contact with the flange of said sleeve to control the movement of the wheel, means for connecting said line-shaft with window-sashes and means connected with said wheel for operating said line-shaft.

6. In a device for the purpose specified, a post, a bearing-box supported by said post, a line-shaft passing through said bearing-box, means connecting said line-shaft with window-sashes, a sprocket-wheel mounted on said line-shaft, a second sprocket-wheel mounted below the line-shaft, means for operating the lower sprocket-wheel and means for connecting the two sprocket-wheels said last means comprising chain-belt sections to operate with said sprocket-wheels and terminating with metal sockets, and bars having their ends inserted in said sockets and set-screws securing them therein so as to connect the ends of the top chain-section with the corresponding ends of the bottom chain-section.

817,759. CURTAIN-FIXTURE. HENRY H. FORSYTH, Chicago, Ill., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Oct. 17, 1904. Serial No. 228,796.



Claim.—1. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of means carried by said head engaging the bottom wall of the groove and operating, under the pull of the curtain-roller spring, to impart a lateral movement of the head in the groove, substantially as described.

2. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of a roller carried by said head engaging the bottom wall of the groove, the groove-engaging periphery of said roller lying in a plane inclined relatively to the vertical plane of the head whereby, in the longitudinal movement of said head in the groove, the roller coöperates with the bottom wall of the latter to crowd said head against the side wall of the groove, substantially as described.

3. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of a roller mounted in said head in a plane inclined relatively to the vertical plane of the head whereby, in the longitudinal movement of said head in the groove, the peripheral travel of the roller over the bottom wall of the latter acts to crowd said head against the side wall of the groove, substantially as described.

4. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of rollers mounted in the upper and lower portions of said head, respectively, said rollers being disposed in planes inclined relatively to the vertical plane of the head and peripherally engaging the bottom wall of the groove, whereby, on the longitudinal movement of the head in the groove, said head is given a lateral movement, substantially as described.

5. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of rollers mounted in the upper and lower portions of said heads, respectively, the peripheral surfaces of said rollers lying in planes inclined relatively to the vertical plane of the head and inversely disposed relatively to each other, whereby the rolling engagement of said rollers with the bottom wall of the groove in the longitudinal travel of the head causes the opposite end portions of said head to laterally rub against the opposite side walls of the grooves, substantially as described.

6. In a curtain-fixture, the combination with a curtain-stick and a head carried thereby adapted to travel in a groove in the frame, of one or more friction-rollers mounted in said head and disposed in planes inclined relatively to the vertical plane of the head and peripherally engaging the bottom wall of the groove, and antifriction-rollers mounted in the opposite ends of said head, substantially as described.

7. In a curtain-fixture, the combination with a guide, of a curtain-stick, and a head carried thereby adapted to coöperate with the guide, of a rotatable member carried by the head engaging the guide and operated by the pull of the curtain-roller spring to impart a lateral movement to the head relative to the guide.

8. In a curtain-fixture, the combination with a guide, a curtain-stick, and a head carried thereby adapted to coöperate with the guide, of a roller carried by the head engaging the guide, and operated by the pull of the curtain-roller spring to impart a lateral movement relative to the guide by its rotary movement in said guide.

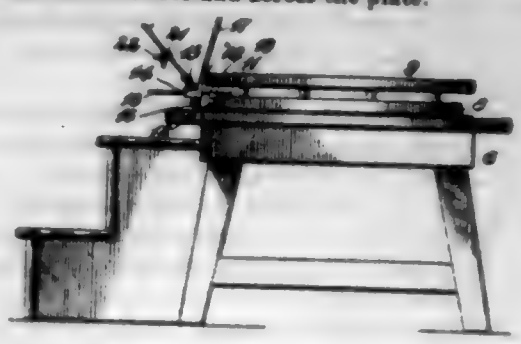
9. In a curtain-fixture, the combination with a guide, of a curtain-stick, and a head carried thereby, adapted to coöperate with the guide, of movable means carried by the head engaging the guide and operated by the pull of the curtain-roller spring to impart a lateral movement to the head relative to the guide.

10. In a curtain-fixture, the combination with a guide, of a curtain-stick and a head carried thereby adapted to coöperate with the guide, and traveling means carried by the head engaging the guide and operating under the pull of the curtain-roller spring to impart a lateral movement to the head relative to the guide.

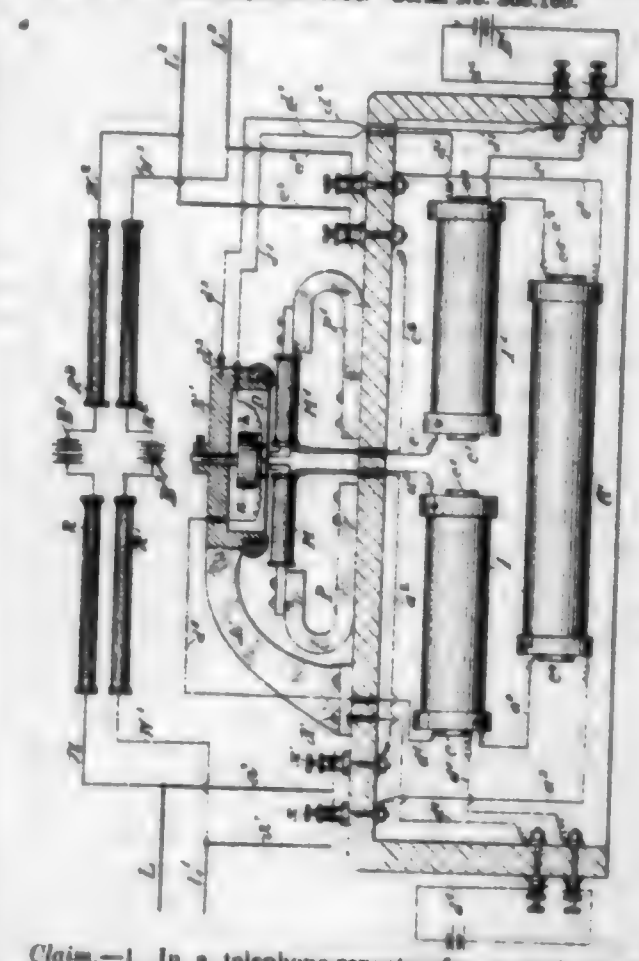
817,760. SKIRT-MARKER. GEORGE W. FRAHER, Detroit, Mich., assignor of one-half to Grace F. Merriman. Filed Jan. 22, 1906. Serial No. 297,208.

Claim.—1. A skirt-marker comprising a platform, a raised track around the same, a carrying-plate having rollers with vertical axes, engaging opposite sides of the track, and a vertically-adjustable indicator and crayon-guide mounted upon the plate.

2. An indicator and crayon-guide for a skirt-marker comprising a carrying-plate having a radially-extending arm, a block slidable in and out on the arm and having means to fasten the same at adjustment, an upright plate on the arm, a frame hinged to the block and having branches extending up beside the upright plate and provided with a scale, and a vertically-adjustable crayon-guide extending between the branches and across the plate.



817,761. TELEPHONIC REPEATER. MERRITT GALLY, Brooklyn, N. Y. Filed Apr. 14, 1904. Serial No. 203,185.



Claim.—1. In a telephone-repeater for repeating telephonic pulsations from one telephone-line to another telephone-line; a single receiving-diaphragm; and two independent receiving-magnets, both magnets on one side of said diaphragm and to operate said single diaphragm, one of the magnets for connection with one telephone-line, and the other magnet for connection with the other telephone-line.

2. In a telephone-repeater for repeating telephonic pulsations from one telephone-line to another telephone-line; a single diaphragm; and two independent magnets on one side of said diaphragm and for operating said single diaphragm; energizing-coils for the magnets; the energizing-coil of one of the magnets for connection with one of the telephone-lines and the energizing-coil of the other magnet for connection with the other telephone-line.

3. In a telephonic repeater; a single diaphragm; two independent magnets, one for one telephone-line and the other for another telephone-line; a retransmitting device; and two retransmitting induction-coils, one induction-coil for each of the two telephone-lines.

4. In a telephone-repeater for repeating telephonic pulsations from one telephone-line to another telephone-line; means for receiving the pulsations for both of the telephone-lines; retransmitting means for repeating the telephone pulsations from one of the telephone-lines to the other telephone-line; and an independent induction-coil having two wires establishing inductive relations between the two telephone-lines; one of the wires of the coil to connect with one of the telephone-lines and the other wire to connect with the other telephone-line.

5. In combination with a repeating device for repeating telephonic pulsations from one telephone-line to another telephone-line; connection between the two telephone-lines for passing a constant current from one line to the other; the resistance being great enough to shunt sufficient current through the repeater for its operation.

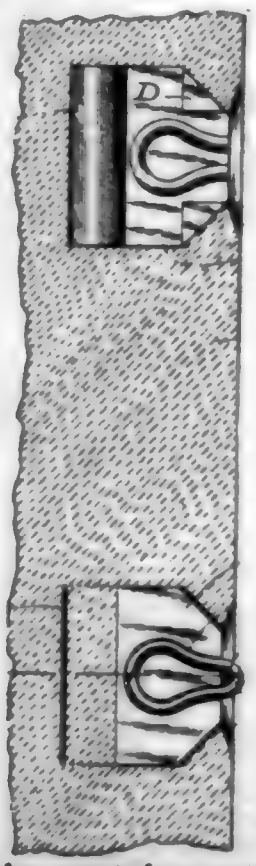
6. In a repeating device for repeating telephonic pulsations from one telephone-line to another telephone-line; a diaphragm; two independent receiving-magnets, both magnets to operate the same diaphragm; an induction-coil of two wires, one wire to connect with one of the telephone-lines, and the other wire to connect with the other telephone-line.

7. In a repeating device for repeating telephonic impulses from one telephone-line to another telephone-line; a diaphragm; two independent receiving-magnets, both magnets to operate the same diaphragm; an induction-coil consisting of a core and two coiled wires, one of the wires as primary to the other wire and vice versa, one wire to connect with one of the telephone-lines and the other wire to connect with the other telephone-line.

8. In combination with a repeating device for repeating telephonic impulses from one telephone-line to another telephone-line, a connection between the two telephone-lines; and an electric generator for passing an independent electric current through the two connected lines, and from one to the other.

9. In combination with a repeating device for repeating telephonic impulses from one telephone-line to another telephone-line; connection between the two telephone-lines; and in said connection an electric generator for passing an independent current from one line to the other and through the lines; and resistance in the connection great enough to shunt sufficient of the pulsating current through the repeater for its repeating operation.

817,762. **STAPLE-RECEIVING CLIP FOR CONCRETE POSTS.** HENRY GUSSEL, Wapakoneta, Ohio. Filed Mar. 6, 1905. Serial No. 248,720.



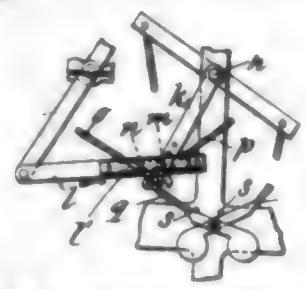
Claim.—1. A clip for concrete fence-posts, comprising a member adapted to be embedded in the post and having one end disposed flush with one face of said post, said member being provided with a U-shaped passage having converging ends, the mouth of said converging ends being disposed in said end of said member which is flush with one face of said post.

2. A staple-receiving metallic clip for concrete fence-posts comprising a member adapted to be embedded in the post and having an enlarged inner end, one end of said member being substantially flush with one face of said post, said member being provided with a substantially U-shaped passage adapted to receive the staple and having converging ends the mouths of which are disposed in the end of said member which is flush with one face of said post.

3. The combination with a concrete or other composite fence-post, of devices embedded therein for receiving fastening devices for securing wires or the like to said posts, said embedded devices being provided with passages bent between their ends and having their mouths disposed in one face of the post, said embedded devices each comprising a strip of sheet metal bent between its ends and provided at its free ends with grooves adapted to register with each other when said free ends are brought into contact with each other to form the aforesaid passage.

4. The combination with a concrete or other composite fence-post, of devices embedded therein for receiving fastening devices for securing wires or the like to said posts, said embedded devices being provided with passages bent between their ends and having their mouths disposed in one face of the post, said embedded devices each comprising a strip of sheet metal bent between its ends and provided at its free ends with grooves adapted to register with each other when said free ends are brought into contact with each other to form the aforesaid passage, said grooved ends being secured together.

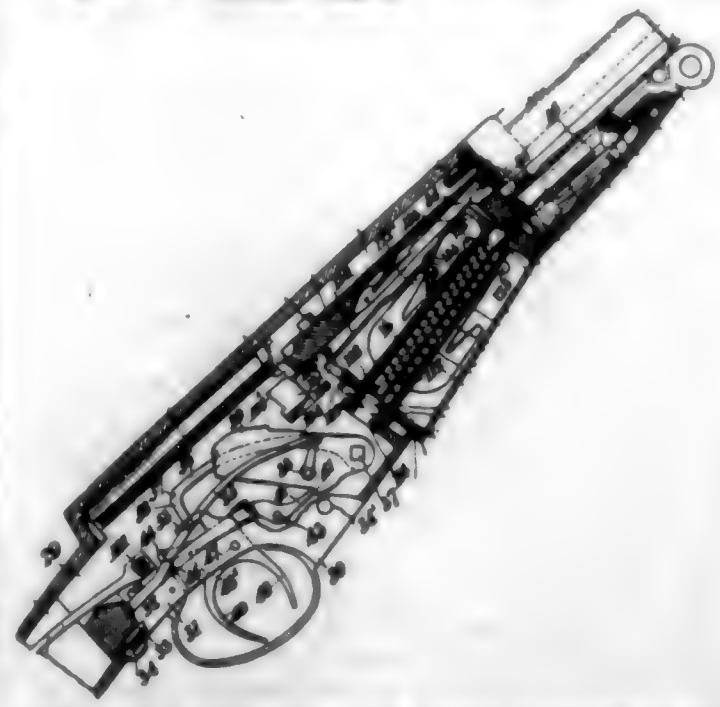
817,763. **SHEDDING MOTION FOR LOOMS.** GIOVANNI GIUSSANI, London, England. Original application filed July 31, 1904. Serial No. 217,462. Divided and this application filed Aug. 16, 1905. Serial No. 274,291.



Claim.—1. A shedding motion for a loom comprising an oscillating lever, a rocking shaft, an arm on the said shaft, a connection between the said lever and the said arm, a device adapted to hold the said arm at the end of each oscillation of the said lever and a device adapted to release the said arm shortly after the commencement of the next oscillation of the said lever.

2. A shedding motion for a loom comprising an oscillating lever, a rocking shaft, an arm on the said shaft, a pin-and-slot connection between the said lever and the said arm, a pawl adapted to hold the said arm at the end of each oscillation of the said lever and a lever adapted to release the said arm shortly after the commencement of the next oscillation.

817,764. **FIREARM.** GEORGE W. GRUVER, Healdsburg, Cal. Filed July 25, 1904. Serial No. 218,071.



Claim.—1. In a firearm, a recoil-actuated breech-block, and an adjustable spring-pressed member serving as a lock for holding the breech-block in firing position, there being a cam-surface between the block and said member to permit the block to pass beyond the same, and means for holding said member in adjusted position.

2. The combination with a recoil-actuated breech-block, of a pivotally-mounted lever having at one end a rounded shoulder for engaging and offering resistance to the movement of the breech-block.

3. In a firearm, a recoil-actuated breech-block, a pivotally-mounted spring-pressed lever having a cam-shoulder for offering resistance to the movement of the block, said lever being adjustable to move the shoulder into positive engagement with the breech-block and lock the same from movement, and means for holding said lever in breech-block-locking position.

4. In a firearm, a recoil-actuated breech-block, a pivotally-mounted spring-pressed lever for yieldably resisting movement of

the block, and means for adjusting said lever to form a positive locking means for said breech-block.

5. The combination in a firearm, of a recoil-actuated breech-block, a pivotally-mounted spring-pressed lever serving in one position to offer resistance to the movement of the block, and in another position to positively lock said breech-block, and means for holding said lever in either position of adjustment.

6. The combination in a firearm, of a recoil-actuated breech-block, a pivotally-mounted lever having a cam-shoulder for engaging and offering resistance to the movement of the block, such lever being adjustable to move said cam-shoulder into locking engagement with the block, and a spring-pressed locking-catch carried by the lever and serving to hold the same in adjusted position.

7. In a firearm, a recoil-actuated breech-block, a lever for engaging and holding the same in its rearmost position, a hammer, a sear, the hammer being automatically cocked on rearward movement of the breech-block, a trigger having finger-actuated push and pull members, and provided with means for engaging and moving the lever to release position, a spring-pressed pin carried by the trigger, and an arm projecting from the sear and with which said pin engages.

8. The combination in a firearm, of a recoil-actuated breech-block, a lever for engaging and holding the same in the rearmost position, a hammer with which the breech-block engages, a sear for holding the hammer in cocked position, a trigger having finger-actuated means for moving the lever to release position, and means for engaging the sear and trigger, said means being held in inoperative position until the release of the lever.

9. The combination with a firearm, of a breech-block, a lever for holding the same in the rearmost position, a hammer automatically cocked by rearward movement of the breech-block, a sear for engaging said hammer, a trigger having finger-actuated push and pull arms, an arm carried by the trigger and in engagement with the lever, and a spring-pressed pin carried by the trigger and automatically engaging with the sear after the operation of the push member of the trigger to release the breech-block.

10. The combination in a firearm, of a breech-block, means for locking the same in the rearmost position, a hammer movable to cocked position by the breech-block, an inverted-U-shaped trigger having finger-actuated push and pull arms, a sear for holding the hammer in position, interengaging arms on the locking-lever and trigger, and a spring-pressed pin carried by the trigger and adapted to engage the sear, said pin having an inclined face to permit its riding below the sear.

11. The combination with a recoil-actuated breech-block, of a spring placed under stress by rearward movement of the block and serving as a means for returning the block to firing position, and means for retarding movement of the block in both directions.

12. The combination with a recoil-operated breech-block, of a spring placed under stress by rearward movement of the block and serving to return the block to firing position, and a pivotally-mounted spring-pressed lever having shoulders for engaging and retarding movement of the breech-block in both directions.

13. The combination with a recoil-actuated breech-block, of a spring placed under stress by rearward movement of the block and serving to return the block to firing position, a pivotally-mounted spring-pressed lever carried by the frame and having a shouldered end portion projecting through an opening in the frame and with which the breech-block engages on both forward and rearward movement.

14. The combination with a recoil-actuated breech-block, of a spring placed under stress during rearward movement of the block and serving to restore said block to firing position, a trigger-controlled means for locking the block in its rearmost position, when the spring is compressed, and a forwardly-movable finger-actuated member on said trigger for releasing the block.

15. The combination with a recoil-actuated breech-block, of a spring placed under stress during rearward movement of the block and serving to return the block to firing position, a trigger-controlled means for locking the block in its rearmost position, and means for engaging and retarding movement of the block in both directions.

16. The combination with a recoil-actuated breech-block, of a slotted frame, a detachable spring-casing at one side of the frame, a spring disposed within the casing and serving to return the breech-block to firing position, an inwardly-projecting lug or flange forming a part of said casing and serving as spring guides or retainers.

17. The combination with a slotted frame, of a recoil-actuated breech-block, a lug or pin carried thereby and extending through the slot, a detachable spring-casing covering the slot, a spring disposed within the casing, and an arm connected at one end to the lug and provided at its opposite end with a projecting lug entering the casing and with which one end of the spring engages.

18. The combination with a slidable breech-block, of a revoluble cartridge-carrier disposed below the path of movement of the breech-block, an arm carried by the breech-block and adapted to engage a cartridge on the carrier, and means for elevating the cartridge and the arm during forward movement of the breech-block.

19. The combination with a slidable breech-block, of a revoluble cartridge-carrier, an arm supported by the breech-block and adapted to engage successive cartridges therein, and a cam for engaging said arm and elevating the same during forward movement of the block.

20. The combination with a slidable breech-block, of a revoluble cartridge-carrier, a pivotally-mounted arm engaging the cartridges, means carried by the frame for elevating the arm during forward movement of the breech-block, and means on the cartridge-carrier for elevating the cartridges during the loading movement.

21. The combination with a magazine, of a revoluble cartridge-carrier, a spring for operating the same, a ratchet-wheel secured to the carrier, a spring-held pawl engaging the ratchet-wheel and preventing rotative movement of the carrier, a fixed stop with which the spring of said pawl may be engaged to effect release of the pawl, and a magazine-casing operable manually to effect release of the pawl.

22. The combination with a revoluble cartridge-carrier, of a spring for rotating the carrier, said spring being placed under stress during the charging operation, a slotted casing for the carrier, a ratchet-wheel secured to the carrier, a spring mounted on the casing, a pawl or detent carried by the spring and engaging the teeth of the ratchet-wheel, said spring being movable into engagement with the frame of the gun when the casing is partly rotated.

23. The combination with a magazine-firearm, of a revoluble cartridge-carrier, a casing having a loading-slot and revoluble independently of the carrier, said slot being normally inclosed by the frame of the gun, and the casing being movable to present the slot to loading position outside the frame.

24. The combination with a magazine-firearm, of a cartridge-carrier, a casing, and a rigid spindle on which the carrier and the casing are independently revoluble.

25. The combination in a magazine-firearm, of a cartridge-carrier, a casing, a spindle on which the carrier and the casing are independently rotatable, and independent locking means for both the carrier and the spindle.

26. The combination in a magazine-gun, of a frame, a detachable lock supported by the frame, and a detachable magazine including a supporting-spindle, one end of which is carried by the frame and the other by the lock-casing.

27. In a breakdown gun, a barrel movable on its pivot to a position approximately parallel with the stock and frame, the muzzle end of the barrel being notched, and a spring-pressed catch carried by the stock and adapted to engage in said notch.

28. In a breakdown gun, a barrel, movable on its pivot to a position parallel with the stock and frame, and means for limiting the breaking movement to the usual loading position of a breakdown gun.

29. The combination in a breakdown gun, of a frame, a barrel pivoted to the frame, a lug carried by the barrel, and an adjustable recessed member mounted transversely of the frame and with which the lug engages to limit breaking movement of the barrel, the recessed portion of the member being movable to a position opposite the lug thereby to permit folding of the barrel into parallel relation with the stock and frame.

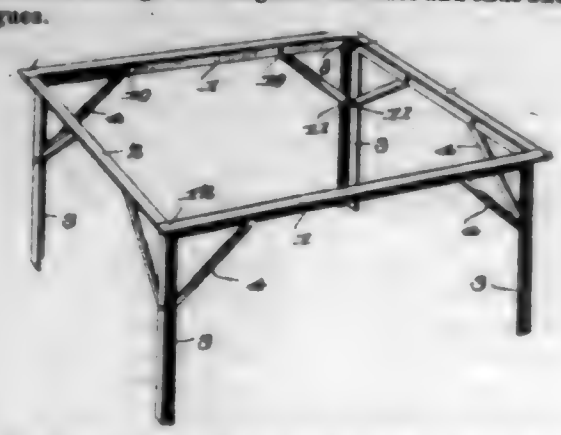
30. The combination in a breakdown gun, of a frame, a barrel having a pivot-lug for connection with the frame, a projecting lug or tooth on said pivot-lug, a transversely-disposed bolt carried by the frame and having a recessed portion which may be moved opposite the lug or tooth, and means for imparting longitudinal movement to said bolt.

31. The combination in a breakdown gun, of a frame, a barrel having a pivot-lug for connection with the frame, a projecting lug or tooth carried by said lug, a transversely-disposed bolt having a recessed portion, which may be moved opposite the lug or tooth, and a collar carried by the bolt and serving to limit movement thereof.

817,765. SINK-FRAME. RANDOLPH F. HAGEMAN and JAMES H. HAGEMAN, New Madison, Ohio. Filed June 20, 1905. Serial No. 267,049.

Claim.—1. A sink-frame constructed of angle-iron and com-

prising sides, ends and legs, the terminals of the sides being incised to free lengths of metal to form tongues that are bent at right angles to the length of the sides and are orificed, and the projecting terminals of the sides forming a continuation of the ends, and assembling devices passed through the flanges of the sides and ends and through the tongues.



2. A sink-frame constructed of angle-iron and comprising sides, ends and legs, the terminals of the sides being incised to free a length of one of the flanges equal to the width of the flange, the metal thus freed forming tongues that are bent at right angles to the length of the sides and orificed, and the projecting terminals of the sides forming a continuation of the ends, and assembling devices passed through the flanges of the sides and ends, and through the tongues and legs.

3. A sink-frame constructed of angle-iron and comprising sides, ends and legs, the terminals of the sides being incised to free a length of one of the flanges equal to the width of the flange, the metal thus freed forming tongues that are bent at right angles to the length of the sides and orificed, and the projecting terminals of the sides forming a continuation of the ends, rivets passed through the flanges of the sides and ends, and through the tongues and legs, and leg-braces secured to the sides, ends and legs.

817,766. CLEANING AND POLISHING DEVICE. WILLIAM J. M. HAWES, Atlanta, Ga. Filed Aug. 16, 1905. Serial No. 274,432.



Claim.—1. A device of the class described comprising a body, and a shoe having a work-face and provided with opposite spring-flanges sprung upon the body and detachably connecting the shoe thereto.

2. A device of the class described comprising a body, and a shoe having opposite spring-flanges detachably sprung upon the shoe, and a facing applied to the shoe with the flanges bent around opposite edges of the facing to connect the same to the shoe.

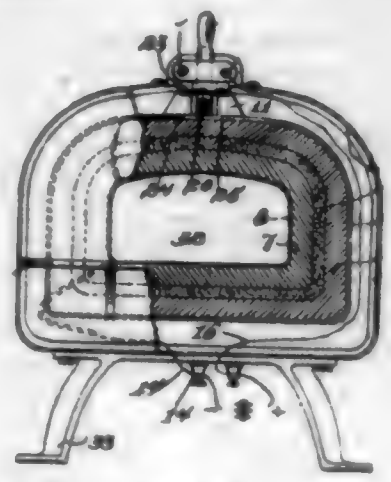
3. A device of the class described comprising a body, and a detachable shoe having opposite spring-flanges detachably sprung upon the body, a working face for the shoe, and guard-flanges projecting laterally from the shoe.

4. A device of the class described comprising a body, and a shoe having opposite spring-flanges detachably sprung upon the body, each flange being rebent upon its outer side to form a U-shaped clamping member with the outer edge of the flange bent laterally outward to form a guard, and a facing applied to the shoe with opposite edges secured within the clamp portions of the flanges.

817,767. ELECTRIC FURNACE. JOHN F. HAMMOND, Brewster, N. Y. Filed Apr. 13, 1905. Serial No. 255,263.

Claim.—1. In a furnace, the combination with a muffle whose interior is wound with a heat-generating wire, of a casing for said muffle and whose exterior is wound with a resistance-wire, both of said wires being connected, and means for traveling from one to another of the convolutions of the resistance-coil for varying the resistance.

2. In a furnace, the combination with a muffle whose interior is wound with platinum wire, of a casing for said muffle, and whose exterior is wound with nickel wire, both of said wires being connected, the convolutions of said nickel wire being so bent, at portions parallel to each other, that the bend of one wire will lie within the bend of another wire, and a device for traveling along said bends for varying the resistance.



3. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor, and which is externally wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a member for riding over said bends, means to support and actuate said member, and means for supporting said actuating means.

4. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor, and which is externally wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a rotatably-mounted member for riding over said bends, and which will contact with one bend before it breaks contact with another, means to support and actuate said member, and means for supporting said actuating means, one of the wires being connected with said supporting means.

5. In a furnace, the combination with a casing provided with grooves, of rows of separators registering with said grooves, a resistance-wire convoluted in said grooves and passing between said separators; that portion of each convolution which lies between the rows of separators being so bent that one bend will lie within the bend of another, a muffle internally wound with a heat-generating wire, and which is connected with said resistance-wire, a shoe for traveling along the bends of said resistance-wire, and means for guiding said shoe.

6. In a furnace, the combination with a muffle of a heat-generating coil on the interior of said muffle, a resistance-coil on the exterior of said muffle, and which is connected with the heat-generating coil, and means for varying the amount of resistance.

7. In a furnace, the combination with a muffle whose interior is wound with platinum wire, of a casing for said muffle whose exterior is wound with nickel wire, both of said wires being connected, the convolutions of said nickel wire being so bent at portions parallel to each other that the bend of one wire will lie within the bend of another, and a device for traveling along said bends for varying the resistance

8. In a furnace, the combination with a muffle whose interior is wound with platinum wire, of a casing for said muffle, and whose exterior is wound with nickel wire, both of said wires being connected, the convolutions of said nickel wire being so bent at portions parallel to each other that the bend of one wire will lie within the bend of another wire, and a rotating device for traveling along said bends for varying the resistance, and said resistance device being adapted to contact with one convolution before it leaves the other.

9. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor, and which is externally wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a rotating member for riding over said bends, a sliding head to support said rotating member, and rods for supporting said head.

10. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor having grooves therein which is wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a wheel for riding over said bends, means to support and actuate said wheel, and guides for supporting said actuating means, one of the wires being connected to said guides.

11. In a furnace, the combination with a casing provided with external grooves of two parallel rows of separators registering with said grooves, a resistance-wire convoluted in said grooves and passing between said separators, and which are bent to suitable form be-

tween said rows, a muffle internally wound with heat-generating wire, and which is connected with said resistance, a rotary shoe for traveling along the bends of said resistance-wire, and means for guiding said shoe.

12. In a furnace, the combination with a ceramic muffle, of a platinum coil on the interior of said muffle, a casing, a resistance-coil on the exterior of said casing, and means for varying the amount of resistance.

13. In a furnace, the combination with a muffle whose interior is wound with platinum wire, of a casing for said muffle, and whose exterior is wound with nickel wire, both of said wires being connected, the convolutions of said nickel wire being so bent at portions parallel to each other that the bends will be V-shaped and will lie within each other, and a device for traveling along said bends for varying the resistance.

14. In a furnace, the combination with a muffle whose interior is wound with platinum wire, of a casing for said muffle, and whose exterior is wound with nickel wire, both of said wires being connected, the convolutions of said nickel wire being so bent at portions parallel to each other that the bend of one wire will lie within the bend of another wire, a device for traveling along said bends for parting the resistance, and said resistance device being adapted to contact with one convolution before it leaves the other, and an outer finishing-casing.

15. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor, which is externally wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a rotating member for riding over said bends, a sliding head for carrying said member, a handle for operating said head member, and means for supporting said head.

16. In a furnace, the combination with a muffle internally wound with a heat-generating wire, of a casing therefor, and which is externally wound with a resistance-wire, each convolution of the resistance-wire being bent so as to lie in the bends of the other convolutions, a rotatably-mounted member for riding over said bends, a sliding head for supporting said member, means for actuating said head, a support for said head, one of the wires being connected to said support.

17. In a furnace, the combination with a casing provided with grooves, of rows of separators registering with said grooves, a resistance-wire convoluted in said grooves and passing between said separators, and which are bent to suitable form between said rows, a muffle internally wound with heat-generating wire and which is connected with said resistance-wire and a rotary shoe for traveling along the bends of said resistance-wire and means for guiding said shoe.

18. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a connector member, a pair of feed-wires, and terminals connected with said wires and arranged to be engaged by such connector, said terminals being arranged to coöperate with the connector, whereby the connector will first connect the first translating-coil with the feed-wires, thereupon the advance of the connector, a parallel circuit of two branches will be established across the leads, in which one branch includes said first translating-coil and the other branch includes the second translating-coil arranged in series with the first resistance-coil; upon a further advance of the connector a shunt will be established in the branch including the first translating-coil, which shunt includes the second resistance-coil; upon a still further advance of the connector the second resistance-coil will be established in series with the first translating-coil on one branch of the aforesaid parallel circuit; and at a further advanced position of the connector the two said resistance-coils will be cut out, leaving the two translating-coils in parallel across the leads.

19. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a connector member, a pair of feed-wires, and terminals connected with said wires and arranged to be engaged by such connector, said terminals being arranged to coöperate with the connector, whereby the connector will establish a parallel circuit of two branches, in which one branch includes the first translating-coil connected in series with the first resistance-coil, and the other branch includes the second translating-coil in series with the second resistance-coil; at a further advance of the connector the same parallel series arrangement will be effected, but with one convolution of each said resistance-coils being cut out, thereby reducing the amount of resistance in circuit with each translating-coil; upon further advance of the connector the convolutions of the resistance-coils will be successively cut out, until at the final position the resistances will be entirely cut out and the translating-coils will be connected in parallel across the leads.

20. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a connector member a pair of feed-wires, and terminals connected with said wires and arranged to be engaged by such connector, said terminals being arranged to coöperate with the connector, whereby the connector will establish a parallel circuit of two branches in which one branch includes the first translating-coil in series with the first resistance-coil, and the other branch includes the second translating-coil in series with the second resistance-coil; at a further advanced position of the connector the first resistance-coil will have a shunt established around one of its convolutions, and upon a further advance the said convolution will be cut out of circuit; at a still further advance the second resistance-coil will have a shunt established around one of its convolutions, and upon a still further advance the said latter convolution will be cut out; and the succeeding position of the connector will cause alternately a reduction of the number of convolutions in the two resistance-coils, until at the final position the two translating-coils will be connected in parallel across their leads.

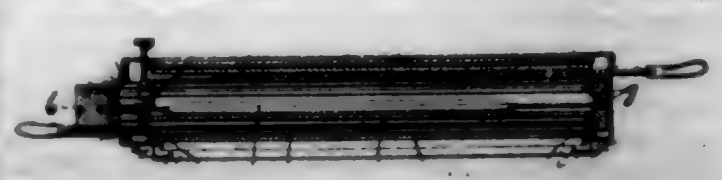
21. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a pair of leads, one of such leads being connected with the front end of each of the translating-coils, the other lead being connected with a movable switch member and arranged to remain in connection therewith throughout its range of movement, a contact-plate connected with the other extremity of said first translating-coil and also connected with the rear end of said second resistance-coil, the rear end of said first resistance-coil being connected with the rear end of the first translating-coil, said switch member being movably supported to first engage with said contact-plate and thereupon engage alternately with the convolutions of the two resistance-coils successively from their front end to their said rear end.

22. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a pair of leads, one of such leads being connected with the front end of each of the translating-coils, the other lead being connected with a movable switch member and arranged to remain in connection therewith throughout its range of movement, a contact-plate connected with the other extremity of said first translating-coil and also connected with the rear end of said second resistance-coil, the rear end of said first resistance-coil being connected with the rear end of the first translating-coil, said switch member being movably supported to first engage with said contact-plate and thereupon engage alternately with the convolutions of the two resistance-coils successively from their front end to their said rear end, the engaging portions of said convolutions of the resistance-coils being arranged whereby the switch member will constantly remain in engagement with two portions not in the same coil.

23. In an electric translating device, the combination of a translating-coil, a second translating-coil, a resistance-coil, a second resistance-coil, a pair of leads, one of such leads being connected with the front end of each of the translating-coils, the other lead being connected with a movable switch member and arranged to remain in connection therewith throughout its range of movement, a contact-plate connected with the other extremity of said first translating-coil and also connected with the rear end of said second resistance-coil, the rear end of said first resistance-coil being connected with the rear end of the first translating-coil, said switch member being movably supported to first engage with said contact-plate and thereupon engage alternately with the convolutions of the two resistance-coils successively from their front end to their said rear end, said engaging portions of the convolutions comprising a series of V-shaped portions overlapping but insulated from each other, whereby the switch member will constantly engage two of such convolutions not in the same coil.

817,788. PHOTOGRAPHIC DEVELOPING APPARATUS.

CHARLES E. HARAM, Syracuse, N. Y. Filed Aug. 10, 1905. Serial No. 273,627.



Claim.—1. In a photographic developing apparatus, a comparatively shallow rectangular open developer-frame having an opening

in one end between its top and bottom to receive a plate-holder and provided with apertures in its bottom for admitting the developer liquid to the interior of the frame and translucent plates secured in the frame at opposite sides of said opening.

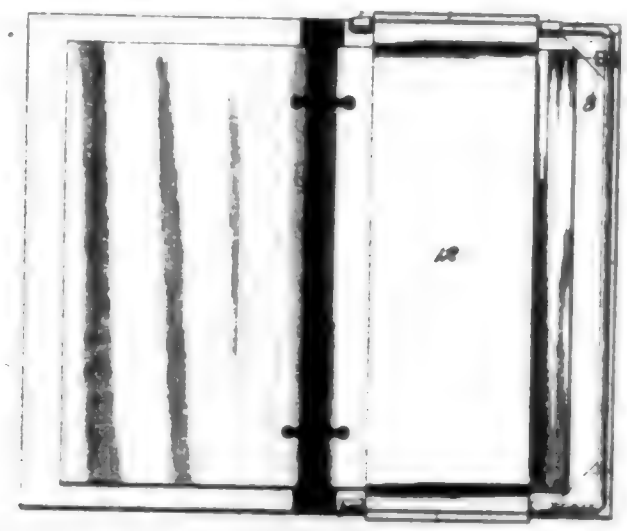
2. A photographic developer-frame and opposite ruby plates spaced apart and supported in the frame to receive between them a plate-holder containing the plate to be developed, and means to release said plate from its holder while in the frame, whereby the plate may be transferred from the holder to the interior of the frame by tilting the frame with the holder therein.

3. A photographic developing apparatus comprising a light, portable box-like frame having an opening in one end between its top and bottom to receive a plate-holder, guides at opposite sides of the opening and a closure for said opening slidable in said guides.

4. A photographic developing apparatus, comprising a box-like frame having an opening in one end between its top and bottom through which the usual plate-holder may be inserted into and removed from the interior of the frame, means for releasing the plate from the holder while in the frame, whereby said plate may be left in the frame when the holder is removed, a sliding plate to hold the photographic plate while removing the holder and a sliding closure for said opening to exclude light from the interior of the frame.

5. In a photographic developing apparatus, a box-like frame having a comparatively narrow inwardly-projecting marginal ledge at the top and also at the bottom, and a marginal flange underlying the bottom ledge and forming therewith a channel, said bottom ledge and flange having their inner edges turned toward each other, but in different vertical planes, and the bottom ledge having openings therein connecting the channel with the interior of the frame.

817,769. **CARBON-SHEET HOLDER.** HARDIN W. HEDGES, Chase, Kans. Filed May 9, 1905. Serial No. 259,840.



Claim.—1. A carbon-sheet holder, comprising a U-shaped frame, sleeves on the arms of said frame, bars or strips clamped at one end by said sleeves against said arms, and sliding sleeves engaging said arms and the opposite ends of said bars or strips and adapted to clamp the latter tightly upon a carbon-sheet interposed between them.

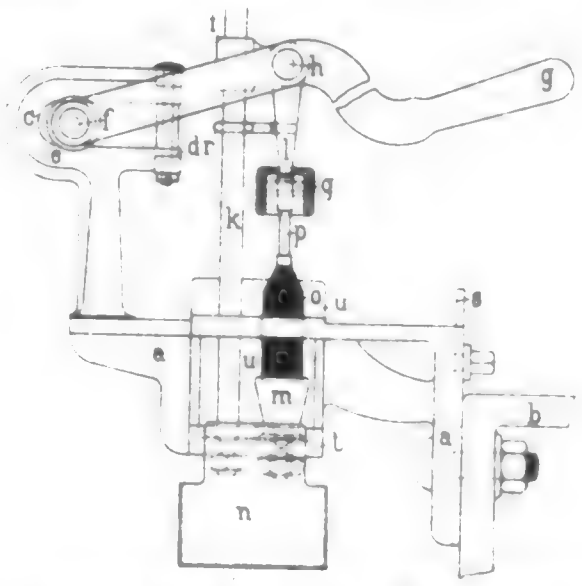
2. A carbon-sheet holder comprising a U-shaped frame, independent clamping-strips mounted on the arms of the said frame, and means for detachably securing said clamping-strips to the arms of the U-shaped frame whereby the ends of a carbon-sheet may be removably secured thereto.

3. The combination with a book, of a U-shaped frame having its body detachably secured to the cover of the book and its arms free and arranged adjacent to the upper and lower edges of the leaves of the book, and means on the arms of the frame for detachably holding the ends of a carbon-sheet.

4. The combination with a book, of an open clip secured to the cover thereof, a U-shaped frame having its body fitted in and removably held by said clip, and its arms receiving the leaves of the book between them, and means for detachably securing the ends of a carbon-sheet to said arms.

817,770. **DEVICE FOR APPLYING COPS TO LOOM-SHUTTLE SPINDLES.** MATHIS HELLICH, Guensbach, Germany, assignor to The Firm of Elsassische Apparatefabrik & Metallgiesserei A. Struedel & J. Gunta, Strassburg-Königshofen, Germany. Filed Dec. 1, 1904. Serial No. 235,015.

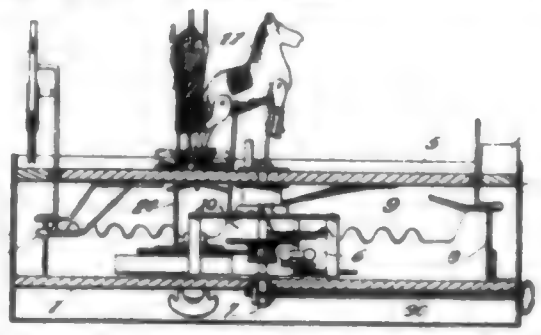
Claim.—1. A device for placing cops on the spindle secured to the shuttle, comprising in combination, a bracket, a roller slide-bearing, a lever operating in said bearing, a pin pivotally secured to said lever, means for insuring vertical down motion of said pin, a shuttle, a spindle pivotally secured thereto, a conical cup with perforated bottom to receive the lower end of the cop, a detachable drip-pan, means to prevent the liquid from squirting about, and adjustable means to limit the operation of said lever, substantially as and for the purpose set forth.



2. A device of the type set forth, comprising a frame, a cup thereon, a splash-fender in proximity to the cup, a drip-pan, and means for expressing moisture from a cop held in said cup.

3. A device of the type set forth, comprising a frame, having a perforated portion, a cop-receiving cup in proximity to said portion, a drip-pan suspended from said portion, a splash-fender connected with said portion, and means for forcing a shuttle-spindle through a cop while the latter is held in said cup.

817,771. **MECHANICAL TOY.** ROBERT HELMER, Hector, Minn. Filed Sept. 21, 1905. Serial No. 279,518.



Claim.—1. In a mechanical toy and in combination with a movable figure, an inraced track, and spaced connections between said figure and track arranged with reference to the teeth or projections to cause opposite end portions of the figure to receive a simultaneous inverse movement at the same time the figure is carried forward.

2. In a mechanical toy, and in combination with a movable figure, a projection, and spaced connections coöperating with said figure and projection to impart to the figure a leaping action simultaneous with its forward movement.

3. In a mechanical toy, the combination of a movable figure, a projection arranged in the path thereof and having oppositely-inclined edge portions, and spaced arms extended from the figure and adapted to coöperate with said projection to impart a leaping action to the figure simultaneously with its forward movement.

4. In a mechanical toy, the combination of a movable figure, an inraced track having projections separating the indentations or serrations, and coöperating means between the figure and said track actuated by means of the indentations and projections thereof to impart to the figure a trotting movement during a portion of its forward movement and a leaping action during certain other portions of its travel, substantially as set forth.

5. In a mechanical toy, the combination of a movable figure, an inraced track, and arms extended from the figure and having offset portions to travel upon the inraced portion of the track to impart a jogging action to the figures simultaneous with its forward movement.

6. In a mechanical toy, the combination of a movable figure, a

movable support therefor, spaced arms having pivotal connection with respectively, said figure and support, and an inraced track cooperating with said arms to impart a jogging movement to the figure simultaneous with its forward movement.

7. In a mechanical toy, the combination of a movable figure, a travel-support therefor, spaced arms having pivotal connection with respectively, the figure and its support, one of said arms being rigid throughout its length and the other composed of articulating parts, and an inraced track coöperating with said arms to impart a jogging action to the figure simultaneously with its forward movement.

8. In a mechanical toy, the combination of a figure, a movable support therefor, spaced arms pivotally connecting said figure with said support and having a portion of each folded to provide an offset, and an inraced track coöperating with the offsets of said arms to impart a jogging action to the figure simultaneously with its forward movement.

9. In a mechanical toy, the combination of a figure, a movable support therefor, an inraced track, and spaced arms having pivotal connection with respectively, the said figure and support, one of said arms being rigid and the other composed of articulating parts, and each of said arms having a portion folded to provide an offset, the parts of the jointed arm articulating upon a member of the folded portion thereof.

10. In a mechanical toy, the combination of a movable figure, hurdles arranged in the path of said figure, a track having projections opposite to the hurdles and having the portions between said projections inraced or serrated, and coöperating means between the movable figure and track to impart a jogging action to the figure when traveling between the hurdles and a leaping action when clearing said hurdles.

11. In a mechanical toy, the combination of an annular rest provided at intervals with hurdles, a movable figure, an annular track concentric with the rest and the path of travel of said figure and having projections opposite to the hurdles and inraced portions opposite the spaces formed between said hurdles, and supporting-arms for said figure having parts arranged to travel upon the inraced and projecting portions of the track to impart a trotting and leaping action to the figure in its forward movement, substantially as set forth.

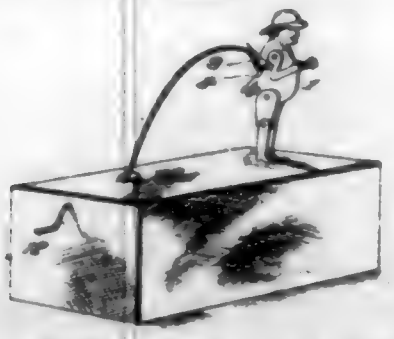
12. In a mechanical toy, the combination of a movable figure, a second figure representing a master, means for imparting a bodily movement to said master, and other means for giving motion to a member of said master independent of the bodily movement.

13. In a mechanical toy, the combination of a figure having jointed members and mounted to turn about an axis, means for imparting rotary movement to said figure, a series of cams concentric with the axis of the figure, and coöperating means between a member of the figure and said cams to cause the member to receive a movement independent of the rotary movement of the figure.

14. In a mechanical toy, the combination of a rotary support, a figure mounted upon said support for independent rotary movement and having jointed members, a pin-wheel connected with the axis of said figure, a trip arranged in the path of the members of said pin-wheel to effect intermittent rotation of the figure, a series of cams concentric with the axis of said figure, and coöperating means between a member of the figure and said cams.

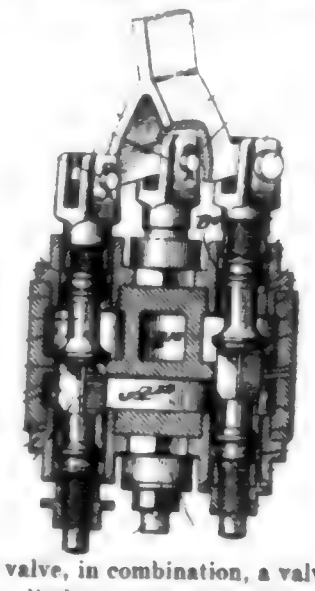
15. A mechanical toy comprising a platform, means for imparting rotary movement thereto a series of figures, arms loosely connecting said figures with the platform, an inraced track coöperating with said arms to impart a jogging action to the figures, another figure representing a master and comprising jointed members, one of which carries a whip or like article, means for imparting intermittent rotary movement to the master, and other means for actuating the whip-carrying arm.

817,772. DANCING TOY. ROBERT HELMER, Hector, Minn. Filed Sept. 21, 1905. Serial No. 279,519.



Claim.—A dancing toy consisting of a box-like framework having an opening in its top, a textile stretched over said opening and forming a platform, a jointed figure having a horizontal tube, a spring-support attached at one end to the framework and having its opposite end bent and passed loosely through said tube and provided with a stop at each end of the tube, a vibrating mechanism located within the framework and comprising a flat spring secured at one end to the framework and having a knocker at the opposite end to come in contact with the aforesaid textile platform, a tappet-wheel for coöperation with the spring, and a shaft having said tappet-wheel fast thereon and provided at its outer end with an operating-crank.

817,773. BALANCED HYDRAULIC VALVE. FRANK HENNEBÖHLE, Chicago, Ill. Filed June 27, 1904. Serial No. 214,381.



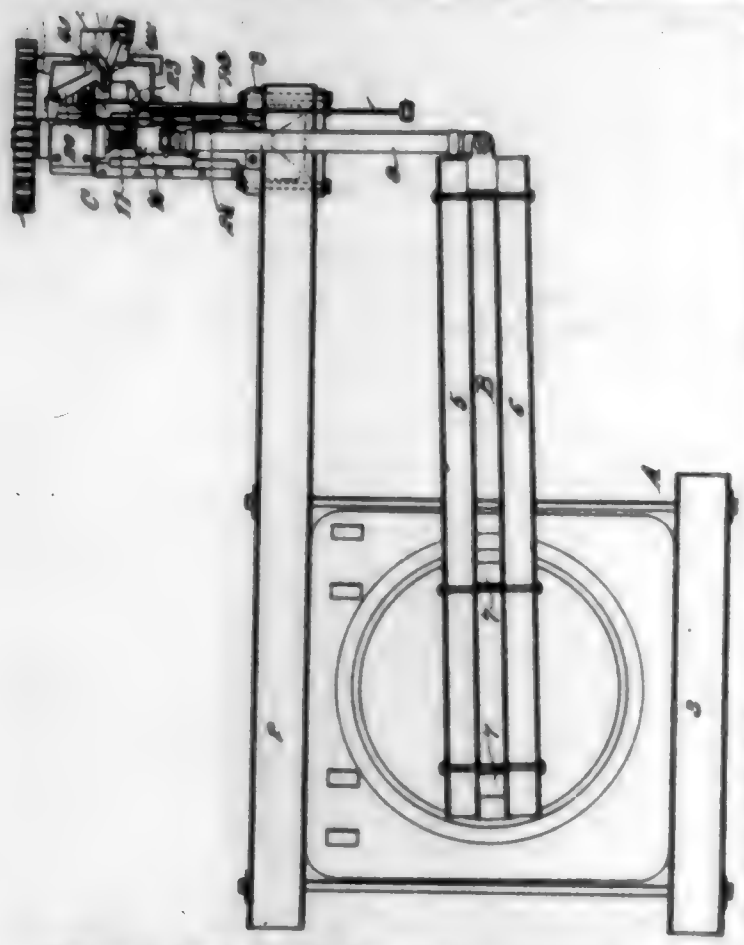
Claim.—1. In a valve, in combination, a valve-casing having a valve-chamber and a discharge-chamber therein alined with each other and connected by an opening, valve-seats being provided at opposite sides of said opening; a cylinder for each of said chambers, alined therewith, said cylinders being removable; a valve-stem extending through said chambers and cylinders; a valve-closure on said stem for closing communication between the valve-chamber and the discharge-chamber, said closure being adapted to be seated upon either of said valve-seats; a piston on said valve-stem for each of said cylinders; removable means on one end of said valve-stem for attaching an operating-lever thereto; and removable means on the other end of said stem for limiting the extent of its movement in one direction.

2. In a valve, in combination, a valve-casing having a valve-chamber and a discharge-chamber therein alined with each other; cylinders alined with said chambers and removably secured to the opposite sides of said casing; a valve-stem extending through said chambers and cylinders; a valve-closure on said stem for closing communication between the valve-chamber and the discharge-chamber; two collars fixed with relation to said valve-stem within each of said cylinders; a packing-ring adapted to lie between said collars; a ring forming a piston for said cylinder and adapted to fit over one of said collars for holding said packing-ring in place; and means for holding said ring in place comprising a yoke having a screw-thread connection with said valve-stem.

3. In a valve, in combination, a valve-casing having a valve-chamber and a discharge-chamber therein alined with each other and connected by an opening, valve-seats being provided at opposite sides of said opening; bushings having a screw-thread engagement with the opposite sides of said valve-casing and forming cylinders alined with said chambers; a valve-stem extending through said chambers and cylinders; a valve-closure on said stem adapted to be seated upon either of said valve-seats; a piston on said valve-stem for each of said cylinders, said pistons having the same area exposed to the pressure fluid; removable means on one end of said valve-stem for attaching an operating-lever thereto; and a nut on the lower end of said stem for limiting the extent of its opening movement

4. In a valve, in combination, a valve-casing having valve-chambers and discharge-chambers therein in alined pairs; a cylinder for each of said chambers, alined therewith, said cylinders being removable; a valve-stem extending through each alined series of chambers and cylinders; a valve-closure on said stem for closing communication between the valve-chamber and the discharge-chamber; a piston on said valve-stem for each of said cylinders, said pistons having the same area exposed to the pressure fluid; a nut on the lower end of each stem for limiting the extent of its opening movement; a bifurcated lever for moving said valve-stems; and a yoke having a screw-thread engagement with one end of each of said valve-stems for attaching said lever thereto.

817,774. SAFE OR VAULT DOOR SEATING MACHINE. HENRY D. HIBBARD, Plainfield, N. J. Filed Sept. 27, 1904. Serial No. 226,122.



Claim.—1. A safe or vault door seating apparatus, comprising means connected to the door and extending transversely to the axis of such door, the weight depthwise of the door assisting in the seating thereof, and means for imparting through said connecting means a rotative movement to the door in the jamb of a safe or vault body.

2. A safe or vault door seating apparatus, comprising means for imparting a limited rotative movement to the door in the jamb of a safe or vault body, and including means connected to the door and extending transversely to the axis of such door.

3. A safe or vault door seating apparatus, comprising means clamped to the door and extending transversely to the axis of such door and projecting crosewise thereof, the weight depthwise of the door assisting in the seating thereof, and means for imparting through such connecting means a rotative movement to the door, first in one direction and then in the opposite direction, within the jamb of a safe or vault body.

4. A safe or vault door seating apparatus, comprising supporting or clamping means for a safe or vault body or jamb member, a door, means clamped to the door and projecting transversely to the axis of such door, the weight depthwise of the door assisting in the seating thereof, and power-driven mechanism connected with said means for imparting a rotative movement, first in one direction and then in the opposite direction, to the door within said jamb.

5. A safe or vault door seating apparatus comprising means for imparting a rotative movement alternately in opposite directions and comprising an oscillatory member connected to the door and supporting it so that the weight thereof will assist in seating such door, and a power-driven reciprocatory member connected to said oscillatory member.

6. A safe or vault door seating apparatus comprising means for imparting a rotative movement alternately in opposite directions, and embodying means connected to the door for supporting such door in a horizontal plane so that the weight thereof will assist in seating it, a traveling head connected thereto, and means for imparting movement alternately in opposite directions to said traveling head.

7. In a safe or vault door seating apparatus, the combination of means clamped to the door for imparting oscillatory movement thereto, a traveling head pivotally connected to said means, means for imparting movement to said traveling head, and means for reversing the movement of said traveling head.

8. In a safe or vault door seating apparatus, means for imparting to the door a rotative movement alternately in opposite directions for a limited distance, comprising oscillatory means connected to the door, and reciprocatory means pivotally connected to said means for imparting an oscillatory movement thereto.

9. In a safe or vault door seating apparatus, means for imparting to the door a rotative movement alternately in opposite directions for a limited distance, comprising means connected to the door, reciprocatory means for imparting an oscillatory movement to said means and comprising a screw-shaft, means for imparting motion thereto, and a traveling head mounted upon said shaft and connected to said door-connecting means, and means for reversing the movement of said traveling head.

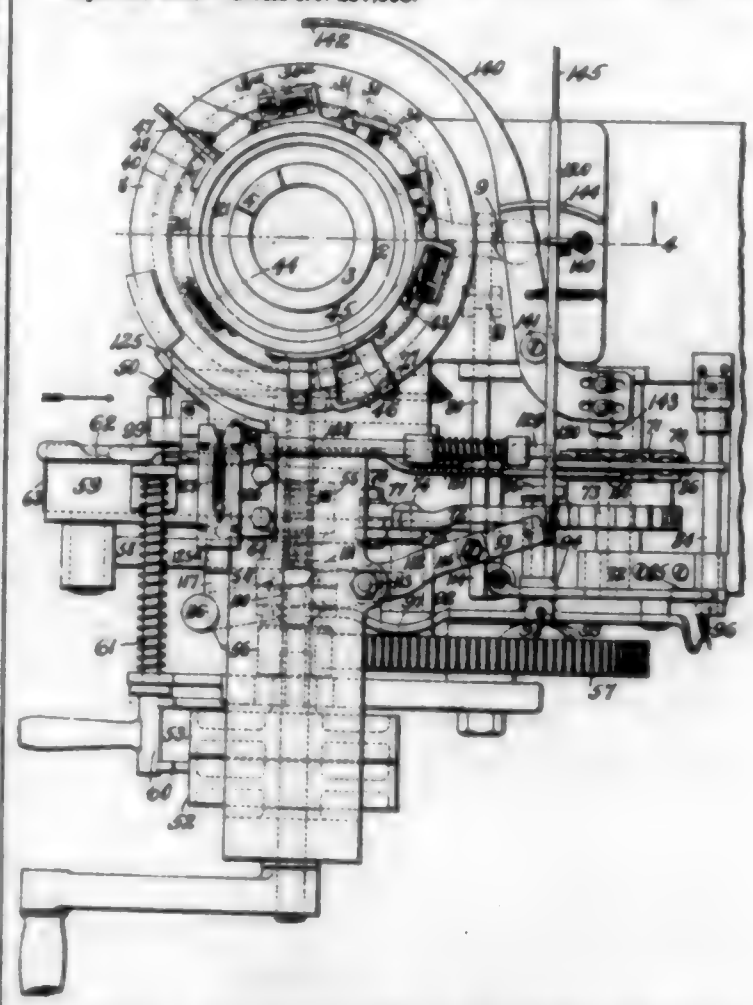
10. In a safe or vault door seating apparatus, means for imparting to the door a rotative movement alternately in opposite directions for a limited distance, comprising means connected to the door, reciprocatory means for imparting an oscillatory movement to said means, and comprising a screw-shaft, means for imparting motion thereto, a traveling head mounted upon said screw-shaft and connected to said door-connecting means, and means for reversing the movement of said traveling head, including belt-shipper mechanism.

11. In a safe or vault door seating apparatus, the combination of means for supporting the jamb member of a safe or vault, and means for supporting the door so that during the grinding operation thereof the weight of such door will seat it in its jamb, and means for imparting to the door a limited rotative movement in opposite directions in such jamb and comprising mechanism for transforming a reciprocatory motion into an oscillatory one.

12. In a safe or vault door seating apparatus, the combination of clamped means for supporting the jamb member of a safe or vault, and means for imparting to the door a limited rotative movement in alternately-opposite directions in such jamb and comprising an arm clamped to said door, a rod pivotally connected thereto, a traveling head connected to said rod, a screw-shaft supporting said traveling head, and means for imparting motion to said screw-shaft.

13. A safe or vault door seating apparatus, comprising means extending transversely to the axis of the door, and means connected to said means for imparting a rotative movement to the door in the jamb of a safe or vault body alternately in opposite directions, the movement in each direction being but a small part of a circle.

817,775. KNITTING-MACHINE. JOHN B. HIPWELL, Reading, Pa., assignor to Windsor Machine Co., Reading, Pa., a Corporation. Filed Apr. 29, 1905. Serial No. 257,986.



Claim.—1. In a knitting-machine the combination with a cam-cylinder, a vertically-movable needle-cylinder, a change-motion for said cam-cylinder comprising a clutch, and a pattern mechanism arranged to control the operation of said clutch, of a lifting-lever for said needle-cylinder, and a clutch-operated lever and separate pattern-operated lever both arranged to directly engage the free end of

said lifting-lever and to independently operate the latter substantially as set forth.

2. In a knitting-machine the combination with a cam-cylinder, a vertically-movable needle-cylinder, a change-motion for said cam-cylinder comprising a clutch, and a pattern mechanism arranged to control the operation of said clutch, of a lifting-lever for said needle-cylinder having its free outer end inclined to the horizontal, and a clutch-operated lever arranged to swing in a horizontal plane and to operate said lifting-lever so as to raise and hold elevated the needle-cylinder substantially as set forth.

3. In a knitting-machine the combination with a cam-cylinder, a vertically-movable needle-cylinder, a change-motion for said cam-cylinder comprising a clutch, and a pattern mechanism arranged to control the operation of said clutch, of a lifting-lever for said needle-cylinder having its free outer end inclined to the horizontal, a clutch-operated lever arranged to swing in a horizontal plane and to operate said lifting-lever so as to raise and hold elevated the needle-cylinder, and a separate pattern-operated lever arranged to swing in a vertical plane and to independently engage and operate said lifting-lever, substantially as set forth.

4. In a knitting-machine the combination with a cam-cylinder, a vertically-movable needle-cylinder, a change-motion for said cam-cylinder comprising a clutch, and a pattern mechanism arranged to control the operation of said clutch, of a lifting-lever for said needle-cylinder having its free outer end inclined to the horizontal, a clutch-operated lever arranged to swing in a horizontal plane and to operate said lifting-lever so as to raise and hold elevated the needle-cylinder, a separate pattern-operated lever arranged to swing in a vertical plane and to independently engage and operate said lifting-lever, and separate contact-screws in said clutch-operated lever and pattern-operated lever for independently regulating their separate lifting actions, substantially as set forth.

5. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam, a throw-in cam, and independent vertically-movable devices for operating said cams located at different distances from the cam-cylinder, of a cam movable in a fixed guide into the path of one or other of said devices.

6. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam, a throw-in cam, and independent vertically-movable devices for operating said cams located at different distances from the cam-cylinder, of a cam movable in a fixed guide and means for periodically moving said cam successively into the separate paths of said devices.

7. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam, a throw-in cam, and independent vertically-movable devices for operating said cams located at different distances from the cam-cylinder, of a cam movable in a fixed guide into the path of one or other of said devices to depress the same, and fixed means for reraising said devices.

8. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam and a throw-in cam, of a fitting thereto provided with horizontal and vertical guideways, a spring-retracted cam radially movable in said horizontal guideway, and a vertical plunger-wedge for projecting said cam to control the operation of the cylinder-cams.

9. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam and a throw-in cam with independent operating devices therefor, drop-pickers with a controlling slide-ring therefor, and an operating-lever for said ring, of a cam arranged to operate one of said independent devices and said ring-operating lever simultaneously at one period of the knitting operation, and the other device at a different period thereof, substantially as set forth.

10. In a knitting-machine the combination with a cam-cylinder carrying a throw-out cam and a throw-in cam with independent operating devices therefor, drop-pickers with a controlling slide-ring therefor, and an operating-lever and latch-lever for said ring, of a cam arranged to operate said devices and said slide-ring-operating lever, and separate means for operating said latch-lever, substantially as set forth.

11. In a knitting-machine the combination with a cam-cylinder carrying drop-pickers, a slide-ring, fingers engaging said pickers, a ring-operating lever and spring, and a ring-locking latch, of separate cams adapted to engage said ring-operating lever and said ring-locking latch respectively and a pattern mechanism for periodically operating said separate cams as required, substantially as set forth.

12. In a knitting-machine the combination with a change-motion mechanism comprising a crank-wheel and a rack-bar reciprocated thereby, of a pattern-chain mechanism comprising an operating-pawl therefor, a pivoted carrying-lever for said pawl having its free end arranged in the path of a contacting portion of said reciprocating bar, and a spring arranged to normally retract said pawl and carrying-lever, substantially as set forth.

13. In a knitting-machine the combination with a change-motion mechanism comprising a clutch and a geared wheel having a cam projection, of a shiftable clutch-throwing lever adapted to be operated by said cam, and pattern-controlled means for shifting said lever into the path of said cam, substantially as set forth.

14. In a knitting-machine the combination with a change-motion mechanism comprising a clutch and a geared wheel having a cam projection, of a clutch-throwing lever, a rock-arm to which said lever is pivoted, and a pattern mechanism and spring arranged to jointly control the position of said lever relative to the cam, substantially as set forth.

15. In a knitting-machine the combination with a change-motion mechanism comprising a clutch and a suitably-guided spring-pressed clutch-arm rod, of means for positively moving said clutch-arm rod, a latch for locking the latter, and a pattern mechanism for releasing said latch, substantially as set forth.

16. In a knitting-machine the combination with a change-motion mechanism comprising a clutch and a suitably-guided spring-pressed clutch-arm rod, and a stop-motion comprising a suitably-guided spring-pressed belt-shifting device, of separate latches for said clutch-arm rod and shifting device one of which latches engages the other to release the latter, substantially as set forth.

17. In a knitting-machine the combination with a change-motion mechanism comprising a clutch and a suitably-guided spring-pressed clutch-arm rod, and a stop-motion comprising a suitably-guided spring-pressed belt-shifting device, of separate latches for said clutch-arm rod and shifting device and a pattern mechanism arranged to operate said clutch-arm latch to release one or both of said latches as desired.

18. In a knitting-machine the combination with a change-motion mechanism comprising a clutch, and with an adjustable needle-cylinder and raising and lowering lever therefor, of a splicer mechanism comprising a vertically-guided splicer-rod, and a clutch-operated lever arranged in operative engagement with said raising and lowering lever and also with said splicer-rod.

19. In a knitting-machine the combination with a change-motion mechanism comprising a clutch, of a thread-splicer mechanism comprising a vertically-guided splicer-rod, a bell-crank having one arm thereof connected to said splicer-rod, a connecting-rod having an end provided with a shouldered slot adjustably engaging the other arm of said bell-crank, a spring and a cam mechanism for controlling said engagement, and a clutch-operated lever operatively connected to said connecting-rod.

20. In a knitting-machine the combination with a change-motion mechanism comprising a clutch, of a thread-splicer mechanism comprising a vertically-guided splicer-rod, a bell-crank having one arm thereof connected to said splicer-rod, a connecting-rod having one end provided with a slot of unequal width forming a shoulder and engaging the other arm of said bell-crank, a clutch-operated lever operatively connected to said connected rod, and means for raising and lowering the slotted end of said connecting-rod to vary its connection to the bell-crank.

21. In a knitting-machine the combination with a change-motion mechanism comprising a clutch, and a cam-lever for releasing the drop-pickers, of a splicer mechanism comprising a vertically-guided splicer-rod, a bell-crank having one arm thereof connected to said splicer-rod, a connecting-rod having one end provided with a slot of unequal width forming a shoulder and engaging the other arm of said bell-crank, and a clutch-operated lever operatively connected to said connecting-rod, said drop-picker cam-lever being also adapted to raise and lower the slotted end of said connecting-rod to vary its connection to the bell-crank.

22. In a knitting-machine, a thread-splicing mechanism comprising a carrier-head provided with thread-guides for an upper main thread and a lower reinforcing-thread and a vertically-movable splicer-trough, and mechanism for raising said trough fully to engage the threads and thereafter lowering the same by steps substantially as set forth.

23. In a knitting-machine, a thread-splicing mechanism comprising a carrier-head provided with thread-guides for an upper main thread and a lower reinforcing-thread and a vertically-movable splicer-trough carrying cutting means and clamping means, and mechanism for raising said trough fully to engage the threads and thereafter lowering the same first partially to disengage the threads and then fully to operate said cutting and clamping means.

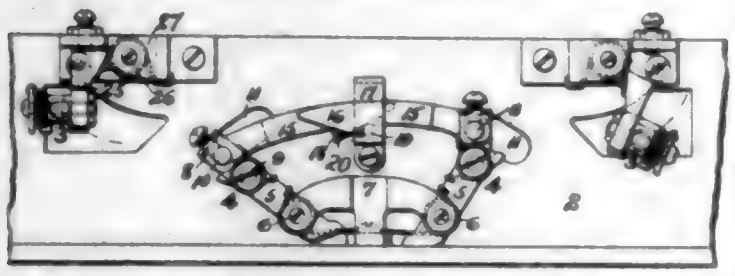
24. In a thread-splicing mechanism for knitting-machines, a vertically-movable splicer-trough provided at its opposite ends re-

spectively with transversely-movable cutting and clamping devices, and vertically-movable rods engaging said devices to reciprocate the same substantially as set forth.

25. In a thread-splicing mechanism for knitting-machines, the combination with a carrier-head, of a vertically-movable splicer-trough guided therein, transversely-movable cutting and clamping devices and vertically-movable operating-rods therefor carried by said trough, and adjustable seats on the carrier-head for said rods.

26. In a thread-splicing mechanism for knitting-machines the combination with a fixed carrier provided with reinforcing-thread guides, of a movable splicer-trough carrying thread cutting and clamping devices, a slack-arm pivoted to said fixed carrier, and a splicer-trough rod having a finger engaging said slack-arm, substantially as set forth.

817,776. PICKER MECHANISM FOR KNITTING-MACHINES. JOHN B. HEPWELL, Reading, Pa., assignor to Windsor Machine Co., Reading, Pa. Filed Oct. 10, 1905. Serial No. 282,067.



Claim.—1. In a knitting-machine the combination of drop-pickers arranged to throw down two needles at once with lifter-pickers having controlling devices whereby the lifting action of each of said pickers alternately effects the locking of the same in final inoperative position and the setting of the other picker into operative position.

2. In a knitting-machine the combination with a pair of alternately-operating pickers, of controlling devices therefor whereby the operating movement of each effects the locking of the same in final inoperative position and the setting of the other picker into operative position.

3. In a knitting-machine the combination with a pair of alternately-operating lifter-pickers, of controlling devices therefor whereby the operating movement of each effects the locking of the same in final inoperative position and the setting of the other picker into operative position.

4. In a knitting-machine the combination with a pair of alternately-operating pickers, of latching means acted upon by each operating movement of either picker to effect the locking of said pickers in final inoperative position and the setting of the other picker for a succeeding operating movement.

5. In a knitting-machine the combination with a pair of alternately-operating pickers, of a latch for each of said pickers and a catch therefor, each of said latches being adapted to release the other in moving into engagement with the catch.

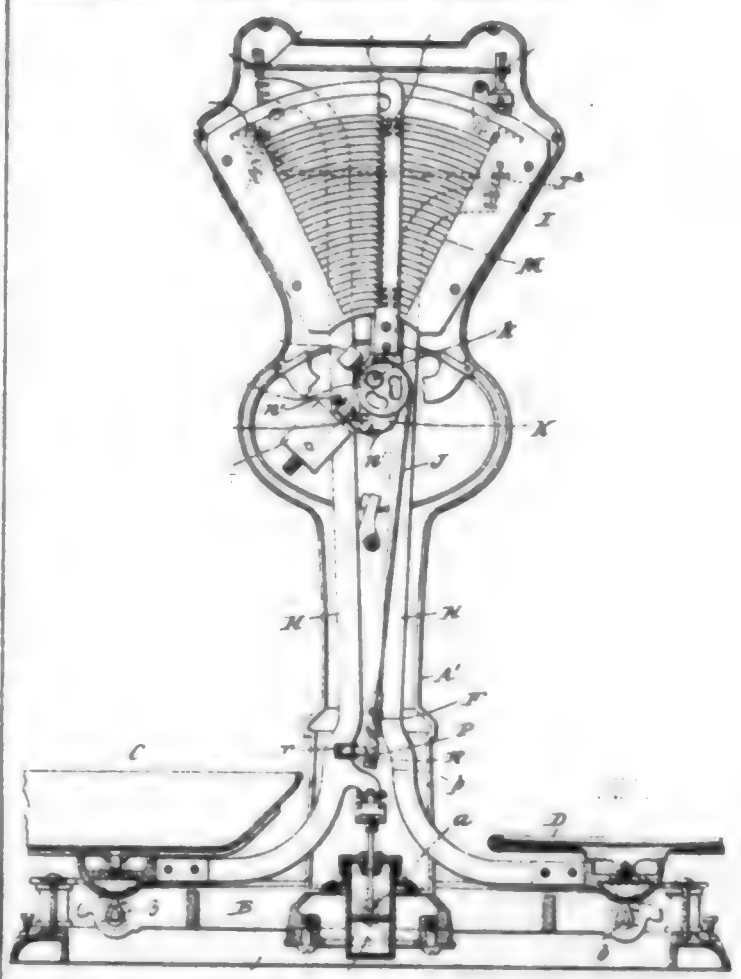
6. An automatic picker for a knitting-machine comprising a main arm pivotally mounted exteriorly upon the cam-cylinder so as to rise and fall in a plane approximately tangent thereto, and a needle-engaging arm pivotally carried by said main arm so as to swing approximately at right angles thereto and extending through an opening in the cylinder-wall.

7. An automatic picker for a knitting-machine comprising a main arm pivotally mounted exteriorly upon the cam-cylinder so as to be capable of swinging downward in a plane approximately tangent thereto, and a needle-engaging arm pivotally carried by said main arm and extending at right angles therefrom through the cylinder-wall, said needle-engaging arm being adapted to be swung downward in an approximately radial plane by the passing needles, substantially as set forth.

817,777. PRICE-SCALE. JOSEPH HOPKINSON, Dayton, Ohio, assignor to The Computing Scale Company, Dayton, Ohio, a Corporation of Ohio. Filed Dec. 15, 1905. Serial No. 291,855.

Claim.—1. In a price-scale, the combination with the lever pivoted intermediate its ends and the goods and removable counterweight receivers carried by said lever, of the upwardly-extending check-arms connected with said receivers, links connected with said arms for maintaining the horizontal parallelism of the receivers and an indicator located above the receivers and actuated by one of said arms; substantially as described.

2. In a price-scale, the combination with the counterbalanced lever, the goods-receiver pivotally supported by the lever, the upwardly-extending check-arm connected with the goods-receiver and a link connected with the arm to maintain the goods-receiver in horizontal parallelism, of a pivoted indicator and differential counterbalance and a flexible connection between the same and upwardly-extending check-arm; substantially as described.



3. In a price-scale, the combination with the pivoted lever, a receiver for counterweights and a receiver for goods pivotally supported on said lever, of a check-arm connected to the goods-receiver and extending above the lever, a link for holding the goods-receiver in horizontal parallelism and a differential counterweight and indicator in operative engagement with the upwardly-extending check-arm; substantially as described.

4. In a scale, the combination with a lever, a receiver pivotally mounted on the lever and having an arm rigid therewith and extending above the lever, said parts constituting a balanced system in the scale, of a differential counterbalancing mechanism an indicator movable in unison with said differential counterbalance mechanism and a connection between said mechanism and the upwardly-extending arm on the receiver; substantially as described.

5. In a scale the combination with a lever, a receiver pivotally mounted on the lever, an arm connected to the receiver and extending above the lever, of a counterbalancing mechanism, and indicator connected therewith pivoted on a fixed axis above the lever, a connection between the arm and said counterbalancing mechanism and a segmental chart having graduations with which the indicator registers; substantially as described.

6. In a price-scale, the combination with a lever, a receiver pivotally supported thereby, and means for counterbalancing the same, of an upwardly-extending arm connected to the receiver, a check-link connected with said arm, a differential counterbalancing mechanism and indicator pivoted on a fixed axis above the lever, a connection between the said counterbalancing mechanism and upwardly-extending arm and a price-chart with which the indicator registers; substantially as described.

7. In a price-scale, the combination with the even-balance over the receivers on opposite ends of said lever and the vertically-extending standard between the receivers, of arms rigidly connected with the receivers and extending vertically in the standard and check-links connecting the upper ends of said arms and standard; substantially as described.

8. In a price-scale, the combination with the even-balance lever, the receivers on opposite ends of said lever and the vertically-extending standard between the receivers, of arms rigidly connected with the receivers and extending vertically in the standard, check-links between the arms and standard, a counterbalancing and price-

indicating mechanism in the upper end of the standard and a connection between the counterbalancing and indicating mechanisms and one of the arms; substantially as described.

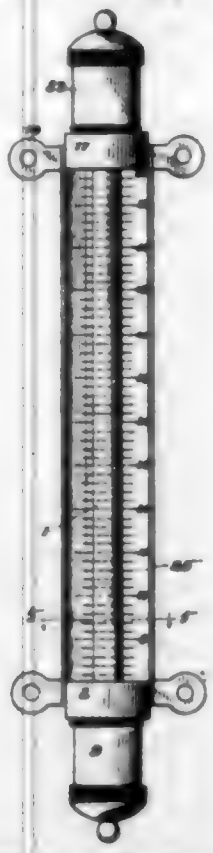
9. In a scale, a balance-lever, a receiver pivoted thereon, a differentially-counterbalanced indicator pivotally supported independently of the lever, and operating connections independent of and separated from the lever between said indicator and receiver; substantially as described.

10. In a scale, a balance-lever, a receiver pivotally mounted thereon, a check arm and link for holding the receivers in horizontal parallelism, a differentially-counterbalanced indicator pivotally supported independently of the lever and operating connections between the said arm and indicator; substantially as described.

11. In a scale, a balance-lever, receivers pivotally mounted on opposite ends thereof, check arms and links for holding the receivers in horizontal parallelism, an indicator and pendulum-counterweight pivotally supported independent of the lever and operating connections between one of said check-arms and the indicator and pendulum-counterweight; substantially as described.

12. The combination with an even-balance scale embodying receivers an equal-arm lever carrying the same and having a movement on both sides of the balancing-point and upwardly-extending check-arms connected with the receivers, of an indicator, a differential counterbalance movable therewith, a flexible connection intermediate the counterbalance and the check-arm connected with the goods-receiver whereby the differential counterbalance only balances goods placed on the receiver and a value-chart with which the indicator registers to indicate the value of goods balanced by the differential counterbalance; substantially as described.

817,778. AIR-PRESSURE AND VACUITY INDICATOR. HENRY A. HOUSE, Bridgeport, Conn. Filed May 2, 1905. Serial No. 258,476.

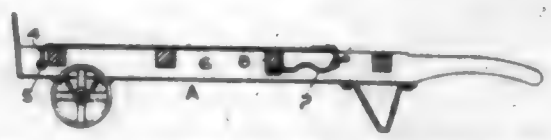


Claim.—1. In an indicator of the character described, a glass tube, flexible reservoirs having open communication with the interior of said tube and at each end thereof, said reservoirs and tube sealed against the admission of air, a casing to form a chamber about each reservoir, one of said reservoirs holding liquid, means for admitting air above the normal into one chamber to force the liquid into the glass, and means to permit the escape of air from the other chamber, for the purpose set forth.

2. In an indicator of the character described, a glass tube, supports at each end thereof, packing between the ends of said glass and supports, projections on said supports, flexible reservoirs connected with said projections and having open communication with the interior of the glass, a casing to form a chamber about said reservoirs subject to pressure or vacuity, means for communicating with said chambers, for the purpose set forth.

3. In an indicator of the character described, an indicating-tube, flexible air and liquid holding reservoirs communicating with the interior of said tube and located one at each end thereof so as to seal the interior of said reservoirs and tube against the atmosphere or outer air, one of said reservoirs adapted to expand while the other is contracting so that, when the liquid is rising in the tube from the liquid-holding reservoir, the other reservoir will be expanded by air in advance of the rising liquid in the tube and thus avoid air compression above said liquid and also prevent the overflow of the liquid, for the purpose set forth.

817,779. TRUCK. THOMAS H. HUGHES, SIDNEY A. JOHNSON, and JAMES H. SAYLE, St. Paul, Minn. Filed Mar. 14, 1904. Serial No. 198,087.

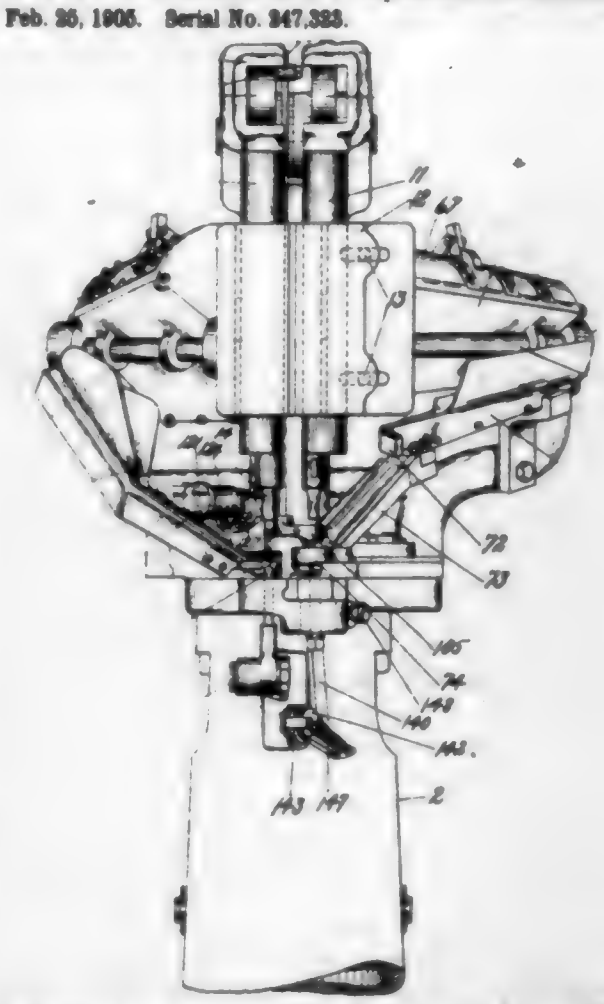


Claim.—1. The combination with a truck provided with an extension attachment consisting of a frame having hinge support at its forward end, of a spring-catch secured to the truck, said spring-catch being bent to engage with the free end of said attachment and hold the same against the face of the truck.

2. The combination with a truck provided with an extension attachment consisting of a frame having hinge support at its forward end, of a spring-catch secured to one of the cross-bars of the truck, said spring-catch having an upwardly and forwardly bent end to engage with the free edge of the attachment.

3. The combination with a truck provided with an extension attachment having hinge support at its forward end upon said truck, of a spring-catch carried by said truck and provided with an upwardly and forwardly bent end to fit over the free edge of the attachment, and a finger-hold carried by said spring-catch.

817,780. MACHINE FOR SETTING GROMETS AND SIMILAR ARTICLES. ARTHUR E. JONES, Union City, Conn., assignor to The S. O. & C. Co., Ansonia, Conn., a Corporation of Connecticut. Filed Feb. 25, 1905. Serial No. 247,323.



Claim.—1. In a machine of the class described, a well for holding washers, means for removing a washer from the well, a follower, and means for actuating said follower intermittently to bear upon washers in the well and force them toward the point at which they are engaged by the washer-removing means.

2. In a machine of the class described, a well for holding washers, a device provided with a recess for receiving the lowermost washer in the well, a follower, means for actuating said follower intermittingly to bear upon washers in the well and force said lowermost washer into said recess, and means for actuating said device to remove said lowermost washer from the well.

3. In a machine of the class described, a well for holding washers, a device mounted below said well for receiving a washer, a retainer mounted on said device and arranged to pass between the lowermost washer in the well and the one above it, and means for actuating said device to remove the lowermost washer from the well.

4. In a machine of the class described, a well for holding a plurality of washers, a device mounted below said well and provided with a recess for receiving a washer, a retainer mounted on said device and arranged to pass between the lowermost washer in the well and the one above it, and means for actuating said device to remove the lowermost washer from the well.

5. In a machine of the class described, a well for holding washers, a device mounted below said well and adapted to receive a washer, a retainer mounted on said device, and means for moving the retainer relatively to said device to place the retainer between a washer and those above it in the well and for thereafter actuating said device to remove a washer from the well.

6. In a machine of the class described, a well for holding washers, a follower, means for actuating said follower intermittently to bear upon washers in the well, a device adapted to receive the lowermost washer in the well, a retainer, and means for actuating said retainer to carry its end between the lowermost washer in the well and the one above it and thereafter actuating said device for removing the lowermost washer from the well.

7. A well for holding washers, a follower bearing yieldingly upon the washers in said well, means for raising said follower intermittently, a device provided with a recess for receiving the lowermost washer in the well, a retainer movably mounted on said device, means for actuating said retainer to carry its end between the lowermost washer in the well and the one above it and thereafter actuating said device for removing the lowermost washer from the well.

8. In a machine of the class described, a well for holding washers, means for removing a washer from the well, means for supplying washers to said well, a follower for bearing upon the washers in the well to force the washers toward the point at which they are engaged by the washer-removing means, and mechanism for raising said follower intermittently to permit washers to pass into the well.

9. In a machine of the class described, a well for holding washers, means for removing a washer from the well, means for supplying washers to said well, a follower, yielding means for moving said follower downwardly upon the washers in the well to force them toward the point at which they are engaged by said washer-removing means, and mechanism for raising said follower intermittently to permit washers to enter the well.

10. In a machine of the class described, a raceway for containing washers, a washer-holding well, means for removing a washer from the well, a follower for bearing upon the washers in the well to force them toward said washer-removing means, and mechanism for actuating said follower intermittently to permit washers to pass from the raceway into the well.

11. In a machine of the class described, a washer-holding well, a device for removing a washer from the well, automatic means for supplying the well with washers, and a follower for forcing the washers down into the well toward the point at which they are engaged by said removing device.

12. In a machine of the class described, a setting device, a lever for actuating said setting device, a well for holding washers, means for removing a washer from said well, a follower for bearing upon the washers in said well to force them toward said washer-removing means, and a connection between said follower and lever whereby said follower is actuated when the lever is operated.

13. In a machine of the class described, a well for holding washers, a device provided with a recess for receiving the lowermost washer in the well, means for holding said device yieldingly in engagement with the lower end of said well, and means for actuating said device to remove a washer from the well.

14. In a machine of the class described, a well for holding washers, a device mounted below said well, a recess of varying depth formed in said device for receiving the lowermost washer in the well, means for holding said device yieldingly in engagement with the well, a retainer mounted on said device, and means for actuating said retainer to move its end over the recess in said device and thereafter actuating said device to remove a washer from the well.

15. In a machine of the class described, a raceway for containing grommets, a feed-slide, means for reciprocating said slide to remove a grommet from the end of the raceway, and means for holding said slide down upon the flange of the grommet.

16. In a machine of the class described, a plunger, a setting device yieldingly mounted in said plunger, a feed-slide for moving a washer into alinement with the setting device, and means for actuating said plunger to carry the end of the setting device into the plane of movement of the feed-slide as the washer is moved into alinement with the setting device, substantially as described.

17. In a machine of the class described, a setting device, means for actuating said setting device, hoppers for containing grommets and washers, raceways into which the grommets and washers pass from said hoppers, a well located at the lower end of the washer-raceway for receiving washers passing from said raceway, means for feeding grommets from the grommet-raceway into alinement with the setting device, means for removing washers from said well and carrying them into alinement with the setting device, and means for forcing the washers in the well toward said washer-removing means.

18. In a machine of the class described, a punch and a setting device, levers for actuating said punch and setting device, means for operating said levers, hoppers for containing grommets and washers, means operated by said levers for oscillating said hoppers, raceways into which the grommets and washers pass from said hoppers, a well located at the lower end of the washer-raceway for holding washers, a reciprocating slide for feeding grommets from the grommet-raceway into alinement with the setting device, and a reciprocating slide for feeding washers from said well into alinement with said setting device.

19. In a machine of the class described, a setting device, a lever for operating said setting device, a rod for actuating said lever, reciprocating slides for feeding grommets and washers into alinement with the setting device, means carried by the rod for reciprocating the washer-feeding slide, and mechanism independent of said last-named means for reciprocating the grommet-feeding slide.

20. In a machine of the class described, a setting device, a lever for actuating said setting device, a device for feeding a grommet into alinement with the setting device, means for moving the grommet-feeding device forwardly, and yielding means independent of said last-named means for moving said feeding device rearwardly.

21. In a machine of the class described, a setting device, a lever for operating said setting device, a rod for actuating said lever, feeding-slides for moving grommets and washers into alinement with the setting device, means actuated by said rod for moving said slides forwardly, and yielding means for moving said slides rearwardly.

22. In a machine of the class described, a washer-feeding slide, an actuator connected to said slide, a reciprocating rod, a block pivotally connected to said rod and adapted to move the actuator in one direction, a stop carried by said rod, means for holding said block normally in engagement with said stop, and means for moving the actuator in the opposite direction.

23. In a machine of the class described, a washer-feeding slide, an actuator connected to said slide and provided with a roller, a reciprocating rod, a block pivotally connected to said rod and provided with an inclined face that is adapted to engage said roller and move the washer-feeding slide forwardly when the rod is moved in one direction, means for moving the washer-feeding slide rearwardly, and an engaging face formed on said block and adapted to contact with said roller for swinging the block on its pivot when the rod is moved in the other direction.

24. In a machine of the class described, a setting device, mechanism for actuating said setting device, means for feeding grommets into alinement with the setting device, a centering-pin for holding a grommet in operative position, a lever to which said pin is connected, and means movable with the setting-device-actuating mechanism for operating said lever.

25. In a machine of the class described, a setting device, a lever for actuating said device, a plurality of hoppers for containing washers and grommets, shafts on which said hoppers are fulcrumed, raceways formed independent of said hoppers and located adjacent thereto for receiving the washers and grommets, a connection between said grommet-hopper and the setting-device-actuating lever whereby movement of said lever will oscillate said hopper and cause the grommets to drop into the grommet-raceway, and means for oscillating the washer-hopper to cause the washers to drop into the washer-raceway.

26. In a machine of the class described, a hopper for containing washers, a receiving-raceway having an inclined vertical passage-way down which the washers roll in a substantially vertical position, and a delivery-raceway having an inclined horizontal passage-way down which the washers travel in a substantially horizontal position, the lower end of the receiving-raceway being bent at an angle to the main portion thereof and located in alinement with the upper end of the delivery-raceway, substantially as and for the purpose described.

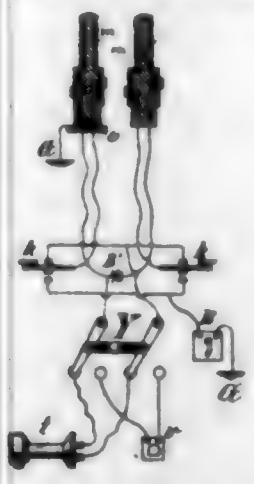
27. In a machine of the class described, a gromet-hopper comprising a tray provided with a plurality of parallel grooves which in width are substantially equal to the diameter of the flange of a gromet, and a cover for said tray which is provided at its lower edge with a plurality of notches in alinement with the grooves in the tray and which in width are substantially equal to the diameter of the shank of a gromet.

28. In a machine of the class described, a well for holding washers and constructed to permit the washers to pass therefrom, a follower, and means for actuating said follower intermittently to bear upon washers in the well and force them toward the point at which they pass from the well, the well being constructed to admit washers when the follower is withdrawn.

29. In a machine of the class described, a well for holding washers and constructed to permit the washers to pass therefrom, automatic means for supplying the well with washers, and a follower for forcing the washers down into the well toward the point at which they pass from the well.

30. In a machine of the class described, a setting device, a well for holding washers, means for removing a washer from the well and placing it in alinement with the setting device, a follower, and means for actuating said follower intermittently to bear upon the washers in the well and force them toward the point at which the washers are engaged by said removing means.

817,781. MULTIPLE SWITCHBOARD FOR TELEPHONE-EXCHANGES. MILO G. KELLOGG, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 30, 1891. Serial No. 413,606.



Claim.—1. In a telephone-exchange system, a metallic-circuit and a ground-circuit line connected together in a complete circuit for conversation from the ground of the subscriber's ground-circuit line through such line and thence through the metallic-circuit line to ground at the central office, two circuit connections of high retardation, one for each line, through both of which respectively said complete circuit is grounded at the central office and the line-annunciators forming part of said circuit connection, substantially as set forth.

2. In a telephone-exchange system, a metallic-circuit and a ground-circuit line connected together in a complete circuit for conversation from the subscriber's ground of the ground-circuit line through such line and thence through the metallic-circuit line to ground at the central office, and the annunciators of the two lines through both of which respectively said complete circuit is grounded at the central office, in combination with a test-battery in said complete circuit and a test-receiving instrument at each board grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with each line, substantially as set forth.

3. In a telephone-exchange system, a metallic-circuit and a ground-circuit line connected together in a complete circuit for conversation from the subscriber's ground of the ground-circuit line through such line thence through the metallic-circuit line to ground at the central office, and retardation-coils, one for each line, through which said complete circuit is grounded at the central office, in combination with a test-battery in said complete circuit and a test-receiving instrument at each board grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with each line, substantially as set forth.

4. In a telephone-exchange system, a metallic-circuit and a ground-circuit line connected together in a complete circuit for conversation from the subscriber's ground of the ground-circuit line through such line and thence through the metallic-circuit line to ground at the central office, and retardation-coils and annunciators, one of each for each line through which said complete circuit is grounded at the central office, in combination with a test-battery in said complete circuit, and a test-receiving instrument at each board grounded on one side and connected on its other side to a plug or device adapted to be brought for testing into connection with each circuit, substantially as set forth.

5. In a telephone-exchange, telephone-lines each permanently grounded at the central office and a test circuit or connection for each line open to its line and grounded, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are connected together for conversation, substantially as set forth.

6. In a telephone-exchange system, telephone-lines each permanently grounded at the central office and a test circuit or connection for each line open to the line and grounded through a resistance-coil, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are connected together for conversation, substantially as set forth.

7. In a telephone-exchange system, telephone-lines, each permanently grounded at the central office and a test circuit or connection for each line open to the line and grounded, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are connected together, and a test-receiving instrument grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with any of said test-circuits, substantially as set forth.

8. In a telephone-exchange system, telephone-lines each permanently grounded at the central office, a test circuit or connection for each line open to its line and connected to one side of a test-receiving instrument, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery, and a plug or device connected to the other side of said test-receiving instrument and adapted to be brought into connection with any of said test-circuits, substantially as set forth.

9. In a telephone-exchange system, telephone-lines each permanently grounded at the central office, and a test wire or circuit for each line open to the line and connected through an individual resistance-coil to one side of a test-receiving instrument, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are switched for conversation, and a plug or device connected to the other side of said test-receiving instrument and adapted to be brought into connection with any of said test-circuits, substantially as set forth.

10. In a telephone-exchange system, multiple switchboards, telephone-lines connected to the same and permanently grounded at the central office, switch apparatus by which any two of said lines may be connected together for conversation and test wires or circuits, one for each line, open to the line, extending to all the boards and grounded, in combination with apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are switched together for conversation, and test-receiving instruments one at each board, each instrument grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with any of said test-circuits, substantially as set forth.

11. In a telephone-exchange system, multiple switchboards, telephone-lines connected to the same and permanently grounded at the central office, switch apparatus by which any two of said lines may be connected together for conversation and test wires or circuits, one for each line, each open to its line, extending to all the boards and grounded through an individual resistance-coil, in combination with apparatus and connections by which any two of said test-circuits are connected together for conversation, and test-receiving instruments, one at each board, each instrument grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with any of said test-circuits, substantially as set forth.

12. In a telephone-exchange system, multiple switchboards, telephone-lines connected to the same and permanently grounded at the central office, switch apparatus by which any two of said lines may be connected together for conversation and test-receiving instruments, one at each board, in combination with test wires or circuits one for each line, each open to the line, extending to all the boards and connected to one side of each of said test-receiving in-

struments, apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are switched together for conversation, and plugs or devices, one for each test-receiving instrument, connected to the other side of the instrument and adapted to be brought into connection with any of said test-circuits, substantially as set forth.

13. In a telephone-exchange system, multiple switchboards, telephone-lines connected to the same and permanently grounded at the central office, switch apparatus by which any two of said lines may be connected together for conversation, and test-receiving instruments, one at each board, in combination with test wires or circuits one for each line, each open to the line, extending to all the boards and connected through an individual resistance-coil to one side of each of said test-receiving instruments, apparatus and connections by which any two of said test-circuits are connected together through a test-battery when their lines are connected together for conversation and plugs or devices one for each test-receiving instrument, each connected to the other side of its instrument and adapted to be brought into connection with any of said test-circuits, substantially as set forth.

14. In a telephone-exchange system, telephone-lines a ground connection for each line at the central office permanently connected to the line and a test circuit or connection for each line open to the line and grounded, in combination with test-battery through which each test-circuit is grounded while its line is switched for conversation, substantially as set forth.

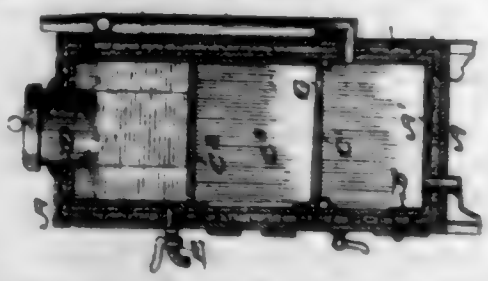
15. In a telephone-exchange system, telephone-lines a ground connection for each line at the central office permanently connected to the line and a test circuit or connection for each line open to the line and grounded through a resistance-coil, in combination with test-battery through which each test-circuit is grounded while its line is switched for conversation, substantially as set forth.

16. In a telephone-exchange system, telephone-lines each permanently grounded at the central office and a test circuit or connection for each line open to the line and grounded, in combination with test-battery through which each test-circuit is grounded while its line is switched for conversation, and test-receiving instruments, one at each board, each grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with each of said test-circuits, substantially as set forth.

17. In a telephone-exchange system, telephone-lines each permanently grounded at the central office, and a test circuit or connection for each line open to the line and grounded through a resistance-coil, in combination with test-battery through which each test-circuit is grounded while its line is switched for conversation and test-receiving instruments, one at each board, each grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with each of said test-circuits, substantially as set forth.

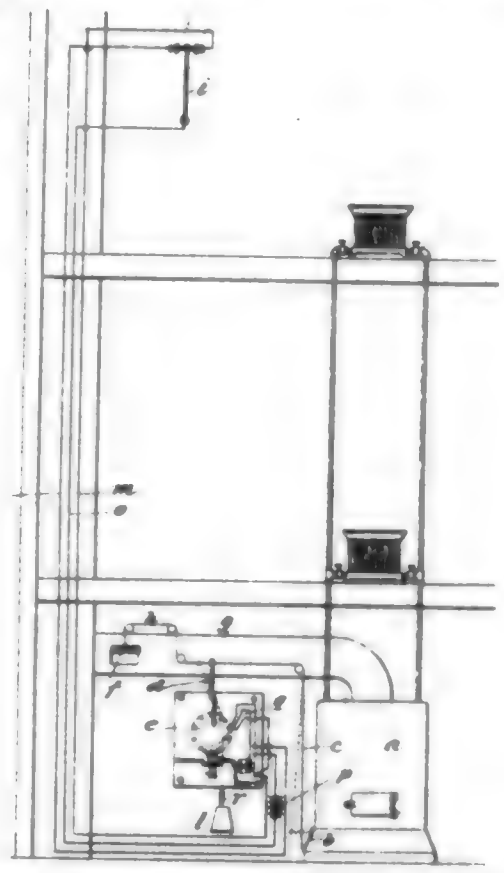
18. In a telephone-exchange system, multiple switchboards, telephone-lines connected to the same and permanently grounded at the central office, switch apparatus by which any two of said lines may be connected together for conversation and test wires or circuits, one for each line, open to the line, extending to all the boards and grounded, in combination with apparatus and connections by which any of said test-circuits is grounded through a test-battery when its line is switched together for conversation, and test-receiving instruments, one at each board, each instrument grounded on one side and connected on its other side to a plug or device adapted to be brought into connection with any of said test-circuits, substantially as set forth.

817,782. **REFRIGERATOR.** ELIZA C. KENDRICK, Nashville, Tenn. Filed Aug. 1, 1903. Serial No. 167,914.



Claim.—A refrigerator comprising a plurality of compartments having doors in the front thereto and adapted to contain articles of food, a ventilating-pipe arranged vertically at the rear of said refrigerator and having communication with the lower portion of said refrigerator, the doors of said compartments having each a perforation adjacent their upper edge, and means for closing said perforations.

817,783. **DEVICE FOR REGULATING HEATING APPARATUS.** WILLIAM H. KIRNAN, Bayonne, N. J. Filed Jan. 11, 1904. Serial No. 188,632.



Claim.—1. The combination with a thermostat, of a rotatable wheel, projections on the wheel, a lever-arm so pivoted that it will be engaged by the projections, a lock engaged by the projections for securing the wheel against rotation, and means controlled by the thermostat for actuating the lock.

2. The combination with a thermostat, of a rotatable wheel, alternately-arranged long and short projections on the wheel, a lever-arm so pivoted that it will be engaged by the long projections, a lock engaging with the projections for securing the wheel against rotation, and means controlled by the thermostat for actuating the lock.

3. The combination with a thermostat, of a rotatable wheel, projections on the wheel, a lever-arm so pivoted that it will be engaged by the projections, a heater having a door or damper, connections between the lever-arm and the door or damper of the heater to be regulated, a lock for securing the wheel against rotation, and means controlled by the thermostat for actuating the lock.

4. The combination with a thermostat, of a rotatable wheel, alternately-arranged long and short projections on the wheel, a lever-arm so pivoted that it will be engaged by the long projections, a heater having a door or damper, connections between the lever-arm and the door or damper of the heater to be regulated, a lock engaging with the projections for securing the wheel against rotation, and means controlled by the thermostat for actuating the lock.

5. The combination with a thermostat, of a rotatable wheel, a lock for securing the wheel against rotation, a latch for tripping the lock, means controlled by the thermostat for releasing the latch, means carried by the wheel for resetting the latch, and a lever-arm so arranged that it will engage with the resetting means.

6. The combination with a thermostat, of a rotatable wheel, alternately-arranged long and short projections, a lever-arm so pivoted that it will be engaged by the long projections, a lock engaging with the projections for securing the wheel against rotation, a latch for tripping the lock, and means controlled by the thermostat for actuating the latch.

7. The combination with a thermostat, of a rotatable wheel, projections on the wheel, a lever-arm so pivoted that it will be engaged by the projections, connections between the lever-arm and the door or damper of the heater to be regulated, a lock for securing the wheel against rotation, a latch for tripping the lock, and means controlled by the thermostat for actuating the latch.

8. The combination with a thermostat, of a rotatable wheel, alternately-arranged long and short projections on the wheel, a lever-arm so pivoted that it will be engaged by the long projections, a heater provided with a door or damper, connections between the

lever-arm and the door or damper of the heater to be regulated, a lock engaging with the projections for securing the wheel against rotation, a latch for tripping the lock, and means controlled by the thermostat for actuating the latch.

9. The combination with a thermostat, of a rotatable wheel, means for rotating the wheel, projections on the wheel, a lever-arm so pivoted that it will be engaged by the projections, connections between the lever-arm and the door or damper of the heater to be regulated, a lock for securing the wheel against rotation, and means controlled by the thermostat for actuating the lock.

10. The combination with a thermostat and an electric circuit, of a rotatable wheel, means for rotating the wheel, a lock for securing the wheel against rotation, a latch for tripping the lock, an armature for freeing the latch, electric means within the circuit for actuating the armature, and means carried by the wheel for resetting the latch.

11. The combination with a thermostat and an electric circuit, of a rotatable wheel, means for rotating the wheel, alternately-arranged long and short projections on the wheel, a lever-arm so pivoted as to be engaged by the long projections, a lock engaging with the projections for securing the wheel against rotation, a latch for tripping the lock, an armature for freeing the latch, and electric means within the circuit for actuating the armature.

12. The combination with a thermostat and an electric circuit, of a rotatable wheel, means for rotating the wheel, a lock engaging with the wheel for securing it against rotation, a latch for tripping the lock, an armature for freeing the latch, means carried by the wheel for resetting the latch, electric means within the circuit for actuating the armature, and contact-points arranged within the path of movement of the wheel for breaking the circuit after the movement of the wheel.

13. The combination with a thermostat and an electric circuit, of a rotatable wheel, means for rotating the wheel, alternately-arranged long and short projections on the wheel, a lever-arm so pivoted as to be engaged by the long projections, a lock engaging with the projections for securing the wheel against rotation, a latch for tripping the lock, an armature for freeing the latch, electric means within the circuit for actuating the armature, and contact-points arranged within the path of movement of the projections and engaged by the long projections for breaking the circuit after a movement of the wheel.

14. The combination with a rotatable wheel, means for rotating the wheel, projections on the wheel, a bell-crank lever so pivoted that one arm may swing in the path of movement of the projections and lock the wheel against rotation, a second bell-crank lever forming a latch, a projection carried by one of the levers and adapted to engage with the other to free the lock from engagement with the wheel, a pivoted lever engaging with the latch, a spring for moving the latch into engagement with the lock, and a projection on the latch adapted to be engaged with the projections on the wheel, and a projection on one of the levers adapted to be engaged by the other lever for moving the lock in the path of the projections.

15. The combination with a rotatable wheel, means for rotating the wheel, projections on the wheel, a bell-crank lever so pivoted that one arm may swing in the path of movement of the projections and lock the wheel against rotation, a second bell-crank lever forming a latch, a projection carried by one of the levers and adapted to free the lock from engagement with the wheel, means for releasing the latch, a pivoted lever engaging with the latch, a spring for moving the latch into engagement with the lock, a projection on the latch adapted to be engaged by the projections on the wheel, and a projection on one of the levers adapted to be engaged by the other lever for moving the lock in the path of movement of the projections.

16. The combination with a movable element and source of power therefor, of a latch having a depending portion, a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, and means for actuating the latch.

17. The combination with a movable element and a source of power therefor, of a latch having a depending portion, a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a second projection on one of the portions adapted to be engaged by the other for setting the lock and means for actuating the latch.

18. The combination with a movable element and a source of power therefor, of a latch having a depending portion, a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a second projection on one of the portions adapted to be engaged by the other for setting the lock, means for actuating the lock, and means carried by the movable element for resetting the latch.

19. The combination with a movable element and a source of power therefor, of a latch having a depending portion, a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a projection on the latch by means of which it is moved and means for actuating the latch.

20. The combination with a movable element and a source of power therefor, of a latch having a depending portion, a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a second projection on one of the portions and adapted to be engaged by the other for setting the lock, a projection on the latch, by means of which it is moved, and means for actuating the latch.

21. The combination with a movable element and a lock therefor, of a latch for tripping the lock, and a common pivot for the lock and latch, and means for actuating the latch.

22. The combination with a movable element and a lock therefor, of a latch for tripping the lock, a common pivot for the lock and latch, and magnetic means for releasing the latch.

23. The combination with a movable element and a lock therefor, of a latch for tripping the lock, a common pivot for the lock and latch, means for actuating the latch, and means carried by the moving element for resetting the latch.

24. The combination with a movable element and a lock therefor, of a latch for tripping the lock, a common pivot for the lock and latch, magnetic means for releasing the latch, and means carried by the moving element for resetting the latch.

25. The combination with a movable element and a latch having a depending portion, of a lock having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a common pivot for the latch and lock, and means for actuating the latch.

26. The combination with a movable element, and a lock having a depending portion, of a latch having a depending portion, a pin carried by one of the portions and adapted to be engaged by the other for tripping the lock, a common pivot for the lock and latch, means for actuating the latch, and means carried by the moving element for resetting the latch.

27. The combination with a movable element, of a latch having a depending portion and a pin thereon, a lock having a depending portion and adapted to be engaged by the pin, a projection on the lock adapted to be engaged by the latch, and means for actuating the latch.

28. The combination with a movable element, of a latch having a depending portion and a pin thereon, a lock having a depending portion and adapted to be engaged by the pin, a projection on the lock which is adapted to be engaged by the latch, means for actuating the latch, and a common pivot for the latch and lock.

29. The combination with a movable element and a lock therefor, of a latch for actuating the lock, having an arm, a stop for the arm, a spring connected to the arm, the spring being upon substantially the same plane as the arm when engaged by the stop, and means for releasing the latch.

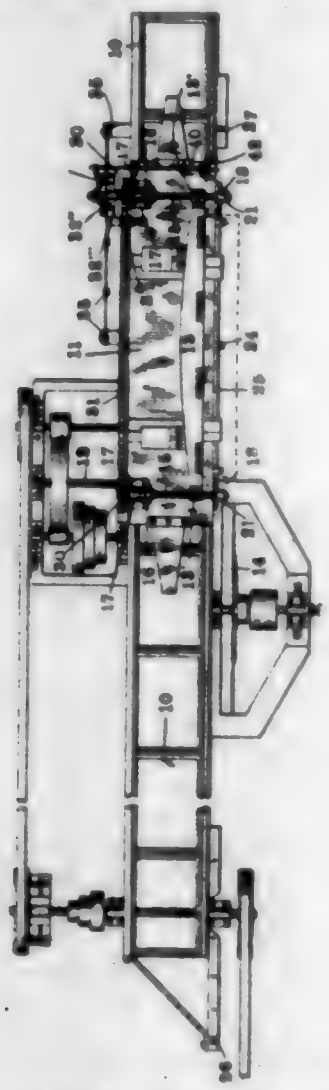
30. The combination with a movable element, of a latch having an arm, a stop therefor, a spring, and a link connecting the spring and arm, the said link having a body portion with upset extremities, the spring and link being upon substantially the same plane as the arm when engaged by the stop, and means for tripping the latch and lock.

31. The combination with a movable element and a lock therefor, of a latch for actuating the lock, the said latch having an arm, a stop therefor, a spring, a link connecting the spring and arm, the said link having a body portion with upset extremities, the spring and link being upon substantially the same plane as the arm when engaged by the stop, means for tripping the latch and lock, and means carried by the moving element for resetting the latch and lock.

817,784. VENEER-CUTTER. LOUIS KOSS, Indianapolis, Ind. Filed Dec. 14, 1904. Serial No. 236,788.

Claim.—1. In a veneer-machine, the combination, with the cutter, the flitch-carriage, and means for moving one with relation to the other, of a flitch-head carried by the carriage and transversely movable thereon toward and from the plane of the cutter, a pair of screw-rods engaging said flitch-head, journal-blocks for said screw-rods mounted in suitable ways on the carriage and movable toward and from the plane of the cutter, a pair of shafts journaled on the carriage

substantially at right angles to the screws and each provided with an eccentric portion, a direct connection between each of said eccentric portions and one of the journal-blocks, a pair of links between said eccentric portions and the journal-blocks, a segmental gear carried by each of said shafts, a rack-bar mounted on the carriage and connecting the two segmental gears, operating means carried by each of said shafts, and means dependent upon the relative movement between the carriage and cutter for alternately engaging said operating means, for the purpose set forth.

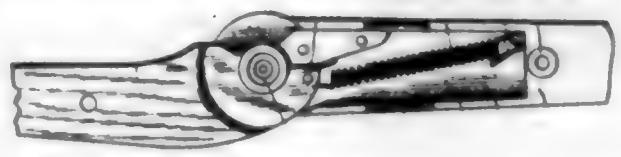


2. In a veneer-machine, the combination, with a cutter, and a flitch-head mounted on said carriage and movable toward and from the plane of the cutter, a pair of screw-rods journaled on the carriage and engaging the flitch-head, intermediate connections between the screw-rods for simultaneous movement thereof, a ratchet-wheel carried by one of said screw-rods, a pawl-arm carried by the carriage and provided with pawls adapted to engage said ratchet-wheel, means carried by the frame for engaging said pawl-arm, a shield shielding a portion of said ratchet, and means for readily and accurately adjusting said shield with relation to the path of travel of the pawls during operation.

3. In a veneer-machine, the combination, with a cutter and a flitch-carriage, of means for moving one with relation to the other in a plane parallel therewith, setback means for moving one transversely to the other, feeding means for moving one transversely with relation to the other in opposition to the setback means, means dependent upon the relative movement between the cutter and flitch-carriage in the cutting plane for automatically operating the setback means, means dependent upon the relative movement between the cutter and flitch-carriage in the cutting plane for automatically operating the feeding means, means operable at all times for varying the action of the operating means on the feeding means, and means for accurately gaging the position of said varying means at all times.

4. In a veneer-sawing machine, the combination, with a saw and a flitch-carriage, of setback means for moving one transversely with relation to the other for the return stroke of the carriage, feeding means for moving one with relation to the other in opposition to the setback means during the return stroke of the carriage, means dependent upon the movement of the flitch-carriage for automatically operating the setback means, means dependent upon the movement of the flitch-carriage for automatically operating the feeding means, means operable at all times for varying the action of said automatic means on the feeding means, and means for accurately gaging and maintaining the position of said varying means at all times.

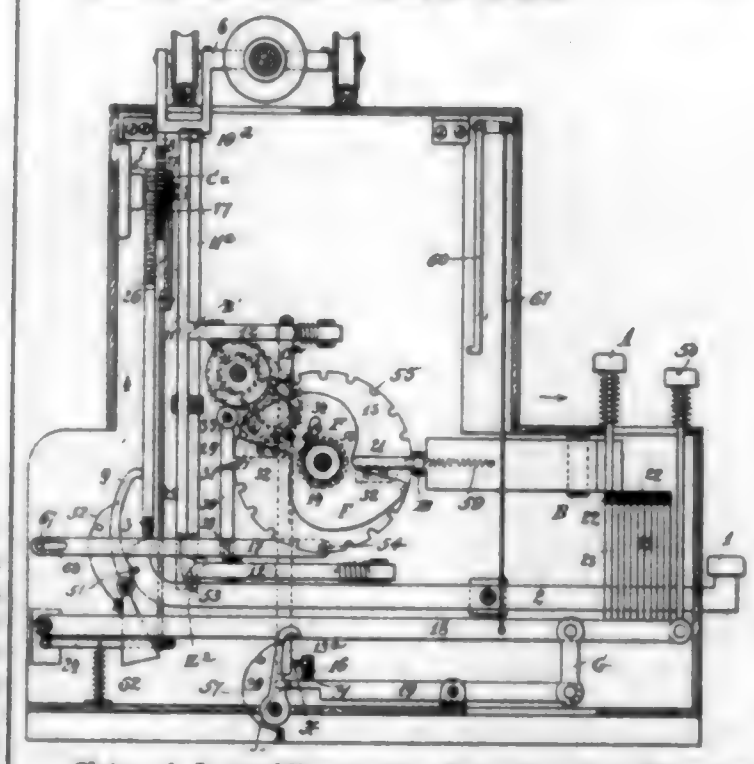
817,785. JOINT FOR ARTIFICIAL LIMBS. CHARLES E. KRITSCH, Washington, D. C. Filed Feb. 23, 1906. Serial No. 302,546.



Claim.—1. A knee-joint for artificial legs, comprising two plates adapted for attachment to the sections of the leg, one of said plates having an aperture adjacent to one end, a hollow boss mounted in said aperture and to which the other plate has pivotal connection, a spring connecting the plates, and a stop carried by one of the plates and adapted to limit the throw of the plates in one direction, as set forth.

2. A knee-joint for artificial legs, comprising two plates, one of which has a hollow boss projecting from opposite faces thereof, the other plate being recessed with a projection at the end of said recess which is apertured to receive one end of the boss, a stop mounted in the recess and against which an end of the boss-carrying plate is adapted to contact, a spring mounted within said recess and connecting said plates, a closure for the recess, a screw passing through said boss, and a nut engaging said screw, as set forth.

817,786. ADDING-MACHINE. MICHAEL KUN, Budapest, Austria-Hungary, assignor to L. & G. Haiphen, Prague, Austria-Hungary, a Firm. Filed Jan. 13, 1904. Serial No. 188,756.



Claim.—1. In an adding-machine, the combination with notched disks and cams rotating therewith, means for rotating the disks, and means actuated by the cams for indicating the totals, substantially as described.

2. In an adding-machine, the combination with notched disks and cams rotating therewith, tongues carrying total-adding keys, the said cams actuating the tongues, bridges actuating the type, the said total-adding keys being arranged to move over the bridges so that when the total-adding keys are depressed on the bridges the corresponding type-levers which have been previously used for printing single items are depressed and affect the impression of the total amount.

3. In an adding-machine, the combination with notched disks, cams, tongues, bridges, and racks actuating the disks, and means for moving said racks into gear by the paper-carriage and keys when depressed, substantially as described.

4. In an apparatus of the type disclosed, the improved means for the adjustment of the paper-carriage to the highest unit, which comprises unit-keys, levers, and cross-bar, the cross-bar being lifted by the ends of the levers, a rack carried by the cross-bar, pinions, the said rack engaging with and setting in rotation the said pinions, and a second rack arranged below the carriage, the said rack being moved forward by the pinions.

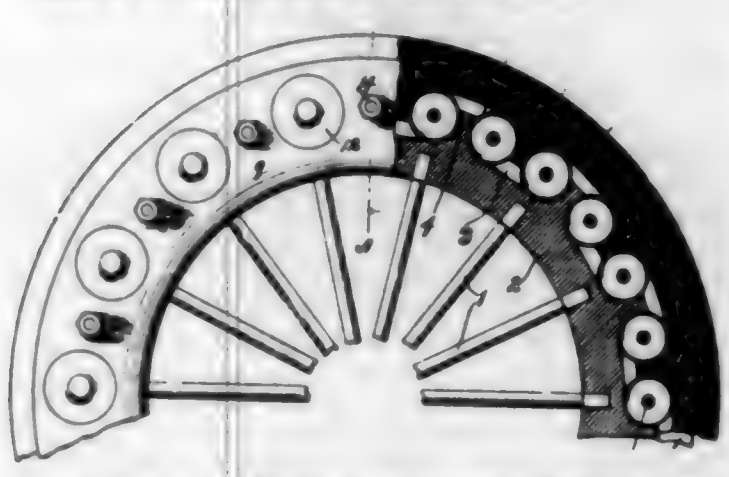
5. In an apparatus of the type disclosed, the combination of a cross-bar, a paper-carriage and a series of notched disks, means for connecting the cross-bar to the paper-carriage and to a notched disk,

means for limiting the extent of movement of the bar, and means comprising restraining-catches of different heights adapted to engage with the key-levers, the catches being rotatably arranged in such a manner the same are released on movement of the key-levers and are formed into the path of the cross-bar to be lifted, by means of spring-pressure, in order to determine the height of stroke, and therefore the position of the paper-carriage, so that an overstroke is prevented, and therefore the paper-carriage is guided to the proper place value, and the notched disk is rotated about an angle corresponding to the number to be printed, substantially as described.

6. In an adding-machine, the combination with notched disks, cams, tongues, bridges, racks, type-bars, cross-bars, and paper-carriage, and means for parallelly guiding the bridges, the said means being connected with the type-bars, and the cross-bars engaging with the paper-carriage, or cams.

7. In an adding-machine, the combination with notched disks, cams, tongues, bridges, racks, type-bars, cross-bars, paper-carriage and means for parallelly guiding the bridges connected with the type-bars and the cross-bars engaging with the paper-carriage or cam-disks, said cross-bar being provided on the one hand with a vertical rack, and on the other hand connected by a vertical arm to a rotatable double lever, on the other end of which a rack is attached, which engages on one side in a toothed wheel, while the rack connected to the cross-bar engages on the other side of said pivoted toothed wheel, substantially as described.

817,787. **VEHICLE-WHEEL.** FREDERICK J. LANCASTER, New York, N. Y. Filed Jan. 28, 1905. Serial No. 243,596.



Claim.—1. The combination with a vehicle-wheel felly, of an annular series of independent springs arranged around the wheel-felly, and a tire of rubber compound or analogous material having an annular series of inwardly-extended lugs overlapping the springs whereby the tire is interlocked to and yieldingly spaced from the felly by the said springs.

2. The combination with a vehicle-wheel felly having an annular series of outwardly-extended lugs, of a tire of rubber compound or analogous material unattached to any metallic band or its equivalent and having an annular series of inwardly-extended lugs and springs engaging the lugs of the felly and tire for yieldingly spacing the tire from and interlocking it with the felly.

3. The combination with a vehicle-wheel felly having an annular series of outwardly-extended lugs, of a tire of rubber compound or analogous material unattached to any metallic band or its equivalent and having an annular series of inwardly-extended lugs and coil-springs interposed between each pair of alternating lugs for yieldingly spacing the tire from and interlocking it with the felly.

4. The combination with a vehicle-wheel felly having alternating annular series of sockets and lugs, of a tire of rubber compound or analogous material unattached to any metallic band or its equivalent and having an annular series of lugs extending into the said felly-sockets and springs located in the sockets engaging the tire and interposed between the said lugs for yieldingly spacing the tire from and interlocking it with the felly.

5. The combination with a vehicle-wheel felly having alternating annular series of sockets and lugs, of a tire having lugs extended into the said sockets and springs interposed between the lugs for yieldingly spacing the tire from and interlocking it with the felly, the said felly being provided with annular flanges for overlapping the sides of the tire.

6. The combination with a vehicle-wheel felly having an annular series of outwardly-extended rigid lugs, of a tire of rubber compound or analogous material unattached to any metallic band or its equivalent and having an annular series of inwardly-extended yielding lugs alternating with said rigid lugs and springs interposed between the rigid and yielding lugs for yieldingly spacing the tire from and interlocking it with the felly.

7. The combination with a wheel-felly having outwardly-extending projections, and a tire of rubber compound or analogous material having inwardly-extending projections, of independent springs arranged one between each of the projections of the felly and the next adjacent projection of the tire, substantially as specified.

8. The combination with a wheel-felly having outwardly-extending projections, and a tire of rubber compound or analogous material having inwardly-extending projections, of a spring filling the space between each of the projections of the felly and the next adjacent projection of the tire, substantially as specified.

9. The combination with a wheel-felly having outwardly-extending projections, of a tire of rubber compound or analogous material having inwardly-extending projections, and independent springs arranged so as to have support upon the wheel-felly, and to severally and independently give direct support locally to the portions of the tire outside of them, substantially as specified.

10. The combination with a wheel-felly, of a tire of rubber compound or analogous material having inwardly-extending projections, and independent springs constructed and arranged so as to have their axes substantially parallel with the axis of the wheel-felly and interposed between the said projections of the tire and supported by the wheel-felly, substantially as specified.

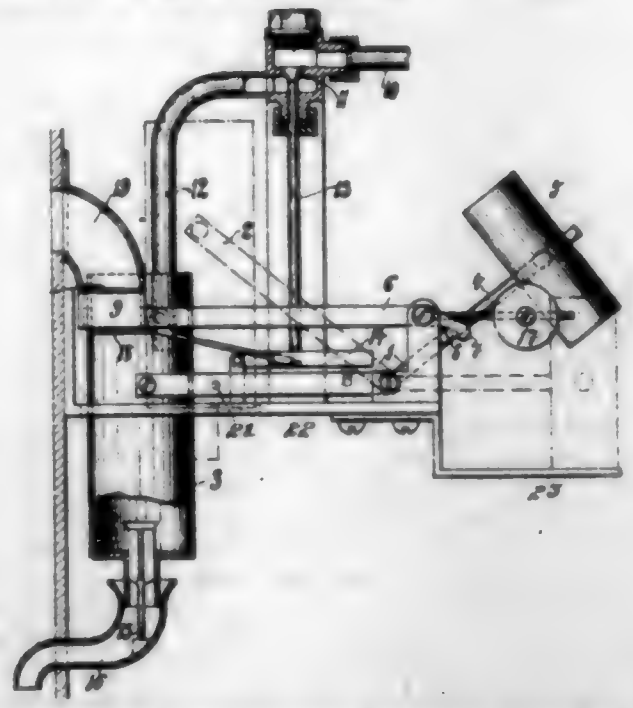
11. The combination with a wheel-felly having outwardly-extending projections, of a tire of rubber compound or analogous material having inwardly-extending projections, and independent springs constructed and arranged so as to have their axes substantially parallel with the axis of the wheel-felly and interposed between the said projections of the felly and tire, substantially as specified.

12. A wheel-felly, a tire of rubber compound or analogous material, and springs arranged between said two parts, all being so combined that the felly and tire shall be prevented from any substantially independent rotary movement, without being directly fastened one to the other, and so that the springs shall be independent and serve to locally support portions of the tire outside of them, substantially as specified.

13. A wheel-felly, a tire of rubber compound or analogous material, and springs arranged between said two parts, all being so combined that the felly and tire shall be prevented from any substantially independent rotary movement, without being directly fastened one to the other, and so that the springs shall be separated and independent and serve to locally support portions of the tire outside of them, substantially as specified.

14. The combination with a wheel-felly and a tire of rubber compound or analogous material locked against longitudinal movement thereon, of a plurality of independent springs having their axes substantially parallel with the axis of the wheel-felly.

817,788. **COIN-CONTROLLED LIQUID-VENDING APPARATUS.** ERICK W. LINDGREN, Hagalund, near Stockholm, Sweden. Filed Sept. 19, 1904. Serial No. 225,113.

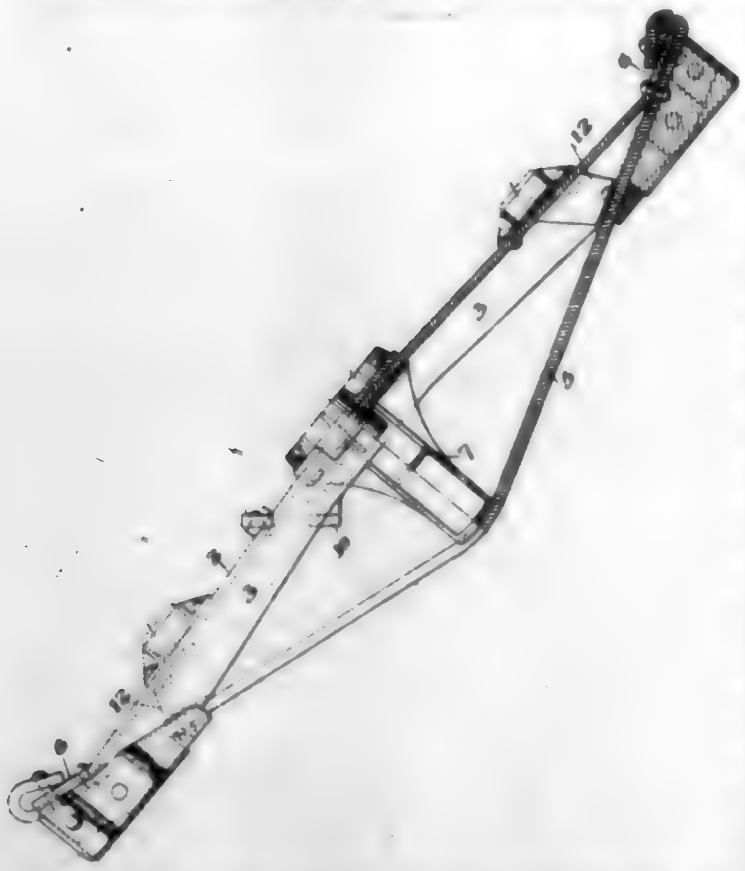


Claim.—1. A liquid-dispensing apparatus comprising a supporting structure, a measuring-cup, a cup-supporting lever pivotally

secured thereto at one end and provided at its opposite end with an adjustably-mounted weight, a stop limiting the movement of said weight in one direction, a lug mounted on the weighted end of said lever, a coin-controlled lever provided with a projecting pawl adapted to engage said lug, a weight normally holding said lever in a position to engage the pawl with said lug, the opposite end of said lever having a coin-receiving pocket adapted to receive coins of a prescribed denomination, the weight of said coins serving to disengage said pawl and lug, a filling-pipe for said cup, a valve in said pipe having a projecting stem, a pivotally-mounted valve-lever adapted to engage said stem and located in operative relation to said cup-supporting lever, a self-closing valve secured in the lower end of the measuring-cup having a stem projecting below the same, and a receiving or draining pipe serving to open said valve.

2. A liquid-dispensing apparatus comprising a structure, a measuring-cup, a cup-supporting lever pivotally secured thereto at one end and provided at its opposite end with an adjustably-mounted weight, a stop limiting the movement of said weight in one direction, a lug mounted on the weighted end of said lever, a coin-controlled lever provided with a projecting pawl adapted to engage said lug, a weight normally holding said coin-lever in a position to engage the pawl with the lug, the opposite end of said lever having a coin-receiving pocket adapted to receive coins of a prescribed denomination, the weight of said coins serving to disengage said pawl and lug, a weighted pocket-lever pivotally mounted to said coin-lever and serving normally to hold the coin in said pocket, said pocket-lever releasing the coin from said pocket when the pawl and lug are disengaged, a filling-pipe for said cup, a valve in said pipe having a downwardly-projecting stem, a pivotally-mounted valve-lever adapted to engage said stem and located in operative relation to said cup-supporting lever, a self-closing valve secured in the lower end of said measuring-cup having a stem projecting below the same, and a receiving or draining pipe provided with a lug adapted to engage said valve-stem.

817,789. TRUCK-BOLSTER. CHARLES A. LINDSTRÖM, Allegheny, Pa., assignor to Pressed Steel Car Company, McKees Rocks, Pa., a Corporation of New Jersey. Filed Dec. 8, 1905. Serial No. 290,883.



Claim.—1. In a truck-bolster, a pressed-steel compression member of channel form, having at its central portion a relatively wide web and relatively shallow flanges, and at its end portions deeper flanges and a narrower web portion; said end portions being bent upwardly to receive a tension member substantially as described.

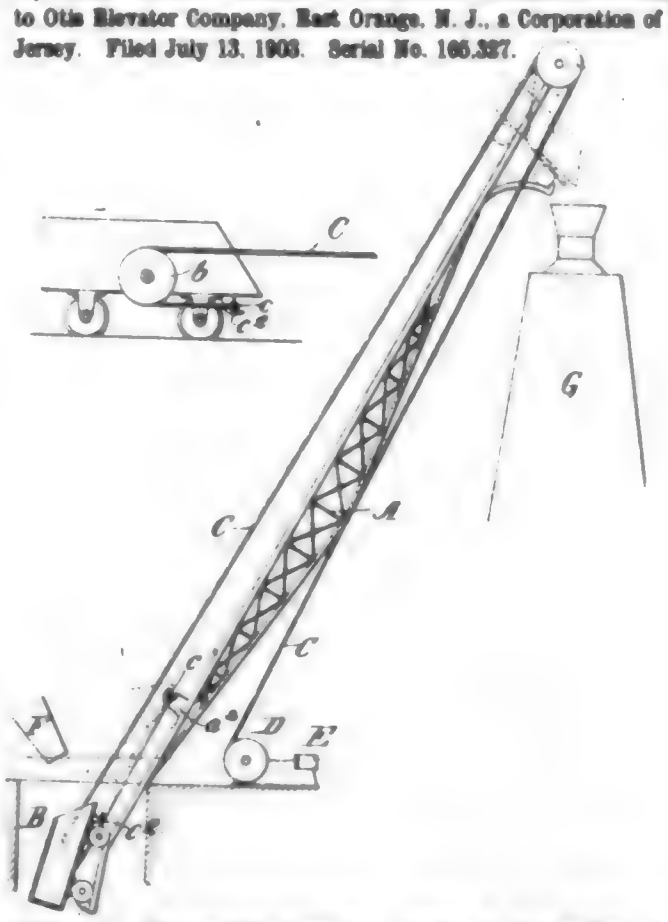
2. In a truck-bolster, a compression member of pressed steel of channel form, having its web portion of increased width at the center and having upwardly-bent end portions; substantially as described.

3. In a truck-bolster, a pressed-steel compression member having its web portion of increasing width from both ends toward its center, and flange portions of decreasing depth from the ends toward the center the end portions of the web being bent upwardly; substantially as described.

4. In a truck-bolster, a pressed-steel compression member of channel form, formed from a single plate or sheet and having at its central portion a relatively wide web and relatively shallow flanges, and at its end portions a relatively narrow web and deeper flanges said end portions being bent upwardly; substantially as described.

5. A truck-bolster having a pressed-steel compression member of channel form, wider at its center than at its ends, and having its flange portions of increasing depth toward the ends which are bent upwardly, and a tension member connected thereto; substantially as described.

817,780. HOIST. ERNEST W. MARSHALL, Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed July 13, 1903. Serial No. 165,327.



Claim.—1. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a motor and cable for effecting the travel of the car on the incline, and means for overcoming the inertia of said car and load with a lessened initial pull comprising a sheave or pulley carried by the car and around which the cable passes, and means situated near the starting-point of the car for holding the end of the cable.

2. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a motor and cables for effecting the travel of the car on the incline, and means for overcoming the inertia of said car and load with a lessened initial pull, comprising a sheave or pulley carried by the car and around which the cables pass, and means situated near the starting-point of the car for holding the ends of the cables.

3. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a motor and cable for effecting the travel of the car on the incline, and means comprising a sheave or pulley around which the cable passes, and a stop near the lower end of the incline for holding the end of the cable, whereby the inertia of said car and load is overcome with a lessened initial pull.

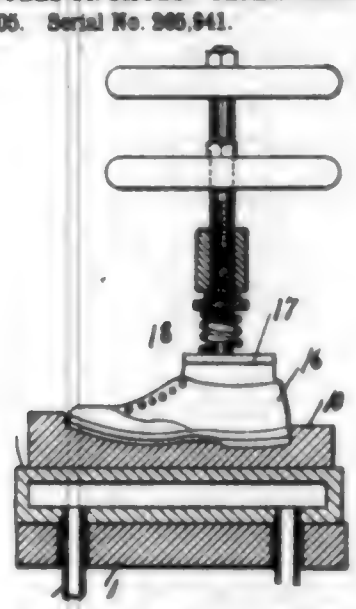
4. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a motor and cable for effecting the travel of the car on the incline, means comprising a sheave or pulley around which the cable passes, and a stop near the lower end of the incline for holding the end of the cable, whereby the inertia of said car and load is overcome with a lessened initial pull, and means carried by the car for carrying the end of the rope with it after it has started up the incline.

5. The combination in a hoist, of an incline, a car adapted for travel up and down the incline, a motor and cable for effecting the travel of the car on the incline, and means for starting said car at less speed than that of the cable and afterward moving the car at the same speed as that of the cable.

6. The combination in a hoist, of an incline, the lower end of which is in a steeper grade than the remainder of the incline, a car

adapted for travel up and down the incline, a motor and cable for effecting the travel of the car on the incline, and means for starting said car at less speed than that of the cable when the car is on the steeper grade of the incline.

817,791. **MECHANISM FOR MOLDING AND VULCANIZING RUBBER SOLES ON SHOES.** THOMAS MILLER, Auburn, R. I. Filed June 19, 1905. Serial No. 265,941.



Claim.—1. In a device of the character described, a mold adapted to form the heel, sole and foxing portion of a shoe from rubber or other plastic material, means for applying heat to said mold for vulcanizing its contents, means for applying pressure to said mold while vulcanizing, and means for causing resistance to the plastic material so the same will be forced into the pores of the upper.

2. In a device of the character described, a mold adapted to form the heel, sole and foxing portion only of a shoe, a last adapted to fit into said mold and assist in the formation of said heel, sole and foxing portion therein, said mold being so formed as to closely engage the foxing-line of said last to cause a resistance and prevent the free flowing of the material therefrom, and means for applying heat and pressure to the material.

3. In a device of the character described, a mold adapted to form the heel, sole and foxing portion of a shoe, a last over which a shoe may be formed the same being adapted to fit the mold and assist in the formation of the heel, sole and foxing therein, means for applying heat and pressure to the material, and means in said last and mold for causing resistance to the plastic material so that the same will be formed into the pores of the upper.

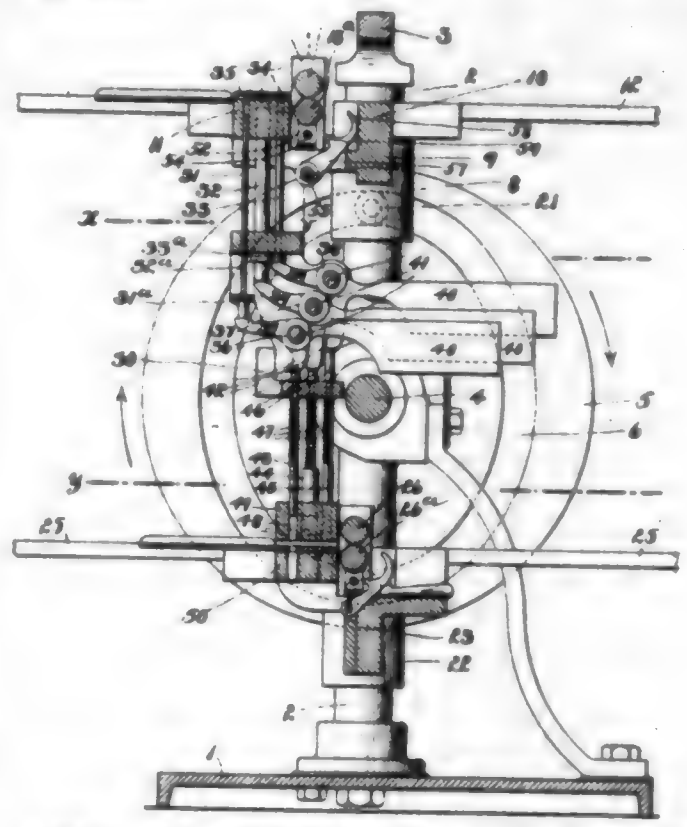
4. In a device of the character described, a mold adapted to form the heel, sole and foxing portion of a shoe, a last over which a shoe may be formed the same being adapted to fit the mold and assist in the formation of the heel, sole and foxing therein, said mold being so formed as to closely fit the upper on the last at the foxing-line thereof to cause a resistance and insure the plastic material being forced into the pores of the upper, and means for applying heat and pressure to the material.

5. In a device of the character described, a mold adapted to form the heel, sole and foxing portion of a shoe from rubber or other plastic material, means for applying heat to said mold for vulcanizing its contents, a last or form to assist in the formation of the heel, sole and foxing portion, means for applying pressure to said mold while vulcanizing, and means engaging the foxing-line to better retain the material while under pressure.

6. In a device of the character described, a mold formed in one piece adapted to form the heel, sole and foxing portion of a shoe, a last adapted to fit into said mold and assist in the formation of said heel, sole and foxing portion therein, said mold being so formed as to closely engage the foxing-line of said last to cause a resistance and prevent the free escape of the material in order to compress and harden the same, means for applying heat, and flexible means for applying pressure to the material.

7. In a device of the character described, a mold made in one piece adapted to form heel, sole and foxing portion only of a shoe, a last over which a shoe may be formed, flexible means for applying pressure to said last, said last adapted to fit the mold and assist in the formation of the heel, sole and foxing portion therein, said mold being so formed as to closely fit the upper on the last at the foxing-line thereof to cause a resistance when under pressure and insure the plastic material being forced into the pores of the upper and adhere to the same, and means for applying heat to the material.

817,792. **PATTERN-CARD-REPRODUCING MACHINE.** ACHILLE D. MONIOT, Philadelphia, Pa. Filed May 26, 1905. Serial No. 262,307.



Claim.—1. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower reciprocatory frames, means for reciprocating said frames toward and from each other, the stationary frame between said upper and lower frames, the rods supported by and vertically movable in said stationary frame, and whose upper ends register with holes through said upper frame, the punches carried by and vertically movable in said stationary frame and whose lower ends register with corresponding holes through said lower frame, together with means carried by said stationary frame and connecting said rods and punches, whereby when one or more of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch or punches will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

2. In a pattern-card-reproducing machine, the combination of the vertical side pillars, the upper and lower frames carried by sleeves mounted on said pillars so as to be capable of vertical movement thereon, the stationary frame supported by said pillars and extending laterally therebetween, between said upper and lower frames, the rods supported by and vertically movable in said stationary frame, the upper ends of said rods respectively slidably engaging corresponding holes through said upper frame, the punches carried by and vertically movable in said stationary frame, and whose lower ends slidably engage corresponding holes through said lower frame, together with means carried by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

3. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower reciprocatory frames, means for reciprocating said frames toward and from each other, the stationary frame between said upper and lower frames, the rods supported by and vertically movable in said stationary frame, and whose upper ends slidably engage corresponding holes through said upper frame, means for limiting the extent of upward movement of said rods, the punches carried by and vertically movable in said stationary frame, and whose lower ends slidably engage corresponding holes through said lower frame, means for limiting the downward movement of said punches, together with means carried by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

4. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower reciprocatory frames, carried thereby, means for reciprocating said frames toward and from each other, the stationary frame between said upper and lower

frames, the rods supported by and vertically movable in said stationary frame, and whose upper ends slidably engage corresponding holes through said upper frame, the bell-crank levers pivotally supported by said stationary frame having limbs below and contiguous to said rods, the punches carried by and vertically movable in said stationary frame and whose lower ends slidably engage corresponding holes through said lower frame, and whose upper ends are below and contiguous to substantially vertically disposed limbs of said bell-crank levers, respectively, substantially as set forth.

5. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower vertically-reciprocatory frames, means for reciprocating said frames toward and from each other, the feed-rollers carried by and journaled in said respective frames and whose meeting peripheries are in line with the upper surfaces of said frames respectively, the stationary frame extending laterally across the machine between said upper and lower frames, the rods supported by and vertically movable in said stationary frame, and whose upper ends slidably engage corresponding holes through said upper frame, the punches carried by and vertically movable in said stationary frame, and whose lower ends slidably engage corresponding holes through said lower frame, means supported by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

6. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower vertically-reciprocatory frames, means for reciprocating said frames toward and from each other, the feed-rollers journaled in said respective frames, and whose meeting peripheries are respectively in line with the upper surfaces of said frames, means for imparting a step-by-step rotation to said rollers at predetermined times, to feed forward cards upon said respective frames a definite predetermined distance, the stationary frame extending laterally across the machine between said upper and lower frames, the rods supported by and vertically movable in said stationary frame and whose upper ends respectively slidably engage corresponding holes through said upper frame, the punches carried by and vertically movable in said stationary frame, and whose lower ends slidably engage corresponding holes through said lower frame, together with means supported by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

7. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower vertically-reciprocatory frames, means for reciprocating said frames toward and from each other, the pairs of feed-rollers journaled respectively in said upper and lower frames, and whose meeting peripheries are in line with the upper surfaces respectively of said frames, the ratchet-wheel on one of each of said pairs of feed-rollers, the pawl-like rods, supported by said supporting-frame and whose inner ends are adapted respectively to be engaged by a tooth of said ratchet-wheels when said frames are reciprocated to their outermost position, whereby said ratchet-wheels and so said feed-rollers are rotated a definite distance, the stationary frame extending laterally across the machine between said upper and lower frames, the rods supported by and vertically movable in said stationary frame and whose upper ends slidably engage corresponding holes through said upper frame, the punches carried by and vertically movable in said stationary frame, whose lower ends slidably engage corresponding holes through said lower frame, together with means supported by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

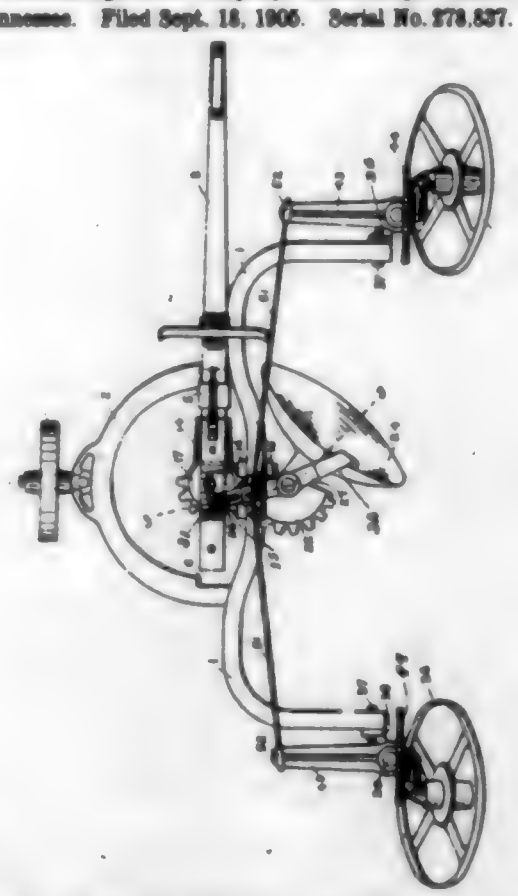
8. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower reciprocatory frames, means for reciprocating said frames toward and from each other, the pairs of feed-rollers carried by said upper and lower frames, respectively, and whose meeting peripheries are in line with the upper surfaces of said frames respectively, means for separating said rollers of the respective pairs, to permit insertion of cards therebetween, the stationary frame extending laterally across the machine between said upper and lower frames, the rods carried by and vertically movable in said stationary frame, and whose upper ends respectively slidably engage corresponding holes through said upper frame, the punches carried by and vertically movable in said stationary frame, and whose lower ends slidably engage corresponding holes through said lower frame, together with means supported by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

9. In a pattern-card-reproducing machine, the combination of the supporting-frame, the upper and lower reciprocatory frames, means for reciprocating said frames toward and from each other, the pairs of feed-rollers carried by said upper and lower frames respectively, and whose meeting peripheries are in line with the upper surfaces of said frames respectively, means for separating said rollers of the respective pairs to permit insertion of cards therebetween, and said means constituting an end gage for said cards respectively, the stationary frame extending laterally across the machine, the rods supported by and vertically movable in said stationary frame and whose upper ends respectively slidably engage corresponding holes through said upper frame, the punches supported by and vertically movable in said stationary frame and whose lower ends respectively slidably engage corresponding holes through said lower frame, together with means carried by said stationary frame and connecting said rods and punches, whereby when one of said rods is prevented from having vertical movement in said stationary frame, the corresponding punch will be prevented from having vertical movement therein, and vice versa, substantially as set forth.

10. In a machine for repeating jacquard-cards, a track for receiving the card, feed-rollers for advancing the card, selecting-needles arranged to coact with the cards, punches under the control of the selecting-needles, and a card-regulating stop arranged to swing between the rollers to limit the position of the end of the card with respect to the rollers.

11. In a machine for punching jacquard-cards, a track for the cards, feed-rollers for advancing the card step by step, one of said feed-rollers having a yielding bodily movement toward and away from the other, punches, selecting-needles, means for operating the punches and selecting-needles and a card-regulating stop comprising a swinging arm provided with a roller-operating nose and a lip, and under the control of the operator for simultaneously separating the feed-rollers and forming an abutment for the entering card.

817,793. PLOW. JOSIAH H. MOORE, Chattanooga, Tenn., assignor to Chattanooga Plow Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Sept. 18, 1905. Serial No. 278,837.



Claim.—1. The combination with the frame, a plow reversible on an upright axis, and two free, swiveled furrow-wheels approximately equidistant from the axis of the plow, of a hand-lever, mechanism joining said hand-lever and said furrow-wheels, said hand-lever being fulcrumed adjacent to said axis of the plow, substantially as described.

2. The combination with the frame, a plow reversible on an upright axis, and two free, swiveled furrow-wheels approximately equidistant from the upright axis of the plow, a tongue hinged on an upright axis adjacent to the upright axis of the plow, of a hand-lever shiftable by said tongue, and mechanism joining said hand-lever and said furrow-wheels, substantially as described.

3. The combination with the frame, a plow reversible on an upright axis, and two free, swiveled furrow-wheels approximately equidistant from the upright axis of the plow, and a tongue hinged on an upright axis adjacent the upright axis of the plow, of a shiftable hand-lever fulcrumed upon a shiftable member in operative relation with said tongue, mechanism joining said hand-lever and said furrow-wheels, substantially as described.

4. In a reversible moldboard-plow, the combination with the plow-frame and two swiveled furrow-wheels, of the segment-gears 17 and 22, a cross-bar, 27, a hand-lever mounted upon said cross-bar, mechanism joining said hand-lever and said furrow-wheels, substantially as described.

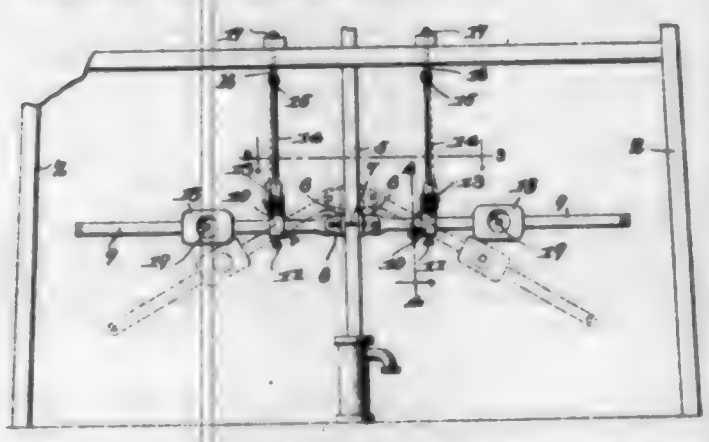
5. The combination with the frame, a plow reversible on an upright axis, and two free, swiveled furrow-wheels approximately equidistant from said axis of the plow, of a hand-lever, mechanism joining said hand-lever and said furrow-wheels, said hand-lever being fulcrumed adjacent to said axis of the plow, and mechanism adjacent each of said furrow-wheels for raising or lowering the adjacent portion of said frame, substantially as described.

6. The combination with the frame, a plow reversible on an upright axis, and two free, swiveled furrow-wheels approximately equidistant from the upright axis of the plow, a tongue hinged on an upright axis adjacent to said upright axis of the plow, of a hand-lever shiftable by said tongue, mechanism joining said hand-lever and said furrow-wheels, and mechanism adjacent each of said furrow-wheels for raising or lowering the adjacent portion of said frame, substantially as described.

7. The combination of a plow-frame comprising a horizontal, semicircular segment provided with notches, 6, a tongue hinged on the axis of said segment, a slidable latch-block surrounding said tongue and adapted to engage in said notches and carrying a lip extending beneath said segment, and a shifting-lever coupled to said block and fulcrumed to said tongue, substantially as described.

8. The combination of a plow-frame comprising a horizontal, semicircular segment provided with notches, 6, a tongue hinged on the axis of said segment, a slidable latch-block surrounding said tongue and adapted to engage in said notches and carrying a lip extending beneath said segment, a spring for shifting said block in one direction, and a lever coupled to said block and fulcrumed to said tongue for shifting said block in the opposite direction, substantially as described.

817,794. PUMP-ROD BALANCE. JAMES MCKAY, Gilman, Iowa. Filed July 31, 1905. Serial No. 272,004.

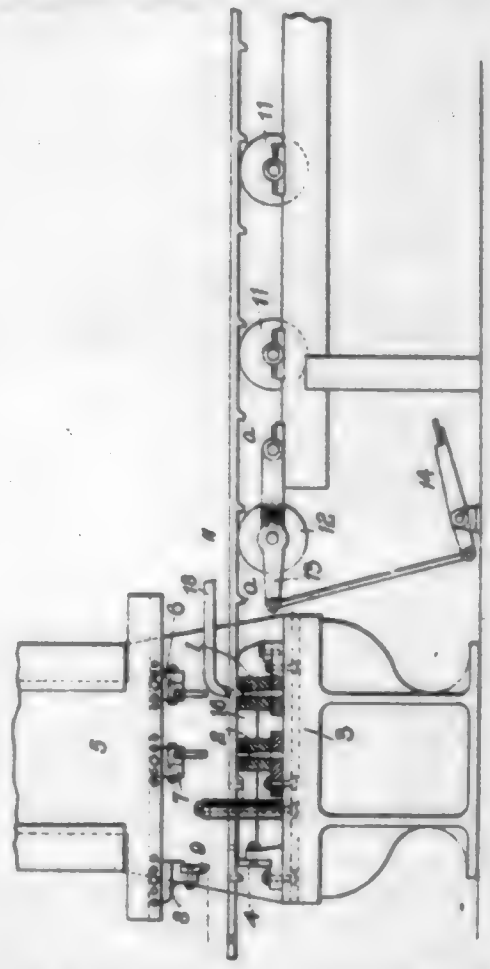


Claim.—1. A sucker-rod, a guide for the same, weighted arms pivotally connected with the sucker-rod, sleeves upon said arms, and links connecting said sleeves with the rod-guide.

2. Supporting means, a sucker-rod guided in said supporting means, links suspended from the latter and spaced from the sucker-rod, arms connected pivotally with the latter and with the links, and adjustable weights upon said arms.

3. In a device of the class described, a pair of spaced supporting-beams having recesses in their inner faces, a pump-rod guided in said recesses, plates clamped upon said rod and having laterally-extending lugs, arms pivoted in said lugs, weights adjustable upon said arms, sleeves adjustable upon said arms, eyebolts connected with the supporting-beams, and links connecting said eyebolts with the adjustable sleeves.

817,795. MACHINE FOR MANUFACTURING TIE-PLATES. WILLIS MCKEE, Elyria, Ohio. Filed Jan. 7, 1905. Renewed Feb. 24, 1906. Serial No. 302,760.



Claim.—1. In a machine for manufacturing tie-plates, &c., the combination of stationary dies, vertically-movable punches and a stop arranged to permit the passage of the body of the article but adapted to engage a projecting portion of the article to be punched, substantially as set forth.

2. In a machine for manufacturing tie-plates, &c., the combination of stationary dies, a stationary shear-blade, movable punches and shear-blade and a stop arranged to permit the passage of the body of the article but adapted to engage a projecting portion of the article operated on, substantially as set forth.

3. In a machine for manufacturing tie-plates, &c., the combination of adjustably-mounted punching-dies, an adjustable shear-blade, a movable head, punches and a shear-blade adjustably mounted in the head, and a stop arranged to engage a projecting portion of the article operated on, substantially as set forth.

4. In a machine for manufacturing tie-plates, &c., the combination of punching-dies, a stop arranged to engage a projecting portion of the article operated on, dies adjustable with reference to said stop, a movable head, punches carried by said head, one or more of said punches being adjustable and a stop arranged intermediate of the dies adapted to engage a projecting portion of the article operated on, substantially as set forth.

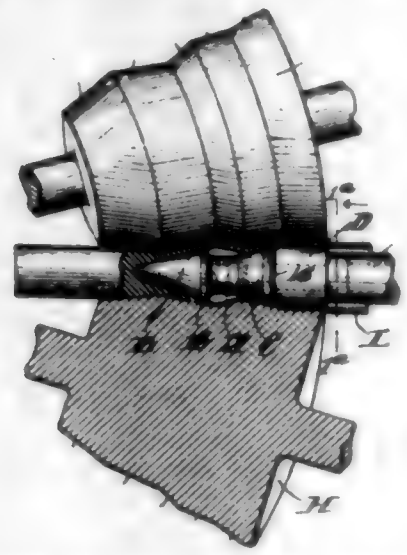
5. In a machine for manufacturing tie-plates, &c., the combination of dies, a movable head, punches carried by said head, a plate provided with a stop-shoulder adapted to engage a projection on the under side of the article to be punched, and means for raising said article clear of the stop, substantially as set forth.

6. In a machine for manufacturing ribbed tie-plates, &c., the combination of vertically-movable punches and stationary dies provided in their upper faces with grooves for the reception of the ribs on the plates whereby a firm bearing for the plate on the dies is provided, substantially as set forth.

817,796. APPARATUS FOR CROSS-ROLLING TUBULAR BODIES OR BLANKS. JOHN H. NICHOLSON, Pittsburg, Pa., assignor to National Tube Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 1, 1904. Serial No. 201,078.

Claim.—1. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, means for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, converging roll-walls for externally compressing the blank, a second plug or mandrel rotatable independ-

ently of said first-named plug, roll-walls for again expanding, elongating and reducing the thickness of the blank upon said second-named plug, an independently-rotatable smoothing-mandrel, and roll-walls for compressing and smoothing the tube on said smoothing-mandrel.



2. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, means for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, converging roll-walls for externally compressing the blank, an independently-rotatable smoothing-mandrel, and roll-walls for compressing and smoothing the tube on said smoothing-mandrel.

3. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, means for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, a second plug or mandrel rotatable independently of said first-named plug, and roll-walls for again expanding, elongating and reducing the thickness of the plug upon said second-named plug.

4. In an apparatus for cross-rolling tubes or blanks in a heated state, the combination of a plurality of interior plugs or mandrels, each rotatable at a different rate of speed, a plurality of externally rolling-bodies different portions of each of which rotate at different rates of speed forming a single pass and provided with rolling-surfaces between which the metal is first pressed against and expanded and reduced upon one of said interior plugs and thereafter rolled upon another of said interior plugs between rolling portions of the external rolls that are rotating with a higher peripheral speed than those pressing against said first-named plug, for substantially the purposes set forth.

5. In apparatus for cross-rolling tubes or blanks in a heated state, the combination of a plurality of interior plugs or mandrels, each rotatable at a different rate of speed, and a plurality of externally rolling-bodies forming a single pass, said rolling-bodies being constructed and fitted to rotate at a greater peripheral speed at the rear end than at the forward end of the pass, thereby causing an elongating effect upon the tubular wall in the pass, for substantially the purposes set forth.

6. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, means for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, converging roll-walls for externally compressing the blank, a second plug or mandrel rotatable independently of said first-named plug, and roll-walls for again expanding, elongating and reducing the thickness of the blank upon said second-named plug.

7. In apparatus for cross-rolling tubular bodies or blanks in a heated state, the combination of a plurality of exterior rolling-bodies, a plurality of independently-rotatable interior bodies, said exterior and interior bodies constituting means for rolling and reducing the heated metal in a single pass upon the interior bodies in succession, and between said bodies and the exterior bodies, for substantially the purposes set forth.

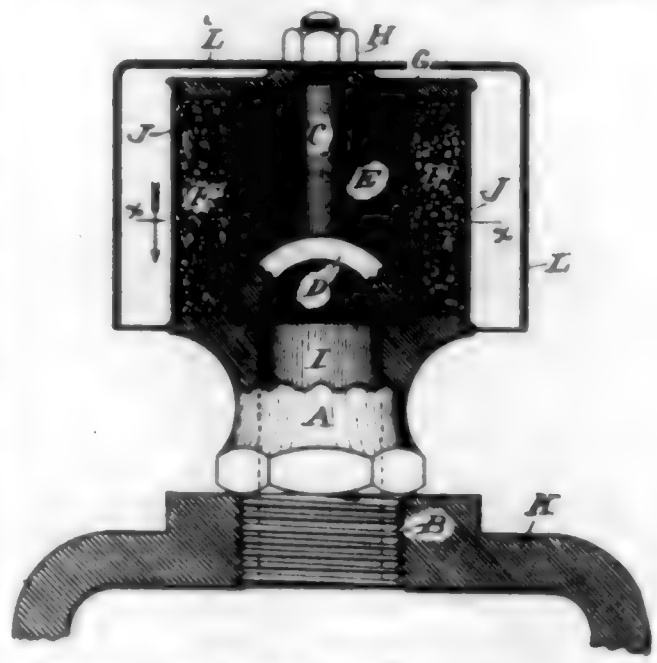
8. In apparatus for cross-rolling tubular bodies or blanks in a heated state, the combination of means for simultaneously expanding and reducing the thickness of the heated metal between interior and exterior expanding-surfaces, a cylindrical interior supporting-body, rotatable independently of said interior expanding-surface, and means for subsequently compressing and smoothing the metal inside and out upon said substantially cylindrical interior supporting-body in the same pass, for substantially the purposes set forth.

9. A rolling-mill, having a plurality of rolls forming a pass, a plurality of mandrels supported in succession in the said pass, and means for adjusting one portion of the active rolling-surface of one of the rolls relatively to the other portions, for substantially the purposes set forth.

10. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, converging roll-walls for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, converging roll-walls for externally compressing the blank, an independently-rotatable smoothing-mandrel, and roll-walls for compressing and smoothing the tube on said smoothing-mandrel.

11. In apparatus for cross-rolling tubes or blanks, rolling mechanism comprising a piercing plug or mandrel, converging roll-walls for forcing the blank on said piercing-plug, diverging roll-walls for expanding, elongating and simultaneously reducing the thickness of the blank on said plug, a second plug or mandrel rotatable independently of said first-named plug, roll-walls for again expanding, elongating and reducing the thickness of the blank upon said second-named plug.

817,797. **STRAINER FOR AIR-COMPRESSORS.** WILLIAM J. OGAN, Dayton, Ohio. Filed Feb. 1, 1906. Serial No. 299,908.



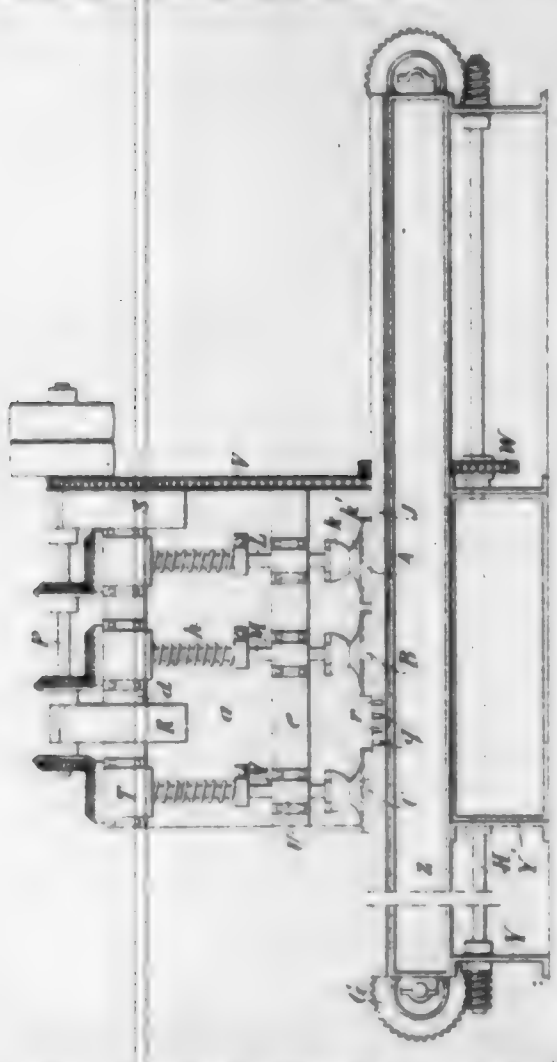
Claim.—A strainer for air-compressors, comprising a screw-threaded apertured base A with yoke D extending from its upper side and spanning the aperture, concentrically-disposed screen-cylinders E and J mounted upon said base portion and inclosed at their upper ends by a cap G, a stem C projected from the yoke D and penetrating a central aperture in the cap, said stem being provided with a nut which tightens the cap against the screen-cylinders, said screen-cylinders providing a chamber concentric therewith and lying on the outer side of the aperture in the base, a filtering medium inclosed within said chamber, and a shield inclosing said strainer and held in position by the nut which tightens the cap against the screen-cylinders.

817,798. **POLISHING-MACHINE.** JOHN R. PRINCE, New York, N. Y. Filed May 24, 1905. Serial No. 262,076.

Claim.—1. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, vertical shafts for said tools and provided with beveled pinions O, a horizontal driving-shaft P provided with beveled pinions Q engaging the pinions on said vertical shafts, a belt E for feeding the marble to said tools, a driving-shaft H for driving said belt, and a connection between said driving-shafts whereby a fixed relation is maintained between the rate of rotation of the tools and the rate of feed of the marble.

2. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, vertical shafts for said tools, a belt for feeding the marble to said tools, transverse members Y Y′ carrying at the front the belt and connected parts, and a frame car-

ried upon the rear of said transverse members and provided with bearings for said shafts projecting over said belt.



3. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, vertical shafts for said tools, a belt for feeding the marble to said tools, longitudinal members Z carrying said belt, guides J carried at the sides of said belt by said members Z, and a frame at the rear provided with bearings for said shafts projecting over said belt.

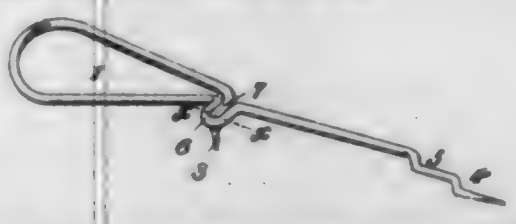
4. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, vertical shafts for said tools, a belt for feeding the marble to said tools, a frame at the rear provided with bearings for said shafts projecting over said belt, and a spring pressing each of said shafts downward, said shafts being flexibly connected to said tools.

5. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, and means between two such tools for cleaning the face of the marble.

6. A polishing-machine for marble and similar stones, including in combination successive tools for smoothing and polishing the face of the marble in successive steps, and cleaning means between two such tools and comprising a water-nozzle and a scraper.

7. A polishing-machine for marble and similar stones, including in combination a polishing-tool, and a shaft having a toothed engagement at its lower end with the tool for rotating the same.

817,799. CAN-OPENER. CLARENCE A. PHILLIPS, Washington, D. C. Filed May 6, 1905. Serial No. 259,186.

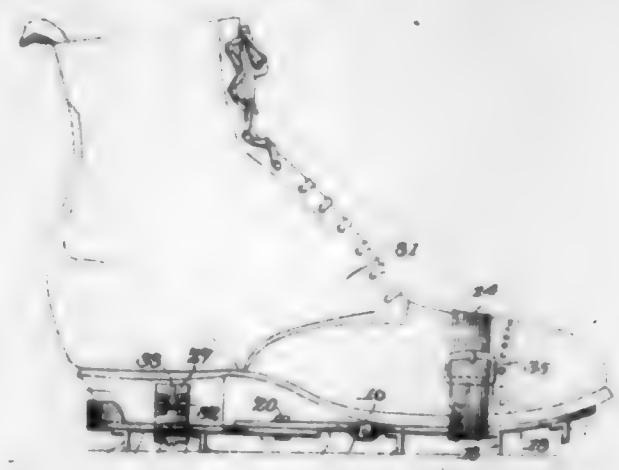


Claim.—1. A can-opener having a penetrating-point and provided with a lateral crimp or loop, and having an end portion fitted into the space formed between the members of said crimp and braced thereby and having the terminal adjacent to said crimp extended therefrom and forming a cutter.

2. A can-opener having a penetrating-point and provided with a lateral crimp or loop, and having an end portion fitted into the space formed between the members of said crimp, the adjacent sides of the bent portion and the members of the crimp being positively interlocked and having the terminal portion of the wire adjacent to said crimp extended therefrom and forming a cutter.

3. The herein-described can-opener as a new article of manufacture, the same formed of a single length of wire comprising a penetrating-point, a series of pivots adjacent to said point, a loop-shaped handle, a lateral crimp adjacent to the end of the handle and in the plane thereof, a cutter, and a bent portion adjacent to said cutter confined between the members of said crimp.

817,800. ICE-CREEPER. DANIEL L. PICKETT, Keene, N. H. Filed Aug. 21, 1905. Serial No. 275,158.

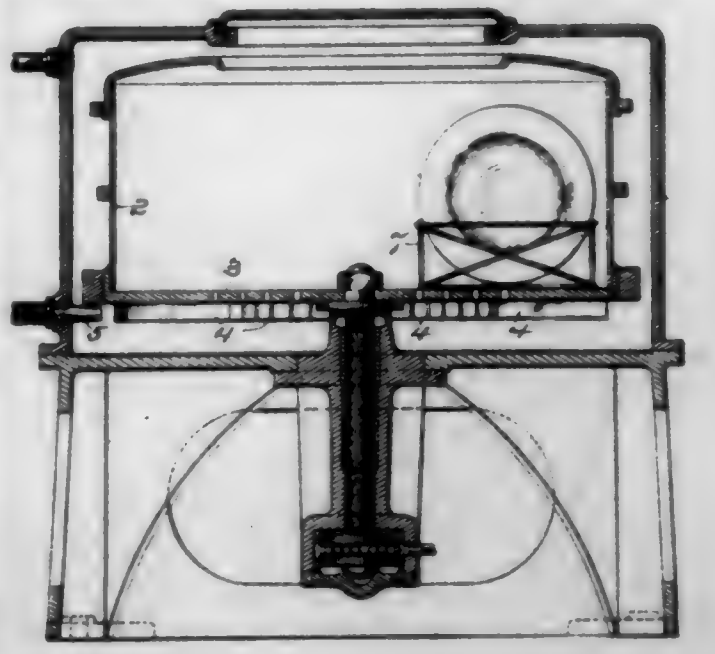


Claim.—1. In an ice-creeper, a heel member having depending spurs, clamp-plates superimposed beneath said heel member and upturned at the ends and extending inwardly and downwardly for yieldably bearing against the heel of the shoe, and means for adjustably connecting said plates to said heel member.

2. In an ice-creeper, a heel member having depending spurs, clamp-plates superimposed beneath said heel member and upturned at the ends and extending inwardly and downwardly for yieldably bearing against the heel of the shoe, a cam member pivoted in one of said upturned ends and bearing against the adjacent downwardly-extending portion, and means for adjustably connecting said plates to said heel member.

3. In an ice-creeper, a heel member having depending spurs, a toe member having depending spurs, means for flexibly uniting said heel and toe members, means for detachably connecting said toe member to the toe portion of a shoe, clamp-plates superimposed beneath said heel member and upturned at the ends with the extremities turned inwardly and downwardly for bearing against the heel of a shoe, a cam member pivoted in one of said upturned ends and operating to compress the adjacent downturned extremity against the shoe-heel, and means for adjustably connecting said plates to said heel member.

817,801. WASHING APPARATUS. JOHN W. PITTOCK, Philadelphia, Pa. Filed Sept. 12, 1905. Serial No. 278,132.



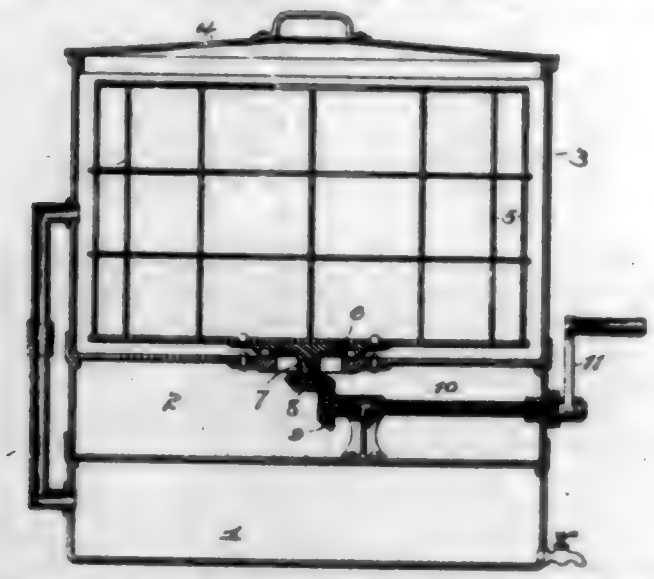
Claim.—1. In a washing-machine, the combination of a receptacle to contain articles to be cleansed, and having a perforated bottom, a turbine under said perforated bottom and means for directing steam against it.

2. In a washing-machine, the combination of a rotary receptacle, a steam-turbine under said receptacle, a steam-nozzle for directing steam against the turbine, said receptacle having a perforated bottom to permit the passage of steam upwardly through the receptacle.

3. In a washing-machine, the combination with a casing, of an upright receptacle for articles to be cleaned, having a perforated bottom and provided with a rotary mounting in the casing, an annular series of vanes under the perforated bottom of the receptacle, and a nozzle to direct steam against said vanes.

4. In an apparatus of the character described, the combination with a casing, of a revolving journal in the center of the casing-bottom, a rotary receptacle secured on the journal in the casing and having a perforated bottom and open top, an annular series of blades or vanes around the bottom of the receptacle, and a steam-nozzle directing steam against said blades or vanes and up through the perforated bottom of the receptacle.

817,802. **WASHING APPARATUS.** JOHN W. PITTOCK, Philadelphia, Pa. Filed Sept. 12, 1905. Serial No. 278,132.



Claim.—1. In an apparatus of the character described, the combination of three superposed separable compartments, the lowest compartment comprising a steam-generator, the upper compartment an article-holder, and the intermediate compartment a drain-compartment, and a pipe connecting the top and bottom compartments for the passage of steam.

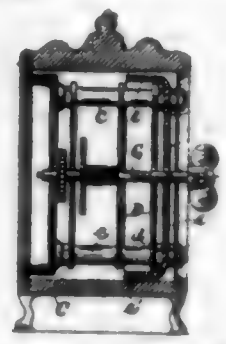
2. In an apparatus of the character described, the combination of a compartment for articles to be washed, a rotary article-holder in the compartment, a steam-generator, a pipe connecting the steam-generator and article-compartment, means for revolving the article-holder and means for draining the compartment containing the articles to be washed.

3. In an apparatus of the character described, the combination of three superposed removable compartments, each upper compartment closing the one next below, the lowest compartment forming a steam-generator, the upper compartment an article-holder and the intermediate compartment a drain-chamber, and a telescoping pipe connecting the bottom and top compartments.

4. In an apparatus of the character described, the combination with a water-chamber or steam-generator, of a drain-chamber on the steam-generator and forming a closure therefor, an article-compartment on the drain-chamber and having an opening in its bottom, a cover on the article-holder, a telescoping pipe connecting the steam-generator and article-holder, a rotary cage in the article-holder adapted to support the articles to be cleaned, a driving-journal therefor projecting into the drain-chamber and having a beveled gear thereon, a shaft supported in the drain-chamber and having a gear meshing with the first-mentioned gear, and an operating-crank on the outer end of said shaft.

817,803. **CLOCK.** WILSON R. PORTER, New Haven, Conn., assignor to The New Haven Clock Company, New Haven, Conn., a Corporation of Connecticut. Filed Apr. 22, 1902. Serial No. 104,134.

Claim.—1. In a clock, the combination with a case, having a separable end plate adapted to be secured to said case, a movement-frame located within said case; and a cup-shaped bell mounted within said case and end plate on pillars taking into said end plate, substantially as described.



2. A clock-case, bell and support for said bell, said case including side and rear parts, said parts being secured together by said support, substantially as described.

3. The combination with a clock-case and the movement-frame contained therein; of a bell arranged at the rear of said case; and a common means for supporting said movement-frame in place, and for supporting said bell, substantially as described.

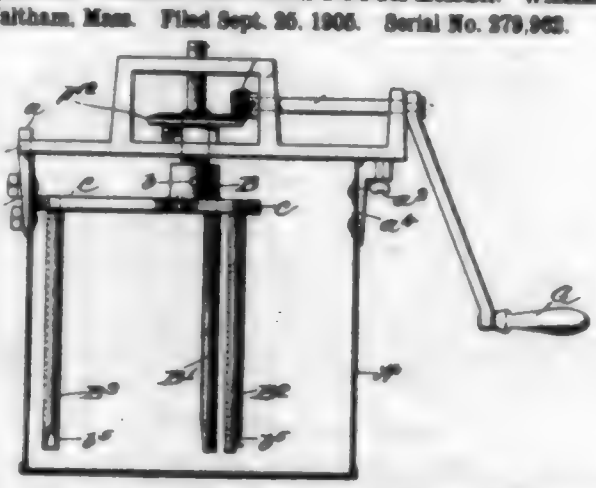
4. In a clock, the combination with a case; of a movement-frame located within said case, and consisting of a plurality of plates and pillars supporting the plates; said pillars extending beyond the rear plate of said movement-frame; of a cup-shaped bell mounted on said pillars and including within its recess the whole or part of said movement-frame; and a back plate closing said case mounted on said pillars outside of said bell, substantially as described.

5. In a clock, the combination with a case; of a separable end plate; a movement-frame consisting of a plurality of plates, pillars supporting said plates of said frame; and a bell mounted on said pillars within said case and end plate and arranged to extend laterally over and inclose a portion of said movement-frame, substantially as described.

6. In a clock, the combination with a case, having a separable end plate, adapted to be secured to said case; a movement-frame consisting of a plurality of plates; pillars supporting the plates of said movement-frame by engagement with said end plate; and a cup-shaped bell mounted on said pillars within said case and end plate, substantially as described.

7. In a clock, the combination with a case, having a separable end plate, adapted to be secured to said case; a movement-frame located within said case and obtaining support from said end plate; and a bell mounted between said case and end plate and arranged to extend laterally over and embrace a portion of said movement-frame, substantially as described.

817,804. **BREAD AND CAKE DOUGH MIXER.** WILLIAM ROSS, Waltham, Mass. Filed Sept. 26, 1905. Serial No. 279,962.



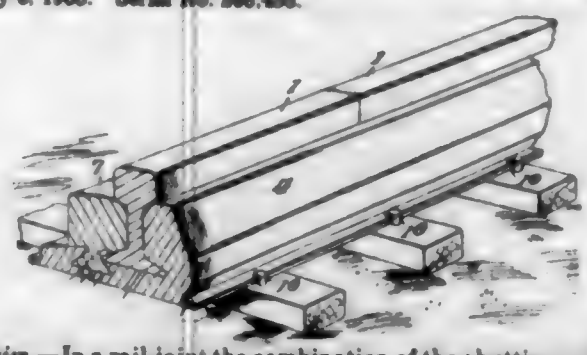
Claim.—1. A dough-mixer comprising a receptacle, a rotating shaft vertically mounted therein, means for rotating said shaft, a spider detachably sleeved upon said rotating shaft and adapted to rotate therewith, perpendicularly-mounted straight tubular stirrer-blades mounted in said spider, said blades being mounted at equi-angular distances apart and every blade being open at both ends, the opening in the bottom being in a direction opposite to the direction of rotation.

2. In a dough-mixer comprising a receptacle, a rotating shaft vertically mounted therein, means for rotating said shaft, a spider-frame detachably sleeved upon said shaft, means for attaching said spider-frame to said rotating shaft to prevent rotative movement thereof, a plurality of straight, tubular stirrer-blades perpendicularly mounted in said spider-frame, said blades being mounted at

equiangular distances apart, every blade being open at both ends, the opening in the lower end being in a direction opposite to that of rotation, which lower opening is made at an angle to the surface of the stirrer-blade, whereby the size of the opening is increased, each of the aforesaid blades being so mounted as to have a separate and distinct path of rotation.

3. In a dough-mixer comprising a receptacle, a rotating shaft vertically mounted therein, means for rotating said shaft, a spider-frame detachably sleeved upon said shaft, means for attaching said spider-frame to said rotating shaft to prevent rotative movement thereof, said means comprising a removable pin adapted to pass through the sleeve of said spider-frame and through the rotating shaft, thereby locking the two together, a plurality of straight tubular stirrer-blades perpendicularly mounted in said spider-frame, said blades being mounted at equiangular distances apart, every blade being open at both ends, the opening in the lower end being in a direction opposite to that of rotation, which lower opening is made at an angle to the surface of the stirrer-blade, whereby the size of the opening is increased, each of the aforesaid blades being so mounted as to have a separate and distinct path of rotation.

817,805. RAIL-JOINT. RAYMOND ROBINS, Waldo, W. Va. Filed July 6, 1905. Serial No. 268,436.



Claim.—In a rail-joint the combination of the abutting rail ends, a base-plate having an abutment made integral therewith which is adapted to embrace one side of the rails, said abutment having a longitudinal groove on the outer face thereof which engages with the spikes, and said base-plate being provided with a longitudinal dovetail groove located adjacent the base of the rails, and a locking member sliding in and having an interlocking connection with said groove, said locking member being adapted to embrace the opposite side of the rails to the before-mentioned abutment, and also being adapted to be locked into position by means of spikes which are engaged by notches placed at each end of the longitudinal groove.

817,806. HARNESS-MOTION FOR LOOMS. CHARLES F. ROPER, Hopedale, Mass., assignor to Draper Company, Portland, Me., a Corporation of Maine. Filed Feb. 13, 1905. Serial No. 245,453.

Claim.—1. A harness-motion for looms having, in combination, a heddle-shaft and reciprocating links at opposite ends thereof, a substantially vertical guide for each of said links, and an actuating-lever pivotally connected directly to each of said links.

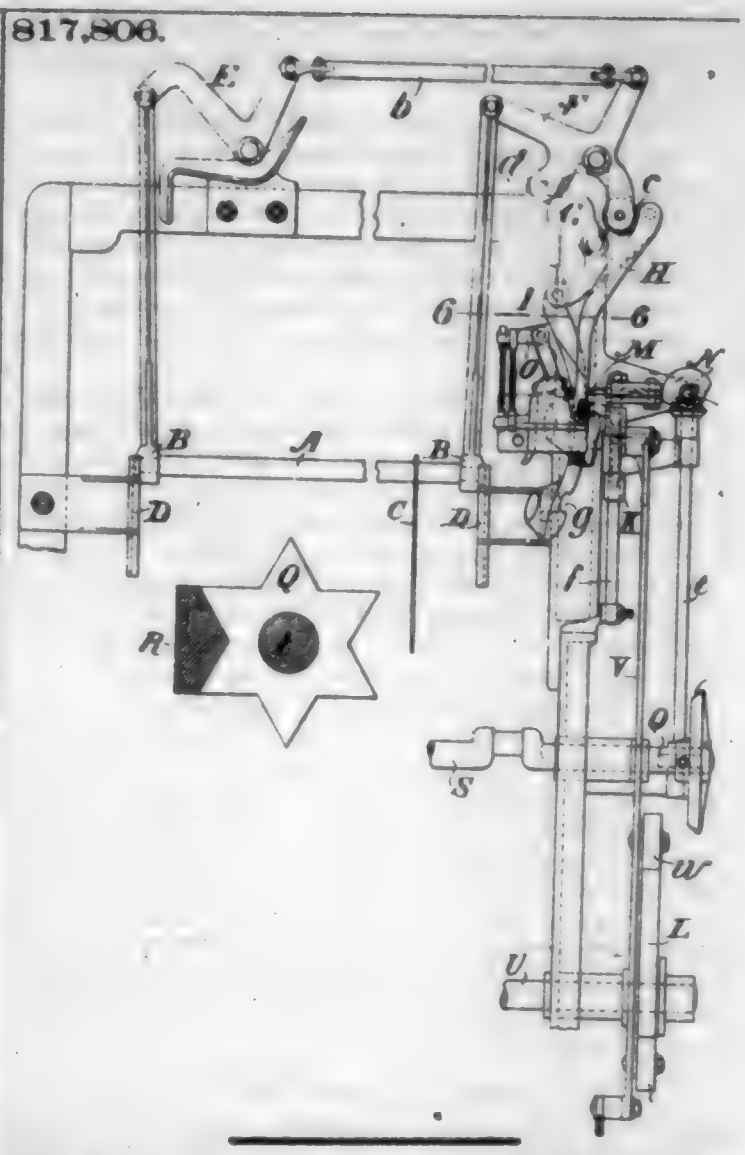
2. A harness-motion for looms having, in combination, a heddle-shaft and reciprocating links at opposite ends thereof, each link being loosely connected with one end of said shaft, a substantially vertical guide for each of said links, and an actuating-lever pivotally connected directly to each of said links.

3. A harness-motion for looms having, in combination, a heddle-shaft, two actuating-levers therefor, a reciprocating link pivotally connected at one end to one of said actuating-levers and at its other end being loosely connected to one end of said heddle-shaft, each of said links having a racking face on its outer lower end, and a substantially vertical guide for the lower end of each link which engages said rocking face.

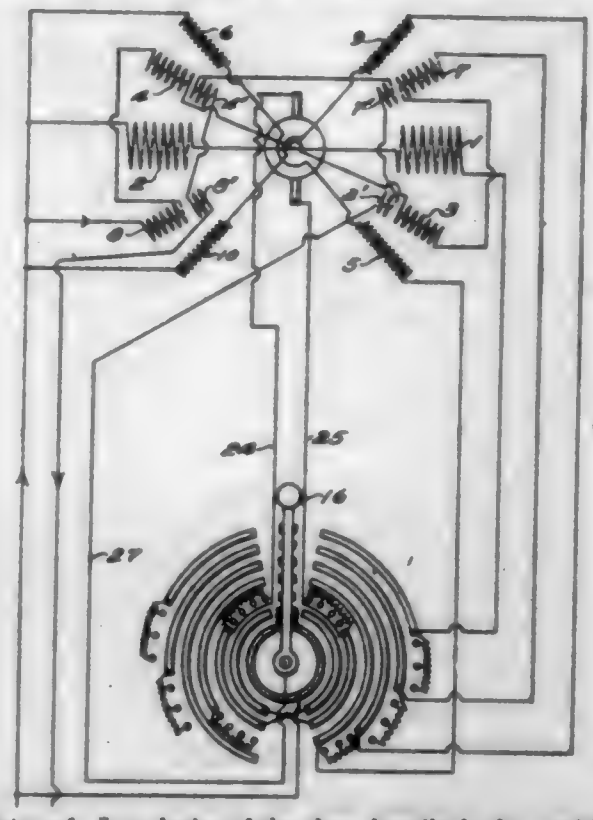
4. A harness-motion for looms having, in combination, a heddle-shaft and actuating coupler-bar therefor, intermediate connections between said heddle-shaft and said coupler-bar, an actuator adapted to coöperate with said coupler-bar, a cam for moving said coupler-bar in one direction and a spring-actutated follower for moving said coupler-bar in the opposite direction, said spring-actuated follower comprising a pivoted lever and a spring acting upon said lever.

5. A harness-motion for looms comprising a coupler-bar in combination with a pivoted follower-lever bearing against said coupler-bar, a fixed finger, and metallic loops adapted to be placed over the ends of said follower-lever and finger respectively, and a coiled spring connecting said metallic loops.

817,806.



817,807. ELECTRIC MOTOR. CHARLES H. ROTH, Chicago, Ill., assignor to Roth Bros. & Co., Chicago, Ill., a Corporation of Illinois. Filed Dec. 27, 1904. Serial No. 238,396.



Claim.—1. In a device of the class described, the combination of a field-magnet having a main pole and two supplemental poles, all of like polarity, one of said supplemental poles being located at each side of said main pole, the combined areas of said supplemental poles being less than that of the main pole; and means for changing the magnetic strength of said main pole without affecting the strength of said supplemental poles, substantially as described.

2. In a dynamo-electric machine, the combination of an armature; a field-magnet having a pair of magnetically-opposed groups of cores, each group comprising a pair of end cores and a plurality of intermediate cores all having like poles opposed to the armature, the polar areas of said end cores being small compared to the com-

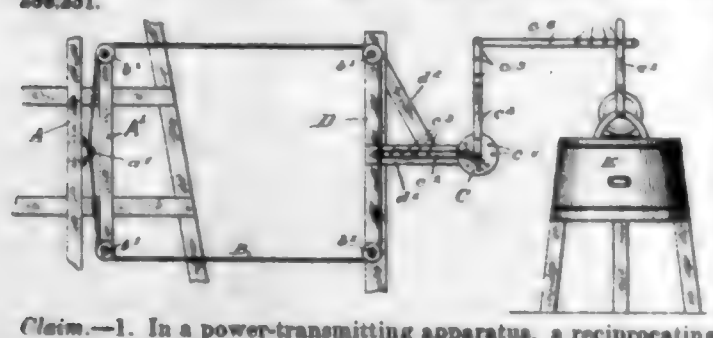
bined area of the intermediate cores; and means for changing the magnetic strength of the intermediate cores without affecting that of the end cores.

3. In a dynamo-electric machine, the combination of an armature; a field-magnet having a pair of magnetically-opposed group of cores each group comprising a pair of end cores and three intermediate cores all having like poles opposed to the armature, the polar areas of said end cores being small compared to the combined polar area of the intermediate cores; windings on said machine; and a controller arranged to gradually reduce the magnetic strength first of the middle core and then of the next adjacent cores, without affecting that of the end cores.

4. In a dynamo-electric machine, the combination of an armature; a field-magnet having a pair of magnetically-opposed group of cores, each comprising a middle core, a pair of end cores located on opposite sides of the middle core, and a pair of intermediate cores respectively located between the middle core and each end core, all of said cores having like poles opposed to the armature; windings on the middle and end cores connected at a shunt of the armature-circuit; windings on the intermediate poles connected in series with the armature; and means for varying the magnetic strength of the middle cores without affecting that of the end cores of each group.

5. In a dynamo-electric machine, the combination of an armature; a field-magnet having a pair of magnetically-opposed group of cores, each comprising a middle core, a pair of end cores located on opposite sides of the middle core, and a pair of intermediate cores respectively located between the middle core and each end core, all of said cores having like poles opposed to the armature; windings on all of said cores connected as a shunt of the armature-circuit; additional windings on the intermediate poles connected in series with the armature; and a variable resistance in circuit with the shunt-windings of the middle and intermediate cores, whereby the magnetic strength of said middle and intermediate cores may be altered without affecting that of the end cores.

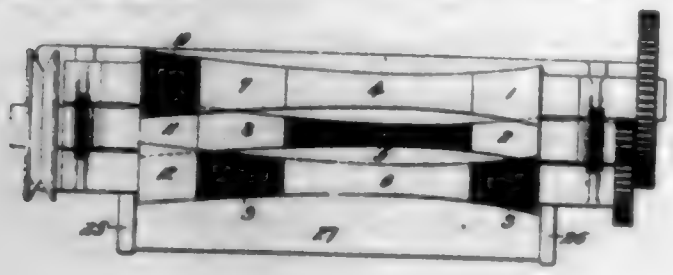
817,808. **WINDMILL ATTACHMENT.** ARNOLD J. SHARY and THOMAS L. ANTHONY, Wilber, Nebr. Filed Nov. 7, 1905. Serial No. 286,231.



Claim.—1. In a power-transmitting apparatus, a reciprocating rod, supports erected adjacent to said rod, pulleys mounted on said supports, a cable arranged on said pulleys and connected with said rod, disks mounted on one of said supports and having registering openings therein, a pivoted lever connected with one of said disks and to said cable, a lever connected to the other disk, means for locking said disks together, and means for connecting said lever to the object to be driven.

2. In a power-transmitting apparatus, in combination with a reciprocating rod, supports erected adjacent to said rod, pulleys mounted on said supports, a cable arranged on said pulleys and connected with said rod, disks mounted on a suitable support and having a series of registering openings therein, a lever adjustably pivoted on a support and connected with one of said disks, a lever connected with the other disk and having a plurality of openings therein, and adjustable means for connecting said second lever to the object to be driven.

817,809. **CIGAR-MACHINE.** ALFRED SHEDLOCK, Jersey City, N. J., assignor, by mesne assignments, to The American Tobacco Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 21, 1903. Serial No. 178,120.



Claim.—1. In bow-facing rowing mechanism, a pair of paddles

Claim.—1. The combination with a plurality of bunch-rotating members arranged along the bunch for making contact with different longitudinal parts thereof, of means for driving a part only of said members, some of said driven members being driven at different speeds from others of said driven members, substantially as described.

2. The combination with a plurality of bunch-rotating members arranged along the bunch for making contact with different longitudinal parts thereof, of means for driving a part only of said members, the remainder of the members being loosely mounted and turning by the friction of the bunch, some of said driven members being driven at different speeds from others of said driven members, substantially as described.

3. The combination with a plurality of groups of bunch-rotating devices arranged to inclose a bunch, each group engaging a different part of the bunch, and means for driving a part only of the members of the groups, said driving means being arranged to drive said members at different speeds, substantially as described.

4. The combination with a plurality of groups of bunch-rotating devices arranged to inclose a bunch, each group engaging a different part of the bunch, of means for driving a part only of the members of the groups, the remainder of the members being loosely mounted and turning by frictional contact with the bunch, said driving means being arranged to drive said driven members at different speeds, substantially as described.

5. The combination with a plurality of groups of bunch-driving rolls arranged to inclose a bunch, each group of rolls engaging a different part of the bunch, of driving means for a part only of the rolls of each group, said driving means being arranged to drive said rolls at different speeds, substantially as described.

6. The combination with a plurality of groups of bunch-driving rolls arranged to inclose a bunch, each group of rolls engaging a different part of the bunch, of driving means for a part only of the rolls of each group, the remainder of the rolls being loosely mounted and arranged to turn by frictional contact with the bunch, said driving means being arranged to drive said driven rolls at different speeds, substantially as described.

7. The combination with a plurality of shafts, said shafts being arranged to support a plurality of bunch-rotating rolls arranged in groups each group inclosing different parts of the bunch and one of the rolls of each group being secured to the shaft, of means for rotating the shafts at different speeds, substantially as described.

8. The combination with a plurality of bunch-rotating rolls arranged to inclose a bunch, of movable bearings in which one of said rolls is mounted, a lever connected to said bearings, and an ejector connected to said lever, substantially as described.

9. The combination with a plurality of bunch-rotating rolls arranged to inclose a bunch, of movable bearings in which one of said rolls is mounted, a lever connected to said bearings said lever being arranged to provide a delivery-chute, and an ejector connected to the lever, substantially as described.

10. The combination with a plurality of bunch-rotating rolls arranged to inclose a bunch, of movable bearings in which one of said rolls is mounted, a lever mechanism connected to said bearings, an ejector-lever, and a connection between the two levers, substantially as described.

11. The combination with a plurality of bunch-rotating rolls arranged to inclose a bunch, of movable bearings in which one of said rolls is mounted, a lever connected to said bearings, said lever being arranged to provide a delivery-chute, and an ejector operated from said lever, substantially as described.

12. The combination with a plurality of bunch-rotating rolls, of movable bearings in which one of said rolls is mounted, a two-armed lever connected to said bearings, a chute-plate connected to the lever-arms, an ejector-lever, and connections between the chute-plate and the ejector-lever, substantially as described.

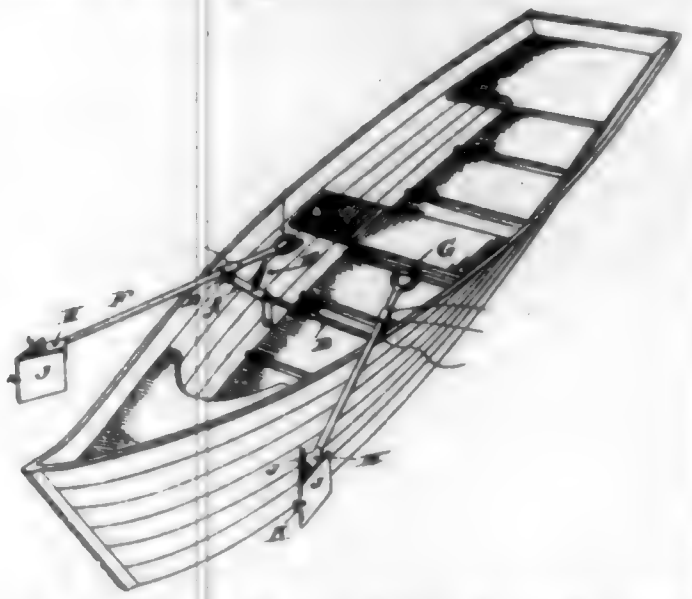
13. The combination with a plurality of groups of rolls arranged to inclose different parts of a bunch said groups consisting of smooth and roughened rolls, and means for driving a roughened roll of each group at a different speed from the roughened rolls of the other group, substantially as described.

14. The combination with a plurality of shafts, said shafts carrying groups of rolls arranged to inclose different parts of a bunch, and a roll of each group being roughened and secured to its shaft, of means for driving the shafts at different speeds, substantially as described.

817,810. **BOW-FACING ROWING MECHANISM.** DANIEL R. SHERN, Peoria, Ill. Filed July 10, 1905. Serial No. 269,060.

Claim.—1. In bow-facing rowing mechanism, a pair of paddles

adapted for back-and-forth movement in the direction of their lengths, the forward movement above the water, the backward beneath it, and a frame adapted for operation by the feet of the oarsman for lowering the paddles toward the water, and means for raising the frame and paddles all for the purposes set forth and described.



2. In bow-facing rowing mechanism, a pair of paddles adapted for movement in the direction of their lengths, and a spring-controlled device adapted for movement in one direction by the pressure of the feet of the oarsman for lowering the paddles toward the water, said device returning automatically to its raised or normal position for the purposes described.

3. In bow-facing rowing mechanism, a pair of paddles adapted for movement in the direction of their lengths, a frame pivoted within the boat on which the paddles are mounted as by a swivel, springs for sustaining the frame and paddles in a raised position as set forth, said frame and paddles adapted by foot-pressure of the operator to be depressed against the pull of the spring for lowering the paddles toward the water substantially in the manner set forth.

4. In bow-facing rowing mechanism, a frame pivoted in the bottom of the boat and extending up above said pivots substantially as described and shown, springs for sustaining the same in a substantially upright position, a foot-piece for lowering the frame by means of the feet of the operator against the pull of the said springs, members carried by the top of the frame as by swivels, and a pair of paddles slidably carried by said members for the purposes explained.

5. In bow-facing rowing mechanism, a frame pivoted at its lower end in the boat and adapted to swing on its pivots by pressure of the foot, springs for normally holding the frame in a substantially upright position, members swiveled to the top of the frame, and a paddle carried in each member, the same comprising a shaft adapted to slide within the said members, a float member carried at the forward end of the shaft, a keel member carried beneath the float, and a pair of blades adapted to open and close and having attachment with the said float.

6. In a bow-facing rowing mechanism, a pivoted frame carried within the boat and adapted to be lowered by the feet and raised automatically when the foot-pressure is removed therefrom and a pair of paddles carried on the frame, the same having a float at the forward end and blades thereon adapted to open and close in an automatic manner for the purposes described.

7. An oar carrying a float at its outer end, and a keel carried on the said outer end for the purposes described.

8. An oar comprising its shaft, a float carried at its outer end and a pair of collapsible blades also carried thereon.

9. An oar comprising its shaft, a float carried at its outer end, a pair of collapsible blades therefor and a keel stationed below the float all for the purposes set forth and described.

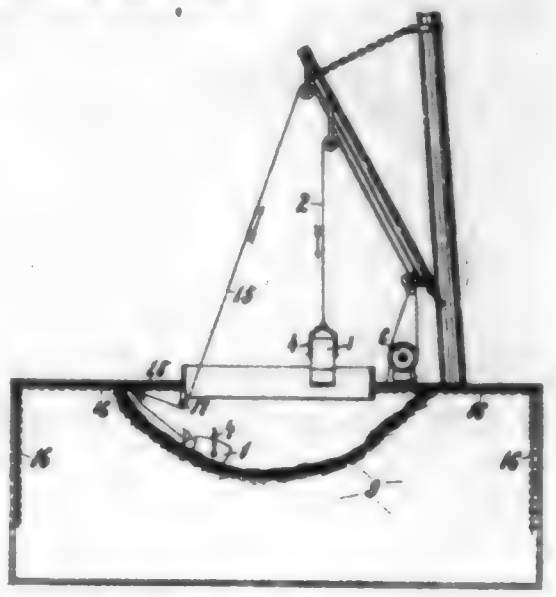
10. An oar having a float member at one end and a keel below the float.

11. An oar having a float at one end and a pair of blades pivoted to the float as shown.

12. An oar having a float at its free extremity and a pair of plates hinged at said point adapted to swing away from the float and to approach it and lie against it substantially as described.

13. An oar having at one end a float the extremity of the float being pointed, a pair of plates hinged at said point and adapted to close against the float and open substantially at right angles to the oar-shaft, and a vertical member beneath the float and parallel with the said oar-shaft to form a keel for the purposes explained.

817,811. AUTOMATIC COLLECTING AND HOISTING OF GOODS. PAUL W. SIEURIN, Gothenburg, Sweden. Filed Apr. 6, 1904. Serial No. 201,909.

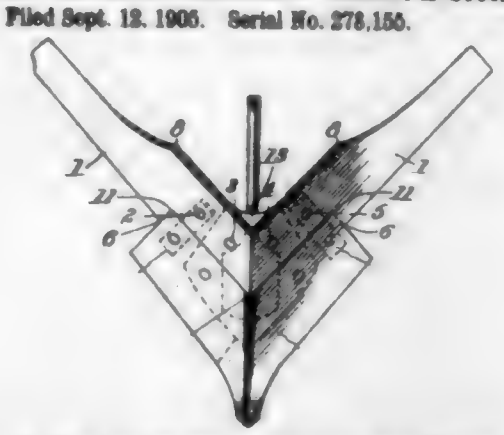


Claim.—1. In a collecting and hoisting apparatus for taking material from the hold of a vessel, the combination of chains 16 secured along the ceiling of the hold and along its walls or equivalent fastening devices, and a hoisting-bucket provided with a drag-cable, and blocks secured to said chain for guiding said cable, substantially as described.

2. In a gathering and hoisting bucket, the combination with the bucket proper, of a hinged front edge 12 which is adapted to be swung up to form a closing-wall, a bail for said bucket, and lifting-chains secured to said bail and connected with said front edge, whereby the latter will be swung up when the bucket is raised.

3. The combination with a hoisting-bucket, of a movable edge 12, arms 10, extending up from said edge, lifting-chains secured to said arms, said arms being provided with a plurality of holes whereby a chain may be adjustably secured thereto so that the front edge may be presented to the material at a more or less acute angle.

817,812. LISTER ATTACHMENT. CHARLES H. SOUSEK, Lamont, Okla. Filed Sept. 12, 1905. Serial No. 278,155.



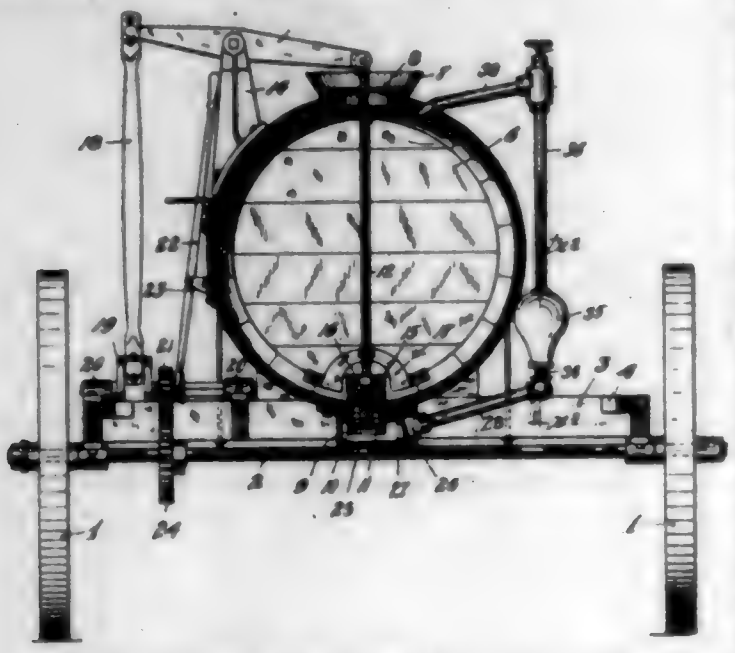
Claim.—1. The combination with the frog and share of a lister-plow, of detachable blades having lateral extensions which project beyond the share and are sharpened on their forward edges, the rear edges beginning at the last point of contact with the share being given a spiral twist toward the outer extremities of the blades until the top and bottom surfaces of said extremities are substantially horizontal.

2. The combination with the lister share and frog of a plow, of detachable blades constructed to conform to the shape of the top edge of the share, the projecting portions of said blades being spirally twisted from the frog outward until the top and bottom surfaces of the extremities of the blades are substantially horizontal, said blades being bolted to the frog and bracket-lugs behind the share through perforations in said frog and bracket and blades.

817,813. POISON-DISTRIBUTER. FERDINAND SPLITTGERBER, North Branch, Minn. Filed Mar. 17, 1905. Serial No. 250,517.

Claim.—1. The combination with a wheeled truck and a tank mounted thereon, of a cylinder-and-piston pump extending through the bottom of said tank, an agitator rigidly and directly secured to the pump-piston, a strainer also rigidly and directly secured to said pump-piston, means for reciprocating the pump-piston under an ad-

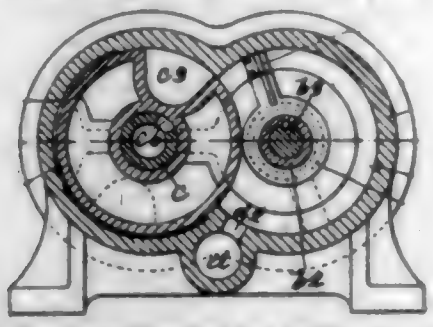
vance movement of the machine, and an outlet-tube leading from said pump, substantially as described.



2. The combination with a wheeled truck and a tank mounted thereon, of a cylinder 10 projecting through the bottom of said tank, a piston-valve working in said cylinder and provided with a stem 12 working upward through said tank, a walking-beam mounted on said tank and attached at one end to the upper end of said stem 12, an agitator 17 applied to said stem, a strainer 15 secured to and covering said piston-rod, a crank-shaft driven from one of the wheels of said truck, a pitman connecting said crank-shaft to said walking-beam, and a delivery-tube leading from said pump and terminating in a spray-nozzle, substantially as described.

3. The combination with a wheeled truck and a tank mounted thereon, of a cylinder-and-piston pump extending through the bottom of said tank, means for operating said pump under the advance movement of the machine, a valve-chest surrounding the lower portion of said cylinder, an outlet-tube leading from said valve-chest to a spray-nozzle, an air-chamber communicating with the intermediate portion of said outlet-tube, and an overflow-pipe leading from the upper portion of said air-chamber back into said tank, substantially as described.

817,814. **ROTARY ENGINE.** KARL A. A. STAAHLGREN, New York, N. Y., assignor, by direct and mesne assignments, to The Engineering and Development Company of New York, a Corporation of New York. Filed June 1, 1904. Serial No. 210,634.



Claim.—1. In a rotary engine the combination with a piston-chamber and piston therein, an abutment-chamber and rotary abutment therein in geared connection with said piston and having a recess therein to permit the rotation of said piston, and a port leading from the central bore in said abutment to its periphery, said port being out of communication with said recess.

2. In a rotary engine the combination with a revoluble piston and an abutment in geared connection therewith, of a recess in said abutment adapted to receive the piston during a portion of its revolution, and a steam-passage out of communication with said recess leading from the interior of said abutment to its periphery.

3. In a rotary engine the combination with a piston-shaft, of a circular disk secured to said shaft, an arm secured to said disk, a piston secured transversely across the end of said arm, an annular piston-chamber adapted to receive said piston, having a transverse opening to receive said disk and said arm, and an abutment-chamber and abutment therein having its cylindrical surface contact said disk.

4. In a rotary engine the combination with intersecting piston and abutment chambers, of a shaft mounted in said piston-chamber, a disk mounted on said shaft having a piston secured thereto outside of the periphery of said disk, a rotary abutment in said abutment-chamber of uniform external diameter of a size to make contact with said disk, mounted on a hollow shaft adapted to be connected with a source of steam-supply and having a port therein, a passage in said abutment separated from said recess and adapted to communicate with said port to admit steam to said piston.

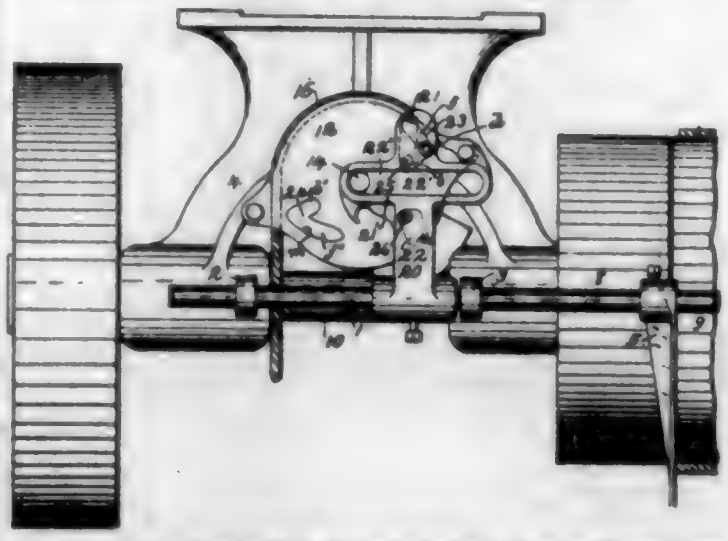
5. In a rotary engine the combination with intersecting piston and abutment chambers, of a shaft mounted in said piston-chamber, a disk mounted on said shaft having a piston secured thereto outside of the periphery of said disk, a rotary abutment in said abutment-chamber of uniform external diameter of a size to contact with said disk, mounted on a hollow shaft adapted to be connected with a source of steam-supply having a port therein and a passage in said abutment separated from said recess and adapted to communicate with said port to admit steam to said piston, after said recess has passed the intersection of said piston and said abutment chambers.

6. A rotary engine, comprising a casing, an abutment rotatably mounted therein, a piston in operative connection with said abutment and comprising a shaft, a tube thereon, a rim or flange on said tube, an arm on said flange and a plate on said arm and extending on each side thereof and a valve in said abutment for admitting motive fluid to said piston, intermittently, substantially as shown and described.

7. A rotary engine, comprising a casing, an abutment-chamber therein, an abutment in said chamber and provided with oppositely-arranged recesses in the periphery thereof, a piston-chamber, enlarged at its periphery, intersecting said abutment-chamber, a piston therein comprising a shaft, a tube thereon, a web member on said tube, a plate on said web member and of greater dimension, transversely of said engine, than said web, a tube in said abutment and provided with ports, said abutment being also provided with corresponding passages in communication with said piston-chamber and means for operating said abutment when said piston is operated, substantially as shown and described.

8. In a rotary engine, a casing composed of a body, front and rear members, a supplemental casing formed in said rear member, a cover therefor, a circular abutment-chamber in said body member, a plurality of annular piston-chambers formed in said casing, an abutment, a rotating piston in each of said piston-chambers, a shaft about which said pistons rotate, a gear-wheel thereon, a tube upon which said abutment rotates, a passage communicating a port in said tube with the corresponding piston-chamber and a gear-wheel connected with said abutment and engaging said first-named gear-wheel, substantially as shown.

817,815. **SHIFTER.** ROSWELL H. STEARNS and HENRY KLEIN, Milwaukee, Wis. Filed Mar. 27, 1905. Serial No. 252,101.



Claim.—1. In a shifter, the combination of an oscillating member; a reciprocating member; and a clutch member adapted to temporarily connect the other two members for motion-transmission during alternate swinging movements of the oscillatory member in one direction; together with means for returning said reciprocating member in the intervals between the operations of the clutch member.

2. In a shifter, the combination of an oscillating member; a reciprocating member; and a clutch member adapted to connect said members for motion-transmission at points traveling on divergent lines; said members being formed to permit a compensating movement of the clutch member substantially equal to the divergence in movement between the two first-mentioned members, at the place of connection.

3. In a shifter, the combination of an oscillating member and a reciprocating member, having opposing recessed faces; and a loose ball located in the recesses of said faces and having a greater diameter than the depth of either recess at one point where one recess is provided with a socket of greater depth than the diameter of the ball; the other recess being formed with walls adapted to push the ball into said socket when the members are in relative movement in one direction, and said recesses being also formed to permit the ball to drop by gravity out of said socket when the recesses are again brought into registry.

4. In a shifter, the combination of an oscillating member and a reciprocating member, having opposing recessed faces; and a loose ball located in the recesses of said faces and having a greater diameter than the depth of either recess except at one point where one recess is provided with a socket of greater depth than the diameter of the ball; the other recess being formed with walls adapted to push the ball into said socket when the members are in relative movement in one direction, and said recesses being also formed to permit the ball to drop by gravity out of said socket when the recesses are again brought into registry, said recesses being elongated to permit a compensatory movement of the ball during the swinging movement of the oscillatory member at the time of ball engagement.

5. In a shifter, the combination of two relatively movable members; a loose ball engaged in suitable recess in one of the members, and arranged to project into a recess in the other member in one position of adjustment; and means for pushing said ball out of the recess in one of the members when said member is moved in one direction.

6. In a shifter, the combination of an oscillating member, recessed on opposite sides of its pivotal center; another member provided with loose balls mounted in sockets therein, and having recesses leading to said sockets; said balls being adapted to drop from said sockets into said recesses when in registery with the recesses of the other member, and each of said recesses being of less depth than the diameter of the ball, said oscillating member having the walls of each of its recesses formed to crowd the corresponding ball out of such recess into the socket of the other member during the return movement of the oscillating member and the recesses of said oscillating member being formed to register alternately with those of the other member.

7. In a shifter, an oscillatory member; clutch members in operative relation thereto; and a motion-receiving member; one of said clutch members being arranged to act upon the motion-receiving member during alternate strokes of the oscillatory member in the same direction, and the other clutch member being arranged to act upon the motion-receiving member during the intermediate strokes of the oscillatory member in the same direction.

8. In a shifter, an oscillating actuating member having recesses on opposite sides of the pivot of oscillation and extended with gradually-increasing depth in one direction along the face of said member; an actuated member; and clutch members adapted to alternately engage in the respective recesses; the extended portions of said recesses being adapted to release the clutch members when the actuating member is moved in one direction.

9. In a shifter, the combination of a shifting bar mounted for longitudinal movement in supporting-bearings; an oscillatory member pivotally mounted on a suitable support in proximity thereto; means for actuating the oscillatory member to normal position; a member connected with the shifting bar and provided with a guideway substantially parallel with the bar; a guide, loosely engaged in said guideway; and devices for connecting said members alternately above and below the axis of pivotal oscillation during successive movements of the oscillatory member in one direction.

10. In a shifter, the combination of a shifting bar mounted to reciprocate longitudinally; an oscillatory member pivotally supported adjacent to the bar; a motion-receiving member, connected with the bar and arranged to reciprocate across the axis of pivotal oscillation; and devices for connecting said members alternately above and below the axis of pivotal oscillation; each of said devices being adapted to automatically release said members from motion-transmitting connection during the initial movement of the oscillatory member in one direction.

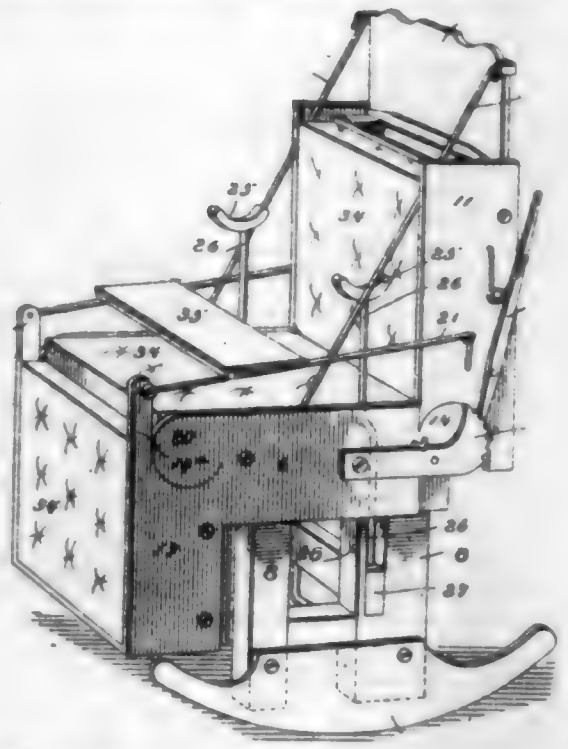
11. In a shifter, the combihation of two movable members in approximate side contact; a pivotal support for one member; a support for the other member adapted to permit a lineal movement; loose balls adapted to alternately engage in registering recesses of the members to connect the same; one of said members being formed with guiding-faces adapted to push the balls out of the recesses in such member during its movement in one direction.

12. In a shifter, an oscillatory member; clutch members in operative relation thereto; and a motion-receiving member, one of said clutch members being arranged to act upon the motion-receiving member during alternate strokes of the oscillatory member in the same direction, and the other clutch member being arranged to act upon the motion-receiving member in an opposite direction during the intermediate strokes of the oscillatory member in the same direction.

13. In a shifter, the combination of an oscillatory member having a side face provided with recesses on opposite sides of the axis of oscillation; each of said recesses being provided with a radially-extending arm, and a shallow tapered arm extending at an angle thereto; together with another member having recessed channels and sockets at one side of the main axis of the channel; and balls mounted in said channels for motion-transmission, substantially as described.

14. In a shifter, a motion-transmitting member provided with an elongated recess and having a socket in one portion of such recess, but at one side of the axis of its elongation, for the reception of a ball-clutch; a loose ball adapted to be partially received therein and wholly received in said socket; and a motion-receiving member adapted to be engaged by the ball when the transmitting member is moved in one direction, and formed to guide the ball into said socket when said transmitting member is moved in the other direction.

817,816. **COMBINED CHAIR AND COUCH.** CHARLES S. J. STEVENS, Oakland, Ind. Ter. Filed July 15, 1905. Serial No. 269,777.



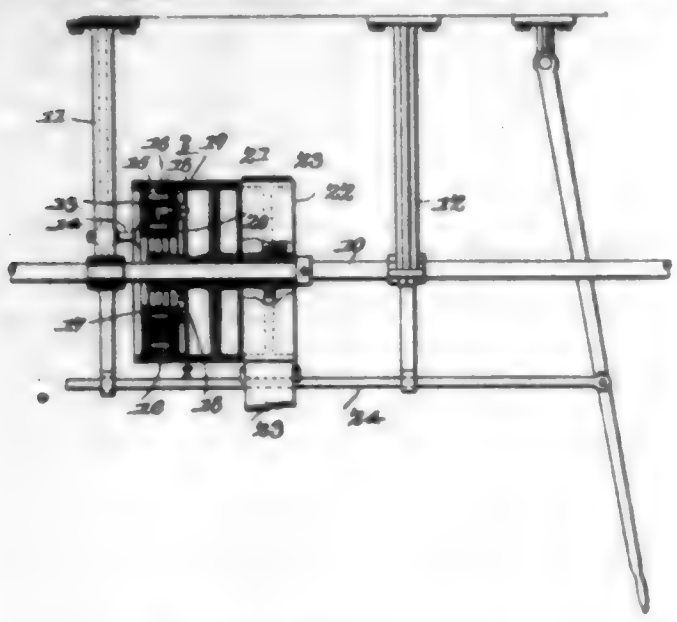
Claim.—In a combined chair and couch, the combination with a seat-section having side pieces which terminate at the ends in segmental extensions, of back and foot sections hinged to the seat-section and having side pieces with recesses in which said extensions fit, the side pieces of the foot-section having upwardly-projecting extensions which stop against and rest upon the side pieces of the seat-section when the foot-section is turned up, and the side pieces of the back-section having shoulders at their lower ends which stop against the ends of the seat-section when let down, connecting-rods between the back and foot sections, and means to fix the same at adjustment.

817,817. **REVERSING-GEAR.** CARL H. SWARTS, Freeport, Ill. Filed Aug. 26, 1905. Serial No. 275,982.

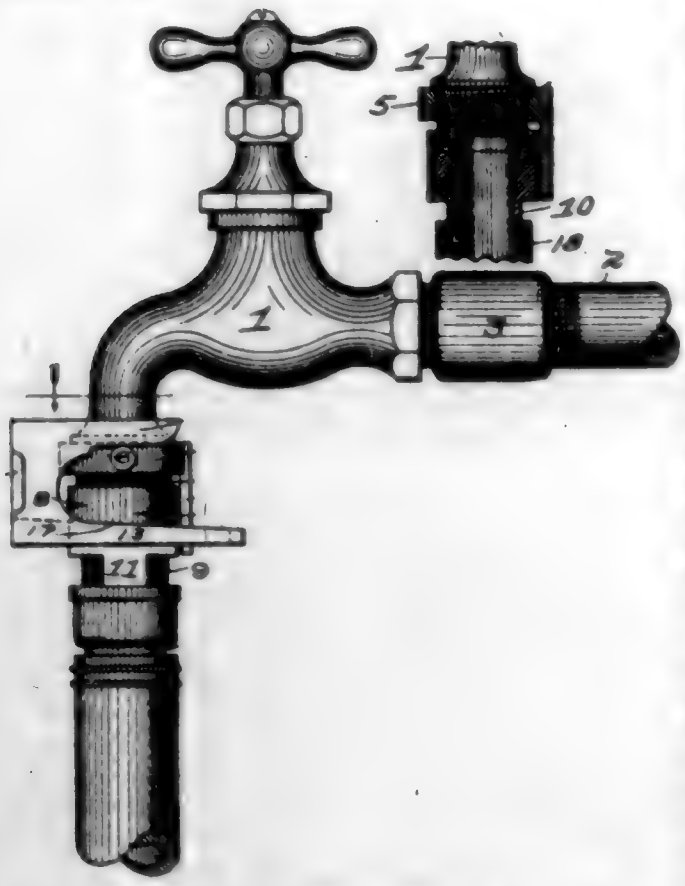
Claim.—1. In a device of the class described, a drive-shaft, spaced stationary hangers supporting said shaft, a belt-pulley fast upon said shaft, a gear-wheel fast upon said shaft, a belt-pulley rim concentric to said shaft and equal in diameter to said belt-pulley and having an internal annular rib provided with inwardly-extending gear-teeth, a plate encircling said shaft and rigidly connected to one of said hangers and bearing at its periphery against the inner face of said pulley-rim and against the shoulder formed by said annular rib, and one or more pinions pivoted upon said plates and engaging said gear-wheel and the gear-teeth of said rib.

2. In a device of the class described, a drive-shaft, spaced stationary hangers supporting said shaft, a belt-pulley fast upon said shaft, a belt-pulley equal in diameter to said first-mentioned pulley and loose upon said shaft, a pulley-rim corresponding to said fast

and loose pulleys and concentric to said shaft and provided with an internal rib having gear-teeth extending inwardly therefrom, a plate encircling said shaft and rigidly connected to one of said hangers and bearing at its periphery against the inner face of said pulley-rim and against the shoulder formed by said rib, a gear-wheel rigidly connected to said shaft, and pinions mounted for rotation upon said plate and engaging said gear-wheel and the gear-teeth of said rib.



817,818. HOSE COUPLING OR CONNECTOR. JOHN I. TRADTIN and FREDERICK H. GROSSHEFF, Dayton, Ohio. Filed Sept. 25, 1905. Serial No. 279,576.

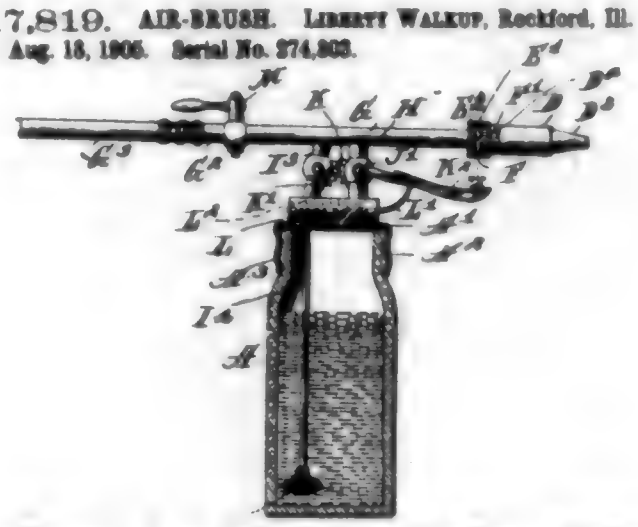


Claim.—1. In a hose-connector, the combination with a faucet, of a nipple having two tapering shoulders disposed on opposite sides of said nipple, a coupling-frame having parallel arms with inner tapering sides, two of said arms engaging the shoulders on the nipple, and means on opposite sides of the faucet engaged by the tapering surfaces of the other of said parallel arms, and whereby the nipple is clamped to the faucet, substantially as specified.

2. In a connector, a ring attachable to the discharge end of a faucet, said ring having trunnions projected from opposite sides, a nipple attachable to the hose, said nipple having shoulders on opposite sides, and a coupling-frame engaging said shoulders, and said trunnions on said ring, whereby the nipple is forced in rigid contact with the end of the faucet, substantially as set forth.

3. In a connector, a trunnion member attachable to the mouth of the faucet, a nipple attachable to the hose, said nipple having on opposite sides flat surfaces terminating in tapering shoulders, and an open frame having four projecting parts which are adapted to engage respectively, the trunnions on said trunnion member, and the shoulders on said nipple, and whereby wedge-like means are provided for forcing the nipple rigidly against the end of the faucet, substantially as specified.

817,819. AIR-BRUSH. LIBERTY WALKUP, Rockford, Ill. Filed Aug. 18, 1905. Serial No. 274,803.



Claim.—1. In an air-brush, in combination, a tubular body threaded exteriorly throughout a portion of its length and provided with an inwardly-sloping perforated shoulder portion terminating in a neck, a conical plug having a tapering central bore extending longitudinally therethrough and tapped at its base into the free end of the neck of the tubular body, a conical cap having the interior of its larger end portion fitted closely to and slidable upon the unthreaded portion of the tubular body and the interior of its smaller end portion tapered to conform to but not contact the exterior of the conical plug, thereby forming an annular air-chamber between such cap and the neck of the tubular body and the conical plug and means for longitudinally adjusting the cap to the conical plug, substantially as and for the purpose specified.

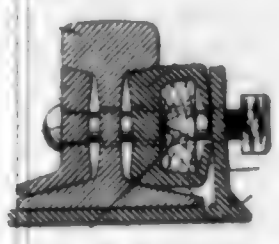
2. In an air-brush, in combination, a tubular body threaded exteriorly throughout a portion of its length and provided with an inwardly-sloping perforated shoulder portion terminating in a neck, a conical plug having a tapering central bore extending longitudinally therethrough and tapped at its base into the free end of the neck of the tubular body, a conical cap provided with an annular groove, in the exterior thereof, and having the interior of its larger end portion fitted closely to and slidable upon the unthreaded portion of the tubular body, and the interior of its smaller end portion tapered to conform to but not contact the exterior of the conical plug, a circular nut having an annular groove in the exterior thereof and threaded interiorly to adapt it to be turned upon the correspondingly-threaded portion of the tubular body, and a clamp seated in the groove in the nut and projecting arms into loose engagement with the groove in the cap, so as to adapt it to regulate the endwise movement of the latter while leaving the nut free to rotate, substantially as and for the purpose specified.

3. In an air-brush, in combination, a tubular body threaded exteriorly throughout a portion of its length and provided with an inwardly-sloping perforated shoulder portion terminating in a neck, a conical plug having a tapering central bore extending longitudinally therethrough and tapped at its base into the free end of the neck of the tubular body, a conical cap provided with an annular groove, in the exterior thereof, and having the interior of its larger end portion fitted closely to and slidable upon the unthreaded portion of the tubular body and the interior of its smaller end portion tapered to conform to but not contact the exterior of the conical plug, a circular nut having an annular groove in the exterior thereof and threaded interiorly to adapt it to be turned upon the correspondingly-threaded portion of the tubular body, and a clamp seated in the groove in the nut and projecting arms into loose engagement with the groove in the cap, an air-tube tightly fitted at one end into the large end of the tubular body, and a pigment-tube tapped by one end into the inner end portion of the neck of the tubular body—so as to leave a pigment-chamber in the central portion of such neck—and extending therefrom along the interior of the air-tube and thence transversely thereout through the side thereof, substantially as and for the purpose specified.

4. In an air-brush, in combination, a body B threaded exteriorly at B′ and provided with a perforated shoulder portion B^3 terminating in a neck B^2, a conical plug C having a tapering central bore C′ extending longitudinally therethrough and tapped into the free end of the neck B^2 of the body B, a conical cap D fitted with an

annular groove D⁶ in the exterior thereof and having the interior of its end portion D' fitted closely to but slidable upon the unthreaded portion D⁴ of the body B and the interior of its end portion D⁵ tapered to conform to but not contact the interior of the plug C, a nut E having an annular groove E', in the exterior thereof, and applied to the threaded portion B' of the body B, and a clamp F seated in the groove E' in the nut E and projecting arms F' into loose engagement with the groove D⁶ in the cap D, so as to regulate the endwise movement of the latter while leaving the nut E free to rotate, substantially as and for the purpose specified.

817,820. **RAILROAD-RAIL JOINT.** GEORGE A. WEBER, Stamford, Conn., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed Nov. 27, 1900. Serial No. 37,895.



Claim.—1. A rail-joint comprising the rail ends, means for maintaining said ends in alinement, and a rail-chair having a base, and an upright bent inward at an acute angle to the base, and thereby constituting a spring when the joint is tightened up.

2. A rail-joint comprising the rail ends, means for maintaining said ends in alinement, and a rail-chair having a base, and an upright constructed at such an angle to the base that when the joint is tightened up the upright is placed under an initial strain and forms a spring and when loosened recovers to subtantially normal position.

3. A rail-joint comprising the rail ends, means for maintaining said ends in alinement, and a rail-chair having a base, and an upright bent slightly inward from the vertical whereby the base of the chair hugs the base of the rails tightly when the joint is tightened up.

4. A rail-joint comprising the rail ends, side bars at each side of the rails, a rail-chair having a base and an upright forming an acute angle with the base and bolts for holding the parts of the joint together.

5. A rail-joint comprising the rail ends, a rail-chair having an upright constructed to constitute a spring, a fish-plate at one side of the joint, a side bar constructed to form a spring and arranged at the other side of the joint between the rails and the upright of the chair and bolts for holding the parts of the joint together.

6. A rail-joint comprising the rail ends, a rail-chair having a base and an upright formed at an acute angle to the base, a fish-plate at one side of the joint, a side bar at the other side of the joint having outwardly-extending portions at its upper and lower edges, and bolts for holding the joint together.

7. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate having a flange-like, laterally-extended base adapted to have an extended bearing upon the flange forming one side of the base of the rail-sections, a second fish-plate or channel-bar arranged upon the other side of the rail-sections, and bolts for securing the parts together, said second fish-plate or channel-bar having a longitudinal edge portion extending outwardly and in a direction transversely to the length of the bolts, and said longitudinal edge portion and the upright of the angle-chair being constructed to be at such a relative angle as to provide for a spring section between them.

8. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar arranged upon the other side of the rail-sections and having outwardly-extending portions at its upper and lower edges so constructed as to converge at their extremities, and bolts for securing the parts together.

9. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar arranged upon the other side of the rail-sections and having outwardly-extending portions at its upper and lower edges constructed wholly or partly at an angle to each other so as to be capable of a spring action, and bolts for securing the parts together.

10. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar arranged upon the other side of the rail-sections and having outwardly-extendin portions at its upper and lower edges so constructed as to converge and have a spring action, and bolts for securing the parts together.

11. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar constructed to bear against the upright of the angle-chair at its upper and lower edges, the upright of the angle-chair and the upper and lower edges of the last-mentioned fish-plate or channel-bar being constructed to be at such a relative angle as to provide for a spring action between them, and bolts for securing the parts together.

12. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar constructed to bear against the upright of the angle-chair at its upper and lower edges and provided at said edges with spring portions, and bolts for securing the parts together.

13. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar constructed to bear against the upright of the angle-chair at its upper and lower edges and provided at said edges with spring portions, a block of packing material intermediate the last-mentioned fish-plate or channel-bar and the upright of the angle-chair, and bolts for securing the parts together.

14. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair comprising a base and an upright extending for its entire height directly upward from the base, and united with the base at the point where it extends upwardly therefrom a fish-plate at one side of the rail-sections, a fish-plate or channel-bar constructed to bear against the upright of the angle-chair, and having a spring portion, and bolts for securing the parts together.

15. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair, a fish-plate at one side of the rail-sections, a fish-plate or channel-bar constructed to bear against the upright of the angle-chair at its upper and lower edges, and provided at said edges with spring portions, a block of packing material intermediate the last-mentioned fish-plate or channel-bar and the upright of the angle-chair, and an angle-brace intermediate the base and upright on the outside of the chair, and bolts for securing the parts together.

16. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair having a base and an upright, a fish-plate at one side of the rail-sections a second fish-plate or a channel-bar arranged at the other side of the rail-sections, and bolts passing through the upright of the angle-chair, said second fish-plate or channel-bar, the rail-sections and the said fish-plate for securing the parts together, the said second fish-plate or channel-bar having a short portion extending from one of its edges outwardly and also in a direction transverse to the length of the bolts, but not extending to the bolts, and having a bearing against the upright of the angle-chair.

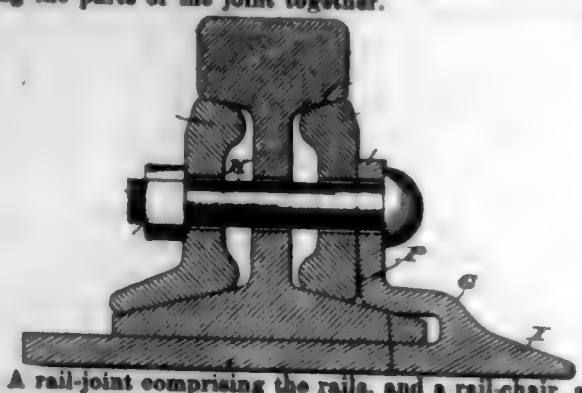
17. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair having a base and an upright, a fish-plate having a base and arranged at one side of the rail-sections, a second fish-plate or a channel-bar arranged at the other side of the rail-sections, and bolts passing through the upright of the angle-chair, said second fish-plate or channel-bar, the rail-sections and the said fish-plate for securing the parts together, the said second fish-plate or channel-bar having a short portion extending from one of its edges outwardly and also in a direction transverse to the length of the bolts, but not extending to the bolts, and having a bearing against the upright of the angle-chair.

18. In a rail-joint, the combination of rail-sections arranged in line, an angle-chair having a base and an upright, a fish-plate at one side of the rail-sections, a second fish-plate or a channel-bar arranged at the other side of the rail-sections, and bolts passing through the upright of the angle-chair, said second fish-plate or channel-bar, the rail-sections and the said fish-plate for securing the parts together, the said second fish-plate or channel-bar having a short resilient portion extending from one of its edges outwardly and also in a direction transverse to the length of the bolts, but not extending to the bolts, and having a bearing against the upright of the angle-chair.

817,821. **RAIL-JOINT.** GEORGE A. WEBER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed Mar. 31, 1906. Serial No. 308,122.

Claim.—1. A rail-joint comprising the rails and a rail-chair, side bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, and an inwardly and upwardly bent portion adapted to bear for a portion of its length upon the upper surface of the base-flanges of the rails and out of contact

therewith for the remainder of its length to a point beyond the edges of the base-flanges, while the upwardly-bent portion is adapted to bear against the outer portion of one side bar, and suitable bolts for securing the parts of the joint together.



2. A rail-joint comprising the rails, and a rail-chair, side bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, and an inwardly and upwardly bent portion adapted to bear for a portion of its length upon the upper surface of the base-flanges of the rails and out of contact therewith for the remainder of its length to a point beyond the edges of the base-flanges, while clearance is provided between the lower portion of the side bar and the upwardly-bent portion of the chair to provide a compensating fit whereby when the joint is tightened a fit over the base-flanges of the rails is insured.

3. A rail-joint comprising the rails and rail-chairs, side bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, and inwardly and upwardly bent portions adapted to bear for portions of their lengths upon the upper surface of the base-flanges of the rails and out of contact therewith for the remainder of their lengths to points beyond the edges of the base-flanges, while the upwardly-bent portions are adapted to bear against the outer portions of the side bars, and suitable bolts for securing the parts of the joint together.

4. A rail-joint comprising the rails and rail-chairs, side bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, a compensating fit being provided between the outer portions of the side bars, and the upwardly-bent portions of the rail-chairs, and suitable bolts for securing the parts of the joint together.

5. A rail-joint comprising the rails and rail-chairs, side bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, and inwardly and upwardly bent portions, the inwardly-bent portions of the chair being adapted to bear for portions of their lengths only, upon the upper surface of the base-flanges of the rails where such length is over the rail-flanges, while clearance is provided between the lower portions of the side bars and the upwardly-bent portions of the chairs to provide a compensating fit whereby when the joint is tightened a fit over the base-flanges of the rails is insured.

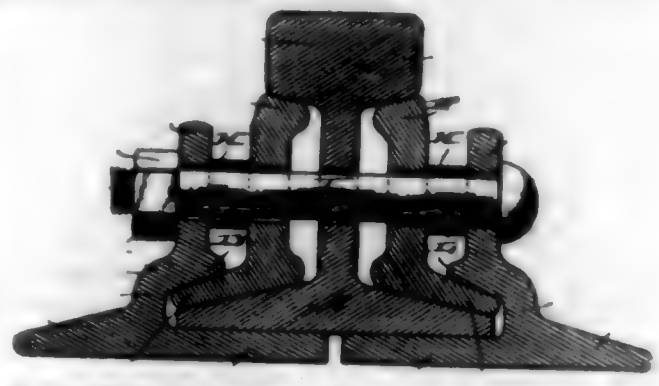
6. A rail-joint comprising the rails and rail-chairs, side bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, and inwardly and upwardly bent portions adapted to bear upon the upper surface of the bases of the rails and against the outer portions of the side bars, the rail-chairs being provided with heightened or prolonged bends in a vertical direction adjacent the base of the rail thereby affording increased strength.

7. A rail-joint comprising the rails and rail-chairs, side bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, the rail-chairs also being provided with thickened and vertically-extended portions between the bases of the chairs and the inwardly-bent portions to provide increased strength.

8. A rail-joint comprising the rails and rail-chairs, side bars at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions adapted to bear upon the upper surface of the bases of the rails and against the outer portions of the side bars, the inwardly-turned portions of the chairs being integrally connected to the base by upwardly-extended portions.

817,822. **RAIL-JOINT.** GEORGE A. WEBER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed Mar. 31, 1905. Serial No. 253,123.

Claim.—1. A rail-joint comprising the rails, side bars, rail-chairs having bases and uprights, inwardly-extending ribs or noses provided upon said uprights projecting beyond the plane thereof, and adapted to bear upon the base-flanges of the rails, filling material between the uprights of the chairs and the side bars, and bolts for securing the parts of the joint together.

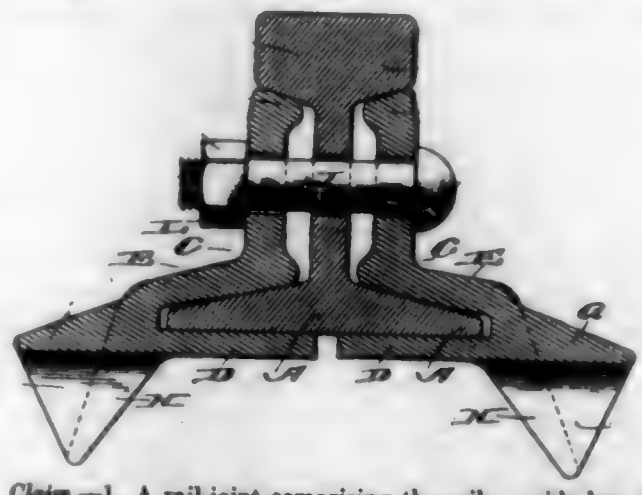


2. A rail-joint comprising the rails, an upright or bolt-plate at one side of the joint, a rail-chair at the other side of the joint having a base and an upright or bolt-plate, an inwardly-extending rib or nose provided upon said upright projecting beyond the plane thereof, and adapted to exert pressure upon the upper surfaces of the base-flanges of the rails, and bolts for securing the parts of the joint together.

3. A rail-chair comprising the rails, side bars, rail-chairs having bases and uprights or bolt-plates, inwardly-extending ribs or noses provided upon said uprights, projecting beyond the plane thereof, and adapted to exert pressure upon the upper surfaces of the base-flanges of the rails, and bolts for securing the parts of the joint together.

4. A rail-joint comprising the rails, side bars, a rail-chair having a base and an upright, an inwardly-extending rib or nose provided upon the upright, projecting beyond the plane thereof, and adapted to bear upon the base-flanges of the rails, filling material between the upright of the chair and one side bar, and bolts for securing the parts of the joint together.

817,823. **RAIL-JOINT.** GEORGE A. WEBER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed Mar. 31, 1905. Serial No. 253,124.



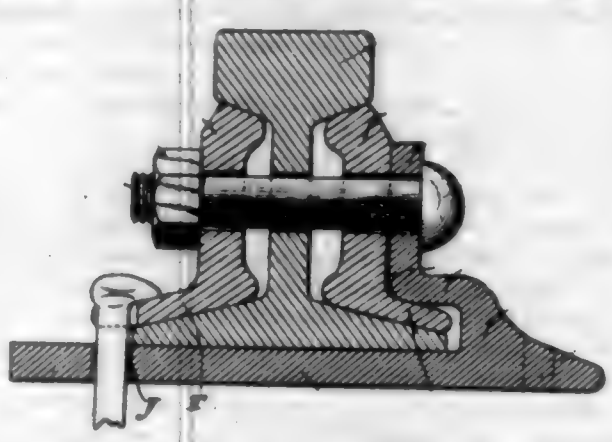
Claim.—1. A rail-joint comprising the rails, a side bar at one side of the joint, and a rail-chair at the other side, said chair comprising a base, an upright, and a spiking-rib bent out of the plane of the base to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle to the vertical.

2. A rail-joint comprising the rails, a side bar at one side of the joint, and a rail-chair at the other side, said chair comprising a base, an upright, and a spiking-rib bent downwardly out of the plane of the base to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle to the vertical.

3. A rail-joint, comprising the rails, rail-chairs at each side of the joint, each chair having a base-plate, a fishing-plate and a spiking-rib, a portion of said rib being bent out of the plane of the base-plate to form a hollowed strengthening-web and having the central portion of the hollow of the web at an angle extending outwardly from the vertical.

817,824. **RAIL-JOINT.** GEORGE A. WEBER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Original application filed Mar. 31, 1905, Serial No. 253,122. Divided and this application filed June 24, 1905. Serial No. 266,707.

Claim.—1. A rail-joint comprising the rails and side bars, said side bars having outwardly-extending lower flanges, a rail-chair having a base underneath the rail and an inwardly and upwardly bent portion forming a bolt-plate, adapted to bear against the outer surface of one side bar and upon the upper surface of the lower flange of said side bar, and bolts for securing the parts of the joint together.



2. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, an inwardly and upwardly bent portion, the inwardly-bent portion of which is adapted to bear for a portion of its length only upon the upper surface of the base-flanges of the angle-bars where such length is over the flanges, while the upwardly-bent portion is adapted to bear against the outer portion of one angle-bar, and suitable bolts for securing the parts of the joint together.

3. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion, a compensating fit being provided between the outer portion of one angle-bar and the upwardly-bent portion of the rail-chair, said chair being adapted to bear upon the flange of the angle-bar and suitable bolts for securing the parts of the joint together.

4. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, and an inwardly and upwardly bent portion, the inwardly-bent portion of the chair being adapted to bear for a portion of its length only upon the upper surface of the base-flange of the angle-bar, where said length is over said flange, while clearance is provided between the lower portion of the angle-bar and the upwardly-bent portion of the chair to provide a compensating fit whereby when the joint is tightened a fit over the flange of the angle-bar and against the outer surface of said bar is insured.

5. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion adapted to bear upon the upper surface of the base-flange of one angle-bar and against the outer portion of one side of said bar, the rail-chair being provided with a heightened or prolonged bend in a vertical direction adjacent the base of the rail, thereby affording increased strength.

6. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion, the rail-chair also being provided with a thickened and vertically-extended portion between the base of the chair and the inwardly-bent portion to provide increased strength, and the inwardly-turned portion of the chair being adapted to bear upon the flange of one angle-bar.

7. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, inwardly and upwardly bent portions, the inwardly-bent portions of which are adapted to bear for portions of their lengths only upon the upper surfaces of the base-flanges of the angle-bars, where such length is over the flanges, while the upwardly-bent portions are adapted to bear against the outer portions of the angle-bars, and suitable bolts for securing the parts of the joint together.

8. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, a compensating fit being provided between the outer portions of the angle-bars and the upwardly-bent portions of the rail-chairs, said chairs being adapted to bear upon the flanges of the angle-bars and suitable bolts for securing the parts of the joint together.

9. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails, and inwardly and upwardly bent portions, the inwardly-bent portions of the chairs being adapted to bear for portions of their lengths only upon the upper surfaces of the base-flanges of the angle-bars, where said lengths are over said flanges, while clearance is provided between the lower portions of the angle-bars and the upwardly-bent portions of the chairs to provide a compensating fit whereby when the joint is tightened a fit over the flanges of the angle-bars and against the outer surface of said bars is insured.

10. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions adapted to bear upon the upper surfaces of the base-flanges of the angle-bars and against the outer portions of one side of said bars, the rail-chairs being provided with heightened or prolonged bends in a vertical direction adjacent the base of the rail, thereby affording increased strength.

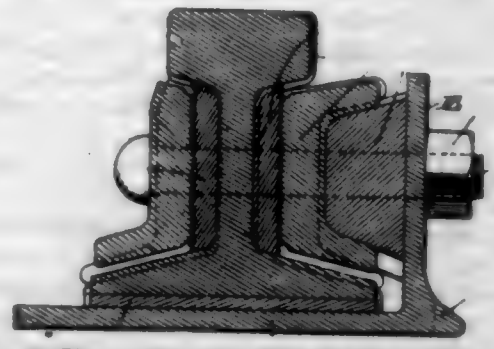
11. A rail-joint comprising the rails and rail-chairs, angle-bars arranged at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions, the rail-chairs also being provided with thickened and vertically-extended portions between the bases of the chairs and the inwardly-bent portions to provide increased strength, and the inwardly-turned portions of the chair being adapted to bear upon the flanges of the angle-bars.

12. A rail-joint comprising the rails and a rail-chair, angle-bars at each side of the joint, said rail-chair being provided with a base underneath the rails and an inwardly and upwardly bent portion adapted to bear upon the upper surface of the base-flange of one angle-bar and against the outer portion of said angle-bar, the inwardly-turned portion of the chair being integrally connected to the base by an upwardly-extended portion.

13. A rail-joint comprising the rails and rail-chairs, angle-bars at each side of the joint, said rail-chairs being provided with bases underneath the rails and inwardly and upwardly bent portions adapted to bear upon the upper surfaces of the base-flanges of the angle-bars and against the outer portions of said angle-bars, the inwardly-turned portions of the chairs being integrally connected to the base by upwardly-extended portions.

14. A rail-joint comprising the rails and a rail-chair, angle-bars arranged at each side of the joint, said rail-chair being provided with a base underneath the rails, an upwardly, inwardly and again upwardly bent portion, the inwardly-bent portion of which is adapted to bear for a portion of its length only upon the upper surface of the base-flanges of the angle-bars, where such length is over said flange, while the upwardly-bent portion is adapted to bear against the outer portion of one side bar, and suitable bolts for securing the parts of the joint together.

817,825. STEP-JOINT. GEORGE A. WEBER, New York, N. Y., assignor, by mesne assignments, to The Rail Joint Company, New York, N. Y., a Corporation of New York. Filed Sept. 14, 1905. Serial No. 278,453.



Claim.—1. The combination with the rail ends, of a step-joint, and means for adjusting the height of one of said rails relatively to the other.

2. The combination with the rail ends, of a step-joint, and means for adjusting the height of the parts of said joints.

3. The combination with the rail ends of different height, of a step-joint, and means for adjusting said joint to compensate for variations in the height of one of the rails.

4. The combination with the rail ends of different weight and height, of a step-joint constructed to maintain said rails in surface and alinement, and means for adjusting the height of the parts of said joint.

5. The combination with the rail ends of different weight and height, a step-joint constructed to compensate for said rails and

maintain them in surface and alinement, and means for compensating for variations in height of one of said rails.

6. The combination with the rail ends of different height, side bars at each side of the webs of the rails extending across the joint and constructed to compensate for the differences in the dimensions of the rails, means for adjusting the height of the parts of said joint, and bolts for securing the parts of the joint together.

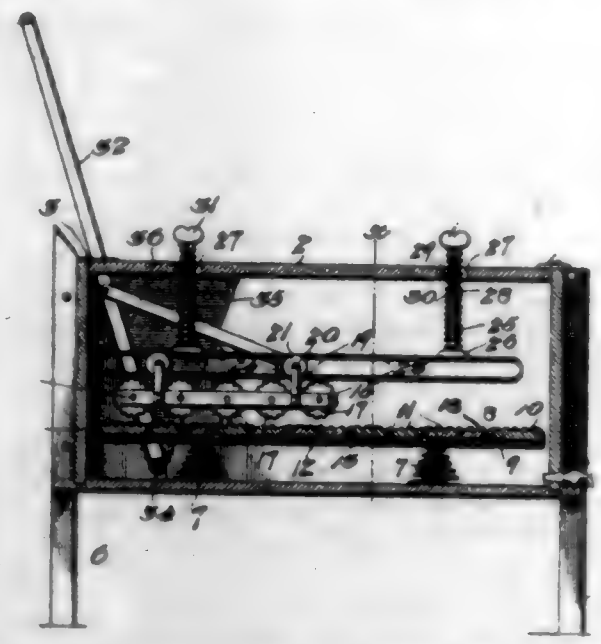
7. The combination with the rail ends of different height, of side bars constructed to compensate for the differences in dimensions of said rails, compensating bars or blocks arranged between the side bars and the web of one of the rail ends, and means for adjusting the relative height of said side bars and compensating bars.

8. The combination with the rail ends, of a step-joint, and means for adjusting the height of either one or both of said rails.

9. The combination with the rail ends, of a step-joint, and means for adjusting the height of the parts of said joint at either end or both ends.

10. The combination with the rail ends, of a step-joint, and means for adjusting both ends of said joint to accommodate rails of different section.

817,826. **WASHING-MACHINE.** ARTHUR WERATLEY, Philadelphia, Pa., assignor, by direct and mesne assignments, to Twentieth Century Roller Washer Co., Philadelphia, Pa. Filed Aug. 5, 1904. Serial No. 219,668.



Claim.—1. A washing-machine comprising a tub, a yieldingly-supported washboard therein, a lid, a guide-frame yieldingly connected to the lid and carried thereby, and a reciprocating rubber frame slidingly coupled to and carried by the guide-frame.

2. A washing-machine comprising a tub, a washboard therein embodying tilting sections, a yielding guide-frame, and a reciprocatory rubber operatively associated with said guide-frame, and movable back and forth over the tilting sections.

3. A washing-machine comprising a tub, a hinged lid thereon, constituting a support or carrier for parts of the washing apparatus, a yieldingly-supported washboard, a guide-frame yieldingly connected to and carried by the hinged lid, tension mechanism interposed between the guide-frame and lid, and a reciprocating rubber operatively coupled to and carried by said guide-frame.

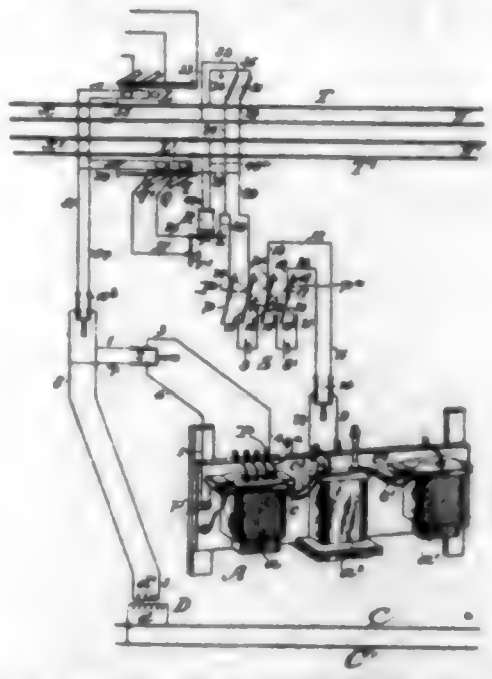
4. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a guide-frame, a reciprocatory rubber operatively associated with said guide-frame, and a tension device for the guide-frame embodying a post connected with the guide-frame and provided with a slot, a pin connected with the lid and passing through said slot, a spring encircling the post and having a portion thereof held between the guide-frame and said pin, and means for revolving the spring.

5. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame, a reciprocatory rubber operatively associated with the guide-frame, an operating-lever connected with the reciprocatory rubber and having means for engaging and lifting the washboard, and means permitting said operating-lever to be raised, substantially as and for the purpose specified.

6. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame, a reciprocatory rubber associated with said guide-frame, and an operating-lever connected with the reciprocatory rubber and embodying a cross-bar which extends beneath the washboard, the sides of the tub being mortised or recessed to receive the operating-lever and to provide a fulcrum therefor and also to admit of the operating-lever being raised, substantially as and for the purpose described.

7. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame connected to and movable with the lid and comprising upper and lower parallel runs and a reciprocatory rubber frame embodying flanged guide-rollers which lie between and engage the upper and lower runs of the guide-frame.

817,827. **SYSTEM OF CHARGING STORAGE BATTERIES.** ASBURY G. WILSON, Wilkinsburg, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Mar. 14, 1905. Serial No. 250,080.



Claim.—1. A railway signaling system, having a primary source of alternating-current supply, means for changing the alternating current into a unidirectional current, storage batteries charged by said unidirectional current, and feed-wires extending from said storage batteries to the signaling system.

2. A railway signaling system, having as a primary source of electric supply an alternating current, a rectifying device in circuit with said source of supply and wherein it is changed or transformed into a unidirectional current, and storage batteries in circuit with said rectifying device and with the signal-operating mechanisms and track.

3. A railway signaling system, having as a primary source of electric supply an alternating current, a transformer in circuit therewith and with a rectifying device, in which latter, said source of supply is transformed into a unidirectional current, and storage batteries in circuit with said rectifying device and with the railway signaling system.

4. A railway signaling and lighting system, having as a primary source of electric supply an alternating current of high voltage, a rectifying device in circuit with said source of supply and wherein it is changed or transformed into a unidirectional current, storage batteries in circuit with said rectifying device and with the signaling and lighting systems, and means for controlling the current-supply.

5. A railway signaling and lighting system, having as a primary source of electric supply, an alternating current of high voltage, a transformer in circuit therewith and with a rectifying device in which latter said source of supply is changed or transformed into a unidirectional current, storage batteries in circuit with said rectifying device and with the signaling and lighting system, and means for controlling the current-supply.

6. A railway signaling and lighting system, having as a primary source of electric supply, an alternating current, a rectifying device in circuit with said source of current-supply and wherein it is changed or transformed into a unidirectional current, storage batteries of high and low potential, arranged in pairs or sets and in circuit with said rectifying device, one set of said batteries being in circuit with the railway signal-operating mechanism and lighting system, and the other set in circuit with the track-circuits of the signaling system, and means for controlling the charging of said batteries.

7. A railway signaling and lighting system, having as a primary source of electric supply, an alternating current of high voltage, a transformer having its primary in circuit with said source of supply and its secondary in circuit with a rectifying device wherein the alternating current is changed or transformed into a unidirectional current, circuits extending from said secondary to the lighting system, and batteries in circuit with said rectifying device and with the railway-signal-operating mechanisms and the track-circuits of the signaling system.

8. A railway signaling system, having as a primary source of electric supply, an alternating current of high voltage, a transformer having its primary in circuit with said source of supply and its secondary in circuit with a rectifying device where the alternating current is changed or transformed into a unidirectional current, batteries in circuit with sad rectifying device and with the railway-signal-operating mechanisms and track-circuits of the signaling systems, and means for controlling the current-supply.

9. In a railway signaling system the combination of mains impressed with an alternating current, means for receiving current from said mains and for changing it into a unidirectional current, storage batteries charged by the unidirectional current, and feed-conductors extending from said storage batteries to apparatus and circuits used in the signaling system.

817,828. LAST. EDWARD C. WOODARD, Campello, Mass., assignor of one-half to Horace F. Woodard, Campello, Mass. Filed Sept. 28, 1905. Serial No. 280,419.



Claim.—1. A last in two parts, viz., a fore part and a heel part, a standard fast to said fore part and projecting into a recess formed in said heel part, a pivot upon said standard located within said heel part, said standard projecting beyond said pivot and resting against the rear side of said recess whereby said heel part is locked against rotation in one direction upon said pivot.

2 A last in two parts, viz., a fore part and a heel part, a rod fast to said fore part and extending rearwardly therefrom at an angle toward the bottom of said last and into a recess formed in said heel part, a pivot extending transversely through said rod and into said heel part, said rod extending beyond said pivot at an angle toward the heel of said last and resting against the rear side of said recess, whereby said heel part is locked against rotation in one direction.

3. A last in two parts, viz., a fore part and a heel part, a rod fast to said fore part and extending rearwardly therefrom at an angle toward the bottom of said last and into a recess formed in said heel part, a pivot extending transversely through said rod and into said heel part, said rod extending beyond said pivot at an angle toward the heel of said last and resting against the rear side of said recess at the rear side of said pivot and against the front side of said recess in front of said pivot.

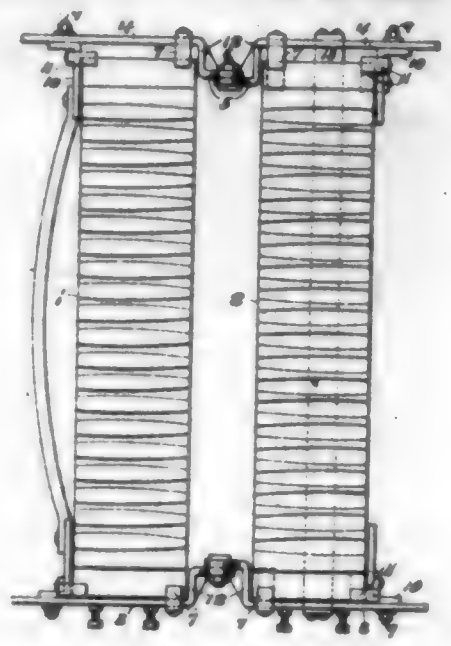
817,829. MOLD-OPENING TOOL. ALLAN G. WOODFORD, Jersey City, N. J., assignor to American Cigar Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 9, 1904. Serial No. 202,316.

Claim.—1. A tool for manipulating the parts of separable bunch-molds, said tool comprising holders for the parts of the molds, the holders being constructed to permit the parts of the molds to be readily inserted and removed therefrom, and hinged connections between the holders, substantially as described.

2. A tool for manipulating the parts of separable bunch-molds, said tool comprising a pair of frames constructed to permit the parts of the mold to be readily inserted and removed therefrom, means on each frame for engaging and holding one of the parts of the mold, and hinged connections between the frames, substantially as described.

3. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of frames, adjustable means on each frame for engaging and holding one of the parts of the mold, and connections between the frames, said connections permitting the frames carrying the parts of the mold to be moved away from each other, substantially as described.

4. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of frames, adjustable means on each frame for engaging and holding one of the parts of the mold, and hinged connections between the frames, substantially as described.



5. A tool for manipulating the parts of a separable bunch-mold, said tool comprising holders for the parts of the mold, said holders being slightly longer than the length of the mold to permit the ready insertion and removal of the mold, and connections between the holders, said connections permitting the frames carrying the parts of the mold to be moved away from each other, substantially as described.

6. A tool for manipulating the parts of a separable bunch-mold, said tool comprising holders for the parts of the mold, said holders being slightly longer than the length of the mold to permit the ready insertion and removal of the mold, and hinged connections between the holders, substantially as described.

7. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of hinged frames each frame having two pairs of clips arranged to engage a part of the mold and one of the clips of each pair being adjustable to permit the use of the tool with different sizes of molds, substantially as described.

8. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of frames each frame being shouldered and provided with holding-clips whereby each part of the mold is held in position to register with the other part, and hinged connections between the frames, substantially as described.

9. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of frames, each frame being shouldered and provided with adjustable holding-clips whereby each part of the mold is held in position to register with the other part, and hinged connections between the frames, substantially as described.

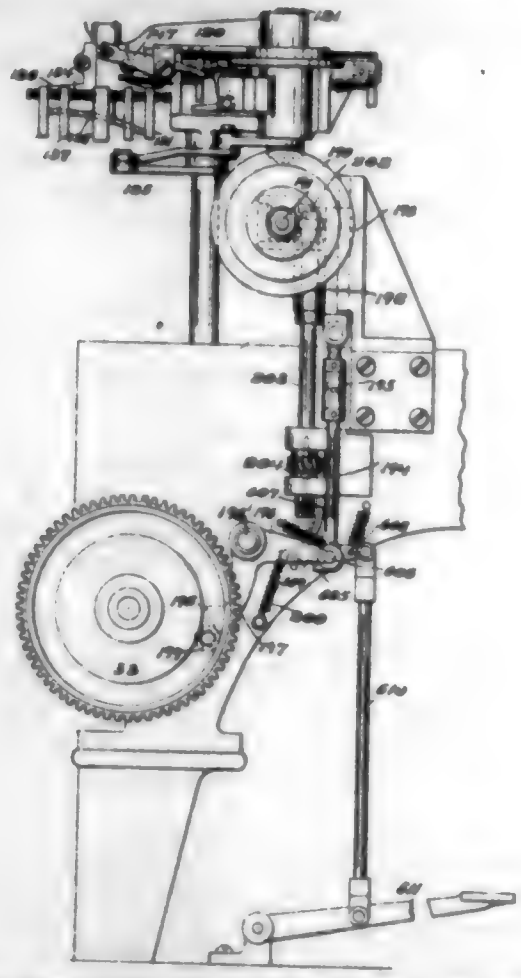
10. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of hinged shouldered frames, the frames being slightly longer than the mold to permit the ready insertion and removal of the mold and each frame being provided with adjustable clips to permit it to be employed with molds of different width, substantially as described.

11. A tool for manipulating the parts of a separable bunch-mold, said tool comprising a pair of hinged frames, the ends of the frames being shouldered and each end of each frame carrying a stationary clip arranged to engage the upper and under side of each part of the mold, and an adjustable clip arranged to engage the upper and under side of each mold, the ends of each frame being spaced from each other a distance slightly greater than the length of the mold so as to permit the ready insertion and removal of the mold, substantially as described.

817,830. CUTTING MECHANISM FOR CIGAR-MACHINES. ALLAN G. WOODFORD, Jersey City, N. J., assignor to International Cigar Machinery Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 9, 1904. Serial No. 202,317.

Claim.—1. In a cigar-machine, the combination with a movable cigar-carrier, of a cutter, means for moving the cutter into and out of the path of the carrier to trim the cigar therein, and means for intermitting when desired the operation of said cutter-moving means while the carrier is passing the cutter, to prevent the cigar from being trimmed.

2. In a cigar-machine, the combination with a movable cigar-carrier, of a cutter, means for moving the cutter into and out of the path of the carrier, and devices under the control of the operator for intermitting when desired the operation of the moving means while the carrier is passing the cutter, to prevent the cigar from being trimmed.



3. In a cigar-machine, the combination with a movable carrier, of a cutter, a sliding head in which said cutter is mounted, a suitable moving means, a driver, disconnectible connections between the driver and the head, and means under the control of the operator whereby said connections may be interrupted when desired, substantially as described.

4. In a cigar-machine, the combination with a movable carrier, of a cutter, a sliding head, driving means including a lever, a link connection between the head and the lever, and means under the control of the operator for disconnecting the link from the lever, substantially as described.

5. In a cigar-machine, the combination with a movable carrier, of a cutter, a sliding head in which the cutter is mounted, driving means including a lever, a stud on the lever, a link having an open hook engaging the stud and pivoted to the head, and tripping devices under the control of the operator for disconnecting the link from the stud, substantially as described.

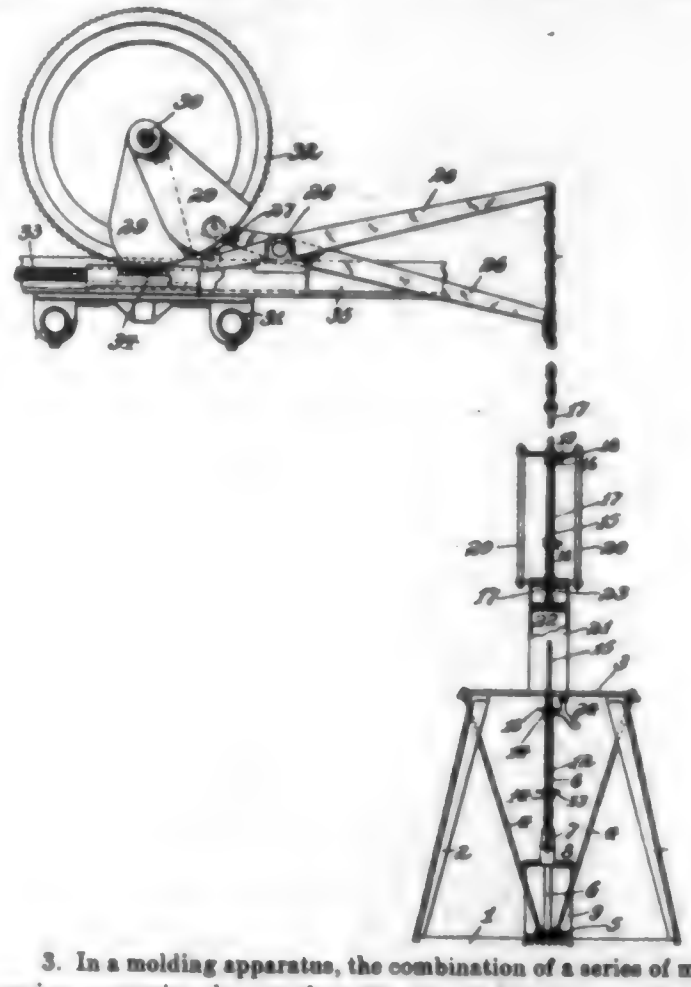
6. In a cigar-machine, the combination with a movable carrier, of a cutter, a sliding head in which the cutter is mounted, driving means including a lever, a stud on the lever, a link having an open hook engaging the stud and pivoted to the head, and tripping devices including a suitable lever under the control of the operator for disconnecting the link from the stud, substantially as described.

7. In a cigar-machine, the combination with a movable carrier, of a cutter, a sliding head in which the cutter is mounted, driving means including a lever, a stud on the lever, a link having an open hook engaging the stud and pivoted to the head, and tripping devices under the control of the operator for disconnecting the link from the stud, said tripping devices including a stud and a suitable lever, and means causing the hooked link to reengage with said stud when the tripping devices are released, substantially as described.

817,831. **MOLDING APPARATUS.** EDWARD L. AIKEN, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 23, 1905. Serial No. 251,662.

Claim.—1. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, and driven means for raising each of said mold-carriers, said means operating to raise the mold-carriers in regular sequence, substantially as set forth.

2. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions and driven means for raising each of said mold-carriers, said means operating to raise the mold-carriers in regular sequence and to hold the same in elevated positions for intervals which are shorter than the periods of depression, substantially as set forth.



3. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, and driven means for raising each of said mold-carriers in regular sequence and for sustaining the same in its elevated position for a short period of time, said means operating to raise one carrier while the preceding carrier is in an elevated position, substantially as set forth.

4. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, releasable means for holding each of said carriers in an elevated position, and driven means for raising said mold-carriers in regular sequence and sustaining the same in their elevated positions for a short period of time, substantially as set forth.

5. In a molding apparatus, the combination of a mold-carrier and means for intermittently raising and lowering said mold-carrier, said means operating to hold the mold-carrier in an elevated position for an interval which is shorter than the period of depression, substantially as set forth.

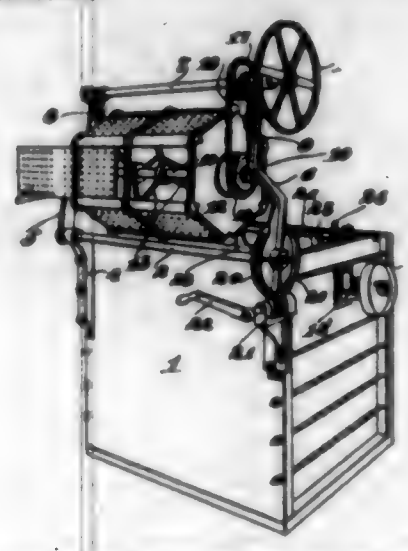
6. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, and driven means for raising and sustaining each of said mold-carriers in regular sequence, the periods of depression being greater than the periods of elevation, substantially as set forth.

7. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, and a driven cam-shaft for elevating each of said mold-carriers and holding the same in its elevated position for a fixed interval of time, the cams being placed at different angles on the shaft so as to raise the mold-carriers in regular sequence, substantially as set forth.

8. In a molding apparatus, the combination of a series of mold-carriers occupying depressed positions, a driven cam-shaft for elevating each of said mold-carriers and holding the same in its elevated position for a fixed interval of time, the cams being placed at different angles on the shaft so as to raise the mold-carriers in regular sequence, and the surfaces of said cams overlapping in such a manner that the lifting operation of one cam takes place during the holding operation of the preceding cam, substantially as set forth.

817,832. **ELECTROPLATING-TANK.** CLARENCE G. BACKUS and GEORGE L. WALLACE, New York, N. Y., assignors to Zucker & Levett & Loeb Company, New York, N. Y., a Corporation of New York. Filed July 27, 1905. Serial No. 271,405.

Claim.—1. In a device of the kind described, a tank, arms attached at one end to a side of the same and a rotatable drum supported by the outer ends of said arms, and means for raising said drum out of said tank and lowering it on one side of the tank substantially as described.



2. In a device of the kind described, a tank adapted to contain a liquid, arms hinged at one end to a side of the same and rotatable receptacle supported by the other ends of said arms and adapted to be entirely submerged in said liquid substantially as described.

3. In a device of the kind described, a tank, arms hinged at one end to a side of the same and supporting at the other end a second set of arms hinged thereto and a rotatable drum supported at the ends of said second set of arms substantially as described.

4. In a device of the kind described, a tank, arms hinged at one end to a side of the same, a rotatable drum supported by the outer ends of the same and a crank mounted on the side of the tank and combined with transmitting mechanism to raise and lower the drum substantially as described.

5. In a device of the kind described, a tank, arms hinged at one end to a side of the same, a rotatable drum supported by the outer ends of the same, a worm-wheel in engagement with one of said arms and an endless screw in engagement with said worm-wheel, substantially as described.

6. In a device of the kind described, a tank adapted to contain a liquid, a rotatable drum mounted on said tank and adapted to rotate in the said liquid, means for raising said drum out of said tank and to one side of the same, said means comprising self-locking mechanism for retaining the drum at any desired elevation, substantially as described.

7. In a device of the kind described a rotatable receptacle, comprising boards forming the side walls thereof, said boards being formed of two layers secured directly to each other, one layer being of wood and the other of hard rubber, and perforations in said boards formed by oppositely-disposed staggered openings connected with each other, by channels, the said openings and channels forming passage-ways through the boards, substantially as described.

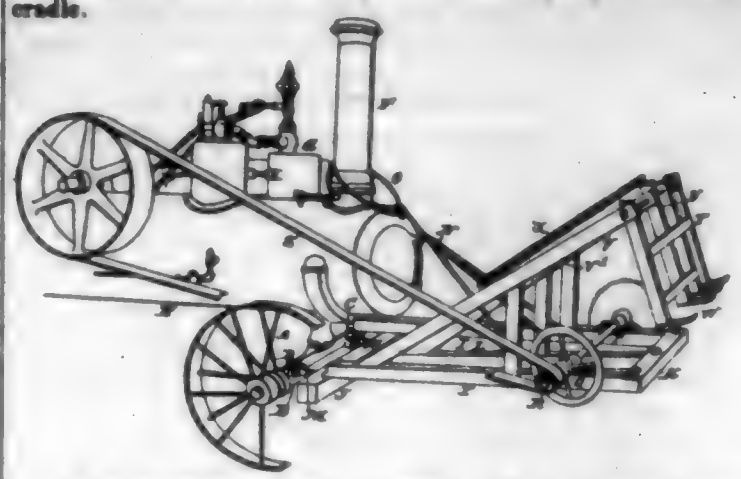
8. In a device of the kind described, a tank adapted to contain a liquid and a rotatable drum mounted on said tank and adapted to be entirely submerged in said liquid and to rotate therein means for raising said drum out of said liquid and to one side of the tank and means for retaining it at any intermediate position substantially as described.

9. In a device of the kind described a rotatable receptacle, comprising boards forming the side walls thereof, said boards being formed of two layers secured directly to each other, one layer being of strengthening material and the other of waterproof material, and perforations in said boards formed by oppositely-disposed staggered openings connected with each other by channels, said openings and channels forming passage-ways through the boards, substantially as described.

817,833. **ATTACHMENT FOR TRACTION-ENGINES.** JOSEPH M. BARTOSH, Mount Vernon, Iowa. Filed Nov. 26, 1904. Serial No. 234,439.

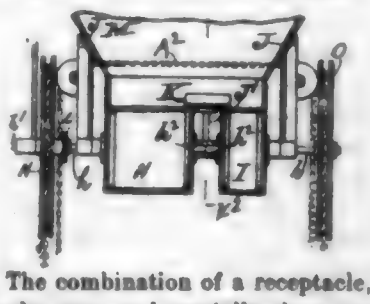
Claim.—1. In combination with a portable engine having an axle with tongue-lugs thereon, a boiler, and a smoke-stack, substantially as described, a saw-frame provided with eyebolts to engage said lugs, a suspending-hook, and a ring to encircle the smoke-stack.

2. In combination with a portable engine, substantially as described, a saw-frame having inclined supports for a wood-cradle, a cradle hinged thereto at its upper end, and a spring to retract the cradle.



3. In combination with a portable engine, a saw-frame composed of side bars, end cross-bars, a middle bar set at an angle to the side bars so as to truss the frame vertically when in horizontal position, diagonal supports for a wood-cradle, and a depending cradle hinged to said supports.

817,834. **MEASURING-DRUM.** GASTON A. BRONDER, Brooklyn, N. Y. Filed Sept. 6, 1904. Serial No. 223,457.



Claim.—1. The combination of a receptacle, a drum arranged to turn and thereby open and partially close an opening in the receptacle, an apron hinged from the receptacle, and arranged to bear on the gate, and form a secondary receptacle, around the opening in the main receptacle.

2. The combination of a hopper, a drum arranged to turn and thereby open and partially close an opening in the hopper, an apron hinged from the hopper, and arranged to bear on the drum and form a secondary receptacle around the opening in the hopper.

3. The combination of a hopper, a hollow drum having an opening in its shell journaled adjacent to an opening in the hopper, means to turn the drum to different positions, and thereby open and partially close the opening in the hopper, an apron hinged from the hopper and arranged to bear on the drum and form a secondary receptacle around the opening in the hopper.

4. The combination of a hopper, a drum arranged to turn and thereby open and close an opening in the hopper, an apron hinged from the hopper and arranged to bear on the drum and form a secondary receptacle around the opening in the hopper, and a shaker in the hopper adjacent to the drum.

5. The combination of a hopper having openings, hollow drums each having an opening, with their longitudinal axes in the same axial line, journaled to partially bear against the edges of the said openings in the hopper, means to turn the drums to different positions independently of each other, and an apron hinged from the hopper and bearing on the drums.

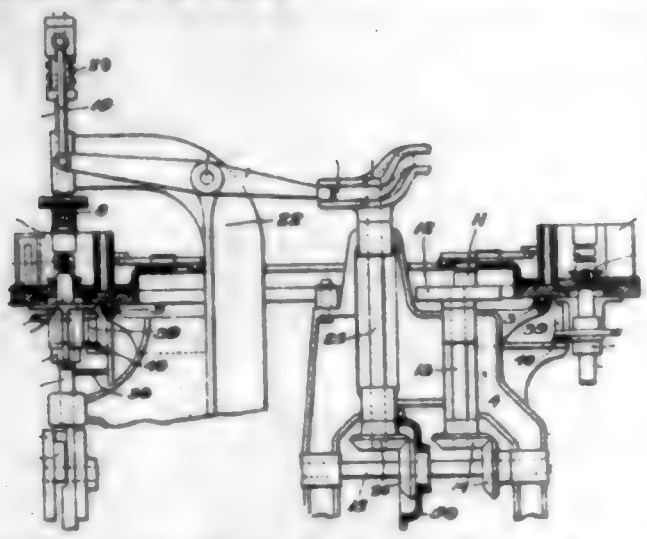
6. The combination of a hopper having an opening; hollow drums each having an opening in their cylindrical surfaces and the axes in the same axial line journaled under the opening in the hopper, a division-plate closing part of the said opening in the hopper, and bearing on the edges of the adjacent cylindrical faces of the drums, means to turn the drums to different positions independently of each other, and an apron hinged from the hopper, bearing on the drums and surrounding the opening in the hopper.

7. The combination of a hopper, a hollow drum having an opening in its shell journaled to bear against the edges of an opening in the hopper, a shaker-chain in the hopper adjacent to the drum and extending through opposite sides of the hopper, the chain arranged to be pulled through the said opposite sides, trunnions on the drum, and means to turn the drum to different positions, to charge and empty the said drum.

8. The combination of a hopper, a hollow drum having an opening in its shell journaled to bear below an opening in the hopper, a shaker-chain in the hopper adjacent to the drum and extending through opposite sides of the hopper, pulleys journaled on the out-

side of the hopper to guide the shaker-chain that passes through the hopper, guides for the chain in the hopper, trunnions on the drum, a pulley supported on one of the trunnions, and a chain on the latter pulley.

817,835. APPARATUS FOR MANUFACTURING GLASS ARTICLES. JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 10, 1905. Serial No. 259,762.



Claim.—1. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to coöperate with said molds in rotation, a series of oppositely-disposed threaded plungers mounted in the mold-carrier, an independent plunger-raising spindle, means for unscrewing the threaded plungers operated by rotation of the mold-carrier, and means for slidingly supporting the plungers, substantially as set forth.

2. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to coöperate with said molds in rotation, a series of oppositely-disposed threaded plungers mounted in the mold-carrier, an independent plunger-raising spindle, means for unscrewing the threaded plungers operated by rotation of the mold-carrier, and vertically-adjustable means for slidingly supporting the plungers, substantially as set forth.

3. Apparatus for forming articles of glassware consisting of a rotatable mold-carrier provided with a circularly-arranged series of molds, a pressing-plunger arranged to coöperate with said molds in rotation, a series of oppositely-disposed threaded plungers mounted in the mold-carrier, an independent plunger-raising spindle, means for unscrewing the threaded plungers operated by rotation of the mold-carrier, and means for slidingly supporting the plungers, with means adapted to engage each spindle and to unscrew it finally from the mold during the stationary period thereof, substantially as set forth.

4. The combination with an intermittently-rotatable mold-carrier, a series of stationary abutments, and a series of vertically-arranged threaded plungers provided with devices adapted to engage said abutments to unscrew the plungers; of independent means adapted to engage each plunger and to finally unscrew it from the mold during the stationary period thereof, substantially as set forth.

5. The combination with an intermittently-rotatable mold-carrier, a series of stationary abutments, and a series of vertically-arranged threaded plungers provided with devices adapted to engage said abutments to unscrew the plungers, and having toothed extremities; of an independent vertically-movable spindle having a toothed extremity adapted to engage the lower end of each plunger and to finally unscrew it during the stationary period thereof, substantially as set forth.

6. The combination with a rotatable mold-carrier, a series of stationary abutments, and a series of vertically-arranged threaded plungers provided with devices adapted to engage said abutments to unscrew the plungers, and having toothed extremities; of an independent vertically-movable spindle having a toothed extremity adapted to engage the lower end of each plunger and to finally unscrew it during the stationary period thereof at an increased speed, substantially as set forth.

7. The combination with a threaded plunger provided with a toothed extremity; of a vertically-movable rotating spindle provided with a corresponding toothed extremity and an energizing-magnet, substantially as set forth.

8. The combination with a threaded plunger provided with a toothed extremity; of a vertically-movable rotating spindle provided with a corresponding toothed extremity and an energizing-magnet, with means adapted to energize said magnet and means to rotate it, substantially as set forth.

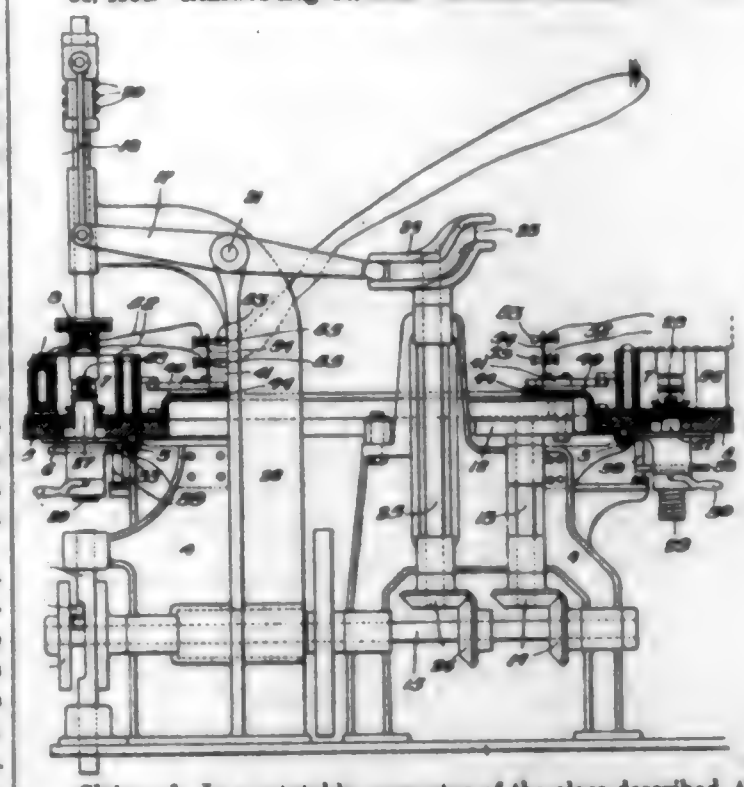
9. The combination with a series of fixed abutments and a rotating mold-carrier; of a threaded spindle extending into the mold-cavity, provided with a star-wheel arranged to engage said abutments and having ratchet mechanism permitting the spindle to be rotated independent of the star-wheel, substantially as set forth.

10. The combination with a series of fixed abutments and an intermittently-rotating mold-carrier; of a threaded spindle extending into the mold-cavity, provided with a star-wheel arranged to engage said abutments and having ratchet mechanism permitting the spindle to be rotated independent of the star-wheel, said spindle being provided with a toothed extremity; and independent means adapted to register with the spindle in its stationary position, and to rotate and finally remove it from the mold-cavity, substantially as set forth

11. The combination with a rotatable mold-carrier, a series of threaded spindles therein, and means for gradually unscrewing said spindles; of a vertically-adjustable inclined shelf arranged to support said spindles and to permit of their gradual lowering travel, substantially as set forth.

12. The combination with a rotatable mold-carrier, a series of threaded spindles therein, and means for gradually unscrewing said spindles; of a vertically-adjustable inclined shelf arranged to support said spindles and to permit of their gradual lowering travel, with means arranged to raise each spindle above the level of said shelf, substantially as set forth.

817,836. APPARATUS FOR MANUFACTURING GLASS ARTICLES. JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 31, 1904. Renewed Aug. 26, 1905. Serial No. 276,980.



Claim.—1. In a rotatable apparatus of the class described, the combination with a plurality of divided molds, of opening and closing mechanism for each mold provided with an actuating-pitman, stationary cams arranged to engage terminals of said pitmen and to actuate them inwardly and outwardly respectively, and supplemental electrically-actuated means for forcing the sides of the molds closely together at the pressing position, substantially as set forth.

2. In a rotatable apparatus of the class described, the combination with a plurality of divided molds, of opening and closing mechanism for each mold provided with an actuating-pitman having a roller, stationary opening and closing cams arranged to engage said roller to withdraw or press the pitman to open or close the mold, and supplemental electrically-actuated means for forcing the sides of the molds closely together at the pressing position, substantially as set forth.

3. In a rotatable glass-forming apparatus, the combination with a plurality of divided molds and a rotating carrier therefor, of opening and closing mechanism for each mold provided with an actuating-pitman having a roller, a stationary circularly-arranged actuat-

ing-cam provided with a movable terminal adapted to engage the roller to close the mold, a resilient backing for said terminal, a cam arranged to engage the roller to open the mold, and supplemental electrically-actuated means for forcing the sides of the molds closely together at the pressing position, substantially as set forth.

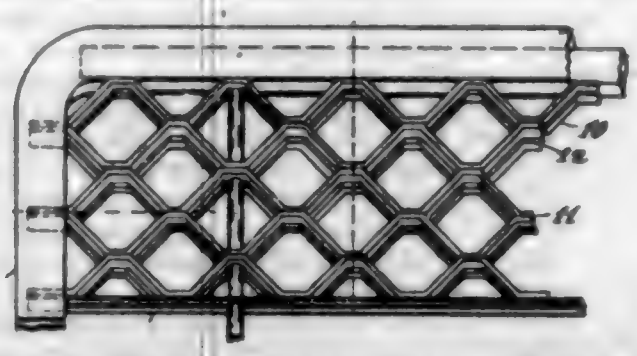
4. A glass-mold provided with hinged sides, one of said sides being provided with a magnet and the other of said sides constituting an armature, substantially as set forth.

5. A glass-mold provided with hinged sides, one of said sides being provided with a magnet and the other of said sides constituting an armature, with movable contacting terminals, and stationary terminals arranged to make contact therewith to energize the magnet and close the mold, substantially as set forth.

6. A glass-pressing mold provided with hinged sides, means for opening and closing the mold, and a magnet and armature incorporated with the sides, with means for energizing the magnet to tightly close the mold, substantially as set forth.

7. In apparatus for forming glassware, the combination with a rotatable mold-carrier, of a series of divided molds mounted thereon, means for opening and closing the molds, and a magnet and armature incorporated with the sides of the mold, with means for establishing a circuit through the magnet, substantially as set forth.

817,837. **STEP OR MAT.** CHARLES DAHLSTROM, Jamestown, N. Y. Filed July 17, 1905. Serial No. 270,061.



Claim.—1. The combination of a series of metal strips having lengthwise corrugations and crosswise abutting corrugations of adjoining strips, said lengthwise corrugations matching at said points of abuttal.

2. The combination of a series of metal strips having corrugations lengthwise of the strips, a portion of said strips having return-bends or corrugations crosswise of the strips, the apexes of said crosswise return-bends of adjoining strips placed abutting to form a mesh, said lengthwise corrugations intermatching at said points of abuttal, substantially as and for the purpose specified.

3. A step or mat consisting of a series of metal strips having continuous lengthwise crimps or corrugations, part of said strips having crosswise abutting corrugations, said lengthwise crimps intermatching at said points of abuttal, part of said strips straight and intermatching with said crimps lengthwise of the strips at said points of abuttal, and a suitable binding edge.

4. In a step or mat, a frame consisting of an inner tubular part and an outer cover, and a suitable mesh within said frame.

5. In a step or mat, a suitable mesh of crimped strips of sheet metal, a frame consisting of binding-pieces for the sides of said mesh and connecting cross-rods, and a channel-cover for said binding-pieces and the ends of said strips and rods.

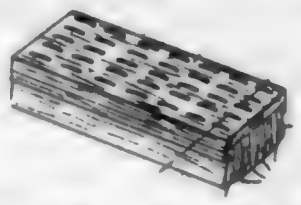
6. A step or mat consisting of a series of metal strips having lengthwise corrugations, a portion of said strips having crosswise abutting corrugations, said lengthwise corrugations fitting into one another at the points of abuttal, tubular edge pieces, and cross connecting-rods for said tubes and intervening strips.

7. A step or mat consisting of a series of metal strips having lengthwise corrugations, a portion of said strips having crosswise abutting corrugations, said lengthwise corrugations fitting into one another at the points of abuttal, tubular edge pieces, cross connecting-rods for said tubes and strips, and a channel-shaped cover around the outer edge and over said tubes.

817,838. **ERASER.** ERNEST G. DAVIS, Chicago, Ill. Filed Nov. 24, 1903. Serial No. 183,660.

Claim.—1. An eraser, comprising a non-resonant back-piece, and a plurality of strips of erasing fabric, each strip being folded upon itself and being stitched to the back-piece along the folded edge, and each folded strip being arranged closely adjacent to the next folded strip, substantially as described.

2. An eraser, comprising a non-resonant back-piece and a plurality of strips of resilient erasing material, each strip being folded upon itself and stitched to the back-piece along its folded edge, said folded strips being arranged closely adjacent to one another, so as to provide a mutually elastic support, substantially as described.



3. An eraser, comprising a non-resonant back-piece and a plurality of strips of felt, each strip of felt being folded upon itself and being tightly stitched to the back-piece along its folded edge, said folded strips of felt being arranged closely adjacent to each other, so as to provide a mutual, resilient support, substantially as described.

4. An eraser, comprising a back-piece and a plurality of felt strips, each strip being folded upon itself and also cut part way through along the outer edge of such fold and being firmly secured to said back-piece along said folded and cut edge, said strips being arranged closely adjacent each other to form a resilient erasing and dust-collecting face, substantially as described.

5. An eraser, comprising a non-resonant back-piece and a plurality of non-resonant erasing-strips, stitched to said back-piece and arranged closely adjacent to each other to afford a mutual support and to provide a resilient erasing and dust-collecting face, substantially as described.

6. An eraser, comprising the combination with a back-piece of non-resilient material, of strips of erasing fabric folded upon themselves and cut partway through along their folded edges, said strips being arranged closely adjacent to each other, the faces formed by said cuts being arranged against one face of the back-piece, said strips being sewed to said back-piece along the lines of said cuts.

7. An eraser, comprising a back-piece of non-resonant material, provided with folded strips of erasing fabric, attached at their folded edges to one face of said back-piece, each strip being arranged substantially parallel with every other strip and being arranged immediately adjacent to the next strip, so that said strips shall directly support each other in a position substantially at right angles to said back-piece, substantially as described.

8. An eraser, made wholly of non-resonant material and comprising a non-resonant back-piece and a plurality of non-resonant strips of resilient erasing fabric, each strip being folded upon itself and being tightly stitched along said folded edge to said non-resonant back-piece, said strips being arranged closely adjacent to and parallel with each other, so as to afford a mutual support, said strips, so arranged, projecting at a right angle to said back-piece and constituting a resilient dust-collecting and erasing surface.

817,839. **HAIR-PIN.** CHARLES L. DURBORAW, Baltimore, Md., assignor of one-half to William F. Seim, Baltimore, Md. Filed Jan. 16, 1904. Serial No. 189,388.

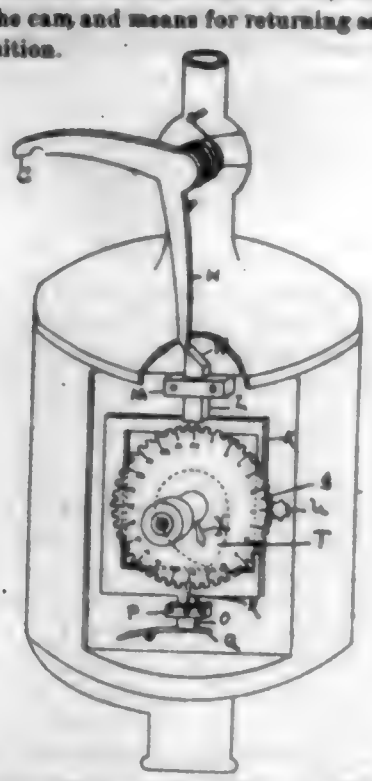


Claim.—A hair-pin composed of a single piece of wire having the ends bent to form a head at its upper end, a neck below said head, then bent outwardly and inwardly forming an enlarged portion below said neck, then extending downwardly parallel with each other forming a contracted portion below the enlarged portion, said contracted portion being crimped, then diverging below the said contracted portion for a short distance and then converging and terminating in segment-shaped extremities.

817,840. **TIMELIGHT-EXTINGUISHER.** ALBERT W. DYER and ANDREW G. SPINNEY, Portland, Me., assignors, by direct and mesne assignments, to William W. Thomas, trustee, Portland, Me. Filed Jan. 20, 1905. Serial No. 241,927.

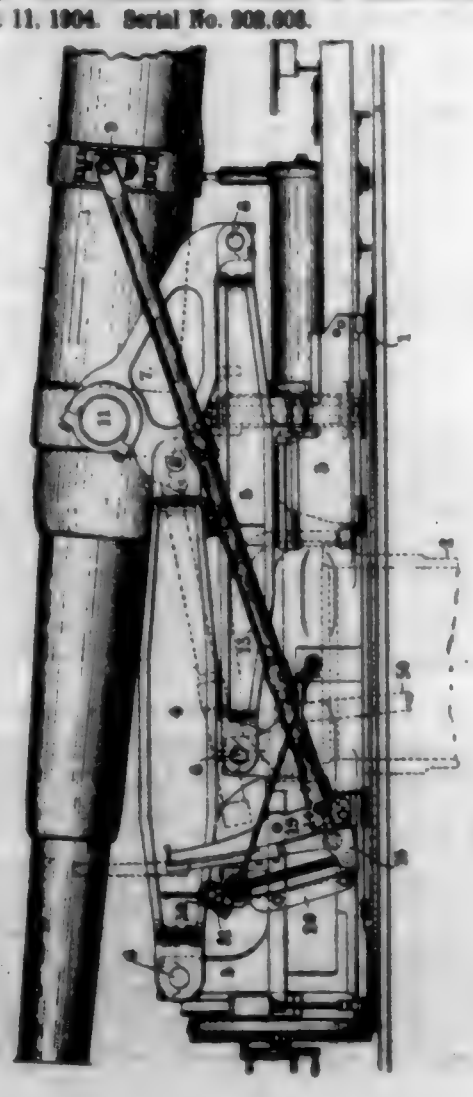
Claim.—1. In an automatic gas-extinguisher, a suitable case divided into two independent non-communicating compartments, suitable driving mechanism in one of said compartments, the other compartment serving as a means for conducting the gas through said case, a shaft mounted in said case and carrying thereon a dial, said dial tightly fitting on said shaft and adapted to be driven with said shaft, a cam rigidly mounted on the end of said shaft and at the back

side of said dial, the whole being driven by said driving mechanism, a spring cut-off, a latch capable of vertical movement on said case and operated by said cam to throw said cut-off, means for indicating the position of the cam, and means for returning said spring-latch to an operative position.



2. In an automatic gas-extinguisher, a suitable case divided into two independent non-communicating compartments, suitable driving mechanism in one of said chambers, the other chamber serving as a means for conducting the gas through said case, a shaft mounted in said case and carrying thereon a dial having numerals on its surface and notches in its periphery, said dial tightly fitting on said shaft and adapted to be driven with the said shaft, a heart-cam rigidly mounted on the inner end of said shaft and contiguous to the back side of said dial, the whole being driven by said driving mechanism, a spring cut-off, a latch capable of vertical movement on said case and operated by said heart-cam to throw said cut-off, means for indicating the position of the heart-cam and means for returning said spring-latch to an operative position.

817,841. GUN-CARRIAGE. ALBERT H. EMERY, Stamford, Conn. Filed Apr. 11, 1904. Serial No. 202,606.



Claim.—1. In a gun-carriage, an elevating-rod of variable length controlling the angle of elevation of the gun and having means holding it at normal length, which yield under abnormal loads imposed upon the rod during recoil.

2. In a gun-carriage, an elevating-rod controlling the angle of elevation of the gun, automatically extensible under abnormal strains of tension applied thereto.

3. In a gun-carriage, an elevating-rod controlling the angle of elevation of the gun, automatically reducible in length under abnormal loads applied thereto.

4. In a gun-carriage, an elevating-rod controlling the angle of elevation of the gun automatically extending under abnormal tension and automatically shortening under abnormal loads of compression imposed upon it.

5. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically extending under abnormal loads of tension imposed upon it during recoil and having means returning it to normal length.

6. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically extending under abnormal loads of tension and shortening under abnormal loads of compression imposed upon it during recoil and having means returning it to normal length.

7. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically extending under abnormal loads of tension imposed upon it during recoil and having means returning it to normal length consisting of initially-loaded springs.

8. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically extending under abnormal loads of tension imposed upon it during recoil and having means returning it to normal length consisting of initially-loaded springs located in the rod.

9. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically extending under abnormal loads of tension and shortening under abnormal loads of compression imposed upon it during recoil and having means returning it to normal length consisting of initially-loaded springs which are additionally loaded by extension and by shortening of the rod.

10. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically changing its length under abnormal strains imposed during recoil, and having a hydraulic press opposing such changes of length.

11. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically changing its length under abnormal strains imposed during recoil, and having a hydraulic press with initially-loaded valves opposing such changes of length.

12. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically changing its length under abnormal strains imposed during recoil, and having a hydraulic press opposing such changes of length and initially-loaded springs restoring the rod to its normal length.

13. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically changing its length under abnormal strains imposed during recoil, and having a hydraulic press with initially-loaded valves opposing such changes of length and initially-loaded springs restoring the rod to its normal length.

14. In a gun-carriage, a rod controlling the angle of elevation of the gun, automatically changing its length under abnormal strains imposed during recoil, and having a hydraulic press with initially-loaded valves opposing such changes of length and initially-loaded springs restoring the rod to its normal length, said press also having a small by-pass permitting the rod to return to normal length under the action of the springs.

15. In a gun-carriage, an elevating-rod controlling the angle of elevation of the gun, changing its length under abnormal strains imposed during recoil and having a plurality of initially-loaded springs connected with the rod at different points in the length of the rod and jointly opposing such changes in length.

16. In a gun-carriage having a link system for lifting the gun to firing position, a limiting-stop arresting the movement of the links, and adjustable to permit the angular position of the links to be changed for different angles of elevation at which the gun is to be fired.

17. In a gun-carriage having a link system for lifting the gun to firing position and an adjustable limiting-stop determining the angular position of the link system at time of firing, gun-elevating mechanism determining the angle of elevation of the gun, and working connections through which the positions of the gun-elevating mechanism and of the limiting-stop are simultaneously adjusted.

18. In a gun-carriage having a link system for raising the gun to firing position and piston lifting the gun through said link system,

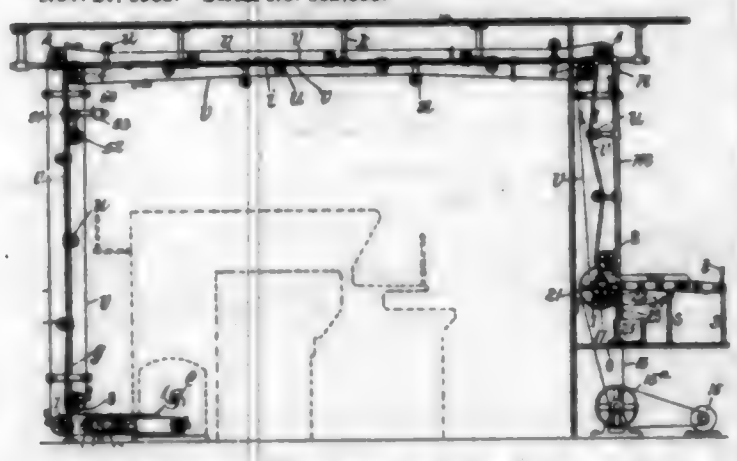
an adjustable limiting-stop arresting the upward motion of the piston when the link system has obtained the angular position desired for the particular angle of elevation at which the gun is to be fired.

19. In combination with an elevating gun-carriage, a cylinder, a piston working in said cylinder to lift the gun to firing position, and limiting-stops arresting the upward movement of the piston, disposed symmetrically with reference to the axis of the piston, and consisting of fixed threaded rods, and stop-nuts on said rods.

20. In combination with an elevating gun-carriage, a cylinder, a piston working in said cylinder to lift the gun to firing position, limiting-stops arresting the upward movement of the piston, disposed symmetrically with reference to the axis of the piston, and the buffers carried by the piston striking against the limiting-stops and avoiding shock when the piston reaches the upper limit of its motion.

21. In combination with an elevating gun-carriage having a link system to raise the gun to firing position, adjustable elevating-rods to determine the angle of elevation of the gun at time of firing and adjustable limiting stop-nuts for determining the angular position of the link system at time of firing; means for simultaneously adjusting the elevating-rods and limiting stop-nuts, consisting of suitable driving mechanism for adjusting the position of the elevating-rods, and shafting and gears connecting said driving mechanism with the stop-nuts.

817,842. **CARRIER.** VICTOR FILTEAU, Montreal, Canada, assignor of one-third to Thomas McLeay Graham, Montreal, Canada. Filed Nov. 27, 1903. Serial No. 182,809.



Claim.—1. The combination with the delivery-drum of a power-driven newspaper-printing press, of a carrier adapted to carry folded newspapers, such carrier comprising a receiving member with end portion extended beneath said delivery-drum to receive the newspapers in overlapping order with the last delivered uppermost and traveling in one direction, an elevating member traveling in another direction, and a further member traveling in a direction different to the directions of travel of the first two members so that the newspapers shall be delivered in reverse overlapping order, and a stop located in the path of the newspapers causing them to be automatically stacked.

2. The combination with the delivery-drum of a power-driven newspaper-printing press, of a carrier adapted to carry folded newspapers such carrier comprising a receiving member with end portion extended beneath said delivery-drum to receive the newspapers in overlapping order with the last delivered uppermost, and traveling in one direction, an elevating member traveling in another direction and a delivery member traveling in a direction opposite to the direction of travel of the receiving member so that the newspapers shall be delivered in reverse overlapping order, and a stop located at the extremity of the delivery against which the newspapers are carried for causing them to be automatically stacked.

3. The combination with the delivery mechanism of a printing-press of a traveling carrier having one end communicating with and receiving the printed articles from the said delivery mechanism in overlapping order with the last delivered uppermost and the other end of such carrier traveling in the opposite direction to the first-mentioned end thereof for the purpose of reversing the order of articles in their travel upon the carrier, means adapted to be acted upon by the articles for the purpose of causing the said articles to be automatically stacked, and means for causing the carrier to travel independently of the press.

4. The combination with the delivery mechanism of a printing-press of a carrier comprising a pair of longitudinals secured rigidly at their lower ends adjacent to the delivery end of the press and extending upwardly, a series of rollers extending between and carried by such longitudinals, a bridging member having one end adjacent to the upper end of the pair of longitudinals, a series of rollers carried thereby, and a second pair of longitudinals secured rigidly at their lower ends adjacent to the point of delivery and having their upper ends located adjacent to the opposite end of the bridging member, a series of rollers extending between and carried by the last-mentioned longitudinals, the rollers at the opposite ends of the bridging member constituting the upper end rollers of the first and last mentioned series of rollers, a pair of coacting endless aprons looped over the rollers of the first-mentioned series and over the rollers common to such series and to the series in the bridging member, a second pair of endless aprons looped over the rollers in the bridging member and over the rollers common to the first and last mentioned series, and a third pair of endless aprons looped over the rollers of the last-mentioned series and over the rollers common to such series and to the series of the bridging member, for the purpose of causing the said pairs of aprons to deliver the printed article from one to another.

5. The combination with the delivery mechanism of a printing-press, of a carrier consisting of a receiving member receiving the printed articles from the press in overlapping order the last received lying uppermost, a delivery member, and an intermediate member between such receiving and delivery members; the receiving member conveying the printed articles, in the same order as received from the delivery mechanism of the press, to the intermediate member, the intermediate member conveying such articles from the receiving member to the delivery member in overlapping order the reverse of that in which they were received from the receiving member, and the delivery member conveying such articles in their reversed order to the point of delivery, and a rigid stop located in the path of the article being conveyed by such delivery member, to arrest such articles while they are still supported by the delivery member, for the purpose set forth.

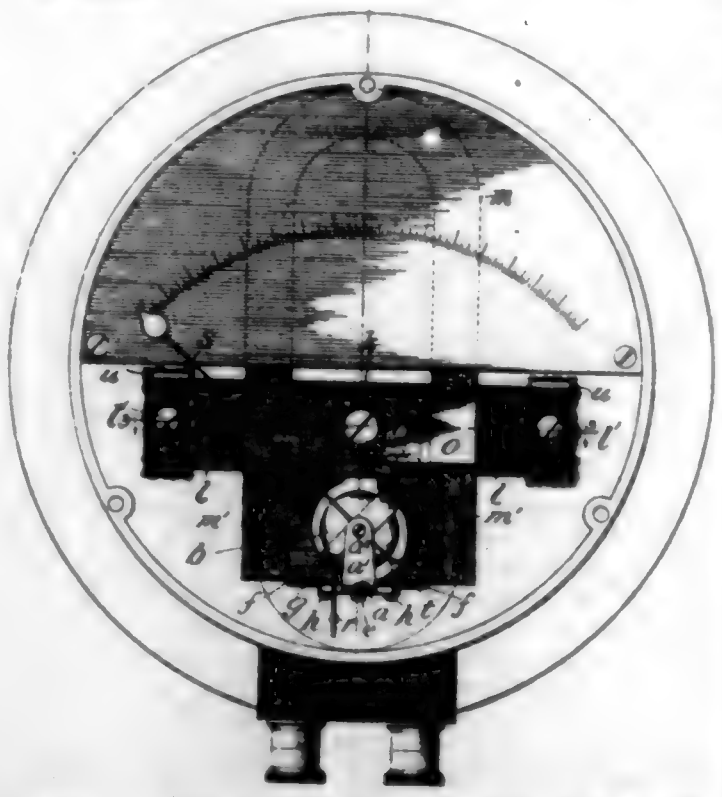
6. The combination with the delivery mechanism of a printing-press, of a carrier adapted to receive from the press the articles printed thereby, such carrier consisting of a series of members communicating one with another and arranged in different angular positions, such series of members comprising a pair of rollers located a short distance apart and supported at one end of such series, a second pair of rollers located at the point of juncture of the first and second members, a third pair of rollers arranged a short distance apart and supported at the point of juncture of the second and third members, a fourth pair of rollers arranged a short distance apart and supported near the opposite end of the series, a pair of endless aprons looped over the rollers of the first and second pairs with one side of each bearing upon one another, a second pair of endless aprons looped over the rollers of the second and third mentioned pairs, and a third pair of endless aprons looped over the rollers of the third and fourth mentioned pairs, a delivery member consisting of a series of rollers having an endless apron looped thereover and presenting a horizontal surface adapted to receive articles dropped thereon, and means located in the path of the printed articles carried by and moving with the said apron of the said delivery member such means being adapted to have the articles come in contact therewith and be stopped thereby while they are still upon the carrier, substantially as described and for the purpose set forth.

7. The combination with the delivery mechanism of a printing-press, of a carrier adapted to receive from the press the articles printed thereby, such carrier consisting of a series of members communicating one with the other such series comprising a receiving member located in position to receive the printed articles as they are delivered by the press, a delivery member, and a series of intermediate members arranged in different angular positions, a pair of rollers located at the point of juncture of the receiving member and the first intermediate member, such pair of rollers being arranged a short distance apart, a second pair of rollers arranged a short distance apart and supported at the point of juncture of the intermediate member last mentioned with the intermediate member adjoining the same, a third pair of rollers arranged a short distance apart and supported at the point of juncture of the last-mentioned intermediate member with the delivery member, a pair of bearing-rollers mounted in the receiving member one near each end thereof, a pair of bearing-rollers supported in the delivery member and located one near each end thereof, a pair of endless aprons looped over the rollers of the first and second pair with one side of each in bearing relation with one another, a second pair of endless aprons looped over the rollers of the second and third mentioned pairs, and a third pair of endless aprons looped over the rollers of the third and fourth mentioned pair, an endless apron looped over the rollers of the receiving member and presenting a horizontal surface adapted to receive articles dropped thereon, an endless apron looped over the rollers of

the delivery member and presenting a horizontal surface adapted to receive articles dropped thereon, and stationary means located in the path of the printed articles carried by and moving with the apron of the said delivery member in position to have the articles come in contact therewith and be stopped thereby while they are still upon the carrier, substantially as described and for the purpose set forth.

8. The combination with the delivery-drum of a printing-press, of a carrier adapted to carry folded newspapers, such carrier comprising a traveling receiving member, with end portion extended beneath said delivery-drum, a second traveling member adapted to carry said newspapers from said receiving member, and a traveling delivery member, said second traveling member and said delivery member being disposed a short distance apart and said second traveling member having an operating-shaft, a movable platform 20 located across the space between said second and delivery members and pivoted to said operating-shaft and adapted to, at times, guide the newspapers being carried and cause the same to be transmitted from the second member to the delivery member, and means for displacing such movable platform to, at other times, allow the newspapers being carried to fall through such space, for the purpose set forth.

817,843. **ELECTRICAL MEASURING INSTRUMENT.** JOHN C. GANO, Chicago, Ill., assignor to International Electric Motor Company, Chicago, Ill., a Corporation of Illinois. Filed July 24, 1905. Serial No. 270,823.



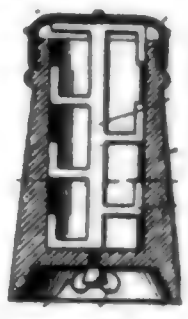
Claim.—1. In an electrical measuring instrument, the combination with a bracket *k*, of a movement supported by said bracket comprising a pair of pole-pieces *f f* fixed upon said bracket, a moving coil pivoted to rotate between said pole-pieces, a horseshoe-magnet between the arms of which said pole-pieces are adapted to fit, and a clamp independent of said pole-pieces for holding said magnet and bracket together.

2. In an electrical measuring instrument, the combination with a supporting-plate carrying a bracket, of pole-pieces mounted upon said bracket, said pole-pieces having flat parallel outer sides and concave inner faces, a coil-frame pivoted to rotate between the concave faces of said pole-pieces, a U-shaped yoke in the arms of which the pivotal mountings for said coil are provided, said yoke-piece being fastened to said pole-pieces, a horseshoe-magnet having parallel arms adapted to embrace the parallel outer sides of said pole-pieces, a clamping-bar o and a screw *p* passing through said clamping-bar into said bracket, said magnet being clamped thereby between said bar and said back plate, substantially as set forth.

3. The combination with the supporting-bracket *k*, of the pole-pieces *f*, *f*, having shoulders *f'*, *f'*, adapted to conform to said bracket, means for holding the shouldered portions of said pole-pieces against said bracket, whereby said pole-pieces are quickly adjusted and maintained in proper relative positions, a coil mounted to oscillate between said pole-pieces, a horseshoe-magnet embracing said pole-pieces and a clamp independent of said pole-pieces for holding said magnet and bracket together.

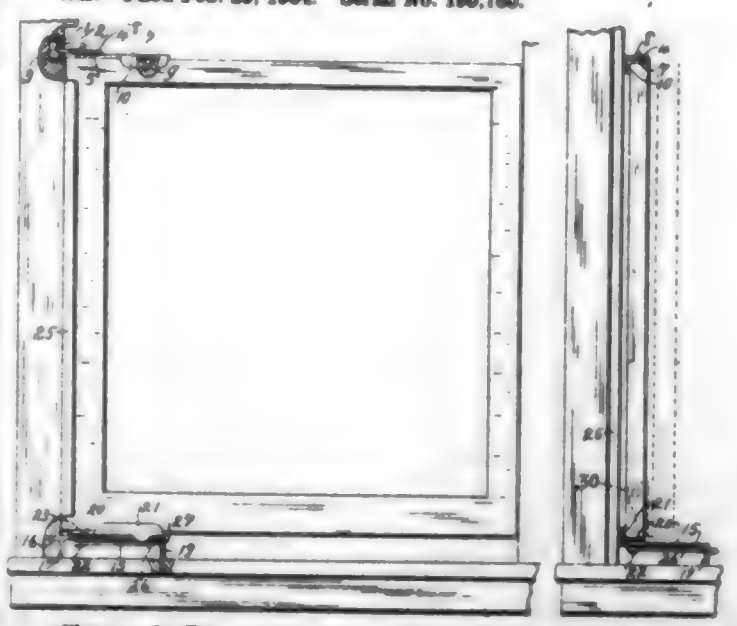
4. In an electrical measuring instrument, a U-shaped magnet and a support therefor, a moving system comprising pole-pieces adapted to fit within the arms of said magnet, and a moving coil mounted to oscillate between said pole-pieces, in combination with a support independent of said magnet, upon which support said pole-pieces are mounted.

817,844. **SALT-SHAKER.** CHARLES R. GILBERT, Los Angeles, Cal. Filed Oct. 14, 1905. Serial No. 282,845.



Claim.—A shaker for a salt-cellar adapted to scrape the entire inner surface of the cellar, comprising a central longitudinal stem rotatively mounted in the cellar and having an end projecting outwardly therethrough—the stem having on opposite sides thereof scraper-arms, the said scraper-arms being mounted at points on the stem equidistant from the points where the arms on the opposite side are mounted, the said scraper-arms being provided with upturned scraper portions in length at least one-half the distance between the scraper-arms, the upper arm having a scraping fit with the top wall of the cellar and the lower arm having a scraping fit with the lower wall of the cellar.

817,845. **TEMPORARY HINGE.** HENRY H. GREENE, Milwaukee, Wis. Filed Feb. 29, 1904. Serial No. 195,785.



Claim.—1. The combination with a window-casing and vertically-movable sash, of a set of removable hinges, each comprising a stationary and movable member; one member of each set being slotted, and the other member provided with a pivot-pin entered in the slot, whereby said members are movably connected together; one member of each set being adapted to be detachably connected with the window-casing, and the other with the sash.

2. The combination with a window-casing and vertically-movable sash, of a set of removable hinges, each comprising a stationary and a movable member; one member of each set being slotted, and the other member having a pivot-pin entered in the slot; the lower hinge having its stationary member supported from the side and sill of the window-casing and extended to form a rest for both sash; together with a hook member adapted to be removably connected with one of the sash at the side opposed to that engaged by the hinge members, and in a position to provide a rest for the other sash, coöperating with the extended portion of the lower stationary member.

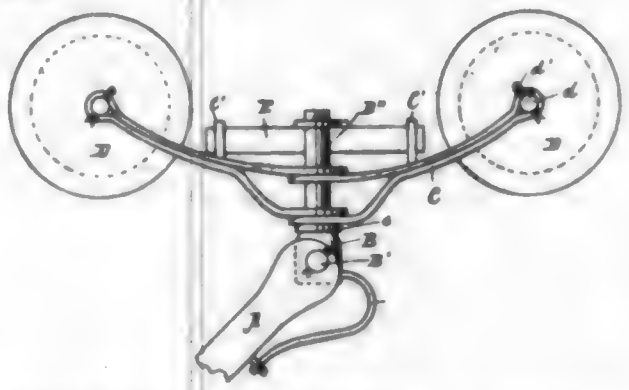
3. The combination with a window-casing and vertically-movable sash, of a set of removable hinges, each comprising a stationary and movable member; one member of each set being slotted, and the other member provided with a pivot-pin entered in said slot; the upper stationary member being forked and provided with a plurality of hooks adapted to interlock in suitable recesses in the casing and the members of both sets being connected with the casing and sash in the plane of the latter.

4. The combination with a window-casing and vertically-movable sash, of a set of removable hinges, each comprising a stationary and a movable member; one member of each set being slotted and the other member provided with a pivot-pin entered in said slot; one of said members being provided with a latch adapted to lock the connected member in one position of adjustment in said slot.

5. The combination with a window-casing and vertically-movable sash, of stationary hinge members adapted to engage the casing on one side, and swinging hinge members adapted to engage the upper and lower rails of the sash; one member of each set having a pivot-pin movably engaged in a slot in the other member; together with means for holding said members when in one position of the adjustment, against relative longitudinal movement.

817,846. TROLLEY-HEAD AND CURRENT-COLLECTOR.

JOHN R. GREENWOOD, Utica, N. Y. Filed Oct. 31, 1904. Serial No. 230,654.



Claim.—1. In a trolley-head, a plurality of current-collectors supporting means therefor comprising spring members pivotally mounted on the trolley-pole head, a spring engaging the trolley-pole head and the said supporting means retaining the collectors in normal alinement substantially as shown.

2. In a trolley-head, a plurality of current-collectors, supporting means therefor comprising spring members pivotally mounted on the pole-head, spring means engaging the trolley-pole head and the said supporting means retaining the latter in normal alinement with the trolley-pole head, substantially as shown.

3. In a device of the character described, doubled spring members adapted to yield vertically and provided with means for supporting a plurality of trolley-wheels and with means for pivotally mounting the said members relatively to the trolley-pole.

4. In a device of the character described comprising a plurality of current-collectors and spring-plate harp members supporting the same, a member supporting the said harp members on the trolley-pole, the said member comprising a head and shank fashioned out of sheet metal providing means for supporting one end on the trolley-pole and pivotally supporting the harp members on the other portion, and spring means connecting the latter portion and the harp members normally maintaining the current-collectors in alinement, substantially as shown.

5. In a device of the character described, flat spring members comprising current-collector-supporting means, pivotal connection of the said members on the trolley-head, spring means normally holding the members in alinement with the pole, and a spring member normally holding the current-collectors in substantially a horizontal position, substantially as described.

6. In a device of the character described, a current-collector, a spring-support for a collector having at one end a return-bend for the mounting of the collector and at the other end adapted to be supported on the trolley-head and adapted by its mounting for horizontal play thereon, spring connection between the said member and the trolley-head limiting such play, spring connection between the trolley-head and the pole normally retaining the collector-supporting member in substantially horizontal position, substantially as described.

7. In a device of the character described comprising a plurality of current-collectors, pivotally-mounted spring-supports for the collectors, means mounted in connection with the supports maintaining the same in normal horizontal and vertical position, substantially as shown.

8. In a device of the character described, trolley-harps fashioned of spring metal having return-bends at the outer ends for the mounting of the current-collectors and having spring members in contact with the current-collectors and mounted on the harp, a shank supported on the trolley-head provided for supporting the harps and spring means connecting the shank and the harps, the said means being mounted on the shank an offset being provided on the harp for engaging said spring means, substantially as shown.

9. In a device of the character described, trolley-harps fashioned of spring metal having return-bends at the outer ends for the mounting of current-collectors and having spring connection between the harps and the trolley-pole head, the said connection comprising a flat spring passing through the trolley-pole head and engaging offsets on the harps, substantially as shown.

10. In a device of the character described, current-collector-supporting members of flat metal each doubled upon itself, the ends being adapted for pivotal mounting on the trolley-pole head and providing a journal at the return-bend thereof for the support of the collector-journal, substantially as described.

11. In a device of the character described, harps formed of double metal plates adapted for the pivotal mounting of the ends on the trolley-pole head and having bearings for the support of current-collectors, and a spring member passing through the trolley-pole head and engaging the harp members to limit the horizontal movement of the latter on the trolley-pole head, substantially as described.

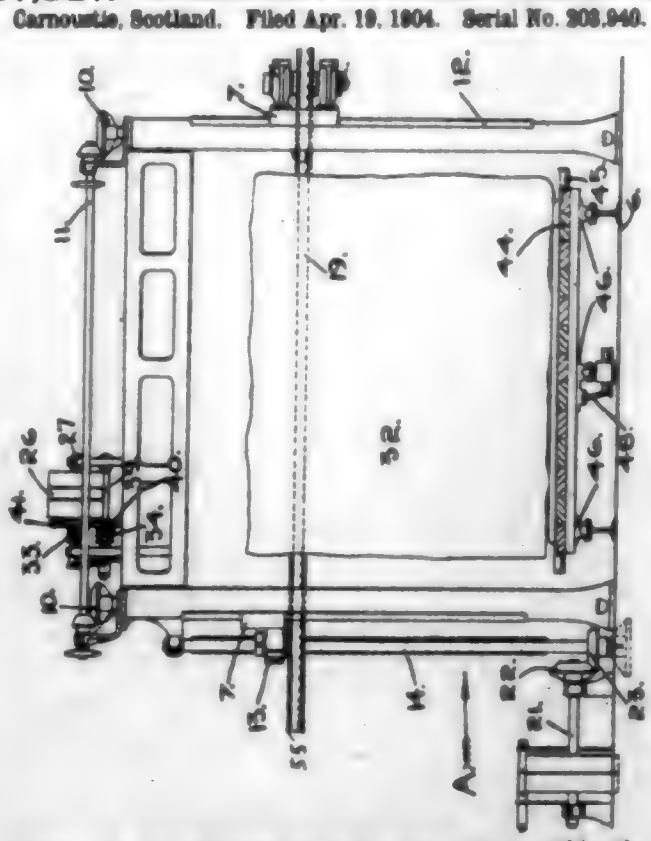
12. In a device of the character described spring-plates supporting the current-collectors and supported on the trolley-pole head to swing horizontally and to swing with their mounting vertically on the trolley-pole, and current-collectors, substantially as described.

13. In a trolley-head comprising a plurality of current-collectors having spring-supporting means therefor mounted on the pole-head, a spring engaging the trolley-pole head and the said supporting means retaining the collectors in normal alinement with each other and with the trolley-pole, substantially as shown.

14. In a device of the character described, flat metal harps vertically resilient and mounted to swing horizontally, in combination with means to limit the said horizontal swing, substantially as described.

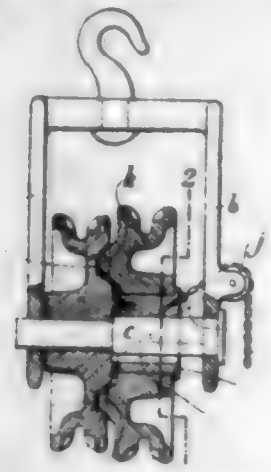
817,847. STONE-SAWING MACHINERY.

ARTHUR G. GRICE, Carnoustie, Scotland. Filed Apr. 19, 1904. Serial No. 203,940.



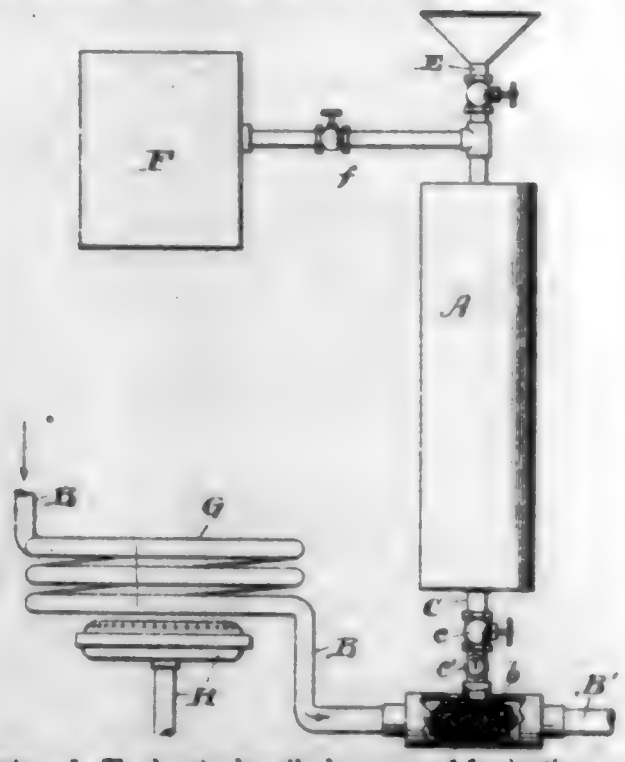
Claim.—In an apparatus for sawing stone, the combination of a band having cutters thereon, pulleys carrying the band, means for driving the pulleys, slides carrying the pulleys, means for raising and lowering the slides at different speeds, said means consisting of nuts on the slides, screws 9 passing through said nuts, said screws having gearing thereon, shafts 11 having gearing thereon meshing with the gearing on the screws 9, means connecting the shafts 11 together, a shaft 27, a fast pulley 26 thereon, means for operating the pulley 26 in one direction or the other, a shaft 39, a pinion 40 hereon, a pinion 43 on the shaft 27, a pinion 41 on one of the shafts 11 engaging with the pinions 40 and 43, clutches 33 and 34 for controlling the pinions 40 and 43, an adjustable crank 35 on the shaft 27, a ratchet-wheel 36 on the lever 39, a rod 37 connecting said wheel 36 with the crank 35, a lever 29 for throwing one clutch into engagement with its pinion while disengaging the other clutch, and a hand-lever for operating said lever 29 whereby the slides may be moved at different speeds, substantially as described.

817,848. PULLEY-TACKLE. EMILE GUITEL and PAUL GUITEL, Morvull, France. Filed Feb. 7, 1905. Serial No. 244,536.



Claim.—In differential pulley-tackle the combination of two sheaves of different diameters, with fixed cheeks, an axle carried by the latter and supporting the sheaves, a sleeve arranged inside one of the said sheaves, inclined surfaces inside the said sleeve, corresponding inclined surfaces on one of the cheeks, a chain attached to the said sleeve, a small pulley guiding the said chain, recesses in one of the sheaves and corresponding bosses provided on the other sheave, substantially as described and for the purpose set forth.

817,849. PROCESS OF FUMIGATING PLANTS. ROBERT HAND, East Cleveland, Ohio. Filed June 13, 1904. Serial No. 212,441.



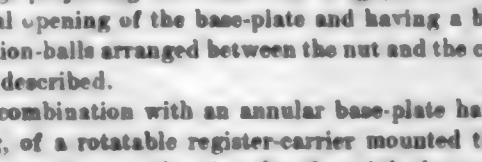
Claim.—1. The herein-described process of fumigating greenhouses, which consists in exposing vaporizable liquid insecticide, in a thin layer, to the action of a stream of superheated steam flowing through a suitable conduit, whereby the insecticide is vaporized and its vapor is taken up and carried along by said superheated steam, and of discharging said superheated steam, laden with the vaporized insecticide, into the atmosphere of the greenhouses, substantially as and for the purpose specified.

2. The herein-described process of fumigating plants contained in a greenhouse, which consists in causing a stream of superheated steam to flow through suitable pipes, and in causing a liquid insecticide to fall slowly into said stream of superheated steam, whereby the insecticide is vaporized and its vapor is taken up and carried along by said stream of superheated steam, and in discharging said superheated steam, laden with the vaporized insecticide, into the atmosphere of the greenhouse, substantially as and for the purpose specified.

3. The herein-described process of fumigating plants which consists in superheating a stream of steam and exposing to the action of said steam an insecticide vaporizable at or below the temperature of the steam, and discharging the resultant vapor into the atmosphere proximate to the plants.

4. The herein-described process of fumigating plants which consists in superheating a stream of steam and interposing in the path of said stream a vaporizable liquid insecticide in a thin layer and directing the vapor resulting therefrom about the plants.

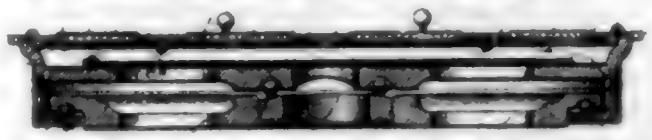
817,850. CHAIN-MACHINE SPLITTER-BIT. THORNTON S. HARBERTY, Riversville, W. Va. Filed Nov. 6, 1905. Serial No. 286,002.



Claim.—1. A bit for coal-mining machines, having a shank portion and a cutting portion, said cutting portion lying at an angle with the shank portion and having its front face wider than its rear face and also having a sharp, curved cutting edge adapted to enter the coal ahead of said faces.

2. A bit for coal-mining machines comprising a shank portion and a cutting portion lying at an angle to said shank portion in a horizontal plane and also lying at an angle to said shank portion in a vertical plane, the front face of said cutting portion being wider than the rear face thereof, said cutting portion having a sharp, curved cutting edge adapted to enter the coal ahead of said faces.

817,851. HOTEL-REGISTER. JOHN P. HART, Bridgeport borough, Pa. Filed May 19, 1905. Serial No. 261,213.



Claim.—1. The combination with an annular base-plate having a flanged rim and central opening, of a rotary carrier for the register proper, the same being mounted on the base and having a pendent angular flange projecting under the base-flange, a nut arranged in the central opening of the base and having a beveled rim, and antifriction-balls interposed between the said flanges and the carrier and nut, substantially as described.

2. The combination with an annular base-plate having a flanged rim, and a central opening, of a rotary carrier for the register proper, which is mounted on the base-plate, and provided with a pendent angular flange projecting under the base-flange, and a nut arranged in the central opening of the base-plate and having a beveled top, and antifriction-balls arranged between the nut and the carrier, substantially as described.

3. The combination with an annular base-plate having a central opening, of a rotatable register-carrier mounted thereon and having a pendent flange embracing the edge of the base-plate, and a nut arranged in the central opening of the base-plate and adapted for vertical adjustment for supporting the carrier in the manner described.

4. The combination with an annular base-plate, and a register-carrier adapted to revolve thereon, of a central bearing provided on said base-plate and a series of antifriction-balls, with compressed-fiber-paper bearings, interposed between the parts, substantially as described.

5. The combination with the annular base-plate, having a flanged rim, of the register-carrier mounted rotatably thereon and having an annular pendent and detachable flange whose horizontal portion projects beneath the flange of the rim, and a series of antifriction-balls, provided with compressed-fiber-paper bearings, interposed between the respective parts, substantially as described.

6. The combination with the base-plate, and the register-carrier mounted rotatably thereon, of a cover and protector for the register proper, the same comprising hinged sections which are attached to the side edges of the carrier and adapted to be folded inward and outward in the manner described.

7. The combination with a base-plate, and the register-carrier arranged rotatably thereon, and provided with upwardly-extending side flanges, of a cover and protector for the register proper, which comprises foldable sections hinged to the said flanges and provided with end flanges which when the cover is folded inward rest upon the top and bottom edges of the carrier, substantially as described.

8. The combination with a base-plate and a register-carrier mounted thereon and having upwardly and laterally extended flanges, of a cover formed of foldable sections which are hinged together and hinged to the said flanges on the inner side thereof, so that when folded outward they rest upon and are supported by the lateral projections of said flanges, substantially as described.

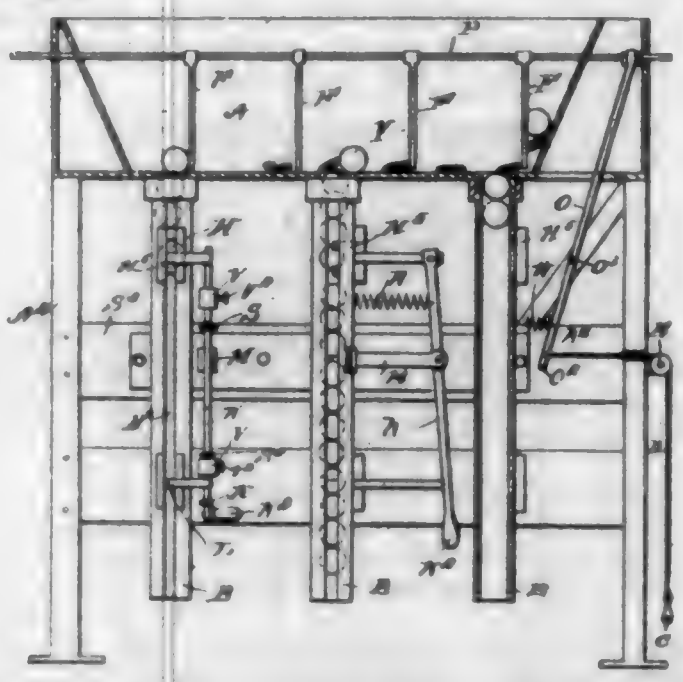
9. The combination with a base and a rotatable register-carrier

mounted thereon, and having upwardly-extending side flanges, of the cover and protector for the register proper comprising hinged and foldable sections whose ends are provided with flanges adapted to lap past each other when the sections are folded outward, and which rest upon the top and bottom edges of the carrier when the sections are folded inward, substantially as described.

10. The combination with a base-plate and a register-carrier, of a cover and a protector for the register proper, comprising sections which are hinged and adapted to fold inward and outward, the same being constructed in skeleton form with openings adapted to receive advertising media and ornamental attachments, glass panels inserted in the openings in the cover, advertising media arranged beneath the same, and plates secured beneath the said media for holding the parts in place, substantially as described.

11. The combination with a base-plate, of a register-carrier mounted thereon and provided with a series of headed studs arranged at one side, and a detachable fastening for leaves applied to said studs, the same comprising a curved spring-metal strip having slots adapted to receive the said studs, whereby the strip is locked with the same, substantially as described.

817,852. PILL AND TABLET COUNTING MACHINE. SEWARD A. HASELTINE, Springfield, Mo. Filed Apr. 23, 1905. Serial No. 257,016.



Claim.—1. In a tablet-counting machine a tube having an opening to receive one tablet at a time upon its edge said tube having an open slot for exhibiting the tablets to view combined with a spring-lever the upper contact-point of which is a spring for stopping and releasing the tablets in the tube without injuring the same.

2. The combination of a triangular trough having tubes connected with its bottom with a stirring mechanism consisting of a rod passing longitudinally through the trough and provided with arms for moving the tablets back and forth in the trough as the rod is moved back and forth substantially as shown and described.

3. In a tablet-counting machine the combination of a triangular trough having oblong tubes connected at its bottom to receive tablets edgewise combined with a stirring mechanism consisting of a rod passing longitudinally through the trough provided with arms for moving the tablets back and forth in the trough combined with a lever for throwing the rod in one direction and a spring for returning the same substantially as shown and described.

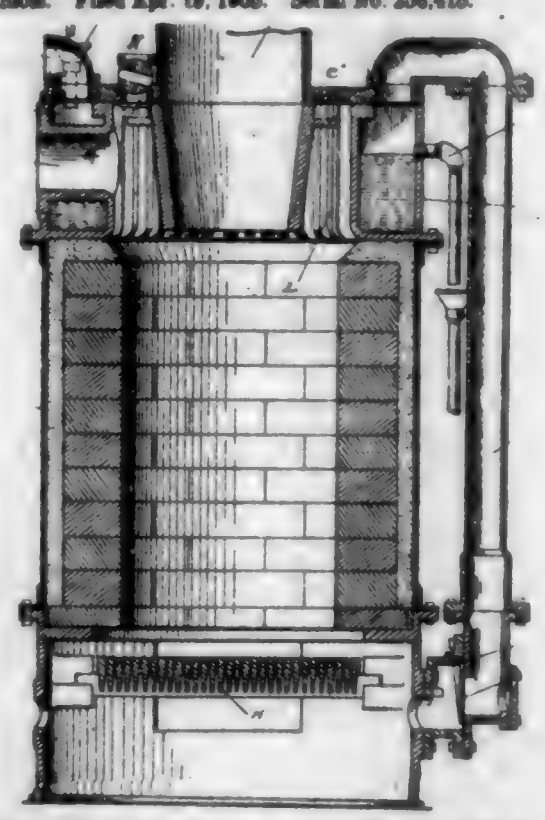
4. In a tablet-counting machine a stirring mechanism consisting of a rod passing longitudinally through the receptacle provided with arms for moving the contents of the receptacle as the rod is moved back and forth combined with a lever one end of which is attached to the foot-piece by a strap and a foot-piece for moving the stirring-rod in one direction and a recoil-spring for moving the same back for stirring the contents of the receptacle substantially as shown and described.

5. In a tablet-counting machine a triangular trough and tubes attached to the lower edge of said trough having oblong openings for receiving the tablets upon edge, each of said tubes provided with a spring-lever having two contact-points, the upper one of which is a spring to prevent injuring the tablets when they are being counted, substantially as shown and described.

6. In a tablet-counting machine the combination of a tube open the whole length of one side to exhibit its contents combined with a lever having two contact-points said lever provided with a spring for closing its lower contact-point when released by the operator, the upper end provided with a soft contact-point and a stay to prevent the lever from being thrown out too far by the operator when releasing the tablets.

7. In a tablet-counting machine a tube having an open front to exhibit its contents combined with a lever having a spring for drawing its lower contact-point into the tube when released by the operator, the upper contact-point being provided with a spring to prevent injury to the tablets when coming in contact with the same substantially as shown and described.

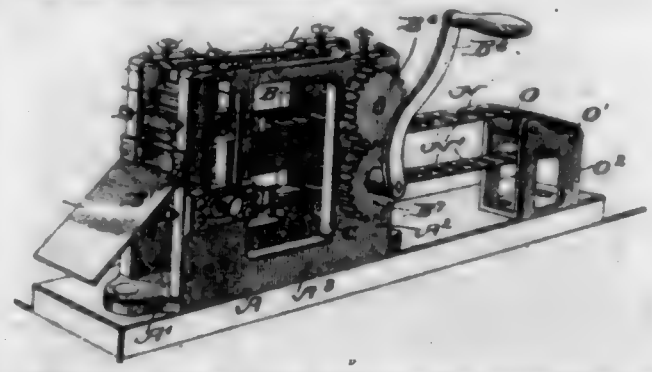
817,853. GAS-PRODUCER. FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 19, 1905. Serial No. 256,415.



Claim.—1. In a gas-producer, the combination with a magazine, of an annular vaporizer surrounding the lower end of said magazine, and spaced therefrom, and a top for said vaporizer extending inwardly over the said space and connected to said magazine, said top having apertures opening into said vaporizer, and valved poker-holes opening into the space between said magazine and vaporizer, for the purpose described.

2. In a gas-producer, the combination with a magazine, of an annular vaporizer surrounding the lower end of said magazine and spaced therefrom, ribs on said vaporizer projecting into said space, and a top for said vaporizer bridging said space and connected to said magazine and having apertures opening into said vaporizer, and valved poker-holes opening into the space between said magazine and vaporizer, for the purpose described.

817,854. CANDY-CUTTER. GEORGE B. JACOBS, Danville, Pa. Filed Oct. 13, 1903. Serial No. 176,862.



Claim.—1. A device of the kind described comprising a pair of endless chains arranged in vertical alinement, each chain comprising a plurality of links having projections thereon, the projections carried by the links of one chain alining with those of the other chain, and an endless delivery-belt of greater length than the chains running over the lower chain, as and for the purpose set forth.

2. The combination with a frame, of the sprocket-rolls, journaled therein, endless chains passing over the sprocket-rolls and adapted to be brought into parallel relation with each other, each link having a transverse groove upon its inner face intermediate its ends and a projection upon the outer face, adjacent the ends, means for moving the rolls, and guides for guiding the chains.

3. A device of the kind described comprising endless chains formed of links having projections thereon, the chains being arranged in vertical alinement and parallel to each other, and an endless delivery-belt of greater length than the chains running over one of said chains, and having opening therein adapted to aline with the projections on the chain-links.

4. A candy-machine of the kind described comprising sprocket-rollers arranged in upper and lower pairs, and endless chains running over the said rollers, each chain being formed of a plurality of links, each link having projections formed on one face adjacent its ends, laterally-extending longitudinal projections on the sides, and a groove on the other face and intermediate the projections adjacent the ends, said groove being engaged by the sprocket-rollers, and a guideway adjacent the chains adapted to receive the lateral projections.

5. In a machine for forming and delivering a chain of candy buttercups, the combination with a suitable feed, of continuously-driven endless aprons adapted and arranged to squeeze or thin the candy at predetermined points to form an intact chain of buttercups.

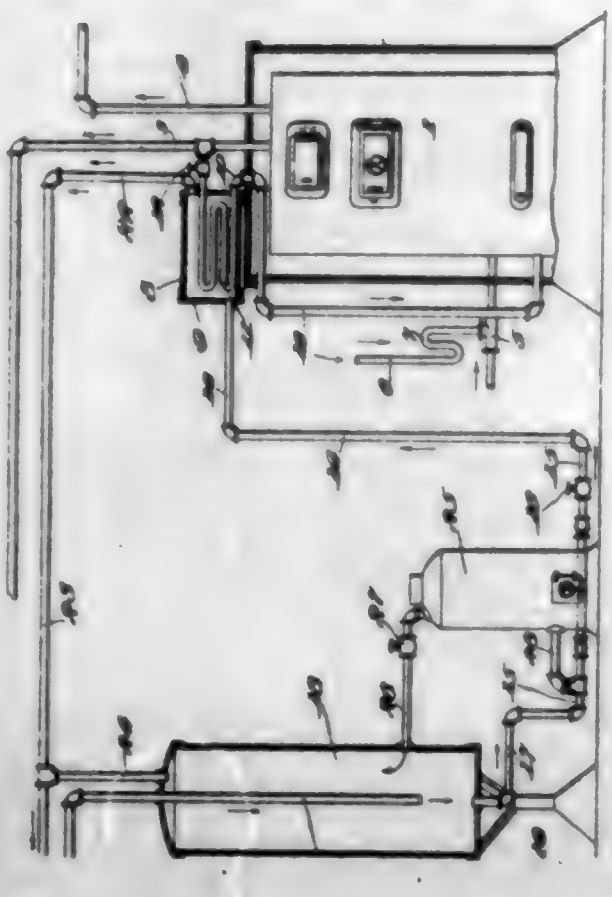
6. In a machine for forming and delivering a chain of candy buttercups, the combination with means for feeding a batch of candy in a continuous length, of continuously-driven endless aprons adapted and arranged to squeeze or thin the candy at predetermined points without completely severing the same.

7. In a machine for forming and delivering a chain of candy buttercups, the combination of continuously-driven endless aprons adapted and arranged to squeeze or thin a strip of candy at predetermined points without completely severing the same, and an inclined feed-table up which the strip of candy is drawn by the aprons.

8. In a machine for making candy buttercups, the combination with means for feeding a batch of candy in a continuous length, of endless aprons adapted and arranged to squeeze or thin the candy at predetermined points without completely severing the same, and means for effecting a coincident movement of the aprons.

9. In a machine for making candy buttercups, the combination with means for feeding a batch of candy in a continuous length, of continuously-driven endless aprons adapted and arranged to squeeze or thin the candy at predetermined points without completely severing the same, and means for adjusting one of said aprons in relation to the other.

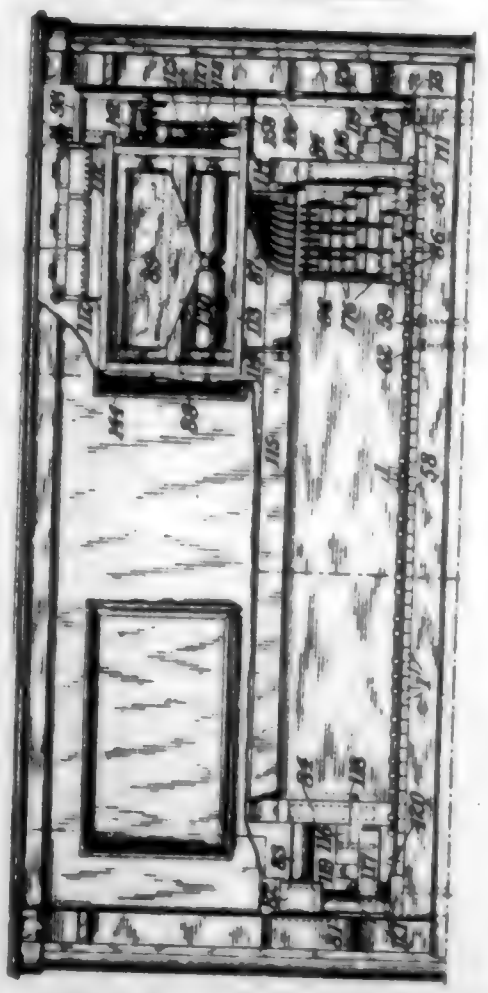
817,855. **HOT-WATER HEATING APPARATUS.** THOMAS H. JANE, Chicago, Ill. Filed Jan. 21, 1901. Serial No. 44,036.



Claim.—1. The combination with a steam-heating system and the generator thereof, of a water-heating chamber and means for heating the same by steam from said system, of a water-tank and means for discharging supply-water therein near its bottom, a pipe connecting the bottom of said water-tank with the hot-water heater and a special heater between said tank and water-heater, which said heater is connected at its bottom with said pipe and at its top with the water-tank at a point above the water-discharge therein and means for cutting said heater out of the water-circulating system, substantially as described.

2. The combination with a steam-heating system and a coil therein communicating with the steam-discharge pipe of the generator and at its opposite end with the bottom of said generator, of a water-heating chamber inclosing said coil, a water-tank, a pipe connecting said water-heating chamber with the upper portion of said tank and with the hot-water-distributing system, means for supplying water from said heater to said tank near one end thereof, a special heater connected with the water-tank at a point above the water-supply thereto and at its lower end with the pipe connecting said tank with the water-heater and means for short-circuiting the communication of said special heater with said tank and for cutting the water-heater out of the water-circulating circuit when said special heater is in operation, substantially as described.

817,856. **MECHANICAL MUSICAL INSTRUMENT.** CHARLES A. KUSTER, Rutherford, N. J., assignor to John A. Woser, New York, N. Y. Filed Jan. 16, 1905. Serial No. 241,188.



Claim.—1. In a mechanical musical instrument having a horizontal keyboard, keys and playing devices operated by said keys, the combination of power-pneumatics in operative relation with said playing devices respectively, tone-regulating pedals in operative relation with said playing devices and located centrally and pump-bellows, bellows-pedals and connections located to one side of said tone-regulating pedals, substantially as described.

2. The combination of a series of pneumatics, a frame or case supporting the same, a tracker-box mounted upon said frame or case, and a motor mounted upon said tracker-box, said pneumatics, frame and tracker-box being removable together, substantially as described.

3. The combination of a main frame or case, bolts secured therein, brackets mounted adjustably on said bolts, a series of power-pneumatics and a frame or case supporting said pneumatics and arranged to rest upon said adjustable brackets, substantially as described.

4. The combination of playing devices, power-pneumatics in

operative relation therewith, air-pumps connected with said pneumatics, pump-operating pedals, links connecting said pedals with said pumps, a board upon which said pedals are hinged or pivoted, arms carrying said board, and adjustable swinging arms upon which the first-named arms are pivotally supported, substantially as described.

5. The combination of a main casing, playing devices, power-pneumatics in operative relation to said playing devices, pump-bellows connected with said pneumatics, pump-pedals, links connecting said pedals to said pump-bellows, a board upon which said pedals are hinged or pivoted, arms secured to said board, and adjustable swinging arms upon which the first-named arms are pivotally supported, substantially as described.

6. The combination of playing devices, power-pneumatics in operative relation therewith, air-exhausting devices, music-sheet-winding devices, a motor therefor, connections between said air-exhausting devices and said pneumatics including a valve-box and slide-valve, connections between said air-exhausting devices and said motor including a valve-box and valve, means to operate said slide-valve, and devices whereby said last-named valve is operated by the slide-valve when the latter moves, substantially as described.

7. The combination of playing devices, power-pneumatics in operative relation therewith, air-exhausting devices, music-sheet-winding devices, a motor therefor, connections between said air-exhausting devices and said pneumatics including a valve-box and slide-valve, connections between said air-exhausting devices and said motor including a valve-box and valve, means to operate said slide-valve, and an arm disposed in the path of movement of the slide-valve and operatively connected with the last-named valve whereby said last-named valve is operated as the slide-valve moves, substantially as described.

8. The combination of playing devices, power-pneumatics in operative relation therewith, air-exhausting devices, music-sheet-winding devices, a motor therefor, connections between said air-exhausting devices and said pneumatics including a valve-box and slide-valve, connections between said air-exhausting devices and said motor including a valve-box and a hinged valve, means to operate said slide-valve, and a shaft having an arm connected to said hinged valve and a second arm in the path of movement of the slide-valve, substantially as described.

9. The combination of a tracker-box, music-sheet winding and rewinding rolls mounted therein, a motor mounted upon said tracker-box and removable therewith, and transmission-gearing between said motor and said rolls, said transmission-gearing including clutches, substantially as described.

10. A series of pneumatics, comprising separate bellows members for each pneumatic, a board common to the series and having air-chambers formed therein, and separate top boards, substantially as described.

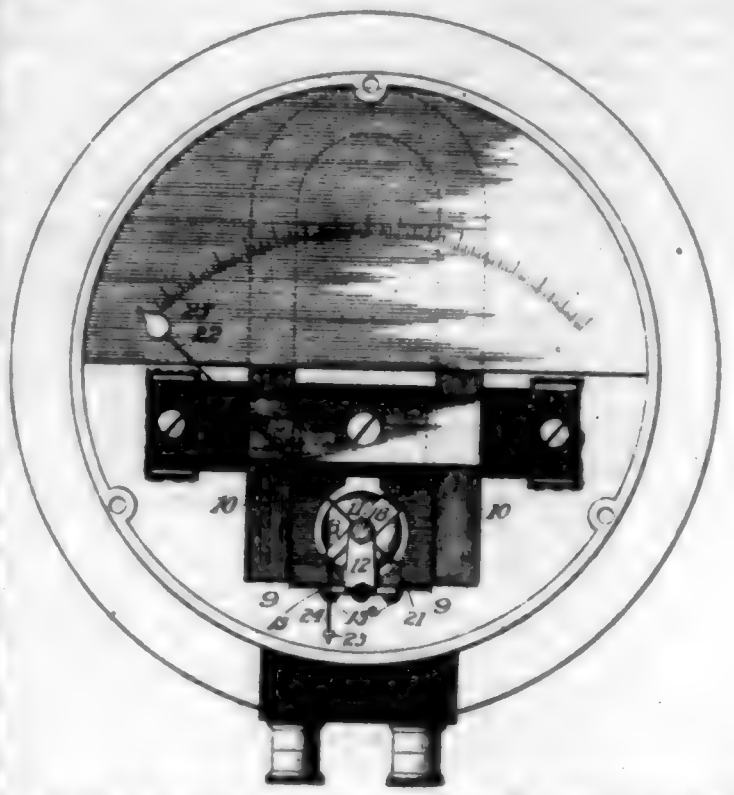
11. A series of pneumatics, comprising separate bellows members, a board common to all of the pneumatics of the series and having formed therein separate air-chambers, and separate top boards, substantially as described.

12. The combination with a series of pneumatics, comprising separate bellows members, a board common to all of the pneumatics of the series and having formed therein separate air-chambers, top boards, and a wind-trunk formed independently of said pneumatics and having independent connections with the air-chambers of the series, substantially as described.

817,857. **ELECTRICAL MEASURING INSTRUMENT.** JOHN M. LEA, Chicago, Ill., assignor to International Electric Meter Company, Chicago, Ill., a Corporation of Illinois. Filed July 31, 1905. Serial No. 271,922.

Claim.—1. In an electrical measuring instrument, the combination with a coil pivoted to turn upon a substantially horizontal axis, of a weight carried by said coil, acting to maintain said coil normally in a zero position and opposing the rotation thereof, a permanent magnet having concave opposite polar faces, a core between said polar faces, about which said coil is axially rotatable, said polar faces being shaped to establish a magnetic field decreasing in strength in the direction in which the coil turns under the influence of an electric current passing through the same; whereby the deflections of said coil are rendered substantially proportional to the current.

2. In an electrical measuring instrument, the combination with a coil and an indicator adapted to be moved thereby, of a central core about which said coil is axially pivoted to turn, a weight for yieldingly maintaining said coil at a zero position, and a magnet having concave opposite polar faces on opposite sides of said core, curved eccentrically with respect to said core to produce an air-gap increasing in width toward the limit of the movement of said coil therein.



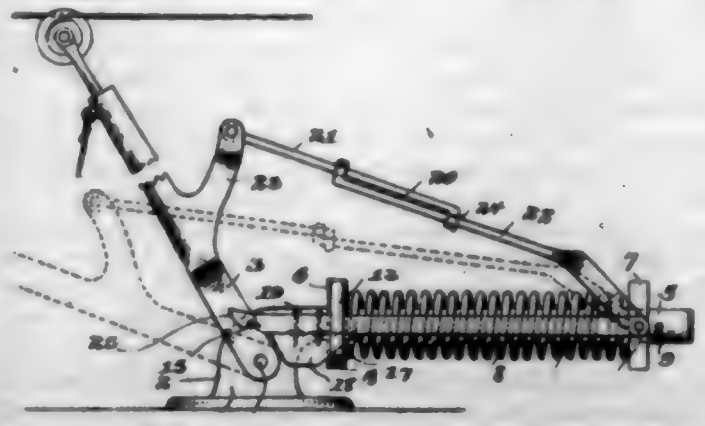
3. In an electrical measuring instrument, the combination with a moving coil, of a coil-frame having pivot-hubs at the ends thereof, a pair of insulating-washers at one end of said hubs, the ends of the wire forming the coil being secured between said washers, and fine flexible conductors fastened to said wire ends and anchored at their other ends to a support.

4. In an electrical measuring instrument, the combination with a moving coil, of a coil-frame upon the inner side whereof the coil is supported, hubs riveted to opposite ends of said frame, jewel-bearings carried by said hubs, fixed pivot-screws having points entering said jewel-bearings, a pair of insulating-washers interposed between the coil-frame and one of said hubs, the ends of the wire of the coil being passed over the edge of the coil-frame and across the end thereof between said washers, on opposite sides of said hub, and fine flexible conductors fastened to the respective ends of said coil-wire and anchored to a support, said conductors serving to convey current to and from the coil.

5. In an electric measuring instrument, the combination with a moving element, of a pivotal hub therefor, a transverse hole through said hub, and an indicating-needle having a threaded end, said needle being drawn through said hole until said threaded end jams therein, whereby the needle is fixed in position.

6. In an electrical measuring instrument, the combination with the coil-frame, of a hub riveted thereto, and a weight-arm bound between the shoulder of the hub and said coil-frame and fastened by the riveting thereof.

817,858. **AUTOMATICALLY-TRIPPING TROLLEY-POLE.** THOMAS H. MARS, Chicago, Ill. Filed July 12, 1905. Serial No. 269,337.



Claim.—1. In combination, a trolley-pole, a base-support with which the lower end of said trolley-pole is pivotally connected, a spring-actuated tension member detachably connected with the pole, a tripping mechanism arranged to effect the disengagement of the tension member from the pole when the latter rises to an abnormal

angle and a lost-motion mechanism connected with the trolley-pole at a point between the pivot and trolley-engaging end thereof and also connected with the tension member so as to advance the latter into position to reëngage the trolley-pole when the latter is drawn down toward a horizontal position.

2. In combination, a trolley-pole, a base-support with which the lower end of said trolley-pole is pivotally connected, a spring-actuated tension member detachably connected with the pole, a tripping mechanism arranged to effect the disengagement of the tension member from the pole when the latter rises to an abnormal angle and a telescoping-link device having one end connected with the trolley-pole at a point intermediate the length of the latter and its opposite end arranged to act upon the tension member after the link has reached its limit of extension.

3. In a trolley, a combination of a suitable base-support, a trolley-pole pivoted thereto, a tension member having hooked engagement with the trolley-pole at a point between the ends of the latter, a spring acting upon said tension member to normally draw the trolley-pole toward an upright position and a cam mechanism arranged in the path of reciprocation of the tension member and operating to automatically disengage the latter from the trolley-pole when the latter rises to an abnormal angle.

4. In a trolley, the combination of a suitable base-support a trolley-pole pivoted thereto, a tension member having hooked engagement with the trolley-pole at a point between the ends of the latter, a spring acting upon said tension member to normally draw the trolley-pole toward an upright position, a cam mechanism arranged in the path of reciprocation of the tension member and operating to automatically disengage the latter from the trolley-pole when the latter rises to an abnormal angle and a lost-motion mechanism connecting the end of the tension member remote from the trolley-pole with the trolley-pole at a point intermediate the length of the latter and more remote from its pivot than the point of connection therewith of the tension member.

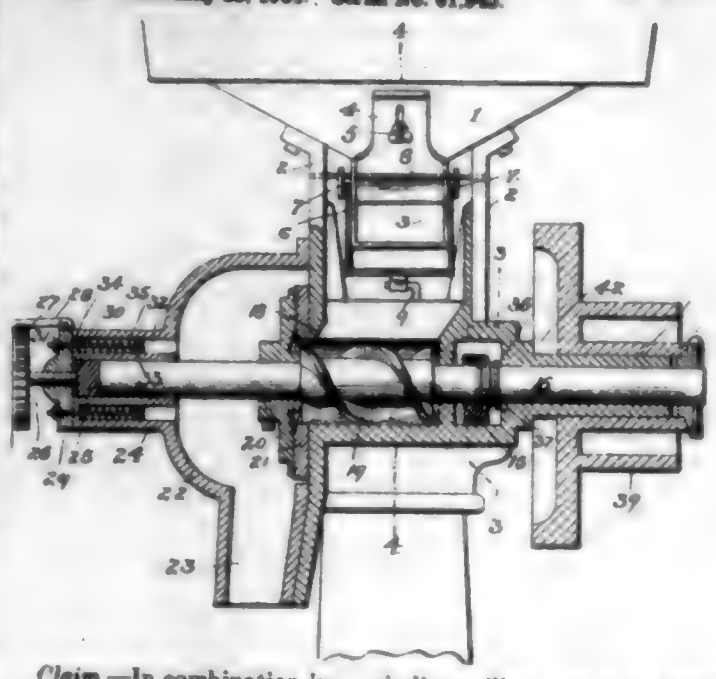
5. In a trolley, the combination of a suitable base-support, a trolley-pole pivotally mounted upon said base, a spring-support mounted upon and extending outwardly from said base-support, a tension member operatively connected with said spring at one end and at its opposite end detachably engaging the trolley at a point above the pivot thereof, an inclined cam-surface upon said tension member, a coöperative stationary cam member upon said spring-support and a telescoping-link mechanism connected at one end with the tension member at a point remote from its pole-engaging end and at its opposite end connected with a trolley-pole at a point above the point of connection of the tension member thereto.

6. In a trolley, the combination of a suitable base-support, a trolley-pole pivotally mounted upon said base, a spring-support mounted upon and extending outwardly from said base-support, a tension member operatively connected with said spring at one end and at its opposite end detachably engaging the trolley at a point above the pivot thereof, an inclined cam-surface upon said tension member, a coöperative stationary cam member upon said spring-support, a telescoping-link mechanism connected at one end with the tension member at a point remote from its pole-engaging end and at its opposite end connected with the trolley-pole at a point above the point of connection of the tension member thereto, and means for drawing the trolley-pole downwardly toward a horizontal position.

7. In combination, a suitable base-support, a trolley-pole pivotally mounted thereon, an extension-arm connected with said base-support and extending horizontally therefrom, a fixed shoulder upon the inner portion of said extension-arm and a sliding member upon the outer end thereof, a coiled expansion-spring interposed between said shoulder and sliding member, a tension member connected with the sliding member at one end and at its opposite end provided with a hook detachably engaging a suitable projection upon the trolley-pole, an inclined cam upon said tension member, a coöperative stationary cam member upon the extension-arm, a telescoping link operatively connected with the tension member at a point remote from the trolley-pole and at its opposite end connected with the pole at a point remote from the pivot thereof and a cord connected with the trolley-pole and depending to a position accessible by the operator.

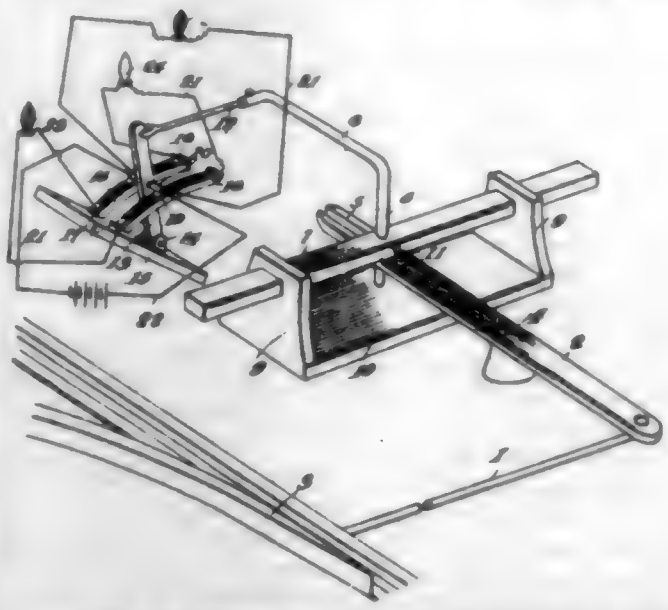
8. In combination with a trolley-pole and a suitable base upon which the pole is pivotally mounted, a spring-actuated tension member arranged in obtuse-angle relation to the trolley-pole and detachably connected with the latter at a point above its pivot, an automatically-acting tripping mechanism arranged to throw off the tension member when the latter is retracted beyond a predetermined limit, and a lost-motion connection between the end of the tension member remote from the trolley-pole and a part of the trolley-pole remote from the engaging end of the tension member.

817,859. GRAIN-GRINDING MILL. MYRON R. MARTIN, Superior, Wis. Filed May 25, 1901. Serial No. 61,945.



Claim.—In combination in a grinding-mill, a pair of grinding-disks, a frame or casing having a projecting sleeve, a shaft connected with one of the grinding-disks and passing through the said sleeve, a driving-pulley turning about the said sleeve in contact with the same whereby the said sleeve acts as the bearing for the said pulley, and a connection between the pulley and the shaft consisting of a flanged bushing pinned to the shaft and extending into the hub of the pulley, the said connection serving to drive the shaft from the pulley which finds its support entirely independent of said shaft, substantially as described.

817,860. SIGNAL FOR SWITCHES. BERNARD O. MATS and MICHAEL WOZNIEWSKI, Chicago, Ill. Filed July 17, 1905. Serial No. 270,106.

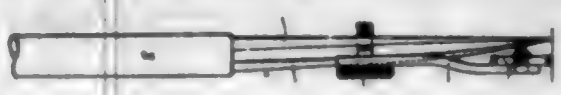


Claim.—1. In combination with the switch-point 3, the lever 2 pivoted between its ends, the rod 1 connected at one end of the lever 2 with the switch-point 3, the spaced supporting members 9 provided with horizontal openings, the horizontally-slidable bar 7 mounted in the openings of the supporting members 9, the standard 6 passing vertically through the bar 7 and having its lower end connected with the end of the lever 2 opposite that connected with the switch-point 3, said end of the lever 2 being bifurcated as shown at 5 to receive the standard 6 therebetween, the lever 13 connected with the standard 6, and signals operably connected with the lever 13 as set forth.

2. In combination with the switch-point 3, the lever 2 pivoted between its ends, the rod 1 connected at one end of the lever 2 with the switch-point 3, the spaced supporting members 9 provided with horizontal openings, the horizontally-slidable bar 7 mounted in the opening of the supporting members 9, the standard 6 passing vertically through the bar 7 and having its lower end connected with the end of the lever 2 opposite that connected with the switch-point 3, said end of the lever 2 being bifurcated as shown at 5 to receive the standard 6 therebetween, the lever 13 connected with the standard 6, the guides 16 arranged in spaced relation and formed on an arc struck from the pivot of the lever 13 as a center, said guides 16 being

arranged upon opposite sides of the lever 13 and provided with a plurality of sets of electrical contacts, sets of circuit-wires connected with the sets of contacts of the guides, the contacts 20 carried by the lever 13 and insulated from each other, the battery-circuit 22 connected with the contacts 20, and the signals in the length of the sets of circuit-wires aforesaid, whereby movement of the lever 13 actuated by the switch-point will cause coöperation of the contacts 20 with a set of contacts on the guide 16 closing the battery-circuit 22 and operating the signal connected with said set of contacts.

817,861. **DRAWING-PEN.** AUGUST MERTES, Ensworth, Pa. Filed June 24, 1905. Serial No. 266,790.

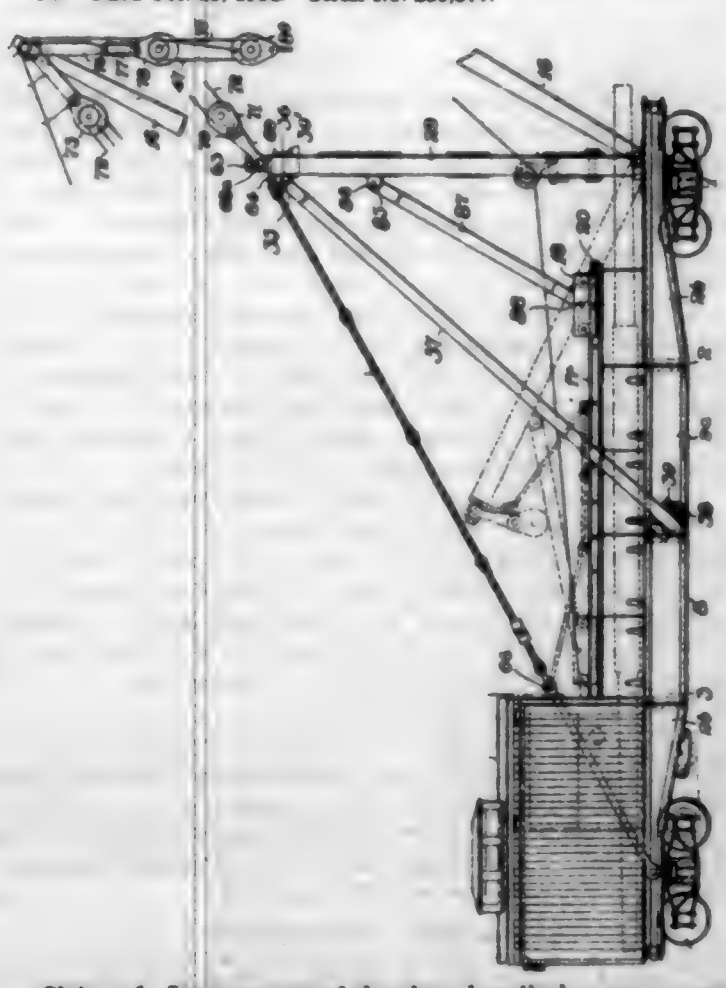


Claim.—1. A dotting-attachment for drawing-pens consisting of a bifurcated frame having spring-terminals adapted to resiliently clamp upon the edges of the pen-blade, and provided with a pivotally-mounted wheel having a series of peripheral abutments, substantially as set forth.

2. The combination with a drawing-pen, of a dotting device consisting of a removable frame having a bearing-wheel provided with peripheral abutments, and bifurcated spring extremities adapted to clamp the edges of the pen, substantially as set forth.

3. A dotting attachment for pens consisting of an attaching-arm provided with resilient forks adapted to embrace the blade of the pen and provided with a pivotal bearing-wheel having peripheral abutments, substantially as set forth.

817,862. **DERRICK-CAR.** SAMUEL P. MITCHELL, Philadelphia, Pa. Filed Oct. 28, 1904. Serial No. 230,377.



Claim.—1. In apparatus of the class described, a car, a mast having its foot fulcrumed on the body of said car, a boom having its foot fulcrumed in relation to said car, a strut having a fulcrumed connection to said mast and a movable foot, and means on said car for controlling the movable foot of said strut to lower said mast, substantially as specified.

2. In apparatus of the class described, a car, a track thereon, a truck movable on said track, a mast having its lower end fulcrumed on said car, a strut fulcrumed to said mast and supported by said truck, and a boom connected to said mast and having its foot fulcrumed in relation thereto, substantially as specified.

3. In apparatus of the class described, a car, a track thereon, a truck on said track, a pin passing through a member of said truck and a rail of said track, an A-frame mast having its feet fulcrumed on said car, a strut fulcrumed to said truck and mast, and a boom connected to said mast and fulcrumed in relation thereto, substantially as specified.

4. In apparatus of the class described, a car, an A-frame mast having its feet fulcrumed on said car, a movable truck, a strut having fulcrumed connections to said mast and truck, folding guy-rods connecting the top of said mast with opposite sides of said car, and a boom connected to said mast, substantially as specified.

5. In apparatus of the class described, an A-frame having a box construction comprising a pair of channels having staggered ends, cover-plates secured to the flanges of said channels and having ends staggered with reference to the ends of said channels, a second pair of channels having staggered ends registering with said first channel ends, cover-plates secured to the flanges of said second pair of channels, a space or spaces between said first and last named cover-plates, splicing members secured to said channels interior and exterior thereto, and a cover plate or plates secured to said flanges over said aperture or apertures, substantially as specified.

6. In apparatus of the class described, an A-frame having legs comprising channels, cover-plates secured to the flanges of said channels, a head comprising bent channels registering with said first channels and forming staggered joints therewith, cover-plates for said head-channels, an aperture between said cover-plates for access to the interior of said joints, splice-plates for said joints within said structure, and a cover-plate for said aperture, substantially as specified.

7. In apparatus of the class described, an A-frame having legs comprising webs with flanges thereon, cover and gusset plates secured to said flanges, a head comprising a reinforced web with flanges thereon and cover-plates connected with said last-named flanges, and struts connecting said gusset-plates, substantially as specified.

8. In apparatus of the class described, an A-frame having horizontal and vertical apertures through the feet thereof, pins passing through said apertures, bearings having apertures through which said pins pass, and means for supporting said frame independently of the pins passing vertically through said feet and bearings, substantially as specified.

9. In apparatus of the class described, a car-bolster, a bearing, a pin by which said bearing is fulcrumed on said bolster, a boom fulcrumed on said bearing, a bearing secured to an end of said bolster, a boom fulcrumed on said bearing, and a mast to which each of said booms is connected, substantially as specified.

10. In apparatus of the class described, a car-bolster, bearings at each end of said bolster, a boom adapted to be fulcrumed on a bearing at one end of said bolster, a counter-beam adapted to be fulcrumed on a bearing at the other end of said bolster, and a mast adapted to be connected with said boom and counter-beam, substantially as specified.

11. In apparatus of the class described, a bolster, a counter-beam bearing connected with said bolster at each end thereof, and a boom-bearing having a pin connection with each of said counter-beam bearings, substantially as specified.

12. In apparatus of the class described, a mast, a bearing for the foot of said mast, a pin connecting said mast and foot, a second bearing engaged by said pin, and a beam fulcrumed on said second bearing, substantially as specified.

13. In apparatus of the class described, a mast, bearings for the feet of said mast, pins connecting said bearings and feet, bearings supported by said pins adapted for fulcruming a beam, bearings supported by said second bearings adapted for fulcruming a boom, and pins for fulcruming said last-named bearings to said second bearings, substantially as specified.

14. In apparatus of the class described, a car having a set of sills and a superstructure carried by said sills, said superstructure comprising tool-compartments and a longitudinal boom-chamber between said compartments, substantially as specified.

15. In apparatus of the class described, a car having a set of sills, a superstructure comprising a longitudinal chamber, and a boom which said chamber is adapted to receive, substantially as specified.

16. In apparatus of the class described, a car, a track carried thereby, a truck movable on said track, a second track carried by said car, a block movable on said last-named track and connected with said truck, and a block connected with said movable block, substantially as specified.

17. In apparatus of the class described, a car, a track carried thereby, a truck movable on said track, a strut supported by said truck, a second track carried by said car, a block connected with said truck and movable on said second track, a motor carried by said

car, and a block and line connecting said motor with said first block, substantially as specified.

18. In apparatus of the class described, a car, a mast having a fulcrum connection with said car, a main boom having a fulcrum connection with said car, a pair of auxiliary booms having fulcrum connections with said car, tackle mechanisms for operating independently each of said booms and their respective loads, and a motor having separate mechanisms for operating each of said tackle mechanisms independently, substantially as specified.

19. In apparatus of the class described, a truck, a movable block connected with said truck, a track on which said block runs, a stationary block, a drum, and a line connecting said drum with said blocks, substantially as specified.

20. In apparatus of the class described, a car, a derrick thereon, an engine connected with and operating said derrick, a wheel connected with an axle of said car, a train of gears and a clutch mechanism for connecting said engine and wheel for moving said car in one direction, and a separate train of gears and clutch mechanism for connecting said engine and wheel and moving said car in the opposite direction, substantially as specified.

21. In apparatus of the class described, a car, a derrick thereon, a motor connected with and operating said derrick, a sprocket-wheel connected with an axle of said car, a journaled shaft and a sprocket-wheel thereon, a chain connecting said sprocket-wheels, a pair of pinions on said shaft, two trains of gears for connecting said motor with said pinions, said gear-trains driving in opposite directions, and clutching mechanism for disengaging either gear-train while engaging the other, substantially as specified.

22. In apparatus of the class described, a car, a mast supported by said car, a main boom connected with said mast and supported by said car, and a lateral boom connected with said mast and having means connecting it with said car whereby it is adapted to move vertically and horizontally on the side thereof, substantially as specified.

23. In apparatus of the class described, a car, a mast comprising connected upright members fulcrumed in relation to said car, a main boom fulcrumed in relation to said car, a lateral boom fulcrumed in relation to said car, and means for counterbalancing said lateral boom, substantially as specified.

24. In apparatus of the class described, a car, a mast comprising a plurality of connected upright members fulcrumed in relation to said car, a strut for supporting said mast, a main boom fulcrumed in relation to said car, a lateral boom fulcrumed in relation to said car, and means for counterbalancing said lateral boom, substantially as specified.

817,863. DERRICK. SAMUEL P. MITCHELL, Philadelphia, Pa. Filed Jan. 31, 1905. Serial No. 242,043.

Claim.—1. In a derrick, a strut having separable tapered end sections each comprising members with converging flanges and tapered plates secured to said flanges and splicing members lapping and secured to said first members, substantially as specified.

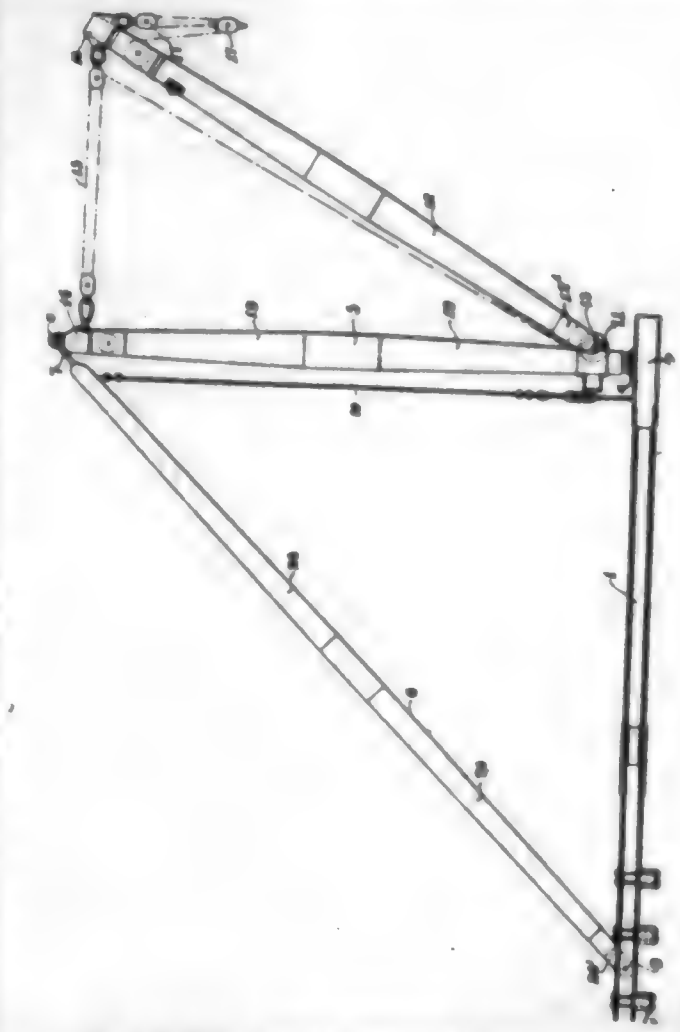
2. In a derrick, a strut comprising a plurality of channeled sections each having a web with parallel end sections having parallel sides and parallel flanges thereon, said web having an intermediate portion arranged diagonally to its ends and having tapered sides with tapering flanges thereon, substantially as specified.

3. In a derrick, a strut having tapered end sections comprising pressed-steel channels having converging flanges and tapered plates secured to said flanges and splicing members for securing said end sections together, substantially as specified.

4. In a derrick, a mast having separable tapered end sections comprising members with converging flanges and tapered plates secured thereto, in combination with a boom having separable tapered end sections comprising members with converging flanges and tapered plates secured thereto, substantially as specified.

5. In a derrick, a mast having tapered end sections comprising members with converging flanges and means for securing said mast members together, in combination with a boom having tapered ends comprising members with converging flanges and means for securing said boom members together and a stay connected to said mast, said stay having tapered end sections comprising members with converging flanges and means for connecting said stay members together, substantially as specified.

6. In a derrick, a mast having tapered end sections comprising pressed-steel channels having converging flanges and tapered plates secured to said flanges, in combination with a boom having tapered ends comprising pressed-steel channels having converging flanges and tapered plates secured to the flanges of said boom-channels, substantially as specified.



7. In a derrick, a mast comprising pressed-steel shapes with converging flanges, and means for securing said shapes together, in combination with a boom comprising pressed-steel shapes with converging flanges and means for securing said last-named shapes together, and a stiff leg comprising pressed-steel shapes with converging flanges and means for securing said last-named flanges together, substantially as specified.

8. In a derrick, a strut having sections connected by a joint comprising abutting flanged shapes on either side thereof, splicing members connecting said flanged shapes, plates connecting said flanged shapes and having an opening between them for access to the interior of said strut, and a splice-plate covering said opening and connected to said strut, substantially as specified.

9. In a derrick, a strut having sections connected by a joint comprising abutting flanged shapes on either side thereof, interior and exterior splicing members connecting said shapes, plates connecting the flanges of said shapes and providing an opening for access to the interior of said strut, a filler-plate fitting said opening, a cover-plate connected to said filler-plate, bolts for securing said cover-plate to said strut, and means within said strut for holding said bolts, substantially as specified.

10. In a derrick, a mast, and a spider secured to said mast, said spider being provided with slots extending in the direction of its periphery, substantially as specified.

11. In a derrick, a spider having slots extending in the direction of its periphery, shackles engaged in said slots, and sheaves carried by said shackles, substantially as specified.

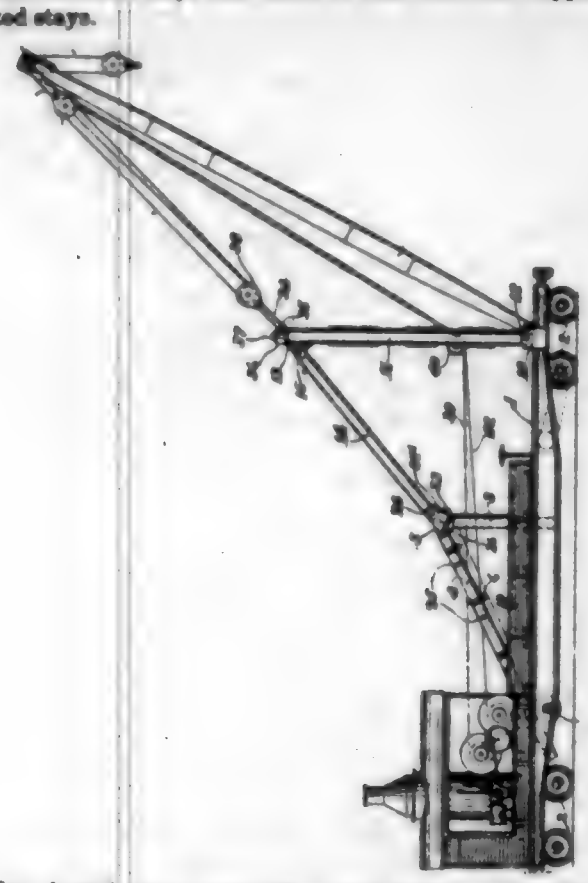
817,864. DERRICK-CAR. SAMUEL P. MITCHELL, Philadelphia, Pa. Filed May 2, 1905. Serial No. 258,540.

Claim.—1. In a derrick-car, a fulcrumed mast, a movable stay fulcrumed to said mast, and a fixed stay providing an inclined way with which said movable stay is connected, said parts being constructed to permit said mast to be lowered and supported by said fixed stay independently of said movable stay.

2. In a derrick-car, a fulcrumed mast, a fulcrumed boom connected to said mast, a movable stay fulcrumed to said mast, a fixed stay providing an inclined way, and mechanism connecting said movable stay with said inclined way.

3. In a derrick-car, a car-body, an A-frame mast fulcrumed on said car-body, a boom fulcrumed on said car-body and connected to said mast, fixed stays having inclined members carried by said car-

body, and movable stays fulcrumed to said mast and supported by said fixed stays.



4. In a derrick-car, a car-body, a mast having a plurality of upright members fulcrumed on said car-body, a boom fulcrumed on said car-body and connected to said mast, a movable stay connected to said mast, and a fixed stay having an inclined member carried by said car-body and engaging said movable stay, said fixed stay having means for engaging and holding said mast.

5. In a derrick-car, a car-body, a mast having a plurality of upright members fulcrumed on said car-body, a boom fulcrumed on said car-body and connected to said mast, a movable stay fulcrumed to said mast, a fixed stay having an inclined member carried by said car-body, said inclined member comprising channels forming a way and said stay having a roller thereon movable in said way, a motor, and mechanism whereby said motor operates said movable stay to elevate and lower said mast.

6. In a derrick-car, a car-body, a mast fulcrumed on said body, a main boom fulcrumed on said body, block-and-tackle mechanism connecting said mast and boom, a lateral boom fulcrumed on said body, a bracket secured to said mast, block-and-tackle mechanism for connecting said lateral boom and bracket, a motor on said car for operating the block-and-tackle mechanism of said booms, and an outrigger for balancing said mechanism.

7. In a derrick-car, a car-body, a mast fulcrumed on said body, a main boom fulcrumed on said body, lateral booms fulcrumed on said body, and outriggers, said outriggers comprising an inclined brace directly connected to the top of said mast, and a laterally-extending brace connected to said inclined brace and body.

8. In a derrick-car, a car-body, an A-frame mast fulcrumed on said body, a movable stay fulcrumed to said mast and having a roller thereon, a fixed stay having members comprising channels forming an inclined way in which said roller moves, means for engaging said movable stay and holding said mast at various elevations, a motor, a line operated by said motor, and sheaves carried by said movable and fixed stays for engaging said line and handling said movable stay and mast.

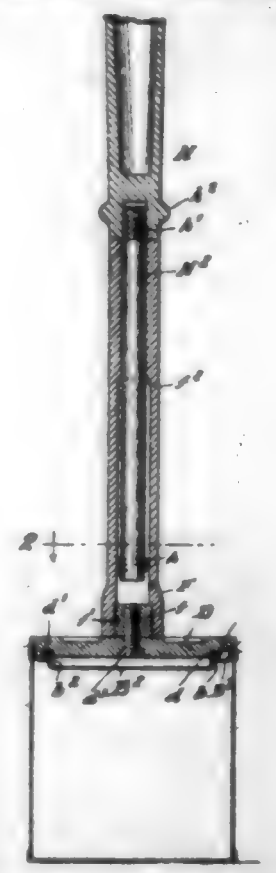
9. In a derrick-car, a car-body, a mast supported by said body, a main boom supported by said body, a block-and-tackle mechanism connecting said mast and boom, lateral booms supported by said body, block-and-tackle mechanisms connecting said mast and lateral booms, an engine having a central drum for operating the main boom-tackle mechanism and lateral spools for operating the lateral boom-tackle mechanism, and a cab for inclosing said engine, said cab having posts set between said drum and spools.

10. In a derrick-car, a car-body having longitudinally-extending tool-chambers on either side thereof, a boom-chamber between said tool-chambers, an engine, and a cab for inclosing said engine, said cab having folding doors providing footways on the sides thereof.

11. In a derrick-car, a car-body having longitudinally-extending tool-chambers on the sides thereof, a boom-chamber between said tool-chambers, an engine having central drums and lateral spools, and a cab containing said engine, said cab having roof-supporting posts disposed in the planes between said drums and spools and side doors adapted for use as footways.

12. In a derrick-car, a car-body, a mast having a fulcrumed connection with said car-body, a main boom having a fulcrumed connection with said car-body and connected to said mast, a lateral boom having a fulcrumed connection with said car-body and connected to said mast, a movable stay connected to said mast, and an inclined stationary stay connected to said car-body, said movable stay being connected to and supported by said stationary stay.

817,865. **DEVICE FOR CLOSING THE CAPS OR COVERS ON FRICTION-TOP CANS.** EDWARD D. MURPHY, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 1, 1905. Serial No. 289,919.



Claim.—1. The hand-operated device for closing caps or covers on friction-top cans herein shown and described and comprising a closing-chuck having a central boss to fit the recess or countersink of the cap or cover, an annular shoulder to engage the rim of the cap or cover and an annular stop-shoulder to engage the rim of the can and limit the downward movement of the chuck in respect to the can, a guide secured to the closing-chuck and a reciprocating hand-operated hammer having a handle and a guide coöperating with the guide on the closing-chuck, substantially as specified.

2. In a device for closing caps or covers on friction-top cans, the combination with a closing-chuck having a central boss and an annular shoulder to engage the rim of the cover and a stop-shoulder to engage the rim of the can, a guide-sleeve or anvil secured to the chuck, a reciprocating hammer having a handle and a guide-stem fitting in the guide-sleeve on the closing-chuck, substantially as specified.

3. In a device for closing caps or covers on friction-top cans, the combination with a closing-chuck having a central boss and an annular shoulder to engage the rim of the cover and a stop-shoulder to engage the rim of the can, a guide-sleeve or anvil secured to the chuck, a reciprocating hammer having a handle and a guide-stem fitting in the guide-sleeve on the closing-chuck, the guide-sleeve on the closing-chuck having an internal shoulder to limit the upward movement of the handle-guide and the handle-guide having a coöperating collar or shoulder, substantially as specified.

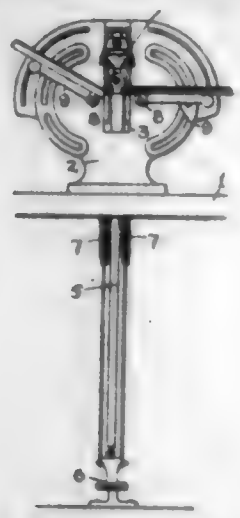
4. In a device for closing caps or covers on friction-top cans, the combination with a closing-chuck having a guide-sleeve secured thereto and a reciprocating hammer having a handle and a guide-stem fitting in the guide-sleeve of the chuck, substantially as specified.

5. In a device for closing caps or covers on friction-top cans, the combination with a closing-chuck having a guide-sleeve secured thereto and a reciprocating hammer having a handle and a guide-stem fitting in the guide-sleeve of the chuck, and means for removably securing the closing-chuck to its guide-sleeve, substantially as specified.

6. A hand-operated device for closing caps or covers on friction-top cans consisting in the combination with a closing-chuck and a hand-operated hammer having a reciprocating connection with the closing-chuck for striking blows against the chuck as it rests on the cap or cover of the can, substantially as specified.

7. A hand-operated device for closing caps or covers on friction-top cans adapted to be lifted by hand from one can to another, and comprising a closing-chuck and a hammer adapted to be grasped in the hand and having a reciprocating connection with the closing-chuck, substantially as specified.

817,866. SASH-TRIMMING MACHINE. MORGAN E. MCAFEE, Atlanta, Ga., assignor to The Heald Machine Company, Worcester, Mass., a Corporation of Massachusetts. Filed July 26, 1904. Serial No. 217,973.



Claim.—1. In a sash-trimming machine, the combination with a reciprocating head carrying a cutting-knife and a support for a sash-bar, by which one end of said bar is held in the path of the knife, an adjustable stop for the end of said bar carried by said reciprocating head, and a cutting-knife adapted to engage in its cut only a portion of the end of said bar, leaving the uncut portion still bearing against the stop.

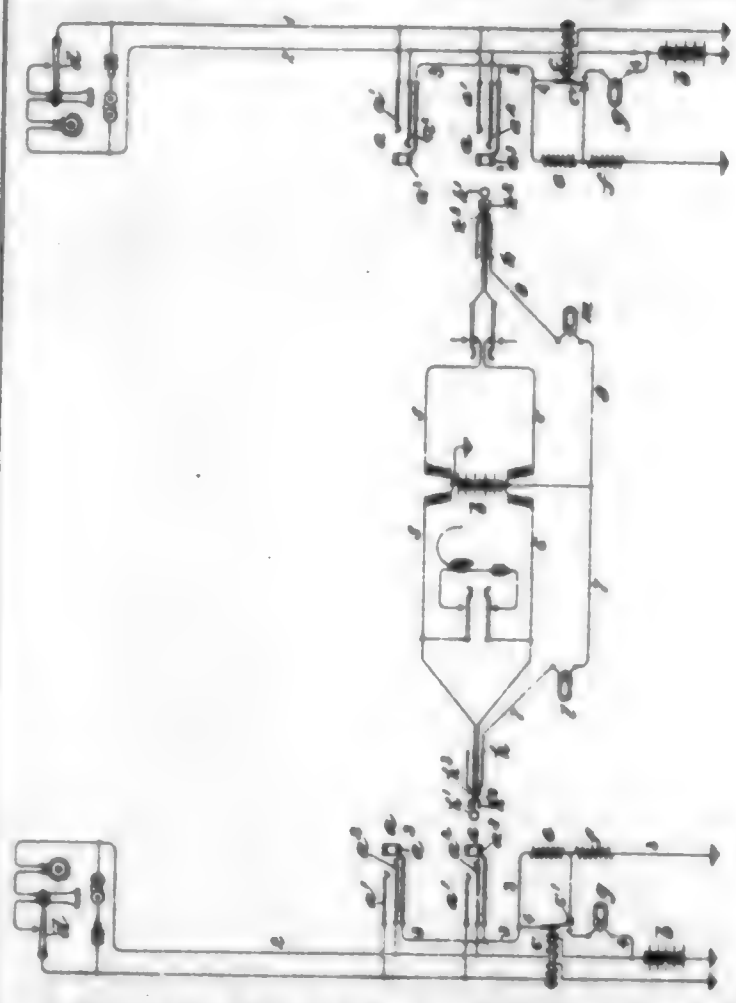
2. In a sash-trimming machine, the combination with a support for a sash-bar, of a reciprocating head carrying a cutting-knife adapted to engage one end of the sash-bar, said head provided with a transverse way at right angles with the line of motion of said knife, a stop for the end of the sash-bar attached to said head and adjustable in said way.

817,867. SUPERVISORY SIGNAL FOR TELEPHONE-SWITCH BOARDS. FRANK R. MCBERTY, Evanston, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 24, 1902. Serial No. 91,031.

Claim.—1. The combination with a source of current, of a local circuit having two parallel branches with a signal device in each branch, means for opening and closing each branch, a resistance in the undivided portion of the circuit and an electromagnetic switch controlling a shunt or short circuit of the resistance, the source of current, signal devices and resistance being proportioned to prevent the actuation of either signal device when both of said parallel branches are closed, one of said signal devices being adapted to be actuated by the increased current when the resistance is shunted by the switch, substantially as described.

2. The combination with a source of current, of a signal device and a resistance in a local circuit therewith, a shunt of said signal device containing a second signal device, a switch controlling said shunt, and a switch controlling the first-mentioned circuit adapted to cut out the first-mentioned signal device and shunt or short-circuit the resistance, whereby said second signal device receives increased current for its operation.

3. The combination with a telephone-line extending from a substation to a central office, of a source of current and a substation telephone-switch controlling the flow of current in the line, a line-relay responsive to the current so controlled, a line-signal of comparatively high resistance included with resistances *e* and *f* in a local circuit controlled at normally open contacts of the relay, a spring-jack for the line, a plug and plug-circuit for making connection therewith, a supervisory signal associated with the plug-circuit in a local shunt of the line-signal, adapted to be established in registering contacts of the plug and jack, the supervisory signal being of comparatively low resistance to shunt the line-signal and being adjusted or adapted to remain inert under the influence of current from said battery flowing through the said resistances *e* and *f*, and a switch-contact closed by the armature of the line-relay when retracted, shunting or short-circuiting the resistance *e*, substantially as set forth.



4. The combination with a source of current, of a signal device *l* and resistances *e f* in a local circuit therewith, a switch adapted to complete said local circuit, a switch *c* controlling a shunt or short circuit of the resistance *e*, the completion of said shunt or short circuit being adapted to bring about the actuation of the signal device *l*, and a second signal device *g* controlled jointly by the switch *c* and the first-mentioned switch.

5. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's station to an exchange and terminating thereat in a line-jack, of cord-connecting apparatus for uniting this telephone-line with another for conversation, a relay at the exchange operable from the substation, line and clearing-out lamps, parallel conductors including the lamps, a source of current for the line-relay and for the lamps, a resistance interposed between the parallel conductors containing the lamps and their source of current, means whereby the cord-circuit will complete the parallel branch containing the clearing-out lamp when connection is being established with the line, the armature of the relay serving to close the parallel branch containing the line-lamp when attracted, and a shunt closed by the armature of the relay when unattracted about a part of the resistance, substantially as described.

6. In a telephone-exchange system, the combination with a telephone-line extending from a subscriber's station to an exchange and terminating thereat in a line-jack, of cord-connecting apparatus for uniting this telephone with another for conversation, a relay at the exchange operable from the substation, line and clearing-out lamps, parallel conductors including the lamps, a source of current for the line-relay and for the lamps, a resistance interposed between the parallel conductors containing the lamps and their source of current, means whereby the cord-circuit will complete the parallel branch containing the clearing-out lamp when connection is being established with the line, the armature of the relay serving to close the parallel branch containing the line-lamp when attracted, and means controlled by the armature when unattracted for cutting out a portion of the resistance in circuit with the clearing-out lamp, the clearing-out lamp requiring more current for its operation than the line-lamp, circuit being established through the clearing-out lamp by the engagement of contacts associated with the plug and engaged jack, substantially as described.

7. In a telephone central-exchange system, the combination with the line-relay having front and back armature contacts; a supervisory signal associated with a switch-cord and a switch-plug

thereof; and a local circuit containing said signal; of a resistance device associated with said local circuit to govern the strength of current therein and thereby to determine the display or non-display of said signal; and a short circuit or shunt round said resistance device leading through the back armature contacts of said line-relay, and adapted to be closed when said relay is unexcited, and opened when the same is excited, whereby the display of said supervisory signal is made dependent upon the attraction or retraction of the armature of said line-relay; substantially as set forth.

8. A telephone system comprising a subscriber's line, a source of current connected with the line, a line-relay, a line-signal adapted to be brought into operation by the energization of said relay, a plug-switch, a supervisory lamp connected and arranged to shunt out the said line-signal when the plug-switch is closed, and a shunt controlled by said relay and arranged to reduce the resistance of the supervisory-lamp circuit when the line-circuit is open and the plug-switch closed.

9. A telephone system comprising a subscriber's line, a substation-switch for closing the line-circuit, a source of current-supply connected with the line, a relay connected with the line, a line-signal associated with said relay and controlled thereby, a plug-switch and a supervisory signal connected and arranged for shunting out said line-signal when the line-circuit is closed, and a normally closed shunt controlled by said relay and adapted for reducing the resistance of the supervisory signal circuit, said shunt closing when the line-circuit is opened by the substation-switch.

10. The combination of a normally open signal-circuit, a normally closed shunt in said circuit, means in said circuit for supplying current, a normally open line-circuit including said source of current, and a relay included in said line-circuit and adapted when energized to open said shunt when the signal-circuit is closed, so as to prevent the display of said signal, said relay when deenergized being adapted to close said shunt, so as to cause the display of said signal.

11. The combination of a subscriber's line, a subscriber's switch, a line-relay, a suitable source of current for supplying current to the line through said relay, a normally open circuit including said source of current, a supervisory signal in said open circuit, a suitable resistance in said circuit, and a normally closed shunt in said normally open circuit extending around said resistance, said shunt being controlled by said line-relay, whereby the closing of said subscriber's switch opens said shunt, so as to prevent the display of said supervisory signal when the normally open circuit is closed, and whereby the opening of said subscriber's switch operates to close said shunt, so as to cause a display of said supervisory signal when the said normally open circuit is closed.

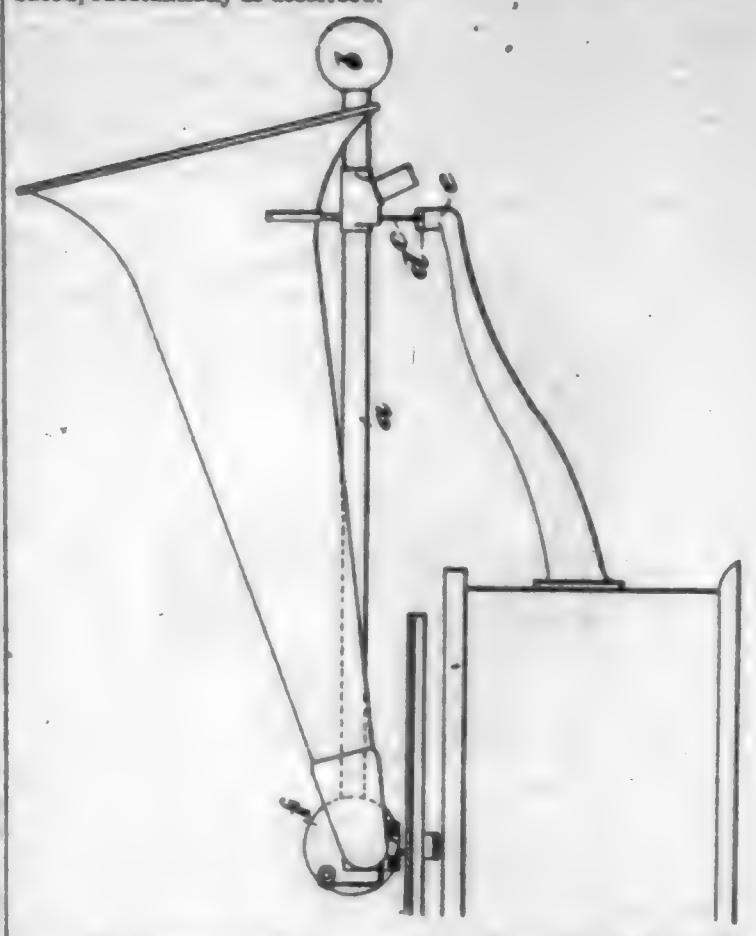
817,868. **SOUND REPRODUCER OR INTENSIFIER APPLICABLE TO PHONOGRAPHS, GRAMOPHONES, &c.** CHARLES A. PARSONS, Newcastle-upon-Tyne, England. Filed Apr. 12, 1904. Serial No. 202,866.

Claim.—1. An apparatus for reproducing sounds, comprising in combination, a valve-face; short flexible springs fixed at one side of said valve-face; an oscillating valve-cover mounted on said springs and adapted to control a current of elastic fluid; and means for actuating said valve-cover in accordance with the sounds to be reproduced; substantially as described.

2. An apparatus for reproducing sound, comprising in combination, a valve-face; short flexible springs fixed at one side of said valve-face; an oscillating valve-cover mounted on said springs and adapted to control a current of elastic fluid; means for adjusting the position of said valve-cover relatively to said valve-face; and means for actuating said movable grating in accordance with the sounds to be reproduced; substantially as described.

3. In a sound-reproducing apparatus, in combination; an elastic-fluid chamber; a fixed grating forming part of the boundary of said chamber; a connection adapted for supplying compressed or rarefied elastic fluid to said chamber; short flexible springs fixed to said chamber; an oscillating grating mounted on said springs and adapted to control the flow of elastic fluid through the openings in said fixed grating; and means for actuating said oscillating grating in accordance with the sounds to be reproduced, substantially as described.

4. In a sound-reproducing apparatus, in combination; an elastic-fluid chamber; a fixed grating forming part of the boundary of said chamber; an axially-oscillating bar mounted on said chamber; a grating fixed to said bar and adapted to control the flow of elastic fluid through said fixed grating; means for adjusting the position of said oscillating grating relatively to said fixed grating, and means for actuating said bar in accordance with the sounds to be reproduced, substantially as described.



5. In a sound-reproducing apparatus, in combination; an elastic-fluid chamber; a hollow arm carrying said chamber, a fixed grating forming part of the boundary of said chamber; said hollow arm being movably supported, a connection to said hollow arm adapted for supplying compressed or rarefied elastic fluid to said chamber; a movable grating adapted to control the flow of elastic fluid through the openings in said fixed grating; and means for actuating said movable grating in accordance with the sounds to be reproduced, substantially as described.

6. In a sound-reproducing apparatus, in combination; an elastic-fluid chamber; a fixed grating forming part of the boundary of said chamber; an axially-oscillating bar mounted on said chamber; a grating fixed to said bar and adapted to control the flow of elastic fluid through said fixed grating; a style-socket-forming arm fixed to said bar; and means for fixing a gramophone or phonograph style in said socket; substantially as described.

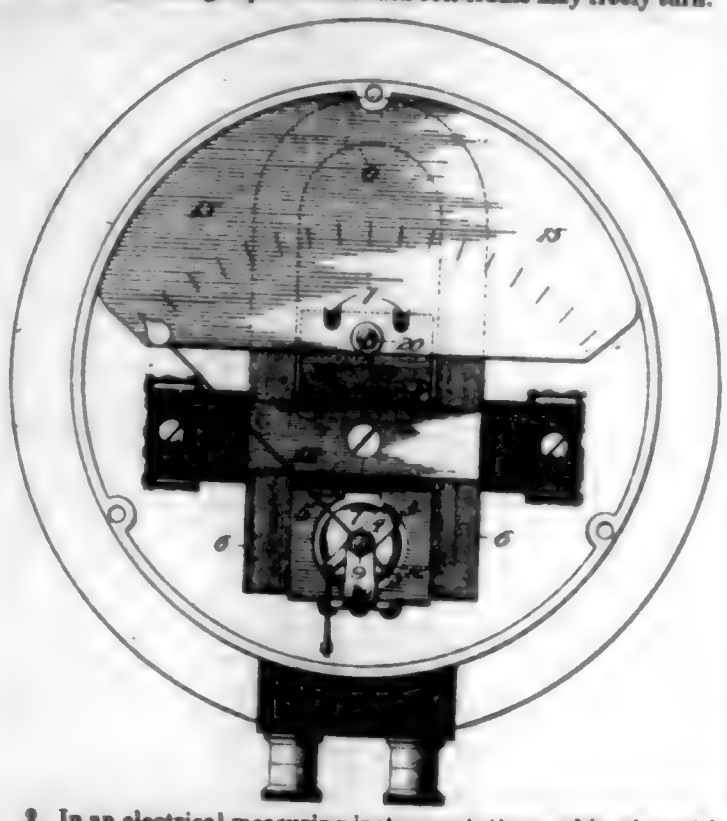
7. In a sound-reproducing instrument in combination; a compressed-air chamber; wire-gauze dividing said chamber into two parts; an air-filter on one side of said wire-gauze; a fixed grating forming part of the boundary of said air-chamber; a grating movable in a substantially normal direction so disposed as to cover the openings in said fixed grating; and means for actuating said movable grating in accordance with the sounds to be reproduced; as set forth.

8. In a sound-reproducing apparatus, in combination; an elastic-fluid chamber; a fixed grating forming part of the boundary of said chamber; an axially-oscillating bar mounted on said chamber; a grating fixed to said bar and adapted to control the flow of elastic fluid through said fixed grating; a style-socket-forming arm fixed to said bar; a style fixed in said arm; and means for actuating said style in accordance with the sounds to be reproduced; substantially as described.

9. In a sound-reproducing instrument in combination; an elastic-fluid chamber; a connection adapted for supplying elastic fluid to said chamber; a fixed grating forming part of the boundary of said chamber; a grating movable in a substantially normal direction adapted to control the flow of elastic fluid through said fixed grating; a tube fixed to said chamber leading from said grating; a short connecting-tube having two or more sharp bends between said tube and the trumpet; and means for actuating said movable grating in accordance with the sounds to be reproduced, substantially as described.

817,869. **ELECTRICAL MEASURING INSTRUMENT.** JOSHUA PATRICK, Chicago, Ill., assignor to International Electric Meter Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 3, 1905. Serial No. 272,470.

Claim.—1. If an electrical measuring instrument, the combination with a coil-frame and the coil disposed upon the inside of said frame, of trunnions mounted upon the ends of said coil-frame, bearing-jewels mounted in the ends of said trunnions, supporting-brackets opposite the ends of said coil-frame, and pivot-screws passing through said brackets and having pointed ends entering said jewels and forming bearings upon which said coil-frame may freely turn.



2. In an electrical measuring instrument, the combination with a metal coil-frame and a coil disposed upon the inside of said frame, of trunnions riveted upon the ends of said coil-frame and stationary pivot-screws having pointed ends entering bearings in the end of said trunnions.

3. In an electrical measuring instrument, the combination with a metal coil-frame, of trunnions at the ends of said coil-frame, each trunnion comprising a head or shouldered portion and a shank passing through the coil-frame and upset to form a rivet to fasten the trunnion in place upon the frame, and pivot-bearings for said trunnions.

4. In an electrical measuring instrument, the combination with a metal coil-frame and a coil carried by said frame, of trunnions at the ends of said coil-frame, each trunnion comprising a head or shouldered portion and a shank passing through the coil-frame, and upset to rivet said trunnion upon the frame, an arm having a looped end fastened under the head or shouldered portion of said trunnion, and pivot-bearings for said trunnions.

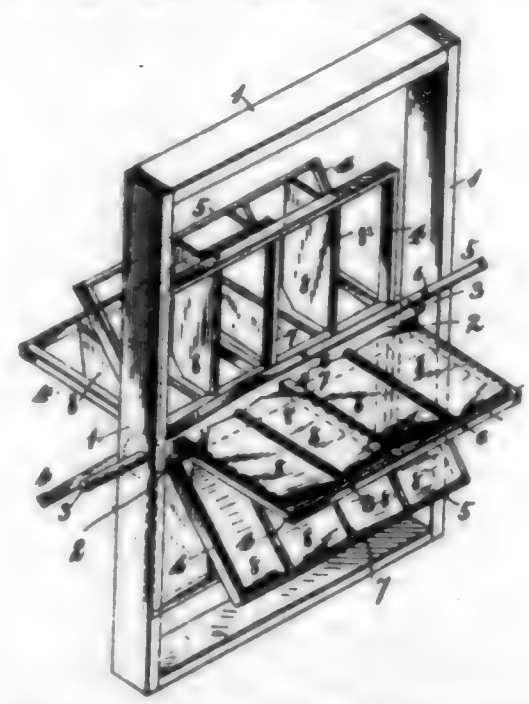
5. In an electrical measuring instrument, the combination with a coil-frame and a coil disposed upon the inside of said frame, of a trunnion upon the end of said frame, said trunnion comprising a head or shouldered portion and a shank passing through said frame and upset to rivet said trunnion in place, a metallic ring encircling said trunnion, and a bushing and washers of insulating material separating said ring from said trunnion, the ends of the wire of the coil being soldered to said trunnion and to said ring respectively, flexible conductors soldered to said ring and trunnions and a support to which said flexible conductors are anchored.

6. In an electrical measuring instrument, the combination with a coil-frame, of a coil carried thereby and having terminals for said coil moving with said frame, a fixed support, and free flexible conductors of smaller cross-section than the wire of the coil, connected with said terminals respectively and anchored to said support, whereby upon passage of an excessive current said free conductors will be fused to rupture the circuit before the coil is injuriously heated.

7. In an electrical measuring instrument, the combination with a moving coil, of a weighted arm opposing the movement of said coil, and fine flexible conductors connected with the terminals of said coil, to convey current to and from said coil, and a support to which said conductors are anchored, said flexible conductors being adapted to fuse and rupture the circuit upon the passage of current of less strength than that required to injuriously heat said coil.

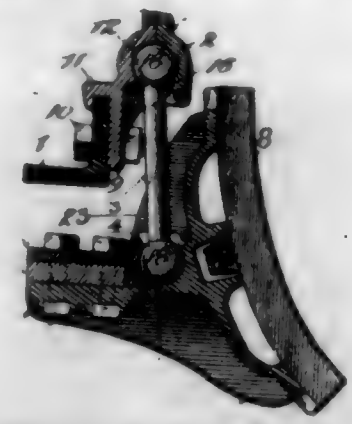
817,870. **CURRENT WATER-WHEEL.** WILLIAM J. PATTON, Springdale, Ark. Filed Aug. 21, 1903. Serial No. 170,294.

Claim.—1. A current water-wheel comprising a rectangular supporting-frame, a shaft journaled horizontally in said frame, a series of arms extending radially from said shaft and connected at their outer ends by beams, a series of hinge-rods extending from the shaft to the beams and connected thereto, a series of flat valves hinged to said hinge-rods, two valves being hinged to each rod to open out away from each other when acted upon by the current, the outer edges of said valves being braced by said arms to form a substantially unbroken surface while under the action of the current, and to fold together by gravity in rising after passing out of the influence of the current, the inner edges of the valves being bent around the hinge-rods to form bearings, substantially as shown and described and for the purposes set forth.



2. A current water-wheel comprising a shaft journaled horizontally, a series of arms secured to and extending outward from said shaft, and connected at their outer ends to longitudinal beams, a series of hinge-rods extending from said shaft to the beams and connected thereto, a series of flat valves hinged to said hinge-rods, two valves being hinged to each rod, and adapted to open out away from each other when acted upon by the current, the outer edges of said valves being braced by said arms and limited in action by said arms to form a substantially unbroken surface while under the action of the current, and to fold together by gravity in rising after passing out of the influence of said current, substantially as shown and described and for the purposes set forth.

817,871. **BRAKE-HANGER.** CHARLES K. PICKLES, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed June 14, 1905. Serial No. 265,132.



Claim.—1. In a device of the class described, a socket, fixed to a truck-frame, a socket secured to the brake beam or head, and a hanger having resilient ends which fit said sockets.

2. In a device of the class described, a socket secured to a truck-frame, a socket secured to a brake beam or head, and hanger having resilient ball-heads fitting in said sockets.

3. In a device of the class described, a socket secured to a truck-frame, a socket secured to a brake beam or head, and a hanger formed of two resilient parts with enlarged heads fitting said sockets, and means for holding said parts together.

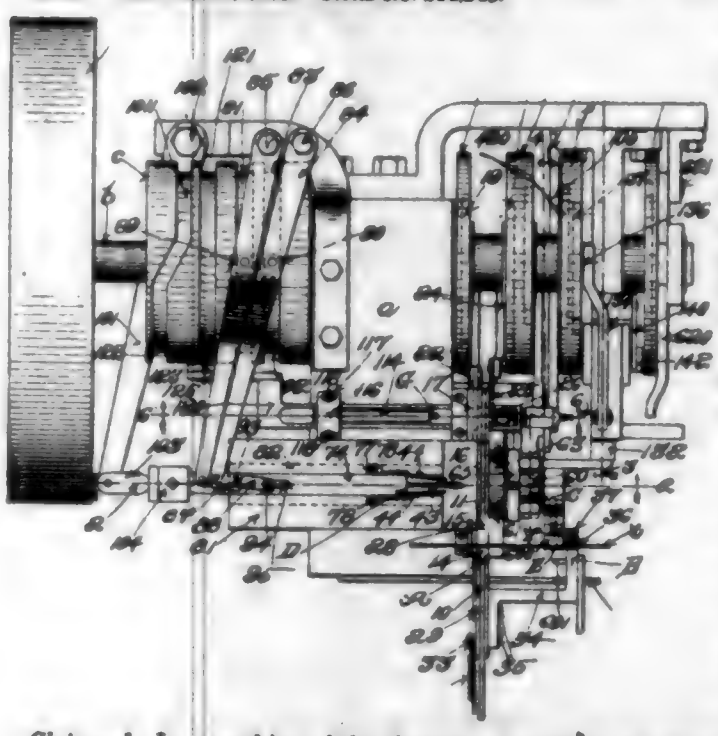
4. In a device of the class described, a socket secured to a truck-

frame, a second socket formed in a brake-head and a piece secured to a brake-beam, and a hanger with enlarged ends resting in said sockets.

5. In a device of the class described, a brake-hanger comprising a shank with divided heads, and springs for causing a separation of said heads.

6. In a device of the class described, a brake-hanger comprising a shank with a divided head, cams, and a spring-actuated wedge for separating the parts of said head.

817,872. MACHINE FOR FORMING LACING-TIPS. CHARLES F. PINKHAM, Boston, Mass., assignor to Frank W. Whitcher, Boston, Mass. Filed June 8, 1905. Serial No. 264,240.



Claim.—1. In a machine of the character described, in combination turning-in mechanism, cement-applying mechanism, and compressing mechanism.

2. In a machine of the character described, the combination with transferring mechanism, of turning-in mechanism, cement-applying mechanism, and compressing mechanism.

3. In a machine of the character described the combination of an exterior turning-in member, and an interior turning-in member coöperating therewith.

4. In a machine of the character described the combination of exterior turning-in mechanism, and interior turning-in mechanism comprising a central support, and grippers coöperating with the said central support.

5. Turning-in mechanism comprising a central support for the lacing, grippers therefor, and holding members contacting with the outside of the lacing while upon the central support.

6. Turning-in mechanism, comprising a central support or spear for the lacing, grippers therefor, and a chuck engaging the outside of the lacing during the turning-in movement.

7. Turning-in mechanism, comprising a central support or spear for the lacing, grippers therefor, and a chuck provided with radially-movable members engaging the outside of the lacing during the turning-in movement.

8. Turning-in mechanism comprising a central support or spear for dilating the end of a lacing said central support or spear being provided with an end portion for insertion in the lace, and having a contracted portion or neck back of said end portion, holding means coöperating with the neck of the said central support or spear to grip the end of the lacing, and exterior members contacting with the lacing upon the said central support or spear.

9. Turning-in mechanism comprising a central support or spear for dilating the end of a lacing said central support or spear being provided with a tapering portion for insertion in the lacing, and having a contracted portion or neck back of said tapering portion, holding means coöperating with the neck of the said central support or spear to grip the end of the lacing, and exterior members having a roughened interior surface contacting with the lacing upon the said central support or spear at its point of greatest diameter.

10. In a machine of the character described, the cement-applying apparatus, comprising a fixed piston, and a cylinder provided with a tip for introduction into the article to which the cement is to be applied, said cylinder being relatively movable with relation to its piston whereby the cement is ejected from the tip and is laid in the article during the backward movement of the said cylinder.

11. In a machine of the character described, the cement-applying mechanism comprising a movable pump-cylinder provided with a tip having a constricted bore, a fixed piston comprising two portions one of a size corresponding with the interior of the pump-cylinder and the other with that of bore of the tip.

12. In a machine of the character described, the cement-applying apparatus, comprising a movable cylinder provided with a tip having a constricted bore, means for supplying cement to the said cylinder, a fixed piston having one portion thereof of a size to fit the main part of the cylinder and another portion of a size to fit said constricted bore.

13. In a machine of the character described, the cement-applying apparatus, comprising a movable cylinder provided with a tip having a constricted bore, means supplying cement to the said cylinder, a fixed piston having one portion of a size to fit the main part of the cylinder and another portion of a size to fit the said constricted bore, and moving means for the said cylinder whereby the cement is ejected during the backward movement of the cylinder.

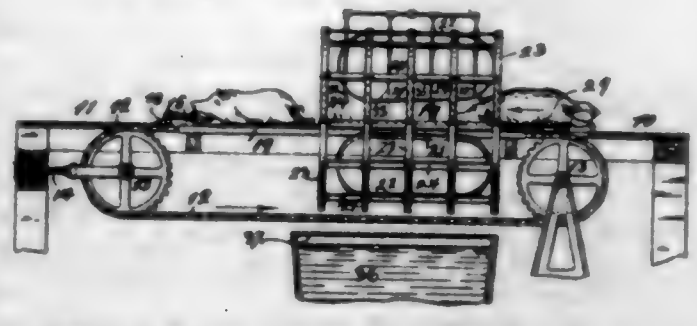
14. In a machine of the character described, the cement-applying apparatus, comprising a movable cylinder provided with a tip having a constricted bore, means supplying cement to the said cylinder, a piston fixed with relation to the said cylinder having one portion of a size to fit the main part of the cylinder and another portion of a size to fit the said constricted bore, moving means for the said cylinder, and adjusting means for the said piston whereby the quantity of the cement ejected during backward movement of the said cylinder may be varied.

15. In a machine of the character described, the combination with turning-in mechanism, cement-applying mechanism, and compressing mechanism, of a cutter-gripper and a side gripper holding the lacing or other article during its transfer from the feeding position to the turning-in position.

16. In a machine of the character described, the combination with turning-in mechanism, cement-applying mechanism, and compressing mechanism, of a lace-carrier for transferring the turned-in lacing from the turning-in position to the compressing position.

17. In a machine of the character described, the combination with turning-in mechanism, cement-applying mechanism, and compressing mechanism of a lace-carrier comprising an arm, gripping members thereon, a rotatable slide-rod upon which the said arm is mounted, and a pair of cams one for imparting to the said lace-carrier a rectilinear motion, and the other imparting to the lace-carrier a rotary motion whereby the lacing is transferred from the turned-in position to the compressing position.

817,873. HOG-SCRAPER. EDWARD RAWSON, Cincinnati, Ohio. Filed Apr. 20, 1905. Serial No. 256,566.



Claim.—1. In a hog-scraper, the combination of a frame consisting of rings, longitudinal members to connect them lengthwise, inwardly-projecting springs on this frame bell-shaped scraper-bits rigidly attached to these springs and arranged to surround a substantially tubular space and means to draw a carcass through this space.

2. In a hog-scraper, the combination of a substantially cylindrical frame arranged in lengthwise divided sections, springs whereby these sections are held together in normal relation, but free to yield circumferentially, springs projecting inwardly from these frame-sections, scraper-bits on these springs arranged to surround a tubular space and means to draw a carcass through this space.

3. In a hog-scraper, the combination of springs having substantially straight portions arranged substantially parallel around a tubular space and having each of their ends curved radially outwardly and turned over and inwardly again for attachment, a non-rotary frame to which these ends are connected, bell-shaped scraper-bits rigidly attached to the straight portions of these springs and means

to draw a carcass through the space surrounded by the straight portions of these springs.

4. In a hog-scraper, the combination of a series of scraper-bits yieldingly supported around a substantially tubular space open at both ends, a receiving-platform at one end, preliminary bell-shaped scraper-bits rigidly attached to this platform and means to draw a carcass over these bits and through the tubular space.

5. In a hog-scraper, the combination of a general frame, springs with curved ends and internal straight portions attached to this frame so as to project radially inwardly therefrom, said straight portions arranged to surround a substantially tubular space, scraper-bits on these straight portions, tail-springs projecting out from the springs mentioned near one end of their straight portions and surrounding the space thereat additional finishing scraper-bits provided on these tail-springs and means to draw a carcass lengthwise through the space mentioned and through between the finishing-scrapers.

6. In a hog-scraper, the combination of scraper-bits arranged to surround a substantially tubular space which is open at both ends, springs on which they are mounted, a general frame to which these springs are attached, also open at each end, a platform opposite each of these ends, a chain supported to lengthwise traverse the space between these ends and surrounded by the scraper-bits, means to move this chain through this space and from one platform to the other and a track consisting of a channel-rail to support the chain between the platforms.

7. In a hog-scraper, the combination of a stationary, non-rotary frame consisting of rings, longitudinal members to connect them lengthwise, inwardly-projecting springs on this frame, scraper-bits rigidly attached to these springs and arranged to surround a substantially tubular space, means to draw a carcass through this space, spray-nozzles supported to project through this frame and arranged to discharge against and toward the scraper-bits and means to supply water to these nozzles.

817,874. MAILING-ENVELOP. JOSEPH SAWDON, Stronghurst, Ill. Filed Mar. 30, 1904. Serial No. 200,691.



Claim.—1. An envelop comprising a flap and a body portion adapted to contain an inclosure and provided with an opening in its front face adjacent to the flap, a fastening device on the inner surface of the flap, a fastening device on the outer surface of the flap, a flexible member fixed to the first fastening device, and extending around the inclosure within the envelop and outwardly through the opening to the second fastening device.

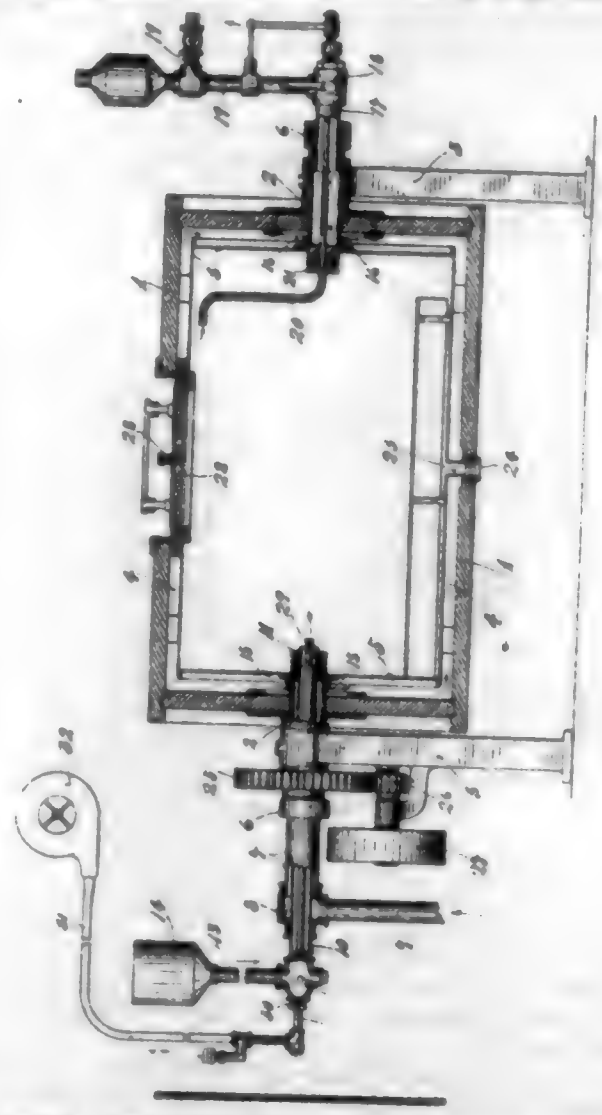
2. An envelop comprising a body portion provided at either end with an opening on its front face and composed of a back, side flaps, and an end flap folded upon the side flaps and a seal-flap attached to the back, a fastening device on the inner surface of the seal-flap, a fastening device on the outer surface of the seal-flap, and a flexible member fixed to the first fastening device, and extending around the inclosure within the envelop, outwardly through the end of the envelop, inwardly through one of the openings of the envelop and outwardly through the other opening to the second fastening device.

817,875. AERATING DEVICE FOR PASTEURIZING. CARL SCHALLINGER and MADS SONDERGAARD, Hutchinson, Minn. Filed Apr. 28, 1903. Serial No. 154,622.

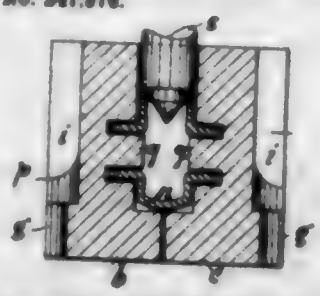
Claim.—1. The combination with a rotary drum or receptacle having a liquid-supply tube extending through one of the journals thereof, of an air-vent leading outward from the inner portion of said drum, said drum, through one journal thereof, and an air-delivery tube leading into said drum, through one of said journals, substantially as described.

2. The combination with a rotary drum or receptacle having a liquid-supply tube extending through one journal thereof, and an air-vent leading outward through the other journal thereof, of an air-delivery tube leading into said drum through one journal thereof, and concentrically located with respect to said liquid-supply tube, substantially as described.

3. The combination with a rotary drum or receptacle having hollow trunnions, of a liquid-supply tube leading into said drum through one trunnion thereof and an air-vent tube leading outward through the other trunnion thereof, an air-delivery tube extending into said drum though said liquid-supply tube, and means for producing a forced circulation of air through said delivery-tube and out through said air-venting tube, said air-venting tube having its inner end raised to the upper portion of said drum, substantially as described.



817,876. TOOL FOR PRESSING AND PIERCING SEAMLESS PIPE-JOINTS. CHRISTIAN SCHMID, Erkelenz, Germany. Filed Mar. 1, 1905. Serial No. 247,976.



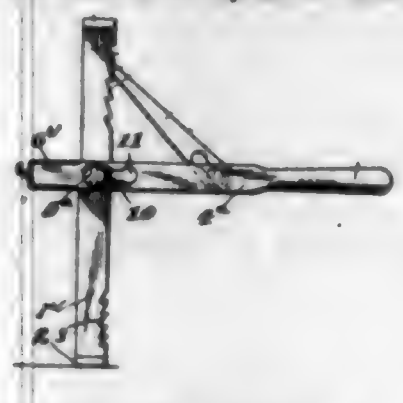
Claim.—A tool for pressing and piercing pipe-joints having coöperating front faces containing a semicylindrical depression *g* with a wider semicylindrical depression *g'* above it and a rectangular depression *i* with the foot end rounded as at *p* adapted to coöperate with a suitable plunger *k* with concaved and centerbored lower surface as described, and having rear faces with semicylindrical depressions *r* and deep annular grooves near the bottom thereof leaving cylindrical blocks *q*, substantially as described.

817,877. WAGON-JACK. ANDREW J. SHAMBLIN, Muldrow, Ind. Ter., assignor of one-half to I. H. Nakdimen, Muldrow, Ind. Ter. Filed Oct. 9, 1905. Serial No. 282,056.

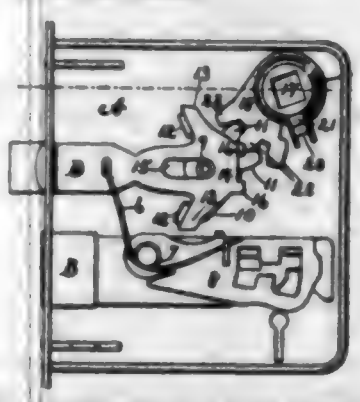
Claim.—1. A wagon-jack comprising a post or standard, reversible end for end, and provided with two series of oppositely-disposed teeth, a lever fulcrumed to said standard at a point offset from the middle thereof and having a longitudinally-adjustable connection with said standard, and a reversible pawl mounted on said lever and having a longitudinally-adjustable connection therewith.

2. A wagon-jack comprising a post or standard reversible end for end and provided with two series of oppositely-disposed teeth, a lever fulcrumed on said standard at a point offset from the middle thereof and provided with a keyhole-slot comprising two pivot portions and a contracted guideway connecting the two, a pivot-stud se-

cured on said standard and provided with a flattened shank designed to slide over said guideway and turnable in either of said pivot portions, and a reversible strut or pawl designed for engagement with either series of teeth and provided with a similar keyhole-slot, the lever-bar being provided with a stud having a flattened shank designed for the accommodation of the keyhole-slot of said pawl.



817,878. LATCH. AMOS SHEPARD, Plantsville, Conn., assignor to Russell and Erwin Mfg. Co., New Britain, Conn., a Corporation. Filed July 13, 1905. Serial No. 269,490.



Claim.—1. The combination of a latch-bolt having two wings, with a double-acting roll-back having two latch-bolt-engaging lugs, a knob-spindle hub separate from the said roll-back, and connecting devices between the said hub and roll-back whereby a motion of the hub in either direction will operate the said roll-back to withdraw the latch-bolt.

2. The combination of a latch-bolt having two wings with a double-acting roll-back having two latch-bolt-engaging lugs, a knob-spindle hub separate from the said roll-back and interlocking projections and recesses on the confronting edges of the said roll-back and hub for communicating the motion of the said hub to the said roll-back.

3. The combination of a latch-bolt having two wings with a double-acting roll-back having two latch-bolt-engaging lugs, a knob-spindle hub separate from the said roll-back and segmental gears on the confronting edges of the said roll-back and hub.

4. The combination of a latch-case with a fixed stud or post on said case, a latch-bolt having two wings and a slot that receives the said post, a roll-back having two latch-bolt-engaging lugs, the said roll-back being pivoted on the said post, and operating devices for imparting a motion in either direction to the said roll-back.

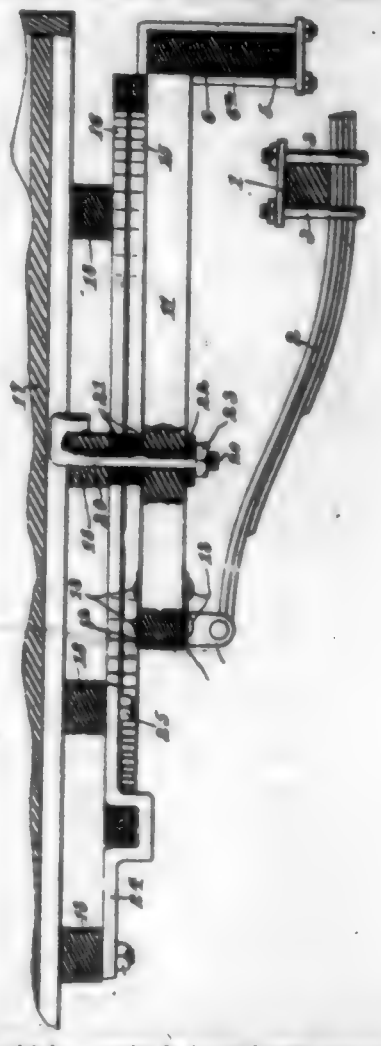
5. The combination of a latch-case with a fixed stud or post on the said case, a slotted and reversible latch-bolt with its rear end mounted on and guided in the edgewise direction by the said post, the said latch-bolt also having two wings and oppositely-projecting lugs 16 for acting on the front and rear walls of the case for guiding that end of the latch in the flatwise direction, a roll-back pivoted on the said post and having two latch-bolt-engaging lugs, and mechanism for operating the said roll-back in reverse directions.

6. The combination of a latch-case with a fixed stud or post on the said case, a slotted latch-bolt having its rear end mounted on and guided by the said post, and also provided with two wings, a double-acting roll-back for engaging the said latch-bolt, an easy spring for projecting the said latch-bolt, mechanism for operating the said roll-back in either direction and a double-acting spring for returning the said mechanism and roll-back.

7. The combination of a latch-bolt, with a knob-spindle hub, mechanism for operatively connecting the said hub and latch-bolt, and a split-ring spring encircling the said hub and in connection with a stop on the case acting to return the said hub when turned in either direction.

8. The combination of a latch-bolt with a knob-spindle hub, mechanism for operatively connecting the said hub and latch-bolt, a double-acting spring mounted directly on the said hub, and a stop on the case for the ends of the said spring to engage for returning the said hub when turned in either direction.

817,879. RUNNING-GEAR FOR VEHICLES. RICHARD B. SHERIDAN, Knoxville, Tenn. Filed July 24, 1905. Serial No. 270,916.



Claim.—In a vehicle, a vehicle-body having beneath it and secured thereto cross-bars, 18, a fifth-wheel frame located beneath said body, a fifth-wheel plate resting upon and secured to said frame, a second fifth-wheel plate resting upon the first-mentioned fifth-wheel plate and secured to said cross-bars, 18, a king-bolt joining said body and said frame in the axis of said plates, a stirrup located rearward of said king-bolt and extending beneath and along the upright faces of said plates and having its ends secured to two cross-bars, 18, springs located beneath and secured to said frame, and an axle applied to said springs forward of said king-bolt, substantially as described.

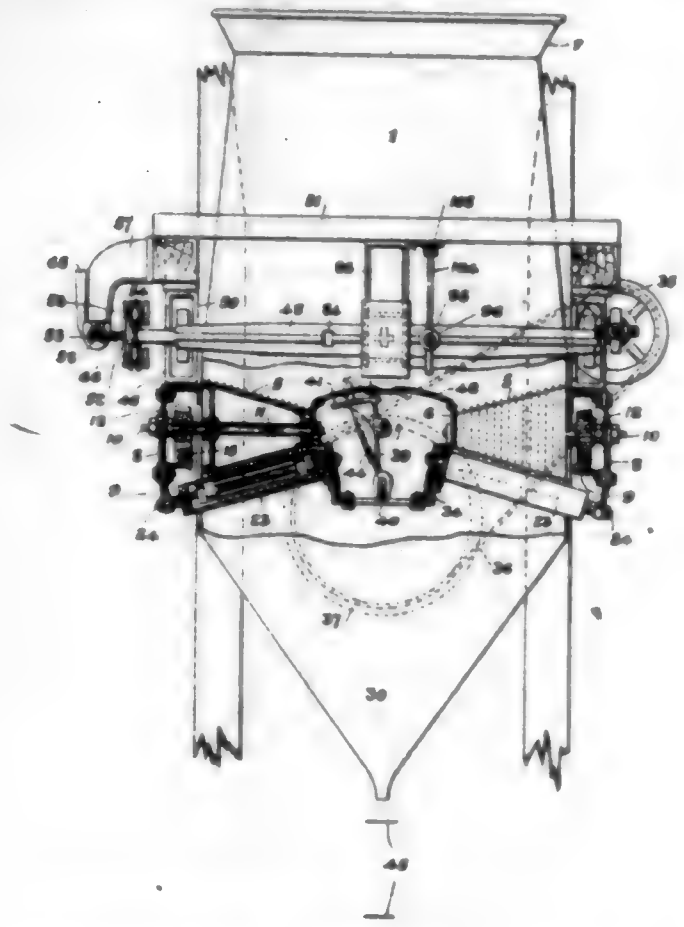
817,880. AUTOMATICALLY-REGULATED FEEDING APPARATUS FOR CIGARETTE-MAKING MACHINES. ROBERT A. SLOAN and JOHN E. L. BARNES, Liverpool, and PERCY OGDEN, Bristol, England. Filed July 11, 1904. Serial No. 216,131.

Claim.—1. In tobacco-feeding apparatus for cigarette-machines, in combination; a movable hopper adapted to contain a supply of tobacco the weight of which tobacco tends to move the hopper in the one direction; a counterbalance tending to move the hopper in the opposite direction with a counterbalancing effect which diminishes in accordance with the rate at which it is desired the tobacco should be fed from the hopper to the machine; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine; and a variable-speed feed-mechanism driving device, controlled by the movement of the hopper; substantially as described.

2. In tobacco-feeding apparatus for cigarette-machines, in combination; a hopper adapted to contain a supply of tobacco and connected to one end of a weigh-beam; a counterbalance connected to the other end of the weigh-beam the counterbalancing effect of which diminishes in accordance with the rate at which it is desired the tobacco should be fed from the hopper to the machine; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine; and a variable-speed feed-mechanism driving device, controlled by the movement of the weigh-beam; substantially as described.

3. In tobacco-feeding apparatus for cigarette-machines, in combination; a hopper adapted to contain a supply of tobacco, attached

to one end of a weigh-beam; a counterbalancing-weight moved along the weigh-beam by gearing connected to the driving-shaft of the cigarette-machine; the cigarette-machine driving-shaft; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine; and a variable-speed feed-mechanism driving device, controlled by the movement of the weigh-beam; substantially as described.



4. In tobacco-feeding apparatus for cigarette-machines, in combination; a hopper adapted to contain a supply of tobacco and carried from one end of a weigh-beam; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine, carried by the said hopper; a counterbalancing-weight moved along the weigh-beam by gearing connected to the driving-shaft of the cigarette-machine; the cigarette-machine driving-shaft; and a variable-speed feed-mechanism driving device, controlled by the movement of the weigh-beam; substantially as described.

5. In tobacco-feeding apparatus for cigarette-machines, in combination; a hopper adapted to contain a supply of tobacco and carried from one end of a weigh-beam; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine, carried by the said hopper; a counterbalancing-weight moved along the weigh-beam by gearing connected to the driving-shaft of the cigarette-machine; the cigarette-machine driving-shaft; and a variable-speed feed-mechanism driving device controlled by the movement of the weigh-beam and provided with flexible means adapted to convey power to the feeding mechanism but incapable of transmitting any turning moment to the weigh-beam; substantially as described.

6. In tobacco-feeding apparatus for cigarette-machines, in combination; a hopper adapted to contain a supply of tobacco and carried from one end of a weigh-beam; a feeding mechanism for transferring the tobacco from the hopper to the cigarette-machine, carried by the said hopper; a counterbalancing-weight moved along the weigh-beam by gearing connected to the driving-shaft of the cigarette-machine; the cigarette-machine driving-shaft; and a variable-speed feed-mechanism driving device comprising a ratchet-wheel the angular position of which determines the speed; a pair of pawls, a reciprocating piece, an interposer connected to the weigh-beam and flexible means adapted to convey the power to the feeding mechanism but incapable of transmitting any turning moment to the weigh-beam; substantially as described.

7. In tobacco-feeding apparatus for cigarette-machines, in combination: a hopper; a series of rotating conical pegged drums radially arranged at the bottom of the hopper, a series of rotating doffers, and means for driving the drums and doffers; substantially as described.

8. In tobacco-feeding apparatus for cigarette-machines, in combination: a hopper, a series of rotating conical pegged drums radially arranged in an annulus at the bottom of the hopper, a series of rotating doffers, the reciprocating prongs and sliding plates at the center of the hopper, and means for driving the drums, doffers and prongs; substantially as described.

9. In tobacco-feeding apparatus for cigarette-machines, in combination: the hopper, the conical pegged drums and the rotating doffers comprising a rotating cylinder provided with combs protruding through holes in the cylinder and journaled eccentrically relatively to the cylinder-journals, and means for driving the drums and doffers; substantially as described.

10. In tobacco-feeding apparatus for cigarette-machines, in combination: the hopper, the conical pegged drums, the rotating doffers and the means for moving the tobacco laterally from the central space within the pegged conical drums comprising two crank-driven frames each carrying a series of prongs which describe an elliptical path, two sliding plates provided with holes to take the said prongs through which holes the prongs protrude on the outstroke and in which they are housed on the return stroke, and means for driving the drums, doffers and prongs; substantially as described.

11. In tobacco-feeding apparatus for cigarette-machines, in combination; the hopper, the pegged conical drums arranged radially, a series of gear-wheels, one on each drum, one of which is driven, and a common gear-wheel meshing with each of the said drum gear-wheels; substantially as described.

12. In tobacco-feeding apparatus for cigarette-machines, in combination; the hopper, the pegged conical drums, the means for driving the drums, the rotating doffers arranged radially, a gear-wheel on each doffer, one of which is driven, and a common gear-wheel meshing with each of said doffer gear-wheels; substantially as described.

13. In tobacco-feeding apparatus for cigarette-machines, in combination; the weigh-beam, the hopper and the feeding mechanism, attached to one end of the weigh-beam, a counterbalancing-weight moved along the weigh-beam by gearing connected to the cigarette-machine driving-shaft, the cigarette-machine driving-shaft, and the means for driving and controlling the speed of the feeding mechanism comprising a shaft driven at a constant speed, a shaft connected to the feeding mechanism by a universal coupling adapted to transmit the torque to the feeding mechanism but incapable of transmitting any turning moment to the weigh-beam, a speed-varying gear interposed between the said shafts and means for operating the said gear controlled by the movement of the weigh-beam; substantially as described.

14. In tobacco-feeding apparatus for cigarette-machines, in combination; the weigh-beam, the hopper and the feeding mechanism, attached to one end of the weigh-beam, a counterbalancing-weight moved along the weigh-beam by gearing connected to the cigarette-machine driving-shaft, the cigarette-machine driving-shaft, and the means for driving and controlling the speed of the feeding mechanism comprising a shaft driven at a constant speed, a shaft connected to the feeding mechanism by a universal coupling adapted to transmit the torque to the feeding mechanism but incapable of transmitting any turning moment to the weigh-beam; a cone-pulley on each of the said shafts, a movable driving connection between the said pulleys, a guide adapted to move said driving connection, and means controlled by the weigh-beam for operating the said guide; substantially as described.

15. In tobacco-feeding apparatus for cigarette-machines, in combination; the weigh-beam, the hopper and feeding mechanism attached to one end of the weigh-beam, the counterbalance moved along the weigh-beam by gearing from the cigarette-machine shaft, the cigarette-machine shaft, the means for driving and varying the speed of the feeding mechanism comprising the cone-pulleys, the belt, the belt-guide, the ratchet, the two pawls, the reciprocating piece, and the interposer connected to the weigh-beam; substantially as described.

16. In tobacco-feeding apparatus for cigarette-machines, in combination; the weigh-beam, the hopper and the feeding mechanism connected to one end of the weigh-beam, the variable-speed feeding-mechanism driving device, the driving-shaft of the cigarette-machine, a counterbalance moving along the weigh-beam and means for moving it comprising a screw driven from the driving-shaft of the cigarette-machine, and a nut adapted to engage the said screw and connected to the counterbalance; substantially as described.

17. In tobacco-feeding apparatus for cigarette-making machines; means for continuously and automatically controlling the cigarette weight by regulating the speed and therefore the rate of delivery by the rate at which the weight in the distributing-hopper

diminishes in relation to the rate at which the cigarettes are produced; substantially as described.

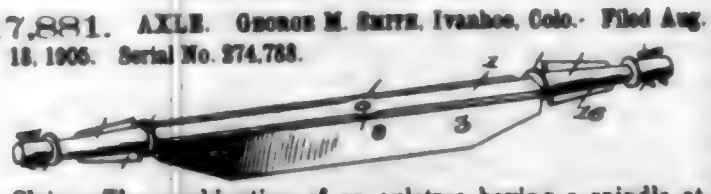
18. In tobacco-feeding apparatus for cigarette-making machines, means for controlling the cigarette weight, in which the tobacco-distributing device as a whole is slung on a counterpoised weigh-beam with a running weight traversed proportionately to the number of cigarettes produced; the distributing device being energized in such manner as not to affect the weighing; and the rise and fall of the weigh-beam end being used to control the speed and therefore the rate of delivery; substantially as described.

19. In tobacco-feeding apparatus for cigarette-making machines; in combination; a tobacco-distributing device slung as a whole from a counterpoised weigh-beam; means for energizing it without affecting the weighing; a steelyard attached to the weigh-beam; a running weight on the steelyard; means for traversing the weight along the steelyard proportionately to the number of cigarettes produced; a relay controlled by the rise and fall of the weigh-beam end; and a speed-varying mechanism operated by the said relay and controlling the rate of delivery; substantially as described.

20. In tobacco-feeding apparatus for cigarette-making machines; in combination; a tobacco-distributing device slung as a whole from a counterpoised weigh-beam; means for energizing it without affecting the weighing; a steelyard attached to the weigh-beam; a running weight on the steelyard; a feed-screw for traversing the weight along the steelyard; change-gear connecting the said screw to the cigarette-making machine; a relay controlled by the rise and fall of the weigh-beam end; and a speed-varying mechanism operated by the said relay and controlling the rate of delivery; substantially as described.

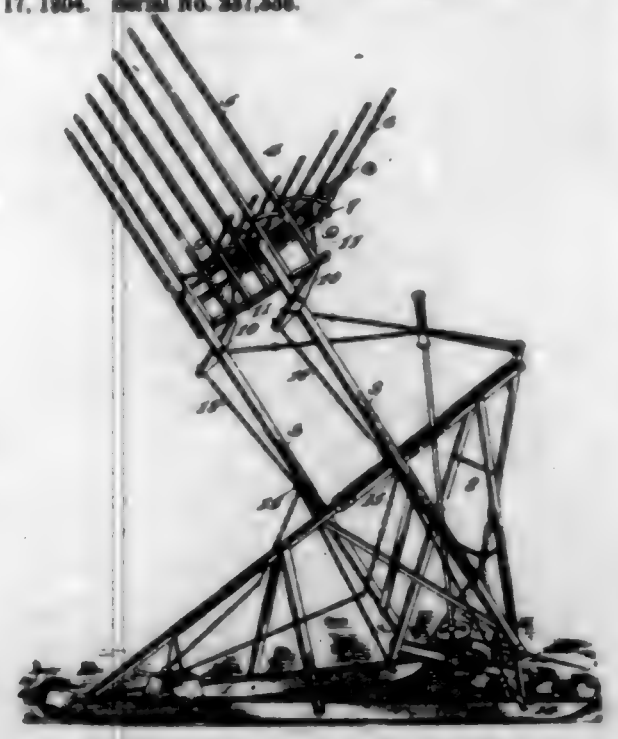
21. In tobacco-feeding apparatus for cigarette-making machines; a tobacco-distributing device consisting of a hopper and a series of conical pegged collecting-drums herein arranged in a circle so that each is adapted to clear surplus tobacco from one adjacent to it, and means for stripping the tobacco from the collecting-drums; substantially as described.

817,881. **AXLE.** GEORGE M. SMITH, Ivanhoe, Colo. Filed Aug. 18, 1905. Serial No. 274,788.



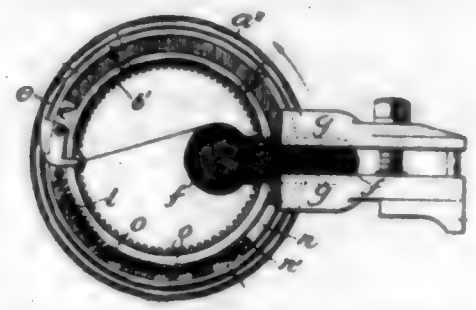
Claim.—The combination of an axletree having a spindle at each end and provided at an intermediate point with an enlarged portion through which a king-bolt-receiving opening is passed, the sides of said axletree flaring outwardly at a point adjacent to the spindles, a housing provided with a longitudinal groove for the reception of the axletree, said groove being enlarged at an intermediate part to receive the enlarged portion of the axletree, and also having its sides flared outwardly at the ends to fit over the flared portions of the axletree adjacent to the spindles, and a king-bolt passing through corresponding openings in the axletree and housing.

817,882. **STACKER-HEAD.** ORRIN F. SMITH, Albia, Iowa. Filed Dec. 17, 1904. Serial No. 237,336.



Claim.—In a stacker, the combination of an elevating-frame, a fork mounted thereon and comprising main teeth, pitcher-teeth pivoted to the main teeth at an angle thereto, a transverse bar connecting said pitcher-teeth, rocker-arms pivoted between their ends to the sides of the elevating-frame, rods connecting one end of each rocker-arm with the transverse bar connecting the pitcher-teeth, hook-bars attached to the body of the stacker, and connections having adjustable connection at one end with the hook-bars aforesaid and connected with the ends of the rocker-arms opposite those connected with the pitcher-teeth.

817,888. **WINDING-MACHINE.** EDWIN H. SEYFFER, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 24, 1905. Serial No. 266,760.



Claim.—1. In a winding-machine, the combination with a positively-driven spool-ring adapted to surround the core to be wound, of a guide adapted to convey the wire from the spool to the core, said guide being mounted to slide around the circumference of the spool-ring, while being driven frictionally thereby.

2. In a winding-machine, the combination with a rotatable spool-ring adapted to surround a core to be wound, and means for positively driving said spool-ring, of a guide adapted to convey the wire from said spool to said core, said guide being frictionally driven by said spool-ring but having a slip relative thereto according to the pull of the wire passing over said guide.

3. In a winding-machine, the combination with a positively-driven spool-ring adapted to be interlinked with a closed core, of a guide for directing the wire from the spool to the core, said guide being mounted upon the ring to be rotated thereby but having a relative movement of rotation thereon as the wire is unwound from the spool, and spring means for maintaining the guide advanced upon the spool to the bight of the loop of wire which passes over said guide between the spool and core, whereby said wire is held taut.

4. In a machine for winding closed cores, the combination with a spool-ring adapted to be interlinked with the core, of means for positively driving said spool-ring, a guide adapted to direct the wire from the spool over the side thereof and toward the core to be wound, said guide being mounted to move backward around the spool-ring as the wire is unwound therefrom, a drag also mounted to move around the ring but having frictional engagement therewith, and a spring connection between said drag and said guide whereby the guide is driven in the rotation of the spool-ring, and the wire being wound is held taut.

5. In a winding-machine, the combination with a rotating ring, of a drag rotated frictionally by said ring and having a slip relative thereto, and a guide connected to said drag by an extensible spring, substantially as set forth.

6. In a winding-machine, the combination with a spool-ring, of means for positively driving the same, and a guide slidably mounted on said spool-ring.

7. In a winding-machine, the combination with a positively-driven spool-ring having an endless way thereon, of a guide mounted to move on said way.

8. In a winding-machine, the combination with a positively-driven spool-ring having an endless way thereon, of a friction-drag and a wire-guide mounted to move on said way, and a resilient connection between said drag and said guide.

9. In a winding-machine, the combination with a positively-driven spool-ring, of an endless way on said spool-ring, a friction-drag and a wire-guide mounted to move on said way, a helical spring connecting said drag with said guide, and a supporting-block for said spring adapted to slide along said way.

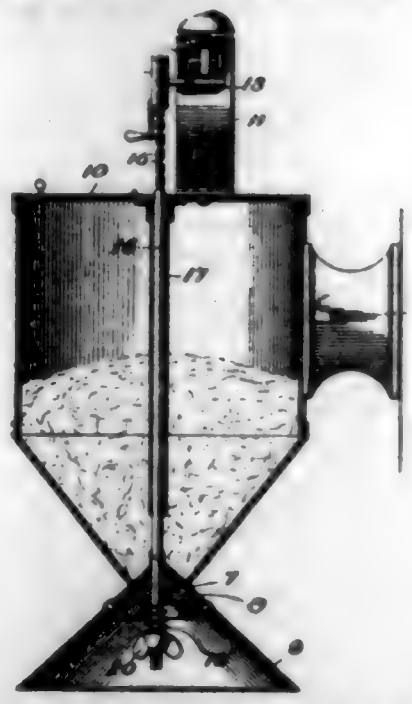
10. In a winding-machine, the combination with the driving mechanism, of a spool-ring adapted to be rotated at an approximately constant speed, and a frictionally-driven wire-guide adapted to be rotated at a variable speed concentrically with said spool-ring.

11. In a winding-machine, the combination with the driving

mechanism, of a spool-ring adapted to surround the core to be wound and to be rotated at an approximately constant speed, a frictionally-driven guide rotating concentrically with said spool-ring and adapted to convey wire from said spool-ring to the core, and means adapted to vary the speed of rotation of said guide, whereby the rate of transfer of wire from said spool-ring is regulated and the accumulation of slack prevented.

12. In a winding-machine for winding closed cores, the combination with the driving mechanism, of a spool-ring interlinked with the core to be wound and adapted to be rotated at an approximately constant speed, said spool-ring having wire wound thereon, a frictionally-driven guide rotating concentrically with said spool-ring, the wire passing from said spool-ring to the core to be wound by way of said guide, the pull on said wire being adapted to vary the speed of rotation of said guide, whereby the rate of transfer of wire from said spool-ring is automatically regulated and the accumulation of slack prevented.

817,884. **TIME FEEDING DEVICE.** LOUIS A. STARNER, Oak Park, Ill. Filed Feb. 23, 1905. Serial No. 246,943.



Claim.—In a time feeding apparatus, the combination with a hopper for the feed having a discharge-opening at the bottom and a guide-tube extending downwardly from the top toward said opening, of a rod movable up and down in the tube, having at its lower end a plug-valve yieldingly supported thereon and controlling the discharge-opening and carrying a conical spreader under said opening, and time-controlled releasing means connected to the upper end of said rod.

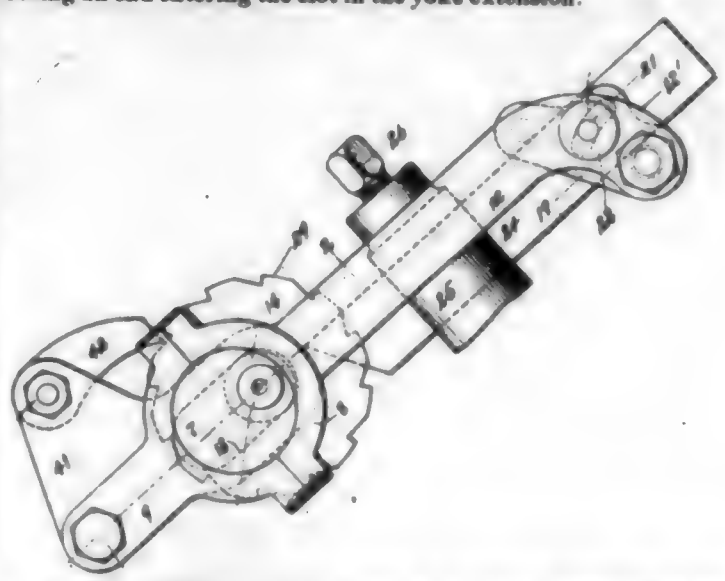
817,885. **LATHE ATTACHMENT.** CHARLES G. TAYLOR, Hartford, Conn. Filed Feb. 8, 1905. Serial No. 244,902.

Claim.—1. A relieving attachment comprising a shaft having an eccentric portion and a sleeve surrounding said eccentric portion; means for clamping a toothed cutter-blank to the sleeve; means for rotating the shaft, and thereby causing the sleeve to advance toward and recede from a turning-tool; an index-plate secured to the sleeve; a pawl; a reciprocatory bar carying the pawl; projections, between which a guide is secured, carried by said bar; and an eccentric on the shaft for actuating the bar.

2. The combination, with a shaft having an eccentric portion between its ends, said shaft also carrying an eccentric, of a sleeve mounted upon the shaft; means for clamping the cutter-blank to the sleeve; a bar having a slot fitting over a collar of the shaft; projections on the bar adapted to fit over and be guided by a fixed part of the lathe; means for connecting the eccentric with the reciprocatory bar; and a pawl carried by said reciprocatory bar, and adapted to engage the teeth of the index-plate.

3. In an attachment for lathes, the combination, with a shaft having an eccentric portion, of a sleeve surrounding said eccentric portion; means for securing a cutter-blank to the sleeve; an index-plate rigid with the sleeve; a bar slotted to receive the shaft; a pawl carried by the bar; means actuated by the shaft for reciprocating the bar; and means for guiding and preventing displacement of the bar during its reciprocatory movement.

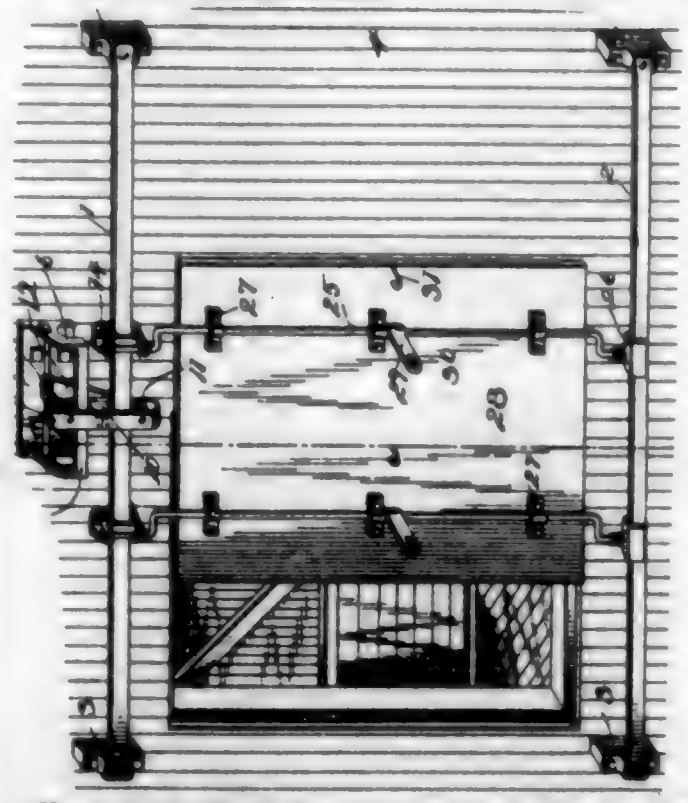
4. An attachment for lathes, comprising a shaft having an eccentric portion between its ends; a sleeve surrounding said shaft and mounted on the eccentric portion thereof; means for securing a cutter-blank to the sleeve; a bar slotted to receive the shaft; a pawl pivoted to said bar; an index-plate rigid with the sleeve; a friction-yoke secured to the sleeve, and having a slotted extension; an eccentric rigid with the shaft; a strap for said eccentric, and having an extension; and a bolt connecting said extension with the bar, and having an end entering the slot in the yoke extension.



5. The combination, with a shaft, of means for securing a cutter-blank to said shaft; a reciprocatory bar; means actuated by the bar for indexing the shaft; an eccentric carried by the shaft and engaging the bar; a plate adjustable on said bar; a projection on said plate; and a projection on the bar, said projections being adapted to engage a guide, and prevent the bar from rotating on the eccentric.

6. The combination, with a shaft, adapted to be received by the centers of the lathe, and having an eccentric portion, of a sleeve mounted on said eccentric portion; a friction-yoke secured on the sleeve, said yoke having a guide-arm; means for engaging said guide-arm, and thus normally holding the sleeve against rotation; and means for indexing the sleeve.

817,886. **DOOR-HANGER FOR SLIDING DOORS.** GEORGE W. TERRELL, Atlanta, Ga., assignor of one-fourth to G. H. Keith and one-fourth to C. G. Hannah, Atlanta, Ga. Filed Mar. 11, 1905. Renewed Feb. 21, 1906. Serial No. 302,226.



Claim.—1. In a device of the character described, the combination with an upper track-rail; of a supporting-rail thereabove and parallel therewith, an auxiliary hanger surrounding and movably mounted upon said rails.

2. In a device of the character described, the combination with an upper track-rail; of a supporting-bracket thereabove and having a rail parallel therewith, an auxiliary hanger surrounding and movably mounted upon said rails, and a bracing device connected to the

auxiliary hanger and to a fixed guide-rod in said bracket and movable thereon.

3. In a device of the character described, the combination with an upper track-rail; of a supporting-rail thereabove, a guide adjacent thereto, an auxiliary hanger surrounding and movably mounted upon the rails, and a brace secured to the hanger and movably mounted upon the guide.

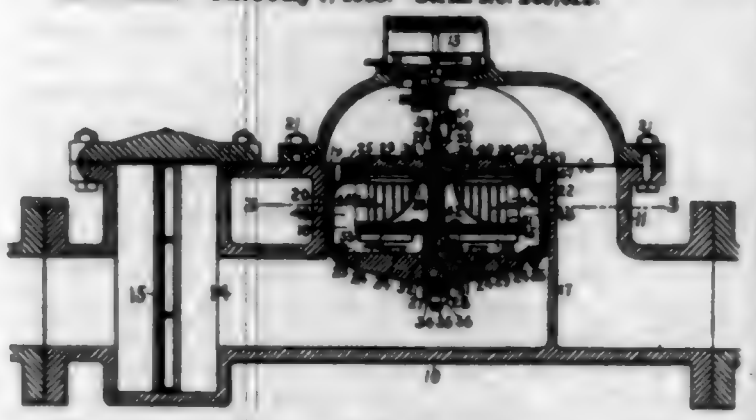
4. In a device of the character described, the combination with an upper track-rail and securing means at the ends thereof; of a bracket above and adjacent the center of the rail, and having a supporting-rail, and an auxiliary hanger surrounding and movably mounted upon the rails, said hanger comprising a spacing-block and oppositely-disposed sections secured to the block.

5. In a device of the character described, the combination with an upper supporting-rail and securing means at the ends thereof; an auxiliary support intermediate said ends and comprising a bracket having a rail integral therewith and parallel with said supporting-rail and a hanger surrounding the rails and movably mounted thereon.

6. In a device of the character described, the combination with an upper track-rail and securing means at the ends thereof; of an auxiliary support for said rail intermediate the ends thereof and comprising a bracket having a rail thereon, and a guide-rod above said rail and a hanger surrounding and movable on the rails, and a brace extending from the hanger and mounted upon the guide.

7. The combination with a track-rail and securing means at the ends thereof; hangers upon said rail and a door supported upon the hangers; of an auxiliary support for the rail at a point between the hangers, comprising a bracket, a rail supported thereby and an auxiliary hanger surrounding and movably mounted upon the rails between the door-hangers.

817,887. **METER.** JAMES A. TILDEN, Hyde Park, Mass., assignor to Hersey Manufacturing Company, South Boston, Mass., a Corporation of Maine. Filed July 7, 1905. Serial No. 268,922.



Claim.—1. A meter comprising a movable measuring member having vanes surrounded by an unimpeded space, a bearing for supporting the weight of the measuring member, and means situated at the opposite end of said member from the bearing for directing the fluid to be measured through the space against the vanes and in the direction of the axis of the member.

2. A meter comprising a measuring device having a head provided with an opening through which the fluid to be measured may flow and vanes projecting from the head, means for delivering the fluid against the outer side of the head, and a deflector situated within the vanes, there being a space between said deflector and the head.

3. In a meter, the combination with a thrust-bearing, of a spindle rotatable therein, a head carried by the spindle, vanes projecting from the head, and means for delivering the fluid to be measured against the side of the head toward the bearing.

4. In a meter, the combination with a thrust-bearing, of a spindle rotatable therein, a head carried by the spindle and being provided with a contracted opening through which the fluid to be measured may flow, vanes projecting from the head, and means for delivering the fluid against the side of the head toward the bearing.

5. The combination with a casing, of a sleeve supported therein, a measuring device mounted to rotate within the sleeve and having vanes spaced from said sleeve, and means for delivering the fluid to be measured through said space and radially with respect to the axis of the measuring device.

6. The combination with a casing, of a sleeve supported therein, a measuring device mounted to rotate within the sleeve and having vanes spaced from said sleeve, and a closure between the sleeve and measuring device near one end of the space.

7. The combination with a casing, of a sleeve supported therein, and a wheel mounted to rotate within the sleeve and having a head situated near one end of the sleeve and vanes projecting from the head toward the opposite end of the sleeve and being spaced from said sleeve.

8. The combination with a casing, of a sleeve supported therein, a wheel mounted to rotate within the sleeve and having a head and vanes projecting from the head and being spaced from the sleeve, and a closure between the sleeve and measuring device near the opposite end from the head.

9. The combination with a casing, of a sleeve supported therein, and a wheel rotatable within the sleeve and having a head, vanes projecting from the head and being spaced from the sleeve and a ring connecting the vanes at the ends opposite the head.

10. The combination with a casing furnishing a chamber, of separated spiders situated in the chamber and being provided with alined openings, bushings for the openings having flanges upon their adjacent ends extending over the spiders, a spindle rotatable in the bushing, and a measuring device fixed to the spindle and which may contact with the bushing-flanges.

11. The combination with a casing, of separated supports, a measuring device rotatable upon the supports, and a deflector mounted upon one of these supports and extending within the measuring device.

12. The combination with a casing furnishing a chamber, of a spider extending across the chamber and being provided with a recess into which are lateral openings between its arms, a spindle bearing in the recess, and a measuring device fixed to the spindle.

13. The combination with a main casing having a chamber and a flow-passage separated from one another, both chamber and passage opening at the top of the casing, of an inner casing situated in the chamber and being supported about a portion of the edge of the main casing-opening, and a cover for said opening coöperating with the inner casing.

14. The combination with a casing, of a separable sleeve mounted therein, supports extending across the opposite end of the sleeve, a measuring device rotatable upon the supports, and a deflector mounted upon one of the supports.

15. A meter comprising a casing, a measuring device rotatable therein, there being a rotary current produced in the casing during the movement of the measuring device, and fluid-engaging means for resisting the rotation of the measuring device, said means being within the casing and out of the rotary current flowing from the measuring device.

16. A meter comprising a casing having inlet and outlet passages, a measuring device movable between the passages, and a resistance member situated upon the inlet side of the measuring device.

17. A meter comprising a casing having inlet and outlet passages, a wheel provided with a head at the side toward the inlet, and resistance-arms projecting from the head.

18. A meter comprising a measuring device, an inclosure extending into proximity with the measuring device near one extremity and being spaced from the remainder thereof, and means for delivering the fluid to be measured at the opposite extremity of the wheel.

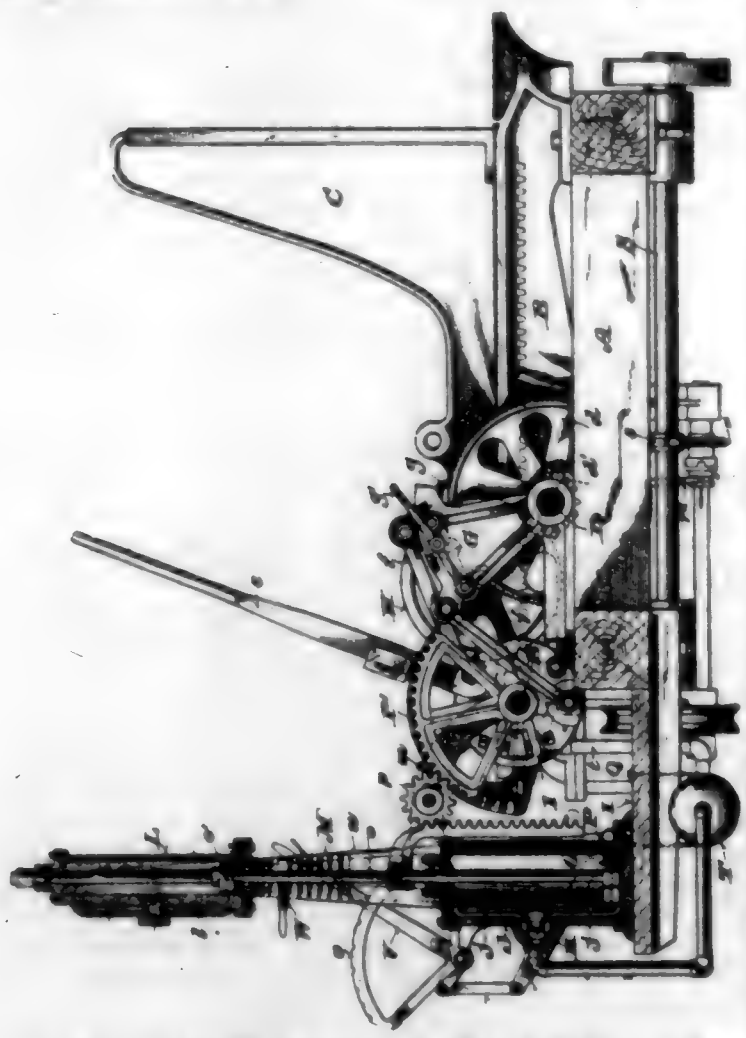
817,888. **SET-WORKS FOR SAWMILL-CARRIAGES.** WILLIAM H. TROUT, Milwaukee, Wis., assignor, by direct and mesne assignments, to Allis-Chalmers Company, Chicago, Ill., a Corporation of New Jersey. Filed Aug. 18, 1897. Serial No. 648,691.

Claim.—1. The combination with the knees and set-shaft of a sawmill-carriage of a fluid-cylinder mounted upon the carriage, and having a fluid-supply connection, a piston fitted to work in said cylinder and arranged to turn the set-shaft, a valve controlling the fluid-supply connection of said cylinder, and a floating lever connected with said valve and piston and arranged to close the valve at different points in the stroke of the piston according to the extent that the valve is opened, substantially as and for the purposes set forth.

2. The combination with the knees and set-shaft of a sawmill-carriage, of a main cylinder having a fluid-supply connection with its opposite ends, a piston fitted to work in said cylinder and having a connection for turning the set-shaft, a check-cylinder having a by-pass connecting its ends, a piston fitted to work in said cylinder and connected with the main piston, connected valves controlling the fluid-supply connection of the main cylinder and the by-pass of the check-cylinder, and a floating lever connected with one of said valves and pistons and arranged to close said valves at different points in the stroke of said pistons according to the extent of opening the valves, substantially as and for the purposes set forth.

3. The combination with the knees and set-shaft of a sawmill-

carriage, of a cylinder having fluid supply and exhaust connections with opposite ends thereof, a piston fitted to work in said cylinder and having a connection for turning the set-shaft, an oscillatory valve controlling said supply and exhaust connections, a lever for opening said valve, and a floating lever pivoted between its ends to an arm on the valve-stem, and having one arm connected with the opening-lever and the other with the piston-rod, substantially as and for the purposes set forth.



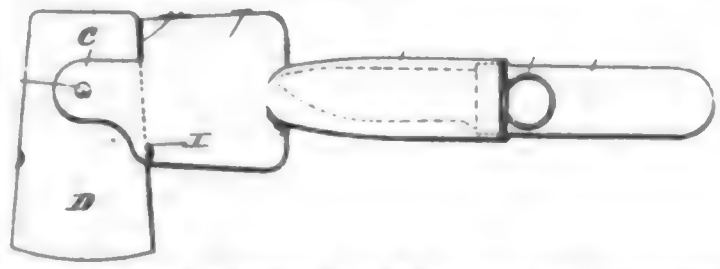
4. The combination with the knees and set-shaft of a sawmill-carriage, a wheel mounted on said shaft and an oscillatory gripping device for engaging and turning said wheel in one direction, of a cylinder mounted on the carriage and having fluid supply and exhaust connections, a piston fitted to work in said cylinder and connected with said oscillatory device, a valve controlling the fluid supply and exhaust connections of said cylinder, and a lever connection with said valve arranged to open and to automatically close the same according to the degree of opening, substantially as and for the purposes set forth.

5. The combination with the set-shaft of a sawmill-carriage, of a cylinder mounted upon said carriage and having fluid supply and exhaust connections, a valve controlling said connections, a piston fitted to work in said cylinder and to actuate said set-shaft, two bars arranged on opposite sides of and parallel with the piston-rod and formed with a series of transverse grooves, and a forked stop-block fitting opposite grooves in said bars, substantially as and for the purposes set forth.

6. In combination with the set-works of a sawmill-carriage comprising an oscillatory gripping device for turning the set-shaft and advancing the knees, a main cylinder and its piston connected with and arranged to oscillate said gripping device, and having fluid supply and exhaust connections, a check-cylinder arranged in line with the main cylinder and having a by-pass between its ends, a piston fitted in said check-cylinder and connected by its rod with the main piston, oscillatory valves controlling the fluid supply and exhaust connections of the main cylinder and the by-pass of the check-cylinder, a lever fixed between its ends to the main valve-stem and having one arm connected by a rod with a corresponding arm on the check-valve stem, a floating lever pivoted between its ends to the other arm of said valve-lever and having one arm connected by a rod with the piston-rod, and a hand-lever connected by a link with the other arm of the floating lever, substantially as and for the purposes set forth.

7. In combination with the knees and set-works of a sawmill-carriage, a fluid-cylinder mounted upon the carriage and having a fluid-supply connection; a piston fitted to work in said cylinder and arranged to turn the set-shaft; a valve controlling the fluid-supply connection of said cylinder; a lever connected with said valve and piston and arranged to close the valve at different points in the stroke of the piston according to the extent to which the valve is opened; and a lever for adjusting the opening of said valve, provided with means for locking it at any desired adjustment, substantially as set forth, whereby the controlling-lever may be set to any predetermined adjustment and the mechanism be thereafter caused to act automatically to move the piston to the predetermined extent and to close the valve when such movement is completed.

817,889. **FOLDING AX.** ANDREW E. VROM, Brainerd, Minn. Filed Aug. 30, 1904. Serial No. 223,764.



Claim.—1. In a folding ax, a single piece of sheet metal bent to form a tubular handle and a wide flattened sheath adjacent thereto, one edge and the end of said sheath being open, ears extending from the ends of said sheath, and an ax-head pivotally mounted between said ears, the butt thereof, when in an operative position adapted to rest against the closed edge of the sheath, the edge of the ax-head adapted to be folded into the sheath through the open edge thereof, substantially as shown and described.

2. In a folding ax, a single piece of sheet metal bent to form a tubular handle and a wide flattened sheath adjacent thereto, the end and one side of said sheath being open, ears extending from the end of said sheath, teats on the inner side of said sheath, and the ax-head pivotally secured between said ears, said ax-head, when in an operative position, resting against the closed edge of the sheath and said teats, and, when in a closed position, the edge of the blade folding into the sheath and being held therein, said sheath being capable of expansion to permit the head to pass the teats, aforesaid, in opening and closing it, substantially as shown and described.

817,890. **COLLAPSIBLE TUBE.** GILBERT M. WILLIAMS, Maysville, Ky., assignor to Allan D. Cole, Maysville, Ky. Filed Sept. 1, 1905. Serial No. 276,755.



Claim.—1. A collapsible tube having a nozzle the neck of which is reduced and provided with a discharge-orifice, a spreading-blade carried by the nozzle, and a removable pin seated in the orifice in the reduced neck and provided with a terminal finger-piece adapted to bear against the base of the spreading-blade.

2. A collapsible tube provided with a threaded extension, a detachable nozzle engaging the threads on said extension and provided with a discharge-orifice, a spreading-blade carried by the end of the nozzle, and a removable pin adapted to normally close said orifice, said pin being of less length than the nozzle and provided with a terminal finger-piece adapted to bear against the base of the spreading-blade.

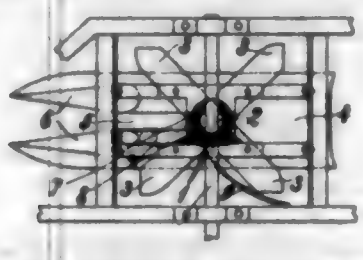
3. A collapsible tube provided with a nozzle having a discharge-orifice, a spreading-blade carried by the nozzle, and a removable pin seated in said orifice and having one end thereof bent laterally to form a finger-piece adapted to bear against the base of the spreading-blade.

4. A collapsible tube provided with a reduced nozzle having a discharge-orifice formed therein, a spreading-blade carried by the nozzle and disposed at an angle thereto, and a removable pin seated in said orifice and having one end thereof bent laterally to form a terminal loop adapted to bear against the base of the spreading-blade.

817,891. **HALM-PLUCKING MECHANISM FOR POTATO-DIGGING MACHINES.** MARCUS ALTSTOCK, Lemberg, Austria-Hungary. Filed Nov. 30, 1904. Serial No. 234,943.

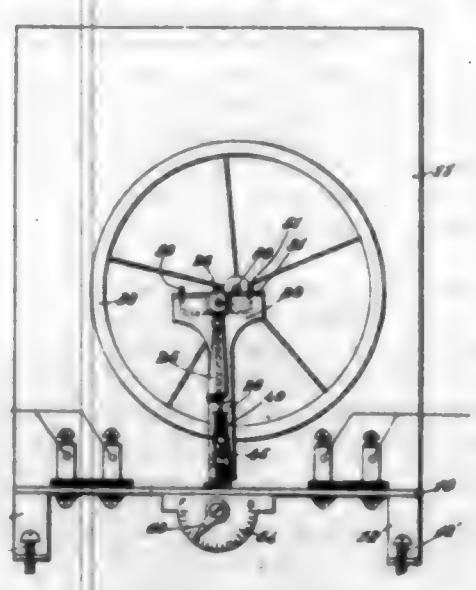
Claim.—1. In halm-plucking mechanism for potato-digging machines the combination of a plurality of plucking-arms mounted

on a vertical shaft, driven by bevel-wheels, from the main shaft of the potato-digging machine and horizontal pressing-rollers near above and below the arms substantially as described.



2. In combination with the plucking-arms and pressing-rollers a guard and feed plate arranged below the lower rollers provided with a slot extending to the middle the edges of the plate forming downwardly-bent flaps, and connecting with the upper roller and a scraping-strip leading to the outside substantially as described.

817,892. **ELECTRIC CLOCK.** GUY H. ANDREWS, Eastland, Cal. Filed Aug. 22, 1905. Serial No. 275,300.



Claim.—1. In timing mechanism, a pair of tiltably-mounted inclined tracks, a balance-wheel having a staff or spindle arranged to travel thereon, and means under the control of said staff or spindle for altering the position of the tracks.

2. In a timing device, a pair of tiltably-mounted tracks, a balance-wheel having a staff or spindle mounted on said tracks, and means operable at the completion of each movement of the staff for changing the position of the tracks and thereby reversing the direction of movement of the balance-wheel.

3. In a timing device, a pair of tiltable tracks movable alternately to oppositely-inclined positions, operating means for the tracks, a balance-wheel having a staff or spindle arranged to travel on the tracks, and means actuated by said staff or spindle for controlling the movement of said operating means.

4. In combination, a track, means for moving the same alternately to an oppositely-inclined position, a balance-wheel supported by the track and movable thereover by gravity, first in one direction and then in the opposite direction, and means controlled by the balance-wheel for altering the inclination of said track.

5. In combination, a pair of pivotally-mounted arms having tracks at their upper ends, means for moving said arms to adjust the tracks alternately to oppositely-inclined positions, a balance-wheel having a staff or spindle mounted on the tracks, an electromagnet connected to the arms and serving to move the tracks to one position, means acting in opposition to the electromagnets for moving the tracks to the opposite position, and a locking device and circuit-closer operable by the staff or spindle as the latter approaches the limit of its movement on said tracks.

6. The combination with a pair of pivotally-mounted track members, of a balance-wheel having a staff or spindle mounted thereon, an electromagnet for moving said track members to one inclined position, a spring for moving said track members to the opposite inclined position, a pivoted arm having fingers disposed in the path of the staff or spindle, a pawl connected to said arm and serving to prevent movement under the influence of the spring, and a circuit-closer also under the control of said arm and serving to close the circuit of the electromagnets.

7. In apparatus of the class described, the combination with a pair of pivotally-mounted arms, tracks carried thereby, a balance-wheel having a staff or spindle mounted on the tracks, a shaft carried by said arms, a pawl, and a circuit-closer carried by the shaft, a pair of arms secured to said shaft and having spaced fingers disposed in the path of movement of the staff or spindle, and locking means with which the pawl engages, a spring tending to move the arms and tilt the track in one direction when the pawl is released, an electromagnet for moving said arms and tilting the track in the opposite direction, and a circuit having terminals with which the shaft-carried contact engages.

8. In apparatus of the class described, a pivotally-mounted U-shaped frame, the upper ends of which are provided with tracks, pivot-pins engaging the upper portion of the frame and serving as the center of movement therefor, a balance-wheel having a staff or spindle mounted on the tracks, a shaft supported by the frame, a pair of arms carried by said shaft and having spaced fingers arranged to be engaged by said staff or spindle, a locking-pawl carried by the shaft, means with which the pawl engages to lock the frame in one position, an electromagnet for moving the frame in one direction, a spring for moving said frame in the opposite direction, and circuit-closing contacts, one of which is carried by the shaft and serving to energize the electromagnet once during each cycle of movement of the parts.

9. In apparatus of the class described, the combination with a pivotally-mounted U-shaped frame having tracks, a balance-wheel having a staff or spindle mounted on the tracks, a shaft extending through the lower portion of the frame, arms carried by said shaft and having fingers disposed in the path of movement of the staff or spindle, a locking-pawl carried by the shaft and movable to release position by the engagement of the staff with one set of fingers.

10. In apparatus of the class described, the combination with a pivotally-mounted track-carrying frame, of a pair of arms pivoted to said frame and movable both independently of and simultaneously with said frame, a balance-wheel having a staff or spindle mounted on the tracks and arranged to engage said arms at the limit of its movement in opposite directions, means for moving the frame, and mechanism connected to the arms for controlling the operation of the train-moving means.

11. In apparatus of the class described, the combination with a pivotally-mounted frame having a pair of spaced tracks, a balance-wheel having a staff or spindle mounted on said tracks, mechanism for tilting the frame alternately in opposite directions, a pair of arms pivotally connected to the frame and movable therewith, said arms having members disposed in the path of movement of the staff or spindle, and a tilting-mechanism-controlling means connected to said arms.

12. In mechanism of the class described, the combination with a pivotally-mounted frame having a pair of spaced tracks, of a balance-wheel having a staff or spindle mounted on said tracks, a rock-shaft journaled in the frame, arms secured to said rock-shaft and having terminal members disposed in the path of movement of said staff or spindle, a centering-spring carried by the frame and having members engaging the opposite sides of one of said arms, a pawl, and a circuit-closer secured to the shaft, a locking means with which said pawl engages to hold the frame in one position, an electromagnet for moving the frame in one direction, the circuit of said magnet being under the control of said circuit-closer, and a spring serving to move the frame in the opposite direction when the electromagnet is deenergized.

13. In a device of the class specified, a tiltable frame having tracks, a balance-wheel having a staff or spindle mounted on said tracks, mechanism for tilting the frame alternately in opposite directions, stops for limiting the movement of said frame, and means for adjusting the positions of said stops.

14. In mechanism of the class described, the combination with a tiltable track-carrying frame, of a balance-wheel having a staff or spindle mounted on the tracks, mechanism for tilting said frame alternately in opposite directions, a pair of pivoted arms forming stops for limiting the movement of said frame, and means for adjusting the distance between said arms and thereby regulating the period of operation of the balance-wheel.

15. In apparatus of the class described, the combination with a tiltable track-carrying frame, of mechanism for moving said frame alternately in opposite directions, a pair of pivotally-mounted arms forming stops for limiting movement of the frame, a yieldable means connecting said arms, and an adjustable spacing member movable between the arms and serving by adjusting the distance between them to regulate the period of operation of the balance-wheel.

16. In mechanism of the class described, the combination with a yieldable track-carrying frame, of a balance-wheel having a staff or spindle mounted on the tracks, mechanism for moving the frame alternately in opposite directions, a pair of pivotally-mounted arms

forming stops for limiting the movement of the frame, a spring connecting said arms, a regulating-screw having a conical portion extending between the arms and serving to adjust the distance between them and thereby regulating the period of operation of the balance-wheel.

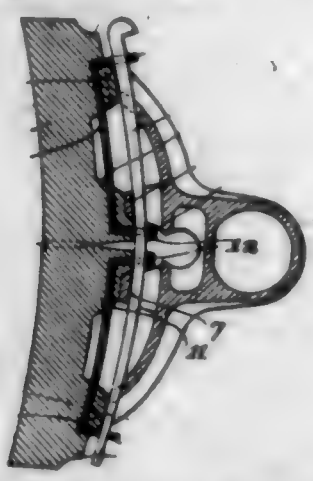
17. In a device of the class specified, the combination with a tiltable track-carrying frame, of an electromagnet, an armature-lever, a pin projecting from the armature-lever, a bar extending from the frame and having a perforated lug through which said pin extends, cushioning-springs surrounding the pin and bearing against the opposite faces of said lug, means for adjusting the stress of the springs, a pair of pivotally-mounted levers having recesses, against the walls of which said bar impinges to stop the movement of the frame, a block carried by one of said arms and having a locking-shoulder, a rock-shaft journaled in the frame, a pair of arms secured to the rock-shaft and having fingers in the path of movement of the staff or spindle, a pawl carried by the rock-shaft and arranged to engage against said shoulder, a spring connected to the bar and serving to move the frame in one direction when the pawl is released, the electromagnet serving to move the frame in the opposite direction, a circuit-closer carried by said pawl, and a magnet-energizing circuit having terminals disposed in the path of movement of said circuit-closer.

18. The combination with an electromagnetically-actuated time-indicating device, of a tiltable track-carrying frame, an electromagnet for operating the same in one direction, means for moving said frame in the opposite direction, circuits including the time-indicating device and the electromagnet, said circuits being under the control of said frame, and a balance-wheel having a staff or spindle mounted on the tracks.

19. In mechanism of the class described, a tiltable track-carrying member, a balance-wheel having a staff or spindle mounted on the tracks, a circuit-closer operable at predetermined intervals controlled by the balance-wheel, a frame, an electromagnet for actuating said frame in one direction, means for actuating said frame in the opposite direction, an electrically-actuated time-indicating mechanism, circuits in which the electromagnet and time-indicating mechanism are connected, and a plurality of circuit-terminals disposed in the path of movement of said circuit-closer.

20. In mechanism of the class described, a tiltable frame having a pair of spaced tracks, a balance-wheel having a staff provided with tapered end portions that rest on said tracks, and means for varying the distance between the tracks.

817,893. **BRAKE-SHOE.** CHARLES W. ARNDURST, Chicago, Ill. Filed Nov. 13, 1905. Serial No. 287,060.



Claim.—1. A brake-shoe provided with filling and spacing lugs adapted to separate the same from the head sufficiently to allow the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, and having embedded in said filling and spacing lugs means for attaching the same to the head, substantially as described.

2. A brake-shoe provided at its ends with filling and spacing lugs adapted to separate the same from the head sufficiently to allow the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, and having embedded in said filling and spacing lugs apertured attaching-lugs adapted for engagement with the key by which the shoe is separably connected to the head, substantially as described.

3. A brake-shoe provided at its ends and intermediate portions with filling and spacing lugs adapted to separate the same from the head, and having embedded in said filling and spacing lugs metal strips, the outer ends of which project from the end filling and spacing lugs in the form of apertured lugs adapted for engagement with the key by which the shoe is separably connected to the head, substantially as described.

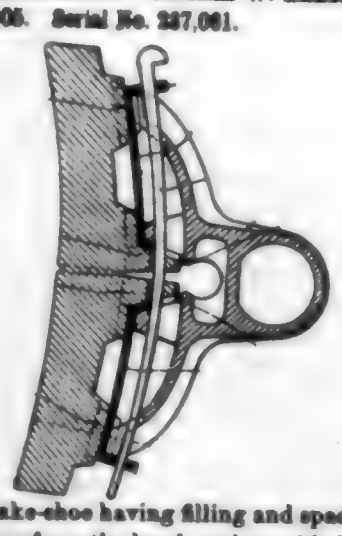
4. The combination with a head having apertured internal attaching-lugs, of a brake-shoe having on its back integral filling and spacing lugs adapted to separate the same from the head, metal strips embedded in the end filling and spacing lugs and projecting from the latter in the form of apertured attaching-lugs, and a key passing through the latter and the internal attaching-lugs of the head, substantially as described.

5. The combination with a head having apertured internal attaching-lugs, of a brake-shoe having on its back integral end and intermediate filling and spacing lugs adapted to separate the same from the head, metal strips embedded in the end and intermediate filling and spacing lugs on each longitudinal half of the shoe and projecting from the end lugs in the form of apertured attaching-lugs, and a key passing through the latter and the internal attaching-lugs of the head, substantially as described.

6. The combination with a head having apertured internal attaching-lugs, of a brake-shoe having on its back integral end and intermediate filling and spacing lugs adapted to separate the same from the head and intermediate integral attaching-lugs on said intermediate filling and spacing lugs, metal strips embedded in the end and intermediate filling and spacing lugs and the intermediate attaching-lugs on both longitudinal halves of the shoe, respectively, and projecting from the end filling and spacing lugs in the form of apertured attaching-lugs, and a key passing through the latter and the apertured attaching-lugs of the shoe and head, substantially as described.

7. A brake-shoe provided on the back thereof with filling and spacing means of sufficient thickness to allow the shoe-body to be entirely worn out without danger of wearing the head even under uneven wear of the shoe, and having embedded in said filling and spacing means attaching-strips separated from the shoe-body proper, substantially as described.

817,894. **BRAKE-SHOE.** CHARLES W. ARNDURST, Chicago, Ill. Filed Nov. 13, 1905. Serial No. 287,061.



Claim.—1. A brake-shoe having filling and spacing lugs adapted to separate the same from the head, and provided with attaching means for connection to the head separably and interlockingly engaging said filling and spacing lugs, substantially as described.

2. A brake-shoe having filling and spacing lugs adapted to separate the same from the head, and provided with attaching means for connection to the head having separable tongue-and-groove engagement with said filling and spacing lugs, substantially as described.

3. A brake-shoe having filling and spacing lugs on its back, said lugs having tongues formed on the sides thereof, in combination with attaching members slidably engaging said tongues and provided with apertured lugs for engagement with the key whereby the shoe is connected to the head, substantially as described.

4. A brake-shoe having end and intermediate filling and spacing lugs on its back, said lugs having tongues formed on the sides thereof, in combination with attaching members having lateral clenchers slidably engaging said tongues and provided at their outer ends with apertured lugs for engagement with the key whereby the shoe is connected to the head, substantially as described.

5. The combination with a head having apertured internal attaching-lugs, of a brake-shoe having on its back integral end and intermediate filling and spacing lugs, said lugs having tongues formed on the sides thereof, attaching-strips having lateral clenchers

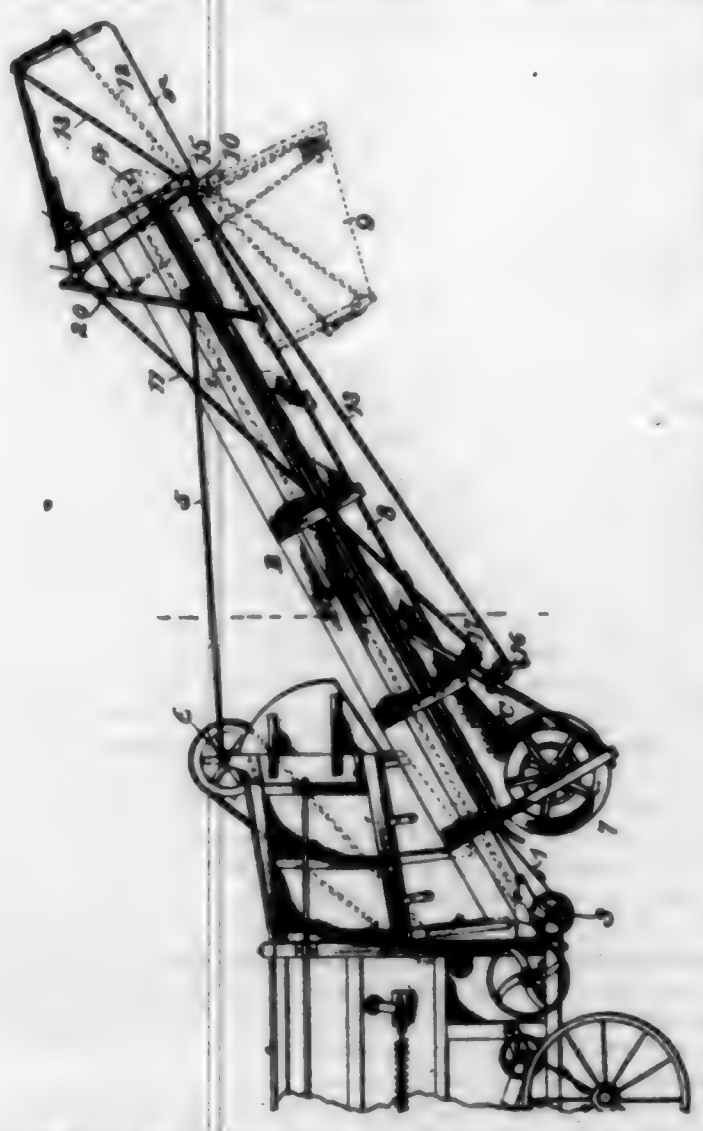
slidably engaging the said tongues and provided at their outer ends with apertured lugs, and a key passing through the latter and the internal attaching-lugs of the head, substantially as described.

6. The combination with a head having apertured internal attaching-lugs, said lugs having tongues formed on the sides thereof, of a brake-shoe having on its back integral end and intermediate filling and spacing lugs and intermediate apertured attaching-lugs, metal stripe having lateral clenchers slidably engaging said tongues and provided at their outer ends with apertured lugs, and a key passing through the latter and the integral attaching-lugs of the head and shoe, substantially as described.

7. A brake-shoe having on its back means for spacing the same from the head, in combination with a removable connecting means interlockingly engaging said spacing means and separated from the back of the shoe proper, substantially as described.

8. A brake-shoe having on its back means for spacing the same from the head, in combination with a slidable connection-piece engaging said spacing means and separated from the back of the shoe proper sufficiently to insure the wearing away of the entire body of the shoe even under uneven wear of the latter without danger of wearing the said connection-piece or the head, substantially as described.

817,895. STRAW-STACKER. JOHN B. BARTHOLOMEW, Peoria, Ill., assignor, by mesne assignments, to The Sattley Stacker Company, Indianapolis, Ind., a Corporation of Maine. Filed May 28, 1900. Serial No. 17,548.



Claim.—1. In a straw-stacking mechanism, the combination with the endless carrier, of the air-blast mechanism arranged to deliver a current of air backward against the straw as it drops from the carrier, the vertically-movable air and straw directing device connected with the stacker, and movable downward and inward to a position below the carrier, and manually-actuated power devices for moving said directing device upward, substantially as set forth.

2. In a straw-stacking mechanism, the combination, with the hinged vertically-adjustable endless carrier, of the air-blast mechanism adjustable with the carrier and arranged to deliver air against the straw as it is deposited by the carrier, the adjustable hood and the adjustable chute in the hood, sustantially as set forth.

3. In a straw-stacking mechanism, the combination, with the endless carrier, and the air-blast mechanism arranged to deliver air below and at the outer end of the carrier, of the vertically-adjustable guide-board or chute under the end of the carrier, and the hood or air-guide adapted to inclose the end of the carrier and of the air-duct the guide-board being adjustable relatively to the hood, substantially as set forth.

4. In a straw-stacking mechanism, the combination of the straw-carrier, the air-blast mechanism arranged to deliver air backward against the straw as it drops from the carrier, and a hood-like chute hinged to the frame of the carrier below the latter and adapted to surround the path of the air-current and the path of the straw as they leave the carrier, and having its longitudinal axis adjustable to lines inclined downward and outward from the longitudinal lines of the carrier, substantially as set forth.

5. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism adapted to deliver air backward against the straw as it drops from the carrier, a vertically-adjustable hood-like chute hinged at the rear upper end of the carrier below the mouth of the air-blast duct and adapted to surround the path of the air and the path of the straw as it leaves the carrier and to be folded downward and inward in an inactive position against the under side of the carrier, and power devices for positively moving the hood from one position to another in both of which its longitudinal axis is inclined downward and outward from the longitudinal lines of the carrier, substantially as set forth.

6. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism, an adjustable hood pivotally connected with the carrier, the pivoted connection being below the carrier and near its delivery end, the hood being arranged to occupy a position in line with the carrier, and means for holding the hood in an inactive position folded against the under side of the carrier out of the path of the straw falling from the carrier substantially as set forth.

7. In a straw-stacking mechanism, the combination of an endless carrier having a straw-carrying limb and a returning-limb, an air-blast mechanism and an adjustable hood arranged to be in line with the carrier and the air-blast mechanism, and provided with a pivot about which it is adjustable to bring the top of the hood below the path of the straw substantially as set forth.

8. In a straw-stacking mechanism, the combination, with an endless carrier, and an air-blast mechanism, of means for directing the straw as it leaves said carrier and receives the air-blast, and devices for contracting at will the vertical dimension of the delivery-opening formed by said directing means.

9. In a straw-stacking mechanism, the combination, with an endless carrier, and an air-blast mechanism, of means for directing the straw upward or downward as it leaves said carrier and receives the air-blast, and devices arranged to move the said straw-directing means in order to contract at will the delivery-opening formed by said directing means, said straw-directing means being removable at will out of the paths of the straw and air-blast.

10. In a straw-stacking mechanism, the combination of an endless carrier, a supporting-frame therefor, means for adjusting the height and inclination of said frame, an air-blast mechanism carried by said frame, guiding devices carried by said frame at its outer end, movable means for directing the straw upward or downward also carried by said frame, and an adjusting rope or ropes passing from said directing means, by said guiding devices, and to or near the inner end of the frame.

11. In a straw-stacking mechanism, the combination of the carrier-frame, the air-blast mechanism having its delivery-trunk below the carrier-frame, the endless straw-carrier mounted on the carrier-frame and arranged to have both its up-moving strand and its down-moving or returning strand arranged to travel on lines above the air-trunk, and the vertically-adjustable hood-like chute arranged to surround the path of the straw as it leaves the carrier and adjustable to have its longitudinal axis while the hood is in action move about a horizontal axis below the outer end of the air-trunk from one inclined line to another inclined line relative to the longitudinal lines of the carrier and relative to the line of travel of the air-blast as it escapes from the air-trunk, substantially as set forth.

12. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism having a trunk below the carrier with its upper end fixed relatively to the carrier whereby the air-blast always escapes on the same lines relatively to the carrier and impinges on the straw as its drops therefrom, and an air and straw directing hood having a top wall adjustable to different positions across the fixed lines of the air travel and having a straw-supporting board adapted to be inclined downward and outward from the lines of the carrier, substantially as set forth.

13. In a straw-stacking mechanism, the combination of a straw-carrier, an air-blast mechanism having a delivery-trunk for directing

the air against the straw as it is delivered by the carrier, a hood surrounding the end of the carrier and said air-duct, means for adjusting the position of the hood and means independent of the hood for changing the direction of the air-blast upward or downward relative to the straw being delivered, substantially as set forth.

14. In a straw-stacking mechanism, the combination of an endless straw-carrier, an air-blast mechanism having a delivery-trunk with its discharge end adjacent to the delivery end of the carrier, an adjustable hood surrounding the delivery end of the carrier and the air-trunk, means for adjusting the angular position of the hood relative to the carrier, a deflecting-board 12 arranged within the hood and movable independently thereof, and means for adjusting the deflecting-board, substantially as set forth.

15. In a straw-stacking mechanism, the combination of a carrier, an air-blast mechanism, an air and straw receiving hood, and means within the hood for directing the air and straw relative to the hood.

16. In a straw-stacking mechanism, the combination of a carrier, an air-blast mechanism, the receiving-hood and means supplemental to the hood for changing the path of the straw in vertical planes after leaving the carrier.

17. In a straw-stacking mechanism, the combination of the carrier, an air-blast mechanism, and a straw catching and supporting board or plate which while in action is held at all times across the vertical lines on which the straw drops from the carrier and which while so held is adjustable vertically for directing the air-blast and the straw at different angles relative to the path of the straw on the carrier, substantially as set forth.

18. In a straw-stacking mechanism, the combination with the air-blast mechanism having an upwardly-inclined air-trunk, the endless carrier arranged to have all of its traveling parts move above the air-trunk, and the air and straw receiving hood extending over and under the path of the straw and the air, and movable about a horizontal axis beneath the outer end of said air-trunk, said parts being arranged substantially as set forth whereby the air is delivered from the trunk without impedance from the carrier and the straw and air can be directed downward, outward and upward at will, as described.

19. In a straw-stacking mechanism, the combination of an endless carrier, an air-blast mechanism delivering air against the straw as it falls from the carrier, and a tubular straw and air receiving and directing device which surrounds the upper end of the carrier and is arranged to move about a horizontal axis below the outer end of said air-blast mechanism and is adapted to be adjusted to have its longitudinal axis inclined relatively downward in relation to the longitudinal lines of the carrier, substantially as set forth.

20. In a straw-stacking mechanism, the combination of a carrier, an air-blast mechanism, an air-deflector adjustable relative to the carrier, and an air and straw confining means adjustable relative to the carrier, and relative to the deflector.

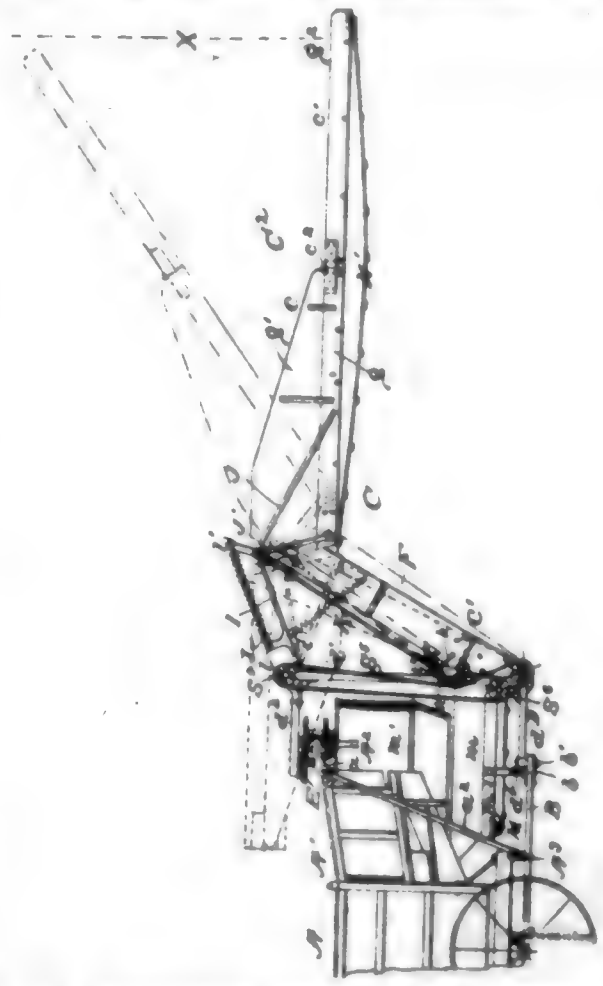
21. In a straw-stacker, the combination of an inner stacker-section, a support therefor, an outer stacker-section hinged to the outer end of the inner section and vertically swingable relative thereto on a transverse axis, and arranged to fold downward toward the rear of the inner section, an upward-extending frame carried by the outer section, sheaves carried respectively by the said frame and the outer section, and a draft device having one end connected to the frame and passing thence around the sheave on the outer section, past the sheave on the frame, and to a winding device on the inner section, substantially as set forth.

817,896. STRAW-STACKER. JOHN B. BARTHOLOMEW, Peoria, Ill., assignor, by mesne assignments, to The Sattley Stacker Company, Indianapolis, Ind., a Corporation of Maine. Filed May 26, 1900. Renewed Nov. 11, 1905. Serial No. 266,910.

Claim.—1. In a straw-stacker, the combination of the supporting-frame, the inner vertically-movable section, the outer section hinged to the inner section, and mechanism connected with said two sections acting to force the inner section outward as the outer section is raised, substantially as set forth.

2. In a straw-stacker, the combination of the supporting-frame, the inner vertically-movable section, the outer vertically-movable section adapted to be folded relative to the inner section, and means for moving the outer ends of the sections simultaneously in opposite directions through a part of their paths, and moving the said ends in the same direction through another part of their paths, substantially as set forth.

3. In a straw-stacker, the combination with a thresher having a straw-outlet of the supporting-frame, the inner section, the carrier thereon, the outer section, the power devices situated above the lower end of the said carrier for horizontally rotating the stacker, and power-transmitting devices extending downward from the power mechanism to the lower end of the carrier, the straw-carrying means extending from below said outlet, substantially as set forth.



4. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section, and an inner or lower vertically-swinging section hinged to the upper section, and an intermediate stacker-carrying frame between the stacker-frame and the main frame rotatable horizontally around a vertical axis and having all of its parts fixed in relation to its vertical pivot members or bearings and connected by a hinge at its outer portion to the inner or lower section of the stacker, substantially as set forth.

5. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section, and an inner or lower vertically-swinging section hinged to the upper section, and an intermediate frame between the stacker-frame and the main frame and connected to the main frame by a relatively low hinge and a relatively high hinge, and hinged to each of the two stacker-sections, substantially as set forth.

6. In a straw-stacking machine, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section, and an inner or lower vertically-swinging section, and a horizontally-swinging intermediate frame interposed between the stacker-frame and the main frame and connected to the main frame by two separated sets of hinging devices and connected to the sections of the stacker by two independent sets of hinging devices, substantially as set forth.

7. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section and an inner or lower vertically-swinging section hinged to the upper section, an intermediate frame having vertically-arranged bars and backwardly-extending bars secured to the vertical bars at the top, and backwardly-extending bars secured to the vertical bars at the bottom, the top bars being hinged to the upper part of the main frame and the bottom bars being independently hinged, hinge devices connecting the intermediate frame to the inner lower stacker-section and a supplemental bar or frame hinged to the intermediate frame and to the upper carrier-section, substantially as set forth.

8. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section, and an inner or lower vertically-swinging section hinged to the upper section, a horizontal hinge inter-

posed between the lower section and the main frame, a vertically-swinging bar hinged to the upper section, and a horizontal hinge interposed between said bar and the upper part of the main frame, said stacker-sections being horizontally vibratable, substantially as set forth.

9. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having two vertically-swinging sections hinged together and arranged to vibrate horizontally, a bar or frame hinged to the upper stacker-section, a horizontal hinge between the said bar and the main frame, and power devices for moving the said bar in vertical planes, substantially as set forth.

10. In a straw-stacking mechanism, the combination with the main supporting-frame, of the stacker-frame formed in two vertically-swinging sections hinged together, and arranged to swing horizontally around a vertical axis, a hinged bar interposed between the upper stacker-section and the main frame, and means connected to said upper stacker-section for simultaneously swinging the sections in vertical planes, said hinged bar being fixed horizontally relative to said stacker-sections, substantially as set forth.

11. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame, having two vertically-swinging sections hinged together, and means for swinging the said sections simultaneously to a common line and beyond said common line, in either direction, substantially as set forth.

12. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame, having two vertically-swinging horizontally-vibratable sections hinged together, a horizontal hinge for the lower inner section, means for swinging the said lower section downward around said hinge, and simultaneously swinging the upper section upward around the hinge that joins the two sections, to bring the said sections first to a common line and then to points beyond said line, substantially as set forth.

13. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two sections hinged together to swing freely to a common line and to points below said line and to points above said line, both of said sections being arranged to swing vertically, substantially as set forth.

14. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two sections hinged together to swing freely to a common line and to points below said line and to points above said line, a sustaining device connected to the upper section and interposed between it and the main frame, and adapted to swing from a line above the hinge which unites the two stacker-sections to a line below said hinge, substantially as set forth.

15. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating sections, horizontally hinged together to swing freely to a common line and to points below said line and to points above said line, said sections having independent carrier-belts with their adjacent ends arranged to swing relatively to each other, substantially as set forth.

16. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating sections hinged together to permit them to be brought to a common line and to points below said line and to points above said line, and two independent carriers, one on each section, arranged to have the inner end of the outer belt lie under the upper end of the inner belt when the sections are in operative position, and to lie above the same when they are in folded position, substantially as set forth.

17. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating sections, the outer upper section being connected to the inner lower section by hinging devices having two horizontal axes arranged to have said upper section swing first around one of said axes and then around the other, substantially as set forth.

18. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating sections, an inclined inner or lower section, and an upper or outer section, said sections being joined together by a hinging device which is bodily movable relatively to one of said sections, whereby the axis of rock is varied, substantially as set forth.

19. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having an inclined inner or lower section, and an upper or outer section, and a link interposed between the said sections and hinged to them independently, substantially as set forth.

20. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having an inclined inner or lower section and an upper or outer section, a link hinged to each of said sections, and means for limiting the movements of said link relative to one of the sections, substantially as set forth.

21. In a straw-stacking mechanism, the combination with a main supporting-frame, a stacker-frame having an inclined inner or lower section and an upper or outer section, a link hinged to said sections, and a stop on the upper outer section adapted to impinge upon the said link and cause it to move relatively to the inner section, substantially as set forth.

22. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having an inner lower section and an upper or outer section, an elevator-belt on the lower section, an independent carrier-belt on the upper section, and means for hinging the stacker-sections together, substantially as set forth, to permit the upper carrier-belt to swing vertically on one axis to bring its inner end below the upper end of the inner belt, and then upon a second axis to move the inner end of the upper belt bodily relatively to the upper end of the inner belt.

23. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having an outer vertically-swinging section and an inner lower section, the bar I connecting the outer section and supporting-frame, a carrier-belt for the upper outer section and a separate independent belt for the inner section having its upper end above the inner end of the upper belt, and a horizontal hinge supporting the inner section whereby said inner section can be lowered to maintain the outer end of the upper section in or near a constant vertical line while the adjacent ends of the belt maintain the described relation, substantially as set forth.

24. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating, vertically-swinging, stacker-sections, hinged together, a hinge for the lower end of the inner stacker-section, a vertically-swinging bar or frame hinged to the upper stacker-section and supported by a hinge at its inner end, and a horizontally-vibrating frame hinged to the main frame, and carrying the hinge of the said bar and the hinge at the lower end of the inner stacker-section, substantially as set forth.

25. In a straw-stacking mechanism, the combination with a main frame, of the stacker-frame having an outer or upper vertically-swinging section, an inner or lower section, hinged to the outer or upper section, a relatively high vertical pivot on the main frame, a second relatively low pivot on the main frame, and a supplemental frame connected to the main frame at the said pivots, and carrying at its outer portion said stacker-sections, said supplemental frame being rigid throughout its parts from top to bottom, substantially as set forth.

26. In a straw-stacking mechanism, the combination of the main frame, the upper or outer vertically-swinging stacker-section, a frame interposed between said stacker-section and the main frame, a relatively high vertical pivot for said interposed frame, a relatively low vertical pivot for said interposed frame, the parts of said frame between the pivots being rigidly secured together, a gearing mechanism mounted at the top of the main frame, means connecting the gearing with the interposed frame for oscillating it, a belt on the said upper carrier-section, an inclined belt for elevating the straw to the upper section, said inclined belt being supported by the interposed horizontally-swinging frame, and power-transmitting devices from said elevated gearing for actuating the belts, substantially as set forth.

27. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, means for connecting said sections with said frame, said outer section being adapted to fold relative to said inner section, and stacket-actuating mechanism at the top of said supporting-frame.

28. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame, and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and moyable in vertical planes, means for connecting said frame with the inner section through the medium of said outer section, and stacker-actuating mechanism at the top of said supporting-frame.

29. In a straw-stacking mechanism, the combination with a thresher having a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, connecting

means between said frame and said outer section and attached to the latter at a point or points which is or are above the pivotal connection of said sections when the outer section is in its horizontal position, and stacker-actuating mechanism at the top of said supporting-frame, said thresher having a straw-outlet between said stacker-actuating mechanism and the lower portion of the stacker.

30. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer section pivotally connected with said inner section and movable in vertical planes, connecting means between said stacker-sections and said frame tending constantly to draw said parts together, and stacker-actuating mechanism at the top of said supporting-frame.

31. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, a tension device connecting said frame with said inner section through the medium of said outer section and tending to balance said sections, and stacker-actuating mechanism at the top of said supporting-frame.

32. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame, and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and similarly movable, links connecting the said outer section with said frame, a tension device between said frame and said sections tending to draw the same together, and stacker-actuating mechanism at the top of said supporting-frame.

33. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and means for connecting said sections with said frame, said outer section being adapted to fold relative to said inner section.

34. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame, and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and a bar or frame piece for connecting said frame with the inner section through the medium of said outer section.

35. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable up and down, an outer stacker-section pivotally connected with said inner section and similarly movable, a link or links connecting the said outer section with said frame at points other than those of its said pivotal connection, and means for moving said sections in vertical planes.

36. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and a connecting-bar between said frame and said outer section and attached to the latter at a point or points which is or are above the pivotal connection of said sections when the outer section is in its horizontal position.

37. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable, in vertical planes, links connecting the said outer section with said frame at points other than those of the said pivotal connection of the outer section, and vertical pivots carrying said supporting-frame.

38. In a straw-stacking mechanism, the combination, of a rigid supporting-frame having at its upper and lower ends vertical pivoting or hinging devices, whereby said frame may be pivotally attached at widely-separated points to the upper and lower parts of a separator-frame, an inner stacker-section hinged to said supporting-frame, an outer stacker-section hinged to said inner section, links connecting said supporting-frame with the outer section independently of the hinge of the latter, and tension means connecting the stacker with the supporting-frame.

39. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer section pivotally connected with said inner section and movable in vertical planes, and connecting means between said stacker-sections and said frame tending constantly to draw said parts together.

40. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and a tension device connecting said frame with said inner section through the medium of said outer section and tending to balance said sections.

41. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame, and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and similarly movable, links connecting the said outer section with said frame, and a tension device between said frame and said sections tending to draw the same together.

42. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and a tension device connecting said frame and outer section.

43. In a straw-stacking mechanism, the combination, with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with said inner section and movable in vertical planes, and an automatic tension device connecting said frame and outer section, the tension of said device being decreased when said outer section is elevated and substantially vertical and being increased when said section is lowered from such vertical position.

44. In a straw-stacking mechanism, the combination, with a main thresher-frame, of an inner stacker-section, a horizontal hinge through the medium of which said section is supported from said main frame, an outer stacker-section horizontally hinged to said inner section, a hinge or link connection between the outer section and main frame independent of said lower section, and a draft device K connected with said outer section.

45. In a straw-stacking mechanism, the combination, with a main thresher-frame, of an inner stacker-section, a horizontal hinge through the medium of which said section is supported from said main frame, an outer stacker-section horizontally hinged to said inner section, a hinge or link connection between the outer section and main frame independent of said lower section, a tension device L acting on said outer section, and a draft device K connected with said outer section.

46. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibratable frame having inwardly-extending bottom bars d pivoted to said main frame, upwardly-extending bars d' and inwardly-extending top bars d^3 pivoted to said main frame, an inner stacker-section C′ hinged to said vibratable frame, an outer stacker-section C^3 hinged to said inner section, connecting means I between the outer section and vibratable frame, straw-carrying devices on the stacker-sections, and mechanism for actuating the vibratable frame and said carrying devices.

47. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibratable frame having inwardly-extending top and bottom bars vertically pivoted to said main frame, and connecting frame or bars d', an inner stacker-section C′ hinged to said vibratable frame, an outer stacker-section C^3 hinged to said inner section, connecting means I between the outer section and vibratable frame, straw-carrying devices on the stacker-sections, and mechanism at the top of the thresher-frame for actuating the vibratable frame and said carrying devices.

48. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibratable frame, having inwardly-extending top and bottom members vertically pivoted to said main frame, and an upwardly-extending frame member, an inner stacker-section C′ hinged to said vibratable frame, an outer stacker-section C^3 hinged to said inner section, connecting means I between the outer section and vibratable frame, a tension device L acting between said outer section and vibratable frame, straw-carrying devices on the stacker-sections, and mechanism for actuating the vibratable frame and said carrying devices.

49. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibratable frame having inwardly-extending top and bottom members vertically pivoted to said

main frame, and an upwardly-extending connecting-frame member, an inner stacker-section C' hinged to said vibratable frame, an outer stacker-section C² hinged to said inner section by a link mechanism H, a stop device H' on the outer section for engaging said link mechanism, means for moving the stacker-sections in vertical planes, connecting means between the outer section and vibratable frame, straw-carrying devices on the stacker-sections and mechanism for actuating the vibratable frame and said carrying devices.

50. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibratable frame having inwardly-extending top and bottom members vertically pivoted to said main frame, and an upwardly-extending connecting-frame member, an inner stacker-section C' hinged to said vibratable frame, an outer stacker-section C² hinged to said inner section, connecting means between the outer section and vibratable frame, straw-carrying devices on the stacker-sections, a draft device K connected with said outer section, and mechanism for actuating the vibratable frame and said carrying devices.

51. In a straw-stacker, the combination of the supporting-frame, the inner section, the carrier thereon, the outer section, the power devices situated at the top of the supporting-frame for horizontally rotating the stacker, and mechanism operatively connecting said power devices with the lower end of the carrier, substantially as set forth.

52. In a straw-stacker, the combination with the inner part of the elevator having the lower part and the upwardly-rising part connected to oscillate horizontally together, and the swinging section pivoted to the inner section on two axes eccentric to each other, of the adjusting and lifting mechanism for the swinging section, and the means for actuating the same, substantially as described.

53. In a straw-stacker, the combination, with a suitable support, of a swinging elevator or elevator-section hinged on said support, on two axial lines one above the other, and means for causing said elevator to swing upward first on the lower axis and then on the upper axis.

54. In a straw-stacker, the combination of an inner upwardly-extending elevator-section having an elevator or carrier, an outer stacker-section hinged on the first section on two axial lines one above the other and having a carrier, and means for causing the outer section to swing upward on the lower axis with the inner end of the outer carrier below the upper end of the inner carrier, and to swing backward on the upper axis to raise the outer carrier clear of the inner carrier.

55. In a straw-stacker, the combination of an inner upwardly-extending elevator-section having an elevator or carrier, an outer stacker-section hinged on the first section on two axial lines one above the other and having a carrier, links H connecting said sections, and means whereby the outer section after swinging upward engages said links to turn with the links on their upper hinge-points.

56. In an attached stacker, the combination, with a thresher, of an initial straw-receiving stacker-section pivoted to swing beneath the discharge end of the thresher, an intermediate stacker-section pivoted to the initial section on an axis at an angle to the axis of the first section, a third stacker-section pivoted to the outer end of the intermediate section and capable of swinging below the line thereof, and means for individually swinging the several sections on their respective pivots.

57. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two sections hinged together to swing freely to a common line and to positions below said line and to a vertical position above said line, the inner of said sections being supported by a horizontal pivot, sustaining devices interposed between the stacker-frame and the supporting-frame, the connection with the stacker-frame be ing close to the line where the two sections are hinged together, and means for vertically adjusting the outer section of the stacker relative to the inner section to the several positions stated.

58. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with the said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with the said inner section and arranged to be freely moved to a position in line with the inner section and to positions above said line and to positions below said line, and means for adjusting the stacker as a whole arranged to connect the said frame with one of the stacker-sections through the medium of the other section.

59. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with the said frame and movable inward and outward at its upper end, an outer stacker-section pivotally connected with the said inner section and arranged to be freely moved to a position in line with the inner section and to positions above said line and to positions below said line, means for adjusting the stacker as a whole arranged to connect the said frame with one of the stacker-sections through the medium of the other section, and means for adjusting the outer section relative to the inner section.

60. In a straw-stacking mechanism, the combination with a supporting-frame, of an inner stacker-section pivotally connected with said frame and movable up and down, an outer stacker-section pivotally connected with the inner section and arranged to be freely moved to a position in line with the inner section and to positions above said line and to positions below said line, means for adjusting the stacker as a whole arranged to connect the stacker with the supporting-frame at points other than those of its pivotal connection therewith, and means for adjusting and for folding the outer section relative to the inner stacker-section.

61. In a straw-stacking mechanism, the combination with a thresher-frame, of a horizontal vibratable frame having widely-separated top and bottom vertical pivots between which the thresher discharges, an inner stacker-section connected to the outer portion of the vibratable frame by a horizontal hinge, an outer stacker-section connected to the inner section by a horizontal hinge, connecting means arranged between the stacker and the said vibratable frame for supporting the stacker as a whole in an inclined rearward-extending position, a draft device for adjusting the outer section relative to the inner one, straw-carrying devices in the stacker-sections, and means for actuating the vibratable frame and the said straw-carrying devices.

62. In a straw-stacker, the combination of a supporting-frame arranged to swing horizontally about a vertical axis, an inner stacker-section pivotally connected to the said supporting-frame by a horizontal axis, an outer stacker-section pivotally connected with the outer end of the inner section by a horizontal axis, means extending between the said supporting-frame and the stacker-sections arranged to support the stacker as a whole in different inclined positions relative to the supporting-frame, and means for adjusting the outer stacker-section relative to the inner section.

63. In a straw-stacker, the combination with a suitable support, of a folding frame comprising an inner section pivoted to the support, and an outer section pivoted to the outer end of the inner section, rigid bars or links constituting pivotal connections between the outer section and the support, the connections between the bars or links and the outer section being at a distance from the pivotal connection of such section with the inner section, whereby the weight of the inner section assists in moving the outer section, and means for moving the outer section on its pivot relative to the inner section, substantially as set forth.

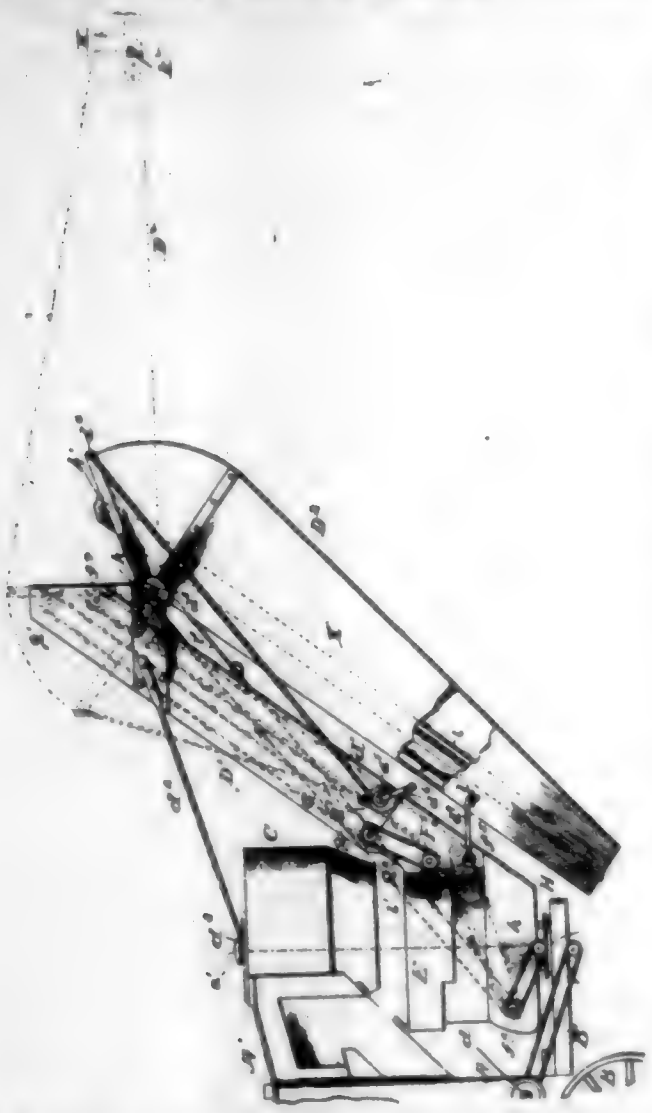
64. In a straw-stacker, the combination with a support, of an inner stacker-section pivotally connected with the support, a second, outer stacker-section pivotally connected with the first-named section, braces or strengthening-pieces secured to the outer stacker-section near its inner end and extending upward above the pivotal connection thereof with the inner section, swinging rods or links arranged to engage with the upward-extending portions of the said brace or strengthening-pieces and connected also with the said support, and means for moving the outer section on its pivot relative to the inner section, substantially as set forth.

817,897. **STRAW-STACKER.** JOHN B. BARTHOLOMEW, Peoria, Ill., assignor, by mesne assignments, to The Sattley Stacker Company, Indianapolis, Ind., a Corporation of Maine. Filed May 29, 1900. Renewed Nov. 11, 1905. Serial No. 236,911.

Claim.—1. In a straw-stacker, the combination of an inner stacker-section, a support for the same, an outer stacker-section vertically swingable on the inner section on a transverse axis and adapted to fold downward toward the rear of the inner section, and a draft device leading from the outer section to the inner section and connecting the said sections and arranged to pass across said axis of the outer section from the front to the rear of said axis as the outer section turns downward and forward, substantially as set forth.

2. In a straw-stacker, the combination of an inner stacker-section, a support for the same, an outer stacker-section vertically swingable on the inner section on a transverse axis and adapted to fold downward at the rear of the inner section, and a draft device leading from the outer section to the inner section independently of said support, connecting the said sections and arranged to pass across said axis of the outer section from the front to the rear of said

axis as the outer section turns downward and forward toward the rear of the inner section, substantially as set forth.



3. In a straw-stacker, the combination of an inner stacker-section, a support for the same, an outer stacker-section vertically swingable on the upper part of the inner section on a transverse axis and adapted to fold downward at the rear of the inner section, and a draft device leading from the upper forward part of the outer section to the lower part of the inner section and directly connecting said sections, and arranged to pass across said axis of the outer section from the front to the rear of said axis as the outer section turns downward and forward, substantially as set forth.

4. In a straw-stacker, the combination of an inner stacker-section, a support for the same, an outer stacker-section vertically swingable on the inner section on a transverse axis and adapted to fold downward toward the rear of the inner section, and a draft device leading from the outer section directly to the inner section and arranged to pass across said axis of the outer section from the front to the rear of said axis as the outer section turns downward and forward, said inner section being swingable on its said support in horizontal planes and being rigidly held in vertical planes, substantially as set forth.

5. In a straw-stacker, the combination of an inner stacker-section, a support for the same, an outer stacker-section swingable vertically on the inner section on a transverse axis and adapted to fold downward toward the rear of the inner section, and a draft device leading from the outer section to the inner section and arranged to pass across from one side to the other of said axis of the outer section as the latter is swung, said outer section being formed in two parts hinged together, substantially as set forth.

6. In a straw-stacking mechanism, the combination of an inner stacker-section, means for supporting the same and for holding it from moving verticaly while the outer section is being adjusted, an outer stacker-section extending from the upper end of said inner section and adapted to fold down at the rear side of the same, a hinge connecting said sections, and a draft device connecting the inner part of the outer section with a relatively fixed part, adapted to act at the front or at the rear of said hinge to operate the outer section and extending through the axis of said hinge when the outer section is suspended substantially vertically in a downward-hanging position.

7. In a straw-stacking mechanism, the combination, with a thresher-frame, of an inner horizontally-vibratable stacker-section, a vertical pivot for the same below the straw-delivery means or opening of the thresher and an upper vertical pivot for the same above said means or opening, an outer stacker-section hinged on the said inner section by a horizontal pivot or hinge and adapted to fold downward at the rear side of said inner section, and a draft device connecting the outer section with the inner section, the line of said draft device being to one side of the hinge-joint of said sections when the outer section is elevated and to the other side of said joint when it is folded downward.

8. In a straw-stacking mechanism, the combination, with a main thresher-frame, of a horizontally-vibrating frame mounted on said main frame, a straw-carrying device on the vibrating frame, an outer stacker-section hinged on said vibrating frame by a horizontal hinge or pivot, adapted to fold downward at the rear side of the same, and having straw-carrying means, and being formed of two parts, the outer of which is foldable on the inner part, and a draft device connecting said outer stacker-section with the vibrating frame, whereby the said section may be adjusted in vertical planes.

9. In a straw-stacking mechanism, the combination of an inner stacker-section, an outer stacker-section, a hinge uniting the sections, about which the outer section turns, and a draft device connected at one end with a relatively stationary part of the apparatus and at its other end with the said outer section, the point of connection of the draft device with the outer setion being on a side of the said pivot diametrically opposite that of the connection with the said stationary part, and being arranged to carry the draft device across the pivot as the outer section moves from a working position to the folding position and vice versa, whereby the draft device is arranged to both fold the outer section and to adjust it in different working positions by a draft or pulling action, substantially as set forth.

10. In a straw-stacking mechanism, the combination of an inner stacker-section, which is held rigid from movement in vertical planes, an outer stacker-section connected with the inner section to swing in vertical planes thereon and to fold down against the rear part of the inner section, and an operating connection extending from the inner section to the outer section for moving the latter, said operating connection being arranged to cross the line of said hinge as the outer section swings in vertical planes, substantially as set forth.

11. In a straw-stacker, the combination with a supporting-frame, of an inner, upwardly-inclined, backwardly-extending stacker-section, straw-carrying means arranged in the inner section of the carrier and comprising underacting and overacting endless belts arranged to discharge the straw at the upper end of the stacker-section, an outer section connected to the upper end of the inner section by a horizontal hinge and arranged to fold downward and toward the rear of the inner section, and provided with straw-carrying means that take the straw from the discharge end of the inner section, and means for adjusting in vertical planes the outer section relative to the inner section and for folding it against the under rear side thereof, substantially as set forth.

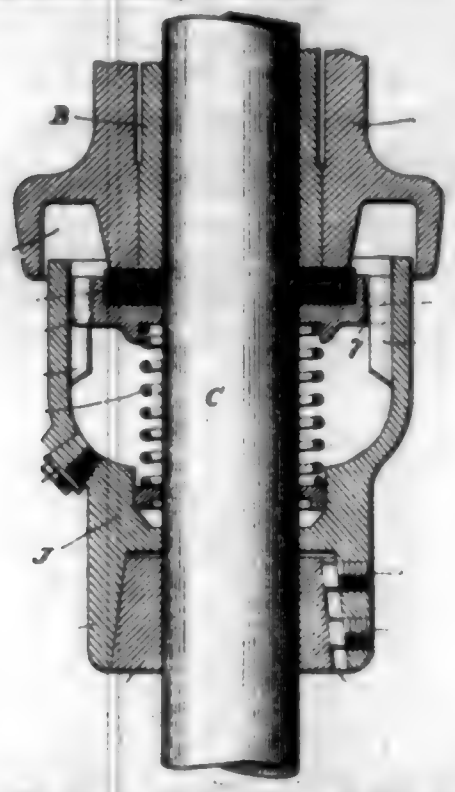
12. In a straw-stacker, the combination with a thresher provided with rearward-extending supports for the stacker arranged respectively above and below the thresher discharge-opening, of an inner stacker-section connected respectively with the said supports of the thresher by vertical pivots or hinges, straw-carrying means comprising a section or part arranged below the discharge-opening of the thresher and an upwardly, rearwardly extending section or part comprising underacting and overacting belts arranged to discharge at the outer upper end of the inner stacker-section, an outer stacker-section connected with the inner section near its upper end by a horizontal hinge and arranged to fold downward and toward the rear of the inner section, and provided with straw-carrying means that take the straw from the discharge end of the upper section, and means for adjusting the outer stacker-section relative to the inner section and for folding it against the under rear side thereof, substantially as set forth.

817,898. **BEARING FOR GRINDING-MILLS.** MORRIS BENJAMIN, Atlanta, Ga. Filed Oct. 21, 1905. Serial No. 283,801.

Claim.—1. The combination in a shaft-bearing and with a shaft of a box, a sleeve receiving the shaft and supported within the box, the box and sleeve having annular concentric flush faces, an annular packing, and means for pressing the same into contact with the said faces and with the face of the shaft, substantially as set forth.

2. The combination in a shaft-bearing and with a shaft of a box, a sleeve receiving the shaft and supported within the box, the box and sleeve having annular concentric flush faces, an annular packing,

means for pressing the same into contact with the said faces and with the face of the shaft, and means for insuring the rotation of the packing with the shaft, substantially as set forth.



3. The combination in a shaft-bearing and with a shaft of a box, a sleeve receiving the shaft and supported within the box, the box and sleeve having annular concentric flush faces, an annular packing, a socketed disk carrying the packing, and means connecting the disk to turn with the shaft while permitting the disk to slide independently of the shaft, substantially as set forth.

4. The combination in a shaft-bearing and with a shaft of a box, a sleeve receiving the shaft and supported within the box, the box and sleeve having annular concentric flush faces, an annular packing, a socketed disk carrying the packing and connected to turn with the shaft, and a spring bearing against the disk and carrying the latter and the packing toward the box and sleeve, substantially as set forth.

5. The combination with the shaft, box, sleeve, and packing bearing against the ends of the box and sleeve, of the disk supporting the packing, a cup supported below the disk to turn with the shaft, and a spring interposed between the cup and disk, substantially as set forth.

6. The combination with the shaft, box, sleeve, and packing bearing against the ends of the box and sleeve, of the disk supporting the packing, a cup supported below the disk to turn with the shaft, and a spring interposed between the cup and disk, the cup provided with an outlet and detachable plug, substantially as set forth.

7. The combination with the shaft, box, sleeve, and packing bearing against the ends of the box and sleeve, of the disk supporting the packing, a cup supported below the disk to turn with the shaft, a spring interposed between the cup and disk, there being bearings on the cup and disk arranged to carry the disk rotatively with the cup while permitting the sliding of the disk, substantially as set forth.

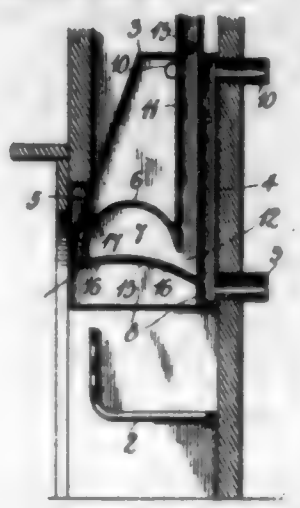
8. The combination with the shaft, box, sleeve, and packing bearing against the ends of the box and sleeve, of the disk supporting the packing, a cup supported below the disk to turn with the shaft, and a spring interposed between the cup and disk, the box having an annular recess receiving the edge of the cup, substantially as set forth.

9. The combination with the shaft, box, sleeve, and packing bearing against the ends of the box and sleeve, of the disk supporting the packing, a cup supported below the disk to turn with the shaft, and a spring interposed between the cup and disk, the box having a socketed hub, and a conical or split collar secured to the shaft and fitting the socket of the cup-hub, substantially as set forth.

817,899. **PROCESS FOR PRODUCING FUEL FROM PEAT BY MEANS OF THE ELECTRIC CURRENT.** JOSEPH B. BERRY, London, England. Filed Oct. 5, 1905. Serial No. 281,530.

Claim.—Process for producing a fuel from peat by means of the electric current, consisting in exposing the peat, previously freed from water by mechanical means, to the effect of an alternating current of two hundred volts and twelve hundred amperes per ton of solid material contained in the peat, for some periods, the current being regulated in such a manner, that a heating of the peat above 100° centigrade is avoided, and removing the water freed by the action of the alternating current after each charge of electricity.

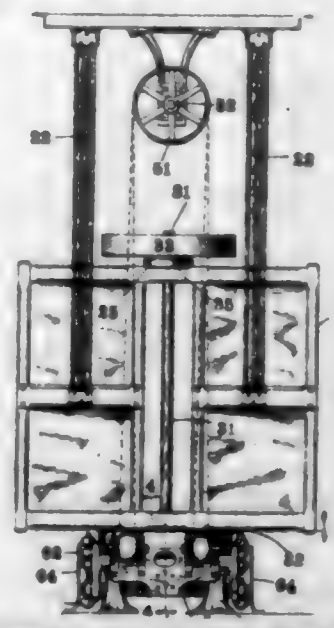
817,900. **HEATER.** HERMAN H. BRANDES, Corydon, Ky. Filed Apr. 3, 1905. Serial No. 253,576.



Claim.—1. A hot-air heater for open fireplaces, comprising a casing to be placed in a chimney and above a grate or burner, said casing having a top, sides and a bottom, the latter having openings, and a smoke-flue in the casing, extending upwardly therethrough, spaced from the rear and end walls thereof and having its lower portion formed by a baffle above the bottom of the casing and forming a heat-retaining pocket, said casing being provided with air inlet and outlet openings.

2. A hot-air heater for open fireplaces, comprising a casing having an air-heating chamber formed with a pocket at its lower side, a flue extending through said chamber and open at its lower end into said pocket, and a baffle at the lower end of the flue and under the pocket and causing the draft to pass upwardly and forwardly under the baffle, into the pocket, and from thence rearwardly into the lower end of the flue.

817,901. **GYRATORY SIFTER.** ALLEN C. BRANTINGHAM, Toledo, Ohio. Filed May 8, 1905. Serial No. 259,372.



Claim.—1. The combination of a sifter structure, means whereby the same is yieldingly suspended, a shaft arranged vertically to said sifter structure and weighted more on one side than the other, eccentric connections between said shaft and said sifter structure, a bridge-tree supporting said shaft, yielding supports carrying said bridge-tree having a limited movement, idler-pulleys carried by the bridge-tree, a driving-shaft, and a belt running from a pulley on the driving-shaft over the idler-pulleys on the bridge-tree to a pulley on the sifter-shaft.

2. The combination of a sifter structure, means whereby the same is yieldingly suspended, a vertical shaft weighted more on one side than on the other and having a driving connection with the sifter structure, a bridge-tree mounted independently of the sifter structure and supporting said shaft, and yielding supports for the bridge-tree having a limited movement.

3. The combination of a sifter structure, means whereby the same is yieldingly suspended, a shaft arranged vertically to said sifter structure, eccentric connections between said shaft and said sifter structure, and independently yieldingly supported power-transmission devices leading to said shaft.

4. The combination of a sifter structure, means whereby the same is yieldingly suspended, a bridge-tree arranged below said sifter structure, means whereby the same is yieldingly suspended, a shaft supported by said bridge-tree, eccentric connections between said shaft and said sifter structure, and power-transmission devices in part carried by said bridge-tree leading to said shaft.

5. The combination of a sifter structure, suspending-links upon which the same is mounted, a bridge-tree, suspending-links for said bridge-tree, a shaft mounted on said bridge-tree, eccentric connections between said shaft and said sifter structure, devices mounted upon said shaft heavier upon one side than upon the other, means whereby the swing of the bridge-tree is limited, and power-transmission devices leading to the shaft.

6. The combination of a sifter structure, means whereby the same is yieldingly suspended, a shaft arranged vertically to said sifter structure, a bridge-tree supporting said shaft, supports for said bridge-tree consisting of suitable brackets secured to the building structure, and pivoted links connected to said brackets and to arms on the bridge-tree.

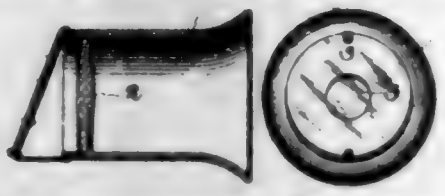
7. The combination with a machine structure and its driving-shaft, of a bridge-tree supporting said shaft and provided with three points of support, three corresponding brackets, and three corresponding links uniting said brackets and said points of support by universal joints.

8. The combination with a machine structure and its driving-shaft, of an independent bridge-tree supporting said shaft, power-transmission devices also carried by said bridge-tree, and yielding supports by which said bridge-tree is carried.

9. The combination of a machine structure, yielding supports therefor, an independent bridge-tree, yielding supports therefor, an eccentric connection between said bridge-tree and said machine structure and means for rotating said connection.

10. The combination of a machine structure, yielding supports therefor, an independent bridge-tree, yielding supports therefor, an eccentric connection between said bridge-tree and said machine structure, and power-transmission devices carried by said bridge-tree.

817,902. **REFLECTOR FOR MAGNIFYING-GLASSES.** CARRY B. BUNKER, Oregon, Mo. Filed Apr. 20, 1904. Serial No. 204,116.



Claim.—1. The combination with the eyepiece of a monocular magnifying-glass, of a reflector held frictionally combined therewith and comprising a tubular ungulaform holder, and a reflecting-surface disposed at the oblique side of the holder and having its center permeable by light.

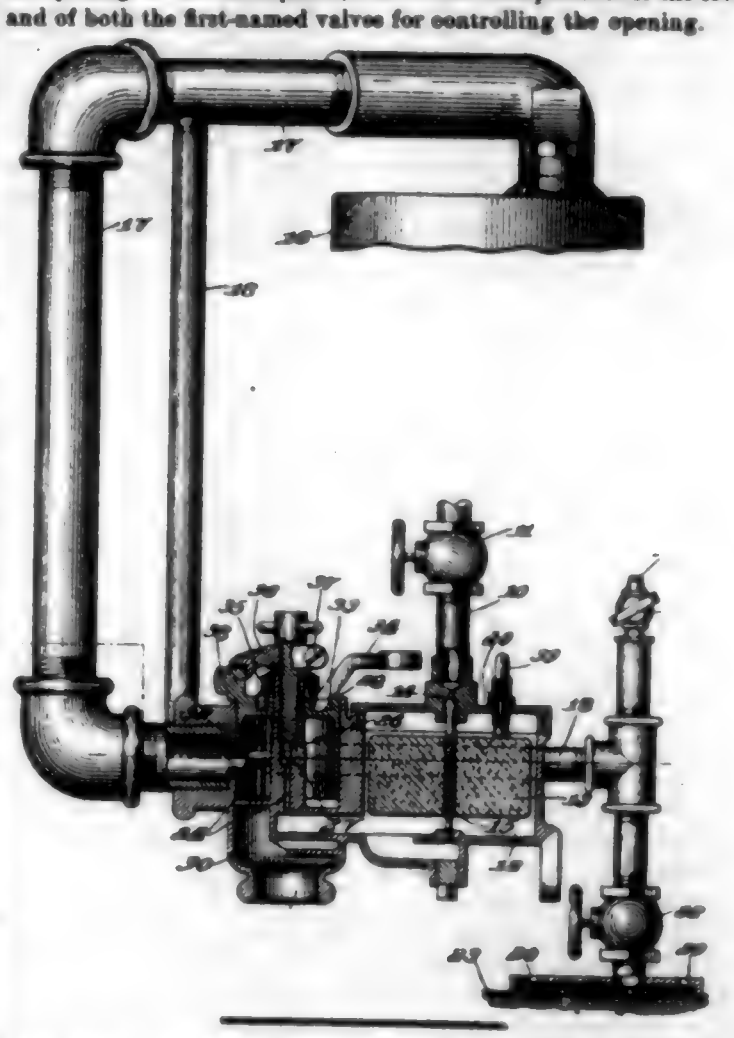
2. The combination with the eyepiece of a monocular magnifying-glass, of a reflector held frictionally combined therewith and comprising a tubular ungulaform holder of substantially the same cross-diameter from end to end, and a reflecting-surface disposed at the oblique side of the holder and having its center permeable by light.

3. The combination with the eyepiece of a monocular magnifying-glass, of a reflector held frictionally combined therewith and adjustable relatively thereto, and comprising a tubular ungulaform holder, and a reflecting-surface disposed at the oblique side of the holder and having its center permeable by light.

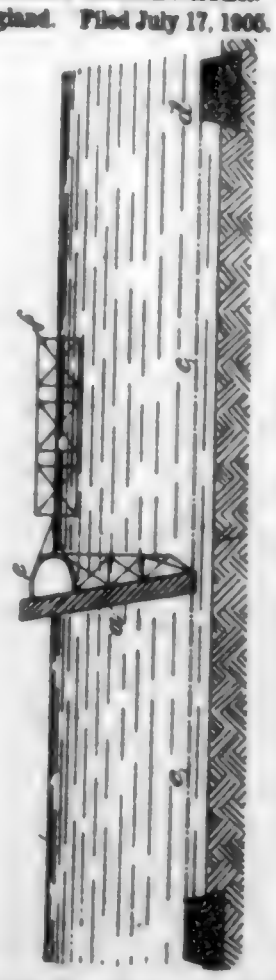
817,903. **CARBURETER.** ALFONSO S. COMSTOCK, Evanston, Ill. Filed Apr. 22, 1905. Serial No. 256,906.

Claim.—1. In a carbureter, in combination, an air-passage, a fuel-passage, a carbureting-passage having an opening to the atmosphere and receiving from the fuel-passage and delivering to the air-passage, and means for simultaneously controlling the flow of air and fuel through the air and fuel passages, respectively, the flow of air through the carbureting-passage being independent of such controlling means.

2. In a carbureter, in combination, an air-passage, a fuel-passage, a throttling-valve in each of such passages, a lever operatively connected to both of such valves, a carbureting-passage receiving from the fuel-passage and delivering to the air-passage and having an opening to the atmosphere, and a valve independent of the lever and of both the first-named valves for controlling the opening.



817,904. **FLOATING BREAKWATER.** THOMAS D. COOK, Glendon-Torquay, England. Filed July 17, 1905. Serial No. 270,127.



Claim.—1. A floating breakwater, comprising in combination, floating frames, moorings attached at the lower ends of said frames, and floating means attached at the upper ends of said frames, at one side thereof as set forth.

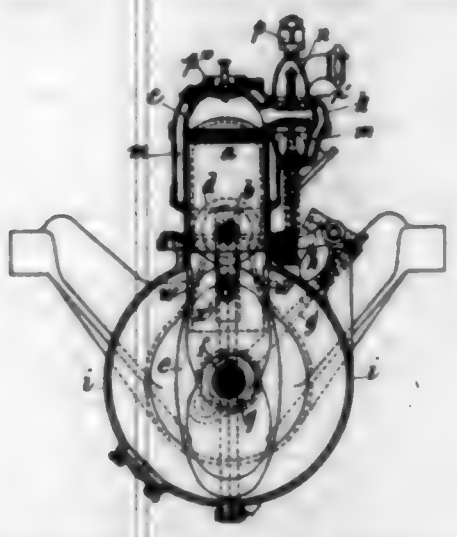
2. A floating breakwater, comprising in combination, floating frames moorings attached at the lower ends of said frames, floating means attached at the upper ends of said frames, at one side thereof

and a horizontal floating framework moored to said frames on the land side, as set forth.

3. A floating breakwater, comprising in combination, floating frames, long mooring means attached at the lower ends of said frames, floating means attached to the upper ends of said frames, at one side thereof said mooring means being approximately horizontal, as set forth.

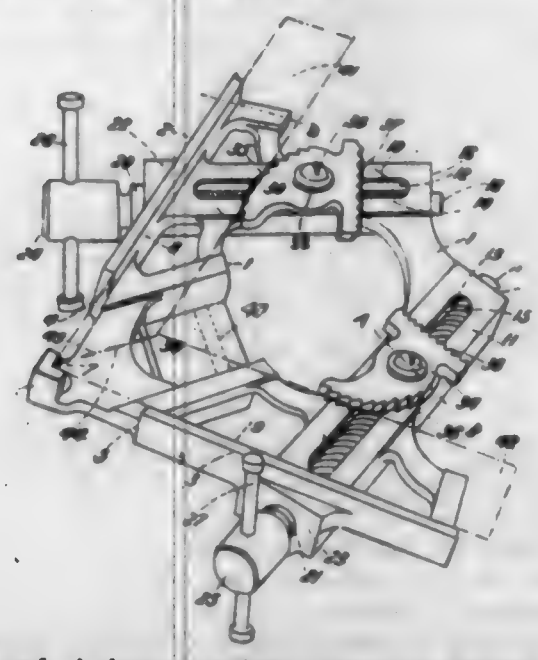
4. A floating breakwater, comprising in combination, floating frames, moorings attached at the lower ends of said frames, and floating means attached at the upper ends of said frames, said means causing said frames to normally slope toward the sea, said frames being free to slope toward the land, as set forth.

817,905. **MOTIVE-POWER ENGINE.** PAUL DANIEL, Levallois-Perret, near Paris, France. Filed Dec. 8, 1902. Serial No. 134,554.



Claim.—In an engine of the character described, the combination with a plurality of cylinders arranged side by side, pistons therein, a shaft passing through the pistons and slidable within the cylinders, rollers arranged upon the shaft, one within each piston, a driving-shaft and elliptical cams mounted as described upon the driving-shaft and bearing upon the rollers, two tubes arranged exteriorly of each set of cylinders, an automatic inlet-valve closing each tube at its upper end, a piston working in each tube, and rods carrying the pistons and mounted on the shaft which passes through the first-mentioned pistons, a spindle x' carried by each of the power-pistons, a transverse shaft screwing into each spindle and a roller mounted upon each of said transverse shafts, and running upon a bearing-surface on each elliptical cam in the manner described.

817,906. **MITER-CLAMP.** RALPH DUNNE, Dunedin, New Zealand. Filed June 27, 1905. Serial No. 267,344.



Claim.—1. A clamp comprising a frame, two flanges at an angle with each other thereon with inclined inner surfaces, and means whereby strips of cut material placed on the frame against said flanges are pushed lengthwise toward each other and held together the means for operating on one strip being independent of the means for operating on the other strip substantially as described.

2. A clamp comprising a frame, two flanges at an angle with each other thereon with inclined inner surfaces, a pillar on said frame forming a corner at the intersection of said surfaces produced, and means whereby strips of cut material placed on the frame against said flanges are pushed lengthwise toward said corner and held together the means for operating on one strip being independent of the means for operating on the other strip substantially as described.

3. A clamp comprising a frame, two flanges at an angle with each other thereon with inclined inner surfaces, a pillar on said frame forming a corner at the intersection of said surfaces produced, two cams with curved toothed edges slidably mounted on said frame, and means operating independent of each other for moving said curved toothed edges toward said flanges respectively, whereby strips of material placed on the frame against said flanges are pushed toward and held together at said corner substantially as described.

4. A clamp comprising a frame, two flanges at an angle with each other thereon with inclined inner surfaces, a pillar on said frame forming a corner at the intersection of said surfaces produced, two cams with curved toothed edges slidably mounted on said frame above two slotted portions respectively, nuts below the frame pivotally secured to said cams, and two screws respectively passing through said nuts whereby said cams are moved independently of each other substantially as described.

5. A clamp comprising a frame, two flanges at an angle with each other thereon, and means whereby strips of cut material placed on the frame against said flanges are pushed lengthwise toward each other and held together, the means for operating on one strip being independent of the means for operating on the other strip.

817,907. **WIRE-STRETCHER.** FELIX L. FERST, Barclay, Tex. Filed Nov. 7, 1905. Serial No. 286,226.



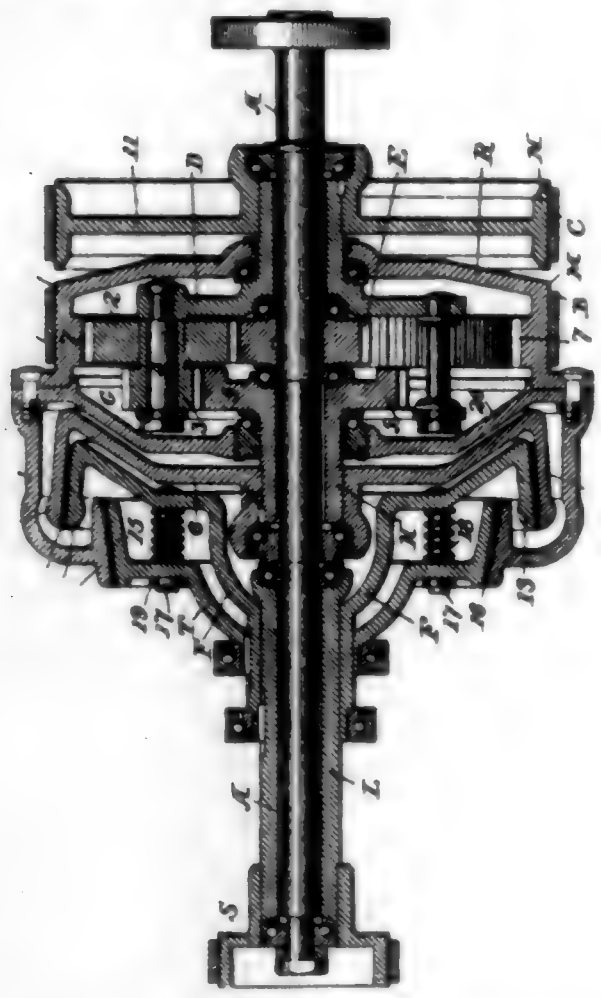
Claim.—1. In a device of the class described, a frame of spaced side members having oppositely-disposed guide-channels and connected at one end, a flexible member coupled to said connecting means and adapted for attachment to a stationary support, rack-bars slidable in said channels, a shaft journaled in said side members and carrying a gear-wheel engaging said rack-bars, clamping means at the ends of said rack-bars, and means for rotating said shaft.

2. In a device of the class described, a frame formed of spaced side members having oppositely-disposed guide-channels, and connected at one end, a flexible member coupled to said connecting means and adapted for attachment to a stationary support.

3. In a device of the class described, a U-shaped frame, a flexible member connected to the closed end of the frame, plates attached to the outer faces of the side portions of said frame and with flanges at the edges extending over the edges of said side members and

spaced therefrom to form longitudinal guide-channels between the frame and plates, rack-bars slidable in said channels a shaft journaled transversely of said frame, a gear-wheel carried by said shaft and engaging said rack-bars, clamping devices upon the ends of said rack-bars, and means for rotating said shaft.

817,908. TRANSMISSION-GEAR. WILLIAM FOLBERTH, Cleveland, Ohio. Filed Oct. 31, 1906. Serial No. 285,332.



Claim.—1. The combination in a three-speed transmission-gear, of a driving-pinion, two friction-clutches, a driven member connected to turn with both clutches, a gear connected with one member of each clutch, and twin pinions engaging the driving-pinion and the gears of the different clutches, substantially as set forth.

2. The combination in a three-speed transmission-gear, of a driving-pinion, two friction-clutches, a driven member connected to turn with both clutches, a gear connected with one member of each clutch, a gear-frame, twin pinions carried by said frame, and brake devices for arresting the rotation of the gear-frame and of the adjacent clutch member, substantially as set forth.

3. The combination in a three-speed transmission-gear, of a driving-pinion, a gear-frame, a plurality of twin pinions carried thereby, a casing supported to rotate about the gear-frame and provided with an internal gear and formed to constitute a clutch member, a coacting clutch member movable longitudinally, and a driven member connected to turn with the latter clutch member, substantially as set forth.

4. The combination in a three-speed transmission-gear, of a driving-pinion, a gear-frame, a plurality of twin pinions carried thereby, a casing supported to rotate about the gear-frame and provided with an internal gear and formed to constitute a clutch member, a coacting clutch member movable longitudinally, a driven member connected to turn with the latter clutch member, a second clutch member turning with the driven member, and a coacting member provided with a gear engaging the twin pinions, substantially as set forth.

5. The combination in a three-speed transmission-gear, of a driving-pinion, a gear-frame, a plurality of twin pinions carried thereby, a casing supported to rotate about the gear-frame and provided with an internal gear and formed to constitute a clutch member, and with a web forming a closed receptacle for lubricant, a coacting clutch member movable longitudinally, and a driven member connected to turn with the latter clutch member, substantially as set forth.

6. The combination in a three-speed transmission-gear, of a driving-pinion, a gear-frame, a plurality of twin pinions carried thereby, a casing supported to rotate about the gear-frame and provided with an internal gear and formed to constitute a clutch member, a coacting clutch member movable longitudinally, a driven member connected to turn with the latter clutch member, and two brake means for arresting the rotation of the gear-frame and of the casing, substantially as set forth

7. The combination in a three-speed transmission-gear, of a driving-pinion, a gear-frame, a plurality of twin pinions carried thereby, said frame connected with a brake-pulley, a casing constituting a brake-pulley supported to rotate about the gear-frame and provided with an internal gear and formed to constitute a clutch member, a coacting clutch member movable longitudinally, a dr ien member connected to turn with the latter clutch member, and brake-bands for engaging the brake-pulleys, substantially as set forth.

8. The combination with the driving-pinion, twin pinions engaging the same, a casing, an internal gear also engaging the twin pinions, of an extension of the casing formed to constitute a clutch member, a second clutch member, a gear carried thereby engaging the twin pinions, two sliding clutch members coacting with the others and movable independently, and a driven member connected to turn with the sliding clutch members, substantially as set forth.

9. The combination with the driving-pinion, twin pinions engaging the same, a casing, and internal gear also engaging the twin pinions, of an extension of the casing formed to constitute a clutch member, having an inclined face, a second clutch member also having an inclined face and a gear carried thereby engaging the twin pinions, two sliding clutch members coacting with the others and movable independently, and a driven member connected to turn with the sliding clutch members, substantially as set forth.

10. The combination with the driving-pinion, twin pinions engaging the same, a casing, and internal gear also engaging the twin pinions, of an extension of the casing formed to constitute a clutch member, a second clutch member, a gear carried thereby engaging the twin pinions, two sliding clutch members coacting with the others and movable independently, springs tending to separate said sliding clutch members, and a driven member connected to turn with the sliding clutch members, substantially as set forth.

11. The combination with the casing having a flange constituting a clutch member, of a second clutch member H having a dished web and flange extending from one side of the same, a sliding clutch member F also having a dished web approximately parallel to the other web and with a flange parallel to that carried by the latter web, a second sliding clutch member T having a dished web and a flange engaging that of the casing, a driving-pinion, and gearing between the pinion and the casing and the member H and brakes B, C, and drums engaged thereby substantially as set forth.

12. A three-speed transmission-gear having a driving-pinion, a driven member, two braking devices, two clutch devices, a gear-frame, twin pinions carried thereby, and means whereby one member of one clutch device may be arrested by one of the brake devices, and the rotation of the gear-frame can be arrested by the other brake device, substantially as set forth.

13. The combination with the driving-pinion and driven member, gear-frame, and twin pinions carried thereby, of two clutch members, a gear carried by each member and engaging said twin pinions, and other clutch members coacting with those driven from said pinions, and connected to turn the driven member, substantially as set forth.

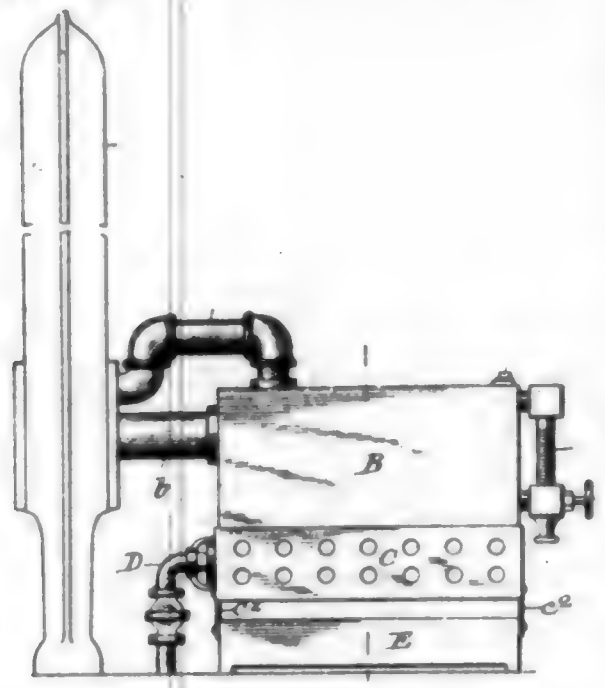
14. The combination with the driving-pinion, gear-frame, and twin pinions carried thereby, of two clutch members, a gear carried by each member and engaging said twin pinions, other clutch members coacting with those driven from said pinions, and means for independently sliding the latter clutch members, substantially as set forth.

817,909. AUXILIARY APPARATUS FOR SUPPLYING STEAM TO RADIATORS. THOMAS A. FONTAINE, Chicago, Ill., assignor of one-third to Charles W. Pitts and one-third to Max Bass, Chicago, Ill. Filed Nov. 25, 1904. Serial No. 234,165.

Claim.—1. In a device of the class described, the combination with a radiator having the ordinary connecting-boss, of an auxiliary heating-boiler having supply and return pipes threaded in said boss and means for heating the water in said auxiliary boiler.

2. In a device of the class described, the combination with a radiator provided with the usual connecting-boss, of an auxiliary heating-boiler, a steam-supply pipe and return-pipe connecting therewith and threaded in said boss, a heater-box below the boiler and a burner within said box for heating the water within the boiler.

817,909.



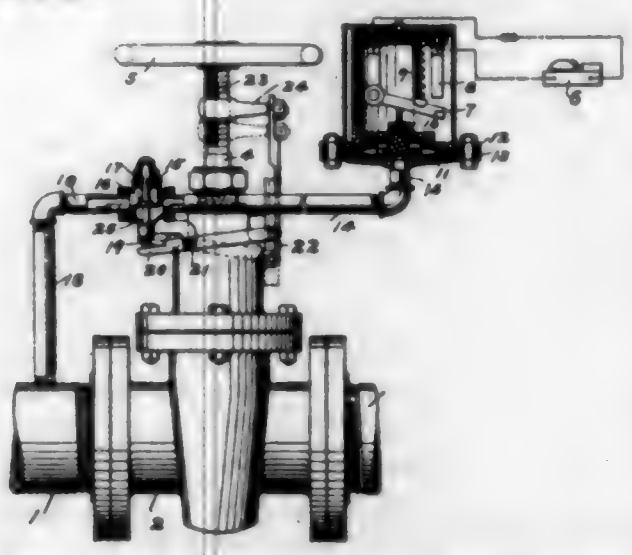
817,910. **DEVICE FOR PROTECTING THE SEALS OF THE BUNGS OR OTHER CLOSURES OF CASKS.** HUGO GERIKE, Klein Schönebeck, near Berlin, Germany, assignor to Gustav Heyden, Schöneiche, near Berlin, Germany. Filed July 26, 1905. Serial No. 271,331.



Claim.—1. A device for protecting the seal of a screw-closure of a cask consisting of a ring having interior annular flange and a circular protecting-plate having central threaded stud to screw into a central orifice of the cask-closure, and lie on the said annular flange over the seal substantially as described.

2. A device for protecting the seal of a screw-closure of a cask, consisting of a ring having an interior annular flange and a circular protecting-plate having a central threaded stud to engage a threaded opening in the cask-closure, the said thread being in the opposite direction to the thread of the closure or bung substantially as described.

817,911. **VALVE APPARATUS.** FREDERICK GRINNELL, New Bedford, Mass., assignor to General Fire Extinguisher Company, New York, N. Y., a Corporation of New York. Filed July 11, 1899. Serial No. 723,516.



Claim.—1. The combination with a valve through which fluid is supplied, of an indicator controlled by fluid-pressure, and adjustable means for controlling said fluid-pressure from the mechanism for opening and closing the valve.

2. The combination with a valve through which fluid is supplied, of an indicator controlled by fluid-pressure, a valve for controlling said fluid-pressure, and adjustable means for operating said valve from the main-valve-operating means.

3. The combination with a supply-pipe and supply-valve, of an indicator, devices operated by fluid-pressure for controlling said indicator, a conduit from said devices to said supply-pipe, and a valve in said conduit adapted to be operated by the partial closing of the supply-valve.

4. The combination with a valve through which fluid is supplied, of pressure-controlled indicator mechanism, and a valve communicating between said mechanism and a fluid-supply and operated when the main valve is partially closed to reduce the supply of liquid therethrough.

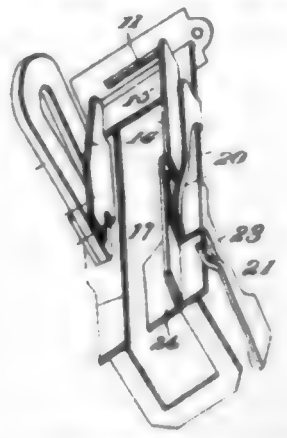
5. The combination with a valve through which fluid is supplied, of a pressure-controlled indicator mechanism, a valve communicating between said mechanism and a fluid-supply, and adjustable devices for operating said valve from the mechanism for operating the main valve.

6. The combination with a valve through which fluid is supplied, of a pressure-operated indicator mechanism, a valve communicating between said mechanism and a fluid-supply, and adjustable means for opening said valve when the main valve is operated to reduce the supply of fluid therethrough.

7. The combination with a valve through which fluid is supplied, of a pressure-controlled indicator mechanism, a valve for controlling the pressure on said mechanism, a lever for operating said valve, and adjustable connections between said lever and the valve-rod of the main valve.

8. The combination with a valve through which fluid is supplied, of a pressure-operated indicator mechanism, a valve for controlling the pressure on said mechanism, a lever engaging the stem of said valve, and a slide connected with said lever and operated from the main-valve rod.

817,912. **VENDING-MACHINE.** CLAUDE A. GUNDER, Jeffersonville, Ind., assignor to American Vending Machine Co., Jeffersonville, Ind. Filed June 16, 1905. Serial No. 265,599.



Claim.—1. In a vending-machine, a transversely-inclined coin-chute provided with a transversely-widened bottom opening and with an entrance-opening designed to direct the coin or the like face downward into the chute, so that its rim will ride along one of the side edges bounding the bottom opening and said chute being also provided at the lower end of the lowermost side wall with a cut-away portion providing a lateral discharge, and the chute being also provided on the opposite side with an extension in contiguous relation to the lateral discharge, as and for the purpose set forth.

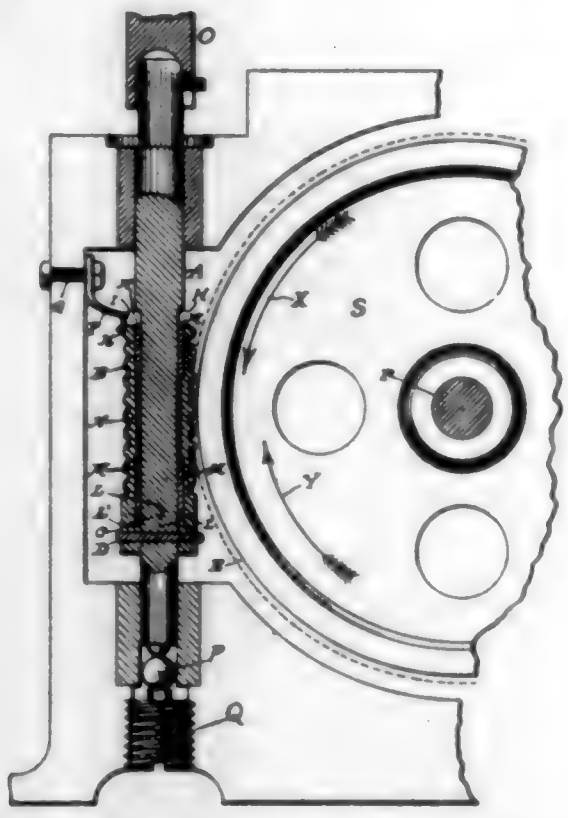
2. In a vending-machine, the combination with an article-ejecting device and means for actuating the same, of a coin-chute provided with an open bottom, a stationary wall bounding one side of said opening, a pivoted wall movable laterally on the bottom at the other side of the opening therethrough and provided with a base-supporting ledge extending normally parallel to the opposite side edge of the bottom opening, the pivoted wall being provided at its free end with a depending arm designed to abut against the outer side of the bottom to limit the inward movement of said wall, and the chute being arranged in an oblique plane and designed to receive a coin on its side whereby it will slide down the chute while it is supported at diametrically opposite points on its face by the bottom at one side and the base-ledge on the pivoted wall at the opposite side, and a projection carried by the ejecting device and arranged in the path of the arm whereby the actuation of the ejecting device will swing the said pivoted side.

3. In a vending-machine, the combination with an article-ejecting device and means for actuating the same, of a coin-chute provided with an open bottom, a stationary wall bounding one side of said opening, a pivoted wall movable laterally on the bottom at the other side of the opening therethrough and provided with a base-supporting ledge extending normally parallel to the opposite side edge of the bottom opening, the pivoted wall being provided at its free end with

a depending arm designed to abut against the outer side of the bottom to limit the inward movement of said wall, and the chute being arranged in an oblique plane and designed to receive a coin on its side whereby it will slide down the chute while it is supported at diametrically opposite points on its face by the bottom at one side and the base-ledge on the pivoted wall at the opposite side, a spring secured at its upper end to the bottom of the chute and at one side edge thereof, with its free end engaging the outer side of said pivoted wall, and a projection carried by the ejecting device and arranged in the path of the arm whereby the actuation of the ejecting device will swing the said pivoted side.

4. In a vending-machine, the combination with an article-ejecting device and means for actuating the same, of a transversely-inclined coin-chute provided with a transversely-widened bottom opening and with an entrance-opening designed to direct the coin or the like face downward into the chute so that its rim will ride along one of the side edges bounding the bottom opening, and said chute being also provided opposite said side edge with a pivoted wall having a bottom or base flange designed to coact with said edge to support the coin, a depending arm secured to the free end of said pivoted wall and a projection carried by the ejecting device and arranged in the path of the arm whereby the actuation of the ejecting device will swing the said pivoted side.

817,913. **DRIVING MECHANISM FOR CENTRIFUGAL SEPARATORS.** WILLIAM C. HARTMANN, Lansing, Mich., assignor to Omega Separator Company, Lansing, Mich. Filed Oct. 17, 1904. Serial No. 228,550.



Claim.—1. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve and move lengthwise on the said spindle, a ratchet attached to said spindle, and a ratchet attached to said worm, adapted to engage with the ratchet attached to the spindle, and automatically-released means for holding said worm at the limit of its movement in one direction, substantially as described.

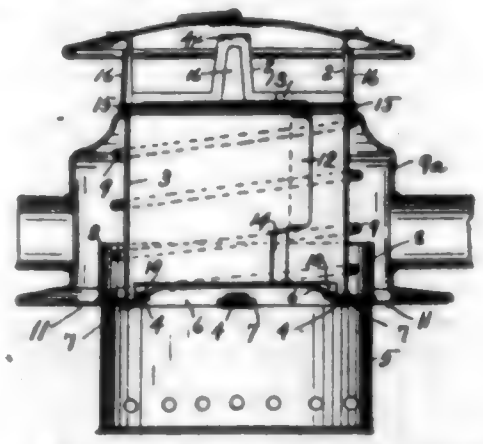
2. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve and move lengthwise on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm, adapted to engage with the ratchet attached to the spindle, and automatically-released means for holding the said worm at the limit of its movement in one direction, and means for limiting the upward motion of said worm, substantially as described.

3. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm adapted to engage with the ratchet attached to the spindle, means for limiting the upward motion of said worm, and means for retaining said worm in its elevated position, substantially as described.

4. In combination with a worm-wheel and worm-spindle, a worm mounted so as to freely revolve on the said spindle, a ratchet attached to said spindle, a ratchet attached to said worm adapted to engage with the ratchet attached to the spindle, means for limiting the upward motion of said worm, means for retaining said worm in its elevated position, and a bushing between the said worm and the worm-spindle, substantially as described.

5. The combination with a worm-wheel, and a worm-spindle, of a worm mounted to freely revolve upon and slide lengthwise of said spindle, means engaging said worm to hold it at the limit of its movement in one direction, and releasable by engagement of the worm and worm-wheel and means constructed to be thrown into and out of operative engagement by the endwise movement of said worm.

817,914. **LANTERN.** JAMES H. HILL, Rochester, N. Y., assignor to Defiance Lantern & Stamping Company, Rochester, N. Y. Filed Nov. 6, 1905. Serial No. 286,063.



Claim.—1. In a lantern-top, the globe-ring, combined with an extension consisting of a separate split compressible extension-ring comprising means integral therewith for fixing the ring ends together.

2. In a lantern-top, the globe-ring, combined with a separate extension comprising a split ring, said ring being compressible to facilitate assemblage therewith of other rings and devices to connect the ends of the ring to make it incompressible in use.

3. In a lantern-top, the globe-ring, combined with an extension consisting of a separate compressible split extension-ring comprising means integral therewith for fixing the ring ends together, said ring having air-passages 10 at the bottom in communication with air-passages 11 of the tube-ring.

4. In a lantern-top, the globe-ring, combined with a separate extension comprising a split ring having tongues to connect its ends, and with a tube-ring, said globe-ring having an inwardly-inclined integral top provided with slots for said tongues, a spring-holding ring, and a spring, said spring-holding ring being loosely seated on the globe-ring and the split ring provided with devices detachably connecting it to said globe-ring.

5. The combination of the globe-ring having the inner integral inclined flange, the loose spring-holding ring seated on the globe-ring at the foot of its inclined flange, and the detachable split globe-ring extension.

6. The combination of the tube-ring and tubes, the globe-ring terminating in a plane below the mouth of said tubes, the split-ring extension of the globe-ring, means for detachably connecting said extension to the globe-ring, said split ring being compressible to facilitate assemblage of parts, and means to render it incompressible after such assemblage.

7. The globe-ring provided with a seat for a spring-holding ring, said latter ring being loosely seated on the globe-ring, a separate globe extension-ring, and means for detachably connecting it to the globe-ring within the spring-holding ring.

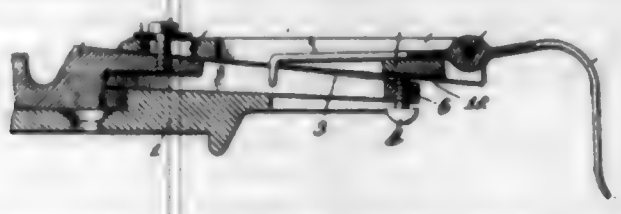
817,915. **WEFT-FORK FOR LOOMS.** THOMAS HILTON, Fall River, Mass. Filed July 11, 1905. Serial No. 269,150.

Claim.—1. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier, a weft-fork pivoted to the carrier, and means adjustably connecting the weft-fork carrier to the weft-fork slide.

2. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier, a weft-fork pivoted to the carrier, and means adjustably connecting the weft-fork to the weft-fork slide so that the carrier can be adjusted laterally or sidewise in relation to said slide.

3. In a weft-fork for looms, the combination with a weft-fork

slide, of a weft-fork carrier, a weft-fork pivoted to the carrier, and means for adjusting the weft-fork carrier up and down in relation to the weft-fork slide.



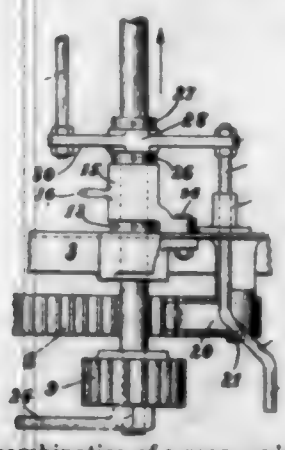
4. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier, a weft-fork pivoted to the carrier, means for adjusting the weft-fork carrier up and down in relation to the weft-fork slide, and means for adjusting the weft-fork carrier laterally or sidewise in relation to the weft-fork slide.

5. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier superposed on the weft-fork slide, a weft-fork pivoted to the carrier, means pivotally connecting the weft-fork carrier to the weft-fork slide, and a screw for adjusting the weft-fork carrier up and down in relation to the weft-fork slide.

6. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier superposed on the weft-fork slide, a weft-fork pivoted to the carrier, and means for adjusting the weft-fork carrier both up and down and laterally in relation to the weft-fork slide comprising a slotted pivotal connection between the carrier and slide to permit lateral or sidewise movement of the carrier and a screw for adjusting the carrier up and down.

7. In a weft-fork for looms, the combination with a weft-fork slide, of a weft-fork carrier superposed on the weft-fork slide, a weft-fork pivoted to the carrier, and means for adjusting the weft-fork carrier both up and down and laterally in relation to the weft-fork slide comprising a slotted pivotal connection between the carrier and slide to permit lateral or sidewise movement of the carrier and a screw for adjusting the carrier up and down, said screw being on one of said parts and having a pointed tip coöperating with serrations or recesses on the other of said parts.

817,916. **SAFETY MECHANISM FOR HOISTS AND THE LIKE.** JOHN T. HORTON, New York, N. Y. Filed Nov. 7, 1905. Serial No. 286,217.



Claim.—1. The combination of a gear, a pinion slidable into and out of engagement therewith, a pawl for engagement with the gear and means operable by the sliding of the pinion out of engagement with the gear to move the pawl into engagement therewith.

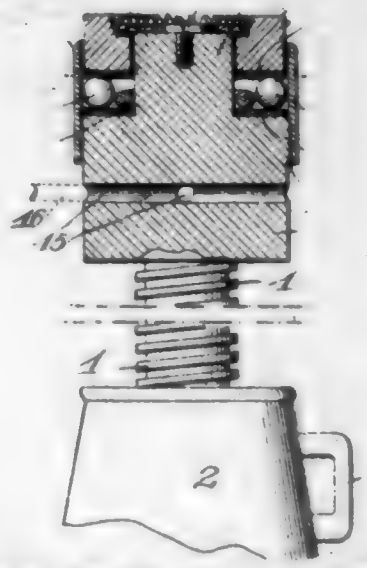
2. The combination of a gear, a pinion mounted for movement into and out of engagement therewith, a pawl for engagement with the gear and means operable by the movement of the pinion out of engagement with the gear to move the pawl into engagement with the gear.

3. The combination of a gear, a pinion slidable into and out of engagement therewith, a pawl for engagement with the gear, and means operable by the sliding of the pinion out of engagement with the gear to move the pawl into engagement with the gear before the pinion passes out of engagement therewith.

4. The combination of a gear, a pinion slidable into and out of engagement therewith, a pawl for engagement with the gear and means operable by the sliding of the pinion out of engagement with the gear to move the pawl into engagement therewith before the pinion passes out of engagement with the gear and means to lock the pawl in engagement with the gear until the pinion is returned to engagement therewith.

5. The combination of two gears, two pinions mounted on one shaft for engagement with the gears respectively, means to move endwise simultaneously, one pinion into engagement and the other pinion out of engagement with their respective gears, a pawl for engagement with each gear and means operable from the endwise movement of the pinions to move each pawl into engagement with its respective gear prior to the disengagement of its respective pinion therefrom.

817,917. **LIFTING-JACK.** IRVIN C. HUFFMAN, Dublin, Ga., assignor of one-half to J. S. Huffman, Dublin, Ga. Filed Oct. 30, 1905. Serial No. 285,215.



Claim.—A device of the character described comprising a jack-screw having at one end a cylindrical enlargement and a reduced cylindrical stem, a head or cap upon said stem and formed in its top with a circular recess, a set-screw in said stem and having its head seated in said recess, bearing-balls arranged around said stem between said cap and said enlargement, washers interposed between said bearing-balls and said cap and enlargement, a ring surrounding said stem and arranged within the row of bearing-balls, and a sleeve carried by said enlargement and adapted to retain said bearing-balls between said cap and enlargement, substantially as described.

817,918. **WEIGHT-SUPPORTING DEVICE FOR SPRING-BEDS.** CHARLES H. JOHNSON, Shelton, Conn. Filed Jan. 18, 1906. Serial No. 296,595.



Claim.—1. In a bed, the combination with side rails and a spring-bottom, of a supporting device for the spring-bottom comprising a cross-piece, side rods to which the cross-piece is attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods, pivoted eyes through which the slide-rods pass, springs acting on the slide-rods to raise the cross-piece against the spring-bottom and means for attaching the supporting device to the side rails.

2. A weight-supporting device for spring-beds comprising a cross-piece, side rods to which the cross-piece is attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods, pivoted eyes through which the slide-rods pass, springs acting on the slide-rods to raise the side rods and cross-piece and means for attaching the device in place.

3. A weight-supporting device for spring-beds comprising a cross-piece, a roller thereon, for the purpose set forth, side rods to which the cross-piece is attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods, pivoted eyes through which the slide-rods pass, springs acting on the slide-rods to raise the side rods and cross-piece and means for attaching the device in place.

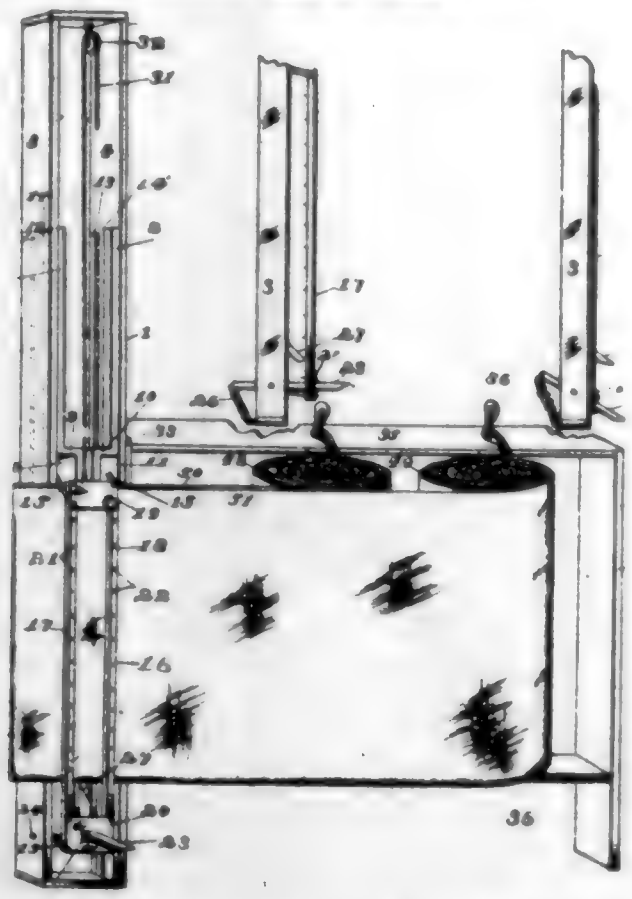
4. A weight-supporting device for spring-beds, comprising a cross-piece, side rods to which the cross-piece is attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods and threaded at their outer ends, pivoted eyes through which the slide-rods pass, nuts on the slide-rods, springs bearing against the nuts and the eyes to raise the side rods and cross-piece and means for attaching the device in place.

5. A weight-supporting device for spring-beds, comprising a cross-piece, side rods to which the cross-piece is attached, studs to which the side rods are attached, slide-rods pivoted to the side rods, eyes through which the slide-rods pass, an attaching-clip, arms depending therefrom in which the studs and eyes are pivoted and springs acting on the slide-rods to raise the side rods and cross-piece.

6. A weight-supporting device for spring-beds comprising a two-part cross-piece, a roller in which the parts of said cross-piece telescope, side rods to which the parts of the cross-piece are attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods, pivoted eyes through which the slide-rods pass, springs acting on the slide-rods to raise the side rods and cross-piece and means for attaching the device in place.

7. An adjustable weight-supporting device for spring-beds comprising a two-part cross-piece, a roller in which the parts of said cross-piece telescope, side rods to which the parts of the cross-piece are attached, pivoted studs to which the side rods are attached, slide-rods pivoted to the side rods and threaded at their outer ends, pivoted eyes through which the slide-rods pass, springs bearing on the nuts and the eyes for raising the side rods and cross-piece and means for attaching the device in place.

817,919. BAG-CUTTING MACHINE. SAMUEL H. JONES, Hess, Okla. Filed June 5, 1905. Serial No. 263,796.



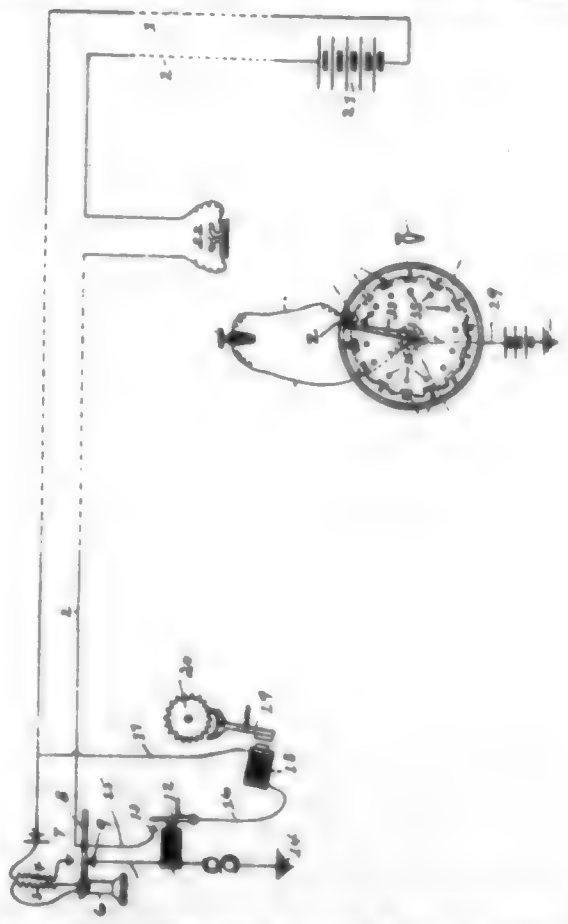
Claim.—1. In a machine of the class described, a bolt-supporting frame, means carried thereby to revolubly support a bolt of material, a clamping-frame secured to the bolt-supporting frame, clamping-bars pivotally connected with the clamping-frame and adapted to coöperate with the fixed portion thereof to clamp the material, a knife-block movable longitudinally of the clamping-frame, and a knife carried by said block and projecting between the bars of the clamping mechanism.

2. In a machine of the class described, a clamping-frame, means for clamping material thereon, a knife movable longitudinally of the clamping-frame, a supporting-frame projected from the clamping-frame, a revoluble support fixed on said latter frame to receive one end of a bolt-rod, and a spring-lock carried by said supporting-frame to receive the other end of the bolt-rod.

3. In a machine of the class described, comprising a bolt-supporting frame, a clamping-frame secured thereto, guides secured interiorly of the clamping-frame, clamping-rods pivotally connected to the clamping-frame and operating intermediate the walls of said frame and the guides, a lever for operating said clamping-frame, a spring for returning said frame to normal position, a knife-block longitudinally movable between the guides of said clamping-frame, a knife projecting from said block, and means for elevating said block.

4. In machine of the class described, comprising a bolt-supporting frame, a clamping-frame secured thereto, guides secured interiorly of the clamping-frame, clamping-rods pivotally connected to the clamping-frame and operating intermediate the walls of said frame and the guides, a lever for operating said clamping-frame, a spring for returning said frame to normal position, a knife-block longitudinally movable between the guides of said clamping-frame, a knife projecting from said block, and a cable secured to the block and passed over a pulley secured to the upper end of said clamping-frame.

817,920. METERING OF TELEPHONIC SERVICES. ISIDOR KITSEE, Philadelphia, Pa. Filed Oct. 20, 1904. Serial No. 230,587.



Claim.—1. In a telephonic system wherein the outlying subscriber centers through a circuit in an exchange, means at said exchange to register the value of the conversation at the outlying station, said means embracing at the exchange automatic means to make and break a circuit in accordance with the value to be registered, means to connect this make-and-break means to the circuit of the subscriber and a grounded source of current for said make-and-break means, and which embraces at the subscriber's station a registering device.

2. Means to register the service of a telephonic circuit connecting an outlying station to a center or exchange, said means embracing at the outlying station a branch circuit including electromagnetic means to actuate a registering device, a registering device, and electromagnetic means to open and close said branch circuit, and embracing at the exchange a source of current adapted to make operative said circuit-closing means, a series of contacts, movable contacting means, means to start the movement of said contacting means, means to estop said means, means to connect the terminals of the contacts and contacting means to the telephonic circuit and a source of current for said circuit.

3. In a telephonic system wherein the outlying station centers in an exchange, means at said exchange to register at said outlying station the value of a conversation, said means embracing at the central an automatic make-and-break device, a grounded source of current connected to said device, means to stop said automatic device at the will of the operator, means to connect said device to one leg of the circuit of the outlying station; the means at the outlying station embracing a registering device connected to one leg of the circuit

and adapted to be connected to the other leg of said circuit through the operation of the armature of a grounded electromagnet.

817,921. **ELECTRIC TRANSMISSION OF INTELLIGENCE.** ISIDOR KITSEE, Philadelphia, Pa. Filed June 24, 1904. Renewed Dec. 26, 1905. Serial No. 293,237.



Claim.—1. A line of transmission consisting of a series of sections of a pair of twisted wires, one wire of the first section in operative relation to a receiving device at one station, the second wire of said section in inductive relation to one wire of the third section, the second wire of said third section in inductive relation to a receiving device of the second station, the terminals of the line being connected through instruments to a return-conductor.

2. In combination with two telephonic stations more or less remote from each other a line of transmission connecting both stations inductively with each other, said line of transmission consisting of a series of conductively independent sections, each section consisting of two wires twisted around each other, the different sections in inductive relation to each other through the twist of one wire of one section around one wire of the section following, the terminals of the line being connected through instruments to a return-conductor.

3. In electricity, a line of transmission connecting two stations with each other, said line of transmission consisting of a series of independent pairs of conductors, each of said pairs of conductors overspanning only part of the space between said two stations, the different pairs in inductive relation with each other through the intertwining of one conductor of one pair with one conductor of the other pair, the terminals of the line being connected through instruments to a return-conductor.

4. A composite sectional line conductor comprising a plurality of sections, each section consisting of conductively-independent conductors twisted together, one of said conductors being common to neighboring sections.

5. A composite sectional line conductor comprising a plurality of sections, each section consisting of conductively-independent conductors twisted together, one of said conductors being common to neighboring sections and the conductors of neighboring sections twisted with said common conductor being conductively independent from each other.

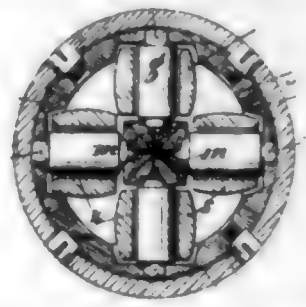
6. A composite sectional line conductor comprising a plurality of sections, each section consisting of conductively-independent conductors twisted together, neighboring sections being conductively connected as to one of the twisted conductors, and alternate sections being conductively independent from each other as to all conductors.

7. A composite sectional line conductor comprising a plurality of sections, each section consisting of conductively-independent conductors twisted together, a conductor of each section being in twisted relation with a conductor of neighboring section.

8. A composite sectional line conductor comprising a plurality of sections, each section consisting of conductively-independent conductors twisted together, each conductor being in twisted relation with conductively-independent conductors of neighboring sections.

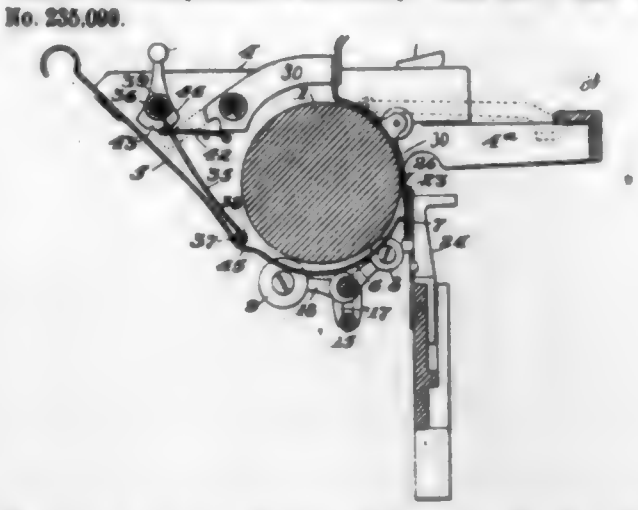
9. In a system for transmission of varying electric currents of impulses, transmitting and receiving apparatus, and a composite sectional line conductor inductively joining the transmitting and receiving apparatus, said line conductor comprising a plurality of sections each section consisting of conductively-independent conductors twisted together, each conductor being in twisted relation with conductively-independent conductors of neighboring sections.

817,922. **UNIVERSAL JOINT.** JULIUS V. KOROKNAY, Raab, Austria-Hungary. Filed July 1, 1905. Serial No. 267,395.



Claim.—In a device of the character described, the combination with the shafts having forked ends, of joint-pins carried by the forks and arranged radially of the shafts and having conical inner ends, and prism-shaped shoes arranged relatively to each other as described, said shoes having a bearing upon and being movable with respect to each other as set forth, and each shoe being provided with a conical seat receiving the conical end of a joint-pin.

817,923. **TYPE-WRITING MACHINE.** EDWARD P. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 1, 1904. Serial No. 235,009.



Claim.—1. In a type-writing machine, the combination with the revoluble platen and the paper-shelf in rear thereof, of releasable means beneath the platen for holding the paper against the same so as to cause the paper to turn with the platen, and independent means mounted between the platen and the paper-shelf for holding paper against the rear side of the platen while said releasable means are released; said independent means having a yielding construction to permit introduction of paper between the same and the platen, and being so mounted that a passage is also left for paper between said independent means and the paper-shelf.

2. In a type-writing machine, the combination with a revoluble platen, of means beneath the platen and including a releasable pressure-roll, for feeding and guiding paper around the under side of the platen, said feeding and guiding means being so constructed that a sheet may be inserted backwardly at the front of the platen and pushed down and back beneath the platen while the latter is stationary, and a gripper mounted between the platen and the paper-shelf and normally standing away from the platen so that paper may be inserted between said gripper and the platen, but movable away from the paper-shelf so as to bear against the paper on the platen and leave an open passage for the upward movement along the paper-shelf of the backwardly-inserted sheet.

3. In a type-writing machine, the combination with a revoluble platen and paper-guiding means which permit the introduction of sheets at both back and front of the platen, of a paper-shelf, a gripper

mounted between the platen and the paper-shelf and normally standing in rear of the platen so that paper may be inserted between the gripper and the platen, but movable forwardly so as to bear against the paper on the platen and leave an open passage for the movement of a sheet between the gripper and the paper-shelf, and means for holding the gripper either against the platen or out of contact therewith at will.

4. In a type-writing machine, the combination with a revoluble platen, a paper-shelf in rear thereof, and paper-guiding means which permit the introduction of sheets at both back and front of the platen, of a gripper mounted between the paper-shelf and the platen, and means, including a finger-piece, for moving said gripper toward and away from the platen; a passage for paper being left between the paper-shelf and the gripper when the latter lies against the platen.

5. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in the rear thereof, of a gripper mounted between the paper-shelf and the platen, a finger-piece for moving said gripper, and means for detaining the gripper either against the platen or away therefrom; a passage for paper being left between the paper-shelf and the gripper when the latter lies against the platen.

6. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of a rock-shaft mounted forwardly of the paper-shelf, and a paper-pressing device extending down from said rock-shaft between the paper-shelf and the platen.

7. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of paper-guiding means which permit the insertion of paper at both back and front of the platen, a rock-shaft mounted forwardly of the paper-shelf and extending parallel with the platen, a paper-pressing device extending down from said rock-shaft between the paper-shelf and the platen, and means operating upon said rock-shaft for holding said paper-pressing device either against the platen or away therefrom.

8. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, said paper-shelf being extended forwardly and curving around the under side of the platen and separated therefrom to permit backward insertion of paper, of a paper-pressing device mounted between said said paper-shelf and the platen at the rear side of the latter, and means for holding said paper-pressing device either against the platen or away therefrom; the construction being such that when said paper-pressing device is against the platen a clear space is left between said device and said paper-shelf; and said paper-shelf being provided with a recess to receive the lower end of said pressing device when the latter is moved from the platen.

9. In a type-writing machine, the combination with a revoluble platen, a paper-shelf, and paper-guiding means which permit the introduction of sheets at both back and front of the platen, of a gripper or finger mounted in rear of the platen and adjustable therealong, and constructed to hold paper stationary against the platen during the introduction into the machine of another sheet.

10. In a type-writing machine, the combination with a revoluble platen, of means beneath the platen and including a releasable main pressure-roll, for feeding and guiding paper around the under side of the platen; said feeding and guiding means being so constructed as to permit a sheet to be introduced at the front of the platen and passed rearwardly beneath the same; and a plurality of grippers or pressure-fingers independently adjustable along the platen and mounted to bear against the rear side thereof.

11. In a type-writing machine, the combination with a revoluble platen and means for guiding paper forwardly beneath and up in front of and back over the platen, said feeding and guiding means including releasable members and being so constructed as to permit a sheet to be introduced at the front of the platen and passed rearwardly beneath the same, of an auxiliary paper-pressing device adjustable along the platen and mounted to press the paper against the platen and hold it stationary during the introduction of an additional sheet.

12. In a type-writing machine, the combination with a frame of a platen journaled therein, releasable paper-pressing means beneath the platen for causing the paper to move with the platen, a series of devices in rear of the platen and independently adjustable therealong, for holding paper stationary against the platen while said releasable paper-pressing means are released, and a finger-piece connected to said series of devices for controlling the same.

13. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of means for guiding paper around the under side of the platen, and means mounted between the paper-shelf and the platen and adjustable along the latter, for holding paper against the platen.

14. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of means for guiding paper around the under side of the platen; said guiding means including a releasable roller and being so constructed as to permit a sheet to be introduced from either back or front of the platen; and means mounted between the paper-shelf and the platen and adjustable along the latter, for holding paper against the platen; said adjustable paper-holding means being so constructed that a clear passage for paper is left between the same and said paper-shelf.

15. In a type-writing machine, the combination with a revoluble platen and paper-guiding means which permit the introduction of sheets at both back and front of the platen, of a paper-shelf, and a series of grippers mounted between the platen and the paper-shelf and adjustable independently of one another along the platen and normally standing in rear thereof so that paper may be inserted between the grippers and the platen, but movable forwardly so as to bear against the paper on the platen and leave an open passage for the movement of a sheet between the grippers and the paper-shelf.

16. In a type-writing machine, the combination with a revoluble platen, a paper-shelf in rear thereof, and paper-guiding means which permit the introduction of sheets at both back and front of the platen, of a series of grippers mounted between the paper-shelf and the platen and adjustable along the latter, and means common to said grippers for moving them simultaneously toward and away from the platen; a passage for paper being left between the paper-shelf and the grippers when the latter lie against the platen.

17. In a type-writing machine, the combination with a rev luble platen and a paper-shelf in rear thereof, of a rock-shaft mounted forwardly of the paper-shelf, a series of grippers or paper-pressing fingers splined to said rock-shaft so as to be adjustable therealong independently of one another, and a spring device operating upon said rock-shaft to hold said grippers against the platen.

18. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of paper-guiding means beneath the platen and including a releasable pressure-roll and permitting the introduction of sheets at both back and front of the platen, a rock-shaft mounted between the paper-shelf and the platen, a series of grippers splined to said rock-shaft so as to be adjustable therealong, a finger-piece for turning said rock-shaft, and yielding means for holding said grippers either against said platen or away therefrom; a passage for paper being left between the paper-shelf and the grippers when the latter rest against the platen.

19. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, said paper-shelf being extended forwardly and curving around the under side of the platen and separated therefrom to permit introduction of the paper at the front of the platen, of a rock-shaft between the paper-shelf and the platen, a series of grippers adjustable along said rock-shaft but mounted thereon so as to turn therewith, and means for holding said grippers against the platen or away therefrom at will; said paper-shelf being formed with a recess extending substantially its entire length, for receiving the lower ends of said grippers when the latter are moved back.

20. In a front-strike writing-machine, the combination with a platen, and means for guiding and feeding paper forwardly thereunder, of a front platen-scale extending longitudinally of the platen and sloping upwardly and forwardly therefrom, to afford a guide for the insertion of paper backwardly at the front of the platen.

21. In a front-strike writing-machine, the combination with a platen and means for feeding paper forwardly thereunder, of a plate wholly below the printing-line and extending longitudinally of the platen in front thereof and sloping upwardly and forwardly therefrom, to facilitate the introduction of sheets backwardly at the front of the platen; said plate and said platen being relatively movable to afford a passage for the paper.

22. In a front-strike writing-machine, the combination with a platen and means for feeding paper forwardly thereunder, of a plate wholly below the printing-line and extending longitudinally of the platen in front thereof and sloping upwardly and forwardly therefrom, to facilitate the introduction of sheets backwardly at the front of the platen, and a spring pressing said plate toward the platen.

23. In a front-strike writing-machine, the combination with a revoluble platen, of a releasable pressure-roll for feeding the paper forwardly under the platen, a deflector curving around the under side of the platen in such relation thereto as to permit the ready introduction of a sheet from the front of the platen, and means wholly below the printing-line and sloping upwardly and forwardly from the front side of the platen and coöperating therewith to guide the

leading edge of a backwardly-inserted sheet between said curved deflector and the platen.

24. In a front-strike writing-machine, the combination with a revoluble platen, of a deflector curving beneath and up toward the front of the platen and well separated therefrom, and a plate wholly below the printing-line and extending along the front of the platen and sloping forwardly and upwardly therefrom, for facilitating the introduction of a sheet backwardly between the platen and said deflector.

25. In a front-strike writing-machine, the combination with a revoluble platen, and means, including a releasable paper-presser, for feeding paper forwardly beneath the platen, of a front platen-scale extending longitudinally of the platen and sloping upwardly and forwardly therefrom, and provided with graduations upon its upper surface said scale and said platen being relatively movable to afford a passage for the paper.

26. In a front-strike writing-machine, the combination with a traveling revoluble platen and means for guiding and feeding paper forwardly thereunder, of a plate mounted upon the framework of the machine in front of the platen and extending longitudinally thereof but close thereto, and sloping upwardly and forwardly therefrom, to facilitate the backward insertion of paper.

27. In a front-strike writing-machine, the combination with a platen and its carriage, of a deflector-plate curving beneath the platen but so mounted as to permit the backward insertion of paper from the front of the platen, and a pair of plates mounted in line upon the framework of the machine in front of the platen and extending longitudinally thereof but close thereto, and sloping upwardly and forwardly therefrom, one plate at each side of the printing-point, for guiding the leading edge of a backwardly-inserted sheet between said deflector-plate and the platen.

28. In a front-strike writing-machine, the combination with a revoluble platen, its carriage, and means, including, a releasable member, for feeding paper forwardly beneath the platen, of a front platen-scale mounted upon the framework of the machine and sloping upwardly and forwardly from the platen and provided with graduations upon its upper surface.

29. In a front-strike writing-machine, the combination with a revoluble platen, its carriage, and a releasable pressure-roll, of a deflector-plate curving beneath the platen in such relation thereto as to permit the backward introduction of a sheet from the front of the platen, and a pair of front platen-scales one at each side of the platen mounted upon the framework of the machine and sloping upwardly and forwardly from the platen; said scales being provided with graduations upon their upper surfaces, and coinciding with the bottom edge of the line of writing upon the platen, and serving to guide the leading edge of a backwardly-inserted sheet between said deflector-plate and the platen.

30. In a front-strike writing-machine, the combination with a revoluble platen, its carriage, and a releasable pressure-roll, of means coöperating with said roll to feed the paper forwardly beneath the platen, said coöperating means being constructed to permit the ready introduction of a sheet from the front of the platen, a pair of plates pivoted to the framework of the machine in front of the platen and extending up to the printing-line on the platen, and from said printing-line bent upwardly and forwardly to facilitate the backward introduction of a sheet between the platen and said coöperating means, and springs pressing said plates toward the platen.

31. In a front-strike writing-machine, the combination with a revoluble platen, of a releasable main pressure-roll for feeding the paper forwardly under the platen, a deflector curving around the under side of the platen in such relation thereto that a sheet may readily be introduced backwardly from the front of the platen, a plate extending along the front of the platen and sloping upwardly and forwardly therefrom to direct the leading edge of the sheet between the platen and said deflector, and means in rear of the platen for holding sheets against the same during the backward introduction of a sheet.

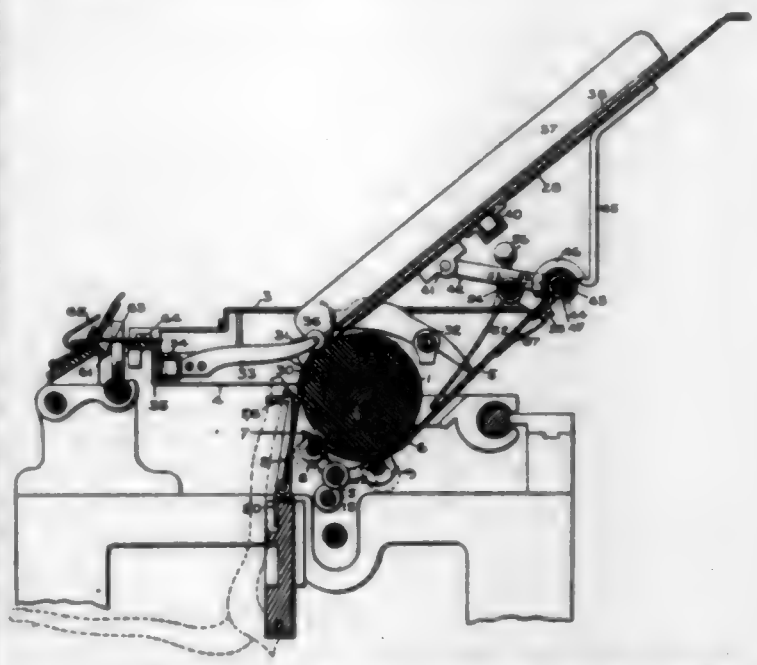
32. In a front-strike writing-machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of a releasable main pressure-roll for feeding the paper forwardly under the platen, a deflector curving around the under side of the platen in such relation thereto that a sheet may readily be introduced backwardly from the front of the platen, a scale extending along the front of the platen and sloping upwardly and forwardly therefrom to direct the leading edge of the sheet between the platen and said deflector, and a gripper to bear against the paper on the rear side of the platen during the backward insertion of another sheet; said gripper being movable away from the platen, and a passage for the backwardly-inserted sheet being left between the paper-shelf and the gripper when the latter lies against the platen.

33. In a type-writing machine, the combination with a revoluble platen, of a series of paper-supports one behind another in rear of the platen, each extending upwardly from the lower rear side of the platen, the rearmost support being continued around the under side of the platen and up around the front thereof, but being well separated from the platen, and coöperating with the platen and with the forward support to form a single open continuous passage for guiding sheets thrust around the platen while the latter is stationary and while other sheets are confined motionless between said forward support and the platen.

34. In a type-writing machine, the combination with a revoluble platen, of a series of paper-supports one behind another in rear of the platen and extending upwardly from the rear side thereof, and a plate curving from the rear support around beneath and up in front of the platen and well separated therefrom and extending unbroken beneath the platen for substantially the entire length thereof, and constituting a guide for sheets thrust around the stationary platen.

35. In a type-writing machine, the combination with a revoluble platen, of two paper-supports, one behind another, and both in rear of the platen and extending upwardly from the rear side thereof, and a plate curving from the rear support around beneath and up in front of the platen and well separated therefrom and extending the entire length of the platen and coöperating with the platen to form an open passage to guide sheets thrust around the stationary platen; said forward paper-support and said platen being so related as to cooperate to protect the inner sheet against being disarranged by the thrusting of outside sheets around the same.

817,924. **TYPE-WRITING MACHINE.** EDWARD F. KUHATE, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 7, 1905. Serial No. 248,796.



Claim.—1. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of said platen, an upwardly and forwardly inclined scale in front of the platen, and a coöperative paper-guide curving beneath the platen and separated therefrom.

2. In a type-writing machine, the combination with a revoluble platen, of types mounted to strike upon the front side of the platen, a hinged paper-supporting board extending upwardly and rearwardly from the platen, releasable means for holding the side edges of the paper against the platen, and means, independent of said paper-holding means, for receiving a sheet at the front of the platen and guiding it rearwardly beneath the same.

3. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen and mounted for movement away from the top of the platen, means for engaging the side edges of a sheet lying upon the board, and a deflector curving beneath the platen at sufficient distance therefrom to enable the leading edges of sheets to slip readily backward beneath the platen; means being provided for permit-

ting the ready introduction of the sheet at the front of the platen between the latter and said deflector.

4. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a platen-frame, a sheet-supporting board extending upwardly and rearwardly from the top of the platen, means for enabling said board to be moved back from the platen, means for pressing against the platen the side edges of a sheet lying upon the board, releasable devices for pressing paper against the front of the platen near the middle thereof and a deflector curving beneath the platen at sufficient distance therefrom to enable the sheets to slip backwardly beneath the platen, a scale inclining upwardly and forwardly from the platen, and releasable pressure-rolls beneath the platen.

5. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and movable away therefrom, releasable rolls for pressing the side edges of the sheet against the front of the platen, and means mounted in front of and below the platen for receiving and guiding sheets downwardly and backwardly when introduced in front of the platen.

6. In a type-writing machine, the combination with a revoluble platen, of a paper-shelf in rear thereof, a forwardly and upwardly inclined scale in front of the platen, a deflector curving beneath the platen and separated therefrom so as to permit the ready introduction of a sheet from either the back or front of the platen, a hinged paper-supporting board extending upwardly or rearwardly from the top of the platen over said paper-shelf and extending in rear thereof, releasable means for pressing the side edges of wide sheets against the front of the platen, and a releasable pressure-roll for pressing narrow sheets against the front of the platen.

7. In a type-writing machine, the combination with a platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and a paper-guiding device curving beneath the platen and up in front thereof and separate from the platen and also constructed to guide the leading edge of a sheet backwardly beneath the platen and rearwardly therefrom, said paper-guiding device extending upwardly in rear of the platen, and said board being mounted to swing back of said paper-guiding device.

8. In a type-writing machine, the combination with a platen and types mounted to strike upon a visible side thereof, of a detachable sheet-supporting board extending upwardly and rearwardly from the delivery side of said platen in the vicinity of the printing-line; said board mounted to swing to a position of disuse.

9. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon a visible side thereof, of a detachable sheet-supporting board extending upwardly and rearwardly from the top side of said platen, and hinged in rear of the platen to the platen-frame.

10. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon the front thereof, of a sheet-supporting board extending rearwardly from the top of the platen, and a hinge connecting said board to said platen-frame; said hinge having a member which is movable to release the board so that it may be detached.

11. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly from the top of said platen and far in rear thereof, and means hinging said board to said platen-frame; said hinging means including a pintle movable to release the board.

12. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly from the top of said platen and far in rear thereof, and means hinging said board to said platen-frame; said hinging means including a pintle movable to release the board, and a spring for holding said pintle in normal position.

13. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon a visible side thereof, of paper-guiding means so related to the platen as to form an open passage to permit the ready introduction of a sheet at the front of the platen, a sheet-supporting board hinged upon said platen-frame and extending upwardly from the top of the platen and far in rear thereof, and a spring tending to maintain said board in normal position.

14. In a type-writing machine, the combination with a platen-frame, a revoluble platen, and types mounted to strike upon the front thereof, of a hinged sheet-supporting board extending upwardly from the top of the platen and far in rear thereof, and means for maintaining said board in normal position.

15. In a type-writing machine, the combination with a platen-frame, of a revoluble platen, types mounted to strike upon the front side of the platen, a hinged detachable paper-supporting board extending upwardly from the top of the platen and far in rear thereof, and a spring for maintaining said board in normal position.

16. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen, releasable means for engaging the side edges of the sheet lying upon the board, and a deflector curving beneath the platen at sufficient distance therefrom to enable a sheet to slip rearwardly beneath the platen, and extending upwardly and rearwardly from the platen, provision being made for the ready introduction of the sheet at the front of the platen, and pressure-rolls beneath the platen and movable to points below said deflector.

17. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front side thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen, releasable means for engaging the side edges of a sheet lying upon the board, a deflector curving beneath the platen at sufficient distance therefrom to enable a sheet to slip rearwardly beneath the platen, and extending upwardly and rearwardly from the platen, means, including a plate sloping upwardly and forwardly from the platen, for enabling the introduction of a sheet at the front of the platen, and pressure-rolls beneath the platen movable to point below said deflector.

18. In a type-writing machine, the combination with a platen-frame and a revoluble platen, of types mounted to strike upon the front side of the platen, a pair of arms hinged upon the platen-frame, a sheet-supporting board hinged to said arms and extending rearwardly from the top of the platen, and means coöperating with said arms to support said board in normal position.

19. In a type-writing machine, the combination with a revoluble platen, and types mounted to strike upon the front side thereof, of paper-shelf in rear of the platen and extending down behind the same, and a sheet-supporting board extending rearwardly from the top of the platen and hinged to the top of said shelf.

20. In a type-writing machine, the combination with a revoluble platen, and types mounted to strike upon the front side thereof, of a paper-shelf in rear of the platen and extending down behind the same; arms hinged to the top of said shelf; a sheet-supporting board hinged on said arms and extending upwardly and rearwardly from the top of the platen; and means coöperating with said arms to support said board.

21. In a type-writing machine, the combination with a platen-frame, of a revoluble platen, types mounted to strike upon the front side of the platen, a pair of arms hinged upon the platen-frame and extending forwardly, and a sheet-supporting board extending rearwardly from the top of the platen and pivoted between its front and rear edges to said arms.

22. In a type-writing machine, the combination with a platen-frame, of a revoluble platen, types mounted to strike upon the front side of the platen, a pair of arms hinged upon the platen-frame and extending forwardly, and a sheet-supporting board extending rearwardly from the top of the platen and pivoted between its front and rear edges to said arms, and means coöperating with said arms to support said board.

23. In a type-writing machine, the combination with a revoluble platen and a paper-shelf in rear thereof, of releasable rolls pressing against the platen, yielding paper-clamps arranged between the platen and the paper-shelf and movable forwardly and backwardly, and means for holding said clamps either against the platen, or against the paper-shelf, or in an intermediate idle position, at will.

24. In a type-writing machine, the combination with a revoluble platen, a paper-shelf mounted behind the same, and releasable rolls pressing against the platen, of a gripping device arranged between the platen and paper-shelf, and means for holding said gripping device either yieldingly against the paper-shelf or in idle position, at will.

25. In a type-writing machine, the combination with a revoluble platen, a paper-shelf in rear thereof, and releasable rolls pressing against the platen, of a set of grippers mounted between the paper-shelf and the platen, a rock-shaft upon which said grippers are mounted, a finger-piece for turning said rock-shaft, and a yielding detent for holding said grippers either against the platen, or against the paper-shelf, or in intermediate idle position, at will.

26. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and side paper-gages mounted upon said board for independent adjustment thereacross; said gages being separated slightly from said board, so that a passage for paper is left between the gages and the board.

27. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a sheet-supporting board extending rearwardly from the top of the platen, and a side paper-gage mounted upon said board for adjustment thereacross and slightly separated from said board, so as to leave a space for paper to pass between the gage and the board.

28. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a deflector curving around the under side of the platen, and in such relation thereto that a sheet may readily be introduced in front of the platen and pushed back around the under side of the platen between the same and said deflector while the platen remains stationary, a sheet-supporting board extending rearwardly from the top of the platen, releasable means for pressing the side edges of the paper against the front of the platen, and a side paper-gage mounted upon said board for adjustment thereacross, and sufficiently separated from the board to permit a few sheets to lie between the same and the board.

29. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon a visible side thereof, of a sheet-supporting board extending rearwardly from the top of said platen, and a side paper-gage mounted upon said board and adjustable thereacross but slightly separated therefrom, said gage provided with a supporting-lip upon which the side edge of the sheet may rest.

30. In a type-writing machine, the combination with a revoluble platen, and types mounted to strike upon a visible side thereof, of a sheet-supporting board extending rearwardly from the top of said platen, and side paper-gages mounted upon the said board and independently adjustable thereacross but separated therefrom, each gage provided with a supporting-lip for the paper.

31. In type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending rearwardly from the top of the platen, a front platen scale or gage extending longitudinally of the platen and sloping upwardly and forwardly therefrom, to serve as a guide for the insertion of paper backwardly at the front of the platen, and releasable means between said scale and said board for pressing the paper against the platen.

32. In a type-writing machine, the combination with a revoluble platen and types mounted to strike upon the front thereof, of a sheet-supporting board extending rearwardly from the top the of platen, a front platen scale or gage extending longitudinally of the platen and sloping upwardly and forwardly therefrom to serve as a guide for the insertion of paper backwardly at the front of the platen, releasable rolls between said scale and said board for holding the side edges of the paper against the platen, means for guiding the leading edge of the paper backwardly beneath the platen, and a releasable pressure-roll to bear against the front of the platen between said side pressure-rolls.

33. In a front-strike writing-machine, the combination with a platen, of a sheet-supporting board extending rearwardly from the top of the platen, a plate extending longitudinally along the platen and sloping upwardly and forwardly therefrom to facilitate the introduction of sheets backwardly in front of the platen, and a spring pressing said plate toward the platen.

34. In a front-strike writing-machine, the combination with a revoluble platen, of a deflector curving around the under side of the platen and separated therefrom to permit the ready movement of a sheet beneath the platen while the latter is stationary, a device sloping upwardly and forwardly from the front side of the platen and cooperating therewith to guide the leading edge of a backwardly-inserted sheet between said curved deflector and the platen, a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and releasable rolls pressing against the platen between said board and said sloping device.

35. In a front-strike writing-machine, the combination with a revoluble platen, of a front platen scale or gage extending longitudinally of the platen and sloping upwardly and forwardly therefrom, a deflector for guiding the leading edge of a sheet backwardly beneath the platen and away therefrom while the platen is stationary, said deflector separated from the platen, a sheet-supporting board extending rearwardly from the top of the platen, and releasable devices for pressing against the platen.

36. In a front-strike writing-machine, the combination with a revoluble platen, of a front platen scale or gage extending longitudinally from the platen and sloping upwardly and forwardly therefrom, a deflector separated from the platen for guiding the leading edge of a sheet backwardly beneath the platen and away therefrom while the platen is stationary, a sheet-supporting board extending rearwardly from the top of the platen, releasable devices for pressing the paper against the front of the platen, and independently-releasable rolls pressing against the under side of the platen and movable out of the path of the paper.

37. In a front-strike writing-machine, the combination with a platen and platen-frame, of a deflector-plate curving beneath the platen and separated therefrom and capable of guiding the leading edge of the sheet backwardly beneath and away from the platen while the latter is stationary, a pair of gage-plates mounted in line in front of the platen and extending longitudinally thereof and near thereto, and sloping forwardly and upwardly therefrom, one plate at each side of the printing-point, for guiding the leading edge of a sheet down between said deflector and said platen, a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and independently-releasable devices for pressing the paper against the platen.

38. In a front-strike writing-machine, the combination with a revoluble platen and a platen-frame, of means for guiding the leading edge of a sheet downwardly beneath the platen and rearwardly therefrom, a front platen gage or scale permanently mounted upon the framework of the machine, and extending upwardly and forwardly from the platen, a sheet-supporting board extending upwardly and rearwardly from the top of the platen, and a plurality of releasable rolls pressing the paper against the platen between said board and said platen-scale.

39. In a front-strike writing-machine, the combination with a revoluble platen, of a deflector curving beneath the platen and separated therefrom and capable of guiding the leading edge of a sheet backwardly beneath the platen and away therefrom, a pair of front platen scales or gages one at each side of the printing-point and mounted upon the framing of the machine and sloping upwardly and forwardly from the platen, said scales coinciding with the edge of the line of writing upon the platen and serving to guide the leading edge of a sheet down between said deflector and the platen, a sheet-supporting board extending rearwardly from the top of the platen, and independently-releasable devices for pressing the paper against the platen.

40. In a front-strike writing-machine, the combination with a revoluble platen and releasable pressure-rolls beneath the same, of means for guiding the leading edge of a sheet backwardly beneath the platen independently of said pressure-rolls, a pair of plates pivoted to the framework of the machine, and extending up to the printing-line on the platen and from said printing-line sloping upwardly and forwardly, a sheet-supporting board extending upwardly and rearwardly from the top of the platen, releasable rolls at the ends of the platen for pressing the side edges of a wide sheet against the platen, and releasable means between said rolls for pressing narrow sheets against the platen.

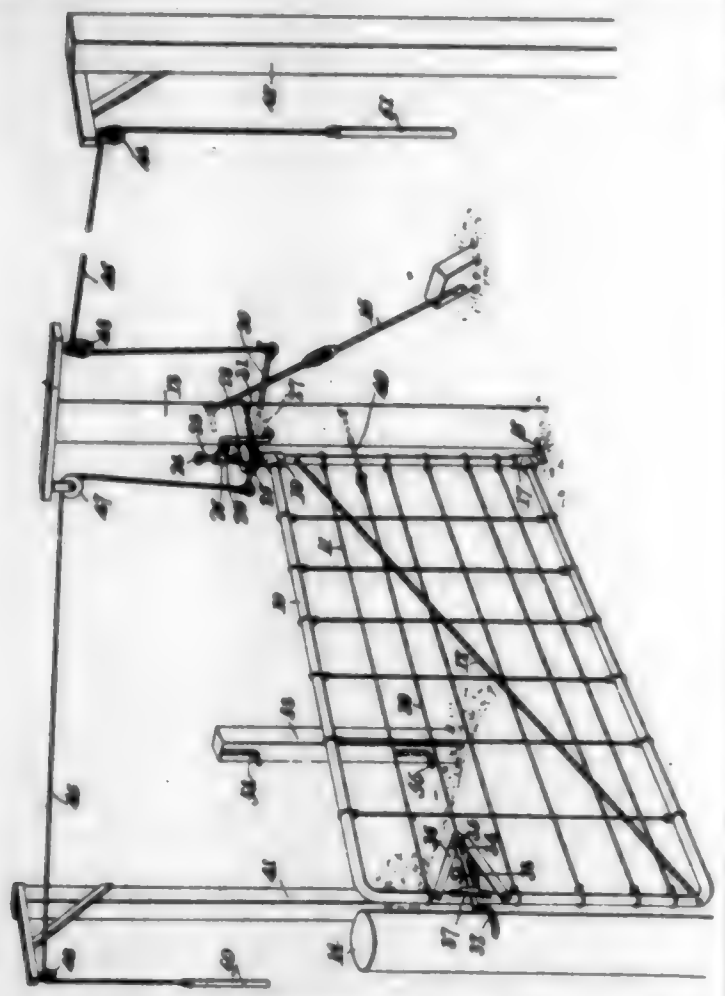
817,925. GATE. ADAM LESLER, Hastings, Nebr. Filed Sept. 14, 1905. Serial No. 278,464.

Claim.—1. In a gate, a supporting-post, a gate hinged at the lower corner to said post and provided at the adjacent upper corner with a projecting stud, an arm swinging from said post with its free end movably engaging said stud, a binding-chain inclosing said post and coupled to said gate, and means for swinging said arm.

2. In a gate, a supporting-post, a gate hinged at the lower corner to said post and provided at the adjacent upper corner with a projecting stud, an arm swinging from said post with its free end movably engaging said stud, a chain-pulley carried by said stud, an endless chain operating on said pulley and encircling said post, and means for swinging said arm.

3. In a gate, a hinge-post and a latch-post disposed at opposite sides of a gateway-opening, a gate hinged at one lower corner and swinging laterally at the adjacent upper corner relative to said hinge-post and with an aperture transversely of the hinge-stile, means for swinging said post laterally upon its hinged corner, a latch-keeper carried by the latch-post, a latch element movably disposed upon said gate, a spring operating to maintain said latch element in projected position for engagement with said keeper, a flexible element connected to said hinge-post and extending slidably through the aperture in

the hinge-stile of the gate and connected to the latch element, whereby when the gate is tilted upon its hinged corner the flexible element will be deflected laterally and draw the latch element longitudinally of the gate.



4. In a gate, a supporting-post, a gate hinged at the lower corner to said post and provided at the adjacent upper corner with a projecting stud, a sleeve slidable on said stud, an arm swinging from said post with its free end movably engaging said sleeve and means for actuating said arm.

817,926. **TRANSFORMER.** CARL A. LOHR, Wilkinsburg, Pa. Filed Apr. 27, 1905. Serial No. 257,044.



Claim.—1. A transformer comprising high and low voltage circuits the said circuits being divided into alternately-disposed sections, links connecting the inner and outer terminals of the sections of the low-voltage circuit, said links being disposed alternately inside and outside of the sections of the high-voltage circuit.

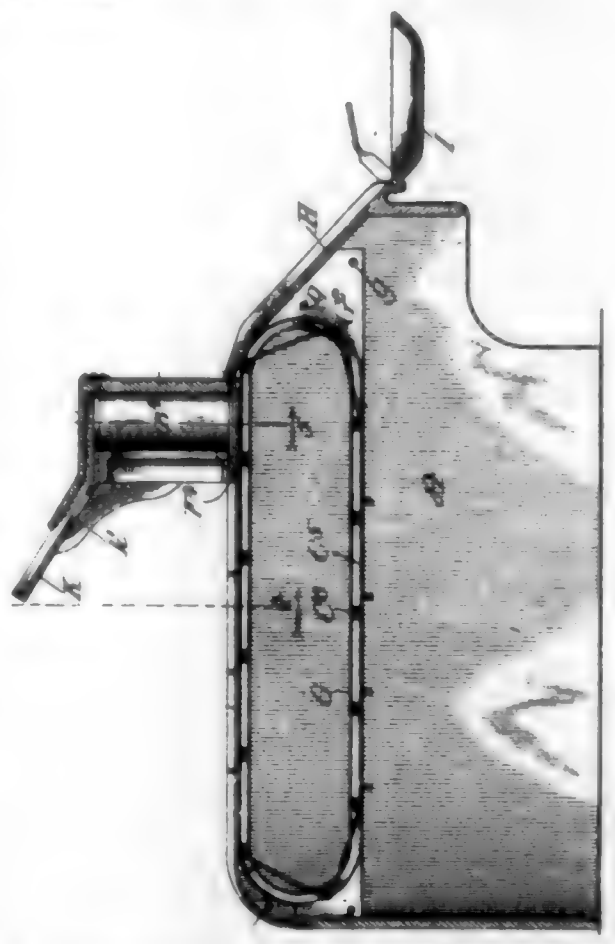
2. A transformer comprising high and low voltage circuits each circuit comprising a plurality of alternately-disposed sections, each section of the low-voltage circuit having inner and outer terminals, connections between the inner and outer terminals, said connections being alternately disposed between the successive sections.

3. In a transformer the combination of a high-voltage circuit, a low-voltage circuit, both circuits being divided into sections placed alternately one against the other, connections between the inner terminals of the sections of the low-voltage circuit, connections between the outer terminals of said sections, said inner and outer connections being alternately disposed.

4. In a transformer the combination of a high-voltage circuit, a low-voltage circuit, both circuits being divided into alternately-disposed sections each section of the low-voltage circuit consisting of a coil in a single layer, links connecting the inner and outer terminals of the sections of the low-voltage circuit, said links being disposed alternately on the inside and outside of the sections of the high-voltage circuit.

817,927. **COIN HOLDING AND DELIVERING MACHINE.** JOHN W. MEAKER, Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company, a Corporation of Michigan. Filed July 21, 1904. Serial No. 217,512.

Claim.—1. A change-making machine comprising a coin-holding receptacle adapted for the discharge of coins from the lower end thereof, and a manually-operable endless traveling belt or carrier provided with coin-ejecting fingers, a part of which is located beneath the bottom wall of said receptacle and moves in a direction parallel therewith, and another part of which is adapted for the application thereto of the finger of the operator for the actuation of said belt or carrier.



2. A change-making machine comprising a plurality of coin-holding receptacles adapted for the discharge of coins from the lower ends thereof, said coin-holding receptacles being arranged side by side and a plurality of manually-operable endless traveling belts or carriers provided with coin-ejecting fingers, parts of the upper laps of said belts or carriers being located below and adapted to move in paths parallel with the bottom walls of the coin-receptacles and other parts thereof being arranged in the same plane and adapted for the application thereto of the fingers of the operator for the actuation of said belts or carriers.

3. A change-making machine comprising a plurality of coin-holding receptacles arranged side by side and adapted for the discharge of coins from the lower ends thereof and a plurality of manually-operable endless traveling belts or carriers provided with coin-ejecting fingers, the said endless belts or carriers being arranged in parallel planes and parts of the upper laps thereof being located beneath the coin-receptacles and adapted to move in planes parallel with the bottom walls of said receptacles and other parts of said upper laps being adapted for the application thereto of the fingers of the operator for the actuation of the said belts or carriers.

4. A coin holding and delivering machine comprising a coin-holding receptacle adapted for the discharge of coins from the lower end thereof, and an endless traveling belt or carrier provided with coin-ejecting fingers; said belt or carrier having a part exposed for the application of the finger thereto equal at least in length to a plurality of the spaces between the coin-ejecting fingers thereon, to provide for the ejection of one or a plurality of coins by a single advance movement of the belt or carrier.

5. A coin holding and delivering machine comprising a coin-holding receptacle adapted for the discharge of coins from the lower end thereof, and an endless traveling belt or carrier provided with coin-ejecting fingers, said belt or carrier having a part exposed for the application of the finger thereto equal at least in length to a plurality of the spaces between the coin-ejecting fingers thereon, and a finger-stop for limiting the movement of the finger in advancing the belt or carrier.

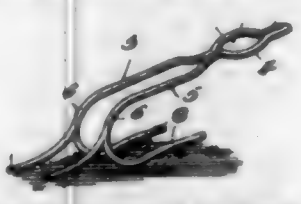
6. A coin holding and delivering machine comprising a coin-holding receptacle adapted for the discharge of coins from the lower end thereof and an endless traveling belt or carrier provided with coin-ejecting fingers; said endless belt or carrier having a part ex-

posed for the application of the finger thereto equal at least in length to a plurality of the spaces between the coin-ejecting fingers thereon, a finger-stop, and a scale provided with marks spaced to correspond with the distance apart of said fingers.

7. A coin holding and delivering machine comprising a plurality of coin-holding receptacles arranged side by side and adapted for the discharge of coins from the lower ends thereof, a plurality of endless traveling belts or carriers arranged side by side in parallel planes with their upper laps in the same planes, said traveling belts or carriers being provided with coin-ejecting fingers, and scale-strips located between the said belts and provided with marks spaced to correspond with the distance apart of the said coin-ejecting fingers on the belts or carriers.

8. A machine for holding and delivering coins comprising a coin-holding receptacle adapted for the discharge of coins from the lower end thereof, an endless traveling belt or carrier consisting of a plurality of pivotally-connected links, each provided with a coin-ejecting finger and guides for the chain located in position to sustain the upper lap of the same beneath the coin-holding receptacle with the coin-ejecting fingers in position to engage the lowermost coin in said receptacle.

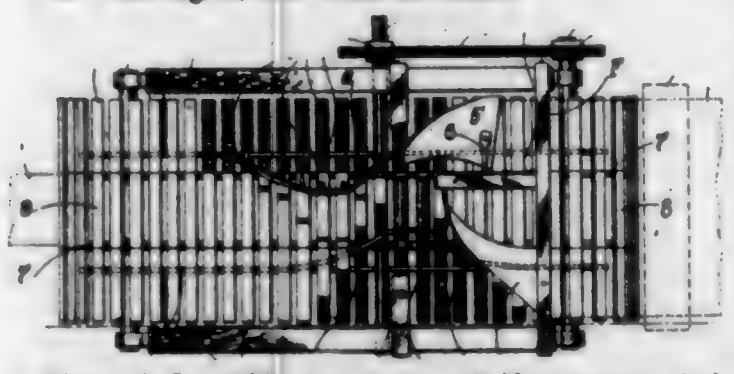
817,928. **GAME APPARATUS.** HARRY MEDLEY, Germantown, Pa. Filed July 1, 1905. Serial No. 267,894.



Claim.—1. A projector formed by bending a piece of spring metal upon itself and comprising a spring-arm, a seat for the missile, and a base formed by bifurcating the end of the spring-arm and bending the arms thus formed toward the front and rear respectively.

2. A projector formed by bending a piece of spring metal upon itself and comprising a handle at one end thereof, a seat for a missile at an intermediate point, and a base formed by bifurcating the extremities of the piece of spring metal and bending the arms thus formed toward the front and rear, respectively.

817,929. **FOLDING-MACHINE.** ALBERT R. NAUER, St. Louis, Mo. Filed Aug. 28, 1905. Serial No. 276,140.



Claim.—1. In a folding-machine, a suitable conveyer, a series of arms hinged to the sides thereof, and a stationary track having formations of suitable contour in the path of said arms for folding the same against the surface of the conveyer, substantially as set forth.

2. In a folding-machine, a suitable belt conveyer, a series of arms or members hinged to the sides thereof, and a track having formations of suitable contour in the path of said arms for folding the same against the surface of the conveyer, substantially as set forth.

3. In a folding-machine, a suitable belt conveyer, a series of arms or members hinged to the sides thereof, a track having formations of suitable contour in the path of the arms for oscillating the same against the surface of the conveyer, and suitable wings against which the sheet is folded at the initial or formative stage of the folding operation, substantially as set forth.

4. In a folding-machine, a suitable conveyer-belt for the support of the sheet to be folded, a series of arms hinged to the opposite sides thereof and foldable toward the supporting-surface of the conveyer, tracks over which the arms pass, suitable formations on the respective tracks for throwing or oscillating the arms on one side against the conveyer in advance of those on the opposite side, and devices carried by the arms and coöperating with the respective formations for returning the arms to their normal position, substantially as set forth.

5. In a folding-machine, a suitable conveyer-belt for the support of the sheet to be folded, a series of arms hinged to the opposite sides thereof and foldable toward the supporting-surface of the conveyer, tracks for the passage of the arms thereover, suitable formations on the respective tracks for consecutively oscillating the arms against the conveyer-supporting surface, and studs on the arms cooperating with the track formations for returning the arms to their normal outwardly-extended position, substantially as set forth.

6. In a folding-machine, a suitable conveyer for the support of the sheet to be folded, a series of arms hinged to the opposite sides thereof and foldable toward the supporting-surface of the conveyer, tracks for the passage of the arms thereover, suitable formations on the respective tracks for consecutively oscillating the arms against the conveyer-supporting surface, those on one side being folded in advance of those on the opposite side, and studs on the arms adapted to be engaged by the formations for returning the arms to their normal outwardly-extended position, substantially as set forth.

7. In a folding-machine, a composite endless or belt conveyer comprising a series of sections, and members forming individual components of one of the sections and foldable against the adjacent section, substantially as set forth.

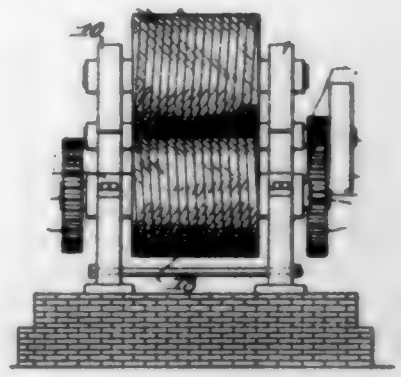
8. In a folding-machine, a composite endless or belt conveyer comprising a central section and two lateral sections, and members forming component parts of the side sections and foldable against the central section, substantially as set forth.

9. In a folding-machine, a composite endless or belt conveyer comprising a central section, and two lateral sections formed of a series of members or arms hinged to the opposite sides of the central section, and means for folding and unfolding the arms of one lateral section to and from the central section, in advance of a corresponding folding and unfolding of the arms of the other lateral section, substantially as set forth.

10. In a folding-machine, a composite belt conveyer having a driven section, and a movable section formed of a series of arms hinged along the sides thereof, a track for the support of said arms, and studs on the arms adapted to engage the track, substantially as set forth.

11. In a folding-machine, a composite belt conveyer having a driven section, and a lateral section composed of a series of hinged arms foldable against the driven section, studs on the arms, and a track having bends or formations for respectively engaging the arms to force them to a folded position, and engaging the studs to unfold the arms, substantially as set forth.

817,930. **OIL-PRESS.** CHRIS NELSON, Memphis, Tenn. Filed Oct. 17, 1905. Serial No. 283,143.

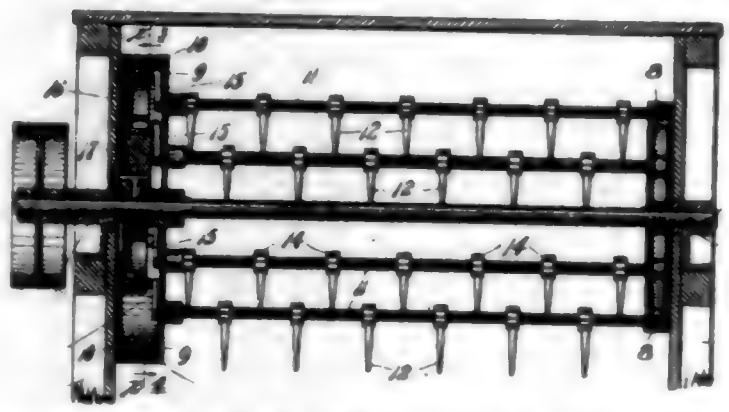


Claim.—1. In an oil-press, a pair of rolls, and means for feeding material between them, the lowermost roll having a covering of cloth or fibrous material through which the oil expressed may be forced, said cloth forming a feeding-surface for engaging the material and directing the same between the rolls.

2. In an oil-press, a frame, a pair of rolls having coverings of cloth wound helically from end to end of the rolls, the cloth serving when saturated to form a feeding-surface for engaging the material and directing the same between the rolls.

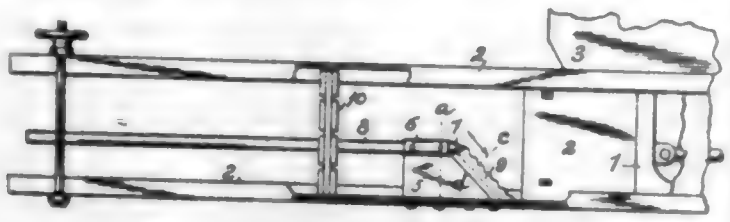
3. In an oil-press, a frame, a lower roll journaled therein, brackets carried by the frame and overhanging the lower bearings, said brackets being provided with vertically-disposed guiding-recesses, bearing-boxes arranged in said guiding-recesses, an upper roll journaled in said bearing-boxes, both of the rolls having coverings of cloth or fibrous material, gearing for imparting movement to the lower roll, a feed-chute for directing the meat or other material between the rolls, and a collecting-trough arranged adjacent to the feed side of the lower roll.

817,931. ROTARY BEATER FOR THRESHING-MACHINES. NELS P. NOREN and EDWARD R. WANG, Hitterdal, Minn. Filed Aug. 7, 1905. Serial No. 272,964.



Claim.—The combination with a rotary shaft, having a pair of laterally-spaced heads, both of which are hollow and one of which is adapted to contain oil and the other forms a complete inclosing case, of a plurality of pivotally-spaced fingered rock-shafts having crank-arms, a non-rotary eccentric surrounded by said crank-arms, and an eccentric-strap loose on said eccentric and pivotally connected directly to said crank-arms, said eccentric, eccentric-strap and crank-arms all being inclosed by and working within the said hollow case-forming head, substantially as described.

817,932. PROCESS FOR BALING HAY AND SIMILAR MATERIALS. JOHN NORTH and WILLIAM H. NORTH, Kansas City, Mo. Filed June 3, 1905. Serial No. 263,558.



Claim.—1. The process consisting in compressing the hay or similar fibrous material around a core to form a bale, and during compression longitudinally cutting the bale from one side to the cored portion.

2. The process consisting in consecutively compressing a series of layers of hay or similar fibrous material, transversely perforating each layer during compression and then arranging the several layers to form a bale with the several perforations in alinement with each other.

3. The process consisting in consecutively compressing a series of layers of hay or similar fibrous material, transversely perforating each layer during compression from end to end and from one edge toward the middle of the layer and arranging the layers to form a bale with the several perforations in alinement with each other.

4. The process consisting in consecutively compressing around a core a series of layers of hay or similar fibrous material and during compression transversely cutting each layer from one edge to the core portion.

5. The process consisting in consecutively compressing a series of layers of hay or similar fibrous material, transversely perforating each layer during compression, arranging the several layers to form a bale with the several perforations in alinement with each other and then tying together the several layers.

6. The process consisting in consecutively compressing a series of layers of hay or similar fibrous material, transversely perforating each layer during compression from end to end and from one edge toward the middle of the layer, then arranging the layers to form a bale with the several perforations in alinement with each other and then tying the several layers together.

7. The process consisting in consecutively compressing around a core a series of layers of hay or similar fibrous material, transversely cutting, during compression, each layer from one edge to the cored portion, arranging the several layers to form a bale with the cored and cut portions in alinement with each other and then tying together the several layers.

8. A bale of hay or similar fibrous material comprising the material compressed to form a bale, the bale being perforated from end to end and longitudinally divided from one side to said perforation.

9. A bale of hay or similar fibrous material comprising the material compressed to form a bale, the bale being perforated from end to end and longitudinally divided from one side to the said perforation, a plurality of bale-ties longitudinally encircling the bale.

10. A bale of hay or similar fibrous material comprising a series of compressed layers of the material arranged end to end, each layer being perforated from end to end and longitudinally divided from one edge to the perforation therethrough, the perforations and divisions being disposed in alinement with each other.

11. A bale of hay or similar fibrous material comprising a series of compressed layers of the material arranged end to end, each layer being perforated from end to end and longitudinally divided from one edge to the perforation therethrough, the perforations and divisions being in alinement with each other, and a series of bale-ties embracing the layers and retaining them in the compressed condition.

12. The process consisting in forcing laterally into a baling-chamber a series of layers of hay or similar fibrous material, consecutively longitudinally compressing said series to form a bale and forming, during compression, a longitudinal hole extending through said layers from one end of the bale to the other.

13. The process consisting in inserting through one side of a baling-chamber a series of layers of hay or similar fibrous material, longitudinally compressing said series of layers to form a bale, forming, during compression, a longitudinal hole extending through said layers from one end of the bale to the other and dividing the layers lengthwise of the bale from said hole to the side opposite the side of the chamber through which the layers were fed.

14. The process consisting in inserting through one side of a baling-chamber a series of layers of hay or similar fibrous material, longitudinally compressing said series to form a bale, forming, during compression, a longitudinal hole extending through the layers from one end of the bale to the other, longitudinally dividing the layers from said hole to the side of the bale opposite the side of the chamber through which the layers were inserted and tying the layers together in the compressed condition.

817,933. GRIP-TREAD FOR PNEUMATIC TIRES. ARTHUR H. PARKER, Sr., Auburn, N. Y. Filed Feb. 16, 1905. Serial No. 245,906.



Claim.—1. A grip-tread for tires comprising a circular series of metal plates seated on the tread of the tire and each provided with a rib having sliding interlocking connection therewith, and means for holding the plates on the tire.

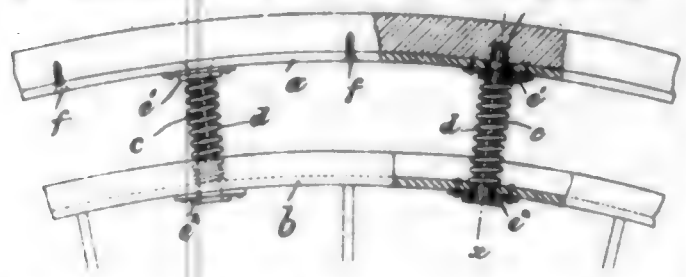
2. A grip-tread for tires comprising a circular series of metal plates loosely seated on the tire and each provided with longthwise and transverse ribs having sliding interlocking connection therewith.

3. The combination with the rim and tire of a vehicle-wheel, a series of metal plates arranged end to end upon the periphery of the tire and each provided with a longitudinal rib and a transverse rib at each end of the longitudinal rib, and separate clamping devices each including a metal plate having a cushion.

4. The combination with a rim and tire of a vehicle-wheel, of a series of metal plates applied to the periphery of the tire end to end, each plate having a longitudinal and a transverse rib, and clamping devices for said plates, each of said devices consisting of a plate passed under the rim and having its opposite sides detachably connected to the corresponding sides of the tread-plate.

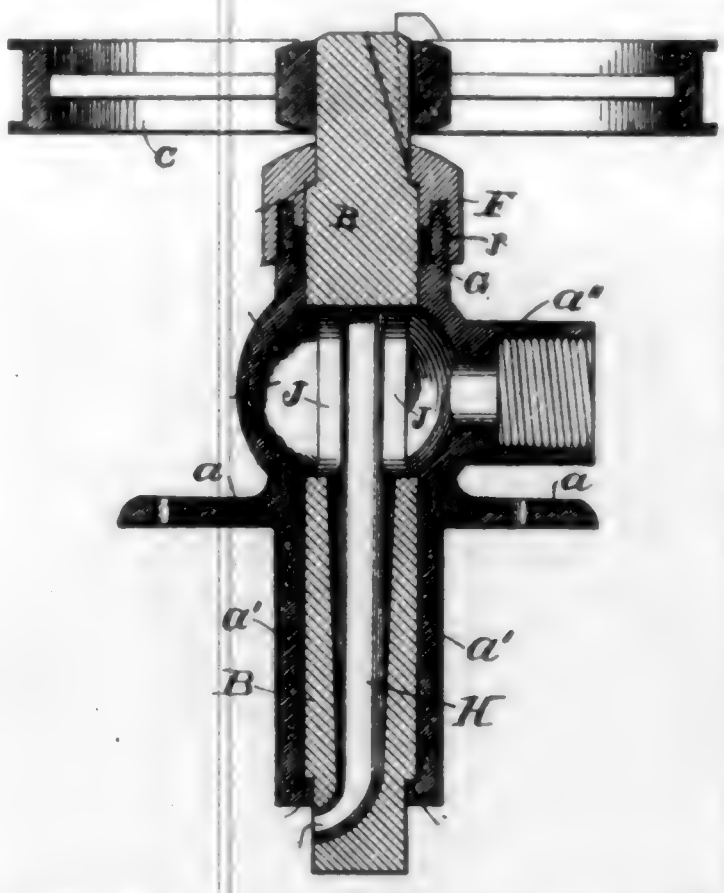
5. The combination with a rim and tire of a vehicle-wheel, a series of metal plates arranged end to end around and upon the periphery of the tire, and each provided with a longitudinal and a transverse rib, of a series of clamping-plates arranged end to end around the inner face of the rim, one for each of the gripping-plates and clamping-levers connected to draw the gripping-plates and clamping-plates together against the periphery of the tire and inner face of the rim respectively.

817,934. SPRING-WHEEL. REGINALD B. PARSONS, Kingston-upon-Hull, England. Filed Mar. 15, 1905. Serial No. 250,261.



Claim.—In a spring-wheel, the combination of an inner rim, an outer rim of flat steel, spindles rigidly connected to said outer rim and movable freely through said inner rim, springs encircling said spindles respectively, the outer ends of said spindles being extended outward considerably beyond said outer rim, and a solid-rubber tire encircling said outer rim in which the outwardly-projecting ends of said spindles are embedded, said inner and outer rims being thickened in proximity to said spindles by means of washer-plates secured thereto, substantially as described.

817,935. COMBINED PROPELLING AND STEERING APPARATUS FOR BOATS. CHARLES W. POST, Zion City, Ill. Filed July 3, 1905. Serial No. 268,219.

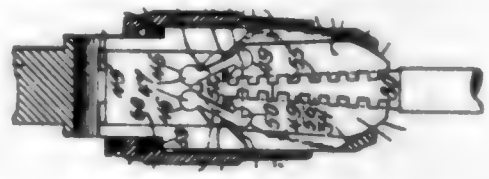


Claim.—The combination of a shell provided with a passage-way therethrough, a shoulder at the lower end of the passage-way and such passage-way enlarged to form a chamber, and such shell provided with an aperture therethrough communicating with the chamber, a plug rotatably mounted in the shell and extending below it, such plug provided with a shoulder corresponding with and resting on the shoulder in the shell, and such plug provided with a passage-way communicating with the chamber in the shell and with the water below the shell, the discharge of such passage-way directing the water flowing therethrough in a substantially horizontal plane, and a steering-wheel attached to the rotatable plug, substantially as described.

817,936. CHUCK. HUBERT P. RICHARDS, Hartford, Conn. Filed Jan. 30, 1905. Serial No. 243,211

Claim.—1. In a chuck the combination with a pair of jaws, an inclined fixed abutment for each jaw, an inclined movable abutment for each jaw, a sleeve for moving said movable abutment and having a screw-thread interrupted at two points the interruptions being of different widths, screw-threaded strips fast with the fixed abutments said strips corresponding in width with the interruptions in the sleeve screw-thread, a slide free to reciprocate relative to said abutments, and links connecting the jaws to said slide.

2. In a bit-stock, the combination with a pair of jaws, of a fixed sloping abutment and a movable sloping abutment for engaging the respective ends of said jaws and pressing them toward each other and upon a bit-shank, and a toggle connection between said jaws for causing the same, when at work, to assume like positions of angularity relative to a common center line.



3. In a chuck, the combination with a pair of jaws, of a fixed sloping abutment and a movable sloping abutment for engaging the respective ends of said jaws and pressing them toward each other, a slide free to reciprocate relative to said abutments, and links connecting the jaws to said slide.

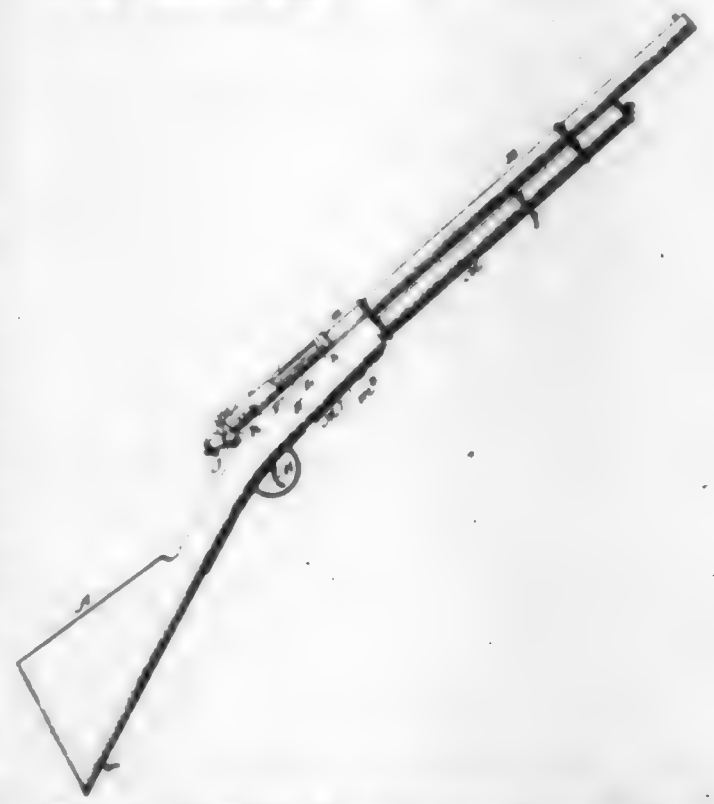
4. In a chuck, the combination with a pair of jaws, of a fixed sloping abutment and a movable sloping abutment for engaging the respective ends of said jaws and pressing them toward each other, a slide free to reciprocate relative to said abutments, links connecting the jaws to said slide, and spring means for separating said jaws.

5. In a chuck, the combination with a pair of jaws, of means for closing the jaws, a reciprocable slide, a link for connecting each of the said jaws to said slide, said links having cylindrical heads at each end, and said slide and jaws having cylindrical sockets for receiving the said heads.

6. In a chuck, the combination with a body portion, of a pair of jaws therein, a reciprocatory member for actuating said jaws and having a slideway parallel with its path of reciprocation, a slide mounted therein, a link for connecting each of the said jaws to said slide, each of said links having cylindrical heads, and said slide and jaws having cylindrical sockets for receiving said heads.

7. In a chuck, the combination with a body portion, of a pair of jaws carried thereby, a member reciprocatory upon the said body portion for closing said jaws, and having a slideway parallel with its path of reciprocation, a slide mounted therein, a link for connecting each of the said jaws to said slide, said links having cylindrical heads, and said slide and jaws having cylindrical sockets for receiving said heads, said reciprocatory member also having a recess, and a spring located in said recess and engaging said jaws for separating the same.

817,937. FIREARM. JULES L. SAGET, New Orleans, La. Filed Oct. 2, 1905. Serial No. 281,006.



Claim.—1. In a firearm, the combination of a stock, a barrel, a breech-frame fixed with respect to the stock and barrel and open at its rear end and having a plain lug at one side adjacent to its rear end and also having a hook-shaped lug arranged at its opposite side and extending beyond said rear end, a sear mounted in the stock and extending into the breech-frame, a trigger also mounted in the stock and connected with the sear, a breech-bolt movable rec-

tilinearly in the breech-frame a transversely-swinging locking member held on the breech-bolt against movement in the direction of the length thereof and having a radial arm and a lateral arm provided with a kerf; the said radial arm being arranged when the breech-bolt is in its closed position, to seat in the hook-shaped lug, and the kerf in the lateral arm being arranged to receive the plain lug, and a spring-pressed firing-pin carried by the breech-bolt and having a beveled lug arranged to be engaged by the sear.

2. In a firearm, the combination of a breech-frame open at its rear end and having a plain lug at one side adjacent to its rear end and also having a hook-shaped lug arranged at its opposite side and extending beyond said rear end, a breech-bolt movable rectilinearly in said frame, and a transversely-swinging locking member held on the breech-bolt against movement in the direction of the length thereof and having a radial arm and a lateral arm provided with a kerf; the said radial arm being arranged, when the breech-bolt is in its closed position, to seat in the hook-shaped lug, and the kerf in the lateral arm being arranged to receive the plain lug.

3. In a firearm, the combination of a breech-frame open at its rear end and having an opening in the upper side of its forward portion and a longitudinal slot extending from said opening to its rear end and also having a plain lug at one side adjacent to its rear end and a hook-shaped lug arranged at its opposite side and extending beyond said rear end, a breech-bolt movable rectilinearly in said frame, an extractor arranged on said breech-bolt and adapted to be withdrawn through the longitudinal slot in the breech-frame, and a transversely-swinging locking member held on the breech-bolt against movement in the direction of the length thereof and having a radial arm and a lateral arm provided with a kerf; the said radial arm being arranged, when the breech-bolt is in its closed position, to seat in the hook-shaped lug, and the kerf in the lateral arm being arranged to receive the plain lug.

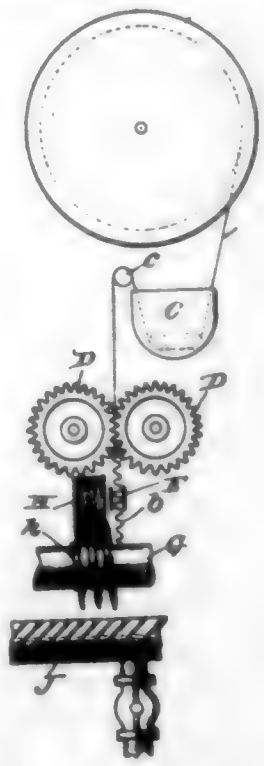
4. In a firearm, the combination of a stock, a barrel, a breech-frame fixed with respect to the stock and barrel and open at its rear end and having a plain lug at one side adjacent to its rear end and also having a hook-shaped lug arranged at its opposite side and extending beyond said rear end, a sear mounted in the stock and extending into the breech-frame, a trigger also mounted in the stock and connected with the sear, a breech-bolt movable rectilinearly in the breech-frame, a transversely-swinging locking member held on the breech-bolt against movement in the direction of the length thereof and having a radial arm and a lateral arm provided with a kerf; the said radial arm being arranged, when the breech-bolt is in its closed position to seat in the hook-shaped lug, and the kerf in the lateral arm being arranged to receive the plain lug, a spring-pressed firing-pin carried by the breech-bolt and having a beveled lug arranged to be engaged by the sear, an extractor carried by the breech-bolt and movable in the breech-frame, and an ejector comprising a plunger extending into the breech-frame, and a spring for impelling said plunger when the same is released by the breech-bolt.

5. In a firearm, the combination of a breech-frame open at its rear end and having a plain lug at one side and a hook-shaped lug at its opposite side, a breech-bolt movable rectilinearly in the breech-frame, a transversely-swinging locking member comprising a collar loosely surrounding the rear portion of the breech-bolt and having a slot, an arm extending radially from said collar and adapted to engage the hook-shaped lug, and an arm reaching laterally forward from the collar and having a kerf to receive the plain lug, and a pin fixed to the breech-bolt and disposed in the slot of the collar.

6. In a firearm, the combination of a barrel, a breech-frame fixed with respect to the barrel and open at its rear end and having an opening in its forward portion and a slot extending rearwardly from said opening to its rear end, a breech-bolt movable rectilinearly in the breech-frame and adapted to be withdrawn through the rear end thereof, an extractor carried by the breech-bolt and arranged to be withdrawn through the slot of the breech-frame, means removably securing the breech-bolt in the breech-frame, a subcaliber barrel adapted when the breech-bolt is removed to be introduced through the breech-frame and into the barrel, said subcaliber barrel having a rim at its rear end provided with a notch and a recess, and an adjustable bar connected to the breech-frame and having an inwardly-directed projection arranged to enter the recess in the rim of the subcaliber barrel.

817,988. METHOD OF MAKING RADIATOR-TUBES. FRANK H. STOLP and CHRISTOPHER WRIGHT, Chicago, Ill., assignors to Long Manufacturing Company, Chicago, Ill., a Corporation. Filed June 27, 1904. Serial No. 214,374.

Claim.—1. The method of making radiator-tubes having extended radiating-surfaces, which consists in forming transverse crimps or corrugations in a strip of sheet metal that is to provide the extended radiating-surface, winding the corrugated strip edgewise and in a spiral course around the tube proper, meanwhile applying tension thereto so as to more or less straighten out or elongate the corrugations to an extent gradually increasing from the inner edge of the strip outward and soldering the spirally-wound strip to the tube, substantially as described.



2. The method of making radiator-tubes having extended radiating-surfaces which consists in forming transverse crimps or corrugations in a strip of sheet metal that is to provide the extended radiating-surfaces, winding the corrugated strip edgewise and in a spiral course around the tube proper, meanwhile applying tension thereto so as to more or less straighten out or elongate the corrugations and so as to make the inner edge of the corrugated strip conform closely to the surface of the tube, and soldering the spirally-wound strip to the tube, as the strip is being wound upon the tube, substantially as described.

3. The method of making radiator-tubes having extended radiating-surfaces which consists in forming transverse crimps or corrugations in a strip of sheet metal that is to provide the extended radiating-surfaces, winding the corrugated strip edgewise and in a spiral course around the tube proper, winding a strand of solder around the tube spirally and between the convolutions of the corrugated strip, and applying heat to melt the solder, substantially as described.

4. The method of making radiator-tubes having extended radiating-surfaces which consists in forming transverse crimps or corrugations in a strip of sheet metal that is to provide the extended radiating-surfaces, winding the strip edgewise and in a spiral course around the tube proper, winding a strand of solder around the tube spirally and between the convolutions of the corrugated strip, applying flux to the strip and strand before winding and applying heat to melt the solder after winding, substantially as described.

5. The method of making radiator-tubes having extended radiating-surfaces which consists in forming transverse crimps or corrugations in a strip of sheet metal that is to provide the extended radiating-surfaces, winding the corrugated strip edgewise and in a spiral course around the tube proper; meanwhile, applying tension thereto so as to more or less straighten out or elongate the corrugations to an extent gradually increasing from the inner edge of the strip outward, winding a strand of solder around the tube spirally and between the convolutions of the corrugated strip, and melting the solder after it is wound, the joint between the strip and tube having been previously fluxed, substantially as described.

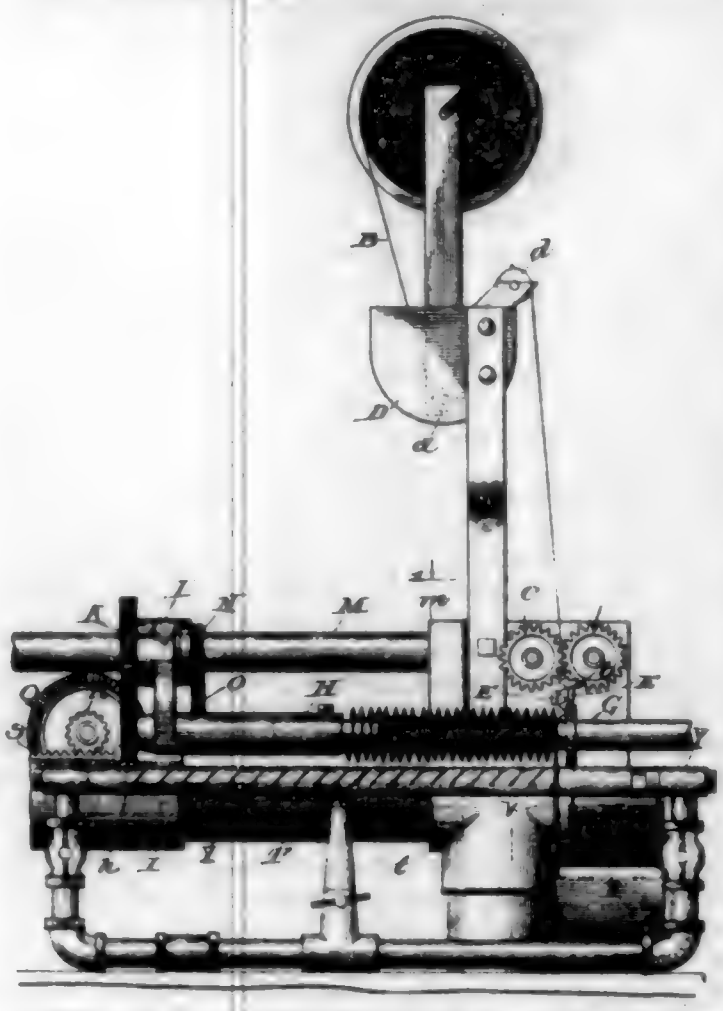
6. The method of soldering a spiral joint which consists in winding one part upon another to form the joint, winding a loose strand of solder along or adjacent to the joint as it is formed and melting the solder during the process of winding to cause it to flow into the joint, substantially as described.

7. The method of soldering which consists in winding one part upon another so that one contacts with the other to form a joint, applying to the joint during the process of winding a separate body of

unfused solder, and fusing the solder after ie is applied and during the process of winding, substantially as described.

8. The method of making radiator-tubes having extended radiating-surfaces which consists in disposing the extended radiating-surface spirally upon the tube, winding a strand of solder spirally upon the tube between the convolutions of the extended radiating-surfaces, and applying heat to fuse the solder, substantially as described.

817,939. **MACHINE FOR MAKING RADIATOR-TUBES.** FRANK H. STOLP and CHRISTOPHER WRIGHT, Chicago, Ill., assignors to Long Manufacturing Company, Chicago, Ill., a Corporation. Filed June 27, 1904. Serial No. 214,378.



Claim.—1. In a machine of the class described, the combination of a shaft, means for holding it against endwise movement, means for revolving it, a carriage movable in directions parallel with the shaft, a chuck mounted upon the carriage, said chuck being located at the side of the shaft, and with its axis parallel therewith and having means for holding a mandrel in a position parallel with the shaft, means operated by movement derived from the shaft for moving the carriage and for revolving the chuck, and means for feeding a strip to the mandrel whereby it is wound spirally thereon, substantially as described.

2. In a machine of the class described, the combination of a shaft, means for holding it against endwise movement, means for revolving it, a carriage movable in directions parallel with the shaft, a chuck mounted upon the carriage, said chuck being located at the side of the shaft and with its axis parallel therewith and having means for holding a mandrel in a position parallel with the shaft, a stationary rack, a pinion mounted upon the shaft and engaging said rack, means mounted upon the carriage and deriving its movement from the shaft for revolving the pinion and the chuck, and means for feeding a strip to the mandrel whereby it is wound spirally thereon, substantially as described.

3. In a machine of the class described the combination of a shaft, means for holding it against endwise movement, means for revolving it, a carriage movable in directions parallel with the shaft, a support parallel with the shaft, upon which the carriage is mounted, a toothed rack on the support, a pinion mounted upon the carriage and engaging said rack, a chuck mounted upon the carriage, said chuck being located at the side of the shaft and with its axis parallel therewith and having means for holding a mandrel in a position parallel with the shaft, a train of gear-wheels mounted upon the carriage and deriving their movement from the shaft for revolving the pinion and chuck and means for feeding a strip to the mandrel whereby it is wound spirally thereon, substantially as described.

4. In a machine of the class described, the combination of a shaft, means for holding it against endwise movement, means for revolving it, a carriage movable in directions parallel with the shaft, a chuck mounted upon the carriage, said chuck being located at the side of the shaft and with its axis parallel therewith and having means for holding a mandrel in a position parallel with the shaft, means deriving its movement from the shaft for moving the carriage and revolving the mandrel, a pair of crimping-rolls for crimping a strip and means deriving movement from the shaft for revolving said rolls, substantially as described.

5. In a machine of the class described the combination of means for supporting and revolving an object having a spiral joint to be soldered, means for winding a strand of solder in proximity to said joint, and means for melting the solder during the process of winding, substantially as described.

6. In a machine of the class described, the combination of means for revolving a mandrel, means for feeding a strip thereto, whereby a spiral joint is formed, means for winding a strand of solder in proximity to the joint, and means for melting the solder during the process of winding, substantially as described.

7. In a machine of the class described, the combination of means for revolving a mandrel and moving it endwise, means for feeding a strip thereto whereby it is wound spirally thereon and a spiral joint formed, means for winding a strand of solder in proximity to said joint, and means for melting the solder during the process of winding, substantially as described.

8. In a machine of the class described, the combination of means for revolving a mandrel and moving it endwise, means for feeding a strip thereto whereby it is wound spirally thereon and a spiral joint formed, means for feeding a strand of solder in proximity to the joint during the process of winding said strip upon the mandrel whereby the strand of solder also is wound, means for applying flux to the joint and means for melting the solder during the process of winding, substantially as described.

9. In a machine of the class described, the combination of means for revolving a mandrel, means for feeding a strip thereto whereby it is wound spirally and a spiral joint formed, means for feeding a strand of solder in proximity to the joint as the winding proceeds whereby the strand of solder is wound upon the mandrel, and a gas-burner located in proximity to the mandrel whereby the solder is melted during the process of winding, substantially as described.

10. In a machine of the class described, the combination of means for revolving a mandrel and moving it endwise, means for feeding a strip thereto whereby it is wound spirally thereon and a spiral joint formed, a flux bath through which the strip passes before reaching the mandrel, means for winding a strand of solder in proximity to the joint, and means for melting the solder during the process of winding, substantially as described.

11. In a machine of the class described, the combination of means for revolving a mandrel and moving it endwise, means for feeding a crimped or corrugated strip thereto edgewise, whereby a spiral flange is formed, means for applying a strand of solder in proximity to the joint between the flange and mandrel, and means for melting the solder, substantially as described.

12. In a machine of the class described, the combination of means for revolving an object having a spiral joint, means for simultaneously winding a strand of solder in proximity to the joint and means for melting the solder during the process of winding, substantially as described.

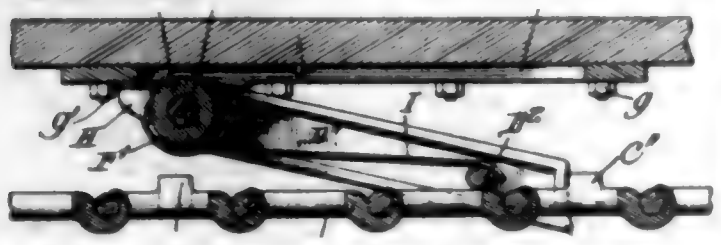
13. In a machine of the class described, the combination of means for revolving a mandrel having a spiral flange, means for winding a strand of solder in proximity to the joint between the flange and the mandrel and means for melting the solder during the process of winding, substantially as described.

14. In a machine of the class described, the combination of means for winding a strip spirally upon a mandrel whereby a spiral flange is formed, means for winding a strand of solder between the convolutions of the spiral flange and means for melting the solder, substantially as described.

15. In a machine of the class described, the combination of means for revolving a mandrel, means for crimping a strip and feeding it to the mandrel whereby it is wound thereon spirally, means for applying a strand of solder in proximity to the joint between the flange and mandrel and means for melting the solder, substantially as described.

817,940. **INCLINED RAILWAY.** WILLIAM H. STRICKLER, Chicago, Ill., assignor to Federal Construction Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 25, 1905. Serial No. 284,360.

Claim.—1. In a device of the class described a combination with a car and a traction-chain having a shoulder thereon, of a dog pivotally supported at its forward end to the car and at its rear end adapted to engage the said shoulder, the length of the dog being greater than the normal distance between its pivot and the chain, substantially as described.



2. In a device of the class described the combination with a car and a chain having a shoulder thereon, of a dog pivoted to the car and extending rearward from its pivot, the rear end of the dog being adapted to engage the said shoulder and the length of the dog being greater than the normal distance between its pivot and the chain, whereby the dog transmits the traction strains by an endwise thrust against its pivotal support, substantially as described.

3. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder and means for limiting the downward movement of the free end of the dog, substantially as described.

4. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, said dog having a portion adapted to engage the chain and prevent its downward movement relatively thereto, substantially as described.

5. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, and a stop for limiting the downward movement of the dog, relatively to the car, substantially as described.

6. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, the rear end of the dog having a toe adapted to prevent its upward movement, substantially as described.

7. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, said dog having means for engaging the top of the chain and thereby limiting its downward movement relatively thereto, and having also means for preventing its upward movement relatively to the chain when in engagement with the shoulder, substantially as described.

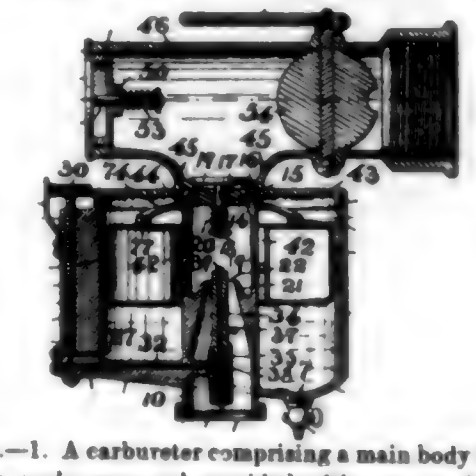
8. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage the shoulder, said dog having means adapted to engage the chain, for limiting its downward movement relatively thereto, and a spring impelling the dog downward, substantially as described.

9. In a device of the class described the combination with a car and a traction-chain having lugs projecting from the sides thereof and providing shoulders, of a dog pivoted at its forward end and extending rearward from its pivotal support, the dog having side bars adapted to straddle the chain, and at their rear ends engage the shoulders and means for limiting the downward movement of the rear end of the dog relatively to the chain, substantially as described.

10. In a device of the class described the combination with a car and a traction-chain, having lugs projecting from the sides thereof and providing shoulders, of a dog pivoted at its forward end to the car and extending rearward from its pivot, said dog having a pair of side bars adapted to straddle the chain and at their rear ends engage said shoulders, said side bars having toes projecting beneath the lugs, the dog being provided also with means for engaging the chain and limiting the downward movement of its rear end relatively to the chain, substantially as described.

11. In a device of the class described the combination with a car and a traction-chain having lugs projecting from the sides thereof and providing shoulders, of a dog, a frame secured to the bottom of the car and having perforated ears extending downward, said dog having a tubular portion, a pivot-pin passing through said tubular portion and through the perforated ears, said dog having also a pair of side bars which straddle the chain and are adapted at their rear ends to engage said shoulders, and means for limiting the downward movement of the rear end of the dog relatively to the chain, substantially as described.

817,941. CARBURETER. CHARLES STOTZ, Newark, N. J. Filed Mar. 26, 1905. Serial No. 251,827.



Claim.—1. A carbureter comprising a main body having its upper portion made open and provided with a screw-thread, a cover screwed down over said open portion, said cover being formed with a centrally-disposed opening, a cylindrical body within said main body having its upper end portion arranged in the opening of said cover and the lower and open end portion of said cylindrical body extending below the closed bottom of said main body, a screen in said lower and open end portion of said cylindrical body, an upwardly-extending flange on said cover, said flange surrounding the opening in said cover, and a laterally-extending tubular body upon and connected with said flange, said laterally-extending body and cover being both removably arranged upon the said main body, a centrally-guided inlet-valve in the upper and open end of said cylindrical body, a means of attachment at one end of said laterally-extending body, and a relief-valve at the other end of said laterally-extending body, said valves being arranged so that the back-fire will close said inlet-valve and will open said relief-valve, substantially as and for the purposes set forth.

2. A carbureter comprising a main body having its upper portion made open and provided with a screw-thread, a cover screwed down over said open portion, said cover being formed with a centrally-disposed opening, a cylindrical body within said main body, having its upper end portion arranged in the opening of said cover and the lower and open end portion of said cylindrical body extending below the closed bottom of said main body, a screen in said lower and open end portion of said cylindrical body, an upwardly-extending flange on said cover, said flange surrounding the opening in said cover, and a laterally-extending tubular body upon and connected with said flange, said laterally-extending body and cover being removably arranged upon the said main body, a centrally-guided inlet-valve in the upper and open end of said cylindrical body, a means of attachment at one end of said laterally-extending body, and a relief-valve at the other end of said laterally-extending body, said valves being arranged so that the back-fire will close said inlet-valve and will open said relief-valve, a cone-shaped air-nozzle in said cylindrical body, a gasolene-conveying duct leading and extending into the lower portion of said cylindrical body, a hollow receiving member connected at right angles with the free end of said conveying-duct, and a tube extending vertically from said receiving member and having its upper end portion projecting through and slightly above the opening of said cone-shaped nozzle, said vertical tube having a closed tip provided with a laterally-extending duct and an outer annular bead-forming groove, substantially as and for the purposes set forth.

3. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell in which the gasolene is mixed with air, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, substantially as and for the purposes set forth.

4. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell in which the gasolene is mixed with air, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, and a throttle in said hollow member, substantially as and for the purposes set forth.

5. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell, said cylinder having an open bottom, and a cone-shaped air-nozzle, a gasolene-conveying tube in the lower portion of said cylinder, a portion of said tube projecting through and slightly above the said air-nozzle for producing a mixture of air and gasolene in the upper part of said cylinder, and means for conveying gasolene from the main body or shell into said tube, a laterally-extending and hollow member into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, substantially as and for the purposes set forth.

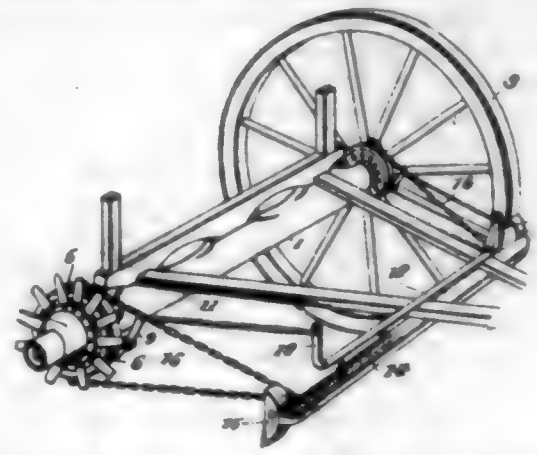
6. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell, said cylinder having an open bottom, and a cone-shaped air-nozzle, a gasolene-conveying tube in the lower portion of said cylinder, a portion of said tube projecting through and slightly above the said air-nozzle for producing a mixture of air and gasolene in the upper part of said cylinder, and means for conveying gasolene from the main body or shell into said tube, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, and a throttle in said hollow member, substantially as and for the purposes set forth.

7. In a carbureter, the combination, with an open-bottomed cylinder, and a cone-shaped air-nozzle in said cylinder, of a gasolene-conveying duct leading and extending into the lower portion of said cylinder, a hollow receiving member connected at right angles with the free end of said conveying-duct, and a tube extending vertically from said receiving member and having its upper end portion projecting through and slightly above the opening of said cone-shaped nozzle, said vertical tube having a closed tip provided with a laterally-extending duct and an outer annular bead-forming groove, substantially as and for the purposes set forth.

817,942. BRAKE. JAMES W. TAPP, Wichita, Kans. Filed Jan. 30, 1905. Renewed Oct. 18, 1905. Serial No. 283,208.

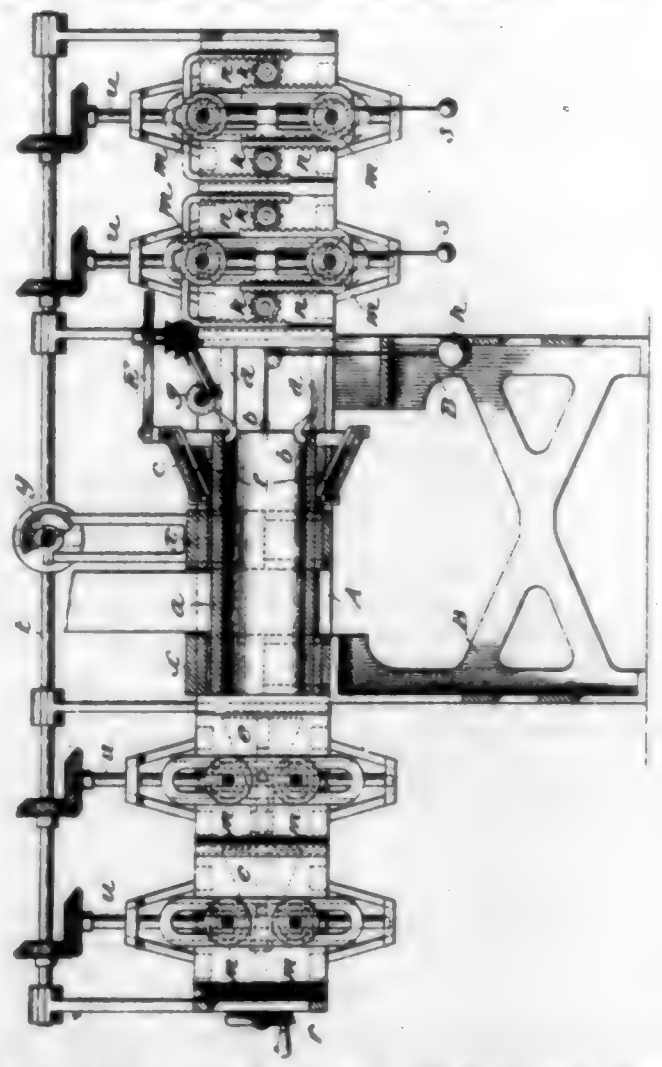
Claim.—1. In a brake, the combination of a brake-wheel, a brake-band coöperating therewith and composed of sections pivoted together at one end, a lever pivoted to the opposite end of one of the sections, a link connection between the lever and the other section, and means for operating the lever as specified.

2. In a brake, the combination of a brake-wheel, a brake-band composed of sections pivotally connected at one end and embracing the brake-wheel, a lever pivoted at one end to the opposite end of a section of the brake-band, a link pivoted at one end to the opposite end of the other section of the brake-band, said link being pivoted at its opposite end to the lever between the ends of the latter, and means connected with the end of the lever opposite that attached to the brake-band for actuating said lever.



3. In a brake, the combination of a brake-wheel, a brake-band therefor composed of sections, one of said sections being wider than the brake-wheel so as to house the same, and means for actuating the sections of the brake-band as specified.

817,943. WOOD-TURNING MACHINE. PHILIP W. WALTZ, Vallejo, Cal. Filed Aug. 22, 1905. Serial No. 275,331.

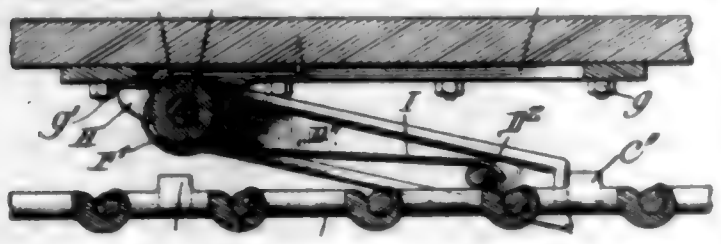


Claim.—1. The combination with a revolving sleeve having knives mounted to move radially therein, of a conical sleeve mounted to slide axially of said first-mentioned sleeve and means to reciprocate the same, the knives being connected to the said conical sleeve to revolve therein but to be moved radially by the reciprocation thereof, by guides loosely engaging around the ends of said sleeve in which guides slide the outer ends of the knives said guides being spaced from said conical sleeve to receive therebetween heads on said outer ends of the knives.

2. The combination with a revolving sleeve carrying radially-movable knives and means reciprocating longitudinally of said sleeve for moving the knives radially, of means for reciprocating said means directly engaging the work and operated by the travel of the work past the same.

3. A lathe comprising in combination a sleeve carrying knives movable toward and from the center thereof, means comprising a cam for so moving the knives and a roller engaging the work and rotated by the travel of the latter and operating the said cam.

Claim.—1. In a device of the class described a combination with a car and a traction-chain having a shoulder thereon, of a dog pivotally supported at its forward end to the car and at its rear end adapted to engage the said shoulder, the length of the dog being greater than the normal distance between its pivot and the chain, substantially as described.



2. In a device of the class described the combination with a car and a chain having a shoulder thereon, of a dog pivoted to the car and extending rearward from its pivot, the rear end of the dog being adapted to engage the said shoulder and the length of the dog being greater than the normal distance between its pivot and the chain, whereby the dog transmits the traction strains by an endwise thrust against its pivotal support, substantially as described.

3. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder and means for limiting the downward movement of the free end of the dog, substantially as described.

4. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, said dog having a portion adapted to engage the chain and prevent its downward movement relatively thereto, substantially as described.

5. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, and a stop for limiting the downward movement of the dog, relatively to the car, substantially as described.

6. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, the rear end of the dog having a toe adapted to prevent its upward movement, substantially as described.

7. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage said shoulder, said dog having means for engaging the top of the chain and thereby limiting its downward movement relatively thereto, and having also means for preventing its upward movement relatively to the chain when in engagement with the shoulder, substantially as described.

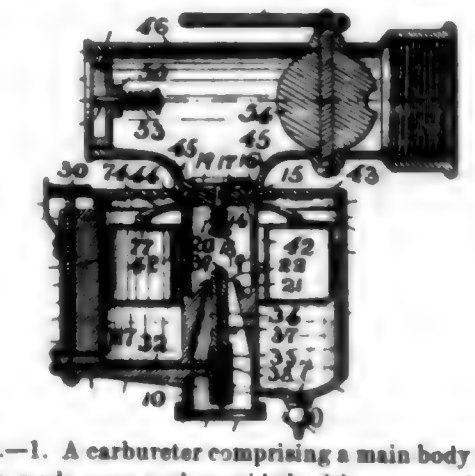
8. In a device of the class described the combination with a car and a traction-chain having a shoulder thereon, of a dog pivoted at its forward end to the car and adapted at its rear end to engage the shoulder, said dog having means adapted to engage the chain, for limiting its downward movement relatively thereto, and a spring impelling the dog downward, substantially as described.

9. In a device of the class described the combination with a car and a traction-chain having lugs projecting from the sides thereof and providing shoulders, of a dog pivoted at its forward end and extending rearward from its pivotal support, the dog having side bars adapted to straddle the chain, and at their rear ends engage the shoulders and means for limiting the downward movement of the rear end of the dog relatively to the chain, substantially as described.

10. In a device of the class described the combination with a car and a traction-chain, having lugs projecting from the sides thereof and providing shoulders, of a dog pivoted at its forward end to the car and extending rearward from its pivot, said dog having a pair of side bars adapted to straddle the chain and at their rear ends engage said shoulders, said side bars having toes projecting beneath the lugs, the dog being provided also with means for engaging the chain and limiting the downward movement of its rear end relatively to the chain, substantially as described.

11. In a device of the class described the combination with a car and a traction-chain having lugs projecting from the sides thereof and providing shoulders, of a dog, a frame secured to the bottom of the car and having perforated ears extending downward, said dog having a tubular portion, a pivot-pin passing through said tubular portion and through the perforated ears, said dog having also a pair of side bars which straddle the chain and are adapted at their rear ends to engage said shoulders, and means for limiting the downward movement of the rear end of the dog relatively to the chain, substantially as described.

817,941. CARBURETER. CHARLES STOTE, Newark, N. J. Filed Mar. 25, 1905. Serial No. 251,937.



Claim.—1. A carbureter comprising a main body having its upper portion made open and provided with a screw-thread, a cover screwed down over said open portion, said cover being formed with a centrally-disposed opening, a cylindrical body within said main body having its upper end portion arranged in the opening of said cover and the lower and open end portion of said cylindrical body extending below the closed bottom of said main body, a screen in said lower and open end portion of said cylindrical body, an upwardly-extending flange on said cover, said flange surrounding the opening in said cover, and a laterally-extending tubular body upon and connected with said flange, said laterally-extending body and cover being both removably arranged upon the said main body, a centrally-guided inlet-valve in the upper and open end of said cylindrical body, a means of attachment at one end of said laterally-extending body, and a relief-valve at the other end of said laterally-extending body, said valves being arranged so that the back-fire will close said inlet-valve and will open said relief-valve, substantially as and for the purposes set forth.

2. A carbureter comprising a main body having its upper portion made open and provided with a screw-thread, a cover screwed down over said open portion, said cover being formed with a centrally-disposed opening, a cylindrical body within said main body, having its upper end portion arranged in the opening of said cover and the lower and open end portion of said cylindrical body extending below the closed bottom of said main body, a screen in said lower and open end portion of said cylindrical body, an upwardly-extending flange on said cover, said flange surrounding the opening in said cover, and a laterally-extending tubular body upon and connected with said flange, said laterally-extending body and cover being removably arranged upon the said main body, a centrally-guided inlet-valve in the upper and open end of said cylindrical body, a means of attachment at one end of said laterally-extending body, and a relief-valve at the other end of said laterally-extending body, said valves being arranged so that the back-fire will close said inlet-valve and will open said relief-valve, a cone-shaped air-nozzle in said cylindrical body, a gasolene-conveying duct leading and extending into the lower portion of said cylindrical body, a hollow receiving member connected at right angles with the free end of said conveying-duct, and a tube extending vertically from said receiving member and having its upper end portion projecting through and slightly above the opening of said cone-shaped nozzle, said vertical tube having a closed tip provided with a laterally-extending duct and an outer annular bead-forming groove, substantially as and for the purposes set forth.

3. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell in which the gasolene is mixed with air, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, substantially as and for the purposes set forth.

4. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell in which the gasolene is mixed with air, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, and a throttle in said hollow member, substantially as and for the purposes set forth.

5. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell, said cylinder having an open bottom, and a cone-shaped air-nozzle, a gasolene-conveying tube in the lower portion of said cylinder, a portion of said tube projecting through and slightly above the said air-nozzle for producing a mixture of air and gasolene in the upper part of said cylinder, and means for conveying gasolene from the main body or shell into said tube, a laterally-extending and hollow member into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, substantially as and for the purposes set forth.

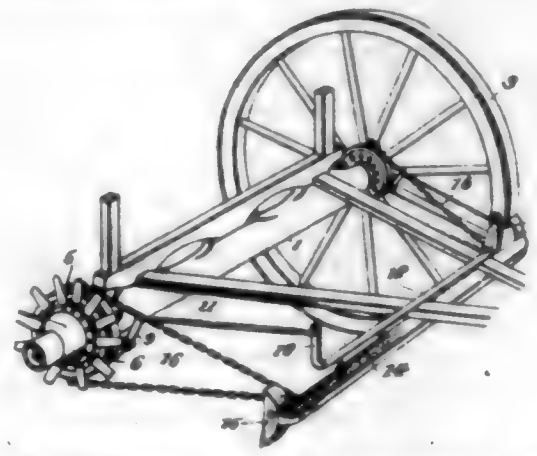
6. A carbureter, comprising a main body or shell adapted to contain a supply of gasolene, a removable cover on said main body or shell an inlet-valve connected with said cover, a float in said body or shell for automatically controlling said inlet-valve, a cylinder within said body or shell, said cylinder having an open bottom, and a cone-shaped air-nozzle, a gasolene-conveying tube in the lower portion of said cylinder, a portion of said tube projecting through and slightly above the said air-nozzle for producing a mixture of air and gasolene in the upper part of said cylinder, and means for conveying gasolene from the main body or shell into said tube, a laterally-extending and hollow member connected with said removable cover into which the gas is drawn for conveyance to the cylinder of a gas-engine, said member being open at its opposite ends, one of said ends being provided with a means of connection for attachment to the gas-engine, a means of communication between said cylinder and hollow member provided with an inlet-valve, and a centrally-guided outlet-valve in the other open end of said hollow member, said valves being arranged so that the back-fire will close said inlet-valve and will open said outlet-valve, and a throttle in said hollow member, substantially as and for the purposes set forth.

7. In a carbureter, the combination, with an open-bottomed cylinder, and a cone-shaped air-nozzle in said cylinder, of a gasolene-conveying duct leading and extending into the lower portion of said cylinder, a hollow receiving member connected at right angles with the free end of said conveying-duct, and a tube extending vertically from said receiving member and having its upper end portion projecting through and slightly above the opening of said cone-shaped nozzle, said vertical tube having a closed tip provided with a laterally-extending duct and an outer annular bead-forming groove, substantially as and for the purposes set forth.

817,842. BRAKE. JAMES W. TAPP, Wichita, Kans. Filed Jan. 20, 1905. Renewed Oct. 18, 1905. Serial No. 283,308.

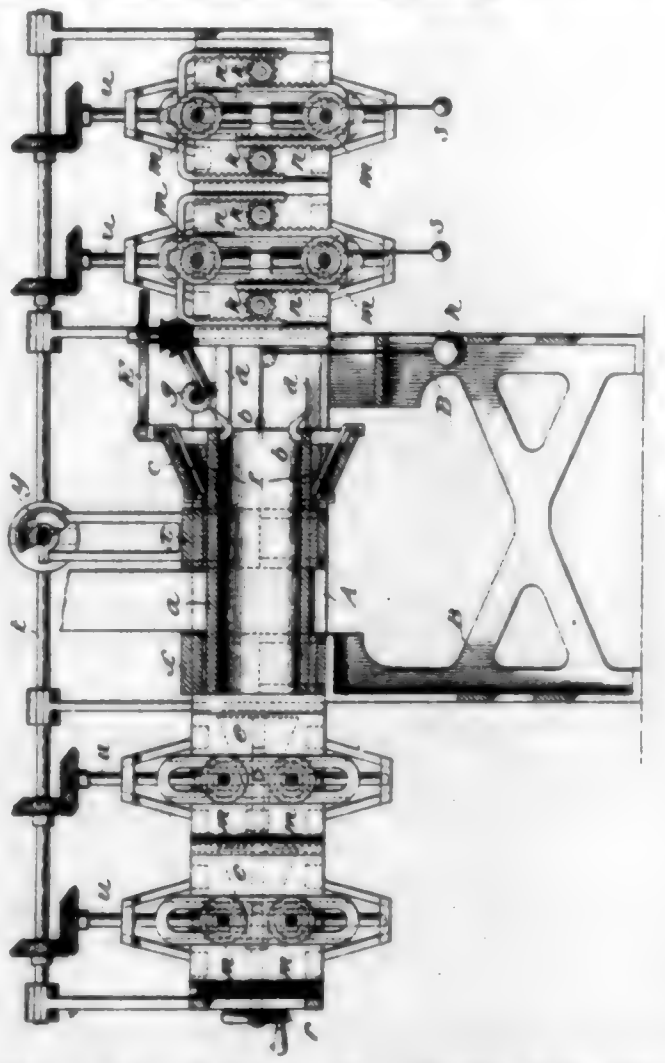
Claim.—1. In a brake, the combination of a brake-wheel, a brake-band coöperating therewith and composed of sections pivoted together at one end, a lever pivoted to the opposite end of one of the sections, a link connection between the lever and the other section, and means for operating the lever as specified.

2. In a brake, the combination of a brake-wheel, a brake-band composed of sections pivotally connected at one end and embracing the brake-wheel, a lever pivoted at one end to the opposite end of a section of the brake-band, a link pivoted at one end to the opposite end of the other section of the brake-band, said link being pivoted at its opposite end to the lever between the ends of the latter, and means connected with the end of the lever opposite that attached to the brake-band for actuating said lever.



3. In a brake, the combination of a brake-wheel, a brake-band therefor composed of sections, one of said sections being wider than the brake-wheel so as to house the same, and means for actuating the sections of the brake-band as specified.

817,943. WOOD-TURNING MACHINE. PHILIP W. WALTZ, Vallejo, Cal. Filed Aug. 22, 1905. Serial No. 275,331.



Claim.—1. The combination with a revolving sleeve having knives mounted to move radially therein, of a conical sleeve mounted to slide axially of said first-mentioned sleeve and means to reciprocate the same, the knives being connected to the said conical sleeve to revolve therein but to be moved radially by the reciprocation thereof, by guides loosely engaging around the ends of said sleeve in which guides slide the outer ends of the knives said guides being spaced from said conical sleeve to receive therebetween heads on said outer ends of the knives.

2. The combination with a revolving sleeve carrying radially-movable knives and means reciprocating longitudinally of said sleeve for moving the knives radially, of means for reciprocating said means directly engaging the work and operated by the travel of the work past the same.

3. A lathe comprising in combination a sleeve carrying knives movable toward and from the center thereof, means comprising a cam for so moving the knives and a roller engaging the work and rotated by the travel of the latter and operating the said cam.

4. A lathe comprising in combination a sleeve carrying knives movable toward and from the center of said sleeve, means for so moving said knives comprising a part movable toward and from the center line of said sleeve to directly engage the work and adapted to be moved by the travel of the work past the same and means for transmitting such latter motion to the means for moving the knives toward and from the center of their sleeve and means for causing a relative rotation of the work and the knives-carrying sleeve.

5. The combination with a hollow mandrel-lathe of upper and lower feed-rolls therefor and means for automatically yieldingly supporting and impelling them toward each other of equalizing means tending to preserve the vertical alinement of said rolls, comprising lower-roll-carrying slides having rack-teeth on opposite sides and upper-roll-carrying slides having arms depending on both sides of the lower-roll slides, and rack-toothed on their inner sides and toothed gears mounted rotatively on the main frame on each side of the lower-roll slides and engaging both sets of the rack-teeth on both the slides.

817,944. LOCKET, PHOTOGRAPH-PENDANT, FRAME, CHARM, AND THE LIKE. THOMAS WILCOX, Birmingham, England. Filed Aug. 26, 1904. Serial No. 222,205.



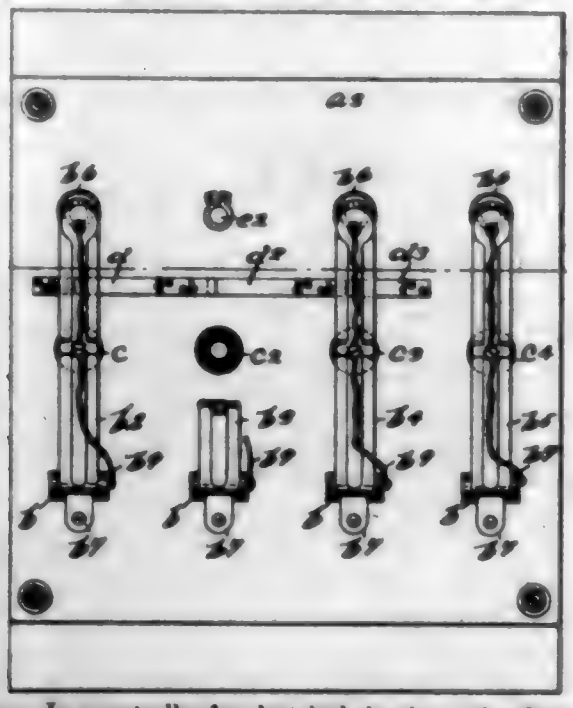
Claim.—1. A device of the class described, comprising a frame, a bezel pivoted therein and adapted to turn therein, side members hinged to said frame and opened when closed by the turning of said bezel, and means for turning said bezel, substantially as shown and described.

2. A device of the class described, comprising a frame, a bezel pivoted therein, means for turning said bezel in said frame, and members hinged to the frame and opened by the turning of said bezel, substantially as shown and described.

3. A device of the class described, comprising a frame, swinging members hinged to the opposite sides thereof and adapted to be opened and closed, a bezel pivoted in said frame and the turning of which opens said members, and means for turning said bezel, substantially as shown and described.

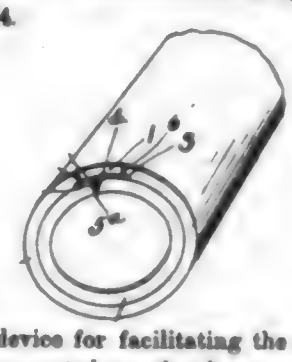
4. A device of the class described, comprising a frame, a bezel pivoted therein by means of pivot-pins one of which passes through said frame, members hinged to said frame and adapted to be open and closed, said members being opened by the turning of said bezel, and means for turning said bezel in said frame consisting of a ring or head connected with the pivot-pin which passes through the frame, substantially as shown and described.

817,945. ELECTRIC CONTROLLING DEVICE. FREDERICK L. WILLARD, Brooklyn, N. Y., assignor of one-half to George Weidersum, New York, N. Y. Filed Oct. 2, 1905. Serial No. 280,223.



Claim.—In a controller for electrical circuits, a plurality of electromagnets, a plurality of circuit-breakers in electrical communication therewith, an electrical circuit through the main winding of said electromagnets and through said circuit-breakers, a supplemental winding for said electromagnets arranged through the shunt of said first-named electrical circuit and movable members adapted to be operated by the corresponding one of said electromagnets through the main winding thereof and be held in the last-named position through the supplemental winding thereof, substantially as shown and described.

817,946. DEVICE FOR FACILITATING THE REMOVAL OF BANDAGES. CAD P. WILLIAMS, Sanders, Ky. Filed May 25, 1905. Serial No. 262,244.



Claim.—1. A device for facilitating the removal of bandages comprising plates connected together by means of a removable rod and having means for engaging a bandage, substantially as described.

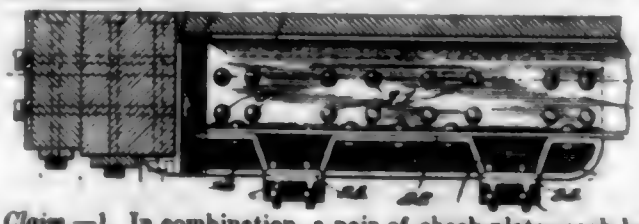
2. A device for facilitating the removal of bandages comprising a pair of plates connected together at their inner edges by means of a hinge having a removable rod and pins projecting from the upper surface of said plates, substantially as described.

3. A device for facilitating the removal of bandages comprising two plates provided with sharp-pointed pins and hinged together at their inner edges by means of a rod having a ring at one end, substantially as described.

4. A device for facilitating the removal of bandages comprising a pair of plates provided with a hinge connecting their inner edges which project upwardly from the upper surface of said plates, the lower surface being in the same plane, pins projecting downwardly from said plates, and a rod connecting the parts of said hinge by the removal of which said hinge is designed to be separated, substantially as described.

5. A bandage provided with a cushion, a device between the bandage and the cushion designed to remove said bandage, said device comprising plates hinged together and having means for engaging the bandage, and means for separating said plates, substantially as described.

817,947. UNDERFRAMING FOR CARS. HENRY C. WILLIAMSON and HERMAN PRIES, Michigan City, Ind. Filed Mar. 13, 1905. Serial No. 249,883.



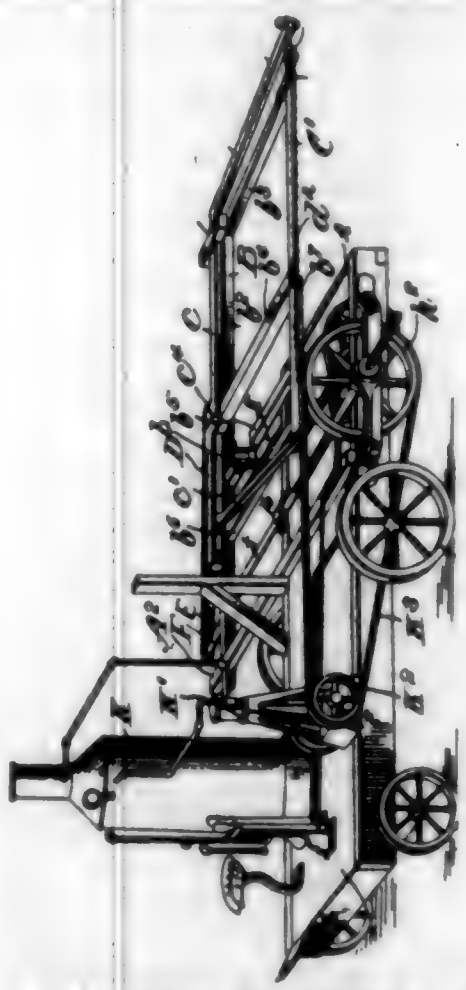
Claim.—1. In combination, a pair of cheek-plates each having a continuous longitudinal backwardly-projecting flange, such flange at intervals extending down to the bottom of the cheek-plate, a tie-plate seated against and riveted to the downwardly-extended portion of the flanges of both plates, and a center sill resting on the body portion of the flange of each plate.

2. In combination, a pair of metal center sills each having a backwardly-projecting bottom flange; a pair of cheek-plates each lying against the inner face of one of the sills and having a continuous longitudinal backwardly-projecting flange, such flange lying against the bottom flange of the sill and at intervals extending down to the bottom of the cheek-plate; and a tie-plate seated against and riveted to such downwardly-extending portion of the flanges of both plates.

3. In combination, a pair of end sills; cheek-plates having backwardly-projecting vertical flanges lying against and bolted to the end sills and having supporting-fillets; and a continuous metal center sill abutting against the supporting-fillets and riveted to the cheek-plates at each of its ends.

817,948. SAWING-MACHINE. OTHO H. WITCHER and ALBERT L. HARVEY, Sweet Springs, Mo. Filed July 8, 1905. Serial No. 268,319.

Claim.—1. In a sawing-machine, the combination with supporting means, of a saw-carrying frame constructed to slide thereon, a saw slidably mounted in said frame, a shaft revolubly mounted on said supporting means, connections between said shaft and saw whereby said saw may be reciprocated, a sleeve mounted on said shaft and adapted to rotate therewith, said sleeve being constructed to permit said shaft to slide longitudinally therein, a pulley loosely mounted on said sleeve, connections between said pulley and said frame whereby said frame may be moved in either direction and means for locking said pulley to said sleeve, substantially as described.

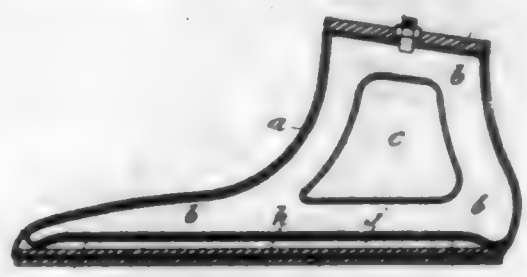


2. In a sawing-machine, the combination with supporting means, of a saw-carrying frame constructed to slide thereon, a saw slidably mounted in said frame, a screw-shaft revolubly mounted on said supporting means and passing through a correspondingly-threaded orifice in said frame, pulleys loosely mounted on said shaft, means for locking either of said pulleys to said shaft, a crank-shaft revolubly mounted on said supporting means, connections between said shaft and saw for reciprocating said saw, a driving-pulley loosely mounted on said crank-shaft, said pulley being provided with a sleeve, belts connecting said pulleys on said screw-shaft with the sleeve on said driving-pulley, one of said belts being crossed whereby said frame may be moved in either direction, and means for locking said pulley to said crank-shaft whereby the frame and saw may be actuated simultaneously, or said frame may be actuated independently of said saw, substantially as described.

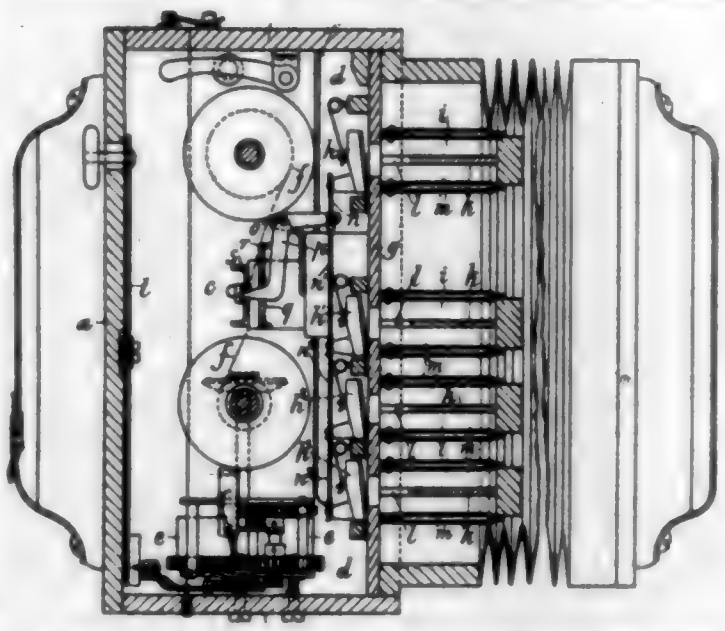
3. In a sawing-machine, the combination with a platform of a saw-carrying frame constructed to slide thereon, a screw-shaft revolubly mounted on said platform and passing through a correspondingly-threaded orifice in said frame, pulleys loosely mounted on said shaft, a clutch on said shaft constructed to slide longitudinally thereon, a lever constructed to throw said clutch into engagement with either of said pulleys, a saw slidably mounted in said saw-carrying frame, a crank-shaft revolubly mounted on said platform, a link connecting said saw with said crank-shaft, said crank-shaft being provided with a rectangular portion constructed to fit into a correspondingly-shaped orifice in a cylindrical sleeve provided at its end with a clutch portion, an outer sleeve loosely mounted on said cylindrical sleeve and being provided with pulleys and at its end with a clutch portion, a lever for throwing said clutches into and out of engagement, means for driving said outer sleeve and belts connecting said pulleys on said screw-shaft with said outer sleeve, one of said belts being crossed, substantially as described.

817,949. **BOOT TREE AND LAST.** FRANK EMERSON and WALTER SCOTT, Leamington, England. Filed Feb. 20, 1905. Serial No. 246,574.

Claim.—The improved boot tree or last consisting of the combination of a pliable body forming the same, a pneumatic elastic chamber inclosed in a space in said body formed by stitching together the central portion of the sides of the latter, an air-valve for inflating the said chamber in the space so formed to the shape and size of the boot or shoe, inner and outer soles, and an inner arch or hollow sole or plate, placed between the elastic chamber or body and the inner sole, for receiving the pressure caused by the inflation of the said chamber and for strengthening the outer sole, substantially as described.



817,950. **MECHANICALLY-PLAYING ACCORDION.** ALFRED SULZNER, Leipsic, Germany. Filed Aug. 15, 1904. Serial No. 220,717.



Claim.—1. In an accordion of the class described, cells arranged in several rows, the cells of one row alternating with those of the other rows, partitions dividing each cell into two compartments and provided with an aperture, reeds arranged at each side of the cells, reed-controlling valves, a single valve being provided for each cell, operating-levers connected each with one of the said valves, a tuning-band provided with slots for the passage of the said operating-levers, a presser-bar adapted to force the tuning-band against the plate, and means for operating such tuning-band.

2. In an accordion of the class described, a plurality of two-part cells arranged in alternating rows, a passage in the partition forming a free communication between the two parts of each cell, a valve for each cell and means for controlling the valve.

817,951. **INVALID-BED ATTACHMENT.** IRVIN BAKER, Latty, Ohio. Filed May 27, 1905. Serial No. 262,648.

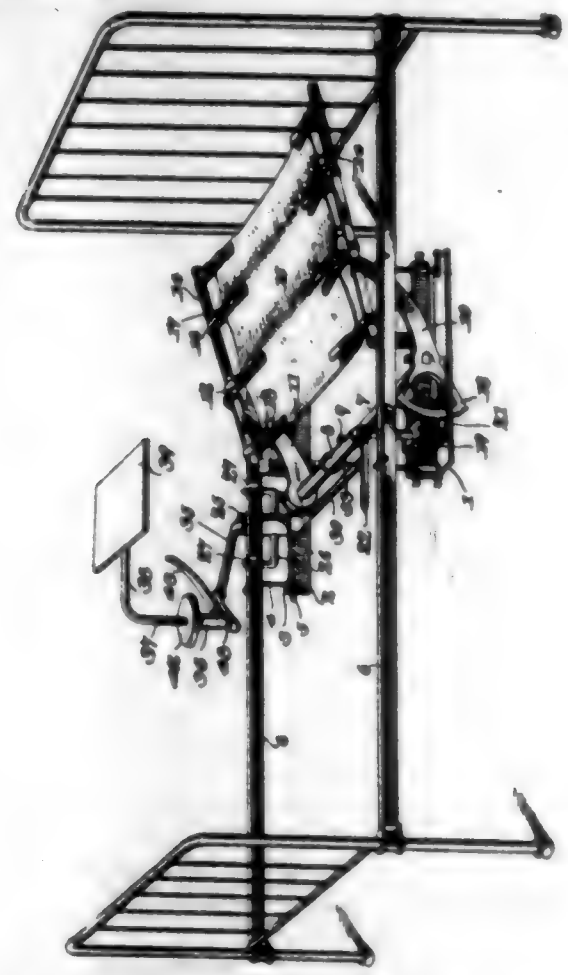
Claim.—1. In a device of the class described, a pair of frame members having rail-engaging hooks, a rock-shaft connecting said frame members, levers upon said rock-shafts, and pivoted back-rest-supporting arms having slidable connection with said levers.

2. In a device of the class described, a pair of frame members having supporting means, a rock-shaft spacing and connecting said frame members, levers upon said rock-shaft, pivoted back-rest-supporting arms having sliding connection with said levers, and means for oscillating the rock-shaft.

3. In a device of the class described, a pair of frame members having supporting means, a telescopic rock-shaft adjustably connecting and spacing said frame members, levers upon said rock-shaft, pivoted back-rest-supporting arms having sliding connection with said levers, a rack-segment upon one of said levers, and a worm supported for rotation in mesh with said rack-segment.

4. A pair of frame members having supporting means, a rock-shaft spacing and connecting said frame members, levers upon said rock-shaft, eyebolts at the free ends of said levers, pivoted back-rest-

supporting arms slidably engaging said eyebolts, a rack-segment upon one of the levers, and a worm supported for rotation in mesh with said rack-segment.



5. In a device of the class described, a pair of frame members having supporting-arms, levers having pivotal relation to the frame members and carrying eyebolts near their outer ends, back-rest-supporting arms pivoted upon the frame members and extending slidably through the eyebolts of the levers, a segment-rack connected with one of the levers, and a worm supported for rotation in mesh with said rack.

6. In a device of the class described, a pair of frame members having supporting means, a rock-shaft spacing and supporting said frame members, levers upon said rock-shaft, a back-rest device operated by said levers, a rack-segment upon one of said levers, a worm supported for rotation in mesh with said rack, and a ratchet-handle upon the worm-carrying shaft.

7. In a device of the class described, a pair of frame members having supporting means, a rock-shaft spacing and supporting said frame members, levers upon said rock-shaft, a back-rest device operated by said levers, a rack-segment upon one of said levers, a worm-carrying shaft supported for rotation with the worm in mesh with said rack said shaft being composed of separable members, and a ratchet-handle upon the upper detachable member of the worm-carrying shaft.

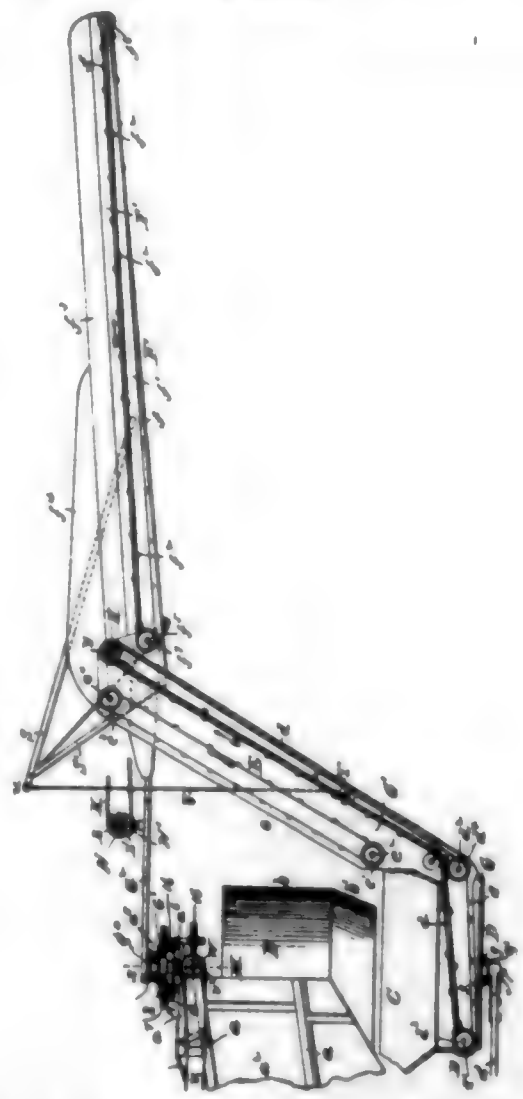
8. In a device of the class described, a pair of pivotally-supported arms, means for simultaneously adjusting said arms, and a ring or annulus having oppositely-extending members provided with hooks for adjustable engagement with said arms.

9. In a device of the class described, a pair of lugs having bed-rail-engaging clamps, arms pivotally connected with said lugs, means for effecting adjustment of the free ends of said arms, and a ring or annulus having oppositely-extending members adapted for adjustable connection with said arms.

10. In a device of the class described, a rock-shaft having levers, a pair of lugs having bed-rail-engaging means, arms pivotally connected with said lugs, means for supporting the arms slidably and detachably with relation to the free ends of the levers, and a ring or annulus having oppositely-extending members provided with means whereby they may be supported adjustably upon the pivoted arms.

11. In a device of the class described, a telescoping rock-shaft having levers, lugs having bed-rail-engaging means, arms pivotally connected with said lugs, hooks upon the levers adapted to support the free ends of said arms, means for oscillating the lever-carrying rock-shaft, and a ring or annulus having oppositely-extending members terminating in hooks adapted to engage the pivoted arms; one of said members being composed of two parts one of which telescopes within the other.

817,952. STRAW-STACKER. JOHN B. BARTHOLOMEW, Peoria, Ill., assignor, by mesne assignments, to The Sattley Stacker Company, Indianapolis, Ind., a Corporation of Maine. Filed Nov. 7, 1899. Renewed Oct. 20, 1904. Serial No. 230,606.



Claim.—1. In a straw-stacker, the combination of a main supporting-frame, an inner frame comprising top and bottom members, and an upward-extending connecting member G′, said inner frame being mounted on the main frame on a vertical axis, an outer frame-section hinged at the upper part of the inner frame, adjustable vertically and foldable downward over said inner and main frames, a carrier on said member G′ having an upper shaft H, a separate carrier-belt on said outer section having an inner shaft f' and foldable with the outer section relative to the other carrier, and means for actuating said carriers, the shaft f' being arranged to swing over the shaft H in the folding operation.

2. In a straw-stacker the combination of a main supporting-frame, a rigid inner frame comprising top and bottom members and an upward and downward extending connecting member G′, said rigid frame being mounted on said main frame on a vertical axis, an upper and outer frame-section hinged at the upper part of said rigid frame, adjustable vertically and foldable inward over the said rigid and main frames, straw-carrying means on said connecting member and outer section, and actuating mechanism at the upper end of said vertical axis connected with said rigid frame to swing the same horizontally, substantially as set forth.

3. In a straw-stacker the combination of a main supporting-frame, a rigid inner frame comprising top and bottom members and an upward and downward extending connecting member G′, said rigid frame being mounted on said main frame on a vertical axis, an upper and outer frame-section hinged at the upper part of said rigid frame, adjustable vertically and foldable inward over the said rigid and main frames, a carrier-belt on said member G′, a separate carrier-belt on said outer section foldable therewith relative to the other belt, means for actuating said belts, and actuating mechanism at the upper end of said vertical axis connected with said rigid frame to swing the same horizontally, substantially as set forth.

4. The combination of a supporting-frame, an inner stacker-section comprising a rigid frame mounted on a vertical axis on said supporting-frame by pivots at the upper and lower parts of said

frames, an outer stacker-section hinged to the upper part of said rigid frames, a belt-carrying roller at the upper end of said rigid frame, a separate belt-carrying roller at the inner end of said outer section, said outer section with its roller being adapted to swing inward over said rigid frame and its roller, separate inner and outer straw-carrying belts on said inner and outer rollers respectively and otherwise mounted to operate on said inner and outer stacker-sections, means for actuating said belts, and means for swinging the said rigid frame horizontally, substantially as set forth.

5. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section adapted to be inverted or carried over a horizontal axis from an outer horizontal position to an inner horizontal position, and an inner or lower section vibratable in horizontal planes around a vertical axis and having all of its parts fixed in relation to said axis, a carrier-belt upon the upper outer frame-section and a separate carrier-belt upon the inner lower frame-section arranged to travel upward to elevate the straw, said two separate belts being arranged to have the outer one swing bodily inward and over the outer end of the inner one, substantially as set forth.

6. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section adapted to be inverted or carried over a horizontal axis from an outer horizontal position to an inner horizontal position, and an inner or lower section swinging horizontally around a vertical axis and having all of its parts fixed in relation to said axis, a carrier-belt upon the outer frame-section and a separate, independent carrier-belt upon the inner lower frame-section arranged to travel upward and deliver the straw to the outer belt, power devices connected to the upper end of the last said belt for actuating it, and power devices for the outer belt connecting it with the inner belt substantially as set forth.

7. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section adapted to be inverted or carried over a horizontal axis from an outer horizontal position to an inner horizontal position, and an inner or lower section vibratable in horizontal planes around a vertical axis, and having all of its parts fixed in relation to said axis, a carrier-belt upon the upper outer frame-section, a carrier-belt upon the inner lower frame-section arranged to travel upward to elevate the straw, power devices connected to the upper end of the inner belt, and power devices connecting the inner belt with the inner end of the upper belt for actuating the same, substantially as set forth.

8. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section, and an inner or lower section vibratable in horizontal planes around a vertical axis, and having all of its parts fixed in relation to said axis, a carrier-belt upon the upper outer frame-section, a carrier-belt upon the inner lower frame-section arranged to travel upward to points adjacent to the inner end of the upper belt, a power mechanism at the aforesaid axis and power-transmitting devices extending therefrom to the inner end of the upper belt, substantially as set forth.

9. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section adapted to be inverted or turned around a horizontal axis from an outer horizontal position to an inner horizontal position, and an inner or lower section vibratable in horizontal planes around a vertical axis and having all of its parts fixed in relation to said axis, a carrier-belt upon the upper outer frame-section, a carrier-belt upon the inner lower frame-section arranged to travel upward to elevate the straw to the upper carrier-belt, a power mechanism connected to the upper end of the inner belt for actuating it, said power mechanism being maintained in fixed horizontal planes, and power-transmitting devices connected to the upper belt and adapted to vibrate in vertical planes, substantially as set forth.

10. The combination, with the separator-frame, having a straw-delivery orifice, of the two-part stacker-frame, the outer part of which is pivoted on the inner part and adapted to swing in longitudinal vertical planes relatively thereto, and the inner part of which extends from lines below the straw-orifice of the separator and near the surface of the ground to points above the separator and is adapted to swing horizontally relatively across the vertical longitudinal planes of the separator but is otherwise held rigid relatively thereto, and the power-driving gearing at the top of the separator and connected with the stacker, substantially as set forth.

11. The combination, with the thresher and separator, having a straw-orifice at the rear end, of the straw-stacker, having two belts, one connected to and supported on a vertically-swinging frame and the other supported on a frame having a horizontal part below the straw-orifice and near the ground-line, and an upwardly-inclined part, this part being rigid with the horizontal part and being pivoted to the vertically-swinging frame, and power-driving gearing at the top of the thresher and connected with the stacker, substantially as set forth.

12. The combination, with the thresher and separator, having a straw-orifice at the rear end, of the stacker fundamentally connected to the separator and formed in two parts, the inner part of which is connected to the separator by a vertical pivot below the straw-orifice and near the ground and extends rigidly to points above the separator, and the outer of which is hinged to the inner part, and power-driving mechanism at the top of the thresher and connected with the stacker, substantially as set forth.

13. The combination, of the separator, having a straw-orifice in the rear end, the two stacker-belts, the two frames for the stacker-belts, the inner frame having a horizontal part below the straw-orifice and near the bottom of the separator and having an upwardly-projecting part rigid with the bottom part and extending to points above the separator, and the outer frame being hinged to the inner one, and a driving mechanism at the top of the separator connected with the stacker-frame and with the said belts, substantially as set forth.

14. The combination, with the thresher and separator having a straw-orifice in the rear end of the stacker having the carrier-frame at its inner or lower end, said carrier-frame having two separated vertical pivots, one at the upper part of the separator-frame and one at the lower part below the straw-orifice and near the ground-line, and said carrier-frame having its parts rigidly connected throughout at points between the said upper and lower pivots, and power-driving mechanism at the top of the thresher above the straw-orifice and connected with the stacker, substantially as set forth.

15. The combination, of a separator, a straw-stacker mounted on said separator by widely-separated top and bottom vertical pivots, means for delivering straw from the separator to said stacker at points between said pivots, and mechanism at the top of the separator at said top pivot and connected with the stacker to vibrate it horizontally on said pivots, substantially as set forth.

16. The combination, of a separator a straw-stacker mounted on said separator by widely-separated top and bottom vertical pivots, means for delivering straw from the separator to said stacker at points between said pivots, and mechanism at the top of the separator at said top pivot and connected with the stacker to vibrate it horizontally on said pivots, said mechanism having also connections with the straw-carrying means of said stacker to actuate the same, substantially as set forth.

17. In a straw-stacker the combination of an inner horizontally-vibratable stacker-section mounted on widely-separated top and bottom pivots, an outer vertically-swinging section hinged on the inner section, a straw-carrier on said inner section, a straw-carrier on said outer section, and mechanism at said top pivot connected with the outer carrier to actuate the same, substantially as set forth.

18. The combination, with the thresher and separator, of the two frame elements secured to the rear end of the separator, one at the top thereof and one at the bottom, both rigid therewith, and the stacker having an inner or lower frame and an outer or upper frame connected together, the inner frame being formed of a horizontal lower part, pivoted to the lower frame element secured to the separator, an upper horizontal part pivoted to the upper frame element secured to the separator, and a vertical part rigid with both the bottom and the top horizontal parts, the elevating-belt supported on said frame, a driving mechanism at the top of the thresher connected with the stacker-frame situated at the vertical axis of the frame-pivots and an intermediate power-transmitting mechanism on the upper pivoted horizontal part of the frame connected with said belt, substantially as set forth.

19. The combination, with the thresher and separator, of the stacker connected to the separator by hinge devices having a vertical axis, said stacker having a vertical or inclined elevator-belt, driving devices arranged to impart power to the upper end of the elevator-belt, a supplemental separate carrier-belt adapted to swing bodily relatively to the aforesaid belt and to be inverted or turned over a horizontal axis near the upper end of the vertical belt from an outer horizontal position to an inner horizontal position, and means for positively driving the bodily-swinging belt, substantially as set forth.

20. The combination, with the thresher and separator, of the stacker secured to the separator, having a vertically-adjustable carrier-belt, a separate carrier-belt arranged to deliver straw to the ad-

justable belt and swinging around a vertical axis relative to the separator, but otherwise held rigidly in relation thereto, and extending to points above the separator, driving devices for the said second belt and driving devices independent of those aforesaid for the first said belt, substantially as set forth.

21. The combination, with the thresher and separator, of the stacker permanently secured to the separator, and arranged to vibrate horizontally, about a vertical axis, and having a straw-carrier belt and a frame for said belt arranged to hold the lower part of the belt under the points where the straw is delivered from the separator and extended upward on vertical or inclined lines and arranged to hold the upper part of the belt in points fixed relatively to the said axis, and power devices connected to the upper end of said belt for actuating it, substantially as set forth.

22. In a straw-stacking mechanism, the combination, with a main supporting-frame, of a stacker-frame having an upper or outer vertically-swinging section and an inner or lower section vibratable in horizontal planes around a vertical axis, and having all of its parts fixed in relation to said axis, a carrier-belt upon the upper outer frame-section, a carrier-belt upon the inner lower frame-section arranged to travel upward to points adjacent to the inner end of the upper belt, a shaft or roller on the horizontal axis engaging with the upper end of the inner belt, a shaft or roller for the upper belt adapted to swing around the last said horizontal axis, and power mechanism at the aforesaid vertical axis, and power-transmitting devices extending from the power mechanism to the upper end of the inner belt and the inner end of the upper belt, substantially as set forth.

23. In an attached stacker, the combination of a horizontally-oscillating frame carrying a suitable belt or belts and having its upper pivot above or near the top of the thresher, a belt-driving mechanism having an actuating member concentric with said upper pivot, a reversing mechanism connected with the upper inner part of said frame, and means for actuating said member and reversing mechanism, comprising two shafts in the plane of said pivot, and connected respectively with said actuating member and with the stacker-frame, substantially as set forth.

24. A belt-driving and stacker-oscillating mechanism comprising a horizontal shaft, gearing for connecting the same with a stacker belt or belts, a second shaft in line with the first shaft, a gear-wheel loose on the latter shaft, engaging a member of said gearing and turning in a direction opposite to the first shaft, means for connecting the second shaft with the stacker-frame, and a clutch for alternately connecting said shafts and connecting the second shaft with said loose wheel, substantially as set forth.

25. The combination of a pivoted stacker-frame, a belt or carrier thereon, the driving-shaft W, the wheel 1 fixed thereon, the shaft 3 in line with the first shaft and connected with the stacker-frame to oscillate the same, the wheel 6 loose on the shaft 3, the pinion 2 engaging said wheels and connected with said belt, and the clutch 8 rotating with the shaft 3 and adapted to clutch either the shaft W or the wheel 6 therewith, substantially as set forth.

26. As a means for oscillating the stacker-frame, the combination with the latter of two separate shafts in line with each other, the one having a power wheel or device and the other being connected with the stacker-frame, a gear-wheel fixed on the former shaft, a gear-wheel loose on the latter shaft, means for connecting said wheels to drive the loose wheel oppositely to the former shaft, and means for alternately clutching the latter shaft with the former shaft and with said loose wheel, substantially as set forth.

27. In a straw-stacker, the combination of a supporting-frame, an inner stacker-section, an outer stacker-section swingable in vertical planes on said inner section, a carrier-roller at the upper end of said inner section, and a carrier-roller at the inner end of said outer section arranged to swing with its said section around the first-mentioned roller, substantially as set forth.

28. In a straw-stacker, the combination of an inner stacker-section, an outer stacker-section having a connection with the inner section whereby it is adapted to swing in vertical planes relative to the inner section, a straw-conveying means on the inner section, and an independent straw-conveying means on the outer section having its inner end eccentric to said connection, whereby said inner end may swing bodily around the outer end of the conveying means on the inner section, substantially as set forth.

29. In a straw-stacker, the combination of an inner stacker-section having a straw-carrier, an outer stacker-section having a straw-carrier independent of the inner straw-carrier and having its inner end arranged below the outer end of the inner carrier, and a hinge connection between said sections arranged eccentric to the inner end of the outer carrier, substantially as set forth.

30. The combination with a supporting-frame, of an upwardly-inclined, rearwardly-extending inner stacker-section supported thereon, an endless belt-carrier arranged in the said stacker-section and passing at its upper end around a roller H, an overacting carrier-belt *e*, an outer stacker-section pivoted to the upper end of the inner section and adjustable in vertical planes, an endless straw-carrier mounted in the outer stacker-section and turning about a roller f^6 at the inner end of the outer section, the roller f^6 being adjacent to and below the roller H when the stacker is in working position and such roller being bodily movable with its section about the roller H when the outer section is adjusted, substantially as set forth.

31. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-vibrating sections hinged together to permit them to be brought to a common line, and the outer of said sections to points below said line and to points above said line, and two independent carriers, one on each section, arranged to have the inner end of the outer carrier lie under the upper end of the inner carrier when the sections are in operative position, and to lie above the same when they are in folded position, substantially as set forth.

32. The combination with a separator provided with upper and lower supports for the stacker between which the straw from the separator is discharged, an inner rigid stacker-section comprising a substantially horizontal lower portion arranged below the discharge of the separator and connected with the lower support by a vertical hinge, an upper substantially horizontal part arranged above the discharge for the separator and connected with the upper support thereof by a vertical hinge, and an upwardly-inclined section in which are mounted the straw-carrying devices for the inner stacker-section, an outer section pivoted to the upper end of the inner section by a horizontal hinge, straw-carrying means mounted in the outer stacker-section and independent of the straw-carrying means in the inner section, all parts of the straw-carrying means in the outer section being adjustable therewith about the pivot uniting it with the inner section, and means for adjusting the outer section relative to the inner section in vertical planes, substantially as set forth.

33. In a straw-stacker, the combination of a main separator-frame, an inner stacker-section supported by said frame, an outer vertically-adjustable section pivoted to the outer end of the inner section, straw-carriers arranged to move the straw along the said sections, and an actuating mechanism for the said straw-carriers arranged at the top of the separator-frame and connected with the straw-carriers at points adjacent to the pivotal connection between the two stacker-sections, substantially as set forth.

34. The combination with a separator-frame, of an upwardly-inclined, rearwardly-extending inner stacker-section supported thereby, an outer stacker-section pivotally connected with the outer end of the inner section and adjustable relative thereto in vertical planes, straw-carrying means arranged in the inner straw-stacker section, other straw-carrying means in the outer stacker-section, and mechanism for actuating the straw-carriers arranged on top of the separator-frame and connected to drive both sets of straw-carrying devices, the connection being adjacent to the points where the two stacker-sections are pivotally connected, substantially as set forth.

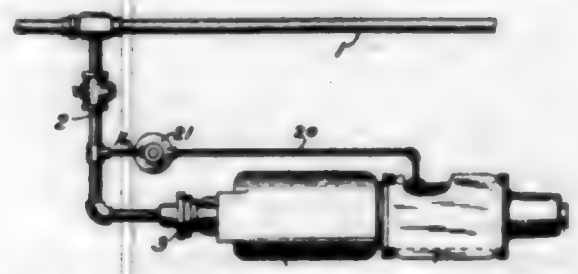
35. In a straw-stacker comprising two sections, an upwardly-inclined, rearwardly-extending section, and an outer section, the latter being connected to the former by a horizontal pivot or hinge and being adjustable in vertical planes, means for carrying the straw along the said stacker-sections, and means for driving the straw-carrying means, the connection of the driving means with the carrier being in proximity to the pivotal or hinge connection of the two stacker-sections, substantially as set forth.

36. In a straw-stacking mechanism, the combination with a main supporting-frame, of a stacker-frame having two horizontally-swinging sections, a lower inner one and an upper outer one, hinged together to permit the upper one to swing freely to a common line with the inner one and to swing to an operative position at either side of said common line, an elevator-belt on the inner section, and an independent carrier-belt on the outer section having its inner end below the upper end of the inner belt, substantially as set forth.

37. The combination with the thresher and carrier having straw-delivering devices at the rear end, of a stacking mechanism having a horizontally-vibrating frame connected to the main frame by a vertical hinge below the straw-deilvering devices, the power-gearing situated at the top of the thresher-frame, whereby the inner end of the stacker can be arranged relatively low below the straw-delivering devices, and having two belt-frame sections, a lower or inner one and an upper or outer one, hinged together, belts on the said frame-

sections, and power-transmitting devices connecting the said power-gearing with the belts, substantially as set forth.

817,953. **FLUID-PRESSURE BRAKE.** ROBERT H. BLACKALL, Edgewood Park, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 13, 1903. Serial No. 161,296.



Claim.—1. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder, and a triple-valve device having means for supplying air from the train-pipe and from the auxiliary reservoir to the brake-cylinder in emergency applications, of means independent of the triple-valve piston for slowly equalizing the pressures upon opposite sides thereof after an ordinary emergency application of the brakes.

2. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder, and a triple-valve device having means for supplying air from the train-pipe and from the auxiliary reservoir to the brake-cylinder in emergency applications, of means independent of the triple-valve piston for slowly equalizing the pressures upon opposite sides thereof after an ordinary emergency application of the brakes, and for preventing such equalization upon excessive venting of the train-pipe.

3. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder and quick-action triple valve, of a valve device for opening communication from the brake-cylinder to the train-pipe in an ordinary emergency application and for closing such communication upon an excessive venting of the train-pipe.

4. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder and quick-action triple valve, of a valve device actuated by the usual venting of the train-pipe in emergency applications to open communication from the brake-cylinder to the train-pipe and actuated by an excessive or complete venting of the train-pipe to close such communication.

5. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder and quick-action triple valve, of a valve for controlling communication from the brake-cylinder to the train-pipe, and a movable abutment subjected to the opposing pressures from the train-pipe and from the brake-cylinder for operating said valve.

6. In a fluid-pressure brake, the combination with a train-pipe, auxiliary reservoir, brake-cylinder and quick-action triple valve, of a valve device for controlling communication from the brake-cylinder to the train-pipe, a movable abutment subject to opposing pressures from the brake-cylinder and the train-pipe and actuated by a small excess of brake-cylinder pressure to open said communication and by a great excess of brake-cylinder pressure to close said communication.

7. An equalizing valve device for fluid-pressure brakes, comprising a movable abutment exposed on one side to train-pipe pressure and on the opposite side to brake-cylinder pressure, and means actuated by a slight movement of the abutment to open communication from the brake-cylinder to the train-pipe and by a further movement in the same direction to close such communication.

8. An equalizing valve device for fluid-pressure brakes, comprising a valve for controlling communication from the brake-cylinder to the train-pipe, and a movable abutment subject to the opposing pressures of the train-pipe and brake-cylinder for operating said valve.

9. An equalizing valve device for fluid-pressure brakes, comprising valves for controlling communication from the brake-cylinder to the train-pipe, a movable abutment subject to opposing pressures of the train-pipe and brake-cylinder, means actuated by a small movement of the abutment to open one of said valves and means actuated by a further movement of the abutment in the same direction to close another of said valves.

10. An equalizing valve device for fluid-pressure brakes, comprising a casing having a movable abutment therein subject to the opposing pressures of the train-pipe and brake-cylinder, means actuated by a small movement of the abutment for opening communication from the brake-cylinder to the train-pipe, a spring for opposing further movement of the abutment and means actuated by a further movement of the abutment for closing said communication.

817,954. **SPRING-BRACE.** CHARLES D. BROUYETTE, Chicago, Ill., assignor of one-half to Frank W. Kinney, Chicago, Ill. Filed Feb. 18, 1903. Serial No. 94,576.

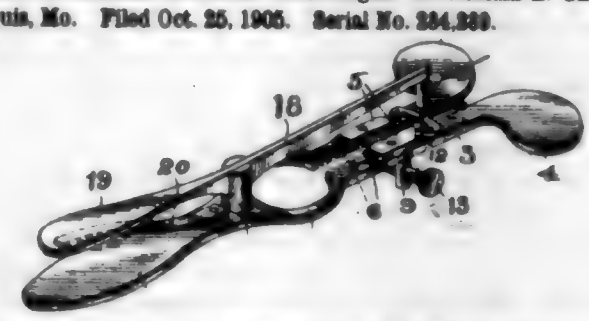


Claim.—1. In a spring-bottom, the combination with a spring, of a brace having a portion thereof bent into engagement with said spring at two points, and a spring arranged to extend, under stress, between said bent portions, so as to cause the same to grip said spring, substantially as described.

2. In a spring-bottom, the combination with a spring, of a brace having a portion thereof bent into engagement with a coil of said spring at two different points, and having a portion thereof extending under tension between said points of engagement so as to cause said bent portions to grip said coil, substantially as described.

3. In a spring-bottom, the combination with a coil-spring, of a brace comprising two loops bent to engage a coil of said spring, and a spring extending under tension between said loops, and so arranged that the tension thereof will cause said loops to grip said coil, substantially as described.

817,955. **PALLET SETTING AND ADJUSTING TOOL.** WILLIAM B. BROSIUS, St. Louis, Mo., assignor to William L. Girard, St. Louis, Mo. Filed Oct. 25, 1905. Serial No. 284,289.



Claim.—1. In a pallet setting and adjusting tool, a handle, a pair of arms integral therewith, and means whereby a pallet is held upon said arms, substantially as specified.

2. In a pallet setting and adjusting tool, a handle, a pair of arms integral therewith, a plate integral with each arm, and means whereby a pallet is held in position upon said arms, substantially as specified.

3. In a pallet setting and adjusting tool, a handle, a pair of arms integral therewith, adjusting-fingers pivotally mounted on said arms and means whereby a pallet is held in position on said arms in front of the fingers, substantially as specified.

4. In a pallet setting and adjusting tool, a bifurcated handle, adjusting-fingers pivotally arranged on the arms of said handle, and means whereby a pallet is held in position with one end on each arm in front of the fingers, substantially as specified.

5. In a pallet setting and adjusting tool, a bifurcated handle, plates integral with the arms of said handle, adjusting-fingers pivotally mounted on the arms, and means whereby a pallet is held in position on the arms in front of the fingers, substantially as specified.

6. In a pallet setting and adjusting tool, a bifurcated handle having spring-arms, means whereby said arms are drawn together, adjusting-fingers located on the spring-arms, and means whereby a pallet is held in position on said arms in front of the fingers, substantially as specified.

7. In a pallet setting and adjusting tool, a handle, a pair of spring-arms integral therewith, means whereby said arms are drawn together, adjusting-fingers pivotally mounted on top of the arms, and a spring-actuated finger for engaging and holding a pallet on the arms in front of the fingers, substantially as specified.

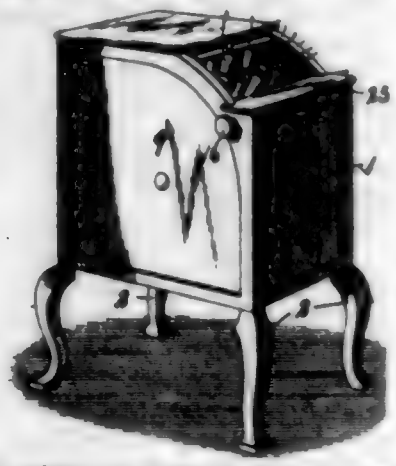
8. In a pallet setting and adjusting tool, a bifurcated handle, means whereby a pallet is held in position on said bifurcated handle, and adjusting-plates arranged on the arms of said handle, the forward ends of which plates are provided with inclined faces, substantially as specified.

9. In a pallet setting and adjusting tool, a handle, a pair of spring-arms carried thereby, adjusting-fingers pivotally mounted on the arms, which fingers are provided on their forward ends with in-

clined faces and means whereby a pallet is held in position on the arms in front of the fingers, substantially as specified.

10. In a pallet setting and adjusting tool, a forked member, means whereby a pallet is held with one end on each of the forks of the member and means arranged on each fork for adjusting the pallet-stones of the pallet, substantially as specified.

817,956. PHONOGRAPH-RECORD CABINET. BERT C. CARMAN, Canastota, N. Y., assignor of one-fourth to Philip T. Weaver and one-fourth to Stephen M. Weaver, Canastota, N. Y. Filed Dec. 20, 1904. Serial No. 238,452.



Claim.—1. A cabinet for cylindrical phonograph-records comprising a rotary drum having radial spindles for supporting the cylinders, a companion holder for each spindle consisting of a screw having an offset end to engage the outer end of the record and holding it on the spindle when inverted.

2. A cabinet for cylindrical phonograph-records comprising a rotary element having a plurality of spindles projecting therefrom, and a corresponding number of movable detents each having its outer end offset and rotatable laterally.

3. A cabinet for cylindrical phonograph-records comprising a rotary drum having a plurality of rows of radial spindles for receiving and supporting the records and a detent for each spindle adjustable lengthwise of such spindle.

4. A cabinet for cylindrical phonograph-records comprising a rotary drum having a plurality of rows of radial spindles for receiving and supporting the records, each spindle having a companion detent movable laterally across the outer end face of the adjacent record.

5. A cabinet for cylindrical phonograph-records comprising a rotary drum having a plurality of rows of radial spindles for receiving and supporting the records, each spindle having a visible record-designating character and a companion detent for each spindle adjustable endwise of such spindle for holding the record thereon.

6. A phonograph-record holder comprising a rotatable element, and a plurality of spindles projecting from the periphery of such element to support the records, and a corresponding number of movable detents adjustable endwise of the spindle for different lengths of record and adapted to engage the outer end of the record to prevent its sliding off from the spindle.

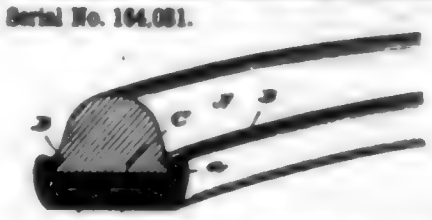
7. A cabinet for cylindrical phonograph-records comprising a rotary drum having a plurality of rows of radial spindles for receiving and supporting the records, and a plurality of rotary endwise-adjustable stops screwed in the drum, one for each spindle to hold its record on the spindle.

8. A phonograph-record holder comprising a rotatable element and a plurality of spindles projecting from the periphery of such element to support the records, each spindle being angular in cross-section leaving finger-space between its sides and the record and a hand-piece connected to rotate said element.

9. In a cabinet for cylindrical records, the combination of a case having a sight-opening, a movable closure for the opening, a rotary drum within the case, spindles secured to and radiating from the periphery of the drum, and a series of rotary detents, each adjustable endwise, and engaging the end of the record to hold the record on the spindle when inverted.

10. In a cabinet for cylindrical records, the combination of a case having a sight-opening, a movable closure for the opening, a rotary drum within the case, spindles secured to and radiating from the periphery of the drum, and a series of movable detents, each having an offset end turned across the outer end of the record to hold the record on the spindle when inverted and means to stop the rotation of the drum at intervals.

817,957. VEHICLE-TIRE. WILL CHRISTY, Akron, Ohio. Filed July 2, 1903. Serial No. 164,031.



Claim.—1. A vehicle-tire of the character described, comprising a resilient tread portion and a stiffened base portion or backing applied to the inner surface of said tread portion, said stiffened base having as an element thereof a strip of foraminous or reticulated material of greater stiffness than the material with which it is associated, substantially as described.

2. A vehicle-tire of the character described, comprising a resilient tread portion and a thickened canvas base portion or backing applied to the inner surface of said tread portion, said canvas backing having associated therewith a strip of foraminous or reticulated material of greater stiffness than said canvas base, substantially as described.

3. A vehicle-tire of the character described, comprising a resilient tread portion and a thickened canvas base portion or backing applied to the inner surface of said tread portion, said canvas backing having associated therewith as a stiffening element a foraminous or reticulated metal strip, substantially as described.

4. A vehicle-tire of the character described, comprising a resilient tread portion and a thickened canvas base portion or backing applied to the inner surface of said tread portion, said canvas backing having incorporated therewith as a stiffening element a strip of woven wire substantially commensurate in surface area with said canvas base, substantially as described.

5. A vehicle-tire of the character described, comprising a solid-rubber tire-body, a thickened fabric base, and, incorporated in the latter, a strip or layer of woven wire for the purpose of stiffening the base transversely, substantially as described.

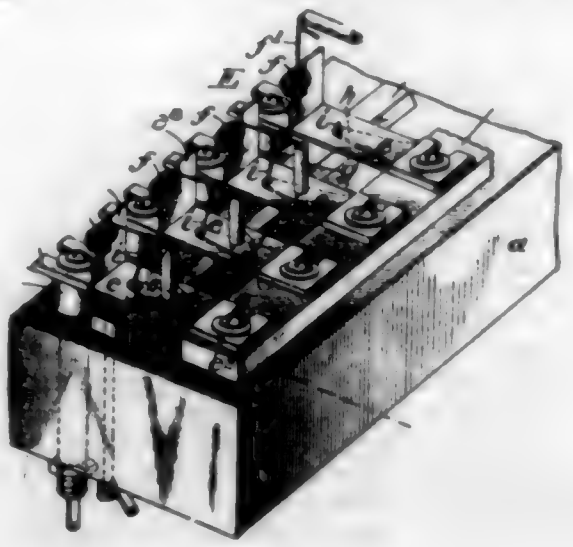
6. The combination with a laterally-shouldered resilient tire-body having a thickened fabric base in which is incorporated a strip or layer of woven wire or like reticulated sheet metal for the purpose of stiffening the base transversely, of a channeled rim in which the same is seated, and fastening-wires engaging the shoulders of the tire-body to secure the latter in the rim, substantially as described.

817,958. ANTISLIPPING DEVICE FOR SHOES. WILLIAM P. CLUGSTEN, Hamburg, Ill. Filed Sept. 21, 1905. Serial No. 279,456.



Claim.—An antislipping device comprising a plate having bearings, a rock-shaft mounted in said bearings, the ends of the shaft extending beyond the plate and being bent to form spur-points which are extensible alongside the plate when the shaft is rocked, a pin projecting from the shaft, and a spring having a perforation with which the pin is engageable.

817,959. ALARM-FUSE FOR TELEPHONE-EXCHANGES. EDWARD B. CRAFT, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 5, 1904. Serial No. 192,183.



Claim.—1. A protective device comprising an insulating mounting-strip and terminal plates therefor, a spring secured to one of said terminals, a fuse-wire electrically connected with the other terminal and united with said spring to maintain the same under tension, and a target carried by said spring, said spring when under tension holding said target in an inconspicuous position, but being adapted upon the parting of the fuse to move said target into a position of display.

2. In a protective device for electric circuits, the combination with an insulating supporting-strip and terminal plates carried at the ends thereof, of a coiled spring, a support therefor mounted upon one of said plates, one end of said spring being electrically connected with the aforesaid terminal plate, an extension-arm formed by the other end of said spring, a target carried by said arm, a fuse-wire electrically connected with the other terminal plate and united with said arm between the target and coil to maintain said spring under tension, said arm being adapted to be moved by the spring to bring the target into a position of display when the fuse-wire is parted.

3. A protective device comprising an insulating mounting-strip and terminal plates therefor, a spring secured to one of said terminal plates, a fuse-wire completing the electrical connection between said plates, and maintaining the spring under tension, an arm carried by said spring, and a tubular glass target carried by an angular portion of said arm, said arm when the spring is under tension maintaining the target inconspicuous, and being adapted upon the parting of the fuse to move said target into a position of display.

4. A protective device comprising an insulating mounting-strip e and terminal pieces e' e^3 therefor, a coiled spring f, a support e^3 therefor, one end of said spring being electrically connected with the terminal e', an extension-arm f' formed by the other end of said spring, an opaque glass target g of distinctive color carried by an angular portion f^2 of said arm, and a fuse-wire f' maintaining said spring under tension and electrically connected with the terminal plate e^3, said fuse-wire being united with the arm f' between the target and coil; whereby when the fuse is parted the target is moved into a position of display by the recoil of said spring.

5. A protective device comprising an insulating supporting-strip, terminal plates carried at the ends thereof, a coiled spring, a metallic supporting-plate for said spring mounted upon one of said terminal plates at right angles thereto, one end of said spring being secured to said plate, an extension-arm carried by the other end of said spring, a leaf-spring secured at one end to the other terminal plate and extending parallel to the insulating-strip on the side thereof opposite said coiled spring, a fuse passing through said strip and connecting said leaf-spring and extension-arm to maintain the coiled spring under tension, and a target of distinctive color carried by an angular portion of said extension-arm and adapted to be moved into a position of display by said arm when the fuse is parted.

6. A protective device comprising an insulating supporting-strip, terminal plates carried at the ends thereof, a coiled spring supported by one of said plates, one end of said spring being connected with said plate, an extension-arm carried by the other end of said spring, a leaf-spring connected with the other terminal plate and extending parallel to said insulating-strip on the side thereof opposite said coiled spring, a fuse passing through said strip and connecting the ends of said springs to maintain the coiled spring under tension, and a target carried by an angular portion of said extension-arm independent of the current-carrying portion thereof, said target being adapted to be moved into a position of display by said arm when the fuse is parted.

7. A protective device adapted to be mounted in a vertical plane, comprising an insulating supporting-strip, terminal plates carried at the ends thereof, a coiled spring supported by one of said plates, one end of said spring being connected with said plate, an extension-arm carried by the other end of said spring, a portion of said arm being bent to lie at right angles, a fuse-wire electrically connected with the other terminal plate and united with said extension-arm between the angular portion thereof and the coiled spring to maintain said spring under tension, and a tubular target carried by said angular portion and normally maintained in an inconspicuous position with its small end alone visible, said target being adapted to be moved by said arm to display its side surface when the fuse is parted.

817,960. **PROCESS OF TREATING WOOD FOR THE PRODUCTION OF PAPER-PULP, TERPENES, AND RESINOUS SUBSTANCES.** GEORGE P. CRAIGHILL and GEORGE A. KERR, Lynchburg, Va., assignors to H. C. Manson, Jr., Lynchburg, Va. Filed Dec. 28, 1904. Serial No. 238,627.

Claim.—1. The herein-described method of producing paper-pulp from wood and extracting and recovering volatile and resinous constituents of the wood, which consists, first, in chemically treating the wood just enough to fix the volatile acids and oils and liberate the terpenes, second, subjecting the mass to the action of heat to volatilize and carry off the terpenes in a pure and colorless state, third, withdrawing the resinous substances including the acids and oils, and then chemically treating the residual fibrous constituents of the wood to reduce them to fiber and remove coloring-matter therefrom.

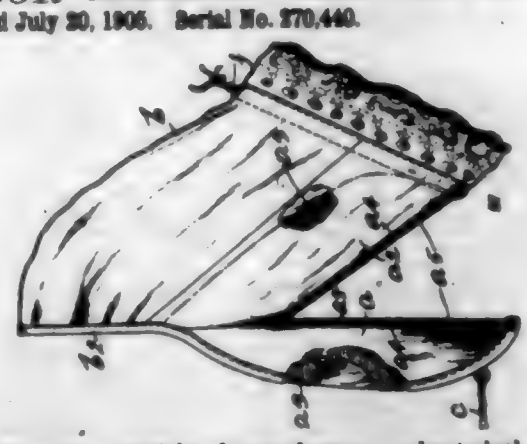
2. The herein-described method of producing paper-pulp from wood and extracting and recovering volatile and resinous constituents of the wood, which consists, first, in chemically treating the wood just enough to fix the volatile acids and oils and liberate the terpenes, second, subjecting the mass to the action of heat to volatilize and carry off the terpenes in a pure and colorless state, and third, withdrawing the resinous substances including the acids and oils, then chemically treating the wood under pressure, to reduce it to fiber.

3. The herein-described method of producing paper-pulp from wood and extracting and recovering volatile and resinous constituents of the wood, which consists, first, in chemically treating the wood to fix the volatile acids and oils and liberate the terpenes, second, subjecting the mass to the action of heat to volatilize and carry off the terpenes in a pure and colorless state, third, withdrawing the resinous substances including the acids and oils, then chemically treating the wood under pressure, to reduce it to fiber, then further chemically treating it to remove the remaining portions of coloring-matter, and then bleaching the pulp.

4. The herein-described method of producing paper-pulp from wood and extracting and recovering volatile and resinous constituents of the wood, which consists, first, in chemically treating the wood to fix the volatile acids and oils and liberate the terpenes, second, subjecting the mass to the action of heat to volatilize and carry off the terpenes in a pure and colorless state, third, withdrawing the resinous substances including the acids and oils, then further digesting the wood to reduce it to fiber and remove coloring-matter by subjecting it, first, to a solution of caustic soda, under pressure, and, secondly, to a solution of carbonate of soda.

5. The herein-described method of producing paper-pulp from wood and extracting and recovering volatile and resinous constituents of the wood, which consists, first, in chemically treating the wood under moderate heat to liberate the terpenes and fix the volatile acids and oils, the terpenes being carried off and recovered, then further digesting the wood at a moderate temperature in the same chemical solution, then drawing off the solution and resinous substances, then subjecting the residual fibrous constituents to a solution of caustic soda, under pressure, and then to a solution of carbonate of soda, and then bleaching by the action of chlorinated soda.

817,961. **DRESS-SHIELD.** EMILIE P. DAVIS, New York, N. Y. Filed July 20, 1905. Serial No. 270,440.

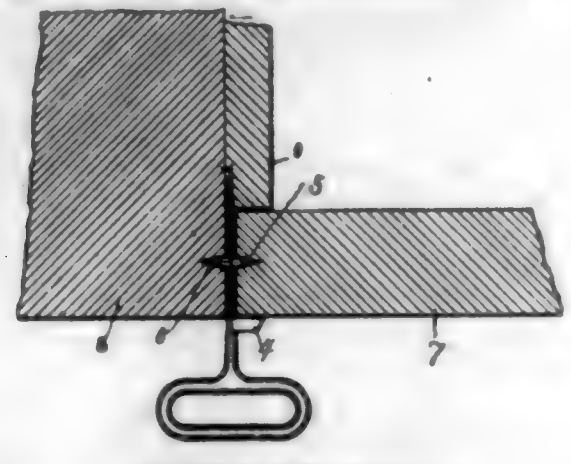


Claim.—As an article of manufacture, a short cloth sleeve provided with a dress-shield of water proof material, said waterproof material being covered on both sides with textile fabric, one part of the said waterproof shield forming a part of the under arm portion of the sleeve, a part of said sleeve also forming the textile covering for such part of the shield, substantially as described.

817,962. **DOOR-SECURER.** ERNEST DENGLER, Gibbon, Nebr. Filed June 5, 1905. Serial No. 263,785.

Claim.—1. In a door-securer, the combination of an elongated body or stem sharpened at one end and provided with a hand-grip at the other end and one or more spurs carried by the said elongated body or stem intermediate its ends.

2. In a door-securer, the combination of an elongated body or stem sharpened at one end, and provided with a hand-grip at the other end, oppositely-disposed spurs carried by the said elongated body or stem intermediate its ends and an outstanding projection or stop adapted to bear against the door to be secured.



817,963. PROCESS FOR THE MANUFACTURE OF PLATES OR SLABS IMITATING MARBLE.

OCTAVE DEVILLERS, Jumet, Belgium. Filed Apr. 4, 1904. Serial No. 201,574.

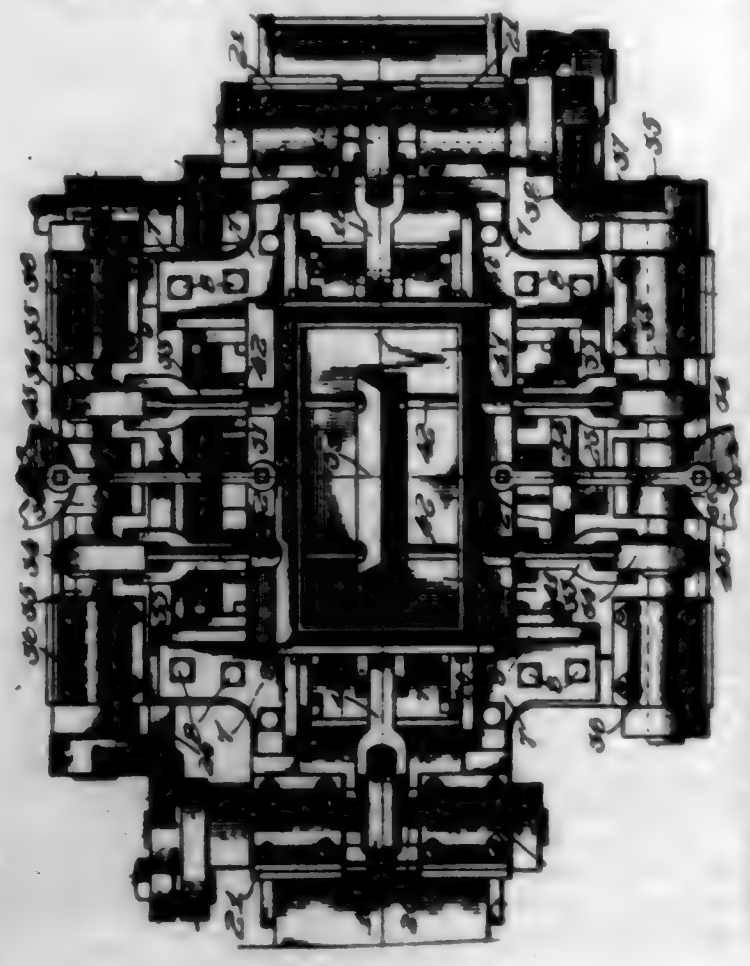
Claim.—1. A process for manufacturing multicolored sheets of glass, having a rough surface for fixing purposes, which consist in covering the sheet of glass with multicolored glass scales and a layer of colored enamel, and then heating to a suitable temperature in order to partially fuse the scales and cause them to become attached by heat to the sheet of glass, substantially as described.

2. A process for manufacturing multicolored sheets of glass, having a rough surface for fixing purposes, consisting in heating a quantity of multicolored pieces of glass to a plastic state, in reducing the same to flakes or scales, in distributing said flakes or scales and a suitable enamel upon a sheet or pane of glass, and subsequently applying heat sufficient to fuse the flakes and sheet of glass.

3. A process for manufacturing multicolored sheets of glass, having a rough surface for fixing purposes, consisting in heating a quantity of multicolored pieces of glass to a plastic state, in reducing the same to flakes or scales, in distributing said flakes or scales upon a sheet or pane of glass, and subsequently applying heat sufficient to fuse the flakes and sheet of glass.

817,964. MACHINE FOR MAKING CEMENT BLOCKS AND THE LIKE.

WILLARD P. ELMORE, Adrian, Mich. Filed Feb. 27, 1905. Serial No. 247,460.



Claim.—1. The combination with a pressure-chamber, comprising laterally-movable side and end walls, means for moving the same simultaneously in and out, a top comprising separable portions, a bottom, and a vertically-reciprocating carriage for carrying the same, means for shifting the separable portions of said top, means for moving said side and end walls in and out, and means for reciprocating said carriage, said mechanism being arranged to begin the downward reciprocation of the carriage shortly after the pressure-walls begin to move outwardly.

2. The combination of a pressure-chamber comprising laterally-movable side and end walls, a top comprising separable portions, a reciprocating carriage for carrying a removable bottom for the pressure-chamber, means for raising and lowering said carriage, and means for transferring the bottom from the machine.

3. The combination with a pressure-chamber, of means for shifting the walls thereof for expanding and contracting the chamber, a reciprocating carriage below said chamber for carrying a removable bottom therefor, a rotary cam for raising and lowering said carriage, and power-rollers for transferring the removable bottom from said carriage.

4. The combination of a pressure-chamber, comprising shiftable walls for expanding and contracting the chamber, and mechanism for shifting said walls, comprising links 18 and rock-shafts 20 having cranks 19 engaging the links 18, rocker-arms 22 on the shafts 20, links 23, 23 pivotally connected with the rocker-arms 22, 22, and cranks for actuating said links.

5. The combination with the bodily-movable side and end walls for a pressure-chamber, of mechanism for actuating the same, comprising links 18 and 23, rock-shafts 20 and 35 having cranks 19 and 34 respectively connecting with the links 18 and 33, gearing between said shafts 20 and 35, links 23 and 24 carried by the shafts 20, and cranks for actuating said links.

6. The combination with the bodily-movable side and end walls for a pressure-chamber, of mechanism for actuating the same comprising links 18 and 33, rock-shafts 20 and 35 having cranks 19 and 34 respectively connecting with the links 18 and 33, gearing between said shafts 20 and 35, links 23 and 24 carried by the shafts 20, and cranks for actuating said links, said links being provided with slots having lateral recesses at one end, whereby the pressure-walls are held a predetermined length of time at their inward and outward positions.

7. The combination of slides 12 and 13 forming the end and side walls respectively of a pressure-chamber, said slides being provided with lateral flanges 14, 14 and 15, 15 respectively, cheek-blocks 7, 7, provided with slots 11, 11, and rollers 17, 17 on the slides 12 and 13, adapted to fit and travel in said slots 11, 11.

8. The combination with a pressure-chamber comprising shiftable pressure-walls 12, 12 and 13, 13, of mechanism for shifting said walls in and out, comprising rock-shafts gear-connected together and provided with crank connections with said pressure-walls, rocker-arms 22, 22 for actuating said gear-connected rock-shafts, links 23, 24 connected with said rocker-arms 22, 22, said links being provided with slots 25, 25, crank-pins adapted to work in said slots 25, 25, a rotary cam 66 carried by the shaft carrying said crank-pins, and a reciprocating carriage arranged to be raised and lowered by said rotary cam.

9. The combination with a pressure-chamber, of a top therefor comprising separable portions 41, 41, and mechanism for shifting said portions, comprising links or rods 44, 44, rotary disks 45, 45 for actuating said rods, and means for actuating said disks.

10. The combination with the slides 41, 41, of links or rods 44, 44 connected therewith, rotary disks 45, 45 with which said rods 44, 44 are connected, rotary shafts 46, 46, carrying the disks 45, 45, and gearing for rotating the shafts 46, 46.

11. The combination with the slides 41, 41, of links or rods 44, 44 connected therewith, rotary disks 45, 45 with which said rods 44, 44 are connected, rotary shafts 46, 46 carrying the disks 45, 45, rotary shafts 50, 50 gear-connected with the shafts 46, 46, a rotary shaft 54 gear-connected with the shafts 50, 50 and provided with a gear 55, and gear-segments 56, 56 located on opposite sides of a rotary wheel, whereby the shaft 54 is rotated at intervals by the separated segments 56, 56 to shift the slides 41, 41 in and out.

12. The combination with the shiftable slides 41, 41, of mechanism for shifting the same back and forth, comprising separated gear-segments 56, 56 carried by a rotary wheel and cooperating with a gear controlling said slides 41, 41.

13. The combination of a pressure-chamber comprising inwardly and outwardly movable pressure-walls, mechanism for shifting said walls, comprising rock-shafts gear-connected with one an-

other and link-connected with said walls, crank connections for actuating said rock-shafts, said crank connections being actuated by a rotary driving-shaft provided with cranks, slides 41, 41, and means for shifting the same, comprising rotary shafts link-connected with said slides, and separated segments 56, 56 carried by said rotary driving-shaft, coöperating with a gear controlling said slides 41, 41.

14. The combination with a pressure-chamber having inwardly and outwardly movable pressure-walls, of mechanism for shifting said walls, comprising rock-shafts connected with said walls, means for rocking said shafts, slides forming gates for a cover for said pressure-chamber, means for shifting said gates, comprising links and rotary shafts for actuating the same, separated gear-segments, and a coöperating gear for intermittently turning said rotary shafts, said separated segments being carried by a rotary driving-shaft, a reciprocating carriage adapted to carry a bottom for said pressure-chamber, and a rotary cam carried by said rotary power-shaft and adapted to reciprocate said carriage vertically.

15. The combination with a pressure-chamber, of a reciprocating carriage carrying a bottom for said chamber, a rotary cam 66 for actuating said carriage, said cam being constructed with a cut-away portion, whereby the carriage is raised and lowered by the cam.

16. The combination with a pressure-chamber and reciprocating carriage carrying the bottom of said chamber, of vertical guideways for said carriage, said carriage being constructed with side pieces 60, 60 whose ends are adapted to fit in said guideways, and with cross-pieces 61, 61 connecting said side pieces.

17. A reciprocating carriage comprising side pieces 60, 60 and cross-pieces 61, 61, and a roller 62 arranged between and hung from the cross-pieces 61, 61, in combination with a pressure-chamber and a bottom therefor carried by said carriage.

18. The combination with the reciprocating carriage C, of a series of rollers located near the lower end of the path of travel of said carriage, and means for driving said rollers, in combination with a pressure-chamber having its bottom carried by said carriage.

19. The combination with a pressure-chamber and a reciprocating carriage having a platform for carrying a pallet-board adapted to form the bottom of said chamber, of a series of rollers adapted to receive the pallet-board from said carriage, and means for driving said rollers.

20. The combination with a pressure-chamber and means for contracting the same, of means for raising and lowering the bottom of said chamber, a series of rollers, and means for driving the alternate rollers in the same direction.

21. The combination with a pressure-chamber for the article and means for contracting the same, of means for raising and lowering the bottom thereof, a series of rollers located to receive said bottom, gearing for driving said rollers, said gearing being loosely connected with alternate rollers, whereby such rollers will be idle and the intervening rollers positively driven all in the same direction.

22. The combination with a pressure-chamber and means for contracting the same, of means for raising and lowering the bottom thereof, a series of rollers located to receive the bottom when lowered, the alternate rollers being provided with rigidly-attached gear-wheels and intermediate rollers being provided with loosely-mounted gear-wheels, and means for driving said gear-wheels.

23. The combination with a pressure-chamber and means for contracting the same, of a reciprocating carriage for carrying the bottom of said chamber, a cam 66 for raising and lowering said carriage, and a roller-frame comprising long rollers at its opposite ends and divided rollers between its ends, said divided rollers being divided to accommodate the cam 66.

24. A roller-frame comprising side strips and cross-strips between which rollers are mounted and intermediate longitudinally-extending strips 76, 76 between said side strips, and short rollers mounted between said intermediate and said side strips, in combination with a pressure-chamber and means for contracting the same, and mechanism for lowering the bottom of said chamber to said rollers.

25. The combination of a pressure-chamber and means for contracting the same, of means for lowering the bottom of said chamber, a roller-frame comprising side strips 69, 69 and cross-strips extending between the same, long rollers extending between said side strips at the opposite ends of said frame, intermediate longitudinally-extending strips 76, 76, short rollers between said intermediate strips and said side strips, a gear 84 on one of said long rollers, and intermeshing gears 82, 83 on said long and short rollers, each alternate gear being loose on its roller.

26. The combination with a pressure-chamber and means for contracting the same, of a reciprocating carriage adapted to carry a pallet-board forming the bottom of said chamber, means for removing said pallet-board from said carriage, and mechanism actuated by said carriage for placing another board thereon.

27. The combination with a pressure-chamber and means for contracting the same, of a reciprocating carriage located below said chamber, means for reciprocating said carriage, a series of rollers located at the lower end of the path of reciprocation of said carriage, mechanism for driving said rollers, and a lever arranged to be actuated by said carriage and provided with a stop to intercept a pallet-board traveling on said rollers.

28. The combination with a pressure-chamber and means for contracting the same, of a reciprocating carriage arranged below the pressure-chamber for carrying a pallet-board forming the bottom of said chamber, a series of rollers located below said chamber to receive the pallet-board from said carriage and transfer the same to one side, and a pivoted lever 90 having an upturned end adapted to be actuated by said carriage and provided with a stop 94 located between two of said rollers.

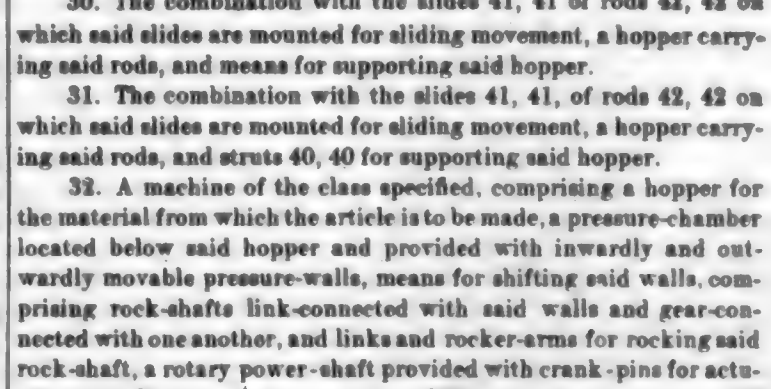
29. The combination with a pressure-chamber and gates 41, 41 for closing the top thereof, of rods 42, 42 on which said gates are mounted for sliding movement.

30. The combination with the slides 41, 41 of rods 42, 42 on which said slides are mounted for sliding movement, a hopper carrying said rods, and means for supporting said hopper.

31. The combination with the slides 41, 41, of rods 42, 42 on which said slides are mounted for sliding movement, a hopper carrying said rods, and struts 40, 40 for supporting said hopper.

32. A machine of the class specified, comprising a hopper for the material from which the article is to be made, a pressure-chamber located below said hopper and provided with inwardly and outwardly movable pressure-walls, means for shifting said walls, comprising rock-shafts link-connected with said walls and gear-connected with one another, and links and rocker-arms for rocking said rock-shaft, a rotary power-shaft provided with crank-pins for actuating said links, gates arranged for sliding movement between said hopper and pressure-chamber, together with mechanism for actuating said gates consisting of rotary disks link-connected with the gates, and a rotary shaft gear-connected with said disk-shafts and provided with a gear-wheel 55, a pair of separated gear-segments on a large gear mounted on said rotary shaft, said segments being adapted to turn said gear 55 at intervals to cause the same to shift said gates in and out, a reciprocating carriage adapted to carry a pallet-board to form a bottom for said pressure-chamber, a rotary cam mounted on said rotary power-shaft and coöperating with a roller on said reciprocating carriage for rasing and lowering the latter, a series of rollers together with mechanism for driving alternate rollers in the same direction, said rollers being arranged to receive the pallet-board from said carriage and transfer the same from the carriage, a pivoted lever 90 arranged to be actuated by the carriage when the same is near the bottom of its downward movement, said lever being provided with a stop 94 interposed between two of said rollers, and a main driving-shaft gear-connected with said rollers and having a power-gear for driving said large gear on said driving-shaft.

817,965. MACHINE FOR MAKING CHENILLE BINDINGS OR TRIMMINGS. EMIL P. EVERSMANN, New York, N. Y. Filed Mar. 1, 1905. Serial No. 247,891.

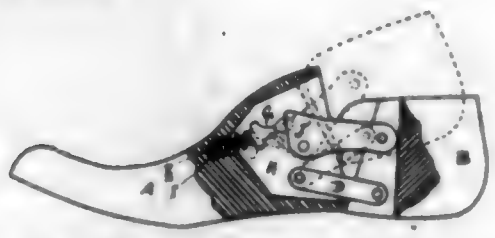


Claim.—1. A machine for making chenille-binding provided with a winding bar or tongue and a cutter mounted in line therewith and adjustable toward and from the end thereof and guide-wheels for the body-threads, said guide-wheels being each provided with parts of different diameters one of which is arranged concentrically with reference to the other and each of said parts being provided with an annular groove, substantially as shown and described.

2. A machine for making chenille-binding provided with a winding bar or tongue and a cutter mounted in line therewith and

adjustable toward and from the end thereof, and two guide-wheels mounted on the opposite sides of the end portion of said bar or tongue and provided with parts of different diameters one of which is arranged concentrically with reference to the other and each of said parts being provided with an annular groove, substantially as shown and described.

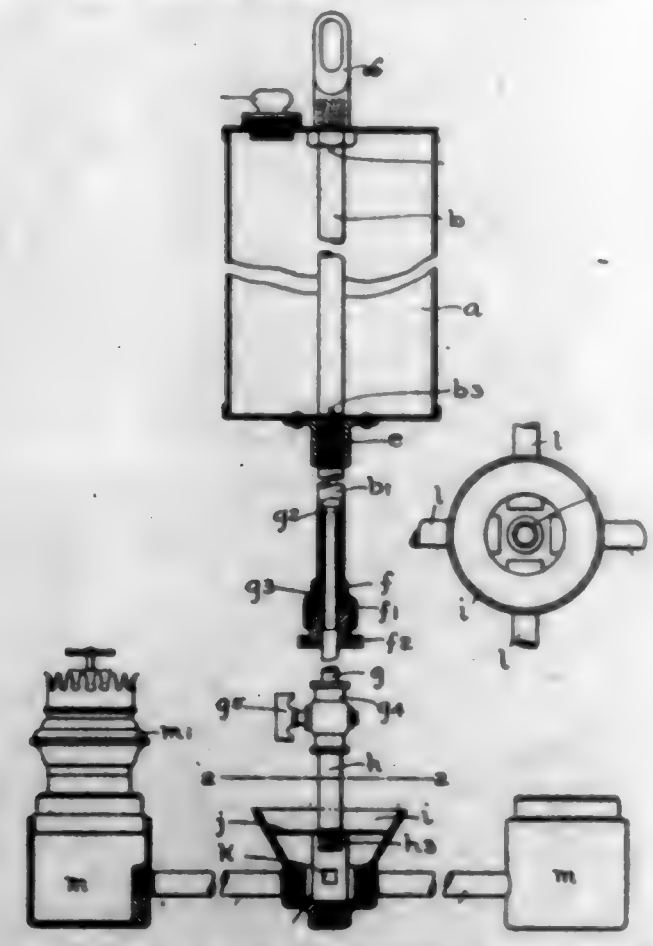
817,966. LAST. AMOS G. PITE, Auburn, Me. Filed June 25, 1904. Serial No. 214,035.



Claim.—1. A last divided transversely, a union connecting the parts, whereby one part may have movement relative to the other, means interposed between the parts for yieldingly opposing movement of the parts, a portion of said opposing means being free to move vertically, the union and opposing means being constructed to offer yielding and decreasing resistance as the parts move away from normal position.

2. A last divided transversely, a union connecting the parts whereby one part is free to move relative to the other, one part being provided with a spring-receiving socket, and a spring mounted in said socket and engaging said union, the size of the outer end of the socket being greater than the size of the spring, and the outer end of the spring being free to move vertically, the spring and union being constructed and positioned to offer yielding and decreasing resistance as the parts move away from normal position.

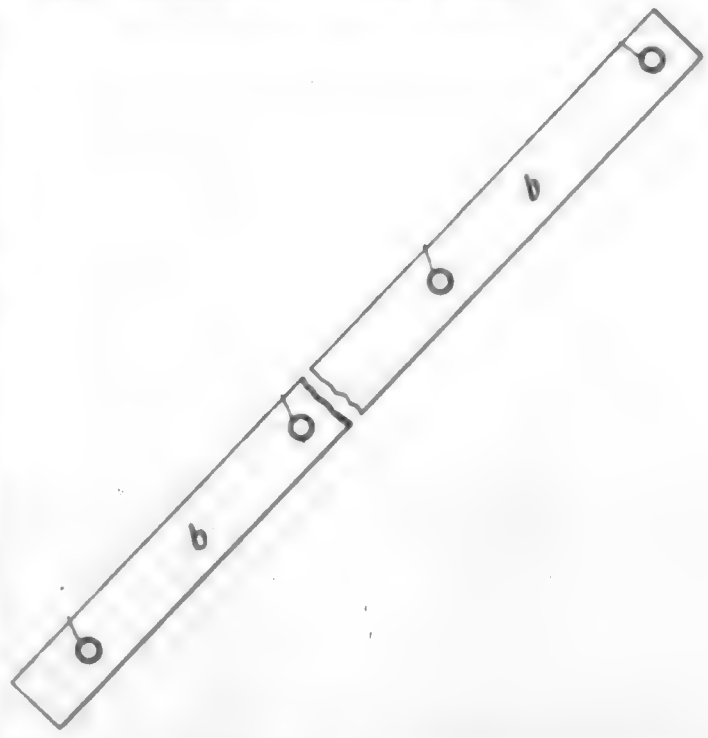
817,967. OIL-LAMP. JOHN B. FOXLEE, Billericay, England. Filed Dec. 7, 1905. Serial No. 290,556.



Claim.—1. In an oil-burning apparatus, a closed tank adapted to be suspended from an overhead support, a tube passing vertically through said tank and provided therein and near the top and bottom thereof with ports or passages, a supplemental tube telescopically connected with the lower end of the tank-tube, a receiver connected with the lower end of the supplemental tube, and laterally-directed tubular arms connected with said receiver and provided with burners, said supplemental tube being also provided within the bottom portion of said receiver with a port or passage, substantially as shown and described.

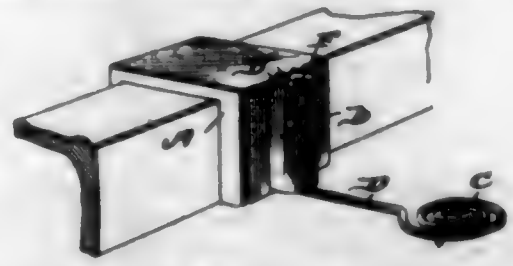
2. In an oil-burning apparatus, a closed tank adapted to be suspended from an overhead support, means for filling the same, a tube passed vertically therethrough, said tube being extended below the bottom of the tank and provided with a packing-box, a supplemental tube passing upwardly through said packing-box and into the lower end of the first-named tube and movable in said tube and packing-box, a receiver connected with the lower end of the supplemental tube, lateral tubular arms connected with said receiver and provided with burners, and means for controlling the flow of oil from said tank into said burners by atmospheric pressure, comprising ports or passages in the tube which passes through the tank at or near the top and bottom thereof, and a port or passage in the bottom portion of the tube which is connected with the receiver, substantially as shown and described.

817,968. MEANS FOR PLAITING HANGING CURTAINS. GEORGE F. FRENCH and WILLIAM H. PINCH, Hulme, Manchester, England. Filed Apr. 24, 1905. Serial No. 257,268.



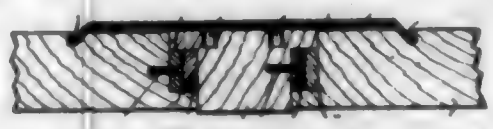
Claim.—In means for plaiting or gathering and suspending curtains and the like, a curtain, a gathering-tape equal in length to the width of the curtain and affixed by its longitudinal edges to the curtain while its central part is free and in conjunction with the curtain forms a channel for a draw-tape, a draw-tape in the said channel and fixed at one end and loose at the other, and a series of eyelets let into the gathering-tape at equal and short distances apart, in combination with a series of hooks each made to the form of a divided annulus with one end turned upward and outward and forming the hook proper, and the other end turned downward and inward and lying opposite the inner face of the other end and each of said hooks engaging one of the eyelets in the tape which when fully on the hook comes below the downwardly and inwardly turned end of the hook, substantially as herein set forth.

817,969. FOOT-REST. EDWARD GALBRAITH, South Omaha, Nebr. Filed June 15, 1904. Serial No. 212,807.



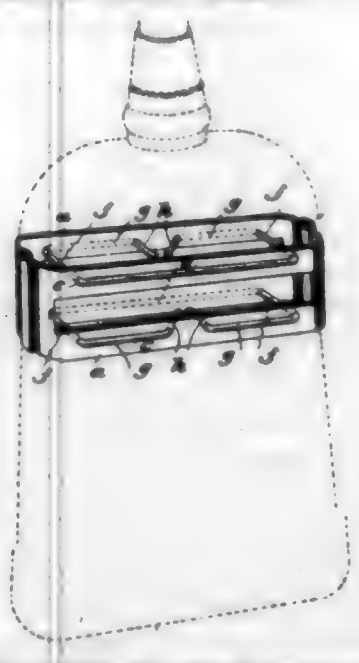
Claim.—A device of the kind described comprising a bracket-casting having a vertical tubular portion provided with radial notches at its upper end, and a vertical arm arranged to rotate in the tubular portion, said arm being provided with an integral horizontal finger at its upper end to engage the radial notches and an integral horizontal arm extending from its lower end, the outer end of said horizontal arm being coiled in convoluted form providing a circular rest portion.

817,970. **BUNG AND SEAL CLOSURE FOR CASKS.** HUGO GEMEIN, Klein Schlieseheck, Germany, assignor to Gustav Heyden, Schlieseheide, near Berlin, Germany. Filed Mar. 10, 1905. Serial No. 249,445.



Claim.—In a cask-closure, the combination of a cask-stave having a bung-orifice with inwardly-projecting annular shoulder *f*, an internally-screw-threaded metal ring to fit the bung-hole above the said shoulder *f*, and having its upper surface lying below the surface of the cask, a bung or plug having a reduced portion to extend through the stave of the cask and fit into the opening formed by the annular shoulder *f*, an externally-threaded metal ring fitting on the said reduced part and adapted to screw-thread into the metal ring of the bung-hole, a packing-ring located beneath the lower edge of the said-metal ring of the plug and above the annular shoulder *f* and a flange on the said bung or plug to fill out the enlarged part of the said cask-hole and having its upper surface flush with the outer surface of the cask substantially as described.

817,971. **BROOM-BRIDLE.** CHARLES A. HALL, New Orleans, La. Filed Nov. 11, 1904. Serial No. 232,230.



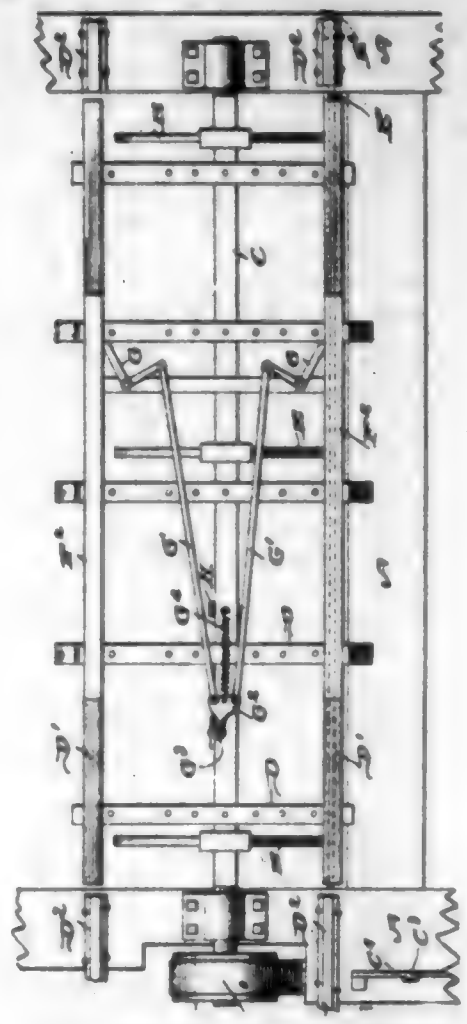
Claim.—The combination with the head of a broom; of a bridle consisting essentially of sheet-metal straps disposed at opposite sides of the upper portion of the head and having longitudinal openings extending from points adjacent to their ends to points adjacent to their opposite ends, and also having their ends arranged at opposite edges of the head and lapped and clenched, an upper fastener of wire and a lower fastener of wire; each of the said fasteners having a long stretch disposed outside and extending longitudinally of one strap, arms extending from the ends of the long stretch and transversely through said strap the broom-head and the other strap, in the order named, short stretches arranged outside and extending longitudinally of the said other strap, and inwardly-converged terminals extending from the inner ends of the latter stretches and through such other straps and into the broom-head.

817,972. **AUTOMATIC DEVICE FOR DUMPING CARS.** WILLIAM L. HANSEN and ALFRED HAYES, Coalville, Utah. Filed Aug. 24, 1904. Serial No. 222,020.

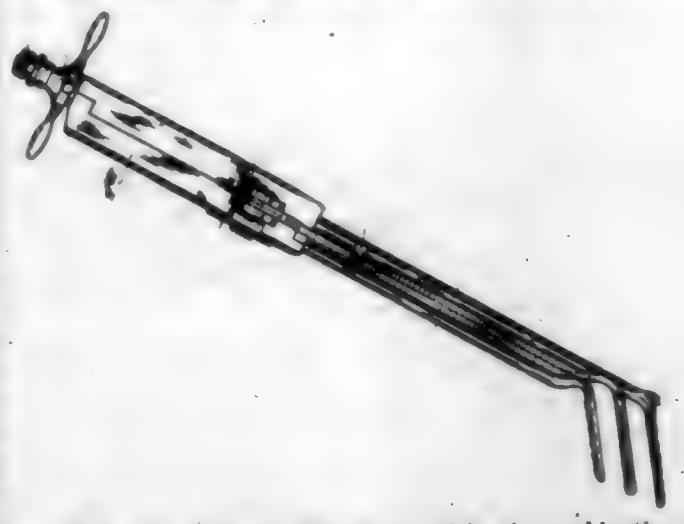
Claim.—1. The combination with a platform, a shaft carried horizontally thereby, a brake-wheel carried by the shaft, a brake-band, a lever adapted to regulate the pressure of the band upon the brake-wheel, a track-section carried by the shaft, the outer rail of the track being a greater distance from the shaft than the inner rail, and counterweights depending from the shaft and adapted to hold the track-section in normally a horizontal plane.

2. The combination with a tilting track-section, of bell-crank levers pivotally carried by said section and normally projecting across the track-rails, a slidable plate carried by the section, a tripping-lever pivotally connected to the plate, a spring adapted to return the plate to its normal position, and rods pivotally connected at one end to the inner ends, respectively, of the bell-crank levers, and at their opposite ends to the plate.

817,972.



817,973. **UTERINE DILATOR.** CASPAR F. HAUSMANN, St. Gall, Switzerland. Filed June 6, 1904. Serial No. 211,235.



Claim.—1. A uterine dilator comprising in combination a hollow handle rotatable adjusting means comprising right and left handed screw-threads located in said handle, a pair of blades operatively connected with said screw-threads respectively and located to be protruded and retracted respectively thereby longitudinally of the handle, a further pair of blades movable laterally on pivots connected to said handle and means on one of the aforesaid longitudinally-movable blades for opening and closing said laterally-movable blades substantially as described.

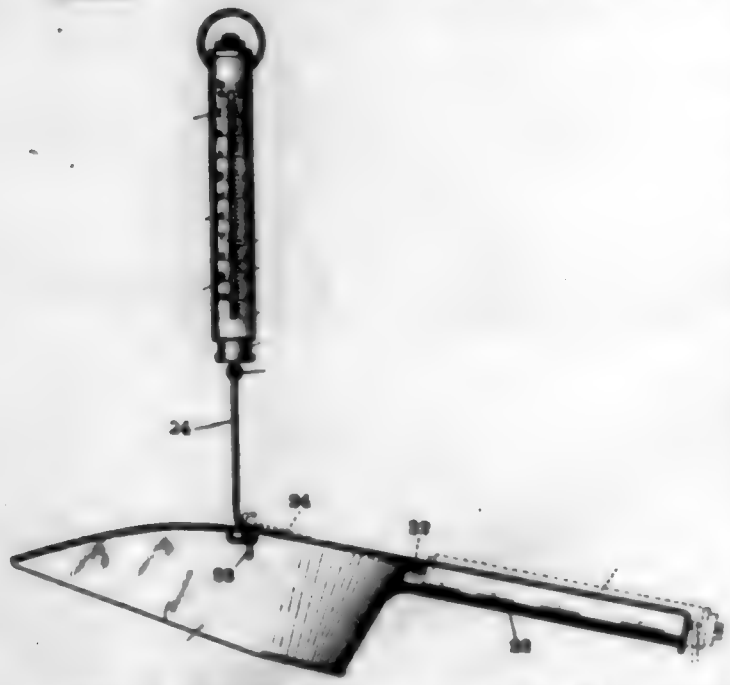
2. A uterine dilator comprising in combination a hollow handle, a screw-spindle located and passing through said handle, means on said screw-spindle for rotating same, a nut on said screw-spindle, an upper blade connected to said nut, a screw-thread of opposite direction within said spindle, a lower blade engaging said screw-thread, a slide or ring adjustably mounted on the handle, a pair of central blades pivoted to said slide and means on said lower blade for opening and closing said central blades substantially as described.

3. A uterine dilator comprising in combination a hollow handle, a screw-spindle located in said handle and projecting through the latter, means on the rear end of said screw-spindle for rotating same, a nut on said screw-spindle an upper blade mounted with its rear end in said nut, a screw-thread in said spindle opposite to the exterior thread thereof, a lower blade having its rear end engaging

said screw-thread, a cross-piece fixed to the lower blade, studs at the ends of said cross-piece, wedges at the center of the cross-piece to the right and left of the lower blade, a slide or ring adjustably mounted on the handle, and a pair of flat central blades pivoted with their rear ends to said slide, passing between the studs and wedges of the cross-piece respectively substantially as described.

4. A uterine dilator comprising in combination a hollow handle, a screw-spindle located in said handle and projecting through the rear end plate of the latter, a hand-wheel keyed to the rear end of said screw-spindle, a nut on said screw-spindle, an upper blade mounted with its rear end in said nut and passing through the front end plate of the handle, a scale on the upper surface of said upper blade, a left-handed screw-thread in said screw-spindle, a lower blade having its rear end engaging said screw-thread and passing through the front end plate of the handle, a cross-piece fixed to the lower blade outside the handle, studs at the ends of said cross-piece, wedges at the center of the cross-piece to the right and left of the lower blade, a slide or ring adjustably mounted on the handle, lateral lugs on said slide, and a pair of flat central blades pivoted with their rear ends to said lugs and curved so that they pass between the studs and wedges of the cross-piece respectively, said central blades crossing each other to bring their ends to the right and left of the ends of the upper and lower blades substantially as described.

817,974. **WEIGHING-SCOOP.** EDWARD L. HEISER and ALEXANDER L. HEISER, Anderson, Ind. Filed May 11, 1905. Serial No. 259,961.



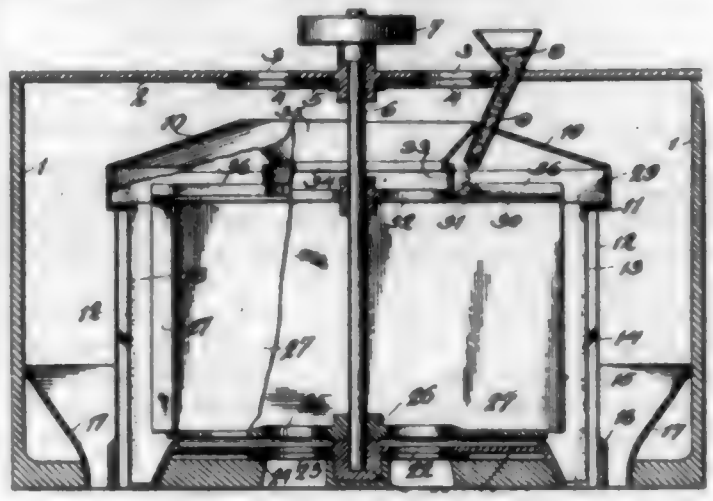
Claim.—1. The combination of a scoop, having a semicylindrical handle, ears on the sides of the scoop upon the opposite side of the center of gravity thereof from the handle, a bail pivotally attached to said ears and provided with stopping means for engaging the scoop to prevent a downward swing of the handle end of the scoop beyond a predetermined point, and a scale attached to said bail and adapted to fold down into the cavity of the handle.

2. The combination with a scoop, of a weighing-scale adapted to support the same, said scale consisting of a pair of telescoping members, the external one of which is provided with a plurality of longitudinal slots through which the internal member may be seen, and a series of graduations flanking each of said slots.

817,975. **SCREENING APPARATUS.** HORACE L. KENT, Brooklyn, N. Y. Filed Apr. 6, 1904. Serial No. 201,822.

Claim.—1. In screening apparatus, a circular screen, a circular guard-screen adjacent said screen to protect the same, a casing inclosing said screens and provided with adjustable valves controlling openings therein, a vertical rotary fan within said screens and formed with a feeding-head having ledges and ribs, an inclosed annular feeding-shelf adjacent said screen to receive material from said head and to allow a stream of said material to fall adjacent the face of said screens, portions of said material being deflected and blown through said screens by said fan and a guide to carry said falling material out of contact with a face of said screens.

2. In screening apparatus, an upright circular screen, a casing inclosing said screen, a vertical rotary fan within said screen, a rotary feeding-head, a feeding-shelf coöperating with said head to receive material therefrom and to allow a stream of said material to fall adjacent the face of said screen, and a guide to carry said falling material out of contact with said screen-face, said material falling out of the path of said fan, portions of said falling material being deflected and blown through said screen by said fan.



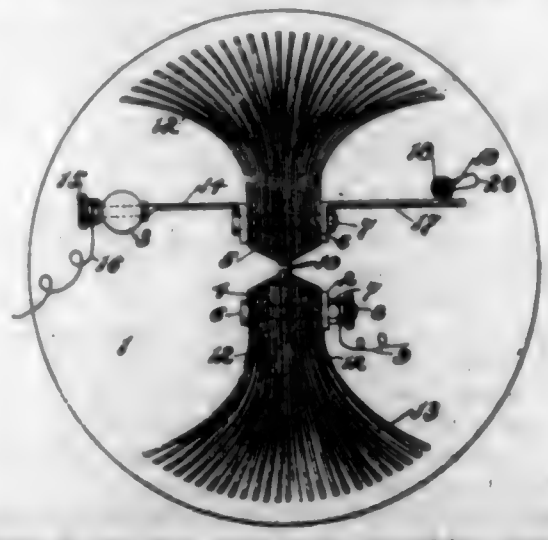
3. In screening apparatus, a substantially circular upright screen, a guard-screen adjacent said screen, a stationary feeding-shelf having a flatter angle than the angle of repose of the material, means to feed material to said shelf to form a pile thereon against which the material impinges to produce a falling stream of material adjacent said guard-screen and a vertical rotary fan within said screens out of the path of said falling material.

4. In screening apparatus, a substantially upright screen, a casing inclosing said screen, blast devices within said screen, a feeding-head to receive material, a stationary feeding-shelf having a flatter angle than the angle of repose of the material coöperating with said head to form on said shelf an inclined pile of material against which the material supplied from said head impinges so as to produce a stream of falling material adjacent said screen, portions of said material being deflected and blown through said screen by said blast devices.

5. In screening apparatus, a substantially upright screen, a casing inclosing said screen, a rotary fan within said screen and provided with a feeding-head, a stationary feeding-shelf coöperating with said head to receive material therefrom to form a pile of material on said shelf against which the material from said head impinges to produce a stream of falling material adjacent said screen, said feeding-shelf and head being substantially inclosed to secure uniform feed of material.

6. In screening apparatus, a substantially upright screen, a feeding-shelf, a rotary feeding-head within said shelf and coöperating therewith to form an inclined pile of material on said shelf against which the material from said head impinges so as to produce a stream of material falling over the edge of said shelf and adjacent said screen.

817,976. **ULTRA-VIOLET LAMP.** THOMAS B. KINRAIDE, Jamaica Plain, Mass. Filed June 12, 1905. Serial No. 264,875.



Claim.—1. An ultra-violet lamp, comprising opposite electrodes, having central discharge-points, and provided with rearwardly-extending separated heat-dissipating members for conducting the heat rearwardly from said points and maintaining an even temperature of the discharge-points in operation.

2. An ultra-violet lamp, comprising opposite electrodes, having central discharge-points and heat-absorbing masses surrounding said discharge-points and provided with rearwardly-extending, separated, heat-dissipating members.

3. An ultra-violet lamp, comprising opposite electrodes, consisting of a mass of metal at the discharge area and separated at the rear thereof into a multitude of diverging plates for dissipating the heat from said mass.

4. In an ultra-violet lamp, an electrode consisting of a plurality of metal plates clamped together in mutual contact at the discharge end thereof and spread apart from each other at the opposite end of said electrode.

5. In an ultra-violet lamp, an electrode having a wedge-shaped discharge end and a fan-shaped rear end, composed of a large number of thin metal plates, means clamping said plates tightly together at the said discharge end, said plates being bent apart from each other to form intervening air-spaces at said rear end.

6. In an ultra-violet lamp, an electrode, consisting of a plurality of thin plates clamped tightly together at one end and separated from each other at the rear thereof, the inner plates thereof consisting of conductors effective for producing ultra-violet rays and extending forward to constitute discharge-points, and the remaining plates consisting of conductors effective for radiating heat.

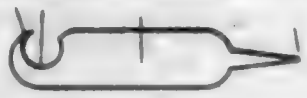
817,977. **ICE-CREEPER.** OWEN F. LEIBERT, Bethlehem, Pa. Filed July 15, 1903. Serial No. 165,571.



Claim.—1. An ice-creeper comprising a metal body, and a yieldable annular cushion of substantially plano-convex shape, the body being composed of a base-plate and a tubular part projecting perpendicular to the base, the cushion being fitted on the tubular part with its plane face in engagement with the base of the plate, and extending beyond the base and attached to the shoe-bottom, the tube projecting through the cushion whereby when the device is applied to the bottom of a shoe engagement with the ground will compress the cushion and permit the tube to enter the ground.

2. The combination with a shoe, of an ice-creeper comprising a metal body and a yieldable annular cushion of substantially plano-convex shape, the body being composed of a base-plate provided with prongs, whereby it is secured to the shoe-bottom, the base-plate also having a tubular part projecting perpendicular to the base, the cushion being fitted on the tubular part with its plane face partly in engagement with the base of the plate and extending beyond the base, and thereby attached to the shoe-bottom, the tube projecting through the cushion whereby engagement with the ground will compress the cushion and permit the tube to enter the ground.

817,978. **TOOTHPICK.** ALBERT E. LUCKMAN, Baltimore, Md. Filed Nov. 11, 1905. Serial No. 286,799.

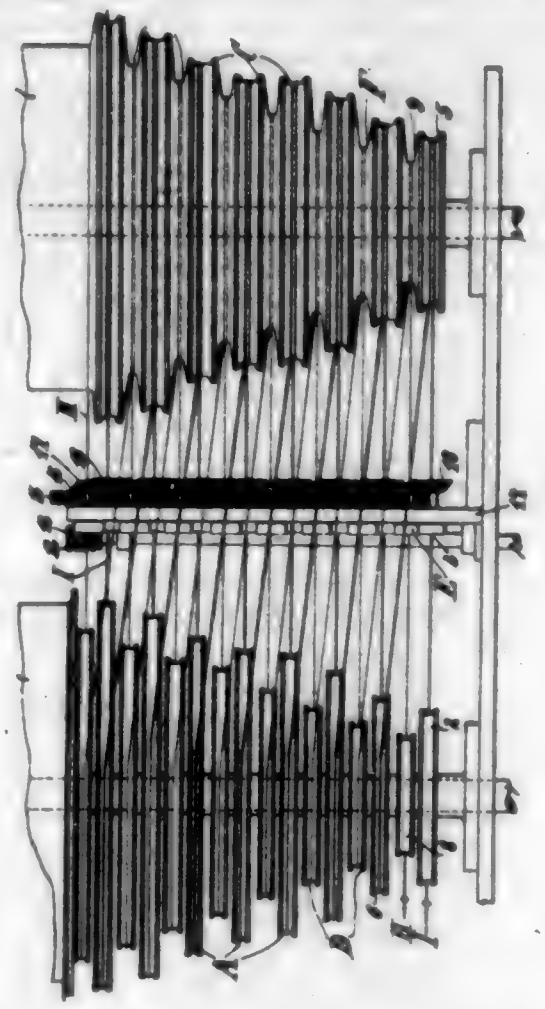


Claim.—An article of manufacture, a toothpick made from a single piece of flat suitable material, one end of the body part being cut away to form a semicircular pointed hook substantially as described and for the purposes set forth.

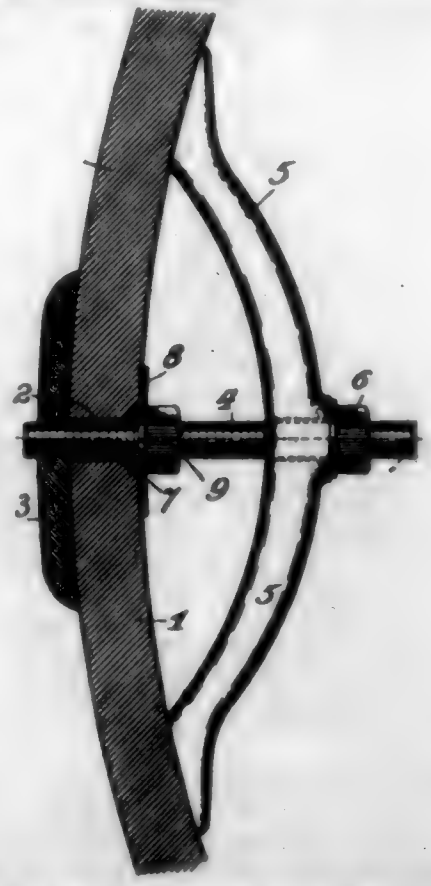
817,979. **WIRE-DRAWING MACHINE.** RICHARD LORENZ, Rummelsburg, Germany. Filed Aug. 3, 1905. Serial No. 272,545.

Claim.—1. In combination two sets of conical guiding-rollers, those of one set being larger in diameter than and alternating with the corresponding guiding-rollers of the other set, two sets of conical drawing-rollers, those of one set being larger than and alternating with the corresponding rollers of the other set, all of the guiding-rollers being on one axis and all of the drawing-rollers on another axis and two sets of drawing-irons arranged between the guiding and drawing rollers, said sets of drawing-irons being in two parallel rows and in the same plane, substantially as described.

2. In combination two sets of conical guiding-rollers, those of one set being larger in diameter than and alternating with the corresponding guiding-rollers of the other set, two sets of conical drawing-rollers, those of one set being larger than and alternating with the corresponding rollers of the other set, all of the guiding-rollers being on one axis and all of the drawing-rollers on another axis, two sets of drawing-irons arranged between the guiding and drawing rollers, said sets being in two parallel rows and in the same plane and means for rotating said drawing-iron consisting of intermeshing gears on one row and intermeshing gears between the opposing irons of the two rows.



817,980. **CASK-REPAIRING DEVICE.** JOHN MAJORS, Hamilton, Ohio, assignor of one-half to Daniel Schrooder, Hamilton, Ohio. Filed Mar. 27, 1905. Serial No. 252,183.



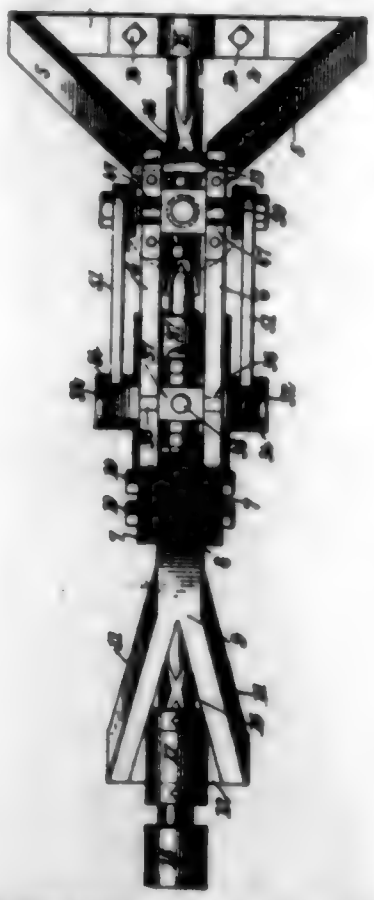
Claim.—1. In a cask-repairing device, the combination of an exterior plate formed of a single piece of metal, adapted to be laterally included within the width of a stave, an interior member having two feet conformed to the normal shape of the inner surface of a stave

separated from each other a distance considerably greater than the length of the exterior plate, a bolt adapted to pass through a stave, engaging the plate at the center and passing through the interior member at the center, and a nut on the bolt engaging said member for drawing the plate and member toward each other and forcing a stave into its normal position.

2. In a cask-repairing device, the combination of an exterior plate formed of a single piece of metal conformed to the normal shape of the stave and adapted to be laterally included within the width of a stave, an interior member having two feet conformed to the normal shape of the inner surface of a stave, separated from each other a distance considerably greater than the length of the exterior plate, a bolt adapted to pass through a stave, engaging the plate at the center and passing through the interior member at the center, and a nut on the bolt engaging said member for drawing the plate and member toward each other and forcing a stave into its normal position.

3. In a cask-repairing device, the combination of an exterior plate formed of a single piece of metal conformed to the normal shape of the stave and adapted to be laterally included within the width of a stave, an interior member having two feet separated from each other a distance considerably greater than the length of the exterior plate, a bolt adapted to pass through a stave, engaging the plate at the center and passing through the interior member at the center, and a nut on the bolt engaging said member for drawing the plate and member toward each other and forcing a stave into its normal position.

817,981. PROPELLER FOR MARINE VESSELS. LORENZO D. MALLORY, Longbeach, Cal. Filed May 4, 1905. Serial No. 258,815.



Claim.—1. In propulsion devices for marine vessels, a screw-shaft, thrust-bearings for the ends thereof, a nut on the shaft, having means entering the groove therein, means for preventing rotation of the nut with the shaft, and means for reciprocating said nut on the shaft, said second-named means comprising ratchets on the periphery of the nut and a spring-controlled pawl for engaging the same.

2. In propulsion devices for marine vessels, a screw-shaft, thrust-bearings for the ends thereof, a nut on the shaft, having means entering the groove therein, means for preventing rotation of the nut with the shaft, and means for reciprocating said nut on the shaft, said third-named means comprising a casing having abutting engagement with the nut.

3. In propulsion devices for marine vessels, a screw-shaft, thrust-bearings for the ends thereof, a nut on the shaft, having means entering the groove therein, means for preventing rotation of the nut with the shaft, and means for reciprocating said nut on the shaft, said third-named means comprising a casing, a yoke, a swinging slidable rod on the yoke, a second yoke connected with the first and a pivoted operating-rod for said second yoke.

4. In propulsion devices for marine vessels, a screw-shaft, thrust-bearings therefor, and means for revolving the shaft in either direction, comprising an operating-rod, a rotatable sleeve mounted thereon and carrying a drum at its lower end and a handle at its upper end, and a tiller-rope wound around the drum and leading to and connecting with the tiller of the vessel.

5. In propulsion devices for marine vessels, a truss-frame, a right and left hand screw-shaft, thrust-bearings therefor supported by said frame, right and left hand nuts on the shaft, having parts of the same entering the grooves in the shaft, said nuts being provided on their peripheries with ratchets, spring-controlled double pawls for engaging the ratchets of the nuts on either side of the axis of the screw-shaft, and means for reciprocating said nuts and pawls longitudinally of the shaft.

6. In propulsion devices for marine vessels, a right and left hand screw-shaft, thrust-bearings therefor, right and left hand nuts on the shaft, having parts of the same entering the grooves in the shaft, a casing upon the shaft carrying means for engaging said nuts, on either side of the axis of the shaft, and means for reciprocating the casing and nuts longitudinally of the shaft, said first-named means comprising double pawls and springs for controlling the same.

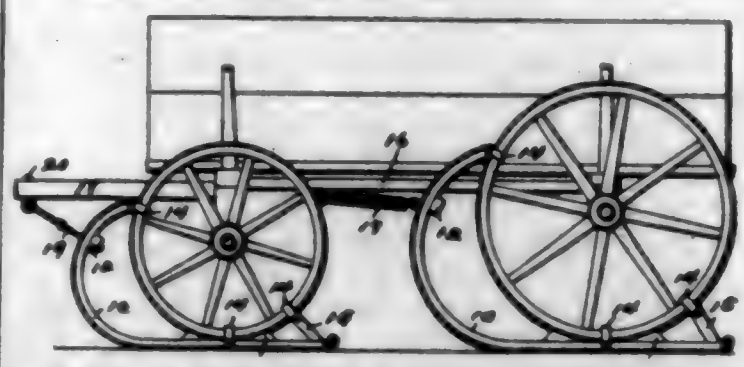
7. In propulsion devices for marine vessels, a right and left hand screw-shaft, thrust-bearings therefor, right and left hand nuts on the shaft, having parts of the same entering the grooves in the shaft, a casing upon the shaft carrying means for engaging said nuts, on either side of the axis of the shaft, and means for reciprocating the casing and nuts longitudinally of the shaft, said second-named means comprising a yoke and a swinging slidable rod, a second yoke and connections between the two, and a pivoted operating-rod mounted upon said second yoke.

8. In propulsion devices for marine vessels, a right and left hand screw-shaft, thrust-bearings therefor, right and left hand nuts on the shaft, having parts of the same entering the grooves in the shaft, a casing upon the shaft carrying means for engaging said nuts on either side of the axis of the shaft, means for reciprocating the casing and nuts longitudinally of the shaft, and operating-levers for the pawls and springs, said springs being substantially triangular in form and having members the terminals of which engage the under side of the pawls, and said levers having heads located between the sides of the springs.

9. In propulsion devices for marine vessels, a right and left hand screw-shaft, thrust-bearings therefor, right and left hand nuts on the shaft, having parts of the same entering the grooves in the shaft, a casing through which the shaft extends having uprights supported thereon, a longitudinal pin having its bearings in said uprights, spring-actuated means mounted on the pin, adapted to be carried into engagement with the nuts, on either side of the axis of the shaft, and means for reciprocating the casing longitudinally of the shaft, said nuts having abutting engagement with the end walls of the casing.

10. In propulsion devices for marine vessels, a screw-shaft, thrust-bearings therefor, and means for imparting rotary motion thereto in either direction, comprising a pivoted operating-rod, a rotatable sleeve on the upper end of the rod, a handle supported by the sleeve, and steering connections between the sleeve and the tiller of the vessel.

817,982. SLEIGH-RUNNER ATTACHMENT FOR VEHICLES. JOHN I. NICHOLSON and THOMAS E. NICHOLSON, Washington, Iowa. Filed July 8, 1905. Serial No. 269,115.



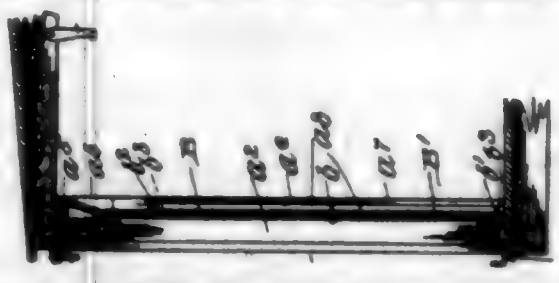
Claim.—1. A pair of sleigh-runners connected at their front end portions by a cross-bar and detachably fixed to the rear wheels of a wagon and the cross-bar flexibly connected with the reach of the wagon by means of a spring.

2. A pair of sleigh-runners connected at their front end portions by a cross-bar and detachably fixed to the front wheels of a wagon and means to detachably and flexibly connect the cross-bar to the pole of the wagon.

3. A pair of sleigh-runners connected at their front end portions by a cross-bar and detachably fixed to the front wheels of a wagon and a jointed screw-bolt to detachably fix the cross-bar to the pole of the wagon.

4. A sleigh-runner attachment for carriages on wheels comprising a pair of runners rigidly connected by a cross-bar and the cross-bar flexibly connected with the carriage-pole and the runners detachably fixed to the front carriage-wheels and a second pair of runners rigidly connected by a cross-bar and the cross-bar connected with the reach of the carriage and the runners detachably fixed to the rear carriage-wheels.

817,983. GRAIN-DOOR FOR RAILWAY-CARS. EDWARD J. NOBLETT, Chicago, Ill. Filed Mar. 25, 1905. Serial No. 251,957.



Claim.—1. A grain-door comprising door-sections hinged horizontally to fold inwardly, guide-pins at opposite edges of adjacent sections, extending longitudinally beyond the ends of the door, a vertical guide-strip adapted to receive said pins at each side the door and catches at the top of the opening one located at the guide-strip and the other secured to engage the fold of the door and support the door in its open position.

2. A grain-door comprising two centrally and horizontally hinged sections adapted to break inwardly, cylindric guide projections at the top of the upper and the bottom of the lower sections extending in alinement with and beyond the ends of the sections, vertically-grooved guides at each end of the opening in which said guide projections engage, an upwardly and outwardly curved finger at the upper end of each guide adapted to engage the guide projections of the upper sections and a catch or latch adapted to engage below the lower sections holding the door folded horizontally and fully opened.

3. The combination with a car and the door-jambs thereof, of a vertically-sliding door bearing at its ends against the inner faces of said jambs and hinged longitudinally near its middle to break inwardly, a grooved guide-strip secured on the inner face of each jamb, projections on each door-section remote from the hinges engaging in the guides, one or more latches at the top of the car and an upwardly and outwardly curved finger at the top of the guide-strip adapted to engage the guide projection of the upper door-section simultaneously with the engagement of said latch or latches beneath the folds of the lower section.

4. A device of the class described comprising a strip having a rabbeted edge, adapted to afford together with the door-jambs of the car, a guide-groove, a metallic casting fitted to the upper end of said strip and provided with an inwardly and upwardly inclined groove registering at its lower end with the groove in said strip and enlarged at its upper end transversely, an inwardly and upwardly directed finger projecting into the groove in said casting and affording a rigid catch, a horizontally-folding door adapted to slide in said groove, a guide-pin at the upper corner of said door adapted to engage said finger, a guide-pin at the lower corner of the door adapted to engage in said groove and a hook supported at the top of the car adapted to engage door at its joint when folded and support it in a horizontal position.

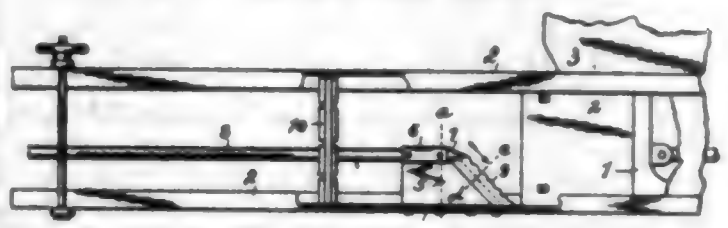
5. A grain-door comprising two horizontal sections hinged along their meeting edges to break inwardly, a door, opening centrally through the lower section near its bottom and hinged at its upper edge thereto, a latch holding said door normally closed, cylindric pins projecting longitudinally beyond and in alinement with the lower edge of the lower section and the upper edge of the upper section, a grooved guide engaging said projection and a rigid outwardly and upwardly curved catch at the upper end of the grooved guide adapted to engage the pins of the upper door-section, a latch adapted to engage beneath the folded sections and together with the catch acting to support said door-sections in a horizontal position at the top of the door-opening and a vertical cleat on the inner face of each guide at the bottom thereof adapted to hold the door in a vertical position when closed.

6. The combination with a car, of a grain-door comprising sections hinged horizontally to break inwardly, pins projecting from the end of each section from the top of the upper and the bottom of the lower and adapted to engage in a grooved jamb, a plate on the jamb between which and the jamb the bottom of the door is held and means at the top of the car adapted to hold the door in its open position.

7. The combination with a car having rabbeted door-jambs, of a vertically-slidable door therein comprising horizontally-hinged sections, pins at the ends of the sections projecting into the rabbet, a hook at the top of the groove in each jamb adapted to engage the pins on the upper section and a latch in the car-roof adapted to support the fold of the door in horizontal position.

8. The combination with a car having side doors of jambs therefor rabbeted on the inner edge, a plate secured on the inner side of each jamb projecting by the edge thereof and forming with the rabbet a wall of a guide-groove, a vertically-sliding grain-door comprising a plurality of horizontally and inwardly folding hinged sections, pins on each end of the door-sections projecting into the grooves, a bracket at the top of each jamb, a finger thereon adapted to engage the pin on the top door-section and means on the car-roof adapted to support the door horizontally when open.

817,984. BALING-PRESS. JOHN NORTH and WILLIAM H. NORTH, Kansas City, Mo. Filed June 3, 1905. Serial No. 263,559.



Claim.—1. The combination with a baling-chamber, of means by which pressure is applied to the hay or similar material, means by which a hole is formed lengthwise through the bale during compression of the material forming the bale, and means secured to one inner side of the baling-chamber for longitudinally dividing the bale from one side to the said hole.

2. The combination with the baling-chamber provided with a lateral feed-hopper, of the longitudinally-reciprocative plunger in said chamber, means for forming a longitudinal hole through the bale during compression of the material forming it, and means secured to one inner side of the baling-chamber for longitudinally dividing the bale from said hole to the side of the bale opposite the side of the baling-chamber through which the material is fed into the chamber.

3. The combination with the baling-chamber, of the reciprocative plunger mounted therein and a core in said chamber having a longitudinal horizontal portion and a longitudinal vertical portion secured to one inner side of said chamber and around which the hay or similar material is compressed by the plunger.

4. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a longitudinal core in said chamber around which the hay or similar material is compressed by the plunger, and a hay-dividing device extending from the core and secured to one side of the baling-chamber.

5. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a core disposed longitudinally in said chamber around which the hay or similar material is compressed by said plunger, and a cutting-blade between the plunger and the core and extending from said core and secured to one side of the baling-chamber.

6. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a core disposed longitudinally in said chamber and around which the hay or similar material is compressed by said plunger, and an inclined cutting-blade extending from said core to one side of the baling-chamber.

7. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a core disposed longitudinally in said chamber and around which the hay or similar material is compressed by the plunger, and a cutting-blade having a curvilinear cutting edge and extending from the core to one side of the baling-chamber.

8. The combination with the baling-chamber of the reciprocating plunger mounted therein, a core disposed longitudinally in said chamber and around which the hay or similar material is compressed by the plunger, and an inclined blade having a curvilinear cutting edge and extending from the core to one side of the baling-chamber.

9. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a core mounted in said chamber having a longitudinal horizontal portion, and a longitudinal vertical portion supporting at its forward end the horizontal portion, and a

cutting-blade disposed in front of and parallel with said vertical portion and extending from the horizontal portion of the core to one side of the baling-chamber.

10. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a longitudinal core in said chamber around which the hay or similar material is compressed by the plunger, and a longitudinally-movable head-block having a hole through which the said core extends.

11. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a core having a longitudinal horizontal portion and a vertical portion disposed longitudinally between the horizontal portion and one side of the baling-chamber, and a longitudinally-movable head-block slotted transversely from one edge toward its middle to receive therein the two portions of the core.

12. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a longitudinal core in said chamber around which the hay or similar material is compressed by the plunger, a cutting-blade extending from the core to one side of the baling-chamber, and a longitudinally-movable head-block slotted from one edge to permit the passage therethrough of the core and cutting-blade.

13. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a longitudinal core around which the hay or similar material is compressed by the plunger, an inclined cutting-blade disposed between the core and the plunger and extending from said core to one side of the baling-chamber, and a longitudinally-movable head-block slotted in one edge to receive therethrough said core and cutting-blade.

14. The combination with the baling-chamber, of the reciprocating plunger mounted therein, a longitudinal core around which the hay or similar material is compressed by the plunger, an inclined blade having a curvilinear cutting edge and extending from the core to one side of the baling-chamber, and a longitudinally-movable head-block slotted in one edge to receive therethrough said core and blade.

15. The combination with the baling-chamber provided with a lateral feed-opening, of the reciprocating plunger mounted in the chamber, a longitudinal core having a horizontal portion and provided with a vertical portion extending from the horizontal portion to the side of the chamber opposite the side having the feed-opening.

16. The combination with the baling-chamber provided with a lateral feed-opening, of the reciprocating plunger longitudinally movable in the chamber, a longitudinal core having a horizontal portion and provided with a vertical portion extending from the horizontal portion to the side of the chamber opposite the side having the feed-opening, and a cutting-blade disposed between the vertical portion of the core and the plunger and extending from the horizontal portion of the core to the side of the baling-chamber.

17. The combination with the baling-chamber provided with a lateral feed-opening, of the reciprocating plunger longitudinally movable in the chamber, a longitudinal core having a horizontal portion and provided with a vertical portion extending from the horizontal portion to the side of the chamber opposite the side having the feed-opening, and an inclined cutting-blade disposed between said vertical portion and the plunger and extending from the horizontal portion to one side of the baling-chamber.

18. The combination with the baling-chamber having a lateral feed-opening, of the reciprocating plunger longitudinally movable in the chamber, a longitudinal core in the chamber having a horizontal portion unsupported at its rear end and having a supporting vertical portion at its forward end extending from the horizontal portion to the side of the baling-chamber opposite the side having the feed-opening.

19. The combination with the baling-chamber having a lateral feed-opening, of the reciprocating plunger longitudinally movable in the chamber, a longitudinal core in the chamber having a horizontal portion unsupported at its rear end and having a supporting vertical portion at its forward end extending from the horizontal portion to the side of the baling-chamber opposite the side having the feed-opening, and a longitudinally-movable head-block slotted in one edge to receive therethrough said core.

20. A core for a baling-chamber comprising a horizontal longitudinal body unsupported at its rear end and provided at its forward end with a longitudinal vertical portion supporting the horizontal portion and having means for being supported at its lower end to the bottom of the baling-chamber.

817,985. SOAP-HOLDER. CONRAD H. PINCHER, New York, N. Y. Filed May 3, 1905. Serial No. 258,622.

Claim.—1. The herein-described soap-holder comprising a yoke composed of spring metal and provided with inwardly-directed arms, the inner ends of each of which are tapered and provided with a recess forming angular projections thereon, said arms being adapted to be forced through a bar of soap, and the angular projections of each of said arms being adapted to be engaged by the recess on the other arm, substantially as shown and described.

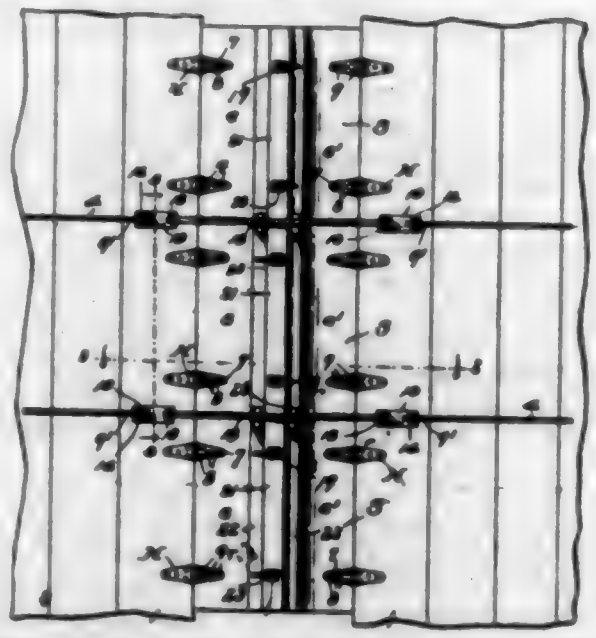


2. The herein-described soap-holder comprising a yoke composed of spring metal and provided with inwardly-directed arms, the inner ends of each of which are tapered and provided with a recess forming angular projections thereon, said arms being adapted to be forced through a bar of soap, and the angular projections of each of said arms being adapted to be engaged by the recess on the other arm, and devices for forcing said arms outwardly when so engaged, substantially as shown and described.

3. The herein-described soap-holder comprising a yoke composed of spring metal and provided with inwardly-directed arms, the inner ends of each of which are tapered and provided with a recess forming angular projections thereon, said arms being adapted to be forced through a bar of soap, and the angular projections of each of said arms being adapted to be engaged by the recess on the other arm, and devices for forcing said arms outwardly when so engaged, said devices comprising a collar slidably mounted on each of said arms, a collar firmly secured on each of said arms and a spring operating between the fixed collar and sliding collar of each of said arms, substantially as shown and described.

4. The herein-described soap-holder, comprising a piece of wire bent to form a yoke and provided with inwardly-directed arms adapted to pass through a bar of soap, a notch in the end of each of said arms adapted to engage a projection on the opposite one of said arms, and said arms when so engaged being of no greater diameter than the wire forming said holder, substantially as shown and described.

817,986. SILO. JONATHAN D. POWELL, Imlay City, Mich. Filed June 14, 1905. Serial No. 265,211.



Claim.—1. A silo composed of matched staves two of which are spaced apart to constitute door-posts; and door-sections each composed of two members hingedly and slidably supported with relation to the door-posts.

2. A silo composed of matched staves two of which are spaced apart to constitute door-posts; door-sections each composed of two members grooved and tongued to match the door-posts; and hinges having slotted leaves connecting said door members hingedly and slidably with the door-posts.

3. A silo having staves constituting door-posts; and door-sections hingedly connected with said posts; in combination with means

including binding-strips, locking-strips, and connecting-bolts for connecting together the free edges of the door members.

4. A silo-door comprising hingedly-supported members having free edges beveled upon their inner and outer sides and reinforcing-strips upon their outer sides; in combination with binding and locking strips of trapezoidal cross-section having registering apertures, and a connecting-bolt having a wing-nut.

5. A silo-door comprising hingedly-supported members having free edges beveled upon their inner and outer sides; in combination with binding and locking strips engaging said inner and outer beveled sides, reinforcing-strips for the latter, and connecting-bolts and wing-nuts.

6. A silo having a door composed of a plurality of sections abutting upon one another, means for hingedly connecting the members of said door-sections with the staves of the silo constituting the door-posts, means for connecting the free edges of the members of the door-sections, U-shaped clamps disposed adjacent to the abutting ends of the door-sections, connecting-bars having hooks connected pivotally with the inner arms of said U-shaped clamps, and hoop-rods having threaded ends extending through apertures in the outer arms of the U-shaped clamps and provided with tightening-nuts.

7. In a silo having a door comprising a plurality of sections abutting upon one another, hoops or rods encircling the silo and including pivotally-supported connecting-bars disposed in alinement with the abutting ends of the door-sections.

8. In a silo, a door comprising a plurality of sections having beveled upper and lower edges abutting upon one another to form V-shaped packing-grooves.

9. In a silo, a door comprising a plurality of sections, hoops or rods encircling the silo and including pivotally-supported connecting members disposed in alinement with the door-sections, and wedges driven between said connecting members and the door-sections.

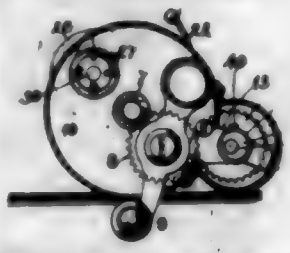
10. In a silo, a door comprising a plurality of sections each comprising a pair of hingedly-supported members beveled at their free edges, locking and binding strips engaging the free edges of the door members, tightening-bolts connecting said strips, hoops encircling the silo, and wedges driven between said hoops and the door members.

11. In a silo, a door comprising a plurality of hingedly and slidably supported sections, means for forcing the free edges of the door members comprising the several sections into alinement with each other and then apart, said means including wedge-strips and tightening-bolts, and additional wedge means for forcing the members of the door-sections in an inward direction.

12. In a silo, a door including a plurality of sections each comprising a pair of members hingedly and slidably connected with adjacent staves of the silo constituting door-posts; in combination with means for drawing the free edges of the door members into registry with each other and then spreading said door members bodily apart from each other.

13. A silo composed of matched staves two of which are spaced apart to constitute door-posts, door members grooved and tongued to match said door-posts, means for supporting said door members slidably with relation to the door-posts, and means for forcing the free edges of the door members into registry with each other and then spreading said door members bodily and forcibly apart and into intimate contact with the edges of the staves constituting the door members.

817,987. FISH-LINE REEL. HARRY H. RICHARDSON, Beaver Falls, Pa., assignor to American Company, Rockford, Ill., a Corporation of Illinois. Filed Aug. 2, 1904. Serial No. 219,231.



Claim.—1. A fish-line reel comprising a frame, a spool supported by the frame, and a line-guide supported by the frame and capable of movement to place it in an operative or in an inoperative position.

2. A fish-line reel comprising a frame, a spool supported by the frame, a line-guide supported by the frame and means for moving the line-guide back and forth in the lengthwise direction of the spool, said line-guide capable of being moved into an inoperative position.

3. A fish-line reel comprising a frame, a spool supported by the frame, a line-guide supported by the frame and means for moving the line-guide back and forth in the lengthwise direction of the spool, said line-guide capable of a movement at right angles to the length of the spool to place it in an inoperative position.

4. A fish-line reel comprising a frame, a spool supported by the frame, a line-guide supported by the frame and means for moving the line-guide back and forth in the lengthwise direction of the spool, said line-guide being pivotally supported in order that it may be moved into an inoperative position.

5. A fish-line reel comprising a frame, a spool supported by the frame, a line-guide supported by the frame and means for moving the line-guide bodily back and forth in the lengthwise direction of the spool, said line-guide capable of being moved in an inoperative position, said movement of the line-guide stopping its bodily movement.

6. A fish-line reel comprising two heads, a spool supported by the heads, gears for rotating the spool, two brackets supported by the heads, each having a circular opening, a frame having ends fitted to the openings, a shaft supported by the ends of the frame and eccentric thereto, a line-guide supported by the shaft, and a toothed wheel supported by the shaft and capable of engagement with the driving-wheel for the spool, and capable of disengagement therefrom by rocking the frame.

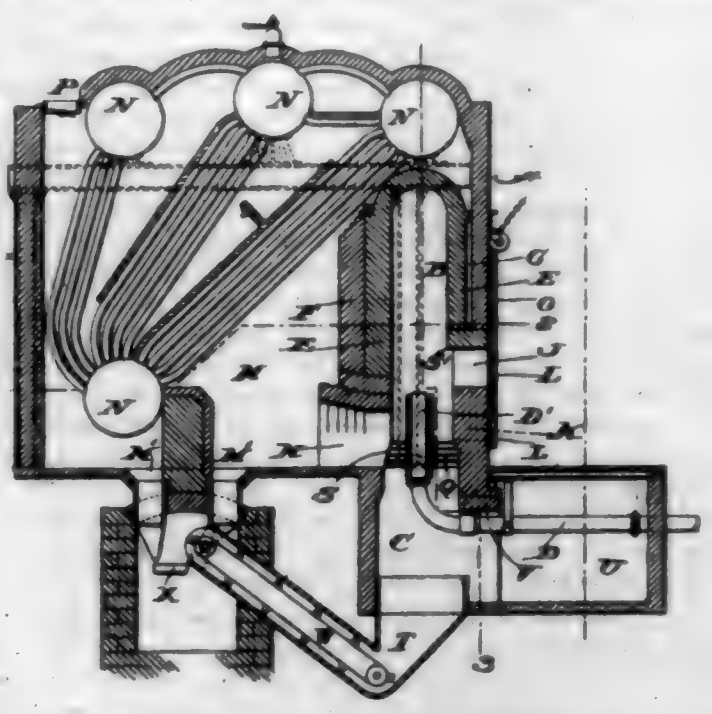
7. A fish-line reel having a rotatable shaft, a line-guide supported by the shaft and capable of a movement at right angles to the length of the spool, and a spring for holding the guide in operative position and in inoperative position.

817,988. MANUFACTURE OF BRICK. GUST A. RIDDLE, Pittsburg, Pa., assignor of two-thirds to J. W. Pritts and C. J. Mathewson, Pittsburg, Pa. Filed Dec. 17, 1904. Serial No. 237,313.

Claim.—1. The herein-described composition of matter for the manufacture of brick, consisting of ground or pulverized ganister stone, silicate of soda, water and glycerin, in or about the proportions stated.

2. The herein-described composition of matter for the manufacture of brick, consisting of ground or pulverized ganister stone nine gallons, silicate of soda one gallon, water one gallon and glycerin twelve drops to each gallon of silicate of soda, substantially as set forth.

817,989. FURNACE FOR BURNING PULVERIZED FUEL AND OTHER SUBSTANCES. ANTHONY M. ROBESON, Johannesburg, Transvaal, and CLAUDE A. BETTINGTON, Boston, Mass. Filed Apr. 13, 1905. Serial No. 255,470.



Claim.—1. In a furnace, a combustion-chamber closed, except at or near the bottom thereof and means for injecting a finely-divided solid fuel and a supporter of combustion substantially vertically into the chamber, the open part of the chamber permitting the escape of products of combustion.

2. In a furnace, a combustion-chamber closed except at or near the bottom and means for injecting a mixture of fuel and a supporter of combustion substantially vertically into the chamber, the open

part of the chamber permitting the escape of products of combustion and unconsumed material.

3. In a furnace, a combustion-chamber, means for injecting finely-divided solid fuel substantially vertically into the chamber in one direction, said chamber having an exit adjacent to the point where the fuel is injected, whereby the products of combustion and unconsumed fuel are caused to double back in the combustion-chamber before passing from the chamber.

4. In a furnace, a combustion-chamber, a pipe through which pulverulent fuel is injected substantially vertically in one direction into the chamber, said chamber having an exit therein adjacent to the end of the pipe whereby the products of combustion are caused to double back in the combustion-chamber before passing therefrom.

5. In a furnace, a combustion-chamber closed except at or near the bottom thereof, a pipe or nozzle at the bottom of the chamber adjacent to the opening from the chamber, through which finely-divided solid fuel is projected substantially vertically into the chamber, the opening from the chamber permitting the escape of products of combustion.

6. In a furnace, a vertical combustion-chamber closed except at or near the bottom, means for supplying to the combustion-chamber fuel and a supporter of combustion, said means being so arranged with respect to the combustion-chamber as to cause at least some of the burning fuel to be supported or held in suspense by the incoming material.

7. In a furnace, a combustion-chamber, and a single means for supplying to the combustion-chamber a mixture of fuel and a supporter of combustion, said means being so arranged with respect to the combustion-chamber as to cause the fuel burning in the chamber to be supported and held in suspense by the incoming material.

8. In a furnace, a combustion-chamber having an opening near its lower end for the passage of products of combustion and another opening adjacent thereto for the passage of unconsumed products, and means for injecting material to be burned into the combustion-chamber so arranged as to keep the material in suspense while burning.

9. In a furnace, a combustion-chamber having an opening near the lower end thereof for the passage of products of combustion and another opening for the passage of unconsumed material and means for injecting material to be burned upwardly into the combustion-chamber.

10. In a furnace, a combustion-chamber open at or near the bottom thereof for the passage of products of combustion and unconsumed material, a pit under the combustion-chamber the inner surface of the walls of the combustion-chamber overhanging the walls of the pit and means for injecting the material upwardly into the combustion-chamber.

11. In a furnace, a combustion-chamber, open at the bottom thereof to permit the passage of unconsumed material, the said combustion-chamber having an opening near the bottom thereof for the passage of products of combustion, a pit under the combustion-chamber, the inner surface of the walls of the combustion-chamber overhanging the inner surface of the walls of the pit, and means for injecting pulverulent material upwardly into the combustion-chamber.

12. In a furnace, a combustion-chamber having an opening for the passage of products of combustion, a pipe near said opening and through which a pulverulent material may be injected into the combustion-chamber substantially vertically in one direction, and the products of combustion are caused to double back upon themselves in the opposite direction before passing through the opening from the combustion-chamber.

13. In a furnace, a combustion-chamber, a pipe through which a pulverulent fuel may be projected upwardly into the combustion-chamber, the combustion-chamber being open only at or near the bottom thereof near the end of said pipe whereby the products of combustion and unconsumed material will be caused to double back and move downwardly before passing from the combustion-chamber.

14. In a furnace, a combustion-chamber open only at or near the bottom thereof for the passage of products of combustion, said combustion-chamber surrounded by an air-space and having a channel in its wall communicating with said space through which a gas may be supplied to the combustion-chamber, means for controlling the supply of gas, and means for injecting upwardly into the combustion-chamber pulverulent material.

15. In a furnace, a combustion-chamber having an opening near the bottom thereof for the passage of products of combustion, said combustion-chamber also being open at its lower end through which slag or other unconsumed material may fall, a device for catching said material, means for conveying away said material and an upwardly-extending pipe through which material to be burned may be injected into the combustion-chamber.

16. In a furnace, a combustion-chamber, having an opening for the passage of products of combustion and another opening in the bottom thereof for the escape of slag or other unconsumed material, a second chamber adjacent to the combustion-chamber into which the products of combustion pass having an opening in the bottom thereof through which ash or other material carried by the products of combustion may escape, and means extending from the opening in the bottom of the combustion-chamber to the opening in the second chamber adapted to remove both the slag and ash.

17. In a furnace, a combustion-chamber and a boiler-chamber, separated by a wall having an opening through which products of combustion pass to the boiler-chamber, the bottom of the combustion-chamber provided with an opening for the escape of slag and the bottom of the boiler-chamber provided with an opening for the escape of ash or other material, and an endless carrier extending from the opening under the combustion-chamber to the opening under the boiler-chamber for the purpose of removing both the slag and ash.

18. In a furnace, a vertical combustion-chamber closed except at or near the bottom, means for supplying to the combustion-chamber pulverulent fuel and a supporter of combustion, said means being so arranged with respect to the combustion-chamber that the incoming fuel will support or hold in suspense some of the particles of the burning fuel.

19. In a furnace, a vertical combustion-chamber closed except at or near the bottom and a single means for supplying to the combustion-chamber a mixture of fuel and a supporter of combustion, said means being so arranged with respect to the combustion-chamber as to cause some of the particles of the burning fuel to be supported or held in suspense by the incoming mixture.

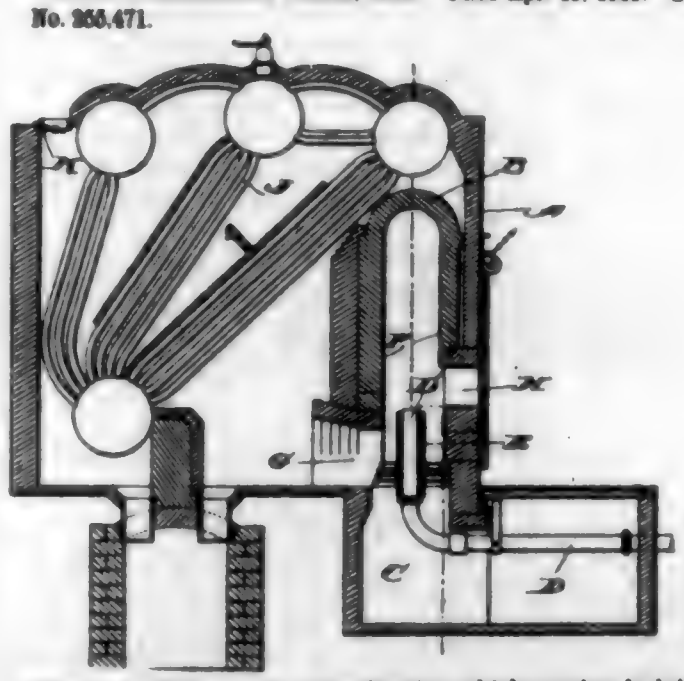
20. In a furnace, a combustion-chamber open at or near its lower end for the passage of products of combustion and unconsumed material and means for injecting material to be burned into the combustion-chamber, the said means being so arranged as to keep some of said material in suspense while the material is burning.

21. In a furnace, a combustion-chamber, means for supplying to the combustion-chamber a fuel and a supporter of combustion, said means being so arranged as to cause the burning fuel and products of combustion to double back and to envelop the incoming fuel.

22. In a furnace, a combustion-chamber, closed except at or near the bottom thereof, means for supplying pulverulent fuel into the chamber near where it is open, the parts being so arranged as to cause the products of combustion and unconsumed particles to double back and envelop the incoming fuel before passing from the combustion-chamber.

817,990. PROCESS OF BURNING FUEL AND OTHER MATERIALS.

ANTHONY M. ROBESON, Johannesburg, Transvaal, and CLAUDE A. BETTINGTON, Boston, Mass. Filed Apr. 13, 1905. Serial No. 255,471.



Claim.—1. The process of combustion which consists in injecting a fuel into a combustion-chamber, igniting the same, and causing the products of combustion and any unconsumed particles thereof to double back and envelop the incoming fuel.

2. The process of combustion which consists in feeding a solid, pulverulent or less finely divided fuel into a combustion-chamber, igniting the fuel, causing the products of combustion and uncon-

sumed particles of the fuel to double back and to envelop the fuel being applied to the chamber.

3. The process of combustion which consists in mixing with a fuel a supporter of combustion, feeding the mixture into a combustion-chamber, igniting the fuel, causing the products of combustion and the unconsumed particles to double back and to envelop the incoming fuel.

4. The process of combustion which consists in injecting a solid, pulverulent or less finely divided fuel and a supporter of combustion into a combustion-chamber, igniting the fuel, causing the products of combustion and the unconsumed particles of the fuel to double back and to envelop the incoming fuel.

5. The process of combustion which consists in projecting a substance and a supporter of combustion into a combustion-chamber, igniting the substance, and causing the products of combustion and unconsumed particles to double back and envelop the burning substance.

6. The process of combustion which consists in injecting a solid, pulverulent or less finely divided fuel and a supporter of combustion into a combustion-chamber having an outlet for the escape of the products of combustion adjacent to the point where the fuel is injected into the combustion-chamber, igniting the fuel, causing the products of combustion and the unconsumed particles of the fuel to double back and to envelop the incoming fuel, the products of combustion passing through said outlet.

7. The process of combustion which consists in injecting a finely-divided material and a supporter of combustion into a combustion-chamber in one direction, igniting the material, causing the products of combustion and the unconsumed particles of said material to return in the opposite direction adjacent to and enveloping the incoming material, whereby a regenerative action is secured.

8. The process of combustion which consists in injecting a substance and a supporter of combustion into a combustion-chamber substantially vertically in one direction, igniting the substance, causing the products of combustion and the unconsumed particles of said substance to return in the opposite direction to the incoming substance, and permitting the said particles and products of combustion to pass on from said combustion-chamber.

9. The process of combustion which consists in projecting a combustible material and a supporter of combustion upwardly into a combustion-chamber, igniting the same and causing the burning material to be in motion or in suspense without separation from the supporter of combustion until combustion is complete.

10. The process of combustion which consists in injecting pulverulent or less finely divided fuel and a supporter of combustion upwardly into a combustion-chamber, igniting the fuel, maintaining the burning fuel in motion or suspense without separating the fuel from the supporter of combustion, until combustion is complete.

11. The process of combustion which consists in injecting a finely-divided or pulverulent substance into a combustion-chamber in an upward direction, supplying to the substance a supporter of combustion, igniting the substance, causing the products of combustion and the unconsumed portions of said substance to return downwardly in proximity to the incoming substance and to envelop the same.

12. The process of combustion which consists in injecting a solid fuel in a finely-divided or pulverulent state into a combustion-chamber in a substantially vertical direction, supplying to the fuel a supporter of combustion, igniting the fuel, causing the unconsumed portions of the fuel and the products of combustion to return adjacent to the incoming fuel, and permitting the products of combustion and unconsumed particles to escape from the combustion-chamber.

13. The process of combustion which consists in injecting a solid fuel in a finely-divided state into a combustion-chamber in an upwardly direction, supplying to the fuel a supporter of combustion, igniting the fuel, causing the burning fuel and the products of combustion to spread out in mushroom form and to return downwardly in proximity to the incoming fuel, and permitting the products of combustion to pass on.

14. The process of combustion which consists in injecting a substance and a supporter of combustion into a combustion-chamber, igniting the substance, causing the burning substance and the products of combustion to double back and return alongside of the incoming substance, whereby eddy-currents are set up, as and for the purpose set forth.

15. The process of combustion which consists in mixing a substance and a supporter of combustion, injecting the mixture into a combustion-chamber, igniting the substance, causing the burning mixture and products of combustion to double back and return alongside of the path of the mixture injected, by which the burning material and products of combustion are under the retarding influence of the injected material.

16. The process of combustion which consists in injecting a finely-divided solid fuel and a supporter of combustion into a combustion-chamber, igniting the fuel, causing the products of combustion and the burning fuel to double back and be in suspense while burning.

17. The process of combustion which consists in injecting a substance and a supporter of combustion into a combustion-chamber opened for the passage of the products of combustion and unconsumed particles of said substance, igniting said substance, causing said substance and the products of combustion to double back on themselves in proximity to the incoming substance and to envelop the same, by which the burning substance and products of combustion are under the retarding influence of the incoming substance and a regenerative action is obtained, and permitting the products of combustion to pass on.

18. The process of combustion which consists in injecting a finely-divided solid fuel in an upwardly direction into a combustion-chamber having an opening for the passage of the products of combustion, supplying a supporter of combustion to the fuel, igniting the fuel, causing the ignited fuel and the products of combustion to double back upon themselves in a downward direction in proximity to and enveloping the upwardly-moving fuel, by which the downward movement of the burning fuel and products of combustion is retarded and a regenerative action is obtained, and permitting the unconsumed products to pass on.

19. The process of combustion which consists in injecting a finely-divided solid fuel and a supporter of combustion upwardly into a combustion-chamber open only at the lower part thereof, causing the products of combustion and the unconsumed particles of the fuel to double back and move downwardly, and permitting the products of combustion and unconsumed material to pass on from the combustion-chamber.

20. The process of combustion which consists in mixing a substance and a supporter of combustion, forcing said mixture into a combustion-chamber having an opening for the escape of the products of combustion, igniting said substance, causing the ignited substance to double back on the incoming substance, keeping the substance in suspense until combustion is complete, and permitting the products of combustion to pass on.

21. The process of combustion which consists in mixing with pulverulent substances a supporter of combustion, injecting said substances into a combustion-chamber having an opening for the passage of the products of combustion, igniting said substances, causing the ignited substances to double back upon the incoming substances, causing the burning substances to be supported by the incoming substances while burning, and permitting the products of combustion to pass on.

22. The process of combustion, which consists in injecting a substance in an upward direction into a combustion-chamber having an opening therein for the passage of the products of combustion, igniting said substance, keeping the substance in suspense while burning, and permitting the products of combustion to pass on.

23. The process of combustion which consists in mixing with a substance a supporter of combustion, injecting the mixture upwardly into a combustion-chamber having an opening for the passage of the products of combustion, igniting said substance, causing the ignited substance to double back on the incoming substance and against the retarding influence thereof, and permitting the products of combustion to pass on.

24. The process of combustion which consists in injecting a pulverulent substance upwardly into a combustion-chamber having an opening for the passage of the products of combustion, igniting said substance, causing the ignited substance to double back on the incoming substance under the retarding influence thereof, whereby part of the burning substance is held in suspense, and permitting the products of combustion to pass on.

25. The process of combustion which consists in mixing with a pulverulent substance a supporter of combustion, injecting the said mixture upwardly into a combustion-chamber having an opening for the passage of the products of combustion, igniting said substance, causing the ignited substance to double back on the incoming substance, keeping some of the burning substance in suspense while burning, and permitting the products of combustion and unconsumed material to pass on.

26. The process of combustion which consists in injecting a pul-

verulent substance and a supporter of combustion substantially vertically into a combustion-chamber, said chamber being open, near the incoming material, for the escape of the products of combustion, igniting the substance and causing the products of combustion and burning substance to double back on the incoming substance, and permitting the products of combustion and the unconsumed material to pass on.

27. The process of treating pulverulent substances, which consists in injecting said substances and a supporter of combustion into a combustion-chamber having openings therein, igniting the combustible substances, causing the products of combustion and the substances to double back on the incoming substances so that the said incoming substances will exert a retarding influence on the returning products of combustion and substances, permitting the products of combustion to pass on in one direction, and the unconsumed material to fall in another direction.

28. The process of treating a pulverulent substance, which consists in injecting said substance and a supporter of combustion upwardly into a combustion chamber, having openings therein, igniting said substance, causing the products of combustion and the ignited substance to double back on the incoming substance, so that the said incoming substance will exert a retarding influence on the returning products of combustion and keep the same in suspense while burning, permitting the products of combustion to pass on in one direction, and some of the unconsumed substance to pass in another direction.

29. The process of treating pulverulent substances, which consists in injecting said substances in an upward direction into a combustion-chamber having an opening at or near the bottom thereof, igniting said substances, causing said ignited substances and products of combustion to double back on the incoming substances, permitting unconsumed products and products of combustion to pass on in a downward direction.

30. The process of treating pulverulent substances, which consists in injecting said substances and a supporter of combustion upwardly into a combustion-chamber, igniting said substances, causing said ignited substances and products of combustion to double back on the incoming substances, permitting the unconsumed material and products of combustion to pass from the combustion-chamber in a downward direction.

31. The process set forth which consists in mixing together pulverulent substances one of which is combustible, injecting said substances into a combustion-chamber, igniting the combustible substance, causing the ignited substance and the products of combustion to double back on themselves, whereby the motion of the ignited substances and products of combustion is retarded and some of the burning substances are held in suspense until combustion is complete, and permitting the unconsumed material and the products of combustion to pass from the combustion-chamber.

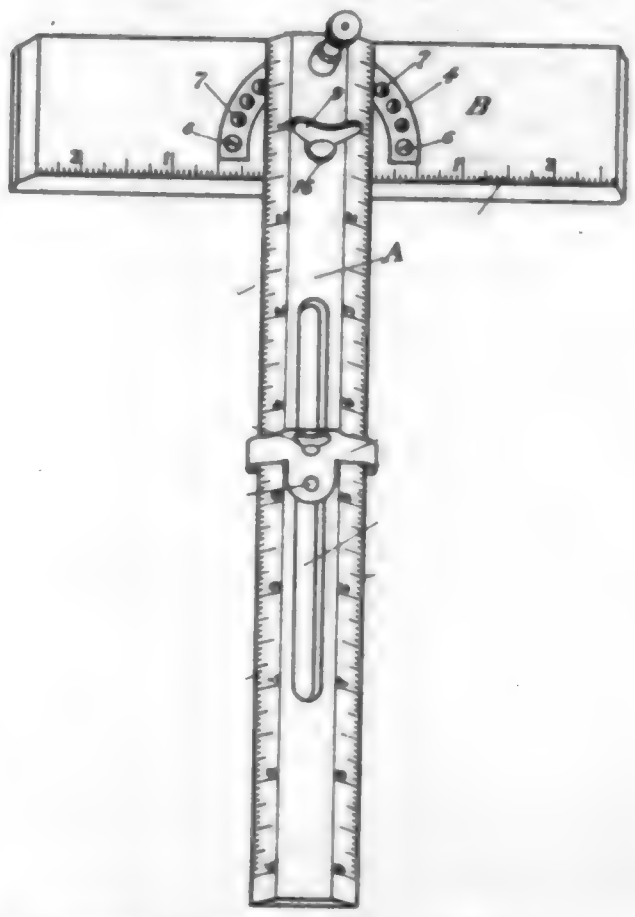
32. The process set forth which consists in injecting pulverulent substances, at least one of which is combustible, upwardly into a combustion-chamber, igniting the combustible material, causing said ignited material and the products of combustion to double back on themselves, whereby the return movement of the ignited material and products of combustion is retarded and some of the burning material is held in suspense while burning, permitting the unconsumed material and products of combustion to pass from the combustion-chamber in a downward direction.

33. The process of combustion which consists in injecting a pulverulent substance and a supporter of combustion into a combustion-chamber, igniting the substance, permitting the products of combustion to pass from the combustion-chamber in such a manner as to be under the retarding influence of the incoming material and the heavier particles of the burning material are prevented from separating from the lighter while the material is burning.

34. The process of combustion which consists in injecting a pulverulent or less finely divided substance and a supporter of combustion into a combustion-chamber, igniting the substance, permitting the products of combustion to pass from said combustion-chamber in such a manner as to be under the retarding influence of the incoming substance and the heavier particles prevented from being separated by gravity while burning.

817,991. BEVEL-SQUARE. THOMAS S. ROSS, Baltimore, Md., assignor of one-third to Michael H. Noon and one-third to James J. Ellis. Filed Nov. 14, 1905. Serial No. 287,214.

Claim.—1. A bevel-square rule comprising a stock and blade and a locking device therefor, the stock being provided with a semicircular plate having recesses in the top part thereof, the blade having a scale thereon, in combination with a locking device therefor, consisting of a thumb-nut provided with a stem, a hollow casting, a metal plug, means of attaching the plug to the stem, a spring arranged around the stem and located within the casting between the plug and the upper part of the casting and means of pivotally attaching the blade to the stock so that the plug may become engaged in the recesses of the plate on the stock substantially as described.



2. A bevel-square rule comprising a stock with scale thereon, a semicircular plate provided with recesses attached to the top part thereof, in combination with a blade with beveled edges and scale thereon and means for engaging the recesses, and having a longitudinal slot cut through the center, a slide having an extension with a hole in the extension and secured to the blade by a thumb-screw and washer and means for securing the blade to the stock substantially as described.

3. A bevel-square rule comprising a stock with a scale thereon, a semicircular plate provided with recesses secured to the top part of the stock by suitable means in combination with a blade having scales thereon, said blade having locking means to engage in the recesses, a longitudinal slot cut through the center of the blade, a slide provided with an extension and a hole therein, a washer on the under part, a thumb-screw to engage the washer whereby the slide is secured to the blade, substantially as herein described.

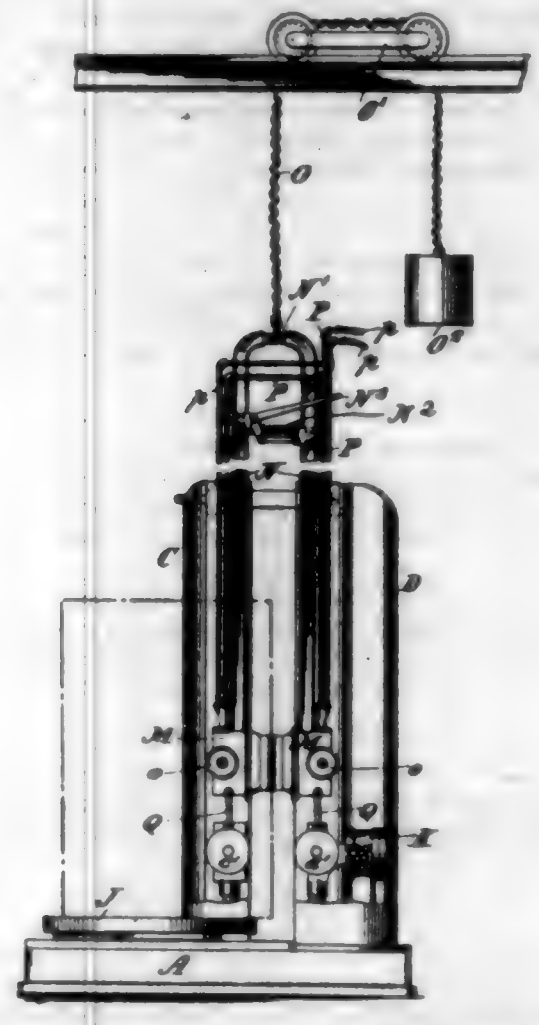
4. A bevel-square rule comprising a stock with scale thereon, in combination with a blade having beveled edges and scale, and having a longitudinal slot in the center, a slide having an extension and provided with a hole in the extension, means of adjustably securing the slide to the blade, the blade being secured to the stock by means of a set-screw substantially as described.

5. A bevel-square rule comprising a stock, scale thereon, a semicircular plate provided with recesses secured to the top part of the stock by suitable means in combination with a blade having beveled edges and scale thereon and provided with a locking means whereby the recesses on the stock are engaged, a longitudinal slot in the center of the blade, a slide having extensions to form a gage a hole 15 in said slide, a thumb-screw and washer attaching the slide to the blade substantially as herein described.

817,992. WELDING APPARATUS. CHARLES L. ROWLAND, Brooklyn, N. Y. Filed Feb. 12, 1906. Serial No. 670,131.

Claim.—1. In a cylinder-welding apparatus the combination of the stationary parallel frames, opposed welding devices running thereon, a frame carrying the welding devices, mechanism for adjusting the frame and welding devices relatively to the parallel frames to bring the welding devices into proper relation to a fresh or unwelded part of the seam, and mechanism for reciprocating the welding de-

vices throughout a limited length of the seam in any position to which they may be so adjusted, substantially as set forth.



2. In a cylinder-welding apparatus the combination of the stationary parallel frames, opposed welding devices running thereon, a frame carrying the welding devices, mechanism for adjusting the frame and welding devices relatively to the parallel frames to bring the welding devices into proper relation to a fresh or unwelded part of the seam, mechanism for reciprocating the welding devices throughout a limited length of the seam in any position to which they may be so adjusted, and a cylinder-support immovable in line with the axis of the cylinder but adjustable transversely thereto, substantially as set forth.

3. In a cylinder-welding apparatus the combination of the stationary parallel frames, opposed welding devices running thereon, a frame carrying the welding devices, mechanism for adjusting the frame and welding devices relatively to the parallel frames to bring the welding devices into proper relation to a fresh or unwelded part of the seam, mechanism for reciprocating the welding devices throughout a limited length of the seam in any position to which they may be so adjusted, and a cylinder-support immovable in line with the axis of the cylinder, but adjustable transversely thereto about a center and in a right line, substantially as set forth.

4. In a cylinder-welding apparatus the combination of the stationary parallel frames, opposed welding devices and heating-furnaces traveling between the stationary frames, a frame carrying the welding devices, mechanism for adjusting the frame, welding devices and furnaces relatively to the parallel frames to bring the welding devices into proper relation to a fresh or unwelded part of the seam, and mechanism for reciprocating the welding devices throughout a limited length of the seam in any position to which they may be so adjusted, substantially as set forth.

5. In a cylinder-welding apparatus the combination of the stationary parallel frames, opposed welding devices and heating-furnaces traveling between the stationary frames, a frame carrying the welding devices, mechanism for adjusting the frame, welding devices and furnaces relatively to the parallel frames to bring the welding devices into proper relation to a fresh or unwelded part of the seam, and mechanism for reciprocating the welding devices and furnaces throughout a limited length of the seam in any position to which they may be adjusted, substantially as set forth

6. In a cylinder-welding apparatus the combination of the vertical parallel frames, a cylinder-support non-adjustable in line with the axis of the cylinder and adapted to support the cylinder to be welded in a vertical position, opposed welding devices working between the parallel frames, mechanism for reciprocating the welding devices throughout the length of the seam to be welded, opposed furnaces suspended between the parallel frames and capable of being moved in correspondence with the welding devices, substantially as set forth.

7. In a cylinder-welding apparatus the combination of the vertical parallel frames, opposed welding devices working between the parallel frames, mechanism for reciprocating the welding devices throughout the length of the seam to be welded, opposed furnaces suspended between the parallel frames, coupled to the carriages of the welding devices and reciprocating therewith, substantially as set forth.

8. In a cylinder-welding apparatus the combination of the vertical parallel frames, opposed welding devices working between the parallel frames, mechanism for reciprocating the welding devices throughout the length of the seam to be welded, opposed furnaces counterbalanced and suspended between the parallel frames and capable of being moved in correspondence with the welding devices, substantially as set forth.

9. In a cylinder-welding apparatus the combination of the vertical parallel frames, opposed welding devices working between the parallel frames, mechanism for reciprocating the welding devices throughout the length of the seam to be welded, opposed furnaces counterbalanced and suspended between the parallel frames, coupled to the carriages of the welding devices and reciprocating therewith, substantially as set forth.

10. In a cylinder-welding apparatus the combination of the vertical parallel frames, a cylinder-support non-adjustable in line with the axis of the cylinder and adapted to support the cylinder to be welded in a vertical position, opposed welding devices working between them, mechanism for reciprocating the welding devices throughout the seam to be welded, the opposed furnaces, their suspended supporting-bars, the hinge connection between said bars and means for swinging the bars on their hinge connection, substantially as set forth.

11. In a cylinder-welding apparatus the combination of the vertical parallel frames, a cylinder-support non-adjustable in line with the axis of the cylinder and adapted to support the cylinder to be welded in a vertical position, opposed welding devices working between them, mechanism for reciprocating the welding devices throughout the seam to be welded, the opposed furnaces, their suspended supporting-bars, the hinge connection between said bars, means for at will automatically swinging the bars on their hinge connection, to separate the furnaces, substantially as set forth.

12. In a cylinder-welding apparatus the combination of the parallel frames, the opposed welding devices, means for reciprocating them between the frames and along the seam to be welded, a power-cylinder traveling with the welding devices for forcing one of the welding devices up to its work, and means for lengthening or shortening the connection between the piston of the cylinder and the welding device, substantially as set forth.

13. In a cylinder-welding apparatus the combination of vertical parallel frames, opposed welding devices between them, their adjustable carrying-frame and means for reciprocating them, the counterbalanced furnaces, and connections between the welding devices and furnaces, substantially as set forth.

14. In a cylinder-welding apparatus the combination of a support for positively holding the cylinder in its fixed position, welding devices, one on each side of the seam to be welded, mechanism for adjusting both welding devices at intervals along the seam to be welded and mechanism for reciprocating the welding devices along the seam in each position to which they may be moved.

15. In a cylinder-welding apparatus the combination of the parallel frames, opposed welding devices located between the frames, mechanism for adjusting the welding devices at intervals along the seam to be welded, and other mechanism for forcing one welding device against the seam to be welded in each position to which they may be moved.

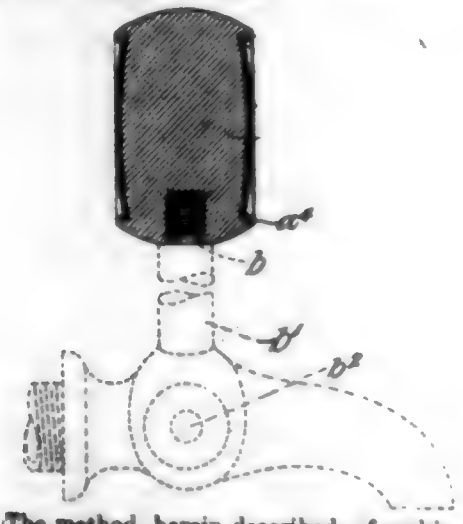
16. In a cylinder-welding apparatus the combination of the vertical parallel frames, an adjustable cylinder-support adapted to support the cylinder in a vertical position, opposed welding devices located between the frames, mechanism for adjusting the welding devices intermittently along the seam to be welded and other mechanism for forcing one welding device against the seam to be welded in each position to which they may be moved.

17. In a cylinder-welding apparatus the combination of opposed reciprocable welding devices, means for supporting a cylinder with the seam to be welded between said devices, means for adjusting the reciprocable welding devices to different positions along the seam, whereby different parts of the seam are successively subjected to the action of the reciprocable intermittently-adjustable welding

devices and heating-furnaces, one on each side of the seam, adapted to be moved along the entire length of the seam.

18. In a cylinder-welding apparatus the combination of a support for positively holding the cylinder in position, welding devices, one on each side of the seam to be welded, means whereby the welding devices may be reciprocated along the entire seam, heating-furnaces, one on each side of the seam, adapted to be moved along the entire seam, and means for circumferentially adjusting the cylinder-support.

817,993. FAUCET-KNOB. Henry A. Rutter, Boston, Mass. Filed May 9, 1904. Serial No. 207,075.



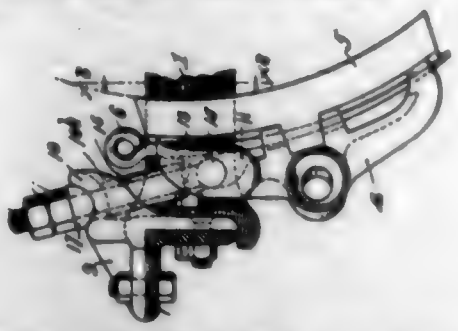
Claim.—1. The method, herein described, of making a faucet-knob, consisting of forming a knob proper of vulcanizable material, partially vulcanizing the same, then placing the face-plate in position having a non-corrosive outer face, pressing the partially-vulcanized material about the edges of said plate and against the outer margin of said non-corrosive outer face, and finally completing the vulcanization while the said material remains engaged about the said edges.

2. The method of making a faucet-knob, consisting of forming a knob proper of vulcanizable material, with a metal plate whose outer face is enameled held against the outside thereof, then pressing a narrow rim of the vulcanizable material over the peripheral edges of said plate and against the enamel, and finally completely vulcanizing the said material and at the same time maintaining said narrow rim of the material pressed immovably over the edges and against the enamel of the plate.

3. The herein-described faucet-knob, comprising a vulcanized body portion, a face-plate set against one side thereof and inclosed by an overhanging part of said body portion extending integrally about the entire perimeter of said face-plate and in direct closing engagement therewith.

4. The herein-described faucet-knob, comprising a vulcanized body portion, a face-plate set into said body portion, and the latter extending integrally over against the front side of said plate about the edges thereof and forming a tight joint therewith, and a threaded part for receiving the faucet-handle, the threads thereof being slightly elastic for making a close, tight fit, substantially impervious to moisture.

817,994. BRAKE-HANGER. Edward H. Scofield, Minneapolis, Minn. Filed Jan. 23, 1904. Serial No. 190,382.



Claim.—1. The combination with a brake-head, of a brake-hanger involving a pair of parts, one of which receives end thrusts and the other tension strains, in the brake-setting action.

2. The combination with a brake-head, of a brake-hanger made up of the telescoped parts pivotally supporting said brake-head, one part being arranged to receive end thrusts and the other tension strains, in the brake-setting action.

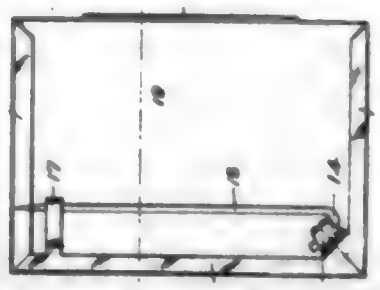
3. The combination with a brake-head and a supporting-bracket on the truck-frame, of a brake-hanger comprising a tension-bolt pivoted to said brake-head and to said supporting-bracket, and a thrust-sleeve on said bolt, between the brake-head and supporting-bracket, arranged to receive end thrusts, substantially as described.

4. The combination with a brake-head and a supporting-bracket said brake-head having an open seat formed with a slitted cylindrical bearing-web and said bracket having a slitted segmental bearing-web, of a tension-bolt working through the slitted web of said brake-head with its laterally-expanded head working within the seat thereof and with its upper end working through the slitted web of said bracket, a rocker seated in the concavity of the bearing-web of said bracket and through which the upper end of said tension-bolt is passed, nuts on the threaded upper end of said tension-bolt, and a thrust-sleeve on said tension-bolt bearing against the outer concave surfaces of the webs of said brake-head and bracket, substantially as described.

5. The combination with a brake-head and supporting-bracket, of a brake-hanger comprising a tension-bolt pivoted to said brake-head and to said supporting-bracket, a thrust-sleeve on said bolt between said brake-head and said supporting-bracket, and means for adjusting one of the said parts to take up the slack, substantially as described.

6. In a car-brake, the combination with brake-heads, hanger-brackets, and hanger-rods for supporting said brake-head; said hanger-rods having T-heads, the arms of which are loosely seated in the hanger-brackets and brake-heads, substantially as set forth.

817,995. MATCH-SCRATCHER. Gustavus A. Smith, Laurel, Iowa, assignor, by direct and mesne assignments, to Handy Match Scratcher Company, Des Moines, Iowa, a Corporation of Iowa. Filed July 31, 1905. Serial No. 271,954.



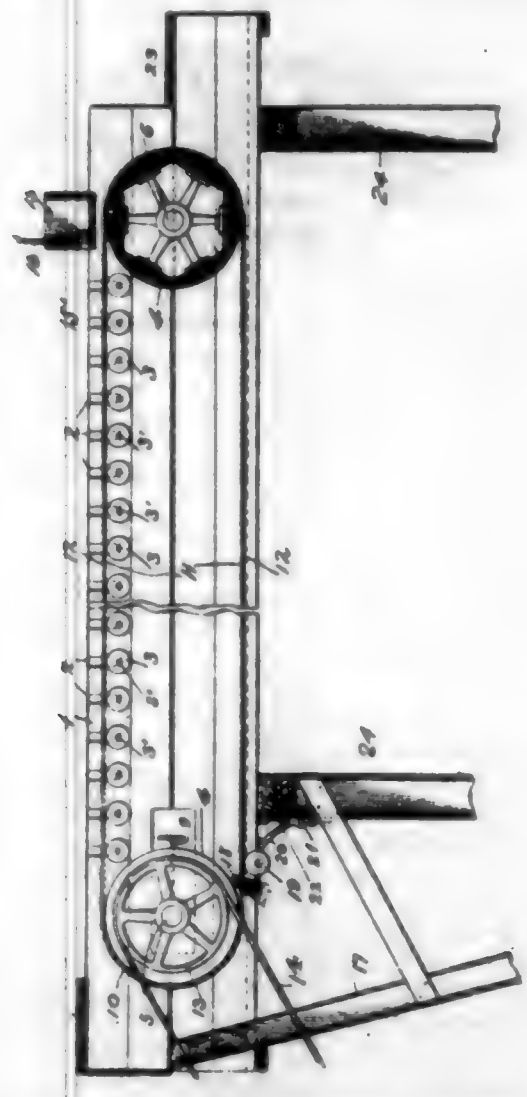
Claim.—1. An improved match-scratcher comprising a body portion formed complete of a single piece of sheet metal and having its outer face provided with a roughened surface, its end margins folded inwardly over its inner face, one of said end margins formed with an integral lug projecting inwardly toward the center of the body portion, one edge margin folded inwardly over the body portion and provided at one end with a lug having one edge parallel and adjacent to the edge of the aforesaid lug and having an integral hook formed near its other end, the other side margin of the body portion extended at right angles to the body portion and away from the rough face thereof, a pin comprising a straight shank and a part arranged at an acute angle relative thereto, said latter part inserted under the said lugs and held by said lugs against the body portion, the other end of the pin designed to engage the said hook.

2. An improved match-scratcher comprising a body portion formed complete of a single piece of sheet metal and having its outer face provided with a roughened surface, its end margins folded inwardly over its inner face, one of said end margins formed with an integral lug projecting inwardly toward the center of the body portion, one edge margin folded inwardly over the body portion and provided at one end with a lug having one edge parallel and adjacent to the edge of the aforesaid lug and having an integral hook formed near its other end, the other side margin of the body portion extended at right angles to the body portion and away from the rough face thereof, a pin comprising a straight shank and a part arranged at an acute angle relative thereto, said latter part inserted under the said lugs and held by said lugs against the body portion, the other end of the pin designed to engage the said hook and a card inserted under the end and one side margin of the body portion and under the pin with its edge adjacent to the other side margin.

817,996. APPARATUS FOR TREATING SEWAGE. Martin Van Buren Smith, New York, N. Y. Filed Aug. 18, 1905. Serial No. 274,643.

Claim.—1. In an apparatus for separating liquids from solids, the combination with a traveling apron or conveyer constructed of a material impervious to water having interstices so fine as to prevent

water under normal conditions from passing therethrough, of means engaging the under surface of the apron or conveyer for drawing water through the apron and discharging it.



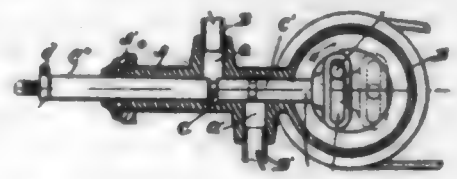
2. In an apparatus for separating liquids from solids, the combination with a traveling apron or conveyer constructed of a material impervious to water having interstices so fine as to prevent water under normal conditions from passing therethrough, of rollers arranged beneath the said apron or roller, with their peripheries engaging the under side of same, whereby water will be induced or drawn through the apron and discharged.

3. In an apparatus for separating liquids from solids, the combination with a traveling apron or conveyer constructed of two layers or strata, the outer layer or stratum composed of a material impervious to water having interstices so fine as to prevent water under normal conditions from passing therethrough, and the other of a perforated material having larger interstices, the two said materials being in intimate contact with each other, of rollers arranged beneath the said apron or carrier with their peripheries engaging the under side of same, whereby water will be induced or drawn through the apron and discharged.

4. An apparatus of the class described comprising an endless apron composed of separate sheets of wire-cloth, the mesh of the outer layer of wire-cloth being so fine as to prevent water under normal conditions from passing therethrough, said apron being arranged in two horizontal runs one above the other, a plurality of rollers in contact with the under side of that part of the apron forming the upper run, said rollers adapted to draw the water through the apron and discharge same, and means for cleansing the apron at about the commencement of the lower run thereof, substantially as specified.

5. An apparatus of the class described comprising an endless apron composed of separate sheets of wire-cloth, the mesh of the outer layer of wire-cloth being so fine as to prevent water under normal conditions from passing therethrough, said apron being arranged in two horizontal runs one above the other, a plurality of rollers in contact with the under side of that part of the apron forming the upper run, said rollers adapted to draw the water through the apron and discharge same, and means for cleansing the apron at about the commencement of the lower run thereof, such means comprising a fluid-pressure-applying device, and a means engaging the outer surface of the said apron or conveyer, substantially as set forth.

817,997. **OIL-FEEDING OR CHARGE-DELIVERING DEVICE.** HERBERT O. SPADE and HENRY B. SPADE, Vicksburg, Mich. Filed Feb. 10, 1905. Serial No. 245,154.



Claim.—1. The combination of a cylinder having receiving and discharging passages therein; a plunger for said cylinder having a relatively fixed portion and a sleeve-like portion reciprocatingly mounted thereon and coacting therewith to form a charge pocket or receptacle; a nut on said plunger, controlling the stroke of the sleeve thereon, thereby controlling the size of the said charge-pocket; and means for reciprocating said plunger, whereby said sleeve is shifted to alternately open said charge-pocket in said receiving-passage, and to close the same in said discharge-passage, for the purpose specified.

2. The combination of a cylinder having receiving and discharging passages therein; a plunger for said cylinder having a relatively fixed portion and a sleeve-like portion reciprocatingly mounted thereon and coacting therewith to form a charge pocket or receptacle; and means for reciprocating said plunger, whereby said sleeve is shifted to alternately open said charge-pocket in said receiving-passage, and to close the same in said discharge-passage, for the purpose specified.

3. The combination of a cylinder having receiving and discharging passages therein; a plunger for said cylinder having a relatively fixed portion and a sleeve-like portion reciprocatingly mounted thereon and coacting therewith to form an annular charge pocket or receptacle; means for controlling the stroke of said sleeve; and means for reciprocating said plunger, whereby said sleeve is shifted to alternately open said charge-pocket in said receiving-passage and to close the same in said discharge-passage, for the purpose specified.

4. The combination of a cylinder having receiving and discharging passages therein; a plunger for said cylinder having a relatively fixed portion and a relatively movable portion reciprocatingly mounted thereon and coacting therewith to form a charge pocket or receptacle; means for controlling the stroke of the said relatively movable portion of said plunger, thereby controlling the size of said charge-pocket; and means for reciprocating said plunger, whereby said charge-pocket is alternately opened in said receiving-passage and closed in said discharge-passage, for the purpose specified.

5. The combination of a cylinder having receiving and discharging passages therein; a plunger for said cylinder having a relatively fixed portion and a relatively movable portion reciprocatingly mounted thereon and coacting therewith to form a charge pocket or receptacle; and means for reciprocating said plunger, whereby said charge-pocket is alternately opened in said receiving-passage and closed in said discharge-passage, for the purpose specified.

6. The combination of a cylinder having a receiving and a discharging passage therein; a plunger for said cylinder having a charge pocket or receptacle arranged to pass from said receiving-passage to said discharge-passage; a movable part on said plunger adapted to open said pocket in said receiving-passage, and to close the same in said discharge-passage, controlled by the movement of said plunger; and means for reciprocating said plunger, for the purpose specified.

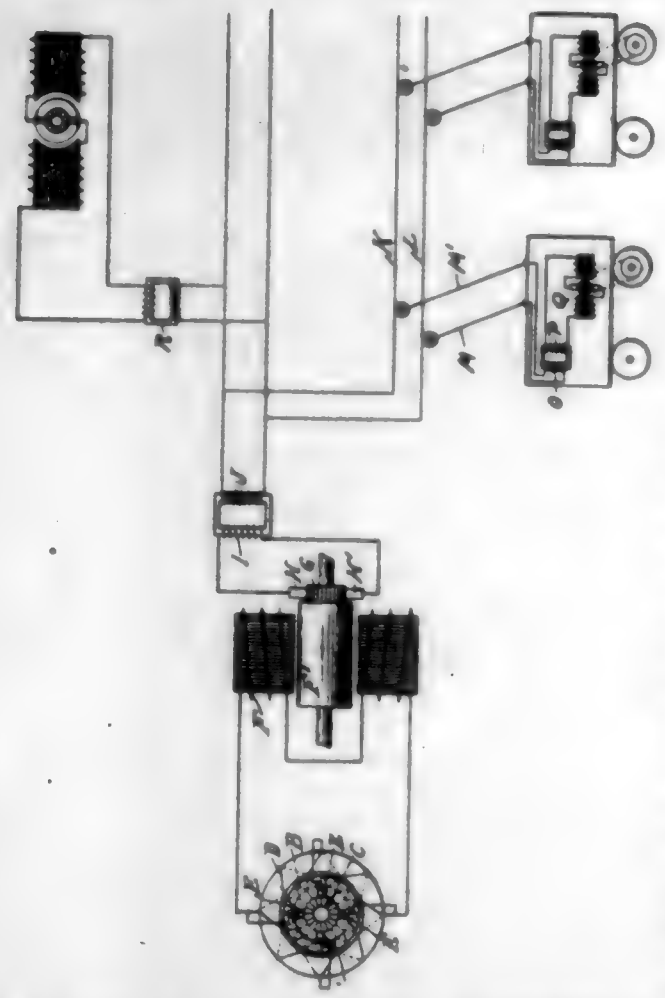
7. The combination of a cylinder having a receiving and a discharging passage therein; a plunger for said cylinder having a charge pocket or receptacle arranged to pass from said receiving-passage to said discharge-passage; a movable part arranged to open said pocket in said receiving-passage, and to close the same in said discharge-passage; and means for reciprocating said plunger, for the purpose specified.

817,998. **MEANS AND METHOD OF TRANSMITTING POWER.** WILLIAM STANLEY, Great Barrington, Mass. Filed Mar. 10, 1905. Serial No. 249,282.

Claim.—1. In a system of distribution, the combination of means for generating low-frequency currents of high potential, mains leading therefrom, step-down transformers connected in multiple to said mains, and motors of the commutator type connected to the secondaries of said transformers.

2. In a system of distribution, the combination of means for generating low-frequency currents of high potential, mains leading therefrom, step-down transformers connected in multiple to said mains, and motors of the commutator type connected to the second-

aries of said transformers, said motors having laminated paths for their magnetic fluxes.



3. In a system for transmitting power, the combination of a low-frequency exciter, a generator of the commutator type having a field energized by the low-frequency currents supplied from said exciter, mains leading from said generator, step-down transformers connected in multiple to said mains, and motors of the commutator type supplied by said step-down transformers.

4. In a system of transmission of power, the combination of a self-exciting low-frequency generator, a main generator having its field energized by currents produced by said low-frequency exciter, mains leading therefrom, step-down transformers connected in multiple to said mains, and motors supplied by the secondaries of said step-down transformers.

5. In any system for transmitting power, the combination of a field-magnet energized by alternating currents of low frequency, an armature rotating relatively to the field produced thereby, said armature being provided with a commutator, brushes bearing upon said commutator, a step-up transformer having its primary connected to said brushes, mains connected to the secondary of said step-up transformer, a plurality of step-down transformers connected in multiple to said mains, and motors of the direct-current type connected to the secondaries of said transformers.

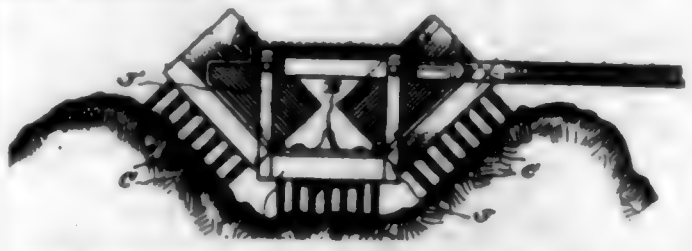
6. In a system of distribution, the combination of means for generating low-frequency currents of high potential, mains leading therefrom, step-down transformers connected in multiple to said mains, and motors of the commutator type connected to the secondaries of said transformers, a series of vehicles propelled by said motors, and movable contacts carried by said vehicles and located in the circuit between said step-down transformers and said mains.

7. The method of transmitting power, which consists in generating alternating currents of low frequency and of high potential transmitting such currents to the point of consumption, and there transforming them into currents of low frequency and lower potential, and energizing by such low-frequency low-potential currents a motor of the direct-current type.

8. The method of transmitting power to a moving vehicle which consists in generating alternating currents of high potential and low frequency, transmitting said energy to said vehicle, and there transforming it to alternating currents of low potential and low frequency and supplying it to a motor of the commutator type located on said vehicle.

817,999. LAND-SCRAPER. OLY STARK, Hardin, Mo. Filed Dec. 7, 1905. Serial No. 290,901.

Claim.—1. In a cultivator, three planks pivotally secured together, cultivating devices secured thereto, and means to yieldingly regulate the position of the two outer planks relative to the middle plank, substantially as shown and described.



2. In a cultivator, three planks pivotally secured together, cultivating devices secured thereto, and spring-actuated means to yieldingly regulate the position of the two outer planks relative to the middle plank, substantially as shown and described.

3. In a cultivator, three planks secured pivotally together, cultivating devices secured thereto, perforated uprights secured to the outside planks, rods slidably mounted in the holes in said uprights, and expansible coil-springs mounted on said rods and bearing against said uprights, substantially as shown and described.

4. In a cultivator, three planks pivotally secured together, teeth secured to the bottoms of said planks, and spring-actuated means to regulate the position of said planks relative to one another, substantially as shown and described.

5. In a cultivator, three planks pivotally secured together, teeth secured to the bottoms of said planks, perforated uprights secured to the outside planks, rods slidably mounted in the holes in said uprights, and expansible coil-springs mounted on said rods and bearing against said uprights, substantially as shown and described.

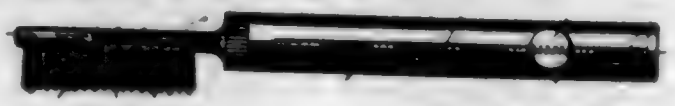
6. In a cultivator, three planks pivotally secured together, the middle of said planks provided with a plate having threaded sockets therein, teeth secured in said planks and in said threaded sockets, and means to yieldingly regulate the position of the two outer planks relative to the middle plank, substantially as shown and described.

7. In a cultivator, three planks pivotally secured together, the middle of said planks provided with a plate having threaded sockets therein, teeth secured in said planks and in said threaded sockets, and spring-actuated means to regulate the position of said planks relative to one another, substantially as shown and described.

8. In a cultivator, three planks pivotally secured together, the middle of said planks provided with a plate having threaded sockets therein, teeth secured in said planks and in said threaded sockets, perforated uprights secured to the outside planks, rods slidably mounted in the holes in said uprights, and expansible coil-springs mounted on said rods and bearing against said uprights, substantially as shown and described.

9. In a cultivating device consisting of a gang of individual cultivators, uprights secured to each individual cultivator, a hinged rod secured to one upright, and adapted to be secured to an upright on the adjacent individual device, the other upright being adapted to be secured to the rod on the neighboring cultivator, said hinged rod being adapted to fold on itself and to be secured to the upright farthest from the hinge therein when the gang is separated into the individual elements, substantially as shown and described.

818,000. TOOTH-BRUSH. CHARLES R. STEVENSON, Boston, Mass. Filed Mar. 23, 1905. Serial No. 251,560.



Claim.—1. As an article of manufacture, a tooth-brush consisting of a holder with bristles fast thereto, a hollow handle detachably fastened to said holder, a collapsible tube of paste located in said handle and having screw-threaded engagement with said holder, said holder provided with a passage therein leading from one end of said tube to said bristles, and a plug extending transversely across said passage-way and located entirely within said holder when said passage-way is closed thereby.

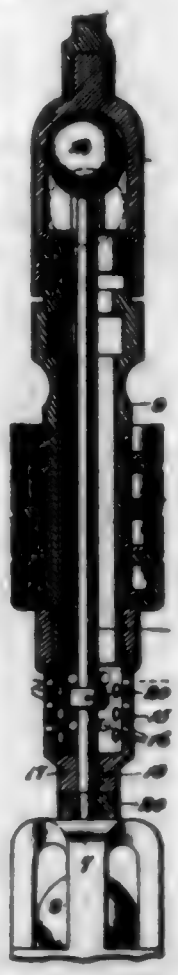
2. As an article of manufacture, a tooth-brush consisting of a holder with bristles fast thereto, a hollow handle detachably fastened to said holder, a collapsible tube of paste located in said handle and having screw-threaded engagement with said holder, said holder provided with a passage therein leading from one end of said tube to said bristles, and a slide extending transversely across said passage-way and slidable on said holder, said slide located entirely within

said holder when said passage-way is closed thereby, and means to prevent said slide from becoming detached from said holder.

3. As an article of manufacture, a tooth-brush consisting of a holder with bristles fast thereto, a hollow handle detachably fastened to said holder, a collapsible tube of paste located in said handle and having screw-threaded engagement with said holder, said holder provided with a passage therein leading from one end of said tube to said bristles, and a slide extending transversely across said passage-way and slidable on said holder, said slide having a finger-piece thereon and located entirely within said holder when said passage-way is closed by said slide, and means to prevent said slide from becoming detached from said holder.

4. As an article of manufacture, a tooth-brush consisting of a holder with bristles fast thereto, a hollow handle detachably fastened to said holder, a collapsible tube of paste located in said handle and having screw-threaded engagement with said holder, said holder provided with a passage therein leading from one end of said tube to said bristles, and a compresser slidable longitudinally of said handle, said compresser having a curved front face adapted to compress said tube and force the contents thereof through said passage to said bristles.

818,001. PUMP. BERRY W. STROUP, Rollersville, Ohio. Filed Aug. 11, 1904. Serial No. 220,412.



Claim.—1. In a pump of the class described, the combination with a reciprocatory piston having a strainer provided with a bottom, said bottom having a guide-opening, of a valve movably mounted in the piston, a stem slidably mounted in the guide-opening and depending below the bottom of the strainer, said stem when elevated in the piston being arranged to raise the valve, and means located in the path of movement of the lower end of the stem for effecting the movement of the same with respect to the piston and thereby raise the valve.

2. In a pump of the class described, the combination with a piston including a movable valve and a strainer-cage fixed upon and held against relative movement with respect thereto, of a stem slidably passing through the strainer-cage and depending below the same, and a standing valve disposed in the path of movement of the stem.

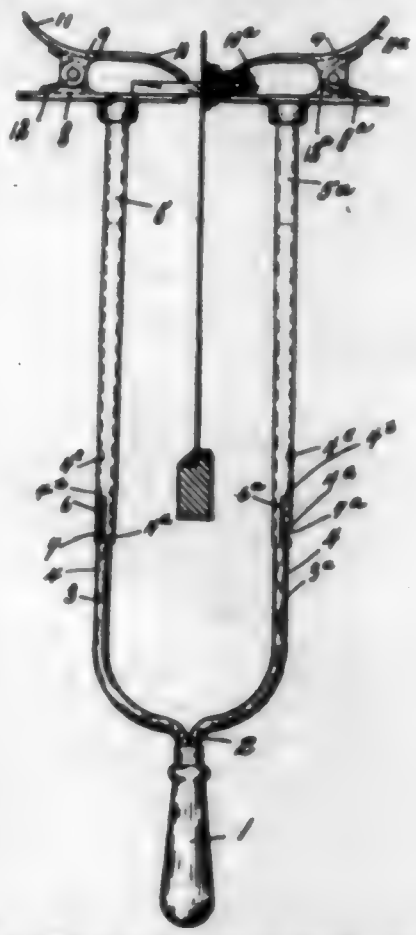
3. In a pump of the class described, the combination with a reciprocatory piston including a movable valve and a strainer-cage, of a stem slidably passing through the strainer-cage and carried thereby, said stem being adapted to engage the valve, and means for effecting the movement of the stem.

4. In a pump of the class described, the combination with a piston including a body having a valve-seat and a valve movable toward and from the seat, a strainer-cage connected to the lower end of the body, and a stem slidably secured to the cage and extending longitudinally of the body, said stem being arranged to engage the valve to unseat the same.

5. In a pump of the class described, the combination with a piston comprising a tubular body having a valve-cage and seat at its upper end, of a valve located in the cage and movable toward and from the seat, a strainer-cage secured to the lower end of the body, a stem extending longitudinally through the body and arranged to engage the valve for the purpose of unseating the same, said stem also projecting through the lower end of the strainer-cage, and retaining devices carried by the stem and located on opposite sides of the bottom of said strainer-cage.

6. In a pump of the class described, the combination with a pump-barrel, of a reciprocatory piston located therein and comprising a tubular body, a valve-cage and seat located at the upper end of the body and a strainer-cage mounted on the lower end of the body, a valve located in the valve-cage and movable toward and from the seat, a stem extending longitudinally through the body and slidably carried by the strainer-cage, said stem being adapted to engage the valve to unseat the same, and a standing valve member secured within the barrel and having an upwardly-extending cage that is located in the path of movement of the lower end of the stem.

818,002. WINDOW-CLEANER. SAMUEL R. SWAIN, Philadelphia, Pa. Filed Apr. 24, 1905. Serial No. 257,094.



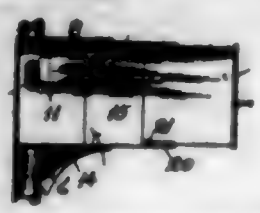
Claim.—1. In a device of the class described, the combination with a suitable handle, of a pair of rods affixed therein, spread beyond and extending laterally to the handle, parallel to each other, and having a series of regularly-spaced indentations on their outer sides, close-fitting tubular sleeves slidable on said rods, having catches formed at their lower ends adapted to engage with the indentations in said rods and clips arranged at their upper ends, all substantially as shown and described.

2. In a device of the class described, the combination with the handle of the rods 3 and 3ª, having the indentations 4, 4ª, 4ᵇ and 4ᶜ, the sleeves 5 and 5ª, having the catches 7 and 7ª, and the material-holding spring-clips at their extreme end, all as and for the purposes as set forth.

818,008. DRAFT ATTACHMENT FOR COOK-STOVES. JOHN B. THORELIUS, Iron Mountain, Mich., assignor of one-half to Adolf Anderson, Iron Mountain, Mich. Filed May 23, 1905. Serial No. 261,626.

Claim.—1. In combination with a cook-stove provided with a raised stationary hood having a top and a ledge or shelf, a cross-wall between the top and ledge or shelf forming a draft-chamber and provided with an opening leading to the flue of the stove, and an extensible draft-regulator open at the bottom and inner end and closed at

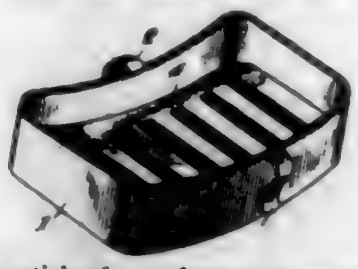
the sides and outer end and adapted to be outwardly drawn from the draft-chamber to overhang the surface of the stove to create a draft up through the extensible draft-regulator and draft-chamber to the flue, substantially as described.



2. In combination with a cook-stove provided with a raised stationary hood having a top and a ledge or shelf, a cross-wall between the top and ledge or shelf forming a draft-chamber and provided with an opening leading to the flue of the stove, and a draft-regulator consisting of an inner section open at both ends and at the bottom, and an outer section open at the bottom and inner end and closed at the outer end, the sections being adapted to telescope one into the other and adapted to be withdrawn to overhang the surface of the stove and form an extensible hood to create a draft through the draft-regulator and draft-chamber to the flue, substantially as described.

3. In combination with a cook-stove provided with a fixed upright hood having a top and a ledge or shelf, and having a flue-pipe passing through the top and through the ledge or shelf, a cross-wall abutting against the flue and extending from the top to the ledge or shelf and provided with an opening leading to the flue and forming a draft-chamber, and a draft-regulator consisting of an inner section open at both ends and at the bottom, and an outer section open at the bottom and inner end and closed at the outer end, the section being adapted to telescope one into the other and adapted to be withdrawn to overhang the surface of the stove and form an extensible hood to create a draft through the draft-regulator and draft-chamber to the flue substantially as described.

818,004. SOAP-HOLDER. SOLOMON THORNTON, Jr., Washington, D. C. Filed June 14, 1905. Serial No. 265,256.



Claim.—As an article of manufacture, a soap-holder having opposite longitudinal edges thereof curved and approximately parallel, one of said edges being concave and the other convex to admit of applying the device to the inner or outer wall of a pail, each of said curved sides being provided with an outwardly and downwardly projecting hook, each hook being adapted to be used as a handle while the other hook engages with the part upon which the holder is secured.

818,005. TELESCOPIC TRESTLE. JOSEPH S. TURNER and PAUL F. HAUSMANN, Los Angeles, Cal. Filed Mar. 25, 1905. Serial No. 251,962.



Claim.—1. A trestle-standard comprising an outer tubular member provided with a base, a member slidable within said outer member and having a series of holes, a link surrounding the inner member and engaging at one end with the holes in the inner member and at the other end with the top of the outer member and means on the outer member engaging the said link to lift the outer member when the inner member is lifted.

2. A trestle-standard comprising an outer member provided with a base, an inner member slidable within the outer member and having a series of holes, a link slidably mounted on the top of the outer member and having a portion to enter said holes, and lugs on the outer member, extending over said links, for the purpose set forth.

3. A trestle-standard comprising an outer member provided with a base, an inner member slidable within the outer member and having a series of holes, a link slidably mounted on the top of the outer member and having a portion to enter said holes, and means for holding said link in different positions to engage it with or release it from the inner member.

4. A trestle-standard comprising an outer member provided with a base, an inner member slidable within the outer member and having a series of holes, a link slidably mounted on the top of the outer member and having a portion to enter said holes, and means for holding said link in different horizontal positions to engage it with or release it from the inner member, said means comprising a part on the outer member formed with a slot in which the link movably engages.

5. A standard for trestles comprising three telescoping members, the outer member having a perforation to receive a pin, the intermediate member having a series of holes to register with said perforation in the outer member and the inner member having a series of holes and a link pivotally mounted at the top of the intermediate member and engaging with the holes in said inner member.

6. A trestle-standard comprising telescoping tubular members, the outer member having a part with a V-shaped slot and a catch-link movable in said slot, the inner member having detent parts engaged by said catch-link.

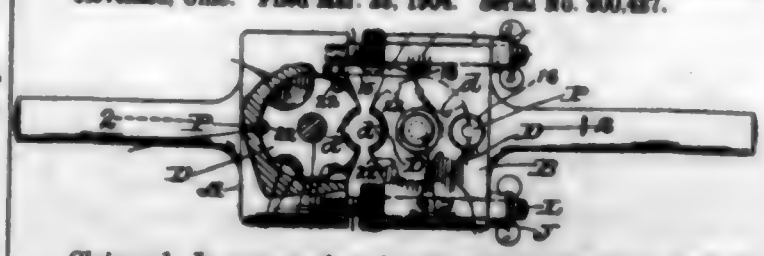
7. A trestle-standard comprising telescoping tubular members, the outer member having lugs and a part with a V-shaped slot, and a catch-link movable in said slot and engaging said lugs in one position of said link, the inner member having detent parts engaged by said catch-link.

818,006. EYEGLASS-MOUNTING. ALBERT S. WEAVER, Providence, R. I., assignor of one-half to Christopher A. Murray, Pawtucket, R. I. Filed Dec. 1, 1905. Serial No. 289,295.



Claim.—An eyeglass-mounting consisting of the combination with a stud-box having notches in two opposite sides, of a fastening-screw having a head provided with radial notches, and a locking-clip having a perforation for the insertion therethrough of said fastening-screw, and provided with a plurality of opposite peripheral arms, two of said opposite arms adapted to be held in said notches in the stud-box, to thereby prevent said locking-clip from turning in said box, and other two of said opposite arms adapted to be turned into said radial notches in the screw-head to thereby prevent said fastening-screw from turning.

818,007. SCREW-THREAD CUTTER. LEROY A. WESTMAN, Cleveland, Ohio. Filed Mar. 28, 1904. Serial No. 200,487.



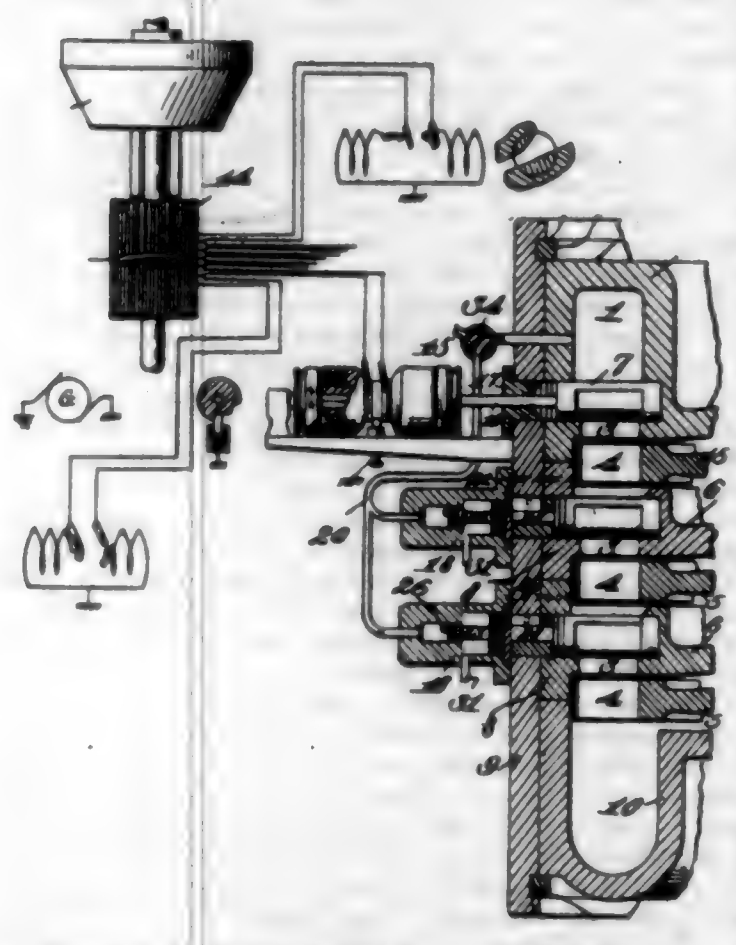
Claim.—1. In a screw-thread cutter, the combination, with the stock, two turnable coöperating die-bearing disks supported from the stock and provided each with screw-thread-cutting dies arranged at suitable intervals circumferentially of the respective disk, and two work-guiding disks connected with the different die-bearing disks respectively, of movable pins adapted to extend from within the die-bearing disks through the stock into the work-guiding disks, which pins are in an operative or inoperative position according as they extend into or are withdrawn from the disks.

2. A screw-thread cutter comprising a stock; two turnable co-operating die-bearing disks supported from the stock and provided each with screw-thread-cutting dies spaced circumferentially of the respective disk; two working guiding disks connected with the different die-bearing disks respectively and provided with screw-threaded holes, two correspondingly-threaded removable or withdrawable pins arranged and adapted to extend through the different die-bearing disks respectively through the stock and screw into one

of the aforesaid holes in the work-guiding disk connected with the respective die-bearing disk.

818,008. GOVERNOR FOR ELASTIC-FLUID TURBINES.

JAMES WILKINSON, Birmingham, Ala., assignor to The Wilkinson Steam Turbine Company, a Corporation of Alabama. Filed July 14, 1903. Serial No. 165,512.



Claim.—1. In an elastic-fluid turbine which is divided into stages and is provided with buckets and fluid-discharging devices, the combination with successively operating controller-valves which respond automatically to variations in pressure within the turbine, of fluid-operated stage-valves which are opened and closed by said controller-valves to vary the flow of fluid between stages, substantially as described.

2. In an elastic-fluid turbine operating by stage expansion, a series of automatically-controlled valves between two wheel-compartments which are adapted to operate successively and without assuming intermediate operating positions to admit fluid-pressure to the succeeding stage when the fluid-supply to the turbine varies.

3. In an elastic-fluid turbine operating by stage expansion, means to deliver a variable supply of motor fluid to the turbine, passages between stages, and valves, for fully opening and closing said passages without assuming intermediate position, which operate automatically sensitive to variations in their respective stage-pressures.

4. In an elastic-fluid turbine operating by stage expansion, means to deliver a variable supply of motor fluid to the first stage, fluid-operated valves for passages between stages, and automatic stage-pressure-controlled secondary valves which control the operation of said stage-valves and the supply of fluid to the succeeding stage or stages.

5. In an elastic-fluid turbine which is subdivided into a plurality of stages and provided with a plurality of nozzle-passages between stages, the combination with a plurality of independently-operable supply-valves of a corresponding number of stage-valves between each two stages, means to successively operate said supply-valves, and means responsive to the variation in stage-pressures to successively and automatically operate the corresponding valves for the several stages.

6. In an elastic-fluid turbine which operates by stage expansion, a working passage for the motor fluid comprising a plurality of independently-controllable supply and stage nozzle passages, governor-controlled valves to vary the cross-sectional area of the supply-passages, and stage-pressure-controlled valves to automatically vary the cross-sectional area of the discharge-passages between the several stages in correspondence with the area of the supply-passages.

7. In an elastic-fluid turbine which operates by stage expansion, a subdivided working passage for the fluid between stages by means of which independently-controllable streams of fluid flow across stages, rotatable elements acted upon by said separate streams, governing mechanism to successively cut off the supply of fluid from the initial subdivisions of said passages, and means responsive to internal pressure to automatically close the corresponding subdivisions of the working passage between each stage.

8. In an elastic-fluid turbine operating by stage expansion and having a variable supply of fluid delivered to the first stage, automatic compound valves exposed to a constant and a varying pressure and controlling the supply of the fluid to succeeding stages.

9. In an elastic-fluid turbine operating by stage expansion, a series of automatic compound pressure-actuated stage-valves, the relative proportions of whose high and low pressure heads differ between one or more of said valves.

10. In an elastic-fluid turbine operating by stage expansion, a passage between wheel-compartments, and automatic pressure-controlled means to effect a pulsatory discharge of fluid from a wheel-compartment through said passage to a succeeding wheel-compartment.

11. In an elastic-fluid turbine operating by stage expansion, passages between wheel-compartments, and means sensitive to the pressure in a wheel-compartment to pulsate part of the fluid-pressure discharged from said wheel-compartment through one or more of said passages to a succeeding wheel-compartment.

12. In a turbine, a plurality of passages for discharging fluid-pressure from a wheel-compartment, and means sensitive to variations in said wheel-compartment pressure for regulating the volume of the discharge into a succeeding wheel-compartment and pulsating a part of said discharge.

13. In an elastic-fluid turbine, a passage for the motor-fluid, and a compound piston-valve automatically moved by stage-pressure to open and close said passage without intermediate operating positions.

14. In a fluid-motor, a working passage for the fluid-pressure, and a valve interrupting the flow of said fluid through said passage, said valve being actuated by the initial fluid-pressure and controlled automatically by the variations between the initial and an intermediate pressure automatically maintained thereby in a stage.

15. In an elastic-fluid turbine comprising head-sections, and an intermediate casing, in combination with an outer shell which holds the head-sections together by curved metal strips forming stops which are seated in suitable recesses in the inner face of said casing.

16. In an elastic-fluid turbine wherein the fluid-pressure admitted is fractionally converted into velocity, head-sections between which intermediate partition-sections are held, and an outer shell surrounding the casing and having inner grooves so disposed that curved metal strips seated therein form abutments to hold the head-sections together.

17. In an elastic-fluid turbine operating by stage expansion, valves controlling the supply of fluid to the first stage, rows of automatic pressure-controlled valves between the several stages, two or more of said valves in each row being operated by relatively different variations in the preceding stage-pressures, the valves sensitive to the same pressures in the several rows being relatively disposed in the direction of the fluid's flow across the stages.

18. In an elastic-fluid turbine operating by stage expansion, means to pulsate the supply of elastic fluid to the first stage, and stage-pressure-controlled means to pulsate the supply to the succeeding stage or stages.

19. In an elastic-fluid turbine operating by stage expansion, means to deliver a part constant and part pulsatory supply of elastic fluid to the first stage, and means to pulsate part of the supply to the succeeding stage or stages.

20. In a turbine, a working passage in which the velocity of the motor fluid is fractionally abstracted, a compound valve for interrupting the flow of fluid through said passage, a low-pressure cylinder for said valve disposed within the turbine, and a high-pressure cylinder for said valve secured to the turbine-shell.

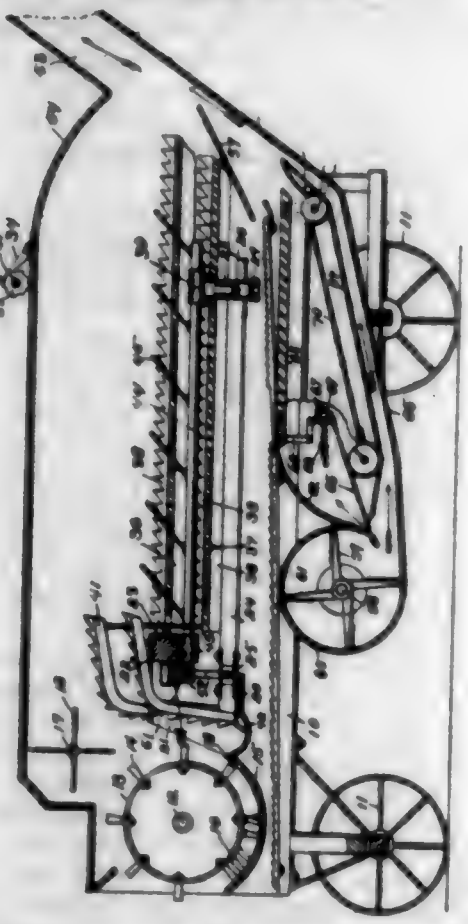
21. In an elastic-fluid turbine operating by stage expansion, a stage-valve, and stage-pressure-controlled means to intermittently actuate said valve to pulsate the fluid-supply admitted to a succeeding stage.

22. In an elastic-fluid turbine operating by stage expansion, a passage between stages, and a valve automatically controlled by stage-pressure and adapted to intermittently and fully open and close said passage responsive to fluctuations in its controlling-stage pressure.

23. In an elastic-fluid turbine operating by stage expansion, a row of stage-valves independently, and intermittently actuated under the control of stage-pressure to vary the fluid-supply to the succeeding stage.

24. In a turbine which operates by stage expansion, fluid-operated stage-valves, motors for actuating said valves comprising cylinders supported by the valve-bearing portion and open at one end to the stage-pressure.

818,009. THRESHING-MACHINE. FRANK J. WOOD, Des Moines, Iowa. Filed June 24, 1904. Serial No. 213,961.



Claim.—1. The combination of a platform, upright partitions secured to the platform, oscillating straw-pans and stock-elevating grates secured to the front ends of the shaking-pans and projecting between the upright partitions.

2. A combination with an oscillating straw-pan of a stock-elevating grate, comprising two sides fixed at their lower ends to the front of the straw-pan extending upwardly and rearwardly, and toothed at their front and top edges, a support fixed to the straw-pan extending upwardly and attached to the rear end of said sides, and slats between the sides arranged at an angle adapted to move straw upwardly and rearwardly over the top of the straw-pan and to permit grain to pass through.

3. The combination of a series of stock-advancing pans capable of up-and-down movement, a series of stock-spreading fingers mounted for rocking movement only and means for operating said pans and fingers in unison, said fingers arranged with relation to the pans to project over the pans that are at their lower limit of movement and away from the pans that are at their upper limit of movement.

4. The combination of a series of stock-advancing devices, means for oscillating them in vertical planes the alternate ones being moved in opposite directions, a series of stock-spreading fingers mounted between said advancing devices and capable of rocking from side to side, said stock-advancing devices being alternately moved above and below the center of movement of said fingers, and means for rocking the fingers to project over the stock-advancing devices that are below their center of movement and away from those above their center of movement.

5. The combination of a series of stock-advancing devices spaced apart, means for oscillating them in vertical planes, the alternate ones being moved in opposite directions, a series of rock-shafts in stationary bearings arranged between the stock-advancing devices at a point midway between the upper and lower limits of movement of said stock-advancing devices, spreading-fingers secured to said shafts and projecting upwardly and toward the delivery end of the stock-advancing devices, and means for rocking said shafts in unison with the movement of the stock-advancing devices, said means causing the arms to project over the stock-advancing devices that are at their lower limits, and away from the stock-advancing devices that are elevated.

6. The combination of a platform, upright partitions secured to the platform, a cross-piece supporting the upper ends of the upright partitions, oscillating shaking-pans, and stock-elevating grates secured to the front end of the shaking-pans and projecting between the upright partitions.

7. In a threshing-machine, the combination of a grated platform having a trough-shaped forward end, a number of upright partitions spaced apart, secured to the grated platform, their forward ends extending upwardly and rearwardly, a cross-piece supporting the upper ends of said partitions, a series of shaking-pans, a stock-elevating grate secured to the forward end of each shaking-pan, comprising an upright portion projecting above the top of the shaking-pan, a portion projecting rearwardly and upwardly therefrom, notched ribs at the sides of the shaking-pans standing close to the adjacent partitions, in one position of the shaking-pans projecting in front of the front edges of the partitions and in another position of the shaking-pans projecting in the rear of the front edges of the partitions, and fingers at the lower ends of the stock-elevating grates projecting downwardly and forwardly and moving close to the trough-shaped portion of the grated platform.

8. The combination of a crank-shaft, having oppositely-disposed crank-arms, two shaking-pans mounted on the crank-arms, a rock-shaft supported between the shaking-pans, arms fixed to the rock-shaft and projecting upwardly, a pinion on the rock-shaft, a rack-bar in mesh with the pinion and means driven by the crank-shaft for reciprocating the rack-bar.

9. The combination of a crank-shaft, having oppositely-disposed crank-arms, two shaking-pans mounted on the crank-arms, a rock-shaft supported between the shaking-pans, arms fixed to the rock-shaft and projecting upwardly, a pinion on the rock-shaft, a rack-bar in mesh with the pinion, and a cam on the crank-shaft operatively connected with the rack-bar.

10. The combination with a crank-shaft having oppositely-disposed crank-arms, of two shaking-pans supported on the crank-arms, a rock-shaft mounted on a stationary support and extending between the shaking-pans, arranged above the lower pan and below the upper pan, when the pans are at their opposite limits of their up-and-down movement, arms fixed to the rock-shaft and movable to position over the pans and means for rocking the shaft in unison with the oscillating movements of the shaking-pan.

11. The combination of two crank-shafts having oppositely-disposed crank-arms, two shaking-pans mounted on the crank-arms, of said shafts, a rock-shaft mounted on a stationary support between the shaking-pans, arms fixed to the rock-shaft and projecting upwardly and toward the delivery end of the shaking-pans, a cam on one of the crank-shafts, a rack-bar operatively connected with the cam, and a pinion on the rock-shaft meshed with the rack-bar.

12. The combination of a machine-frame, a crank-shaft having oppositely-disposed crank-arms rotatably mounted in the machine-frame, a second crank-shaft having oppositely-disposed crank-arms, a cross-piece, brackets on the cross-piece supporting the second crank-shaft, means for raising and lowering the cross-piece, a number of shaking-pans connected to the crank-arms of said shafts, a stationary cross-piece fixed to the machine-frame, a number of rock-shafts arranged between the shaking-pans supported at one end by the stationary cross-piece and at the other end by the brackets on the adjustable cross-piece, arms fixed to the rock-shafts and projected upwardly and rearwardly, and means driven by one of the crank-shafts for operating the rock-shafts.

13. The combination of a machine-frame, a crank-shaft having oppositely-disposed crank-arms rotatably mounted in the machine-frame, a second crank-shaft having oppositely-disposed crank-arms, a cross-piece, brackets on the cross-piece supporting the second crank-shaft, means for raising and lowering the cross-piece, a number of shaking-pans connected to the crank-arms of said shafts, a stationary cross-piece fixed to the machine-frame, a number of rock-shafts arranged between the shaking-pans supported at one end by the stationary cross-piece and at the other end by the brackets on the adjustable cross-piece, arms fixed to the rock-shafts and projected upwardly and rearwardly, pinions on the rock-shafts, a rack-bar slidingly supported and in mesh with the pinions, and a cam on one of the crank-shafts operatively connected with the said rack-bar.

14. The combination of a machine-frame, a grate or sieve, a bottom for the machine-frame inclined upwardly and rearwardly, a discharge-spout to receive stock forced over the bottom, a fan-casing, a partition above the bottom extending from a point near the fan-casing to a point beyond the grate or sieve, a fan in the fan-casing, a tailings-spout above the first partition extending laterally and a grain-discharge spout extending laterally beneath the end of the grate or sieve opposite from the tailing-sieve.

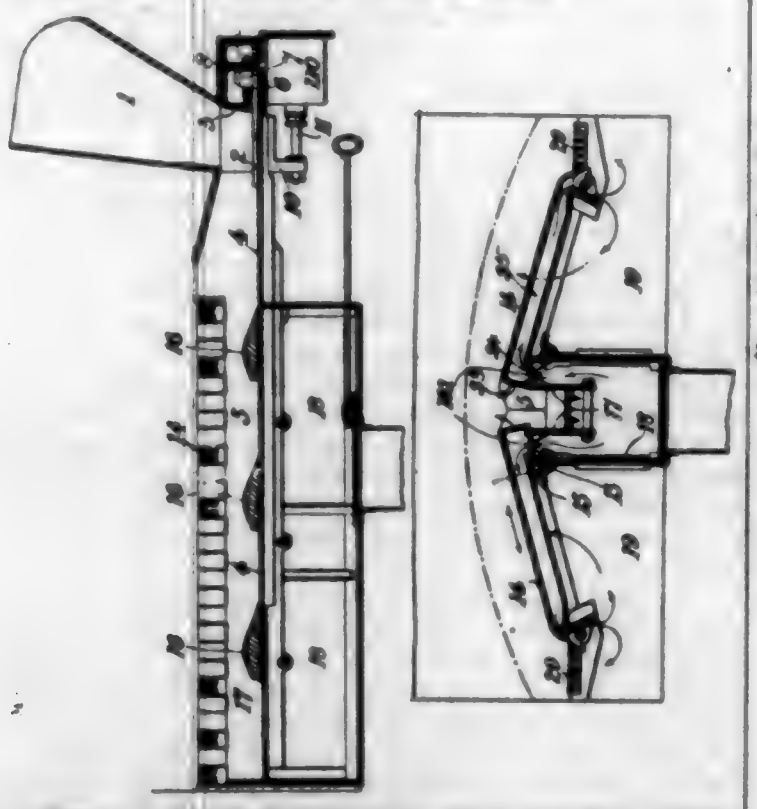
15. The combination of a machine-frame inclosed at its discharge end, a discharge-spout communicating with the delivery end of the machine, a grate or sieve near the bottom of the machine-frame, a fan-casing below the machine-frame, a solid bottom extending from the fan-casing to the discharge-spout, a partition above the inclined bottom extending from a point in the rear of the grate or sieve to a point adjacent to the fan-casing, a partition extending from the fan-casing to a point in front of the grate or sieve, a deflector extending from a point above the rear end of the grate or sieve upwardly and rearwardly, and a fan in the fan-casing.

16. The combination of a machine-frame inclosed at its discharge end, a discharge-spout communicating with the delivery end of the machine, a grate or sieve near the bottom of the machine-frame, a fan-casing below the machine-frame, a solid bottom extending from the fan-casing to the discharge-spout, a partition above the inclined bottom extending from a point in the rear of the grate or sieve to a point adjacent to the fan-casing, a partition extending from the fan-casing to a point in front of the grate or sieve, a deflector extending from the point above the rear end of the grate or sieve upwardly and rearwardly, and a fan in the fan-casing, and a valve controlling the passage-way to the grate or sieve.

17. The combination of a machine-frame inclosed at its discharge end, a discharge-spout communicating with the delivery end of the machine, a grate or sieve near the bottom of the machine-frame, a fan-casing below the machine-frame, a solid bottom extending from the fan-casing to the discharge-point, a partition above the inclined bottom extending from a point in the rear of the grate or sieve to a point adjacent to the fan-casing, a partition extending from the fan-casing to a point in front of the grate or sieve, a deflector extending from the point above the rear end of the grate or sieve upwardly and rearwardly, a fan in the fan-casing, and a threshing-cylinder and means for driving the fan from the threshing-cylinder.

18. A combination of a machine-frame comprising an inclosed casing communicating with a stacker-trunk, a grate or sieve yieldingly supported in machine-frame, a fan-casing, a fan therein, partitions arranged to direct air from the fan under the sieves and into the stacker-trunk, and also through the sieves, a valve arranged to control the passage-way from the fan-casing to a point through the sieves, and means for connecting the sieve and valve, said means tending to open the valve when the sieve is lowered by an accumulation of stock, and also tending to close the valve when the sieve is in a normally elevated position.

818,010. **UNDERFEED-FURNACE.** WILFRED R. WOOD, London, England. Filed Mar. 26, 1904. Serial No. 200,046.



Claim.—1. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, and an inclosed ash-pit adapted to receive said air, substantially as described.

2. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, an inclosed ash-pit adapted to receive said air, and means for reciprocating the grate-bars substantially as described.

3. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, an inclosed ash-pit adapted to receive such air, and tipping grates at the outer ends of said grate-bars, substantially as described.

4. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, an inclosed ash-pit adapted to receive said air, means for reciprocating the grate-bars and tipping grates at the outer ends of said grate-bars, substantially as described.

5. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, an inclosed ash-pit adapted to receive said air rocking bars adapted to reciprocate said grate-bars and means for rocking said rocking bars, substantially as described.

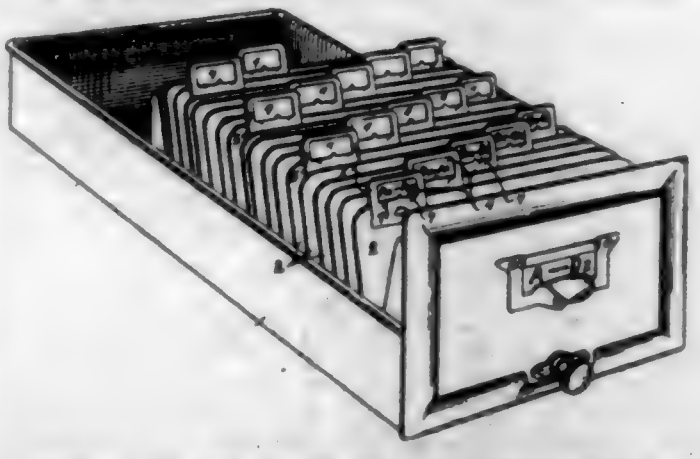
6. In underfeed-furnaces and in combination, a retort, means for feeding the fuel thereto, grate-bars of box-like cross-section each having one end in proximity to the retort, said grate-bars being adapted to take all the air to support combustion at their retort ends and to deliver a portion to such retort and all the remainder to the ash-pit, an inclosed ash-pit adapted to receive said air, rocking bars notches on the grate-bars with which said rocking bars engage, and means for operating the rocking bars, substantially as described.

818,011. **BILLIARD-CUE-TIP FASTENER.** GEORGE W. ALLEN and WARREN B. BEACH, Clyde, Kans. Filed Sept. 18, 1905. Serial No. 278,906.



Claim.—A cue-tip embodying a button having its flat side provided with a rectangular socket, an attaching member comprising a threaded shank and a pair of cutting elements adapted to incise the walls of the socket, the pitch of the cutting edges being opposite to that of the threads of the shank, and a securing element attached to the button and through which the shank of the attaching member projects.

818,012. **DIVISION-PLATE AND TABLET-HOLDER.** HORACE W. ANDREWS, Canton, Ohio, assignor to The Canton Steel Roofing Company, Canton, Ohio, a Corporation of Ohio. Filed Aug. 19, 1905. Serial No. 274,858.



Claim.—1. A division-plate and tablet-holder adapted for index-files consisting of a plate and a holder comprising an open front having marginal flanges at the rear, and a spring back of less area

than the front, whereby a tablet or index-card may be securely held against lateral movement between the front and back, substantially as and for the purpose specified.

2. A division-plate and a tablet-holder consisting of a suitable plate, and a tablet-holder provided with a back, and an open front, top and end angled flanges located at the top and ends of the back plate, and the body of the holder cut or severed below the front open portion of said holder, substantially as and for the purpose specified.

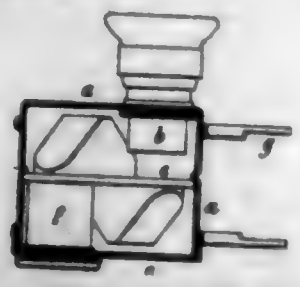
3. A division-plate and a tablet-holder consisting of a suitable plate, and a tablet-holder provided with a back, and an open front, top and end angled flanges located at the top and ends of the back plate, and the body of the holder cut or severed below the front open portion of said holder, and a tang adapted to engage the lower edge of the tablet, substantially as and for the purpose specified.

818,013. WINDMILL. ROBERT S. BARTLETT, Hocona, Tex. Filed Oct. 4, 1905. Serial No. 281,344.



Claim.—A wind-wheel comprising spaced-apart heads, a circular series of transversely-curved blades secured to said heads and held therebetween, the outer edges of said blades being arranged in a circle and the inner edges of said blades being also arranged in an inner circle which forms a wind-chamber at the center of the wheel, the inner edge of each curved blade being located at a point where a line drawn therethrough and through the center of the wheel will intersect the outer edge of the next blade in advance, and each of said blades being concave-convex in cross-section, the cross-section thereof lying in an arc struck from the outer circle of the wheel to the inner circle forming the wind-chamber, the radius of said arc being equal to one-quarter the diameter of the wheel.

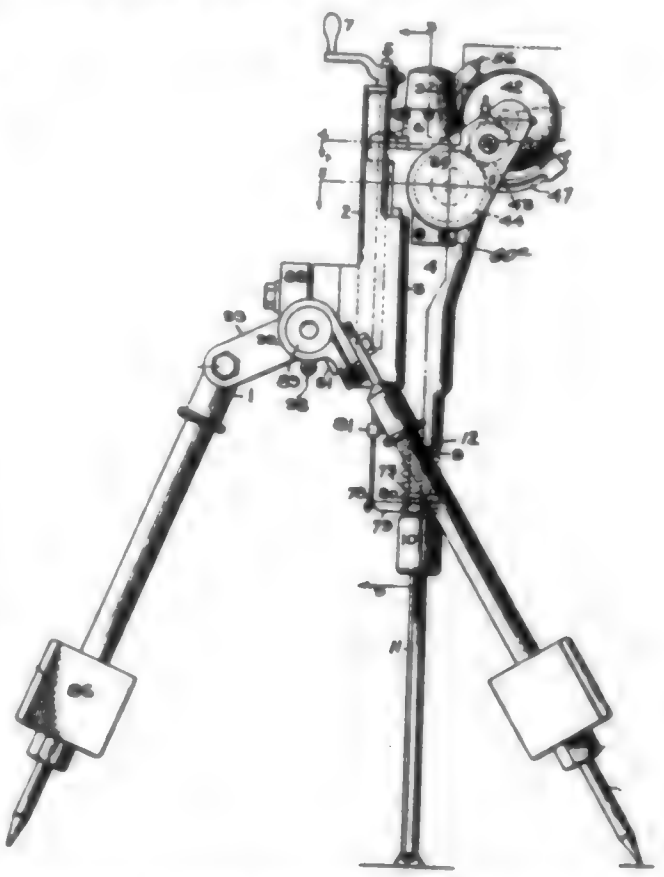
818,014. PRISM-TELESCOPE CASING. MAX BERGER, Jena, Germany, assignor to The Firm of Carl Zeiss, Jena, Germany. Filed May 20, 1905. Serial No. 261,234.



Claim.—1. In a binocular prism field-glass two casings, each comprising a shell and bottom piece made of sheet metal, a cover-plate closing the open end of the shell and bottom piece and two hinge-arms fastened to the shell, the bottom and the cover-plate having each a hole for receiving the eyepiece and objective respectively.

2. In a binocular prism field-glass two casings, each comprising a shell and bottom piece made of sheet metal, a cover-plate closing the open end of the shell and bottom piece and two hinge-arms, each of which completely encircles an unpierced zone of the shell, the bottom and the cover-plate having each a hole for receiving the eyepiece and objective respectively.

818,015. ROCK-DRILL. ROBERT BIRKIE, Sr., Bolivar, Pa. Filed Aug. 26, 1905. Serial No. 275,906.



Claim.—1. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft for said spindle also mounted in the casing, a motor mounted directly on the casing on trunnions at right angles to the actuating-shaft, cushioning means between said trunnions and the casing, and gearing connecting said motor and drill-actuating shaft.

2. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft for said spindle mounted in the casing, a motor mounted directly on the casing on trunnions at right angles to its shaft and with its shaft parallel to the actuating-shaft, cushioning means between the motor trunnions and casing, and gearing connecting said motor and drill-actuating shaft.

3. In a drill, the combination of a movable body or casing, a drill-spindle mounted therein, an actuating-shaft therefor, a motor mounted on the casing on trunnions transverse to its shaft and with its shaft parallel to the drill-actuating shaft, spur-gears connecting said shafts, and cushioning means for the motor-shaft adjacent to said gears and arranged to permit one of said gears to roll on the other.

4. In a drill, the combination of a movable body or casing, a drill-spindle mounted therein, an actuating-shaft therefor, a motor mounted on the casing on trunnions transverse to its shaft and with its shaft parallel to the actuating-shaft, spur-gears connecting said shafts, cushioning means between the motor trunnions and casing, and cushioning means for the motor-shaft adjacent to the gears.

5. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor, the motor-shaft and actuating-shaft being transverse to the line of reciprocation of the drill, gearing connecting said shafts, trunnions on said motor, a yoke on the casing provided with bearings for said trunnions, and cushioning means between said yoke and trunnions.

6. In a drill, the combination of a support, a drill body or casing

movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor provided with trunnions, seats on the casing for receiving said trunnions, cushioning means between said seats and trunnions, gearing connecting the motor-shaft with the drill-actuating shaft, and cushioning means for said motor adjacent to said gearing.

7. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor, said motor-shaft and actuating-shaft being transverse to the line of reciprocation of the drill, gearing connecting said shafts, trunnions on the motor-body, seats on the casing for receiving said trunnions, cushioning means between said seats and trunnions, and cushioning means for the motor-shaft adjacent to said gearing.

8. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor yieldingly mounted on the casing and movable therewith, gearing connecting said motor and drill-actuating shaft, and springs supporting said motor adjacent to said gearing.

9. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor, gearing between said motor and actuating-shaft, trunnions on said motor, seats on the casing for receiving said trunnions, springs between said trunnions and seats, and springs bearing against the motor-body adjacent to the gearing connecting the same to the drill-actuating shaft.

10. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said body, an actuating-shaft therefor, a motor, gearing connecting the same with said drill-actuating shaft, trunnions on said motor, bearings on the casing for receiving said trunnions, said bearings being provided with a movable cap, and cam-actuated means for locking said cap in position.

11. In a drill, the combination of a support, a drill body or casing movably mounted thereon, a reciprocating drill-spindle mounted in said casing, an actuating-shaft therefor, a motor, gearing connecting said motor and drill-actuating shaft, trunnions on said motor, bearings on the casing for receiving said trunnions, a hinged cap for said bearings, and cam-actuated locking means for the free end of said cap.

12. In a drill, the combination, of a body or casing, a reciprocating drill-spindle mounted therein, a motor for actuating said spindle, said motor being provided with trunnions, bearings for said trunnions, said bearings being provided with a movable cap, and cam-actuated locking means for said cap.

13. In a drill, the combination of a casing or body, a reciprocating drill-spindle therein, a motor for actuating said spindle, trunnions on said motor transverse to its axis, seats on the casing for receiving said trunnions, cushioning means between said seats and trunnions, and a yielding support for the end of the motor-casing.

14. In a drill, the combination of a body or casing, a reciprocating drill-spindle mounted therein, a motor for actuating said spindle, trunnions on said motor transverse to its axis, bearings for said trunnions, seats on the casing or body for receiving said bearings, and springs interposed between said bearings and seats.

15. In a drill, the combination of a body or casing, a reciprocating drill-spindle mounted therein, a motor for actuating said spindle, trunnions on said motor, bearings for said trunnions, seats in the casing for receiving said bearings and spring-pressed plungers mounted in said seats and contacting with said bearings.

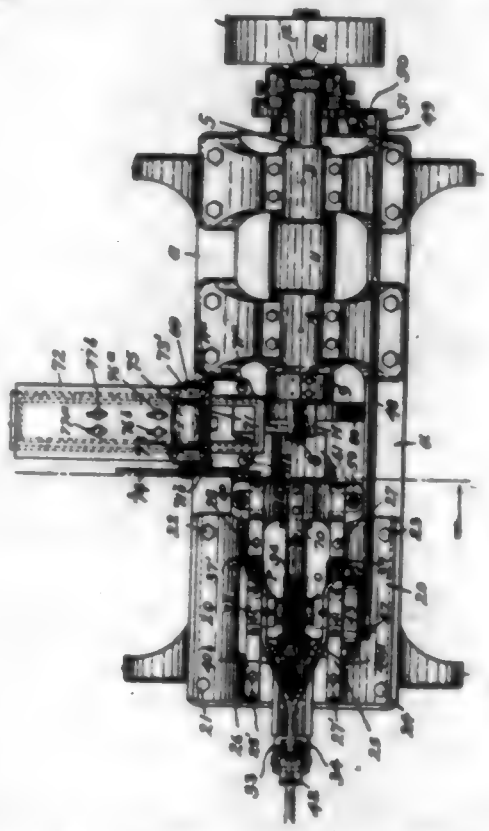
16. In a drill, the combination of a movable body or casing, a drill-spindle mounted therein, a motor for actuating said spindle, trunnions on said motor, bearings for receiving said trunnions, a movable cap for said bearings, and spring-pressed plungers mounted in said bearings and caps and bearing against said trunnions.

17. In a drill, the combination of a movable body or casing, a reciprocating drill-spindle therein, an actuating-motor mounted on the casing with its shaft transverse to the line of reciprocation of the drill-spindle, trunnions on the motor at right angles to its shaft, and cushioning means arranged to cushion the movement of the motor both transversely and axially of said trunnions.

18. In a drill, the combination of a movable body or casing, a reciprocating drill-spindle mounted therein, a motor flexibly mounted on said casing, gearing connecting the motor-shaft with the drill-spindle, a flange or ring surrounding the end of the motor-body, and spring-pressed plates between said ring and the motor-body and serving to cushion the same.

19. In a drill, the combination of a movable body or casing, a reciprocating drill-spindle mounted therein, a motor trunnioned on said body, cushioning means for said trunnions, a ring surrounding the end of neck of the motor-body, spring-pressed plates interposed between said ring and motor-body, and gearing connecting the motor-shaft with said drill-spindle.

818,016. **MACHINE FOR MAKING PLUGS FOR PAPER-ROLLS.** EDWIN CARVER, Winchester, Ind. Filed Feb. 16, 1905. Serial No. 245,910.



Claim.—1. In a machine for making plugs for paper-rolls, the combination with means for alternately feeding endwise and holding a rod, cutters shaping the end portion thereof and a reciprocating cutting-off tool arranged and timed to sever the portion so shaped, of a spout or receiver traveling with said cutting-off tool and advancing to a position under the portion being cut off to receive the same and a fixed cover for said spout, to a position under which it returns in order to exclude the chips produced by the shaping-cutter, all substantially as shown and described.

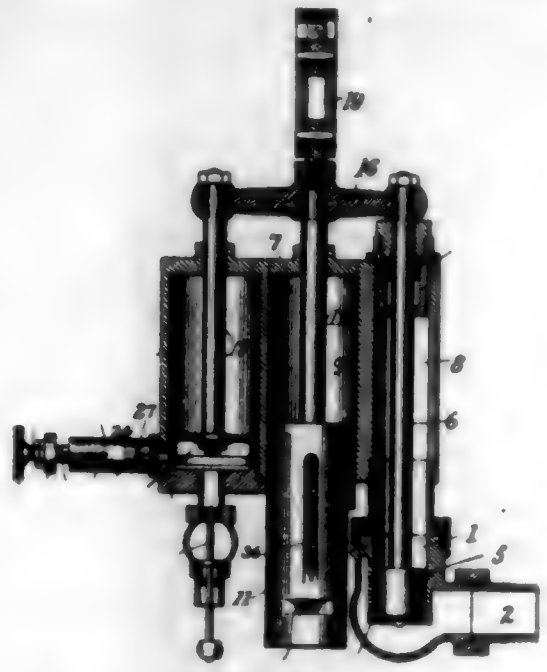
2. In a machine for making plugs for paper-rolls, the combination with means for alternately feeding endwise and holding a rod to be operated on, cutters shaping the end portion thereof and reciprocating cutting-off tool arranged and timed to sever the portion so shaped, of a spout or receiver traveling with said cutting-off tool and advancing to a position under the portion being cut off to receive the same and a fixed cover for said spout, to a position under which it returns in order to exclude the chips produced by the shaping-cutter, the feeding means preventing rotation of the rod, and the shaping-cutter rotating concentric with the work so as to shape the same without imparting centrifugal force thereto, all substantially as shown and described.

3. In a machine for making plugs for paper-rolls, the combination with means for alternately feeding endwise and holding a rod to be operated on, cutters shaping the end portion thereof and a reciprocating cutting-off tool arranged and timed to sever the portion so shaped, of a spout or receiver traveling with said cutting-off tool and advancing to a position under the portion being cut off to receive the same and a fixed cover for said spout, to a position under which it returns in order to exclude the chips produced by the shaping-cutter, a chute connected to said spout to receive the chips from the shaping-cutters and direct them in an opposite direction while the said spout is in its retired position, all substantially as shown and described.

818,017. **LIQUID-METER.** HOMER H. DENNY and THOMAS W. RICHARDS, Brooklyn, N. Y. Filed Oct. 13, 1905. Serial No. 282,549.

Claim.—1. A liquid-meter comprising a valve-casing having an intake and an outlet, a valve within said casing to control the flow of liquid through the intake and the outlet, a hollow cylinder communicating with said valve-casing, a valve-stem attached to said valve and extending through said hollow cylinder, a second cylinder parallel with the first-named cylinder, a piston working in said second

cylinder and having a piston-rod parallel to said valve-stem, a rigid connection between said valve-stem and said piston-rod, means for controlling the escape of air from said second cylinder during the descent of the piston therein, and means for simultaneously effecting the closure of said valve and the descent of the piston in said second cylinder.



2. A liquid-meter comprising a valve-casing having an intake and an outlet, a valve within said casing, a hollow cylinder registering with said casing in which said valve can move, a valve-stem extending longitudinally through said hollow cylinder, a second hollow cylinder parallel to the first-mentioned hollow cylinder, a piston and piston-rod working in said second hollow cylinder, said piston-rod being rigidly connected and parallel to said valve-stem, a barrel extending laterally from said second cylinder below said piston and having a slot in the wall thereof, a block or plug adjustably secured within said barrel, whereby said slot can be closed wholly or in part, and means for imparting simultaneous downward movement to said valve and said piston, whereby the closure of said valve is effected within a period determined by the amount of opening of the slot in the barrel extending laterally from said second cylinder.

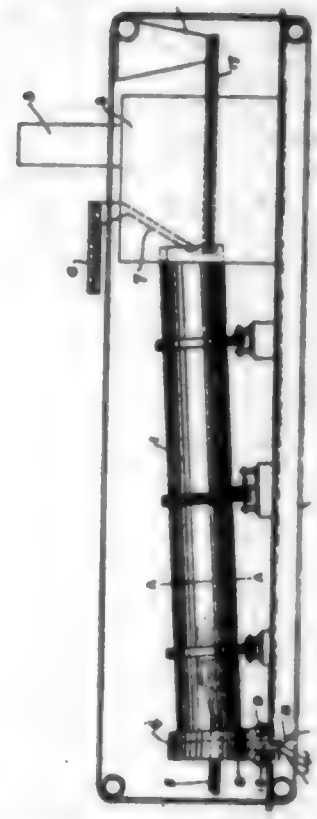
3. The combination in a liquid-meter, of a valve-casing having an intake and an outlet, a measuring-valve for controlling the flow of liquid through said intake and outlet, a hollow cylinder communicating with said valve-casing and registering with the chamber thereof, a valve-stem extending through said hollow cylinder, a second hollow cylinder having an intake-valve in the bottom and an adjustable escape for fluid contained in said second cylinder, a piston working in said second cylinder and having a piston-rod parallel to said valve-stem, a yoke forming a rigid connection between said valve-stem and said piston-rod, and a weight secured to said yoke between said valve-stem and said piston-rod, whereby said valve may be closed and said piston forced downward within said cylinder at a rate determined by the rate of escape of the fluid contained in the cylinder beneath said piston.

4. In a liquid-meter, the combination with a valve-casing having an intake and an outlet, of a valve in said casing to control the passage of liquid through the casing, means for gradually closing the valve to cut off the flow of liquid through the casing, a valve in the outlet from said casing, and means for simultaneously opening the valve in the outlet and setting in operation the means for closing the valve in the valve-casing, whereby the valve in the valve-casing is gradually closed after the opening of the valve in the outlet.

5. In a liquid-meter, a valve-casing having an intake and an outlet, a valve in said casing to control the passage of liquid through the casing, a weight adapted by its descent to close said valve and cut off the flow of liquid through the casing, a valve in the outlet from said casing means for locking said weight when raised, and means operative when the valve in said outlet is opened to release said weight and permit it to descend.

6. The combination in a liquid-meter, of a valve-casing having an intake and an outlet-pipe, a valve controlling the flow of liquid through said casing from the intake and into the outlet-pipe, a valve in said outlet-pipe, means for closing the first-mentioned valve, said closing means being inoperative as long as the valve in the outlet-pipe is closed, and means for releasing said closing means when the valve in the outlet-pipe is opened.

818,018. **PROCESS OF OPERATING CEMENT-KILNS.** Henry L. Doherty, Madison, Wis. Filed Jan. 4, 1906. Serial No. 294,664.



Claim.—1. The process of operating continuous cement-kilns which consists in admixing with the stream of pulverulent material passing therethrough a modicum of preformed clinker.

2. The process of operating rotary cement-kilns which consists in admixing with the stream of pulverulent material passing therethrough a modicum of preformed clinker.

3. The process of operating rotary cement-kilns which consists in admixing with the stream of pulverulent material passing therethrough a modicum of hot preformed clinker.

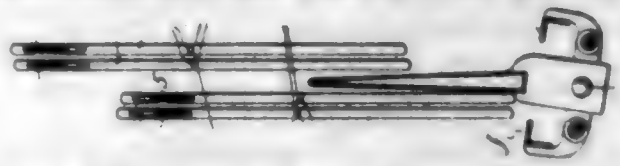
4. The process of operating continuous cement-kilns which consists in diverting a portion of the stream of finished material flowing therefrom and returning it to and admixing with the inflowing stream of raw cement-making materials.

5. The process of operating rotary cement-kilns which consists in diverting a portion of the stream of finished material flowing therefrom, and returning it to and admixing with the inflowing stream of raw cement-making materials.

6. The process of operating continuous cement-kilns which consists in abstracting five to twenty-five per cent. of the finished material delivered and returning it to and admixing with the inflowing stream of raw cement-making materials.

7. The process of operating rotary cement-kilns which consists in abstracting five to twenty-five per cent. of the finished material delivered, and returning it to and admixing with the inflowing stream of raw cement-making materials.

818,019. **SHEDDING MECHANISM FOR LOOMS.** Clark H. Draper, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed July 17, 1905. Serial No. 269,930.



Claim.—1. In a loom, reciprocating harness-frames each provided with a plurality of parallel series of detector-heddles having limited longitudinal movement relative to their frames, and means to position the heddles of a frame to bring the warp-threads controlled thereby into alinement in a plane of the shed.

2. In a loom, reciprocating harness-frames each provided with a plurality of parallel cross-bars, and a series of longitudinally-slotted detector-heddles mounted on each cross-bar of a frame, said cross-bars being constructed and arranged to position the several series of heddles on a frame to bring the warp-threads controlled thereby into alinement in either plane of the shed.

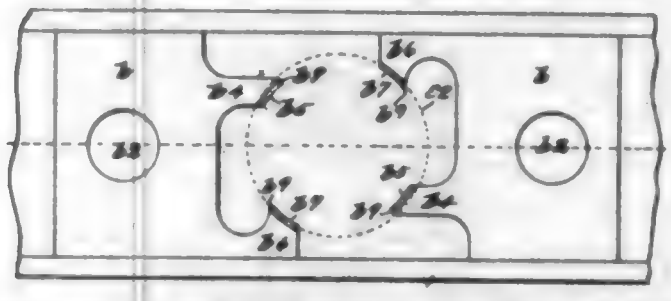
3. In a loom, reciprocating harness-frames each provided with a plurality of parallel series of warp stop-motion-controlling heddles, and means to raise the rear series of a frame higher, and depress the

same lower, than the front series, to thereby cause the warp-threads controlled by both series to be alined when the shed is opened.

4. In a loom, reciprocating harness-frames each provided with two parallel cross-bars, and a series of longitudinally-slotted detector-heddles suspended from each cross-bar and having limited longitudinal movement relative thereto, the rear cross-bar extending higher and lower than the front cross-bar, to lift its series of heddles higher and depress them lower than the series on the front cross-bar, to thereby aline the warp-threads of both series in both planes of the shed.

5. In a loom, reciprocating harness-frames each provided with two series of detector-heddles, each heddle coöperating with a warp-thread, and means to effect a different vertical movement of the two series of heddles, to thereby cause the warp-threads of both series to be alined in the planes of the shed when the latter is opened.

818,020. THREAD-CUTTING DIE AND PROCESS FOR MAKING THE SAME. JOHN ELDER, Corona, N. Y. Filed Oct. 21, 1902. Serial No. 128,108.



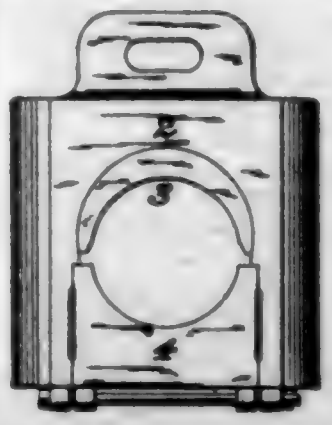
Claim.—1. The process of making a thread-cutting implement which consists in setting the blank die at one angle to a given tangent of the circle of the die-cutting tap, then cutting the teeth on a circle of the same diameter as the work to be cut and then setting said die in operative position in the stock at a different angle to the like tangent of the working circle of the die by tilting it on a point eccentric to the arc of its threads, substantially as and for the purpose set forth.

2. A screw-thread-cutting die having cutting-teeth and following teeth cut upon the same circle, the said cutting-teeth extending when the die is in operative position farther toward the center of the working circle than the following teeth, substantially as described.

3. A screw-thread-cutting die having cutting and following teeth cut upon the same circle, the cutting-teeth, when the die is in operative position extending farther toward the center of the working circle than the following teeth and the cutting edge of the said cutting-teeth extending farther toward the center of the working circle than the remainder of the said teeth, substantially as described.

4. A screw-thread-cutting die having a plurality of thread-cutting teeth and a following tooth for each thread-cutting tooth, all of said teeth being cut on the same circle, the said cutting-teeth, when in operative position, extending farther toward the center of the working circle than the following teeth, substantially as described.

818,021. AXLE-BOX LUBRICATOR. ALBERT G. ELVIN, Franklin, Pa. Filed July 6, 1905. Serial No. 268,585.



Claim.—1. In an axle-lubricator, the combination of an oil-cellar, a float fitted to traverse vertically in the cellar, and an indicator-rod connected to said float and adapted to project below the bottom of the cellar when the float stands at or below a determined level therein.

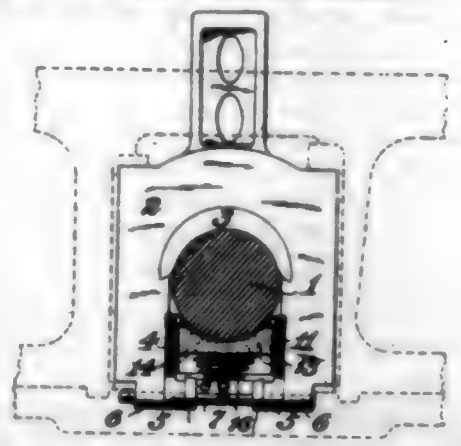
2. In an axle-lubricator, the combination of an oil-cellar, a float fitted to traverse vertically in the cellar, an indicator-rod connected to said float, and a vertical passage extending through the bottom of the cellar, through which said indicator-rod passes and from which it projects when the float stands at or below a determined level in the cellar.

3. In an axle-lubricator, the combination of an oil-cellar, an inwardly-curved cap-plate located at the top of said cellar and perforated by wick-slots, wicks engaging said slots and extending therefrom to the lower portion of the cellar, a float fitted to traverse vertically in the cellar, an indicator-rod connected to said float and adapted to project below the bottom of the cellar when the float stands at or below a determined level therein, and means for preventing the wicks from interference with the movements of the float.

4. In an axle-box lubricator, the combination of an oil-cellar, an inwardly-curved cap-plate located at the top of said cellar and perforated by wick-slots, wicks engaging said slots and extending therefrom to the lower portion of the cellar, a float fitted to traverse vertically in the cellar, an indicator-rod connected to said float and adapted to project below the bottom of the cellar when the float stands at or below a determined level therein, and a guard interposed between the float and the adjacent wicks.

5. In an axle-box lubricator, the combination of an oil-cellar, a vertical tube fixed to and extending through the bottom of the cellar, an indicator-rod fitting freely in said tube, and a cup-shaped float fixed to the upper end of the indicator-rod.

818,022. AXLE-BOX LUBRICATOR. ALBERT G. ELVIN, Franklin, Pa. Filed Jan. 26, 1906. Serial No. 298,060.



Claim.—1. In an axle-lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

2. In an axle-lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end and provided with side lugs, an end plate fitting against the outer end of the main cellar and having lateral lugs registering with the lugs of the main cellar, a rod passing through the lugs of the main cellar and end plate, a stud fixed to the main cellar and passing through the end plate, a nut engaging said stud and bearing on the end plate, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

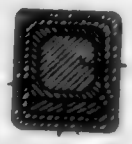
3. In an axle-box lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end, said auxiliary cellar being formed of smooth-surfaced sheet metal and having a perforated top plate curved to fit an axle-journal, a follower-plate fitting freely in the auxiliary cellar, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

4. In an axle-box lubricator, the combination, substantially as set forth, of a main axle-box cellar which is open at its outer or front end, an end plate connected detachably to the outer end of the main cellar, an auxiliary lubricant-cellar located in the main cellar and removable therefrom through its front end and having a perforated top curved to fit an axle-journal, a follower-plate fitting freely in the aux-

iliary cellar and having each of its sides downwardly turned, and a spring interposed between and bearing on the bottom of the main cellar and the lower side of the follower-plate.

5. In an axle-box lubricator, an open-bottomed auxiliary lubricant-cellar of smooth-surfaced sheet metal, having a perforated top curved to fit an axle-journal and side and end walls extending downwardly therefrom and adapted to abut against the walls of a main axle-box cellar, substantially as set forth.

818,023. ROD-PACKING. OLIN J. GARLOCK, Palmyra, N. Y. Filed Oct. 11, 1905. Serial No. 282,337.

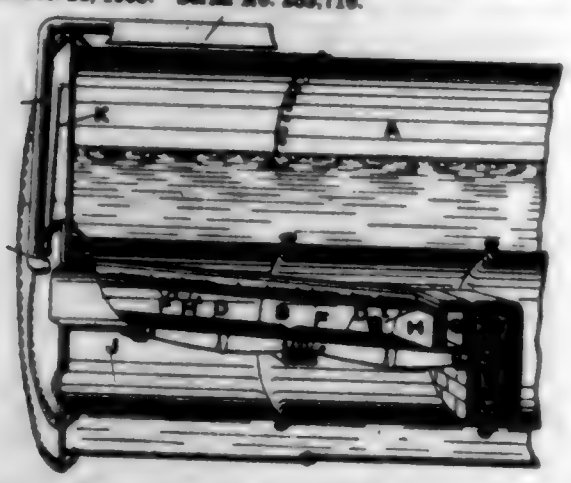


Claim.—1. Packing for piston-rods, consisting of a strand of loose fiber, as abestos, a tubular wrapper of asbestos for said fiber strand, and a strip of non-vulcanizing india-rubber parallel with the fiber strand and in contact with said wrapper, and an outside wrapper for said parts.

2. Packing for piston-rods, consisting of a rope having a center strand of fiber, and a tubular, braided asbestos sheath for said center strand, a flat strip of non-vulcanizing india-rubber cemented to the sheath, and an outside wrapper wound upon and cemented to said sheath and the india-rubber strip.

3. The process of constructing a rope of packing, such as described, consisting in braiding a sheath upon a strand of fiber, keeping said fiber and sheath in a dry state, adding to said sheath a strip of india-rubber with cement between, submitting the body thus formed to lateral pressure, allowing the same to harden under pressure, and applying an outer wrapper to the said compressed body with cemented surfaces, and finally calendering the whole body to give it form approximately rectangular in cross-section.

818,024. SMOKE-CONSUMER. BEN HAIGH, Montreal, Canada. Filed Oct. 21, 1905. Serial No. 283,716.



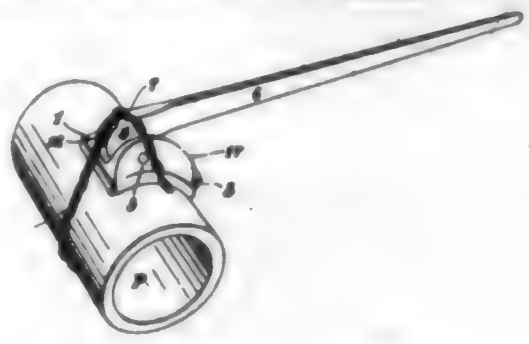
Claim.—1. In combination with a boiler-furnace or the like, a hood located at the top of said boiler, a pipe leading from the hood into the fire-box and passing along the side wall of the same, said pipe provided with apertures opening into the fire-box, and a superheating-chamber connected with said pipe, said chamber communicating with the ash-pit and provided with an aperture leading into the fire-box.

2. A smoke-consumer for furnaces and the like, comprising a hood located at the top of the furnace, a protected superheating-chamber located at the back of the fire-box, a pipe leading from the hood to the superheating-chamber and passing along the side wall of the fire-box, said pipe provided with apertures opening into said fire-box, means for admitting steam or compressed air into said pipe, means of communication between the ash-pit and the superheating-chamber, and means for admitting the contents of the superheating-chamber to the flame of combustion.

818,025. WRENCH. EDWIN A. HARDISON, Bakersfield, Cal. Filed June 19, 1905. Serial No. 265,363.

Claim.—1. The combination of a shoe, having a pipe-engaging face extending substantially the entire length thereof, a band fastened at one end to the shoe, a lever pivoted to the shoe and provided with a catch for the band, and a spring between the shoe and the lever for holding the band tight.

2. In combination, a shoe adapted near each end thereof to contact with a pipe, a lever of the first order pivoted to said shoe, a band fastened to the shoe, means for fastening said band to said lever, and a spring between the shoe and the lever, said spring pressing against the lever between its fulcrum and the resistance.



818,026. DUST DEFLECTOR AND CATCHER FOR RADIATORS. ROLLIN HAWKINS, Indianapolis, Ind. Filed Feb. 7, 1905. Serial No. 244,610.



Claim.—1. In a dust-catcher for radiators, an upwardly and forwardly sloping hood having an under-side dust-catching pocket along its front edge, and an apron hinged to the rear of said hood, said apron being adjustable at its lower edge to or from the radiator.

2. In a dust-catcher for radiators, a forwardly and upwardly curved hood supported above the radiator, an apron hinged to the rear edge of the hood and adjustable at its free edge to and from the radiator, and means for holding a given adjustment of the hood.

3. In a dust-catcher for radiators, an upwardly and forwardly sloping hood supported above the radiator, said hood having an under-side pocket along its front edge with an overhanging rear flange, an apron hinged at its upper edge to the rear edge of the hood, slots in the end plates of the hood concentric with the hinge, and bolts from the apron entering said slots, and nuts on the threaded ends of the bolts by tightening which a given adjustment of the apron with relation to the hood may be held.

4. In a dust-catcher for radiators, the combination with the radiator of a holding-plate having a head with a vertically-extended flange, a hood having under-side notched holders to engage said flanges of the head by being slipped down from above thereon.

5. In a dust-catcher for radiators, a radiator, holding-plates removably secured thereto, said plates having a head resting upon the coils of the radiator, said head having vertically-grooved flanges, a hood adapted to be supported above the radiator, said hood having under-side slotted holders to receive the flanges of said head in the slots of the holders, said slots having inwardly-projected lugs to enter the grooves of the flanges.

6. In a dust-catcher for radiators, a radiator formed of a plurality of parallel coils, a holding-plate, a bolt passing between the coils and through the holding-plate to fasten the latter to the radiator, said holding-plate having a head resting upon a pair of coils, said head having a vertically-grooved flange, a hood above the radiator, said hood having downwardly-projected slotted holders to receive the flanges of the heads in the slots of the holders, said slots having inside lugs which enter the grooves of the flanges.

7. In a dust-catcher for radiators, a radiator, a hood above the radiator and supported by the radiator, said hood sloping upwardly and forwardly and having an under-side dust-pocket along its front edge with an inwardly-projecting rear flange, an apron hinged at its upper edge to the back of the hood, and adjustable at its lower edge to and from the radiator, and a false non-heat-conducting wall at the back of the radiator in the path of the adjustable apron.

8. In a dust-collector for radiators, a radiator, a hood supported above and by the radiator, an adjustable apron hinged to the rear of

the hood, and a false wall at the back of the radiator in the path of the adjustable hood, said false wall comprising a vertical plate, and a vertically-corrugated plate between the first-named plate and the radiator.

9. In a dust-collector for radiators, a radiator, a hood supported above and by said radiator, said hood being sloped upwardly and forwardly and having a collecting-pocket under its front edge, an apron hinged to the back of the hood and adjustable at its lower edge, a false wall at the back of the radiator terminating in the path of adjustable apron, said false wall comprising a vertical plate which rests upon the floor, a corrugated plate between the first plate and the radiator, and horizontal bars between said two plates, the said first plate being perforated below the corrugated plate which latter does not extend to the floor.

10. In a dust-catcher for radiators, a radiator, a hood supported above and by said radiator, an adjustable apron hinged to the back of the hood, a false wall back of the radiator terminating in the range of the adjustable apron, said false wall comprising a plate which rests upon the floor, a second corrugated plate between the first plate and the radiator which terminates above the floor, bars between the two plates, the first plate having perforations below the corrugated plate, and metal straps bolted to the radiator and bent up and over the top of the false wall and down against the back thereof.

11. In a dust-catcher for radiators, a hood and an apron hinged to the hood and adjustable about said hinge.

12. In a dust-catcher for radiators, a hood and an apron hinged to the hood and adjustable about said hinge and means for holding a given adjustment of the hood.

13. In a dust-catcher for radiators, a hood, an apron hinged to said hood and plates also hinged to the hood but eccentrically of the apron-hinge, and means for connecting the plates and apron whereby they will be automatically adjustable with relation to each other.

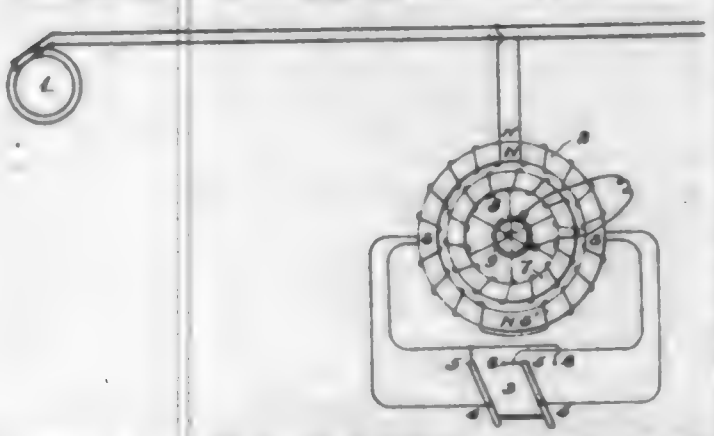
14. An attachment for radiators, comprising a hood adapted to be supported over a radiator, and a skirt extending downward from one side of the hood, the lower portion of said skirt being laterally adjustable.

15. An attachment for radiators, comprising a hood adapted to be supported over a radiator and provided with a dust-catcher, and a skirt extending downward from one side of the hood, the lower portion of said skirt being laterally adjustable.

16. In a dust-catcher, the combination with a radiator and a hood, of a member supported on top of the radiator, means depending from the member for attaching it to the radiator and means above the member for attaching the hood to the member.

17. In a dust-catcher, the combination with a radiator and a hood, of a member supported by a plurality of the radiator-coils, means depending from the member for attaching it to the radiator and adjustable means above the member for attaching the hood to the member.

818,027. **INDUCTION-MOTOR.** Dugald C. Jackson, Chicago, Ill. Filed Mar. 8, 1900. Renewed Apr. 11, 1904. Serial No. 202,670.



Claim.—1. The herein-described method of operating an induction-motor, provided with an armature having a progressive winding, a commutator, and auxiliary conductors for short-circuiting conductors of the armature-winding, which consists in establishing a field by a single-phase alternating current, subjecting the progressive armature-winding to the influence of the said single-phase alternating field, inducing currents in the said armature-winding and passing the same in progression through the coils of the armature-winding, the commutator and brushes, whereby the motor is started, changing the number of poles of the field to which the armature is subjected, and conveying current between the coils of the armature that are subject to unlike poles of the field through the said auxiliary conductors for normally operating said motor.

2. The herein-described method of operating an induction-motor provided with an armature having a progressive winding and having interconnections thereon for short-circuiting coils thereof and a commutator, which consists in subjecting the same to a field having a plurality of magnetic poles, inducing currents in the said armature-winding and passing the same through the said armature-winding in progression, whereby the said motor is started, then subjecting the same to a field with a different number of magnetic poles, inducing currents in the said progressive armature-winding and conveying the same through the said short-circuiting conductors for normally operating said motors.

3. The herein-described method of operating an induction-motor provided with an armature having a progressive winding, a commutator and auxiliary conductors for electrically connecting different portions of the armature-windings, which consists in subjecting the armature to an alternating field, inducing current in the progressive armature-winding and passing the same in progression through the coils of the armature by way of the commutator and brushes, changing the number of poles of the field to which the armature is subjected, inducing currents in the said armature, and conveying the same between the coils of the said armature that are subject to unlike poles of the field through the said auxiliary conductors.

4. The herein-described method of operating an induction-motor provided with an armature having a progressive winding having interconnections thereon for short-circuiting coils thereof and a commutator, which consists in establishing a field by a single-phase alternating current, subjecting the armature to the influence of said field so that portions of the armature electrically connected by means of the auxiliary conductors are normally under the influence of poles of like sign, conveying current through the said armature-conductors by way of the commutator and brushes for starting said motor, changing the number of poles of the field to which the armature is subjected, and conveying current between the coils of the armature that are subject to unlike poles of the field through the said auxiliary conductors for normally operating said motor.

5. The herein-described method of operating an induction-motor provided with an armature having a winding and auxiliary conductors for electrically connecting portions of the armature-windings, which consists in establishing a field by a single-phase alternating current, subjecting the armature thereto, and creating in the said armature at portions thereof which are electrically connected by means of the auxiliary conductors magnetic fields of substantially like magnetic potential, inducing current in the armature-winding and passing the same through the coils thereof by way of the commutator and brushes for starting the motor, changing the number of poles of the field to which the armature is subjected, and conveying current between coils of the armature that are subject to unlike poles of the field through the said auxiliary conductors.

6. The herein-described method of operating an alternating current dynamo-electric machine provided with an armature having a reëntrant progressive winding and a commutator associated with said winding, which consists in establishing a field by a single-phase alternating current to start the motor, changing the number of poles of the field after the motor is started, and completing the circuit through each spire of said progressive winding through an additional conductor of resistance-wire.

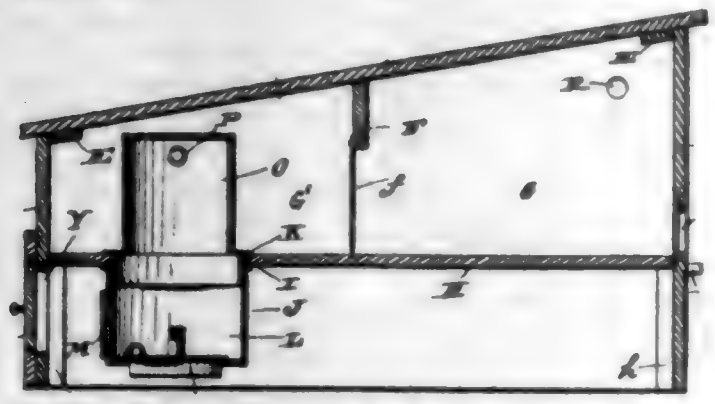
7. The herein-described method of operating an alternating-current dynamo-electric machine provided with an armature having a reëntrant progressive winding and a commutator associated with said winding, which consists in establishing a single-phase alternating-current field having a certain number of poles for starting the motor, changing the number of poles of the field after the motor is started, and providing additional conductors of resistance-wire for forming conducting-paths between successive commutator-segments of said commutator.

818,028. **BROODER.** Walter V. Jacobs, West Salem, Ohio. Filed May 10, 1905. Serial No. 259,714.

Claim.—1. In combination with a brooder having inclosing walls, a heating-drum seated on the floor thereof, pipes leading from said drum toward the inclosing walls, and caps slidably mounted in the inclosing walls adapted to receive the free ends of said pipes and provided with outlet-openings, substantially as shown and described.

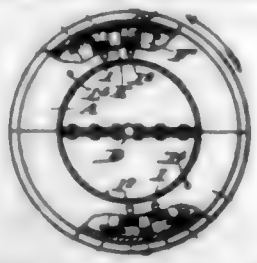
2. In a brooder comprising inclosing walls, a floor secured to said walls so as to leave a space above and below the same, a heating-drum secured in said floor and extending above and below the same, pipes leading from said drum toward the inclosing walls, caps slidably mounted in said walls and adapted to receive the free ends of said pipes, said caps being provided with lateral outlet-openings,

and a flexible partition suitably suspended and dividing the chamber above the floor into two compartments, substantially as shown and described.



3. A brooder comprising a front wall, a rear wall of less height than the front wall, and side walls having their top edges slanting from the top edge of the front wall, to the top edge of the rear wall, brackets secured to the said walls, the floor mounted on said brackets and having a hole therein, the heating-drum seated on said hole, pipes extending laterally from said drum, caps slidably mounted in the side walls to receive the free ends of the said pipes and having outlet-openings therein, said side walls also provided with ventilating-openings and vertical grooves, a transverse beam mounted in said grooves, a curtain secured to said beam and extending to the floor aforesaid, a roof removably mounted on said walls and beam and transverse cleats on said roof to seat inside of said front and rear walls, substantially as shown and described.

818,029. TRAILING CYLINDER-HEAD ROTARY ENGINE. Homer A. King, Colton, Cal. Filed Nov. 7, 1905. Serial No. 286,309.



Claim.—1. In a rotary engine, the annular cylinder composed of parts A, B and B' having ports I, I, and exhausts H, H, as its only openings in combination with the disk-band K completing the cylinder.

2. In combination with the annular cylinder of a rotary engine, the mechanism, L' L', L^2, L, and ports I I, for the purpose set forth.

3. In a rotary engine, the annular cylinder composed of parts A, B and B' having ports I, I, I^3, I^3, and exhausts H, H, H, H, as its only openings in combination with the disk-band K completing the cylinder.

4. The motive-fluid chest G', inclosed by the outer casing on one side of the annular cylinder of a rotary engine, in combination with mechanism, L, L^2, L' L', and ports, I I.

5. In a rotary engine, the mechanism, L^2, L', L', L^2, and L, in combination with ports, I I, I^3 I^3, pistons B, trailing cylinder-heads, F, and F', for the purpose set forth.

6. Within the casing on one side of a rotary engine, the motive-fluid chest G', in combination with mechanism, L, L^2, L' L', L^2, and ports, I I, and I^3 I^3.

7. In a rotary engine, the bolts F^3, bolt-heads X, and coiled-wire springs S', in combination with trailing cylinder-heads, F, and F', for the purpose set forth.

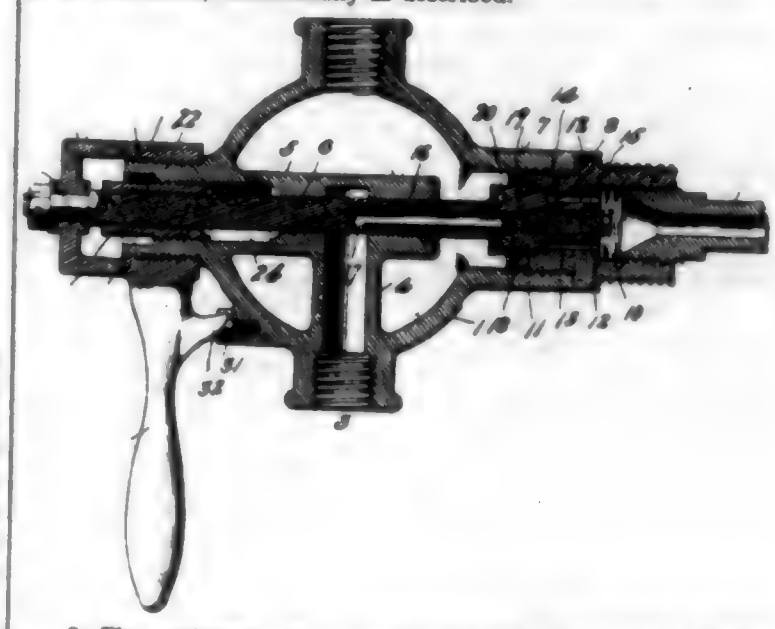
8. In a rotary engine, the guards Z, coiled-wire springs S, bolts F^3, in combination with trailing cylinder-heads, F, and F', for the purpose set forth.

9. One or more pistons with a trailing cylinder-head on each side of each piston, within an annular cylinder of a rotary engine, connected to a disk and shaft revolved by the pressure of a motive fluid.

818,030. OIL-BURNER. Robert G. Kirkwood, Pittsburg, Pa. Filed Feb. 23, 1905. Serial No. 246,960.

Claim.—1. The combination with a casing having a valve-head and a valve-seat surrounding said head, of a movable hollow stem having a valve-seat and valve-head to fit said complementary members, and means for operating said movable stem.

2. The combination of a casing having a stationary valve-head and valve-seat surrounding said head, a hollow movable stem having a valve-seat and valve-head complementary thereto, an operating-lever, a nozzle connected with said valves, and a second nozzle having means to regulate the flow of air to the burner, all combined in an oil-burner, substantially as described.



3. The combination in a valve device of a hollow casting having a plurality of inlets, a hollow movable stem therein formed with a valve-seat and communicating with one of the inlets, a sleeve secured in the casting, a projection from said sleeve adapted to fit said valve-seat, a valve-seat in said sleeve, a valve-head on said stem adapted to fit said valve-seat, and means for operating said movable valve-stem to simultaneously open or close said valves.

4. In a valve device the combination with a hollow casting having a plurality of inlets of a movable hollow stem formed with a valve-seat and communicating with one of said inlets, a sleeve with a valve-seat secured in the casting, a screw-plug in said sleeve adapted to fit said valve-seat in the stem, a head on the stem to fit the sleeve valve-seat, and means for operating the movable valve-stem.

5. A casting having a plurality of inlets, a hollow movable stem formed with a valve-seat, a sleeve in the casting having a projection adapted to fit said seat, and a valve-seat surrounding said projection, a valve-head on the stem adapted to fit the sleeve valve-seat, a chamber formed in the sleeve, passages connecting said chamber and adjacent valve-seat, and an operating-lever.

6. In a valve a hollow casting having a plurality of inlets, an integral guide-sleeve within said casting inclosing a hollow movable stem, a valve-head and valve-seat on said stem, an integral hollow arm in the casting connecting the hollow stem with one of the inlets, a fixed valve member in the casing adapted to fit said seat surrounding said valve member, and a valve-seat adapted to receive said valve-head.

7. A valve-casing having a plurality of inlets, a movable hollow stem communicating with one of said inlets having a valve-head and valve-seat, a valve-seat and valve-head in the casing adapted to fit said valve-head and seat on the stem said valve-seat surrounding the valve-head in the casing, and means for operating said stem.

8. A valve-casing having a plurality of inlets, a movable hollow stem communicating with one of said inlets having a valve-head and valve-seat, a sleeve secured in said casing having a valve-seat and valve-head adapted to fit said valve head and seat, and means for operating said stem.

9. A valve-casing having a plurality of inlets, a hollow movable stem having a valve-head and valve-seat, a branch pipe connecting one of said inlets with the hollow stem, a sleeve secured in the casing having a valve-head and valve-seat to receive said stem valve seat and head, a chamber at one end of said sleeve, and passages connecting said chamber with the valve-seat therein.

10. A valve-casing having a plurality of inlets, a hollow movable stem having a valve-head and valve-seat at one end and an operating-lever at the other, a valve-seat and valve-head in the casing to receive said valve head and seat, said lever being movable to operate the valve-stem.

11. A valve-casing having a plurality of inlets, a hollow, movable stem having a valve-head and valve-seat at one end, a valve-seat and valve-head in the casing to receive said valve head and seat, and a lever connected to said stem having bearing on the casing.

12. In an oil-burner, the combination of a valve-casing having a plurality of inlets, a hollow movable stem having a valve-head and valve-seat at one end, a sleeve in the casing having a valve-seat and

valve-head to receive said valve head and seat, a nozzle in the sleeve, and means for operating said valve-stem and thereby simultaneously control said valves.

13. In an oil-burner the combination of a valve-casing having a plurality of inlets, a hollow movable stem having a valve head and seat at one end, a sleeve having a valve-seat and valve-head adapted to receive said stem valve head and seat, a chamber formed in the sleeve having communication with the valve-seat in the sleeve, and a nozzle connected to said chamber.

14. In an oil-burner the combination of a valve-casing having a plurality of inlets, a hollow movable stem having an air-valve head and an oil-valve seat at one end, a sleeve in the casing having a valve-seat and a valve-stem head to receive said head and seat, a chamber in the sleeve and a perforated partition between said chamber and valve-seat, and a nozzle connected in said chamber.

15. In an oil-burner the combination of a casing having a plurality of inlets, a movable hollow stem therein having an air-valve head and an oil-valve seat at one end, a sleeve in the casing having a valve-seat and a valve-head to receive said stem-head and seat, a branch pipe within the casing connecting the oil-inlet and hollow valve-stem, a nozzle in the sleeve, and a lever connected to said stem.

16. In an oil-burner the combination with a casing having a valve and valve-seat therein, a nozzle connected to said casing, of a hollow stem having a valve-head and valve-seat thereon, and a lever connected to said stem for moving the same whereby said valves are regulated proportionately.

17. The combination in an oil-burner of a casing having a plurality of valves therein, a nozzle connected with said valves, a movable valve-stem, a lever having a threaded sleeve portion engaging said casing, and an extension on said sleeve forming a bearing for said stem, whereby the valves are operated by said lever.

18. The combination with a casing having a valve-seat and valve-head formed therein, a stem having a valve-head and valve-seat complementary thereto, and a lever connected to said stem for moving the same.

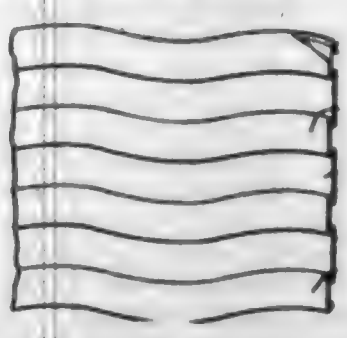
19. The combination with a casing having a valve-seat and valve-head therein, a stem having a valve-head and valve-seat, a lever having a threaded portion engaging the casing, and an extension on the lever forming a bearing for said stem, whereby the valves are operated simultaneously.

20. The combination in an oil-burner, of a casing having a valve-head and a valve-seat surrounding said head and both members fixed therein; a nozzle adjacent said head and seat; a hollow movable stem provided with a valve-seat and valve-head; and a second nozzle having means therein for regulating the draft therethrough.

21. The combination of a casing having an oil-valve head and an air-valve seat surrounding said head, and a nozzle, means for introducing oil and air therethrough under pressure; a movable hollow stem having an oil-valve seat and an air-valve head thereon and operating means therefor; and a second nozzle inclosing the first or casing nozzle having a lower pressure therethrough, and means for regulating said pressure.

22. The combination in an oil-burner of a casing having a valve-head and a valve-seat surrounding said head, a nozzle, and means for introducing oil and air therethrough under pressure; a movable hollow stem with a valve-seat and valve-head thereon, and a second nozzle having a gate-valve therein to regulate the flow of air under pressure.

818,031. **PRESSED BELTING.** ALEXANDER KERLIK, New York, N. Y., assignor to Simon Gutman and Joseph Jacobs, New York, N. Y. Filed Nov. 15, 1905. Serial No. 287,416.



Claim.—1. As an article of manufacture, a band of pliable material provided with box-plaited portions extending longitudinally in an undulatory form.

2. As an article of manufacture, a band or strip of pliable material provided with symmetrically-arranged plaited portions extending longitudinally in an undulatory form, and having the marginal edges extending in undulatory lines disposed symmetrical with the lines of the plaits.

3. As an article of manufacture, a band or strip composed of superposed layers of fabric stitched together along the marginal edges and provided with plaited portions extending longitudinally in an undulatory form, and having the marginal edges extending in undulatory lines.

4. As an article of manufacture, a band or strip composed of superposed layers of fabric secured together along their marginal edges and provided with box-plaited portions extending longitudinally in an undulatory form, the marginal edges of the band extending in undulatory lines.

818,032. **INCANDESCENT GAS-MANTLE.** MARTIN KOBLENZER, Vienna, Austria-Hungary, assignor to Welsbach Light Company, Gloucester City, N. J., a Corporation of New Jersey. Filed Apr. 20, 1905. Serial No. 256,069.



Claim.—1. The combination of an inverted incandescent gas-mantle and a surrounding cage out of contact with the mantle to protect the same, substantially as described.

2. The combination of an inverted gas-mantle directly attached to a holder therefor and a surrounding cage also attached to said holder and out of contact with the mantle, substantially as described.

3. The combination of an inverted incandescent gas-mantle mounted on a holder therefor and a cage surrounding the mantle, but out of contact therewith, substantially as described.

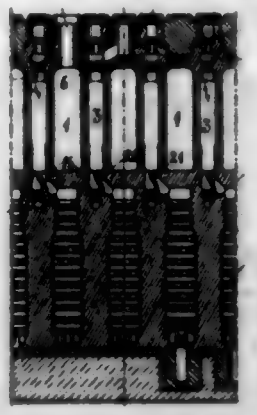
4. The combination of an inverted incandescent gas-mantle and a cage of refractory material surrounding and out of contact with the mantle for protecting the same, substantially as described.

5. The combination of an inverted incandescent gas-mantle and a cage of refractory material surrounding the same, said cage comprising a series of filaments united at a common point, and a ring to which said filaments are attached, said cage being out of contact with the mantle; substantially as described.

6. The combination of an inverted incandescent gas-mantle, a holder therefor comprising two concentric connected annuli, and a cage of refractory material surrounding said mantle and connected to said holder; substantially as described.

7. The combination of an inverted incandescent gas-mantle, a holder therefor comprising an annular base and a second annulus connected to said base, and a cage of refractory material surrounding the mantle, said cage comprising a series of centrally-connected filaments, a ring secured thereto, and hooked extensions on certain of said filaments engaging the annular base; substantially as described.

818,033. **GAS-FURNACE OR COKE-OVEN.** HEINRICH KOPPERS, Essen-on-the-Ruhr, Germany. Filed Feb. 7, 1905. Serial No. 244,563.



Claim.—1. In a coke-oven, a series of heating-chambers, and coking-chambers intermediate the heating-chambers, combined with a series of regenerators below and parallel to the heating-chambers and communicating directly therewith, substantially as specified.

2. A coke-oven provided with coking-chambers, heating-chambers intermediate the coking-chambers, and a series of alternating gas-regenerators and air-regenerators arranged below and communicating with the heating-chambers, substantially as specified.

3. A coke-oven provided with parallel coking-chambers, a series of heating-chambers intermediate each pair of coking-chambers, and alternating gas-regenerators and air-regenerators arranged below and communicating with the heating-chambers, substantially as specified.

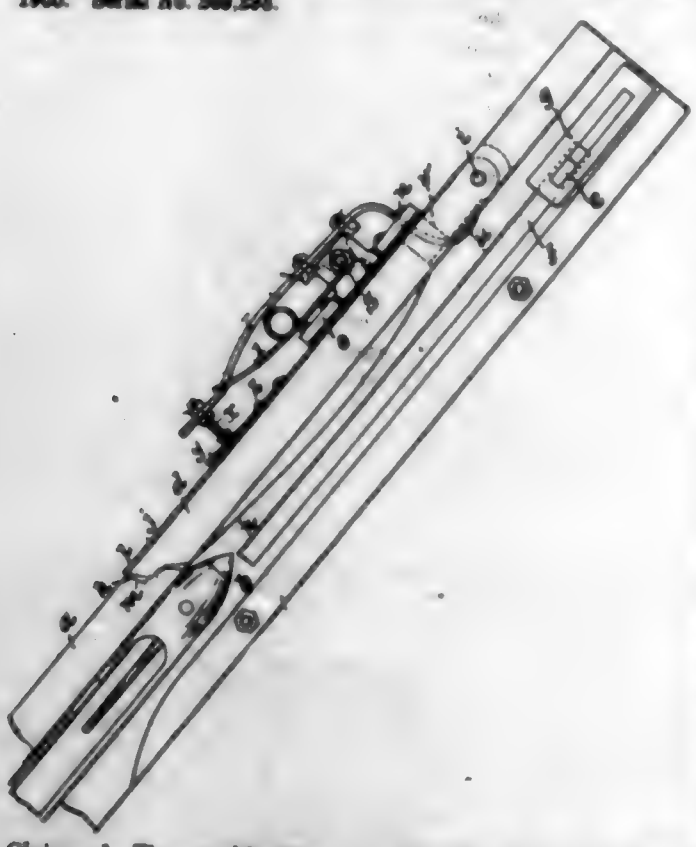
4. A coke-oven provided with parallel coking-chambers, heating-chambers intermediate the coking-chambers, two sets of alternating gas-regenerators and air-regenerators arranged below and communicating with the heating-chambers, a gas-pipe, means for controlling communication between the gas-regenerators and the gas-pipe, an air-passage for each set of air-regenerators, and means for controlling communication between each air-passage and the air-regenerators, substantially as specified.

5. A coke-oven provided with coking-chambers, two sets of heating-chambers intermediate the coking-chambers, two sets of regenerators communicating with the heating-chambers and arranged below the coking-chambers, and a partition between the regenerators, substantially as specified.

6. A coke-oven provided with coking-chambers having parallel heating-walls, heating-chambers between said walls, regenerators communicating with the heating-chambers, a partition and an arched passage between the regenerators and arranged transversely to the heating-walls, passages communicating with the regenerators, dampers between the passages and regenerators, a flue, means for connecting the passages either to the flue or to the open air, a gas-main inclosed in the arched passage, and valve-controlled means for admitting gas to the regenerators, substantially as specified.

7. A coke-oven provided with coking-chambers having parallel heating-walls, heating-chambers between said walls and having top openings, horizontal channels that increase in area from the ends toward the center and communicate through said openings with the heating-chambers, and dampers controlling said openings, substantially as specified.

818,034. **SHUTTLE-CHECK FOR LOOMS.** JEAN LAFORET, Stolle, France, assignor to Albert B. Strange, Paterson, N. J. Filed July 12, 1905. Serial No. 269,293.

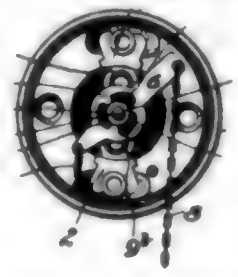


Claim.—1. The combination of a shuttle-box and a shuttle-check comprising a primary lever, a secondary lever fulcrumed in said box, said primary lever having one end engageable by the shuttle and said secondary lever being fulcrumed between its ends, having one end opposite the shuttle-engaging end of said primary lever, and having its other end projecting into the path of movement of the shuttle, and an elastic device interposed between the secondary lever and the shuttle-engaging end of the primary lever, substantially as described.

2. The combination of a shuttle-box and a shuttle-check comprising a primary lever and a secondary lever fulcrumed in said box, said primary lever having one end engageable by the shuttle and said secondary lever being fulcrumed between its ends, having one end engageable with the shuttle-engaging end of said primary lever and having the other end thereof projecting into the path of movement of the shuttle, said secondary lever comprising an adjustable device forming the part directly engageable with the primary lever, substantially as described.

3. The combination of a shuttle-box and a shuttle-check comprising a primary lever, a secondary lever fulcrumed in said box, said primary lever having one end engageable by the shuttle and said secondary lever being fulcrumed between its ends, having one end engaging the shuttle-engaging end of said primary lever, and having its other end projecting into the path of movement of the shuttle, and a spring pressing the secondary lever against the primary lever, substantially as described.

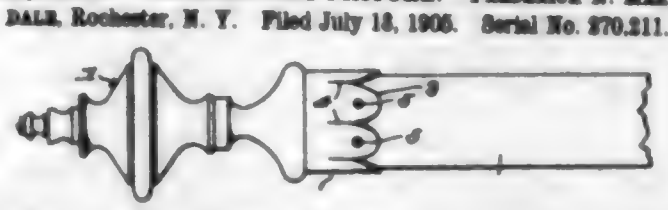
818,035. **ELECTRIC SWITCH.** HENRY E. LEPPERT, New Britain, Conn., assignor to The Hart Manufacturing Company, Hartford, Conn., a Corporation of New Jersey. Filed Apr. 24, 1905. Serial No. 257,127.



Claim.—1. In a snap-switch, a central arbor, a contact device arranged to be operated thereby, an operating device mounted on said arbor, and free to revolve thereon in one direction, and means for engaging said operating device with said arbor when the former is rotated in an opposite direction, said means comprising an independently-moving part arranged between said arbor and the wall of said operating device, said wall being shaped to form a wedge-shaped space for said independently-moving part.

2. In a snap-switch, a central rotatable arbor, a contact device carried thereby, an operating device mounted on said arbor and free to revolve thereon in one direction, and means for engaging said operating device with said arbor when the former is rotated in an opposite direction, said means including a hub, an externally-arranged sleeve-like member outstanding said hub, and an independently-moving part arranged between said arbor and said sleeve-like member and arranged to interlock said sleeve-like member and said arbor when the former is moved in one direction relatively thereto, and a spring for normally pressing said interlocking device toward the interlocking position.

818,036. **CURTAIN-POLE FIXTURE.** FREDERICK H. MARTINDALE, Rochester, N. Y. Filed July 18, 1905. Serial No. 270,211.



Claim.—As a new article of manufacture, a head or knob for curtain-poles having a cylindrical pole-socket projecting therefrom of like cross-diameter throughout its entire length and incised longitudinally to form a plurality of resilient clamping elements each of which is provided with an inward-projecting tooth or prong formed of the metal of the element.

818,037. **STARTING MECHANISM FOR PNEUMATIC TOOLS.** ROBERT T. MICHLS, Philadelphia, Pa., assignor to Ridgely and Johnson Tool Company, a Corporation of Illinois. Filed Sept. 6, 1901. Serial No. 74,589.

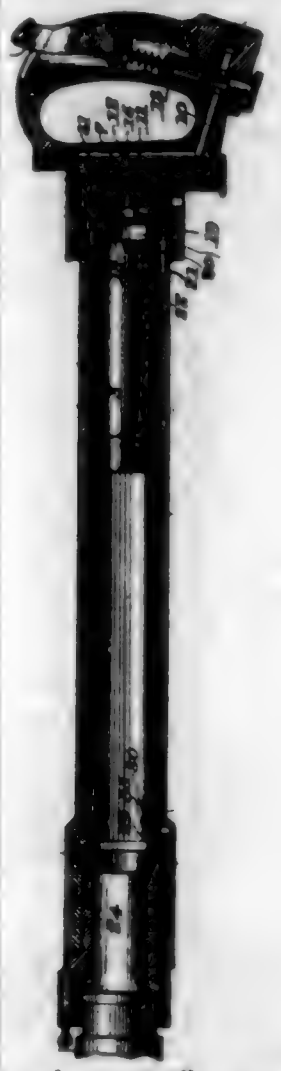
Claim.—1. In a pneumatic tool, a cylinder having exhaust-ports, a piston therein, a normally open stop-valve contained in said cylinder, and means for closing said stop-valve, and starting said piston when the working tool is pressed to the work.

2. In a pneumatic tool, a cylinder having exhaust-ports, a piston therein, a plurality of normally open stop-valves contained in said cylinder, and means for closing said valves and effecting the starting of said piston, when the working tool is pressed to the work.

3. In a pneumatic tool, a cylinder having exhaust-ports, a plurality of normally open stop-valves and means, operated by pressing the shank of the working tool inwardly, for closing said valves and starting the tool.

4. In a pneumatic tool, a cylinder, a piston therein, stop-valve-

controlled ports normally open located at each end of said cylinder and leading to the atmosphere, and means for closing said ports and effecting the starting of said piston when the tool is pressed against the work.



5. In a pneumatic tool, a normally open stop-valve located within the cylindrical body of the tool and closed by the act of pressing the tool to its work, whereby the live motive fluid is prevented from escaping from said body.

6. In a pneumatic tool, the combination of a manually-operated throttle-valve controlling the initial admission of motive fluid to the tool, a supplemental normally open valve intermediate the first-mentioned valve and the working parts of the tool and means interposed between said supplemental valve and the working tool for closing said valve by the act of pressing the tool to its work.

7. In a pneumatic tool having a grasping-handle secured to its rear end, the combination of a manually-operated throttle-valve located in said handle for controlling the initial admission of motive fluid to the tool and a supplemental normally open stop-valve located within the body of the tool and operated by the act of pressing the tool to its work, for controlling the operation of the tool after motive fluid has been admitted thereto by the opening of said manually-operated valve.

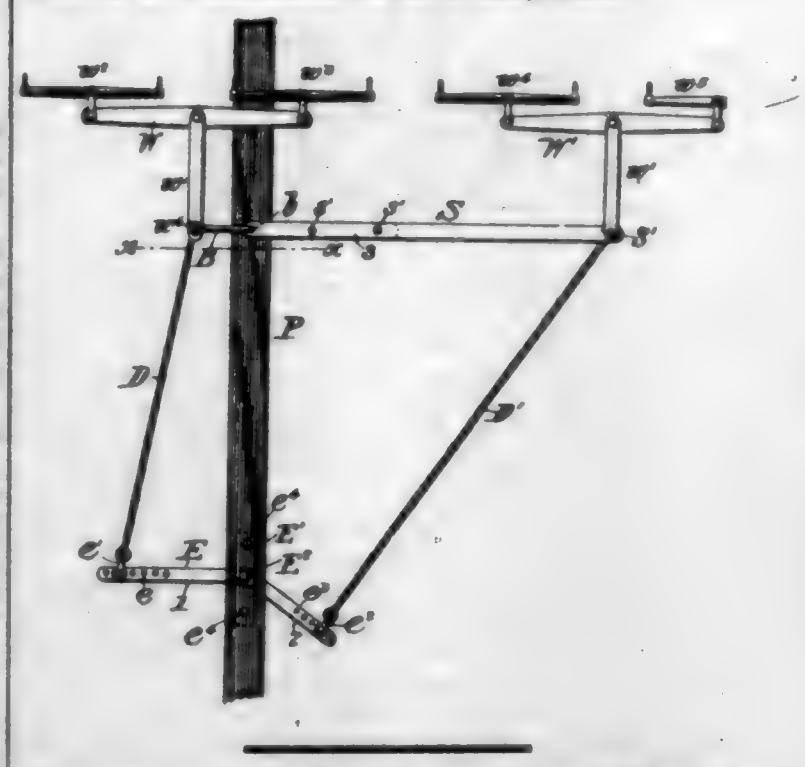
8. In a pneumatic tool provided with a grasping-handle at its rear end, the combination of a manually-operated throttle-valve located in said handle for controlling the initial admission of motive fluid to the tool and a supplemental normally open stop-valve located within the body of the tool and adapted to be closed by the act of pressing the tool to its work, whereby the live motive fluid is prevented from escaping from the working parts of the tool.

9. In a pneumatic tool, the combination with the cylinder or body having a bore at its front end for the reception of the shank of the working tool and a working tool having its shank inserted in said bore, of a normally open stop-valve for preventing the escape of the live motive fluid from the cylinder of the tool and means intermediate said valve and the shank of said working tool whereby the full insertion of said shank serves to close said valve.

10. In a pneumatic tool, a cylinder having normally open ports and passages at each end thereof adapted to permit the escape of live motive fluid from either end of the tool, stop-valves controlling said ports and passages and means for operating said valves to close said ports and passages by the act of pressing the tool to its work.

818,088. **DRAFT-EQUALIZER.** RUDOLPH MILLER, Wheaton, Minn. Filed Jan. 18, 1904. Serial No. 189,613.

Claim.—A draft-equalizer comprising in combination the following instrumentalities: a draft-tongue, a bell-crank equalizing-lever having its arms set at an obtuse angle and pivoted on the inside of the tongue at the point of intersection of the arms, the length of said arms being inversely proportional to the distances from the tongue of the lines of draft appertaining to the respective arms, a clevis associated with each arm and a number of holes in each to receive the bolt of the clevis for purposes of adjustment, a link extending forwardly from each clevis, a strap constituting a forward extension of each link, whiffletrees pivotally attached to the forward ends of the straps, a pivotal connection between each strap and link, a bolt through the same forming the pivot, a long transverse brace formed as a flat strap, resting at one end with its flat face on the upper face of the tongue, and extending at substantially right angles therefrom to the pivotal connection between the longer link and its whiffletree-strap, the outer end of the brace being perforated to receive the pivot-bolt of the link and strap, and the brace being itself presented edgewise to the direction of strain, a supplemental strap riveted to the inner end of the brace upon its lower face, and bent down to form a fork embracing the tongue between its bifurcations, a combination bar and bolt having its outer end formed into an eye to receive the pivot-bolt of the short draft-link and its strap, the inner end of the said bar being bent down at right angles to its body and passed through an eye in the flat brace, a pivot-opening in the tongue, and a registering eye in the lower supplemental strap, the projecting end of the bolt being threaded to receive a suitable nut, a supplemental bar with eyes at both ends and bent to serve as a brace against the side of the tongue, being secured between the pivot-bolt of the link and strap at the outer end, and the tongue-bolt on the inner end, all bent and arranged substantially as described, whereby a perfect distribution of stresses is attained, adjustment of opposite drafts may be had to equalize the same, and the whiffletrees and their portions of the direct-draft mechanism will lie upon the upper face of the tongue, while the equalizing-lever is attached upon the lower face thereof, rendering the attachment more secure for heavy strains.



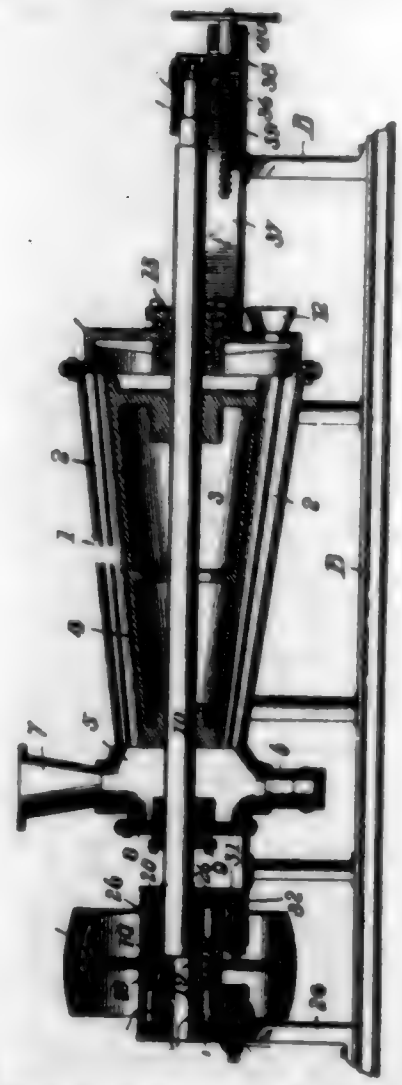
818,089. **REFINING-ENGINE FOR PAPER-PULP.** MELVIN A. MILLS, Lawrence, Mass. Filed April 23, 1901. Serial No. 57,080.

Claim.—1. A refining-engine comprising a shell, a plug in said shell, a shaft rigidly attached to said plug, a driving-pulley having its axis in alinement with the shaft, independent fixed bearings for the pulley arranged concentrically to the shaft, the pulley being journaled in said bearings, said shaft being arranged slidably within the pulley but held to turn therewith, and means for adjusting the shaft longituidnally, substantially as set forth.

2. A refining-engine comprising a shell, a plug in said shell, a shaft rigidly attached to said plug, a driving-pulley having its axis in alinement with said shaft, two independent fixed bearings for the pulley, one arranged on each side of the same concentrically to the shaft, the pulley being journaled in said bearings, means for connecting the shaft to the pulley for a rotation therewith but free longitudinal movement within the same, and means for adjusting said shaft longitudinally, substantially as described.

3. A refining-engine comprising a shell, a plug in said shell, a shaft rigidly attached to said plug, a driving-pulley having its axis in

alinement with said shaft, two independent fixed bearings for the pulley, one arranged on each side of the same concentrically to the shaft, a sleeve rigidly connected to the pulley and having its ends extended on each side of the same and turning in the fixed bearings, the said shaft being extended into said sleeve and connected to it for positive rotation but longitudinally adjustable within the same, and means for imparting an endwise adjustment to the shaft, substantially as described.



4. A refining-engine comprising a shell, a plug in said shell, a shaft rigidly attached to said plug, a driving-pulley having its axis in alinement with said shaft, two independent fixed supports for said pulley provided with roller-bearings, one of said supports being arranged on each side of the pulley, a sleeve rigidly connected to the pulley and having its ends extended on each side of the same and turning in said roller-bearings, the said shaft being extended into said sleeve and connected to it for positive rotation, but longitudinally adjustable within the same, and means for imparting an endwise adjustment to the shaft, substantially as described.

5. In an engine substantially as described, the combination of a shell, a shaft passing through the shell and having a plug rigidly attached to the shaft and rotatable within the shell, a pulley for driving the shaft arranged concentrically thereto, and a fixed bearing supporting the pulley and receiving the lateral pull and strain of its belt independently of the shaft, said shaft being extended concentrically within the pulley and connected to it for a positive rotation but free longitudinal adjustment, substantially as described.

6. A refining-engine comprising a bed-plate having fixed bearings and a thrust-bearing, a shell on said bed-plate, a plug in said shell, a shaft for said plug, and having one end mounted in said thrust-bearing, and a pulley having a sleeve extending beyond each side thereof and mounted in the fixed bearings, the said sleeve having the other end of the shaft slidably inserted therein, but held to turn therewith, as set forth.

7. In an engine of the class described, the combination with the shell and the rotating plug therein, of the plug-shaft, driving-gear having an operative connection with said shaft for turning the same while permitting a longitudinal movement thereof, and adjusting means for effecting endwise movement of the shaft.

8. In an engine of the class described, the combination with the shell and the rotating plug therein, of the plug-shaft, driving-gear fixedly arranged and having an operative connection with one end of said shaft, a thrust-bearing for the opposite end of the shaft, and shaft-adjusting means associated with said thrust-bearing.

9. In an engine of the class described, the combination with the shell and the rotating plug therein, of the plug-shaft projecting beyond opposite ends of the shell, driving-gear arranged beyond one end of the shell and having a rotating quill slidably receiving one end of the plug-shaft, and also interlocked therewith, a thrust-bearing receiving the opposite end of said shaft, and adjusting means associated with said thrust-bearing for effecting endwise adjustment of the shaft and the plug carried thereby.

10. In an engine of the class described, the combination with the shell and the rotating plug therein, of the plug-shaft, a suitably-rotated driving-quill having bearing-supports at both ends, said quill slidably receiving one end of the shaft and also interlocked therewith, a thrust-bearing receiving the opposite end of said shaft, and adjusting means associated with said thrust-bearing for effecting endwise adjustment of the shaft.

11. In an engine of the class described, the combination with the shell and the rotating plug therein, of the plug-shaft, axially-alined spaced roller-bearings, a driving quill or sleeve having journal ends turning in said roller-bearings, said quill slidably receiving one end of the plug-shaft and interlocked therewith, a pulley fitted centrally upon the quill between said bearings, and adjusting means coöperating with said shaft to effect an endwise adjustment thereof and the plug carried thereby.

12. In an engine of the class described, the combination with the shell and the plug, of the plug-shaft, a driving-gear operatively connected with one end of the shaft, a stationary guiding-support, a thrust-bearing slidably mounted upon said support and receiving the end of the shaft opposite the driving-gear, and adjusting mechanism for sliding the thrust-bearing upon its support.

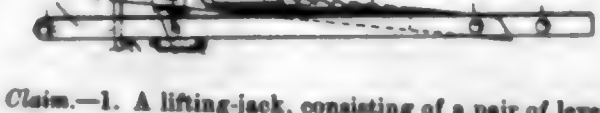
13. In an engine of the class described, the combination with the shell and the plug having a shaft projecting exterior to the shell, driving-gear for the shaft, and a thrust-bearing receiving the shaft and comprising means for bearing the thrust of the shaft in either direction.

14. In an engine of the class described, the combination with the shell, and the plug having a shaft, of driving-gear for the shaft, and a duplex or double-acting thrust-bearing receiving the shaft.

15. In an engine of the class described, the combination with the shell, the plug, and the driving-gear for the plug-shaft, of a duplex or double-acting thrust-bearing, comprising means for similarly bearing the thrust of the shaft in either direction.

16. In an engine of the class described, the combination with the shell, the plug, and the driving-gear for the plug-shaft, of the duplex or double-acting thrust-bearing comprising means for similarly bearing the thrust of the shaft in either direction, and adjusting mechanism for longitudinally adjusting the thrust-bearing to effect an endwise adjustment of the shaft.

818,040. **LIFTING-JACK.** JABUS H. MONTGOMERY, Santa Cruz, Cal. Filed Dec. 11, 1905. Serial No. 291,200.



Claim.—1. A lifting-jack, consisting of a pair of lever-arms, a central longitudinal cut lifting-bar pivoted between said arms and provided with front cross-serrations, and an adjustable bracket loosely secured within said cut and adapted to engage with said serrations, substantially as set forth.

2. A lifting-jack consisting of a pair of lever side arms, a lifting-bar pivoted between said arms, and provided with front serrations and a longitudinal cut and an adjustable bracket having an end projection adapted to contact with the inner surface of the lifting-bar, substantially as set forth.

3. A lifting-jack consisting of a pair of lever-arms, a lifting-bar pivoted between said arms and provided with front serrations and a longitudinal cut, an adjustable bracket formed with an end knob and held loosely within said cut, and a split tapering wedge inserted between said knob and the lifting-bar, substantially as set forth.

4. A lifting-jack consisting of a pair of lever-arms, a lifting-bar pivoted between said arms and provided with cross-serrations and a central longitudinal cut, an adjustable bracket formed with an end knob and loosely secured within said cut, a split tapering wedge adjustably inserted between said knob and lifting-bar, and a retaining-catch pivoted to the outer end of said lifting-bar and adapted to engage with a cross-bar that is rigidly secured to the lever-arms, substantially as and for the purpose set forth.

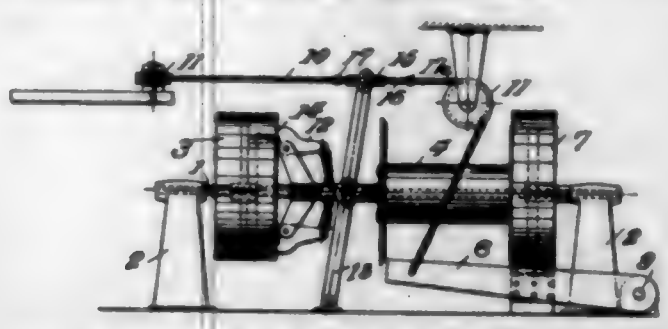
818,041. **WIRE BUCKLE AND LOOP.** JOHN C. MOORE, New York, N. Y., assignor to North & Judd Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 19, 1906. Serial No. 296,730.



Claim.—1. As an article of manufacture, a buckle comprising two loop portions formed from a single piece of wire and including an intermediate strap and tongue-bar and a tongue pivoted thereon, the ends of said wire terminating in said bar and projecting from opposite sides of the buckle and toward said tongue.

2. As an article of manufacture, a buckle comprising two loop portions formed from a single piece of wire and including an intermediate strap and tongue-bar and a tongue pivoted thereon, the ends of said wire terminating in said bar and projecting from opposite sides of the buckle and toward said tongue, the other part of said bar comprising a continuous piece of wire extending from one side of the buckle to the other.

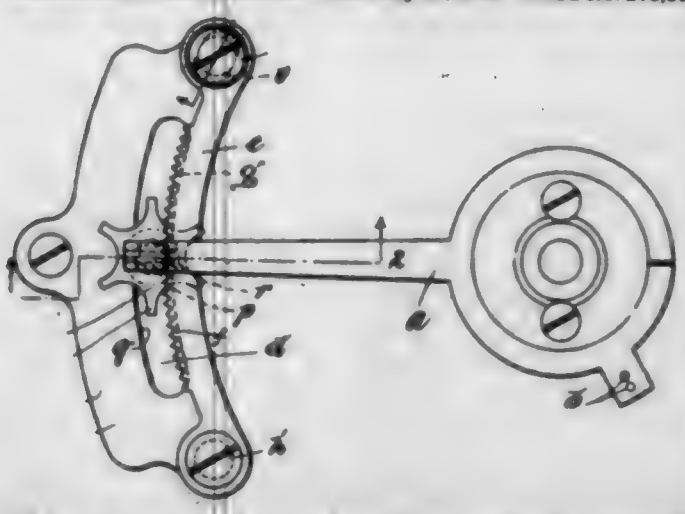
818,042. **WELL-OPERATING APPARATUS.** RICHARD A. MYERS, Warren, Pa. Filed Aug. 17, 1905. Serial No. 274,626.



Claim.—1. The combination of a driver, a drive-shaft, a drum operable by the driver and mounted on said shaft, a brake-band for said drum, a brake-lever connected with the brake-band, clutch mechanism on the drive-shaft for connecting the driver with the drum, a shifting lever for said clutch mechanism, a pull-rope connected with the brake-lever, and a sleeve applied to the shifting lever and having sliding connection with the pull-rope aforesaid, whereby movement of the brake-lever independently of the clutch-lever is admitted of.

3. In mechanism of the type described, the combination of a drive-shaft, a driver, a winding-drum, a brake for said drum, clutch mechanism on the shaft for operably connecting the driver with said shaft to actuate the drum in one direction, a shifting lever for the clutch mechanism, a pulling-rope connected with the brake and with the lever to control the operation of the brake and the clutch mechanism, and a sliding connection between said rope and the lever admitting of operation of the brake independently of the clutch mechanism.

818,043. **WATCH-REGULATOR.** OLOF OHLSON, Newton, Mass., assignor to American Waltham Watch Company, Waltham, Mass., a Corporation of Massachusetts. Filed July 31, 1905. Serial No. 271,880.



Claim.—1. In a regulator, a slotted plate, a toothed member adjacent and substantially parallel with one side of the slot in said plate, a star-wheel supported by said plate, a stud and a pinion carried by said wheel and engaged respectively in the slot and with the toothed member, and a regulator-arm arranged for actuation by movement of the star-wheel.

2. In a regulator, a slotted plate, a toothed member adjacent and substantially parallel with one side of the slot in said plate, a star-wheel supported by said plate, a stud and a pinion carried by said wheel and engaged respectively in the slot and with the toothed member, and a regulator-arm engaged with said star-wheel.

3. In a regulator, a slotted plate, a toothed member adjacent and substantially parallel with one side of the slot in said plate, a star-wheel supported by said plate, a stud attached to the star-wheel and having a shank adapted to bear against the side of the slot opposite the toothed member and a head frictionally engaging the plate on the side opposite the wheel, a pinion attached to the star-wheel meshing with the toothed member, and a regulator-arm engaged with the star-wheel.

4. In a regulator, a regulator-arm, a toothed bar adjacent the end of said arm curved substantially concentrically with the path of movement thereof and having its teeth on the convex side, a plate arranged parallel with the bar and separated therefrom by a space, said plate having a slot curved concentric with the bar, a wheel supported by said plate extending partially into said space, a pinion connected with the wheel and meshing with the teeth of the bar, a projection extending from the wheel into the slot and bearing against one side thereof for guiding the wheel and pinion, and a connection therewith and with the regulator-arm.

5. In a regulator, a graduated plate having a guiding edge or surface, a bar or plate having a side parallel with said guiding-surface provided with teeth, said bar being mounted with capacity for yielding, an actuating-wheel engaged with said guiding-surface and supported by said plate, a pinion carried by the actuating-wheel and held in mesh with the teeth of said bar by the guiding-surface, and a regulator-arm connected for actuation by the wheel.

6. In a regulator, a plate having a guideway, a wheel supported and guided thereby, a toothed bar supported adjacent thereto having at one end an elongated hole, studs for holding said bar, one of them extending through the elongated hole and being of less diameter than the length thereof, whereby a limited movement of the bar is permitted, a pinion carried by the wheel in mesh with the teeth of the bar, and a regulator-arm.

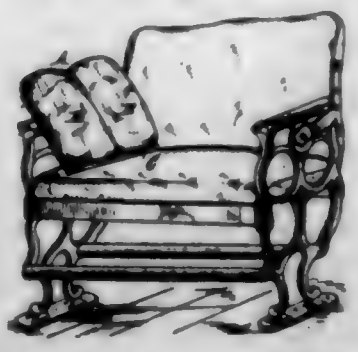
7. In a regulator, a toothed bar, a wheel having a pinion meshing therewith and guided to travel in a path parallel with the bar, a stud projecting from the center of the wheel, and a regulator-arm having a slot near its end adapted to receive said stud.

8. In a regulator, a toothed bar, a wheel having a pinion meshing therewith and guided to travel in a path parallel with the bar, a stud projecting from the center of the wheel, and a regulator-arm having a slot near its end formed with sides convergently inclined with respect to the plane of the bar and parallel to the direction of the length of the arm, said stud being engaged with and bearing against said sides.

818,044. **MANUFACTURE OF METALLIC COMPOUNDS.** SAMUEL PARFITT, Cardiff, England. Filed May 25, 1903. Serial No. 159,633.

Claim.—In the manufacture of metallic compounds in which decarbonized iron is the basic or principal constituent, the process which consists in melting the iron, treating the latter so as to produce a resultant product containing not more than one-tenth of one per cent. of carbon, and adding to the metal metallic aluminium and metallic tungsten.

818,045. **HEAD-REST FOR CAR-SEATS.** CLAYTON W. PERRY, South Dayton, N. Y. Filed Nov. 27, 1903. Serial No. 183,783.



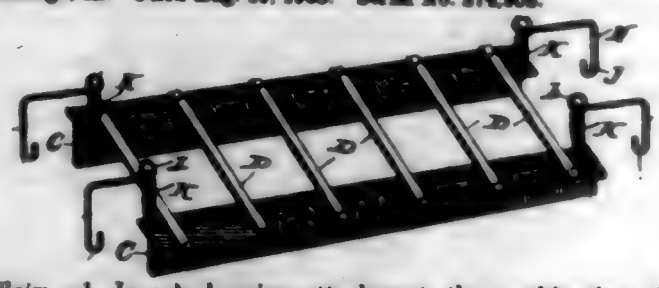
Claim.—1. A head-rest for car-seats, comprising sections hinged together and provided with seat-engaging grooves extending transversely across the sections in line with each other, the engagement of the said grooves with the seat operating both to hold the sections open and to prevent the said rest from twisting out of position.

2. A head-rest comprising trays hinged together at their edges

to be folded on such hinges to a closed condition, the backs of the trays being provided with grooves alined when the head-rest is unfolded, and cushions forming covers for said trays, the said grooves being adapted to inclose the longitudinal corner of the arm of the seat for preventing displacement of the head-rest.

3. A head-rest comprising elements foldable together, each of said elements being grooved transversely in such position as to produce a continuous transverse groove when the elements are unfolded, for engaging the longitudinal corner of the arm of a seat for sustaining the head-rest in position, the groove of the several foldable elements being positioned therein at such point as to be between the elements when in a folded condition.

818,046. BED-SPRING ATTACHMENT. WILLIAM A. PERRY, Chicago, Ill. Filed Aug. 19, 1905. Serial No. 274,958.



Claim.—1. In a bed-spring attachment, the combination of a pair of bars T-shaped in cross-section adapted for transverse arrangement with respect to the bed, of straps holding the bars spacedly and parallel, a series of supporting members consisting of metal pieces constructed L-shaped with one end portion of each thereof bent to form a hook and the other end portion of each thereof formed loop shape, and a series of vertically-disposed coiled springs secured at their lower ends to the inner portions of the ends of said parallel bars and having their upper ends secured to the looped ends of the supporting members, substantially as described.

2. In a bed-spring attachment, the combination with bars T-shaped in cross-section adapted for transverse arrangement with respect to the bed and presenting their ribs vertically, of straps secured at their ends to the flanges of said bars near the outer edges thereof to hold the bars spacedly and parallel, a series of supporting members adapted to partially embrace the rails of the supporting-frame for the attachment, one end of each of said members bent to form a hook and the other portion thereof formed loop shape, and a series of vertically-disposed coiled springs secured at their lower ends to the inner edges of the ends of said parallel bars and having their upper ends secured to the looped ends of the supporting members, substantially as described.

818,047. TAKE-UP MECHANISM. NICHOLAS POWER, New York, N. Y. Filed May 12, 1904. Serial No. 207,564.



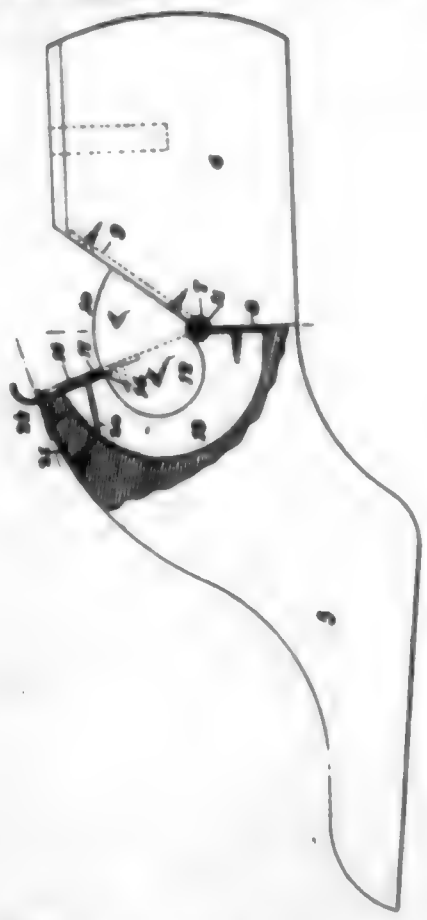
Claim.—1. The combination in mechanism of the character specified of a rotatable spindle, a compensating pulley mounted on said spindle and comprising two disks or sections, one of which sections is fixed upon the spindle, and the other free to slide and turn on the spindle, means for yieldably holding the latter disk or section in contact with the former, and a belt engaging both of said disks or sections.

2. A take-up device comprising a rotatable spindle, a pulley-section fixed upon said spindle, a pulley-section loosely mounted on said spindle and free to slide and turn thereon, said pulley-sections presenting a substantially V-shaped groove between their peripheral portions, means for holding said sections in yielding contact, and a belt running in the groove between the belt-sections.

3. A take-up device comprising a rotatable spindle, a pulley-section fixed upon said spindle, a second pulley-section rotatably and slidably mounted on said spindle, said pulley-sections presenting a substantially V-shaped groove between their peripheral portions, a spring engaging said second pulley-section and holding it in yielding contact with the other pulley-section, and a belt running in the groove between said pulley-sections.

4. A take-up device comprising a rotatable spindle, a pulley-section fixed on said spindle, a second pulley-section mounted on said spindle and free to slide and turn thereon, a tension device for holding said loosely-mounted pulley-section in yielding contact with the fixed pulley-section, means for varying the tension of said tension device, and a belt engaging both of said pulley-sections.

818,048. SHOE-LAST. GEORGE RAINBECK, Newark, N. J., assignor of one-half to Joseph A. Rainbeck, New Durham, N. J. Filed May 2, 1905. Serial No. 258,462.



Claim.—1. A last comprising a front portion, a rear portion, these portions being cut away to form a V-shaped opening and abutting surfaces, a hinge having a leaf secured to the abutting face of the front portion and the other leaf attached to the inclined surface of the rear portion, and a plate attached to the second leaf aforesaid and extending across the V-shaped opening and adapted to enter a saw cut in the front portion.

2. A last comprising a front portion having a saw cut therein, a rear portion, these portions being cut away to form a V-shaped opening and abutting surfaces, a hinge secured to the abutting surface of the front portion and the inclined surface of the rear portion, a plate secured to the last-mentioned leaf extending across the V-shaped opening and into the saw cut, and means on the front portion to latch the plate.

3. The improved last, comprising the front and rear portions, a two-leaf hinge joining said front and rear portions, the leaf fastened to the rear portion having a curved plate attached to said leaf, said plate extending forwardly into a straight cut formed in the forward last portion, and a sliding spring-actuated latch for locking said plate in the forward last portion, substantially as set forth.

4. The improved last, comprising front and rear portions, a two-leaf hinge, one leaf of which is fastened to the rear portion and has a curved plate which extends forwardly into a cut formed in the front portion, a sliding latch for locking said plate in the forward portion and a transverse stay-plate extending across the latch at its locking end, substantially as set forth.

5. The improved last having front and rear portions hinged together, said last having a V-shaped aperture at the joint and the forward portion having a saw cut and a transverse stay-plate across said saw cut, a plate secured to the rear portion and extending into said saw cut and a latch arranged between the forward portion and the stay-plate to lock the first said plate and the rear portion in connection therewith.

818,049. HORSESHOE. CHARLES A. READY, Niagara Falls, N. Y. Filed Apr. 21, 1904. Serial No. 204,260.

Claim.—A horseshoe consisting of a bar of angle shape in cross-section having one flange extending laterally outward and forming

a hoof-plate, and the other flange extending downward from the innermost edge of the hoof-plate and forming a continuous calk, said calk flaring outwardly and having a sharp edge, and said hoof-plate having nail-holes located near its outer edge and outwardly beyond the edge of the calk and remote from its upper portion, whereby the calk will not interfere with the proper driving of the nails in applying the shoe, substantially as set forth.



818,050. PLAYING-BALL. HAZEN RITCHIE, Peterboro, Canada. Filed Mar. 11, 1905. Serial No. 249,626.

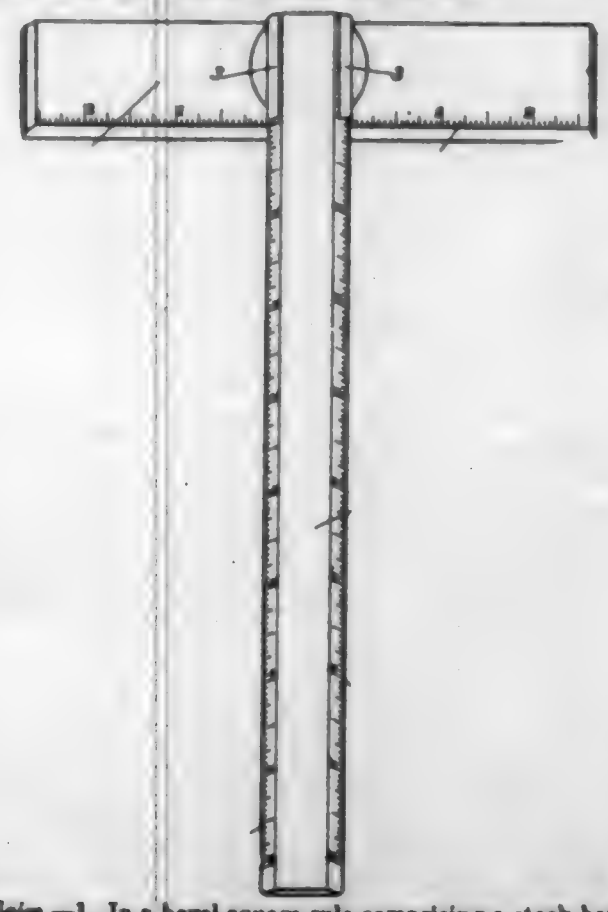


Claim.—1. A playing-ball, comprising a hollow spring-metal core formed of a plurality of segments suitably secured together at their convergent points, and longitudinally separated therebetween, and a gum-material covering, as and for the purpose specified.

2. A playing-ball, comprising a hollow metal core formed of a plurality of distinct and separate segments, having slots therein, means for securing said segments together at their convergent points only, and a suitable covering, as and for the purpose specified.

3. A playing-ball, comprising a hollow metal core formed of a plurality of distinct and separate segments, having longitudinal slots in the bellying portions thereof, means for securing said segments together at their convergent points only, and a suitable covering, as and for the purpose specified.

818,051. BEVEL-SQUARE RULE. THOMAS S. ROSS, Baltimore, Md., assignor of one-third to Michael H. Noon and one-third to James J. Ellis. Filed Nov. 14, 1905. Serial No. 287,313.



Claim.—1. In a bevel-square rule comprising a stock having a scale thereon in combination with a blade provided with beveled edges and scale, the blade being fitted in a guide, the guide being attached to the stock by means of a rivet and a concave washer substantially as described.

2. In a bevel-square rule comprising a stock having a scale thereon, a disk with recesses secured to the top part of the stock, a guide with a projection on the under side thereof to engage in the recesses of the disk, the lateral edges being bent upwardly and inwardly to form grooves wherein the blade is fitted to the guide which is attached to the stock by means of a rivet and concave washer, substantially as described.

3. In a bevel-square rule comprising a stock with scale thereon, a flat disk attached in the top part thereof and having recesses formed near its outer edges, in combination with a guide having a projection formed on the under side thereof to engage the recesses in the disk, its lateral edges being bent upwardly and inwardly to form grooves wherein a blade with beveled edges and scale thereon is fitted, the guide being attached to the stock by means of a rivet and concave washer substantially as described.

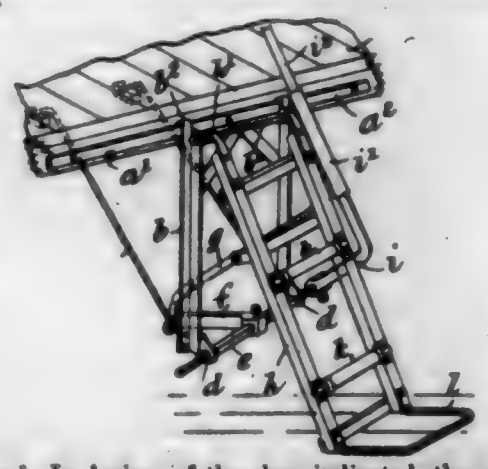
4. A bevel-square rule comprising a stock, a circular disk attached to the upper part thereof by suitable means, and provided with recesses near its outer edges, a guide having a projection on the under side thereof for the purpose of engaging in the recesses of the disk, the lateral edges of the sides being bent upwardly and inwardly to form grooves in which a rule-blade is fitted, said slide being attached to the stock by means of a rivet and concave washer substantially as described.

818,052. FOUNTAIN-PEN. WILLIAM R. ROTHWELL, West Philadelphia, Pa., assignor to Eugene M. Vasey, Philadelphia, Pa. Filed May 24, 1904. Renewed Mar. 13, 1906. Serial No. 305,812.



Claim.—In a fountain-pen, a rigid barrel, a flexible sack inclosed by said barrel, means secured to the sack and arranged to slide about the barrel to compress or dilate said sack, and a closure for the lower portion of the sack arranged to surround the pen proper and feed therefor.

818,053. MEANS FOR MOVING GOODS. THOMAS P. RUDKINS, Mitiamo, Victoria, Australia, assignor of one-half to Patrick Kennedy O'Brien, Mitiamo, Victoria, Australia. Filed July 18, 1905. Serial No. 270,224.



Claim.—1. In devices of the class indicated, the combination with a supporting-frame, of means for connecting it with a platform, a goods-carrier movably connected with the frame, a lever or levers for turning an axle or the like, having frame-support, and connections between the axle and the carrier whereby the latter may be raised or lowered by turning the said axle, substantially as described.

2. In devices of the class indicated, in combination with a platform and a relatively rigid frame having lateral sliding engagement with the platform; a vertically-movable carrier pivoted at its inner end to said fixed frame, and means for raising or lowering the free end of said carrier, substantially as described.

3. In devices of the class indicated, in combination with a platform; a carrier having a pivotal engagement at one end with the platform, and mechanism beneath the platform whereby the free end of the carrier may be raised or lowered, a hand-lever connected to said mechanism to operate it, substantially as described.

4. In devices of the class indicated, in combination with a platform; a carrier-frame having pivotal engagement at one end with the platform, a rotatable shaft connected to the platform and having a handle, a crank-arm on said shaft and a link pivoted to the crank-arm and to the under side of said carrier, substantially as described.

5. In devices of the class indicated, the combination with a supporting-frame, of means to connect it slidably to a platform, a carrier connected to the frame, a lever or levers for turning the axle or the like having frame-support, and connections between the axle and the carrier to raise and lower the latter, substantially as indicated.

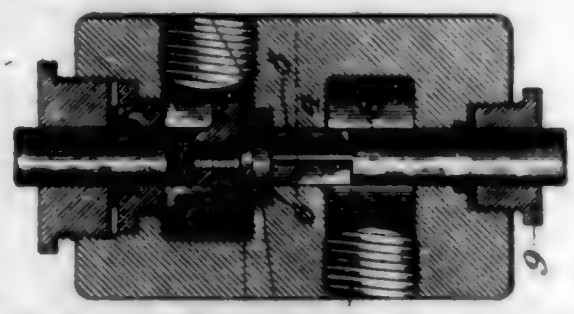
6. In devices of the class indicated, a platform, a removable supporting-frame and a removable truck-carrier provided with rollers, means for swinging the carrier upward or downward to any desired angle, in combination with means whereby the truck may be moved laterally, substantially as described.

7. In devices of the class indicated, in combination with a platform, having a carrier pivot-shaft mounted thereon adjacent to the edge thereof; a carrier having wheels at one end, the other end of said carrier being provided with means for engaging with said rod turning vertically thereon, and mechanism mounted on said platform adapted to raise and lower the free end of said carrier when it is pivotally engaged with the platform-shaft, substantially as described.

8. In combination with a platform; a longitudinal track-bar mounted along the edge thereof, a depending frame whose upper end has laterally-sliding engagement with the said track-bar, a rotatable shaft mounted in said frame, a crank-arm on said shaft, a carrier having pivotal engagement with the frame at its inner end, a link connecting the crank-arm and the carrier, and a lever on the rotatable shaft for turning the same and raising the said carrier, substantially as described.

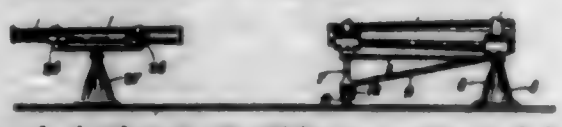
9. In devices of the class indicated, in combination with a platform, a longitudinal track-bar along the edge thereof, a depending frame whose upper end hooks over and has lateral sliding engagement with the said track-bar, removable braces for said frame, a rotatable shaft mounted at the lower end of said frame, a crank-arm on said shaft, a carrier having pivotal engagement with the frame at its inner end, a link pivoted to said crank-arm and to the under side of the carrier, a lever on the rotatable shaft for turning the same and raising the said carrier and means for lengthening or shortening said lever, substantially as described.

818,054. **VALVE.** WILLARD T. SEARS, Philadelphia, Pa., assignor to Kline-Bement-Pond Company, Jersey City, N. J. Filed Apr. 17, 1905. Serial No. 255,883.



Claim.—In a valve, the combination, substantially as set forth, of a valve-body having an inlet and an outlet, a partition in the valve-body between the inlet and the outlet and provided with an opening, said opening being margined by concentric metallic valve-seats, a metallic valve fitted to play in said opening and seat upon one of said valve-seats and close the opening, a free passage being provided for the flow of liquid from between said metallic valve and its seat during the entire closing movement of the valve, and a packing of leather or similar material carried by said valve and adapted to seat upon the other valve-seat and form a supplementary closure for said opening when the metallic valve reaches its own seat.

818,055. **TELESCOPE.** CHRISTOPHER SOULAS, Okato, New Zealand. Filed Nov. 28, 1904. Serial No. 234,655.



Claim.—1. A telescope comprising an eyepiece end, brackets carrying the eyepiece end a standard supporting the brackets, an object end comprising a horizontal tube and a tube at right angles to the horizontal tube a counterweight upon the object end, a trunnion upon the object end, bearings carrying the object end, a base-plate integral with the bearings, wheels upon which the base-plate is mounted, a pivot-pin fixed to the base-plate, a rearmost bearing to the object end, a carriage supporting the rearmost bearing, and circular tracks whereon the two ends of the telescope travel, substantially as set forth.

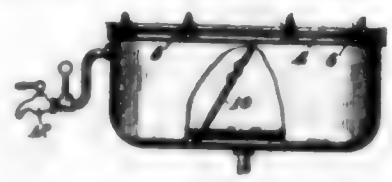
2. A telescope, comprising an eyepiece end, brackets carrying the eyepiece end, a standard supporting the brackets, an object end, bearings carrying the object end, a carriage supporting the rearmost bearing, a standard supporting the foremost bearing, a pin integral with the foremost bearing and passing into the standard and to which the carriage is pivoted as set forth.

3. A telescope, comprising an eyepiece end, a standard upon which the eyepiece end is mounted, a circular track upon which the standard is placed, an object end, a carriage upon which the object end is mounted, a standard to which the carriage is pivoted, and a circular track upon which the carriage travels, as set forth.

4. A telescope, comprising an eyepiece end, a standard upon which the eyepiece end is mounted, a finder-telescope mounted upon the eyepiece end, an object end, a carriage upon which the object end is mounted, a standard to which the carriage is pivoted, a lamp mounted upon the object end, and a tube fitted to the lamp as set forth.

5. A telescope comprising an eyepiece end, a standard upon which the eyepiece end is mounted, a finder-telescope and a lamp mounted upon the eyepiece end, a tube fitted to the lamp, an object end, a carriage upon which the object end is mounted, a standard to which the standard is pivoted, a finder-telescope and a lamp mounted upon the eyepiece end, and a tube fitted to the lamp as set forth.

818,056. **BEER-COOLER.** FREDERICK H. STROBEL, Baltimore, Md. Filed Aug. 1, 1905. Serial No. 272,217.



Claim.—A beer-cooler comprising two vessels, one adapted to be placed within the other whereby space is left therebetween for the circulation of beer, and a partition interposed between the walls of the space dividing the space between the vessels into two compartments, and inlet and outlet conduits for conveying and discharging the beer to the compartments, said partition having perforations at different elevations therein and adjacent to one of the exposed surfaces of the vessels whereby the contents pass in limited quantities from one subdivision to the other, thereby insuring its exposure to the cool surface whereby the beer is throroughly cooled.

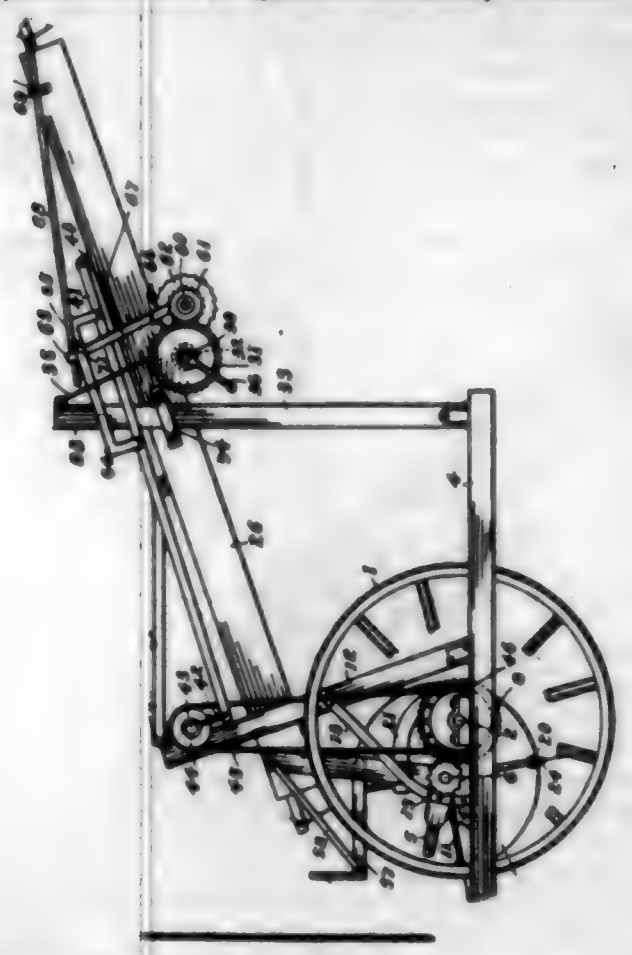
818,057. **HAY-LOADER.** R. K. SWIFT, Sterling, Ill. Filed June 2, 1905. Serial No. 263,411.

Claim.—1. In a hay-loader, the combination of mechanism for gathering the hay from the ground; mechanism for conveying the hay from the gathering mechanism to the wagon, to be loaded thereon; and means for automatically raising the forward end of the conveying mechanism, as the loading operation progresses, substantially as shown and described.

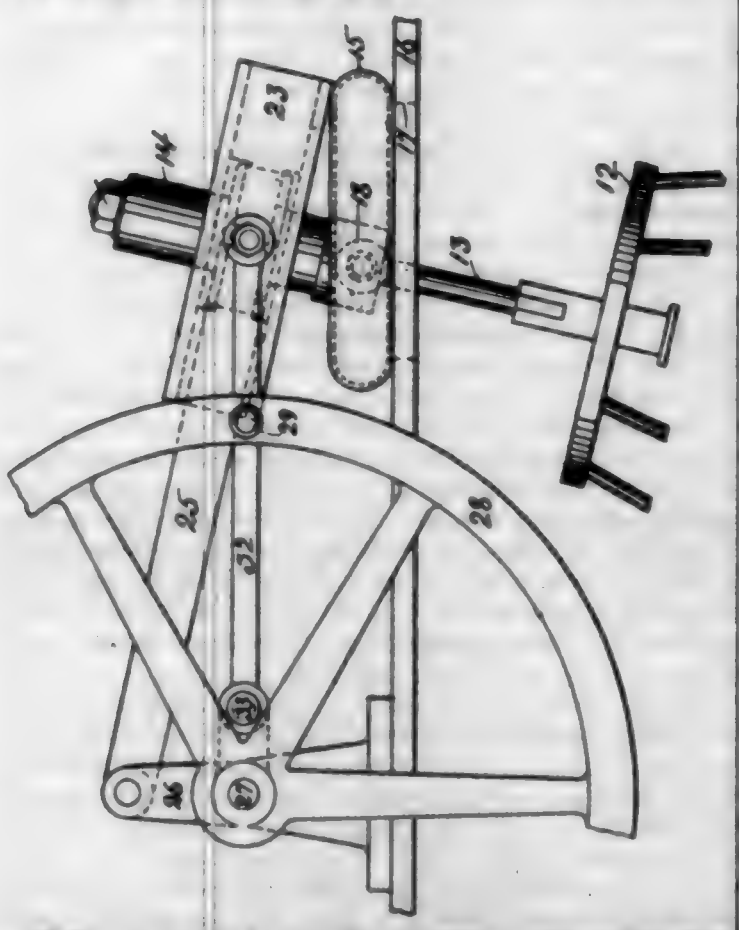
2. In a hay-loader, the combination, with the elevator floor and sides, suitably mounted in the machine, of two series of elevator-bars, suitably mounted above said floor, each of said bars being provided with a plurality of swinging teeth; means for imparting to said series of elevator-bars an alternating reciprocating movement; means for gathering the hay from the ground and delivering it to said elevator-bars; and means for automatically raising the forward end of the elevating devices, through the action of such elevator-bars while the operation of loading is in progress, substantially as shown and described.

3. In a hay-loader, the combination of a cylinder 9, and shaft 6 centrally thereof; a pair of tooth-bars 18, extending longitudinally of said cylinder; a pair of racks 17 loosely embracing said shaft, and rigidly connecting said tooth-bars; and means for imparting to said pair of tooth-bars a vibratory movement transversely of the cylinder at each half-rotation thereof, substantially as and for the purpose named.

4. In a device of the class named, the combination of the shaft 6, rotatably mounted in the machine; the cylinder 9, fixed on the shaft 6, and provided in its ends with radial slots 11; the tooth-bars 18 within the cylinder 9, and provided at their ends with rollers 20, outside the ends of the cylinder; the series of flexible teeth 23, fixed to said bars; the racks 17, rigidly connecting the bars in oppositely-disposed pairs; and the cams 21, suitably supported near the ends of the cylinder 9, and adapted to successively engage the rollers 20, during the partial rotation of the cylinder, substantially as shown.



818,058. WASHING-MACHINE. GUSTAV A. TROSS, Omaha, Nebr. Filed Aug. 24, 1904. Serial No. 221,962.



Claim.—1. A washing-machine consisting of the combination of an agitator, a tub containing said agitator, a shaft upon which said agitator is mounted, a driver, and means connected up between said driver and said agitator and shaft for imparting to the latter two elements a reciprocating traveling motion, an oscillatory rotary motion, and a rocking motion on an axis transverse to said shaft.

2. A washing-machine consisting of the combination of an agitator, a driver, means connected up between the above-named two elements for imparting to said agitator simultaneously, an oscillatory motion and a reciprocating traveling motion, and a tub containing said agitator.

3. A washing-machine consisting of the combination of an agitator, a tub containing said agitator, a driver, and means connected up between said driver and said agitator for imparting to said agitator simultaneously an oscillatory motion and a reciprocating traveling motion, said means consisting of a shaft supporting the agitator, pinion-and-rack gearing between the driver and said shaft for giving the rotary motions, and a track and wheels thereon for supporting said agitator, and a crank and pitman for giving the traveling motions to said agitator.

4. A washing-machine consisting of the combination of an agitator, a tub containing said agitator, a driver, and means connected up between said driver and said agitator for imparting to said agitator simultaneously an oscillatory motion and a reciprocating traveling motion, said means consisting of a shaft supporting the agitator, pinion-and-rack gearing between the driver and said shaft for giving the rotary motions, said pinion being mounted upon said shaft, and traveling therewith, a casing carrying said pinion and forming bearings for said shaft, a crank on said driver and a connecting-rod between said crank and said casing.

5. A washing-machine consisting of the combination of an agitator, a tub containing said agitator, a driver, and means connected up between said driver and said agitator for imparting to said agitator simultaneously a rocking motion and a reciprocating traveling motion, said means consisting of a shaft supporting the agitator, pinion-and-rack gearing between the driver and said shaft for giving the rotary motions, said pinions being mounted upon said shaft, and traveling therewith, a casing carrying said pinion and forming bearings for said shaft, a crank and a connecting-rod for said driver, a track, wheels thereon, said wheels being journaled in bearings in said casing, and said rack being stationary with respect to said pinion, and said wheels forming a support for the weight of said agitator, shaft, casing, pinion, rack, and one portion of said connecting-rod.

6. In a washing-machine the combination of an agitator, a tub containing said agitator, a driver, and means connected between said driver and said agitator for imparting to said agitater, a traveling motion bodily backward and forward, said means consisting of a shaft carrying said agitator, a crank, and a connecting-rod between said crank and said casing.

7. In a washing-machine the combination of an agitator, a tub containing said agitator, a driver, and means connected between said driver and said agitator for imparting to said agitator, a traveling motion bodily backward and forward, said means consisting of a shaft carrying said agitator, a crank and a connecting-rod between said crank and said shaft, a casing for the shaft, and said rod being connected to said casing.

8. In a washing-machine the combination of a tub, an agitator therein, wheels for supporting the same, tracks for said wheels, a shaft for the agitator, a casing supporting said shaft, bearings in said casing supporting said wheels, and a rod extending from said casing for moving the same along said tracks.

9. A washing-machine consisting of the combination of a wheel, a handle thereon, a shaft therefor and a crank attached thereto, a connecting-rod for the crank, a casing attached to the connecting-rod at the end opposite from said crank, bearings in said casing, a shaft supported in said bearings, an agitator and pinion fixed to the last-named shaft, a cover-plate having a slot through which passes said last-named shaft, tracks supported upon and secured to said plate parallel to said slot, wheels on said track and journals in bearings in said casing, said wheels supporting said casing, a rack for said pinion and provided with guides along which said casing may slide, a rod having one end pivoted to said rack, and the other end held stationary and a tub containing said agitator.

10. A washing-machine consisting of the combination of a tub, an agitator therein, a shaft upon which the same is mounted, a driver, and means connected up between said driver and said agitator and shaft for imparting to the latter two elements a reciprocating traveling motion, an oscillatory rotary motion, and a rocking motion on an axis transverse to said shaft, a casing surrounding said shaft, and antifriction-bearings supporting said shaft vertically in said casing.

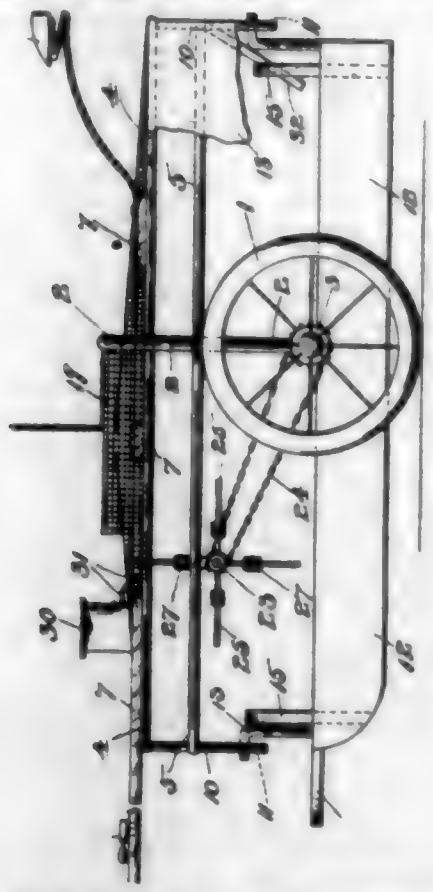
11. In a washing-machine the combination of a tub, a cover therefor, a slot in said cover, an agitator with its shaft bodily movable to and fro along said slot, a driver connected up with said shaft, tracks respectively on opposite sides of said slot and parallel thereto, and wheels running on said tracks and supporting said shaft.

12. In a washing-machine the combination of a tub, a cover therefor, having a slot therein, tracks along said slot, a casing between said tracks and carrying-wheels for running on said tracks, a shaft with its agitator journaled in bearings in said casing, and means for propelling said wheels along said track.

13. In a washing-machine the combination of a tub, a vertical shaft, an agitator within said tub and affixed to said shaft so as to rotate therewith, and means for simultaneously rocking said shaft on its axis and reciprocating the same in a horizontal direction.

14. A washing-machine consisting of the combination of an agitator, a tub containing said agitator, a driver, and means connected up between said driver and said agitator for imparting to said agitator simultaneously a rocking motion and a reciprocating traveling motion, said means consisting of a shaft supporting the agitator, pinion-and-rack gearing for giving the rotary motions, and a a crank and pitman for giving the traveling motions to said agitator.

818,059. INSECT-EXTERMINATOR. EVERETT E. THOMPSON, JULIUS O. THOMPSON, and JUNIOUS A. THOMPSON, Kaufman, Tex. Filed Oct. 14, 1904. Serial No. 228,430.



Claim.—1. In an insect-destroyer, a horizontal axle suitably journaled and driven, brushes pivotally secured to said axle and arranged in pairs, and means to adjust said brushes relative to one another, substantially as shown and described.

2. In an insect-destroyer, a reel consisting of a series of brushes arranged in pairs and pivotally mounted on a common spindle to brush the foliage of growing plants, means to adjust said brushes relative to one another, and means to convey an insecticide to said reel, substantially as shown and described.

3. In an insect-destroyer, a horizontal axle suitably journaled and driven, brushes pivotally secured to said axle in pairs, curved and grooved guides secured to said axle, means to secure said brushes to said guides, a tank to contain an insecticide, and a spray connected to said tank and arranged to distribute the insecticide on said reel, substantially as shown and described.

4. In an insect-exterminator, pans adapted to pas on each side of rows of growing plants, said pans being held in a yielding position and adapted to move horizontally and vertically, and means to dislodge insects from said plants and cause them to drop into said pans, substantially as shown and described.

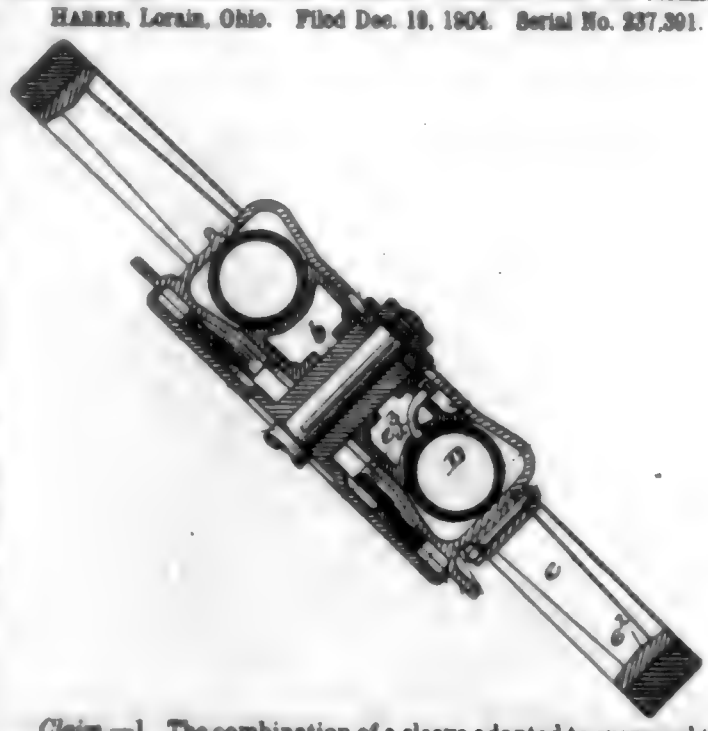
5. In an insect-exterminator, a wheeled frame, pans supported by said frame and held in a yielding position being adapted to move horizontally and vertically, and rotating brushes mounted on said frame, substantially as shown and described.

6. In an insect-exterminator, a wheeled frame, slotted posts on said frame, pans supported by said slotted posts and connected by arch-shaped springs, said frame being covered by suitable fabric, and means to dislodge insects into said pans, substantially as shown and described.

7. In an insect-exterminator, a wheeled frame, pans supported by said frame and adapted to pass on each side of a row of growing plants, the sides of said pans toward the row being slanting, and brush-faces secured to the adjacent edges of said pans, substantially as shown and described.

8. In an insect-exterminator, a wheeled frame, slotted posts secured to said frame, pans mounted in the slots in said posts, arch-shaped springs connecting said pans, said pans adapted to pass on opposite sides of a row of growing plants, and having the sides toward the row formed with an abrupt slant, brush-faces secured to the adjacent edges of said pans, a reel journaled on said frame and geared to the traction-wheels, a tank for supplying an insecticide to said reel, the sides of said frame covered with a suitable fabric, the top formed conical in shape and having an opening in its apex, and a trap covering said opening, substantially as shown and described.

818,060. PNEUMATIC WHEEL. RICHARD TREW and HOLLIS H. HARRIS, Lorain, Ohio. Filed Dec. 19, 1904. Serial No. 237,391.



Claim.—1. The combination of a sleeve adapted to surround the axle, an annular member mounted on said sleeve, a cushion on said annular member, a wheel having a hollow casing surrounding said cushion, a collar on the axle bearing against said sleeve and holding said annular member in place, and means for holding the collar in place.

2. The combination of an annular member adapted to surround an axle, an elastic annular cushion surrounding said member, a wheel having a hollow casing seated on said cushion and a piece adapted to be placed around the axle and engage the casing to convert the wheel into a solid wheel.

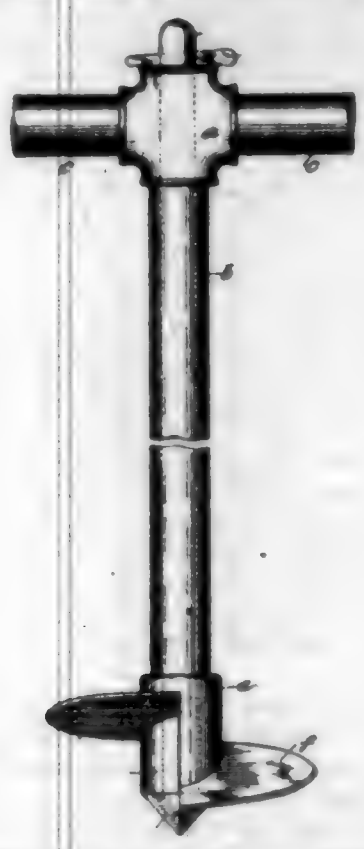
3. The combination of an axle, an annular member adapted to surround the same, a cushion on the annular member, a wheel having a hollow casing surrounding said cushion, and having a flange lying alongside of said annular members, and a distance-piece adapted to surround the axle and engage the flange of said casing.

4. The combination of an axle, an annular member surrounding the same, a cushion on the annular member, a wheel having a hollow casing surrounding the cushion, said wheel having a flange lying alongside of the annular member, there being a central opening through said flange, a nut screwing onto the end of the axle, and a ring adapted to surround the axle and lie alongside of said annular member and prevent movement of said hub toward or from the axle, said nut being adapted to hold said ring in place.

5. In combination, in a wheel, an annular member adapted to rotate freely about an axle, said member having a cushion-seat on its periphery, a cushion on said seat, a casing open at its center and embracing said annular member closely so as to be guided in its movement thereby, said casing connected to a rim and flared to permit the lateral expansion of the cushion.

6. In combination, in a wheel, a hub adapted to fit over an axle and having integral therewith a driving-disk, an annular member mounted on and freely rotatable about said hub, said annular member having a cushion mounted on its periphery, a casing open at its center and embracing said annular member, retaining and positioning means adapted to fit over the end of the axle and bear against the annular member, a rim carried by the casing and a shifting drive connection between the driving-disk and the casing.

818,061. LAND-ANCHOR. GEORGE D. TOY, JR., ROBERT H. TOY, and HUGH T. TOY, Sidney, Ohio. Filed Nov. 13, 1905. Serial No. 287,094.



Claim.—1. In a device of the character described, a spirally-formed earth-engaging member having a central opening therethrough and holes on each side of said opening, a rod passing through said central opening, and collars surrounding said rod above and below said member respectively, said collars provided with portions adapted to interlock with each other and with the holes in said member.

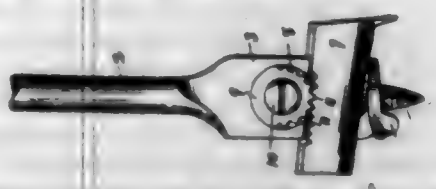
2. In a device of the character described, a rod adapted to be driven into the ground, a collar on said rod, a socket removably mounted on said rod, an earth-engaging element arranged between said collar and socket, means for interlocking said collar, earth-engaging element and socket, a pipe secured to said socket, and means for interlocking said pipe and rod.

3. In a device of the character described, a rod adapted to be driven into the ground, a collar on said rod having a spiral upper edge, a socket removably mounted on said rod and having a spiral lower edge, an earth-engaging element arranged between said collar and socket, means for interlocking said collar, earth-engaging means, and socket, and means for turning said socket.

4. In a device of the character described, a rod provided with a point and a bearing, an earth-engaging element arranged on said rod and resting on said bearing, a socket loosely mounted on said rod and having portions interlocking with said earth-engaging element, and its bearing, and means for operating said socket.

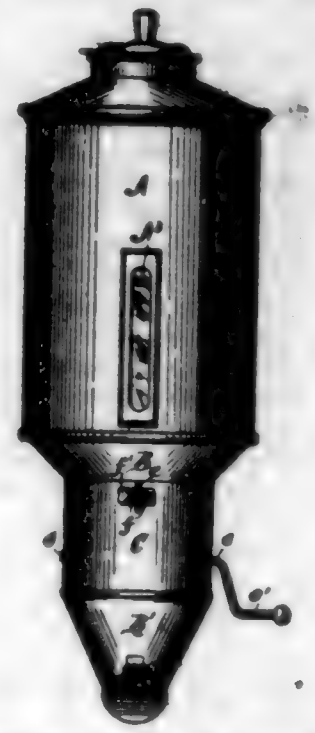
5. In a device of the character described, a rod having a point on its lower end and an eye in its upper end, a collar loosely mounted on said rod above its point and having a spiral upper edge, a spiral earth-engaging blade surrounding said rod and resting on said collar, said blade having holes therethrough, a socket loosely mounted on said rod, and having its lower edge conforming to and normally resting upon the upper face of said spiral blade, means for interlocking said socket, blade and collar, a pipe surrounding said rod and secured at its lower end to said socket, handles secured to said pipe, and removable means for locking said pipe against upward movement on said rod.

818,062. EXPANSIBLE BIT. STILES H. TUCKER, Seymour, Conn. Filed Dec. 11, 1905. Serial No. 291,207.



Claim.—The herein-described expansible bit comprising a shank, a semicircular head, an undercut transverse groove in the flat face of said head, a circular recess having beveled walls above said groove and intersecting the same, a cutter arranged in said groove the upper edge of said cutter having a beveled edge and formed with notches in the central portion of said upper edge, a beveled-edge block located in the recess above the cutter and formed with teeth in a portion of its circumference, said teeth in the block engaging with notches in the cutter, and a screw extending through said block into said head whereby said block is clamped to the head and the cutter locked in position, substantially as described.

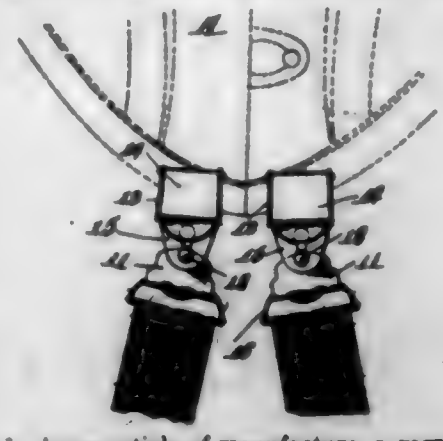
818,063. KITCHEN UTENSIL. EUGENE H. VUILLEMOT and HERMON E. VUILLEMOT, Syracuse, N. Y. Filed Jan. 15, 1906. Serial No. 296,021.



Claim.—1. A utensil of the class specified, comprising a cylindrical receptacle provided on its bottom with a hopper, a cylindrical chamber having its upper portion slitted vertically and embracing the hopper and provided with ears at opposite sides of the slit and means for drawing said ears toward each other for clamping the chamber to said hopper, a sieve and agitator in said chamber, a forwardly-inclined tapering discharge-spout fastened to said chamber, a lid hinged to the end of the spout, and a coiled spring disposed substantially upright within the discharge-spout and having its upper end fastened thereto and its lower end formed with an arm pivotally connected to the lid as and for the purpose set forth.

2. A utensil of the class specified comprising an upright cylindrical receptacle formed at its bottom with a hopper provided on its lower portion with an external ring, a cylindrical sifting-chamber provided with means for clamping it detachably to said ring, a sieve and a rotary agitator supported within said chamber, a discharge-spout on the bottom of said chamber, a lid hinged to the end of the discharge-spout, and a coiled spring disposed within the spout and serving to retain the lid in both closed and opened positions as set forth.

818,064. GARMENT-SUPPORTER. CHARLES W. WALDO, Worcester, Mass., assignor to himself, Albert B. Flint, Worcester, Mass., and H. W. Little, New York, N. Y. Filed June 3, 1905. Serial No. 263,573.



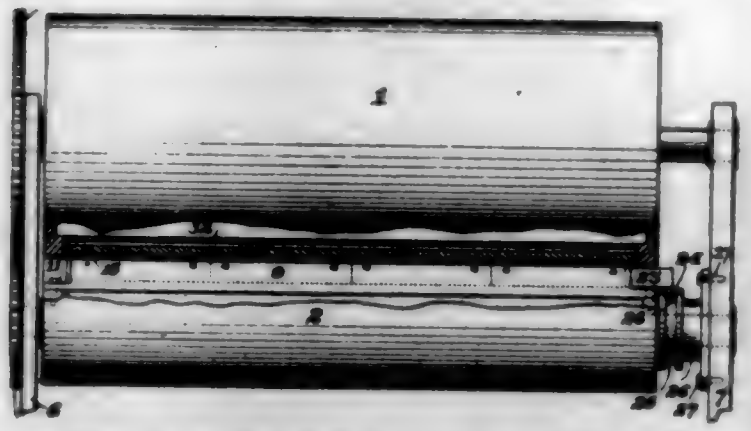
Claim.—1. As an article of manufacture, a garment-supporter comprising two members, an upper member to be attached to a corset, and a lower member having provision for receiving a garter-strap, and a single clamp device for fastening the upper member to the corset, and for locking the connection between the upper and lower members.

2. As an article of manufacture, a garment-supporter comprising an upper member to be attached to a corset, a lower member having provision for receiving a garter-strap, a pivotal connection between said members comprising a headed pin extending from one of said members and engaging a keyhole-socket in the other of said members, and a single clamp device for fastening the upper member to a corset, and for locking the pivotal connection between said members.

3. As an article of manufacture, a garment-supporter comprising an upper member to be attached to a corset, a lower member having provision for receiving a garter-strap, a pivotal connection between said members formed by a headed pin extending from the lower member, and engaging a keyhole-slot in the upper member, and a single clamp pivoted in arms of the upper member, one part of the clamp engaging the corset, while the other part of the clamp covers a portion of the keyhole-slot so as to lock the pivotal connection between the upper and lower members.

4. In a garment-supporter, the combination of an upper member to be attached to a corset, a lower member having side arms with a clamp-piece pivoted therein for adjustably fastening a garter-strap thereto, a pivotal connection between the upper and lower members formed by a headed pin extending from the lower member and engaging a keyhole-slot in the upper member, and a clamp-piece pivoted in arms extending from the upper member, one part of the clamp-piece engaging and clamping the device to the corset, while the other part of the clamp-piece covers a portion of the keyhole-socket and serves to lock the pivotal connection between the upper and lower members.

818,085. PAPER-CUTTING DEVICE. WILLIAM J. WARD, New Rochelle, N. Y. Filed Nov. 11, 1904. Serial No. 232,356.



Claim.—1. In a mechanism for severing a web into sheets, the combination with a pair of revolving cylinders between which the web runs, of a cutting-blade having teeth and extending along one of said cylinders, said blade so mounted that the teeth are incapable of projecting from the surface of the blade-cylinder, during the severing operation, a distance greater than the height of the teeth, and means for moving the blade endwise independently of its cylinder when it is in position to coact with the other cylinder in severing the paper.

2. In combination, a pair of revolving cylinders, a cutting-blade having teeth and extending along one of said cylinders, said blade so mounted that the teeth are incapable of projecting from the surface of the blade-cylinder, during the severing operation, a distance greater than the height of the teeth, and means for causing the teeth to penetrate the web in a single direction diagonal to the length of the blade throughout the web-severing operation.

3. In combination, a pair of revolving cylinders, a cutting-blade having teeth and extending along one of said cylinders, said blade so mounted that the teeth are incapable of such projection from the cylinder during the cutting operation that their punctures will unite to form a single continuous cut across the web, means for moving the blade endwise during the entire web-cutting operation, and means for returning the blade to normal endwise position.

4. In combination, a pair of revolving cylinders, a series of cutting-teeth extending along one of said cylinders and each having an inclined cutting edge, means for advancing said teeth longitudinally of the cylinder with their inclined edges foremost during the web-penetrating movement of the teeth, and independently of their cylinder, and means for retracting the teeth.

5. In combination, a pair of revolving cylinders, a series of cutting-teeth extending along one of said cylinders, a coöperating bar in the other of said cylinders, said bar having a longitudinal recess, the width of which does not substantially exceed the thickness of the teeth, the latter being so mounted as to be incapable during the web-cutting operation of projecting into said recess so far that their punctures would unite to form a continuous cut across the web, means for moving the teeth longitudinally of their cylinder during the web-severing operation, so as to form their punctures into a continuous cut, and means for returning the teeth to original position.

6. The combination of a revolving cylinder, a bar parallel with the axis of the cylinder and extending along the same and mounted for movement parallel with said axis, a toothed cutting-blade detachably secured to said bar, a bearing, means upon said bar to engage said bearing to effect such endwise movement of the bar during the web-puncturing operation of the teeth, and a coöperating cylinder.

7. A paper-cutting device comprising a box, a knife-bar movably mounted therein, knives with teeth thereon, each tooth having an inclined cutting edge, and mechanism for giving the knives an oblique edgewise movement, with said inclined edges foremost, relatively to the paper, during the entire paper-cutting operation.

8. The combination of a revolving cylinder, a bar extending along the same and mounted for movement endwise of the cylinder, a series of blade-sections detachably secured upon said bar end to end and having cutting-teeth with inclined edges, a fixed peripheral cam-groove concentric with the cylinder-axis, a stud upon said bar running in said groove, to effect reciprocation of the bar, and a coöperating cylinder.

9. A paper-cutting device, comprising a box, a knife-bar, knives with teeth thereon, a stud fastened to said knife-bar, cheek or guide blocks, and guide-pins for said cheek or guide blocks and knife-bar.

10. A paper-cutting device, comprising a box or casing, a knife-bar mounted therein, knives with teeth fastened to said knife-bar, cheek or guide blocks, springs for said cheek or guide blocks, means for moving the knife-bar, and pins for guiding the knife-bar.

11. The combination with a pair of revolving cylinders between which the web runs, of a serrated cutting-blade extending along one of said cylinders, but so mounted as to be incapable of punching slits of sufficient length to make a complete severance of the web, and means for moving said knife endwise during the slitting operation, sufficiently to merge the slits into a single cut, completely severing the web, means being provided for so guiding said blade that its serrations or teeth do not project beyond the surface of its cylinder a distance greater than the height of said teeth, during the slitting operation.

12. In combination, a pair of revolving cylinders, a projecting serrated cutting-blade extending along one of said cylinders, but capable of making only a partial severance of the web by reason of its projection from its cylinder, and means for moving the blade parallel with the axis of its cylinder during the entire time in which the blade is in contact with the web until the latter is completely severed, and means for returning the blade to normal endwise position.

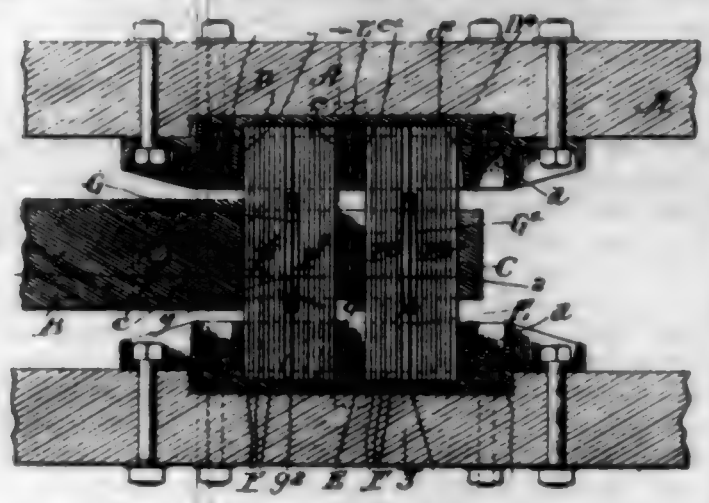
13. In combination, a pair of revolving cylinders, a series of cutting-teeth extending along one of said cylinders and each having an inclined cutting edge, said teeth projecting from their cylinder only enough to effect a partial severance of the web, and means for advancing said teeth with their inclined edges foremost during the penetration of the web by the teeth, so as to effect a complete severance of the web.

14. In combination, a pair of revolving cylinders, a series of cutting-teeth extending along one of said cylinders, a coöperating bar in the other of said cylinders, said bar having a longitudinal recess which is about equal in width to the thickness of the teeth, and the latter being so mounted that their tips barely project into said recess during the revolution of the cylinders, so as to be capable by reason of such projection to effect only partial severance of the web, and means for moving the teeth longitudinally of their cylinder during the penetration of the web by the teeth, so as to enlarge the punches into a continuous cut, thereby completely severing the web; means being provided for returning the teeth to original position.

15. A web-severing cylinder or carrier provided with a set of cutting-teeth, means coöperating with said teeth to enable the latter to penetrate the web, the construction and arrangement being such that the web is only partially severed by the penetration of the teeth, and means for moving the teeth in a direction substantially parallel with the cylinder-axis during their action upon the web, so as to merge their incisions into a continuous cut completely severing the web; means being provided for returning the teeth to normal position.

818,086. DRAFT-RIGGING FOR RAILWAY-CARS. JAMES M. WADEN, Chicago, Ill. Filed May 31, 1906. Serial No. 319,135.

Claim.—1. The combination with shouldered draft-irons and a draw-bar provided with a yoke, of two like sets of spring cushioning-plates, sliding spacing-blocks interposed between and in contact with the ends of the sets of cushioning-plates, follower-plates interposed between the sets of cushioning-plates and the draw-bar and yoke, and spacing-plates interposed between and in contact with the follower-plates and the centers of the sets of cushioning-plates.

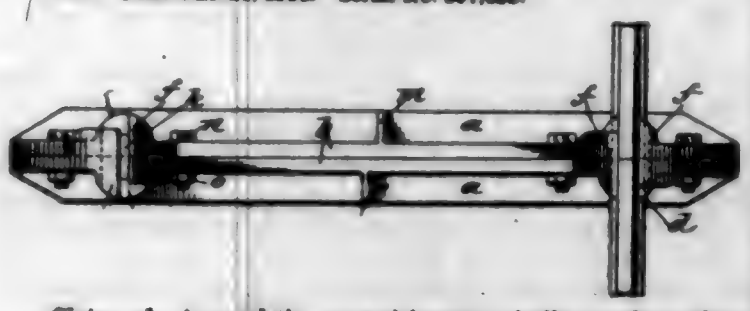


2. The combination with shouldered draft-irons and a draw-bar provided with a yoke, of a plurality of sets of spring cushioning-plates arranged in pairs, the sets constituting such pairs being of like stiffness and the sets in the different pairs differing in stiffness, sliding spacing-blocks interposed between and in contact with the ends of the two sets of cushioning-plates of each pair, follower-plates interposed between the external sets of cushioning-plates and the draw-bar and yoke, and interposed spacing-plates having bearing contact with the centers of the sets constituting each pair and with the follower-plates.

3. The combination with shouldered draft-irons and a draw-bar provided with a yoke, of two like sets of spring cushioning-plates, sliding spacing-blocks interposed between and in contact with the ends of the two sets of cushioning-plates, two sets of spring follower-plates interposed between the sets of cushioning-plates and the ends of the draw-bar and yoke, and spacing-plates interposed between and bearing on the centers of the sets of cushioning-plates and the sets of spring follower-plates.

4. The combination with shouldered draft-irons and a draw-bar provided with a yoke, of two like sets of spring cushioning-plates, sliding spacing-blocks interposed between and in contact with the ends of the two sets of cushioning-plates, spring follower-plates interposed between sets of cushioning-plates and the ends of the draw-bar and yoke, and spacing-plates interposed between and bearing on the centers of the sets of cushioning-plates and the sets of follower-plates, the shoulders on the draft-irons engaged by the spring follower-plates being inclined or beveled.

818,067. METALLIC TIE. JOHN A. WILKINSON, Washington, D. C. Filed Jan. 20, 1906. Serial No. 297,082.



Claim.—1. A metal tie, comprising two similar angle-sections having mating rail-supporting bosses at each end, and integral rail-clamping members overhanging the respective bosses.

2. A metal tie, comprising two similar L-sections having mating rail-supporting bosses at each end, and integral clamping members overhanging the respective bosses.

3. A metal tie, comprising two similar sections having mating rail-supporting bosses at each end, and integral rail-clamping members adapted to engage the top of the rail-base and also to engage the web of the rail from the base to the rail-head.

4. A metal tie, comprising two similar sections having mating rail-supporting bosses at each end, and integral rail-clamping jaw members, each of said members having a shoulder to engage the rail-base and a vertical face engaging the web of the rail from the base to the rail-head.

5. A metal tie, comprising two similar sections having mating rail-supporting bosses at each end, and integral rail-clamping jaw members, each of said members having a shoulder to engage the rail-base and a vertical face engaging the web of the rail from the base to the rail-head, the jaw members at the respective ends of the assembled tie overlapping each other laterally.

6. A metal tie, comprising two similar L-sections adapted to be secured together back to back, and means for holding them in such adjusted position, each section having one-half of a rail-supporting boss at each end, and a rail-clamping jaw overlying the boss members.

7. A metal tie, comprising two similar L-sections adapted to be secured together back to back, and means for holding them in such adjusted position, each section having one-half of a rail-supporting boss at each end, and rail-clamping jaws overlying the boss members, said jaws having an undercut shoulder to engage the rail-base, and a vertical face to engage the rail-web from the base to the head.

8. A metal tie, comprising two similar and removably-connected L-sections placed back to back, mating rail-supporting bosses formed integrally with each of said sections, and rail-clamping jaws also formed integrally with said sections, each jaw having an undercut shoulder to engage the rail-base, and a vertical face to engage the rail-web, the vertical faces of the adjacent clamping-jaws overlapping each other laterally.

9. A metal tie, comprising two similar sections having mating rail-supporting bosses at each end, integral rail-clamping members overhanging the respective bosses, and transverse ribs on the sections to preserve the alinement of the rails.

10. A metal tie, having rail-supporting bosses and rail-clamping jaws at each end, and removable cushions located in recesses in the tops of the rail-supporting bosses.

11. A metal tie, having rail-supporting bosses and rail-clamping jaws at each end, and removable wedge-shaped cushions located in recesses in the tops of the rail-supporting bosses.

12. An interchangeable section for metal ties, comprising as an integral structure a horizontal flange, a vertical web, a boss at each end to support the rail, and a clamping-jaw at each end overhanging the corresponding boss and having a vertical face to engage the rail-web substantially throughout the vertical extent of the latter.

13. An interchangeable section for metal ties, comprising as an integral structure a horizontal flange, a vertical web, a boss at each end to support the rail, and a clamping-jaw at each end having an undercut shoulder above the corresponding boss and a vertical face of substantially the same depth as the rail-web.

14. An interchangeable section for metal ties, comprising as an integral structure a horizontal flange, a vertical web, a boss at each end to support the rail, and a clamping-jaw at each end having an undercut shoulder above the corresponding boss and a vertical face of substantially the same depth as the rail-web, said vertical face being laterally extended to overlap the corresponding face of a mating section.

15. An interchangeable section for metal ties, comprising as an integral structure a horizontal bottom flange, a vertical web, a boss at each end between the web and flange to form a rail-support, a clamping-jaw at each end having an undercut shoulder above the corresponding boss to engage the rail-base, and a vertical face of substantially the same depth as the rail-web, and transverse holding-ribs.

16. A metal tie comprising two similar interchangeable sections, having coöperating rail-clamping members, each member having a vertical face to engage the rail-web throughout the vertical extent thereof, mating rail-supporting bosses at the ends of each section having registering recesses in the tops thereof, and a removable cushion in the registering recesses at each end.

17. A metal tie, comprising two similar angle-sections having mating rail-supporting bosses at each end, the boss members at the respective ends having registering recesses in their upper faces, and removable cushions in said recesses.

18. A metal tie, comprising two similar L-sections having mating rail-supporting bosses at each end, provided with registering recesses in their upper faces, and wedge-shaped cushions in the mating recesses at the respective ends of the tie.

818,068. REGISTERING APPARATUS FOR TELEPHONE-EXCHANGES. CLARENCE B. WRIGHT, Cleveland, Ohio, assignor to David A. Yoder, Toledo, Ohio. Filed Jan. 19, 1905. Serial No. 241,576.

Claim.—1. In apparatus of the class described, the combination with a controlling-circuit-closing device, of a source of current, an electrically-actuated counter, another electrically-actuated counter,

and means for supplying interrupted current thereto and adapted to be connected with the latter, substantially as set forth.



2. In registering apparatus for telephone-exchanges, the combination with a controlling-circuit closer at the exchange, of an electrically-operated counting mechanism, an electrically-operated timing mechanism and means for simultaneously connecting current with each upon the actuation of the controlling-circuit closer, whereby the signaled call or disconnection and the elapsed time in responding thereto are both registered, substantially as set forth.

3. In registering apparatus for telephone-exchanges, the combination with a pilot-signal relay at the exchange, of an electrically-actuated counter, intermediate circuit-closing means, a timing mechanism adapted to be connected in circuit with the latter and with a source of interrupted current upon the actuation of the relay, whereby both appliances are operated upon the actuation of the relay, substantially as set forth.

4. In registering apparatus for telephone-exchanges, the combination with the pilot-relays for the line-signals and for the clearing-out signals at an operator's position, of a switch controlling the circuit to either of said relays, an electrically-operated counting and timing mechanism adapted to be connected in circuit therewith, whereby the elapsed time either for making connection or disconnection may be automatically indicated, substantially as set forth.

5. In apparatus of the class described, the combination with a source of current, of means for interrupting the same at definite time intervals, a controlling-relay at the operator's position of a telephone-exchange, an electrically-actuated counting mechanism, another electrically-actuated counting mechanism, and intermediate contacts closed together upon the actuation of the counting mechanism connected in circuit to supply the interrupted current to the last-mentioned counting mechanism during the closure of the controlling-relay, substantially as set forth.

6. In a telephone-exchange, the combination with a controlling-relay corresponding to each operator's position, a source of current controlled thereby, an electrically-actuated counter, and another electrically-actuated counter corresponding to each operator's position, a suitable timing interrupter device, and means for simultaneously closing the circuits through the electromagnets of the counting mechanisms upon the actuation of the controlling-relay, substantially as set forth.

7. In registering apparatus for operators' positions at telephone-switchboards, the combination with an automatically-actuated circuit opening and closing device, of a source of electric current controlled thereby, and associated to be connected in circuit therewith in separate branches, an electrically-actuated counter in one branch, and a timed interrupter device and another electrically-actuated counter in the other branch, substantially as set forth.

818,069. GAS-CHECK PAD. EUGENE A. YARNELL, Washington, D. C. Filed Apr. 21, 1905. Serial No. 256,724.



Claim.—1. A gas-check pad having a cover composed substantially of asbestos material.

2. A cover for a gas-check pad, made of a cloth of non-metallic, non-combustible fibrous mineral material.

3. A cover for a gas-check pad made of asbestos cloth.

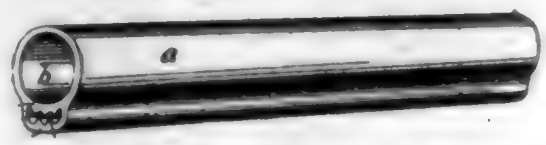
4. A gas-check pad provided with a suitable filling and having a cover formed from an inner ring, an outer ring of asbestos, and two substantially flat pieces connecting said rings.

5. A gas-check pad provided with a cover having a portion thereof surrounding the outer periphery of the pad composed of asbestos.

6. A cover for a gas-check pad formed from a plurality of pieces, the one normally in contact with the bore of the gun being of asbestos.

818,070. RETORT. RICHARD ITTNER, Cleveland, Ohio. Filed Dec. 20, 1902. Serial No. 136,960.

Claim.—1. In a structure of the class described, the combination with the retort-chamber for receiving the charge, of a false bottom affording a ventilating-passage beneath the floor of the said chamber, and means therein comprising a corrugated or ribbed under face for increasing the radiating-surface of the floor of said retort-chamber, substantially as set forth.

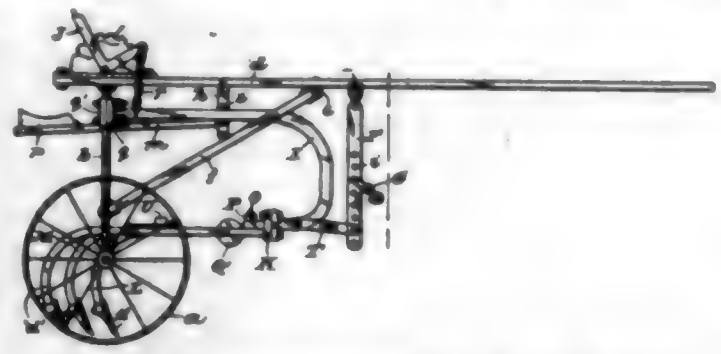


2. In a structure of the class described, the combination with the retort-chamber formed of fire-clay walls of substantially uniform thickness, of a series of strengthening ridges or ribs molded integrally along its bottom surface, and adapted to stay the structure for support from its ends, and a false bottom, inclosing the strengthening-ridges, thereby forming an air-passage forwardly open and rearwardly provided with a vent, substantially as set forth.

3. In a structure of the class described, the combination with a retort-chamber for receiving the charge, of a false bottom affording a ventilating-passage beneath the floor thereof, and a series of longitudinal ribs or ridges integral with the floor for increasing its radiating-surface, the said ribs being positioned within the ventilating-passage, substantially as set forth.

4. In a structure of the class described, the combination with the retort-chamber, of a false bottom or shield affording a ventilating-passage of restricted size beneath the same, and a series of alternating ribs or ridges on the top and bottom surfaces of the ventilating-passage for making the structure self-sealing in case of breakage or perforation of the floor, substantially as set forth.

818,071. RIDING-CULTIVATOR. JOSEPH A. BEAN, Franklin township, Hendricks county, Ind. Filed Sept. 25, 1905. Serial No. 279,874.



Claim.—1. A cultivator including an arch, a pair of arms connected movably to the sides of the arch, means for supporting and controlling the movements of the arms, and shovel-arms supported by means of the movable arms.

2. A cultivator including an arch, a pair of arms connected movably to the sides of the arch and provided with means connected to the arms for the guidance thereof, means for supporting the arms, and shovel-arms supported by means of the movable arms.

3. A cultivator including an arch having upright side parts, a pair of arms movable vertically on and also swinging laterally about the side parts of the arch and supporting shovel-arms, means for supporting and controlling the movements of the arms vertically, and means for guiding the movable arms laterally.

4. A cultivator including an arch, frame members mounted on the arch, a pair of arms movable vertically on the arch and also swinging horizontally, levers mounted on the frame members and connected with and controlling the vertical movements of the movable arms, means supported by the frame members connected with and controlling the horizontal swinging movements of the movable arms, and shovel-arms supported by means of the movable arms.

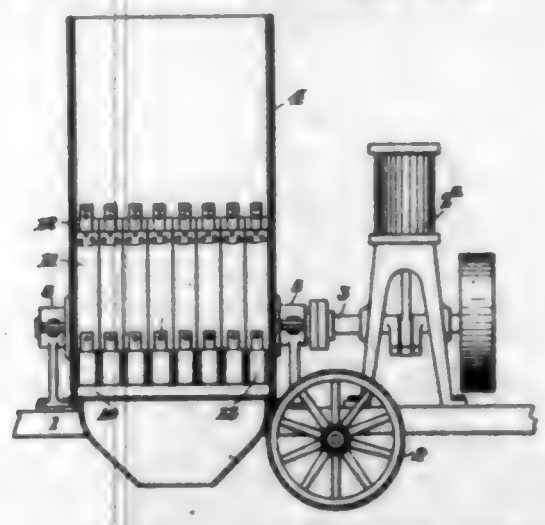
5. A cultivator including an arch having upright side parts, a pair of arms having guide-bearings attached thereto in engagement with the side parts of the arch and provided with caps also in engagement with the side parts and attached to the guide-bearings, frame members mounted on the arch, levers mounted on the frame members and connected with and adjustably supporting the arms so that the guide-bearings may move on the side parts, latches for the levers, and cultivator-shovels having arms supported by the movable arms.

6. A cultivator including an arch having upright sides, a pair of arms mounted movably on the sides of the arch, means for supporting and controlling the movements of the arms, a pair of gang-frames secured fixedly to the arms and provided each with a vertical pivot, a horizontal disk mounted on the pivot and having a vertical disk attached thereto provided with a horizontal pivot, a shovel hav-

ing an arm provided with a vertical disk mounted on the horizontal pivot of the hereinbefore-mentioned vertical disk, and a plurality of shovels having arms fixed to the gang-frames.

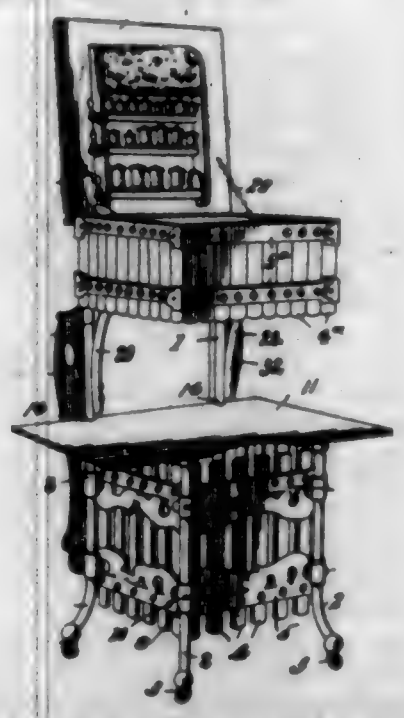
7. A cultivator comprising an arch, carrying-wheels, frame members attached to the arch and forming a tongue, a doubletree pivotally supported by means of the frame member, hangers depending from the doubletree, braces attached to the hangers and also to the doubletree, swingletrees connected to the hangers, curved arms connected movably to the arch and also to the hangers, levers mounted on the frame members and connected with the curved arms, gang-frames attached to the curved arms, shovel-arms attached fixedly to the gang-frames, shovel-arms connected pivotally to the gang-frames and provided with controlling and adjusting means, cultivator-shovels attached to the shovel-arms, and a seat supported by the arch and guided by means of the frame members.

818,072. **SNOW-MELTING MACHINE.** JOHN F. BLAKE, Port Monmouth, N. J., assignor of one-tenth to Herman M. Schaap, New York, N. Y. Filed Oct. 20, 1903. Serial No. 177,795.



Claim.—A portable snow-melter comprising a series of grindstones, a hopper or casing wherein they are mounted, an engine or motor for turning the grindstones, a series of hanging trap-doors together forming part of one wall of said casing, said doors hanging opposite to said stones and adapted to be opened by means of pebbles or obstructions passing over the grindstones, weights tending normally to close said doors, an apron or deflector at the lower portion of said grindstones for positively discharging pebbles or obstructions, and a trough for conveying away the water.

818,073. **SEWING-CABINET.** VAN NESS H. BOGARDUS, Torrington, Conn., assignor of one-half to William T. Nead, Torrington, Conn. Filed Aug. 2, 1905. Serial No. 272,340.



Claim.—1. A sewing-cabinet comprising a receptacle supported on front and rear legs, the rear legs rising above the top of the receptacle, projections upon said legs, a work-board capable of being supported upon said projections and the front legs of the receptacle when in use, and means to support the work-board in an upright position against the back of the rear legs when the board is not in use.

2. A sewing-cabinet comprising a receptacle supported on front and rear legs, the rear legs rising above the top of the receptacle, means for connecting the top of the rear legs together, a work-board capable of being supported upon the top of the receptacle when in use, brackets upon the lower portions of the rear legs for the support of the work-board when not in use, and a shiftable keeper attached to said connection of the upper portion of the legs for engagement with the board to removably hold the same upon the brackets.

3. A sewing-cabinet comprising a lower receptacle supported on front and rear legs, the rear legs rising above the receptacle, an upper receptacle carried by the rear legs, a work-board capable of being supported upon the top of the lower receptacle when in use and means for supporting the board on the back of the rear legs when not in use.

4. A sewing-cabinet comprising a lower receptacle supported on front and rear legs formed of a series of upright slats, the rear legs rising above the receptacle, an upper receptacle also formed of a series of upright slats and carried by the rear legs, a work-board capable of being supported upon the top of the lower receptacle when in use and means for supporting the board on the back of the rear legs when not in use.

5. In a sewing-cabinet, the combination of a lower receptacle supported on front and rear legs, the rear legs rising above the receptacle, an upper receptacle carried by the upper ends of the rear legs, a hinged cover for the upper receptacle, a work-board capable of being supported upon the top of the lower receptacle when in use, and means to support the board upon the back of the rear legs when not in use.

818,074. **STRAP-BUCKLE.** PATRICK H. BURKE, New Britain, Conn., assignor to North & Judd Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 25, 1905. Serial No. 284,288.



Claim.—1. The combination of a buckle and tuck-loop formed of a single piece of wire, the two ends being brought together parallel, and the opposite side being doubled to form, in conjunction with the ends, a strap-bar and a separately-formed tongue mounted between the sides of the buckle on one end of said wire.

2. A combined buckle and tuck-loop formed of a single piece of wire, a separately-formed tongue pivoted on one end of the wire, and a double portion of the wire opposite to said pivot end and forming an abutment to prevent lateral displacement of said tongue.

3. A combined buckle and tuck-loop formed of a single piece of wire, with the two ends brought together to form a part of the strap-bar, a double portion forming the other part of the strap-bar, and a tongue mounted on one end and centered between the other end and said doubled portion.

4. A combined buckle and tuck-loop formed of a single piece of wire, one end forming a pivotal support for the tongue, a separately-formed tongue pivoted thereon, the other end of said wire being bent around parallel to the first end and forming a double portion of the strap-bar.

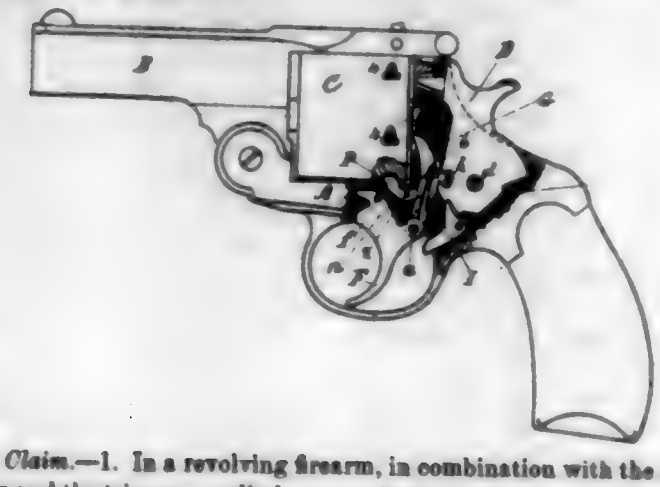
5. A combined buckle and tuck-loop formed from a single piece of wire with one end forming a part of a tongue and strap-bar, and a separately-formed tongue pivoted on said bar.

6. A combined buckle and tuck-loop formed from a single piece of wire and having a strap and tongue bar extending entirely across the buckle, and a tongue centrally pivoted on said bar, the portion of the strap and tongue bar on each side of the pivoted tongue being integral with the adjacent sides of the buckle and tuck-loops.

7. As an article of manufacture, a strap-buckle formed of wire and comprising two loop portions, the adjacent portions of the two loops being substantially parallel and forming a tongue and strap bar extending entirely across said buckle, and a tongue centrally pivoted on said bar.

8. As an article of manufacture, a buckle comprising two loop portions formed from a single piece of wire and including an intermediate strap and tongue bar extending entirely across said buckle and a tongue centrally pivoted thereon, the ends of said wire terminating in said bar and projecting from one side of said buckle and toward said tongue.

818,075. CYLINDER-STOP FOR REVOLVERS. MARTIN BYR, Worcester, Mass., assignor to Harrington & Richardson Arms Co., Worcester, Mass., a Corporation of Massachusetts. Filed Sept. 9, 1905. Serial No. 277,720.



Claim.—1. In a revolving firearm, in combination with the cylinder and the trigger, a cylinder-stop pivoted in the frame below the cylinder and having a rigid, upwardly-inclined actuating-arm, and a lifter pivoted on the trigger, said arm and lifter each provided, at their upper end, with laterally-projecting interengaging devices that move into engaging or non-engaging relation by the swinging action of said lifter-arm and cylinder-stop arm; said devices engaging to actuate the cylinder-stop for unlocking the cylinder with the primal upward movement of the lifter, and moved out of alinement for non-engagement when the lifter-nose escapes from the notch of the hammer, the device on the lifter passing downward forward of, and without contacting with the cylinder-stop device, when the trigger and lifter return to primary position.

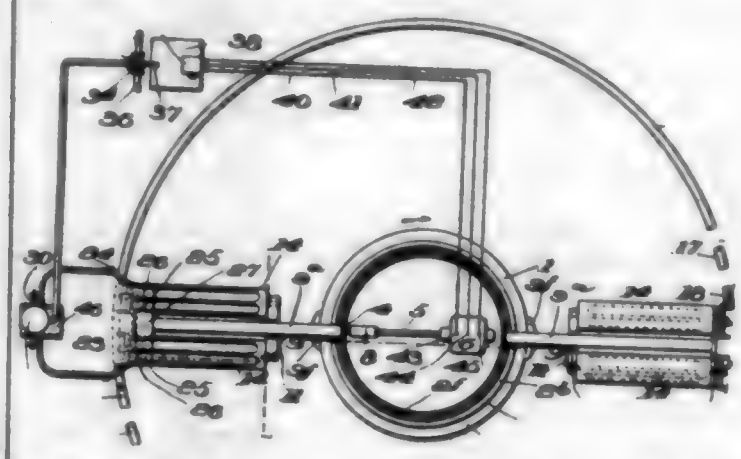
2. In a cylinder-stop mechanism for the purpose described, the lifter-pawl provided at its top end with an offset lug; in combination with a tiltable stop device provided with a cylinder-engaging end and a non-flexible, upwardly-projecting arm having an offset lug that engages with the lug on said lifter-pawl when at its primal position, when its end is within the notch of the hammer, and is released as the lifter moves upward, and assumes a non-contacting path of movement when the end of the lifter is out of said notch, and means for returning said stop device to normal position.

3. A mechanism for the purpose specified, comprising, in combination with the revolver-cylinder, the pivoted trigger, and means for rotating the cylinder; a tiltable stop device comprising a transverse supporting-body, having a cylinder-engaging member and an upwardly-directed rigid actuating-arm, a pivoting-axis for said stop device in the frame, the lifter pivoted on the trigger and provided on its head with means for a primary lifting engagement with said arm, and for release thereof by its upward movement and a reaction-spring for said stop, said lifter and stop-actuating arm and their engaging means being relatively disposed, to pass each other without contacting when the end of the lifter-arm is against the outer face of the hammer-tumbler, thereby preventing reëngagement or contact of the lifter and arm during the retractive movement of the lifter until it reaches its approximate primal position.

4. In a revolving firearm comprising the cylinder, the hammer, the trigger and cylinder moving finger; the combination, of the cylinder-stop device consisting of the body portion P pivotally supported in the frame and carrying the integral cylinder-engaging member 3, and a rearward upwardly-extending rigid arm 6 having at its upper end a laterally-offset stud 5, the hammer-lifter pawl pivoted on the trigger and provided at its head with the laterally-projecting stud 7 that engages the stud on said arm by upward movement of the lifter when its end is in engagement with the notch of the hammer, and passing in front of, and without contact with the stud of the cylinder-stop arm during the return movement of the lifter-pawl, and a coiled expanding spring supported in a recess in the trigger and carrying a stud that impinges against said stop device, all constructed and operating as described.

818,076. APPARATUS FOR CASTING METALS. ADOLPH C. CLARK and THOMAS J. CLARK, Perth Amboy, N. J. Filed Dec. 12, 1905. Serial No. 291,420.

Claim.—1. In a casting-machine, a circular carrier, means for rotating the same, means extending radially from and carried by the carrier to support a mold, a mold pivotally supported by said means, fingers connected to the mold, a track forming part of a circle on which the fingers rest and by which the mold is held in an upright position during part of the travel of the carrier, means adjacent to one end of the track against which the fingers contact and by which the mold is inverted, and means adjacent to the other end of the track against which the fingers contact to right the mold and place the fingers in position to rest on the track.



2. In a casting-machine, a circular carrier, means for rotating the same, means extending radially from and carried by the carrier to support a mold, a mold pivotally supported by said means, fingers connected to the mold, a track forming part of a circle on which the fingers rest and by which the mold is held in an upright position during part of the travel of the carrier, and a plate adjacent to one end of the track, said plate having downwardly-projecting arms and rollers carried by the arms against which the fingers contact and by which the mold is inverted.

3. In a casting-machine, a circular carrier, means for rotating the same, means extending radially from and carried by the carrier to support a mold, a mold pivotally supported by said means, fingers connected to the mold, a track forming part of a circle on which the fingers rest and by which the mold is held in an upright position during part of the travel of the carrier, a plate adjacent to one end of the track, said plate having downwardly-projecting arms and rollers carried by the arms against which the fingers contact and by which the mold is inverted, and another plate adjacent to the other end of the track, having arms projecting vertically and rollers carried by the arms against which the fingers contact to right the mold and to place the fingers in position to rest upon the track to hold the mold in its upright position.

4. In a casting-machine, a carrier, an arm extending radially therefrom and supported thereby, a beam having an opening therein secured to the outer end of the arm, another beam having an opening therein secured to the arm between the ends thereof, bolts carried by the beam and coacting with the arm, whereby the said beam may be adjustable lengthwise of the arm and set at any predetermined point thereon, and a plurality of molds pivoted in the openings in the beams.

5. In a casting-machine, a circular carrier, means for rotating the carrier, an arm extending radially from the carrier, a cross-beam secured to the end of the arm, having a circular opening thereon, another cross-beam between the ends of the arm and adjustable longitudinally thereon, a mold pivoted in said beams, a hub secured to one end of the mold, arms radiating from the hub and fingers extending from the arms, means coacting with said fingers to invert the mold, a track forming part of a circle, means near one end of the track coöperating with said fingers to invert the mold, and means adjacent to the other end of the track to right the mold, said fingers resting on the track during a part of the travel of the carrier to hold the mold in its upright position.

6. In a casting-machine, a circular carrier, means for operating the same, an arm extending radially from and supported by the carrier, a cross-beam having an opening therein secured to one end of the arm, another cross-beam having an opening therein between the ends of the arm, means for adjustably supporting the second cross-beam longitudinally of the arm, a mold having trunnions supported in said openings, a hub secured to one of the trunnions, arms extending radially from said hub, fingers extending outwardly from the ends of the arms, a track forming part of a circle and on which the fingers rest to hold the mold in an upright position, a plate above the track and adjacent to one end thereof, arms extending downwardly from said plate, rollers carried by said arms against which the fingers contact to invert the mold, another plate below the mold and adjacent to the other end thereof, said plate having arms extending upwardly, and rollers carried by said arms against which the fingers contact to right the mold and place the fingers in position to rest on the track to hold the mold in its upright position.

7. In a casting-machine, a carrier, means for moving the same, means carried thereby to support a mold, a mold pivotally supported by said means, arms connected to the mold, fingers extending from the arms, a track on which the fingers rest and by which the mold is held in an upright position during a part of the travel thereof, a plate adjacent to one end of the track, said plate having downwardly-projecting arms, rollers carried by the arms against which the first-mentioned arms contact and by which the mold is inverted, and another plate adjacent to the other end of the track having upwardly-projecting arms, rollers carried by these arms against which the arms secured to the mold coact to right the mold and place the fingers in position to rest upon the track and to hold the mold in an upright position.

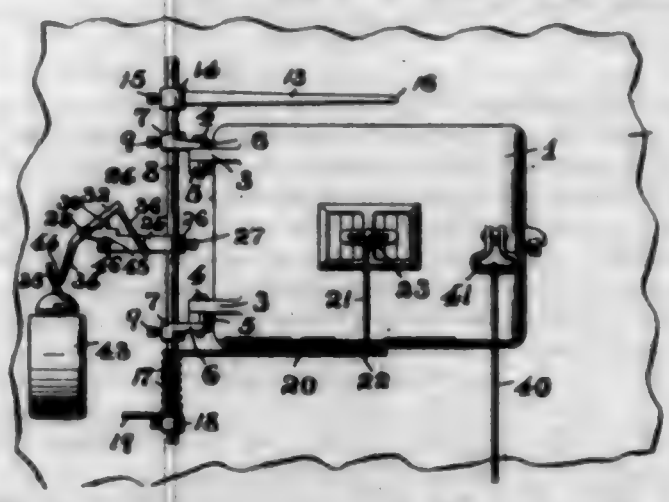
8. In a casting-machine, a carrier, means for moving the same, means carried thereby for supporting a mold, a mold pivotally supported by said means, arms connected to the mold, a track on which the arms rest and by which the mold is held in an upright position during a part of the travel thereof, a plate adjacent to one end of the arm, said plate having downwardly-projecting arms, a roller carried by each of the arms against which the arms of the mold contact to invert the mold, and another plate adjacent to the other end of the track having vertically-projecting arms, and rollers carried by each of said arms against which the arms of the mold contact to right the mold and to place the arms of the mold in such position as to rest upon the track and to hold the mold in its upright position during the further travel of the mold.

9. In a casting-machine, a circular carrier, means for rotating the carrier, an arm extending radially from the carrier, an adjustable cross-beam secured to the same between its ends, another cross-beam secured at the outer end of the arm, a plurality of molds pivoted in said beams, a hub connected to one end of each mold, arms radiating from the hubs and means coacting with said arms to invert the molds during the travel of the carrier.

10. In a casting-machine, a carrier, an arm extending radially therefrom and supported thereby, a pair of longitudinal molds pivotally supported on each side of the said arm, said molds being parallel to each other, arms radiating from the outer end of the molds, a track forming part of a circle, means near one end of the track coöperating with said arms to invert the molds, and means adjacent to the other end of the track to right the molds, the said arms resting on the track during a part of the travel thereof to hold the molds in an upright position.

11. In a casting-machine, a carrier, an arm extending radially therefrom and supported thereby, a cross-beam having a circular opening in each end thereof, secured to the oute end of the arm, another cross-beam having a circular opening in each end thereof, secured to the said arm between its ends, said second beam being adjustable lengthwise of the arm, a pair of molds pivoted in the openings in the said cross-beams, said molds being located one on each side of the arm and being parallel to each other, means for operating the carrier, means for inverting the molds at a predetermined point in their travel, and separate means for righting the molds.

818,077. **DOOR HOLDING AND RELEASING DEVICE.** SAMUEL S. COLT, Orange, N. J. Filed Mar. 16, 1905. Serial No. 250,373.



Claim.—1. The combination, with the door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, and a means of connection between the said door and the release, substantially as and for the purposes set forth.

2. The combination, with the door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, and a spring for closing said door when the release is actuated, substantially as and for the purposes set forth.

3. The combination, with the door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, a means of connection between the said door and release, and a spring for closing said door when the release is actuated, substantially as and for the purposes set forth.

4. The combination, with a hinged or pivoted door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, said holding device and release being arranged on the pivot side of the door and connected with the pivot members, substantially as and for the purposes set forth.

5. The combination, with a hinged or pivoted door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, said holding device and release being arranged on the pivot side of the door and connected with the pivot members, and a spring for closing said door when the release is actuated, substantially as and for the purposes set forth.

6. The combination, with the door of a furnace, or the like, of a fixed body, a release-arm pivotally connected with said body, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, and a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, substantially as and for the purposes set forth.

7. The combination, with the door of a furnace, or the like, of a fixed body, a release-arm pivotally connected with said body, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, and a spring for closing the door when said arm is actuated, substantially as and for the purposes set forth.

8. The combination, with the door of a furnace, or the like, of a fixed body, a release-arm pivotally connected with said body, means for limiting the movement of said release-arm, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, and a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, substantially as and for the purposes set forth.

9. The combination, with the door of a furnace, or the like, of a fixed body, a release-arm pivotally connected with said body, means for limiting the movement of said release-arm, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, and a spring for closing the door when said arm is actuated, substantially as and for the purposes set forth.

10. The combination, with the door of a furnace, or the like, of a fixed body, a stud on said body, a release-arm pivotally connected with said body, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, and a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, substantially as and for the purposes set forth.

11. The combination, with the door of a furnace, or the like, of a fixed body, a stud on said body, a release-arm pivotally connected with said body, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged upon said release-arm for actuating said release-arm, and a spring for closing the door when said arm is actuated, substantially as and for the purposes set forth.

12. The combination, with the door of a furnace, or the like, of a

fixed body, a stud on said body, a release-arm pivotally connected with said body, means for limiting the movement of said release-arm, a means of connection between said stud of said release-arm and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged upon said release-arm, substantially as and for the purposes set forth.

13. The combination, with the door of a furnace, or the like, of a fixed body, a stud on said body, a release-arm pivotally connected with said body, means for limiting the movement of said release-arm, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, a clock-operated mechanism slidably arranged upon said release-arm for actuating said release-arm, and a spring for closing the door when said arm is actuated, substantially as and for the purposes set forth.

14. The combination, with the door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a release-arm pivotally connected with said body, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, substantially as and for the purposes set forth.

15. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a release-arm pivotally connected with said body, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, and a spring on said rod for closing the door when said release-arm is actuated, substantially as and for the purposes set forth.

16. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a release-arm pivotally connected with said body, means for limiting the pivotal movement of said release-arm, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, substantially as and for the purposes set forth.

17. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a release-arm pivotally connected with said body, means for limiting the pivotal movement of said release-arm, a means of connection between said body and the door for holding the door open and said release-arm in locked engagement, a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, and a spring on said rod for closing the door when said arm is actuated, substantially as and for the purposes set forth.

18. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a stud on said body, a release-arm pivotally connected with said body, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged on said release-arm, substantially as and for the purposes set forth.

19. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a stud on said body, a release-arm pivotally connected with said body, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, a clock-operated mechanism slidably arranged on said release-arm, and a spring on said rod for closing the door when said arm is actuated, substantially as and for the purposes set forth.

20. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a stud on said body, a release-arm pivotally connected with said body, means for limiting the pivotal movement of said release-arm, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, and a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, substantially as and for the purposes set forth.

21. The combination, with a door of a furnace, or the like, and its hinge members, of a rod connected with said hinge members, means on said rod for retaining it in a fixed relation, a fixed body on said rod, a stud on said body, a release-arm pivotally connected with said body, means for limiting the pivotal movement of said release-arm, a means of connection between said stud and the door for holding the door open and said release-arm in locked engagement, a clock-operated mechanism slidably arranged on said release-arm for actuating said release-arm, and a spring on said rod for closing the door when said arm is actuated, substantially as and for the purposes set forth.

22. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivoted to said finger, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substantially as and for the purposes set forth.

23. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivoted to said finger, means for limiting the pivotal movement of said release-arm, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substantially as and for the purposes set forth.

24. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivotally connected with said finger, a means of adjustment in engagement with said release-arm, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substantially as and for the purposes set forth.

25. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivoted to said finger, a means of adjustment in engagement with said release-arm, means for limiting the pivotal movement of said release-arm, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substantially as and for the purposes set forth.

26. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivoted to said finger, a shelf on said body provided with a screw-threaded hole, an adjusting-screw movable in said hole, said screw having an end in engagement with said release-arm, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substanially as and for the purposes set forth.

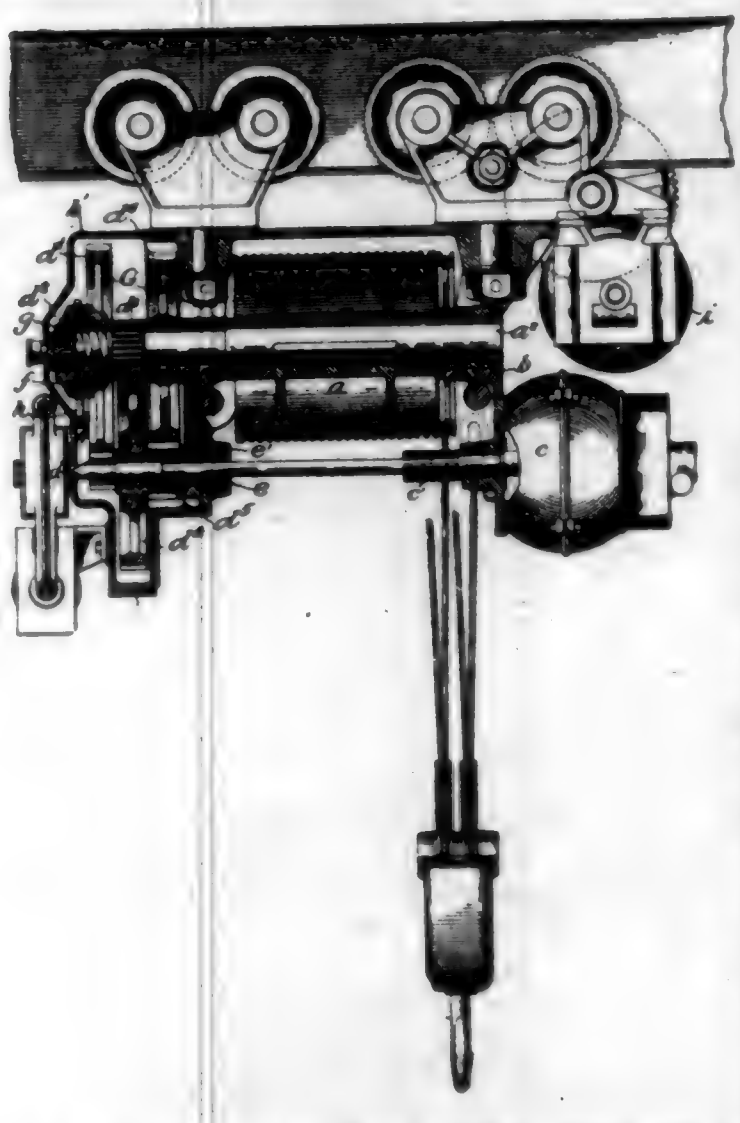
27. In a combined door holding and release mechanism, a fixed body having a finger, a hook-shaped release-arm pivoted to said finger, a shelf on said body provided with a screw-threaded hole, an adjusting-screw movable in said hole, said screw having an end in engagement with said release-arm, means for limiting the pivotal movement of said release-arm, and a time-set prime mover suspended from said release-arm, adapted at a predetermined time to vibrate and move along said arm, to actuate said arm and finally engage with the hook of said arm, substantially as and for the purposes set forth.

28. The combination, with a hinged or pivoted door of a furnace, or the like, of a combined holding device and movable release-arm for retaining the door in an open position, a time-set prime mover slidably arranged and suspended from said release-arm and adapted to move said release-arm at a predetermined time, said holding device and release-arm being arranged on the pivot side of the door and connected with the pivot members, a means of connection between said door and the release-arm, and a spring for closing said door when the release-arm is actuated, substantially as and for the purposes set forth.

818,078. **ELECTRIC HOIST.** PHILIP J. DARLINGTON, Chicago, Ill. Filed Dec. 19, 1904. Serial No. 237,435.

Claim.—1. In an electric hoist, the combination with a hoisting-drum, of a housing therefor in the end walls whereof the horizontal drum-shaft is journaled, a motor mounted outside the housing upon one of the end walls thereof with its shaft passing through the housing external to the drum, and reduction-gearing supported on the other end wall of the housing and connecting the drum and motor shafts; whereby a powerful hoist is obtained occupying small headroom.

2. In an electric hoist, the combination with a hoisting-drum, of a housing for said drum in the walls whereof the shaft of the drum is journaled, a motor mounted on the outside of the housing with its shaft extending therein external to the drum, a quill supported by the housing in which said shaft is journaled, and reduction-gearing supported at one end of said drum and connecting the drum and motor shafts, a portion of said gearing being rotatably mounted upon said quill.



3. In an electric hoist, the combination with a hoisting-drum, of a housing therefor, a motor carried by the housing for driving said drum, and trolley-wheels provided with supports, the sides and top of said housing being adapted to carry said supports; whereby the hoist may be interchangeably employed upon overhead and side tracks.

4. In an electric hoist, the combination with a hoisting-drum, of a housing therefor, in the vertical walls whereof the drum-shaft is journaled, a motor on the outside of said housing with its shaft extending therein, reduction-gearing mounted upon the outer surface of one of said end walls and connecting the drum and motor shafts, a cover for said end wall, a load-retaining friction and ratchet brake, associated with the hoisting-drum and motor, and a spring-actuated pawl mounted upon the said cover and controlling said brake.

5. In an electric hoist, the combination with a hoisting-drum, of a housing therefor, a motor carried by the housing for driving said drum, trolley-wheels and tracks therefor, and shafts adapted to support said wheels at the sides of the housing, each shaft passing through both side walls of the housing and being supported thereby.

6. In an electric hoist, the combination with a hoisting-drum, of a housing or frame for said drum, in the vertical end walls whereof the drum-shaft is journaled, a motor mounted on the outside of the frame with its shaft extending therein external to the drum, reduction-gearing supported at one end of the drum, said gearing connecting the drum and motor shafts, trolley-wheels and tracks therefor, and supports carried upon the sides of said housing or frame adapted to support said wheels.

7. In an electric hoist, the combination with a hoisting-drum, of a housing therefor, in the vertical end walls whereof the drum-shaft is journaled, a motor mounted on the outside of the frame with its shaft extending therein external to the drum, reduction-gearing supported at one end of the drum, said gearing connecting the drum and motor shafts, and trolley-wheels with their supports, the top and sides of said housing being adapted to carry said supports.

818,079. AMUSEMENT APPARATUS. FRANK H. DICKSON, Oswego, N. Y. Filed Sept. 25, 1905. Serial No. 279,880.

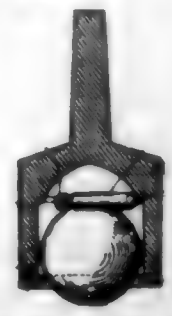


Claim.—1. The combination with the supporting-frame and the upright spindle secured to said frame and formed with a convexed top, of a rocker-plate provided in its central portion with a longitudinal slot receiving through it the said spindle and with an inverted-V-shaped brace extending upward from the end portions of the plate and lengthwise over the slot and mounted at its center on the top of the spindle, and the teeter-beam composed of parallel members mounted on the plate at opposite sides of the slot thereof and receiving between them the aforesaid brace as set forth.

2. The combination of the teeter-beam composed of two members disposed side by side with a space between them and provided with a plurality of transverse perforations in their end portions, spacing-blocks interposed between the beam members, tie-bolts passing through said parts, seats mounted on the ends of the beam members, tenons depending from the seats and inserted between the beam members, pins inserted removably in the perforations of the beam members and tenons, and posts attached to the tenons substantially as set forth.

3. An amusement apparatus comprising a suitable support, a teeter-beam pivotally mounted upon said support and composed of two parallel members disposed side by side with a space between them, seats disposed on the ends of the beam and provided with tenons interposed between the beam members, said tenons and beam members being provided with coinciding apertures, and pins inserted removably through said apertures and sustaining the seats adjustably toward and from the center of the beam as set forth.

818,080. BALL-CASTER. CALEB D. DUNHAM, Boston, Mass. Filed Sept. 1, 1905. Serial No. 276,666.



Claim.—1. The combination of a socket, a ball movably held therein and a plurality of rollers interposed between said ball and said socket, said rollers being so arranged as to rotate simultaneously and concentrically within said socket and so as to act as movable bearings for said ball.

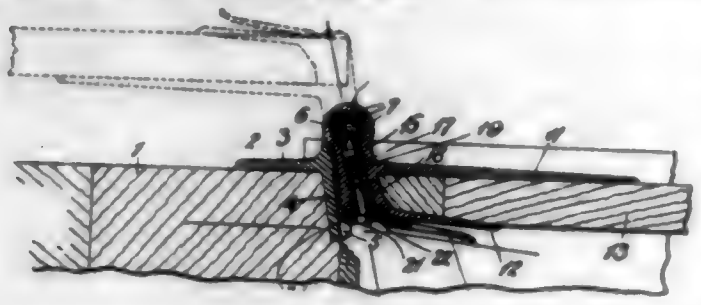
2. The combination of a holder having a socket, a ball movably held therein, and a plurality of rollers interposed between said ball and said socket, said socket having an inclined face on its inner wall and said rollers being in movable engagement with said ball, said inclined face and each other.

3. The combination of a holder having a socket, a ball movably held therein, and a plurality of rollers each having substantially conically-shaped ends, said socket having an inclined face on its inner wall, the angle of which corresponds to the angle of the ends of said rollers, and said rollers being so arranged as to be in movable engagement with said ball, said inclined face and with each other.

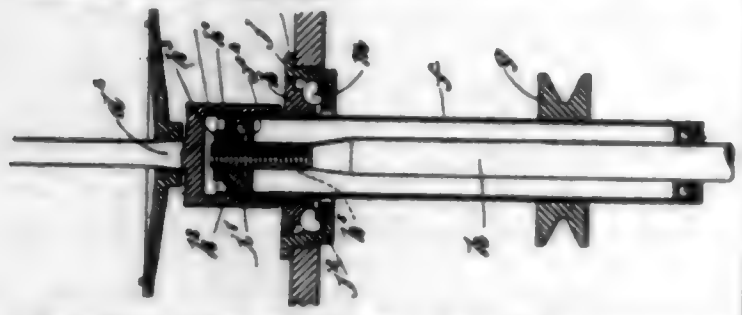
818,081. LOCK-HINGE. JOHN W. DWYER, Hartford, Conn. Filed Jan. 26, 1905. Serial No. 242,626.

Claim.—A hinge comprising in its contruction an angular bracket having a lateral flange on one of its arms, a pintle rigidly secured in the inner end of said bracket and having notches on its outer vertical surface; a knuckle member having a perforated base, and adapted to be loosely mounted on the pintle and constructed to provide a lateral flange and a seat for a closure, said flange being adapted to coöperate with the lateral flange on the bracket to prevent sagging, a locking-bolt movably mounted in said perforatoin

and adapted to be projected into the respective notches on said spindle, a spring mounted on said bolt within said perforation for actuating the same in one direction, and a lever operatively connected with said bolt for withdrawing the same.



818,082. SPINDLE. JAMES G. HARLE, Dedham, Mass. Filed Apr. 27, 1905. Serial No. 257,676.



Claim.—1. In a spindle, a bearing adapted to be supported by the spindle-rail, a rotatable member mounted in said bearing, a blade supported and rotated by said member, a whirl on said member below the spindle-rail, and an independently-supported stem on which said rotatable member is journaled to hold it against lateral or gyratory vibration.

2. The combination with a step-rail and a spindle-rail, of a rod or stem on the step-rail, a bearing on the spindle-rail, and a hollow bobbin-supporting member journaled in said bearing and on said rod or stem.

3. In a spindle, the combination of a rod or stem, a hollow cylinder, said rod or stem and said cylinder being provided with complemental cones and races, balls interposed between said cones and races, and a blade attached to said hollow cylinder.

4. In a spindle, the combination of a rod or stem, a hollow cylinder, said rod or stem and said cylinder being provided with complemental cones and races, balls interposed between said cones and races, a blade attached to said hollow cylinder, a cup adapted for attachment to a rail and having a race, an external cone on said cylinder and balls between said last-mentioned cone and race.

818,083. CREDIT-CABINET. WALTER M. ELLETT and ROLLO M. VICK, Alliance, Ohio. Filed May 10, 1905. Serial No. 259,730.



Claim.—In a credit-cabinet, a case, a series of credit-slip partitions, said credit-slip partitions carrying wires, and the wires provided with crank or angled portions, said crank or angled portions adapted to be held in lowered or elevated positions, substantially as and for the purpose specified.

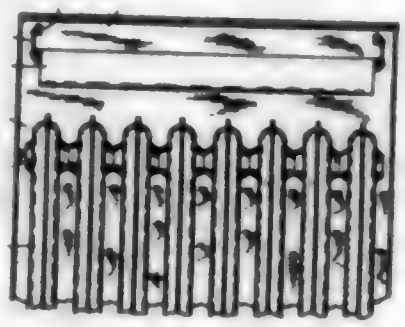
818,084. MOUNTING PHOTOGRAPHS OR PICTURES. JOSEPH M. ELLIOT, Germantown, Pa. Filed Jan. 22, 1906. Serial No. 297,151.

Claim.—1. A mount for photographs or pictures, comprising a stiff board back, a sheet of mount-paper or the like stretched over the face and held in a rigid position by securing the same only to the back, and a photograph or picture attached to the sheet so as to be held suspended therefrom.

2. A mount for photographs or pictures, comprising a stiff back, a sheet of mount-paper or the like with flaps, said sheet being held taut away from the face of said back and secured only by said flaps to said back and an insert provided with a photograph or picture and both attached to said sheet so as to be held suspended from said mount-sheet.

3. A mount for photographs or pictures, comprising a stiff back, a sheet of mount-paper or the like provided with end flaps held in required position independent of the face of said back by fastening or pasting the flaps of said sheet to said back, inserts held suspended from said mount-sheet, and a photograph or picture attached to said insert.

818,085. HEATER. JAMES D. ERSKINE, Chicago, Ill. Filed Feb. 18, 1905. Serial No. 246,231.



Claim.—In a heater, the combination, with a radiator, of an overhanging shield therefor, and a laterally-movable water-pan supported in movable bearings depending from the overhanging portion of the shield.

818,086. BOTTLE-WASHER BRUSH. BERNARD GOEBBARD, Chicago, Ill., assignor to B. Goldman & Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 4, 1905. Serial No. 290,206.

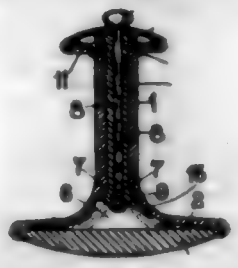


Claim.—1. In combination, a stem provided on one end with a cross-head, brush fiber secured to the stem toward its opposite end, a head provided in its top with a recess and having a slotted neck extending from it through which to insert the stem and enter the cross-head in said recess, and a collar on said neck clamping said cross-head in said recess, for the purpose set forth.

2. In combination, a stem provided on one end with a cross-head, brush fiber secured to the stem toward its opposite end, a head provided in its top with a recess and having a slotted externally-threaded neck extending from it through which to insert the stem and enter the cross-head in said recess, and a nut screwed upon said neck and clamping said cross-head in said recess, for the purpose set forth.

3. In combination, a stem composed of spirally-twisted wires formed into a cross-head at one end, brush fiber confined between the twisted wires of the stem toward its opposite end, a head adapted to be connected at its lower end with a spindle and provided in its top with a recess and with a slotted threaded neck extending from said top, the neck being longitudinally grooved at opposite sides of the slot therein, and a nut screwed upon said neck and clamping said cross-head in said recess, for the purpose set forth.

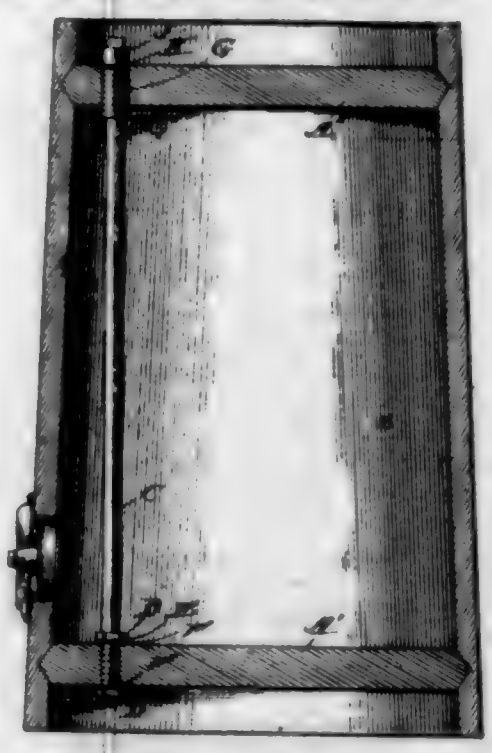
818,087. STUD, DRESS-FASTENER, AND THE LIKE. THOMAS HARAM, Handsworth, near Birmingham, England, assignor to Charles H. Collins & Sons, Birmingham, England. Filed Nov. 7, 1905. Serial No. 286,178.



Claim.—1. A garment-fastener consisting of a hollow stem its inner walls terminating in shoulders, a bifurcated stem of resilient parts each part terminating in a shoulder at its inner end adapted to engage the shoulders of the hollow stem, a head on said bifurcated stem adapted to be seated upon the outer end of said hollow stem, a base for the latter, and a pin adapted to be inserted into the bifurcated stem to cause its shouldered ends to be opened and held in locked engagement with the shoulders of said hollow stem.

2. In dress or the like fasteners, the combination comprising a part, consisting of the hollow stem 1, having the interior shoulders 7, the broadened base 2, with a part, consisting of the bifurcated stem 8, having projections 9 at its inner end, the said bifurcated stem being held by the head 10 and the central rod or pin 12 having a retaining end 13 within the said top or inner part for the purpose of forcing the bifurcated stem under the shoulders 7 substantially as and for the purpose set forth.

818,088. TANK. OLOF HJELMBERG, Chicago, Ill. Filed Feb. 17, 1905. Renewed Jan. 19, 1906. Serial No. 296,831.



Claim.—1. A tank having a drainage-tube extending completely through it from top to bottom, said tube being open at its upper end to admit water from above the head of the tank and at its lower end to permit the water to escape below the bottom of the tank and being without internal communication with the tank, and means for closing and opening the tube at will, substantially as described.

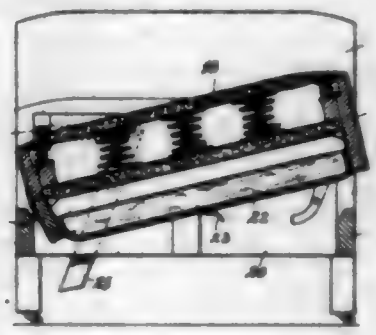
2. A tank having a drainage-tube extending through its head and downward therefrom, terminating at its lower end on the outside of the tank, said tube being open at both ends and being without internal communication with the tank and having a portion projecting above the head and provided with an opening for admitting water, and means for closing and opening said opening at will, substantially as described.

3. A tank having an opening through its head, a fitting secured in said opening and projecting above the upper surface of the head, the projecting portion being threaded and provided with lateral openings, a threaded cap fitting on said projecting portion and a tube extending from said fitting downward and through a second opening with which the tank is provided, said tank and tube being without internal communication, substantially as described.

4. A tank having an opening through its head, a fitting secured in the opening in the head and having a reduced portion projecting above the head and providing a shoulder, said reduced portion being threaded and provided with a lateral opening, a threaded cap fitting said reduced portion and adapted to be screwed thereon and into contact with the shoulder, and a tube extending downward from said fitting and passing out through a second opening with which the tank is provided, the tank and tube being without internal communication, substantially as described.

5. A tank having a drainage-tube extending through the head and downward into the tank and thence out through the tank to the outside thereof, said tube being open at its upper end above the head for the admission of water and open at its lower end, outside of the tank for the discharge of water, and a controllable closure for said tube, the tank and tube being without internal communication, substantially as described.

818,089. CONVERTIBLE SOFA-BED. GUSTAV B. HOLMES, AXEL G. BOSTROM, and JOHN M. BOSTROM, Milwaukee, Wis. Filed Sept. 14, 1905. Serial No. 278,268.



Claim.—1. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon and adapted to rest on the front and rear of the main frame in one position, a movable front board by which the engagement is made between the frame of the seat or body portion and the main frame, and means for moving said front board to release said engagement and permit the seat or body portion to be turned.

2. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon and adapted in one position to have its frame rest upon the main frame, a swinging front board on the frame of the seat or body portion by which the engagement between the said frame and the main frame is made, and means for swinging the front board to permit the seat or body portion to be turned.

3. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged front board adapted to engage the main frame, and a lever mounted on the main frame and capable of swinging the front board out of engagement with the main frame to permit the seat or body portion to be inverted.

4. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a partition on the main frame, a lever mounted thereon, a hook carried by the lever extending through an opening in the partition, and an arm on the hinged board adapted to be engaged by the hook to swing the hinged board out of engagement with the main frame.

5. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a partition on the main frame, a lever mounted thereon, a hook carried by the lever and extending through an opening in the partition, an arm on the hinged board, a lug on the arm adapted to be engaged by the hook to swing the hinged board out of engagement with the main frame, and a cam to receive the lug from the hook and hold it extended so as to keep the hinged board in the position to which it is swung by the lever until it is clear of the main frame.

6. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a partition on the main frame, a lever mounted thereon, a hook carried by the lever and extending through an opening in the partition, an arm on the hinged board, a lug on the arm adapted to be engaged by the hook, a cam to receive the lug from the hook and hold it extended so as to keep the hinged board in the position to which it is swung by the lever until it is clear of the main frame, and a second cam at the other side of the sofa-bed adapted to engage and move the lug so as to cause the hinged board to clear the main frame.

7. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a catch-plate pivotally mounted in the

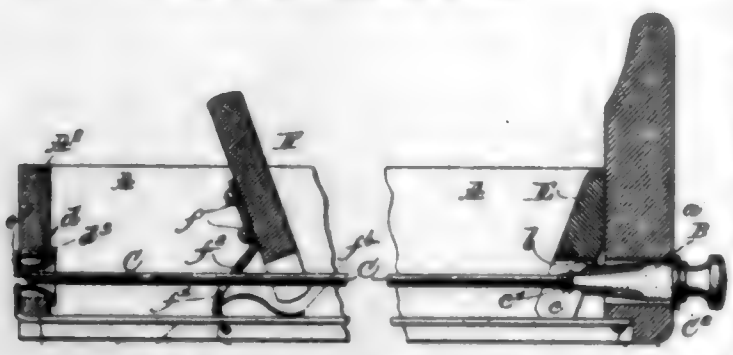
main frame and adapted to engage the seat or body portion, an arm projecting from the catch-plate, a suitably-mounted lever, and a lug on the lever adapted to engage the arm for retracting the catch-plate from engagement with the seat or body portion.

8. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a partition on the main frame, a lever mounted thereon, a hook carried by the lever and extending through an opening in the partition, an arm on the hinged board, a lug on the arm adapted to be engaged by the hook to swing the hinged board out of engagement with the main frame, a catch-plate pivotally mounted in the partition and having a rib adapted to engage a groove in the frame of the seat or body portion, an arm on the catch-plate extending through the partition, and a lug on the lever to engage the arm and withdraw the catch-plate from engagement with the seat or body portion.

9. In a sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a partition on the main frame, a lever mounted thereon, a hook carried by the lever and extending through an opening in the partition, an arm on the hinged board, a lug on the arm adapted to be engaged by the hook to swing the hinged board out of engagement with the main frame, a spring-pressed catch-plate pivotally mounted on the partition and adapted to engage the frame of the seat or body portion, an arm on the catch-plate extending through the partition, and a lug on the lever adapted to engage the arm for withdrawing the catch-plate from engagement with the frame of the seat or body portion.

10. A sofa-bed having a main frame and a seat or body portion pivotally mounted thereon, a frame for the seat or body portion having a hinged board adapted to engage the main frame, a spring-pressed mattress-extension frame on the seat or body portion having connection with the hinged board and adapted to hold said hinged board outwardly, and means for swinging the hinged board against the pressure of the extension-frame out of engagement with the main frame.

818,090. CARD-HOLDER. DAVID E. HUNTER, Cambridge, Mass., assignor to Library Bureau, Boston, Mass., a Corporation of Massachusetts. Filed Mar. 10, 1904. Serial No. 197,545.

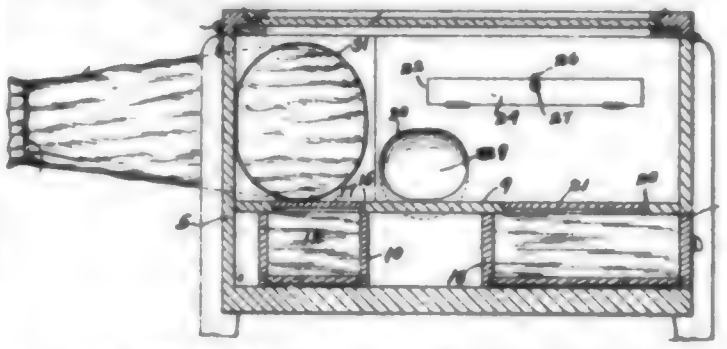


Claim.—1. In a card-holder, a drawer, a card-holding rod removably mounted in said drawer, automatically-operated means for locking the said rod in operative position, a guide-bar, a spring-locked follower slidably mounted upon said guide-bar, said guide-bar having one of its ends attached to the front of the drawer and its opposite end upturned to form a seat for a bushing, and a bushing adapted to receive the end of the aforementioned card-holding rod when the same is in operative position.

2. In a card-holder, a drawer, a card-holding rod removably mounted in said drawer, automatically-operated means for locking said rod in operative position, a guide-bar, a spring-locked follower slidably mounted on said guide-bar, said guide-bar having one of its ends attached to the front of the aforementioned drawer and its opposite end being upturned, and a bushing mounted in said upturned portion, and extending through an opening in the rear wall in the aforesaid drawer and adapted to receive the end of the aforesaid card-holding rod.

818,091. DEVICE FOR FACILITATING THE BRONZING OF PRINTED MATTER. FRANK JANOUSEK, Jr., Milwaukee, Wis. Filed Aug. 3, 1905. Serial No. 272,483.

Claim.—1. In a device for facilitating the bronzing of printed matter, the combination with a casing having an opening for the insertion of the arm of the operator, and the interior space of said casing provided with a table for supporting the printed matter to be bronzed, of a receptacle for the bronze extending laterally outwardly from the casing, and having an open inner side communicating with an opening through the side of the casing.



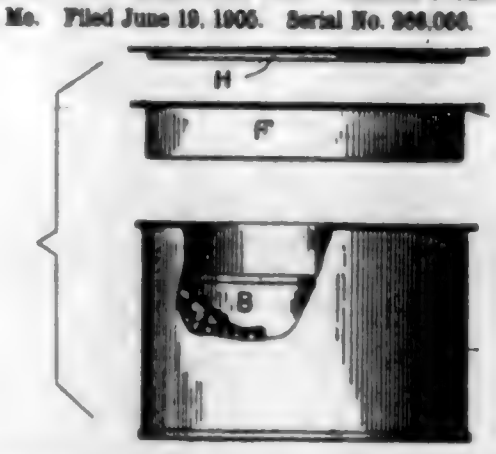
2. In a device for facilitating the bronzing of printed matter, the combination of a casing having an opening for the insertion of the arm of the operator, and subdivided interiorly by a horizontal partition, said partition forming a table for supporting the printed matter to be bronzed, a drawer beneath the partition, the said partition provided with an opening communicating with the drawer, and a flexible sleeve extending from the arm-opening of the casing.

3. In a device for facilitating the bronzing of printed matter, the combination of a casing having an opening for the insertion of the arm of the operator, and subdivided interiorly by a horizontal partition, said partition forming a table for supporting the printed matter to be bronzed, a drawer beneath the partition, said partition provided with an opening leading to the drawer, and a receptacle for the bronze projecting outwardly laterally from a side of the casing, and having an open inner side communicating with an opening in said side of the casing.

4. In a device for facilitating the bronzing of printed matter, the combination of a casing having an opening for the insertion of the arm of the operator, and said casing subdivided interiorly by a horizontal partition, the partition forming a table for supporting the printed matter to be bronzed, a drawer beneath the partition, with means for gaining access through the partition to the drawer, a receptacle for the bronze projecting outwardly laterally from a side of the casing, and having an open inner side communicating with an opening in said side of the casing, and a flexible sleeve secured in the arm-opening of the casing and extending therefrom.

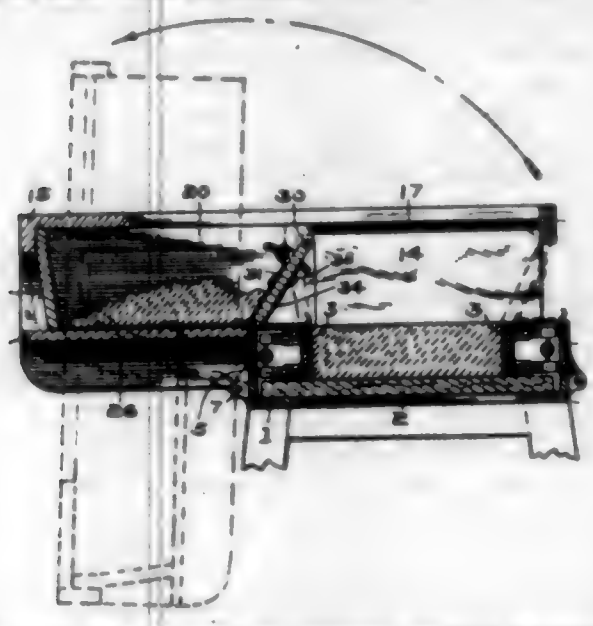
5. In a device for facilitating the bronzing of printed matter, the combination of a casing having an opening in its top covered with a transparent material, and said casing also having an opening for the insertion of the arm of the operator, and divided interiorly by a horizontal partition, said partition forming a table for supporting the printed matter to be bronzed, a drawer beneath the partition, with means for gaining access through the partition to the drawer, and a receptacle for the bronze projecting outwardly laterally from a side of the casing, and having an open inner side communicating with an opening in said side of the casing.

818,092. SELF-HEATING CAN. GEORGE S. JEWETT, Norridgewock, Me. Filed June 19, 1905. Serial No. 266,066.



Claim.—A self-heating can, comprising an outer and inner receptacle with a space intervening between the same, the outer receptacle having a bottom with an annular groove in the upper surface thereof in which the inner receptacle fits, the portion of the bottom of the outer receptacle beyond said annular groove being inclined and bent to form an annular groove, adapted to receive the circumferential wall of the outer casing, a water-tank resting upon the top of said inner receptacle, a flanged top to said water-tank, having an annular groove therein, forming a shoulder and designed to hold said water-tank against the inner wall and flange of the outer receptacle, as shown and described.

818,093. MOLD-FILLING DEVICE. JOHN A. JOHNSON, Winamac, Ind., assignor of one-half to Edwin J. Forest, Indianapolis, Ind. Filed Aug. 14, 1905. Serial No. 274,190.



Claim.—1. In a device of the character described, the combination of the mold, a feed device movably mounted over the mouth of the mold and adapted to direct the material to said mouth, a cutting device carried by the feed device for removing the surplus material from the top of the mold, a receptacle for catching said surplus material and means permitting lateral movement of said feed and cutting devices.

2. In a device of the character described, the combination of the mold, a feed device movably mounted over the mouth of the mold, cutter-knives, a head-plate in the feed device for mounting the cutter-knives, and an adjusting means on the feed device for varying the line of inclination of both the head-plate and cutter-knives.

3. In a device of the character described, the combination of the mold, a feed device movably mounted over the mouth of the mold, cutter-knives, a head-plate in the feed device for mounting the cutter-knives, means for adjustably mounting the cutter-knives, and an adjusting means on the feed device for varying the line of inclination of both the head-plate and cutter-knives.

4. In a device of the character described, the combination of the mold, a hopper-supporting frame pivotally mounted above the mold, a hopper supported in the hopper-frame, and means permitting reciprocatory movement of said hopper across the mouth of the mold.

5. In a device of the character described, the combination of the mold, a hopper-supporting frame pivotally mounted above the mold, a hopper supported in the hopper-supporting frame, means permitting the hopper-frame and hopper to swing away and free the top of the mold.

6. In a device of the character described, the combination of the mold, a hopper-supporting frame pivotally mounted above the mold, a hopper movably mounted in the hopper-supporting frame, a floor in the hopper-supporting frame to form the bottom for the hopper when the latter stands in shifted position, and means permitting lateral movement of said hopper.

7. In a device of the character described, the combination of the mold, a feed device movably mounted over the mouth of the mold, means permitting movement of said feed device across the mouth of the mold, and trowels carried by the hopper to engage and smooth the exposed surface of the molded article.

8. In a device of the character described, a mold unit composed of a plurality of individual molds, a feed device susceptible to move across the mouths of said individual molds, and means carried by said feed device to smooth the freshly-cut surfaces of the molded articles.

9. In a device of the character described, a mold unit composed of a plurality of individual molds, a feed device mounted so as to be operatively movable in a right-angle plane line of the mouths of the individual molds, cutter-knives carried by the feed device, and means on the feed device for varying the line of inclination of said cutter-knives.

10. In a device of the character described, a mold unit composed of a plurality of individual molds, a feed device mounted so as to be operatively movable in a right-angle plane line of the mouths of the individual molds and adapted to simultaneously fill said molds, means carried by the feed device for removing the surplus material from the tops of the molds, and a receptacle for catching said surplus material.

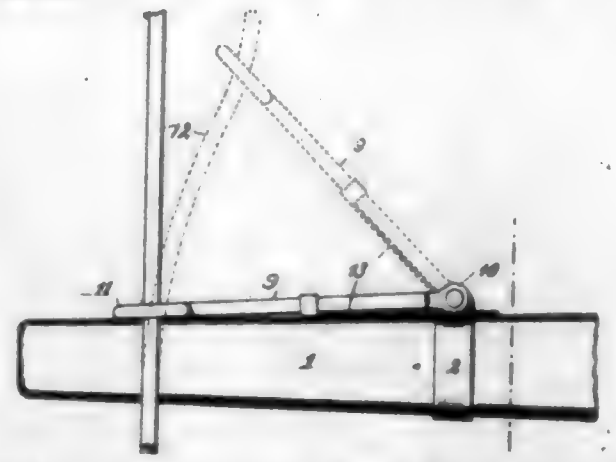
11. In a device of the character described, a mold unit composed of a plurality of individual molds, a feed device mounted so as to be operatively movable in a right-angle plane line of the mouths of the individual molds and adapted to simultaneously fill said molds, means carried by the feed device for removing the surplus material from the tops of the molds, a receptacle for catching said surplus material, and means carried by the feed device to smooth the freshly-cut surfaces of the molded articles.

818,094. COMBINED INKSTAND, PAPER-HOLDER, AND PEN-RACK. LORENZO R. JOHNSON, Elmira, N. Y. Filed Feb. 24, 1905. Serial No. 247,146.



Claim.—In a device of the kind described, a base-plate, a casing upon the rear portion of the base-plate, said casing having a slotted front, a removable back and a top the upper surface of which is below the upper edges of the back and sides of the casing, the said sides being cut out above the top, all as and for the purpose set forth.

818,095. TUG-HOLDER FOR SWINGLETREES. ORRA S. JOHNSTON, Leavenworth county, Kans. Filed Feb. 11, 1905. Serial No. 245,195.

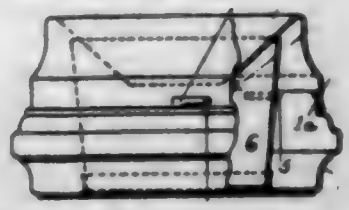


Claim.—1. The combination with a swingletree, of a clamp having longitudinal adjustment thereon, and a tug-engaging member pivotally secured to said clamp so that it will be adjusted longitudinally with the latter, substantially as described.

2. A tug-holder consisting of a clamp comprising two resilient members adjustably held together so they may embrace and be adjusted longitudinally upon swingletrees of different widths, and a tug-engaging member pivotally secured to said clamp so that it will be adjusted longitudinally with the latter, substantially as described.

3. The combination with a swingletree, of a clamp having longitudinal adjustment thereon, a screw for holding said clamp at any point of its adjustment, an arm pivotally mounted at its inner end upon said screw so that it will be adjusted longitudinally with the clamp, a tug-engaging loop at the outer end of said arm, and a spring engaging the arm for normally holding its looped end in contact with the swingletree, substantially as described,.

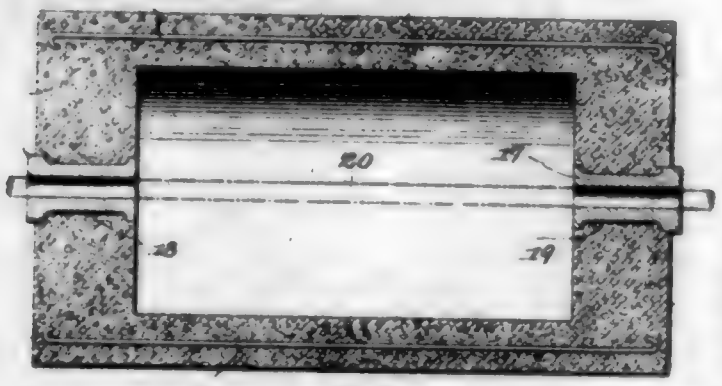
818,096. CUSPIDOR. FREDERICK A. KELTY, Saginaw, Mich. Filed May 15, 1905. Serial No. 260,465.



Claim.—The combination in a cuspidor with a permanent body or base portion open at the top, and a permanent upper part or cover

secured to the base by an exterior fastening, the cover provided with a tapering downwardly-inclined shield, of a plurality of yielding frames located interiorly of and projecting laterally from the base portion and a destructible cup removably received between and embraced by the frames, which frictionally engage the cup to retain it in position, the sides of the cup surrounding the aperture in the cover.

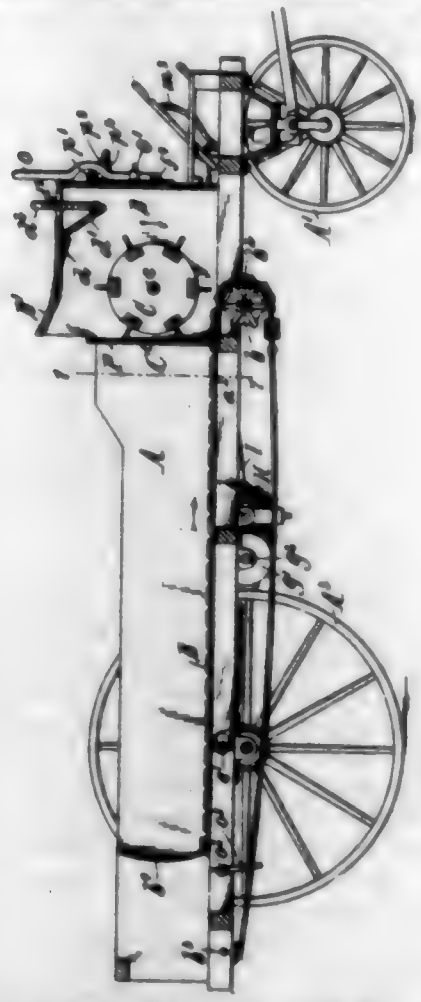
818,097. LAND-ROLLER. JOHN C. F. KELCH, Celina, Ohio. Filed Jan. 10, 1906. Serial No. 295,447.



Claim.—1. A land-roller consisting of a tubular member having closed ends and with metal bearing extending centrally through said ends said bearing having concaved outer sides for receiving the concrete material.

2. A land-roller consisting of a tubular member of concrete having spaced tie-rods embedded therein said rods bent laterally at the ends and with the ends of the tubular member closed, and metal bearings extending through said closed ends and provided with concaved outer surfaces for receiving the concrete material.

818,098. FERTILIZER-DISTRIBUTER. JOSEPH S. KEMP, Newark Valley, N. Y. Filed Apr. 4, 1905. Serial No. 253,818.



Claim.—1. A fertilizer-distributer comprising a receptacle for the material to be distributed, a beater arranged in front of said receptacle, means for actuating the beater with its rear portion in an upward direction and for delivering the material downwardly in front of the beater, and a feed mechanism for feeding the material in the receptacle forwardly to the beater, substantially as set forth.

2. A fertilizer-distributer comprising a receptacle for the material to be distributed, a beater arranged in front of said receptacle, means for actuating the beater with its rear portion in an upward direction, a hood extending forwardly over the beater and downwardly in front thereof and opening downwardly, and a feed mechanism for feeding the material in the receptacle forwardly to said beater, substantially as set forth.

3. A fertilizer-distributer comprising a body for the reception of the fertilizer, front and rear supporting-axles, a front delivery-opening arranged in the front portion of said body in rear of the front axle, a beater arranged in the front portion of said body over said opening, means for actuating the beater with its rear portion in an upward direction, and a hood extending forwardly over the beater and downwardly in front thereof to said delivery-opening, substantially as set forth.

4. In a fertilizer-distributer, the combination of a receptacle for the fertilizer, a beater, means for feeding the material in the receptacle to the beater, a hood extending over the beater and downwardly opposite the descending side of the beater, and a movable deflector arranged in the hood over the descending side of the beater and movable up and down in the hood, substantially as set forth.

5. In a fertilizer-distributer, the combination of a receptacle for the fertilizer, a beater, means for feeding the material in the receptacle to the beater, a hood extending over the beater and downwardly opposite the descending side of the beater, and a deflector arranged obliquely in the upper portion of the hood over the descending side of the beater for deflecting the material downwardly, substantially as set forth.

6. In a fertilizer-distributer, the combination of a receptacle for the fertilizer, a beater, means for feeding the material in the receptacle to the beater, a hood extending over the beater and downwardly opposite the descending side of the beater, a deflector arranged obliquely in the upper portion of the hood over the descending side of the beater for deflecting the material downwardly, and means for adjusting the inclination of the deflector, substantially as set forth.

7. In a fertilizer-distributer, the combination of a receptacle for the material to be distributed, a beater, means for feeding the material in the receptacle to the beater, a movable gate arranged between the receptacle and the beater, and a hood which extends over the beater and has its top provided with a movable portion which is adapted to move upwardly with the gate, substantially as set forth.

8. In a fertilizer-distributer, the combination of a receptacle for the material to be distributed, a beater arranged in front of said receptacle, means for feeding the material in the receptacle forwardly to the beater, a movable gate arranged adjacent to the rear side of the beater, and a hood which extends forwardly over the beater and has its top provided with a movable rear portion which is adapted to move upwardly with the gate, substantially as set forth.

9. In a fertilizer-distributer, the combination of a receptacle for the material to be distributed, ground-wheels on which the receptacle is supported, a feed mechanism in said receptacle, and a return mechanism for returning said feed mechanism to its initial position, actuated by contact with a ground-wheel, substantially as set forth.

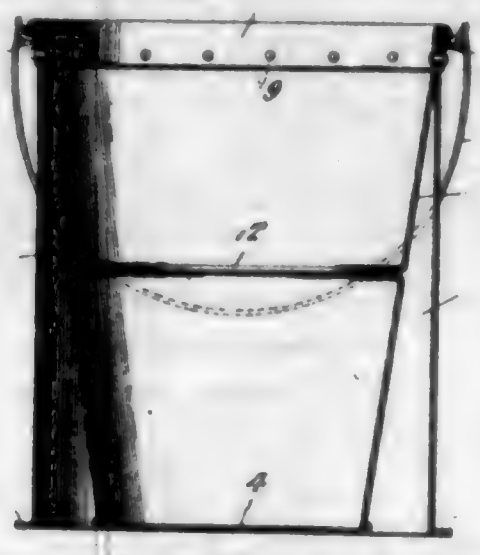
10. In a fertilizer-distributer, the combination of a receptacle for the material to be distributed, ground-wheels on which the receptacle is supported, a feed mechanism in said receptacle, and a return mechanism comprising a frictional driving-roller adapted to be driven by contact with a ground-wheel, a support for said roller movable toward and from the ground-wheel, and mechanism connecting said roller with said feed mechanism, substantially as set forth.

11. In a fertilizer-distributer, the combination of a receptacle for the material to be distributed, ground-wheels on which the receptacle is supported, a movable bottom in said receptacle, a driving-shaft for said bottom provided with a sprocket-wheel, a frictional driving-roller adapted to be driven by contact with a ground-wheel and carrying a sprocket-wheel, a support for said roller movable toward and from said ground-wheel, and a drive-chain connecting said sprocket-wheels, substantially as set forth.

818,099. CULINARY VESSEL. ORVILLE M. KNOX, Oneida, N. Y. Filed Aug. 2, 1905. Serial No. 272,344.

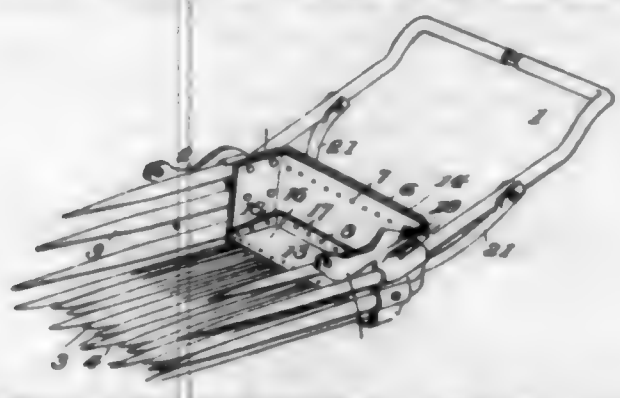
Claim.—1. A cooking utensil comprising an inner vessel and an outer jacket surrounding the same and spaced therefrom to form an intervening chamber, said vessel and jacket being coextensive in length or depth and having their bottom portions arranged in a common plane, the inner vessel being of frusto-conical and the outer vessel of cylindrical form, the enlarged upper end of the vessel being substantially of the same diameter as the internal diameter of the jacket and terminating in a cylindrical flange snugly fitting against the jacket and closing the upper contracted end of the chamber, the

upper edges of the flange and jacket being complementarily outturned to form a rim, a stiffening member inclosed by said rim, and rivets passing through the jacket and flange below the rim and adjacent to the upper end of the flaring body of the vessel and tightly closing the joint formed thereby.



2. A cooking utensil of the character described, comprising an inner vessel of frusto-conical form and having a flat bottom, and an outer jacket of cylindrical form and provided with a base-support disposed in the plane of said flat bottom, the said inner vessel being arranged within the jacket to form an intervening flaring heating-chamber and having its upper end conforming substantially to the internal diameter of the jacket and formed with a cylindrical flange resting in direct contact with the inner surface of the upper end of the jacket and forming a closure for the upper contracted end of the heating-chamber, the upper edges of the jacket and flange being complementarily outturned to form an external rim at the upper end of the vessel, a stiffening element inclosed by said rim, and an annular row of rivets joining the jacket and flange below the rim and between the same and the upper end of the body of the inner vessel and forming a reinforcing attaching and joint-closing connection, substantially as described.

818,100. **FORK SCRAPER.** ALEXANDER KORNIL and FREDRICK RADLOFF, Goldendale, Wash. Filed Aug. 30, 1905. Serial No. 276,444.



Claim.—1. A fork scraper comprising a solid back, a series of tines having their rear portions bent to extend in the rear of said back, and a back plate covering the bent ends of the tines and secured to the upright wall of said back portion.

2. A fork scraper comprising a solid back, a series of tines having their rear portions bent to extend in the rear of said back, and a back plate covering the bent ends of the tines and secured to the upright wall of said back portion, said back plate having its upper edge portion offset to extend over the upper extremities of the bent ends and coming close against the upright wall of the back and fastened thereto.

3. In a fork scraper, a back comprising an upright wall and a bottom and having a series of openings along the lower edge of the upright wall, and a series of tines having their rear ends bent to extend in the rear of said upright wall, the tines passing through the openings along the lower edge of said upright wall and resting upon the bottom.

4. In a fork scraper, a back comprising an upright wall and a bottom and having a series of openings along the lower edge of the upright wall, a series of tines having their rear ends bent to extend in the rear of said upright wall, the tines passing through the openings along the lower edge of said upright wall and resting upon the bottom, and a bottom reinforcement overlapping the inner or rear portions of the tines and secured to the bottom of said back.

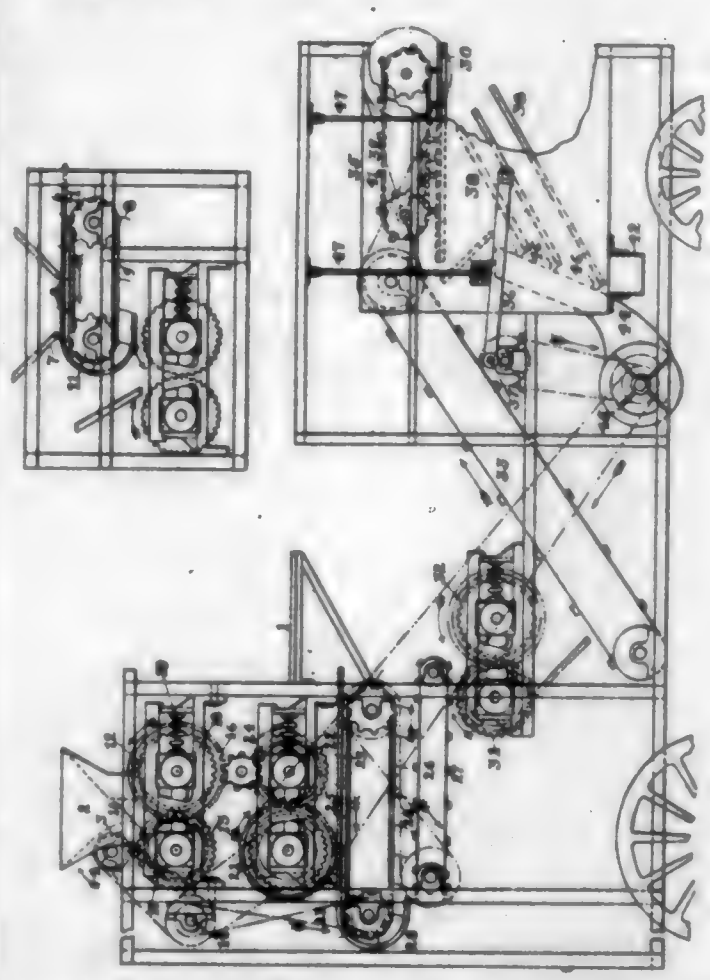
5. In a fork scraper, a back comprising an upright wall and a bottom and having a series of openings along the lower edge of the upright wall, a series of tines having their rear ends bent to extend in the rear of said upright wall, the tines passing through the openings along the lower edge of said upright wall and resting upon the bottom, and a bottom reinforcement overlapping the inner or rear portions of the tines and secured to the bottom of said back, said bottom reinforcement having a rear and end flanges secured to corresponding parts of the aforesaid back portion of the scraper.

6. In a fork scraper, the combination of a series of tines, and companion plates embracing the rear portion of said tines, one of said plates having extensions coming between the tines and closing the spaces formed between said tines and plates.

7. In a fork scraper, the combination of a bottom plate, a series of tines attached thereto, and a bottom reinforcing-plate arranged above the first-mentioned plate and secured thereto and having angle extensions coming between the tines and attached to the said bottom plate.

8. A fork scraper comprising a back having an upright wall, a bottom and ends and having a series of openings along the lower edge of said upright walls, a series of tines having their rear ends bent to extend in the rear of said upright walls and having the tines passing through the openings in said wall and resting upon the bottom, and a bottom reinforcement having a rear and end flanges attached to corresponding ends of the back and having angle extensions coming between the tines and attached to the forward edge of said bottom.

818,101. **FLAX-THRESHING MACHINE.** HUGH H. LAMONT, San Francisco, Cal. Filed Aug. 19, 1902. Renewed Mar. 20, 1906. Serial No. 307,065.



Claim.—1. In a flax-threshing machine, an open-bottomed feeding-hopper adapted to receive a mass of flax and without spreading the same, an endless feeder having teeth adapted to project into said hopper and to discharge material from the bottom of the mass, and crushing-rolls below the hopper between which the said discharged material is delivered.

2. In a flax-threshing machine, an open-bottomed hopper adapted to receive flax in a mass, an endless feeder having teeth adapted to project into said hopper and to discharge material from the bottom of the mass, and a plurality of pairs of crushing-rolls having their members differentially geared, one of said pairs of rolls receiving the material between them from above and delivering it downwardly to another pair, the downward delivery being aided by the gravity of the material.

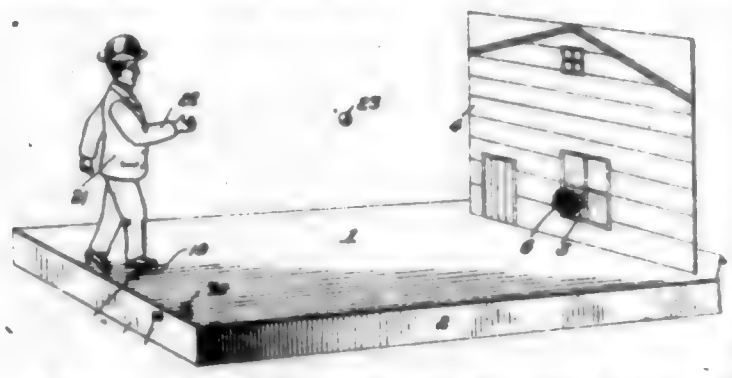
3. In a flax-threshing machine, an open-bottomed feeding-hopper adapted to receive the raw material in mass and without spread-

ing the same, an endless feeder having teeth adapted to project directly into said hopper and to discharge material from the bottom of the mass, and crushing-rolls arranged in the same horizontal plane beneath the hopper, between which said discharged material is delivered.

4. In a flax-threshing machine, a device for separating the seed from the chaff, comprising a shaking-casing, a screen secured to and moving therewith, a traveling scraper running in proximity to said screen, a series of inclined solid tables of different lengths, all extending in the same direction, and means for forcing air between the tables in opposition to the downhill travel of the seed.

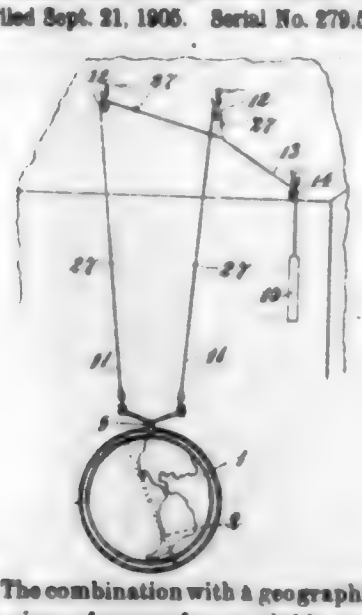
5. In a flax-threshing machine, the combination with an open-bottomed hopper, of an endless carrier having teeth projecting into said hopper, and crushing-rolls directly beneath the hopper.

818,102. TOY. CHARLES W. LANYON, Shady Creek, Pa. Filed Sept. 23, 1905. Serial No. 279,693.



Claim.—A figure toy embodying a housing, a plate disposed at the rear thereof, a target projecting through said plate, mechanism mounted beneath the housing for raising and lowering said target, and mechanism for discharging a projectile against said target, embodying a toy figure constituting a movable projectile-holder, a member movably mounted on said housing and extending therethrough and having rigid connection with said holder, means for locking said member against movement, means for imparting movement to said member, and means for releasing said member from said locking means.

818,103. GLOBE-SUPPORTING DEVICE. JOHN P. LITLEY, Chicago, Ill. Filed Sept. 21, 1905. Serial No. 279,561.



Claim.—1. The combination with a geographical globe provided with a meridian-ring, of means for revolubly mounting said globe in said ring, means for adjustably mounting said ring as to height and the inclination of said globe, comprising an axis adapted to be mounted in the ring and receive said globe, and said ring being provided at its outer edge with an annular flange on each face, a clamp comprising two jaws, adapted to bear upon the edges of said flanges, projections on the free ends of said jaws adapted to extend within said annular flanges and engage the inner faces of same, means for forcing said jaws toward each other; oppositely-disposed laterally-extending rigid supporting-arms on said clamp, cords attached to the free ends of said arms, supporting-pulleys, said cords being drawn over said pulleys and a balance-weight attached to the free ends of said cords, substantially as described.

2. The combination with a geographical globe provided with an axial opening and a meridian-ring, of means for revolubly mounting said globe in said ring and means for adjustably mounting said ring as to height and inclination of the axis of said globe, comprising an axis adapted to be mounted in said ring and receive said globe, said axis being reduced at its ends to form pivots and shoulders and said ring being provided with radially-disposed openings adapted to receive said reduced ends a compression-spring in one of said openings adapted to hold said axis endwise so that the shoulder at its opposite end engages the inner face of said ring, said ring being provided at its outer edge with an annular flange on each face, a clamp comprising two jaws adapted to bear upon the edges of said flanges, projections on the free ends of said jaws adapted to extend within said annular flanges and engage the inner faces of same, means for forcing said jaws toward each other; oppositely-disposed latterally-extending rigid supporting-arms on said clamp, cords attached to the free ends of said arms, suitable supporting-pulleys, said cords being trained over said supporting-pulleys and a balance-weight attached to the free ends of said cords substantially as and for the purpose described.

818,104. BUST-SUPPORTER. LORA B. LYON, Detroit, Mich. Filed July 14, 1905. Serial No. 269,600.

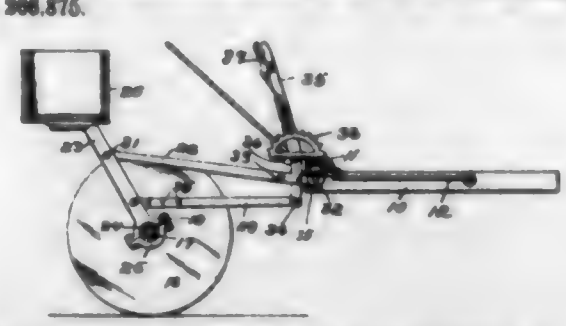


Claim.—1. A bust-supporting cincture, having in combination bust-supporting pockets, a back-band connecting the same, a continuous binding extending along the upper edge from end to end of the structure, a continuous binding extending along the lower edge from end to end thereof, independent fastening means whereby the top and bottom bindings may be independently strained, substantially as described.

2. A bust-supporting cincture, having in combination bust-supporting pockets, a back-band, stiffening material extending across the back-band from edge to edge thereof, a continuous binding extending along the upper edge of the entire cincture and a continuous binding extending along the lower edge of the entire cincture, and independent means whereby the upper and lower edges may be independently strained, substantially as described.

3. A bust-supporting cincture, having in combination, a back connecting-piece, stiffening attachments transverse the said back-piece, bust-supporting pockets at the ends of said back-piece and connected thereby, a binding at the upper edge of the cincture continuous from end to end thereof, a binding at the lower edge of said cincture, the said binding at the upper edge being longer than the binding at the lower edge, substantially as described.

818,105. SOD AND CORNSTALK CUTTER. PEARL C. MEREDITH and THOMAS O. MEREDITH, Marne, Iowa. Filed June 24, 1905. Serial No. 266,875.



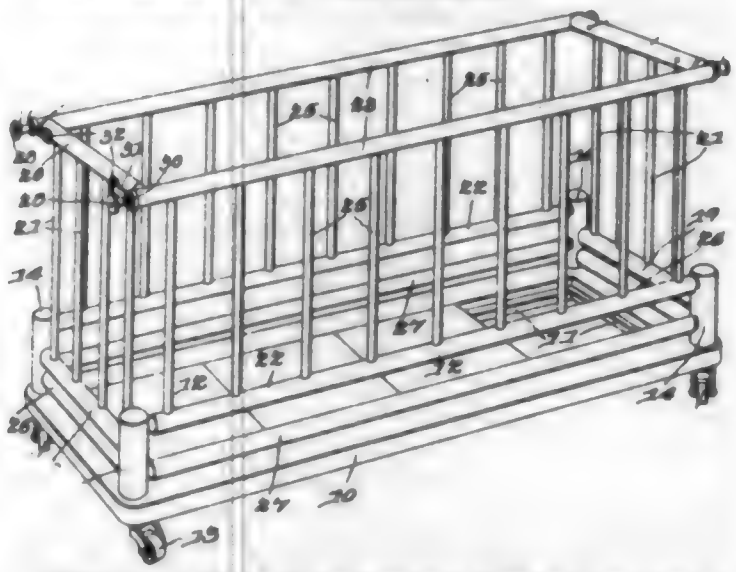
Claim.—1. In an implement of the kind described, the combination of a tongue, a cross-piece fixed to the tongue, a series of flat disks arranged in line, arms connected with the disk-supports and extended upwardly, a weight attached to the upper ends thereof, links connected to the cross-piece and to the arms, links at the lower ends of the arms and an adjustable lever connected to said lower links to tilt the weight forwardly and rearwardly relative to the disks.

2. In an implement of the kind described, the combination of a tongue, a cross-piece fixed to the tongue, a series of flat disks arranged in line, arms connected with the disk-supports and extended upwardly, a weight attached to the upper ends thereof, adjustable links connected to the cross-piece and to the top of the arms, adjustable links at the lower ends of the arms and a lever fulcrumed to the weight and connected to the lower links.

3. In an implement of the kind described, the combination of a tongue, a cross-piece, a number of brackets connected to the cross-

piece, two levers fulcrumed to the end portions of the cross-piece, two sectors adjacent to said levers and fixed to the cross-piece, spring-actuated pawls carried by the levers to engage the sectors, two angular rods, a series of flat sharpened disks on each, sleeves on the rods between the disks, the inner ends of the meeting portions of said sleeves on said rods connected by a universal joint, two arms for each set of disks, said arms formed with detachable boxings at their lower ends rotatably mounted upon the sleeves of said set of disks, two upper links adjustable longitudinally pivotally connected to the upper ends of said arms and to the brackets on the cross-piece, two lower adjustable sets of links pivotally connected to the arms and also pivotally connected to said lever and a weight attached to the upper end of each pair of said arms.

818,106. **INCLOSURE FOR INFANTS.** SUMNER L. MORSE, Athol, Mass. Filed Oct. 2, 1905. Serial No. 280,961.



Claim.—1. A device of the character described comprising a frame, a removable sectional bottom supported thereby and adapted to entirely close the same, upstanding posts at the corners of the frame, side and end panels interposed at their lower edges between, and pivoted to the posts, said panels adapted to fold upon the frame and to extend upward from the posts, and means for fastening the panels together when in raised positions comprising hooks movably connected to the end panels, threaded stems upon the side panels adapted to be engaged by the hooks, and means for binding the hooks while engaging the stems.

2. A device of the character described comprising a frame, upstanding posts at the corners of the frame, side and end panels pivoted to the post and adapted to fold upon the frame, and means for fastening the panels together when raised and comprising hooks connected to the end panels, threaded stems upon the side panels adapted to be engaged by the hooks, and means for binding the hooks while engaging the stems.

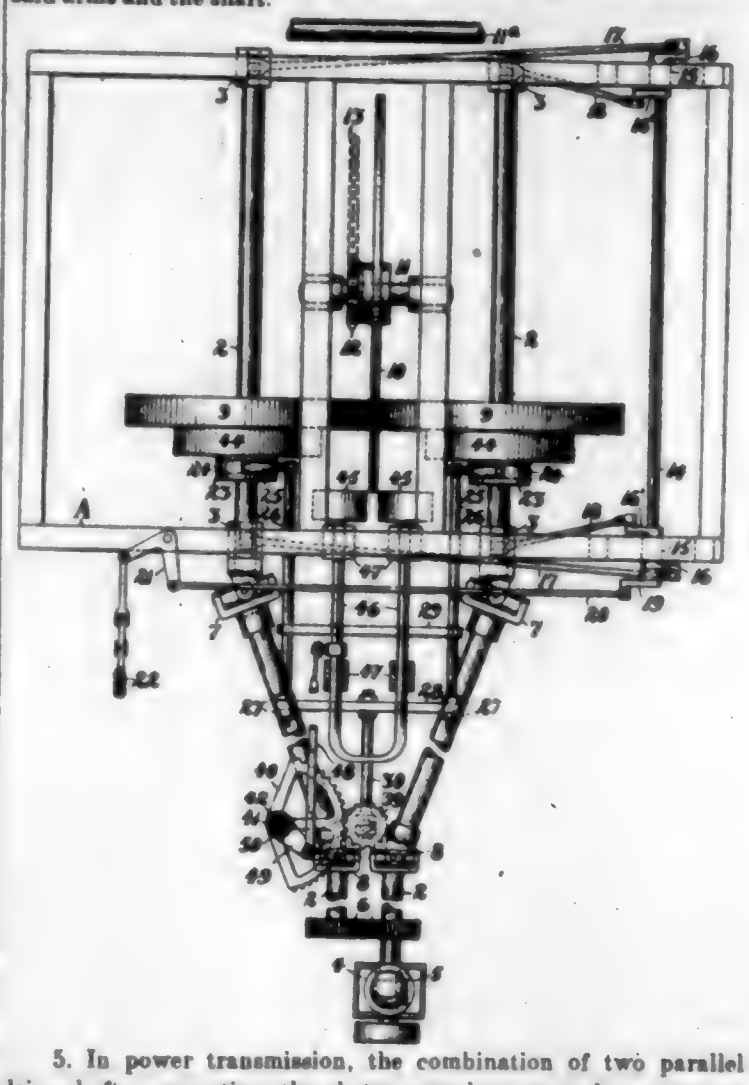
818,107. **POWER-TRANSMISSION MECHANISM.** ROLLA A. MORTON, San Jose, Cal. Filed June 15, 1905. Serial No. 265,343.

Claim.—1. In a power transmission, the combination with a drive-disk, of friction-rollers arranged upon opposite sides of the disk, means to drive said rollers simultaneously and in opposite directions, and means to move said rollers in unison into and out of engagement with the drive-disk, said last-named means including a rock-shaft having oppositely-extending arms and connections between said arms and the rollers.

2. In a power transmission, the combination with a drive-disk, of friction-rollers arranged upon opposite sides of the disk, means to drive said rollers simultaneously and in opposite directions, means to move said rollers in unison into and out of engagement with the drive-disk, said last-named means including a rock-shaft having oppositely-extending arms and connections between said arms and the rollers and means to shift said rollers simultaneously and radially of the disk.

3. In a power transmission, the combination with a drive-disk, of friction-rollers arranged upon opposite sides of the disk, means to drive said rollers simultaneously and in opposite directions, means to move said rollers in unison into and out of engagement with the drive-disk, said last-named means including a rock-shaft having oppositely-extending arms and connections between said arms and the rollers, means to shift said rollers simultaneously and radially of the disk and means other than said rollers to reverse the disk.

4. In power transmission, the combination of two parallel drive-shafts, connections therebetween and a source of power to operate the shafts in opposite directions, a friction-disk between the shafts, slidable rollers on the shafts engageable simultaneously and equally on opposite sides of the disk, and means for moving the rollers into and out of contact with the disk said means including a rock-shaft having oppositely-extending arms, and connections between said arms and the shaft.



5. In power transmission, the combination of two parallel drive-shafts, connections therebetween and a source of power to operate the shafts in opposite directions, a friction-disk between the shafts, slidable rollers on the shafts engageable simultaneously and equally on opposite sides of the disk, means for sliding said rollers in unison and simultaneously on the shafts and means for moving the shafts toward or from each other to carry the rollers into or out of engagement with the disk, said last-named means including a rock-shaft having oppositely-extending arms and connections between these arms and the said shafts.

6. In power transmission, the combination of two parallel drive-shafts, connections therebetween and a source of power to operate the shafts in opposite directions, a friction-disk between the shafts, slidable rollers on the shafts engageable simultaneously and equally on opposite sides of the disk, means for sliding said rollers in unison and simultaneously on the shafts, means for moving the shafts toward or from each other to carry the rollers into or out of engagement with the disk, said last-named means including a rock-shaft parallel with the shafts, and provided with oppositely-extending arms, and connections between said arms and the first-named shafts, and means other than said rollers to reverse the movement of the disk.

7. In a power transmission, the combination of two parallel shafts connected with a source of power and operatable simultaneously in opposite directions, a drive-disk between the shafts, two sets of rollers carried by the shafts slidable thereon and turnable therewith, one set of said rollers arranged to impinge directly on the disk to drive the latter in one direction, and a third set of rollers interposable between the disk and the second set of rollers on the shafts to reverse the disk.

8. In a power transmission, the combination of two parallel shafts connected with a source of power and operatable simultaneously in opposite directions, friction-rollers turnable with and slidable on said shafts, a disk between the shafts and engageable by said rollers to drive the disk in one direction, a second set of rollers turnable with and slidable on the shafts and out of engagement with the disk, and means interposable between said second set of rollers and the disk to reverse the latter.

9. In a power transmission, the combination of two parallel shafts connected with a source of power and operatable simultaneously in opposite directions, friction-rollers turnable with and slidable on said shafts, a disk between the shafts and engageable by said rollers to drive the disk in one direction, a second set of rollers turnable with and slidable on the shafts and out of engagement with the disk, and means interposable between said second set of rollers and the disk to reverse the latter, said reversing means comprising a pair of idle rollers.

10. In a power transmission, the combination of two parallel shafts connected with a source of power and operatable simultaneously in opposite directions, friction-rollers turnable with and slidable on said shafts, a disk between the shafts and engageable by said rollers to drive the disk in one direction, a second set of rollers turnable with and slidable on the shafts and out of engagement with the disk, means interposable between said second set of rollers and the disk to reverse the latter, said reversing means comprising a pair of idle rollers, means for shifting all of said rollers radially of the disk, and means for moving all of said rollers laterally of the disk.

11. In power transmission, the combination with a vehicle-frame, a pair of parallel shafts hung therefrom so as to be movable to and from each other, means for rotating said shafts simultaneously and oppositely, friction-rollers turnable with and slidable on the shafts, a drive-disk between and engageable by the friction-rollers, means for moving said rollers laterally of the disk to cause the rollers to impinge equally and simultaneously on opposite sides of the disk, or to move out of engagement therewith, and means for shifting said rollers radially of the disk, said last-named means including a spring-frame connected with each of the rollers and means for reciprocating said frame.

12. In power transmission, the combination with a vehicle-frame, a pair of parallel shafts hung therefrom so as to be movable to and from each other, means for rotating said shafts simultaneously and oppositely, friction-rollers turnable with and slidable on the shafts, a drive-disk between and engageable by the friction-rollers, means for moving said rollers laterally of the disk to cause the rollers to impinge equally and simultaneously on opposite sides of the disk, or to move out of engagement therewith, means for shifting said rollers radially of the disk, said last-named means including a spring-frame connected with each of the rollers and operating normally to carry them out of engagement with the disk, and means for reciprocating said frame.

13. In a friction transmission, the combination with a pair of parallel shafts connected with a source of power and operatable simultaneously in opposite directions, friction-rollers turnable with and slidable on the shafts, a drive-disk between the rollers, means for moving the shafts to carry the rollers into and out of engagement with the disk, a frame connected with the rollers, said frame comprising parallel spring-rods, means connecting one end of said rods with the rollers, means connecting the other ends of the rods with each other, and an intermediate brace forming a fulcrum for the rods, an operating-lever and connections between said lever and frame to reciprocate the latter to move the rollers radially of the disk.

14. In a friction transmission, the combination with a pair of parallel shafts connected with a source of power and operatable simultaneously in opposite directions, friction-rollers turnable with and slidable on the shafts, a drive-disk between the rollers, means for moving the shafts to carrry the rollers into and out of engagement with the disk, a frame connected with the rollers, said frame comprising parallel spring-rods, means connecting one end of said rods with the rollers, means connecting the other ends of the rods with each other, and an intermediate brace forming a fulcrum for the rods, an operating-lever and connections between said lever and frame to reciprocate the latter to move the rollers radially of the disk, said connections including a segment and pinion substantially as described.

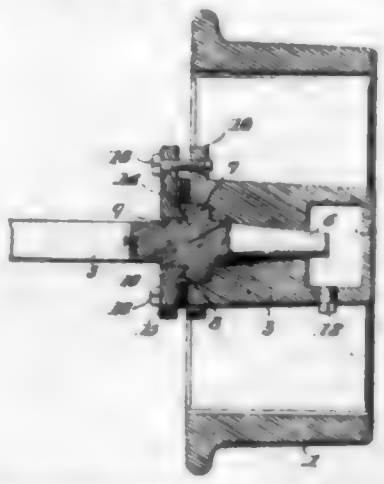
15. In a friction transmission, the combination of a drive-shaft, two rollers turnable therewith and slidable thereon, said rollers of different diameters, a drive-disk engageable by the larger roller to drive the disk in one direction, and an idle roller interposable between the disk and the smaller roller to reverse the disk.

16. In a friction transmission, a drive-disk, a drive-shaft, two rollers on said shaft one larger than the other, means for rotating the shaft, means for moving the shaft laterally of the disk to bring the larger roller into or out of engagement with the disk, and an idle roller interposable between the disk and the smaller of said rollers on the shaft.

17. In a friction transmission, a drive-disk, a drive-shaft, two rollers on said shaft one larger than the other, means for rotating the shaft, means for moving the shaft laterally of the disk to bring the larger roller into or out of engagement with the disk, and an idle roller interposable between the disk and the smaller of said rollers on the shaft, the combined length of the diameter of said idle roller and the radius of said smaller roller being greater than the radius of the larger roller.

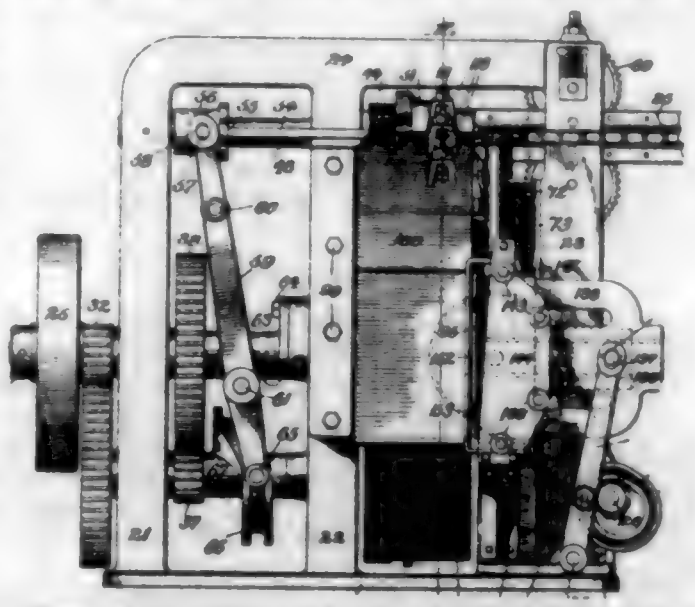
18. In a friction transmission, a disk, a drive-shaft means for rotating said shaft, a roller turnable with and slidable on the shaft and engageable with the disk, and means for reciprocating the roller radially of the disk, said means including a spring part operating normally to carry the roller out of engagement with the disk, a radial arm connected with said part, a worm and gear to operate said arm, a pinion connected with the worm, a segment meshing said pinion and an operating-lever for said segment.

818,108. **MINE-CAR WHEEL.** JOHN J. MCCULLY, Mexico, Mo. Filed June 1, 1905. Serial No. 263,351.



Claim.—The combination with a mine-car wheel, of a spindle having a collar provided on its outer face with an approximately V-shaped circumferential seat, a dust-guard having a flange corresponding to the shape of the seat and fitting therein, washers interposed between the dust-guard and the wheel-hub, and means for assembling the guard with the wheel.

818,109. **LOCKED-SEAM-CAN-BODY MACHINE.** JOHN H. MCELROY, Chicago, Ill. Filed June 7, 1903. Serial No. 110,626.



Claim.—1. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having a pair of tucking-blades therein coöperating alternately with the seaming-groove, and means for rotating said rollers in synchronism.

2. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having a pair of tucking-blades therein coöperating alternately with the seaming-groove and having their engaging edges of different sizes for the purpose described, and means for rotating said rollers in synchronism.

3. In a device of the class described, the combination with the roller having the seaming-groove therein, of discharge mechanism for carrying the can-body off of said roller, the coöperating roller having a pair of tucking-blades therein coöperating alternately with

the seaming-groove, a portion of the periphery of the second roller between the blades being reduced to facilitate the discharge of the cans from the roller, and means for rotating said rollers in synchronism.

4. In a device of the class described, the combination with the roller having the seaming-groove therein, of the tucking-blade roller whose circumference is a multiple of that of the grooved roller, means for rotating said rollers at the same peripheral velocity, and plural pairs of tucking-blades coöperating with said seaming-groove.

5. In a device of the class described, the combination with the roller having the seaming-groove therein, of the tucking-blade roller whose circumference is a multiple of that of the grooved roller, means for rotating said rollers at the same peripheral velocity, plural pairs of tucking-blades coöperating with said seaming-groove, and discharge mechanism coöperating with the grooved roller to discharge a can-body therefrom at every second rotation thereof, said tucking-blade roller having the reduced portions on the periphery thereof located so as to be opposed to the grooved roller while the cans are being discharged therefrom.

6. In a device of the class described, the combination with the roller having the seaming-groove therein, of the tucking-blade roller whose circumference is a multiple of that of the grooved roller, means for rotating said rollers at the same peripheral velocity, plural pairs of tucking-blades coöperating with said seaming-groove, discharge mechanism coöperating with the grooved roller to discharge a can-body therefrom at every second rotation thereof, said tucking-blade roller having the reduced portions on the periphery thereof located so as to be opposed to the grooved roller while the cans are being discharged, and fingers upon the periphery of the tucking-blade roller adapted to engage with blanks and carry them to the grooved roller properly positioned upon the unreduced portion of the periphery of the tucking-blade roller.

7. In a device of the class described, the combination with the roller having the seaming-groove therein, of the tucking-blade roller whose circumference is a multiple of that of the grooved roller, means for rotating said rollers at the same peripheral velocity, plural pairs of tucking-blades coöperating with said seaming-groove, discharge mechanism coöperating with the grooved roller to discharge a can-body therefrom at every second rotation thereof, said tucking-blade roller having the reduced portions on the periphery thereof located so as to be opposed to the grooved roller while the cans are being discharged, and adjustable mechanism on the periphery of the tucking-blade roller adapted to engage with the blanks and carry them to the grooved roller properly positioned upon the unreduced portion of the periphery of the tucking-blade roller, said mechanism consisting of the radially-extended fingers attached to the circumferentially expanding and adjustable spring bodies mounted in said reduced portions of the periphery of the tucking-blade roller above suitable depressions therein.

8. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating tucking-blade roller carrying a pair of tucking-blades and adapted to receive blanks upon its periphery and carry them to the grooved roller, and means for rotating said rollers at the same peripheral velocity.

9. In a device of the class described, the combination with the roller having the seaming-groove and the annular channel therein, of the coöperating tucking-blade roller having the flange coöperating with said annular channel and carrying a pair of tucking-blades and adapted to receive blanks upon its periphery and carry them to the grooved roller, and means for rotating said rollers at the same peripheral velocity.

10. In a device of the class described, the combination with the roller having the seaming-groove and the annular channel therein, of the coöperating tucking-blade roller carrying the pair of tucking-blades adapted to coöperate with the seaming-groove and having the flange on its periphery coöperating with the annular channel and adapted to receive blanks upon its periphery and carry them to the grooved roller, means for rotating said rollers at the same peripheral velocity, and means for holding a blank against the flange as it is carried to the grooved roller.

11. In a device of the class described, the combination with the roller having the seaming-groove and the annular channel therein, of the coöperating tucking-blade roller carrying the pair of tucking-blades adapted to coöperate with the seaming-groove and having the flange on its periphery coöperating with the annular channel and adapted to receive blanks upon its periphery and carry them to the grooved roller, means for rotating said rollers at the same peripheral velocity, and means for holding a blank against the flange as it is carried to the grooved roller consisting of the plurality of rollers journaled in the frame so as to bring their peripheries against the edge of the tucking-blade roller and the blank, the opposite edge of the blank resting against the flange.

12. In a device of the class described, the combination with the roller having the seaming-groove and the annular channel therein, of the coöperating tucking-blade roller carrying the pair of tucking-blades adapted to coöperate with the seaming-groove and having the flange on its periphery coöperating with the annular channel and adapted to receive blanks upon its periphery and carry them to the grooved roller, means for rotating said rollers at the same peripheral velocity, and means for holding a blank against the flange as it is carried to the grooved roller consisting of the plurality of rollers journaled in the frame on axes set at acute angles to the periphery of the tucking-blade roller so as to bring their peripheries against the edge of the tucking-blade-roller periphery and the blank, the opposite edge of which rests against the flange.

13. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating tucking-blade roller carrying a pair of tucking-blades and adapted to receive blanks upon its periphery and carry them to the grooved roller, and the spring-pressed rollers coöperating with the periphery of the tucking-blade roller to hold the blank firmly in engagement therewith as it is fed to the grooved roller.

14. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating tucking-blade roller carrying a pair of tucking-blades and adapted to receive blanks upon its periphery and carry them to the grooved roller, the spring-pressed rollers coöperating with the periphery of the tucking-blade roller to hold the blank firmly in engagement therewith as it is fed to the grooved roller, and means for adjusting the tension of the springs.

15. In a device of the class described, the combination with the roller having the seaming-groove therein, of the tucking-blade roller carrying a pair of tucking-blades and adapted to receive blanks upon its periphery and carry them to the grooved roller, means for rotating said rollers at the same peripheral velocity, a pair of fingers projecting from the periphery of the tucking-blade roller near its edges and just back of the second tucking-blade, and the spring-pressed rollers coöperating with the periphery of the tucking-blade roller between the fingers to hold the blank in engagement therewith.

16. In a device of the class described, the combination with the blank-receiving roller, of the shield therefor adapted to bend a blank to the curve of the roller as it is thrust sidewise between said roller and shield.

17. In a device of the class described, the combination with the blank-receiving roller, of the shield therefor adapted to bend a blank to the curve of the roller as it is thrust sidewise between said roller and shield, and fingers on said roller adapted to catch the end of the blank and carry it forward between the shield and the roller.

18. In a device of the class described, the combination with the blank-receiving roller, of the shield therefor adapted to bend a blank to the curve of the roller as it is thrust between said roller and shield, said shield having its inner surface on substantially the same curve as the periphery of the blank-receiving roller and extending closely thereto and having a portion of its outer surface of a length equal to a blank on a straight line and curved inwardly to meet the curved inner portion thereof, and fingers on said roller adapted to catch the end of the blank and carry it forward between the shield and the roller; substantially as shown and described.

19. In a device of the class described, the combination with the blank-receiving roller, of the shield therefor adapted to bend a blank to the curve of the roller as it is thrust between said roller and shield, and automatic mechanism for thrusting blanks one by one between said shield and roller.

20. In a device of the class described, the combination with the blank-receiving roller of the shield therefor adapted to bend a blank to the curve of the roller as it is thrust between said roller and shield, automatic mechanism for thrusting blanks one by one between said roller and shield, and means for driving said roller and automatic mechanism in synchronism.

21. In device of the class described, the combination with the blank-working mechanism, of a blank-feeding mechanism operating in synchronism therewith and including a plurality of screws of increasing pitch adapted to feed forward and separate the blanks, and means for rotating the screws in unison.

22. In a device of the class described, the combination with the blank-working mechanism, of a blank-feeding mechanism operating in synchronism therewith and including a plurality of screws of increasing pitch adapted to feed forward and separate the blanks,

means for rotating the screws in unison, and a reciprocating plunger adapted to discharge the blanks one by one from said screws to the blank-working mechanism after they are separated.

23. In a device of the class described, the combination with the blank-working mechanism, of a blank-feeding mechanism operating in synchronism therewith and comprising a blank-receiving cage open at one side having screws of increasing pitch in the opposite side and in the top and bottom of the cage, means for rotating the screws in unison, and a reciprocating plunger adapted to discharge the blanks one by one from said screws to the blank-working mechanism after they have been separated.

24. In a device of the class described, the combination with the blank-working mechanism, of a blank-feeding mechanism operating in synchronism therewith and including a plurality of screws of increasing pitch adapted to feed forward and separate the blanks, means for rotating the screws in unison, a reciprocating plunger adapted to discharge the blanks one by one from said screws to the blank-working mechanism after they are separated, a shaft rotating in unison with the screws, and connections between the shaft and plunger to reciprocate it once during a portion of each rotation of the screws.

25. In a device of the class described, the combination with a stationary journal supported at one end and having the horn secured to the other end thereof, of the grooved roller journaled thereon, a parallel shaft carrying the tucking-blade roller in the plane of the grooved roller, gearing connecting said rollers to compel them to rotate at the same peripheral velocity, and discharge mechanism cooperating with the grooved roller at every other rotation thereof.

26. In a device of the class described, the combination with the stationary journal supported at one end and having the horn secured to the other end thereof, of the grooved roller journaled thereon, a parallel shaft carrying the tucking-blade roller in the plane of the grooved roller, gearing connecting said rollers to compel them to rotate at the same peripheral velocity, discharging mechanism coöperating with the grooved roller at every other rotation thereof, a parallel cam-shaft, connections between said cam-shaft and discharge mechanism for operating the same, and gearing between said shafts for operating them at the proper relative speeds.

27. In a device of the class described, the combination with the stationary journal 48 supported at one end, of the grooved roller 45 journaled thereon, a parallel shaft 29 having the pulley-wheel 25 loosely mounted on the outer end thereof and the tucking-blade roller secured on the inner end thereof in the plane of the grooved roller, discharge mechanism reciprocating on the journal 48 and cooperating with the grooved roller 45 at every other rotation thereof, the parallel cam-shaft 34 having the cam thereon, the operating-lever connecting the cam and the discharge mechanism, and the train of gearing substantially as shown and described connecting the pulley-wheel 25 with the shaft 29 through the shaft 34.

28. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having a pair of tucking-blades therein coöperating alternately with the seaming-groove, means for operating said tucking-blades, and means for rotating said rollers in synchronism.

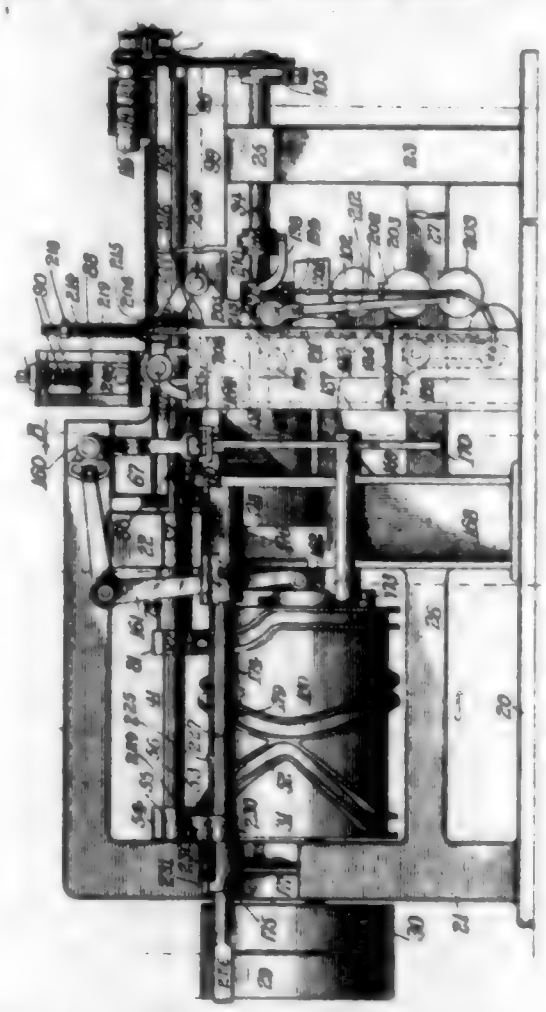
29. In a device of the class described, the combination with the roller having the seaming-groove therein, of the coöperating roller having a pair of tucking-blades therein coöperating alternately with the seaming-groove and having their engaging edges of different sizes for the purpose described, means for operating said tucking-blades, and means for rotating said rollers in synchronism.

30. In a device of the class described, the combination with the roller having the seaming-groove therein, of discharge mechanism for carrying the can-body off of said roller, the coöperating roller having a pair of tucking-blades therein coöperating alternately with the seaming-groove, a portion of the periphery of the second roller between the blades being reduced to facilitate the discharge of the cans from the roller, means for operating said tucking-blades, and means for rotating said rollers in synchronism.

31. In a device of the class described, the combination with the forming-horn having the seaming-groove therein, of the pair of tucking members adapted to coöperate alternately with the groove, and means for moving the members to alternately enter the groove.

32. In a device of the class described, the combination with the forming-horn having the seaming-groove therein, of the pair of tucking members adapted to coöperate alternately with the groove and having their engaging edges of different form, and means for moving the members to alternately enter the groove.

818,110. CAN-MAKING MACHINERY. JOHN H. MCELROY, Chicago, Ill. Filed Nov. 10, 1903. Serial No. 180,589.



Claim.—1. In a can-body machine, the combination with the bearing-rod, of the grooved mandrel mounted to rotate on one end thereof and having the gear secured thereto, the coöperating cylinder carrying the tucking-blade and having the gear meshing with the first gear, a shaft parallel to the bearing-rod, and carrying a cam, discharge mechanism coöperating with the mandrel, guided by the bearing-rod, and operated by the cam, and gear connections between the shaft and the cylinder.

2. In a can-body machine, the combination with the mandrel having the straight and helical grooves therein and the coöperating cylinder having the tucking-blade coöperating with the straight groove, of means for rotating the mandrel and cylinder in unison, discharge mechanism consisting of a finger adapted to be moved forward in the helical groove, and means for moving said finger forward in the proper time and for moving it out of the plane of the groove as it is returned.

3. In a can-body machine, the combination with the mandrel having the straight and helical grooves therein and the coöperating cylinder having the tucking-blade coöperating with the straight groove, of means for rotating the mandrel and cylinder in unison, discharge mechanism consisting of a finger adapted to be moved forward in the helical groove, means for moving said finger forward in the proper time and for moving it out of the plane of the groove as it is returned, and a roller journaled on the end of the finger and forming the contact-surface.

4. In a can-body machine, the combination with the mandrel having the groove therein and the cylinder having the tucking-blade coöperating with the groove, of discharge mechanism coöperating with the mandrel, and means for diminishing the effective cross-sectional area of the mandrel while the discharge mechanism is operating.

5. In a locked-seam can-body machine, the combination with the rotatable mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

6. In a locked-seam can-body machine, the combination with the rotatable mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel, seam-press-

ing mechanism, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

7. In a locked-seam can-body machine, the combination with a rotatable mandrel about which the can-body is formed by the rotation thereof, of a hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel, seam-pressing mechanism coöperating with the can on an extension of the mandrel, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, body-feeding mechanism for moving the body from the mandrel proper to the extension, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

8. In a locked-seam can-body machine, the combination with the rotatable grooved mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel in the groove thereof, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

9. In a can-body machine, the combination with the mandrel upon which the can-body is formed, of discharge mechanism coöperating therewith, a stationary horn upon which the body is discharged, a cross-head carrying oppositely-disposed rollers adapted to engage the seam and press it against the horn, a rigid way upon which the cross-head travels, and antifriction-rollers between the the way and cross-head.

10. In a can-body machine, the combination with the mandrel having a groove therein and the cylinder having the tucking-blade coöperating with the groove, of discharge mechanism coöperating with the mandrel, and a shell coöperating with the mandrel and preventing the escape of the blank edges from the groove.

11. In a can-body machine, the combination with the mandrel upon which the seam is formed, of discharge mechanism coöperating therewith, a shell coöperating with the mandrel and moving with the discharge mechanism, and a seam-pressing member connected with the shell and adapted to be drawn over the seam after it is discharged from the mandrel and before it entirely escapes from the shell.

12. In a can-body machine, the combination with the forming and seaming mechanism, of the automatic blank-feeding apparatus, and means for automatically stopping the machine when the supply of blanks is exhausted.

13. In a can-body machine, the combination with the forming and seaming mechanism, of the automatic blank-feeding apparatus, and means for automatically stopping the machine when the supply of blanks is exhausted, consisting of a belt-shifter and mechanism for engaging it with a reciprocating part of the machine when the last blank is fed in.

14. In a can-body machine, the combination with the forming and seaming mechanism, of the automatic blank-feeding apparatus, and means for automatically stopping the machine when the supply of blanks is exhausted, consisting of a belt-shifter, and mechanism for engaging it with a reciprocating part of the machine when the last blank is fed in, consisting of a clutch member, and a circuit containing a magnet energized by the discharge of the last blank and the armature of which operates the clutch member.

15. In a can-body machine, the combination with the forming and seaming mechanism operating automatically at intervals, of mechanism for automatically feeding the uncut cylinders to a cutting means between the operations of the forming and seaming mechanism, and cutting means connected therewith for automatically cutting the cylinder formed thereby into a plurality of shorter cylinders.

16. In a can-body machine the combination with the forming and seaming mechanism, of means connected therewith for automatically cutting the cylinder formed thereby into a plurality of shorter cylinders, said means consisting of pairs of shearing-disks between which the cylinders are fed one by one, and mechanism for rotating the disks.

17. In a can-body machine, the combination with the forming and seaming mechanism, of means connected therewith for automatically cutting the cylinder formed thereby into a plurality of shorter cylinders, said means consisting of pairs of shearing-disks between which the cylinders are fed one by one, and mechanism for bringing the disks together and subsequently rotating them.

18. In a can-body machine, the combination with the forming and seaming mechanism, of means connected therewith for automatically cutting the cylinder formed thereby into a plurality of shorter cylinders, said means consisting of pairs of shearing-disks between which the cylinders are fed one by one, and mechanism for accurately positioning the cylinder, bringing the disks together, and subsequently rotating them.

19. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and can-head applying and crimping mechanism to apply and crimp the head upon the can-body.

20. In a can-body machine, the combination with the forming and seaming mechanism, of means for simultaneously applying and crimping a head to the body and for beading the body.

21. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and means for simultaneously applying and crimping a head to the body and for beading the body while on said cylinder.

22. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks from the pile, of a counterbalance-weight to raise the blanks to the operating-level, said weight being arranged to automatically compensate for the diminishing weight of the pile of blanks counterbalanced thereby.

23. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks from the pile, of a counterbalance-weight to raise the blanks to the operating-level, said weight being arranged to automatically compensate for the diminishing weight of the pile of blanks counterbalanced thereby, and consisting of a plurality of weights connected to the blank-support in two places and adapted to swing one by one from a position where they operate against the blank-support to where they operate with it.

24. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks from the pile against which the blanks press when it is above the pile, of a counterbalance-weight to raise the blanks to the operating-level, said weight being arranged to automatically compensate for the diminishing weight of the pile of blanks counterbalanced thereby, and brake mechanism for preventing the weight from raising the blanks when the delivery mechanism is not above the pile.

25. In an automatic blank-feed apparatus, the combination with means for maintaining the blanks at a certain level, of an auxiliary mechanism for the same purpose which is adapted to operate upon some of the lowermost blanks while the pile is being replenished.

26. In an automatic blank-feed apparatus, the combination with the means for mantaining the blanks at a certain level, of a moving member adapted to carry the separated blanks away one by one, and lifters adapted to rest upon the uppermost blanks and to be raised by the moving member just before it comes into position to carry away a lifted blank.

27. In a can-body machine, the combination with a mandrel having a groove therein, and the cylinder having the tucking-blade coöperating with the groove, of discharge mechanism coöperating with the mandrel, and means for diminishing the effective cross-sectional area of the mandrel while the discharge mechanism is operating, said means consisting of a retractable surface piece on the mandrel, a slide rotating with said mandrel, connections between the slide and the surface piece to retract the surface piece as the slide is moved longitudinally, and means for reciprocating said slide longitudinally at the proper intervals.

28. In a can-body machine, the combination with a mandrel having a groove therein, and the cylinder having the tucking-blade coöperating with the groove, of discharge mechanism coöperating with the mandrel, and means for diminishing the effective cross-sectional area of the mandrel while the discharge mechanism is operating, said means consisting of a retractable surface piece on the mandrel having pins projecting inwardly therefrom, a slide rotating with said mandrel and having cam-slots therein with which the pins coöperate to retract the surface piece as the slide is moved longitudinally, and means for reciprocating said slide longitudinally at the proper intervals.

29. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and a can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder, a crimping-roller adapted to be applied to the edge of the can-head when on the can, and means for rotating the chuck and the roller.

30. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-

body is finally delivered, and a can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder and having a gear-pinion on its outer end, a shaft having a crimping-roller secured thereto, adapted to be applied to the edge of the can-head when on the can, a gear-pinion on said shaft adapted to engage with the pinion on the chuck, and means for rotating the shaft and moving it to bring the pinions into engagement.

31. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and a can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder and having a gear-pinion on its outer end, a swinging frame having a shaft mounted therein, a crimping-roller secured to said shaft and adapted to be applied to the edge of the can-head when on the can, a pinion on said shaft adapted to mesh with the pinion on the chuck, and means for swinging the frame to engage the pinions and for rotating the shaft.

32. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and a can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder, a crimping-roller adapted to be applied to the edge of the can-head when on the can, means for rotating the chuck and the roller, and mechanism for automatically delivering can-heads one by one to said holder.

33. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, and a can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder, a crimping-roller adapted to be applied to the edge of the can-head when on the can, means for rotating the chuck and the roller, and mechanism for automatically delivering can-heads one by one to said holder, consisting of a chute adapted to receive a single row of can-heads, and a swinging escapement coöperating therewith and operated by the holder to deliver them thereto as it is moved away from the cylinder.

34. In a can-body machine, the combination with the forming and seaming mechanism, of a horn upon which the cylinder formed thereby is delivered, a shearing-disk rotating in the horn, another disk coöperating therewith and separated therefrom as the can-body is fed over the disk in the horn, and mechanism for bringing the disks into contact and rotating them for the purpose described.

35. In a can-body machine, the combination with the forming and seaming mechanism, of a horn upon which the cylinder formed thereby is delivered, a shearing-disk mounted to rotate in said horn, a movable frame in which a second shearing-disk to coöperate with the first is mounted to rotate, a shaft in said frame upon which its shearing-disk is secured, gearing between said disks adapted to be engaged when they are brought together and driven by said shaft, and means for moving the frame and rotating the shaft.

36. In a can-body machine, the combination with the forming and seaming mechanism, of a horn upon which the cylinder formed thereby is delivered, a shaft mounted to rotate in said horn and carrying a shearing-disk and a gear-pinion, a swinging frame carrying another shaft having secured thereon a coöperating shearing-disk and coöperating pinions, cam-surfaces on said frame for accurately positioning the cylinder with reference to the disks, means for rotating the shaft in the frame, and means for moving the frame to bring the gearing into mesh and the disks into operation.

37. In a can-body machine, the combination with the forming and seaming mechanism, of a rotatable cylinder upon which the can-body is finally delivered, a beading-flange on said cylinder, and can-head applying and crimping mechanism to apply and crimp the head upon the can-body, said mechanism consisting of a reciprocating holder adapted to receive a can-head and to apply it to the can-body upon the cylinder, a chuck mounted to rotate in the holder, a pinion secured to the chuck, a movable frame carrying a shaft having a crimping-roller secured thereto adapted to be applied to the edge of the can-head when on the can, a beading-roller adapted to coöperate with the beading-flange, a pinion adapted to engage with the pinion on the chuck, means for rotating the shaft, and means for moving the frame to bring the coöperating elements into engagement, substantially as described.

38. In a can-body machine, the combination with the mandrel having the hook-forming groove and the discharge-groove therein, and the coöperating cylinder having the tucking-blade coöperating with the hook-forming groove, of means for rotating the mandrel and cylinder in unison, discharge mechanism consisting of a finger adapted to be moved forward in the discharge-groove, and means for moving said finger forward in the proper time, and for moving it out of the plane of the groove as it is returned, said means consisting of a lug on said finger coöperating with a pair of stationary grooves in one of which it advances and in the other of which it returns.

39. In a can-body machine, the combination with the mandrel having the hook-forming groove and the discharge-groove therein, and the coöperating cylinder having the tucking-blade coöperating with the hook-forming groove, of means for rotating the mandrel and cylinder in unison, discharge mechanism consisting of a finger adapted to be moved forward in the discharge-groove, and means for moving said finger forward in the proper time, and for moving it out of the plane of the groove as it is returned, said means consisting of a lug on said finger coöperating with a pair of stationary grooves, in one of which it advances and in the other of which it returns, and switch mechanism at the ends of the grooves.

40. In a can-body machine, the combination with the mandrel having the hook-forming groove and the discharge-groove therein, and the coöperating cylinder having the tucking-blade coöperating with the hook-forming groove, of means for rotating the mandrel and cylinder in unison, discharge mechanism consisting of a finger adapted to be moved forward in the discharge-groove, and means for moving said finger forward in the proper time, and for moving it out of the plane of the groove as it is returned, said means consisting of a lug on said finger coöperating with a pair of stationary grooves, in one of which it advances and in the other of which it returns, and switch mechanism at the ends of the grooves consisting of spring-pressed plungers at the ends of the grooves adapted to close the connecting-passages and to be cammed away by the lug as it moves in one direction.

41. In an automatic blank-feed apparatus, the combination with a blank-holder, of a lifter for separating the blanks one by one, means for translating each lifted blank laterally as it is separated, and mechanism for then giving it a longitudinal motion for the final feed.

42. In an automatic blank-feed apparatus, the combination with a holder for a plurality of blanks, of a lifter for separating the blanks one by one, a holder for a single blank parallel to the main holder, means for translating each lifted blank laterally as it is separated to carry it from over the main holder to the single-blank holder, and mechanism for giving it a motion longitudinally of the single-blank holder for the final feed.

43. In an automatic blank-feed apparatus, the combination with a holder for a plurality of blanks, of a lifter for separating the blanks one by one, a holder for a single blank parallel to the main holder, a pair of hooks moving transversely of the main holder for engaging an edge of the separated blank and carrying it to the single-blank holder, and mechanism for giving the blank in the single holder a movement longitudinally thereof.

44. In an automatic blank-feed apparatus, the combination with a holder for a plurality of blanks, of a lifter for separating the blanks one by one, a holder for a single blank parallel to the main holder, a pair of hooks moving transversely of the main holder for engaging an edge of the separated blank and carrying it to the single blank holder, and mechanism for giving the blank in the single holder a movement longitudinally thereof, comprising a slide reciprocating longitudinally of the holder and engaging the blank on its forward movement.

45. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks from the pile against which the blanks press when they are above the pile, of a counterbalance-weight to raise the blanks to the operating-level, and brake mechanism for preventing the weight from raising the blanks when the delivery mechanism is not above the pile.

46. In an automatic blank-feed apparatus, the combination with means for translating the separated blanks from the pile, of a counterbalance-weight to raise the blanks to the operating-level, said weight being arranged to automatically compensate for the diminishing weight of the pile of blanks counterbalanced thereby, and

brake mechanism for preventing the weight from raising the blanks at certain intervals.

47. In an automatic blank-feed apparatus, the combination with means for carrying the blanks one by one from off the top of the pile, of a counterbalance-weight to raise the blanks to the operating-level, and brake mechanism for preventing the weight from raising the blanks at certain intervals.

48. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks one by one from the top of the pile, of a shaft, sprocket-wheels on said shaft, a brake-disk on said shaft, a blank-support, sprocket-chains connecting said blank-support and said shaft, a weight connected with said shaft and adapted to raise the blanks on the support, and means to press on the brake-disk released at intervals.

49. In an automatic blank-feed apparatus, the combination with means for carrying off the blanks one by one from the top of the pile, of a shaft, sprocket-wheels on said shaft, a brake-disk on said shaft, a blank-support, sprocket-chains connecting said blank-support and said shaft, a weight connected with said shaft and adapted to raise the blanks on the support, a lever bearing on the brake-disk, and a cam to force the lever against the disk at intervals.

50. In an automatic blank-feed apparatus, the combination with means for maintaining the blanks at a certain level, of an auxiliary mechanism for the same purpose, which is adapted to operate upon some of the lowermost blanks while the pile is being replenished, said mechanism consisting of a lifting-fork, and a spring adapted to coöperate therewith.

51. In an automatic blank-feed apparatus, the combination with means for maintaining the blanks at a certain level, of an auxiliary mechanism for the same purpose, which is adapted to operate upon some of the lowermost blanks while the pile is being replenished, said mechanism consisting of horizontal arms adapted to take in channels in the top of the main support, a support for said arms, a lifting-spring, and means for connecting said support operatively with said lifting-spring.

52. In a can-body machine, the combination with the mandrel upon which the can-body is formed, of discharge mechanism for the body formed thereon, and a cover for the seam moving with the discharge mechanism to prevent the seam being disengaged as the body is moved.

53. In a can-body machine, the combination with a mandrel upon which the can-body is formed, of discharge mechanism for the body formed thereon, a cover for the seam moving with the discharge mechanism to prevent the seam being disengaged as the body is moved, and a seam-pressing member adapted to engage the seam as it is released on the return of the cover.

54. In a locked-seam can-body machine, the combination with a rotatable grooved mandrel about which the can-body is formed by the rotation thereof, of hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel in the groove thereof, seam-pressing mechanism, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

55. In a locked-seam can-body machine, the combination with the rotatable grooved mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel in the groove thereof, seam-pressing mechanism coöperating with the can on an extension of the mandrel, blank-feeding mechanism for feeding the blank in lines first parallel and then transverse to the axis of the horn, body-feeding mechanism for moving the body from the mandrel proper to the extension, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

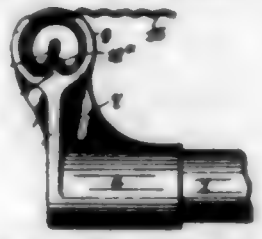
56. In a locked-seam can-body machine, the combination with the rotatable mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel, feeding mechanism for moving the blank parallel to the axis of the horn, a gage against which the side of the blank is fed, feeding mechanism for then moving the blank transversely to the axis of the horn a fixed distance, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

57. In a locked-seam can-body machine, the combination with the rotatable mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel, seam-pressing mechanism coöperating with the can on the extension of the mandrel, feeding mechanism for moving the blank parallel to the axis of the horn, a gage against which the side of the blank is fed, feeding mechanism for then moving the blank transversely to the axis of the horn a fixed distance, feeding mechanism for moving the can-body from the mandrel proper to the extension, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

58. In a locked-seam can-body machine, the combination with the rotatable grooved mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel in the groove thereof, seam-pressing mechanism, feeding mechanism for moving the blank parallel to the axis of the horn, a gage against which the side of the blank is fed, feeding mechanism for then moving the blank transversely to the axis of the horn a fixed distance, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

59. In a locked-seam can-body machine, the combination with the rotatable grooved mandrel about which the can-body is formed by the rotation thereof, of the hook-forming mechanism coöperating therewith to engage the ends of the blank about the mandrel in the groove thereof, seam-pressing mechanism coöperating with the can on an extension of the mandrel, feeding mechanism for moving the blank parallel to the axis of the horn, a gage against which the side of the blank is fed, means for then feeding the blank transversely to the axis of the horn a fixed distance, feeding mechanism for moving the body from the mandrel proper to the extension, and means for rotating said mandrel and operating said mechanisms in the proper sequence and synchronism.

818,111. BED-SPRING FRAME. ROBERT NAYSMITH, Pittsburg, Pa., assignor to Pittsburg Tube Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 26, 1905. Serial No. 280,117.



Claim.—1. In a bed-spring frame, the combination with castings, each comprising a tubular body portion open at one end and a tubular member disposed at right angles to the body portion, said tubular member being split for a portion of its length, side rails seating in said body portions, end rails formed with longitudinally-disposed slots, said slots having inturned edges and said end rails seating in the tubular members, the sides of the tubular members being bent over said end rails and a fabric having its edges secured in the slots in the end rails, substantially as described.

2. In a bed-spring frame, the combination with side rails, of a casting carried by each end of said side rails and formed with a closed tubular member to receive the side rail, a split tubular member carried by said casting, an integral flange and integral webs connecting said tubular members, a supporting-prong carried by said casting, a tubular end rail adapted to seat in said split tubular member, said tubular end rail being split and having its edges bent inwardly to form a longitudinally-disposed slot adapted to receive the edge of a woven-wire fabric, means to fix said end rail within said tubular member, substantially as described.

3. In a bed-spring frame, the combination with side rails, of a casting carried by each end of each side rail, said castings being provided with a hollow tubular body portion to receive the side rails, a split tubular member carried by said casting, tubular end rails mounted in said split tubular members, each said end rail having a longitudinally-disposed slot formed therein adapted to receive the edge of a woven-wire fabric, a longitudinally-disposed rib formed integral with the split tubular member and engaging a slot formed in the end rail to prevent rotation of said end rail within said split tubular member, substantially as described.

818,112. BED-SPRING FRAME. ROBERT NAYSMITH, Pittsburg, Pa., assignor to Pittsburg Tube Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 30, 1905. Serial No. 280,814.

Claim.—1. The combination with a bed, of a bed-spring frame consisting of castings, tubing connecting some of said castings together, angle-bars mounted upon said castings, pins carried by said

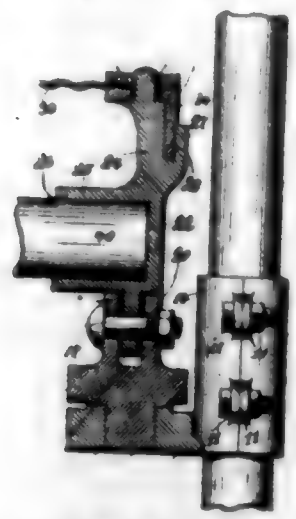
castings and adapted to extend upwardly into said bars, hook-shaped members carried by said castings and adapted to support said frame upon said bed, substantially as described.



2. The combination with a bed, of a bed-spring frame consisting of castings, oval tubing connecting some of said castings together, bars supported by said castings and adapted to support a wire fabric, hook-shaped members carried by said castings and adapted to support said frame upon said bed, means to detachably connect said bars to said castings, substantially as described.

3. In a bed-spring frame, the combination of castings adapted to form the corners of the frame, hook-shaped members carried by said castings and adapted to support said frame upon a bed, means to detachably connect a woven-wire fabric to said frame, substantially as described.

818,113. SPRING-SUPPORT FOR BEDS. ROBERT NAYSMITH, Pittsburg, Pa., assignor to Pittsburg Tube Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 2, 1905. Serial No. 280,963.



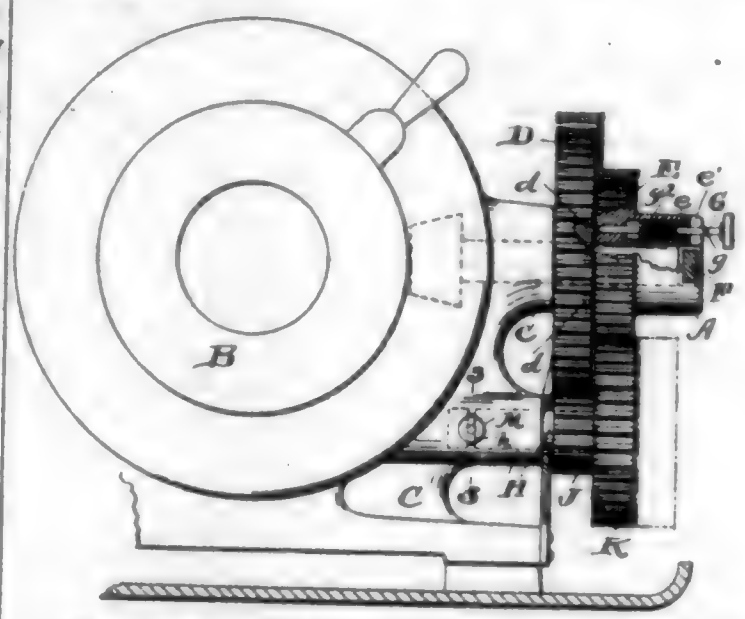
Claim.—1. In a folding bed, the combination with a head and foot piece, consisting of posts, of sleeves carried by said posts, angular arms carried by the front sleeves and having slots formed therein, front corner-castings, revoluble members carried by the rear sleeves, rear corner-pieces pivotally mounted upon the revoluble members, an oval tubular side rail connecting the rear corner-pieces together and another oval tubular rail connecting the front corner-castings together, angular bars mounted upon the rear corner-pieces and the front corner-castings, and adapted to support a woven-wire fabric, means to attach said fabric to said angular bars, substantially as described.

2. In a folding bed, the combination with a head-piece and a foot-piece consisting of posts, of sleeves carried by said posts, revoluble members connected to some of said sleeves, and corner-pieces hinged to said revoluble members, detachable castings connected to the other of said sleeves, tubular rails connecting said hinged corner-pieces together, tubular side rails connecting said detachable castings together, angular bars carried by said corner-pieces and said detachable castings, a woven-wire fabric carried by said bars, means to attach said sleeves to said posts, means to prevent the rails from rotating and means to detachably connect said bars to said corner pieces and castings.

3. In a folding bed the combination with a head and foot piece consisting of posts, of sleeves carried by said posts, angular arms carried by the front sleeves and having slots formed therein, front corner-castings engaging said angular arms, revoluble members carried by the rear sleeves, rear corner-pieces pivotally mounted upon the revoluble members, a side rail connecting the rear corner-pieces together, another rail connecting the front corner-castings together, bars mounted on the rear corner-pieces and the front corner-castings and a woven-wire fabric attached to said bars, substantially as described.

4. In a bed, of the character described, the combination with a head-piece and a foot-piece, of a frame consisting of tubular front and rear rails, revoluble rear corner-pieces, detachable front castings and angle-bars connecting the rear revoluble corner-pieces with the front detachable castings, a woven-wire fabric carried by said angle-bars, means to detachably connect said fabric to said angle-bars, means to prevent the front and rear rails from rotating, means to pivotally connect the corner-pieces to the head and foot pieces, means to revolubly connect the corner-pieces to the head and foot pieces, and means to detachably connect the front castings to the head and foot pieces.

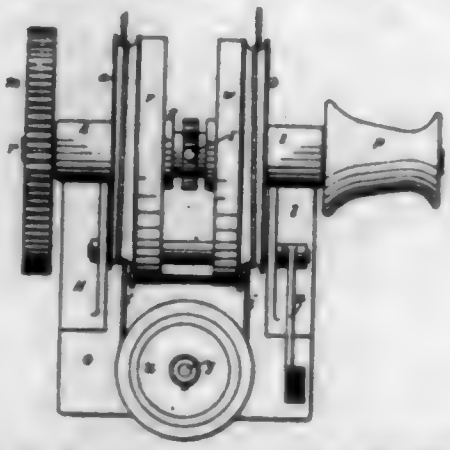
818,114. GEARING FOR THREAD-CUTTING MACHINES. HERMAN W. OSTER, Cleveland, Ohio, assignor to The Oster Manufacturing Company, a Corporation of Ohio. Filed Aug. 14, 1905. Serial No. 274,072.



Claim.—1. In a thread-cutter, in combination with the driving-shaft thereof, a gear D secured to said shaft, a gear E rotatably mounted thereon, a pin-clutch for connecting and disconnecting said gears, and an operating-handle secured to the pin, with a sliding shaft H two gears J and K secured thereto for engagement with the gears D and E, and means preventing the endwise movement of shaft H in the direction to cause a disengagement of said gears.

2. In a thread-cutter, in combination with the driving-shaft, a gear D secured thereto having in its face a plurality of recesses A, a gear E loosely mounted upon said shaft and having a slot e' in its hub, a spring-pin extending through the hub of said gear and having on its outer end a small cross-bar g, a sliding shaft H rotatably mounted in the frame of the machine, and two gears J and K secured thereto, said shaft having an annular groove h, a spring-pin mounted in the frame of the machine and adapted to engage in said annular groove, and having a small cross-arm m on its outwardly-extended end, there being a slot in the frame of the machine crossing the hole through which said pin passes, substantially as described and specified.

818,115. HOISTING APPARATUS. CARL T. PAINTER, Chattanooga, Tenn. Filed July 3, 1906. Serial No. 266,134.



Claim.—1. In a hoisting mechanism, the combination of a pair of wheels about which a cable is adapted to pass, a clutch mounted between the wheels and arranged to be brought into engagement with one or the other thereof accordingly as it is moved, and thereby connect it with a source of driving power, and a cable-guiding pulley arranged to direct the cable from one of the wheels to the other, substantially as set forth.

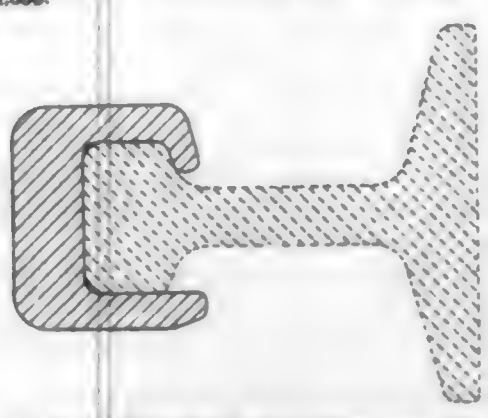
2. In a hoisting mechanism, the combination of a pair of wheels about which a cable is adapted to pass mounted loosely upon a shaft, a clutch mounted between the wheels and arranged to be brought

into engagement with one or the other thereof accordingly as the clutch is adjusted and to thereby connect the wheel with a source of driving power, and a guiding-pulley for the cable mounted loosely upon a support, the axis of the said pulley being disposed at right angles to the axis of the said wheels, substantially as set forth.

3. In a hoisting apparatus, the combination of a shaft adapted to be continuously driven in one direction, a pair of wheels *a*, *b*, loosely mounted thereupon and provided with peripheral cable grooves or seats, clutch mechanism arranged to connect one or the other of the wheels with the shaft accordingly as it is adjusted, a grooved pulley, *u*, mounted loosely upon a support that is disposed at right angles to the shaft on which the wheels *a*, *b*, are mounted, and a hoisting-cable passing around one of the wheels, thence around the pulley *u* and thence around the other wheel, substantially as set forth.

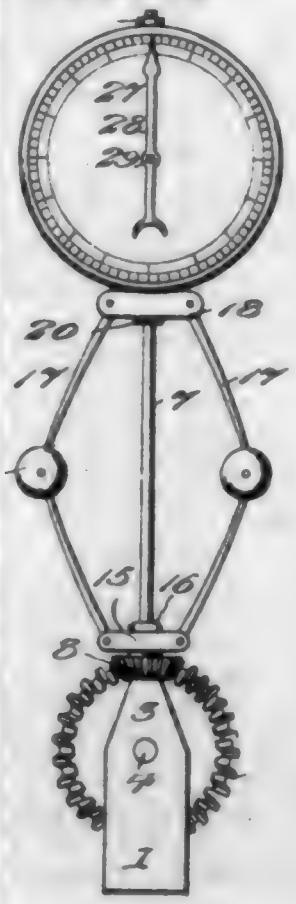
4. In a hoisting-machine, the combination of a shaft, *r*, a pair of wheels provided with cable seats or grooves loosely mounted on the said shaft and formed with laterally-projecting flanges having inclined faces adapted to constitute friction-surfaces, and movable friction members adapted to engage with the said inclined faces of the flanges of the wheels, each comprising an annular friction-ring, disk-like plates secured near their outer edges to the opposite faces of the ring and near their inner edges to sliding ring-like members mounted on the driving-shaft, and means for shifting the movable clutch members, substantially as set forth.

818,116. **RENEWABLE CAP FOR PERMANENT WAY-RAILS.** HERBERT W. PERRY, Trichinopoly, India. Filed June 6, 1905. Serial No. 264,030.



Claim.—A renewable rail-cap for permanent way-rails with projecting lower edges, having these edges nicked or cut into at intervals as above described, to limit and facilitate the bending in of portions of these edges under the head of the rail.

818,117. **SPEED-INDICATOR.** RALPH PLUMMER, Baraboo, Wis. Filed Apr. 27, 1905. Serial No. 257,700.



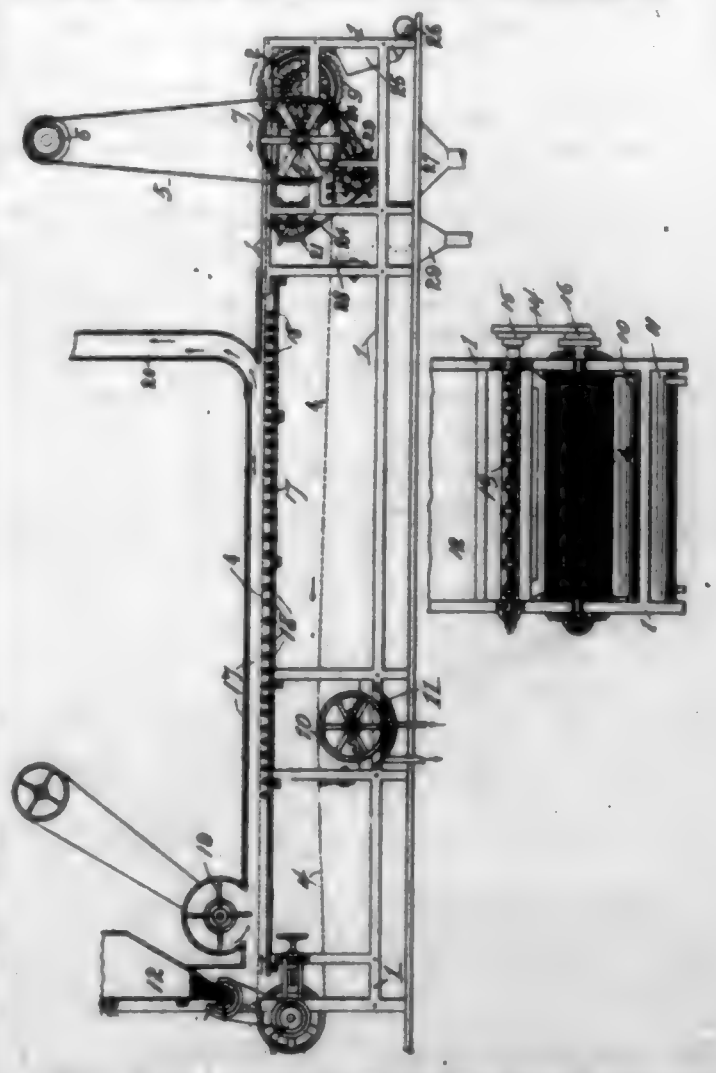
Claim.—1. A speed-indicator comprising a base, a standard rising from the base, a controller supported on the standard, means carried by the base for operating the controller, a dial carrying a pointer and supported on the standard, a sleeve slidably mounted on the standard and connected with the controller, and means intermediate the sleeve and pointer to operate the latter in the movement of the controller.

2. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a spring adapted to normally maintain the sleeve at its upward limit of movement, a rack connected with the sleeve, and gear meshing with said rack and connected with the pointer.

3. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a rack connected with the sleeve, and gear meshing with said rack, and connected with the pointer, and a spring terminally connected to said sleeve and to the standard.

4. A speed-indicator comprising a base, a shaft revolubly mounted in the base, a standard rising from the base, a controller supported on the standard, means intermediate the shaft and controller for operating the latter in the revolution of the shaft, a dial-casing including the dial and pointer supported on the upper end of the standard, a sleeve movably connected to the controller and slidably engaging the standard, a rack connected with the sleeve, and gear meshing with said rack, and connected with the pointer, and a spring connected at one end to the sleeve and adjustably connected at the opposite end of the standard.

818,118. **CLOVER-SEED-CLEANING MACHINE.** THOMAS M. PRINE, Toledo, Ohio. Filed June 6, 1904. Serial No. 211,317.



Claim.—1. In a machine of the described class, an apron, means for moving the same, means for moistening the apron, means for drying the apron, means for feeding seed upon the apron after such moistening and before such drying, and means for removing such seed

after the drying, the adhering seed at one point in the travel of the apron and the non-adhering seed at another point.

2. In a machine of the described class, a frame, an endless apron mounted to travel horizontally in the frame, means for moistening the apron, means for drying the apron, means at one end of the frame for feeding seeds upon the apron after the moistening operation, and means at the other end of the frame for removing the adhering and the non-adhering seeds at separate points after the drying operation.

3. In a machine of the described class, a frame, a pulley at each end of the frame, an endless apron traveling on the pulleys, means for heating the upper part of the apron, means for moistening the lower part of the apron, means for supplying an air-blast to the upper part of the apron, means at one end of the frame for feeding seed onto the apron, means at the other end of the frame for loosening and removing part of the seed, and a scraper which engages the apron for loosening and removing the remaining part of the seed.

4. In a machine for removing mucilaginous coated seeds from clover and other non-mucilaginous coated varieties, an endless traveling apron, means for dampening the outer surface thereof, a hopper containing the seed to be cleaned, means for feeding the seed in regulated quantities from the hopper upon the dampened surface of the apron and for distributing it thereon, means for drying said apron, brushes for removing all but the mucilaginous coated seeds, and scrapers, acting after said brushes having acted, for removing the mucilaginous coated seeds.

5. In seed-separating apparatus, the combination with a frame, of an endless belt having upper and lower stretches, means engaging the lower stretch of the belt for moistening the same, means located above the upper stretch of the belt for feeding seed thereto while moistened, and heating means located between the stretches of the belt.

6. In seed-separating apparatus, the combination with a movable carrier for seed, of means coacting with the carrier in the successive order named, to wit: means for moistening the belt, means for feeding seed to the belt while moistened, means for drying the belt with the seed thereon, and means for removing the seed from the belt that clings thereto.

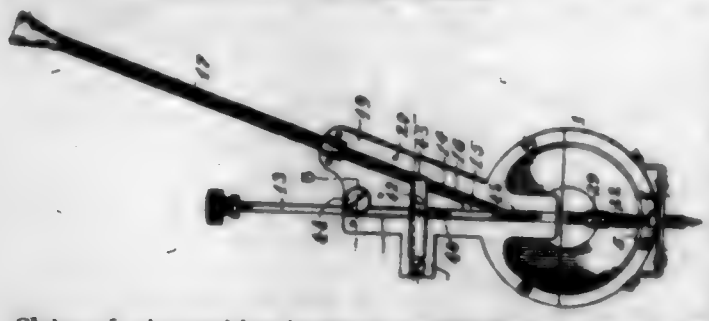
7. In seed-separating apparatus, the combination with a movable carrier for seed, of means coacting with the carrier in the successive order named, to wit: means for moistening the belt, means for feeding seed to the same while moistened, means for drying the belt with the seed thereon, means for collecting the seed that does not adhere to the belt, and means for removing the seed that clings to the belt.

8. In seed-separating apparatus, the combination with a carrier-belt, of means for drying the same, and means for passing a current of air over the belt contiguous to the drying means.

9. In seed-separating apparatus, the combination with a support, of means for moistening the support, means for drying the same, and means for feeding the seed to the support between the moistening and drying means and while said support is moistened.

10. In seed-separating apparatus, the combination with an endless belt, of spaced moistening and drying means, and means for feeding seed to the moistened portion of the belt between said moistening and drying means.

818,119. SOUND-BOX. CHARLES A. C. PRITCHARD, Cleveland, Ohio. Filed Sept. 2, 1905. Serial No. 276,894.



Claim.—1. A sound-box having in combination a stylus tube or retainer, a channel in alinement therewith, and a second channel for styluses communicating with the first-mentioned channel at a point above the upper end of the tube or retainer, said second channel being inclined with respect to the first, and a plunger in said first-mentioned channel having a range of movement permitting its lower end to be withdrawn to uncover the junction of said channels and to be inserted into the tube or retainer to eject styluses therefrom, substantially as specified.

2. A sound-box having in combination a retainer for styluses, a channel in alinement with said retainer, a plunger in said channel, a second channel, communicating with the first channel, wherein styluses may be stored, a spring extending across said first-mentioned channel and having a portion projecting into the second channel, and a plunger in said first-mentioned channel having means thereon adapted to engage said spring, substantially as specified.

3. A sound-box having in combination a stylus-retainer, a channel in alinement therewith, a magazine wherein styluses may be stored end to end and communicating with said channel, means for retaining the styluses in said magazine, and a plunger in the channel adapted to operate such retaining means to cause the release of styluses therefrom, substantially as specified.

4. A sound-box having in combination a stylus tube or retainer provided with means for normally retaining a stylus therein, a channel in alinement therewith, a magazine for styluses, a channel connecting said magazine and first-mentioned channel, means for retaining styluses in said magazine, and a plunger in said first-mentioned channel constructed and adapted when in lowered position to eject a stylus from the tube or retainer, in elevated position to permit a stylus to pass from the connecting-channel into the first-mentioned channel, and in intermediate positions to operate the retaining means to release styluses therefrom to cut off communication between the channels, substantially as specified.

5. In a sound-box the combination of a stylus-retainer, a magazine for supplying styluses thereto, a spring-detent arranged to prevent the feed of styluses from the magazine to the retainer, and a plunger adapted to engage said detent and move it in a direction to permit the feed of styluses from the magazine, substantially as specified.

6. In a sound-box, the combination of a stylus-retainer, a magazine for supplying styluses thereto, a spring-detent arranged to engage the stylus in the magazine nearest the retainer, and a plunger adapted to engage said detent and move it in a direction to release said stylus, substantially as specified.

7. In a sound-box, the combination with a stylus-retainer, of a stylus-magazine in which styluses may be stored end to end, and means for feeding the styluses successively from said magazine into said retainer, substantially as specified.

8. In a sound-box, the combination with a stylus-retainer, of a plunger located in line therewith, and a stylus-magazine wherein styluses may be stored end to end, branching from said retainer, the plunger serving to feed the styluses successively from the magazine into said retainer, substantially as specified.

9. In a sound-box, the combination with a needle or stylus-retainer, of a stylus-magazine in which styluses may be stored end to end, a spring-detent controlling the advance of the styluses, and means for successively releasing said styluses from the detent and feeding them into said retainer, substantially as specified.

10. The combination of a sound-box having a stylus-retainer, a channel communicating therewith, a magazine wherein styluses may be placed end to end adapted to communicate with said channel, and means for permitting or cutting off the supply of styluses from said channel to said retainer, substantially as specified.

11. A sound-box having at its lower portion a stylus tube or retainer and at its upper portion a magazine wherein styluses may be stored end to end detachably secured to the upper portion of the box-body, substantially as specified.

12. A sound-box having in combination a stylus-retainer, a channel for styluses communicating therewith, and a tube adapted to communicate with such channel and removably secured to said box, the upper end of said tube being provided with a funnel-shaped inlet, substantially as specified.

13. A sound-box having in combination a bridge or support having an opening therethrough, a flat spring secured to said bridge on opposite sides of said opening and spaced therefrom, said spring having an opening in alinement with the opening in the bridge, a stylus-tube having a threaded portion in the opening of the spring, and a nut on such threaded portion of said tube on each side of said spring, substantially as specified.

14. In a sound-box, the combination of a cylindrical body having its lower portion projecting beyond the plane of the upper portion and provided with an opening therethrough, a bridge carried by such lower portion of the body and having an opening therethrough, a spring carried by said bridge, and a stylus tube or retainer connected to said spring and extending through the openings in the bridge and the lower portion of the body, substantially as specified.

15. In a sound-box the combination of a needle-magazine, a needle-tube to receive the needles from the magazine, a clamp at the lower end of said tube, a plunger for forcing the needles from and into said clamp, a bridge attached to the body of the sound-box and

provided with an opening therethrough, a plate-spring secured to the upper side of said bridge and having the needle-tube passing through the middle thereof and through the opening in the bridge, a nut on said tube below the spring and a washer and nut on said tube above the spring whereby the tube is adjustably secured to the spring, the bridge serving as a firm support for the spring and needle-tube when the plunger is forcing needles from and into the chuck, substantially as specified.

16. A stylus tube or retainer for sound-boxes having at its lower end means for preventing a stylus from dropping or falling out and a spring adapted to engage the upper end of such stylus to prevent it from moving upwardly in said tube or retainer, substantially as specified.

17. A stylus-tube for sound-boxes having an opening in the wall thereof, a spring secured to said tube and having an inwardly-projecting portion normally extending into said opening, said opening being positioned to permit the engagement of a stylus by such inwardly-projecting portion of the spring to prevent the stylus from moving upwardly in said tube, substantially as specified.

18. A stylus-tube for sound-boxes having an opening in the wall thereof, a flat spring secured to the outside of the tube and having a free end inturned to project through said opening, the opening being located to permit such end of the spring to engage the upper end of a stylus, substantially as specified.

19. A stylus-tube having its lower portion provided with retaining means for preventing a stylus from dropping or falling out and having an opening in its wall above such lower portion, a flat spring having an inturned end adapted to project through said tube to engage the upper end of a stylus, and an adjustable sleeve surrounding said tube and spring, substantially as specified.

20. In a sound-box, the combination of the box-body, said body being provided with a member having a score therein for the supply of styluses, a transparent plate covering said score and providing therewith a channel, and a stylus tube or retainer carried by said body, substantially as specified.

21. In a sound-box, the combination of the box-body, said body being provided with a member having therein a plunger groove or channel and a stylus-supplying groove or channel, a transparent plate covering said grooves or channels, and a stylus tube or retainer in alinement with said plunger groove or channel, substantially as specified.

22. In a sound-box, the combination of the box-body, said body being provided with a member having therein a plunger groove or channel and a stylus-supplying groove or channel, a plunger in the latter groove or channel, a stylus-retainer carried by said body, a flat spring extending across said grooves or channels and having a portion projecting into the stylus groove or channel to retain styluses therein, said plunger having an elevated portion adapted to engage said spring and operate it to move the projecting portion thereof out of the path of the styluses in the stylus-supplying groove or channel, substantially as specified.

23. In a sound-box, the combination of a plate provided with a plunger-groove, a cover for said groove, a needle tube or retainer supported with its upper end in line with the plunger-groove and having a clamp at its lower end, a tubular needle-receptacle removably attached to the said plate, and a plunger for forcing the needles from and into said clamp, substantially as specified.

24. In a sound-box, the combination of a plate provided with a plunger-groove and with a needle-groove branching from the plunger-groove, a needle tube or retainer supported with its upper end in line with the plunger-groove and having a clamp at its lower end, and a spring crossing the plunger-groove and serving as a stop for the needles in the needle-groove, a cover-plate for said grooves having a slot for said spring, and a plunger in the plunger-groove for lifting said spring to release a needle in the needle-groove and permit it to slide through the needle-tube to said clamp, substantially as specified.

25. In a sound-box, the combination of a plate provided with a plunger-groove and with a needle-groove branching from the plunger-groove, a needle-tube supported with its upper end in line with the plunger-groove and having a clamp at its lower end, a flat spring attached to the face of said plate and extending across the plunger-groove to the needle-groove and serving as a stop for the needles, a plunger in the plunger-groove provided with a cam for lifting said spring to release a needle from the needle-groove, and a cover-plate for said groove provided with a slot for said spring, said cover-plate being transparent to permit the operator to determine the correct position and operation of the plunger, spring, and needles, substantially as specified.

26. In a sound-box, the combination, with the needle or stylus tube or retainer, of a plunger for entering the same and thereby regulating the volume of sound, substantially as specified.

27. In a sound-box, the combination of a stylus tube or retainer, of a member having therein a score providing part of a plunger groove or channel, a plate covering said score and completing said groove or channel, a magazine adapted to communicate with said groove or channel, means for retaining styluses in said magazine, a plunger in said groove or channel having a flattened surface adjacent said plate and a projection or cam for operating said retaining means, and a screw having its head overlapping said score and the flattened surface of the plunger to serve as a stop for said plunger and prevent the same from turning, substantially as specified.

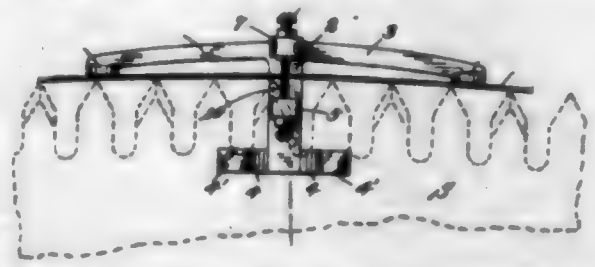
28. In a sound-box, the combination of a stylus tube or retainer, of a member having therein a plunger groove or channel in alinement with said tube or retainer, a magazine adapted to communicate with said groove or channel, means for retaining styluses in said magazine, a plunger having a flattened surface and a cam projecting therefrom adapted to operate said retaining means, and a screw having its head overlapping such flattened surface of the plunger, said cam having a surface conforming to the contour of the screw-head, substantially as specified.

29. A sound-box having, in combination, a bridge or support having an opening therethrough, a flat spring secured to said bridge on opposite sides of said opening, said spring having an opening in alinement with the opening in the bridge, a stylus-tube having a threaded portion in the opening of the spring, and a nut on such threaded portion of said tube on each side of said spring, substantially as specified.

30. A sound-box having, in combination, a body having an opening therethrough, a bridge secured to said body and extending across said opening, said bridge having itself an opening in alinement with the opening in the body, a flat spring secured to said bridge and extending across said opening, said spring having an opening therethrough in alinement with the opening in the bridge, a stylus-tube extending through the opening in said spring and having an adjustable connection therewith, substantially as specified.

31. A sound-box having, in combination, a stylus-retainer, a channel for styluses communicating therewith, and a tubular magazine wherein styluses may be stored end to end adapted to communicate with such channel, the upper end of said magazine being provided with a funnel-shaped inlet, substantially as specified.

818,120. SAW-JOINTER. AUGUSTUS O. REPPETO, Blachly, Oreg. Filed Aug. 15, 1904. Serial No. 220,894.



Claim.—1. The combination with a frame having forwardly-protruding lugs, and an elastic jointing-blade, of means carried by the frame for clamping the said blade at its center, the ends of said blade extending under the said lugs of the frame and being free to move relatively thereto.

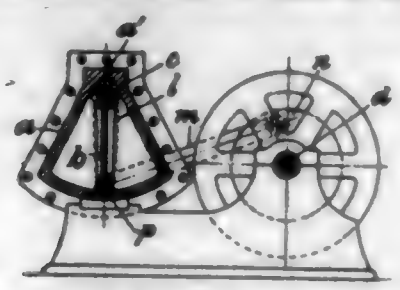
2. The combination with the frame having bent ends constituting forwardly-protruding lugs, and the elastic blade, of the adjustable clamping-screws arranged one on each side of the blade.

3. The combination with a frame comprising a shank having at one end laterally-extending arms terminating in bent ends and having at the other end additional laterally-extending arms, a block carried by said shank and a lug carried by said shank and opposing said block, screws passing through said lug and said block, of a flat, smooth, elastic blade secured between said screws and extending below said bent ends.

4. A frame comprising a shank having two sets of arms, one of said sets of arms having outwardly-bent ends, a block carried by said shank a lug carried by the shank and screws passing, respectively, through said block and lug, substantially as and for the purposes described.

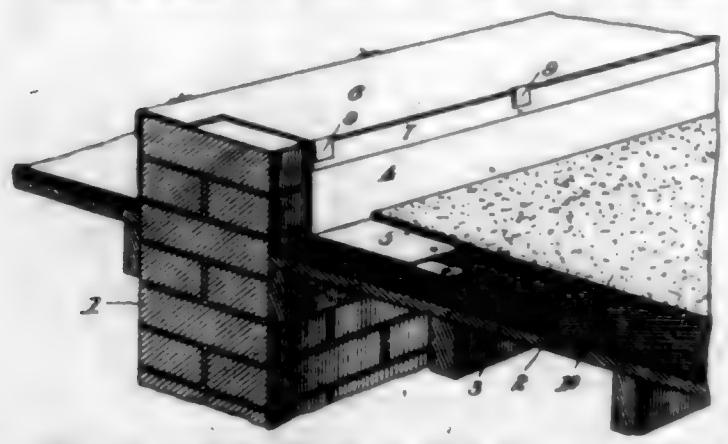
5. In a saw-jointing tool, the combination with a frame of substantially T shape, having two arms extending laterally and provided with lugs on their ends, two adjusting-screws arranged in alinement and a flat elastic blade clamped between said adjusting-screws and extending under said lugs.

818,121. **FLUID-PRESSURE ENGINE.** EDWARD ROACH, Chesterfield, England. Filed Mar. 15, 1904. Serial No. 198,871.



Claim.—In a steam or other fluid pressure engine, a chamber in the general form of a segment of a circle and the piston filling the same from side to side working therein, the fulcrum-shaft *c* connected to the piston, and at the part opposite the piston *b*, working in contact and making joint with the apex *a'* of the chamber, an arm *l* on the shaft *c* outside the chamber, a crank-shaft *d*, a disk *n* mounted thereon, a pin on said disk, a rod *m* connected at one end to said pin and at the other end to the arm *l*, a valve-chamber *i* on one of the upright segment-shaped sides of the piston-chamber, ports *f* leading from the valve-chamber to the piston-chamber, an exhaust-port *g*, a slide-valve in said valve-chamber controlling said ports, an eccentric on the crank-shaft *d* and connections therefrom to the slide-valve for controlling the same, substantially as described.

818,122. **METAL SHEATHING FOR FIRE-WALLS.** WILLIAM R. ROSE, Washington, D. C. Filed Dec. 16, 1905. Serial No. 292,094.



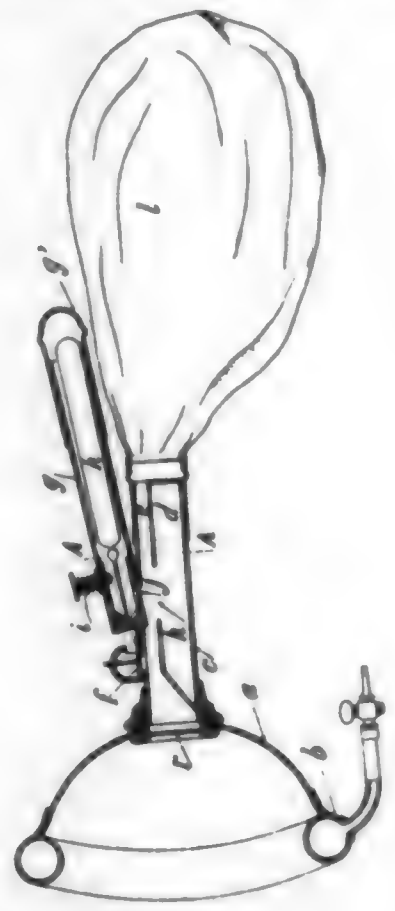
Claim.—1. A metal sheathing for fire-walls comprising a flashing secured to the roof and having a free edge terminating below the top of the wall, a top cover for the wall having depending flanges overlapping the free edge of the flashing, and flexible metal cleats secured to the top cover, extending beneath the flanged portion thereof and the flashing, and secured to the roof at points removed from the wall.

2. In building construction, a fire-wall, a flashing secured to the roof and having a free edge terminating below the top of the wall, a top cover for the fire-wall having depending flanges overlapping the free edge of the flashing, flexible metal cleats secured to the top cover, extending beneath the flanged portion thereof and the flashing, and secured to the roof at points removed from the wall, and a roofing material overlying the roof and portion of the flashing lying thereon.

818,123. **MASK FOR ADMINISTERING ANESTHETICS.** ALBERT ROUSSEAU, Bordeaux, France. Filed July 20, 1905. Serial No. 270,486.

Claim.—1. An apparatus for administering anesthetics comprising a mask *a* of transparent material in combination with a tube *c* leading into the center of the mask, a bladder *f* secured at the free end of the tube *c*, a chamber *d* formed in said tube *c* and adapted to receive the liquid anesthetic, a chamber *e* formed also in the tube *c*, communicating with the chamber *d* and connecting the mask with the bladder, two tubes *g* leading into the upper part of the tube *c* or chamber *e*, two glass tubes *h* containing the liquid anesthetic and arranged respectively in the tube *g*, and a spring-rod *i* arranged on each tube *g*, substantially as and for the purpose set forth.

2. An apparatus for administering anesthetics comprising in combination a mask *a* of transparent material, a pneumatic ring *b* surrounding said mask, a tube *c* leading into the center of the mask, a bladder *f* secured at the free end of the tube *c*, a chamber *d* formed in said tube *c* and adapted to receive the liquid anesthetic, a chamber *e* formed also in the tube *c*, communicating with chamber *d* and connecting the mask with the bladder, a valve *f* applied at the top of the chamber *e*, a metal gauze *r* arranged at the end of the tube *c* next to the mask, two tubes *g* leading into the upper part of the tube *c* or chamber *e*, two glass tubes *h* containing the liquid anesthetic and arranged respectively in the tube *g*, and a spring-rod *i* arranged on each tube *g*, substantially as and for the purpose set forth.



818,124. **TREATING CLAYS CONTAINING GYPSUM.** KEIJO SAKURAI, San Francisco, Cal. Filed Nov. 20, 1905. Serial No. 288,254.

Claim.—1. The treatment of raw clayey material containing gypsum which comprehends the heating of the material to a temperature sufficient to entirely remove all the water from the gypsum, but without altering the character of the clay of the material.

2. The herein-described process which comprehends heating raw clayey material containing gypsum, to reduce the original gypsum to the condition of dead burnt gypsum, but without dehydrating the original clay proper.

3. The herein-described process of rendering commercially valuable raw clayey material containing gypsum which comprehends heating said material to a temperature of approximately 200° centigrade.

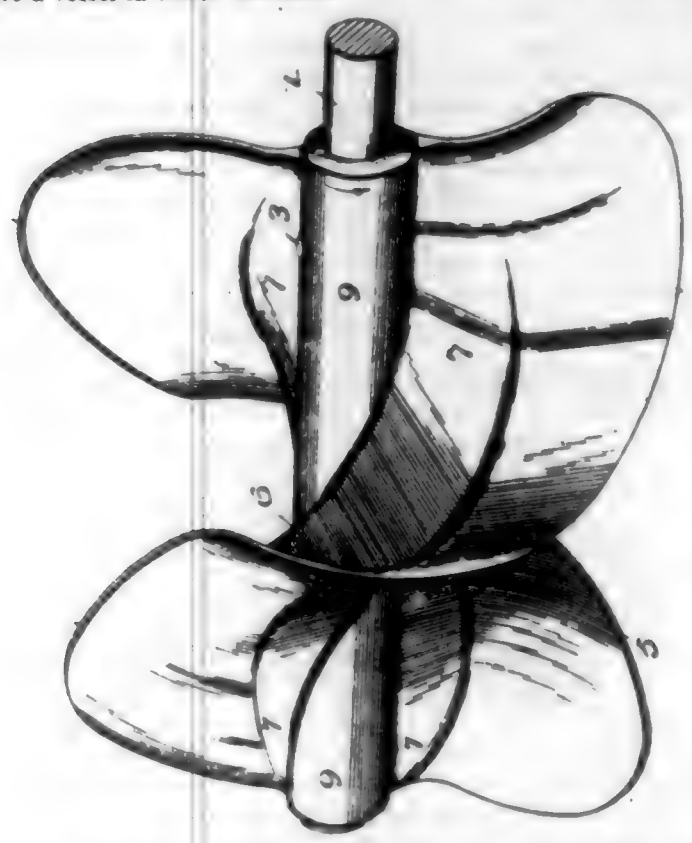
4. The herein-described process which comprehends the preliminary heating of clayey material containing gypsum, to reduce the gypsum to the condition of dead burnt gypsum, mixing the heated material with a suitable binder to form a paste, molding the pasty material and drying the same.

5. As a new commercial commodity, clay and dead burnt gypsum formed by heating the natural original gypsum-bearing material to a sufficient heat as only to entirely dehydrate the original gypsum, leaving the clay proper unchanged.

818,125. **PROPELLER.** ROBERT W. SHAW, Stamford, Conn., assignor to The Shaw Propulsion Company, a Corporation of New York. Filed Nov. 9, 1904. Serial No. 232,008.

Claim.—1. The herein-described compound propeller comprising a central portion 2, blade portions 7 spirally disposed on said central portion and arranged diametrically opposite each other, terminal flanges 4 and 5 designed to coöperate with the blade portions 7, said flanges 4 and 5 being relatively cupped in respect to the inner portions 7 or disposed in a substantially curved lateral plane relative to the plane of said inner portions, the opposite ends of the complete propeller being substantially the same in formation and curvature though oppositely arranged, whereby the flanges 4 and 5 will have a grasping power upon the water and the propeller may be driven oppositely or reversely without causing the blade portions

following the other to offer resistance thus enabling the propeller to drive a vessel in either direction.



2. A propeller having two diametrically opposite blade portions 7 throughout its length, each half of the propeller being similar in contour and area to the other half, the blade portion of each half having an inner diametrically-extended portion and also having an outer curved flange disposed at an angle to the inner portion of the blade, the flanges of each half of the propeller being a duplication of the flanges of the other half excepting that they are oppositely disposed whereby the complete propeller may be rotated in either direction, disposing but one half of the propeller in operation while the other half moves through the water without engaging it.

3. The herein-described propeller having a body portion or member 9, a pair of spirally-disposed blades on said member, one half of the blades being disposed directly opposite to the other half while the inner portions of the blades extend directly outward from the body portion and are provided with curved flanges to engage and act upon the water whereby the latter will be held against a lateral thrust and move longitudinally with the propeller, the forward half of the propeller accomplishing the work of propulsion while the other half rotates without friction or strain upon the water.

4. The herein-described propeller having a pair of spiral blades arranged diametrically opposite each other, said blades being so disposed in relation to each other that but one half of each of the blades will act upon the water to propel a vessel when the propeller is rotated.

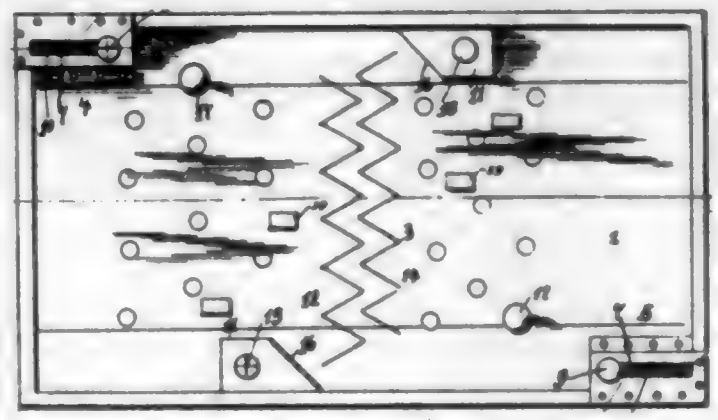
5. The herein-described propeller having blades through ut its length, said blades having curved flanges and being spirally disposed with substantially one half thereof (measured longitudinally) in an intersecting spiral plane relative to the body portion of the propeller whereby but one of said halves will act upon the water to propel a vessel when the propeller is positively driven, and the other half will act upon the water to propel a vessel when reversely driven.

6. A reversible propeller comprising a shaft and a plurality of blades arranged spirally around said shaft, each of said blades consisting of two end portions extending to the center of the propeller and merging into a connecting portion having its outer edge substantially transversely arranged to the adjacent edges of said end portions and disposed at the center of the propeller.

7. A reversible propeller comprising a shaft and a plurality of blades arranged spirally around said shaft, each of said blades consisting of two end portions extending to the center of the propeller and merging at the center of said propeller into a connecting portion having its outer edge substantially transversely arranged to the adjacent edges of said end portions, those portions of the end portions adjacent the shaft being at an angle to the remaining portions of said end portions.

818,126. GAME APPARATUS. FREDERICK SIEDER, Swissvale, Pa. Filed Dec. 11, 1905. Serial No. 291,369.

Claim.—1. A game apparatus embodying a board or plat having side walls, a lid adapted to fit upon said side walls, spring-actuated shooting devices mounted in the diagonally opposed corners of the board or plat and adapted to propel balls toward the center of the board, blocks adjustably mounted upon said board and adapted to deflect said balls toward the center of said board, breastwork-pieces mounted upon said board, players adapted to be stood in the center of said board to be knocked down by said balls, substantially as described.

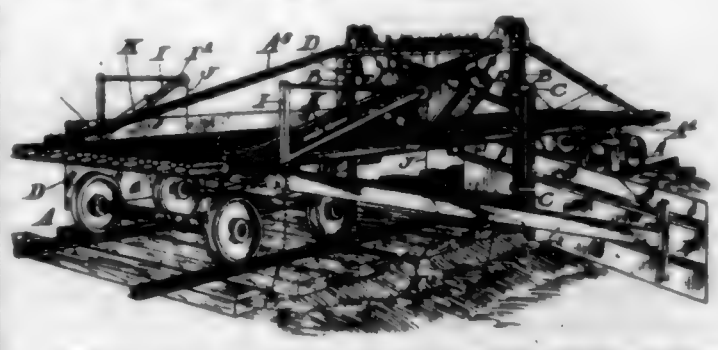


2. A game apparatus embodying a board or plat, spring-actuated shooting devices mounted upon said board and adapted to propel balls toward the center of said board, deflector-blocksadjustably mounted upon said board, players mounted in the center of said board and adapted to be knocked down by the balls of the shooting device, means to shield said players, and means to inclose said board and its appurtenant parts, substantially as described.

3. A game apparatus embodying a board or plat, shooting devices carried by said board or plat and adapted to propel balls toward the center of said board, movable deflector-blocks mounted upon said board, means carried by said board to indicate the position of said players, substantially as described.

4. A game apparatus embodying a board or plat, shooting devices carried by said board or plat, and adapted to propel balls toward the center of said board, independently-movable deflector-blocks mounted upon said board, and players mounted centrally of said board.

818,127. SPREADER-CAR. PERRIPOR F. SMITH, Jr., Dennison, Ohio. Filed Dec. 19, 1904. Serial No. 237,403.



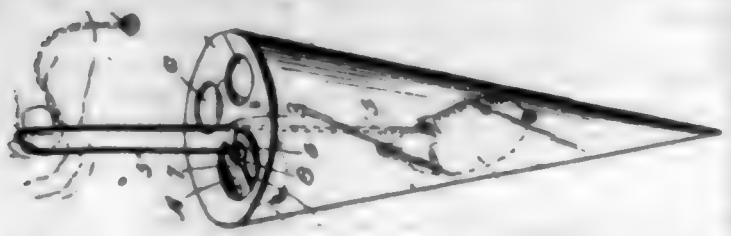
Claim.—1. A spreader-car having in combination one or more vertical standards B forming struts of a diamond truss secured at its ends to the body of the car, a spreader-plate pivotally and slidingly secured to said standard, and means for raising or lowering said spreader-plate and securing it in position.

2. A spreader-car having in combination two vertical standards B forming struts of two diamond trusses secured at their ends to the body of the car, transverse beams connecting said standards together at top and bottom, spreader-plates pivotally and slidingly secured to said standards and means for raising or lowering said spreader-plates and securing them in position.

3. A spreader-car having two trucks and vertical standards secured to the car-body at an intermediate point in combination with a spreader plate or plates pivotally and slidingly secured to said standards, means for raising and lowering said plates, a removable strut for holding the spreader-plate in extended position, a strut-socket on the bolster of a truck and a strut-socket on the spreader-blade.

4. A spreader-car having two trucks and vertical standards secured to the car-body at an intermediate point in combination with a spreader plate or plates pivotally and slidingly secured to said standards, means for raising and lowering said plates, a removable strut for holding the spreader-plate in extended position, a strut-socket on the bolster of a truck, a strut-socket on the spreader-blade and a hoist on the car-body arranged to handle the strut.

818,128. PUZZLE. WILLIAM W. SMITH, Pittsburg, Pa. Filed Jan. 23, 1906. Serial No. 297,226.



Claim.—1. In a device of the character described, comprising a casing having an opening therein, a weight mounted in said casing, and a suspension device arranged to run freely through the casing, one end of said suspension device being connected to the weight and the other free therefrom, but arranged to be connected therewith to draw the weight through said opening.

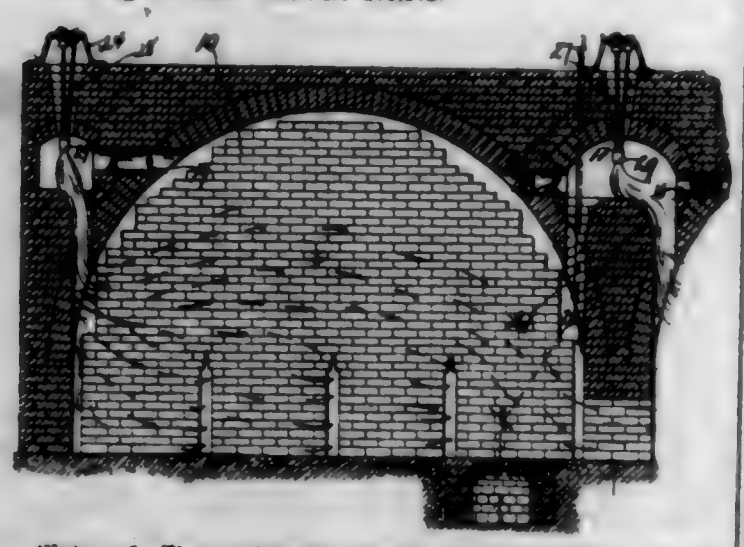
2. A device of the character described comprising a casing having an opening therein, a weight loosely mounted in said casing and arranged to be drawn through said opening, and a suspension device running freely through said casing at a point distinct from said opening, one end of said suspension device being attached to said weight and the other end being provided with means whereby it may be detachably connected thereto to draw the weight through said opening.

3. A device of the character described comprising a casing provided with an opening, a weight loosely mounted in said casing and designed to pass through said opening, the said weight being provided with an opening, and a suspension device mounted to run through said casing, said suspension device being secured at one end to said weight and provided at its other end with a ball arranged for engagement in said opening in the weight whereby to withdraw the weight through the opening in the casing.

4. A device of the character described comprising a casing provided with an opening, a weight loosely mounted in said casing, and designed to pass through said opening, said weight being provided with an opening and a contracted slot or passage leading therefrom, and a suspension device running through said casing and secured to said weight, the suspension device being provided at one end with a ball or button designed to enter said opening and to be retained therein by the contracted slot or passage, whereby to withdraw the weight through the opening in the casing.

5. A device of the character described comprising a conoidal casing, the base of which is provided with a central aperture and different-sized openings spaced thereabout, a weight loosely mounted in said casing and provided with an opening and a contracted passage leading therefrom, a suspension device mounted to run loosely through said aperture and connected at one end to said weight, and a ball provided with a shank secured to the other end of the suspension device, said ball being designed to enter the opening in the weight and engage the walls of the slot therein whereby to withdraw the weight from one of the openings in the base of the casing.

818,129. OIL-BURNING BRICK-KILN. RICHARD SOUTH, Los Angeles, Cal., assignor of one-half to Morris Marks, Los Angeles, Cal. Filed Aug. 10, 1905. Serial No. 273,575.



Claim.—1. The combination with a plurality of kilns, of partitions separating the kilns, combustion-spaces in said partitions, escape-flues leading from the combustion-space of each partition to the kilns on both sides of said partition, and a lower flue arranged in the partition for placing adjacent kilns in communication with each other.

2. The combination with a kiln, of a combustion-chamber, forming a vaporizer, and a plurality of valved flues leading from the chamber to different points in the kiln.

3. The combination with a kiln, of a combustion-chamber arranged in the upper portion of the wall of the kiln, and flues leading from said chamber, the flues opening into the kiln at different heights respectively.

4. In combination, a series of kilns, vertical partitions separating said kilns, and provided with transverse passages at their bases, a combustion-chamber in the upper portion of each partition, injector-burners leading into said chamber, and vertical and horizontal flues leading from the chamber to the kilns on each side thereof.

818,130. DETACHABLE LEAF FOR BOOKS. MILTON G. SWAN, Lancaster, Pa. Filed May 18, 1905. Serial No. 260,992.



Claim.—A detachable leaf A, in combination with a reinforcing-strip of fabric B on its inner edge and a series of metallic plates C between the said strip and the said leaf, an L-shaped slot being made through each of the said plates, and the said strip and the leaf opposite the same and extending to the edge thereof and being adapted to slip onto a fastening staple or rod, the said plates and strip of fabric being permanently secured together and removable from the book as a whole substantially as set forth.

818,131. GAS-OVEN. THOMAS B. TAYLOR, Detroit, Mich. Filed Dec. 26, 1903. Serial No. 186,634.



Claim.—1. The combination of two burners, a lighter adjacent to said burners and adapted to catch escaping gas from each of said burners, said lighter being provided with a trunk extending between the burners, said trunk being provided with a series of perforations extending through its walls throughout its length to admit air to every part of the length of the gas-column in said trunk.

2. The combination of a burner having an aperture therein to permit the escape of a jet of gas therefrom, a trunk open at each end and having its open end located adjacent to said burner and in front of the aperture therein, said trunk being provided with a series of perforations extending through its walls throughout its length adapted to admit air to every part of the length of the gas-column in said trunk to form a combustible mixture therewith.

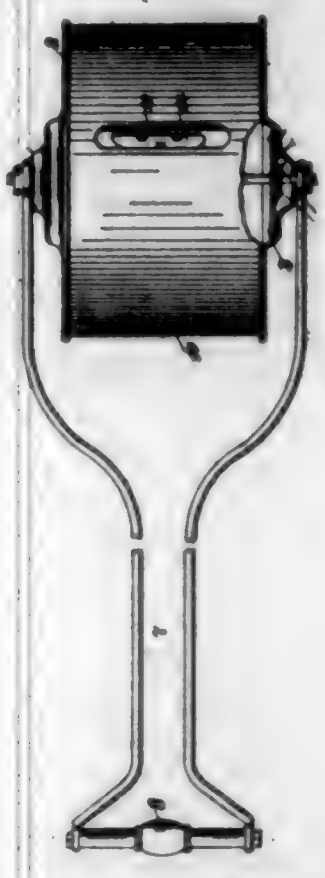
818,132. TOY. JOSEF UNGERMAN, Pittsburg, Pa. Filed Nov. 25, 1905. Serial No. 289,026.

Claim.—1. A toy of the class described embodying a revoluble drum, an axle passing through said drum, a propelling-arm connected to the ends of said axle, said drum having slots formed therein, springs mounted within said drum, heads carried by said springs and adapted to successively protrude through said slots, and means carried by said axle to force said heads through said slots.

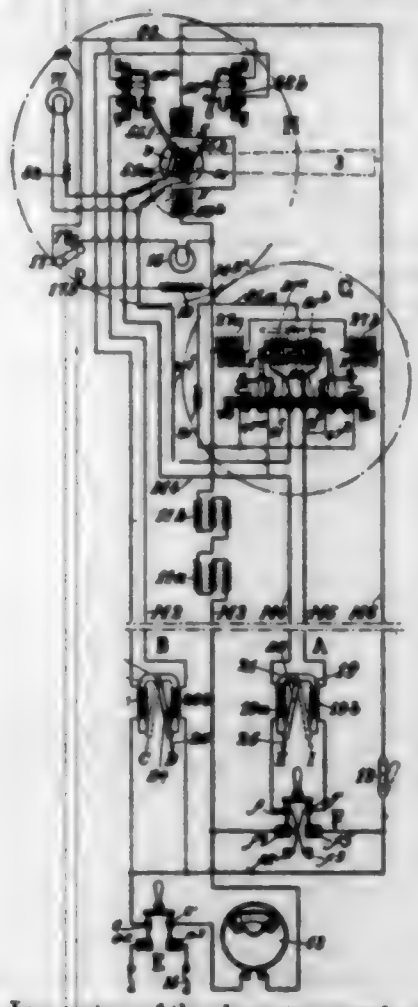
2. A toy of the class described, embodying a revoluble drum, an axle extending through said drum, springs mounted in said drum, heads carried by said springs, means to propel said drum, means actuated by the operation of said drum to move said heads outside of said drum, substantially as described.

3. A toy embodying a drum having slots formed therein, heads mounted in said drum, means to propel said drum, means actuated by the first-named means to successively move said heads outside of said drum, means mounted within said drum to emit musical notes si-

multaneously with the movement of the heads outside the drum, substantially as described.



818,133. COMBINED SYSTEM OF ELECTRIC SIGNALING AND SWITCH-SETTING FOR RAILROADS. BRUNO O. WAGNER, El Paso, Tex. Filed Oct. 26, 1904. Serial No. 230,681.



Claim.—1. In a system of the character stated, a source of electric energy, a semaphore mechanism and a switch-setting mechanism, said semaphore mechanism and said switch-setting mechanism each including armature and field magnets, the armature-magnets of the switch-setting mechanism and semaphore mechanism being connected in series with each other substantially as shown and described.

2. In a system of the character stated, a source of electric energy, a semaphore mechanism and a switch-setting mechanism, said semaphore mechanism and said switch-setting mechanism each including armature and field magnets, the armature-magnets of the switch-setting mechanism and semaphore mechanism being connected in series with each other, the field-magnets of the switch-setting mechanism being connected in multiple with the field-magnets of the semaphore mechanism, all being arranged substantially as shown and described.

3. In a system of the character stated, a semaphore mechanism including field and armature magnets, a switch-setting mechanism including field and armature magnets, said armature-magnets all being connected in series with each other, and a semaphore-lamp connected in shunt with the armature-magnet circuits substantially as shown and described.

4. In a system of the character stated, a semaphore mechanism and a switch-setting mechanism each including field and armature magnets, the said armature-magnets being connected in series with each other, a source of electric energy connected to the armature-circuit, and an indicator in the armature-circuit, substantially as shown and described.

5. In a system of the character stated, a semaphore mechanism and a switch-setting mechanism each including field and armature magnets, the said armature-magnets being connected in series with each other, a source of electric energy connected to the armature-circuit, and an indicator in the armature-circuit, a supplemental indicator-circuit, means controlled by the semaphore mechanism for controlling said supplemental indicator-circuit, an indicator in said supplemental indicator-circuit, substantially as shown and described.

6. In a system of the character stated, a source of electric energy, a semaphore mechanism having an armature-coil, a switch-setting mechanism having an armature-coil, an armature-circuit connected to the source of electric energy, said semaphore and said switch-setting mechanisms having their armatures connected in series in the armature-circuit, a semaphore-lamp in shunt with the armature-circuit, an indicator in the armature-circuit, means controlled by said switch-setting mechanism for operating said indicator, a supplemental indicator-circuit connected with the source of electric energy and with the semaphore mechanism, means controlled by the semaphore mechanism for admitting current to the supplemental indicating-circuit, a supplemental indicator in the supplemental indicator-circuit, a second lamp and a resistance adapted to be connected, one at a time, to the supplemental indicator-circuit, substantially as shown and described.

7. In a system of the character stated, a source of electric energy, a semaphore mechanism having an armature-coil, a switch-setting mechanism having an armature-coil, an armature-circuit connected to the source of electric energy, said semaphore and said switch-setting mechanisms having their armatures connected in series in the armature-circuit, a semaphore-lamp in shunt with the armature-circuit, an indicator in the armature-circuit, means controlled by said switch-setting mechanism for operating said indicator, a supplemental indicator-circuit connected with the source of electric energy and with the semaphore mechanism, means controlled by the semaphore mechanism for admitting current to the supplemental indicating-circuit, a supplemental indicator in the supplemental indicator-circuit, a second lamp and a resistance adapted to be connected, one at a time, to the supplemental indicator-circuit, said semaphore and said switch-setting mechanism each including a field-magnet, a field-magnet circuit connected with said field-magnets and to the source of electric energy and electric heaters in said field-magnet circuit, substantially as shown and described.

8. In a system of the character stated, a source of electric energy, an electromagnetic semaphore mechanism, and an electromagnetic switch-setting mechanism connected in series, means for controlling the current as it flows from the source of electric energy to operate the switch-setting and semaphore mechanisms substantially as shown and described.

9. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism and an electromagnetic semaphore mechanism connected in series with each other to said source of electric energy, an electromagnetic indicator for said switch-setting mechanism controlled thereby, and electromagnetic indicator for said semaphore-operating mechanism controlled thereby, all being arranged substantially as shown and described.

10. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism and an electromagnetic semaphore mechanism connected in series with each other to said source of electric energy, an electromagnetic indicator for said switch-setting mechanism controlled thereby, an electromagnetic indicator for said semaphore-operating mechanism controlled thereby, and electric heaters connected with said source of electric energy, substantially as shown and described.

11. In a system of the character stated, a source of electric en-

ergy, a semaphore mechanism, said semaphore mechanism including a semaphore-blade and an operating means, said operating means including an electromotor having field and armature magnets, the field-magnet coils being connected in series to the source of electric energy, and the armature-coil being connected to the source of electric energy, a circuit-closer operatable by the armature and connected to one terminal of the source of energy, an indicator in circuit with said circuit-closer and the other terminal of the source of energy to operate when the armature closes the circuit, and a supplemental lamp connected across the armature-terminals.

12. In a system of the character stated, a source of electric energy, a semaphore mechanism, said semaphore mechanism including a semaphore-blade and operating means, said operating means including an electromotor having field and armature magnets, the field-magnet coils being connected in series to the source of electric energy, and said armature-coil being connected to the source of electric energy, a circuit-closer operatable by the armature and connected to one terminal of the source of energy, an indicator in circuit with said circuit-closer and the other terminal of the source of energy to operate when the armature closes the circuit, and a supplemental lamp connected across the armature-terminals, and means for choking the current through the supplemental lamp at times.

13. In a system of the character stated, a source of electric energy, a semaphore mechanism, said semaphore mechanism including a semaphore-blade and an operating means, said operating means including an electromotor having field and armature magnets, the field-magnet coils being connected in series to the source of electric energy, and the armature-coil being connected to the source of electric energy, a circuit-closer operatable by the armature and connected to one terminal of the source of energy, an indicator in circuit with said circuit-closer and the other terminal of the source of energy to operate when the armature closes the circuit, a supplemental lamp connected across the armature-terminals, and means for choking the current through the supplemental lamp at times, said means comprising a reactance-coil in series with the supplemental lamp.

14. In a system of the character stated, a source of electric energy, a semaphore mechanism including a semaphore-blade and an operating mechanism therefor, said semaphore-operating mechanism including an electric motor having field and armature electromagnets, the field-magnet coils being connected in series to the source of electric energy, the armature-coil being connected to the source of electric energy, a pair of circuit-closers each operatable by the armature and each having one of their terminals connected together and to one terminal of the source of electric energy, a signal-lamp, a substitute resistance, a snap-switch in series with the lamp and resistance, said lamp, said resistance, and said switch being connected in series in said circuit-closer connection, an indicator including a pair of coils one of which is connected in circuit with one circuit-closer and the other connected in circuit with the other circuit-closer, both of said coils being also connected to the other terminal of the source of electric energy, said indicator being arranged to operate when the circuit is closed at said circuit-closers.

15. In a system of the character stated, a source of electric energy, a semaphore mechanism including a semaphore-blade and an operating mechanism therefor, said semaphore-operating mechanism including an electric motor having field and armature electromagnets, the field-magnet coils being connected in series to the source of electric energy, the armature-coil being connected to the source of electric energy, a pair of circuit-closers each operatable by the armature and each having one of their terminals connected together and to one terminal of the source of electric energy, a signal-lamp, a substitute resistance, a snap-switch in series with the lamp and resistance, said lamp, said resistance, and said switch being connected in series in said circuit-closer connection, an indicator including a pair of coils one of which is connected in circuit with one circuit-closer and the other connected in circuit with the other circuit-closer, both of said coils being also connected to the other terminal of the source of electric energy, said indicator being arranged to operate when the circuit is closed at said circuit-closers, and a supplemental lamp connected across the armature-terminals.

16. In a system of the character stated, a source of electric energy, a semaphore mechanism including a semaphore-blade and an operating mechanism therefor, said semaphore-operating mechanism including an electric motor having field and armature electromagnets, the field-magnet coils being connected in series to the source of electric energy, the armature-coil being connected to the source of electric energy, a pair of circuit-closers each operatable by the armature and each having one of their terminals connected together and to one terminal of the source of electric energy, a signal-lamp, a substitute resistance, a snap-switch in series with the lamp and resistance, said lamp, said resistance and said switch being connected in series in said circuit-closer connection, an indicator including a pair of coils one of which is connected in circuit with one circuit-closer and the other connected in circuit with the other circuit-closer, both of said coils being also connected to the other terminal of the source of electric energy, said indicator being arranged to operate when the circuit is closed at said circuit-closers, a supplemental lamp connected across the armature-terminals, and a reactance-coil in series with said lamp.

17. In a system of the character stated, a semaphore including a blade-operating mechanism and a semaphore-blade operatable thereby, said operating mechanism including armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coil to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other field-coil line-wires, and means controlled by the armature for operating said closers.

18. In a system of the character stated, a semaphore including a blade-operating mechanism and a semaphore-blade operatable thereby, said operating mechanism including an armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coil to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a substitute resistance in series with said switch, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other coil line-wire, and means controlled by the armature for operating said closers.

19. In a system of the character stated, a semaphore including a blade-operating mechanism and a semaphore-blade operatable thereby, said operating mechanism including armature-magnets and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coils to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other field-coil line-wire, and means controlled by the armature for closing said circuit, as the armature reaches the end of its movement in either direction.

20. In a system of the character stated, a semaphore including a blade-operating mechanism and a semaphore-blade operatable thereby, said operating mechanism including an armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting field-coil to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a substitute resistance in series with said switch, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other coil line-wire, and means controlled by the armature for operating said circuit-closers, as the armature reaches the end of its movement in either direction.

21. In a system of the character stated, a semaphore including a blade-operating mechanism, and a semaphore-blade operatable thereby, said operating mechanism including armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coil to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a

double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other field-coil line-wire, and means controlled by the armature for operating said circuit-closers, and a supplemental signal-lamp connected across the armature-terminals.

22. In a system of the character stated, a semaphore including a blade-operating mechanism, and a semaphore-blade operatable thereby, said operating mechanism including armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coil to the source of energy, circuit-closers each including a movable and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other field-coil line-wire, and means controlled by the armature for operating said circuit-closers, a supplemental signal-lamp connected across the armature-terminals, and means connected in said supplemental lamp-circuit for choking back the current when an abnormal voltage is present at the armature-terminals.

23. In a system of the character stated, a semaphore including a blade-operating mechanism and a semaphore-blade operatable thereby, said operating mechanism including an armature-magnet and field-magnets, a source of electric energy, a pair of line-wires connecting the armature-coil with the source of energy, a second pair of line-wires connecting the field-coils to the source of energy, circuit-closers each including a movable contact and a fixed contact, one contact of each circuit-closer being connected together to one field-coil line-wire, a signal-lamp and a switch in said last-named connection, a substitute resistance in series with said switch, a double-coil indicator, one coil of the indicator being connected to one contact of one circuit-closer and the other coil being connected to one contact of the other circuit-closer, both indicator-coils being also connected to the other coil line-wire, means controlled by the armature for operating said circuit-closers, as the armature reaches the end of its movement in either direction, a supplemental signal-lamp connected across the armature-terminals and means connected in circuit with said signal-lamp for choking down the current when an abnormal voltage is present at the armature-terminals.

24. A system of the character stated, comprising in combination with a railway-switch and semaphore, electromagnetic means for opening and closing the rail-switches, controlling means for said electromagnetic means, means for indicating the position of the switch, electromagnetic semaphore-operating means connected with and operating in unison with said first-mentioned means and controlled by said controlling means, supplemental indicating means controlled by said semaphore-operating means for indicating the position of the semaphore, and an electric semaphore-light in the semaphore-indicating circuit, controlled by the semaphore-operating means.

25. A system of the character stated, comprising in combination with a railway switch and semaphore, electromagnetic means for opening and closing the rail-switches, controlling means for said electromagnetic means, means for indicating the position of the switch, electromagnetic semaphore-operating means connected with and operated in unison with said first-mentioned means and controlled by said controlling means, supplemental indicating means controlled by said semaphore-operating means for indicating the position of the semaphore, an electric semaphore-light in the semaphore-indicating circuit, controlled by the semaphore-operating means, said semaphore-operating means including an electric motor having field and armature magnets, a supplemental signal-lamp connected across the armature-terminals of said motor, and means for indicating when the first-mentioned signal-lamp is lighted or extinguished.

26. A system of the character stated, comprising in combination with a railway switch and semaphore, electromagnetic means for opening and closing the rail-switches, controlling means for said electromagnetic means, means for indicating the position of the switch, electromagnetic semaphore-operating means connected with and operatable in unison with said first-mentioned means and controlled by said controlling means, supplemental indicating means controlled by said semaphore-operating means for indicating the position of the semaphore, an electric semaphore-light in the semaphore indicating circuit, controlled by the semaphore-operating means, said semaphore-operating means including an electric motor having field and armature magnets, a supplemental signal-lamp connected across the armature-terminals of said motor, and means for indicating when the first-mentioned signal-lamp is lighted or extinguished, and switch-rail heaters connected in circuit with said switch and semaphore operating mechanisms.

27. A system of the character stated, comprising in combination with a railway switch and semaphore, electromagnetic means for opening and closing the rail-switches, controlling means for said electromagnetic means, means for indicating the position of the switch, electromagnetic semaphore-operating means connected with and operatable in unison with said first-mentioned means and controlled by said controlling means, supplemental indicating means controlled by said semaphore-operating means for indicating the position of the semaphore, an electric semaphore-light in the semaphore-indicating circuit, controlled by the semaphore-operating means, said semaphore-operating means including an electric motor having field and armature magnets, a supplemental signal-lamp connected across the armature-terminals of said motor, means for indicating when the first-mentioned signal-lamp is lighted or extinguished, switch-rail heaters connected in circuit with said switch and semaphore operating mechanisms, and an ammeter connected in series with all of said means to measure the current consumption.

28. In an apparatus of the character stated, electromagnetic switch-rail-shifting devices, circuit-closers controlled thereby, branch circuits controlled by the circuit-closers, indicators controlled by said branch circuits, electromagnetic track signaling apparatus in direct electrical connection with the rail-switch-shifting apparatus and working in unison therewith, circuit-closers controlled by said track signaling apparatus, supplemental indicating circuits controlled by said last-named circuit-closers, indicators in said circuits, an electric signaling-lamp coöperatively connected with the track signaling apparatus, a compensating resistance, means for substituting said compensating resistance for said signal-lamp, a supplemental electric lamp connected with the track-signal-operating mechanism to be lighted while the track-signals are being changed, electric heaters connected in circuit with said switch-setting and track signaling apparatus and arranged under the rail-switch, and measuring instruments connected in circuit with all of the aforesaid devices for testing the system as to its working conditions and efficiency substantially as shown and described.

29. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature magnets, a pair of line-wires connecting said armature-magnets to the source of electric energy, a reversing-switch for reversing the current in said armature line-wires, a balanced double-coil electromagnetic indicator having one coil in series with one armature line-wire and the other coil in series with the other armature line-wire, means controlled by the switch-setting mechanism for varying the electric current in one or the other armature line-wires to unbalance the indicator, a semaphore-operating mechanism comprising field-magnets and an armature-magnet, said last-named field-magnets being connected in parallel with the field-magnets of the switch-setting mechanism, said last-named armature-magnets being connected in series with the armature-magnet of the switch-setting mechanism, a pair of line-wires for connecting all of said field-magnets to the source of electric energy, supplemental indicating-circuits for said semaphore-operating mechanism, a balanced indicator in said supplemental signaling-circuits, and means controlled by the semaphore-operating mechanism for upsetting the balance in the supplemental signal-circuit substantially as shown and described.

30. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature magnets, a pair of line-wires connecting said armature-magnets to the source of electric energy, a reversing-switch for reversing the current in said armature line-wires, a balanced double-coin electromagnetic indicator having one coil in series with one armature line-wire and the other coil in series with the other armature line-wire, means controlled by the switch-setting mechanism for varying the electric current in one or the other armature line-wires to unbalance the indicator, a semaphore-operating mechanism comprising field-magnets and an armature-magnet, said last-named field-magnets being connected in parallel with the field-magnets of the switch-setting mechanism, said last-named armature-magnet being connected in series with the armature-magnet of the switch-setting mechanism, a pair of line-wires for connecting all of said field-magnets to the source of electro-energy, supplemental indicating-circuits for said semaphore-operating mechanism, a balance-indicator in said supplemental signaling-circuits, and means controlled by the semaphore-

operating mechanism for upsetting the balance in the supplemental signal-circuit, an electric lamp and a resistance connected to one field-magnet line-wire, and a switch connected in circuit with said lamp and resistance and with the supplemental signaling-circuit, substantially as shown and described.

31. In a system of the character stated, a source of electric energy, an electromagnetic switch-setting mechanism including field and armature magnets, a pair of line-wires connecting said armature-magnets to the source of electric energy, a reversing-switch for reversing the current in said line-wires, a balanced double-coil electromagnetic indicator having one coil in series with one armature line-wire and the other coil in series with the other armature line-wire, means controlled by the switch-setting mechanism for varying the electric current in one or the other armature line-wires to unbalance the indicator, a semaphore-operating mechanism comprising field-magnets and an armature-magnet, said last-named field-magnets being connected in parallel with the field-magnets of the switch-setting mechanism, said last-named armature-magnets being connected in series with the armature-magnet of the switch-setting mechanism, a pair of line-wires for connecting all of said field-magnets to the source of electro-energy, supplemental indicating-circuits for said semaphore-operating mechanism, a balance-indicator in said supplemental signaling-circuits, and means controlled by the semaphore-operating mechanism for upsetting the balance in the supplemental signaling-circuit, an electric lamp and a resistance connected in parallel with each other to one field-magnet line-wire, a switch connected in circuit with said lamp and resistance and with the supplemental signaling-circuit, a supplemental lamp connected across the armature-terminals of the semaphore-operating mechanism, and an indicating-ammeter in series with the source of electric energy for indicating the current consumption substantially as shown and described.

32. In a system of the character stated, a switch-setting mechanism comprising a source of electric energy, field-magnets and an armature-magnet, means connected with the armature-magnet and adapted to be connected to the switch-rails for imparting the motion of the armature-magnet to the switch-rails, a pair of armature line-wires and a pair of field line-wires connecting the armature-magnet and the field-magnets respectively to the source of electric energy, a pair of circuit-closers operable by the armature and each having one of their contacts connected to the field-circuit between the field-magnets, a resistance in said last-named connection, said circuit-closers each having one of their terminals connected to the armature line-wires, a double-pole double-coil indicator having one of its coils connected in series with one armature line-wire and the other coil in series with the other armature line-wire, a reversing-switch in said armature-circuit, electric rail-heaters in series with the field-magnet circuit in one field-magnet line-wire, a cut-out switch in the other field-magnet line-wire, a semaphore-operating mechanism including an electric motor having field and armature magnets, said last-named field-magnets being connected in parallel with the field-magnets of the switch-setting mechanism, said armature of the semaphore-operating mechanism being connected in series with the armature of the switch-setting mechanism, a signal-lamp and an inductive resistance connected across the armature-terminals of the semaphore-operating mechanism, a pair of circuit-closers operatable by the semaphore-operating mechanism and each having one of their terminals connected together and to one of the field-magnet line-wires, a switch, a semaphore electric lamp and a resistance adapted to be separately connected in series with said last-named connection, said semaphore electric lamp and said last-named resistance being connected in parallel with each other, a pair of supplemental line-wires, one of which is connected to the other contact of one of the semaphore-mechanism circuit-closers, the other of which is connected to the other terminal of the second semaphore-mechanism circuit-closer, a double-pole double-coil indicator having one coil connected in series with one of the supplemental line-wires and the other coil connected in series with the other supplemental line-wire, said indicator having both coils connected with one of the field-magnet line-wires, a cut-out switch and an ammeter connected in circuit with the source of electric energy, substantially as shown as described.

33. In a combined system of electric signaling and switch-setting for railroads of the character stated, the combination with a plurality of hermetically-closed resistance-boxes to be arranged underneath the metallic rail-switch base-plates for electrically heating the switch-points in the winter, said heating-boxes being joined into one of the main wires to the parallelly-connected field-circuits of the rail-switch-setting apparatus and the track signaling mechanism, a signal-pole switch connected in the common field return-wire to disconnect the heaters and field-coil from the circuit without disturbing the track-signals and causing changes in the position of the rail-switch.

34. In a combined system of electric signaling and switch-setting for railroads, the combination with electromagnetically-operated switch-setting devices having field and armature circuits and electromagnetically-operating semaphore-operating devices common to said field and armature circuits, of a plurality of hermetically-sealed resistance-boxes to be arranged beneath the rail-switch base-plates for electrically heating the switch-points, said heating-boxes being connected in series with said field-circuit of the aforesaid switch-setting apparatus and semaphore-operating apparatus, a switch connected in the return field-circuit wire for disconnecting the heater and field-coils from the circuit without disturbing the track-signals or causing changes in the position of the rail-switch.

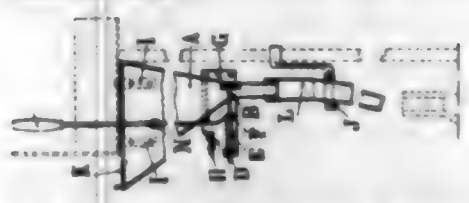
35. In a system of electromagnetically-operated rail-switch-setting apparatus and an electromechanical track signaling mechanism of the character stated, each including armature and field magnets, all of said armature-magnets being connected in series with each other and disposed in a circuit, an indicator of the character stated in said armature-circuit, a current-reversing switch also in said armature-circuit, said armature of the track signaling mechanism being rotatable, an arm movable by said armature, contact-making devices stationarily mounted adjacent the armature and adapted to be engaged by said armature-arm as it reaches the limit of its movement in each direction, supplemental electric circuits for said contact-making devices, an electric semaphore-lamp and a resistance, a switch connected with said lamp and resistance and to said contact-making devices, a second indicator of the character stated including a pair of coils one of which is connected to one contact-making device and the other connected to the other contact-making device of the semaphore-operating mechanism, said indicator consisting of a U-shaped soft-iron magnet with downwardly-opening legs upon which the coils are mounted, an iron armature loosely suspended at the magnet-yoke, centrally between said legs, said armature arranged to be pulled from its perpendicular positions by the magnet-pole which is energized by the branch circuit established when the contact-making devices of the track signaling mechanism are closed substantially as set forth.

36. In a system of the character stated, an electromagnetic switch-setting apparatus, and an electromechanical track signaling apparatus of the character stated, both being in electric connection with each other and a source of electric energy, the combination with the two series-connected armature-windings of said apparatuses, of an electromagnetically-operating indicator in the operator's station, said indicator consisting of a U-shaped stationary soft-iron magnet with downwardly-pointing legs, a wire coil on each leg, each coil connected in the line-wire of said armature-circuit, an iron armature loosely suspended at the magnet-yoke centrally between said legs, said armature being deflected from its perpendicular position when the magnetic equilibrium between the two coils is disturbed due to the branch circuits effected by the contact-making devices that are operated by the rail-switch-setting apparatus at the moment when one or the other final positions of movement is reached, substantially as shown.

37. In a combined system of electric signaling and switch-setting apparatus for railroads comprising in combination with a source of direct current, means for breaking the current automatically in case of other circuits, means to open, close and reverse circuits by hand, an ammeter for measuring and controlling the current consumption, said ammeter having a number of adjustable hands which are provided with an indicating-scale slidable in front of the pointer and main scale of the instrument, a system of six wires to be arranged either in open air or underground cables, a track signaling apparatus consisting of a stationarily-mounted magnet-field of constant polarity, a rotatable iron armature directly and fixedly secured to the signal-plate of the semaphore, and toggle-spring devices connected with the armature for limiting the angle of rotation and locking the signal-blade mechanically to its final positions, said armature being provided with a coil of insulated copper wire and mounted to rotate in both directions, circuit-closing devices, an insulated lever fastened to the armature to engage said armature-closing devices to operate the same when the signaling positions of the apparatus are reached, said circuit-closing devices being stationarily fastened and insulated from the housing of the signaling apparatus, an electric incandescent lamp, a resistance or reactance coil in series therewith, said lamp-coil being connected across the terminals of the aforesaid armature-coil to be lighted when current is passing the armature, a rail-switch-setting apparatus including a stationary magnetic field

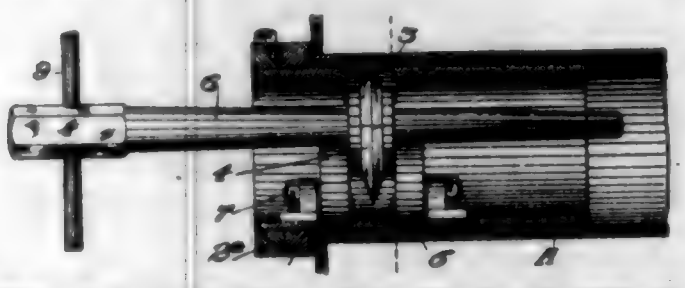
of constant polarity, an iron armature mounted for alternate motion in line with the magnetic flux between the poles of the field, a pair of oppositely-wound armature-coils for energizing said armature to produce like poles at its outer ends, said armature-coils being connected in series to the armature-coil of the track signaling apparatus, both armatures being in a separate circuit from the field-coils, a reversible switch at the operator's station in said armature-circuit adapted to change the direction of current in said armatures to change the direction of motion of both apparatuses, circuit-closing devices for said rail-switch-settting mechanism adapted to be engaged by the armature therein, branch circuits for said last-named circuit-closers, said branch circuit including one field-magnet coil of the switch-setting apparatus and said circuit-closers being arranged that when closed a branch current will flow from the said field-magnet coil through a cross-wire to one armature-wire or the other according to which circuit-closer was actuated upon, a resistance in said cross-wire, an electromagnetic indicator at the station in said armature-circuit, said branch current disturbing the equilibrium of said electromagnetic indicator to produce signals therein substantially as shown and for the purposes specified.

818,134. MANUFACTURE OF BOTTLES, FLASKS, AND THE LIKE. PAUL WAGNET, Becaulpont, near Fresnes, France. Filed July 31, 1904. Serial No. 217,897.



Claim.—In an apparatus of the character described, the combination with a hopper for containing sawdust having a discharge-opening at its lower end and a tube communicating with said opening and adapted to discharge sawdust into a mold, of a regulating-slide arranged to control the discharge of sawdust through the discharge-opening of the hopper, a pivoted spring-controlled lever engaging said slide to move the same, and a rod carried by the slide adapted to break up or agitate the sawdust at each stroke of the lever.

818,135. TUBE-CUTTER. ALFRED WARREN, San Lucas, Cal. Filed Dec. 16, 1905. Serial No. 292,075.



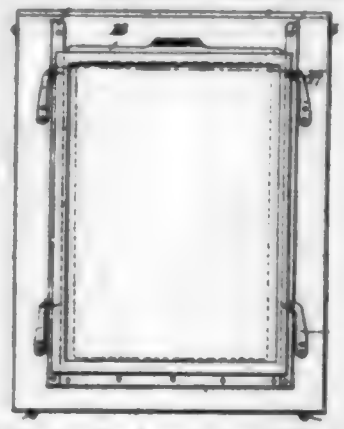
Claim.—1. In a tube-cutter, a sleeve fitting loosely within the tube to be cut having a collar bearing against the end of the tube and its supporting flue-sheet, a segmental opening made through the sleeve, adapted to receive a circular cutter, rollers journaled within the sleeve, said sleeve having segmental openings through which the peripheries of these rollers project to form a bearing against the inner surface of the tube to be cut and in opposition to the cutter, a tapering spindle passing through the cutter and bearing upon one side on the interior periphery of the journaled rollers and on the other against the interior of the central opening of the cutter.

2. In a tube-cutter, a sleeve loosely turnable within the tube to be cut having a collar to bear against the outer end of the tube and flue-sheet, rollers journaled within the sleeve having their peripheries projecting through slots on one side thereof, a circular V-shaped cutter having a hollow hub, the ends of said hub projecting at each side of the cutter and turnable between the interior periphery of the journaled rollers, the interior curvature of said rollers intersecting the curvature of the opening through the cutter-hub, and a tapering spindle adapted to pass through the cutter-hub and by pressure against the rollers and the interior of the hub to force the cutter into contact with the interior of the tube to be cut, and means whereby the spindle and sleeve are revolved.

3. In a tube-cutter, a sleeve or tubular support loosely turnable within a tube to be cut having a collar upon its outer end contacting with the end of the tube or face of the tube-sheet, rollers journaled within the sleeve with their peripheries projecting through open slots upon one side of the sleeve, a segmental slot upon the opposite side having V-shaped grooves formed in its ends, a V-shaped cutter having a hollow hub projecting upon each side of the cutter and adapted to rest upon the inner peripheries of the journaled rollers the V-shaped portion of the cutter being turnable and guided by the V-shaped grooves at the end of the segmental channel and means by which the cutter is forced outwardly against the interior of the tube to be cut.

4. In a tube-cutter, a hollow revoluble part having a segmental opening upon one side within which a circular V-shaped cutter is revolubly guided, rollers journaled within the revoluble part with their peripheries projecting through slots in said part in opposition to the cutter, a hollow hub on the cutter turnable between the rollers, a countersunk collar fitting loosely upon the revoluble part and inclosing the head or flange of the tube to be cut, a second collar fixed upon the revoluble part and faced to turn freely against the first-named collar, a tapering spindle extending through the hub of the cutter and bearing upon one side against the interior of said hub and upon the other against the journaled rollers, and means whereby said spindle may be revolved to turn the cutter around within the tube to be cut.

818,136. CAMERA ATTACHMENT. RUSSELL A. WOODALL, Richwood, W. Va. Filed Nov. 16, 1905. Serial No. 287,713.



Claim.—1. A camera attachment comprising a back having an exposure-opening, a ground-glass frame covering the opening and of less area than the back member, pairs of spring-fingers connecting each end of the ground-glass frame to the back member, each finger having one end secured to the rear face of the back member and its free end provided with an outwardly-directed ear lying against the adjacent edge of the ground-glass frame, and fastenings piercing the ears of the fingers and the ground-glass frame, one set of fingers having its ears provided with slots disposed longitudinally of the ground-glass frame and receiving the adjacent fastenings.

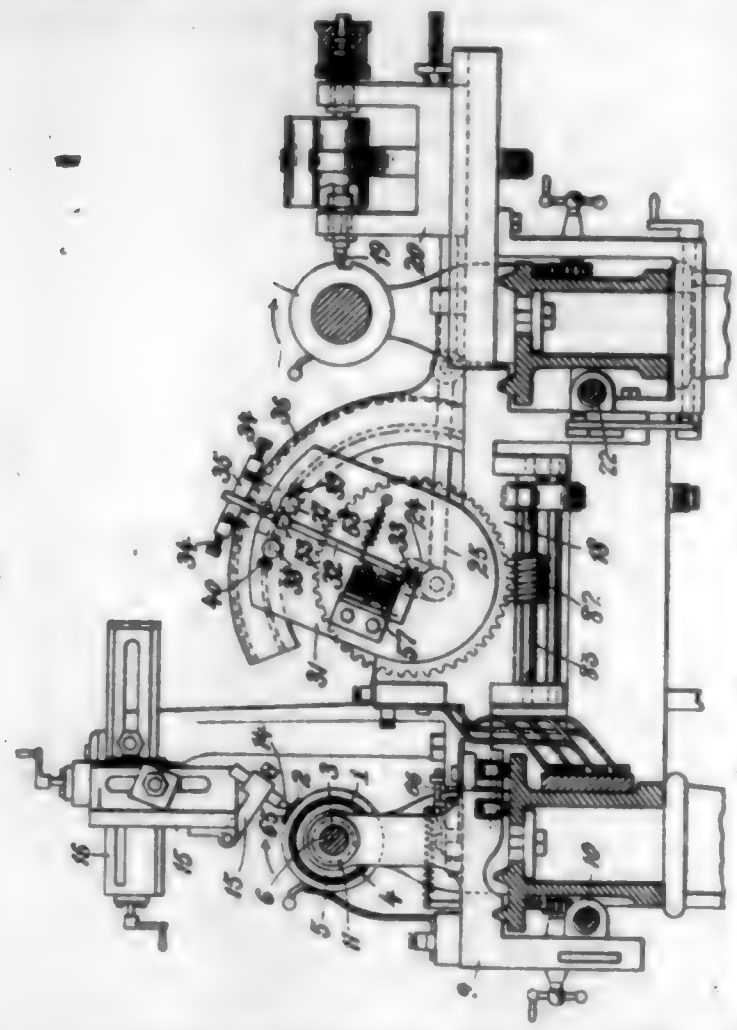
2. A camera attachment comprising a back having an exposure-opening, guide-bars secured to the back of the frame at opposite sides of the opening and projecting beyond one end of the opening, a cross-bar closing the space between the other ends of the guide-bars, and a ground-glass frame yieldably connected to the back and covering the exposure-opening, those ends of the guide-bars which project beyond the exposure-opening also projecting beyond the ground-glass frame.

3. A camera attachment comprising a back having an exposure-opening, guide-bars secured to the back at opposite sides of the opening and projecting beyond one end thereof, a cross-bar closing the space between the other ends of the guide-bars, a ground-glass frame applied to the guide-bars and covering the exposure-opening, those ends of the guide-bars which project beyond the opening also projecting beyond the ground-glass frame, sets of spring-fingers yieldably connecting opposite ends of the ground-glass frame to the back, each finger having one end secured to the rear face of the back at the outer side of the adjacent guide-bar with its free end provided with an outwardly-directed ear lying in substantial parallelism with the adjacent edge of the ground-glass frame, and fastenings piercing the ears and the ground-glass frame, the ears of one set of fingers having slots in which the adjacent fastenings work.

818,137. ENGRAVING-MACHINE. PAUL V. AVRIL, Paris, France. Filed Aug. 24, 1904. Serial No. 221,965.

Claim.—1. An automatic engraving-machine comprising a rotating pattern-cylinder having portions of its surface covered with an insulating material, a tracing-style coöperating therewith, means for rotatably supporting a cylindrical blank, a cutting-tool, electrically-controlled clutch mechanism operatively connected to im-

part movement to the tool to and from the blank, a switch in the clutch-circuit, an oscillating support for the switch, and means for shifting the switch as the style in traversing the surface of the pattern-cylinder contacts with an uninsulated portion thereof.



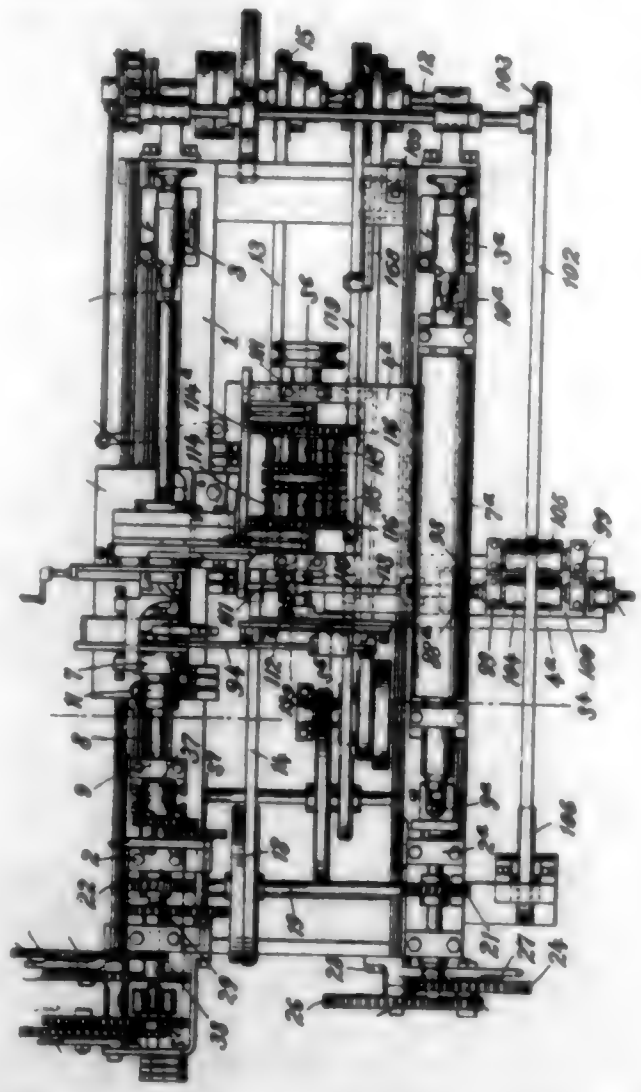
2. An automatic engraving-machine comprising a rotating pattern-cylinder having portions of its surface covered with an insulating material, a tracing-style coöperating therewith, means for rotatably supporting a cylindrical blank, a cutting-tool, oppositely-acting clutches electrically controlled and operatively connected to impart movement to the tool to and from the blank, a switch controlling current to the clutches, means for shifting the switch as the style moves in or out of contact with the uninsulated portions of the pattern-cylinder, and means for automatically opening the clutch-circuit after the switch is shifted to limit the movement of the tool and render the depth of cut uniform.

3. An automatic engraving-machine comprising a rotating pattern-cylinder having portions of its surface covered with an insulating material, a tracing-style coöperating therewith, means for rotatably supporting a cylindrical blank, a cutting-tool, oppositely-acting clutches electrically controlled and operatively connected to impart movement to the tool to and from the blank, a switch controlling current to the clutches, a support for the switch mounted to have a limited movement under the influence of the clutch in circuit, a magnet arranged to throw the switch, and requisite connections through which the magnet is energized as the style moves in or out of contact with uninsulated portions of the pattern-cylinder.

4. An automatic engraving-machine comprising a rotating pattern-cylinder having portions of its surface covered with an insulating material, a tracing-style coöperating therewith, means for rotatably supporting a cylindrical blank, a cutting-tool, oppositely-acting clutches electrically controlled and operatively connected to impart movement to the tool to and from the blank, a switch, a spring for shifting the switch to close the circuit through one of the clutches, a magnet for reversing the switch to close the circuit through the other clutch, a support for the switch movable under the influence of the clutch in circuit, adjustable stops for limiting the movement of one member of the switch, and requisite connections through which the magnet is energized as the style moves in or out of contact with uninsulated portions of the pattern-cylinder.

5. An automatic engraving-machine comprising in its construction, a lathe and a carriage therefor, a pattern-cylinder mounted in the lathe and movable lengthwise with the carriage under the control of the feed thereof, said pattern-cylinder having portions of its surface covered with an insulating material, a tracing-style coöperating with the cylinder, a source of current-supply, means for connecting the cylinder and style in circuit with the source of current-supply, a second lathe providing support for a cylindrical blank, a cutting-tool movable to and from the blank, a rock-shaft mounted upon the carriage of said second lathe and operatively connected to impart movement to the tool, oppositely-acting clutches upon the shaft, said clutches being electrically operated, a switch controlling current to the clutches, a support for the switch fast upon the rock-shaft, means for shifting the switch as the style moves in or out of contact with uninsulated portions of the pattern-cylinder, and means for opening the clutch-circuit after the switch is shifted to limit the rotation of the rock-shaft to a definite number of degrees in each direction.

818,138. **ENGRAVING-MACHINE.** PAUL V. AVRIL, Paris, France. Filed Aug. 25, 1904. Serial No. 222,188.



Claim.—An automatic engraving-machine comprising a lathe, a lathe-carriage, a pattern-cylinder rotatably mounted in the lathe and movable with the carriage thereof, reversible feed mechanism for the carriage, means for automatically controlling the feed-mechanism, a tracer coöperating with the pattern-cylinder, a second lathe providing support for a cylindrical blank, a carriage for said second lathe, a tool movable to and from the blank, said tool being carried by a cross-slide of the carriage of said second lathe, a rock-shaft mounted upon the last-mentioned carriage and connected to reciprocate said cross-slide, and oppositely-acting clutches controlled by the tracer and mounted upon the rock-shaft.

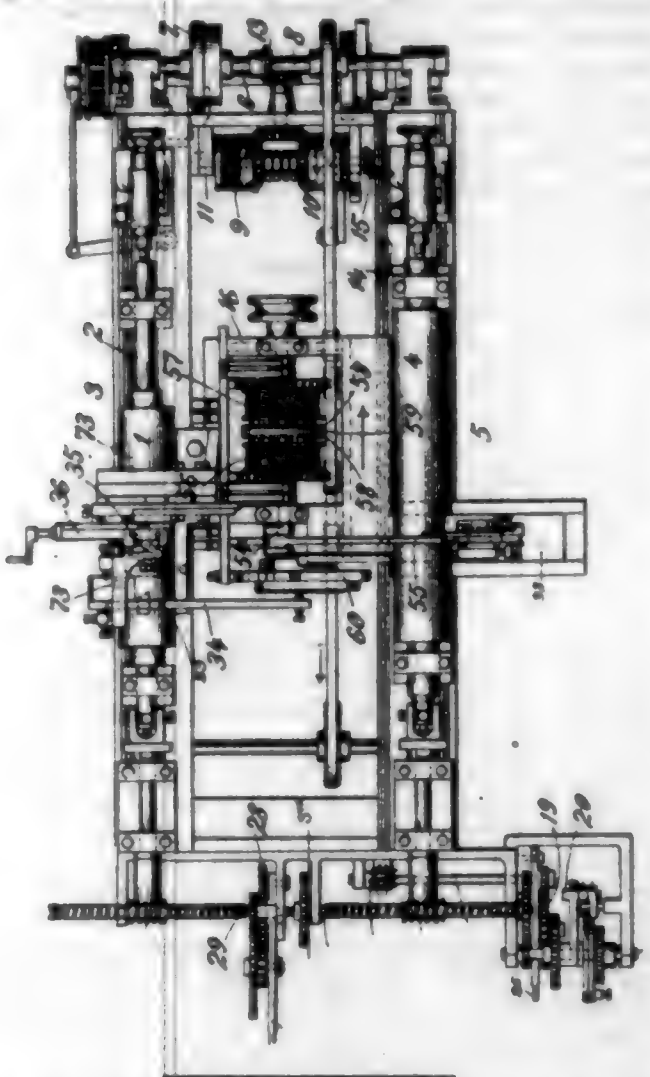
818,139. **ENGRAVING-MACHINE.** PAUL V. AVRIL, Paris, France. Filed Oct. 7, 1904. Serial No. 227,574.

Claim.—1. An automatic engraving-machine comprising means for supporting a blank, a tool coöperating therewith, a pivoted lever, connections between the tool and lever whereby they are movable in parallel relation, and means for giving the lever motion to vary the angle of the tool relatively to the blank.

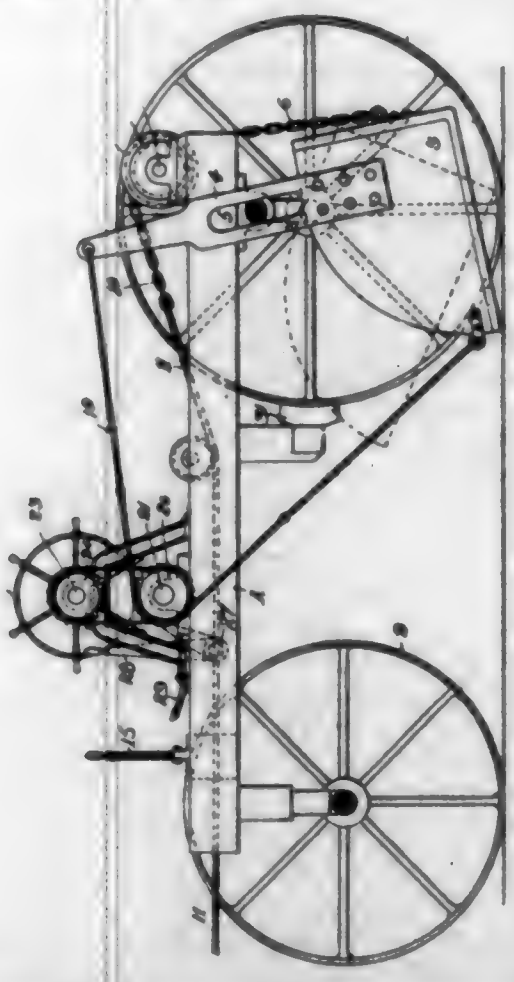
2. An automatic engraving-machine comprising means for supporting a blank, a tool coöperating therewith, a pivoted lever, interposed links connecting the lever and tool in parallel relation, and means for giving the lever motion to vary the angle of the tool relatively to the blank.

3. An automatic engraving-machine comprising means for sup-

porting a blank, a tool coöperating therewith, a gage-bar, a lever pivoted upon the bar, interposed links connecting the lever and tool in parallel relation, and means for giving the lever motion to vary the angle of the tool relatively to the blank.



818,140. SCRAPER. HENRY P. BARKER, Marysville, Cal. Filed Aug. 29, 1905. Serial No. 276,236.



Claim.—1. The combination of a wheeled frame, a scraper pivotally carried thereby, means for raising and lowering said scraper, means independent of the raising and lowering means and connecting with the scraper at each side of its pivot, for oscillating it, and means connected with the raising and lowering means for propelling the frame.

2. The combination of a wheeled frame, a scraper pivotally mounted thereon and having a limited vertical movement, means for positively raising or lowering the scraper, means independent of the raising and lowering means and connecting with the scraper at each side of its pivot, for positively turning the scraper on its pivots, means for locking the scraper in any desired position, and traction means for the frame connected with the scraper.

3. The combination of a portable frame, a vertically-adjustable scraper pivotally mounted thereon, said scraper open at the top and front, means connecting with the scraper at each side of its pivotal center for tilting said scraper to cause its bottom to assume different angles relative to the surface traversed, and means to raise and lower the scraper.

4. The combination of a frame, a scraper, slotted arms on the scraper and projecting beyond the pivotal center thereof, a part on the frame engaging the slots on said arms and forming a fulcrum for the scraper means for raising and lowering the scraper, and means including a connection whose ends connect respectively with the slotted arms and with a part of the scraper on the opposite side of the pivotal center, and a rotatable member engaging an intermediate portion of the said connection, for holding the scraper in different tilted positions.

5. The combination with a wheeled frame, a scraper, slotted arms on the scraper with the rear axle of the frame engaging the slots in said arms and forming a fulcrum for the scraper, flexible connections between the arms and the scraper, sprockets around which said flexible connections pass, means for rotating said sprocket to tilt the scraper, and means to raise and lower the scraper.

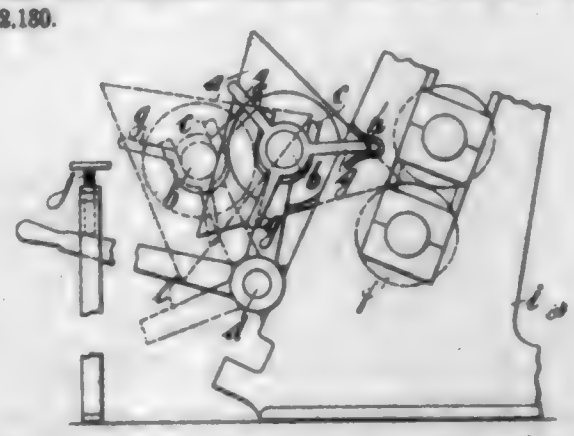
6. The combination with a wheeled frame, of a vertically-adjustable scraper pivoted thereon, arms on said scraper, flexible connections between the arms and the scraper, sprockets around which said flexible connections pass, means for rotating the sprockets to rock the scraper, means for holding the scraper against rocking, and means connected with the scraper for raising the latter and also for propelling the frame.

7. The combination of a wheeled frame, a vertically-adjustable scraper pivoted thereon, means for rocking the scraper, means for preventing the rocking of the scraper, flexible connections between the scraper and a source of power for raising and lowering the scraper, and means on the frame to grip said flexible connections to propel the frame.

8. The combination of a wheeled frame, a scraper vertically adjustable and pivoted on the rear axle, arms on the scraper, flexible connections between the arms and the scraper, a sprocket around which said flexible connections pass, means for turning the sprocket to rock the scraper, means including a pawl-and-ratchet mechanism to prevent the rocking of the scraper, and traction means for the frame connected with the scraper and operating to dump the scraper on the release of said pawl-and-ratchet mechanism.

9. The combination of a wheeled frame, a scraper having slotted arms fulcruming and vertically adjustable on the frame, flexible connections between the arms and the scraper, sprockets around which said flexible connections pass, means for rotating the sprockets to rock the scraper, means for preventing the rocking of the scraper, a drum-shaft, flexible connections between said drum-shaft and the scraper, a traction-cable connected with the drum-shaft to rotate the latter, and grip means on the frame to engage the cable to propel the frame.

818,141. GLASS-ROLLING MACHINERY. EDWARD BESTLESTONE, West Smethwick, England. Filed Oct. 10, 1905. Serial No. 282,180.



Claim.—1. In glass-rolling machinery, the combination with the rolls of a continuous series of glass-supporting tablets rigidly

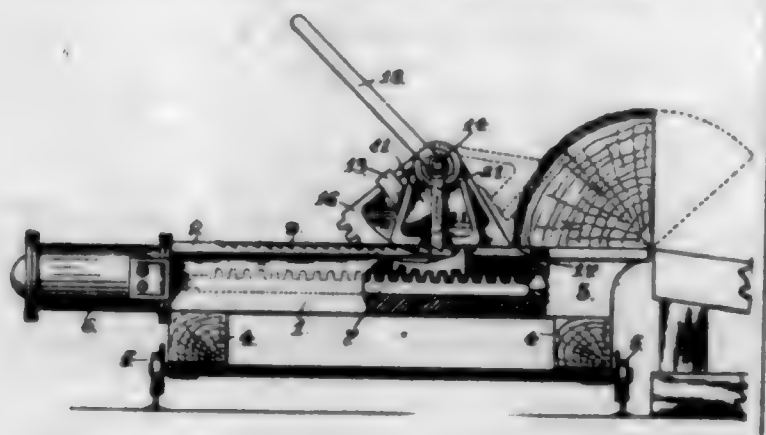
united at their abutting edges and forming a rotatable teeming-plate, and rocking or lever-like supports for the said plate, substantially as described.

2. In glass-rolling machinery, means for feeding the glass between the rolls consisting of a rotatable triangular teeming-plate, the flat surfaces of which are adapted to receive the glass.

3. In glass-rolling machinery, the combination with the rolls of a continuous series of glass-supporting tablets forming a triangular teeming-plate, trunnions carrying the said plate, lever-like supports for the said trunnions, a pivot-shaft for the said supports, and an operating-lever secured to the said shaft, substantially as set forth.

4. In glass-rolling machinery, the combination with the rolls of a continuous series of glass-supporting tablets forming a triangular teeming-plate, trunnions carrying the said plate, lever-like supports for the said trunnions, a pivot-shaft for the said supports, an operating-lever secured to the said shaft, and means retaining the respective tablets by turns in the operative position, substantially as set forth.

818,142. **LOG-TURNER.** SAMUEL J. BENS, San Francisco, Cal., assignor, by direct and mesne assignments, to Reginald L. Muir, San Francisco, Cal. Filed Mar. 22, 1905. Serial No. 251,413.



Claim.—1. In a log-turner, a frame having a longitudinal slot, a rack movable in the frame, standards adjustably mounted in the frame and projecting vertically above said slot, a toothed quadrant adapted to engage said rack, and journaled in said standards, and a turning-shoe secured to the quadrant and projecting forwardly in said slot, and adapted to rise above said slot and turn the log.

2. In a log-turner, a frame, a rack movable therein, a swinging toothed quadrant having a turning-shoe, and means for disengaging said quadrant from the rack.

3. In a log-turner, a frame, a rack movable therein, standards adjustable longitudinally on said frame, a swinging toothed quadrant having a turning-shoe, and means for locking said standards to and releasing them from the frame.

4. In a log-turner, a frame, a rack movable therein, standards movable longitudinally in said frame, a shaft in said standards, a swinging toothed quadrant suspended from said shaft, means for locking said standards to and disengaging them from the frame, and means for preventing the swing of the quadrant in either direction.

5. In a log-turner, a frame, a structure sliding in guides in said frame, a toothed quadrant, having a turning-shoe, and suspended in said structure, means for locking the said structure to the frame, a sliding rack, and means for disengaging, first, the structure from the frame and subsequently the quadrant from the rack.

6. In a log-turner, a frame having a ratchet-surface, standards movable in guides in said frame, a rock-shaft journaled in said standards, a dog on said shaft adapted to engage said ratchet-surface and lock the standards and a cam secured to said shaft; whereby the turning of said shaft in opposite directions will engage said dog with and disengage it from said ratchet-surface.

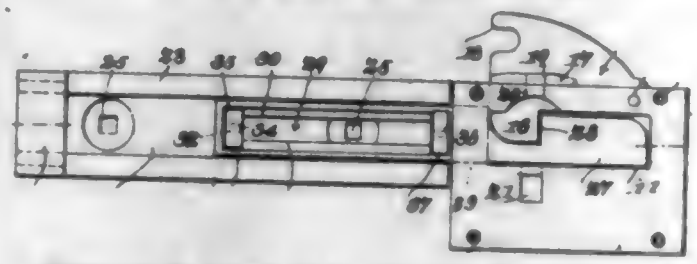
7. In a log-turner, a frame having guides and adjacent ratchet-surfaces; a structure comprising standards movable in said guides; a rock-shaft mounted in said standards and having differential eccentrics; a dog suspended from one of said eccentrics and adapted to engage said ratchet-surface; a toothed quadrant suspended from one of said eccentrics, a movable rack with which said quadrant engages, and means for turning said rock-shaft; whereby said dog can be released, leaving the quadrant in engagement, and said quadrant subsequently disengaged.

8. In a log-turner, a frame, standards guided therein, means for locking said standards to and releasing them from the frame, a swinging toothed quadrant, a rack with which said quadrant engages, and means for raising and unlocking said locking means without disengaging the quadrant.

9. In a log-turner, a frame, standards guided therein and having stops, a swinging quadrant having corresponding stops, a movable rack with which said quadrant engages, and means for raising the quadrant and thereby engaging said stops, so as to lock the quadrant to said standards.

10. In a log-turner, a frame, standards guided therein, a toothed quadrant mounted in said standards and swinging between them, a log-turning shoe carried by said quadrant, and a yoke secured to both standards and serving both as a brace for the same and as a stop for said quadrant.

818,143. **SLIDING-DOOR FASTENER.** WILLIAM H. BOOTH, Atkinson, N. C. Filed Oct. 26, 1905. Serial No. 284,502.



Claim.—1. In a lock of the class described, a frame having means for attachment to a door and provided with spaced longitudinal guide-ribs, a bolt slidable upon said frame and between said guide-ribs and provided with a transverse recess near one end and with a longitudinal transverse slot, the inner faces of said slot having guide-ribs disposed intermediate the side faces of the bolt, a stop-lug detachably connected to said frame and extending through said slot and provided with projections engaging the guide-ribs in the same, and whereby the bolt is reversibly disposed upon the frame, a casing having means for attachment to the door-jamb and with an aperture for receiving the free end of the bolt when projected, and a latch swinging in said casing and provided with a lug for engaging the recess in said bolt.

2. In a lock of the class described, a frame having means for attachment to a door and provided with spaced longitudinal guide-ribs, a bolt slidable upon said frame and between said guide-ribs and provided with a transverse recess near one end, means for detachably connecting said bolt movably between said guide-ribs, a casing having means for attachment to a door-jamb, and provided with a transverse aperture extending entirely through the same and with a longitudinal aperture communicating with the transverse aperture and an end aperture in the path of and adapted to receive the bolt and a latch swinging through said longitudinal aperture and provided with a lug for engaging the recess in the bolt when the latter enters the casing.

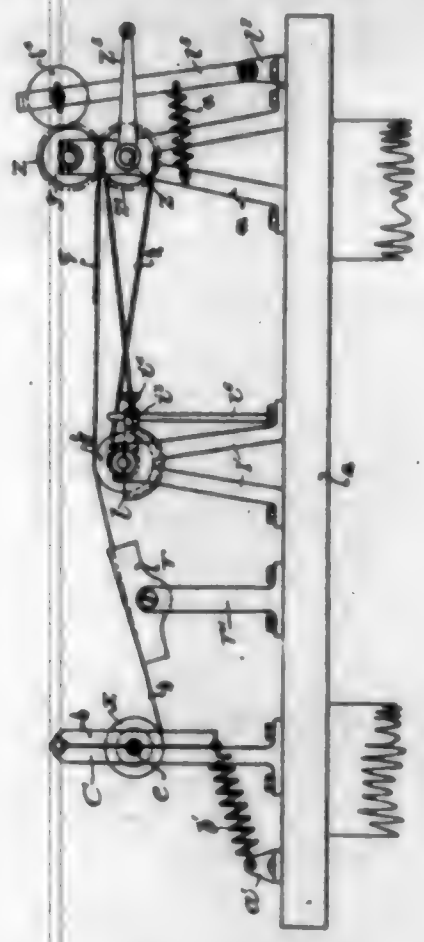
3. In a lock of the class described, a bolt having means for movably connecting to a door and with a transverse recess near the free end, a casing having means for attachment to a door-jamb and with an aperture extending entirely through the same, and with a longitudinal aperture communicating with the transverse recess and an aperture in the end of the casing also communicating with the transverse recess and adapted to receive said bolt when projected and a latch swinging through said longitudinal aperture and provided with a lug for engaging the recess in said bolt and with lateral lugs for bearing upon the casing and limiting the movement in one direction.

818,144. **PROCESS AND APPARATUS FOR MAKING METAL-COATED PAPER STRIPS.** GEORG BRÄUNLICH, Nuremberg, Germany. Filed Sept. 3, 1904. Serial No. 223,899.

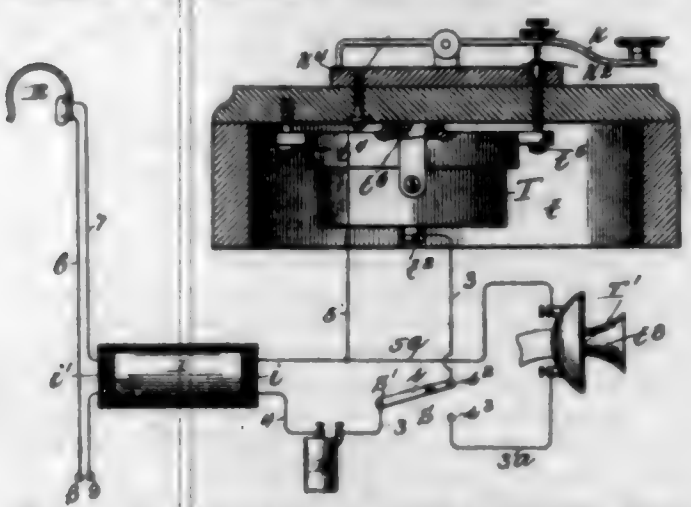
Claim.—1. The process of preparing metal-coated fabric for gilders' use which consists in applying a plurality of strips of metal foil of varying widths, to one side of a plurality of strips of fabric, then applying material capable of preventing the adhesion of said foil to said strips of fabric, then subjecting the fabric to pressure and simultaneously winding said strips of fabric and foil upon cores corresponding in width to the fabric wound thereon.

2. An apparatus of the class described comprising a roller rotatively supported and composed of a plurality of separate disks, means for rotating said roller, means for feeding to said roller a strip of paper provided on one side with a thin layer of metal and coated on the opposite side with powdered bolus or the like, and a tightening-roller yieldingly held in engagement with the paper wound upon said disk roller.

3. An apparatus of the class described comprising a roller rotatively supported and composed of a plurality of separate disks, a spindle on which said disks are threaded, clamping-nuts for securing said disks in position upon the spindle, a spring-actuated pressure-roll for said disk roller, a collapsible standard carrying a supply or roll of paper carried on said standard, a coating-roller rotatably mounted and located between said disk roll and supply-roller, a trough for said coating-roll and in which the latter is sunk, said coating-roller engaging the lower face of the paper as the same is fed to the disk roller, and a pivotally-mounted table guiding said paper on its passage from the supply-roll to the coating-roll.



818,145. TELEGRAPH SYSTEM. MYRON J. CARPENTER, La Grange, Ill. Filed June 2, 1905. Serial No. 263,377.



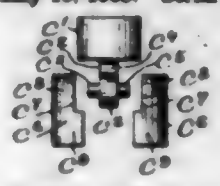
Claim.—1. In a system of telegraphy, the combination of a telegraph-key, a telephone-transmitter, a support common to both adapted and arranged to communicate mechanically vibrations due to the manipulation of the telegraph-key to the telephone-transmitter, a source of electric current, and a circuit including said source of current, the key, and the transmitter in series, whereby said transmitter is responsive to the sound-vibrations and to the current variations produced by the manipulation of said key.

2. In a system of telegraphy, the combination of a telegraph-key, a telephone-transmitter, a support whereon said key and transmitter are arranged in common, said support closing the mouth of the transmitter, whereby said transmitter is made responsive only to vibrations produced by the manipulation of the key.

3. In a system of telegraphy, the combination of a telegraph-key, and a telephone-transmitter mounted upon a support common to both, and a closure for said transmitter, whereby said transmitter is made responsive to vibrations produced only by the manipulation of the key.

4. In a system of telegraphy, the combination of a telegraph-key and a telephone-transmitter mounted upon a support common to both, an induction-coil, a source of electric current and a circuit including said source, key, transmitter and the primary circuit of an induction-coil, said transmitter being responsive to the sound-vibrations and to the current variations produced by the manipulation of the said key.

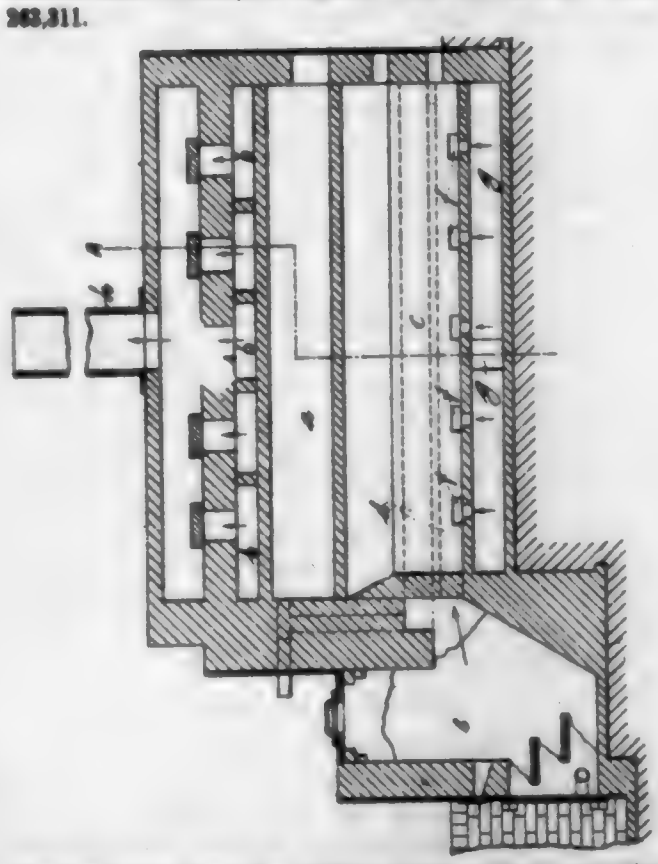
818,146. BRACELET. JAMES M. CLARK, 2d, North Attleboro, Mass., assignor to The Daggett & Clap Co., Attleboro, Mass., a Corporation of Maine. Filed May 18, 1905. Serial No. 261,011.



Claim.—1. In a concealed hinge for bracelets, the combination of a member having a body portion c', the center tongue c^3 having the depression c^4, and the circular end c^5 and the oppositely-disposed stamped-up teats c^6 c^6 forming the pintle of the hinge, all formed integral, and a two-part member, each part c^8 having a cut-away portion c^7 for the tongue c^3 and in the face of the cut-away portion the recess c^9 for a teat c^6 on the tongue c^3, as described.

2. In a bracelet, the combination of the two semicircular tubular parts a and b which when together form the circular body of the bracelet having the ends a' and b' meeting in a plane oblique to the tangent, and the concealed hinge c consisting of a member having the body portion c', the central tongue c^3 having the depression c^4, and the circular end c^5 and the oppositely-disposed teats c^6 c^6 forming the pintle of the hinge, all formed integral, and a two-part member each part c^8 having the cut-away portion c^7 for the tongue c^3 and in the face of the cut-away portion the recess c^9 for a teat c^6 on the tongue, and means for securing the hinge in the ends a' and b' of the bracelet, as described.

818,147. APPARATUS FOR HEATING METALS. FREDERICK J. CLEWCH-JONES, Leamington, England. Filed June 1, 1905. Serial No. 263,311.

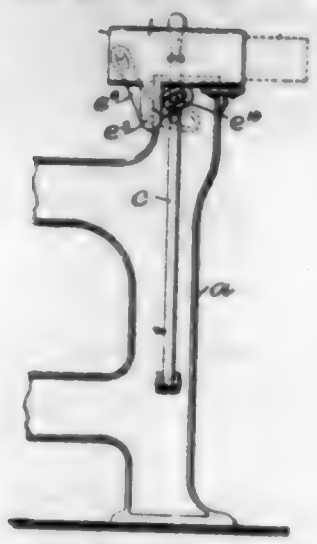


Claim.—1. In means for heating metals without oxidation or decarburization of the same, the combination consisting of a muffle, a combustion-chamber surrounding the muffle, superheating-conduits adjacent the combustion-chamber and communicating with the interior of the muffle, means for supplying combustible gas to said conduits, passages between the conduits and the combustion-chamber for supplying gas to said chamber and an air-supply to said chamber.

2. In means for heating metals without oxidation or decarburization of the same, the combination consisting of a muffle, a combustion-chamber below the same, passages connected to said chamber

and surrounding the muffle, superheating-conduits placed on each side of a part of the combustion-chamber and communicating with the interior of the muffle, means for supplying said conduits with combustible gas, passages connecting the conduits with the combustion-chamber and an air-supply to said chamber.

818,148. STOP-INDICATOR FOR LOOMS. JOHN A. COLLINS, Fall River, Mass. Filed June 30, 1905. Serial No. 267,756.



Claim.—1. A visual stop-indicator for looms comprising a flat, hollow, box-shaped frame open at the ends, an indicator-plate painted a conspicuous color in the box-frame, means for rigidly securing the box-frame to a loom, the shipper-lever and means for operatively connecting the indicator-plate to the shipper-lever of the loom, whereby on the starting of the loom the indicator-plate is drawn into the box-frame out of sight and on the stopping of the loom the indicator-plate is moved out of the box-frame into its visible position, as described.

2. A visual stop-indicator for looms comprising a flat, hollow, box-shaped frame open at the ends and having a central slot in its back and a downwardly-extending arm, an indicator-plate painted a conspicuous color in the box-frame and having a pin in a position to extend outwardly through the slot in the frame, a bell-crank lever pivotally secured to the arm on the box-frame and operatively connected to the pin on the indicator-plate, means for rigidly securing the box-frame to a loom, the shipper-lever and means for operatively connecting the bell-crank lever with the shipper-lever of the loom, whereby on the starting of the loom the indicator-plate is drawn into the box-frame out of sight and on the stopping of the loom the indicator-plate is moved out of the box-frame into its visible position, as described.

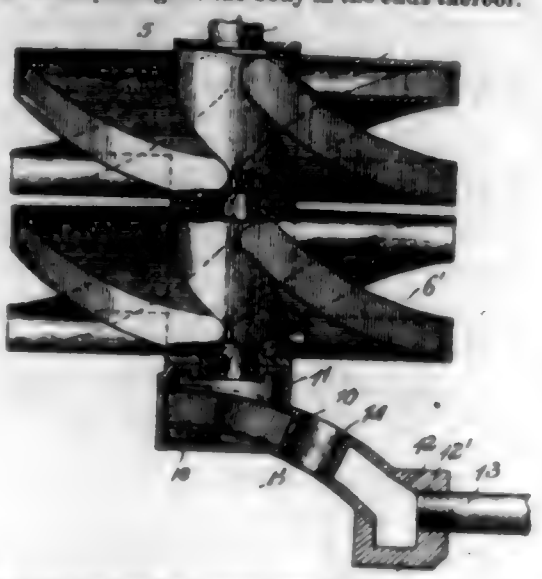
3. The combination with the side frame *a* and the shipper-lever *c* of a loom, of a visual stop-indicator *e* consisting of a flat, hollow, box-shaped frame *e'* open at both ends and having the central slot e^3 and the downwardly-extending arm e^2, an indicator-plate e^1 in the frame *e'* painted a conspicuous color and having the pin e^5 in a position to extend outwardly through the slot e^3 in the frame, a bell-crank lever e^6 pivotally secured to the end of the arm e^2 and having the slot e^7 in its upper arm for the pin e^5 and the slot e^8 in its lower arm, a bracket e^9 secured at one end to the side frame *a* of the loom and at its opposite end to the box-frame *e'* by screws or other means, and an arm e^{10} secured at one end to the shipper-lever *c* in a position for the free end of the arm to enter the slot e^8 in and engage with the bell-crank lever e^6, for the purpose as described.

818,149. WATER-HEATING ATTACHMENT. FRANK E. DONALDSON, Palos Park, Ill., assignor of one-half to Harry W. Donaldson, Chicago, Ill. Filed Oct. 6, 1905. Serial No. 281,594.

Claim.—1. In a water-heating attachment for heat-generators, a tubular body having a continuous axial opening therethrough, and spiral, hollow wings communicating with the opening in said body, there being inlet and outlet openings in the structure, communicating with the continuous axial opening.

2. In a water-heating attachment for heat-generators, a tubular body, and spiral wings substantially quadrant in shape, said wings being hollow and communicating with the said body, and there being inlet and outlet openings in the structure.

3. In a water-heating attachment for heat-generators, a structure comprising a tubular body, and a plurality of wings thereon arranged spirally of the body and occupying in the aggregate substantially a complete circle in plan measurement, said structure having inlet and outlet openings to the body in the ends thereof.



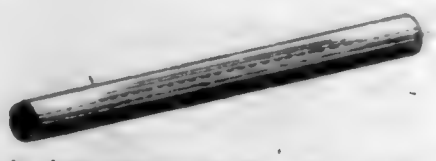
4. In a water-heating attachment for heat-generators, a plurality of structures each comprising a tubular body and spiral hollow wings on said body each communicating with the interior thereof, said structure being secured together in superposed relation and provided with openings for intercommunication.

5. In a water-heating attachment for heat-generators, a plurality of structures each comprising a tubular body and spiral, hollow wings on said body communicating with the interior thereof, said structures being superposed one upon the other, hollow nipples 8 connecting said bodies for communication, and there being openings in the lowermost and uppermost structures for the inlet and outlet of water.

6. In a water-heating attachment for heat-generators, a superstructure comprising a tubular body and spiral hollow wings on said body communicating therewith, and a hollow base or relatively short vertical extent and relatively great horizontal extent, arranged for communication with said superstructure, there being provided an inlet to the base and an outlet from the superstructure.

7. In a device of the character described, a superstructure comprising a hollow cylindrical body, and a hollow spiral wing communicating with the interior of said body, and a base comprising a semicircular, semiarched portion detachably secured to said structure and having communication therewith, there being provided an inlet-opening in the base and an outlet-opening in the superstructure.

818,150. CIGARETTE AND PROCESS OF MAKING SAME. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Feb. 15, 1905. Serial No. 245,762.



Claim.—1. An improvement in the art of making cigarettes which consists in crimping, corrugating, ribbing or otherwise roughening a portion of the wrapper-paper and then applying paste to one edge thereof before closing the wrapper around the filler.

2. The herein-described improvement in the process of manufacturing cigarettes, which consists in roughening the paste-receiving portion near, but not extending to one edge of the wrapper-paper then applying paste to said roughened edge, and then pressing the pasted roughened edge into position to adhere to the opposite edge of the paper.

3. The herein-described improvement in the process of manufacturing cigarettes, which consists in roughening the paste-receiving portion near, but not extending to one edge of the wrapper-paper so as to leave a flat smooth pasting portion on both sides of the roughened portion then applying paste to said roughened edge and then pressing the pasted roughened edge into position to adhere to the opposite edge of the paper.

4. The herein-described improvement in the process of manufacturing cigarettes, which consists in feeding the paper by a pair of rolls having corresponding portions of their peripheries formed to crimp, corrugate, rib, or otherwise roughen the edge of the paper, then passing the paper in position to receive paste upon said edge and pressing said edge in overlapped relation to the opposite edge of the paper.

5. As a new article of manufacture, a cigarette having its pasted portion crimped parallel and adjacent to but not extending to the edge.

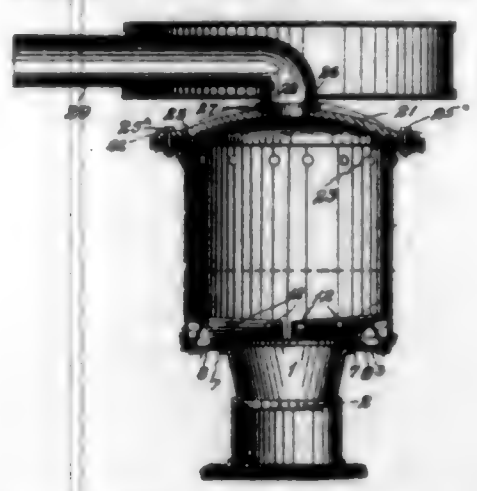
6. As a new article of manufacture, a cigarette having one of the overlapped portions of its paper wrapper provided with crimping or similar roughening, with plane smooth pasting portions on each side thereof and having paste applied on the roughened and smooth parts of said overlapping portion, and said portion overlapped upon and pasted to the opposite side of the paper.

7. As a new article of manufacture, a machine-made cigarette having a pasted wrapper with a plain inner edge and with the outer overlapped portion crimped, substantially as described.

8. As a new article of manufacture, a machine-made cigarette with a pasted wrapper having an inner plain edge and an outer crimped paste-bearing portion overlapping the plain inner edge, substantially as described.

9. As a new article of manufacture, a machine-made cigarette having a pasted wrapper with the outer overlapped and pasted portion of the paper crimped, and the inner overlapped portion smooth, substantially as described.

818,151. **GAS-FURNACE.** DAVID A. ERINGER, Columbus, Ohio, assignor to The Columbus Heating & Ventilating Company, Columbus, Ohio, a Corporation of Ohio. Filed May 22, 1905. Serial No. 261,662.



Claim.—1. In a furnace, the combination with the fire-pot adapted to receive fuel and the furnace-casing, of a ring-plate extending from and supported by the fire-pot and provided with ribs forming inner and outer channels, the outermost of which receive the lower end of the casing, curved burner-plates inclined rearwardly having their lower ends fitting in the inner channels of the ring-plate and their upper ends in contact with the casing, and means for fastening the burner-plates against said ring-plate and said casing.

2. In a furnace, the combination with the fire-pot adapted to receive fuel and the furnace-casing, of a ring-plate extending laterally from and supported upon the upper end of the fire-pot, the said ring being formed with an upstanding flange around its outer edge and curved ribs adjacent to the flange, the said ribs and flange forming a channel for the reception of the lower end of the furnace-casing, the said ring also being formed with a plurality of concentric ribs provided nearer the inner edge of the ring and forming a channel, upwardly-curved burner-plates having their lower ends fitting in the last-named channel and their upper ends in contact with the furnace-casing, and means for holding the burner-plates against said ring-plate and said casing.

818,152. **NEEDLE, &c.** THOMAS A. EDWARDS, Boston, Mass. Filed June 1, 1903. Renewed Sept. 11, 1905. Serial No. 278,040.

Claim.—1. A needle having a loop-shaped eye, one side of which is reëntrant, while the other side is salient, the latter pointing toward the penetrating end of the instrument.

2. A needle having two substantially loop-shaped eyes, arranged base to base, one side of each eye being reëntrant, while the the other side is salient.

3. A needle having a longitudinally-extending aperture, and a bridge extending across said aperture and provided with oppositely-extending fingers, said bridge and fingers forming the inner walls of loop-shaped eyes, the outer walls of which are parts of the wall of the orifice.

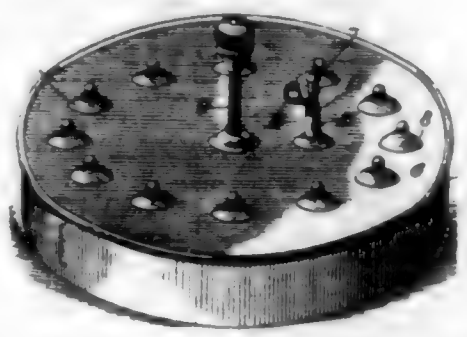
4. A surgical instrument such as a needle, having a casing or director formed to closely fit a portion of the instrument and detachable therefrom, so that the said director may be left in an orifice or puncture to guide the instrument back through the same opening.

5. A pointed penetrating surgical instrument having means for carrying a ligature, and provided with a detachable grooved director.

6. A needle having a longitudinally-extending aperture and a cross-bar or bridge extending across said aperture and provided with a finger extending lengthwise of the needle, the ends of the bridge being rotatably engaged with the sides of the aperture, so that the finger may be projected from the needle.

7. A needle having a longitudinally-extending aperture, and a bridge extending across said aperture and provided with oppositely-extending fingers, said bridge and fingers forming the inner walls of loop-shaped eyes, the outer walls of which are parts of the wall of the orifice, the ends of said bridge being rotatably engaged with the sides of the aperture, so that the fingers may be projected from the needle.

818,153. **GAME DEVICE.** ADAM EHRBALD, New York, N. Y. Filed Dec. 12, 1905. Serial No. 291,378.



Claim.—1. A game device comprising a casing having openings in its top wall, closures for said openings, and a disk mounted to rotate in the casing, and having numbered spaces.

2. A game device comprising a casing having openings in its top wall, closures for the openings, a disk mounted to rotate in the casing, and having numerals thereon, and a stop device for the disk.

3. A game device comprising a casing having openings in its top wall, closures for said openings, a disk mounted to rotate in the casing, having numbered spaces and blank spaces, and a spindle on which the disk is mounted.

4. A game device comprising a casing having an annular row of openings in its top wall, closures for said openings, a spindle extended through said top wall, a stop-bearing for the lower end of the spindle, and a disk mounted on the spindle within the casing, the said disk being provided with an annular row of numerals.

5. A game device comprising a casing having openings in its top wall, closures for said openings and a disk mounted to rotate in the casing, the said disk having devices thereon adapted to be disclosed through said openings.

6. A game device comprising a casing having an annular row of openings in its top wall, closures for said openings, a numeral-carrying disk arranged in the casing, a rotary spindle on which said disk is mounted, the said disk being provided with a circular row of perforations, and a stop-pin movable through said top wall and adapted to engage in any one of said perforations.

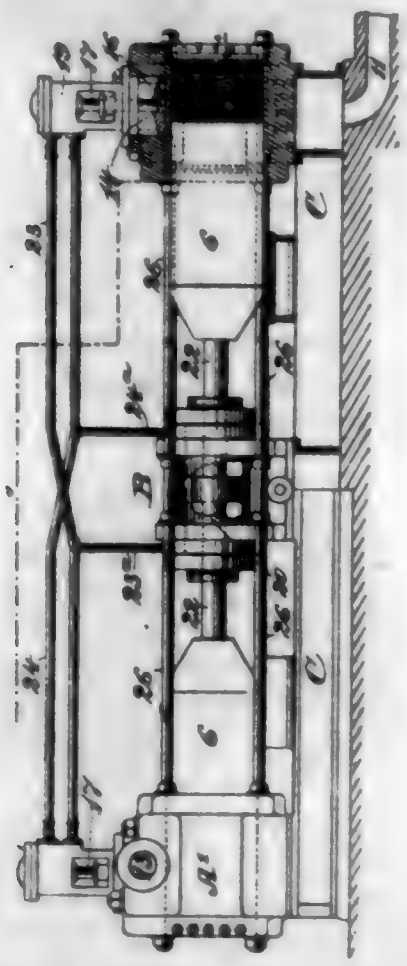
7. A game device comprising a casing having openings in its top wall, a rotary numeral-carrying disk in the casing, the said disk being provided with a circular row of perforations, a sleeve secured to the top wall and having a slot at one side, a pin movable in said sleeve for engaging in any one of said perforations, and a finger-piece extended from the pin and adapted to slide in said slot.

818,154. **FILTER-PRESS.** MARTIN EKENBERG, Stockholm, Sweden. Filed Nov. 3, 1904. Serial No. 231,291.

Claim.—1. A filter-plate, for use in a filter-press, composed of a plurality of very thin and flexible sheets of metal disposed face to face, and means for pressing said sheets together with a regulable pressure.

2. A filter-press, having a filter-plate composed of a plurality of thin and flexible sheets of non-absorbent material disposed face to face, and means for pressing said sheets together, said filter-plate forming a wall of the press-chamber with the edges of the sheets presented to said chamber and providing a multiplicity of outlets per unit of filtering-surface, and means for forcing the liquid from the chamber outward through the interstices in said plate.

3. A filter-press, having a filter-plate composed of a plurality of thin sheets of non-absorbent material disposed face to face, and means for pressing said sheets together, such filter-plate forming a wall of the press-chamber, and a compressing-piston playing in said chamber, said piston movable in a path substantially at right angles to the path of the fluid through the interstices between said sheets.



4. A filter-press, having a base-piece, a cap-piece, two filter-plates of laminated structure between said base and cap pieces and forming side walls of the press-chamber, a valve-controlled inlet to said chamber for the fluid mixture to be filtered, and a reciprocating compressing-piston playing in said press-chamber, the path in which said piston travels being in a direction substantially at right angles to that in which the fluid flows through the interstices between the lamina of the filter-plates.

5. A filter-press, having a recessed base-piece, a recessed cap-piece, two side plates, two laminated filter-plates 4, at the respective sides of the press-chamber, said plates being backed by said side plates and compressed between said base and cap pieces, valve-controlled means for supplying fluid to said press-chamber, and a compressing-piston having a reciprocating movement in said chamber longitudinally of the lamina of the filter-plates.

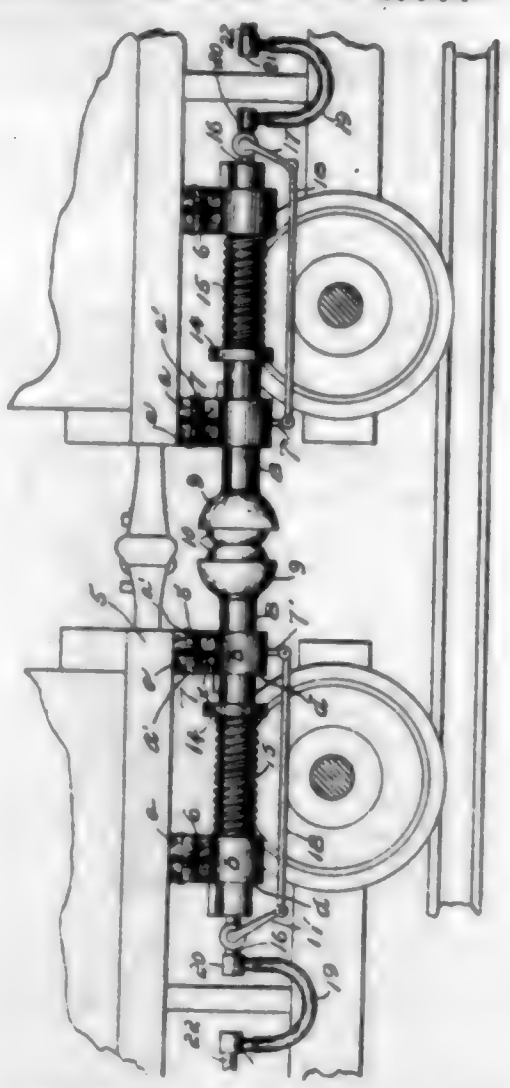
6. A filter-press, having a base-piece 1, a cap-piece 2, with a supply-inlet for the fluid, a valve-chamber, and a port leading from the valve-chamber to the press-chamber, the side plates 3, the laminated filter-plates 4, forming the sides of the press-chamber and each composed of superposed thin sheets of metal pressed together between said base-piece and cap-piece, a compressing-piston 6 in the press-chamber, a valve 16 in the valve-chamber and controlling the port leading to the press-chamber, and means for imparting alternate reciprocating movements to the said valve 16 and piston 6, as set forth.

7. A filter-press, having a press-chamber open at its ends and with its sides formed of filter-plates 4, a reciprocating compressing-piston extending into said chamber from one of its open ends and means for resisting the forcing out of the cake of solid material at the opposite end of said chamber.

8. A filter-press, having a compressing-chamber, a reciprocating piston which fits and plays in said chamber, and a filter-plate forming a side of said chamber, said plate being made up of thin, superposed sheets of metal with their edges presented to a side of the piston.

818,155. AIR-BRAKE COUPLING. JOHN S. FARLOW, Salisbury, Md. Filed Oct. 27, 1905. Serial No. 284,726.

Claim.—1. The combination with a car, of brackets secured thereto in spaced relation longitudinally of the car, a sleeve slidably engaged in the brackets and extending beyond the end of the car, a hollow resilient body carried by the outer end of the sleeve, said body having an opening in its outer portion and having another opening communicating with the passage of the sleeve, a collar carried by the sleeve between the bracket and arranged for engagement of the outer bracket to limit the outward movement of the sleeve, a spring disposed between the collar and the inner bracket to hold the sleeve yieldably against inward movement, a turn-plug carried by the rearward end of the sleeve, means for automatically operating the turn-plug when the sleeve is moved, a fluid-supply pipe, and flexible connections between the turn-plug and said supply-pipe.

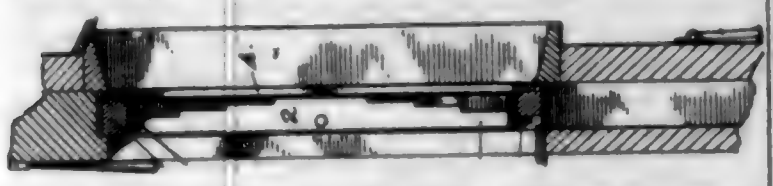


2. The combination with a car, of brackets secured thereto in spaced relation longitudinally of the car, a sleeve slidably engaged in the brackets and extending beyond the end of the car, a funnel carried by the outer end of the sleeve, a hollow resilient body secured in the funnel, said body having registering openings therein alining with the passage of the sleeve, a collar carried by the sleeve between the brackets and adapted for engagement of the outer bracket to limit the outward movement of the sleeve, a helical spring engaged with the sleeve between the collar and the inner bracket to hold the sleeve yieldably against inward movement, a turn-plug engaged in the inner end of the sleeve, a cap engaged with the inner end of the turn-plug, a fluid-supply pipe, a cap engaged with the fluid-supply pipe, flexible connections between the caps for the passage of fluid from one cap to the other, and means for automatically operating the valve when the sleeve is moved in the brackets, said means being arranged to close the valve when the sleeve is moved outwardly and to open the valve when the sleeve is moved inwardly.

3. In an air-brake coupling, the combination with a sleeve having an exterior longitudinal slot therein, of a collar slidably engaged with the sleeve said collar having a slot registering with that of the groove, flanges carried by the collar at opposite sides of its slot and extending outwardly therefrom, a plate secured between the flanges, a wing carried by the plate, an attaching-plate, spaced wings carried by the attaching-plate and lying at opposite sides of the first-named wing, a pivot-pin engaged in the wings, a key removably engaged in the registering slots, and means for holding the first-named wing yieldably against pivotal movement with respect to the second-named wings.

818,156. SAFETY LEVER-FRAME FOR CAR-WINDOWS. WILHELM GATSEN, San Francisco, Cal. Filed Nov. 20, 1905. Serial No. 288,697.

Claim.—1. A breaking attachment for windows consisting of a frame, means carried upon the window-sash for moving said frame so as to press upon the glass and to break it in lines substantially coincident with the inner line of the sash.

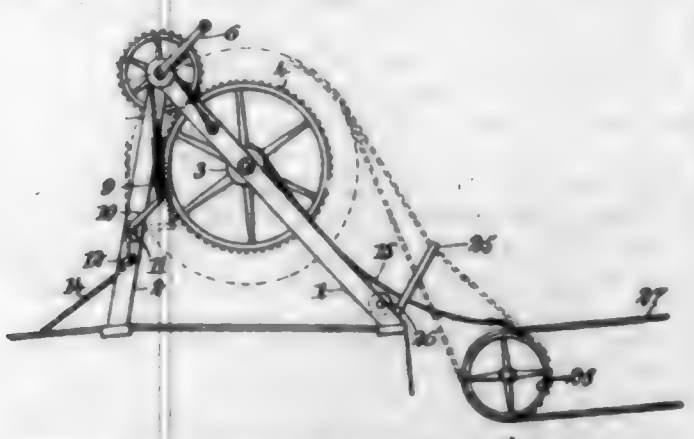


2. The combination with a window and the sash thereof of a metallic frame fulcrumed to the sash having points of contact with the glass parallel with and close to the inner edge of the sash whereby said glass may be cut or broken from the frame with smooth remaining edges.

3. The combination with a window and the sash therof of one or more metallic bars pivoted to the sash adjacent to the inner portions of the sash, said bars having the lower edges formed with angles of contact and turnable about the fulcrum to press said angles against and break the glass in substantially the line of the bars.

4. The combination with a glazed sash, of metal bars pivoted to the sash, said bars having angles of contact on said inner edges whereby the glass may be broken, and a handle connected with the bars and fitting a depression in the sash.

818,157. **BELT-REEL.** DAVID F. GRIGGS, Barlow, N. D. Filed Sept. 18, 1905. Serial No. 278,827.



Claim.—1. In a device of the character described, a frame, a reel mounted in the frame, a strap connected to said reel, and a belt-engaging device attached to the strap, said engaging device comprising a frame, arms mounted to swing in said frame for engaging the under side of the belt, and latching-arms for holding said first-named arms in engagement with the belt.

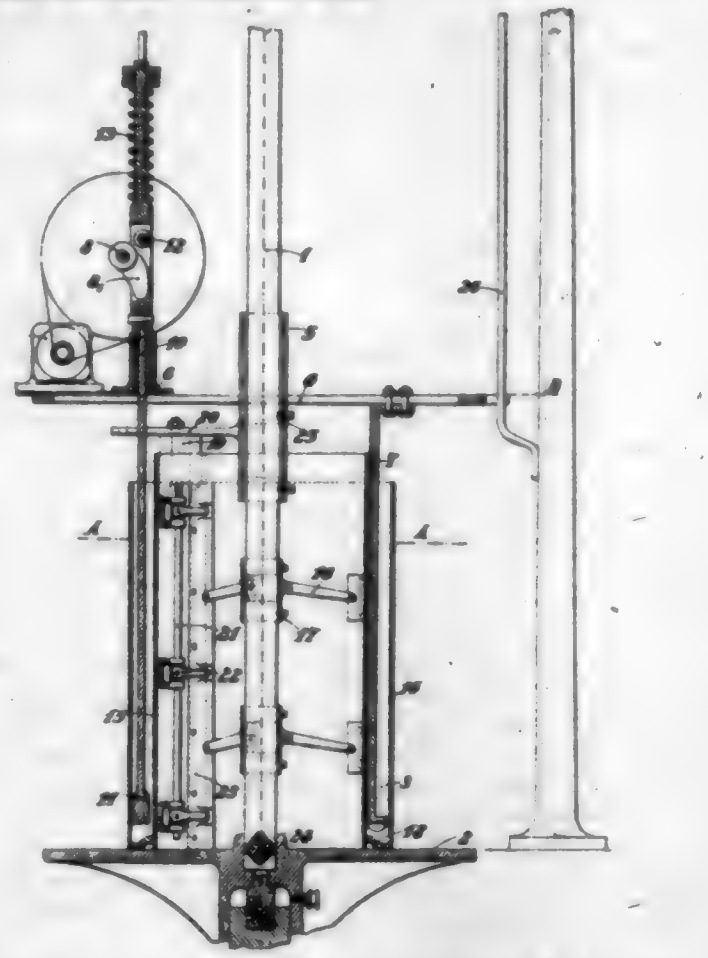
2. A device for the purpose described comprising a frame, a reel mounted in the frame, a gearing for rotating the reel, a strap attached to the reel, a frame secured to the free end of the strap and having vertically-disposed portions, belt-engaging arms pivoted in said vertically-disposed portions, lifting-arms attached to the first-named arms and divergent therefrom, locking-arms divergent from said second-named arms, latches pivoted in the horizontally-disposed portion of said frame, spring-pressed extensions on said latches, and a yoke on the front members of the first-named frame for engaging said extensions to release the latches.

3. A device for the purpose specified, comprising a main frame, a reel arranged in the main frame, a strap extended from the reel, a belt-engaging device on the free end of said strap, and a spring-pressed tension device for engaging with the belt wound upon the reel.

4. A device for the purpose specified, comprising a main frame, a reel mounted therein, a gear-wheel on the shaft of the reel, a pinion meshing with the gear-wheel, a crank on the shaft of the pinion, a flanged pulley on said shaft, a metal strap attached at the inner end to the main frame and passing over said flanged pulley, a spring attached to the free end of said metal strap, an arm pivoted to the frame and connected to said spring, said arm having a lug, a shaft pivoted in the frame, a lug on said shaft for engaging with the first-named lug, a tension-plate mounted on said shaft, a strap extending from the reel, and a belt-engaging device attached to the free end of said strap.

5. In a device of the character described, a main frame, a reel mounted therein, a strap extended from the reel, a belt-engaging device connected to said strap and comprising a frame having downwardly-extending members, arms pivoted in said downwardly-extending members for engagement against the under side of the belt, lifting-arms arranged at an acute angle from the first-named arms, locking-arms extended from the first-named arms and having beveled upper ends, latches pivoted in the frame and having notches to receive said inclined ends, extension-pieces on said latches, pins in the latches with which said extension-pieces engage to prevent movement in one direction, springs for holding the extensions in normal position, and a yoke on the main frame for engaging with said extensions to release the latches from the arms having beveled ends.

818,158. **MACHINE FOR MANUFACTURING PIPES OR CONDUITS FROM CEMENT, &c.** CLAUDE GIRARDOT, Vitry-Le-François, France, assignor to Société J. et a Pavin de Lafarge, Viviers, France. Filed Jan. 3, 1905. Serial No. 239,509.



Claim.—1. A molding-machine of the class described, comprising a rotary table, a mold mounted on said table comprising a casing and a core, a shaft carrying said core and extending through the latter and being detachably connected to said table for rotating the same, a platform loosely mounted on said shaft, ramming mechanism carried by said platform, a gage carried by said platform for adjusting the height thereof in accordance with the height of the material in the mold, and means carried by said shaft for expanding and contracting the core.

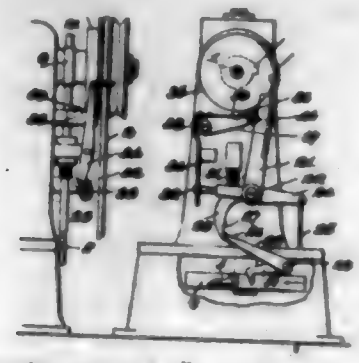
2. A molding-machine of the class described, comprising a rotary table, a mold mounted thereon comprising a casing and an expansible core, means located within said core for locking it in its expanded position, a shaft extending through said core and detachably connected to said table for rotating the same, arms pivotally connecting said shaft and said core, a support mounted on the said shaft, templets carried by said support and extending between said casing and said core to maintain the latter parts in concentric relation, a platform loosely mounted on said shaft, a ramming device mounted on said platform, and a gage mounted on said platform for adjusting the height thereof in accordance with the amount of material in the mold.

3. A mold involving an outer casing and an inner expansible split core, a stop carried by one part of said core, a rotary shaft mounted in the other part, and locking-arms carried by said rotary shaft and adapted to be turned thereby into engagement with said stop to lock the core in its expanded position.

818,159. **STOP-MOTION FOR HIGH-SPEED MACHINES.** WILLIAM B. GOODYEAR, Newark, N. J. Filed May 27, 1905. Serial No. 262,551.

Claim.—1. A stop-motion, wherein means are employed for automatically reducing the speed of the machine before stopping it,

such means being controlled by the machine, and means for positively driving it at a reduced speed to a predetermined stopping position.



2. A stop-motion, wherein means are employed to automatically reduce the speed of the machine before stopping it, and to continue the engagement of the driving power after the speed is reduced, such means being controlled by the machine.

3. In a stop-motion, the combination with a driven shaft, of means for driving the shaft at high speed, means for positively and automatically driving the shaft at a reduced speed, such means being controlled by the driven shaft, and means for positively stopping the shaft.

4. In a stop-motion, the combination with a driven shaft, of means for positively driving the shaft at high speed, of means for positively and automatically driving the shaft at a reduced speed, to a predetermined stopping position, such means being controlled by the driven shaft, and means for positively stopping the shaft.

5. In a stop-motion, the combination with a driven member, of means for positively driving the member at high speed, such means being disengageable, of means for stopping the driven member, such means comprising means for automatically operating the driven member at a reduced speed, such means being controlled by the driven member, and means for positively stopping the driven member.

6. In a stop-motion, the combination with a driven member, means for driving the member at high speed, and a positive stop, and means for automatically driving the driven member at a reduced speed, such means being controlled by the driven member, and means for applying the stop after the driven member has been moved to a predetermined stopping position.

7. A stop-motion having means for automatically reducing the speed of a machine a predetermined number of revolutions before stopping it, and to positively drive the machine a predetermined number of revolutions after the speed is reduced.

8. A stop-motion having means to automatically reduce the speed of a sewing-machine, after making a predetermined group of stitches, and to continue the engagement of the driving power after the speed is reduced.

9. In a stop-motion, the combination with a driven shaft, a stop therefor, a plurality of driving-pulleys, a single belt therefor, gearing between the driving-pulleys and the shaft, and means for shifting the belt and applying the stop, whereby the speed of the shaft will be reduced, and it will be positively driven at such reduced speed.

10. In a stop-motion, the combination with mechanism to drive a machine at different speeds, the said mechanism being self-contained within the driving-pulleys, and means for positively stopping the machine.

11. In a stop-motion, the combination with a shaft and a plurality of pulleys thereon, gearing located within the pulleys, and means for positively rotating the shaft at a reduced speed, and means for positively stopping the shaft.

12. In a stop-motion, the combination with a driven shaft, two pulleys thereon, gearing connecting the pulleys and the shaft, a belt, and means for causing the belt to engage with one pulley, or with both pulleys, and means for stopping the shaft.

13. In a stop-motion, the combination with a driven shaft, a sleeve thereon, pinions carried by the sleeve, a plurality of pulleys turning upon the shaft, and carrying gears engaging with the pinions, means for rotating the pulleys, and means for stopping one of said pulleys, and means for preventing rotation of the shaft.

14. In a stop-motion, the combination with a shaft, two pulleys thereon, the said pulleys turning loosely upon the shaft, gears upon the pulleys, a sleeve upon the shaft and rotating therewith, pinions carried by the sleeve and engaging with the gears upon the pulleys, means for rotating the pulleys, means for preventing rotation of one of the pulleys, and means for preventing rotation of the shaft.

15. In a stop-motion, the combination with a shaft, a plurality of pulleys thereon, positive gearing connecting the pulleys to the shaft, means for rotating the pulleys, means for preventing rotation of one of the pulleys, and means for preventing rotation of the shaft.

16. In a stop-motion, the combination with a shaft, two pulleys thereon, gearing connecting the pulleys to the shaft, means for driving one or both of the pulleys, means for preventing rotation of one of the pulleys, and means for preventing rotation of the shaft.

17. In a stop-motion, the combination with a shaft, two pulleys thereon, gearing connecting the pulleys to the shaft, a belt, means for causing the belt to engage with one pulley or both pulleys, means for preventing rotation of one of the pulleys, and means for preventing rotation of the shaft.

18. In a stop-motion, the combination with a shaft, a sleeve thereon, two pinions of different sizes carried by the sleeve, two pulleys turning freely upon the shaft and carrying gears engaging with the pinions, means for preventing rotation of one of the pulleys and means for driving one or both of the pulleys and means for preventing rotation of the shaft.

19. In a stop-motion, the combination with a shaft, a sleeve thereon and rotating therewith, the said sleeve carrying a large and a small pinion, two pulleys turning freely upon the shaft, gears on the pulleys, the said gears engaging with the pinions, means for driving one or both of the pulleys, and means for preventing rotation of one of the pulleys and means for preventing rotation of the shaft.

20. In a stop-motion, the combination with a shaft, a sleeve thereon and turning therewith, the said sleeve carrying a small and a large pinion, two pulleys journaled upon the shaft and turning freely thereon, one of said pulleys carrying a pinion engaging with the larger of the two pinions on the sleeve, and the other pulley carrying an internal gear engaging with the smaller of the pinions, means for driving one or both of the pulleys, and means for preventing rotation of one of the pulleys and means for preventing rotation of the shaft.

21. In a stop-motion, the combination with a driving-shaft, a cam moving in time therewith, means for positively rotating the shaft at the working speed, means for positively rotating the shaft at a slower speed, and means for stopping the shaft, the last two means being controlled by the movements of the cam.

22. In a stop-motion, the combination with a driven shaft, a cam moving in time therewith, means for rotating the shaft at the working speed, said means comprising two pulleys, gearing interposed between the pulleys and the shaft, a driving-belt, means for shifting the belt from one pulley to engage with both pulleys, and a positive stop for the shaft, the said belt being shifted and the positive stop applied by mechanism controlled by the cam.

23. In a stop-motion, the combination with a driven shaft and a cam moving in time therewith, of a sleeve carried by the driven belt, and carrying pinions, two pulleys loosely journaled upon the driven shaft, and carrying gears engaging with the pinions, a driving-belt, means for shifting the belt from one pulley so as to cause it to run upon both pulleys, a brake to prevent rotation of one of the pulleys, and a positive stop for the shaft, the said belt-shifting device, brake and stop being actuated by mechanism controlled by the cam.

24. In a stop-motion, the combination with a driven shaft and a cam moving in time therewith, a sleeve upon the driven shaft carrying pinions, two pulleys loosely journaled upon the shaft and carrying gears which engage with the pinions, a driving-belt engaging with the pulleys, a belt-shifter for causing the belt to engage with one or both of the pulleys, a brake for one of the pulleys, a positive stop for the shaft, a finger engaging with the cam, and mechanism controlled by the movements of the finger for actuating the belt-shifter, the brake and stop.

25. In a stop-motion, the combination with a driven shaft and a cam moving in time therewith, means for rotating the shaft, a projection on the shaft, a lever having a notch adapted to engage with the projection and form a positive stop for the shaft, a finger connected to the lever, the end of the finger having steps, and a finger controlled by the cam and adapted to engage with each of the said steps.

26. In a stop-motion, the combination with a driven shaft and a cam rotating in time therewith, two pulleys adapted to drive the driven shaft at different rates of speed, a belt adapted to engage with one or both of said pulleys, a belt-shifter, a finger connected to and controlling the movements of the belt-shifter, one end of the finger being stepped, and a second finger engaging with such stepped portion of the first finger and controlled by the cam and means for positively stopping the shaft.

27. In a stop-motion, the combination with a driven shaft and a cam rotating in time therewith, of two pulleys, gearing interposed between the pulleys and the shaft, a belt, means for causing the belt to engage with one or both of said pulleys to positively drive the

shaft, the said means comprising a belt-shifter, a projection turning with the shaft, a lever having a notch adapted to engage with the said projection and form a positive stop for the shaft, a finger connected to the lever, the ends of the said finger being stepped, connections between the finger and the belt-shifter, a second finger engaging with the steps, and connections between the second finger and the cam for controlling the position of the former.

28. In a stop-motion, the combination with a driven shaft and a cam rotating in time therewith, of two pulleys connected to the shaft, gearing between the pulleys and the shaft, and a belt adapted to engage with one or both of said pulleys to positively drive the shaft, a lever engaging with the belt for the purpose of shifting it, the said lever having a slot, a pin engaging with the slot, a finger connected to the pin, the end of said finger being stepped, a second finger engaging with the stepped portion, and means actuated by the cam for moving the second finger and means for positively stopping the shaft.

29. In a stop-motion, the combination with a driven shaft and a cam moving in time therewith, two pulleys on the shaft gearing between the pulleys and the shaft, a belt adapted to engage with one or both of said pulleys to positively drive the shaft, a lever engaging with the belt and adapted to shift it, the said lever having a cam-slot, a projection on the shaft, a lever having a notch adapted to engage with the projection and form a positive stop for the shaft, a finger connected to the lever for the purpose of moving it, a pin connected to the finger and engaging with the cam-slot, the face of said finger being stepped, a second finger engaging with the stepped portion and connections between the second finger and the cam.

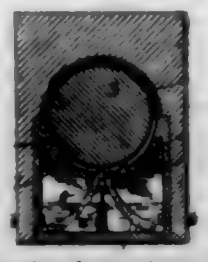
30. In a stop-motion, the combination with a shaft, two pulleys thereon, gearing between the pulleys and the shaft, and means for rotating one or both of said pulleys, a brake engaging with one of said pulleys and adapted to lock it against rotation, a projection on the shaft, and a lever having a notch adapted to engage with the projection and form a positive stop for the shaft, the said lever carrying means for applying the brake.

31. In a stop-motion, the combination with a shaft and a pulley, a projection on the shaft, and a lever having a notch and adapted to engage with the projection, the said lever carrying means for applying the brake.

32. In a stop-motion, the combination with a shaft, a pulley thereon, a brake for preventing rotation of the pulley, a member connected to the brake, and having a bent portion, a projection on the shaft, a lever having a notch adapted to engage with the projection, and a pin carried by the lever and adapted to engage with the bent portion of the member for applying the brake.

33. In a stop-motion, the combination with a shaft, a cam rotating in time therewith, a projection on the shaft, a sleeve on the shaft rotating therewith and carrying a large and a small pinion, two pulleys loosely journaled on the shaft, one of said pulleys carrying a pinion engaging with the larger pinion and the other of said pulleys carrying an internal gear engaging with the smaller of the two pinions, a belt adapted to engage with one or both of said pulleys and positively rotate the shaft, a lever having a notch adapted to engage with the projection on the shaft and form a positive stop for the shaft, a brake adapted to engage with one of said pulleys to prevent its rotation, a spring carried by the brake, the said spring having an angular extremity, a pin carried by the lever and adapted to engage with the spring for applying the brake, a lever engaging with the belt and adapted to shift it, the said lever having a cam-slot, a finger connected to and actuating the first lever, a pin moved by said finger and engaging with the cam-slot on the belt-shifting lever, the free end of the said finger being stepped, a second finger carried by a shaft and engaging with the stepped portion of the first finger, a third finger engaging with the cam, means for disengaging the first finger from the second finger, and a spring for engaging the two fingers together.

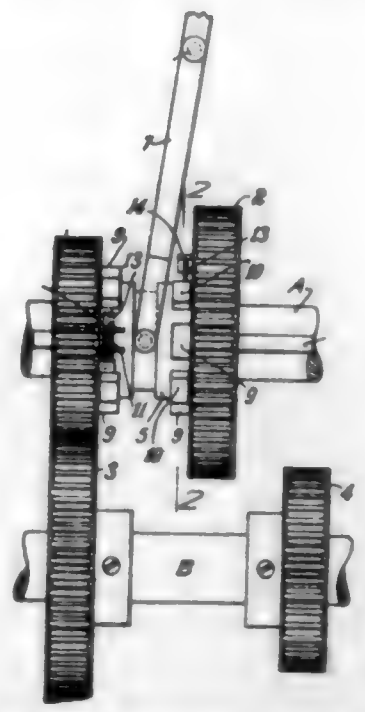
818,160. LUBRICATOR. CHARLES B. GRABBING, Freedom, Pa. Filed Sept. 25, 1905. Serial No. 280,048.



Claim.—1. A lubricating journal-box, embodying an enlarged body portion formed with a cut-away surface, a brass mounted in said body portion, a lubricant-chamber, secured in said journal-box, and coacting with said brass to form a bearing for a shaft extending therethrough, said chamber being formed on its face adjacent said shaft, with a longitudinal slot, a sheet of fabric adapted to be held between said slot and against said shaft, expansive resilient means for holding said fabric in said position, and a lubricant-storage tank, in communication with said lubricant-receptacle.

2. A journal-box, embodying a body portion formed with a concave upper wall, and depending side walls, a brass mounted in said upper wall, a lubricant-container, formed with a concave upper wall and held between said depending side walls, said container coacting with said brass to provide bearings for a shaft extending therethrough, said container being formed along its entire length with a longitudinal slot, a sheet of fabric extending through said slot and being held against said shaft, an inverted-V-shaped metallic supporting-plate, resiliently supported in said lubricant-chamber, and adapted to hold said sheet of fabric against said shaft, an adjustable metallic plate, mounted upon the upper face of said lubricant-chamber, for regulating the width of the slot therein, means for adjustably locking said plate in any set position, and the storage-tank in communication at all times with said lubricant-chamber.

818,161. NON-GRINDING POWER-TRANSMISSION DEVICE. DAVID S. GRANT, Stoneham, Mass. Filed June 12, 1905. Serial No. 264,781.



Claim.—1. In a non-grinding power-transmission device, a pair of interlocking members capable of being engaged and disengaged with each other, one of said members being loose on its mounting; and means for causing such engagement and disengagement; in combination with means for limiting the change of position of said loose member relative to its mounting; and elastic means for automatically maintaining said member about midway between the limits of said change when said members are disengaged, substantially as set forth.

2. In a non-grinding power-transmission device, a pair of interlocking members capable of being engaged and disengaged with each other, one of said members being rotatably mounted upon its bearing and being provided with a clutching device; a sleeve rigidly mounted upon its bearing and adapted to engage the clutching device in such a manner as to permit a limited motion of said member relative to said sleeve; elastic means for automatically maintaining said member about midway between the limits of said motion when said members are disengaged; and means for causing said engagement and disengagement, substantially as set forth.

3. In a non-grinding power-transmission device, a shaft; a shifting device slidably mounted on said shaft, an interlocking member rotatably mounted on said shifting device and provided with a clutching arrangement; clutch means affixed to said shifting device and adapted to engage with the clutching arrangement on said member so as to limit the amount of rotation of said member relative to said shifting device; a second interlocking member positioned so as to be readily engaged and disengaged by aforesaid interlocking member, through the agency of said shifting device; elastic means for automatically maintaining the first-mentioned interlocking member about midway between the limits of said rotation when disen-

gaged; and means for causing said engagement and disengagement, substantially as set forth.

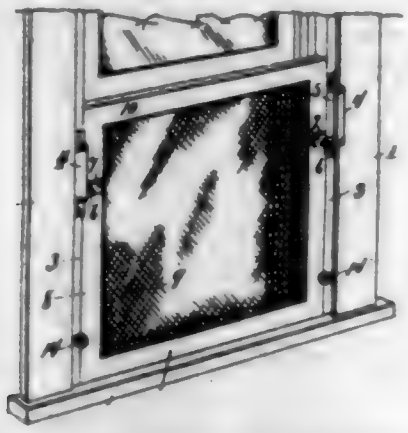
4. In a non-grinding power-transmission device, a pair of interlocking members, one of said members movable a limited distance on its mounting, a yieldable device coöperative with said latter member to regulate the motion thereof, and means for engaging and disengaging the members.

5. In a device of the class described, a plurality of interlocking members, each having a mounting, at least one of the members having a limited movement on its mounting, a tension device therefor, and means for engaging and disengaging the members.

6. In a device of the class described, coöperative driving members, a shiftable mounting for one of the said members, the latter having a limited movement on its mounting, and a buffer device coöperative with said member when being moved.

7. A yieldingly-mounted power-transmission element, a shiftable mounting therefor, a buffer device operating on said element, and means for shifting the mounting.

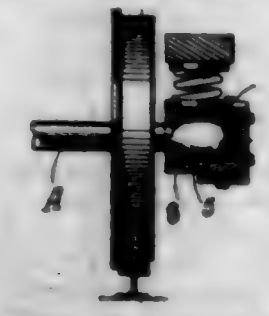
818,162. WINDOW-SCREEN. ALEXANDER GEBES, Detroit, Mich. Filed Apr. 3, 1905. Serial No. 253,396.



Claim.—1. The combination with a window-frame, of the keepers mounted thereon out of the path of the vertical movement of the screen-frame and having vertical ways therein, a screen adapted to fit within the window-frame, pins projecting from the screen-frame and lying within the slots of said keepers, the length of said slots being such as to permit of the vertical movement of the screen-frame and the removal of said pins from said keepers by tilting the screen-frame sidewise.

2. The combination with a window-frame, of the keepers secured to the outer sides thereof, said keepers having vertical ways therein, a screen adapted to fit within the window-frame, plates secured to the outer faces of the opposite sides of the screen-frame between the top and the bottom thereof, pins projecting from said plates adapted to lie in the vertical slots of the keepers, the length of said slots being such as to allow the simultaneous insertion of the pins therein, and a simultaneous removal of the pins therefrom by tilting the screen-frame sidewise, beveled lugs on the sill to direct the screen into place and stops to prevent the bottom of the screen from swinging outwardly.

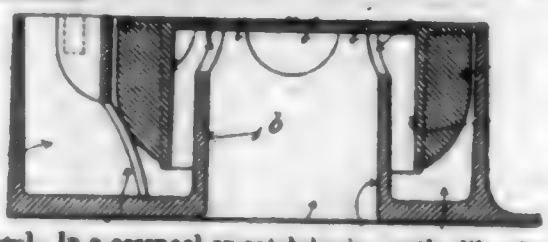
818,163. JOURNAL-BOX. SAMUEL HANEY, North Manchester, Ind. Filed Oct. 27, 1905. Serial No. 284,701.



Claim.—1. In combination with an axle having a terminal ellipsoidal head, a box composed of two chambered sections inclosing said head, means for coupling the sections together, there being a series of oil-cells formed in the lower section, and means for conveying oil to the cells, substantially as set forth.

2. In combination with an axle having a terminal ellipsoidal head, a box composed of two chambered sections inclosing said head, and separated by inclined seams, a plate for holding the sections together, there being a series of oil-cells formed in the lower section, and an inclined oil-duct leading through the walls of the lower section to the bottom cell of the series, substantially as set forth.

818,164. COVER AND TRAP FOR CATCH-BASINS AND THE LIKE. PAUL HANNAGAN, Lawrence, Mass. Filed July 11, 1906. Serial No. 326,147.

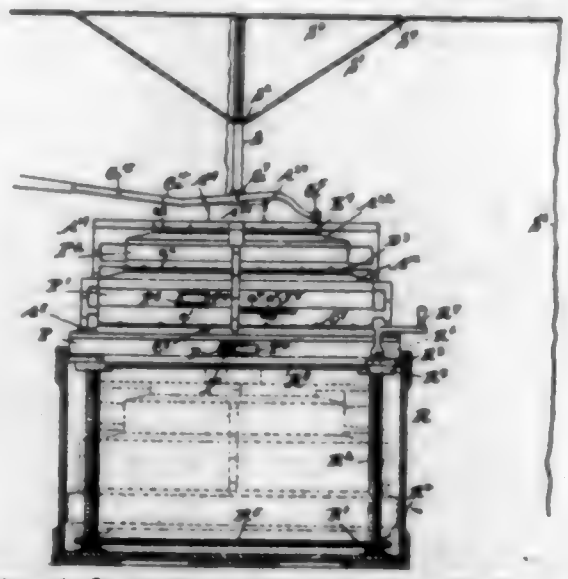


Claim.—1. In a cesspool or catch-basin, or the like, in combination, a central wall or pipe, an inverted top or cup having a downturned shell or flange to form a water seal for said central wall or pipe, separated projections at the top of said central wall or pipe serving as supports for the said top or cup, and ribs or lugs serving to prevent horizontal movement of the said top or cup.

2. The cover for cesspools or catch-basins for sewers having the passage for downflow of water, inner and outer walls around such passage having a seal-chamber between them, an open-topped side chamber beyond said outer wall communicating with the seal-chamber, and a removable top having a depending shell or flange entering the said seal-chamber.

3. The cover for cesspools or catch-basins for sewers having the passage for downflow of water, inner and outer walls around such passage having a seal-chamber between them, an open-topped side chamber communicating with the seal-chamber, and a top having the depending shell or flange entering the said seal-chamber, with the opening adjacent the said top for entrance of water directly into the seal-chamber.

818,165. VOTING-MACHINE. CHARLES F. HARRINGTON, Lyndhurst, N. J., assignor to The Dial Voting Machine Company, Lyndhurst, N. J., a Corporation of New Jersey. Filed Oct. 10, 1904. Serial No. 227,800.



Claim.—1. In a voting-machine, a horizontally-disposed circular casing having an annular slot and carrying a plurality of names or other identifying symbols of candidates to be voted for, a registering mechanism for each of such names, an actuator loosely mounted on a vertical center in said casing and having a portion extending radially through said slot to the exterior of said casing, whereby said actuator may be swung horizontally to a selected name and into operable relation to the registering mechanism therefor, and means for simultaneously moving said registering mechanisms vertically relatively to said actuator to operate the registering mechanism for the selected name by contact with said actuator.

2. In a voting-machine, a horizontally-disposed circular casing having an annular slot and carrying a plurality of groups of names or other identifying symbols of candidates to be voted for, a registering mechanism for each of said names, an actuator for each group loosely mounted on a vertical center in said casing and having a portion extending radially through said slot, whereby each of said actuators may be swung horizontally to a selected name in its group and into operable relation to the registering mechanism for such name, and means for simultaneously moving said registering mechanisms vertically relatively to said actuators to operate the registering mechanisms for the selected names by contact with said actuators.

3. In a voting-machine, a horizontally-disposed circular casing having an annular slot and carrying a plurality of groups of names or other identifying symbols of candidates to be voted for, each group representing an office and having its names arranged in the same party order, a registering mechanism for each of said names, a plurality of actuators loosely mounted to swing horizontally in said casing and having a portion on each actuator extending radially through said slot to the exterior of said casing, whereby any of said actuators may be swung independently to a selected name, means for engaging said actuators and swinging them simultaneously to the names of candidates of the same party in the several groups and into operable relation to the registering mechanisms for such names, and means for simultaneously moving said registering mechanisms vertically relatively to said actuators to operate the registering mechanisms for the selected names by contact with said actuators.

4. In a voting-machine, a circular casing having an annularly-arranged slot, a deck on said casing bearing the names or other indetifying symbols of the candidates, a plurality of radially-arranged actuators within said casing having a portion protruding through said slot adjacent to said names, and means for moving said actuators to the names selected and into operable relation with said registering mechanisms therefor.

5. In a voting-machine, a circular casing having an annularly-arranged slot, a deck on said casing bearing a plurality of groups of names or other identifying symbols of the candidates, each group representing an office and having the names thereon arranged in the same party order in each, registering mechanism for each of said names, a radially-arranged actuator for each group centered within said casing and having a portion protruding through said slot, means for setting the actuators simultaneously to the names of candidates of the same party in said groups, and means for moving said actuators and mechanisms relatively to each other to operate said mechanisms.

6. In a voting-machine, a circular casing having an annularly-arranged slot, a deck on said casing bearing a series of party names or symbols and a plurality of groups of names or other identifying symbols of the candidates, each group representing an office and having the names therein arranged in the same party order as said series, registering mechanism for each of said names, a radially-arranged actuator for each group and for said series, the actuator for the latter having a projecting part extending through said slot adjacent to said deck and serving as an index, means for moving all of said actuators simultaneously to set them to vote a party-ticket indicated by the position of said index relatively to said series, and means for moving said actuators and mechanisms relatively to each other to operate said mechanisms.

7. In a voting-machine, a casing, a plurality of registering mechanisms within said casing, a plurality of actuators arranged radially thereof on a central bearing and adapted to swing thereon into operable relation with said mechanisms, and means for moving said mechanisms relatively to said actuators to operate said mechanisms.

8. In a voting-machine, a casing, a plurality of registering mechanisms arranged in a series of groups within said casing, a plurality of actuators arranged radially of said casing on a central bearing and adapted to swing thereon, means for swinging said actuators simultaneously into operable relation to selected registering mechanisms in said groups, and means for moving said series of registering mechanisms relatively to said actuators to operate said mechanisms.

9. In a voting-machine, a casing, a plurality of actuators arranged radially therein on a central bearing and adapted to swing thereon, a plurality of registering mechanisms in a series of groups concentric to said bearing, one group for each actuator and the registering mechanisms of each of groups arranged in the same party order, means for engaging and swinging said actuators into operable relation with the same party mechanism in each group and releasing said actuators, whereby any of the latter is free to be moved into operable relation with another mechanism in the same or another group, and means for moving said series of mechanisms relatively to said actuators to operate said mechanisms.

10. In a voting-machine, a casing, a vertical shaft located therein, a series of radially-arranged actuators centered on said shaft, a frame centered on said shaft and carrying registering mechanisms arranged concentrically thereto, means for moving said actuators into operable relation with said registering mechanisms, and means for raising said frame and operating said mechanisms by contact with said actuators.

11. In a voting-machine, a casing, a vertical shaft located therein, a series of radially-arranged actuators centered on said shaft, a frame centered on said shaft and carrying registering mechanisms arranged concentrically thereto, means loosely mounted on said shaft and operable from the exterior of said casing for simultaneously moving said actuators into operable relation with said registering mechanisms, and means for raising said frame and operating said mechanisms.

12. In a voting-machine, a casing, a vertical shaft located therein, a series of radially-arranged actuators loosely centered on said shaft, registering mechanisms arranged concentrically thereto, means for moving said actuators into operable relation with said registering mechanisms, means for raising said mechanisms and operating them by contact with said actuators, and means carried by said shaft for returning said actuators to the original position.

13. In a voting-machine, a casing, a vertical shaft located therein, a series of radially-arranged actuators loosely centered on said shaft, a frame loosely centered on said shaft, registering mechanisms carried by said frame and arranged concentrically to said shaft, means for moving said actuators into operable relation with said registering mechanisms, means carried by said shaft for returning said actuators to the original positions, a lever connected to said shaft and frame whereby the latter may be raised to operate said registering mechanisms and the shaft turned to return said actuators.

14. In a voting-machine, a casing having a vertical shaft therein, a series of radially-arranged actuators loosely centered on said shaft, a frame loosely centered on said shaft and carrying registering mechanisms arranged concentrically thereto, means for moving said actuators into operable relation with said registering mechanisms, means for raising said frame to operate said registering mechanisms, and a locking means arranged to prevent a succeeding descent of said frame until released.

15. In a voting-machine, a casing, a vertical shaft therein, a series of radially-arranged actuators loosely centered on said shaft, a frame loosely centered on said shaft and carrying registering mechanisms arranged concentrically thereto, means for moving said actuators into operable relation with said registering mechanisms, means moving with said shaft for returning said actuators to the original positions, a lever connected to said shaft and to said frame and adapted to raise and lower the latter to operate said registering mechanisms and also to turn said shaft, locking means arranged to prevent the descent of said frame, and means actuated by a partial revolution of said shaft for releasing said locking means.

16. In a voting-machine, a casing, a vertical shaft therein, a series of radially-arranged actuators loosely centered on said shaft, a frame loosely centered on said shaft and carrying registering mechanisms arranged concentrically thereto, means for moving said actuators into operable relation with said registering mechanisms, means moving with said shaft for returning said actuators to the original positions, a vertical flange on said casing surrounding said shaft, a notch in said flange, a lever connected to said shaft and frame and adapted to sink and rise in said notch and to ride in the raised condition upon said flange, a locking means arranged to prevent a succeeding descent in said notch, and means for releasing said locking means by the partial revolution of said shaft.

17. In a voting-machine, a circular casing having an annularly-arranged slot, a vertical shaft centrally located in said casing, a series of actuators loosely mounted on a sleeve inclosing said shaft, and having a portion of each extending through said slot, and each capable of being swung independently by such portion, a wheel loosely mounted on said shaft and operated from the exterior of said casing and arranged to be partially rotated and raised and lowered, pins on said wheel adapted to engage said actuators and swing them simultaneously when said wheel is in one vertical position and to release said actuators and permit them to be moved independently when said wheel is in the other vertical position, and a series of concentrically-arranged registering mechanisms operated by said actuators, whereby all of said actuators may be moved simultaneously to certain selected registering mechanisms and either of said actuators subsequently moved to another of said mechanisms.

18. In a voting-machine, a casing, a vertical shaft therein, a series of actuators loosely centered on said shaft and capable of swinging thereon, lugs on said actuators at different distances from said shaft, a wheel moving with said shaft and having lugs similarly arranged and adapted to engage said lugs on said actuators and return the latter to an original position.

19. In a voting-machine, a casing, a shaft therein, a series of actuators loosely centered on said shaft and capable of swinging thereon, lugs on said actuators arranged in pairs, each pair at a different distance from said shaft, a pair of wheels moving with said shaft in opposite directions, each having lugs similarly arranged and adapted to engage said lugs on said actuators and return them to an original position.

20. In a voting-machine, a circular casing having a plurality of circular decks and an annular slot adjacent to each of said decks, a vertical shaft arranged centrally of said casing, a plurality of series of radial actuators loosely centered on said shaft, each actuator having a portion or head projecting through one of said slots by which it may be moved independently therein, and a portion or toe within said casing adapted to lie in the path of a registering mechanism when presented thereto, a wheel loosely mounted on said shaft and adapted to engage the actuators of such plurality of series and move them simultaneously into operative relation to certain of said registering mechanisms, and adapted to release said actuators and permit them to be moved independently by said heads.

21. In a voting-machine, a circular casing having a plurality of circular decks and an annular slot adjacent to each of said decks, a vertical shaft arranged centrally of said casing, a plurality of series of registering mechanisms arranged concentrically in said casing, a plurality of radial actuators loosely centered on said shaft, each actuator having a portion or head projecting through one of said slots by which it may be moved independently therein, and a portion or toe within said casing adapted to lie in the path of one of said registering mechanisms when presented thereto, a wheel loosely mounted on said shaft and adapted to engage the actuators of said plurality of series and move them simultaneously into operative relation to certain of said registering mechanisms, and adapted to release said actuators and permit them to be moved independently by said heads, and means for moving said registering mechanisms relatively to said actuators to operate said mechanisms.

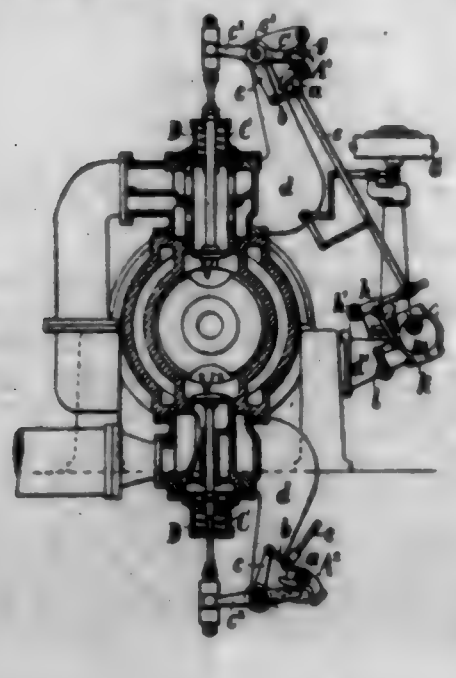
22. In a voting-machine, a casing composed of annular superposed sections, portions of which are cylindrical and portions conical, each succeeding conical portion being of less diameter, the said sections separated from each other to form annular slots and spaces, and supported by brackets and bosses on said sections engaged with standards, the whole forming a turret-like structure having inclined decks of different diameters.

23. In a voting-machine, a casing composed of annular superposed sections separated from each other to form annular spaces, series of registering mechanisms within said casing adjacent to said spaces, belts covering said spaces and adapted to be moved circumferentially of said casing, and an opening in each belt through which said registering mechanisms may be inspected.

24. In a voting-machine, a casing composed of annular superposed sections separated from each other to form annular spaces, series of registering mechanisms within said casing adjacent to said spaces, annular belts covering said spaces and adapted to be moved circumferentially of said casing, an opening in each belt through which said registering mechanisms may be inspected, a cover for said opening, and a locking means for said cover.

25. In a voting-machine, a casing composed of annular sections having an annular space between them, registering mechanisms within said casing adjacent to said space, an annular belt covering said space and adapted to be moved circumferentially of said casing, an opening in said belt through which said registering mechanisms may be inspected, and means for closing and locking said opening.

818,166. VALVE-GEAR. WILHELM HARTMANN, Berlin, Germany. Filed June 2, 1904. Serial No. 210,526.



Claim.—1. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, and a clutch member rocking in unison with the said rocking cam, said clutch member being mounted on the pivot of the valve-lever engaging the said valve-lever, to impart a return motion to the same, for closing the valve.

2. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, a clutch member rocking in unison with the said rocking cam and arranged for engaging the said valve-lever, to impart a return motion to the same, for closing the valve, and a locking device controlled by the said rocking cam, for engaging the said valve-lever to lock the latter against movement during the return stroke of the rocking cam and the said clutch member.

3. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, a clutch member rocking in unison with the said rocking cam and arranged for engaging the said valve-lever, to impart a return motion to the same, for closing the valve, and a locking device controlled by the said rocking cam, for engaging the said valve-lever to lock the latter against movement during the return stroke of the rocking cam and the said clutch member, the said locking device consisting of a projection on the valve-lever and a pawl for engaging the said projection.

4. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, a clutch member rocking in unison with the said rocking cam and arranged for engaging the said valve-lever, to impart a return motion to the same, for closing the valve, and a locking device controlled by the said rocking cam, for engaging the said valve-lever to lock the latter against movement during the return stroke of the rocking cam and the said clutch member, the said locking device consisting of a projection on the valve-lever, an arm rocking with the cam-lever, an escapement-lever controlled by the said arm and a pawl moving with the said escapement-lever and adapted to engage the said projection.

5. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, a clutch member rocking in unison with the said rocking cam and arranged for engaging the said valve-lever, to impart a return motion to the same, for closing the valve, and an actuating device for the said cam and clutch, consisting of a link connected at one end to the cam and the clutch, a pivoted arm engaged by the other end of the link, an eccentric, a rock-arm connected with the eccentric-rod and a link connecting the said pivoted arm with the eccentric-rod at a point such as I I adapted to transfer motion only during one part of the revolution to the pivoted arm.

6. A valve-gear for intermittently and positively actuating a valve, comprising a valve-lever connected with the valve, a rocking cam engaging the said valve-lever, for the latter to open the valve, a clutch member rocking in unison with the said rocking cam and arranged for engaging the said valve-lever, to impart a return motion to the same, for closing the valve, and a tension device for the valve, under tension during a part of the stroke, and to deliver work during another part of the valve-stroke.

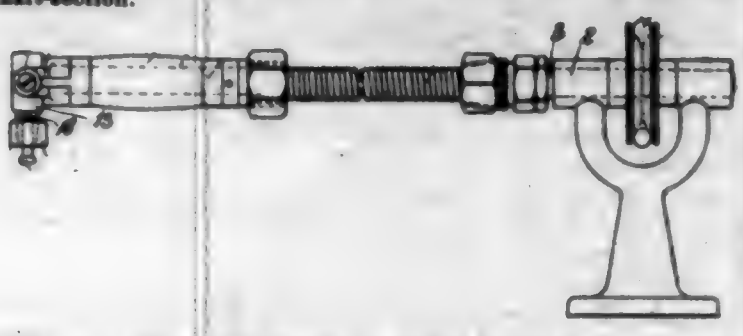
7. In a valve-gear, the combination of inlet and exhaust valves, mechanism for operating each valve positively to both open and close it, casings through which the valve-stems project, the casing through which the inlet-valve stem projects having an open outer end and the casing through which the exhaust-valve stem projects having an open inner end, collars on the valve-stem, and springs surrounding the valve-stems between the collars, and the closed ends of the casings, as and for the purpose set forth.

818,167. BURNISHING-MACHINE. FRANK E. HATFIELD, Boston, Mass., assignor to Francis F. Hicks, Boston, Mass. Filed Mar. 8, 1905. Serial No. 249,171.

Claim.—1. A burnishing-machine comprising a portable head having a handle portion and a rectilinear guide connected together, a completely-rotating shaft-section journaled in said handle portion, a burnishing-tool supported by said guide, and connections between the shaft and tool continuously in engagement therewith whereby the tool is reciprocated on the guide by rotation of the shaft-section.

2. In a burnishing-machine, a portable head comprising a han-

die portion, a rectilinear guideway supported by the handle adjacent one end thereof, a tool-holder mounted in said guideway, a tool carried by said holder, a bearing formed in said handle portion and extending longitudinally thereof, a completely-rotating shaft-section journaled in said bearing, and connections between the shaft-section and tool-holder whereby the latter is reciprocated by rotation of the shaft-section.



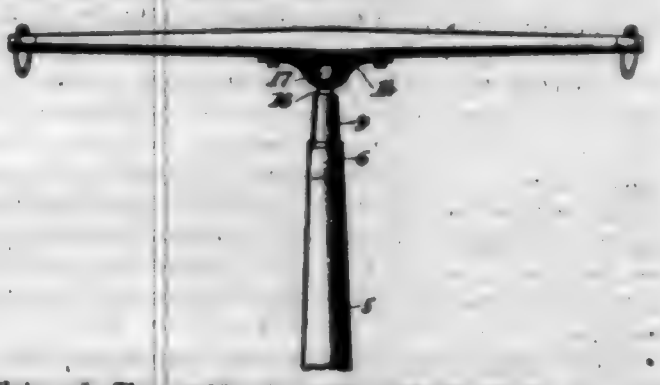
3. In a burnishing-machine, a portable head having a handle portion and a guideway connected together, a tool-holder mounted to slide in said guideway, a shaft journaled in said handle portion, an eccentric on said shaft, abutting surfaces formed on said tool-holder and arranged to engage the eccentric, and a tool carried by said holder.

4. In a burnishing-machine, a portable head having a handle portion and a connected arm formed with an internal guideway, a tool-holder having a guiding portion mounted to slide in said guideway, a shaft journaled in said handle portion, an eccentric on said shaft, abutting surfaces formed on said tool-holder and arranged to engage the eccentric at diametrically opposite points, and a tool carried by said holder.

5. In a burnishing-machine, a portable head having a handle portion and a pair of arms projecting from one end of the handle portion, the said arms being separated from each other at their ends and having internal bearings or guideways in alinement, a tool-holder having a body portion located between said arms and projections held in said guideways, a shaft journaled in said handle portion, an eccentric on said shaft, ways or abutting surfaces formed on the body portion of the tool-holder and arranged to engage diametrically opposite points of the eccentric, and a burnishing-tool carried by said holder.

6. A burnishing-machine having a portable handle portion, a guide rigidly connected to said handle adjacent its end and extended at substantially right angles to the length thereof, a tool-holder slidingly mounted in said guide and arranged to reciprocate lengthwise therein, a burnishing-tool detachably mounted centrally on said holder, a shaft-section journaled axially in said handle portion, an eccentric thereon adjacent said guide arranged to rotate and thereby drive the tool-holder in opposite directions of reciprocation, and a flexible driving-shaft section connected to the aforesaid shaft-section.

818,168. NECK-YOKE. CHARLES B. HESS, Saco, Mont. Filed Oct. 10, 1906. Serial No. 338,068.

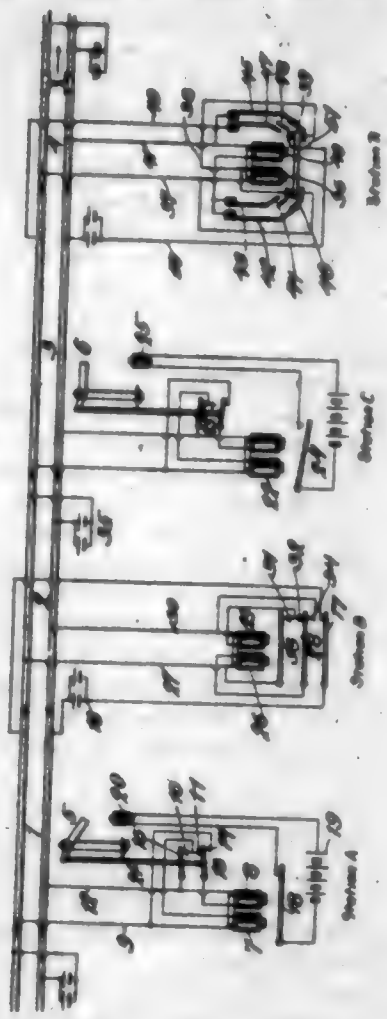


Claim.—1. The combination with a vehicle-tongue, of a metal tip thereon, a socket member for engaging over the tip, and means for interlocking the tip and socket member, a yoke having swinging connection with the socket member, and antifriction-balls arranged in said swinging connection.

2. The combination with a vehicle-tongue, of a metal tip thereon having a reduced portion, a lug on said reduced portion, a socket member for engaging over the reduced portion and having an annular channel for receiving the lug, the said channel having an outward opening, a clip adapted for connection with a yoke and having a chamber, a ring-like extension on the socket member passing into the chamber of the clip, a pivot-bolt passing through the walls of the clip and also through said opening, the said opening having a larger diameter than the diameter of the bolt, and antifriction-balls arranged in the space between the opening of the extension and the bolt.

3. The combination with a wagon-tongue, of a socket member adapted for connection with the tongue and having a ring-like extension, a yoke, a clip on the yoke, and an antifriction-ball connection between said extension and the clip.

818,169. ELECTRICAL CIRCUIT AND DEVICE. ROBERT J. HEWETT, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed June 2, 1905. Serial No. 263,500.



Claim.—1. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

2. The combination of a circuit, with magnetic means connected with said circuit; a circuit-chamber connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, the position of said circuit-changer being dependent upon the energization and deenergization of said magnetic means.

3. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance when said magnetic means are energized and to reverse the connection when said magnetic means are deenergized; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

4. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller for the signal and controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

5. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller for the signal and controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, the position of said circuit-changer being dependent upon the energization and deënergization of said magnetic means.

6. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance when said magnetic means are energized and to reverse the connection when said magnetic means are deënergized; and a circuit-controller for the signal and controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

7. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and operated by the movement of the signal and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

8. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and operated by the movement of the signal and acting to change the connection of said magnetic means from one of low resistance to one of high resistance when said magnetic means are energized and to reverse the connection when said magnetic means are deënergized; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

9. The combination of a circuit, with two magnet-coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series.

10. The combination of a circuit, with two magnet-coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series, the movement of said circuit-changer to its last-mentioned position being initiated when said coils are deënergized in series, and the movement of said circuit-changer to its first-mentioned position being initiated when said coils are energized in multiple.

11. The combination of a track-circuit, with a signal; two magnet-coils; and a circuit-changer arranged to connect said coils in series and in multiple in the circuit, said coils when energized in multiple initiating the movement of the signal to clear position and when deënergized in series initiating the movement of the signal to danger position.

12. The combination of a track-circuit, with a signal; two magnet-coils; a circuit-changer arranged to connect said coils in series and in multiple in the circuit; a circuit-controller for controlling the position of the signal and arranged to be picked up when said coils are energized in multiple and to be held up when said coils are energized in series.

13. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, said circuit-changer being directly operated by said magnetic means.

14. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, said circuit-changer being directly operated by said magnetic means and moved to the low-resistance connection when said magnetic means are deënergized and to the high-resistance connection when said magnetic means are thereafter energized.

15. The combination of a circuit, with two magnetic coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

16. The combination of a track-circuit, with a signal; two magnet-coils; and a circuit-changer arranged to connect said coils in series and in multiple in the circuit, said coils when energized in multiple initiating the movement of the signal to clear position and when deënergized in series initiating the movement of the signal to danger position, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

17. The combination of a track-circuit, with a signal; two magnet-coils; a circuit-changer arranged to connect said coils in series and in multiple in the circuit; a circuit-controller for controlling the position of the signal and arranged to be picked up when said coils are energized in multiple and to be held up when said coils are energized in series, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

18. The combination of a track-circuit, with home and distant signals; two magnet-coils; a circuit-changer arranged to connect said coils in multiple and in series in said track-circuit; a signal-circuit for the home signal having a circuit-controller with a neutral armature operated by said magnet-coils; a signal-circuit for the distant signal having a circuit-controller with a polarized armature operated by said magnet-coils; a pole-changer in said track-circuit.

19. The combination with a track-circuit having two magnet-coils; a signal; a signal-circuit for the signal having two circuit-controllers, operated by said coils, one of said circuit-controllers being moved from its pick-up to its hold-up position when said coils receive current of a given characteristic, and the other circuit-controller being moved from its pick-up to its hold-up position when said coils receive current of a different characteristic; means for varying the characteristic of the current for said coils; and a circuit-changer connected with said coils and acting to connect said coils in a low-resistance connection to pick up said circuit-controllers, and to connect said coils in a high-resistance connection to hold up said circuit-controllers.

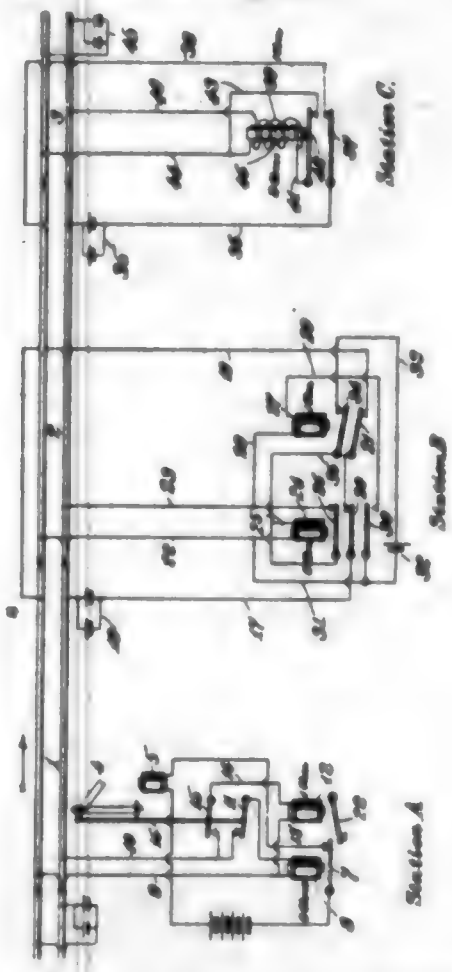
818,170. **ELECTRICAL DEVICE AND CIRCUIT.** ROBERT J. HEWETT, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed June 2, 1905. Serial No. 263,501.

Claim.—1. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is initially energized and to be held up when the high-resistance coil is energized.

2. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is initially energized and to be held up when the high-resistance coil is energized, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

3. The combination of a circuit; with two magnet-coils, one of

high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit, and excludes the low-resistance coil from said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is energized and to be held up when the high-resistance coil is energized.



4. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit and excludes the low-resistance coil from said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is energized and to be held up when the high-resistance coil is energized, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

5. The combination of a track-circuit; with a signal; two magnet-coils one of high resistance and one of low resistance; the low-resistance coil, when first energized, initiating the movement of the signal to clear position, and the high-resistance coil when energized operating to maintain the signal in clear position; and a circuit-changer connected with said circuit and arranged to cut out the high-resistance coil after the latter has been deënergized and to cut in the high-resistance coil after the low-resistance coil has been energized.

6. The combination of a track-circuit; with a signal; two magnet-coils one of high resistance and one of low resistance; the low-resistance coil, when first energized, initiating the movement of the signal to clear position, and the high-resistance coil when energized operating to maintain the signal in clear position; and a circuit-changer connected with said circuit and arranged to cut in the low-resistance coil and to cut out the high-resistance coil after the latter has been deënergized and to cut out the low-resistance coil and to cut in the high-resistance coil after the low-resistance coil has been energized.

7. The combination of a track-circuit; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be picked up by the coil of low resistance and held up by the coil of high resistance; and a circuit-changer operated by the movement of the signal from one position to another, said circuit-changer acting when in one position to exclude the high-resistance coil and include the low-resistance coil in the circuit, and when in its other position acting to include said high-resistance coil in the circuit.

8. The combination of a track-circuit; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be picked up by the coil of low resistance and held up by the coil of high resistance; and a circuit-changer operated by the movement of the signal from one position to another, said circuit-changer acting when in one position to exclude the high-resistance coil and include the low-resistance coil in the circuit, and when in its other position acting to include said high-resistance coil in the circuit and exclude the low-resistance coil.

9. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit, and when in its other position it includes the high-resistance coil in said circuit; a circuit-controller arranged to be held up by the high-resistance coil; and an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller.

10. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; a circuit-controller arranged to be held up by the high-resistance coil; and an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

11. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil, arranged to mechanically pick up said circuit-controller; and a circuit-changer acting to change the connection of said coils with the track-circuit from one of high resistance when the signal is in clear position to one of low resistance when the signal is at danger.

12. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer operated by the signal and acting to change the connection of said coils with the track-circuit from one of high resistance when the signal is in clear position to one of low resistance when the signal is at danger.

13. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer acting to include the high-resistance coil when the signal is in clear position and acting to exclude the high-resistance coil and include the low-resistance coil in the circuit when the signal is at danger.

14. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer operated by the signal and acting to include the high-resistance coil when the signal is in clear position and acting to exclude the high-resistance coil and include the low-resistance coil in the circuit when the signal is at danger.

818,171. WHEEL-FASTENING. GEORGE C. HICKS, Jr., Connersville, Ind., assignor to The P. H. & F. M. Roots Company, Connersville, Ind. Filed Nov. 17, 1905. Serial No. 287,786.

Claim.—1. In a wheel-fastening, the combination, substantially as set forth, of a wheel-body provided with a perforation to freely admit a shaft, said perforation presenting a half-bore to fit the shaft, a hub portion independent of the wheel-body and having a half-bore adapted to engage the shaft opposite its engagement by the half-bore of the wheel-body, and clamping-bolts engaging the wheel-body and independent hub portions at the opposite side of the

5. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller for the signal and controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, the position of said circuit-changer being dependent upon the energization and deënergization of said magnetic means.

6. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance when said magnetic means are energized and to reverse the connection when said magnetic means are deënergized; and a circuit-controller for the signal and controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

7. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and operated by the movement of the signal and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

8. The combination of a track-circuit, with a signal; magnetic means connected with said circuit; a circuit-changer connected with said circuit and operated by the movement of the signal and acting to change the connection of said magnetic means from one of low resistance to one of high resistance when said magnetic means are energized and to reverse the connection when said magnetic means are deënergized; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection.

9. The combination of a circuit, with two magnet-coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series.

10. The combination of a circuit, with two magnet-coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series, the movement of said circuit-changer to its last-mentioned position being initiated when said coils are deënergized in series, and the movement of said circuit-changer to its first-mentioned position being initiated when said coils are energized in multiple.

11. The combination of a track-circuit, with a signal; two magnet-coils; and a circuit-changer arranged to connect said coils in series and in multiple in the circuit, said coils when energized in multiple initiating the movement of the signal to clear position and when deënergized in series initiating the movement of the signal to danger position.

12. The combination of a track-circuit, with a signal; two magnet-coils; a circuit-changer arranged to connect said coils in series and in multiple in the circuit; a circuit-controller for controlling the position of the signal and arranged to be picked up when said coils are energized in multiple and to be held up when said coils are energized in series.

13. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, said circuit-changer being directly operated by said magnetic means.

14. The combination of a circuit, with magnetic means connected with said circuit; a circuit-changer connected with said circuit and acting to change the connection of said magnetic means from one of low resistance to one of high resistance and the reverse; and a circuit-controller controlled by said magnetic means and arranged to be picked up during the low-resistance connection of said magnetic means and to be held up during its high-resistance connection, said circuit-changer being directly operated by said magnetic means and moved to the low-resistance connection when said magnetic means are deënergized and to the high-resistance connection when said magnetic means are thereafter energized.

15. The combination of a circuit, with two magnetic coils; a circuit-changer connected with said circuit and so arranged that when in one position it connects said coils in series and when in its other position it connects said coils in multiple; and a circuit-controller arranged to be picked up when said coils are in multiple and held up when said coils are in series, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

16. The combination of a track-circuit, with a signal; two magnet-coils; and a circuit-changer arranged to connect said coils in series and in multiple in the circuit, said coils when energized in multiple initiating the movement of the signal to clear position and when deënergized in series initiating the movement of the signal to danger position, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

17. The combination of a track-circuit, with a signal; two magnet-coils; a circuit-changer arranged to connect said coils in series and in multiple in the circuit; a circuit-controller for controlling the position of the signal and arranged to be picked up when said coils are energized in multiple and to be held up when said coils are energized in series, said circuit-changer being operated directly by said magnet-coils and moved to multiple connection when said coils are deënergized and moved to series connection when said coils are thereafter energized.

18. The combination of a track-circuit, with home and distant signals; two magnet-coils; a circuit-changer arranged to connect said coils in multiple and in series in said track-circuit; a signal-circuit for the home signal having a circuit-controller with a neutral armature operated by said magnet-coils; a signal-circuit for the distant signal having a circuit-controller with a polarized armature operated by said magnet-coils; a pole-changer in said track-circuit.

19. The combination with a track-circuit having two magnet-coils; a signal; a signal-circuit for the signal having two circuit-controllers, operated by said coils, one of said circuit-controllers being moved from its pick-up to its hold-up position when said coils receive current of a given characteristic, and the other circuit-controller being moved from its pick-up to its hold-up position when said coils receive current of a different characteristic; means for varying the characteristic of the current for said coils; and a circuit-changer connected with said coils and acting to connect said coils in a low-resistance connection to pick up said circuit-controllers, and to connect said coils in a high-resistance connection to hold up said circuit-controllers.

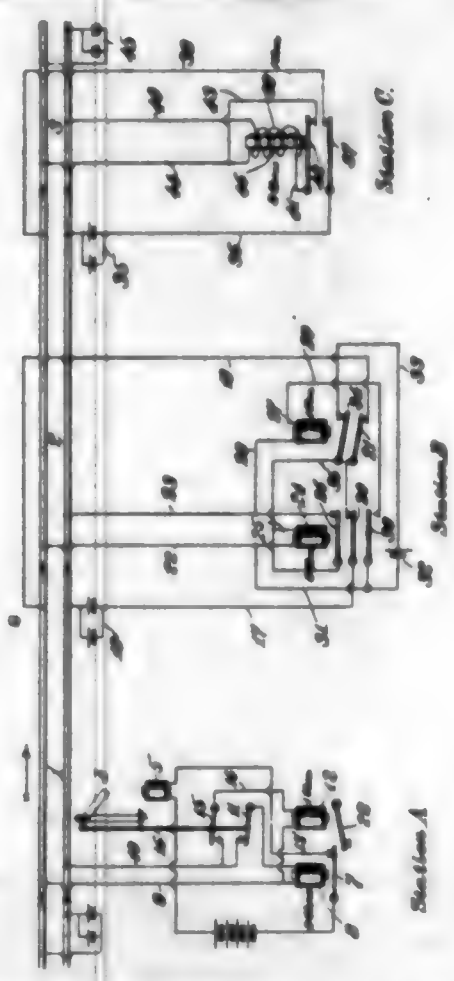
818,170. **ELECTRICAL DEVICE AND CIRCUIT.** ROBERT J. HEWETT, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed June 2, 1905. Serial No. 263,501.

Claim.—1. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is initially energized and to be held up when the high-resistance coil is energized.

2. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is initially energized and to be held up when the high-resistance coil is energized, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

3. The combination of a circuit; with two magnet-coils, one of

high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit, and excludes the low-resistance coil from said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is energized and to be held up when the high-resistance coil is energized.



4. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit and excludes the low-resistance coil from said circuit; and a circuit-controller arranged to be picked up when the low-resistance coil is energized and to be held up when the high-resistance coil is energized, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

5. The combination of a track-circuit; with a signal; two magnet-coils one of high resistance and one of low resistance; the low-resistance coil, when first energized, initiating the movement of the signal to clear position, and the high-resistance coil when energized operating to maintain the signal in clear position; and a circuit-changer connected with said circuit and arranged to cut out the high-resistance coil after the latter has been deënergized and to cut in the high-resistance coil after the low-resistance coil has been energized.

6. The combination of a track-circuit; with a signal; two magnet-coils one of high resistance and one of low resistance; the low-resistance coil, when first energized, initiating the movement of the signal to clear position, and the high-resistance coil when energized operating to maintain the signal in clear position; and a circuit-changer connected with said circuit and arranged to cut in the low-resistance coil and to cut out the high-resistance coil after the latter has been deënergized and to cut out the low-resistance coil and to cut in the high-resistance coil after the low-resistance coil has been energized.

7. The combination of a track-circuit; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be picked up by the coil of low resistance and held up by the coil of high resistance; and a circuit-changer operated by the movement of the signal from one position to another, said circuit-changer acting when in one position to exclude the high-resistance coil and include the low-resistance coil in the circuit, and when in its other position acting to include said high-resistance coil in the circuit.

8. The combination of a track-circuit; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be picked up by the coil of low resistance and held up by the coil of high resistance; and a circuit-changer operated by the movement of the signal from one position to another, said circuit-changer acting when in one position to exclude the high-resistance coil and include the low-resistance coil in the circuit, and when in its other position acting to include said high-resistance coil in the circuit and exclude the low-resistance coil.

9. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit, and when in its other position it includes the high-resistance coil in said circuit; a circuit-controller arranged to be held up by the high-resistance coil; and an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller.

10. The combination of a circuit; with two magnet-coils, one of high resistance and one of low resistance; a circuit-changer connected with said circuit and so arranged that when in one position it excludes the high-resistance coil from said circuit but includes the low-resistance coil in said circuit; and when in its other position it includes the high-resistance coil in said circuit; a circuit-controller arranged to be held up by the high-resistance coil; and an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller, the movement of said circuit-changer to its last-mentioned position being initiated by the energization of the low-resistance coil, and the movement of said circuit-changer to its first-mentioned position being initiated by the deënergization of the high-resistance coil.

11. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil, arranged to mechanically pick up said circuit-controller; and a circuit-changer acting to change the connection of said coils with the track-circuit from one of high resistance when the signal is in clear position to one of low resistance when the signal is at danger.

12. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer operated by the signal and acting to change the connection of said coils with the track-circuit from one of high resistance when the signal is in clear position to one of low resistance when the signal is at danger.

13. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer acting to include the high-resistance coil when the signal is in clear position and acting to exclude the high-resistance coil and include the low-resistance coil in the circuit when the signal is at danger.

14. The combination of a track-circuit including a source of energy; with a signal; two magnet-coils, one of high resistance and one of low resistance; a circuit-controller arranged to be held up by the high-resistance coil; an armature for the low-resistance coil arranged to mechanically pick up said circuit-controller; and a circuit-changer operated by the signal and acting to include the high-resistance coil when the signal is in clear position and acting to exclude the high-resistance coil and include the low-resistance coil in the circuit when the signal is at danger.

818,171. **WHEEL-FASTENING.** GEORGE C. HICKS, Jr., Connersville, Ind., assignor to The P. H. & F. M. Roots Company, Connersville, Ind. Filed Nov. 17, 1905. Serial No. 287,786.

Claim.—1. In a wheel-fastening, the combination, substantially as set forth, of a wheel-body provided with a perforation to freely admit a shaft, said perforation presenting a half-bore to fit the shaft, a hub portion independent of the wheel-body and having a half-bore adapted to engage the shaft opposite its engagement by the half-bore of the wheel-body, and clamping-bolts engaging the wheel-body and independent hub portions at the opposite side of the

bore and adapted to draw the independent hub portion toward the wheel-body, said independent hub portion having a keyway adapted to receive a key engaging the shaft, whereby said independent hub portion is adapted for fixed angular relationship with the shaft while the wheel-body may be angularly adjusted relative thereto by means of the clamping-bolts.



2. The combination, substantially as set forth, of a shaft, a wheel secured thereto, a second shaft parallel with the first one, a wheel disposed upon the second shaft and engaging the first wheel, said second wheel having a wheel-body perforated to freely admit its shaft and having a half-bore fitting its shaft and adapted for angular movement on the shaft, a hub portion for the second wheel, independent of the wheel-body and having a half-bore to engage the shaft, clamping-bolts uniting said independent hub portion to the wheel-body of its wheel and disposed upon opposite sides of the shaft and serving to angularly adjust said independent hub portion relative to its wheel-body, and a key engaging said independent hub portion and its shaft, whereby the independent hub portion has fixed angular relation to the shaft while the wheel-body may be angularly adjusted upon the shaft by means of the clamping-bolts.

3. In a wheel-fastening, the combination, substantially as set forth, of a wheel-body perforated to freely admit a shaft and having a hub part rigidly formed with it and projecting from its sides, said hub part having a half-bore adapted to fit a shaft, clamps or quarter-hubs disposed upon each side of the wheel-body opposite the side projections of its hub part and having half-bores to fit the shaft and having keyways to receive a key to hold them against angular displacement on the shaft, and clamping-bolts disposed at opposite sides of the bore and adapted to draw the quarter-hubs forcibly toward the hub part of the wheel-body and to adjust the angular relation between them.

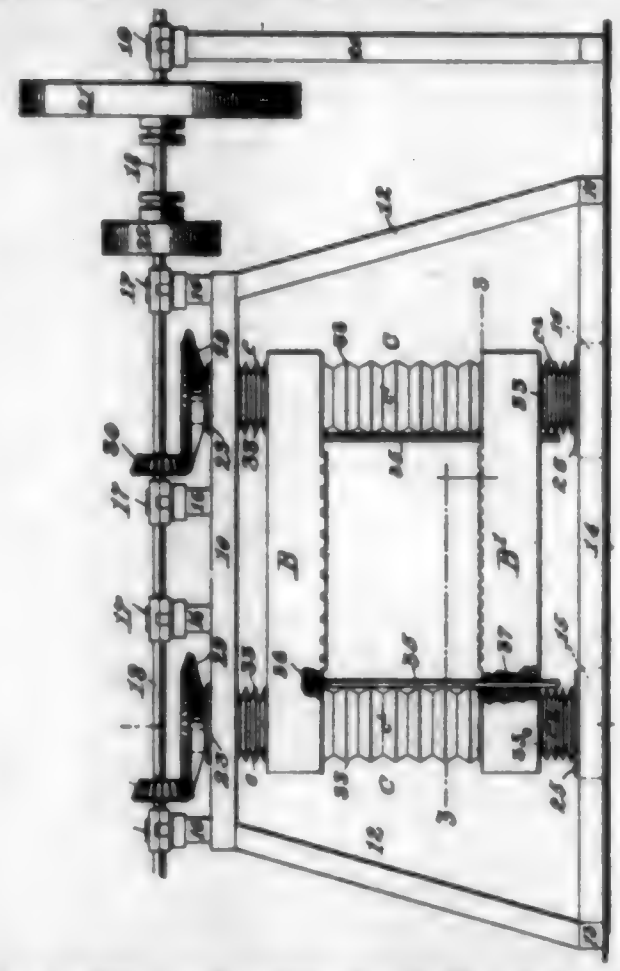
818,172. COTTON-COMPRESS. WILLIAM HILL, Alexandria, La. Filed Sept. 12, 1905. Serial No. 278,173.

Claims.—1. In a cotton-compress, a frame, a drive-shaft carried thereby, parallel screw-shafts mounted to turn in the frame, each shaft having corresponding right and left hand threads, opposing platens carried by the shafts, means for turning the shaft in one or the other direction, folding protective casings for the shafts, and guards at the inner faces of the protective casings.

2. In a cotton-compress, a frame, a drive-shaft carried thereby, vertical parallel screw-shafts mounted to turn in the frame, the said shaft having corresponding right and left hand threads, platens provided with inserted nuts of a softer material than that of the shafts, the said nuts being interiorly threaded correspondingly to the threaded portions of the shafts they receive, means for turning the screw-shafts from said drive-shaft, protective casings for the screw-shaft, and guards for the protective casings.

3. In a cotton-compress, a frame, parallel screw-shafts mounted to turn in the frame, each shaft having corresponding right and left hand threads, platens operated to and from each other by the rotation of the screw-shafts, means for revolving the screw-shafts in one or the other direction, and accordion-plaited protective casings surrounding the said shafts.

4. In a cotton-compress, a frame, a drive-shaft carried thereby, vertical parallel screw-shafts mounted to turn in the frame, the said shafts having corresponding right and left hand threads, platens provided with inserted nuts of a softer material than that of the shafts, the said nuts being interiorly threaded correspondingly to the threaded portions of the shafts they receive, folding protective casings for the said shafts, located between the platens above and below them, and guard-rods attached to the upper platen, being passed loosely through the lower platen, the said guard-rods being at the inner faces of the said protective casings, and means for simultaneously turning said shafts to the right or to the left.



5. In a press, a frame, screw-shafts having corresponding right and left hand exterior threads, opposing platens adapted to be operated to and from each other by the action of the said shafts, the platens having apertures correspondingly threaded to the threaded portions of the shaft they are adapted to receive, accordion-plaited protective casings surrounding the said shafts, guard-rods secured to the upper platen, extending loosely through apertures in the lower platen, said guard-rods being located at the inner faces of the protective casings, and means for simultaneously rotating the shafts in one or the other direction.

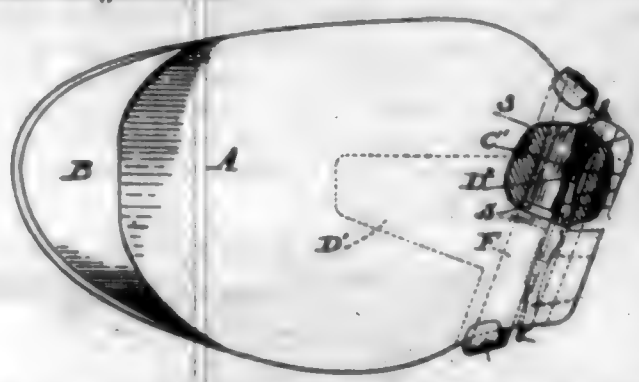
6. In a compress, the combination with a frame, parallel vertical shafts mounted to revolve in the said frame, said shafts having corresponding right and left hand threads, and means for simultaneously rotating the said shafts in one or the other direction, of platens having inserted bronze nuts, the said nuts having interior threads adapted to the threaded portions of the shafts they are to receive, protective accordion bellows-casings for each shaft, the casings being loosely located around the shafts and attached to the upper and lower faces of the platens, to the lower face of the lower platen and to the base of the frame, the upper face of the upper platen and the lower portion of the frame, and guard-rods secured to the upper platen, extending down along the inner faces of said protective casings between the platens, the lower platen being provided with apertures through which the lower ends of the guard-rods freely pass.

7. In a cotton-compress, a frame, a drive-shaft carried thereby and provided with bevel-pinions, parallel screw-shafts mounted to turn in the frame, each shaft having corresponding right and left hand threads, the shafts being provided at their upper ends with bevel-gears meshing with the pinions on the drive-shaft, platens operated to and from each other by the rotation of the screw-shafts, a clutch-pulley on the drive-shaft for turning the shaft in one direction to move the platens toward each other, and a smaller clutch-pulley for turning the drive-shaft in the opposite direction to move the platens rapidly away from each other.

818,173. ANTISLIPPING REMOVABLE SOLE FOR SHOES. JOSEPH M. HOFFMAN, Brooklyn, N. Y., assignor of one-half to John F. Nelson, Brooklyn, N. Y. Filed Apr. 13, 1905. Serial No. 256,282.

Claim.—1. A removable antislipping sole for shoes, consisting of the combination with a sole-piece having a toe-cap and a tread-surface adapted to coincide with the shoe-sole rearward to the shank thereof, of a longitudinally-grooved metallic bar mounted fixedly on

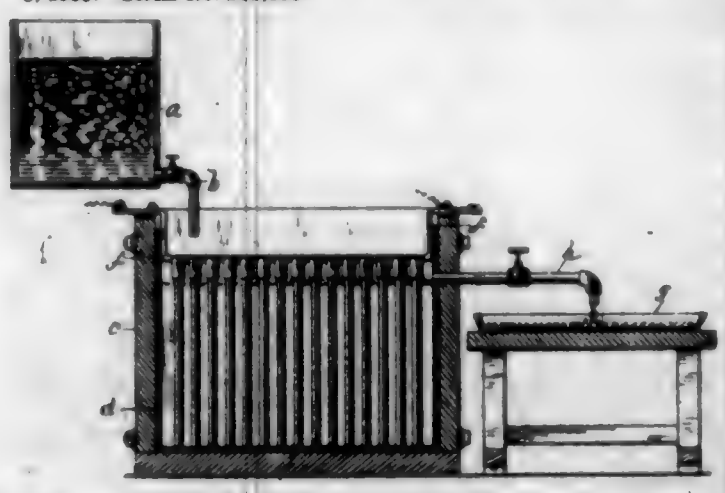
the sole-piece contiguous to the rear end thereof and transversely thereto, a pair of oppositely-disposed clip-carrying rack-bars adapted to slide independently in said grooved bar, with pawl mechanism operating to respectively lock and release each of said clip-carrying bars in the said grooved bar.



2. In a device of the character recited, the combination of the following elements; a sole-piece having a toe-cap and a tread-surface adapted to coincide with a shoe-sole rearward to the shank thereof, with means to removably clamp it to the shoe-sole, consisting of a grooved metallic keeper-bar mounted fixedly on the sole-piece contiguous to the rear end thereof and transversely thereto, a pair of oppositely-disposed and independently-movable clip-carrying bars provided with a serrated edge and adapted to slide in the groove of the keeper-bar, with means to respectively lock and release each clip-carrying bar therein, consisting of a pawl-carrying and spring-actuated bar also mounted in the grooved keeper-bar and projecting outwardly beyond the edge thereof.

3. In a device of the character recited, the combination with a sole-piece of thick rubber in the tread portion, having a toe-cap and a frictional tread-surface, of a metallic keeper embedded in the rubber, said keeper having a forward-extending tongue and a body portion with two contiguous grooves therein separated from each by a slotted partition, a pair of clip-carrying bars having a serrated edge and mounted slidingly in one of said grooves, and a spring-actuated pawl-carrying bar mounted slidingly in the other of said grooves, the pawl extending through the slot in the said partition and normally registering with the serrated edge of the clip-bar.

818,174. **PROCESS OF RECLAIMING WASTE GOLD AND OTHER VALUABLE METALS FROM WATER AND OTHER LIQUIDS.** CHARLES B. HOLLAND, New York, N. Y., assignor to The Holland Metal Recovery Company, a Corporation of New York. Filed June 5, 1905. Serial No. 263,896.



Claim.—1. The process of reclaiming gold or other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, and collecting the coagulum produced thereby.

2. The process of reclaiming gold or other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, and collecting the coagulum and precipitate produced thereby.

3. The process of reclaiming gold or other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, collecting the coagulum produced thereby, and subjecting it to a suitable process for extracting the metal contained therein.

4. The process of reclaiming gold or other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, collecting the coagulum and precipitate produced thereby, and subjecting it to a suitable process for extracting the metal contained therein.

5. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank and collecting the coagulum produced thereby.

6. The process of reclaiming gold or other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank and collecting the coagulum and precipitate formed thereby.

7. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank, collecting the coagulum produced thereby, and subjecting it to a suitable process for extracting the metal contained therein.

8. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of liquid into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank, collecting the coagulum and precipitate produced thereby, and subjecting it to a suitable process for extracting the metal contained therein

9. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of water to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, removing the coagulum produced thereby, evaporating, decanting and filtrating off the liquid therefrom, and subjecting the product or residuum to a separating process for the purpose of extracting the metal.

10. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of water into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank, removing the coagulum produced by the electrolytic process, evaporating, decanting or filtering off the liquid therefrom, and subjecting the product or residuum to a separating process for the purpose of extracting the metal.

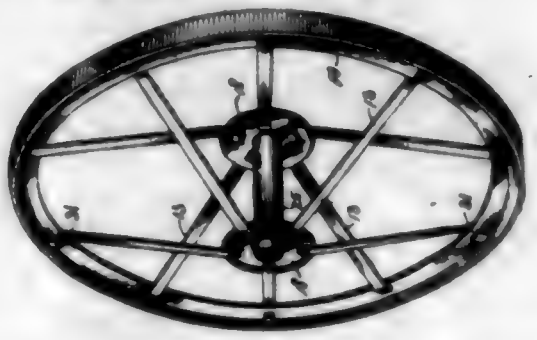
11. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of water to an electrolytic apparatus, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, removing the coagulum and precipitate produced thereby, evaporating, decanting or filtrating off the liquid therefrom, and subjecting the product or residuum to a separating process for the purpose of extracting the metal.

12. The process of reclaiming gold and other precious or valuable metals from water or other liquids, consisting in conducting the stream or body of water into and continuously through a runway or tank, subjecting it to electrolysis, in the presence of a body capable of forming a coagulum, while it is passing through the runway or tank, removing the coagulum and precipitate produced by the electrolytic process, evaporating, decanting or filtering off the liquid therefrom, and subjecting the product or residuum to a separating process for the purpose of extracting the metal.

818,175. **WHEEL AND PROCESS OF MAKING THE SAME.** CHARLES B. HOWE, Wabash, Ind., BENJAMIN F. REX, Kalamazoo, Mich., and EDWARD P. HOLDEN, Chicago, Ill., assignors to Wabash Manufacturing Company, Wabash, Ind., a Corporation of Indiana. Filed Sept. 16, 1905. Serial No. 278,319.

Claim.—1. In the process of making a wheel, securing the spokes to the hub by punching tongues out of hub-plates and leaving holes, bending the ends of the spokes, inserting the bent ends of the spokes in said holes in the hub-plates, and placing the punched tongues of the hub-plates back into position against the spokes.

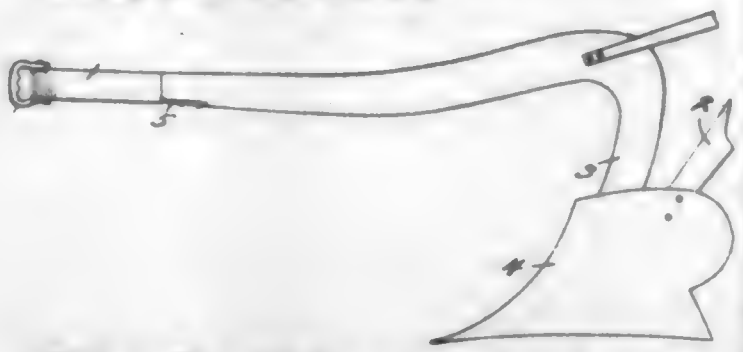
2. In the process of making a wheel, making the hub of two independent movable hub-plates and an independent intermediate tubular member, said hub-plates having central apertures with oppositely-extending flanges surrounding said apertures, securing the inner ends of the spokes to said hub-plates, placing a tubular hub member in said apertures, and turning the flanges surrounding the apertures over the ends of said tubular members.



3. A wheel consisting of a T-rim with transverse spoke-openings through the inwardly-extending annular flange thereof, a pair of hub-plates with transverse spoke-openings, spokes with their outer and inner ends reversely offset at right angles with extremities extending beyond said offset adapted to be inserted through said openings in opposite sides of the rim-flange and hub-plates respectively, and means for holding said hub-plates apart.

4. A wheel consisting of a rim with spoke-openings, a pair of hub-plates having spoke-openings formed by punching out tongues that are bent against the spokes after insertion, spokes fitting in the spoke-openings in said frame and hub-plates, and means for holding said hub-plates apart.

818,176. **HORSE-DETACHER.** FRANK J. HUMBERT, MAX, N. D. Filed July 8, 1905. Serial No. 268,853.



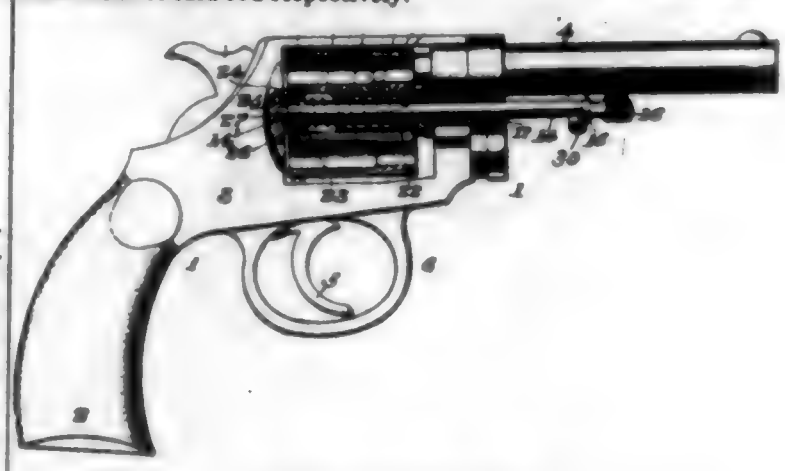
Claim.—1. The combination with a plow including a beam, of an arm secured to the beam and provided at its outer end with a jaw, a casing having a lug at one end, a follower mounted for sliding movement within the casing, a partition within the casing intermediate the end thereof, said partition having a slot arranged centrally thereof, an arm pivotally mounted at one of its ends to the said follower and provided with a jaw at its end opposite to the end of its pivotal connection with the follower, the jaws of said arms being adapted for locking engagement with each other, a spring encircling the second-named jaw, and arranged between the follower and said partition to hold the follower and second arm in their normal position, said follower and said second arm being arranged and associated with the first arm to permit of engagement of the jaw with the second arm and with the aforesaid lug to detach both arms from engagement with each other.

2. The combination with a plow including a beam, of an arm secured to the beam, a casing having an arm therein for locking engagement with the first-named arm, and means for automatically releasing the said arms from engagement with each other.

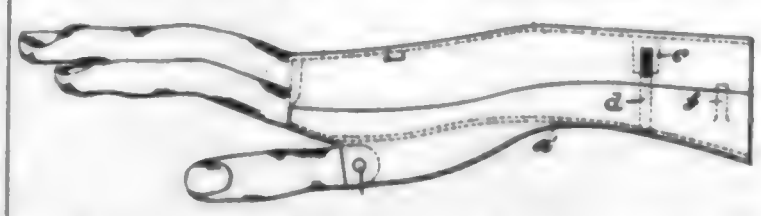
3. The combination with a plow including a beam, of an arm secured to the beam, a casing having a spring-actuated arm arranged therein for locking engagement with the first-named arm, and means for automatically disengaging the arms.

818,177. **FIREARM.** HENRY M. KOLB and CHARLES FOREL, Philadelphia, Pa. Filed Apr. 15, 1905. Serial No. 255,601.

Claim.—In a firearm, a frame having an aperture in its face and a cam leading to the outer edge of said aperture, a barrel, a cylinder, a rod supporting said cylinder, and having a portion thereof at its inner end adapted to enter said aperture whereby the inner end of said rod is supported in said frame, a lug on said barrel having a lateral aperture permitting passage of said rod and forming a semicylindrical bearing portion embracing and supporting the outer end of said rod and providing an outwardly-directed seat therefor, a counterbore formed in said lug, a head on said rod adapted to be seated longitudinally in said counterbore and adapted to prevent lateral displacement of said rod and head and a spring for automatically causing said inner end of said rod and said head to be seated in said aperture and said counterbore, respectively and permitting by a pull against the pressing of said spring, a slight movement of said rod longitudinally, whereby the rod can be moved laterally, the engagement of said aperture and said lug with said rod positively locking the same in proper position and forming a support for the inner and outer ends of said rod respectively.



818,178. **GLOVE-DISPLAY FORM.** HENRY H. LAHR and THOMAS B. SWIFT, Elizabeth, N. J. Filed Mar. 31, 1905. Serial No. 253,040.



Claim.—1. A device of the character described comprising an upper finger-section and a lower palm-section, divided in a plane parallel to the said palm-section, and means for securing the said named sections together.

2. A device of the character described comprising an upper finger-section and a lower palm-section, and means formed on said upper section and engaging said lower section for holding the said sections against displacement.

3. A device of the character described comprising an upper and a lower section, said upper section having fingers formed thereon, a movable thumb mounted in said lower section, means for holding said sections against displacement, and means for locking said sections together.

4. A glove-form comprising a finger-section and a palm-section, the said finger-section being cut away to receive the said palm-section, and means formed on said finger-section and engaging the lower palm-section for holding the sections against displacement.

5. A glove-form comprising a finger-section and a palm-section, said sections being separable along a plane substantially parallel to the palm of the hand and means for securing said sections together.

6. A hollow glove-form comprising a finger-section and a palm-section, the said finger-section provided with a centering-lug, a recess formed in the palm-section for the reception of the said lug, two lugs formed on the interior of the palm-section to engage the interior walls of the finger-section.

7. A hollow glove-form comprising a finger-section and a palm-section, said sections being separable along a plane substantially parallel to the palm of the hand, a boss provided on said finger-section, and a screw-threaded bolt passing through the palm-section and engaging said boss for locking the sections together.

8. A glove-form comprising two hollow sections, separable along a plane substantially parallel to the palm of the hand, and means for holding and securing the sections together.

818,179. **SAW-SWAGE.** SAMUEL T. LIPSEY, Georgetown, S. C. Filed May 5, 1905. Serial No. 258,825.

Claim.—1. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-

die supported by the head and extending across the slot, a rotatable anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening, to thereby support this die in operative position, and means for adjusting the said anvil-die forwardly or rearwardly with reference to said swaging-die.



2. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-die supported by the head and extending across the slot, a rotatable anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening, to thereby support this die in operative position, and means whereby the anvil-die may be raised or lowered relatively to said swaging-die.

3. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-die supported by the head and extending across the slot, a rotatable anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening, to thereby support the anvil-die forwardly or rearwardly with reference to said swaging-die, and means for truing the anvil-die with the swaging-die.

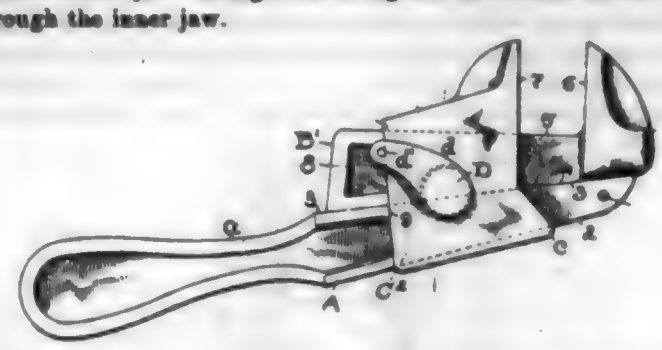
4. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-die supported by the head and extending across the slot, a rotatable polygonal anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening, to thereby support this die in operative position, and means whereby the anvil-die may be raised or lowered relatively to said swaging-die.

5. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-die supported by the head and extending across the slot, a rotatable anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening to thereby support this die in position, means whereby the anvil-die may be raised or lowered relatively to said swaging-die, and means whereby the anvil-die may be tipped forwardly or rearwardly with reference to the swaging-die, embodying a cap adjustably secured to said upper surface of the head, a plug rigid with the cap, having a recess therein, a block provided with sockets, and screws extending through the cap and entering said sockets.

6. A saw-swage comprising a head having a slot therethrough from the peripheral surface thereof and formed from its upper surface with an opening leading to the slot, a rotatable swaging-die supported by the head and extending across the slot, a rotatable anvil-die provided with a central pin projecting from the sides thereof and having its ends frictionally engaging with opposite sides of said opening to thereby support this die in operative position, means for adjusting the anvil-die forwardly or rearwardly with reference to the swaging-die, embodying a forwardly and rearwardly adjustable cap closing the upper end of the opening, a socket having a recess therein and extending within the opening, and a vertically-adjustable block supported in the recess of the socket and engaging with faces of the anvil-die.

818,180. **WRENCH.** JOHN R. LONG, Akron, Ohio. Filed Aug. 28, 1905. Serial No. 276,029.

Claim.—1. In wrenches, a wrench having two jaws and a handle-bar with a tapered outer end on which both said jaws are mounted, the outer jaw having a stem rigid therewith and extending through the inner jaw.



2. In wrenches, a wrench having a handle-bar and two jaws slidably mounted thereon, and one of said jaws provided with a tapered shank engaged in the other jaw and adapted to be moved outward beyond the outer end of said handle-bar.

3. In wrenches, a handle-bar and two jaws slidably mounted thereon, said parts constructed to increase the space between the jaws in increasing ratio in proportion as both jaws are moved outward on said bar and the outer jaw having a tapered stem engaged in the inner jaw.

4. A wrench comprising a main supporting-bar, a jaw with a tapered shank slidably mounted on said bar and another jaw slidably mounted over said shank and bar.

5. In wrenches, a main bar, an outer jaw and a shank rigid therewith tapered toward said jaw, and an inner jaw sleeved over said bar and shank and adjustably confined thereon.

6. In wrenches, a main bar having a tapered working end, a jaw with a tapered shank slidable on said bar, an inner jaw sleeved over said bar and shank, and a lock engaged through said inner jaw against both said bar and shank.

7. In wrenches, a main bar, a jaw-supporting shank slidable on said bar, a locking-jaw slidable upon said shank and bar, and a lock in the side of said jaw engaging both said jaw and shank.

8. A wrench comprising a main bar and a jaw with a shank mounted thereon, said shank constructed at its side and rear to be engaged by a finger for purposes of adjustment, and a locking-jaw sleeved over said parts and constructed to lock thereon.

9 The main bar, the outer jaw and its shank thereon, and the locking-jaw sleeved over said bar and shank and having its lower portion projecting forward of its gripping-face, thereby promoting the easy release of said locking-jaw.

10. In a wrench, a handle-bar having a tapered outer end, a jaw having a shank with a greater degree of taper than said bar, and a locking-jaw sleeved over said parts.

11. A wrench having a tapered handle-bar and a jaw-shank of greater taper than said handle-bar and a locking-jaw engaged over said parts and having a forward projection on its bottom extending in front of the face thereof.

12. A monkey-wrench having a handle-bar with a tapered end, a movable outer jaw with a tapered stem mounted to slide on said handle-bar and an inner jaw with an eye engaged over said handle-bar and stem and adapted to be tightened on both.

13. A wrench consisting of three several members, comprising a tapered handle-bar, a jaw having a tapered shank slidably mounted on said handle-bar and an inner jaw slidably mounted on said handle-bar and tapered shank.

14. The wrench consisting of a handle-bar having an outwardly-tapered end, an outer jaw having a shank tapered in the same direction as said handle-bar, and an inner jaw having an opening through the same flaring from front to rear to conform to the said tapered members and adapted to slide thereon.

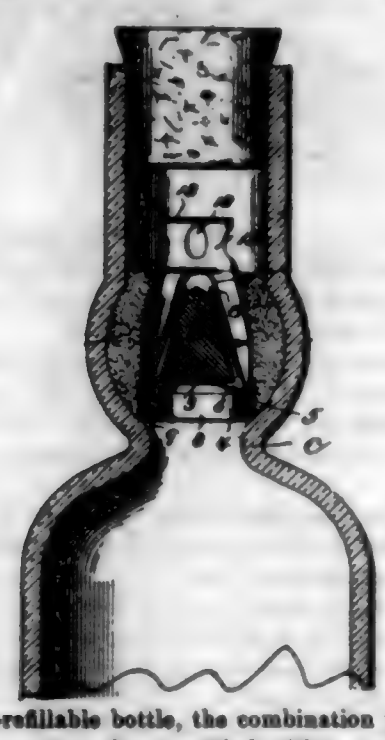
15. A wrench having a handle-bar with an outer tapered end, an outer jaw having a tapered shank resting on said tapered end and one of said parts having a rib and the other a channel at their meeting edges, and an inner jaw having a flaring front-to-rear opening engaged over said handle-bar and said shank, said handle-bar having a stop at its outer end to limit the outward movement of the said inner jaw.

16. The handle-bar having a tapered outer end and a jaw slidably engaged over said end, and an outer jaw having a tapered shank slidably engaged within said inner jaw.

818,181. **NON-REFILLABLE BOTTLE.** HARRY J. LUTS and HARRY W. FRIEDEL, Wheeling, W. Va. Filed Oct. 17, 1905. Serial No. 283,127.

Claim.—1. In a non-refillable bottle, the combination with the

bottle-neck, of the lower valve-seat member arranged to be seated in the bottle-neck and formed with a centrally-disposed opening, a valve-seat surrounding the opening and formed with an upward opening, annular recess arranged outside the valve-seat, a valve arranged to rest upon the valve-seat, and means for retaining in place and guarding the valve seated in the said annular recess, substantially as set forth.



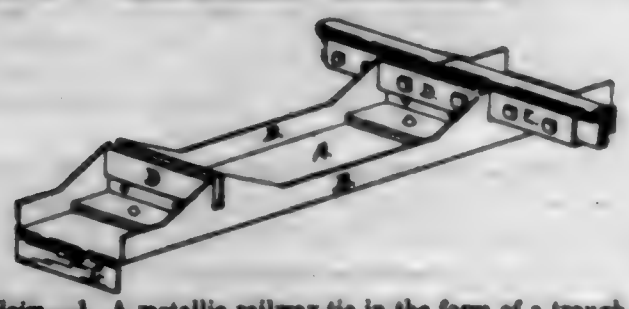
2. In a non-refillable bottle, the combination with the bottle-neck, of a valve-seat member provided with an annular recess, a weighted valve, means for retaining the said valve in position, and an inclosing member surrounding the valve and valve-retaining means and having its lower edge supported in the said annular recess, substantially as set forth.

3. In a non-refillable bottle, the combination with the neck of the bottle, of a valve-seat member provided with an annular recess, a loosely-mounted conical-shaped valve arranged to rest on the valve-seat, a hollow conical-shaped device for retaining the valve in position, and an inclosing member for the valve and valve-retaining means supported in said recess in the valve-seat member and provided with openings in its side walls, substantially as set forth.

4. In a non-refillable bottle, the combination with the bottle-neck, of a valve-seat member provided with an annular recess, a loosely-mounted conical-shaped valve arranged to rest on the valve-seat, a hollow conical-shaped device for retaining the valve in position, the lower end thereof being cylindrical and arranged to rest in the said annular recess of the valve-seat member, and an inclosing member for the said parts provided with openings or passages in its side walls, substantially as set forth.

5. In a non-refillable bottle, the combination with the bottle-neck, of an annular lower member provided with a valve-seat and having an annular recess concentric with its outer edge, a conical-shaped valve arranged to rest on the said valve-seat, a hollow conical-shaped valve-retaining member provided with slots along its sides and having its lower end of cylindrical shape and arranged to closely fit within the said annular recess in the lower number, and an outer inclosing member surrounding the said lower member, valve and valve-retaining member, its lower end being cylindrical and supported in the said annular recess and its outer end being contracted and provided with openings in its side walls, substantially as set forth.

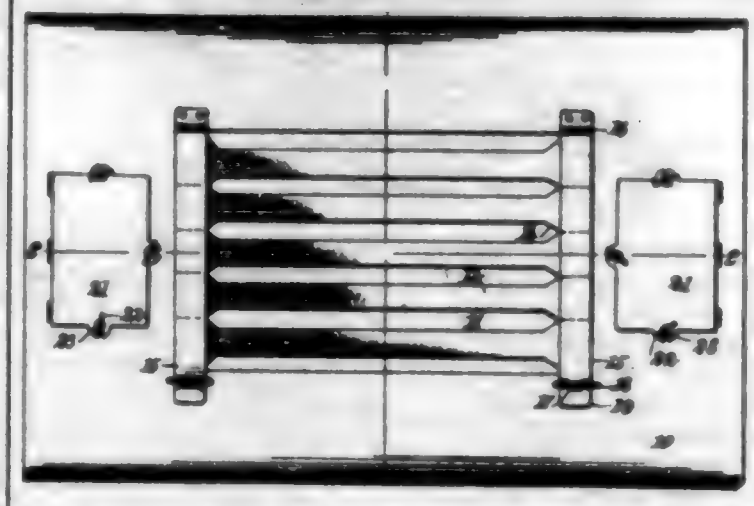
818,182. METALLIC RAILWAY-TIE. ROBERT H. LUTZ, Rotterdam, N. Y. Filed Jan. 15, 1906. Serial No. 296,054.



Claim.—1. A metallic railway-tie in the form of a trough, the bottom of the trough forming the bed-piece of the tie, a metallic chair secured to the bottom of the trough and adapted to fit between the sides of the trough forming a channel to support the rail and a metallic shim with the ends turning downward, of suitable size and length, to fit in said channel under the rail, substantially as described and for the purpose set forth.

2. A metallic railway-tie in the form of a trough forming the bed-piece of the tie, a metallic chair secured to the bottom of the trough and adapted to fit between the sides thereof forming a channel for the rail to lie in, a rail without a flange on the base adapted to fit in said channel and with vertically-oblong bolt-holes for bolting the rails in the channel and a shim adapted to fit in the channel under the rail, substantially as described.

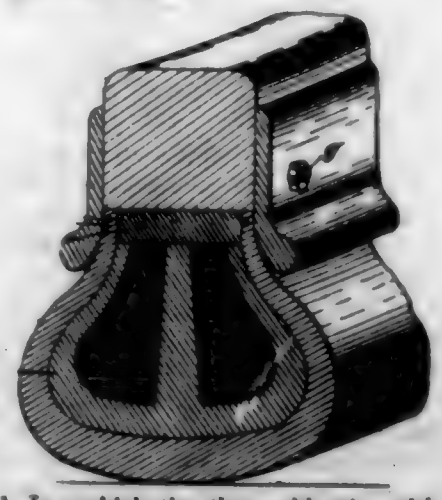
818,183. LIFE-SAVING RAFT. HARRY J. MATSON, Havre, France. Filed May 17, 1905. Serial No. 260,878.



Claim.—1. A life-raft of substantially rectangular box-like form having a central chamber opening at the top and bottom, flanges extended inward from the end walls of said chamber, slats for resting on said flanges, and securing-bars for the slats, the said bars being hinged to the raft at one end and having locking connection with the raft at the opposite end.

2. A life-raft of substantially rectangular box-like form having a central chamber opening outward at the top and bottom, removable closures for the openings consisting of slats having widened engaging ends, receptacles arranged in said raft outward of said chamber, the said receptacles opening outward at the top and bottom, and closures for the outward openings of said receptacles.

818,184. TIRE. CHARLES MILLER, Binghamton, N. Y. Filed Sept. 3, 1903. Serial No. 171,782.

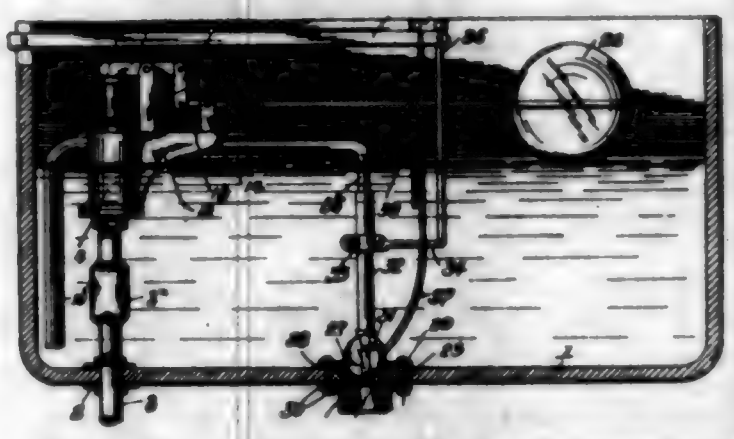


Claim.—1. In a vehicle-tire, the combination with the rim or felly of the wheel, of an annular strip extending around the periphery of the rim and of less width than the rim forming two annular shoulders at the side portions thereof, an interior cushion gradually decreasing in thickness from its outer or peripheral portion to its inner edges, and engaging at said edges the outer face of the strip and flush with the side edges thereof, a casing corresponding in shape to the interior cushion, and also gradually decreasing in thickness from its outer or peripheral portion to the extreme inner edges thereof, the inner edges of the casing projecting inward beyond the contracted inner edges of the interior cushion and engaging the side edges of said strip and contacting at the ends with the outer periphery of the rim, the contracted inner edges of said casing at the sides of the strip being provided with wires extending around the casing and embedded therein, annular clamping-plates engaging the sides of the felly or rim and extending outward beyond the shoulders formed by

the side edges of the said strips, and means for holding the clamping-plates in place to cause the wired inner edges of the casing to be gripped between the clamping-plates and the side edges of said strips.

2. In a vehicle-tire, the combination with the rim or felly of the wheel, of a strip extending around the periphery of the rim, and of less width than the rim forming an annular shoulder extending around each side of the rim or felly, a casing decreasing in thickness from its outer or peripheral position to its extreme inner edges, the said contracted edges being placed against said shoulders, annular wires embedded in the inner contracted edges of the casing at points opposite the said shoulders on the rim, annular clamping-plates lying against the sides of the felly or rim and extending to points opposite said annular shoulders, the edges of said clamping-plates being enlarged and flared outwardly, and means for holding the clamping-plates in place, to cause the wired inner edges of the casing to be forcibly gripped between the clamping-plates and the said shoulders.

818,185. **FLUSHING APPARATUS.** JOHN W. MIFTON, Washington, Pa. Filed July 3, 1905. Serial No. 268,133.



Claim.—1. In a flushing apparatus, the combination with a tank having an inlet and outlet port, of a float-actuated valve controlling said inlet, said valve consisting of a casing having a discharge-pipe, a detachable vitreous valve-seat mounted within said casing, a valve operating in said casing, a globular vitreous valve controlling said outlet-port, means to elevate said valve, means to partially rotate and retain said valve in an elevated position, and means actuated by the first-named valve to release said valve, substantially as described.

2. In a flushing apparatus, the combination with a tank having an inlet and an outlet, of a float-actuated valve controlling said inlet, a globular vitreous valve controlling said outlet and elevated by the operation of a lever, means mounted adjacent to said outlet to partially rotate said valve when elevated, means to temporarily retain said valve in an elevated position, and means actuated by the first-named valve to release said valve, substantially as described.

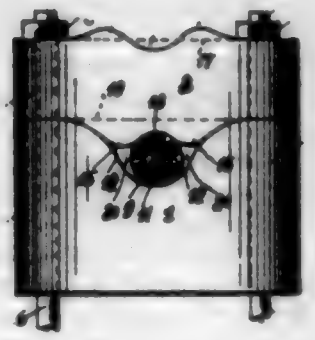
3. In a flushing apparatus, the combination with a tank having inlet and outlet ports formed therein, of a float-actuated valve controlling said inlet-port, said valve consisting of a casing having a ball-valve operating therein, a vitreous valve-seat mounted in said casing, a globular vitreous float adapted to actuate said valve, a globular vitreous float controlling said outlet-port, a bushing mounted in said outlet-port, a refill-pipe carried by said bushing and said casing upon which said vitreous valve operates, means to elevate said valve, means to partially rotate and temporarily retain said valve in an elevated position, and means actuated by said float to release said valve, substantially as described.

4. In a flushing apparatus, the combination with a tank having inlet and outlet ports formed therein, of a float-actuated valve controlling said inlet, said valve consisting of a casing, a ball-valve mounted in said casing and actuated by said float, a globular vitreous valve controlling said outlet-port, means to elevate said valve, means to partially rotate said valve when ascending and descending, said means being adapted to temporarily hold said valve in an elevated position, and means to release said valve, substantially as described.

818,186. **INSULATING-CLEAT.** HENRY D. MURDOCK, Wilkinsburg, Pa. Filed July 17, 1905. Serial No. 269,955.

Claim.—1. An insulating-block of the character described consisting of two members, one of said members having a groove formed therein, protuberances carried by the upper and lower faces of the other of said members, said member having grooves formed therein between said protuberances, and means to secure said members together, substantially as described.

2. An insulating-block of the character described consisting of two members, one of said members having a groove formed therein, protuberances carried by the other of said members to fit in the groove of the first-mentioned member, said last-named member having a groove formed therein between said protuberances, substantially as described.



3. An insulating-block consisting of two members one of said members having a groove formed therein, protuberances carried by the other of said members and adapted to fit within said groove, substantially as described.

4. An insulating-block comprising two members adapted to match together, and one of which members has a cable-receiving groove in its matching face, the other of said members having two matching faces, and having protuberances on both of its faces to fit in the groove of the first-mentioned member, substantially as described.

5. An insulating-block comprising two members, one of which is provided centrally of its matching face with a transverse groove, the other of said members having two matching faces to match with the first-mentioned member, and having a transverse groove in each matching face, and having protuberances on each matching face at the sides of the grooves.

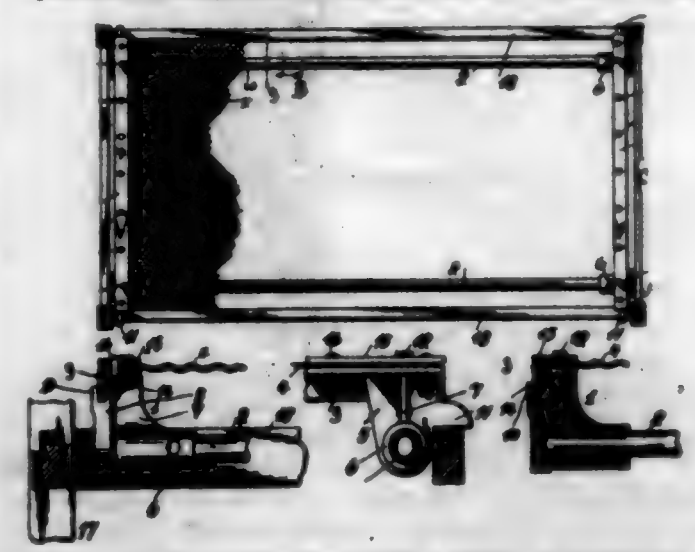
6. In an insulating-block, a reversible member, having both of its faces adapted to match with another member, and having a centrally-arranged transverse groove in each of its faces, the said grooves being of different depths, protuberances on both of said faces at the outer sides of the grooves, in combination with a second member having a groove in its matching faces to receive said protuberances.

7. An insulating-block comprising two members adapted to match together, one of which has a transversely-extending groove on its matching face, and the other of which is adapted to have either of its faces match with the first-mentioned member, and is provided with a groove and a protuberance on each face, the grooves on one face being of a depth less than the grooves on the other face, and the protuberances adapted to engage in the transversely-extending groove in the first-mentioned member, substantially as described.

8. An insulating-block comprising a member adapted to receive a cable, and having a weakened portion adapted to be broken away to form an opening therethrough.

9. In an insulating-block, two members adapted to be matched together, and each provided with a cable-receiving groove, one of said members constructed with a weakened portion adapted to be broken away to form an opening therethrough, as and for the purpose described.

818,187. **BED-SPRING FASTENER.** ROBERT NAYSMITH, Pittsburg, Pa., assignor to Pittsburg Tube Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 27, 1905. Serial No. 280,380.



Claim.—1. The combination with a fabric, of angle-bars secured to the ends of said fabric, castings, each casting consisting of a

plate, a tubular extension carried by said plate and having an oval bore, oval tubing adapted to connect some of said castings together, angular extensions carried by said castings and adapted to support said fabric and angle-bars upon a bed-frame, the plates of said castings being cut away at their rear sides and provided with a transversely-disposed slot at the bottom of the cut-away portion to receive the edge of the angle-bar, upwardly-extending pins carried by said plates, said bars having openings formed therein and adapted to receive said pins when mounted upon said castings, substantially as described.

2. In a bed-spring, the combination with a woven-wire fabric, of angle-bars secured to the ends of said fabric, strips of metal arranged over the ends of the fabric and riveted to the angle-bars, vertical plates having their rear portion cut away and formed with slots at the bottom of the cut-away portion to receive the lower edges of the angle-bars, said plates having each a pin on its upper edge adapted to pass through a hole in the angle-bar, and a registering hole in the strip carried by the angle-bar and side rails connecting said castings, substantially as described.

3. In a bed-spring, the combination with corner-castings, each consisting of a plate having an integral tubular extension and a rib extending from the tubular extension to the top edge of the plate, said plate being cut away on its rear side and formed with a transverse slot at the base of the cut-away portion, and said plate being provided with a pin on its upper edge and a lug at one side; of the angle-bars adapted to rest on said plates, with one edge in the slot at the rear side of the same, the said pins on the plates passing through holes in the said angle-bars, a fabric having its edge attached to the angle-bars and strips riveted to the angle-bars on top of said fabric.

4. A corner-casting for bed-springs comprising a flat plate having a laterally-extending lug, said plate being cut away on one side and provided with a transversely-disposed slot at the bottom of the cut-away portion, a vertically-disposed rib carried by said plate centrally thereof, a pin carried by the upper end of said rib, and a tubular extension of oval contour carried by the lower end of the plate below said rib.

818,188. ART OF MINING. ALBERT G. PARKER, Platte Center, Nebr., assignor of one-half to Christian M. Gruenther, Platte Center, Nebr. Filed Feb. 2, 1905. Serial No. 243,849.



Claim.—1. A mining-siphon comprising a head having inlet and outlet openings, a flexible inlet-pipe connected with the inlet-opening, and an outlet-pipe leading from the outlet-opening.

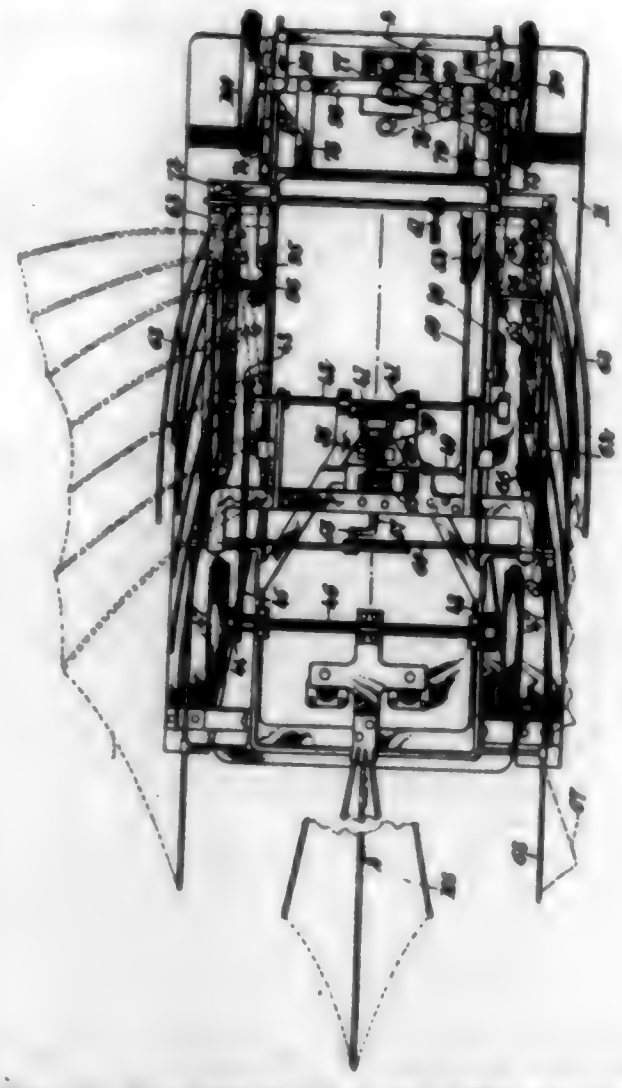
2. A mining-siphon comprising a head having inlet and outlet openings, a plurality of flexible inlet-pipes connected with the inlet-opening, and an outlet-pipe leading from the outlet-opening.

3. A mining-siphon comprising a head having inlet and outlet openings, a plurality of flexible inlet-pipes connected with the inlet-opening, a valve associated with the inlet-pipe, and an outlet-pipe leading from the outlet-opening.

4. A mining-siphon comprising a head having an inlet-opening, an outlet-opening and a priming-opening, a valve in the priming-opening, a flexible inlet-pipe connected with the inlet-opening, an outlet-pipe leading from the outlet-opening, and a valve near the lower extremity of the outlet-pipe.

5. A mining-siphon comprising a head having an inlet-opening, an outlet-opening and a priming-opening, a chamber connected with the priming-opening and a valve upon each side of the chamber, a flexible inlet-pipe connected with the inlet-opening, an outlet-pipe leading from the outlet-opening, and a valve near the lower extremity of the outlet-pipe.

818,189. THEATRICAL DEVICE. HARRY M. PETTIT, New York, N. Y. Filed Feb. 27, 1905. Serial No. 247,515.



Claim.—1. The combination of an automobile, wings thereon, means for spreading the wings, and means for vibrating them.

2. The combination of a self-propelled vehicle, longitudinally-placed wings pivotally mounted thereon, means for spreading the wings, and means for vibrating them about their pivots.

3. The combination of a vehicle, a set of wings thereon, and means for moving the wings from a longitudinal to an inclined position and simultaneously spreading them.

4. The combination of a vehicle, a set of wings thereon, means for moving the wings from a longitudinal to an inclined position and simultaneously spreading them, and means for thereafter vibrating the wings.

5. The combination of a vehicle, a set of longitudinally-placed wings pivotally mounted thereon, a second set of wings pivoted to the vehicle, means for moving the second set of wings from a horizontal to an inclined position, and means for spreading both sets of wings.

6. The combination of a vehicle, a set of longitudinally-placed wings pivotally mounted thereon, a second set of wings pivoted to the vehicle, means for moving the second set of wings from a horizontal to an inclined position, means for spreading both sets of wings, and means for simultaneously vibrating both sets of wings.

7. The combination of a vehicle, a frame longitudinally pivoted thereto, a series of ribs pivoted to said frame, means for spreading the ribs, and means for vibrating the frame.

8. The combination of a vehicle, a frame longitudinally pivoted

thereto, a series of ribs pivoted to said frame, means for spreading the ribs, and means for vibrating the frame; said means for spreading the ribs comprising a bar pivotally connected with each rib and reciprocable along the frame.

9. The combination of a vehicle, an arm pivoted thereto and adapted to assume a longitudinal position with respect to the vehicle, a series of ribs on the arm, and means for swinging the arm on its pivot and simultaneously moving the ribs.

10. The combination of a vehicle, an arm pivoted thereto and adapted to assume a longitudinal position with respect to the vehicle, a series of ribs on the arm, and means for swinging the arm on its pivot and simultaneously moving the ribs; said means comprising a slide on the arm connected with each rib, a movable frame, and means connecting the frame and sides for moving them with respect to the arm when the arm is swung upon its pivot.

11. The combination of a vehicle, an arm pivoted thereto and adapted to assume a longitudinal position with respect to the vehicle, a series of ribs on the arm, and means for swinging the arm on its pivot and simultaneously moving the ribs; said means comprising a slide on the arm connected with each rib, a movable frame, means connecting the frame and slides for moving them with respect to the arm when the arm is swung upon its pivot, a bracket fixed to the arm adjacent to each slide, and a link pivotally connected with each bracket and rib.

12. The combination of a vehicle, an arm pivoted thereto and adapted to assume a longitudinal position with respect to the vehicle, a series of ribs on the arm, means for swinging the arm on its pivot and simultaneously moving the ribs, and means for permitting the arm to receive a pivotal motion about an axis at an angle to that about which its main pivotal motion is made.

13. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings.

14. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings; said means comprising a pivoted frame upon which the side wing is mounted, a pivoted arm upon which the front wing is mounted, connections between said frame and arm, and means for oscillating the frame about its pivot.

15. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings; said means comprising a pivoted frame upon which the side wing is mounted, a pivoted arm upon which the front wing is mounted, connections between said frame and arm, and means for oscillating the frame about its pivot; said last-named means comprising a lever rigidly mounted with respect to said frame and having an elongated slot, a rotatable shaft having a crank entering said slot, and means for rotating the shaft.

16. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings; said means comprising a pivoted lever having an elongated slot, a shaft having a crank entering said slot, a motor for rotating said shaft, and a clutch between the motor and shaft.

17. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings; said means comprising a pivoted lever having an elongated slot, a shaft having a crank entering said slot, a motor for rotating said shaft, a clutch between the motor and shaft, means connected with said motor for propelling the vehicle, and a second clutch for engaging and disengaging said means with respect to the motor.

18. The combination of a vehicle with a side wing, a front wing, and means for simultaneously vibrating both of said wings; said means comprising a pivoted lever having an elongated slot, a shaft having a crank entering said slot, a motor for rotating said shaft, a clutch between the motor and shaft, means connected with said motor for propelling the vehicle, a second clutch for engaging and disengaging said means with respect to the motor, a lever connected with said clutches for operating them, a link connected with said lever, an operating-lever connected with said link, and a spring for normally holding said operating-lever in neutral position.

19. The combination of a vehicle with a side wing, a front wing, means for simultaneously vibrating both of said wings; said means comprising a pivoted lever having an elongated slot, a shaft having a crank entering said slot, a motor for rotating said shaft, a clutch between the motor and shaft, means connected with said motor for propelling the vehicle, and a second clutch for engaging and disengaging said means with respect to the motor; a blower mounted on the vehicle, a battery for operating the motor and the blower, and means for connecting either the blower or motor with the battery.

20. A vehicle comprising a frame, a motor mounted thereon, connections from the motor for propelling the vehicle, a blower on the frame, means for driving the blower and motor, a pair of tubes connected with the outlet of said blower, and a discharge-outlet for each tube directed toward the center of the vehicle.

21. A vehicle comprising a frame having a roof and uprights connected therewith, a blower mounted on the frame, and tubes connected with the blower and with the uprights and having outlets located under the roof.

22. A vehicle comprising a frame, a motor mounted thereon, connections from the motor for propelling the vehicle, a blower on the frame, means for driving the blower and motor, a pair of tubes connected with the outlet of said blower, a discharge-outlet for each tube directed toward the center of the vehicle, wings mounted upon the frame, and means for operating the wings.

23. A vehicle comprising a frame having a roof, trolley-wheels rotatably mounted thereabove from which the vehicle may be suspended, uprights connecting the roof with the body of the vehicle, and means upon the vehicle for propelling it along a track or the like below it.

24. The combination with a vehicle having overhead trolley-wheels, of a track located above the vehicle and adapted to support it, and a guide located adjacent to the track for causing the wheels to engage the track.

25. The combination with a vehicle having overhead trolley-wheels, of a track located above the vehicle and adapted to support it, and a guide located adjacent to the track for causing the wheels to engage the track; said track being pivoted at one end and movably mounted at the other.

26. The combination of a winged vehicle and a trolley-rail from which it may be suspended, and means for bodily lowering the rail with the vehicle suspended therefrom.

27. The combination of a winged vehicle, with a trolley-rail for supporting the vehicle, means for pivotally supporting the trolley-rail at one end, means for movably supporting it at the other, trolley-wheels on the vehicle, and a guide near the pivoted end of the rail for directing the wheels to the rail.

28. The combination of a stationary track, a movable trolley-rail suspended with one end thereabove, a second stationary track located at a distance from the first and at a different elevation, and a vehicle adapted to be supported by said tracks suspended from said rail and moved upon said rail from one track to the other.

29. The combination of a stationary track, a trolley-rail having one end pivoted at a stationary point thereabove, a second stationary track, means for moving the other end of said rail, and a vehicle adapted to run on and above said tracks and to be transferred from one stationary track to the other by said rail.

30. The combination of a stationary track, a trolley-rail having one end pivoted thereabove, a second stationary track located in a lower plane than the first track, means for moving the other end of said rail, a vehicle adapted to be transferred from the first stationary track to the other by said rail, and vertically-movable scenery located between said stationary tracks.

31. The combination with two stationary tracks at different elevations, of a vehicle, movable means for moving the vehicle from the higher track to the lower one, and vertically-movable scenery located between the tracks.

32. The combination with two stationary tracks at different elevations, of a vehicle, and movable means for moving the vehicle from the higher track to the lower one, said means comprising a trolley-rail having two portions at an angle to each other.

33. The combination with a road-bed, of a vehicle adapted to run on the road-bed, and means for moving the vehicle from the road-bed, suspending it in the air out of contact with the road-bed, and depositing it on the road-bed in a different position, said means comprising a movable trolley-rail.

34. A theatrical appliance, comprising a vehicle having a pivoted body and means for swinging the body, comprising a bell-crank on the body and a link pivotally connected with the body and with the stationary part of the vehicle.

35. A theatrical appliance comprising a vehicle having a body pivoted on a horizontal axis, and manually-operable means for swinging said body in a vertical plane.

36. A theatrical appliance comprising a vehicle having a pivoted body, resilient means for supporting said body in horizontal position, and means for swinging the body out of horizontal position.

37. A theatrical appliance comprising a vehicle having a pivoted body, resilient means for supporting said body in horizontal position, and means for swinging the body out of horizontal position; said last-named means comprising a bell-crank on the body, and a

link pivotally connected with the body and with a stationary part of the vehicle.

38. A roller-coasting or similar device comprising a plurality of tracks separated by a gap and having their adjacent ends in longitudinal alinement, a second track in a single and approximately horizontal plane and extending above and in line with said first-named tracks, and a car having a plurality of wheels below its body for engaging with said first-named tracks and a plurality of supports extending above its body, each of said supports carrying a wheel for engaging said last-named tracks.

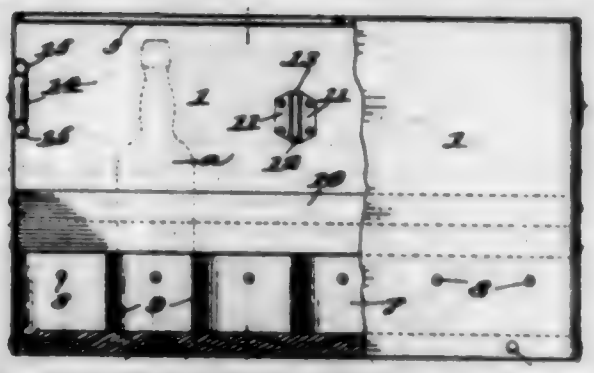
39. A roller-coasting or similar device comprising a plurality of tracks separated by a gap and having their adjacent ends in longitudinal alinement, a second track extending above and in line with said first-named tracks, and a car having a plurality of wheels below its body for engaging with said first-named tracks and a plurality of supports rigidly secured to and extending above its body, each of said supports carrying a wheel for engaging said last-named tracks.

40. A roller-coasting or similar device comprising a plurality of tracks separated by a gap and having their adjacent ends in longitudinal alinement, the end of the track leading from the starting-point of the car being in a different horizontal plane than the adjacent end of the track leading to the destination of the car, a second track above and in line with said first-named tracks and forming a bridge for the gap between said tracks, and a car having a plurality of wheels below its body for engaging with said first-named tracks and a plurality of supports extending above its body and carrying wheels for engaging said last-named tracks.

41. A roller-coasting or similar device comprising a plurality of lower tracks separated by a gap, and a second overhead track bridging said gap, in combination with a car having a plurality of wheels below its body for engaging with said first-named tracks, and a plurality of supports extending above its body, each of said supports carrying a wheel for engaging said overhead tracks.

818,190. COMPARTMENT-BOX FOR BOTTLES OR THE LIKE.

HYMAN PHILLIPS, Cincinnati, Ohio. Filed Dec. 30, 1904. Serial No. 239,057.



Claim.—1. In a device of the character described, the combination of a body portion formed from sheet metal with side and end walls, a wooden bottom extended across said body portion, attaching devices carried by the body portion and detachably engaged with the wooden bottom and braces extended across the interior of the body portion and formed from strips of metal bent in rectangular hollow form and having at their ends flanges attached to the opposite walls of the body portion.

2. A device of the character described comprising a sheet-metal body portion having side and end walls and a hollow, rectangular cross-sectioned partition-strip formed from sheet metal and extended across the body portion and having lateral ears or flanges at its opposite ends attached to opposite walls of the body portion.

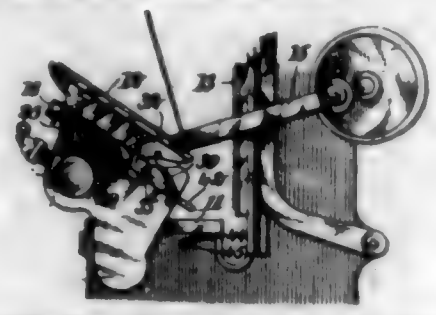
3. A device of the character described comprising a metal body portion having side and end walls, a wooden bottom inserted in and carried by said body portion and a brace extended across the interior of the body portion with ends attached to opposite walls thereof, said brace being formed from sheet metal bent in rectangular hollow cross-sectional form.

818,191. REGISTERING DEVICE FOR PRESSES.

WILLIAM J. RAMBAUM, New York, N. Y. Filed Apr. 13, 1905. Serial No. 255,379.

Claim.—1. In a printing-press, the combination of a rocking bridge, a platen thereon, means for holding a form, means for adjusting the bridge toward and from the form, a registering device on the bridge, a stud, and means connected with the registering device and adapted to engage the stud for operating the registering device.

2. In a printing-press, the combination of a rocking bridge, a platen thereon, means for holding a form, means for adjusting the bridge toward and from the form, a registering device, a stud, and means connected with the registering device and adapted to engage the stud for operating the registering device; the said stud being so located as to engage said operating means when the platen is so adjusted as to receive an impression from the form, but to miss it when the platen is so adjusted as to avoid receiving an impression upon the rocking of the bridge to the end of its stroke.



3. The combination with a printing-press having a stud and a rocking bridge, of a registering device mounted on the bridge, and operating mechanism for the registering device located in a position to engage the stud when the bridge is rocked.

4. The combination with a printing-press having a stud and a rocking bridge, of a registering device mounted on the bridge, and operating mechanism for the registering device located in a position to engage the stud when the bridge is rocked, said stud being mounted on a stationary part of the machine.

5. The combination with a printing-press having a stud and a rocking bridge, of a registering device mounted on the bridge, and a movable arm on the bridge connected with the registering device for operating it, and adapted to engage the stud when the bridge is rocked.

6. The combination with a printing-press having a rocking bridge, of a registering device mounted on the bridge, and operating mechanism for the registering device located in a position to engage a stationary part of the press when the bridge is rocked.

7. The combination with a printing-press having a rocking bridge, of a registering device on the bridge, and means for operating the registering device when the bridge is rocked.

8. The combination with a printing-press having a rocking bridge, of a registering device on the bridge, means for operating the registering device when the bridge is rocked, and means for adjusting said operating means.

9. The combination with a printing-press having a rocking bridge, of a registering device, and means for operating said device only when the rocking bridge is moved to a position to cause an impression to be made.

10. The combination of a movable platen, a registering device, a stationary stud, and means connected with the registering device for engaging the stud during the motion of the platen.

11. A registering attachment comprising a movably-mounted registering device, a lever connected therewith, and means for moving the lever relatively to said registering device when the latter reaches a certain position.

12. A registering attachment comprising a movably-mounted registering device, a lever connected therewith, and means for moving the lever relatively to said registering device when the latter reaches a certain position; said means comprising a movable element connected with the lever and a stationary stud.

13. A registering attachment comprising a movably-mounted bracket, two levers pivotally mounted upon the bracket and connected together, means for engaging the arm of one of the levers for operating it, and connections from the other lever to a registering device proper.

14. A registering attachment comprising a pivoted lever having a long arm, a short arm and a surface on its short arm for engaging an operating device, a second pivoted lever, adjustable means for connecting the long arm of the first lever with the short arm of the second, and adjustable means for connecting the long arm of the second lever with a registering device.

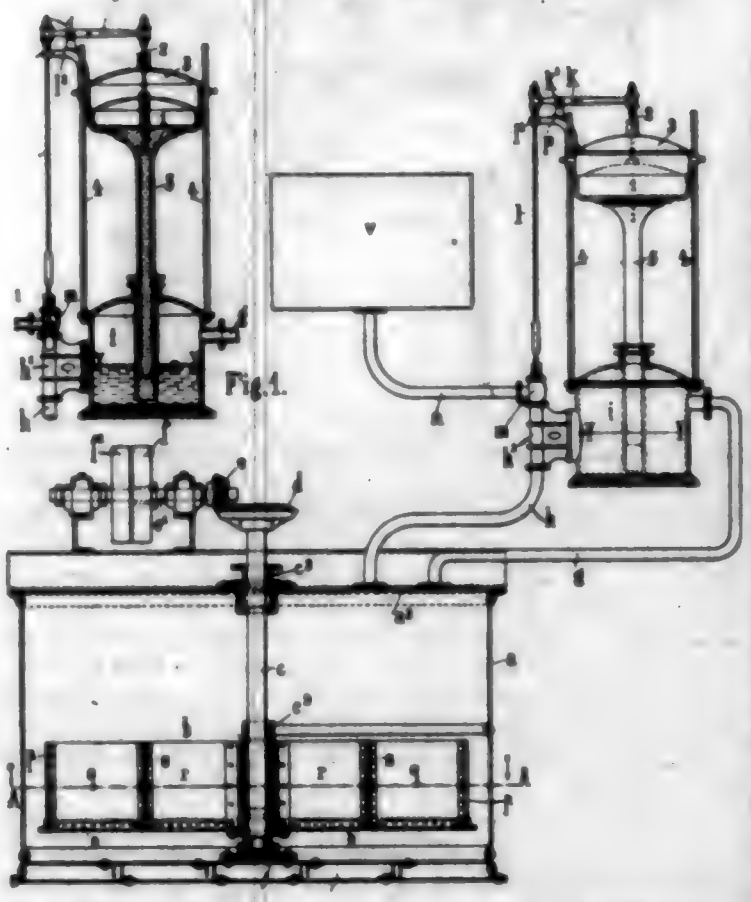
15. A registering attachment comprising a pivoted lever having a surface on its short arm for engaging an operating device, a second pivoted lever, adjustable means for connecting the long arm of the first lever with the short arm of the second, and means for connecting the long arm of the second lever with a registering device; said first-mentioned adjustable means comprising a screw-threaded rod passing through the long arm of the first-mentioned lever, and a pair of nuts on said rod and adapted to engage the opposite sides of said last-mentioned long arm.

16. The combination with a registering device, of a lever, means for operating it, a rod adjustably connected with one arm of the lever, and a universal joint connected with said rod and adapted to transmit motion therefrom to a registering device.

17. A registering device comprising a lever, a block pivotally connected therewith, a yoke pivotally connected with the block, a second block pivotally connected with the yoke, and means for pivotally connecting the second block with the registering device proper.

18. An attachment for a machine comprising a block, a yoke having a pair of arms pivotally connected with said block and a second pair of arms located at right angles to the first pair of arms, a second block pivotally connected with the last-mentioned pair of arms, and means for pivotally connecting each block on a line at right angles to its pivotal connection with the yoke with devices for transmitting motion.

818,192. **PROCESS OF MANUFACTURING CAUSTIC ALKALIES AND ZINC SULFID.** CHARLES RANSON, Brussels, Belgium, assignor to Henry William De Steckle, Dieuze, Germany. Filed Oct. 3, 1904. Serial No. 227,675.



Claim.—1. The process of manufacturing alkali hydrates, which consists in treating zinc in the presence of alkali hydrate with alkali sulfid.

2. The process of manufacturing alkali hydrates, which consists in heating zinc in excess in the presence of alkali hydrates with alkali sulfid.

3. The process of manufacturing alkali hydrates, consisting in heating zinc in the presence of alkali hydrates with alkali sulfid, which is added in a quantity no greater than necessary for transforming zinc-alkali oxid into zinc sulfid and caustic alkali.

4. The process of manufacturing alkali hydrates, consisting in treating zinc in excess in the presence of alkali hydrates with alkali sulfid, the alkali sulfid being added in a quantity no greater than necessary for transforming zinc-sodium oxid into zinc sulfid and caustic alkali.

5. The process of manufacturing alkali hydrates, which consists in treating zinc in the presence of alkali hydrate with alkali sulfid and keeping the precipitate in suspension.

6. The process of manufacturing alkali hydrates, which consists in heating zinc in excess in the presence of alkali hydrate with alkali sulfid and keeping the precipitate in suspension.

7. The process of manufacturing alkali hydrates, which consists in heating zinc in the presence of alkali hydrates with alkali sulfid, which is added in a quantity no greater than necessary for transforming zinc-alkali oxid into zinc sulfid and caustic alkali and keeping the precipitate in suspension.

8. The process of manufacturing alkali hydrates, which consists in treating zinc in excess in the presence of alkali hydrates with alkali sulfid, which is added in a quantity no greater than necessary for transforming zinc alkali into zinc sulfid and caustic alkali and keeping the precipitate in suspension.

818,193. **HARNESS SNAP-HOOK DEVICE.** JOHN RHODERT, Racine, Wis. Filed Feb. 28, 1905. Serial No. 247,897.



Claim.—1. A combined snap and breast-strap slide consisting in the combination of a breast-strap-receiving slide or saddle, and a freely-swinging snap-hook at its upper end pivotally joined thereto, said hook comprising a transverse bar arranged a considerable distance below said slide, a hook-bill and a spring-actuated swinging tongue for and normally closing said hook-bill, said bill forming a guard for said tongue against engagement thereof with the saddle or a breast-strap thereon, said hook-bill, tongue and slide being relatively arranged to hold a breast-strap and said slide from the path of movement of said tongue during the swinging movements of said hook, for the purposes described.

2. In combination, a breast-strap-receiving slide or saddle consisting solely of the curved imperforate spreader and slide-plate having upwardly-diverging portions terminating in the top transverse edges and having the depending side arms, said slide being entirely open and disconnected at the outer sides of and below said plate, and a freely-swinging hook comprising a cross-head between and loosely joined to said arms, a hook-bill, and a swinging spring-actuated tongue for said bill, said tongue being approximately straight, said bill forming a guard or stop for said tongue and against opening engagement between said tongue and said slide or a breast-strap thereon, as and for the purposes described.

3. A combined snap and breast-strap slide comprising, in combination, a breast-strap-receiving saddle, and a freely-swinging snap-hook at its upper end having a transverse head pivotally joined to the saddle, said hook comprising said head arranged a considerable distance below said saddle, a hook-bill and an approximately straight tongue, said snap-hook being so pivoted to the saddle that when the bill of the hook strikes the breast-strap no portion of the strap on the saddle will intersect the plane passed through the hook-bill and the pivotal line between the snap-hook and the saddle, whereby said bill forms a guard for said tongue.

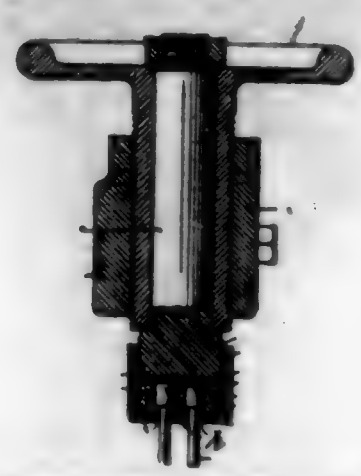
4. A combined snap and slide comprising a saddle consisting of a curved plate terminating in upwardly-extending ends and having side walls, and a freely-swinging snap-hook having a transverse portion pivotally joined to said side walls, said hook having a yieldingly-held tongue and a guard for said tongue consisting of the hook-bill arranged with respect to the tongue and saddle to prevent opening engagement between said tongue and any portion of a harness connection passing under said saddle-plate, said saddle being open and unobstructed opposite said plate ends, whereby said plate rests freely and loosely on said connection and is free to rock and move vertically and independently thereof the distance between said plate and said snap-hook transverse portion, substantially as described.

818,194. **PUNCH-HOLDER FOR TABLET-MACHINES.** EMANUEL L. RICHARDS, New London, Conn. Filed Dec. 6, 1905. Serial No. 290,511.

Claim.—1. In a punch-holder for tablet-machines, a plunger, means having openings adapted to receive punches, means for connecting said receiving means to said plunger, and means engaging said receiving means for holding said punches in position in the openings thereof and for forcing the same against said plunger.

2. In a punch-holder for tablet-machines, a plunger, means pro-

vided with openings adapted to receive punches, means for connecting said receiving means to said plunger, and means engaging said receiving means for holding said punches in position therein and for forcing the same against said plunger, said engaging means, receiving means and plunger coöperating to prevent side movements of the punches.



3. In a punch-holder for tablet-machines, a plunger, a disk having openings, certain portions of the walls thereof being threaded, punches having heads engaging the unthreaded portions of the openings, lock-nuts for engaging the threaded portions of the openings of said disk and for holding the punches in position therein by forcing the same against said plunger, said lock-nuts arranged when removed, from said disk to permit of the disconnection and reinsertion of the punches from and into said disk, and a cap engaging said disk and connecting the same with said plunger.

4. In a punch-holder for tablet-machines, a plunger having a cap removably secured thereto, a disk mounted in said cap and extending therethrough having openings for the reception of punches, a second disk forming a bearing-plate for the punches and for holding the same in positon in said first disk by closing the openings at their upper ends, and lock-nuts arranged in the openings of said first disk for locking the punches thereto and for forcing the same against said second disk.

5. In a punch-holder for tablet-machines, a plunger having an externally-threaded portion, a cap removably secured thereto, a disk and plate arranged in said cap and held by the same in engagement with each other and end of said plunger, said disk having openings to receive punches and permit the same to bear against said plate, and lock-nuts inserted in said openings for removably holding the punches in said plate and permitting of disconnection and reinsertion without disengaging the cap from said plunger.

818,193. DEVICE FOR DRESSING SAWS. THOMAS W. ROACH, Lyman, Wash. Filed Feb. 15, 1905. Serial No. 245,736.

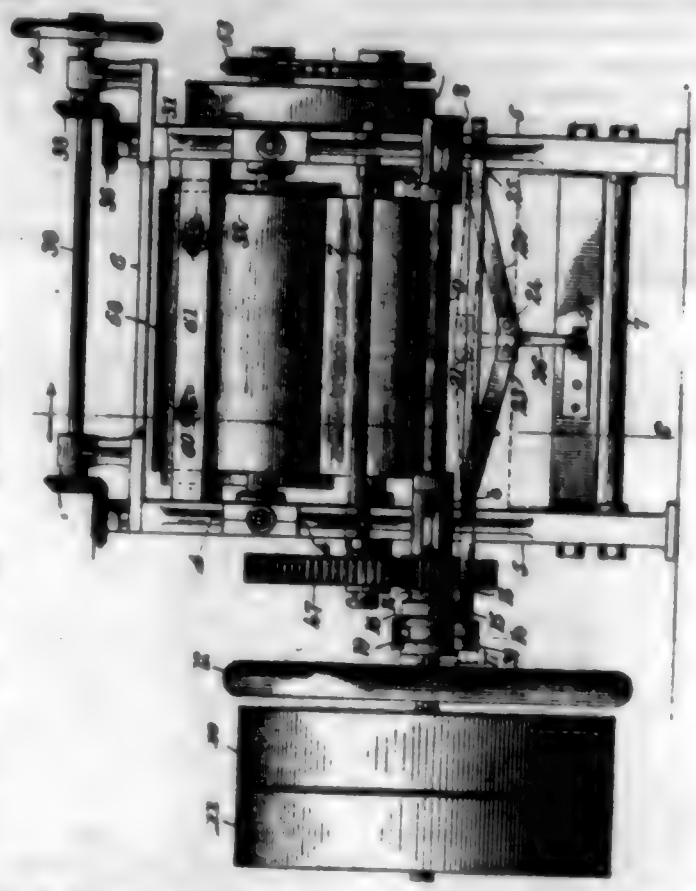


Claim.—1. A saw-gaging device comprising a body having an overhanging shelf broken by an opening therein, a slide mounted on the body and having a table adapted to lie in said opening for the purpose specified, means for mounting and holding the slide, and relatively soft-metal sheaths removably fitted on the shelf respectively at the side of the opening therein.

2. A saw-gaging device having a body with a ledge at right angles thereto adapted to lie opposite the teeth of the saw, and a removable sheath of soft metal embracing said ledge and adapted to engage the saw.

818,196. DOUGH-BREAKER. LUCIUS A. ROCKWELL and JOHN J. LINDEN, New York, N. Y.; said Linden assignor to said Rockwell. Filed Dec. 8, 1905. Serial No. 290,957.

Claim.—1. A dough-breaker comprising a frame, a plurality of breaking-rollers in the frame and having gear connections one with another, a main driving-shaft, a pinion loosely mounted on said driving-shaft, a gear-wheel on the shaft of one of the rollers and meshing with said pinion, a clutch member carried by the pinion, a clutch member slidable on the shaft but rotating therewith, a shifting rod for the last-named clutch member, and a treadle for operating said rod.



2. A dough-breaker comprising a frame, a plurality of breaking-rollers mounted in the frame, gear connections between the rollers, a driving-shaft, a pinion loosely mounted on said shaft, a gear-wheel on the shaft of one of the rollers and meshing with said pinion, a clutch member carried by the pinion, a companion clutch member slidable on the shaft but rotating therewith, the said companion clutch member having an annular channel, a collar having an interior rib for engaging in said channel, a sliding bar to which the collar is attached, a treadle, a link having connection with a part extended upward from the treadle and also having pivotal connection with a fixed part of the machine-frame, and another link having connection with a sliding rod and also with said upwardly-extended part from the treadle.

3. A dough-breaker comprising a frame, a lower roller mounted in the frame, an upper roller mounted in the frame, vertically-adjustable bearing-blocks for said upper roller, a rear roller, spring-yielding bearing-blocks for said rear roller, gear connections between the several rollers, a curved guide-plate between the lower and rear rollers, a scraper, a curved plate coacting with the rear roller, and a scraper coacting with the upper roller.

4. In a dough-breaker, a frame, a lower roller mounted in the frame, an upper roller in the frame, a rear roller in the frame, spring yielding bearings for the rear roller, gear-wheels on the shafts of the upper and lower rollers meshing one with another, sprocket-wheels on the shafts of the lower and rear rollers, and a sprocket-chain for engaging with said sprocket-wheels.

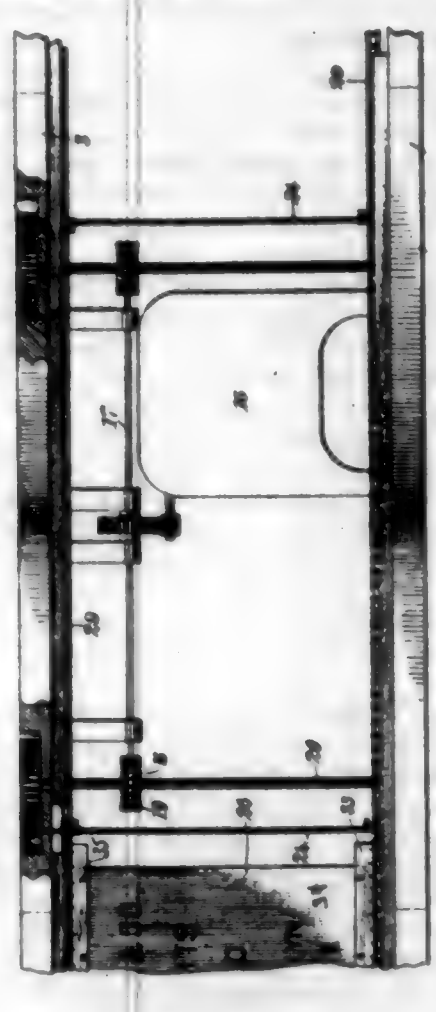
818,197. ADVERTISING DEVICE. HERCULES A. DE RUDIO, Los Angeles, Cal. Filed May 10, 1905. Serial No. 259,795.

Claim.—1. In a device of the class described in combination, a guide presenting a groove with a contracted opening, a chain adapted to move in said groove and having a transverse bar projecting upwardly through said contracted opening, and means for attaching advertising matter to said chain.

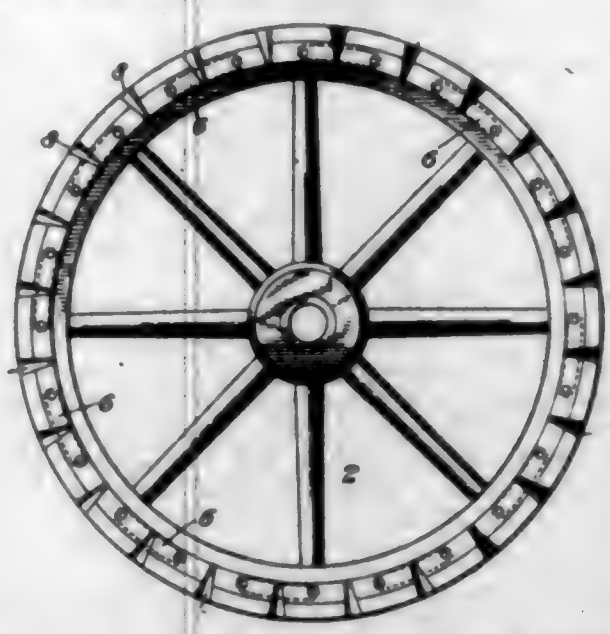
2. In a device of the class described in combination, a pair of oppositely-disposed guiding-walls having T-slots on the adjacent faces thereof, chains guided in said slots and having enlarged portions affording means for retaining said chains within said slots, and means for attaching advertising-cards between said chains.

3. In a device of the class described in combination, a guiding member having a T-slot in the face thereof, and a chain having enlarged eyes disposed in the enlarged portion of said slot and having bars projecting outwardly from said face.

4. In a device of the class described in combination, a casing comprising an upper board and a lower board, said boards having guide-grooves in the forward and rear edges thereof, said boards further having a plurality of guide-grooves extending inwardly from the extremities thereof, transverse shafts connected with said boards, sprocket-wheels mounted on said shafts, chains passing around said sprocket-wheels and having enlarged extensions lying within said grooves, means for advancing said chains, and means for attaching advertising matter between said chains.



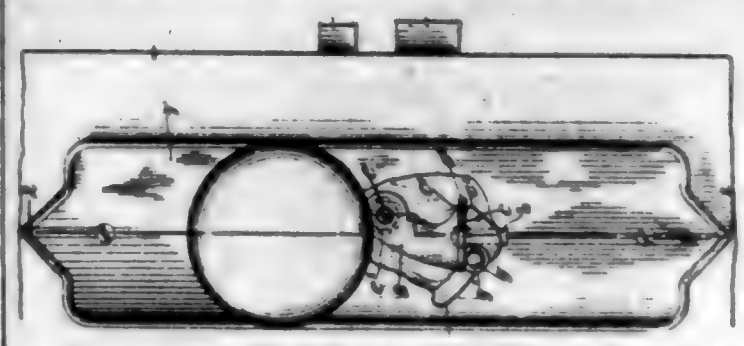
818,198. VEHICLE-WHEEL. JOHN C. SCHLEICHER, Mount Vernon, N. Y. Filed July 14, 1905. Serial No. 269,589.



Claim.—1. In a wheel-tire, the combination with an inner solid fixed tire its edges projecting beyond the felly of the wheel and forming circular flanges, of an outer sectional tire having downwardly-extending portions embracing the inner tire and links pivotally connected to the inner faces of said sections below the flanges of the inner tire, substantially as described.

2. In a wheel-tire, the combination with an inner fixed tire its edges projecting beyond the felly of the wheel and forming circular flanges, of an outer sectional tire having downwardly-extending portions embracing the inner tire, links pivotally connected to inner faces of said sections below the flanges of the inner tire and a cushion located between said tires, substantially as described.

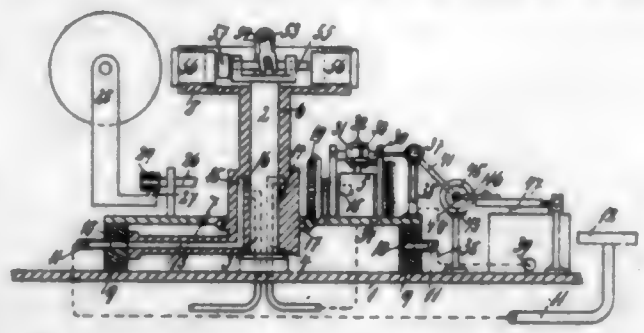
818,199. KEY-HOLDING ATTACHMENT FOR LOCKS. HERBERT A. SHAGER, Monroe, Wash., assignor of one-half to John B. Dolloff, Monroe, Wash. Filed June 5, 1905. Serial No. 263,742.



Claim.—1. The combination with an escutcheon having a keyhole therein and a curved slot at one side of the keyhole, of a dog formed of a thin flat body having in one side edge a transverse slot for receiving the flattened key-shank, the walls of the slot being parallel and having their outer defining edges rounded, the dog being pivoted to the inner face of the escutcheon above the keyhole and provided below its slot with a knob-handle projecting out through the curved slot of the escutcheon, said handle being provided with an enlargement spaced from its inner end a distance a little greater than the thickness of the escutcheon.

2. The combination with an escutcheon having a keyhole and a curved slot at one side of the keyhole, of a dog formed of a flat body having a slot in one side edge for receiving a flattened key-shank, the walls of the slot being parallel, the dog being pivoted to the inner face of the escutcheon above the keyhole and provided below its slot with a handle projecting out through the slot of the escutcheon.

818,200. PNEUMATIC TYPE-WRITER. MAXIMILIAN SOBLIK, Düsseldorf, Germany. Filed Nov. 16, 1903. Serial No. 181,292.



Claim.—1. In a pneumatic type-writer, the combination of a perforated key with a pressure-cylinder controlled thereby, an inclosed piston, a lever actuated by the piston, a rotatable type-carrier, a type-striking mechanism, and a paper-carriage controlled by the lever, substantially as specified.

2. In a pneumatic type-writer, the combination of a perforated key with a pressure-cylinder controlled thereby, an inclosed piston, a lever actuated by the piston, a rotatable arm adapted to be engaged by the lever, and a rotatable type-carrier adapted to be arrested by the arm, substantially as specified.

3. In a pneumatic type-writer, the combination of a perforated key with a pressure-cylinder controlled thereby, an inclosed piston, a lever actuated by the piston, a valve connected to the lever, a cylinder controlled by the valve, an inclosed piston, a cock actuated by the piston, a type-hammer, and pneumatic means controlled by the cock for operating said hammer, substantially as specified.

4. In a pneumatic type-writer, the combination of a perforated key with a pressure-cylinder controlled thereby, an inclosed piston, a pair of levers actuated by the piston, a rotatable arm adapted to be engaged by the levers, and a paper-carriage actuating said arm, substantially as specified.

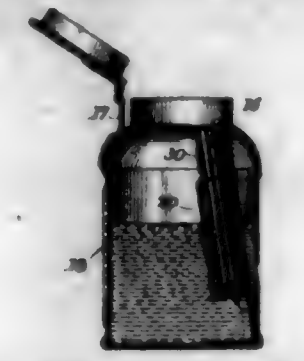
818,201. MATCH-HOLDER ATTACHMENT FOR LAMPS. AUBLEY H. STOW, Switchback, W. Va. Filed Aug. 24, 1905. Serial No. 275,563.

Claim.—1. A lamp provided with a match-holder open to the oil-chamber thereof.

2. A lamp provided with a match-holder disposed in the oil-chamber thereof out of contact with the side walls thereof, said match-holder having an opening to said chamber to permit the oil to come in contact with the matches for increasing the inflammability thereof.

3. A lamp provided with a match-holder open to the oil-cham-

ber thereof and provided with a bottom disposed above the bottom of the lamp.

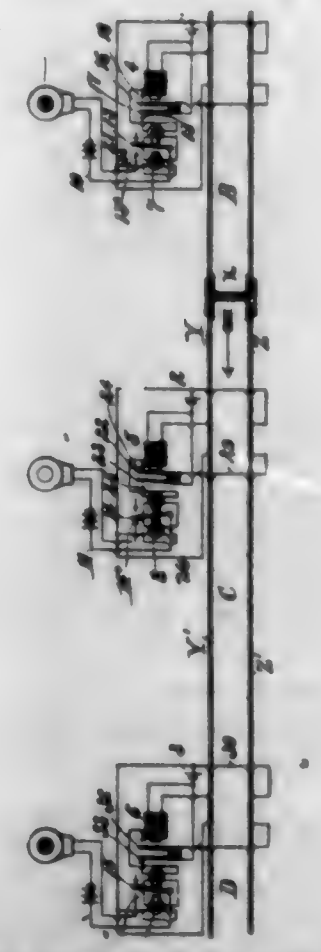


818,202. BOOK-PURSE. EMMA I. SWEET, Wallace, Idaho. Filed May 4, 1905. Serial No. 258,766.



Claim.—A book having a substantially circular pocket formed in the cover thereof, adapted to receive a coin, and a folding flap attached at one edge to said cover, said flap having side pieces attached to said flap and to said cover, said pocket having a recess in the edge thereof opposite the point of attachment of said flap to said cover.

818,203. RAILWAY-SIGNAL-CONTROLLING CIRCUIT. HERBERT B. TAYLOR, Newark, N. J., assignor to Advance Signal Company, Newark, N. J., a Corporation of New Jersey. Filed Oct. 1, 1900. Serial No. 31,842.



Claim.—1. In a signal system, the combination of a series of electrically-separate track-sections, a signal for each section, a relay located at the entrance end of each section and connected to the rails thereof, a single relay connected to the rails of the advance end of the adjacent section and controlling the first-named relay, a signal-operating circuit controlled by the first-named relay, a single source of energy and a normally open track-circuit operating each of said relays to clear the signal.

2. In a signal system, the combination of series of electrically-separate rail blocks or sections, a signal and signal-operating circuit for each section, said signals located to indicate the condition of an advance section, a source of electrical energy and a normally deenergized relay connected in series to the rails at the advance end of each section, a single relay connected to the rails at the entrance end of each section and controlling the signal-operating circuit, the circuits formed by said sources of energy, rails and relays being normally open, the relay at the advance end of a section arranged to control the rail-circuit of the next section in advance, and said rail-circuits forming the only conductors of electrical energy between the signals.

3. In a signal system, the combination of a track divided into blocks or sections, with signals for each section, a normally open track-circuit for each section, a polarized relay for each section, normally energized by a connection independent of the track-circuit and controlling the corresponding signal, said relay comprising a coil connected to the normally open track-circuit for reversing the polarization of the polarized relay to operate the signal, a normally deenergized electromagnetic track device located at the distant end of same block and connected to the normally open track-circuit so as to be energized by the entrance of a train on the block and circuit-controlling means operated by said normally deenergized track device, on energization thereof, to break the normally energized circuit and close the normally open track-circuit of the polarized relay of the advance section.

4. In a railway signal system, the combination of a series of normally open-circuited track blocks or sections, a source of energy for each block, signals for the respective blocks and signal-circuits for the respective signals, two relays located at the adjoining ends of two blocks, one of said relays normally deenergized and controlling the other relay, the second-named relay controlling the signal-circuit, the source of energy of the rearward section connected to the rails thereof by a connection including the first-named relay and also connected to the second-named relay by a connection controlled by said first-named relay, said second-named relay included in the track-circuit of the advance section.

5. In a railway signal-controlling system, the combination of normally open-circuited rail-sections and signals for the respective sections, controlling-circuits for said signals, closed-circuit batteries connected to said open-circuited rail-sections, a relay for holding open the signal-circuit, normally energized by the circuit of the rearward-section battery, the said relay adapted to close the said signal-circuit when energized by the current of the forward-section battery, and means for energizing said relay as last stated consisting of the forward-section rails and battery and a relay connected to the rearward-section battery and circuit-controlling devices operated thereby to open the connection from the first-named relay to the rearward-section battery and close the connection from same to the forward-section battery.

6. In a railway signal system, the combination of normally open-circuited rail-sections and signals for the respective sections, batteries for the respective sections connected to the rails at one end of said sections, polarized relays connected to the rails at the opposite end of said sections by normally open-circuited connections for controlling the respective signals, said relays having high and low resistance windings of opposite magnetizing effect and connected respectively with the battery of the preceding section and with the rail-circuit of the advance section, and said windings adapted to alternately control the signal upon being alternately energized by closing or opening the rail-circuit of the corresponding section.

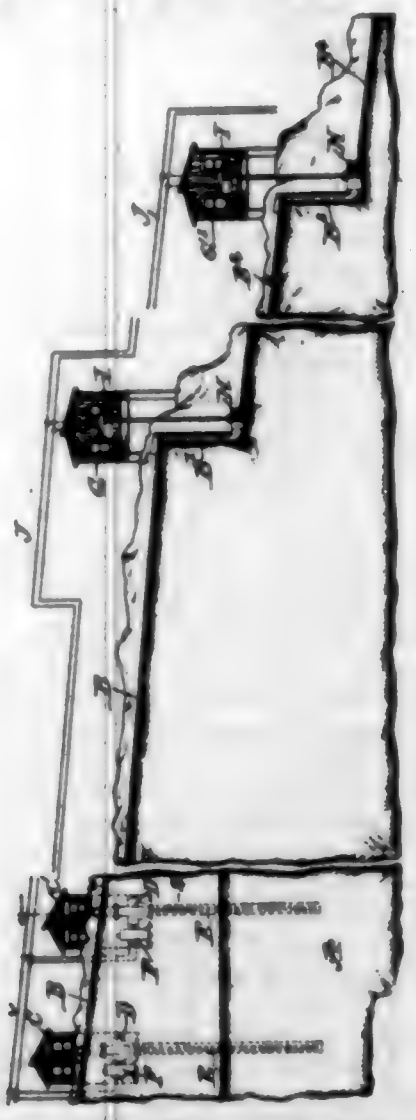
7. In a railway signal system, the combination of track-sections, each section forming a rail-circuit, a relay having two windings of opposite magnetizing effect connected respectively to the corresponding rail-section and to the battery of the preceding section, one of said windings being energized by a track-battery of the preceding section, the other winding being normally open-circuited but adapted to be energized by a track-battery connected to the same section as said relay, and a low-resistance relay connected to each rail-section and located adjacent to the said double-wound relay, the said low-resistance relay adapted to control the energization of either winding of the first-named relay.

8. In a signal system, the combination of a track divided into

blocks or sections, a signal located near the entrance end of each block for protecting said block, a circuit including a circuit-closer for the signal, a relay controlling the said circuit-closer located at the entrance end of the block, said relay being normally energized by a track-battery of the preceding section, said relay also being adapted to operate the signal of its corresponding section upon being energized by a track-battery of the said section and a relay operative from the section preceding the signal and connections controlled by said relay for cutting off from the signal-operating relay the current from the battery in the section preceding said signal and supplying said relay with current from the battery in the advance section thereby operating the signal-circuit.

9. A railway signaling system, consisting of the combination of a consecutive number of open-circuited track-sections, signals properly located for indicating the condition of an advance section, a source of energy in circuit with each signal for actuating the same, two cooperatively-acting electrically-controlled devices connected with the rails of adjoining track-sections for controlling each signal-circuit, and a source of electrical energy so connected to each track-section that the entrance of a train on a section preceding the signal will cause the electrical device of that section to become operative and with the electrically-controlled device of the advance section to operate the signal of the advance section.

818,204. METHOD AND MEANS FOR PROCURING WATER FOR IRRIGATING AND OTHER PURPOSES. INGVART THELMAN, Fresno, Cal. Filed Dec. 3, 1904. Serial No. 235,340.

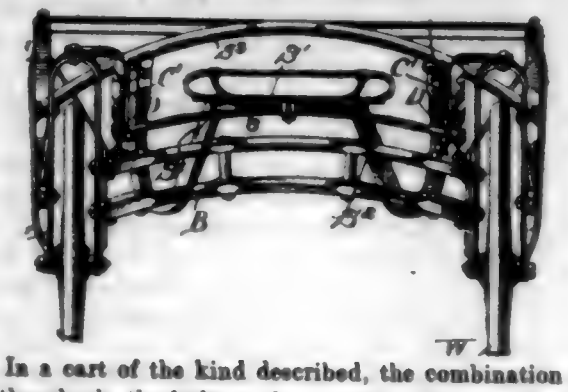


Claim.—1. The herein-described method of procuring water for irrigating or other purposes, consisting in lifting water from one level to another, then conducting such water to still another and lower level to develop power, and finally applying such power to lift the water from the first to the second level.

2. The combination with an inclined waterway, of pumps for lifting water from wells into the said waterway at the head thereof, electric motors for driving the said pumps, water-motors driven by the water in the said waterway, and located in a plane lower than the head of the water in the wells and electric generators driven by the said water-motors and connected with the said electric motors.

818,205. CART. JOHN I. VAILE, River Forest, Ill. Filed May 23, 1905. Serial No. 261,506.

Claim.—1. In a cart of the kind described, a pair of wheels, a fork for each wheel, shafts connected to said forks, a bridge connecting said forks together and located below the upper portions of said forks, bars connecting the bridge with the upper parts of the forks, and a seat adjustably supported on said bars.



2. In a cart of the kind described, the combination with the shafts, the wheels, the forks, and connections between the forks, of a spring-supported and vertically-adjustable seat located between the upper parts of said forks.

3. In a cart of the kind described, a pair of wheels, a fork for each wheel, a pair of shafts connected to the outside of the forks so that the forks will be located between the shafts, a bridge connected to the sides of the forks opposite the shaft connections and serving to connect the forks together, and a spring-supported seat carried by said bridge.

4. In a cart of the kind described, a pair of wheels, a fork for each wheel, a pair of shafts connected to the outside of the forks near the middle of the lengths thereof and so that the forks will be located between the shafts, a bridge connecting the forks together, and a seat supported by said bridge.

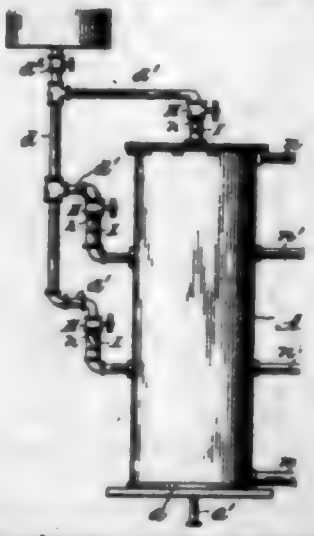
5. In a cart of the kind described, the combination with a pair of shafts, a bridge provided with connections to said shafts, and a pair of wheels placed between and protected by the shafts, of a seat located between the wheels at a normal elevation approximately on a level with the upper parts of the wheels, and means for adjusting the elevation of said seat.

6. In a cart of the kind described, the combination with a pair of wheels, and a fork for each wheel, of a pair of shafts extending outside of the wheels and connected to said forks at points close to but slightly above the axes of the wheels, a bridge connecting said forks and a seat supported between said forks and below the upper portions thereof.

818,206. MANUFACTURE OF PAPER-PULP. MARIUS LE NORMANT DES VARANNES and ANTOINE R. DE VAINS, St. Vincent de Blanzat, near Cébazat, France. Filed Jan. 21, 1905. Serial No. 242,197.

Claim.—The process of eliminating metallic particles from paper-pulp which consists in subjecting the same, after it has been completely finished, or refined, and before sizing, to the action of gaseous chlorin to convert the metallic particles into soluble chlorids and then removing said chlorids by washing.

818,207. CARBURETER. NICHOLAS J. VERRET and JAMES PALMER, Newport, Ark., assignors to Domestic Gas Machine Company, Little Rock, Ark., a Corporation of Arkansas. Filed July 31, 1905. Serial No. 272,070.



Claim.—1. In a carbureter or gas-generator, the combination with a closed tank, of horizontally-disposed perforated plates spaced apart and arranged in groups farther spaced apart, said plates being cut away at opposite sides alternately to provide circuitous passages,

valved feed-pipes for the hydrocarbon discharging above each group, an air-inlet pipe entering below the tier of absorbents, and independent gas-service pipes let into the tank above each group of absorbents and leading to different points of consumption, substantially as shown and described.

2. In a carbureter or gas-generator, the combination with a closed tank, of horizontally-disposed perforated plates spaced apart and arranged in groups farther spaced apart, said plates being cut away at opposite sides alternately to provide circuitous passages, rods connected to the plates and supporting the same, absorbents placed upon the plates, valved feed-pipes discharging above each group, an air-inlet pipe at one end of the tank, and gas-discharge pipes entering the tank above the groups of absorbents, substantially as shown and described.

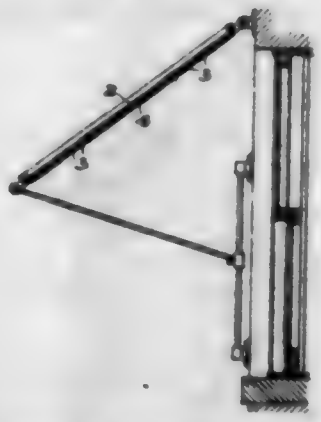
3. In a carbureter or gas-generator, the combination with a closed tank, of horizontally-disposed perforated plates spaced apart and arranged in groups farther spaced apart, said plates being cut away at opposite sides alternately to provide circuitous passages, rods connected to the plates and supporting the same, absorbents placed upon the perforated plates, and bends in the supporting-rods for holding the absorbents in place; together with valved feed-pipes discharging above each group of absorbents, an air-inlet pipe and gas-discharge pipes, the latter being located above each group of absorbents, substantially as shown and described.

4. In a carbureter or gas-generator, the combination with a closed tank, of horizontally-disposed perforated plates spaced apart and arranged in groups farther spaced apart, said plates being cut away at opposite sides alternately to provide circuitous passages, rods loosely connected to the plates and supporting the same, absorbents placed upon the perforated plates, and bends in the supporting-rods for holding the absorbents in place; together with feed-pipes, needle-valves therein, glass tubes below the needle-valves and forming a part of the feed-pipes, an air-supply pipe and gas-discharge pipes, the latter being located above each group of absorbents, substantially as shown and described.

5. In a carbureter or gas-generator, the combination with the supply-tank, of a tank or generator having a tier of perforated plates and absorbents supported thereon, of a valve discharging through the center of the top of the tank or generator and comprising a vertical glass tube of the same height as the supply-tank and on the same horizontal plane therewith, a rod extending through the center of said glass tube and having a tapered end adapted to enter the seat of the valve, and a glass tube below said seat of the valve.

6. In a carbureter or gas-generator, the combination with the tank or generator having a tier of perforated plates and absorbents thereon, a feed-valve discharging through the top of the tank, a pivoted lever connected to the valve-rod, a rod connected to said lever, and an operating-lever connected to the rod; together with a driven shaft, a weighted arm loosely mounted thereon, and a pin carried by the driven shaft for turning the weighted arm over so that it may fall by gravity and operate the lever last above mentioned.

818,208. PRISM-GLASS. FRANK L. O. WADSWORTH, Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y., a Corporation of West Virginia. Filed June 17, 1905. Serial No. 265,806.



Claim.—1. As a new article of manufacture, a prism-glass plate having a continuous prism-surface and having on the prism-face transverse strengthening-ribs.

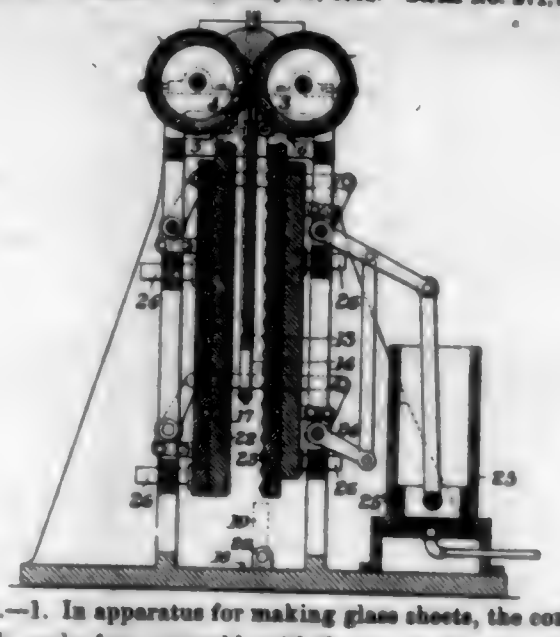
2. As a new article of manufacture, a prism-glass plate having a continuous prism-surface and having on the prism-face transverse strengthening-ribs at right angles to the prism projections.

3. As a new article of manufacture, a prism-glass plate having a continuous prism-surface and having on the prism-face transverse strengthening-ribs, the apices of which are substantially flush with the apices of the prisms.

4. As a new article of manufacture, a prism-glass plate having a continuous prism-surface and having on the prism-face transverse strengthening-ribs angular in cross-section and filleted at the base.

5. As a new article of manufacture, a prism-glass plate having a continuous prism-surface and having on the prism-face transverse strengthening-ribs prismatic in cross-section and adapted to refract the light transversely.

818,209. APPARATUS FOR THE MANUFACTURE OF SHEETS OF GLASS. FRANK L. O. WADSWORTH, Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y., a Corporation of West Virginia. Filed July 28, 1905. Serial No. 271,796.



Claim.—1. In apparatus for making glass sheets, the combination of rolls, and a frame movable with the glass as it passes from the rolls and by which the sheet is held; substantially as described.

2. In apparatus for making glass sheets, the combination of rolls, and a frame movable with the glass as it passes from the rolls and by which the sheet is held, said frame having separable side portions; substantially as described.

3. In apparatus for making glass sheets, the combination of rolls, and a frame movable with the glass as it passes from the rolls and by which the sheet is held, said frame having its inner edges of contracted thickness; substantially as described.

4. In apparatus for making glass sheets, the combination of rolls, and a frame movable with the glass as it passes from the rolls and by which the sheet is held, the rolls having recessed end portions for the frame; substantially as described.

5. In apparatus for making glass sheets, the combination of rolling mechanism and a frame which receives the glass as it passes from the rolling mechanism and by which the sheet is held, and means whereby a wire mesh may be supported in the frame in position to be embedded in the glass sheets; substantially as described.

6. In apparatus for making glass sheets, the combination of rolls, and a frame movable with the glass as it passes from the rolls and by which the sheet is held, said frame being vertical in position; substantially as described.

7. In apparatus for making glass sheets, the combination of rolls from which the glass is delivered in vertical position, and vertical pressure-plates adapted to press the glass; substantially as described.

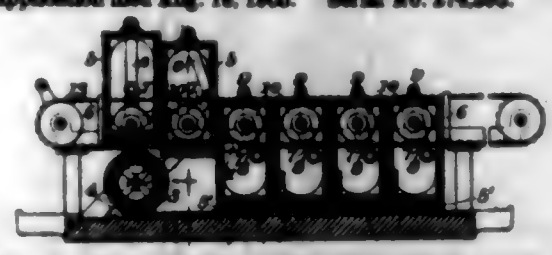
8. In apparatus for making glass sheets, the combination of vertical pressure-plates, means by which the formed sheet is delivered between them in vertical position, and means for causing the relative approach of the plates; substantially as described.

9. In apparatus for making glass sheets, the combination of rolls from which the glass is delivered in vertical position, a frame by which the glass is supported, and vertical pressure-plates adapted to press the glass; substantially as described.

10. In apparatus for making glass sheets, the combination of rolling mechanism and a frame movable with and which receives the glass as it passes from the rolling mechanism and by which the sheet is held, and a track upon which the frame is delivered; substantially as described.

11. In apparatus for making glass sheets, the combination of rolling mechanism and a frame movable with and which receives the glass as it passes from the rolling mechanism and by which the sheet is held, a track upon which the frame is delivered, and a receiving-table to which the track leads; substantially as described.

818,210. APPARATUS FOR THE MANUFACTURE OF GLASS SHEETS. FRANK L. O. WADSWORTH, Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y., a Corporation of West Virginia. Original application filed Oct. 1, 1903, Serial No. 175,296. Now Patent No. 798,945, Sept. 5, 1905. Divided and this application filed Aug. 16, 1905. Serial No. 274,393.



Claim.—1. Apparatus for making glass sheets, having a sheet-forming roll, a table, and a series of successively-operating pressing-dies which act upon the sheet; substantially as described.

2. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of successively-operating pressing-dies which act upon the sheet, and mechanism adapted to move the dies against the sheet as the rolling progresses; substantially as described.

3. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of dies, and means by which the dies are successively moved against the sheet as the sheet is rolled; substantially as described.

4. Apparatus for making glass sheets, having a sheet-forming roll, a table, and a series of successively-operating figured pressing-dies which act upon the sheet; substantially as described.

5. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of successively-operating figured pressing-dies which act upon the sheet, and mechanism adapted to move the dies against the sheet as the rolling progresses; substantially as described.

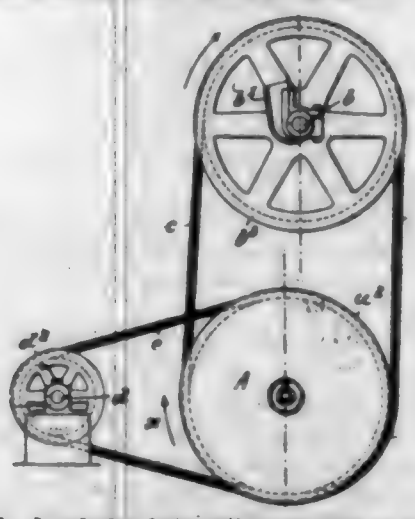
6. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of figured dies, and means by which the dies are successively moved against the sheet as the sheet is rolled; substantially as described.

7. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of dies elevated above the path of the roll, and mechanism operating to move the dies successively against the sheet as the roll passes; substantially as described.

8. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of successively-operating pressing-dies which act upon the sheet, and means for holding the dies against the sheet until the glass has set; substantially as described.

9. Apparatus for making glass sheets, having a sheet-forming roll, a table, a series of successively-operating pressing-dies which act upon the sheet, and mechanism adapted to move the dies against the sheet as the rolling progresses, said mechanism being connected with the roll; substantially as described.

818,211. TUBULAR BALL-MILL. MAX F. ABBE, New York, N. Y. Filed Mar. 22, 1905. Serial No. 251,601.



Claim.—1. A tubular ball-mill composed of a rotatable cylinder, inclosed pebbles, a power-shaft, means for suspending the cylinder from said shaft, and means for rotatably sustaining the cylinder in a deflected position, substantially as specified.

2. A tubular ball-mill composed of a rotatable cylinder, inclosed pebbles, a power-shaft, means for suspending the cylinder from said shaft, a sustaining-shaft journaled sidewise from the cylinder, and means for rotatably connecting the cylinder to the sustaining-shaft, substantially as specified.

3. A tubular ball-mill provided with a spiral ingress-conveyer having an inwardly-flaring central convolute, which merges into the body of the conveyer and is deflected at an obtuse angle from the same, substantially as specified.

4. A tubular ball-mill provided with a working chamber, an ingress-head having a centrally-perforated inner wall that establishes communication between the working chamber and head, a spiral conveyer within the head the innermost convolute of which surrounds the central opening of the inner wall, a perforated gate controlling said opening, and means for opening and closing said gate, substantially as specified.

5. A tubular ball-mill provided with a working chamber, an ingress-head having a centrally-perforated inner wall that establishes communication between the working chamber and head, a spiral conveyer within the head and having an inwardly-flaring central convolute that surrounds the central opening of the inner wall, a perforated gate controlling said opening, and means for opening and closing said gate, substantially as specified.

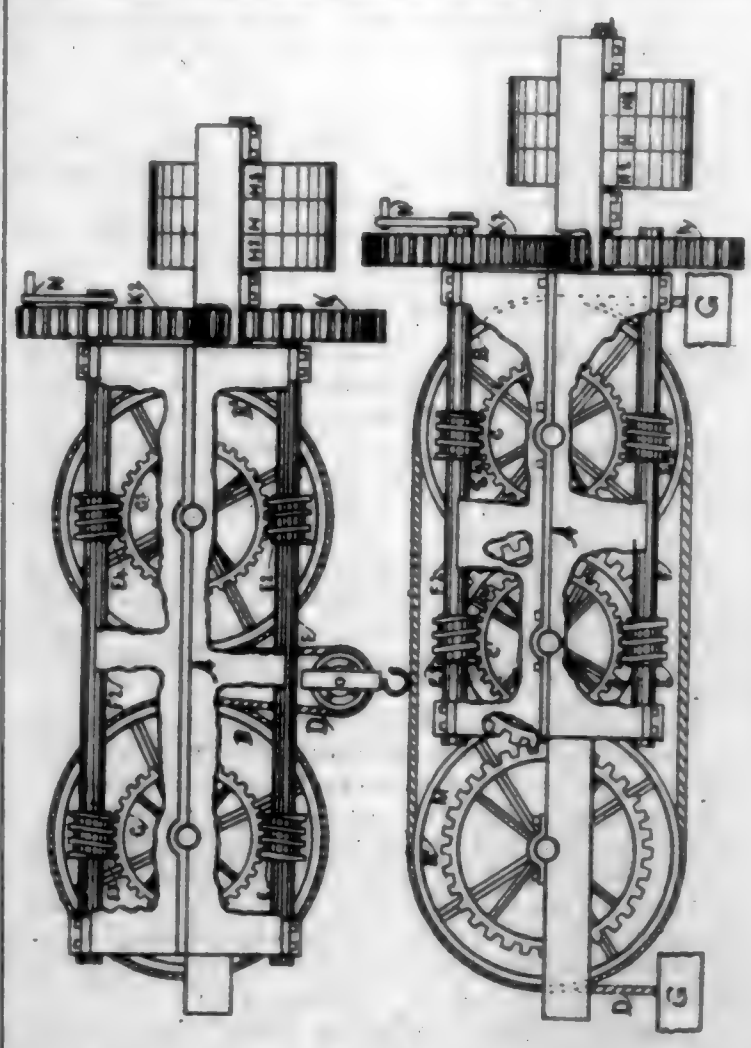
6. In a tubular ball-mill, an ingress-head provided with an outer chamber, an inner chamber, an intermediate partition having an opening, and a slide having a deflector and adapted to control said opening, substantially as specified.

7. In a tubular ball-mill, an ingress-head provided with an outer chamber, an inner chamber having a discharge-opening, a partition intermediate the chambers and having a slide-controlled opening, a spiral conveyer within the inner chamber and having an inwardly-flaring central convolute, and a perforated gate that controls the discharge-opening of the inner chamber, substantially as specified.

8. In a tubular ball-mill, an egress-head having an outer wall, an inner wall, and an intervening spiral egress-conveyer having an outwardly-flaring central convolute intermediate the walls, substantially as specified.

9. In a tubular ball-mill, an egress-head provided with an inner wall, an outer wall, an intermediate chamber, a spiral conveyer within the chamber, a cock-controlled discharge-tube surrounded by the inner convolute of said conveyer, and a perforated plate at the inner end of said tube, substantially as specified.

818,212. HOISTING MECHANISM. DANIEL ARREY, Philadelphia, Pa. Filed Aug. 10, 1905. Serial No. 273,697.



Claim.—1. In a hoisting-machine gearing comprising a plurality of worms in pairs, transverse shafts, worm-wheels thereon the

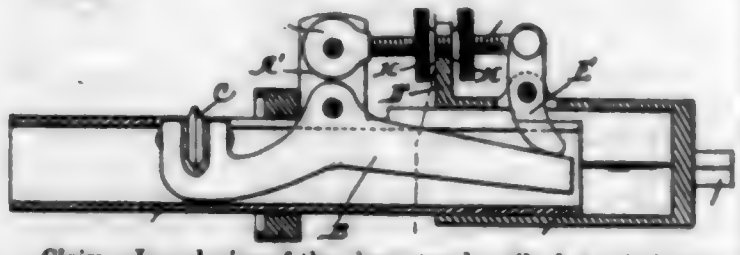
opposite sides of which engage said worms of the respective pairs and drums, each actuated from one of said worm-wheels.

2. In a hoisting-machine gearing comprising a plurality of worms in pairs, transverse shafts, drums carried thereby, and worm-wheels mounted on said shafts and meshing at opposite sides with the worms of a pair.

3. In a hoisting-machine, a power-shaft, a gear carried thereby, parallel shafts, a gear on each shaft in mesh with each other and one of said gears in mesh with the gear of the power-shaft, a right and left hand worm mounted on each of said parallel shafts, transverse shafts journaled between and at right angles to the worm-shafts and actuated thereby, and a drum mounted on each of said transverse shafts.

4. In a hoisting-machine, parallel shafts, a right and left hand worm mounted on each of said parallel shafts, transverse shafts journaled between and at right angles to the worm-shafts and actuated thereby, a drum mounted on one of said transverse shafts and means for imparting motion to said parallel shafts.

818,213. **FLUE OR TUBE CUTTER.** DANIEL W. ARGO and CHARLES H. JONES, Saxton, Pa. Filed July 11, 1905. Serial No. 269,178.



Claim.—In a device of the character described, a tubular portion, the forward end of which is adapted to be inserted within the flue or tube to be cut, means for limiting the depth of the insertion, two ears extending upward from the tubular portion a distance apart, a lever pivoted between the two ears and lying within the tubular portion, the tubular portion being slotted the length of the lever and in conformity to the shape of the same, a rotary cutting-tool journaled in the forward end of said lever and adapted to protrude beyond the periphery of the tubular portion, a sleeve adapted to slide over the rearward end of the tubular portion, a cam-lever pivoted intermediate of its two ends to the sleeve, the lower end of the cam-lever being curved rearwardly and bearing against the upper surface of the rearward end of the cutting-tool lever so that when the lower end of the cam-lever is forced forward the rearward end of the lever will be depressed, a screw-threaded rod pivoted to the upper end of the cam-lever, the other end of the rod pivoted between the ears extending upward from the tubular portion, an extension extending upward from the sleeve, nuts threaded upon the screw-threaded rod each side of said extension, and a wrench-hold formed upon the outer end of the sleeve, as and for the purpose specified.

818,214. **EXCAVATOR.** AUGUST M. ANDERSON, Moorhead, Minn. Filed May 11, 1905. Serial No. 259,861.

Claim.—1. In an excavator, in combination, a frame, an arm pivotally attached thereto, bows attached toward the free extremity of said arm and lying adjacent to said frame, an excavating-wheel carried forwardly of said arm, and means for locking the same in a depressed position.

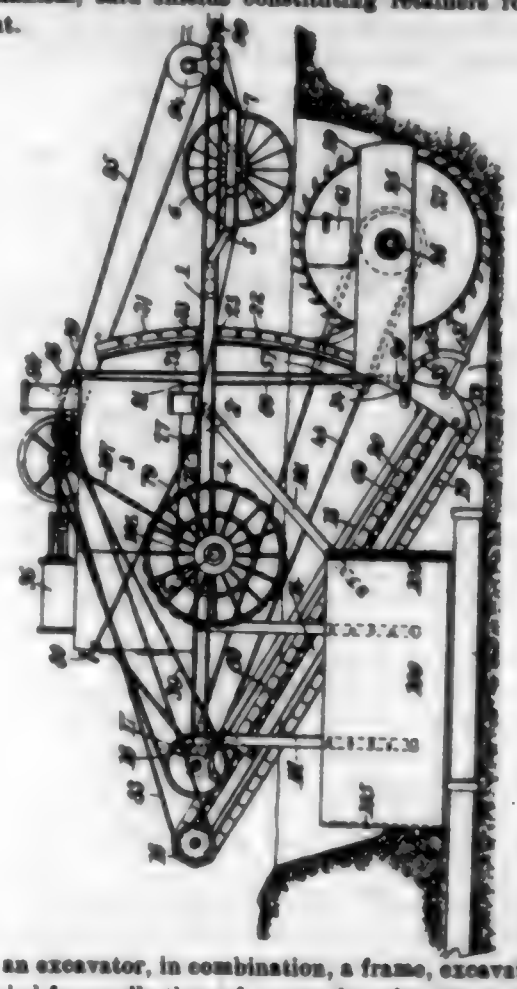
2. In an excavator, in combination, a frame, an arm pivotally attached to said frame, bows attached to said arm and lying adjacent to said frame, means for locking said bows to said frame, an excavating-wheel carried forwardly of said arm, and means for rotating said wheel.

3. In an excavator, in combination, a frame comprising a pair of substantially parallel beams, an excavating-wheel, means for lowering said wheel and elevating the same above said beams in the space between said beams, and means for driving said wheel.

4. In an excavator, in combination, a frame comprising a pair of substantially parallel side beams, an arm pivotally attached to said beams, a conveyer carried by said arm, an excavating-wheel supported by said arm, forwardly of said conveyer, means for raising and lowering said arm and wheel, and a cross-beam connecting said side beams beyond the path of said arm and wheel.

5. In an excavator, in combination, an excavating-wheel, a depressible member carrying said wheel, a conveyer carried by said member, and a plow carried by said member, behind said wheel, and adapted to receive excavated material from said wheel.

6. In an excavator, in combination, a frame, excavating mechanism carried thereby, means for advancing said frame, and shields carried by said frame and projecting into the space excavated by said mechanism, said shields constituting retainers for the wall thereabout.



7. In an excavator, in combination, a frame, excavating mechanism carried forwardly thereof, means for advancing said frame, a shield under said frame and behind said excavating mechanism, and means for conveying the excavated material to a point behind said shield.

8. An excavating-wheel comprising, in combination, a transverse supporting-shaft, a sleeve rigid therewith, a hub rotatably mounted on said sleeve, a rim carrying teeth, spokes connecting said rim with said hub, and a fixed head attached to said sleeve and substantially filling the space surrounded by said rim.

9. In an excavating-machine, in combination, an excavating-wheel, a conveyer behind said wheel and adapted to receive excavated material therefrom, a plow between said wheel and said conveyer, and comprising a pivoted plate, and a quadrant attached to said plate and affording means for adjusting the angular position thereof.

818,215. **EXCAVATOR.** AUGUST M. ANDERSON, Moorhead, Minn. Filed May 11, 1905. Serial No. 259,862.

Claim.—1. In an excavator in combination, a wheel having teeth, means for rotating said wheel upon a substantially horizontal axis, said wheel being formed in separated sections, a driving-chain passing into the space between the said sections and affording means for rotating said wheel, and means for driving said chain from a point behind said wheel.

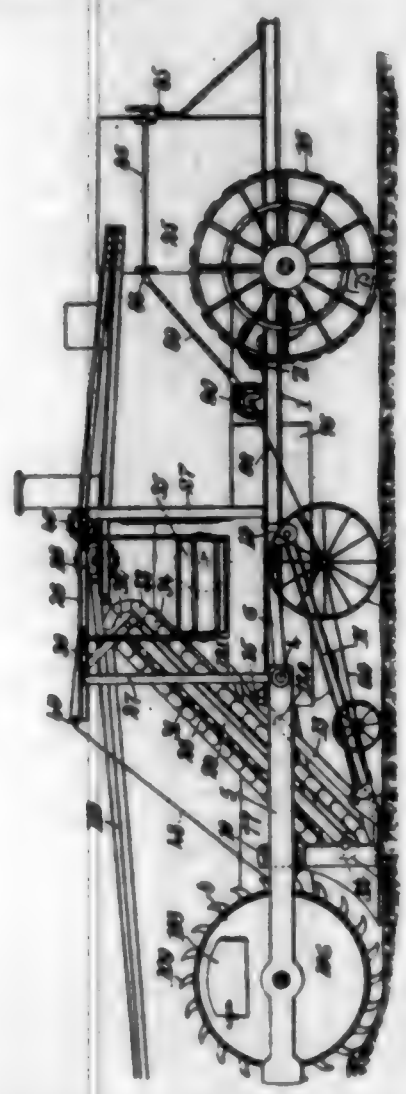
2. In an excavator in combination, an excavating-wheel, a conveyer formed in separated sections behind said wheel, and means for driving said wheel through the space between said sections and from a point behind said conveyer.

3. In an excavator in combination, an excavating-wheel formed in sections, a conveyer behind said wheel and also formed in sections, a chain passing from a point behind said conveyer through the spaces between said sections and affording means for driving said wheel, and mechanism behind said conveyer for driving said chain.

4. In an excavator in combination, a frame, plow-beams supported at the under side of said frame and projecting forwardly therefrom, a plow carried at the forward extremities of said beams, and adjustable hangers connecting with said beams near the forward extremities thereof and attaching to the forward extremity of said frame.

5. In an excavator in combination, a frame, inclined plow-beams pivotally attached to the under side of said frame and projecting forwardly therefrom, adjustable hangers pivotally connected with the forward extremity of said frame and pivotally attached to

the forward extremities of said beams, a plow carried by said beams, an excavating-wheel before said plow and supported by said frame, and a conveyer supported at said plow and adapted to deliver material received from said wheel.



6. In an excavator in combination, a frame, inclined plow-beams projecting forwardly therefrom and pivotally attached thereto, adjustable hangers attached to the forward extremities of said beams and supported from said frame, a plow carried by said beams, arms pivotally mounted on said frame and projecting forwardly therefrom, an excavating-wheel carried between said arms, and a conveyer behind said wheel and adapted to receive material therefrom.

7. In an excavator in combination, a frame, inclined plow-beams projecting forwardly therefrom and pivotally attached thereto, adjustable hangers attached to the forward extremities of said beams and supported from said frame, a plow carried by said beams, arms pivotally mounted on said frame and projecting forwardly therefrom, an excavating-wheel carried between said arms, a conveyer behind said wheel and adapted to receive material therefrom, and means for attaching said plow to said arms.

8. In an excavator in combination, an excavating-wheel, a main conveyer adapted to receive material from said wheel, a pair of lateral conveyers disposed behind said first conveyer and adapted to receive material therefrom, bevel gear-wheels at the adjacent extremities of said lateral conveyers, and a wheel therebetween meshing therewith.

9. In an excavator in combination, excavating mechanism, a main conveyer adapted to receive material therefrom, a pair of oppositely-disposed lateral conveyers to which said main conveyer delivers, hangers adjustably supporting the outer extremities of said lateral conveyers, bevel gear-wheels at the inner extremities of said lateral conveyers and affording means for actuating the same, a double bevel-gear between said first bevel-gears and meshing with both, and means for continuously driving said last bevel-gear.

10. An excavating-wheel having a rotatable circular rim, fixed heads at the extremities of said rim inclosing the interior thereof, and teeth mounted in said rim.

11. An excavating-wheel comprising a substantially cylindrical body, removable teeth attached to the periphery of said body, heads at the extremities of said body and having openings therethrough, and covers for said openings.

12. An excavating-wheel comprising an outer rim and an inner rim, a plurality of teeth having shanks projecting through openings in said rims, and nuts on the extremities of said shanks securing the same.

13. In an excavator in combination, a pair of arms, a shaft connecting the same, a sleeve mounted on said shaft, a wheel having a body rotatably mounted on said sleeve, and a plurality of teeth carried by the periphery of said wheel.

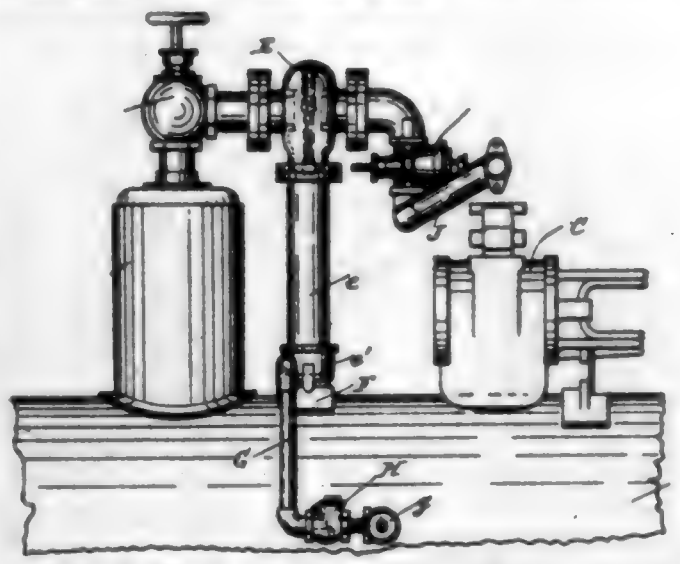
14. In an excavator in combination, a pair of arms, a shaft connecting the same, a sleeve mounted on said shaft, a wheel having a body rotatably mounted on said sleeve, a plurality of teeth carried by the periphery of said wheel, and heads closing the extremities of said body.

15. In an excavator in combination, a pair of substantially parallel arms, a shaft connecting the same, a sleeve fixed on said shaft, a pair of concentric rims carrying teeth and constituting an excavating-wheel, and a plurality of hubs rotatably mounted on said sleeve and rigid with said rims.

16. In an excavator in combination, a pair of oppositely-disposed arms, a shaft supported therebetween, a sleeve about said shaft, a pair of rims carrying teeth and constituting an excavating-wheel, hubs rigid with said rims and rotatably mounted on said sleeve, said rims being formed in sections, a space therebetween through which a drive-chain may pass, and a chain-wheel surrounding said sleeve in said space and rigidly connecting with said rims.

17. In an excavating-wheel in combination, an outer rim having openings therethrough, an inner rim having openings therethrough, a plurality of teeth having shanks passing through said first openings and having threaded extremities passing through said last openings, said teeth having shoulders abutting the outer face of said outer rim, and nuts mounted on said extremities and securing said teeth.

818,216. **SEPARATOR.** GUSTAF A. ANDERSON, Waynesboro, Pa., assignor to The Geiser Manufacturing Company, Waynesboro, Pa. Filed Nov. 18, 1905. Serial No. 288,062.



Claim.—1. The combination, with a boiler provided with a steam-dome, of a water-separator connected to the upper part of the said dome, a water-receiver arranged adjacent to the said dome and supporting the said separator from the top of the boiler-shell, and a small pipe connection extending around the side of the boiler and connecting the lower part of the said receiver with the water-space of the boiler.

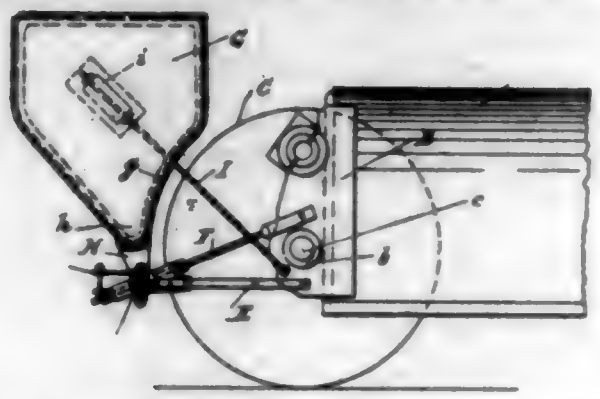
2. The combination, with a boiler provided with a steam-dome, of a water-separator connected to the upper part of the said dome, a water-receiver arranged under the said separator and supporting it from the top of the boiler-shell, a small pipe connection extending around the side of the boiler and connecting the lower part of the said receiver with the water-space of the boiler, and a check-valve inserted in the said pipe connection.

818,217. **TANK FOR TRACTION-ENGINES.** GUSTAF A. ANDERSON, Waynesboro, Pa., assignor to The Geiser Manufacturing Company, Waynesboro, Pa. Filed Nov. 18, 1905. Serial No. 288,063.

Claim.—1. The combination, with a boiler and traction-wheels, of a beam supported from the said boiler and arranged crosswise at the rear of the said wheels, and two tanks supported by the end portions of the said beam and provided with upwardly and forwardly extended front portions which project part way over the said wheels.

2. The combination, with the boiler and traction-wheels of a traction-engine, of a beam supported from the said boiler and arranged crosswise at the rear of the said wheels, and two tanks sup-

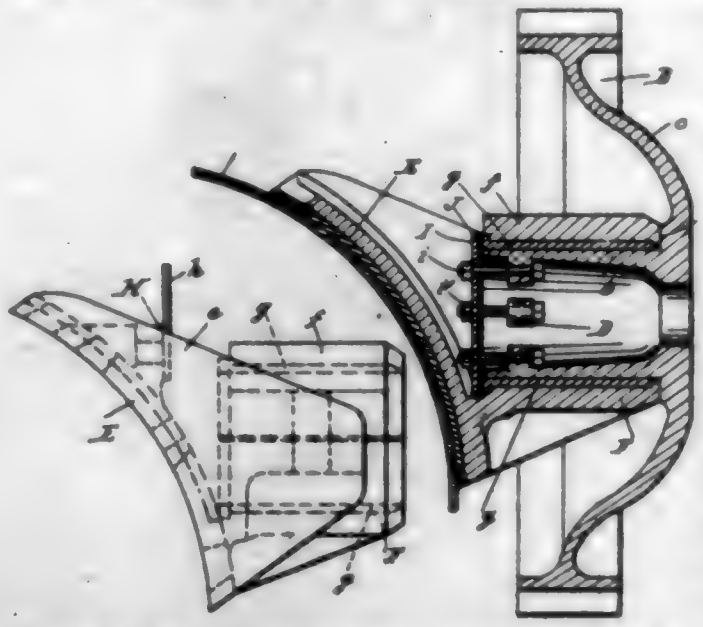
ported by the said beam, each said tank having a rectangular upper part, a narrow rounded bottom, an inclined portion at the lower part of its rear side, and a curved portion at the lower part of its front side which extends part way over the traction-wheel in front of it.



3. The combination, with the boiler and traction-wheels of a traction-engine, of a beam supported from the said boiler and arranged crosswise at the rear of the said wheels, two tanks supported by the said beam and provided with upwardly and forwardly extended front portions which project part way over the said wheels, brackets secured to the adjacent sides of the said tanks, and braces secured to the said brackets at one end and connected with the boiler at the other end.

4. The combination, with a boiler and traction-wheels, of a beam supported from the said boiler and arranged crosswise at the rear of the said wheels, and two tanks supported by the end portions of the said beam and arranged with their centers of gravity normally to the rear of the center of gravity of the said beam.

818,218. **WHEEL-BEARING.** GUSTAF A. ANDERSON, Waynesboro, Pa., assignor to The Geiser Manufacturing Company, Waynesboro, Pa. Filed Nov. 18, 1905. Serial No. 288,084.

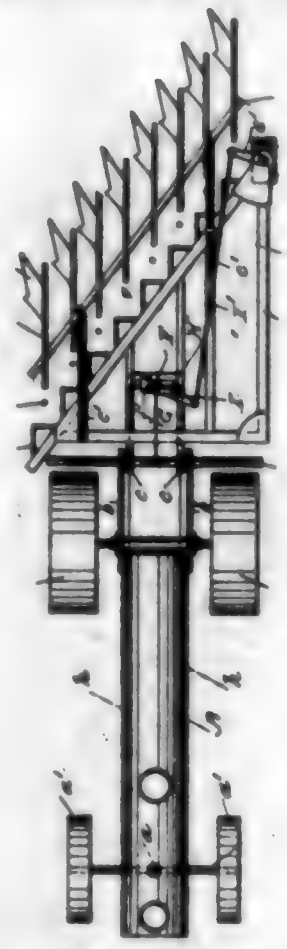


Claim.—1. The combination, with a supporting-bracket provided with a bearing, of a wheel provided with a tubular hub which is journaled in the said bearing and provided with a shoulder bearing against the outer end of the said bearing, a plate bearing against the inner end of the said bearing, bolts connected to the internal part of the said tubular hub and projecting through openings in the said plate, and nuts screwed on the projecting end portions of the said bolts and retaining the said hub in position.

2. The combination, with a supporting-bracket provided with a bearing, of a wheel provided with a tubular hub which is arranged inside its rim and which is journaled in the said bearing, said tubular hub having internally-projecting lugs and a shoulder at the outer end of the bearing, a plate which bears against the inner end of the said bearing, and bolts connecting the said plate with the said lugs.

3. The combination, with a curved supporting-bracket having a bearing projecting from its lower part and having also integrally-formed ribs connecting the end portions of the said bearing with the upper end portions of the bracket, and a removable cap secured to the said bearing; of a wheel provided with a tubular hub journaled in the said bearing and having a shoulder which bears against the outer end of it, a plate bearing against the inner end of the said bearing, and fastening devices between the said plate and hub.

818,219. **GANG-PLOW.** GUSTAF A. ANDERSON, Waynesboro, Pa., assignor to The Geiser Manufacturing Company, Waynesboro, Pa. Filed Nov. 21, 1905. Serial No. 288,261.



Claim.—1. The combination, with a traction-engine provided with a steering-axle, of a gang-plow frame pivotally connected with the said traction-engine and provided with a steering-wheel, a sleeve having its upper end pivoted to the said frame, a radius-rod connecting the lower part of the said sleeve with the traction-engine, a rock-shaft journaled in the said sleeve, a cross-bar secured on the lower end of the said rock-shaft, connections between the said rock-shaft and steering-axle, and connecting mechanism between the upper end of the said rock-shaft and the said steering-wheel.

2. The combination, with a traction-engine provided with a pivoted steering-axle, of a gang-plow pivotally connected with the said traction-engine and provided with a rock-shaft for operating its steering-gear, a radius-rod operatively connected with the said rock-shaft and traction-engine and moving the said rock-shaft to a limited extent in a longitudinal plane, an operating-bar on the said rock-shaft, and connections between the said operating-bar and steering-axle.

3. The combination, with a traction-engine provided with a steering-axle, of a gang-plow frame pivotally connected with the said traction-engine, a vertical rock-shaft supported by the said frame, an operating-bar secured to the said rock-shaft and movable in a horizontal plane, connections between the said bar and axle, a steering-wheel provided with a vertical operating-shaft and mounted in the said frame, an arm secured to the said shaft and projecting in one direction, an arm secured to the said rock-shaft and projecting in the opposite direction, and a rod connecting the two said arms.

4. The combination, with a gang-plow frame provided with a steering-wheel, of a sleeve having its upper end pivoted to the said frame, means for limiting the movement of the said sleeve lengthwise of the said frame, a rock-shaft journaled in the said sleeve, an operating-bar secured to the lower end of the said rock-shaft, and connecting mechanism between the upper end of the said rock-shaft and the said steering-wheel.

5. The combination, with a gang-plow frame provided with a steering-wheel, of a shaft for operating the said steering-wheel mounted vertically in the said frame and provided with an arm at its upper end, a sleeve having its upper end pivoted to the said frame, means for limiting the movement of the said sleeve lengthwise of the said frame, a rock-shaft journaled in the said sleeve and provided with an operating-bar on its lower end and an arm on its upper end, and a rod connecting the two said arms.

6. The combination, with a plow-frame, of a guide-plate provided with a rectangular socket and having its front end pivotally connected with the said frame, a draw-plate slidable in the said

socket, a pin of soft material connecting the said plates, and a plow-beam pivoted to the said draw-plate.

7. The combination, with a plow-frame, of a guide-plate having its front end pivotally connected with the said frame, a plate and distance-pieces secured above the said guide-plate and forming a socket at its rear part, a draw-plate slidable in the said socket, a pin of soft material connecting the said guide-plate and draw-plate, and a plow-beam pivoted to the said draw-plate.

8. The combination, with a plow-beam, and a lifting-beam detachably connected thereto; of a socket secured to the said plow-beam, a bar adjustable vertically in the said socket, a gage-wheel carried by the said bar, and a guard-finger carried by the said plow-beam and extending between the said lifting-beam and the upper end of the said bar.

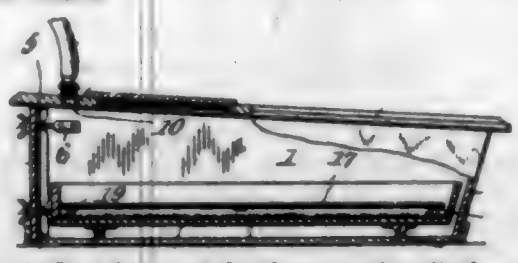
9. The combination, with a plow-beam, and a lifting-beam detachably connected thereto; of a socket secured to the said plow-beam, a bar adjustable vertically in the said socket, a gage-wheel carried by the said bar, and a guard-finger pivoted to the said plow-beam with its free end portion resting on the top end of the said bar.

10. The combination, with a plow-beam, of a bracket secured to one side of the plow-beam, a finger pivoted to the said bracket and arranged in a downwardly and forwardly inclined position, a spring which presses the front end portion of the said finger toward the plow-beam, a lifting-beam, and a flexible connection secured to the said lifting-beam and provided with a link which engages with the said finger.

11. The combination, with two plow-beams, of a pin which projects laterally from one of the said plow-beams, an arm pivoted on the said pin, a bracket secured to the other said plow-beam and provided with a bearing which projects above the plow-beams, and a pin pivoted in the said bearing and provided with an eye which is slidable longitudinally on the said arm.

12. The combination, with two plow-beams, of an arm pivotally connected with one of the said plow-beams, a bracket secured to the other said plow-beam, and a guide-eye slidable longitudinally on the said arm and pivotally supported by the said bracket.

818,220. **BURIAL-CASKET.** ALBERT BELAIR, Montreal, Canada, assignor to J. Tancrede Morin, Montreal, Canada. Filed Apr. 6, 1905. Serial No. 254,062.



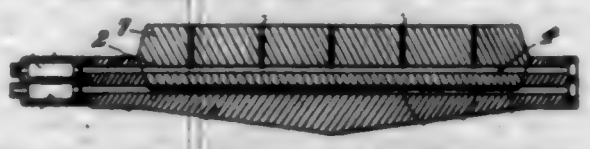
Claim.—1. In a device of the character described, a casket, in combination with an insertible tray, and a grille disposed in the tray.

2. In a device of the character described, a casket, in combination with an insertible tray, a removable grille disposed in the tray, and a body of absorbent matter disposed under the grille.

3. In a device of the character described, a casket having a removable end wall, in combination with an insertible tray and a grille disposed in the tray.

4. In a device of the character described, a casket, an insertible tray disposed in the casket, a removable grille disposed in the tray, a body of absorbent matter disposed under the grille, and said casket being provided with a removable end wall to permit the removal of the tray.

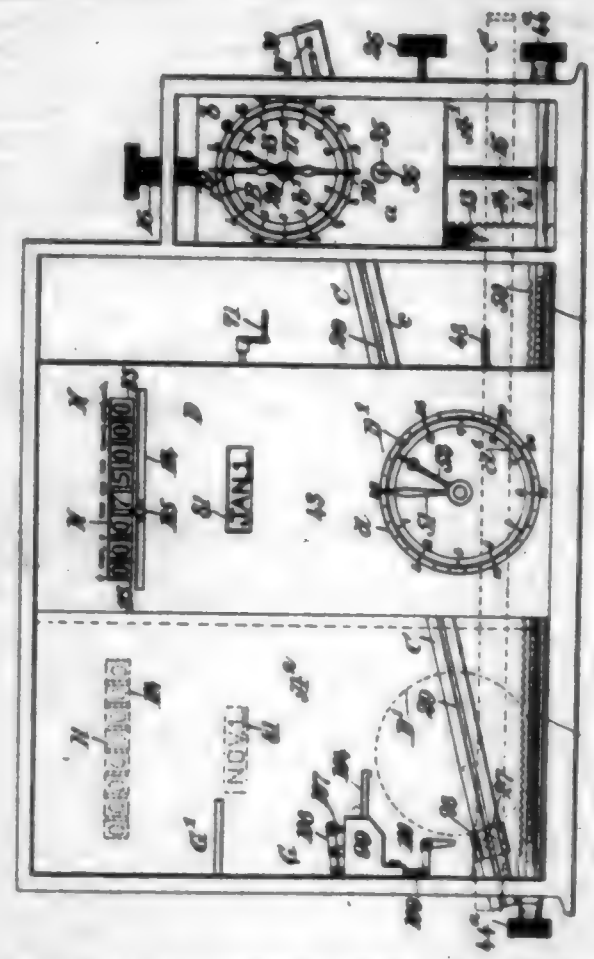
818,221. **METHOD OF COMBUSTION.** OSCAR BENDER, Treptow, near Berlin, Germany. Filed Jan. 31, 1905. Serial No. 243,537.



Claim.—The method of combustion of solid fuel which consists in intermingling steam and air, introducing the same into a bed of solid fuel in a state of combustion, vaporizing a hydrocarbon with the exclusion of air, and finally intermingling all of the gases within said bed of fuel.

818,222. **MACHINE FOR CALCULATING INTEREST AND PERCENTAGE.** WALTER M. BRALY, Blackwell, Okla. Filed Feb. 15, 1905. Serial No. 245,734.

Claim.—1. In a machine for computing interest and percentage, a carriage, means for moving the carriage, a time-dial on the carriage, pointers for the same, a mechanism for operating the pointers by the movement of the carriage, a computing mechanism operated by the actuating mechanism for the carriage, and a calendar-controlling mechanism operated by the operating mechanism for the said pointers.



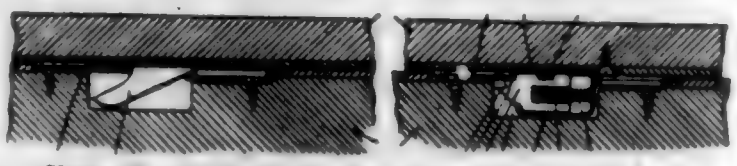
2. In a machine for calculating interest and percentage, a casing, a carriage having vertical movement in said casing, a rate-dial carried thereby, pointers for the said rate-dial, and a mechanism for operating the pointers, operated by the movement of the carriage, a second carriage having movement in the casing at right angles to the first-named carriage, a time-dial located on the second carriage, pointers for the time-dial, mechanism for operating the said pointers, operated by the movement of said second carriage, a computing mechanism located in the second carriage, an operating-lever common to both of the carriages and adapted to impart movement to one carriage and the computing mechanism of the other, an operating connection between the said lever and the said computing mechanism, and a calendar-control mechanism located between the computing mechanism and the time-dial, also operated by the movement of the second carriage.

3. In a machine for calculating interest and percentage, a casing, a carriage having vertical movement in the said casing, a rate-dial carried thereby, pointers for the said rate-dial, and a mechanism for operating the pointers, operated by the movement of the carriage, a second carriage having movement in the casing at right angles to the first-named carriage, a time-dial located on the second carriage, pointers for the time-dial, mechanism for operating the said pointers, operated by the movement of the said second carriage, a computing mechanism located in the second carriage, an operating-lever common to both of the carriages and adapted to impart movement to one carriage and the computing mechanism of the other carriage, an operating connection between the said lever and the said computing mechanism, a calendar-control mechanism located between the computing mechanism and the time-dial on the second carriage, which mechanism consists of a plain winding-roller, a spring-controlled winding-roller, a display-roller and guide-rollers, and an apron carried by the rollers, gears carried by sundry of the said rollers, and a driving connection between the gearing of the rollers and the operating mechanism for the pointers for the time-dial.

4. In a machine for calculating interest and percentage, a casing, a carriage having vertical movement in the said casing, a rate-dial carried thereby, pointers for the said rate-dial, and a mechanism for operating the pointers, operated by the movement of the carriage, a second carriage having movement in the casing at right angles to the first-named carriage, a time-dial located on the second carriage, pointers for the time-dial, mechanism for operating the said

pointers, operated by the movement of the said second carriage, a computing mechanism located in the second carriage, an operating-lever common to both of the carriages and adapted to impart movement to one carriage and the computing mechanism of the other, an operating connection between the said lever and the said computing mechanism, a calendar-control mechanism located between the computing mechanism and the time-dial on the second carriage, which mechanism consists of a plain winding-roller, a spring-controlled winding-roller, a display-roller and guide-rollers, and an apron carried by the rollers, a bracket pivotally mounted on the said second carriage, gears carried by the said bracket, adapted to establish connection between the driving mechanism for the pointers of the time-dial and the gearing of the rollers on the calendar-control mechanism, a lock for the said bracket, and means for automatically shifting the said bracket to break the driving connection between the said calendar-control mechanism and the driving mechanism for the time-dial pointers.

818,223. COFFIN-FASTENER. FRANK P. BRIDGE and JOHN STACKHOUSE, Philadelphia, Pa. Filed June 30, 1905. Serial No. 267,730.



Claim.—1. In a lock for coffins or caskets, a lock-casing secured to and depending from the cover, a keeper secured to the top edge of the body and provided with an opening formed therethrough large enough to allow for the passage of the lock-casing, a horizontally-sliding plate arranged within the casing, the nose of which is adapted to normally protrude from the casing and engage the under side of the keeper, a coil-spring interposed between the rear of the bolt and the rear end of the casing tending to force the bolt outward, said spring being larger in diameter than the width of the bolt, the sides of the casing being curved outward concentric with the spring to accommodate the increased diameter of said spring, and means for retracting the bolt from the exterior of the coffin, as specified.

2. In a lock for coffins or caskets, a plate secured to the under side of the cover, a lock-casing secured thereto and depending therefrom, a keeper secured to the upper edge of the body, said keeper provided with an opening formed therethrough large enough to allow for the passage of the lock-casing, a longitudinally-sliding bolt arranged within the lock-casing, the nose of the bolt normally protruding forward from the casing so as to engage the under side of the keeper, the bolt being slotted from the rearward end inward, a coil-spring lying within said cut-away portion and interposed between the bolt and the rear of the casing, said spring being larger in diameter than the thickness of the bolt, the sides of the casing being curved outward to accommodate the spring and guide the same, the nose of the bolt being beveled from its outer forward end inward and downward so that the same may be retracted automatically when pressed downward through the keeper, a lever lying flat against the under side of the lock-plate and pivoted to said lock-plate upon one end, extending through the casing and fitting within a notch formed in the upper edge of the bolt, the other end of the lever upon the opposite side of the lock-casing extending beyond the plate and being provided with a finger-piece at its outer end, that portion of the lever extending beyond the plate being bent downward to a lower level than the plate, as and for the purpose specified.

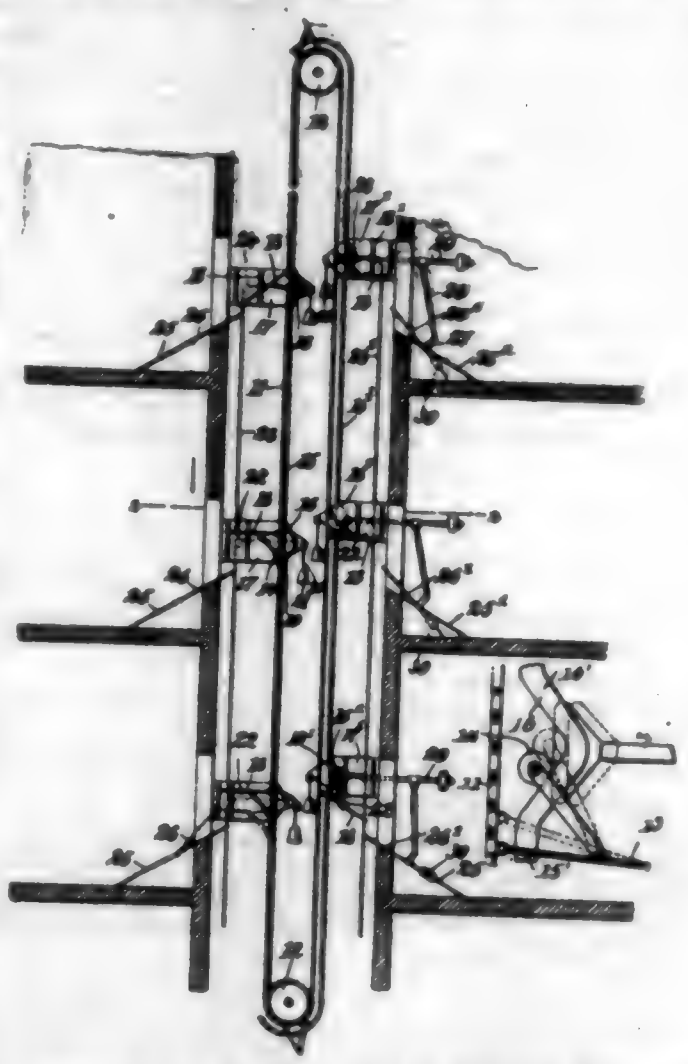
818,224. CASKET-FASTENER. FRANK P. BRIDGE, Westgrove, Pa. Filed Nov. 28, 1905. Serial No. 289,531.



Claim.—1. In combination, a fastener consisting of a base-plate and a housing, the latter being of hooked shape, a spring-catch secured within the housing, a key-lever adapted to operate the lid, a socket adapted to receive the housing, a guideway formed in the socket for alining the fastener and a lip formed upon the socket with which the latch is adapted to engage, as and for the purpose set forth.

2. In combination with a socket and the lid therefor, a locking-fastener, a socket for receiving the same, a slip-fastener consisting of a base-plate and hooked nose formed from one piece of metal and a socket for the reception of the last-named fastener, said socket having a guideway formed therein for alining the fastener before engagement with the socket, as and for the purpose set forth.

818,225. CONVEYER. HARRY BROWN, New York, N. Y. Filed May 14, 1904. Serial No. 207,941.



Claim.—1. An endless conveyer having pivoted pans, a track therefor, a series of offsets in said track, a pivoted plate located adjacent to each offset, a section of track on each plate, means for holding said plates against the track, comprising a counterweight, and means for temporarily removing said plates from said tracks.

2. A vertical conveyer having pivoted pans, a guiding-track, offsets in said track, guiding devices located adjacent to said offsets, means on the conveyer for engaging said guiding devices and causing said pans to be automatically dumped at the offsets, and a flexible connection for controlling each guiding device.

3. A conveyer having movable pans thereon, a guiding-track therefor, a series of offsets in said track, a pivoted plate located adjacent to each of said offsets, a section of track on each plate, a rib on each plate, and means on each of said pans for coöperating with said ribs to cause the pans to be dumped.

4. A conveyer, having movable pans thereon, a guiding-track therefor, a series of offsets in said tracks, a pivoted plate located adjacent to each of said offsets, a section of track on each plate, a rib on each plate, said ribs on the several plates being located out of vertical alinement with each other, and means on said pans for coöperating with said ribs, to cause the pans to be dumped.

5. A conveyer having movable pans thereon, a guiding-track therefor, a series of offsets in said track, a pivoted plate located adjacent to each of said offsets, a section of track on each plate adapted to be moved into said offsets and form a continuous track with the main track, a rib on each plate, said ribs on the several plates being located out of vertical alinement with each other, and an adjustable lug on each of said pans adapted to come into contact with certain of said ribs to cause the pans to be dumped in the desired position with respect to the conveyer.

6. A conveyer having pans thereon, a guiding-track, a series of plates located adjacent to the track, a section of track on each plate, a rib on each plate, said ribs on the several plates being located out of vertical alinement with each other, and means connected with the pans for engaging said ribs.

7. A conveyer having movable pans, a guiding-track, a series of offsets in said track, a plate located adjacent to each of said offsets, a section of track on each plate, and means connected with the pans and cooperating with the plates for causing the pans to be dumped.

8. The combination of a conveyer, having pans, a movably-mounted discharge-chute, having a portion thereof adapted to project into the path of the pans, means for automatically moving the chute in the path of the pans, and means for rendering said moving means inoperative.

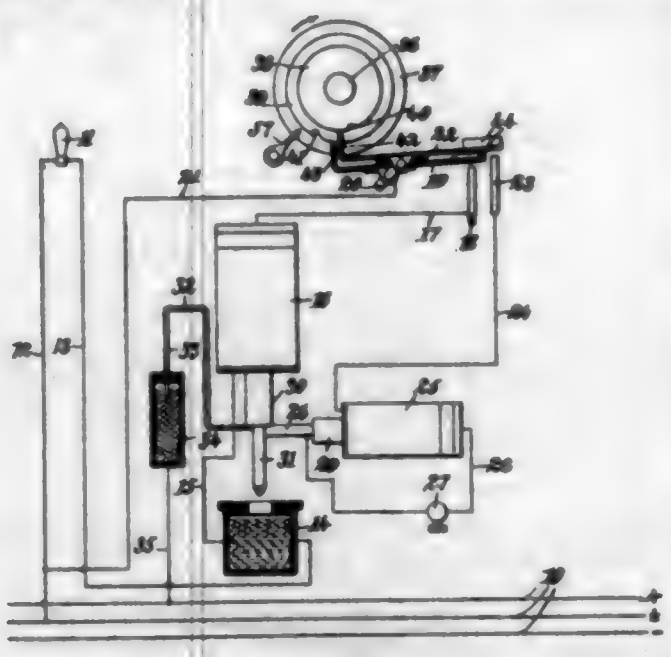
9. The combination of a conveyer having pans, a discharge-chute pivotally mounted on a stationary support and having a portion thereof projecting into the path of the pans, and means for automatically moving the chute out of the path of the pans, said means comprising a rod connected to the chute and means on the conveyer for reciprocating the rod.

10. The combination of a conveyer, having pans thereon, a series of movably-mounted discharge-chutes, and means operable by the conveyer for automatically moving any of said chutes into the path of movement of the pans when a pan approaches the chute.

11. The combination of a conveyer, having pans thereon, a series of movably-mounted discharge-chutes, means operable by the conveyer for automatically moving any of said chutes into the path of movement of the pans when a pan approaches the chute, and means for holding the other chutes out of the path of movement of the pans.

12. The combination of a conveyer, having pans, a series of movably-mounted discharge-chutes, means for moving any of said chutes into the path of movement of said pans, means for holding the other chutes out of the path of the pans, means for dumping each pan when it approaches a chute extending into the path thereof, and means for rendering the last-named means inoperative when a pan approaches a chute held out of said path.

818,226. **ELECTRIC SWITCH.** LEWIS R. BROWN, South Orange, N. J., and FRED H. WENTWORTH, New York, N. Y.; said Wentworth assignor of thirty one-hundredths to said Brown. Filed May 5, 1905. Serial No. 259,942.



Claim.—1. An electric switch comprising a contact-making element, means for supporting said element in inoperative position, an electric circuit, means connected with the electric circuit for releasing said element to cause it to complete another electric circuit, and means on said element for opening said first-mentioned electric circuit when it has released the element.

2. The combination with a main circuit, of an electric switch comprising a contact-making bar, a contact device, means for normally holding said bar in elevated position out of contact with said contact-making device, means for releasing said bar and permitting it to drop into contact with said device, electrical connections from said bar to one member of the main circuit, and electrical connections from said means to another member of the main circuit, said means being in electrical connection with the bar when holding it in elevated position and insulated therefrom when the bar is in contact with the contact-making device.

3. The combination with a main circuit, of an electric switch comprising a contact-making bar, a contact device, means for normally holding said bar in elevated position out of contact with said contact-making device, means for releasing said bar and permitting it to drop into contact with said device, electrical connections from said bar to one member of the main circuit, and electrical connections from said means to the other member of the main circuit, said means being in electrical connection with the bar when holding it in elevated position, said contact-making bar being provided with insulation for preventing electric connection between it and the means for releasing it when the bar is released.

4. The combination with a main circuit, of an electric switch comprising a vertically-movable bar, a mercury-cup located below the bar, a bar for holding the first-mentioned bar in elevated position, means for retracting said second bar and permitting the first-mentioned bar to drop into the mercury-cup, electrical connections from the first-mentioned bar to one member of the main circuit, and electrical connections from the mercury-cup to the other member of the main circuit.

5. The combination with a main circuit, of an electric switch comprising a vertically-movable bar, a mercury-cup located below the bar, a bar for holding the first-mentioned bar in elevated position, means for retracting said second bar and permitting the first-mentioned bar to drop into the mercury-cup, electrical connections from the first-mentioned bar to one member of the main circuit, electrical connections from the mercury-cup to the other member of the main circuit, said first-named bar being provided with insulation for preventing the passage of a current between it and the second bar when the first bar is in the mercury-cup, and means for returning the first-mentioned bar to elevated position.

6. The combination with a main circuit, of an electric switch comprising a contact-making bar, a contact device, means for normally holding said bar in elevated position out of contact with said contact-making device, means for releasing said bar and permitting it to drop into contact with said device, electrical connections from said bar to one member of the main circuit, electrical connections from said means to the other member of the main circuit, said means being in electrical connection with the bar when holding it in elevated position, and means for returning said bar to elevated position, said means comprising an electromagnet.

7. The combination with a main circuit, of a mercury-cup connected therewith, an electrical instrument between the mercury-cup and the main circuit, a vertically-movable bar adapted to enter the mercury-cup, an electromagnet, a bar connected with said electromagnet and adapted to hold said first-named bar in elevated position out of the mercury-cup, and means for connecting the electromagnet with the main circuit to energize it and withdraw the second bar from contact with the first bar.

8. The combination with a main circuit, of an electrical instrument connected therewith, a mercury-cup connected with the electrical instrument, a movable bar adapted to enter the mercury-cup and permanently connected with the main circuit, an electromagnet, a bar connected with the electromagnet and controlled thereby, said bar being adapted to hold the first-named bar in elevated position out of the mercury-cup, and electrical connections between the said last-named bar, said electromagnet and the main circuit, for exciting the electromagnet and withdrawing the bar from its supporting position.

9. The combination of a mercury-cup, a movable bar adapted to enter the mercury-cup, an electromagnet, a bar connected to the electromagnet and controlled thereby, said bar being adapted to hold said first-named bar out of the mercury-cup, and electrical connections between the last-named bar and the electromagnet for exciting the latter and withdrawing the bar from its supporting position.

10. The combination of an electrical circuit, a mercury-cup, a vertically-movable bar adapted to enter the cup connected with said circuit, an electromagnet, a bar connected with said electromagnet and adapted to engage the said first-named bar and hold it in elevated position out of the mercury-cup, and means for energizing the electromagnet to withdraw the second-named bar from contact with the first bar.

11. In an electric switch, the combination of a contact-making bar, a contact device, means for normally holding said bar out of contact with said device, means for releasing the bar and permitting it to move into contact with said device, said means being an electrical connection with the bar when holding it out of contact, and means for returning said bar to a position out of contact with said device.

12. In an electric switch, the combination of a vertically-movable bar, a mercury-cup located below the bar, a second bar for holding the first-mentioned bar in an elevated position, means for retracting the second bar and permitting the first-named bar to drop into the mercury-cup, said first-named bar being provided with an insulation for preventing the passage of the current between it

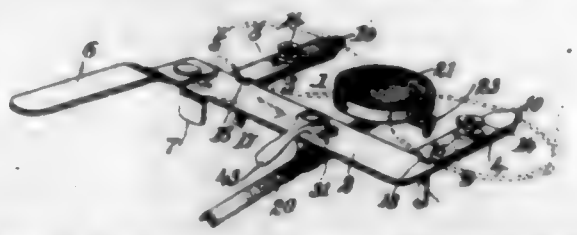
and the second bar when the first bar is in the mercury-cup, and means for returning the first-mentioned bar to elevated position.

13. In an electric switch, the combination of a vertically-movable conducting-bar connected with a source of power, a mercury-cup located below the bar, a second bar for holding the first-mentioned bar in elevated position, and means for retracting the second bar and permitting the first-mentioned bar to drop into the mercury-cup.

14. In an electric switch, the combination of a contact-making bar, a contact device, means for normally holding said bar in elevated position out of contact with said contact device, and means for releasing said bar and permitting it to drop into contact with said device, said means being in electrical connection with the bar when holding it in elevated position, and said contact-making bar being provided with insulation for preventing electric connection between it and the means for releasing it when the bar is raised.

15. The combination with a main circuit, of an electrical instrument connected therewith, a contact device electrically connected with the electrical instrument, a movable bar adapted to engage said contact device and electrically connected with the main circuit, whereby when the bar engages the contact device a circuit will be completed through the electrical instrument and bar, an electromagnet for supporting said bar, a circuit connected with the electromagnet, means for making and breaking said circuit, an electromagnet for moving said bar to position out of contact with the contact-making device, and means for controlling the admission of a current to the last-named electromagnet.

818,227. CLAMPING DEVICE. ALBERT E. BROWN, Brookfield, and CHARLES H. RHODES, Herkimer, N. Y.; said Rhodes assignor to said Brown. Filed Oct. 6, 1904. Serial No. 227,384.



Claim.—1. In combination, a frame comprising a body having forwardly-projecting arms, clamping-plates coöperating with said arms, said clamping-plates having spurs projecting laterally therefrom, said frame having openings through which said spurs pass, a reflector, and means for attaching the same to said frame.

2. In combination, a frame comprising a body with forwardly-projecting arms, a pair of clamping-plates attached to said arms and coöperating therewith, threaded studs carried by said arms, thumb-nuts carried by said clamping-plates and received upon said studs, means for attaching said thumb-nuts by flanges, means for guiding said clamping-plates upon said frame, an adjustable arm attached to said frame, and a reflector carried upon said arm.

3. In combination, a frame comprising a body with forwardly-projecting arms, clamping-plates attached to said arms and coöperating therewith, a handle carried by said frame, a fin extending from said frame and adapted to be secured in a vise, and a reflector supported upon said frame.

4. In combination, a frame comprising a body with plates attached to said body, the plates having recesses adapted to receive thumb-nuts, thumb-nuts having faces adapted to abut against said plates, undercut keepers on the plates adapted to receive said thumb-nuts in conjunction with said recesses, and laterally-disposed flanges formed on said thumb-nuts abutting the inner surface of said keepers and adapted to be retained thereby.

5. In combination, a frame comprising a body with forwardly-projecting arms, a pair of clamping-plates mounted upon said arms, said arms having threaded studs passing upwardly through the said plates, thumb-nuts carried by said plates and seating upon said studs, said clamping-plates having laterally-projecting spurs, said frame having openings through which said spurs pass, said body having a downwardly-projecting fin formed at an edge thereof, said body further having an extension beyond said fin and a pivoted handle attached to said extension, and a reflector supported upon said frame.

6. A clamping device comprising a frame with a swivel-head attached thereto, an arm making an adjustable connection with said swivel-head, means for simultaneously clamping said swivel-head and arm, and a reflector carried by said arm.

7. A clamping device comprising a frame, a swivel-head rotatably mounted on said frame, said swivel-head presenting a face adapted to abut against said frame and having a circumferentially-disposed face, an arm resting against said last face, a member adapted to force said arm against said swivel-head in the direction of said frame, clamping-plates coöperating with said frame and a reflector carried by said arm.

8. A clamping device comprising a frame, a swivel-head rotatably mounted on said frame, said swivel-head presenting a face adapted to abut against said frame and having a circumferentially-disposed face, an arm resting against said last face, a member adapted to force said arm against said swivel-head in the direction of said frame, and a reflector carried by said arm.

9. A clamping device comprising a frame, a swivel-head rotatably mounted against the face of said frame and presenting a circumferentially-disposed face, an arm adapted to rest against said last face, a stirrup adapted to maintain said arm against said circumferential face, means for drawing said stirrup in the direction of said frame, and a reflector carried by said arm.

10. A clamping device comprising a frame, a swivel-head rotatably mounted against the face of said frame and presenting a circumferentially-disposed face, an arm adapted to rest against said last face, a stirrup adapted to maintain said arm against said circumferential face, means for drawing said stirrup in the direction of said frame, and a reflector carried by said arm.

11. A clamping device comprising a frame having an opening therethrough, a stud passing through said opening, a swivel-head attached to said stud and having a face abutting said frame, said swivel-head having a circumferentially-disposed face, an arm resting against said last face, a stirrup attached to said stud and maintaining said arm against said swivel-head, a member making a threaded connection with said stud on the side of said frame opposite to said swivel-head, and a reflector carried by said arm.

12. A clamping device comprising a frame having an opening therethrough, a stud passing through said opening, a swivel-head presenting a circumferentially-disposed clamping-face and a second face adapted to abut against the under side of said frame, said swivel-head having recesses in the wall thereof extending from said last face, a transverse pin mounted in said stud and passing through said recesses, a stirrup mounted upon said pin, a lever on the upper side of said frame making a threaded connection with said stud, an arm received between said circumferential face and said stirrup, and a reflector carried by said arm.

13. A clamping device comprising a frame having an angular opening therethrough, a threaded sleeve having an angular hub mounted in said opening and projecting upwardly from said frame, a stud passing through said sleeve and supported thereby, a swivel-head surrounding said stud below said frame and having a face abutting the under side of said frame, said swivel-head further having a circumferentially-disposed substantially V-shaped groove, a stirrup, a pin passing through said stud and engaging said stirrup, a V-shaped arm engaging said V-shaped groove and lying between the same and said stirrup, a lever having a threaded hub engaging said threaded sleeve, and a reflector carried by said arm.

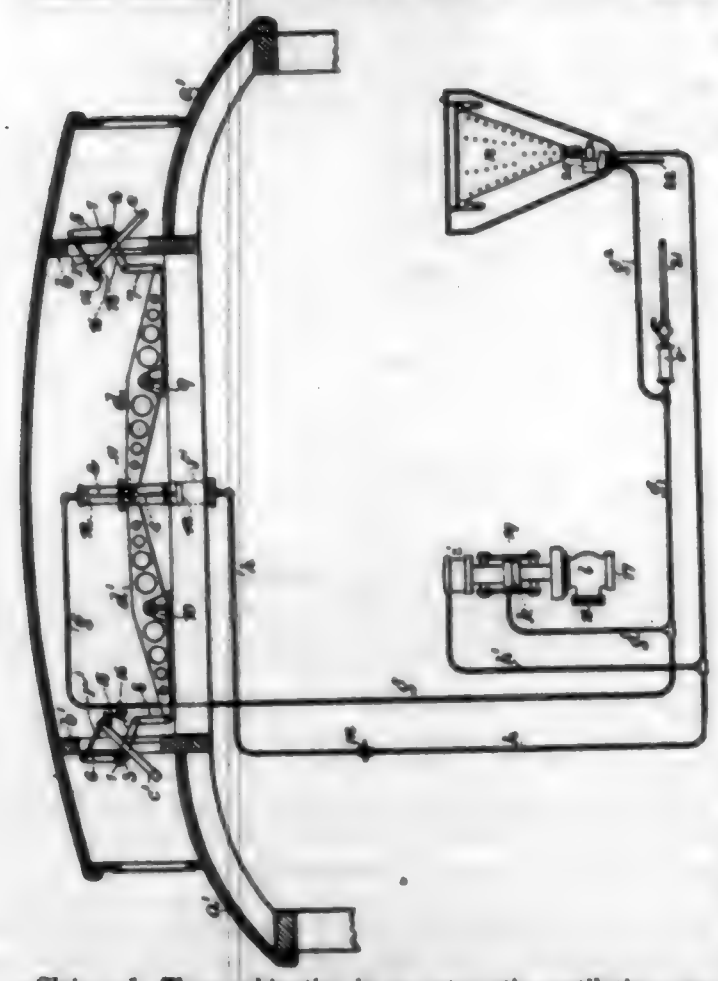
818,228. CLOTHES-DRIER. ERNEST BUTLER, Sheldon, Iowa. Filed Mar. 12, 1904. Serial No. 197,847.



Claim.—The herein-described clothes-drier, comprising the hollow stationary post 1 having the opening 26 near its upper end and the opening 11 below said opening 26, the spring 27 secured on said post, the stop-pin 25 in the opening 26 and secured to and pressed inwardly by said spring, the sliding post 2 in the hollow post 1 and having the notch 24 in one side, said notch having the inclined side and

the abrupt shoulder at the lower end of said side, a clothes-supporting reel mounted on said sliding post, the winding-drum mounted on one side of the hollow post and having the ratchet-wheel and the crank, whereby said drum and ratchet-wheel may be simultaneously rotated, the weighted pawl pivotally connected to the stationary post and engaging the ratchet to prevent rotation of the drum in one direction, and the cord attached to the winding-drum, passed through the opening 11 and attached to the lower end of the sliding post, said winding-drum and cord serving to raise the sliding post, said pawl and ratchet-wheel coacting with the drum and cord to support the sliding post in raised position, and said stop-pin and notch coacting to limit the upward movement of the sliding post.

818,229. AUTOMATIC VENTILATING APPARATUS. FREDERIC C. CRADDOCK, Newburgh, N. Y., assignor of seventy one-hundredths to Mark J. Keogh, Michael H. Keogh, Daniel S. Gerow, and Robert H. Barnett, Newburgh, N. Y. Filed Mar. 27, 1903. Serial No. 150,190.



Claim.—1. The combination in an automatic ventilating apparatus, with the side ventilating-sashes of the car, a thermostatic device and a supply of fluid under pressure, of means actuated by the thermostatic device and the fluid-pressure for regulating the supply of steam to the heating apparatus of a car, means also actuated thereby for simultaneously opening and closing the sashes, and a device interposed between the respective means and by the actuation of which all of the sashes of the series may be caused to simultaneously and instantaneously close, substantially as set forth.

2. In an automatic ventilating apparatus, the combination with the series of sashes in the respective sides of the car and devices upon which the same are mounted and adapted to swing, of fluid-pressure cylinders and pistons therein moving in the same direction, means for controlling the same by the temperature of the car and corresponding devices located at one end of the car, and on opposite sides of the fluid-pressure cylinders and pistons and actuated thereby and in turn connected respectively to the sashes of the series, whereby all of the sashes are simultaneously and instantaneously actuated, substantially as set forth.

3. In an automatic ventilating apparatus, the combination with the series of sashes in the respective sides of the car, of fluid-pressure cylinders and pistons therein moving in the same direction, means for controlling the same by the temperature of the car, corresponding devices located at one end of the car, actuated by the fluid-pressure cylinders and pistons and connected respectively to the sashes of the series, whereby all of the sashes are simultaneously and instantaneously actuated, and means associated with one of said fluid-pressure cylinders for relieving the pressure therein and permitting the pressure in the other cylinder to actuate the means employed to close all of the sashes, substantially as set forth.

4. In an automatic ventilating apparatus, the combination with the sashes in series at the sides of the car, of shafts and devices connected to the sashes for loosely pivoting the same to said shafts, fluid-pressure cylinders having pistons connected and moving in the same direction, and pipes for supplying pressure to the opposite sides of said pistons, a pair of oppositely-placed beams in one end of the car and connections from adjacent ends thereof to the piston-rod of said pistons, whereby said beams are simultaneously actuated, and devices connected respectively to said shafts, sashes and the opposite ends of said beams, whereby with the movement of the beams the sashes may be opened or closed, substantially as set forth.

5. In an automatic ventilating apparatus, the combination with the sashes in series at the sides of the car, of shafts and devices connected to the sashes for loosely pivoting the same to said shafts, fluid-pressure cylinders having pistons connected and moving in the same direction and pipes for supplying pressure to the opposite sides of said pistons, a pair of oppositely-placed beams in one end of the car and connections from adjacent ends thereof to the piston-rod of said pistons, whereby said beams are simultaneously actuated, and devices connected rigidly to corresponding ends of the shafts and to the distant or free ends of said beams and other devices agreeing in number with the number of the sashes and connected respectively to the said shafts and sashes whereby the sashes may all be opened or shut by the movement of the beams or any one or more of said sashes may be closed by hand, substantially as set forth.

6. In an automatic ventilating apparatus, the combination with the sashes in series at the sides of the car, of shafts and devices connected to the sashes for loosely pivoting the same to said shafts, fluid-pressure cylinders connected pistons therein moving in the same direction and automatic means for controlling the fluid under pressure to the said pressure-cylinders, a pair of oppositely-placed beams in one end of the car and connections from adjacent ends thereof to the piston-rod of said pistons, whereby said beams are simultaneously actuated, and crank-arms 13, 14 secured to said shafts at one end and links 7 8 extending from said crank-arms to the distant free ends of said beams, and series of crank-arms 5 6 also secured to said shafts and agreeing in number with the number of the sashes, and latch-arms $r\,r'$ pivoted to the crank-arms 5 6 and adapted to pass through the upper portions of said sashes, and means secured to the sashes and in one position engaged by the latch-arms and in another position free from said latch-arms, substantially as and for the purposes set forth.

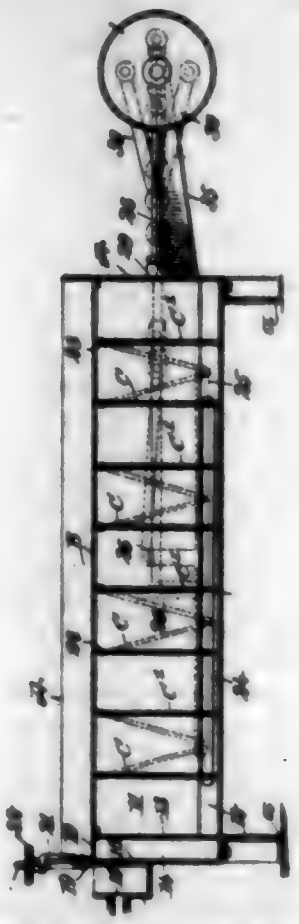
7. In an automatic ventilating apparatus, the combination with the sashes in series at the sides of the car, of shafts and devices connected to the sashes for loosely pivoting the same to said shafts fluid-pressure cylinders connected pistons therein moving in the same direction and automatic means for controlling the fluid under pressure to the said pressure-cylinders, a pair of oppositely-placed beams in one end of the car, and connections from adjacent ends thereof to the piston-rod of said pistons, whereby said beams are simultaneously actuated, and crank-arms 13, 14 secured to said shafts at one end and links 7 8 extending from said crank-arms to the distant free ends of said beams, and series of crank-arms 5 6 also secured to said shafts and agreeing in number with the number of the sashes, and latch-arms $r\,r'$ pivoted to the crank-arms 5 6 and adapted to pass through the upper portions of said sashes, latches 15 pivoted to said sashes and notched latch-plates 16 engaged thereby, whereby in one position of the latches 15 the same are engaged by the latch-arms $r\,r'$ and in the other position are free of said latch-arms, so that the sashes can be moved by hand, substantially as set forth.

8. In an automatic ventilating apparatus, the combination with the series of side sashes of the car, of fluid-pressure cylinders, oppositely-placed connected pistons therein, fluid-pressure pipes opening into the said cylinders, beams $d\,d'$ connected to the piston-rod of said pistons at adjacent ends, devices connecting the beams with the sashes, whereby the sashes may be opened or closed or held at intermediate points, a thermostatic device for controlling the fluid-pressure in the pipes and acting against the respective pistons, and a hand-operated cock in the pipe leading to one of said fluid-pressure cylinders, whereby the pressure therein may be released to permit the pressure against the other piston to operate so as to effect the movements of the mechanism and simultaneously and instantaneously to close all of the sashes, substantially as set forth.

818,230. PULP-SCREEN. CHARLES B. CHAPMAN, Fort Edward, N. Y., assignor of one-half to Joseph Goodfellow, Fort Edward, N. Y. Filed Aug. 23, 1905. Serial No. 275,405.

Claim.—1. In a pulp-screen, a box-body, a screen supported at the upper portion of the said body, paddles or blades pivoted in the

body at their upper ends beneath the said screen, the said blades or paddles being in two series and the series being alternately placed, and means for reciprocating the series of paddles simultaneously in opposite directions.

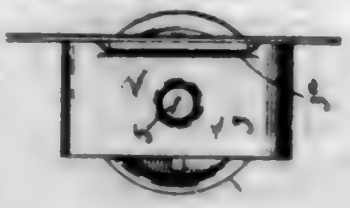


2. In a pulp-screen, a box-body, a screen located within the said box-body adjacent to its top, a casing located below the screen in the box-body, comprising side sections which stop short of the bottom of the box-body and an end section which extends to the bottom of said box-body, two series of paddles or blades pivoted within the casing at their upper ends, the paddles or blades of the series being alternately arranged, and means for rocking the said blades or paddles simultaneously in opposite directions.

3. In a pulp-screen, a box-body, a screen within the said body located adjacent to the top, a casing located in the box-body below the screen, comprising side sections which extend to the forward end of the box-body from a point near the rear and terminate short of the bottom of the box-body, and a rear section connecting the side sections and extending to the bottom of the box-body, forming a rear pocket in communication with the spaces between the sides of the body and the side sections of the casing, a trough located at the rear of the box-body, an opening leading into the said pocket, a gate for the said opening, said trough being provided with an overflow-outlet, series of blades or paddles pivoted within the said casing at their upper ends, the blades of the series being alternately placed, and means for simultaneously rocking the blades of each series in an opposite direction to the other.

4. In a pulp-screen, a box-body, a screen located in the said box-body, arms extending from the said screen at one end, a shaft journaled in bearings carried by the arms, disks secured to the said shaft, a pulley also secured to the shaft, two series of blades or paddles pivoted at their upper ends within the box-body below the screen, the blades or paddles of the series being alternately placed, an operating-bar at each side of the body, one bar being connected to the lower end of one series of paddles or blades and the other bar being correspondingly attached to the blades or paddles of the other series, links connected with the said operating-bars, pitmen connected with the said links, said pitmen being pivotally attached to the said disks on the said shaft at opposite sides of the centers of the disks.

818,231. SASH-PULLEY. DWIGHT G. CLARK, Plainville, Conn. Filed May 5, 1905. Serial No. 259,002.

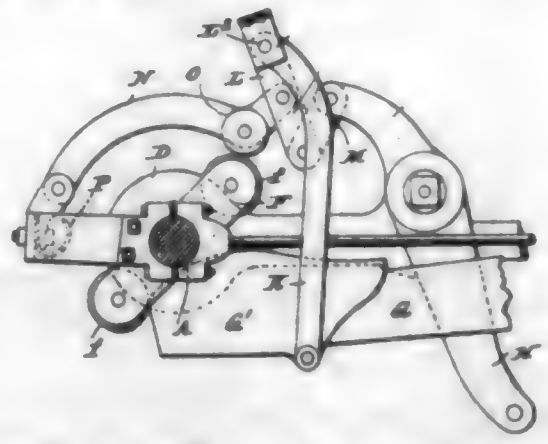


Claim.—1. In a device of the character described, a face-plate having an elongated slot therein, a portion of the metal displaced in forming said slot being extended rearwardly and forming a stiffening-web extending entirely around said slot and also forming a case-centering device, a case bearing on the outer side of said centering device, a portion of the metal of said face-plate being bent down to afford means for clamping said case securely against said face-plate the side edges of said case being bent outward and doubled back beneath the bent-down portion of the face-plate.

2. In a device of the character described, a face-plate having an elongated slot therein, a portion of the metal displaced in forming said slot being extended rearwardly and forming a stiffening-web extending entirely around said slot, and also forming a case-centering device, a case bearing on the outer side of said centering device and means for clamping said case securely against said face-plate, said means comprising long flanges at the opposite side edges of said case substantially at right angles to the body of the case, and a turned-back portion of the stiffening-web of the face-plate along each side of said elongated slot.

3. A frame for a sash-pulley comprising a face-plate having an elongated slot, clamping-flanges integral with the face-plate at the sides of the slot, an elongated case of less thickness than the width of the plate having its side edges bent outward to substantially the width of the face-plate and backward beneath the clamping-flanges.

818,232. BALING-PRESS. WILLIAM R. COLMAN, Quincy, Ill. Filed Aug. 14, 1905. Serial No. 274,096.



Claim.—1. In a power mechanism for presses the combination with the pitman and double-ended rotary power-head adapted to engage the pitman to impart the final advance movement thereto, of a mechanism for giving the pitman its initial movement embodying links pivotally connected with the pitman and a fixed support respectively, an intermediate lever pivotally connecting said links and a pressure-receiving link pivotally connected with said lever and movable into and out of the path of the arms of the power-head; substantially as described.

2. In a power mechanism for presses the combination with the pitman and rotary power-head, of link-arms pivotally connected with the pitman and a fixed support respectively, an intermediate lever pivotally connecting said link-arms, and a pressure-receiving link pivotally connected at one end with said intermediate lever and at the opposite end with a fixed support, said pressure-receiving link being movable into and out of the path of the power-head; substantially as described.

3. In a power mechanism for baling-presses the combination with the rotary power-head and pitman, of link-arms pivotally connected with the pitman, a link-arm pivotally connected with a fixed support, an intermediate lever pivotally connecting said link-arms and a pressure-receiving member pivotally connected with said lever intermediate the link-arm connections and movable into and out of the path of the power-head; substantially as described.

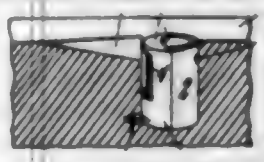
4. In a power mechanism for baling-presses the combination with the rotary power-head and pitman, of link-arms pivotally connected at one end with the pitman and at the opposite end with an intermediate lever, a link pivoted at one end to a fixed support and at the opposite to said intermediate lever, a pressure-receiving link pivoted on a fixed support and pivotally connected with said lever intermediate the first-mentioned link connections, and coöperating rollers on the pressure-receiving link and power-head; substantially as described.

5. In a power mechanism for baling-presses, the combination with the double-ended power-head and the reciprocatory pitman, of link-arms pivotally connected with the pitman and a fixed support

respectively, an intermediate lever pivotally connecting said link-arms, and a pressure-receiving link pivoted at one end to a fixed support and having its end substantially radial to the power-head and pivotally connected with the intermediate lever, the intermediate part of said pressure-receiving link being movable into and out of the path of the power-head; substantially as described.

6. In a power mechanism for baling-presses, the combination with the rotary power-head and reciprocatory traverser, of three link-arms two pivotally connected with fixed supports and one pivotally connected with the pitman and an intermediate lever with which said link-arms are pivotally connected at different points, one of said link-arms being movable into and out of the path of the power-head; substantially as described.

818,233. COFFIN-FASTENER. CHARLES A. CONKLIN, Adrian, Mich. Filed Dec. 2, 1904. Serial No. 235,170.



Claim.—1. A keeper comprising two half-round members adapted to enter and fill a receiving-socket, one member having a projecting prong and an aperture adapted to receive an interlocking part, the other member being adapted to engage the first-mentioned member in the socket and retain it in place.

2. A keeper, comprising semicylindrical members adapted to enter a socket, one of said members having an engaging prong adapted to enter the wall of the socket and an aperture to receive a hook or engaging part, the other of said members forming with the first part a cylindrical shell and adapted to be driven into the socket against the first part to crowd the prong into the wall thereof and to fill the socket-opening in conjunction with the part carrying the prong.

3. A cylindrical socket-keeper composed of separable members, one member having a projecting prong and an aperture for an engaging part, the other member forming the complementary portion of the cylinder and adapted to wedge the pronged member in a receiving-socket in which the members are seated.

4. A hollow socket-keeper, composed of separable parts adapted to fill a socket, one part having a projecting prong and means for engaging an interlocking hook, the other part being adapted to wedge the pronged part in the socket, the united parts forming a bottom and a retaining member passing through said bottom.

818,284. REGISTER. ISAAC S. DEMENT, East Orange, N. J., and FOSTER J. HULL, Brooklyn, N. Y., assignors, by mesne assignments, to American Mechanical Cashier Company, a Corporation of New Jersey. Filed Mar. 20, 1903. Renewed Dec. 7, 1905. Serial No. 290,751.



Claim.—1. The combination of a plurality of registering devices of different denominational value, a plurality of operating means for the respective registering devices, pawl-and-ratchet connections between the operating means and the registering devices, and means controlled by the registering devices to limit the movement of the operating means for the registering devices of higher denominations and for allowing extra movement of such operating means when the lower registering devices pass the zero-point.

2. The combination of a plurality of register-shafts a plurality of operating-shafts, sliding controller-bars, geared to said operating-shafts, dogging means for limiting the movement of said controller-bars and means connected to the register-shafts to control operation of such dogging means for the controller-bars of next higher denomination.

3. The combination of a plurality of register-shafts, a plurality of operating-shafts connected thereto by pawl-and-ratchet connections, sliding controller-bars, geared to said operating-shafts, dogging means for limiting the movement of said controller-bars and means connected to the register-shafts to control operation of such dogging means for the controller-bars of next higher denomination.

4. The combination of a plurality of register-shafts, a plurality of operating-shafts connected thereto by pawl-and-ratchet connections, controller-bars geared to said operating-shafts, springs for moving said controller-bars in one direction, keyboard mechanism for determining the extent of said movement, handle-operated reset mechanism for moving said bars in succession in the opposite direction, dogging devices for the controller-bars determining the extent of their reset movement and means operated by the register-shafts to release said dogging means for the controller-slides of next higher denomination when the said register-shafts pass the zero-point.

5. The combination of a plurality of register-shafts, a plurality of operating-shafts connected thereto by pawl-and-ratchet connections, controller-bars geared to said operating-shafts, springs for moving said controller-bars in one direction, keyboard mechanism for determining the extent of said movement, handle-operated reset mechanism for moving said bars in succession in the opposite direction, dogging devices for the controller-bars, fixed stopping means coöperating with said dogging devices for determining the extent of the reset movement, and means operated by the register-shaft to release said dogging means by pushing it over said stopping means, for the controller-slides of next higher denomination when the said register-shafts pass the zero-point.

6. The combination of a plurality of register-shafts, operating-shafts connected thereto by pawl-and-ratchet connections, controller-bars geared to said shafts, keyboard mechanism and operating means controlling the movement of said controller-bars in one direction, reset means for moving said bars in reverse direction, fixed stopping means and dogging devices for the controller-bars and engaging normally with one side of said fixed stopping means and means connected to the respective register-shafts for pushing said dogging devices to the next higher denomination over the said fixed stopping means when the said register-shafts pass the zero-point.

7. The combination of a plurality of register-shafts, a plurality of operating-shafts connected thereto by pawl-and-ratchet connections, controller-bars geared to said operating-shafts, springs for moving said controller-bars in one direction, keyboard mechanism for determining the extent of said movement, handle-operated reset mechanism comprising a yielding connection for moving said bars in succession in the opposite direction, dogging devices for the controller-bars determining the extent of their reset movement and means operated by the register-shafts to release said dogging means for the controller-slides of next higher denomination when the said register-shafts pass the zero-point.

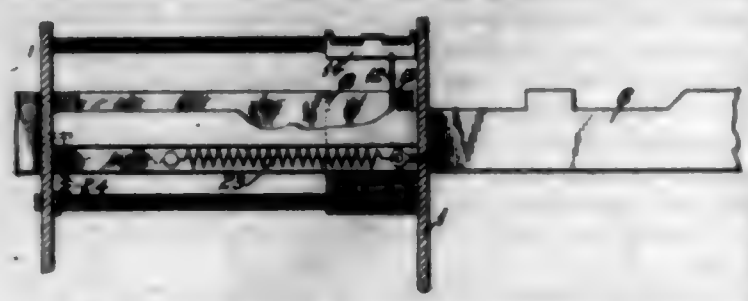
8. The combination of the rack-bars of a registering device and a resetting device, provided with engaging parts capable of being disengaged from each other when the resetting device has moved the registering device back to its normal position.

9. The combination with a plurality of registering devices and their operating means, of pawl-and-ratchet connections between said parts having members slidable into and out of engaging relation and means engaging the said slidable members to disconnect the registering devices.

818,285. REGISTER. ISAAC S. DEMENT, East Orange, N. J., assignor to American Mechanical Cashier Company, New York, N. Y., a Corporation of New York. Filed July 23, 1903. Renewed Dec. 7, 1905. Serial No. 290,752.

Claim.—1. The combination of a plurality of register-shafts of different denominational value, a plurality of controller-bars opera-

tively connected to the register-shafts, means for operating the controller-bars, devices projected in the path of the controller-bars to determine the return movement of the same, and means for operating said devices and register-shafts to turn a register-shaft of higher value when the lower one passes the zero-point.



2. The combination of a plurality of register-shafts of different denominational value, a plurality of controller-bars operatively connected to the register-shafts, means for operating the controller-bars, stop-plates in the path of the controller-bars to determine the return movement of the same, and means for operating said stop-plates and register-shafts to turn a register-shaft of higher value when the lower one passes the zero-point.

3. The combination of a plurality of register-shafts of different denominational value, a plurality of controller-bars operatively connected to the register-shafts, means for operating the controller-bars, oscillating stop-plates in the path of the controller-bars to determine the return movement of the same, and means for operating said oscillating stop-plates and register-shafts to turn a register-shaft of higher value when the lower one passes the zero-point.

4. The combination of a plurality of register-shafts, a plurality of controller rack-bars operatively connected to the register-shafts, means for operating said controller-bars, two shouldered oscillating stop-plates, shoulders on the bars engaging the stop-plates to determine the limit of their return movement, and means on the register-shafts operating the stop-plates to permit the turning of a register-shaft of higher value when the lower one passes the zero-point.

5. The combination of a plurality of register-shafts, a plurality of rack-bar controllers operatively connected to the register-shafts, two shouldered oscillating stop-plates engaging shoulders on the controller-bars, cams on the register-shafts, rock-shafts supporting the stop-plates, and arms on said shafts operated upon by the cams to oscillate the stop-plates to determine the movement of the register-shaft of higher value if the lower one passes the zero-point.

6. The combination of a plurality of register-shafts, a plurality of controller rack-bars operatively connected to the register-shafts, rock-shafts supporting the oscillating stop-plates, cams on the register-shafts engaging arms on the rock-shafts to operate the oscillating stop-plates, a stationary notched stop-plate, dogs pivoted to the oscillating stop-plates and adapted to engage the notched stop-plate and retain the oscillating stop-plates in position to allow the controller rack-bars to affect the register-shafts of higher value.

7. The combination of a plurality of register-shafts, a plurality of spring-actuated controller rack-bars operatively connected thereto, means for determining the movement of the controller-bars when released, means for returning them to their initial position, cam-controlled oscillating stop-plates, dogging means for retaining them in their cam-operated positions, and shoulders on the oscillating stop-plates engaging shoulders on the controller-bars to determine the movement of the register-shaft of higher value if the lower one passes the zero-point.

8. The combination of a plurality of register-shafts, a plurality of controller rack-bars, two shouldered oscillating stop-plates mounted on rock-shafts and adapted to limit the return movement of the controller-bars, cams on the register-shafts oscillating the stop-plates during each revolution of the register-shafts to affect the oscillating stop-plate and the controller-bar of the next higher denomination.

9. The combination of a plurality of register-shafts, a plurality of controller rack-bars, cam-controlled oscillating stop-plates, a stationary stop-plate, dogging means carried by the oscillating stop-plate and adapted to engage the stationary stop-plate to permit the controller-bars to affect, in their return movement, the register-shaft of higher value when the lower one passes the zero-point.

10. The combination of a plurality of register-shafts, a plurality of controller-bars, oscillating stop-plates engaging the controller-bars, dogging means pivoted on the oscillating stop-plates, a stationary stop-plate engaged by the dogging means to hold the oscillating stop-plates in operative position, and a tooth on the dogging means engaging an inclined shoulder on the controller-bar to release the dogging means from the stationary stop-plate when the controller-bar is returned to its normal position.

11. The combination of a plurality of controller-bars, a plurality of register-shafts operated thereby, oscillating stop-plates, dogs on said plates, a stationary stop-plate engaged by said dogs, means for resetting the register-shafts to zero comprising a gear-operated rack, pinions loosely mounted on the register-shafts and engaging the rack, wheels fixed to the register-shafts, means for engaging the pinions and wheels, and means for preventing the dogs on the oscillating stop-plates from engaging the stationary stop-plate during the resetting operation.

12. The combination of a plurality of register-shafts, means for resetting the register-shafts to zero, comprising a gear-operated rack, pinions loosely mounted on the register-shafts and engaging the rack, wheels fixed to the register-shafts and carrying spring-actuated pins, and projections on the pinions adapted to engage the wheel-pins whereby the shafts will be returned to zero when the rack is operated.

13. The combination of a plurality of controller-bars, a plurality of register-shafts operated thereby, oscillating stop-plates, dogs on said stop-plates, a stationary stop-plate engaged by the dogs, a spring-actuated rock-shaft operated by the reset means, arms on said rock-shaft engaging heels on the dogs to hold them out of engagement with the stationary stop-plate during the resetting operation.

14. The combination of a plurality of register-shafts, means for resetting the register-shafts comprising a gear, a rack operated thereby, pinions loosely mounted on the register-shafts and engaging the rack, wheels fixed to the register-shafts, means for engaging the pinions and wheels, a spring-actuated rock-shaft, and a cam on the gear operating said rock-shaft, for the purposes explained.

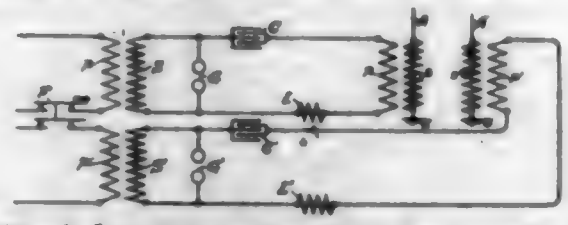
15. The combination of a plurality of register-shafts, means for resetting the register-shafts to zero comprising a reset-shaft mounted in the frame, a gear on said shaft, a rack engaged by the gear, pinions on the register-shafts engaged by the rack, a cam on the reset-shaft, and a rock-shaft operated by said cam for the purposes explained.

16. The combination of a plurality of controller-bars, a plurality of register-shafts operated thereby, oscillating stop-plates, dogs on said stop-plates, a stationary stop-plate engaged by the dog, means for resetting the register-shafts to zero, and means for holding the dogs out of engagement with the stationary stop-plate when the register-shafts are reset to zero.

17. The combination of a plurality of registering devices and a resetting device, the said devices provided with engaging parts consisting of yielding spring-actuated pins so arranged that in the regular registering operation the engaging parts will pass each other, while in the resetting operation the said pins will lock and the resetting device will move the registering device to its original position.

18. The combination of a registering device and a resetting device provided with engaging parts consisting of yielding spring-actuated pins, one of said engaging pins adapted to withdraw from engagement with the other when the resetting device has moved the registering device back to its normal position.

818,236. **SPACE SIGNALING SYSTEM.** CORNELIUS D. EHRET, Ardmore, Pa. Filed July 27, 1903. Serial No. 167,129.



Claim.—1. In a wireless-telegraph receiver, means for producing fluctuating electric current, means for reinforcing said current, and a recorder controlled by said reinforced current.

2. In a wireless signaling system, receiving apparatus comprising means responsive to the received electroradiant energy for producing fluctuations or changes in locally-generated current, means for amplifying said changes or fluctuations in said current, and a signal-translating instrument controlled or actuated by said amplified current.

3. In a wireless signaling system, receiving apparatus comprising an aerial conductor, a wave-responsive device associated therewith, a source of locally-generated current controlled by said wave-responsive device, means for amplifying the changes or fluctuations in said current as caused by said wave-responsive device,

and a signal-translating instrument actuated or controlled by said amplified current.

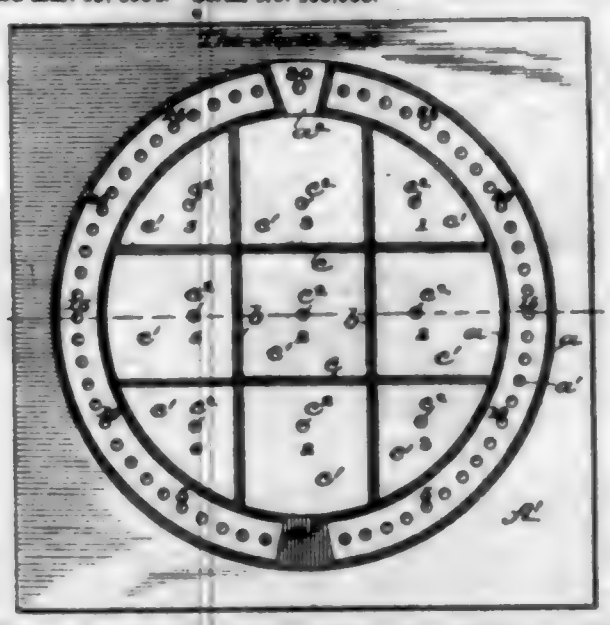
4. In a wireless signaling system, receiving apparatus comprising an aerial conductor, a wave-responsive device associated therewith, a local circuit containing a source of energy controlled by said wave-responsive device, a booster associated with said local circuit, and a signal-translating instrument actuated or controlled by the increased energy.

5. In a wireless signaling system, receiving apparatus comprising an aerial conductor, means associated therewith for producing a current fluctuating in a manner to represent a signal, means for increasing the amplitude of the fluctuations, and a signal-translating instrument controlled or actuated by said increased fluctuations.

6. In a wireless signaling system, transmitting apparatus comprising means for impressing upon the natural media trains of electroradiant energy waves succeeding each other at practically uniform rate, in combination with receiving apparatus comprising an aerial conductor, a self-restoring wave-responsive device associated therewith, a local source of energy controlled by said wave-responsive device, an associated induction-generator driven above synchronism for the rate of succession of current impulses depending upon the transmitted wave trains, and a signal-translating instrument controlled or actuated by the reinforced energy.

7. In a wireless signaling system, means for impressing upon the natural media a plurality of series of wave trains, the waves of each series having a characteristic frequency, and the wave trains of each series succeeding and not overlapping the wave trains of the other series, in combination with receiving-apparatus comprising a plurality of receiving-circuits, each circuit being selective of the waves of a certain series, and a magnetizable mass subjected to a number of magnetizing forces equal to or a multiple of the sum of the transmitted wave trains, said magnetizing forces succeeding each other in an order corresponding with the order of succession of the transmitted wave trains, said magnetizable mass producing or controlling the production of a signal.

818,237. GAME-BOARD. RICHARD F. ELBURN, Chestertown, Md. Filed Mar. 19, 1904. Serial No. 198,990.

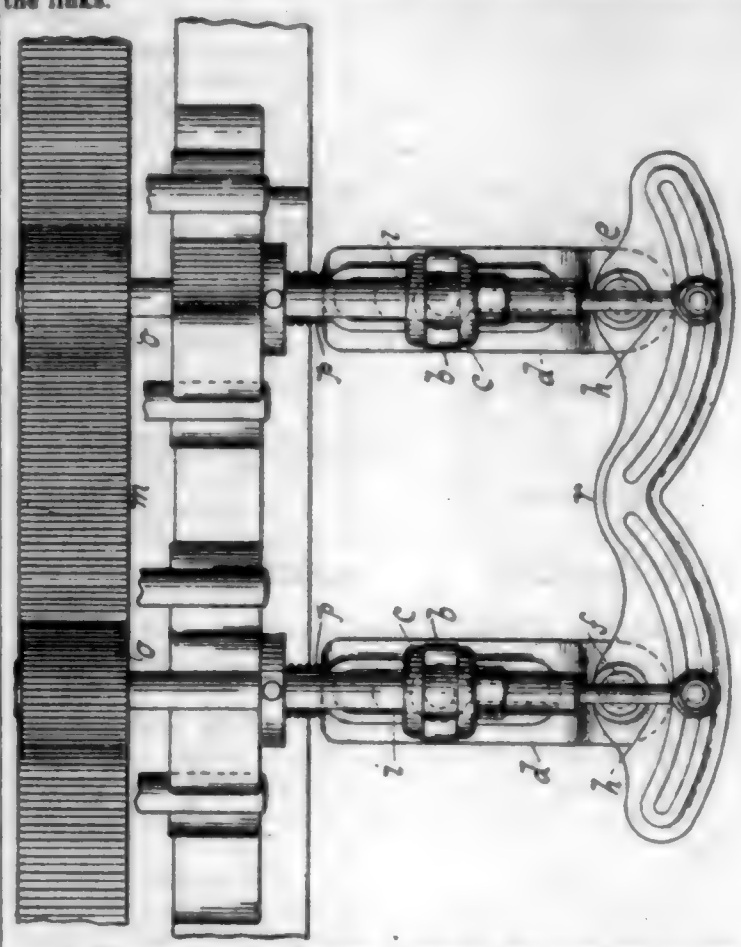


Claim.—A game apparatus consisting of a suitable base having delineated thereon a plurality of intersecting horizontal and vertical lines forming a plurality of spaces, a value-numeral delineated on the surface of each space, a circle inclosing the vertical and horizontal lines, each space provided with a peg hole or socket, a row of peg-holes beginning below the lower central space at each side of the vertical center of the same and extended upwardly in an arc to the side of the vertical center of the upper central space, a peg-hole located above the upper space at its vertical center, said peg-hole forming a continuation of the two side arcs of holes and being common to each, two sets of game-pegs of contrasting colors, each set consisting of a specified number of small pegs and one large or registering peg.

818,238. INKING ARRANGEMENT FOR PRINTING-PRESSES. GEORGE P. FENNER, New London, Conn. Filed Oct. 31, 1905. Serial No. 285,285.

Claim.—1. A device for regulating the vibration of ink-rollers which comprises vibrator-nuts, a connection between the nuts, and links for conveying motion from the connection to the ink-rollers.

2. The combination with driving-shafts and nuts reciprocated by the shafts, of a connection vibrated by the nuts, links extended from the connection, and ink-rollers having their shafts engaged by the links.

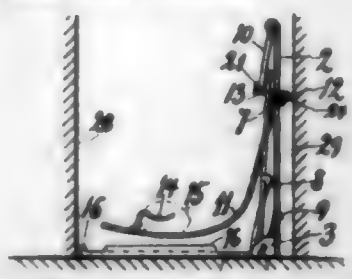


3. The combination between driving-shafts and nuts reciprocated by the shafts, of a connection vibrated by the nuts, links extended from the connection, and ink-rollers having their shafts engaged by the links, said links being adjustably united to the connection.

4. The combination with driving-shafts and nuts reciprocated thereby, of forks with sliding blocks, ink-roller shafts engaged by the forks, links connected to the forks, and a connection engaging the links and pivoted to the nuts.

5. A vibrating device for ink-rollers comprising driving-shafts with nuts reciprocated thereby, a slotted connection pivoted to the nuts, links adapted to be adjustably pivoted along the slots, and ink-roller shafts engaged and vibrated by the links.

818,239. ANIMAL-TRAP. EDWARD FIENHABER, Janesville, Minn. Filed Oct. 13, 1905. Serial No. 282,606.

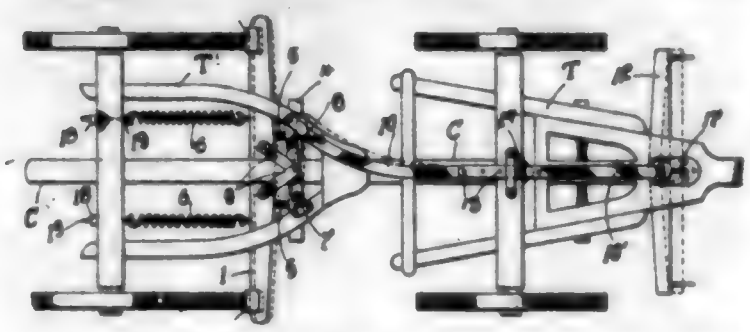


Claim.—1. As an improved article of manufacture, an animal-trap consisting of an elongated sheet-metal frame bent to form a base and an upright, and having at the bend the perforated lugs 3, and at the top of the upright a pair of perforated lugs, a bar inserted in the lugs 3, a striking-bail pivotally placed on the bar, and a spring on the bar for driving the striker, a comparatively short trigger trunnioned in the upper lugs and adapted to engage and hold the striker in its set position, the lever 11 pivotally suspended from the upper part of the front side of the upright and having at its lower end a long horizontal arm acting as a treadle for the animal, and at its upper end a shorter horizontal arm adapted to engage the end of the trigger to hold the trap set.

2. As an improved article of manufacture, an animal-trap consisting of an elongated sheet-metal frame bent to form a base and an upright, and having at the bend the perforated lugs 3, and at the top of the upright two perforated lugs, a three-armed trigger having one arm inserted in each of said lugs and the third arm hanging downward therefrom, a bar in the lower lugs, a spring-actuated striker on the bar, a bow-shaped lever pivoted upon the front side of the upright near the upper end thereof and being formed with a lower horizontal arm serving as a treadle for the animal, and an upper horizon-

tal arm having a hole for engaging the lower arm of the trigger; said lever being formed near its top with a horizontally-broad tongue at its back side, and said upright having a horizontal slot receiving loosely said tongue, and means for retaining said tongue in the slot, the bow shape of the lever being to clear the bar and spring, and the trunnions of the trigger being to prevent side motion of said member.

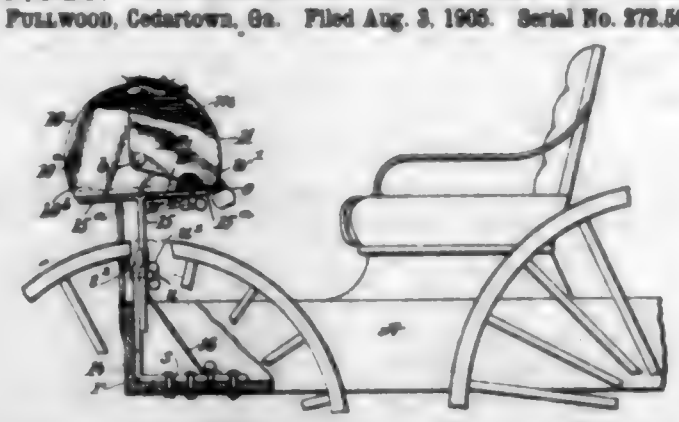
818,240. **WAGON-BRAKE.** FRED FISHER, Ironton, Mo., assignor to Charles Madinger, Ironton, Mo. Filed Oct. 13, 1905. Serial No. 282,631.



Claim.—1. In combination with an oscillating doubletree having a movement lengthwise of the vehicle, a lever pivoted to the rear thereof, a brace or shoe carried by the lever above its pivotal point and adapted to be forced against the doubletree, an angle-plate having a recess or slot for the passage of the lever, an offset or shoulder in the slot for locking the lever in position, a brake-beam, and connections between the doubletree and brake-beam, substantially as set forth.

2. In combination with a reciprocating brake-beam, means for guiding the same, springs for forcing the beam against the wheels of the wagon-truck, a lever pivoted at one end below the truck, links connecting an intermediate point of said lever to the brake-beam, a pull-bar leading from the opposite end of the lever, and a doubletree movable lengthwise of the wagon coupled to the front end of the pull-bar, the parts operating substantially as, and for the purpose set forth.

818,241. **MAIL COLLECTION AND DELIVERY BOX.** JOHN I. PULLWOOD, Cedartown, Ga. Filed Aug. 3, 1905. Serial No. 272,507.



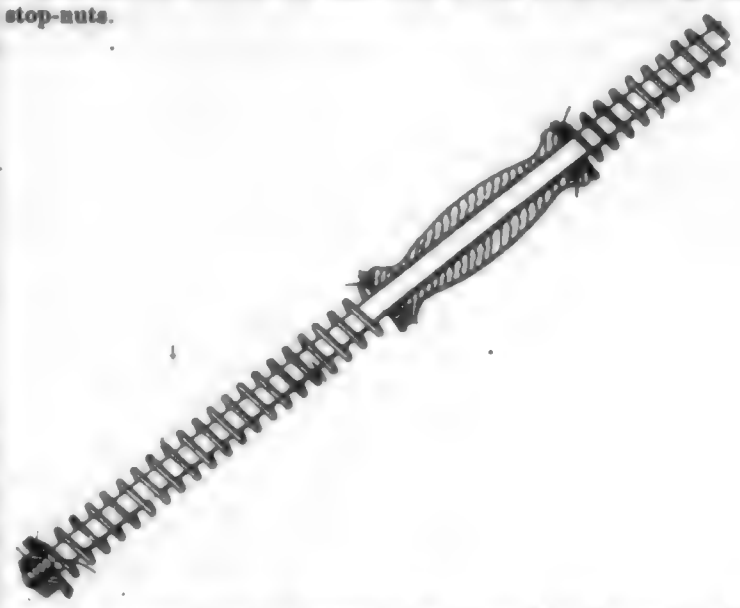
Claim.—1. A supporting-frame for a mail-box, comprising duplicate standards having vertical extensions, and lateral wings on upper ends of said extensions, said wings being securable on the bottom of a mail-box mounted thereon.

2. In a device of the character described, the supporting-frame for the mail-box, comprising two upright standards having horizontal base portions, a slotted extension-arm clamped upon each standard by an adjustable bolt and nut, the slotted extension-arms each having a slotted horizontal wing on its upper end, and a bolt engaging said slot and also engaging the bottom of a mail-box body for adjustably securing the box on the standard.

818,242. **EXERCISING DEVICE.** THEODOR R. GEISEL, Springfield, Mass. Filed Dec. 27, 1905. Serial No. 293,475.

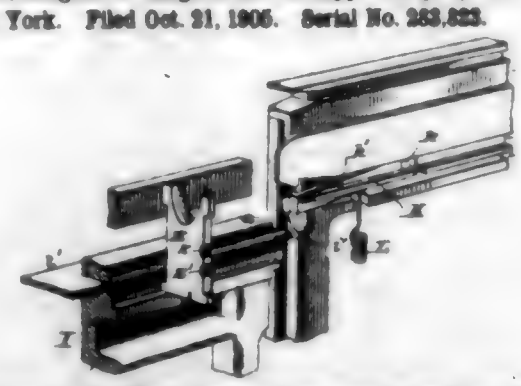
Claim.—1. An exercising device consisting of a rod, having stops at its ends, a pair of tubular handles slidable on the rod and arranged the one separated from the other, and each at a distance from an end of the rod, a spiral spring encircling the middle portion of the rod having its outer ends in engagement with the ends of the tubular handles, and two further spiral springs encircling the portions of the rod between the outer ends of said handles and the end stops.

2. An exercising device consisting of a rod, having at its ends necked-down screw-threaded portions and shoulders, and nuts screw-engaging said threaded portions set against said shoulders, constituting end stops, a pair of tubular wood handles provided with metallic washers at their opposite ends slidable on the rod and arranged the one separated from the other, and each at a distance from an end of the rod, a spiral spring encircling the middle portion of the rod having its outer ends in engagement with the washer-provided ends of the tubular handles, and two other spiral springs encircling the portions of the rod between the outer ends of said handles and the end stop-nuts.



3. An exercising device consisting of a rod, having stops at its ends, a pair of tubular handles slidable on the rod and arranged the one separated from the other, and each at a distance from an end of the rod, a spiral spring encircling the middle portion of the rod having its outer ends connected with the inner ends of the tubular handles, and two further spiral springs encircling the portions of the rod and between the outer ends of said handles and the end stops, and having their inner ends connected with the handles of their outer ends confined against movement relatively to the rod.

818,243. **LINOTYPE-MACHINE.** CARL L. GROHMANN, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 21, 1905. Serial No. 283,823.



Claim.—1. In a linotype-machine containing "two-letter" matrices, a switch beyond the assembling-elevator to control the elevation of the matrices as they are delivered laterally from said elevator.

2. In a linotype-machine, and in combination with the assembling-elevator I, and the intermediate channel M provided with two grooves, a movable switch to control the course of the matrix-cars into one groove or the other.

3. In combination with the assembling-elevator and the channel M, the intermediate switch controlled by the elevator to hold the advancing matrices down to their proper level.

4. In a linotype-machine having a horizontal channel for the passage of the composed matrix-lines in an endwise direction, a device located in the path of the matrix-line and adjustable to hold the matrices at a low level or permit their passage at a high level.

5. In a linotype-machine, a switch to control the course of the matrix-line, arranged to be actuated by the assembling-elevator.

6. In a linotype-machine, the combination of the assembling-elevator, the intermediate channel and vertically-movable automatic device to hold down the matrices advancing from the assembler to the channel at a low level.

7. In a linotype-machine, an assembling-elevator provided with means for maintaining the matrices of a composed line at a high or a low level as required, a channel through which the matrix-lines are horizontally delivered from the assembling-elevator, and an adjustable device in said channel to maintain the level of the matrices as they are transferred.

8. A linotype-machine having a grooved guiding-rail, and a preliminary guide-block adjustable to direct the course of the matrices during their passage toward the body of the guide-rail.

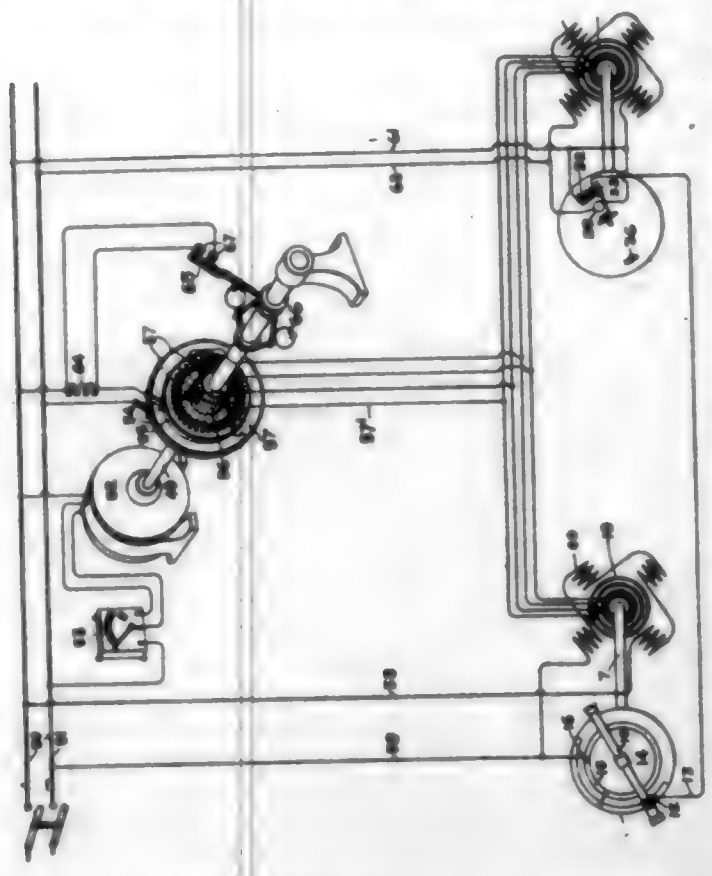
9. A linotype-machine having a guide-rail, and a preliminary guide-block adjustable with respect to the rail and serving to govern the course of the matrices from the assembler to said rail.

10. A linotype-machine having a guide-rail provided with a lower rib, the upper and lower faces of which are arranged to engage with the matrices of a two-letter machine either in normal or raised position, and a preliminary guide-block for directing the matrix-lugs to positions above or below said rib.

11. In a linotype-machine, a guide-rail having a rib arranged to engage with the lower lugs of normal or raised matrices, and a preliminary guide-block adjustable to direct all of the lugs beneath the rib during ordinary work, and to direct normal and raised matrices below and above said rib respectively, when different faces are used in the same line.

12. In a linotype-machine, the adjustable matrix-guide extending beyond the assembler into the intermediate channel.

818,244. **SIGNALING SYSTEM.** JOHN L. HALL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 15, 1904. Serial No. 224,555.



Claim.—1. A signal system comprising a transmitter and a receiver each having a rotatable part, means for driving said parts synchronously, an observing instrument on the transmitter movable independently of the rotatable part thereof, and means on the receiver for indicating a direction bearing a definite relation to the position of said observing instrument.

2. A signal system comprising a transmitter and a receiver each having a rotatable part, means for driving said parts synchronously and in a definite angular relation, an observing instrument on the transmitter movable independently of the rotatable part thereof, and means on the receiver for indicating a direction bearing a definite relation to the position of the observing instrument.

3. A signal system comprising a transmitter and a receiver each having a rotatable part, means for driving said parts synchronously and in a definite angular relation, an observing instrument on the transmitter movable independently of the rotatable part thereof, and means on the receiver for indicating once during each revolution of the rotatable part of the receiver a direction bearing a definite relation to the position of the observing instrument.

4. A signal system comprising a transmitter and a receiver each having a rotatable part, means for rotating said parts synchronously and in a definite angular relation, and devices actuated by the transmitter for causing the receiver to indicate a direction bearing a definite relation to the position of the rotatable part of the transmitter when said devices were operated.

5. A signal system comprising a transmitter and a receiver each having a rotatable part, means for rotating said parts in synchroniam and in a definite angular relation, and devices actuated by the transmitter for causing the receiver to indicate once in each revolution of the rotatable part thereof a direction bearing a definite relation to the position of the rotatable part of the transmitter when said devices were operated.

6. A signal system comprising a transmitter and a receiver each having a rotatable part, means for rotating said parts synchronously, and means carried by the rotatable part of the receiver for giving an indication of direction once in each rotation thereof.

7. A signal system comprising two transmitters and corresponding receivers each having a rotatable part, means for driving the rotatable part of each transmitter and the receiver corresponding thereto in synchronism and in a definite angular relation, and means on each transmitter for causing its receiver to indicate a direction once in each revolution thereof.

8. A signal system comprising two transmitters having parts thereon adapted to be trained on an objective, receivers corresponding to the transmitters, a chart, and means on each receiver governed by the transmitter corresponding thereto for flashing a beam of light onto said chart to indicate by the intersection of the two beams the position of the objective.

9. A signal system comprising two transmitters each provided with a movable observing instrument, receivers corresponding to the transmitters each having a movable part, means for moving said parts, a chart, and means on the movable part of each receiver governed by the transmitter corresponding to that receiver for flashing a beam of light onto the chart to give an indication.

10. A signal system comprising a transmitter and a receiver each having a rotatable part, means for driving said parts synchronously and in a definite angular relation, means on the transmitter for closing an electric circuit, and means carried by the rotatable part of the receiver and actuated on closure of said circuit to give an indication.

11. A signal system comprising a transmitter and a receiver each having a rotatable part, means for driving said parts synchronously and in a definite angular relation, means on the transmitter for closing an electric circuit, and means carried by the rotatable part of the receiver and actuated on closure of said circuit to indicate the angular position of the movable part of the transmitter when said circuit was closed.

12. A signal system comprising a transmitter and a receiver each having a rotatable part, motors for driving said parts synchronously and in a definite angular relation, a movable observing instrument on the transmitter, means dependent upon the position of said instrument for closing an electric circuit once in each revolution of the rotatable part of the transmitter, and means on the rotatable part of the receiver actuated on closure of said circuit to give an indication.

13. A signal system comprising a transmitter and a receiver each having a rotatable part, motors for driving said parts synchronously and in a definite angular relation, a movable observing instrument on the transmitter, means dependent upon the position of said instrument for closing an electric circuit once in each revolution of the rotatable part of the transmitter, and means carried by the rotatable part of the receiver and actuated on closure of said circuit to indicate the angular position of said instrument when the circuit was closed.

14. A signal system comprising a transmitter, a movable observing instrument thereon, a receiver, a rotatable part thereon, a motor driving the same, and means carried by said rotatable part of the receiver arranged to give an indication each time it arrives at a position bearing a predetermined angular relation to the position of said observing instrument.

15. A signal system comprising a transmitter and a receiver each having a rotatable part, means for rotating said parts synchronously, devices on the rotatable part of the receiver for flashing a beam of light to give a signal, and means on the transmitter governing said devices.

16. A signal system comprising a transmitter provided with a movable observing instrument adapted to be trained on an objective, a receiver corresponding to the transmitter, and means on the receiver governed by the transmitter for flashing a beam of light.

17. A signal system comprising a transmitter, a movable observing instrument thereon, a receiver, a rotatable part thereon, a motor driving the same, a lamp carried by said part, and means for causing said lamp to give an indication each time said rotatable part arrives at a position bearing a predetermined angular relation to the position of said observing instrument.

18. A signal system comprising a transmitter, a movable ob-

serving instrument thereon, a receiver, a rotatable part thereon, a motor driving the same, a casing having an opening therein on said part, a lamp within the casing, an electromagnet, means operated thereby for permitting the rays of light from said lamp to show through said opening, and means for closing the circuit of said electromagnet dependent upon the position of said observing instrument.

19. A signal system comprising a transmitter, a rotatable member on the transmitter, means for driving the same, an observing instrument on the transmitter movable independently of said rotatable member, means whereby an electric circuit is closed by the transmitter once in each revolution of said member, and a receiving instrument having parts actuated by the closure of said circuit.

20. A signal system comprising a transmitter, a rotatable member on the transmitter, a motor for driving the same, an observing instrument on the transmitter movable independently of said rotatable member, means whereby an electric circuit is closed by the transmitter once in each revolution of said member at a point in the revolution depending upon the position of the observing instrument, and a receiving instrument having parts actuated by the closure of said circuit.

21. A signal system comprising a transmitter having a movable observing instrument thereon, a brush secured to the instrument and movable therewith, a rotatable member, a motor driving the same, a conducting-piece carried by said member and adapted to be engaged by said brush, a receiver having parts electrically actuated to indicate a direction bearing a definite relation to the position of the observing instrument, and electrical connections between said parts and said brush and conducting-piece.

22. A signaling system comprising a transmitter, a rotatable member thereon, a motor driving the same, a contact carried by said member, a brush coöperating with said contact once in each revolution of said member to close a signaling-circuit, means permitting movement of said brush, and the receiver having parts actuated to give an indication when said signaling-circuit is closed.

23. A signal system comprising a transmitter having means for closing an electric circuit, a receiver, a rotatable member thereon, means for driving the same, and means carried by said rotatable member and actuated by the closure of said circuit to give an indication.

24. A signal system comprising a transmitter having means for closing an electric circuit, a receiver, a rotatable part thereon, a motor driving the same, a casing having an opening therein on said part, a lamp within the casing, an electromagnet energized on closure of said circuit, and means operated thereby for permitting the rays of light from said lamp to show through said opening.

25. A signal system comprising a transmitter having means for closing and opening a circuit, a receiver, a rotatable part thereon, a motor driving the same, a casing having an opening therein on said part, an incandescent electric lamp having a straight filament within the casing, and means controlling the admission of light from the lamp through the opening in the casing operated when said circuit is closed or opened.

26. A signal system comprising a transmitter having means for closing and opening a circuit, a receiver, a rotatable part thereon, a motor driving the same, an incandescent electric lamp carried by said part and adapted to give a signal, a spring within said lamp attached at one end to the filament to hold the same in proper relation, and means controlling the admission of light from the lamp operated when said circuit is closed or opened.

27. A signal system comprising a transmitter having means for closing and opening a circuit, a receiver, a rotatable part thereon, a motor driving the same, a casing having an opening therein carried by said part, a lamp within the casing, a shutter normally closing said opening, and an electromagnet energized when said circuit is closed for operating the shutter.

28. A signal system comprising a transmitter having means for closing and opening a circuit, a receiver, a rotatable part thereon, a motor driving the same, a casing having an opening therein on said part, a lamp within the casing, means operated when said circuit is closed or opened for permitting the rays from the lamp to show through said opening, a lens for focusing the rays of light, and means for adjusting the lens and lamp toward and away from each other.

29. A signal system comprising a transmitter, a receiver, a rotatable part thereon, a motor driving the same, a signal-lamp and a lens carried by said rotatable part, means for adjusting the lamp and lens toward and away from each other while said part is being rotated, and means on the transmitter for controlling the admission of light from the lamp on the receiver.

30. A signal system comprising a transmitter and a receiver, each having a rotatable part, and means for starting said rotatable parts from a position of rest together, bringing them up to speed together and rotating them in synchronism when up to speed to maintain a definite phase relation between them.

31. A signal system comprising a transmitter and a receiver each having a rotatable part, synchronous electric motors driving said parts and means for bringing said motors from a position of rest up to speed together to maintain a predetermined angular relation between the rotatable parts driven by said motors.

32. A signal system comprising a transmitter and a receiver each having a rotatable part, synchronous electric motors driving said parts, means for supplying current to the armatures of said motors comprising a rectifier, connections thereto from a source of direct-current supply, and electrical connections between said rectifier and the armatures of said synchronous motors.

33. A signal system comprising a transmitter and a receiver each having a rotatable part, synchronous electric motors driving said parts, means for supplying current to the armatures of said motors comprising a rectifier, connections thereto from a source of direct-current supply, connections between the rectifier and the armatures of said motors, a resistance in one of said connections, and a switch for short-circuiting the resistance.

34. A signal system comprising in combination, a transmitter and a receiver each having a rotatable part, synchronous motors driving said parts, mains from a source of direct-current supply, a variable-speed electric motor connected thereto, a rectifier driven by said motor and connected to said direct-current mains, and connection between the rectifier and the armatures of the synchronous motors.

35. A signaling system comprising a plurality of observing instruments at different points, a miniature of the field of the observing instruments at another point, and synchronized apparatus for directing two beams of light to coördinately follow the movements of the observing instruments and locate by their point of intersection on the chart the position of an objective.

36. A signaling system comprising a plurality of observing instruments at different points, a miniature of the field of the observing instruments at another point, and synchronized apparatus for directing two planes of light to coördinately follow the movements of the observing instruments and locate by their point of intersection on the chart the position of an objective.

37. In a signaling system, the combination of a signaling device having a rotatable portion, a synchronous motor driving the same, mains supplying current to the motor, and means connected in said mains for adjusting the frequency of the alternating current supplied to said synchronous motor.

38. In a signaling system, the combination of a signaling device having a rotatable portion, a synchronous motor driving the same, and means for varying the frequency of the alternating current supplied to said synchronous motor comprising a commutator having segments connected by resistances, and brushes bearing on the commutator, said commutator and brushes being relatively movable.

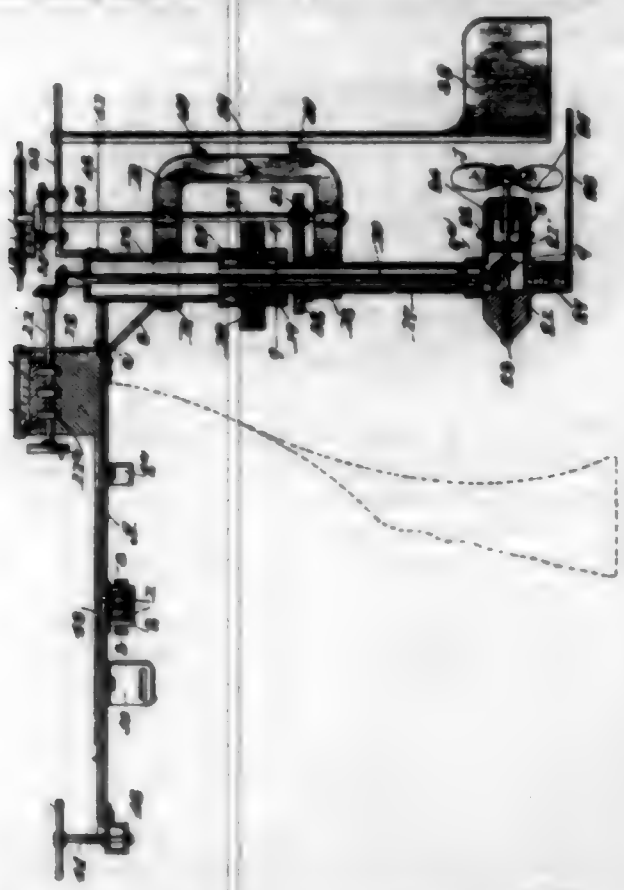
818,245. PROPELLER ATTACHMENT FOR BOATS. ARTHUR B. HAUCK, New York, N. Y. Filed Aug. 5, 1905. Serial No. 272,938.

Claim.—1. The improved propelling attachment for boats, comprising a platform or frame, means for securing it to the stern of a boat, a driving-shaft arranged on said platform, and a frame hinged to the first-named one and adapted to be folded therewith, means for securing the foldable frame in working position, and a propeller and propelling mechanism connected with the foldable frame and adapted to be operatively connected with the aforesaid driving-shaft substantially as described.

2. The improved boat-propelling attachment comprising a platform and means for securing it to the stern of a boat, a frame hinged thereto and provided with means for securing it rigidly in working position, a propelling mechanism including a propeller proper and means for driving it, the propeller being adapted to be set at different angles to the axis of a boat, and means for adjusting it in such position, substantially as described.

3. A boat-propelling attachment comprising a platform and a frame hinged thereto, and propelling mechanism carried thereby, and means for securing the platform to a boat, the same comprising bars which are slidable transversely in keepers and provided with means for securing them to the sides of the boat and clamping them in the keepers, substantially as described.

4. In a boat-propelling attachment, the combination with a frame adapted for support upon the stern of a boat, and a frame hinged thereto and provided with a propeller and means for driving the same, of adjustable bars arranged transversely on the platform and having goosenecks adapted to engage the sides of the boat and means for clamping them in place, substantially as described.



5. The combination, with a frame adapted to be supported upon and secured to the stern of a boat, of a frame secured to the first-named frame, a vertical driving-shaft arranged in said frame, a hollow rotatable shaft through which the same passes, a propeller having a shaft provided with bearings forming a fixed attachment of said hollow shaft, an antifriction-bearing and support for the hollow shaft, and means for rotating it for adjusting the propeller in different positions, substantially as described.

6. The combination, with a rigid frame, of a propeller attachment comprising a hollow shaft having a horizontal bearing and provided at its upper end with a horizontal flange supported in said rigid frame, a propeller having a shaft arranged at right angles to said hollow shaft, a driving-shaft operatively connected with the propeller-shaft and arranged within the hollow shaft, and means for rotating the latter, substantially as described.

7. The combination, with a rigid frame having a tubular pendent portion, a hollow rotatable shaft projecting upward in the lower portion of such fixed tubular portion, antifriction-rollers arranged between the two parts, and means for supporting the hollow shaft vertically, a propeller and a propeller-shaft arranged in suitable bearings forming a horizontal attachment of the hollow shaft, and a driving-shaft passing through the latter and operatively connected with the propeller-shaft, substantially as described.

8. The combination, with a frame having a tubular portion arranged vertically therein, the lower portion of the latter being enlarged radially and provided with a pendent flange which is screw-threaded interiorly, a hollow rotatable shaft projecting into such tubular portion and provided with a horizontal flange, a short tube applied to the tubular shaft and having an upwardly-projecting and exteriorly-threaded flange adapted to screw into the flange of the fixed tubular portion, and antifriction-balls applied between the respective parts to furnish both vertical and horizontal bearings, a driving-shaft passing through such tubular portion and the hollow shaft, a horizontal bearing applied to the lower end of the hollow shaft, and a propeller and propeller-shaft, the latter being connected with the driving-shaft, and means for rotating the hollow shaft for setting the propeller in different positions, substantially as described.

9. The combination with a frame, a rotatable shaft having its bearings therein, and provided at its lower end with a horizontal bearing, a propeller and a propeller-shaft arranged in such bearing, the driving-shaft operatively connected with the propeller-shaft, a rotatable steering-shaft operatively connected with the aforesaid hollow shaft, and a steering-wheel applied thereto, substantially as described.

10. The combination, with the tubular part 13 and the hollow shaft 17 having its bearings in the latter, a propeller and a propeller-shaft, and a driving-shaft therein also having bearings in the hollow shaft, a steering-shaft 28 having bearings in the fixed frame, meshing gears applied to the hollow shaft and steering-shaft, and a steering-wheel applied to the steering-shaft, substantially as described.

11. The combination, with a rigid frame, and propelling mechanism including a hollow rotatable shaft having its bearings in and supported by such frame, and provided at its lower end with a horizontal bearing, a propeller-shaft arranged in the latter, a steering-shaft which is operatively connected with such hollow shaft for adjusting the propeller at different angles, a steering-wheel applied to such steering-shaft, means for locking the steering-wheel and thereby holding the propeller fixed in any position to which it may be adjusted, and a manually-operated steering mechanism comprising a rubber hinged upon the rear portion of the aforesaid frame, and wires and a steering-wheel for adjusting the same, substantially as described.

12. The combination, with a rigid frame and steering mechanism including a hollow rotatable shaft, a propeller-shaft having its bearings in an attachment of the lower portion of said shaft, a steering-shaft operatively connected with the hollow shaft, a steering-wheel applied to such steering-shaft, a notched collar surrounding the shaft and fixed on the frame, and a spring-catch adapted to be manually released, the same normally engaging the said collar and forming an attachment of the steering-wheel, whereby the propeller may be locked in any required position, substantially as described.

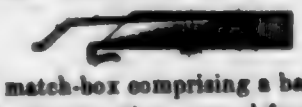
13. The combination, with the hollow shaft, a vertical driving-shaft arranged therein, a horizontal bearing applied to the lower end of the hollow shaft, a propeller having a shaft arranged in said bearing, meshing gears applied to the respective shafts, a collar applied to the propeller-shaft, and a nut screwed into the hollow bearing and abutting said collar and thus serving to hold the gears in mesh, substantially as described.

14. The combination, with the hollow shaft, a driving-shaft arranged therein, a horizontal bearing applied to the lower end of the hollow shaft, a propeller-shaft arranged in such bearing and gears operatively connecting it with the said driving-shaft, a fixed collar and an adjustable nut bearing against the same, and a set-screw applied to the inner end of the propeller-shaft for adjusting the same as required, substantially as described.

15. The combination, with the hollow shaft, and a driving-shaft arranged therein, of the horizontal bearing applied to the lower end of said hollow shaft, a propeller-shaft arranged in said bearing, a sleeve-nut screwed into one end of the bearing, a cap screwing upon the outer end of the nut, and a bearing for the shaft inclosed between the nut and cap, substantially as described.

16. The combination, with a frame adapted to be secured upon the stern of a boat, of a frame and propelling mechanism carried thereby, said frame being hinged to the first-named one and adapted to be folded beneath the same substantially parallel thereto, and means connected with the first-named frame for securing the hinged frame in the folded position, substantially as described.

818,246. MATCH-BOX. ROSCOE L. HEAPES, Bloomington, Ill. Filed Aug. 30, 1905. Serial No. 276,404.

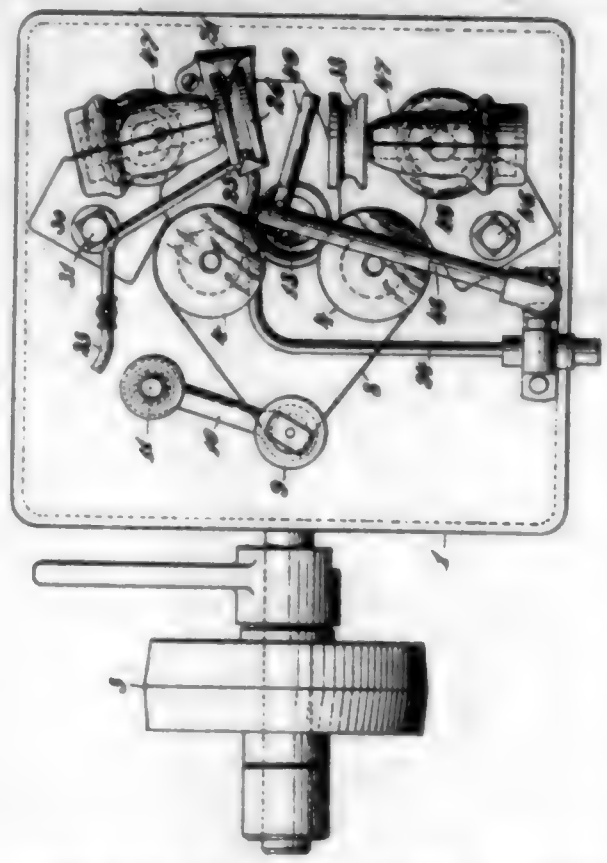


Claim.—1. A match-box comprising a back plate, a rear plate sliding thereon, the front sections spaced from the back plate and from each other and supported by the rear plate said front sections having inclined portions converging toward and normally in engagement with the back plate, and means for locking the rear plate in position, upon the back plate.

2. A match-box comprising back and side pieces, the back piece being vertically slotted adjacent the side piece, a front piece formed of two sections spaced apart and spaced from the back piece, the converging end portions carried by the front sections and in normal contact with the upper edge portion of the back plate, the bottom piece integral with the front sections, a rear plate integral with and connecting the bottom pieces and sliding upon the inner face of the back plate, a spring-clip carried by the rear plate adapted to engage the lower edge of the back plate, and guide-fingers carried by the ends of the rear plate, said fingers passing through the slots of the back plate and in engagement with the edges of said slots.

818,247. MACHINE FOR IRONING FOLD-COLLARS. LEWIS R. HEIM, Danbury, Conn. Filed Mar. 20, 1905. Serial No. 251,040.

Claim.—1. A machine for the purpose specified, having a mechanism for shaping and feeding the collar, means for folding and guiding the collar into said mechanism, and an independent rotating ironer, adjacent to the outlet of said mechanism, so disposed as to iron the fold of the shaped collar as it emerges from said mechanism.



2. A machine for the purpose specified, having mechanism for feeding and shaping the folded collar, means for folding the collar and guiding it into said mechanism, a rotating ironer for the fold of the shaped collar, said ironer being disposed adjacent to the point where the collar emerges from the feeding and shaping mechanism, and means for adjusting the height of said ironer.

3. A machine for the purpose specified, having mechanism for feeding and shaping the folded collar, means for folding the collar and guiding it into said mechanism, a rotating, grooved ironing-wheel disposed adjacent to the point where the collar emerges from the feeding and shaping mechanism and in position to bear on the fold of the collar, and means for imparting to said wheel a peripheral speed greater than the speed at which the collar is moved.

4. A machine for the purpose specified, having mechanism for feeding and shaping the folded collar, means for folding the collar and guiding it into said mechanism, a rotatable, grooved ironing-wheel disposed adjacent to the point where the collar emerges from the feeding and shaping mechanism and in position to bear on and roll over the fold of the collar, and means for driving said wheel.

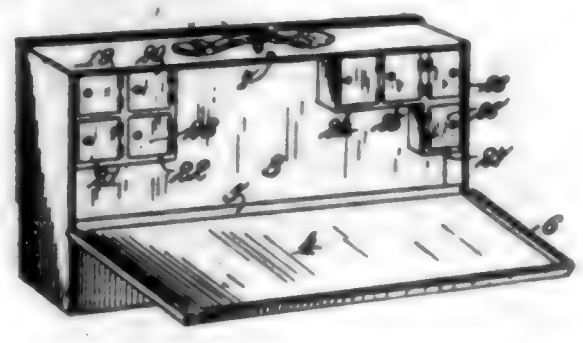
5. A machine for the purpose specified, having a feeding and shaping mechanism for a folded collar consisting of two upright, rotating rollers provided with faces of soft material, a spring-actuated pressure-roller, an endless belt on the two upright rollers, and means for tightening said belt, means for folding and guiding the collar into said shaping and feeding mechanism, and an adjustable rotating ironer disposed adjacent to the point where the collar emerges.

6. A machine for ironing fold-collars, having a feed mechanism comprising two upright rotating rollers 4, provided with faces 50 of soft, yielding material, a spring-actuated pressure-roller 13, an endless belt 8, on the rollers 4, and means for tightening said belt, means for guiding the folded collar into said feed mechanism, and a rotating ironer situated adjacent to the point where the collar emerges from the feed mechanism.

7. A machine for ironing fold-collars, having a feed mechanism provided with a heated pressure-roller, means for guiding the collar into the feed mechanism and for steaming it, and a heated, rotating ironing-roller disposed near the point where the collar emerges from the feed mechanism and in position to iron its upper, folded edge.

818,248. CABINET. GEORGE H. HERRINGER, Hornellsville, N. Y. Filed Apr. 10, 1905. Serial No. 254,838.

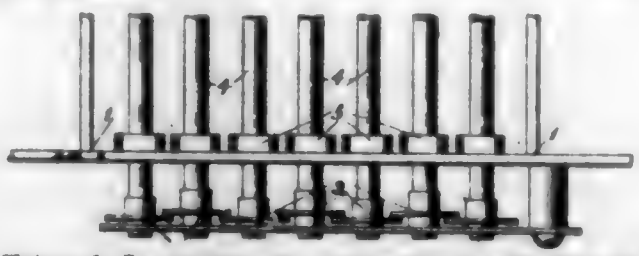
Claim.—1. A cabinet of the class set forth, having a body with a jointless bottom and immovable side portions extending above the bottom a considerable distance, the body also having a jointless top, a central partition immovably secured to the top and bottom and dividing the cabinet into independent compartments, subcompartments mainly disposed in the upper portion of the main compartments against the partition, clear spaces being formed between the lower maximum projections of the said subcompartments or the bottoms of the latter and the bottom of the cabinet, and drop-doors hinged at their lower edges to the immovable side portions of the cabinet-body.



2. A cabinet of the class set forth constructed of light sheet metal and having a body with a jointless bottom and top and side portions immovably extending upwardly thereover a considerable distance, a fixed partition extending from the center of the top to the bottom of the body and fully between the opposite ends to provide two main compartments at opposite sides of the cabinet, subcompartments supported against the opposite sides of the partition and located mainly in the upper portion of the two compartments formed by said partition, clear places being provided below the said subcompartment and inclosed by the bottom and the upwardly-extending side portions of the body, and drop-doors hinged to the upper edges of the immovable side portions of the body for rendering the opposite compartments accessible.

3. A cabinet of the class set forth divided longitudinally to form opposite compartments for respectively receiving tools, and clothing, and articles of food, cooking and eating utensils, the opposite sides being immovably extended upwardly from the bottom of the cabinet and terminating in upper inwardly-bent edges extending fully throughout the length of the cabinet, and drop-doors hinged to the upper extremities of the immovable sides below the upper edges of the latter, and having means to embrace portions of the ends and top of the cabinet, whereby dust-proof joints are formed.

818,249. REGISTER. FOSTER J. HULL, Brooklyn, N. Y., assignor to American Mechanical Cashier Company, New York, N. Y., a Corporation of New York. Filed Sept. 24, 1903. Renewed Dec. 7, 1905. Serial No. 290,754.



Claim.—1. In a register, the combination of a plurality of register-shafts, means for operating the same, means for resetting the register-shafts to zero, comprising pinions on the register-shafts and rack-bars operating upon each other to engage and hold one of said rack-bars in positive engagement with the pinions during the resetting operation.

2. In a register, the combination of a plurality of register-shafts, mutilated pinions secured thereon, a resiliently-supported rack-bar, capable of lateral and longitudinal movement, a rack-bar operatively connected with and controlling the movement of said resiliently-supported rack-bar, and means for locking said bars together during certain periods of their operations.

3. In a register, the combination of a plurality of register-shafts, means for operating the same, mutilated pinions on the register-shafts, a longitudinally and laterally moving rack-bar, a rack controlling the operation of said rack-bar, means for operating said controlling rack-bar, and means for locking said rack-bars together during certain periods of their longitudinal movement.

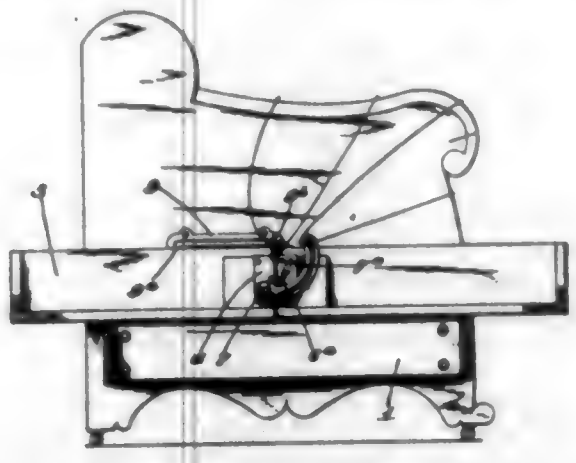
4. In a register, the combination of a plurality of register-shafts, pinions on said shafts, a resiliently-supported rack-bar adapted to engage said pinions, but normally out of engagement therewith, a driven rack-bar controlling said resiliently-supported rack-bar, and alternate projections and depressions on the rack-bars adapted to

give the resiliently-supported rack-bar a lateral thrust to engage the pinions when the driven rack-bar is operated.

5. In a register, the combination of a plurality of register-shafts, mutilated pinions mounted thereon, a spring-supported rack-bar adapted to engage said pinions, a rack-bar operatively connected with and controlling said spring-supported rack-bar, and a latch on the spring-supported rack-bar engaging a pin on the controlling rack-bar to lock the rack-bars together during certain periods of the re-setting position.

6. In a register, the combination of a plurality of register-shafts, a spring-supported rck-bar, a rack-bar operatively connected with and controlling the spring-supported rack-bar, pinions on the register-shafts adapted to be engaged by one of the rack-bars and said pinions constructed to permit the rack-bar to return to its initial position without rotating said pinions, and alternate projections and depressions on the rack-bars for laterally moving the spring-supported rack into engagement with the pinions.

818,250. **COMBINED COUCH AND BED.** EDWIN M. HULSE, Columbus, Ohio, assignor to The Geneva Furniture Manufacturing Company, Geneva, N. Y., a Corporation of New York. Filed Oct. 5, 1904. Serial No. 227,193.



Claim.—In a combined couch and bed, the combination of the base, end pieces secured thereto, runner-bearings provided with depressed auxiliary bearings at their rear ends, a seat and back hinged together, trunnions projecting eccentrically with respect to the hinge of the seat and back and engaging the runner-bearings, and means whereby the said seat and back may be locked in and unlocked from angular relation to each other.

818,251. **TRUNK-HARNESS.** GEORGE W. JONES, Owens, Fla. Filed Aug. 25, 1905. Serial No. 275,822.

Claim.—1. A trunk-harness comprising a set of corner-buffers having guideways, and a pair of cords loosely engaging the guideways of the respective diagonally opposite buffers, the ends of each cord being provided with adjustable connections.

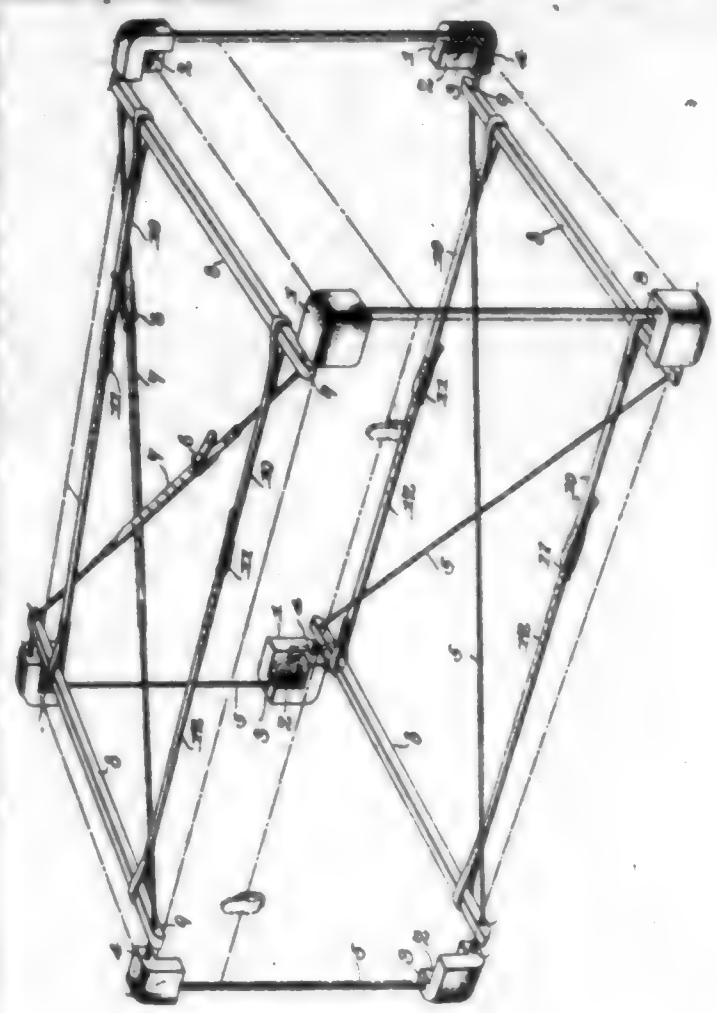
2. A trunk-harness comprising a set of corner-buffers provided with guideways, a pair of cords loosely engaging the guideways of the respective diagonally opposite buffers and crossed at the top and bottom of the device, one end of each cord being provided with a buckle and the other end of the cord being adapted for engagement with the buckle.

3. A trunk-harness comprising corner-buffers, crossed cords connecting the diagonally opposite buffers, and tightening means engaging the cords for spreading the same to place a tension thereon.

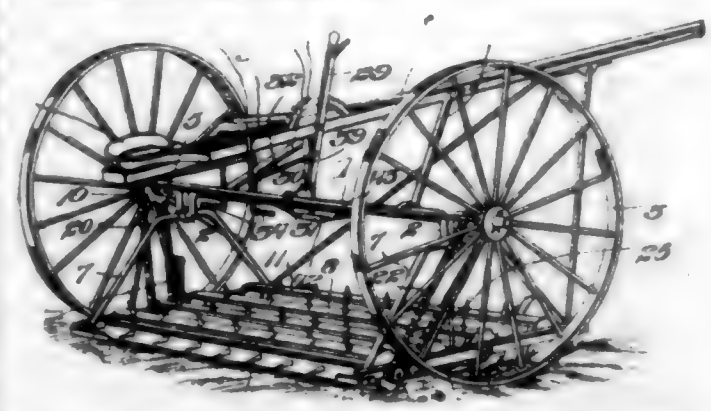
4. A trunk-harness comprising corner-buffers, crossed cords connecting the buffers, opposite cross-bars slidably engaging the cords, and means for moving the cross-bars upon the cords to spread the same and thereby place a tension thereon.

5. A trunk-harness comprising corner-buffers, diagonally-crossed cords connecting the buffers, cross-bars slidably engaging the cords, and an adjustable connection between the cross-bars to move the same upon the cords and spread the latter to place a tension thereon.

6. In a trunk-harness, the combination with a set of corner-buffers having guideways, of a pair of cords loosely engaging the guideways of the respective diagonally opposite buffers, said cords being crossed at the top and bottom of the device, an adjustable connection between the ends of each cord, cross-bars loosely pierced by the crossed portions of the respective cords, corresponding straps connected to the cross-bars, and an adjustable connection between the straps for moving the cross-bars upon the cords to spread and place a tension upon the latter.



818,252. **CULTIVATOR.** JESSE E. JONES, Sycamore, Ind. Filed Feb. 1, 1905. Serial No. 243,717.



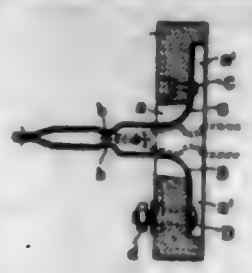
Claim.—In a device of the class described, an axle having a pair of substantially U-shaped crank-bends, ground-wheels journaled on the axle, U-shaped hangers pivoted on the latter within the crank-bends and held thereby against longitudinal movement on the axle, a frame suspended for oscillation by the hangers, a plurality of rollers journaled for rotation in the frame and provided with teeth, sprocket-wheels fixed upon the ends of the rollers, a chain connecting said wheels for driving the rollers one from another, a chain-and-sprocket connection between one of the rollers and ground-wheels, a crank-arm fixed on the axle, an operating-lever sustained on the machine and connected with said arm, said lever being operable for rotating the axle to raise or lower the roller-carrying frame, and foot-levers pivoted on the machine and connected with the arm, said levers having stirrups to receive the feet of the operator for moving the foot-levers to raise or lower the roller-frame.

818,253. **INCANDESCENT-LAMP SOCKET.** WALTER J. JONES, Hackensack, N. J., assignor to General Electric Company, a Corporation of New York. Filed Dec. 3, 1900. Serial No. 38,597.

Claim.—1. In series incandescent lighting, a receptacle having automatic line-closing contacts, and a lamp-socket adapted to receive an ordinary incandescent lamp therein and carrying coöperating contacts normally separated by insulation of low dielectric value.

2. In series incandescent lighting, a receptacle having two spring-contacts adapted to close against each other, a lamp-socket adapted to receive an ordinary incandescent lamp therein and carry-

ing two spring-contacts adapted to close against each other, and a piece of insulation between said socket-contacts.



3. In series incandescent lighting, a receptacle provided with two spring-contacts having beads and inclined ends, a lamp-socket adapted to receive an ordinary incandescent lamp therein and provided with two coöperating spring-contacts having beads and inclined ends, and a piece of insulation between the ends of the socket-contacts.

4. The combination with a receptacle A having spring-contacts B, of a socket E adapted to receive an ordinary incandescent lamp therein and having spring-contacts F and a piece G of paper, silk or the like between the contacts F.

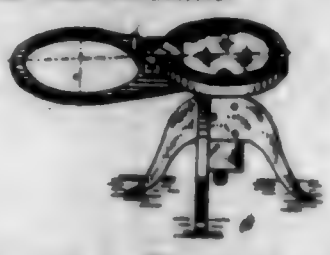
5. The combination with a receptacle having spring-contacts normally in contact with each other, of a socket adapted to receive an ordinary incandescent lamp therein and carrying spring-contacts adapted to enter between the receptacle-contacts and to force them apart only after making contact with them.

6. The combination with a receptacle A, having spring-contacts B each provided with an inclined end *b'*, and an intermediate bead *b*, of a socket E adapted to receive an ordinary incandescent lamp therein and having spring-contacts F each provided with an inclined end *f'*, and an intermediate bead *f*.

7. A socket for incandescent lamps comprising an insulating socket-piece, a side contact and a center contact within said piece, and two flat metal springs projecting from one end of said socket-piece and each provided with an angular attaching-lug directly connected by a rod or screw to the respective contacts.

8. In an electric-lamp fixture, the combination with threaded supporting means, of a yoke comprising a body part with a central threaded seat into which the said threaded supporting means are screwed and having at its periphery depending arms with inwardly-turned feet, a plate of insulation rigidly bolted to said feet, and circuit-terminals and lamp-supporting means on said plate of insulation.

818,254. **MILKING-STOOL.** HENRY H. KAGEY, Ashland, Ohio. Filed Nov. 10, 1905. Serial No. 286,653.



Claim.—1. In a combined milking-stool and holder, a screw-support, a pail-holder having slots formed therein in alinement with each other and pivotally secured to the said support, a seat secured to the plate of said support, a washer interposed between the seat and holder, said seat and holder adapted to rotate independent of each other.

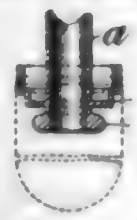
2. A combined milking-stool and pail-holder comprising a screw-support, a seat mounted thereon, a washer supported upon a collar on said screw-support, a pail-holder pivotally and adjustably secured to said support whereby said pail-holder can be rotated and radially adjusted, a clamp secured to the pail-holder having a projecting portion extending over the top of the seat, a pin secured thereto meshing with an annular groove in the seat movably retaining the pail-holder at any point of its radial adjustment, means for vertical adjustment of the seat and pail-holder as described and set forth

3. In a milking-stool the combination of a stool and pail-holder, comprising a screw-support, a nut adapted to engage with said screw-support providing vertical adjustment, a seat pivotally secured to said screw-support, a pail-holder pivotally secured to said screw-support, said seat and pail-holder secured to said screw-support in such a manner as to permit either to rotate independent of each other or together, means for radial adjustment of the pail-holder.

4. The combination of a milking-stool and pail-holder, a screw-support for vertical adjustment, a pail-holder pivotally secured to said support, a seat rigidly secured to the plate of the screw-support, a washer interposed between the seat and the pail-holder, an annular groove formed in the top of the seat, a clamp secured to the pail-holder having its projecting portion extending over and lying in close contact with the top of the seat, a pin secured to said projecting portion, meshing with said annular slot, means for retaining the holder in place under pressure by frictional contact by the weight of the parts and contents as described and set forth.

5. In a milking-stool, a screw-support, a nut secured to the legs of the stool, a seat securely attached to the plate of the screw-support said nut and screw-support providing vertical adjustment and means of rotating the seat, a pail-holder pivotally secured to the tang of the screw-support, slots formed in said pail-holder for radial adjustment, a clamp secured by a thumb-screw and nut to the pail-holder, a depending pin or lug attached to said clamp, an annular groove formed in the seat in alinement with the pin affording a means of retaining the pail-holder at any point of its radial adjustment under pressure, means for rotating said seat and pail-holder independent of each other as described and set forth.

818,255. **INVERTED INCANDESCENT GAS-BURNER.** MONTFORD KAY, Clapton, England. Filed Dec. 13, 1904. Serial No. 236,657.



Claim.—1. An inverted incandescent gas-burner having a straight burner-tube provided with an enlargement upon the wall at the open and unobstructed end thereof for spreading the issuing gases, and a mantle surrounding said open end and extending considerably above and below the same, for the purpose specified.

2. An inverted incandescent gas-burner having a straight-tube burner provided with an annular recess in the wall thereof at and around the open and unobstructed end of the burner, said recess having an approximately horizontal wall, and a mantle surrounding said open end and extending considerably above and below said recess, for the purpose specified.

3. An inverted incandescent gas-burner having a straight burner-tube provided with an annular bulge around and on the open and unobstructed end thereof for spreading the issuing gases, a mantle surrounding said open end and extending considerably above and below same, and a free combustion-space between the bulge and mantle, for the purpose specified.

4. An inverted incandescent gas-burner having a burner-tube provided with an enlargement around and on the open end thereof, an annular recess in the wall of said tube at and around said open end, a mantle surrounding said open end and extending considerably above same, and a free combustion-space between the enlargement and mantle, for the purpose specified.

5. An inverted incandescent gas-burner having a burner-tube provided with an annular bulge around and on the open end thereof, an annular recess in said bulge, a mantle surrounding said open end and extending considerably above same, and a free combustion-space between the bulge and mantle, for the purpose set forth.

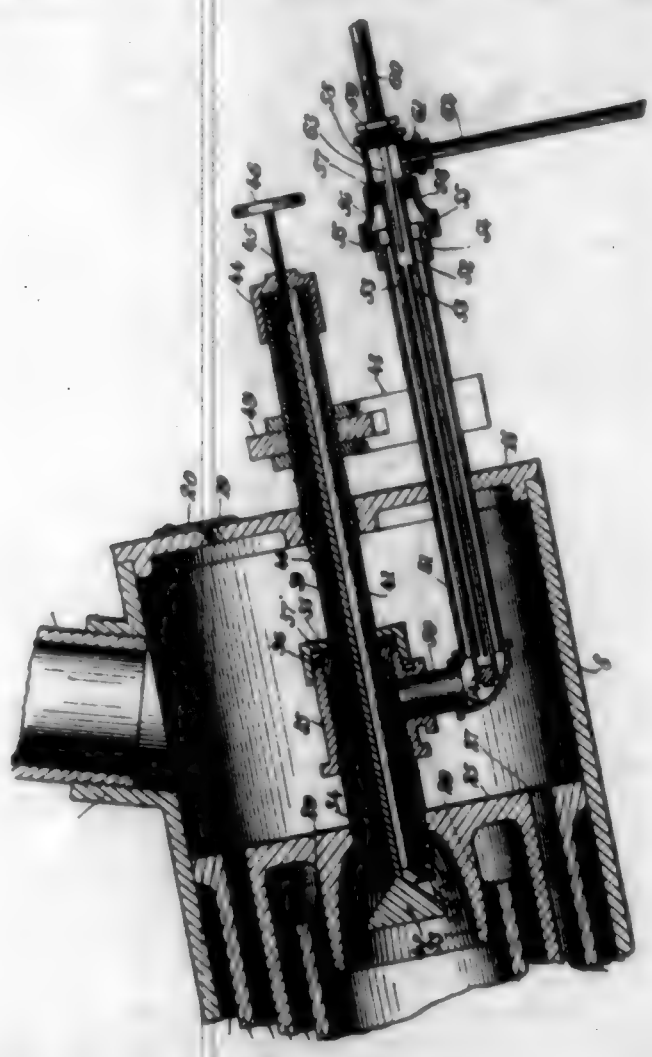
6. An inverted incandescent gas-burner having a burner-tube provided with an annular bulge around its open end, an annular recess in said bulge, and teeth on said bulge projecting inwardly into said open end, for the purpose set forth.

7. An inverted incandescent gas-burner having an annular bulge around its open end, an annular recess in the bulge and radial slits in the lower horizontal wall of said bulge projecting inwardly into said open end, substantially as and for the purpose set forth.

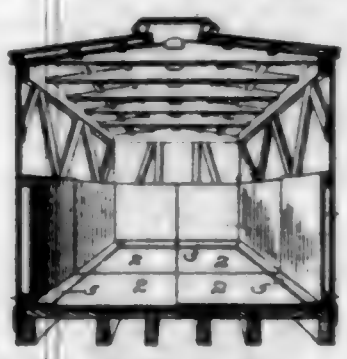
818,256. **BURNER FOR HYDROCARBON VAPORS.** WILLIAM KEMP, Tucson, Ariz., assignor, by direct and mesne assignments, to The Kemp Hydro-Carbon Furnace Company, a Corporation of New York. Filed Oct. 3, 1903. Serial No. 175,582.

Claim.—In a burner for hydrocarbon vapor and the like, the combination of a casing, a baffle-cup within the casing, comprising inner and outer cylinders having a space between the two closed at one end and open at the other, together with an intermediate cylinder, closed at the end thereof adjacent to the open end of said space and open at the closed end of the space; means for delivering hydrocarbon vapor to said inner cylinder, and means for supplying air to

and through said baffle-cup, the closed end of said intermediate cylinder having an annular bead extending within the open end of said inner cylinder.



818,257. LINING FOR TRACTION-VEHICLES. FREDERICK W. KENNEDY, Shelbyville, Ind. Filed Oct. 21, 1905. Serial No. 283,330.



Claim.—1. In a car, the combination with a body, of a lining positioned within said body, said lining reinforced upon its lower, outer edges.

2. In a car, the combination with the body, of a removable, sectional lining positioned within said body, each section of said lining reinforced upon its lower, outer edges.

3. In a car, the combination with a body, of a sectional lining positioned within said body, each section comprising a side strip folded intermediate its length, said strip provided with flaps upon its lower edge, a bottom strip engaging said flaps, said bottom strip provided with flaps upon its outer edges engaging the sides of said side strip.

4. In a car, the combination with a body, of a lining positioned wihin said body, said lining comprising overlapping sections, each section reinforced upon its lower, outer edge.

5. In a car, the combination with a body, of a lining comprising similarly-constructed, overlapping sections, positioned within said body, each section comprising a base, an end, and a side.

6. In a car, the combination with a body, of a lining carried by said body, said lining comprising similarly-constructed sections, each section comprising a base or bottom, and an end and a side secured to said bottom, said bottom of the same width as the height of said end and side.

7. In a car, the combination with a body, of a sectional lining carried by said body, each section of said lining comprising a bottom, a side, and an end, said side and bottom being of the same dimensions and of similar structure, whereby the side may be employed as the bottom when assembling the sections.

8. In a car, the combination with a body, of a lining carried by said body, said lining comprising overlapping, bodily-movable sections, each section comprising a base, an end, and a side.

9. In a car, the combination with a body, of a lining, constituting a bin, carried by said body, said lining comprising bodily-movable sections, each section comprising a bottom or base, an end, and a side.

10. In a car, the combination with a body, of a lining carried by said body, said lining comprising horizontally, bodily movable sections.

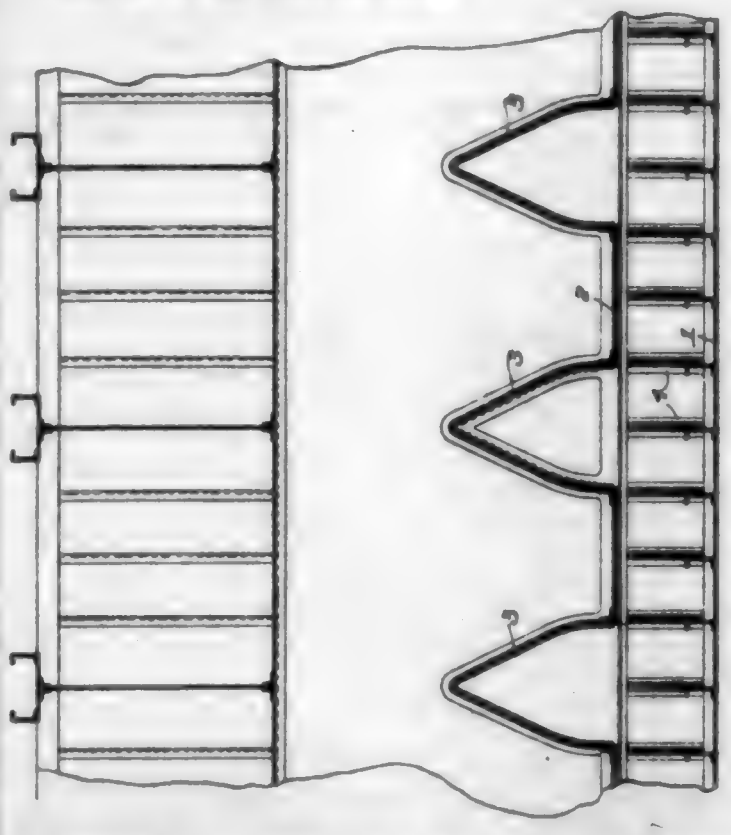
11. In a car, the combination with a body, of a sectional lining, constituting a bin, carried by said body, each section comprising a bottom or base, a side, and an end, the bottom and side of the same dimension, whereby said bottom may be used as a side or vice versa.

818,258. PEN. ELMER E. KEPNER, Springfield, Oreg. Filed Dec. 15, 1905. Serial No. 292,314.



Claim.—The herein-described pen having upwardly-extending, outwardly-curved lips forming a reservoir between them for the ink, said lips having an inclined front edge and a slit at the converging ends of said lips and a reversely-curved portion to engage a penholder, substantially as described.

818,259. SHIP CONSTRUCTION. JOSEPH KIDD, Duluth, Minn. Filed May 13, 1905. Serial No. 260,255.



Claim.—1. The combination of an inner and outer hull forming water-compartments between them and lateral hollow partitions on the bottom of the inner hull communicating with the water-compartments and forming a series of lateral hoppers for the bulk cargo.

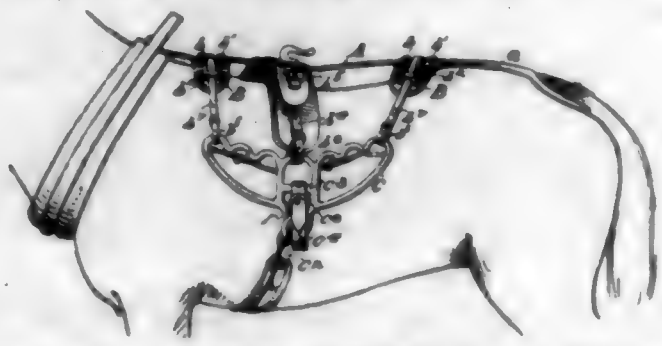
2. In a ship, the combination with an outer hull, of an inner hull spaced therefrom and forming water-compartments, hollow partitions on the bottom of the inner hull communicating with and forming part of the water-compartments, and said partitions so shaped as to form a series of hoppers across the ship down into which the bulk cargo will feed by gravity.

3. In a ship, the combination with an outer hull, of an inner hull spaced therefrom and forming a water-space between them, bulkheads dividing said space into water-compartments, hollow partitions of approximately inverted-V shape in cross-section, extending across the ship, built into the bottom of the inner hull, communicating with the water-compartments and constituting a part thereof, and forming a series of lateral hoppers into which the bulk cargo feeds by gravity.

4. In a ship, the combination with an outer hull, of an inner hull

spaced therefrom, and forming a water-space between the hulls, the bottom of the inner hull so shaped as to form a series of hoppers across the ship beneath the hatches, and means dividing said space into a number of separate water-tight compartments.

818,260. HARNESS. CHARLES C. KING, Little Rock, Ark. Filed June 17, 1905. Serial No. 265,714.



Claim.—1. In harness, the combination of a back-strap, a plurality of pads connected with the back-strap, a back-band connected with the central pad, a plate connected with one of the pads and the back-strap, and provided with diverging branches at its free end, rollers journaled longitudinally of the branches, straps connected with the remaining pads and depending from either end thereof, crescent-shaped frames provided with eyes to receive the depending straps and the back-band, shaft-tugs depending from the frames, stirrups connected to the shaft-tugs, and shaft-supporting rollers journaled transversely of the stirrups.

2. In harness, the combination of a back-strap, a plurality of pads connected with the back-straps, a back-band connected to one of the pads, straps connected with the remaining pads and depending from either end thereof, crescent-shaped frames provided with eyes to receive the depending straps and the back-band, shaft-tugs depending from the frames stirrups connected to the shaft-tugs and shaft-supporting rollers journaled transversely of the stirrups.

3. In harness, the combination of a back-strap, a plurality of pads connected with the back-strap, one of said pads being provided with terrets, straps connected with the pads and depending from either end thereof, frames provided with eyes to receive the depending straps, shaft-tugs connected with the frames, and stirrups provided with shaft-supporting rollers connected with the shaft-tugs.

4. In harness, the combination of a back-strap, a plurality of pads movably connected to the back-strap, terrets on one of the pads, straps connected with the pads and depending from the ends thereof, frames connected to the free ends of the depending straps, shaft-supporting stirrups and means for securing the stirrups to the frames.

5. In harness, the combination of a back-strap, a plurality of pads connected with the back-strap, shaft-supporting stirrups, rollers journaled transversely of the stirrups and a plurality of straps connecting the pads and the stirrups.

6. In harness, the combination of a back-strap, a plurality of pads connected with the back-strap, means for receiving and supporting a shaft, and means connecting said supporting means with the individual pads.

7. In harness, the combination of a back-strap, a plurality of pads connected with the back-strap, shaft-supporting means, means connecting the individual pads with the shaft-supporting means, a breast-strap provided with a neck-strap and means connected with one of the pads for receiving and supporting the neck-strap of the breast-strap.

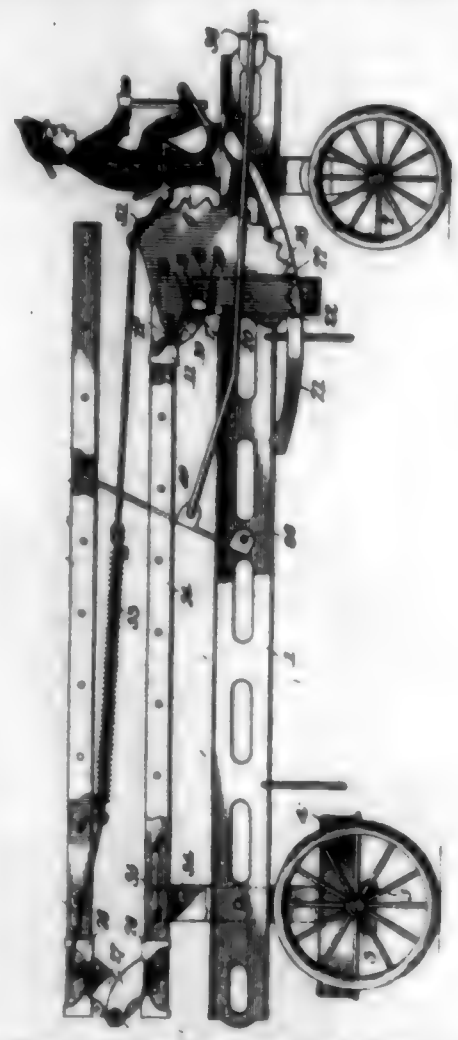
8. In harness, the combination of a back-strap, a plurality of pads connected to the back-strap, a breast-strap, and means connected with one of the pads for receiving and supporting the breast-strap.

9. In harness the combination of a back-strap, shaft-supporting means, a plurality of means connecting the shaft-supporting means with the back-strap whereby the weight of the shafts is distributed on different parts of the back-strap.

10. In harness, the combination of a back-strap, shaft-supporting means, means connecting the shaft-supporting means with a plurality of points on the back-strap, and means whereby the pull of the shaft-supporting means may be shifted to different parts of the back-strap.

818,261. AUTO-AERIAL LADDER-TRUCK. HARRY T. KINGSBURY, Keene, N. H. Filed Sept. 29, 1905. Serial No. 280,641.

Claim.—1. A toy ladder-truck having a spring-elevated ladder, and automatic means for governing the speed of movement of the ladder.



2. A toy ladder-truck having a movable ladder, means for elevating the same, and automatic mechanism for retarding or governing the movement of said elevating means.

3. A toy ladder-truck having a movable ladder, a spring for elevating the same, and an automatic governing device for retarding the action of the spring.

4. A toy ladder-truck, a ladder pivotally connected thereto, a spring for elevating the ladder, and an escapement mechanism for governing the speed of movement of the ladder.

5. A toy ladder-truck, a ladder pivoted thereto, an escapement member carried by and movable with the ladder, a spring for elevating the ladder, and an escapement-anchor supported by the truck-frame and coacting with said escapement member to retard or govern the movement of the ladder.

6. A toy ladder-truck, a ladder pivotally connected thereto, a toothed segment secured to and movable with the ladder, an escapement-anchor carried by the truck-frame and comprising a pair of spaced arms having weighted outer ends and provided with crosspins forming pallets, and a spring for elevating the ladder.

7. A toy ladder-truck, an automatically-elevated ladder carried thereby, a catch acting against the elevating device to hold the ladder in lowered position, and means for releasing the catch; substantially as described.

8. A toy ladder-truck, an automatically-elevated ladder carried thereby, a catch for engaging and holding the ladder in lowered position, and means for transmitting release movement to said catch.

9. A toy ladder-truck, an automatically-elevated ladder supported thereby, and an obstacle-engaging catch normally holding the ladder in lowered position.

10. A toy ladder-truck, a ladder pivoted thereto, a catch for holding the ladder in lowered position, and a catch trip-bar projecting in front of the truck and operable by engagement with any obstacle in the path of the truck.

11. A toy ladder-truck, a ladder pivotally connected thereto, a spring for elevating the ladder, a pivotally-arranged catch normally holding the ladder in lowered position, and a U-shaped trip-bar connected to the catch, and extended to the forward end of the truck in a position to be engaged by any obstacle in the path of movement of the truck.

12. A toy ladder-truck, a ladder pivotally connected thereto, said ladder being formed of a pair of pivotally-connected sections, the ends of which are designed to abut when the ladder is elevated, an elevating spring at the juncture of the two ladders and tending to elevate

the same, and means connecting the upper ladder-section to the truck-frame, whereby unwinding movement of the spring will raise the lower ladder-section and throw the whole ladder forward.

13. A toy ladder-truck, a ladder pivotally connected thereto and formed of a plurality of pivotally-connected sections, a torsion-spring arranged at the juncture of two sections of the ladder and tending to separate the same, and a spring-connecting bar extending between the upper ladder-section and a stationary portion of the truck-frame.

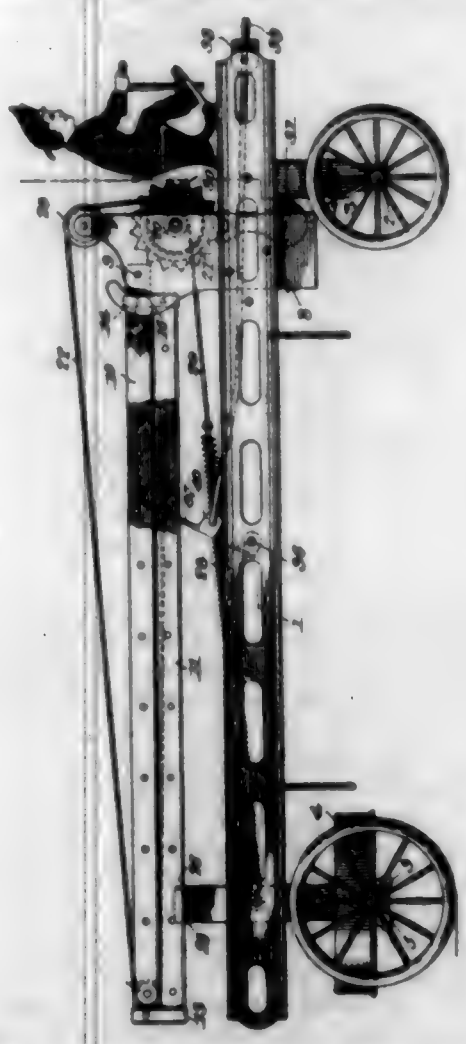
14. A toy ladder-truck, a pivot-pin supported by the frame of the truck, a ladder, a bracket clamped to the ladder and having ears through which the pivot-pin passes, a toothed segment mounted on the pivot-pin and having a notched projection engaging the bracket, a cross-bar having end ears through which the pivot-pin passes and provided with depending notched sides arranged to receive the segment and hold the ladder in a central position, an anchor pivoted to the frame and engaging the teeth of the segment, and a spring for elevating said ladder.

15. In a toy ladder-truck, the combination with a frame and running-gear, of a motor element for driving the truck, a seat at the front end of the truck, a ladder pivoted to the forward end of the truck, a ladder-rest arranged near the rear edge of the truck, a spring for elevating the ladder, an obstacle-engaging catch normally holding the ladder in lowered position, and means for governing the speed at which the ladder is elevated.

16. In a toy ladder-truck pivotally connected ladder-sections supported thereby, means for elevating the latter, including an elevating-spring arranged at the juncture of two of the ladder-sections, a catch device for holding the ladder-sections in retracted position, and a trip for releasing said catch; substantially as described.

17. In a toy ladder-truck, a series of ladder-sections, a spring for elevating the same, a catch for holding the ladder in lowered position, and a trip device projecting from the truck and operable by engagement with an obstacle in the path thereof to release the catch and allow the ladder-sections to be elevated; substantially as described.

818,262. **AUTO-AERIAL LADDER-TRUCK.** HARRY T. KINGSBURY, Keene, N. H. Filed Sept. 29, 1905. Serial No. 280,642.



Claim.—1. A toy ladder-truck, a ladder pivoted thereto, formed of a number of slidably-connected sections, and means for elevating said ladder, and automatic mechanism for controlling the speed of the elevating means.

2. A toy ladder-truck, a ladder pivoted thereto and formed of a number of slidably-connected sections, and a single operating means for first swinging the ladder to upright position, and then sliding the upper section on the lower.

3. A toy ladder-truck, a ladder pivoted thereto, said ladder being formed of a number of sections, guide-clips connecting said sections, a ladder elevating and extending means, and means for preventing sliding movement of the upper section until both sections have been swung to approximately vertical position.

4. A toy ladder-truck, a U-shaped frame carried thereby and provided with arcuate slots, a ladder pivoted to the frame and comprising slidably-mounted sections, guide-clips connecting the sections, lugs projecting from one set of clips and arranged to enter said arcuate slots, a winding-drum, a cord passing from the drum to the lower portion of the upper ladder-section, an elevating-spring and a cord extending between the spring and the hub of the winding-drum.

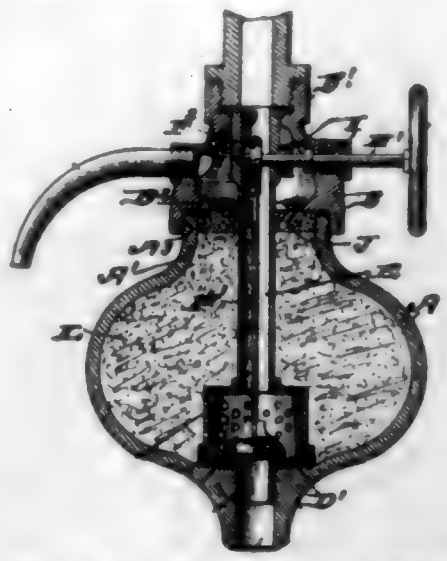
5. A ladder-truck, a pivoted ladder carried thereby, a ladder-elevating means including a winding-drum, an escapement-wheel secured to the winding-drum, and a weighted anchor engaging said escapement-wheel.

818,263. **BAR-KNIFE.** WILLIAM H. KINGSLEY, San Francisco, Cal. Filed June 6, 1905. Serial No. 263,980.



Claim.—A knife, the blade of which is wedge-shaped in cross-section, the back or thickest portion of the blade being channeled or beveled down to one of the faces to form a short sharp cutting edge, and said back being, at each extremity of said cutting edge, beveled or channeled down from said face to the opposite face to form side cutting edges continuous with said first-named cutting edge, substantially as described.

818,264. **FILTER.** GOTTLOB KLUMPP, Brooklyn, N. Y. Filed Oct. 24, 1904. Serial No. 229,801.



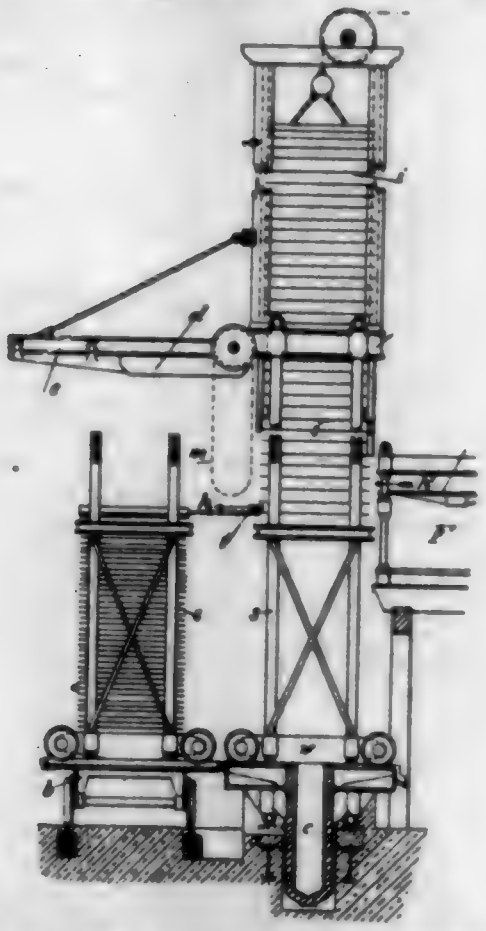
Claim.—1. In a filter, the combination with a casing designed to contain a filtering material, said casing having a neck at its upper, and a discharge-opening at its lower end, of a cap connected to the neck, a perforated cylinder arranged in the casing and having a tube extending into the discharge-opening and a tube projecting from the top which extends into the casing, a disk arranged in the neck of the casing and means carried by the cap and tube for closing the tube connected to the lower end of the cylinder for the purpose specified.

2. In a filter, the combination with a casing adapted to contain a filtering material and having a discharge-mouth at its lower end and a neck at its upper end, of a cap connected to the neck, said cap having a threaded neck portion at its upper end and a flange at its lower end, a perforated cylinder arranged within the casing, said cylinder having a tube attached to its lower end and communicating therewith, and a tube attached to its upper end, and also communicating therewith, the last-named tube extending up through the cylinder and cap, a shaft journaled in the cap and projecting into the tube, and having an eccentric upon its inner end, a band surrounding the eccentric, a rod depending from the band, a valve connected to the rod and a discharge-tube connected to the cap.

3. The combination with a casing designed to contain a filtering material, and having a discharge-opening and a neck portion, of a

cap connected to the neck portion, said cap having a threaded neck designed to engage a water-spigot, a tube connected to the cap, a flange formed integral with the cap, a perforated cylinder arranged within the casing, said cylinder having tubes connected to and communicating therewith, one of the tubes projecting into the cap and engaging the spigot, a shaft journaled in the cap and an eccentric arranged on the shaft, a band carried by the eccentric, and having a rod connected thereto, a valve connected to the lower end of the rod, and a porous disk disposed in the casing and adapted to engage the flange and filtering material to compress the latter when the casing and cap are connected substantially as specified.

818,265. OIL-PRESS. GERMAN KOPPEL, Harburg, near Hamburg, Germany. Filed Nov. 30, 1904. Serial No. 234,969.



Claim.—1. In an oil-press, means for moving the stack of boxes longitudinally and drawing them apart to enable the pressed cakes to be removed and fresh cakes to be inserted at constant heights.

2. In an oil-press, means for mechanically raising the stack of boxes bodily and drawing them apart after expression to bring the several boxes successively opposite a certain point to enable the pressed cakes to be taken out and fresh ones to be inserted.

3. In an oil-press, the combination, with a frame having a removable end plate, and a stack of boxes within the frame, of a hydraulic lift to raise the stack of plates after expression through the passage controlled by the removable plate.

4. In an oil-press, the combination, with a stack of boxes, a frame about said stack, and a pressure-plate arranged to fill out said frame, of means for removing the said plate laterally of the said frame, and means for raising the stack of plates through the free end of said frame.

5. In an oil-press, the combination, with a series of spaced boxes arranged in a stack, and links connecting the several boxes, of means for lifting the stack of boxes bodily and drawing them apart to enable the pressed cakes to be removed and fresh cakes inserted at constant heights.

6. In an oil-press, the combination, with a frame, a series of spaced boxes stacked within the frame, means connecting the boxes to allow of play, of a removable end plate to the frame, means for applying pressure to the stack at the opposite end from the movable plate, and means for moving the entire stack of boxes longitudinally within the frame and drawing the same apart to enable the pressed cakes to be removed and fresh cakes inserted at a uniform height.

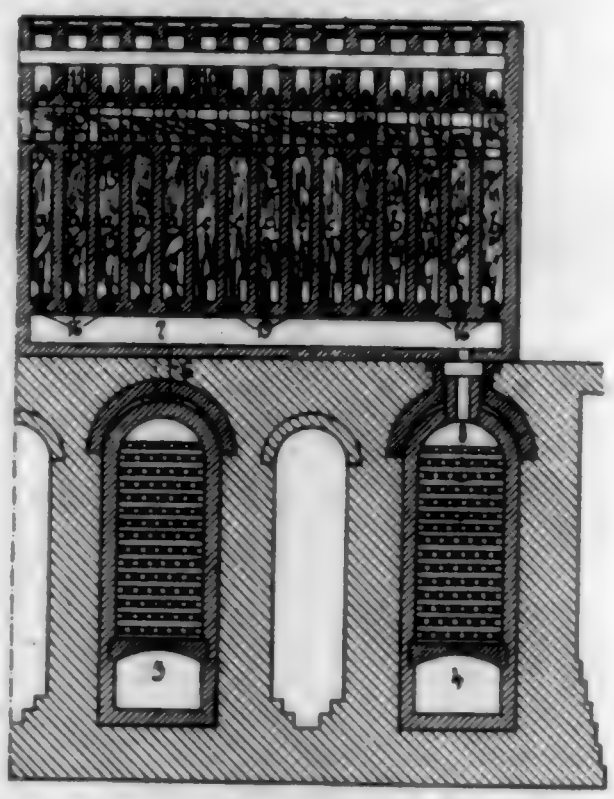
7. In an oil-press, the combination, with a frame, a series of spaced boxes stacked within the frame, links connecting the boxes to allow of play, of a laterally-removable end plate at the top of the frame, means for applying pressure to the bottom of the stack, and means for lifting the entire stack of boxes and drawing the same apart to enable the pressed cakes to be removed and fresh cakes inserted at a uniform height.

8. In an oil-press, the combination, with a frame arranged to receive a stack of boxes containing cakes, a removable end plate closing one end of the frame, and means at the other end for applying pressure to the stack of boxes within the frame, of means for shifting the position of the stack to bring each box successively opposite a uniform point of discharge for the pressed cake and a uniform point for the reception of a fresh cake.

9. In an oil-press, the combination, with a frame arranged to receive a stack of boxes containing cakes, a removable end plate closing one end of the frame and means at the other end for applying pressure to the stack of boxes within the frame, of means for shifting the position of the frame and stack, and means for shifting the position of the stack longitudinally of the frame to bring each box successively opposite a uniform point of discharge for the pressed cake and a uniform point for the reception of a fresh cake.

10. In a plant for expressing oil, the combination, with a main press comprising a frame arranged to receive a stack of oil-cake boxes, means for applying pressure to the stack, and means for lifting the stack of boxes and drawing them apart to enable the pressed cakes to be removed and fresh cakes inserted at constant heights, of an auxiliary press, means for shifting the position of the stack of the auxiliary press to a point adjacent to the stack of the main press, and means for lifting the auxiliary stack and drawing the boxes apart to enable the preliminary pressed cakes to be transferred to the main stack.

818,266. COKE-OVEN. HEINRICH KOPPERS, Essen-on-the-Ruhr, Germany. Filed Sept. 7, 1904. Serial No. 223,607.



Claim.—1. A coke-oven having vertical heating-flues and a common open upper horizontal passage for the combustion-gases, said heating-flues at the point where they pass into the said passage being restricted by projections of the bond courses, means for causing the air to ascend vertically at one angle of the heating-flue, and the gas at the opposite angle, guides for giving such paths to the gas and to the air within the separate heating-flues that the combustion zone is displaced to the top of the coal charge.

2. A coke-oven having a horizontal open passage and separate heating-flues, said heating-flues at the point where they pass into said passage being restricted, and having bond courses rising within the horizontal passage constructed to present recesses between the separate heating-flues which recesses have a cross-section corresponding to the sum of the combustion-gases passing therethrough substantially as described and for the purpose set forth.

3. A coke-oven having an upper horizontal open passage and heating-flues, said flues at the point where they pass into said passage being restricted by projections of the bond courses, said projections being small in the flues remote from the chimney and thence widening out toward the chimney, substantially as described and for the purpose set forth.

4. A coke-oven, having an open horizontal passage and heat-

ing-flues, said heating-flues at the point where they pass into the upper horizontal passage being restricted by projections of the bond course, which restrictions are narrow at the end remote from the chimney and thence widen out toward the chimney and slides upon the projections so as to permit of adjusting the apertures of the heating-flues, substantially as described and for the purpose hereinabove set forth.

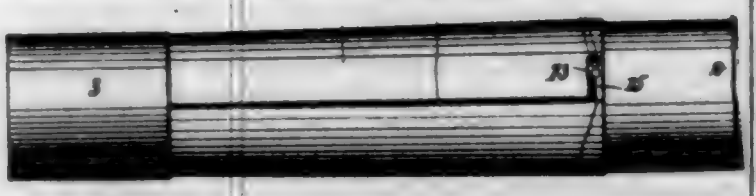
5. A coke-oven, having horizontal passages, heating-flues, bond courses rising within the horizontal passages, and presenting recesses between the separate heating-flues, which recesses have a cross-section corresponding to the sum of the combustion-gases passing therethrough, said heating-flues where passing into the upper horizontal passage presenting restrictions caused by projections on the bond courses and which are narrow at the end remote from the chimney and thence widen out toward the chimney, substantially as described and for the purpose hereinabove set forth.

6. A coke-oven, having a horizontal passage, heating-flues, bond courses rising within the horizontal passage and presenting recesses between the separate heating-flues, which recesses have a cross-section corresponding to the sum of the combustion-gases passing therethrough, said heating-flues where they pass into the upper horizontal passage presenting restrictions formed by projections on the bond courses, which restrictions are narrow at the end remote from the chimney and thence widen out toward the chimney, and slides on the projections to permit of adjusting the apertures of the heating-flues, substantially as described and for the purpose hereinabove set forth.

7. A coke-oven, having a horizontal passage, heating-flues and means whereby the air ascends vertically in one angle of the heating-flue and the gas in the opposite angle for the purpose of forming the combustion zone at the top of the coal charge, substantially as described and for the purpose hereinabove set forth.

8. A coke-oven, having a horizontal passage, heating-flues and means whereby the air ascends vertically in one angle of the heating-flue and the gas in the opposite angle, and interchangeable nozzles permitting of regulating the quantities of gas and air passing through and their ratio one to the other, substantially as described and for the purpose hereinabove set forth.

818,267. ADJUSTABLE SHEET-METAL PIPE. HARRY LATIMER, High Bridge, N. J. Filed Apr. 13, 1905. Serial No. 255,200.



Claim.—1. A pipe-section having longitudinal edges adapted to form a seam, one of said edges presenting a plurality of recesses of different depths, said recesses being adapted to receive the opposite edge to determine the diameter of the pipe-section.

2. A pipe-section consisting of a sleeve having longitudinal edges adapted to come together to form a lapped seam, one of said edges having a succession of recesses of progressively-increasing depth, said recesses being adapted to receive an opposite edge and determining the diameter of said pipe-section.

3. A pipe-section consisting of a sleeve having longitudinal edges adapted to overlap to form a seam, one of said edges being folded so as to form an inner ply and a groove adjacent thereto, said groove being adapted to receive the opposite edge, said inner ply having a serrated edge presenting a plurality of recesses of progressively increasing and decreasing depth, said recesses being adapted to receive the said opposite edge of said sleeve near the extremity of said pipe-section to determine the diameter thereof.

4. A stovepipe-section consisting of a sleeve having extremities of different diameters, the small extremity of said sleeve having notches in a longitudinal edge thereof, said notches progressively increasing in depth and being adapted to receive the opposite longitudinal edge to determine the diameter of the small extremity of said pipe-section, and means for adjustably locking the said edges at the other extremity of said pipe-section.

5. A stovepipe-sleeve having a longitudinal edge thereof folded to form a crease and a groove adjacent to said crease, said groove being adapted to receive the opposite longitudinal edge and said crease having a slot formed therein at the extremity of said sleeve, and a locking-plate rigidly attached at said opposite edge and received in said slot, said locking-plate having a plurality of notches in the edge thereof adapted to engage the end of said slot, and affording means for adjusting the diameter of said sleeve.

818,268. SCAFFOLD. DANIEL LEUE, Iowa City, Iowa. Filed Apr. 5, 1905. Serial No. 253,977.



Claim.—1. In a scaffold, an inclined support comprising a ladder-section having sides and connecting-rungs, an arm, means for permanently pivotally securing one end of such arm between the upper ends of said sides, a brace hinged at its lower end to one of said rungs, and means for detachably securing the outer end of said brace to said arm, said ladder-section being constructed to permit the arm and brace to be folded between the sides thereof.

2. The scaffold-support herein described comprising a ladder member composed of a series of rungs and sides, extensible legs fitted against said sides, keeper-plates for retaining the legs in proper positions relatively to said sides, and stirrups pivotally secured to said legs and having upper and lower flanged ends overlapping the latter and the sides of the ladder, the lower flanged ends of said stirrups being designed to engage the under side of a ladder-rung for holding the legs in their extended positions.

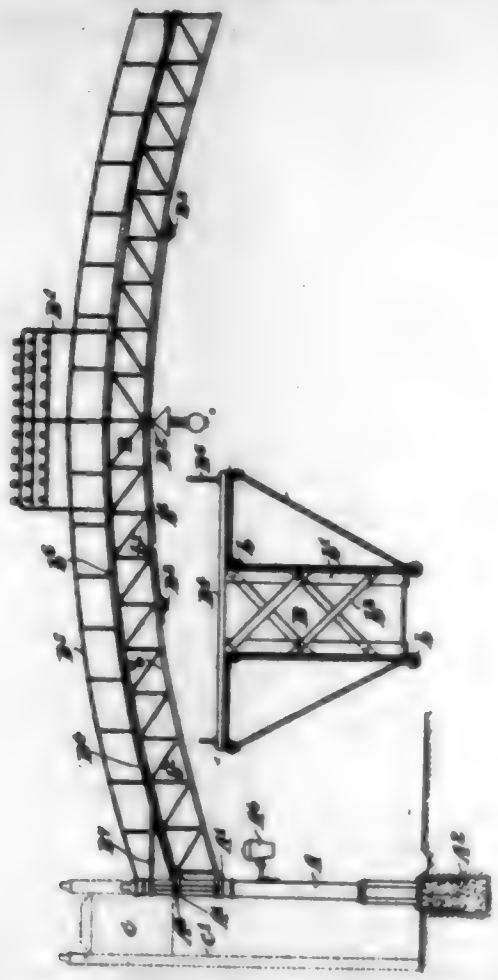
3. A scaffold comprising two inclined supports and horizontally-disposed arms upon which cross-boards are designed to rest, each support consisting of a ladder member having sides formed with holes or openings, extensible legs secured to said sides, keeper-plates overlapping the sides and legs for retaining the latter in proper positions relatively to said sides, some of said keeper-plates being secured to and movable with said legs, removable pins designed to fit in said holes or openings, above such keeper-plates and steps secured to the sides of said extensible legs, said horizontally-disposed arms being pivotally mounted between said sides, and inclined braces for supporting said arms, as set forth.

4. A scaffold comprising two inclined supports, each support consisting of a ladder-section having divergent sides and connecting-rungs, extensible legs, an arm permanently pivotally secured at its inner end between the convergent ends of said sides, an inclined brace pivoted to one of said rungs and detachably engaging said arm, keeper-plates for retaining the legs in proper position relatively to said sides, stirrups pivotally secured to said legs and having lower flanged ends for engaging the under side of a ladder-rung, and cross-boards designed to rest on and be supported by the arms of two inclined supports, said ladder-section being constructed to permit the arm and brace to be folded down between the sides thereof.

818,269. SYSTEM FOR SUPPORTING CABLES, &c. ERNEST LONDER, Don, Tasmania, Australia. Filed July 13, 1905. Serial No. 269,544.

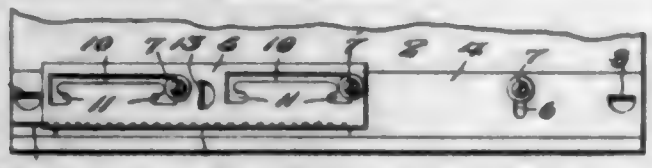
Claim.—1. In a supporting means of the class described, a plurality of spaced columns, a girder connected to the columns and having a platform throughout the longitudinal length of said girder, braces for supporting said platform, rails at opposite sides and ex-

tending the entire length of the platform, and a frame mounted above the platform for supporting insulator-wires.



2. In a supporting means of the class described, spaced columns, brackets secured to the upper extremities of each of said columns, a double girder connected to the brackets, a platform supported by the girder, hand-rails extending the entire length of said platform, a frame for supporting insulator-wires arranged a distance above the platform and standards for supporting said frame.

818,270. BEEHIVE. GEORGE W. MANN, San Luis Obispo, Cal. Filed Nov. 14, 1905. Serial No. 287,369.



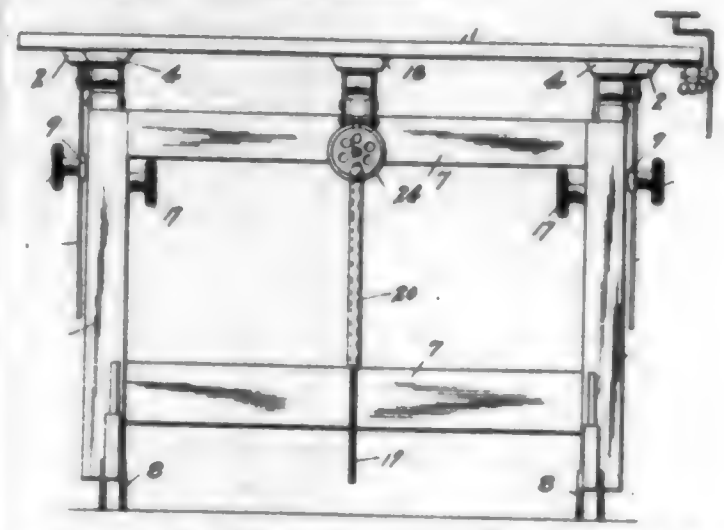
Claim.—1. In a device of the class described, a hive having an opening, a main slide for normally partially closing said opening, means connecting the slide for vertical movement on the hive, an auxiliary slide for closing the remainder of said opening, and means connecting the auxiliary slide for vertical and horizontal movement relative to the main slide.

2. In a device of the class described, a hive having an elongated doorway, a main slide provided with transverse slots, fastening members entered through said slots for securing the slide in place, and an auxiliary slide having longitudinal slots terminated in transversely-disposed slot extensions, said slots being designed to receive said fastening members for securing the auxiliary slide movably in place.

818,271. DRAFTING-TABLE. GEORGE W. MARTIN, Akron, Ohio. Filed Feb. 14, 1905. Serial No. 245,575.

Claim.—1 In a drafting-table, the combination with a frame, having vertical hollow standards, of supports slidably adjustable in said standards, the table-top carried by said supports, clamping-plates loosely attached to the inner surfaces of said hollow standards, bolts extending through said standards having heads which engage the clamping-plates, and means for drawing upon the bolts to clamp the plates tightly against the sliding supports.

2. In a drafting-table, the combination with a frame, having vertical hollow standards, of supports slidably adjustable in said standards, the table-top pivoted to said supports, clamping-plates loosely attached to the inner surfaces of said hollow standards, bolts extending through said standards having heads which engage the clamping-plates, and means for drawing upon the bolts to clamp the plates tightly against the sliding supports, channeled sleeves mounted to rotate on said bolts and slotted links passing through said sleeves and over said bolts, one end of each of said links being pivoted to the table-top, said drawing means being adapted when actuated to operate the clamping-plates to simultaneously clamp the links against the sleeves, whereby the top is simultaneously secured in both angular and vertical adjustment.



3. In a drafting-table, the combination with a frame, having vertical hollow standards, of supports slidably adjustable in said standards, the table-top carried by said supports, spring-metal clamping-plates attached at one end to the inner surfaces of said hollow standards, bolts extending through said standards having heads which engage the clamping-plates at their free ends, and means for drawing upon the bolts to clamp the plates tightly against the sliding supports.

4. In a drafting-table, the combination with a frame, having vertical hollow standards, the supports slidably adjustable in said standards, the table-top carried by said supports, a pair of clamping-plates loosely attached to the opposite inner surfaces of each hollow standard, bolts extending in opposite directions through said standards and having heads which engage the clamping-plates, and means for drawing the same to clamp the plates tightly against the sliding supports on opposite sides thereof.

5. In a drafting-table, the combination with a frame, having vertical hollow standards, the supports slidably adjustable in said standards, the table-top carried by said supports, a pair of spring-metal clamping-plates attached at one end to the opposite inner surfaces of each hollow standard, bolts extending in opposite directions through said standards and having heads which engage the clamping-plates at their free ends, and means for drawing the same to clamp the plates tightly against the sliding supports on opposite sides thereof.

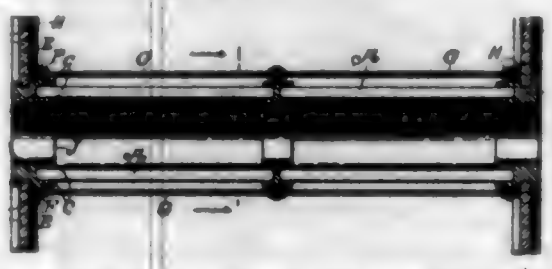
6. In a drafting-table, the combination with a frame, having vertical hollow standards, the supports slidably adjustable in said standards, the table-top pivoted to said supports, a pair of clamping-plates loosely attached to the opposite inner surfaces of each hollow standard, bolts extending in opposite directions through said standards and having heads which engage the clamping-plates, and means on each of the bolts for drawing the same to clamp the plates tightly against the sliding supports on opposite sides thereof, channeled sleeves mounted to rotate on a pair of said bolts one on each of said standards opposite each other, slotted links passing through said sleeves and over said bolts, one end of each of said links being pivoted to the table-top, said drawing means, on the above-mentioned sleeve-carrying bolts, being adapted, when actuated to operate the clamping-plates, to simultaneously clamp the links against the sleeves, whereby the top is simultaneously secured in both angular and vertical adjustment.

7. In an adjustable standard for a table, a vertical hollow standard supported from the floor, a support slidingly adjustable in said standard, a top carried on said supports, a clamping-plate loosely attached to the inner surface of the hollow standard, a bolt extending through said standard and having a head which engages the clamping-plate, and means for drawing upon the bolt to clamp the same tightly against the sliding support.

818,272. CULVERT. HARLAN G. MOATS, Villisca, Iowa. Filed July 12, 1905. Serial No. 269,306.

Claim.—1. A culvert comprising end collars having annular grooves formed in one face and a groove in the periphery thereof,

segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral grooves and forming a wall, grooved posts engaging the ends of said slabs, intermediate supporting-collars having annular grooves formed in both faces to receive the ends of the slabs, said collars having integral lugs formed on the circumference thereof, and longitudinal bolt-rods secured in the lugs and extending the entire length of the culvert.



2. The combination in a culvert, with end collars having annular grooves formed in one face and a groove in the periphery thereof, segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral grooves and forming a wall, the collars being formed with lugs on the circumference thereof, of longitudinal bolt-rods secured in said lugs and extending the full length of the culvert.

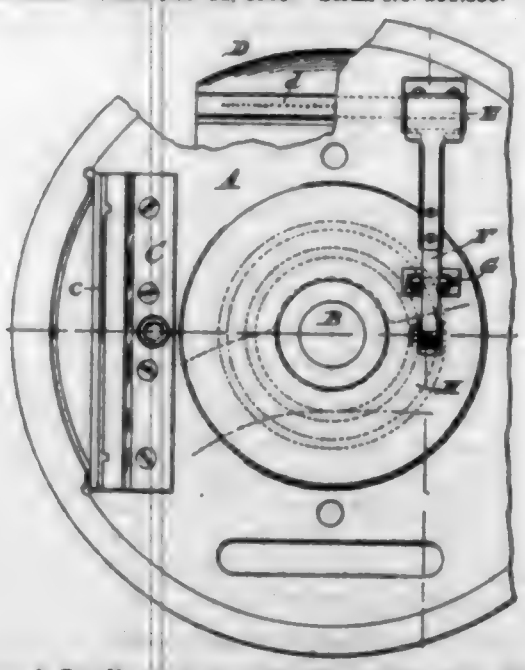
3. In combination, a culvert comprising end collars having annular grooves in one face and in the periphery thereof, segmental slabs having their ends engaging the annular grooves, end slabs engaging the peripheral grooves and forming a wall, grooved posts secured to said slabs, intermediate supporting-collars having annular grooves formed in both faces to receive the ends of the slabs, lugs formed integral on the circumference of the collars, and longitudinal bolt-rods secured in the collars and extending the entire length of the culvert.

818,273. HANDLE FOR VESSELS OR RECEPTACLES. ERNST MOHR, Milwaukee, Wis., assignor to National Enameling and Stamping Company, a Corporation of New Jersey. Filed Dec. 28, 1904. Serial No. 238,656.



Claim.—A metal handle having a split tubular body portion with legs formed integrally with and projecting downwardly from the lower side of the tubular portion whereby to leave the tubular portion open at the ends and the split in the body portion having position above the point where the legs and body unite and a split reinforce-tube extending through the tubular body portion with the split of the reinforce-tube confronting the solid portion of the tubular body.

818,274. LINOTYPE-MACHINE. MELVIN W. MORRISON, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Dec. 11, 1905. Serial No. 291,356.



Claim.—1. In a linotype-machine, the combination of a melting-pot, a rotary carrier provided with a mold to coöperate with the pot, and a pot-wiper secured to and carried wholly by the mold-carrier.

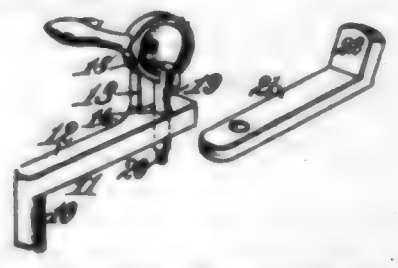
2. In a linotype-machine, the combination of a melting-pot, having a delivery-mouth adapted to close the rear side of the mold, a rotary disk turning always in the same direction and provided with a slotted mold, and a pot-wiper carried by said disk.

3. In a linotype-machine, the combination of a melting-pot having a delivery-mouth to close the mold, a rotary disk containing a slotted mold, and a wiper carried by said disk to act upon the mouth of the pot, and movable to and from the plane of the pot-mouth.

4. In a linotype-machine, the combination of a melting-pot, having a delivery-mouth adapted to close the mold, a revolving disk containing a slotted mold, an arm pivoted to said disk and provided with a wiper to act upon the pot-mouth, and a stationary cam controlling the position of said wiper to and from the plane of the pot-mouth.

5. In a linotype-machine, a melting-pot provided with a delivery-mouth, a rotary disk having a slotted mold to coöperate with said mouth, a stationary knife to trim the base of the slug in the mold, a pot-mouth wiper attached to and carried by the disk, and means for moving said wiper rearward against the pot-mouth during its passage thereover, and thereafter moving it forward that it may clear the knife when passing the same.

818,275. CLAMPING ATTACHMENT FOR MITER-BOXES AND THE LIKE. ROBERT L. MCCARTNEY, Ottumwa, Iowa. Filed Apr. 10, 1905. Serial No. 254,804.



Claim.—1. The combination with a work-supporting base provided with means for holding and forming a guide for the saw, of a stem vertically adjustable with respect to one edge of the base and provided with an angular arm, a cam-head eccentrically mounted on a portion of the arm, a pin attached to the cam-head and movable through the arm, and a clamping member engaged by the lower end of the pin.

2. The combination with a work-supporting base provided with means for holding and forming a guide for the saw, of an angular element embodying a stem adjustable with respect to the base and having an angular arm, a cam-head eccentrically supported by the arm, a clamping member arranged under the plane of the arm, and adapted to be disposed in various angular positions on the base and a connection between the clamping member and cam-head.

3. The combination with a work-supporting base provided with means for holding and forming a guide for the saw, of a clamping attachment consisting of an adjustable stem having an angular arm, a cam-head eccentrically mounted on a portion of the arm and having a flange, a clamping member disposed under the plane of the arm and provided with a terminal foot, the clamping member being movable on the base to assume various angular positions and also applicable to either side of the base, and a pin movable through the arm and engaging the member and having an upper hooked terminal connected to the flange of the head.

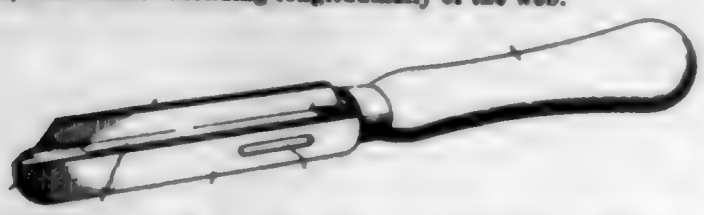
4. The combination with a work-support having means for holding and guiding a saw, of a cam-head adjustably held thereon, a clamping member to engage the work-support and the work on the latter, the clamping member being adjustable to dispose it in various angular positions on the work-support, and a connection between the clamping member and the cam-head for vertically adjusting the said member.

5. The combination with a work-support having means for holding and guiding the movement of a cutting implement, of a clip mounted thereon and carrying a clamping-screw, a stem adjustably held in the clip and provided with an angular arm, a cam-head eccentrically mounted on a part of the arm, a clamping member disposed below the plane of the arm and adjustable to dispose it in various angular positions on the work-support, and a connection movably extending through the arm and engaging the cam-head and the clamping member.

818,276. PARING DEVICE. WILLIAM A. MCCORMACK, Bloomington, Ill. Filed May 19, 1905. Serial No. 261,227.

Claim.—1. A parer and slicer comprising a central web, and

blades projected in parallel planes from the opposite edges of said web, said blades extending longitudinally of the web.



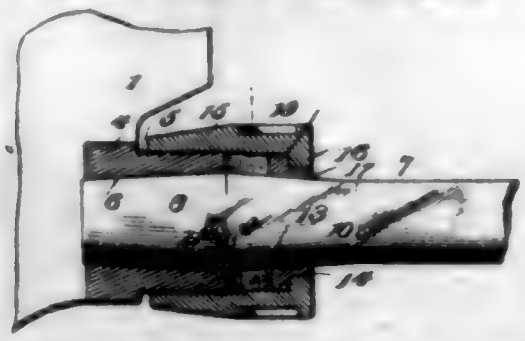
2. A parer and slicer comprising a paring-blade, a slicing-blade extending in a plane parallel with the paring-blade, and a web extending longitudinally of the blades and arranged at a right angle thereto.

3. A parer and slicer comprising blades arranged in parallel offset planes, a web extending longitudinally of the blades and joining the opposite edges thereof, one of the blades being formed with an elongated slot having one of its walls sharpened.

4. A parer and slicer comprising blades arranged in parallel and offset planes, a web extending longitudinally of and joining said blades, and arranged at right angles thereto, said web being cut away for a portion of its length to free the edge of one of said blades, the other of said blades being formed with a longitudinally-arranged slot having one wall sharpened.

5. A parer and slicer comprising a paring-blade and a slicing-blade arranged in parallel offset planes, a web extending longitudinally of and joining said blades, the free end of said web and the adjacent end of one of the blades being sharpened.

818,277. PISTON-ROD CONNECTION. CHARLES T. MCELVANEY, Denison, Tex. Filed June 2, 1905. Serial No. 263,446.



Claim.—1. In combination, a cross-head having a tapered opening, a piston-rod having a front and rear taper, the rear taper fitting the tapered opening in the cross-head, a split sleeve fitting over the front taper, and a binding-nut engaging the cross-head and binding the split sleeve on the front taper of the piston and also binding the rear taper against the wall of the tapered opening in the cross-head.

2. In combination, a cross-head having a threaded boss formed with a tapered opening, a piston-rod having a front and rear taper, a split sleeve formed with an opening, the rear taper of the piston-rod engaging the wall of the tapered opening of the boss and the front taper engaging the wall of the opening of the sleeve, a nut having threads and a flange, the threads engaging the threads of the boss and the flange engaging the split sleeve, whereby to bind the tapers of the piston-rod to the walls of the adjacent openings.

3. In combination, a cross-head formed with a tapered seat, a rod formed with a taper to correspond with the tapered seat in the cross-head and a second but reversed taper formed on said rod, a threaded portion extending from the cross-head, and means engaging the threaded portion to bind the second-mentioned tapered portion and force the first-mentioned taper in and hold it in its seat in the cross-head.

4. In combination, a cross-head formed with a threaded boss and tapered seat, a rod formed with a taper, a hollow threaded binding element engaging the threaded boss, and a split collar inclosed within the binding element and engaging the rod to cause the binding element to force the tapered rod into and hold it in the seat.

5. In combination, a cross-head formed with a threaded boss and a tapered seat, a piston-rod formed with two opposite tapers, one of which fits in the tapered seat in the cross-head, a nut engaging the threaded boss, and a binding element interposed between the nut and the second taper on the rod.

6. In combination, a cross-head, a piston-rod which is formed with a taper, means for binding one end of said piston-rod to the cross-head, a binding element encircling and engaging the taper of the piston-rod, and means engaging the binding element and the cross-head to force the binding element on the taper and hold the rod and cross-head together.

7. In combination, a cross-head, a piston-rod which is formed with two opposite tapers, a seat for one taper, a movable binding element formed with an opening through which the second taper passes, and means for forcing the binding element on its cooperating taper and the other taper in its seat, and means for locking the forcing means.

8. In combination, a cross-head having a threaded boss and a tapered seat, a piston-rod formed with opposite tapering surfaces one of which engages the tapered seat, a binding element engaging the second-mentioned tapered surface, an internally-threaded nut engaging the threaded boss for forcing the binding element on the tapered portion and the other tapered surface in its seat, and a detachable projection which engages notches formed in the nut to lock the parts together.

818,278. SAP-RECEIVING RECEPTACLE. EDWIN A. MCKOY, Atlanta, Ga. Filed Oct. 2, 1905. Serial No. 281,063.



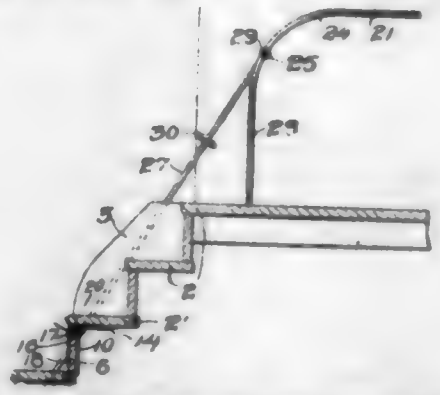
Claim.—1. In a device of the character described, the combination of an apron provided with a rearwardly-extending flange, a receptacle provided with an inwardly-extending flange, the flange of said receptacle engaging the flange of said apron, whereby said receptacle is supported upon the apron.

2. A device of the character described, comprising a substantially flat apron, a sharpened flange formed upon the upper edge of said apron, and a curved flange formed upon the lower edge of said apron, and a receptacle engaging and supported upon the curved flange of said apron.

3. A device of the character described, comprising an apron provided with supporting means formed upon its lower portion, and a slidable receptacle engaging and suspended upon said supporting means, said receptacle movable longitudinally thereof and capable of being entirely removed from said supporting means by sliding it off of the same at one end of said apron.

4. A device of the character described, comprising an apron provided with flanged ends, penetrating means formed upon one of the longitudinal edges of said apron and supporting means formed upon the opposite longitudinal edge, and a longitudinally-movable receptacle carried by said supporting means and capable of being removed entirely from said apron at one of its ends.

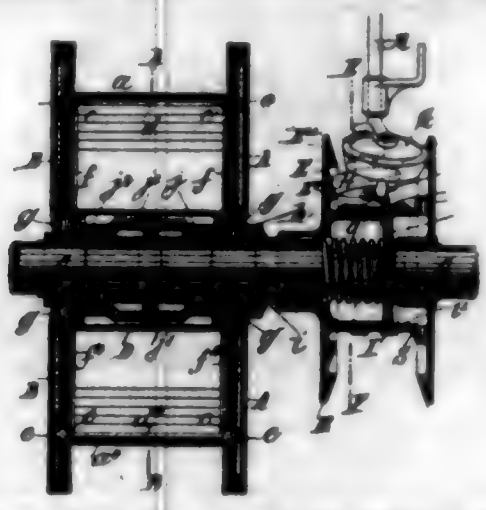
818,279. CAR-STEP. NANCY A. E. MCLENDON, Sanford, Colo. Filed May 31, 1905. Serial No. 263,061.



Claim.—The combination with fixed steps; of foldable steps cooperating therewith, guard-rails associated with the fixed steps, each of said guard-rails having upper and lower hooks; and hand-levers connected with the foldable steps whereby the latter may be folded and unfolded, each of the hand-levers having an eye at its upper end for interchangeable engagement with corresponding upper and lower hooks of the guard-rails.

818,280. EXPANDING PULLEY. ANDRÉ L. HOFF, Paris, France. Filed Nov. 28, 1903. Serial No. 183,002.

Claim.—1. An expansible pulley, comprising side plates, radially-movable cross-pieces secured thereto, ribbons secured one to each cross-piece, and passing freely through all other cross-pieces in coils, a substantially continuous belt-surface being formed thereby.



2. An expansible pulley, comprising side plates, a shaft, a gear-case, cross-pieces between the plates, coiled ribbons secured at one end to the cross-pieces, nuts on the cross-pieces, radially-arranged screws and gears therefor in the gear-case, and threaded into the nuts, a sleeve adapted to operate the gears and means for rotating said sleeve on the shaft or locking it thereto, substantially as described.

3. An expansible pulley comprising a shaft, side plates, radially-arranged screws thereon, cross-pieces carried thereby and carried by the screws, coiled ribbons secured one to each cross-piece, a substantially continuous belt-surface being formed thereby, a gear-case, pinions on each screw within the gear-case, gearing within the gear-case connecting the pinions on each side of the gear-case, a sleeve adapted to operate the pinions on one side of said gear-case and means to lock said pinion to the shaft or rotate it thereon, substantially as described.

4. An expansible pulley, having a shaft, a belt-surface and means to change its diameter, comprising a pair of disks, one rotating with the shaft, and one adapted to either be locked thereto or to rotate independently thereof, a friction-clutch adapted to retard the motion of one disk with relation to the shaft to produce one change of diameter, and a positive driving means to produce the opposite change in diameter.

5. In combination with a shaft, an expansible pulley comprising a sleeve free to rotate on the shaft, two disks, one rotating with the sleeve, and one rotating with the shaft, a clutch between them, means for separating the disks to unclutch them, and a brake to retard the motion of the sleeve, said separating means adapted to rotate the disks oppositely.

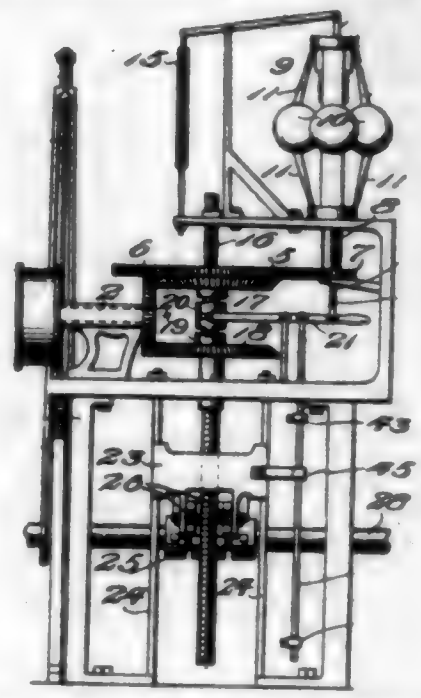
6. In combination with a shaft, an expansible pulley comprising a sleeve free to rotate on the shaft, two disks, one rotating with the sleeve and the other with the shaft, a clutch between them, a spindle having a pair of geared driving-wheels carried between the disks, a brake operatively connected to said spindle, and means for turning the spindle to unclutch the disks, and cause the geared driving-wheels to bear upon the disks to rotate them oppositely.

818,281. SPEED-REGULATOR. JAMES OLER, CHRISTIAN A. FUGAL, and JUNIUS J. HAYES, Pleasant Grove, Utah. Filed Sept. 16, 1905. Serial No. 278,729.

Claim.—1. In a speed-regulator for water-wheels, the combination with a driving element and a gate-controlling element, the latter comprising a rock-shaft, of a governor driven by said driving element, an actuating element for rocking the gate-controlling element, gearing between the governor and actuating element for automatically moving the latter in one direction or the other, and means for disconnecting the actuating element from the gate-controlling element to permit the latter to be independently operated

2. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, the latter comprising a rock-shaft, of a governor driven by said driving element, an actuating device for automatically operating the gate-controlling element, gearing including clutch mechanism between the governor and actuating element for moving the latter in one direction or the other, and means for shifting the clutch mechanism to neutral position when the actuating element reaches the limit of its rocking movement in either direction.

3. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, the latter comprising a rock-shaft, of a governor driven by said driving element, gearing including clutch mechanism between the driving and gate-controlling elements for rocking the latter in one direction or the other, said clutch mechanism being automatically controlled by the governor, and means automatically operated by said gearing for shifting the clutch mechanism to neutral position and throwing the gearing out of operation when the gate-controlling element has been rocked to the prescribed extent in either direction.



4. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, the latter comprising a rock-shaft, of a governor driven by said driving element, an actuating member operatively connected with the controlling element to impart rocking movement thereto, gearing between the driving mechanism and actuating member for moving said member in one direction or the other, said gearing including clutch mechanism automatically controlled by the governor, and shifting means controlled by said actuating member for restoring the clutch mechanism to normal position.

5. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, the latter comprising a rock-shaft, of a governor operated by the driving element, a sliding actuating member operatively connected with the gate-controlling element to impart a rocking movement thereto, gearing including clutch mechanism controlled by the governor for moving said actuating member in one direction or the other, and shifting means controlled by said actuating member for restoring the clutch mechanism to normal position when adjusted to the limits of its movements.

6. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, of a governor driven by said driving element, an actuating element movable in one direction to operate the controlling element to open the water-gate and in the other direction to close the gate, gearing between the driving and actuating elements including clutch mechanism controlled by the governor for moving said actuating element in one direction or the other when the speed of the wheel exceeds or falls below the normal, and shifting means movable in parallel relation to the actuating element and operated thereby at the limit of its movements to restore the clutch mechanism to normal position.

7. In a speed-regulator for water-wheels, the combination with a driving element, and a gate-controlling element, of a governor driven by said driving element, an actuating member for operating the controlling element, a screw-shaft for operating said actuating member, gearing including clutch mechanism controlled by the governor for connecting the driving element with the shaft to operate it in one direction or the other, and shifting mechanism controlled by the actuating member to restore the clutch mechanism to normal position and disconnect the gearing from the shaft.

8. In a speed-regulator for water-wheels, the combination with a driving element, and an oscillating gate-controlling element, of a reciprocating actuating member operatively connected with said controlling element, a governor driven by the driving element, a screw-shaft for operating the actuating member, gearing including clutch mechanism controlled by the governor for operating said shaft in one direction or the other, a shifting device for restoring the

clutch mechanism to normal position, and means carried by the actuating member for operating said shifting device at the limit of the movements of said actuating member.

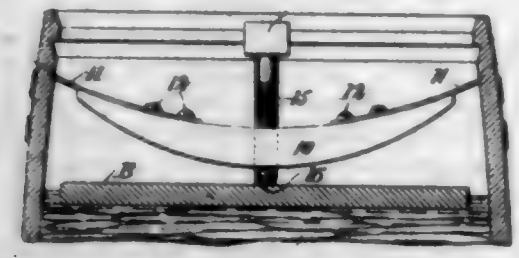
9. In a device of the class described, a driving element, a rock-shaft having means for communicating motion therefrom and having a yoke fixed thereto, automatic speed-regulating mechanism embodying a reciprocating member actuated by the driving element, a rocker-arm pivotally connected with the said reciprocating element and loosely engaging the rock-shaft and having a coupling projection between the arms of the yoke, and means for detachably connecting said projection to the yoke.

10. In a speed-regulator for water-wheels, the combination of a driving-gear, an oscillating gate-controlling shaft, a sliding operating element, a screw-shaft for operating said element, a governor, gears loosely mounted on the shaft and meshing with the driving-gear, one of said gears being in operative relation with the governor, said gears having clutch elements, a clutch member splined to the shaft and movable to engage either of said clutch elements, a shifting member for adjusting said clutch member, an operative connection between the actuating member and gate-controlling element, and shifting mechanism controlled by the actuating member for restoring the clutch member to normal position.

11. In a speed-regulator for water-wheels, the combination with a driving element and a gate-controlling element, of a governor driven by said driving element an actuating member for operating the controlling element, a screw-shaft for operating said actuating member, gearing including clutch mechanism and an actuating-lever therefor controlled by the governor for connecting the driving element to the shaft to operate it in one direction or the other, a rod connected with the lever and carrying contacts, and a coacting contact member carried by the actuating imember to engage the contacts on the rod at the limits of the movement of said actuating member to restore the clutch mechanism to normal position and disconnect the gearing from the shaft.

12. In a speed-regulator for water-wheels, the combination of a drive-shaft carrying a gear-wheel, a screw-shaft, oppositely-revoluble gears loosely mounted on the screw-shaft and meshing with said gear-wheel and provided with clutch members, a coöperating clutch member on the screw-shaft between the gears, a lever for operating said coöperating clutch member to connect either of said loose gears with the screw-shaft, a governor driven by one of said gears and operatively connected with the lever, a rock-shaft, a nut actuated by the screw-shaft and operatively connected to the rock-shaft, and shifting mechanism controlled by the nut operatively connected with the clutch-lever to restore said coacting clutch member to normal position at the limits of the movement of the nut.

818,282. **RETAINING DEVICE.** FERNANDO C. DOS PASSOS, Augusta, Ga. Filed Mar. 14, 1905. Serial No. 250,044.

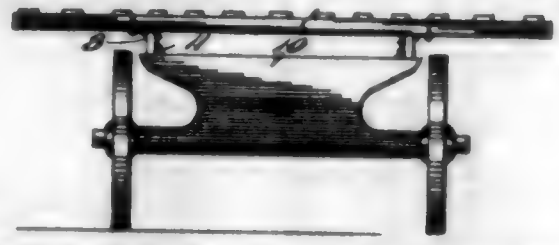


Claim.—1. The combination with a barrel having a movable head, of a retaining device for the movable head, comprising a bar, a contact-screw threaded through the bar and engaging the movable head, and toothed plates on the ends of the bar inclined upwardly with respect to a plane perpendicular to the axis of the contact-screw.

2. A retaining device, comprising a bar, a contact-screw threaded through the bar, spring-plates on the ends of the bar and inclined upwardly with respect to a plane perpendicular to the axis of the contact-screw, straps encircling the ends of the bar and the plates, and means on the inner ends of the plates for engaging the bar to prevent longitudinal movement of the plates with respect thereto.

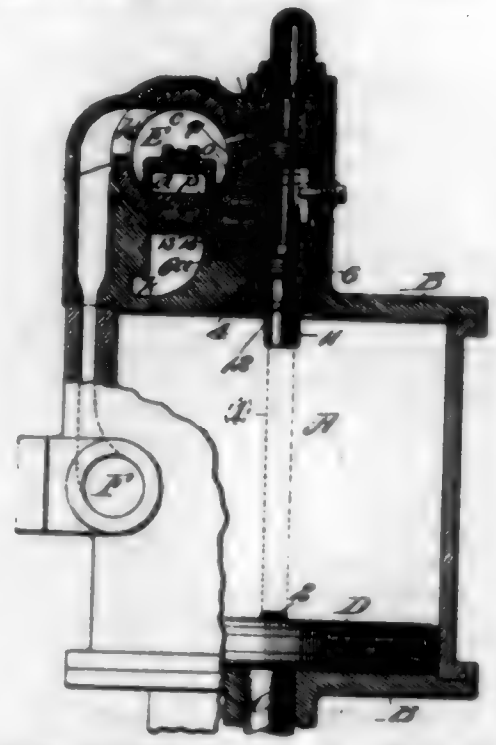
3. A retaining device, comprising a bar, provided on its upper face at the ends thereof with rack-teeth, a contact-screw threaded through the bar, spring-plates on the face of the bar having a hooked portion for engaging the rack-teeth, straps encircling the ends of the bar and the spring-plates, and a screw traversing the straps and the plates.

818,283. **WAGON-BRACKET.** JOHN W. PATTERSON, Tiskilwa, Ill. Filed Mar. 15, 1905. Serial No. 250,257.



Claim.—A wagon-bracket comprising an integral plate bent at one end to provide a bolster-plate, projected vertically at right angles from said bolster-plate to provide a body portion, and bent at right angles from the upper end of the body portion in a direction reverse to the direction of the bolster-plate to provide a rack-plate, the outer end of the rack-plate being laterally extended, a loop-retaining bolt secured in said extended portions of the rack-plate, and an angle-plate secured to the under side of the rack-plate with a depending portion parallel to but spaced from the body portion of the bracket, said body portion being provided with means for securing same to a wagon-sill.

818,284. **FLUID-ACTUATED VALVE.** WALTER O. PELHAM, Monett, Mo., assignor of one-half to Pius F. Ferguson, Monett, Mo. Filed June 14, 1905. Serial No. 265,237.



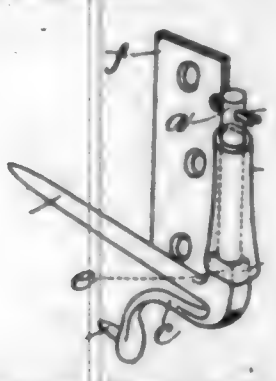
Claim.—In a device of the character described, the combination with a cylinder and its piston, of a main valve associated therewith, a reversing-valve casing, a reversing-valve consisting of two pistons having a slide-valve interposed between said pistons, and a depending portion carried by said last-mentioned piston and said slide-valve, which depending portion extends into the steam-cylinder and is in the path of movement of said first-mentioned piston and is susceptible of being moved thereby; said valve-casing having suitable ports for effecting the movement of said main valve after said reversing-valve has been mechanically operated, and said cylinder and valve-casing being provided with a port for causing said reversing-valve to be fluid-actuated when the first-mentioned piston reaches a predetermined point, substantially as described.

818,285. **BLIND-HINGE.** JOHN H. POOLE, Braintree, Mass., assignor, by direct and mesne assignments, of one-third to Frank C. Granger, Randolph, Mass., one-third to Eben H. Googins, Cambridge, Mass., and one-third to Edward E. Piper, Randolph, Mass. Filed July 3, 1905. Serial No. 268,150.

Claim.—1. A blind-hinge comprising a pintle member having external locking-faces at its lower portion, and a socket member having internal locking-faces at its lower portion adapted to engage the locking-faces of the pintle member and lock the socket member in either of two positions.

2. A blind-hinge comprising a pintle member having external oppositely-inclined locking-faces at its lower portion, and a socket member having internal locking-faces at its lower portion adapted to

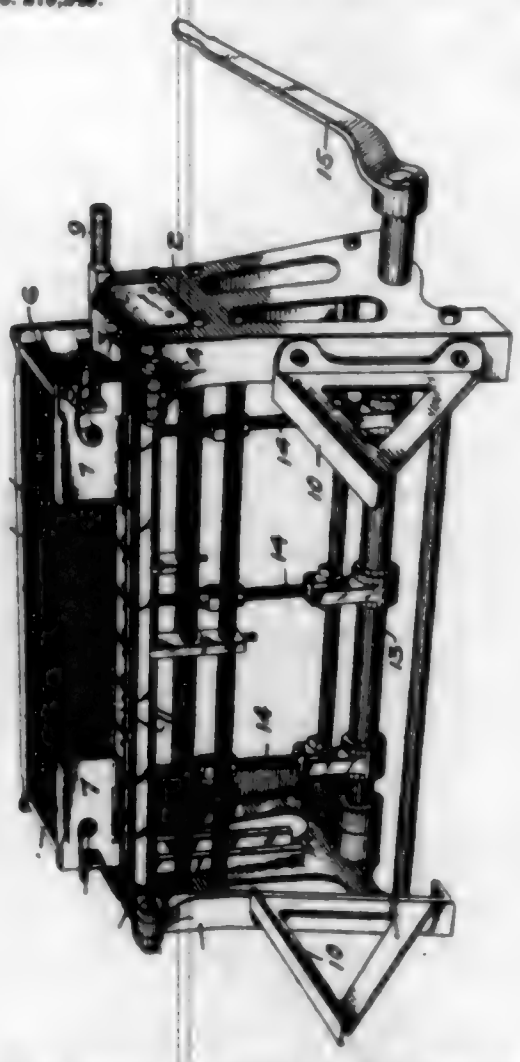
engage the locking-faces of the pintle member and lock the socket member in either of two positions.



3. A blind-hinge comprising a pintle member having an enlargement at its base, and a socket member constructed to rotate on the pintle and formed at its lower end to surround said enlargement and engage the sides thereof to lock the socket member in either of two positions.

4. A blind-hinge comprising a pintle member having at its base an enlargement provided at opposite sides with locking-faces, a leaf and a socket connected to the leaf adapted to rotate on the pintle, the socket being distorted at its lower end to provide internal locking-faces adapted to engage the faces of said enlargement and lock the socket and leaf in either of two positions.

818,286. **PROCESS OF MOLDING CONCRETE BRICKS OR BLOCKS.** WILLIAM POSTER, St. Paul, Minn. Filed Sept. 20, 1905. Serial No. 279,249.



Claim.—1. A process of molding concrete bricks or blocks which consists in placing a thin layer of cement in a mold having a hard smooth floor to form on the block a finished facing impervious to moisture, and then filling up and tamping the mold with a mixture of coarse sand and cement to form a comparatively porous backing, substantially as described.

2. A process of making a concrete brick or block which consists in placing a thin layer of fine sand and cement mixed in suitable proportions in a mold having a hard smooth floor to form a finished facing on the block, and then filling up and tamping the mold with a mixture of coarser sand and proportionately less cement whereby a softer, more pervious backing will be formed, substantially as described.

3. A process of making a concrete brick or block which consists in placing in a mold having a hard smooth floor a thin layer of cement and coloring mixture in suitable proportions to produce the desired shade of color and form a smooth-finished facing on the brick, and then filling up and tamping the mold with a mixture of coarse sand and proportionately less cement whereby a softer, more pervious backing will be formed.

4. A process of making a concrete brick or block which consists in placing in a mold having a hard smooth floor a thin layer of cement mixed with fine sand and coloring in suitable proportions to produce the desired shade of color and form a hard finished facing on the brick, and then filling up and tamping the mold with a mixture of coarse sand and proportionately less cement, substantially as described.

5. A process of making a concrete brick or block which consists in placing a vertical division-plate in a mold having a smooth hard floor and a smooth vertical wall near said plate and sifting a cement mixture upon the bottom of the mold and filling the space between the division-plate and the vertical wall with the same material to form horizontal and vertical facings, then placing a mixture of coarse sand and cement upon said horizontal facing and raising the division-board and tamping the mixtures together, and finally completely filling the mold with said last-named mixture to form a backing for said horizontal and vertical facing-layers and entirely removing the division-plate and tamping the mixtures together, substantially as described.

6. A process of making a concrete brick or block which consists in placing a vertical division-plate in a mold having a floor and a vertical wall near said plate and sifting a cement mixture upon the bottom of the mold and filling the space between the division-plate and the vertical wall with the same material to form horizontal and vertical facings, then placing a mixture of coarse sand and cement upon the said horizontal facing and raising the division-board and tamping the mixtures together, and finally filling the mold with said last-named mixture to form a backing for said horizontal and vertical facing-layers and entirely removing the division-plate and tamping the mixtures together, substantially as described.

818,287. **PROCESS OF TREATING CLAY.** EUGENE S. POWERS, Merchantville, N. J. Filed July 10, 1905. Serial No. 269,082.

Claim.—1. The herein-described process of making plastic products, consisting in incorporating with clay a liquid solution of silica, or similar inorganic substance, molding same, and thereafter causing the crystallization of said silica on the surface of the composition.

2. The herein-described process of making plastic products, consisting in mixing clay and sand, adding liquid solution of silica, molding same, and thereafter causing the crystallization of said solution of silica on the surface of the composition.

3. The process of making plastic products, consisting in incorporating with clay a liquid solution of silica, molding same, and thereafter causing the formation of a crystallized crust on the surface of the composition to prevent the shrinkage or contraction thereof, substantially as described.

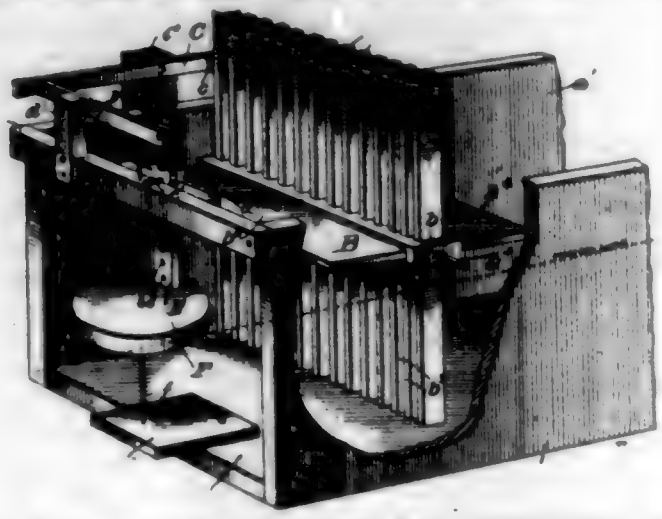
4. The process of making plastic products, consisting in mixing clay and sand, adding and mixing liquid solution of silica, molding such composition, then exposing same to the atmosphere, and thereafter heating whereby the exposed surface forms a crystallized crust, substantially as described.

5. The process of making plastic products, consisting in mixing clay and sand, adding and mixing liquid solution of silica, molding such composition, then causing the formation of an oxid on the exposed surface thereof, and thereafter heating same whereby the oxid forms a crystallized crust, substantially as described.

818,288. **SCREEN FOR IRRIGATING-DITCHES.** WILLIAM B. RACE, Lake, Idaho, assignor of one-half to Lebbeus A. Murray, Lake, Idaho. Filed Sept. 7, 1905. Serial No. 277,414.

Claim.—1. In apparatus of the class described, the combination of a casing, comprising bottom and side walls, cross-bars connecting the side walls at the top, a screen within the casing and comprising a bar arranged transversely thereof, pivot-pins on the ends of the bar and engaging the side walls of the casing, spaced parallel longitudinal bars secured to the transverse bar by their centers, pins in the outermost longitudinal bars on one side of the casing and projecting beyond the side of the screen, vanes on the transverse bar arranged at a right angle to the longitudinal bars, a lever pivoted on the side wall and provided with a catch for engaging the pins of the screen, a lever pivotally mounted upon a cross-bar and having pivotal con-

nection with the first lever, a bearing on the cross-bar, a bar secured to the free end of the lever and depending through the bearing, a bearing-block on the bottom of the casing, a rod supported by the bearing-block and by the cross-bar, and a float sliding on the rod and adapted to engage the depending bar to release the screen.



2. In apparatus of the class described, the combination of a casing, comprising a bottom and side wall, cross-bars connecting the side walls at the top, a screen rotatably mounted transversely of the casing, a lever pivoted on the side wall and provided with a catch for maintaining the screen in a vertical position, a lever pivotally mounted upon a cross-bar and having pivotal connection with the first lever, a bearing on the cross-bar, a bar secured to the free end of the lever and depending through the bearing, a bearing-block on the bottom of the casing, a rod supported by the bearing-block and the cross-bar, and a float sliding on the rod and adapted to engage the depending bar to release the screen.

3. In apparatus of the class described, the combination of a casing comprising a bottom and side walls, cross-bars connecting the side walls at the top, a screen rotatably mounted transversely of the casing, means for restraining the rotation of the screen, a vertical rod supported by the casing, a float sliding on the rod, and means whereby when said float is elevated it may release the screen from the restraining means.

4. In apparatus of the class described, the combination of a casing adapted to form a part of an irrigating-ditch, and comprising a bottom and side walls, cross-bars connecting the side walls at the top, a screen rotatably mounted transversely of the casing, means for maintaining the screen in an upright position, a float mounted for vertical movement in the casing, and means whereby the upward movement of the float may release the screen-retaining means.

5. In apparatus of the class described, the combination of a casing adapted to form a part of an irrigating-ditch, comprising bottom and side walls, a screen rotatably mounted transversely of the casing, means for retaining the casing in a vertical position, a float adapted to be actuated by the water in the irrigating-ditch, and means connecting the float and the screen whereby the motion of the float may control the movement of the screen.

6. In apparatus of the class described, the combination of a casing comprising a bottom and side walls adapted to form a part of an irrigating-ditch, a screen rotatably mounted transversely of the casing, means for maintaining the screen in an upright position, and means whereby the height of the water in the casing above the screen may control the movement thereof.

7. In apparatus of the class described, the combination of a casing adapted to form a part of an irrigating-ditch, and comprising a bottom and side walls, a screen rotatably mounted transversely of the casing, means for maintaining the screen in an upright position, and means whereby the rise of the water above the screen may release said retaining means.

8. A screen for irrigating-ditches, comprising a plurality of spaced parallel bars mounted to rotate within the ditch, vanes at right angles to the direction of length of the bars, means for normally retaining the screen in a vertical position, and means whereby the rise of the water in the ditch above the screen may release the said retaining means.

9. A screen for irrigating-ditches, comprising a plurality of spaced parallel bars mounted to rotate within the ditch, vanes at right angles to the direction of length of the bars, means for normally retaining the screen in a vertical position, and means whereby the rise of the water in the ditch above the screen to a predetermined level may release the said retaining means.

10. A screen for irrigating-ditches, comprising a plurality of spaced parallel bars mounted to rotate within the ditch, vanes at right angles to the direction of length of the bars, means for normally retaining the screen in a vertical position, a float within the ditch, and means whereby the rise of the float may release the said retaining means.

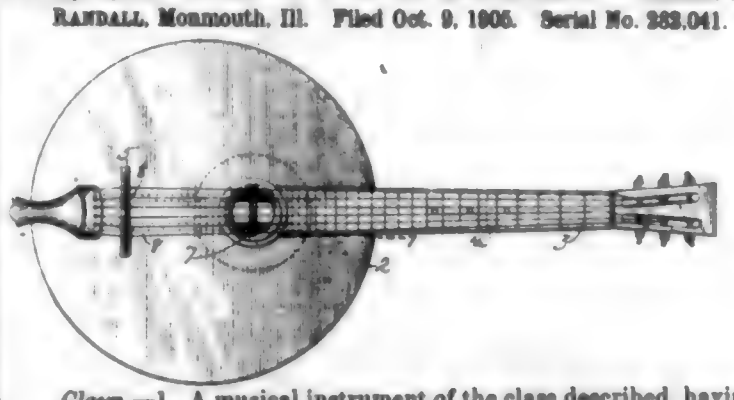
11. A screen for irrigating-ditches, comprising a plurality of spaced parallel bars mounted to rotate within the ditch, vanes at right angles to the direction of length of the bars, means for normally retaining the screen in a vertical position, a float within the ditch, and means whereby the rise of the float to a predetermined level may release the retaining means.

12. The combination with an irrigating-ditch, of a screen rotatably mounted therein, means for normally retaining the screen in a vertical position, and means whereby the water in the ditch above the screen may control the motion of the screen.

13. The combination with an irrigating-ditch, of a screen rotatably mounted therein, means for normally retaining the screen in a vertical position, and means whereby the rise of the water in the ditch above the screen may release the said retaining means.

14. The combination with an irrigating-ditch, of a screen rotatably mounted therein, means for normally retaining the screen in a vertical position, and means whereby the rise of the water in the ditch above a predetermined level may release the said retaining means.

818,289. **STRINGED MUSICAL INSTRUMENT.** ELEAZER A. RANDALL, Monmouth, Ill. Filed Oct. 9, 1905. Serial No. 282,041.

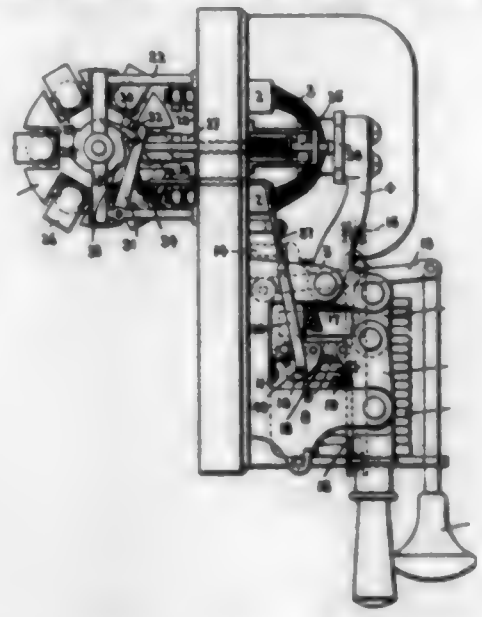


Claim.—1. A musical instrument of the class described, having a body provided with a sound-opening, a bridge seated within said body, vibratory bars fixed longitudinally to and within said body, their median portions resting on said bridge, and a pipe or tube arranged to rest above said bridge between said bars and the top of the body.

2. In an instrument of the class described, a neck and a sound-box, a bridge resting on the top of the box, a second bridge resting on the bottom thereof, vibratory bars resting thereon, their ends fixed to the body portion of the box, and a pipe or tube intermediate the parallel bars and the top of the sound-box.

3. In a stringed instrument of the class described, a sound-box provided with a sound-opening in the top thereof, a bridge arranged within the sound-box, vibrating bars resting thereupon, and a sound-conducting pipe resting upon said bars and its upper edge contacting said top around the sound-opening.

818,290. **HIGH-TENSION CIRCUIT-BREAKER.** ROBERT H. READ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 26, 1903. Serial No. 163,091.



Claim.—1. The combination with a switch, of a plurality of fuses, and means for automatically feeding them successively into shunt relation to said switch upon successive operations of the switch.

2. The combination with a switch, of a rotatable magazine-fuse in shunt thereto, and means for automatically rotating said magazine at each closure of the switch.

3. The combination with a switch, of a rotatable magazine-fuse in shunt thereto, means for rotating said magazine at each closure of the switch, and means for preventing the closure of said switch after the last fuse has blown.

4. The combination with a switch, of a plurality of fuses, means for feeding them successively into shunt-relation to said switch, and means for insuring the closure of the switch before the circuit through the fuse is closed.

5. The combination with a switch, of a clip in circuit with each terminal thereof, a plurality of fuses each having a flange at each end, and means for automatically inserting said flanges into said clips.

6. The combination with a switch, of a plurality of fuses each having a flange at each end, a rotatable drum carrying said fuses, clips in circuit with the terminals of the switch and lying in the planes of revolution of said flanges, and means for automatically rotating the drum at each closure of the switch.

7. The combination with the switch, of a magazine-fuse in shunt to the terminals thereof, a locking-lever for preventing the closure of said switch, and a cam on the magazine for actuating said lever after the last fuse has been used.

8. The combination with a switch, of a rotatable magazine-fuse in shunt to the terminals thereof, a ratchet-and-pawl feed for said magazine, a coiled spring connecting the ratchet and the magazine, and an escapement for regulating the rotative effect of said spring.

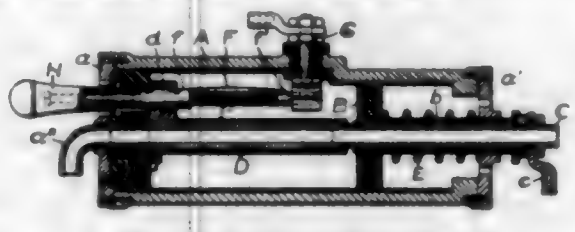
9. The combination of a switch or circuit-breaker, a fuse automatically interposed in shunt to the main contacts after closure, and means for opening the contacts while the fuse completes the shunt.

10. The combination of a switch or circuit-breaker, a fuse-magazine containing a plurality of cartridge-fuses, and means for automatically positioning a cartridge-fuse and subsequently upon the opening of the breaker breaking the circuit through said fuse.

11. The combination with a switch, of a plurality of fuses, means responsive to the switch-movements for feeding said fuses into operative position, and means for preventing the actuating switch-movements after the last fuse has been used.

12. The combination with a switch, of a plurality of fuses, and mechanical means controlled by the switch-movements for automatically feeding said fuses into operative position.

818,291. ELECTRIC CUT-OUT. ROBERT H. READ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 26, 1904. Serial No. 225,906.



Claim.—1. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable member subjected to the pressure generated in said chamber when the fuse blows, a movable contact within said chamber operatively connected to said member, a stationary contact, and means for holding said movable contact normally in engagement with said stationary contact, said contacts being included in circuit with said fuse.

2. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable contact within said chamber in circuit with said fuse, and means responsive to a rise of pressure in said chamber for moving said contact.

3. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable contact within said chamber in circuit with said fuse, a movable member subjected to the pressure generated in said chamber when the fuse blows, and operative connections between said member and said contact.

4. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable contact in circuit with said fuse, and means responsive to a rise of pressure in said chamber for moving said contact, said contact being arranged when moved to open a passage from said chamber to atmosphere.

5. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable contact in circuit with said fuse, a movable member subjected to the pressure generated in said chamber when the fuse blows, and operative connections between said member and said contact, said contact being arranged when moved to open a passage from said chamber to atmosphere.

6. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable member subjected to the pressure generated in said chamber when the fuse blows, a movable contact operatively connected to said member, a stationary contact, and means for holding said movable contact normally in engagement with said stationary contact, said contacts being arranged when separated to open a passage from said chamber to atmosphere.

7. In a cut-out for electric circuits, a chamber, a fuse contained therein, a movable member subjected to the pressure generated in said chamber when the fuse blows, and a movable tubular contact in circuit with said fuse and operatively connected to said member and adapted when moved to offer a passage from said chamber to atmosphere.

8. In a cut-out for electric circuits, a chamber, a fuse contained therein, a contact in circuit with said fuse, a tubular movable contact at one end open to atmosphere and at the other end normally closed by the companion contact, a movable member subjected to the pressure generated in said chamber when the fuse blows, and operative connections between said member and said movable contact.

9. In a cut-out for electric circuits, a chamber, a fuse contained therein, a stationary contact in circuit with said fuse, a tubular movable contact extending through said casing and open at its outer end to atmosphere, means for holding the inner end of said movable contact normally in engagement with said stationary contact, a movable member subjected to the pressure generated in said chamber when the fuse blows, and operative connections between said member and said movable contact.

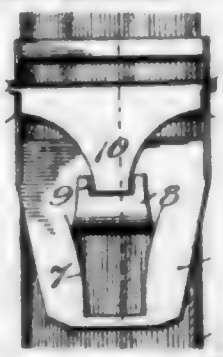
10. In a cut-out for electric circuits, a chamber, a fuse contained therein, a tubular contact yieldingly mounted in said chamber and connected in series with said fuse, and means responsive to a rise of pressure in said chamber operatively connected to said tubular contact.

11. A fusible cut-out comprising a closed chamber, a plug-fuse adapted to be inserted and withdrawn from said chamber, and means responsive to a rise of pressure in said chamber for breaking the circuit in which said fuse is connected when inserted.

12. A fusible cut-out comprising a closed chamber, a plug-fuse adapted to be introduced and withdrawn from the chamber, a tubular electrode yieldingly mounted in said chamber adapted to be moved by the pressure generated in the chamber when the fuse blows and to provide a discharge-path for the gases, and connections for coupling the electrode and fuse in series when the fuse is inserted.

13. A fusible cut-out comprising a closed chamber, a plug-fuse adapted to be inserted and withdrawn from said chamber, a tubular contact in circuit with said fuse when inserted and adapted when moved to offer a passage from said chamber to atmosphere, and means responsive to a rise of pressure within said chamber for moving said contact.

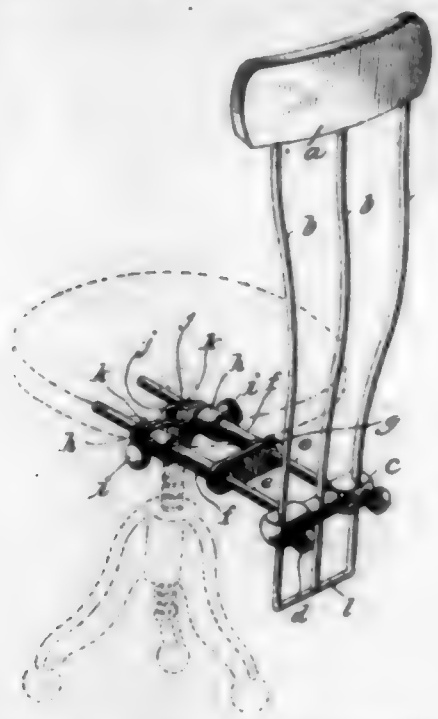
818,292. BUCKLE-HOOK. WILLIAM W. REID, Winnsboro, Tex. Filed Apr. 3, 1905. Serial No. 253,529.



Claim.—In a device of the class described a base-plate formed with strap-receiving openings, said plate being cut out within its plane, the cut-out portion being bent to form a hook and terminally bifurcated, a tongue pivotally connected with the base-plate and terminally bent to provide a semicylindrical projection extending beneath the body of the tongue with its free edge bearing against the under surface of the tongue-plate, said projection being formed with a series of teeth to engage the strap, said tongue being terminally provided with a depending end to fit within the bifurcation of the hook.

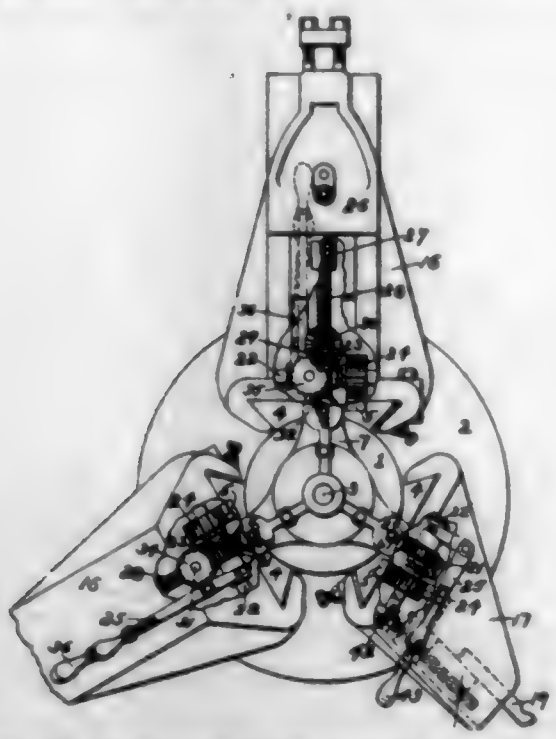
818,293. ADJUSTABLE STOOL-BACK REST. LESTER M. RICH, Cedar Rapids, Iowa. Filed Dec. 22, 1904. Serial No. 237,912.

Claim.—1. An adjustable detachable back-rest for stools, consisting of a frame comprising parallel members connected by cross-pieces at their outer and their inner ends, the cross-piece at the inner ends forming part of the stool-engaging devices, additional stool-engaging devices adapted to coöperate with said inner cross-piece, a pair of parallel rods extending through said frame upon opposite sides of the seat-screw and adjustably supported in said frame, a device connecting the projecting ends of said rods, and a back-rest supported on said connecting device, substantially as set forth.



2. An adjustable back-rest for stools, consisting of a frame comprising parallel members connected by cross-pieces at their outer as well as their inner ends, the cross-piece at the inner end forming part of the stool-engaging devices, an additional movable cross-piece adapted to coöperate with said inner cross-piece, threaded tubular portions *f'* extending from the frame through holes in this movable cross-piece, a pair of parallel rods extending through said frame upon opposite sides of the seat-screw and adjustably supported in said frame, nuts *k* screwed on the threaded extensions *f'* for the purpose set forth, said rods extending through said nuts, a cross-bar connecting the projecting ends of said rods, and a back-rest supported on this latter cross-bar, substantially as described.

818,294. BORING-BAR. JOHN RIDDELL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 19, 1903. Serial No. 173,757.



Claim.—1. A boring-bar provided with a plurality of separate independently-movable tool-carriages which are angularly disposed about the axis of said bar.

2. A boring-bar provided with a plurality of independently-movable carriages, each having means for causing it to traverse the entire length of the bar in a path independent of that of the other carriages and without interfering with the others.

3. A boring-bar provided with a plurality of independently-movable tool-carriages angularly disposed and capable of passing one another, and means for operating each carriage independently.

4. A boring-bar comprising a rotatable body provided with longitudinal V's for supporting and retaining the carriages, and an independent tool-carriage on each V, the carriages being arranged to traverse the entire length of the bar without interfering with each other.

5. A boring-bar comprising a rotatable body provided with longitudinal V's for supporting and retaining the carriages, an independent tool-carriage angularly disposed on each V, and means for moving each carriage independently.

6. A boring-bar comprising a rotatable body provided with longitudinal V's for supporting and retaning the carriages, an independent tool-carriage on each V, a rotatable shaft adjacent to each V, and operating connections between each shaft and the corresponding tool-carriage.

7. A boring-bar comprising a rotatable body provided with longitudinal V's for supporting and retaining the carriages, an independent tool-carriage on each V, a rotatable shaft adjacent to each V, means for imparting movement from said shaft to said carriage, and means for rotating the shaft in either direction.

8. The combination with a rotatable boring-bar, of a tool-carriage movable longitudinally thereof, a shaft for moving said carriage, a gear on said shaft, a rocking frame carrying idle gears meshing with said gear, and a driving-gear with which said idle gears can be engaged.

9. The combination with a boring-bar having a head at one end, of a plurality of tool-carriages movable on said bar, a plurality of shafts for operating said carriages, a central driving-gear in said head, and a separate reversing-gearing for connecting said gear with each shaft.

10. A boring-bar provided with a plurality of separate independently-movable tool-carriages which are angularly disposed about the axis of the bar and are mounted to move past each other, a longitudinally-extending V for each carriage, shafts running parallel with the V's, and supports for the shafts.

11. A boring-bar body having a plurality of undercut ribs having tangential faces, carriages mounted on the ribs and arranged to move past each other when in operation, and tool-holders mounted on the carriages.

12. A boring-bar body having a plurality of longitudinal undercut ribs having tangential faces each containing a longitudinal groove, tool-carriages mounted on the ribs, shafts mounted in the grooves for moving the carriages past each other, and tool-holders mounted on the carriages.

13. A boring-bar body having a plurality of longitudinal undercut ribs radially disposed and having tangential faces, each containing a longitudinal groove, carriages mounted on the ribs to move past each other, feed-screws located in the grooves, racks adjacent to the feed-screws, and gears meshing with the racks for moving the carriages past each other.

14. A rotatable boring-bar having longitudinally-movable tool-carriages mounted to move past each other, a means for rotating the bar, longitudinal shafts for moving the carriages past each other, racks adjacent to the shafts and movable with the bar, pinions mounted on the carriages and meshing with the racks for quickly moving the carriages, and means for connecting the pinions with the shafts.

15. A rotatable boring-bar carrying longitudinally-movable tool-carriages angularly disposed and arranged to move past each other on their supports, a means for rotating the bar, a longitudinal shaft, a rack adjacent to said shaft and movable with the bar, a pinion mounted on the carriage and meshing with said rack, a worm mounted on said carriage and splined on said shaft, and a worm-gear meshing with the worm and driving said pinion.

16. A rotatable boring-bar carrying a longitudinally-movable tool-carriage, automatic means for moving the tool-carriage radially, a means for rotating the bar, a longitudinal shaft, a rack adjacent to said shaft, a pinion mounted on the carriage and meshing with said rack, a worm mounted in said carriage and splined on said shaft, a worm-gear meshing with the worm and driving said pinion, and a clutch for connecting and disconnecting said worm-gear and pinion.

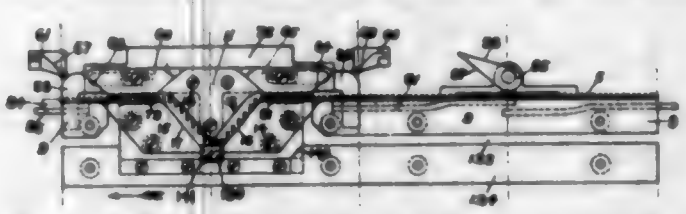
17. The combination with a rotatable boring-bar, of a plurality of longitudinally-movable tool-carriages angularly disposed about the axis of the bar and capable of moving past each other while in operation, radially-movable slides on said carriages, longitudinal shafts,

means for operatively connecting the carriages with the shafts, and independent means rotating with the bar for operatively connecting the slides with said shafts.

18. The combination with a rotatable boring-bar, of a plurality of tool-carriages angularly disposed about the axis of the bar and capable of moving past each other while in operation, radially-movable slides on and rotating with said carriages, screws mounted on the carriages for moving said slides, longitudinal shafts mounted in bearings on the rotatable bar, sleeves mounted in the carriages and splined on the shafts, gears on said sleeves, and connections between said gears and said screws.

19. The combination with a rotatable boring-bar, of a means for rotating the bar, tool-carriages angularly disposed about the axis of the bar and capable of moving past each other while in operation, radially-movable slides on said carriages, screws engaging with said slides and provided with pinions, longitudinal shafts, sleeves splined on said shafts and provided with gears, intermediate gearing between said gears and pinions, and means rotating with the bar for connecting and disconnecting said gearing.

818,295. **KNITTING-MACHINE.** JAMES E. ROWE, Pawtucket, R. I., assignor to E. Jenckes Manufacturing Company, Pawtucket, R. I., a Corporation of Rhode Island. Filed Nov. 26, 1901. Serial No. 83,735.



Claim.—1. In a knitting-machine the combination of a circularly-arranged series of needles, a single knitting-cam for operating the needles to draw the loops during reciprocating knitting, sinkers for holding the fabric as the needles advance through the loops, means for advancing and withdrawing the sinkers and means for leading the thread to the needles in advance of the knitting-point as the knitting-wave travels back and forth along the series of needles, substantially as described.

2. In a knitting-machine the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with means for forming a knitting-wave in the needles in fixed relation to the cam-cylinder during reciprocating knitting, sinkers for holding the fabric as the needles rise, means for advancing and withdrawing the sinkers and means for leading the thread to the needles in advance of the knitting-wave during the travel of the wave in either direction, substantially as described.

3. In a knitting-machine the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with means for forming a knitting-wave in the needles in fixed relation to the cam-cylinder during reciprocating knitting, sinkers for holding the fabric as the needles rise, means for shifting the points at which the sinkers are advanced and withdrawn from side to side of the knitting-wave, and means for leading the thread to the needles in advance of the knitting-wave during the travel of the wave in either direction, substantially as described.

4. In a knitting-machine the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with a single knitting-cam for operating the needles to draw the loops during both rotary and reciprocating knitting, sinkers for holding the fabric, means for shifting the points at which the sinkers are withdrawn and advanced from side to side of the point of the knitting-cam during reciprocating knitting, and means for shifting the point from which the thread is led to the needles from side to side of the knitting-cam, during reciprocating knitting, substantially as described.

5. In a knitting-machine the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with a single knitting-cam for drawing down the needles during rotary and reciprocating knitting, sinkers for holding the fabric, a sinker cam-ring provided with movable cams for reciprocating the sinkers, and means for shifting the sinker-cams during reciprocating knitting, substantially as described.

6. In a knitting-machine the combination of sinkers for holding the fabric, a sinker cam-ring, cams movably mounted on said ring for operating the sinkers, and means for shifting said cams radially during the reciprocation of the sinker cam-ring, substantially as described.

7. In a knitting-machine the combination of sinkers for holding the fabric, a sinker cam-ring having an annular rib for engaging the sinkers, pivoted blocks forming a part of said rib and means for operating said blocks to vary the operation of the sinkers, substantially as described.

8. In a knitting-machine the combination of sinkers for holding the fabric, a sinker cam-ring having movable cams for operating the sinkers, a slide frictionally held on the sinker cam-ring, connections between the slide and sinker-cams whereby the movement of the slide shifts said cams, and means for shifting said slide on the sinker-cam ring at the end of the stroke in each direction of the reciprocation of the sinker cam-ring.

9. In a knitting-machine the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with a single cam for drawing down the needles during rotary and reciprocating knitting sinkers for holding down the fabric, means for advancing and withdrawing the sinkers, a thread-guide connected with the cam-cylinder, and means for shifting the thread-guide from side to side of the knitting-cam during reciprocating knitting, substantially as described.

10. In a knitting-machine, the combination of a needle-cylinder, needles guided therein, a cam-cylinder carrying a single knitting-cam for operating the needles to draw the loops during both rotary and reciprocating knitting, sinkers for holding the fabric, means for advancing the sinkers back of the knitting-point as the cam-cylinder reciprocates, and means for leading the thread to the needles from in front of the wave formed in the needles, substantially as described.

11. In a knitting-machine the combination of a cam-cylinder, a thread-guide frictionally connected to move with said cam-cylinder, a radially-movable slide connected with the thread-guide, and a stop arranged to be engaged by the slide as the cam-cylinder approaches the end of its stroke in either direction, substantially as described.

12. In a knitting-machine the combination of a cam-cylinder, a thread-guide movably connected therewith, means for arresting the movement of the thread-guide before the cam-cylinder reaches the end of its stroke in either direction, and means for automatically rendering said arresting means inoperative during rotary knitting, substantially as described.

13. In a knitting-machine the combination of a cam-cylinder provided with a single knitting-cam, sinkers for holding the fabric, a sinker cam-ring connected with the cam-cylinder and provided with movable cams for operating the sinkers, a thread-guide movably connected with the cam-cylinder, means for shifting the thread-guide with relation to the cam-cylinder and means for shifting the sinker-cams through the movement of the thread-guide, substantially as described.

14. In a knitting-machine, the combination, with a needle-cylinder and needles guided therein, of a cam-cylinder provided with a single knitting-cam for forming a knitting-wave in said needles, means for rotating and reciprocating one of said cylinders, sinkers, a sinker cam-ring, and means for positively connecting the cam-cylinder and sinker cam-ring in fixed relation, and means for changing the relation between the knitting and sinker-operating cams during reciprocating knitting, substantially as described.

15. In a knitting-machine, the combination of a needle-cylinder, needles guided therein, a cam-cylinder provided with a single knitting-cam for drawing down the needles during rotary and reciprocating knitting, sinkers for holding the fabric, and a sinker cam-ring provided with cams for advancing the sinkers back of the knitting-point and withdrawing the sinkers, substantially as described.

16. In a knitting-machine, the combination of a rod, a picker mounted to slide and swing upon said rod, a spring for holding the picker in position to be engaged by the needles, and a cam for swinging the picker about the rod as it is moved longitudinally of the rod by engagement with the needles, substantially as described.

17. In a knitting-machine the combination of a picker mounted to swing about an axis and to be moved longitudinally of its axis by engagement with the needles, and means rendered effective by the longitudinal movement of the picker imparted to it by the needle for swinging it about its axis, substantially as described.

18. In a knitting-machine the combination of a horizontal rod, a picker mounted to slide and swing upon said horizontal rod, a spring for holding the picker in position to be engaged by the needles, and a cam for swinging the picker about the rod as it is moved longitudinally of the rod by engagement with the needles, substantially as described.

19. In a knitting-machine the combination of a picker mounted to swing about an axis and to be moved longitudinally of the axis by its engagement with the needles, a cam on the picker for swinging the picker and a coöperating surface over which the cam rides when

the picker is moved longitudinally by engagement with the needles, substantially as described.

20. In a knitting-machine the combination of a picker mounted to swing about an axis and to be moved longitudinally of the axis by its engagement with the needles, of a cam to which the needles are transferred by the picker, and means for swinging the picker in back of the cam as the picker is moved longitudinally by its engagement with the needles, substantially as described.

21. In a knitting-machine the combination of a picker mounted to swing about an axis and to be moved longitudinally of the axis by its engagement with the needles, of a cam to which the needles are transferred by the picker, a cam-surface on the picker which coöperates with the edge of said cam to swing the picker out of the path of the needles as the picker is moved longitudinally by its engagement with the needles, substantially as described.

22. In a knitting-machine the combination of a picker for operating upon the needles, a cam to which the needle is transferred by the picker, and means for moving said cam to throw the picker into and out of operation, substantially as described.

23. In a knitting-machine the combination of a lifting-picker, a depressing-picker, a guard-cam, and means for moving said guard-cam to engage and throw either picker out of operation.

24. In a knitting-machine the combination of a lifting-picker, a depressing-picker, a guard-cam normally holding the lifting-picker out of operation, means for moving said guard-cam to release the lifting-picker and to throw the depressiug-picker out of operation at the beginning of the heel and toe, to release the depressing-picker at the beginning of the widening and to throw the lifting-picker out of operation to the end of the widening, substantially as described.

25. In a knitting-machine the combination of a guard-cam, a slide to which the cam is secured, a second slide to which the former slide is connected, a radial slot in said second slide, a crank-pin engaging said slot, and means for intermittently rotating said crank-pin, substantially as described.

26. In a knitting-machine the combination of a cam provided with cam-surfaces for raising and depressing the needles, means for automatically swinging said cam about its axis to bring either of said surfaces into operation, and means for moving said cam radially inward when the depressing-surface is to operate, and radially outward when the raising-surface is to operate, substantially as described.

27. In a knitting-machine the combination of a cam provided with cam-surfaces for raising and depressing the needles, means for automatically swinging said cam about its axis, and a stationary cam for moving said needle-operating cam longitudinally of its axis as it is swung about its axis, substantially as described.

28. In a knitting-machine the combination of the cam-cylinder provided with a leveling-guideway, a vertically-movable block carrying the cams for reciprocating the needles, and a cam carried by said block which is brought into the path of the needle-butts by the upward movement of said block and directs the needle-butts into said guideway, substantially as described.

29. In a knitting-machine the combination of the cam-cylinder, provided with a leveling-guideway, a vertically-movable block carrying the cams for reciprocating the needles, a cam carried by said block which is brought into the path of the needle-butts by the upward movement of said block and directs the needle-butts into said guideway, and a cam for directing the needle-butts out of said guideway when said block is depressed, substantially as described.

30. In a knitting-machine the combination of a cam-cylinder, provided with a leveling-guideway, a vertically-movable block carrying the cams for reciprocating the needles, a cam-surface on said block for directing the needle-butts into the guideway when the block is raised, a cam arranged to direct the needle-butts onto one of the cams for raising the needles when the block is depressed and a yielding bridge above the latter cam, substantially as described.

31. In a knitting-machine the combination of a cam-cylinder provided with a leveling-guideway, a vertically-movable block, cam-plates 11, 14 and 15 carried by said block, a cam-surface 138 on plate 15, a rib 137 carried by said block below the plates 14 and 15, and a cam 139, substantially as described.

32. In a knitting-machine the combination of a cam-cylinder, a ledge for the needle-butts supported within and out of contact with the inner surface of the cam-cylinder, and knitting-cams supported inside the cam-cylinder to leave a free space between said cams and the cam-cylinder for the escape of broken needle-butts, substantially as described.

33. In a knitting-machine the combination of a knitting-cam and a yielding cushion below said cam, substantially as described.

34. In a knitting-machine the combination of a knitting-cam, and a spring-pressed bridge-piece 141 at the end of the knitting-cam, substantially as described.

35. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of sinkers for holding the fabric, and means for advancing and withdrawing the sinkers, substantially as described.

36. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of sinkers for holding the fabric, means for advancing and withdrawing the sinkers, and means for automatically effecting the narrowing and widening, substantially as described.

37. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of means for automatically throwing the individual needles out of and into operative relation with said cam during the reciprocating knitting, substantially as described.

38. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of means for rendering a part of the needles inactive during reciprocating knitting, and means for automatically rendering individual needles inactive and active during reciprocating knitting, substantially as described.

39. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of sinkers for holding the fabric, means for advancing and withdrawing the sinkers, means for rendering a part of the needles inactive during reciprocating knitting, and means for automatically rendering individual needles inactive and active during reciprocating knitting, substantially as described.

40. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of a switch-cam for rendering a part of the needles inactive during reciprocating knitting and needle-pickers for transferring individual needles from one series of needles to the other in narrowing and widening, substantially as described.

41. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means operating in connection therewith, substantially as described.

42. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means operating at the sides of said cam, substantially as described.

43. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means operating alternately at opposite sides of said cam, substantially as described.

44. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means coöperating with said cam to lift the needles during narrowing, substantially as described.

45. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means coöperating with said cam to lift the needles, substantially as described.

46. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, of needle-picking means operable alternately at opposite sides of said cam, the latter having portions coöperating with said needle-picking means to continue the lifting movements of the needles after movement thereof by said picking means, substantially as described.

47. A knitting-machine provided with a knitting-cam adapted for rotary and reciprocating knitting presenting the same path of movement for the needles irrespective of the direction of relative movement between the same and said cam, and needle-picking means adapted to operate automatically in connection with the respective ends of said cam, substantially as described.

48. In a knitting-machine, a switch-cam, and means automatically to impart vertical and also in and out movements thereto, substantially as described.

49. In a knitting-machine employing long and short butt needles, a switch-cam, and means automatically to impart vertical and also in and out movements thereto, substantially as described.

50. In a knitting-machine the combination of a needle-cylinder, its needles, a knitting-cam adapted for rotary and reciprocating knitting, and needle-picking means operating at the sides of said cam, substantially as described.

51. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, sinkers for holding the fabric, means for advancing the sinkers back of the knitting-point,

and means for leading the thread to the needles in front of the knitting-point, substantially as described

52. In a knitting-machine the combination with a knitting-cam adapted for rotary and reciprocating knitting, sinkers for holding the fabric, cams for advancing and withdrawing the sinkers, and pickers for automatically effecting the narrowing and widening, substantially as described.

53. In a knitting-machine the combination with a rotary cam-carrier, of a knitting-cam secured in fixed relation thereto adapted for rotary and reciprocating knitting, sinkers for holding the fabric, and means for advancing and withdrawing the sinkers, substantially as described.

54. In a knitting-machine the combination of a rotary cam-carrier, a knitting-cam secured in fixed relation thereto adapted for rotary and reciprocating knitting, sinkers for holding the fabric, means for advancing and withdrawing the sinkers, and means for automatically effecting the narrowing and widening, substantially as described.

55. In a knitting-machine the combination of a rotary cam-carrier, a knitting-cam secured in fixed relation thereto adapted for rotary and reciprocating knitting, and needle-picking means operating in connection therewith, substantially as described.

56. In a knitting-machine, stitch-forming cam-surfaces adapted for circular and reciprocatory knitting, needle-picking means, operable at opposite sides thereof, and means to deliver the thread in advance of said cam-surfaces at each reciprocation thereof.

57. In a knitting-machine, the combination with a double-acting stitch-forming cam, of needle-picking means operating in connection therewith.

58. In a knitting-machine, the combination with a double-acting stitch-forming cam of needle-picking means operating at both sides of said cam.

59. In a knitting-machine, the combination with a double-acting stitch-forming cam of needle-picking means operating alternately at opposite sides of said cam.

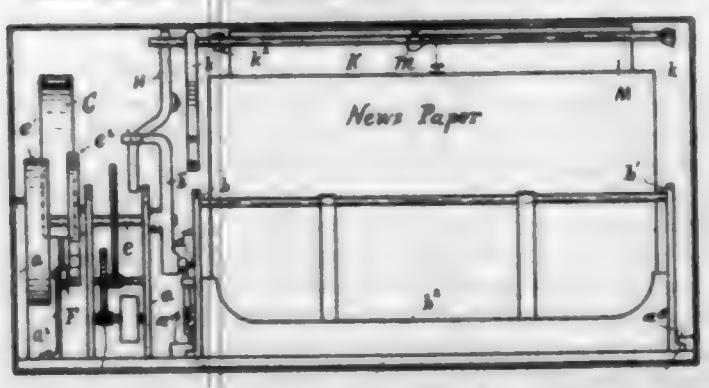
60. In a knitting-machine, the combination with a double-acting stitch-forming cam of needle-picking means coöperating with said cam to elevate or depress the needles during narrowing and widening.

61. In a knitting-machine, the combination with a double-acting stitch-forming cam of needle-picking means coöperating with said cam to elevate or depress the needles.

62. In a knitting-machine, the combination with a double-acting stitch-forming cam of needle-picking means operable alternately at opposite sides of said cam, the latter having portions coöperating with said needle-picking means to continue the elevating or depressing movements of the needles after movement thereof by said picking means.

63. A knitting-machine provided with a stitch-forming cam presenting the same path of movement for the needles irrespective of the direction of relative movements between the same and said cam and needle-picking means adapted to operate automatically in connection with the respective ends of said cam.

818,296. **NEWSPAPER-VENDING MACHINE.** JOHN A. RULE, Cincinnati, Ohio. Filed Dec. 31, 1904. Serial No. 239,083.



Claim.—1. In a vending-machine of the character described the combination of a receptacle divided into a series of compartments, doors in the bottoms of the compartments, latches for holding the doors closed, and an automatic means for successively engaging the latches to release the doors.

2. In a vending-machine of the character described the combination of a receptacle divided into a series of compartments, doors in the bottoms of the compartments, latches for holding the doors closed, and a swinging arm for successively engaging the latches, and a step-by-step feed for moving the arm from one latch to the succeeding latches.

3. In a vending-machine of the character described the combination of a receptacle having a series of swinging doors in its bottom, levers fulcrumed upon the receptacle adjacent to and engaging each door, and a swinging arm for successively engaging th levers to release them from the doors.

4. In a vending-machine of the character described a casing, removable receptacles adapted to be secured in the casing, each receptacle being divided into compartments of a size varying from that of the other receptacles, and having doors in the bottom of the compartments, means for holding the doors closed, and an adjustable releasing mechanism for opening the doors of the different receptacles.

5. In a vending-machine of the character described a series of compartments, means for varying the size of the compartments, doors in the bottoms of the compartments, levers journaled adjacent to the compartments for engaging the doors, a shaft, a means for exerting a normal pressure on the shaft tending to rotate it, an arm journaled upon the shaft to engage the levers, a ratchet-wheel with different-sized teeth secured upon the shaft and a pawl for engaging the teeth of the ratchet-wheel.

6. In a vending-machine of the character described a receptacle having doors in its bottom for releasing the papers, latches upon the receptacle for holding the doors closed, a swinging arm for engaging successively the latches, a slide for indicating when the papers are all sold, and a lever journaled in the casing having one end in the path of the swinging arm at the limit of its travel to be struck by the same when the papers are all sold, and engaging the slide at the other end to automatically actuate the same.

818,297. **EYEGLASS-HOLDER.** MARIE J. RUSSELL, Chicago, Ill. Filed Nov. 20, 1903. Renewed Sept. 22, 1905. Serial No. 279,711.



Claim.—1. An eyeglass-holder, comprising a hair-pin, and a pendent open hook loosely connected therewith and free to swing in all directions, whereby said hook can hang in a vertical position regardless of the position assumed by said hair-pin.

2. An eyeglass-holder, comprising a hair-pin, an eye formed thereon, a pendent open hook, and an eye formed on said hook interlocking with the eye of said pin permitting the hook to always hang in a vertical position.

3. An eyeglass-holder for the hair comprising a hair-pin having a loop at one end forming an eye, a clasp at the other end of the hair-pin, a pendent hook having an eye for engaging the eye of the pin, the upper end of the hook being open for receiving eyeglasses, the connection formed by the eye of the hook with the eye of the pin permitting of the pin hanging in a vertical position at all times when the hair-pin is in place in the hair of the user.

818,298. **RAILROAD-RAIL JOINT.** ELVIS P. SANDEFUR, Manda, Ky. Filed Jan. 16, 1905. Serial No. 241,360.

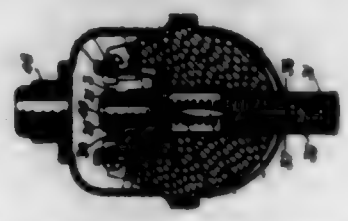


Claim.—1. The combination, with the alined ends of railroad-rails whose web and base are cut away, the web thus having a horizontal and inclined portion, of a joint-bar having a broad base and vertical flanges which are separated by a space adapted to receive the webs of the meeting rails and having the bottom of the groove between said flanges formed with a central, horizontal portion and other portions sloped therefrom toward the respective ends of the bar, substantially as described.

2. The improved joint-bar for railroad-rails, comprising a broad base, vertical, longitudinal flanges which are separated by a space adapted to receive the ends of the meeting rails, and having

the bottom of the groove between said flanges sloped from the central portion downward toward the ends, substantially as described.

818,299. SNAP-SWITCH. FRANK W. SANFORD, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 30, 1904. Serial No. 226,602.



Claim.—1. In an electric switch, the combination of a rotary pole-piece, means for restraining the rotation of said pole-piece, a spring connected to said pole-piece, and reciprocating means adapted to torsion said spring and then release the restraining means.

2. In an electric switch, the combination of a rotary pole-piece, means for restraining the rotation of said pole-piece, a spring connected to said pole-piece, and means movable parallel to the axis of said pole-piece and adapted to torsion said spring and then release the restraining means.

3. In an electric switch, the combination of a rotary pole-piece mounted upon a carrier provided with stop projections, a stationary stop-plate, a spring connected to said carrier and normally acting to force it into engagement with the stop-plate, and reciprocating means adapted to torsion said spring and then move the carrier out of engagement with the stop-plate.

4. In an electric switch, the combination of a rotary pole-piece, means for restraining the rotation of said pole-piece, an actuating-spindle, a spring connecting said spindle and pole-piece, and reciprocating means adapted to rotate said spindle to torsion said spring and then release the restraining means.

5. In an electric switch, the combination of a rotary pole-piece, a carrier therefor provided with stop projections, stationary stops adapted to engage said projections, an actuating-spindle connected to said carrier by a spring, and a reciprocating rod adapted to engage and rotate said spindle to torsion said spring and thereafter engage said carrier and move it out of engagement with said stationary stops.

6. In an electric switch, the combination of a rotary pole-piece, a hollow spindle connected to said pole-piece, and a spiral actuating-rod movable through said hollow spindle and adapted to engage shoulders carried thereby.

7. In an electric switch, the combination of a rotary pole-piece, a hollow spindle connected thereto a spiral actuating-rod movable through said spindle and adapted to engage shoulders carried thereby, and a non-rotatable push-button having ratchet engagement with said rod.

8. In an electric switch, the combination of stationary stops, a rotary pole-piece having a carrier adapted to engage said stationary stops, a hollow spindle connected by a spring to said carrier, and a spiral actuating-rod movable through said hollow spindle and adapted to engage a shoulder thereon to rotate the latter and then to engage the carrier and move it out of engagement with the stationary stops.

9. In an electric switch, the combination of a stop-plate, a pole-piece having a carrier adapted to move axially into locking engagement with said stop-plate, a hollow spindle connected to said carrier by a spring and provided with an internal shoulder, and a spiral actuating-rod adapted to move axially through said hollow spindle to rotate the latter and then engage the carrier and move it axially out of engagement with the stop-plate.

10. In an electric switch, the combination of a rotary pole-piece, a hollow spindle connected thereto and provided with an internal shoulder and a spring-finger, a spiral actuating-rod movable through said spindle and adapted to engage said shoulder and spring-finger, and a non-rotatable push-button having ratchet connection with said actuating-rod.

818,300. PROCESS FOR MAKING BRAKE-SHOES. WILLIAM D. SARGENT, New York, N. Y., assignor to American Brake Shoe & Foundry Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 4, 1903. Serial No. 179,831.

Claim.—1. The process of making brake shoes which consists in providing a cast shell of proper form having dove-tailed openings therein, placing filaments of malleable metal in said shell and pouring in molten metal to fill the interstices between the malleable filaments, extending said filling through the openings to bind the shell and filling together.



2. The process of making filled brake shoes which consists in providing a cold shell of iron, partly filling the same with malleable metal pieces, and then pouring in a final filling of molten hard cast metal, whereby the cast filling is chilled in pouring, substantially as and for the purpose described.

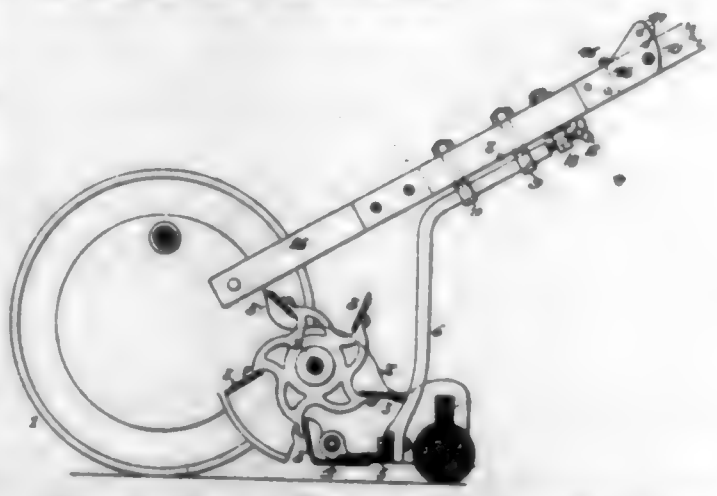
3. The process of making brake shoes which consists in casting a circumferential shell of cast iron around a steel backing, filling the space in said shell with malleable filaments and filling the interstices between said filaments with cast iron, substantially as described.

4. The process of making brake shoes which consists in casting a shell upon the outside edges of a steel back, filling the space formed by the shell and back with filaments of malleable iron in skeleton form, and then pouring into the interstices between said filaments a filling of hard cast iron, substantially as described.

5. The process of making brake shoes which consists in providing a steel backing having perforations therein, casting thereon a circumferentially arranged shell so as to engage the outer edges of the back, then filling the space in said shell with filaments of malleable steel and filling the interstices between said filaments with molten cast iron, extending the same through the said openings in the steel back, whereby both the shell and the filling of cast metal have a hold upon the edges of said steel back.

6. The process of making brake shoes which consists in providing a cold shell of cast iron in the form of a complete box except for one open side, partly filling the space therein with filaments of malleable metal and then pouring in molten cast iron to fill the interstices between the filaments of malleable metal.

818,301. LAWN-MOWER. THOMAS S. SAYER, Cape May, N. J. Filed Aug. 14, 1905. Serial No. 274,105.



Claim.—1. The combination of the frame, lower blade, rotating reel, and handle structure of a lawn-mower, with means controlled by the handle for varying the relative positions of the lower blade and reel-blades by movement of said handle.

2. The combination of the frame, lower blade, rotating reel, and handle structure of a lawn-mower, with a connection controlled by the handle between the said lower blade and the handle structure whereby the cutting edge of said blade can be adjusted in respect to the cutting edges of the reel-blades by movement of the handle.

3. The combination of the frame, lower blade, rotating reel, and handle structure of a lawn-mower, with a pivoted carrier for said lower blade, and a connection controlled by the handle between said carrier and the handle structure, whereby adjustment of the cutting edge of the lower blade in respect to the cutting edges of the reel-blades can be effected by movement of the handle.

4. The combination of the frame, lower blade, rotating reel and handle structure of a lawn-mower, with an adjusting device for said lower blade, located on and controlled by said handle structure, for varying the relative position of the lower blade and reel.

5. The combination of the frame, lower blade, rotating reel and handle structure of a lawn-mower, with a connection between the

lower blade and the handle and controlled by said handle whereby the relative positions of said lower blade and reel-blades can be varied by movement of the handle, and means for arresting that movement which causes approach of said cutting edges.

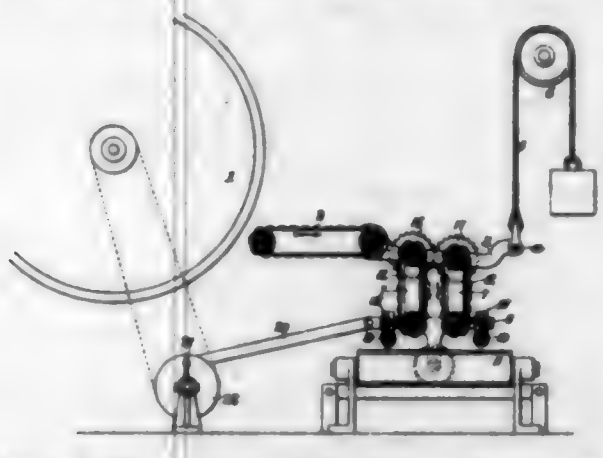
6. The combination of the frame, lower blade, and rotating reel of a lawn-mower, with a two-part handle structure having its upper member capable of being raised and lowered independently of the lower member, and a connection controlled by the handle whereby the relative positions of the lower blade and the reel-blades can be varied by movement of said lower member of the handle.

7. The combination of the frame, lower blade, rotating reel and handle structure of a lawn-mower, a carrier for the lower blade and a rod connecting said carrier to the handle structure, and guided on the latter so as to be susceptible of movement independently thereof.

8. The combination of the frame, lower blade, a supporting-axle and a rotating reel thereon, and handle structure of a lawn-mower and a carrier for said lower blade, pivotally connected to the frame at different points from the reel-supporting axle, a rod connecting said carrier to the handle structure and serving, by movement of the handle structure, to adjust the lower blade with respect to the reel, and means for arresting movement of said rod on the handle structure.

9. The combination of the frame, lower blade, rotating reel, and handle structure of a lawn-mower, a connection controlled by the handle whereby the cutting relation of the lower blade and the reel-blades can be varied by movement of the handle, and a roller yieldingly mounted on the frame of the mower.

818,302. LAP-FEEDING DEVICE FOR CARDING-MACHINES. CHARLES SCHOFIELD and ISAAC REEDER, Philadelphia, Pa., assignors to William Schofield Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 12, 1903. Serial No. 156,806.



Claim.—1. The combination of the delivery-apron of a carding-machine, a transfer-apron mounted at a lower level than said delivery-apron and traveling in a direction transverse to the direction of travel of the same, and a web-guiding device interposed between said delivery and transfer aprons and having as elements a horizontally-guided carriage and means for reciprocating the same, said carriage being free from any connection with the delivery-apron which would cause rising-and-falling movement of the latter as the carriage reciprocates, substantially as specified.

2. The combination of the delivery-apron of a carding-machine, disposed in a horizontal plane, a transfer-apron mounted at a lower level than said delivery-apron and traveling in a direction transverse to the direction of travel of the same, and a web-guiding device interposed between said delivery and transfer aprons, and having as elements a horizontally-guided carriage and means for reciprocating the same, said carriage being free from any connection with the delivery-apron which would cause rising-and-falling movement of the latter as the carriage reciprocates, substantially as specified.

3. The combination of the delivery-apron of a carding-machine, disposed in a horizontal plane, a vertically-fixed support for said apron, a transfer-apron mounted at a lower level than said delivery-apron and traveling in a direction transverse to the direction of travel of the same, and a web-guiding device interposed between said delivery and transfer aprons and having as elements a horizontally-guided carriage and means for reciprocating the same, said carriage being free from any connection with the delivery-apron which would cause rising-and-falling movement of the latter as the carriage reciprocates, substantially as specified.

4. The combination of the delivery-apron of a carding-machine, a transfer-apron mounted at a lower level than said delivery-apron and traveling in a direction transverse to the direction of travel of the same, and a web-guiding device having as elements opposite web-feeding devices, means for imparting forward or feeding movement thereto, a horizontally-guided carriage and means for reciprocating the same, said carriage being free from any connection with the delivery-apron which would cause rising-and-falling movement of the latter as the carriage reciprocates, substantially as specified.

5. The combination of the delivery-apron of a carding-machine, a vertically-fixed support for both ends of said apron, a transfer-apron mounted at a lower level than said delivery-apron and traveling in a direction transverse to the direction of travel of the same, a pair of web feeding and guiding belts interposed between the conveyer-apron and the transfer-apron, a horizontally-guided carriage for the lower drums of said belts, and a pivoted frame free to swing vertically and carrying the upper drums of said belts, substantially as specified.

818,303. SASH-FASTENER. CHARLES G. SEAMAN, Spokane, Wash. Filed Aug. 11, 1904. Serial No. 220,392.



Claim.—1. A sash-lock comprising a case, vertically-alined pins carried by the case, a swinging bolt having a straight upper slot receiving the upper pin and inclined downwardly and forwardly toward the outer lower corner of the bolt, said bolt also being provided with an arcuate slot struck from an elevated center and receiving the other pin, the lower free end of the bolt being provided with a locking projection which is in a substantially horizontal position in the locked position of the bolt, the case being provided with an opening through which the projection works, the bottom of the bolt being inclined downwardly and rearwardly from the projection, and a tumbler mounted upon the case and working in frictional engagement with the inclined bottom of the bolt to simultaneously elevate and swing the same rearwardly.

2. A sash-lock comprising a case, vertically-alined pins carried by the case, a swinging bolt having a straight upper substantially longitudinal slot receiving the upper pin and inclined downwardly and forwardly toward the outer lower corner of the bolt, said bolt also being provided with an arcuate slot struck from an elevated center and receiving the other pin, the lower free end of the bolt being provided with a locking projection which is in a substantially horizontal position in the locked position of the bolt, the case being provided with an opening through which the projection works, the bottom of the bolt being inclined downwardly and rearwardly from the projection, and means separate from the bolt to simultaneously elevate and swing the bolt rearwardly upon the pins as a support, the pins being at the rear ends of the slots in the locked position of the bolt and at the forward ends of the slots when the bolt is retracted.

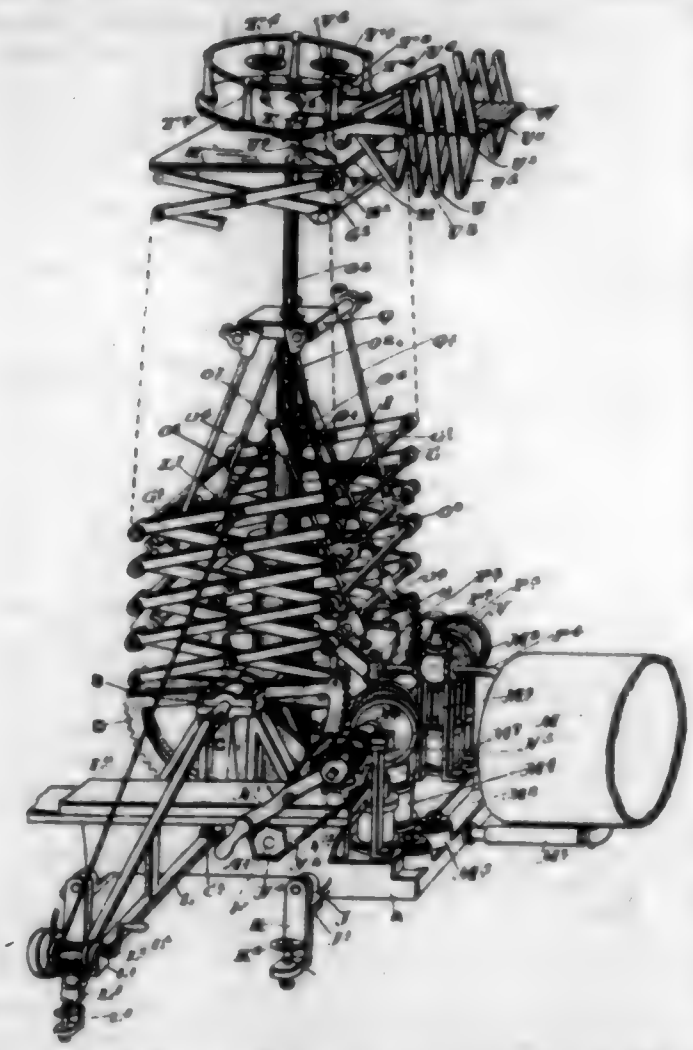
818,304. AERIAL LADDER. ANGUS W. SHAW, Toronto, Canada, assignor to Robert Fleming, in trust. Filed June 2, 1905. Serial No. 263,444.

Claim.—1. The combination with the base and standards located thereon and the stud-shaft supported in the standards, of a pair of segmental worm-gears journaled on each stud-shaft, the expansible and collapsible standard comprising the crossed side bars and end connecting-rods, the ends of the lowermost bars of which are connected to the ends of the segmental worm-gears, and worm-shafts provided with worms suitably journaled in the base and engaging said worm-gears, and means for turning such worm-shafts as and for the purpose specified.

2. The combination with the base and standards located thereon and the stud-shaft supported in the standards, of a pair of segmental worm-gears journaled on each stud-shaft, the expansible and collapsible standard comprising the crossed side bars and end connecting-rods, the ends of the lowermost bars on one side being connected to one pair of segmental gears and the lowermost bars on the other side being connected to the other pair of segmental gears one bar being connected to each gear, and two pairs of worm-shafts provided with worms suitably journaled in the base and intermediate meshing gears located on the ends of the worm-shafts, bevel-gears located on the end of one worm-shaft of each pair, a cross-shaft having bevel-gears meshing with the aforesaid bevel-gears and means for driving such cross-shaft as and for the purpose specified.

3. The combination with the base and the expansible and col-

lapsible standard, of the braces extending laterally out from the base and being pivoted thereto, spring-actuated reels supported on the ends of the braces, the guys carried by such reels and extending up to the standards as and for the purpose specified.



4. The combination with the base and expansible and collapsible standard suitably supported thereon, of the top platform, the telescopic standard secured to the base and connected at the top to the platform, means for actuating said expansible and collapsible standard and means for extending and contracting such telescopic standard as and for the purpose specified.

5. The combination with the base and expansible and collapsible standard suitably supported thereon, of the top platform, the telescopic standard secured to the base and connected at the top to the platform, means for actuating said expansible and collapsible standard and fluid-pressure means for extending and contracting such telescopic standard as and for the purpose specified.

6. The combination with the base and the expansible and collapsible standard comprising the two sets of oppositely-placed cross-bars and the rods connecting the two sets, and means connected to the bottom of the lower cross-bars for expanding and contracting the two sets, the telescopic standard and means for extending and contracting the same, of rods located within the collapsible standard and pivotally connected to the head of the intermediate length of the telescopic standard and to the connecting cross-rods of the collapsible and expansible standard as and for the purpose specified.

7. The combination with the expansible and collapsible standard comprising the sets of cross-bars connected together and means for expanding and contracting the same, of the extensible and contractible telescopic standard located within the aforesaid standard, a base for supporting both standards, a fluid-reservoir supported on the base, a main driving-shaft and fluid-pumps located on the base driven from such shaft and designed to pump the fluid from the reservoir into the telescopic standard, so as to extend the same as and for the purpose specified.

8. The combination with the expansible and collapsible standard comprising the sets of cross-bars connected together and means for expanding and contracting the same, of the extensible and contractible telescopic standard located within the aforesaid standard, a base for supporting both standards, a fluid-reservoir supported on the base, a main driving-shaft, and fluid-pumps located on the base, driven from such shaft, and designed to pump the fluid from the reservoir into the telescopic standard, so as to extend the same, and a suitable exhaust-pipe from the telescopic standard into the reservoir and a controlling-valve for such pipe as and for the purpose specified.

9. The combination with the main top platform and the supplemental platform supported on the same, of a bridge supported on the supplemental platform and provided with a slatted floor, and means at the inner end for rolling up such floor when the bridge is being drawn in as specified.

10. In an aerial ladder, in combination a top platform, a supplemental platform supported centrally on the top platform, so that it may be rotated and tilted and a screw-spindle extending through a threaded sleeve attached to the supplemental platform and provided with a roller at the bottom designed to ride on a track on the platform, and a hand-wheel at the top as and for the purpose specified.

11. In an aerial ladder, the combination with the top platform suitably supported on the standard and provided with a central boss and gear-wheel secured to the same, of a chair secured to the top of the gear-wheel and provided with a central boss, a sleeve located on the reduced central boss of such chair and having a set-screw extending therethrough into an annular groove in the boss, a supplemental platform having depending lugs pivotally connected to the sleeve, a spindle suitably journaled in the supplemental platform and provided with a pinion at one end meshing with the aforesaid gear-wheel and a hand-wheel at the opposite end as and for the purpose specified.

12. The combination with the base and expansible and collapsible standard comprising the two sets of oppositely-placed cross-bars and the rods connecting the two sets and means for raising such standard, of a telescopic tubular standard extending upwardly through the aforesaid standard and means for operatively connecting the tubes to the collapsible standard aforesaid and fluid means for raising and lowering the tubular standard as specified.

13. The combination with the main top platform and supplemental platform suitably supported upon the same, of the racks located in suitable guideways at the bottom of the supplemental platform, the gear-wheels meshing with the racks having their spindles suitably journaled in the supplemental platform and one of the spindles provided with turning means and the bridge comprising the two sets of cross-bars forming the sides and suitably connected together and to the ends of the racks, the cross-rods extending through the center of the cross-bars, the slotted side bars supported on the cross-rods and having a cross-plate connecting them together at the outside and a suitable floor for the bridge as and for the purpose specified.

14. The combination with the main top platform and supplemental platform suitably supported upon the same, of the racks located in suitable guideways at the bottom of the supplemental platform, the gear-wheels meshing with the racks having their spindles suitably journaled in the supplemental platform and one of the spindles provided with turning means and the bridge comprising the two sets of cross-bars forming the sides and suitably connected together and to the ends of the racks, the cross-rods extending through the center of the cross-bars, the slotted side bars supported on the cross-rods and having a cross-plate connecting them together at the outside, a slatted floor for the bridge secured between the outer ends of the cross-bars forming the sides and a spring-actuated roller journaled at the inner end of the bridge under the supplemental platform designed to carry the slatted floor of the bridge as and for the purpose specified.

818,305. MEANS FOR DRESSING FISH. EDMUND A. SMITH, Seattle, Wash., assignor to The Smith Cannery Machines Company, Seattle, Wash., a Corporation of Washington. Filed May 31, 1905. Serial No. 263,406.

Claim.—1. In a machine of the nature indicated, the combination with a movable toothed cutting instrument, of a plurality of yielding coacting riders mounted thereon one above each tooth of said instrument, said riders adapted to contact the body to be operated upon and thereby guide the instrument relatively to said body.

2. In a machine of the nature indicated; the combination with a movable fin-severing knife normally yieldingly held in cutting position, of a plurality of yielding coacting shoes mounted thereon and arranged along the edge of said knife and adapted to ride the body of the fish and thereby guide the knife over said body.

3. In a machine of the nature indicated; the combination with a movable fin-severing knife having a flat blade normally yieldingly held in cutting position, of a series of movable shoes mounted on said knife along the edge of said blade and normally yieldingly held in relative position to each other.

4. In a machine of the nature indicated; the combination with a fin-severing knife having its blade normally yieldingly held in cutting position, of a series of coacting shoes disposed along the edge of

said knife and adapted to open and close relatively to each other, and means to yieldingly support the shoes in normal position.



5. In a machine of the nature indicated; the combination with a movable fin-severing knife having a flat blade normally yieldingly held in position, of a series of shoes disposed along the edge of said knife with the toes projecting forwardly thereof, and resilient stems supported transversely said blade and adapted to carry said shoes.

6. In a machine of the nature indicated; the combination with a movable fin-severing knife having a serrated cutting edge, of coacting body-riders disposed along the edge of said knife at the points of the serrations.

7. In a machine of the nature indicated; a knife comprising a shank having a blade at one end, a series of movable riders disposed along the edge of the blade at one side and adapted to open and close relatively to each other, and means to yieldingly support said riders in normal position.

8. In a machine of the nature indicated; a knife comprising a shank having a blade at one end, a series of stems disposed transversely of said blade and mounted on the knife, and shoes yieldingly fixed to said stems along the cutting edge of the blade.

9. In a machine of the nature indicated; a knife comprising a shank having a blade at one end, a series of resilient stems disposed transversely of said blade and secured by one end to the knife adjacent the back edge, and shoes fixed to said stems with their toes beyond the cutting edge of said blade.

10. In a machine of the nature indicated; a knife comprising a shank, a blade removably seated thereon, and a series of yielding riders supported along the cutting edge of said knife independent of said blade.

11. In a fish-cleaning machine, the combination with a fishway, of a fin-cutting instrument, a rotatable guard mounted on said cutting instrument and having wings adapted to engage the fins to be severed by said instrument, and means on said cutting instrument for actuating said guard.

12. In a fish-cleaning machine, the combination with a fishway, of a fin-severing knife overhanging the same and having a substantially flat blade, a laterally-adjustable rotatable guard mounted on the blade and having radially-disposed arms and rods on said arms arranged parallel the axis of rotation of the guard and adapted to engage the fins to be severed by said knife.

13. In a fish-cleaning machine, the combination with a grooved way, of a yielding fin-severing knife overhanging said way, said knife having a substantially flat blade, of a rotatable guard comprising arms longitudinally said axis, journals for the axis horizontally mounted on said blade relatively to the cutting edge, and means by which the guard is rotated.

14. In a machine of the nature indicated; the combination with a knife having a shank formed with a pivot at one end; of a socket carrying a seat for said pivot, trunnions on the socket disposed at an angle to said seat, journals for the trunnions, and means to normally secure said pivot from turning in the socket.

15. In a machine of the nature indicated; a knife-mount comprising a knife-socket having trunnions disposed at an angle to the cutting edge of the knife, journals for the trunnions, a vertically-adjustable base-plate, means to slidably mount said journals on the plate, and a rotatably-adjustable standard supporting said plate.

16. In a machine of the nature indicated, the combination with a fishway, of a vertically-adjustable standard, horizontally-adjustable boxes mounted thereon, a shank provided on its one end with cutting instruments normally extending across said fishway, said shank being pivoted at its other end in said boxes, as and for the purpose set forth.

17. In a machine of the nature indicated; a drag comprising a longitudinally-reciprocal plunger, a frame rotatably mounted thereon, a mangle-rack on said frame, a rotatable pinion, means to insure constant engagement of said rack and pinion, operable jaws carried on said plunger, and means whereby rotation of said frame actuates said jaws.

18. In a machine of the nature indicated; a drag comprising a longitudinally-reciprocal plunger, a frame rotatably mounted thereon, a mangle-rack on said frame, a rotatable pinion held in constant engagement with the rack, operable jaws carried on the plunger, a bar slidably mounted on said plunger, means whereby movement of the bar actuates said jaws, and other means whereby rotation of said frame moves the bar.

19. In a machine of the nature indicated, the combination with a fish-transporting device embodying gripping-jaws, of a severing instrument immovable with the transporting device and being movable across the path of said jaws.

20. In a machine of the nature indicated; the combination with a fish-transporting device adapted to convey the fish by engaging the tail, of a pivotally-mounted tail-severing knife operably related to said device and having the blade at one extremity of the shank, means to normally yieldingly hold said knife in retracted position, and means arranged on said device to operably engage the knife.

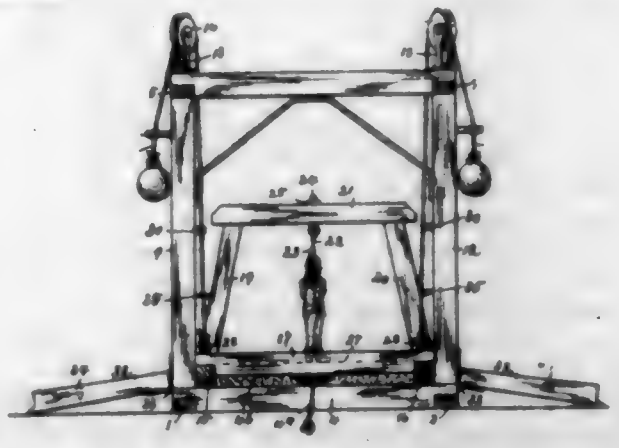
21. In a machine of the nature indicated; the combination with a fish-transporting device adapted to convey fish by engaging the tail, of a tail-severing knife comprising a bell-crank-shaped shank and a blade at the end of one arm, means to mount the knife to swing at the point of angle, means to normally yieldingly hold the shank with the blade in retracted position, and means arranged on said device to engage the other arm of the shank and operate the knife.

22. In a machine of the nature indicated, a gripping means, means for operating said means, a cutting means immovable with said gripping means movable across the path of said gripping means, and means carried by said gripping means for operating said cutting means.

23. In a machine of the nature indicated, a sliming apparatus comprising a frame, a horizontal shaft, a cylindrical wiper swingably mounted thereon and operated thereby, a vertical shaft operably connected with the first-named shaft, a pair of yielding arms pivoted thereto, cylindrical wipers mounted on said arms and operated by said vertical shaft, and means to pass a body to be slimed between the wipers.

24. In a machine of the nature indicated, means for conveying a fish-body, a cutter for severing a fish-body from said means, and means carried by said conveying means for operating said cutter.

818,306. **HANGMAN'S SCAFFOLD.** JOHN C. SMITH, Lynchburg, Va., assignor of one-third to James P. Williamson and one-third to Benjamin F. Marsh, Lynchburg, Va. Filed Sept. 2, 1905. Serial No. 276,844.



Claim.—1. The combination in a hangman's scaffold, of a frame provided with a series of bolt-recesses and a drop-platform

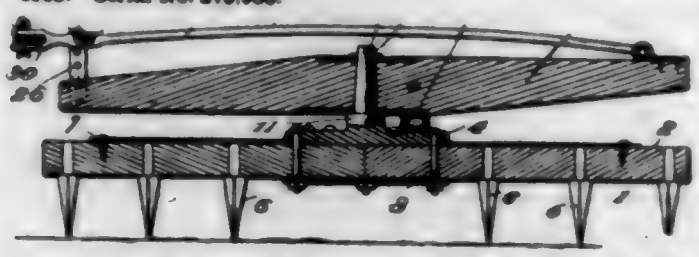
having bolts adapted to engage the said recesses with means for simultaneously releasing the said bolts.

2. In a hangman's scaffold, the combination of a main frame and a second frame adapted to operate vertically therein, the second frame provided with bolt-recesses and a drop-platform having bolts adapted to engage the aforesaid recesses, with means for simultaneously operating the bolts.

3. In a hangman's scaffold, a main frame and an elevator-frame adapted to operate therein, the elevator-frame provided with counterbalances and the main frame having side braces for securing the elevator-frame in either its upper or lower position.

4. A hangman's scaffold comprising a main frame, an elevator-frame adapted to operate therein, the said elevator-frame provided with a top beam, a suspensory rope and noose and means for connecting the rope with the beam.

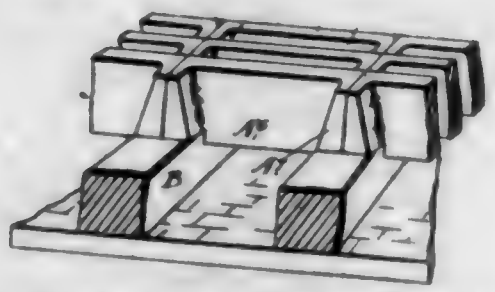
818,307. **ROTARY HARROW.** ORSON SMITH, Anoka, Minn., assignor of one-half to Charles H. Fridley, Anoka, Minn. Filed Aug. 28, 1905. Serial No. 275,950.



Claim.—1. In combination, a beam, a rotary harrow pivotally mounted on the beam, a bow-shaped draft-bar connected to the rear end of the beam, a slot being formed in the bow-shaped draft-bar, ears on the beam, and a fastening passing through perforations formed in the ears and the slot in the bow-shaped draft-bar, substantially as described.

2. In combination, a beam, a rotary harrow pivotally mounted on the beam, a track on the harrow, a bar pivotally mounted on the beam, and extending outwardly therefrom, a roller on the outer end of the bar to engage the track, a chain connected to the opposite ends of the beam and engaging the bar, a bow-shaped draft-bar secured to the rear of the beam, ears formed with perforations and a fastening device passing through the perforated ears and a slot formed in the draft-bar, substantially as described.

818,308. **FLOOR-BRICK FOR DOWNDRAFT-KILNS.** RICHARD SOUTHWORTH and JOSEPH R. HOLDEN, Mimico, Canada. Filed Dec. 8, 1905. Serial No. 290,959.

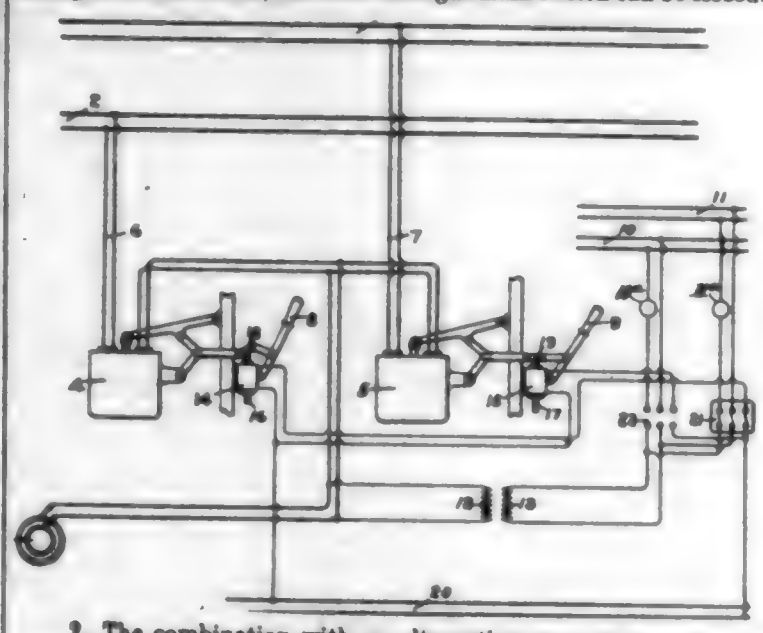


Claim.—1. A floor-brick for kilns having one plain vertical side and plain vertical ends and one recessed side forming end projections, and a depending portion of the length of the bottom of the recess extending beneath the body portion said end projections having upwardly and outwardly inclined opposing faces as and for the purpose specified.

2. The combination with the beams, of a plurality of bricks having one of the sides plain and the other side recessed, so as to provide projecting ends, which are designed to fit against the plain side of the adjacent brick, and all the bricks being arranged, so that the ends abut each other and the joints over the beam are alined, and the depending portions extend between the beams said projecting ends having upwardly and outwardly inclined opposing faces so that the space formed between two bricks is smaller at the bottom than at the top as and for the purpose specified.

818,309. **INTERLOCKING SWITCH.** CHARLES W. STONE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 4, 1904. Serial No. 227,173.

Claim.—1. The combination with an alternating-current generator, of two or more sets of main bus-bars, one or more sets of synchronizing bus-bars, main switches and synchronizing-switches, and means for interlocking said switches so that when a given synchronizing-switch is closed, none but the right main switch can be closed.



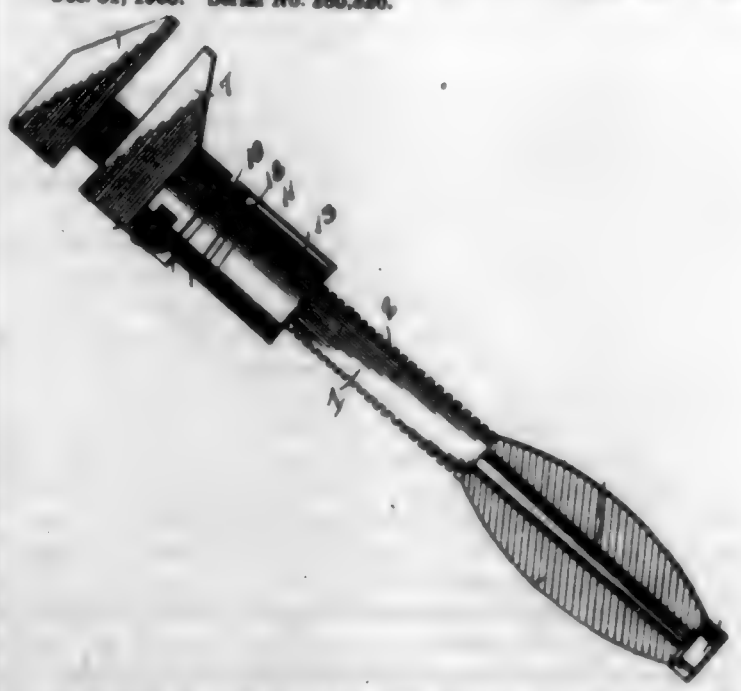
2. The combination with an alternating-current generator, of two or more sets of bus-bars, main switching apparatus for connecting said generator to said bars, and means for automatically preventing the closing of a given part of said apparatus when the machine has been synchronized with a set of bus-bars not connected with said part.

3. The combination with an alternating-current generator, of two or more sets of bus-bars, main switching apparatus for connecting said generator to said bars, electromagnets for disabling respective parts of said apparatus, and means for closing the circuit of all said magnets except one, when the machine is being synchronized with the bus-bars connected with the part that is not disabled.

4. The combination with an alternating-current generator, of two or more sets of bus-bars, separate main switches for connecting said generator to said bars, electromagnets for disabling said switches, one or more synchronizing-circuits, and switches for closing any one of them, said switches having poles which energize all the electromagnets except the one controlling the main switch which will connect the generator with the buses with which it has been synchronized.

5. The combination with an alternating-current generator, of two or more sets of bus-bars, separate main switches for connecting said generator to said bars, toggles for actuating said switches, a tripping-magnet adjacent to each toggle and adapted to break it when energized, one or more sets of synchronizing-circuits, and a multiple-pole switch for each of said circuits, one of whose poles is in circuit with all the electromagnets except the one controlling the switch that is to be closed.

818,310. **WRENCH.** GEORGE H. STRICKLAND, Warren, Ohio. Filed Oct. 31, 1905. Serial No. 285,326.



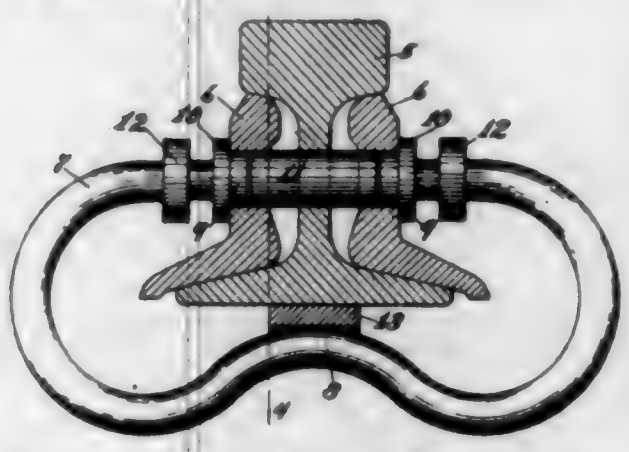
Claim.—1. In a device of the class described, a shank provided with teeth and having a fixed jaw, a movable jaw slidably disposed

upon the shank, and a tubular operating member connected with the movable jaw, said operating member comprising a pair of relatively movable sections having oppositely-disposed sets of threads adapted for engagement or non-engagement with the teeth.

2. In a device of the class described, a shank having teeth and carrying a pair of coöperating jaws, one of said jaws being movable longitudinally of the shank, and a tubular operating member disposed for movement on the latter and operatively connected with the movable jaw, said coöperating member comprising a pair of sections having opposed sets of internal threads adapted for engagement or non-engagement with the teeth, the sections being relatively rotatable to effect alinement or non-alinement of either set of threads.

3. In a device of the class described, a shank provided with teeth and carrying a pair of coöperating jaws, one of said jaws being movable upon the shank, a tubular operating member movable upon the shank and operatively engaged with the jaw, said member comprising a pair of sections having oppositely-disposed sets of threads adapted for engagement or non-engagement with the teeth, the sections being relatively rotatable to effect alinement or non-alinement of the sets of threads, and means for locking the sections against relative movement.

818,811. **BOLTLESS RAIL-SPLICE.** CHARLES L. SULLIVAN and WILLETT J. DICKINSON, Chicago, Ill.; said Dickinson assignor to Handy Car Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 27, 1906. Serial No. 298,162.



Claim.—1. In combination in a rail splice fastening, opposing splice bars having perforations, a spring passing beneath the rail and having its ends bent upwards and inwards and entering the openings and provided with shoulders adjacent such ends adapted to bear against the faces of the splice bars.

2. In a rail splice fastening in combination, opposing splice bars having perforations, a spring passing beneath the rail with its center curved up to engage the bottom of the rail and having upwardly inturned ends entering the perforations and provided with shoulders adjacent such ends adapted to engage against the faces of the splice bars.

3. In a rail splice fastening in combination, opposing splice bars having perforations, a spring passing beneath the rail with its center curved up to engage the bottom of the rail and having upwardly inturned ends entering the perforations and provided with shoulders adjacent such ends adapted to engage against the face of the splice bars, and means whereby the position of the curved up central portion of the spring relative to the bottom of the rail may be varied to adjust the tension of the spring.

4. In a rail splice fastening in combination, opposing splice bars having perforations, a spring passing beneath the rail with its center curved up to engage the bottom of the rail and having upwardly inturned ends entering the perforations and provided with shoulders adjacent such ends adapted to engage against the faces of the splice bars, and a wedge adapted to be forced between the bottom of the rail and the curved up portion of the spring.

5. In a rail splice fastening in combination, opposing splice bars having perforations, a spring passing beneath the rail with its center curved up to engage the bottom of the rail and having upwardly inturned ends entering perforations and provided with shoulders adjacent such ends adapted to engage against the faces of the splice bars, and a wedge provided with a holding notch adapted to be forced between the bottom of the rail and the curved up portion of the spring.

6. In a rail splice fastening in combination, opposing splice bars, a spring having an upcurved center portion to engage the bottom of the rail and upcurved ends adapted to engage the splice bars, and means whereby the ends of the springs are held by the splice bars.

7. In a rail splice fastening in combination, opposing splice bars having alined perforations, a plug extending between the splice bars, a spring passing beneath the rail and having an upturned central portion engaging the rail and having upturned incurved ends adapted to fit the perforations and engage the splice bars to hold them against the rail.

8. In a rail splice fastening in combination, opposing splice bars having alined perforations, plugs extending between the splice bars, springs passing beneath the rail and having upturned central portions engaging the rail and having upturned incurved ends adapted to fit the perforations and engage the splice bars to hold them against the rail, and means whereby the position of the upturned central portion of the spring may be adjusted relative to the bottom of the rail.

9. In a rail splice fastening in combination, opposing splice bars having perforations, a spring extending beneath the rail and having upwardly incurved ends engaging the perforations and engaging means for a removing tool on the spring adjacent its end.

10. In a rail splice fastening in combination, opposing splice bars, a spring extending beneath the rail and having upwardly incurved ends engaging the splice bars, and engaging means for an expanding tool on the spring adjacent its end.

11. In a rail splice fastening in combination, opposing splice bars with alined perforations, a plug passing through a portion of each splice bar and the web of the rail, and a spring passing beneath the rail and having shouldered ends adapted to bear against the splice bars and hold the plug in position.

12. A securing means for abutting rail ends, comprising splice bars overlapping the abutting rail ends, ties beneath the splice bars, and clamps adapted to hold the splice bars and extending beneath the rail and engaging the ties to prevent creeping of the rails.

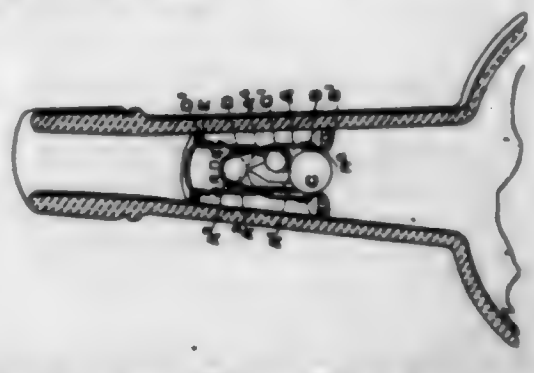
13. A securing means for abutting rail ends, comprising splice bars overlapping the abutting rail ends, ties beneath the splice bars, and obliquely directed clamps adapted to hold the splice bars and extending beneath the rail and engaging the ties to prevent creeping of the rails.

14. A securing means for abutting rail ends, comprising splice bars overlapping the abutting rail ends, ties beneath the splice bars, and a plurality of clamps, a part of which are directed obliquely in one direction and the other part are obliquely directed in the opposite direction adapted to hold the splice bars and extending beneath the rail and engaging the ties to prevent creeping of the rails.

15. A securing means for abutting perforated rail ends, comprising perforated splice bars overlapping the abutting rail ends, means extending through the perforations in the rails and splice bars to prevent relative longitudinal movement thereof, ties beneath the splice bars and spring clamps engaging the perforations in the splice bars and extending beneath the rail and engaging the ties to prevent creeping of the rail in both directions.

16. In a rail splice fastening in combination, opposing perforated splice bars, a spring extending beneath the rail and having upwardly incurved shouldered ends engaging the perforations in the splice bars, and a collar on the spring adjacent the shoulder.

818,812. **NON-REFILLABLE-BOTTLE ATTACHMENT.** EDWARD A. SULLIVAN, Toronto, Canada, THOMAS W. PRITCHARD, Germantown, and RODMAN W. C. ELLISON, Bryn Mawr, Pa. Filed May 1, 1905. Serial No. 258,430.



Claim.—1. A non-refillable-bottle attachment comprising a lower portion or cage having an outwardly-extending holding-flange internally contracted to form a seat, a ball fitting such contracted portion and an upper sleeve portion fitting on the top of the cage and provided with a suitable holding-flange and perforations as and for the purpose specified.

2. A non-refillable-bottle attachment comprising a lower portion or cage having an outwardly-extending holding-flange inter-

nally contracted to form a seat, a ball fitting such contracted portion and an upper sleeve portion fitting on the top of the cage and provided with a suitable holding-flange and perforations, and a minor ball designed to coact with the major ball as and for the purpose specified.

3. A non-refillable-bottle attachment comprising a lower open portion or cage having an outwardly-extending holding-flange split into teeth and designed to be expanded to fit the neck, said flange being contracted internally to form a seat, a filling of cement designed to surround the annular space around the flange and a ball fitting such contracted portion, and an upper sleeve portion fitting on the top of the cage and provided with a flange split to form teeth and designed to be expanded to fit the neck and provided with perforations, and a cement filling designed to fit into the annular space between the sleeve and the neck as and for the purpose specified.

4. In a non-refillable-bottle attachment a lower portion consisting of an open cage tapered at the top and rounded and provided at the bottom with a contracted neck and a ball designed to have its seat in the neck as and for the purpose specified.

5. In a non-refillable-bottle attachment a lower portion consisting of an open cage tapered at the top and rounded and provided at the bottom with a contracted neck, a ball designed to have its seat in the neck, and a minor ball located within the cage and designed to coact with the major ball and have its seat when the bottle is inverted in the tapered upper portion as and for the purpose specified.

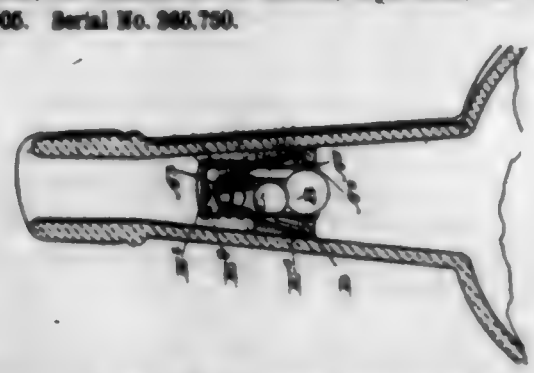
6. In a non-refillable-bottle attachment a lower portion consisting of an open cage and a flange or ring surrounding the bottom edge of the cage and provided with a portion split into teeth and designed to be expanded to fit into the neck of the bottle as and for the purpose specified.

7. In a non-refillable-bottle attachment a sleeve designed to fit onto the lower portion and provided with perforations having inclined lips extending from the bottom of the perforations, and permanent means for holding the sleeve in the neck as and for the purpose specified.

8. In a non-refillable-bottle attachment a sleeve designed to fit onto the lower portion and provided with perforations having inclined lips extending from the bottom of the perforations, a ring or flange fitting around the upper portion of the sleeve and split, so as to form teeth, which are expansible to fit the neck as and for the purpose specified.

9. In a non-refillable bottle, the combination with an open cage having a tapered closed upper portion and an annular projection extending around such portion, of a perforated sleeve designed to have the lower edge rest on the annular projection as and for the purpose specified.

818,313. **NON-REFILLABLE-BOTTLE ATTACHMENT.** EDWARD A. SULLIVAN, Toronto, Canada, THOMAS W. PRITCHARD, Germantown, and RODMAN W. C. ELLISON, Bryn Mawr, Pa. Filed June 17, 1905. Serial No. 265,750.



Claim.—1. A non-refillable-bottle attachment comprising a lower portion or cage having an inwardly-extending flange, a ring formed of yielding material surrounding such lower portion and adapted to be suitably cemented in the neck, and a ball having a seat on the inwardly-extending flange, and a hood fitting over the cage and provided with louver-like openings in its periphery as and for the purpose specified.

2. A non-refillable-bottle attachment comprising a lower portion or cage having an inwardly-extending flange, a ring formed of yielding material surrounding such lower portion and adapted to be suitably cemented in the neck and a major ball having a seat on the inwardly-extending flange and a minor ball designed to rest on the major ball and protrude through one of the openings in the cage when in the normal position as and for the purpose specified.

3. A non-refillable-bottle attachment comprising a lower portion or cage having an inwardly-extending flange, a ring formed of yielding material surrounding such lower portion and adapted to be suitably cemented in the neck, and a ball having a seat on the inwardly-extending flange, a hood fitting over the cage and provided with louver-like openings in its periphery and a slitted cone-frustum-shaped bottom portion, the bottom of which is designed to rest on the ring aforesaid as and for the purpose specified.

4. A non-refillable-bottle attachment comprising a lower portion or cage having an inwardly-extending flange, a ring formed of yielding material surrounding such lower portion and adapted to be suitably cemented in the neck, and a ball having a seat on the inwardly-extending flange, a hood fitting over the cage and provided with louver-like openings in its periphery, a slitted cone-frustum-shaped bottom portion, the bottom of which is designed to rest on the ring aforesaid and a filling of cement located peripherally outside the cone-frustum-shaped bottom of the hood as and for the purpose specified.

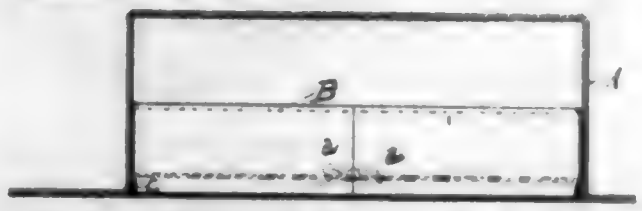
5. In a non-refillable-bottle attachment, a lower portion consisting of an open cage tapered at the top and having reverse-V-shaped notches forming an upward extension of the openings of the cage as and for the purpose specified.

6. In a non-refillable-bottle attachment, a lower portion consisting of an open cage tapered at the top and having reverse-V-shaped notches forming an upward extension of the openings of the cage and shoulders at the bottom of the tapered portion as and for the purpose specified.

7. In a non-refillable-bottle attachment, a lower portion consisting of an open cage tapered at the top and having reverse-V-shaped notches forming an upward extension of the openings of the cage, the bars between the openings being provided with ribs on the inside of the inclined portion as and for the purpose specified.

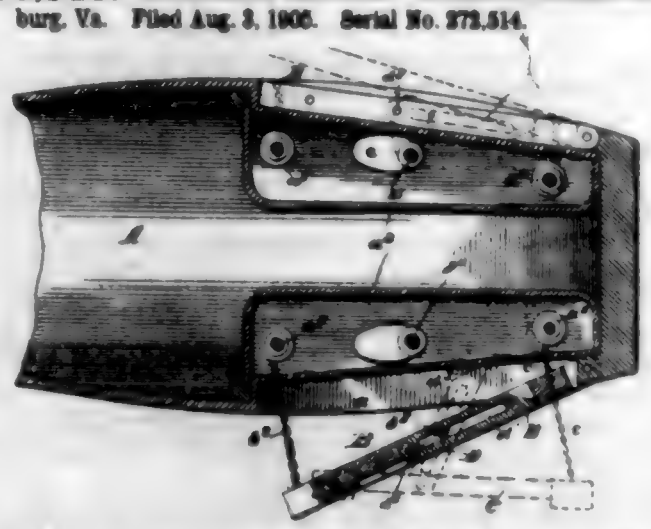
8. In a non-refillable-bottle attachment, a hood comprising a cylindrical portion with a flat top and louver-like openings in the cylindrical portion and a slitted cone-frustum-shaped bottom portion as and for the purpose specified.

818,314. **HAT.** JOSEPH TAYLOR, Stockport, England, assignor to Hat Manufacturers Supply Co. Ltd., Stockport, England. Filed Oct. 18, 1905. Serial No. 283,279.



Claim.—A hat provided with a sweat, an elastic band behind the sweat and having free ends toward the back of the hat, with means fixedly securing the elastic band to the hat-sweat at points near the wearer's temples, for the purpose described.

818,315. **AUXILIARY RUDDER.** WILLIAM M. TAYLOR, Mecklenburg, Va. Filed Aug. 3, 1905. Serial No. 272,514.



Claim.—1. The combination with the hull of a ship having recesses adjacent to the stern, of rectangular frames hinged within the recesses to the rear end thereof, a fin hinged within the frame to the front end thereof, longitudinally-slotted braces pivoted to the fin and projecting rearwardly along the sides thereof, pins on the frame for engaging the slots, a plurality of pairs of rollers journaled within the hull, and flexible connections between the free ends of the fins, the free ends of the frame and the respective pairs of rollers.

2. The combination with the hull of a ship having recesses adjacent to the stern, of rectangular frames hinged within the recesses

to the rear end thereof, fins hinged within the frame to the front ends thereof, a plurality of pairs of rollers journaled within the hull and flexible connections between the free ends of the fins, the free ends of the frame, and the respective pairs of rollers.

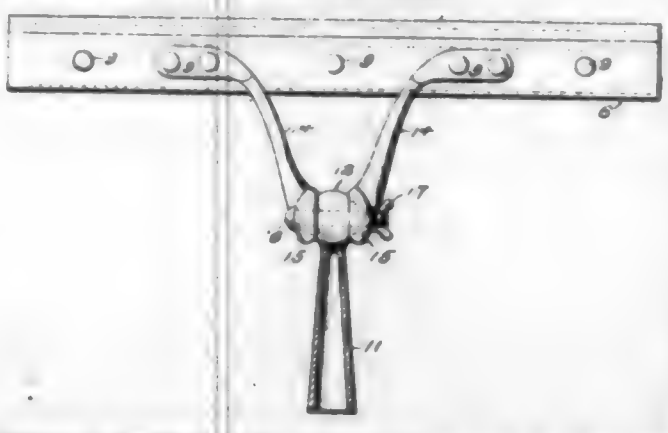
3. The combination with the hull of a ship having recesses adjacent to the stern, of rectangular frames hinged within the recesses to the rear end thereof, fins hinged within the frame to the front ends thereof, and means for opening and closing the fins and the frames.

4. The combination with the hull of a ship of frames hinged at their rear ends to the stern thereof, fins hinged within the frames a the front ends thereof, and means for opening and closing the frames and the fins.

5. The combination with the hull of a ship, of a frame hinged by its rear end to the stern thereof, a fin hinged within the frame at the front end thereof, longitudinally-slotted braces pivoted to the fin and projecting rearwardly along the sides thereof and pins on the frame for engaging the slots of the braces.

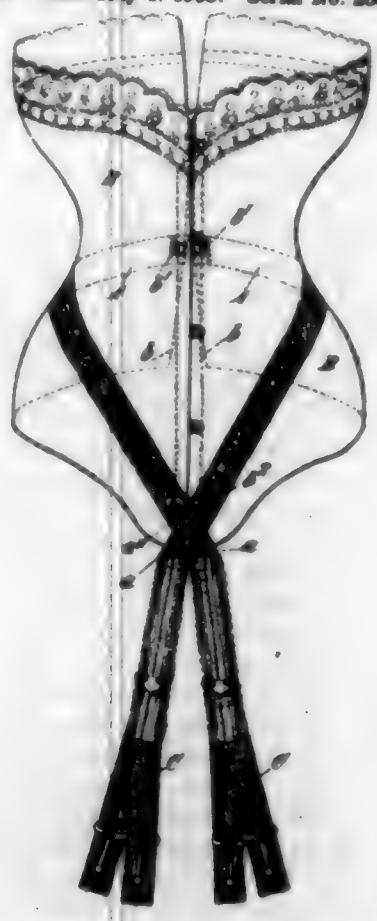
6. The combination with the hull of a ship, of frames hinged at their rear end to the sides of the hull adjacent to the stern thereof, fins hinged within the frame at the front ends thereof and means attached to the fin for engaging the hull whereby to maintain the fin in a position such, that the force of the water acts upon the outer face thereof.

818,316. SCRUBBER OR BRUSH. AXEL TROLLANDER, Chicago, Ill. Filed Mar. 30, 1905. Serial No. 252,553.



Claim.—A handle-fastening for scrubbers and the like, comprising a socket-piece having a globular head with projecting lugs thereon, arms secured to opposite ends of the scrubber and converging to said head and having concave sockets fitting opposite sides thereof and notches in said sockets to receive the lugs, and a pivot-bolt extending through the sockets and the head.

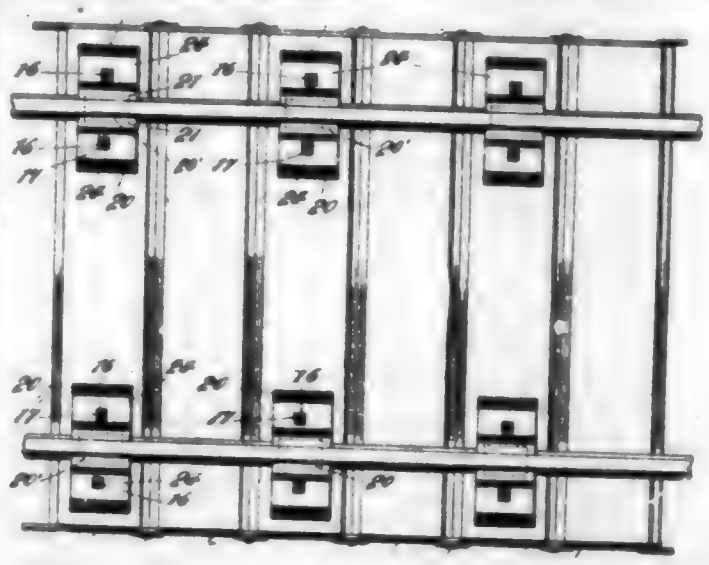
818,317. STOCKING-SUSPENDERS. ANNIE WARDROPER, London, England. Filed May 1, 1905. Serial No. 258,341.



Claim.—1. A stocking-suspender waistband comprising two members having the inner ends crossing each other at an angle and secured together, stocking-suspenders connected with said inner ends, an eyelet in one of said members for engaging with the lower bust-stud of the corset, and hook-pieces for detachably connecting the outer ends of said members with the back edges of the corset substantially as and for the purpose specified.

2. A stocking-suspender waistband comprising two elastic members secured together near their inner ends, stocking-suspenders connected with said inner ends, an eyelet on one of said members for connecting it with the lower bust-stud of the corset, and means for detachably connecting said members with the outer edges of the corset for the purpose specified.

818,318. RAILROAD-TIE. MATHEW J. WEAVER, Plattsburg, Mo., assignor of one-half to Erasmus C. Hall, Plattsburg, Mo. Filed Dec. 27, 1905. Serial No. 293,433.



Claim.—1. A railroad-tie, comprising a metal truss-frame filled in with cement and means whereby said ties may be secured together.

2. A railroad-tie, comprising a metal truss-frame filled in with cement, and means whereby said ties may be adjustably secured together.

3. A railroad-tie, comprising a metal truss-frame filled in with a composition, means for securing the ties together, and means carried by the metal truss-frame for securing the rails thereto.

4. A railroad-tie, comprising a metal truss-frame embedded in a composition, means secured to the truss-frame for securing the ties together, and means secured to the truss-frame for securing the rails to the ties.

5. A railroad-tie, comprising a metal truss-frame embedded in a composition, means for securing the ties together and means for securing the rail to the tie.

6. A railroad-tie, comprising a metal truss-frame embedded in a composition, arms secured to the truss-frame and extending laterally from the sides of the tie, and means whereby said arms may be secured together for securing the ties together.

7. A railroad-tie, comprising a metal truss-frame embedded in a composition, arms carried by the truss-frame and extending laterally from the side of the tie, and bolts secured to the truss-frame and extending vertically from the upper face of the tie whereby the rail is secured to the tie.

8. A railroad-tie, comprising a metal truss-frame embedded in a composition, means whereby the ties may be secured together and stirrups passing under the truss-frame and having their free ends extending vertically from the upper face of the tie.

9. A railroad-tie, comprising a metal truss-frame embedded in a composition, arms carried by the truss-frame and extending laterally at the tie ends, and means whereby the arms of one tie is adjustably secured to the arm of the abutting tie.

10. A railroad-tie, comprising a metal truss-frame, embedded in composition, stirrups supported by the truss-frame and having their free ends extending out through the upper face of the tie, and means carried by the free ends of the stirrups for securing the rail to the tie.

11. A railroad-tie, comprising a metal truss-frame formed of upper and lower plates supported intermediate their ends by braces, stirrups having their free ends passing upwardly through the braces and the upper plate of the frame, a plate below the lower looped end of the stirrup and having a depression to receive the same, rivets passing upwardly on each side of the stirrup through the plate, the

brace, and the upper plate of the truss-frame and securing the three together and the said truss-frame embedded in a composition.

12. A railroad-bed composed of composition ties secured together and the spaces between the same filled in with cement.

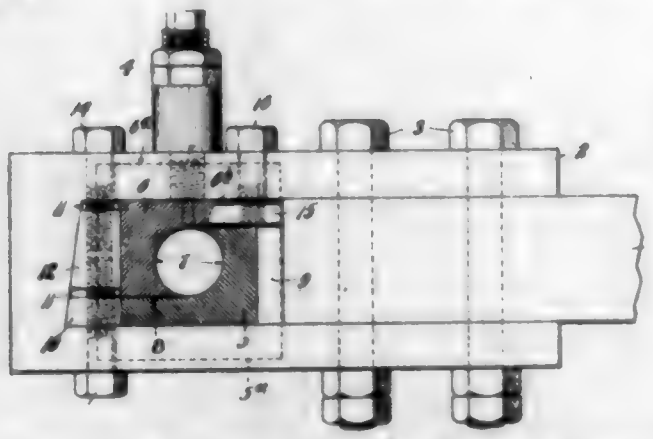
13. A railroad-bed composed of metal-reinforced composition ties adjustably secured together and the spaces between the same filled in with cement.

14. A railroad-bed composed of metal-reinforced composition ties adjustably secured together side by side, and the space between the same filled in with cement.

15. A railroad-bed composed of metal-reinforced composition ties having broad bases and narrower upper surfaces and placed side by side and adjustably secured together, and the space between the broad bases of the ties filled with cement to form a road-bed with transverse channels between the ties.

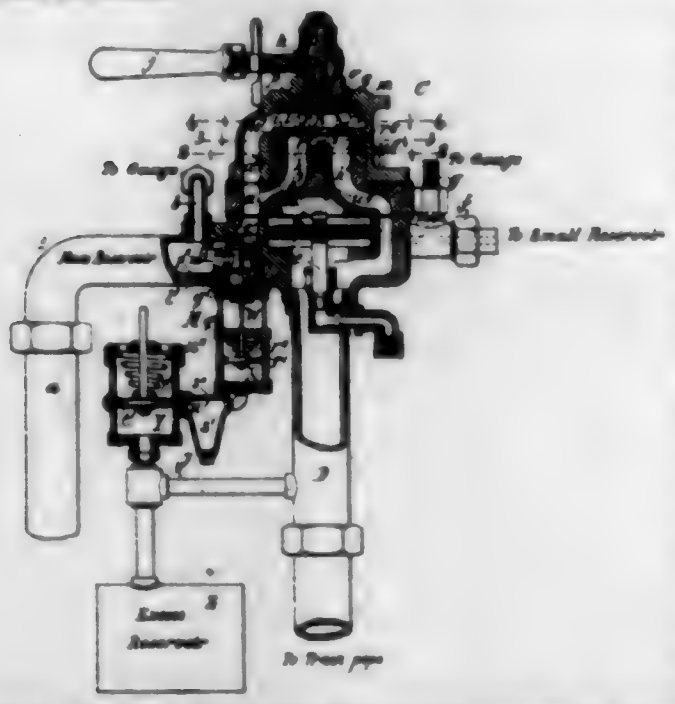
16. A railroad-bed composed of metal-reinforced composition ties placed side by side, upwardly-extending bolts embedded in said ties, a plate having a slot through which one of said bolts passes and having a flange engaging the rail, the upper face of said plate having serrations, and the plate having an opening through which the bolt passes and having serrations on its lower face to engage and adjustably hold the first plate in its adjusted position.

818,319. ADJUSTABLE BEARING FOR ROD-BRASSES. GEO. S. WEBSTER, Minneapolis, Minn. Filed Oct. 23, 1905. Serial No. 284,837.



Claim.—The combination with a rod and a strap, of a two-part bearing-box, divided on parallel lines that join tangentially with the bearing-surface thereof, and a pair of independent opposing screw-actuated wedges for adjusting and setting one of the said box-sections with respect to the other, substantially as described.

818,320. FLUID-PRESSURE BRAKE AND OTHER APPARATUS. JAMES N. WEEKLY, Jersey City, N. J., assignor to George Holt Fraser, Brooklyn, N. Y. Filed Dec. 10, 1896. Renewed Oct. 19, 1905. Serial No. 283,500.



Claim.—1. In air-brakes and other pressure apparatus, the combination with a source of fluid-pressure, means for utilizing such pressure, a pipe communicating between said parts and a valve controlling such communication, of a pressure-regulator in communication with said pipe beyond said valve and automatically preventing flow of pressure to said means exceeding a predetermined limit, and a valve operated by said regulator, having fully-open and fully-closed positions and popping from one position to the other without intermediate rest.

2. In air-brakes and like apparatus, the combination with a brake-cylinder and a pipe supplying fluid-pressure thereto, of an inlet-valve operated by the pressure in said cylinder and automatically preventing flow of pressure thereto at a predetermined limit of pressure therein, and means preventing operation of said valve prior to such limit of pressure.

3. In air-brakes and analogous apparatus an auxiliary reservoir and a pipe supplying pressure thereto, in combination with an automatic inlet-valve operated by the pressure within said reservoir and automatically closed by such pressure and preventing flow of pressure thereto at a predetermined limit, and means closing such valve only when such limit of pressure is reached.

4. In air-brake and analogous apparatus, the combination with an engineer's valve and a main reservoir, of a quick-acting pop-valve at the main reservoir side of and automatically and completely closing flow of pressure to said engineer's valve when the pressure therein reaches a predetermined limit, and means operated by the pressure beyond said engineer's valve and controlling operation of said pop-valve.

5. In air-brake and analogous apparatus, an engineer's valve, a main reservoir supplying pressure thereto, and a train-pipe receiving pressure therefrom, in combination with a quick-acting pop-valve at the main-reservoir side of said engineer's valve automatically operated by the pressure in said train pipe and completely isolating the latter from said reservoir when the pressure in the train-pipe reaches a predetermined limit, and preserving the maximum communication between said reservoir and pipe until such limit is reached.

6. For fluid-pressure brakes and other devices, the combination with a pressure-operated valve, of the improved valve-operator comprising a pressure-receiving cylinder and a piston therein, the one movable relatively to the other, means supplying pressure from one side of said pressure-operated valve to said cylinder at one side of said piston and a pressure-outlet therefrom at the other side thereof, means resisting relative movement of said parts, and a valve and valve-port operated by such relative movement for supplying pressure to the pressure-operated valve to be operated at a predetermined point in such movement.

7. For fluid-pressure brakes and other devices, the combination with a pressure-operated valve, of the improved valve-operator comprising a cylinder and a movable piston therein, a pressure-inlet for said cylinder at one side of said piston, a pressure-outlet therefor opening to the atmosphere at the other side of said piston, a spring resisting movement of said piston, and a fluid-pressure-controlled valve controlling flow of pressure to the pressure-operated valve to be operated and opened at a predetermined position of said piston.

8. For fluid-pressure brakes and other apparatus, means for operating valves by pressure consisting of a cylinder having a port intermediate of its ends, and pressure inlet and outlet ducts beyond said port, a piston within said cylinder between said ducts and crossing said port, and a spring resisting movement of said piston, and adjustable to determine the limit of pressure at which said piston shall cross said port, said piston moving past said port and opening it to the pressure in said cylinder when the predetermined limit of pressure therein is exceeded, whereby pressure can then flow through said port to the point of use, and said spring moving said piston to the other side of said port when the pressure falls below the predetermined limit, whereby said port is open and said pressure can escape therethrough to the outlet from said cylinder.

9. In valves for fluid-pressure brakes and other purposes, a pressure-conductor and a valve controlling communication therethrough, in combination with a piston connected to and operating said valve, and automatic pressure-operated means normally permitting said piston to occupy a position in which said valve is open, and upon predetermined conditions suddenly permitting a flow of pressure against said piston and causing it to quickly seat said valve.

10. For fluid-pressure brakes and other apparatus, a pressure-conductor, in combination with a valve controlling flow thereto comprising a seat and a valve proper movable against and from such seat, and means closing said valve proper operated automatically by the pressure at the egress side thereof when a predetermined limit of pressure is attained, and means opening said valve proper operated by the pressure at the ingress side thereof when such pressure falls below said limit.

11. For fluid-pressure brakes and other devices a conductor for fluid-pressure having a valve-seat and a valve proper controlling communication past said seat, in combination with a piston operating said valve proper, a cylinder for said piston, means automatically supplying pressure within said cylinder for operating said piston, and an automatic relief-valve controlling escape of such pressure and controlled by the pressure at the ingress side of said valve proper.

12. For fluid-pressure brakes and other apparatus, the combination with a cylinder and means for supplying pressure thereto of a valve controlling ingress to said cylinder automatically closed by the pressure therein at its egress side and automatically controlled by the pressure at its ingress side and means controlling operation of said valve at predetermined differences of pressure in said cylinder and its supplying means.

13. For fluid-pressure brakes and other apparatus a valve K having valve proper *w*, cylinder *w'*, piston *w''*, cylinder N, piston O, cylinder Q, piston R, ducts *y''* and *z''*, ports *x' x''* and vent *z*, substantially as and for the purpose set forth.

14. For fluid-pressure brakes and other apparatus, a vessel for compressed fluid and a fluid-conductor leading thereto in combination with a valve controlling flow of pressure to said vessel, closed by the pressure therein, automatically closing at a predetermined limit of pressure therein and free to open when the pressure therein exceeds that at the ingress side of said valve and means keeping said valve closed while the pressure in said vessel and conductor exceeds such limit, and permitting it to open when the pressure in said conductor is less than said limit.

15. For fluid-pressure brakes and other apparatus, the combination with an auxiliary reservoir and a distributing-valve therefor of a valve between said parts automatically closing and arresting flow to said reservoir at a predetermined limit of pressure therein and free to unresistingly open and release pressure therefrom when the pressure at its outer side is below that in said reservoir.

16. For fluid-pressure brakes and other apparatus, a fluid-pressure conductor having a valve-seat and a valve proper closing on said seat and controlling communication through it, in combination with a piston operating said valve proper, a cylinder for said piston, a second cylinder receiving pressure from the egress side of said valve proper, a port leading from the latter cylinder to the former cylinder at one side of its piston, a similar port leading to the other side of such piston, a port leading from the ingress side of said valve proper to said second cylinder a piston in the latter and a valve therein controlling flow of pressure to said first cylinder and when in one position supplying pressure to one side thereof and relieving it from the other side thereof and when in the other position reversing the supply of pressure to said cylinder.

17. For fluid-pressure brakes and other apparatus, a valve L having a seat and valve proper and means automatically operating the latter comprising a cylinder, a piston therein, ducts leading to said cylinder at opposite sides of said piston and an automatically-operated valve supplying pressure to one side or the other of said piston at predetermined limits of pressure on the respective sides of said valve proper.

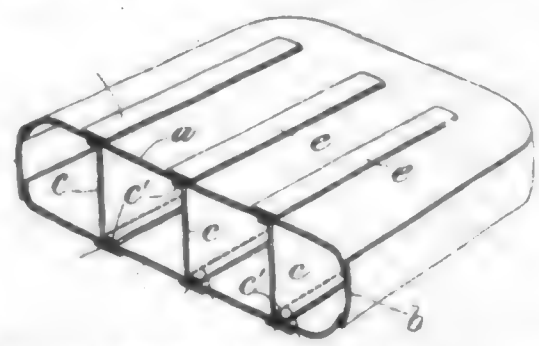
18. For fluid-pressure brakes and other apparatus, a valve L comprising a casing having a valve-seat, a cylinder *d''*, a valve-seat, a cylinder T, ducts *e''*, *g''* and *g'*, vent *f''*, a valve proper, a piston *d'* operating the latter and in said cylinder *d''*, and a piston U in said cylinder T operated by the pressure therein, and controlling flow to said cylinder *d''* to determine the position of the piston *d'* therein and open or close said valve proper.

19. For fluid-pressure brakes and other devices, a valve proper, a piston operating it, a cylinder for said piston, and a port leading thereto, in combination with a second cylinder, a piston therein, a pressure-inlet for said cylinder at one side of said piston, a tubular sleeve at the other side thereof intersecting said port, a piston-rod for said piston working in said sleeve, having a duct leading from the pressure side of said piston and a valve fitting said sleeve beyond said duct, and having a duct at the other side of said valve leading to the outer air, said piston and stem moving with the pressure in said cylinder and when in one position opening said port and permitting a flow of pressures from said second cylinder to said first cylinder and when in the other position preventing such flow and permitting escape of pressure from said first cylinder through said port and sleeve to the exterior.

20. For fluid-pressure brakes and other devices, a pressure-operated valve in combination with means for controlling the supply of pressure to the same comprising a cylinder A', a piston C' therein, a stem E' for such piston, a duct F' therethrough, a valve G' moving with said stem, and a port J' opposite said valve, substantially as and for the purpose set forth.

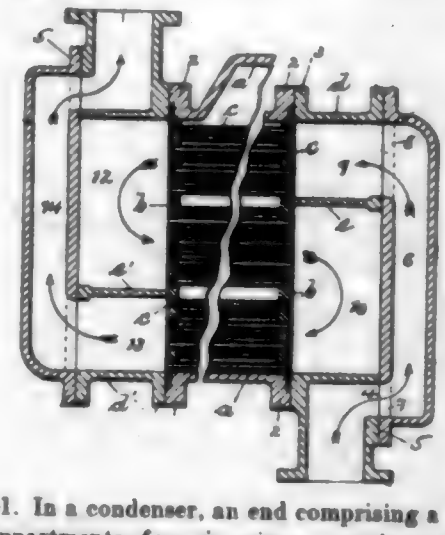
21. An engineer's valve for fluid-pressure brakes having feed train-pipe, small reservoir, and direct exhaust-ports, in combination with a rotary valve proper having reciprocal ports, said valve and valve proper having lap-service application and emergency positions, and having between the latter second lap and direct-application positions, and having reciprocal ports, the one communicating with the small reservoir and the other with the train-pipe, communicating with each other at the second lap and direct-application positions, whereby during direct application the small reservoir pressure-gage can be used to show train-pipe pressure.

818,321. PNEUMATIC MATTRESS, CUSHION, &c. RICHARD A. WHALL, Reading, Mass., assignor of one-half to Metropolitan Air Goods Company, Reading, Mass., a Corporation of Massachusetts. Filed July 22, 1905. Serial No. 270,833.



Claim.—An air-holding bag adapted for use as a pneumatic mattress or cushion, and having stay-strips which extend between the side pieces of the bag and are united to said side pieces by rows of stitches passing through the side pieces, and air-proof reinforcing-strips applied to the outer surfaces of the side pieces and covering the stitches, said strips being united to the side pieces by vulcanization and not only preventing the escape of air around the stitches, but also the rupturing of the side pieces along the rows of stitches.

818,322. CONDENSER. CLIFTON H. WHEELER, Philadelphia, Pa., assignor, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 11, 1906. Serial No. 295,549.



Claim.—1. In a condenser, an end comprising a water-box divided into compartments of varying sizes, a nozzle on the said water-box, a bonnet secured to the said water-box and a throat on the said bonnet opening interiorly at its opposite ends with the same in communication respectively with the said nozzle and that compartment of the water-box most remote from the nozzle.

2. In a condenser, an end comprising a water-box, a partition-wall dividing the interior of the water-box into two compartments of different sizes, a nozzle on the said water-box, a bonnet secured to the said water-box and a throat on the said bonnet opening interiorly at its opposite ends with the same in communication respectively with the said nozzle and the smaller of the said compartments in the water-box.

3. In a condenser, an end comprising a water-box, a partition-wall dividing the interior of the water-box into two compartments of different sizes, a nozzle on the said water-box, a bonnet secured to the said water-box and a throat extending centrally and exteriorly across the said bonnet and providing a passage-way opening interiorly at its opposite ends with the same in communication respec-

tively with the said nozzle and the smaller of the said compartments in the water-box.

4. A condenser comprising a body, tube-plates, tubes extending through the said condenser-body and secured at their opposite ends in the said tube-plates, ends for the said condenser-body alike and secured to the respective ends in diametrically opposite positions, each condenser end comprising a water-box divided into compartments of varying sizes, a nozzle secured to the water-box, a bonnet also secured to the water-box and a throat on the said water-box providing a passage-way opening interiorly at its opposite ends with the same in communication respectively with the said nozzle and the smaller of the said compartments in the water-box, so that in the circulation of water through the apparatus, the condenser-tubes are flooded at all times.

5. A condenser comprising a body, tube-plates, tubes extending through the said condenser-body and secured at their opposite ends in the said tube-plates, ends for the said condenser-body alike and secured to the respective ends in diametrically opposite positions, a water-box, a partition-wall extending transversely across the interior of the said water-box and dividing the same into two compartments of different sizes, a nozzle on the said water-box, a throat on the said nozzle, providing a passage-way opening interiorly at its opposite ends with the same in communication respectively with the said nozzle and the smaller of the said compartments in the water-box.

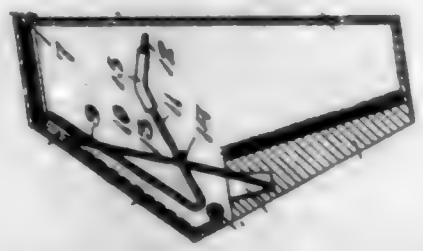
6. In a condenser, a water-box end divided by a partition into compartments of varying sizes and a nozzle having a side aperture, a bonnet secured to said water-box and a throat forming a part thereof and spanning one of said compartments and interiorly communicating at its opposite ends with the side aperture of the nozzle and the compartment of the water-box most remote from the nozzle.

818,323. **HAT-PIN.** THOMAS E. WHITE, Okisko, N. C. Filed Nov. 12, 1904. Serial No. 232,447. (Model.)



Claim.—In a device of the class described, a pin, a head arranged thereon, the material of the pin being returned upon itself through the head and bent to form guards disposed at opposite sides of the latter, arms projecting laterally from the pin at a point in advance of the head and terminating in eyes, said arms being produced by bending the material into shape after formation of the guards, and a hat-engaging member formed of a single piece of material and comprising a shank pivoted in the eyes and a pair of engaging hooks having sharpened terminals.

818,324. **MATCH-BOX.** BOSQUE M. WHITEKER, Pinkerton, Tex. Filed May 26, 1905. Serial No. 262,383.



Claim.—1. A match-box provided with a movable cover, a stop or abutment within the box, a spring-arm carried by the cover, said arm being movable with the cover and adapted to act in conjunction with the stop for moving the cover to open position, and means provided on the arm for engaging a match for delivery from the box when the cover is opened.

2. A match-box having a movable cover, a spring acting thereon, a match engaging and delivering member carried by the cover, and a stop or abutment with which said member contacts when the cover is in closed position, said member being composed of spring material and serving to move the cover to open position.

818,325. **EYEGLASSES.** GEORGE L. WILLIAMS, Chicago, Ill. Filed Apr. 18, 1904. Renewed Mar. 6, 1906. Serial No. 305,393.

Claim.—1. In a lens-mounting, the combination with an open box, a spring and a guard, the spring and guard having perforated overlapping ends occupying the box, of a locking-plate having a perforated portion of equal thickness throughout interposed between the overlapping ends of the spring and guard and having flanges engaging their respective extremities, and a screw passing through the perforations and into the box, the head of the screw having engagement with one of said overlapping portions, whereby they are clamped against the bottom of the box, substantially as described.



2. In a lens-mounting, the combination with an open box, a spring and a guard, the spring and guard having perforated overlapping ends occupying the box, of a locking-plate having a perforated portion of equal thickness throughout interposed between the overlapping ends of the spring and guard and having flanges engaging their respective extremities, and a screw passing through the perforations and into the box, the head of the screw having engagement with one of said overlapping portions substantially as described.

3. In a lens-mounting, the combination with an open box, a spring and a guard, the spring and guard having perforated overlapping ends occupying the box, of a locking-plate having a perforated portion of equal thickness throughout interposed between the overlapping ends of the spring and guard, flanges engaging their respective extremities, and laterally-extending ears engaging the side walls of the box, at both the upper and lower sides thereof, and a screw passing through the perforations into the box, substantially as described.

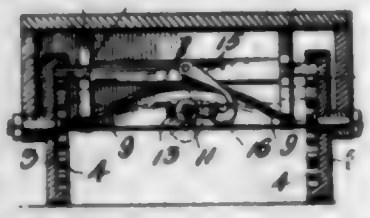
4. In a lens-mounting, the combination with the box, the spring and the guard, the spring and guard having overlapping ends occupying the box, of a locking-plate having a portion of equal thickness throughout interposed between the overlapping ends of the spring and guard, flanges engaging their respective extremities, and ears on the flanges engaging the side walls of the box at both the upper and lower sides thereof, substantially as described.

5. In a lens-mounting, the combination with an open box, a spring and a guard, the spring and guard having perforated overlapping ends occupying the box and terminating, at their extremities, flush with the side walls of the box at both the upper and lower sides thereof of a locking-plate having a perforated portion of equal thickness throughout interposed between the overlapping ends of the spring and guard, and flanges engaging their respective extremities and also engaging the box, and a screw passing through the perforations and into the box, substantially as described.

6. A locking-plate for lens-mountings having a perforated portion of equal thickness throughout adapted to occupy the box and to be interposed between the overlapping portions of the spring and guard, and flanges at the extremities of said perforated portion, said flanges being presented in opposite directions, substantially as described.

7. A locking-plate for lens-mountings having a perforated portion of equal thickness throughout adapted to occupy the box and to be interposed between overlapping portions of the spring and guard and flanges proceeding in opposite directions from the extremities of said perforated portion said flanges having ears adapted to engage the side walls of the box at both the upper and lower sides thereof, substantially as described.

818,326. **TRUCK.** GEORGE M. WILLIAMS, Fresno, Cal. Filed Mar. 13, 1906. Serial No. 305,926.

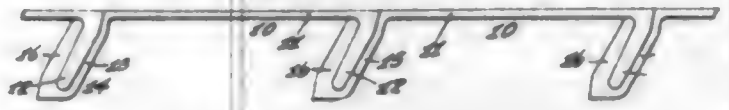


Claim.—1. A truck having its wheels each provided with an annular series of sockets, a sliding locking bar to coact with said sockets, a rocking bar or rod extending transversely to said locking-bar, a crank-arm upon said rocking bar, a curved link connecting said crank-arm and said locking-bar, a spring for holding said locking-

bar either in or out of engagement with said sockets according to the position of said curved link and an operating crank-handle upon said rocking rod.

2. A truck of the character described, comprising a suitable body, supporting-wheels therefor, each provided with an annular series of sockets adjacent to its periphery, slotted guide-brackets upon said body, a transversely-extending locking-bar slidably mounted in said brackets and adapted to engage said sockets, a spring for retaining said bar normally in engagement with said sockets, a bearing upon said body, a longitudinally-extending rocking rod mounted in said bearing and extending through the ends of said body, crank-handles upon the ends of said rocking rod, a crank-arm upon said rocking rod and a curved link connecting said crank-arm and said locking-bar.

818,327. **METAL SHEET-PILING.** JOHN R. WILLIAMS, East Orange, N. J. Filed Jan. 15, 1906. Serial No. 296,015.



Claim.—1. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same; substantially as set forth.

2. A metal sheet-piling composed of interlocked sections each comprising integrally a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, said flange being inclined inwardly from its edge of the section and said loop being correspondingly inclined outwardly from its edge of the section; substantially as set forth.

3. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same; substantially as set forth.

4. A metal sheet-piling composed of interlocked sections each comprising integrally a web, a flange projected from the side of one edge thereof, and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, said flange being inclined inwardly from its edge of the section and said loop being correspondingly inclined outwardly from its edge of the section; substantially as set forth.

5. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, and said flange and the outer member of said loop of each section being thicker than the web of the section; substantially as set forth.

6. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal comprising a web, a flange projected from the side of one edge thereof and a loop projected from the same side of the other edge thereof, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flanges and loops on said sections being of a formation adapting them to interlock one upon the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, and said flange and the outer member of said loop of each section being thicker than the web of the section; substantially as set forth.

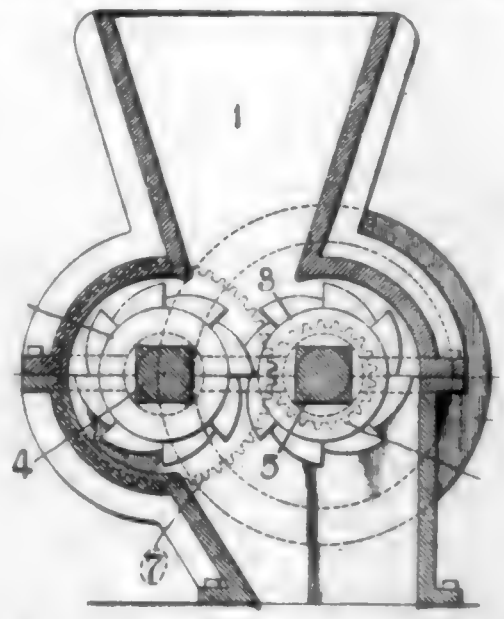
7. A metal sheet-piling composed of interlocking sections each comprising integrally a web, a flange projected from the side of one edge thereof, and a loop projected from the side of the other edge thereof, said loop being closed at its outer end and open at its inner end, and the outer portions of said flange and loop being set at an angle to the inner portions thereof; substantially as set forth.

8. A metal sheet-piling composed of interlocked sections each being in one integral piece of metal and said sections respectively having at their adjoining edges a loop and a flange projected from the side of the edge of the sections and adapted to interlock one within the other, whereby they resist any pressure applied against the face of the sections tending to separate the same, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web; substantially as set forth.

9. A metal sheet-piling composed of integral interlocking beam-sections at whose adjoining edges said sections are respectively formed with a loop and a flange projected from the side of the sections and adapted to engage each other, said loop being inclined outwardly and closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and said flange being correspondingly inclined inwardly; substantially as set forth.

10. A metal sheet-piling composed of integral interlocking beam-sections at whose adjoining edges said sections are respectively formed with a loop and a flange projected from the side of the sections and adapted to engage each other, said loop being closed at its outer end and open at its inner end adjacent to the adjoining edge of the web, and the outer portions of said loop and flange being set at an angle to the inner portions thereof; substantially as set forth.

818,328. **PRELIMINARY BREAKER FOR CRUSHERS AND PULVERIZERS.** MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed July 31, 1905. Serial No. 271,982.



Claim.—In an apparatus of the character described, the combination with a casing, the upper portion of which forms a hopper, two shafts having squared portions mounted in said casing below the hopper, cylinder-sections arranged on the squared portions of said shafts in intimate engagement with each other and provided with V-shaped teeth, the cylinder-sections of one shaft being staggered with relation to each other, whereby the paths of travel of said teeth intersect each other on the respective cylinders, a pulley on one of said shafts, a pinion on the other of said shafts meshing with said gear whereby said shafts rotate at unequal speeds, and a balance-wheel on the shaft carrying the pinion; substantially as described.

818,329. **DISPLAY-RACK.** ASA C. WOOD, Waterloo, Iowa. Filed Apr. 13, 1905. Serial No. 255,339.

Claim.—1. A display-rack, comprising a standard, upwardly-extending pivoted members carried by said standard, hat-supporting means carried by the upper ends of said members, a sleeve vertically movable on said standard, links connecting said sleeve and the upwardly-extending members, and a pivoted member carried by the standard and adapted to engage the vertically-movable sleeve for holding the same.

2. A display-rack, comprising a standard, an upwardly-extending member pivotally carried by the standard, upwardly-extending ribs pivotally carried by the upper end of said member, a sleeve

vertically movable upon said member, links pivotally connected to the sleeve and having their upper ends pivotally connected to the ribs, a pivoted catch carried by the member and adapted to engage the sleeve and hold it in its adjusted position, whereby the sleeve is vertically adjustable.



3. A display-rack, comprising a standard, upwardly-extending ribs pivotally carried by the standard, a sleeve loosely mounted upon said standard, links connecting said sleeve and ribs, and a tooth-bar carried by the standard for preventing the sleeve from being drawn upward upon the standard.

4. A display-rack, comprising a standard, upwardly-extending ribs pivotally carried by the standard, a sleeve vertically adjustable on the standard, links connecting said sleeve and the ribs, a tooth-bar pivoted to the upper end of the standard, and engaging a pin carried by the vertically-movable sleeve, and preventing the upward movement of the sleeve caused by the hat through the links.

5. A display-rack, comprising a standard, upwardly-extending ribs pivotally carried by the standard, a sleeve loosely mounted upon said standard, links connecting the sleeve and ribs, and a tooth-bar pivotally carried by the standard and engaging the sleeve and preventing the same from being drawn upward upon the standard.

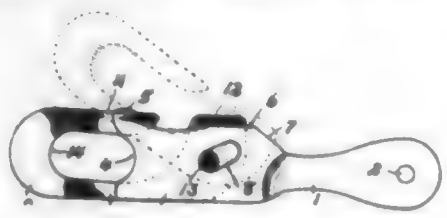
6. A display-rack, comprising a base, an upwardly-extending tube carried by the base, a tube vertically movable within the tube carried by the base, a hat-supporting member having its lower end provided with a ball within the upper end of the vertically-movable tube, a rod passing upward through the tube, a rubber block carried by the rod for engaging the ball carried by the hat-supporting member, a washer carried by the lower end of the vertically-adjustable tube, and a screw passing through said washer and adapted to expand the washer against the inside of the stationary tube and hold the vertically-movable tube in its adjusted position, and said screw adapted to engage the rod within the vertical tube and hold the rubber block in engagement with the ball.

7. A display-rack, comprising a base, an upwardly-extending tube carried by the base, a tube vertically movable within the tube carried by the base, a hat-supporting member having its lower end provided with a ball within the upper end of the vertically-movable tube, upwardly-extending members pivotally carried by the hat-supporting member, a sleeve loosely mounted upon said standard, links connected to the sleeve and ribs, a tooth-bar pivotally carried by the standard and engaging the sleeve and preventing the same from being drawn upward upon the standard, a rod passing upward through the vertically-movable tube, a rubber block carried by the rod for engaging the ball carried by the hat-supporting member, a washer carried by the lower end of said vertically-movable tube, and a screw passing through said washer and adapted to expand the washer against the inside of the upwardly-extending tube and hold the vertically-movable tube in its adjusted position, said screw adapted to engage the rod within the vertically-movable tube and hold the rubber block in engagement with the ball.

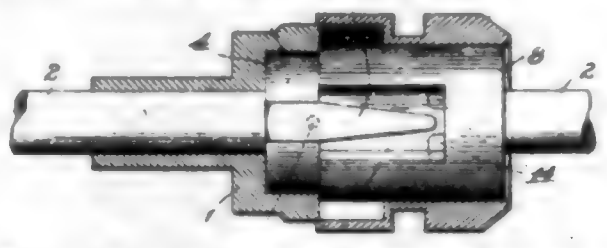
8. A display-rack, comprising a standard, upwardly-extending pivoted members carried by said standard, hat-supporting means carried by the upper ends of said members, a sleeve vertically adjustable on said standard, links connecting said sleeve and the upwardly-extending members, and a pivoted member carried by the standard and having teeth on its lower face to engage the sleeve and hold it in its adjusted position.

818,330. **HARNESS-SNAP.** MARCUS D. WOOD, Centralia, Wash. Filed Jan. 3, 1905. Serial No. 239,537.

Claim.—A harness-snap consisting of a shackle whose end is adapted for attachment to the harness, and whose other end has a tongue having an oblique guiding-slot near its inner end and provided upon its outer end with an interlocking lug, and a hook mounted in said oblique slot and having a longitudinal vertical slot adapted to receive and form a locking engagement with said lug.



818,331. **FRICTION-CLUTCH.** EDWIN E. ANDREWS, Akron, Ohio, assignor to Automatic Clutch Company, Akron, Ohio, a Corporation of Ohio. Filed Apr. 24, 1905. Serial No. 257,235.



Claim.—1. In a friction-clutch, the combination with the two members thereof, and a gripping member loosely disposed in operative relation thereto, of means independent of said clutch members for forcing said gripping member into gripping action, and means for causing said gripping member to automatically increase the gripping action in proportion to any increase in the load.

2. In a friction-clutch, the combination with the two members thereof, and an expansible member loosely disposed in operative relation thereto, of means lying outside of the plane of the diameter of said expansible member for forcing said expansible member into gripping action against the load on the clutch, and for causing said expansible member to automatically increase the gripping action in proportion to any increase in said load.

3. In a friction-clutch, the combination with the two members thereof, and an expansible member loosely disposed in operative relation thereto, of a wedge or lever for expanding said expansible member into gripping action, and a movable part independent of said clutch members adapted to initially tilt said wedge or lever to expand said expansible member against the load on the clutch, and to further tilt said wedge or lever automatically through the expansible member as the load on the clutch is increased.

4. In a friction-clutch, the combination with the two members thereof, and an expansible member loosely disposed in operative relation thereto, of a wedge or lever for expanding said expansible member into gripping action, and means for operating said wedge or lever to shift the fulcrum-point of said wedge or lever and the point of application of the power and to change the character of the power, so that the expansible member is initially expanded against the load of one of the members, but is further automatically expanded by any increase in the load imposed on the clutch.

5. In a friction-clutch, the combination with the two members thereof, and a split ring loosely disposed in operative relation thereto, of a wedge or lever engaging between the ends of said split ring for expanding the latter into gripping action, and a movable part independent of said clutch members engaging the free end of said wedge or lever to tilt the same and thus expand said split ring against the load and by its further movement after the split ring has been expanded sufficiently to clutch the members becoming the fulcrum of said wedge or lever, whereby any increase in the load imposed on the clutch will cause said split ring to automatically increase the tilt of said wedge or lever and thereby further expand said split ring into firmer gripping action.

6. In a friction-clutch, the combination with the two members thereof, and a split ring loosely disposed in operative relation thereto, of a wedge or lever engaging between the ends of said split ring for expanding the latter into gripping action and having its free end tapered, a sleeve shiftable on one of said members toward and from the other member, and a projection carried by said sleeve for engaging, when shifted, the tapered end of said wedge or lever to tilt the latter and thus expand said split ring into gripping action against the load imposed on the clutch, and in its further movement becoming the fulcrum of said wedge or lever whereby any increase in the load will cause said split ring to automatically increase the tilt of said wedge or lever and thereby further expand said split ring into firmer gripping action.

7. In a friction-clutch, the combination with the two members thereof, and a split ring loosely disposed in operative relation thereto, of a wedge or lever having one end engaging between the ends of said split ring for expanding the latter into gripping action and having its other end tapered and freely disposed in one of said members, a wall in said member immediately adjacent to said split ring forming the initial fulcrum-point for said wedge or lever, a sleeve shiftable on said member toward and from the other member, and a projection carried by said sleeve for engaging, when shifted, between the fulcrum-wall and the tapered end of said wedge or lever to tilt the latter and thus expand said split ring into gripping action against the load imposed on the clutch, and for forcing, in its further movement, said wedge or lever away from said wall and thus becoming the fulcrum of said wedge or lever whereby any increase in the load will cause said split ring to automatically increase the tilt of said wedge or lever and thereby further expand said split ring into firmer gripping action.

8. In a friction-clutch, the combination with the two members thereof, of an expansible member loosely disposed in operative relation thereto, a wedge or lever for expanding said expansible member into gripping action, means for gradually shifting the points of contact between the two as the gripping action is applied to shorten the leverage, and means for operating said wedge or lever.

9. In a friction-clutch, the combination with the two members thereof, and an expansible member loosely disposed in operative relation thereto, of a wedge or lever for expanding said expansible member into gripping action, the points of contact between said expansible member and said wedge or lever being formed on a curve and means for operating said wedge or lever.

10. In a friction-clutch, the combination with the two members thereof, and an expansible member loosely disposed in operative relation thereto, of a wedge or lever for expanding said expansible member into gripping action and having its contacting surfaces with said expansible member formed on a curve and means for operating said wedge or lever.

11. In a friction-clutch, the combination with the two members thereof, a split ring loosely disposed in operative relation thereto, and means for operating said split ring of a split band encircling said split ring and forming an intermediate surface between said split ring and its gripping-surface, said band having its ends inturned and adapted to engage said split ring whereby the movement imparted to said band when forced by the expansion of said split ring into gripping action will be imparted to said split ring.

12. In a friction-clutch, the combination with the two members thereof, of a split ring disposed in operative relation thereto, means for automatically and permanently expanding said split ring to compensate for wear thereon, and independent means for expanding said split ring into gripping action.

13. In a friction-clutch, the combination with the two members thereof, of a split ring disposed in operative relation thereto and formed in a plurality of sections, means for automatically and permanently separating the sections of said split ring to compensate for wear thereon, and independent means for expanding said split ring into gripping action.

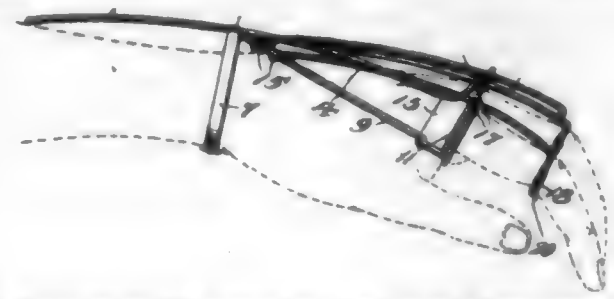
14. In a friction-clutch, the combination with the two members thereof, of a split ring disposed in operative relation thereto and formed in sections, a web disposed between each of said sections to automatically and permanently separate said sections to compensate for wear thereon, and independent means for expanding said split ring into gripping action.

15. In a friction-clutch, the combination with the two members thereof, of a split ring disposed in operative relation thereto and formed in sections of which meeting faces are formed at an angle to each other, a wedge disposed between each of said sections and contacting with said meeting faces, means for exerting a constant pressure on said wedge to force the same to automatically separate said sections to compensate for wear thereon, and independent means for expanding said split ring into gripping action.

16. In a friction-clutch, the combination with the two members thereof, of a split ring disposed in operative relation thereto and formed in sections of which certain meeting faces are formed at an angle to each other, a wedge disposed between each of said sections and contacting with said meeting faces, a spring for exerting a constant pressure on said wedge to force the same to automatically separate said sections to compensate for wear thereon, and independent means for expanding said split ring into gripping action.

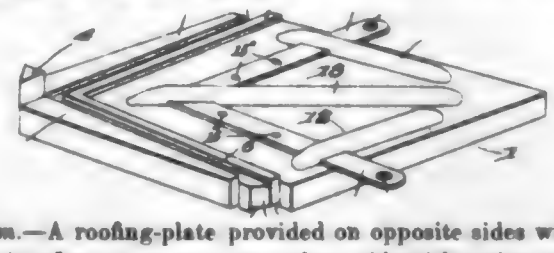
818,332. **FINGER-EXERCISER.** ULYSSES G. ANSON, Park City, Utah. Filed June 27, 1905. Serial No. 267,256.

Claim.—1. In a device of the class described, a main frame, an attaching device carried thereby, an auxiliary frame provided with a guide portion and having side portions, a plurality of spring-finger members connected with the side portions of the auxiliary frame and slidably engaged with the guide portion, said members being adapted for free independent movement in a direction transversely of the frame, and means for engaging said members with the fingers of an operator.



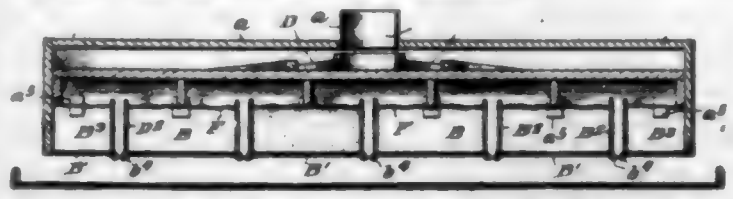
2. In a device of the class described, a main frame composed of spring material and arched in the direction of its length, attaching means disposed intermediate the ends of said frame, an auxiliary frame including an elevated guide portion, a pliable member extending transversely of the auxiliary frame adjacent the guide portion, and a plurality of spring-finger members engaged with the auxiliary frame and slidably engaging the guide portion, said members being adapted for independent movement in a direction transversely of the frame, and means for engaging said members with the fingers of an operator.

818,333. **ROOFING-PLATE.** HENRY BADEN, Hamler, Ohio. Filed May 26, 1905. Serial No. 263,473.



Claim.—A roofing-plate provided on opposite sides with marginal locking-flanges, on one corner of one side with a triangular sealing-lug, on its under side with integral reinforces, and with metallic attaching-strips interposed between the reinforces and the plate and having their terminals projected beyond the edges thereof.

818,334. **ORE-CONCENTRATOR.** BRIG BALLANTYNE, Sumpter, Oreg. Filed May 17, 1904. Serial No. 208,457.



Claim.—1. An ore-concentrating box comprising a box or casing having a series of individual pulp-pans therein arranged side by side, each pan having a downwardly and forwardly inclined bottom with an outlet at its forward end for the discharge of the concentrates, the pans having their side walls arranged in spaced relation to provide intervening side discharges for the tailings.

2. An ore-concentrating box open at its base and provided with discharge-apertures at the lower forward end thereof, a pulp-pan having a forwardly and downwardly inclined bottom closing the open base of the box, and sides extending upwardly from said bottom, said sides diminishing in depth from the forward ends thereof and having their upper edges arranged in a horizontal plane, the forward end of the bottom of the pan being extended to provide a shelf having lateral or side discharges and a forward transverse flange.

3. An ore-concentrating box having a pulp-pan closing the bottom thereof, said box being provided with an inlet at its upper rear end and an outlet at its lower front end, and said pan having a forwardly and downwardly inclined bottom provided with a shelf extending beyond said outlet and having side discharge portions, a partition between said inlet and pulp-pan, said partition inclining rearwardly and downwardly from a point below the inlet to a point at the rear of the box above the rear end of the pan, and a conductor at the rear end of the partition leading down into the rear end of the pan for conducting thereto the pulp flowing from the inlet.

4. An ore-concentrator comprising a box or casing having a se-

ries of pulp-pans arranged side by side, and means for distributing the flowing pulp to the pans, said pans being provided at their forward ends with discharges for concentrates and at their sides with discharges for the tailings, the pans being spaced at their sides to form passages for the outward flow of the discharged tailings.

5. An ore-concentrator comprising a casing containing a pulp-pan closing the bottom thereof, said casing having an outlet for the concentrates at its forward end and the pan and bottom wall inclining downwardly toward said outlet, said pan being formed with side walls arranged in a horizontal plane and with a shelf extending from the bottom thereof beyond said outlet and provided with side discharges, an apron disposed longitudinally in the top portion of the pan and adapted to lie upon the surface of the contents thereof, and a pulp-conductor supported by the casing and having a discharge-terminal projecting into the upper rear portion of the pan and adapted to discharge the pulp thereinto below the apron and the surface of the contents of the pan.

6. An ore concentrator comprising a box or casing provided with an outlet at its lower forward end and an inlet at its upper rear end, a pulp-pan closing the bottom of the casing and having a forwardly and downwardly inclined bottom, and upwardly-extending sides having their upper edges arranged in a horizontal plane, the said bottom being provided with an extension beyond said outlet forming a shelf having discharge-outlets at its opposite ends, a partition extending on a downward incline from the front to the rear of the casing above the pan and separating the same from the inlet, said partition being provided at its lower end with a discharge-opening, and a conductor leading from said partition into the upper rear portion of the pan.

7. An ore-concentrator comprising a casing provided with an inlet at the top thereof and a series of outlets in its front wall, a series of pulp-pans disposed within said casing and forming closures for the bottom thereof, said pans being arranged in spaced parallel relation, and each pan having a bottom wall inclining downwardly and forwardly to said outlet, a shelf projecting forwardly from the bottom and provided with side discharges, sundry of the pans also having side walls having their edges arranged in a horizontal plane, the contiguous side walls of the series of pans forming intervening discharge-passages, the construction and arrangement of the outlet, the bottom wall and side walls of each pan being such as to cause the concentrates to be discharged through the outlet onto the shelf and the tailings and pulp-water to be retarded and caused to flow over the sides of the pan and down through the intervening passages, aprons supported within the casing and adapted to rest upon the surface of the contents of the pan, a distributing chamber communicating with the inlet of the casing, channels extending from said distributing-chamber to a point above the upper rear ends of the pans, and discharge-passages leading from said channels down into the upper rear ends of the pans to discharge the pulp into the same above the surface of the contents thereof and below the level of the aprons.

8. An ore-concentrator comprising a box or casing containing a pulp-pan, said pan closing the base of the casing and comprising a forwardly and downwardly extending bottom terminating in a shelf at the lower front end thereof, sides extending upwardly from said bottom, said sides being highest at the front and decreasing in height rearwardly therefrom and having their upper edges disposed in a horizontal plane, and projections extending above said sides at the forward ends thereof to act as guards or retainers to facilitate the flow of the tailings over the sides of the pans.

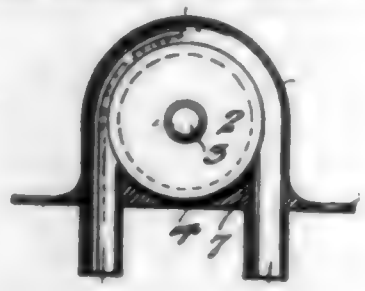
9. In an ore-concentrator, a pulp-pan provided with a front discharge for the concentrates, and means for causing the tailings to flow over the sides thereof, and a flexible cover extending longitudinally at the top of the pan and centrally supported, the edges of said cover being free to yield to permit outward flow of the tailings.

10. A distributing-box having an inlet at its upper front end and containing a rearwardly and downwardly inclined dividing-partition and openings at its rear lower end, a pulp-pan below said inclined partition, the bottom of said pan inclining downwardly and forwardly, said pan having front and lateral discharges for the separated material, and a flexible cover for the pan supported from the aforesaid partition and extending horizontally over the pan.

818,335. SASH-PULLEY. MARION H. BALLEW and REUBEN A. MEAD, Los Angeles, Cal., assignors of one-third to Robert R. Dixon, Los Angeles, Cal. Filed Oct. 24, 1905. Serial No. 284,258.

Claim.—1. In a device of the character set forth, a casing provided with tubular projecting guideways, a rope-guard and a pulley journaled in the sides of the casing, substantially as set forth.

2. In a device of the character set forth, a casing provided with tubular projecting guideways, rope-guards, flanges and a pulley journaled in the sides of the casing, substantially as set forth.



818,336. BLUE DYE AND PROCESS OF MAKING SAME. OSCAR BALLY, Mannheim, and HUGO WOLFF, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Oct. 11, 1905. Serial No. 282,319.

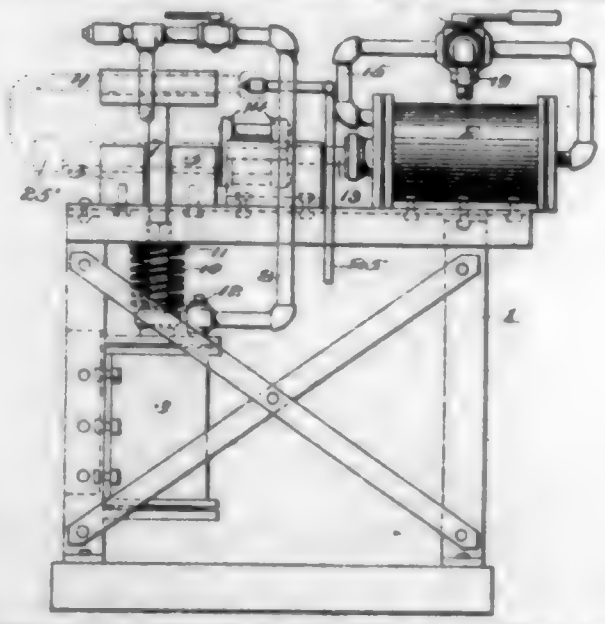
Claim.—1. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together a halogen anthracene body and glycerin.

2. The process for the production of anthracene coloring-matter by treating chlor-benzanthrone with caustic alkali.

3. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone obtainable from a halogen anthracene body, which coloring-matters dissolve in concentrated sulfuric acid, yielding violet to brown solutions, and which dissolve in alkaline hydrosulfite yielding blue to bluish-red vats which dye vegetable fiber substantively giving violet to blue shades.

4. As a new article of manufacture the anthracene coloring-matter which can be obtained by treating chlor-benzanthrone with caustic alkali, which coloring-matter dissolves in concentrated sulfuric acid yielding a violet-brown solution, and which dissolves in alkaline hydrosulfite yielding a bluish-red vat which dyes vegetable fiber substantively yielding blue shades.

818,337. FLUE SWAGING AND PLUGGING MACHINE. WILLIAM R. BARNES, Atlanta, Ga. Filed May 10, 1905. Serial No. 259,834.



Claim.—1. A tube-swaging machine, comprising gripping means for holding tubes or flues, a reciprocating swaging-head having spreading plugs and collars, and power-cylinder for forcing the plugs into the ends of the tubes and the collars over them and for withdrawing the same from the tubes.

2. A swaging-machine, comprising tube or flue gripping means, a reciprocating swaging-head arranged opposite the ends of the tubes and having apertures for receiving the ends of the tubes, and plugs carried by the said head opposite said apertures, and a power-cylinder for reciprocating the said swaging-head.

3. A flue swaging and plugging machine, comprising a frame, a gripping means mounted thereon, a reciprocating swaging-head formed with inner and outer walls, the outer wall having apertures formed therein, ferrules fitting in said apertures and also made of a size to fit upon the said tubes, and plugs or swages carried by the inner wall of the head opposite said apertures, a piston carrying the said

size to fit upon the said tubes, and plugs or swages carried by the inner wall of the head opposite said apertures, a piston carrying the said swaging-head, and extending into a power-cylinder, and means for introducing pressure into either end of said power-cylinder for reciprocating the swaging-head.

4. A swaging-machine, comprising tube-gripping jaws, a reciprocating swaging-head having apertures formed therein, shaping collars or ferrules removably mounted in the said apertures and cooperating swaging-plugs carried by the said swaging-head.

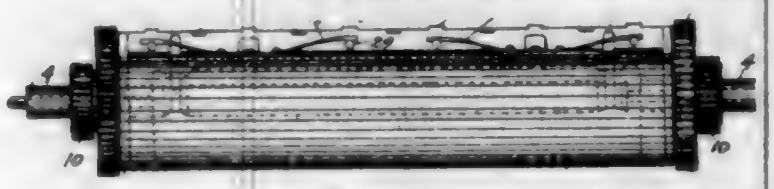
5. A swaging-machine, comprising means for holding a tube, a swaging-head movable with relation thereto, shaping collars or ferrules movably mounted in the swaging-head, plugs coöperating with the collars for swaging or shaping the ends of tubes, and a power-driven piston carrying the said swaging-head.

6. A swaging apparatus, comprising a tube-gripping device, a reciprocating collar-carrying head mounted opposite the gripping device and provided with apertures, flanged collars or ferrules fitting in said apertures, swaging-plugs also carried by said swaging-head, and means for reciprocating the swaging-head for causing the plugs and collars to act upon tubes held by the gripping means.

7. A swaging-machine for flues or tubes comprising gripping means for holding the ends of the tubes and a swaging-head carrying collars mounted opposite the ends of the tubes, and power mechanism for forcing the swaging-head and collars over and in the ends of the tubes to swage the same.

8. A swaging-machine comprising tube or flue gripping means, a reciprocating swaging-head arranged opposite the ends of the tubes, a power-cylinder for reciprocating the said swaging-head and means for introducing water under pressure into the tubes for testing the same while the said swaging-head is in one end of said tubes.

818,338. **GRIPPER FOR PRINTING-PRESSES AND MEANS FOR OPERATING SAME.** MORRISON J. BARNETT, San Francisco, Cal., assignor, by mesne assignments, to Whitson Autopress Company, a Corporation of New York. Filed May 26, 1904. Serial No. 209,870.



Claim.—1. In grippers for printing-presses, the combination of a cylinder, a longitudinally-movable central shaft therein having cam-shaped annular depressions, a gripper having posts resting in said depressions, said posts sliding through the wall of the cylinder, and means set in operation in the movement of the cylinder for longitudinally moving said shaft to move said posts outward from said depressions, substantially as described.

2. In grippers for printing-presses, the combination of a cylinder, a longitudinally-movable central shaft therein having cam-shaped portions, a gripper having posts formed integral therewith engaged by said portions, and means actuated in the movement of the cylinder for longitudinally moving said shaft, substantially as described.

3. In grippers for printing-presses, the combination of a cylinder, a longitudinally-movable central shaft therein, a gripper having posts integral therewith and moved radially by said shaft, and means actuated in the movement of said cylinder for so operating said shaft to move the posts radially, substantially as described.

4. In grippers for printing-presses, the combination of a cylinder, a longitudinally-movable central shaft therein, a gripper-plate having gripper-fingers formed integral therewith and moved radially by the movement of said shaft, and means actuated in the movement of the cylinder for so operating said shaft to move the gripper-fingers radially, substantially as described.

5. In grippers for printing-presses, the combination of a cylinder having a recessed portion, a gripper-plate moving against a wall of said recessed portion, and having projections, and bow-springs secured to said recessed portion and engaging projections on the gripper-plate to press the gripper-plate radially inward, substantially as described.

6. In grippers for printing-presses, the combination of a cylinder having a recessed portion, a gripper-plate moving against a wall of said recessed portion and having gripper-fingers and projections, posts formed integral therewith and sliding through a second wall of said recessed portion, and bow-springs secured to said latter wall and engaging projections on the gripper-plate to press the same radially inward, substantially as described.

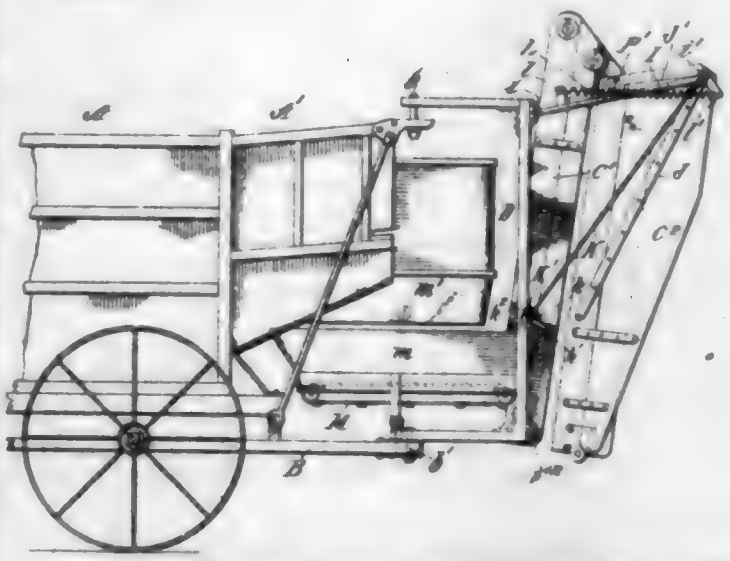
7. In grippers for printing-presses, the combination of a cylinder having a recessed portion, a gripper-plate moving against a wall of said recessed portion and having gripper-fingers and projections, posts formed integral therewith and sliding through a second wall of said recessed portion, bow-springs secured to said latter wall and engaging projections on the gripper-plate to press the same radially inward, and adjusting-screws for adjusting the tension of said bow-springs, substantially as described.

8. In grippers for printing-presses, the combination of a spring, a cylinder having a recessed portion, a gripper-plate moving radially against one wall of said recessed portion, and bow-springs having flexures both to press the gripper-plate against said wall and also to press it normally inward or radially, substantially as described.

9. In grippers for printing-presses, the combination of a cylinder, slideways therefor, a gripper, a longitudinally-movable central shaft for operating said gripper, a cam for operating said shaft, and a frame for supporting said cam secured partly to the frame of the printing-press and partly to the slideway of the cylinder, substantially as described.

10. In grippers for printing-presses, the combination of a cylinder, slideways therefor, a gripper, a longitudinally-movable central shaft in the cylinder, operating said gripper by its longitudinal movement, a frame secured partly to the frame of the press and partly to a slideway, a cam in said frame and means for adjusting said cam, substantially as described.

818,339. **STRAW-STACKER.** JOHN B. BARTHOLOMEW, Peoria, Ill., assignor to The Sattley Stacker Company, Indianapolis, Ind., a Corporation of Maine. Original application filed May 26, 1900, Serial No. 18,096. Divided and this application filed Feb. 15, 1906. Serial No. 301,265.



Claim.—1. In a straw-stacker, the combination with a suitable support, of an inner stacker-section pivoted thereto on a horizontal axis, an outer stacker-section pivotally connected with the inner section near the upper end of the latter and arranged to fold downward toward the rear of the inner section, a draft device leading from the outer section to the support and controlling the movements of the former, and means connecting between the said support and the outer section, whereby the weight of the inner section is caused to assist in moving the outer section, substantially as set forth.

2. In a straw-stacker, the combination with a suitable support, of a folding stacker-frame comprising an inner section pivoted to the support, and an outer section pivoted to the outer end of the inner section and arranged to fold downward against the rear side of the former, draft devices connecting the inner section and the support and arranged to control the movements of the latter, and rigid bars or links constituting pivotal connections between the outer section and the support, the connections between the bars and the outer section being at a distance from the pivotal connection of the two stacker-sections and arranged to cause the lifting of the inner section as the outer section is folded downward, substantially as set forth.

3. In a straw-stacker, the combination of a horizontal swinging frame D arranged to be supported at the rear of a threshing-machine, the inner, upward-extending stacker-section pivotally connected at its lower end with the said frame, an outer stacker-section pivotally connected with the outer upper end of the inner section and arranged to fold downward toward the rear of the inner section, and means connecting the outer section with the frame arranged to draw the inner section toward the frame when the outer section is folded down, substantially as set forth.

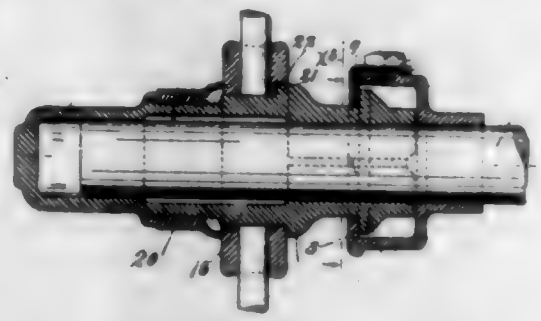
4. In a straw-stacker, the combination with a suitable support, of a folding stacker-frame comprising an inner section pivoted to the support, an outer section pivoted to the outer end of the inner section and arranged to fold downward toward the rear thereof, and rigid bars or links pivotally connecting the outer section with the said support, the connection of the bars or links with the outer section being distant from the pivotal connection of the two sections and being arranged to occupy a position above the said pivotal connection when the stacker is in working positions and to move downward and toward the said pivotal connection as the outer section is moved down and toward the rear of the inner section, substantially as set forth.

5. In a straw-stacker, the combination of a suitable support, an inner section pivoted to the support, an outer section pivoted to the outer end of the inner section and arranged to fold downward toward the rear of such section, rigid arms or links constituting pivotal connections between the outer section and the inner section, the connections between the bars or links and the outer section being at a distance from the pivotal connection of the two sections, whereby the weight of the inner section assists in moving the outer section, and a draft device leading from the outer section to the said support and connecting them and arranged to cross the axis of the outer section from the front to the rear as the outer section turns downward, substantially as set forth.

6. In a straw-stacker, the combination with a suitable support, of an inner stacker-section pivotally connected thereto, an outer stacker-section pivotally connected to the inner section and arranged to be folded relative thereto, means connecting the outer section with the said support whereby the two stacker-sections in their relative vertical movements tend to balance each other, and a spring arranged to further assist in counterbalancing the said stacker-sections, substantially as set forth.

7. In a straw-stacker, the combination with a suitable support, of an inner stacker-section pivotally connected thereto, an outer stacker-section pivotally connected to the outer end of the inner section and arranged to fold downward toward the rear thereof, connections between the outer stacker-section and the said support arranged to cause the two stacker-sections in a measure to balance each other in their vertical movements, and a spring arranged to further assist in counterbalancing the said stacker-sections, substantially as set forth.

818,340. HUB. DELBERT B. BARTON, Racine, Wis. Filed Nov. 10, 1904. Serial No. 232,126.



Claim.—1. The combination with an axle and a lock-box rigid thereon and removable therefrom only by axial sliding movements with respect thereto, and an axle-box rotatable on said axle, said two boxes having interlocking beads or flanges which may be interlocked and disengaged only by an endwise rocking movement at an angle to their alined axes, whereby the said two boxes are held interlocked by said axle when in working positions thereon and may be separated when removed therefrom, substantially as described.

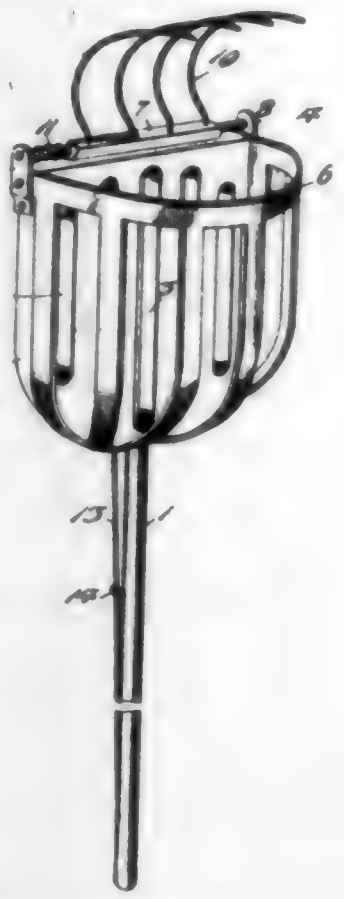
2. The combination with an axle, of a lock-box thereon provided with an approximately segmental retaining-flange, and an axle-box rotatable on said axle and provided with a raised bead cooperating with said retaining-flange of said lock-box to hold the said two boxes interlocked when in working position on said axle, and permitting the said boxes to be separated only when removed from said axle and which lock-box and axle-box may be separated only when moved from the axle and given endwise rocking movement the one with respect to the other and free for angular movements with respect to each other, substantially as described.

3. The combination with an axle of an integrally-formed lock-box extending concentric to said axle and provided at its outer side with a segmental retaining-flange extending throughout approximately its lower half-circumference, and an axle-box having at its inner end a raised retaining-bead insertible into said lock-box and removable therefrom only by an endwise rocking movement of one of said boxes with respect to the other, whereby said two boxes are interlocked when in working position on said axle, substantially as described.

818,341. PROCESS OF MAKING PHENYLGLYCIN SALTS. WILHELM BERAGHEL and GUSTAV K. SCHUMANN, Ludwigshafen-on-the-Rhine, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Sept. 21, 1905. Serial No. 279,545.

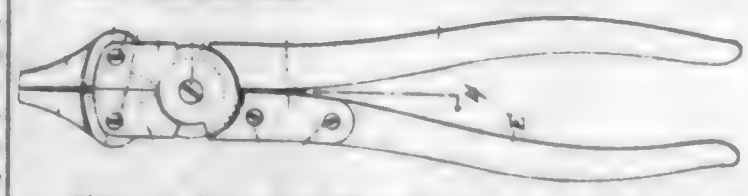
Claim.—The process of making phenylglycin salt by reacting on chloracetic acid with an excess of anilin until the phenylglycin is converted into its anilid, separating this anilid and saponifying it with caustic alkali.

818,342. FRUIT-PICKER. JAMES T. BELL, Lansing, Mich. Filed Feb. 20, 1906. Serial No. 302,060.



Claim.—In a fruit-picker, a handle, a receptacle carried thereby, a shaft journaled at the forward end of the receptacle and provided with a plurality of picker-fingers adapted to close the mouth of the receptacle, a spring acting on the shaft to hold the fingers in closed position, a traction element operatively connected with the shaft, and a keeper provided on the handle for engagement by said element to lock the fingers in open position.

818,343. PLIERS. PETER BROADBOOKS, Batavia, N. Y., assignor to Utica Drop Forge and Tool Company, Utica, N. Y. Filed June 22, 1904. Serial No. 213,587.



Claim.—1. In a pair of pliers of the character described, a lever, a plier-jaw formed integral with said lever, a second lever, a separate side plate secured upon each side of said second lever and crossing the first-named lever, the first-named lever being pivoted to the side plates at the point of crossing, the other plier-jaw being formed with one of the side plates, a side cutting-jaw formed with the other side plate, a second separate side cutting-jaw pivoted upon the same pivot as the levers and plates, the ends of said side cutting-jaws being held rigidly secured in the pockets formed to the plier-jaws, as and for the purpose specified.

2. In a pair of pliers of the character described, a lever, a plier-jaw formed integral with said lever, a side plate arranged upon each side and crossing said lever and pivoted to the lever at the point of

crossing, extensions extending downward from said side plates, a second lever secured between said extensions, the pivotal portion of the side plates and lever being formed circular and of two different diameters, the smaller diameter being upon the jaw side and the larger diameter being upon the lever side, two side cutters, one formed integral with one side plate, the other side cutter being pivoted upon the same pivot as the side plates and confined between one side plate and the lever, the other plier-jaw formed with the other side plate, one side cutter secured to each plier-jaw, a circular boss extending outward from the side plate in which the parallel jaw is made integral, said boss being slotted diametrically, a cutter carried by the opposite parallel jaw adapted to travel around the periphery of said boss and cross said slot to form a cutter, as and for the purpose specified.

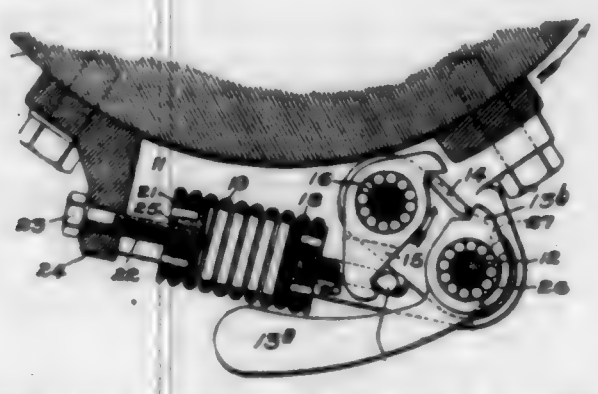
818,344. SEAL. EDWARD J. BROOKS, East Orange, N. J. Filed Aug. 28, 1905. Serial No. 276,964.



Claim.—1. A flexible shackle of flat metal having its ends provided with eyes and with interlocking neck portions adjoining said eyes, in combination with a compressible seal part of lead having a stud-pin at its face adapted to be embraced by said eyes and a wall surrounding said stud-pin provided with a notch adapted to admit said neck portions and to support the same.

2. An improved seal composed of a flexible shackle of sheet metal having its ends provided with eyes and with laterally-compressed interlocking neck portions U-shaped in cross-section adjoining said eyes, and a compressible seal part of lead having a stud-pin at its face adapted to be embraced by said eyes and a wall surrounding said stud-pin provided with a notch adapted to admit said neck portions and to support the same, substantially as hereinbefore specified.

818,345. EMERGENCY-GOVERNOR FOR STEAM-ENGINES. OTTO F. BRUMAN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 1, 1904. Serial No. 226,730.



Claim.—1. A self-setting tripping device for an emergency-governor for a steam-engine, comprising a pivoted tripper mounted to revolve, a spring for counterbalancing its centrifugal effect, and a toggle-joint between said parts which tends to straighten out when the tripper moves to its operative position.

2. A self-setting tripping device for an emergency-governor, comprising a pivoted tripper mounted to revolve, a spring to counterbalance its centrifugal effect, a rocker connected with said spring, and a toggle-joint between the rocker and the tripper which tends to straighten out when the tripper moves to its operative position.

3. A self-setting tripping device for an emergency-governor, comprising a tripper and a rocker pivoted near each other and having notched arms, a link having knife-edges received in said notches, and a spring attached to said rocker.

4. A tripping device for an emergency-governor, comprising a pivoted tripper having a long arm and a short arm, a pivoted rocker having a long arm and a short arm, a link connecting said short arms and forming a toggle, and a spring attached to the long arm of the rocker.

5. A tripping device for an emergency-governor, comprising a pivoted tripper, a pivoted rocker connected therewith, and a spring attached to said rocker and so arranged that its centrifugal effect does not exert any turning moment on said rocker.

6. A tripping device for an emergency-governor, comprising a pivoted tripper mounted on a shaft, a pivoted rocker connected therewith, and a spring attached at one end to an arm of said rocker and arranged with its axis tangential to said shaft and at right angles to the rocker-arm.

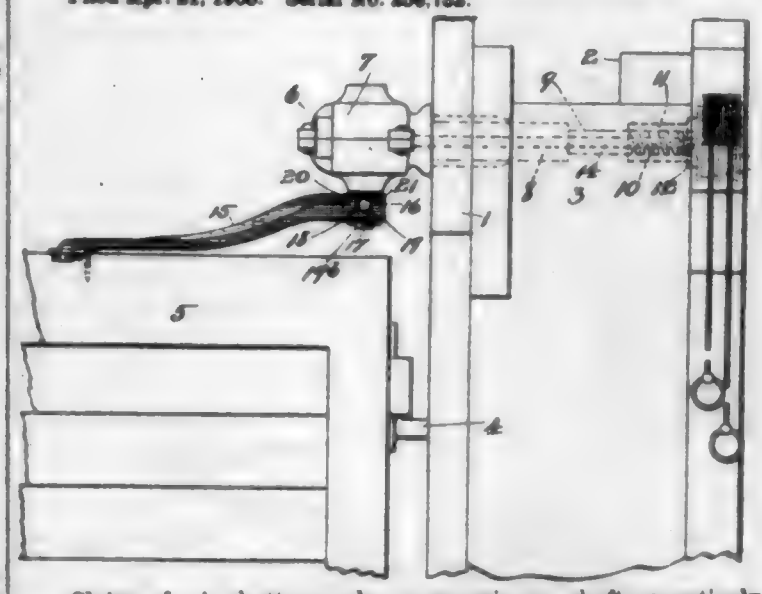
7. A tripping device for an emergency-governor, comprising a tripper operating by centrifugal force against a spring, and constructed to exert an increasing leverage against said spring as it moves outward.

8. A tripping device for an emergency-governor, comprising a frame curved to fit a shaft, two transverse pins in said frame, shoulders on the frame adjacent to one pin, a tripper pivoted on one of said pins and having a lug to abut against said shoulders, a rocker pivoted on the other pin, a knife-edged link connecting the tripper and the rocker, an adjustable spring attached at one end to the frame, and a T-headed bolt connecting the other end of said spring with the rocker.

9. In a governor for prime movers, the combination of a pivoted weight, a spring for opposing the weight which is disposed so that the forces exerted by the ends thereof due to centrifugal force are parallel to the radius of the center of gravity of the spring, a fixed support for one end of the spring, a movable support for the other end of the spring, the reaction at the point of contact between the spring and support being in line with the axis of the movable support, and a connection between the movable support and the weight.

10. In a governor for prime movers, the combination of a pivoted weight, a spring for opposing the weight which is disposed so that the forces exerted by the ends thereof due to centrifugal force are parallel to the radius of the center of gravity of the spring, a fixed support for one end of the spring, a movable support for the other, the reaction between the spring and movable support taking place in line with the axis of the movable support, a connection for transmitting motion between the support and weight, and a frame to which the parts are secured.

818,346. SHUTTER-WORKER. ARTHUR M. BURNHAM, Gardiner, Me., assignor of one-half to Wm. Gordon Crawford, Washington, D. C. Filed Apr. 21, 1905. Serial No. 256,732.



Claim.—1. A shutter-worker comprising a shaft operatively connected to an arm designed to be connected to a shutter, a casing, having a hollow member integral therewith carrying the said shaft and provided with screw-threads, and a screw-threaded sleeve mounted on and covering the end of said hollow member designed to clamp said hollow member to a window-casing, substantially as shown and described.

2. A shutter-worker comprising a shaft, a casing having a shaft therein operatively connected to the first-mentioned shaft and provided with a block rigidly fixed thereon, and an arm having forked ends pivoted to said block, substantially as shown and described.

3. A shutter-worker comprising a shaft, a casing having a shaft therein operatively connected to the first-mentioned shaft and provided with a square block rigidly fixed thereon and an arm having forked ends connected to said block, substantially as shown and described.

4. A shutter-worker comprising a casing, having a hollow extension, with a tube at one end thereon, said tube provided with exterior screw-threads, an interiorly-screw-threaded sleeve mounted on the screw-threads of the tube and having a hole at one end, a shaft passing through said extension, tube, and hole in the sleeve, an operating-arm designed to be pivoted to a shutter, means for operatively connecting said shaft and arm and means for operating said shaft, substantially as shown and described.

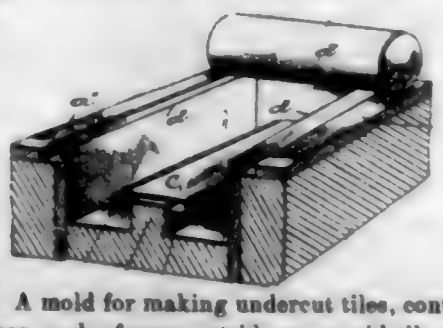
818,347. **JEWEL-SETTING PLIERS.** BRITTON B. BYRD, Durham, N. C., assignor of three-fourths to V. G. Davis, Bracey, Va., and John I. Rose and F. L. Walker, Durham, N. C. Filed June 2, 1905. Serial No. 263,485.



Claim.—1. A device of the class described comprising crossed and pivoted evers having jaws rigid therewith and having work-engaging faces meeting on a line substantially perpendicular to the general line of the levers and having tongue-and-groove formations in the opposing faces, and a gage adjustably secured at the pivot.

2. A device of the class described comprising a lever having a jaw at one end substantially perpendicular thereto, a work-engaging face formed upon the jaw and with a longitudinal lip centrally of the face, a jaw pivoted to the lever and having a work-engaging face provided with a groove complementary to the lip, and a gage adjacent the work-receiving opening and adjustably secured at thepivot.

818,348. **MOLD FOR UNDERCUT TILES.** WILLIAM H. CANMEYER, Boonton, N. J. Original application filed Mar. 4, 1904, Serial No. 196,552. Divided and this application filed May 3, 1904. Serial No. 206,225.



Claim.—1. A mold for making undercut tiles, containing a rib fast upon its floor, and a former astride upon said rib and provided with overhanging shoulders whose inner faces (adjacent to said rib) outline the undercut in the tile.

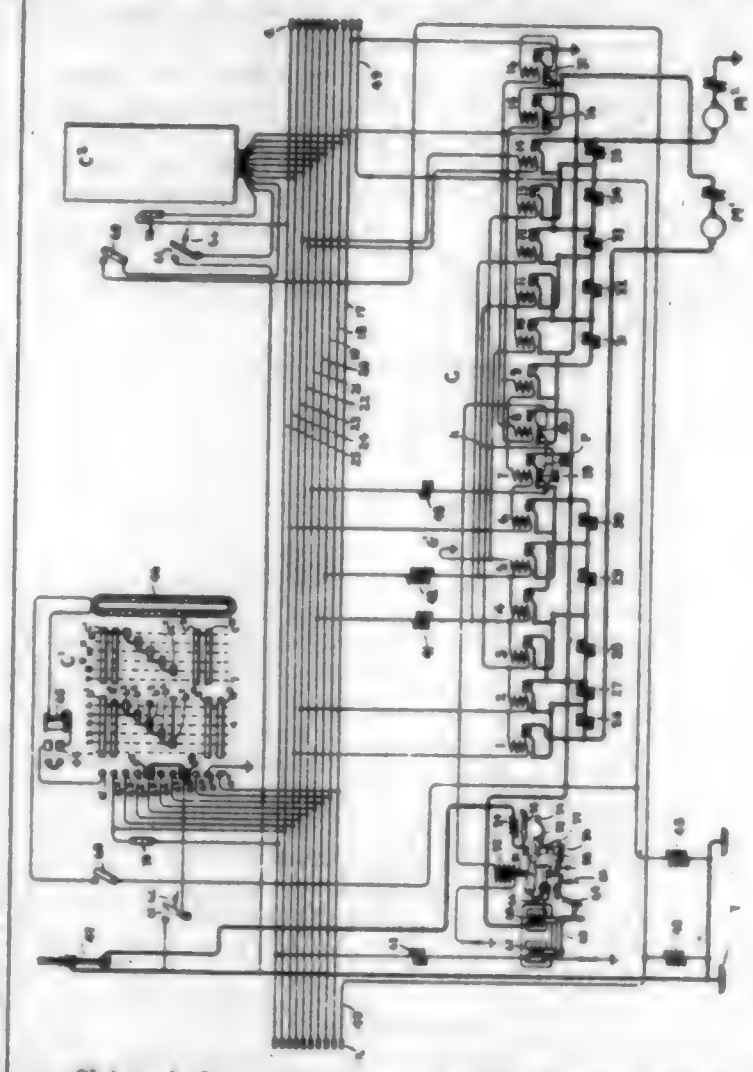
2. A mold for forming undercut tiles, having upon its floor a rib, with vertical sides, in combination with a former seated upon said rib, and composed of a blank whose sides are bent downward and inward to less than a right angle with its main portion.

3. A mold for making undercut tiles, containing a projection upon its floor, and a detachable former thereon provided with overhanging shoulders whose inner faces (adjacent to said projection) outline the undercut in the tile.

4. A mold for making undercut tiles containing a projection fast upon its floor, and a detachable former thereon composed of a blank whose sides are bent downward and inward to less than a right angle with its main portion.

5. The herein-described means for forming undercut tiles, comprising a mold having a projection rising from its floor and a detachable and non-combustible former seated upon said projection and provided with overhanging shoulders whose inner faces serve to outline the undercut.

818,349. **CONTROL SYSTEM.** FRANK E. CASE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 10, 1904. Serial No. 227,812.



Claim.—1. In a system of control, in combination, a plurality of circuits, a switch in one of said circuits, and means operable to open said switch only upon the deënergization of one of said circuits while the other remains energized.

2. In a system of control, in combination, a motor-circuit, a control-circuit, a normally closed circuit-breaker in said motor-circuit, and means operable upon the deënergization of the control-circuit while the motor-circuit remains energized to trip the circuit-breaker.

3. In a system of control, in combination, a motor-circuit, a control-circuit, a circuit-breaker in said motor-circuit, and means operable to trip the circuit-breaker when one of said circuits is deënergized but not when both are deënergized simultaneously.

4. In a system of control, in combination, controlled and control circuits, a circuit-breaker, and means operable to cause the circuit-breaker to open upon the deënergization of one of said circuits but not upon the simultaneous deënergization of both circuits.

5. In a system of control, in combination, controlled and control circuits, a circuit-breaker, and means operable to cause the circuit-breaker to open upon the deënergization of the control-circuit while the controlled circuit remains energized but not when both circuits are deënergized simultaneously.

6. In a system of control, in combination, a motor-circuit and a control-circuit, a circuit-breaker, means for setting said circuit-breaker, means for tripping the circuit-breaker on overload in the motor-circuit, and means for tripping the circuit-breaker upon failure of the current in the control-circuit while the motor-circuit remains energized.

7. In a system of control, a controlled circuit, a control-circuit, a normally closed circuit-breaker, and electromagnetic means under the influence of said circuits for tripping the circuit-breaker upon failure of current in the control-circuit while the controlled circuit remains energized.

8. In a system of control, a controlled and a control circuit, a circuit-breaker, an electromagnet in each of said circuits and adjacent the circuit-breaker, and means coöperating with said electromagnets for tripping the circuit-breaker upon the deënergization of one of said electromagnets while the other electromagnet remains energized.

9. In a system of control, a controlled and a control circuit, a circuit-breaker, an electromagnet in each of said circuits and adjacent the circuit-breaker, and means coöperating with said electro-

magnets for tripping the circuit-breaker upon the deënergization of the magnet in the control-circuit while the other remains energized the arrangement being such that the circuit-breaker is not tripped when both magnets are deënergized simultaneously.

10. In a system of control, a motor-circuit and a control-circuit, a normally closed circuit-breaker, means for tripping said circuit-breaker at will, means for tripping it upon overload in the motor-circuit, and means for tripping it upon failure of control-current while the motor-circuit remains energized.

11. In a system of train control, comprising controllers on a plurality of cars operated through a train-line from a master-controller located at any desired point on the train, a circuit-breaker on each of the motor-cars, and circuit-breaker actuating means comprising an electromagnet included in the motor-circuit and an electromagnet connected to a conductor in the train-line, the said actuating means being so constructed and arranged that it will cause the circuit-breaker to open only in case current continues to flow in the motor-circuit after the electromagnet connected to the conductor in the train-line has been deënergized.

12. In a system of train control, comprising controllers on a plurality of cars operated through a train-line from a master-controller located at any desired point on the train, an automatic circuit-breaker on each of the motor-cars, means for normally maintaining each circuit-breaker in its closed position, and actuating means for the maintaining means of each circuit-breaker comprising an electromagnet included in the motor-circuit and an electromagnet connected to a conductor in the train-line, the said actuating means being so constructed and arranged that it will actuate the maintaining means to release the circuit-breaker only in case current continues to flow in the motor-circuit after the electromagnet connected to the conductor in the train-line has been deënergized.

13. In a system of train control, a connection between the current-collecting devices of a plurality of cars, a resistance in said connection, a controller and connections therefor so arranged that the circuit passing through said controller from the current-collecting devices of either car contains only a portion of the whole resistance.

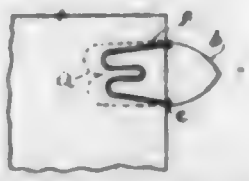
14. In a system of train control, connections between the current-collecting devices of a plurality of cars, resistances in said connections, a controller upon each car, and connections therefor so arranged that the circuit passing through a controller from any current-collecting device contains less than the whole resistance between the several collecting devices.

15. In a system of train control, a connection between the current-collecting devices of two cars, a resistance in said connection, a controller on each of said cars, and connections therefor so arranged that the circuit passing through either controller from the current-collecting device of either car contains a portion only of said resistance.

16. In a system of train control, a connection between the current-collecting devices of two cars, a resistance in said connection, a controller upon each car, and connections therefor so arranged that the circuit passing through either car from the current-collecting devices of either car contains one-half of said resistance.

17. In a system of control, a car provided with two controllers and a separate connection from each controller to the current-collecting device of the car, a resistance in each connection and a lead extending from each connection from a point between the resistance and controller to one end of the car.

818,350. **MUSIC-TURNER.** CHARLES CHRISTIANSEN, FRANK F. NOLL, and ERNEST L. BUCHANAN, Grand Rapids, Mich. Filed Aug. 10, 1905. Serial No. 273,689.



Claim.—1. In a music-turner, a sheet-metal body, a wing projecting from each side of the body and arranged to infold the ends of a wire-holder, a curved handpiece projecting from one end of the body with a notch at each side between the body and the handpiece, a wire-holder bent to form a fold of U form and each arm of said fold bent so that the fold and the ends of the arms will press upon opposite sides of the body, the ends of the arms infolded by the wings on the body so that the bends in the arms engage the notches in the body and the bow is made to press solidly against the opposite side of the body, the end of the bow being slightly curved out from the body.

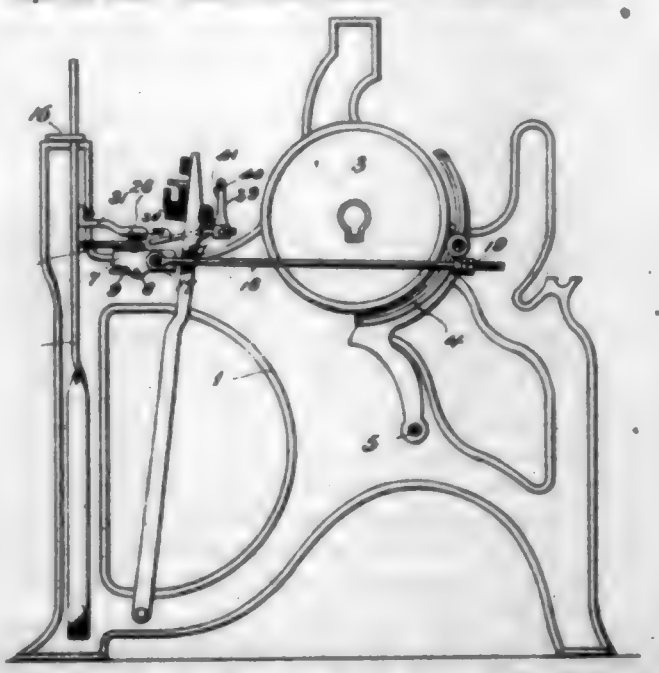
2. In a music-turner, a sheet-metal back, a handpiece integral therewith with a notch at each edge between the handpiece and the body, a spring-wire folded so the body and ends are parallel and passed through the notches to hold the body of the wire snugly against the other surface of the sheet-metal body, wings at each edge of the body folded around the ends of the wire to hold it firmly to place, and the wire bent up near the point of contact with the metal body, substantially as and for the purpose set forth.

818,851. **INVALID-ROBE.** EMMA CLARK, New Orleans, La. Filed Dec. 19, 1903. Serial No. 185,831.



Claim.—A sectional robe for invalids, comprising a back piece provided on its lateral and shoulder edges with securing-tapes, sleeves open throughout their length; the edges of said open sleeves being provided with complementary securing-tapes, and the upper ends of the sleeves being permanently secured to the back piece for a distance approximately half the width of the sleeves and the remaining free portions of said ends provided with securing-tapes, and a front portion composed of a piece of material, of sufficient width to extend from one lateral edge of the back piece to the other lateral edge thereof, and having complementary securing-tapes along its lateral edges, armhole edges and shoulder edges, whereby the front portion may be readily removed from the robe and the permanently-attached sleeves opened out flat and smooth with the back piece, as and for the purpose specified.

818,352. **LOOM-STOPPING MECHANISM.** JOSEPH COLDWELL, Fall River, Mass., assignor to James K. Lanning, Boston, Mass. Filed Sept. 29, 1903. Renewed Jan. 16, 1906. Serial No. 296,405.



Claim.—1. The combination, with a loom, having a brake, of means connected with the brake for applying the same, a dagger for operating such brake-operating means, and mechanism for moving said brake-operating means into the path of the dagger subsequent to a disengagement of the shipper-handle from its holding-notch.

3. The combination with a loom having a brake, of means connected to the brake for applying the same, a dagger for operating such brake-operating means, and a device operated by the shipper-handle for moving said brake-operating means into the path of the dagger when said shipper-handle is disengaged from its holding-notch.

3. The combination with a loom having a brake, of means connected to the brake for applying the same, a movable part of the loom for actuating such brake-applying means, and means for moving the brake-operating means into the path of such movable part of the loom upon the release of the shipper-handle from its holding-notch.

4. The combination with a loom having a brake, of means connected to the brake for applying the same, a dagger carried by the lay and adapted to actuate said means when the latter is advanced into its path, and devices carried by the shipper-handle which upon a release of said handle will serve to advance said brake-applying means.

5. The combination with a loom having a brake, of means connected to the brake for applying the same, a movable part of the loom for actuating such brake-applying means, and means for moving the brake-operating means into the path of such movable part of the loom upon the release of the shipper-handle from its holding-notch, and means for returning said brake-applying means to its normal or inoperative position when said shipper-handle is returned to its holding-notch.

6. The combination with a loom, of a reciprocal frog, a frog-plate therein and adapted to be advanced from the plane of the frog, the brake-rod connected to the frog, a dagger movable with the lay, and devices operated by the shipper-handle for actuating the plate and advancing it into the path of the dagger.

7. The combination with a loom having a brake-bar, of a movable frog, mounted on the frame thereof and pivotally connected with and adapted to actuate the brake-bar, a plate seated upon the frog and normally in line therewith, and means carried by the shipper-handle and adapted when said handle is released from its holding-notch to elevate the plate into the path of the dagger of the loom.

8. The combination with a loom having a brake-rod, of a movable frog pivotally connected to the brake-rod thereof, a plate seated loosely in the frog and normally out of the path of the dagger of the loom, a pin rising from the plate, and a cam moved by the release of the shipper-handle from its holding-notch to operate the pin so as to elevate the plate into the path of the said dagger.

9. The combination with a loom having a brake-rod, of a movable frog pivotally connected to the brake-rod thereof, a plate seated loosely in the frog and normally out of the path of the dagger of the loom, a pin rising from the plate, an arm secured to and projecting from the shipper-handle and a cam-finger extending therefrom, said finger being adapted when the shipper-handle is released to contact with said pin and raise the plate into the path of the dagger.

10. The combination with a loom having a brake-rod, of a movable frog pivotally connected to the brake-rod thereof, a plate seated loosely in the frog and normally out of the path of the dagger of the loom, a projection on the plate, a cam for striking the same and raising the plate, said cam being supported by and movable with the shipper-handle when the latter is released from its holding-notch, and a bunter extending from the frog, and, when the latter is advanced, into the return-path of said shipper-handle.

11. The combination in a loom having a brake-rod, the frame of which is provided with a shoulder, of a frog U-shaped in cross-section mounted movable thereover, a buffer-spring interposed between the shoulder and rear end of the frog, pivotal connection between the frog and the brake-rod of the loom, a plate loosely carried by the frog, and means carried by the shipper-handle for raising the plate into the path of the dagger of the loom when the said shipper-handle is released from its holding-notch.

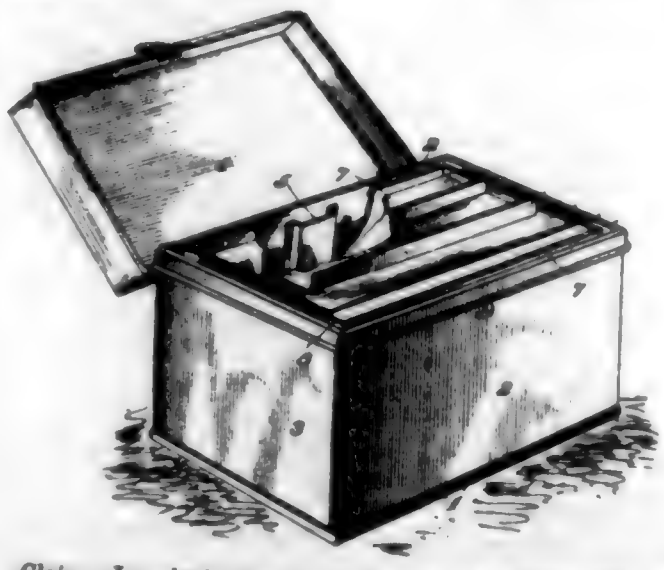
12. In a loom provided with a vibratory lay, a brake and brake-operating mechanism adapted to be actuated by the moving lay, the combination of movable means normally out of the path of the lay and operatively related to the brake-operating mechanism, and devices adapted upon the occurrence of a thread fault to swing said movable means into the path of the lay.

13. In a loom provided with a vibratory lay, a brake, a sliding frog operatively connected to the brake, and a shuttle-feeler and dagger carried by the lay and adapted upon occurrence of a shuttle fault to cause the dagger to impact upon the frog and stop the loom, the combination of swinging means operatively related to the frog and normally out of the path of the dagger, and devices adapted upon the occurrence of a thread fault to move said swinging means into the path of the dagger.

14. A loom having a vibratory lay, a brake and brake-operating mechanism, a member carried by the lay but movable relatively thereto, a second member normally out of the path of said movable member but adapted to be moved to engage the same, means for moving one of said members into coöperative engagement with the other on the occurrence of a shuttle fault, means to move the other of said members into such coöperative engagement on the occurrence of a thread fault, and means actuated by such engagement for operating the brake.

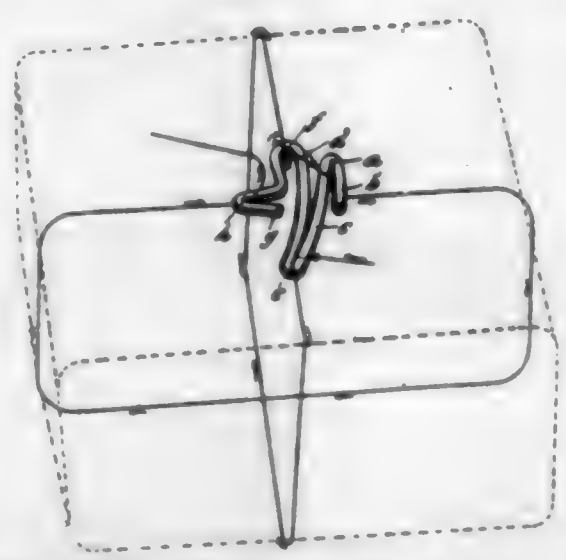
15. A loom provided with a vibratory lay, a brake and brake-operating mechanism adapted to be actuated through the moving lay, means responsive to a thread fault, for rendering the brake-operating mechanism effectual and means responsive to a shuttle fault also for rendering said brake-operating mechanism effectual.

818,353. **MEANS FOR PRESERVING FOODS.** JAMES M. COLE, Tacoma, Wash. Filed Aug. 4, 1904. Renewed Mar. 24, 1906. Serial No. 307,822.



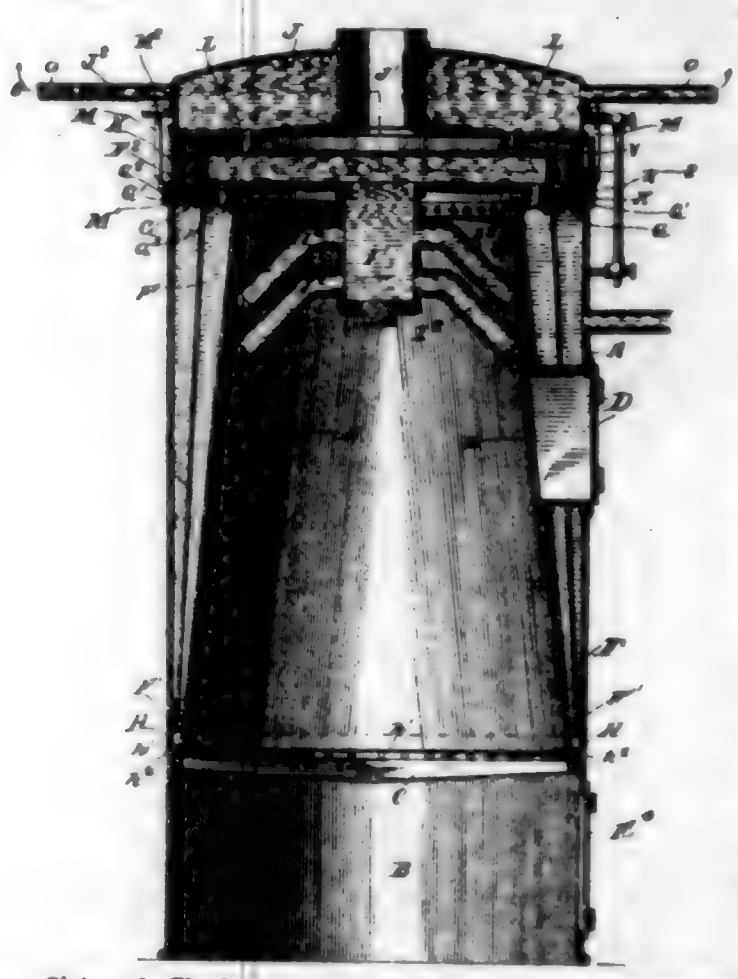
Claim.—In a device for preserving foods, the combination with an inner casing comprising a frame, a slat extending across the bottom of the frame, a second slat provided with upturned edges extending across the top of the frame, projections at the corners of the frame and extending downwardly beyond the bottom of the frame, an outer casing in which said inner casing is adapted to be placed and projections upon the outer casing for holding the sides of the inner casing out of contact with the outer casing.

818,354. **PACKAGE-TIE.** EDGAR M. COMSTOCK, Ypsilanti, Mich. Filed Sept. 6, 1904. Serial No. 223,287.



Claim.—A package-tie composed of a single length of wire bent at one end to an angle to engage and hold the first end of a cord inserted therein, a sharply-angular center portion next adjacent thereto, a curved portion at the end of one of the arms forming said sharply-angular portion, around which the cord may be wound, and an angular part adjacent to said curved portion and forming the other end of the length of wire around which the free end of a cord may be drawn, substantially as described.

818,355. **HOT-WATER HEATER.** JOEL A. COFFMOSE and THOMAS B. STULTS, Roanoke, Va. Filed Aug. 15, 1905. Serial No. 274,312.



Claim.—1. The hot-water heater herein described comprising the outer shell or casing, the inner wall-plate within said shell and made in trunco-conical form and inclining inwardly toward its upper end forming a water-chamber within the shell the lower end of the inner plate being secured to the outer plate or shell, the top plate flanged at its inner and outer edges and secured at such edges respectively to the inner wall-plate and the shell forming the top of said water-chamber, the intermediate plate or partition flanged at its upper end and secured at such end to the top plate between the inner and outer plates and provided at its lower end with reversely-projecting lugs spacing it apart from the inner and outer plates, said partition forming the water-chamber into inner and outer compartments, the lower dome arranged above said water-chamber, the tapered slip-nipples connecting said dome with the inner compartment of the water-chamber, the centrally-depending tubular extension projecting from said dome downwardly into the fire-box formed by the upper end of the inner wall-plate and provided with downwardly-extending tubes, the upper dome having a central discharge-opening for smoke, &c., and fitting within the upper end of the outer shell and provided above said shell with the lateral flange, the tapered slip-nipples connecting said upper dome-section with the lower dome-section, the bolts secured at their lower ends to the shell and projecting thence upwardly through the lateral flange of the upper dome-section, the nuts on said bolts, the feed-pipes leading from the upper dome-section for connection with the radiators and the return-pipes delivering to the outer compartment of the water-chamber within the shell, all substantially as and for the purpose set forth.

2. In a heater substantially as described, the combination of the outer shell, an inner wall, a top plate between the outer shell and inner wall, a partition-plate depending from said top plate and dividing the water-chamber between the outer and inner plates into separate compartments, means being provided whereby said compartments communicate at their lower ends.

3. A water-heater having an annular water-chamber and an intermediate partition dividing the same into inner and outer compartments, means for feeding the water to the outer compartment and for conducting the water from the inner compartment, the outer compartment forming a cover for the inner compartment and communicating therewith, substantially as set forth.

4. The combination in a water-heater with the shell or casing, of the water-chamber and fire-pot within the same, and the dome over the fire-pot and communicating with the water-chamber, and provided with a depending central extension having laterally-projecting tubes within the fire-pot, substantially as described.

5. The combination with the outer shell and the inner trunco-conical plate forming a water-chamber within the outer shell, of a partition-plate dividing said water-chamber into inner and outer compartments which communicate at their lower ends, and the dome above said water-chamber and communicating with the inner compartment thereof, substantially as set forth.

6. The combination of the outer shell or casing, the trunco-conical inner plate within the shell, the top plate between the upper end of said inner plate and the shell and the partition-plate depending from said top plate and spaced at its lower end away from the shell, the dome above the water-chamber and connected with the compartment or space between the inner plate and the partition-plate.

7. The combination of the outer shell, the trunco-conical inner plate, rivets securing the lower end of said plate to the outer shell, the top plate secured at its outer edge to the shell, and at its inner edge to the trunco-conical plate, the partition depending from the top plate between the inner plate and the shell and forming inner and outer compartments in the water-chamber, said compartments communicating at their lower ends, and the dome above the water-chamber and communicating with the inner compartment thereof, substantially as set forth.

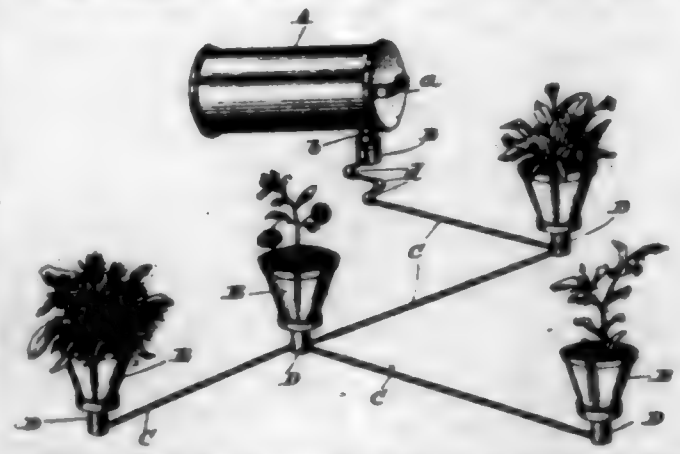
8. The combination in a heater of the shell, the plate within the same and forming a water-chamber, the lower dome, slip-nipples connecting the lower dome with the water-chamber, the upper dome, slip-tubes connecting said dome with the lower dome, and devices between the upper dome and the casing or shell whereby the upper dome may be pressed down toward the lower dome and the latter toward the water-chamber, substantially as set forth.

9. The water-heater comprising the shell having an annular water-chamber, a lower dome above and communicating with the water-chamber, an upper dome above and communicating with the lower dome, and devices for securing the upper dome in connection with the shell, substantially as set forth.

10. In a water-heater the combination with the shell or casing and means providing a fire-pot within the same, of a dome above said fire-pot, a tubular extension depending from said dome within the fire-pot, and laterally and downwardly extending tubes projecting from said extension within the fire-pot, substantially as and for the purpose set forth.

11. The combination in a hot-water heater with a shell, and an inner wall-plate, of a partition-plate extending between the shell and inner wall-plate and provided at its lower end with reversely-projecting lugs spacing it apart from the inner wall-plate and the shell whereby to establish communication between the compartments at the outer and inner side of the said partition, substantially as and for the purposes set forth.

818,356. **PLANT-IRRIGATION SYSTEM.** THOMAS A. DAVIS, Findlay, Ill., assignor of one-half to Charles Bevarley Davis, Todds Point township, Ill. Filed Sept. 21, 1905. Serial No. 279,567.

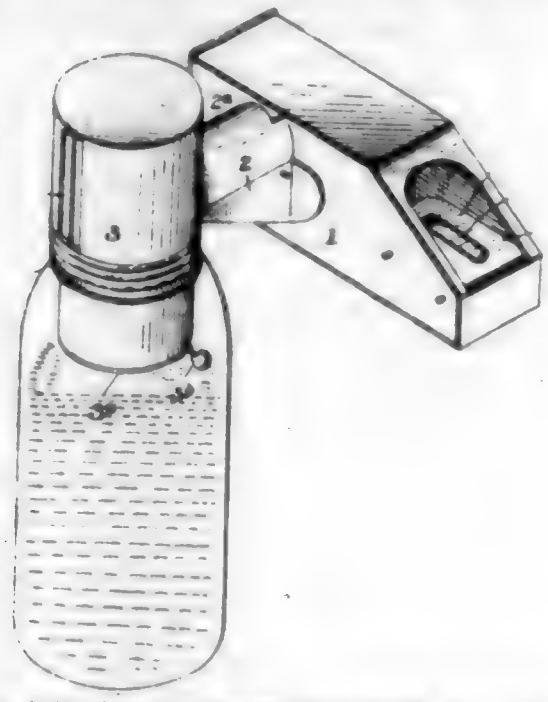


Claim.—The herein-described plant-irrigating system consisting of the reservoir A with the neck-shaped outlet *b*, together with the receiving-cup B, the lead pipe C with the elbow-unions *d d* and the pot-receptacle D, and the wick L all substantially as set forth and for the purpose specified.

818,357. **ANIMAL-TRAP.** THOMAS A. DAVIS, Findlay, Ill., assignor of one-half to William W. Harbert, Findlay, Ill. Filed Nov. 25, 1905. Serial No. 289,096.

Claim.—1. A trap of the character described, comprising a receptacle equipped with interacting tilting platforms, a chamber closed at its upper end and provided with an offset annular flange or extension, means forming a passage-way between said receptacle

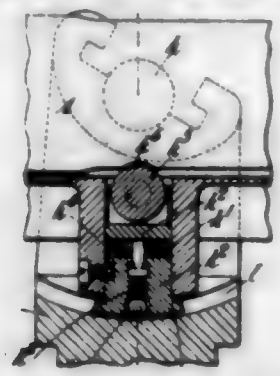
and said chamber, and a liquid-containing vessel, said flange having a screw-threaded surface for effective connection with said vessel.



2. A trap of the character described, comprising a receptacle equipped with interacting tilting platforms, a chamber closed at its upper end and provided with an offset annular flange, a passage-way between said receptacle and chamber, constituted of a covered chute having an upward and outward inclined bottom and a gravity-actuated flap or guard arranged therein, and a liquid-containing vessel, said annular flange having a screw-threaded surface for effective connection with said vessel.

3. A trap of the character described, comprising a receptacle equipped with interacting pivoted platforms, a chamber closed at its upper end and provided with an offset annular flange or extension, a covered chute forming a passage-way between said receptacle and said chamber and having an upward and outward inclined bottom and a gravity-actuated flap or guard, and a liquid-containing vessel equipped with a gravity-actuated valve or bottom, said annular flange having a screw-threaded surface for effective connection with said vessel.

818,358. MOUNTING FOR RECOILING-GUNS. ARTHUR T. DAWSON and GEORGE T. BUCKHAM, London, England, assignors to Vickers Sons & Maxim Limited, Westminster, England. Original application filed Apr. 13, 1905, Serial No. 250,079. Divided and this application filed July 6, 1905. Serial No. 268,348.



Claim.—1. In a quick-firing gun, the combination with the gun-cradle and the mounting in which said cradle is trunnioned, of a spring-plunger made in two superposed parts mounted in a recess in the under side of the cradle, a curved or wedge-shaped portion on the lower part of the said plunger lying in a curved or wedge-shaped groove of the mounting, a roller carried by the upper part of said plunger normally engaging with a slight notch or recess in the gun, springs interposed between the two parts of the plunger, and a spring-roller mounted in the lower part of the plunger and bearing against said groove in the mounting substantially as and for the purpose specified.

2. In a quick-firing gun, the combination with the gun-cradle and the mounting in which said cradle is trunnioned, of a spring-plunger made in two superposed parts mounted in a recess in the under side of the cradle, a curved or wedge-shaped portion on the lower part of said plunger lying in a curved or wedge-shaped groove of the mounting, a roller carried by the upper part of said plunger normally engaging with a slight notch or recess in the gun, means for detachably connecting the two parts of the plunger with freedom of motion between them, springs interposed between the two parts, means for retaining the plunger in place within its recess without impediment to its movement, and a spring-roller mounted in the lower part of the plunger and bearing against said groove in the mounting substantially as and for the purpose specified.

818,359. WINDOW-SHADE FASTENING. GEORGE A. DEMO, Newport, Minn. Filed Nov. 7, 1905. Serial No. 286,940.



Claim.—1. The combination with a shade-roller, and a shade provided with eyelets, of bands embracing the roller and having their ends interlocked to hold them from circumferential movement thereon, and a clasp carried by each band, said clasps having looped portions embracing the bands and bendable fingers passing through said eyelets and clenched against the outer face of the shade.

2. The combination with a shade-roller and a shade provided with eyelets, of bands closely embracing the roller and having their ends interlocked to retain them in fixed position thereon, and clasps carried by the bands, said clasps having looped portions embracing the bands above the shoulders formed by the interlocking ends thereof in the direction of revolution of the roller, and provided with bendable fingers passing through the eyelets in the shade and clenched against the outer face of the latter, the interlocking ends of the bands thus serving to hold the clasp from shifting under the resistance of the shade.

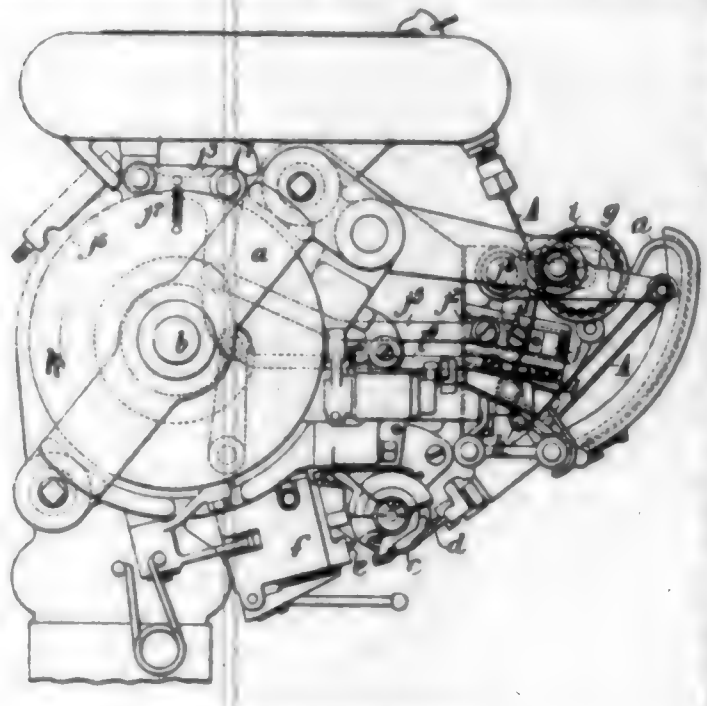
818,360. THREAD-MEASURING MECHANISM FOR BOOT AND SHOE SEWING MACHINES. MARK T. DENNE, Rushden, England. Original application filed Aug. 23, 1903, Serial No. 170,635. Divided and this application filed May 9, 1904. Serial No. 207,123.

Claim.—1. In a sewing-machine of the kind described, the combination with the take-up device, of a thread-locking device, said locking device comprising two blocks, means for moving one of said blocks and means including an eccentric for adjusting the other block, substantially as described.

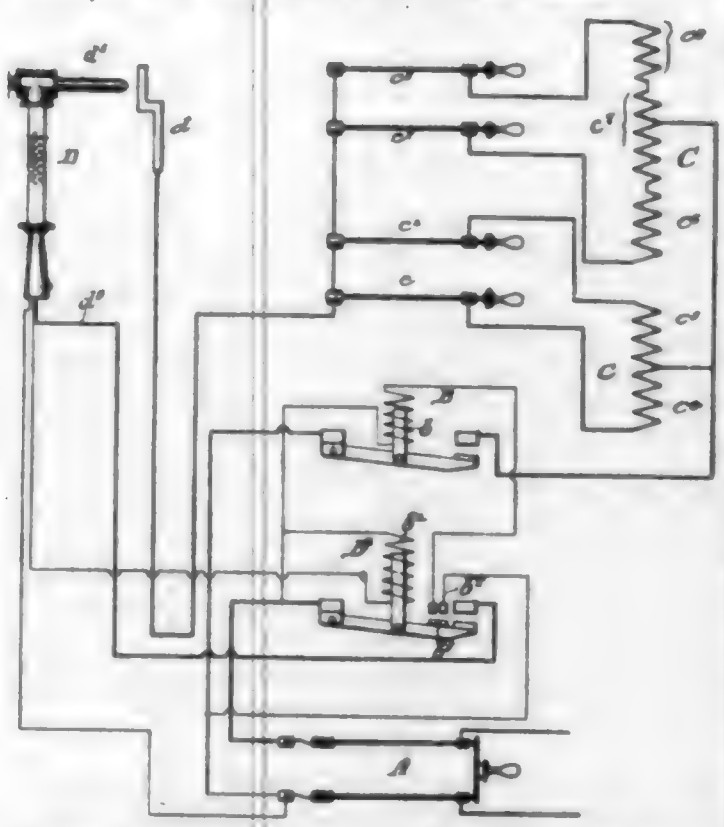
2. In a sewing-machine of the kind hereinbefore described, the combination with a take-up mechanism including provision for elastically controlling the thread of a pull-off device comprising a sliding block, mechanism for reciprocating said block, a thread-engaging part having a slotted portion, and securing devices passing through said slotted portion and adjustably securing said thread-engaging part to said block, substantially as described.

3. In a sewing-machine of the kind hereinbefore described, the combination with needle-thread tension device and take-up mechanism, of a pull-off device a thread-locking device adjacent to the pull-off device comprising, a stationary and a movable part, operating mechanism connected with said movable part, a rotatable supporting device for said stationary part having an eccentric portion engaging

said stationary part whereby said stationary part may be adjusted by turning said rotatable supporting device, substantially as described.



818,361. ARC-WELDING APPARATUS. ARTHUR C. EASTWOOD, Cleveland, Ohio. Filed May 2, 1905. Serial No. 258,559.



Claim.—1. Arc-welding apparatus including a portable terminal and an electromagnetic switch in circuit therewith, with a switch carried on said terminal and connected to control the said electromagnetic switch, substantially as described.

2. Arc-welding apparatus including a portable terminal, an insulated handle therefor, a hand-controlled switch on said handle, with an electromagnetic switch in circuit with the terminal and having its coil in circuit with the hand-controlled switch, substantially as described.

3. Arc-welding apparatus including two terminals for permitting current to flow to an article to be operated on, an electromagnetic switch in circuit with the terminals, a hand-operated switch in circuit with the coil of said electromagnetic switch for controlling the same, a bank of resistance, and controlling means therefor, for varying the magnitude of the current at will, substantially as described.

4. Arc-welding apparatus including two terminals for permitting current-flow to an article to be operated on, a pair of electromagnetic switches respectively in circuit with said terminals, a bank of resistance, a number of switches for controlling the amount of said resistance in circuit, with a controlling-switch in circuit with the coil of one of the electromagnetic switches, substantially as described.

5. Arc-welding apparatus including two terminals for permitting current to flow to an article to be operated on, a pair of electromagnetic switches respectively in circuit with said terminals, a switch carried by a terminal and in circuit with the coil of the first automatic switch, and an auxiliary switch operated by said first switch and in circuit with the coil of the other electromagnetic switch, substantially as described.

6. Arc-welding apparatus including a terminal having an electrode-holder, a hollow, ventilated metallic supporting-body therefor, a handle of heat-non-conducting material for said body, and a shield-piece between the body and said handle, substantially as described.

7. Arc-welding apparatus including means for connecting a body to be operated on to a source of current, a terminal having an electrode-holder, a metallic supporting-body for said holder having means for the attachment of a conductor, an insulating-handle for the body, a switch on the handle having a push-button whereby it is operated, and an electromagnetic switch connected between the said supporting-body and the source of current, the coil of said switch being in circuit with the switch on the handle, substantially as described.

8. Arc-welding apparatus including a terminal having an electrode-holder, a hollow, ventilated supporting-body therefor, means for connecting the body to a source of current, an insulating-handle for the body, and means carried by said handle for controlling the current-flow to said body, substantially as described.

9. Arc-welding apparatus including a terminal having an electrode-holder, a supporting-body therefor, means for connecting the body to a source of current, an insulating-handle for the body, means external to said holder and body for controlling the current-flow thereto, and a device carried by said handle for controlling the operation of said latter means, substantially as described.

10. Arc-welding apparatus including a plate to be clamped to an article to be operated on, a portable terminal having an electrode from which an arc is formed to the article operated on, a pair of electromagnetic switches respectively in a circuit with the plate and with the electrode, a bank of resistance, and means for controlling the amount of said resistance in circuit, substantially as described.

11. Arc-welding apparatus including a terminal for attachment to an article to be operated on, a portable terminal having an electrode from which an arc is formed, a pair of electromagnetic switches in circuit with said terminals, a switch carried by the portable terminal and in circuit with the coil of one of said electromagnetic switches, with means for causing said switches to be operated successively, substantially as described.

12. Arc-welding apparatus including a terminal for attachment to an article to be operated on, a portable terminal having an electrode from which an arc is formed, a pair of electromagnetic switches in circuit with said terminals, a switch carried by the portable terminal and in circuit with the coil of one of said electromagnetic switches, with an auxiliary switch in circuit with the coil of the second switch and controlled by said first switch for preventing operation of said second switch until after the first switch has been operated, substantially as described.

818,362. ALARM-LATCH. CHARLES E. C. EDEY, Tacoma, Wash. Filed Feb. 1, 1904. Serial No. 191,542.

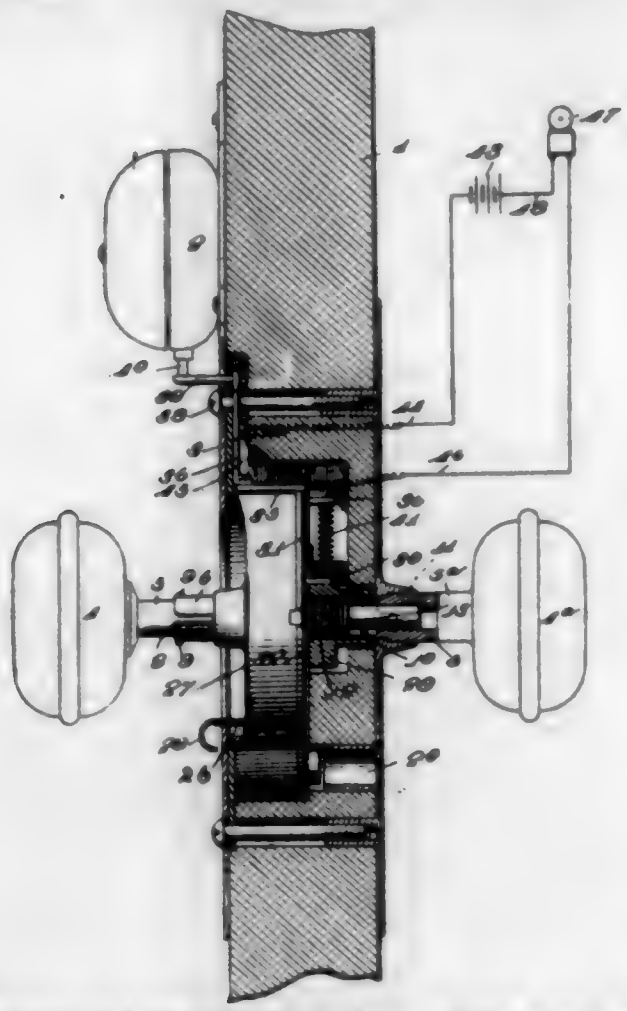
Claim.—1. An alarm-latch mechanism, comprising a rock-shaft, a revoluble hollow latch, actuating sleeve-shaft coöperating therewith, a cam capable of being connected to and disconnected from said rock-shaft and an alarm operable by said cam when it is disconnected from said rock-shaft.

2. An alarm-latch mechanism having a revoluble shaft, a knob rigidly attached to said shaft, a second knob movably mounted with respect to the shaft but capable of being drawn into engagement therewith for turning it when necessary, a cam carried by the movable knob and an alarm mechanism operable by the actuation of the cam when the movable knob is disconnected from the said revoluble shaft

3. A latch mechanism provided with a rock-shaft, a cam mounted in said latch mechanism, means for moving the shaft longitudinally and thereby connecting it with the cam, and an alarm mechanism operable by the action of the cam.

4. An alarm-latch mechanism comprising a plurality of rotatable knob-shafts, one of which shafts is fixed against longitudinal movement while the other is capable of longitudinal movement, a cam on the fixed knob-shaft, and an alarm-actuating mechanism operable thereby.

5. An alarm mechanism comprising a plurality of revoluble knob-shafts, an intermediate shaft rigidly connected with one knob-shaft and capable of being connected or disconnected from the other knob-shaft, a cam carried by the said latter knob-shaft and an alarm mechanism capable of actuation by the movement of the cam when the knob which carries the same is disconnected from the said intermediate shaft, the connection of the knob carrying said cam, with the intermediate shaft operating to prevent the actuation of the alarm mechanism.



6. An alarm-latch mechanism having a rockable shaft, a sleeve surrounding the same, a cam adjacent to one end of said sleeve, means capable of operation for connecting or disconnecting the sleeve, a knob for turning the cam with the said knob and cam, and an alarm mechanism operable by the cam.

7. An alarm-latch mechanism comprising a rock-shaft, a knob-shaft capable of movably receiving one end of the rock-shaft, a cam carried by the knob-shaft, the said cam being operable by the shaft or by the rock-shaft when connected with the knob-shaft, means operable for connecting or disconnecting the knob-shaft with the rock-shaft, and an alarm mechanism operable by the said cam upon the disengagement of the knob-shaft from the rock-shaft.

8. An alarm-latch comprising a rock-shaft, a rotatable knob-shaft, a cam carried thereby, an alarm mechanism operable by the cam, a latch operable by either the said rock-shaft or the knob-shaft, and an abutment member upon said latch and a member carried by the rock-shaft adapted to be projected into the path of said abutment member.

9. An alarm-latch mechanism comprising a plurality of knob-shafts, both of which are capable of a rocking movement while one of them is capable of rotation, means operable for connecting or disconnecting the shafts, a latch operable by either of said shafts when locked together, a cam upon one of said knob-shafts, and an alarm operable by said cam.

10. An alarm mechanism having a non-reciprocable shaft, a cam carried thereby, a reciprocating shaft adapted to engage the non-reciprocable one, means for moving the reciprocating shaft in position to hold the rotating shaft, a latch operable by either shaft when they are connected, and an alarm mechanism operable by the cam when the shafts occupy a disengaged position.

11. An alarm-latch provided with a rock-shaft, and a rotatable shaft, means for rocking said shaft, a cam on the rotatable shaft, spring-actuated sliding members operable by the cam, and an alarm mechanism actuated by the sliding members.

12. An alarm-latch mechanism comprising a reversible latch formed with a beveled projection portion, an integral shoulder formed thereon, a movable stop coöperating therewith, the said latch having a guide-groove formed thereon, and a guiding-rib engaging the said groove for directing the reciprocating movement of the latch.

13. An alarm-latch mechanism comprising a casing, a latch-actuating sleeve mounted therein, a reciprocating rock-shaft having a bearing in the sleeve, an alarm-actuating cam mounted adjacent to the said sleeve, and means for connecting the reciprocating rock-shaft with the said cam, the sleeve being capable of controlling the engagement of the rock-shaft with the said cam.

14. An alarm-latch mechanism comprising a housing, a sleeve mounted therein, a reciprocating rock-shaft extending through the sleeve, the said sleeve having recesses of different depths formed in one end thereof, a cam for actuating an alarm, and a spring tending normally to force the rock-shaft into engagement with the cam, the recesses of the sleeve affording means for permitting or preventing the engagement of the rock-shaft with the said cam.

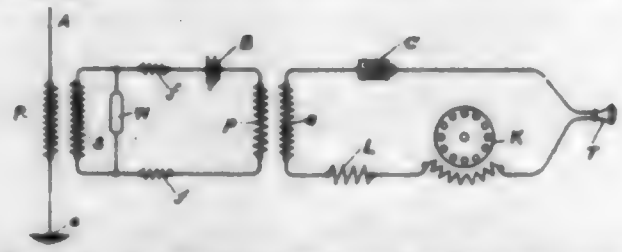
15. A lock mechanism comprising a reciprocating latch, a rocking sleeve for actuating the same, a reciprocating shaft extending through the said sleeve having actuating-pins in the ends thereof, a knob or handle secured to one end of said shaft, an alarm-actuating handle movably engaging the other end of said shaft, the pin at that end of said shaft being capable of connecting the shaft with the alarm-actuating handle, a spring tending to force the pin into engagement with the said handle, and means carried by the latch-actuating sleeve for preventing or permitting of the said engagement.

16. A latch mechanism comprising a housing, a latch-actuating sleeve mounted therein and having shallow and deep notches formed in its edge, a reciprocating shaft extending through the sleeve and having a pin secured thereto capable of engaging either the shallow or the deep notches, a spring interposed between a collar on the shaft and the sleeve, tending to draw the pin into engagement with the notched end of the sleeve, an outer handle capable of movement with respect to the shaft, means carried by the shaft for connecting it with the outer handle when the pin is in engagement with the deep notches of the sleeve, the said shaft not being connected with the outer handle when the pin is in the shallow notches and an alarm mechanism operable by the said outer handle when it is movable on the shaft.

17. A latch mechanism comprising a reciprocating latch, an actuating-sleeve for moving the same, and an outer and inner knob, a reciprocating shaft secured to one of said knobs and extending through the sleeve, the said shaft being capable of a reciprocating movement, an alarm mechanism and means for holding the shaft out of engagement with one of said knobs for rendering the said knob incapable of operating the latch mechanism but capable of operating the alarm mechanism.

18. An alarm-latch mechanism comprising a reciprocating latch, a sleeve for operating the same, cams projecting from the sleeve for retracting the latch, arms projecting from the edges of the latch, a lock-stop member engaging one of said arms, the said member being capable of operation by a key, an alarm device and means for rendering the latch-operating mechanism inoperative.

818,363. **ART OF SIGNALING THROUGH SPACE.** CORNELIUS D. EHRET, Ardmore, Pa. Original application filed July 27, 1903, Serial No. 167,129. Divided and this application filed Aug. 25, 1905. Serial No. 276,760.



Claim.—1. The method of rendering intelligible messages or signals transmitted through the natural media in electroradiant form, which consists in transforming the received electroradiant energy into the energy of electric currents or charges, controlling by such currents or charges locally-generated electrical energy to produce changes or fluctuations thereof, amplifying the fluctuations or changes of said energy, and controlling or actuating a signal-translating instrument by the amplified energy.

2. The method of rendering intelligible messages or signals transmitted through the natural media in electroradiant form, which consists in transforming the received electroradiant energy into the energy of electric currents or charges, controlling by said currents

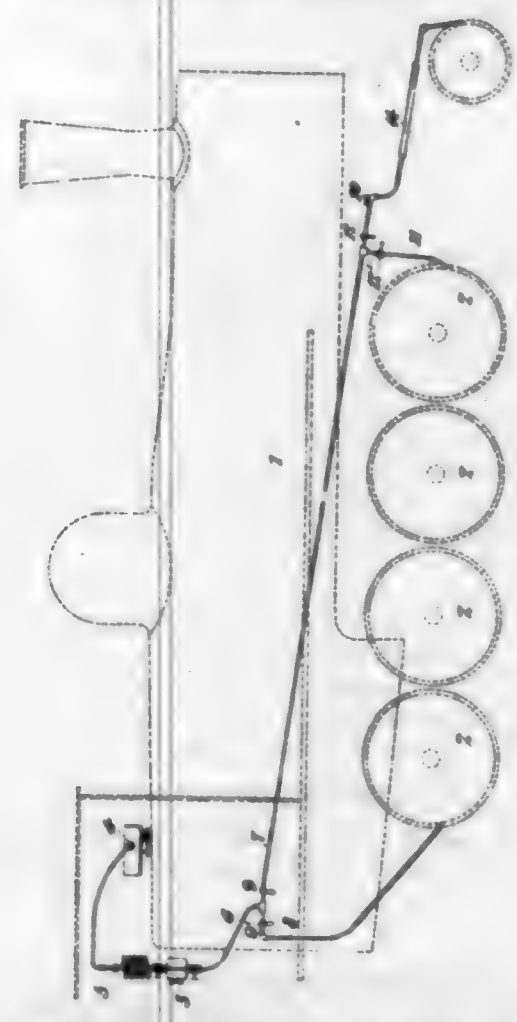
or charges the production of current fluctuations representing the transmitted messages or signals, increasing or amplifying said current fluctuations, and employing said amplified or increased fluctuations to reproduce the messages or signals.

3. The method of rendering intelligible messages or signals transmitted through the natural media in electroradiant form, which consists in transforming the received electroradiant energy into the energy of electric currents or charges, controlling by said currents or charges the production of fluctuations of current locally generated, boosting or reinforcing said current and reproducing the messages or signals by said boosted or reinforced current.

4. The method of rendering intelligible messages or signals transmitted through the natural media in electroradiant form, which consists in transforming the electroradiant energy into the energy of electric currents or charges, controlling by said currents or charges the production of a fluctuating current, boosting or reinforcing said current without destroying its message or signal representing form, and reproducing the messages or signals by said boosted or reinforced current.

5. As an improvement in the art of reproducing signals or messages represented in transmission by electroradiant energy, the step which consists in amplifying the current changes or fluctuations representing the messages or signals.

818,364. LUBRICATING SYSTEM. HARRY W. ELLIOTT, Prescott, Ariz. Filed Dec. 21, 1905. Serial No. 293,697.



Claim.—1. A system of lubricating the frictionally-engaging surfaces of a track and vehicle-wheel comprising a pipe adapted to deliver a current of steam and atomized oil against one of such surfaces.

2. A system of lubricating the frictionally-engaging surfaces of a flanged wheel and track-rail comprising a pipe extending into proximity to the wheel-flange, and adapted to deliver a current of atomized oil thereagainst.

3. A system of lubricating the frictionally-engaging surfaces of a flanged wheel and track-rail comprising a pipe having a nozzle in proximity to the wheel-flange, and connected to an oil-supply and a source of steam-pressure.

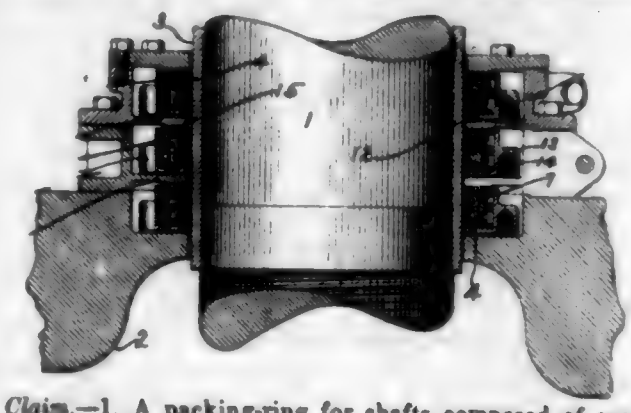
4. A system of lubricating a wheel-flange comprising an oil feeder or receptacle, and a pipe in communication with said receptacle and with a source of steam under reduced pressure and temperature conditions, said pipe terminating in an orifice in proximity to the wheel-flange.

5. A system of lubricating a wheel-flange comprising an oil-receptacle, and a source of fluid-pressure, and means for delivering oil particles in a current of the fluid against the wheel-flange.

6. A system of lubricating a wheel-flange comprising a steam-pipe having a nozzle in proximity thereto, and means for introducing crude petroleum into the steam-pipe.

7. A system of lubricating the wheel-flanges of a vehicle comprising a source of steam-pressure, and an oil-receptacle, and pipes having nozzles for delivering a current of steam carrying oil particles against the surface of the flanges.

818,365. PACKING-RING FOR SHAFTING. WILLIAM L. R. EMMET, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 28, 1905. Serial No. 267,234.



Claim.—1. A packing-ring for shafts composed of segments having their ends rabbeted together on a plane of revolution, and a break-joint plate covering the outer ends of the radial spaces between the ends of said segments.

2. A packing-ring for shafts composed of segments having their ends rabbeted together on a plane of revolution, a circumferential groove in its periphery, an elastic band in said groove, and a break-joint plate covering the outer ends of the radial spaces between the adjacent ends of said segments and held in place by said band.

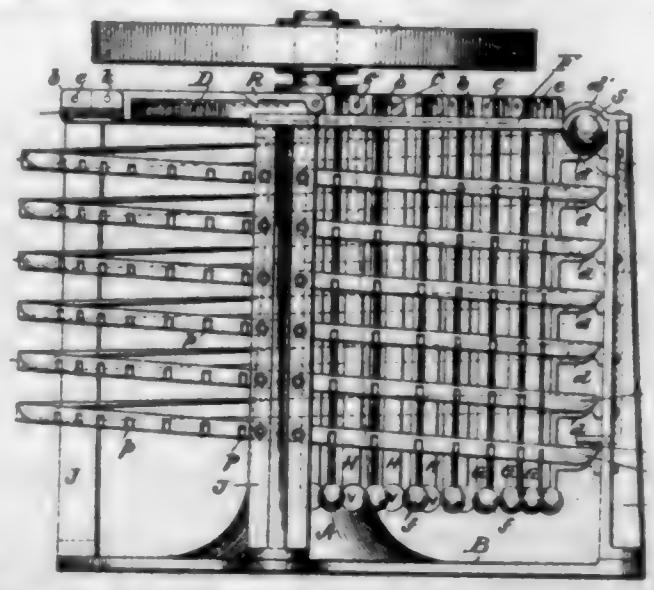
3. A packing-ring for shafts composed of segments having their ends rabbeted together on a plane of revolution, a circumferential groove in its periphery and a transverse groove at each joint, a garter-spring in the circumferential groove, and break-joint plates in the transverse grooves under said spring.

4. The combination with a segmental packing-ring, of a holder composed of a band having an inwardly-extending flange, and provided with sockets to receive springs, for urging said holder in a direction parallel with its axis.

5. The combination with a segmental packing-ring, of a holder for the same made in segments, and anchors for said ring clamped between the segments of said holder.

6. The combination with a segmental packing-ring, of a holder for the same made in segments, and a plate clamped between said segments and having prongs entering said packing-ring.

818,366. MOTOR POWER-MACHINE. ALFREDO FLORES, New York, N. Y., assignor of two-thirds to John L. Weaver, Boise, Idaho. Filed Oct. 28, 1905. Serial No. 284,915.



Claim.—1. A gravity-motor having an inclined track or race, a power-shaft, levers projecting into said track, means for transmitting power from said levers to said shaft, and a movable body engaging the levers.

2. A gravity-motor having a plurality of vertical levers pivotally secured and provided with arms, an inclined track or race in which said arms project, a power-shaft, means for transmitting power from said levers to said shaft, and a movable body engaging the track.

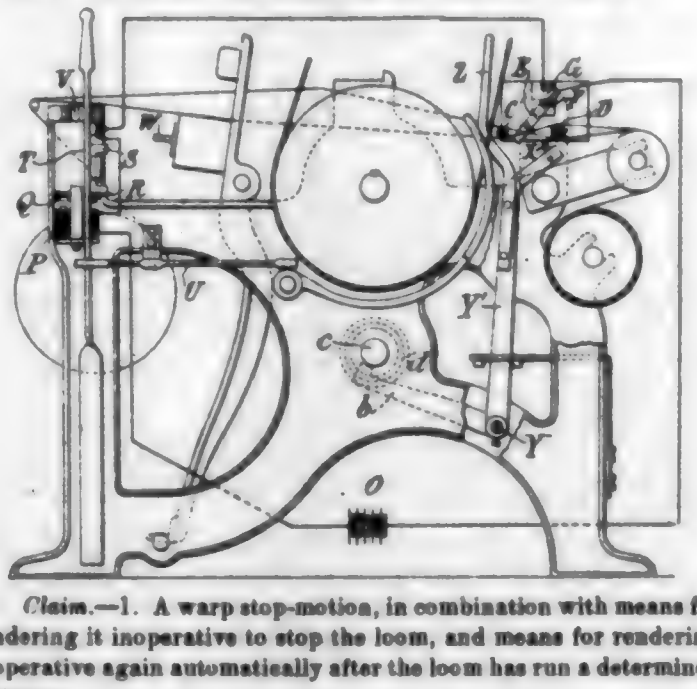
3. A gravity-motor having an annular plate, a plurality of levers pivotally connected to said plate and provided with laterally-extending arms, a track or race having slots therein in which said arms project, a power-shaft, means for transmitting power from said levers to said shaft, and a movable body engaging the track and the arms on said levers.

4. A gravity-motor having an inclined track or race provided with slots, inclined steps adjacent to said slots, a plurality of vibratory levers having arms projecting into said slots, a power-shaft, means for transmitting power from said levers to said shaft, and a movable body in said track.

5. A gravity-motor having an inclined track or race, levers projecting into said track; a power-shaft having a ratchet-wheel secured thereto, levers having pawls engaging the ratchet-wheel, and a movable body in said track.

6. A gravity-motor having a vertical power-shaft, vibratory levers, a spiral track or race surrounding said shaft and levers, and in which the levers project, means for transmitting power from said levers to said shaft, and a movable body in said track.

818,367. WARP STOP-MOTION FOR LOOMS. NORBERT FORESTER. Passaic, N. J. Filed Aug. 4, 1905. Serial No. 272,666.



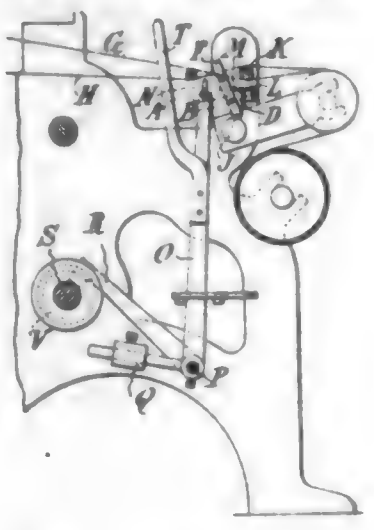
Claim.—1. A warp stop-motion, in combination with means for rendering it inoperative to stop the loom, and means for rendering it operative again automatically after the loom has run a determined distance.

2. A warp stop-motion, in combination with means for rendering it inoperative, said means including a series of levers each supported upon a crossing-point of two warp-threads, a shiftable rod X for relieving the threads of the weight of said levers, means for locking said rod X in its operative position, and means for returning said rod to its operative position automatically after the loom has run a determined distance.

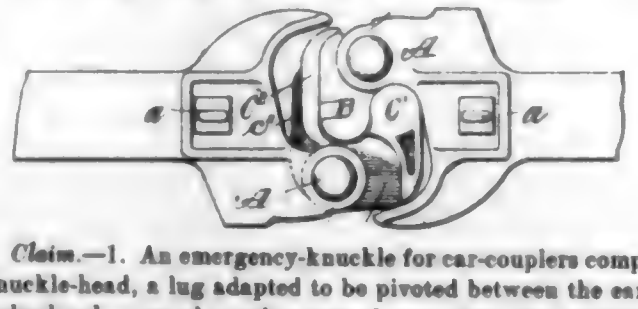
3. A warp stop-motion, in combination with means for rendering it inoperative, said means including a series of levers each supported upon a crossing-point of two warp-threads, a shiftable rod X for relieving the threads of the weight of said levers, an arm *b* moving with said rod X and engaged in the normal running of the loom with the cam-shaft *c*, a sleeve *d* on said cam-shaft provided with a screw-thread, and a spring *a* for shifting the rod X longitudinally when the arm *b* is moved beyond the diameter of the sleeve *d*, whereby the end of the arm *b* engages the beginning of the screw-thread and is gradually shifted back to its original position by the rotation of the cam-shaft after the loom is started.

818,368. WARP STOP-MOTION. NORBERT FORESTER, Passaic, N. J. Filed Aug. 18, 1905. Serial No. 274,655.

Claim.—A warp stop-motion for looms including a pivot-rod B below the warp and forming one terminal of an electric circuit, a rod D below the warp and forming the opposite terminal, a series of levers A pivoted loosely on the rod B and having a longer arm projecting upward at an angle and resting upon a crossing-point of two warp-threads and adapted to swing down by its weight when a thread breaks, each of said levers A having also a shorter arm *J* adapted to swing against said rod D and to be pressed there by the weight of the longer arm when the latter swings down, a comb L having teeth embracing the longer arms of said levers to prevent lateral displacement thereof, said rod D and comb L being mounted in the rear of said levers A, and a rod N in front of said levers adapted to be moved against the same to hold them in their inoperative positions regardless of the condition of the threads.



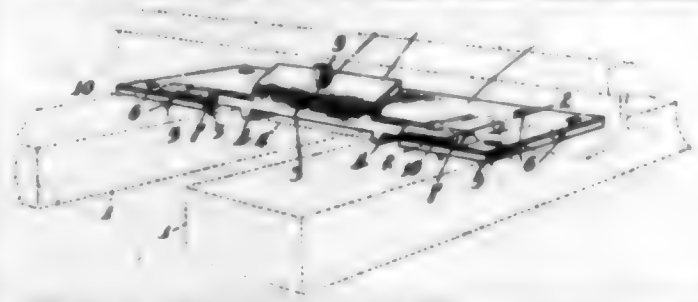
818,369. EMERGENCY-KNUCKLE FOR CAR-COUPLINGS. GEORGE H. GILMAN, St. Paul, Minn., and JAMES H. BROWN, South Tacoma, Wash. Filed Mar. 14, 1904. Serial No. 198,022.



Claim.—1. An emergency-knuckle for car-couplers comprising a knuckle-head, a lug adapted to be pivoted between the ears of a coupler-head, a guard member spaced apart from the knuckle-head to receive the head of the knuckle of a coöperating coupler, said guard member having a forwardly-extending projection at the end thereof adapted to extend around the coöperating knuckle to retain the emergency-knuckle in coupling engagement with the coöperating knuckle.

2. An emergency car-coupler knuckle comprising means for pivotally connecting the same to a coupler-head, a guard member spaced apart from the knuckle-head to receive the knuckle-head of a coöperating coupler, said guard member having a forwardly-curved vertical flange adapted to extend around the surface of the coöperating knuckle-head adjacent to its supporting-lug.

818,370. TIE-PLATE OR SEAT FOR RAILWAY-RAILS. SAMUEL J. GRUBB, Dooley, Va. Filed Aug. 30, 1905. Serial No. 276,463.



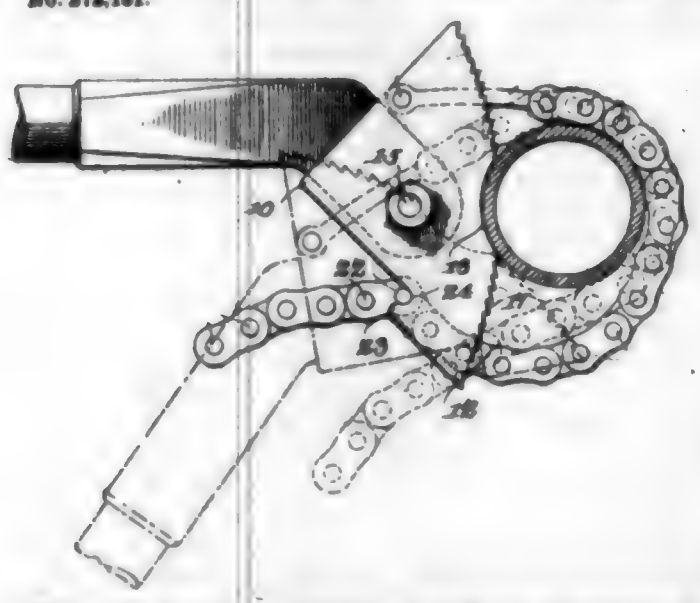
Claim.—1. A tie-plate or seat for rails, comprising a seat-plate having at its respective end portions integral prongs projecting downwardly from its bottom to enter adjacent ties and also provided at its end portions with holes to receive spikes to enter adjacent ties, said seat-plate being provided with an upwardly-projecting flange to engage the outer edge of the rail-base and also having a large flange at its outer portion which is adapted to overhang the rail-base, and a set-screw threaded through said overhanging flange in a general upright direction and adapted to engage the rail-base.

2. A tie-plate or seat for rails, comprising a seat-plate provided at its outer portion with an upwardly-projecting flange to engage the outer edge of the rail and also having a large flange at its outer portion which is adapted to overhang the rail-base, a set-screw threaded

through said overhanging flange in a general upright direction and adapted to engage the rail-base, and means for securing the end portions of the plate to adjacent ties.

3. A tie-plate or seat for rails, comprising a seat-plate provided at its outer portion with an upwardly-projecting flange to engage the outer edge of the rail and also having a large flange at its outer portion which is adapted to overhang the rail-base, a set-screw threaded through said overhanging flange in a general upright direction and adapted to engage the rail-base, said seat-plate having lateral extensions at its end portions beyond the upright flange aforesaid which rest on the ties, and means for securing the end portions of the plate to adjacent ties.

818,371. **WRENCH.** SAMUEL F. HALL, Houston, Tex., assignor of one-half to James Lawlor, Houston, Tex. Filed Aug. 1, 1905. Serial No. 272,181.



Claim.—1. A wrench comprising a head having its working face provided with spaced jaw portions, a flexible work-embracing element loosely carried by one end of the head and capable of being drawn around the work, said work-embracing element having a series of detachable connections with the other end of the head, there being a work-receiving recess formed in the work-engaging face of the head between the jaw portions thereof, the successive engagements of the work-embracing element with the head being spaced relatively to the depth of the work-receiving recess to produce slack in the work-embracing element sufficient to permit of the wrench-head moving across the work until the latter becomes wedged between one of the jaw portions and the work-embracing element.

2. A wrench comprising a head having its working face provided with spaced jaw portions, a chain loosely connected to one end of the head and provided upon opposite sides with series of lateral projections, the other end portion of the head being provided with spaced seats for detachable engagement by the projections of the chain, there being a work-receiving recess formed in the work-engaging face of the head between the jaw portions thereof, the projections of the chain being successively spaced relatively with respect to the depth of the work-receiving recess to produce slack in the chain when engaged with the seats to permit of the wrench-head being moved across the work until the latter becomes wedged between one of the jaw portions and the chain.

3. A wrench comprising a bifurcated head having its working face at opposite sides of the bifurcation provided with jaw portions, there being a work-receiving recess formed in each side of the head between the opposite jaw portions thereof, one end of the head having corresponding seats at opposite sides of its bifurcation, and a chain loosely connected within the bifurcation of the head at the other end thereof and provided at opposite sides with series of lateral projections for successive engagement with the seats, the projections being spaced relatively with respect to the depth of the work-receiving recess to produce slack in the chain when the work is in the work-receiving recess and the chain is engaged with the seats to permit of the wrench-head being moved across the work until the latter becomes wedged between one of the jaw portions and the chain.

4. A wrench comprising a head having its working face provided with opposite jaw portions and also provided with a handle-receiving seat disposed at an angle of substantially forty-five degrees to the working face of the head, a flexible work-embracing element connected to one end of the head and having a series of connections with the other end thereof, and a handle for interchangeable engagement with the seat of the head.

5. A wrench comprising a head having a working face and also provided with a handle-receiving seat disposed at an angle of substantially forty-five degrees to the working face of the head, a flexible work-embracing element connected to one end of the head and having a series of connections with the other end thereof, and a handle for interchangeable engagement with the seat of the head.

6. A wrench comprising a head having its working face provided with a jaw, a work-receiving recess and a handle-receiving seat disposed at an angle of substantially forty-five degrees to the working face of the head, a flexible work-embracing element connected to one end of the head and having a series of connections with the other end of the head, and a handle having one end set at an angle of substantially forty-five degrees to the longitudinal axis of the handle for interchangeable engagement with the handle-receiving seat.

7. A wrench comprising, a head embodying a plurality of plates parallel at each end and the ends connected by a lateral integral curve, and each having at each end oppositely-inclined work-engaging teeth, and means for holding the work in engagement with the teeth.

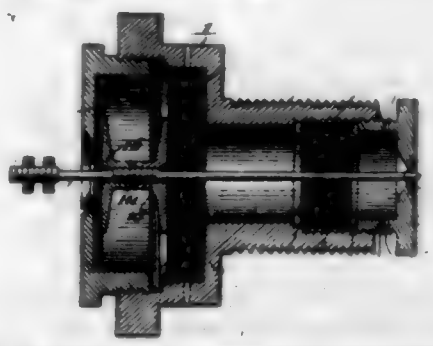
8. A wrench comprising, a head embodying a plurality of plates parallel at each end and the ends connected by a lateral integral curve and each having at each end oppositely-inclined work-engaging teeth and having transverse concavity formed at the curves and registering with each other and means for holding the work in engagement with the teeth.

9. A wrench comprising, a head embodying a plurality of plates convex along their edges and parallel with each other at each end and the ends connected by a lateral integral curve and each having at each end oppositely-inclined work-engaging teeth and having a transverse concavity formed at the curves and registering with each other and means for holding the work in engagement with the teeth.

10. A wrench comprising, a head embodying a plurality of plates convex along their outer edges and parallel with each other at each end and the ends connected by a lateral integral curve and each having at each end oppositely-inclined work-engaging teeth and having a transverse concavity formed at the curves and registering with each other a chain pivoted between the plates at one end and arranged to embrace the work and means for securing the chain between the plates at their other ends.

11. In a wrench a head formed of two toothed plates, a chain pivoted at one end between the plates and having spaced studs outstanding laterally therefrom lugs offset from the plates forming registering notches proportioned to receive alined studs and curved shoulders disposed circumferentially to the notches as centers and proportioned to seat adjacent alined studs.

818,372. **SPARK-PLUG.** BERT W. HALLSTEAD, Scranton, Pa. Filed Nov. 5, 1904. Serial No. 231,580.



Claim.—1. A spark-plug comprising a body portion, a cap carried by said body portion, a conductor-stem extending longitudinally through said cap and body portion, a body of insulating material surrounding said stem and engaging the walls of said body portion for spacing the stem from said body portion, a similar body of insulating material surrounding the stem and engaging the cap for spacing the stem from the cap, and means carried by the stem and interposed between said bodies of insulating material for spreading said bodies apart and pressing the same against said body portion and cap respectively.

2. A spark-plug comprising a body portion, a conductor-stem extending longitudinally through the same, separate bodies of insulating material surrounding said stem and engaging the walls of said body portion for spacing the stem from the body portion, and a plurality of nuts interposed between said bodies of insulating material and threaded onto said stem for retaining the same in position.

3. A spark-plug comprising a hollow body portion, a stem extending through the same, insulating material engaging the walls of said body portion and supporting said stem out of contact there-

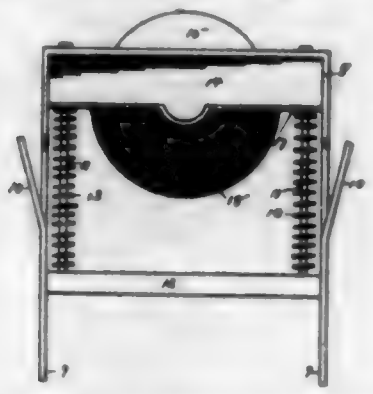
with, part of said insulating material being spaced from another part thereof, a nut threaded onto said stem between said parts of insulating material and engaging one part thereof, and a second nut also threaded onto said stem between said parts of insulating material and engaging the other part thereof.

4. A spark-plug comprising a hollow body portion, a stem extending longitudinally, centrally therethrough, disks of insulating material surrounding said stem and engaging the walls of said body portion for spacing the stem therefrom, and a pair of sleeve-nuts threaded onto said stem between the disks of insulating material and engaging said disks for retaining the stem against longitudinal movement.

5. A spark-plug comprising a body portion, a conductor-stem extending longitudinally through the same, separate bodies of insulating material surrounding said stem for spacing the same from the body portion, means spaced apart and carried by said stem and interposed between said bodies of insulating material for maintaining the same in position, and means for retaining said interposed means against movement longitudinally of said stem.

6. A spark-plug comprising a body portion, a conductor-stem extending through the same, insulating-disks arranged within said body portion and supporting said stem, and nuts carried by said stem and engaging said insulating material for retaining the same in position, said nuts being formed of a material capable of expanding under the action of heat at a greater rate than the body portion.

818,373. JOURNAL-LUBRICATOR. EDDIE W. HANCOCK, Savannah, Ga. Filed Oct. 10, 1904. Serial No. 227,915.



Claim.—1. A lubricator comprising an oil-receptacle, a well located within said receptacle and having an oil-opening, a disk journaled in said well, and means adapted to move said well and disk vertically only while held in a horizontal position.

2. A journal-lubricator comprising a detachable oil-receptacle adapted to engage at its upper edge a journal-bearing, a suitable oil-conveying means located within said receptacle, a bail pivoted at its ends to the bearing and adapted to receive said receptacle and hold the same in position.

3. A journal-bearing comprising a detachable receptacle, an oil-conveying means located within said receptacle, a bail pivoted at its ends to a journal-bearing and adapted to receive said receptacle, and a spring located at the bottom of said receptacle for retaining said bail.

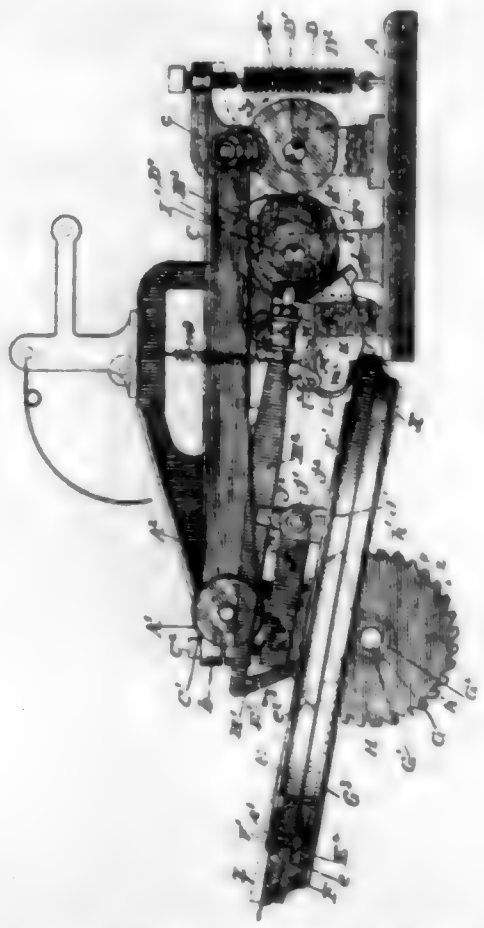
818,374. LOOPING-MACHINE. SETH T. HARSHAW, Cohoes, N. Y. Filed Feb. 13, 1904. Serial No. 193,462.

Claim.—1. In a looping-machine, the combination with a stationary bed-plate, an arm having a sleeve supported above the plate, a circular plate, an oscillating device having its lower end portion secured to the center of said circular plate, the upper portion of the oscillating device working in the sleeve and mechanism for operating said oscillating device and plate alternately toward and from said stationary base-plate.

2. In a looping-machine, the combination with a stationary base-plate, an arm having a sleeve and connected with said base-plate, a circular plate suspended from the sleeve, a ring, mounted on the circular plate, points on the ring for holding loops of two pieces of knit fabric, means for oscillating the circular plate, and a needle cooperating with the points for the purpose specified.

3. In a looping-machine, the combination with a stationary base-plate, an arm provided with a sleeve at its end, an oscillating device, a circular plate carried by the oscillating device, a revoluble ring carrying spaced points for receiving the loops of two pieces of knit fabric to be joined, means for actuating the oscillating device, and mechanism for intermittently rotating the ring.

4. In a looping-machine, the combination with a stationary base-plate, an arm provided with a sleeve, an oscillating device suspended from the sleeve, including a rigid circular plate, a revoluble ring with points adapted to be rotated on the circumferential portion of the circular plate, a gear on the ring, mechanism secured to the lower side of the circular plate and coacting with the gear for intermittently actuating the ring, and means for actuating the oscillating device.



5. In a looping-machine, the combination with a stationary base-plate, an arm supported above and extended rearward from the base-plate, a circular plate suspended from the arm and adapted to be oscillated, a circumferential way, formed in the circular plate, means for oscillating the plate, a ring rotating in the way, a series of points projecting from the ring for engaging the loops of two pieces of knit fabric to be joined, a gear on the lower side of the ring, a ratchet-wheel, a pinion actuated by the ratchet-wheel and engaging the gear, and a dog for actuating the ratchet-wheel.

6. In a looping-machine, the combination with a circular plate which is suspended and fixed from revolving, a metal ring carrying a series of points and adapted to be rotated intermittently on the circumferential portion of said circular plate, a gear formed on the lower side of the ring, a pinion mounted on the circular plate and meshing with the gear, means for intermittently rotating the gear, and means for oscillating the circular plate.

7. In a looping-machine, the combination with a circular plate which is fixed against rotation, a metal ring provided with a series of points for suspending two pieces of knit fabric by their loops, mechanism for intermittently rotating said ring and the series of points in relation to said circular plate, a needle, and means for oscillating the circular plate.

8. In a looping-machine, the combination with a suspended circular plate fixed from turning, a metal ring carrying points for suspending two pieces of knit fabric and adapted to be rotated in relation to said circular plate, a shaft supported from bearings fixed to the lower side of said circular plate, a ratchet-wheel, means for intermittently rotating the ratchet-wheel, mechanism between said metal ring and the ratchet-wheel for rotating the ring, a needle, and means for oscillating the circular plate.

9. In a looping-machine, a mechanism for suspending two pieces of knit fabric by the loops of the same, and for intermittently rotating said fabric, the said mechanism consisting of the combination of a circular plate which is fixed from rotating, a ratchet-wheel, a dog for actuating the ratchet-wheel, a pinion revolved with said ratchet-wheel, a circular series of cogs provided on the lower side of the intermittently-rotating mechanism from which the two pieces of knit fabric are suspended, and a reciprocating arm for actuating said dog, a needle, and means for oscillating the intermittently-rotated mechanism.

10. In a looping-machine, the combination with a stationary base-plate, an arm projected rearward from said base-plate and provided with a sleeve, an oscillating fabric-holding device suspended from the sleeve, including a rigid circular plate, a rotating device carried by the circular plate and adapted to hold two pieces of knit fabric suspended from their loops to be joined, and an adjustably-mounted lever mechanism for actuating the oscillating device.

11. In a looping-machine, the combination with a stationary base-plate, an arm projecting from the base-plate, a circular plate adapted to be vertically oscillated below the arm toward and from the base-plate, an oscillating device fixed to the center of the circular plate and pivoted to the arm, a circular way formed on the periphery of the plate, a rotating ring having an intermittent movement in said way, a series of points carried by said ring from which two pieces of knit fabric may be suspended by their loops between the rotating ring and the base-plate, means for moving the ring, a lever on the pivot of the oscillating device, means for lifting one end of the lever, and a reacting spring for returning said lever.

12. In a looping-machine, the combination with a stationary base-plate provided with a projecting arm, a circular plate suspended from said arm by an oscillating device between said arm and circular plate, a lever connected to said oscillating device, means for raising one end of said lever, a reacting spring for returning the lever, a metal ring adapted to be rotated in relation to the circular plate and carrying points to engage with the loops of two pieces of knit fabric, mechanism for intermittently rotating the ring, which comprises a ratchet-wheel, a reciprocating dog for rotating said ratchet-wheel, and a means for holding the ratchet-wheel after it is operated by the dog.

13. In a looping-machine, the combination with a stationary base-plate, an arm projected rearward from the same and provided with a sleeve, an oscillating device including a circular plate fixed from turning, and suspended from the sleeve, an arm connected to said oscillating device, a cam for operating the oscillating device, a ring of points mounted on the plate, mechanism, including a ratchet-wheel and a reciprocating dog, for rotating said ring of points, an eccentric for imparting a reciprocating motion to said dog, and gearing to revolve the eccentric twice to one revolution of the cam.

14. In a looping-machine, the combination with a stationary base-plate, a circular plate, a ring carrying a circular series of points for suspension of two pieces of knit fabric, mechanism for revolving the ring in relation to the base-plate, means for oscillating the circular plate and the rotating series of points toward and from said base-plate, a reciprocating needle, and mechanism for oscillating the needle-point forward from said base-plate toward said rotating ring and return.

15. In a looping-machine, the combination with a stationary base-plate, a circular plate adapted to be oscillated toward and from said base-plate, a ring carrying points for holding two pieces of fabrics suspended between said ring and base-plate, mechanism for revolving the ring in relation to the base-plate, a reciprocating arm, an eccentric for imparting reciprocating motion to the lower end of the arm, a needle secured to the lower end of the arm and having its body carried on a curve the radius of which extends from the center of motion of said arm to the shank of said needle, mechanism for vibrating said arm, and means for oscillating the plate.

16. In a looping-machine, the combination with a stationary base-plate, a ring carrying a series of points from which two pieces of knit fabric may be suspended by their loops, means for revolving the ring in relation to the base-plate, means for oscillating the ring toward and from the base-plate, an arm, a pivot for said arm, a needle secured in the lower end of the arm and carried upward from its shank on a curve the radius of which extends from the needle-shank to the pivot of the arm, a cam, a follower pivoted to the suspended arm, and coöperating with the cam, the said needle-arm being oscillated twice by the cam to one oscillation of the ring of points.

17. In a looping-machine, the combination with a stationary base-plate, a ring carrying a series of points to hold two pieces of knit fabric, mechanism for intermittently rotating said ring, mechanism for oscillating said ring, an oscillating needle-holding bar, a camway, a follower in said way, a pivot connecting said follower with said needle-holding bar, the camway actuating the needle-bar twice to each oscillation of the ring-carrying points, so that the needle may be moved first over a point and back and then forward over the space between said point and the next succeeding point.

18. In a looping-machine, the combination with a ring carrying points from which loops of two pieces of knit fabric are suspended, mechanism for oscillating said ring and points, mechanism for intermittently rotating said ring, an oscillating needle-bar, a curved needle secured to the bar, mechanism for oscillating the bar twice—once over a point and once over the space between said point and its succeeding one—to each oscillation of the ring of points, and also to each intermittent movement of the ring.

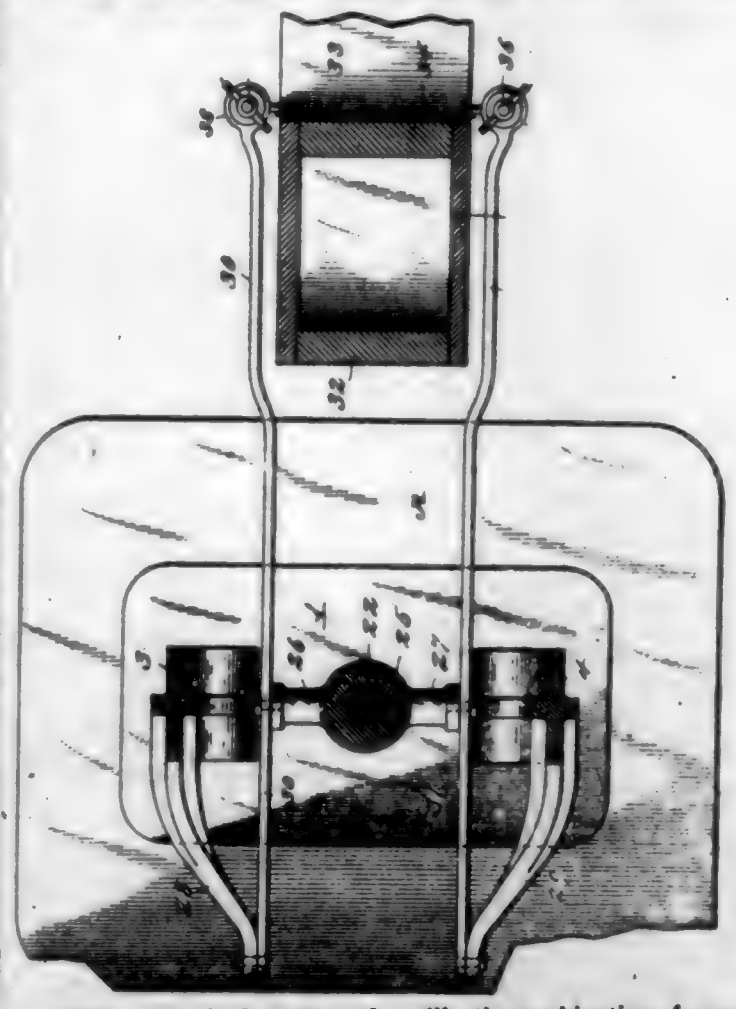
19. In a looping-machine, the combination with a stationary base-plate, an intermittently-moving ring of points for suspension of two pieces of knit fabric by their loops, means for oscillating the ring, a needle adapted to be oscillated from the base-plate, a curved looper provided at its forward end with a looping-finger and a chamfer opposite said looping-finger, mechanism for actuating said needle as described, and mechanism operating said looper as stated for producing the elastic chain of stitches for joining the loops of two pieces of fabric.

20. In a looping-machine, the combination with a stationary base-plate, a curved needle, a suspended arm carrying said needle, an eccentric for actuating said arm with an oscillating movement, a ring carrying a circular series of points for suspending two pieces of knit fabric, by their loops, mechanism for rotating said ring and points intermittently, mechanism for oscillating said ring and points toward and from said needle, a looper having a curved body provided at its terminal end with a looping-finger and having a chamfer opposite said finger, a lever operating said looper for oscillating the same toward and from said needle, a dual cam-body having peripheral cam depressions and elevations, and face-cam depressions and elevations, means for holding said lever against both the peripheral cam and face-cam and for moving said looper laterally.

21. In a looping-machine, the combination with a looper having a curved body provided with a looping-finger and a chamfer opposite the said looper-finger, a laterally-movable lever carrying said looper, a dual cam-body having a peripheral face provided with elevations and depressions for oscillating the said lever, and a side face with elevations and depressions for moving said lever laterally and return.

22. A looping-machine including points for holding loops of fabric, a needle, means for oscillating the points toward and from the needle, including a pivoted arm, a cam for tilting the arm in one direction, means for tilting the arm in the opposite direction, and means for operating the needle toward and from the points.

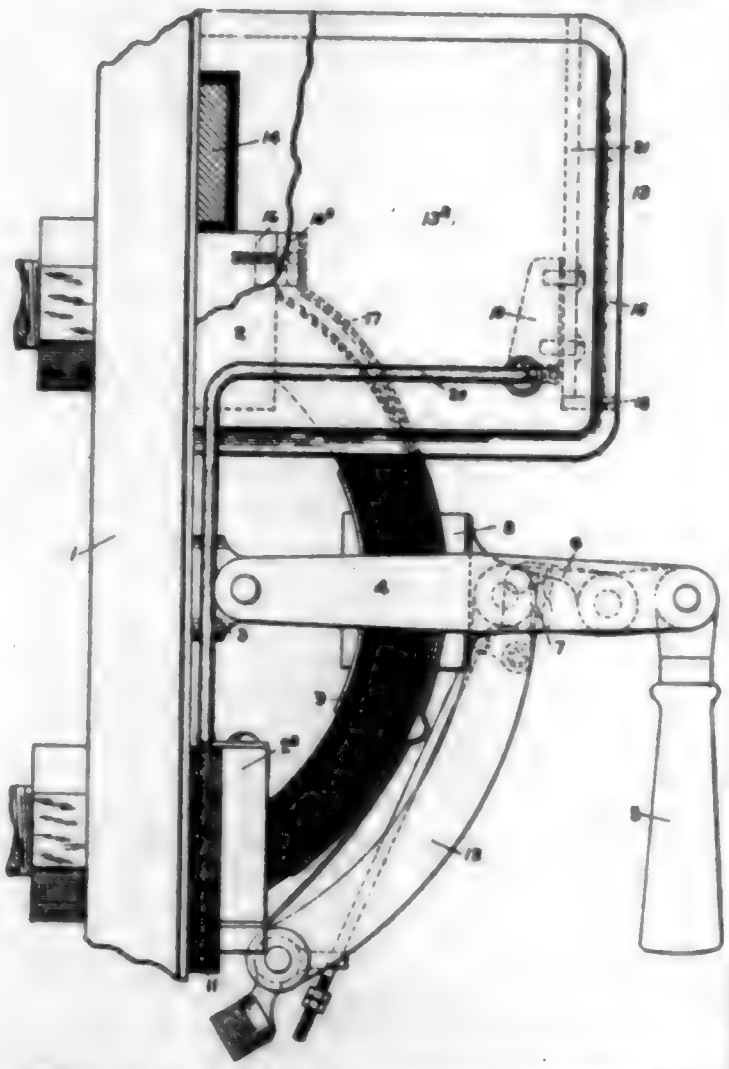
818,375. **FEED-REGULATOR.** JACOB R. HENDRIX, Elizabethton, Tenn. Filed Dec. 4, 1902. Serial No. 133,905.



Claim.—In a feed-regulator for mills, the combination of a supporting-frame, a bin-chute, a vertically-adjustable slidable gate at the outlet thereof, a vertically-positioned rotatable shaft, revoluble and vertically-movable governor devices on the shaft, a sleeve slidably mounted on the shaft below the governor, connections between the sleeve and the governor, a hub loosely mounted on the sleeve and

formed with diametrically-extending arms, levers pivotally mounted on the arms and having their rear ends pivotally supported on the frame and extending forward to the vertically-movable gate, oppositely-disposed screw-threaded rods secured to the upper ends of the gate and projecting through the forward ends of the levers, and adjustable nuts on the rods, whereby the levers may be adjusted on the rods.

818,376. ARC-EXTINGUISHING CUT-OUT. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 8, 1903. Serial No. 168,774.



Claim.—1. An electric switch or circuit-breaker having an arc-expelling chute inclosing both a main and shunt contact, both main and shunt contacts having substantially the same impedance.

2. An electric switch or circuit-breaker having main and shunt contacts of substantially the same reactance, and a blow-out magnet in inductive relation to both contacts.

3. An arc-extinguishing cut-out having the points of circuit rupture completely inclosed by a magnetic circuit, the magnetizing-current for which is furnished by current traversing the contacts and the arc.

4. An arc-extinguishing cut-out having its points of circuit rupture between iron pole-pieces extending across the gap at the sides thereof, the magnetizing-current for which is furnished by current traversing the contacts and arc.

5. An electric switch or circuit-breaker having a main and shunt contact inclosed in an arc-rupturing chute between iron pole-pieces, the two pairs of contacts being of the same reactance.

6. An electric switch or circuit-breaker having main and shunt contacts, a chute in which they move on opening the circuit, and a metal contact electrically connected with the shunt to take the arc after a definite range of movement of the movable contact and thereby prevent deflection of the arc-gases.

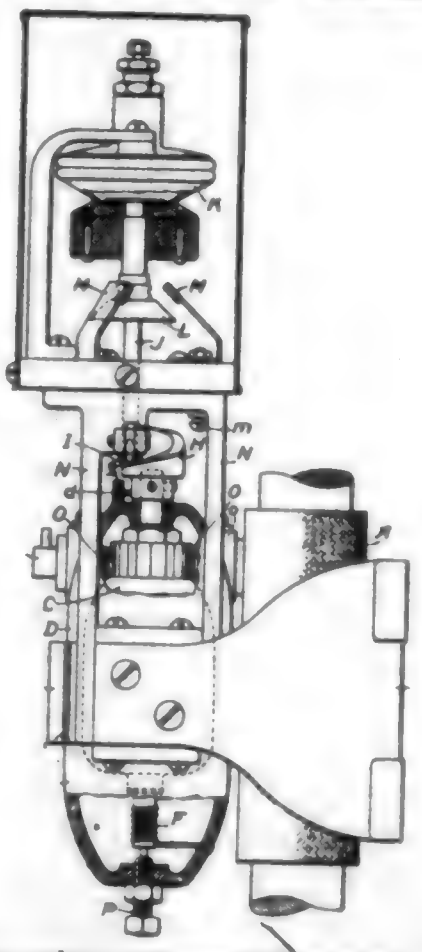
7. An electric switch or circuit-breaker having main and shunt contacts, a chute in which they move, an insulating-partition across the end of the chute, and an arcing-contact near the partition electrically connected with one circuit-terminal.

8. The combination with a current interrupter or cut-out, of means for localizing the magnetic flux on the side nearest the terminals, said means comprising plates of magnetic material at the sides of a chute inclosing the terminals, and a magnetic connection between the plates.

9. A current interrupter or cut-out having an arc-chute at the side of the terminals and walls of magnetic material connected by a short-circuiting connection on the side away from the terminals.

10. A current interrupter or cut-out having a magnetic circuit of good permeability inclosing both terminals, the field in the direction of expulsion being of less reluctance than the other parts.

818,377. REVERSE-CURRENT RELAY. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 22, 1904. Serial No. 229,548.



Claim.—1. In a relay, a stationary field-magnet member, an armature journaled between the poles thereof, a cam carried by the armature-shaft, a reciprocating member adapted to be moved by said cam, and a switch-contact carried by said reciprocating member.

2. In a relay, a stationary field-magnet member, an armature journaled between the poles thereof, a cam carried by the armature-shaft, a roller bearing on said cam, a longitudinally-movable spindle carried by said roller, and a switch-contact carried by said spindle.

3. In a relay, a stationary field-magnet member, an armature with a vertical shaft journaled between the poles of the field member, a cam at the upper end of said shaft, a roller bearing on said cam, a vertically-movable spindle supported by said roller, and a switch-contact carried by said spindle.

4. In a relay, a stationary field-magnet member, an armature with a vertical shaft journaled between the poles of the field member, a cam carried at the upper end of said shaft, a roller bearing on said cam, a vertically-movable spindle supported by said roller, a pivoted lever guiding said roller and receiving the lateral pressure thereof, and a switch-contact carried by said spindle.

5. In a relay, a stationary field-magnet member, an armature journaled between the poles thereof, a cam carried by the armature-shaft, a reciprocating member adapted to be moved by said cam, a switch-contact carried by said reciprocating member, and means for retarding the movement of said reciprocating member.

6. In a relay, a stationary field-magnet member, an armature with a vertical shaft journaled between the poles of the field member, a cam carried at the upper end of said shaft, a roller bearing on said cam, a vertically-movable spindle supported by said roller, a switch-contact carried by said spindle, and means for retarding the movement of said spindle.

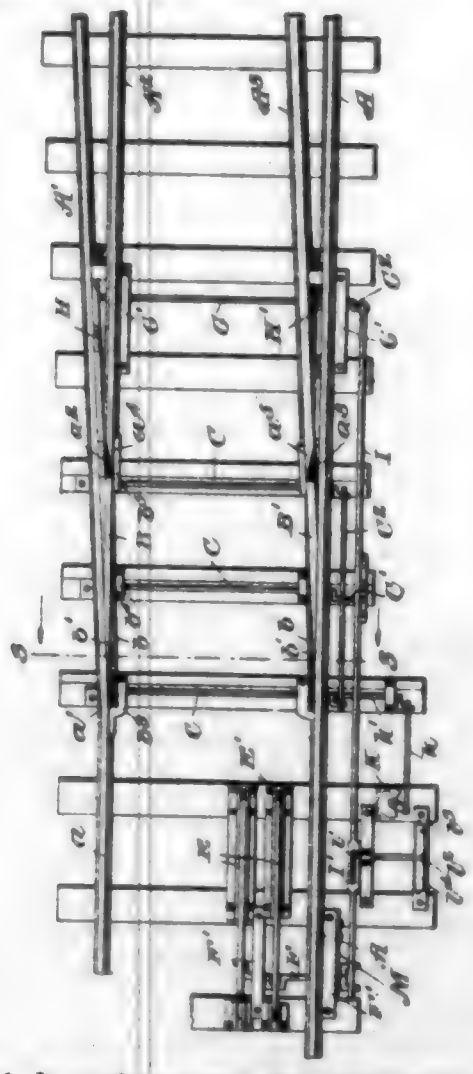
7. In a relay, a stationary field-magnet member, an armature journaled between the poles thereof, a cam carried by the armature-shaft, a reciprocating member adapted to be moved by said cam, a switch-contact carried by said reciprocating member, and means normally opposing the movement of said armature.

8. In a relay, a stationary field-magnet member, an armature with a vertical shaft journaled between the poles of the field member, a cam carried at the upper end of said shaft, a roller bearing on said

cam, a vertically-movable spindle supported by said roller, a switch-contact carried by said spindle, and means normally opposing the movement of said armature.

9. In a relay, a stationary field-magnet member, an armature journaled between the poles thereof, a stop adapted to be engaged by the armature, a spring arranged to hold said armature normally in engagement with said stop, a cam carried by the armature-shaft, a reciprocating member adapted to be moved by said cam, and a switch-contact carried by said member.

818,378. RAILWAY-SWITCH. WILLIAM W. HOFFMAN, La Fayette, and FRANCIS W. POWERS, West Lafayette, Ind., assignors to Electric & Steam Ry. Supply Co., La Fayette, Ind. Filed June 29, 1905. Serial No. 267,635.



Claim.—1. In a railway-switch, the combination with movable switch-points, and means for operating the same, of a broken main rail and a broken siding-rail terminating adjacent the rear ends of said switch-points and having the tread portions of their ends cut away to form a recess for the reception of the flange of a car-wheel.

2. In a railway-switch, the combination with movable switch-points, and means for operating the same, of a broken main rail and a broken siding-rail terminating adjacent the rear ends of said switch-points and having the tread portions of their ends cut away forming a recessed horizontal face and a vertical wedge-shaped tread.

3. In a railway-switch, the combination with the main track and siding rails, of a pair of adjacent switch-points, and means for bodily elevating one of said switch-points and simultaneously lowering the other, the base of said switch-points being of the same thickness throughout their lengths, and the forward tread-surface of said switch-points being cut away to form a recessed horizontal face and a vertical wedge-shaped tread.

4. In a railway-switch, the combination with the main track and siding rails, of a pair of switch-points adjacent thereto, means for bodily elevating one of said switch-points and simultaneously lowering the other, and means for limiting the upward movement of said switch-points, comprising stops carried by same.

5. In a railway-switch, the combination with the main track and siding rails, of a pair of switch-points adjacent thereto, means for bodily elevating one of said switch-points and simultaneously lowering the other, and means for limiting the upward movement of said switch-points, comprising transversely-disposed hooks depending from the switch-points and adapted to engage beneath the rails.

6. In a railway-switch, the combination with unbroken main rails one of said main rails branching off into a siding-rail, a broken main-rail section and siding-rail terminating immediately alongside of said first-mentioned rails and having their tread-surfaces cut away to form a wedge-shaped tread with a recess adjacent said first-mentioned rails to receive the flange of the wheels, of a pair of switch-points disconnected from and having their rear ends terminating adjacent said recessed ends of said broken main and siding rails, said switch-points cut away at their forward ends to form a recess and a wedge-shaped tread, and means for bodily elevating one of said switch-points and simultaneously lowering the other.

7. In a railway-switch, the combination with a pair of switch-points disconnected from the rails, and means for bodily elevating one of said switch-points and simultaneously lowering the other, of flange-plates located adjacent the inside faces of one of the main track-rails and siding-rails, said flange-plates being so connected as to operate simultaneously in reverse vertical directions, and means connecting said flange-plates with said switch-points to throw said switch-points, substantially as described.

8. In a railway-switch, the combination with the main and siding rails and suitable switch-points, with means for operating the same, of flange-plates pivoted at one end to the inside face of one of said main rails and siding-rails, and having their upper edges disposed in the plane of travel of the car-wheel flange, means connecting said flange-plates to simultaneously operate said plates reversely in vertical planes, means connecting said plates to said switch-points to throw the latter, and means for limiting the upward movement of said flange-plates.

9. In a railway-switch, the combination with the main and siding rails and suitable switch-points, with means for operating the same, of flange-plates pivoted at one end to the inside face of one of said main rails and siding-rails, and having their upper edges disposed in the plane of travel of the car-wheel flange, means connecting said flange-plates to simultaneously operate said plates reversely in vertical planes, means connecting said plates to said switch-points to throw the latter, and means for limiting the upward movement of said flange-plates, comprising angle-rods disposed in the path of travel of said plates and adapted to engage same at a predetermined point of their upward movement.

10. In a railway-switch, the combination with suitable switch-points and means for throwing same, comprising an operating crank-shaft having a crank thereon, contact-plates adapted to be engaged by a moving car and operate said crank-shaft, a reciprocating rod operatively connecting said crank and switch-points, and means for holding said crank and reciprocating rod in their extreme positions comprising a lug carried by said crank and a spring member having its free end engaging above said lug.

11. In an automatic railway-switch having switch-points, contact-plates and operative connections therebetween, the combination of contacting means carried by the rolling-stock, comprising a pair of pivoted arms having contact-rollers journaled thereon, lugs pivotally supported at a fixed height relatively to the car-wheels, and means for bringing said lugs into operative engagement with said rollers.

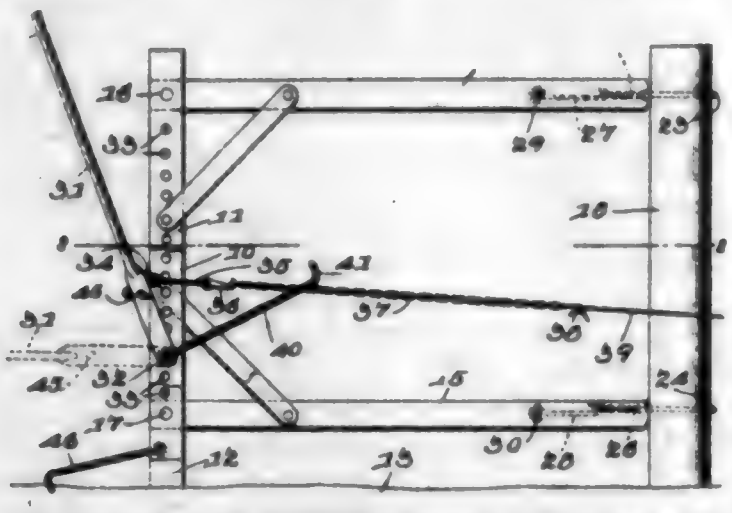
12. In an automatic railway-switch having switch-points, contact-plates and operative connections therebetween, the combination of contacting means carried by the rolling-stock, comprising a pair of pivoted arms having contact-rollers journaled thereon, a collar or wrist adapted to be revolubly mounted on the axle of the car, angularly-disposed lugs carried by said collar, and means for oscillating said collar or wrist, substantially as described.

13. In a railway-switch, the combination with the cross-ties having their upper face longitudinally recessed, saddles in said recessed portion and having top faces flush with top faces of the ties to solidly support the unbroken rails of the track, switch-points, and operating-shafts for said switch-points extending longitudinally within said recessed portions.

818,379. WIRE-STRETCHER. GEORGE W. HOLMES, Greenfield, Ill. Filed Feb. 5, 1906. Serial No. 299,582.

Claim.—1. A wire-stretching apparatus comprising a standard for bearing on the ground and having spaced stays extending laterally therefrom for bearing against a fence-post, means for detachably coupling said stay members to said post, a lever swinging from said standard, a flexible element connected at one end to said lever and with the other end adapted to be detachably connected to the wire to be strained, and means for detachably connecting said flexible element to said standard, to hold the strain on the wire while the lever is being adjusted to a new position.

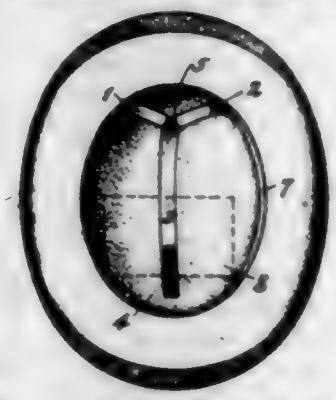
2. A wire-stretching apparatus comprising a standard for bearing on the ground and having spaced stays extending laterally therefrom for bearing against a fence-post means for detachably coupling said stay members to said post a lever swinging from said standard, a flexible element connected at one end to said lever and with the other end adapted to be detachably connected to the wire to be strained, a gripping member movably connected to said standard and having means at the free end for detachably engaging said flexible element.



3. A wire-stretching apparatus comprising a standard for bearing upon the ground and formed with spaced sides, stays spaced apart and connected between said spaced sides and extending therefrom and adapted to bear against a fence-post, means for detachably coupling said stay members to said post, a lever pivoted to swing between said spaced sides, a flexible element connected at one end to said lever and with the other end provided with wire-engaging means, a gripping member swinging at one end from said standard and provided with means at the free end for detachable engagement with said flexible element.

4. A wire-stretching apparatus comprising a standard, means for maintaining said standard spaced from a fence-post, a lever swinging from said standard, a flexible element connected at one end to said lever and with means at the other end for detachably coupling to the wire to be strained, and an arm swinging from said standard and terminating in an eye through which said flexible element movably extends, whereby the wire may be held in strained position while the lever is adjusted to a new position.

818,380. PAPER-CLIP FOR HATS. WILLIAM H. HOLSTON, New York, N. Y. Filed Oct. 23, 1905. Serial No. 283,907.

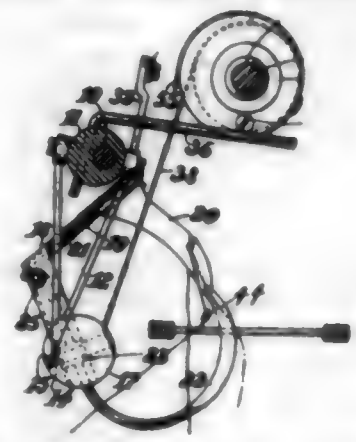


Claim.—1. In a folding paper-clip for hats, a plurality of arms pivotally connected together, one of said arms having a substantially flat end adapted to project under the band of a hat, and an independent spring-tongue carried by another arm for the purpose specified.

2. A device of the character described, comprising three curved flexible arms, two of said arms having substantially flat straight ends adapted to project under the band of a hat and a yielding spring clip or tongue carried by one of said arms.

818,381. APPARATUS FOR SLAYING WARPS. JOSEPH JOUBERT and FRÉDÉRIC SOYER, Lyon, France. Filed July 25, 1904. Serial No. 218,080.

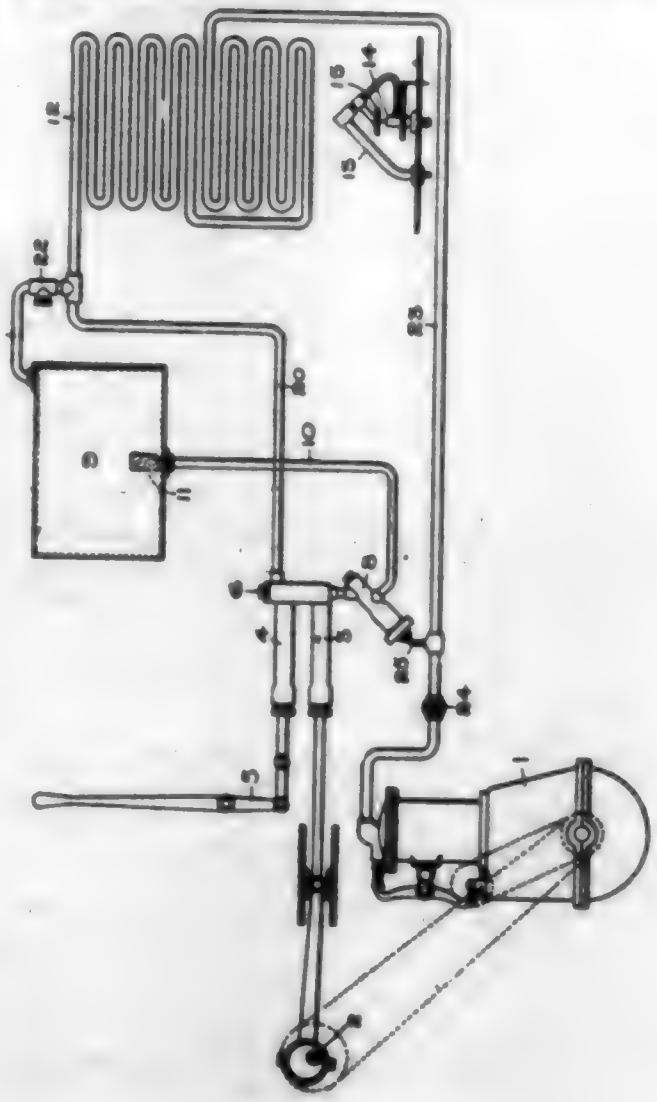
Claim.—1. In an apparatus for slaying warps, having a drawing-in hook and tongue swinging round a freely-suspended center, means to swing this center during operation parallel to the direction of the reed-dents, means for accurately adjusting the said tongue and hook in relation to each other in accordance with the thickness of the reed-dent and means for adjusting the said hook to suit various reed widths, all substantially as and for the purpose set forth.



2. In an apparatus for slaying warps, a suspended parallelogrammic frame with sides pivotally connected together, a tool-holder eccentrically mounted upon a shaft forming the lower side of the said parallelogrammic frame, means for turning the said tool-holder, a drawing-in hook and tongue carried by the said tool-holder, an oscillating scroll, a connection between the said scroll and the said tool-holder for turning the latter, an angular lever-arm adjustable in the said parallelogrammic frame and a crank-stud in the said scroll for oscillating the said parallelogrammic frame, all substantially as and for the purpose set forth.

3. In an apparatus for slaying warps, a suspended parallelogrammic frame with sides pivotally connected together, a tool-holder eccentrically mounted upon a shaft forming the lower side of the said parallelogrammic frame, means for turning the said tool-holder, a drawing-in hook and tongue bearing against each other carried by the said tool-holder, a stud in the latter upon which the said tongue is adapted to turn, a set-screw above the said tool-holder and an arm on the said tongue engaging in the said set-screw, all substantially as and for the purpose set forth.

818,382. SYSTEM OF WATER REGULATION FOR FLASH-BOILERS. HERMANN LEMP, Lynn, Mass., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed July 15, 1901. Serial No. 68,348.



Claim.—1. In combination, a pump, a tank containing liquid, a boiler supplied by the pump, and a device which normally acts as an automatic suction-valve for the pump and is adapted to be rendered inoperative by the steam-pressure of the boiler when such pressure becomes abnormally great.

2. In combination, a pump, a tank containing liquid, a boiler supplied by the pump, a single valve between the tank and the pump which automatically opens toward the latter, and means for holding the valve open when the steam-pressure on the boiler becomes excessive, and a conduit for conveying steam to said means.

3. In combination, a boiler, an engine, a pump driven from the engine, a spring-seated suction-valve located exterior to the pump structure, a regulator which is connected to the steam-pipe on the boiler side of the throttle and is acted upon by the boiler-pressure, and means acted upon by the regulator for controlling the suction-valve of the pump.

4. In combination, a boiler, a source of water-supply, a pump having a fixed length of stroke, spring-seated suction and delivery valves for the pump, a connection extending between the pump and the source of supply in which the suction-valve is located, and a regulator also located in said connection which is acted upon by the boiler-pressure for raising the suction-valve of the pump when the boiler-pressure rises above a predetermined amount.

5. In combination, a boiler, an engine, a pump driven thereby, a spring-seated suction-valve therefor, and a regulator comprising a spring-pressed plunger arranged to move into and out of engagement with the valve, and a diaphragm which is controlled by the steam-pressure of the boiler for actuating the plunger in a manner to raise the valve when the pressure increases to a certain point.

6. In combination, a boiler, a manually-actuated pump, an automatically-actuated pump, both delivering water to the boiler, a controlling-valve which is common to both pumps, a device which is adapted to be acted upon by the boiler-pressure for opening the valve when the boiler-pressure rises above a certain point, and a casing separated from the pumps which contains the device and the controlling-valve.

7. In combination, a boiler, a manually-actuated pump, an automatically-actuated pump, both delivering water to the boiler, a suction-valve which is common to both pumps and is located on the inlet side of the automatically-actuated pump, a steam-actuated diaphragm operatively connected to the suction-valve and adapted to raise the same to relieve the automatically-actuated pump of substantially all of its load, and a delivery-valve which is also common to the pumps and is located on the outlet side of the manually-actuated pump.

8. In combination, a manually-actuated piston, a power-piston, cylinders therefor, a pipe in series with the cylinders, a valve in the pipe adapted to open automatically toward the cylinders, and a diaphragm which is acted upon by fluid-pressure for raising the valve from its seat when the pressure exceeds a certain point.

9. In combination, a pump having a free passage, a detachable conduit connected with the pump and communicating with said passage, a check-valve in said conduit, and an automatic regulator which renders the check-valve inoperative.

10. In combination, a flash-boiler, a pump for supplying liquid thereto, a steam-actuated regulator for controlling the supply of liquid to the boiler, a connection between the regulator and the boiler, said regulator comprising an automatic suction-valve, a pressure device adapted to act upon the valve, and a casing containing the said device and valve.

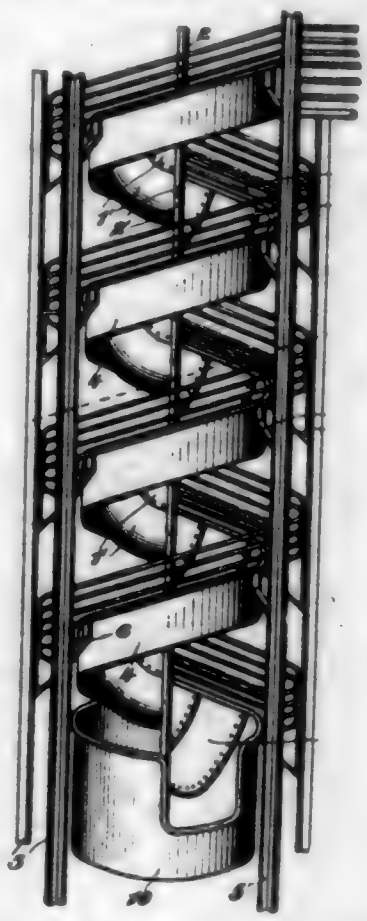
11. In combination, a boiler, a liquid-containing tank, a conduit between them, a power-pump in the conduit, a steam-actuated regulator between the pump and the tank, means between the power-pump and the boiler for supplying liquid to the latter, a steam-consumption device, a steam-supply conduit between the boiler and the said device, and a connection between said latter conduit and the regulator.

12. In combination, a boiler, a source of water-supply, a conduit connecting the two, two pumps included in the conduit, a single automatically-actuated valve in the conduit on the suction side of the pumps, and a device controlled by the pressure of the boiler for holding the valve open when the steam-pressure reaches a predetermined point.

13. In combination, a boiler, an engine, a steam-supply conduit between them, a source of liquid-supply, a conduit connecting said source with the boiler, a power-pump included in said latter conduit which derives its power from the engine, means for supplying liquid to the boiler separately or in conjunction with the pump, and means in the steam-supply conduit which is governed by the boiler-pressure for controlling the quantity of liquid supplied to the boiler.

14. In a regulator for liquid-supplying systems, the combination of a casing having inlet and outlet passages, and containing an automatically-actuated valve between the passages, a seat for the valve, a spring for seating the valve, means which acts upon the valve for opening it against the tension of said spring, and a steam-actuated diaphragm which operates said means.

818,383. SPIRAL SLIDEWAY. WILLIAM H. LOGAN, Louisville, Ky., assignor to Kirker-Bender Fire Escape Company, Louisville, Ky. Filed Oct. 13, 1904. Serial No. 228,340.



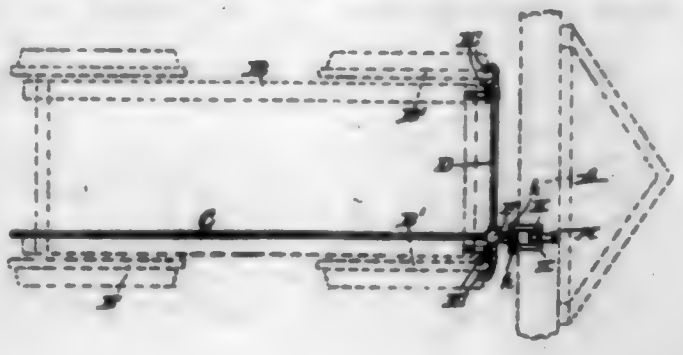
Claim.—1. A spiral slideway having a central supporting means a safety-screen comprising a series of spirally-arranged wires, said safety-screen being on the outside of said slideway, and an outer spiral guard-wall comprising a series of spirally-arranged wires, substantially as described.

2. A spiral slideway having a central supporting means, a vertical stiffening-wall secured to said slideway, an outer guard-wall constructed of a series of spirally-arranged wires, and a safety-screen interposed between the said slideway and the said outer guard-wall, said safety-screen being constructed of a series of spirally-arranged wires, substantially as described.

3. A spiral slideway having a dish or curve therein and having a central supporting means constructed in sections, a spirally-arranged vertical stiffening-wall secured to the outer edge of said slideway, the top edge of said wall extending only to the top edge of said slideway, whereby the dish or curve of the slideway is preserved regular and unbroken, substantially as described.

4. A spiral slideway having its central supporting means constructed in sections, a core in each of said sections arranged to enter its adjacent section, and a series of flights constructed independent of the central sectional supporting means and secured to the said sectional central supporting means, substantially as described.

818,384. CAR-WHEEL-FLANGE LUBRICATOR. ANDREW C. LOVE, Sacramento, Cal. Filed Aug. 28, 1905. Serial No. 275,447.



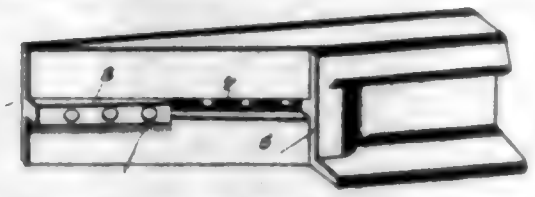
Claim.—1. In combination with a car-body and a swiveled wheeled truck thereon, pipes for conveying a lubricant to the wheel-flanges, a valve for controlling the flow of the lubricant through said pipes, and operative connections between said valve and the car-body, substantially as shown and described.

2. In combination with a car-body and a swiveled wheeled truck thereon, pipes for conveying a lubricant to the wheel-flanges, a valve for controlling the flow of the lubricant through said pipes, a rocking member for opening said valve attached to the stem thereof, and operative connections between said rocking member and the car-body, substantially as shown and described.

3. In combination with a car-body and a swiveled, wheeled truck, pipes for conveying a lubricant to the wheel-flanges, a valve for controlling the flow of the lubricant through said pipes having a spring-actuated plunger, a rocking member secured to the valve-stem, arms secured to the rocking member, and a rod secured to the car-body and adapted to engage said arms and open the valve, substantially as shown and described.

4. In combination with a car-body and a swiveled, wheeled truck, pipes for conveying a lubricant to the wheel-flanges, a valve for controlling the flow of the lubricant through said pipes having a spring-actuated plunger, a block pivotally secured to the valve-stem, L-shaped arms having a slot therein secured to said stem, and a rod secured to the car-body and adapted to engage the arms and open the valve, substantially as shown and described.

818,885. RAIL-JOINT. CHARLES E. LUNDAHL, Minneapolis, Minn. Filed Oct. 7, 1904. Serial No. 227,534.



Claim.—1. A rail having an end formed with a beveled face extending obliquely to the plane of the rail and terminating at its inner end in a square shoulder, said face being formed with a central longitudinal groove extending outwardly from said shoulder, and a rib between said groove and the outer end of said beveled face, said rib having its contact-face disposed coincident with or parallel to the plane of the rail and being of slightly less length than the groove substantially as described.

2. In a rail-joint, the combination with rails provided with halved overlapping ends beveled upon their inner faces obliquely to the plane of the rails to form a scarf-joint, each of said ends being formed at its inner extremity with a square shoulder and formed upon its beveled face with a longitudinal groove extending from said shoulder to a point about midway the length of the beveled face, and a tongue projecting from said beveled face between the outer end of said groove and the outer extremity of the rail end, said tongue having its contact-face disposed coincident with or parallel to the plane of the rail and being formed at its inner end with a straight transverse shoulder, and fastenings for connecting the rail ends together, the grooves in the respective ends of the rails exceeding in length the coacting tongues to provide an intervening space between the inner ends of the tongues to allow for expansion and contraction of the joint substantially as described.

818,886. ARCH STRUCTURE. DANIEL B. LUTEN, Indianapolis, Ind. Original application filed May 17, 1902. Serial No. 107,812. Divided and this application filed July 25, 1904. Serial No. 217,835.



Claim.—1. An arch having embedded therein a plurality of tension members passing alternately across the rib, said members being low at the crown and high at the haunches, and each of said members passing across the rib at different longitudinal points from the others, substantially as described.

2. An arch having embedded therein tension members passing alternately across the rib, said members being high at the crown and low at the haunches, substantially as described.

3. An arch having a plurality of tension members embedded therein, said members passing alternately across the rib and being high at the crown and low at the haunches, and each passing across the rib at a different point longitudinally from the others, substantially as described.

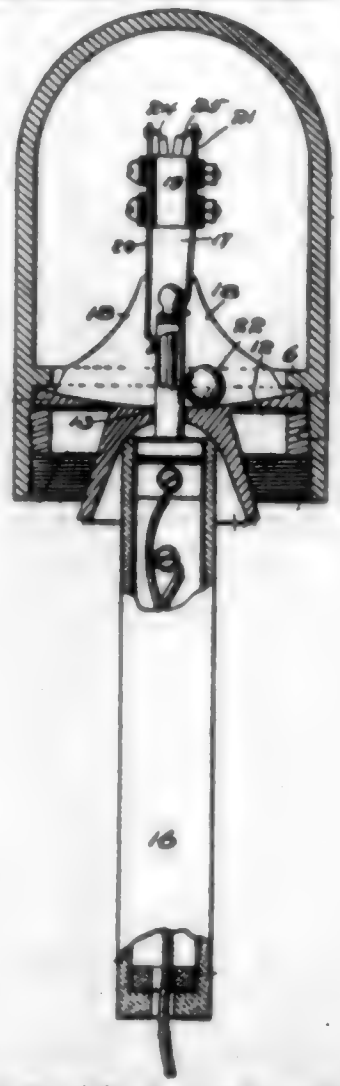
4. An arch having tension members embedded therein and passing alternately across the rib, some of said members being low at the crown and high at the haunches and others being high at the crown and low at the haunches, substantially as described.

5. An arch having two classes of tension members embedded therein and passing alternately across the rib, one class being low at the crown and high at the haunches, the other high at the crown and low at the haunches, the several members of each class crossing the arch at longitudinally-different points from the others, substantially as described.

6. An arch having tension members embedded therein, some of said members being low at the crown and high at the haunches and others high at the crown and low at the haunches, a pavement extending across the bed of the stream between abutments or side walls, and ties embedded in said pavement and extending from abutment to abutment, substantially as described.

7. An arch having embedded therein rods, bars or other tension members in two or more series, following one face of the arch-rib, thence across and following the other face of the rib, the points of crossing for the different series being angularly or laterally displaced with respect to each other, substantially as described.

818,887. SWITCH-RECEPTACLE. GEORGE H. METHENY, Lima, Ohio. Filed May 26, 1906. Serial No. 318,264.



Claim.—1. A device of the character described, comprising an inverted, cup-shaped casing, said casing provided with an internal screw-threaded surface formed near its lower edge, an annular extension formed upon the inner face of said casing, said screw-threaded surface terminating short of said annular extension, a removable base member positioned within said casing, and contiguous to said annular extension, said base member provided with an upper concaved surface and with a central aperture, said member provided with a conical, depending portion, said depending portion provided with a concaved recess, a standard formed integral upon said base member, ribs extending in opposite directions from said standard and formed integral with said base member, a block formed upon the upper end of said standard, spring-terminals carried by said block, and an annular locking member positioned within said casing for securing said base member in a fixed position, said locking member provided with an outer screw-threaded surface and with inwardly-projecting extensions.

2. A device of the character described comprising an inverted, cup-shaped casing, a removable member of the same diameter as the diameter of the interior of said casing, positioned within said casing, means for securing said member within said casing, said member provided with an aperture, a ball-valve positioned within said casing and normally closing said aperture, and terminal-carrying means formed upon said member.

3. A device of the character described, comprising a casing closed at its top and open at its bottom, a removable member positioned within and closing the bottom of said casing, said member provided with a depending guiding portion and an aperture, a ball-valve closing said aperture, and terminal-supporting means carried by said member.

4. A device of the character described, comprising a casing, open at its bottom and closed at its top, a removable member of the same dimensions as the dimensions between the inner walls of said casing, said member positioned within said casing, said member provided with a series of apertures and with terminal-carrying means, and valve means for closing one of said apertures.

5. A device of the character described, comprising a casing closed at its top and open at its bottom, a removable member closing said bottom, said member provided with an aperture, a ball-valve for closing said aperture, and terminal-carrying means formed upon said member.

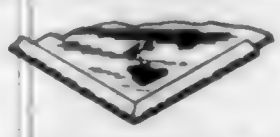
6. A device of the character described, comprising a casing, a removable member positioned within said casing, means for securing said member within said casing, guiding means carried by said member, valve means carried by said member, and terminal-carrying means carried by said member.

7. A device of the character described, comprising a casing closed at its top and open at its bottom, a removable member positioned within the lower portion of said casing, means for securing said removable member within said casing, depending guiding means formed upon said member, terminal-carrying means formed upon said member within said casing, said member provided with an aperture, and a ball-valve for closing said aperture.

8. In a device of the character described, the combination of a casing closed at its top and open at its bottom, a removable bottom of substantially the same width as the interior of said casing, positioned within the same, a revoluble locking member threaded into said casing and in engagement with the said bottom, terminal-carrying means supported by said bottom, conical guiding means formed upon said bottom, said bottom provided with an opening, and valve means for closing said opening.

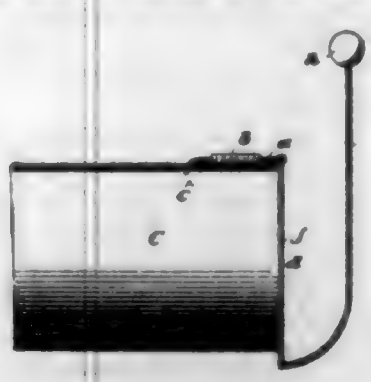
9. In a device of the character described, the combination of a casing closed at its top and open at its bottom, an extension formed interiorly of said casing, a removable bottom positioned within said casing and in engagement with said extension, a removable, annular locking member threaded into said casing and in engagement with said bottom, and terminal-carrying means positioned within said casing.

818,388. **MANIFOLDING-BOOK.** ANDREW J. MIDGARD, Stoughton, Wis. Filed Mar. 3, 1905. Serial No. 248,267.



Claim.—A book of the character described, having one cover provided upon its inner surface and near a lateral edge and one end thereof with a leaf-upholding "hump" or elevation formed by an upbent portion of said cover.

818,389. **MOSQUITO-GUARD FOR CISTERNS AND TANKS.** BENJAMIN C. MIER, New Orleans, La. Filed Aug. 18, 1905. Serial No. 274,774.

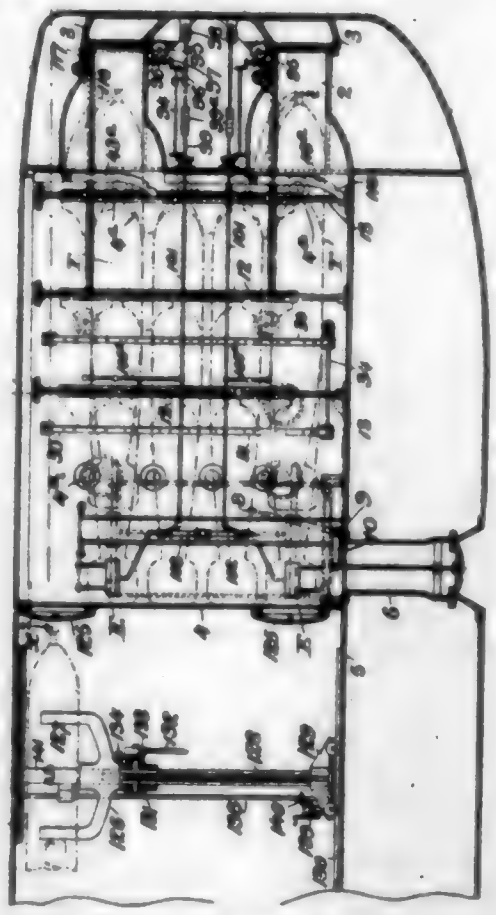


Claim.—1. The combination with a pipe; of a mosquito-guard comprising bars having barbs embedded in the upper portion of the pipe, a swinging, apertured gate hinged to the said bars and arranged to gravitate against the end of the pipe, and an arm extending forwardly and upwardly from the lower portion of the gate and provided with a weight.

2. As an article of manufacture, a mosquito-guard comprising bars terminating in barbs, a swinging, apertured gate hinged to said bars, and an arm extending forwardly and upwardly from the gate and provided with a weight.

3. As an article of manufacture, a mosquito-guard for cistern-pipes, comprising bars fixedly connected together and terminating in barbs, a gate having a circular wire hinged to the said bars and also having a diaphragm of reticulated material stretched within and connected to the wire, and an arm forming a terminal of the said wire and provided with a weight.

818,390. **MEANS FOR CARRYING AND HANDLING TORPEDOES ON VESSELS.** THOMAS J. MORIARTY, Newport, R. I. Filed Aug. 10, 1904. Serial No. 220,261.



Claim.—1. A boat or vessel having in it a water-tight magazine to contain torpedoes, said magazine having a valve-controlled connection with the sea for flooding it, an inlet for torpedoes and an expulsion-tube for the latter.

2. A boat or vessel having in it a water-tight magazine to contain torpedoes, said magazine having a valve-controlled connection at its bottom with the sea, and at its top a charging-door in the hull of the boat for the insertion of torpedoes.

3. A boat or vessel having in it a water-tight magazine capable of storing a plurality of torpedoes, said magazine having a valve-controlled connection at its bottom with the sea, a charging-door at its upper part for the insertion of torpedoes, and mechanism in its interior for shifting the floating torpedoes, said mechanism being operatable from the exterior of the magazine.

4. A boat or vessel having an expulsion-tube, and having within it a water-tight magazine to contain torpedoes, said magazine being connected with the said expulsion-tube for discharging the torpedoes, and having a charging-door at its upper part for the insertion of torpedoes and a valve-controlled connection with the sea for flooding it and floating the contained torpedoes.

5. A boat or vessel having an expulsion-tube forward, and having within it an upright, water-tight magazine for containing torpedoes, said magazine having a valve-controlled connection at its bottom with the sea, a charging-door at the upper part, a connection at its forward end with the expulsion-tube, and being provided with means for shifting the floating torpedoes therein into alinement with the expulsion-tube.

6. A boat or vessel provided with an expulsion-tube, and a wa-

ter-tight magazine connected with the sea and with the said expulsion-tube, said magazine being provided with a charging-door for the insertion of torpedoes, mechanism in its interior for shifting the contained floating torpedoes into alinement with the expulsion-tube, and mechanism for advancing and expelling the torpedo.

7. A boat or vessel provided with an expulsion-tube and with a magazine to contain torpedoes, said magazine having connections with the sea for floating it, a charging-door for the insertion of torpedoes at its upper part, and being connected with the expulsion-tube and provided interiorly with endless carriers for shifting the torpedoes up and down, means for advancing the floating torpedoes in the magazine, and hinged guides for the superposed and floating torpedoes.

8. A boat or vessel provided with an expulsion-tube and having in it a magazine for floating torpedoes, connected at its end with said expulsion-tube, and below with the sea for flooding it, said magazine being upright and of sufficient width to accommodate a plurality of superposed and submerged torpedoes, and provided interiorly with upright carriers for shifting the torpedoes up and down, means for advancing the torpedoes to the expelling position, means for imparting an impetus to the torpedo, and means for guiding them, in combination with means for opening the outboard-cap of the expulsion-tube and simultaneously setting in motion the motor of the torpedo.

9. A boat or vessel provided with an expulsion-tube, an outboard-cap therefor, means for opening said cap, and an upright magazine connected at its ends with said expulsion-tube and at its bottom with the sea for flooding, and said magazine having within it endless carriers for shifting the torpedoes up and down, hinged guides for the superposed floating torpedoes in the magazine, and means for advancing a torpedo alined with the expulsion-tube, said means comprising a depressible hook to engage the torpedo, means for depressing said hook from outside the magazine, and a rack device for advancing said hook, said rack device being operatable from outside the magazine.

10. A boat or vessel having an expulsion-tube, and a torpedo-magazine connected with said tube and with the sea for flooding, said magazine being provided with means for advancing a torpedo into position for expelling it, and means for imparting to it the expelling impetus, said means comprising an ejector E, means for moving said ejector into and out of position behind the torpedo, and cock-controlled means for supplying compressed air to the cylinder of said ejector.

11. A boat or vessel, having an expulsion-tube, an outboard-cap for same, a torpedo-magazine connected with the inboard end of said expulsion-tube, and with the sea for flooding, means for advancing a torpedo in the magazine to the expulsion position, an ejector in the magazine, means for moving said ejector into position behind the advanced torpedo, and means, actuated by the said outboard-cap when opened, for setting in motion the motor of the torpedo and for admitting compressed air to the ejector.

12. A boat or vessel having an expulsion-tube, and a torpedo-magazine connected with the said tube and with the sea for flooding, such magazine being provided with a movable barrier to prevent the premature advance of the torpedo, said barrier consisting of slidable clamps coupled to move in unison and means for moving them.

13. A boat or vessel having an expulsion-tube and a torpedo-magazine connected with said tube and with the sea for flooding, said magazine being provided with means for moving the torpedo forward to the expelling-point, means for imparting an ejecting or expelling impetus to the torpedo, means for setting the motor of the torpedo in motion, and means for holding the propeller of the war-head of the torpedo against premature rotation, said means comprising a suspended arm 43°, which engages said propeller, means for locking said arm in position while the expulsion-tube is closed, and an automatic latch device which holds said arm up when lifted.

14. In a device for the purpose specified, the upright magazine having means for flooding it, the slotted rocking tube 49 mounted in the magazine, means for rocking said tube, the spring 49° for returning said tube after it has been rocked, the rack-bar 55 slidably mounted in the tube, the hook 54 carried by said rack-bar, the pinion 56 gearing with said rack-bar, and means for rotating said pinion.

15. In a device for the purpose specified, the upright magazine, having means for flooding it, the ejector, comprising a cylinder 120, a piston 131 in the latter, the headed rod of said piston, and the piston-spring 123, the swiveled supporting air-pipe 104 of the ejector, cock-controlled means for admitting air to the cylinder of the ejector, means for advancing the torpedo in the magazine, and intermediate mechanism between the last-named means and the ejector for automatically swinging the latter into position when the torpedo is advanced.

16. In a device for the purpose specified, the upright magazine 4, having connection with the sea for flooding, means for shifting the floating torpedoes up and down, and movable guiding devices for the superposed torpedoes, said guiding devices comprising the pairs of guides 12, hinged on upright axes and shaped to fit about the torpedoes, means for connecting said guides and compelling them to swing in unison, and means, operated from the exterior of the magazine, for actuating said guides.

17. In a device for the purpose specified, the combination with the pairs of swinging guides 12, for the torpedo, of the links 28, 29, connected with said guides 12 and forming a guideway for the guide-piece on the torpedo.

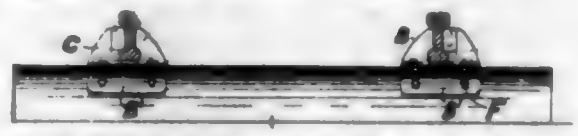
18. In a device for the purpose set forth, the coacting combination of the following instrumentalities, namely, the hinged outboard-cap 3, the ejector, the cock controlling the admission of air to the ejector, a means operatively connecting the arm of said cock with said cap, means for swinging the ejector into position behind a torpedo, and means for operating said cap.

19. In a device for the purpose specified, the combination of the following coacting instrumentalities, namely, the hinged outboard-cap 3, the ejector, the cock controlling the admission of air to the ejector, means operatively connecting the arm of said cock with said cap, the interposing lever 80, means operatively connecting said cap 3 with said lever 80, means for swinging the ejector into position behind the torpedo, and means for opening the cap 3.

20. A boat or vessel having in it a torpedo-magazine, provided with a valve-controlled connection with the sea, with a manhole-opening into the said boat or vessel and a capped expulsion for the torpedoes connecting the magazine with the water of flotation.

21. A boat or vessel having in it a magazine for torpedoes, provided with a valve-controlled connection with the sea for flooding, a manhole for the insertion or withdrawal of torpedoes, and a carrier in the boat for the torpedoes, said carrier having means for raising and lowering it and for moving it toward and from the magazine.

818,391. **RAILWAY-CHAIR.** THOMAS NOBLE, St. Annes on the Sea, England. Filed Jan. 19, 1906. Serial No. 296,835.



Claim.—1. In combination with a rail, and a tie or sleeper having a rounded top surface, of a chair or support provided with jaws to receive the rail, a base so shaped as to fit the contour of and seat itself on the tie or sleeper, and fastening means for fastening the chair to the sleeper radially to the curvature of the base of the chair and of the sleeper itself.

2. In combination with a rail, and a tie or sleeper having a rounded top surface, of a chair or support having a base cast in one piece with the jaws, said base being made concave on its under side to fit and seat itself on the rounded top surface of the sleeper.

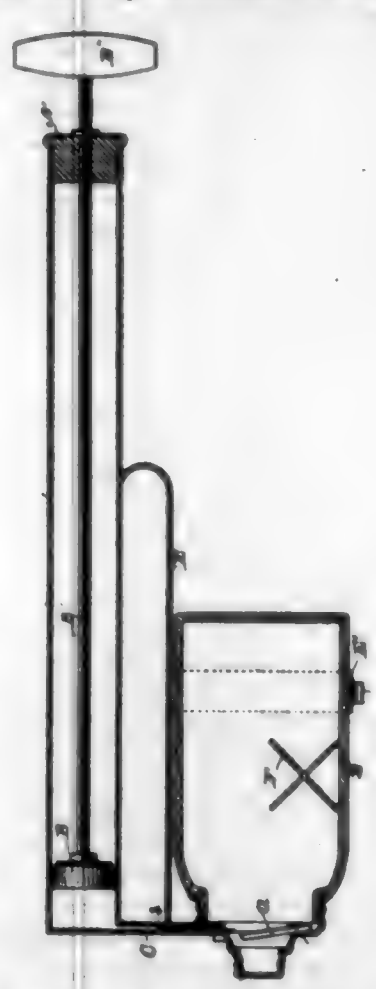
3. In combination with a rail, and a tie or sleeper having a rounded top surface, of a chair or support having a base shaped to fit and seat itself on the rounded top surface of the tie or sleeper, a slit cut in said base and the tongue thus formed turned up so as to form a jaw against which the rail is fixed, and means for fastening the rail to the chair, and the chair to the sleeper.

4. In combination with a rail, and a tie or sleeper having a rounded top surface, of a chair or support having a base shaped to fit and seat itself on the rounded top surface of the tie or sleeper, a slit cut in said base and the tongue thus formed bent over and hammered down onto the flange of the rail to hold it tight, and a dog or spike passed through the hammered-down flange and through the rail and the sleeper to hold same tight.

818,392. **SPRAYER.** CLARENCE W. PARKS, Lowell, Mich., assignor to Dexter G. Lock and William A. Watts, Lowell, Mich. Continuation of application Serial No. 115,501, filed July 14, 1902. This application filed Sept. 14, 1903. Serial No. 173,202.

Claim.—1. In a sprayer, the combination of an air-pump, a downwardly-depending air-delivery tube therefor, a liquid-receptacle, a cap therefor secured to said air-delivery tube, an air-chamber adjacent to the exterior of said cap, delivery-ports for said chamber, spraying-tubes arranged through said cap, with their outer ends adjacent to said ports, a handhold secured to the under side of said pump and to said air-delivery tube, and a supporting-ring for said receptacle secured to said handhold.

2. In a sprayer, the combination of an air-pump, a downwardly-depending air-delivery tube therefor, a liquid-receptacle, a cap therefor secured to said air-delivery tube, an air-chamber adjacent to the exterior of said cap, delivery-ports for said chamber, spraying-tubes arranged through said cap, with their outer ends adjacent to said ports, a handhold secured to the under side of said pump, and a supporting-ring for said receptacle secured to said handhold.



3. In a sprayer, the combination of an air-pump, a downwardly-depending air-delivery tube therefor, a liquid-receptacle, a cap therefor secured to said air-delivery tube, an air-chamber adjacent to the exterior of said cap, delivery-ports for said chamber, spraying tubes arranged through said cap, with their outer ends adjacent to said ports, a handhold secured to the under side of said pump.

4. In a sprayer, the combination of an air-pump, a downwardly-depending air-delivery tube therefor, a liquid-receptacle, a cap therefor secured to said air-delivery tube, an air-chamber adjacent to the exterior of said cap, delivery-ports for said chamber, spraying-tubes arranged through said cap, with their outer ends adjacent to said ports.

5. In a sprayer, the combination of an air-pump; a downwardly-depending air-delivery tube therefor having a suitable delivery-port at its lower end; a handhold on the under side of said pump; a liquid-receptacle supported on said handhold and on said delivery-tube; and a suitable spray-tube arranged with its outer end adjacent to said air-delivery port, for the purpose specified.

6. In a sprayer, the combination of an air-pump; a downwardly-depending air-delivery tube therefor having a suitable delivery-port at its lower end; a handhold on the under side of said pump; a liquid-receptacle; and a suitable spray-tube arranged with its outer end adjacent to said air-delivery port, for the purpose specified.

7. In a sprayer, the combination of an air-pump; a downwardly-depending air-delivery tube at the end thereof, having a suitable delivery-port at its lower end; a liquid-receptacle arranged below said air-pump; a cap therefor secured to said air-delivery tube; and a suitable spray-tube carried by said cap arranged with its outer end adjacent to the air-delivery port of said air-delivery tube, for the purpose specified.

8. In a sprayer, the combination of a pump, downwardly-depending arms on said pump, the pump between said arms constituting a handle; a liquid-receptacle on said arms; an air-passage having a delivery-port near said receptacle; and a suitable spray-tube arranged with its outer end adjacent to said air-delivery port; for the purpose specified.

9. In a sprayer, the combination of a pump having a suitable discharge-port; a liquid-receptacle; a spray-tube arranged within said receptacle with its outer end adjacent to said air-discharge port; and an agitating device within said receptacle comprising disk-like rings connected on diametrical lines.

10. In a sprayer, an agitator comprising disk-like rings arranged in intersecting relation substantially as right angles and secured together.

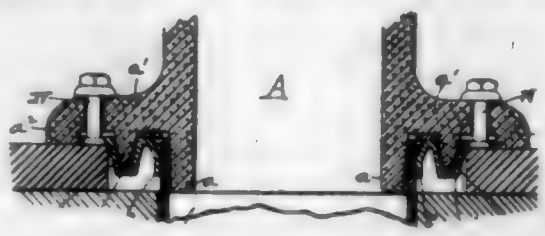
11. In a sprayer, the combination with an air-pump carrying holding means, and the reservoir carried by said holding means, of a cover for the reservoir having fluid-tubes, an air-chamber adjacent to the external periphery of said cover and provided with jet-orifices coöperating with the fluid-tubes, and an air-trunk connecting said chamber with the outlet of the pump.

12. In a sprayer, the combination with the reservoir and air-supply means, of a main cover or cap for the reservoir, fluid-tubes carried by said main cover or cap, and an air-chamber in connection with the air-supplying means and adjacent to the exterior periphery of the main cover or cap, said air-chamber being provided with jet-orifices coöperating with the fluid-tube.

13. In a hand-sprayer, the combination with an air-pump carrying a rest and holding means, the reservoir carried by said holding means, a screw-cover for the reservoir having a filling-cap and also provided with a plurality of fluid-tubes having their delivery ends disposed outside of the cover, an air-chamber adjacent to the external periphery of the cover and provided in its front wall with jet-orifices, and an air-trunk connecting said chamber with the outlet of the pump.

14. In a sprayer, the combination with an air-pump, of a non-corrodible reservoir supported by said pump, a cover for the reservoir, fluid-tubes carried by said cover, an air-chamber adjacent to a portion of the external surface of the cover and having orifices, and an air-trunk connecting said chamber with the outlet of the pump.

818,393. PIPE-COUPLING FOR WATER-CLOSETS, &c. CHRISTOPHER F. PLUNKETT, New York, N. Y., assignor of one-fourth to James J. Plunkett, New York, N. Y. Filed Apr. 12, 1905. Serial No. 255,226.



Claim.—1. In a coupling for connecting closet-bowls or the like to a soil-pipe, the combination with a hollowed base, a ring surrounding and secured to said soil-pipe with a central annular trough, and slots about its outer edge with means for securing said ring to said base.

2. In a coupling for connecting closet-bowls or the like, to a soil-pipe, the combination with a hollowed base, a spud thereon, fitting within the soil-pipe, a ring surrounding and secured to said soil-pipe with a central annular trough, slots about its outer edge and bolts passing through said hollowed base and slots for securing said ring to said base.

3. In a coupling for connecting closet-bowls or the like, to a soil-pipe, the combination with a hollowed base having an outer flange, an inner spud fitting within the soil-pipe, and an intermediate flange, and a ring about said soil-pipe and between the spud and outer flange secured thereto, having a trough into which said intermediate flange dips, said ring adapted to be secured to said base by bolts.

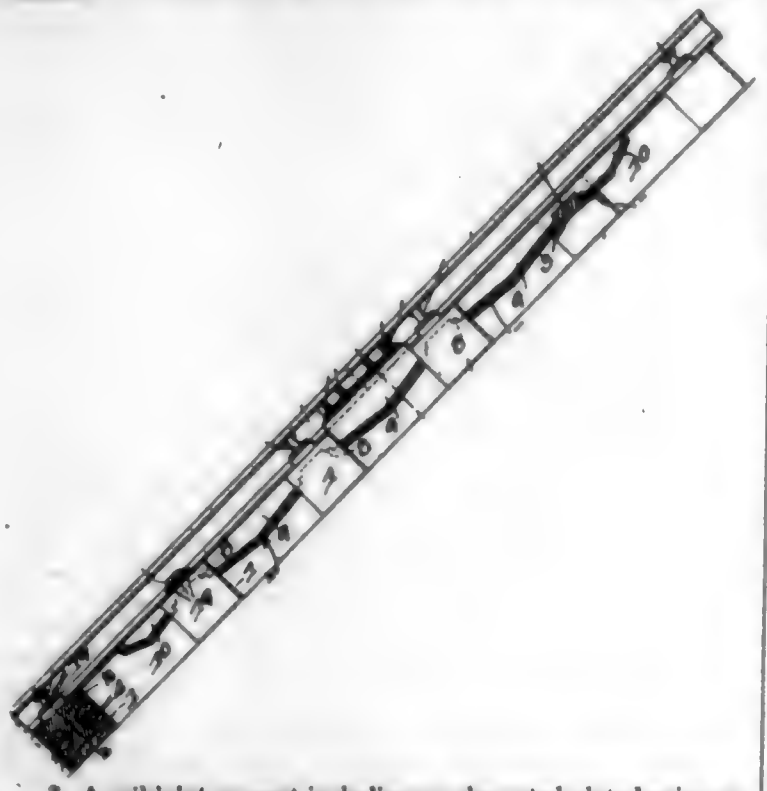
4. In a coupling for connecting closet-bowls or the like, to a soil-pipe, the combination with a hollowed base, having an outer flange, an inner spud fitting within the soil-pipe, and an intermediate flange, and a ring about said soil-pipe and between the spud and outer flange, secured thereto, having a trough into which said intermediate flange dips, said trough and ring adapted to form a liquid seal.

818,394. RAIL-JOINT SUPPORT. FRANK SEVERNS, Lead, S. D., assignor of one-fourth to Robert H. Driscoll, Lead, S. D. Filed Oct. 4, 1905. Serial No. 281,224.

Claim.—1. A rail-joint support including an elongated plate having tie-engaging recesses, and intermediate angular reinforcements the under sides of which are inclined downwardly in the direction of points intermediate the tie-engaging recesses.

2. A rail-joint support including an elongated plate having tie-engaging recesses provided with steps or shoulders and intermediate

angular reinforcements the under sides of which are inclined downwardly in the direction of points intermediate the tie-engaging recesses, in combination with ties having seats for the tie-engaging recesses.

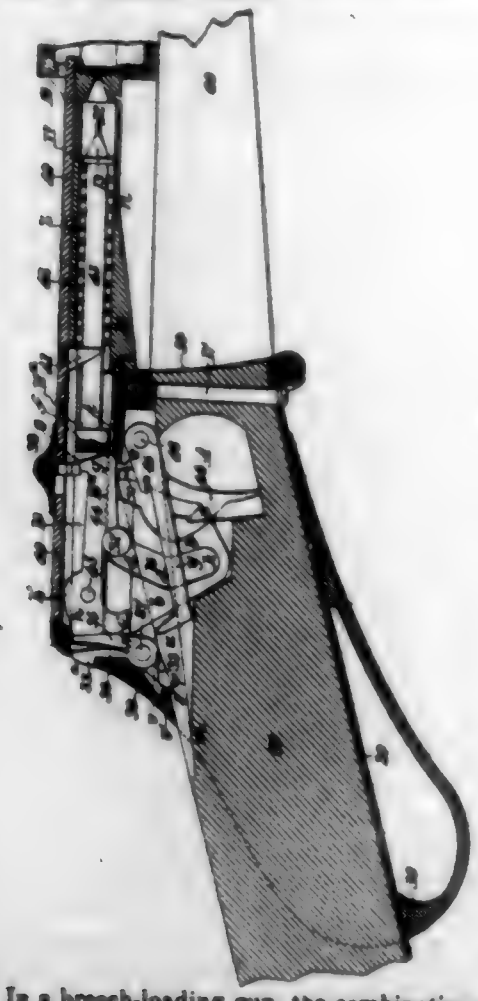


3. A rail-joint support including an elongated plate having recesses, in combination with flanged supporting members affording seats engaging the recesses in the plate.

4. A rail-joint support including an elongated plate having shouldered recesses and intermediate reinforcements, in combination with flanged supporting members having seats for the recessed portions of the plate and forming abutments for the reinforcements.

5. A rail-joint support including an elongated plate having recesses and intermediate reinforcements, in combination with supporting members including flanged recess-engaging saddles.

818,895. MAGAZINE-FIREARM. GEORGE L. SMITH, U. S. Navy. Filed Sept. 8, 1901. Serial No. 74,567.



Claim.—1. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt for closing the breech, a sliding grip mounted on the stock, the under part of said grip constituting a support for the fingers in opening the breech and the top part forming a rest for the thumb in closing said breech, a single positive element on said breech-bolt, and a single engaging element on said grip directly and positively connecting the said two parts in operative relation, the parts being so constructed that the removal of said engaging element will permit ready dismounting of all said parts of the gun, substantially as described.

2. In a breech-loading gun, the combination with the breech and the stock of the gun, of a breech-bolt for closing the breech, a grip slidably mounted upon the stock, direct connections connecting the bolt with the grip and arranged to impart a rising movement to the bolt to unlock the same, and a rearward and lowering movement to fully withdraw the bolt as the grip slides rearwardly on the stock.

3. In a breech-loading gun, the combination with the breech and the stock of the gun, of a breech-bolt adapted to close the breech, a pistol-grip slidably mounted on the stock, a single pin and slot carried directly by and operatively engaging the grip an the bolt, whereby movement of the grip directly controls the opening, closing and locking of the breech, the parts being so constructed that the removal of the pin will permit ready dismounting of all said parts of the gun, substantially as described.

4. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt adapted to close the breech, a grip slidably mounted upon the stock, a toe projecting downwardly from the bolt, and a single cam-slot formed therein, a single pin carried by the grip and engaging said slot, whereby movement of the grip upon the stock will cause the breech-bolt to be opened, closed and locked, substantially as described.

5. In a breech-loading gun, the combination with the breech and the stock, of a receiver on the stock and having a vertical slot therein, a breech-bolt slidably mounted in said receiver and having a toe provided with a single cam-slot extending downwardly through said vertical slot, a grip slidably mounted on said stock and having a pin engaging the said cam-slot, whereby movement of the grip will impart an opening and closing movement to the breech-bolt, substantially as described.

6. In a breech-loading gun, the combination with the breech and the stock, of a receiver having a slotted bottom secured to the stock, a breech-bolt slidably mounted in said receiver and having a downwardly-projected toe passing through the slot in the bottom of the receiver, and provided with a cam-slot, a recoil-toe rigid on said bolt adapted to engage with the stock when the breech is closed, a grip slidably mounted on the stock and provided with a pin engaging the cam-slot, whereby movement of the grip imparts a positive movement to the bolt for disengaging the recoil-toe and for opening and closing the breech, substantially as described.

7. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt adapted to close the breech, a recoil-toe rigid on said bolt adapted to engage the fixed structure when the bolt closes the breech, a grip slidably mounted on said stock, the under part of said grip forming a support for the fingers in opening the breech and the upper part a rest for the thumb in closing the same, and a direct connection between the grip and the bolt, whereby movement of the grip upon the stock imparts movement to the bolt for disengaging the toe and opening and closing the breech, the parts being so constructed that the removal of the direct connection between the grip and bolt will permit ready dismounting of all said parts of the gun, substantially as described.

8. In a breech-loading gun, the combination with the breech and the stock, of a receiver in the stock having a slotted bottom, a breech-bolt slidably mounted on said receiver and having a toe provided with a cam-slot and extending downwardly through the slot in the bottom of the receiver, a grip slidably mounted on the stock and provided with a pin engaging said cam-slot, a sear carried by the bolt and having a toe at its forward end resting on the bottom of the receiver when the breech is closed, a shoulder formed at the forward end of the slot in the receiver-bottom, with which said toe is adapted to engage when the bolt is moved to the rear, and means for holding the breech-bolt in closed position, substantially as described.

9. In a breech-loading gun, the combination with the breech and stock, of a breech-bolt having a bore slidably mounted on the stock and adapted to close the breech, a firing-pin slidably mounted in the bore of the bolt, a sear fulcrumed on the firing-pin within the bore of the bolt and having a cocking-toe adapted to engage a fixed part when the breech-bolt is withdrawn, trigger mechanism controlling the sear, and a spring adapted to actuate the firing-pin when the sear is released, a grip slidably mounted on the stock and having a direct connection with the bolt, whereby the bolt is moved for closing and opening the breech by sliding movement of the grip on the stock, substantially as described.

10. In a breech-loading gun, the combination with the breech and the stock, of a receiver in said stock having grooves in its sides, a breech-bolt slidably mounted therein and having guide-lips thereon adapted to engage the said grooves in the sliding movement of the bolt, a recoil-toe on the bolt adapted to hold the bolt against recoil when the breech is closed, a firing-pin and sear carried by the bolt, a spring having one end engaging the firing-pin, trigger mechanism controlling the sear, an extractor secured to the breech-bolt and carrying an abutment for the other end of said spring and holding the parts together, and means for sliding the bolt to open and close the breech, substantially as described.

11. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt provided with a central bore, slidably mounted on the stock, a firing-pin slidably mounted in the said bore, a sear fulcrumed on the firing-pin, a spring for actuating the firing-pin, an extractor secured to the bolt and having a toe engaging the bolt, a yoke carried by the extractor and embracing the firing-pin, and forming an abutment for the rear end of the spring, whereby all the parts can be readily assembled and dismantled, substantially as described.

12. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt provided with a central bore, slidably mounted on the stock, a firing-pin slidably mounted in the said bore, a sear fulcrumed on the firing-pin, a spring for actuating the firing-pin, an extractor mounted on the bolt and having a part engaging the bolt, a yoke carried by the extractor and embracing the firing-pin, and forming an abutment for the rear end of the spring, whereby all the parts can be readily assembled and dismantled, substantially as described.

13. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock and having a central bore, a firing-pin slidably mounted in said bore, a sear carried by the firing-pin, a grip slidably mounted on said stock, a single pin-and-slot connection between the grip and bolt for imparting opening, closing and locking movements to the bolt as the grip is moved on the stock, the construction being such that the removal of said pin will readily permit the dismounting of all of said parts from the gun, substantially as described.

14. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a grip formed in two sections joined together by a dovetailed connection, a pin in the grip, and cam-slot on the bolt with which said pin engages for imparting the necessary movements to the bolt for opening and closing the breech, whereby removal of the pin from the grip releases the bolt for ready removal, and permits separation of the grip-sections, substantially as described.

15. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted thereon, a grip formed of two sections united by dovetailed connection, pins passing through said sections, a recess in one section adjacent to the pins, a locking-bar in said recess for locking the two parts together, a pin on the grip, and a cam-slot on the bolt with which said pin engages, substantially as described.

16. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a grip slidably mounted on the stock and formed of two sections having dovetailed connections, a stop on one section to limit the forward sliding movement of said section on the other, a locking device for locking the sections together when adjusted, a pin carried by the grip and engaging the bolt for operating the latter, substantially as described.

17. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt adapted to close the breech, a recoil-toe on the breech-bolt adapted to engage a shoulder on the fixed structure, a toe extending downwardly from said bolt having a cam-slot therein, a sliding grip on the stock having a pin engaging said slot, a locking device situated directly in rear of the breech-bolt adapted to lock the said grip in closed position against rearward movement, substantially as described.

18. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a grip slidably mounted on said stock, a latch situated directly in rear of the bolt and having a spring-actuated arm engaged by a fixed part on the breech-bolt, and a toe adapted to engage the fixed structure when the bolt closes the breech-bolt, and thereby lock said breech in closed position, substantially as described.

19. In a breech-loading gun, the combination with the breech and the stock, of a sliding bolt on the stock, means for moving said bolt, a latch device situated directly in the rear of the breech-bolt and adapted to engage the bolt when closed, a locking-toe on said latch and a recess on the fixed structure with which said toe is adapted to engage when the bolt is closed, substantially as described.

20. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a firing-pin and sear carried by the said bolt, trigger mechanism controlling the sear, a sliding grip on the stock, a latch pivotally supported on the grip in rear of the breech-bolt and having a toe engaging a recess in the fixed structure when the bolt closes the breech, a latch-tripper controlling the latch and situated in the line of movement of the sear as the bolt moves with the same, a cam connection between the grip and the bolt for moving the latter, substantially as described

21. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt for closing the breech, slidably mounted on the stock, a firing-pin, and a sear carried by said firing-pin having a cocking-toe adapted to engage the fixed structure, a trigger mechanism controlling said sear and adapted to release the sear to allow the firing-pin to operate, mechanism for operating the bolt, and means operating in conjunction with the sear to prevent the firing-pin from firing movement at any time before the sear reaches cocking position, substantially as described.

22. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a firing-pin carried by the bolt, trigger mechanism, a sear carried by the firing-pin and having a cocking-toe, means for imparting a forward movement to the firing-pin, a shoulder on the fixed structure for engaging the sear to cock the firing-pin mechanism, a seat on the breech-bolt, a shoulder on the sear adapted to engage said seat in case the sear has not been moved far enough to permit its cocking-toe to engage its seat, and means for moving the breech-bolt, substantially as described.

23. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, mechanism for moving the bolt to open and close the breech, trigger mechanism, a firing-pin, and a sear coöperating with the trigger mechanism, and means on the trigger coöperating with a part on the receiver and with the bolt adapted to lock the bolt to the receiver to prevent opening movement of the bolt until the said trigger has been released, substantially as described.

24. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, means for operating said bolt, a trigger having a projecting toe, and means coöperating therewith while the bolt is unlocked, adapted to lock said trigger against firing movement at such teim, and also coöperating therewith during the firing movement of the trigger to prevent the bolt from rising to unlock, substantially as described.

25. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a toe on said bolt, means for operating the bolt, a trigger having a projecting toe adapted to engage the toe on the bolt while the bolt is unlocked, whereby the trigger is locked against movement at such time, substantially as described.

26. In a breech-loading gun, the combination with the breech, the stock and a receiver mounted on the stock and having a shoulder, of a breech-bolt for closing the breech having a central bore and a seat therein, a firing-pin, operating in the bore, a slot in said firing-pin a sear pivotally supported therein and having a cocking-toe adapted to engage said shoulder in the receiver, means for operating the bolt, said sear being constructed to swing into the slot of the firing-pin as the breech is closed and to engage the bolt structure, thereby preventing the firing-pin from accidental release until the bolt is locked, substantially as described.

27. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, mechanism for operating the bolt, a trigger and devices coöperating therewith to fire the gun, a projecting toe on the bolt, and a toe on the trigger adapted to engage the said toe on the bolt to lock the trigger against action until the breech is entirely closed and to prevent the bolt from rising as the trigger is pulled, substantially as described.

28. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a firing-pin slidably mounted on the breech-bolt, a sear pivotally mounted on the firing-pin, a cocking-toe at the front end and a projection on the upper part, a locking-pin adjustably mounted on the bolt structure and adapted to engage said projection to lock the sear down, a shoulder for the cocking-toe, a trigger adapted to release the sear from its cocking position, and means for moving the bolt and engaging the sear to move it rearwardly to cocking position after firing, substantially as described.

29. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a firing-pin slidably mounted on the bolt and having a spring for actuating the same, a sear pivotally mounted in a slot in the firing-pin, and having a cocking-toe, a shoulder on the fixed structure for engagement with said toe, a beveled portion at the upper side of the sear adapted to engage a fixed part on the bolt, and an inclined forward portion adapted to engage a fixed part on the bolt as the bolt moves rearwardly, and means for retracting the firing-pin and swinging down the end of the sear, whereby the sear is rotated about its pivot as the bolt moves rearwardly, and such rotation is limited by contact of the beveled portion with its fixed coöperating part, substantially as described.

30. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a grip slidably mounted on the stock, a positive connection between the breech-bolt and the grip, a latch pivoted on the grip in the rear of the bolt and adapted to engage a fixed part on the stock, a trigger mechanism and a firing-pin, and means controlled by the trigger for holding the bolt locked until the trigger is released, substantially as described.

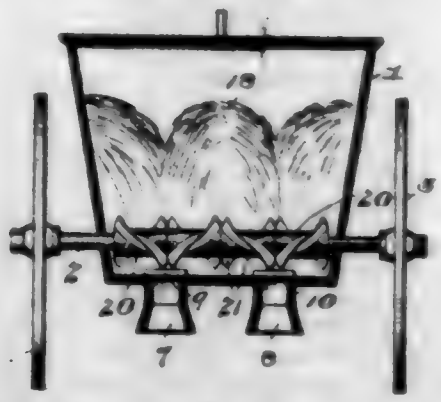
31. In a magazine-gun, the combination with the breech, the stock and the magazine, of a receiver having a slotted bottom through which the cartridges are fed upwardly into line for loading, a breech-bolt having guide-lips slidably mounted in said receiver, mechanism for operating the same, flanges flanking the slot in the bottom of the receiver over the magazine acting as guides for the breech-bolt and also adapted to engage the uppermost cartridge of each tier in succession and to guide the breech-bolt by engagement with the guide-lips thereon, substantially as described.

32. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt slidably mounted on the stock, a firing-pin slidably mounted on the bolt, a sear pivotally supported thereon, a latch mechanism located directly in rear of the sear and having its arm in contact with and covering the rear end of the sear, a grip slidably mounted upon the stock and inclosing the latch mechanism and rear end of breech-bolt and sear, whereby a gas check or deflector to prevent escape of gas to the rear is provided, substantially as described.

33. In a breech-loading gun, the combination with the breech and the stock, of a breech-bolt for closing the breech, a latch mechanism situated in rear of the bolt, a grip mounted upon the stock and inclosing the latch mechanism, a device on the trigger for holding the bolt locked until the trigger is released, and a button or projection on the latch mechanism extending into an opening in the grip, whereby the said latch mechanism may be operated when desired to release the bolt, substantially as described.

34. In a breech-loading gun, the combination with the breech and the stock, of a receiver having a slotted bottom, a breech-bolt having a central bolt and slotted rear portions, a firing-pin mounted in the said bore, a sear pivotally supported on said firing-pin, and having a cocking-toe adapted to engage a seat on the receiver-bottom when the bolt is moved to the rear, and a hook on its rear end, a grip slidably mounted upon the stock, a toe on the bolt having a cam-slot, a pin on the grip engaging said slot, said pin adapted to engage the hook on the sear when the grip moves rearwardly, an extractor secured to the upper side of the bolt, a locking-pin passing through said extractor for locking the sear down, and a trigger mechanism for releasing the sear from its seat, substantially as described.

818,396. **FERTILIZER-DISTRIBUTER.** WILLIAM TORRES, Vacherie, La. Filed Oct. 4, 1905. Serial No. 281,316.



Claim.—1. In a distributer, the combination with a receptacle provided with means for discharging material therefrom, of screw feeding mechanism within said receptacle composed of feeding-sections arranged to feed toward a common point of discharge.

2. In a distributer, the combination with a receptacle provided with means for discharging material therefrom, of screw feeding mechanism within said receptacle composed of a pair of feeding-sections arranged to feed toward a common point of discharge, and a single driving member for both feeding-sections.

3. In a distributer, the combination with a receptacle, an axle within the same, and wheels secured to and adapted to drive the axle, of a plurality of pairs of oppositely-acting feeding-sections secured to the axle, and a common means for discharging the contents of the receptacle for each pair of feeding-sections.

4. In a distributer, the combination with a receptacle, axle within the same, and wheels secured to and adapted to drive the axle, of a plurality of pairs of oppositely-acting screw feeding-sections and a common point of discharge for each pair of feeding-sections, substantially as set forth.

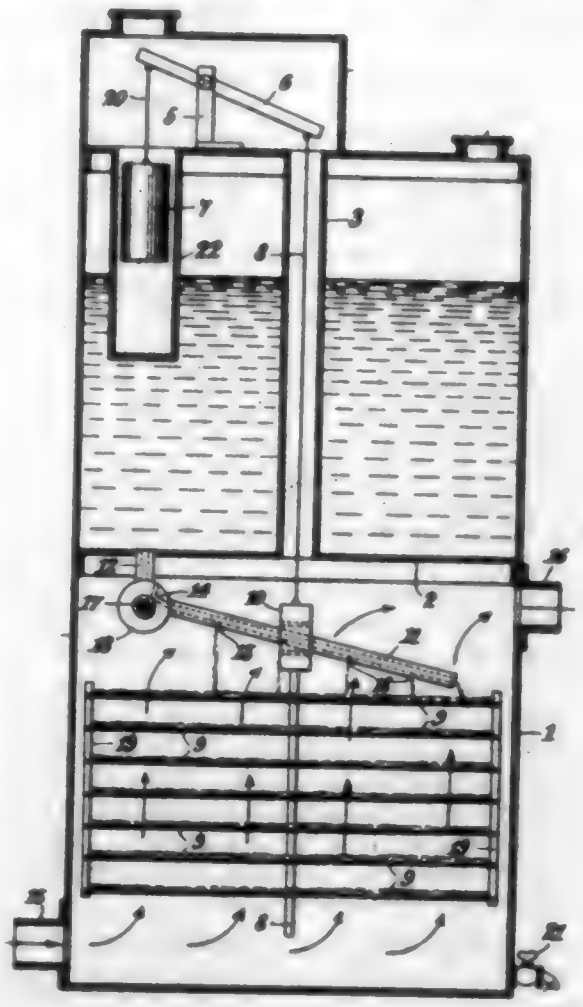
5. In a distributer, the combination with a receptacle, axle within the same, and wheels secured to and adapted to drive the axle, of a plurality of cylinders severally secured to the axle, each cylinder being provided with a feeding fin or blade and each pair of cylinders having relatively convergent fins or blades, whereby discharge is made toward a common point of discharge provided in the receptacle.

6. In a distributer, the combination with a receptacle, a shaft within the same and wheels secured to and adapted to drive the shaft, of a plurality of cylinders provided respectively with sockets and lugs and means for securing them severally to the axle, each pair of cylinders being provided with convergent fins or blades disposed to feed toward a common point of discharge provided for them in the receptacle.

7. In a distributer, the combination with a receptacle provided with oppositely-acting screw feed mechanisms and a discharge common to both mechanisms toward which said mechanisms feed, of a gate, and a lever operatively communicating with the gate.

8. In a distributer, the combination with a receptacle provided with a plurality of oppositely-acting pairs of screw feed mechanisms and a plurality of discharge-chutes toward each of which a pair of said mechanisms feed, of a plurality of gates corresponding in number to that of the chutes, a yoke connecting the gates, and a lever operatively communicating with the yoke.

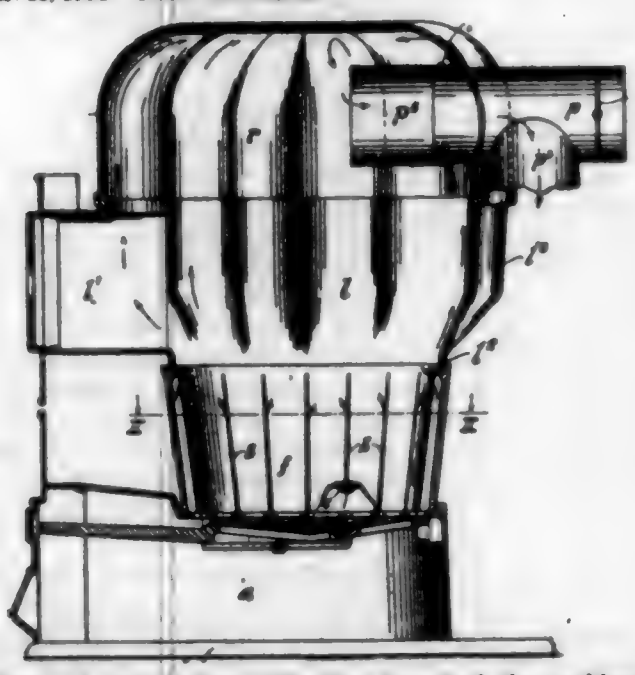
818,397. **CARBURETER.** GUSTAV TRESENREUTER, Berlin, Germany, assignor to Franz Glinicke, Berlin, Germany. Filed May 20, 1905. Serial No. 261,373.



Claim.—1. In a carbureter of the class described, the combination with a vessel, of a horizontal partition dividing said vessel into a liquid-storage chamber above and a carbureting-chamber below, a frame in said carbureting-chamber, a plurality of superposed horizontal sieves arranged in said frame and provided with layers of glass-wool, a slotted cross-head at the top of said frame, an outlet in said horizontal partition, a horizontal pin suspended from said horizontal partition, a disk provided with a bent channel and mounted to turn on said horizontal pin close to said outlet, so that the one end of its channel may register with said outlet, a hollow lever rigidly connected with said disk and engaging in the slot of said slotted cross-head, the cavity of this lever communicating with the other end of the bent channel in said disk, means for outbalancing said frame with the parts connected therewith, when there is no hydrocarburet in the layers of glass-wool, a supply-conduit for gas near the bottom of said carbureting-chamber, and a carbureted gas-outlet at the top of said carbureting-chamber.

2. In a carbureter of the class described, the combination with a closed vessel, of a horizontal partition dividing said vessel into a liquid-storage chamber above and a carbureting-chamber below, a vertical tube extending from said horizontal partition to the top of said closed vessel, a box on the top of said closed vessel and communicating with said vertical tube, a pocket attached from below to the top of said closed vessel and communicating with said box, a support in said box, a two-armed lever mounted in said support to turn, a frame in said carbureting-chamber, a plurality of superposed horizontal sieves arranged in said frame and provided with layers of glass-wool, a slotted cross-head at the top of said frame, an outlet in said horizontal partition, a horizontal pin suspended from said horizontal partition, a disk provided with a bent channel and mounted to turn on said horizontal pin close to said outlet, so that the one end of its channel may register with said outlet, a hollow lever rigidly connected with said disk and engaging in the slot of said slotted cross-head, the cavity of this lever communicating with the other end of the bent channel in said disk, a rod or chain connecting said slotted cross-head with the one end of said two-armed lever through said vertical tube, a counterweight suspended from the other end of said two-armed lever and playing within said pocket and arranged to outbalance said frame with said plurality of superposed horizontal sieves and layers of glass-wool, said slotted cross-head and said hollow lever, when there is little hydrocarburet in the glass-wool, a supply-conduit for gas near the bottom of said carbureting-chamber, and a carbureted gas-outlet at the top of said carbureting-chamber.

818,398. **FURNACE.** WILBERT G. WISE, Akron, Ohio, assignor to The Wise Furnace Company, Akron, Ohio, a Corporation of Ohio. Filed Apr. 15, 1904. Serial No. 203,244.



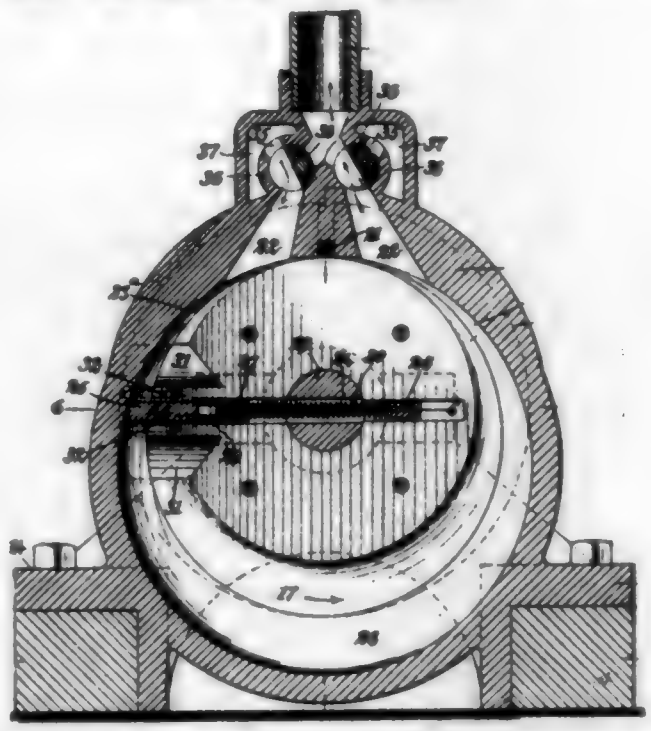
Claim.—1. In a furnace of the class described, the combination with its fire-pot of inverted frusto-conical form; the same having vertical air-cells and side openings therein, of an expanded radiator, continuous with the walls of the fire-pot and so shaped as to cause the currents of heated air and gases to be directed peripherally along the side walls of the radiator, and a chimney-opening or exit disposed interiorly of said radiator, substantially as set forth.

2. In a furnace of the class described, the combination with an upwardly-expanded fire-pot having air-passages and side-wall openings adapted to supply air peripherally to and above the fuel therein, of an enlarged or expanded radiator surmounting the same, having vertically-corrugated flaring side walls adjacent to which the combustion of the heated gases is effected by means of the peripheral air-supply, substantially as set forth.

3. In a furnace of the class described, the combination with the fire-pot *f* having vertical air-cells and communicating slots *s* within its side walls, of the upwardly flaring or expanded radiator continuing said fire-pot, along whose side walls the air-supply is adapted to be directed, and a flue-opening or exit for the products of combustion situated centrally of the expanded radiator adjacent to the dome, substantially as set forth.

4. The combination in a furnace with the fire-pot *f* having air-ducts *c* and side openings *s* within its walls, of the radiator-section *l* and its dome *r* carried thereon having flaring side walls continuing those of the fire-pot without interruption; said radiator being formed with expanded vertically-corrugated walls, and a chimney-opening or exit interiorly situated within the radiator-dome, substantially as set forth.

818,399. **ROTARY ENGINE.** ARTHUR H. WRIGHT, South St. Paul, Minn. Filed Jan. 16, 1906. Serial No. 296,274.



Claim.—1. A rotary engine having a stator, a rotor operating concentrically therein, the rotor having a continuously-grooved periphery, and the stator having an internal protuberance projecting into the groove of the rotor to contact with the walls thereof at one point on its periphery, said protuberance having an inner wall curved eccentrically to the periphery of the rotor, and the stator also having an internal groove disposed oppositely to the said protuberance and running into the end portions thereof, the outer wall of the groove being curved eccentrically to the rotor, a piston-head radially movable on the rotor, and means for admitting and exhausting the working fluid at opposite sides of the point of contact between the rotor and said protuberance.

2. A rotary engine having a stator, a rotor operating concentrically therein, the rotor having a continuously-grooved periphery, and the stator having an internal protuberance projecting into the groove of the rotor to contact with the walls thereof at one point on its periphery, said protuberance having an inner wall curved eccentrically to the periphery of the rotor, and the stator also having an internal groove disposed oppositely to the said protuberance and running into the end portions thereof, the outer wall of the groove being curved eccentrically to the rotor, a piston-head radially movable on the rotor, and means for admitting and exhausting the working fluid at opposite sides of the point of contact between the rotor and said protuberance, said internal groove of the stator having a curved cross-sectional form.

3. A rotary engine having a stator, a rotor operating concentrically therein, the rotor having a continuously-grooved periphery, and the stator having an internal protuberance projecting into the groove of the rotor to contact with the walls thereof at one point on its periphery, said protuberance having an inner wall curved eccentrically to the periphery of the roter, and the stator also having an internal groove disposed oppositely to the said protuberance and running into the end portions thereof, the outer wall of the groove being curved eccentrically to the rotor, a piston-head radially movable on

the rotor, and means for admitting and exhausting the working fluid at opposite sides of the point of contact between the rotor and said protuberance, the rotor having a steam-pocket therein at each side of the piston-head and directly adjacent thereto.

4. A rotary engine having a stator, a rotor operating therein and having a diametrical pocket, a piston-head movable in one end of the pocket, a counterweight movable in the opposite end portion of the pocket, and means effecting a yielding connection between the piston-head and counterweight.

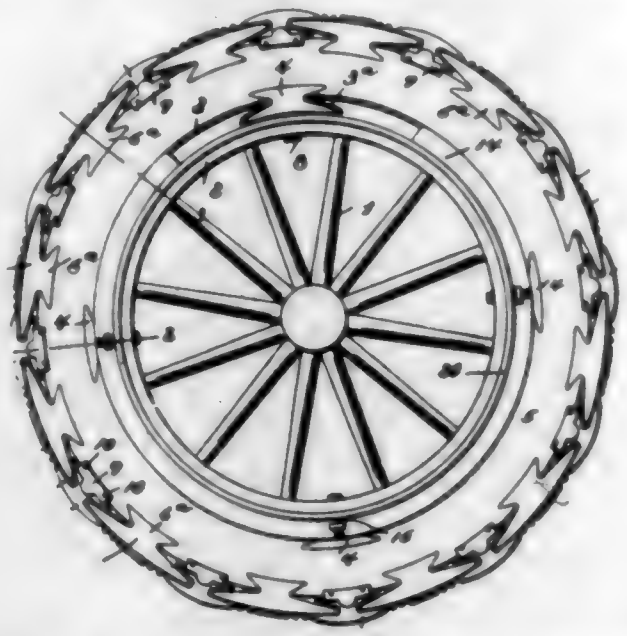
5. A rotary engine having a stator, a rotor operating therein and having a diametrical pocket, a piston-head movable in one end of the pocket, a counterweight movable in the opposite end portion of the pocket, and means effecting a yielding connection between the piston-head and counterweight, said means comprising a rod attached to the counterweight and sliding on the piston-head, and springs connecting the rod with the piston-head.

6. In a rotary engine, the combination of a stator, a rotor, valves, cams for operating the same, means movably mounting the cams on the rotor, means for alternately throwing the cams in and out of action, the second-named means comprising a collar splined on the rotor, a linkage connecting the collar with each cam, a member having sliding connection with the collar, and means mounted independently of the rotor and connected with said member whereby to shift the collar through the medium of said member.

7. A rotary engine having a valve, a piston-like member connected to the valve, a casing in which the member operates, means for applying fluid-pressure to either side of said member at will, and means for periodically operating the valve.

8. A rotary engine having a valve, a rotary piston-like member attached thereto, a circular casing in which the said member operates, an abutment in the casing and engaging the member, means for entering fluid-pressure into the casing at either side of the abutment at will, and means for periodically actuating the valve.

818,400. VEHICLE-TIRE. ROBERT WRIGHT, Cleveland, Ohio. Filed July 31, 1905. Serial No. 271,993.



Claim.—1. The combination with a wheel-rim, and a rubber tire, having recesses in its inner wall, of a spring-metal band secured to the rim and extending around between the rim and the tire and having cross-folds expanded to produce enlarged recesses, and plugs with expanded heads and bases fitting in the recesses in the tire and band respectively.

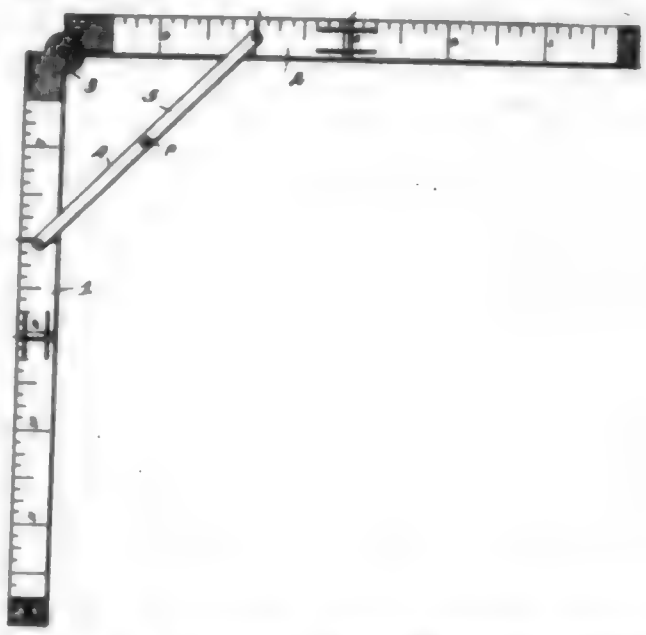
2. The combination with a wheel-rim, of a flat metal ring thereon having a flange at one end and a removable ring-nut at the other, a spring-band having cross-folds, extending around and secured upon the ring, and a rubber tire upon said band.

3. The combination with a wheel-tire, of an armor-band comprising a metal ribbon extending around and secured to the tread of the tire and bent to form a series of cross-loops, and rubber plugs fitting within said loops.

4. The combination with a wheel-tire having undercut cross-recesses in the tread, of an armor thereon having retaining-ribs fitting in said recesses.

5. The combination with a wheel-tire having undercut cross-recesses in the tread, of a metal band extending around the tire and having expanded cross-folds, rubber connecting-plugs fitting in said recesses and in the inner folds, and rubber tread-plugs fitting in the outer folds.

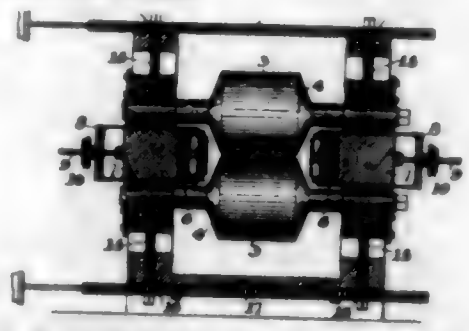
818,401. RULE. ORANGE H. WYCOFF, Winfield, Kans. Filed Jan. 13, 1906. Serial No. 296,071.



Claim.—A rule comprising a pair of arms having a jointed connection, in combination with a folding and separable brace consisting of two members having their outer ends pivotally connected to the arms of the rule, the inner end of one of said arms being provided with a pin or stud and the inner end of the other member being provided with a notch to receive and retain said pin or stud, substantially as described.

REISSUES.

12,472. ROLLING-MILL. PETER M. WEBER, Homestead, Pa., assignor to Carnegie Steel Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 19, 1902. Serial No. 94,845. Original No. 645,409, dated Mar. 13, 1900.



Claim.—1. The combination with a universal mill having horizontal positively-driven reducing-rolls, and vertical rolls driven by friction with the metal being rolled, whose axes lie in a vertical plane containing the axes of the horizontal rolls, the four rolls forming a pass with open edges, of a finishing-mill to which the metal is taken from said universal mill; substantially as described.

2. The combination with a cogging-mill, of an intermediate universal mill having horizontal positively-driven reducing-rolls, and vertical rolls driven by friction with the metal and having their axes lying in a vertical plane containing the axes of the horizontal rolls, the four rolls forming a pass with open edges, and a finishing-mill having closed passes to shape the edges and give uniform results; substantially as described.

3. In a universal rolling-mill, the combination with a housing having a pair of cogging-rolls mounted therein, of a housing having an upper and lower pair of vertical adjustable bearings mounted therein, a horizontal roll journaled in each pair of said bearings and each adjusted toward one another by the said bearings, means for adjusting the said bearings, a casing secured to each side of said housing and arranged between each pair of adjustable bearings, a longitudinally-operating bearing arranged in each of the said casings and provided on their inner face with a semicircular recess in which is mounted a series of roller-bearings, a retaining-plate secured to the inner end of said longitudinally-operating bearings and provided with a rectangular opening, a vertical roll mounted in each of the said recesses, frictionally engaging said roller-bearings, pro-

jecting partly through the said opening and retained in position by said plate, and means connected to each of said longitudinally-operating bearings adapted to operate the same simultaneously; substantially as described.

4. In a universal rolling-mill, the combination with a pair of cogging-rolls, a pair of vertically-adjustable universal rolls and a pair of simultaneously-operating longitudinal bearings arranged in relation to said universal rolls, of a pair of finishing-rolls provided between the same with a series of horizontally-arranged passes for finishing I-beams and preventing a fin forming upon the feet thereof, said passes formed by providing each of the said rolls at the first pass with a horizontally-alining collar with tapering sides, an alining collar at each side of the first-mentioned collar and provided with straight sides and so arranged as to form a horizontal portion upon the rolls between the collars, providing the upper of said rolls at the second pass with a collar having each side thereof tapering and terminating in an annular shoulder and further providing said roll with a horizontal portion at the side of each shoulder; providing the lower of said rolls at the second pass with a collar in horizontal alinement with the collar of the upper roll and having its sides tapering and terminating in a horizontal portion in alinement with the annular shoulders of the upper collar, further providing said lower roll at the second pass at the end of each of the horizontal portions with a collar of greater diameter than the alining collar and which operate at the side of each of the annular shoulders of the upper roll; providing the lower of said rolls at the third pass with a collar having each side tapering and terminating in an annular shoulder and further providing said roll with a horizontal portion at the side of each of the said collars, providing said upper roll at the third pass with a collar in horizontal alinement with the collar of the lower roll and having tapering sides which terminate in a horizontal portion in alinement with the annular shoulders of the lower collars, further providing said upper roll at the third pass at the end of each horizontal portion with a collar of greater diameter than the alining collar and which operate at the side of each of the annular shoulders of the lower roll at the third pass; substantially as described.

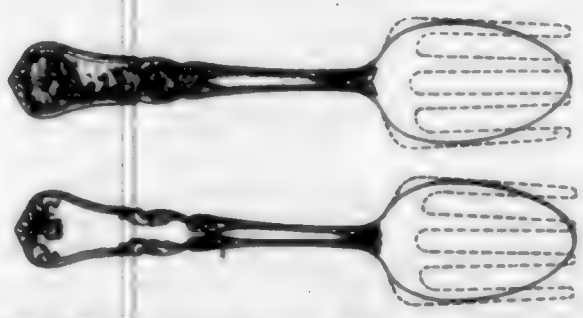
DESIGNS.

37,954. BADGE. ANTONI WIENIEWSKI, Buffalo, N. Y. Filed Feb. 26, 1906. Serial No. 303,541. Term of patent 14 years.



Claim.—The ornamental design for a badge, as shown.

37,955. HANDLE OF SPOONS, FORKS, OR SIMILAR ARTICLES. WILLIAM A. JAMESON, Niagara Falls, N. Y. Filed Mar. 15, 1906. Serial No. 306,304. Term of patent 7 years.



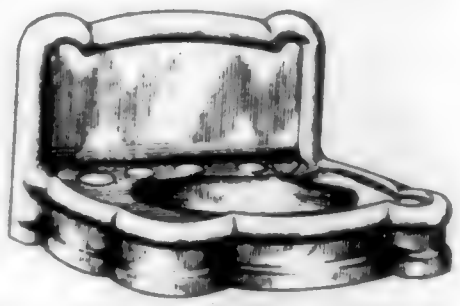
Claim.—The ornamental design for the handle of a spoon, fork or similar article as shown.

37,956. BOTTLE. SIEGMUND HOCHSTADTER, New York, N. Y. Filed Mar. 7, 1906. Serial No. 304,800. Term of patent 14 years.



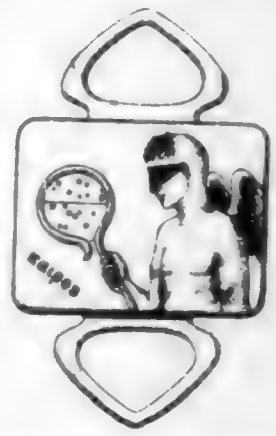
Claim.—The ornamental design for a bottle, as shown.

37,957. WASHBASIN. JOHN ZIPP, Chattanooga, Tenn., assignor to The Cahill Iron Works, a Corporation of Tennessee. Filed Feb. 26, 1906. Serial No. 303,125. Term of patent 7 years.



Claim.—The ornamental design for a washbasin, as shown.

37,958. CIGAR-CUTTER. EDWIN W. DAYTON, New York, N. Y. Filed Feb. 23, 1906. Serial No. 302,644. Term of patent 7 years.



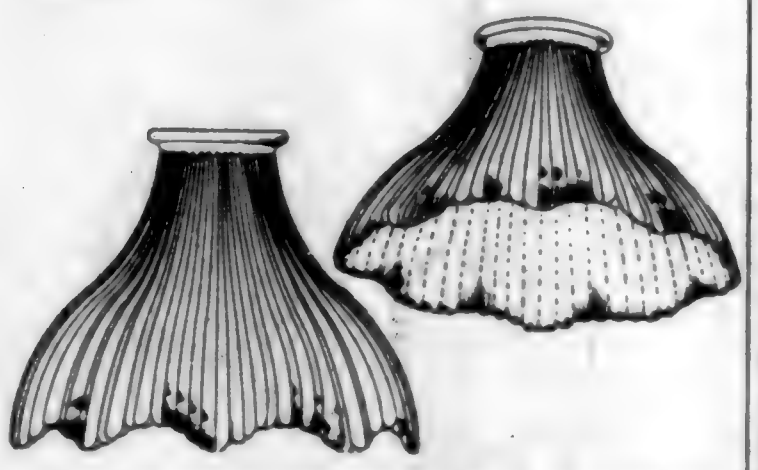
Claim.—The ornamental design for a cigar-cutter, as shown.

37,959. TRUNK-TRIMMING. ISIDOR MENDEL, Cincinnati, Ohio. Filed Oct. 30, 1905. Serial No. 285,190. Term of patent 7 years.



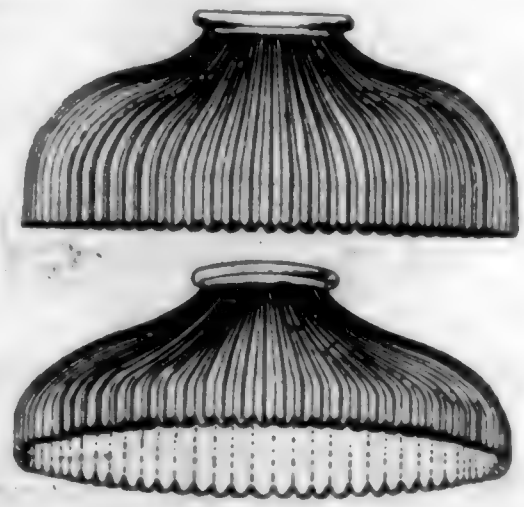
Claim.—The ornamental design for a trunk-trimming as shown.

37,960. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,721. Term of patent 14 years.



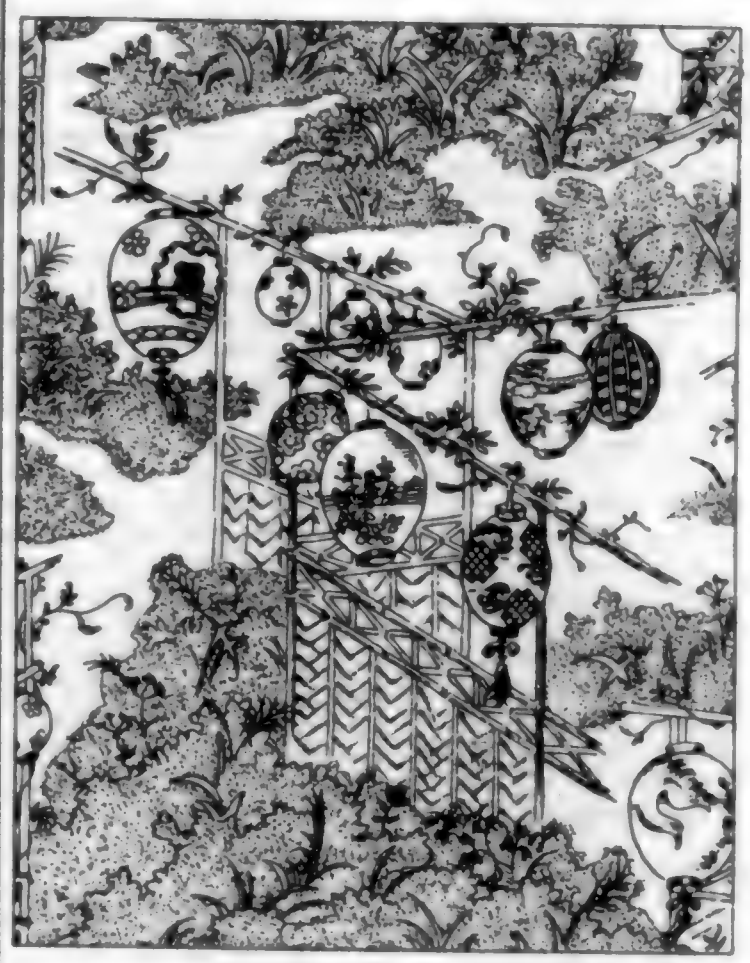
Claim.—The ornamental design for a glass reflector of the form shown, having external reflecting-prisms visible on the interior of the reflector, as described.

37,961. PRISMATIC-GLASS REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed Aug. 2, 1905. Serial No. 272,445. Term of patent 14 years.



Claim.—The ornamental design for a prismatic-glass reflector of the form shown having external reflecting-prisms visible also on the interior of the reflector, as shown and described.

37,962. PRINTED TEXTILE FABRIC. EDWARD B. VANDERSAW, Brooklyn, N. Y. Filed Dec. 26, 1905. Serial No. 292,652. Term of patent 7 years.



Claim.—The ornamental design for a printed textile fabric as shown.

TRADE-MARKS

PUBLISHED APRIL 17, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 73. WINES. TO-KALON WINE CO., Washington, D. C. Filed Apr. 1, 1905.

TO-KALON

The arbitrary word TO-KALON arranged upon an ornamental panel.

SER. No. 1,770. LIQUID-VARNISH COATING FOR INTERIOR WOODWORK. THE INTERIOR HARDWOOD CO., Indianapolis, Ind. Filed Apr. 15, 1905.

PARQUET-LAC

The word PARQUET-LAC.

SER. No. 1,867. GIN. SAMUEL STREET & CO., New York, N. Y. Filed Apr. 17, 1905.

DE STAR GIN

The word-symbol DE STAR GIN and the representation of a five-pointed star.

SER. No. 2,120. PREPARED FOOD FOR INFANTS AND INVALIDS. THE TARO FOOD CO. INC'D, Danbury, Conn. Filed Apr. 18, 1905.

TAROENA

The arbitrary word TAROENA.

SER. No. 2,308. OATMEAL, ROLLED OATS, CRACKED WHEAT, ROLLED WHEAT, FARINA, HOMINY GRITS, PEARLED BARLEY, PREPARED RICE, AND BREAKFAST-FOODS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Apr. 19, 1905.

QUAKER

The word QUAKER.

SER. No. 2,502. CULINARY ARTICLES MADE OF TINWARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Apr. 20, 1905. Used ten years.

LISK

The word LISK.

SER. No. 2,579. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

SPECIAL

The arbitrary word SPECIAL.

SER. No. 2,580. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

SOLID SPLIT

The arbitrary words SOLID SPLIT.

SER. No. 2,581. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905. Used ten years.

SOLID SPLIT SPECIAL.

The words SOLID SPLIT SPECIAL."

SER. No. 2,582. PASTED LEATHER SHEETS. WESTERN LEATHER COMPANY, Milwaukee, Wis. Filed Apr. 21, 1905.

BANNER

The word BANNER.

SER. No. 3,319. BAKING-POWDER. TOZE BROS., Des Moines, Iowa. Filed Apr. 27, 1905. Used ten years.

ECONOMY BAKING POWDER

The words ECONOMY BAKING POWDER and the representations of a cannon, cannon-balls, and ramrod.

SER. No. 3,633. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES CO., Columbus, Ohio. Filed Apr. 28, 1905.

SER. No. 3,633.



The name HOSTER'S in heavy shaded script and arranged at a slight inclination to the horizontal.

SER. No. 4,155. WHISKY. A. G. MARSHUETZ & Co., New York, N. Y. Filed May 3, 1905.



A design representing a shield bearing the monogram M M, through which is placed a torch held aloft by a hand. On either side of the shield is a fanciful scroll design.

SER. No. 4,291. EXTRACTS OF LEMON, VANILLA, ALMOND, AND GINGER. E. R. DURKEE & Co., New York, N. Y. Filed May 2, 1905.

DRAGON



The word "DRAGON" or the representation of a dragon, used singly or together.

SER. No. 4,479. WHISKY. MARYLAND DISTILLING CO., Chicago, Ill. Filed May 6, 1905.

ARTILLERIST

The word ARTILLERIST.

SER. No. 4,549. WHISKY. C. PERSON'S SONS, Buffalo, N. Y. Filed May 6, 1905.



The words BUFFALO CLUB, underneath which is a representation of a buffalo's head within a circle.

SER. No. 4,697. LARD. DUNLEVY & BROTHER, Pittsburg, Pa. Filed May 8, 1905.

SER. No. 4,897.

WHITE LILY

The arbitrarily-selected word-symbol WHITE LILY," associated with the representation of a cluster of calla-lilies.

SER. No. 4,894. LAXATIVE REMEDY. MCKESSON & ROBBINS. New York, N. Y. Filed May 10, 1905.

TARTAN

The word TARTAN.

SER. No. 4,964. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

SUFFOLK

The arbitrarily-selected word SUFFOLK.

SER. No. 4,965. COTTON PIECE GOODS, EMBODYING SHEETINGS, SHIRTINGS, TICKINGS, DUCKS, OSNABURGS, DENIMS, AND CANTON FLANNELS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

ST. LAWRENCE

The arbitrarily-selected abbreviation and word ST. LAWRENCE.

SER. No. 4,967. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 10, 1905.

MASSASOIT

The arbitrarily-selected word MASSASOIT.

SER. No. 4,987. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

ALLEGHENY

The arbitrarily-selected word ALLEGHENY.

SER. No. 4,988. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

RELIANCE

The arbitrarily-selected word RELIANCE.

SER. No. 4,990. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

LEXINGTON

The arbitrarily-selected word LEXINGTON."

SER. No. 4,991. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

LIBERTY

The arbitrarily-selected word LIBERTY.

SER. No. 4,992. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905.

SER. No. 4,992.

GREAT WESTERN

The arbitrarily-selected words GREAT WESTERN.

SER. No. 4,993. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

ARGUS

The arbitrarily-selected word ARGUS.

SER. No. 4,996. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

MASSACHUSETTS

The arbitrarily-selected word MASSACHUSETTS.

SER. No. 4,998. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass. Filed May 10, 1905. Used ten years.

CONCORD RIVER

The arbitrarily-selected words CONCORD RIVER.

SER. No. 5,113. WHISKY. THE GEORGE BIELER SONS COMPANY, Cincinnati, Ohio. Filed May 11, 1905. Used ten years.

SER. No. 5,113.



A panel bearing the words "'RARE OLD PERFECT' BROOKFIELD RYE 'MADE FAMOUS BY PUBLIC FAVOR,'" the autograph firm-signature "GEO. BIELER SONS," and the place of doing business, "CINCINNATI. U.S.A.," the words "RARE OLD PERFECT" and "MADE FAMOUS BY PUBLIC FAVOR" being inclosed in quotation-marks, and a fleur-de-lis being arranged at each end of the word "RYE." On the panel also appear two winged dragons rampant on either side of the letter "B," with the date "1867" beneath.

SER. No. 5,203. WATER-TUBE BOILERS. A. D. GRANGER CO., New York, N. Y. Filed May 11, 1905.

STAR

The word STAR.

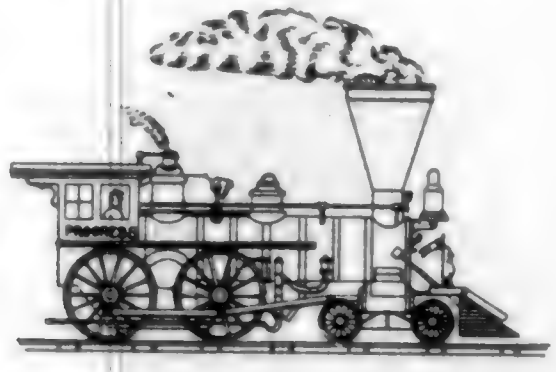
SER. No. 5,259. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 11, 1905.



The representation of a rooster.

SER. No. 5,260. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass. Filed May 11, 1905.

SER. No. 5,260.



The representation of a locomotive with a man at the window of the cab thereof and the word PROGRESS on the tender.

SER. No. 5,270. COTTON, WORSTED, AND MIXED COTTON AND WOOL PIECE GOODS. YORK MANUFACTURING CO., Saco, Me. Filed May 11, 1905.

EDEN

The word EDEN.

SER. No. 5,303. WHISKY. BASILIUS WINTER, Rock Island, Ill. Filed May 12, 1905.



The words GOOD LUCK, associated with the representation of a horseshoe.

SER. No. 5,510. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

Duquesne

The word DUQUESNE.

SER. No. 5,608. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1905.

AVENA

The word AVENA.

SER. No. 5,609. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1905.



The pictorial representation of a man in Highland dress holding a bagpipe.

SER. No. 5,610. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1905.



SCOTCH

The pictorial representation of a man in Highland dress holding a bagpipe, and the word SCOTCH.

SER. No. 5,611. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1905. Used ten years.

SCOTCH

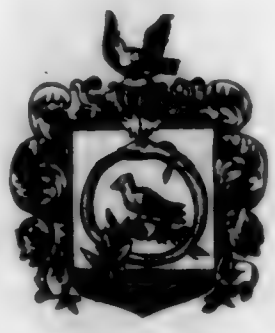
The word SCOTCH.

SER. No. 5,688. OIL FOR INTERNAL AND EXTERNAL USE, COMMONLY KNOWN AS "HAARLEM OIL." HOLLAND MEDICINE COMPANY, Washington, D. C., and Philadelphia, Pa. Filed May 15, 1905. Used ten years.



A shield or escutcheon, in the center of which is shown a sword upright, flanked at either side by two six-pointed stars, diamond-foliated, the sword-point being surmounted by a Maltese cross. Underneath the shield or escutcheon is the word "HARLEMENSIS and the signature C. DE KONING TILLY" in facsimile.

SER. No. 5,689. MEDICINAL OIL FOR INTERNAL AND EXTERNAL USE, COMMONLY KNOWN AS "HAARLEM OIL." HOLLAND MEDICINE COMPANY, Washington, D. C., and Philadelphia, Pa. Filed May 15, 1905.



A shield or escutcheon ornamented at the outside of the top and the two sides by fern-like leaves enscrolled, a rectangle blazoned upon the shield, a serpent holding the body adjacent to the tail in its mouth, the tail extending behind the head and falling down over the neck in front a short distance, an olive branch foliated or leaved extending from the bottom of the shield into the rectangle and serpent coil, a dove with folded wings perchant upon the branch within the serpent coil; for crest, a helmet barred surmounted by a dove with wings upraised.

SER. No. 5,714. POTASH. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 15, 1905. Used ten years.

AMERICAN
PURE CRYSTAL
POTASH

The words AMERICAN PURE CRYSTAL POTASH.

SER. No. 5,812. GINGER CHAMPAGNE. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo. Filed May 16, 1905. Used ten years.

SER. No. 5,812.



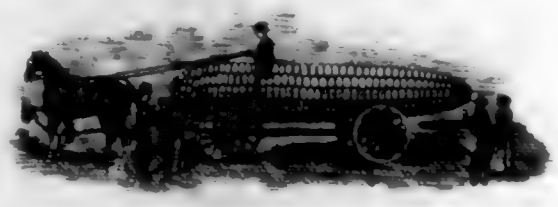
The bust representation of an Indian rising above clouds with the setting sun as a background and holding in one hand a glass and in the other a pipe, a scene showing a house, a well-curb, a rock, trees, people in the foreground and mountain-peaks in the background, the word "MANITOU" inclosed in quotation-marks, the words "ORIGINAL NATURAL MINERAL GINGER CHAMPAGNE BOTTLED AT THE FAMOUS EFFERVESCENT SPRINGS LYING AT THE FOOT OF PIKE'S PEAK, COLO. MANITOU, COLO. U. S. A. THE ONLY WATER ON THE AMERICAN CONTINENT RECHARGED WITH ITS OWN GAS. KEEP BOTTLE IN COOL PLACE AND LAY ON ITS SIDE," and the name of the company in script.

SER. No. 5,813. EFFERVESCENT OR CARBONATED MINERAL WATER. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo. Filed May 16, 1905. Used ten years.



The bust representation of an Indian rising above clouds, with the setting sun as a background, and holding in one hand a glass and in the other a pipe; a scene showing a house, a well-curb, a rock, trees, and people in the foreground and mountain-peaks in the background; the word "MANITOU" inclosed in quotation-marks; the words "ORIGINAL NATURAL MINERAL TABLE WATER BOTTLED AT THE FAMOUS EFFERVESCENT SPRINGS LYING AT THE FOOT OF PIKE'S PEAK, COLO. MANITOU, COLO. U.S.A. THE ONLY WATER ON THE AMERICAN CONTINENT RECHARGED WITH ITS OWN GAS. KEEP BOTTLE IN COOL PLACE AND LAY ON ITS SIDE," and the name of the company in script.

SER. No. 5,819. CORNMEAL AND CORN-CHOP. PITTMAN & HARRISON CO., Sherman, Tex. Filed May 16, 1905.



The representation of an ear of corn loaded upon a wagon to which is hitched a pair of horses driven by a man astride of said ear

of corn, there being also near the front and rear ends of the ear of corn representations of male and female figures, which appear to be looking with wonderment at the team thus made up.

SER. No. 3,882. BICARBONATE OF SODA. PENNSYLVANIA SALT MANUF'G CO., Philadelphia, Pa. Filed May 17, 1905. Used ten years.



The words NATRONA BRAND PENN'A SALT MFG. CO., PHILADELPHIA, arranged on a band extending diagonally across an annular band made up of concentric circles, the words "BI CARB: SODA" within the circles, and the silhouette of the head of a Quaker inclosed in a substantially rectangular frame and arranged upon the diagonal and annular bands.

SER. No. 3,910. GRAIN-BINDING HARVESTERS, CORN-HARVESTERS, RICE-HARVESTERS, MOWERS AND REAPERS, AND EXTRA AND REPAIR PARTS FOR SUCH APPARATUS. INTERNATIONAL HARVESTER COMPANY OF AMERICA, Chicago, Ill. Filed May 17, 1905.

CHAMPION

The word CHAMPION.

SER. No. 3,928. DUPLICATING-INK. NEOSTYLE COMPANY, New York, N. Y. Filed May 18, 1905.

NEOSTYLE

The word NEOSTYLE.

SER. No. 6,121. STEAM AND HOT-WATER BOILERS FOR HEATING PURPOSES. NEW YORK CENTRAL IRON WORKS CO., Geneva, N. Y. Filed May 20, 1905. Used ten years.

DUNNING

The word "DUNNING."

SER. No. 6,051. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa. Filed May 18, 1905.



The representation of two arrows crossed.

SER. No. 6,069. RYE WHISKY. JACOB HENRY HENTZ, Jr., Philadelphia, Pa. Filed May 19, 1905. Used ten years.



A monogram of the letters and character W H & Co and the abbreviation and number "ESTD. 1793," inclosed within concentric circles.

SER. No. 6,472. WHISKY. H. J. HELLERT & SONS, Vincennes, Ind. Filed May 24, 1905.

Harmonie Club

The words HARMONIE CLUB.

SER. No. 6,817. TOILET CREAM. CHARLES J. COUNTER, Boston, Mass. Filed May 27, 1905.

MAGDA

The fanciful word "MAGDA."

SER. No. 7,008. WHISKY. LAZARUS & NASSAUER, Cairo, Ill. Filed May 29, 1905.

SILVER MOON

The words "SILVER MOON."

SER. No. 7,186. WORSTED, WOOLEN, AND COTTON-MIXED PIECE GOODS. GRIFFON COMPANY, New York, N.Y. Filed June 1, 1905.



Two parallel stripes of yellow color, one broad and the other narrow, woven into the fabric near the selvage of the same.

SER. No. 7,459. TYPE-WRITER RIBBON. BACON BROTHERS, Seattle, Wash. Filed June 5, 1905.



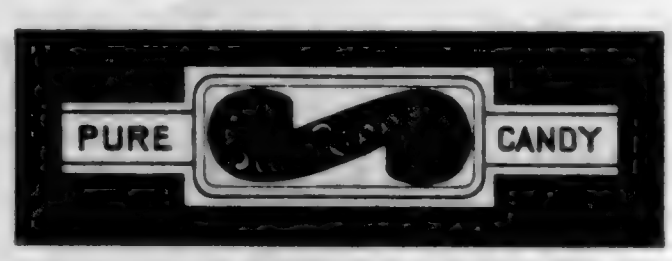
A rectangular panel bearing the representation of a flower having thereon a monogram of the letters "K R," and the words ITSGOOD KLEAN RIBBON MANUFACTURED BY ITSGOOD RIBBON CO ROCHESTER N Y.

SER. No. 7,472. CANNED AND TINNED SALMON. RICHARD B. GREEN & Co., LIMITED, Liverpool, England. Filed June 5, 1905.



An oblong panel having two disks, on each of which appears the representation of a salmon-steak fringed with pieces of parsley and associated with the words PARSLEY BRAND, all of the oblong panel excepting where the disks appear being filled in by representations of salmon-scales.

SER. No. 7,541. CHOCOLATE CREAMS, CARAMELS, AND CANDIES. THE BLUE RIBBON CANDY COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed June 6, 1905.



The words THE BLUE RIBBON BRAND printed upon the representation of a scroll or ribbon within a rectangle. Adjacent to this rectangle on the left end is a smaller rectangle, in which the word PURE is printed, and on the right end a similar rectangle, in which the word CANDY is printed. A large rectangle forms the background or border for the whole of the above.

SER. No. 7,655. WHISKY. NELSON DISTILLING CO., St. Louis, Mo. Filed June 8, 1905. Used ten years.

SER. No. 7,655.



The words OAK HILL, beneath which is a monogram composed of the letters N D Co.

SER. No. 7,698. WINE. HENRY R. MYERS, Covington, Ky. Filed June 8, 1905. Used ten years.

FULTON

The word FULTON.

SER. No. 7,782. WHEAT-FLOUR. COLLIN COUNTY MILL & ELEVATOR COMPANY, McKinney, Tex. Filed June 9, 1905.



A marine scene with a lighthouse in the background and a sack of flour bearing the words WHITE BILLOWS floating in the water.

SER. No. 7,824. CONDENSED MILK. BORDEN'S CONDENSED MILK Co., Jersey City, N. J., and New York, N. Y. Filed June 10, 1905.



The picture or representation of a lone pine-tree standing in the foreground, while in the background are other trees and a lake, the

whole picture being inclosed in a heavy oval frame with a panel at its base and decorations of pine cones and needles and across the top the arbitrarily-selected words PINE TREE.

SER. No. 7,858. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal. Filed June 10, 1905. Used ten years.



The word DEIMEL.

SER. No. 7,952. CIGARS. JOSEPH WEINBERGH, Dayton, Ohio. Filed June 12, 1905.



The words GENTLEMAN GEORGE, associated with a picture of King George IV.

SER. No. 8,138. CANNED SALMON. ALASKA PACKERS ASSOCIATION, San Francisco, Cal. Filed June 14, 1905.



The word ARGO.

SER. No. 8,166. WHISKY. CHAS SHAFFNER & Co., Chicago, Ill. Filed June 15, 1905.



The word ROSEWOOD.

SER. No. 8,382. CENTRIFUGAL PUMPS. WHEELER CONDENSER & ENGINEERING Co., New York, N. Y. Filed June 17, 1905.



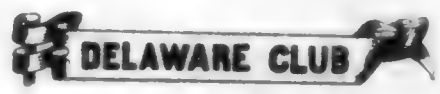
A volute figure, with the word WHEELER in a curved line above it.

SER. No. 8,511. GUNPOWDER. AMERICAN POWDER MILLS, Boston, Mass. Filed June 19, 1905.



The words DEAD SHOT.

SER. No. 8,518. WHISKY. MAYER, SONS & Co., Philadelphia, Pa. Filed June 19, 1905.



The words DELAWARE CLUB on a ribbon design.

SER. No. 8,519. WHISKY. MAYER, SONS & Co., Philadelphia, Pa. Filed June 19, 1905. Used ten years.



The words PRIDE OF VIRGINIA on a scroll of ribbon design.

SER. No. 8,520. WHISKY. MAYER, SONS & Co., Philadelphia, Pa. Filed June 19, 1905.



The word ELITE on a ribbon design.

SER. No. 8,521. WHISKY. MAYER, SONS & Co., Philadelphia, Pa. Filed June 19, 1905. Used ten years.



The words PRIDE OF PENNSYLVANIA on a ribbon design.

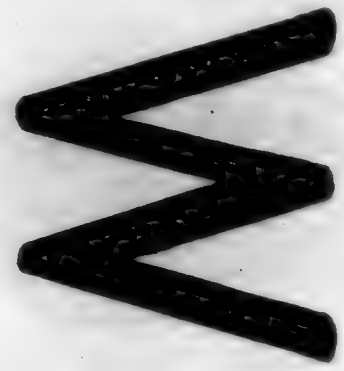
SER. No. 8,541. CHILDREN'S SUITS AND PARTS OF SUITS. JONES BROS. OVERALL COMPANY, Dubuque, Iowa. Filed June 19, 1905.



The words LITTLE TUDOR and a representation of a little boy dressed in an overall suit wearing a hat.

SER. No. 8,597. SOLID-GOLD FINGER-RINGS EITHER IN SOLID BANDS OR WITH A SETTING. J. R. WOOD & SONS, New York, N. Y. Filed June 20, 1905.

SER. No. 8,597.



The letter W laid on its side; thus ≷

SER. No. 8,880. PENNYROYAL AND TANSY PILLS. HORACE B. TAYLOR, Philadelphia, Pa. Filed June 21, 1905.

The words DR. HOOPER'S GREEN SEAL EXTRA STRONG on a green seal stamp in the center of an ornamental band label, with the word STAMP and the picture of a seal at one end and the word OFFICE at the other end. The words HOOPER'S PILLS and ROYAL ENGLISH PENNYROYAL, GREEN SEAL AND TANSY, appear on the label, which is decorated with a fanciful design.

SER. No. 8,775. PEPPER SAUCE. E. MCILHENNY'S SON, Avery's Island, La. Filed June 22, 1905. Used ten years.



A central circular field inclosing the name and address E. MCILHENNY NEW IBERIA LOUISIANA and an annular band surrounding the same bearing the words TABASCO PEPPER SAUCE, all appearing on a diamond-shaped figure.

SER. No. 8,857. MEN'S SHIRTS AND BOYS' SHIRTS, WAISTS, AND BLOUSES. CHARLES REISMAN & Co., Cleveland, Ohio. Filed June 23, 1905. Used ten years.



A scroll with a central panel on which are the letters and word K AND E.

SER. No. 8,777. PEPPER-SAUCE. E. MCILHENNY'S SON, Avery's Island, La. Filed June 22, 1905. Used ten years.



A central circular field inclosing the name and address E. MCILHENNY NEW IBERIA LOUISIANA and an annular band surrounding the same bearing the words TABASCO PEPPER SAUCE, all appearing on a diamond-shaped figure, the name E. MCILHENNY, part of the address, and the words TABASCO PEPPER SAUCE being printed in green, the diamond being printed in pink and bordered by a green line.

SER. No. 8,879. WHISKY. JOHN MILLING CRANSTON, Augusta, Ga. Filed June 24, 1905. Used ten years.

Jack Cranston's

PRIVATE STOCK

The words JACK CRANSTON'S PRIVATE STOCK, associated with a monogram of the letters J M C.

SER. No. 8,914. WHISKY. H. F. CORBIN & Co., Cincinnati, Ohio. Filed June 24, 1905.



A design simulating an iron cross bearing thereon a fanciful eight-sided figure, in the central field of which appears a star, with the letters, character, and abbreviation H F C & Co. arranged between the points of the star.

SER. No. 8,936. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex. Filed June 24, 1905.

SER. No. 8,936.



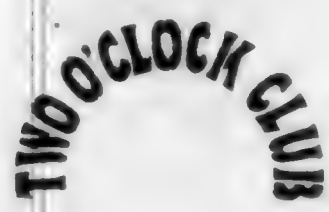
The words HONEY SUCKLE above a design showing an eagle in the act of flying holding in its talons a wreath, in the center of which is a monogram composed of the letters, character, and word L E & SON. A double circle forms a background for this design, on either side of which is a spray of honeysuckle.

SER. No. 8,951. WHISKY. KAUFMANN BROS. & CO., Toledo, Ohio. Filed June 24, 1905.



The word YONDOTA.

SER. No. 8,965. WHISKY. ADOLPH LOEB, Cincinnati, Ohio. Filed June 24, 1905.



The words TWO O'CLOCK CLUB.

SER. No. 9,058. BEER AND LAGER-BEER. HARVARD BREWING CO., Lowell, Mass. Filed June 26, 1905.



A groundwork formed of the representation of a plurality of flags arranged in substantially horizontal rows, each of said flags bearing the letter "H," and streamers interposed between the rows of flags. Upon some of said streamers are the words "PURE BEER" and "$1000.00" and on others the words "HARVARD" "BREWING" "COMPANY." Upon said groundwork in fancy script letters is the word "HARVARD" and also the symbol "$1000.00," the words "PURE BEER," and the representation of a seal bearing a flag having the letter "H" thereon. On the seal is also the word "HARVARD." The whole is inclosed in a fancy border of "engine-work" scrolls, and approximately centrally of each of the end portions of said border is a star upon which appears a flag bearing the letter "H."

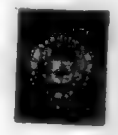
SER. No. 9,066. COCKTAILS. S. C. HERBST IMPORTING CO., Milwaukee, Wis. Filed June 26, 1905.

SER. No. 9,066.



The words OLD JUDGE.

SER. No. 9,249. PILLS. ALLCOCK MANUFACTURING CO., New York, N. Y. Filed June 27, 1905. Used ten years.



A rectangular device. In the center is a shield surmounted by an animal resembling a sheep couchant surrounded by a fancy circular border, the whole surrounded by a square fancy border, the spaces between the two borders and the space within the circular border being occupied by printed matter, said printed matter consisting of the words BRANDRETH'S PILLS, ALLCOCK'S POROUS PLASTER, B. BRANDRETH, FORWARD, PROPRIETARY.

SER. No. 9,311. WHISKY. KIEFER & CO., Los Angeles, Cal. Filed June 28, 1905.



The name MICAWBER, associated with a picture representing Micawber twirling a cane.

SER. No. 9,353. HAIR TONICS, STAINS, REMOVERS, AND DANDRUFF CURES. HOWARD E. NICHOLS, St. Louis, Mo. Filed June 28, 1905.



The representation of three walnuts arranged upon a single leaf, the word "WALNUTTA," inclosed in quotation-marks, being arranged across the walnuts.

SER. No. 9,532. PRESERVATIVE COATINGS FOR METALS. ALEXANDER H. STILLWAGON, Connellsville, Pa. Filed June 30, 1905.

SER. No. 9,532.



The representation of a corroded pipe and the word COATAPAL.

SER. No. 9,649. OLIVES. GRIGGS, COOPER AND COMPANY, St. Paul, Minn. Filed July 3, 1905.

Whynot

The arbitrary word WHYNOT.

SER. No. 9,660. MEDICINE IN TABLET FORM TO PREVENT PHYSICAL AND MENTAL AILMENTS IN MEN, WOMEN, AND CHILDREN. EDMOND R. MORAS, Chicago, Ill. Filed July 3, 1905.

DETOXYL

The word DETOXYL intersected by an arrow, the head of which is shown broken off.

SER. No. 9,780. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.



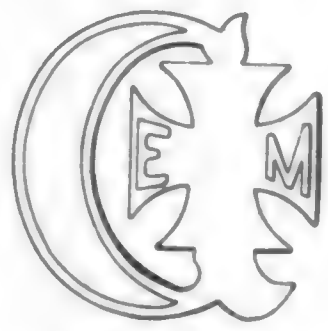
A seal bearing the head of a goat and a cluster of hops and barley-heads inclosed in an oval-shaped panel.

SER. No. 9,795. CANDY. SPRAGUE, WARNER & COMPANY, Chicago, Ill. Filed July 3, 1905.

RICHELIEU

The arbitrarily-selected word RICHELIEU.

SER. No. 9,936. HEATING-STOVES AND COOKING-STOVES. GEM CITY STOVE MANUFACTURING CO., Quincy, Ill. Filed July 8, 1905.



The letter G grasping a Maltese cross between its arms and the letters E and M arranged on the arms of the cross.

SER. No. 10,077. SQUABS. EDITH E. BILLINGS, West Springfield, Mass. Filed July 11, 1905.



The word ALEGRIA, associated with the outline figure of a pigeon and forming a part of an inclosing arabesque design for the pigeon.

SER. No. 10,121. LEATHER SHOES. LEWIS W. FRANKLIN, Boston, Mass. Filed July 11, 1905.



The words THE FRANKLIN SHOE and a medallion bearing the portrait of Benjamin Franklin.

SER. No. 10,270. VARNISH. B. L. HUNTER, San Francisco, Cal. Filed July 13, 1905.

LUSTRELAC

The word LUSTRELAC.

SER. No. 10,276. ROOFING CONSISTING OF FLEXIBLE SHEETS OF WATERPROOF MATERIAL. THE EASTERN GRANITE ROOFING COMPANY, New York, N.Y. Filed July 13, 1905.

Granite

The arbitrary word-symbol GRANITE.

SER. No. 10,344. WHISKY. STRAUSS, PEITS & Co., Cincinnati, Ohio. Filed July 15, 1905. Used ten years.

The FAMOUS LEWIS "66"

The words and figures "THE FAMOUS LEWIS 66."

SER. No. 10,372. INSULATED WIRE AND ADHESIVE TAPES COMMONLY USED FOR INSULATING. NEW YORK INSULATED WIRE COMPANY, New York, N. Y. Filed July 15, 1905.



A raven perched within a border representing a coil of wire. A ribbon is held by the beak of the raven, together with the words RAVEN CORE WIRE.

SER. No. 10,566. TIN PLATES, TERNE PLATES, TIN TAGGERS, BLACK TAGGERS, AND SHEET-IRON. E. L. PARKER & Co., Baltimore, Md. Filed July 19, 1905.

LEADER

The arbitrary word LEADER.

SER. No. 10,567. TIN PLATES, TERNE PLATES, TIN TAGGERS, BLACK TAGGERS, AND SHEET-IRON. E. L. PARKER & Co., Baltimore, Md. Filed July 19, 1905.

CAPITAL

The arbitrary word CAPITAL.

SER. No. 10,568. TIN PLATES, TERNE PLATES, TIN TAGGERS, BLACK TAGGERS, AND SHEET-IRON. E. L. PARKER & Co., Baltimore, Md. Filed July 19, 1905.

SER. No. 10,568.

TRIPLE

The arbitrary word TRIPLE.

SER. No. 10,570. PORTLAND CEMENT. THE EDISON PORTLAND CEMENT COMPANY, West Orange and New Village, N. J. Filed July 19, 1905.

Thomas A Edison

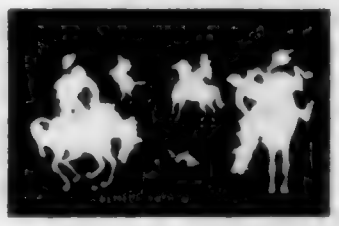
The autograph name THOMAS A. EDISON.

SER. No. 10,575. FANCY FEATHERS, OSTRICH-FEATHERS, AND FEATHER TRIMMINGS. E. LEWINSOHN, Berlin, Germany. Filed July 19, 1905.



A panel on which is displayed an eagle holding in its talons a banner depending from a double-headed arrow, the word BERLIN appearing on the banner.

SER. No. 10,646. REMEDY FOR THE CURE OF DISEASES OF THE RESPIRATORY ORGANS. J. JUNGMANN, New York, N. Y. Filed July 21, 1905.



The representation of several rough riders on kicking bronchos in front and the representation of a rider on horseback lassoing a broncho in the rear, with the words A REMEDY FROM THE PRAIRIES below said picture.

SER. No. 10,754. ALARM-CLOCKS. THE WM. L. GILBERT CLOCK COMPANY, Winsted, Conn. Filed July 24, 1905.



The letter G, within which appears the word BEST.

SER. No. 10,830. CARBURETING-LAMPS. GENERAL SAFETY MANTLE LIGHT CO., New York, N. Y. Filed July 26, 1905.

SER. No. 10,830.



The word IDEALIGHT within an aureole, the letters of this word increasing in size from each end to the center and the central letter being the largest and composed of two letters L L oppositely arranged and with their vertical lines coinciding.

SER. No. 10,988. CANNED FRUITS AND VEGETABLES. HARTLEY C. BAXTER, Brunswick, Me. Filed July 28, 1905. Used ten years.

BEST RESERVE

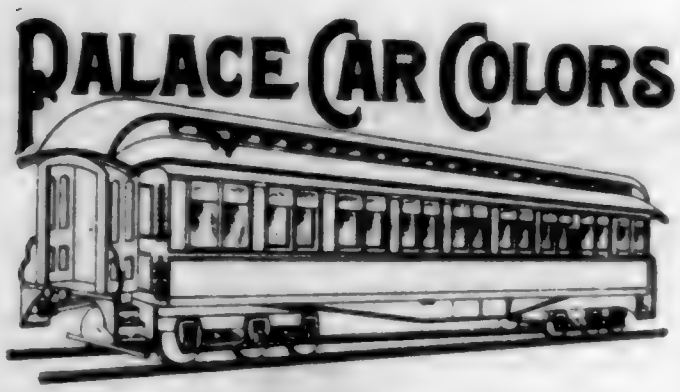
The words BEST RESERVE.

SER. No. 11,011. EXTRACTS FOR COFFEE. SMITH & WHEELER, Newark, N. J. Filed July 29, 1905.



The representation of a woman holding in one hand a cup of coffee and the words CARLSBADER HEALTH EXTRACT FOR COFFEE HEALTHFUL AND NOURISHING; IT'S DELICIOUS, together with scrolls and wreaths.

SER. No. 11,317. MIXED LIQUID PAINT. VANE-CALVERT PAINT CO., St. Louis, Mo. Filed Aug. 7, 1905. Used ten years.



The words PALACE CAR COLORS, together with a representation of a railway-coach, which words are printed in a straight line immediately above the representation of the railway-coach.

SER. No. 11,400. TABLE AND DAIRY SALT, ICE-CREAM SALT, AND SALT FOR SALTING HIDES. BROWN & SHAW, New York, N. Y. Filed Aug. 7, 1905.

SER. No. 11,400.



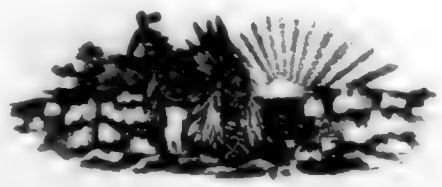
A chariot with a figure seated on the same and an open receptacle for salt resting on the rear end thereof and the word "STERLING" associated therewith.

SER. No. 11,674. COAL-MINERS' PICKS. FULTON TOOL WORKS, Canal Fulton, Ohio. Filed Aug. 15, 1905. Used ten years.

FULTON

The word "FULTON."

SER. No. 11,729. GINGER-CHAMPAGNE. THE MANITOU MINERAL SPRINGS COMPANY, Manitou, Colo. Filed Aug. 17, 1905. Used ten years.



The representation of an Indian's head and shoulders rising above the clouds, with the setting sun in the background, holding a glass in one hand and a pipe in the other.

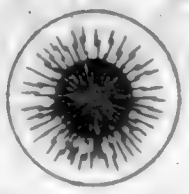
SER. No. 11,862. SCREWS, BOLTS, NUTS, RIVETS, BURRS, WASHERS, AND WIRE NAILS. AMERICAN SCREW COMPANY, Providence, R. I. Filed Aug. 21, 1905.



A representation of a spread-eagle upon a belted globe with a number of screws in each talon of the eagle.

SER. No. 12,100. REMEDY FOR CORNS, BUNIONS, AND INGROWN NAILS. STAFFORD DRUG CO. OF BALTIMORE CITY, Baltimore, Md. Filed Aug. 30, 1905.

CORNICIDE



The word "CORNICIDE," associated with a pictorial representation of a corn-plaster, comprising two concentric circular lines with zigzag lines radiating from within the smaller circle.

SER. No. 11,807. LEATHER SHOES FOR MEN. WERTHEIMER-SWARTS SHOE CO., St. Louis, Mo. Filed Aug. 22, 1905.



The words "SIR KNIGHT," associated with a shield-shaped figure upon which appears the pictorial representation of an equestrian knight surrounded by a group of persons, and in the background is a floating banner bearing the design of a four-leaf clover and the words "SIR KNIGHT."

SER. No. 12,105. RUGS. MCCLEARY, WALLIN & CROUSE, Amsterdam, N. Y. Filed Aug. 31, 1905.

I S R

The letters "I S R."

SER. No. 12,130. DISINFECTANTS AND ANTISEPTICS. SCHÜLKE & MAYR, Hamburg, Germany. Filed Sept. 1, 1905.

LYSOL

The word "LYSOL."

SER. No. 12,131. DISINFECTANTS AND ANTISEPTICS. SCHÜLKE & MAYR, Hamburg, Germany. Filed Sept. 1, 1905.



A triangle in which is a circular field of contrasting color, on which is inscribed the word "LYSOL."

SER. No. 12,160. FOOD FOR BABIES AND INVALIDS. THOMAS J. BALL, Chelsea Station, Mass. Filed Sept. 2, 1905. Used ten years.

HARVARD

The word "HARVARD."

SER. No. 12,246. BLEACHED, GRAY, PRINTED, AND FANCY DAMASKS. NEUSS, HESSLEIN & Co., New York, N. Y. Filed Sept. 5, 1905.



A representation of the statue of Ariadne riding a lioness.

SER. No. 12,496. LEATHER BOOTS, SHOES, AND SLIPPERS. WILLIAM A. MOODY, Boston, Mass. Filed Sept. 12, 1905.



The words "THE JOHN MITCHELL SHOE" upon a scroll inclosing a portrait of John Mitchell, president of the United Mine Workers of America.

SER. No. 12,535. EMULSIFIED PREPARATIONS, COUGH MIXTURES, AND LOTIONS FOR THE SKIN. A. H. DAYTON and G. T. WICHORE, Naugatuck, Conn., administrators of the estate of James O. May, deceased. Filed Sept. 13, 1905. Used ten years.



The representation of a branch or spray of the marshmallow-plant bearing a bloom, leaves, and buds, the words "THE MARSHMALLOW," and the words "[GREEK & ΛΩΩ I HEAL.]"

SER. NO. 12,425. PREPARATIONS FOR COLORING BUTTER. WELLS & RICHARDSON COMPANY. Burlington, Vt. Filed Sept. 9, 1905.



In a rectangular frame the word "DANDELION," the representation of a dandelion-plant inclosed in a circular frame, the words, character, and abbreviation "WELLS & RICHARDSON COS." diagonally in the upper section upon a scroll, the words "BUTTER COLOR" upon a scroll beneath the word "DANDELION," the words "WILL NOT COLOR THE BUTTERMILK" in a panel, and across the bottom the words, character, and abbreviation "WELLS & RICHARDSON CO. PROP'S BURLINGTON VT."

SER. NO. 12,391. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.

CRUSADE

The word "CRUSADE" in ordinary Roman capitals.

SER. NO. 12,592. UMBRELLA-FRAMES AND RIBS OF METAL. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.

LAURUS

The word "LAURUS."

SER. NO. 12,612. UMBRELLA-FRAMES. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The words "LOCK RIB" in capital letters, with the representation of a running fox, the whole inclosed by a border-line.

SER. NO. 12,613. UMBRELLA-FRAMES. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The word "ARCUS" in ordinary Roman capitals, with the representation of a running fox, the whole inclosed by a border-line.

SER. NO. 12,614. UMBRELLA-FRAMES. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The word "PARAGON" in ordinary Roman capitals, with the representation of a running fox, the whole inclosed by a border-line.

SER. NO. 12,615. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.

PARAGON

The word "PARAGON" in Roman capitals.

SER. NO. 12,616. UMBRELLA-FRAMES OF METAL. SAMUEL FOX & CO., LIMITED, Stocksbridge Works, near Sheffield, England. Filed Sept. 14, 1905. Used ten years.



The representation of a running fox.

SER. NO. 12,622. CHAIRS. SHEBOYGAN CHAIR COMPANY, Sheboygan, Wis. Filed Sept. 14, 1905.



A monogram of the letters "S C Co" inclosed in a diamond-shaped border, on which appear the words "SHEBOYGAN CHAIR CO. SHEBOYGAN WIS. U. S. A."

SER. NO. 12,740. AUTOMOBILES. JOHN C. HIBBON, St. Louis, Mo. Filed Sept. 18, 1905.

SER. No. 12,740.

SUCCESS

The word "SUCCESS."

SER. No. 12,953. PERIODICAL PUBLICATION. THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Sept. 25, 1905.

The Surprise

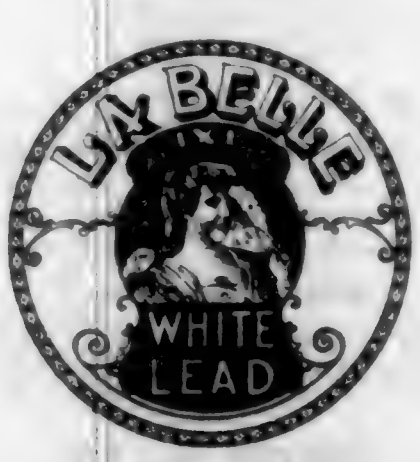
The words "THE SURPRISE."

SER. No. 12,999. LINSEED-OIL. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.

ARMSTRONG-McKELVY-LEAD & OIL CO. PITTSBURGH, PA.

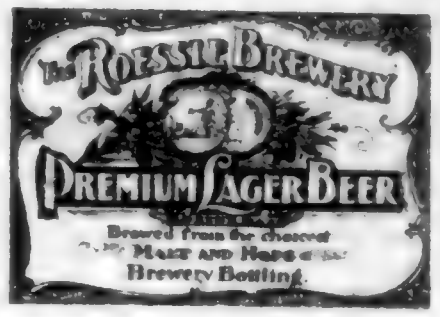
The words and abbreviations "ARMSTRONG-MCKELVY LEAD & OIL CO., PITTSBURGH, PA."

SER. No. 13,033. WHITE LEAD. MOSES LUBELSKY & SON, New York, N. Y. Filed Sept. 26, 1905. Used ten years.



The words and letters "LA BELLE I X L WHITE LEAD" and the representation of the bust of a woman in evening dress, holding a fan to her head, all inclosed in an ornamental border.

SER. No. 13,116. BEER. NEW ENGLAND BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905. Used ten years.



An ornamental panel having thereon the words "THE ROESSLE BREWERY PREMIUM LAGER BEER, BOSTON, MASS. BREWED FROM THE CHOICEST MALT AND HOPS. BREWERY BOTTLING," and a spray of foliage having thereon overlapping medals.

SER. No. 13,133. LAGER-BEER. THE PETER SCHOENHOFEN BREWING COMPANY, Chicago, Ill. Filed Sept. 29, 1905. Used ten years.



A panel bearing the word "EDELWEISS," the name "P. SCHOENHOFEN BREWING CO. CHICAGO," and the word "(EXPORT)" inclosed in parentheses, a red, white, and blue striped shield bearing a representation of a Mercury staff with an "S" intertwined therewith and a wreath partially inclosing the same, an Alpine scene, and stalks of barley.

SER. No. 13,152. SPICES AND MUSTARD. E. R. DURKEE & CO., New York, N. Y. Filed Sept. 30, 1905.

DRAGON



The representation of a dragon or the word "DRAGON," used singly or together.

SER. No. 13,178. ANKLE-SUPPORTING LEATHER SHOES. JOHN JUSTUS LATTEMANN, New York, N. Y. Filed Sept. 30, 1905. Used ten years.

CORSET

The word "CORSET."

SER. No. 13,221. HAT-PINS. SCOTT-BLAKE CO., Portland, Me. Filed Oct. 2, 1905.

"CATCH-ON"

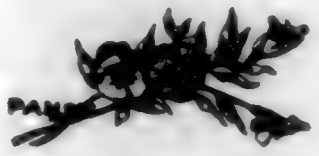
The arbitrarily-chosen hyphenated word "CATCH-ON" printed with quotation-marks, all in gothic type.

SER. No. 13,305. SALVE WHICH IS A CURE OR REMEDY FOR FRECKLES. JOHN J. KLEIN, New York, N. Y. Filed Oct. 5, 1905.

FRECKELENE

The word "FRECKELENE."

SER. No. 13,323. CANDY. PAUL F. BEICH CO., Bloomington, Ill. Filed Oct. 5, 1905.



The word "PANSY," associated with the pictorial representation of a bunch or spray of pansies.

SER. No. 13,403. BLADES FOR POCKET, TABLE, KITCHEN, BUTCHER, HUNTING, FARRIERS', PHYSICIANS' AND SURGEONS' KNIVES, METAL INK-ERASERS, AND RAZORS. CASE BROTHERS CUTLERY CO., Little Valley, N. Y. Filed Oct. 7, 1905. Used ten years.

TESTED XX.

The word "TESTED" and the letters "X X."

SER. No. 13,444. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo. Filed Oct. 9, 1905.

ROYAL

The arbitrary word "ROYAL."

SER. No. 13,445. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo. Filed Oct. 9, 1905.

APEX

The arbitrary word "APEX."

SER. No. 13,447. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo. Filed Oct. 9, 1905. Used ten years.

SER. No. 13,447.

ACME

The word "ACME."

SER. No. 13,448. WALL-PLASTER, PLASTER-OF-PARIS, CALCINED PLASTER, AND STUCCO. ACME CEMENT PLASTER CO., St. Louis, Mo. Filed Oct. 9, 1905. Used ten years.

CLIMAX

The word "CLIMAX."

SER. No. 13,464. ELECTRICAL APPLIANCES FOR ASSISTING THE HEARING. CHARLES W. HARPER, Boston, Mass. Filed Oct. 10, 1905.

ORIPHONE

The word "ORIPHONE."

SER. No. 13,588. EXPLOSIVE-ENGINES. THE BUCKEYE MANUFACTURING COMPANY, Anderson, Ind. Filed Oct. 14, 1905. Used ten years.

The LAMBERT

The words "THE LAMBERT."

SER. No. 13,623. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

ELECTRIC

The word "ELECTRIC."

SER. No. 13,627. WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905. Used ten years.

STAR

The word "STAR."

SER. No. 13,708. PIANOS. THE PACKARD COMPANY, Fort Wayne, Ind. Filed Oct. 17, 1905. Used ten years.

Packard

The word "PACKARD."

SER. No. 13,785. RAZORS, POCKET-KNIVES, BUTCHERS' KNIVES, BOWIE-KNIVES, FARRIERS' KNIVES, HUNTING-KNIVES, AND TABLE-KNIVES. GEORGE WOSTENHOLM AND SON LIMITED, Sheffield, England. Filed Oct. 20, 1905. Used ten years.

WOSTENHOLM

The word "WOSTENHOLM."

SER. No. 13,801. MEN'S DRESS-SHIRTS. BROOK & NEWMAN, New York, N. Y. Filed Oct. 21, 1905.

Clermont

The word "CLERMONT."

SER. No. 13,894. LINIMENT TO BE USED AS EMBROCATION FOR RHEUMATISM, SPRAINS, BRUISES, LAME BACK, STIFF JOINTS, SWOLLEN FEET, SORE THROAT, AND HEADACHE CURE. HENRY H. WRENCH, Jr., Montclair, N. J. Filed Oct. 24, 1905.

WAHOO



The representation in three-quarter view of the head, neck, and bust of an Indian brave, wherein the bust is clad in full regalia and the head is surmounted by a feathered war-bonnet, and such head being surmounted by the word "WAHOO."

SER. No. 14,104. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905. Used ten years.

C. BISHOP

The name "C. BISHOP."

SER. No. 14,105. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905. Used ten years.

GREAT AMERICAN

The words "GREAT AMERICAN."

SER. No. 14,110. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905. Used ten years.

BROWN'S

The word "BROWN'S."

SER. No. 14,114. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905. Used ten years.

T. TAYLOR

The name "T. TAYLOR."

SER. No. 14,115. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905.

LANCET

The word "LANCET."

SER. No. 14,118. SAWS. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa. Filed Oct. 31, 1905. Used ten years.

JACKSON

The word "JACKSON."

SER. No. 14,313. MINERAL WATER. THE APOLLINARIS COMPANY, LIMITED, London, England. Filed Nov. 4, 1905. Used ten years.



A representation of a pool and a fountain surrounded by shrubs and plants.

SER. No. 14,378. ASTRINGENT, ANTISEPTIC, DETERGENT, AND DISINFECTANT MEDICINE INTENDED FOR USE AS A MOUTH, NOSE, AND THROAT WASH. LAVORIS CHEMICAL COMPANY, Minneapolis, Minn. Filed Nov. 6, 1905.

LAVORIS

The word "LAVORIS."

SER. No. 14,489. LEATHER BOOTS AND SHOES. W. L. DOUGLAS SHOE CO., Portland, Me. Filed Nov. 11, 1905. Used ten years.

W.L.DOUGLAS

The name "W. L. DOUGLAS."

SER. No. 14,490. LEATHER BOOTS AND SHOES. W. L. DOUGLAS SHOE CO., Portland, Me. Filed Nov. 11, 1905. Used ten years.



The portrait of W. L. Douglas.

SER. No. 14,502. MEDICINAL PREPARATION FOR THE CURE OF SYPHILIS, TABES, BILIOUS DISEASES, AND DISEASES OF THE BLADDER. J. D. RIEDEL AKTIENGESELLSCHAFT, Berlin, Germany. Filed Nov. 11, 1905.

Mergal

The word "MERGAL."

SER. No. 14,573. WOVEN-WIRE FENCING. AMERICAN STEEL AND WIRE COMPANY, Chicago, Ill. Filed Nov. 13, 1905.

BANNER

The word "BANNER."

SER. No. 14,641. FIRE-EXTINGUISHERS. AMERICAN-LA FRANCE FIRE ENGINE CO., Elmira, N. Y. Filed Nov. 15, 1905.

SALVAGE

The word "SALVAGE."

SER. No. 14,664. MEDICATED AND PERFUMED SOAP. POTTER DRUG & CHEMICAL CORPORATION, Boston, Mass. Filed Nov. 15, 1905.

Cuticura

The arbitrary word-symbol "CUTICURA."

SER. No. 14,652. GIN. LUTTIES BROTHERS, New York, N. Y. Filed Nov. 15, 1905.



The representation of London Tower Bridge and the words "LONDON BRIDGE."

SER. No. 14,672. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

CHROMOCLAUCINE

The word "CHROMOCLAUCINE."

SER. No. 14,673. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

FLAVAZINE

The word "FLAVAZINE."

SER. No. 14,675. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

ROSAZEINE

The word "ROSAZEINE."

SER. No. 14,677. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

SCARLATOL

The word "SCARLATOL."

SER. No. 14,679. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

DIANIL

The word "DIANIL."

SER. No. 14,680. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

MELANOGEN

The word "MELANOGEN."

SER. No. 14,682. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

SER. No. 14,682.

FLAVOPHOSPHINE

The word "FLAVOPHOSPHINE."

SER. No. 14,684. MATERIALS SUITABLE FOR THE SIZING AND FINISHING OF TEXTILE FIBERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905.

DIAMOND SIZE

The words "DIAMOND SIZE."

SER. No. 14,686. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

CHROMOTROP

The word "CHROMOTROP."

SER. No. 14,687. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y Filed Nov. 15, 1905. Used ten years.

THIOCHROMOGEN

The word "THIOCHROMOGEN."

SER. No. 14,688. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

PATENT BLUE

The words "PATENT BLUE."

SER. No. 14,689. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

VIOLAMINE

The word "VIOLAMINE."

SER. No. 14,690. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

AZO ACID

The words "AZO ACID."

SER. No. 14,691. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

SER. No. 14,691.

THIONINE

The word "THIONINE."

SER. No. 14,692. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

GERMANIA BLACK

The words "GERMANIA BLACK."

SER. No. 14,693. MATERIALS SUITABLE FOR THE SIZING AND FINISHING OF TEXTILE FIBERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 15, 1905. Used ten years.

VICTORIA

The word "VICTORIA."

SER. No. 14,719. FLOURS MADE FROM WHEAT, OATS, RYE, CORN, AND BUCKWHEAT AND MEALS MADE FROM RYE, CORN, AND OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed Nov. 16, 1905.

QUAKER

The word "QUAKER."

SER. No. 14,773. PERCUSSION-CAPS. ELEY BROTHERS LIMITED, London, England. Filed Nov. 17, 1905.



The representation of a shield having an ornamental border and with a monogram of the letters "E B L" upon its face.

SER. No. 14,801. MEDICINAL PREPARATION HAVING ANTIPYRETIC, ANALGESIC, HYPNOTIC, AND ANTINEURALGIC PROPERTIES. VICTOR KORCHL & Co., New York, N. Y. Filed Nov. 18, 1905. Used ten years.

DR. KNORR'S ANTIPYRINE

The words "DR. KNORR'S ANTIPYRINE."

SER. No. 14,923. PRINTED AND PIECE-DYED SILKS. CHENEY BROTHERS, South Manchester, Conn. Filed Nov. 23, 1905.

SER. No. 14,938.

SHOWER-PROOF

The hyphenated word "SHOWER-PROOF."

SER. No. 14,938. SAWS, SAW-BLADES, AND SAW-HANDLES. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,939. PLANES AND PLANE-IRONS. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,941. CHISELS AND GOUGES. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,943. RAZORS. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,944. POCKET-KNIVES. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its side and on which said words appear.

SER. No. 14,945. AUGERS, BITS, AND GIMLETS. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its sides, on which said words appear.

SER. No. 14,946. FILES AND RASPS. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and a figure of wedge shape having three-sided projections at its side and on which said words appear.

SER. No. 14,947. CORN-KNIVES AND HAY-KNIVES. SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Nov. 22, 1905. Used ten years.



The words "KEEN KUTTER" and the figure of a wedge shape having three-sided projections at its sides and on which said words appear.

SER. No. 14,979. DRIED AND EVAPORATED FRUITS. GRIFFIN & SKELLEY CO., San Francisco, Cal. Filed Nov. 25, 1905.

ARROW

The word "ARROW."

SER. No. 14,983. VENEREAL DISEASE REMEDIES. MAX PIORKOWSKI, Berlin, Germany. Filed Nov. 25, 1905.

Antiluin

The word "ANTILUIN."

SER. No. 14,995. DOORS. PAINE LUMBER COMPANY, LIMITED, Oshkosh, Wis. Filed Nov. 25, 1905.

SER. No. 14,995.

KORELOCK

The word "KORELOCK" printed in peculiar form. The first letter "K" and the last letter "K" in the word are larger and extend above the upper and lower lines of the other letters "ORELOC." The right upper arm of the first letter "K" in the word is connected with the left upper arm of the last letter "K" by a line which is straight, excepting a slight angle therein over the letters "E" and "L." A similar line likewise connects the lower inside arms of said two letters "K."

SER. No. 15,078. DYESTUFFS AND COLORING-MATTERS. H. A. METZ & Co., New York, N. Y. Filed Nov. 30, 1905.

AZOPHOR

The word "AZOPHOR."

SER. No. 15,063. PAPER WRAPPERS FOR ROLLS OF RIBBON. D. SEELIGER SON & Co., New York, N. Y. Filed Nov. 30, 1905.



The representation of the head of an elk, above which, inclosed in a double ellipse, are the words "ELK BRAND."

SER. No. 15,172. SKIN LOTIONS AND WASHES. ELISABETH MARIE STERBEL, Washington, D. C. Filed Dec. 4, 1905.



A bust pictorial representation of applicant with the initials "E. M. S." in script letters located directly over the head of said pictorial representation, the whole being surrounded by a band of ribbon having a bow-knot arranged at both the upper and lower portion of the said pictorial representation.

SER. No. 15,327. BEER. THE WACKER & BIRK BR'G & M'LT'G CO., Chicago, Ill. Filed Dec. 11, 1905.

Perfecto

The word "PERFECTO."

SER. No. 15,184. PAPER-FASTENERS. THE THOMAS STATIONERY MANUFACTURING COMPANY, Springfield, Ohio. Filed Dec. 4, 1905. Used ten years.

COUNTING HOUSE PAPER FASTENERS

The words "COUNTING HOUSE" arranged over the illustration of a paper-fastener, with the word "PAPER" on one side of said illustration and the word "FASTENERS" on the other side thereof.

SER. No. 15,371. PERFUMES, TOILET WATERS, EXTRACTS, AND COLOGNES. D. R. BRADLEY & SON, New York, N. Y. Filed Dec. 13, 1905.

Treflora

The word "TREFLORA."

SER. No. 15,430. HOUSEHOLD ARTICLES MADE OF GALVANIZED WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Dec. 15, 1905. Used ten years.

LISK

The word "LISK."

SER. No. 15,431. HOUSEHOLD ARTICLES MADE OF COPPER WARE. THE LISK MANUFACTURING CO., LIMITED, Canandaigua, N. Y. Filed Dec. 15, 1905. Used ten years.

LISK

The word "LISK."

SER. No. 15,618. LUBRICATING OILS AND GREASE. CHARLES F. KELLOM, Philadelphia, Pa. Filed Dec. 23, 1905.



The word "INVADER" and a representation of a mounted knight. On one arm of the knight is the representation of a shield, on which said word "INVADER" is placed.

SER. No. 15,680. PERIODICAL PUBLICATION. HOLOPHANE GLASS COMPANY, New York, N. Y. Filed Dec. 27, 1905.

LIGHT
VERSUS
ILLUMINATION

The words "LIGHT VERSUS ILLUMINATION."

SER. No. 15,681. PERIODICAL PUBLICATION. VAN RENSSELAER LANSINGH, New York, N. Y. Filed Dec. 27, 1905.

Engineering of
Illumination

The words "ENGINEERING OF ILLUMINATION."

SER. No. 15,682. PEGS AND CHIN AND SHOULDER RESTS FOR VIOLINS, GUITARS, MANDOLINS, AND THE LIKE. GUSTAV L. BECKER, executor of the estate of Francis L. Becker, deceased, New York, N. Y. Filed Dec. 27, 1905. Used ten years.

BECKER'S

The word "BECKER'S."

SER. No. 15,723. LEATHER AND CANVAS SHOES. FOSS, PACKARD & CO., Boston, Mass. Filed Dec. 28, 1905.

THE Tiffany

The words "THE TIFFANY" printed in the particular or distinctive style shown and arranged below and to one side of the representation of a shield having a human hand extending upward therefrom and holding a diamond between the thumb and forefinger, the word "TIFFANY" also appearing on the face of the shield.

SER. No. 15,942. TEA AND COFFEE POTS AND COFFEE-URNS. SILVER & COMPANY, New York, N. Y. Filed Jan. 6, 1906. Used ten years.



A side-view representation of a tea and coffee pot having in a central position the inscription "THE MARION HARLAND TEA & COFFEE POT" surrounded by an oval border.

SER. No. 15,941. TEA AND COFFEE POTS. SILVER & COMPANY, New York, N. Y. Filed Jan. 6, 1906. Used ten years.



The representation of a coffee-pot, the body of which is shown in section with the cover removed and shown in edge view beneath the spout of the coffee-pot and with the representation of a measuring-cup held in a woman's hand above the open top of the coffee-pot and of boiling water flowing into the said open end from the cup and steam arising therefrom, together with the words "THE MARION HARLAND COFFEE POT AND PROCESS OF COFFEE MAKING" to the left of the hand and cup.

SER. No. 15,946. PERIODICAL PUBLICATION. THE ILLUMINATING ENGINEERING PUBLISHING CO., New York, N. Y. Filed Jan. 6, 1906.

THE ILLUMINATING ENGINEER

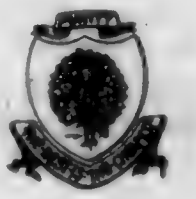
The words "THE ILLUMINATING ENGINEER."

SER. No. 15,979. WINE. GEO. BENZ & SONS, St. Paul, Minn. Filed Jan. 8, 1906.



The word "AURORA" surmounting an allegorical representation of dawn.

SER. No. 16,031. PREPARATION OF CHIONANTHUS VIRGINICA, A REMEDY FOR DISEASES OF THE LIVER. PEACOCK CHEMICAL COMPANY, St. Louis, Mo. Filed Jan. 8, 1906.



The representation of a peacock standing upright upon a shield with its tail spread, the shield being surmounted by a scroll bearing the word "PURITY," and there being a scroll beneath the shield bearing the words "THE BEST IS THE CHEAPEST."

SER. No. 15,990. WRAPPING-PAPER. THE DAYTON PAPER NOVELTY CO., Dayton, Ohio. Filed Jan. 8, 1906.



A circle, within which is displayed an arctic scene with a bear shown in the foreground, the word "POLAR" being written above, and the word "FIBER" under, the bear.

SER. No. 16,088. WATERPROOF ROOFING-FELT. ST. PAUL ROOFING, CORNICE & ORNAMENT COMPANY, St. Paul, Minn. Filed Jan. 10, 1906.

COAT-ROID

The word "COAT-ROID."

SER. No. 16,089. EAVES-TROUGHS. ST. PAUL ROOFING, CORNICE & ORNAMENT COMPANY, St. Paul, Minn. Filed Jan. 10, 1906.



The words "EASY BREAD" arranged above the representation of the adjacent ends of two eaves-troughs pointing downwardly toward each other, the words and representation being upon a solid elliptical background.

SER. No. 16,135. WHISKY. C. BERRY & CO., Boston, Mass. Filed Jan. 12, 1906.

DIAMOND WEDDING

The words "DIAMOND WEDDING."

SER. No. 16,136. COCKTAILS. C. BERRY & CO., Boston, Mass. Filed Jan. 12, 1906.

Ser. No. 16,186.

NORTHERN LIGHT

The words "NORTHERN LIGHT."

Ser. No. 16,189. PICTURE-FRAMES. A. M. COLLINS MANUFACTURING COMPANY, Philadelphia, Pa. Filed Jan. 12, 1906.

Framelet

The word "FRAMELET."

Ser. No. 16,257. PRINTED COTTON FABRICS. JOSEPH W. WOODS AND SON CORPORATION, Boston, Mass. Filed Jan. 17, 1906.

GLEN
DENIM

The words "GLEN DENIM."

Ser. No. 16,289. TOILET-PAPER. JOHN ROBERTSON & SON, Bellows Falls, Vt. Filed Jan. 18, 1906.

EAGLE MILLS



The words "EAGLE MILLS" and the representation of a spread-eagle perched on a heraldic roll.

Ser. No. 16,328. CORDIAL BITTERS. THE FRANCISCAN COMPANY, a Corporation, Santa Barbara, Cal. Filed Jan. 19, 1906.



A representation of Santa Barbara Mission, with a bell above suspended from a beam, and a palm-tree at each end of the picture, and associated with the words "THE GENUINE FRANCISCAN."

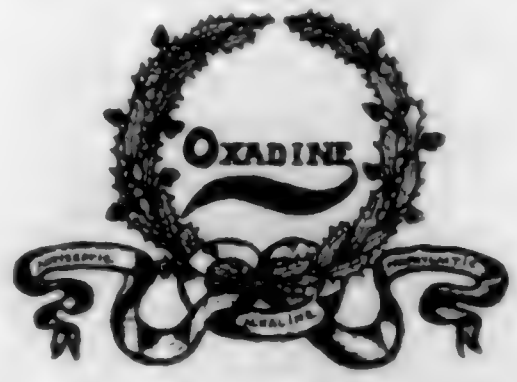
Ser. No. 16,345. BREAD. CYRUS R. MILLER, Milwaukee, Wis. Filed Jan. 20, 1906.

Ser. No. 16,345.



A heart-shaped figure, upon which appear the words "SWEETHEART BREAD." The heart is red in color and the words white, all within a blue square.

Ser. No. 16,354. TOOTH-POWDER AND ANTISEPTIC MOUTH-WASH. THEODORE R. HARVEY, Westfield, N. J. Filed Jan. 20, 1906.



The word "OXADINE" surrounded by a wreath of oak-leaves and acorns tied with a ribbon, with the words "ANTISEPTIC, ALKALINE, PROPHYLACTIC," upon the same.

Ser. No. 16,409. CIGARETTES. BUTLER-BUTLER, (Incorporated.) New York, N. Y. Filed Jan. 23, 1906.

RED SUN

The words "RED SUN."

Ser. No. 16,428. WHISKY. ELIAS A. MCQUADE, Lowell, Mass. Filed Jan. 22, 1906.



The words "PULLMAN CLUB" and a circular design bearing the monogram "E A McQ." The circular figure is surrounded by fanciful scrolls and heads and leaves of grain.

Ser. No. 16,436. PREPARED FOOD FOR ANIMALS AND POULTRY. CHARLES PETER KERTELL, San Francisco, Cal. Filed Jan. 22, 1906.

SER. No. 16,486.

RED BALL



The words "RED BALL" and the representation of a red ball.

SER. No. 16,461. POCKET-KNIVES AND BUTCHER-KNIVES. JAMES C. LINDSAY HARDWARE CO., Pittsburg, Pa. Filed Jan. 24, 1906.

TRUE BLUE

The words "TRUE BLUE."

SER. No. 16,503. WHISKY. OWEN J. CARPENTER, Covington, Ky. Filed Jan. 25, 1906.



The words "CARTERET CLUB" printed across the representation of a fanciful design resembling somewhat a clover-leaf.

SER. No. 16,506. PNEUMATIC TIRES FOR WHEELS. THE B. F. GOODRICH COMPANY, Akron, Ohio. Filed Jan. 25, 1906. Used ten years.

PALMER

The word "PALMER."

SER. No. 16,514. LEATHER SHOES. GILMAKER BROS., San Francisco, Cal. Filed Jan. 25, 1906.



The words "THE HERMOSA" in fanciful lettering, the words "SPECIAL SHOE EXTRA...HIGH...QUALITY" above said words, and "114 GRANT AVE. SAN FRANCISCO, CAL." in the right-hand corner below said words.

SER. No. 16,517. AGRICULTURAL NEWSPAPERS. JOHN M. STAHL, Chicago, Ill. Filed Jan. 25, 1906.

SER. No. 16,517.

THE ILLINOIS FARMER



The words "THE ILLINOIS FARMER, DEVOTED TO THE INTERESTS OF THE FARMERS OF ILLINOIS," the word "THE" having a scroll at each side thereof, a four-leaf clover at the right of the word "ILLINOIS," and a partly-husked ear of corn to the left of the word "FARMER."

SER. No. 16,658. YEAST. NEW PROCESS YEAST CO., Chicago, Ill. Filed Feb. 1, 1906.



The words "HART'S YEAST" printed in white on a blue panel, with the representation of a heart printed in red in the center of the same.

SER. No. 16,664. BREAD, BISCUITS, ROLLS, PIES, CAKES, AND CRACKERS. JAMES CLARKE, New York, N. Y. Filed Feb. 1, 1906.

O X O

The letters "O X O."

SER. No. 16,665. EXTERNAL REMEDY FOR CROUP. THE SMOOT DRUG CO., Provo, Utah. Filed Feb. 1, 1906.

CROUPINE

The word "CROUPINE."

SER. No. 16,678. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y. Filed Feb. 2, 1906.

Wiscolene

The word "WISCOLENE."

Ser. No. 16,186.

NORTHERN LIGHT

The words "NORTHERN LIGHT."

Ser. No. 16,189. PICTURE-FRAMES. A. M. COLLINS MANUFACTURING COMPANY, Philadelphia, Pa. Filed Jan. 12, 1906.

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EAGLE MILLS



The words "EAGLE MILLS" and the representation of a spread-eagle perched on a heraldic roll.

Ser. No. 16,323. CORDIAL BITTERS. THE FRANCISCAN COMPANY, a Corporation, Santa Barbara, Cal. Filed Jan. 19, 1906.



A representation of Santa Barbara Mission, with a bell above suspended from a beam, and a palm-tree at each end of the picture, and associated with the words "THE GENUINE FRANCISCAN."

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SPECIAL SHOE EXTRA...HIGH...QUALITY Hermosa 114 GRANT AVE. SAN FRANCISCO CAL.

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SER. No. 16,658. YEAST. NEW PROCESS YEAST CO., Chicago, Ill. Filed Feb. 1, 1906.

HART'S YEAST

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CROUPINE

The word "CROUPINE."

SER. No. 16,678. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y. Filed Feb. 2, 1906.

Wiscolene

The word "WISCOLENE."

SER. No. 16,679. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y. Filed Feb. 2, 1906.

CHAMPANOL

The word "CHAMPANOL."

SER. No. 16,680. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y. Filed Feb. 2, 1906.

Wiscol

The word "WISCOL."

SER. No. 16,681. FLAVORING EXTRACTS. WITTEMANN BROS., New York, N. Y. Filed Feb. 2, 1906.

Brandol

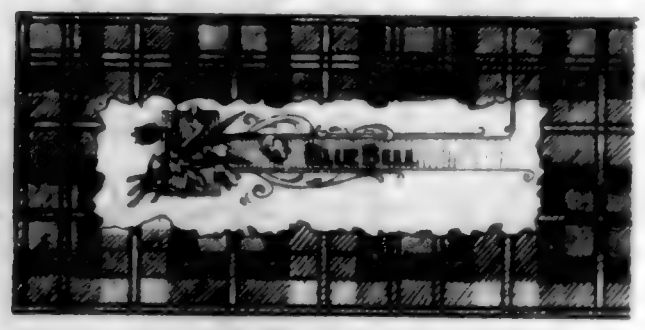
The word "BRANDOL."

SER. No. 16,714. WHEAT-FLOUR. LIBERTY MILLS, Nashville, Tenn. Filed Feb. 3, 1906.

LEONTE

The word "LEONTE."

SER. No. 16,754. CANDY. THE ROBERT F. MACKENZIE CO., Cleveland, Ohio. Filed Feb. 5, 1906.



The words "BLUE BELL" on a fanciful panel design ornamented with a spray of bluebell stems, leaves, and flowers and with fanciful scrollwork, all surrounded by a background of the Mackenzie plaid.

SER. No. 16,755. WINE. WM HOSLSCHER AND CO., INCORPORATED, San Francisco, Cal. Filed Feb. 5, 1906.



The words "SPARKLING SYLVANA," associated with a fanciful bust picture of a woman with a wreath of leaves on her head and holding a wine-glass in her uplifted right hand. Beneath the picture is a spray of grape vines and leaves with bunches of grapes, and back of the woman's head is a circular aureole with radiating lines.

SER. No. 16,763. CALFSKIN. GEORGE MARTIN LEATHER CO., Milwaukee, Wis. Filed Feb. 5, 1906.



A circular design containing the word "ZENITH," appearing on the representation of a calf standing upon the pinnacle of a mountain with clouds in the background, and the words "MT. EVEREST," appearing in the lower foreground as if printed upon the rocks of the mountain.

SER. No. 16,782. CATTLE-FOOD. DOCK & COAL CO., Plattsburg, N. Y. Filed Feb. 6, 1906.

BUTTERCUP

The word "BUTTERCUP."

SER. No. 16,797. KNIT UNDERWEAR. J. H. SEMEL & CO., New York, N. Y. Filed Feb. 6, 1906.



The words "MOHAWK MILLS" and the bust representation of a female Indian.

SER. No. 16,811. OVERALLS, BIBS, AND COATS, THE SAME CONSTITUTING COMPLETE OVERALL-SUITS. RICHFORD GARMENT COMPANY, Richford, Vt. Filed Feb. 7, 1906.

HARDKNOX

The coined word "HARDKNOX."

SER. No. 16,824. HOSIERY. REINS & MEINS, Cincinnati, Ohio. Filed Feb. 8, 1906. Used ten years.



The words "THE LOCKLAND MILLS" placed over a wreath.

SER. No. 16,848. HAIR-RESTORER. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 8, 1906. Used ten years.

SER. No. 16,848.

"REVIVUM"

The word "REVIVUM" inclosed in quotation-marks.

SER. No. 16,847. REMEDY FOR COUGHS, COLDS, INFLUENZA, AND AFFECTIONS OF THE THROAT AND LUNGS. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

HALE'S
H·O·N·E·Y
Horehound
and Tar.

The words "HALE'S HONEY OF HOREHOUND AND TAR."

SER. No. 16,849. HAIR-RESTORER. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

HAIR REVIVUM

The words "HAIR REVIVUM."

SER. No. 16,851. REMEDY FOR TOOTHACHE. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

PIKE'S
TOOTH-ACHE DROPS

The words "PIKE'S UNIVERSAL VEGETABLE TOOTH-ACHE DROPS."

SER. No. 16,852. REMEDY FOR TOOTHACHE. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

PIKE'S
TOOTHACHE
DROPS.

The words "PIKE'S TOOTHACHE DROPS."

SER. No. 16,853. TONIC, DIGESTIVE, AND NUTRIENT PREPARATION. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

HYDROLEINE,
(Hydrated Oil)

The words "HYDROLEINE (HYDRATED OIL.)"

SER. No. 16,855. DYE FOR THE HAIR. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

BATCHELOR'S
PREMIUM
LIQUID HAIR DYE

The words "BATCHELOR'S PREMIUM LIQUID HAIR DYE."

SER. No. 16,856. DYE FOR THE HAIR. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.

Batchelor's
Hair Dye.

The words "BATCHELOR'S HAIR DYE."

SER. No. 16,895. TELEPHONES. HUTCHISON ACOUSTIC COMPANY, New York, N. Y. Filed Feb. 10, 1906.

MULTIPHONE

The word "MULTIPHONE."

SER. No. 16,901. BLUING. THE ULTRAMARINE COMPANY, New York, N. Y. Filed Feb. 10, 1906.

BLEACHETTE

The word "BLEACHETTE."

SER. No. 16,973. REMEDY FOR EXTERMINATING PARASITES FROM THE BODY OF HUMAN BEINGS AND ANIMALS. HOMER E. BOWLES, Muncie, Ind. Filed Dec. 13, 1905.

IKEY
EINSTEIN

The name "IKEY EINSTEIN."

SER. No. 17,297. SOAP. THE PENNSYLVANIA SOAP COMPANY, Lancaster, Pa. Filed Feb. 23, 1906.

POWERINE

The word-symbol "POWERINE."

Sm. No. 17,098. RAZORS. A. Graff, New York, N. Y. Filed Feb. 16, 1906.



The representation of the head of an Indian chief inclosed in an ornamental border.

Sm. No. 17,208. ANTISEPTIC AND DISINFECTANT MINERAL SOAP. The Peruton Manufacturing Company, Portland, Oreg. Filed Feb. 20, 1906.



The word "Rainier" and a pictorial representation comprising a distant view of Mount Rainier, with a foreground including woods and water.

Sm. No. 17,522. COFFEE-MILLS. The Bronson-Walton Company, Cleveland, Ohio. Filed Mar. 5, 1906.

MONITOR

The word "Monitor."

Sm. No. 17,531. COOKING RANGES AND STOVES. Cook and Van Evera Co., Chicago, Ill. Filed Mar. 5, 1906.

AUTOBAKE

The arbitrarily-selected word "Autobake."

Sm. No. 17,652. CORSETS. Harry D. Miller, Bridgeport, Conn. Filed Mar. 8, 1906.

Sm. No. 17,652.



The words "Thomson's "Glove-Fitting" Corset."

Sm. No. 17,681. NAILS. United Shoe Machinery Company, Boston, Mass. Filed July 13, 1906.



A figure having the shape of three bars merging at a common point of intersection.

Sm. No. 17,742. SHEARS AND SCISSORS. Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.



The letters "O V B," with a panel extending across the same, upon which appear the words "Our Very Best."

Sm. No. 17,743. SAWS AND SAW-BLADES. Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.



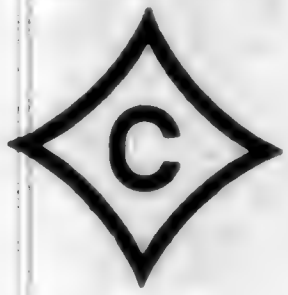
The letters "O V B," with a panel extending across the same, upon which appear the words "Our Very Best."

SER. No. 17,745. FOOD AND MEAT CHOPPERS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Mar. 12, 1906. Used ten years.



The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST."

SER. No. 17,754. SOCKETS, SLEEVES, ARBORS, MANDRELS, COLLETS, DRILL AND TURRET TOOL-HOLDERS, AND CHUCKS FOR HOLDING TOOLS. THE CLEVELAND TWIST DRILL COMPANY, Cleveland, Ohio. Filed Mar. 12, 1906.



The letter "C" inclosed in a lozenge-shaped figure having concaved sides.

SER. No. 17,829. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

NATIONAL

The word "NATIONAL."

SER. No. 17,837. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906.

C. C. C.

The letters "C. C. C."

SER. No. 17,843. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

STONO

The word "STONO."

SER. No. 17,845. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

BALDWIN FERTILIZER CO'S

The words and abbreviation "BALDWIN FERTILIZER Co's."

SER. No. 17,848. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

BERKELEY CHEMICAL CO'S

The words and abbreviation "BERKELEY CHEMICAL Co's."

SER. No. 17,856. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

OCCONNEECHEE

The word "OCCONNEECHEE."

SER. No. 17,859. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

CROATAN

The word "CROATAN."

SER. No. 17,860. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

COREE

The word "COREE."

SER. No. 17,861. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

OCONEE

The word "OCONEE."

SER. No. 17,862. FERTILIZERS. NAVASSA GUANO COMPANY OF WILMINGTON, Wilmington, N. C. Filed Mar. 15, 1906. Used ten years.

SER. No. 17,862.

CLARENDON

The word "CLARENDON."

SER. No. 17,871. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906. Used ten years.

PON PON

The words "PON PON."

SER. No. 17,872. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906. Used ten years.

BALTIMORE

The word "BALTIMORE."

SER. No. 17,873. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906.

GOOD AS GOLD

The words "GOOD AS GOLD."

SER. No. 17,902. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

WILLIAM PENN

The words "WILLIAM PENN."

SER. No. 17,917. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

ARUNDEL

The word "ARUNDEL."

SER. No. 17,918. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

EMPIRE

The word "EMPIRE."

SER. No. 17,919. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

DIXIE

The word "DIXIE."

SER. No. 18,074. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906. Used ten years.

AMERICAN

The word "AMERICAN."

SER. No. 18,075. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906.

ACME

The word "ACME."

SER. No. 18,076. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906.

ACORN

The word "ACORN."

SER. No. 18,077. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906.

CLOVER LEAF

The words "CLOVER LEAF."

SER. No. 18,078. SPRING-HINGES. THE COLUMBIAN HDW. CO., Cleveland, Ohio. Filed Mar. 21, 1906. Used ten years.

CAMBRIDGE

The word "CAMBRIDGE."

TRADE-MARKS

REGISTERED APRIL 17, 1906.

51,368. CARBON COPYING-PAPER. BACON BROTHERS, Seattle, Wash.

The representation of a sheet of carbon-paper held stretched out by two hands, associated with the words "ITSGOOD" and "KLEAN KARBON," the capital letters "K" and "N" being used as the first and the last letter, respectively, of each word, all inclosed in a rectangular line border.

Filed June 5, 1905. Serial No. 7,460. PUBLISHED FEBRUARY 20, 1906.

51,369. PIANOS. THE CABLE COMPANY, Chicago, Ill.

The word-symbol "PALMETTO."

Filed August 16, 1905. Serial No. 11,695. PUBLISHED FEBRUARY 20, 1906.

51,370. SELF-PLAYING PIANOS WITHOUT KEYBOARDS. LYON & HEALY, Chicago, Ill.

The words "MAJESTIC, JR."

Filed August 7, 1905. Serial No. 11,349. PUBLISHED FEBRUARY 20, 1906.

51,371. STRINGS FOR VIOLINS. LYON & HEALY, Chicago, Ill.

The words "KOZIE FLAKI."

Filed August 7, 1905. Serial No. 11,358. PUBLISHED FEBRUARY 20, 1906.

51,372. GUITARS AND MANDOLINS. LYON & HEALY, Chicago, Ill.

The word "REGAL."

Filed August 7, 1905. Serial No. 11,365. PUBLISHED FEBRUARY 20, 1906.

51,373. BANJOS. LYON & HEALY, Chicago, Ill.

The word "MYSTIC."

Filed August 7, 1905. Serial No. 11,367. PUBLISHED FEBRUARY 20, 1906.

51,374. STRINGS FOR MUSICAL INSTRUMENTS. LYON & HEALY, Chicago, Ill.

The words "SPECIAL TESTED." Used ten years.

Filed August 7, 1905. Serial No. 11,370. PUBLISHED FEBRUARY 20, 1906.

51,375. BUTTER. JOAQUIN MENENDEZ, New York, N. Y.

The representation of a carnation and several buds and leaves, associated with the word "CLAVEL."

Filed August 16, 1905. Serial No. 11,693. PUBLISHED FEBRUARY 20, 1906.

51,376. WEEKLY PUBLICATION. TRADESMEN'S PUBLISHING COMPANY, St. Louis, Mo.

The words "SHOE AND LEATHER GAZETTE" on a rectangular ornamental background. Used ten years.

Filed August 18, 1905. Serial No. 11,748. PUBLISHED FEBRUARY 20, 1906.

51,377. WEEKLY PUBLICATION. TRADESMEN'S PUBLISHING COMPANY, St. Louis, Mo.

The words "THE DRYGOODSMAN AND GENERAL MERCHANT."

Filed August 18, 1905. Serial No. 11,749. PUBLISHED FEBRUARY 20, 1906.

51,378. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The words "IVORY FINISH" and the letters and figures "No. 808" arranged on an oblong panel.

Filed April 15, 1905. Serial No. 1,561. PUBLISHED FEBRUARY 20, 1906.

51,379. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "AUTO."

Filed April 15, 1905. Serial No. 1,589. PUBLISHED FEBRUARY 20, 1906.

51,380. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The word "SAFETY."

Filed April 15, 1905. Serial No. 1,592. PUBLISHED FEBRUARY 20, 1906.

51,381. HORSE-COLLARS. WYETH HARDWARE & MANUFACTURING CO., St. Joseph, Mo.

The representation of the globe encircled by a horse-collar, there being on the pad at the top of the collar the numerals "666." On one side of the collar is disposed a shield with a panel running obliquely across the face thereof, within which is disposed the word "WYETH," there being a star on the shield above and below said panel, said shield being pierced by an arrow.

Filed August 10, 1905. Serial No. 11,497. PUBLISHED FEBRUARY 20, 1906.

51,382. CERTAIN NAMED CHOCOLATE AND COCOA PREPARATIONS. AKTIEN-GESELLSCHAFT VEREINIGTE BERNER & ZURCHER CHOCOLADE-FABRIKEN LINDT & SPRUNGLI, Berne, Switzerland.

The representation of a winged dragon with the words "CHOCOLAT LINDT" beneath the same, the dragon being perched upon the capital letters "C" and "L," there being a helmet with feathers and streamer upon it over the head of the dragon.

Filed May 24, 1905. Serial No. 6,543. PUBLISHED FEBRUARY 20, 1906.

51,383. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word "IMPERIAL."

Filed May 11, 1905. Serial No. 5,157. PUBLISHED FEBRUARY 20, 1906.

51,384. WHEAT-FLOUR, GRAHAM FLOUR, AND RYE-FLOUR. THE DIAMOND ELEVATOR & MILLING COMPANY, Minneapolis, Minn.

The word "CUT" appearing on a diamond-shaped figure printed in red.

Filed April 11, 1905. Serial No. 1,138. PUBLISHED FEBRUARY 20, 1906.

51,385. PLUG CHEWING-TOBACCO AND SMOKING-TOBACCO. H. N. MARTIN & CO., Louisville, Ky.

The pictorial representation of a martin within a figure of irregular form, which is surrounded by a circle, and the name "H. N. MARTIN & CO.," which appears in a semicircle at the upper side of the main or circular figure, and the name "GREENVILLE," which appears in a separate circle at the lower side of the said main figure, the grounds upon which the figure of the martin and the said names appear having contrasting colors. Used ten years.

Filed May 19, 1905. Serial No. 6,100. PUBLISHED FEBRUARY 20, 1906.

51,386. GLYCERIN SOAP. MÜLHENS & KROPFF, New York, N. Y.

The representation of a cake of soap having on one face thereof two parallel bars or gutters having rounded ends. Used ten years.

Filed April 12, 1905. Serial No. 1,242. PUBLISHED FEBRUARY 20, 1906.

51,387. SPARKLING, EFFERVESCENT TONIC BEVERAGES. RUMFORD CHEMICAL WORKS, Providence, R. I.

The word "PHOSA."

Filed May 16, 1905. Serial No. 5,770. PUBLISHED FEBRUARY 20, 1906.

51,388. POULTRY-FOOD. MARION W. SAVAGE, Minneapolis, Minn.

The words "INTERNATIONAL POULTRY FOOD," a monogram of the letters "M W S," and at the top and bottom of the mark pictorial representations of a rural landscape with poultry in the foreground. Used ten years.

Filed May 12, 1905. Serial No. 5,313. PUBLISHED FEBRUARY 20, 1906.

51,389. CANNED FISH. SCHWABACHER BROS. & CO. INC., Seattle, Wash.

The words "HAPPY HOME."

Filed August 21, 1905. Serial No. 11,832. PUBLISHED FEBRUARY 20, 1906.

51,390. POWDERED DESSERT JELLY PREPARATION. THE STERN & SAALBERG COMPANY, New York, N. Y.

The word "BROMANGELON."

Filed April 20, 1905. Serial No. 2,441. PUBLISHED FEBRUARY 20, 1906.

51,391. CIGARS. A. SANTARLLA & Co., Chicago, Ill.

The word "REFORMADOR."

Filed January 8, 1906. Serial No. 16,004. PUBLISHED FEBRUARY 20, 1906.

51,392. CIGARS. A. SANTARLLA & Co., Chicago, Ill.

The words "FLORA MIA."

Filed January 8, 1906. Serial No. 16,005. PUBLISHED FEBRUARY 20, 1906.

51,393. CIGARS. A. SANTARLLA & Co., Chicago, Ill.

The word "OPTIMO" and the portrait of Antonio Santaella, associated with a plantation scene showing palm-trees and tropical shrubbery, with a man on horseback at each side and also men standing at the right side. In the background of the scene appear two small buildings.

Filed January 8, 1906. Serial No. 16,006. PUBLISHED FEBRUARY 20, 1906.

51,394. CIGARS. LEAVITT P. BISSELL, Suffield, Conn.

The words "THE STUDY," associated with the representation of the interior of a room, showing a bookcase, a table on which are a lamp, a box of cigars, and a hand of tobacco, an empty chair, and the representation of a man seated in another chair with one elbow on the table and holding in his hands a cigar.

Filed January 8, 1906. Serial No. 16,020. PUBLISHED FEBRUARY 20, 1906.

51,395. SMOKING-TOBACCO. BRITTAIN TOBACCO WORKS, Columbia, Tenn.

The words "GILT EDGE."

Filed January 18, 1906. Serial No. 16,283. PUBLISHED FEBRUARY 20, 1906.

51,396. LEATHER BOOTS AND SHOES. CRADDOCK-TERRY COMPANY, Lynchburg, Va.

The representation of a bell having the words "SOUTHLAND BELLE" thereon.

Filed September 23, 1905. Serial No. 12,930. PUBLISHED FEBRUARY 20, 1906.

51,397. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass.

The words "BLACK BEAUTY."

Filed January 17, 1906. Serial No. 16,254. PUBLISHED FEBRUARY 20, 1906.

51,398. MONTHLY MAGAZINE. THE FRUIT-GROWER COMPANY, St. Joseph, Mo.

The words "THE WESTERN FRUIT-GROWER," of which the word "WESTERN" is arranged upon a narrow horizontal band which intersects the top of the initial letters "T," "F," and "G," extends above the remaining letters, and bears the representation of leaves and fruit.

Filed July 20, 1905. Serial number 10,997. PUBLISHED FEBRUARY 20, 1906.

51,399. PIGMENT COLORS AND COLORED PAINTS. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa.

The word "RICHMOND." Used ten years.

Filed September 20, 1905. Serial No. 12,828. PUBLISHED FEBRUARY 20 1906.

51,400. PIGMENT COLORS AND COLORED PAINTS. JOHN T. LEWIS & BROS. CO., Philadelphia, Pa.

The word "KENSINGTON." Used ten years.

Filed September 20, 1905. Serial No. 12,830. PUBLISHED FEBRUARY 20, 1906.

51,401. CONDENSED MILK. MICHIGAN CONDENSED MILK CO., Lansing, Mich., and New York, N. Y.

The word "ALPINE." Used ten years.

Filed August 1, 1905. Serial No. 11,103. PUBLISHED FEBRUARY 20, 1906.

51,402. ANY FORM OF SMOKING OR CHEWING TOBACCO. NASHVILLE TOBACCO WORKS, Nashville, Tenn.

The word "TYRONE." Used ten years.

Filed September 14, 1905. Serial No. 12,557. PUBLISHED FEBRUARY 20, 1906.

51,403. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The words and abbreviations "ECKSTEIN WHITE LEAD CO. CINCINNATI, O." Used ten years.

Filed September 1, 1905. Serial No. 12,132. PUBLISHED FEBRUARY 20, 1906.

51,404. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The letters and words "S. G. CORNELL & SON BUFFALO, N. Y. Used ten years.

Filed September 1, 1905. Serial No. 12,133. PUBLISHED FEBRUARY 20, 1906.

51,405. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The letters and words "KENTUCKY COMPANY O K LOUISVILLE." Used ten years.

Filed September 1, 1905. Serial No. 12,134. PUBLISHED FEBRUARY 20, 1906.

51,406. LIME. THE NORRIS & CHRISTIAN STONE & LIME CO., Marion, Ohio.

The letter "B" arranged within a circle, there appearing above the circle the words "BIG B LIME" inclosed in quotation-marks.

Filed July 20, 1905. Serial No. 10,614. PUBLISHED FEBRUARY 20, 1906.

51,407. CARBON PAINTS. THE PATTERSON SARGENT CO., Cleveland, Ohio.

The word "NOBRAC."

Filed September 18, 1905. Serial No. 12,771. PUBLISHED FEBRUARY 20, 1906.

51,408. TOILET-PAPER. POND'S EXTRACT COMPANY, New York, N. Y.

The words "POND'S EXTRACT TOILET PAPER." Used ten years.

Filed September 20, 1905. Serial No. 12,818. PUBLISHED FEBRUARY 20, 1906.

51,409. CANDIES. SCHALL & Co., New York, N. Y.

The words "FOXY GRANDPA" and the conventional representation of Foxy Grandpa.

Filed August 24, 1905. Serial No. 11,968. PUBLISHED FEBRUARY 20, 1906.

51,410. RECLAIMED RUBBER IN SHEET FORM. U. S. RUBBER RECLAIMING WORKS OF NEW YORK, New York, N. Y.

The representation of a Maltese cross upon the leaf of an india-rubber plant, with the words "RECLAIMED VICTORIA RUBBER" upon the cross.

Filed September 7, 1905. Serial No. 12,349. PUBLISHED FEBRUARY 20, 1906.

51,411. WASHING FLUID. ROBERT J. WILLIAMS, West Liberty, Iowa.

A portrait of the registrant, Robert J. Williams, associated with his signature "BOBBY WILLIAMS."

Filed September 15, 1905. Serial No. 12,629. PUBLISHED FEBRUARY 20, 1906.

51,412. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word "PRINCESS."

Filed May 11, 1905. Serial No. 5,155. PUBLISHED FEBRUARY 20, 1906.

51,413. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word-symbol "RENAISSANCE."

Filed May 11, 1905. Serial No. 5,156. PUBLISHED FEBRUARY 20, 1906.

51,414. LEAD-PENCILS. AMERICAN LEAD PENCIL CO., New York, N. Y.

The words "BEATS ALL." Used ten years.

Filed December 15, 1905. Serial No. 15,435. PUBLISHED FEBRUARY 20, 1906.

51,415. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.

The words "THE UNIVERSAL." Used ten years.

Filed May 10, 1905. Serial No. 4,862. PUBLISHED FEBRUARY 20, 1906.

51,416. TURKEY-RED OIL AND SOLUBLE GREASE. THE ARABOL M'F'G. CO., New York, N. Y.

The pictorial representation of an Egyptian sphinx mounted on a pedestal.

Filed May 2, 1905. Serial No. 4,014. PUBLISHED FEBRUARY 20, 1906.

51,417. CIGARS. THE DEISEL-WEMMER CO., Lima, Ohio.

The words "SAN FELICE." Used ten years.

Filed April 24, 1905. Serial No. 2,939. PUBLISHED FEBRUARY 20, 1906.

51,418. WHEAT BREAD. E. A. WILLIAMS, INCORPORATED, Newark, N. J.

The word "ADMIRAL."

Filed July 28, 1905. Serial No. 10,967. PUBLISHED FEBRUARY 20, 1906.

51,419. LEATHER AND RUBBER CEMENT. ECLIPSE CEMENT & BLACKING CO., Philadelphia, Pa.

The words "BULL DOG" and the representation of a bulldog in recumbent position and an annular band, within which latter said representation is contained and on which said words are imposed.

Filed April 17, 1905. Serial No. 1,855. PUBLISHED FEBRUARY 20, 1906.

51,420. CHEWING AND SMOKING TOBACCO. ROBT. HARRIS & BRO., Reidsville, N. C.

The representation of a hatchet.

Filed April 19, 1905. Serial No. 2,646. PUBLISHED FEBRUARY 20, 1906.

51,421. WINE. ITALIAN SWISS COLONY, San Francisco, Cal.

The word "MARSALOTTO."

Filed May 25, 1905. Serial No. 6,581. PUBLISHED FEBRUARY 20, 1906.

51,422. CIGARS. THOMAS J. KERINS, Addison, N. Y.

The letters "B. OF R. T."

Filed January 6, 1906. Serial No. 15,955. PUBLISHED FEBRUARY 20, 1906.

51,423. MARINE PAINT. HARRY LOUDERBOUGH, Jersey City, N. J.

The words "IRON CROWN PAINT" and the representation of a crown supported by two men dressed as sailors.

Filed May 4, 1905. Serial No. 4,288. PUBLISHED FEBRUARY 20, 1906.

51,424. CONDENSED MILK. MICHIGAN CONDENSED MILK Co., Lansing, Mich., and New York, N. Y.

The word "SUPERIOR." Used ten years.

Filed August 1, 1905. Serial No. 11,104. PUBLISHED FEBRUARY 20, 1906.

51,425. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill.

The representation of a bull. Used ten years.

Filed August 2, 1905. Serial No. 11,156. PUBLISHED FEBRUARY 20, 1906.

51,426. BLACK PAINTS AND JAPANS. N. Z. GRAVES CO., INC., Philadelphia, Pa.

The word "OXFORD." Used ten years.

Filed April 18, 1905. Serial No. 2,104. PUBLISHED FEBRUARY 20, 1906.

51,427. LEATHER FOR SHOES, GLOVES, AND HARNESS. PFISTER & VOGEL LEATHER COMPANY, Milwaukee, Wis.

A monogram of the letters "P V" on a spray of hemlock and inclosed in a circular border.

Filed April 26, 1905. Serial No. 3,191. PUBLISHED FEBRUARY 20, 1906.

51,428. STOCK-FEED. RALSTON PURINA CO., St. Louis, Mo.

The word "PROTENA."

Filed April 6, 1905. Serial No. 653. PUBLISHED FEBRUARY 20, 1906.

51,429. BEER. STORZ BREWING CO., Omaha, Nebr.

A representation of a hop-leaf bearing a picture of a fountain spouting from an Artesian well, above which appears a dove with outstretched wings. Directly back of fountain are diminutive men grouped around a kettle. Surrounding the picture is a band or circle containing the words "STORZ AGE. PURITY. STRENGTH."

Filed June 1, 1905. Serial No. 7,124. PUBLISHED FEBRUARY 20, 1906.

51,430. SILVER TABLEWARE, HOLLOW WARE, AND FLAT WARE. WOODSIDE STERLING COMPANY, New York, N. Y.

The letter "W" partially surrounded by a wreath.

Filed April 25, 1905. Serial No. 3,004. PUBLISHED FEBRUARY 20, 1906.

51,431. LOZENGES. A. SLAUSON & Co., New York, N. Y.

The figure or conventional representation of a star and the word "STAR."

Filed November 9, 1905. Serial No. 14,447. PUBLISHED FEBRUARY 20, 1906.

51,432. LOZENGES. A. SLAUSON & Co., New York, N. Y.

The word "ROYAL."

Filed November 9, 1905. Serial No. 14,448. PUBLISHED FEBRUARY 20, 1906.

51,433. LOZENGES. A. SLAUSON & Co., New York, N. Y.

The word "MEDALLION."

Filed November 9, 1905. Serial No. 14,449. PUBLISHED FEBRUARY 20, 1906.

51,434. LOZENGES. A. SLAUSON & Co., New York, N. Y.

The word "PEARL."

Filed November 9, 1905. Serial No. 14,450. PUBLISHED FEBRUARY 20, 1906.

51,435. DRESSING FOR SOFTENING AND PRESERVING LEATHER. A. J. REACH CO., Philadelphia, Pa.

The word "DOLCE."

Filed June 21, 1905. Serial No. 8,696. PUBLISHED FEBRUARY 20, 1906.

51,436. BEER. ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo.

The representation of a bottle-cork and the word "ANHEUSER" appearing thereon, a wire being twisted around the head of the cork. Used ten years.

Filed July 3, 1905. Serial No. 9,776. PUBLISHED FEBRUARY 20, 1906.

51,437. ROOFING-FELT. BARRETT MANUFACTURING COMPANY, New York, N. Y.

The letters "B B." Used ten years.

Filed August 21, 1905. Serial No. 11,872. PUBLISHED FEBRUARY 20, 1906.

51,438. GINGER-ALE. SIMON BECKER, Spartanburg, S. C.

The word "COLONIAL."

Filed October 16, 1905. Serial No. 13,654. PUBLISHED FEBRUARY 20, 1906.

51,439. INDIA-RUBBER BAGS AND POUCHES. CONTINENTAL CAOUTCHOUC COMPANY, New York, N. Y.

The word "CONTINENTAL." Used ten years.

Filed June 24, 1905. Serial No. 9,006. PUBLISHED FEBRUARY 20, 1906.

51,440. MOLASSES. P. DUFF & SONS, Pittsburg, Pa.

A figure whose outline is that of a very wide or broad keystone and having centrally therein a colored disk surrounded by circles or rings of contrasting color and having over its face a ribbon or scroll, a scroll also appearing at the bottom and at the right side, and the representation of growing sugar-cane appearing at either side inside of the outline of the figure, with the words "THE BEST FOR EVERY PURPOSE" within the figure at the top, the word "DUFF'S" across the upper edge of the disk, the word "REFINED" on the scroll across the disk, the word "MOLASSES" across the bottom of the disk and toward the right, the words "PITTSBURG, PA.," on the scroll at the bottom, and the words "P. DUFF & SONS" at the bottom and to the left. Used ten years.

Filed July 14, 1905. Serial No. 10,286. PUBLISHED FEBRUARY 20, 1906.

51,441. BUTTER. FRANCIS H. LEGGETT & COMPANY, New York, N. Y.

The arbitrary word "PREMIER."

Filed June 26, 1905. Serial No. 9,314. PUBLISHED FEBRUARY 20, 1906.

51,442. RAZOR-STROPS. EDWARD B. GIBFORD, Adrian Mich.

The representation of a zigzag line.

Filed June 30, 1905. Serial No. 9,512. PUBLISHED FEBRUARY 20, 1906.

51,443. NON-ALCOHOLIC TONIC BEVERAGE. JNO. HINTON, Richmond, Va., assignor, by mesne assignments, to The Brassar Company, Incorporated, Richmond, Va., a Corporation of Virginia.

The word "BRASSAR."

Filed July 15, 1905. Serial No. 10,408. PUBLISHED FEBRUARY 20, 1906.

51,444. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England.

The words "HUNTLEY & PALMERS." Used ten years.

Filed June 30, 1905. Serial No. 9,442. PUBLISHED FEBRUARY 20, 1906.

51,445. NATURAL STONE USED FOR RUBBING PURPOSES. JAMES H. RHODES & COMPANY, Chicago, Ill.

A rectangular panel upon which appear the words "GENUINE HOOSIER RUBBING STONE."

Filed October 16, 1905. Serial No. 13,656. PUBLISHED FEBRUARY 20, 1906.

51,446. PIANOS. MASON & HAMLIN Co., Cambridge, Mass.

The words "MASON & HAMLIN" in a type known as "Old English text." Used ten years.

Filed July 14, 1905. Serial No. 10,336. PUBLISHED FEBRUARY 20, 1906.

51,447. PREPARATIONS FOR CLEANING ENAMELED AND PORCELAIN WARE. WILLIAM C. MCKINNEY, New Brighton, Pa., assignor to Porcela Company, Pittsburg, Pa., a Corporation of Pennsylvania.

The word "PORCELA," with the letters "POR" and "ELA" radiating from a common center, having the letter "C" enlarged and common to all the repeated uses of the word, the whole forming a star-like figure composed entirely of letters forming the word "PORCELA," readable vertically, horizontally, or obliquely.

Filed September 28, 1905. Serial No. 13,101. PUBLISHED FEBRUARY 20, 1906.

51,448. MINERAL-SPRING WATER. THE MOUNTAIN VALLEY SPRINGS COMPANY, Mountain Valley Springs, Ark.

The words "MOUNTAIN VALLEY." Used ten years.

Filed June 19, 1905. Serial No. 8,565. PUBLISHED FEBRUARY 20, 1906.

51,449. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A design suggesting Mosaic work, in which a number of Maltese crosses are arranged in diagonal lines. Rows of small squares and lines cross the design horizontally and vertically.

Filed July 12, 1905. Serial No. 10,148. PUBLISHED FEBRUARY 20, 1906.

51,450. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A rectangular design having conventional leaf-sprays at each corner. A double frame of intertwined lines surrounds the design. In the center is displayed a curved device with arches at the ends and sides. A vine-like scroll at each end and in the center completes the design.

Filed July 12, 1905. Serial No. 10,149. PUBLISHED FEBRUARY 20, 1906.

51,451. BLACK PAINTS AND JAPANS. N. Z. GRAVES CO., INC., Philadelphia, Pa.

A monogram of the letters "N Z G" and the abbreviation "Co."

Filed June 26, 1905. Serial No. 9,069. PUBLISHED FEBRUARY 20, 1906.

51,452. SMOKING-TOBACCO, CHEWING-TOBACCO, SNUFF, AND TOBACCO EXTRACTS. REPUBLIC OF FRANCE, Paris, France.

A cartouch having scrollwork at its ends and at its middle a rectangle, in which rectangle is the representation of a globe having on one side thereof an allegorical figure representing Commerce and on the other side thereof an allegorical figure representing Industry, these figures being shown with joined hands. At the top of the rectangle is the word "TABACS" and at the bottom thereof the words "REPUBLIQUE FRANÇAISE." On one side of the rectangle, within the scrollwork, is the word "MANUFACTURES," and on the other side thereof are the words "DE L'ÉTAT."

Filed October 6, 1905. Serial No. 13,375. PUBLISHED FEBRUARY 20, 1906.

51,453. SMOKING-TOBACCO. REPUBLIC OF FRANCE, Paris, France.

The word "SCAFERLATI."

Filed October 6, 1905. Serial No. 13,376. PUBLISHED FEBRUARY 20, 1906.

51,454. SOAPS. JULES FRANÇOIS GEORGES DE ROUSSY DE SALES, Paris, France.

The denomination "BEN'SOAP."

Filed July 18, 1905. Serial No. 10,528. PUBLISHED FEBRUARY 20, 1906.

51,455. WASHING-BLUE. THE SAWYER CRYSTAL BLUE COMPANY, Boston, Mass.

The words "SAWYER'S CRYSTAL BLUE." Used ten years.

Filed July 17, 1905. Serial No. 10,442. PUBLISHED FEBRUARY 20, 1906.

51,456. PRESERVATIVE AND INSULATING VARNISHES. THE STANDARD PAINT COMPANY, New York, N. Y.

The representation of a peacock with its tail spread out within a circle, in which also appear the letters "S P C." This is surrounded by a black ring, on which appears at the top the word "PEACOCK."

Filed November 18, 1905. Serial No. 14,796. PUBLISHED FEBRUARY 20, 1906.

51,457. CIGARS. AARON STRAUS, Chicago, Ill.

The representation of a tobacco factory, in front of which is the representation of numerous persons walking on the street, together with several horses and wagons, and above the main entrance-door of said factory being the words "LA VENGA" and on each side of the roof of said factory the words "FABRICA DE TABACOS," the whole scene being inclosed in a fancy border consisting of medals, flowers, and leaves surmounted by an eagle with outstretched wings, associated with the words "LA VENGA."

Filed August 22, 1905. Serial No. 11,911. PUBLISHED FEBRUARY 20, 1906.

51,458. LAMP-CHIMNEYS AND LANTERN-GLOBES. R. E. TONGUE & BROS., Philadelphia, Pa.

The word "LUSTRE." Used ten years.

Filed November 9, 1905. Serial No. 14,460. PUBLISHED FEBRUARY 20, 1906.

51,459. PIANOS. THE WEBER PIANO COMPANY, New York, N. Y.

The word "WEBER." Used ten years.

Filed July 17, 1905. Serial No. 10,420. PUBLISHED FEBRUARY 20, 1906.

51,460. LEATHER BOOTS AND SHOES. E. S. WOODBURY & COMPANY, Boston, Mass.

The word "TRIUMPH," in combination with the representation of clouds and the figure of an eagle with outstretched wings upon a background of radiating rays.

Filed November 9, 1905. Serial No. 14,434. PUBLISHED FEBRUARY 20, 1906.

51,461. COFFEE. HUGH A. CARNEY, Boston, Mass.

The word "JOYCOF."

Filed November 25, 1905. Serial No. 14,997. PUBLISHED FEBRUARY 20, 1906.

51,462. CANNED FRUITS AND VEGETABLES. DAVIS, BAXTER & COMPANY, Portland, Me.

The words or word-symbol "HONEY DROP." Used ten years.

Filed June 26, 1905. Serial No. 9,077. PUBLISHED FEBRUARY 20, 1906.

51,463. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash.

The representation of a bunch of tulip flowers with leaf, associated with the words "TULIP BRAND."

Filed September 25, 1905. Serial No. 12,984. PUBLISHED FEBRUARY 20, 1906.

51,464. SAUSAGES. B. FRANKFELD & Co., New York, N. Y.

The representation of a hog carrying pigs on its back and associated with the words "SALCHICHON LOS CERDOS CONTENTOS."

Filed September 22, 1905. Serial No. 12,902. PUBLISHED FEBRUARY 20, 1906.

51,465. CUP-GREASE AND LUBRICATING-OILS. GALENA AXLE GREASE CO., Galena, Ill.

The word "SUPERIOR." Used ten years.

Filed October 23, 1905. Serial No. 15,397. PUBLISHED FEBRUARY 20, 1906.

51,466. STOCK-FOOD. GOYER ALLIANCE REFINING COMPANY, Memphis, Tenn.

The word "PROTALFA."

Filed November 3, 1905. Serial No. 14,253. PUBLISHED FEBRUARY 20, 1906.

51,467. WHEAT-FLOUR. THE HAYNES MILLING COMPANY, Portland, Ind.

The words "OUR PRIDE."

Filed September 19, 1905. Serial No. 12,780. PUBLISHED FEBRUARY 20 1906.

51,468. COFFEE. HILLS BROS., San Francisco, Cal.

The representation of a figure of a man drinking from a cup, the man being shown as wearing a white turban and a yellow robe, and said figure is produced in the center of a red background.

Filed September 29, 1905. Serial No. 13,139. PUBLISHED FEBRUARY 20, 1906.

51,469. BEER. INDEPENDENT BREWING ASS'N, Chicago, Ill.

The word "PRIMA."

Filed April 13, 1905. Serial No. 1,345. PUBLISHED AUGUST 1, 1905.

51,470. SPICES. LEHN & FINK, New York, N. Y.

The representation of a pyramid bearing the letters and character "L & F" on level ground and disposed within a circular panel surrounded by a border of two circles.

Filed October 27, 1905. Serial No. 13,969. PUBLISHED FEBRUARY 20, 1906.

51,471. MACHINE-BELTING. MAIN BELTING CO., Philadelphia, Pa.

The word "LEVIATHAN."

Filed January 12, 1906. Serial No. 16,156. PUBLISHED FEBRUARY 20, 1906.

51,472. WHEAT-FLOUR. MCCLOSKEY BROTHERS, New Orleans, La.

The word "COMUS" and the representation of a bearded man bearing a crown on his head.

Filed April 25, 1905. Serial No. 2,962. PUBLISHED SEPTEMBER 5, 1905.

51,473. GAMES. CHARLES ADAM MILLER, Buffalo, N. Y.

The words "ARMY OFFICERS."

Filed November 1, 1905. Serial No. 14,174. PUBLISHED FEBRUARY 20, 1906.

51,474. HASH AND HASHED MEATS. NELSON MORRIS & COMPANY, Chicago, Ill.

The word "BARBECUE."

Filed November 3, 1905. Serial No. 14,249. PUBLISHED FEBRUARY 20, 1906.

51,475. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

A device in which a human hand is represented as holding and displaying thirteen outspread playing-cards. Of these cards the ace of spades is the only one whose whole face is visible, the other cards being partly spread out behind the ace of spades, so as to show their indices. Used ten years.

Filed November 7, 1905. Serial No. 14,389. PUBLISHED FEBRUARY 20, 1906.

51,476. FLEXIBLE GAS-TUBING. NEW YORK GAS TUBING COMPANY, New York, N. Y.

The word "STATITE."

Filed October 24, 1905. Serial No. 13,891. PUBLISHED FEBRUARY 20, 1906.

51,477. COFFEE. O. W. PEIRCE COMPANY, La Fayette, Ind.

The words "PEIRCE'S GOLDEN RIO COFFEE" printed in the order shown, one above the other. Accompanying said words and entwined with the lettering thereof are the branches and leaves of a coffee-plant in bearing, having a small bird perched on one of its branches and its mate flying near by. Used ten years.

Filed December 1, 1905. Serial No. 15,117. PUBLISHED FEBRUARY 20, 1906.

51,478. GAMES AND TOYS. ELLA A. PELTIER, Delphos, Ohio.

The word "FLAGSAM."

Filed October 18, 1905. Serial No. 13,735. PUBLISHED FEBRUARY 20, 1906.

51,479. CERTAIN NAMED JEWELRY. PHOENIX JEWELRY CO., New York, N. Y.

The words "PHOENIX JEWELRY CO." Used ten years.

Filed January 24, 1906. Serial No. 16,463 PUBLISHED FEBRUARY 20, 1906.

51,480. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY LIMITED, Minneapolis, Minn.

The word "TRY'IT."

Filed November 10, 1905. Serial No. 14,475. PUBLISHED FEBRUARY 20, 1906.

51,481. LEATHER BOOTS, LEATHER SHOES, AND SLIPPERS. CHARLES K. SHAROOD, St. Paul, Minn.

The word "ARISTO" printed on a background in the form of an ornamental scroll. At one side of the letter "A" is a bust portrait of the applicant, Charles K. Sharood, and under the portrait is a scroll bearing the name "C. K. SHAROOD."

Filed June 15, 1905. Serial No. 8,200. PUBLISHED FEBRUARY 20, 1906.

51,482. FLOUR MADE FROM WHEAT. SHEFFIELD-KING MILLING CO., Minneapolis, Minn.

The pictorial representation of a maple-leaf and the words "MAPLE LEAF."

Filed January 22, 1906. Serial No. 16,364. PUBLISHED FEBRUARY 20, 1906.

51,483. LEAD-PENCILS. EDWARD G. SOLTMANN, New York, N. Y.

The word "MONARCH" printed with quotation-marks.

Filed January 20, 1906. Serial No. 16,355. PUBLISHED FEBRUARY 20, 1906.

51,484. TEA. SPRAGUE, WARNER & COMPANY, Chicago, Ill.

The word "RICHELIEU."

Filed September 11, 1905. Serial No. 12,479. PUBLISHED FEBRUARY 20, 1906.

51,485. LAGER-BEER AND BOTTLED BEER. TERRE HAUTE BREWING CO., Terre Haute, Ind.

The representation of an eagle poised upon a cornucopia, the cornucopia being decorated with barley-heads and hop-blossoms. Around the eagle and cornucopia in a circle and in plain block letters the following words and abbreviations are arranged: "TERRE HAUTE BREWING CO. TERRE HAUTE, IND.," the whole being surrounded with concentric circles.

Filed June 12, 1905. Serial No. 7,989. PUBLISHED FEBRUARY 20, 1906.

51,486. PEACH-TREES, SCIONS, CUTTINGS, GRAFTS, ROOTS, AND STOCKS. TEXAS NURSERY COMPANY, Sherman, Tex.

The pictorial representation of a peach on which is shown the portrait of E. W. Kirkpatrick on a dark disk, said disk being surrounded by concentric circles, between which circles appear the words "EARLY WHEELER PEACH."

Filed January 12, 1906. Serial No. 16,147. PUBLISHED FEBRUARY 20, 1906.

51,487. LEATHER BOOTS, SHOES, AND SLIPPERS. JOHN WANAMAKER, Philadelphia, Pa.

The name "JOHN WANAMAKER" written in a particular distinctive irregular style, said name appearing over the word "SPECIAL," the said name and said word being associated with each other and with the representation of an approaching railway-train.

Filed July 13, 1905. Serial No. 10,261. PUBLISHED DECEMBER 26, 1905.

51,488. INCANDESCENT MANTLES, LAMPS, AND LAMP-FITTINGS. WELSBACH LIGHT COMPANY, Gloucester City, N. J.

The word "REFLEX."

Filed January 9, 1906. Serial No. 16,065. PUBLISHED FEBRUARY 20, 1906.

51,489. ENAMELED LEATHER. WOLFF PROCESS LEATHER COMPANY, Philadelphia, Pa.

The word "CLIMAX."

Filed November 29, 1905. Serial No. 15,070. PUBLISHED FEBRUARY 20, 1906.

51,490. LIVER REMEDY. A. C. SIMMONS JR. MEDICINE CO., Sherman, Tex.

The monogram "A C S JR," wherein the letter "A" is arranged within the letter "C" and both within a field covered by the letter "S," the letters "JR" being arranged within the letter "A."

Filed May 11, 1905. Serial No. 5,221. PUBLISHED FEBRUARY 20, 1906.

51,491. HOMINY FEED. AMERICAN HOMINY COMPANY, Indianapolis, Ind.

The fanciful word "HOMCO."

Filed January 20, 1906. Serial No. 16,356. PUBLISHED FEBRUARY 20, 1906.

51,492. REMEDY FOR HEADACHES AND LIVER DISORDERS. JAMES G. BAKER, Fairfield, Ill.

The arbitrary word "YANKER."

Filed April 20, 1905. Serial No. 2,480. PUBLISHED FEBRUARY 20, 1906.

51,493. ACID PHOSPHATE AND A SYRUP OF PHOSPHATES. THE CHAS. H. PHILLIPS CHEMICAL CO., New York, N. Y.

A monogram containing the letters "PHILLIPS," said monogram being on a shield which is surrounded by a buckled strap. Used ten years.

Filed April 11, 1905. Serial No. 1,176. PUBLISHED FEBRUARY 20, 1906.

51,494. WHISKY. CORNING AND COMPANY, Peoria, Ill.

The words "MT PLEASANT." Used ten years.

Filed May 1, 1905. Serial No. 3,739. PUBLISHED FEBRUARY 20, 1906.

51,495. REMEDY FOR CERTAIN NAMED DISEASES. THE EUCALINE MEDICINE CO., Dallas, Tex.

The representation of a leaf and a small portion of a branch upon which there are a flower and a seed-pod of the eucalyptus-tree, the branch being within the curve of the leaf.

Filed April 28, 1905. Serial No. 3,473. PUBLISHED FEBRUARY 20, 1906.

51,496. LEATHER AND CANVAS BOOTS AND SHOES. GEO. E. KEITH COMPANY, Brockton, Mass.

The representation of a man in evening dress walking over a shoe.

Filed June 10, 1905. Serial No. 7,845. PUBLISHED FEBRUARY 20, 1906.

51,497. STEAM AND HOT-WATER HEATERS AND PARTS THEREOF. THE HERRENDEEN MANUFACTURING CO., Geneva, N. Y.

The word "FURMAN." Used ten years.

Filed May 17, 1905. Serial No. 5,000. PUBLISHED FEBRUARY 20, 1906.

51,498. WHEAT-FLOUR. CHARLES KING & SON, Alexandria, Va.

The word "SENATOR."

Filed October 30, 1905. Serial No. 14,085. PUBLISHED FEBRUARY 20, 1906.

51,499. TONIC AND GENERAL STIMULANT. MELLIER DRUG COMPANY, St. Louis, Mo.

The word-symbol "PONCA COMPOUND."

Filed May 22, 1905. Serial No. 6,320. PUBLISHED FEBRUARY 20, 1906.

51,500. SPECIFIC FOR NEURALGIA AND RHEUMATISM. MELLIER DRUG COMPANY, St. Louis, Mo.

The word-symbol "TONGALINE."

Filed May 22, 1905. Serial No. 6,321. PUBLISHED FEBRUARY 20, 1906.

51,501. HAMMERS. ARTHUR R. ROBERTSON, Boston, Mass.

The words "HORSESHOE MAGNET." Used ten years.

Filed June 19, 1905. Serial No. 8,476. PUBLISHED FEBRUARY 20, 1906.

51,502. NATURAL AND ARTIFICIAL PORTLAND AND HYDRAULIC CEMENT. ROUND TOP CEMENT COMPANY, Bloomfield, N. J.

The representation of two rugged mountains separated by a valley.

Filed June 10, 1905. Serial No. 7,861. PUBLISHED FEBRUARY 20, 1906.

51,503. ANTISEPTICS AND GERMICIDES. MARION WILLIS SAVAGE, Minneapolis, Minn.

The words "PHENO-CHLORO," beneath which are enlarged representations of cholera and fever germs, with the representations of instruments used in laboratory work.

Filed May 12, 1905. Serial No. 5,311. PUBLISHED FEBRUARY 20, 1906.

51,504. CANNED FISH. SCHWABACHER BROS. & CO. INC., Seattle, Wash.

The representation of a bordered silver shield upon which the words "SILVER SHIELD BRAND" appear.

Filed August 21, 1905. Serial No. 11,283. PUBLISHED FEBRUARY 20, 1906.

51,505. UNITING AGENTS FOR COLORS. FERDINAND SICHEL CHEMISCHE FABRIK LIMMER, Limmer by Hanover, Germany.

A sickle with its cutting edge to the right, the handle pointing downward. Below the handle is a crescent-shaped line ornament On the blade or iron of the sickle are the words "SICHEL-GLUE;" within the lines of the crescent the words "MY NAME IS MY FAME."

Filed June 8, 1905. Serial No. 7,673. PUBLISHED FEBRUARY 20, 1906.

51,506. PINE-WOOD OIL. SPIRITTINE CHEMICAL COMPANY, Wilmington, N. C.

The word "SPIRITTINE."

Filed April 12, 1905. Serial No. 1,279. PUBLISHED FEBRUARY 20, 1906.

51,507. TANNING EXTRACT. THE STAMFORD MFG. CO., New York, N. Y.

The word "CLIMAX" inclosed in a diamond-shaped figure.

Filed May 29, 1905. Serial No. 6,885. PUBLISHED FEBRUARY 20, 1906.

51,508. TANNING EXTRACT. THE STAMFORD MFG. CO., New York, N. Y.

A coined word "PARANAX" inclosed in a diamond-shaped figure.

Filed May 29, 1905. Serial No. 6,886. PUBLISHED FEBRUARY 20, 1906.

51,509. DYESTUFF OR COLORING MIXTURE FOR LEATHER. THE STAMFORD MFG. CO., New York, N. Y.

The word "REGAL."

Filed May 29, 1905. Serial No. 6,887. PUBLISHED FEBRUARY 20, 1906.

51,510. CANDY. SWEET CANDY CO., Salt Lake City, Utah.

The word "CARNATION," associated with the representation of carnation-flowers.

Filed June 6, 1905. Serial No. 7,542. PUBLISHED FEBRUARY 20, 1906.

51,511. ANTIFRICTION OR BEARING METALS. WILLIAM A. HARDY & SON'S CO., Fitchburg, Mass.

The word "CENTURY."

Filed May 18, 1905. Serial No. 5,938. PUBLISHED FEBRUARY 20, 1906.

51,512. READY-MIXED PAINTS. WILLIAMS, MARTIN & GRAY, INC., Norfolk, Va.

The word "MONTICELLO."

Filed June 10, 1905. Serial No. 7,870. PUBLISHED FEBRUARY 20, 1906.

51,513. UPHOLSTERY TEXTILE FABRICS. ANDREW MCLEAN CO., Passaic, N. J., and New York, N. Y.

The figure of a knight on horseback waving aloft a standard, the figure resting upon an ornamental pedestal on which are inscribed the words "THE VICTOR."

Filed April 14, 1905. Serial No. 1,546. PUBLISHED FEBRUARY 20, 1906.

51,514. CERTAIN NAMED MEDICINE. ADA B. BRADLEY, San Francisco, Cal.

The word "ROTANYA."

Filed June 14, 1905. Serial No. 8,072. PUBLISHED FEBRUARY 20, 1906.

51,515. WHISKY. CAHN, BELT & CO., Baltimore, Md.

The words "MARYLAND CLUB."

Filed April 1, 1905. Serial No. 154. PUBLISHED FEBRUARY 20, 1906.

51,516. PIG-IRON. CLINTON IRON AND STEEL COMPANY, Pittsburg, Pa.

The words "HECTOR INSPECTED FOUNDRY IRON," the word "HECTOR" being inclosed in quotation-marks, associated with a representation of a nude figure of a man wearing a helmet, with a poised spear in one hand and a shield on the other arm, on which appears the word "HECTOR," and the same word below such representation.

Filed May 4, 1905. Serial No. 4,239. PUBLISHED FEBRUARY 20, 1906.

51,517. WHISKY. CORNING AND COMPANY, Peoria, Ill.

The name "LEE NEWTON'S." Used ten years.

Filed May 1, 1905. Serial No. 3,737. PUBLISHED FEBRUARY 20, 1906.

51,518. OINTMENT. D. RANSOM, SON AND COMPANY, Buffalo, N. Y.

The words "DR A. TRASK'S MAGNETIC OINTMENT" above the representation of an apparatus consisting of a boiler, fire-arch, chimney, gage, &c., and having a person in a partially-kneeling position engaged with a cooler in the preparation of the compound. The words "NONE GENUINE WITHOUT THE SIGNATURE OF S. BUELL" are inscribed upon the label at one side of the aforesaid words and illustration.

Filed May 16, 1905. Serial No. 5,864. PUBLISHED FEBRUARY 20, 1906.

51,519. LINIMENT. D. RANSOM, SON AND COMPANY, Buffalo, N. Y.

The words "PROF. ANDERSON'S DERMADOR," the words "PROF. ANDERSON'S" being arranged in an upper panel having a straight top margin, a curved lower margin, and ornamental ends and the word "DERMADOR" in a lower panel having ornamental top corners, and an illustration between the two panels of a black horse standing upon the bank of a sheet of water and facing to the left and two men, one of whom is on one knee applying liniment to one of the hind legs of the horse, and the other is standing at the horse's head holding the bridle.

Filed May 16, 1905. Serial No. 5,865. PUBLISHED FEBRUARY 20, 1906.

51,520. COUGH-CANDY. DONIPHAN & Co., St. Joseph, Mo.

A rectangular panel bearing a representation of the bust of a man dressed in Quaker costume and the words "QUAKER CANDY COUGH DROPS."

Filed May 2, 1905. Serial No. 4,016. PUBLISHED FEBRUARY 20, 1906.

51,521. SHEETINGS AND DRILLS. EASLEY COTTON MILLS, Easley, S. C.

The representation of a pair of kingfishers, each sitting on one foot or claw on a limb and holding in the other a fishing-line attached to a pole which rests at its base on a rock below, with pond-lilies in the background.

Filed May 15, 1905. Serial No. 5,658. PUBLISHED FEBRUARY 20, 1906.

51,522. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "RACKET."

Filed December 22, 1905. Serial No. 15,583. PUBLISHED FEBRUARY 20, 1906.

51,523. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary words "OUR OWN." Used ten years.

Filed December 22, 1905. Serial No. 15,585. PUBLISHED FEBRUARY 20, 1906.

51,524. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "ARCADIA."

Filed December 26, 1905. Serial No. 15,625. PUBLISHED FEBRUARY 20, 1906.

51,525. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "RUTLAND." Used ten years.

Filed December 26, 1905. Serial No. 15,628. PUBLISHED FEBRUARY 20, 1906.

51,526. REMEDIES FOR DISEASES OF THE EYE. THE EYE-FIX REMEDY COMPANY, Detroit, Mich.

The hyphenated word "EYE-FIX."

Filed May 17, 1905. Serial No. 5,914. PUBLISHED FEBRUARY 20, 1906.

51,527. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio.

The name "C. O. DAILEY'S." Used ten years.

Filed June 24, 1905. Serial No. 8,904. PUBLISHED FEBRUARY 20, 1906.

51,528. OVERSHIRTS. LEVI STRAUSS & COMPANY, San Francisco, Cal.

The word "SUNSET," associated with the conventional representation of the setting sun.

Filed January 10, 1906. Serial No. 16,095. PUBLISHED FEBRUARY 20, 1906.

51,529. METAL PIPE-FITTINGS. MALLEABLE IRON FITTINGS COMPANY, Branford, Conn.

The letters "M. I. F. Co." Used ten years.

Filed May 6, 1905. Serial No. 4,565. PUBLISHED FEBRUARY 20, 1906.

51,530. MEN'S AND BOYS' PANTS. MALONE MANUFACTURING CO., Malone, N. Y.

The words "THE ADIRONDACK," associated with the representation of a mountain and lake scene, a tree having a bird upon a branch thereof being represented in the foreground and a stag standing near the base of said tree.

Filed April 21, 1905. Serial No. 2,630. PUBLISHED FEBRUARY 20, 1906.

51,531. SEWING-MACHINES. ALBERT G. MASON, Cleveland, Ohio.

The words "NEW DEFENDER."

Filed April 3, 1905. Serial No. 279. PUBLISHED FEBRUARY 20, 1906.

51,532. FABRIC OF COTTON DUCK. MOUNT VERNON-WOODBERRY COTTON DUCK COMPANY, Baltimore, Md.

The word-symbol "COLUMBIA" in the arc of a circle and in connection with an arbitrary device representing a section of the sun with peculiar rays above. Used ten years.

Filed May 18, 1905. Serial No. 5,984. PUBLISHED FEBRUARY 20, 1906.

51,533. RUGS, ART SQUARES, AND MATTING MADE OF GRASS TWINE. OSHKOSH GRASS MATTING CO., Oshkosh, Wis.

The word "DELTOX."

Filed April 28, 1905. Serial No. 3,446. PUBLISHED FEBRUARY 20, 1906.

51,534. MEDICINAL PREPARATION USED AS A NERVE SEDATIVE. PEACOCK CHEMICAL CO., St. Louis, Mo

The words "PEACOCK'S BROMIDES." Used ten years.

Filed May 22, 1905. Serial No. 6,311. PUBLISHED FEBRUARY 20, 1906.

51,535. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.

The word "MONARCH." Used ten years.

Filed June 12, 1905. Serial No. 7,943. PUBLISHED FEBRUARY 20, 1906.

51,536. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.

The word "PRINCESS," together with a fanciful representation of the bust portrait of a woman, the face being shown in profile in partial décolleté costume, the picture being partly surrounded by scrollwork.

Filed December 29, 1905. Serial No. 15,763. PUBLISHED FEBRUARY 20, 1906.

51,537. WAISTS, DRESSES, AND SUITS. ROSENBAUM COMPANY, Pittsburg, Pa.

The representation of a shield quartered, the quarters being in two contrasting colors, one quarter having a representation of a rose-tree produced thereon, another quarter a representation of a rose in full bloom, the third quarter has the letters "A R C O," and the fourth quarter the letter "R." and the abbreviation "Co."

Filed May 24, 1905. Serial No. 6,520. PUBLISHED FEBRUARY 20, 1906.

51,538. BOYS' SUITS. HENRY A. SEINSHEIMER, Cincinnati, Ohio.

The word "PERFECTION," associated with the representation of a comet at the right-hand upper side of the word. Used ten years.

Filed June 1, 1905. Serial No. 7,144. PUBLISHED FEBRUARY 20, 1906.

51,539. COLOGNE. FREEMAN B. SHEDD, Lowell, Mass.

The words and numeral "HOYT'S 5 NICKEL," the word "NICKEL" being printed across the figure "5." Used ten years.

Filed May 15, 1905. Serial No. 5,744. PUBLISHED FEBRUARY 20, 1906.

51,540. PETTICOATS AND UNDERSKIRTS. THE STEWART, HOWE AND MAY COY., Jersey City, N. J.; New York, N. Y.; Boston, Mass.; St. Louis, Mo.; Chicago, Ill., and San Francisco, Cal.

The letters and character "S. H. & M." with a dot or period following each letter.

Filed June 3, 1905. Serial No. 7,364. PUBLISHED FEBRUARY 20, 1906.

51,541. WHISKY. A. P. HOTALING & Co., San Francisco, Cal.

The words "OLD KIRK."

Filed May 25, 1905. Serial No. 6,657. PUBLISHED FEBRUARY 20, 1906.

51,542. WHISKY. LOUIS J. ADLER, Pittsburg, Pa.

The word "RELDA," associated with the representation of a double eagle on a dark background in the form of a trefoil with radiating lines.

Filed May 22, 1905. Serial No. 6,300. PUBLISHED FEBRUARY 20 1906.

51,543. SHOTGUN-SHELLS. THE AUSTIN CARTRIDGE CO., Cleveland, Ohio.

The words "CRACK SHOT."

Filed May 1, 1905. Serial No. 3,751. PUBLISHED FEBRUARY 20, 1906.

51,544. PORTABLE BOWLING-ALLEYS. THE AMERICAN BOX BALL CO., Indianapolis, Ind.

The words "THE AMERICAN BOX BALL ALLEY."

Filed April 19, 1905. Serial No. 2,294. PUBLISHED FEBRUARY 20, 1906.

51,545. RULES, YARDSTICKS, BOARD-MEASURES, AND LOG-MEASURES. THE CHAPIN-STEPHENS COMPANY, New Hartford, Conn.

A rectangular figure having upper and lower panels, the upper panel being divided centrally by a diamond-shaped figure, and end panels of subetantially triangular shape.

Filed April 7, 1905. Serial No. 724. PUBLISHED FEBRUARY 20, 1906.

51,546. SHEARS AND SCISSORS. HENRIE CLAUSS, Fremont, Ohio.

The name "CLAUSS" written in script with a paraph extending from the bottom of the letter "C" and underlining the name.

Filed June 5, 1905. Serial No. 7,464. PUBLISHED FEBRUARY 20, 1906.

51,547. REMEDY FOR CATARRH. FRANCIS CLENDINNING, Brooklyn Hills and Richmond Hills, N. Y.

The representation of a diamond-shaped figure with the letter "C" in each corner of the figure.

Filed December 27, 1905. Serial No. 15,686. PUBLISHED FEBRUARY 20, 1906.

51,548. METAL. DILWORTH, GILBERT & TOWNE, INCORPORATED, New York, N. Y.

The word "DEAL" upon a square background colored red.

Filed April 20, 1905. Serial No. 2,416. PUBLISHED FEBRUARY 20, 1906.

51,549. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "DIXIE."

Filed December 22, 1905. Serial No. 15,586. PUBLISHED FEBRUARY 20, 1906.

51,550. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "PEORIA." Used ten years.

Filed December 26, 1905. Serial No. 15,626. PUBLISHED FEBRUARY 20, 1906.

51,551. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

A conventional representation of an arched city gate, associated with the arbitrary words "GATE CITY."

Filed December 26, 1905. Serial No. 15,627. PUBLISHED FEBRUARY 20, 1906.

51,552. HAIR-PINS AND HAIR ORNAMENTS. FISHEL, NESSLER & Co., New York, N. Y.

The word "TORSHELL."

Filed September 27, 1905. Serial No. 13,072. PUBLISHED FEBRUARY 20, 1906.

51,553. WHISKY. J. & A. FREIBERG, Cincinnati, Ohio.

The word "BROADWAY." Used ten years.

Filed June 24, 1905. Serial No. 8,901. PUBLISHED FEBRUARY 20, 1906.

51,554. LOCKS. GENERAL SPECIALTY COMPANY, Philadelphia, Pa.

A representation of a kangaroo forming the letter "K" of the word "KANGAROO."

Filed December 5, 1905. Serial No. 15,201. PUBLISHED FEBRUARY 20, 1906.

51,555. ANTISEPTIC AND GERMICIDE PREPARATIONS. THE GOLD SPIRIT CHEMICAL CO., South Bend, Ind.

The words "GOLD SPIRIT" in script type.

Filed June 8, 1905. Serial No. 7,646. PUBLISHED FEBRUARY 20, 1906.

51,556. BELT-COUPLINGS. GREENE TWEED & Co., New York, N. Y.

The word "MORAN'S." Used ten years.

Filed December 8, 1905. Serial No. 15,264. PUBLISHED FEBRUARY 20, 1906.

51,557. NEEDLES FOR HAND AND MACHINE SEWING. HENRY MILWARD & SONS, LIMITED, Redditch, England.

The arbitrary word "CALYXEYED." Used ten years.

Filed October 2, 1905. Serial No. 13,198. PUBLISHED FEBRUARY 20, 1906.

51,558. FOOD AND MEDICINE FOR POULTRY. DR. HESS & CLARK, Ashland, Ohio.

A rectangular figure inclosed in an ornamental border and divided into three panels, the upper panel containing the words "DR. HESS POULTRY PAN-A-CE-A,' the lower panel containing the words "A POSITIVE CURE FOR GAPES CHOLERA AND ROUP MAKES HENS LAY," and the central panel containing the representation of hens sitting on a nest with eggs protruding from the nest and a third hen standing by the nest and chickens in the foreground.

Filed June 15, 1905. Serial No. 8,183. PUBLISHED FEBRUARY 20, 1906.

51,559. GALL CURE. DR. HESS & CLARK, Ashland, Ohio.

The representation of a collar and hames, within which is a representation of a horse's head and neck with a collar on the neck and the representation of the head and shoulders of a man in the act of placing the medicine on the horse's neck, associated with the words "CURES GALLS."

Filed June 15, 1905. Serial No. 8,191. PUBLISHED FEBRUARY 20, 1906.

51,560. POWDER FOR KILLING VERMIN AND DISINFECTING. DR. HESS & CLARK, Ashland, Ohio.

A rectangular panel inclosing a picture representing a barnyard scene inclosed in a circle, with a little girl in the foreground kneeling and holding a fowl by the leg and in the act of sprinkling powder thereon and associated with the words "INSTANT LOUSE KILLER KILLS LICE TICKS AND FLEAS A DEODORIZER AND DISINFECTANT. 1 LB. 25¢."

Filed June 21, 1905. Serial No. 8,746. PUBLISHED FEBRUARY 20, 1906.

51,561. OINTMENT. WILLIAM T. HITE, Walnut, Kans.

The letters "H. H."

Filed June 24, 1905. Serial No. 8,995. PUBLISHED FEBRUARY 20, 1906.

51,562. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill.

The letter "M" surrounded by a wreath.

Filed August 7, 1905. Serial No. 11,383. PUBLISHED FEBRUARY 20, 1906.

51,563. WHEELBARROWS AND THE PARTS THEREOF. THE KILBOURNE & JACOBS MANUFACTURING COMPANY, Columbus, Ohio.

The word "SCIOTO" inclosed in quotation-marks. Used ten years.

Filed September 20, 1905. Serial No. 12,820. PUBLISHED FEBRUARY 20, 1906.

51,564. SCISSORS. F. KÖLLER & Co., Solingen, Germany.

The words "MAGNA WERK."

Filed January 16, 1906. Serial No. 16,219. PUBLISHED FEBRUARY 20, 1906.

51,565. BABBITT METAL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.

The word "PHOENIX" and a representation of a phenix. Used ten years.

Filed November 8, 1905. Serial No. 14,407. PUBLISHED FEBRUARY 20, 1906.

51,566. EXPLOSIVES. NOBEL'S EXPLOSIVES COMPANY LIMITED, Glasgow, Scotland.

The word "BALLISTITE."

Filed September 26, 1905. Serial No. 13,035. PUBLISHED FEBRUARY 20, 1906.

51,567. ROCK AND RYE. P. J. BOWLIN LIQUOR CO., St. Paul, Minn.

The word "REGAL" and a shield design bearing a monogram of the letters and abbreviation "P J B L Co."

Filed June 21, 1905. Serial No. 8,632. PUBLISHED FEBRUARY 20, 1906.

51,568. ELECTRIC GENERATORS AND MOTORS AND PARTS THEREOF. CHARLES ALGERNON PARSONS, Newcastle-upon-Tyne, England.

The representation of two semicircular sections of turbine-blade rings, one superimposed upon the other, forming a central elliptical space bounded by turbine-blades fixed in the outer blade-rings.

Filed January 22, 1906. Serial No. 16,397. PUBLISHED FEBRUARY 20, 1906.

51,569. ENGINE-GOVERNORS. THE PICKERING GOVERNOR Co., Portland, Conn.

The representation of three curved flat springs connected at each end with a hub and each spring having a ball near the middle of its length.

Filed June 9, 1905. Serial No. 7,749. PUBLISHED FEBRUARY 20, 1906.

51,570. STOVES, RANGES, HEATERS, FURNACES, AND PARTS THEREOF. RICHARDSON & BOYNTON COMPANY, New York, N. Y.

The word "PERFECT." Used ten years.

Filed April 21, 1905. Serial No. 2,610. PUBLISHED FEBRUARY 20, 1906.

51,571. WHISKY. R. M. ROSE Co., Atlanta, Ga.

The words "ROSE'S PURITY," the word "PURITY" being inclosed in quotation-marks. Used ten years.

Filed May 3, 1905. Serial No. 4,156. PUBLISHED FEBRUARY 20, 1906.

51,572. TYPE-WRITING MACHINES. THE SMITH PREMIER TYPEWRITER COMPANY, Syracuse, N. Y.

The words "SMITH PREMIER."

Filed January 25, 1906. Serial No. 16,510. PUBLISHED FEBRUARY 20, 1906.

51,573. WHISKY. OSCAR TAUSSIG, New York, N. Y.

The word "SQUIRREL" and a picture of a squirrel seated upon a branch within a circle.

Filed June 8, 1905. Serial No. 7,663. PUBLISHED FEBRUARY 20, 1906.

51,574. SHIPS' LOGS. THOMAS WALKER & SON LTD., Birmingham, England.

The word "EXCELSIOR."

Filed November 28, 1905. Serial No. 15,050. PUBLISHED FEBRUARY 20, 1906.

51,575. METAL LEAF. W. H. COE MFG. Co., Providence, R. I.

The words "RIBBON LEAF." Used ten years.

Filed April 17, 1905. Serial No. 2,008. PUBLISHED FEBRUARY 20, 1906.

51,576. WRENCHES. THE WHITMAN & BARNES MANUFACTURING COMPANY, Akron, Ohio.

The words "BULL DOG."

Filed November 16, 1905. Serial No. 14,714. PUBLISHED FEBRUARY 20, 1906.

51,577. WHISKY. MOSES L. BEAN, Salisbury, N. C.

The words "RED BUCK."

Filed December 21, 1905. Serial No. 15,563. PUBLISHED FEBRUARY 20, 1906.

51,578. CORDIALS. COLBURN, BIRKS & Co., Peoria, Ill.

The words "CLARKE'S ROCK CANDY." Used ten years.

Filed June 30, 1905. Serial No. 9,419. PUBLISHED FEBRUARY 20, 1906.

51,579. STIFF-FELT, SOFT-FELT, AND STRAW HATS. DENZER, GOODHART & SCHEUER, New York, N. Y.

The hyphenated word "NOX-ALL" surmounted by an eagle holding in its bill a scroll upon which appear the words "SUPERIOR MAKE," and the words "THE HAT" arranged at the respective ends of the word "NOX-ALL" and the letters and character "D. G. & S." appearing below said word. Used ten years.

Filed July 29, 1905. Serial No. 11,016. PUBLISHED FEBRUARY 20, 1906.

51,580. WHISKY. EPSTEIN BROS. Co. LTD., New Orleans, La.

The words "OIL OF JOY" ornamented with a fanciful scroll-work design.

Filed October 5, 1905. Serial No. 13,314. PUBLISHED FEBRUARY 20, 1906.

51,581. PERFUMED SOAP. EUGENE RIMMEL LIMITED, London, England.

The representation of a rose with two leaves, generally known as "heraldic rose." Used ten years.

Filed January 12, 1906. Serial No. 16,142. PUBLISHED FEBRUARY 20, 1906.

51,582. GAS AND GASOLENE ENGINES. THE FAIRBANKS Co., New York, N. Y.

The representation of a section of a wheel having thereupon the words "THE FAIRBANKS," the word "FAIRBANKS" being inclosed in quotation-marks, associated with the words and character "IMPROVED" and "GAS & GASOLENE ENGINES."

Filed April 17, 1905. Serial No. 1,968. PUBLISHED FEBRUARY 20, 1906.

51,583. WHISKY. CHARLES J. GALLAGHER, Philadelphia, Pa.

The representation of two crossed bands, two concentric circles thereon, between which appear the words "GALLAGHER & BURTON PHILADELPHIA," within the inner circle appearing the letters and character "G. & B." and the numerals "1877."

Filed September 18, 1905. Serial No. 12,746. PUBLISHED FEBRUARY 20, 1906.

51,584. HATS. JOSEPH R. GILLEAUDEAU, New York, N. Y.

The word "REGENT."

Filed September 28, 1905. Serial No. 13,106. PUBLISHED FEBRUARY 20, 1906.

51,585. WHISKY. DAVID KOHN, Philadelphia, Pa.

The word "ARION," associated with the monogram "D K" on a circular design inclosed in a circle.

Filed January 8, 1906. Serial No. 16,049. PUBLISHED FEBRUARY 20, 1906.

51,586. LADIES' AND GENTLEMEN'S KID, CLOTH, AND CHAMOIS GLOVES. FRANK W. LAROM, New York N. Y.

The arbitrarily-selected hyphenated word-symbol "MoCo."

Filed September 11, 1905. Serial No. 12,471. PUBLISHED FEBRUARY 20, 1906.

51,587. WITHDRAWN.

51,588. WOOLEN DRESS GOODS. JOHN LONER, New York, N. Y.

The representation of a moline cross upon a shield, over which shield the words "MOLINE CROSS BRAND" appear, and below the shield a convoluted scroll is placed bearing the motto "COMME IL FAUT," together with laurel-sprays beneath the lower side and bottom portions of the shield, the butt-ends of which sprays cross at the central portion of the scroll.

Filed October 14, 1905. Serial No. 13,593. PUBLISHED FEBRUARY 20, 1906.

51,589. COTTON DUCK. LOWELL WEAVING COMPANY, Lowell and Boston, Mass.

The words "LOWELL WEAVING Co." Used ten years.

Filed October 27, 1905. Serial No. 13,981. PUBLISHED FEBRUARY 20, 1906.

51,590. COTTON DUCK. LOWELL WEAVING COMPANY, Lowell and Boston, Mass.

The word "LOWELL." Used ten years.

Filed October 28, 1905. Serial No. 14,019. PUBLISHED FEBRUARY 20, 1906.

51,591. WHISKY. MAHAN SUPPLY Co., Wichita, Kans.

The words "BRIGHT BROOK" and a monogram of the letters and abbreviation "M S Co" inclosed in two concentric circles on a panel background, with a spray of grain and grain-leaves at each end.

Filed October 30, 1905. Serial No. 14,063. PUBLISHED FEBRUARY 20, 1906.

51,592. QUILTS. MARSHALL FIELD & COMPANY, Chicago, Ill.

The word "CARNATION" and the representation of a number of carnations, stems, and buds.

Filed December 4, 1905. Serial No. 15,160. PUBLISHED FEBRUARY 20, 1906.

51,593. ANTISEPTIC SOLUTION. THE MERCER CHEMICAL COMPANY, Mercer, Pa.

The word "EUCASEPTOL" inclosed in quotation-marks and arranged in a diamond-shaped figure, all surrounded by a rectangular ornamental border, with the words "EUKASEPTOL," "EUKACEPTOL," and "EUCACEPTOL" within the border and adjacent thereto, and the words "UCASEPTOL," "UCACEPTOL," "UKASEPTOL," and "UKACEPTOL" also within the border and adjacent to the sides of the diamond-shaped figure.

Filed September 22, 1905. Serial No. 12,927. PUBLISHED FEBRUARY 20, 1906.

51,594. SHIRTS, COLLARS, AND CUFFS. NEW COLUMBIA SHIRT Co., New York, N. Y.

The arbitrary word "COLUMBIA" in script letters with a paraph under the word. Used ten years.

Filed July 27, 1905. Serial No. 10,886. PUBLISHED FEBRUARY 20, 1906.

51,595. SHIRT-FRONTS AND FALSE SHIRT-BOSOMS. REVERSIBLE COLLAR COMPANY, Boston and Cambridge, Mass.

The representation of a man clad in shirt and trousers holding in his hands a collar.

Filed June 29, 1905. Serial No. 9,394. PUBLISHED FEBRUARY 20, 1906.

51,596. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.

The words "WILD BOY'S SISTER HOSE," together with the pictorial representation of a girl chasing a boy, the boy being shown in advance, the representation being shown in a panel. In the lower left-hand corner of the panel a rail-fence corner is shown and in the lower right-hand corner a bunch of grass.

Filed December 5, 1905. Serial No. 15,213. PUBLISHED FEBRUARY 20, 1906.

51,597. HOSIERY. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.

The words "WILD BOY," together with the pictorial representation of a boy seated upon a chair, one hand resting upon his knee, the other upon the seat of the chair, his knees protruding through his stockings.

Filed December 5, 1905. Serial No. 15,214. PUBLISHED FEBRUARY 20, 1906.

51,598. WORM-DESTROYER OR VERMIFUGE. GEORGE G. STEKETEE, Grand Rapids, Mich.

The portrait of George G. Steketee and the following words: "STEKETEE'S PIN WORM DESTROYER."

Filed September 27, 1905. Serial No. 13,086. PUBLISHED FEBRUARY 20, 1906.

51,599. NEURALGIA-DROPS. GEORGE G. STEKETEE, Grand Rapids, Mich.

The portrait of George G. Steketee and the words "STEKETEE'S NEURALGIA DROPS."

Filed September 27, 1905. Serial No. 13,087. PUBLISHED FEBRUARY 20, 1906.

51,600. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y.

The representation of a swastika within an ornamental border.

Filed June 27, 1905. Serial No. 9,173. PUBLISHED FEBRUARY 20, 1906.

51,601. LADIES' AND CHILDREN'S UNDERWAISTS. THE WARNER BROS. Co., Bridgeport, Conn.

The word "PERFECTION." Used ten years.

Filed October 12, 1905. Serial No. 13,534. PUBLISHED FEBRUARY 20, 1906.

51,602. WHISKY. WILMERDING-LOEWE Co., San Francisco, Cal.

The representation of a line of prairie schooners drawn by oxen and the words and figures "DAYS OF 49," the words being upon a scroll.

Filed June 26, 1905. Serial No. 9,008. PUBLISHED FEBRUARY 20, 1906.

51,603. LINIMENT. JAMES F. BALLARD, St. Louis, Mo.

The word "SNOW." Used ten years.

Filed June 3, 1905. Serial No. 7,316. PUBLISHED FEBRUARY 20, 1906.

51,604. GERMICIDE AND ANTISEPTIC COMPOUND. JAMES F. BALLARD, St. Louis, Mo.

The hyphenated word "CAMPHO-PHENIQUE."

Filed June 3, 1905. Serial No. 7,317. PUBLISHED FEBRUARY 20, 1906.

51,605. REMEDY FOR DISTEMPER. THE DAGGETT REMEDY COMPANY, Boston, Mass.

The letters "D D D" arranged on a red disk.

Filed October 28, 1905. Serial No. 13,859. PUBLISHED FEBRUARY 20, 1906.

51,606. WITHDRAWN.

51,607. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "ALADRA."

Filed December 22, 1905. Serial No. 15,579. PUBLISHED FEBRUARY 20, 1906.

51,608. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "ARDMORE." Used ten years.

Filed December 22, 1905. Serial No. 15,580. PUBLISHED FEBRUARY 20, 1906.

51,609. SHEETINGS AND DRILLINGS. EXPOSITION COTTON MILLS, Atlanta, Ga.

The arbitrary word "GRANITE."

Filed December 22, 1905. Serial No. 15,581. PUBLISHED FEBRUARY 20, 1906.

51,610. ASTRINGENT REMEDIES FOR BOWEL AND SIMILAR COMPLAINTS. FOSTER MILBURN COMPANY, Buffalo, N. Y.

The words and abbreviations "DR. FOWLER'S EXT. OF WILD STRAWBERRY." Used ten years.

Filed September 18, 1905. Serial No. 12,743. PUBLISHED FEBRUARY 20, 1906.

51,611. WHISKY. FRENSDORF & BROWN, Baltimore, Md.

The word "BALTLAND."

Filed January 8, 1906. Serial No. 16,041. PUBLISHED FEBRUARY 20, 1906.

51,612. COSMETIC HAIR AND SKIN TONICS. GEORGE V. G. HERRERTON, Philadelphia, Pa.

The pictorial representation of the head of Cleopatra arranged in a circle formed by lines representing the horizon and which merge into heavy and fine irregular lines to represent a desert partially compassed by the flowing hair of Cleopatra, together with a pyramid and camel, the whole being surrounded on certain sides by a frieze of the so-called "sacred Egyptian lotus flower."

Filed November 11, 1905. Serial No. 14,510. PUBLISHED FEBRUARY 20, 1906.

51,613. FACE-POWDER. FERDINAND T. HOPKINS, New York, N. Y.

The words "ORIGINAL LILY WHITE" in the upper part of an oval figure ornamented with scrollwork and a conventional flower center.

Filed June 1, 1905. Serial No. 7,168. PUBLISHED FEBRUARY 20, 1906.

51,614. COATS, VESTS, AND TROUSERS. JONES DRY GOODS Co., Kansas City, Mo.

The word "STEDWOR."

Filed July 18, 1905. Serial No. 10,531. PUBLISHED FEBRUARY 20, 1906.

51,615. BOILERS AND RADIATORS. KELLOGG-MACKAY-CAMERON Co., Chicago, Ill.

The representation of a seal having a fringed border, concentric circles being produced upon the representation of the seal, and within the inner circle a monogram of the letters "K M C" and the abbreviation "Co" appear, the letters and the monogram appearing in fancy script type and in circular arrangement.

Filed July 3, 1905. Serial No. 9,789. PUBLISHED FEBRUARY 20, 1906.

51,616. BATH-TUBS AND LAVATORIES. KELLOGG-MACKAY-CAMERON Co., Chicago, Ill.

The letters "K-M-C" in quotations and separated by hyphens, the letters being in fancy script.

Filed July 3, 1905. Serial No. 9,790. PUBLISHED FEBRUARY 20, 1906.

51,617. CULTIVATORS. THE MIDLAND MANUFACTURING Co., Tarkio, Mo.

The word "MIDLAND" on a diamond-shaped field inclosed in a diamond-shaped border.

Filed November 2, 1905. Serial No. 14,208. PUBLISHED FEBRUARY 20 1906.

51,618. STOMACH-BITTERS. MUNYONS HOMŒOPATHIC HOME REMEDY Co, Philadelphia, Pa.

The representation of a pawpaw-tree and a sign-board projected across the trunk of the tree and the words "MUNYON'S PAW-PAW" on said sign.

Filed September 14, 1905. Serial No. 12,564. PUBLISHED FEBRUARY 20, 1906.

51,619. TROUSERS. I. L. PEARL & Co., Johnson, Vt.
The word "JOHNSON." Used ten years.
Filed December 21, 1905. Serial No. 15,560. PUBLISHED FEBRUARY 20, 1906.

51,620. SALVES. PRESTO PHARMACAL COMPANY, Reading, Pa.
The hyphenated word "HE-LIT," which appears above a medallion representation of a man holding a lighted taper and having scrollwork on either side.
Filed October 13, 1905. Serial No. 13,545. PUBLISHED FEBRUARY 20, 1906.

51,621. TAPESTRY-BRUSSELS AND TAPESTRY-VELVET CARPETS. ROXBURY CARPET COMPANY, Boston, Mass.
A pair of interrupted black lines situated near each edge of a carpet extending longitudinally of the fabric of the carpet from end to end upon the back of the same. Used ten years.
Filed July 17, 1905. Serial No. 10,452. PUBLISHED FEBRUARY 20, 1906.

51,622. MEDICINAL, RESTORATIVE, AND REGULATIVE COMPOUNDS. JOSEPH H. SCHENCK, Philadelphia, Pa.
An oblong ornamental figure having displayed centrally thereon two medallions with figures therein, the one to the left representing an emaciated person and the other to the right a robust person, with escutcheons arranged above and below the medallions respectively containing the words "SCHENCK'S" and "MANDRAKE PILLS," and to the left and right, respectively, of the medallions in ornamental sunken fields the abbreviation and words "DR. SCHENCK'S FAMILY MEDICINES" and the words "PULMONIC SYRUP, AND SEA WEED TONIC." Used ten years.
Filed October 20, 1905. Serial No. 13,984. PUBLISHED FEBRUARY 20, 1906.

51,623. STOVES AND RANGES AND REPAIRS AND PARTS THEREFOR. SILL STOVE WORKS, Rochester, N. Y.
The word "STERLING." Used ten years.
Filed October 26, 1905. Serial No. 13,951. PUBLISHED FEBRUARY 20, 1906.

51,624. COFFEE-MILLS. THE SUN MANUFACTURING COMPANY, Columbus, Ohio.
The word "SUN," formed of a capital letter "S" and the small letters "U" and "N" in the arms of the letter "S" and inclosed in concentric circles, with flaming rays radiating from the outer circle to represent the sun.
Filed October 2, 1905. Serial No. 13,224. PUBLISHED FEBRUARY 20, 1906.

51,625. COFFEE-MILLS. THE SUN MANUFACTURING COMPANY, Columbus, Ohio.
The word and figures "No. 1080."
Filed October 2, 1905. Serial No. 13,225. PUBLISHED FEBRUARY 20, 1906.

51,626. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The word "ELECTRA."
Filed October 21, 1905. Serial No. 13,829. PUBLISHED FEBRUARY 20, 1906.

51,627. LAWN-MOWERS. SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.
The words "NEW DEPARTURE."
Filed October 21, 1905. Serial No. 13,831. PUBLISHED FEBRUARY 20, 1906.

51,628. WHISKY. THE THEOBALD AND SON CO., Columbus, Ohio.
The word "OLDWAY."
Filed January 8, 1906. Serial No. 16,033. PUBLISHED FEBRUARY 20, 1906.

51,629. WITHDRAWN.

51,630. HORSE COVERS, NETS, SADDLE-HOUSINGS, LAP-ROBES, AND DUSTERS. WILLIAM AYRES & SONS, Philadelphia, Pa.
The numeral "5" and the letter "A" in juxtaposition.
Filed December 19, 1905. Serial No. 15,509. PUBLISHED FEBRUARY 20, 1906.

51,631. ANILIN DYESTUFFS. C. BISCHOFF & Co., New York, N. Y.
The arbitrarily-selected words "CRESYL BLUE."
Filed August 16, 1905. Serial No. 11,686. PUBLISHED FEBRUARY 20, 1906.

51,632. CERTAIN PROPRIETARY REMEDY FOR EXTERNAL APPLICATION TO ANIMALS. THE BRANDRETH CO., Ossining, N. Y.
The word-symbol "HIPPACEA." Used ten years.
Filed June 27, 1905. Serial No. 9,303. PUBLISHED FEBRUARY 20 1906.

51,633. COTTON PIECE GOODS. CHIQUOLA MANFG. CO., Honea Path, S. C.
The representation of an eagle and a hawk with outspread wings in the attitude of fighting and standing on tree-limbs.
Filed December 7, 1905. Serial No. 15,253. PUBLISHED FEBRUARY 20, 1906.

51,634. CHERRY-RYE PHOSPHATES. COLBURN, BIRKS & Co., Peoria, Ill.
The word "CLARKE'S," under which is a representation of a bunch of cherries. Used ten years.
Filed July 3, 1905. Serial No. 9,755. PUBLISHED FEBRUARY 20, 1906.

51,635. LIQUID PREPARATION FOR THE CURE OF RHEUMATISM. B. T. DAVIS, Huntington, W. Va.
The word "COLCIN."
Filed July 20, 1905. Serial No. 10,602. PUBLISHED FEBRUARY 20, 1906.

51,636. SUPPOSITORIES. DR. PIERRE CHEMICAL COMPANY, Chicago, Ill.
The hyphenated word "BORO-PHENO-FORM."
Filed July 15, 1905. Serial No. 10,391. PUBLISHED FEBRUARY 20, 1906.

51,637. WHISKY. EMINENCE DISTILLERY CO., St. Paul, Minn.
The word "SQUARE," associated with the picture of a distillery and distillery warehouses in an oval design.
Filed January 8, 1906. Serial No. 16,003. PUBLISHED FEBRUARY 20, 1906.

51,638. PERFUMERY. EUGENE RIMMEL LIMITED, London, England.
The representation of a rose with two leaves, generally known as "heraldic rose." Used ten years.
Filed August 4, 1905. Serial No. 11,256. PUBLISHED FEBRUARY 20, 1906.

51,639. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.
The words "SCOTT'S EXTRA COATED." Used ten years.
Filed July 3, 1905. Serial No. 9,606. PUBLISHED FEBRUARY 20, 1906.

51,640. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.
The words "PROTECTION OLD PROCESS."
Filed July 3, 1905. Serial No. 9,609. PUBLISHED FEBRUARY 20, 1906.

51,641. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.
The words "NEVILLE OLD STYLE." Used ten years.
Filed July 3, 1905. Serial No. 9,611. PUBLISHED FEBRUARY 20, 1906.

51,642. TIN AND TERNE PLATES. FOLLANSBEE BROTHERS COMPANY, Pittsburg, Pa.
The word "DUQUESNE." Used ten years.
Filed July 3, 1905. Serial No. 9,616. PUBLISHED FEBRUARY 20, 1906.

51,643. WHISKY. GEO. BENZ & SONS, St. Paul, Minn.
The word "PICKWICK."
Filed January 8, 1906. Serial No. 15,969. PUBLISHED FEBRUARY 20, 1906.

51,644. WHISKY. GEO. BENZ & SONS, St. Paul, Minn.
The words "PICKWICK CLUB." Used ten years.
Filed January 8, 1906. Serial No. 15,977. PUBLISHED FEBRUARY 20, 1906.

51,645. CHEMICAL FIRE-EXTINGUISHERS. GRAAFF & Co. G. M. B. H., Berlin, Germany.
The word "MINIMAX."
Filed July 15, 1905. Serial No. 10,400. PUBLISHED FEBRUARY 20, 1906.

51,646. ANTISEPTIC FOR LOCAL AND INTERNAL USE. H. K. MULFORD COMPANY, Philadelphia, Pa.

The symbol-word "BENZO-FORMOL COMP."

Filed July 17, 1905. Serial No. 10,480. PUBLISHED FEBRUARY 20, 1906.

51,647. MEDICINAL MINERAL OIL. H. K. MULFORD COMPANY, Philadelphia, Pa.

The word "BLANDINE."

Filed July 17, 1905. Serial No. 10,483. PUBLISHED FEBRUARY 20, 1906.

51,648. REMEDY FOR THE TREATMENT OF REMITTENT AND PERNICIOUS MALARIAL FEVERS. H. K. MULFORD COMPANY, Philadelphia, Pa.

The hyphenated word "CHIL-CEDINE."

Filed July 17, 1905. Serial No. 10,484. PUBLISHED FEBRUARY 20, 1906.

51,649. MEDICINAL PREPARATION IN SUPPOSITORY OR OINTMENT FORM. H. K. MULFORD COMPANY, Philadelphia, Pa.

The word "TANICHTHOL."

Filed July 17, 1905. Serial No. 10,485. PUBLISHED FEBRUARY 20, 1906.

51,650. GRANULAR EFFERVESCENT SALT. H. K. MULFORD COMPANY, Philadelphia, Pa.

The word "SALICYLOS."

Filed July 17, 1905. Serial No. 10,489. PUBLISHED FEBRUARY 20, 1906.

51,651. REMEDY FOR DISEASES OF THE LIVER AND DIGESTIVE TRACT. HIGHLAND DRUG COMPANY, Newburgh, N. Y.

The word "MACWELL" in script, with a paraph extending from the letter "M" and having the words "LIVER REMEDY" thereon.

Filed July 29, 1905. Serial No. 11,007. PUBLISHED FEBRUARY 20, 1906.

51,652. HOSE-SUPPORTERS. CHRISTINA J. HIGLEY, New York, N. Y.

The word "HERCULES."

Filed December 18, 1905. Serial No. 15,494. PUBLISHED FEBRUARY 20, 1906.

51,653. SNIPS, SHEARS, AND SCISSORS. THE INTERNATIONAL CUTLERY COMPANY, Fremont, Ohio.

The word "DANDY" on a scroll-shaped figure.

Filed July 3, 1905. Serial No. 9,671. PUBLISHED FEBRUARY 20, 1906.

51,654. HEATING AND COOKING STOVES. JOLIET STOVE WORKS, Joliet, Ill.

The letter "M."

Filed August 22, 1905. Serial No. 11,918. PUBLISHED FEBRUARY 20, 1906.

51,655. WHISKY. W. H. JONES & Co., Boston, Mass.

The word "BUTTERNUT."

Filed January 8, 1906. Serial No. 16,008. PUBLISHED FEBRUARY 20, 1906.

51,656. WHISKY. W. H. JONES & Co., Boston, Mass.

The word "BIGWOOD."

Filed January 8, 1906. Serial No. 16,009. PUBLISHED FEBRUARY 20, 1906.

51,657. DANDRUFF AND SKIN CURE. ALFRED J. KRANK, St. Paul, Minn.

The word "OSIRIS," accompanied by a representation of one form of the god Osiris, in which the god is shown as having the head and neck of a bird on the body of a human being.

Filed June 30, 1905. Serial No. 9,518. PUBLISHED FEBRUARY 20, 1906.

51,658. NUTRITIVE TONICS AND TISSUE-BUILDERS. HAKEN MORSE, New Rochelle, N. Y.

The word "ORIOSOL."

Filed September 7, 1905. Serial No. 12,314. PUBLISHED FEBRUARY 20, 1906.

51,659. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio.

The words "KENTUCKY LILY."

Filed January 8, 1906. Serial No. 15,981. PUBLISHED FEBRUARY 20, 1906.

51,660. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio.

The word "MILLSTONE," associated with a monogram of the letters and abbreviation "M D Co" inclosed in two concentric circles ornamented with a spray of grain.

Filed January 8, 1906. Serial No. 15,982. PUBLISHED FEBRUARY 20, 1906.

51,661. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio.

The words "GRAIN BELT."

Filed January 8, 1906. Serial No. 15,984. PUBLISHED FEBRUARY 20, 1906.

Filed January 8, 1906. PUBLISHED FEBRUARY 20, 1906.

51,662. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio.

The words "GOLDEN BELL."

Filed January 8, 1906. Serial No. 15,987. PUBLISHED FEBRUARY 20, 1906.

51,663. PLOWS. PARLIN & ORENDORFF CO., Canton, Ill.

The word "SUCCESS."

Filed August 3, 1905. Serial No. 11,210. PUBLISHED FEBRUARY 20 1906.

51,664. BUGGIES AND CARRIAGES. THE ROCK HILL BUGGY CO., Rock Hill, S. C.

An ornamental panel having circular and curved end ornaments and bearing the words "ROCK HILL BUGGY CO. ROCK HILL, S. CAROLINA," these words being divided into two lines, and between them is a panel of solid color bearing the words "ROCK HILL GRADE" and the representation of a rocky hill.

Filed August 17, 1905. Serial No. 11,723. PUBLISHED FEBRUARY 20, 1906.

51,665. BUGGIES AND CARRIAGES. THE ROCK HILL BUGGY CO., Rock Hill, S. C.

An ornamental panel having circular and curved end ornaments and bearing the words "ROCK HILL BUGGY CO ROCK HILL, S. CAROLINA." The words are divided into two lines, and between them is a panel of solid color bearing the words "CAROLINA GRADE." Between these two words is the representation of a tree, and on each side of the lower portion of the tree is an ellipse.

Filed August 17, 1905. Serial No. 11,725. PUBLISHED FEBRUARY 20 1906.

51,666. WHISKY. RICHARD A. SPLAINE & Co., Haverhill, Mass.

The words "WILLIAM TELL," associated with a design showing a picture of William Tell shooting an apple from a boy's head, with soldiers in the background inclosed, in an oval-shaped outline.

Filed January 8, 1906. Serial No. 16,021. PUBLISHED FEBRUARY 20, 1906.

51,667. ELECTRIC FUSES WITH OR WITHOUT CAP. STAR ELECTRIC FUSE WORKS, Wilkes-Barre, Pa.

A five-pointed star, the halves of the points of which are alternately dark and light.

Filed July 31, 1905. Serial No. 11,059. PUBLISHED FEBRUARY 20, 1906.

51,668. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y.

The representation of a balance-beam scale.

Filed June 27, 1905. Serial No. 9,174. PUBLISHED FEBRUARY 20, 1906.

51,669. CELLULOID HAIR-PINS. THOMAS J. TAYLOR COMPANY, New York, N. Y.

The portrait of Marie Antoinette inclosed in an ornamental frame, associated with the name "MARIE ANTOINETTE," appearing on the frame.

Filed August 7, 1905. Serial No. 11,402. PUBLISHED FEBRUARY 20, 1906.

51,670. LADIES' BELTS. ANNE E. TOMLINSON, New York, N. Y.

The word "PRINCETTE."

Filed December 9, 1905. Serial No. 15,306. PUBLISHED FEBRUARY 20, 1906.

51,671. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.

The word "FASCINATOR."

Filed July 21, 1905. Serial No. 10,674. PUBLISHED FEBRUARY 20, 1906.

51,672. COMBS. Dr. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.

The word "NEPTUNE."

Filed July 21, 1905. Serial No. 10,675. PUBLISHED FEBRUARY 20, 1906.

51,673. INTERNAL REMEDIES FOR HEADACHES. G. VAN ANTWERP & SON, Mobile, Ala.

The representation of an arrow with a monogram of the letters "V B" thereon, with a scroll above having the word "BROMO" thereon and a scroll below having the word "VIN" thereon.

Filed August 8, 1905. Serial No. 11,433. PUBLISHED FEBRUARY 20, 1906.

51,674. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio.

The word "PATHFINDER" and the letter "W" crossed by an arrow inclosed by a fanciful wreath.

Filed January 8, 1906. Serial No. 15,997. PUBLISHED FEBRUARY 20, 1906.

51,675. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio.

The words "OLD HORNPIPE."

Filed January 8, 1906. Serial No. 16,000. PUBLISHED FEBRUARY 20, 1906.

LABELS

REGISTERED APRIL 17, 1906.

12,781.—*Title:* "IMPORTED." (For Cigars.) A. T. KINNEY, St. Paul, Minn. Filed March 19, 1906.

12,782.—*Title:* "FABRICA DE TABACOS, CIGAROS EXQUISITOS." (For Cigars.) THE OTIS LITHOGRAPH CO., Cleveland, Ohio. Filed March 7, 1906.

12,783.—*Title:* "HERBS H T TONIC." (For a Tonic.) KILIAN HERBERT, Chicago, Ill. Filed March 21, 1906.

12,784.—*Title:* "FRANKLIN TABLETS." (For Medicine.) EDWARD TAYLOR RIDER, Malone, N. Y. Filed March 16, 1906.

12,785.—*Title:* "GITT'S ANTI KRY." (For Medicine.) CHARLES D. GITT, Danville, Va. Filed March 15, 1906.

12,786.—*Title:* "CHAMPAGNE GINGER ALE." (For Ginger-Ale.) RICHARD FRANK & Co., New York, N. Y. Filed March 20, 1906.

12,787.—*Title:* "MIRTHFUL SCOTCH WHISKEY." (For Scotch Whisky.) ELDER-HARRISON Co., Baltimore, Md. Filed March 16, 1906.

12,788.—*Title:* "BOARDMAN'S PUTNAM COFFEE JAVA & MOCHA." (For Coffee.) THE WM. BOARDMAN & SONS CO., Hartford, Conn. Filed March 21, 1906.

12,789.—*Title:* "CRYSTAL BRAND." (For Sal-Soda.) THE JOHN H. VOSS COMPANY, Delray, Mich. Filed December 22, 1905.

12,790.—*Title:* "ASTANBY." (For Toilet-Paper.) SCOTT PAPER CO., Philadelphia, Pa. Filed March 22, 1906.

12,791.—*Title:* "NEVOBURNA." (For Fireproofing Starch Compound.) JOSEPH WEILIE MAXWELL, Louisville, Ky. Filed February 5, 1906.

12,792.—*Title:* "FLEMING SHOE MACHINE THREAD." (For Shoe-Machine Thread.) LANDIS MACHINE COMPANY, St. Louis, Mo. Filed March 16, 1906.

12,793.—*Title:* "ROYAL ANTI-RUST ENAMEL." (For Enamel.) J. S. GRAINER & Co., Grand Rapids, Mich. Filed March 19, 1906.

12,794.—*Title:* "K-A-U-R-I." (For Varnish.) BROOKLYN VARNISH M'F'G Co., Brooklyn, N. Y. Filed February 5, 1906.

PRINTS

REGISTERED APRIL 17, 1906.

1,621.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed March 21, 1906.

1,622.—*Title:* "CENTENNIAL PRIZE MEDAL." (For Malt Liquors.) JACOB RUPPERT, New York, N. Y. Filed October 4, 1906.

1,623.—*Title:* "VELVO." (For a Face-Massage Cream.) GEO. C. KRUSEN, Philadelphia, Pa. Filed March 21, 1906.

1,624.—*Title:* "THE GEM FOLDING TAKE-UP TWINE AND PAPER BAG HOLDER." (For Twine-Holders.) ELVAH O. BULMAN, Grand Rapids, Mich. Filed March 17, 1906.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE KINNEY AND SCHULTZ.

Decided January 13, 1906.

1. FINAL REJECTION—EXAMINER'S ACTION UNDERSTOOD.

Where the applicant understood the Examiner's first action in all essential particulars and the next Office action merely restated the original ground of rejection, *Held* that a request that an amendment filed after final rejection be admitted should be denied.

2. SAME—ADDITIONAL EXPLANATION—CASE NOT REOPENED.

Where the final rejection referred to no new reasons or references and the invention was simple, the fact that a more extended explanation of the same ground of rejection was given furnishes no reason for reopening the case for the consideration of additional claims.

ON PETITION.

DETERSIVE COMPOUNDS.

Messrs. Parker & Burton for the applicants.

ALLEN, *Commissioner:*

This is a petition that the Primary Examiner be advised that an amendment which was filed after final rejection be admitted and considered.

This request appears to be based upon two grounds: First, that up to the time of that action the petitioners were not fully advised of the position of the Examiner, because his letters of rejection were not clear, and, second, the action relied upon as a final rejection gave new reasons for rejection, and was not, therefore, a proper final action.

The Examiner wrote a letter December 20, 1904, prior to his final rejection, and it appears from the applicants' reply thereto that they understood the Examiner's action in all essential particulars. The only question of possible doubt was a statement of a theory of action of the elements in the compound. That this theory did not affect the real ground of rejection is evident from the fact that the next Office action, which was a mere restatement of the grounds of rejection, did not refer to it in any way.

The Examiner's action was sufficiently clear to be understood, and therefore the first ground for alleging that the final rejection was improper is not well founded.

As to the second ground for the request, it is found that the final rejection did not state new reasons for rejection. The letter of final rejection referred to no references which had not before been relied upon. Attention was directed therein to certain statements found in one of the references, giving the page and line where such statements were found; but this was not the citation of new reasons for rejection. The reasons for rejection were the same and the material upon which the rejection was based was the same. The patent cited related to but one invention. It was a simple invention and the description was not extended, so that it was not necessary to give more than a general statement of what it was thought to disclose. The fact that a more extended explanation of the same ground of rejection was given does not furnish a reason for reopening the case for the consideration of additional claims.

The petition is denied.

MOORE *v.* CURTIS.

Decided January 18, 1906.

1. INTERFERENCE—SUSPENSION OF PROCEEDINGS ON ONE MOTION DOES NOT EXTEND TWENTY-DAY PERIOD FOR OTHER MOTIONS.

Where proceedings are suspended pending the final determination of a motion brought within the twenty days, such suspension does not operate to extend the period for bringing other motions, and a motion brought after the twenty days should not be transmitted, although the case is still under suspension.

2. SAME—JURISDICTION OF PRIMARY EXAMINER.

Where an interference is transmitted to the Primary Examiner for the consideration of one question, he is without jurisdiction to consider an entirely independent question.

3. SAME—DELAY IN BRINGING MOTION—SHOWING INSUFFICIENT.

A delay of three months in bringing a motion to dissolve is not excused because of alleged delay to the moving party in procuring copies of two applications which are referred to in the preliminary statement of the opposing party. It was not necessary to the bringing of the motion to procure copies of such applications, as they were not included in the interference and could not, therefore, form a basis for its dissolution.

APPEAL on motion.

TURBINES.

Mr. Thomas D. Stetson and *Mr. C. J. Hedrick* for Moore.

Messrs. Dyer & Dyer for Curtis.

ALLEN, *Commissioner:*

This is an appeal by Curtis from a decision of the Examiner of Interferences transmitting Moore's motion to dissolve.

The twenty days allowed for motions, as provided by Rule 122, expired August 18, 1905. On this day motions for a re-formation of the interference, so as to include a prior application of the moving party, and a stay of proceedings were presented, together with a motion to transmit to the Primary Examiner the motion to re-form the interference. The motion to transmit the interference to the Primary Examiner was denied, and proceedings were suspended pending the final determination of that motion.

Appeal was taken from the refusal to transmit, which appeal was withdrawn September 13, 1905. On the same day a motion to amend the interference was filed, accompanied by the usual motions to transmit and for a stay of proceedings. This motion was transmitted and proceedings were suspended. It appears from the statement of counsel for Moore that at the hearing before the Primary Examiner on Curtis's motion to amend counsel for Moore presented a motion to dissolve the interference, which the Examiner refused to consider, on the ground that he had no jurisdiction to consider it, as it had not been transmitted to him by the Examiner of Interferences. In view of this holding the motion to dissolve was presented to the Examiner of Interferences, who transmitted it to the Primary Examiner. In granting the motion to transmit the Examiner of Interferences stated that the motion of Curtis to re-form the interference—

> was filed before the twenty days had expired, and since proceedings were suspended and have not since been resumed the time within which motions may be brought is still running.

But it has been held in a number of decisions that the pendency of one motion is no excuse for the failure to bring other motions, and a suspension of proceedings as to one motion does not extend the period of time for bringing other motions. (*Perussel* v. *Wichmann*, 99 O. G., 2970; *Harvey* v. *Lubbers* v. *Raspillaire*, 112 O. G., 1215; *Ingoldsby* v. *Bellows*, 113 O. G., 2219; *Pfingst* v. *Anderson*, 117 O. G., 597.)

It must be held, therefore, that Moore's motion of November 14 was not brought within the time allowed him, but, on the contrary, was brought nearly three months thereafter. It follows, therefore, that the motion should not be transmitted without a very clear showing under oath why it was not presented at the proper time.

The verified showing now on file in support of the motion consists principally in the statements that Curtis's preliminary statement referred to two prior applications, and it was deemed necessary to examine and secure abstracts of these applications, in addition to the papers of the application directly involved in the interference, before the motion could be brought; that deponent was until November 9 of the opinion that the pendency of Curtis's motion dispensed with the necessity of transmitting a motion to dissolve through the Examiner of Interferences, and that he was of the opinion that it could be presented to the Primary Examiner at the hearing on Curtis's motion.

This showing is insufficient. It is well settled that where an interference is transmitted to the Primary Examiner for the consideration of one question he is without jurisdiction to consider an entirely independent question. Appellant is therefore charged with the knowledge that the Primary Examiner could not consider a motion to dissolve when the interference had been transmitted only for the purpose of considering an amendment of the issue.

Likewise the supposed necessity of securing copies or abstracts of the prior applications referred to in the preliminary statement of Curtis is not a sufficient excuse. Interferences are not dissolved because of allegations in preliminary statements or because of anything found in applications which are not directly included in the interference. In declaring an interference prior applications which are not included are not taken into consideration, and the purpose of a motion to dissolve being to correct any error that may have been committed in declaring the interference it follows that as such prior applications were not considered no error could have been committed on account of them.

The decision of the Examiner of Interferences is reversed.

ZIMMERMANN *v.* ZAMBONI.

Decided January 20, 1906.

INTERFERENCE—DISSOLUTION—APPEAL ON MOTION—INTERFERENCE IN FACT AND RIGHT OF PARTY TO MAKE CLAIM.

Where the argument on a motion to dissolve on the ground of no interference in fact raises the question whether a party is entitled to make the claim corresponding to the count, *Held* that this question of his right to make the claim is to be reviewed if at all, with the final decision in the interference and not upon interlocutory appeal.

APPEAL on motion.

PULLEY OR WHEEL.

Mr. Rudolph M. Hunter for Zimmermann.

Mr. Charles Kintner for Zamboni.

ALLEN, *Commissioner:*

This is an appeal by Zamboni from the decision of the Primary Examiner denying his motion for a dissolution of the interference as to count 1.

In the appeal it is said:

> The Examiner erred in not holding that there was no interference in fact as to count 1, and not holding that the references relied upon anticipate the Zimmermann structure.

Under the express provisions of Rule 124 there is no interlocutory appeal from the Examiner's ruling that the issue is patentable, and therefore that matter will not be considered.

In his decision the Examiner said:

> As to the first ground of the motion, no reason was presented as to there being no interference in fact, and as both parties make the claims of the issue that portion of the motion is denied.

On the present appeal it has not been pointed out that the terms of the issue mean different things when applied to the two cases. The argument goes rather to the question whether Zimmermann is entitled to make a claim corresponding to count 1. It is clear that if he has a right to make the claim it means the same thing as it does in Zamboni's case. The question as to his right is to be reviewed, if at all, with the final decision in the interference and not upon interlocutory appeal.

The Examiner was right in refusing to dissolve the interference on the ground that there is no interference in fact, and therefore his decision is affirmed.

SCOTT *v.* HAYES AND BERGER.

Decided January 31, 1906.

INTERFERENCE—MOTION TO DISSOLVE—INSUFFICIENCY OF OATH ACCOMPANYING APPLICATION.

A motion to dissolve setting up irregularity on account of the insufficiency of the oath to the application of the opposing party by reason of the failure of the officer administering the same to impress his seal thereon should not be transmitted to the Primary Examiner where it appears from an affidavit of such officer that at the time he administered the oath he was empowered to do so and that he was not provided with a seal and from a certificate of the clerk of the county in which the oath was executed that at the time it was executed such officer did, in fact, have power to administer it.

APPEAL on motion.

SEWING-MACHINE.

Mr. Thos. E. Robertson and *Messrs. Robertson & Johnson* for Scott.

Mr. Charles L. Sturtevant for Hayes and Berger.

ALLEN, *Commissioner:*

This is an appeal by Scott from the decision of the Examiner of Interferences refusing to transmit to the Primary Examiner a motion to dissolve the interference on the ground that there was irregularity in the declaration. Scott has also filed a petition asking that the question of irregularity raised by him be considered and the interference dissolved.

In the motion papers it is alleged by Scott that the application of Hayes and Berger was irregular, informal, and incomplete, for the reason that no proper oath accompanied it. The oath purported to be executed before F. P. Ashley as notary public; but no official seal was impressed upon the paper upon which the oath was written. Scott contends that the absence of the seal renders the paper purporting to be an oath invalid and of no effect, and therefore urges that Hayes and Berger have not completed their application and have no standing in the interference.

On behalf of Hayes and Berger an affidavit has been filed by Ashley alleging that he was a notary public at the time the oath was executed and was then empowered to administer oaths and that he was not provided with a seal. A certificate has also been filed by the clerk of the county in which the oath was executed to the effect that F. P. Ashley was, in fact, a notary public empowered to administer oaths at the time that the oath to the application of Hayes and Berger was executed. It is therefore clear that Hayes and Berger did make oath to the application and that there is no force to the objection made by Scott.

The decision of the Examiner of Interferences is affirmed and the petition is dismissed.

EX PARTE SLEEPY EYE MILLING COMPANY.

Decided March 8, 1906.

TRADE MARKS—PUBLICATION NO BAR TO REQUIREMENT OF DESCRIPTION.

The fact that the trade-mark has been published is no good reason why the Examiner of Trade-Marks may not require a description of the trade-mark as shown in the drawing.

ON APPEAL.

TRADE-MARK FOR WHEAT FLOUR.

Mr. Patrick H. Gunckel for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks requiring that the application include a description of the trade-mark as shown in the drawing.

The Examiner's action was in accordance with the express requirement of the statute as fully set forth in *ex parte The Carborundum Company*, (118 O. G., 2250.) The fact that this mark has been published does not prevent the refusal of registration where good ground for refusal appears. (*Ex parte Cluett, Peabody & Company*, 120 O. G., 902.)

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE THE CHAPOT-SHIRLAW COMPANY.

Decided March 14, 1906.

1. TRADE-MARKS—EXAMINER'S RULING A JUDICIAL DECISION SUBJECT TO APPEAL.

The action of the Examiner of Trade-Marks holding that an application filed prior to the passage of the act of February 20, 1905, was not a pending case and refusing to permit an amendment to the application to bring it under the provisions of the act was a judicial decision subject to review on appeal.

2. SAME—RETURN OF FEE.

Where the applicant accepted the decision of the Examiner without appeal and filed a new application, *Held* he is not entitled to the return of the filing fee on said application, notwithstanding the decision in *ex parte Griserin-Werke Paul Camphausen G. M. B. H.*, (120 O. G., 327.)

ON PETITION.

TRADE-MARK FOR CHAMOIS-SKINS AND ARTICLES MADE THEREFROM.

Mr. Vernon E. Hodges for the applicant.

ALLEN, *Commissioner:*

This is a petition for the return of the fee of ten dollars paid upon the filing of the above-entitled application.

It appears that the petitioner filed an application for the registration of a trade-mark prior to the passage of the act of February 20, 1905, and that after the passage of the act the Examiner of Trade-Marks refused to permit it to amend the case to bring it under the provisions of the act, because it was not a pending case. The petitioner thereupon filed the present application covering the same subject-matter. It now calls attention to the decision in *ex parte Griserin-Werke Paul Camphausen G. M. B. H.* (120 O. G., 327) and says that in view thereof the Examiner was wrong in ruling that the original application was not pending and subject to amendment to bring it under the provisions of the new law. It is upon the ground of this alleged misinformation on the part of the Examiner that the petitioner now asks for the return of the fee paid in the present case.

The Examiner's ruling was a judicial decision subject to review upon appeal, and since the applicant accepted his decision without appeal it is not entitled to the return of the fee in the present case because of the alleged misinformation. It necessarily exercised its judgment in determining whether it would appeal from the ruling or file a new application. Having determined to file a new application, the payment of the fee was required by law.

The petition is denied.

EX PARTE RUPPERT.

Decided March 14, 1906.

1. PRINT—TITLE GIVEN NOT ON PRINT.

Where the title given to a print does not appear on it, *Held* that registration was properly refused.

2. SAME—SAME—CURING OBJECTION.

Where objection is made that the title does not appear upon the print, *Held* that the objection may be cured by filing copies having the proper title printed thereon or by changing the title to that which appears upon the present copies.

3. SAME—INDICATION OF MERCHANDISE.

Held that a print for malt liquors which includes as an essential feature a representation of a beer-keg is a sufficient indication of the merchandise for which it was designed.

ON PETITION.

PRINT FOR MALT LIQUORS, INCLUDING BEER AND ALE.

Mr. J. L. Atkins for the applicant.

ALLEN, *Commissioner:*

This is a petition from the decision of the Primary Examiner refusing to register a print for malt liquors entitled "The Ruppert Eagle."

The title given to the print does not appear on it, as required in the rules of practice, and this constitutes one of the grounds for refusing registration. Additional ground for refusal stated by the Examiner is that the print does not describe or indicate the merchandise for which it was designed.

An examination of the print shows that it includes as an essential feature a representation of a beer-keg, and it is believed that this is a sufficient indication of the merchandise. The objection that the label is not descriptive should not be insisted upon.

The objection that the title does not appear upon the label is well founded and under the express provisions of the rules must be insisted upon. This objection may be cured by filing copies having the proper title printed thereon or by changing the title to that which appears upon the present copies.

The decision of the Examiner refusing registration is affirmed.

BASS, RATCLIFF & GRETTON, LIM., *v.* HARTMANN BREWING COMPANY.

Decided March 19, 1906.

1. TRADE-MARKS—NOTICE OF OPPOSITION—TIME FOR FILING.

Where the notice of opposition to the registration of a trade-mark was filed one day after the expiration of the thirty days allowed by law, *Held* that said notice is of no force or effect.

2. SAME—SAME—MUST BE MADE BY EXECUTIVE OFFICERS OF CORPORATION.

Where a notice of opposition is filed in behalf of a corporation, *Held* that the oath should be furnished by one of the executive officers of said corporation, together with a statement of his authority to act as the agent of the corporation.

3. SAME—SAME—DISMISSED WHEN MADE BY ATTORNEY.

Where a notice of opposition filed in behalf of a corporation was made by its attorney, *Held* that there is no more authority for accepting the notice of opposition and oath of an attorney for a corporation than for accepting a corresponding notice and oath for an individual, and the Examiner was right in dismissing the opposition.

4. SAME—AMENDMENT TO APPLICATION—REPUBLICATION UNNECESSARY.

Where after the publication of the mark an amendment is made to the application for a trade-mark eliminating some of the goods upon which the mark is used, *Held* that there is no necessity for republishing the trade-mark.

APPEAL from Examiner of Interferences.

TRADE-MARK FOR LAGER-BEER.

Mr. F. W. Smith, Jr., and *Messrs. Mason, Fenwick & Lawrence* for Hartmann Brewing Company.

Mr. Arthur Steuart for Bass, Ratcliff & Gretton, Lim.

ALLEN, *Commissioner:*

This is an appeal by Bass, Ratcliff & Gretton, Limited, from the decision of the Examiner of Interferences dismissing its opposition to the registration of a trade-mark by the Hartmann Brewing Company.

The ground of the dismissal was that the notice of opposition and its supporting oath were not made by Bass, Ratcliff & Gretton, Limited, but by its attorney.

It appears that the applicant's mark was published in the OFFICIAL GAZETTE on May 9, 1905, and that on June 7, 1905, notice of opposition was filed in behalf of Bass, Ratcliff & Gretton, Limited, by Mr. Arthur Steuart as attorney. On June 9 notice of opposition was filed on behalf of Bass, Ratcliff & Gretton, Limited, by "John Lambrick, secretary." This last notice was filed one day after the expiration of the thirty days allowed by law and is therefore of no force or effect. The opposition can be sustained, if at all, only upon the notice filed by Steuart as attorney.

In *Martin* v. *Martin & Bowne Company* (119 O. G., 962) it was held that the notice of opposition must be signed and sworn to by the party who believes that he would be damaged by registration, and not by his attorney. That decision has been affirmed by the Court of Appeals of the District of Columbia. In the present appeal it is said that Bass, Ratcliff & Gretton, Limited, is a corporation and can act only by agent, and it is urged, therefore, that the opposition and affidavit made in its behalf by its attorney is a compliance with the law. It is urged that the requirement for the personal oath of the one opposing cannot apply and was not intended to apply to a corporation.

In regard to this matter it may be said that a corporation can act by its executive officers when it is necessary, and in the present case it is thought that the oath should be furnished by such an officer, with a statement of his authority to act as the agent of the corporation.

As pointed out in the case of *Martin* v. *Martin & Bowne Company, supra*, the statute clearly and specifically requires that "said notice of opposition shall be verified by the person filing the same," and this is the same "person who believes he would be damaged by the registration of a mark." (Sec. 6.)

Section 29 of this act provides that—

> The terms "person" and "owner" and any other word or term used to designate the applicant or other entitled to a benefit or privilege or rendered liable under the provisions of this act, include a firm, corporation, or association as well as a natural person.

There is no more authority either in reason or in the terms of the law for accepting the notice of opposition and oath of an attorney for a corporation than for accepting a corresponding notice and oath for an individual. The Examiner was right in dismissing the opposition.

The appellant here alleges in his appeal that the applicant's trade-mark should have been published a second time, because of an amendment to the application after the first publication. The amendment restricted the field covered by the application by eliminating some of the goods upon which the mark is used. Since the original publication included all of the goods now claimed and, in addition, others which have been abandoned, there appears to be no necessity for republication. The original publication was notice of the applicant's present claim of ownership, and any one desiring to oppose its claim has had ample opportunity to do so. Republication would simply afford a second opportunity without apparent necessity.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

SEEBERGER *v.* RUSSEL.

Decided December 6, 1905.

1. INTERFERENCE—PRIORITY—REDUCTION TO PRACTICE—EVIDENCE NECESSARY TO ESTABLISH SUCCESSFUL OPERATION.

Where a device embodying the invention in issue is shown to have been constructed and the question is whether or not such device operated successfully and satisfactorily, the testimony of the inventor and of two witnesses who showed that they were thoroughly familiar with the construction, that the device operated successfully, and that they used it a number of times is sufficient to warrant the conclusion that such device was an actual reduction to practice, and it is unnecessary that the facts on which they base their conclusion appear in the record.

2. SAME—SAME—CIRCUMSTANCES CREATING UNFAVORABLE INFERENCE AS TO SUCCESSFUL TEST.

Where the invention in issue related to an auxiliary traveling platform in combination with an escalator and it appears that after an alleged successful operation the platform was removed from the escalator and never replaced and some of the parts disappeared and twelve escalators were built without the platform, *Held* that these circumstances when unexplained tend strongly to create the inference that the alleged test was not regarded as successful; but when a reasonable and satisfactory explanation thereof is given such an inference is unwarranted.

3. SAME—SAME—DELAY IN FILING APPLICATION AFTER REDUCTION TO PRACTICE.

Where the reduction to practice of the invention was clearly established, a delay of two and a half years in filing the application therefor is not sufficient to destroy the weight of proof of actual reduction to practice, especially where it appears that drawings showing substantially the same construction as the original device were sent to applicant's attorneys more than a year before the application was filed and before any one else had entered the field.

Mr. Chas. E. Foster for the appellant,

Mr. C. T. Benedict and *Mr. A. L. Morsell* for the appellee.

SHEPARD, *J.:*

This is an interference proceeding between rival claimants of the invention described in the following issue:

1. The combination with an endless movable carrier, of a landing, said landing consisting of a fixed framework and one or more movable parts or sections, and means for moving the upper surface of the movable portion of said landing in the same direction as and independently of the moving carrier.

2. In a device of the class described, the combination with the ways having the inclined and horizontal portions, of the steps mounted to travel thereon and forming a landing on the horizontal portion, means for driving said steps, an auxiliary landing adjacent to the landing formed by the steps, and means for driving said auxiliary landing at different speed from that of the steps.

The application of Russel was filed February 15, 1902, that of Seeberger, June 7, 1902. Both disclose a traveling stairway or escalator composed of an endless chain of steps which assume the form of stairs when moving up the inclined ways, and the flat condition of an ordinary landing when traveling in a horizontal plane. In combination with such a structure is shown an auxiliary landing traveling in the same direction as the stairway, but at a lower rate of speed in order to facilitate entrance upon, and exit from the higher-speed stairway when moving in a horizontal plane. When the stairway is moving at the ordinary speed required in the majority of cases, say not more than one hundred feet per minute, the auxiliary landing is not necessary to enable the average user to step with safety from the stairway to the stationary landing.

The Examiner of Interferences awarded priority to Russel, and was reversed by the Examiners-in-Chief, who, in turn, were reversed by the Commissioner.

Russel alleges conception of the invention in December, 1900, disclosure to others about August 12, 1901, and admits that no model, or full-sized machine embodying the invention have ever been made. Whether these dates have been established is immaterial, for all of the tribunals of the Patent Office agree that Seeberger conceived the invention and disclosed it to others between June and December of 1899. The substantial question for determination is, whether, during that time as alleged, Seeberger reduced the invention to practice. The Examiners-in-Chief were clearly of the opinion that he did. The Examiner of Interferences was equally convinced, from all of the evidence and surrounding circumstances, that what he did amounted to nothing more than an abandoned experiment, and that he was not exercising diligence when Russel entered the field. The Commissioner said that the decision depended upon the legal effect to be given to the work done by Seeberger in 1899, for if that was not a reduction to practice, he had not shown the requisite diligence thereafter. He then said:

Seeberger and his witnesses Henderson and Venn testify that they were employd by the Otis Elevator Company in 1899, and that there was built for this company, under the direction of Seeberger, at Yonkers, New York, a machine which consisted of the combination with a traveling stairway of an auxiliary traveling landing. Seeberger states that he conceived the combined stairway and landing some time before the landing was actually placed upon the machine, but that it was not placed on the machine until the fall of 1899, and that it was operated at that time with satisfactory results. Venn testifies to the same effect. Henderson testifies to the same facts. There is therefore no doubt of the fact that an apparatus embodying the invention of the issue, namely, a traveling stairway in combination with an auxiliary traveling landing, was actually constructed as early as November 1899, and experimented with for a short period of time. It is necessary to determine whether this device was a reduction to practice of the invention of the issue by Seeberger.

In the testimony of these witnesses above referred to, it is to be noted that they merely state that in their opinion the result of the experiments was satisfactory. No facts, however, appear from the record upon which a conclusion may be reached that these witnesses were justified in their opinions. The Court of Appeals of the District of Columbia, in the case of *Gallagher* v. *Hien*, (115 O. G., 1330; 25 App. D. C., 77; 83,) held that such facts should appear from the record in order to warrant the holding that the inventor and his witnesses were right in their opinion that the results of certain tests were satisfactory. In that case, Gallagher and his witnesses testified that tests of the device under consideration had been made and that the tests were satisfactory. The court said with respect to this testimony that the mere opinion of the witnesses as to the alleged successful tests could not be accepted in the absence of any facts appearing in the record "which enable us to determine whether he (Gallagher) was justified in his conclusion that the result of the test was satisfactory."

We are constrained to disagree with this view of the evidence relating to the reduction to practice, and of the application of the doctrine of *Gallagher* v. *Hien*. It must be remembered that Seeberger had for several years been occupied in the invention and perfection of the escalator—a name which he had himself coined.

Venn was also an inventor and expert in the art. Henderson was a mechanical draftsman of the Otis Elevator Company and had worked on plans and patterns for the escalator erected in 1899. This was used in a building of the Otis Elevator Company to test it, and was exhibited to visitors. Working satisfactorily, it was, more than a year afterward, transferred to the department store of the Siegel & Cooper Co. in Chicago, adapted to the conditions there, and put in constant use. Venn, who was familiar with all the details of Seeberger's drawings and constructions, testified that the auxiliary traveling landing was attached to this construction in the fall of 1899, and having particularly described its construction, attachment and operation, said:

It was driven at half the speed of the steps and in the same direction as the steps. It was located at the top landing alongside of, and running parallel with the horizontal run of the steps.

He then said that he saw the escalator and auxiliary landing in actual operation frequently, and that he rode upon it a dozen or more times, making use of the traveling auxiliary landing for the purpose of getting off the escalator at the top. After this, he said that he found it satisfactory and successful. Henderson, with the drawings before him, gave an elaborate description of the construction, attach-

ment and operation of the auxiliary landing. He said that he rode upon the escalator and used the auxiliary landing constantly, during the month and more that it was attached, and found it both satisfactory and successful. During this time no change or improvement was made in it. Seeberger testified even more fully as to construction and operation and produced a diary, apparently regularly kept and free from suspicion, showing an entry to the effect that the auxiliary landing was working successfully. It appears, beyond all question, that he wrote to his patent attorneys on March 31, 1901, describing the auxiliary landing and sent them several sheets of drawings identical with those attached to this application. According credibility to all of these witnesses, as was done by all of the tribunals of the Patent Office, we think that they satisfactorily establish the reduction of the invention to practice. As was said in the decision of the Examiners-in-Chief:

> It is of no consequence that the escalator proper was not required, in order to do its duty, to have an auxiliary traveling platform. The escalator and the landing were run at the proper direction and relative speed, whether the speed of the escalator was to be, in any instance, greater or less. To adapt it to a situation where an auxiliary landing was needed required nothing more than a difference of speed at which the apparatus should be operated. The use of the two elements combined which demonstrated its utility at a low speed of operation demonstrated its utility at a high speed of operation.

The testimony in *Gallagher* v. *Hien* was quite different from that above recited. The device of the invention in that case consisted of expansible resilient rings constituting a friction-spring for use in car-couplings. These were necessarily compelled to have great strength under the pressure to be expected in their intended use. The first test claimed as reduction to practice was by Gallagher alone in the shop through pressure in a vise. Of this it was said by Mr. Justice Duell, who delivered the opinion:

> What that pressure was he does not state, nor does he state any facts which enable us to determine whether he was justified in his conclusion that the result of the test was satisfactory.

Afterward the device was taken to Bridgeport where some slight changes were made, and the springs tempered. It was then put in a vise, and then on the anvil of a powerful steam-hammer where it was held in place by a pair of blacksmith's tongs. After being repeatedly struck with the hammer, the springs were broken by a hard blow. The pieces were gathered up, taken to New York and laid away for future use. They were never again used for any purpose until produced in the interference proceeding with Hien. Another witness says that not having a power-press at Bridgeport shops, the device was squeezed in a vise and found to work as a spring, but the power of the vise was not great enough to close the spring. It stood a light blow of the steam-hammer but broke under a harder one. This witness expressed no opinion as to the result of the test. No measurements were taken to show the tensile strength or the pressure to which the springs were subjected. An officer of the Standard Coupler Company, which was prosecuting the case, as noted in the opinion also, thought it was "worth experimenting with." More than a year after the tests, he is recorded as saying:

> I thought there was enough in the idea to warrant some experiments.

Another point made in the decision adverse to Seeberger, deserves some consideration also. It appears that the auxiliary traveling platform was removed from the escalator a month or more after its attachment, and never replaced. The parts were kept together until after the application for patent was filed. After that, in removing the building in which they had been stored, some of the parts disappeared. The escalator was removed to the store of Siegel & Cooper Company and there erected and used without a traveling platform. Twelve escalators in all have been built, without a traveling-platform attachment. These facts were not regarded as showing a suppression of the invention—and rightly so under the circumstances—but were given great weight as tending to show that the alleged test had not been, at the time, regarded as successful. Such circumstances, when unexplained, undoubtedly tend strongly to create such an inference, and have always been given great weight in the absence of conclusive proof of successful reduction.

The explanation given, however, we regard as reasonable and satisfactory. The testimony shows that when the escalator was first erected in the factory building at Yonkers, N. Y., the landing for egress was located on the left side. It was afterward concluded to change this egress to the other side. This involved changes in the escalator-castings. During the time these were being made the landing on the left was removed, and the traveling landing was put in operation, and continued for more than a month. When the construction was ready for change to the landing on the other side, the traveling landing was removed and stored. It also appears that the traveling landing is an unnecessary attachment to an escalator moving short distances, and at a speed not exceeding one hundred feet to the minute. Its sole purpose is to protect from danger of falling in stepping from the moving stairway when at a high rate of speed. The slow speed is adapted to short distances, as in the then testing use of the escalator, and met the requirements of use in the Siegel & Cooper Company building, as well as in the other cases of later construction. The auxiliary platform was not, therefore, a thing of immediate commercial value. This value depended upon the adoption of the escalator for long distances where rapid speed is important, as in the case of elevated railways and the like. It is to be remembered that escalators are very expensive constructions and that their use must always be comparatively limited. To lay aside the auxiliary platform at the time, and not to incorporate it in subsequent constructions where high speed was not required, was not unreasonable, and it is not, therefore, a circumstance sufficient to overcome the clear proof of satisfaction with its test in actual use. There was some delay in applying for a patent, it is true, but this is also insufficient to destroy the weight of the proof of actual reduction to practice. No change was made—certainly no material one—in the device of the original construction, and the original drawings were copied in a form proper for presentation to the Patent Office, and sent to the patent attorneys for attention on March 31, 1901. Seeberger was in Europe attending to matters relating to escalators at the Paris Exposition from April until the latter part of December of 1900. No rival had entered the field when he forwarded the drawings, and he knew nothing of the invention of Russel until the interference was declared. The latter, as we have seen, has never constructed an escalator or an auxiliary platform for attachment to one, and did not enter the Patent Office until February 15, 1902, although he says in his preliminary statement, that he conceived the invention about December, 1900, but did not disclose it to any one until August 12, 1901. We attach no material weight to the fact that part of the traveling platform was lost or destroyed after removal and storage, because this did not occur until after the application had been filed. The loss has been not unreasonably explained, and, under all the circumstances, heretofore mentioned, it is entitled to no effective weight.

It follows that the decision of the Commissioner must be reversed. It is so ordered, and that this decision be certified to the Commissioner of Patents as required by the law.

Reversed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 121—No. 8. TUESDAY, APRIL 24, 1906. PRICE—$5 per year.

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Labels	24	No. 12,795 to No. 12,818, inclusive.
Prints	9	No. 1,625 to No. 1,633, inclusive.
Reissues	3	No. 12,473 to No. 12,475, inclusive.
Total issue	957	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	4	Nevada	.....	.....
Alaska, District of	.....	.....	New Hampshire	4	1
Arizona Territory	.....	1	New Jersey	40	14
Arkansas	1	1	New Mexico Ter't'y	.....	.....
California	20	9	New York	95	75
Colorado	7	1	North Carolina	1	.....
Connecticut	13	4	North Dakota	3	.....
Delaware	2	.....	Ohio	35	30
District of Columbia	5	1	Oklahoma Territ'y	4	1
Florida	2	2	Oregon	2	.....
Georgia	4	1	Pennsylvania	57	24
Hawaii Territory	.....	.....	Porto Rico	.....	.....
Idaho	.....	1	Rhode Island	7	3
Illinois	57	21	South Carolina	1	.....
Indian Territory	1	.....	South Dakota	2	.....
Indiana	16	3	Tennessee	7	2
Iowa	15	3	Texas	9	4
Kansas	3	.....	Utah	2	1
Kentucky	3	7	Vermont	.....	.....
Louisiana	4	1	Virginia	6	2
Maine	.....	5	Washington	6	2
Maryland	6	4	West Virginia	5	.....
Massachusetts	33	30	Wisconsin	13	9
Michigan	16	4	Wyoming	.....	1
Minnesota	7	5	U. S. Army	.....	.....
Mississippi	3	.....	U. S. Navy	1	.....
Missouri	29	12			
Montana	4	.....	Total to citizens of the United States	574	291
Nebraska	6	2			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Netherlands	.....	.....
Austria-Hungary	3	1	Newfoundland	.....	.....
Belgium	2	.....	New South Wales	2	.....
Brazil	.....	.....	New Zealand	.....	.....
British West Indies	.....	.....	Norway	.....	.....
Canada	9	.....	Persia	.....	.....
Cape Colony	.....	.....	Queensland	.....	.....
Chile	.....	.....	Roumania	.....	.....
China	.....	.....	Russia	.....	.....
Costa Rica	.....	.....	San Salvador	.....	.....
Cuba	.....	4	Scotland	2	.....
Denmark	.....	.....	South Africa	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	18	8	Sweden	1	1
France	5	1	Switzerland	1	1
Germany	20	5	Transvaal, South Africa	1	.....
Ireland	.....	2	Victoria	1	.....
Italy	.....	.....	Western Australia	.....	.....
Japan	.....	.....			
Java	.....	.....			
Mexico	1	.....	Total to citizens of foreign countries	66	23
Natal	.....	.....			

Delivery of Patent.

The patent will be delivered or mailed on the day of its date to the attorney of record, if there be one; if not, to the patentee; or, if the attorney so request, to the patentee or assignee of an interest therein.

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 19, 1906.

This Office has been informed by the Secretary of the Interior that Hugo F. Bungardt, of Kansas City, Mo., was disbarred April 4, 1906, from practicing before the Department or any Bureau thereof.

C. M. IRELAN,
Chief Clerk.

Notice.

(ORDER No. 1,664.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 18, 1906.

The practice in regard to the hearing and decision of cases by two members of the Board of Examiners-in-Chief as announced in *Kyle* v. *Corner* (79 MS. Dec., 90) is modified as follows:

During the absence of one member of the Board of Examiners-in-Chief the other two members may hear and determine cases and are not required to continue them at the mere request of the parties. Where the two members hearing the case are unable to agree, they may set the case down for rehearing before three members either before or after announcing judgment.

F. I. ALLEN,
Commissioner.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 17, 1906.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
	In arrears—Under fifteen days.			
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 10	Mar. 2	268
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 9	Feb. 23	450
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufacturing, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 5	Dec. 30	304
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 4	Mar. 21	243
332	X. Carriages and Wagons.....	Apr. 4	Nov. 16	990
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 3	Mar. 19	202
303	XVII. Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 3	Jan. 31	331
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Presses, Store-Service, Tobacco, etc.	Apr. 3	Jan. 8	272
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 3	Dec. 1	628
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 3	Sept. 25	773
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 3	Sept. 7	424
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 2	Feb. 19	400
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 2	Nov. 13	728
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 2	Sept. 27	763
	Under one month.			
122	XIX. Stoves and Furnaces and Steam-Boiler Furnaces.	Mar. 29	Oct. 16	696
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Mar. 27	Jan. 25	580
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making.	Mar. 27	Sept. 12	609
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 26	Feb. 16	392
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Mar. 21	Jan. 2	461
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Optics, Signals, Time Controlling Mechanism.	Mar. 20	Oct. 26	741
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 19	Feb. 21	249

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Mar. 19	Sept. 11	724
167	V. Fine Arts, Bookbinding, Harvesters, Jewelry, and Music.	Mar. 17	Jan. 29	491
	Between one and two months.			
327	XVIII. Steam-Engineering, etc ...	Mar. 16	Dec. 26	477
147	XXIX. Coopering, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools.	Mar. 16	Dec. 20	470
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Mar. 15	Feb. 8	476
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Mar. 12	Mar. 12	390
307	XIV. Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Metal Personal Wear, Making, Sheet-Metal Ware, Making, Tools, Wire-Working.	Mar. 12	Dec. 9	379
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Mar. 12	Oct. 12	764
142	IX. Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, Sewerage, and Water Distribution.	Mar. 12	Aug. 14	1233
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Mar. 8	Oct. 30	556
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Mar. 7	Nov. 13	634
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 5	Sept. 14	660
109	XVI. Telegraphy and Telephony..	Feb. 24	Jan. 19	357
	Between two and three months.			
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Feb. 10	Oct. 14	759
382	XXVIII. Air and Gas Engines, Air and Gas Pumps, Pneumatics.	Feb. 8	July 12	1132
312	VII. Velocipedes, Clutches, Fire-Escapes, Games and Toys, Ladders, Mechanical Motors, and Paper Manufactures.	Feb. 7	Nov. 14	508
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Feb. 5	Oct. 21	332

Total number of applications awaiting action 20,846

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Under one month.			
	Trade-Marks.....	Mar. 17	Feb. 8	1954
	Under fifteen days.			
	Designs.....	Apr. 4	Mar. 17	64
	Labels and Prints.....	Apr. 16	Apr. 16	14

Trade-Marks.

The publication of trade-marks under the act of February 20 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

PATENTS

GRANTED APRIL 24, 1906.

818,402. PNEUMATIC-TIRE PLUG. DAVID APSTEIN, Bridgeport, Conn. Filed June 24, 1905. Serial No. 266,262.



Claim.—1. A pneumatic-tire plug, comprising a head having a transverse recess therein, a transverse rocker-pin mounted in the recess, a threaded shank rotatably mounted in said transverse pin, and a nut mounted upon said shank.

2. A pneumatic-tire plug, comprising a head having a transverse pocket therein, a rocker-pin mounted in the pocket, a threaded shank pivotally mounted in the pin, a nut mounted on the shank, and a flexible washer secured to the under side of the head.

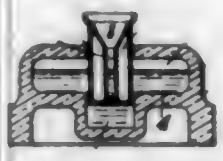
3. A pneumatic-tire plug, comprising a head having a transverse pocket therein, a rocker-pin mounted in the pocket, an annular rib formed on the under side of said head, a flexible washer to engage the rib, hooks to secure the washer in place, a threaded shank pivotally connected to the transverse pin mounted in the socket of the head, and a nut adjustably mounted upon the shank substantially as described.

4. A pneumatic-tire plug, comprising a head having hooks upon its under side, a flexible washer attached to said hooks, a threaded shank pivoted to the head, a nut upon the shank, and a flexible washer attached to the nut.

5. A pneumatic-tire plug comprising a head having a transverse recess therein, a transverse rocker-pin mounted in the recess, a threaded shank rotatably mounted in said transverse recess, a nut mounted upon said shank, and flexible material secured beneath the head and washer.

6. A pneumatic-tire plug, comprising a head convexed on its under side to conform to the normal shape of a tire, a threaded pin swiveled to said head, and a concave washer mounted on the said threaded pin.

818,403. INK-WELL. FRANK M. ASHLEY, New York, N. Y. Filed Mar. 12, 1903. Serial No. 147,870.



Claim.—1. In an ink-well, the combination of a body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, and a plunger of sufficiently less diameter than the auxiliary reservoir to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir, the downward pressure exerted by the lower end of the plunger, on ink within the auxiliary reservoir serving to upwardly force said ink, said main reservoir having a passage for air leading to the atmosphere during the movement of the plunger.

2. In an ink-well, the combination of a body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, and a plunger of sufficiently less diameter than that of said auxiliary reservoir to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir, the downward pressure exerted by the lower end of the plunger on the ink within the auxiliary reservoir serving to upwardly force said ink, said main reservoir having a passage for air leading to the atmosphere during the movement of the plunger.

3. In an ink-well, the combination of a body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, and a plunger of sufficiently less diameter than that of said auxiliary reservoir to have its lower end move up and down within said auxiliary reservoir to any degree without interruption in the ink communication between the main reservoir and the auxiliary reservoir, the downward pressure exerted by the lower end of the plunger on the ink within the auxiliary reservoir serving to upwardly force said ink; the sides of the well-body extending above the highest plane attained by the top of the plunger when the latter is in position and said main reservoir having a passage for air leading to the atmosphere during the movement of the plunger.

4. In an ink-well, the combination of a body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, and an ink-raising float of sufficiently less diameter than that of the auxiliary reservoir to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir, said main reservoir being open to the atmosphere during the movement of the float.

5. In an ink-well, the combination of a body containing a main and an auxiliary reservoir communicating with each other, and an ink-raising float of less diameter than that of the auxiliary reservoir adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir and be permitted under a depressing action exerted on the float, to further descend within said reservoir without interrupting at any time the communication between said main and auxiliary reservoirs, said main reservoir being open to the atmosphere during movement of the float.

6. In an ink-well, the combination of a body containing a main and an auxiliary reservoir of substantially the same depth and communicating with each other, and an ink-raising float of sufficiently less diameter than that of said auxiliary reservoir and adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir and be permitted under a depressing action exerted on the float, to further descend within said reservoir without interrupting at any time, the communication between said main and auxiliary reservoirs.

7. In an ink-well, the combination of a body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, the auxiliary reservoir being a prolongation of the main reservoir, a cover for said body, having an opening, and a depressible ink-raising float adapted to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir, said float being of less diameter than said auxiliary reservoir whereby an intervening ink-circulation space will be formed to maintain constant communication between said reservoirs irrespective of any movement of the float within the auxiliary reservoir, said main reservoir being open to the atmosphere during the movement of the float.

8. In an ink-well, the combination of a body containing a main and an auxiliary reservoir, the latter being a prolongation of the former, a cover for said body, having an opening, and a depressible ink-raising float adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir, said float being of less diameter than said auxiliary reservoir, whereby an intervening ink-circulation space will be formed to maintain constant communication between said reservoirs, irrespective of any movement of the float within the auxiliary reservoir, said main reservoir having a passage to the atmosphere during the movement of the float.

9. In an ink-well, the combination of a body containing a main

and an auxiliary reservoir in open communication with each other, a cover for said body having an opening in a horizontal plane of the same diameter as the auxiliary reservoir, and a depressible ink-raising float having parallel sides and adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir, said float adapted to extend through the top opening and main reservoir, and having that portion movable within the auxiliary reservoir, of less diameter than the latter whereby a constant communication is maintained between both reservoirs, irrespective of any movement of the float.

10. In an ink-well, the combination of a body containing a main and an auxiliary reservoir, and an ink-raising float adapted to have an upper part extend external to the body and the lower end of said float move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir by reason of the float being of considerably less diameter than that of said auxiliary reservoir, the sides of the well-body extending above the highest plane attained by the top of the float when the latter is in position.

11. In an ink-well, the combination of a body containing a main and an auxiliary reservoir in open communication with each other, and an ink-raising float of sufficiently less diameter than said auxiliary reservoir and adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir and be permitted under a depressing action exerted on the float to further descend within said reservoir without interrupting at any time the communication between said main and auxiliary reservoirs, the sides of said well-body extending above the highest plane attained by the top of the float when the latter is in position.

12. An ink-well presenting in two parts, a body and an ink-raising float, said body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, said float being of sufficiently less diameter than said auxiliary reservoir to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir.

13. A two-part ink-well comprising a body having a main and auxiliary reservoir, at all times in open communication with each other, and a cover with an opening immediately above the auxiliary reservoir, said auxiliary reservoir and said opening being of substantially the same diameter, and a depressible float adapted to be buoyed by the ink and having parallel sides, said float being of nearly the same diameter as said opening and said auxiliary reservoir and extending through said opening and said main reservoir down into the auxiliary reservoir: substantially as described.

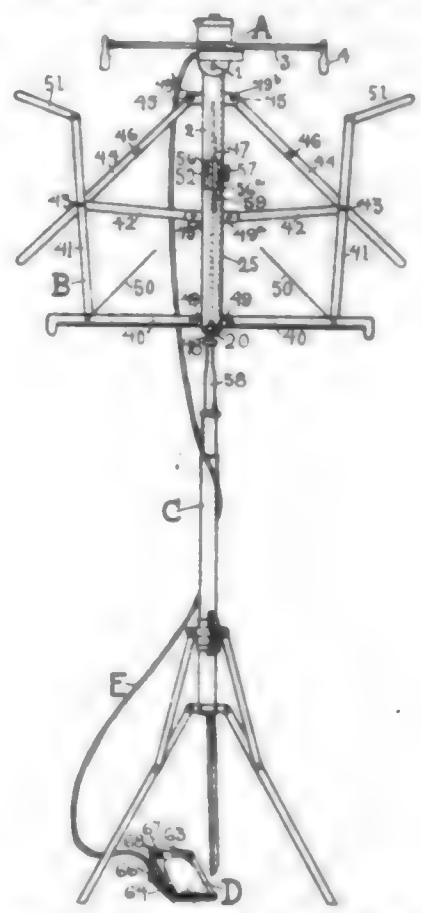
14. In an inkstand of the character described, a main reservoir, an auxiliary reservoir formed in the base thereof, a plunger having an ink-passage therethrough, the outer surface of said plunger being exposed to the main reservoir and the lower end of said plunger extending within said auxiliary reservoir, said auxiliary reservoir having a passage freely communicating at all times with said main reservoir, said main reservoir having a passage communicating with the atmosphere during the movement of said plunger.

15. In an ink-well, the combination of a body containing a main and an auxiliary reservoir, a plunger adapted to have its lower end move up and down within said auxiliary reservoir and of sufficiently reduced diameter compared to that of the auxiliary to form a passage between the outer wall of said plunger and the inner wall of said auxiliary reservoir, said passage being open at all times, said main reservoir having a passage open to the atmosphere during the movement of the plunger, and means for conducting the ink to the upper end of the plunger.

16. An ink-well having a main reservoir provided with a passage normally open to the atmosphere, an auxiliary reservoir formed in the bottom of the ink-well, a float adapted to play vertically in said auxiliary reservoir and having its lower end of considerably reduced diameter relative to that of the auxiliary reservoir so that a passage is formed between the outer wall of said float and the inner wall of said reservoir which passage is open at all times, and means for conducting ink to the upper end of said float.

17. In an inkstand of the character described, a main reservoir, an auxiliary reservoir formed in the bottom thereof, a plunger of sufficient diameter to raise the ink to the top thereof when depressed, the outer surface of which is exposed to the main reservoir and the lower end of which extends within said auxiliary reservoir, said plunger being of sufficiently reduced diameter relative to the diameter of said auxiliary reservoir to form a passage for ink communicating at all times between the lower end of the auxiliary reservoir and the main reservoir.

818,404. MUSIC-LEAF-TURNING STAND. JOSEPH BAHL and JOSEPH C. BAHL, Chicago, Ill. Filed Mar. 24, 1905. Serial No. 251,890.



Claim,—1. The combination with a folding music-stand having a middle-bar, of a leaf-turning mechanism pivotally mounted on the top of the said bar and including an escapement, said mechanism and escapement being foldable with the stand, a finger-lever pivoted at the lower end of the bar, and a connection between said finger-lever and the escapement.

2. The combination with a folding music-stand having a middle bar, of a leaf-turning mechanism pivotally mounted on the top of said bar and including an escapement, said mechanism and escapement being foldable with the stand, and a portable bellows and flexible tube operatively connected to the escapement.

818,405. COMBINED MEASURING AND REGISTERING DEVICE. JOHN BARRY and MICHEAL L. SHAUGHNESSY, Westphalia, Kans. Filed May 29, 1905. Serial No. 262,941.



Claim.—1. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, and a spring adapted in resisting longitudinal movement of

the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

2. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, and a spring having an arm disposed longitudinally of and secured rigidly with relation to the measuring means and an arm disposed transversely of such means and attached to the dog to hold the latter yieldingly withdrawn from the rack-bar.

3. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, a guide-clip to limit the pivotal movement of the dog from the rack-bar, and a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

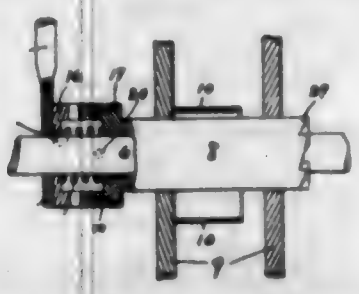
4. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar, and means to hold the rack-bar against accidental movement when not being moved by the dog.

5. The combination with a measuring means, of a register comprising marks numbered consecutively, a slidable rack-bar suitably guided, a spring carried by the rack-bar and frictionally engaging the measuring means, a dog mounted slidably and pivotally on said measuring means, a spring holding said dog at the left-hand limit of its slidable movement and withdrawn from the path of the rack-bar, and a guide-clip secured to the measuring means and engaging said dog and limiting its pivotal movement away from the rack-bar.

6. The combination with a measuring-plate having a longitudinal slot and provided with consecutively-numbered marks contiguous to said slot, a slidable rack-bar mounted on said plate, a pin carried by said rack-bar and projecting through said slot, an index-finger secured to the pin and adapted to successively register with said marks, means to prevent accidental sliding movement of the rack-bar, a dog movable longitudinally and pivotally, and a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

7. The combination with a measuring-plate provided with parallel longitudinal slots and with consecutively-numbered marks alongside one of said slots, a longitudinally-slidable rack-bar mounted on said plate and provided with a pin projecting up through the slot contiguous to said marks, an index-finger carried by said pin and adapted to successively register with said marks, a dog mounted on said plate and provided with a thumb-stud projecting up through the other slot so as to move longitudinally and pivotally therein, a guide secured to said plate and engaging the dog and limiting the pivotal movement of the latter away from said rack-bar, and a spring secured to the dog and a point fixed with relation to the plate and resisting longitudinal movement of the dog and pivotal movement of the same toward the rack-bar.

818,406. **MECHANICAL MOTOR AND BRAKE.** ARTHUR W. BARTLETT, Montcagle Valley, Canada. Filed May 31, 1905. Serial No. 263,806.

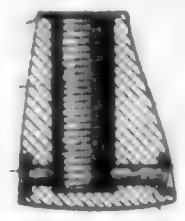


Claim.—1. In a mechanical motor for bicycles, the combination of a shaft, a sleeve mounted thereon, a drum mounted on the sleeve, a spring forming a resilient connection between the two, means to drive said drum, means to lock said sleeve, and means to release said sleeve and permit the same to be driven by said drum.

2. In a mechanical motor for bicycles, the combination of a pedal-shaft, a sleeve loosely mounted thereon, a drum loosely mounted on said sleeve, a spring connecting said sleeve and drum, a sprocket-wheel secured to said shaft, said wheel adapted to be positioned to drive said drum, means to lock said sleeve, and means to move said sleeve into driving engagement with said shaft so said sleeve and shaft may be driven by said spring.

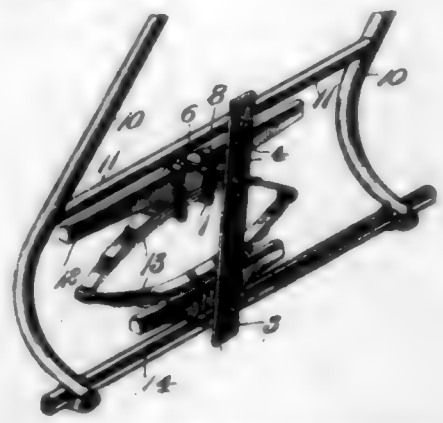
3. In a mechanical motor for bicycles, the combination of a shaft, sleeve mounted thereon, a drum mounted on said sleeve, means to prevent the backward rotation of the drum, a spring within the drum to form a connection between the sleeve and drum, a sprocket-wheel on said shaft and adapted to move into driving engagement with said drum, means to cause the sleeve to be held from rotation, and a spring to release said sleeve and to force it into driving relation with said shaft to permit the spring in said drum to drive said sleeve and shaft.

818,407. **LAST.** GEORGE E. BELCHER, Stoughton, Mass. Filed Feb. 27, 1904. Serial No. 195,556.



Claim.—In a hinged last, the combination with the slotted heel-section having a thimble-receiving aperture, of a binding-thimble in said aperture extending from the comb toward the bottom of the heel-section and having adjacent to its upper end and integral therewith, means for positively engaging the heel-section, and a binding cross-bolt interlocked with the thimble at the lower end of the latter and close to the bottom surface of the heel-section and positively engaging the opposite sides of the heel-section, one of the two binding members extending across the plane of the hinged slot so as to prevent splitting on said plane.

818,408. **SUPPORT FOR VEHICLE TONGUES OR SHAFTS.** JAMES W. BOBBITT and EDWARD HAYES, Joplin, Mo. Filed Sept. 1, 1905. Serial No. 276,697.



Claim.—1. A device of the character described, comprising a bar, an angular member having a slot extending longitudinally therein, bolts or screws extending through said slot and through the bar to bind the angular member and bar together, finger-and-thumb hold on each bolt or screw, a hook, a bolt or screw extending therethrough and through the said slot in the bar, finger-and-thumb hold on said bolt or screw, and a lug on said hook projecting into the slot, substantially as specified.

2. A device of the character described, comprising a bar adapted to connect with the vehicle tongue or shaft and abut against the spring or axle, an angular member having one arm resting upon the bar and a longitudinal slot in the other arm, a clamp binding the angular member and the bar together, a hook, a bolt extending through the hook and through the slot in the arm of the angular member, and a lug integral with said hook projecting into the slot aforesaid to prevent the hook from turning on the bolt, substantially as specified.

3. A device of the character described, comprising a bar, an angular member having one arm bearing against the bar and having a slot in said arm, bolts extending through the bar and through the slot to bind the angular member and the bar together, said angular member having a slot extending longitudinally in its outer arm, a hook, a bolt extending through the hook and through the slot in the outer arm of the angular member to bind the two parts together, and a lug on the inner end of the hook projecting into the slot in the angular member to prevent the hook from turning, substantially as described.

and an auxiliary reservoir in open communication with each other, a cover for said body having an opening in a horizontal plane of the same diameter as the auxiliary reservoir, and a depressible ink-raising float having parallel sides and adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir, said float adapted to extend through the top opening a d main reservoir, and having that portion movable within the auxiliary reservoir, of less diameter than the latter whereby a constant communication is maintained between both reservoirs, irrespective of any movement of the float.

10. In an ink-well, the combination of a body containing a main and an auxiliary reservoir, and an ink-raising float adapted to have an upper part extend external to the body and the lower end of said float move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir by reason of the float being of considerably less diameter than that of said auxiliary reservoir, the sides of the well-body extending above the highest plane attained by the top of the float when the latter is in position.

11. In an ink-well, the combination of a body containing a main and an auxiliary reservoir in open communication with each other, and an ink-raising float of sufficiently less diameter than said auxiliary reservoir and adapted to be so supported by its own buoyancy that its lower end will be normally within said auxiliary reservoir and be permitted under a depressing action exerted on the float to further descend within said reservoir without interrupting at any time the communication between said main and auxiliary reservoirs, the sides of said well-body extending above the highest plane attained by the top of the float when the latter is in position.

12. An ink-well presenting in two parts, a body and an ink-raising float, said body containing a main and an auxiliary reservoir intercommunicating for the flow of ink in opposite directions from one to the other, said float being of sufficiently less diameter than said auxiliary reservoir to have its lower end move up and down within and substantially throughout the height of said auxiliary reservoir without interruption in the ink communication between the main reservoir and the lower portion of the auxiliary reservoir.

13. A two-part ink-well comprising a body having a main and auxiliary reservoir, at all times in open communication with each other, and a cover with an opening immediately above the auxiliary reservoir, said auxiliary reservoir and said opening being of substantially the same diameter, and a depressible float adapted to be buoyed by the ink and having parallel sides, said float being of nearly the same diameter as said opening and said auxiliary reservoir and extending through said opening and said main reservoir down into the auxiliary reservoir; substantially as described.

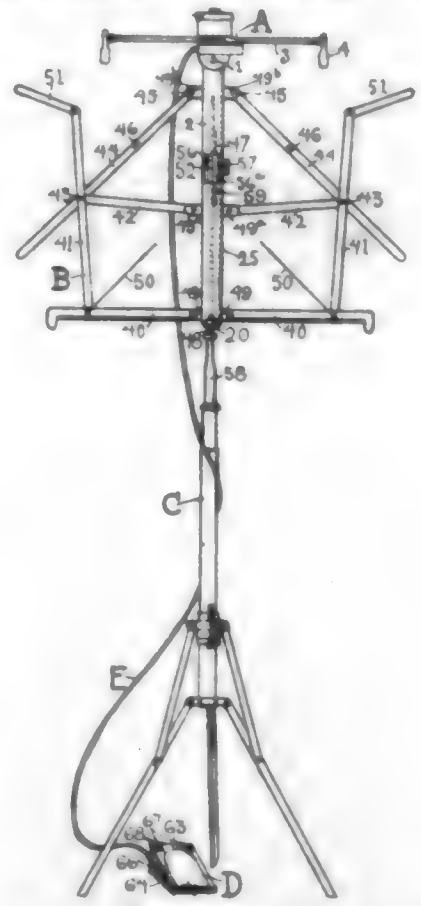
14. In an inkstand of the character described, a main reservoir, an auxiliary reservoir formed in the base thereof, a plunger having an ink-passage therethrough, the outer surface of said plunger being exposed to the main reservoir and the lower end of said plunger extending within said auxiliary reservoir, said auxiliary reservoir having a passage freely communicating at all times with said main reservoir, said main reservoir having a passage communicating with the atmosphere during the movement of said plunger.

15. In an ink-well, the combination of a body containing a main and an auxiliary reservoir, a plunger adapted to have its lower end move up and down within said auxiliary reservoir and of sufficiently reduced diameter compared to that of the auxiliary to form a passage between the outer wall of said plunger and the inner wall of said auxiliary reservoir, said passage being open at all times, said main reservoir having a passage open to the atmosphere during the movement of the plunger, and means for conducting the ink to the upper end of the plunger.

16. An ink-well having a main reservoir provided with a passage normally open to the atmosphere, an auxiliary reservoir formed in the bottom of the ink-well, a float adapted to play vertically in said auxiliary reservoir and having its lower end of considerably reduced diameter relative to that of the auxiliary reservoir so that a passage is formed between the outer wall of said float and the inner wall of said reservoir which passage is open at all times, and means for conducting ink to the upper end of said float.

17. In an inkstand of the character described, a main reservoir, an auxiliary reservoir formed in the bottom thereof, a plunger of sufficient diameter to raise the ink to the top thereof when depressed, the outer surface of which is exposed to the main reservoir and the lower end of which extends within said auxiliary reservoir, said plunger being of sufficiently reduced diameter relative to the diameter of said auxiliary reservoir to form a passage for ink communicating at all times between the lower end of the auxiliary reservoir and the main reservoir.

818,404. **MUSIC-LEAF-TURNING STAND.** JOSEPH BAHL and JOSEPH C. BAHL, Chicago, Ill. Filed Mar. 24, 1905. Serial No. 251,890.



Claim,—1. The combination with a folding music-stand having a middle-bar, of a leaf-turning mechanism pivotally mounted on the top of the said bar and including an escapement, said mechanism and escapement being foldable with the stand, a finger-lever pivoted at the lower end of the bar, and a connection between said finger-lever and the escapement.

2. The combination with a folding music-stand having a middle bar, of a leaf-turning mechanism pivotally mounted on the top of said bar and including an escapement, said mechanism and escapement being foldable with the stand, and a portable bellows and flexible tube operatively connected to the escapement.

818,405. **COMBINED MEASURING AND REGISTERING DEVICE.** JOHN BARRY and MICHEAL L. SHAUGHNESSY, Westphalia, Kans. Filed May 29, 1905. Serial No. 262,941.



Claim.—1. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, and a spring adapted in resisting longitudinal movement of

the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

2. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, and a spring having an arm disposed longitudinally of and secured rigidly with relation to the measuring means and an arm disposed transversely of such means and attached to the dog to hold the latter yieldingly withdrawn from the rack-bar.

3. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, a guide-clip to limit the pivotal movement of the dog from the rack-bar, and a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

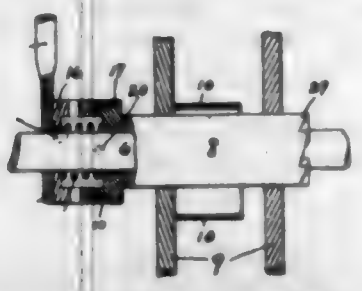
4. The combination with a measuring means, of a register comprising marks consecutively numbered, a slidable rack-bar, an index-finger movable with the rack-bar and adapted to register successively with said marks, a dog movable longitudinally and pivotally, a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar, and means to hold the rack-bar against accidental movement when not being moved by the dog.

5. The combination with a measuring means, of a register comprising marks numbered consecutively, a slidable rack-bar suitably guided, a spring carried by the rack-bar and frictionally engaging the measuring means, a dog mounted slidably and pivotally on said measuring means, a spring holding said dog at the left-hand limit of its slidable movement and withdrawn from the path of the rack-bar, and a guide-clip secured to the measuring means and engaging said dog and limiting its pivotal movement away from the rack-bar.

6. The combination with a measuring-plate having a longitudinal slot and provided with consecutively-numbered marks contiguous to said slot, a slidable rack-bar mounted on said plate, a pin carried by said rack-bar and projecting through said slot, an index-finger secured to the pin and adapted to successively register with said marks, means to prevent accidental sliding movement of the rack-bar, a dog movable longitudinally and pivotally, and a spring adapted in resisting longitudinal movement of the dog to impart pivotal movement to said dog and cause it to engage the rack-bar.

7. The combination with a measuring-plate provided with parallel longitudinal slots and with consecutively-numbered marks alongside one of said slots, a longitudinally-slidable rack-bar mounted on said plate and provided with a pin projecting up through the slot contiguous to said marks, an index-finger carried by said pin and adapted to successively register with said marks, a dog mounted on said plate and provided with a thumb-stud projecting up through the other slot so as to move longitudinally and pivotally therein, a guide secured to said plate and engaging the dog and limiting the pivotal movement of the latter away from said rack-bar, and a spring secured to the dog and a point fixed with relation to the plate and resisting longitudinal movement of the dog and pivotal movement of the same toward the rack-bar.

818,406. **MECHANICAL MOTOR AND BRAKE.** ARTHUR W. BARTLETT, Montcalm Valley, Canada. Filed May 31, 1905. Serial No. 263,906.

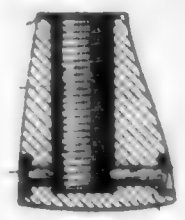


Claim.—1. In a mechanical motor for bicycles, the combination of a shaft, a sleeve mounted thereon, a drum mounted on the sleeve, a spring forming a resilient connection between the two, means to drive said drum, means to lock said sleeve, and means to release said sleeve and permit the same to be driven by said drum.

2. In a mechanical motor for bicycles, the combination of a pedal-shaft, a sleeve loosely mounted thereon, a drum loosely mounted on said sleeve, a spring connecting said sleeve and drum, a sprocket-wheel secured to said shaft, said wheel adapted to be positioned to drive said drum, means to lock said sleeve, and means to move said sleeve into driving engagement with said shaft so said sleeve and shaft may be driven by said spring.

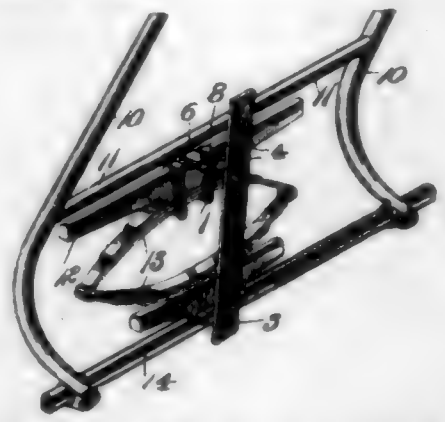
3. In a mechanical motor for bicycles, the combination of a shaft, sleeve mounted thereon, a drum mounted on said sleeve, means to prevent the backward rotation of the drum, a spring within the drum to form a connection between the sleeve and drum, a sprocket-wheel on said shaft and adapted to move into driving engagement with said drum, means to cause the sleeve to be held from rotation, and a spring to release said sleeve and to force it into driving relation with said shaft to permit the spring in said drum to drive said sleeve and shaft.

818,407. **LAST.** GEORGE E. BELCHER, Stoughton, Mass. Filed Feb. 27, 1904. Serial No. 195,556.



Claim.—In a hinged last, the combination with the slotted heel-section having a thimble-receiving aperture, of a binding-thimble in said aperture extending from the comb toward the bottom of the heel-section and having adjacent to its upper end and integral therewith, means for positively engaging the heel-section, and a binding cross-bolt interlocked with the thimble at the lower end of the latter and close to the bottom surface of the heel-section and positively engaging the opposite sides of the heel-section, one of the two binding members extending across the plane of the hinged slot so as to prevent splitting on said plane.

818,408. **SUPPORT FOR VEHICLE TONGUES OR SHAFTS.** JAMES W. BOBBITT and EDWARD HAYES, Joplin, Mo. Filed Sept. 1, 1905. Serial No. 276,607.



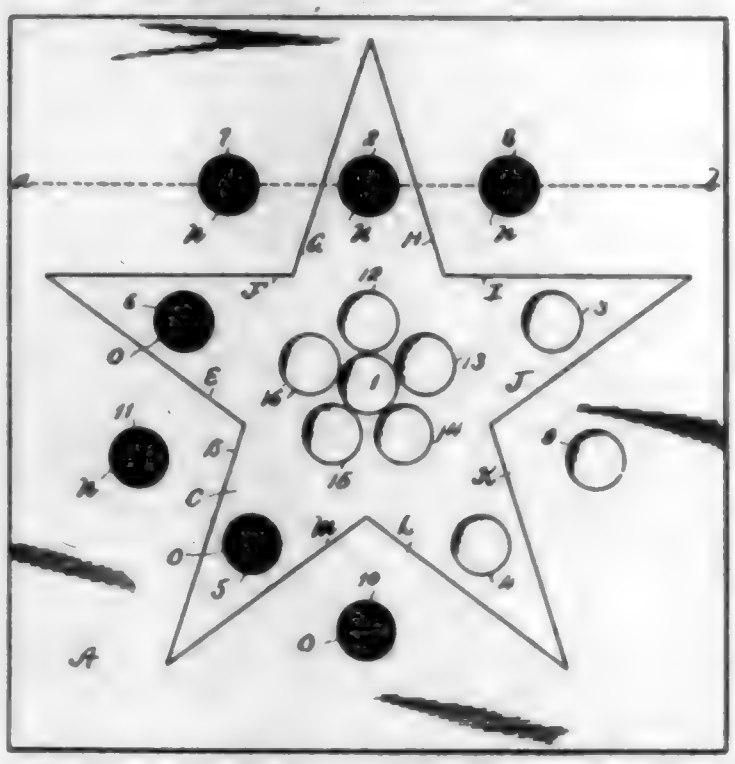
Claim.—1. A device of the character described, comprising a bar, an angular member having a slot extending longitudinally therein, bolts or screws extending through said slot and through the bar to bind the angular member and bar together, finger-and-thumb hold on each bolt or screw, a hook, a bolt or screw extending therethrough and through the said slot in the bar, finger-and-thumb hold on said bolt or screw, and a lug on said hook projecting into the slot, substantially as specified.

2. A device of the character described, comprising a bar adapted to connect with the vehicle tongue or shaft and abut against the spring or axle, an angular member having one arm resting upon the bar and a longitudinal slot in the other arm, a clamp binding the angular member and the bar together, a hook, a bolt extending through the hook and through the slot in the arm of the angular member, and a lug integral with said hook projecting into the slot aforesaid to prevent the hook from turning on the bolt, substantially as specified.

3. A device of the character described, comprising a bar, an angular member having one arm bearing against the bar and having a slot in said arm, bolts extending through the bar and through the slot to bind the angular member and the bar together, said angular member having a slot extending longitudinally in its outer arm, a hook, a bolt extending through the hook and through the slot in the outer arm of the angular member to bind the two parts together, and a lug on the inner end of the hook projecting into the slot in the angular member to prevent the hook from turning, substantially as described.

4. A device of the character described, comprising a bar, an angular member having one arm bearing against said bar and having a slot in said arm, a bolt having finger-and-thumb hold on one end, extending through said slot and through the bar, a nut having finger-and-thumb hold, screwed onto the bolt, a hook, a bolt having finger-and-thumb hold on one end, extending through the hook and one arm of the angular member, a nut having finger-and-thumb hold, screwed onto said last-named bolt, and a lug on the inner end of the hook in engagement with the angular member to prevent the hook from turning on the bolt, substantially as described.

818,409. GAME. ALICE BOLTON, Kansas City, Mo. Filed Dec. 19, 1905. Serial No. 292,405.



Claim.—1. A game apparatus comprising a playing-board and a plurality of sets of playing devices, the devices of each set having corresponding means for distinguishing them from the devices of the other sets, the playing-board having on its face the star-shaped figure and marked places denoting the places for receiving the playing devices respectively, the marked places being disposed in rows arranged parallel respectively with the different sides of the star-shaped figure.

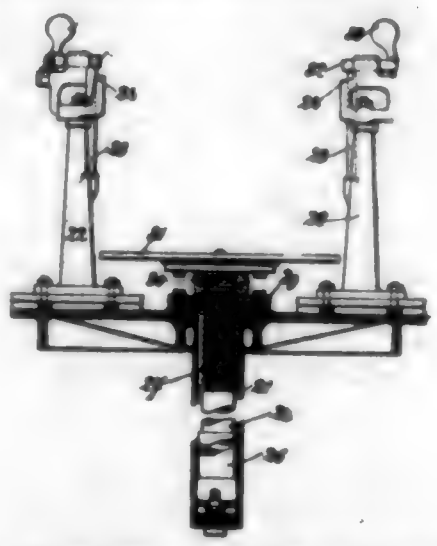
2. A game apparatus comprising a playing-board and a plurality of sets of playing devices, the devices of each set having corresponding means for distinguishing them from the devices of the other sets, the playing-board having on its face the figure of a five-pointed star and having on the same face a plurality of marked places for receiving respectively the playing devices, the marked places being disposed one in the center and one upon and one between each point of the star, the marked places upon and between the points being disposed respectively in rows disposed parallel respectively with the sides of the star.

3. A game apparatus comprising a playing-board and a plurality of different-colored sets of playing devices, the playing-board having on one side a star-shaped figure and a plurality of depressions for respectively receiving the playing devices, the depressions being disposed one in the center of the star, one upon each point and one between each two points, the depressions being arranged in rows parallel with the different sides of the star respectively.

4. A game apparatus comprising a playing-board and a plurality of different-colored sets of playing devices, the face of the board having thereon the figure of a five-pointed star, and having also a plurality of marked places for receiving respectively the playing devices, the marked places being disposed one in each point of the star and one between each two points, and a marked place intermediate each marked place in the points and the center of the star, the said marked places forming rows of three each, the rows being disposed two rows parallel with and upon opposite sides respectively of each line forming a side of the star.

5. A game apparatus comprising a playing-board consisting of a sheet provided with a plurality of perforations and a backing covering said perforations at one side of the sheet, the sheet having on the opposite side a figure in the form of a five-pointed star, the perforations being disposed one in the center of the star, one upon each point of the star, and one between each two points, and a series arranged in a circle around the central perforation and intermediate respectively the central perforation and the perforations on the points, the perforations being arranged so as to form rows of three each, a row at each side of and parallel with each line forming a side of the star, and a plurality of different-colored playing devices adapted to be placed respectively in said perforations.

818,410. MACHINE FOR MANIPULATING FOUNDRY-MOLDS. PHILIBERT BONVILLAIN, Paris, France. Filed July 20, 1904. Serial No. 218,026.



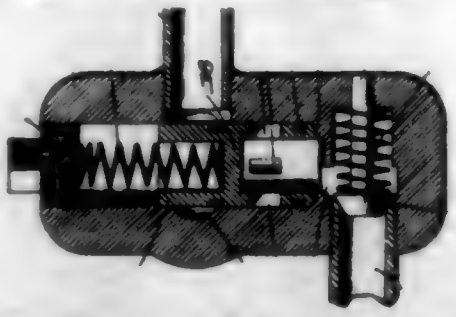
Claim.—1. In a machine for assembling and for emptying foundry-flasks, the combination with a horizontal plate movable between the uprights of a frame, of two vertical rods fixed upon the said frame, disymmetric seats on each side of said rods upon the said uprights, a hydraulic piston carrying the said horizontal plate, means for limiting the ascending and descending travel of the said piston, and means for retaining the lower mold-box after it has been emptied, substantially as above described and for the object specified.

2. In a machine for assembling and emptying foundry-flasks, the combination with a horizontal plate movable between the uprights of a frame, of two vertical rods fixed upon the said frame, disymmetric seats on each side of said rods upon the said uprights, a hydraulic piston having a head carrying the said horizontal plate, a cylinder for this piston, a socket closing this cylinder to guide the piston and serve as a seat for its head, a screw-nut upon the said piston below the horizontal plate, a rod fixed vertically under the said plate, a movable stop upon this rod, a conduit for water under pressure having an operating-lever controlled by said stop, and means for retaining the lower mold-box after it has been emptied, substantially as above described and for the object specified.

3. In a machine for assembling and emptying foundry-flasks, the combination with a horizontal plate movable between the uprights of a frame, of two vertical rods fixed upon the said frame, disymmetric seats on each side of said rods upon the said uprights, vertical rods guided on the exterior of the uprights, weights connected with these rods by cables, and grooved pulleys for carrying said cables, substantially as before described and for the object specified.

4. In a machine of the character herein set forth, lateral rods and disymmetric seats, a mold-box having diametrically opposite ears with holes for admitting the lateral rods of the machine, and projections disposed disymmetrically on each side of said ears and corresponding with the disymmetric seats of the machine, combined substantially as above described and for the object specified.

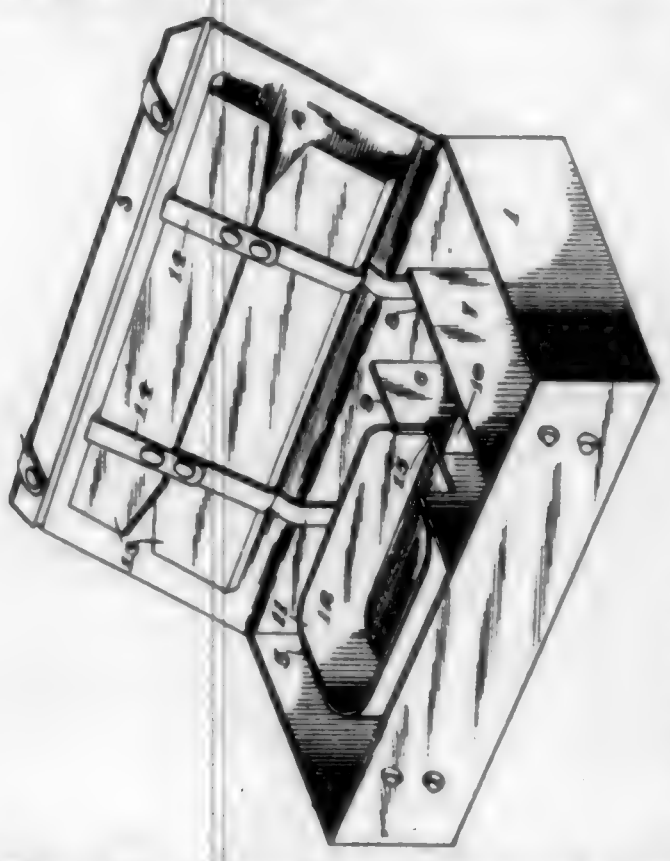
818,411. BACK-PRESSURE VALVE. CHARLES A. BURR, North East, Pa. Filed Dec. 24, 1904. Serial No. 238,233.



Claim.—In combination, a cylindrical valve-casing having at one end an entrance-port, and at one side a discharge-port, the inner

wall of the casing having an annular groove in communication with said discharge-port, and the lower portion of said casing being reduced in diameter to form an annular valve-seat, a cylindrical valve arranged within said casing, said valve being provided with end recesses separated by a solid imperforate partition, the wall of the valve below the partition being provided with discharge-ports arranged on lines tangential with respect to the valve, and the upper recess being arranged to receive one end of a valve-closing spring, that portion of the valve above the tangential ports serving to entirely close the annular groove and the discharge-port when the valve is on its seat, a valve-closing spring, and means for adjusting the stress of said spring.

818,412. TOILET-CASE. HUGH H. BYRNE, La Crosse, Wis. Filed Sept. 7, 1905. Serial No. 277,465.



Claim.—1. In a toilet-case, the combination of a body, a cover therefor, flaps attached to the under sides of the cover, means for securing said flaps so as to inclose articles therein, the body of the case being divided into a plurality of transverse compartments, and a main compartment, and an annular partition arranged in the main compartment and forming a separate compartment for holding toilet articles.

2. In a toilet-case, the combination of a body, a cover therefor, flaps attached to the under sides of the cover, straps for securing said flaps so as to inclose articles therein, a plurality of partitions dividing the body of the case interiorly into transverse compartments, a longitudinal partition separating one of the transverse compartments into two smaller compartments, an annular partition in one of the compartments, and means for securing the cover in closed position.

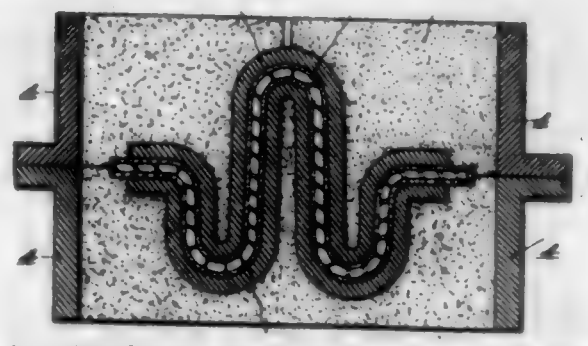
3. A toilet-case of the type described, comprising a body, a cover therefor, the body of the case being separated interiorly by the transverse partitions 8 and 9 forming the smaller compartments 6, the larger compartment 7, and the main compartment 5, the main compartment 5 having the annular partition 11 therein disposed with one end of said annular partition against the adjacent transverse partition 9, the central portion of the partition 9 and the adjacent end of the partition 11 being cut away as shown at 15, and the longitudinal partition 10 separating the compartments 6 and having its upper edge flush with the cut-away portion 15 of the partitions aforesaid.

818,413. COMBINED METAL CORE VENT AND SUPPORT. HENRY C. CALDWELL, Buffalo, N. Y., assignor to Arthur B. Underhill, Buffalo, N. Y. Filed Mar. 3, 1904. Serial No. 196,453.

Claim.—1. A combined rigid metal vented core bar and support, consisting of a broad flat metal strip wound spirally to form a tube.

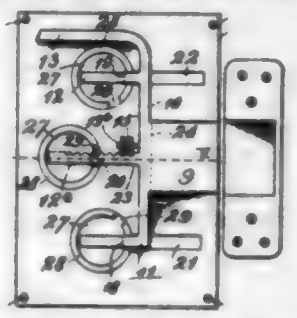
2. A combined rigid metal vented core bar and support, consisting of a broad flat metal strip wound spirally to form a tube and provided with a spiral open joint.

3. A combined metal vented core bar and support, consisting of a flat metal strip provided with turned-up edges and wound spirally to form a tube.



4. A combined metal vented core bar and support, consisting of a flat metal strip provided with turned-up edges and wound spirally to form a tube, and provided with a spiral open joint.

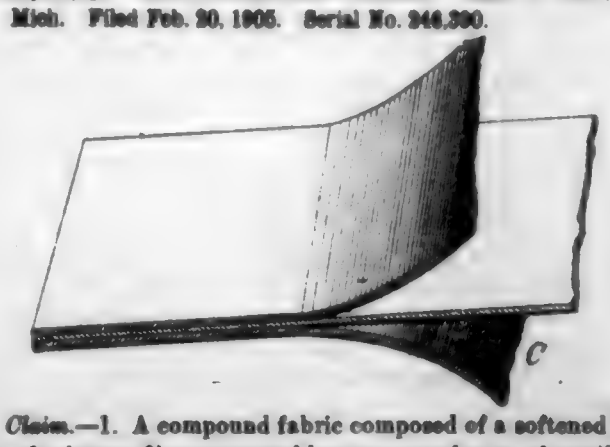
818,414. COMBINATION-LOCK. DAVID H. CLEVELAND, Kansas City, Kans. Filed May 15, 1905. Serial No. 260,419.



Claim.—1. A lock consisting of a frame, a bolt carried thereby, a member carried by the bolt, means for throwing said bolt inwardly and outwardly, a tumbler journaled in the frame adapted to engage and disengage the member on the bolt, a sleeve integral with said tumbler, a spindle telescopically arranged in said sleeve, a knob secured to the outer end of said spindle, and an indicator carried by said knob adapted to coöperate with the graduated margin surrounding the knob.

2. A lock consisting of a back plate having a longitudinal groove communicating with a plurality of transverse grooves, an intermediate plate provided with sockets and transverse grooves which latter register with the transverse grooves in the back plate, a bolt slidably arranged in one of said transverse grooves, means for operating said bolt, a bar formed integral with the bolt and arranged to slide in the longitudinal groove, shouldered arms formed integral with the bar and arranged to slide in the transverse grooves, tumblers journaled in the sockets and provided with marginal flanges adapted to engage and disengage the shoulders on the arms, sleeves on said tumblers, spindles connected to said sleeves, knobs secured to said spindles, and a face-plate having openings for the reception of the knobs, said face-plate, intermediate plate, and back plate being suitably secured together.

818,415. HEAT-RESISTING FABRIC. GILES F. COLE, Lansing, Mich. Filed Feb. 20, 1905. Serial No. 246,390.



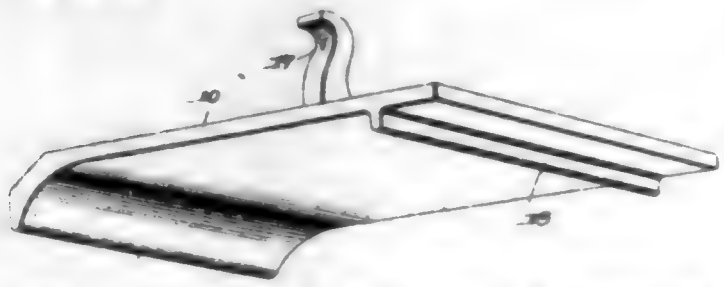
Claim.—1. A compound fabric composed of a softened flexible sheet of asbestos fiber cemented between two layers of textile fabric having a fleecy exterior surface.

2. A compound fabric composed of a softened flexible sheet of asbestos fiber cemented between two layers of textile fabric having fleecy surfaces.

3. A compound heat-resisting fabric composed of a softened flexible sheet of asbestos fiber cemented between two layers of canton-flannel, the fleecy side of said flannel being out.

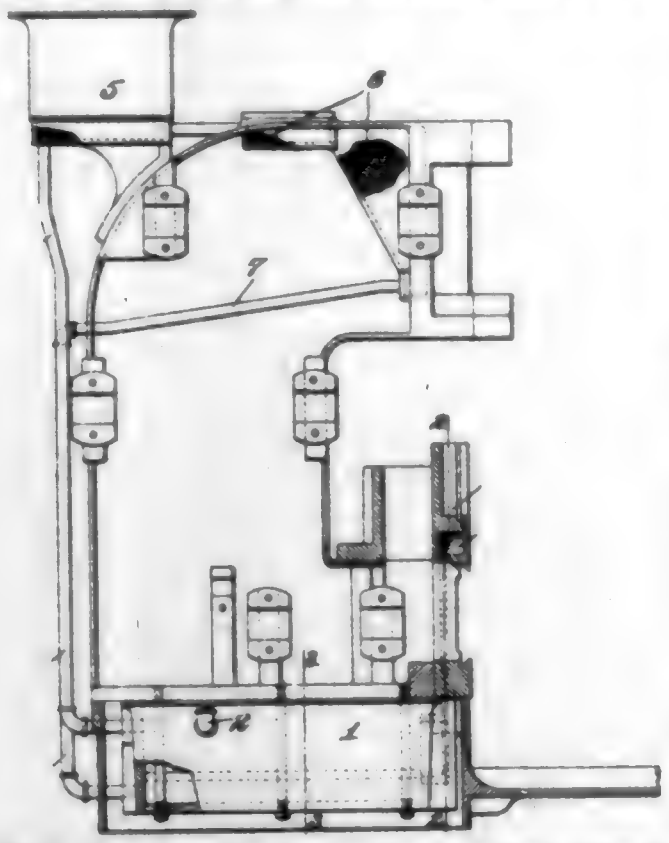
4. A compound heat-resisting fabric composed of a softened flexible sheet of asbestos fiber cemented between two layers of two-faced canton-flannel.

818,416. CURBING AND SIDEWALK DRESSING IMPLEMENT. Patrick F. Connelly, Sioux Falls, S. D. Filed Oct. 31, 1904. Serial No. 230,839.



Claim.—As a new article of manufacture, an implement for dressing the edges of artificial-stone curbing and the contiguous surface of a sidewalk, comprising a flat plate having a curved edge at one side and a rib depending therefrom near the other side, said rib having parallel sides and disposed parallel to the curved edge of the plate, whereby the plate is guided and maintained in position during the smoothing action.

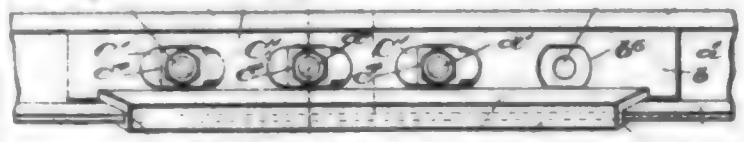
818,417. HEATING SYSTEM FOR WAX-THREAD SEWING-MACHINES. George L. Corcoran and George A. Dobyns, St. Louis, Mo., assignors to Champion Shoe Machinery Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 4, 1905. Serial No. 272,731.



Claim.—A wax-thread sewing-machine comprising a frame having at the front portion thereof an upwardly-projecting casting provided with a recess which forms a shuttle-race and a transversely-extending chamber 9 formed in said casting beneath said shuttle-race, a water-tank connected to the lower part of the frame of the machine, a supply-pipe and a return-pipe connecting said chamber with said tank, a wax-pot connected to the upper part of said frame and provided with a water-chamber in the lower portion thereof, a chamber 6 formed in the portion of said frame which carries the thread-measuring mechanism with which the machine is provided, a connection between said chamber and the chamber in the wax-pot, a supply-pipe leading from the upper part of the water-tank to the chamber in the wax-pot, and a return-pipe leading from the chamber 6 to the lower part of the water-tank; substantially as described.

818,418. FISH-PLATE. George H. Cornwell, Park Ridge, N. J., assignor of two-fifths to W. F. Pippey, New York, N. Y. Filed Aug. 17, 1906. Serial No. 274,514.

Claim.—1. In a rail-joint, the meeting ends of rails having bolt-holes therein, a fish-plate on each side of the rail, said plates having openings therein larger than the bolt-holes, bolts passing through said openings, washers having flanges which rest against the outside of the fish-plates and having lugs which project into said openings, the said lugs and openings being of such relative diameter as to permit the said rails to move vertically and to expand or contract longitudinally without straining the bolts or the fish-plates.

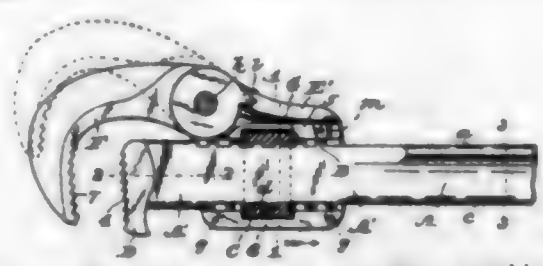


2. In a rail-joint, the meeting ends of rails having bolt-holes therein, a fish-plate on each side of the rail and overlapping the joints, said fish-plates consisting of vertical webs and flanges at the upper ends which rest against the web of the rail and against the under side of the tread of the rail, said fish-plates having outwardly-extending flanges and the edges thereof being inturned so as to fit over and under the edges of the rail-flanges and permit the rail-flanges to move vertically, and means for fastening the fish-plates and the rail ends together so that the rail may have vertical movement and may be moved longitudinally by contraction and expansion without straining the fastening device and the fish-plates.

3. In a rail-joint, the meeting ends of rails having bolt-holes therein, a fish-plate on each side of the rail and overlapping the ends thereof, each fish-plate consisting of a vertical web, an enlarged upper part forming an inwardly-projecting flange which rests against the vertical web of the rail near the tread and also against the under side of the tread, an outwardly-extending flange having an over-inturned edge which rests under the flange of the rail, the distance between the inturned end of the flange being such as to permit the rail-flange to have vertical play, said webs of the fish-plates having openings therein which mate with the openings in the rail-bolts passing through the rails and the webs of the fish-plates, the said bolts fitting snugly in the holes in the rails, lugs projecting into the openings in the fish-plates, other such washers under the nuts of the bolts, a second set of nuts on the bolts, and means between the bolts to prevent the said second set of nuts from turning.

4. In a rail-joint, the meeting ends of rails, the fish-plates on opposite sides thereof being connected by bolts which pass through holes in the rail and fish-plates, said bolts being provided at one end with a washer having a plate thereon which bears against a nut and prevents the nut from turning.

818,419. AUTOMATIC ADJUSTABLE-GRIP PIPE-WRENCH. William H. Dalby, Indianapolis, Ind. Filed Jan. 18, 1904. Serial No. 189,497.



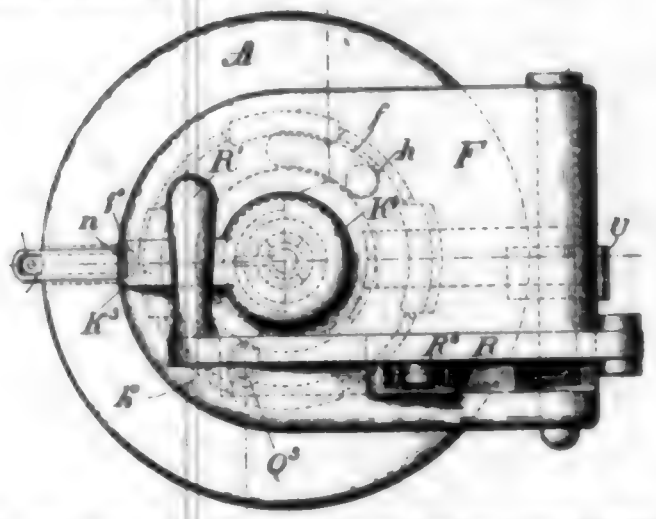
Claim.—An improved pipe-wrench comprising a combined lever and handle with a toothed jaw D attached to one end thereof, the opposite end part thereof having the broad face *a* extending beyond the planes of the sides thereof, the intermediate portion of said handle and lever having flat sides with threads on the edges thereof, a cross-head on said intermediate portion and carrying a spring arranged between the sides thereof, and a jaw pivoted between the sides of the cross-head and having a short projection extending over and engaging the free end of the spring.

818,420. BREECH-LOADING ORDNANCE. Robert B. Dashiell, U. S. Navy; Eleanor R. Dashiell executrix of said Robert B. Dashiell, deceased. Filed May 27, 1898. Serial No. 681,930.

Claim.—1. In a breech mechanism for breech-loading guns, the combination of an operating-lever, and mechanism for opening and closing the breech operated by said lever, of means for operating said lever, consisting of a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring, substantially as described.

2. In a breech mechanism for breech-loading guns, the combination of an operating-lever, and mechanism for opening and closing

the breech operated by said lever, of means for operating said lever, consisting of a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring adjustably mounted on said rod and normally pressing the same in one direction, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring, substantially as described.



3. In a breech mechanism for breech-loading guns, the combination of an operating-lever, and mechanism for opening and closing the breech operated by said lever, of means for operating said lever, consisting of a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, an adjusting-nut mounted on said rod for adjusting the compression on said spring, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring, substantially as described.

4. In a breech mechanism for breech-loading guns, the combination of an operating-lever, and mechanism for opening and closing the breech operated by said lever, of means for operating said lever, consisting of a lever moving with the gun and provided with a tripping-toe, the said lever having an elongated pivot-hole with a spring normally pressing the tripping-toe toward the engaging projection on the gun-mount, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring, substantially as described.

5. In a breech mechanism for breech-loading guns, the combination of an operating-lever, and mechanism for opening and closing the breech operated by said lever, of means for operating the said lever, consisting of a lever moving with the gun and provided with a tripping-toe, the said lever having an elongated pivot-hole with a spring normally pressing the tripping-toe toward the engaging projection on the gun-mount, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, an adjusting-nut mounted on said rod for adjusting the compression on said spring, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring, substantially as described.

6. In a breech mechanism for breech-loading guns of the slotted-screw system, the combination with the breech-block and hinged carrier, of an operating-lever, with mechanism for opening and closing the breech and a cartridge-case extractor both operated by said lever, of means for operating said lever, consisting of a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring and to open the breech, and means operated by the extractor for holding the breech open until released, substantially as described.

7. In a breech mechanism for breech-loading guns of the slotted-screw system, the combination with the breech-block and hinged carrier, of an operating-lever, with mechanism for opening and closing the breech and a cartridge-case extractor both operated by said lever, of means for operating said lever, comprising a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring adjustably mounted on said rod and normally pressing the same in one direction, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring and to open the breech, and means automatically operated by the extractor for holding the breech open until the extractor is pressed forward, substantially as described.

8. In a breech mechanism for breech-loading guns of the slotted-screw system, the combination with the breech-block and hinged carrier, of an operating-lever, with mechanism for opening and closing the breech and a cartridge-case extractor both operated by said lever, of means for operating said lever, comprising a lever moving with the gun and provided with a tripping-toe, a rod connecting said lever and the operating-lever, a coil-spring mounted on said rod and normally pressing the same in one direction, an adjusting-nut mounted on said rod for adjusting the compression on said spring, and a projection on the gun-mount adapted to strike the tripping-toe on counter-recoil, and to move said rod against the action of said spring to open the breech, and means automatically operated by the extractor for holding the breech mechanism in the open position and for releasing the same when desired, substantially as described.

9. In a breech mechanism for breech-loading guns, the combination with the breech-block and hinged carrier, of a cartridge-case extractor, automatic means for swinging said hinged carrier to the open position on counter-recoil, means automatically controlled by said extractor for holding the said hinged carrier in the open position, or for releasing the same when desired, and automatic means for closing the breech when the hinged carrier is released, substantially as described.

10. In a breech mechanism, the combination with a gun-body provided with a screw-box, a hinged carrier, a breech-block carried thereby, a cartridge-case extractor, and means operated by said extractor for holding the carrier open until released, substantially as described.

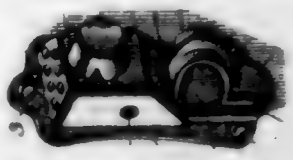
11. In a breech mechanism, the combination with a gun-body provided with a screw-box, a hinged carrier, a breech-block carried thereby, a cartridge-case extractor, means operated by said extractor for holding the carrier open until released, and means automatically operated by the insertion of the shell for tripping said extractor, and thus releasing the carrier, substantially as described.

12. In breech-loading ordnance, the combination with a gun-body having a slot through the walls thereof for the cartridge-case extractor, of a hinged carrier pivoted to said gun-body, a cartridge-case extractor loosely mounted in said gun-body and provided with a curved front face adapted to roll along the forward wall of said slot in the gun-body, and provided with double cam-surfaces on its heel, of a double-acting cam rigidly attached to the hinged carrier and engaging one set of said cam-surfaces on the extractor for ejecting the empty cartridge-case, and the other set of cam-surfaces on the extractor for restoring the latter to the initial position, substantially as described.

13. In breech-loading ordnance, the combination with a hinged carrier, and a breech-block carried thereby, of a detachable housing securing the breech-block in the carrier, and firing mechanism mounted in said housing, substantially as described.

14. In breech-loading ordnance, the combination with a hinged carrier, and a breech-block carried thereby, a firing-pin mounted in said breech-block, a detachable housing securing the breech-block on the carrier, a sliding sear mounted in said housing and engaging said firing-pin, and means for cocking said firing-pin and for releasing said sear, substantially as described.

818,421. **HAT-HANGER.** PATRICK F. DENNING, Newark, N. J. Filed July 17, 1905. Serial No. 269,991.



Claim.—1. A device of the class described, comprising a casing having front and end openings, and a spring-actuated clamping-lever mounted within the casing and extending through the end opening for exteriorly clamping an article, and also provided with a push-button projecting through the front opening, said push-button being flared.

2. A device of the class described, comprising a casing having front and end openings, and a spring-actuated lever mounted within the casing and extending through the end opening and provided with an exteriorly-arranged clamping portion and having a push-button projecting through the front opening, said lever being pivoted at a point between the push-button and the clamping portion.

3. A device of the class described, comprising a casing having front and end openings, a lever provided at opposite sides at an intermediate point with ears, and comprising an upper arm having a hollow outwardly-projecting push-button split at opposite sides and flared and extending through the front opening, and a lower arm having an inwardly-extending bend at the bottom opening and provided with a reversely-arranged projecting loop and having a clamping-lip extending outward from the loop, a pivot passing through the ears and located between the clamping-lip and the push-button, and a spring for actuating the lever.

4. A device of the class described, comprising a casing having a pin-receiving opening and provided with a pin-receiving space spaced from the opening, and means extending into the pin-receiving space for yieldably clamping a pin, whereby the same is retained in the opening.

5. A device of the class described, comprising a casing having a pin-receiving opening and provided with a pin-receiving space spaced from the opening, and a cushion extending into the pin-receiving space for yieldably clamping a pin.

6. A device of the class described having a pin-receiving opening and provided with a clamping-jaw, and a cushion coöperating with the clamping-jaw, said cushion being also arranged to clamp a pin for holding the same in said opening.

7. A device of the class described provided with a pin-receiving opening and having an exterior clamping-jaw, and a cushion provided with interiorly and exteriorly arranged portions, the exteriorly-arranged portion coöperating with the clamping-jaw, and the interior portion being arranged to clamp a pin for holding the same in the opening.

8. A device of the class described, comprising a casing provided at the upper portion with a pin-receiving opening and having a pin-receiving space at its lower portion extending across the casing, and a cushion mounted on the casing and extending into the same at the said space.

9. A device of the class described, comprising a casing provided at the top with a pin-receiving opening and having a raised portion located below the opening and forming a narrow space which extends across the casing, and a cushion carried by the raised portion of the casing and extending into the said space to clamp a pin.

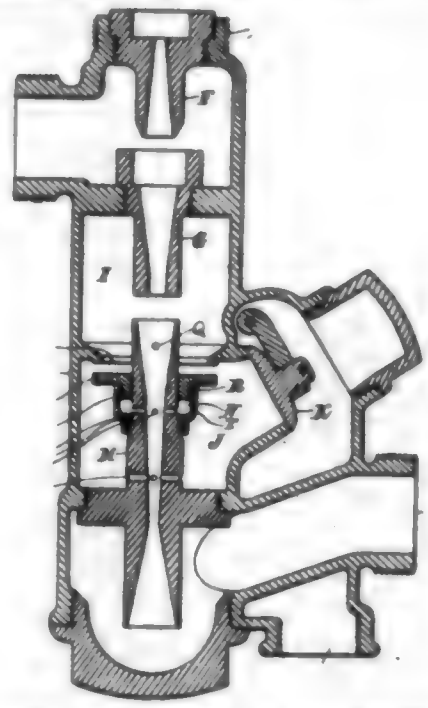
10. A device of the class described, comprising a casing provided at the top with a plurality of perforations and having a pin-receiving space at the bottom, a clamping-lever mounted on the casing, and a cushion coöperating with the lever and extending into the space and being of sufficient width to engage a pin inserted in any one of the pin-receiving openings.

11. A device of the class described, comprising a casing, a spring-actuated lever fulcrumed at an intermediate point between the sides of the casing and extending through one end of the same, said lever having an operating-arm which is provided with a push-button projecting at the front of the casing, the other arm of the lever consisting of a flat terminal clamping portion to engage a hat beyond the rim, and an intermediate substantially U-shaped portion located between the flat clamping portion and the pivot of the lever to receive the curled-up portion or rim of a hat.

12. A device of the class described, comprising a plate having a casing at one end, a cushion located at the opposite end portion of the plate, and a spring-actuated lever fulcrumed at an intermediate point between the sides of the casing and extending through one end of the same, one arm of the lever constituting an operating-arm and provided with a push-button projecting at the front of the casing, the other arm of the lever consisting of a flat terminal clamping portion coöperating with the said cushion for engaging a hat beyond the rim, and a substantially U-shaped intermediate portion located between the clamping portion and the pivot to receive the curled-up portion or rim of a hat.

818,422. **STEAM-INJECTOR.** WILLIAM A. DOWNER, Detroit, Mich. Filed Dec. 23, 1905. Serial No. 293,077.

Claim.—1. In an automatic injector of the character described, the combination of the combining-tube having the usual spill-holes near its mouth and near its point of greatest contraction, and intermediate spill-holes between the same, a cup surrounding the combining-tube and adapted to receive the spill from said intermediate spill-holes, a valve-disk sleeved upon the combining-cone and normally supported upon the cup and a valve-seat above the valve-disk forming an overflow-passage around the combining-tube through which the chamber above the valve-seat is adapted to communicate with the chamber below, under control of the valve, said valve having a piston in engagement with the cup and forming a pressure-chamber therein operating to assist the valve in seating at a predetermined point in the starting of the injector.



2. In an automatic injector of the character described, the combination of the combining-tube having the usual spill-holes near its mouth and near its point of greatest contraction and intermediate spill-holes between the same, a cup secured upon the combining-tube in position to receive the spill from the intermediate spill-holes and provided with corresponding spill-holes, a valve-disk sleeved upon the combining-cone and normally resting upon the cup, and a valve-seat above the valve-disk forming a normally open overflow-passage around the combining-cone and dividing the space above and below the valve-disk into primary and secondary overflow-chambers, said valve-disk provided with a piston on its under side engaging with the cup and forming a pressure-chamber therein operating to assist in the closing of the valve at a predetermined point in the operation of starting the injector.

3. In an automatic injector of the character described, the combination of the combining-tube having the usual spill-holes near its mouth and near its point of greatest contraction and intermediate spill-holes between the same at a determined point in the length of the tube, a cup adjustably secured upon the combining-tube and in position to receive the spill from the intermediate spill-holes and provided with corresponding spill-holes at the base and with spill-openings on the upper edge, a valve-disk sleeved upon the combining-cone and normally resting upon the cup, and a valve-seat above the valve-disk forming a normally open passage around the combining-cone between the chambers above and below the valve-disk, said valve-disk provided with a piston on its under side forming a pressure-chamber in the cup and controlling the spill-openings on the upper edge of the cup.

818,423. **ATTACHMENT FOR SHAPERS FOR MAKING CURVED SURFACES.** HORACE DUNN, Cleveland, Ohio, assignor to American Steel and Wire Company of New Jersey, Worcester, Mass., a Corporation of New Jersey. Filed Aug. 12, 1905. Serial No. 274,009.

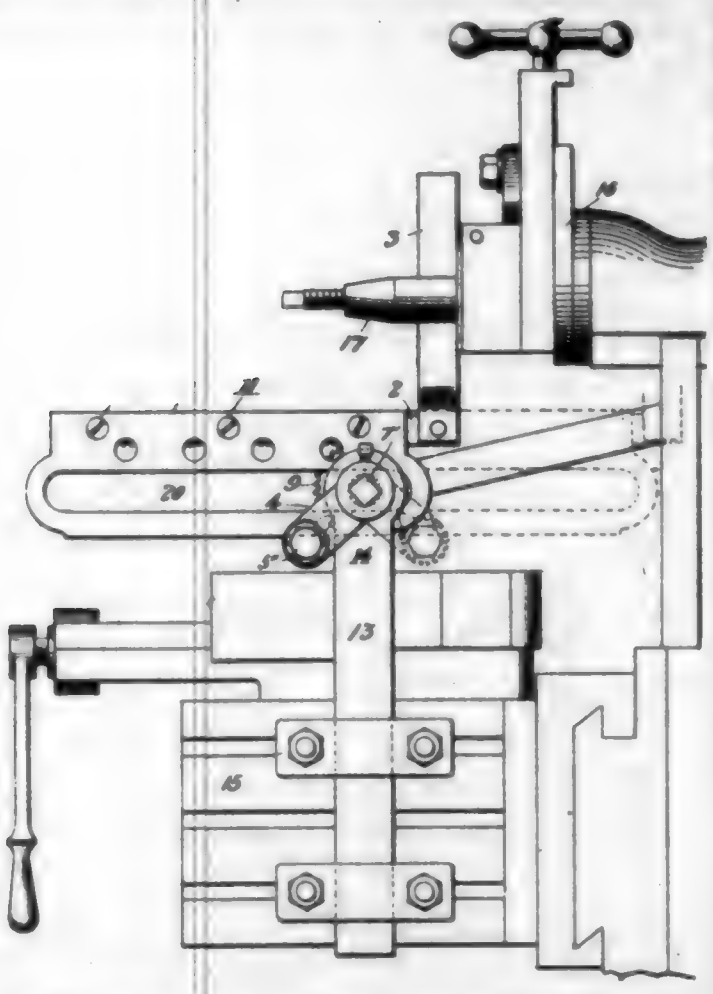
Claim.—1. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft mounted between the shaper-head and the bed of the machine, a tool-holder on said shaft, and means connected with the shaper-head to impart rotary motion to said shaft.

2. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft mounted between the shaper-head and the bed of the machine, a tool-holder on said shaft, a gear on said shaft, and a rack connected with the shaper-head and meshing with said gear to rotate said shaft.

3. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft mounted between the shaper-head and the bed of the machine, a tool-holder on said shaft, a gear on said shaft, a rack connected with the shaper-head and meshing with said gear to rotate said shaft, and a guide-frame attached to said rack and embracing said shaft.

4. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft mounted between the shaper-head and the bed of the machine, a crank-shaped

tool-holder secured on said shaft, and means connected with the shaper-head to impart rotary motion to said shaft and tool-holder.



5. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket removably secured to the machine-frame, a tool-holder on said shaft, and means connected with the shaper-head to impart rotary motion to said shaft and tool-holder.

6. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket removably secured to the machine-frame, a tool-holder on said shaft, a gear on said shaft, and a rack connected with the shaper-head and meshing with said gear to impart rotary motion to said shaft and tool-holder.

7. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket removably secured to the machine-frame, a tool-holder on said shaft, a gear on said shaft, a rack connected with the shaper-head and meshing with said gear to impart rotary motion to said shaft and tool-holder, and a guide-frame attached to said rack and embracing said shaft.

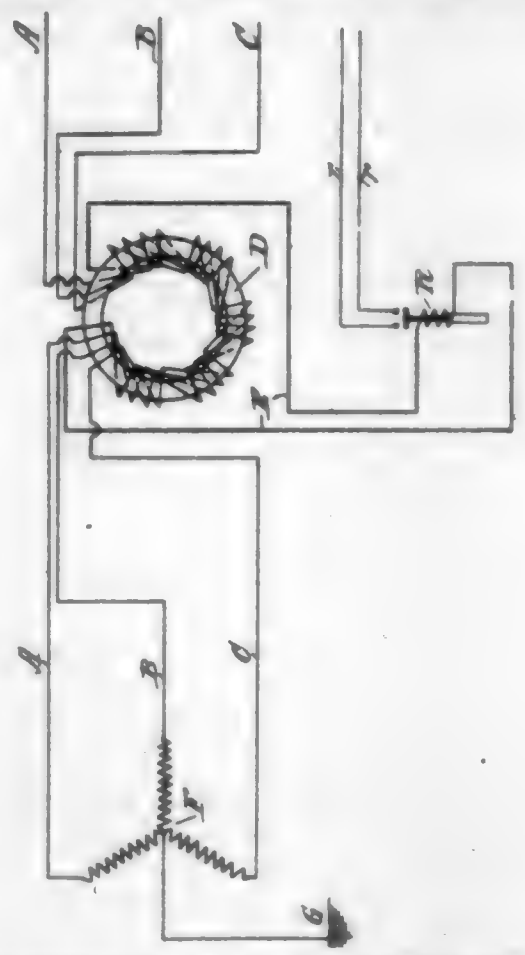
8. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket secured to the machine-frame, a tool-holder mounted on said shaft to swing around the work, means for adjustably clamping a tool in said holder, and means connected with the shaper-head to impart rotary motion to said shaft and tool-holder.

9. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket secured to the machine-frame, a tool-holder mounted on said shaft to swing around the work, means for adjustably clamping a tool in said holder, a gear on said shaft, and a rack connected with the shaper-head, meshing with said gear to impart rotary motion to said shaft and tool-holder.

10. An attachment for shapers for producing curved surfaces on the work secured to the shaper-bed, comprising a shaft journaled at one end in a bracket secured to the machine-frame, a tool-holder mounted on said shaft to swing around the work, means for adjustably clamping a tool in said holder, a gear on said shaft, a rack meshing with said gear, and a link connecting the rack with the shaper-head, whereby rotary motion is imparted to said shaft and tool-holder.

818,424. SAFETY DEVICE FOR ALTERNATING-CURRENT DISTRIBUTION. GEORGE H. EASTMAN, Chicago, Ill. Filed Sept. 17, 1904. Serial No. 224,823.

Claim.—1. An automatic safety device for alternating currents consisting of a plurality of circuit-conductors arranged on different sides of the system and their electromotive forces differing from each other in phases a group of independent windings insulated from each other, one for each of the circuit-conductors, arranged in close proximity and bearing the same inductive relationship to each other, whereby the inductance is neutralized when the vectorial sum of the currents in the circuit-conductors is zero; and an extra coil for controlling an electrosensitive device, said extra coil being in position to be inductively energized by any one of the first-mentioned coils.



2. An automatic safety device for alternating currents consisting of a plurality of line conductors arranged on different sides of the system and their electromotive forces differing from each other in phase a core having the line conductors insulated therefrom and from each other and wound substantially in balance thereon; and an electrosensitive device adapted to be influenced by magnetic flux in said core.

3. An automatic safety device for alternating currents consisting of a plurality of line conductors arranged on different sides of the system and their electromotive forces differing from each other in phase a core having the line conductors wound substantially in balance thereon said line conductors being electrically non-connected; an electrosensitive device; and a conductor connected to said electrosensitive device and having a portion wound around said core to be energized by the magnetic flux therein.

4. In a distributing system for alternating currents, the combination of a magnetic core; a set of line conductors insulated from each other and arranged on different sides of the system and differing in phase from each other wound on said core in balance so that at any portion of said core the vectorial sum of the electromotive forces is substantially zero; an electrosensitive device; and an independent winding on said core connected to said electrosensitive device for operating the same when said core has magnetic flux set up therein.

5. In a distributing system for alternating currents, the combination of a metallic ring; a set of line conductors insulated from each other and having independent windings of an equal number of turns upon said ring; said line conductors being arranged on different sides of the system and differing in phase from each other; an electrosensitive device; and a separate conductor connected to said electrosensitive device and making a number of turns around said ring.

6. In a distributing system, the combination of an alternating generator; three line conductors connected thereto on opposite sides of the system whereby their electromotive forces differ from each other by one-third of a period; a magnetic core; three equivalent windings around said core electrically connected to said line conductors and insulated from each other; and an electrosensitive device adapted to be operated by magnetic flux in said core.

7. In a three-phase, alternating system of electric distribution,

the combination of an alternating generator; three line conductors leading therefrom and differing in phase by one-third of a period; a closed-circuit magnetic core; three independent windings insulated from each other and symmetrically arranged on said core and connected to said line conductors, and an electrosensitive device adapted to be operated by magnetic flux in said core.

8. In a three-phase, alternating system of electric distribution, the combination of an alternating generator; three line conductors connected thereto so as to differ in phase by one-third of a period; a laminated iron ring; three independent windings of an equal number of turns symmetrically wound around said ring and insulated from each other; a fourth winding wound around said ring symmetrically with respect to the other three windings; and an electrosensitive device operated by said fourth winding when a current is induced therein.

9. A system of alternating-current distribution having a circuit-breaker for its mains and apparatus governing the circuit-breaker, said apparatus including inducing-windings all insulated from each other and their currents differing in phase from each other, and each main of the system including one of said inducing-windings, and said apparatus also including a circuit having a winding in transformer relation with each of said inducing-windings.

10. A system of alternating-current distribution having a circuit-breaker for its mains, which mains differ from each other in phase, apparatus governing the circuit-breakers, said apparatus including inducing-windings each in a main of the system and insulated from each other, a secondary winding in transformer relation with each of the inducing-windings and a magnet governing the circuit-breaker and receiving current from the secondary winding substantially as described.

11. A polyphase system of alternating-current distribution having a circuit-breaker for its mains, said mains differing from each other in phase, apparatus governing the circuit-breaker, said apparatus including inducing-windings each in a main of the system and insulated from each other, a secondary circuit having a winding in transformer relation with each of the inducing-windings, and a magnet governing the circuit-breaker and receiving current from the secondary circuit, substantially as described.

12. A system of alternating-current distribution having an electrosensitive device, apparatus governing said device and including a core having windings thereon each included in a main of the system, and each insulated from the other and having their electromotive forces differing in phase, said apparatus also including a secondary circuit having a winding in transformer relation with each of said inducing-windings.

13. A system of alternating-current distribution having three mains arranged on different sides of the system and differing from each other in phase by one-third of a period, a circuit-breaker for said mains and apparatus governing said circuit-breaker, said apparatus including a plurality of windings, one adapted to have current induced therein by any one of the remaining windings for operating said circuit-breaker, said remaining windings being insulated from each other and each connected to a main of the system.

14. A system of alternating-current distribution having three mains arranged on different sides of the system and differing in phase by one-third of a period, and an electrosensitive device, apparatus governing said device and including a core having insulated windings thereon so proportioned that in normal operation no field is set up in said core, each main of the system including one of said windings.

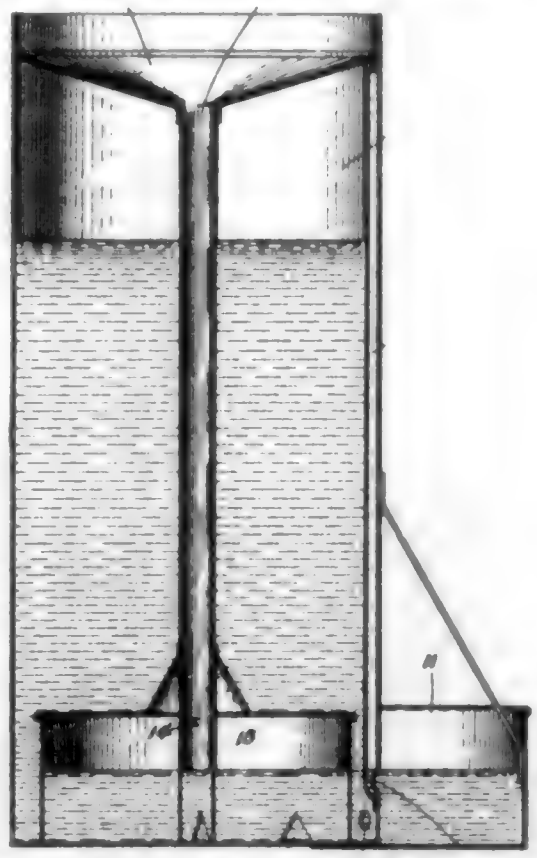
15. A system of alternating-current distribution having three mains arranged on different sides of the system and differing in phase by one-third of a period, an electrosensitive device, apparatus governing said device including inducing-windings each in a main of the system, and a secondary circuit having a winding in transformer relation with each of the inducing-windings and supplying current to said electrosensitive device, said inducing-windings being insulated from each other and so proportioned that normally no magnetic field is set up by them.

16. A system of alternating-current distribution having mains on different sides of the system differing from each other in phase, an electrosensitive device, apparatus governing said device including inducing-windings insulated from each other, each main of the system including one of said inducing-windings, and a secondary circuit having a single winding in transformer relation with all of the inducing-windings and supplying current to said electrosensitive device, said inducing-windings being insulated from each other and so proportioned that normally no magnetic field is set up by them.

17. In combination, a source of polyphase current, inducing-windings connected thereto and normally producing no flux of any kind by reason of their currents differing in phase, and the windings being so wound in balance that the currents neutralize each other as far as inducing action of the windings is concerned, a secondary winding in which current is induced when the inducing-windings jointly produce flux, and an electrosensitive device operated by said secondary winding substantially as described.

18. In combination, a three-phase generator, three insulated main conductors connected thereto so as to differ in phase by one-third of a period, a magnetic core, said main conductors being so wound upon said core that under normal conditions the integrated sum, algebraically, of all of the vectors in such portions of the mains as are wound upon said core remain substantially at zero, and an electrosensitive device adapted to be influenced by said core when the same is energized.

818,425. **STOCK-WATERING TANK.** JOSIAH P. EDWARDS, Shirley, Ind., assignor, by direct and mesne assignments, to Gedge Brothers Iron Roofing Company, Anderson, Ind., a Corporation of Indiana. Filed Jan. 8, 1906. Serial No. 294,149.



Claim.—1. In a device of the class described, a closed reservoir having upper and lower compartments separated by a transverse partition having an aperture, a drinking-trough connected to said reservoir, a discharge from the lower of said compartments into said drinking-trough and disposed below the upper line of the same, and an equalizing-pipe leading from the lower of said compartments and terminating above the upper of said compartments.

2. In a device of the class described, a closed reservoir having the cover member spaced below the upper rim and provided with an aperture communicating with the interior of the same, a detachable closure to said aperture, a transverse partition dividing the interior of said reservoir into two compartments and having a compartment-connecting aperture, a drinking-trough connected to said reservoir, a discharge from the lower of said compartments into said drinking-trough and disposed below the upper line of the same, and an equalizing-pipe extending through said partition and through said cover member.

3. In a device of the class described, a tank having a headed upper end, and a delivery-receptacle communicating with the interior of said tank near its lower end, of a comparatively large expansion-chamber arranged in the lower end of said tank and communicating with the interior and exterior of the tank.

4. In a device of the class described, a tank having a headed upper end, and a delivery-receptacle communicating with the interior of said tank near its lower end, of a comparatively large expansion-chamber arranged in the lower end of said tank and communicating with the interior of the tank and communicating with the exterior of the tank by a passage the upper end of which extends above the normal level of the liquid within the tank.

5. In a device of the class described, the combination with a tank

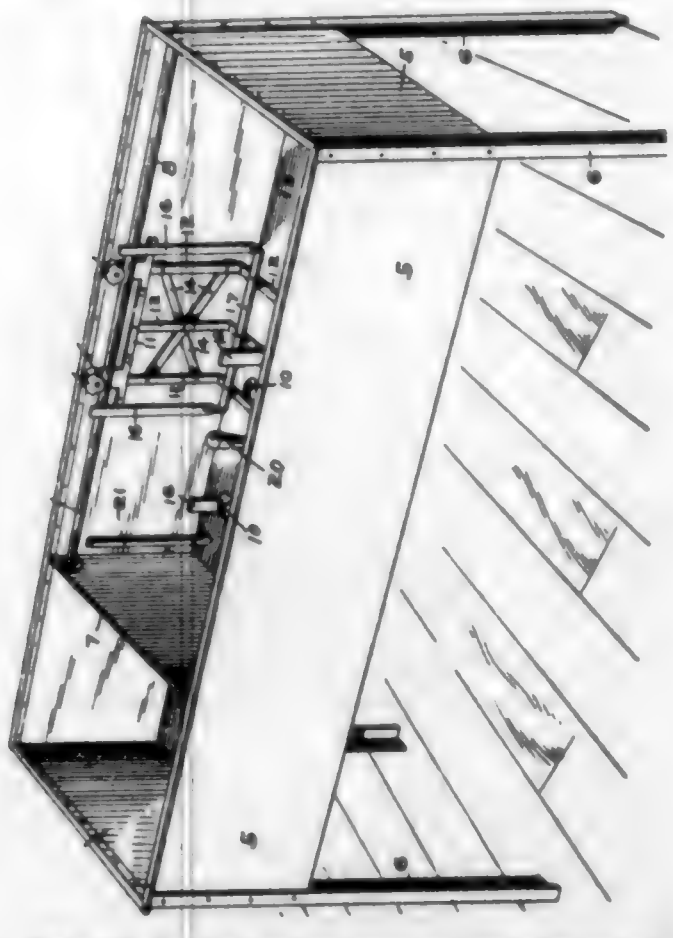
and a delivery-receptacle communicating therewith near its bottom, of a cover for the upper end of said tank, a tube passing through said cover downward through the tank to a point near its bottom and communicating with an expansion-chamber of comparatively large cubic contents arranged in the lower end of said tank and communicating with the interior of the tank.

818,426. NOODLE-CUTTER. WILLIAM N. FOUST, Summit township, Crawford county, Pa. Filed Sept. 9, 1904. Serial No. 223,940.



Claim.—A rotary disk-cutter comprising a handle having a widened portion at one end thereof, the upper and lower surfaces of said widened portion being curved to an edge, parallel slits in said widened portion at right angles to said curved surfaces, cutting-disks mounted in said slits, and a rod passed through said wide portion and centrally through said disks and in such a position that the edges of said disks project beyond said upper and lower curved surfaces, substantially as shown and described.

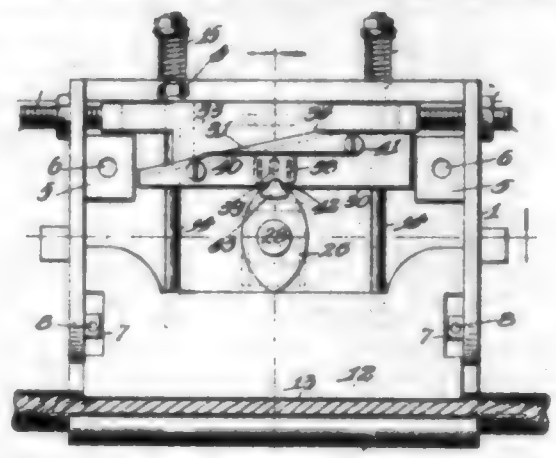
818,427. DISH-WASHING MACHINE. ISAAC L. FRANKEL, Indianapolis, Ind. Filed Jan. 9, 1905. Serial No. 240,340.



Claim.—1. In a dish-washing machine, a tank divided by a partition into two compartments, a pair of horizontal and parallel tubular ways supported by said partition and the end of the tank, pulleys or wheels mounted on the tubular ways, housings within which said wheels are mounted, hangers depending from said housings, horizontal bars supported by said hangers, a plurality of bars fastened to said horizontal bars and extending thence down to near the bottom of the tank and thence horizontally across the tank, braces for said bars, a handle attached to the carriage thus formed, and a removable dish-holding receptacle of perforate material supported upon the horizontal members of said plurality of bars.

2. In a dish-washing machine, a tank divided by a partition into two compartments, each of said compartments having a separate tubular overflow, one of said compartments having a pair of horizontal tubular tracks or ways, each adjacent to opposite sides of its tank and supported from the end of the tank and from said partition, a plurality of wheels mounted on each of said ways, each of said wheels having a hanger, horizontal bars supported by said hangers, other bars having their ends attached to opposite ones of said horizontal bars and extending first downwardly and then horizontally across the tank, cross-bars to brace the downwardly-extended portions of said last bars, other bars crossing the horizontal members of the bars which connect the opposite horizontal bars and having their ends bent upwardly to form stops, a handle extension from the carriage thus formed, and a receptacle of woven wire to receive the dishes to be washed, said receptacle being removably secured upon the carriage.

818,428. GRIP FOR AERIAL-TRAMWAY CABLES. EDWARD P. FREDERICK, St. Louis, Mo. Filed Feb. 27, 1905. Serial No. 247,594.



Claim.—1. In a grip for aerial tramways, a horizontal adjusting mechanism for adjusting the movable jaw, comprising two bars, having inclined faces dovetailed into each other and slidingly mounted relative to each other, the upper one of said bars being provided with screw-threaded ends and nuts located on said screw-threaded ends, by means of which the said bar may be moved horizontally; substantially as specified.

2. In a grip for aerial tramways, a horizontal adjusting mechanism for adjusting the movable jaw, comprising two bars, having inclined faces dovetailed into each other and slidingly mounted relative to each other, the upper end of said bars being provided with screw-threaded ends, nuts located on said screw-threaded ends, by means of which the said bar may be moved horizontally, and a resilient catch mounted on the lowermost one of said bars, adapted to engage with a lug carried by the clamping mechanism; substantially as specified

3. In a grip for aerial tramways provided with a movable jaw, a clamping mechanism and an adjusting mechanism, a resilient catch carried by the adjusting mechanism and a lug carried by the clamping mechanism, adapted to engage the said catch; substantially as specified.

4. In a grip for aerial tramways, having a clamping mechanism, a resilient retaining device for locking said clamping mechanism; substantially as specified.

5. In a grip for aerial tramways, having an adjustable movable jaw and a clamping mechanism susceptible of vertical movement, a retaining device for locking said clamping mechanism; substantially as specified.

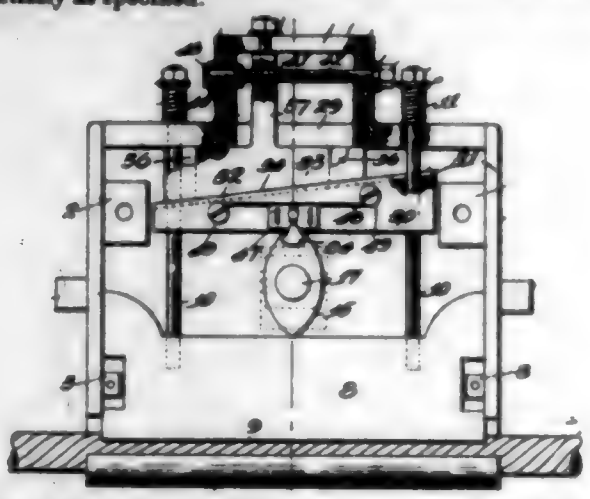
6. In a grip for aerial tramways, a horizontal adjustable mechanism for adjusting the movable jaw, comprising two bars, having inclined faces dovetailed into and slidingly mounted relative to each other, the uppermost one of said bars being provided with a standard having a screw-threaded opening, a screw-threaded shaft mounted in said opening and fixed against horizontal movement, by means of which a horizontal movement may be imparted to said upper bar; guide-rods for said bars; and a resilient spring-catch carried by the lowermost one of said bars; substantially as specified.

818,429. GRIP FOR AERIAL-TRAMWAY CABLES. EDWARD P. FREDERICK, St. Louis, Mo. Filed Feb. 27, 1905. Renewed Feb. 19, 1906. Serial No. 301,915.

Claim.—1. In a grip for aerial tramways, mechanism for adjusting the movable jaw, comprising two bars, having inclined faces, dovetailed into each other and slidingly mounted relative to each other, the uppermost one of said bars being provided with a standard having a screw-threaded opening, and a screw-threaded shaft mounted in said opening and fixed against horizontal movement, by means of which a horizontal movement may be imparted to said upper bar; substantially as specified.

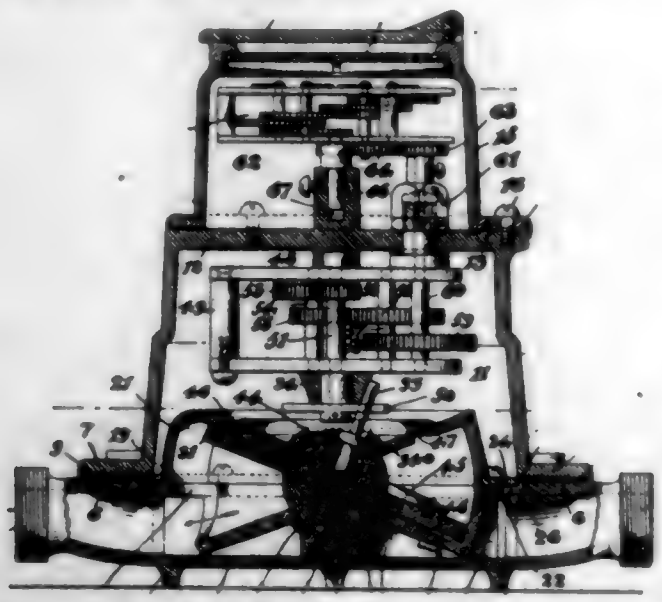
2. In a grip for aerial tramways, a horizontal adjustable mechanism for adjusting the movable jaw, comprising two bars, having inclined faces dovetailed into and slidingly mounted relative to each other, the uppermost one of said bars being provided with a standard

having a screw-threaded opening, a screw-threaded shaft mounted in said opening and fixed against horizontal movement, by means of which a horizontal movement may be imparted to said upper bar, and a resilient-spring catch carried by the lowermost one of said bars; substantially as specified.



3. In a grip for aerial tramways, a horizontal adjustable mechanism for adjusting the movable jaw, comprising two bars, having inclined faces dovetailed into and slidingly mounted relative to each other, the uppermost one of said bars being provided with a standard having a screw-threaded opening, a screw-threaded shaft mounted in said opening and fixed against horizontal movement, by means of which a horizontal movement may be imparted to said upper bar, a resilient-spring catch carried by the lowermost one of said bars, and a clamping mechanism for the movable jaw, provided with a lug adapted to engage in the said resilient catch: substantially as specified.

818,430. **WATER-METER.** HENRY FREDRICK, Newark, N. J. Filed Apr. 26, 1905. Serial No. 257,421.



Claim.—1. In a water-meter, a bottom section having a central recess provided with an inlet and an outlet for water, a disk-chamber seated in said recess and being at its lower part smaller than the recess so as to form therewith an annular space or passage, said disk-chamber having partitions adapted to close said passage-way between the inlet and outlet and having ports on opposite sides of the partition farthest from the inlet, a disk in said chamber, a gear-chamber above said disk-chamber and entirely closed off thereby from the recess of the bottom section, gears in said gear-chamber adapted to be actuated by said disk, and registering means in connection with said gears.

2. In a water-meter, a bottom section having a central recess with an inlet and an outlet leading thereto, a middle section providing a gear-compartment, a disk-chamber mounted in the mouth of said recess and separating said recess from the gear-chamber above, said disk-chamber engaging the bottom of the recess and being at its lower part smaller than the same to form therewith an annular passage and having in its side entrance and discharge ports, radial partitions upon said disk-chamber dividing the said annular passage and placing the parts in communication with each other through the disk-chamber, a disk in said disk-chamber, gears in said gear-compartment adapted to be actuated by said disk, and registering mechanism in connection with said gears.

3. In a water-meter, a casing having a bottom section providing a disk-chamber recess with water-inlet and discharge-passages at the sides thereof, and a middle section provided with a closed top and an open bottom adapted to be secured upon said bottom section around the said recess thereof, a disk-chamber seated in the mouth of said recess and thus serving also to divide the said water-passages from the chamber of the middle section, a disk in said disk-chamber, gearing in the said middle-section chamber in connection with said disk, and counter mechanism in connection with said gearing.

4. In a water-meter, a casing having a bottom section providing a disk-chamber recess with water-inlet and discharge-passages at the sides thereof, and a middle section provided with a closed top and an open bottom adapted to be secured upon said bottom section around the said recess thereof, a disk-chamber seated in the mouth of said recess and dividing the water-passages of the bottom section from the chamber of the middle section, said disk-chamber providing interior ball-seats in the center of its top and bottom walls, the upper of which seats is apertured, a disk in said chamber having a ball lying in said seats and permitting a limited leakage into the middle-section chamber, gearing in said middle-section chamber in connection with said disk, and counter mechanism in connection with said gearing.

5. In a meter, a casing providing a counter-chamber with a vertical socket therein, a counter in said chamber having a central bottom pin adapted to enter said socket, a driving-shaft projecting upward into said counter-chamber, gears upon said shaft and counter, respectively, adapted to intermesh, and means adapted to receive motion from the water passing through the meter to drive said shaft.

6. In a water-meter, a casing, a disk-chamber having a conical floor provided with a plurality of radially-extending grit pockets or recesses, each independent of the others and having its depth increasing from nothing at the end next the center of the disk-chamber outward, a disk in said disk-chamber, and registering mechanism adapted to be operated by said disk.

7. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having upon one of its faces an annular rib, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

8. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having upon its face an annular projecting rib, a wire embedded in said rib, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

9. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having upon its face an annular projecting rib, the disk-chamber having a groove to receive said rib, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

10. In a disk water-meter, a casing providing a disk-chamber having in its wall a circular groove, a flat disk having an annular rib nicely fitting said groove, a wire embedded in said rib, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

11. In a disk water-meter, a casing providing a disk-chamber, a radial septum in said chamber having its sides or faces concaved and its inner end edge vertically slotted, a disk in said chamber having a center ball and a radial slot of greater width than the thickness of the said septum, a projection upon the center ball of the disk adapted to enter the end edge slot of the septum and take the friction between said disk and septum, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

12. In a disk water-meter, a casing providing a disk-chamber, a radial septum in the chamber, a disk mounted in said chamber and having a radial slot adapted to receive said septum and a branch slot leading from one side of said main slot, a friction-wheel in said branch slot, an arbor-pin for said friction-wheel having bearings in the opposite walls of said branch slot, and registering means adapted to be operated by said disk.

13. In a disk water-meter, a casing providing a disk-chamber, a radial septum in the chamber having its side or face concaved, a disk mounted in said chamber and having a radial slot adapted to receive said septum and a branch slot leading from the main slot at the concaved side of the septum, a friction-wheel in said branch slot, an arbor-pin for said friction-wheel having bearings in the opposite walls of said branch slot, and registering means adapted to be operated by said disk.

14. In a disk water-meter, a casing providing a disk-chamber, a radial septum in the chamber, a disk mounted in said chamber and

having a radial slot adapted to receive said septum, and branch slots leading from opposite sides of said main slot, friction-wheels one in each of said branch slots, an arbor-pin for each friction-wheel having bearings in the opposite walls of the branch slot, and registering means adapted to be operated by said disk.

15. In a disk water-meter, a casing providing a disk-chamber having in its top and bottom walls annular grooves, a disk in said chamber provided on its upper and lower surfaces with ribs adapted to fit said grooves, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

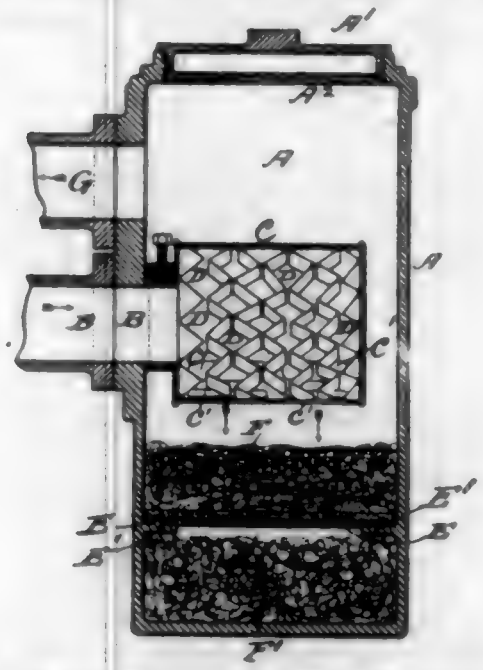
16. In a disk water-meter, a casing providing a disk-chamber having in its top and bottom walls annular grooves, a flat disk in said chamber provided on its upper and lower surfaces with ribs adapted to fit said grooves, wires embedded in said ribs, means for conducting water to and from said chamber, and registering mechanism adapted to be actuated by said disk.

17. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having upon its opposite faces annular ribs, and registering means adapted to be actuated by said disk

18. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having upon its opposite faces annular ribs, wires embedded one in each rib, and registering means adapted to be operated by said disk.

19. In a disk water-meter, a casing providing a disk-chamber, a disk in said chamber having an annularly-disposed strengthening-wire embedded in itself, and registering means adapted to be actuated by said disk.

818,431. OIL-SEPARATOR. CHARLES H. GAMMON, Coldfield, near Birmingham, England. Filed Nov. 23, 1904. Serial No. 234,594.

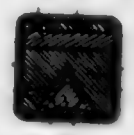


Claim.—1. An oil separator or filter for steam-motor cars and other vehicles, motor-boats, locomotive or stationary engines or the like, consisting of a steam-chamber A with screw-cap A' and aperture A², exhaust-pipe B entering said chamber A, a separating-box C contained within the steam-chamber A and connected to exhaust-pipe B, strips of metal D arranged crosswise inside the separating-box C, holes C' in the lower part of the said separating-box, side wings C² above the holes C' substantially as described.

2. In an oil separator or filter for steam-motor cars and other vehicles, motor-boats or the like or for locomotive or other engines a steam-chamber A, exhaust-pipe B leading into same, a separating-box C containing strips of corrugated, plain or zigzag metal D a perforated plate or plates E arranged beneath said separating-box C, the cotton-waste F arranged between the separating-box and the perforated plate or tray and cotton-waste F' beneath the plate E all for the purpose substantially as described.

3. In an oil separator or filter for steam-motor cars, motor-launches or the like, or for locomotive or other engines the combination and arrangement of a steam-chamber A leading from compartment 1 and exhaust-pipe B, separating-box C, containing metal strips D perforated hinged plate or tray E cotton-waste F F', exhaust-outlet pipe G placed above the exhaust-inlet B—or elsewhere—a chamber or water-container H in connection with the steam-chamber A said water-container forming two compartments, 1, 2, the outlet-pipe I from steam-chamber A to compartment 1 cotton-waste F² the pipe J leading from compartment 1 and entering the water-compartment 2 the pipe K with gauze screen K' leading from compartment 2 to the pump or tank the overflow L in compartment 1 all operating in manner and for the purpose substantially as described and illustrated.

818,432. ROD-PACKING. OLIN J. GARLOCK, Palmyra, N. Y. Filed Nov. 18, 1905. Serial No. 288,042.

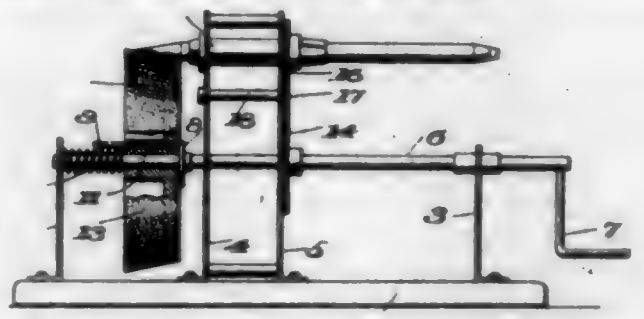


Claim.—1. A packing for piston-rods, consisting of a main strand of soft material, as canvas ducking, having a longitudinal groove in one side, a metallic strand, as of lead, in the groove, and strands of different materials back of the main strand, and a wrapper for the whole.

2. A packing for piston-rods, comprising a main strand of fibrous material substantially rectangular in cross-section, having a longitudinal V-shape groove in one side, a hollow triangular strand of lead in said groove and filling the same, a strand of india-rubber in the leaden strand, and strands of different soft material back of the main strand, and an outside wrapper for the combined strands, the whole body being substantially square in cross-section.

3. A rope of rod-packing comprising a main strand of yielding material having a longitudinal groove in one side, a strand of flexible metal in said groove, a strand of india-rubber against the said main strand on the side opposite the metal strand, a strand of fibrous material against the india-rubber strand, all the strands except the metallic strand being substantially rectangular in cross-section and a wrapper for the strands.

818,433. PENCIL-SHARPENER. PERRY GARST, Portsmouth, N. H. Filed May 31, 1905. Serial No. 262,996.



Claim.—1. In a pencil-pointer, a base, a grinding-drum, a shaft on which the drum is journaled, a rotating pencil-holder, means for simultaneously rotating the drum and holder, and means for yieldingly holding the drum in a direction in the axis of the pencil-holder.

2. In a pencil-pointer, a shaft, a drum journaled on the shaft, a pencil-holder located parallel to the said shaft and adapted to hold a pencil to be sharpened, means for simultaneously rotating the pencil and drum, and means for yieldingly pressing the drum toward the pencil in a line parallel to the axis of the pencil.

3. In a pencil-pointer, a shaft, a drum mounted on the shaft and adapted to move longitudinally thereof but to turn therewith, a pencil-holder having its axis parallel with the axis of the shaft, means for rotating the drum and pencil-holder simultaneously, and means for yieldingly pressing the drum toward the holder and in the line of the axis thereof.

4. In a pencil-pointer, a shaft, a drum loosely mounted on the shaft and movable longitudinally thereof, means to cause the drum to rotate with the shaft, a pencil-holder lying parallel to the shaft, means for simultaneously driving the drum and pencil-holder, and a spring adapted to yieldingly hold the drum toward the holder and in the line of the axis thereof.

5. In a pencil-pointer, a shaft, a drum slidingly mounted on the shaft and adapted to turn therewith, a pencil-holder parallel to the axis of the shaft, means for simultaneously rotating the pencil-holder and drum, and means for yieldingly holding the drum against and applying pressure to the pencil in line parallel with the axis thereof.

6. In a pencil-pointer, a shaft, an abrasing or grinding drum mounted on the shaft and adapted to move longitudinally thereof, said drum having a hole through the axis thereof, a rod connected to the shaft and passing through the opening in the drum to cause the drum to rotate upon turning the shaft, a pencil-holder located parallel to the shaft and adapted to hold a pencil, means for simultaneously rotating the shaft and the holder so as to cause the pencil and the drum to rotate, and means for yieldingly holding the drum

against the pencil and applying pressure in line with the axis of the pencil.

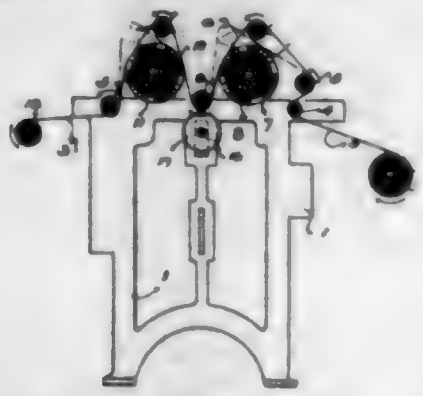
7. In a pencil-pointer, a shaft, an abrasing or grinding drum mounted on the shaft and adapted to move longitudinally thereof, said drum having an opening eccentric to the shaft, a rod connected to the shaft and passing through the opening in the drum to cause the drum to rotate with the shaft, a pencil-holder located parallel to the shaft and adapted to hold a pencil, means for simultaneously rotating the shaft and the holder so as to cause the pencil and drum to rotate, and a spring for yieldingly holding the drum against the pencil and applying pressure in line with the axis of the pencil.

8. In a pencil-pointer, a frame consisting of a side plate, two arms projecting therefrom, a standard, a shaft mounted in the plate, a pencil-holder mounted in one of the arms and in the standard, a shaft mounted in the other arm and in the standard, a grinding-drum mounted on the second shaft and adapted to move longitudinally thereof and to rotate therewith, means for forcing the drum toward the pencil-holder and in line with the axis thereof, and means for simultaneously rotating the pencil-holder and the shaft carrying the drum upon the rotation of the first shaft.

9. In a pencil-pointer, a frame consisting of a side plate, two arms and a standard, a shaft mounted in the frame having a gear secured thereto, a pencil-holder mounted in the standard and in one of the arms, a shaft mounted in the standard and in the other arm, a grinding-drum secured to the second shaft and adapted to move longitudinally thereof and rotate therewith, means for yieldingly holding the drum in a direction in line with the axis of the pencil-holder, and pinions on the pencil-holder and the drum-shaft connecting with the gear whereby upon the rotation of the shaft the pencil-holder and the drum will be rotated simultaneously.

10. In a pencil-pointer, a frame having a side plate and two arms projecting therefrom, a standard, a shaft mounted in the side plate, a gear connected to the said shaft, a pencil-holder adapted to receive a pencil mounted in one arm of the frame and in the standard, a gear secured to each of the pencil-holders and meshing with the first-mentioned gear, a shaft mounted in the standard and in the other arm of the frame, a drum loosely mounted on the second shaft and adapted to move longitudinally thereof, said drum having an opening through the hub thereof, a rod connected to the shaft and passing through said opening, whereby upon the rotation of the shaft the drum will be rotated, a spring bearing against the drum and adapted to yieldingly hold it against a pencil in the holder and to apply pressure in line with the axis of the pencil, and a gear connected to the last-mentioned shaft and also connected with the gear on the first-mentioned shaft as and for the purpose set forth.

818,434. **RUBBING, BREAKING, AND POLISHING MACHINE FOR SILK OR SILK-MIXED GOODS.** ALPHONSE GERBER, Paterson, N. J. Filed Aug. 8, 1904. Serial No. 219,575.

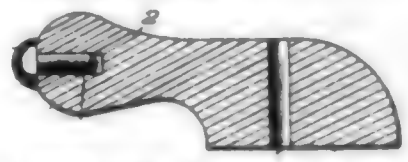


Claim.—1. The combination with the rotary knife-carrying members of gears loosely mounted on each end of the shafts of said members, arms secured to each of said gears, tension-rolls mounted to turn by friction in the outer ends of said arms, which project beyond the knife-carrying members, an intermediate gear meshing with the two gears which carry the tension-roll arms, an operating arm or lever secured to said intermediary gear and a guide for said operating-arm provided with means for holding said arm in the position desired, substantially as set forth.

2. In a machine for finishing silk or silk-mixed fabrics, a rotary member, knives having a discontinuous edge spirally arranged on and carried by said member with the spirals turning to the right, a second rotary member, knives spirally formed thereon with the spirals turning to the left and having a continuous edge, in combination with lever-arms loosely mounted on the ends of the shafts of said rotary members, gears secured to the inner ends of said arms, tension-rolls mounted in the outer ends of said arms and adapted to be turned by the friction of the moving fabric, an intermediary gear meshing with above-mentioned gears, an operating lever-arm secured to the intermediary gear, and a guide for said operating lever-arm provided with means for holding said arm in the position desired, for the purposes specified and substantially as set forth.

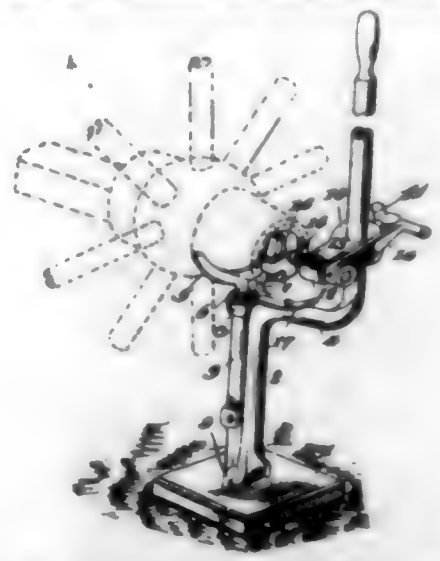
3. In a machine of the character described, the combination with the rotating, breaking, spreading and polishing members and means for driving the same, of tension-rolls, levers carrying the same and having gears secured to their inner ends, an intermediary gear meshing with said gears and a lever secured to said intermediary gear.

818,435. **DOOR-CHECK.** BERT GONYO, Trudeau, N. Y. Filed Apr. 8, 1905. Serial No. 254,614.



Claim.—As a new article, a door-check consisting of a solid body flat upon its under side and rounded at one end toward the flat under side, a head extending from the other end of the body and consisting of a knob-like integral extension projected from the upper portion thereof, and a buffer at the outer end of the head, the body being provided with a vertical opening therethrough to receive a fastening for attachment of the door-check to a suitable support.

818,436. **LIFTING-JACK.** WILLIAM J. GRAY, Sauk Center, Minn. Filed Nov. 10, 1904. Renewed Mar. 24, 1906. Serial No. 307,324.



Claim.—1. In a device of the class described, the combination of a lever, a lifting-bar pivoted to the lever at a point between the ends of the latter, and a nut-operating means carried by the lever above the lifting-bar.

2. In a device of the class described, the combination of a base, a lever pivoted to said base, a lifting-bar pivoted at one end to the lever, and automatically-operating means for connecting the opposite end portion of the lifting-bar with the lever.

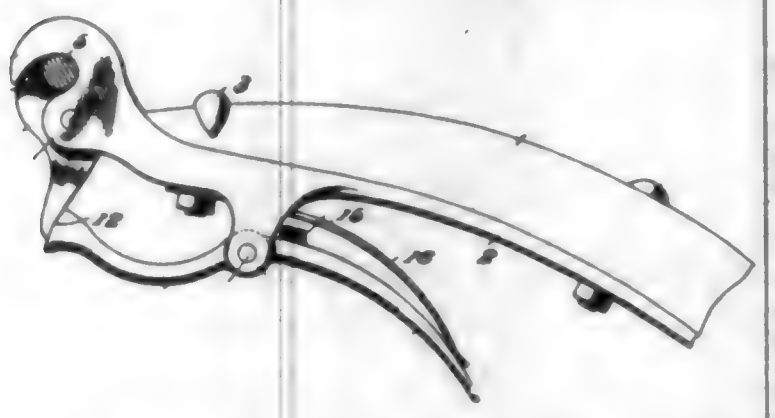
3. In a device of the class described, the combination of a base, a lever pivoted at one end to the base, a lifting-bar pivoted at one end to the lever at a point between the ends of the latter, and spring interlocking means between the opposite end portion of the lifting-bar and the lever.

4. In a device of the class described, the combination of a lever, a lifting-bar pivoted at one end to the lever at a point between the ends of the latter, a lock device carried by the opposite end of the lifting-bar, engaging means carried by the lever for coöperation with the said lock device, a lifting-head upon the lifting-bar, and adjustable nut-operating means movable longitudinally of the lever.

5. In a device of the class described, the combination of a base, a lever pivoted to said base, a lifting-bar pivoted at one end to the lever, interlocking means between the opposite end of the lifting-bar and the lever, and a nut-operating device adjustable longitudinally of the lever above said lifting-bar.

818,437. **THILL-COUPLING.** JAMES A. GREEN, Millsdale, Va. Filed May 20, 1905. Serial No. 261,414.

Claim.—1. In an automatic thill-coupling and in combination with the thill-iron or forging provided with an engaging jaw, a pivoted dog provided with a complemental jaw and having a tailpiece and a spring-actuated lock-lever arranged to make positive engagement with opposite faces of said tailpiece to hold the dog either open or closed.

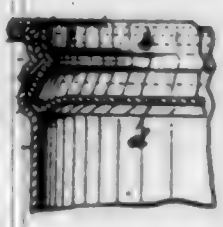


2. In a thill-coupling, the combination of a thill-iron provided with an engaging end constituting a jaw, a dog coöperating therewith and having a complemental jaw and oppositely-disposed cam-faces, and a spring-actuated lock device arranged to ride upon either cam-face and positively hold the said jaws either open or closed.

3. In a thill-coupling the combination of a thill-iron provided with an engaging end, a movable jaw coöperating therewith, a lock-lever arranged to hold the movable jaw closed and to normally exert a pressure thereon, and provided with a projection, and a spring normally exerting a pressure upon the lock-lever, and prevented from overstraining by means of said projection.

4. The herein-described thill-coupling comprising a thill-iron having its outer end recessed to form an engaging jaw and provided with spaced lugs a short distance from the rear of the jaw, a dog pivoted between its ends to the engaging end of the thill-iron and having a recess to form a companion jaw, a lock-lever pivoted between said spaced lugs and having its outer end widened to form a head for coöperation with the tail portion of the pivoted dog and having a projection upon its handle end and a spring interposed between the thill-iron and lock-lever and normally exerting a pressure upon the latter substantially as and for the purpose set forth.

818,438. **SOLDERLESS SEAM FOR SHEET-METAL VESSELS.** OSCAR HEINDORF, London, England, assignor, by direct and mesne assignments, to John Murphy, Brooklyn, N. Y. Filed Mar. 18, 1905. Serial No. 250,801.



Claim.—1. A sheet-metal vessel having the edge portions of its body and head arranged as concentric layers and thereby forming a flange on said vessel, said flange being continuously or annularly grooved and thus expanded in one portion and continuously or annularly contracted in a portion above and remote from the aforesaid portion, substantially as described.

2. A sheet-metal vessel having the edge portions of its body and head arranged as concentric layers and thereby forming a flange on the vessel, said flange being continuously or annularly expanded in one plane and continuously or annularly contracted in another plane and having its edge portion bent over to form a rim or bead, substantially as described.

3. A sheet-metal vessel having the edge portions of its body and head arranged as concentric layers and thereby forming a flange on said vessel, said flange being continuously or annularly expanded in one plane and continuously or annularly contracted in a plane above the aforesaid plane of expansion and having its edge portion bent over to form a rim or bead, substantially as described.

4. A sheet-metal vessel having the edge portions of its body and head arranged as concentric layers and thereby forming a flange on said vessel, said flange being continuously grooved on the inside and said groove being depressed below the level of the body portion of said head, substantially as described.

818,439. **METHOD OF FORMING HERMETIC SEAMS IN SHEET METAL.** OSCAR HEINDORF, London, England, assignor, by direct and mesne assignments, to John Murphy, Brooklyn, N. Y. Filed Mar. 18, 1905. Serial No. 250,802.



Claim.—1. The method of forming a hermetic seam in sheet metal which consists in forming a rebend in one edge portion and inserting the other edge portion therein, grooving the laminated body thus produced longitudinally so as to produce interfitting grooves and beads in the layers thereof, and then bending the thus grooved laminated body over out of the plane of initial assemblage of said edge portions, substantially as described.

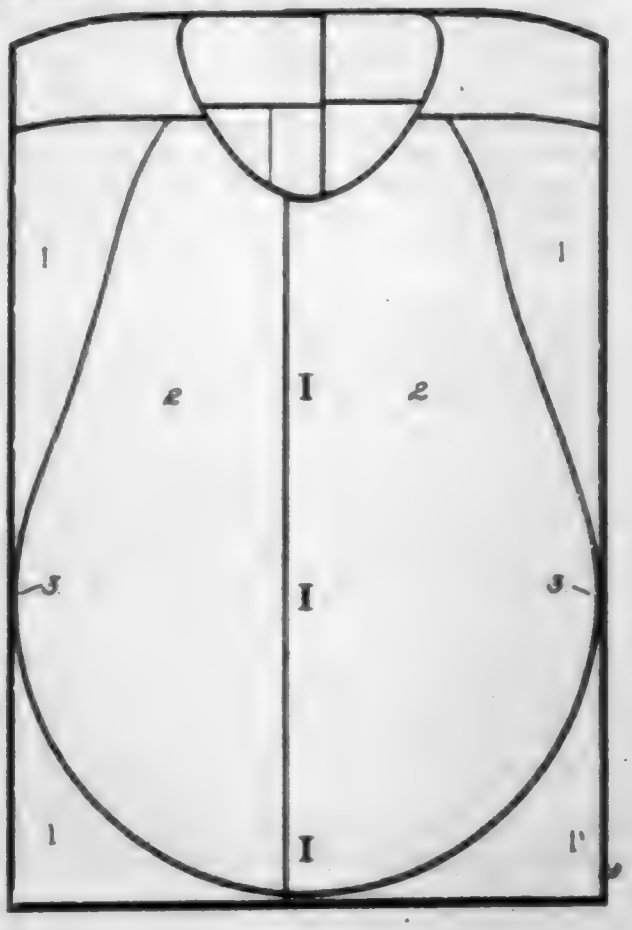
2. The method of forming a hermetic seam in sheet metal which consists in forming a rebend in one edge portion and inserting the other edge portion therein, grooving and compressing the laminated body thus produced longitudinally so as to produce interfitting grooves and beads in the layers thereof, and then bending the thus grooved laminated body over out of the plane of initial assemblage of said edge portions, substantially as described.

3. The method of forming a hermetic seam in sheet metal which consists in forming a rebend in one edge portion and inserting the other edge portion therein, grooving and compressing the laminated body thus produced longitudinally so as to produce interfitting grooves and beads in the layers thereof, and then bending the thus grooved laminated body over and compressing it against the portion of the metal adjacent one of said edge portions, substantially as described.

4. The method of forming a hermetic seam in sheet metal which consists in forming a rebend in one edge portion and inserting the other edge portion therein, grooving and compressing the laminated body thus produced longitudinally so as to produce interfitting grooves and beads in the layers thereof, then bending the thus grooved laminated body over against the portion of the metal adjacent one of said edge portions, and then grooving said portion coincident with the groove of said grooved laminated body, substantially as described.

5. The method of forming a hermetic joint in a sheet-metal lock-seam having longitudinal beads on certain of its layers which consists in compressing the layers of the seam to cause the beads to intimately contact with adjacent layers, and then bending the seam, compressed, over around an axis parallel with the seam, whereby to cause the beads to wipe against the adjacent layers, substantially as described.

818,440. **SHIRT.** WENDELL HESS, Jr., Troy, N. Y., assignor to International Shirt & Collar Co., a Corporation of New York. Filed Oct. 30, 1905. Serial No. 284,963.

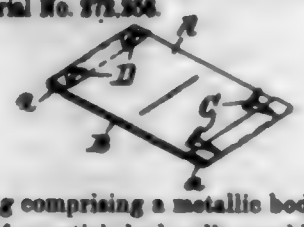


Claim.—1. A dress-shirt bosom having its greatest width below its horizontal center line substantially as and for the purpose described.

2. A dress-shirt bosom gradually increasing in width from its horizontal center line toward its lower end as set forth.

3. A dress-shirt bosom having its greatest width below its horizontal center line, its lower end of semicircular shape, and the upper portion gradually diminishing in width from the widest point to the neckband as described.

818,441. LAUNDRY-TAG. HENRY HIGGIN, Newport, Ky., assignor to The Higgin Manufacturing Company, Newport, Ky. Filed Aug. 1, 1905. Serial No. 272,956.



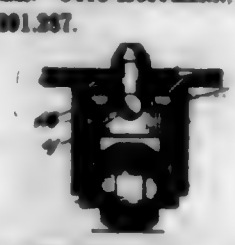
Claim.—1. A tag comprising a metallic body adapted to be secured over the edge of an article by bending and having its outer face covered by a marking-tape; a longitudinally-projecting tang on the inner face of the body near one end; engaging means near the other end adapted to receive the point of the tang; and a metallic portion interposed between the engaging means and the tape, substantially as specified.

2. A tag comprising a metallic body adapted to be secured over the edge of an article by bending; a marking-tape covering said body and secured thereto by folding back the ends of the body onto the tape; a tang on the inner face of the body near one end; and a socket formed in the portion of the body lying under the other folded end thereof and adapted to receive the tang, substantially as specified.

3. A tag comprising a metallic body adapted to be secured over the edge of an article by bending; a marking-tape covering said body and secured thereto by folding back the ends of the body onto the tape; a longitudinally-projecting tang on the inner face of the body near one end; and a socket formed in the portion of the body lying under the other folded end thereof and adapted to receive the tang, substantially as specified.

4. A tag comprising the body-piece A having tape-piece B secured thereto by means of the back-turned ends *a*; longitudinally-projecting tangs C at one end of the body; and sockets D struck up from the portion of plate A lying under the other folded end *a*, substantially as specified.

818,442. CASTER. OTTO HOFFMANN, Chicago, Ill. Filed Dec. 11, 1905. Serial No. 291,257.



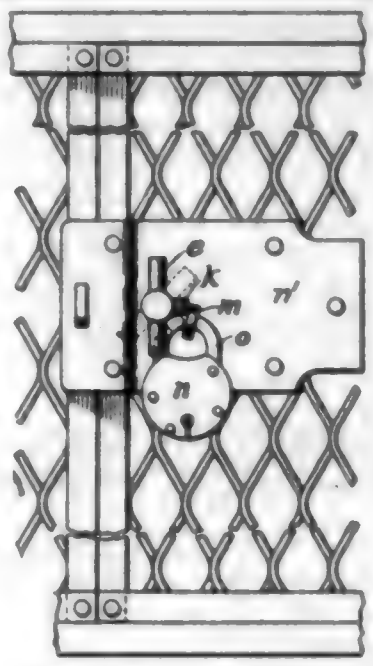
Claim.—A caster comprising a base-plate having a depending barrel and a bearing-hole at the center thereof, a block fitting in the barrel and having a spindle on top extending through the hole, rollers between the base-plate and the top of the block, and a caster-wheel mounted in the bottom of the block in line with the axis of the spindle.

818,443. LOCKING DEVICE. GEORGE HOLDEN, Merchantville, N. J., assignor to Merritt and Company, a Corporation of Pennsylvania. Filed Feb. 7, 1905. Serial No. 244,563.

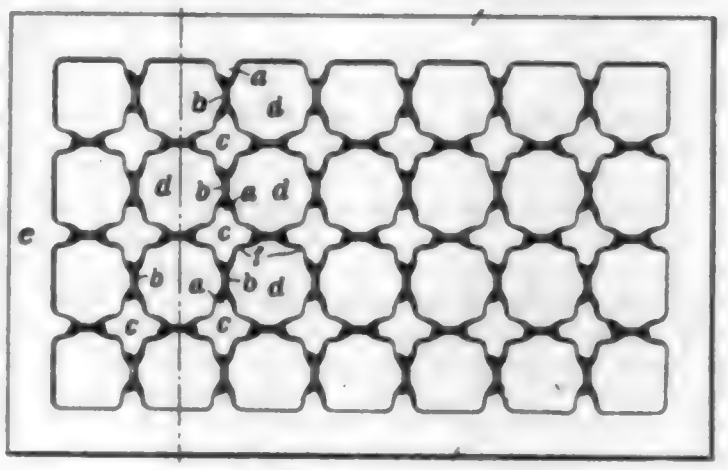
Claim.—1. In a locking device, the combination of a rotary catch-actuating handle having a projection, a staple adjacent to said handle but out of the path of the projection when the handle is turned, and a detachable padlock carried by said staple with its hasp projecting in the path of the handle projection and acting as an obstruction to prevent the turning of the handle while said padlock is on the staple.

2. In a locking device, the combination of vertical bolts and a lateral catch, means for simultaneously projecting or retracting said bolts and catch, a handle carried by the door to be locked for operating said bolt and catch actuating means and provided with a projection, a staple also carried by the door arranged adjacent to but out of the path of said projection, and a removable obstruction adapted when fastened in said staple to obstruct said projection and prevent the operation of the handle.

818,443.



818,444. RETICULATED SHEET-METAL STRUCTURE. GEORGE HOLDEN, Merchantville, N. J., assignor to Merritt and Company, a Corporation of Pennsylvania. Filed May 19, 1905. Serial No. 261,099.



Claim.—1. A reticulated sheet-metal structure consisting of a unitary body composed of a multiplicity of short strands integrally connected together, with a series or number of strands meeting at the points of junction, said strands between the points of junction with other strands lying in a different plane from that of the unitary portions of metal at the points of junction.

2. A reticulated sheet-metal structure consisting of a unitary body composed of a multiplicity of short strands integrally connected together, with a series or number of strands meeting at the points of junction, said strands between their points of junction with other strands being twisted transversely to the plane of the uniting portions of metal at the points of junction.

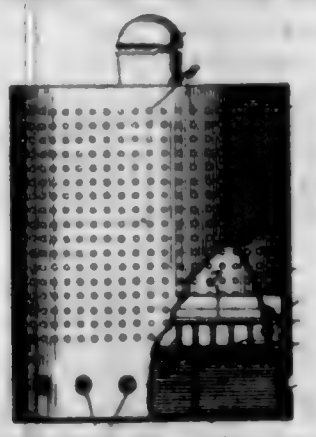
3. A reticulated sheet-metal structure consisting of a unitary body composed of a multiplicity of short strands integrally connected together at their ends, with a series or number of strands meeting at the points of junction, said strands between their points of junction with other strands lying in a plane transverse to the plane of the uniting portions of metal at the points of junction.

4. A reticulated sheet-metal structure consisting of a unitary body composed of a multiplicity of short strands each strand merging into other similar strands at the ends and the portions between the ends of the strands lying in a plane transverse to the plane of the points of merger.

5. A sheet-metal structure consisting of a unitary body composed of a multiplicity of short integrally-connected strands said strands between the points of junction with other strands lying in a different plane from that of the uniting portions of metal at the point of junction, and a continuous strip or portion integrally connected with the ends of the outer strands to form a selvage.

6. A sheet-metal structure consisting of a unitary body composed of a multiplicity of short integrally-connected strands said strands between the points of junction with other strands lying in a different plane from that of the uniting portions of metal at the point of junction, and a continuous strip or portion bounding the reticulated body formed by said strands and connected with the ends of the outer strands to form a selvage.

818,445. BERRY-SEED SEPARATOR. HOWARD HOLTON, Amsterdam, N. Y. Filed June 26, 1905. Serial No. 267,412.

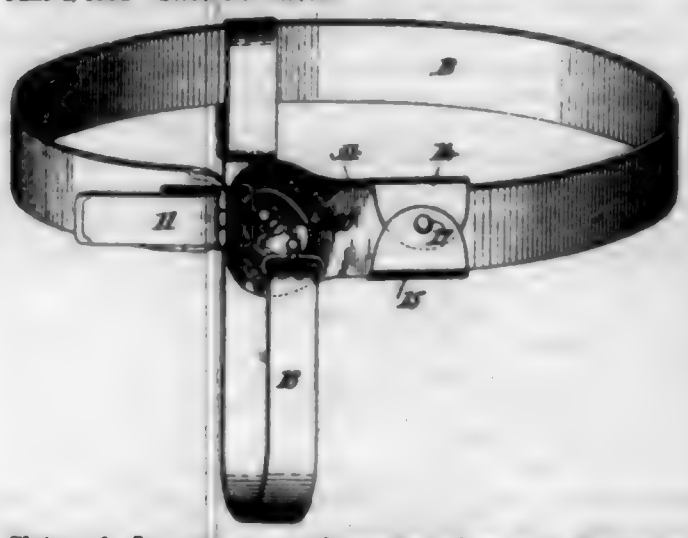


Claim.—1. In a separator, the combination with a perforated receptacle; of a plunger adapted to slide within the receptacle, a cutting-tool detachably secured within the plunger, and a handle connected to the cutting-tool.

2. In a separator, the combination with a perforated receptacle; of a plunger, a ring therein, a coiled blade secured within the ring, a handle connected to the ring and means for detachably securing the ring within the plunger.

3. In a separator, a cutting-tool comprising a ring, a coiled blade secured therein, one edge of the ring and the blade being in the same plane, means for holding the coils at proper distances apart, and a handle connected to the ring.

818,446. TRUSS. GEORGE V. HOUSE, Mount Vernon, N. Y. Filed June 4, 1904. Serial No. 211,121.



Claim.—1. In a truss, a pad-carrying plate, a body-band secured at one of its ends to one end of said plate, fastening means carried by the other end of said plate for engaging the free end of the body-band, a protective side flap opening horizontally on the front side of the protective plate and adapted to overlap the free end of the body-band and the fastening means for said free end, and upper and lower flaps extending at right angles to the side flap and adapted to overlap said first-named flap on the front side of the protective plate, and means for detachably securing the said upper and lower flaps one over the other.

2. In a truss, a pad-carrying plate for a web-truss, a body-band attached thereto at one end, a fastening device carried by the said plate, adapted to receive the free end of the body-band, a protective device consisting of flaps arranged to fold one over the other and over the fastening device and the end of the body-band received by the fastening device, and means for securing the said flaps one to the other, as described.

3. A pad-carrying plate for a web-truss, a body-band for the truss, secured thereto at one end, a buckle attached to the said carrying-plate at its opposite end, adapted to receive the free end of the body-band, and a protective device consisting of flaps arranged to be folded over the buckle and the free end of the body-band when in the buckle, and to be folded one on the other, and a fastening device for the said flaps, as described.

4. In a truss, a pad-carrying plate, a body-band, a fastening device carried by the plate and adapted to receive the free end of the body-band, flaps carried by the plate and arranged to fold one over the other and over the free end of the body-band after the latter is received by the fastening device, and a device having separable members for securing the said flaps in position.

818,447. STATION-INDICATOR. ALFRED B. HOVEY and JOHN B. TAPLEY, Cass Lake, Minn. Filed Nov. 7, 1904. Serial No. 231,736.



Claim.—1. In a device of the class described, an indicator-operating means including a push-pawl, a pull-pawl, an operating means connecting the two, a pair of toothed drums engaged by said pawls, an indicator operable by said drums, a locking device adapted to engage one of said drums, and means for alternately throwing said pawls into and out of engagement with the teeth on said drums to thereby reverse the direction of movement of the indicator.

2. In a device of the class described, the combination with a casing, of a pair of toothed drums rotatably mounted therein, a pawl-carrying bar pivoted between said drums, an indicator operable by said drums, a push-pawl and a pull-pawl pivoted to said bar and adapted to engage the teeth on said drums, means for adjusting said pawls alternately to operative position, and a locking member adapted to engage one of said drums and movable to operative and inoperative position by the pawl-carrying bar.

3. In a device of the class described, the combination with a casing provided with a display-opening, toothed drums mounted for rotation therein, a ratchet-wheel rotatable with one of said drums, a pawl-carrying bar pivoted between the drums and provided with a push and a pull pawl adapted to engage the teeth on the drums, an indicator operable by said drums to successively display a symbol at said opening, and a pivoted locking member adapted to engage the ratchet-wheel and movable to locked and unlocked positions by the movement of the pawl-carrying bar.

4. In a device of the class described, the combination with a casing, toothed drums mounted for rotation in said casing, an indicator operable by one of said drums, a ratchet-wheel rotatable with said drum, a pawl-carrying bar pivoted between the drums, a push-pawl and a pull-pawl pivoted to said bar and adapted to alternately engage the teeth on the drums, a guide for said bar, pins disposed within the guide for limiting the lateral throws of the bar, and a locking-pawl adapted to engage the ratchet-wheel.

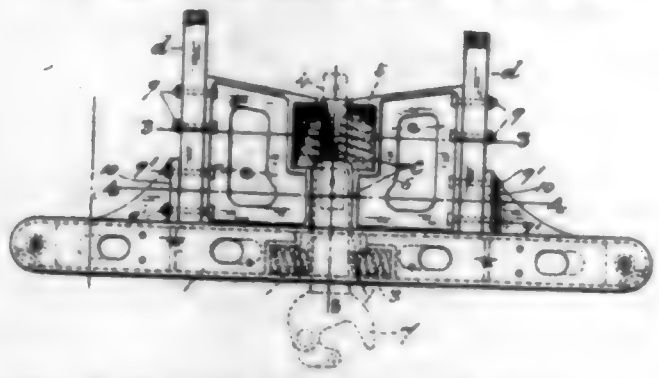
5. In a device of the class described, the combination with a casing, toothed drums mounted for rotation therein, an indicator operable by said drums, a pawl-carrying bar pivoted between the latter and provided with a push-pawl and a pull-pawl adapted to engage the teeth on said drums, a lever for adjusting said pawls alternately to operative position, a ratchet-wheel rotatable with one of said drums, a pin carried by the bar, and a locking-pawl adapted to engage the ratchet-wheel and provided with an inclined shoulder for engagement with the pin.

6. In a device of the class described, a pair of indicators each provided with operating means, and an intermediate operating mech-

anism for simultaneously actuating both indicator-operating means, said mechanism also including means for reversing the direction of rotation of the operating means of both indicators and means for locking the same in reversed position.

7. In a device of the class described, a pair of indicators each provided with an indicating-dial and means for rotating the same, a lever disposed between the indicators and having a flexible connection with the dial-operating means of both indicators for simultaneously operating the latter, and means also disposed between said indicators for reversing the direction of rotation of said dials.

818,448. LOCOMOTIVE-ENGINE FRAME. CLARENCE H. HOWARD, St. Louis, Mo. Filed Nov. 20, 1905. Serial No. 288,304.



Claim.—1. The combination with the longitudinal frame-beams of a locomotive, of an end sill fixed to the said beams and having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the said beams and in alinement with the said opening, a bracket projecting from each side of, and integral with the said pocket and with the end sill, the said brackets having their outer lateral portions adapted to bear against the said beams, and means for fixing the said brackets to the said beams, substantially as described.

2. The combination with the longitudinal frame-beams of a locomotive, of an end sill fixed to the beams and having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the said beams and in alinement with the said opening, a bracket projecting from each side of, and integral with the said pocket, the said brackets having their outer lateral portions adapted to bear against the inner sides of the said frame-beams, and means for fixing the brackets to the said beams, substantially as described.

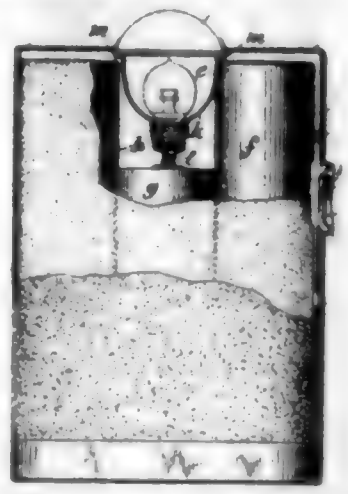
3. The combination with the longitudinal frame-beams of a locomotive, of an end sill fixed to the said beams and having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting rearwardly therefrom between the said beams, in alinement with the said opening, a bracket projecting from each side of, and integral with the said pocket, the side brackets having their outer lateral portions adapted to bear against the inner sides of the said beams, webs projecting from the end sill and adapted to bear against the outer sides of the said beams, and means for fixing the said brackets, beams, and webs together, substantially as described.

4. The combination with the longitudinal frame-beams of a locomotive, of an end sill fixed to the said beams and having a central opening transversely therethrough for the draw-bar, a draw-bar pocket integral with the end sill and projecting therefrom between the said beams, and a brace integral with, and adapted to connect the said pocket and end sill to the said beams, part way along the sides thereof, substantially as described.

818,449. PORTABLE ELECTRIC LIGHT. CONRAD HUBERT, New York, N. Y. Filed May 19, 1905. Serial No. 261,156.

Claim.—1. A portable electric light comprising a casing and a battery therein, an electric lamp carried by the casing, and circuit-completing means from the battery to the lamp including a push-button and a contact, the casing having a fixed abutment for the push-button and the push-button being movable from a position in which the contact is actuatable by the push-button to close the circuit and is permitted to automatically return from circuit-closing to circuit-opening condition, to a position in which the push-button is cooperative with the fixed abutment to force the contact into circuit-closing condition.

2. A portable electric light comprising a casing and a battery therein, an electric lamp carried by the casing, and circuit-completing means from the battery to the lamp including a push-button and a contact-finger, the contact-finger being within the casing and arranged to abut against a battery-terminal, the casing having an abutment for the push-button and the push-button being movable from a position in which the contact-finger is actuatable by the push-button to close the circuit and is permitted to automatically return from circuit-closing to circuit-opening condition, to a position in which the push-button is cooperative with the abutment to force the contact finger into circuit-closing condition.



3. A portable electric light comprising a casing and a battery therein, an electric lamp carried by the casing, and circuit-completing means from the battery to the lamp including a push-button and a contact-finger, the push-button and the contact-finger having an engaging projection and depression to normally hold the push-button in a position in which the contact-finger is actuatable by the push-button to close the circuit and is permitted to automatically return from circuit-closing to circuit-opening position, and the push-button and casing having a sliding connection whereby the push-button may be moved relatively to the contact-finger to abut against the casing and force the contact-finger into circuit-closing position.

4. The combination of a casing and a battery therein, and means for closing the circuit of the battery, including a push-button and a contact-finger, the casing being provided with an opening in part large enough to permit the push-button to be moved inward to thrust the contact-finger into circuit-closing position with freedom to automatically return from such circuit-closing position and the opening in the casing being in part adapted to engage the push-button and permit the push-button to be moved to wedge the contact-finger into circuit-closing position.

5. The combination of a casing and a battery therein, and circuit-completing means for the battery including a push-button and a contact-finger, the push-button having a peripheral groove and the casing being provided with an opening in part large enough to permit the push-button to be moved inward to thrust the contact-finger into circuit-closing position with freedom to automatically return from such circuit-closing position, and the opening in the casing being in part narrower to engage the peripheral groove of the push-button and permit the push-button to be moved to wedge the contact-finger into circuit-closing position.

6. The combination of a casing and a battery therein, and circuit-completing means for the battery including a push-button and a contact-finger, the push-button and the contact-finger having an engaging projection and depression and the push-button having a peripheral groove therein, the casing being provided with an opening in part large enough to permit the push-button to be moved inward to thrust the contact-finger into circuit-closing position with freedom to automatically return from such circuit-closing position, the engaging projection and depression being located so as to normally hold the push-button in such position of automatic return, and the opening in the casing being in part narrower to engage the peripheral groove of the push-button and permit the push-button to be moved to wedge the contact-finger into ciruit-closing position.

7. The combination of a casing, a shield thereon, a battery carried by the casing, and means for closing the circuit of the battery including a push-button and a contact-finger, the shield being provided with an opening in part large enough to permit the push-button to be moved inward to thrust the contact-finger to the circuit-closing position with freedom to automatically return from such circuit-closing position and the opening in the shield being in part adapted to engage the push-button and permit the push-button to wedge the contact-finger into circuit-closing position.

8. The combination of a casing, a shield thereon, a battery car-

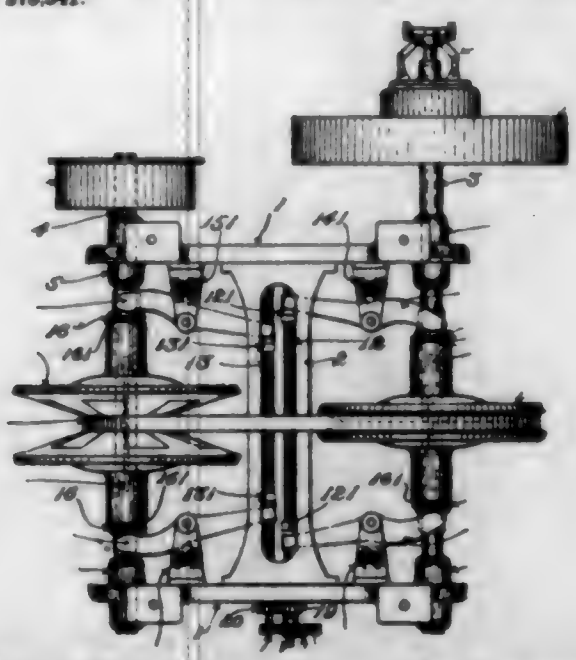
ried by the casing, and means for closing the circuit of the battery including a push-button and a contact-finger, the push-button and contact-finger having an engaging projection and depression and the shield having an opening therein in part large enough to permit the push-button to be moved inward to thrust the contact-finger into circuit-closing position with freedom to automatically return from such circuit-closing position, the engaging projection and depression normally holding the push-button in such position of automatic return, and the opening in the shield being in part adapted to engage the push-button and permit the push-button to be moved to wedge the contact-finger into circuit-closing position.

9. The combination of a casing, a shield thereon, a battery carried by the casing, and means for closing the circuit of the battery including a push-button and a contact-finger, the contact-finger being arranged so as to close the circuit by contact with the battery, spacing projections extending inward from the wall of the casing above and below the contact-finger, the push-button and contact-finger being engageable to normally hold the push-button in a position in which the contact-finger is permitted to automatically return from circuit-closing to circuit-opening position and the push-button being movable relatively to the contact-finger to lock the contact-finger in circuit-closing condition.

10. A portable electric light comprising a casing and a battery therein, a cover for the casing having recesses therein, an electric lamp, a lamp-socket having opposite lateral projections adapted to be engaged in the recesses of the cover by part rotative movement of the lamp-socket relatively to the cover, and means for completing and closing the circuit from the battery to the lamp.

11. A portable electric light comprising a casing and a battery therein, a cover for the casing having recessed portions therein, an electric lamp, a lamp-socket having opposite lateral projections adapted to be engaged in the recesses of the cover by part rotative movement of the lamp-socket relatively to the cover, a lens fitted in the cover and held in place by the lamp-socket, and means for completing and closing the circuit from the battery to the lamp.

818,450. **VARIABLE-SPEED COUNTER-SHAFT MECHANISM.** JAMES E. HUNTER, North Adams, Mass. Filed Aug. 23, 1905. Serial No. 275,341.



Claim.—1. In a speed-varying counter-shaft mechanism, the combination with a set of expanding pulleys, and a band connecting the same, of adjusting means located intermediately with respect to the said pulleys, and separately-movable short arms or levers extending in opposite directions with respect to each other from the said adjusting means to the respective pulleys and operatively connected with the said pulleys to expand and contract the latter.

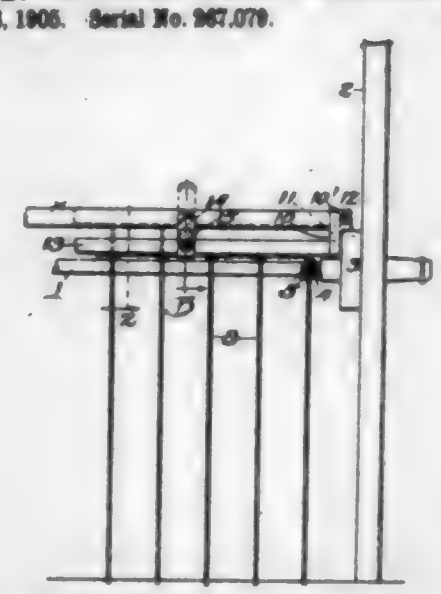
2. In a speed-varying counter-shaft mechanism, the combination with a set of expanding pulleys, and a band connecting the same, of screw-threaded adjusting means located intermediately with respect to the said pulleys, and separately-movable short pulley-expanding members operated by the said screw-threaded adjusting means and extending in opposite directions with respect to each other from the latter to the respective pulleys.

3. In a speed-varying counter-shaft mechanism, the combination with a set of expanding pulleys, and a band connecting the same, of speed-regulating means located intermediately with respect to the said pulleys, pulley-expanding members extending in opposite directions from the said means to the respective pulleys, and means for adjustment of the pulleys to regulate the tension of the band.

4. In a speed-varying counter-shaft mechanism, the combination with a set of expanding pulleys, and a band connecting the same, of the short arms or levers in operative connection with the said pulleys, adjusting-rods for the said arms or levers, means to adjust the said rods in unison, and means to adjust said rods independently.

5. In a speed-varying counter-shaft mechanism, the combination with a set of expanding pulleys, and a band connecting the same, of the short arms or levers in operative connection with the said pulleys, the adjusting-rods for the said arms or levers, and means to rotate the said rods in unison, provided with a clutch permitting adjustment of the rods independently.

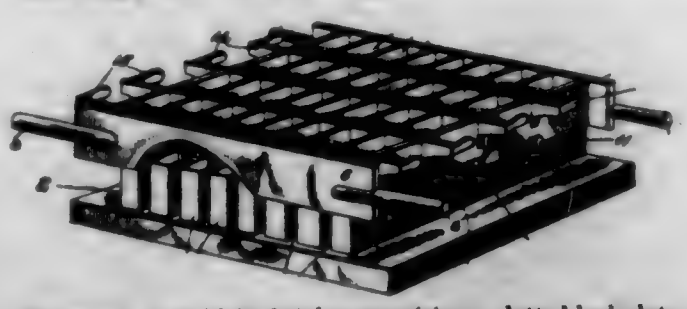
818,451. **HAY-RAKE.** HARVEY R. INGLEDUE, Chicago, Ill. Filed June 26, 1905. Serial No. 267,070.



Claim.—1. In a hay-rake, in combination, an axle, main-frame castings sleeved on the ends thereof and a main-frame member interposed therebetween, vertically-extending guides formed upon said castings, arms rigidly secured to said axle and extending forwardly therefrom, a rake-head bar supported upon the forward ends thereof, rake-teeth pivotally mounted upon said bar, said rake-teeth having an independent vertical movement about their pivotal axes, a vertically-adjustable tooth-controlling bar movably arranged within said guides and above said rake-teeth for securing the latter against such independent vertical movement, and means for locking said bar in the desired position.

2. In a hay-rake, in combination, an axle, an oscillating rake-head consisting of forwardly-projecting arms secured to said axle and a rake-head bar supported upon the ends thereof, main-frame castings sleeved upon and near the ends of said axle and a main-frame member interposed therebetween, rake-teeth pivotally mounted upon said rake-head bar, said rake-teeth having an independent vertical movement about their pivotal axes, vertically-extending guides formed upon said main-frame castings, a vertically-adjustable tooth-controlling bar movably arranged within said guides above the rake-teeth and slightly in the rear of the axle for securing the said teeth against independent vertical movement, and a spring-held latch for locking said tooth-controlling bar in the desired position.

818,452. **MOLD FOR BRICKS.** JAMES A. JUDIE, South Bend, Ind. Filed Aug. 3, 1905. Serial No. 272,606.



Claim.—1. A mold for bricks comprising a slotted bed-plate, a partitioned mold-frame mounted on the bed-plate with the partitions thereof in the slots of the bed, and a combined ejector and carrier mounted in the mold-frame and dividing the latter into a plurality of matrices.

2. A brick-mold comprising a bed, a mold-frame mounted on the bed and having slotted partitions, and a combined ejector and carrier mounted in the slots of the partitions and forming compartments in which bricks are molded.

3. A brick-mold comprising a slotted bed-plate, and a mold-frame mounted on said bed-plate and having partitions adapted to drop into the slots of the bed-plate and eject the molded brick.

4. In a brick-mold the combination of a bed-plate, a mold-frame mounted on the bed-plate and having partitions provided with slots, and members fitted in the slots of the partitions and dividing the said frame into a plurality of matrices, said frame being arranged to drop in the bed-plate to eject the molded bricks.

5. The combination of a bed-plate having a plurality of spacing-blocks with a slot between each two blocks, a frame having a plurality of partitions adapted to fit within the slots of the bed-plate and provided with rows of transverse slots, and plates fitted in the slots of the partitions and dividing the frame into a plurality of compartments in which the bricks are molded.

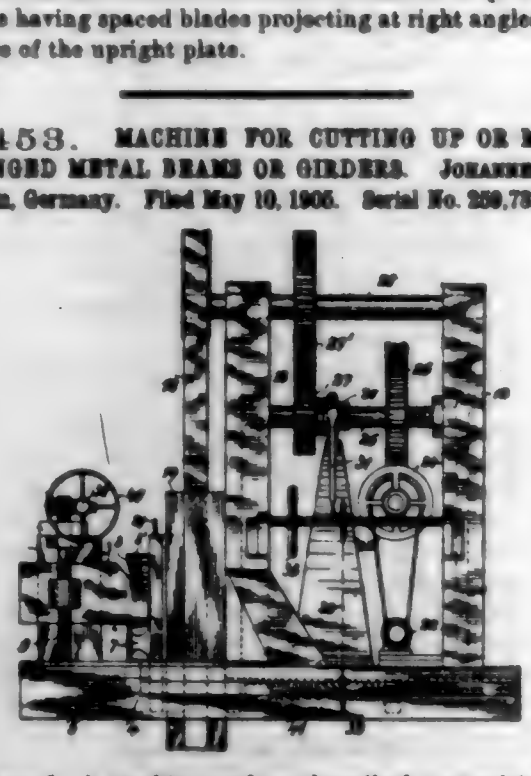
6. A brick-mold comprising a slotted bed-plate, a mold-frame supported on said bed-plate and having partitions adapted to fit in the slots of the bed-plate, said partitions being provided with rows of slots, and a plurality of combined ejectors and carriers each having an upright plate fitted in the slots of the partitions and also having blades arranged to rest on the top of the bed-plate and straddle the partitions, substantially as specified.

7. A brick-mold comprising a slotted bed-plate, a mold-frame having partitions provided with slots mounted on said bed-plate with the partitions in the slots thereof, and carriers having upright portions standing in the slots of the partitions and blades resting upon the top of the slotted bed-plate and forming the bottom of the matrices.

8. In a mold of the class described the combination with a mold-frame having parallel partitions provided with rows of transverse slots, of carriers fitted in the slots of the partitions and having blades straddling said partitions and constituting the bottom of the matrices.

9. A carrier for a mold of the class described comprising an upright plate having spaced blades projecting at right angles from the lower edge of the upright plate.

818,453. MACHINE FOR CUTTING UP OR MITERING FLANGED METAL BEAMS OR GIRDERS. JOHANNES KRÜGER, Stettin, Germany. Filed May 10, 1905. Serial No. 259,783.



Claim.—1. A machine such as described, comprising a vertically to-and-fro movable tool-stock, superposed cutters carried thereby and clamping devices to clamp the beam to be cut, one of said cutters adapted to act on the flange or flanges and the others on the web of said beam.

2. A machine such as described, comprising a vertically to-and-fro movable tool-stock, superposed cutters carried thereby, clamping devices to hold the beam to be cut at any angle to the cutters, one of said cutters acting on the flange or flanges of the beam and the others on the web thereof.

3. A machine such as described, comprising oppositely-situated pairs of clamping-jaws, a vertically-movable tool-stock, a cutter mounted in the stock and coöperating with the jaws to cut a beam held therein in any horizontal angle, said cutter operated to cut the flanges, and planers also mounted in the stock to cut the web after the flanges have been cut and passing through the cut in the flanges.

4. In a machine such as described, the combination of clamping devices; with a tool-stock, a cutter-die, planing-bits, and a smoother-bit carried by said stock and suitably spaced thereon, and means to move the stock to cause the cutter-die to act on the flange or flanges and the planer-bits on the web of a flanged metal beam held by the clamping devices with its web parallel to the line of motion of the stock, said planing-bits arranged to act successively on said web and said smoother-bit arranged to act last on the proximate surfaces of the cut in both flange, or flanges, and web.

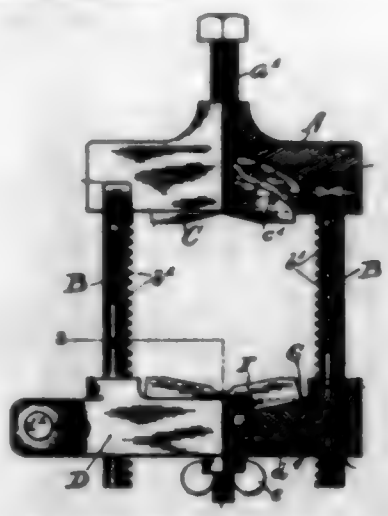
5. In a machine such as described, the combination of clamping devices with a tool-stock, suitably-spaced cutting-tools carried thereby and means to reciprocate the stock and cause one of the tools to act on the flange or flanges and the other on the web of a flanged metal beam held by the clamping devices with its web parallel to the line of motion of the cutters.

6. In a machine such as described, the combination of clamping devices, with a tool-stock, suitably-spaced cutting-tools carried thereby, means to move the stock toward and from the clamping devices and means to reciprocate the stock in a plane at right angles to the plane of the aforesaid movement and cause one of the tools to act on the flange or flanges and the other tools on the web of a flanged metal beam held by the clamping devices with its said web parallel to the line of motion of the cutters.

7. A machine such as described, comprising oppositely-positioned pairs of clamping-jaws to hold a beam in any horizontal angle with its web substantially upright, a tool-stock, means to move it both vertically and horizontally, a tool carried thereby positioned opposite the center of the web, said tool coöperating with and passing between the upper clamping-jaws to cut a top flange and coöperating with and passing between the lower clamping-jaws to cut a bottom flange.

8. In a machine such as described, the combination of a bed-plate and clamping devices thereon; with a base-plate movable on said bed-plate toward and from said clamping devices, vertical guides on said base-plate a tool-stock vertically movable in said guides and carrying cutting-tools, and mechanism on the base-plate to reciprocate the tool-stock to cause one of the cutting-tools to act on the flange or flanges and the other cutting-tools to act in succession on the web of a flanged metal beam and pass through the cut made by the cutter for the flanges.

818,454. LATHE-DOG. ANDREW KRAH, Chicago, Ill. Filed Apr. 6, 1904. Serial No. 201,818.



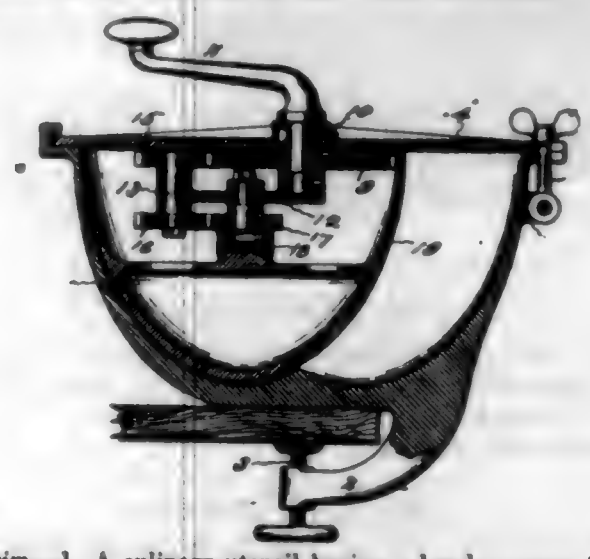
Claim.—1. In a lathe-dog, a fixed head, a clamping-block adjustable on said head, rack-bars secured to said head, an adjustable clamping-head arranged on said rack-bars and formed with inclined slideways therein, blocks mounted in said slideways and having teeth on their outer faces adapted to engage said rack-bars, springs arranged in said clamping-head and adapted to retract said toothed blocks, a clamping-block having a beveled face bearing on said toothed blocks and means for adjusting said clamping-block.

2. In a lathe-dog, a fixed head, a clamping-block on said head, rack-bars loosely secured to said head and having teeth on their inner sides, a clamping-head slidably arranged on said rack-bars and having inclined slideways therein, blocks slidably mounted in said slideways and having teeth adapted to engage the rack-bar teeth, means for automatically disengaging said blocks from said rack-bars, a clamping-block adjustably mounted on said slidable clamping-head and having portions bearing on said toothed blocks and adapted to force said blocks outwardly, means for adjusting said clamping-block and for locking it in its adjusted position.

3. In a lathe-dog provided with a suitable head, a clamping-

block adjustable on said head, rack-bars secured to said head, an adjustable clamping-head slidably mounted on said rack-bars, blocks mounted on said member and having teeth adapted to engage said rack-bars, said blocks adapted to be automatically and simultaneously thrown into engagement with said rack-bars upon pressure being applied to the clamping-head, springs secured to said clamping-head and adapted to automatically and simultaneously disengage said blocks from said rack-bars upon pressure being relieved from said clamping-head and means for locking said blocks in engagement with said rack-bars.

818,455. CULINARY UTENSIL. FREDERICK J. LABOCK, East Hartford, Conn. Filed July 28, 1905. Serial No. 271,619.

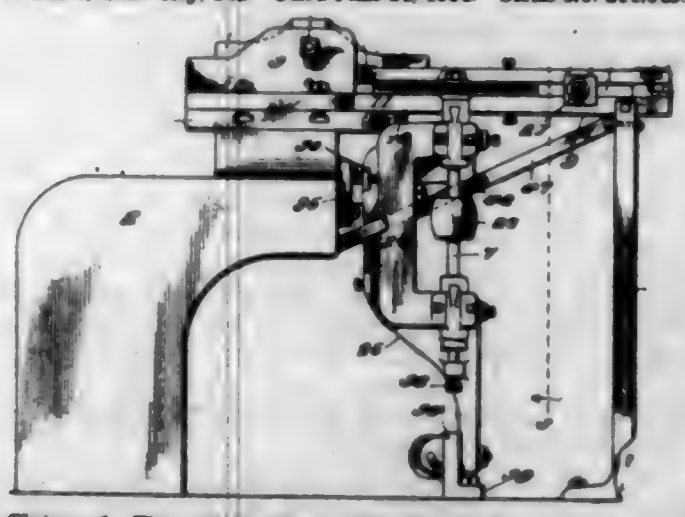


Claim.—1. A culinary utensil having a bowl, a cover for the bowl, a gear supported by the cover, a handle having a stem extending through the cover, an arm secured to the handle-stem, a pestle supported by the arm, a gear attached to the pestle, and pinions carried by the arm, one meshing with the cover-gear and the other meshing with the pestle-gear, substantially as specified.

2. A culinary utensil having a bowl, a cover for the bowl, an external gear supported by the cover, a handle having a stem extending through the cover and the gear, an arm secured to the handle-stem inside of the gear, a pestle rotarily supported by the arm, a gear attached to the pestle, an arbor supported by the arm, a pinion attached to one end of the arbor and meshing with the cover-gear, and a pinion attached to the other end of the arbor and meshing with the pestle-gear, substantially as specified.

3. A culinary utensil having a bowl, a cover for the bowl, an external gear supported by the cover, a handle having a stem extending through the cover and the gear, an arm secured to the handle-stem inside of the gear, a gear rotarily supported by the arm, an arbor carried by the arm, a pinion attached to one end of the arbor and meshing with the gear that is fastened to the cover, a pinion attached to the other end of the arbor and meshing with the gear that is carried by the arm, and a hollow pestle fastened to the gear carried by the arm and inclosing the gears and pinions, substantially as specified.

818,456. RESAWING-MACHINE. JAMES C. LAWSON and GEORGE P. LOWE, Lake City, Fla. Filed June 24, 1904. Serial No. 214,048.



Claim.—1. The combination with the lumber-guides, and a horizontal circular saw, of a saw-guide, having one face alined with and forming a continuation of one of the lumber-guides.

2. The combination with the horizontally-adjustable lumber-guides, of a horizontal circular saw, and a saw-guide, having one face alined with and forming a continuation of one of the lumber guides and adjustable therewith.

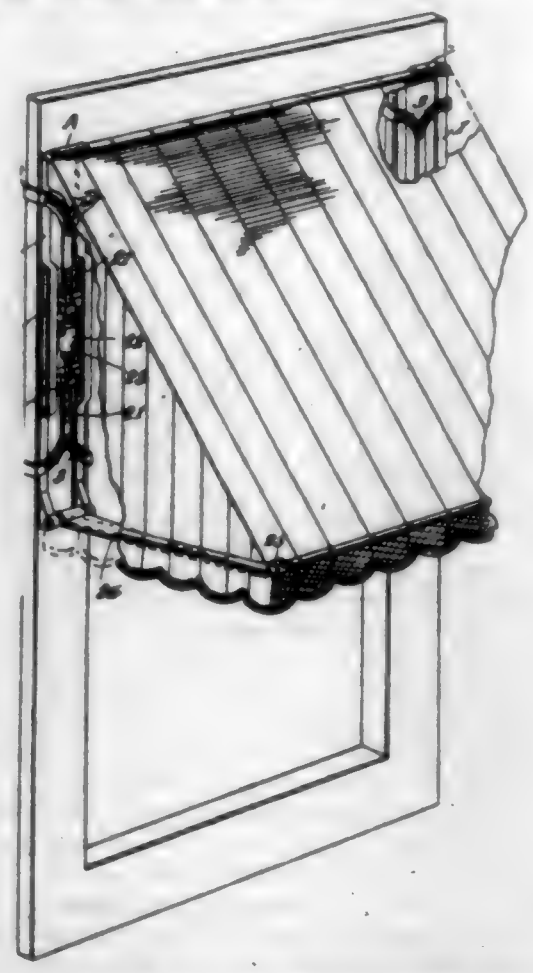
3. In a machine of the class described, the combination with the work-guides of a planing-machine, of a horizontal saw-guide extending therefrom, and having one face alined therewith and forming a continuation thereof, a saw operating in the guide, a post supporting the outer portion of the guide, and braces extending from the outer portion of the guide to the said frame, substantially as described.

4. The combination with the lumber-guides and a pivotally-mounted saw-carrying frame, of a vertical saw-shaft shiftable horizontally in directions parallel to the feed of the lumber-guide and on the saw-carrying frame, and a horizontal circular saw carried by the vertical saw-shaft.

5. The combination with the lumber-guides and the pivotally-mounted saw-carrying frame, a frame movable horizontally on the pivotally-mounted frame in the directions parallel to the feed of the lumber-guides, set-screws carried by the pivotally-mounted frame and engaging the horizontally-movable frame on opposite sides a vertical saw-shaft carried by the horizontally-movable frame, and a horizontal circular saw carried by the vertical shaft.

6. The combination with the pivotally-mounted saw-carrying frame, provided with vertical slots, of bolts adjustable in said slots and provided with dovetailed heads, a bearing-bracket, provided with dovetailed grooves in which the dovetailed heads fit to permit the horizontal adjustment of the bearing-frame, a vertical shaft carried by the bearing-frame, and a horizontal circular saw carried by the vertical shaft.

818,457. CLAMP-BRACKET. EDWARD A. LITTS, Sioux City, Iowa. Filed May 22, 1905. Serial No. 261,017.



Claim.—1. Means for removably attaching an awning to the jambs of an opening, the same consisting of a pair of oblong frames, one for each jamb, laterally-operable clamps at intervals in the length of each frame for gripping opposite sides of the jamb, means connecting the clamps of each frame for simultaneous operation, and means at opposite ends of the frames for detachable connection therewith of the awning.

2. Means for removably attaching an awning to the jambs of an opening, the same consisting of a pair of oblong frames, one for each jamb, a pair of slides mounted upon each frame, a clamp having adjustable connection with each slide, means connecting said slides for simultaneous operation, and means at opposite ends of the frames for detachable connection of the awning thereto.

3. In a device of the character set forth, the combination of a main frame, oppositely-disposed clamp members, slides having said

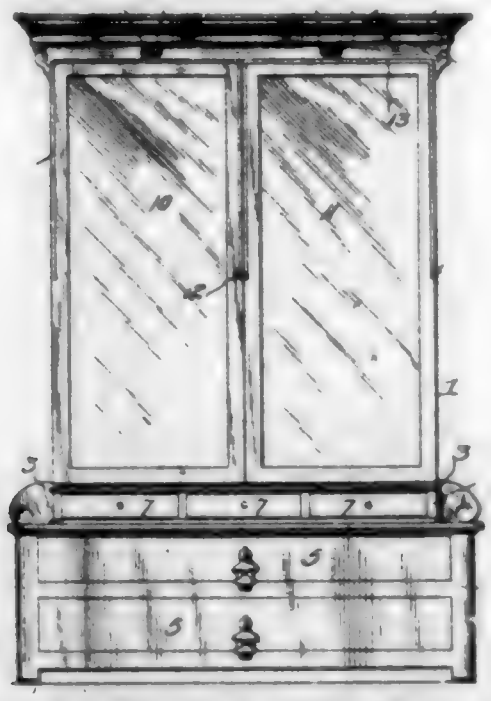
clamp members pivotally connected thereto, other slides, means for adjustably connecting the two sets of slides, and actuating means for moving the last-mentioned slides outward or toward each other.

4. Means for removably attaching an awning to the jambs of an opening, the same consisting of a pair of oblong frames, clamps at intervals in the length of each frame, operating means, connections adjustably joining the clamps to the operating means, a pivoted arm at the lower end of each frame, and awning-clamps at the upper end of the frames and at the outer ends of the pivoted arms.

5. Means for attaching an awning to the jambs of an opening, the same consisting of a pair of frames, each provided at its upper end with a clamp, and having at its lower end a pivoted arm provided at its outer end with an awning-clamp said frames having clamp devices intermediate of their ends consisting of upper and lower pairs of clamp members and intermediate actuating means.

6. Means for attaching an awning to the jambs of an opening, the same consisting of a pair of frames, each provided at its upper end with a clamp, and having at its lower end a pivoted arm provided at its outer end with an awning-clamp said frames having clamp devices intermediate of their ends consisting of upper and lower pairs of clamp members and intermediate actuating means, the latter consisting of slides having the clamp members attached thereto, operating means, and adjustable connections between the operating means and said slides.

818,438. DRESSER. William K. Malcolm, Butte, Mont. Filed Dec. 4, 1904. Serial No. 234,002.



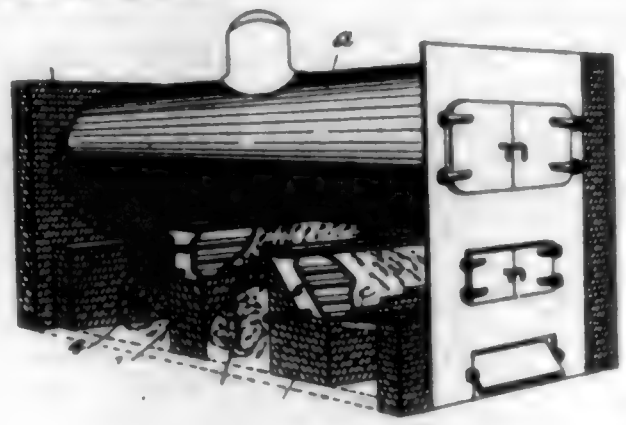
Claim.—1. An article of furniture of the class described, having a central upright mirror mounted to turn in a horizontal plane, a pair of side mirrors, and pivoted supports to which they are pivotally connected for angular movement in a horizontal plane, the pivotal axes of said supports being so spaced and the length of said supports being such that the side mirrors may be disposed side by side in front of and to cover the central mirror.

2. An article of furniture of the class described, having a central upright mirror mounted to turn in a horizontal plane, a pair of side mirrors and pivoted supports to which they are pivotally connected for angular movement in a horizontal plane, the pivotal axes of said supports being so spaced and the length of said supports being such that the side mirrors may be disposed side by side in front of and to cover the central mirror, the mirrors being also mounted to be swung vertically.

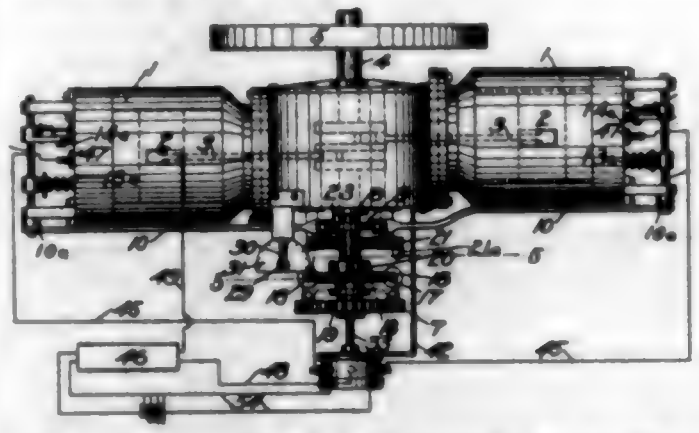
818,459. BOILER ATTACHMENT. John Moffat, Berlin, Canada. Filed Sept. 10, 1906. Serial No. 278,788.

Claim.—1. A furnace having a number of bridge-walls therein spaced apart so as to form a number of combustion-chambers, air-heating chambers, situated in the tops of said bridge-walls and having discharge-openings leading to the rear of said walls and means for introducing fresh air to said chambers, one of said walls having an opening in its lower part so that the products of combustion may flow through said opening as well as over said bridge-wall.

2. A furnace having a bridge-wall therein having an inclined top, an inclined air-heating chamber in said top, said chamber having an air-inlet and discharge-openings leading to the rear of said bridge-wall, an auxiliary bridge-wall located in the rear of the first bridge-wall and forming with said first wall a combustion-chamber, said auxiliary bridge-wall having an arched opening in its lower part for the passage of the products of combustion therethrough, and an air-heating chamber in the top of said bridge-wall heated by the products of combustion flowing over the wall, said chamber having an air-inlet and discharge-openings, said openings leading to the rear of the bridge-wall.



818,460. SPARKING-IGNITION-CONTROLLING MEANS FOR EXPLOSIVE-ENGINES. Joseph S. Morland, Rochester, N. Y., assignor of one-half to Moss Mosely, Rochester, N. Y. Filed Apr. 21, 1904. Serial No. 204,221.



Claim.—1. In an explosive-engine provided with the usual cylinder, piston and ignition devices, the combination of an induction-coil, a single shiftable controlling member constructed to vary the time of making and breaking the primary circuit of said coil and to place the secondary circuit thereof in sparking condition during an invariable portion of the engine-piston travel, and a governing means for automatically shifting said controlling member, substantially as described.

2. In an explosive-engine provided with the usual cylinder, piston and ignition devices, the combination of an induction-coil, a single shiftable controlling member constructed to vary the time of making and breaking the primary circuit of said coil and to place the secondary circuit thereof in sparking condition during an invariable portion of the engine-piston travel, a governing means for automatically shifting said controlling member, an adjustable means engaging said controlling member and constructed to resist the shifting action of the governing means thereon, and means for varying the resistance of said adjustable means during the operation of the engine, substantially as described.

3. In an explosive-engine provided with the usual cylinder, piston, and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary in open circuit with the ignition devices and a terminal, a single shiftable controlling member constructed to engage said two contacts in the primary circuit to close said circuit at various points in the engine-piston travel and to close the secondary circuit through a spark-gap to said terminal during an invariable portion of the engine-piston travel, and a governing means constructed to shift said controlling member automatically, substantially as described.

4. In an explosive-engine provided with the usual cylinder, piston and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary in open circuit with the ignition devices and a terminal, a single shiftable controlling mem-

ber constructed to engage said two contacts in the primary circuit to close said circuit at various points in the engine-piston travel and to close the secondary circuit through a spark-gap to said terminal during an invariable portion of the engine-piston travel, a governing means constructed to shift said controlling member automatically, adjustable means engaging said controlling member and constructed to resist the shifting action of the governing means thereon, and means for varying the resistance of said adjustable means during the operation of the engine, substantially as described.

5. In an explosive-engine provided with the usual cylinder, piston, and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary arranged in electrical connection with one electrode of the ignition device and with a contact, a terminal electrically connected to the remaining electrode of the ignition device, a single shiftable controlling member constructed to engage said two contacts in the primary circuit to close said circuit at various points in the engine-piston travel and to place said secondary contact in sparking relation to said terminal during an invariable portion of the engine-piston travel, and a governing means constructed to shift said controlling member automatically, substantially as described.

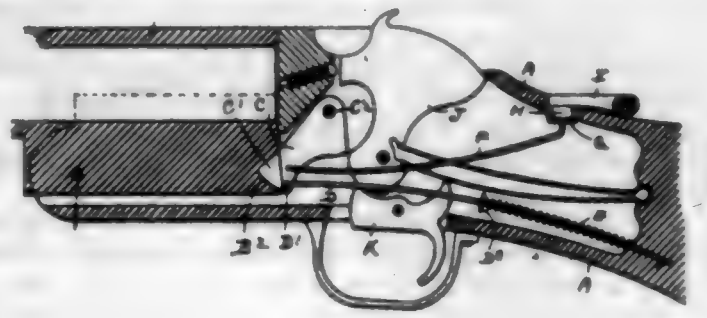
6. In a multiple-cylinder engine provided with the usual pistons and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary arranged in electrical connection with one of the electrodes of each of the several ignition devices and with a contact, a separate terminal for each of said ignition devices arranged in electrical connection with the remaining electrode thereof, a single shiftable controlling member constructed to engage said two contacts in the primary circuit to close said circuit at various points in the travel of the several engine-pistons and to place said secondary contact successively in sparking relation with each of said terminals during an invariable portion of the corresponding engine-piston travel, and a governing means constructed to shift said controlling member automatically, substantially as described.

7. In an explosive-engine provided with the usual cylinder, piston and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary arranged in electrical connection with one electrode of the ignition device and with a contact, a terminal electrically connected to the remaining electrode of the ignition device, a single shiftable controlling member provided with a peripheral element constructed to engage said two contacts in the primary circuit to close said circuit at various points in the engine-piston travel, and with an end plate constructed to place said secondary contact in sparking relation to said terminal during an invariable portion of the engine-piston travel, and a governing means constructed to shift said controlling member automatically, substantially as described.

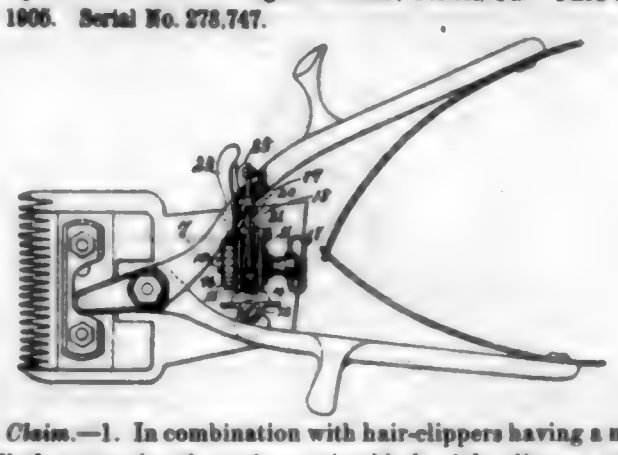
8. In an explosive-engine provided with the usual cylinder, piston and ignition devices, the combination of an induction-coil arranged with its primary in open circuit with a source of electrical energy and two contacts, and its secondary arranged in electrical connection with one electrode of the ignition device and with a contact, a terminal electrically connected to the remaining electrode of the ignition device, a single shiftable controlling member provided with a peripheral element, constructed to engage said two contacts in the primary circuit to close said circuit at various points in the engine-piston travel, and with an end plate constructed to place said secondary contact in sparking relation to said terminal during an invariable portion of the engine-piston travel, means constructed to maintain said secondary contact in engagement with said plate in the several shifted positions of the controlling means, and a governing means constructed to shift said controlling member automatically, substantially as described.

818,461. **BREECH-LOADING FIREARM.** OSCAR F. MOSSBERG, Fitchburg, Mass., assignor to Mary Elizabeth Johnson, Fitchburg, Mass., executrix of Iver Johnson, deceased. Filed Aug. 30, 1899. Serial No. 728,940.

Claim.—In a breakdown gun, the combination with a frame and a barrel, of a latch pivoted to the frame and normally engaging the barrel, means for withdrawing the latch from the barrel, the frame provided with an aperture therein, a rod, one end of which is connected to the latch and the opposite end of which is partially received in the aperture in the frame, a spring adapted to normally force the rod out of the aperture to retain the latch in engagement with the barrel, the rod adapted to be moved rearwardly when the latch is withdrawn from the barrel, and be guided by and slide within the aperture in the frame.



818,462. **HAIR-CLIPPER.** THOMAS W. MCNALLY, Bristol, Pa., assignor of one-third to Hugh B. Nelson, Bristol, Pa. Filed Sept. 16, 1905. Serial No. 278,747.



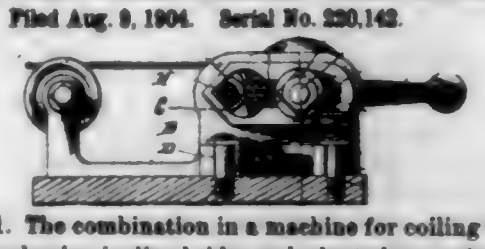
Claim.—1. In combination with hair-clippers having a movable handle for actuating the reciprocating blade of the clippers, of a gage maintained to be movable away from the blades of the clippers, and means for moving the gage operatively connected with a movable part of the clippers and operated thereby when more than the minimum movement is imparted to such movable part.

2. The combination with hair-clippers of a gage-plate connected thereto by a bar, a spring that engages the bar and exerts a tendency to move the gage toward the cutters of the clippers, means for moving the gage away from the cutters to which a rotary movement is imparted from one of the handles of the clippers; when a movement greater than normal is imparted to the handle and means for restraining movement of the gage against the action of the spring.

3. In combination with hair-clippers of the type shown, a gage-plate having a rack-bar, a mutilated gear-wheel maintained to engage the rack-bar, a toggle connected to one of the handles of the hair-clippers and to the shaft of the mutilated gear-wheel, a pawl carried by the toggle for engagement with the mutilated gear-wheel, and a ratchet-wheel for holding the shaft against movement, substantially as shown and for the purpose set forth.

4. In combination with hair-clippers, a gage-plate, a rack-bar attached thereto, a shaft having thereon a mutilated gear-wheel for engagement with the rack-bar, links connected to one of the handles of the hair-clippers and to the shaft of the gear-wheel, a pawl carried by the links such pawl being adapted to move the gear-wheel when the handle is moved beyond its normal range of movement, a pawl and ratchet for locking the shaft carrying the mutilated gear-wheel against movement in one direction, and a spring that encircles the bar carried by the gage, substantially as shown.

818,463. **WIRE-COILING MACHINE.** ERNEST A. PAGE, Williamsport, Pa. Filed Aug. 9, 1904. Serial No. 220,142.



Claim.—1. The combination in a machine for coiling wire, of a spindle-bearing having inclined sides and adapted to receive spindles varying in size, a coiling-spindle of a size to enter said bearing, means to press the coiling-spindle to a seat against the inclined bearing sides, and means for rotating the spindle.

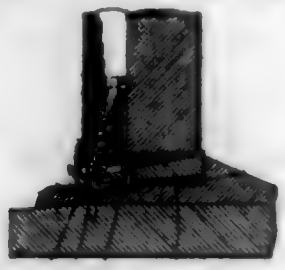
2. In a machine for coiling wire, the combination of a bearing-piece having bearing-surfaces inclined toward each other, a coiling-drum adjustably secured to said bearing-piece at the side remote from such bearing-surfaces, a coiling-spindle bearing on said inclined surfaces, and means for rotating the spindle.

3. In a wire-coiling machine, a standard having a slot therein provided with inclined bearing-surfaces, a coiling-spindle passing through said slot and bearing on said surfaces, and a coiling-drum held on a journal or pintle adjustable in said slot, all combined.

4. The combination, in a machine for coiling wire, of a standard having a bearing in which the coiling-spindle is both laterally and longitudinally movable, a spindle-guide in rear of said standard, a spindle rotatable in the standard and guide and means for rotating the spindle

5. In a wire-coiling machine, the combination of a standard having inclined bearing-surfaces for the spindle, a spindle having bearing on said surfaces, and a coiling-drum provided with a grooved face and a smooth burnished surface, adjustably supported alongside the coiling-spindle.

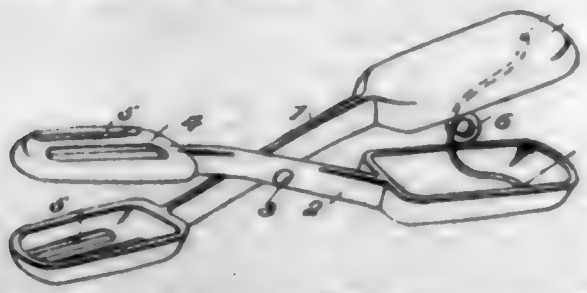
818,464. **WEATHER-STRIP FOR DOORS.** LEWIS A. PATTON and CHARLES M. POWELL, Ellendale, Okla., assignors of one-third to Ora B. Powell, Ellendale, Okla. Filed Aug. 17, 1905. Serial No. 274,510.



Claim.—1. The combination with a door-casing and the door thereof, of a threshold-strip upon the sill of the casing provided with a recess, and with a cam-shoulder, a weather-strip occupying said recess, and a lever projecting from the weather-strip and resting upon the cam-shoulder whereby said lever is given a sliding rocking movement to bring the weather-strip inward and upward against the bottom of the door when the door is closed.

2. The combination with a threshold-strip having a recess extending its full length and a cam-shoulder, outward beyond the recess, of a weather-strip occupying said recess and hinged at its outer edge to the threshold-strip, and provided with a curved lever resting slidably upon the cam-shoulder, said lever extending outward and upward from the weather-strip and having its free end disposed inward of and above said cam-shoulder.

818,465. **FORCEPS FOR HANDLING BOILED CLOTHES.** LOT W. PRICE, Whitten, Iowa. Filed Apr. 17, 1905. Serial No. 256,073.

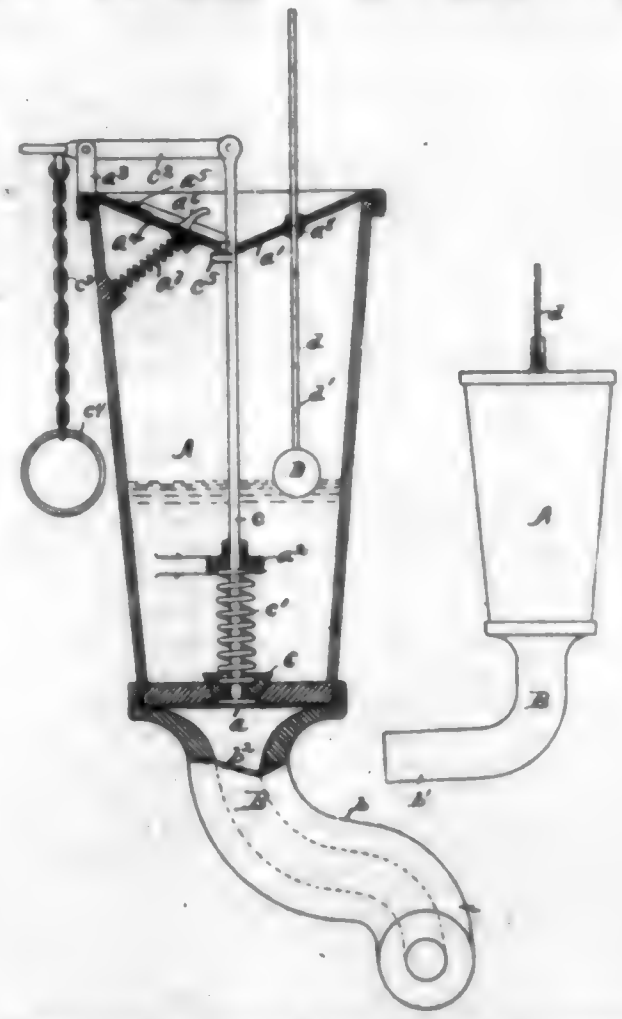


Claim.—A forceps for handling boiling clothes comprising levers pivoted at an intermediate point and provided at their opposite ends with spoon-shaped members, each pair of which open toward and are adapted to close upon each other, one pair of the spoon-shaped members serving as jaws with which to grip the clothes and having longitudinal slots in the back thereof, and a spring fitting the recess formed by the opposite pair of spoon-shaped members which owing to their peculiar shape enable the operator to obtain a good purchase thereon.

818,466. **DEVICE FOR DRENCHING HORSES.** NED S. PRICE, Erie, Pa. Filed Aug. 7, 1905. Serial No. 273,148.

Claim.—1. In a drenching device, the combination of a receptacle, a part *b* extending laterally from the receptacle, and a rearwardly-extending part *b'* said parts forming a nozzle unobstructed from the end of the part *b'* to beyond the turn between the parts to permit of the nozzle being inserted in the side of the mouth with the jaws closed, and turned to bring the part *b* through the side of the mouth, and the part *b'* extending into or toward the throat, and a valve controlling the flow of liquid from the receptacle.

2. In a drenching device, the combination of a receptacle, a part *b* extending laterally from the receptacle, and a rearwardly-extending part *b'* said parts forming a nozzle unobstructed from the end of the part *b'* to beyond the turn between the parts to permit of the nozzle being inserted in the side of the mouth with the jaws closed, and turned to bring the part *b* through the side of the mouth, and the part *b'* extending into or toward the throat, and a valve controlling the flow of liquid from the receptacle, a stem extending from said valve through the top of the receptacle, and means within the reach of the operator's hand grasping the receptacle, for tripping the valve.



3. In a drenching device, the combination of the receptacle A, the lateral part *b*, and the rearwardly-extending part *b'* forming the nozzle B unobstructed from the end of the part *b'* to beyond the turn between the parts, the valve C controlling the connection between the receptacle and the nozzle, and the stem *e* extending from the valve through the top of the receptacle, a lever c^3 extending from the stem over the side of the receptacle, a lug a^3 forming the fulcrum for the lever c^3, a chain c^5 secured to the lever, and the thumb-ring c^4, secured to the chain.

4. In a drenching device, the combination of a receptacle for the liquid, said receptacle being provided with a vent, a nozzle extending from said receptacle, a valve controlling the flow of liquid from the receptacle to the nozzle, means for closing the vent, and means for opening the vent and valve simultaneously.

5. In a drenching device, the combination with a receptacle, a nozzle extending therefrom, and a funnel-top arranged on said receptacle having an opening through which material may pass from the top into the receptacle, said opening also forming a vent for the receptacle, means for closing said vent and means for opening said vent.

6. In a drenching device, the combination with a receptacle, a nozzle extending therefrom, and a funnel-top arranged on said receptacle, having an opening through which material may pass from the top into the receptacle, said opening also forming a vent for the receptacle, means for closing said vent, a valve controlling the flow of liquid from the receptacle to the nozzle, and means for simultaneously opening the valve and the vent.

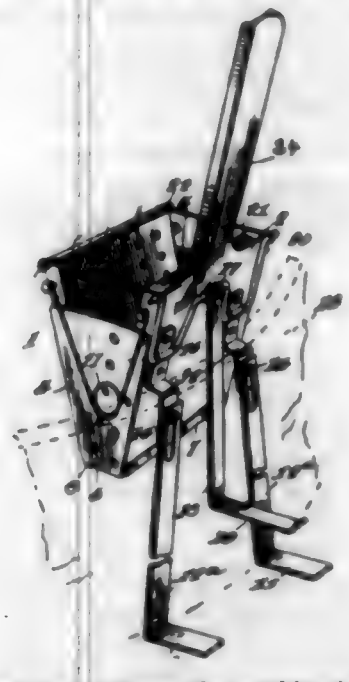
7. In a drenching device, the combination of a receptacle for the liquid, a nozzle extending therefrom, a funnel-shaped top *a'* on the receptacle, having an opening therefrom for the passage of the material, a cover a^4 for said opening, a hinge for securing said cover to the top, a spring a^7 for holding said cover in closed position.

8. In a drenching device, the combination of the receptacle A, having the passage *a* through the bottom thereof, the lateral part *b* and rearwardly-extending part *b'* forming a nozzle B unobstructed from the end of the part *b'* to beyond the turn between the parts, the valve C controlling the opening, a stem *e* extending from the valve

through the top, the funnel-shaped top *a'* having an opening for the introduction of the material, said opening also forming a vent, a cover a^4 for said opening, and means on the stem *c* for opening said cover.

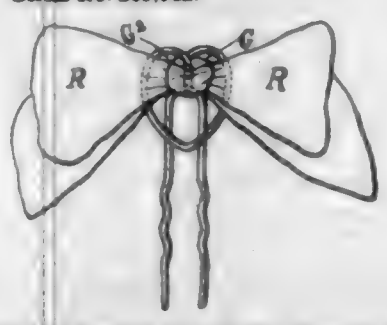
9. In a drenching device, the combination of a receptacle, a part *b* extending laterally from the receptacle, and a rearwardly-extending part *b'* said part forming a nozzle unobstructed from the end of the part *b'* to beyond the turn between the parts to permit of the nozzle being inserted in the side of the mouth with jaws closed, and turned to bring the part *b* through the side of the mouth, and the part *b'* extending into or toward the throat, and a valve controlling the flow of liquid from the receptacle, the float D having the graduated stems *d* extending upwardly therefrom through the top of the receptacle.

818,467. MOP-WRINGER. THOMAS J. PUTNAM, Peru, N. Y. Filed Mar. 20, 1905. Serial No. 251,736.



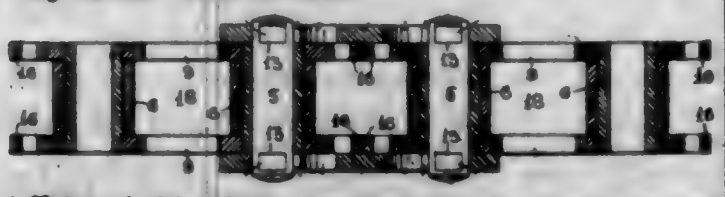
Claim.—In a mop-wringer, the combination of a relatively stationary section, a pressure-section movable toward and from the stationary section, sides carried by the stationary section, a crank-shaft for actuating the pressure-section, a handle extending upwardly from the stationary section, a foot-piece connected with the crank-shaft, and adjustable legs attached to the stationary section.

818,468. HAIR-PIN. FLORENCE B. REGAN, New York, N. Y. Filed July 17, 1905. Serial No. 269,992.



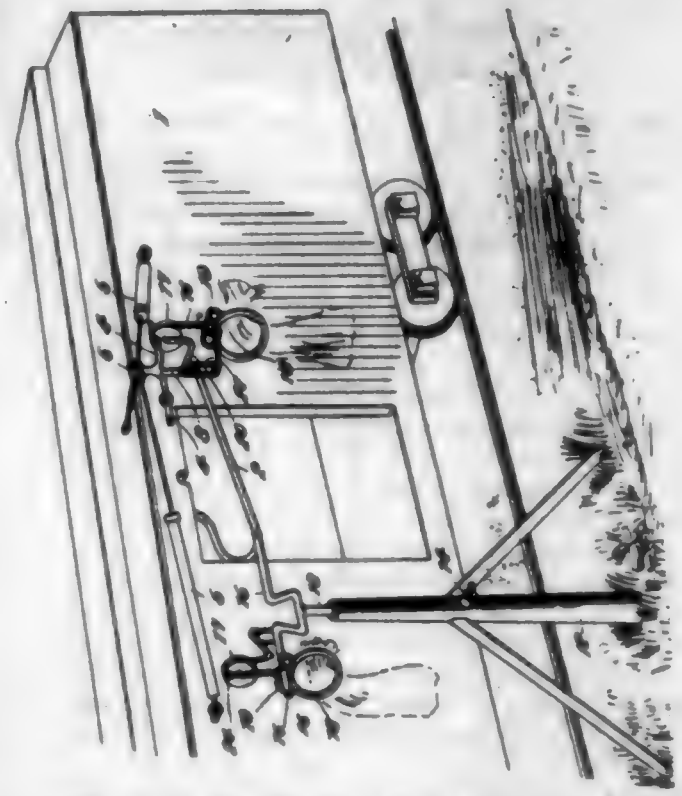
Claim.—A hair-pin formed of a single piece of wire bent intermediate its ends to form two legs said legs being connected together below the bend the loop above the connected ends of the legs bulging outwardly and bent downwardly into proximity to the legs of the pin whereby two openings are formed at the top of the hair-pin for the reception of a ribbon bow.

818,469. DETACHABLE DRIVE-CHAIN. LEONARD R. ROGERS, Worcester, Mass., assignor to William H. Gates, Worcester, Mass. Filed Aug. 22, 1904. Serial No. 221,617.



Claim.—A drive-chain comprising central and side links arranged in pairs pivotal pins hinging said central and side links, said central links having their opposing ends between said side links extended to reduce the width of the space between said side links uniform with the space between the central links.

818,470. MAIL-BAG CATCHING AND DELIVERING MECHANISM. WILLIAM T. ROCK, Cheyenne, Okla. Filed July 31, 1905. Serial No. 272,105.



Claim.—1. In combination, a car, a mail-catcher including a mail-receiving support mounted on the car and inclining upwardly from a point interior of the car to a point exterior thereof, and a bag-holder to be received upon the inclined support and to gravitate into the car thereon.

2. In combination with a car, a mail-bag catcher carried by the car and embodying an inclined rail, and a bag-holder consisting of a trolley adapted to be received on the inclined rail and to travel into the car thereon.

3. In combination with a car, a mail-bag catcher carried by the car and embodying an inclined rail, and a bag-holder consisting of a trolley adapted to be received on the inclined rail and to automatically travel into the car thereon.

4. In combination with a car, a mail-bag catcher embodying a rail supported by the car, and a mail-bag holder to be caught by said rail and embodying a trolley adapted to travel thereon.

5. In combination with a car, a mail-bag catcher embodying a rail supported by the car, a mail-bag holder to be caught by said rail and embodying a trolley adapted to travel thereon, and means carried by the trolley for preventing accidental displacement thereof after it is delivered to the rail.

6. In combination with a car, a mail-bag catcher embodying a rail supported by the car, a mail-bag holder to be caught by said rail and embodying a trolley adapted to travel thereon, and an automatically-operated latch for preventing displacement of the trolley or bag-holder from the rail after it has been delivered thereto.

7. In combination with a car, a catcher mounted thereon and embodying an inclined rail, a mail-bag holder consisting of a trolley to be delivered to the inclined rail, and an automatically-operating device carried by the trolley for preventing accidental displacement thereof after it has been delivered to the rail.

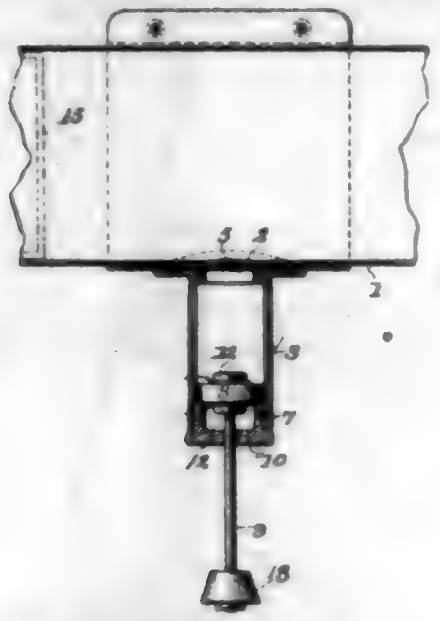
8. In combination with a car, a movable support mounted thereon and including a movable rail adapted to be projected from the car and upwardly and outwardly inclined in position when so projected, and a mail-bag holder embodying a trolley to be delivered to the rail to travel into the car thereon.

9. In combination with a car, a mail-bag catcher mounted thereon and embodying a supporting-rail, a mail-bag holder consisting of a trolley to be caught by said rail and to travel thereon into the car, and a trolley-wheel for the trolley adapted to support the mail-bag holder preparatory to delivery thereof from the car.

10. In combination with a car, a mail-bag catcher thereon embodying a supporting-rail, a mail-bag-supporting member independent of said rail, a mail-bag holder consisting of a trolley adapted to be caught by the rail aforesaid and to travel thereon, and means carried by said trolley whereby the same may be supported upon the

supporting member aforesaid preparatory to delivery thereof from the car.

818,471. INDICATOR FOR PNEUMATIC CARRIERS. HERMAN W. ROTTER, Milwaukee, Wis., assignor of one-half to Joseph McCann, Milwaukee, Wis. Filed July 8, 1904. Serial No. 215,425.



Claim.—1. In a pneumatic store-service system, the combination of a pneumatic carrier-tube, a cylinder depending from the tube and open at its upper end in register with an opening in said tube, a piston within the cylinder, and a weighted rod extending from the piston through the lower end of said cylinder.

2. In a pneumatic store-service system, the combination of a pneumatic carrier-tube section having an opening through the lower side thereof, a piece of reticulated material applied beyond the line of the inner circumference of said tube-section, a vertically-arranged cylinder, clamped to said tube-section, and with its open upper end in communication with an opening therein; a skeleton cap secured to the open lower end of said cylinder, and having an inner piston-supporting flange; a piston fitting within said cylinder, and having a depending piston-rod passing down and out through said cap; and a weight secured to the lower end of said piston-rod.

3. In a pneumatic store-service system, the combination with a pneumatic carrier-tube section, having an opening through the lower side thereof, of a vertically-arranged open-ended cylinder clamped to said tube, and with its upper end in communication with said opening therein; a piston supported within said cylinder; and a piston-rod depending from said piston, and weighted at its projecting lower end.

818,472. PLANE. HENRY B. SARGENT, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed Aug. 15, 1904. Serial No. 220,834.



Claim.—1. In a plane, the combination with a stock, of a throat in the bottom thereof, a sliding mouthpiece for varying the size of said throat, a disk fitted in a circular seat to rotate on said stock and having a depending cam between said stock and said mouthpiece adapted to engage said mouthpiece to operate the same, and protected by said disk, and means for locking said mouthpiece.

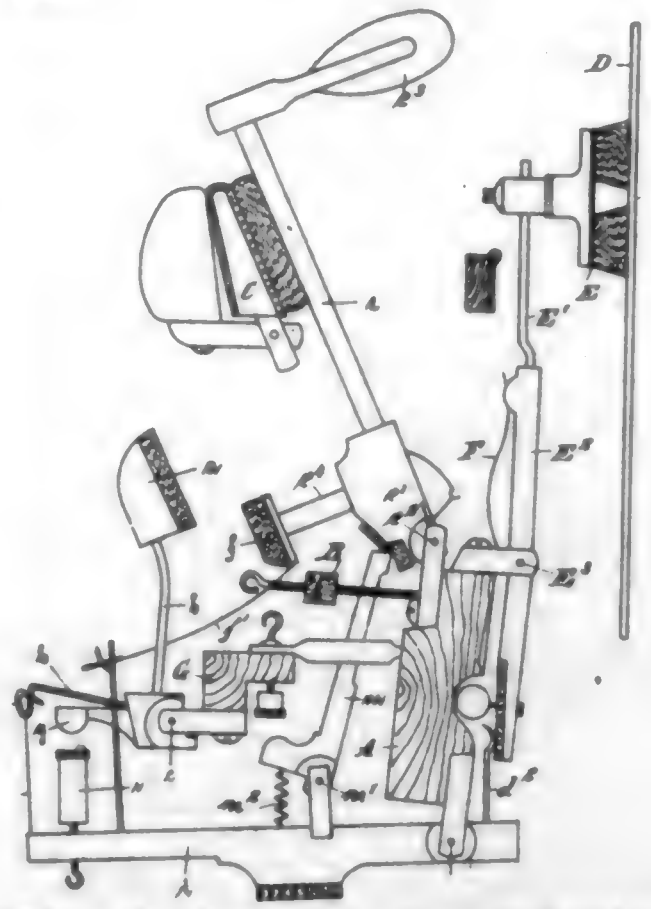
2. In a plane, the combination with a stock, of a throat in the bottom thereof, a sliding mouthpiece for varying the size of said throat, a disk fitted in a circular seat to rotate on said stock and having a depending cam between said stock and said mouthpiece adapted to engage projections on said mouthpiece in an immediately adjacent plane to operate the same, and protected by said disk, and means for locking said mouthpiece.

3. In a plane, the combination with a stock, of a throat in the bottom thereof, a sliding mouthpiece for varying the size of said throat, a disk fitted in a circular seat to rotate on said stock and having a perforation and a depending cam between said stock and said mouthpiece adapted to engage integral projections on said mouthpiece in an immediately adjacent plane to operate the same, and protected by said disk, and means for locking said mouthpiece, including a screw-threaded post on said mouthpiece projecting through said perforation in said disk, and a nut on said post adapted to bind said disk on said stock to prevent movement thereof.

4. In a plane, the combination with a stock, of a throat in the bottom thereof, a sliding mouthpiece for varying the size of said throat, a disk mounted on said stock and having a depending cam and a perforation, oppositely-disposed integral lugs on said mouthpiece adapted to be engaged by said cam, a screw-threaded post on said mouthpiece projecting through said perforation in said disk in which it is capable of lateral play, and a nut on said post adapted to bind said disk on said stock to prevent movement of said mouthpiece, the nut being arranged to overlap the wall surrounding the aperture of the disk.

5. In a plane, the combination with a stock, of a throat in the bottom thereof, a sliding mouthpiece for varying the size of said throat, a disk fitted in a circular seat to rotate on said stock and having a depending cam between said stock and said mouthpiece adapted to engage integral projections on said mouthpiece in an immediately adjacent plane to operate the same and protected by said disk, a projecting finger-piece on the upper surface of the disk, and means for locking said mouthpiece from movement.

818,473. REPETITION-ACTION FOR PIANOS. JAKOB SCHAAF, Frankfort-on-the-Main, Germany. Filed Nov. 22, 1904. Serial No. 233,318.



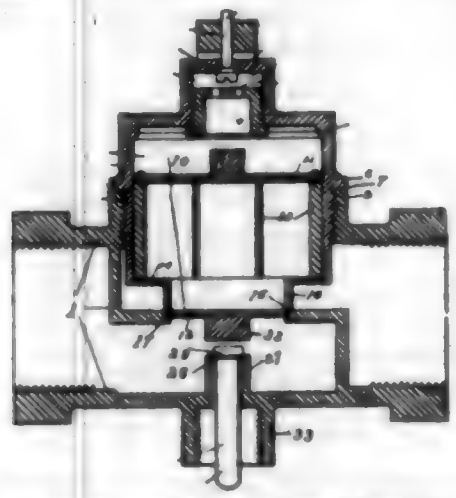
Claim.—1. In a piano-action the combination with the hammer having a counter-check, of a back-check adapted to coöperate with said counter-check, a lever *b* pivoted on the frame and carrying said back-check, said lever being provided with two operating-arms *g* and *k*, a wippen *d*, an operating member *i* carried by the wippen *b* and adapted to engage one of said operating-arms *g* to throw the back-check into the path of the counter-check, and a flexible connection *l* secured to the other operating-arm *k* and to the wippen to withdraw the back-check from the path of the counter-check, at the termination of the downward movement of the wippen.

2. In a piano-action, the combination with the pivoted hammer carrying a counter-check, of a back-check adapted to coöperate with said counter-check, one of said checks being grooved to receive and center the other, the axis of the groove being in a plane at right angles to the axis of the hammer-pivot, and means for throwing the back-check into and out of the path of the counter-check.

818,474. VALVE. FRANK SOUBIER, Mansfield, Ohio. Filed May 26, 1905. Serial No. 262,352.

Claim.—1. A valve comprising a body portion, a flanged cap having an internal circumferential rib adjacent to the top, said rib ground on its lower surface to form a valve-seat, a seat formed in the

valve-body, said valve composed of an upper and lower disk of different diameters.



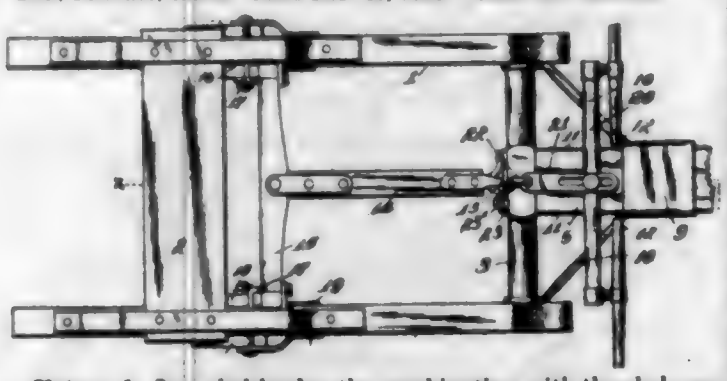
2. A valve comprising a body portion, a flanged cap having an internal circumferential rib with a valve-seat formed thereon, a pin-valve fitted to the upper portion of said cap, a bushing having apertures provided therein secured to said cap affording a means of support for said pin-valve, a main valve composed of an upper and lower disk, an annular flange made integral with the lower disk, wings secured thereto, a combined releasing-pin and valve fitted to an aperture in the body portion of the valve and located below the lower disk of the main valve substantially as described and for the purpose set forth.

3. A valve comprising a body portion, a cap having a depending annular flange with an internal rib, a perforated bushing fitted to the upper portion of said cap, a pin-valve supported by said bushing, an upper valve-disk adapted to contact with said rib, depending wings made integral therewith, a guiding-plate secured to said wings, a flange made integral with said plate and of smaller diameter, a lower valve-disk secured to said flange, a combined valve and releasing-pin fitted to the lower body portion of the valve.

4. In a valve comprising a body portion, a cap having a depending circular flange with a valve-seat formed on the inner periphery thereof, a main valve comprised of two disks of different diameter fitted to said circular flange, a pin-valve fitted to upper portion of said cap, a bushing secured to said cap and adapted to support said pin-valve with apertures provided therein for the escape of air from the main-valve chamber, a combined releasing-pin and valve fitted to the lower portion of the body of the valve below the main valve as described and set forth.

5. A valve comprising a body portion, a flanged cap having an internal rib forming a valve-seat, a bushing secured to the upper portion of said cap, a pin-valve fitted to an aperture in the upper portion of said cap, a main valve composed of two disks of different diameters, a combined releasing-pin and valve secured to the lower portion of the valve below the main valve, means for opening the main valve, substantially as described and set forth.

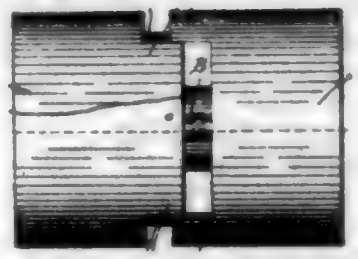
818,475. SLED-BRAKE. GEORGE W. SHAFFER and JAMES L. HARMAN, Florence, Mont. Filed Mar. 27, 1905. Serial No. 252,231.



Claim.—1. In a sled-brake, the combination with the sled-runners and a roller journaled thereto, of a slidable tongue having a slot, a brake operated by the tongue, a pin on the roller which passes loosely through the slot in the tongue, and a pin attached to the sled by a flexible connection and adapted to be inserted in either end of the slot to lock the brake either set or released as desired.

2. In a sled-brake, the combination with the sled-runners and a roller journaled thereto, of a slidable tongue, a brake connected to said tongue, a doubletree, a bolt pivoting the doubletree to the tongue, and a brace and guide connected to the roller and having a slot which loosely receives the bolt aforesaid.

818,476. SHAFT-COUPLING. FRANK SHAW, Syracuse, N. Y. Filed Aug. 14, 1901. Serial No. 72,010.



Claim.—1. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve, and devices for adjusting the sections axially relatively to each other, there being means for relieving said devices from strain incidental to the tendency of movement of one of the sections of the shell around the sleeve relatively to the other, substantially as and for the purpose described.

2. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve, and bolts extending through the sections lengthwise of the sleeve for adjusting the sections axially relatively to each other, there being interlocking lugs projecting from the contiguous ends of said sections for relieving the bolts from shearing strain, substantially as and for the purpose set forth.

3. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve and being provided with interlocking lugs projecting from their contiguous ends, and openings extending through the main parts of the sections and the lugs lengthwise of the axis of the shell, and bolts in the last-mentioned openings of the sections for adjusting said sections axially relatively to each other, said bolts being relieved by the interlocking lugs from shearing strain, substantially as and for the purpose described.

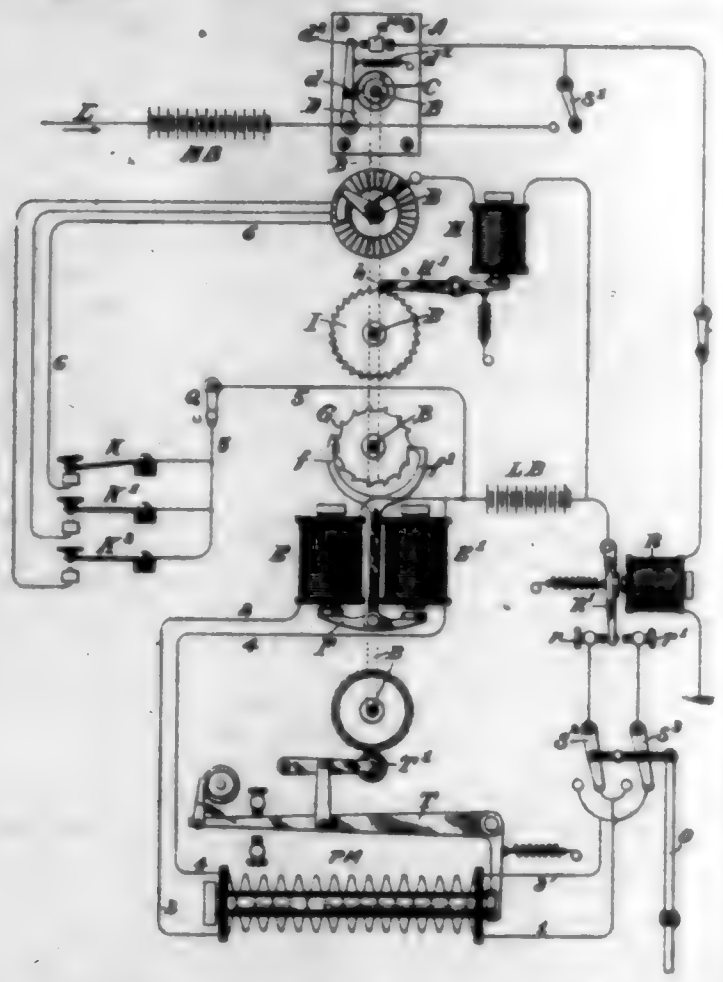
4. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve and being provided with interlocking lugs projecting from their contiguous ends, and openings extending through the main parts of the sections and the lugs lengthwise of the axis of the shell, and bolts in the last-mentioned openings of the sections for adjusting said sections axially relatively to each other, said bolts loosely fitting in the openings for receiving the same and being relieved by the interlocking lugs from shearing strain, substantially as and for the purpose specified.

818,477. PRINTING-TELEGRAPH. ROBERT J. SHERRY, New York, N. Y. Filed May 22, 1903. Serial No. 158,368.

Claim.—1. In a printing-telegraph, the combination of the type-wheel and shaft, a main-line battery, a circuit-interrupter included in the main line, and actuated by the shaft to change the condition of the line-circuit at each step or movement of the type-wheel, the main-line relay, two local circuits controlled at the front and back stops of its armature-lever, a local battery for said circuits, a double-wound print-magnet having a coil in each local circuit, a magnet in each local circuit for effecting a movement of the type-wheel each time the condition of the circuit of the line is changed, the keys and their local circuits including the sunflower segments and trailer, and an arresting-magnet common to all the key-circuits for arresting the type-wheel when a key is depressed and thereby prolonging the then open or closed condition of the line-circuit, whereby the print-magnet is charged by the prolonged closing of the local circuit and an impression from the type-wheel effected, substantially as set forth.

2. In a printing-telegraph, the combination of the type-wheel, its shaft, a main-line battery, a main-line circuit-interrupter actuated by the wheel or shaft, the line-relay, the local battery, two circuits therefrom controlled at the front and back stops of the relay and each including a coil of a print-magnet and an escapement-magnet, the escapement-wheel and lever, the keys, their local circuits including the sunflower segments and trailer, the arresting-magnet common to all the key-circuits, its armature-lever, and the arresting-wheel on the type-wheel shaft, substantially as set forth.

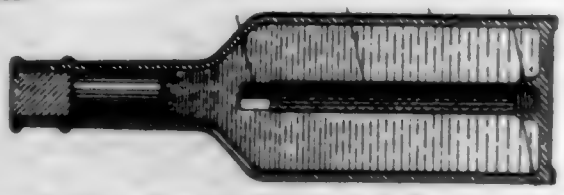
3. In a printing-telegraph, the combination of the sunflower, its trailer and means for disengaging the trailer from the sunflower when receiving.



4. In a printing-telegraph, the combination of the sunflower, its trailer, a switch for connecting the instrument for either transmission or reception, and devices operated by the switch when moved into position for reception to disengage the trailer from the sunflower.

5. The combination of two printing-telegraph instruments connected by a line and one arranged for transmission to the other, the trailer of the transmitter bearing on the sunflower, and the trailer of the receiver being thrown out of contact with its sunflower.

818,478. **RECEPTACLE FOR STORING ALCOHOLIC LIQUORS.** Solomon Schwatder, Denver, Colo. Filed Feb. 23, 1904. Serial No. 194,911.



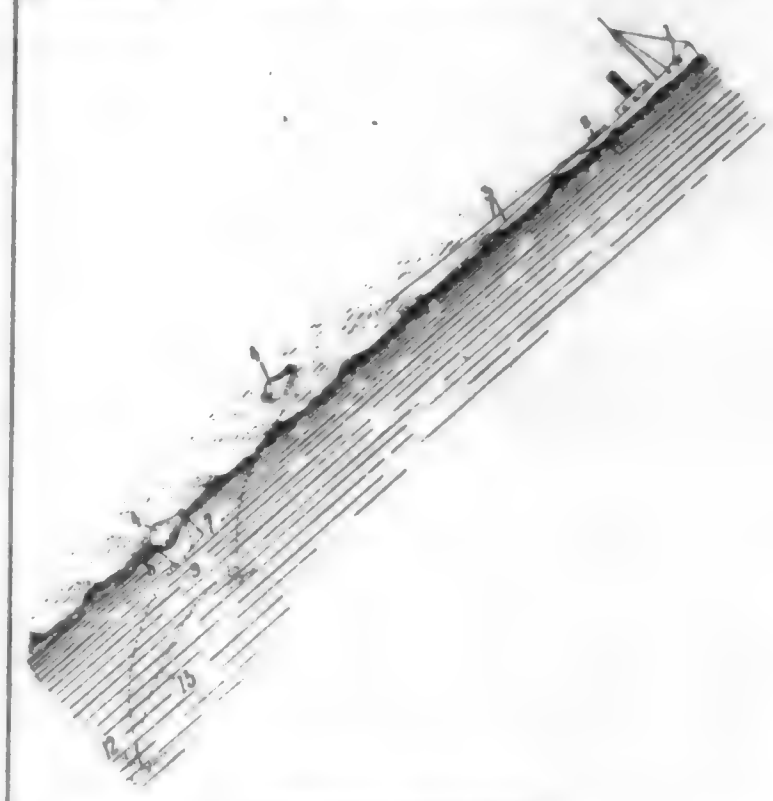
Claim.—1. A vessel for retailing alcoholic liquors, comprising a receptacle provided on its inside with a threaded boss, a perforated receptacle secured to said boss and adapted to receive a maturing agent, substantially as described.

2. A vessel for retailing alcoholic liquors, comprising a suitable receptacle, a perforated smaller receptacle secured on the inside of the first-named receptacle and adapted to contain a maturing agent, substantially as described.

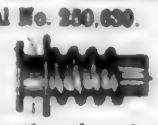
818,479. **DEVICE FOR SEARCHING SUBMARINE MINES, &c.** Ulrik S. Östrand, Sundbyberg, Sweden. Filed Sept. 28, 1905. Serial No. 280,457.

Claim.—1. In a device for searching submarine mines and the like the combination of buoys, steering means on said buoys adapted to keep the same at a distance from each other during the motion through the water, water-kites suspended from the said buoys, and a catch-cord between the said kites, substantially as and for the purpose set forth.

2. In a device for searching submarine mines and the like the combination, of buoys, steering means on said buoys adapted to keep the same at a distance from each other during the motion through the water, water-kites, suspension-cords between the said buoys and kites, swingable plates on said suspension-cords, and a catch-cord between the said swingable plates, substantially as and for the purpose set forth.



818,480. **BINDING-POST.** Clyde Slusser, Charleston, W. Va. Filed Mar. 17, 1905. Serial No. 250,630.



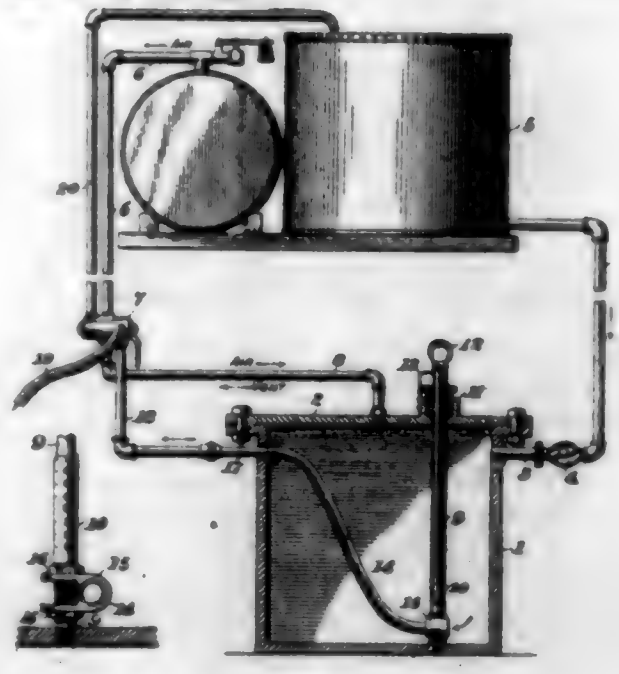
Claim.—1. A binding-post for electrical circuits consisting of a hollow tubular part of malleable metal, a spring-contact maker mounted upon the exterior thereof and a support coöperated with the malleable end of the tubular part, substantially as described.

2. A binding-post for electrical circuits consisting of a hollow tubular part of malleable metal, having a slot in the lower end, and a spring-contact maker mounted upon the exterior thereof.

3. In a binding-post for electrical apparatus, the combination of a tubular part made of malleable metal, a spring encircling the said part and means upon the part for holding a conductor against the pressure from the spring and a support coöperated with the malleable end of the tubular part, substantially as described.

4. In an electrical binding-post, the combination with a tubular part made of malleable metal and having a serrated lower end and a flanged upper end, of a spiral spring encircling the body of the said post, a washer interposed between the spring and flanged ends, and means upon the post for maintaining a conductor against pressure from the spring, substantially as described.

818,481. **APPARATUS FOR MEASURING AND DELIVERING LIQUIDS.** Guilford L. Spencer, Washington, D. C. Filed Sept. 16, 1903. Serial No. 173,445.



Claim.—1. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

2. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a check-valve controlling the liquid-inlet, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

3. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a flexible pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

4. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a check-valve controlling the liquid-inlet, a flexible pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

5. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, a graduated member secured to said free end, and a separate air-tight opening receiving said graduated member, as set forth.

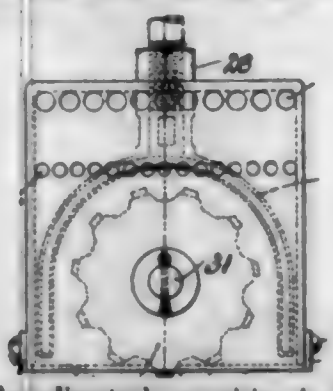
6. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a guide-rod fixed in the bottom of said vessel, and a graduated tube secured to the adjustable end of said outlet-pipe, sliding on said guide-rod and passing through the top of said vessel, as set forth.

7. An apparatus for measuing and delivering liquids, comprising an air-tight vessel with an inlet for compressed air and a liquid-outlet pipe having one end vertically adjustable within said vessel, a supply-tank having a pipe containing a check-valve and leading to said vessel, and a vent-pipe leading from said vessel to a point above the liquid-level in said supply-tank, as set forth.

8. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a source of compressed air, a vent-pipe, and a cock having passages which in one position admit compressed air to the vessel and in another position cut off the supply of compressed air and open communication with the vent-pipe, as set forth.

9. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a source of compressed air, a vent-pipe, a liquid-delivery pipe, and a cock having passages which in one position admit compressed air to the vessel and open the liquid-outlet pipe to said delivery-pipe, and in another position cut off the supply of compressed air, close the liquid-outlet pipe and open communication with the vent-pipe, as set forth.

818,482. **BRANDING-TOOL.** MORTIMER P. SULLIVAN, Boston, Mass. Filed June 1, 1905. Serial No. 263,242.

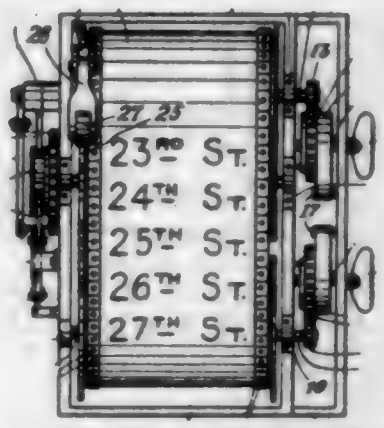


Claim.—1. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a type-disk journaled to rotate in said casing and projecting through the bottom thereof, means to lock said type-disk against rotation, a gas-burner in the interior of said casing, and a pipe connected to said burner and projecting therefrom outside said casing.

2. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a series of type-disks journaled to rotate in said casing and projecting through the bottom thereof, a gas-burner in the interior of said casing, a pipe connected to said burner and projecting therefrom outside said casing, and bottom plates slidable on said casing and adapted to engage said type-disks and lock them against rotation.

3. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a series of type-disks journaled to rotate in said casing and projecting through the bottom thereof, a U-shaped gas-burner adjacent to said type-disks and provided with apertures in alinement with the peripheries of said disks, a pipe connected to said burner and projecting therefrom outside said casing, and bottom plates slidable upon said casing and adapted to engage said type-disks and lock them against rotation.

818,488. **STATION-INDICATOR.** JOHN H. TAPLEY and ALFRED H. HOVEY, Cass Lake, Minn. Filed Apr. 5, 1904. Renewed July 11, 1905. Serial No. 269,574.



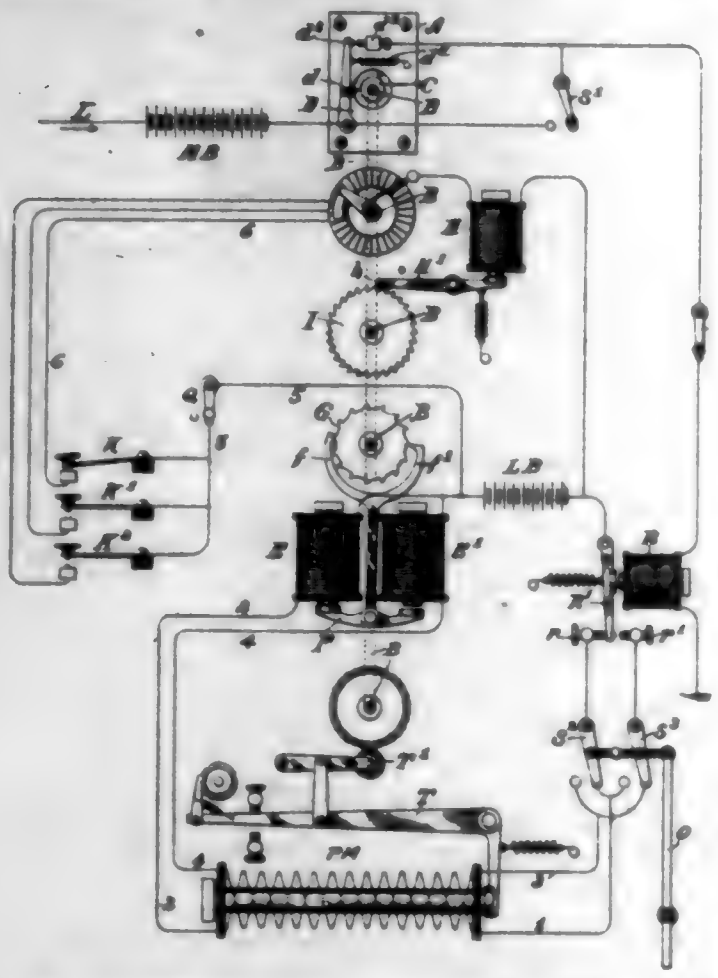
Claim.—1. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axes, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, a pair of pawls mounted thereon, means for adjusting said pawls to move the same alternately to inoperative position, and means for operating the pawls.

2. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device, having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, a pair of pawls carried thereby, means for adjusting said pawls to move the same alternately to inoperative position, means for actuating the pawls, spring-dogs provided with rollers on their engaging ends, and a wheel or disk on the axis of the feed device and provided with a series of peripheral sockets in which said rollers register.

3. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, spring-pawls mounted thereon, a lever fulcrumed on said carrier and having arms arranged to move either pawl out of operative position, means for positioning said lever, and means for actuating the pawl-carrier.

4. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, spring-pawls mounted thereon, a lever fulcrumed on said carrier and having arms arranged to move either pawl out of operative position, means outside the casing and interior connections for adjusting said lever on its fulcrum to control the positions of the pawls, and means outside the casing and interior connections for reciprocating the pawl-carrier to actuate the operative pawl.

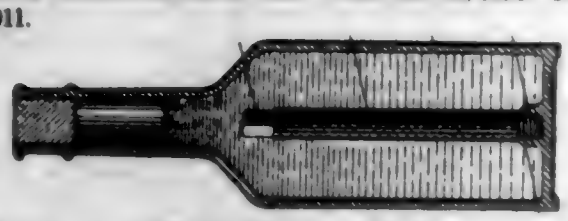
3. In a printing-telegraph, the combination of the sunflower, its trailer and means for disengaging the trailer from the sunflower when receiving.



4. In a printing-telegraph, the combination of the sunflower, its trailer, a switch for connecting the instrument for either transmission or reception, and devices operated by the switch when moved into position for reception to disengage the trailer from the sunflower.

5. The combination of two printing-telegraph instruments connected by a line and one arranged for transmission to the other, the trailer of the transmitter bearing on the sunflower, and the trailer of the receiver being thrown out of contact with its sunflower.

818,478. **RECEPTACLE FOR STORING ALCOHOLIC LIQUORS.** SOLOMON SEWATZER, Denver, Colo. Filed Feb. 22, 1904. Serial No. 194,911.



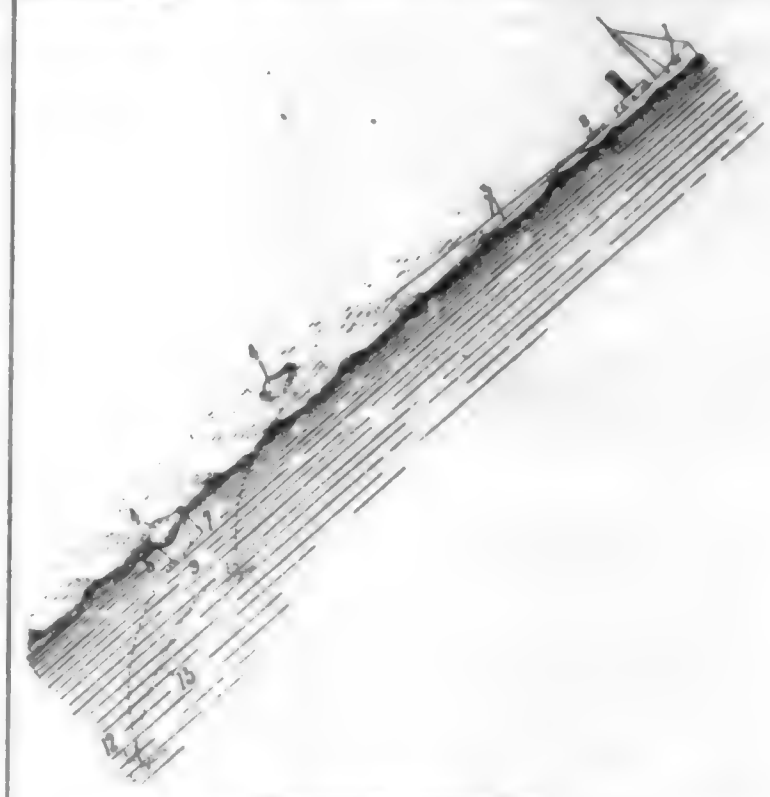
Claim.—1. A vessel for retailing alcoholic liquors, comprising a receptacle provided on its inside with a threaded boss, a perforated receptacle secured to said boss and adapted to receive a maturing agent, substantially as described.

2. A vessel for retailing alcoholic liquors, comprising a suitable receptacle, a perforated smaller receptacle secured on the inside of the first-named receptacle and adapted to contain a maturing agent, substantially as described.

818,479. **DEVICE FOR SEARCHING SUBMARINE MINES, &c.** ULRIK S. SJÖSTRAND, Sundbyberg, Sweden. Filed Sept. 28, 1905. Serial No. 280,457.

Claim.—1. In a device for searching submarine mines and the like the combination of buoys, steering means on said buoys adapted to keep the same at a distance from each other during the motion through the water, water-kites suspended from the said buoys, and a catch-cord between the said kites, substantially as and for the purpose set forth.

2. In a device for searching submarine mines and the like the combination, of buoys, steering means on said buoys adapted to keep the same at a distance from each other during the motion through the water, water-kites, suspension-cords between the said buoys and kites, swingable plates on said suspension-cords, and a catch-cord between the said swingable plates, substantially as and for the purpose set forth.



818,480. **BINDING-POST.** CLYDE SLUSSER, Charleston, W. Va. Filed Mar. 17, 1905. Serial No. 250,630.



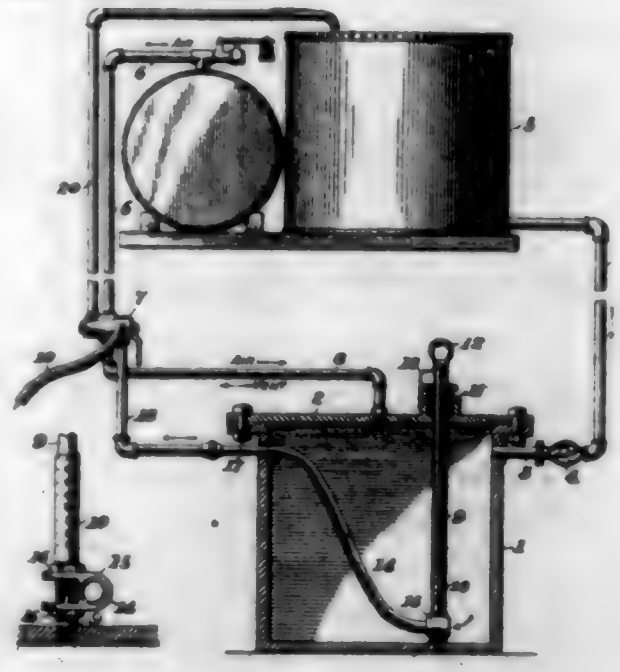
Claim.—1. A binding-post for electrical circuits consisting of a hollow tubular part of malleable metal, a spring-contact maker mounted upon the exterior thereof and a support coöperated with the malleable end of the tubular part, substantially as described.

2. A binding-post for electrical circuits consisting of a hollow tubular part of malleable metal, having a slot in the lower end, and a spring-contact maker mounted upon the exterior thereof.

3. In a binding-post for electrical apparatus, the combination of a tubular part made of malleable metal, a spring encircling the said part and means upon the part for holding a conductor against the pressure from the spring and a support coöperated with the malleable end of the tubular part, substantially as described.

4. In an electrical binding-post, the combination with a tubular part made of malleable metal and having a serrated lower end and a flanged upper end, of a spiral spring encircling the body of the said post, a washer interposed between the spring and flanged ends, and means upon the post for maintaining a conductor against pressure from the spring, substantially as described.

818,481. **APPARATUS FOR MEASURING AND DELIVERING LIQUIDS.** GUILFORD L. SPENCER, Washington, D. C. Filed Sept. 14, 1903. Serial No. 173,445.



Claim.—1. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

2. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a check-valve controlling the liquid-inlet, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

3. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a flexible pipe connected to said outlet and having a vertically-adjustable free end below said outlet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

4. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a check-valve controlling the liquid-inlet, a flexible pipe connected to said outlet and having a vertically-adjustable free end below said oulet, and an index fixed on said vessel for indicating the position of said free end, as set forth.

5. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air and an outlet for liquid, a pipe connected to said outlet and having a vertically-adjustable free end below said outlet, a graduated member secured to said free end, and a separate air-tight opening receiving said graduated member, as set forth.

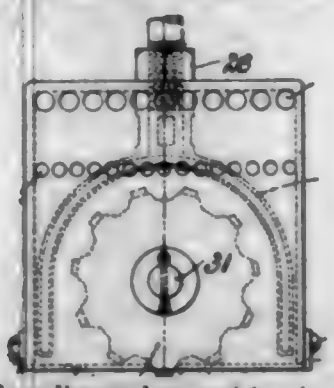
6. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a guide-rod fixed in the bottom of said vessel, and a graduated tube secured to the adjustable end of said outlet-pipe, sliding on said guide-rod and passing through the top of said vessel, as set forth.

7. An apparatus for measuing and delivering liquids, comprising an air-tight vessel with an inlet for compressed air and a liquid-outlet pipe having one end vertically adjustable within said vessel, a supply-tank having a pipe containing a check-valve and leading to said vessel, and a vent-pipe leading from said vessel to a point above the liquid-level in said supply-tank, as set forth.

8. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a source of compressed air, a vent-pipe, and a cock having passages which in one position admit compressed air to the vessel and in another position cut off the supply of compressed air and open communication with the vent-pipe, as set forth.

9. An apparatus for measuring and delivering liquids, comprising an air-tight vessel with inlets for liquid and compressed air, a liquid-outlet pipe, said pipe having one end vertically adjustable within said vessel, a source of compressed air, a vent-pipe, a liquid-delivery pipe, and a cock having passages which in one position admit compressed air to the vessel and open the liquid-outlet pipe to said delivery-pipe, and in another position cut off the supply of compressed air, close the liquid-outlet pipe and open communication with the vent-pipe, as set forth.

818,482. **BRANDING-TOOL.** MORTIMER P. SULLIVAN, Boston, Mass. Filed June 1, 1905. Serial No. 263,342.

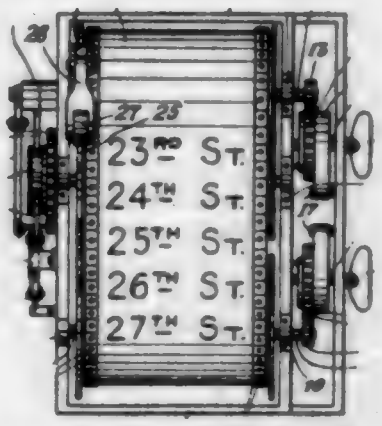


Claim.—1. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a type-disk journaled to rotate in said casing and projecting through the bottom thereof, means to lock said type-disk against rotation, a gas-burner in the interior of said casing, and a pipe connected to said burner and projecting therefrom outside said casing.

2. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a series of type-disks journaled to rotate in said casing and projecting through the bottom thereof, a gas-burner in the interior of said casing, a pipe connected to said burner and projecting therefrom outside said casing, and bottom plates slidable on said casing and adapted to engage said type-disks and lock them against rotation.

3. A branding-tool comprising in its construction a hollow casing provided with apertures in the walls thereof, a series of type-disks journaled to rotate in said casing and projecting through the bottom thereof, a U-shaped gas-burner adjacent to said type-disks and provided with apertures in alinement with the peripheries of said disks, a pipe connected to said burner and projecting therefrom outside said casing, and bottom plates slidable upon said casing and adapted to engage said type-disks and lock them against rotation.

818,488. **STATION-INDICATOR.** JOHN E. TAPLEY and ALFRED E. HOVEY, Cass Lake, Minn. Filed Apr. 5, 1904. Renewed July 11, 1905. Serial No. 269,374.



Claim.—1. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axes, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, a pair of pawls mounted thereon, means for adjusting said pawls to move the same alternately to inoperative position, and means for operating the pawls.

2. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device, having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, a pair of pawls carried thereby, means for adjusting said pawls to move the same alternately to inoperative position, means for actuating the pawls, spring-dogs provided with rollers on their engaging ends, and a wheel or disk on the axis of the feed device and provided with a series of peripheral sockets in which said rollers register.

3. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, spring-pawls mounted thereon, a lever fulcrumed on said carrier and having arms arranged to move either pawl out of operative position, means for positioning said lever, and means for actuating the pawl-carrier.

4. In a station or street indicator, an indicator-ribbon, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having means for engaging the ribbon to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with said gear-wheels, a pawl-carrier, spring-pawls mounted thereon, a lever fulcrumed on said carrier and having arms arranged to move either pawl out of operative position, means outside the casing and interior connections for adjusting said lever on its fulcrum to control the positions of the pawls, and means outside the casing and interior connections for reciprocating the pawl-carrier to actuate the operative pawl.

5. In a device of the class described, an indicator-ribbon having perforations near its edges, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having projections for engaging the ribbon-perforations, to move it, a gear-wheel on the feed-device axis, a second gear-wheel in mesh therewith, toothed drums mounted for rotation with the gear-wheels, a pair of pawls, means for adjusting said pawls alternately to inoperative position, means for actuating the pawls to turn the feed device, and means for holding said feed device in place upon completion of the feed movement.

6. In a device of the class described, an indicator-ribbon having perforations near its edges, a pair of spools upon and from which it is wound, coil-springs for exerting tension upon the spool-axes, an intermediate rotary feed device having projections for engaging the perforations in the ribbon to move the latter, a pair of intermeshing gear-wheels, toothed drums mounted for rotation with said gear-wheels, a swinging pawl-carrier, a pair of pawls carried thereby, a reversing-lever fulcramed on said carrier and having arms arranged to move either pawl out of operative position, means for positioning said lever, and means for actuating the pawl-carrier.

7. In a device of the class described, a casing provided with a display-opening, an indicator-operating means including a pair of intermeshing toothed drums, a pawl-carrying bar pivoted between said drums, a pair of pawls carried by the pivoted end of the bar and adapted to alternately engage the teeth on the drums, an indicator operable by said drums to successively display a symbol at said opening, and means for normally holding one of said pawls out of engagement with the teeth of the adjacent drum.

8. In a device of the class described, an indicator-operating means including a push-pawl, a pull-pawl, an operating means connecting the two, a pair of intermeshing toothed drums engaged by said pawls, an indicator operable by said drums, and means for alternately throwing said pawls into and out of engagement with the drums to thereby reverse the direction of movement of the indicator.

9. In a device of the class described, an indicator-operating means including a pair of intermeshing toothed drums, a pawl-carrying bar pivoted between said drums, pawls carried by the bar and adapted to alternately engage the teeth on the drums, an indicator operable by the latter, and a reversing-lever pivoted to and movable with the pawl-carrying bar and adapted to disengage one of the pawls from the teeth on the adjacent drum to thereby reverse the direction of movement of the indicator.

10. In a device of the class described, an indicator-operating means including a plurality of intermeshing gear-wheels, toothed drums secured to said gears, a pawl-carrying bar pivoted between the drums, pawls pivoted to the bar and adapted to engage the teeth on said drums, an indicator operable by the drums, means for adjusting said pawls alternately to inoperable position to thereby reverse the direction of movement of the indicator, and means for locking one of said pawls in inoperative position.

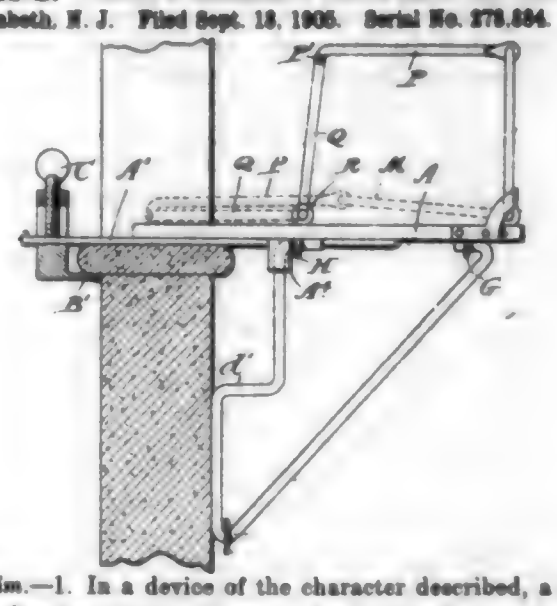
11. In a device of the class described, the combination with a casing, shafts journaled in the casing, intermeshing toothed drums mounted on the shafts, a pawl-carrying bar pivoted between said drums, an indicator operable by the drums, a notched wheel fixed to the shaft of one of the drums, pawls carried by the pivoted end of the bar and adapted to engage the teeth on said drums, a reversing-lever pivoted to the bar for moving the pawls alternately to inoperative positions to thereby reverse the direction of rotation of the indicator, and a spring-pressed lever provided with a terminal roller adapted to engage the notched wheel.

12. In a device of the class described, the combination with a casing, intermeshing toothed drums mounted for rotation therein, an indicator operable by said drums, a pawl-carrying bar pivoted between the drums and provided with a push and a pull pawl adapted to engage the teeth on said drums, and a reversing-lever pivoted to said bar at a point intermediate the ends of the latter and adapted to alternately move the pawls to inoperative positions to thereby reverse the direction of movement of the indicator.

13. In a device of the class described, a casing provided with a display-opening, an indicator-operating means including a push-pawl, a pull-pawl, an operating means connecting the two, an indicator operable by said pawls to successively display a symbol at said opening, and a reversing-lever having a substantially T-shaped head provided with laterally-extending pins adapted to engage said pawls for moving the latter alternately to inoperative position.

14. In a device of the class described, a casing provided with a display-opening, an indicator-operating means including a pawl-carrying bar having a push and a pull pawl pivoted thereto, an indicator operable by said pawls to successively display a symbol at said opening, a reversing-lever pivoted to said bar and having one end thereof slotted and its opposite end provided with laterally-extending pins adapted to engage said pawls, and a pin secured to said bar and adapted to engage the slot in the reversing-lever.

818,484. WINDOW-CLEANING PLATFORM. HOWELL P. TERRY, Elizabeth, N. J. Filed Sept. 18, 1905. Serial No. 278,884.



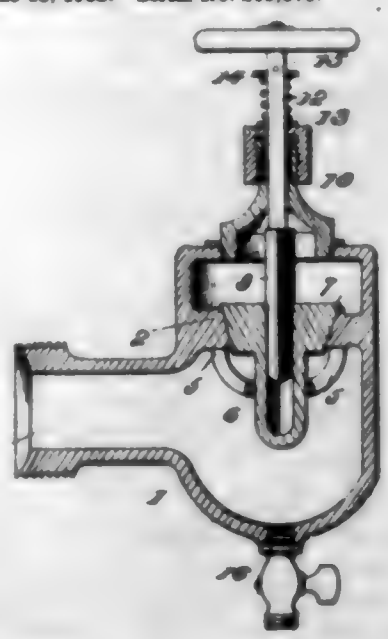
Claim.—1. In a device of the character described, a portable window-cleaning platform A, means for holding it strongly to a window-base, and folding legs D E and a sliding tie J combined and adapted to serve substantially as herein specified.

2. In a device of the character described, a portable window-cleaning platform, means for holding it strongly and adjustably to a window-base, comprising bars and adjustable clamps, folding legs and a sliding tie carried on such legs, all combined and adapted to serve substantially as herein specified.

3. In a device of the character described, a portable window-cleaning platform and means for holding it to a window-base, comprising bars adapted to extend inward through a window-opening, adjustable clamps on such bars adapted to engage the interior of the building, a safety-stop A^3 on such bars, legs carried on the under face of the platform adapted to be extended and bear fairly against the building or be folded close to the base and a sliding tie on such legs in combination with each other and with stops, all arranged to serve substantially as herein specified.

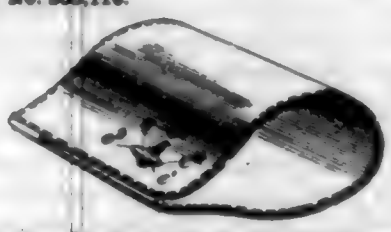
4. In a device of the character described, a portable window-cleaning platform, means for holding it to a window-base, comprising bars adapted to extend inward through a window-opening, adjustable clamps on such bars adapted to engage the interior of the building, a safety-stop A^3 on such bars, legs carried on the under face of the platform adapted to be extended so as to bear fairly against the building and to be folded and lie close to the base and a sliding tie on such legs, in combination with each other and with the stops, the collapsible yoke, links and levers, all adapted to serve substantially as herein specified.

818,485. CHECK-VALVE. JOHN C. THOM, South Amboy, N. J. Filed June 13, 1905. Serial No. 265,073.



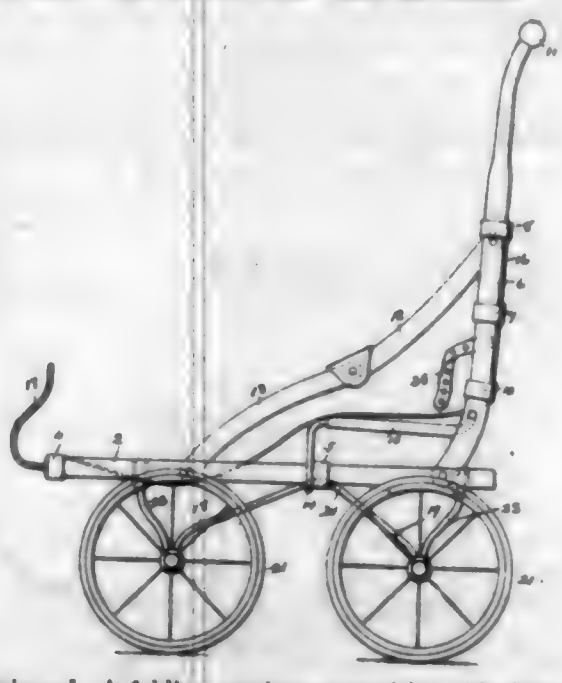
Claim.—In a check-valve, the combination of a casing having communication with an outlet-passage and an inlet-passage, a diaphragm extending across the casing and provided at approximately its central point with a valve-seat, a valve resting freely upon its seat and controlled in its movement by the difference in pressure upon its opposite faces, the edge of the valve being beveled so as to fit snugly against the valve-seat, a stem pendent from the valve and formed with an angular opening, a guide-ring surrounding the pendent stem, supporting-arms connecting the guide-ring to the diaphragm, a spindle mounted in the casing so as to have a rotary and longitudinal movement, the inner end of the spindle having an angular formation and fitting within the angular opening in the stem pendent from the valve-seat so as to have an interlocking and telescoping connection therewith, and a spring normally holding the spindle out of engagement with the base of the opening in the stem so as to permit the valve to move freely.

818,486. COLLAR AND CUFF BUTTON. JAMES K. TROMA, near Cooperstown, and JAMES G. D. TROMA, Oneonta, N. Y. Filed Mar. 31, 1905. Serial No. 253,116.



Claim.—A button having a flattened shank provided with an outer inclined frictional bearing-surface, and a rotary flattened latch-head having its pivotal axis in line with said shank and adapted to be turned in the plane of the shank and to have a clamping engagement with said inclined frictional bearing-surface when the flattened head and shank extend at right angles to each other, substantially as specified.

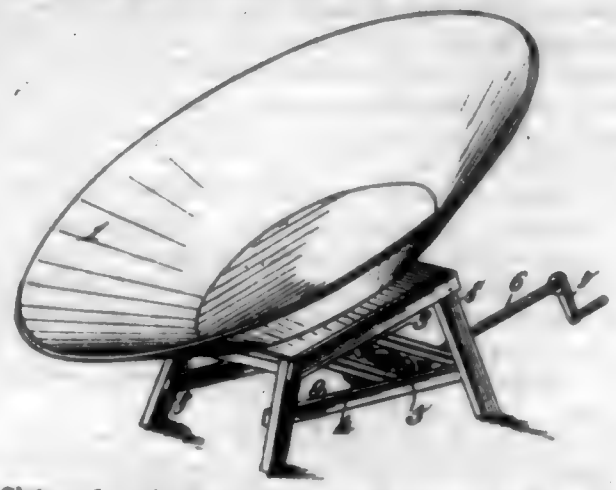
818,487. FOLDING BABY-CARRIAGE. ANDREW B. TODD, Meriden, Conn. Filed June 26, 1905. Serial No. 266,993.



Claim.—1. A folding carriage comprising side bars, uprights pivotally connected to the rear ends thereof, a transversely-arranged brace connecting said side bars, a transversely-arranged locking-bar forward of said brace, said bar extending outside the side bars upward and rearward into pivotal engagement with the uprights, axle-supports pivotally connected with the side bars and having the central portion extending upward over the brace and below the locking-bar, and means for holding the uprights in a vertical position, substantially as described.

2. A folding baby-carriage comprising side bars, a transverse brace connecting said side bars, uprights pivotally connected to said side bars and provided with a handle-bar, a locking-bar extending transversely between said bars and outside the same, thence upward and rearward into pivotal engagement with the uprights forming a seat-support, a strip of fabric connected to said uprights and to the forward end of the bars, an axle-frame pivoted to the side bars and each comprising two V-shaped portions, supporting-axles on which wheels are mounted, said V-shaped portions connected by a central portion extending upward and inward over said brace and below said locking-bar, pivotally-connected links uniting said side bars and uprights, whereby said uprights may be locked in their vertical position, substantially as described.

818,488. BICYCLE-TRACK. STEPHEN W. TOBEY, Brockton, Mass. Filed Jan. 20, 1905. Serial No. 242,060.



Claim.—1. A banked bicycle-track mounted upon an axle and rotatable in the plane of the circuit of the riding-surface.

2. A bicycle-track mounted upon an axis at an angle to the horizontal and rotatable in the plane of the circuit of the riding-surface.

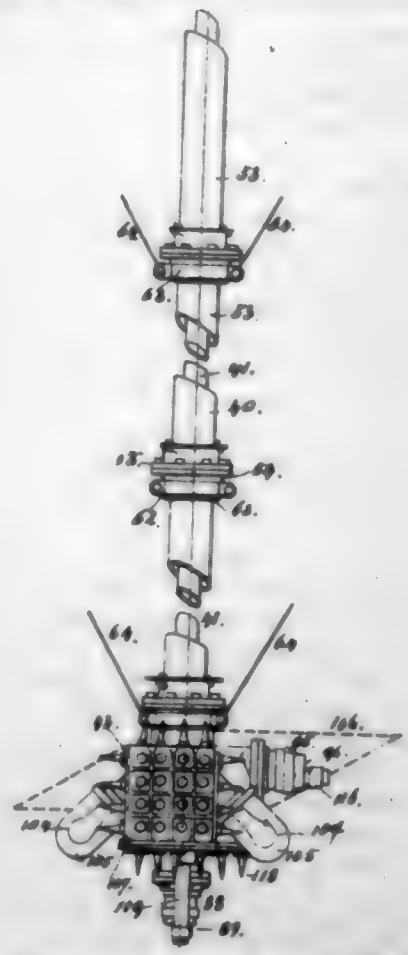
3. A banked bicycle-track mounted upon an axis at an angle to the horizontal and rotatable in the plane of the circuit of the riding-surface.

4. A banked bicycle-track mounted upon an axis and rotatable in the plane of the circuit of the riding-surface, and means for rotating the same.

5. A bicycle-track rotatably mounted upon an axis at an angle to the horizontal, and means for rotating the same about said axis.

6. A banked bicycle-track rotatably mounted upon an axis at an angle to the horizontal, and means for rotating the same about said axis.

818,489. TELESCOPE. EDWARD A. TRAPP, New York, N. Y. Filed Nov. 14, 1904. Serial No. 232,591.



Claim.—1. A submarine telescope having a lens at its objective end, means for illuminating the region about said lens, and means for extracting the air from within the telescope; substantially as set forth.

2. A submarine telescope having a lens at its objective end, combined with a box carried by the instrument at said objective end and having a photographic lens in reasonably near relation to said objective-lens, means exterior to said box for illuminating the region

about the same, and means within said box and coöperating with said photographic lens for directly photographing the images observable by means of said objective-lens; substantially as set forth.

3. A submarine telescope having a lens at its objective end, combined with a box carried by the instrument at said objective end and having a photographic lens in reasonably near relation to said objective-lens, means exterior to said box for illuminating the region about the same, means within said box and coöperating with said photographic lens for directly photographing the images observable by means of said objective-lens, a shutter normally closed over said photographic lens, and electrical means for opening said shutter; substantially as set forth.

4. A submarine telescope having the outer barrel or tube, the inner observation-tube extending substantially throughout the length of said outer tube, means for maintaining said inner tube and spacing it from said outer tube, a lens at the objective end of the instrument, and electric lamps for illuminating the region about said objective end, the electric wires for said lamps being admitted through the space between said inner and outer tubes; substantially as set forth.

5. A submarine telescope having the outer barrel or tube, the inner observation-tube extending substantially throughout the length of said outer tube, means for maintaining said inner tube and spacing it from said outer tube, a lens at the objective end of the instrument, electric lamps for illuminating the region about said objective end, a box carried by the instrument at its objective end and having a photographic lens in reasonably near relation to said objective-lens, means within said box and coöperating with said photographic lens for directly photographing the images observable by means of said objective-lens, a shutter normally closed over said photographic lens, and electrical means for opening said shutter, the electric wires for said lamps and photographing apparatus being admitted through the space between said outer and inner tubes; substantially as set forth.

6. A telescope comprising the outer barrel or tube, the inner observation-tube extending substantially throughout the length of said outer tube, means for maintaining said inner tube and spacing it from said outer tube, a box carried by the instrument at its objective end and having a lens, and a reflector within said box in line with said lens and said inner tube; substantially as set forth.

7. A telescope comprising the outer and inner tubes and having at its objective end a box, a reflector therein in line with said inner tube, a lens for coöperation with said reflector, means adjacent to said lens for photographing the images refracted through the same, and means for illuminating the region about said box; substantially as set forth.

8. A submarine telescope having at its objective end a lens in line with the tube of the instrument, a lens disposed at an angle thereto, a reflector for receiving the images presented by said last-mentioned lens, and means for moving said reflector to position in line with said tube and from such position; substantially as set forth.

9. A submarine telescope having at its objective end a box, a lens carried by said box and projected horizontally, a reflector within said box at an angle of forty-five degrees to the tube of the instrument and to the line of said lens, means for illuminating the region about said box, and means carried by said box for directly photographing the objects observed through the instrument; substantially as set forth.

10. A submarine telescope having at its objective end a lens in line with the tube of the instrument, a lens projected at an angle thereto, a reflector for receiving the images from said last-mentioned lens, means for moving said reflector to and from position in line with said tube, and independent means adjacent to each of said lenses for directly photographing the images observable therethrough; substantially as set forth.

11. A submarine telescope having at its objective end a lens in line with the tube of the instrument, a lens projected at an angle thereto, a reflector for receiving the images from said last-mentioned lens, means for moving said reflector to and from position in line with said tube, and a turn-table supporting the instrument from its upper portion and permitting the same to be turned axially; substantially as set forth.

12. A submarine telescope having at its objective end a box, a reflector therein in line with the tube of the instrument, a lens carried by said box in line and for coöperation with said reflector, means for illuminating the region about said box, and a turn-table supporting the instrument from its upper portion and permitting the same to be turned axially; substantially as set forth.

13. A telescope comprising the inner and outer tubes and having adjacent to its eyepiece end a switchboard and a box to which the outer tube is connected, and provided at its outer end with a lens and electric lamps for illuminating the region about said lens, said box forming a chamber leading to the space between said tubes for receiving the electric wires which pass from said switchboard to the lamps; substantially as set forth.

14. A telescope comprising the inner and outer tubes and having adjacent to its eyepiece end a switchboard and a box to which the outer tube is connected, and provided at its outer end with a lens, electric lamps, and electrically-operated photographic apparatus, said box forming a chamber leading to the space between said tubes for receiving the electric wires which pass from said switchboard to said photographic apparatus and lamps; substantially as set forth.

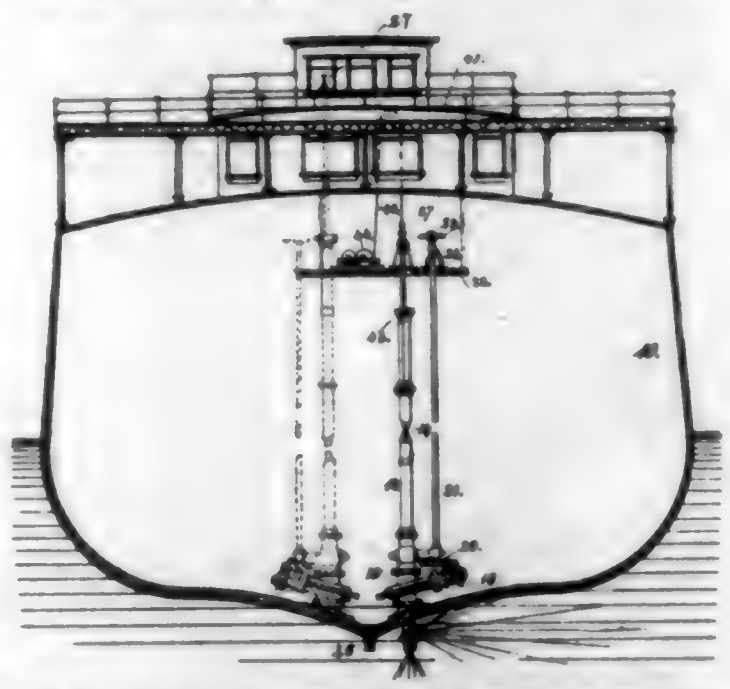
15. The platform and means for yieldingly suspending the same, combined with a submarine telescope extended through said platform and having an eyepiece at its upper end and a lens at its lower end, with means for illuminating the region about said lower end; substantially as set forth.

16. The platform having a turn-table thereon, combined with a submarine telescope extended through said platform and mounted on said turn-table and having an eyepiece at its upper end, and at its lower end carrying a box containing a reflector in line with said eyepiece and having a horizontally-projected lens in line with said reflector; substantially as set forth.

17. A telescope comprising a tubular body portion having a telescope at one end and a lens at the other end and being air-tight between said end portions, combined with means for extracting the air from within the instrument to thereby prevent condensation on the lens; substantially as set forth.

18. A submarine telescope having a lens at its objective end and provided in the mounting of said lens with an escape-port for such air or air-globules as may gather about the outer face of said lens; substantially as set forth.

818,490. SUBMARINE TELESCOPE AND MEANS FOR MOUNTING THE SAME. EDWARD A. TRAPP, New York, N. Y. Filed Nov. 29, 1904. Serial No. 234,781.



Claim.—1. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, and a submarine telescope mounted in said tube and having at its lower end a lens, with means for supporting and raising and lowering the instrument within said tube; substantially as set forth.

2. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, and a submarine telescope mounted in said tube and having at its lower end a lens and means for illuminating the region about said lens, with means for supporting and raising and lowering the instrument within said tube; substantially as set forth.

3. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, a gate for opening and closing the lower end of said tube, and a submarine telescope mounted in said tube and having at its lower end a lens, with means for supporting and raising and lowering the instrument within said tube; substantially as set forth.

4. A vessel having a tube extending down through it in line

with a hole in the bottom of the vessel, a gate for opening and closing the lower end of said tube, and a submarine telescope mounted in said tube and having at its lower end a lens and means for illuminating the region about said lens, with means for supporting and raising and lowering the instrument within said tube; substantially as set forth.

5. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, a gate for opening and closing the lower end of said tube, and a submarine telescope mounted in said tube and having at its lower end a lens, with means for supporting and raising and lowering the instrument within said tube, and means extending downwardly from about the upper end of the instrument for operating said gate; substantially as set forth.

6. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, and a submarine telescope mounted in said tube and having at its lower end a box carrying downwardly and horizontally projected lenses and a movable reflector for coöperation with said horizontally-projected lens, with means for raising and lowering and supporting the instrument within said tube; substantially as set forth.

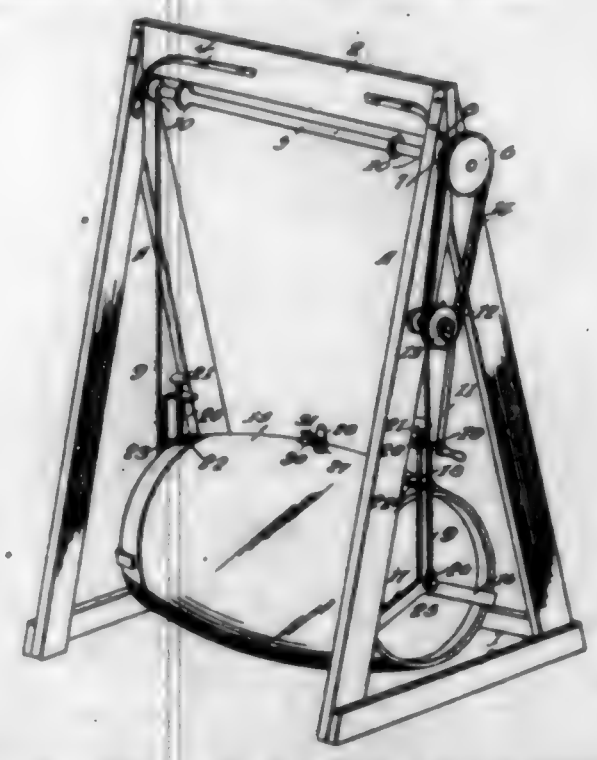
7. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel, and a submarine telescope movable vertically in said tube and having at its lower end a lens and a series of scraper-blades to engage the inner walls of said tube; substantially as set forth.

8. A vessel having a tube extending down through it in line with a hole in the bottom of the vessel and provided with a gate to open or close the lower end of said tube, and a submarine telescope mounted to be moved vertically within said tube and having means for centering it within the same, said instrument having a lens at its lower end; substantially as set forth.

9. A vessel having vertical tubes at opposite sides of its keel in line with openings in the bottom of the vessel and extending upwardly within the vessel above the water-line, said tubes having gates for opening or closing their lower ends, and submarine telescopes mounted to be moved vertically within said tubes and having lenses at their lower ends; substantially as set forth.

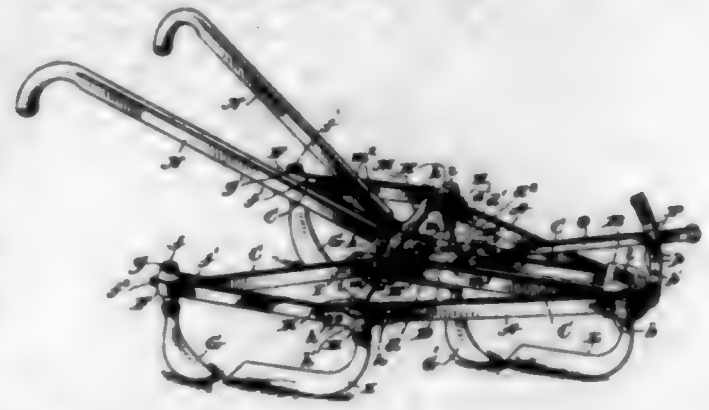
10. A vessel having vertical tubes at opposite sides of its keel in line with openings in the bottom of the vessel and extending upwardly within the vessel above the water-line, said tubes having gates for opening or closing their lower ends, and submarine telescopes mounted to be moved vertically within said tubes and having lenses and means for illumination at their lower ends; substantially as set forth.

818,491. **BARREL-DRAINING DEVICE.** LIVY T. TUCKER, Whiteside, Mo. Filed Mar. 23, 1905. Serial No. 251,686.



Claim.—In means of the class described, the combination of a support, barrel-engaging clamp devices, each of said devices comprising integral divergent arms provided with lateral extensions at their outer extremities, a feed-screw mounted in an extension of one of the arms, a clamp-plate slidable longitudinally of the arm carrying the feeding-screw and coacting with said screw, hooks projected from the clamp-plate and engaging the arm adjacent thereto to connect the clamp-plate with the arm, pins projected from each clamp device adjacent the point where the several arms thereof meet, said pins being provided with annular grooves, hoisting means mounted upon the support and embodying a windlass and hoisting-cables connected therewith, and links connecting the hoisting-cables with the pins of the clamp devices, said links being narrower at one end, the narrow portions of the links receiving the pins of the clamp devices and engaging in the grooved portions thereof.

818,492. **CULTIVATOR.** ISAAC N. VAN PELT, Lamar, Mo. Filed Nov. 2, 1905. Serial No. 285,213.



Claim.—1. A cultivator-frame comprising diverging beams, and truss-braces secured to the inner sides of said beams and extending from the front to the rear ends thereof, adjacent portions of said braces intermediate the ends thereof being rigidly connected to each other.

2. A cultivator-frame comprising diverging beams, truss-brace secured to the inner sides of said beams and extending from the front to the rear ends thereof, and a block interposed between and rigidly connected to said braces intermediate the ends thereof.

3. A cultivator-frame comprising a piece of metal folded upon itself to form divergent beams, and bowed braces secured to the inner sides of said beams, adjacent portions of said braces intermediate the ends thereof being rigidly connected to each other.

4. A cultivator-frame comprising a piece of metal folded upon itself to form divergent beams, a second piece of metal folded upon itself and secured at its bend and ends to the inner side of the piece of metal forming the beams, the portions of said second piece intermediate its bend and ends being bent inwardly and rigidly connected to each other.

5. A cultivator-frame comprising diverging beams, truss-braces secured to the inner sides of said beams and extending from the front to the rear ends thereof, and shovel bearing blocks removably secured between the adjacent ends of the beams and braces.

6. In a cultivator, a frame, a runner-like cutter journaled in the forward portion thereof, a pair of runner-like cutters journaled in the sides of said frame, a handle pivoted upon said frame and a connection between said handle and the cutters journaled in the sides of said frame.

7. In a cultivator, a frame having a plurality of shovels secured thereto a pair of cutters journaled in the sides of said frame, inwardly-extending arms secured to said cutters, a cross-bar pivotally secured to the frame and having its ends loosely connected with the free ends of said inwardly-extending arms, and a handle secured to said cross-bar.

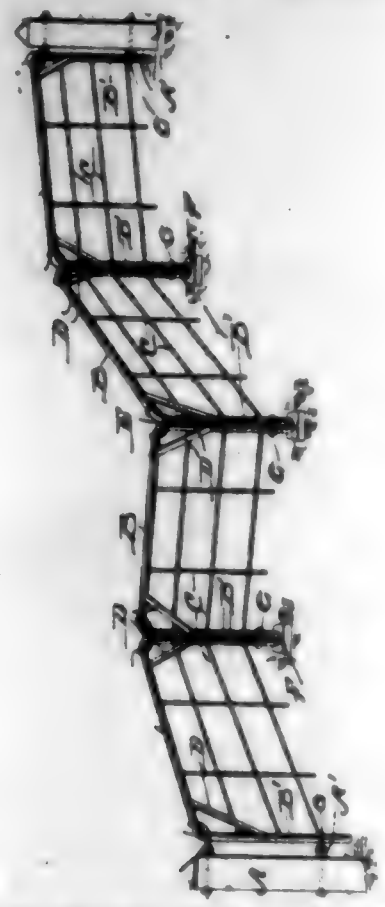
8. In a cultivator, a frame having a plurality of shovels secured thereto, a pair of cutters journaled in the sides of said frame, inwardly-extending arms secured to the journals of said cutters and terminating in upturned portions, a cross-bar pivotally secured to the frame and provided at its ends with bifurcated portions adapted to loosely embrace the upturned portions of the inwardly-extending arms, and a handle secured to said cross-bar.

9. A cultivator-frame comprising diverging beams, truss-braces secured to the inner sides of said beams and extending from the front to the rear end thereof, a block interposed between and rigidly connected to said braces intermediate the ends thereof, and a draft-rod pivotally connected to said block.

818,498. **FENCE.** JOSEPH W. VEIT, Wapakoneta, Ohio. Filed July 21, 1905. Serial No. 270,643.

Claim.—1. A fence formed in sections, each section comprising a horizontal and two vertical end members and a wire network, base-blocks adapted to receive the lower ends of two adjacent vertical members of the fence-sections, means for locking adjacent sections

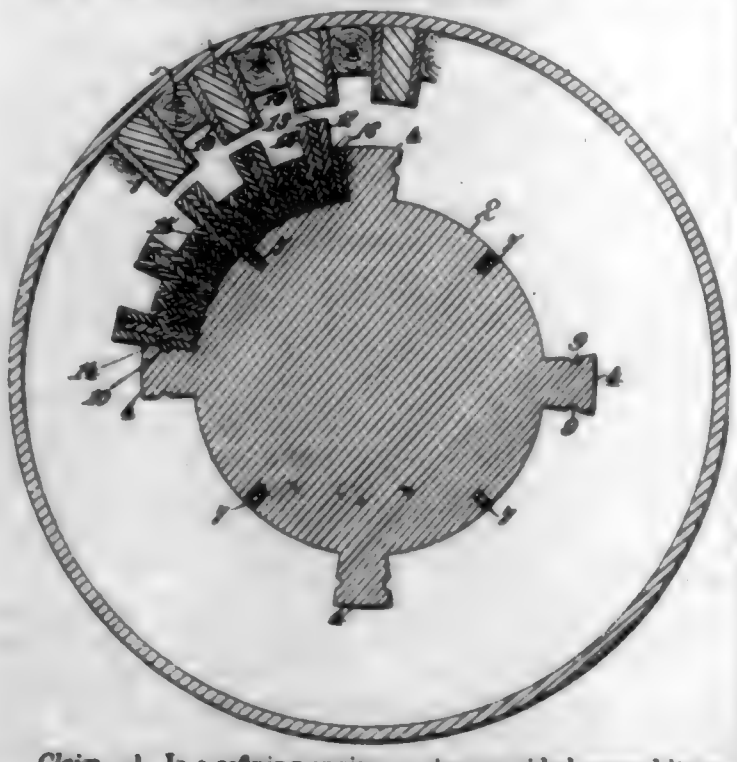
together, corner-posts, and means for connecting end sections to said posts.



2. A fence of the kind described comprising a plurality of tubular frames, a wire network carried thereby, base-blocks recessed on their upper faces to receive the lower ends of adjacent frame members, a ring encircling said adjacent members, a link comprising a ring portion and a hook portion and adapted to connect the upper corner portions of adjacent frames, posts, and means for connecting the end frames to the posts.

3. A fence formed in sections, each section comprising a frame of gas-pipe having a horizontal member and vertical end members, a wire network carried by the frame, diagonal braces arranged on the frame, and base-blocks recessed on their upper faces to receive the lower ends of the vertical members.

818,494. **REFINING-ENGINE.** SOLOMON R. WAGG, Appleton, Wis. Filed June 24, 1903. Serial No. 162,934.



Claim.—1. In a refining-engine, a plug provided around its periphery with a series of longitudinally-disposed ribs, a series of blades inserted between the adjacent ribs, and a pair of wedges inserted in the space between two ribs and having opposing inclined faces.

2. In a refining-engine, a plug provided around its periphery with a series of groups of two or more blades, one of said blades being of stone.

3. In a refining-engine, a plug provided around its periphery with a series of groups of blades, each group comprising one or more metal bars and a stone bar.

4. In a refining-engine, a plug provided around its periphery with a series of groups of three blades, the middle blade being of stone.

5. In a refining-engine, a plug having a series of bars thereon said bars gradually decreasing in thickness from one end of the plug toward the other.

6. In a refining-engine, a plug having a series of groups of two or more bars thereon one of said bars being of stone, said stone bars being of successively less degrees of coarseness from one end of the plug toward the other.

7. In a refining-engine, a plug having a series of groups of three bars thereon, the intermediate bar being of stone, said stone bar being of successively less degrees of coarseness from one end of the plug toward the other.

8. A refining-engine having its blades arranged in a series of groups of two or more bars, one of said bars being of stone, said stone bars being of successively less degrees of coarseness from one end of the engine toward the other.

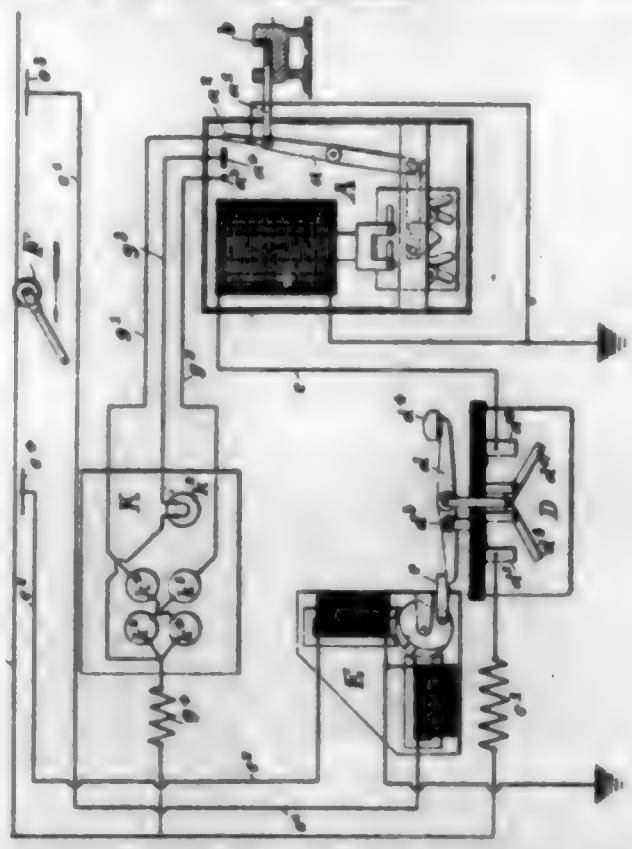
9. In a refining-engine, a plug having a series of groups of two or more bars arranged thereon, one of said bars being composed of sections of stone, the groups of bars extending from end to end of the plug and the stone sections being of successively less degrees of coarseness from one end of the plug toward the other.

10. A refining-engine having its blades arranged in a series of groups of three bars, the intermediate bar being composed of sections of stone, the groups of bars extending from end to end of the engine and the stone sections being of successively less degrees of coarseness from one end of the plug toward the other.

11. In a refining-engine, in combination with the plug having blades arranged thereon, a shell having a series of stone bars arranged around its interior, each of said stone bars having wooden bars at its sides, and a wedge-block inserted between successive pairs of wooden bars for spacing the stone bars the requisite distance apart.

12. A refining-engine having stone bars, said bars gradually decreasing in coarseness from one end of the engine toward the other.

818,495. **SYSTEM OF OPERATING RAILROAD-SWITCHES.** ALDRED K. WARREN, New York, N. Y., assignor to American Automatic Switch Company, New York, N. Y., a Corporation of New York. Filed June 24, 1905. Serial No. 266,702.



Claim.—1. In a system of electrically-operating railroad-switches, the combination of means for operating a switch-point, an operating-lever at a distance from said means, a lock for the lever, and means adapted to be operated by the car to actuate the lock.

2. In a system of electrically-operating railroad-switches, the combination of an operating-lever, an electric lock for the lever, two

contacts arranged near the switch and adapted upon the passage of a car over the switch to close a current first through the lock to lock the lever and then through the lock to unlock the lever.

3. In a system of electrically-operating railroad-switches, the combination of an operating-lever, an electric lock for the lever, a current-main and two contacts near the main on each side of the switch respectively, and electrically connected with the lock whereby the trolley or contact-plate of a car passing through the switch may connect the main with the lock first through one contact to lock the lever and then through the other contact to unlock the lever.

4. In a system of electrically-operating railroad-switches, the combination of an operating-lever, an electric lock for the lever having two magnets, a current-main, a contact near the main on one side of the switch and electrically connected with one magnet, and a contact near the main on the other side of the switch and electrically connected with the other magnet, whereby the trolley or contact-plate of a car passing through the switch may effect the operation of one magnet to lock the lever and then of the other magnet to unlock the lever.

5. In a system of electrically-operating railroad-switches, the combination of an operating-lever, an electric lock for the lever having two magnets with their poles substantially at right angles to each other and a disk carrying a crescent-shaped armature mounted to rotate between the poles, a curent-main, a contact near the main on one side of the switch and electrically connected with one magnet, and a contact near the main on the other side of the switch and electrically connected with the other magnet, whereby the trolley or contact-plate of a car passing through the switch may effect the operation of one magnet to lock the lever and then of the other magnet to unlock the lever.

6. In a system of electrically-operating railroad-switches, the combination of an operating-lever, means operated thereby to throw a switch and an indicating-board having means to indicate the location of the switch in its two limiting positions and in an intermediate position, said means being elecrically connected with the said mechanism.

7. In a system of electrically-operating railroad-switches, the combination of an indicating-board, switch mechanism including a lever for throwing the switch and contacts electrically connected with the indicating-board and adapted to coöperate with the lever to close circuits through the indicating-board to indicate the position of the switch.

8. In a system of electrically-operating railroad-switches, the combination of an indicating-board having means to indicate the location of a switch in its two limiting positions and in an intermediate position, switch mechanism including a lever for throwing the switch and three contacts electrically connected respectively with the indicating means for the different positions of the switch, said lever being adapted to close a circuit through each one of said contacts, the particular contact through which the circuit is closed at any given moment depending upon the position of the lever.

9. In a system of electrically-operating railroad-switches, the combination of an indicating-board having thereon the representation of a track, a switch, electrical means to move said switch and a signal, switch mechanism including a lever, and three contacts connected respectively with said electrical means and the signal, said lever being adapted to close a circuit through each one of said contacts, and the particular contact through which the circuit is thus closed at any given moment depending upon the position of the lever.

10. In a system of electrically-operating railroad-switches, the combination of an operating-lever, means operated thereby to throw a switch, a lock for the lever, means adapted to be operated by the car to actuate the lock, and an indicating-board near the lever to show the position of the switch.

11. In a system of electrically-operating railroad-switches, the combination of an operating-lever, means operated thereby to throw a switch including a second lever, a lock for the operating-lever, means adapted to be operated by the car to actuate the lock, an indicating-board near the operating-lever having means to indicate the location of the switch in its two limiting positions, and two contacts electrically connected respectively with the indicating means, said second lever being adapted to close a circuit through each of said contacts and the particular contact through which the circuit is thus closed at any given moment depending upon the position of the switch.

12. In a system of electrically-operating railroad-switches, an indicator for showing the position of a switch, said indicator having two pairs of magnets and an X-shaped armature whereby the energization of either pair of magnets turns the armature so that one of its straight members lies in a line across the poles of that pair of magnets.

13. In a system of electrically-operated railroad-switches, an indicator for showing the position of a switch, said indicator having two pairs of magnets, an X-shaped pivoted armature and a spring connected to the armature so as to assist in turning the armature on its pivot, whereby the energization of either pair of magnets turns the armature so that one of its straight members lies in a line across the poles of that pair of magnets and whereby the spring tends to hold the armature in its turned position.

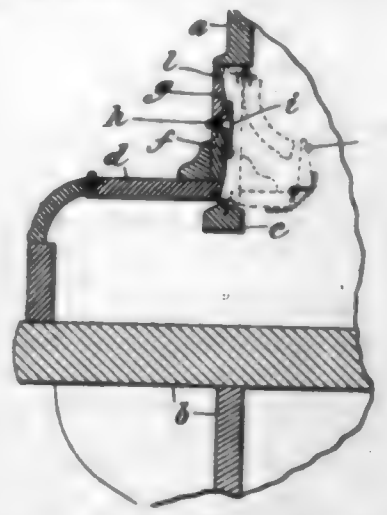
14. In a system of electrically-operating railroad-switches, the combination of an indicator for showing the position of a switch, said indicator having two pairs of magnets and an X-shaped armature, two contacts electrically connected respectively with each pair of magnets and means operatively connected with the switch to close a circuit through the contacts and their respective pairs of magnets, the particular contact through which the circuit is closed depending upon the position of the switch.

15. In a system of electrically-operating railroad-switches, an electric switch having two terminals, a plunger, and two pivoted arms adapted to contact respectively with the terminals and the ends of which are engaged by the plunger.

16. In a system of electrically-operated railroad-switches, an electric switch having two terminals and a spring-actuated plunger, two pivoted arms adapted to contact respectively with the terminals and the ends of which are engaged by the plunger, and a spring connecting said arms.

17. In a system of electrically-operating railroad-switches, an electric switch comprising a box for containing oil, two terminals adapted to extend into the oil, a plunger, a lever pivoted thereto for actuating the same, two pivoted arms adapted to contact respectively with the terminals and the ends of which are engaged by the plunger.

818,496. PIANO. JOHN A. WEBER, New York, N. Y. Filed Oct. 6, 1905. Serial No. 281,572.



Claim.—1. A piano having a backfall composed of two longitudinal parts, one of which is movable with respect to the other.

2. A piano having a backfall composed of two longitudinal parts, one of which is hinged upon the other, and a spring to maintain such parts in normal relation and to permit relative movement.

3. A piano having a hinged backfall composed of two longitudinal parts, one of which is hinged upon the other, a spring to maintain such parts in normal relation and to permit relative movement, and a stop to coöperate with the movable parts.

4. A piano having a backfall composed of two longitudinal parts, one of which is hinged upon the other, said part having a notch, a spring to maintain such parts in normal relation and to permit relative movement, and a stop to coöperate with the movable parts and engage said notch.

5. A piano having a keyboard-cover hinged to its support, a backfall composed of two longitudinal parts hinged together, one of said parts being fixed to the cover, and means coöperating with the hinged parts of the backfall to cause it to fold as the cover is swung upon its hinge.

6. A piano having a keyboard-cover hinged to its support, a backfall composed of two longitudinal parts hinged together, one of said parts being fixed to the cover, a spring secured to said parts to maintain them in normal relation, and a stop fixed in the path of the movable part to coöperate therewith.

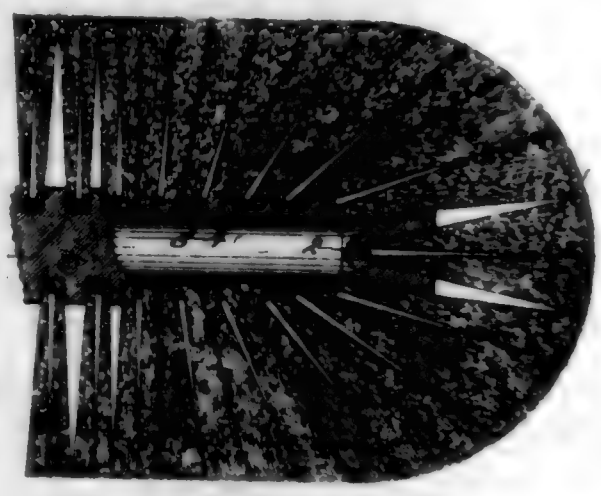
7. A piano having a keyboard-cover, a backfall composed of two longitudinal parts hinged together and means whereby the backfall is folded as the keyboard-cover is raised.

8. A piano having a keyboard-cover, a backfall composed of two longitudinal parts hinged together, and means whereby the backfall is restored to normal position as the keyboard-cover is closed.

9. A piano having a keyboard-cover, a backfall composed of two longitudinal parts hinged together, means whereby the backfall is folded as the keyboard-cover is raised, and means whereby the backfall is restored to normal position as the keyboard-cover is closed.

10. A piano having a keyboard-cover hinged to its support, a backfall composed of two longitudinal parts hinged together, one of said parts being fixed to the cover and the other part having a notch in its rear face, a spring to maintain said parts in normal relation, and a stop fixed in the path of the movable part to coöperate therewith, and engage said notch.

818,497. **BRUSH.** WILLIAM B. WHITTEMORE, Hartford, Conn. Filed Mar. 1, 1905. Serial No. 247,867.



Claim.—1. A brush having a handle with a continuous spiral groove at one end, the side walls of the groove gradually changing from substantially perpendicular to the axis of the handle at the inner end to oblique to the axis of the handle at the outer end, and bristles bound into the groove, substantially as specified.

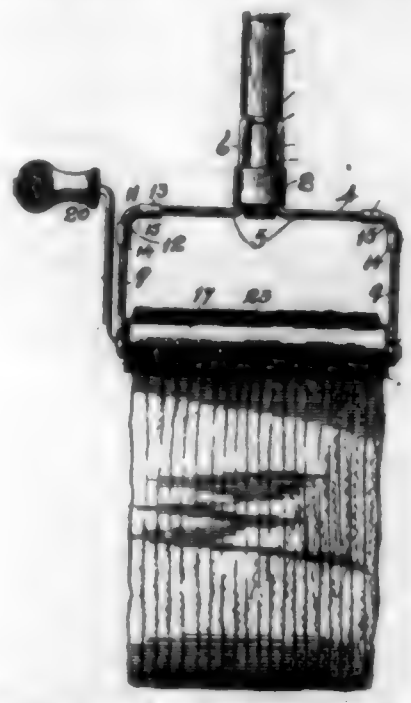
2. A brush having a wood handle with a continuous spiral groove at one end, the side walls of the groove gradually changing their angularity with relation to the axis of the handle and a portion of the side walls of the groove being formed of metal and a portion of wood, and bristles bound into the groove, substantially as specified.

3. A brush having a handle with a socket at one end and a spiral groove extending from near the base of the socket for a portion of the length of the handle, the side walls of the groove gradually changing from substantially parallel with the walls of the socket to approximately right angles to the axis of the handle, tufts of bristles with the doubled ends of the tufts fastened in the socket, and tufts of bristles with the doubled ends of the tufts bound in the groove, substantially as specified.

4. A brush having a wood handle with a reduced portion at one end, said handle having a socket formed in the tip end of the reduced portion, a spiral groove formed by winding a strip of metal spirally on the reduced portion of the handle and a spiral groove in continuation of the metal groove turned in the handle, tufts of bristles with the doubled ends of the tufts fastened in the socket at the end of the handle, tufts of bristles bound upon the exterior of the socket, and tufts of bristles with the doubled ends of the tufts bound into the groove formed by the metal and formed in the handle, substantially as specified.

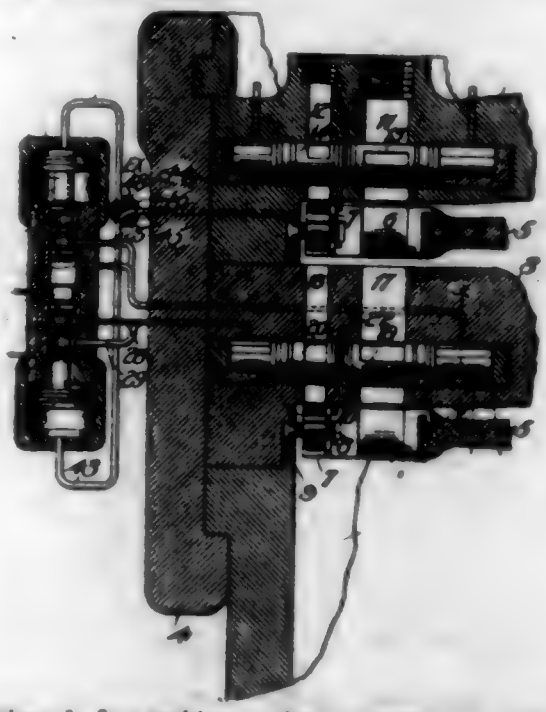
818,498. **COMBINED MOP HEAD AND WRINGER.** WILLIAM R. WILEY, Evanston, Ill. Filed May 22, 1905. Serial No. 261,620.

Claim.—1. In a combined mop head and wringer, the combination of a handle provided near its end with a circumferential groove or channel, brackets each consisting of a yoke having a cross-head entered into the circumferential groove or channel and having laterally-extending side arms terminating in angularly-disposed bracket-arms, the adjacent bracket-arms of the two brackets diverging with respect to one another, a ferrule surrounding the handle and the yokes and adapted to clamp the one to the other, two rollers mounted between the bracket-arms and held under tension by the resiliency of the bracket-arms, and clips surrounding adjacent portions of the brackets for clamping the brackets together, substantially as described.



2. In a combined mop head and wringer, the combination of a handle provided near its lower end with a circumferential groove or channel, a pair of brackets each consisting of a central yoke having a cross-head adapted to enter the circumferential groove or channel, the yokes terminating in laterally-extending arms, said arms terminating in depending bracket-arms, the adjacent bracket-arms diverging with respect to one another, and each of the bracket-arms being provided at its end with an inwardly-opening hook, clips positioned at the angle between the laterally extending and depending arms of the brackets, each clip consisting of two collars in angular relation to one another surrounding the bracket-arms, and a neck connecting the collars, a pair of rollers, each being provided with a projecting pivot-pin adapted to be embraced by the hooked ends of the depending arms for holding the depending arms distended and under spring tension, a handle formed by extending one of the pivot-pins for rotating one of the rollers, and plates at the ends of the rollers, each of the plates being provided at one side with a perforation for one of the pivot-pins and at the opposite side with an elongated slot for the other pin, said plates being interposed between the depending bracket-arms and the ends of the rollers, substantially as described.

818,499. **CONTROLLER MECHANISM FOR MULTIPLE-STAGE TURBINES.** JAMES WILKINSON, Birmingham, Ala., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Jan. 20, 1905. Serial No. 241,973.



Claim.—1. In a turbine, a wheel-compartment, a rotatable element therein, nozzles to discharge motor fluid with different driving

effects upon said element, means to maintain the nozzles acting with one driving effect closed, and means comprising a plurality of valves independently and automatically controlled by pressure conditions in the turbine to govern the flow of fluid through the active nozzles.

2. In a turbine wherein the motor fluid is expanded in stages and discharged against rotatable elements, two or more sets of conduits between two stages, valves for said conduits adapted to be automatically and independently controlled by internal pressure, and means to maintain one set of conduits closed while the flow of motor fluid through the other set is automatically regulated.

3. In a reversible multiple-stage turbine, a set of direct stage-nozzles, a set of reversing stage-nozzles, valves for each set of nozzles adapted to be automatically and independently controlled by internal-pressure conditions, in combination with means to prevent the flow of motor fluid through both sets of passages at the same time.

4. In a reversible multiple-stage turbine, a number of direct and reversing stage-nozzles, a valve for each nozzle which is adapted to be automatically and independently controlled by internal pressure, and means to subject the valves of but one set of nozzles at a time to the control of the internal pressure.

5. In a reversible multiple-stage turbine, a plurality of direct and reversing stage-nozzles, means to maintain the reversing-nozzles closed when the turbine is driven forward, and a number of automatic valves, governed by internal-pressure conditions, which control means for successively opening or closing the direct nozzles.

6. In a reversible multiple-stage turbine, a plurality of direct and reversing nozzles, means to maintain the direct nozzles closed when the turbine is being driven in a reverse direction, and a number of automatic valves, governed by internal-pressure conditions, which control means for successively opening or closing the reversing-nozzles.

7. In a two-speed turbine, independent working passages for producing different speeds of rotation, and automatic stage-pressure-controlled valves for regulating the flow of motor fluid in said working passages between stages.

8. In a multiple-stage turbine having two independent sets of working passages, one acting to drive the turbine forward, and the other producing a different driving action as to speed or direction, a separate automatic stage-pressure-controlled valve for controlling the flow of motor fluid through each passage between stages, and means to cut one set of working passages out of service.

9. In a multiple-stage turbine, two conduits between stages which discharge motor fluid with different driving effects against a bucket element in the stage of lower pressure, valves automatically operated by the pressure in the higher-pressure stage for controlling the flow of motor fluid through each of said nozzles, and means to expose but one of said valves at a time to said controlling stage-pressure.

10. In a multiple-stage turbine, two sets of conduits between stages which discharge fluid-pressure with different driving effects against a bucket element, valves for said conduits, and a number of controller devices automatically acted upon by internal pressure, each device controlling, by fluid-pressure means, valves for a conduit in each set.

11. In a multiple-stage turbine, two sets of supply and stage nozzle passages which coöperate with sets of rotatable buckets and act to discharge fluid-pressure with different driving effects against the bucket-bearing elements, a number of separate fluid-actuated valves for each set of stage-nozzles, a number of stage-pressure-controlled automatic controller-valves for the valves of each set of stage-nozzles, and means to maintain one set of stage-nozzles closed while the controller-valves for the other set successively open or close the same.

12. In a multiple-stage turbine, a plurality of sets of nozzle-passages between stages which discharge fluid-pressure with different driving effects against a bucket element, a fluid-pressure-actuated valve for each nozzle, a controller-casing, automatic valve means therein exposed to a substantially constant force which is opposed by internal turbine-pressure supplied to said casing, conduits leading from said casing to a valve for each set of nozzle-passages, and serving to conduct a high or low pressure under the control of said automatic valve means to open or close the valves.

13. In a turbine operating by stage expansion, bucket-wheels having two sets of buckets disposed at different distances from their centers, independent sets of nozzles coöperating with said sets of buckets, and a number of valves for each set of nozzles, in combination with a plurality of automatic controller-valves, which operate sensitive to stage-pressure, for each set of stage-valves, and means to maintain one set of said controller-valves inactive.

14. In a multiple-stage turbine, a number of controller-casings for stage-valves comprising each two differential cylinders, piston-valves in said cylinders, conduits leading from the low-pressure ends of said cylinders to the interior of the turbine, ports admitting high pressure to the high-pressure ends of said cylinders, passages leading from each cylinder to a group of stage-valves, and means to expose a corresponding low-pressure cylinder of each casing to the turbine-pressure while exposing the other low-pressure cylinders to the atmosphere or exhaust-pressure.

15. In a multiple-stage turbine, a controller-casing for stage-valves comprising a main body portion, and a cap secured to each end thereof, said casing comprising two differential cylinders whose low-pressure ends are formed in said caps, and whose high-pressure ends are formed in said body portion, ports admitting high pressure to one end of said cylinders, and conduits leading from their other ends to a valve-casing which communicates through one port with an exhaust or atmospheric pressure, and through the other with a stage-compartment in the turbine, and a valve in said casing which maintains one of said conduits in communication with the stage-pressure and the other with the low pressure or atmosphere, and means under the control of said automatic valves to operate stage-valves.

16. In a multiple-stage turbine, a stage-pressure-actuated controller device for stage-valves comprising a compound differential cylinder, automatic controller-valves in said cylinder, ports adapted to admit high and exhaust pressures to opposite ends of said valves, and conduits acting to conduct pressure under the control of said valves to operate stage-valves.

17. In a multiple-stage turbine, sets of stage-nozzles which discharge fluid-pressure with different driving effects against a bucket element, valves for each set of nozzles, and a plurality of controller devices each comprising a casing having two differential cylinders, differential piston-valves of relatively varying proportions therein exposed to a substantially constant pressure and a stage-pressure, and conduits to conduct a high or exhaust pressure under the control of said piston-valves to successively open or close said stage-valves, substantially as described.

18. In a multiple-stage turbine having independent working passages producing different driving effects upon bucket elements, a number of valves to control the flow of fluid-pressure between stages for each set of working passages, a number of controller-valve casings for said stage-valves, passages leading from each casing to a stage-valve for each set of working passages, and a number of automatic valves in each casing which are moved sensitive to stage-pressure and control the admission of an actuating-pressure to the valves which they control to open or close the same, and means to cause the corresponding automatic valves of each casing to be alternately controlled by stage-pressure or moved to a position where they cause the closure of the stage-valves under their control.

19. In a turbine having two independent working passages, rotatable parts acted upon by the fluid in said passages, the fluid in one passage acting to drive said parts forward and in the other passage to produce a different driving effect, separate valve means for said passages automatically responsive to internal pressure conditions and adapted to control the flow of motor fluid through each passage at an intermediate point thereof, and means to cut all said passages out of service.

818,500. **PAPER.** JOHN A. WILKINSON, Shelton, Conn. Filed July 27, 1905. Serial No. 271,490.



Claim.—1. As a new article of manufacture a web or sheet of paper having blistered upper and lower surfaces, the blisters comprising air cells or pockets between the said upper and lower surfaces.

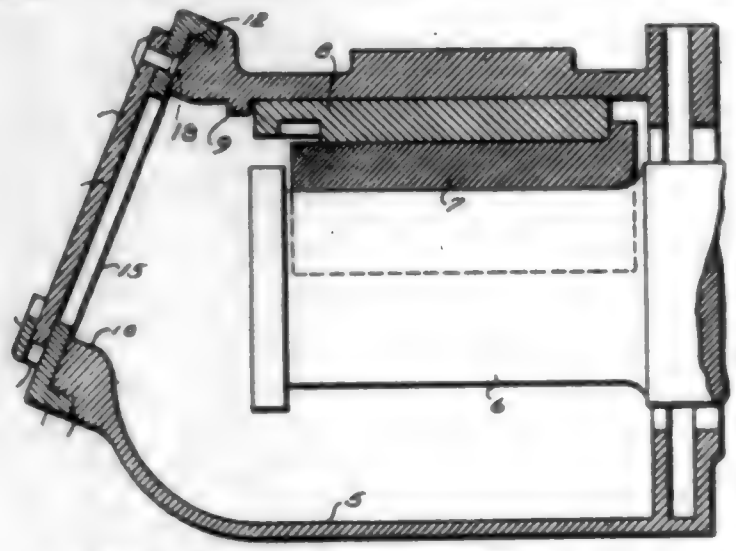
2. As a new article of manufacture, a web or sheet of rope paper having blistered upper and lower surfaces, the blisters comprising air cells or pockets between the said upper and lower surfaces.

3. As a new article of manufacture a web or sheet of rope paper having vesicated surfaces produced by blistering a plane sheet the blisters comprising air cells or pockets between the upper and lower surfaces.

818,501. **JOURNAL-BOX FOR RAILWAY-CARS.** JAMES R. WILLIAMSON, Chicago, Ill. Filed Dec. 1, 1905. Serial No. 289,230.

Claim.—1. A railway journal-box comprising a casing, a bearing in said casing for engaging the journal, said casing having in one end an opening adapted to permit the removal of said bearing, a cover adapted to be secured over said opening to prevent the re-

moval of the bearing while said cover is in position, said cover having therein a hand-hole for permitting access to the interior of the casing but of insufficient size to permit the removal of said bearing, said hand-hole being wide at its lower part and comparatively narrow at its upper part and being of substantially the same height as the opening in said casing, and a lid forming a closure for said hand-hole.



2. A journal-box comprising a casing, a bearing in said casing for engaging the journal of a car-axle, said casing having in one side an opening of suitable form to permit the removal of said bearing, a cover adapted to be secured over said opening for preventing the removal of said bearing, said cover having therein a hand-hole adapted to permit of access to the casing for the purpose of oiling and examining the bearing but of insufficient size to permit the removal of the bearing, and a lid forming a closure for the opening in said cover, said lid being pivoted near one edge of the cover and being wedge-shaped at its other edge and said cover having therein a groove fitting said other edge of the lid whereby said lid will fit tightly against the face of the cover when said lid is in its closed position.

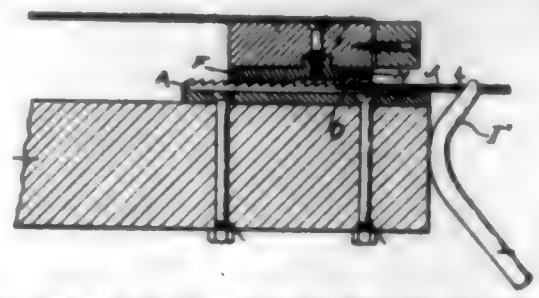
3. A journal-box comprising a casing, a bearing in said casing for engaging the journal of a car-axle, said casing having in one side an opening of suitable form to permit the removal of said bearing, a cover adapted to be secured over said opening for preventing the removal of said bearing, said cover having therein an opening adapted to permit of access to the casing for the purpose of oiling and examining the bearing but of insufficient size to permit the removal of the bearing, and a lid forming a closure for the opening in said cover, said lid being pivoted near the edge of the cover and being wedge-shaped at its other edge and said cover having thereon a grooved flange fitting the wedge-shaped edge of the lid and adapted when said lid is in its closed position, to cause said lid to fit tightly against the face of the cover and said flange having openings therein to permit the passage of dirt from said groove, substantially as described.

4. A journal-box comprising a casing, a bearing in said casing for engaging the journal of a car-axle, said casing having in one side an opening of suitable form to permit the removal of said bearing, a cover forming a closure for said opening and having threaded engagement with the casing, shoulders on said cover and casing adapted to bear upon each other when said cover is screwed into its closed position, said cover having therein a hand-hole adapted to permit of access to the casing for the purpose of oiling and examining the bearing but of insufficient size to permit the removal of the bearing, said hand-hole being comparatively wide at one side and narrow at the opposite side and the threads on said cover being cut to bring said wide part of the hand-hole at the bottom when said shoulders are in engagement with each other.

818,502. **WIRE-MATTRESS STRETCHER.** JEROME B. WILSON, Lansing, Mich. Filed Apr. 22, 1905. Serial No. 257,017.

Claim.—1. In a device of the character described, the combination of a side bar and an end bar, a rack on the side bar having upwardly and outwardly extending flanges, teeth on said flanges, a clamp on the end bar, said clamp having teeth arranged to engage said first-mentioned teeth, and downwardly-extended flanges arranged to loosely engage under said flanges of the clamp.

2. In a device of the character described, the combination of a side bar and an end bar, a rack on the side bar having upwardly and outwardly extending flanges, teeth on said flanges, a clamp on the end bar, said clamp having teeth arranged to engage said first-mentioned teeth, downwardly-extended flanges arranged to loosely engage under said flanges of the clamp, and means for imparting relative longitudinal movement between said clamp and rack.



3. In a device of the character described, the combination with a side bar and an end bar, a rack on the side bar having upwardly-extended flanges at its respective sides and an intermediate unobstructed portion, teeth on said flanges, a clamp on said end bar, teeth on the clamp arranged to engage said first-mentioned teeth on the rack, and means arranged within said unobstructed space between the flanges of the rack, adapted to engage the clamp to impart movement thereto.

4. In a device of the character described, the combination with a side bar and an end bar, a rack on the side bar having upwardly-extended flanges at its respective sides and an intermediate unobstructed portion, teeth on said flanges, a clamp on said end bar, teeth on the clamp arranged to engage said first-mentioned teeth on the rack, and a member adapted to rest within said unobstructed space between the flanges on the rack, said member having a detachable interlocking engagement with the clamp, whereby a longitudinal movement of said member will impart a like movement to said clamp.

5. In a device of the character described, the combination with a side bar and an end bar, a rack on the side bar having a longitudinally-extended centrally-arranged unobstructed portion and teeth without said unobstructed portion, a clamp on said end bar, teeth on the clamp arranged to engage said first-mentioned teeth on the rack, and means arranged within said unobstructed space between the teeth on the rack adapted to engage the clamp to impart movement thereto.

6. In a device of the character described, the combination with a side bar and an end bar, a rack on the side bar having an unobstructed surface and flanges extending outwardly therefrom, teeth on said flanges, a clamp on said end bar, teeth on the clamp arranged to engage said first-mentioned teeth on the rack, and means arranged within said unobstructed portion of the rack, adapted to engage the clamp to impart movement thereto.

818,503. **SOLE-PRESSING MACHINE.** ERASTUS B. WINKLEY, Lynn, Mass. Filed Oct. 23, 1900. Serial No. 34,011.

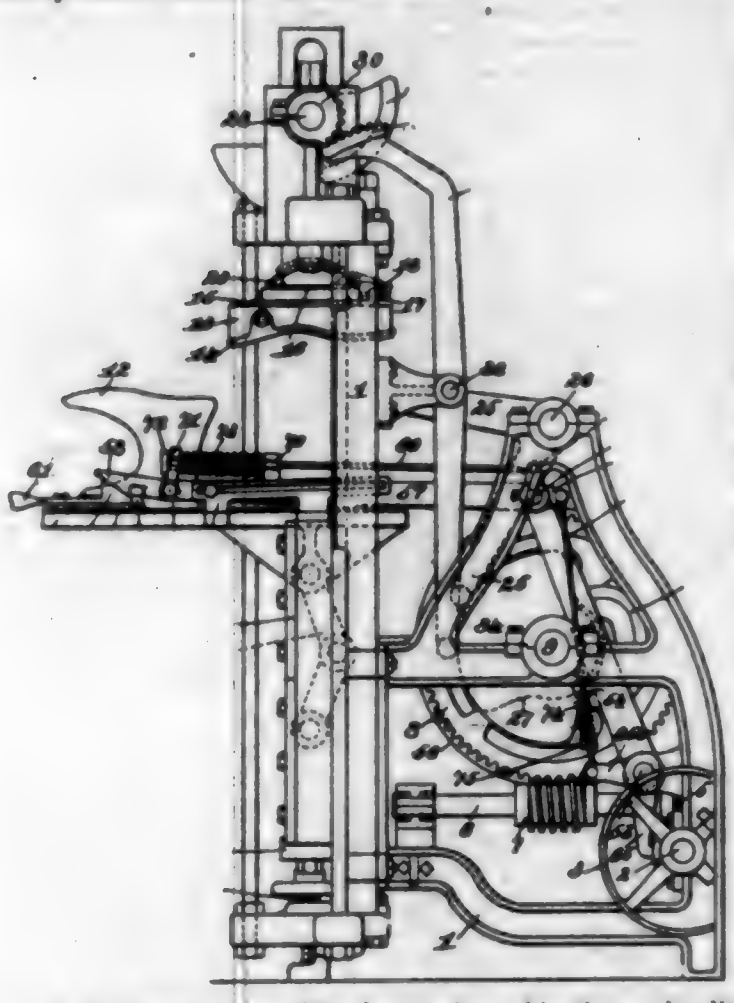
Claim.—1. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, and mechanism operating automatically and continuously to impart a relative vertical movement to the jack and form to bring the jack and form into a position of pressure, to hold the jack and form in said position during the time required to press the sole of a shoe placed upon the jack, and thereafter to separate the jack and form to bring the jack into a position of clearance, substantially as described.

2. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, and mechanism operating automatically and continuously to impart a relative vertical movement to the jack and form to bring the jack and form into a position of pressure, to hold the jack and form in said position during the time required to press the sole of a shoe placed upon the jack, and thereafter to return the jack to its position of presentation, substantially as described.

3. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of pressing-forms coöperating respectively therewith, mechanism for relatively actuating the jacks and forms to cause each jack and its coöperating form to press the sole of a shoe placed on the jack, comprising means for imparting relative vertical movements to each jack and form to produce pressure and clearance, means controlled by the operator for connecting each jack with said actuating mechanism, and automatic means for disconnecting each jack therefrom, substantially as described.

4. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of pressing-forms coöperating respectively therewith, mechanism for relatively actuating the jacks and forms to cause each jack and its coöperating form to press the sole of a shoe placed on the jack, comprising means for imparting

relative vertical movements to each jack and form to produce pressure and clearance, and means for connecting each jack with said actuating mechanism having provision for throwing said mechanism into operation, substantially as described.



5. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of pressing-forms coöperating respectively therewith, mechanism operating automatically and continuously to impart a relative vertical movement to each jack and form when connected therewith to bring the jack and form into a position of pressure, to hold the jack and form in said position during the time required to press the sole of a shoe placed upon the jack, and thereafter to return the jack into its position of presentation, and means for connecting and disconnecting each jack and said actuating mechanism, substantially as described.

6. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, mechanism for imparting to the jacks rectilinear reciprocating movements to bring them from a position of presentation to a position of clearance and to return them to a position of presentation, means for connecting and disconnecting each jack and said mechanism, and mechanism for imparting to each jack and form relative vertical movements to bring the jack and form into a position of pressure and to separate the jack and form to bring the jack into a position of clearance, substantially as described.

7. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of forms coöperating respectively therewith, mechanism acting to bring each jack and form when connected therewith into a position of pressure, to separate the jack and form to bring them into a position of clearance, and to return the jack to a position of presentation, means for throwing each jack and its coöperating form into and out of operative connection with said actuating mechanism, and means acting automatically to throw said actuating mechanism out of operation when the jack is in its position of presentation and its coöperating form is in its position of clearance, substantially as described.

8. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of forms coöperating respectively therewith, mechanism acting to bring each jack and form into a position of pressure, to separate the jacks and forms to bring them into a position of clearance, and to return the jacks to a position of presentation, and means acting automatically to throw said actuating mechanism out of operation when one of the jacks is in its position of presentation and all the forms are in their position of clearance, substantially as described.

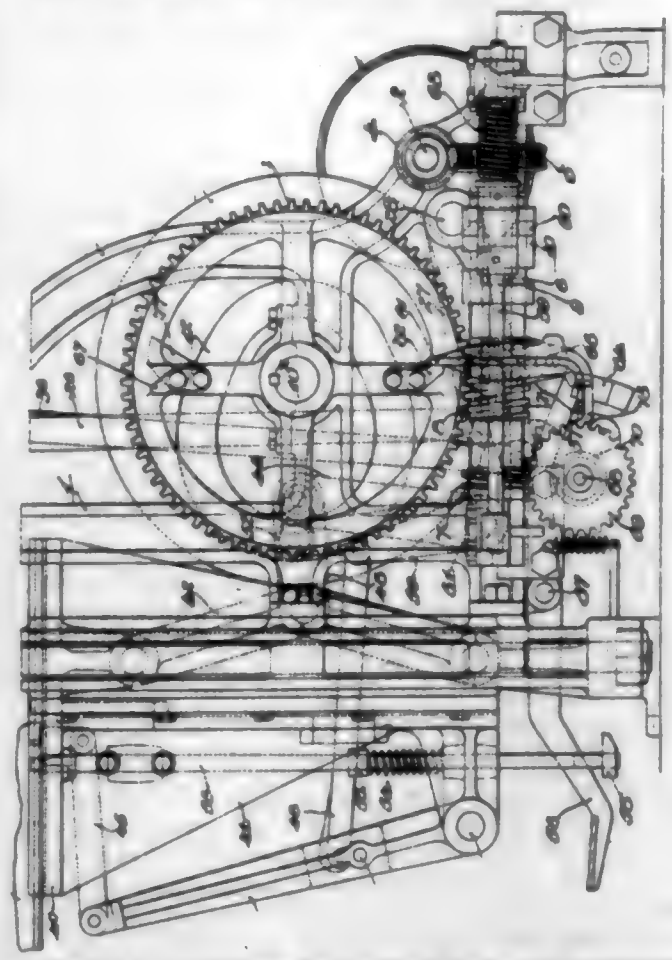
9. A sole-pressing machine, having, in combination, a plurality of sole-pressing forms, a plurality of shoe-supporting jacks coöperating respectively therewith, a vertically-reciprocating supporting-table common to all the jacks and along which each jack is independently movable from a position of presentation to a position of clearance, and means for actuating the table and jacks, substantially as described.

10. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of sole-pressing forms coöperating respectively therewith, swinging levers for imparting to said jacks a rectilinear movement from a position of presentation to a position of clearance, links and latches connecting the levers and jacks, and means for automatically actuating the latches to disconnect the jacks when the jacks are returned to a position of presentation, substantially as described.

11. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of sole-pressing forms coöperating respectively therewith, and mechanism for relatively actuating the jacks and forms to press the soles of shoes supported upon the jacks and to return the jacks to a position of presentation having provision for actuating each jack separately or all the jacks simultaneously at the will of the operator, substantially as described.

12. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of sole-pressing forms coöperating respectively therewith, mechanism acting to impart to each jack and its coöperating form relative vertical movements to produce pressure and clearance and to return the jack to its position of presentation while the other jacks remain in a position of presentation, and means acting automatically to throw said mechanism out of operation when all the jacks are in a position of presentation, substantially as described.

818,504. SOLE-PRESSING MACHINE. ERASTUS B. WINKLEY, Lynn, Mass. Filed Apr. 2, 1903. Serial No. 150,703.



Claim.—1. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism acting automatically to bring the jack and form into a position of pressure to hold the jack and form in such position and thereafter separate the jack and form, and means for varying the time during which the jack and form are held in a position of pressure, substantially as described.

2. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism for relatively actuating the jack and form to press the sole of a shoe, means acting automatically to stop said mechanism with the jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation, substantially as described.

3. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism for relatively actuating the jack and form to press the sole of a shoe, means acting automatically to stop said mechanism with the jack and form in a position of pressure, and means acting automatically to thereafter

start said mechanism into operation having provision for adjustment to vary the time during which the jack and form are held in a position of pressure, substantially as described.

4. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism for relatively actuating the jack and form to press the sole of a shoe, means acting automatically to stop said actuating mechanism with the jack and form in a position of pressure, normally inoperative mechanism acting automatically when thrown into operation to start said actuating mechanism, and means acting automatically to throw said normally inoperative mechanism into operation, substantially as described.

5. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism acting automatically to bring the jack and form into a position of pressure, to hold the jack and form in such position, and thereafter return the jack to a position of presentation, and means for varying the time during which the jack and form are held in a position of pressure, substantially as described.

6. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism for relatively actuating the jack and form to bring them into a position of pressure, to hold them in such position and thereafter return the jack to a position of presentation, means acting automatically to stop said mechanism with the jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation, substantially as described.

7. A sole-pressing machine, having, in combination, a shoe-supporting jack, a sole-pressing form, mechanism for relatively actuating the jack and form to bring them into a position of pressure, to hold them in such position and thereafter return the jack to a position of presentation, means acting automatically to stop said mechanism with the jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation having provision for adjustment to vary the time during which the jack and form are held in a position of pressure, substantially as described.

8. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism acting automatically to bring each jack and form into a position of pressure to hold the jack and form in such position and thereafter separate the jack and form, means for throwing each jack and its coöperating form into and out of operative connection with said mechanism and means for varying the time during which the jack and form are held in a position of pressure, substantially as described.

9. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism acting automatically to bring each jack and form into a position of pressure to hold the jack and form in such position and thereafter return the jack to position of presentation, means for throwing each jack and its coöperating form into and out of operative connection with said mechanism and means for varying the time during which the jack and form are held in a position of pressure, substantially as described.

10. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism for relatively actuating each jack and its coöperating form to press the sole of the shoe, means for throwing each jack and its coöperating form into and out of operative connection with said mechanism, means acting automatically to stop said mechanism with a jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation, substantially as described.

11. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism for relatively actuating each jack and its coöperating form to press the sole of the shoe, means for throwing each jack and its coöperating form into and out of operative connection with said mechanism, means acting automatically to stop said mechanism with a jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation having provision for adjustment to vary the time during which the jack and form are held in a position of pressure, substantially as described.

12. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism for relatively actuating each jack and form to press the sole of a shoe, and to return the jack to its position of presentation, means for connecting and disconnecting each jack and said actuating mechanism, and means for locking each jack in its position of presentation, substantially as described.

13. A sole-pressing machine, having, in combination, a plurality of shoe-supporting jacks, a plurality of coöperating sole-pressing forms, mechanism for relatively actuating each jack and form to press the sole of a shoe and to return the jack to its position of presentation, means for locking each jack in its position of presentation, and a treadle and suitable connections for unlocking a jack, for connecting a jack to the mechanism for relatively actuating said jack and its coöperating form, and for throwing said mechanism into operation, substantially as described.

14. A sole-pressing machine, having, in combination, a shoe-supporting jack, a coöperating sole-pressing form, mechanism for relatively actuating the jack and form to press the sole of a shoe and to return the jack to its position of presentation, means for locking the jack in its position of presentation, and a treadle and suitable connections for unlocking the jack and for throwing the mechanism for relatively actuating the jack and form into operation, substantially as described.

15. A sole-pressing machine, having, in combination, a shoe-supporting jack and a sole-pressing form coöperating to level the sole of a shoe placed on the jack, mechanism for relatively actuating the jack and form comprising an intermittently-rotating cam-shaft, a constantly-rotating driving-shaft, and connections between the driving-shaft and cam-shaft acting automatically to stop the cam-shaft with the jack and form in a position of pressure and thereafter start the cam-shaft, substantially as described.

16. A sole-pressing machine, having, in combination, a shoe-supporting jack and a pressing-form coöperating to press the sole of a shoe placed on the jack, means for actuating the jack, a latch for holding the jack in a position of presentation, a latch for connecting the jack with its actuating mechanism, and mechanism connected with both latches for actuating the same to release the jack and connect it with its actuating mechanism, substantially as described.

17. A sole-pressing machine, having, in combination, a jack and a pressing form coöperating to press the sole of a shoe placed on the jack, a spring-pressed latch for holding the jack in a position of presentation, mechanism controlled by the operator for disengaging the latch from the jack, and means for preventing a reëngagement of the latch with the jack until the machine has completed its cycle of operations, substantially as described.

18. A sole-pressing machine, having, in combination, a shoe-supporting jack and a pressing-form coöperating to press the sole of a shoe placed on the jack, means for holding the jack in a position of presentation, means for connecting the jack with its actuating mechanism, and mechanism connected with both of said means whereby one is rendered inoperative when the other is rendered operative, substantially as described.

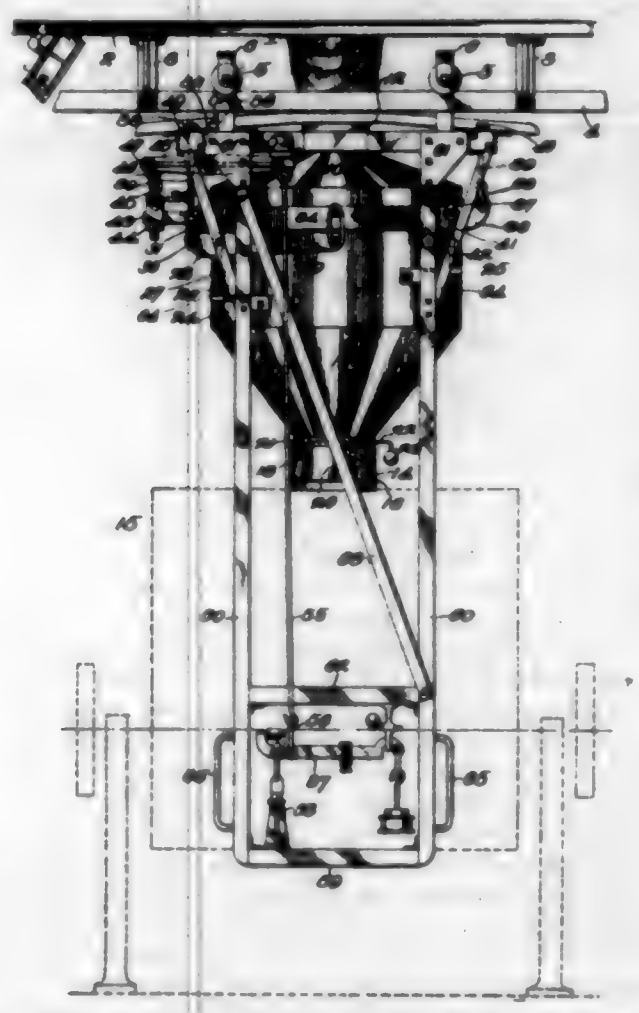
19. A sole-pressing machine, having, in combination, a shoe-supporting jack and a pressing-form coöperating to press the sole of a shoe placed on the jack, means for holding the jack in a position of presentation, mechanism controlled by the operator for rendering said means inoperative, and a device for maintaining said means inoperative until the machine has completed its cycle of operations, substantially as described.

20. A sole-pressing machine, having, in combination a shoe-supporting jack and a pressing-form coöperating to press the sole of a shoe placed on the jack, means for holding the jack in a position of presentation, mechanism controlled by the operator for rendering said means inoperative, a device acting to maintain said means inoperative until the machine has completed its cycle of operations and then allow said means to become operative, and means acting automatically to actuate said device, substantially as described.

818,505. TRAVELING HOPPER-SCALE. FREDRICK J. WOLFF, Kansas City, Mo. Filed Sept. 11, 1905. Serial No. 277,835.

Claim.—1. In a hopper-scale, the combination of a frame, a hopper within the said frame, a lever pivotally suspended near one end from the frame and linked near said end directly to the hopper, the other end of said lever projecting beyond the opposite side of the hopper, a second lever pivotally suspended from the frame at the same side of the hopper as the projecting end of the first-named lever and having its inner ends linked to said first-mentioned lever and linked at an intermediate point directly to the hopper, and a beam disposed horizontally within the frame and pivotally suspended therefrom, one end of said beam being linked to the projecting end of the first-mentioned lever.

2. The combination of a frame, a hopper inclosed by the frame, a semicircular lever disposed around the hopper and linked directly thereto near its ends, said lever being pivotally suspended at its ends from the frame, a beam pivotally suspended from the frame and having one end linked to the central point of the said lever, and a second semicircular lever disposed around the hopper and pivotally suspended from the frame said lever being linked at its ends to the sides of the first-mentioned lever and at intermediate points directly to the hopper.



3. The combination of a supporting-frame, a hopper within the same, a semicircular lever disposed around the hopper and having its ends pivotally suspended from the frame, said lever being linked directly to the hopper near its ends and provided at its center with a lateral arm, a beam pivotally suspended from the frame and having one end linked to the said lateral arm, and a second semicircular lever pivotally suspended from the frame and linked at intermediate points directly to the hopper, the ends of said lever being linked to the sides of the first-mentioned lever.

4. The combination of a supporting-frame, a hopper, a semicircular lever disposed around and linked near its ends directly to the hopper and having its ends pivotally suspended from the frame, a beam pivotally suspended from the frame and linked to the center of said lever, and a second semicircular lever disposed around the hopper and linked directly thereto, said lever having its ends linked to the first-mentioned lever and being provided with lateral arms by which it is pivotally suspended from the frame.

5. The combination of a supporting-frame, a hopper within the same, a pair of levers pivotally suspended from the frame and linked directly to the hopper and to each other, a beam pivotally suspended from the frame and having one end linked to one of the levers, a frame secured rigidly to one side of the supporting-frame and arranged below the end of the said beam and depending below the hopper, a scale-beam in the lower end of said frame, and a connection between said scale-beam and the first-mentioned beam.

6. The combination of a trackway, a supporting-frame arranged to travel thereon, a hopper mounted within said frame, a leverage connection between the hopper and said frame, a rigid frame depending from one side of the supporting-frame and provided with handles on its sides, a scale-beam within said depending frame, and a connection between said scale-beam and the leverage connection of the hopper and the supporting-frame.

7. In a traveling hopper-scale, a traveling frame, a hopper having a leverage connection with and arranged centrally of the frame, and having its upper end open, and a plate secured to the frame and disposed over the hopper and provided with an opening vertically above the open upper end of the hopper.

8. In a traveling hopper-scale, a traveling frame, a hopper having a leverage connection with and arranged centrally of the frame and having its upper end open, and a plate secured to the frame over the open upper end of the hopper and having a central opening registering with the upper end of the hopper, said plate being inclined slightly downward toward its ends and having upturned side flanges.

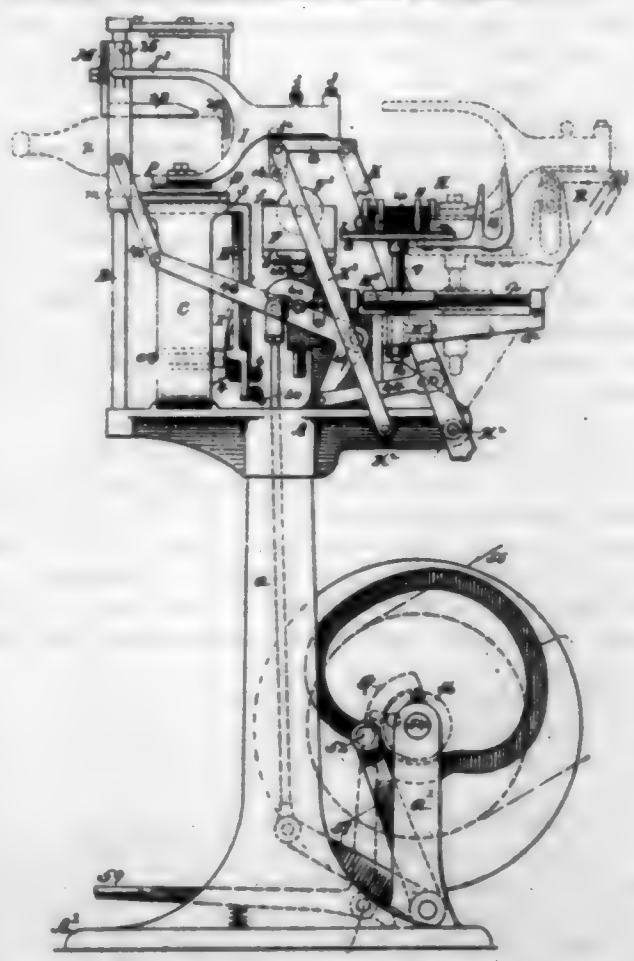
9. In a hopper-scale, a hopper having its lower end open and provided with a depending neck around said opening, oppositely-disposed half-rings on the inner wall of said neck, a valve controlling the said opening, and means for holding the valve up against one half-ring and down upon the other half-ring.

10. In a hopper-scale, a hopper having its lower end open and provided with a depending neck around said opening, a valve controlling said opening, means for holding the valve yieldingly closed, a sleeve adjustably secured on said neck and provided with an outwardly-projecting flange said sleeve being arranged to be projected beyond said neck to enter a receptacle with its flange resting on the receptacle.

11. In a hopper-scale, a hopper having its lower end open and provided with a depending neck around said opening, a valve controlling said opening, means for holding the valve yieldingly closed, a sleeve adjustably secured on said neck and provided with an outwardly-projecting flange, a pin projecting outward from said neck, a sleeve fitting adjustably on the neck and provided with a slot engaging the pin, and a clamping-nut engaging the outer end of said pin.

12. In a traveling hopper-scale for bakeries, the combination with the hopper, of a V-shaped agitator loosely hung at its point in the wall of the hopper and having one arm playing in the hopper and its other arm depending freely outside the hopper.

818,506. LABELING-MACHINE. FRANK O. WOODLAND, Worcester, Mass. Filed June 27, 1902. Serial No. 113,417.



Claim.—1. A labeling-machine comprising a movable carrier, means for pasting and picking up a label mounted on said carrier, means for reciprocating said carrier in an arched line of movement, a paste-box having paste-delivering means, elevating devices that move the paste-box toward the path of the pasting-pickers, a label-holder, a reciprocating label-holder support movable in a general direction with said carrier, but on a line differential to that of the carrier movement, and means for effecting uniform rate of movement for the pickers and label-holder as they converge and recede.

2. A labeling-machine, comprising, in combination with wiping-on devices and a pusher mechanism; a transferring-carrier, dual parallel-swinging supports for said carrier, a pair of picker-fingers supported by vertical pivots on said carrier, pasting-pickers detachably secured to said fingers, a paste-receptacle and paste-dis-

tributing means, an edgewise-movable label-holder, means for guiding the label-holder, means for moving said carrier and pickers over the paste-distributing means, and to a position rearward of the normal position of said label-holder while the pickers act at coincident relation to the labels, and to effect synchronous convergent terminal movements of the same, for the purpose set forth.

3. A labeling-machine comprising a carrier mounted on upwardly-projecting parallel swinging supports, a pair of laterally-swinging arms pivoted on said carrier, a contractile spring and stops for said arms, pasting-pickers attached to said arms, a paste-box and paste-delivering roller, means for moving said paste-box to bring the roller into contact with the pasting-pickers, a label-holder having means for retaining a pile of labels thereon, a rearwardly and forwardly movable label-holder bed, guides therefor, a label-holder standard yieldably sustained in said bed, means for effecting a movement of said label-holder and its bed in unison with the movement of the pasting-pickers, and means for readjusting the level of the label-holder in relation to its bed as it returns to primary position.

4. A labeling-machine, comprising an oscillatory carrier carrying means for pasting and picking up a label, a label-supply holder, carrier-supporting means that maintains the plane of the carrier and picking-up devices relatively parallel to the plane of the label-holder during the oscillatory movement, a paste-receptacle having paste-delivering roll, means for moving said carrier to pass the pasting-pickers in contact with the paste-delivering roll, and into alinement with the label-supply holder, and means for reciprocating the label-supply holder with the carrier, at each movement of the carrier, and means for returning the carrier to forward position with the label out of contact with the paste-delivering roll.

5. In a labeling-machine, in combination with the transferring-carrier and pasting-pickers carried thereon, a label-holder bed backwardly and forwardly movable on a line differentially approaching that of said carrier, a label-holder supported and vertically adjustable in said bed, a friction grip device for normally sustaining the adjustment thereof, an automatically-engaging means for effecting movement of the label-holder bed and holder with the rear portion of the carrier movement, and a cam or incline that readjusts the label-holder in its bed as it returns to primary position.

6. In a labeling-machine, and in combination, a label-carrier having oscillative movement, picker-arms pivotally mounted on said carrier, pasting-pickers attached to said arms, means for supplying paste to said pickers, means for delivering a label to said pickers, label-wiping devices, and a reciprocating pusher having means for passing the bottle between the wipers, said picker-arms and said pusher being provided with coacting members whereby a positive outward swing or lateral movement is imparted to said picker-arms and paster-pickers by the prime downward action of said pusher.

7. In a labeling-machine provided with a label-transferring carrier, wiper devices, and a reciprocating bottle-pusher mechanism, the laterally-swinging picker-arms pivotally mounted on said carrier and having the pasting-pickers supported thereon, said picker-arms respectively provided with extension members, in combination, with the bottle-pusher head having inclined cam projections thereon that act against said extension members for laterally spreading the picker-arms.

8. In a labeling-machine, the combination, of a flexible wiper, and a resistance-follower acting against the back or reverse surface of said wiper with a yieldable pressure, and movable along the wiper-surface.

9. In a labeling-machine, a label-wiping mechanism comprising a pair of stationary wiper-stands, oppositely-disposed wipers of moderately-flexible material respectively fixed to said stands, laterally-movable followers upholding the free portions of said wipers and carried by laterally-swinging arms, and a spring, or springs, connected with said arms for pressing the wiper-followers toward their normal or primary position with a yielding resistance.

10. The combination, with the flexible resilient rectangular wipers, supports for one edge thereof, their opposite edges free and projecting into the passway; of separate movable wiper-upholding followers adapted to press said wipers toward the bottle and to retreat with a yielding resistance, by lateral and downward swing movement toward the wiper-supports, as the bottle goes through the passway between the wipers.

11. In a labeling-machine, in combination, a pair of oppositely-disposed flexible flap-wipers, means for the stationary support of the outer edges of said wipers, a pair of parallel roller-followers rolling against the under surface of the wipers toward and from their flexible ends, means for supporting said follower-rollers to uphold the working portion of the wiper-flap, and means for imparting a yielding resistance to outward movement of said followers.

12. In a labeling-machine, in combination with means for pasting and delivering the labels, and means for passing a bottle through the wipers; the stationary wiper-stands, flexible wiper-flaps secured at one edge to said stands, crossed swinging arms pivoted at the foot thereof and provided at their tops with parallel bars or rollers that move along the under surface of the wipers, springs that force said arms inward, a pivotally-attached cross-bar connecting said arms, and a guard-tongue formed on said bar and projecting in front of the arms, for the purpose set forth.

13. In combination with means for pasting and presenting a label; of the wiper-stands, inwardly-projecting flexible resilient wipers fixed on said stands, resistance-followers acting beneath and against said wipers, follower-levers oppositely fulcrumed at the base of said stands and swinging said followers laterally toward and from each other, means for insuring uniform movement of the followers, a spring, or springs, connecting the levers, stops for limiting their approach, and means for pushing a bottle between the pair of wipers and followers.

14. In a labeling-machine, a pair of pasting-pickers, a movable carrier therefor with laterally-yieldable supports for said pickers, a pair of wipers, and a label-center stay comprising a yieldable grip device in combination with a reciprocating pusher-head, and means controlled by the pusher-head for simultaneously spreading said pickers laterally; advancing the bottle to the label and wipers, and raising said grip device into holding position against the label, by the movement of said pusher-head.

15. In a labeling-machine, the combination, with means for pasting and delivering a label, a pusher mechanism for advancing the label-receiving article between the wipers, and a pair of flexible wipers supported at one edge; of a pair of yielding resistance-followers for upholding the flexible portion of said wipers, and a plurality of springs for effecting retroaction of the followers, said springs being arranged to progressively come into action for augmenting the resistance as the space between followers is increased.

16. In a labeling-machine, a pair of upright wiper-stands united at their feet, a pair of oppositely-swinging arms pivotally connected with said stands and having at their upper ends parallel follower-fingers, a spring or springs acting to press said follower-arms toward each other, means for insuring uniform movement of said follower-arms, and inwardly-projecting flexible wiper-flaps having their outer edges respectively secured to said wiper-stands, and their flexible ends resting upon said followers.

17. In a labeling-machine, in combination with means for pasting and delivering a label, wiping-on devices, and a pusher-head having means for conducting the bottle or article through the passway between said wiping-on devices; of a label-centering grip comprising rotatable grip-roller, means for supporting said roller carried on the pusher-head, and means for pressing said roll against the label and bottle oppositely to the bottle-pushing device.

18. In a labeling-machine, in combination with means for pasting and delivering a label, flexible wiper-flaps, laterally-movable followers beneath said wipers, and a reciprocating pusher-head having means for conducting a bottle through said wipers; of a label-center grip comprising a rotatable elastic roller mounted on a transverse axis in a vertically-swinging arm hinged to a support connected with the pusher-head, a spring acting to elevate the free end of said arm, and a projection or finger carried on said arm and adapted to engage beneath the wiper or wiper-follower, for the purpose set forth.

19. The combination of a pair of wiping-on devices, means for pasting and delivering a label adjacent to said wipers, a sliding pusher-head, guide-rods therefor, a bottle-pushing brace secured to said pusher-head, a label-gripping means provided with a yielding grip-roller disposed as a jaw in opposite relation to said pushing-brace, a support for said label-gripping means moving with the pusher-head, and a connecting-link joining said pusher-head with the actuator means which works the label-delivering appliances.

20. In a labeling-machine, the combination, with the supporting-frame, oscillating carrier having pasting-pickers, swinging carrier-supports, bottle-pusher head, the actuator-lever and connection-links for moving said carrier and pusher-head; of the rocker-lever fulcrumed on the frame-base, the revoluble cam engaging one arm of said rocker-lever, the rod connecting the other arm with said actuator-lever, a drive-pulley and an automatic stop-clutch for the cam, and a clutch-controlling lever pivoted on the base and provided with a toe-treadle and a reacting spring, substantially as set forth.

21. In a labeling-machine, for the purpose set forth, a label-holder having rearward and forward reciprocative action from a pre-

determined position at its front limit, and provided with label-supporting guide devices thereon, those for the rear edge of the labels being adjustably mounted upon the holder-plate and provided with means overhanging the edge of the label-pack; in combination with paste-applying pickers that reciprocatively move into conjunction with said holder for taking labels therefrom.

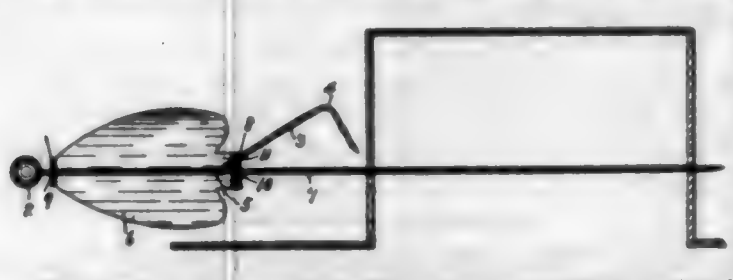
22. In a labeling-machine, the combination, with the pasting-pickers, the label-holder plate provided with upright label-supporting guards perpendicular to the plane of said plate, and means for moving the pickers onto and from the top of a pile of labels seated upon said plate; of a finger device carried upon the holder-plate and projecting over the top of the labels resting thereon, said finger device being arranged for automatic or self adjustment to conform to the decreasing height of the pile of labels above the plate, and adapted for lateral displacement to facilitate recharging the holder with labels.

23. In a labeling-machine, the combination with means for pasting and delivering the labels, wiping devices, and a pusher having means for passing a bottle through the wiping devices; of a label-center grip consisting of a freely-rotatable grip-roll, a movable spring-pressed arm carried upon the pusher and having the grip-roll axle mounted thereon, a spring for normally pressing said arm toward the bottle, and means for arresting the approach movement of said arm and grip-roll when adjacent to, but before it reaches the primal position of the delivered label, for the purpose set forth.

24. In a labeling-machine, in combination with means for pasting, placing and wiping on labels, a transferring-carrier carrying paste-applying pickers, a reciprocating bed movable backward and forward in line with said carrier, a vertically-movable label-holder stand yieldably supported on said bed, a detachable label-holder plate mounted on said stand, label-holding guide devices thereon adjustable in relation to the axis of the stand, means for elevating said label-holder stand in relation to the bed, and means for reciprocating said bed and parts supported thereon, synchronous with the action of the transferring-carrier.

25. In a labeling-machine, in combination, with a reciprocating means for pasting and delivering labels; a vertically-movable label-holder carried upon a horizontally-movable bed, and means for moving said bed and label-holder to bring the latter into the path of said pasting and delivering means, and to travel in unison therewith while taking a label from said holder.

818,507. **HAT-PIN.** ANDERSON WOODWARD, Leeper, Mo., assignor of three-fourths to William S. Bailey, Charles M. Hamilton, and William Montgomery, Leeper, Mo. Filed July 17, 1905. Serial No. 270,059.



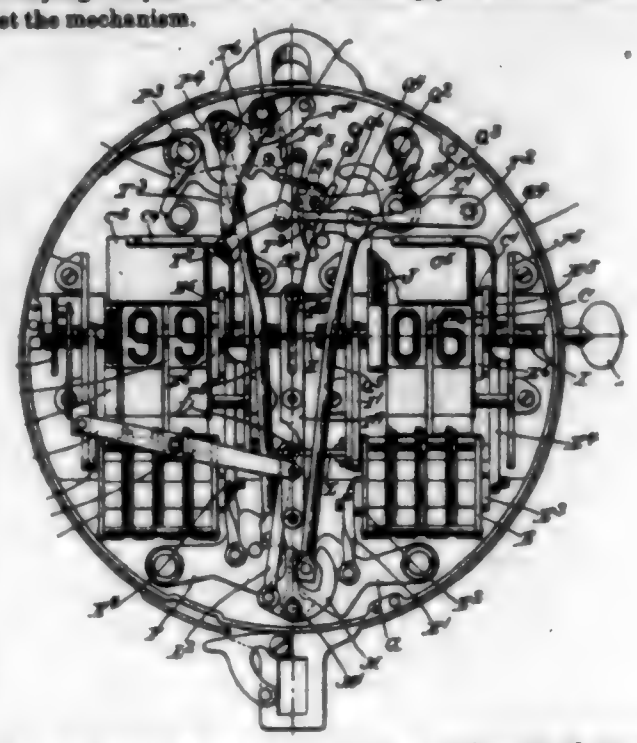
Claim.—1. A pin provided with a guard comprising a pointed hook member adapted to lock the pin against accidental displacement, a plate having outstanding ears provided with openings through which the pin passes, one of said ears being provided with an opening through which the hook member passes, the parts being so disposed that a sliding movement of the said plate along the pin will force the hook member into locking engagement with the article within which the pin is to be secured against accidental displacement.

2. A pin provided with a pivoted hook member slidingly secured thereto, said member consisting of two portions bent at approximate right angles to each other, the point of the said member being normally in proximity to the pin, and means adapted to draw the portion of the hook member carrying the point into a position at approximately a right angle to the pin.

818,508. **FARE-REGISTER.** ARTHUR H. WOODWARD, Chicago, Ill., assignor to The International Register Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 27, 1901. Serial No. 76,746.

Claim.—1. The combination in a registering device of a resetting device, comprising a recessed shaft, a resetting-lever mounted in said recessed shaft, and a controlling device for controlling the position of said lever when the shaft is rotated.

2. The combination in a registering device of a resetting device, comprising a recessed shaft, a resetting-lever mounted therein and provided with two projecting parts, one the actuating part for the lever and the other the engaging part to engage the registering mechanism to reset it, the device arranged so that the engaging part is controlled by varying the position of the actuating part, and means for varying the position of said actuating part when it is desired to reset the mechanism.



3. The combination in a registering mechanism of a resetting device, comprising a recessed shaft, a resetting-lever mounted in said recessed shaft and provided with a part adapted to be projected beyond the face of the shaft so as to engage the registering mechanism, and a varying device for controlling the position of said lever when the shaft is rotated.

4. The combination in a registering device of a resetting device, comprising a recessed shaft, a resetting-lever mounted in said recessed shaft, a controlling device for controlling the position of said lever, and means for retarding the operation of the controlling device so as to delay the movement of said lever in a predetermined manner.

5. A resetting device for registering mechanisms, comprising a rotatable recessed shaft, a resetting-lever mounted therein and provided with two projecting parts, one adapted to engage the registering mechanism when the shaft is rotated and reset it, the other adapted to engage an actuating part when the shaft is rotated so as to move the shaft and project beyond the face of the shaft the part which engages the registering mechanism.

6. The combination in a registering mechanism of a resetting device, comprising a rotatable recessed shaft, a resettjng-lever mounted therein and provided with a part adapted to be projected beyond the shaft so as to engage the registering mechanism and reset it, a cam on said shaft, a lever associated with said cam, a blind connected with said lever so as to be actuated thereby to cover the exposed part of the registering mechanism while it is being reset.

7. A resetting device for registering mechanisms, comprising a rotatable shaft, a lever pivotally connected thereto, a controlling device for controlling the position of said lever, comprising two separate devices, one adapted to move the lever to its operative position and the other adapted to move it to its inoperative position.

8. The combination in a fare-register, comprising a permanent and trip register, of a resetting device for the trip-register, comprising a rotatable shaft, a cam on said shaft, a cam-lever engaging said cam and adapted to be lifted when the shaft is turned, said shaft attached to the connecting mechanism between the tens and units wheels so as to disconnect said wheels when moved, and also connected with a blind so as to move said blind to conceal the figures of the trip-register while being reset.

9. A register, comprising two sets of registering mechanism located in the same casing, each set comprising a permanent register, a trip-register and an alarm mechanism, placed in alinement, the two sets located side by side, an operating mechanism for said registering mechanisms, a connection between the operating mechanism and the permanent register, a connection between the permanent register and the trip-register, and an independent connection from the operating mechanism to the alarm mechanism, comprising connecting-rods connected to the operating mechanism and located be-

tween the two sets of registering mechanism and connected with the alarm mechanism.

10. A register comprising a casing containing a registering mechanism, a back attached to said casing, an intermediate chamber, a separate casing within said chamber, and a bell within said latter casing.

11. A register, containing two sets of registering mechanism located side by side, each comprising a permanent register, a trip-register and an alarm mechanism, the permanent and trip registers having substantially parallel shafts and the alarm mechanisms mounted on shafts substantially at right angles to the shafts of the permanent and trip registers.

12. The combination in a register of two sets of registering mechanism, each comprising a permanent register, a trip-register and an alarm device, with a space between them, the trip-registers actuated through the permanent registers and a separate actuating device for the alarm device the connections from the actuating mechanism to said register and alarm devices located in said space.

13. The combination in a registering device of a resetting device, comprising a shaft having a longitudinal recess, a resetting-lever in said recess, and an automatic controlling device for controlling its position when the shaft is rotated.

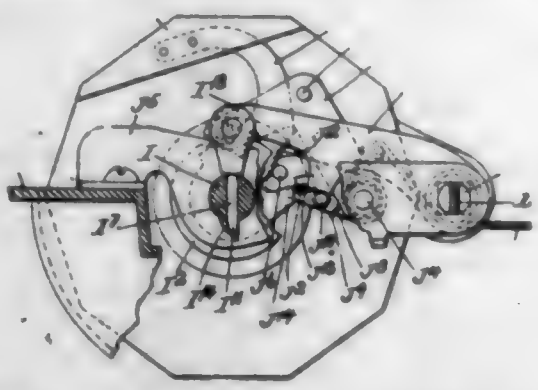
14. The combination in a registering device of a resetting device, comprising a shaft, a resetting-lever extending longitudinally along a portion of said shaft, and a controlling device for controlling the position of said lever.

15. The combination with a registering device of a casing therefor, a resetting device for the registering device, comprising a shaft having one end projecting through said casing, a resetting-lever within the casing and mounted upon said shaft so as to be inaccessible from the exterior of the casing, and an engaging device within the casing which engages said resetting-lever when the shaft is turned so as to move it to its operative position.

16. The combination in a registering device of a resetting device comprising a recessed shaft, a resetting-lever mounted in said recessed shaft and pivotally connected therewith between its ends, an engaging device on each end of the lever, one engaging device adapted to engage the registering mechanism, and the other adapted to engage a controlling device for the lever.

17. A register comprising two sets of registering mechanism, placed side by side and separated by a space, interlocking actuating parts for said mechanism located at the end of said space, an alarm mechanism located at the other end of said space, and a connecting device between said actuating parts and said alarm mechanism.

818,509. **HUNDRED-INDICATOR.** ARTHUR H. WOODWARD, Chicago, Ill., assignor to The International Register Company, Chicago, Ill., a Corporation of Illinois. Original application filed Sept. 27, 1901, Serial No. 76,746. Divided and this application filed Oct. 10, 1903. Serial No. 176,462.



Claim.—1. The combination with a registering mechanism, provided with a hundreds-indicating device, of a resetting mechanism adapted to reset the hundreds device during the beginning of the resetting process, and means for preventing the hundreds device from being moved to its operative position during the resetting process.

2. A registering mechanism, comprising a hundreds device, adapted to indicate hundreds, an actuating device for moving the hundreds device to its indicating position when the proper number of registrations have been made, a resetting mechanism for the hundreds device, and a locking device for holding the hundreds device in its inoperative position.

3. A registering mechanism, comprising a hundreds-indicating device, an arm adapted to engage the same and move it to its indicating position when the proper number of registrations have been made, a holding-dog for holding it in such position, and a spring connected at one end to said arm and at the other end to the holding-dog, said spring also acting to return the hundreds device to its inoperative position during the resetting process.

4. A hundreds-indicator, comprising a part upon which the character is placed, an arm associated with said part, an actuating device for moving said arm to its indicating position when the proper number of registrations have been made, a holding-dog for holding said arm in said indicating position, a resetting-shaft upon which the arm of the hundreds-indicator is mounted and means for releasing said holding-dog when it is desired to reset the device.

5. The combination with a hundreds-indicator of a rotatable shaft upon which said hundreds-indicator is mounted, a cam thereon, a lever controlled by said cam, a holding part for holding the hundreds-indicator in its indicating position, and means associated therewith for engaging the cam-lever when the said shaft is turned so as to release the holding part.

6. An indicating device, comprising a supporting-arm provided with a display part, an actuating device for said arm adapted to move it to its indicating position, a separate holding device adapted to hold it in said indicating position, a releasing device for releasing said holding device, means for moving said arm to its concealed position, and a locking device for holding it in said latter position.

7. The combination with a units and a tens numeral-wheel of a hundreds device all mounted so as to move about the same axis, an actuating part for said hundreds device, provided with two projecting parts, one adapted to engage the hundreds device and the other to engage the tens-wheel, and a locking device for locking said hundreds device in its indicating position.

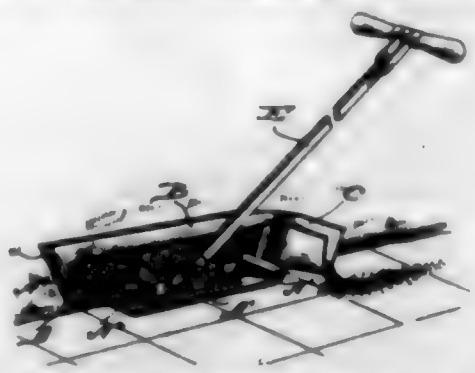
8. The combination with an indicating device of three movable parts, one adapted to move the hundreds device to its indicating position, another adapted to lock said hundreds device in its indicating position, and a third adapted when moved to disengage said locking part, said three parts mounted so as to move about points on the same side of the axis about which the indicating device moves.

9. The combination with an indicating device of three movable parts, one adapted to move the hundreds device to its indicating position, said two movable parts mounted upon the same axis and a third movable part adapted to lock said hundreds device in its indicating position, and a third adapted when moved to disengage said locking part, and means for moving said hundreds device to its non-indicating position when released.

10. A registering mechanism comprising a hundreds-indicating device, a resetting-shaft upon which said hundreds-indicating device is movably mounted, a pivoted actuating part for moving said hundreds-indicating device to its operative position, a locking device for locking it in this position, and a pivoted releasing-lever for releasing said locking device.

11. A registering mechanism comprising a hundreds-indicating device, an arm adapted to engage the same and move it to its indicating position when the proper number of registrations have been made, a holding device for holding it in such position, and a spring connected with said arm and holding device.

818,510. **LAWN-EDGE TRIMMER AND DITCHER.** JAMES M. ALDRICH, Adrian, Mich. Filed July 19, 1905. Serial No. 270,353.



Claim.—1. The combination with a carriage, of a trimmer-blade adjustably connected thereto and provided with a discharge-chute.

2. The combination with a carriage, of a V-shaped trimmer-blade, adjustably connected thereto and provided with a curved discharge-chute.

3. The combination with a carriage, of a V-shaped trimmer-blade, the forward edges of which are sharpened, the rear end being provided with a discharge-chute.

4. The combination with a carriage having a handle connected

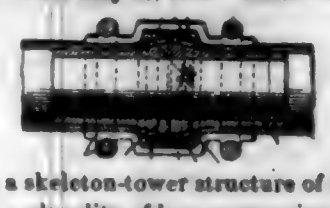
thereto, of a V-shaped trimmer-blade adjustably connected to one side of the carriage, the forward edge of said trimmer-blade being sharpened, and a curved discharge-chute connected to the rear end of the trimmer-blade, as set forth.

5. The combination with a carriage having a base-plate with turned-up ends and a flanged side, of a V-shaped trimmer-blade adjustably connected to said flange provided with a discharge-chute, and a handle connected to said plate, as set forth.

6. The combination with a carriage having a base-plate mounted on wheels and provided with a flanged side, slots formed in said flange, of a V-shaped trimmer-blade provided with bolts working in said slots, and a curved discharge-chute connected to the rear end of the trimmer-blade, as set forth.

7. The combination with a base-plate provided with turned-up ends mounted on rollers, a flange formed on one side of said plate provided with slots, of a trimmer-blade carrying bolts working in said slots of the flange, an inwardly-projecting discharge-chute connected to the rear of the trimmer-blade, and a handle connected to the base-plate, as set forth.

818,511. SKELETON-TOWER STRUCTURE. ROBERT L. ALLEN, Syracuse, N. Y. Filed May 15, 1905. Serial No. 260,598.



Claim.—1. In a skeleton-tower structure of the class described, the combination of a plurality of legs converging upwardly from the base toward the top, a one-piece metal casting or plate having a series of apertures therethrough one for each leg in which said legs are inserted, a wedging member movable lengthwise of and engaging the inner faces of said legs, and means for drawing said member upwardly, thereby tending to spread the upper ends of the legs and causing them to frictionally engage the walls of their respective apertures in the first-named plate.

2. In a skeleton tower of the character described, a series of upright tubular legs converging toward the top and having their upper ends expanded, a plate having flaring openings one for each leg receiving said expanded ends, conical hubs fitting in said expanded ends, and means to secure said hubs in operative position.

3. In a skeleton tower of the character described, a series of tubular legs converging upwardly from the bottom, and having their upper ends expanded, a plate having flaring openings receiving and fitting upon said expanded ends, a second plate having conical hubs fitting within said expanded ends, and means for clamping said plates together.

4. In a skeleton tower of the character described, in combination, a series of upright tubular legs converging from the bottom upward and having their upper ends expanded, a plate having a series of openings receiving the upper ends of the tubular legs, the upper ends of said openings flaring upwardly and fitting upon said expanded ends, the lower end of said openings being elongated radially to permit the lower ends of the tubular legs to be brought into parallel position to each other, and means for securing the expanded ends in their respective openings.

5. In a tower of the class described, the combination with a series of upwardly-converging tubular legs having their upper ends expanded, a plate having a series of upwardly-flaring openings receiving and fitting upon the expanded ends of the legs, a second plate having hollow conical hubs fitting within said expanded ends of the legs and means for clamping said plates together, thereby wedging the conical hubs into said expanded ends.

6. In a tower of the class described, the combination with a series of upwardly-converging tubular legs having their upper ends expanded, a plate having a series of openings receiving and fitting upon the expanded ends of the tubular legs, a second plate having conical hubs fitting within the expanded ends of said legs, means for clamping the plates to each other to wedge said hubs into the expanded ends of the legs, a third plate beneath the first-named plate and wedging between and against the inner faces of the legs, and means for moving said third plate endwise of the legs for the purpose described.

7. In a tower of the character described, the combination of a series of upwardly-converging legs, a plate having conical hubs wedging within the upper ends of the legs, and means to clamp said plate in operative position.

8. In a tower of the character described, a series of upwardly-converging tubular legs, a plate having openings for receiving the upper ends of said legs, a second plate having conical hubs wedging into the upper ends of said legs, and means for clamping said plates to each other.

9. In a tower of the class described, the combination with a series of upwardly-converging tubular legs, a plate having hollow wedge-shaped projections entering the upper ends of said legs, and means for moving said plate endwise.

10. In a tower of the class described, the combination with a series of upwardly-converging tubular legs, a plate having hollow wedge-shaped projections entering the upper ends of said legs, means for moving said plate endwise, a second plate fitting between and wedging against the inner faces of the legs when moved upwardly and means for clamping said plates together, thereby wedging the second plate between the legs and also wedging said projections of he first-named plate into the open ends of the tubes.

11. A skeleton tower having a series of upright tubular legs composed of sections arranged end to end, the meeting ends of each leg-section being expanded, a bushing fitting within the meeting ends of said sections and provided with double conical surfaces fitting in the expanded ends, clamping-sections embracing said meeting ends and a U-shaped bolt clamping said sections upon opposite faces of the meeting ends of the tubular sections, the inner bushing extending beyond the ends of the outer clamping-section to avoid buckling.

12. In a skeleton tower of the class described, the combination with a series of upright legs, each composed of sections arranged end to end and having their meeting ends expanded, separate collars having a wedging fit upon said expanded ends and movable endwise, and means having a wedging fit upon said collars to draw them endwise toward each other.

13. In a skeleton tower of the class described, the combination with a series of upright legs, each composed of sections arranged end to end and having their meeting ends expanded, a bushing fitted in said expanded ends, separate collars each having a wedging fit upon one of said expanded ends, opposite clamping members having a wedging fit upon said collars, and means to draw said members toward each other.

14. In a skeleton tower of the class described, the combination with a series of upright legs, each composed of sections arranged end to end and having their meeting ends expanded, a bushing fitted in said expanded ends, separate collars each having a wedging fit upon one of said expanded ends, clamping members inclosing said collars and having beveled shoulders engaging their outer ends, and means to draw said members together, whereby the beveled shoulders wedge the collars toward each other and against the expanded ends of the leg-sections.

15. In a skeleton tower of the class described, the combination of a series of tubular legs converging upwardly from the base and each composed of sections arranged end to end, the meeting ends of the tubular sections being expanded, collars fitted upon the outer surface of the expanded ends each having a biting-tooth engaging said expanded ends, said collars having beveled shoulders and clamping members having beveled shoulders engaging the beveled shoulders of the collars and means for drawing said clamping members together, whereby the engaging beveled shoulders operate to draw the meeting ends of the tubular leg-sections toward each other.

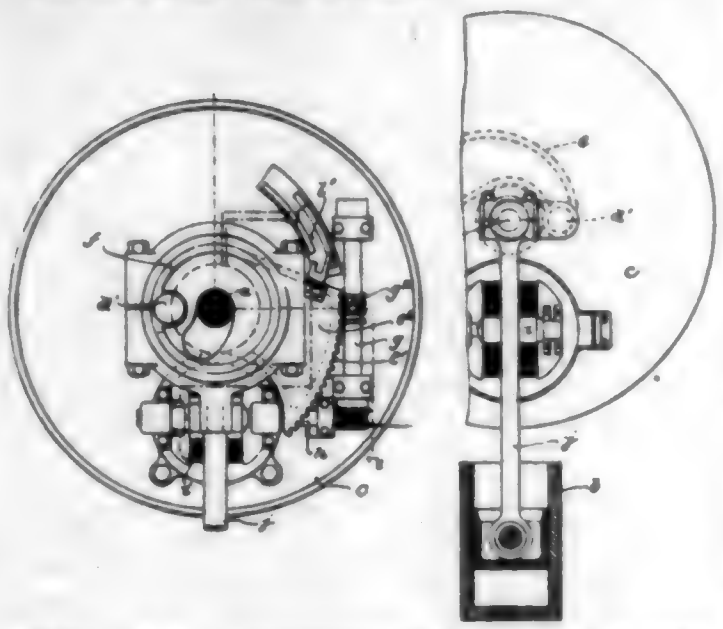
16. In a skeleton tower of the class described, the combination of a plurality of upwardly-converging legs, each composed of sections arranged end to end, collars fitting upon the adjacent ends of the leg-sections and having biting-teeth engaging said leg-sections, said collars having their outer end faces beveled in opposite directions, clamping members engaging said beveled faces of the collars and means for drawing said clamping-sections together around the adjacent ends of the leg-sections, whereby the engagement of the clamping-sections with the beveled end faces of the collars operate to draw said collars and leg-sections toward each other.

17. In a skeleton tower of the class described, the combination of a plurality of upwardly-converging tubular legs each composed of sections arranged end to end and having their meeting ends expanded, hollow double-tapered bushings fitting in the expanded ends of the leg-sections, toothed collars fitting upon the outer faces of said expanded ends and having opposed beveled end faces, clamping-sections inclosing said collars and meeting ends of the leg-sections and provided with beveled faces engaging the beveled faces of the collars and means for drawing said clamping-sections together upon the collars and around the adjacent ends of the leg-sections, the hollow bushing having its ends extended beyond the ends of the clamping sections.

18. In a tower of the class described, the combination of a plu-

rality of upwardly-converging legs spaced apart, a transverse horizontal brace-frame between the legs and including a clamping-plate and U-bolt for each leg, each clamping-plate and bolt engaging opposite faces of its leg in substantially the same diametrical plane for the purpose of avoiding short leverage strains.

818,512. **POWER MECHANISM.** RICH J. ARNOLD, Chicago, Ill. Filed June 12, 1900. Serial No. 20,084.



Claim.—1. In a power-transmission mechanism the combination with a rotatably-mounted support, of a load-driving eccentric carried thereby and movable from or toward the axis of the said support, and means including a motor carried by the support for effecting the adjustment of the eccentric, substantially as described.

2. In a power-transmission mechanism the combination with a rotatably-mounted support, of a load-driving eccentric carried thereby and movable from or toward the axis of the said support, means including a motor for effecting the adjustment of the eccentric and for securing the eccentric in the position to which it has been adjusted, substantially as described.

3. In a power-transmission mechanism, the combination with a rotatably-mounted support, of a load-driving eccentric carried thereby, and having connection with the said support permitting its rotatable or swinging movement with respect to the axis of rotation of the support, means including a motor for effecting the adjustment of the eccentric and for securing the eccentric in the position to which it has been adjusted, substantially as described.

4. In a power-transmission mechanism, the combination with a rotatable support, of an eccentric rotatably mounted upon and with relation to the support, motor means carried by the support for effecting the adjustment of the eccentric, and means extraneous of the support for effecting the operation of the motor to secure the adjustment of the eccentric while in operation, substantially as described.

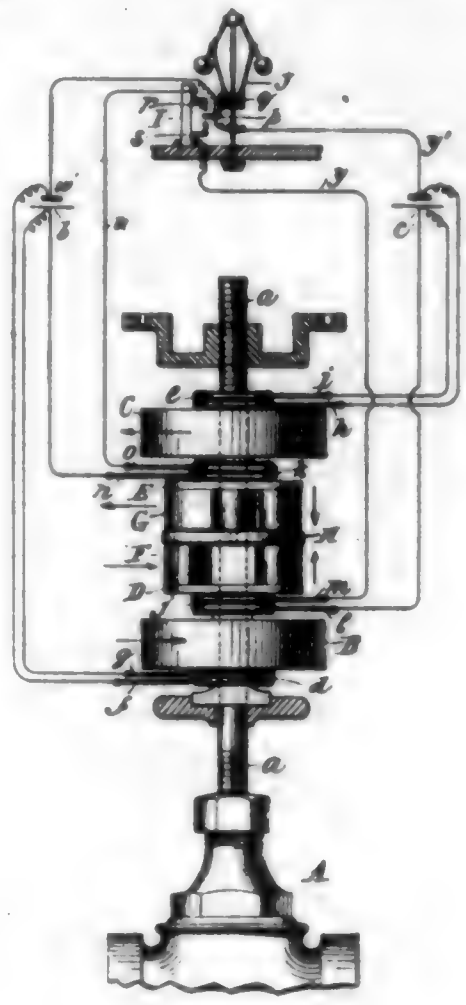
5. In a power-transmission mechanism, the combination with a rotatably-mounted support, of load-driving means carried thereby, and an electric motor for varying the displacement or eccentricity of said load-driving means relative to the axis of said rotatably-mounted support, substantially as described.

6. In a power-transmission mechanism, the combination with a rotatably-mounted support, of load-driving means carried thereby, and motor means completely rotatable with the support for effecting a displacement or change of eccentricity of said load-driving means with relation to the axis of said rotatably-mounted support, substantially as described.

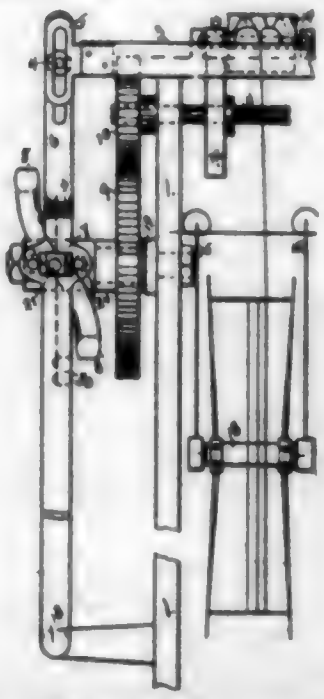
818,513. **ELECTROMAGNETIC GOVERNOR.** DANIEL BACON, New York, N. Y. Filed Apr. 17, 1905. Serial No. 255,893.

Claim.—An electromagnetic governor which consists of a governing device adapted to move at a speed corresponding to that of the apparatus to be governed, a circuit-closer adapted to be operated by said governing device upon reaching a predetermined point of high or low speed, an electromagnetic device mounted upon the controlling-stem of the apparatus to be governed, and adapted to turn said stem in either direction as may be required to increase or diminish the speed of said apparatus, and means, substantially as described, whereby an electric current is directed into said electromagnetic device in one or the other direction by the action of said governing device in contacting with said circuit-closer.

818,513.



818,514. **WINDING-MACHINE.** DAVID BARTON and HARRISON K. ACKERMAN, Paterson, N. J. Filed Jan. 6, 1905. Serial No. 239,886.

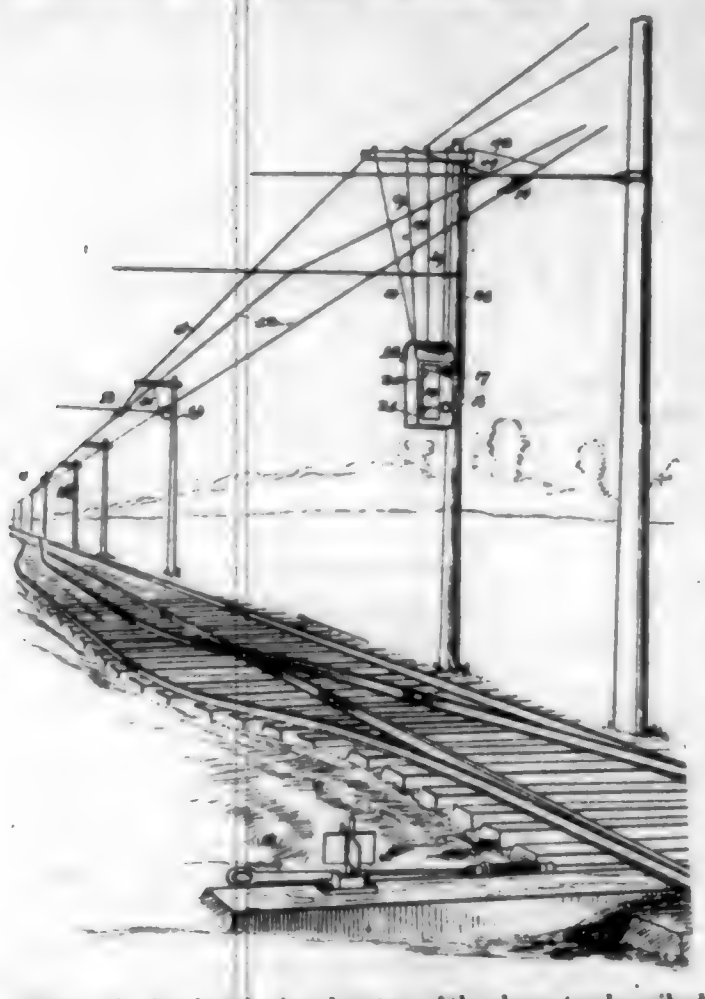


Claim.—1. In a winding-machine, a rotatable cam, a traverse-lever having a rectangular opening, a block having a slot and a square portion which engages the opening in said lever, two rollers mounted on said block acting in sliding contact on opposite faces respectively of said cam and a flat spring secured to said lever and passing through the slot in said block for the purpose of preventing jar at the ends of the traverse.

2. In a winding-machine, a cam, means for rotating said cam, a traverse-lever, lugs on said lever, a pin mounted in said lugs, springs on said pin and means connecting said cam and lever comprising a block engaging said cam, a spring secured at one end to said lever and connected intermediate its ends with said block, and the other end of said spring engaging said pin between said springs.

3. In a winding-machine, a winding-spindle, a guide, a traverse-lever, means connecting said guide and lever, a rotatable cam and means on said lever forming a yielding connection between said cam and the lever.

818,515. ELECTRIC SIGNAL SYSTEM. VICTOR W. BERGENTHAL, Chicago, Ill. Filed July 21, 1904. Serial No. 217,473.



Claim.—1. An electric signal system of the character described, comprising a trolley-actuated circuit-closer, a semaphore or signal, and an electromagnet for operating the same local to said circuit-closer, a remote semaphore or signal and its actuating-electromagnet, an electric switch opened by one of said magnets when the latter is energized, and an electrical circuit including said magnets, switch, and circuit-closer controlled by the trolley, whereby when said trolley closes said circuit, the magnets throw the semaphores and open their own circuit by means of said switch, substantially as described.

2. An electric signal system of the character described, comprising a trolley-actuated circuit-closer, a semaphore or signal, and an electromagnet for operating the same local to said circuit-closer, a remote semaphore or signal and its actuating-electromagnet, an electric switch opened by one of said magnets when the latter is energized, an electrical circuit including said magnets, switch, and circuit-closer controlled by the trolley, and locking devices for locking said semaphores in the positions in which they may be placed by the energizing of said electromagnets, whereby when said trolley closes said circuit the magnets throw the semaphores which become locked in position and open their own circuit by means of said switch-substantially as described.

3. An electric signal system of the character described, comprising a trolley-actuated circuit-closer, a semaphore or signal, and an electromagnet for operating the same local to said circuit-closer, a local electric lamp, an electric switch closed by said magnet when the latter is energized, a circuit including a source of current, said lamp, and switch, a remote semaphore or signal, an operating-electromagnet therefor, a remote electric lamp, a second electric switch closed by said last-mentioned electromagnet when the latter is energized, a circuit including a source of current, said remote lamp, and said second switch, a third electric switch opened by one of said magnets when it is energized, and a circuit including said third switch, said magnets, and said circuit-closer, substantially as described.

4. A signal-box for an electric signal system having a semaphore, an electric lamp, a normally closed electric switch, two normally open electric switches, a pair of magnets to operate said semaphore and switches, a circuit including one of said magnets and said normally closed switch, a second circuit including the second magnet and one of said normally open switches, and a third circuit including said lamp and the remaining normally open switch, whereby a current sent over said first circuit causes its magnet to set the semaphore and close the normally open switches, and open the normally closed switch thus causing the lamp to light, closing the circuit of the second magnet, and opening the circuit of the first magnet, and whereby a current subsequently sent over said second circuit energizes the second magnet, reverses the switches, extinguishes the light, and reverses the semaphore, substantially as described.

5. A signal-box for an electric signal system having a semaphore, an electric lamp, a normally closed electric switch, two normally open electric switches, a pair of magnets to operate said semaphore and switches, a circuit including one of said magnets and said normally closed switch, a second circuit including the second magnet and one of said normally open switches, a third circuit including said lamp, a source of current, and the remaining normally open switch, whereby a current sent over said first circuit causes its magnet to set the semaphore, to close the normally open switches, and to open the normally closed switch, thus causing the lamp to light, closing the circuit of the second magnet, and opening the circuit of the first magnet, and whereby a current subsequently sent over said second circuit energizes the second magnet, reverses the switches, extinguishes the light, and reverses the semaphore, and means to lock the semaphore in its two positions, substantially as described.

6. In a block-signal system of the character described, the combination of two signal-boxes, the first box having a semaphore of a given color, a lamp of the same color, a normally closed electric switch, two normally open electric switches, and a pair of electromagnets to operate said semaphores and switches, the second box having a semaphore of a different color, a lamp of the same color as the second semaphore, a normally closed electric switch, two normally open electric switches, and a pair of electromagnets to operate said second semaphore and switches, a first circuit including one of the electromagnets and the normally closed switch of the first box, and the normally closed switch of one of the electromagnets of the second box, a second circuit including the remaining electromagnet and one of the normally open switches of the first box, and the remaining electromagnet and one of the normally open switches of the second box, a third circuit including a source of current and remaining normally open switch and lamp of the first box, and a fourth circuit including a source of current and the remaining normally open switch and lamp of the second box, whereby energization of the first circuit throws both semaphores and reverses all the switches thus lighting the lamps and closing the switches of the second circuit, and whereby subsequent energization of the second circuit reverses the semaphores, extinguishes the lights, and reverses all the switches.

7. A locking device for a semaphore, comprising in combination with the semaphore-shaft and its actuating-electromagnet, a lost-motion connection between the armature of the electromagnet and the shaft, a spring-actuated latch adapted to lock the connection and means for disengaging the latch as the armature is taking up the lost motion, substantially as described.

8. In a contact device for overhead trolleys, the combination with a frame supported above the normal line of the trolley-wire, contact-pieces carried by said frame and means for deflecting said wire out of its normal line between the ends of said contact-pieces, whereby the trolley-wire serves to guide the trolley-wheel into contact with said contact-pieces, and one of said pieces being electrically connected with said wire, substantially as described.

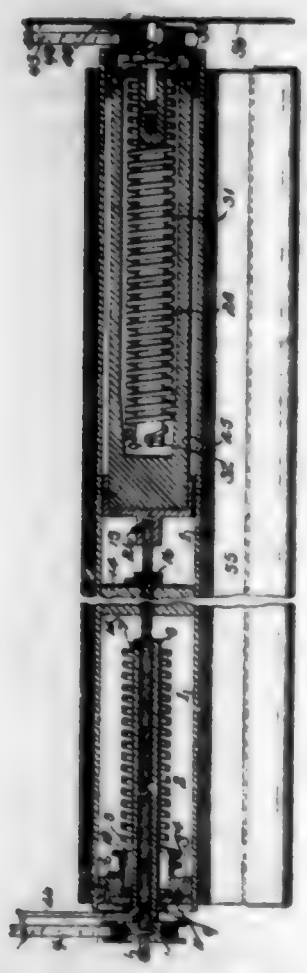
9. In a contact device for overhead trolleys, the combination with contact-pieces supported above the normal line of the trolley-wire, of means deflecting said wire out of its normal line between the ends of the contact-pieces, the contact-pieces so disposed as to guide the trolley-wheel in the normal line of the trolley-wire, one of said pieces being electrically connected to the trolley-wire, substantially as described.

818,516. SHADE-ROLLER AND SUPPORT THEREFOR. ORESTES S. BROWN, Milwaukee, Wis. Filed Mar. 2, 1905. Serial No. 248,050.

Claim.—1. In a device of the described class; the combination of a shade-roller, provided with tubular sockets in each end; an axial support for said roller, provided with winding-drums at each end of the roller; flexible supporting-bands arranged to wind upon the said drums; a spring in one of said sockets and arranged to actuate the roller; another spring in the other socket arranged to actuate the roller; suitable catches normally controlling the reaction of the respective springs; and non-rotatable elements in said roller, each connected with one of the springs and provided with arms loosely engaging the bands above the drums.

2. In a device of the described class; the combination of a shade-roller provided with a tubular socket in one end; a hollow cylinder located in said socket and projecting axially therefrom; a drum mounted upon the projecting end of said cylinder; a supporting-band wound upon said drum; a journal-pin loosely connected with the supporting-band and constituting a non-rotatable element mounted in said cylinder; and a catch on said cylinder adapted to

engage said non-rotatable element; together with a spring connected with said non-rotatable element, and also connected to rotate said cylinder.



3. In a device of the described class; the combination of a shade-roller, provided with tubular sockets in each end; a rod extending axially through one of said sockets; a drum mounted on said rod; a non-rotatable sleeve encircling said rod and provided with a bearing for the shade-roller; a coiled spring connected with said sleeve and shade-roller to actuate the latter; a cylinder located in the other socket; a spring for actuating said cylinder; a non-rotatable bar located in said cylinder, having an axial projection extending outwardly therefrom; said spring being located within the cylinder and connected with the non-rotatable bar and cylinder respectively; a winding-drum mounted on said cylinder; flexible supporting-bands wound upon the winding-drums of said cylinder and rod; and catches located in operative relation to the non-rotatable sleeve and bar and arranged to prevent the reaction of said springs; together with means for holding said sleeve and bar from rotating.

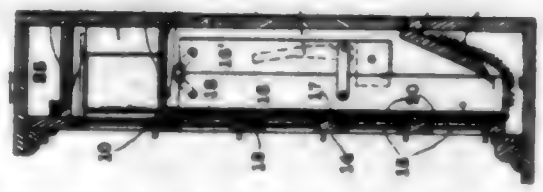
4. In a device of the described class; the combination of a cylinder; a rod extending axially from one end thereof; a winding-drum mounted on said cylinder, and another winding-drum mounted on said rod; flexible supporting-bands wound upon said drums and connected with suitable fixed points of support; a shade-roller journaled on said cylinder and rod; a spring for actuating said shade-roller; and non-rotatable elements within said shade-roller, having arms extending upwardly and loosely engaging the supporting-bands above the drums; said actuating-springs for the cylinder and shade-roller being connected with said non-rotatable elements.

5. In a device of the described class, the combination of a traveling support provided with an intermediate cylinder and having winding-drums at each end; flexible hanger connections wound upon said winding-drums and connected with fixed points of support; non-rotatable elements carried by said traveling support a shade-roller mounted upon said traveling support; and springs each having one end connected with one of the non-rotatable elements one of said springs being located in the cylinder, and operatively connected with the traveling support, and the other spring being operatively connected with the shade-roller.

6. In a device of the described class; the combination of a shade-roller; a cylinder independently rotatable therein; a fixed bar located in said cylinder; a spring coiled upon the bar and connected with the bar and cylinder at its respective ends; and a winding-drum connected with said cylinder.

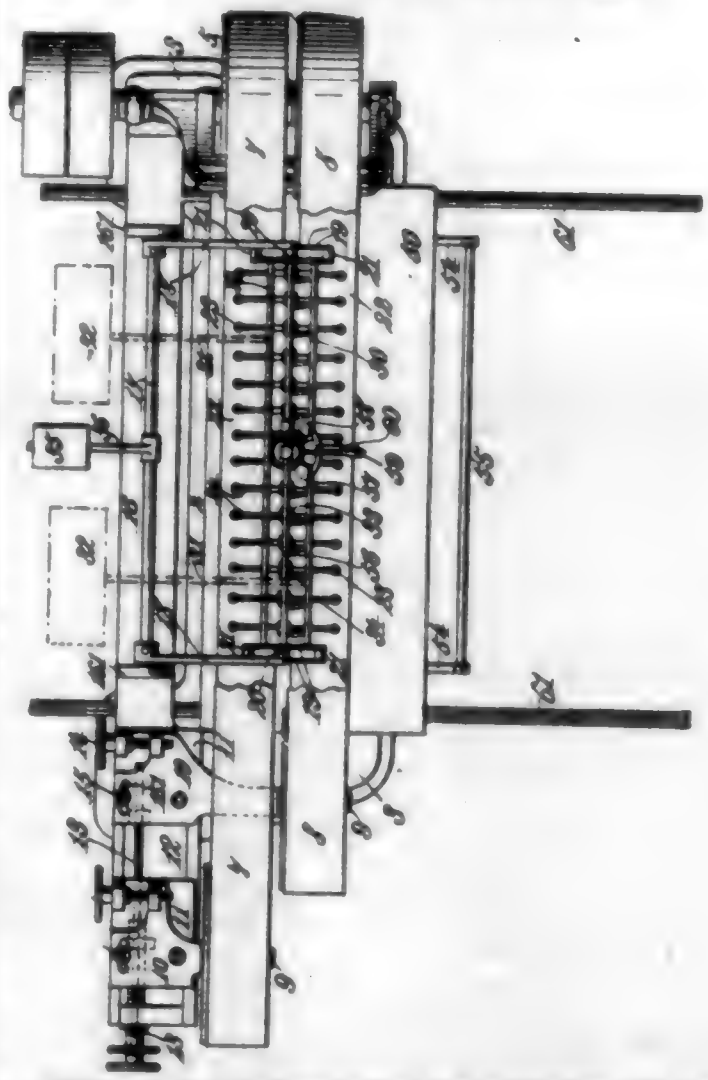
818,517. FOLDING BED. WILLIAM L. CALDWELL, Indianapolis, Ind. Filed June 27, 1904. Serial No. 214,277.

Claim.—1. The combination, in a folding-bed structure, of a suitable containing-casing carrying at its upper end means for mating with the lower end of a bookcase-section, a swinging bed member mounted in said casing, glass panels carried by the exposed face of said swinging bed member, a pocket formed behind each of said glass panels, and an imitation-book board adapted to fit in said pocket, and carrying upon one face imitations of the backs of books.



2. The combination, in a folding bed structure, of a suitable containing-casing, a swinging bed member mounted therein, glass panels carried by the exposed face of said bed member, an open-ended pocket formed behind each of said glass panels, and a filling-board adapted to enter said pocket and extend across the glass panels.

818,518. DOUBLE-BELT SANDER. DE LASKI T. CLEMONS, Hornellsville, N. Y. Filed Nov. 16, 1904. Serial No. 232,963.



Claim.—1. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a pressure device to hold the belt to the work, a source of fluid-pressure, connections between said pressure device and the source of pressure, and means for controlling said pressure connections.

2. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a flexible belt-guide, and pressure devices operated by fluid-pressure to hold said belt-guide and belt against the work.

3. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a flexible belt-guide, and a series of fluid-pressure-operated pins to hold said belt-guide and belt against the work.

4. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a flexible belt-guide, and fluid-pressure-operated pins by which said belt-guide is supported and the said guide and belt held against the work.

5. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, fluid-pressure-operated means to hold said belt against the work, a high-pressure pipe, a low-pressure

pipe, and means for connecting said fluid-pressure-operated means with either of said pipes.

6. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a plurality of fluid-pressure-operated devices to force said belt against the work, a high-pressure pipe, a low-pressure pipe, and means for connecting said pressure devices with either one or both of said pipes.

7. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts running in fixed angular relation to the work, a pressure device for each of said belts, and means for moving either one of said belts toward or from the work without changing its angular relation thereto.

8. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts movable toward or from the work, and connections between said belts whereby movement of either belt will cause movement of the other in an opposite direction.

9. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, belt-guides for each of said belts, a toggle-frame supporting said belt-guides, and means for rocking said toggle-frame to throw one or the other of said guides against its belt and hold said belt against the work.

10. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, belt-guides for each of said belts, a pressure device for each of said belt-guides, a toggle-frame supporting said belt-guides and pressure devices, and means for rocking said toggle-frame to throw one or the other of said guides and pressure devices against its belt and hold said belt against the work.

11. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, a belt-guide for each of said belts, a normally elevated supporting-frame for said guides, manually-controlled means for depressing said supporting-frame, and means for throwing one or the other of said guides against its belt and hold said belt against the work.

12. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, a belt-guide for each of said belts, a pressure device for each of said guides, a normally elevated supporting-frame for said guides, manually-controlled means for depressing said supporting-frame, and means for throwing one or the other of said guides and pressure devices against its belt and hold said belt against the work.

13. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, a belt-guide for each of said belts, a toggle-frame to support said guides, counterweighted supporting-arms normally holding said frame and guides in elevated position, manually-controlled means for depressing said frame and guides, and manually-operated means for throwing said toggle-frame to an oblique position to bring one or the other of said belt-guides and belts into operative relation to the work.

14. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a belt-guide, groups of fluid-pressure pins arranged lengthwise of the belt-guide, a source of pressure, and independent controlling-cocks for each group of pressure-pins.

15. In a sanding-machine, the combination with a suitable work-support, of a traveling sand-belt, a belt-guide, groups of fluid-pressure pins arranged lengthwise of the belt-guides, a high-pressure supply, a low-pressure supply, and independent cocks for each group of pins controlling both the high-pressure and low-pressure supply.

16. In a sanding-machine, the combination with a suitable work-support, of two traveling sand-belts, belt-guides for each of said belts, groups of fluid-pressure pins arranged lengthwise of the belt-guides, a source of fluid-pressure, and a single cock for one or more of the groups of pressure-pins for each belt-guide.

17. In a sanding-machine, the combination with a suitable work-support and two traveling sand-belts, pressure mechanism comprising movable frames, supporting-plates carried by said frames, fluid-pressure cylinders on said plates, pressure-pins in said cylinders, belt-guides hung from said pins, and means for rocking said frames to bring one or the other of said belt-guides into operative relation to its belt and the work.

18. In a sanding-machine, the combination with a suitable work-support and two traveling sand-belts, of pressure mechanism comprising movable frames, supporting-plates carried by said frames, fluid-pressure cylinders on said plates, pressure-pins in said cylinders, belt-guides hung from said pins, a rock-shaft carried by said frames, and manually-operated means for rocking said shaft and frames to bring one or the other of said belt-guides into operative relation to its belt and the work.

19. In a sanding-machine, the combination with suitable sanding instrumentalities, of a vertically-adjustable work-support, vertically-adjustable pressure mechanism to hold said sanding instrumentalities against the work, and means for simultaneously adjusting said work-support and pressure mechanism to accommodate different thicknesses of work.

20. In a sanding-machine, the combination with suitable sanding instrumentalities, of a work-support, supporting-posts for said work-support, means for adjusting said work-support vertically on its posts, pressure mechanism to hold said sanding instrumentalities against the work, and means for adjusting said pressure mechanism vertically simultaneously with the adjustment of the work-support.

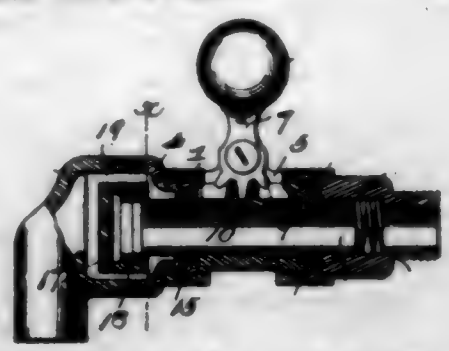
21. In a sanding-machine, the combination with a traveling sand-belt, of a work-support, supporting-brackets thereon, screw-threaded posts engaged by said brackets, sprocket-wheels carried by said brackets and threaded on said posts, pressure mechanism to hold the belt against the work, pull-rods connected with said pressure mechanism to raise and lower the same, brackets on the work-support through which said pull-rods pass, sprocket-wheels carried by said brackets, and a drive-chain engaging the work-support and pressure mechanism sprocket-wheels to give a simultaneous adjustment thereto.

22. In a sanding-machine, the combination with suitable sanding instrumentalities, of a work-table, counterbalanced pressure mechanism above said table, pull-rods connected with said pressure mechanism, and vertically-movable bars carried by said table and engaging said pull-rods to move said counterbalanced pressure mechanism into operative relation to the work-table and work.

23. In a sanding-machine, the combination with suitable sanding instrumentalities, of a work-table, counterbalanced pressure mechanism above said table, pull-rods connected with said pressure mechanism, brackets on said pull-rods, rollers mounted on said brackets and extending beneath said table, and vertically-movable bars on said table engaging the rollers on said pull-rod brackets to move the pressure mechanism into operative relation to the work-table and work.

24. In a sanding-machine, the combination with suitable sanding instrumentalities, of vertically-movable supporting-tracks, of a work-table mounted on said tracks, counterbalanced pressure mechanism above said table, pull-rods extending downwardly from said pressure mechanism, brackets on said tracks through which said pull-rods pass, sleeves threaded on said pull-rods and vertically movable in said brackets, sprocket-wheels carried by said brackets and splined to said sleeve, brackets carried by said sleeves, rollers on said brackets, and vertically-movable bars hung from said work-table and engaging said rollers to move said pressure mechanism into operative relation to the work-table and work.

818,519. VALVE. MICHAEL J. CONNORS, Kansas City, Mo. Filed Sept. 22, 1904. Serial No. 226,561.



Claim.—1. A valve comprising a casing having a water-tight chamber at one end with a by-pass therearound, and an endwise-movable tube open at both ends and arranged within said casing one end of said tube adapted to be inserted into said chamber to shut off the flow while the other end remains always open.

2. A valve comprising a casing having a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube open at both ends arranged within said casing, and means to actuate said tube to thrust one end thereof into said chamber to stop the flow or to withdraw said tube to permit the flow through the by-pass.

3. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube open at both ends and arranged within said casing, and means extending into the slot in said casing to actuate said tube to thrust one end thereof into said chamber to stop the flow or withdraw said tube to permit the flow through the by-pass.

4. A valve comprising a casing having a slot therein and a wa-

ter-tight chamber at one end with a by-pass therearound, an endwise-movable tube open at both ends and arranged within said casing, and means attached to said casing and tube extending into the slot in said casing to actuate said tube to thrust one end thereof into said chamber to stop the flow or withdraw said tube to permit the flow through the by-pass.

5. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube open at both ends and arranged within said casing adapted to have one end thereof thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, and means extending through the slot in the casing and connecting with the chute, to actuate said tube.

6. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube arranged within said casing adapted to be thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, a hand-lever pivoted to said casing and means on said tube extending into the slot in the casing for connecting said lever and tube for actuating the latter.

7. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube arranged within said casing adapted to be thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, a hand-lever pivoted to said casing, means extending into the slot in the casing for connecting said lever and tube for actuating the latter, and means to automatically close the valve.

8. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube arranged within said casing adapted to be thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, a hand-lever pivoted to the casing and having gear-teeth at its lower end extending into the slot of the casing, said tube also having teeth or lugs adapted to be engaged by the teeth on said lever for actuating said tube.

9. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube arranged within said casing adapted to be thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, a hand-lever pivoted to the casing and having gear-teeth at its lower end extending into the slot of the casing, said tube also having teeth or lugs adapted to be engaged by the teeth on said lever for actuating said tube, and a coiled spring arranged between the end of the tube and the inner end wall of the casing to automatically close the valve.

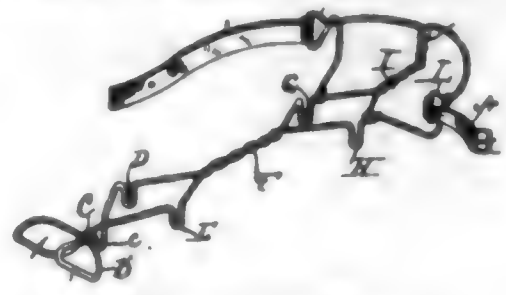
10. A valve comprising a casing having a slot therein and a water-tight chamber in one end thereof with a by-pass therearound, a hand-lever pivoted to said casing, an endwise-movable tube arranged within said casing and adapted to have one end thereof thrust into said chamber to stop the flow and withdrawn therefrom to permit the flow through the by-pass, said tube also having a lug extending into the slot in said casing for connection with said hand-lever.

11. A valve comprising a casing having a slot therein and a water-tight chamber at one end with a by-pass therearound, an endwise-movable tube arranged within said casing adapted to be thrust into said chamber to stop the flow or withdrawn therefrom to permit the flow through the by-pass, a hand-lever pivoted to the casing and having gear-teeth at its lower end adapted to engage similar teeth on the tube through the slot in the casing, said teeth so arranged on said lever that said lever normally stands in an inclined position, said lever also having a laterally-projecting pin engaged by a spring fixed to the casing, said spring normally holding the lever in such position as to close the valve.

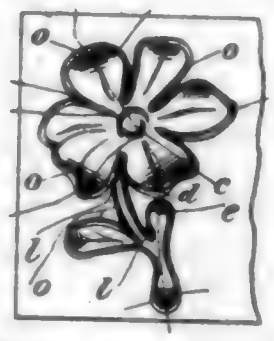
12. A valve comprising a casing made in sections having the joints therebetween suitably packed, one section of said casing having a slot therein, another section provided with a water-tight chamber arranged therein with a by-pass therearound, an endwise-movable tube mounted in said first-mentioned section and adapted to have one end thereof thrust into said chamber to stop the flow, and means, to actuate said tube, having connection therewith through said slot.

818,520. ICE-CREEPER. CHARLES O. COOK, Bernardston, Mass. Filed June 26, 1905. Serial No. 267,092.

Claim.—An ice-creeper comprising a single strand of wire looped approximately centrally to embrace the toe of a shoe, the said wire being twisted from the loop, a suitable distance, a tang or spur bent from one of the sections of the wire, the said section diverging from the said tang, two tangs in transverse alinement, bent from the wire, the said sections of the wire being then converged, a shank formed by twisting the wire, heel-tangs in transverse alinement formed by bending the wire on itself, a heel-supporting section extending rearwardly, a heel-embracing section formed by diverging portions of the wire, strap-securing loops bent from the sections of the wire, and heel-supporting sections formed by the converging ends of the wire and means for securing the terminals of the section to the body of the device, near the rear tangs.



818,521. STENCIL-PLATE FOR PRINTING IN COLORS. GEORGES COURTOT, Paris, France. Filed June 8, 1903. Serial No. 160,660.



Claim.—A stencil-plate for color-printing on fabrics and the like the edges of the design or pattern of which are bent over outside the plate so as to form openings of various sizes through which the color-sprays produce on the fabric arranged behind such plate a similar design in shaded and blended colors, substantially as set forth.

818,522. TREADLE-PUMP. JOHN COX, Vandalia, Ill. Filed Jan. 3, 1902. Serial No. 88,192.



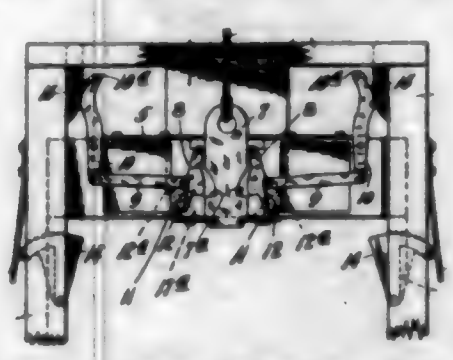
Claim.—1. In a treadle-pump, a vertically-movable discharge-pipe having a plunger-head, a valve therein, a chamber to receive said plunger-head and having a valve therein, a treadle to coöperate with said discharge-pipe, a flexible coupling between said treadle and said discharge-pipe comprising a shoulder upon the said discharge-pipe, a collar adjustably mounted above said shoulder, a link composed of two eyes, one of which is clamped between said shoul-

der and said collar; a clamping member secured to the under side of the treadle, a rod adapted to reciprocate between said clamping member and the under side of the treadle as the pipe and treadle ascend, an eye integral with said rod and being connected to the other eye of the said link.

2. In a treadle-pump, a vertically-movable discharge-pipe, a treadle to coöperate therewith; a flexible coupling between said treadle and said discharge-pipe comprising a shoulder upon the said discharge-pipe, a collar adjustably mounted above said shoulder, a link composed of two eyes, one of which is clamped between said shoulder and said collar; a clamping member secured to the under side of the treadle, a rod adapted to reciprocate between said clamping member and the under side of the treadle as the pipe and treadle ascend, an eye integral with said rod and being connected to the other eye of the said link, and means to prevent the said rod from withdrawing from the clamping member.

818,523. SAFETY DEVICE FOR HOISTING APPARATUS.

JOHN DAHLIN, Chisholm, Minn. Filed Oct. 16, 1905. Serial No. 283,330.



Claim.—1. The combination with upright guides, of a carriage-frame movable thereon, and a cable for raising and lowering said frame, a coupling detachably connecting said cable to said frame, a movable lock normally holding the parts of said coupling interlocked, means for moving said lock into a releasing position when said frame passes a predetermined point, and means for positively separating the parts of said coupling under the upward movement of the said frame and at a time after said lock has been released, substantially as described.

2. The combination with upright guides, of a carriage-frame movable thereon, and a cable for raising and lowering said frame, a coupling detachably connecting said cable to said frame, movable locks normally holding the parts of said coupling interlocked, means for moving said locks into releasing positions when said frame passes a predetermined point, and means for positively separating the parts of said coupling under the upward movement of the said frame and at a time after said locks have been released, substantially as described.

3. The combination with upright guides, of a carriage-frame movable thereon, and a cable for raising and lowering said frame, a separable coupling uniting said cable to said carriage-frame, a lever, and a link connecting said lever to the movable part of said coupling, and a trip located on one of said guides in the path of movement of one of the levers of said tripping connection, operative to effect the release of said cable from said carriage-frame, when the latter reaches a predetermined altitude, substantially as described.

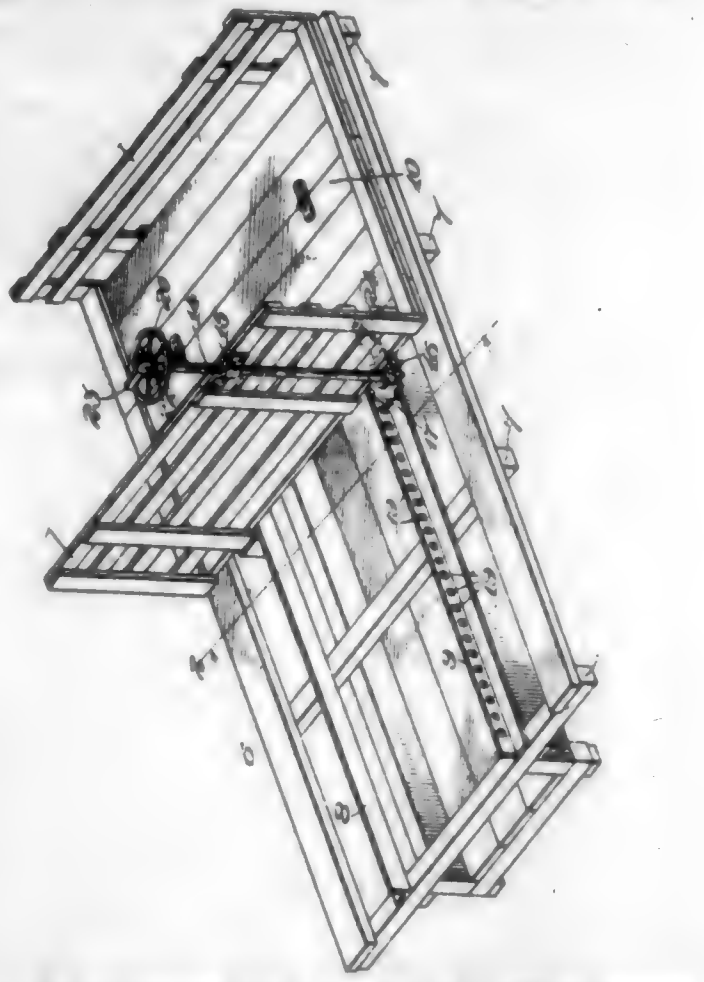
4. The combination with upright guides, of a carriage-frame movable thereon, and a cable for raising and lowering said frame, a coupling detachably connecting said cable to said frame, a movable lock normally holding the parts of said coupling interlocked, means for moving said lock into a releasing position when said frame passes a predetermined point, means for positively separating the parts of said coupling under the upward movement of the said frame and at a time after said lock has been released, and a latch for securing said frame against downward movement just before said lock has been released, substantially as described.

818,524. HAY-RACK.

JOSEPH DAIN, Ottumwa, Iowa. Filed Oct. 19, 1905. Serial No. 283,460.

Claim.—1. The combination with a hay-rack, of a movable platform thereon, a toothed wheel carried by said platform, means for turning said wheel, a device carried by the body of the said rack with which the teeth of said wheel engage, a projection on one face of said wheel, a bar adapted to be moved toward said wheel to engage such projection, and means for moving such bar, substantially as described.

2. The combination with a hay-rack, of a movable platform thereon, a toothed wheel carried by said platform, means for turning said wheel, a device carried by the body of the said rack with which the teeth of said wheel engage, a series of projections on one face of said wheel, a spring-bar adapted to be forced toward said wheel to engage such projections, and means for moving said bar and holding the same toward the face of said wheel, substantially as described.



3. The combination with a hay-rack, of a movable platform thereon, a toothed wheel carried by said platform, means for turning said wheel, a device carried by the body of the said rack with which the teeth of said wheel engage, a series of projections on one face of said wheel, a spring-bar fixedly attached at one end and having its other end projecting opposite the said wheel, and a device attached to said projecting end of the bar and adapted to be moved to force said spring-bar between two of said projections, substantially as described.

4. The combination with the body of a hay-rack, of a movable platform thereon, a hollow, upright, axially-movable post, a toothed wheel secured to the lower end of said post, a device carried by the hay-rack body with which the teeth of said wheel engage, a longitudinally-movable rod in said hollow post, and a locking device secured to the said rod and adapted by the movement of said rod to be brought into contact with the said wheel, substantially as described.

5. The combination with the body of a hay-rack, of a movable platform thereon, a hollow, upright, axially-movable post, a toothed wheel secured to the lower end of said post, a device carried by the hay-rack body with which the teeth of said wheel engage, a longitudinally-movable rod in said hollow post, a spring-bar fixedly secured at one end and having its other end connected with said rod, and means connected with the upper end of said rod for normally holding said spring-bar away from said toothed wheel, substantially as described.

6. The combination with the body of a hay-rack, of a movable platform thereon, a hollow, upright, axially-movable post, a toothed wheel secured thereto around the lower end of the post and provided on its lower face with a plurality of projections, a device carried by the rack-body with which the teeth of such wheel engage, a longitudinally-movable rod having its lower end projecting out of the lower end of said post, a bar attached to the lower end of the post and adapted to be drawn up to lie between two of the projections on the lower face of the wheel, and an operating device secured to the upper end of said rod, substantially as described.

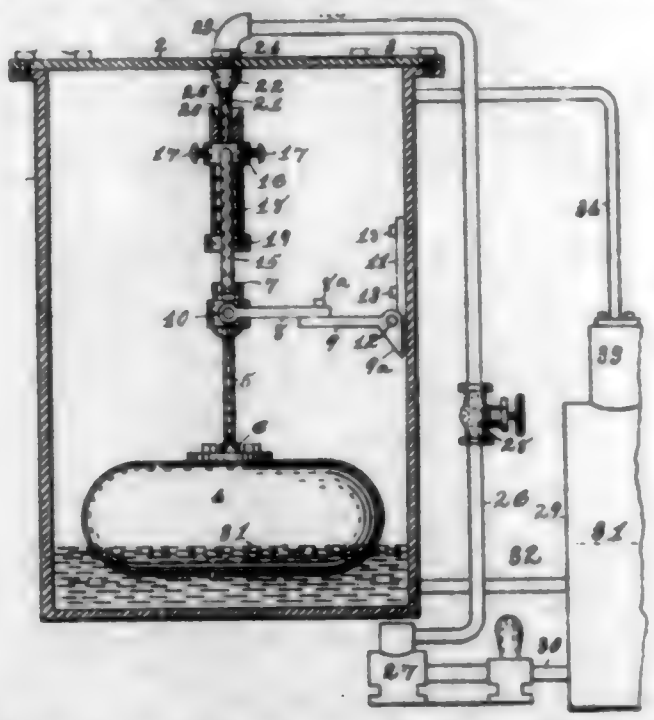
7. The combination with the body of a hay-rack, of a movable platform thereon, a hollow, upright, axially-movable post, a toothed wheel secured thereto around the lower end of the post and provided on its lower face with a plurality of projections, a device carried by the rack-body with which the teeth of such wheel engage, a longitu-

dinally-movable rod having its lower end projecting out of the lower end of said post, a bar of spring material attached at one end to a fixed support and at its other end to the lower end of said rod, and an operating device at the upper end of said rod, substantially as described.

8. The combination with the body of a hay-rack, of guide-rails thereon each formed of an angle-iron, one portion of one of which is provided with a series of openings, a platform movable on said guide-rails, a toothed wheel adapted to engage the rail provided with said openings, and means for turning said wheel, substantially as described.

9. The combination with the body of a hay-rack, of guide-rails thereon each formed of an angle-iron, a platform having wheels or rollers adapted to run on the horizontal portions of said angle-irons, a toothed wheel adapted to engage a series of openings in the vertical portion of one of said angle-irons, and means for turning said toothed wheel, substantially as described.

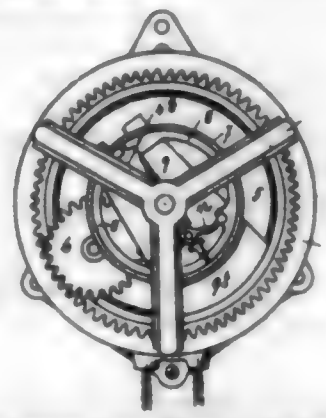
818,525. **WATER-LEVEL REGULATOR.** ARTHUR B. DANKE, Neenah, Wis. Filed Aug. 4, 1905. Serial No. 272,649.



Claim.—1. In a water-level regulator for holding the water in a steam-boiler at a substantially uniform level, the combination with a boiler and a feed-pump, of a tank for holding steam in its upper, and water in its lower part, it being located with reference to the boiler so that their water-levels may correspond, pipes connecting the steam and water spaces of the boiler with those of the tank, a float arranged within the tank, a stem extending upward from said float, links connecting said stem with the wall of the tank for guiding its upward and downward movements, a pipe suspended from a universal joint above said stem having a dishing upper end and a closed lower end, a smaller pipe rigidly fixed to and depending from the center of said tank-cover, a boss of downward-decreasing diameter upon said pipe, below said cover, fitted to said dishing end of the first-named pipe, an opening through said smaller pipe near the lower end of said boss, said pipe having a closed lower end and being of a length downward from said boss nearly equal to the length of said first-named pipe and being fitted to enter its bore and have the larger pipe moved vertically upon the smaller, for closing and-opening the opening therein, and a pipe connecting the upper end of said perforated pipe with a pump which is arranged for delivering water from a suitable supply to the boiler, substantially as described.

2. A water-level regulator, consisting of a tank adapted to be connected at its upper end with the steam-space of a boiler, and its lower end with the water-space thereof, a float arranged to be floated by the water in said tank, a stem extending upward from said float, links connecting said stem with the wall of said tank for guiding its upward and downward movements, a pipe suspended from a universal joint above said stem, a dishing upper end to said pipe and a closed lower one, a smaller pipe rigidly fixed to and depending from the center of said tank-cover, a boss of a downward-decreasing diameter upon said pipe, below said cover, fitted to said dishing end of the first-named pipe, a perforation through said smaller pipe near the lower end of said boss, said pipe having a closed lower end and being of a length downward from said boss nearly equal to the length of the first-named pipe, and being fitted to enter its bore and to have the pipe moved vertically upon the smaller one for closing and opening the perforation therein, and a pipe connecting the upper end of said perforated pipe with a pump which is adapted for delivering water from a suitable supply to a boiler, substantially as set forth.

818,526. **FIRE-ESCAPE.** CHARLES F. DAVY, Mohawk, N. Y. Filed Jan. 25, 1906. Serial No. 297,739.



Claim.—1. A fire-escape comprising a frame, a shaft carried thereby, a wheel journaled upon said shaft, a cable running upon said wheel, a stationary ring about said shaft, a centrifugally-movable weighted member, semicircular brake-shoes adapted to engage with the stationary ring, a rotatable pinion upon the shaft driving said brake-shoes and carrying said weighted member, gearing connecting the said wheel with said gear-pinion for driving the same, a toggle-joint connecting the said brake-shoes and engaging with the weight, substantially as set forth.

2. A fire-escape comprising a frame and a shaft carried thereby, a wheel mounted upon the shaft within the frame and a cable around the wheel, a stationary friction-ring around said shaft, semicircular expanding brake-shoes within the stationary ring, a gear-pinion mounted on the shaft and engaging with and serving to drive said friction-shoes, a centrifugally-movable weight also mounted upon said gear-pinion, a toggle-joint-lever connection between said semicircular brake-shoes and engaging with the said centrifugally-movable weight to expand the shoes within the friction-ring, a stationary internal gear in said frame surrounding said gear-pinion and a planet-gear on the said wheel engaging both with the said internal gear and the said gear-pinion on the shaft, substantially as set forth.

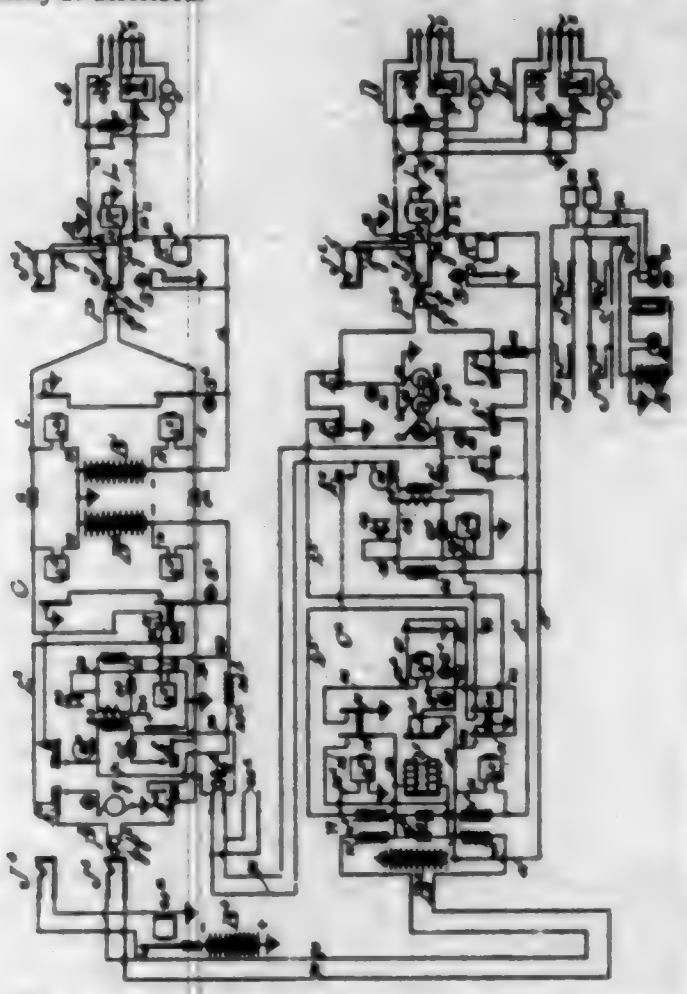
3. The combination in a fire-escape of an inclosing substantially circular frame, a shaft axially mounted therein, a wheel mounted upon said shaft and inclosed within the frame, a cable around said wheel, a stationary ring surrounding the said shaft, semicircular brake-shoes arranged within said stationary ring, a rotatable pinion provided upon said shaft and engaging with said friction-shoes to drive the same, a centrifugally-movable weight mounted also upon said pinion, a toggle-joint-lever connection between said brake-shoes connected at the knuckle with the said movable weight, and a gearing for driving the said gear-pinion from the said wheel, substantially as set forth.

818,527. **TELEPHONE TRUNKING SYSTEM.** WILLIAM W. DI[illegible], Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 14, 1902. Serial No. 115,406.

Claim.—1. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, a signal at the incoming end of the trunk, a trunk-relay at said end actuated by current over the trunk when connection is established at the outgoing end for preventing the operation of said signal, means actuated when the called subscriber responds for entirely depriving said relay of operating-current, and means whereby said relay still remains in operated position although deprived of operating-current through any of its windings and prevents the actuation of said signal during conversation, substantially as described.

2. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a polarized relay at the incoming end of the trunk, a signal at said incoming end whose actuation depends upon said relay, and means to direct current through said relay in one direction when connection is severed at the outgoing end and in the opposite direction when connection is established at said end to effect the desired operation of the relay, substantially as described.

3. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized relay at the incoming end of the trunk, a signal at said incoming end whose actuation depends upon said relay, and means to direct current through said relay in one direction before connection is established at the outgoing end and to direct current through the same in the opposite direction after the connection is established, substantially as described.



4. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized relay at the incoming end of the trunk, a signal at said incoming end whose actuation depends upon said relay, and means for normally sending current through said relay in one direction and to send it through the same in the opposite direction by the act of making the connection at the outgoing end of the trunk, substantially as described.

5. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized relay at the incoming end of the trunk, a signal at said incoming end whose actuation depends upon said relay, and means for sending current through said relay in one direction when connection is established with the outgoing end of the trunk and for sending it through said relay in the opposite direction when the said connection is severed, substantially as described.

6. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a source of current normally connected with the trunk, a trunk-relay connected between the trunk conductors at the incoming end, a signal whose actuation depends upon said relay, and means for reversing the connections of the said current source with the trunk when connection is established at the outgoing end of the trunk, substantially as described.

7. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay connected between the trunk conductors at the incoming end, a signal whose actuation depends upon said relay, and means for connecting the live pole of a current source with one of the conductors before connection is established and for connecting the same pole with the other conductor after connection is established, substantially as described.

8. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay at the incoming end of the trunk, a signal whose actuation depends upon said relay, a source of current connected with said trunk before connection is established therewith at the outgoing end, and a relay actuated when connection is established at said end for disconnecting said source, substantially as described.

9. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay connected at the incoming end of the trunk, a signal whose actuation depends upon said relay, a source of current at the outgoing end of the trunk connected therewith before connection is established with said end, and a relay actuated when connection is established for disconnecting said source, substantially as described.

10. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay at the incoming end of the trunk, a signal at said end whose actuation depends upon said relay, a source of current connected with the outgoing end before connection is established and adapted to send current in one direction through said relay, a relay also connected with the outgoing end of the trunk actuated when connection is established for disconnecting said source, and means for directing current through said trunk-relay in the reverse direction when connection is established at the outgoing end, substantially as described.

11. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay at the incoming end of the trunk, a signal whose actuation depends upon said relay, a source of current connected with said trunk before connection is established and adapted to send current through said relay in one direction, a relay connected at the outgoing end of the trunk, and means for sending an operating-current through said relay to disconnect said source and to also send a current in the reverse direction through said polarized relay when connection is established with the outgoing end of the trunk, substantially as described.

12. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay at the incoming end of the trunk, a signal whose actuation depends upon said relay, a source of current normally connected with one side of said trunk, a relay connected with the other side of the trunk, said relay presenting sufficient retardation to prevent short-circuiting of the voice-currents during conversation, a cord-circuit to connect with the outgoing end of the trunk, a source of current associated therewith and means for sending an operating-current from said source through said relay to open the connection of the first-named source and to direct current in the opposite direction through said trunk-relay, substantially as described.

13. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect, and a called telephone-line with which its incoming end is adapted to connect, of a polarized trunk-relay at the incoming end of the trunk, a signal whose actuation depends upon said relay, a normal connection with a source of current to actuate said relay in one direction, a relay connected with the other side of said trunk to sever the said connection from said source, said relay presenting sufficient retardation to prevent the short-circuiting of the voice-currents during conversation, a cord-circuit connected with the outgoing end, a supervisory signal associated therewith, and means for placing said supervisory signal in condition to operate by current flowing over one side of the talking-circuit and through said relay, said relay being actuated at the same time to open said connection, and current being simultaneously directed through said polarized relay in the reverse direction to correspondingly actuate it, substantially as described.

14. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a high-resistance polarized relay at the incoming end of the trunk connected in the metallic circuit thereof, a signal at the incoming end whose actuation depends upon said relay, a supervisory signal associated with the outgoing end of the trunk placed in condition to operate when connection is established therewith, and means for removing the high resistance of said relay from the trunk when the called subscriber responds, whereby a sufficient flow of current is permitted

therein to render the supervisory relay inoperative, substantially as described.

15. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a high-resistance polarized trunk-relay at the incoming end of the trunk connected in the metallic circuit of the outgoing end, a signal at the incoming end whose actuation depends upon said relay, a supervisory relay associated with the outgoing end of the trunk placed in condition to operate by current flowing over the metallic trunk-line and through said high resistance, and means for removing said high resistance from the trunk when the called subscriber answers to permit a sufficient flow of current therein to render the supervisory signal inoperative, substantially as described.

16. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a high-resistance polarized trunk-relay connected between the trunk-conductors at the incoming end, a source of current connected with the trunk and adapted to send current through said relay in one direction, a signal at the incoming end whose actuation depends upon said relay, a supervisory signal associated with the outgoing end of the trunk placed in condition to operate by current flowing over a portion of the talking-circuit and through said high-resistance relay and means for removing the resistance of said relay from between the trunk-conductors when the called subscriber responds, whereby a sufficient flow of current in the trunk is permitted to render the supervisory signal inoperative, substantially as described.

17. The combination with a trunk-line, of a calling telephone-line with which its outgoing end is adapted to connect and a called telephone-line with which its incoming end is adapted to connect, of a high-resistance-polarized trunk-relay at the incoming end of the trunk-circuit thereof, a signal whose actuation depends upon said trunk-relay, means for causing current to flow through said relay in one direction before connection is established with the outgoing end of the trunk to operate it in one direction, a cord-circuit to connect with said end, a supervisory signal associated therewith and placed in condition to operate by current flowing over one side of the trunking-circuit, said latter current flowing in the reverse direction through said trunk-relay to operate it in the reverse direction, said high-resistance relay serving to limit the flow of current in the trunk, and means for cutting out said high resistance when the called subscriber responds to permit an increased flow of current in the trunk to render said supervisory signal inoperative, substantially as described.

18. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end placed in condition to operate when connection is established with the called line, a polarized relay at the incoming end, and means to operate said polarized relay in the proper direction when connection is established at the outgoing end of the trunk to prevent the operation of said signal, substantially as described.

19. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, means to place said signal in condition to operate when connection is established with the called line, a polarized relay at the incoming end of the trunk and means to direct current through said relay in one direction before connection is established at the outgoing end and in the reverse direction when connection is established, the latter current being in the proper direction to prevent the operation of the signal, substantially as described.

20. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, and means actuated by current flowing over said trunk in one direction when connection exists with the called line to prevent the operation of said signal and by current in the reverse direction to actuate said signal when the connection is severed at the outgoing end, substantially as described.

21. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end, a polarized relay at said end and means to direct current through said relay in the proper direction to prevent the operation of said signal when a connection is established at the outgoing end, and further means when connection is severed at the outgoing end to direct current through said relay in the reverse direction to suitably operate the same, substantially as described.

22. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, a relay actuated over a portion of the talking-circuit when connection is established with the called line to place said signal in condition to operate, a polarized relay at the incoming end and connected with the outgoing end of the trunk, said relay being actuated by current sent through the same in the proper direction when connection is established at the outgoing end to prevent the operation of said signal, substantially as described.

23. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, a relay actuated over a portion of the talking-circuit when connection is established with the called line to place said signal in condition to operate, a polarized relay at the incoming end and connected with the outgoing end of the trunk, and means to direct current through said polarized relay when connection is established at the outgoing end, said current being in a direction to actuate the relay so as to prevent the said signal from operating, and further means actuated upon severing the connection at the outgoing end, said current being in a reverse direction to actuate said relay so as to cause said signal to operate, substantially as described.

24. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal for the incoming end of the trunk, a relay actuated over one side of the talking-circuit when connection is established with the called line to place said signal in condition to operate, a polarized trunk-relay at the incoming end of the trunk and connected with the outgoing end, a source of current connected with said trunk to normally send a current through the relay in a direction to actuate the same so as to permit said signal to operate and means for directing current over the trunk in the reverse direction when a connection is established at the outgoing end to operate said relay in the reverse direction and prevent said signal from operating, substantially as described.

25. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, a relay actuated over one side of the talking-circuit to place said signal in condition to operate, a polarized trunk-relay at the incoming end of the trunk and connected with the outgoing end, a source of current associated with the outgoing end and connected with the trunk when a conversational circuit is established to direct current through said polarized relay in a suitable direction to prevent the operation of said signal, and a relay responsive to current in the called line adapted to deprive said trunk-relay of operating-current during conversation, the armature of said polarized relay remaining in the position to which it was last moved during the time the trunk-relay is deprived of operating-current whereby the said signal is maintained inert, substantially as described.

26. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a disconnect-signal at the incoming end of the trunk, a relay actuated over one side of the talking-circuit when connection is established with the called line to place said signal in condition to operate, a polarized relay at said incoming end adapted to receive current in a suitable direction when a connection is first established at the outgoing end to actuate the armature thereof in such manner as to prevent the operation of said signal, means for depriving the same of operating-current upon the response of the called subscriber, the armature of said trunk-relay remaining in the position to which it was last moved during the time the relay is deprived of operating-current whereby the said signal remains inert, substantially as described.

27. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a guard-signal at the incoming end and connected at the outgoing end, a source of current normally connected with the trunk to direct current through said relay so as to actuate it in such manner as to prevent the normal operation of said signal, and means to disconnect said source and direct current through said relay in the reverse direction when a connection is established at the outgoing end to actuate said relay in the proper direction to operate said signal, substantially as described.

28. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a signal at the incoming end of the trunk, a relay adapted to be actuated over one side of the talking-

circuit when connection is established with the called line, a polarized trunk-relay at said incoming end, said signal being actuated to give a guard indication when the first-named relay is deenergized and the polarized relay is actuated in one direction by current sent over the trunk when the connection is established at the outgoing end, substantially as described.

29. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a signal at the incoming end of the trunk, a relay actuated over one side of the talking-circuit when connection is established with the called line, a polarized relay at the incoming end of the trunk, said signal being controlled by said two relays so as to give a guard indication when a connection exists at the outgoing end and before connection is established at the incoming end and to give a disconnect indication when connection exists at the incoming end and is severed at the outgoing end, substantially as described.

30. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, of a signal at the incoming end of the trunk, a relay actuated over one side of the talking-circuit when connection is established with the called line, a polarized relay at the incoming end of the trunk, said signal being entirely controlled by said two relays to operate the same to give a guard indication when the first-named relay is deenergized and the second is actuated by current over the trunk when the connection exists at the outgoing end only and to give a disconnect indication when the first-named relay is energized and the polarized relay is actuated by current flowing over the trunk when the connection has been severed at the outgoing end, substantially as described.

31. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord-circuit and placed in condition to operate by current flowing over a portion of the talking-circuit when the cord is connected with the trunk, a relay associated with the incoming end of the trunk and adapted to be operated over a portion of the talking-circuit when the trunk is connected with the called line, a testing-circuit for said incoming end of the trunk normally completed over one strand thereof and through the normal contacts of said relay, said testing-circuit being severed and the trunk-circuit being placed in condition for talking by the actuation of said relay, a ringing-signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, means for rendering inert and for locking out said ringing-signal during the remainder of the connection, a polarized trunk-relay at the incoming end of the trunk actuated in one direction by current over the trunk from the cord-circuit when the cord-circuit is connected with the trunk, means to permit the flow of current over the metallic trunk-line to render said supervisory signal inert when the called subscriber responds, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of the first-named relay, means for operating said signal when the cord-circuit is disconnected from the trunk and the trunk is connected with the subscriber's line, whereby a disconnect indication is given, and further means for actuating said signal when the cord is connected with the trunk and the trunk is disconnected from the trunk-line, whereby a guard indication is given, a source of current to furnish current for the operation of the relays and signals and to charge the transmitters for talking purposes, substantially as described.

32. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, a trunk-relay at the incoming end of the trunk of relatively high resistance and connected in series in the metallic circuit of the outgoing end, a source of current and a relay normally connected in series in said metallic circuit at the outgoing end, the resistance of said trunk-relay being such as to prevent a sufficient flow of current in said metallic circuit to operate said second relay, substantially as described.

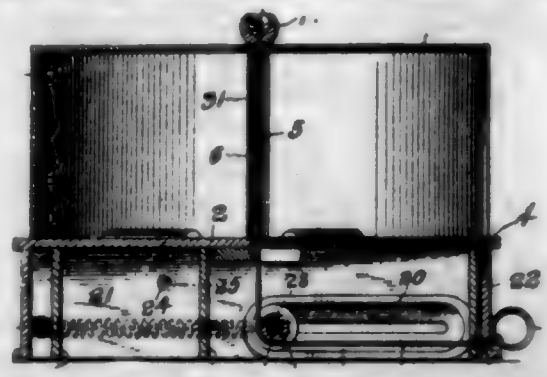
33. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, a trunk-relay at the incoming end of the trunk of relatively high resistance and connected in series in the metallic circuit of the outgoing end, a source of current and a relay normally connected in series in said metallic circuit at the outgoing end, the resistance of said trunk-relay being such as to prevent a sufficient flow of current in said metallic circuit to operate said second relay, said second relay being operated during a connection at the outgoing end of the trunk to open the normal connection to said source, substantially as described.

34. The combination with a trunk-line adapted to connect with a calling telephone-line at its outgoing end and with a called telephone-line at its incoming end, a polarized trunk-relay at the incoming end of the trunk of relatively high resistance and connected in series in the metallic circuit of the outgoing end, a source of current and a relay normally connected in series in said metallic circuit at the outgoing end, the resistance of said trunk-relay being such as to prevent a sufficient flow of current in said metallic circuit to operate said second relay, said second relay being operated during a connection at the outgoing end of the trunk to open the normal connection to said source, substantially as described.

35. The combination with a trunk-line, of a cord-circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a relay legged to ground from one side of the talking-circuit established by the connection of the cord-circuit with the trunk, said relay having sufficient impedance to prevent the passage of voice-currents, a supervisory signal associated with the cord-circuit and placed in condition to operate by current flowing over a portion of the talking-circuit and through said relay when the cord is connected with the trunk, a source of current normally connected with the other side of the trunk-circuit at the outgoing end and adapted to be disconnected by the operation of said relay, a polarized trunk-relay at the incoming end of the trunk connected with said outgoing end and actuated in one direction by current from said source under normal conditions and in the opposite direction by current from the cord-circuit when the latter is connected with the trunk, a source of current at the incoming end, a relay also associated with the incoming end of the trunk and adapted to be operated by current from said source over one strand when connection is established with the called line, said relay serving when actuated to place the trunk in condition for conversation, a ringing-signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, a second relay responsive to current in the trunk from said source when the called subscriber answers his call, said latter relay serving to render the said ringing-signal inert, means for locking out said ringing-signal during the remainder of the connection, means operated by the said second relay to permit a flow of current over the metallic trunk-line to render said supervisory signal inert when the called subscriber responds, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of the first-named relay, said signal being actuated when the cord-circuit is disconnected from the trunk, and the trunk is connected with the called-subscriber's line and the called-subscriber's line is not in use, whereby a disconnection indication is given, said signal being also operated when the cord-circuit is connected with the trunk and the trunk is disconnected from the called line to give a guard indication, said source serving also to charge the transmitters for talking as well as for the operation of said relays and signals, substantially as described.

36. The combination with a trunk-circuit extending between different switchboard-sections and adapted to interconnect telephone-lines for conversation, of a polarized relay bridged across the circuit and having a high resistance, a signal associated therewith whose actuation depends upon said relay, a source of current normally connected at the opposite end of the trunk and adapted to send current through said relay to operate it in one direction, a cut-off relay for said end of the trunk, and means when connection is established therewith to sever said connection and to send current in the reverse direction through said relay, substantially as described.

818,528. **CHEESE-CUTTER.** ROGERS D. DRUMMOND, Poughkeepsie, N. Y. Filed June 5, 1905. Serial No. 263,793.



Claim.—1. A cutter of the character described, comprising a base, a centrally-disposed tubular upright thereon, said base and upright being formed with alining slots, and a flexible cutting element adapted to be moved through said slots, substantially as described.

3. A cutter of the character described, comprising a base, a centrally-disposed tubular upright thereon, said base and upright being formed with alining slots, a guide device slidable in said base and in alinement with its slot and a flexible cutting element passed over said guide and extending through said tubular upright and beneath the said base, substantially as described.

3. A cutter of the character described, comprising a base, a centrally-disposed tubular upright thereon, said base and upright being formed with alining slots, a spring-retracted guide and pulley slidably mounted in said base in alinement with its slot, a flexible cutting-wire passed over said pulley and extending through said tubular upright and beneath said base, substantially as described.

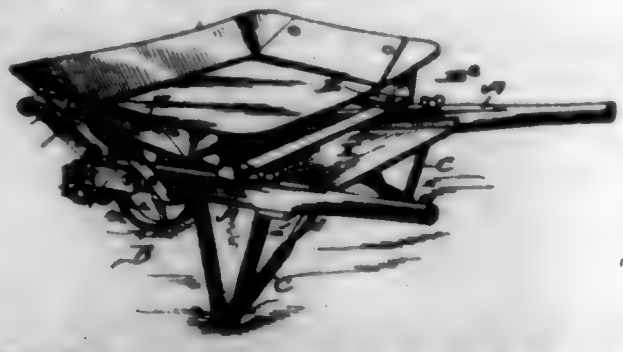
4. A cutter of the character described, comprising a base, a centrally-disposed tubular upright thereon, said base and upright being formed with alining slots, a guide roller or pulley slidably mounted in said base in alinement with its slot, a flexible cutting element passed around said pulley and having one of its ends extending through said tubular upright and its other end attached to the outer portion of said base, and a handpiece upon the free end of said cutting element, substantially as described.

5. A cutter of the character described, comprising a base, a centrally-disposed tubular upright thereon, said base and upright being formed with alining slots, rollers upon said base for supporting a piece of cheese or the like, a guide device in said base, a flexible cutting wire or element passed about said guide device and having one end attached to the outer portion of said base and its opposite end extending through said slotted upright, a handpiece upon the free end of said wire, and a movable cover upon said base formed with a slot or opening to clear and guide said wire.

6. A cutter of the character described, comprising a circular base having an annular side wall and formed with a radially-disposed slot, a tubular upright disposed centrally upon said base and formed with a longitudinal slot to aline with the slot in said base, radially-disposed rollers mounted in said base for supporting cheese or the like, a guide-frame removably mounted beneath said base, a guide-pulley slidably mounted in said frame, a spring for retracting said pulley, a flexible cutting-wire engaging said pulley having one end attached to the outer portion of said base adjacent to the slot in the latter and its opposite end extending through said tubular upright, and a handpiece upon the free end of said cutting-wire, substantially as described.

7. A cutter of the character described, comprising a circular base having an annular side wall and formed with a radially-disposed slot, a tubular upright disposed centrally upon said base and formed with a longitudinal slot to aline with the slot in said base, radially-disposed rollers mounted in said base for supporting cheese or the like, a guide-frame removably mounted beneath said base, a guide-pulley slidably mounted in said frame, a spring for retracting said pulley, a flexible cutting-wire engaging said pulley having one end attached to the outer portion of said base adjacent to the slot in the latter and its opposite end extending through said tubular upright, a handpiece upon the free end of said cutting-wire, a movable cover mounted upon the said base and formed with a radially-extending slot or opening in its top and a slotted tubular guide depending from the center of the under side of the top of said cover and adapted to telescope the tubular upright upon said base, substantially as described.

818,529. **WHEELBARROW.** HARVIN ERICK, Johnstown, N. Y. Filed Apr. 4, 1904. Serial No. 201,514.



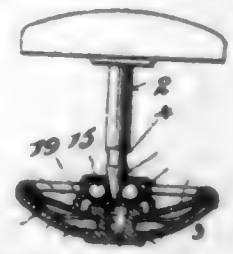
Claim.—1. In a wheelbarrow, the combination with a pair of thills having a wheel mounted on the shaft journaled in the forward ends, of a hopper carried by bars arranged on said thills, castings secured to the forward end of the thill, links connected to said bars and castings, legs connected to said thills, and a bail pivoted to the side of the thills adapted to hold the hopper in an adjusted position, for the purpose described.

2. In a wheelbarrow the combination with a wheeled frame, of the hopper, the bars to which the hopper is attached, the arms to which the bars are hinged, said arms being hinged to the frame, and the pivoted supporting-bail, together with means for limiting the movement of said bail and means for fastening the hopper in either position.

3. In a wheelbarrow, the combination with a pair of thills, mounted on a wheel and provided with legs of a hopper carried by parallel bars, castings secured to the end of the thills, links pivotally connected to the castings and bars, a bail pivoted to the side of the thills adapted to engage the hopper, and a pin arranged on the side of the thill, and adjacent the bail adapted to hold the bail in an adjusted position, for the purpose described.

4. In a wheelbarrow, the combination with a pair of thills, mounted on the wheel and supported by legs, of a hopper carried by parallel bars, having bifurcated ends, the walls of said bifurcated ends being provided with openings, castings secured to the forward end of the said sills, provided with perforated lugs, V-shaped links pivoted between the said bifurcations, and to the lugs, a bail pivoted to the side of the thills adapted to hold the hopper in an adjusted position by engaging pins arranged on the side of the thills, for the purpose described.

818,530. **CLUTCH FOR STUDS.** ROBERT FISCHER, New York, N. Y., assignor to C. P. Goldsmith & Company, New York, N. Y., a Firm. Filed Aug. 26, 1905. Serial No. 275,963.



Claim.—1. An article of the class described, having a shank provided with a groove, a clutch therefor, comprising a retaining-chamber having a shoulder, balls in said chamber which engage on said shoulder and enter the groove of the shank, thereby gripping the latter, and a finger-piece adapted to move said balls in and out of engagement with said shank.

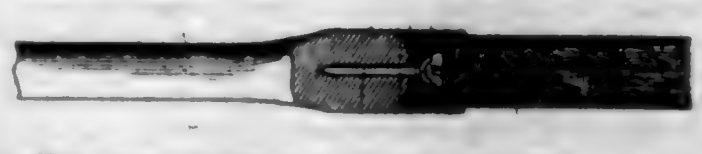
2. An article of the class described, having a shank provided with a groove, a clutch therefor, comprising a retaining-chamber, balls therein adapted to engage in the said groove to grip the said shank and a finger-piece adapted to move said balls in and out of engagement with said shank.

3. An article of the class described having a shank provided with a groove, a holder for the same comprising a curved base, a finger-piece therein adapted to be operated from the exterior to release the shank, a leaf-spring adapted to hold the said finger-piece, a cup secured to the base, and having a chamber, balls in said chamber and means whereby when the shank is inserted in the holder the finger-piece will cause the balls to enter into engagement in the groove of said shank.

4. An article of the class described having a shank provided with a groove and a conical end, a holder for the shank comprising retaining members having a chamber in which are provided balls, a finger-piece 8 having a top plate 11 adapted to retain said balls in the chamber, said balls being adapted to engage the shank.

5. An article of the class described comprising a shank having a groove, and a conical end, a holder therefor, comprising a base 6, a leaf-spring 9, in the base, a finger-piece 8, held by the said spring, a cup 14 secured to the base and having a chamber provided with a shoulder, balls in the said finger-piece whereby when the finger-piece is moved upwardly the balls will be caused to press on the said shoulder and enter the groove in the shank the said shank being adapted to be released upon the outward movement of the finger-piece.

818,531. **BRUSH.** OREN FISH, Cleveland, Ohio. Filed Mar. 9, 1905. Serial No. 249,263.



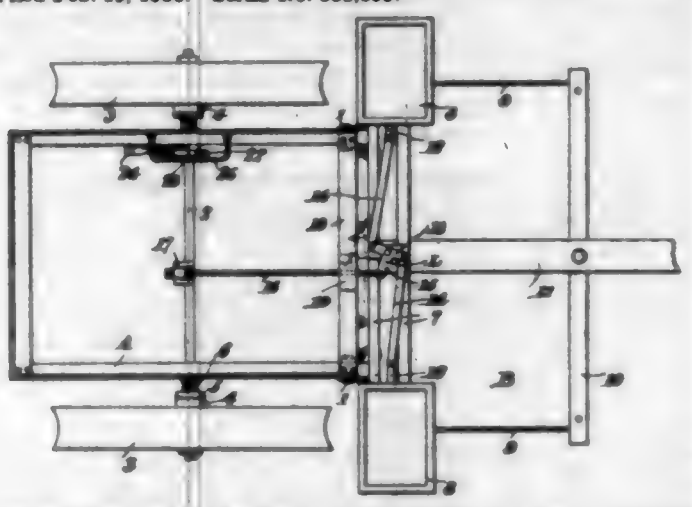
Claim.—1. A flat brush, comprising a handle having a fixed head, a ferrule fitted against the head, bristles located in the ferrule,

and a clamping-bar of expansible material provided with spaced side flanges forming a bottom recess or channel, said bar being rigidly secured at the top to the head, the said flanges being spread to clamp the bristles between their side faces and the walls of the ferrule after the said clamping-bar has been secured to the head.

2. A flat brush, comprising a handle having a fixed head, a ferrule fitted against the head, bristles located in the ferrule, a clamping-bar constructed of expansible material and consisting of spaced side flanges and a connecting top portion, and fastening devices piercing the top portion of the clamping-bar and rigidly securing the latter to the said head, the heads of the fastening devices being located in the space between the side flanges, and the latter being spread to clamp the bristles between the side faces and the walls of the ferrule after the said clamping-bar has been secured to the head.

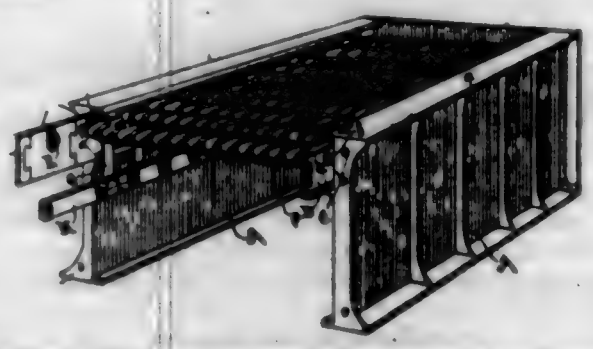
3. A flat brush, comprising a handle having a fixed head beveled at the edges, a ferrule fitted against the head, bristles located in the ferrule, a clamping-bar constructed of expansible material and having a bottom groove or channel, said clamping-bar having side flanges and connecting end walls, and fastening devices piercing the clamping-bar at the top thereof and rigidly securing the same to the head, the heads of the fastening devices being located in the groove or channel, and the side flanges of the clamping-bar being spread to clamp the bristles between their side faces and the walls of the ferrule after the said bar has been secured to the head.

818,532. CORN-PLANTER. JOSEPH N. FRANZ, Lowistown, Mo. Filed Feb. 19, 1906. Serial No. 301,390.



Claim.—In a corn-planter, a main frame, an axle connected therewith for rotation, carrying-wheels upon the axle, spring-actuated clutch devices for locking said wheels upon the axle for rotation in one direction, means for rotating the axle independently of the wheels, a crank upon the axle, a runner-frame hingedly connected with the main frame, reciprocatory seed-slides upon the runner-frame, a T-lever pivoted upon the latter, links connecting two arms of said lever with the seed-slides, a pitman connecting the crank upon the axle detachably with the third arm of the T-lever, and means for supporting said pitman in inoperative position.

818,533. GRATE. JOHN E. FROST, Watkins, N. Y., assignor to Elmira Heater Company, Elmira, N. Y. Filed Jan. 14, 1905. Serial No. 241,034.



Claim.—1. The combination of a base comprising side and end members, the side members being provided on their inner faces with parallel guideways, grate-holders comprising separable plates adapted to be inserted in said guideways, and grate-bars extending between and journaled in the oppositely-disposed holder-plates.

2. The combination of a base comprising side and end members, the side members being provided on their inner faces with parallel guideways, grate-holders comprising plates coupled together by interlocking joints and adapted to be inserted in said guideways, and grate-bars extending between and journaled in the oppositely-disposed holder-plates.

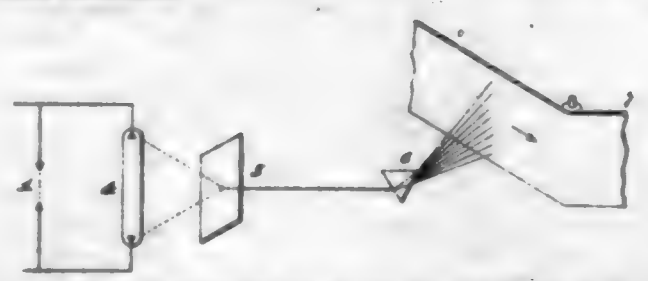
3. The combination of a base comprising side and end members, the side members being made up of sections provided on their inner faces with parallel guideways, sectional grate-holders the sections of which are adapted to be coupled together and inserted in said guideways, and grate-bars extending between and journaled in oppositely-disposed holder-sections.

4. The combination of a base comprising side and end members, the side members being provided on their inner faces with parallel guideways, grate-holders comprising separable ribbed plates adapted to be inserted in said guideways, and grate-bars extending between and journaled in oppositely-disposed holder-plates.

5. The combination of a base comprising side and end members, the side members being provided on their inner faces with parallel guideways, grate-holders comprising plates adapted to be inserted in said guideways and provided with outturned longitudinal ribs, whereby air-spaces are formed between the holders and the side members, and grate-bars extending between and journaled in oppositely-disposed holder-plates.

6. The combination of a base comprising side and end members, the side members being made up of sections provided on their inner faces at or near the top with parallel guideways, sectional grate-holders adapted to be inserted in said guideways, and grate-bars extending between and journaled in oppositely-disposed holder-sections.

818,534. APPARATUS FOR INDICATING THE CHARACTER OF ELECTRICAL EFFLUVIA. LÉON GERARD, Brussels, Belgium, assignor to Percy Thompson, East Orange, N. J. Filed June 14, 1905. Serial No. 265,258.



Claim.—1. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube connected in circuit with the discharge-gap, and means for observing the rays produced by the vacuum-tube, substantially as set forth.

2. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, and means for observing the rays produced by the vacuum-tube, substantially as set forth.

3. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, and means for photographically recording the character of the rays produced by the vacuum-tube, substantially as set forth.

4. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, means for separating the rays produced by said vacuum-tube into their constituent elements, and means for recording the character of said separated rays photographically, substantially as set forth.

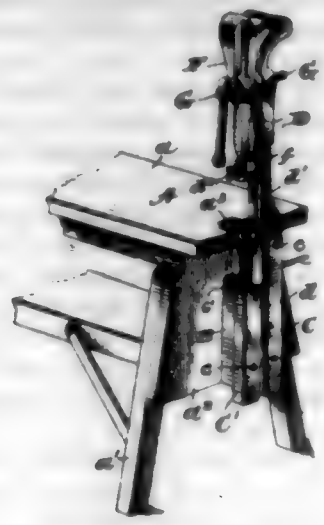
5. An apparatus for indicating the character of electrical effluvia, wherein are combined a discharge-gap, a vacuum-tube placed in shunt to the discharge-gap, means for separating the rays produced by said vacuum-tube into their constituent elements, a traveling photographic sensitive surface, and means for projecting said separated rays upon said surface, substantially as set forth.

818,535. VISE. FRANCIS M. GRAY, Decatur, Ill. Filed Jan. 13, 1905. Serial No. 240,851.

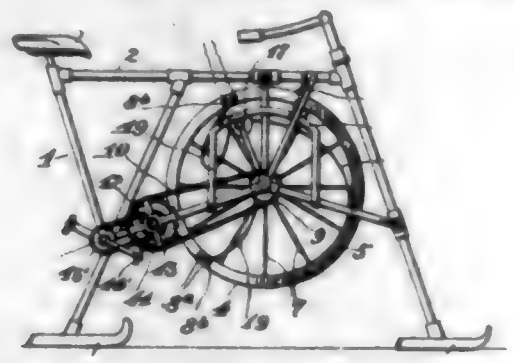
Claim.—1. In a device of the character described, a supporting-plate, a pair of guides secured thereto, a standard slidably secured between said guides, the inner adjacent portions of said guides being extended to overlie said standard, a vise-jaw rigidly secured to the upper end of said standard, and a movable jaw secured to said first-mentioned jaw, the upper rear portion of the guide adjacent the movable jaw being provided with a cut-away portion, as and for the purposes set forth.

2. In a device of the character described, a supporting-plate, a

guide secured thereto, a standard slidably secured in said guide, a vise-jaw rigidly secured to the upper end of said standard, and a movable jaw operatively associated with said first-mentioned jaw, the upper portion of the guide adjacent the movable jaw being provided with a cut-away portion as and for the purpose set forth.



818,536. PROPELLING DEVICE. ORIE B. HAGAMAN, Newark, N. J. Filed Dec. 1, 1904. Renewed Nov. 2, 1905. Serial No. 285,591.



Claim.—1. In a propelling device of the character described, the combination with a suitable support, of a frame revolubly mounted thereon, wings connected to said support and to said frame whereby when the latter is revolved the wings are brought into and out of operative position, substantially as described.

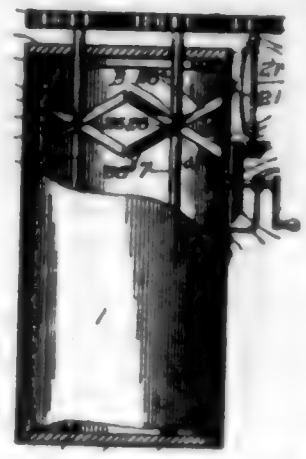
2. In a propelling device of the character described, the combination with a suitable support, of a cylindrical frame revolubly mounted thereon, means whereby said cylindrical frame is revolved, flexible wings secured to said support and to said cylindrical frame whereby when the latter is revolved said wings are brought into and out of operative position, substantially as described.

3. In a propelling device of the character described, the combination with an arched or U-shaped axle, of a cylindrical frame revolubly mounted thereon, means whereby said frame is revolved, flexible wings secured to said arched axle and to said frame whereby when the latter is revolved said wings will be successively brought into and out of operative position, substantially as described.

4. In a propelling device of the character described, the combination with an arched or U-shaped axle, having laterally-projecting bearing-spindles, of a cylindrical frame revolubly mounted on said spindles, said frame consisting of two wheels spaced apart and connected together by cross-bars arranged at equidistant points around said rims and flexible wings secured at one end to said arched axle and at their opposite ends to the cross-bars of said cylindrical frame, and means whereby said frame is revolved to successively bring said wings into and out of operative position, substantially as described.

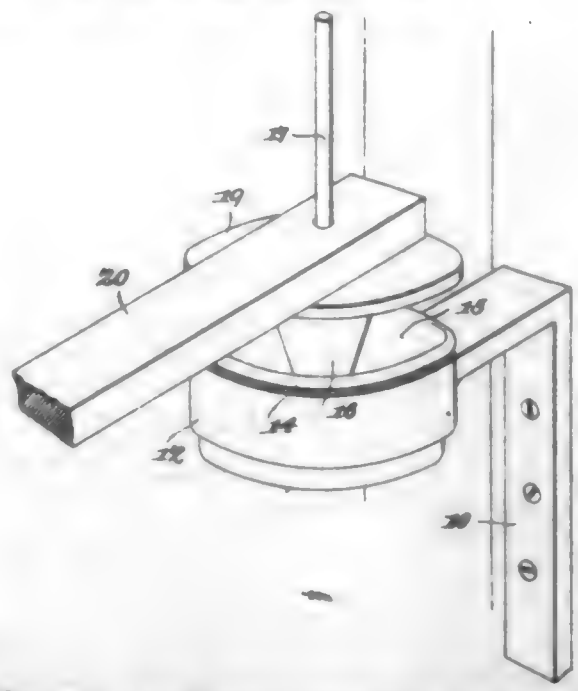
5. In a propelling device of the character described, the combination with an arched or U-shaped axle having laterally-projecting spindles, and a cross-bar, of a cylindrical frame revolubly mounted on said spindles, said frame consisting of wheels spaced apart and connected together by slotted cross-bars secured at equidistant points around the rims of said wheels, bearing-disks arranged on the cross-bar of said axle, wing-attaching bars having their ends mounted in said disks and arranged at equidistant points around said cross-bar, flexible wings secured at one end in the slots of said cylinder cross-bars and adjustably connected at their opposite end to the rods around said axle cross-bar, and means whereby said cylinder is revolved to successively bring said wings into and out of operative position, substantially as described.

818,537. CHURN. EDDIE L. HARRIS, Canton, N. C., assignor of one-half to George H. Smathers, Canton, N. C. Filed Oct. 2, 1905. Serial No. 281,034.



Claim.—A churn comprising a body portion including a cover, a pair of shafts journaled in the bottom of the body and its cover and protruding through the latter, a gear-wheel carried on the protruding end of each shaft, the gear-wheels meshing with each other, a bracket connected to the said body and having a journal bearing in its outer end, a bearing formed in the body and in direct alinement with the bearing of the said bracket, a crank-handle journaled in the said bearings, the crank-shaft carrying a beveled gear, a short vertical shaft mounted upon the body of the churn and having a beveled gear at its lower end for mesh with the beveled gear of the handle and a pinion at its upper end for mesh with one of the aforesaid gear-wheels of the shafts, and dashers adjustably mounted upon the said shaft.

818,538. PERCH-SUPPORT. FRED B. HEIERDING, Oklahoma, Okla. Filed Dec. 5, 1905. Serial No. 290,448.



Claim.—1. A perch-support comprising a bracket having an integral supporting-arm provided with a ring, a cup surrounded and supported by the ring and having an inverted frusto-conical stud therein and extending therefrom, and integral therewith and a perch-engaging spindle upstanding from the stud.

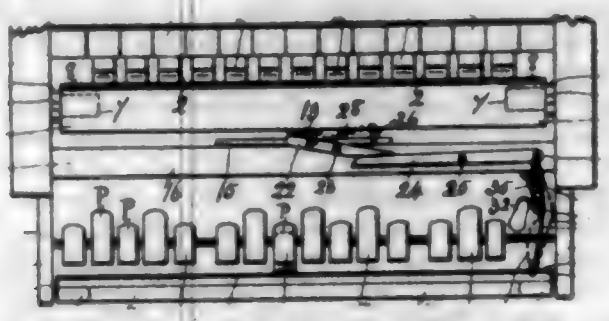
2. A perch-support comprising a bracket having an integral supporting-arm provided with a ring, a cup surrounded and supported by the ring and having an inverted frusto-conical stud therein and extending therefrom, and integral therewith, a covering-disk mounted upon the stud and extending beyond the periphery of the cup, and a perch-engaging spindle upstanding from the stud and engaging the disk.

818,539. ORGAN AND PIANO. FREDERICK M. HOWARD, Hamilton, Canada. Filed Nov. 7, 1904. Serial No. 231,638.

Claim.—1. In an organ, a horizontal bar adapted to oscillate therein, an extending lip on the bar, manual-keys, beveled lips on the manual-keys, a tongue on the bar, an armature carried by the tongue, magnets underneath the said armature, and means for throwing and rebounding the said tongue.

2. In an organ, pedal-keys, a bar having pivotal connection

with the pedal-frame and in contact with pedals, a retaining-bar parallel therewith and adapted to oscillate, and means to operate said bars by the said pedal-keys.



3. In an organ, a stationary bar, magnets on the bar, an armature above the magnets, a lever pivoted to the stationary bar, pedal-keys below said bar, an oscillating bar below the pedal-keys, and means connecting said lever to the said oscillating bar.

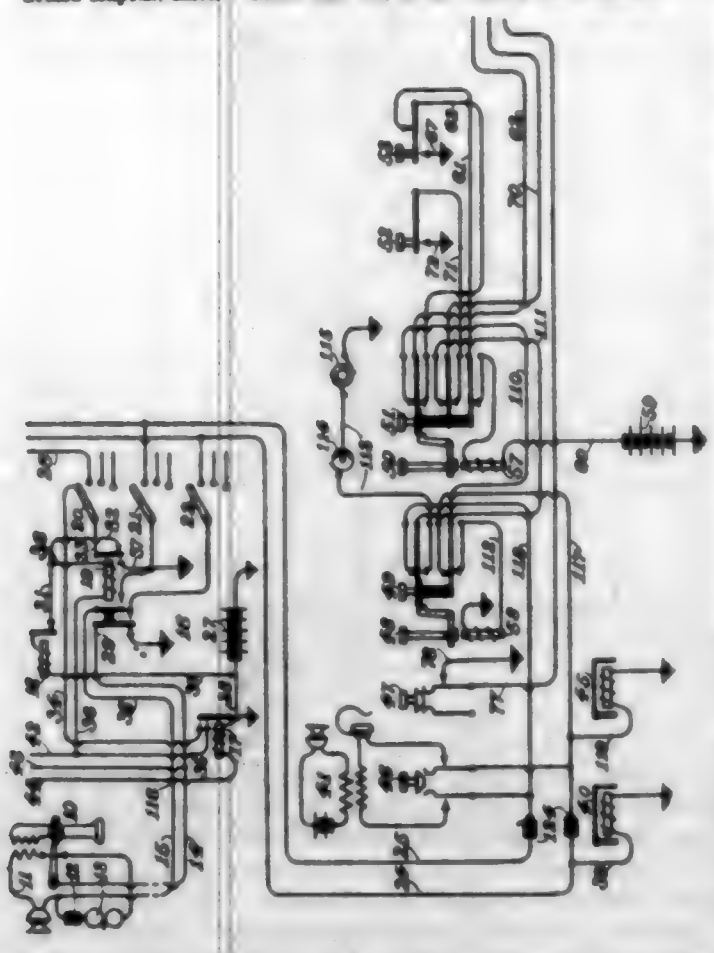
4. In an organ, a stationary bar, a magnet on the bar, a key-retaining bar adapted to oscillate, a tongue projecting therefrom, an armature on the tongue, a stop for the tongue, and means on the tongue to engage the tongue-stop.

5. In an organ, pedal-keys, a horizontal bar adapted to oscillate near the pedal-keys, a stationary bar above the pedal-keys, a lever pivoted to the stationary bar and a cord connecting said lever and oscillating bar.

6. In an organ, manual-keys, blocks with lips on the manual-keys, an oscillating bar, a lip on the bar and magnets to hold the bar.

7. In an organ, manual-keys, beveled blocks with lips on the manual-keys, a retaining-bar adapted to oscillate, a lip on the bar, the beveled blocks to engage said lip, a tongue on the bar, an armature on the tongue, a stationary bar, a magnet on the bar, and a tongue-motion regulator on the stationary bar.

818,540. **TELEPHONE-EXCHANGE SYSTEM.** EDMUND LAND, Grand Rapids, Mich. Filed Mar. 20, 1905. Serial No. 250,933.



Claim.—1. In a telephone system, the combination of a substation-telephone, a central office, a trunk-selecting switch in said central office, a line connecting said substation-telephone with said trunk-connecting switch, speech-transmitting elements forming a part of said substation-telephone and adapted to receive electrical energy for speech transmission from said connecting telephone-line, a source of electrical potential in said central office, a relay in said central office and connected to said line, a trunk in said central office, a visual signal, and a circuit including said source of potential, said relay, said line, said speech-transmitting elements, a conductor in said trunk and said visual signal, substantially as described.

2. In a telephone system, the combination of a substation-telephone, a central office, an automatic switch in said central office, a grounded source of electric energy in said central office, a relay in said central office, a telephone-line extending between said substation-telephone and said central office; a switch-controlling circuit extending from ground through said source of energy, said relay, a limb of said line, the speech-transmitting elements of said substation-telephone, the remaining limb of said line and to ground; a trunk; a visual signal; and a supervisory circuit extending from ground through said source of energy, said relay, the limbs of said line, the speech-transmitting elements of said substation-telephone, a conductor of said trunk, said visual signal and to ground; said first-mentioned circuit and said second-mentioned circuit being effective alternatively, substantially as described.

3. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said substation-telephone with said central office and comprising two limbs, a relay having an inductive winding in said central office, a source of electrical potential in said central office, speech-transmitting elements at said substation connected between the limbs of said line, a trunk, a signal device associated with said trunk and having an inductive winding balancing inductively the inductive winding of said relay, means for connecting said line and said trunk, and a circuit including said source of potential, said relay, the two limbs of said line, said speech-transmitting elements and said signal device, substantially as described.

4. In a telephone system, the combination of an automatic switch adapted to connect a telephone-line to a selected trunk, a telephone-substation, a telephone-line connecting said substation-telephone with said automatic switch, a relay associated with said automatic switch, a source of electrical potential, a circuit extending from ground through said source of electrical potential and the windings of said relay to one of the limbs of said line, a selected trunk, a signal device associated with said trunk, a circuit extending from ground through the winding of said signal device and a conductor of said trunk, and through the selecting contacts of said automatic switch to the other limb of said telephone-line and speech-transmitting elements forming a part of said substation-telephone and connected between the two limbs of said line, substantially as described.

5. In a telephone system, the combination of a substation-telephone, a central office, a relay having an inductive winding in said central office and associated with said line, a source of electrical potential in said central office, a plurality of trunks in said central office, means for connecting said telephone-line with a selected one of said trunks, a visual signal having an inductive winding and associated with said selected trunk, and a circuit comprising said source of potential, said inductive winding of said relay, said telephone-line, the speech-transmitting elements of said telephone, a conductor of said trunk, and said inductive winding of said signal device, substantially as described.

6. In a telephone system, the combination of a substation 10, a line 14 15 connecting said substation to a central office, an automatic switch 16 in said central office, a trunk 24 25 leading from said automatic switch to an operator, an operator's equipment 41 adapted to be associated with said trunk, an automatic switch 88 adapted to be associated with said trunk, keys forming a part of said operator's equipment and adapted to control said automatic switch 88 when it is associated with said trunk, and a plurality of lines as 14′ 15′ selectively accessible to said automatic switch 88, substantially as described.

7. In a telephone system, the combination of a substation 10, a line 14 15 connecting said substation with a central office, a trunk in said central office, an automatic switch 16 adapted to connect said line with said trunk, an operator's equipment, keys forming a part of said operator's equipment and associated with said trunk, an automatic switch 23 associated with said trunk and adapted to be controlled by said keys, an automatic switch 88 adapted to be associated with said trunk and adapted to be controlled by said keys when so associated, and a plurality of lines as 14′ 15′ selectively accessible to said automatic switch 88, substantially as described.

8. In a telephone system, the combination of a substation-telephone 10, a line 14 15 connecting said substation-telephone to an automatic switch 16, an automatic switch 16 adapted to connect said telephone-line to a trunk, a trunk, a first circuit including a source of electric potential, the speech-transmitting elements of said substation-telephone, said line, said automatic switch 16, and a portion of said trunk; an automatic switch 88 controlled manually by a central-office operator, a selected telephone-line 14′ 15′, a substation-telephone 10′ on said selected telephone-line, a second circuit including a source of electric potential, the speech-transmitting elements of

said substation-telephone 10′, said selected telephone-line, said automatic switch 88, and the remaining portion of said trunk; and an inductive link connecting together said first circuit and said second circuit for speech transmission between the two said substation-telephones, substantially as described.

9. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said substation with said central office, speech-transmitting elements forming a part of said substation-telephone adapted to transmit speech by energy received over said telephone-line, an automatic switch in said central office connected to said line and adapted to connect said line with a trunk leading to an operator's equipment, the trunk, an automatic switch connected with said trunk and adapted to said operator's control and adapted to connect said trunk to a selected line, a substation on said selected line, speech-transmitting elements in said latter substation adapted to transmit speech by energy received over said selected line, a circuit including a central-office source of electrical potential and said speech-transmitting elements of said first substation, an independent circuit including a source of electrical potential in said central office and the speech-transmitting elements of said latter substation-telephone, and an inductive link connecting said circuits adapted to transmit alternating currents between said circuits, substantially as described.

10. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone and said central office, trunk-lines wholly within said central office and adapted at one end to be selected by a telephone-line and at the other end to select a telephone-line, an automatic switch connected to said telephone-line for selecting an idle one of said trunks, keys connected with said selected trunk for controlling its selecting end, and visual signals connected to said selected trunk and adapted to be controlled by substation-telephones connected to said trunk, substantially as described.

11. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone and said central office, trunks within said central office, an automatic switch associated with said line and adapted to connect said line selectively with an idle one of said trunks, a visual signal associated with said selected trunk and adapted to be displayed when said trunk is connected with, an operator's telephone, a key for connecting said operator's telephone with said trunk, means associated with said trunk for connecting with a selected one of a plurality of telephone-lines, a key associated with said trunk having electromagnetic release and adapted to be released consequent upon connection with a selected telephone-line, another key associated with said trunk adapted to connect a source of ringing energy to said selected line and having electromagnetic release adapted to release said key upon the answering of a substation-telephone upon said selected telephone-line, and a visual signal associated with said trunk adapted to be displayed while the receiver is off the hook at a substation-telephone upon said selected telephone-line, consequent to the release of said keys, substantially as described.

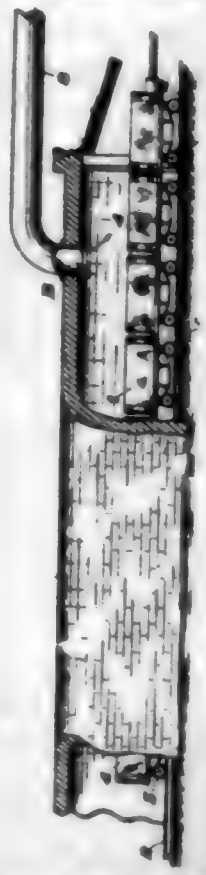
12. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone and said central office, trunks within said central office, an automatic switch associated with said line, and adapted to connect selectively with an idle one of said trunks, a visual signal associated with said selected trunk, and adapted to be displayed when said trunk is connected with, an operator's telephone equipment, a key for connecting said operator's telephone with said trunk, means associated with said trunk for connecting with a selected one of a plurality of telephone-lines, a key associated with said trunk having electromagnetic release and adapted to be released consequent upon connection with a selected telephone-line, and a visual signal associated with said trunk adapted to be displayed while the receiver is off the hook, at a substation-telephone upon said selected telephone-line, substantially as described.

13. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone and said central office, trunks in said central office, an automatic switch associated with said line and adapted to connect said line selectively with an idle one of said trunks, a relay controlling said automatic switch, a source of electric potential in said central office, speech-transmitting elements in said substation adapted to transmit speech by energy received over said line, a visual signal associated with said selected trunk, a circuit including said source of potential, said relay, said line, said speech-transmitting elements, and said signal, an operator's telephone, keys for connecting said operator's telephone with said trunk, an automatic switch associated with said trunk for selecting a telephone-line, a selected telephone-line, a substation-telephone upon said selected line, speech-transmitting elements in said latter substation-telephone adapted to transmit speech by energy received over said line, keys associated with said trunk for controlling said latter automatic switch, a key associated with said trunk for impressing ringing energy upon said selected telephone-line, a key associated with said trunk, for maintaining connection between said trunk and a selected telephone-line and for disrupting said connection, another visual signal associated with said trunk, a second circuit including said source of potential, said selected line, the speech-transmitting elements of said latter substation-telephone and said other visual signal, and an inductive link connecting said first circuit with said second circuit, substantially as described.

14. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone with said central office, a relay in said central office, a visual signal in said central office, automatic switch in said central office, and a circuit including a central-office source of electrical potential, said relay, said line, said telephone, circuit-conductors passing through said automatic switch, and said visual signal, substantially as described.

15. In a telephone system, the combination of a substation-telephone, a central office, a line connecting said telephone with said central office, speech-transmitting elements in said substation-telephone adapted to transmit speech by energy received over said line, a relay in said central office, a visual signal in said central office, automatic switch in said central office, and a circuit including a central-office source of electrical potential, said relay, said line, said speech-transmitting elements of said telephone, circuit-conductors passing through said automatic switch, and said visual signal, substantially as described.

818,541. HEAT-CONSERVING APPARATUS. HERBERT LANG, Oakland, Cal. Filed June 13, 1905. Serial No. 264,995.

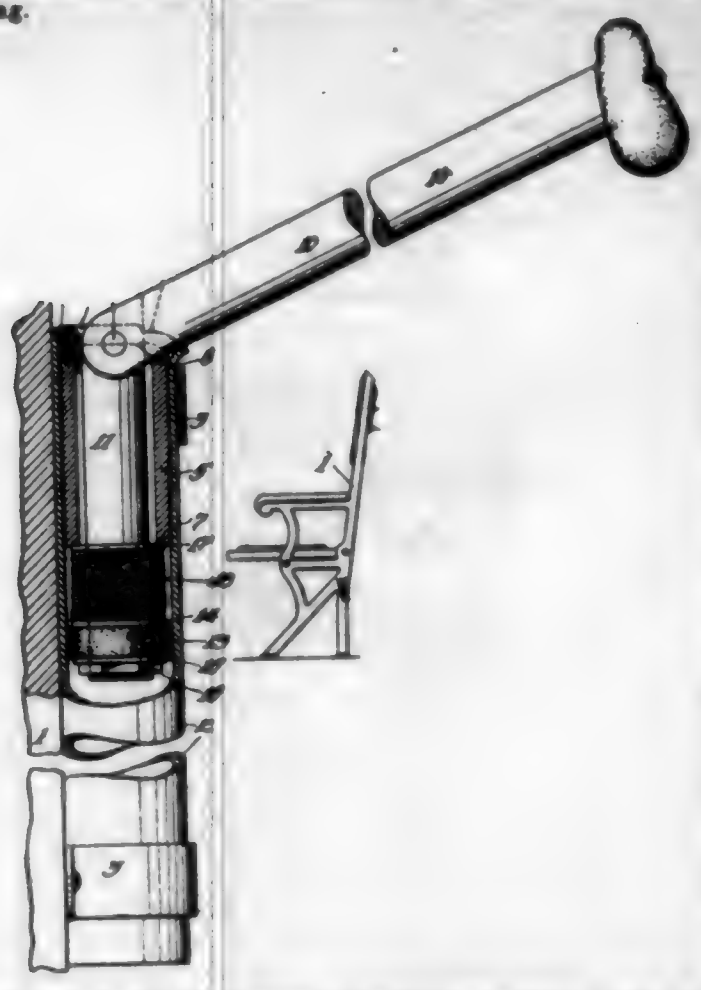


Claim.—The apparatus for conserving and utilizing the heat of hot furnace-slag as herein described, consisting of a smelting-furnace, an elongated chamber, open at both ends, refractory lined, a series of separable molds for receiving the molten slag from the furnace, means for transporting the molds continuously through the chamber, an air-inlet near the outlet of the chamber, an air-outlet near the slag-receiving end of the chamber, means to impel air through the chamber in reverse direction to the travel of the molds, and means to push the train of molds through the chamber from end to end, substantially as specified.

818,542. OPERA-CHAIR HAT AND WRAP RACK. FRANK D. LANTERMAN, Los Angeles, Cal. Filed Feb. 24, 1905. Serial No. 247,075.

Claim.—1. A device of the character described comprising a rack, a tubular casing adapted to receive the rack, means for holding the rack extended from the casing, a head on the end of the rack, and a cushion on the casing upon which the head rests when the rack is

housed and which prevents noise when the rack is dropped into the casing.

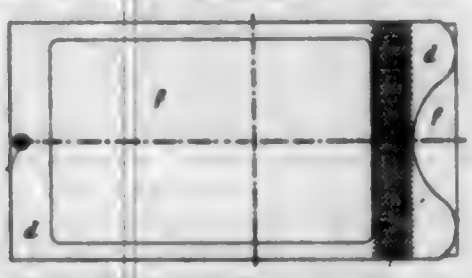


2. A device of the character described comprising a rack, an extension hinged to the rack, a tubular casing for receiving the rack and extension, and means for preventing withdrawal of the extension from the casing, a spring encircling the extension, means on the extension for compressing the spring, and an abutment within the casing against which the spring is compressed.

3. A device of the character described comprising a rack, an extension hinged to the rack, a tubular casing for receiving the rack and extension, means for limiting the sliding play of the extension in the casing, and an annular cushion on the extension adapted to bear against the wall of the casing.

4. In a device of the character described, a rack, a rubber head thereon, an extension hinged to the rack, a casing for inclosing the extension and rack, a sleeve inside the casing, a rubber ring on the extension, washers on the extension below the sleeve, a coil-spring between the washers, the upper end of the sleeve being cut to form an inclined bearing-face, and the upper end of the casing being flared outwardly to form a lip, and a segmental rubber cushion on top of the casing and sleeve against which said head strikes when the rack is dropped and which supports the same.

818,543. **EXPOSURE APPLIANCE.** AUGUST LEISTENSCHNEIDER, Jena, Germany, assignor to The Firm of Carl Zeiss, Jena, Germany. Filed Oct. 26, 1905. Serial No. 284,526.



Claim.—1. An exposure appliance consisting of a holder and a receiver for the holder, said holder comprising an outer frame, a flat member housed by the frame and carrying a sensitive surface, and a sheath-like shutter adapted, when inserted within the frame, to envelop the member; and said receiver being provided with a slit, through which the frame and the member extend outwardly, when the holder is inserted in the receiver.

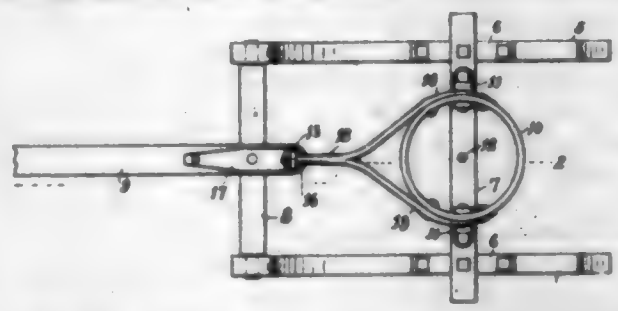
2. An exposure appliance consisting of a holder and a receiver for the holder, said holder comprising an outer frame, a flat member housed by the frame and carrying a sensitive surface and of which frame one end is fastened to one end of the member and the other end partly projects beyond the other end of the member, the holder comprising further a sheath-like shutter adapted, when inserted within the frame, to envelop the member; and said receiver being provided with a slit, through which the frame and the member extend outwardly, when the holder is inserted in the receiver.

3. An exposure appliance consisting of a holder and a receiver for the holder, said holder comprising an outer frame, a flat member housed by the frame and carrying a sensitive surface and of which frame one end is fastened to one end of the member and the other end partly projects beyond the other end of the member, the holder comprising further a sheath-like shutter adapted, when inserted within the frame, to envelop the member; and said receiver being provided with a slit, into which the holder is adapted to be introduced and through which the frame and the member are adapted to extend outwardly, when the holder is inserted in the receiver.

4. An exposure appliance consisting of a holder and a receiver for the holder, said holder comprising an outer frame, a flat member housed by the frame and carrying a sensitive surface, and of which frame one end is provided with a perforation and fastened to one end of the member and the other end partly projects beyond the other end of the member, the holder comprising further a sheath-like shutter adapted, when inserted within the frame, to envelop the member; and said receiver being provided at one end with a releasable spring-catch adapted to engage the perforation in the frame and at the opposite end with a slit, into which the holder is adapted to be introduced and through which the frame and the member are adapted to extend outwardly, when the holder is inserted in the receiver.

5. An exposure appliance consisting of a holder and a receiver for the holder, said holder comprising an outer frame, a flat member housed by the frame and carrying a sensitive surface, and of which frame one end is provided with a perforation and fastened to one end of the member and the other end partly projects beyond the other end of the member, the holder comprising further a sheath-like shutter adapted, when inserted within the frame, to envelop the member; and said receiver being provided at one end with a releasable spring-catch adapted to engage the perforation in the frame and at the opposite end with a slit, into which the holder is adapted to be introduced and through which the frame and the member are adapted to extend outwardly, when the holder is inserted in the receiver, this slit being provided with an antifriction-roller.

818,544. **ANTI TIP-OVER DEVICE FOR BOB-SLEIGHS.** ROBERT LONDA, Fort Atkinson, Wis., assignor to Northwestern Manufacturing Company, Fort Atkinson, Wis., a Corporation of Wisconsin. Filed May 8, 1905. Serial No. 259,260.



Claim.—In a sleigh, the combination of the runners, a cross-bar connecting the front ends of the runners, a tongue secured upon said cross-bar and projecting slightly rearward thereof, an eye secured in the rear end of the tongue and rising therefrom, a frame supported by the runners, and a finger projecting forward from said frame and having its front end upturned and projecting through and playing loosely in the eye rising from the tongue.

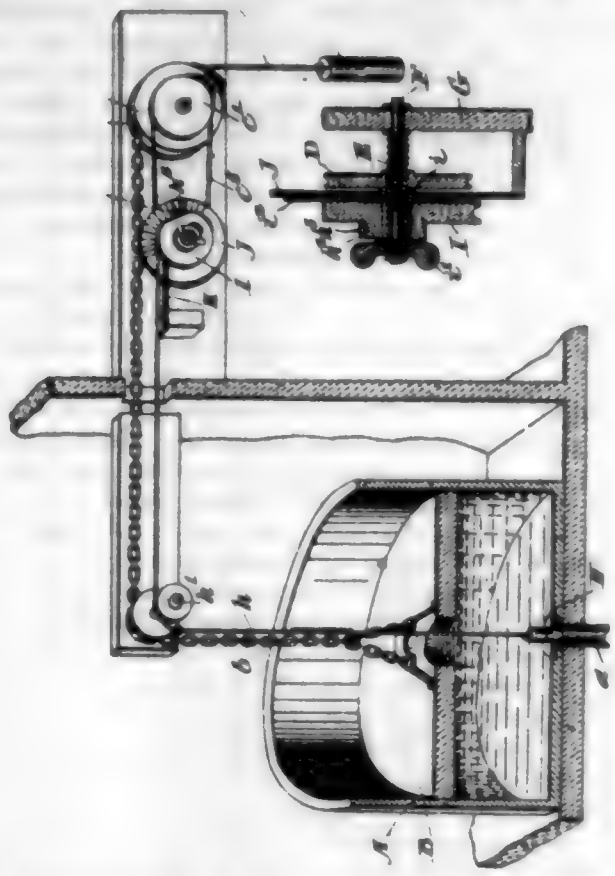
818,545. **WHEY-MEASURING APPARATUS.** HUGH R. MACDONALD, Alexandria, Canada. Filed June 15, 1905. Serial No. 265,463.

Claim.—1. In a device of the class described the combination with the whey-vat and valve therefor, of a float, a rotatable index-finger, a dial coacting therewith, means whereby the lowering of the float operates the said index-finger and means whereby the said valve may be closed when the index-finger reaches a predetermined point on the dial as and for the purpose specified.

2. In a device of the class described in combination a whey-vat, a suitable valve therefor, a pulley, means for operating the same, a pointer provided on said pulley a fixed indicator-dial adapted to coact with said pointer and means for communicating the motion of said pulley to said valve as and for the purpose specified.

3. In a device of the class described in combination a whey-vat, a suitable valve therefor, a pulley, means for operating the same, a

pointer provided on said pulley, a fixed indicator-dial adapted to coact with said pointer, a member A^9 connected by suitable means to said valve, a pin securing said member on pulley, and a trigger for automatically releasing said member as and for the purpose specified.



4. In a device of the class described a whey-vat, a suitable valve therefor, a float, a pulley, means for communicating the motion of said float to said pulley, a member A^3 on the pulley, means connecting said member with the valve, and a trigger for automatically releasing said member as and for the purpose specified.

5. In a device of the class described in combination a whey-vat, a suitable valve therefor, a float, a pulley, means for communicating the motion of said float to said pulley, a member A^3 secured to said pulley, means connecting said member to the valve, a pointer on said pulley, a fixed indicator-dial adapted to coact with said pointer and a trigger adapted to release said member A^3 and so close said valve as and for the purpose specified.

6. In a device of the class described in combination a whey-vat, a suitable valve therefor, a float, a pulley, a chain connecting said float to said pulley, counterbalancing means for holding said chain taut and means for causing the rotation of said pulley to operate the valve as and for the purpose specified.

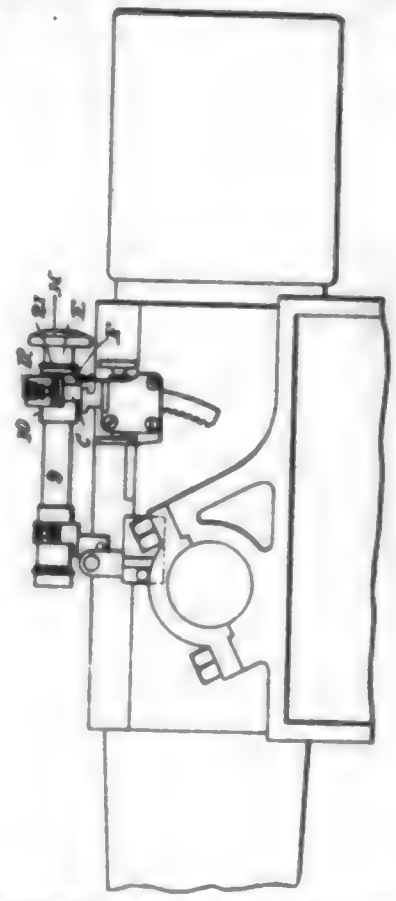
7. In a device of the class described in combination a whey-vat, a suitable valve therefor, a fixed indicator, a pulley provided with a pointer adapted to coact with said indicator, a float, a second pulley, means for communicating the action of said float to said pulley, means for clamping the aforesaid index-pulley to said pulley and means for causing the index-finger to operate the valve by its rotation as and for the purpose specified.

8. In a device of the class described the combination with a whey-vat, and suitable valve therefor, of a fixed indicator, a pulley provided with a pointer adapted to coact with said indicator, a float, a second pulley, means for communicating the action of said float to said second pulley, means for clamping the aforesaid index-pulley to said pulley, a member A^3 secured in said pulley, means for connecting the member with the valve, and a trigger for automatically releasing said catch as and for the purpose specified.

818,546. **TELESCOPIC SIGHT FOR GUNS.** John F. Mehos and Herman G. Jakobsson, South Bethlehem, Pa., assignors to The Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Oct. 26, 1903. Serial No. 178,695.

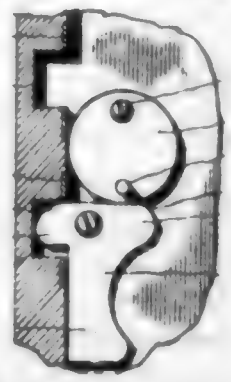
Claim.—1. The combination in a telescope, of two sections having corresponding longitudinal ribs and recesses, additional shorter recesses in the rear section, a spider having projections extending into said shorter recesses, and a spring bearing against said spider and against a bearing in the forward section of the telescope, substantially as set forth.

2. The combination with a gun, of a telescope, a support for the telescope mounted on the gun or gun-cradle, and means for adjusting the telescope longitudinally in said support and securing it after adjustment, the telescope being in sections, one sliding in respect to the other, with an intervening spring, substantially as set forth.



3. The combination with a gun, of a telescope, a support for the telescope mounted on the gun or gun-cradle, and means for adjusting the telescope longitudinally in said support comprising a worm carried by the support, and a coöperating worm-rack upon the telescope, substantially as set forth.

818,547. **SASH HOLDER AND LOCK.** Andrew J. McCord, Chattanooga, Tenn. Filed Mar. 27, 1906. Serial No. 308,301.



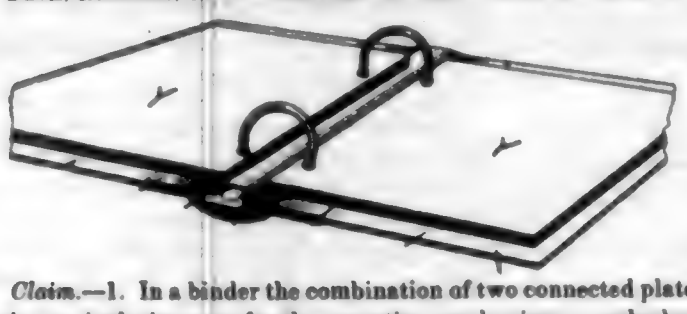
Claim.—1. A lock comprising a substantially T-shaped latch member having its head pivotally supported substantially midway of its ends, one end of the head constituting a catch for engagement with a keeper and the shank portion of the latch being disposed to lie against the keeper and prevent swinging of the latch in one direction, and means mounted independently of the latch and capable of being moved into engagement with the head of the latch to prevent rotation thereof in the opposite direction, and also capable of engaging the other side of the head to hold the latch when swung to a position at substantially right angles from its locked position.

2. A lock comprising a substantially T-shaped gravity-latch member having its head pivotally supported substantially midway between its ends, one end of the head constituting a catch for engagement with a latch, and an eccentrically-pivoted locking-disk mounted above the latch and capable of being turned into engagement with the head of the latch opposite the catch end thereof, and also capable of being turned out of engagement with the head and then returned into engagement with the opposite side of the head when the latch has been swung into a substantially horizontal position.

3. The combination with a window-casing provided with a socket, and a slidable sash, of a gravity-latch pivoted adjacent its upper end upon the sash and provided with a lateral catch extension

for engagement with the socket of the frame, the lower portion of the latch being disposed to lie against the frame and prevent rotation of the latch in one direction when engaged with the socket, and an eccentrically-pivoted disk mounted upon the sash above the latch and capable of being turned into engagement with the top of the latter to lock the latch against rotation in the opposite direction, the disk capable of being turned out of engagement with the latch to permit releasing of the latter, and the back of the latch being provided with a seat into which the disk is capable of being turned to support the latch in a substantially horizontal position.

818,548. **TEMPORARY BINDER.** LUTHER C. MCNEAL, Rochester, N. Y., assignor of one-fourth to Howard L. Osgood and C. Schuyler Davis, Rochester, N. Y. Filed Mar. 10, 1904. Serial No. 197,403.



Claim.—1. In a binder the combination of two connected plates forming an inclosing case for the operating mechanism; a rock-shaft rotatively secured between said plates, carrying one or more tilting prongs, and an arm for rocking it; mating prongs supported oppositely to said tilting prongs, respectively; an actuator between said plates, adjacent to said rocking arm, and adapted when moved in one direction to engage said arm and thereby to tilt said prongs; and an extensible hand-piece, whereby said actuator is operated.

2. In a binder, the combination of a support; a rock-shaft rotative thereon, carrying one or more tilting prongs; mating prongs supported oppositely to said tilting prongs, respectively; an actuating-plate adapted to slide longitudinally of the rock-shaft and thereby to tilt said tilting prongs; means for locking said actuating-plate to a part of said support when said prongs are in the closed position, and an extension-piece adapted to unlock said parts and to engage said actuating-plate for moving it to tilt the prongs.

3. In a binder, the combination of a support; a rock-shaft rotative thereon, carrying one or more tilting prongs; mating prongs supported oppositely to said tilting prongs, respectively; an actuating-plate adapted to slide longitudinally and thereby to tilt said tilting prongs; means for locking said actuating-plate to a part of said support, when the prongs are in the closed position, and a movable extension-piece adapted to engage said actuting-plate for moving it to tilt the prongs.

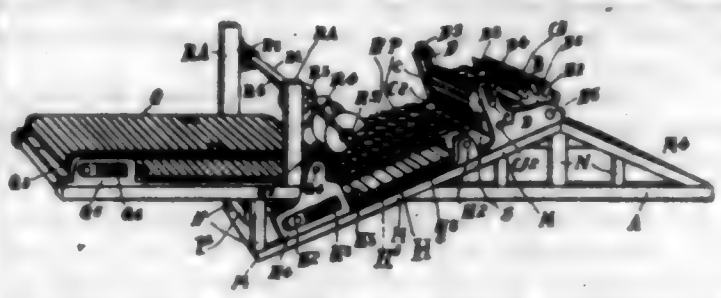
4. In a binder of book form, the combination of a casing forming the back of the book; one or more pairs of tilting prongs for holding loose sheets; means contained within said casing for supporting and opening and closing said prongs; covers for said binder; and flexible strips secured upon the top and bottom of said casing, respectively, and between which the covers are secured; substantially as shown and described.

5. In a binder, the combination of a rock-shaft carrying one or more tilting prongs and an arm for rocking it; two connected plates forming an inclosing case for parts of the operating mechanism, the uppermost of said plates having slots through which the prongs pass that are secured to the rock-shaft; means for rotatively securing said rock-shaft within said case upon the surface of one of said plates, between the ends of said rock-shaft; mating prongs supported upon said case opposite to said tilting prongs, respectively, and hand-operated means adapted to engage said arm and thereby to open and close said prongs.

6. In a loose-leaf binder, the combination with a casing comprising a base having laterally overlapping flanges on its longitudinal edges, and a plate or strip having its edges confined to the base by the said flanges, of a slide mounted within said casing provided with cams, and binding-post members pivotally supported on the casing and having projecting lugs for coöperating with said cams when the slide is moved to close and lock the binding-post members.

7. In a loose-leaf binder, the combination with a base having laterally-overlapping flanges on its longitudinal edges, a plate or strip having its longitudinal edges confined by said overlapping edges and coöperating with the base to form a housing, rock-shafts longitudinally arranged within the housing and having arcuate leaf-engaging spurs at right angles to the shafts and projecting through openings in said housing, a slide within the housing, and means on the rock-shafts for engagement with the slide.

818,549. **FEEDER FOR CORN HUSKERS AND SHREDDERS.** EDON P. HASH, Mount Carmel, Ohio, assignor of one-third to William F. Pond, Mount Carmel, Ohio. Filed Feb 1, 1904. Serial No. 191,501.



Claim.—1. In a feeder for corn-huskers, the combination of the inclined carrier, the snapping-rolls at the upper end of the carrier, rollers for supporting the carrier, means for rendering one of these rollers adjustable relatively to the other, bearings for said rollers, channeled pieces H^3 for supporting the bearings, a frame M on which the channeled pieces are adapted to slide, said pieces H^3 having slots therein and bolts on and above the frame M engaging in the said slots so that by tightening the bolts the pieces H^3 will be locked to the frame, substantially as described.

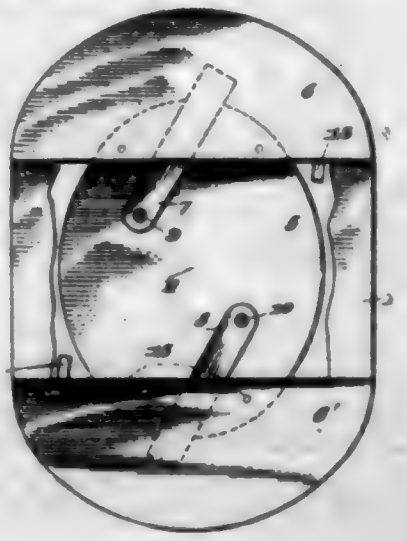
2. In a feeder for corn-huskers, the combination of an inclined frame M, an inclined carrier, snapping-rolls adjacent the upper end of the carrier, a shredding mechanism in rear of said rolls, rollers for supporting the carrier, channeled pieces H^3 supporting the bearings of said rollers, means for adjusting the bearings of one roller relatively to the bearings of the other roller, a frame adapted to support the said snapping-rolls and the said shredder, said frame being supported by the inclined frame M, and means for enabling the pieces H^3 to be adjusted nearer to or farther from said snapping-rolls, substantially as described.

3. In a feeder for corn-huskers, the combination of the snapping-rolls, the inclined carrier adjustable to and from these rolls, rollers H, K, supporting the carrier, means for slidably supporting said rollers, the horizontal carrier, rollers Q^2 Q^3 supporting the same, the roller Q^2 being supported by a part of the inclined carrier so as to have movement therewith, and means for the adjustment of the roller Q^2.

4. In a feeder for corn-huskers, the combination of the snapping-rolls, the inclined carrier adjustable to and from these rolls, rollers H, K, supporting the carrier, means for slidably supporting said rollers, the horizontal carrier, rollers Q^2 Q^3, supporting the same, the roller Q^2 being supported by a part of the inclined carrier so as to have movement therewith, means for the adjustment of the roller Q^2, and a spreader located just beyond the rear end of the horizontal carrier.

5. In a feeder for corn-huskers, the combination of the snapping-rolls, the inclined carrier adjustable to and from these rolls, rollers H, K, supporting the carrier, means for slidably supporting said rollers, the horizontal carrier, rollers Q^2, Q^3, supporting the same, the roller Q^2 being supported by a part of the inclined carrier so as to have movement therewith, means for the adjustment of the roller Q^2, a cross-bar located below the adjacent ends of the two carriers, a plurality of rods having one end held by said rod and extending above and parallel with the inclined carrier, the other ends of said rod being free, and a spreader located just beyond the rear end of the horizontal carrier.

818,550. **TABLE.** SAMUEL A. NICHOLS, Los Angeles, Cal. Filed Aug. 14, 1905. Serial No. 274,304.



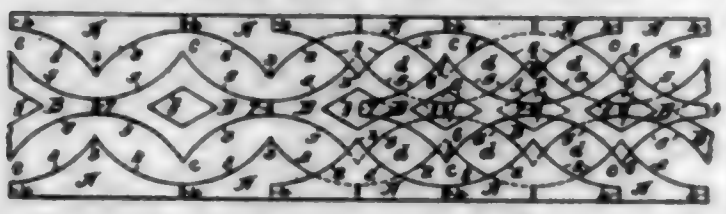
Claim.—1. A table having a pedestal provided with a top; two leaves pivotally secured to the pedestal-top at points equidistant from and at points opposite of and at the side of the center line of the top of the pedestal, said leaves being adapted to be swung away from each other; and a temporary leaf adapted to be inserted between said swinging leaves.

2. A table having a pedestal provided with a top; supporting-pins secured in said pedestal-top; two arms pivotally secured to the pedestal-top at points equidistant from and at points opposite of and at the side of the center line of the top of the pedestal; two leaves rigidly secured to said arms, said leaves being adapted to be swung away from each other; supporting-lugs secured to said leaves; and a temporary leaf adapted to be inserted between said swinging leaves.

3. A table provided with a frame and legs secured thereto; two swinging leaves pivotally secured to the top of the frame eccentric to the center thereof and an auxiliary leaf adapted to be inserted between the swinging leaves when extended.

4. An extension-table of the character herein described comprising a table having a divided top pivotally attached thereto by means of extension-arms, said arms pivoted at points eccentric to the center of the table and adapted to be swung away from each other so as to provide an opening for the insertion of a temporary leaf; and a temporary leaf.

818,551. **BUILDING-BLOCK.** NELS J. PETERSON, Omaha, Nebr. Filed July 17, 1905. Serial No. 270,040.



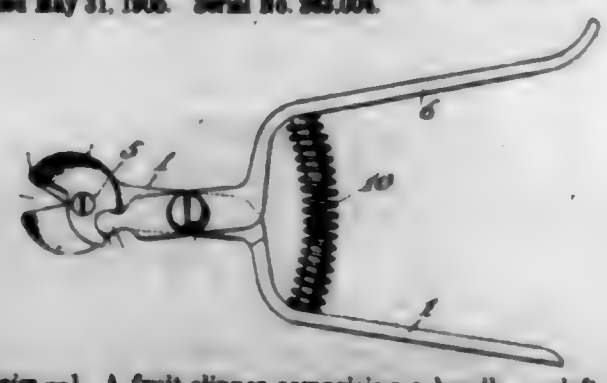
Claim.—1. A filler-block for wall construction, comprising a body portion having four converging sides which meet in a point opposite each other and the center thereof, and said body portion being provided with an aperture, substantially as set forth.

2. A filler-block for wall construction, composed of four inclined sides 5, which meet in points 6, and 8, opposite the center of the block, the ends 7, the top and bottom faces *b*, and the diamond-shaped aperture, substantially as set forth.

3. A wall composed of building-blocks A, having converging sides 2, which meet in a line 3, the filler-blocks B, having a diamond-shaped aperture *f*, and the four inclined sides 5, which meet in lines 6, and 8, opposite each other and the center of said block, said last-mentioned blocks being laid so that each block of a course above the lowermost course will seat upon four blocks next below.

4. A masonry wall consisting of a plurality of wall-sections, one section at an angle to the other section, said wall being composed of a plurality of triangular blocks laid in courses and having three contiguous rows in each course, such rows being separated to provide an air-space on each side of the center row or filler-blocks, the air-space of one course on each side of the center row or filler-blocks being arranged to cross the air-space of the adjoining courses above and below to provide vertical communicating passages between the air-space of the several courses, and the center row of blocks having substantially triangular-shaped apertures to provide vertical air-passages which communicate with the aforesaid contiguous air-spaces upon each side of the center row of blocks.

818,552. **FRUIT-CLIPPER.** HOWARD H. PETTY, Pomona, Cal. Filed May 31, 1905. Serial No. 263,004.



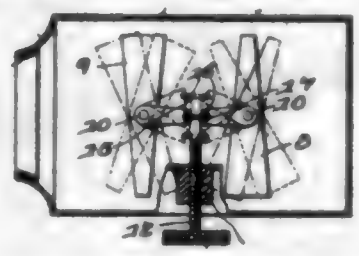
Claim.—1. A fruit-clipper comprising a handle, a cleft bowl-shaped jaw or blade fixed thereon, a bowl-shaped jaw or blade pivoted in the bowl of said fixed jaw or blade and a handle pivoted on the first-named handle and operating the pivoted jaw or blade.

2. A fruit-clipper comprising a handle, a bowl-shaped jaw or blade fixed thereon, a bowl-shaped jaw or blade pivoted in the bowl of said fixed jaw or blade and a handle pivoted to the first-named handle and connected by a ball-and-socket joint with the pivoted jaw or blade.

3. A clipper comprising two bowl-shaped members, each provided with a cutting edge, one of said members being pivotally mounted within the other member to enable relative pivotal movement of the cutting edges, and operating means connected to the respective members.

4. A clipper comprising a bowl-shaped member having a notch provided with a cutting edge, a bowl-shaped member pivoted in the aforesaid member and provided with a cutting edge and operating-handle means operatively connected to the respective members.

818,553. **CAMERA ATTACHMENT.** WILLIS E. PHILLIPS, Colltran, Colo. Filed Nov. 9, 1905. Serial No. 286,532.



Claim.—1. A camera attachment comprising a frame provided at one end with an exposure-opening and having its other end formed for connection with the lens-tube of a camera, front and rear prisms mounted within the frame, and means to tiltably adjust the prisms.

2. A camera attachment comprising a tube which is provided at its front end with an exposure-opening and has its rear end provided with a coupling to embrace the lens-tube of a camera, front and rear prisms within the frame, and means to adjustably tilt the prisms.

3. A camera attachment comprising a tube which is provided at its front end with an exposure-opening and has its rear end reduced and open to form a coupling for embracing the lens-tube of a camera, front and rear prisms within the tube, and means for tiltably adjusting the prisms.

4. A camera attachment comprising a frame provided at one end with an exposure-opening and at its opposite end with means for engagement with a lens-tube, front and rear prisms pivotally supported within the frame, and means to tiltably adjust the prisms upon their pivotal supports.

5. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube and means carried by one side of the tube for adjustably turning the prisms upon their pivots.

6. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, and a threaded adjusting-stem carried by the tube and associated with the prisms to pivotally adjust the same.

7. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, crank-arms carried by the pivots of the prisms, and an adjusting device carried by the tube and associated with the crank-arms.

8. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, crank-arms carried by the pivots of the prisms, and a threaded adjusting-stem carried by the tube and provided at its inner end with a circular head, the crank-arms being provided with seats receiving the head of the adjusting-stem.

9. A camera attachment comprising a tube which is provided at its front end with an exposure-opening and has its rear end formed for engagement with the lens-tube of a camera, front and rear prisms within the tube, and means to adjust the prisms, said tube being rotatable upon its longitudinal axis when associated with the lens-tube.

10. The combination with the lens-tube of a camera, of a light-refracting device rotatably associated with the lens-tube and including front and rear prisms.

11. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms

pivoted within the tube and having trunnions projecting upon the exterior of the tube, crank-arms carried by the projected portions of the trunnions and provided with bifurcated free ends, and a threaded adjusting-stem carried by the case and having a circular head working in the bifurcation of the crank-arms.

12. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, and means to simultaneously tilt the prisms to corresponding angular adjustments and to permit individual adjustments of the prisms.

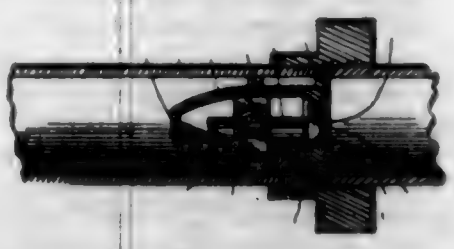
13. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, and means to simultaneously adjust the prisms to corresponding angles, each prism capable of being disconnected from the adjusting means to permit individual adjustment thereof.

14. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, crank-arms carried by the prisms, and adjusting means associated with the crank-arms, each crank-arm capable of being disassociated with the adjusting means to permit individual adjustment of the corresponding prism.

15. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, elastic crank-arms for the prisms, and an adjusting element associated with the crank-arms, each crank-arm capable of being sprung out of engagement with the adjusting devices to permit individual adjustment of the corresponding prism, the tube being provided with friction-surfaces against which the crank-arms bear to hold the same against looseness when disengaged from the adjusting devices.

16. A camera attachment comprising a tube provided at its forward end with an exposure-opening and having its rear end formed for engagement with the lens-tube of a camera, front and rear prisms pivoted within the tube, trunnions for the prisms piercing the tube, spring crank-arms carried by the projected portions of the trunnions and having their free ends bifurcated, and a threaded adjusting-stem mounted upon the tube and provided with a circular head received within the bifurcations of the crank-arms, each crank-arm capable of being sprung out of engagement with the head to permit individual adjustment of the corresponding prism, the tube being provided with flat external bosses beneath the crank-arms and the crank-arms having bowed portions to frictionally bear upon the bosses for holding the crank-arms against looseness when disengaged from the adjusting-stem.

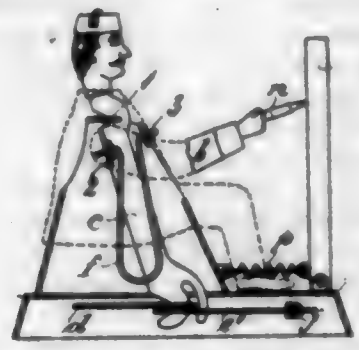
818,554. GAS-SAVING DEVICE. FRANK W. PLAYSTED, Milwaukee, Wis. Filed June 6, 1905. Serial No. 264,032.



Claim.—A gas-saving device comprising, in combination with a meter, pipes communicating therewith, a union having threaded connection with one of said pipes, a second pipe having threaded connection with each union, a screen intermediate the ends of the pipes held by each union, a shell of conical shape having an opening at its apex, a flange at the opposite end of the shell resting upon said screen and engaged by one of said pipes, an opening at the bottom of said shell having a tapering wall, a valve-stem mounted within said shell and having a conical valve adapted to rest upon said screen and reduce the opening in the lower end of the shell, and arms radiating from the shell and adapted to engage the inner surface of one of said pipes, as shown and described.

818,555. MECHANICAL TOY. ALFRED W. POSNOCK, Woking, England. Filed Jan. 31, 1905. Serial No. 242,152.

Claim.—1. In a mechanical toy, the combination with the toy figure, of a pencil carried by the toy figure, of a drawing-board, of levers connected therewith, sliding means carrying profiles engaging with these levers to operate the same and means for moving said sliding means in a straight line, thereby causing the toy to make drawings corresponding to the profiles, substantially as described and for the purpose set forth.

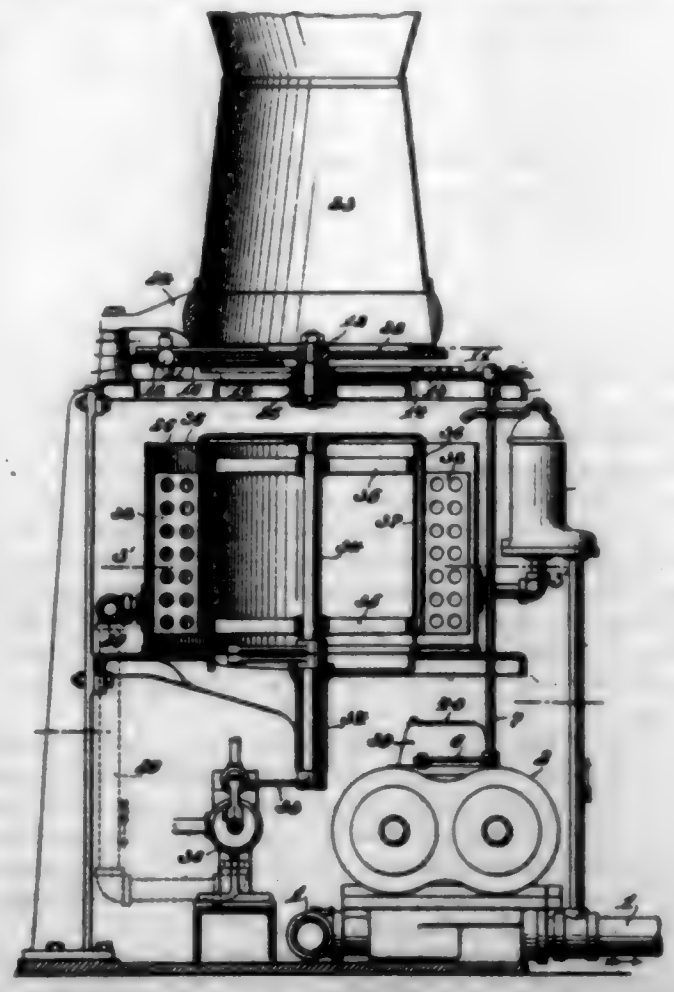


2. In a mechanical toy, the combination with a movable toy arm, of a pencil carried by the toy arm of a drawing-board of levers attached at said arm, a slide carrying profiles engaging with the levers, and a gearing for moving said slide in a straight line, thereby causing the toy to make drawings, substantially as described and for the purpose set forth.

3. In a mechanical toy, the combination with a toy arm having a universal joint of a pencil carried by the said arm, of a drawing-board, of levers for vertically and horizontally moving the arm, a slide carrying profiles engaging with the levers, a spring tending to move the arm in a certain direction and to maintain engagement between the profiles and levers, and a gearing for moving said slide in straight line thereby causing the toy to make drawings, substantially as described and for the purpose set forth.

4. In a mechanical toy, the combination with a toy arm having a universal joint of a pencil carried by said arm, of a drawing-board, of levers for vertically and horizontally moving the arm a toy base, a slide placed upon the outside of the upper wall of said toy base and carrying profiles engaging with the levers, a spring tending to move the arm in a certain direction and to maintain engagement between the profiles and levers, and a gearing for moving said slide in straight line, thereby causing the toy to make drawings, substantially as described and for the purpose set forth.

818,556. DEVICE FOR RELATIVE FEED. FRANCIS I. DU PONT, Wilmington, Del. Filed Aug. 23, 1905. Serial No. 275,256.



Claim.—1. In combination with a water-main, a water-meter, means for charging a solid material to the main relatively to the flow

therein, comprising a cylinder, a platform spaced beneath the cylinder and a deflector actuated by the meter to sweep the platform.

2. In combination with a water-main under pressure, a water-meter, means for charging a solid material to the main, comprising a cylinder, a platform spaced below the cylinder, a deflector operated by the meter to sweep the platform, means for mixing the material fed with liquid not under pressure and means for forcing the liquid with the material suspended therein into the main under pressure.

3. In a feeding device for a water-main under pressure, the combination of a meter included in said main, mechanism operated by said meter for feeding a solid material so that the rate of feed will vary as the flow of water operating the meter varies, a receptacle for receiving the material fed, means for maintaining a supply of water in said receptacle, and means for returning the water mixed with the material from said receptacle back to the main.

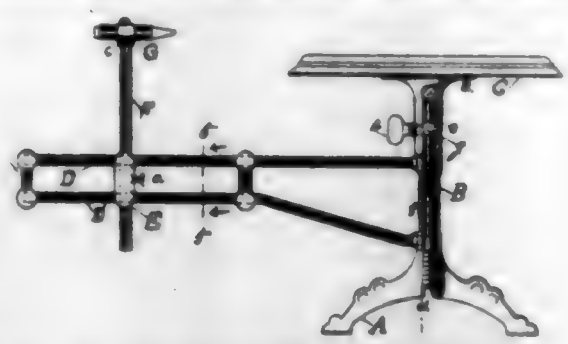
4. In a feeding device for a water-main under pressure, the combination of a meter included in said main, mechanism operated by said meter for feeding a solid material so that the rate of feed will vary as the flow of water operating the meter varies, a receptacle for receiving the material fed, means for maintaining a supply of water in said receptacle, means for agitating the water and material mixed therewith in said receptacle, and means for delivering the water mixed with the material from said receptacle back to the main.

5. In combination with a water-main, a meter, means for feeding material to the main relatively to the flow therein, comprising a stationary hopper, a platform spaced below the lower extension of the hopper, a deflector extending over the table and pawl-and-ratchet mechanism operated by the meter for operating the deflector.

6. In combination with a water-main, a meter, means for feeding material to the main relatively to the flow therein, comprising a stationary hopper, a platform spaced below the lower extension of the hopper, a deflector extending over the table, pawl-and-ratchet mechanism operated by the meter for operating the deflector, and means for adjusting said deflector to change said relative feed.

7. In combination with a water-main, a water-meter, means for charging a solid material to the main relatively to the flow therein, comprising a cylinder, a platform spaced beneath the cylinder, a deflector projecting over the platform, means for supporting the deflector having a ratchet-wheel connected therewith and a pawl operated by the meter for coöperating with the ratchet-wheel.

818,557. SKIRT-SCRIBING PLATFORM. WALTER H. PORTER, Mansfield, Mass. Filed Sept. 27, 1905. Serial No. 280,359.



Claim.—1. A skirt-scribing device having a platform rotatably mounted on a standard, a horizontal arm pivotally connected with said standard so as to rotate in a horizontal plane around the axis of said standard independently of the rotation of the platform and a marking device carried by said horizontal arm.

2. A skirt-scribing device having a rotatable platform, a horizontal arm radial to said platform and rotatable on an axis in alinement with the axis of rotation of the platform independently of the rotation of the platform, and a scribing device carried by said horizontal arm, said scribing device being rotatable in a horizontal plane independently of the rotation of either said platform or horizontal arm.

3. A skirt-scribing device having a platform rotatably mounted on a standard, a horizontal arm pivotally connected with said standard so as to rotate in a horizontal plane around the axis of said standard as a center independently of the rotation of the platform, and a marking device carried by said horizontal arm, said marking device being rotatable in a horizontal plane independently of the rotation of either said platform or horizontal arm.

4. A skirt-scribing device having a rotatable platform, a horizontal arm radial to said platform and rotatable on an axis in alinement with the axis of rotation of the platform independently of the rotation of the platform, a slide mounted on said horizontal arm and freely movable thereon radially toward and from the platform, a vertical rod carried by said slide and vertically adjustable, means for holding said rod in its adjusted position and a marker carried by said vertically-adjustable rod.

5. A skirt-scribing device having a rotatable platform, a horizontal arm radial to said platform and rotatable on an axis in alinement with the axis of rotation of the platform independently of the rotation of the platform, a slide mounted on said horizontal arm and freely movable thereon radially toward and from the platform, a vertical rod carried by said slide, and vertically adjustable, means for holding said rod in its adjusted position, and a marker carried by said vertically-adjustable rod, said marker being rotatable in a horizontal plane independently of the rotation of said horizontal arm and platform.

6. A skirt-scribing device having a horizontal arm rotatable in a horizontal plane on a vertical axis, a platform located within a circle whose center is in alinement with the axis of rotation of said arm, the outer end of said arm projecting beyond the outer edge of the platform, and a scribing device carried by said horizontal arm, said scribing device being rotatable in a horizontal plane independently of the rotation of the horizontal arm.

7. A skirt-scribing device having a horizontal arm rotatable in a horizontal plane on a vertical axis, a platform located within a circle whose center is in alinement with the axis of rotation of said arm, the outer end of said arm projecting beyond the edge of the platform, a slide mounted on said horizontal arm and freely movable thereon radially toward and from the platform, a vertical rod carried by said slide and vertically adjustable, means for holding said rod in its adjusted position, and a marker carried by said vertically-adjustable rod, said marker being rotatable in a horizontal plane independently of the rotation of said horizontal arm.

8. A skirt-scribing device having a rotatable platform, means for clamping at will said platform against rotation, a horizontal arm radial to said platform and rotatable on an axis in alinement with the axis of rotation of the platform independently of the rotation of the platform, and a scribing device carried by said horizontal arm, said scribing device being rotatable in a horizontal plane independently of the rotation of either said platform or horizontal arm.

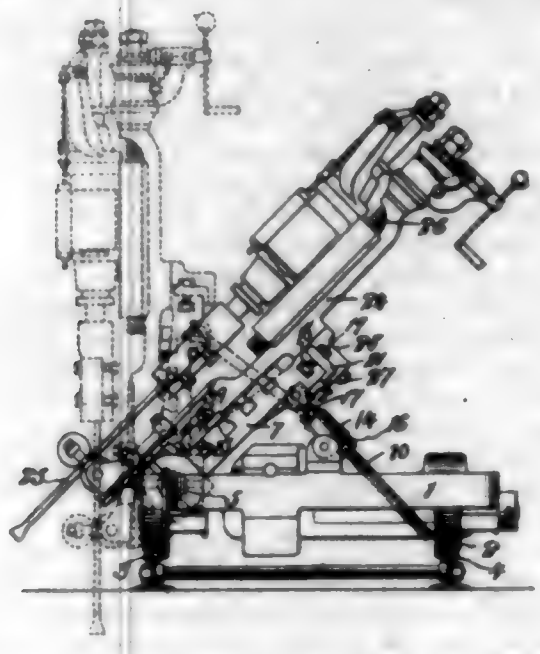
9. A skirt-scribing device having a platform rotatably mounted on a standard, a horizontal arm carried by a sleeve rotatably journaled on said standard below the platform, a horizontal arm pivotally connected with said standard so as to rotate in a horizontal plane around the axis of said standard independently of the rotation of the platform and a marking device carried by said horizontal arm.

10. A skirt-scribing device having a platform mounted on a standard, a plurality of arms carried by a sleeve rotatably journaled on said standard below the platform and projecting radially to the axis of rotation in the same vertical plane with each other, a slide supported jointly by both of said radial arms and freely movable thereon, a vertical rod carried by said slide and vertically adjustable to different elevations, means for clamping said vertical rod in its adjusted position and a chalk-holder carried by said vertical rod.

11. A skirt-scribing device having a platform mounted on a standard, a plurality of arms carried by a sleeve rotatably journaled on said standard below the platform and projecting radially to the axis of rotation in the same vertical plane with each other, a slide supported jointly by both of said radial arms and freely movable thereon, a vertical rod carried by said slide and vertically adjustable to different elevations, means for clamping said vertical rod in its adjusted position and a chalk-holder carried by said vertical rod, said chalk-holder being rotatable in a horizontal plane independently of the rotation of said radial arms.

12. A skirt-scribing device having a rotatable platform, a horizontal arm radial to said platform and rotatable on an axis in alinement with the axis of rotation of the platform independently of the rotation of the platform, and a scribing device carried by said horizontal arm, said scribing device being rotatable in a horizontal plane independently of the rotation of either said platform or horizontal arm, the platform being mounted upon said standard by means of a tubular bearing secured to the said platform and extending downwardly therefrom to receive the upper end of the standard, an annular groove in said standard and a thumb-screw which passes through the side of said bearing and is adapted to engage with said groove whereby the platform may be either clamped fast to the standard or the screw may be adjusted to enter the groove in such manner as to permit rotation of the platform but prevent it from being lifted from the standard or it may be set back far enough to permit removal of the platform at will.

818,558. CHANNELING-MACHINE. WILLIAM PRELLWITZ, Easton, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Sept. 2, 1904. Serial No. 223,100.



Claim.—1. A channeling-machine comprising a suitable support, a back plate mounted on the support, a shell located in immediate proximity to the face of the back plate, means for adjusting the shell bodily along the back plate and a drill carried by the shell.

2. A channeling-machine comprising a suitable support, a back plate mounted on the support, a carriage mounted on the back plate, a shell pivoted to the carriage and located in immediate proximity to the face of the back plate and a drill carried by the shell.

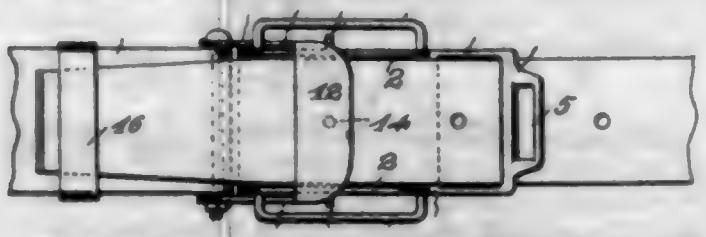
3. A channeling-machine comprising a suitable support, a back plate mounted on the support, means for tilting the back plate, a carriage mounted on the upper edge of the back plate, a drill-carrying shell pivoted to the carriage and means for clamping the shell to the face of the back plate.

4. A channeling-machine comprising a suitable support, a back plate mounted on the support and provided with a plurality of grooves in its face, a drill-carrying shell adjustable bodily along the back plate, means for pivotally securing the drill-carrying shell to the back plate and clamping-bolts engaged in said grooves for locking the shell to the back plate in different adjustments.

5. A channeling-machine comprising a suitable support, a back plate mounted on the support and provided with dovetailed grooves on its face, a drill-carrying shell pivotally secured to the back plate and provided with lateral flanges, clamps constructed to engage the flanges and clamping-bolts having their heads engaged in the dovetailed grooves for locking the clamps and hence the shell to the back plate.

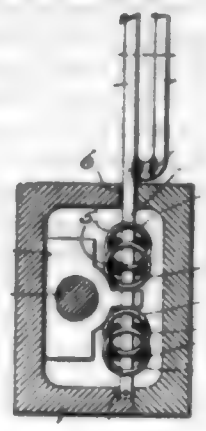
6. A channeling-machine comprising a suitable support, a back plate mounted on the support and provided with dovetailed grooves in its face and a dovetailed groove in its upper edge, said grooves extending to the opposite ends of the plate, a carriage mounted on the upper edge of the plate, a shell pivoted to the carriage, clamps for locking the shell to the plate and clamping-bolts having their heads engaged in said dovetailed grooves for locking the carriage and the clamps in the desired adjustments.

818,559. TRACE-BUCKLE. OTTO RAMPENDAHL, St. Helena, Cal. Filed Aug. 3, 1905. Serial No. 273,569.



Claim.—A buckle of the character described consisting of a base-plate having a centrally-disposed aperture, flanges formed on the sides of said plate to receive the end of a trace, a slotted extension formed on one end of said plate, a bail-shaped clasp provided with a cross-bar having a stud projecting centrally therefrom to engage the trace and the aperture in the base-plate, studs projecting laterally from the base-plate, and guard-loops projecting outwardly from said base-plate, substantially as described.

818,560. SLASHER-COMB. ALONZO E. RHOADES, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Aug. 7, 1905. Serial No. 273,606.



Claim.—1. In a comb of the class described, an elongated base, warp-guides each comprising a shank having a plurality of upright and laterally-offset dents, and means to sustain and laterally position the warp-guides.

2. In a comb of the class described, a series of warp-guides each comprising a shank having two upright, separated flat dents laterally offset from each other and in parallelism, and means to sustain and laterally position said warp-guides.

3. In a comb of the class described, a series of warp-guides each comprising a flat shank bifurcated at its upper end to present two flat dents having their inner edges separated, said dents being laterally offset and one of them forming a continuation of the shank.

4. As a new article of manufacture, a metallic warp-guide for combs, comprising a shank having two elongated, separated dents thereon laterally offset from each other.

5. As a new article of manufacture, a metallic warp-guide for combs, comprising a flat shank bifurcated at its upper end to present two flat, separated dents laterally offset from each other and in parallelism.

6. As a new article of manufacture, a metallic warp-guide for combs comprising a flat shank bifurcated at its upper end to present two flat, separated dents laterally offset from each other and in parallelism, one of the dents forming a prolongation of the shank and lying in the same plane therewith.

7. In a comb of the class described, an elongated base, longitudinally-extended coiled springs arranged in pairs and adapted to sustain and laterally position the warp-guides, and a series of warp-guides each comprising a shank coöperating with the springs, and two upright flat dents at its upper end, laterally offset from each other and in parallelism, and separated in a fore-and-aft direction.

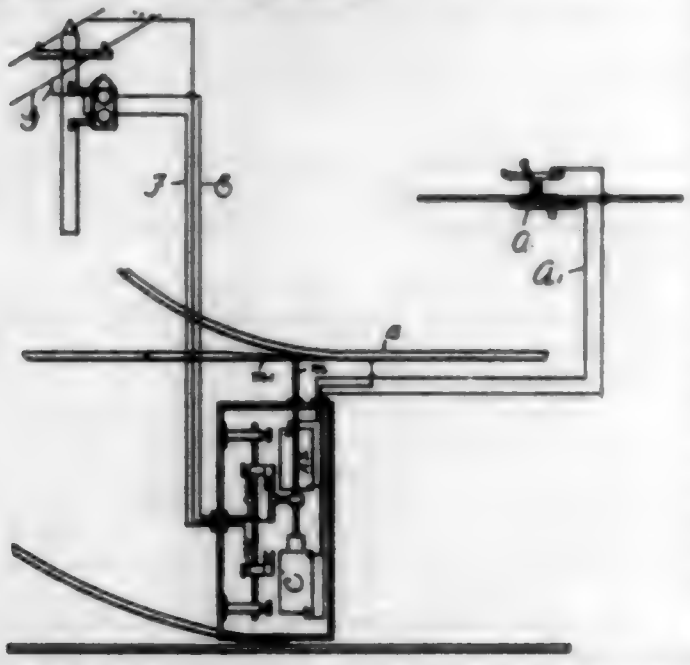
8. In a comb of the class described, an elongated base, two parallel rows of flat, upright dents laterally offset from each other, a series of shanks with each of which two dents, one in each row, are rigidly connected, and means coöperating with the shanks to support and laterally position the dents.

818,561. SWITCH. EDWARD P. ROBBINS, Mansfield, Ohio, assignor of one-half to Herman B. Homberger, Mansfield, Ohio. Filed Oct. 20, 1905. Serial No. 283,090.

Claim.—1. In a switch, a trunnioned support secured to the trolley-pole underneath the trolley-wheel, rotating levers mounted thereon, rollers secured to the free ends of the levers, pawls pivoted to said levers, means for retaining said levers in a predetermined position under tension, means for releasing said levers permitting them to rotate, means for conducting an electric current to a shifting-rail mechanism connected to the pivotal rail of the switch alternately closing and opening said switch at the will of the operator as described and set forth.

2. In an automatic electric switch for street-railways, a trolley mechanism secured to the trolley-pole, contact-plates suspended on both sides of the trolley-wire, means for bringing the trolley mechanism in contact with the plates, solenoids secured to a case or box in alinement with each other, a plunger fitted to reciprocate in apertures in said solenoids, an arm secured to said plunger, a shifting-rod attached to said arm, a connecting-rod secured to one end of the rod with the opposite end secured to the pivotal rail of the switch, means for conducting an electric current to the solenoids exciting them alternately, and forcing the shifting-rod to reciprocate and throw the switch to correspond with the direction it is desired to move the car in, signal-lights connected to and operated in conjunction with the shifting mechanism as described and set forth.

3. In an automatic electric switch for street-railways, a trolley mechanism secured underneath the trolley-wheel, contact-plates suspended on each side of the trolley-wire, a box placed underneath the surface of the ground having an auxiliary bottom, solenoids attached to said bottom, a plunger having enlarged ends fitted to reciprocate in suitable apertures provided therein, means for charging said solenoids alternately with an electric current, connecting mechanism secured to the pivotal rail and the plunger, brackets attached to the side of the box, a bar mounted therein, forked contacts adjustably mounted on said bar, an arm attached to the shifting-rod, a knife-contact attached to the end and adapted to be brought in and out of contact with the forked contacts, means for making an electrical connection with a light series.



4. In an electrically-operated switch, a trolley mechanism secured to the trolley-pole, contact-plates having the under portion made concave with both ends curved upward, said plates being hung on each side of the trolley-wire, a trolley-clamp suspended from an insulated shell resting on the wire, a box placed under the surface of the ground, solenoids attached to an auxiliary bottom, a plunger fitted to apertures provided therein, an arm secured to said plunger, a shifting-rod adjustably secured to the free end of said arm, a connecting-rod secured to the projecting end of the shifting-rod on one end and the pivotal rod on the opposite end, an arm secured to the shifting-rod having a knife-contact attached to the free end, forked contacts secured to a bar and adapted to contact therewith when the plunger is operated said contact being wired to a light series.

5. In an automatic switch, a trunnioned support clamped to the trolley-pole, levers mounted thereon having their free ends projecting upwardly at an incline, rollers journaled to bolts passing through apertures in the free ends, pawls pivotally secured to the inner faces of each lever, collars made contiguous with the journals of the trunnioned support having notches formed in the periphery thereof and adapted to mesh with the hooked portion of the pawls, stop-pins secured to the face of the collars meshing with slots formed in the lower portion of the levers, volute helix springs attached to the end of the levers, cones adapted to inclose said springs, one end of said cones being connected to the bent end of the small coil in such a manner as to connect the cone and levers together under tension with means of decreasing or increasing the tension of the spring, whereby the levers are made to rotate when the pawls are released as described and set forth.

6. In an automatic electric switch, comprising a trunnioned support adjustably secured to the trolley-pole, rotating levers secured to said support under tension means for releasing said levers, means for limiting the rotation of said levers, contact-plates suspended on each side of the trolley-wire, means for regulating the throw of the levers to contact with the plates and conduct the currents from the trolley to excite or charge the solenoids operating the shifting mechanism as described and set forth.

7. In an electric switch comprising a trolley mechanism, contact-plates, a shifting mechanism, brackets, a rod, forked contacts secured to said rod, an arm carrying a knife-contact, means for alternately making a circuit with lights placed in a box behind different-colored bull's-eyes, as described and set forth.

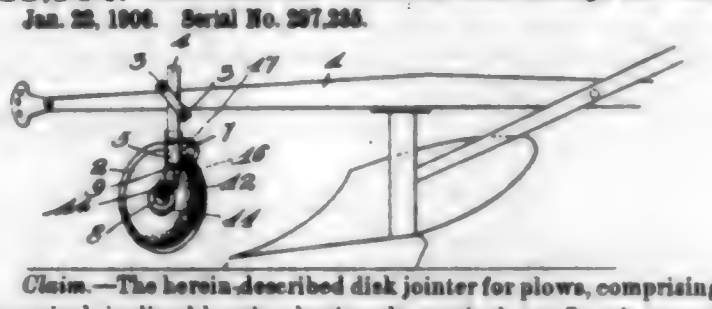
8. An automatic switch for street-railways, comprising a support having projecting lugs made integral forming a trunnion, levers journaled on said lugs, pawls pivotally secured to said levers, collars having notches formed in the periphery thereof, a guard secured to the trolley-pole, a spiral spring connected to the levers, cones adapted to inclose the lugs and springs, said springs being compressed and exerting a pressure against the lower portion of the levers preventing lateral motion.

9. In an automatic switch, a trunnioned support secured to the trolley-pole, levers journaled on said trunnions with the free ends extending on each side of the trolley-wheel, pawls pivotally secured to said levers, volute helix springs, cones inclosing said springs, ears made integral with said levers, contact-plates suspended on each side of the trolley-wire, means of conducting an electric current to a shifting-rail mechanism as described and set forth.

10. In an electric-switch mechanism, comprising a trolley mechanism, contact-plates suspended on each side of the trolley-wire, a shifting-rail mechanism adapted to impart movement to the switch-rail, brackets secured to one side of a box placed under the ground, a bar supported by said brackets, forked contacts adjustably secured to said bar, an arm secured to the shifting mechanism, a knife-contact secured thereto and adapted to be moved in and out of contact with the forked contacts whereby an electrical connection is made with a light series connected to lights placed in a suitable box as described and set forth.

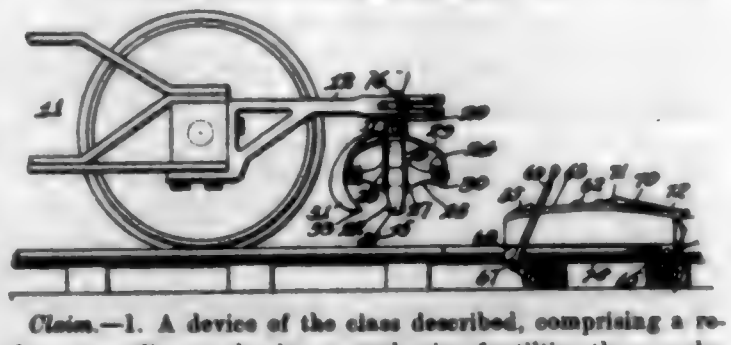
11. In an automatic electric switch, a trunnioned support, levers rotatably mounted thereon under tension, pawls secured thereto and adapted to retain said levers in a predetermined position, contact-plates, means for bringing the trolley mechanism in and out of contact with said plates, a shifting mechanism connected to the switch-rail, means for operating said mechanism by an electric current transmitted from the trolley with a signal-light mechanism operated in conjunction with said shifting mechanism whereby the position of the switch is indicated by lights placed in a box behind bull's-eyes of different colors, said light mechanism being electrically connected with light series alternately.

818,562. **DISK JOINTER.** THOMAS M. ROSS, Carthage, Mo. Filed Jan. 22, 1906. Serial No. 297,235.



Claim.—The herein-described disk jointer for plows, comprising the conical, inclined bearing having the vertical arm 7 on its upper side, said arm having the recess 6 in its outer side forming a seat, the hanger 4 having its lower end in said seat, the conical journal in the bearing and having the dished enlargement at its inner end, the disk having its central portion bearing against said dished enlargement, the bolt passed through the disk and journal and having the nut and washer, the latter bearing against the bearing, the scraper for the disk, and the bracket-arm for said scraper having a screw-threaded outer end passed through the arm 7 and hanger 4 and provided with the nuts to clamp them together and also securing the scraper, substantially as described.

818,563. **CAR-REGISTER.** FREDERICK A. SCHIERBAUM, St. Louis, Mo. Filed Aug. 18, 1905. Serial No. 274,304.



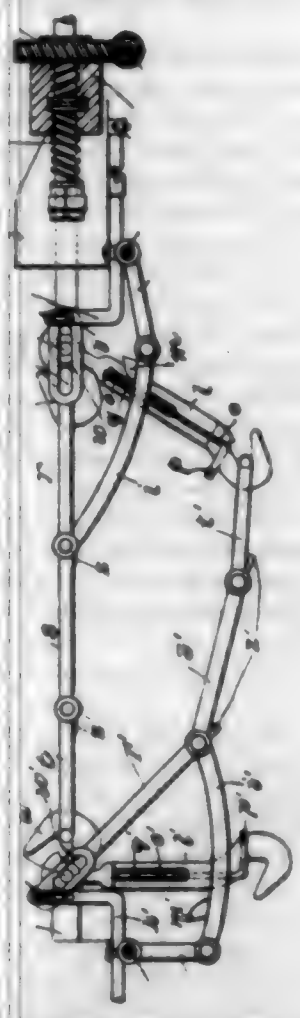
Claim.—1. A device of the class described, comprising a recorder, a recording mechanism, a mechanism for tilting the recorder to place it in alinement with the recording mechanism, a tape located in the recorder, a mechanism for moving the tape step by step, a recording-ribbon located in the recorder and communicating with the tape, a cover located on the recorder, a mechanism for automatically operating said cover to open and close the opening through which the record is made, substantially as specified.

2. A device of the class described, comprising a recorder, a re-

cording mechanism carried by the car, a recording-wheel provided with type indicating the number and initial of the car, brushes carried by the recording mechanism with which the type come in contact for cleansing the same, a type-protecting arm carried by the recording mechanism for protecting the type a recorder mechanism for operating tapes located in the recorder, a spring-actuated dog located upon the recorder mechanism for operating the same when brought in contact with the recording mechanism, and a suitable mechanism for tilting the recorder to bring it in alinement with the recording mechanism, substantially as specified.

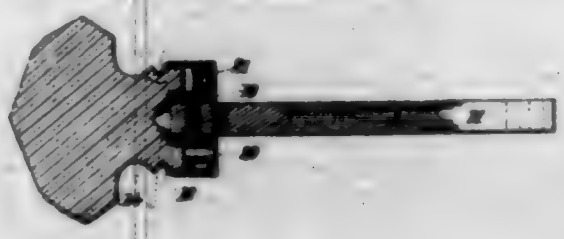
3. A car-recorder, comprising a suitable casing located upon the railway road-bed, means whereby lateral motion may be imparted to the casing, an actuating mechanism whereby the casing may be tilted, a tape and recording-ribbon located within the casing, an actuating mechanism for operating the tape and ribbon step by step, a recording mechanism carried by the car, guides formed on the casing to guide the recording mechanism and operate the tape-actuating mechanism, a cover located on the casing automatically opened and closed with the raising and lowering of the recorder for opening and closing the recess through which the record is made by the recording mechanism, substantially as specified.

818,564. CAR-COUPLING. AUGUST SCHULZ, Podejuch, Germany. Filed Oct. 21, 1904. Serial No. 229,467.



Claim.—In a car-coupling member, the combination with a main draw-hook mounted on the platform, coupling-loops pivoted together and to said draw-hook, a link connected to said coupling-loops, a rock-shaft mounted on the platform of the car and having a crank attached to said link, a spare hook pivotally mounted on said main hook, a bar movably mounted in said spare hook and pins projecting laterally from said bar and engaging said flaps carried by said links when the link is raised.

818,565. KNOB-FASTENING. FREDERICK J. SCHWARZ, New York, N. Y., assignor to P. E. Guerin, New York, N. Y., a Corporation of New York. Filed Aug. 14, 1905. Serial No. 274,049.

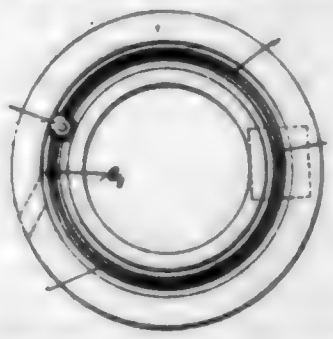


Claim.—1. The knob having in the end of its shank oppositely-disposed recesses, combined with the metal cap secured on said shank and having a hub to receive the spindle and stops to enter said recesses; substantially as set forth.

2. The knob having in the end of its shank oppositely-disposed recesses, combined with the metal cap applied on said shank and having a hub to receive a spindle and stops to enter said recesses, said cap having its outer edges pressed into an annular groove formed in said shank and affording a shoulder to receive said edges; substantially as set forth.

3. The knob and the shank therefor having in its end the socket and oppositely-disposed recesses, combined with the spindle, the metal cap secured on said shank and having a hub to enter said socket and receive the spindle, a stop to enter one of said recesses and a screw to enter the other recess and secure the spindle to said cap, said screw extending transversely through the side of said cap and along its said recess and through the side of said hub; substantially as set forth.

818,566. LIQUID-METER. KARL SCOTT, Frankfort-on-the-Main, Germany. Filed June 26, 1903. Serial No. 163,269.

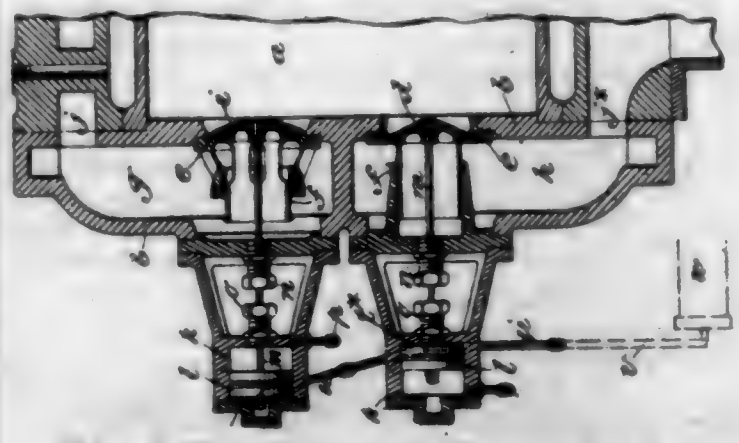


Claim.—1. A liquid-meter consisting of a casing with an annular channel having entrance and exit passages tangentially arranged adjacent to each other, a body in said channel, said body being freely and continuously driven forwardly in said channel by the pressure of the water, and of a measuring mechanism which is operated by said body at each revolution.

2. A liquid-meter consisting of a casing with an annular channel having entrance and exit openings tangentially arranged adjacent to each other, a body in said channel, said body being freely and continuously driven forward in the channel by the pressure of the water, and a measuring mechanism comprising a spring lying in the channel, which is pressed downwardly by the said moving body, a contact connected with the spring, a circuit controlled by the contact, and a registering mechanism in the circuit, substantially as described.

3. A fluid-meter comprising a casing having an endless raceway therein, an entrance to said raceway and an exit therefrom for the moving fluid, a body freely and continuously movable by the fluid current throughout said raceway, a movable circuit-closing device projecting in said raceway in the path of the movable body, a circuit, and an indicator in said circuit substantially as described.

818,567. VALVE-OPERATING DEVICE FOR COMPRESSORS. HENRY C. SERGEANT, Westfield, N. J., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed June 26, 1902. Serial No. 113,342.



Claim.—1. The combination with the inlet-valve of a compressor, of a motor consisting of a cylinder and piston, means for admitting a pressure fluid to said cylinder on one side of the piston for closing said valve, and an elastic-fluid supply connected with said cylinder on the other side of said piston and exerting a constant tendency to open the valve, substantially as herein described.

2. The combination with the discharge-valve of a compressor, of a motor consisting of a cylinder and piston, means for admitting a pressure fluid to said cylinder on one side of the piston for closing said valve, and an elastic-fluid supply connected with said cylinder on the other side of said piston and exerting a constant tendency to open the valve, substantially as herein described.

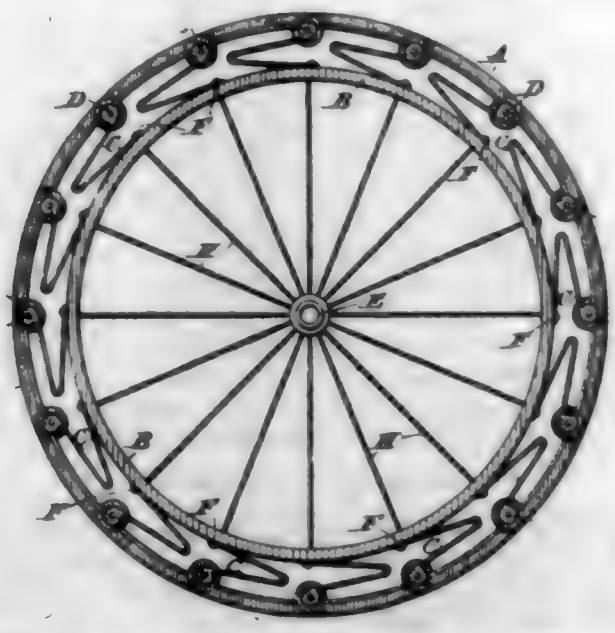
3. The combination with the inlet-valve of a compressor, of a motor consisting of a cylinder and piston, means for admitting a pressure fluid to said cylinder on one side of its piston for closing said valve and for permitting leakage of said fluid past the piston and storing said leakage whereby said leakage may act to open the valve when the pressure fluid is cut off.

4. The combination with the discharge-valve of a compressor, of a motor consisting of a cylinder and piston, means for admitting a pressure fluid to said cylinder on one side of its piston for closing said valve and for permitting leakage of said fluid past the piston and storing said leakage whereby said leakage may act to open the valve when the pressure fluid is cut off.

5. The combination with the inlet and discharge valves of a compressor and a motor for each of said valves consisting of a cylinder and piston, of means for admitting a pressure fluid to each of the motor-cylinders on one side of its piston for closing said valves, and pipes forming communication between the said motor-cylinders on those sides of their respective pistons opposite to the sides on which the pressure fluid acts for closing the valves, substantially as herein described.

6. The combination with the inlet and discharge valves of a compressor and a motor for each of said valves consisting of a cylinder and piston, means for admitting a pressure fluid to the several cylinders for closing said valves and for permitting leakage past the several pistons, and a reservoir common to the several cylinders for storing said leakage whereby said leakage may act to open the valves when the pressure fluid is cut off from their respective cylinders, substantially as herein described.

818,568. **TIRE FOR VEHICLES.** EDWARD B. SIMS, Western, Nebr. Filed June 27, 1905. Serial No. 267,306.



Claim.—A tire composed of metal sections hinged together, connected to the rim of a common wheel by a succession of springs, each section being covered by a separate rubber pad.

818,569. **TYPE-WRITING MACHINE.** ARTHUR W. SMITH, Jersey City, N. J., assignor to Yost Writing Machine Company, Ilion, N. Y., a Corporation of New York. Original application filed Dec. 11, 1901, Serial No. 85,451. Divided and this application filed May 10, 1902. Serial No. 106,893.



Claim.—1. In a type-writing machine, the combination of a hollow key-head having an opening in the base thereof, and a key-stem comprising resilient members having engaging means that are adapted to be removably inserted in the said opening in the key-head and to engage the key-head and the walls of said opening to positively lock the key-head to the stem and to prevent the head from turning on the stem.

2. In a type-writing machine, the combination of a hollow key-head having an opening in the base thereof, and a key-stem comprising resilient members having bearing-shoulders against which the base of the head bears to support the head in place and having engaging means that are adapted to be removably inserted in the said opening in the key-head and to engage the key-head and the walls of said opening to positively lock the key-head to the stem and to prevent the head from turning on the stem.

3. In a type-writing machine, the combination of a hollow removable key-head, having an opening formed therein and a key-stem comprising a pair of independent resilient plates secured together, each having an outwardly-projecting lug, which lugs project into the opening in the head and engage and positively interlock therein to secure the head to the key-stem and positively prevent the head from turning on the stem, said lugs being maintained in engagement by the resiliency of the plates and affording a removal of the head by a movement of said plates toward each other.

4. In a type-writing machine, the combination of a removable hollow key-head, a rigid engaging portion forming part of said head, resilient supports having lateral clip members, which positively interlock with the engaging portion of the key-head and positively prevent it from turning thereon and which enable the head to be removed.

5. In a type-writing machine, the combination of a removable hollow key-head having an engaging member formed as a part thereof, and a key-stem comprising separate suitably-united resilient plates, each having a projecting lug that is adapted to enter the hollow key-head and engage the engaging member of said head and to be maintained in positive engagement by the resiliency of the plates so as to positively prevent the key-head from turning on the stem and to afford the removal of the head by a relative movement of said plates.

6. In a type-writing machine, the combination of a hollow key-head having an angular engaging opening in the base thereof, a key-stem to which said head is removably connected, said stem comprising resilient plates, engaging means on said plates that coöperate with the walls of the angular opening in the base of the key-head and which positively lock the head to the stem.

7. The combination of a key-head for type-writing machines, comprising a two-part metallic body portion, the upper section of which is concaved, and a resilient cover which extends over the concaved portion and over the entire upper surface and edges of the head and is secured in place between the two metallic parts that constitute the body of the head, and a key-stem to which said head is detachably secured.

8. The combination of a key-head for type-writing machines, comprising two oppositely-disposed metallic cup-like sections, the uppermost section being concaved on top, a paper disk having a type character thereon and a celluloid cover, the disk and the cover being arranged to bridge said concavity and being secured in place between said metallic cup-like sections, and a key-stem to which said head is detachably secured.

9. The combination of a key-head comprising two metallic cup-like sections, one of which is entirely covered with a sheet of celluloid so as to present a key-head having a seamless covering of celluloid at its top and sides which celluloid sheet is secured between the two metallic sections and held in place by the pressure which unites the said sections, and a key-stem to which said head is detachably secured.

10. The combination of a key-head comprising two oppositely-disposed metallic cup-like sections, the top one of which is concaved and is entirely covered with a sheet of celluloid so as to present a key-head having a seamless covering of celluloid at its top and sides, which celluloid sheet is secured between the two metallic sections and held in place by the pressure which unites the said sections, so that the celluloid is stretched across the concaved portion of the head to form a resilient contact portion for the finger and a fabric having a character thereon located beneath said celluloid sheet, and a key-stem to which said head is detachably secured.

11. In a type-writing machine, the combination of a hollow key-head comprising a two-part metallic body portion, the upper part or section of which is concaved, and a resilient covering which extends over the concaved portion and over the entire surface and edges of the head and is secured between the two metallic parts that constitute the body of the head, said head having an opening in the base

thereof, and a key-stem comprising resilient members having engaging means that are adapted to be inserted in the said opening in the key-head and positively engage the key-head and the walls of said opening, to removably secure the key-head to the stem and to prevent the head from turning on the stem.

12. In a type-writing machine, the combination of a hollow key-head comprising two oppositely-disposed metallic cup-like sections, the uppermost section being concaved on top, a paper disk having a type character thereon and a celluloid cover, the disk and the cover being arranged to bridge said concavity and being secured in place between said metallic cup-like sections, said key-head having an opening in the base thereof and a key-stem comprising resilient members having engaging means that are adapted to be inserted in said opening in the key-head and positively engage the key-head and the walls of said opening to removably secure the key-head to the stem and to prevent the head from turning on the stem.

13. The combination of a key-head comprising two cup-like sheet-metal parts, and a key-stem to which said key-head is directly and detachably secured.

14. The combination of a hollow key-head comprising two oppositely-disposed cup-like sheet-metal parts secured together; and a key-stem to which said key-head is directly and detachably secured.

15. The combination of a key-head comprising two oppositely-disposed sheet-metal cup-like parts secured together; an opening in the lower one of said parts; and a key-stem having a resilient portion sprung into said opening whereby said key-head is detachably secured to said stem.

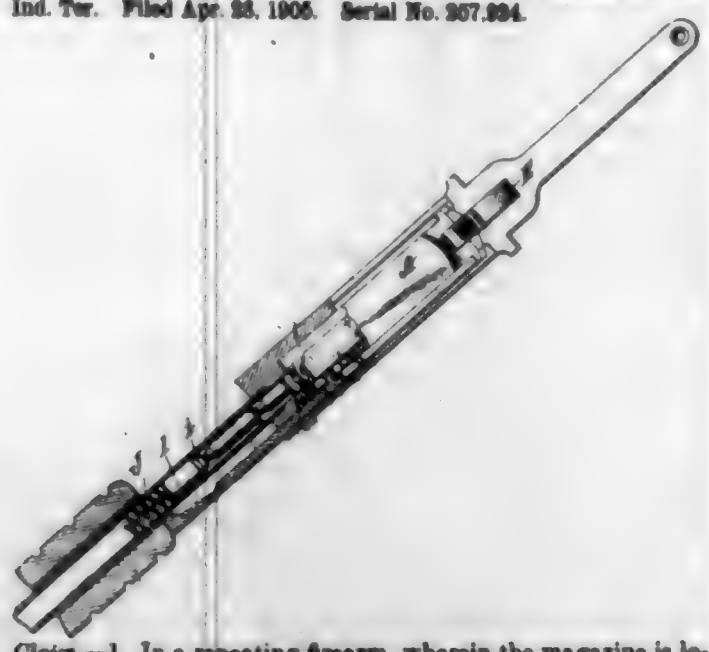
16. The combination of a key-stem and a key-head detachably secured to said stem, said key-head being positively and directly locked in position on said stem.

17. The combination of a key-head comprising a sheet-metal part; and a key-stem, a portion of which detachably interlocks with said sheet-metal part to positively lock said key-head in position on said stem.

18. The combination of a key-stem having a spring portion, and a key-head having a part which detachably interlocks with said spring portion to positively lock said key-head in position on said stem.

19. The combination of a key-stem and a key-head detachably mounted on said stem, said head being positively locked in position directly on said stem by a spring-actuated latch.

818,570. **MAGAZINE-FIREARM.** VOLNEY M. SPRANGEL, Wagoner, Ind. Ter., assignor of one-half to Cornelius E. Castle, Wagoner, Ind. Ter. Filed Apr. 23, 1905. Serial No. 257,224.



Claim.—1. In a repeating firearm, wherein the magazine is located below and parallel with the barrel and the breech-piece and carrier are located in a receiver in rear of the magazine, and operated by a slide-handle in front of the receiver, the combination with an action-slide for operating the breech-piece and actuating the carrier to convey a cartridge from the magazine to the barrel, of a stop within the receiver for holding cartridges in the magazine while the carrier is elevated, and an auxiliary stop in the front wall of the receiver, actuated by the action-slide, which holds cartridges in the magazine while the carrier is depressed and filled but allows a single cartridge to pass it when the carrier rises.

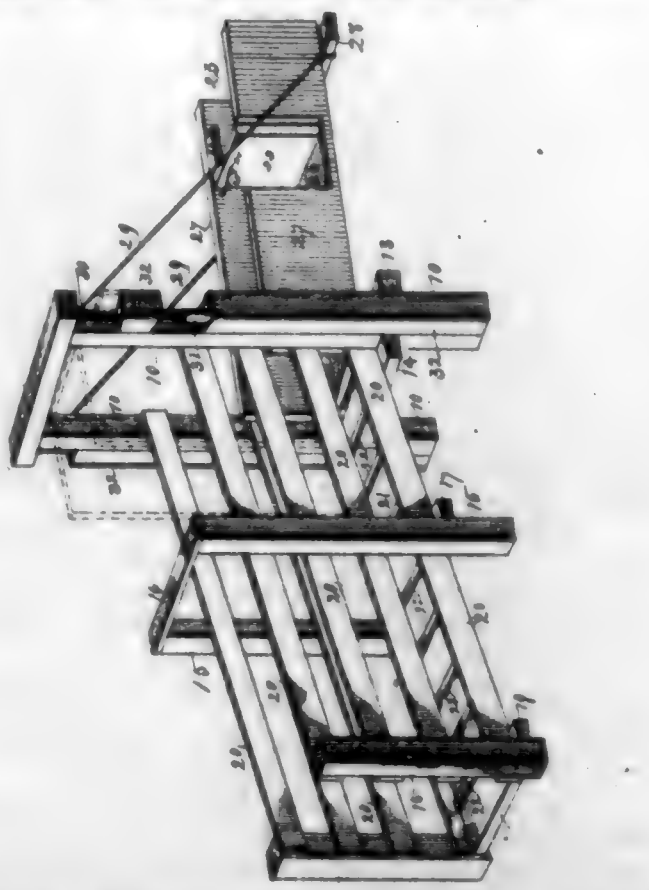
2. The combination of the receiver, the barrel, and magazine opening into the front of the receiver, the breech-piece and carrier within the receiver, the action-slide connected with the breech-piece, a cartridge-stop on the carrier for holding cartridges in the magazine while the carrier is elevated and an auxiliary stop in the front wall of the receiver operated by the action-slide and which holds cartridges in the magazine while the carrier is depressed and the carrier is filled and also while the carrier is rising but which is actuated to release the rearmost cartridge in the magazine when the action-slide reaches the limit of its inward movement and is then moved by the slide into the path of the next following cartridge in the magazine.

3. The combination with a barrel, magazine, receiver and firing mechanism of a repeating firearm, of a cartridge-stop in the front wall of the receiver adapted to engage the rearmost cartridge in the magazine when the arm is in firing condition, and means for withdrawing the stop in the act of throwing back the breech-piece and elevating the carrier.

4. In a repeating firearm of the class described the combination with the receiver, breech-piece and carrier, of an action-slide detachably connected with the breech-piece, extending forwardly therefrom and having a recess near its front end on its inner side, a removable slide-cover for holding the action-slide in place and which when removed allows the action-slide to be withdrawn from the receiver, and a spring-pressed cartridge-stop located in the front wall of the receiver behind the action-slide and which extends into the magazine and engages the rearmost cartridge therein when the arm is in firing condition but which passes into the recess of the action-slide out of the path of the cartridges in the magazine when the carrier is lifted and the breech-piece thrown back.

5. In a repeating firearm of the class described, the combination with the magazine and the recessed action-slide, of a spring-pressed stop projecting into the rear portion of the magazine and adapted to enter the recess in the action-slide and a spring-pressed magazine-plug in the magazine having its rear end reduced so as to permit the stop to reciprocate into and out of the recess in the action-slide, when the plug is at the rear end of the magazine, substantially as and for the purpose specified.

818,571. **ADJUSTABLE STOCK-CHUTE.** AARON E. STARRETT, Kellogg, Iowa. Filed Nov. 20, 1905. Serial No. 288,774.



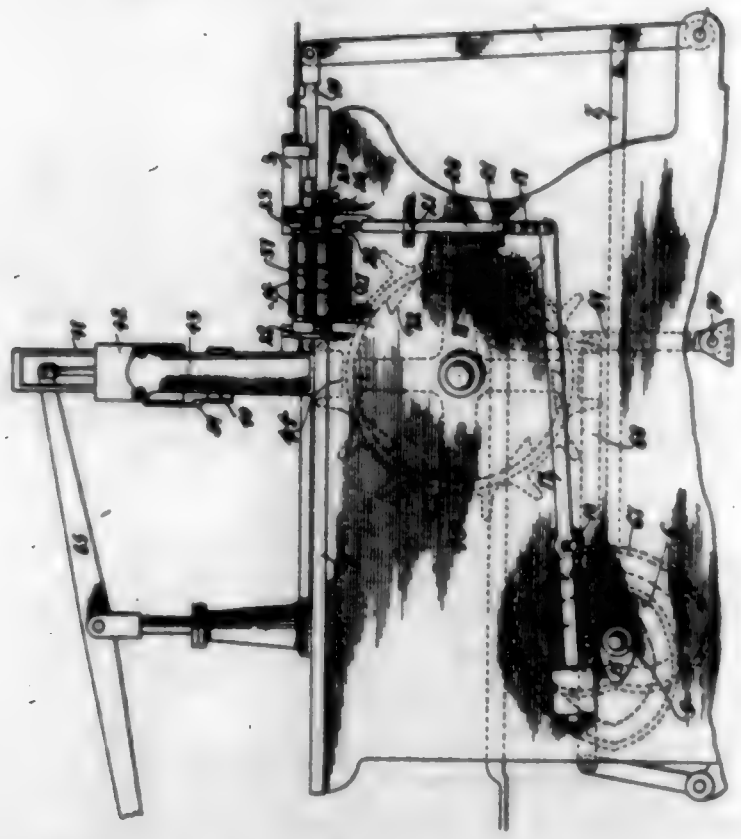
Claim.—1. In a stock-chute, an open-ended inclined passage-way having parallel sides for animals and an extension passage-way hinged to the upper end of the inclined passage and a hinged door in one of its parallel sides, to operate as set forth.

2. In a stock-chute, an open-ended inclined passage-way for animals and an extension passage-way hinged to the upper end of the inclined passage, a door in one of its sides, ropes connected with the free end of the extension and passed over direction-pulleys, direction-pulleys at the sides and tops of uprights, uprights at the rear end of the inclined passage and weights on the ends of the ropes, to operate in the manner stated.

3. In a stock-chute, an open-ended inclined passage-way for animals and an extension passage-way hinged to the upper end of the inclined passage, a door and door-fastening devices in one of its sides, ropes connected with the free end of the extension and passed over direction-pulleys, direction-pulleys at the sides and tops of uprights, uprights at the rear end of the inclined passage, weights on the ends of the ropes and boxing fixed to said uprights to conceal and protect the weights, arranged and combined to operate as set forth.

4. A stock-chute comprising an open-ended inclined passage-way for animals, an extension passage-way hinged to the upper end of the inclined passage, a door in one of its sides, door-fastening devices, ropes connected with the free end of the extension and passed over direction-pulleys, direction-pulleys at the sides and tops of the uprights, uprights at the rear end of the inclined passage, weights on the end of the ropes and boxing fixed to the uprights at the rear end of the inclined passage-way to conceal the weights, arranged and combined to operate in the manner stated.

818,572. **WRAPPING-MACHINE.** ALBERT STRARNS and PETER H. MACCORQUODALE, Syracuse, N. Y.; said MacCorquodale assignor to said Stearns. Filed Sept. 3, 1904. Serial No. 223,210.



Claim.—1. In a wrapping-machine, a package-placer, a reciprocating package-feeder for feeding packages thereto and an endless conveyer for automatically depositing packages directly onto the package-feeder at predetermined intervals.

2. In a wrapping-machine, a package-placer, a longitudinally-reciprocating package-feeder for feeding the packages thereto and an endless conveyer arranged laterally with respect to the feeder for automatically depositing packages directly onto the package-feeder at predetermined intervals.

3. In a wrapping-machine, a plurality of package-placers, a plurality of package-feeders for feeding the packages thereto and endless conveyers for automatically depositing packages directly onto the package-feeders at predetermined intervals.

4. In a wrapping-machine, a plurality of package-placers, a plurality of longitudinally-reciprocating package-feeders for feeding packages thereto and a plurality of laterally-movable endless conveyers for automatically depositing packages directly onto the package-feeders at predetermined intervals.

5. In a wrapping-machine, a plurality of longitudinally-reciprocating package-feeders having pockets thereon, means for moving the package-feeders to bring the pockets into different transverse planes and a plurality of laterally-movable conveyers arranged in different transverse planes for automatically depositing packages into said pockets at predetermined intervals.

6. In a wrapping-machine, a plurality of package-placers arranged in the same transverse plane, a plurality of longitudinally-reciprocating package-feeders having pockets thereon, means for moving the package-feeders forwardly to bring their pockets beneath the package-placers and rearwardly to bring the pockets to points in different transverse planes and laterally-movable conveyers arranged in different transverse planes for depositing packages into said pockets at predetermined intervals.

7. In a wrapping-machine, a plurality of longitudinally-reciprocating package-feeders, a plurality of laterally-movable conveyer-belts, pulleys therefor, a shaft, means for connecting the shaft to one or more of the pulleys at pleasure and means for imparting an intermittent rotary movement to the shaft.

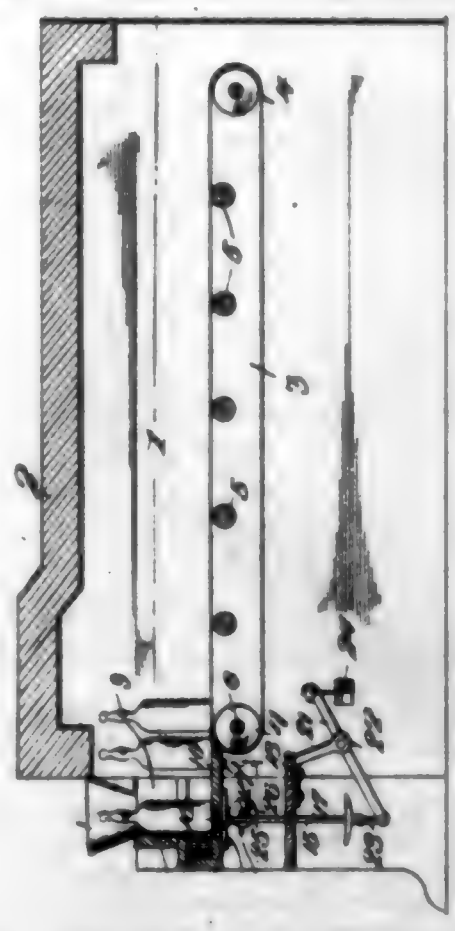
8. In a wrapping-machine, a vertically-reciprocating package-placer, spring elastic grippers and spur-grippers carried by the package-placer, the spring elastic grippers being arranged to frictionally engage the package and the spur-grippers being arranged to positively engage the package.

9. In a wrapping-machine, a vertically-reciprocating package-placer, spring elastic grippers carried by the package-placer for frictionally engaging the four sides of the package, spur-grippers carried by the package-placer for positively engaging the opposite sides of the package and means for opening and closing the grippers at predetermined points in the movements of the package-placer.

10. In a wrapping-machine, a vertically-reciprocating package-placer comprising a box and a block yieldingly connected, rock-shafts at the opposite sides of the box, a spur-gripper carried by each rock-shaft, a connection between the spur-grippers for causing them to simultaneously open and close, a spring-actuated arm carried by one shaft tending to hold the grippers normally closed and a finger carried by one shaft normally projecting beneath the block and operated thereby at a predetermined point in the movement of the package-placer.

11. In a wrapping-machine, a vertically-reciprocating package-placer, standards with which the placer is fitted to slide, spur-grippers carried by the package-placer and means carried by one of the standards for opening the grippers at a predetermined point in the movement of the package-placer.

818,573. **APPARATUS FOR FEEDING ARTICLES INTO OVENS.** WILLIAM STENDER, Streator, Ill. Filed Oct. 16, 1905. Serial No. 283,006.



Claim.—1. An apparatus of the character described, comprising an oven having an article-receiving opening, an article-receiver, means for feeding articles from said receiver through said opening and means for holding said receiver stationary while an article is being moved from it by said feeding means.

2. An apparatus of the character described, comprising an oven having an article-receiving opening, an article-receiver, means for feeding articles from said receiver through said opening and means actuated by said feeding means for holding said receiver against

movement while said feeding means is moving an article from said receiver.

3. An apparatus of the character described comprising an oven having an article-receiving opening, a reciprocatory article-receiver, a rotary feeder for moving articles from said receiver through said opening, and means for holding said receiver against movement while said feeder is moving an article therefrom.

4. An apparatus of the character described comprising an oven having an article-receiving opening, a reciprocatory article-receiver, a rotary feeder for moving articles from said receiver through said opening, and a latch actuated by said rotary feeder for holding said receiver against movement when an article is being removed therefrom by said feeder.

5. An apparatus of the character described comprising an oven having an article-receiving opening, a reciprocatory article-receiver, a rotary feeder for moving articles from said receiver through said opening, a latch to coact with said receiver, means actuated by said rotary feeder for causing said latch to hold said receiver against movement, and means actuated by said rotary feeder for causing said latch to release said receiver.

6. An apparatus of the character described, comprising an oven having an article-receiving opening, a reciprocatory article-receiver adapted to be depressed by the weight of the article placed thereon, means for holding said receiver normally in an elevated position, a feeding device for moving articles from said receiver through said opening, and means controlled by said feeder for securing said receiver in its depressed position when the article is being removed therefrom.

7. An apparatus of the character described, comprising an oven having an article-receiving opening, a reciprocatory article-receiver adapted to be depressed by the weight of the article placed thereon, means for holding said receiver normally in an elevated position, a rotary feeder for moving the articles from said receiver through said opening, a latch for securing said receiver in its depressed position, and means controlled by said feeder for operating said latch.

8. An apparatus of the character described, comprising an oven having an article-receiving opening, a reciprocatory article-receiver adapted to be depressed by the weight of the article placed thereon, means for holding said receiver normally in an elevated position, a rotary element, an arm upon the latter for moving an article from said receiver and through said opening, a latch to coact with said receiver, said latch being adapted to be actuated in one direction by said arm, and a pin upon said rotary element for actuating said latch in the opposite direction.

9. An apparatus of the character described comprising an oven having an article-receiving opening, a casing arranged in front of said opening and above a floor or table in said oven, a guide above said casing, a vertically-movable article-receiver arranged in and beneath said casing, a lever attached to said receiver, a counterbalancing-weight upon said lever, a rotary shaft or element arranged beneath said table, a pair of arms upon said element adapted to move through openings in said table to move articles from said receiver through the inlet-opening of said oven, and means for holding said receiver against movement when an article is being moved therefrom.

10. An apparatus of the character described comprising an oven having an article-receiving opening, a casing arranged in front of said opening and above a floor or table in said oven, a guide above said casing, a vertically-movable article-receiver arranged in and beneath said casing, and having a shoulder, a lever attached to said receiver, a counterbalancing-weight upon said lever, a rotary shaft or element arranged beneath said table, a pair of arms upon said element adapted to move through openings in said table to move articles from said receiver through the inlet-opening of said oven, a swinging latch to coact with the shoulder upon said receiver, said latch being adapted to be moved in one direction by one of said arms, and a pin upon said element adapted to engage said latch to move it in the reverse direction.

11. An apparatus of the character described comprising an oven having an article-receiving opening at one end, an endless moving table in said oven, a stationary table or platform at the inlet end of said oven, an article-guide adjacent to said inlet-opening, a vertically-movable counterbalanced article-receiver in said guide, means for moving articles from said receiver through said inlet-opening, and means for holding said receiver in its depressed position while articles are being moved therefrom, substantially as described.

12. In an apparatus of the character described, the combination of a vertically-reciprocating article-receiver consisting of a head and a notched rod, means for supporting said receiver in an elevated position, means for moving articles from the head of said receiver, a rotary element, a latch to coact with the notch in the rod of said receiver, and means upon said element for respectively moving said latch into and out of engagement with said notch.

818,574. **HALF-TONE PHOTOLITHOGRAPHY AND THE LIKE.** ADAM STEPHAN, Waverley, near Sydney, New South Wales, Australia, assignor to Robert Sands, Sydney, New South Wales, Australia. Filed Aug. 18, 1904. Serial No. 221,311.

Claim.—1. The herein-described process consisting in coating a transfer medium with a gelatin emulsion so as to give a grain reticulation then passing an inked soft-nap lithoroller over the same, then manipulating said medium with a hard dry lithoroller, then printing such medium from the original negative and finally reinking such transfer medium with the soft-nap lithoroller before developing the same for transfer to the stone or metal used.

2. The herein-described process consisting in passing an inked soft-nap lithoroller over a transfer medium to which a grain is imparted in any way then manipulating said medium with a hard dry lithoroller, then printing such medium from the original negative, and reinking such transfer medium with the soft lithoroller before developing the same for transfer to the stone or metal used.

3. The herein-described process consisting in passing an inked soft-nap lithoroller over a transfer medium or transfer mediums coated with a gelatin emulsion so as to give a grain reticulation, then manipulating said medium with a hard dry lithoroller, then printing such medium or mediums from the original negative or negatives through a color-filter or color-filters, and reinking such transfer medium or mediums before developing the same for transfer to the stone or metal used.

4. The herein-described process consisting in passing an inked soft-nap lithoroller over a transfer medium or transfer mediums to which a grain is imparted in any way, then manipulating said medium or mediums with a hard dry lithoroller, then printing such medium or mediums from the original negative or negatives through a color-filter or color-filters, and reinking such transfer medium or mediums with the soft lithoroller before developing the same for transfer to the stone or metal used.

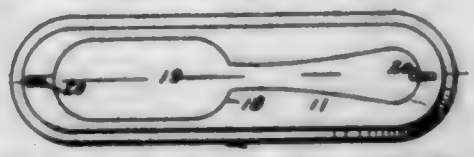
5. The herein-described process consisting in coating a transfer medium with a gelatin emulsion so as to give a grain reticulation, then passing an inked soft-nap lithoroller over said medium, then printing the medium from the original negative, and then passing the inked soft-nap lithoroller over the medium again.

6. The herein-described process consisting in passing an inked soft-nap lithoroller over a transfer medium to which a grain is imparted in any way, printing said medium from the original negative and then passing said lithoroller over the medium again.

7. The herein-described process consisting in manipulating a transfer medium coated with a gelatin emulsion so as to give a grain reticulation with a hard dry lithoroller, and then printing said medium from the original negative.

8. The herein-described process consisting in manipulating a transfer medium to which a grain is imparted in any way with a hard dry lithoroller, and then printing said medium from the original negative.

818,575. **TOILET-CASE.** JAMES P. STUBBLEFIELD, Buchanan, Tenn. Filed Aug. 26, 1905. Serial No. 275,911.

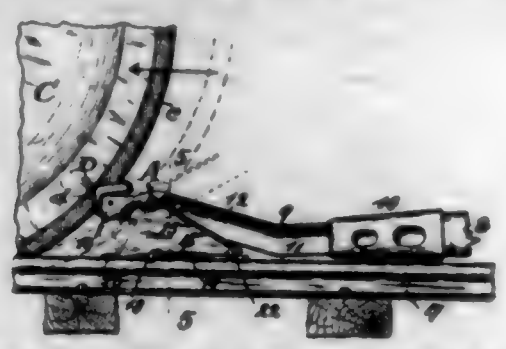


Claim.—1. A brush having a head comprising hinged sections, one of said sections having a pocket, the top wall of which has an opening, a second brush fitting in the opening, catches for securing said brush, and a spring in the pocket bearing on the brush for pushing it from the opening when the catches are disengaged.

2. A brush having a head comprising hinged sections, one of said sections having a pocket, the top wall of which has an opening, a second brush removably secured in the opening, and a mirror carried by the other section and visible through the aforesaid opening when the brush is removed therefrom.

818,576. **CAR-LEVER.** GEORGE B. SULLIVAN, Evanston, Ohio. Filed Oct. 25, 1905. Serial No. 284,260.

Claim.—1. In a car-moving lever, the combination with the lever proper, of an angular heel-piece pivotally carried at the upper corner of its front end and a shoe whereby the lever rests upon the rail.



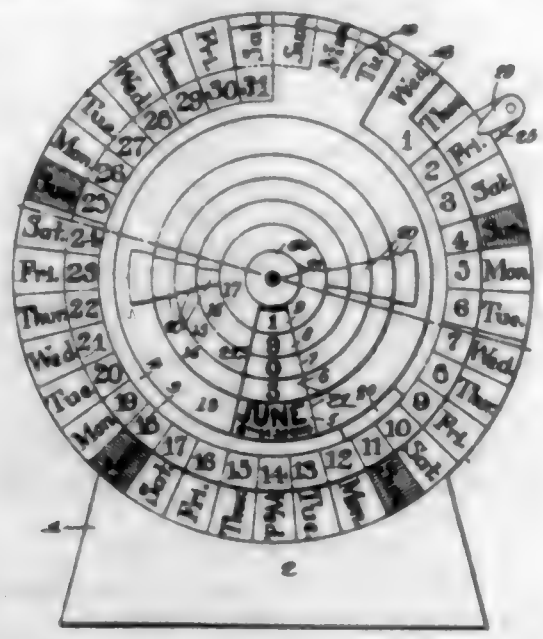
2. A car-moving lever, the front part of which is T-shaped in profile and provided with a vertical rib which is laterally enlarged to form two cheeks with a recess between, in combination with a heel-piece having an angular-arranged flange with a rib whereby it is pivotally secured in the recess mentioned and a shoe whereby the lever rests upon the rail.

3. A car-moving lever, in combination with a shoe on which it rests and which shoe is provided with a contact-surface on its under side, or sole of leather, or material equivalent thereto like rubber, fabric or compositions of these materials.

4. A car-moving lever in combination with a shoe consisting of a base and two sides projecting upwardly therefrom and between which it is fulcrumed and which base is provided with ridges on its under side, one on each edge, and a sole of leather held between these ridges.

5. A car-moving lever in combination with a shoe consisting of a base and two sides projecting upwardly therefrom and between which it is fulcrumed and which base is provided with ridges on its under side, one on each edge, a sole of leather held between these ridges and a nose projecting from the base in front of this sole.

818,577. **PERPETUAL CALENDAR.** WILLIAM B. SUNNERALL, Atlanta, Ga. Filed June 27, 1905. Serial No. 267,231.

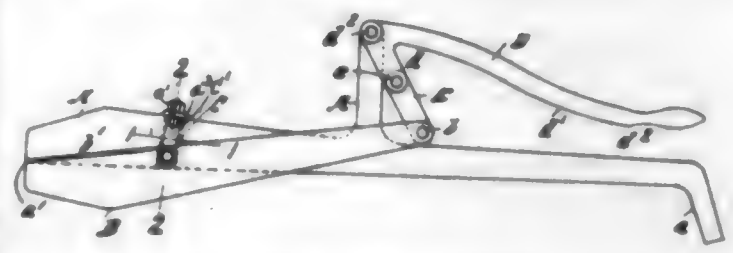


Claim.—1. A calendar embodying a plurality of independently-rotatable disks having printed thereon the names of the days of the week, the days of the month, the months of the year, and the years of a century, certain of the disks being provided with shutters for concealing from view days of the week and of the month not appearing in the month designated, and also exhibiting to view the first day of a succeeding month.

2. A calendar comprising a base having displayed thereon, the names of the days of the week five times repeated, a disk superposed thereon and bearing the number of the days of the month, a months-disk superposed upon the day-disk, a plurality of year-disks superposed upon the months-disk, and means combined with certain of the disks for shielding from view days of the week and of the month not present in the month designated.

3. A calendar comprising a base having arranged thereon, the names of the days of the week, five times repeated, a post secured to the base and provided with longitudinal channels or grooves, a day-of-the-month disk, a month-disk, and a plurality of year-disks loosely mounted upon the post, and spaces interposed between the respective disks and having means to engage the grooves of the channels to hold them against rotation, each of the said spacers beginning with the month-disk being provided with a sight-opening.

818,578. **PLATE-SHEARS.** CHARLES SWAN, Corry, Pa. Filed Dec. 1, 1904. Serial No. 235,126.



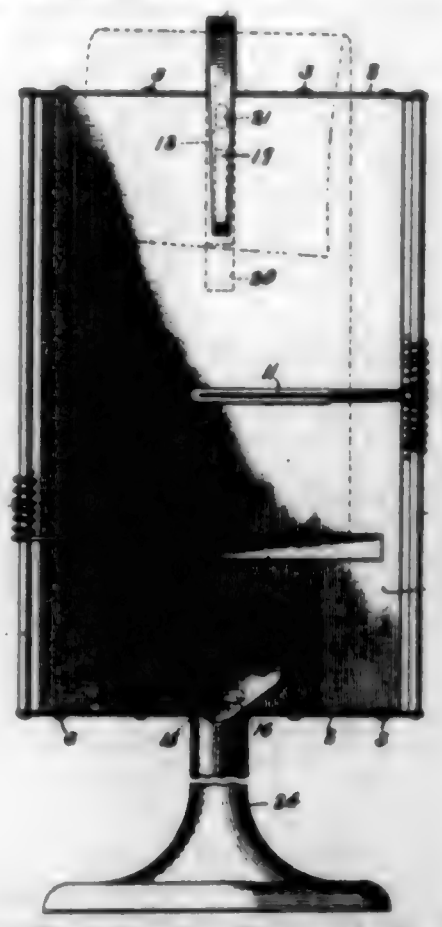
Claim.—1. In a plate-shears the combination with the blades; of a pivot for said blades movable relatively to one of said blades to permit of the adjustment of the cutting edges of the blades toward and from each other and transversely to the axis of the pivot; and means for adjusting the pivot.

2. In a plate-shears, the combination with the blades; a sliding bolt mounted on one of said blades; means for adjusting said bolt relatively to said blade; and the pivot-pin carried by said adjustable bolt and extending at right angles to the line of movement of the blade, the other of said blades being mounted on said pivot-pin.

3. In a plate-shears, the combination with the blades, one of said blades having a dovetailed slot; a dovetailed bolt arranged in said slot; means for adjusting the bolt in the slot; a pivot-pin carried by said bolt and extending at right angles to the line of movement of the blade, the other of said blades being mounted on said pivot-pin.

4. In a plate-shears, the combination with the blades A and B, the blade A having the dovetailed slot a^3 therein; the bolt C′ having the screw-threaded portion C^3 and the dovetailed portion C^2 arranged in said slot; lug a^3 extending from the blade A and having a perforation through which the screw-threaded portion C^3 extends; the nut c^3 on said screw-threaded portion; the pivot-pin C on the bolt C′; the jaw B mounted on said pivot-pin C.

818,579. **COPY-HOLDER.** WILLIAM P. SWOPE, Owenton, Ky. Filed Jan. 30, 1906. Serial No. 298,672.



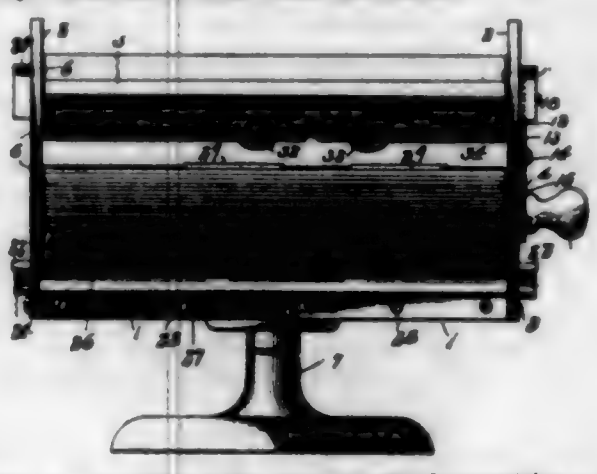
Claim.—1. The combination with a copy-holder platen; of a resilient keeper adjustably connected to the platen and having its free end extending in front thereof, said keeper being bent to a compound curve and adapted to loosely support a raised sheet.

2. The combination with a platen having its rear side provided with a groove or channel, of a keeper having one terminal disposed in the channel, and its other terminal bent to a compound curve and disposed at the front of the platen, and means for locking the keeper at any desired adjustment relatively to the platen.

3. The combination with a platen provided in its rear side with a longitudinal groove or channel, of a resilient keeper having one terminal provided with a longitudinal slot and mounted within the channel, and its other terminal formed into a compound curve and disposed at the front of the platen, a threaded stud carried by the platen and projecting through the slot, and a thumb-screw carried by the stud.

4. The combination with a copy-holder platen; of a resilient keeper adjustably connected to and extending in front of the platen, said keeper extending beyond the platen and adapted to loosely support a raised sheet upon the platen.

818,580. ROTARY COPY-HOLDER. WILLIAM P. SWOPE, Owenton, Ky. Filed Jan. 30, 1906. Serial No. 298,673.

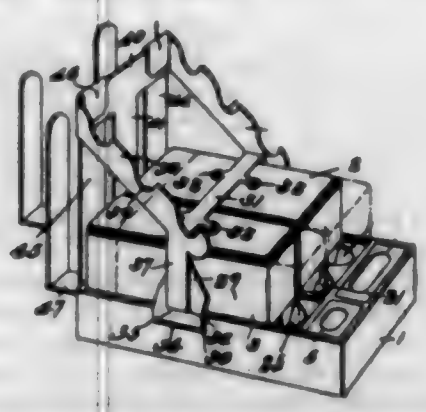


Claim.—1. An article of the class described comprising a roller to receive matter to be copied, a roller to store the matter as it is copied, means for imparting rotation in like directions to the two rollers, and means for winding the matter to be copied upon one roller when turned in one direction and for positively directing said matter into contact with the other roller and wind it thereon when the direction of rotation of the first-named roller is reversed.

2. An article of the class described comprising a feed and a storage roller, a train of gears connecting the two rollers to cause them to rotate in the same direction, tension-rollers coacting with the feed and storage rollers, means for directing a sheet of paper around the storage-roller when rotated in one direction, and means for directing a sheet of paper around the feed-roller when the direction of rotation of the storage-roller is reversed.

3. An article of the class described comprising a storage and a feed roller, a train of gearing for causing both the rollers to rotate in the same direction when one is actuated, tension-rollers coacting with the feed and storage rollers, shields partly encircling the last-named rollers, and guards carried by the shields and coacting with the rollers.

818,581. INK-WELL. WILLIAM P. SWOPE, Owenton, Ky. Filed Jan. 30, 1906. Serial No. 298,674.



Claim.—1. An article of the class described comprising a base having ink-wells of different depths, and a superposed ink-reservoir, one of the parts being movable relatively to the other to open or close the wells.

2. An article of the class described comprising a base provided with a plurality of ink-wells of different depths, and a superposed ink-reservoir movable upon the base to open or close the ink-wells.

3. An article of the class described comprising a base provided with an ink-well and with upstanding marginal flanges, a superposed ink-reservoir mounted for longitudinal movement upon the base to cover or uncover the ink-well, and being limited in its movements by the flanges, and yielding means for holding the reservoir combined with the base.

4. An article of the class described comprising a base embodying a fixed and a removable ink-well, and ink-reservoirs superposed upon the base and movable thereon to cover or uncover the ink-wells.

5. An article of the class described comprising a base embodying a plurality of ink-wells of different depths, one of which is detachably combined with the base, and superposed ink-reservoirs movable relatively to the base to cover or uncover the ink-wells.

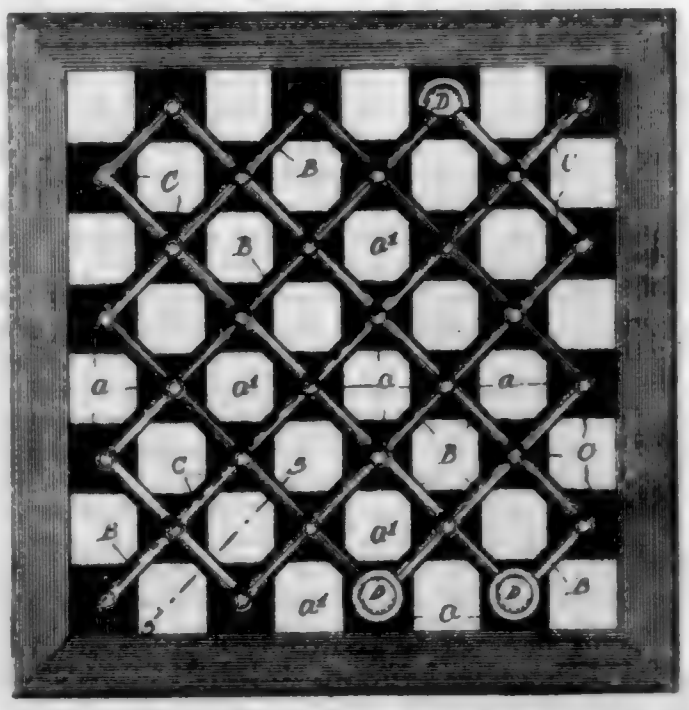
6. An article of the class described comprising a base provided with an ink-well, an ink-reservoir superposed upon the base and movable thereon to cover or uncover the well, a pressure-exerting member coacting with the reservoir and having a detachable connection with the base, a pen-rack detachably combined with the pressure-exerting member, and a paper-and-envelop rack detachably combined with the pen-rack.

7. An article of the class described comprising a base provided with an ink-well and with terminal and lateral seats, an ink-reservoir movably mounted upon the base to cover or uncover the ink-well, a pressure-exerting member coacting with the reservoir and having inward-projecting flanges to engage the lateral seats and having slots adjacent to the flanges, a pen-rack having inward-projecting toes to engage the slots and a flange to engage the terminal seat, and a combined paper-and-envelop rack having clip members to engage with the pen-rack.

8. An article of the class described, comprising a base provided with a plurality of ink-wells, superposed ink-reservoirs movably mounted upon the base to open or close the ink-wells, and a fastening device for securing the reservoirs to the base.

9. An article of the class described comprising a base having ink-wells therein and flanges surrounding the wells and extending upward from the base, and a superposed ink-reservoir disposed above each well and held against displacement by the flanges, said reservoirs being detachable from the base to open or close the wells.

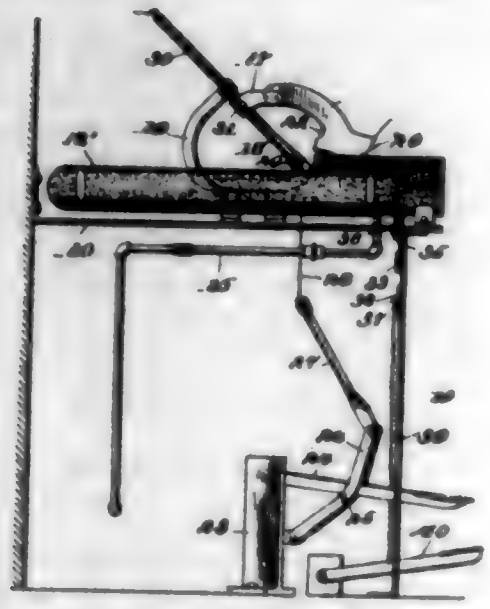
818,582. GAME-BOARD. STEPHEN M. THOMAS, Chicago, Ill. Filed June 26, 1903. Renewed July 6, 1905. Serial No. 268,556.



Claim.—1. The combination of a game-board having a plurality of squares and a plurality of depressions within said squares and having a plurality of grooves of less depth than the depressions running through the squares, and depressions in the direction in which the moves are to be made, of a plurality of pieces having downwardly-projecting buttons of the same thickness as the depth of the depressions.

2. The combination with a game-board having a plurality of squares, the squares having shallow circular depressions, and a plurality of grooves of less depth than the depressions, running through the squares in the direction in which the moves are to be made and intersecting the depressions, of a plurality of pieces having downwardly-projecting circular buttons of the same size as the depressions in the squares.

818,583. MACHINE FOR FORMING SACKS FOR SUSPENSORY BANDAGES. JUDITH K. TOLLES, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Aug. 4, 1902. Serial No. 118,396.



Claim.—1. The combination of a pair of irons having opposing and substantially rectangular ironing-surfaces, and a die carrying material to be operated upon and arranged to travel diagonally between said ironing-surfaces.

2. The combination of a pair of irons having opposing ironing-surfaces, a die carrying the material to be operated upon, and means for moving the die in a downwardly and forwardly direction between the ironing-surfaces.

3. The combination of a pair of irons having opposing ironing-surfaces, a die carrying the material to be operated upon and arranged to travel between the ironing-surfaces in contact therewith, and prongs on the die to engage and hold the material.

4. The combination of a die carrying the material to be operated upon, substantially rectangular-shaped irons for shrinking the material into shape, and means for moving said die in a diagonal direction to and away from said irons.

5. The combination of a pair of irons having opposing ironing-surfaces, a die arranged to carry the material to be operated upon between said ironing-surfaces to be ironed, and means for simultaneously moving said ironing-surfaces together on the material, while carried by the die, after the ironing operation to set the shape.

6. The combination of a pair of irons having opposing ironing-surfaces, a die to carry and hold the material to be operated upon between said surfaces, a lazy-tongs connected with said ironing-surfaces, and means for operating the lazy-tongs to compress the ironing-surfaces on the material carried by the die.

7. The combination of a pair of irons having opposing and substantially rectangular ironing-surfaces, a die for holding the material to be operated upon, means for moving the die in a diagonal direction between the ironing-surfaces, and means for simultaneously moving the irons toward each other while the material is held therebetween.

8. The combination of a pair of irons having opposing ironing-surfaces, a bracket, a rod arranged on said bracket in a diagonal position with relation to said irons, a collar carried by the rod, a die connected to the collar, means connected with the collar for moving it down on the rod and the die between said ironing-surfaces, and means connected with the collar for returning it to its normal position.

9. The combination of a pair of irons having opposing ironing-surfaces, a bracket arranged behind said ironing-surfaces, a rod carried by said bracket in a diagonal position with relation to said irons, a die guided on the rod and arranged to travel between the ironing-surfaces in a diagonal direction relative thereto, a spring for holding the die normally in its upper position, and means for carrying the die down between the ironing-surfaces.

10. The combination of a pair of irons having opposing ironing-surfaces, a die, a die-lever, a pin on said die-lever, and a pedal-lever engaging said pin and adapted to operate the die.

11. The combination of a pair of irons having opposing ironing-surfaces, a die arranged to carry the material to be operated upon between said ironing-surfaces, a die-lever, a link connected to said lever, a chain connecting the link and the die, and a pedal-lever to operate said die-lever.

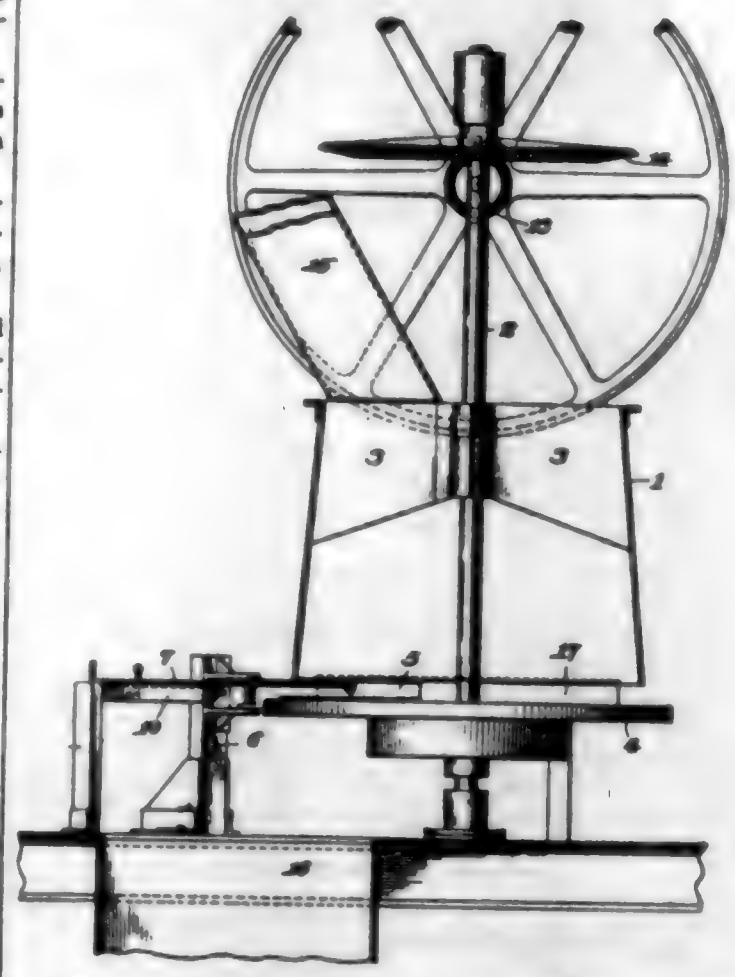
12. The combination of a pair of irons, a rod mounted at an acute angle to the irons, a die arranged to travel on said rod, a spring connected with the die and normally holding it in position above the irons, a lever connected with the die, and a pedal-lever operating said die-lever to carry the die in between the irons.

818,584. LOCK-NUT. ETHELBERT W. TREATT, Plaistow, England. Filed Sept. 13, 1905. Serial No. 278,338.

Claim.—1. In combination with a bolt, a series of nuts adapted to engage said bolt, said nuts acting in conjunction one with the other, said nuts having concaved and convexed faces, the convexed faces being slotted radially and fitting with a concaved face.

2. In combination with a bolt, a pair of nuts adapted to engage said bolt, said nuts acting in conjunction one within the other, said nuts having their under surfaces concaved and their upper surfaces conical and slotted, the conical surface being adapted to engage the concaved surface.

818,585. FEEDING DEVICE. EDWARD E. TRUMP, Syracuse, N. Y. Filed Mar. 11, 1902. Serial No. 97,576.



Claim.—1. In a feeding device, the combination of means for rotating an integral mass of material with a substantially constant circumferential dimension at its base, and deflecting means projecting into said base.

2. In a feeding device, the combination of means for rotating an integral mass of material with a substantially constant circumferential dimension at its base, and adjustably-supported deflecting means projecting into said base.

3. In a feeding device, the combination of a rotatable receptacle for material comprising a cylinder and a table spaced beneath its lower edge, said table having a diameter exceeding that of the cylinder sufficient to support the material at natural slope, and means for deflecting from within the cylinder the under portion of the rotating material.

4. In a feeding device, the combination of a rotatable receptacle for dry granular or powdered material comprising a cylinder and a table spaced beneath its lower edge, said table having a diameter exceeding that of the cylinder sufficient to support the material at natural slope, and means for deflecting from within the cylinder the under portion of the rotating material.

5. In a feeding device, the combination of a rotatable receptacle for material comprising a cylinder and a table spaced beneath its lower edge, said table having a diameter exceeding that of the cylinder sufficient to support the material at natural slope, and adjustably-supported means for deflecting from within the cylinder the under portion of the rotating material.

6. In a feeding device, the combination of a rotatable receptacle, comprising an envelop and a platform spaced beneath the lower extension thereof, and an adjustably-supported deflector projecting between the platform and the envelop, the proportions and positions relatively of the envelop, the platform and the deflector, being such that the amount of material deflected, with each rotation of the receptacle, shall so preponderate the variation of deflection, due to the variation in the natural slope of material, as to render such variation inappreciable.

7. In combination with a stationary receiving device having an intake-port, a feeding device therefor, comprising a rotatable receptacle, formed by an envelop and a platform spaced below the lower extension thereof, and means for deflecting material therefrom to the receiving device, a chamber for inclosing said intake-port and a movable seal arranged between the inclosing chamber and the rotatable receptacle.

8. In combination with a stationary receiving device having an intake-port, a feeding device therefor, comprising a rotatable receptacle, formed by an envelop and a platform spaced below the lower extension thereof, and means for deflecting material therefrom to the receiving device, a chamber inclosing said intake-port, and a movable seal arranged between the inclosing chamber and the rotatable receptacle, and a scraper rotating beneath the platform, for sweeping the bottom of the inclosing chamber.

9. In combination with a receiving device having a material-intake port, such as a stack under pressure above atmosphere, means for feeding material thereto, comprising a rotatable receptacle, formed by an envelop and a platform spaced below the lower extension thereof, and means for deflecting the material therefrom to the stack, said envelop having a vertical extension sufficient to maintain a mass of material above said intake-port sufficient to counteract the said pressure.

10. In combination with a receiving device having a material-intake port, such as a stack under pressure above atmosphere, means for feeding material thereto, comprising a rotatable receptacle, formed by an envelop and a platform spaced below the lower extension thereof, and means for deflecting the material therefrom to the stack, said envelop having a vertical extension sufficient to maintain a mass of material above intake-port sufficient to counteract said pressure, a chamber inclosing said intake-port and a movable seal between the inclosing chamber and the rotatable receptacle.

11. In a feeding device the combination of a rotatable receptacle, comprising an envelop and a platform spaced below the lower extension thereof, means for deflecting the under portion of the mass of material rotated thereby, a receiver for said deflected material, a chamber inclosing the aperture of the receiver, the platform and the lower portion of the envelop, an annular channel and an annular flange adapted to project therein, secured between the inclosing chamber and the rotating envelop to maintain a movable seal therebetween.

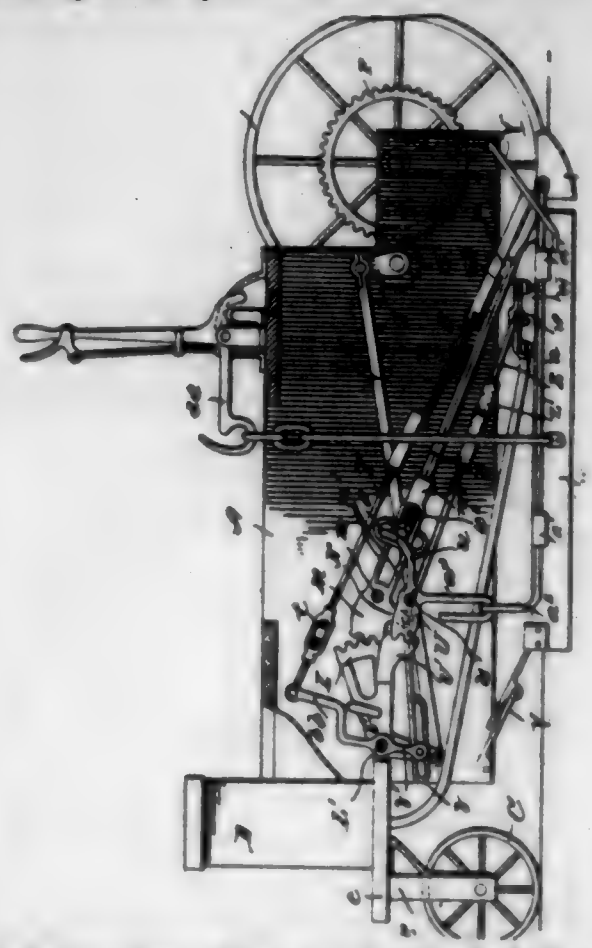
818,586. **TOBACCO SELF-TRANSPLANTER.** ARENT C. UEDAHL, Viroqua, Wis. Filed Aug. 18, 1902. Serial No. 120,068.

Claim.—1. In a transplanter, the combination of a wheeled frame carrying a furrow opener and closer, vertically-swinging rods carrying jaws to receive the plants, wheel-driven means for raising and lowering the rods, and wheel-driven means for opening the jaws when they are in elevated and in lowered positions respectively.

2. In a transplanter, the combination of a wheeled frame carrying a furrow-opener and an intermittently-operating furrow-closer, vertically-swinging rods carrying jaws to receive the plants, wheel-driven means for opening the jaws to release the plants when said jaws are lowered, and wheel-driven means to actuate the furrow-closer.

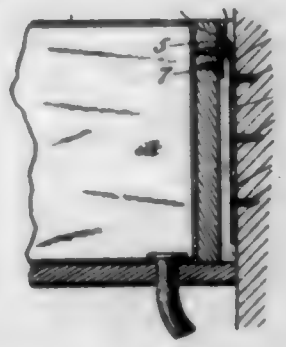
3. In a transplanter, the combination of a wheeled frame carrying a furrow opener and closer, a segment-gear carrying rods provided with jaws to receive the plants, a rocker, a wheel-driven segment-gear meshing with said first-mentioned gear to raise and lower the jaws, and a trip carried by the wheel-driven gear and engaging the rocker to open the jaws.

4. In a transplanter, the combination of a wheeled frame carrying a furrow opener and closer, a segment-gear carrying rods provided with jaws to receive the plants, and having a projecting arm, a sprinkler having a controlling-valve connected with the aforesaid arm, wheel-actuated means for opening the jaws, and a wheel-driven segment-gear meshing with the aforesaid gear to raise and lower the jaws and to operate the sprinkler-valve.



5. In a transplanter, the combination of a wheeled frame carrying the furrow opener and closer, a segment-gear carrying rods provided with jaws to receive the plants, said gear having a projecting arm, a wheel-driven segment-gear meshing with the first-mentioned gear to raise and lower the jaws, a rocker, one end of which is operatively connected to the jaws, and the other end is connected to the aforesaid arm, and a trip carried by the wheel-driven gear and engageable with the rocker.

818,587. **HANGER-SUPPORT FOR TANKS, BASINS, AND THE LIKE.** FREDERICK J. VEITCH, New York, N. Y. Filed Nov. 7, 1903. Serial No. 180,211.



Claim.—1. The combination of a suitable vessel having a recess in the rear side thereof, with a wall-plate lying within said recess and provided at its upper edge with an inclined flange presenting a continuous horizontal ledge inclining downwardly toward a wall, and another plate fastened to and ranging lengthwise of the tank, said plate having a rearwardly and downwardly inclined flange arranged to rest on the ledge of the wall-plate; the weight of the vessel tending to draw the inclined surfaces of the two plates into wedging engagement, whereby the vessel is drawn by gravity against the wall.

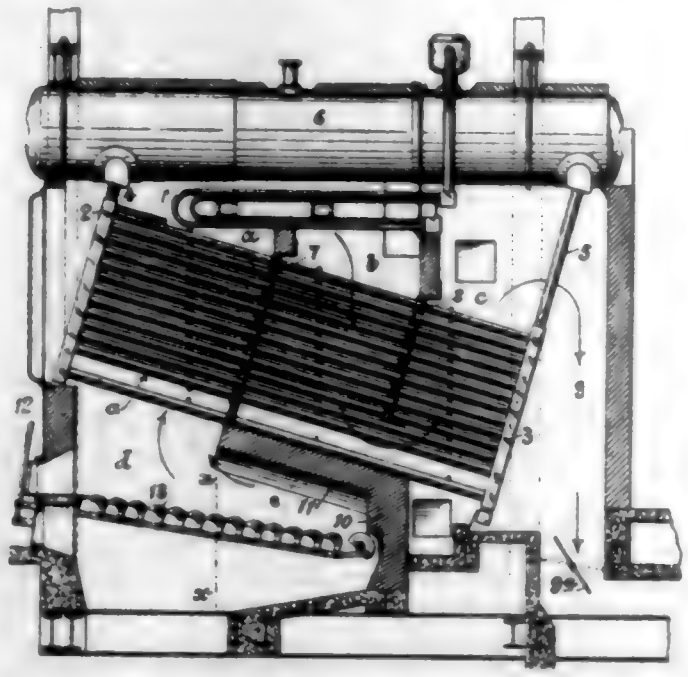
2. The combination of a suitable vessel, with a wall-plate having an inclined upper edge forming a horizontal ledge, and another plate ranging lengthwise of the vessel and provided with a downwardly-inclined flange which rests on the inclined edge of the wall-plate; said ledge of the wall-plate being received in a tapering space between the vessel-plate and the inclined flange thereof.

3. As a new article of manufacture, a hanger for a tank or other plumber's vessel comprising a wall-plate having an inclined top edge forming a continuous ledge and provided in its body with a plurality of rows of apertures, and a coöperating tank-plate having

a downwardly-inclined flange which projects rearwardly from the same; said inclined flange and the inclined edge of the two plates being arranged for wedging engagement.

4. The combination of a hanger member having means for fastening the same to a wall, said hanger member having the top edge thereof inclined upwardly and away from the plane of the member, and said edge ranging lengthwise of the member, a vessel, and another hanger member fixed to the vessel and provided with a downwardly-inclined flange which lies beyond the plane of the vessel, said flange overlapping the inclined top edge of the wall member and cooperating therewith in drawing the vessel toward the wall member and in supporting said vessel independently of other supporting means.

818,588. **FURNACE.** HOSEA WEBSTER, Montclair, N. J. Filed Oct. 2, 1905. Serial No. 280,930.



Claim.—1. In combination with a steam-boiler of the horizontal inclined water-tube type having a plurality of passes for the gases through the tubes and a fire-box roofed by the tubes of the first pass, a rearward extension of said fire-box beneath the second pass, a grate extending through said fire-box and said extension; a roof separating said extension from said second boiler-pass, and a wall closing said fire-box extension at the rear.

2. In combination with a steam-boiler of the horizontal inclined water-tube type having a plurality of passes for the gases through the tubes and a fire-box roofed by the tubes of the first pass, a rearward extension of said fire-box beneath the second pass, a rearwardly-feeding grate extending through said fire-box and said extension and a roof separating said extension from said second boiler-pass.

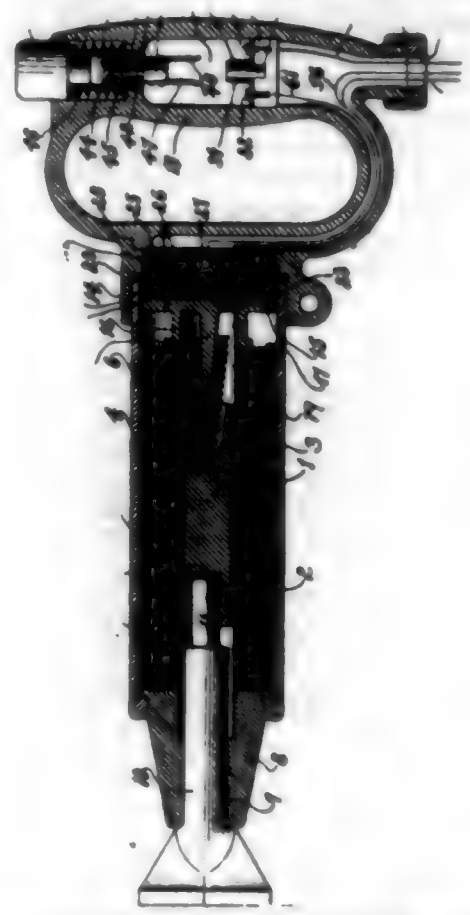
3. In combination with a steam-boiler of the horizontal inclined water-tube type having a plurality of passes for the gases through the tubes and a downtake at the rear of the boiler and a fire-box roofed by the tubes in the first pass, of a bridge-wall located between the medial line of said water-tubes and said downtake; a roof extending forwardly from the top of said bridge-wall to the first pass, and a grate extending from the front of the boiler to said bridge-wall throughout the space roofed by the tubes of the first pass, and said roof.

818,589. **ELECTRIC HAMMER.** WILLIAM F. WEBNER, New York, N. Y., assignor of one-half to Alex Wendelburg, New York, N. Y. Filed Sept. 9, 1905. Serial No. 277,708.

Claim.—1. An electric hammer comprising successive coils wound in opposite directions, a hammer proper arranged to reciprocate within the coils, a tool having its shank projected within the hammer and means for energizing and deënergizing the coils.

2. An electric hammer comprising successive coils wound in opposite directions, a hammer proper arranged to reciprocate within the coils, and provided with a socket in its end for receiving a tool-shank and means for energizing and deënergizing the coils.

3. An electric hammer comprising successive coils wound in opposite directions, a hammer proper arranged to reciprocate within the coils and provided with sockets in its opposite ends, one for receiving a tool-actuating stem or shank and one for receiving a spring, a spring arranged to enter said socket in one end of the hammer and means for energizing and deënergizing the coils.



4. An electric hammer comprising successive coils wound in opposite directions, a hammer proper arranged to reciprocate within the coils and provided with a socket for receiving a tool-shank, a wearing-button located in said socket, a tool-shank arranged to enter the socket and provided with a hardened end to receive the impact of the hammer and for momentarily holding the magnetism and means for energizing and deënergizing the coils.

5. An electric hammer comprising successive coils wound in opposite directions, a casing for the coils, a tool-holder engaged with the casing at one end, a handle engaged with the casing at the opposite end, a follower of non-magnetic material interposed between the handle and coils, a hammer proper arranged to reciprocate within the coils and provided with a socket in its end toward the handle, a spring guided by the follower and entering the said socket on the hammer and means for energizing and deënergizing the coils.

6. An electric hammer comprising successive coils wound in opposite directions, a suitable casing for the coils, a hollow handle engaged with the casing, disks of insulating material located between the handle and coils and provided with registering contact-rings, wires leading from the coils to the rings in one disk, wires leading from the companion disk through the handle, a commutator and source of electric energy for energizing and deënergizing the coils.

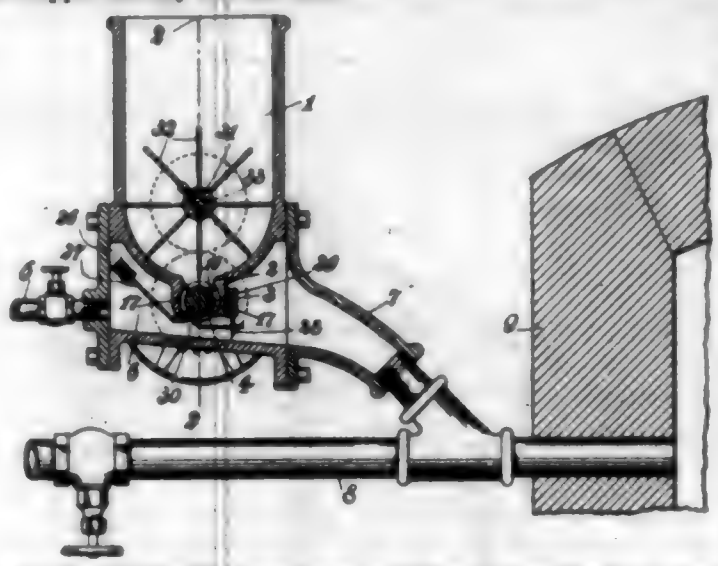
7. An electric hammer comprising a plurality of coils suitably arranged within a casing, a hammer proper arranged to reciprocate within the coils, a hollow handle attached to the casing, an electric switch located within the handle, said switch comprising a spring-actuated plunger under the control of the operator and a spring-actuated sub-plunger carried by the said plunger, a source of electric energy and contact-pieces within the handle in position to be connected and disconnected by the subplunger, said contact-pieces being connected the one with the coils and the other with a source of electric energy.

818,590. **APPARATUS FOR FEEDING PULVERIZED FUEL.** GEORGE S. WELLS, Chicago, Ill. Filed May 10, 1905. Serial No. 259,790.

Claim.—1. In a fuel-feeding apparatus, an air or gas supply pipe or passage, a mixing-chamber into which said pipe or passage opens, an outlet-passage from said chamber, a pulverized-fuel hopper having a mouth opening into said chamber in the path of the air or gas blast therethrough, and means at the hopper-mouth for continuously and uniformly supplying measured quantities of fuel from the hopper directly into the blast.

2. In a fuel-feeding apparatus, an air or gas supply pipe or passage, a mixing-chamber into which said pipe or passage opens, and an outlet-passage from said chamber, a pulverized-fuel hopper hav-

ing a mouth opening into said chamber in the path of the air or gas blast therethrough, and a rotary means at the hopper-mouth for continuously and uniformly supplying measured quantities of fuel from the hopper directly into the blast.



3. In a fuel-feeding apparatus, an air or gas supply pipe or passage, a mixing-chamber into which said pipe or passage opens, and an outlet-passage from said chamber, a pulverized-fuel hopper having a mouth opening into said chamber in the path of the air or gas blast therethrough, a rotary means at the hopper-mouth for continuously and uniformly supplying measured quantities of fuel from the hopper directly into the blast, and means for varying the feeding capacity of said rotary means independent of the speed of rotation of the same.

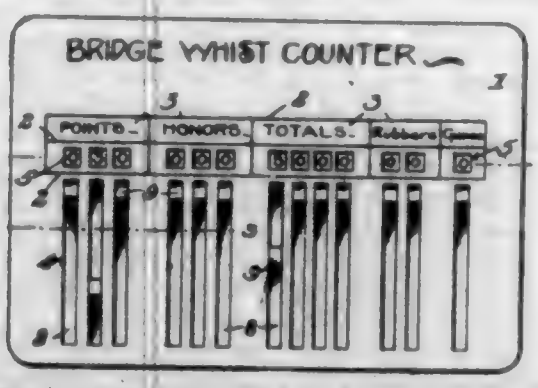
4. In an apparatus for feeding pulverized fuel, the combination with a hopper having a delivery-slot, of a traveling carrier communicating therewith and with a point of delivery, a scraper for maintaining a given level of fuel on said carrier, and means for regulating the quantity of fuel carried by the latter.

5. In an apparatus for feeding pulverized fuel, the combination with a hopper having a delivery-slot, a chamber communicating therewith through said slot and having a delivery-slot, of a rotating carrier in said chamber having a plurality of peripheral pockets of equal dimensions, a sleeve longitudinally movable on said shaft one end of which forms one wall of each pocket, and means for imparting longitudinal movement to said sleeve for simultaneously varying the width of all of said pockets, and agitating devices disposed in the path of said carrier to release the fuel from said pockets.

6. In an apparatus for feeding pulverized fuel, the combination with a hopper having a delivery-slot, of a plurality of equal traveling pockets communicating successively with said delivery-slot at regular intervals, and means normally intersecting the path of said pockets to release the contents thereof at the point of discharge.

7. In an apparatus for feeding pulverized fuel, the combination with a hopper having a delivery-slot, of a plurality of equal traveling pockets communicating successively with said delivery-slot at regular intervals, means disposed in operative relation to said pockets for simultaneously varying the capacity thereof, and means normally intersecting the path of said pockets at the point of discharge to release the contents thereof.

818,591. **COUNTER.** HERBERT T. WESTON, Beatrice, Nebr. Filed Mar. 9, 1905. Serial No. 249,317.



Claim.—1. A counter comprising a face portion having suitable headings, slots and apertures, strips slidably mounted in the slots and apertures, a band in each aperture extending under a strip, all of said strips being overlapped and retained by the edges of their slots, and a tab upon each strip and in its slot.

2. A counter comprising a face portion having headings thereon and slots and apertures under the headings, said headings being respectively "Points," "Honors," "Totals," "Rubbers" and "Games," strips slidably mounted in the slots and apertures, a band in each aperture extending under the strip working therein, all of said strips being overlapped and retained by the edges of their slots, and a tab upon each strip and in its slot.

3. A counter comprising a slotted body portion, a strip slidably mounted back of and retained in position by the edges of the slot, and a tab upon the strip and adapted to be folded into the slot.

4. A counter comprising a slotted face portion having apertures alining with the slots, a band in each aperture, a strip slidably mounted back of each slot and aperture and upon the band in its aperture, and a flexible tab upon the strip and adapted to fold into the slot of the strip.

5. A counter comprising a face portion having parallel slots therein and apertures alining with the slots, said slots and apertures being suitably designated, a strip slidably mounted back of each slot and aperture, said strip having successively-arranged numerals upon one face, means for holding the strip in its aperture and a flexible tab upon each strip and adapted to fold into its slot.

6. A counter comprising a slotted face portion, a backing portion connected thereto, strips slidably mounted between said portions and having consecutively-arranged numerals thereon, and a flexible tab upon each strip adapted to fold into the slot of its strip.

7. A counter comprising a face portion having suitable headings thereon and slots and apertures under the headings, a backing portion connected to the face portion, strips slidably mounted in the slots and apertures, means for holding the strips in the apertures, each strip having consecutively-arranged numerals upon one face, and a tab upon each strip adapted to fold into the slot of its strip.

8. A counter comprising a face portion having headings thereon and slots and apertures under the headings, a backing portion and a flap integral with the face portion, said flap adapted to engage and hold the backing portion, strips slidably mounted in the slots and apertures, means for holding the strips in the apertures, and a tab upon each strip adapted to fold into the slot of its strip.

9. A counter comprising a face portion having headings thereon and slots and apertures under the headings, said headings being respectively "Points," "Honors," "Totals," "Rubbers" and "Games," a backing-strip connected to the face portion, strips interposed between the backing-strip and face portion and visible through the slots and apertures, means for holding the strips against displacement laterally, and a tab upon each strip and extending through one of the slots, said tabs being adapted to fold into their respective slots.

818,592. **MAIL-BAG CATCHER.** WILLIAM T. WETTERELL and EDWARD B. WETTERELL, Fishersville, Va. Filed Aug. 1, 1905. Serial No. 273,227.

Claim.—1. In a mail-bag catcher and deliverer, a track-standard, a laterally-extending bar mounted for swinging movement in a horizontal plane on said standard, oppositely-disposed catcher-arms carried by the bar, and bag-supporting arms pivoted to the standard.

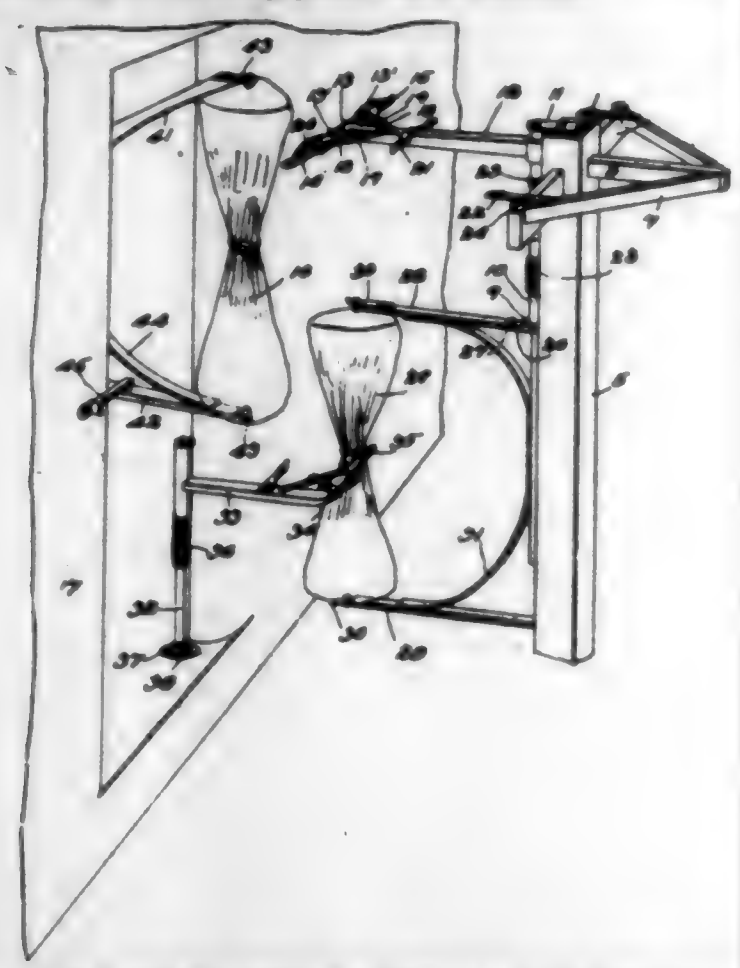
2. In a mail-bag catcher and deliverer, a track-standard, a laterally-extending bar mounted for swinging movement on said standard, catcher-arms carried by the bar, a spring for centering the bar with respect to the standard, and bag-supporting arms pivoted to said standard.

3. In a mail-bag catcher and deliverer, a track-standard provided with a cross-arm, a laterally-extending bar mounted for swinging movement on said standard and adapted to engage the cross-arm, catcher-arms carried by the bar, means for locking the latter in engagement with the cross-arm, and pivoted bag-supporting arms pivoted to said standard.

4. In a mail-bag catcher and deliverer, a track-standard, a laterally-extending bar mounted for swinging movement on said standard, catcher-arms pivoted to the bar, and braces pivoted to the catcher-arms and bar, respectively, and having their intermediate portions hinged to thereby permit the catcher-arms to swing rearwardly and engage the bag.

5. In a mail-bag catcher and deliverer, a track-standard, a laterally-extending bar mounted for swinging movement on said standard and provided with a stop-plate, catcher-arms pivoted to the bar, a spring secured to the bar and engaging the catcher-arms, and braces pivoted to the catcher-arms and bar, respectively, and having their intermediate portions hinged to thereby permit the spring to swing the arms rearwardly in engagement with the stop-plate and hold the mail-bag on said bar.

6. In a mail-bag catcher and deliverer, a track-standard provided with a cross-arm, a laterally-extending bar mounted for swinging movement on the standard and adapted to engage the cross-arm, catcher-arms pivoted to the bar and adapted to swing rearwardly against said bar for supporting the mail-bag thereon, a spring for normally centering the bar with respect to the standard, and means for locking said bar in engagement with the cross-arm.



7. In a mail-bag catcher and deliverer, a track-standard provided with a cross-arm having buffers secured thereto, catches secured to the opposite ends of the cross-arms, a laterally-extending bar mounted for swinging movement on the standard and adapted to engage said catches, catcher-arms pivoted to the bar for engagement with a mail-bag and adapted to fold rearwardly against said bar, and a spring for normally centering the laterally-extending bar with respect to said standard.

8. In a mail-bag catcher and deliverer, a track-standard provided with a cross-arm, a shaft journaled on the standard, a laterally-extending bar secured to the shaft and adapted to swing rearwardly in engagement with the cross-arm, catcher-arms pivoted to the bar and extending in horizontal alinement on each side thereof, a spring for normally centering the bar with respect to the standard, and means for locking said bar against the cross-arm when said bar is swung rearwardly.

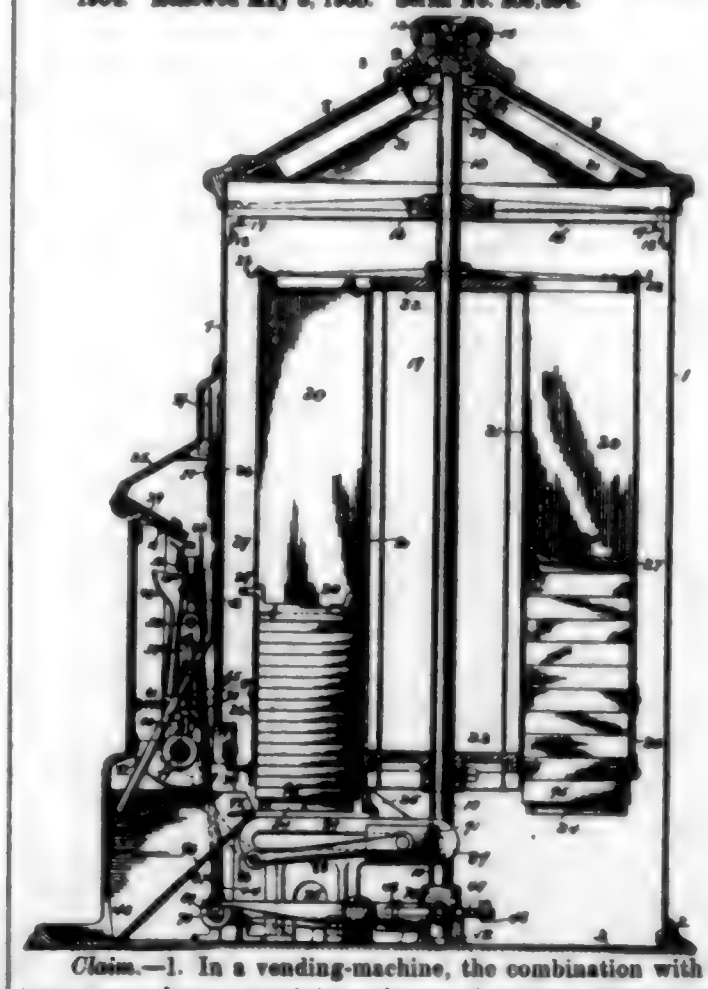
9. In a mail-bag catcher and deliverer, a track-standard, a pair of bag-supporting arms pivoted thereto, and a spring having an intermediate portion thereof secured to the standard and its opposite ends bearing against the bag-supporting arms for moving said arms to inoperative position when the bag is released.

10. In a mail-bag catcher and deliverer, a track-standard provided with a cross-arm, a laterally-extending bar mounted for swinging movement on the standard and adapted to engage the cross-arm, catcher-arms carried by the bar, a spring for normally centering said bar with respect to the standard, a pair of bag-supporting arms pivoted to the standard below the laterally-extending bar, and a spring having its intermediate portion secured to the standard and its opposite ends engaging the pivoted supporting-arms for moving said arms to inoperative position when the bag is detached.

11. In a mail-bag catcher and deliverer, the combination with a car having a door-opening therein, of a vertical shaft journaled on the car at said opening and provided with a fixed and a pivoted bag-supporting arm, a catch secured to the car and adapted to engage the pivoted arm for holding said arms in operative position, a spring for disengaging the pivoted arm from the catch when the mail-bag is detached, and a spring carried by the shaft for swinging said arms rearwardly within the car.

12. In a mail-bag catcher and deliver, the combination with a car having a door-opening formed therein, of a vertical shaft journaled on the car at said opening and provided with a fixed and a pivoted bag-supporting arm, locking means carried by the car and engaging the pivoted arm for holding said arms in operative position, means for disengaging the pivoted arm when the mail-bag is released, and means for automatically swinging said arms to inoperative position within the car.

818,593. **VENDING-MACHINE.** WILLIAM C. WHITNEY, Newark, N. J., assignor to Silas B. Wilmore, New York, N. Y. Filed Mar. 17, 1904. Renewed May 3, 1905. Serial No. 256,694.



Claim.—1. In a vending-machine, the combination with a rotary storage-frame containing columns of goods of different prices, of a series of coin-chutes for different coins, coin-controlled operating mechanism over which without obstruction a coin would jump and return to the purchaser, and a deflector common to all the coin-chutes and means operated by the frame to move said deflector behind the proper coin-chute and deflect the coin into the coin-controlled operating mechanism.

2. In a vending-machine, the combination with a rotary storage-frame containing columns of goods of different price, of a series of coin-chutes for different coins, coin-controlled operating mechanism over which a coin if unobstructed would jump and return to the purchaser, a deflector, a star-wheel movable with the storage-frame and means operated by the star-wheel to control the operation of the deflector to direct the proper coin into the coin-controlled mechanism.

3. In a vending-machine, the combination with a vertical shaft, and a storage-frame thereon comprising a series of columns or compartments for goods to be vended, of a star-wheel having a point or tooth for every column or compartment, a cam-plate, a coin-guiding deflector to direct the proper coin into operative position, and screws in the star-wheel to govern the operation of the cam-plate and deflector.

4. In a vending-machine, the combination with a casing, a vertical shaft therein, means for turning the same, a storage-frame on said shaft having a series of radial columns or compartments for goods of different price and a series of coin-entrance chutes for coins of different values, of a star-wheel on the shaft having a point or tooth for each compartment or column of the storage-frame and screw-threaded holes in said points or teeth, a cam-plate depressed varying distances by the screws in accordance with their length, and means operated by said cam-plate for permitting only the coin of proper value to pass to the coin-controlled mechanism.

5. In a vending-machine, the combination with a casing, a vertical shaft therein, means for turning the same, a storage-frame on said shaft having a series of radial columns or compartments for goods of different price, and a series of coin-entrance chutes for coins of different values, of a star-wheel on the shaft having a point or tooth for each compartment or column of the storage-frame and

screw-threaded holes in said points or teeth, a cam-plate depressed varying distances by the screws in accordance with their length, a coin-guide to direct a coin to the coin-controlled mechanism for ejecting the goods and over which coins placed in the coin-chutes would jump and return to the purchaser if unobstructed, a deflector pivoted at one end and made in the form of a bell-crank lever, a rod connecting one member of said lever or deflector to the cam-plate to move the deflector behind the proper coin-chute to deflect the proper coin into the coin-guide and a spring to normally hold the deflector behind one chute.

6. In a vending-machine, the combination with a storage-frame, and coin-controlled mechanism to eject the goods therefrom, of a coin-chute to direct coins into said coin-controlled mechanism and having an open bottom through which smaller coins will fall, a pivoted or hinged deflector in said chute which will be displaced by the proper coin but deflect a smaller coin driven with force thereagainst, in an attempt to reach the coin-controlled mechanism, a second deflector, and means operated by the frame to move the same behind the coin-chute and deflect the coin into the coin-controlled operating mechanism.

7. In a vending-machine, the combination with a rotary storage-frame having a series of radial columns for goods and a weight on each pile of goods, of a coin-entrance chute, a deflector and means for effecting the operation of the deflector by the weight when a column is empty to deflect a coin back to the purchaser.

8. In a vending-machine, the combination with a rotary storage-frame having a series of radial columns for goods and a weight on each pile of goods, of a coin-entrance chute, a deflector, a cam-plate and a finger on each weight adapted when the column is empty to depress the cam-plate and move the deflector into position to throw out or return a coin placed in the chute, to the purchaser.

9. In a vending-machine, the combination with a rotary storage-frame containing columns or piles of goods to be vended and a weight on each pile of goods, of a series of coin-entrance chutes, a hinged plate having a series of deflectors thereon, a cam-plate, a rod connecting said cam-plate and deflector-plate, and fingers on the weights, which when the columns are empty are in a horizontal plane to engage the cam-plate and move all of the deflectors into the path of coins entering the chutes and deflect them out of operation and back to the purchaser.

10. In a vending-machine, the combination with a column of goods to be vended, of a coin-entrance chute, a coin-guide into which the coin falls, a coin-holder hinged to the coin-guide, an ejector-operating shaft, a segment thereof having a shoulder thereon in front of which the coin is held by the holder, a locking-pawl normally engaging a pin on the segment to lock the shaft, and a pin on the holder to engage and release the pawl when the shaft is turned and the holder and segment are coupled temporarily by a coin.

11. In a vending-machine, the combination with an ejector-operating shaft, a segment thereon normally locked, a holder to hold a coin on the segment which couples them together and an ejector within the holder for throwing a coin out of the holder and returning it to the purchaser.

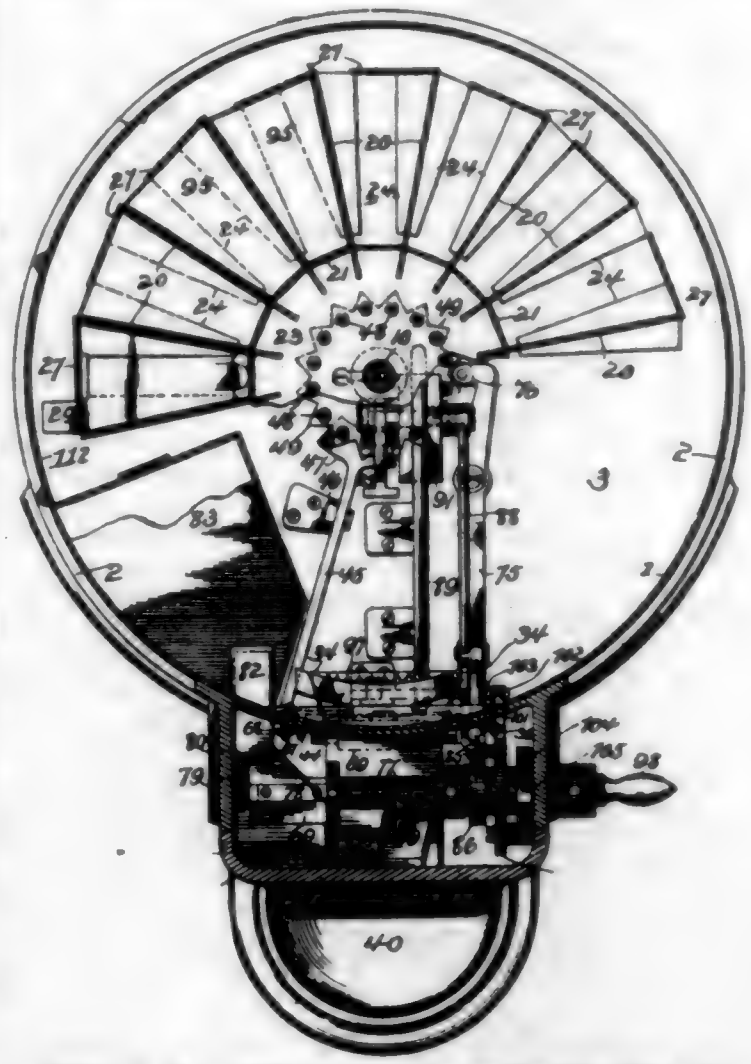
12. In a vending-machine, the combination with a rotary storage-frame containing a series of columns of goods of different price, and coin-entrance chutes for coins of different value, of a coin-holder to hold a coin in position to permit the operation of the ejector mechanism, and a coin-ejector in said holder, adapted when the frame is turned, with a coin in the holder, to eject the coin and return it to the purchaser.

13. In a vending-machine, the combination with a rotary shaft, a storage-frame thereon containing goods in columns and of different price, of a star-wheel on said shaft, a ratchet-lever engaging the same, a coin-holder to hold a coin in operative position in the coin-controlled mechanism, and a coin-ejector operated by the ratchet-lever when the storage-frame and star-wheel are turned, to throw the coin out of operative position and return it to the purchaser.

14. In a vending-machine, the combination with a rotary shaft, a storage-frame thereon containing goods in columns and of different price, of a star-wheel on the shaft, a ratchet-lever engaging the star-wheel, a coin-holder to hold a coin in operative position in the coin-controlled operating mechanism, a coin-ejector in said holder, a lever connected therewith and adapted to move the same, a rod connecting said lever with a pivoted bar having a cam-slot therein, a plunger having a pin in said cam-slot, a housing or guide for said plunger, and a pivotal connection between the plunger and ratchet-lever.

15. In a vending-machine, the combination with a casing having a delivery-pocket therein, a rotary storage-frame for goods of different price, and means for ejecting the goods into the delivery-pocket, of a series of coin-entrance chutes for coins of different value, a single coin-guide, a hopper to direct misplaced coins into the delivery-pocket, a deflector, a star-wheel fixed to turn with the storage-frame, and interchangeable screws of various lengths in the star-wheel to move the deflector and direct only the proper coin into the coin-controlled operating mechanism.

818,594. **VENDING-MACHINE.** WILLIAM C. WHITNEY, Newark, N. J., assignor to Silas E. Wilmore, New York, N. Y. Filed Mar. 17, 1904. Renewed Feb. 17, 1906. Serial No. 301,636.



Claim.—1. In a vending-machine, the combination with a casing, of a vertical shaft therein having means outside of the casing to turn the same, a storage-frame secured on said shaft and adapted to contain cartons or boxes with goods therein, a star-wheel on said shaft, and a ratchet-lever engaging the periphery of said star-wheel.

2. In a vending-machine, the combination with a casing, of a vertical shaft therein having means outside of the casing for turning said shaft, a storage-frame secured on the shaft and adapted to contain goods to be vended, a star-wheel on said shaft, a ratchet-lever engaging the star-wheel, and means for locking said lever in locked engagement with the star-wheel when ejector mechanism is operated.

3. In a vending-machine, the combination with a casing, of a rotary storage-frame therein, a star-wheel movable with the frame, a ratchet-lever pivoted between its ends, a roller at one end of said lever engaging the star-wheel, an ejector, a shaft to operate the ejector, and means for locking said lever in locked engagement with the star-wheel to hold the storage-frame when the shaft is operated.

4. In a vending-machine, the combination with a rotary storage-frame and a star-wheel fixed thereto, of a ratchet-lever pivoted between its ends and one end engaging the periphery of the star-wheel, a pivoted locking-bar having a notched end to be moved in the path of the lever and hold it in position to lock the star-wheel and frame, an ejector-operating shaft, a disk thereon having a notch or recess in its periphery and a lever having one end normally in said notch or recess and when the disk is turned to move the lever out of the notch adapted to raise the locking-bar to lock the ratchet-lever.

5. In a vending-machine, the combination with a casing having an opening or window therein, of a rotary storage-frame for goods to be vended comprising a series of radial columns for goods, weights located on top of each and every column of goods, and an indicator and devices connected with said indicator and operated by a weight in any empty column, to move the indicator and designate the fact of any empty column at the opening or window.

6. In a vending-machine, the combination with a casing having an opening or window therein, of a rotary storage-frame in said casing having a series of radial columns for goods to be vended, a weight in each and every column on top of the pile of goods, a counterweighted rotary disk behind the window having the word "Empty" or other like printed matter thereon normally out of alinement of the window, and means operated by a weight in an empty column for turning the disk to expose the word "Empty" at the window.

7. In a vending-machine, the combination with a casing having an opening or window in its front, of a counterweighted rotary disk behind the window having the word "Empty" thereon normally out of alinement with the window, a rotary storage-frame in the casing having a series of radial compartments for goods to be vended, a weight on top of the goods in each and every column, a finger on each weight projecting out beyond the frame, a double cam-plate pivoted at one end and in the path of a weighted finger in an empty column to be depressed thereby, and a rod connecting the free end of this cam-plate with the disk to turn the latter and display the word "Empty" at the window when the cam-plate is depressed by a weighted finger.

8. In a vending-machine, the combination with a rotary vending-frame comprising a top plate, a series of radial partitions secured to the top plate, a cylinder secured to the central portion of the top plate, depending therefrom and through which the inner edges of the partitions pass, a ring or disk secured in the cylinder near its lower end, bottom plates secured to the lower ends of the partitions at opposite sides providing a space for an ejector between them, plates connecting the outer edges of the partitions but spaced from the bottom plates to allow a single carton or box to pass below them, shutters hinged to said outer plates, and catches on the top plate to secure the upper ends of said hinged shutters.

9. In a vending-machine, the combination with a casing, a vertical shaft therein, and a storage-frame secured on said shaft, of a removable cover on said casing through which the shaft projects, inwardly-projecting pins on a depending flange of the cover, to enter inclined slots in the casing, and a spring-metal tongue over one of said slots having an opening to receive and lock a pin and bent to permit its displacement by the pins in entering the slot.

10. In a vending-machine, the combination with a column or receptacle for a pile of cartons or boxes to be vended, of a sliding block or carriage below the same, an ejector pivoted at one end to one side of the block or carriage, a spring to hold the ejector in an inclined position to engage the inner end of the lowest carton, a rotary shaft, an arm swung by said shaft, and a pitman connecting said arm and carriage or block.

11. In a vending-machine, the combination with a fixed ejector-guide, and a sliding ejector thereon, of a storage-frame comprising a series of radial columns or compartments any one of which may be disposed in front of the ejector, a rotary shaft, an arm loose thereon, a disk secured to the shaft, pins or screws on the face of said disk on opposite sides of the arm to move the same, and a pitman connecting the arm with the ejector to move the latter when the shaft is turned.

12. In a vending-machine, the combination with a shaft to operate the ejector mechanism, of a disk on said shaft having a series of teeth on its periphery and a recess at both ends thereof, a triangular dog mounted to turn on pivot and having one of its points normally in a disk-recess, a longitudinally-movable rod, a plate thereon against a face of said triangular dog and a spring pressing said plate against the dog to hold it in an inclined position to compel the disk to be turned throughout the entire series of teeth before it can return or until the dog shall enter the recess at the end of the teeth and its position be reversed.

818,595. STORE-SERVICE APPARATUS. EVERETT W. WILCOX, Springfield, Mass. Filed Mar. 24, 1905. Serial No. 251,766.

Claim.—1. In a movable shelving apparatus, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on each structure, endless cables provided to run around the side pairs of wheels, a plurality of shelves and shelf-supports having swinging connections with the courses or runs of the cables, and means for vertically adjusting the shelves relatively to the cables.

2. In a movable shelving apparatus, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on said structures, endless cables provided to run around side pairs of the wheels, bars horizontally carried between courses of the oppositely-located cables, hangers journaled on said cross-bars and depending therebelow, shelf-supports vertically adjustable on the depending hangers, and means for locking the shelf-supports in their adjusted positions.

3. In a movable shelving apparatus, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on said structures, endless cables provided to run around side pairs of the wheels, bars horizontally carried between courses of the oppositely-located cables, hangers journaled on said cross-bars and depending therebelow, and having their depending members provided with teeth, shelf-supports vertically adjustable on the depending hangers, and having teeth engaging those of the hangers, and means for confining the shelf-supports in their interlocked positions, relatively to the hangers.



4. In an apparatus of the character described, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on said structures, endless cables provided to run around side pairs of the wheels, bars horizontally carried between courses of the oppositely-located cables, hangers journaled on said cross-bars and having separated depending members provided with teeth, shelf-supports comprising horizontal shelf-supporting portions and upright portions each comprising a part k^3 having teeth k^4 and separated cheek members angularly arranged relatively to said part k^3, and adapted to embrace and engage the depending members of the hangers, and a three-sided part l having a set-screw l^5, substantially as described.

5. In an apparatus of the character described, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on said structures, endless cables provided to run around side pairs of the wheels, bars horizontally carried between courses of the oppositely-located cables, hangers journaled on said cross-bars and having separated depending members provided with teeth, shelf-supports comprising horizontal shelf-supporting portions and upright portions comprising a part k^3 having teeth, k^4 and separated cheek members angularly arranged relatively to said part k^3, and adapted to embrace and engage the depending members of the hangers, and constructed with edge recesses k^6, and a three-sided part l having a set-screw l^5, and adapted for an interlocking engagement by said cheek members in said recesses k^6, substantially as described.

6. In an apparatus of the character described, opposite side supporting structures, each comprising base-plates having front-to-rear arrangements and columns or posts having lower end connections with, and supports on, said base-plates, and a transverse member D comprising the divergent arms terminating in contractible collars d for embracing and adjustably engaging the upper portions of the columns of a pair, an upper carrier-wheel journaled on each appliance D, and a lower carrier-wheel and lower support therefor

sustained by said columns, endless cables provided to run around the side pairs of wheels, and a plurality of shelves and shelf-supports having swinging connection with the opposite courses or runs of the cables.

7. In an apparatus of the character described, opposite side supporting structures, each comprising base-plates having front-to-rear arrangements and provided with upwardly-opening socketed bosses, constructed with the transverse sockets b^3 and means for constricting the walls thereof, the stay-rods b^3 having their extremities confined in said sockets b^3 and extending from the one side structure to the other, columns or posts having the lower ends thereof received in said socketed bosses, and transverse members uniting the upper portions of the columns of each side pair, upper and lower pairs of wheels rotatably mounted on each of said side structures, endless cables provided to run around the side pairs of wheels, and a plurality of shelves and shelf-supports having swinging connections with the opposite courses or runs of the cables.

8. In an apparatus of the character described, opposite side supporting structures, each comprising base-plates having front-to-rear arrangements and provided with upwardly-opening socketed bosses, constructed with the transverse sockets b^3 and means for constricting the walls thereof, stay-rods b^3 having their extremities confined in said sockets b^3 and extending from the one side structure to the other, columns or posts having the lower ends thereof received in said socketed bosses, and transverse members uniting the upper portions of the columns, of each side pair, clamp-collars C and means for confining them on the upper portions of the columns having horizontal sockets, and stay-rods c' adjustably confined in said horizontal sockets and extending from those of one side structure to the other, upper and lower pairs of wheels rotatably mounted on each of said side structures, endless cables provided to run around the side pairs of wheels, and a plurality of shelves and shelf-supports having swinging connections with the opposite courses or runs of the cables.

9. In a store-service apparatus of the character described, opposite side supporting structures, upper and lower pairs of wheels rotatably mounted on each structure, endless cables provided to run around the side pairs of wheels, hangers having swinging connection with the courses or runs of the cables, and depending members, a plurality of shelf-supports connected with said depending members, and shelves on said supports.

10. In a store-service apparatus of the character described, opposite supporting structures, upper and lower pairs of wheels rotatably mounted on each structure, endless cables provided to run around the side pairs of wheels, bars J supported horizontally by, and between, the runs of the oppositely-located cables, hangers K having swinging connections with said bars near the cables, and intermediately-arranged hangers M, each comprising depending front and rearwardly located members m, m, and a uniting upper portion engaged with an intermediate portion of a bar J, a series of shelf-supports on, and adjustably connected to respective sets of said hangers, and shelves on said supports.

11. In an apparatus of the character described, oppositely-located end structures each comprising a front and rearwardly located column, wheel-carrying members transversely connecting the pairs of columns, one thereof being vertically adjustable relatively to said columns, and means for confining such member in its adjusted position, a member connected to, and extending between, the columns of a pair, and a device mounted thereon and operable relatively to the adjustable wheel-carrying member to impart its adjusting movement thereto, cables for runs around the wheels, bars J extending between the runs of the different cables, hangers and shelf-supports, and shelves thereon.

12. In an apparatus of the character described, oppositely-located end structures each comprising a front and rearwardly located column, wheel-carrying members D F, transversely connecting the pairs of columns, the one F thereof being vertically adjustable relatively to said columns, and means for confining such member in its adjusted position, a bar O′ having collar-provided ends, and confinement devices, and connected to the columns of a pair, and a screw O engaging through said bar O′ and coacting with the adjustable wheel-carrying bar F, cables for runs around the wheels, bars J extending between the runs of the different cables, hangers and shelf-supports, and shelves thereon.

13. In an apparatus of the character described, opposite end structures, cable-supporting wheels thereon, one adjustable vertically relatively to the other, endless cables running around the upper and lower wheels comprised in each end pair, hangers supported for swinging movements by, and relatively to, the cables, and a plurality of shelf-supports, individually vertically adjustable on each hanger, and shelves carried by pairs of said shelf-supports.

14. In an apparatus of the character described, opposite end supporting structures, adjustable toward each other, and upper and lower stay-rods extending between and adjustably connected to said end supporting structure, cable-supporting wheels on said end structures, endless cables running around the upper and lower wheels in each end pair, hangers supported for swinging movements by, and relatively to, the cables, a plurality of shelf-supports individually vertically adjustable on each hanger and shelves carried by oppositely-located pairs of said shelf-supports.

15. In an apparatus of the character described, opposite end structures, one adjustable toward and from the other and upper and lower stay-rods extending between and adjustably connected to the end structures, cable-supporting wheels on said end structures, one adjustable vertically relatively to the other, endless cables running around the the upper and lower wheels comprised in each end pair, bars J supported horizontally between the runs of the endwise opposite cables, hangers supported for swinging movements on said bars, a plurality of shelf-supports individually adjustably connected on said hangers, and shelves on pairs of the said shelf-supports.

16. In an apparatus of the character described, opposite end structures and cable-supporting wheels thereon, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables running around the upper and lower wheels comprised in each end pair, hangers supported for swinging movements by, and relatively to, the cables, shelves carried by and extending between the opposite hangers of each pair thereof, a support vertically adjustable on one of the end structures and having journals for a shaft which is carried thereby and which has a worm in mesh with the said worm-wheel.

17. In an apparatus of the character described, opposite end structures, each comprising a front and a rearwardly located column and means of transverse connection therefor, and cable-supporting wheels mounted for rotation on said end structures, and one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables running around the upper and lower wheels comprised in each end pair, hangers supported for swinging movements by, and relatively to, the cables, shelves carried by and extending between the opposite hangers of each pair thereof, transverse supporting-bar R having the clamp-collars r at the ends thereof to embrace the columns of one of the end structures, and means for effecting the confinement of said clamp-collars on said column, and said bar having horizontal journal-bearings, a worm-shaft supported by and extended through said bearings and having a worm in mesh with the worm-wheel, and means for rotating the worm-shaft.

18. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, and a drum mounted on the worm-shaft, pawl-and-ratchet devices having intervening connections between the drum and the worm-shaft, a lever, and a cable connected with the lever and having a winding engagement about said drum.

19. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, and a drum mounted on the worm-shaft, pawl-and-ratchet devices having intervening connections between the drum and the worm-shaft, a lever, a cable, one portion of which is connected to said lever, and another portion thereof having a winding engagement about said drum, and a cable-section having a winding engagement with said drum, and having a portion depending therebelow and carrying a weight.

20. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, a foot-lever and means actuated thereby for intermittently rotating the worm-shaft in a given direction, and a bracket or foot-support projecting from the one end structure at a place somewhat above the floor and adjacent the said foot-lever.

21. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable supporting wheels having a worm-wheel connected to rotate as one there-

with, endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, and a device mounted on the worm-shaft and comprising a ratchet-wheel in non-rotatable engagement with the shaft and a rotatable drum-shell having a pawl pivoted thereon, and engaging said ratchet-wheel, a lever and a cable connected with said lever and having a winding engagement about said drum and means for exerting a retracting or reversing force on said drum.

22. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, and a device mounted on the worm-shaft and comprising a sleeve having a ratchet-wheel, in non-rotatable engagement with the shaft, and a drum-shell surrounding and rotative relatively to the said sleeve, and having a pawl pivoted thereon and engaging said ratchet-wheel of the sleeve, a foot-lever and a cable therewith connected and having a winding engagement about said drum.

23. In an apparatus of the character described, opposite end structures, and cable-supporting wheels, one of said cable-supporting wheels having a worm-wheel connected to rotate as one therewith, the endless cables and a plurality of shelves carried thereby, a shaft horizontally mounted at one end of the apparatus, and having a worm in mesh with the said worm-wheel, and a device mounted on the worm-shaft and comprising a sleeve having a rib-and-groove engagement with the worm-shaft, and removable therefrom, and endwise reversible relatively thereto, a ratchet-wheel provided on said sleeve, and a drum-shell rotative about the sleeve and having a pawl, pivoted thereon, and engaging said ratchet-wheel, a latch for retaining the sleeve and shell in place on the worm-shaft, a lever, and a cable connected with said lever and having a winding engagement about said drum, and means for exerting a retracting or reversing force on said drum.

24. In an apparatus of the character described, opposite supporting structures, upper and lower pairs of peripherally-recessed wheels rotatably mounted on each structure, endless cables provided to run around the wheels, and having buttons connected at intervals thereon, hangers arranged in opposite pairs and horizontal crossbars having at their extremities, supporting connections with buttons of the cable, and on which the hangers are supported, and an arc-shaped bar P having a supporting connection on each of said opposite structures, adjacent the lower wheels thereon, and in positions to serve as supporting-guards for the cable-buttons and equipments supported thereby at the time such parts have movements around the lower cable-wheels, and shelves carried on the hangers.

25. In an apparatus of the character described, opposite side columns comprising each a front and rearwardly located column, transverse column-uniting members having cable-wheels journaled on said uniting members, and said wheels being peripherally recessed, cables having buttons at intervals thereon, shelf-supporting hangers having supporting connection with buttons of the cable, arc-shaped transverse members P endwise provided with constrictive collars engaging about said columns, and means of confinement therefor, substantially as shown and for the purpose set forth.

26. In an apparatus of the character described, opposite end supporting structures, and peripherally-recessed cable-wheels thereon, endless cables, and a plurality of buttons each comprising a pair of facewise adjoined and separable sections, constructed in the proximate faces thereof with arc-shaped and endwise-alined grooves i^4, i^5, for receiving engagement of cable-bends therein, and means for connecting the button-sections in their embracing engagements about the cable.

27. In an apparatus of the character described, opposite end structures and cable-wheels rotatably mounted thereon and constructed with recesses or notches e in their peripheries, cables having buttons connected at intervals thereon, headed rods e', extending horizontally through and inwardly beyond the buttons, tubular bars J within the end portions of which said rods enter, means for confining the buttons, rods and tubular bars in their engaged relations, hangers supported by said tubular bars and shelves carried by said hangers.

818,596. METAL SHEET-PILING. JOHN R. WILLIAMS, East Orange, N. J. Filed Oct. 31, 1905. Serial No. 285,943.

Claims.—1. A metal sheet-piling composed of sections each having in one integral piece a transverse member and members extending laterally in opposite directions from the edges thereof and being about equal in extent and having at their outer edges the angular locking-tongues 14, 15 which extend inwardly from said lateral members, and a locking member secured to said transverse member and affording, with the adjacent walls of the section, receiving-recesses for the locking-tongues of adjacent sections; substantially as set forth.



2. A metal sheet-piling composed of sections each having a transverse member and parallel members extending laterally in opposite directions from the edges thereof and at an angle thereto and being about equal in extent and having at their outer edges the angular locking-tongues, and a locking member secured to said transverse member and affording, with the adjacent walls of the section, receiving-recesses for the locking-tongues of adjacent sections; substantially as set forth.

3. A metal sheet-piling composed of sections each having in one integral piece a transverse diagonally-disposed member and members extending laterally in opposite directions from the edges thereof and being about equal in extent and having at their outer edges the angular locking-tongues 14, 15 which extend inwardly from said lateral members, and a locking member secured to said transverse member and affording, with the adjacent walls of the section, receiving-recesses for the locking-tongues of adjacent sections; substantially as set forth.

4. A metal sheet-piling composed of sections each having a diagonally-disposed transverse member and parallel members extending laterally in opposite directions from the edges thereof and at an angle thereto and being about equal in extent and having at their outer edges the angular locking-tongues, and a locking member secured to said transverse member, and affording, with the adjacent walls of the section, receiving-recesses for the locking-tongues of adjacent sections; substantially as set forth.

5. A metal sheet-piling composed of sections each having in one integral piece a transverse member 11 and oppositely-extending parallel lateral members 12, 13, the former having a tongue 14 and the latter the tongue 15, and a locking member 16 secured to said transverse member and affording the receiving-recesses 17, 18, said tongues 14, 15 being extended inwardly at an angle from said lateral members; substantially as set forth.

6. A metal sheet-piling composed of sections each having in one integral piece a transverse member and parallel members extending laterally in opposite directions from the edges thereof and being about equal in extent and having at their outer edges the angular locking-tongues, said sections being alternately faced in opposite directions with the adjacent lateral members thereof in face-to-face contact, combined with means carried by said sections for locking them together in series; substantially as set forth.

7. A metal sheet-piling composed of sections each having in one integral piece a transverse diagonally-disposed member and parallel members extending laterally in opposite directions from the edges thereof and at an angle thereto and being about equal in extent and having at their outer edges the angular locking-tongues, said sections being alternately faced in opposite directions with the adjacent lateral members thereof in face-to-face contact, combined with means carried by said sections for locking them together in series; substantially as set forth.

8. A metal sheet-piling composed of plate-sections which overlap one another and form a piling of two thicknesses, and locking members carried by the respective sections for locking them together, said sections being of unequal length and alternated in vertical series and also with respect to the two thicknesses of the piling, whereby the joints between the adjacent ends of the sections of one thickness are against solid portions of the sections of the other thickness; substantially as set forth.

9. A metal sheet-piling composed of plate-sections which overlap one another and form a piling of two thicknesses, and locking members carried by the respective sections for locking them together, said sections being of unequal length and alternated in vertical series and also with respect to the two thicknesses of the piling, whereby the joints between the adjacent ends of the sections of one thickness are against solid portions of the sections of the other thickness, and said locking members on the sections being disposed to extend above and not down to the lower edges of the sections, whereby said members lap over upon the sections next above them; substantially as set forth.

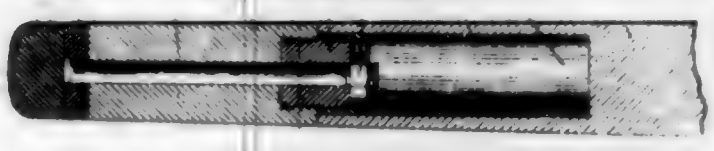
10. A metal sheet-piling composed of plate-sections which over-

lap one another and form a piling of two thicknesses, and locking members carried by the respective sections for locking them together, said sections being of unequal length, with all of the shorter sections of the same length and all of the longer sections of the same length, and alternated in vertical series and also with respect to the two thicknesses of the piling, whereby the joints between the adjacent ends of the sections of one thickness are against solid portions of the sections of the other thickness; substantially as set forth.

11. A metal sheet-piling composed of plate-sections which overlap one another and form a piling of two thicknesses, and locking members carried by the respective sections for locking them together, said sections being of unequal length, with all of the shorter sections of the same length and all of the longer sections of the same length, and alternated in vertical series and also with respect to the two thicknesses of the piling, whereby the joints between the adjacent ends of the sections of one thickness are against solid portions of the sections of the other thickness, and said locking members on the sections being disposed to extend above and not down to the lower edges of the sections, whereby said members lap over upon the sections next above them; substantially as set forth.

12. A metal sheet-piling composed of sections each having in one integral piece a transverse member and parallel members extending laterally in opposite directions from the edges thereof and being about equal in extent and having at their outer edges the angular locking-tongues, said sections being alternately faced in opposite directions with the adjacent lateral members thereof in face-to-face contact, combined with means carried by said sections for locking them together in series, said sections being of unequal length and alternated in vertical series and also with respect to the two thicknesses of the piling, whereby the joints between the adjacent ends of the sections of one thickness are against solid portions of the sections of the other thickness; substantially as set forth.

818,597. BILLIARD-CUE. JAMES W. WILSON, New York, N. Y. Filed Jan. 17, 1906. Serial No. 296,538.

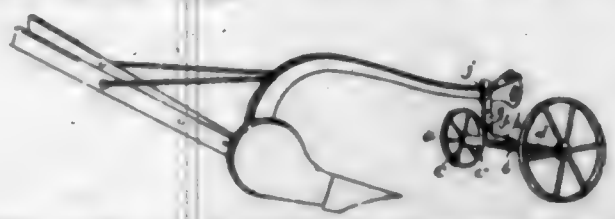


Claim.—1. A billiard-cue comprising a one-piece butt-section having a cavity therein at one end, a substantial solid point provided with an axial bolt-receiving opening, a tip detachable from the point, a member for coupling the point to the butt, a bolt carrying the tip having a shank designed to extend through the bolt-opening in the point, and a nut screwed upon the shank housed within said cavity, substantially as described.

2. A cue comprising a butt-section, having a cavity in the end thereof, a point-section, a sleeve fitting the cavity provided with threads, a block held at one end in the point-section and having a part projecting from the latter for engagement with said sleeve, a tip, a bolt having its head embedded in the tip and its shank projecting through the point-section and block and a nut threaded on said stem, substantially as described.

3. A cue comprising a butt-section, having an axial cavity provided with a threaded portion, a point-section having a stem engaging the threads of the cavity and a shoulder about the stem to abut against the end of the butt-section, a tip, a bolt having its head engaged with the tip, its shank projecting through the point-section with a threaded portion projecting to the outside of the stem and a nut mounted on the said threaded portion of the bolt, said nut and threaded portion being housed within the cavity of the butt-section when the parts are assembled.

818,598. PLOW. FRANK L. WOODWARD, Clinton, Mich. Filed Feb. 1, 1904. Serial No. 191,519.



Claim.—1. In an attachment for plows the combination of a single supporting-hanger comprising a single upright arm to be engaged upon a plow-beam, and a horizontal arm projecting laterally from the base of the upright arm, an independent land-wheel axle having an upright portion at its inner end constructed to be engaged with the upright arm of the hanger, means to adjustably unite the upright portion of the land-wheel axle upon the upright arm of the hanger below the plow-beam, a furrow-wheel axle provided with an inwardly-extending horizontal portion, and additional means to adjustably unite the horizontal portion of the furrow-wheel axle upon the horizontal arm of the hanger, whereby both axles are independently adjustable upon the same single supporting-hanger.

2. In an attachment for plows the combination of a single supporting-hanger comprising a single upright arm to be engaged upon the plow-beam and a horizontal arm projecting laterally from the base of the upright arm, an independent land-wheel axle having an inwardly-extended arm provided with an upright portion at its inner end and located against the upright arm of the hanger, a furrow-wheel axle provided with an inwardly-extended horizontal arm, the land-wheel axle and the upright arm of the hanger, the one constructed with a vertically-elongated slot below the plow-beam, a connecting-bolt passed through said slot to unite the land-wheel axle with the upright arm of the hanger, and the horizontal arm of the hanger and the horizontal furrow-wheel axle the one constructed with an elongated orifice, and a connecting-bolt passed through said orifice to unite the corresponding arm and axle, whereby both axles are independently adjustable upon the same single supporting-hanger.

3. In an attachment for plows the combination of a single supporting-hanger comprising a single upright arm to be engaged upon the plow-beam and a horizontal arm projecting laterally from the base of the upright arm, an independent land-wheel axle having an inwardly-extended arm provided with an upright portion at its inner end in contact with the upright arm of the hanger, means to adjustably unite the upright portion of the land-wheel axle upon the upright arm of the hanger below the plow-beam, a furrow-wheel axle provided with an inwardly-extending horizontal arm, and means to adjustably unite the horizontal arm of the furrow-wheel axle upon the horizontal arm of the hanger, whereby both axles are independently adjustable upon the single supporting-hanger, the land-wheel axle being reversible in its engagement with the upright arm of the hanger to carry the inner end of the land-wheel axle above or below the outer end thereof whereby the land-wheel may be raised or lowered as may be desired.

4. In an attachment for plows the combination of a land-wheel axle, a furrow-wheel axle, and a single supporting-hanger intermediate the two axles, independent means to adjustably engage the single supporting-hanger with each of said axles, said single supporting-hanger constructed to be engaged at its upper end upon one face of a plow-beam.

5. The combination with a plow provided with a beam, of a land-wheel axle, a furrow-wheel axle, and an intermediate independent single supporting-hanger adjustably engaged with each of said axles, and a clip engaging the upper end of the single supporting-hanger upon the one face of the plow-beam.

818,599. DRAFT-EQUALIZER. SILAS E. BAILOR and FRED M. ASHE, Tarkio, Mo. Filed June 1, 1905. Serial No. 263,253.

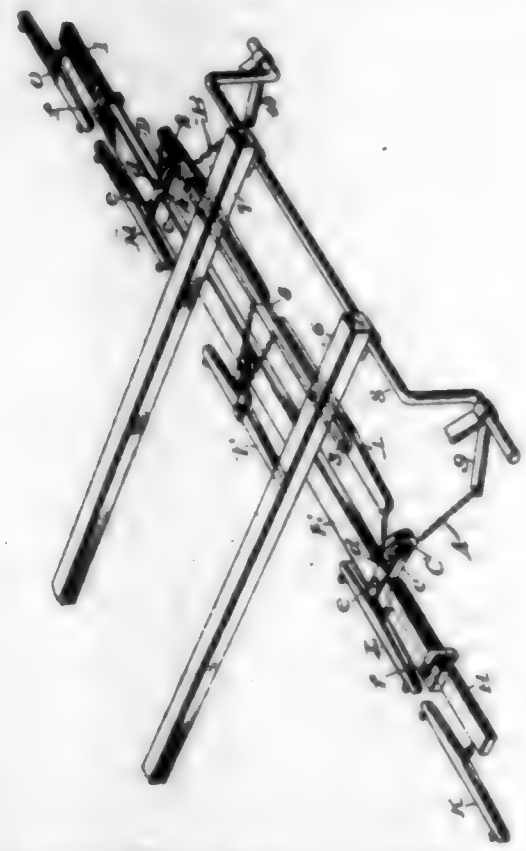
Claim.—1. A draft-equalizer comprising in combination, a transverse pivotal evener mechanism, flexible connecting devices between the evener mechanism and the machine-frame said connecting devices having one of their ends connected with the evener mechanism and their opposite ends connected fixedly with the machine-frame and draft devices connected with each of said flexible connections.

2. A draft-equalizer comprising in combination, a transverse pivotal evener mechanism, ropes or chains connected with said mechanism and having a fixed connection with the machine-frame, movable guides or pulleys around which said ropes or chains pass, and draft devices operatively connected with said guides, for the attachment of the draft-animals.

3. A draft-equalizer comprising in combination, two evener-levers adapted to be pivotally supported by the machine, chains or ropes connected with the outer ends of the evener-levers and adapted to be connected also with the machine, guides or pulleys around which the chains pass, draft devices operatively connected with said guides or pulleys, for the attachment of the draft-animals, and a suitable connection between the inner ends of the evener-levers.

4. In combination with a machine, two evener-levers pivotally mounted thereon, chains connected at their ends respectively with the evener-levers and with the machine, pulleys over which the chains pass, and draft devices operatively connected with the pulleys, for the attachment of the draft-animals.

5. In combination with the machine, two evener-levers pivotally sustained thereby, a running connection between the inner ends of the levers, chains connected with the outer ends of the levers and with the frame of the machine, pulleys around which the chains pass, and draft devices operatively connected with the pulleys, for the attachment of the draft-animals



6. A draft-equalizer comprising in combination, two evener-levers arranged end to end and adapted to be pivotally supported by the machine, a chain connected at its ends to the inner ends of said levers, a pulley or guide around which the chain passes, chains having their upper ends connected with the outer ends of the evener-levers and having their lower ends adapted to be connected with the machine, vertical pulleys around which said last-mentioned chains pass, and draft devices connected with said vertical pulleys, for the attachment of the draft-animals.

7. A draft-equalizer comprising in combination, two evener-levers adapted to be pivotally supported by the machine, a running connection between the inner ends of said levers, a draft device for the attachment of a draft-animal operatively connected with the running connection, two chains connected at one of their ends with the outer ends of the evener-levers and adapted to have their opposite ends connected with the machine, pulleys around which said chains pass, and draft devices operatively connected with said pulleys, for the attachment of additional draft-animals.

8. A draft-equalizer comprising in combination, evener-levers supported by the machine, a suitable connection between the inner ends of the levers, flexible connections between the outer ends of the levers and the machine, and draft devices for the attachment of the animals, said draft devices being operatively connected with the flexible connections.

9. A draft-equalizer comprising in combination, evener-levers supported by the machine, a running connection between the inner ends of the levers, flexible connections between the outer ends of said levers and the machine, and draft devices for the attachment of draft-animals, said draft devices having a running connection with said flexible connections.

10. A draft-equalizer comprising in combination, evener-levers adapted to be supported by the machine, a suitable connection between the inner ends of said levers, chains or ropes connected with the opposite ends of the levers and adapted to be connected with the machine, guides or pulleys around which said chains pass, an equalizing-bar connected with said guides or pulleys, and draft devices connected with the equalizing-bar, for the attachment of draft-animals.

11. The combination of evener-levers supported by the machine, a running connection between the inner ends of said levers, chains connected with the outer ends of the levers and with the machine, pulleys around which said chains pass, an equalizing-bar connected with said pulleys, doubletrees connected with said equalizing-bar, and swingletrees connected with said doubletrees, for the attachment of the draft-animals.

12. The combination of two evener-levers pivotally connected with the machine, a chain connecting the inner ends of the same, a pulley Q around which said chain passes, a swingletree connected with said pulley, chains connecting the outer ends of the evener-levers with the machine, pulleys C and D around which said chains pass, an equalizing-bar connected with the pulleys C and D, doubletrees connected with the equalizing-bar, and swingletrees connected with said doubletrees.

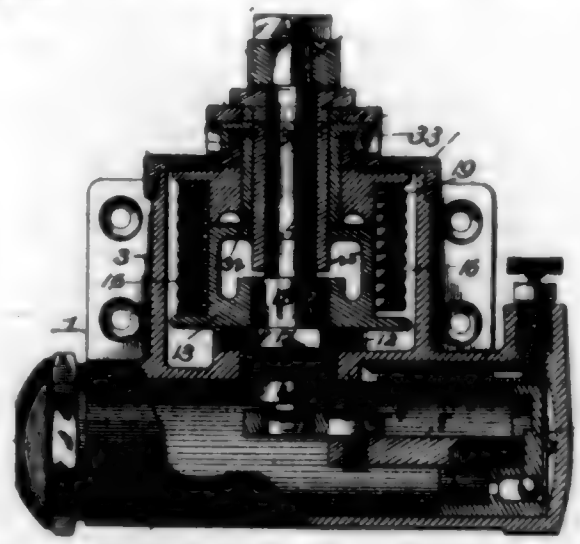
13. In combination with the machine, a fixed arm, having its lower end terminating below the axis of the carrying-wheels, an evener mechanism sustained by the machine, a connection between the evener mechanism and said arm adapted to transmit to the arm the draft applied to said connection and draft devices operatively connected with said connection; whereby the pull of the draft-animals will have a tendency to lift the machine and relieve "neck-weight" on the animals.

14. In combination with a machine, two evener-levers mounted thereon, two fixed arms extending below the axis of the carrying-wheels, flexible connections between said arms and the evener-levers, and draft devices for the attachment of the draft-animals, said draft devices being operatively connected with the flexible connections.

15. In combination with the machine, fixed arms extending downwardly and forwardly from the axle thereof, an evener mechanism operatively connected with said arms, and draft devices operatively connected with the evener mechanism, for the attachment of the draft-animals.

16. In combination with the machine, two arms extending downwardly and forwardly from the axle, two evener-levers pivotally sustained by the machine and arranged end to end, chains connected at their upper ends with the outer ends of said evener-levers and connected at their lower ends with the ends of said arms, vertical pulleys around which said chains pass, draft devices for the attachment of draft-animals operatively connected with said pulleys, and a connection between the inner ends of said evener-levers.

818,600. **COMBINED DOOR CHECK AND CLOSER.** ARTHUR F. BARDWELL, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn. Filed Dec. 2, 1904. Serial No. 235,206.



Claim.—1. In a door-closer, the combination with a spring-chamber, of upper and lower hubs, a spring connected at one end to one hub and at its other end to the other hub, a thimble for each hub, the said thimbles extending up above the top of the spring-chamber, a lever-arm, and means connecting the latter and thimbles.

2. In a door-closer, the combination with a spring-chamber and a spiral spring therein, of a hub connected to one end of the spring, a hub connected to the other end of the spring, a thimble attached to each hub, one thimble embracing the other, a lever-arm and means connecting the lever-arm and thimbles.

3. In a door check and closer, the combination with a spindle, a piston-chamber, and a piston in the latter and connected to the spindle, of a spring-chamber, upper and lower hubs, a spring connected at its ends to said hubs, a thimble for each hub, the said thimbles extending above the top of the spring-chamber, a lever-arm fast on the spindle and means thereon operatively connecting the latter and the thimbles.

4. In a door check and closer, the combination with a spindle, a piston-chamber and a piston within said chamber connected to the spindle, of two independently-movable hubs encompassing but free

of said spindle, a spiral spring connected at its ends to said hubs, a thimble for each hub, each thimble extending above the spring-chamber, a lever fast on the spindle and having means thereon to engage both of said thimbles, and means for holding one thimble and its hub against movement while the other is in motion or under tension.

5. In a door-closer, the combination with a spring-chamber and spindle of two independently-movable hubs encompassing but free of said spindle, each hub having a thimble projecting above the spring-chamber, a spiral spring located within said chamber and connected at its ends to said hubs, means for holding one thimble and its hub against movement while the other is in motion or under tension, a lever fast on said spindle, and means whereby when said lever is moved in one direction it engages and turns one thimble and its hub and when moved in the opposite direction engages and turns the other thimble and its hub.

6. In a door-closer, the combination with a spindle, a spring-chamber and a spiral spring therein, of a lower hub connected to one end of the spring, an upper hub connected to the other end of the spring, a thimble detachably connected to each hub and projecting through the top of the casing, a lever-arm fast on the spindle and means connecting the thimbles and lever-arm.

7. In a door-closer, the combination with a spring-chamber a spiral spring therein, and a spindle of a lower hub connected to one end of the spring, an upper hub connected to the other end, a thimble connected to each hub and projecting up through the top of the casing, an arm on one thimble, a ratchet-wheel on the other thimble, a disk carrying a pawl engaging the ratchet-wheel and a lever-arm fast on the spindle and engaging the pawl-carrying disk and the arm on the thimble.

8. In a combined door closer and check, the combination with a piston-chamber, a piston therein, a spring-chamber and a spiral spring in the latter, of a spindle passing through the spring-chamber and connected to the piston, a lever-arm on the spindle, a hub connected to the upper end of said spring, a hub connected to the lower end of the spring, a thimble connected to each hub, the said thimbles embracing but free of said spindle, and means operatively connecting the lever and thimbles.

9. In a door-closer the combination with a helical spring, of a sectional spool, each section consisting of a body having an end flange, the bodies of the two sections of the spool forming a continuous unbroken cylindrical bearing for the spring, whereby when the spring is being wound, the coils intermediate the end sections first engage the spool-sections, and thus cause the spring to exert increased power.

10. In a combined door closer and check the combination with a sectional spool, a spindle passing centrally through the spool and connected to the piston, means embracing the spindle and connected to the spool-sections or hub and a lever-arm for actuating the spindle and said means connected with the spool-sections, of a helical spring surrounding the spool and connected at its ends to said spool-sections.

818,601. **AREAMETER.** ERL V. BEALS, Boston, Mass. Filed Aug. 20, 1903. Serial No. 170,152.

Claim.—1. In an areameter, continuously-operative web-propelling means, area-measuring means, and web-actuated means operated by relative slipping of the web and its propelling means for disabling said area-measuring means.

2. In an areameter, a web-controlled measuring-circuit, an indicator controlled thereby, and web-actuated means for rendering said circuit inoperative with respect to the indicator.

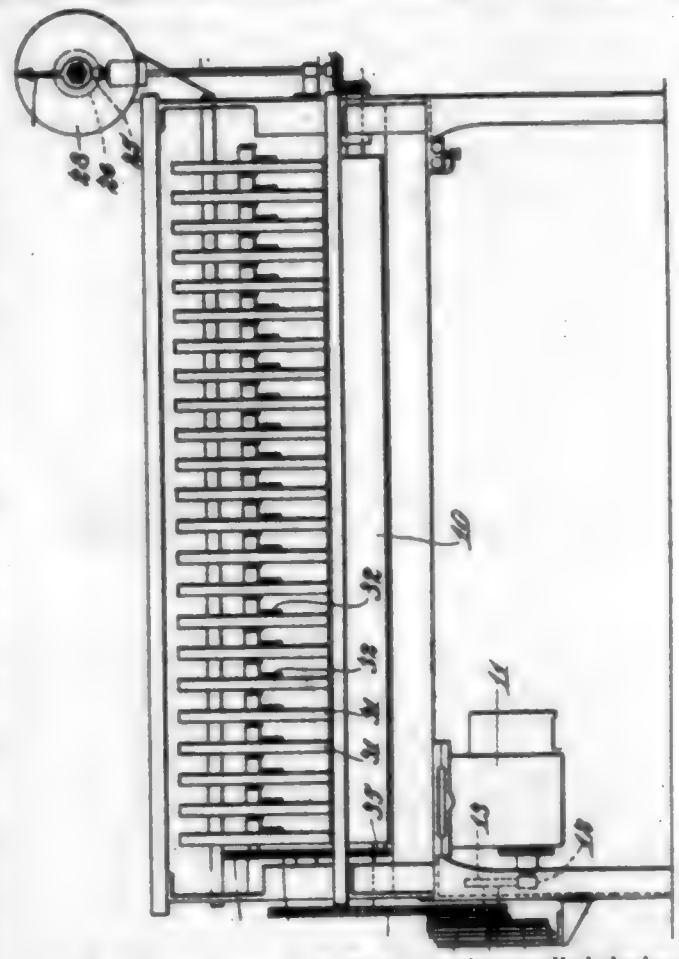
3. In an areameter, an indicator, a series of web-controlled selective devices, means made operative by the presence of the web for operatively connecting said devices with the indicator, and web-actuated means for disabling the connection when the web is retarded.

4. In an areameter, web-propelling length-measuring means, an indicator, a clutch to connect said indicator with said measuring means, a series of breadth-measuring selective devices controlling the clutch, and web-controlled means to disable said devices.

5. In an areameter, a series of breadth-measuring web-controlled selective circuits, indicating means controlled thereby, and web-controlled means for disabling said circuits.

6. In an areameter, a web-propelled friction-wheel, a contact driven thereby, a coöperating contact normally carried with said driven contact, and a constantly-moving frictional device to pick up said coöperating contact and change the relation of the contacts when the friction-wheel is held.

7. In an areameter, constantly-moving web-propelling means, web-propelled elements, an indicator, controlling connections between said elements and the indicator, and means made operative by the retarding of said elements for disabling said connections.



8. In an areameter, an indicator, web-propelled devices connected therewith, constantly-operative web-propelling means, and mechanism operated by a change in speed relation between said devices and the web-propelling means for disabling the connections to the indicator.

9. In an areameter, constantly-operative web-propelling means, a series of measuring-circuits, a series of web-propelled elements, and means operated by a change in speed relation between said means and elements for disabling said circuits.

10. In an areameter, a web-driven contact, a coöperating contact, a constantly-moving driver for the latter, and a frictional slipping connection between said driver and coöperating contact.

11. In an areameter, a wheel mounted for engagement and rotation by the web, a constantly-rotated shaft, a contact-wheel loose on said shaft and rotated by the web-engaged wheel, and a coöperating contact-wheel mounted on and having a frictional connection with said shaft.

12. In an areameter, an indicator, a web-engaging element, a constantly-moving driver, a frictional slipping device associated with said element, and a connection between said element and the indicator disabled by the action of said device.

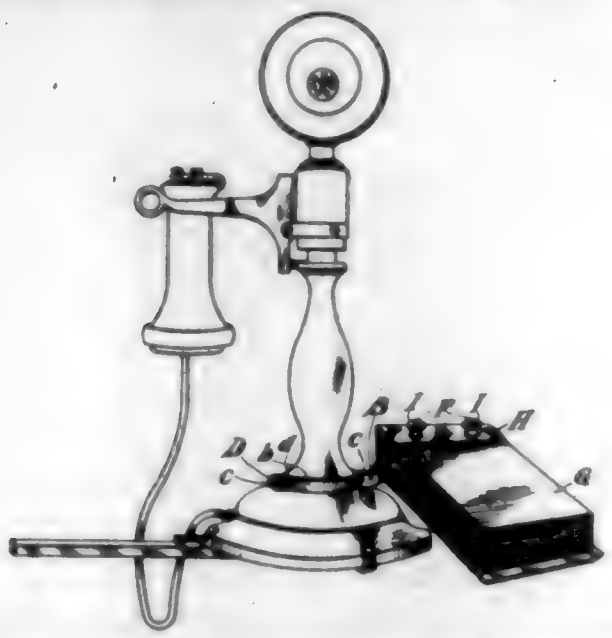
13. In an areameter, a conductive web-propelling measuring-roll, a series of independently-movable conductive wheels coöperating therewith, an indicator, indicator-operating means, and a series of circuits including said roll and the respective wheels and controlling the connection of said indicator with its operating means.

14. In an areameter, an indicator, an electromagnetic clutch device controlling the same and having a motor-circuit and a checking-circuit, a relay controlling one of said circuits and having its magnet included with the other circuit, and a series of web-controlled contacts controlling said relay and clutch device.

818,602. **ATTACHMENT FOR DESK-TELEPHONES.** JOSEPH C. BELDEN and ALBERT BEUTLER, Chicago, Ill., assignors to Belden Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed July 2, 1904. Serial No. 215,116.

Claim.—1. In an attachment for desk-telephones a plate for supporting a writing-pad, a rod supporting said plate and having its end bent into the arc of a circle adapted to embrace a portion of the circumference of the pedestal of the desk-telephone, a yoke-piece bent into a similar arc, screws for clamping said rod and said yoke together around the base of said pedestal, posts passing through said rod and said plate and riveted upon said rod and having projecting

members, a writing-pad having perforations adapted to be engaged by the projecting members of said posts, and means for holding said writing-pad upon said posts, substantially as described.

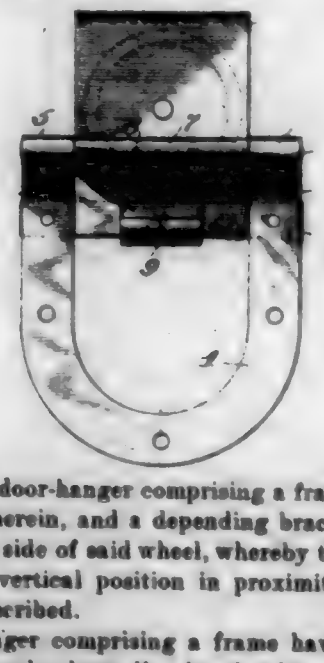


2. In an attachment for desk-telephones, a plate for supporting a writing-pad, a rod riveted to said plate adapted to engage the pedestal of said desk-telephone, means for clamping said rod into engagement with said pedestal, screw-threaded rivet-posts passing through said rod and said plate and riveted into said rod and said plate, a writing-pad, a binding-strip having perforations adapted to be engaged by said rivet-posts, and nuts for said rivet-posts adapted with said binding-strip to clamp said pad upon said plate, substantially as described.

3. In combination with a telephone-desk stand, a rod having a bent portion adapted to engage the pedestal of said stand, a yoke, also adapted to engage said pedestal, screws for clamping said rod and said yoke together around said pedestal, a writing-pad, a plate for supporting said writing-pad riveted to said rod, posts for securing said writing-pad in place upon said plate, said posts passing through said plate and said rod and riveted thereto, a binding-strip also perforated to engage said posts and nuts adapted to engage screw-threads on said posts for clamping said binding-strip against said pad, substantially as described.

4. In an attachment for desk-telephones, a rod, means for attaching said rod to a desk-telephone, a plate for supporting a writing-pad, rivets for holding said plate on said rod and having projecting members, a writing-pad, and clamping means associated with the projecting members of said rivets and adapted to clamp said writing-pad upon said plate, substantially as described.

818,603. DOOR-HANGER. WILLIAM P. BENSON, Sterling, Ill. Filed June 16, 1902. Serial No. 111,944.



Claim.—1. A door-hanger comprising a frame having a track-wheel journaled therein, and a depending bracket hinged to said frame at the inner side of said wheel, whereby the door has a tendency to assume a vertical position in proximity to the building; substantially as described.

2. A door-hanger comprising a frame having a track-wheel journaled therein, and a depending bracket hinged to said frame at the inner side of the track-wheel and above the lower edge thereof, whereby the door has a tendency to assume a vertical position in proximity to the building; substantially as described.

3. A door-hanger comprising a frame having a track-wheel journaled therein, a depending bracket hinged to said frame, and means arranged on the door-hanger for limiting the inward movement of said bracket relatively to said frame while permitting its free outward movement independently of said frame; substantially as described.

4. A door-hanger comprising a frame having a track-wheel journaled therein, a depending bracket hinged to said frame at the inner side of the track-wheel, and means for limiting the inward movement of said bracket relatively to said frame while permitting its free outward movement independently of said frame; substantially as described.

5. A door-hanger comprising a frame having a track-wheel journaled therein, a depending bracket hinged to said frame at the inner side of the track-wheel and above the lower edge thereof, and means for limiting the inward movement of said bracket relatively to said frame while permitting its free outward movement independently of said frame; substantially as described.

6. A door-hanger comprising, in combination with a track-wheel, a frame in which such wheel is journaled and which extends thereover as a hood, a depending bracket hinged to said frame at the inner side of the track-wheel, said frame having an extension projecting below the wheel, and means for limiting the inward movement of the depending bracket relatively to the wheel-frame while permitting its free outward movement independently of said frame; substantially as described.

7. A door-hanger comprising in combination with a track-wheel, a frame in which such wheel is journaled and which extends thereover as a hood, a depending bracket hinged to the inner end of the frame or hood, said frame having an extension projecting below the tread of the wheel, and a cross-bar on the bracket and arranged in the path of movement of said extension to limit the inward movement of the bracket; substantially as described.

8. The combination of a frame or hood 2 having a track-wheel 3 journaled in it and provided at one side of the said wheel with the bearing 7, the bracket 1 provided with the upwardly-extending side arms 4 embracing the frame 2 and having the bearings 5 at their upper ends, and the pintle 8 extending through the bearings 5 and 7; substantially as described.

9. The combination of the frame 2 having a track-wheel journaled therein and provided upon one side of the said wheel with the bearing 7 and having its opposite side depending below the axis of said wheel, the bracket 1 having its upwardly-extending side arms provided with the bearings 5, the pintle 8 extending through the bearings 5 and 7, and the stop-bar 6 carried by the bracket 1 and cooperating with the depending extension of the frame 2; substantially as described.

10. A door-hanger comprising a frame having a track-wheel journaled therein, and a depending bracket hinged to said frame at the inner side of the track-wheel, a portion of said frame being arranged in the path of movement of said bracket to limit its independent inward movement and prevent the door from contacting the building; substantially as described.

11. A door-hanger comprising a frame having a track-wheel journaled therein and provided with a depending extension and a depending bracket hinged to said frame and provided with a cross-bar arranged to contact said depending extension and to be limited thereby as to further independent movement; substantially as described.

12. A door-hanger comprising a frame having a track-wheel journaled therein and substantially inclosed by the frame and a depending bracket hinged to said frame at the inner side of the track-wheel and at a point intermediate the plane of the tread of the wheel and its axis; substantially as described.

13. A door-hanger comprising a frame substantially inverted-U shaped and having a track-wheel journaled therein and substantially inclosed thereby, and a depending bracket hinged to said frame at the inner side of the track-wheel; substantially as described.

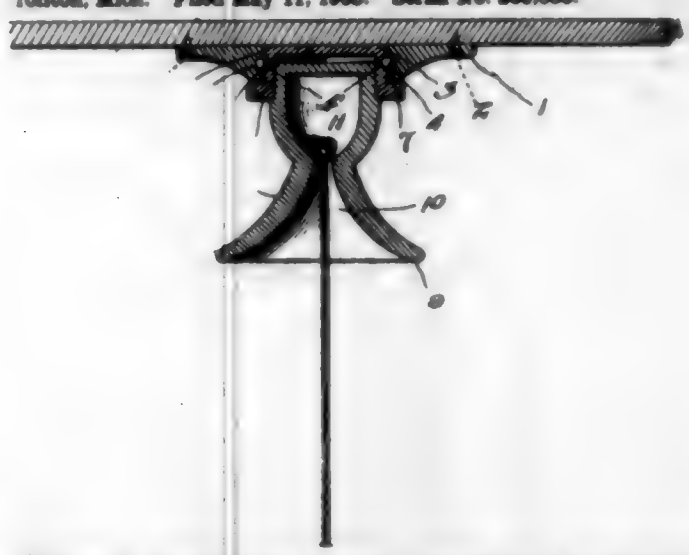
14. A door-hanger comprising a frame substantially inverted-U shaped and having a track-wheel journaled therein and substantially inclosed thereby, and a bracket depending in the plane of the outer member of the U-shaped frame and hinged at its upper end to the other or inner member of said U-shaped frame and at a point above the tread of the wheel; substantially as described.

15. A door-hanger comprising a frame having a track-wheel journaled therein, and a depending bracket hinged to said frame at the inner side of said track-wheel, said bracket having a portion normally lying against said frame at the other side of said track-wheel, whereby the movement in one direction of said bracket relative to said frame is limited.

16. A door-hanger comprising a track-wheel, a frame therefor, a downward extension from said frame at one side of the wheel, said extension being constructed to engage the track-rail to prevent derailment of said wheel, and a bracket having a hinged connection with said frame at the other side of said wheel, a portion of said bracket being adapted to engage said downward extension, whereby the movement of said bracket in one direction is limited.

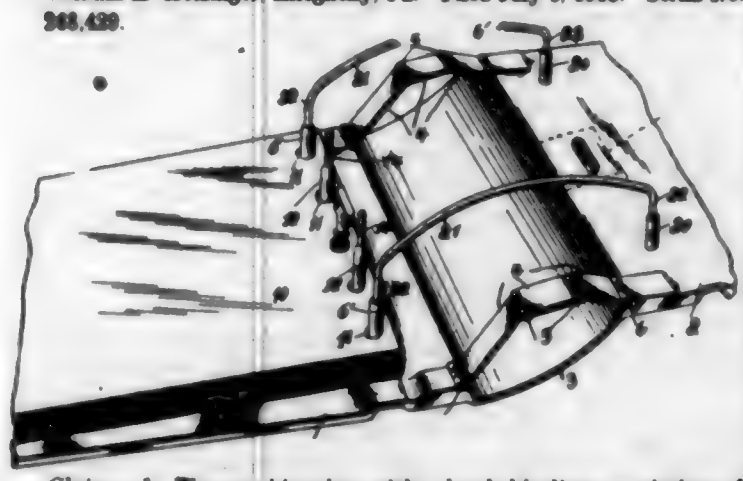
17. A door-hanger comprising a frame having a track-wheel journaled therein, and a bracket hinged to said frame at one side of the central plane of said wheel, said frame and bracket having engaging parts adapted to limit their relative movement due to the offset hinging of said bracket.

818,604. **PUNCHING-BAG SUPPORT.** RICHARD E. BIRD, Carrollton, Mich. Filed May 11, 1905. Serial No. 260,053.



Claim.—A punching-bag support, comprising a bracket-plate having a circular opening, a bearing-ring swiveled in said opening and having a screw-threaded socket, and a bag-suspending bell having its upper portion secured in the socket of said swiveled ring, substantially as described.

818,605. **LOOSE-LEAF LEDGER.** FRIEDRICH BOLLENBACH, Allegheny, Pa., assignor of one-third to Elmer E. Herman and one-third to William M. Holzinger, Allegheny, Pa. Filed July 6, 1905. Serial No. 268,429.



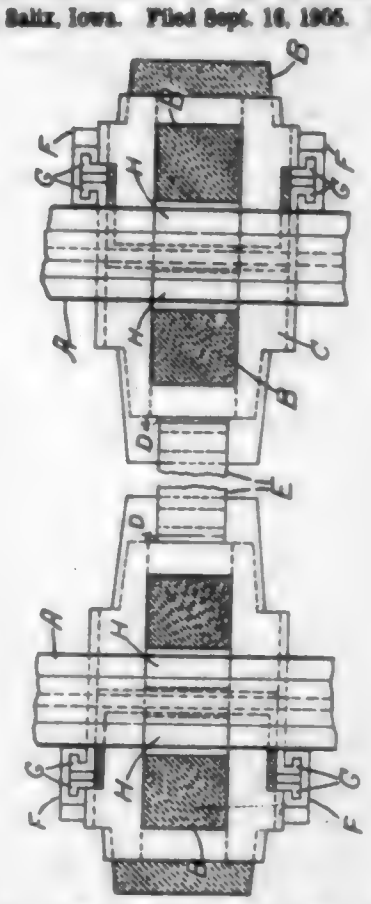
Claim.—1. The combination with a book-binding consisting of a back and a cover, of a three-part hinge connecting said cover and said back, tubes carried by said back adjacent its hinged edges and adapted to receive perforated sheets, spring-pressed pins mounted in some of said tubes, a screw-threaded post carried by said back, a slotted sleeve detachably mounted upon said post and adapted to be engaged by a lock carried by said cover, tubes carried by said cover and adapted to fit within some of the tubes of said back, curved bars adapted to fit within the tubes of said cover and said back, means for locking the ends of said bars within said tube, substantially as described.

2. A binding for perforated sheets of paper consisting of the combination with a back and a cover, of hinges connecting said cover to said back, tubes carried by said back, a post carried by said back, a slotted sleeve adjustably mounted upon said post and adapted to be engaged by a lock carried by said cover, tubes carried by said cover and adapted to fit in the tubes of said back, curved bars adapted to fit in the tubes of said back and cover, means to lock the curved bars within said tubes, and means carried by some of the tubes of the back to force the cover open when released by said lock, substantially as described.

3. The combination with the back and cover of a binding adapted to contain pages, said pages having perforated edges, of tubes carried by said back and adapted to hold said pages, a sleeve adjustably connected to said back and adapted to be engaged by a lock carried by said cover, tubes carried by said cover and adapted to engage in the tubes of said back, curved bars adapted to engage in the tubes of said cover and said back, means to lock said bars in said tubes, means carried by said back to force said cover open when released by said lock, substantially as described.

4. The combination with a suitable binding consisting of a back and cover, said cover having a conventional form of lock, of an adjustable sleeve carried by said back and adapted to be engaged by said lock, telescopic tubes carried by said back and cover and adapted to hold pages, curved bars adapted to engage in said tubes, means to lock said bars in said tubes, substantially as described.

818,606. **RAILROAD-TIE.** ISAAC N. BOOKER and STERLING P. LINKSWILER, Salix, Iowa. Filed Sept. 16, 1905. Serial No. 278,530.



Claim.—1. In a railroad-tie, a metal casing adapted for a short tie underneath each rail and consisting, in combination, of two parts joined on the sides of the tie, wedge-shaped keys for securing the side parts together, each of the parts having a jog on each side near the end, the ends being smaller and wedge-shaped, brackets formed integral with the casing, and projecting upward therefrom on each side of the rail, and means for securing the casings together between the rails, substantially as described.

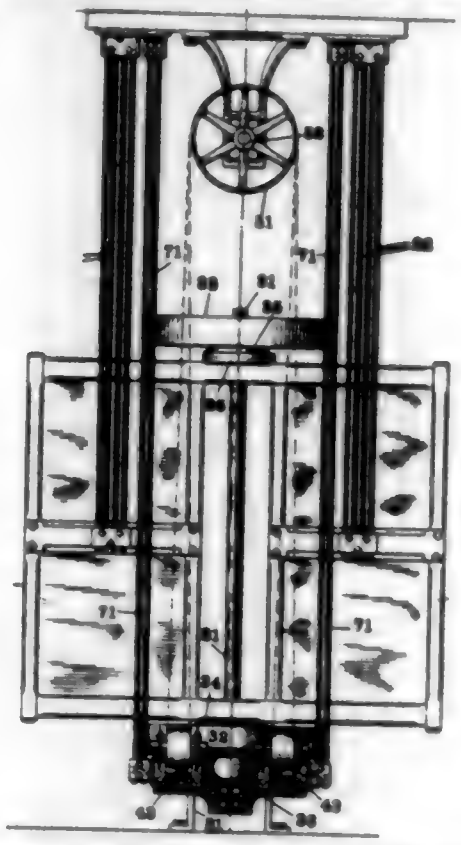
2. In a railroad-tie, the combination of a casing C formed of two parts, each of said parts having jogs on the sides thereof, and being largest in the middle, the edges of the side parts which join forming grooves G, keys F, for insertion in said grooves to secure the parts together, tongues D on the upper, inner ends of the casings, couplings E for insertion in the tongues to unite the ties, and brackets H, formed integral with the casings and conforming to the shape of the sides of the rails, substantially as described.

818,607. **GYRATORY SIFTER.** ALLEN C. BRAITHINGHAM, Toledo, Ohio. Filed May 11, 1905. Serial No. 259,965.

Claim.—1. The combination of a sifter structure, means whereby the same is yieldingly suspended, a bridge-tree arranged below said sifter structure, means whereby the same is yieldingly suspended, a driving-shaft for the sifter structure supported by said bridge-tree, connections between said shaft and said sifter structure, yieldingly-supported power-transmission devices leading to said shaft, and yieldingly-mounted stops adapted to limit the movement of said bridge-tree.

2. The combination of a sifter structure, supports by means of which the same is yieldingly suspended from overhead, a bridge-tree arranged below said sifter structure, supports by means of which the same is yieldingly suspended from overhead, a driving-shaft for the

sifter structure supported by said bridge-tree, connections between said driving-shaft and said sifter structure, and yieldingly-mounted stops adapted to limit the movement of the bridge-tree.



3. The combination of a sifter structure, overhead suspending devices therefor, a bridge-tree arranged below said sifter structure, overhead suspending devices therefor, a driving-shaft for the sifter structure supported by said bridge-tree, and yieldingly-mounted stops carried from an adjacent portion of the building adapted to engage with and limit the movement of the bridge-tree.

4. The combination of a sifter structure, overhead suspending devices therefor, a bridge-tree arranged below said sifter structure, overhead suspending devices therefor, a shaft supported by the bridge-tree, eccentric connections between said shaft and said sifter structure, suitable power-transmission devices leading to said shaft, and stops adapted to limit the movement of the bridge-tree.

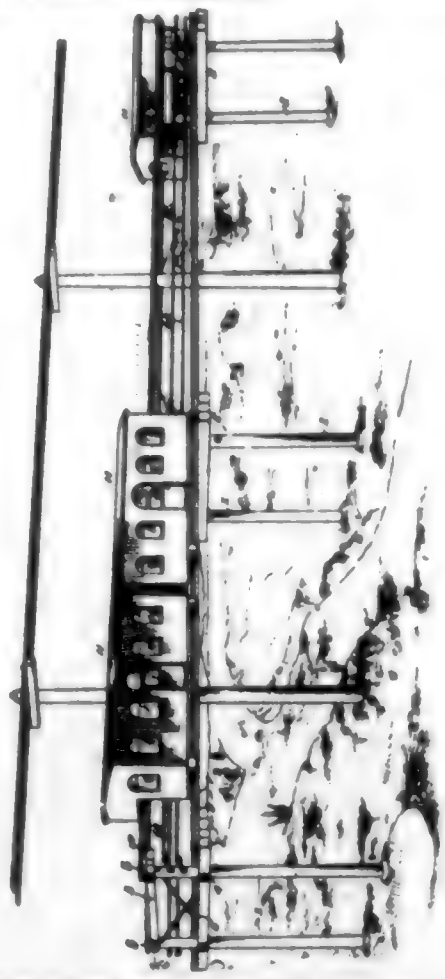
5. The combination of a sifter structure, means whereby the same is yieldingly suspended, a bridge-tree arranged below said sifter structure, means whereby the same is yieldingly suspended, a driving-shaft for the sifter structure supported by said bridge-tree, eccentric connections between said shaft and said sifter structure, and independently-supported stops arranged to engage with and limit the movement of the bridge-tree.

818,608. SUSPENDED RAILWAY. GEORGE W. BROWER, Santa Monica, Cal. Filed Jan. 31, 1906. Serial No. 298,779.

Claim.—1. In a suspended railway, the combination with a car-body and an upper and lower trackway, of a plurality of trucks for riding on the upper trackway and supporting the car-body, said trucks comprising a turn-table, a main drive-wheel carried thereby, a supplemental frame pivotally secured to the turn-table frame, pilot-wheels carried by said supplemental frame and arranged in pairs forwardly and rearwardly of the drive-wheel, means for shifting said supplemental frame to maintain but one pair of pilot-wheels in operative engagement with the track at a time, and retaining-wheels beneath the car-body for engaging the lower tracks substantially as shown and described.

2. In a suspended railway, the combination with a car-body and an upper and lower trackway, of a plurality of trucks for riding on the upper trackway and supporting the car-body, said trucks comprising a turn-table, a main drive-wheel carried thereby, a supplemental frame pivotally secured to the turn-table frame, pilot-wheels carried by said supplemental frame and arranged in pairs forwardly and rearwardly of the drive-wheel, means for shifting said supplemental frame to maintain but one pair of pilot-wheels in operative engagement with the track at a time, retaining-wheels beneath the car-body for engaging the lower tracks, and a drive-motor carried by one of said trucks, gear connections between the drive-motor and the drive-wheel of the truck, substantially as shown and described.

3. In a suspended railway, the combination with a car-body and an upper and a lower trackway, of a plurality of trucks for riding on the upper trackway and supporting the car-body, said trucks comprising a turn-table, a main drive-wheel carried thereby, a supplemental frame pivotally secured to the turn-table frame, pilot-wheels carried by said supplemental frame and arranged in pairs forwardly and rearwardly of the drive-wheel, means for shifting said supplemental frame to maintain but one pair of pilot-wheels in operative engagement with the track at a time, retaining-wheels beneath the car-body for engaging the lower tracks, and a pair of fixed retaining-wheels carried by the car-body for engaging the upper track-rail, substantially as shown and described.



4. In a suspended railway, the combination with a car-body and an upper and a lower trackway, of a plurality of trucks for riding on the upper trackway and supporting the car-body, said trucks comprising a turn-table, a main drive-wheel carried thereby, a supplemental frame pivotally secured to the turn-table frame, pilot-wheels carried by said supplemental frame and arranged in pairs forwardly and rearwardly of the drive-wheel, means for shifting said supplemental frame to maintain but one pair of pilot-wheels in operative engagement with the track at a time, retaining-wheels beneath the car-body for engaging the lower tracks, a drive-motor carried by one of said trucks, gear connections between the drive-motor and the drive-wheel of the truck, and a pair of fixed retaining-wheels carried by the car-body for engaging the upper track-rail, substantially as shown and described.

5. In a suspended railway of the character stated, a car, track-engaging wheels beneath the car-body and arranged in the same horizontal plane for engaging opposite sides of a track, a pair of trucks secured to the car-body at the top thereof from which the car-body is suspended, said trucks each including a main frame including a turn-table, a drive-shaft carried by the main frame, a drive-wheel on said drive-shaft, a supplemental frame pivotally secured to said main frame, pilot-wheels carried by said supplemental frame and arranged in pairs, one pair at the front and the other pair at the rear of the drive-wheel, means for shifting said supplemental frame to cause one pair of pilot-wheels to engage the track at a time, a pair of retaining-wheels adjacent the drive-wheel for engaging the sides of a track, one of said trucks including a rearwardly-extending platform, a motor secured thereto, gear connections between the motor and the drive-wheel of said truck, a hanger carried by the motor-platform at the rear, a wheel fulcrumed in said hanger, a track suspended from the car-body for said last-named wheel to ride on, substantially as shown and described.

6. In a suspended railway of the class described, the combination with a trackway consisting of an upper or main rail and a lower rail, of a car comprising a body adapted to be suspended over said rails, a pair of trucks pivotally mounted on said car-body, drive-wheels carried by said trucks for engaging the upper track, means

carried by the trucks and operating in advance of the drive-wheel for positively directing the drive-wheel in alinement with the track, similar means at the rear of the drive-wheel for the same purpose, retaining-wheels adjacent the truck for engaging the sides of the track, retaining-wheels beneath the car-body for engaging the sides of the lower track, means for directing either the front or rear drive-wheel directing means into operative engagement with the track at times substantially as shown and described.

7. In a suspended railway of the class described, the combination with a trackway consisting of an upper or main rail and a lower rail, of a car comprising a body adapted to be suspended over said rails, a pair of trucks pivotally mounted on said car-body, drive-wheels carried by said trucks for engaging the upper track, means carried by the trucks and operating in advance of the drive-wheels for positively directing the drive-wheel in alinement with the track, similar means at the rear of the drive-wheel for the same purpose, retaining-wheels adjacent the truck for engaging the sides of the track, retaining-wheels beneath the car-body for engaging the sides of the lower track, means for directing either the front or rear drive-wheel directing means into operative engagement with the track at times, and cushion-tires for all of said wheels, substantially as shown and described.

8. In a suspended railway, the combination with a pair of fixed track-engaging retaining-wheels, of a truck, said truck including a turn-table pivotally mounted to the car-body with its axis of rotation parallel to and in the same transverse vertical plane with the axis of rotation of the retaining-wheels, means at the front of the drive-wheel and at the rear of the drive-wheel for operating the turn-table to bring the drive-wheel into proper alinement with the track at all times, and means for shifting the front directing means into engagement with the rail while simultaneously shifting the rear directing means out of engagement with the rail, substantially as shown and described.

9. In a suspended railway, the combination with a pair of fixed track-engaging retaining-wheels, of a truck, said truck including a turn-table pivotally mounted to the car-body with its axis of rotation parallel to and in the same transverse vertical plane with the axis of rotation of the retaining-wheels, of means at the front of the drive-wheel and at the rear of the drive-wheel for operating the turn-table to direct the drive-wheel into proper alinement with the track at all times, means for shifting the front directing means into engagement with the rail while simultaneously shifting the rear directing means out of engagement with the rail, and supplemental retaining-wheels mounted beneath the car-body for engaging a second rail, said supplemental retaining-wheels arranged in pairs with their axis of rotation in the same vertical plane as the axis of rotation of the first-mentioned retaining-wheels, substantially as shown and described.

10. In a railway of the class described, the combination with an upper and lower track and trestle-work therefor, of a car adapted to run on said track structure and comprising a car-body, trucks for supporting said car, said trucks including a turn-table, ball-bearings for said turn-table, said turn-table having downwardly-projecting arms, a drive-shaft mounted in bearings thereon, a drive-wheel on said drive-shaft between said arms for riding on the upper rail, retaining-wheels rotatable in a plane at right angles to the drive-wheel for engaging each side of the upper rail, pilot-wheels arranged in pairs one pair in front and the other in back of the drive-wheel, a drive-motor mounted on one of said trucks and geared with the drive-wheel shaft, means for mounting said drive-motor on said truck to be laterally shiftable as the turn-table turns, and means for shifting the pilot-wheels on each truck simultaneously to bring either the forward or rearward pairs of pilot-wheels of each truck into engagement with the track, and supplemental retaining-wheels beneath the car-body for engaging the lower track substantially as shown and described.

11. In a suspended railway, the combination with a car-body, of a truck therefor, said truck comprising a main frame having a turn-table portion and downwardly-projecting arms, ball-bearing connections between the turn-table portion and the car-body for supporting the truck, on the car-body, a master drive-wheel carried by said main frame, a supplemental frame pivotally secured to said main frame, pilot-wheels carried by said supplemental frame, and means for oscillating said supplemental frame on its pivots.

12. In a suspended railway, the combination with a car-body, of a truck therefor, said truck comprising a main frame having a turn-table portion and downwardly-projecting arms, ball-bearing connections between the turn-table portion and the car body for supporting the truck on the car-body, a master drive-wheel carried by said main frame, a supplemental frame pivotally secured to said main frame, pilot-wheels carried by said supplemental frame, means for oscillating said supplemental frame on its pivots, and resilient tires for all of said wheels, substantially as shown and described.

13. In a suspended railway, the combination with a car-body, of a truck therefor, said truck comprising a main frame having a turn-table portion and downwardly-projecting arms, ball-bearing connections between the turn-table portion and the car-body for supporting the truck on the car-body, a master drive-wheel carried by said main frame, a supplemental frame pivotally secured to said main frame, pilot-wheels carried by said supplemental frame, means for oscillating said supplemental frame on its pivots, said main frame having rearwardly-projecting portions, a motor-platform secured to said rearwardly-projecting portions, a hanger extending upwardly from the rear of said platform, a wheel rotatably mounted in the upper end of said hanger, a trackway supported from the car-body for coöperating with said last-named wheel, gear connections between the motor and the drive-axle, and a magnetic brake for said drive-axle, substantially as shown and described.

14. In a suspended railway, the combination with a car-body, of a truck therefor, said truck comprising a main frame having a turn-table portion and downwardly-projecting arms, ball-bearing connections between the turn-table portion and the car-body for supporting the truck on the car-body, a master drive-wheel carried by said main frame, a supplemental frame pivotally secured to said main frame, pilot-wheels carried by said supplemental frame, means for oscillating said supplemental frame on its pivots, said main frame having laterally-projecting portions, a motor-platform secured to said rearwardly-projecting portions, a hanger extending upwardly from the rear of said platform, a wheel rotatably mounted in the upper end of said hanger, a trackway supported from the car-body for coöperating with said last-named wheel, gear connections between the motor and the drive-axle, a magnetic brake for said drive-axle, and resilient tires for all of said wheels, subtantially as shown and described.

15. In a suspended railway, a truck comprising a main frame, a master drive-wheel rotatably mounted therein, for rotation in a vertical plane, means carried by the truck for driving said drive-wheel, said truck including a turn-table, means for permitting the drive means to have lateral adjustment as the turn-table turns, a supplemental frame secured to said main frame, pilot-wheels carried by said supplemental frame and arranged in pairs, one pair at the front and the other at the rear of the drive-wheel and means for simultaneously shifting all of said pilot-wheels in pairs to direct one pair of pilot-wheels in engagement with the tracks while simultaneously moving the other pair of pilot-wheels out of engagement with the track, substantially as shown and described.

16. In a suspended railway, a track comprising an upper rail and a lower rail arranged in different vertical and horizontal planes, of a car-body adapted to be suspended over said rails, retaining-wheels mounted on the under side of said car-body for engaging the sides of the lower rail, a pair of trucks pivotally secured to the car-body for coöperating with the upper rail, retaining-wheels mounted on the car-body for engaging the sides of the upper rail, each of said trucks comprising a main frame, including a turn-table having a ball-bearing connection with the car-body, and including downwardly-projecting arms, a master drive-wheel mounted between said arms, a drive-shaft for said drive-wheel mounted in bearings in said arms, a supplemental frame secured to said main frame, a pair of pilot-wheels mounted in said supplemental frame in front of the drive-wheel, a second pair of pilot-wheels mounted in said supplemental frame to the rear of the drive-wheel, and means for simultaneously operating the pilot-wheels of each truck to shift one pair of each truck into engagement with the upper rail, while simultaneously shifting the other pair of each truck out of engagement with the upper rail, substantially as shown and described.

17. In a suspended railway, a track comprising an upper rail and a lower rail arranged in different vertical and horizontal planes, of a car-body adapted to be suspended over said rails, retaining-wheels mounted on the under side of the car-body for engaging the sides of the lower rail, a pair of trucks pivotally secured to the car-body for coöperating with the upper rail, retaining-wheels mounted on the car-body for engaging the sides of the upper rail, each of said trucks comprising a main frame, including a turn-table having a ball-bearing connection with the car-body, and including downwardly-projecting arms, a drive-shaft for said drive-wheels mounted in bearings in said arms, a supplemental frame secured to said main frame, a pair of pilot-wheels mounted in said supplemental frame in front of the drive-wheel, a second pair of pilot-wheels mounted in said supplemental frame to the rear of the drive-wheel, and means for simultaneously operating the pilot-wheels of each truck to shift

one pair of each truck into engagement with the upper rail, while simultaneously shifting the other pair of each truck out of engagement with the upper rail, a drive-motor, gear connections between the drive-motor and the drive-wheel shaft of one truck, and means for mounting said motor, to be adjustable in the arc of a circle having as its center the pivotal axis of the turn-table and in proportion to the degree of turning of the turn-table, substantially as shown and described.

18. In a suspended railway, a car-body, a pair of trucks from which said car-body is suspended, each of said trucks including a main frame pivotally secured to the car-body, a master drive-wheel carried by said main frame for riding on the track, a pair of fixed retaining-wheels at each side of the driver-wheels for engaging each side of the track, pilot-wheels for positively bringing the drive-wheel into proper alinement with the track at all times, supplemental retaining-wheels beneath the car-body for engaging the lower track and means coöperating with the other track for preventing the car jumping the track, substantially as shown and described.

19. In a suspended railway, a car-body, a pair of trucks from which said car-body is suspended, each of said trucks including a main frame pivotally secured to the car-body, a master drive-wheel carried by said main frame for riding on the track, a pair of fixed retaining-wheels at each side of the driver-wheels for engaging each side of the track, pilot-wheels for positively bringing the drive-wheel into proper alinement with the track at all times, supplemental retaining-wheels beneath the car-body for engaging the lower track, means coöperating with the upper track for preventing the car jumping the track, a drive-motor, gear connections between the drive-motor and one of the drive-wheel shafts, and means for mounting said drive-motor to maintain positive alinement with the drive-wheel shaft, as the said drive-wheel turns to meet a curve in the track substantially as shown and described.

20. In a suspended railway, comprising the combination with an upper and a lower track-rail, of a car-body suspended over said rails, retaining-wheels beneath said car-body for engaging the lower track-rail, fixed retaining-wheels carried by said car-body for engaging the sides of the upper track-rail, a pair of trucks pivotally secured to the car-body, drive-wheels mounted in said trucks for riding on the upper track-rail, a drive-motor, gear connections between said drive-motor and one of said drive-wheel shafts, means operating in advance of the drive-wheel and engaging the upper track for shifting the truck to maintain the drive-wheel in proper alinement with the track to meet curves therein, and for simultaneously shifting the drive-motor correspondingly to the drive-wheel to maintain proper alinement between the drive-motor and the drive-wheel shaft, and a hanger coöperatively connected with the drive-motor support and the car-body for taking up the weight of the drive-motor, all being arranged substantially as shown and described.

21. In a suspended railway, the combination with a car-body, and an upper and a lower trackway, of a plurality of trucks for riding on the upper trackway and supporting the car-body, said trucks each comprising a turn-table, a main drive-wheel carried thereby, a supplemental frame pivotally secured to the turn-table frame, pilot-wheels carried by the supplemental frame and arranged in pairs, forwardly and rearwardly of the drive-wheel, means for shifting the supplemental frame to maintain but one pair of pilot-wheels in operative engagement with the truck at a time, retaining-wheels beneath the car-body for engaging the lower tracks, pneumatic tires for the main wheels and supplemental wheels arranged at the front and rear of the car-body for supporting the same at times substantially as shown and described.

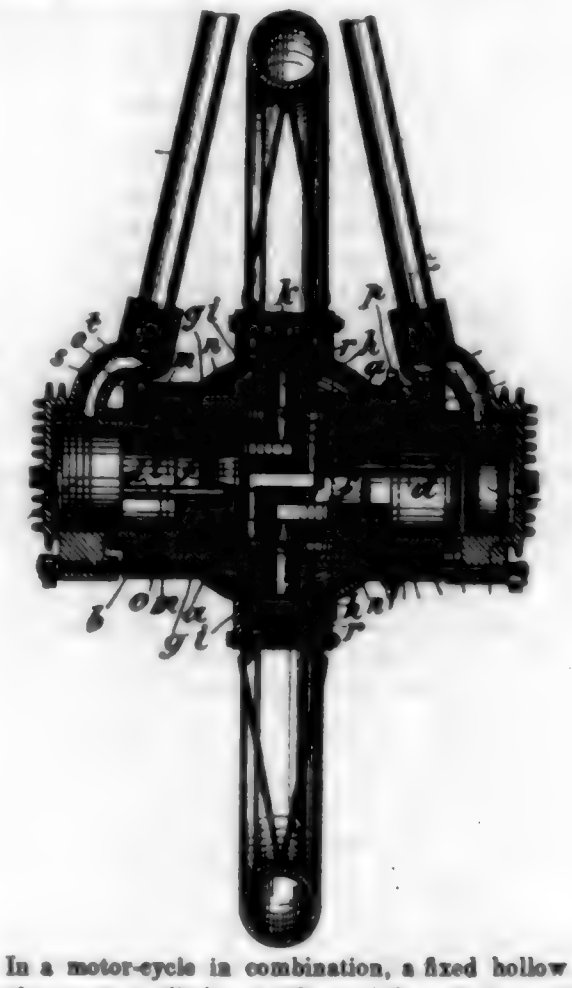
818,609. MOTOR-CYCLE. EDUARD BUTIKOFER, Biel, Switzerland.
Filed Feb. 9, 1906. Serial No. 300,326.

Claim.—1. In a motor-cycle, in combination, two motors oppositely disposed within the driving-wheel, the common middle plane of which coincides with the axis of rotation of the driving-wheel, a crank-shaft common to both said motors in the middle plane of the driving-wheel, and two fly-wheels within the hub of the driving-wheels, substantially as described.

2. In a motor-cycle, in combination, a fixed hollow driving-wheel axle, and motor-cylinders, one at either end of said hollow axle, substantially as described.

3. In a motor-cycle, in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end of said hollow axle, pistons therein, pitmen, and a crank-shaft cranked to one hundred and eighty degrees, substantially as described.

4. In a motor-cycle, in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end thereof, pistons therein, a shaft cranked to one hundred and eighty degrees, pitmen connecting said pistons to said crank-shaft, and a fly-wheel at either end of said crank-shaft, substantially as described.



5. In a motor-cycle in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end thereof, pistons therein, a shaft cranked to one hundred and eighty degrees, pitmen connecting said pistons to said crank-shaft, a fly-wheel at either end of said crank-shaft, trunnions on said fly-wheels, and bearings in said hollow driving-wheel axle for journaling said trunnions, substantially as set forth.

6. In a motor-cycle in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end thereof, pistons therein, a shaft cranked to one hundred and eighty degrees, pitmen connecting said pistons to said crank-shaft, a fly-wheel at either end of said crank-shaft, trunnions on said fly-wheels, bearings in said hollow driving-wheel axle for journaling said trunnions, and a bevel-wheel on one of said trunnions outside of said fixed hollow axle, substantially as described.

7. In a motor-cycle in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end thereof, pistons therein, a shaft cranked to one hundred and eighty degrees, pitmen connecting said pistons to said crank-shaft, a fly-wheel at either end of said crank-shaft, trunnions on said fly-wheels, bearings in said hollow driving-wheel axle for journaling said trunnions, a bevel-wheel on one of said trunnions outside of said fixed hollow axle, a two-part casing surrounding said driving-wheel axle and rigidly secured to the driving-wheel, ball-bearings between said fixed axle and said two-part casing, and a bevel-wheel on said casing meshing with the first said bevel-wheel, substantially as described.

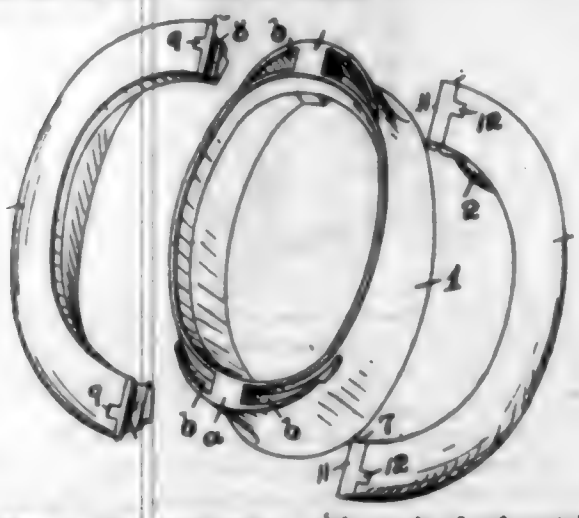
8. In a motor-cycle in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end thereof, pistons therein, a shaft cranked to one hundred and eighty degrees, pitmen connecting said pistons to said crank-shaft, a fly-wheel at either end of said crank-shaft, trunnions on said fly-wheels, bearings in said hollow driving-wheel axle for journaling said trunnions, a bevel-wheel on one of said trunnions outside of said fixed hollow axle, a two-part casing surrounding said driving-wheel axle and rigidly secured to the driving-wheel, ball-bearings between said fixed axle and said two-part casing, a bevel-wheel on said casing meshing with the first said bevel-wheel, and a sprocket-wheel rigidly secured to said two-part casing, substantially as described.

9. In a motor-cycle, in combination a fixed hollow driving-wheel axle, a motor-cylinder at either end of said axle, and symmetrically-disposed gas-conducting passages, substantially as described.

10. In a motor-cycle in combination, a fixed hollow driving-wheel axle, a motor-cylinder at either end of said axle, symmetrically-disposed gas-conducting passages, valve-chambers in communication with said gas-passages, valves therein, and means for secur-

ing said valve-chambers directly to the hollow frame-tubing, substantially as set forth.

818,610. HAT-BRIM FLANGE AND CENTER BLOCK OR FRAME THEREFOR. FRANK L. BUTTERWORTH, Brooklyn, N. Y. Filed Jan. 23, 1903. Serial No. 140,315.



Claim.—1. The combination, with a pair of soft-metal matrix members, of hard-metal overlapping end members united with and embedded in the body portions of the end members of said matrix members, substantially as and for the purposes set forth.

2. The combination, with a pair of soft-metal matrix members, of hard-metal overlapping and interlocking end members united with and embedded in the end portions of said matrix members, substantially as and for the purposes set forth.

3. The combination, with a curling-frame, of soft-metal matrix members, and means for detachably holding said soft-metal matrix members in position upon said frame, and hard-metal overlapping end members united with and embedded in the end portions of said matrix members, substantially as and for the purposes set forth.

4. The combination, with a curling-frame, of soft-metal matrix members, and means for detachably holding said soft-metal matrix members in position upon said frame, and hard-metal overlapping and interlocking end members united with and embedded in the end portions of said matrix members, substantially as and for the purposes set forth.

5. The combination, with a curling-frame provided with anchors, said anchors being arranged at the opposite ends of the frame and each anchor being formed with a pair of receiving portions, of matrix members upon said frame, and said members having end portions extending into the receiving portions of said anchors, substantially as and for the purposes set forth.

6. The combination, with a curling-frame provided with anchors, said anchors being arranged at the opposite ends of the frame and each anchor being formed with a pair of receiving portions, of matrix members upon said frame, and said members having end portions extending into the receiving portions of said anchors, and interlocking devices embedded in the ends of said matrix members, substantially as and for the purposes set forth.

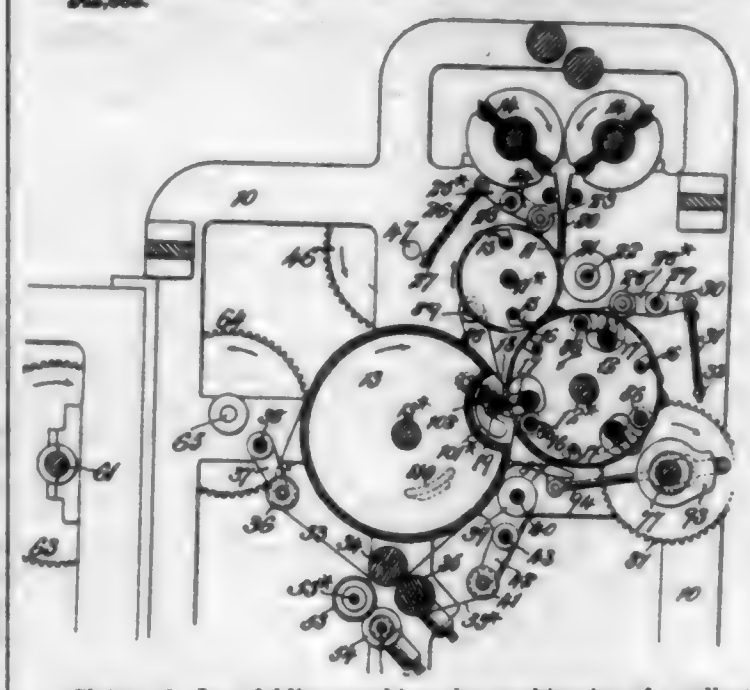
7. A pair of separably-connected matrix members, each member comprising a curved soft-metal body of a contour conforming to the shape of a hat-brim which is to be curled, each member being made at its ends with receiving portions, and a hard-metal end locking or holding member at each end of the soft-metal body, each end locking or holding member having a portion arranged in a receiving portion of the soft-metal body, and having another portion arranged upon and extending across the entire end face of each end of the soft-metal body to provide a protection for the ends of each matrix member, substantially as and for the purposes set forth.

8. The combination, with a curling-frame provided with anchors, said anchors having receiving portions, of a pair of matrix members, each member comprising a curved soft-metal body of a contour conforming to the general outline of the curling-frame and to the shape of the hat-brim which is to be curled, each matrix member being made at its ends with receiving portions, a hard-metal end locking or holding member at each end of the soft-metal body, each locking or holding member having a portion arranged in a receiving portion of the soft-metal body and having another portion arranged upon and extending across the entire end face of each end of the soft-metal body to provide a protection for the ends of each matrix member, and each matrix member being provided with enlargements forming holding members and registering with the receiving portions of said anchors of the curling-frame, substantially as and for the purposes set forth.

9. A hat-brim-forming flange comprising a soft-metal body, and a reinforcing means at each end of the said body, said means being made of a hard metal and extending laterally across each end of the flange, substantially as and for the purposes set forth.

10. The combination, with a pair of soft-metal matrix members, of hard-metal reinforcing members at each end of the soft-metal matrix members, each reinforcing member extending laterally across each end of the flange, substantially as and for the purposes set forth.

818,611. FOLDING MACHINERY. EDGAR H. COTTRELL, Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 27, 1905. Serial No. 242,553.



Claim.—1. In a folding-machine, the combination of a collecting-cylinder for making collections of sheets one upon another, a second cylinder for assembling together one upon another a plurality of so made collections, a third cylinder and folding devices on the second and third cylinders arranged to coact for folding together the so assembled plurality of collections.

2. In a folding-machine, the combination of a collecting-cylinder for making collections of sheets one upon another, a second cylinder for assembling together one upon another a plurality of so made collections, a third cylinder, and a folding-blade and folding-jaws on said second and third cylinders respectively for folding together the so assembled plurality of collections.

3. In a folding-machine, the combination of a collecting-cylinder for making collections of sheets one upon another, an assembling-cylinder for assembling one upon another a plurality of the so made collections, folding-blades upon said assembling-cylinder, and a folding-cylinder furnished with jaws coöperating with said blades for folding together the so assembled plurality of collections.

4. In a folding-machine, the combination of a collecting-cylinder for making collections of sheets one upon another, a second cylinder for assembling together one upon another a plurality of such collections, a third cylinder, a folding-blade and folding-jaws on said second and third cylinders respectively for folding together the so assembled plurality of collections, and a cutter for slitting the folded plurality crosswise of the fold into a number of signatures.

5. In a folding-machine, the combination of a cylinder for making collections of sheets one upon another, a second cylinder for assembling together one upon another a plurality of such collections, grippers on said cylinders for receiving sheets to be folded, a third cylinder, folding-blades on said second cylinder, folding-jaws on said third cylinder coöperating with said folding-blades, cam-actuated mechanism for opening said grippers for transmitting the collections of sheets from the first-mentioned cylinder to the second one and for delivering the assemblages of sheets from the second to the folding-jaws, and cam-actuated mechanism for opening said jaws for the entrance thereinto of the folding-blades and the delivery therefrom of the folded assemblages of sheets.

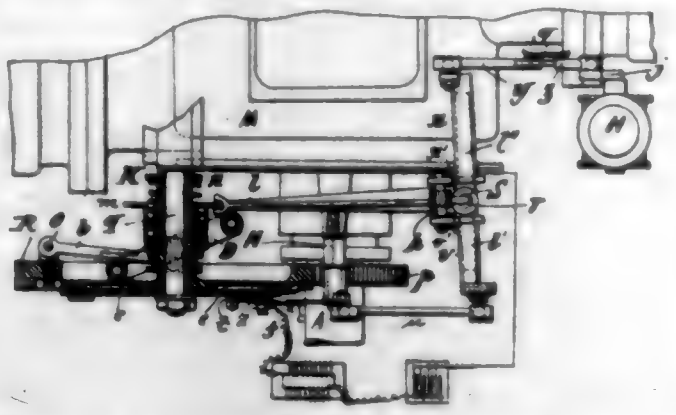
6. In a folding-machine, the combination of a cylinder for making collections of sheets one upon another, a second cylinder for assembling together one upon another a plurality of such collections, grippers on said cylinders for receiving sheets to be folded, shiftable cams and means for placing them in position for opening the grippers of said cylinders for the delivery of collections of sheets from the first-mentioned one and their reception and assemblage by the second one,

a third cylinder, folding-blades on the second cylinder, folding-jaws upon the third cylinder coöperating with said folding-blades, a shiftable cam and means for placing the same in position for opening the grippers of the second cylinder to deliver the assembled collections of sheets therefrom to said blade and grippers, and cams for opening said folding-jaws for the entrance of the folding-blades thereinto and for the delivery of the folded assemblages of sheets therefrom.

7. In a folding-machine, a collecting-cylinder, an assembling-cylinder, means for rotating the assembling-cylinder two-thirds of a revolution during each revolution of the collecting-cylinder, two sets of grippers on the collecting-cylinder and three sets of grippers on the assembing-cylinder, cam-actuated mechanism for causing each set of the grippers on the collecting-cylinder to collect a sheet every revolution and deliver two sheets every other revolution to the assembling-cylinder and cam-actuated mechanism for causing the gripper on the assembling-cylinder to complete their assemblages of two groups of two sheets from the collecting-cylinder every one and one-third revolution of the assembling-cylinder.

8. In a folding-machine, a collecting-cylinder, an assembling-cylinder, a folding-cylinder, two sets of grippers on the collecting-cylinder and three sets of grippers on the assembling-cylinder, folding devices on the assembling and folding cylinders, cam-actuated mechanism for causing each set of the grippers on the collecting-cylinder to collect a sheet every revolution and deliver two sheets every other revolution and cam-actuated mechanism for causing the grippers on the assembling-cylinder to complete their assemblages of two groups of two sheets from the collecting-cylinder and fold the same onto the folding-cylinder every one and one-third revolution of the assembling-cylinder.

818,612. **REGULATOR FOR GAS AND PETROLEUM MOTORS.** HENRY CROUAN, Clichy, France. Filed Jan. 3, 1899. Serial No. 701,027.



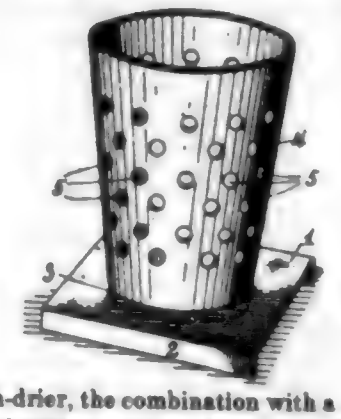
Claim.—1. In a regulator for gas or petroleum engines, the combination with a throttle-valve and an operating-wheel therefor, of a weighted lever, a sleeve connected therewith and fitted over the shaft of the said wheel, a controlling-spring, a yoke-link journaled at one end and connected at the other end with the sleeve, a three-armed lever mechanically connected with the throttle-valve, a tubular sleeve x fitted over one branch of said lever, a rod pivotally attached to said tubular sleeve and provided with a central slot a second rod adapted to extend into the former and connected with the stem of the throttle-valve, a suitable spring connecting said rods and means for allowing the position of said tubular sleeve x to be determined by hand, at will, substantially as described.

2. In a speed-regulating device for gas or petroleum engines, the combination with a throttle-valve and an operating-wheel, of the weighted lever, the sliding sleeve actuated thereby and mounted on the shaft of said wheel, the controlling-spring, the yoke-link journaled at one end and connected at the other end with the sleeve, a two-armed lever l adapted to turn round the journal and carrying a tubular sleeve x provided with a crank-arm, a rod v pivoted thereon and a second rod z suitably connected with the former and with the throttle-valve.

3. In a speed-regulator for gas or petroleum engines, the combination with a throttle-valve, of an operating-wheel, a lever mechanically connected with said wheel and carrying a tubular sleeve fitted over one of its branches, a connecting-rod pivotally attached thereto, an ignition device having a contact-piece actuated by the said connecting-rod and a series of contacts adapted to offer a gradual increased resistance to the electric current, substantially as described.

818,613. **DISH-DRIER.** JESSIE DALY, Waverly, N. Y. Filed Aug. 28, 1905. Serial No. 275,978.

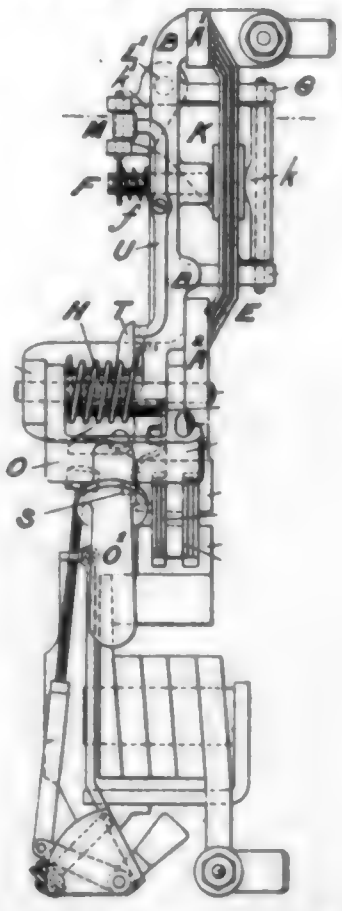
Claim.—1. In a dish-drier, the combination with a support open at each end, and provided with an opening in its top, of a dish-holder having an open bottom adapted to fit in said opening.



2. In a dish-drier, the combination with a support open at each end and provided with an opening in its top, of a dish-holder having an open bottom and perforated sides, said holder being supported in the opening in said support.

3. In a dish-drier, the combination with a base having an opening in its top, legs depending from the side of said base, of a tapering holder having perforations throughout its area, said holder being constructed to fit within the opening in the base and a series of wires having split ends secured within and forming the bottom of said holder.

818,614. **ELECTRICAL SWITCH AND CUT-OUT.** CHARLES M. DORMAN, REGINALD A. SMITH, and HERBERT G. BASES, Salford, England. Filed Mar. 28, 1905. Serial No. 252,589.



Claim.—1. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B, brush E and springs for raising the switch-arm, of means for translating the force and pressure of the springs to cause the brush E to press tightly against and grip the contact-blocks when the switch-arm is in the on or working position substantially as described.

2. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B brush E, and springs for raising the switch-arm, of a lever pivoted to the switch-arm B one end of which presses against the brush, and a latch pivoted to the base A to engage the lever substantially as described.

3. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B brush E, and springs for raising the switch-arm, of a lever pivoted to the switch-arm one end of which presses against the brush E, a latch pivoted to the base A to engage the lever, and means for releasing the pivoted latch substantially as described.

4. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B brush E, and springs for

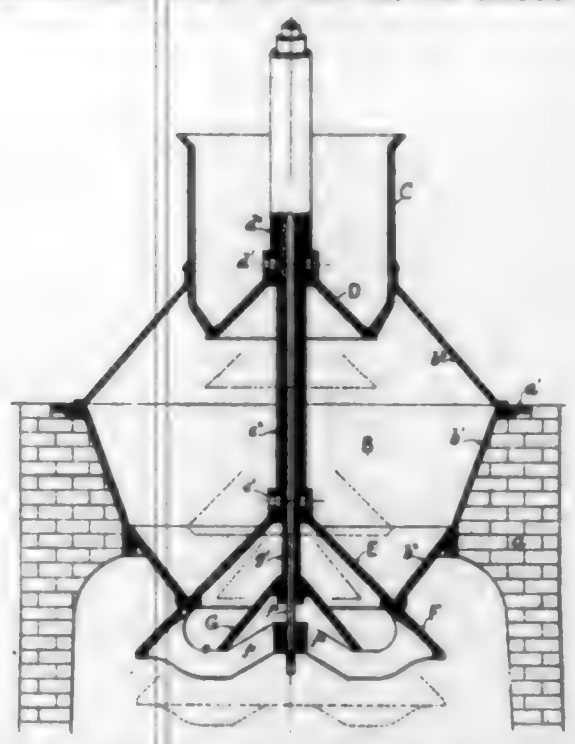
raising the switch-arm, of a lever K pivoted to the switch-arm one end of which presses against the brush E, a latch M pivoted to the base A to engage the lever K, a lever T pivoted to the switch-arm to release the latch M, and an electrically-operated lever T by which the lever U is moved substantially as described.

5. In an electric switch or cut-out, the combination with the base A, contact-blocks A′ A^3 switch-arm B, brush E, springs for raising the switch-arm, and a lever K pivoted to the switch-arm, one end of which lever presses against the brush E and the other end of which engages with a latch M pivoted to the base A, with which the end of the lever K engages, a handle O with contact-blades Q and secondary contact-blocks P P′ with which the contact-blades Q engage after the switch-arm B and brush E have been engaged with the primary contact-blocks A′ A^3 substantially as and for the purpose described.

6. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B, brush E, springs for raising the switch-arm, a lever K pivoted to the switch-arm one end of which lever presses against the brush E, and a latch M pivoted to the base A with which the other end of the lever K engages, of a handle O with switch contact-blades Q a latch R pivoted on the handle O and engaging at one end with a projection S attached to the base A, and actuated at the other end by the switch-arm B and the projection S substantially as and for the purpose described.

7. In an electric switch or cut-out, the combination with the base A contact-blocks A′ A^3 switch-arm B brush E, springs for raising the switch-arm and a handle O, of a lever K pivoted to the switch-arm one end of which presses against the brush E, a latch M pivoted to the base A to engage the lever K, means for releasing the latch M, and lever R pivoted to the handle O and a pin S to secure the lever in position substantially as described.

818,615. **BLAST-FURNACE-CHARGING APPARATUS.** JOHN W. DOUGHERTY, Steelton, Pa. Filed Nov. 22, 1904. Serial No. 233,903.



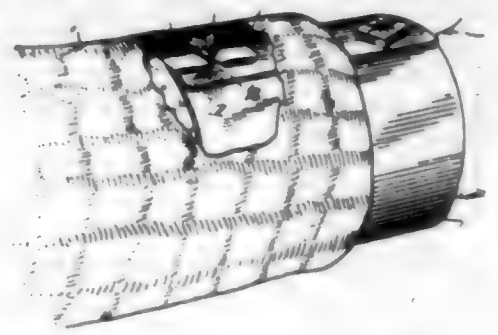
Claim.—1. A charging apparatus for furnaces having in combination a feed-hopper, a two-part bell having an upper conical portion and a lower frusto-conical portion forming a continuation of the conical portion to close the lower end of said hopper, and a deflector adapted to be positioned within the opening at the lower end of the hopper when the conical portion of the bell is lifted, substantially as described.

2. A charging apparatus for furnaces having in combination with a hopper a two-part bell having an upper conical portion and a lower frusto-conical portion forming a continuation of the conical portion, a spider in the frusto-conical portion, two concentric independently-operable hangers, one secured to the conical portion of the bell and the other to the spider, and a deflector operable between any position of the parts of the two-part bell, substantially as described.

3. A charging apparatus for furnaces having in combination, a hopper, a two-part conical bell, a hanger secured to the upper conical part, a spider to support the lower frusto-conical part, a hanger connected to the center of the spider, a deflector between the conical upper part of the bell and the spider and a hanger therefor, all of said hangers concentric and independently operable, substantially as described.

4. A charging apparatus for furnaces having in combination, a supplemental hopper, a bell to close the same, a main charging-hopper below the same, a conical bell to close the main hopper, a separate continuation of said conical bell, the meeting edges of the two when closed at the lower edge of the main hopper, a deflector contained within the conical bell and its continuation, a separate hanger for all of the bells, the deflector and the continuation of said conical bell, all of said hangers concentric and independently operable, substantially as described.

818,616. **CUFF-HOLDER.** SAMUEL P. DUNLAP, Chicago, Ill. Filed Aug. 19, 1905. Serial No. 274,835.



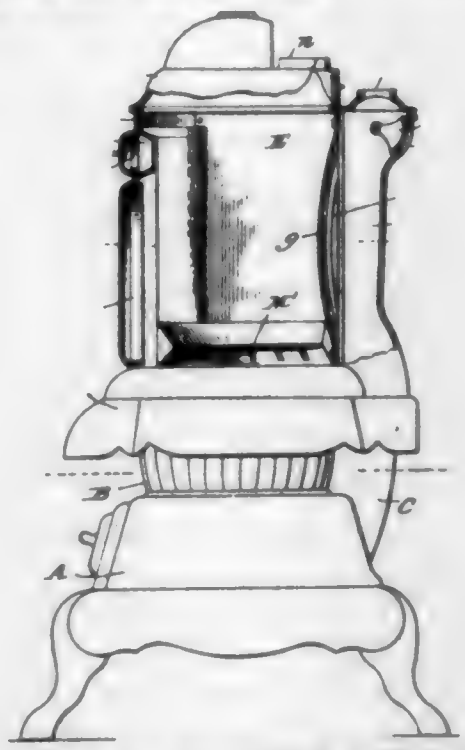
Claim.—1. A cuff-holder comprising a button formed by a wire coil, the ends of the wire being formed into spring-shanks, and cooperating jaws carried by the shanks.

2. A cuff-holder comprising a spring-wire which is folded intermediate of its ends and has its folded portion bent to form a spiral button, the ends of the wire being formed into spring-shanks, and coöperating jaws carried by the shanks.

3. A cuff-holder comprising a spring-wire bent to form a button, the ends of the wire being formed into spring-shanks with their extremities bent into loops, and jaw-plates secured to the loops.

4. A cuff-holder comprising a spring-wire which is folded intermediate of its ends with its folded portion bent into a spiral button, the ends of the wire being formed into separate spring-shanks extending at substantially right angles to the general plane of the button with the free extremities of the shanks bent into loops at substantially right angles to said shanks, and coöperating jaw-plates folded upon the loops with their inner ends toothed.

818,617. **HEATING-STOVE.** JOSEPH W. BARRY, Quincy, Ill. Filed July 10, 1905. Serial No. 269,107.



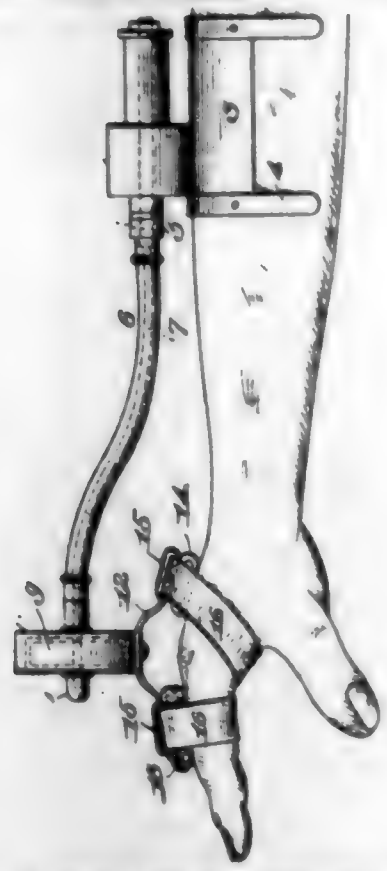
Claim.—1. In a stove, the combination with the base-section and fire-pot, of the body-section embodying an air-flue at the rear formed of separate castings connected at their edges, and sheet-metal side portions secured along their rear edges to the side edges of the flue-sections; substantially as described.

2. In a stove the combination with the base-section and fire-pot, of the body-section embodying an air-flue at the rear formed of separate castings connected at their edges, sheet-metal side portions having their rear edges clamped between the flue-sections and a front

section uniting the front edges of the side portions; substantially as described.

3. In a stove, the combination with the base-section and fire-pot, of the body-section embodying an air-flue at the rear formed of separate castings connected at their edges, the inner casting being bowed inwardly over the fire-pot, sheet-metal side portions having their rear edges connected with the flue at the meeting edges of the castings, a cast front portion having door-openings, hot-blast flues at each side of said door-openings and a dampered entrance opening to said hot-blast flue; substantially as described.

818,618. **MASSAGE APPARATUS.** George B. Fraley, Philadelphia, Pa., assignor to The Electric Thermo-Vibra Company, Philadelphia, Pa., a Corporation of New Jersey. Filed July 28, 1904. Renewed June 13, 1905. Serial No. 265,067.



Claim.—1. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having means at one extremity to engage a portion of the arm, and holding devices at the opposite extremity for attachment to a hand of an operator, the said holding devices carrying movable vibrating elements to bear directly against the back of the hand opposite the palm of the latter.

2. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having means at one extremity for securing it in applied position to the arm, and yielding devices at the opposite extremity for firmly engaging the back of the hand of an operator.

3. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor at one extremity, a vibrator at the opposite extremity operatively connected to the motor and having yielding devices connected thereto, and means for holding the said vibrator and yielding devices and motor respectively on the back portion of the hand and arm of an operator, the yielding devices directly bearing on the back of the hand when applied.

4. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor at one extremity, a vibrator at the opposite extremity connected to the motor, yielding devices coöperating with the vibrator and having fastening devices attached to the terminals thereof to engage the palm of the hand of an operator, and means for holding the motor on the arm of the operator.

5. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor at one extremity, a vibrator at the opposite extremity, a flexible shaft connecting the motor and vibrator, a yielding transmitting-plate coöperating with the vibrator and having means to directly bear on the back of the hand of the operator, and means for holding the apparatus on the back portion of the arm and hand of an operator.

6. A massage apparatus having a motor, a vibrator operatively connected to the motor, a yielding transmitting-plate coöperating with the vibrator, a soft pad carried by one extremity of the plate, and a hollow pad attached to the opposite extremity of said plate.

7. A massage apparatus having a motor, a vibrator operatively connected to the motor, a vibration-transmitting plate coöperating with the vibrator, cushion devices carried by the opposite extremities of the plate, and holding means for the apparatus to respectively engage the hand and arm of an operator, the cushion devices bearing on the hand when the apparatus is applied.

8. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor, a vibrating disk connected to the motor and formed with a cavity to throw the same out of counterbalance, yielding vibration-transmitting devices coöperating with the vibrator and positively applicable to the back of the hand of the operator, and means for holding the vibrating disk and vibration-transmitting devices directly over and in contact with the back of the hand of an operator, and the motor on the arm of the latter.

9. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor, a vibrator means, a flexible shaft connecting the motor and means, a vibration-transmitting plate coöperating with the means, and cushion devices at opposite extremities of the plate to loosely bear on the back of the hand of the operator.

10. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a motor at one extremity, a casing at the opposite extremity with a rotary vibrator therein formed with a cavity to throw it out of counterbalance, a flexible shaft between the motor and the vibrator and engaging the center of the latter, and means coöperating with the casing for transmitting the pulsations of the vibrator directly to the back of the hand of an operator and for holding the motor on the arm of the latter.

11. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a support to yieldingly embrace the arm, a motor on the support, a vibrator located at a distance from and operatively connected to the motor, and a yielding plate coöperating with the vibrator and having means for attaching it and the forward extremity of the apparatus to the hand of an operator.

12. A massage apparatus having a support with end clasps for engaging the arm of the operator, a motor held on the support, a vibrator operatively connected to the motor, and means for holding the vibrator end of the apparatus in applied position.

13. A massage apparatus completely applicable to and supported by the back portion of the hand and arm of an operator, comprising a casing having a vibrator therein, which is located over the back portion of the hand, means for operating the vibrator held on a part of the arm, a yielding plate having an arched contour and intermediately connected to the casing, cushion devices carried by the opposite extremities of the plate, and fastening means to engage the hand and extending over the extremities of the plate and cushion devices to maintain the latter in contact with the back of the hand.

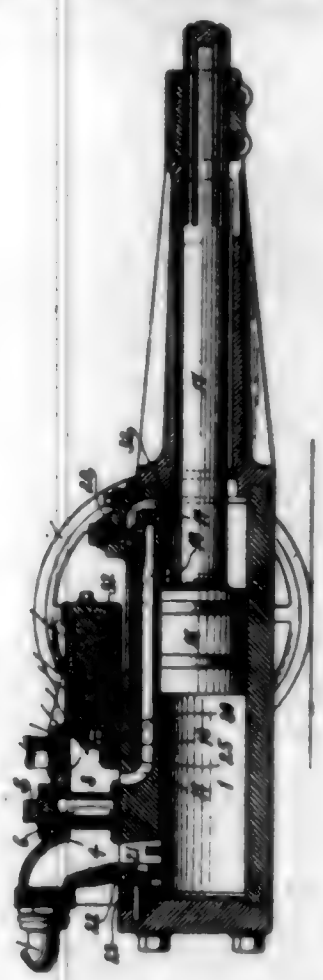
14. A massage apparatus completely applicable to the back portion of the arm and hand of an operator, having a rotating disk vibrator with a cavity at one side of the center to disturb the counterbalance, a casing inclosing the vibrator, the vibrator and its casing being disposed transvereely with relation to the back of the hand, an arched yielding plate connected at its center to the lower portion of the casing to extend longitudinally of the back of the hand and having projecting terminals to loosely bear on the back of the hand, and means for operating the vibrator.

15. A massage apparatus completely applicable to and supported by the back portion of the hand and arm of an operator, comprising a motor having means for holding it over the arm, a circular casing, a rotary vibrator in the casing, the casing and its vibrator having means for holding the same over the back of the hand, a flexible shaft between the motor and the center of the vibrator, a sheathing for the shaft, and means connected to the casing for transmitting the pulsations of the vibrator directly to the back of the hand between the fingers and the wrist.

16. A massage apparatus completely applicable to and supported by the back portion of the hand and arm of an operator, having pulsation-generating means positively applicable to the back of the hand of the operator to cause a transmission of the vibration through the palm of the hand directly to the patient.

818,619. **COAL-CUTTING MACHINE.** Arthur H. Gibson, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 15, 1905. Serial No. 287,491.

Claim.—1. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, air-passages leading to the front and rear of the cylinder and a governor controlled by the movement of the piston for reducing the stroke of the said piston.



2. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, air-passages leading to the front and rear of the cylinder and a governor controlled by the movement of the piston beyond its normal forward limit for automatically reducing the supply of air to the front of the piston for reducing its stroke.

3. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a rear air-port, a main front port, an auxiliary front port and a governor controlled by the movement of the piston for cutting off the supply of air through the main front port for reducing the stroke of the piston.

4. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a rear air-port, a main front port, an auxiliary front port and a governor controlled by the movement of the piston beyond its normal forward limit for cutting off the main front port to reduce the stroke of the piston.

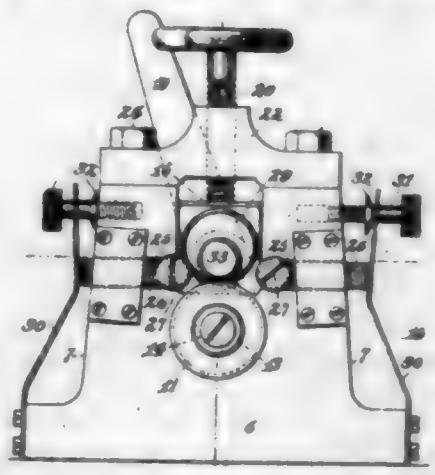
5. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a rear port, a main front port, an auxiliary front port, and a governor for controlling the stroke of the piston comprising a plunger, its cylinder, a spring for yieldingly holding the plunger in position to leave the main front port open and a port leading from the front of the work-cylinder to the front of the plunger whereby the excessive forward movement of the piston will cause the air to force the plunger back into position to close the main front port and thus reduce the supply of air to the front of the piston.

6. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a rear port, a main front port, an auxiliary front port, a governor for controlling the stroke of the piston comprising a plunger, its cylinder, a spring for yieldingly holding the plunger in position to leave the main front port open, a port leading from the front of the work-cylinder to the front of the plunger whereby the excessive forward movement of the piston will cause the air to force the plunger back into position to close the main front port and thus reduce the supply of air to the front of the piston, and a governor-valve for partially closing the plunger-controlling port for temporarily retaining air-pressure on the plunger irrespective of the position of the piston.

7. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a valve-chest divided into front and rear chambers, a rear port leading from the rear chamber to the rear of the work-piston, a main front port leading from the front valve-chest chamber to the front of the piston at a distance from the end of the cylinder, an auxiliary front port leading from the front valve-chest chamber to the front of the piston adjacent to the end of the cylinder, a spring-actuated governor-plunger located in the valve-chest normally in position to leave the main front port open and a port leading from the front of the said plunger to the front end of the work-cylinder whereby the governor-plunger is moved rearwardly to close the main front port when the work-piston overruns the limit of its normal forward movement.

8. In an air-presser-driven coal-cutting machine, a work-cylinder, its piston, a valve-chest divided into front and rear chambers, a rear port leading from the rear chamber to the rear of the work-piston, a main front port leading from the front valve-chest chamber to the front of the piston at a distance from the end of the cylinder, an auxiliary front port leading from the front valve-chest chamber to the front of the piston adjacent to the end of the cylinder, a spring-actuated governor-plunger located in the valve-chest normally in position to leave the main front port open, a port leading from the front of the said plunger to the front end of the work-cylinder whereby the governor-plunger is moved rearwardly to close the main front port when the work-piston overruns the limit of its normal forward movement, and a governor-valve arranged to partially close the port leading from the plunger to the cylinder for temporarily retaining air-pressure on the plunger.

818,620. MACHINE FOR FORMING FINGER-RINGS. RUDOLPH C. GROSSMANN, Jersey City, N. J., assignor to Samuel Aufhauser, New York, N. Y. Filed Sept. 7, 1905. Serial No. 277,295.



Claim.—1. A device of the character described, comprising a base and end pieces, a lower shaft provided at one end with a gear-wheel and at its opposite end with a roller, an upper driving-shaft vertically adjustable in said end pieces and having one end provided with a gear meshing with said former gear, and its opposite end extending beyond said end piece and over said roller, opposite and laterally-disposed rods adapted to slide in one of said end pieces and carrying guide-rollers, and springs adapted to exert their tension on the ends of said rods, substantially as described.

2. A device of the character described, comprising a base and end pieces, a lower shaft journaled in said end pieces and provided with a gear at its rear end and with a roller at its forward end, an upper adjustable driving-shaft geared to said lower shaft at one end and at its forward end extending outwardly over said roller, opposite and laterally-disposed rods adapted to slide in one of said end pieces and provided at one end with guide-rollers, and springs secured at their lower ends to said base and adjustable at their upper ends to engage with the outer ends of said sliding rods, substantially as described.

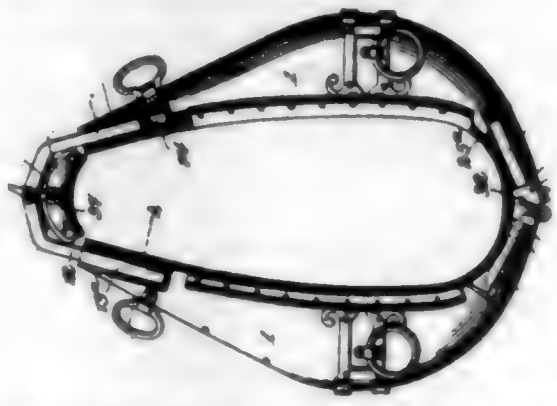
3. A device of the character described, comprising a base and end pieces, upper and lower shafts mounted in said end pieces, the former being adjustable toward and away from the latter, a roller loosely mounted on the end of one of said shafts, opposite and laterally-disposed rods adapted to slide in one of said end pieces and carrying guide-rollers, springs secured to said base at one end, the opposite ends being adjustable toward the outer ends of said sliding rods, substantially as described.

818,621. HORSE-COLLAR. GEORGE W. HAHN, Mansfield, Ill. Filed Nov. 1, 1904. Serial No. 230,975.

Claim.—1. A horse-collar, comprising sides, means for detachably connecting the sides together at the bottom, angular bars adjustably and detachably connected to the sides at the top, and a transverse member consisting of a single piece located beneath and adjustably pivoted to the contiguous ends of said bars, thereby forming hinge-joints on which the sides are adapted to swing in opening and closing the collar.

2. A horse-collar, comprising sides, means for detachably connecting the sides together at the bottom, bars composed of longitudi-

nal portions connected to the sides at the top and transverse portions projecting inwardly toward each other from the longitudinal portions, and a transverse member consisting of a single piece located beneath and pivoted to the contiguous outer ends of the transverse portions of the said bars, thereby forming hinge-joints on which the sides are adapted to swing in opening and closing the collar, said transverse member forming a support for a neck-pad and also supporting the transverse portions of the said bars.



3. In a horse-collar, the combination of two sides provided with sockets, connecting-bars detachably fitted in the sockets, means for detachably fastening the connecting-bars together at their outer ends, and locking devices for holding the connecting-bars in the sockets, each locking device consisting of a rock-shaft or spindle provided with a lug or projection extending into the socket and engaging the connecting-bar thereof.

4. In a horse-collar, the combination of two sides provided with sockets, connecting-bars adjustably fitted in the sockets, and locking devices for holding the said bars in the sockets, each locking device consisting of a rock-shaft or spindle extending longitudinally of the socket at one side thereof and provided with a lug extending through one wall of the socket and engaging the connecting-bar thereof.

5. In a horse-collar, the combination of two sides provided with sockets, connecting-bars adjustably fitted in the sockets, and locking devices, each consisting of a rock-shaft or spindle extending longitudinally of the adjacent socket at one side of the same and provided with a lug extending through one wall of the socket and engaging the connecting-bar thereof, said rock-shaft or spindle being also provided with an exterior operating-arm.

6. In a horse-collar, the combination of sides having sockets, connecting-bars adjustably secured in the sockets and provided with transversely-disposed portions, and a transverse member independently pivoted to the transverse portions and arranged below and exteriorly of the connecting-bars to form a support for a neck-pad.

7. In a horse-collar, the combination of two sides, L-shaped connecting-bars adjustably secured to the sides and having transverse portions, and a transverse member having a groove open at the top to receive the transverse portions of the connecting-bars, said transverse member being pivotally and adjustably secured to the same.

8. In a horse-collar, the combination of two sides, connecting-bars secured to the sides and having transverse portions, a transverse member receiving the transverse portions of the connecting-bars, and pivots adjustably securing the transverse portions of the connecting-bars to the transverse member and hinging the former to the latter.

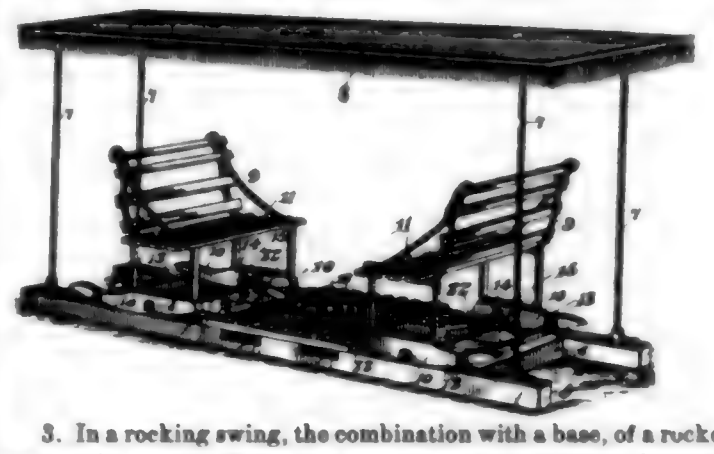
9. In a horse-collar, the combination of two sides, connecting-bars vertically adjustable longitudinally of the sides and provided with transverse portions, a transverse member arranged below and receiving the transverse portions of the connecting-bars, and pivots adjustably securing the transverse portions to the transverse member and hinging the former to the latter.

10. In a horse-collar, the combination of two thin metallic sides stamped at their inner faces to form partial sockets, casings secured to the inner faces of the sides and completing the sockets, said casings being also provided with bearings, connecting-bars adjustably fitted in the sockets, and locking devices journaled in the said bearings and provided with means for engaging the connecting-bars.

818,622. **ROCKING SWING.** JOHN HANCOCK, Alton, Ill. Filed Oct. 31, 1904. Renewed Sept. 30, 1905. Serial No. 280,333.

Claim.—1. In a rocking swing, the combination with a rocker-seat, of a reciprocatory platform, and a link pivoted to the platform and to the rocker-seat.

2. In a rocking swing, the combination with a base, of a rocker-seat mounted thereon, a reciprocatory platform also movably supported on the base separately from the rocker-seat, and connections between the platform and the seat.



3. In a rocking swing, the combination with a base, of a rocker-seat member mounted thereon, a reciprocatory platform having a roller-support on the base, and a link connecting the platform and seat member.

4. In a rocking swing, the combination with a base including side sleepers, of a seat member having rockers supported on the sleepers, a platform slidably mounted on the sleepers, and links connecting the platform and seat member.

5. In a rocking swing, the combination with a seat member having spaced rockers, of a rod connecting the rockers, a reciprocatory platform, and a link pivoted to the platform and to the rod.

6. In a rocking swing, the combination with a seat member having spaced rockers, of a cross-rod connecting the rockers and having an offset, a reciprocatory platform located in advance of the said member, and a link pivoted to the platform and to the offset portion of the cross-rod.

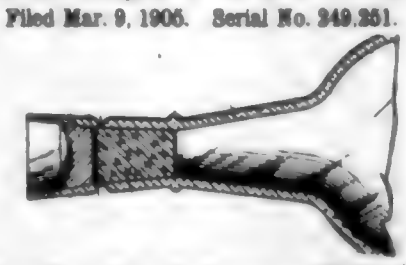
7. In a rocking swing, the combination with a base having an upstanding guideway, of a rocker-seat member having a rod movable in the guideway, a platform, and a connection between the platform and rod.

8. In a rocking swing, the combination with spaced seat members including a seat and rockers rigidly connected thereto, of a platform located between the seat members, and links pivoted to the platform and to the seat members.

9. In a rocking swing, the combination with a base, of spaced seat members including rockers supported on the base, and seats rigidly carried by the rockers, a platform located between the seat members and supported on the base, and links pivoted to the platform and having pivotal connections with the seat members.

10. In a rocking swing, the combination with a base including side sleepers, of seat members having spaced rockers supported on the sleepers, a platform located between the seat members and having rollers movably mounted upon the sleepers, and links pivoted to the ends of the platform and connected to the seat members.

818,623. **BOTTLE.** JEFFERSON D. HARBINE and CHARLES F. HOGAN, Travilah, Md., assignors of one-third to Hattan A. Waters, Travilah, Md. Filed Mar. 9, 1905. Serial No. 249,251.

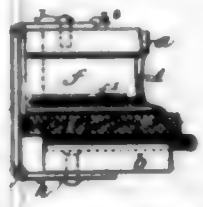


Claim.—A bottle having the interior of its neck provided with two distinct tapers, one above the other, the lower taper being less than the upper and designed to accommodate a flexible cork or stopper, the upper taper being greater for the ready passage of the flexible cork or stopper and for the ready seating of a glass locking-stopper, the said tapered neck causing a space to be left between the two stoppers, said neck having a breakable groove between the two tapers, substantially as described.

818,624. **CONSTRUCTION OF SKYLIGHTS.** JOHN HASLAM, Darlinghurst, New South Wales, Australia. Filed July 13, 1904. Serial No. 216,422.

Claim.—1. A sash-bar consisting of a flanged head at the superior end of the web of the bar, a wide base to the sash-bar, a cap adapted to fit over the contour of the superior part of the sash-bar

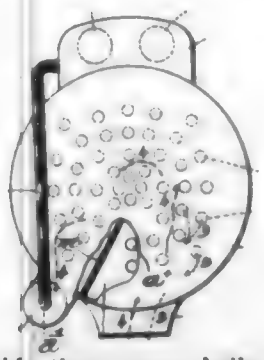
and a closing-plate at the end of the bar, the same being adapted to prevent the cap from slipping or sliding off the bar.



2. A skylight-bar consisting of a web with a rectilinear flanged head at the top having sharp arrises and a wide flange at the bottom of web with channels on each side adapted to support the edges of the sheets of glass on each side of the web and an articulated resilient cap adapted to fit accurately the top flange of the bar and to slide and open for the purpose of removal as specified.

3. A skylight-bar consisting of a web with a rectilinear flanged head at the top having sharp arrises and a wide flange at the bottom of web with channels on each side of the web adapted to support the edges of the sheets of glass on each side of the web, and articulated and resilient caps to fit accurately the top flange of the bar to open or slide and a hinge to open in two folds secured to the wide flange at the bottom end of the bar and capable of being fastened with a set-screw on top flange to secure cap and prevent the caps or glass from sliding off the bar.

818,625. STEAM-DRYING APPARATUS FOR MOTOR-VEHICLES. HENRY HOWARD, Brookline, Mass. Filed June 21, 1899. Serial No. 721,316.



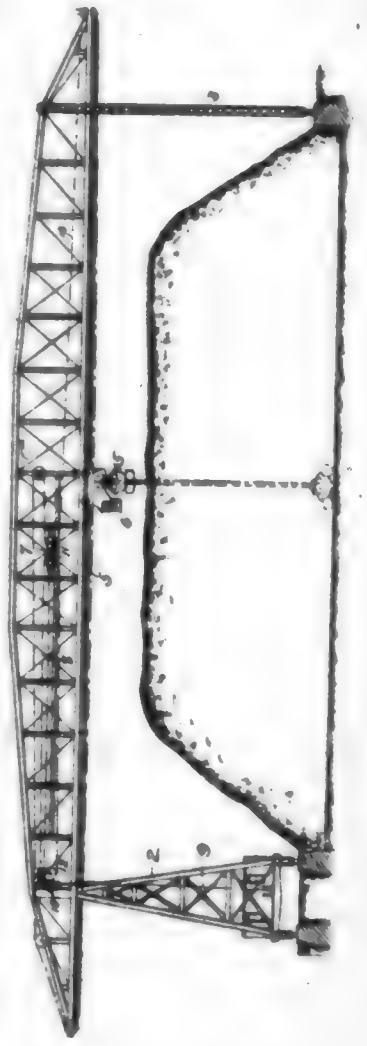
Claim.—In combination, a steam boiler and engine, a hood or casing to receive the products of combustion and having an air-inlet, a downturned escape-flue communicating with and forming the outlet for the hood, an exhaust-outlet leading from the engine and arranged to create a draft in the flue, the products of combustion passing through the flue, and the air drawn thereinto through the hood by the draft, both acting to dry the exhaust, and a deflector in the hood between the air-inlet thereof and the entrance to the flue from the hood.

818,626. OPERATING MECHANISM FOR CLAM-SHELL BUCKETS. FRANK E. HULETT, Cleveland, Ohio, assignor to The Wellman-Seaver-Morgan Company, Cleveland, Ohio. Filed Aug. 25, 1904. Serial No. 222,170.

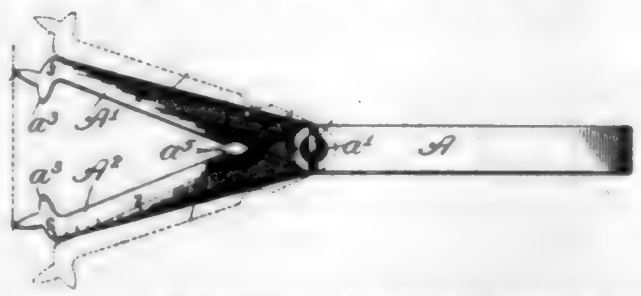
Claim.—1. In an operating mechanism for clam-shell buckets, the combination with a bridge, a track thereon and a trolley mounted to run on said track, of an operator's cage on said trolley, an electric motor in the cage adapted to propel the trolley on the track, hoisting and holding drums or spools on the trolley, cables on said drums or spools, pulleys at the ends of the bridge over which the cables are passed, an auxiliary carriage on the bridge, sheaves thereon over which the hoisting-cable passes between its ends, means for moving said auxiliary carriage, and a clam-shell bucket secured on the ends of said cables.

2. In a hoisting and conveying apparatus, the combination with a bridge, of a bucket, a trolley, an operator's cage on the trolley, a hoist-cable connected at its ends to the closing mechanism of the bucket and passing in opposite directions around and over sheaves in the trolley and around sheaves on the bridge, a second hoist-cable carrying a sheave engaging a looped section of the first-mentioned hoist-cable, a drum for actuating the second hoist-cable a motor in the operator's cage and gearing connecting said motor and the track-wheels of the trolley.

3. In a hoisting and conveying apparatus, the combination with a bridge of a bucket, a trolley, an operator's cage on the trolley, a hoist-cable connected at its ends to the closing mechanism of the bucket and passing around and over drums or sheaves on the trolley and around sheaves on the bridge, a second cable carrying a sheave engaging a looped section of said first-mentioned hoist-cable, a drum for actuating the second hoist-cable, a pair of holding drums or spools actuated by the movements of the hoisting drums or spools, cables connected to said holding-drums and also to the bucket and brakes for said holding-drums.



818,627. COMBINATION IMPLEMENT. WILLIAM L. IWAN, Streator, Ill. Filed May 13, 1904. Serial No. 207,763.



Claim.—1. An implement of the character described, comprising a handle open at its lateral edges to sheathably receive blades, a clamping-screw, and superposed blades supported on said clamping-screw at one end of the handle and adapted to swing past each other, said blades having straight edges adapted to be brought into the same transverse plane and divider-points at their free extremities and lateral caliper-points adjacent to the divider-points at the edges opposite the straight edges, for the purpose set forth.

2. An implement of the character described, comprising a U-shaped handle, blades provided with divider-points and adjacent to said points with caliper-points, and a clamping-screw extending through a side member of the handle and through the base portions of the blades and into the opposite side member of the handle, for the purpose set forth.

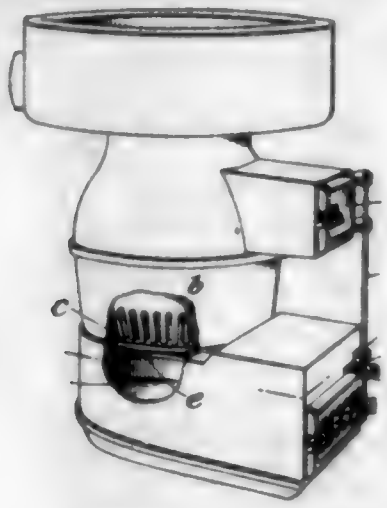
818,628. STOVE AND FURNACE. HENRY E. JANES, New York, N. Y., assignor to Janes & Kirtland, New York, N. Y., a Corporation of New York. Filed June 10, 1905. Serial No. 264,556.

Claim.—1. In combination with the ash-pit of a stove or furnace, a movable ash-detector located in the pit, a part of the stove or furnace movable in the operation thereof and a connection between said part and said detector.

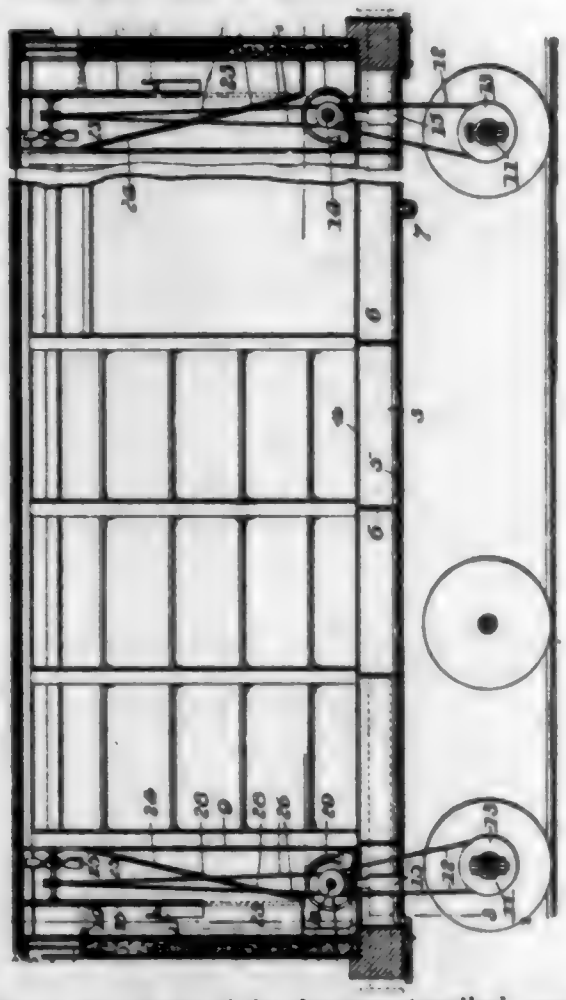
2. In combination with the ash-pit of a stove or furnace, a movable ash-detector located in the pit, a door for the stove or furnace, and a connection between the door and the ash-detector.

3. In combination with the ash-pit of a stove or furnace, a mov-

able ash-detector located in the ash-pit, a door for the stove or furnace, a shaft forming the pintle of and secured to said door and a connection between the shaft and said detector.



818,629. RAILWAY-CAR. HANFORD L. KERR, Kansas City, Kans. Filed Dec. 28, 1899. Serial No. 741,850.



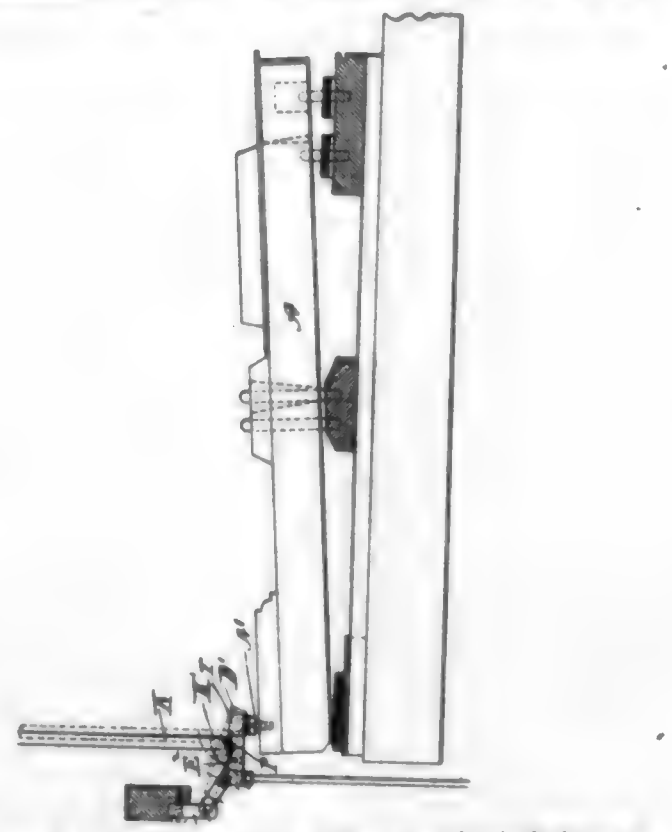
Claim.—1. In a device of the character described, a car-body having an air-opening in the end thereof, a V-shaped central air-shaft taking air from the opening and discharging it in the upper part of the car, an air-fan located at the discharge end thereof side air-shafts also taking air from the opening and discharging beneath the discharge of the central air-shaft, a pair of fans for facilitating the passage of air through the side shafts and means connected with the car-axle for driving the several fans, substantially as described.

2. In a device of the character described, a car-body, water-troughs located between the carrying-beams thereof, sliding perforated covers for the water-troughs, said car-body having an opening in its end, a central air-shaft taking air from the opening and discharging it near the top of the car, side air-shafts also taking air from the opening and discharging it below the discharge of the central air-shaft, fans located in the several air-shafts, a shaft suitably journaled, means for driving the fans from the shaft, a pump operated by the shaft and adapted to take water from the troughs and spray it across the air-shafts, and gutters adapted to carry off water from the sprays and return it to the troughs, substantially as described.

3. In a device of the character described, a car-body having an air-opening in the end thereof, a V-shaped central air-shaft, taking air from the opening and discharging it in the upper part of the car, an air-fan located at the discharge end thereof, side air-shafts also taking air from the opening and discharging beneath the discharge of the central air-shaft, and a pair of fans for facilitating the passage of air through the side air-shafts.

4. In a device of the character described, a car-body, water-troughs located between the carrying-beams thereof and open to the interior of the car, said car-body having an opening in its end, a central air-shaft taking air from the opening and discharging it near the top of the car, side air-shafts also taking air from the opening and discharging it below the discharge of the central air-shaft, fans located in the several air-shafts, a pump adapted to take water from the troughs and spray it across the air-shafts, and gutters in the air-shafts to return the water to the troughs.

818,630. PIANO-ACTION, MECHANICAL PLAYER. PETER KRUMSCHEID, Boston, Mass. Filed July 20, 1905. Serial No. 271,330.



Claim.—In a pianoforte-action, having a mechanical player attachment, a device consisting of a key and adjusting capstan-screw; an extension-piece resting upon a tilting foot and operated by it; and said tilting foot, the outer end of which rests upon the said adjusting-screw; a mechanically-operated riser constructed to actuate the said tilting foot; and an extension-guide one end of which is pivoted to a fixed part and the free end to the said tilting foot-piece; substantially as and for the purpose set forth.

818,631. TROLLEY-WIRE SUPPORT. JAMES H. LANE and URIAH GULNICK, Newark, N. J. Filed May 4, 1905. Serial No. 258,775.



Claim.—1. A trolley-wire hanger comprising an upper member, flanges projecting horizontally therefrom, said flanges being of an even plane throughout their entire surface, and arms depending from the central portion of the hanger.

2. A trolley-wire hanger comprising an upper member having horizontally-extending flanges projecting from the base thereof, said flanges being of an even plane throughout their entire surfaces, and arms depending from the central portion of the hanger for the purpose specified.

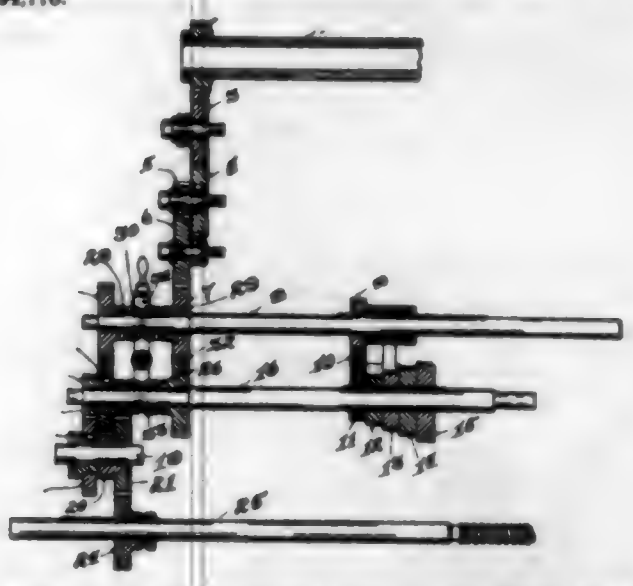
3. A trolley-wire hanger comprising an upper member, the sides of which taper from the center toward each end, horizontally-projecting flanges extending from the base of the upper member and throughout the entire length thereof, and arms depending from the central portion of the hanger.

4. A trolley-wire hanger comprising an upper member having laterally-extending flanges projecting from either side, and from the

base thereof, and throughout the entire surface, and arms depending from the central portion of the hanger.

5. A trolley-wire hanger comprising an upper member, laterally-extending flanges projecting horizontally from the base of the upper member and from each side thereof, said flanges being of an even plane throughout their entire surface, and arms depending from the central portion of the hanger.

818,632. VARIABLE-SPEED MECHANISM. CHARLES F. LAUB, Cincinnati, Ohio, assignor to The Lodge & Shipley Machine Tool Company, Cincinnati, Ohio, a Corporation. Filed Jan. 5, 1906. Serial No. 294,770.



Claim.—1. In a variable-speed device, a first, second and third shaft, a cone-and-tumbler gear system between the first and second shaft, a cone-and-tumbler gear system between the second and third shaft, a gear-wheel loose on the first shaft, means for rotating said gear-wheel, a fixed gear-wheel on the second shaft meshing with the said loose gear-wheel on the first shaft, the prime gear element of the cone-and-tumbler gear system, between the second and third shafts, being loose on the second shaft, and a fixed gear-wheel upon the first shaft intermeshing with the said prime change-gear element on the second shaft, substantially as described.

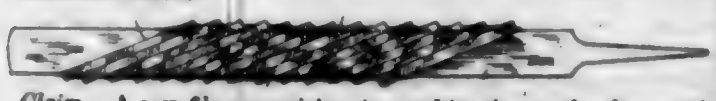
2. In a variable-speed device, a first, second and third shaft, a cone-and-tumbler gear system connecting the first shaft to the second, a cone-and-tumbler gear system connecting the second shaft to the third, loose gears on the first and second shafts, and clutch mechanism whereby the driving relationship of the first two shafts may be transposed, substantially as described.

3. In a vairable-speed device, a first, second and third shaft, a variable-speed gear system between the first and second shaft, a variable-speed gear system between the second and third shaft, loose gears on the first and second shafts, and clutch mechanism whereby the driving relationship of the first two shafts may be transposed, substantially as described.

4. In a device of the class described, a first and a second shaft, gearing connecting said shafts, a pair of loose gears on the first shaft and an opposing pair of intermeshing gears loose on the second shaft, and means for clutching the diametrically-opposed gears to their respective shafts, whereby the driving relationship of said shafts may be transposed, substantially as described.

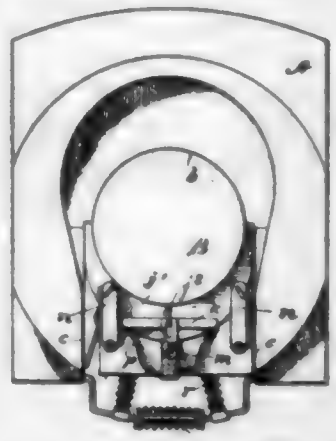
5. In a device of the class described, a first and a second shaft, gearing connecting said shafts, a pair of loose gears on the first shaft and an opposing pair of intermeshing gears loose on the second shaft, clutch members on the meeting faces of said gears, a double-faced sliding clutch keyed to each of said shafts between said clutch members, a lever fulcrumed between said shafts and connected at opposite ends to said sliding clutch members, whereby the diametrically-opposed gears on the two shafts may be alternately fixed to their respective shafts transposing the driving relationship of said shafts, substantially as described.

818,633. SAW-FILE. PETER LORD, Worcester, Mass., assignor of one-half to William H. Inman, Worcester, Mass. Filed Mar. 11, 1905. Serial No. 249,543.



Claim.—A saw-file comprising in combination, a shank, constituting the body and handle of the file, a series of separate ribs or short files placed parallel to each other side by side, on the surface of said shank, at an angle to the edges thereof, and means for fastening said separate ribs or short files in position, consisting in a mass of solder overlying the ends thereof and the edges of the shank, substantially as set forth.

818,634. JOURNAL-BOX. GEORGE W. MEYER, Waterloo, Iowa. Filed Jan. 2, 1906. Serial No. 294,330.



Claim.—1. A journal-box having a body having a bearing or brass in its upper portion, an oil-vat removably arranged in the body below the bearing or brass, guard-plates carried by the vat, means for yieldingly pressing said guard-plates laterally inward, means for yieldingly pressing said guard-plates upwardly, and a support and fastener for the oil-vat disposed below the same and detachably connected to the body.

2. A journal-box having a body, a bearing or brass disposed in the upper portion of the body, an oil-vat removably arranged in the body below the bearing or brass, resilient plates connected to one side of the vat and bearing against one side of the body, guard-plates carried by the vat and extending above the ends thereof, means for yieldingly pressing said guard-plates laterally inward, means for yieldingly pressing said guard-plates upwardly, and a support and fastener for the oil-vat disposed below the same and detachably connected to the body.

3. A journal-box having a body, an oil-vat movable vertically in the body, a support arranged in and detachably connected to the body below the vat, and a spring carried by the support and interposed between the same and the vat.

4. A journal-box having a body, an oil-vat movable vertically therein, and a resilient plate interposed between one side of the vat and the adjacent wall of the body and bearing against one of said parts.

5. A journal-box having a body, a vertically-movable oil-vat therein, means disposed below the vat and yieldingly supporting the same in the body, yieldingly-pressed guard-plates arranged at the ends of the oil-vat and exending above the same, and a resilient plate interposed between one side of the vat and the adjacent wall of the body.

6. A journal-box having a body, an oil-vat yieldingly sustained therein, yieldingly-pressed guard-plates arranged at the ends of the oil-vat and extending above the same, and a resilient plate interposed between one side of the vat and the adjacent wall of the body.

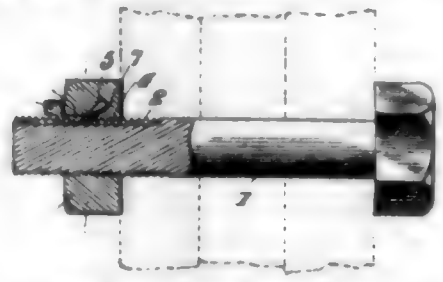
7. A journal-box having a body, a bearing or brass arranged in the upper portion thereof, an oil-vat disposed and movable vertically in the body below the bearing or brass, yieldingly-pressed guard-plates arranged at the ends of the oil-vat and extending above the same so as to normally rest opposite the ends of the bearing or brass, and means detachably connected to the body and arranged below and adapted to yieldingly support the vat in the body.

8. A journal-box having a body, a vertically-movable vat arranged therein, and a support and fastener disposed below the vat and comprising sections having portions arranged to enter keeper-sockets in the body, springs for pressing said sections apart, and springs carried by the sections and arranged to yieldingly support the vat.

9. A journal-box having a body, an oil-vat arranged therein, guard-plates arranged at the ends of the vat and extending above the same, brackets carried by the vat, bowed springs mounted between the brackets and the guard-plates and adapted to yieldingly press said plates inward, springs interposed between the brackets and the plates for pressing said plates upward, and springs carried by the vat and arranged to assist the first-mentioned bowed springs in yieldingly pressing the guard-plates inward.

10. A journal-box having a body, an oil-vat removably arranged therein, a bearing or brass disposed in the body above the vat, and guard-plates arranged at opposite ends of the vat; one of said guard-plates comprising sections pivoted together, and a spring for pressing the joint between the sections upwardly.

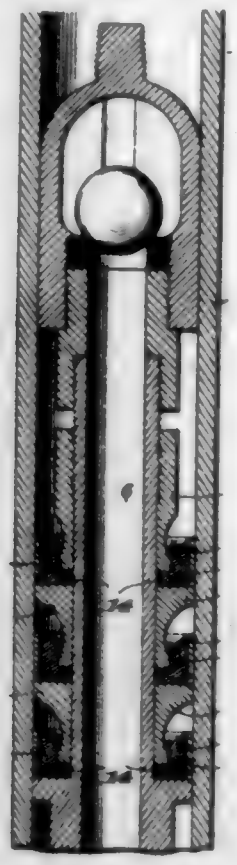
818,635. NUT-LOCK. WILLIAM MCCARER, Frederick, Okla. Filed May 20, 1905. Serial No. 261,386.



Claim.—1. In a nut-lock, the combination of a bolt having a longitudinal groove therein, a nut having a corresponding groove extending therein from one end and terminating within the nut in an inclined wall, and a locking-pin having a beveled point and a head, one face of the head coming adjacent to the side of the bolt and being of such a width as to prevent the locking-pin from turning and thereby always holding the beveled point away from the bolt and insuring its correct engagement with the before-mentioned inclined wall, said locking-pin fitting into the corresponding grooves and being adapted to be locked in position by having its point deflected by impinging upon the inclined wall.

2. In a nut-lock, the combination of a bolt having a longtudinal groove therein, a nut having a corresponding groove extending therein from one end and terminating within the nut in an inclined wall, and a locking-pin having a beveled point and a head, the portion of the shank adjacent the head being formed with an offset so as to permit the head to come adjacent to the side of the bolt, the face of the head adjacent the bolt being of such a width as to prevent the locking-pin from turning and thereby always holding the beveled point away from the bolt and insuring its correct engagement with the before-mentioned inclined wall, said locking-pin fitting into the corresponding grooves and being adapted to be locked in position by having its point deflected by impinging upon the inclined wall.

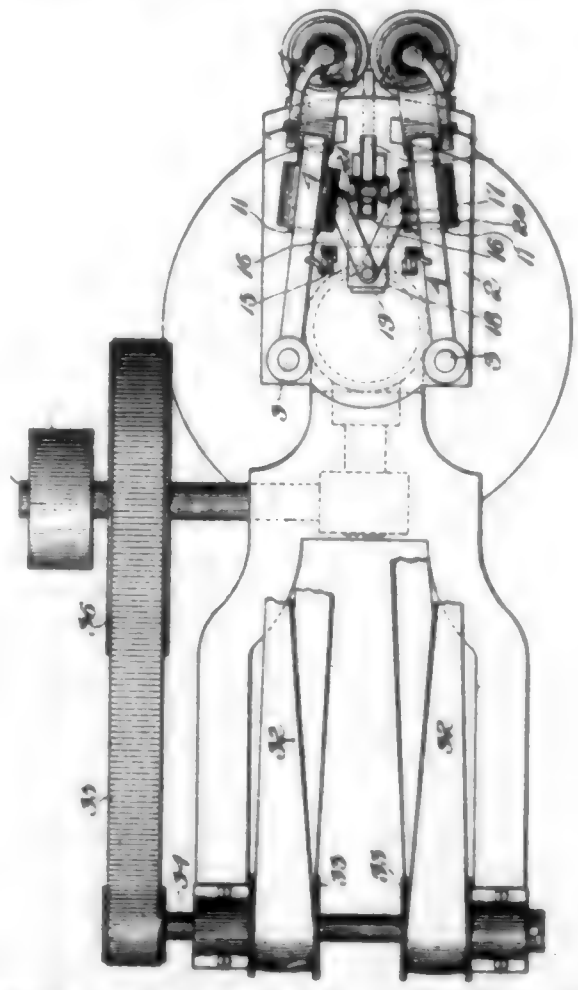
818,636. ATTACHMENT FOR PUMP-PISTONS. JOHN MCEWEN, Bradford, Pa. Filed Apr. 27, 1905. Serial No. 257,772.



Claim.—1. A packing-cup for pump-pistons comprising a flexible body portion provided with an inwardly-extending flange for engagement with the pump-piston, and a split ring secured to and surrounding the exterior walls of the body portion, the adjacent ends of the ring being spaced apart to expose a portion of the flexible body portion and inclinded or beveled in opposite directions.

2. A packing-cup for pump-pistons comprising a flexible body portion provided with an inwardly-extending flange for engagement with the pump-piston, and a split metal ring secured to and surrounding the exterior walls of the body portion with its adjacent ends spaced apart and inclined or beveled inopposite directions, the upper edge of the ring being disposed flush with the top of the body portion and its lower edge terminating short of the bottom of the inwardly-extending flange.

818,637. SOLE-EDGE-TRIMMING MACHINE. WILLIAM F. PACKARD, Brockton, Mass., assignor of one-half to Charles E. Field, Brockton, Mass. Filed Oct. 31, 1904. Serial No. 230,681.



Claim.—1. A sole-edge trimmer, comprising opposite arms mounted to swing on fixed pivots, rotary cutters, shafts, and pulleys carried in the free ends of said arms, a spring normally holding said cutters toward each other, and treadle mechanism for positively separating said cutters at will.

2. A sole-edge trimmer, comprising cutters movable toward and from each other, edge-guides movable with said cutters for engaging the opposite sides of the shoe and automatically directing the trimming action of said cutters by said engagement with the shoe, and yielding means normally holding said cutters toward each other and maintaining said edge-guides in engagement with the shoe.

3. A sole-edge trimmer, comprising opposite arms mounted to swing toward and from each other, and each provided with a cutter and with an edge-guide for bearing directly on the shoe and directing the cutting action, and with a yielding work-rest for engaging the sole opposite the edge-guide, yielding means for yieldingly pressing said edge-guides in unremitting engagement with the shoe on opposite sides thereof, and means for rotating said cutters.

4. A sole-edge trimmer, comprising opposite cutters for simultaneously engaging the opposite edges of a sole, yielding means for maintaining said cutters under a tendency to move toward each other, and treadle mechanism for controlling at will the action of said yielding means.

5. A sole-edge trimmer, comprising opposite cutters mounted to move toward and from each other, means for rotating them, yielding means normally holding said cutters toward each other, said cutters being at all times free to move toward each other into engagement with the opposite edges of the sole, and means carried by said cutters for supporting a shoe at its opposite sides in proper position for trimming.

6. A sole-edge trimmer, comprising opposite cutters mounted to

swing about fixed pivots, means for manually separating said cutters to receive a sole between them, and automatic means for bringing said cutters together for trimming the toe as the shoe is pulled by the operator from between the cutters.

7. A sole-edge trimmer, comprising opposite arms swinging about fixed pivots, rotary cutters carried by said arms, a tension-spring connecting said arms, and manual separating means therefor, said cutters being provided with means for simultaneously engaging the opposite sides of a shoe-sole at its opposite edges.

8. A sole-edge trimmer, comprising swinging arms carrying cutters at their free ends, means for swinging said arms toward each other, means carried by said cutters for directing the extent of cutting action thereof, a toggle connecting said arms, and a treadle for operating said toggle.

9. A sole-edge trimmer, comprising opposite cutters for simultaneously engaging the opposite edges of a sole, and edge-guides to engage the shoe for guiding said cutters, said edge-guides having a longitudinal edge adjacent the shoe for preventing the cutters from following a slight unevenness in the shoe.

818,638. HAMMER-DRILL. WILLIAM PRELLWITZ, Phillipsburg, N. J., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 7, 1905. Serial No. 290,690.



Claim.—1. In a hammer-drill, a hammer-cylinder and a hollow protective casing therefor having its walls entirely spaced from the cylinder, the cylinder being supported only by the ends of the casing for the purpose set forth.

2. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing having its walls entirely spaced from the cylinder, the cylinder and tail-rod having sliding engagements with and supported only by the ends of the casing for the purpose set forth.

3. In a hammer-drill, a hammer-cylinder, its tail-rod of less diameter than the cylinder and a protective casing having its walls entirely spaced from the cylinder, the cylinder and tail-rod having sliding engagements with and supported only by the ends of the casing for the purpose set forth.

4. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing for the cylinder, the cylinder having an exhaust-port leading through the tail-rod to a point exterior to the casing.

5. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing for the cylinder, the cylinder having one exhaust-port leading therethrough to a point exterior to the casing and another exhaust-port leading through the tail-rod to a point exterior to the casing.

6. In a hammer-drill, a hammer-cylinder, its tail-rod, a protective casing for the cylinder, the cylinder having an exhaust-port leading through the tail-rod to a point exterior to the casing and a deflector on the tail-rod for directing the exhaust away from the operator.

7. In a hammer-drill, a hammer-cylinder, its tail-rod, a protective casing for the cylinder, the cylinder having one exhaust-port leading therethrough to a point exterior to the casing and another exhust-port leading through the tail-rod to a point exterior to the casing and a deflector on the tail-rod for directing the exhaust from the last-named exhaust-port away from the operator.

8. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing having its walls entirely spaced from the cylinder, said cylinder having an exhaust-port leading through its side walls to a point exterior to the casing.

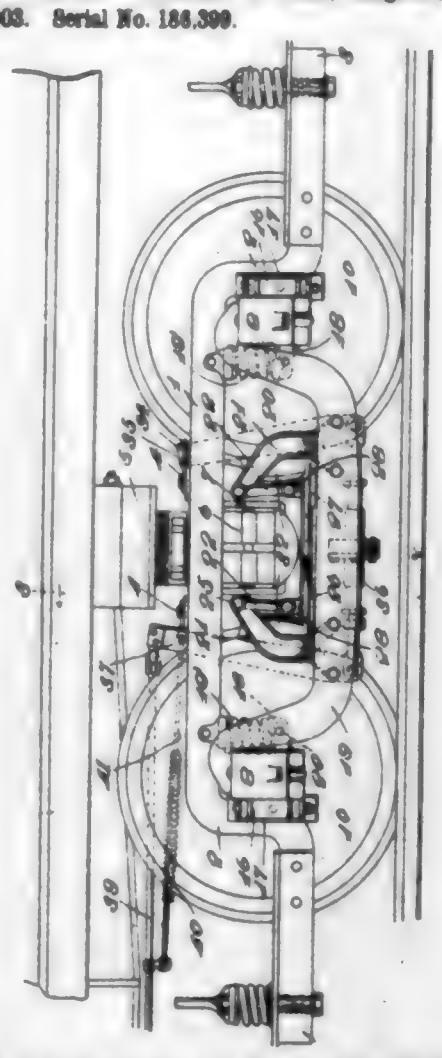
9. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing having its walls entirely spaced from the cylinder, said cylinder having an exhaust-port leading through the tail-rod to a point exterior to the casing.

10. In a hammer-drill, a hammer-cylinder, its tail-rod and a protective casing having its walls entirely spaced from the cylinder, said cylinder having one exhaust-port leading therethrough to a point exterior to the casing and another exhaust-port leading through the tail-rod to a point exterior to the casing.

11. In a hammer-drill, a hammer-cylinder, its tail-rod, a protective casing having its walls entirely spaced from the cylinder, said cylinder having an exhaust-port leading through its tail-rod to a point exterior to the casing and a deflector on the tail-rod arranged to direct the exhaust away from the operator.

12. In a hawmer-drill, a hammer-cylinder, its tail-rod, a protective casing having its walls entirely spaced from the cylinder, said cylinder having one exhaust-port leading therethrough to a point exterior to the casing and another exhaust-port leading through the tail-rod to a point exterior to the casing and a deflector on the tail-rod for directing the exhaust from the last-named port away from the operator.

818,639. BRAKE. WILLIAM G. PRICE, Kingston, N. Y. Filed Dec. 23, 1903. Serial No. 186,399.



Claim.—1. In a mechanism of the class described, the combination with brake mechanism, of a turnbuckle controlling such mechanism, and a spring within the turnbuckle for actuating the same.

2. In a mechanism of the class described, the combination with brake mechanism, of a turnbuckle engaging the same, and a spring pressing said turnbuckle in a direction for causing the same to automatically take up the slack of said brake mechanism.

3. In a mechanism of the class described, the combination with a pair of brake-shoes, of a turnbuckle interposed between said shoes, and a spring carried by said turnbuckle for actuating the same for maintaining said shoes in an applied condition.

4. In a mechanism of the class described, the combination with a brake-shoe and a lever for actuating the same, of a turnbuckle engaging said lever and means arranged within said turnbuckle for automatically expanding the same for actuating said lever.

5. In a mechanism of the class described, the combination with brake-applying means, of a turnbuckle connecting the same, and means within said turnbuckle for effecting a normal tendency of expansion to said turnbuckle.

6. In a mechanism of the class described, the combination with brake-applying means, of a turnbuckle connecting the same, and means carried by the turnbuckle for imparting a normal tendency of expansion to said turnbuckle.

7. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, a spring engaging said sleeve for rotating the same, and a support for said spring.

8. A turnbuckle for brake mechanism comprising a pair of sleeves, bars threaded into the same, and a spring carried by said sleeves for rotating the same.

9. A turnbuckle for brake mechanism comprising a sleeve, a bar threaded into the same, and a spring carried within said sleeve for rotating the same.

10. In a mechanism of the class described, the combination with brake-applying means, of a turnbuckle connecting the same, and means for effecting a normal tendency of expansion to said turnbuckle.

11. A turnbuckle for a brake mechanism comprising bars spaced apart, sleeves threaded thereon, and means carried by one of said bars for rotating said sleeves.

12. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, a second bar, and means carried thereby for rotating said sleeve.

13. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, a housing connected with said sleeve, a second bar, and means carried by said second bar within said housing for rotating said sleeve.

14. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, a housing connected to said sleeve, means within said housing for rotating said sleeve, and means carrying said rotating means.

15. A turnbuckle for brake mechanism comprising a sleeve, a bar threaded into the same, a spring engaging said sleeve for actuating the same, and a support for said spring movable longitudinally of said bar.

16. A turnbuckle for brake mechanism comprising a sleeve, a bar threaded into the same, and a coiled spring engaging said sleeve for imparting a normal tendency to said sleeve to rotate.

17. A turnbuckle for brake mechanism comprising a sleeve, a bar threaded therein formed with a longitudinal aperture, a rod extending into said aperture and movable longitudinally therein, and a spring connected with said rod engaging said sleeve for rotating the same.

18. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, a coiled spring engaging said sleeve, and a support for said coiled spring.

19. A turnbuckle for brake mechanism comprising a plurality of bars, sleeves threaded thereon, a rod projecting from one of said bars, and means carried by said rod for rotating said sleeves.

20. A turnbuckle for brake mechanism comprising a plurality of bars, sleeves threaded thereon, a housing carried by said sleeves, a coiled spring within said housing engaging the same at one end, and a rod projecting from one of said bars engaging the other end of said spring.

21. A turnbuckle for brake mechanism comprisig a sleeve, a bar threaded into the same, a polysided aperture formed in said bar, a rod fitting in said aperture and movable longitudinally therein, and a spring fixed at one end to said rod and coiled about the same, and connected, at its opposite end, to said sleeve.

22. A turnbuckle for brake mechanism comprising a sleeve, a rod threaded into the same, a housing at one end of said sleeve, and a coiled spring inclosed by said housing and engaging said sleeve for imparting a normal tendency of rotation thereto.

23. In a mechanism of the class described, the combination with brake-beams, brake devices actuated thereby, means for spreading said beams apart, means for frictionally temporarily maintaining said beams spread apart, and means for locking said means in their spread condition.

24. In a mechanism of the class described, the combination of brake-beams, brake devices actuated thereby, a turnbuckle interposed between said beams, and means within the turnbuckle for elongating the same, said turnbuckle being incapable of elongation or compression independently of said elongating means.

25. In a mechanism of the class described, the combination of brake-beams, brake devices actuated thereby, a turnbuckle interposed between said beams, and means carried within said turnbuckle for elongating the same for spreading said beams apart.

26. In a mechanism of the class described, the combination with brake-shoes and means for actuating the same, of friction devices retarding movement of said brake-shoes, and means for maintaining said shoes contiguous to the points of application.

27. In a mechanism of the class described, the combination with brake-shoes and means for actuating the same, of cushion-controlled friction means retarding movement of said shoes, and means for taking up the slack of said shoes.

28. A turnbuckle for brake mechanism comprising bars spaced apart, sleeves threaded thereon, and a spring interposed between said bars and sleeves.

29. A turnbuckle for brake mechanism comprising a bar, a sleeve threaded thereon, and a coiled spring carried by said bar and connected with said sleeve.

30. In a mechanism of the class described, the combination with a truck-frame provided with equalizer-bars and wheels, of brake-shoes supported by said bars, and means for retaining the same normally in contact with said wheels.

31. In a mechanism of the class described, the combination with supporting-wheels and a truck carried thereby having equalizer-bars, of brake-shoes carried by said equalizer-bars, means for applying said shoes to said wheels, and means for retaining said shoes in contact with the wheels after such application.

32. In a mechanism of the class described, the combination with supporting-wheels and a truck carried thereby having equalizer-bars, of brake-shoes, a link pivoted to each of said shoes and pivotally supported by one of said bars, means for producing frictional contact of the parts at the points of the pivots of said links, means for applying said shoes to said wheels, and automatically-expanding means retaining said shoes in contact with said wheels after such application.

33. In a mechanism of the class described, the combination with carrying-wheels and a truck carried thereby having equalizer-bars, of a bracket carried by each of said bars, a link pivoted to each of said brackets, a brake-shoe pivotally carried by each of said links, a spring engaging each of said links at each pivot for producing friction between the parts, means for applying said shoes to said wheels, and means for retaining said shoes in contact with the wheels.

34. In a mechanism of the class described, the combination with a truck-frame, supporting-wheels therefor, and equalizer-bars connecting said wheels, of brake-beams supported by said bars, brake-shoes actuated by said beams, means for moving said beams in position for applying said shoes, and means for retaining the shoes in contact with said wheels after such application.

35. In a mechanism of the class described, the combination with a truck-frame, supporting-wheels therefor, and equalizer-bars connecting said wheels, of brake-shoes supported by said equalizer-bars between the wheels, brake appliances controlled by said beams, means for spreading said beams apart, and automatically-expanding means for retaining said brake-beams in such spread condition.

36. In a mechanism of the class described, the combination with pivotally-supported brake-shoes and means for actuating the same, of cushions engaging the pivots of said shoes for producing friction, and means for taking up the slack of said shoes.

37. In a mechanism of the class described, the combination with car-truck-supporting wheels, of brake-beams disposed between the same, brake mechanism actuated by said beams, means for spreading said beams apart, and means carried by said beams for retaining the same in such spread condition.

38. In a mechanism of the class described, the combination with brake-shoes, of pivotally-mounted links carrying the same, springs engaging said links for producing friction at the pivots thereof, and means for taking up the slack of said shoes.

39. In a mechanism of the class described, the combination with a brake-shoe, of a pivotally-mounted link pivotally supporting said shoe, means for producing friction at each of the pivots on said link, and means for taking up the slack of said shoe.

40. In a mechanism of the class described, the combination with a truck and equalizer-bar, of brackets carried by said equalizer-bar, links pivotally depending from said brackets, brake-shoes pivotally carried by said links, means for producing friction at the pivot-points of said links, and means for taking up the slack of said shoes.

41. In a mechanism of the class described, the combination with a brake-shoe and a support, of a link, a bolt carried by said support and engaging said link for pivotally supporting the same, a spring surrounding said bolt, a nut threaded on said bolt engaging said spring for pressing the same against said link for causing the link to frictionally engage said support, connections between said link and shoe, and means for taking up the slack of the shoe.

42. In a mechanism of the class described, the combination with a truck having equalizer-bars, of brake-shoes, levers for actuating

the same carried by said equalizer-bars, and a cushion interposed between and normally tending to spread said bars.

43. In a mechanism of the class described, the combination with axles, wheels carried thereby, and journal-boxes for said axles, of equalizer-bars carried by said boxes, brake-beams supported by said equalizer-bars, brake devices controlled by said beams, means connecting said beams and preventing movement of the same toward each other, and means for automatically spreading said beams apart.

44. In a mechanism of the class described, the combination with brake-shoes and levers for actuating the same, of friction devices retarding movement of the brake-shoes toward each other, and automatically-expanding means preventing approach of said levers toward each other.

45. In a mechanism of the class described, the combination with brake-shoes and levers for actuating the same, of friction devices resisting by friction the movement of said shoes toward each other, and means for automatically taking up slack due to wear of the brake-shoes.

46. In a mechanism of the class described, the combination with brake-shoes and levers for actuating the same, of friction devices resisting by friction movement of the brake-shoes away from the point of application, and automatically-expanding means for retaining said shoes in the given positions with respect to each other after the same have been spread apart.

47. In a mechanism of the class described, the combination with brake-shoes, of friction devices resisting by friction movement thereof, means for moving said shoes, and automatically-acting means for retaining the shoes in their given positions after such movement.

48. In a mechanism of the class described, the combination with a brake-shoe and support, of a link, a bolt pivotally connecting said link with said support, a nut on said bolt, a spring engaged by said nut for producing frictional contact between the link and support when the nut is tightened, connections between the link and brake-shoe, and means for taking up the slack of the brake-shoe.

49. In a mechanism of the class described, the combination with a pivotally-supported brake-shoe and means for actuating the same, of means for producing variable friction of the pivotal mounting of said shoe, and means for taking up the slack of the shoe.

50. In a mechanism of the class described, the combination with a pivotally-supported brake-shoe and means for actuating the same, of means engaging the pivot of said shoe for producing friction, said means being susceptible of adjustment for increasing or decreasing the friction, and means for taking up the slack of the shoe.

51. In a mechanism of the class described, the combination with a support, a brake-shoe pivotally carried thereby, and means for actuating the brake-shoe, of a nut movable longitudinally of the pivot supporting said brake-shoe, and means for taking up the slack of the shoe.

52. In a mechanism of the class described, the combination with brake devices adapted to be adjusted during the braking operation, means for temporarily frictionally retaining said brake devices in their adjusted positions, and meansinterposed between said brake devices for permanently maintaining the same in their adjusted position.

53. In a mechanism of the class described, the combination with brake devices adapted to be spread apart during the braking operation, means for frictionally temporarily maintaining said brake devices in such spread condition, and means for permanently maintaining said brake devices in such spread condition.

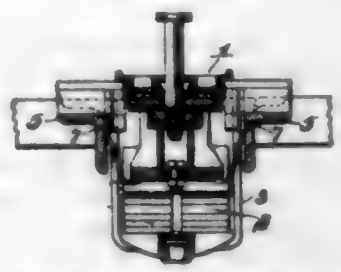
54. In a mechanism of the class described, the combination with brake devices adapted to be adjusted during the braking operation, means for frictionally temporarily maintaining the same in such adjusted position at the conclusion of a braking operation, and means released by such temporary maintenance for permanently maintaining said brake devices in such adjusted position.

55. In a mechanism of the class described, the combination of brake-shoes, brake-hangers supporting the same, brake-beams connected to said shoes, friction devices engaging said hangers for resisting movement of said brake-shoes, and means connecting said brake-levers for automatically adjusting said shoes.

818,640. CAR-TRUCK. WILLIAM G. PRICE, Pittsburg, Pa. Filed Nov. 13, 1904. Serial No. 233,504.

Claim.—1. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of spring-arms interposed between said transoms and bolster for frictionally resisting movement of said bolster.

2. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a bodily, laterally movable spring-arm interposed between said bolster and fixed element for frictionally resisting movement of the bolster.



3. The combination with a movably-mounted bolster, of transoms arranged at the sides thereof, and a one-piece spring shaped to form spring-arms interposed between said bolster and transoms for frictionally resisting movement of the bolster.

4. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of a one-piece spring carried by the bolster and frictionally engaging said transoms.

5. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of a spring carried by said bolster and frictionally engaging both of said transoms.

6. The combination with a movably-mounted bolster, of a spring extending beneath the same and frictionally resisting movement of the bolster, said spring being bodily movable laterally with said bolster.

7. The combination with a movably-mounted bolster and a spring connected to said bolster beneath the same and extending beyond the bolster, and means frictionally contacting with said spring for frictionally resisting movement of the bolster.

8. In a truck, the combination with a pair of transoms and means for supporting the same, of a bolster swinging between said transoms, and a spring compressed by said bolster between said transoms.

9. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a spring compressed by the bolster against said fixed element for frictionally resisting longitudinal movement of the bolster.

10. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a spring-arm compressed by the bolster against the fixed element for resisting movement of the bolster, said arm being movable longitudinally with respect to the fixed element and laterally with respect to itself.

11. The combination with a movably-mounted bolster and transoms at the sides thereof, of a spring compressed by the bolster against said fixed element, the construction and arrangement being such that the positioning of the bolster between the transoms compresses said spring to a position for frictionally resisting movement of the bolster.

12. The combination with a bolster and an element fixed with respect thereto, of a spring interposed between said bolster and fixed element and so constructed and arranged as to be compressed by the positioning of the bolster for frictionally resisting longitudinal movement of the bolster.

13. The combination with a bolster and an element fixed with respect thereto, of a spring-arm compressed by said bolster between the bolster and arm for frictionally resisting longitudinal movement of the bolster.

14. In a truck, the combination with a fixed element and a bolster movably mounted with respect thereto, of a spring compressed between said fixed element and bolster by the weight of the bolster for frictionally resisting longitudinal movement of the bolster.

15. The combination with a bolster, of a spring-arm compressed by the weight thereof in position for frictionally resisting longitudinal movement of the bolster.

16. The combination with a movably-mounted bolster, of a spring compressed by the weight of the bolster and retained in such position thereby for frictionally resisting longitudinal movement of the bolster.

17. The combination with a movably-mounted bolster, of a spring compressed by the weight of said bolster for frictionally resisting longitudinal movement of the bolster.

18. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of spring-arms carried by said bolster and movably engaging said transoms.

19. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of spring-arms carried by said bolster and frictionally engaging said transoms and movable longitudinally thereof.

20. The combination with a movably-mounted bolster and elements fixed with respect thereto, of spring-arms carried by said bolster and movable bodily, laterally and frictionally engaging the said fixed elements.

21. The combination with a movably-mounted bolster and transoms arranged at the sides thereof, of spring-arms carried by said bolster and compressed between said transoms, said arms being movable longitudinally of the transoms.

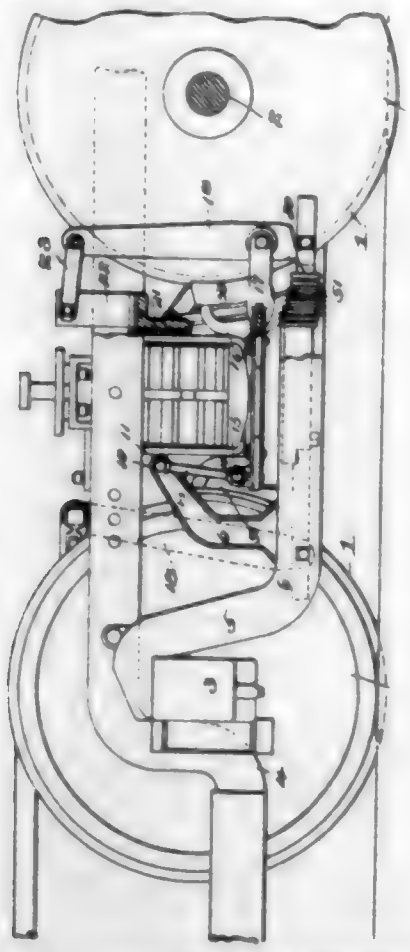
22. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a spring compressed by the weight of said bolster against said fixed element for frictionally resisting longitudinal movement of the bolster.

23. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a spring connected with said bolster and compressed by the weight thereof against said fixed element for frictionally resisting longitudinal movement of the bolster.

24. The combination with a movably-mounted bolster and an element fixed with respect thereto, of spring-arms compressed by the weight of said bolster against said fixed element for frictionally resisting longitudinal movement of the bolster.

25. The combination with a movably-mounted bolster and an element fixed with respect thereto, of a spring compressed by the weight of said bolster into frictional contact with said fixed element for frictionally resisting movement of the bolster, the spring being bodily movable laterally with respect to itself and longitudinally with respect to said fixed element.

818,641. SLACK-ADJUSTER. WILLIAM G. PRICE, Pittsburg, Pa. Filed Feb. 11, 1905. Serial No. 245,310.



Claim.—1. In a slack-adjuster, the combination with the elements to be adjusted, and means for frictionally, temporarily maintaining said elements in an adjusted position, of a plurality of movable objects adapted to be interposed singly between said elements for permanently maintaining the adjustment thereof.

2. In a slack-adjuster, the combination with the elements to be adjusted, means for frictionally maintaining such elements temporarily in an adjusted position, of relatively small elements designed to be interposed by gravity between said adjusted elements.

3. In a slack-adjuster, the combination with the elements to be adjusted, and means frictionally sustaining said elements temporarily in an adjusted position, of movable objects designed to be interposed between said adjusted elements, and means for retaining said objects between said elements for permanently maintaining the adjustment thereof.

4. A slack-adjuster comprising separable elements and balls designed to be interposed between said elements.

5. A slack-adjuster comprising separable elements balls designed to be interposed between said elements and a casing for containing said balls when interposed between the elements.

6. In a slack-adjuster the combination with the parts of a machine between which slack is to be taken up, of a plurality of balls designed to be interposed by gravity between said parts for taking up the slack thereof.

7. A slack-adjuster comprising separable elements and friction means for retaining said elements in given position and balls designed to be interposed between said elements.

8. In a slack-adjuster, the combination with an element, of a second element movable with respect thereto, adapted to take up slack and balls designed to be interposed between said elements.

9. In a slack-adjuster, the combination with an element, of a second element movable with respect thereto, a lever pivotally engaging said second-mentioned element, means for producing friction at the point of said pivot and movable objects adapted to be interposed between said first and second mentioned elements.

10. In a brake-slack adjuster, the combination with a brake apparatus, of levers pivotally connected thereto, means for producing friction of the pivots of said levers and means for interposing balls between said levers for taking up slack of the parts connected with the levers.

11. In a brake-slack adjuster, the combination with a brake apparatus, of levers pivotally connected therewith, means for producing friction at the point of said pivots, elements movable with respect to each other, interposed between and pivotally connected with said levers, means for producing friction at the points of said last-mentioned pivots, and means for interposing balls between said movable elements.

12. An expanding adjuster comprising a casing, a rod extending into same and balls designed to be introduced by gravity in said casing.

13. An expanding adjuster comprising a casing, a rod movable longitudinally therein, a longitudinally-movable piston carried by said rod and means for introducing balls into the casing.

14. An expanding adjuster, comprising a casing, a rod movable longitudinally therein, a spring-pressed piston carried by said rod within said casing and means for introducing balls into the casing.

15. An expanding adjuster, comprising a casing formed with a plurality of chambers, a rod movable within one of said chambers and balls carried within the other said chambers, an aperture being formed in the wall between the chambers.

16. An expanding adjuster, comprising a casing formed with upper and lower chambers, a rod movable within the lower chamber and balls arranged within the upper chamber, an aperture being formed in the wall between said chambers.

17. An expanding adjuster, comprising a casing, having a plurality of chambers, a rod movable within one of said chambers and balls within the other chamber, a passage being formed in the wall between said chambers of a size sufficient for admitting of the moving of balls from the second-mentioned chamber to the first-mentioned chamber but preventing the return of such balls under compression by said rod.

18. An expanding adjuster, comprising a casing formed with an upper and a lower chamber, a rod movably mounted in the lower chamber, balls in the upper chamber, an aperture being formed in the wall between the upper and lower chambers for preventing the discharge of balls from the upper chamber to the lower chamber by gravity and means for facilitating return of said balls to the upper chamber.

19. An expanding adjuster, comprising a casing provided with a plurality of chambers, a rod movably mounted in one of said chambers, balls arranged in the other of said chambers, an aperture being formed in the wall between said chambers, of a diameter greater than the diameter of one of the balls and less than twice the diameter of such ball.

20. An expanding adjuster having an upper and lower chamber, a rod movably mounted in the lower chamber and balls arranged in the upper chamber, an aperture being formed in the wall between said chambers, of a size admitting of discharge of balls by gravity from the upper chamber into the lower chamber and preventing return of said balls and a valve for permitting return of the balls from the lower to the upper chamber.

21. An expanding adjuster, comprising a casing formed with an upper and a lower chamber, a rod movably mounted in the lower chamber, balls arranged in the upper chamber, an aperture being formed in the wall between said chambers for permitting of discharge of balls by gravity from the upper to the lower chamber, and

a valve arranged at the end of the lower chamber and normally closing said chamber designed to be operated for permitting return of the balls from the lower chamber to the upper chamber.

22. An expanding adjuster, comprising a casing having an upper and lower chamber, a rod movably mounted in the lower chamber, an aperture being formed in the wall dividing said upper and lower chambers and means in said upper chamber adapted to move by gravity through said aperture into the lower chamber for taking up excess of movement of said rod.

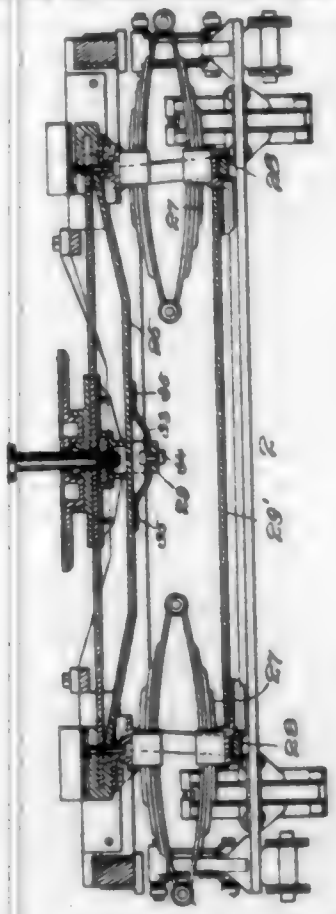
23. An expanding adjuster comprising a casing, having a plurality of chambers, a rod movably mounted in one of said chambers, balls disposed in the other of said chambers, an aperture being formed in the wall between the chambers for admitting balls from the second-mentioned chamber to the first-mentioned chamber and a valve formed with a bore communicating with the ball-containing chamber and formed with a second bore communicating with the first bore and adapted to be positioned in register with the rod-containing chamber for permitting return of the balls from the rod-containing chamber to the ball-containing chamber.

24. An expanding adjuster comprising a movably-mounted rod, a casing inclosing the same and means for supplying balls between said rod and the end of said casing.

25. An expanding adjuster comprising a longitudinally-movable rod, a casing surrounding the same, an open-ended chamber formed in said casing and communicating with the rod-surrounding portion of the casing, means carried by said chamber, designed to contact with said rod for preventing approach thereof toward the end of the casing, a closure for the end of said chamber and an accordion casing inclosing said rod and the open end of said casing.

26. An expanding adjuster comprising a movably-mounted rod, a casing surrounding the same, a hardened lining for said casing and means for introducing relatively small movable elements between said rod and casing.

818,642. **BOLSTER SWING-DAMPER.** WILLIAM G. PRICE, Pittsburg, Pa. Filed Feb. 20, 1905. Serial No. 246,555.



Claim.—1. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring frictionally resisting movement of the same, and a support for said spring adjustable with respect to the bolster.

2. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, means for frictionally resisting movement of the bolster in varying degrees relative to the weight sustained by the bolster and means for adjusting said friction means.

3. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring arranged beneath said bolster and adapted to have its ends engage the bolster for frictionally resisting movement of the bolster, and vertically-adjustable means supporting said spring.

4. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring bent intermediate its length and having its ends resting against the bolster for frictionally resisting movement thereof, and a support engaging said spring intermediate the length thereof.

5. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring designed to frictionally engage said bolster and mounted adjustably with respect thereto.

6. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of an adjustable spring positioned for frictionally resisting movement of said bolster and for having its frictional contact with the bolster varied relative to the weight sustained by the bolster.

7. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring frictionally resisting movement thereof positioned for having its frictional contact varied relative to the vertical movement of the bolster and means adjustably sustaining said spring in position.

8. In a bolster-controlling apparatus, the combination with a bolster, of a spring designed to frictionally engage the same for resisting movement thereof, and means for supporting said spring at various points of adjustment toward and away from said bolster.

9. In a bolster-controlling apparatus, the combination of a movably-mounted bolster, and adjustable means engaging the under surface of said bolster for frictionally resisting movement thereof.

10. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of adjustable means fixedly sustained with respect to said bolster beneath the same and frictionally engaging the under surface of said bolster for resisting movement thereof.

11. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, and transoms fixed with respect thereto, of a plate secured to said transoms, and a spring carried by said plate arranged beneath said bolster for frictionally resisting movement thereof.

12. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of an adjustable spring normally fixed against movement with respect to said bolster in position for having its deflection varied relative to the vertical movement of the bolster.

13. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring bent intermediate its length in position with its ends resting against the bolster for frictionally resisting movement thereof, and an adjustable support for said spring engaging the spring at the point of the bend therein.

14. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring bent intermediate its length and having its ends resting against the bolster for frictionally resisting movement thereof, and supporting means for said spring, adjustably mounted and adapted to be adjusted transversely of the bolster.

15. In a bolster-controlling apparatus, the combination with a rigidly-mounted support, of a bolster movable with respect to said support, and a spring bent intermediate its length and having its ends frictionally engaging said bolster and its intermediate bent portion engaged by said support.

16. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, means for frictionally resisting movement of the bolster, means for adjusting said frictional means toward and away from the bolster for varying the operation of the friction means.

17. In an apparatus for controlling a bolster, the combination with a movably-mounted bolster, of a transom at the side thereof, a spring carried by said transom and frictionally resisting movement of said bolster, and means for facilitating adjustment of the springs for varying the tension of said spring.

18. In an appartus for controlling a bolster, the combination with a movably-mounted bolster, of a transom at the side thereof, and a spring carried by said transom and engaging said bolster for frictionally resisting movement thereof, said spring being positioned for having its tension varied in a ratio proportionate to the vertical movement of the bolster.

19. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of an arm frictionally contacting therewith, and means for varying the friction of said arm.

20. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of an arm frictionally contacting therewith, and means for increasing the friction thereof.

21. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring fixed with respect to said bolster beneath the same and frictionally engaging the bolster for resisting movement thereof.

22. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring fixed with respect to the bolster and engaging the under surface thereof for frictionally resisting movement of the bolster.

23. In a bolster-controlling apparatus, the combination with a longitudinally movably mounted bolster and transoms fixed with respect thereto, of a plate secured to said transoms, and meanscarried by said plate and arranged beneath said bolster for frictionally resisting the longitudinal movement thereof.

24. In a bolster-controlling apparatus, the combination with a longitudinally movably mounted bolster and transoms fixed with respect thereto, of a plate carried by said transoms arranged transversely with respect to said bolster, and means carried by said plate for frictionally resisting movement of the bolster.

25. In a bolster-controlling apparatus, the combination with a movably-mounted bolster and transoms fixed with respect thereto, of a plate secured to said transoms transversely of and beneath said bolster, and a spring fixed to said plate and extending longitudinally of and frictionally engaging said bolster.

26. In a bolster-controlling apparatus, the combination with a longitudinally movably mounted bolster, of means for resisting the longitudinal movement thereof in a ratio directly proportionate to the weight sustained by the bolster and means adjustable with respect to said bolster for varying said resistance.

27. In a bolster-controlling apparatus, the combination with a longitudinally-movable bolster, of adjustable means for frictionally damping the longitudinal movement of the bolster, the friction of said damping means varying in a ratio proportionate to the weight sustained by the bolster.

28. In a bolster-controlling apparatus, the combination with a movably-mounted bolster and a spring arranged longitudinally of the bolster and engaging the under face thereof and a support arranged transversely of the bolster beneath the same carrying said spring.

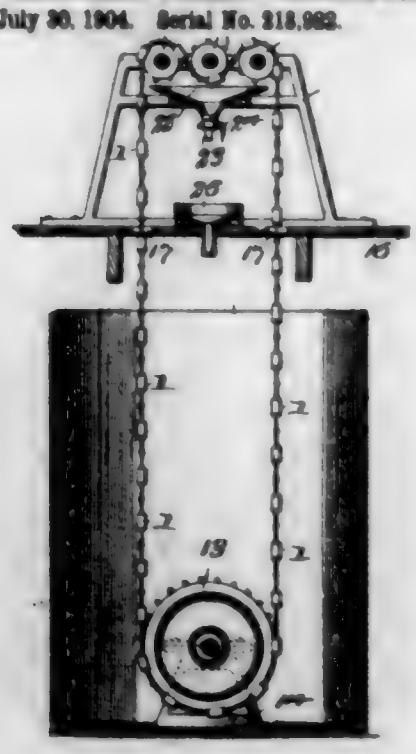
29. In a bolster-controlling apparatus, the combination with a swinging bolster, of a spring disposed for assisting in sustaining the weight of the bolster and arranged to frictionally resist the longitudinal or swinging movement of the bolster.

30. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring having flat surfaces directly engaging the bolster and arranged to frictionally damp the movement thereof in a ratio proportionate to the rise and fall of the bolster.

31. In a bolster-controlling apparatus, the combination with a movably-mounted bolster and a support spaced therefrom, of a spring interposed between the bolster and support and frictionally resisting longitudinal or swinging movement of the bolster, the wear due to friction being taken up directly by the spring.

32. In a bolster-controlling apparatus, the combination with a movably-mounted bolster, of a spring positioned beneath the same and an adjustable support extending beneath said bolster and sustaining said spring in position for frictionally resisting movement of the bolster.

818,643. **MEASURING VESSEL.** CLARENCE SCHOCK, Mount Joy, Pa. Filed July 30, 1904. Serial No. 218,992.



Claim.—1. A measuring vessel having a drain-tube, the edge of the inlet of which is at varying distances from the bottom of the vessel and that portion of said edge nearest the bottom of the vessel being at all times in line with the axis of the vessel.

2. A measuring vessel having a drain-tube rigidly mounted therein, the edge of the inlet of said tube being at varying distances from the bottom of the vessel, and that portion of said edge nearest the bottom of the vessel being at all times in line with the axis of the vessel.

3. A measuring vessel having a rigid drain-tube therein of less length than the sides of the vessel, the edge of the inlet of said tube being at varying distances from the bottom of the vessel and that portion of said edge nearest the bottom of the vessel being at all times in line with the axis of the vessel.

4. The combination with a measuring vessel; of a discharge-tube therein having its inlet end obliquely cut away, that portion of said end nearest the bottom of the vessel being at all times in line with the axis of the vessel.

5. A measuring vessel having a drain-tube adjustably mounted therein, the edge of the inlet of said tube being at varying distances from the bottom of the vessel, that portion of said edge nearest the bottom being at all times in line with the axis of the vessel.

6. In a measuring vessel, the combination with the body portion having a threaded opening in its bottom, of a discharge-tube adapted to fit in said threaded opening and disposed parallel with the sides of the measuring vessel and having its upper end obliquely cut away whereby the position of the lower side of said obliquely-severed end will determine the quantity of contents in the measuring vessel, the position of the discharge-point of the tube being varied by rotating the discharge-tube.

7. The combination with an elevator; of a measuring vessel connected thereto and having an overflow-tube, the edge of the inlet of said tube being at all times intersected by the longitudinal axis of the vessel.

8. The combination with an elevator; of a measuring vessel connected thereto and having an overflow-tube rigidly mounted therein, the edge of the inlet of said tube being at all times intersected by the longitudinal axis of the vessel.

9. The combination with an elevator; of a measuring vessel connected thereto and having a rigid overflow-tube adjustably mounted therein, the edge of the inlet of said tube being at all times intersected by the longitudinal axis of the vessel.

10. The combination with an elevator; of a measuring vessel movably connected thereto and having an overflow-tube, the inlet of which is at all times intersected by the longitudinal axis of the vessel.

11. The combination with a suitable support; of a measuring vessel connected thereto and adapted to swing thereon, said vessel having an overflow-tube, the edge of the inlet of which is at all times intersected by the longitudinal axis of the vessel.

12. The combination with a suitable support; of a measuring vessel connected thereto and adapted to swing thereon, said vessel having an overflow-tube rigidly mounted therein, the edge of the inlet of said tube being at all times intersected by the longitudinal axis of the vessel.

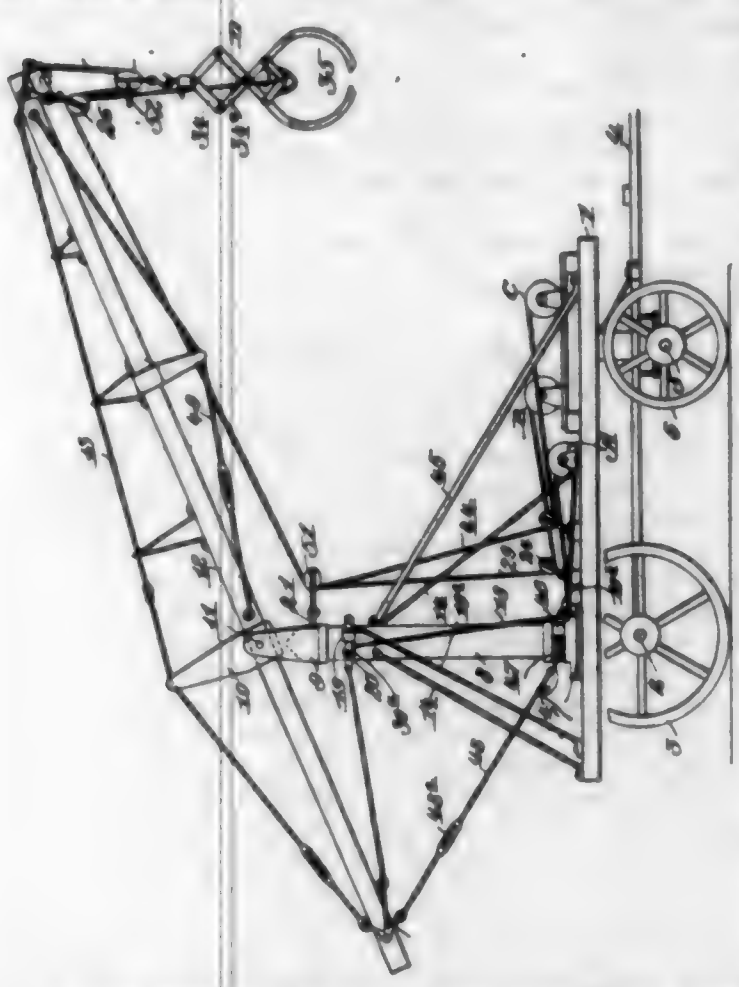
818,644. **CANE-LOADING APPARATUS.** LEONCE J. B. TROUARD, New Orleans, La. Filed June 23, 1905. Serial No. 266,631.

Claim.—1. In an apparatus of the class set forth, the combination of a bed mounted on running-gear, an upright column held on the bed, a boom movably supported on the column to have swinging movement from one side to the other of the bed, outwardly-projecting devices connected to the column and carrying pulleys, ropes or cables connected to the rear extremity of the boom and passing through the said pulleys downwardly to the bed for swinging the boom in opposite transverse directions, a grappling device held by the lifting extremity of the boom, and means for raising and lowering the grappling device.

2. In an apparatus of the class set forth, the combination of a movable supporting means, a boom disposed on the said supporting means and having a swinging movement in opposite transverse directions, outwardly-projecting arms carrying pulleys, ropes or cables connected to the rear end of the boom and engaging the said pulleys, a grappling device movably held by the lifting extremity of the boom, and means for controlling the elevation and depression of the grappling device.

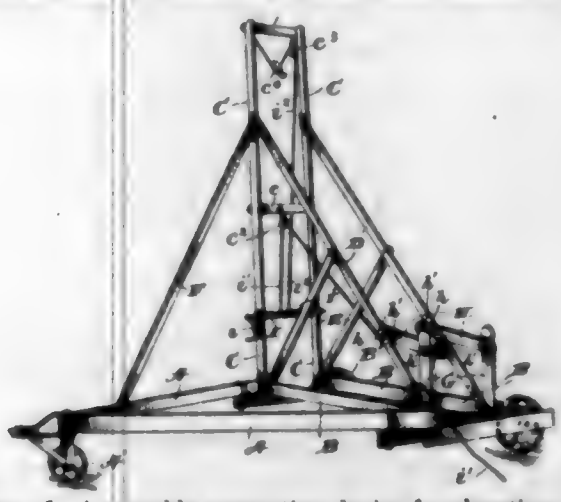
3. In an apparatus of the class set forth, the combination of a movable supporting means, a boom mounted on the supporting means and shiftable from one side to the other of the latter, connect-

ing-rods attached to the rear end of the boom and movably held by the supporting means to permit the boom to have unretarded swinging movement, devices for swinging the boom to opposite sides of the supporting means, and a grappling device movably held by the lifting end of the boom.



4. In an apparatus of the class set forth, a movable bed, an upright column supported on the bed, a boom held on the column and having a pivotal and laterally-swinging operation, a collar rotatably mounted on the column, connecting-rods between the said collar and rear end of the boom, devices connected to the rear end of the boom for swinging the latter in opposite lateral directions, and a grappling device held by the lifting extremity of the boom and provided with means for raising and lowering the same.

818,645. PORTABLE DERRICK. JOHN F. WHITE, Bloomington, Ill., assignor to Portable Wagon Dump and Elevator Company, a Corporation of Illinois. Filed Jan. 16, 1905. Serial No. 241,357.



Claim.—1. A portable supporting device for elevating-conveyers comprising a supporting-frame, means for supporting an elevator transversely thereon, and means for bodily moving said elevator endwise on said supporting-frame while supported transversely thereon.

2. In a device of the character described, a supporting-frame, a track fixed relatively to said supporting-frame secured transversely thereof, and an elevator supported upon said track and bodily movable endwise thereon.

3. In a device of the character described, a supporting-frame, a track fixed relatively to said supporting-frame secured transversely thereof, an elevator supported upon said track, and means for bodily adjusting said elevator endwise on said track.

4. In a device of the character described, a supporting-frame, a track fixed relative to said supporting-frame secured transversely thereof, an elevator supported upon said track and bodily movable endwise thereon, and means for raising and lowering the delivery end of said elevator.

5. A portable support for elevating-conveyers comprising a supporting-frame, a track arranged transversely of said frame and adapted to support the rear end of an elevator, means for supporting the forward end of the elevator, and means for adjusting said elevator on said track.

6. A portable support for elevating-conveyers comprising a supporting-frame, an adjustable track thereon adapted to support the rear end of a conveyer, and means for supporting the forward end of the conveyer.

7. A portable support for elevating-conveyers comprising a supporting-frame, an adjustable track thereon adapted to support the rear end of a conveyer, and means for adjustably supporting the forward end of the conveyer.

8. A portable supporting device for elevating-conveyers comprising a supporting-frame, an adjustable track on said frame adapted to support the rear end of an elevator, hoisting mechanism carried by said frame for adjustably supporting the forward end of an elevator, and means on the frame for moving the elevator endwise on the track.

9. In a device of the character described, a supporting-frame, an elevator supported transversely thereon, and means for bodily moving said elevator endwise on said frame while supported transversely thereon.

10. In a device of the character described, a supporting-frame an elevator extending transversely thereof, means for supporting the forward end of said elevator, and adjustable means for supporting the rear end of said elevator.

11. In a device of the character described, a supporting-frame, an elevator supported transversely thereon, means for raising and lowering the delivery end of said elevator, and independent means for moving said elevator bodily endwise on said frame while supported transversely thereon.

12. In a device of the character described, a supporting-frame, an adjustable track secured thereto, and an elevator supported at its lower end upon said track and movable thereon.

13. In a device of the character described, a supporting-frame, an adjustable track secured thereto, an elevator supported at its lowef end upon said track, and means for adjusting said elevator on said track.

14. In a device of the character described, a supporting-frame, an adjustable track secured thereto, an elevator supported at its lower end on said track and movable thereon, and means for raising and lowering the delivery end of said elevator.

15. In a device of the character described, a supporting-frame, a track secured transversely thereof, an elevator having its lower end supported on said track, means for supporting the upper end of the elevator and means for adjusting said elevator on said track.

16. In a device of the character described, a supporting-frame, an adjustable track secured thereto, an elevator having its lower end supported upon said track, a derrick secured to said supporting-frame and extending above the delivery end of the elevator, winding mechanism for raising and lowering the delivery end of the elevator, and means for adjusting the elevator on the track.

17. In a device of the character described, a supporting-frame, an angularly-adjustable track secured thereto, an elevator supported adjacent its rear end on said track, and means for raising and lowering the delivery end of said elevator.

18. In a device of the character described, a supporting-frame, an angularly-adjustable track secured thereto, a conveyer supported adjacent its rear end on said track, means for raising and lowering the delivery end of the elevator, and means for adjusting the elevator on the track.

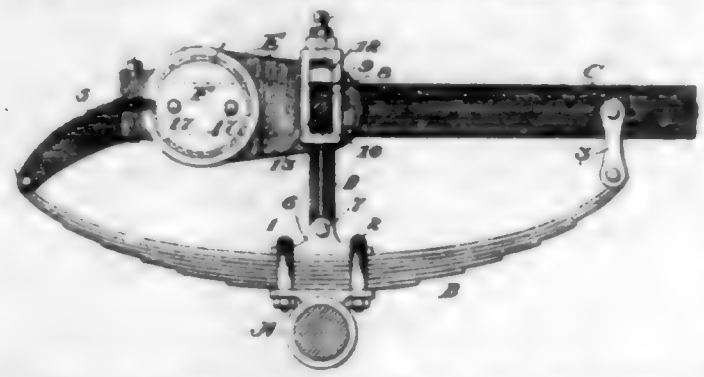
19. In a device of the character described, a supporting-frame, a transversely-arranged track secured to one side thereof, a pair of uprights secured to the opposite side of said frame, an elevator supported adjacent its rear end upon said track and having its delivery end projecting through said uprights, means for raising and lowering the delivery end of said elevator, said means comprising a windlass journaled in said uprights, a cable wound thereon and connected to the delivery end of the elevator, and means for adjusting the elevator on the track, said means comprising a windlass journaled in the uprights and a cable wound on said windlass and connected to the rear end of said elevator.

20. In a device of the character described, a wheeled truck, a conveyer extending transversely thereof, means for adjustably sup-

porting the forward end of the conveyer, and means for adjustably supporting the rear end of the conveyer.

21. In a device of the character described, a supporting-frame, a track secured transversely thereof, an elevator having its lower end supported on said track, and means for adjustably supporting the forward end of said elevator.

818,646. SHOCK-ABSORBER FOR VEHICLES. ROBERT P. WILSON, Providence, R. I. Filed Sept. 5, 1905. Serial No. 277,085.



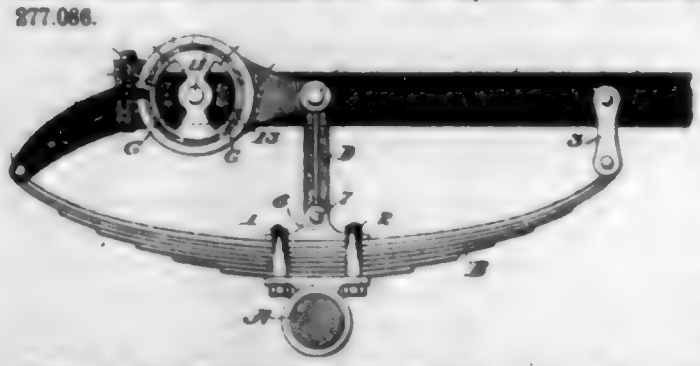
Claim.—1. The combination, with an axle, body-frame, and body-supporting springs, in a road-vehicle, of a shock-absorber interposed between the axle and body-frame and comprising a frictional device by which the springs are stiffened and their movements retarded on rough roads, said frictional device comprising a member fixedly attached to said body-frame and a relatively movable member and a slotted connection between said relatively movable member and the axle, for rendering said frictional device idle on smooth roads.

2. The combination, with an axle, body-frame, and body-supporting springs, in a road-vehicle, of a shock-absorber interposed between the axle and body-frame and comprising a circular drum fixedly attached to said body-frame, a lever-piece including a strap having a lining of leather or the like embracing the periphery of said drum and provided with a stud, a slotted connection, the slot of which embraces said stud, and means for adjusting said strap, to increase or reduce the frictional resistance, said lever-piece being movable by hand when the parts are at rest.

3. The combination, with an axle, body-frame, and body-supporting springs, in a road-vehicle, of a shock-absorber interposed between the axle and body-frame and comprising a circular drum fixedly attached to said body-frame, a lever-piece including a strap having a lining of leather or the like embracing the periphery of said drum and provided with a stud, a slotted connection, the slot of which embraces said stud, and means for adjusting said slotted connection to vary the effective length of the slot.

4. The combination, with an axle, body-frame, and body-supporting springs, in a road-vehicle, of a shock-absorber interposed between the axle and body-frame and comprising a circular drum fixedly attached to said body-frame, a lever-piece including a strap having a lining of leather or the like embracing the periphery of said drum and provided with a stud, a slotted connection, the slot of which embraces said stud, and means within said slot for cushioning the contact of its ends with said stud, substantially as hereinbefore specified.

818,647. SHOCK-ABSORBER FOR SPRING-VEHICLES. ROBERT P. WILSON, Providence, R. I. Filed Sept. 5, 1905. Serial No. 277,086.



Claim.—1. The combination, with an axle and the spring-supported body-frame, of a road-vehicle, of a shock-absorber comprising a connecting-link pivotally coupled to the axle, a lever-piece pivotally connected to said link and having a leather-lined strap as part thereof, a circular drum embraced peripherally by said strap, a central stud on which said drum turns and by which it is attached to said body-frame, and a lost-motion device whereby said friction device is permitted to oscillate freely within smooth road limits of motion and to automatically resist and absorb shocks and to retard return movements of the spring-supported body.

2. The combination, with an axle and the spring-supported body-frame, of a road-vehicle, of a shock-absorber comprising a connecting-link pivotally coupled to the axle, a lever-piece pivotally connected to said link and having a leather-lined strap as part thereof, a circular drum embraced peripherally by said strap, a central stud on which said drum turns and by which it is attached to said body-frame, and a lost-motion device comprising a segmental slot in said drum concentric with said stud and a stop fixedly attached to said body-frame within said slot, whereby said friction device is permitted to oscillate freely within smooth road limits of motion and to automatically resist and absorb shocks and to retard return movements of the spring-supported body.

3. The combination, with an axle and the spring-supported body-frame, of a road-vehicle, of a shock-absorber comprising a connecting-link pivotally coupled to the axle, a lever-piece pivotally connected to said link and having a leather-lined strap as part thereof, a circular drum embraced peripherally by said strap, a central stud on which said drum turns and by which it is attached to said body-frame, and a lost-motion device consisting of a pair of segmental slots in said drum concentric with said stud, and a pair of stops fixedly attached to said body-frame within said slots, whereby said friction device is permitted to oscillate freely within smooth road limits of motion and to automatically resist and absorb shocks and to retard return movements of the spring-supported body.

4. The combination, with an axle and the spring-supported body-frame, of a road-vehicle, of a shock-absorber comprising a connecting-link pivotally coupled to the axle, a lever-piece pivotally connected to said link and having a leather-lined strap as part thereof, a circular drum embraced peripherally by said strap, a central stud on which said drum turns and by which it is attached to said body-frame, and a lost-motion device consisting of a pair of segmental slots in said drum concentric with said stud, and a pair of stops fixedly attached to said body-frame within said slots, and provided with cushions to contact with the respective ends of said slots, whereby said friction device is permitted to oscillate freely within smooth road limits of motion and to automatically resist and absorb shocks and to retard return movements of the spring-supported body.

5. The combination, with an axle and the spring-supported body-frame, of a road-vehicle, of a shock-absorber comprising a connecting-link pivotally coupled to the axle, a lever-piece pivotally connected to said link and having a leather-lined strap as part thereof, a circular drum embraced peripherally by said strap, a central stud on which said drum turns and by which it is attached to said body-frame, a lost-motion device whereby said friction device is permitted to oscillate freely within smooth road limits of motion and to automatically resist and absorb shocks and to retard return movements of the spring-supported body and means for adjusting said strap to vary the resistance of said friction device, substantially as hereinbefore specified.

818,648. DETERGENT FOR SCOURING WOOL. SALO WOHLE, London, England. Filed June 1, 1905. Serial No. 263,331.

Claim.—1. A detergent for scouring wool made from a decoction of a vegetable material yielding mucilage, to which vegetable saponin is added, as well as small quantities of a fatty oil, a feeble vegetable acid, and peroxid of sodium.

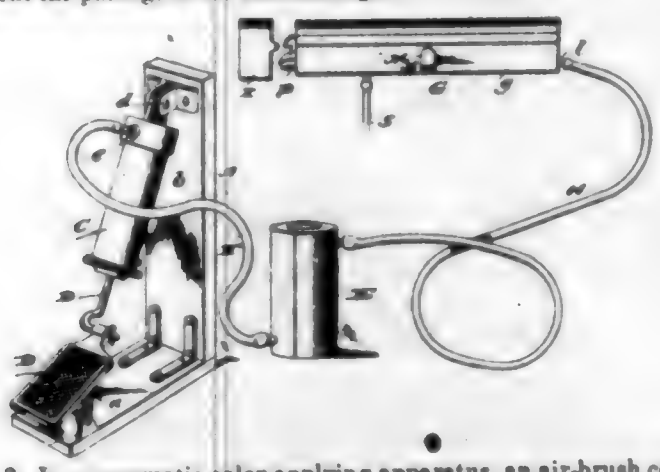
2. A detergent for scouring wool, comprising a decoction of vegetable material yielding mucilage, an extract of stripped horse-chestnuts to which carbonate of soda has been added, a fatty oil, a feeble vegetable acid, and sodium peroxid, combined in or about the proportions specified.

818,649. PNEUMATIC COLOR-APPLYING APPARATUS. FELIX WOLF, New York, N. Y. Filed Jan. 30, 1906. Serial No. 298,731.

Claim.—1. A pneumatic color-applying apparatus, comprising a portable stand having a base and also having an upright fixed to and rising from one end of the base, an air-pump having a piston and also having a cylinder containing the piston and pivoted at its upper end to the upright of the stand, a treadle mounted on standards rising from the base of the stand and connected to the piston of the pump, a portable air-storage tank connected with the eduction-orifice of the pump, and an air-brush connected through a flexible conduit with the tank and having a tube adapted to be connected with a source of color-supply.

2. In a pneumatic color-applying apparatus, an air-brush com-

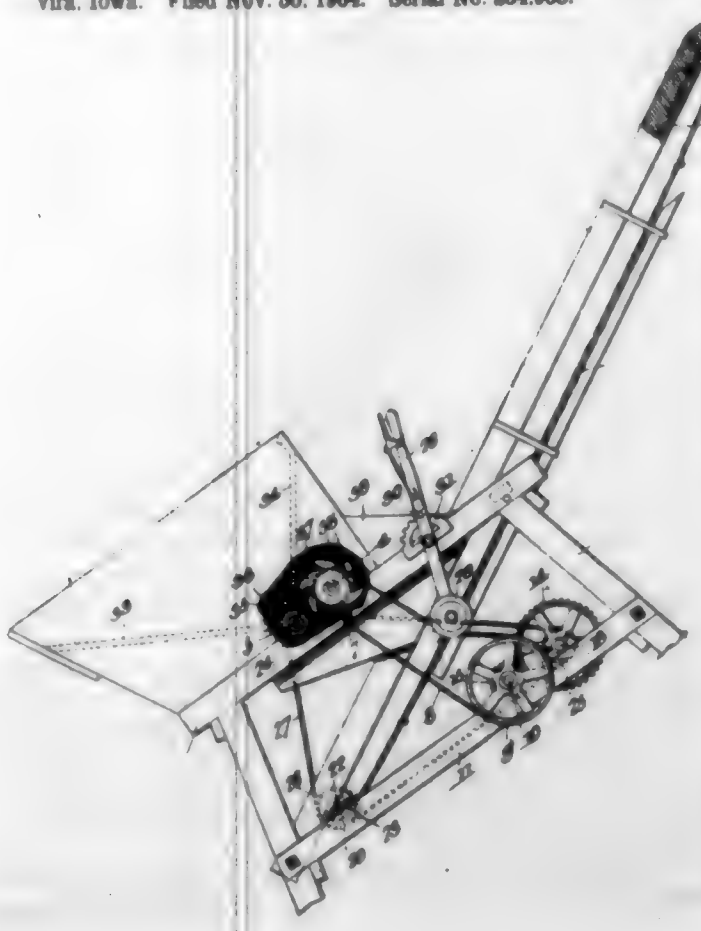
prising a hollow body, a nozzle carried by the body and having a tube adapted to be connected with a source of color-supply, a nozzle carried by the body and having its discharge arranged adjacent to that of the first-mentioned nozzle, a compressible tube connected to the second-mentioned nozzle and arranged longitudinally in the hollow body and adapted to be connected with a source of fluid-pressure supply, and a spring-pressed thumb-piece carried by the body and normally exerting lateral pressure against the compressible tube so as to prevent the passage of air therethrough.



3. In a pneumatic color-applying apparatus, an air-brush comprising a hollow body, a nozzle carried by the body and having a tube adapted to be connected with a source of color-supply, a second nozzle carried by the body and having its discharge arranged adjacent to that of the first-mentioned nozzle, a compressible tube connected to the second-mentioned nozzle and arranged longitudinally in the hollow body and adapted to be connected with a source of fluid-pressure supply, a frame fixed in the body and having parallel uprights at one side thereof, a thumb-slide movable through an aperture in one wall of the body and having an upright opposed to the uprights of the frame, and a spring backing the upright of the thumb-slide and interposed between the same and the back wall of the frame.

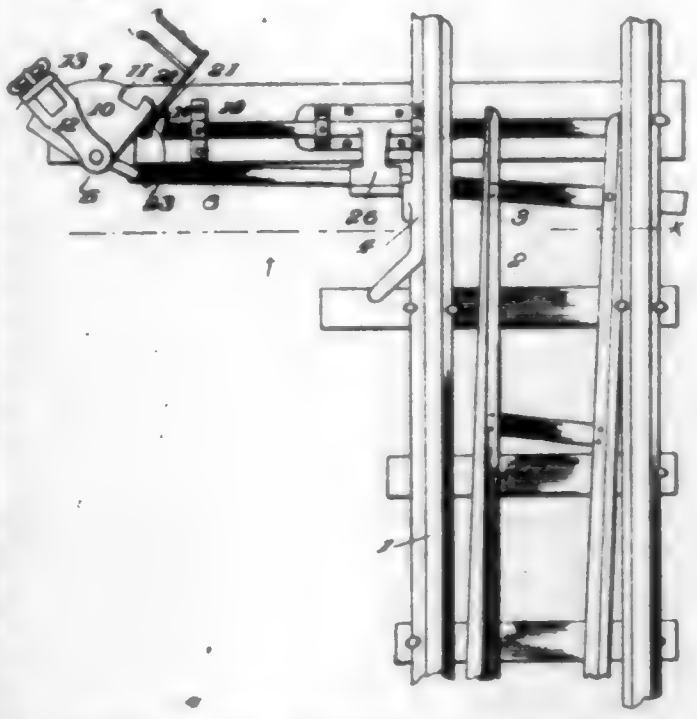
4. In a pneumatic color-applying apparatus, an air-brush comprising a hollow body having a notch in its forward wall and an opening in its bottom, a clamp arranged in the body adjacent to the notched wall thereof, a body of plastic material removably arranged in said clamp, nozzles invested in said body of plastic material; one of said nozzles having a depending portion extending through the opening in the bottom of the body, a compressible tube connected to the other nozzle, and arranged in the body, and a spring-pressed thumb-piece carried by the body and normally exerting lateral pressure against the compressible tube so as to prevent passage of air therethrough.

818,650. **CORN-CUTTING MACHINE.** CHARLES A. YOUNG, Elvira, Iowa. Filed Nov. 30, 1904. Serial No. 234,955.



Claim.—In a machine of the class described, a hopper having feed-boards inclined toward each other and spaced apart, a fluted or corrugated feed-roller supported for rotation adjacent to the lower edge of one feed-board and spaced from the other feed-board to form a slit or aperture sufficiently wide for the passage of ears of corn, a shaft supported for rotation outside the hopper at a distance from the exit-aperture of the latter, spaced cutters upon said shaft having teeth of a length exceeding the width of the exit-aperture said teeth having sloping back edges, approximately radial front or cutting edges, and points that terminate within a short distance of the periphery of the feed-roller and the lower edge of the feed-board spaced from the latter; and means for rotating the feed-roller and the cutter-carrying shaft in opposite directions, the former slowly and the latter more rapidly.

818,651. **SWITCH OPERATING AND LOCKING MECHANISM.** ALFRED ANDERSON, Detroit City, Minn., assignor of one-fourth to Ankel G. Wedge, one-fourth to Halvor Rasmusson, one-fourth to Peter K. Hasterud, all of Detroit City, Minn. Filed July 10, 1905. Serial No. 269,051.



Claim.—1. In switch mechanism, the combination of a switch-point, a switch-bar connected therewith, a switch-stand, operating mechanism on the switch-stand including an operating member for actuating the switch-bar, locking mechanism for the switch-point including a rock-shaft, an arm projecting from the rock-shaft and adapted to engage the switch-bar to lock said switch-point from movement, a lever pivoted to the switch-stand and connected with the rock-shaft for actuation thereof, the operating member of the switch-bar being initially movable to actuate said switch-bar, said operating member being then movable to automatically actuate the lever connected with the rock-shaft, whereby the arm on the rock-shaft will be caused to engage the switch-bar.

2. In switch mechanism, the combination of a switch-bar, an operating member therefor, locking mechanism for the switch-bar, and a lever for actuating the locking mechanism and arranged in the path of movement of the operating member aforesaid to be actuated by the same.

3. In switch mechanism, the combination of a switch-bar, a switch-stand, a shaft mounted on said stand and connected with the switch-bar for actuation thereof, a notched plate carried by said stand, an arm projected from the shaft aforesaid, a handle pivoted to said arm and movable therewith to actuate the switch-bar, the handle being movable independently of the arm to engage a notch in the plate aforesaid, means for locking the handle in engagement with the plate, locking mechanism for the switch-bar including a rock-shaft, a locking-arm projecting from said shaft and adapted to engage the switch-bar, a lever connected with the rock-shaft, and a member projected from the lever to be engaged by the handle aforesaid as the latter is moved independently of the arm to which it is pivoted, whereby said lever is automatically operated on such independent movement of the handle.

4. In switch mechanism, the combination of a switch bar and stand, a horizontally-swinging operating member connected to said switch-bar and mounted on said stand and provided with a vertically-swinging handle designed for locking engagement with the stand

when the handle is moved downwardly, and a supplemental locking device including a rock-shaft and a lever operatively connected thereto, said lever being disposed in the path of the handle whereby the latter in its downward movement will actuate the lever and lock the switch-bar.

5. In switch mechanism, the combination with a switch bar and stand of an operating member mounted on the stand and movable in one direction to actuate the switch member the said member being provided with a pivoted handle portion movable relatively thereto and designed in its movement for locking engagement with the stand, and a supplemental locking device, including a lever and guide-arm thereon, said guide-arm being arranged in the path of the movement of the handle with respect to its supporting member whereby said movement of the handle will actuate the movement of the lever.

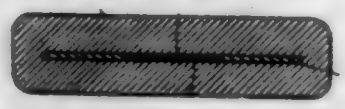
6. In switch mechanism, the combination with a switch-bar and switch-stand, of a horizontally-movable operating arm or member mounted on the stand and designed to actuate the switch-bar, said bar being provided with a downwardly-swinging handle arranged for locking engagement with the stand, and a supplemental locking device, comprising a rock-shaft provided with an arm arranged for connection with the switch-bar to lock the same, and a lever designed to rock said shaft and provided with an arm in the path of the downward movement of the handle, for the purpose specified.

7. In switch mechanism, the combination with a switch-bar and switch-stand, of a horizontally-movable operating arm or member mounted on the stand and designed to actuate the switch-bar, said arm being provided with a downwardly-swinging handle arranged for locking engagement with the stand, and a supplemental locking device, comprising a rock-shaft provided with an arm arranged for connection with the switch-bar to lock the same, and a lever fulcrumed on the stand and arranged to rock said shaft and provided with two spaced-apart guide-arms designed to receive said handle between them whereby the downward movement of the handle for locking engagement with the switch-stand will effect the movement of the lever and a consequent rocking of the shaft into engagement with the switch-bar.

8. In switch mechanism, the combination with the switch bar and stand, the latter being provided with a segmental notched plate, of an operating member connected with the switch-bar and mounted on the stand above said plate, said member being provided with a downwardly-swinging handle designed to enter the notches on the plate to thereby lock the parts from movement, and a supplemental locking device consisting of a projection on the switch-bar, a rocking shaft provided with a locking-arm designed to abut against said projection to hold the switch-bar from movement, and a lever fulcrumed on the stand and connected to said shaft, said lever being provided with an arm projecting in the path of said handle and in juxtaposition to one of the notches in the plate whereby the downward movement of the handle for locking engagement of the plate will move said lever.

9. In switch mechanism, the combination with a switch bar and stand, the latter being provided with a segmental notched plate, of an operating member connected with the switch-bar and mounted on the stand above said plate said member being provided with a downwardly-swinging handle designed to enter the notches to thereby lock the parts from movement, and a supplemental locking device consisting of a projection on the switch-bar, a rocking shaft provided with a locking-arm designed to fit between said projection and the adjacent portion of the track to hold the switch-bar from movement, a lever fulcrumed on the stand and connected to said shaft said lever being provided with an arm projecting in the path of said handle and in juxtaposition to one of the notches in the plate whereby the downward movement of the handle for locking engagement of the plate will move said lever.

818,652. SOAP BAR. THEODORE M. ANDERSON, Bellingham, Wash. Filed Feb. 13, 1906. Serial No. 345,348.



Claim.—1. As a new article of manufacture, a bar of soap containing a sheet of paper or the like, said sheet being perforated adjacent of its edges, substantially as and for the purposes described.

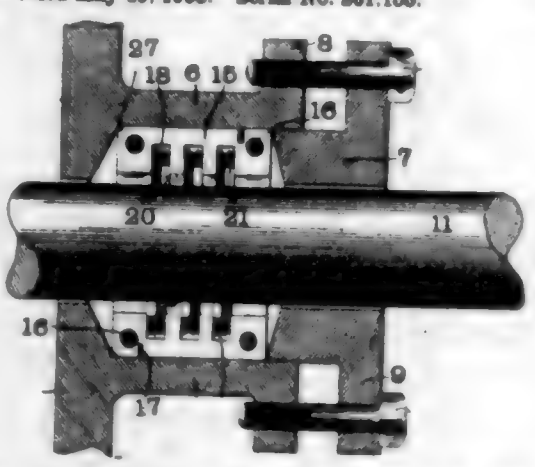
2. As a new article of manufacture, a bar of soap containing a sheet of paper or the like, said sheet being provided with a plurality of rows of perforations, located near the edge of the sheet and parallel therewith.

3. As a new article of manufacture, a bar of soap, containing a sheet of paper or the like, said sheet of paper being formed with an integral pocket, adapted to receive a ticket or coupon.

4. As a new article of manufacture, a bar of soap and a single sheet of paper or the like inclosed in the soap, said sheet of paper being provided with a pocket having an opening on one side of the sheet.

5. The combination with a bar of soap, of an inclosed sheet of paper, a pocket formed on said sheet of paper and a ticket or coupon arranged in said pocket.

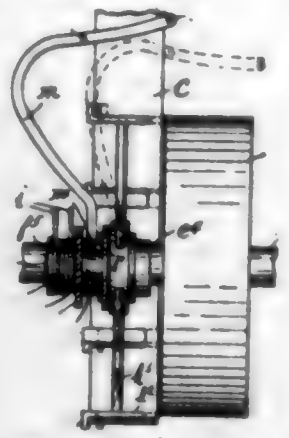
818,653. PISTON-ROD PACKING. EDWARD BADER, St. Louis, Mo. Filed May 19, 1905. Serial No. 261,153.



Claim.—1. In a packing for piston-rods or the like, the combination with a casing formed of two semicylindrical parts, a plurality of grooves formed in both parts of said casing, a spline set into said casing across the line of junction of the two parts to prevent relative longitudinal movement between said parts, and a pair of expansible rings arranged side by side in each groove, each ring being composed of a plurality of separable parts, the junction of one ring facing the solid parts of the adjacent ring.

2. In a packing for piston-rods or the like, the combination with a casing formed of two semicylindrical parts, of a plurality of grooves formed in both parts of said casing, a pair of splines set into said casing across the line of junction of the two parts at opposite sides and opposite ends to prevent relative longitudinal movement between said parts, and a pair of expansible rings arranged side by side in each groove, each ring being composed of a plurality of separable parts, the junction of one ring facing the solid parts of the adjacent ring.

818,654. BELT-SHIFTER. SAMUEL R. BAILEY, Amesbury, Mass. Filed Feb. 6, 1905. Serial No. 244,241.



Claim.—1. In combination with a fast pulley and a belt driven thereby, a belt-holder at one side of said pulley having a belt-supporting portion of less width than the belt, means for holding the belt on the belt-holder with its edge portion rejecting therefrom when out of engagement with the pulley, and means for moving the holder toward the pulley, substantially as described.

2. In combination with a fast pulley and a belt driven thereby, an axially-movable belt-holder at one side of said pulley, and means for holding the belt on the belt-holder with its edge portion projecting therefrom when out of engagement with the pulley, comprising a stop disposed to limit the movement of the belt onto the holder at a position in which its belt-supporting portion is of less width than the belt, substantially as described.

3. In combination with a fast pulley and a belt driven thereby, a belt-holder at one side of said pulley, means for holding the belt on

the belt-holder with its edge portion projecting therefrom when out of engagement with the pulley, comprising a stop disposed to limit the movement of the belt onto the holder at a position in which its belt-supporting portion is of less width than the belt, and means for moving said stop and holder toward the pulley, substantially as described.

4. In combination with a fast pulley and a belt driven thereby, a belt-holder at one side of said pulley, means for holding the belt on the belt-holder with its edge portion projecting therefrom when out of engagement with the pulley, comprising a stop disposed to limit the movement of the belt onto the holder at a position in which its belt-supporting portion is of less width than the belt, and means for moving said stop and holder toward the pulley simultaneously, substantially as described.

5. In combination with a fast pulley and a belt driven thereby, an axially-movable belt-holder at one side of said pulley, and means for holding the belt on the belt-holder with its edge portion projecting therefrom when out of engagement with the pulley, comprising a stop connected to said holder and movable therewith axially, said stop being disposed to limit the movement of the belt onto the holder at a position in which its belt-supporting portion is of less width than the belt, substantially as described.

6. In combination with a fast pulley and a belt driven thereby, a belt-holder at one side of said pulley having a belt-supporting face of less width than the belt, and means for holding the belt thereon with its edge portion projecting therefrom when out of engagement with the pulley, and means for moving the holder toward the pulley, substantially as described.

7. In combination with a fast pulley and a belt driven thereby, a belt-holder at one side of said pulley, having a belt-supporting portion of less width than the belt, means for holding the belt on the belt-holder with its edge portion projecting therefrom when out of engagement with the pulley, a belt-shifting arm adapted to engage the belt and means for moving said holder and arm simultaneously toward and from the pulley, substantially as described.

8. In combination with a fast pulley and a belt driven thereby, a circular belt-holder journaled at one side of said pulley having a flange projecting from its belt-supporting face at a distance from the edge thereof next the pulley less than the width of the belt, and means for holding said holder in a remote position from the pulley with the edge portion of the belt projecting therefrom out of contact with the pulley, and means for moving the holder toward the pulley, substantially as described.

9. In combination with the shaft having a fast pulley thereon, a circular belt-holder journaled at one side of said pulley, comprising a series of arms having a corresponding series of circularly-arranged, independent, belt-supporting faces at their ends, the diameter of the path of movement of said belt-supporting faces being greater than the diameter of the pulley at the portion of its face adjacent said belt-holder, and means for axially moving said belt-holder with relation to said pulley, substantially as described.

10. In combination with a shaft having a fast pulley thereon, a belt adapted to pass about said pulley, a hanger, a belt-holder journaled and axially movable on said hanger at one side of said pulley, a fork engaging said holder, a lever pivotally connected adjacent one end to said hanger and to said fork, respectively, at different points longitudinally thereof, and means at the opposite end of said lever for engaging the belt at its edge, substantially as described.

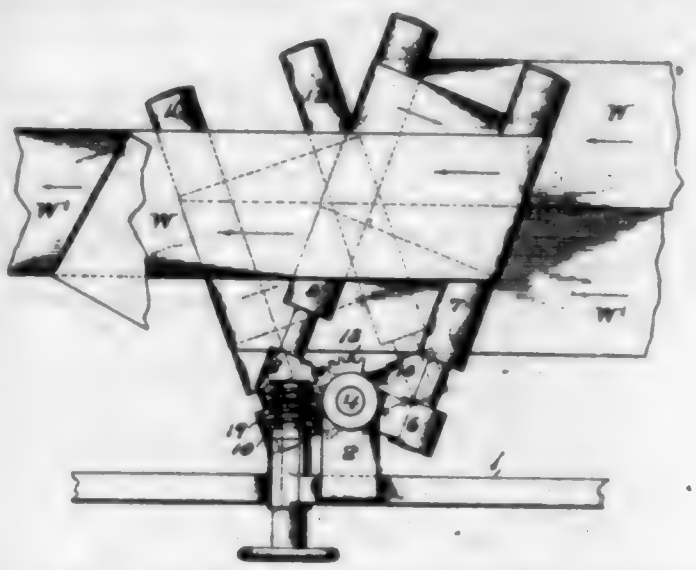
11. In combination with a main shaft having a fast pulley thereon, and a belt adapted to pass about said pulley, a transversely-movable, circular belt-holder journaled at one side of said pulley, a belt-shifting lever having a fixed pivot adjacent one end and means at the other end for engaging the belt, means connecting said belt-holder and said lever adjacent said pivot, whereby movement of said lever to shift the belt causes corresponding movement of the belt-holder, and operating means connected to the belt-engaging end of said lever for moving it in either direction to shift the belt, substantially as described.

818,655. WEB-GUIDE. JOHN C. F. BALER, New York, N. Y., assignor to Robert Hoe, New York, N. Y. Filed May 9, 1903. Serial No. 156,398.

Claim.—1. The combination with a web-guide around which the web may be passed, of means whereby the guide may be given a swinging adjustment to change the widthwise position of the traveling web after said web leaves the guide, substantially as described.

2. The combination with a web-guide comprising a plurality of members about which the web may be passed, of means whereby the guide may be given a swinging adjustment to change the widthwise position of the traveling web after said web leaves the guide, substantially as described.

3. The combination with a web-guide comprising a plurality of members around which the web passes, the surface of the member with which the web first comes in contact lying nearer the path of the incoming web than the corresponding surface of the other member, of means whereby said members may be given a swinging adjustment to change the widthwise position of the traveling web after the web leaves the guide, substantially as described.



4. The combination with a web-guide comprising a plurality of members about which the web may be passed, of means whereby said members may be given a simultaneous swinging adjustment to change the widthwise position of the traveling web after the web leaves the guide, substantially as described.

5. The combination with a web-guide comprising a plurality of members about which the web may be passed, the surface of the member with which the web first comes in contact lying nearer the path of the incoming web than the corresponding surface of the other member, of means whereby said members may be given a simultaneous swinging adjustment to change widthwise position of the traveling web after the web leaves the guide, substantially as described.

6. The combination with a web-guide comprising a plurality of substantially horizontally arranged members around which the web passes, the surface of the member with which the web first comes in contact lying nearer the path of the incoming web than the corresponding surface of the other member, of means whereby said members may be given a swinging adjustment to change the widthwise position of the traveling web after the web leaves the guide, substantially as described.

7. The combination with a web-guide comprising a plurality of substantially horizontally arranged members around which the web may be passed, of means whereby said members may be given a simultaneous swinging adjustment to change the widthwise position of the traveling web after the web leaves the guide, substantially as described.

8. The combination with a web-guide comprising a plurality of substantially horizontally arranged members about which the web may be passed, the surface of the member with which the web first comes in contact lying nearer the path of the incoming web than the corresponding surface of the other member, of means whereby said members may be given a simultaneous swinging adjustment to change the widthwise position of the traveling web after the web leaves the guide, substantially as described.

9. In a web-guide, the combination with a pivotally-mounted support, of a pair of guiding members carried by the support, whereby the guiding members may be given a swinging adjustment, substantially as described.

10. In a web-guide, the combination with a pivotally-mounted support, of a pair of guiding members carried by the support, said members being parallel to each other, of means for giving said support an adjusting swinging movement about its center and for holding it in adjusted position, substantially as described.

11. The combination with a frame, of a support mounted therein, a pair of guiding members carried by the support, and means including a worm-gearing for giving the guiding members a swinging adjustment with respect to the path of travel of a web, whereby said path of travel is changed, substantially as described.

12. The combination with a frame, of a support mounted therein, a guide consisting of a pair of bars carried by the support, the surface of the bar with which the web first comes in contact lying nearer the path of the incoming web than the corresponding surface of the other bar, and means for giving said guide a swinging adjust-

ment to change the widthwise position of the traveling web after it leaves the guide, substantially as described.

13. The combination with a frame, of a support mounted therein, a guide comprising a pair of bars, the surface of the bar with which the web first comes in contact lying nearer the path of travel of the incoming web than the corresponding surface of the other member, each of said bars having one end carried by the support the other end being free, and means for giving the guide a swinging adjustment to change the widthwise position of the traveling web after leaving the guide, substantially as described.

14. The combination with a frame, of a support mounted therein, a guide comprising a pair of substantially horizontally arranged bars, the surface of the bar with which the web first comes in contact lying nearer the path of travel of the incoming web than the corresponding surface of the other member, each of said bars having one end carried by the support the other end being free, and means for giving the guide a swinging adjustment to change the widthwise position of the traveling web after leaving the guide, substantially as described.

15. The combination with a frame, of a support mounted therein, a guide comprising a pair of bars each of said bars having one end carried by the support, the other end being free, and means including worm-gearing for giving the guiding members a swinging adjustment with respect to the path of travel of the web, substantially as described.

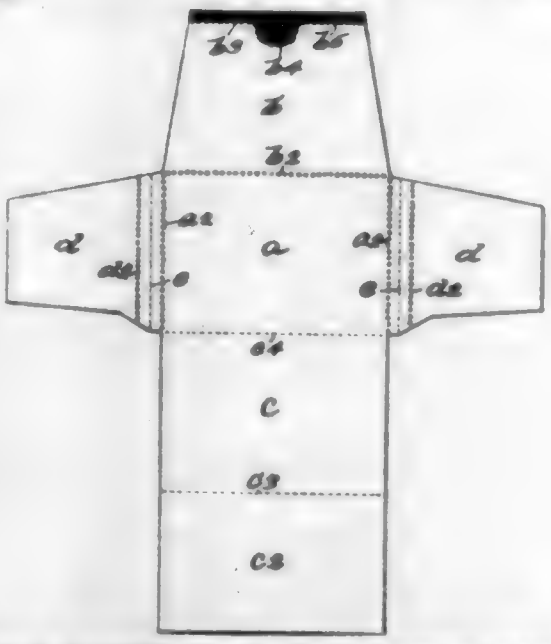
818,656. **PROCESS OF PRODUCING PRINTING-SURFACES.** HENRY BARTH, Cincinnati, Ohio. Filed Jan. 20, 1905. Serial No. 241,223.



Claim.—1. The process of making a printing-surface which consists in etching an image upon a metal plate, inserting the plate as the matrix in a mold and then bringing the molten metal into the mold.

2. The process of making a printing-surface consisting of forming a negative of a picture upon a metal plate, inserting the plate as a matrix in a mold and bringing the molten metal into the mold.

818,657. **COMBINATION ENVELOP AND MESSAGE BLANK.** WILLIAM H. BASSINGER, Passaic, N. J. Filed Oct. 15, 1904. Serial No. 228,582.

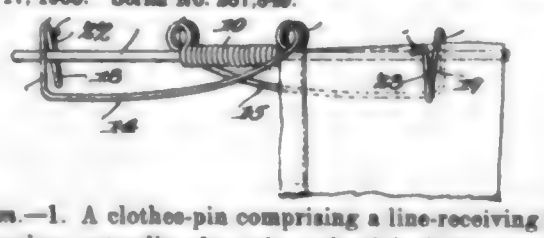


Claim.—1. A combination envelop and message blank, comprising a body portion, a sealing side flap, a folding side member opposite the sealing side flap, and end flaps; the body portion being extended at both ends beyond the folding side member and being separated at said ends from the end flaps by folding lines at each side of which are parallel perforated lines, the end flaps being also narrower than the body portion and the sealing side flap being separated from the body portion by a row of perforations, said sealing side flap being also of a width equal to that of the body portion and the free edge thereof being gummed on its inner side, substantially as shown and described.

2. A combination envelop and message blank, comprising a body portion, a sealing side flap, a folding side member opposite the sealing side flap and end flaps; the body portion being extended at both ends beyond the folding side member and being separated at said ends from the end flaps by folding lines at each side of which are parallel perforated lines, the end flaps being also narrower than the body portion and the sealing side flap being separated from the body portion by a row of perforations, said sealing side flap being also of a width equal to that of the body portion and the free edge thereof being gummed on its inner side, and the gummed portion thereof being also separated from the remainder thereof by a perforated line, substantially as shown and described.

3. A combination envelop and message blank, comprising a body portion, a sealing side flap, folding end flaps, and a folding side member opposite the sealing side flap; all of said flaps being separated from the body portion by perforated lines and at least one of the end flaps being separated from the body portion by two parallel perforated lines, and the body portion being extended at the end where the end flap is separated therefrom by two perforated lines, the end flaps being also narrower than the body portion and the sealing-flap being also of a width equal to that of the body portion and the free edge thereof being gummed on its inner side, substantially as shown and described.

818,658. **CLOTHES-PIN.** CHARLES W. BOMER, Temple, Tex. Filed Nov. 17, 1905. Serial No. 287,849.



Claim.—1. A clothes-pin comprising a line-receiving helix, resilient members extending from the ends of the helix, crossed resilient arms extending from said members and past the helix, means carried by said arms for clamping fabrics upon a line, arms extending from said means, and angularly-disposed finger-pieces projecting from said arms.

2. A clothes-pin comprising a line-receiving helix, resilient members extending from the ends thereof, crossed resilient arms extending from said members and past the helix, V-shaped riders carried by said members for clamping fabrics upon a line, arms extending from the riders, and finger-pieces extending at angles from said arms.

3. A clothes-pin comprising a line-receiving helix, resilient members extending from the ends of the helix, crossed resilient arms extending from said members and past the helix, means carried by said arms for clamping fabrics upon a line, arms extending from said means, and angularly-disposed finger-pieces projecting from said arms and past the ends of the helix.

818,659. **SNAP-SEAL.** EDWARD J. BROOKS, East Orange, N. J. Filed Aug. 31, 1905. Serial No. 276,613.



Claim.—1. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle, a separately-formed snap part attachable to one shackle end and adapted to be inserted therewith into said seal part at the factory to preliminarily unite the parts, and a separately-formed snap part securely attached to the other shackle end and adapted for insertion therewith at the final fastening operation.

2. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, and inwardly-projecting lips at the sides of said inlet-hole, a flexible sheet-metal shackle, a separately-formed snap part attachable to one shackle end and adapted to be

inserted therewith into said seal part at the factory to preliminarily unite the parts, and a separately-formed snap part securely attached to the other shackle end and adapted for insertion therewith at the final fastening operation.

3. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle, having snap-part-attaching means at both ends, a separately-formed snap part loosely attachable to one shackle end and adapted to be inserted therewith into said seal part at the factory to preliminarily unite the parts, and a separately-formed snap part securely attached to the other shackle end and adapted for insertion therewith at the final fastening operation.

4. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle preliminarily attached to said seal part at one end and having its other end provided with a snap-part-attaching hole, and a separately-formed snap part of sheet metal having notches in its lateral edges adapting it to be interlocked with said hole and adapted to be inserted through said inlet-hole together with the shackle end last named at the final fastening operation and to prevent its withdrawal.

5. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle preliminarily attached to said seal part at one end and having its other end provided with a snap-part-attaching hole, and a separately-formed snap part of sheet metal having notches in its lateral edges adapting it to be interlocked with said hole and adapted to be inserted through said inlet-hole together with the shackle end last named at the final fastening operation and to prevent its withdrawal, said shackle and snap part being further constructed with a bendable spur and a hole to interact with said spur for rendering the attachment of said snap part rigid.

6. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle preliminarily attached to said seal part at one end and having its other end provided with a snap-part-attaching hole, and a separately-formed snap part of sheet metal having notches in its lateral edges adapting it to be interlocked with said hole and adapted to be inserted through said inlet-hole together with the shackle end last named at the final fastening operation and to prevent its withdrawal, said snap-part-attaching hole containing a bendable spur integral with the shackle and said snap part having a hole to interact with said spur to render the attachment of said snap part rigid.

7. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle preliminarily attached to said seal part at one end and having its other end provided with a snap-part-attaching hole, and a separately-formed snap part of sheet metal having notches in its lateral edges adapting it to be interlocked with said hole and adapted to be inserted through said inlet-hole together with the shackle end last named at the final fastening operation and to prevent its withdrawal, said snap part being further constructed with a free-ended catch adapted to interlock with tampering-tools.

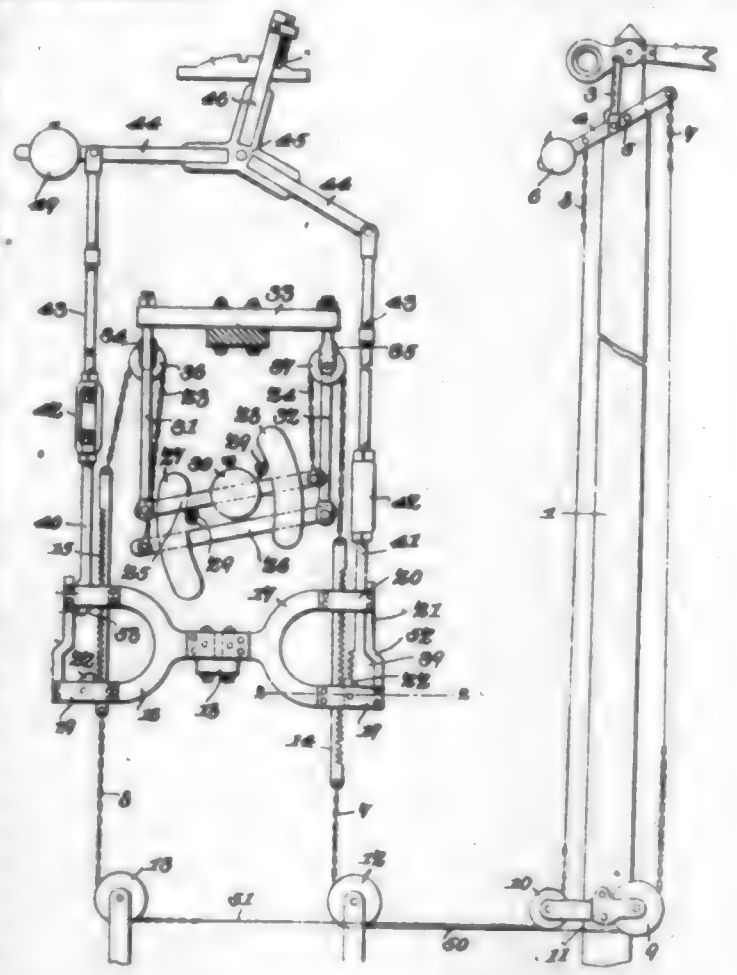
8. A snap-seal having, in combination, a hollow seal part provided with a suitable inlet-hole, a flexible sheet-metal shackle, having rectangular snap-part-attaching holes at both ends and a bendable spur within one of said holes, separately-formed sheet-metal snap parts each having notches in its sides adapting it to be interlocked with one of said holes, and one of them having a hole adapted to interact with said spur to render the attachment secure and rigid, the respective shackle ends being adapted to be successively inserted together with the attached snap parts through said inlet-hole into said seal part and to be secured against withdrawal by said snap parts, substantially as hereinbefore specified.

818,660. RAILWAY-SIGNAL. ADAM BROSIOUS, Catawissa, Pa. Filed Jan. 19, 1906. Serial No. 296,858.

Claim.—1. The combination with a semaphore, of an actuating device therefor embodying a pair of reciprocatory rack-bars, a pair of toothed plates adapted alternately to be thrown into engagement with the rack-bars, and a take-up device operatively connected with the rack-bars.

2. The combination with a semaphore, of a pair of rack-bars operatively connected with the wires thereof, an automatic operating take-up device connected with the rack-bars, a pair of toothed plates adapted alternately and automatically to be thrown into and out of engagement with the rack-bars, and operating-levers operatively connected with the plates.

3. The combination with a semaphore, of a counterweighted lever operatively connected with the bull's-eye end thereof, a pair of rack bars, flexible connections between the lever and the rack-bars, a compensating device connected with the rack-bars, a pair of toothed plates adapted automatically to be thrown into and out of engagement with the rack-bars, a pair of operating-levers connected with the toothed plates, and an adjustable counterweight carried by one of the mechanisms.



818,661. CROWN AND BRIDGE WORK. ARTHUR H. BROWN, Hamilton, Mo. Filed Sept. 18, 1905. Serial No. 278,907.



Claim.—1. A denture embodying a retainer provided in one edge with sockets disposed wholly within it, and a tooth having a shoulder to engage the retainer and close the sockets and headed pins to engage the sockets.

2. A denture embodying a tooth provided with a flat pressure-receiving shoulder disposed approximately at right angles to its length and extending throughout the width of the tooth and with headed anchoring-pins extending parallel with the shoulder, and a retainer to be engaged by the shoulder and provided with sockets to be engaged by the headed ends of the pins.

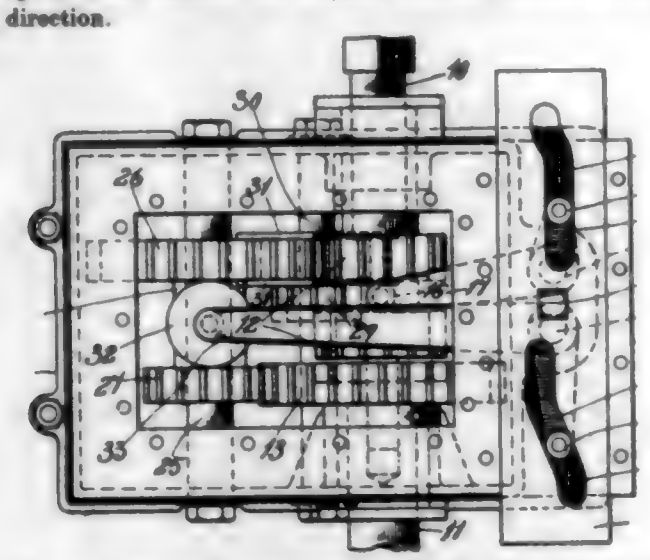
3. A denture comprising a tooth having its lingual surface provided with two flat shoulders arranged in step order, one of which is disposed at right angles to the length of the tooth and the other obliquely thereto, a headed retainer engaging one of the shoulders, and means for assembling the tooth and retainer.

4. A denture comprising a tooth having its lingual surface provided with two flat shoulders arranged in step order, one of which is disposed at right angles to the length of the tooth and the other obliquely thereto, a headed retainer engaging the first-named shoulder, and means for assembling the tooth and the retainer.

818,662. SLIDE-GEAR. HERBERT H. BUFFUM, Abington, Mass., assignor to H. H. Buffum Company, Abington, Mass., a Corporation of Maine. Filed July 3, 1904. Serial No. 215,721.

Claim.—1. In a slide-gear, the combination of alined driving and driven members, gears carried thereby, an axially-shiftable gearing member for connecting the driving and driven gears in a forward-driving relation, and reversing-gearing carried with said axially-shiftable member into and out of train between the driving and driven gears.

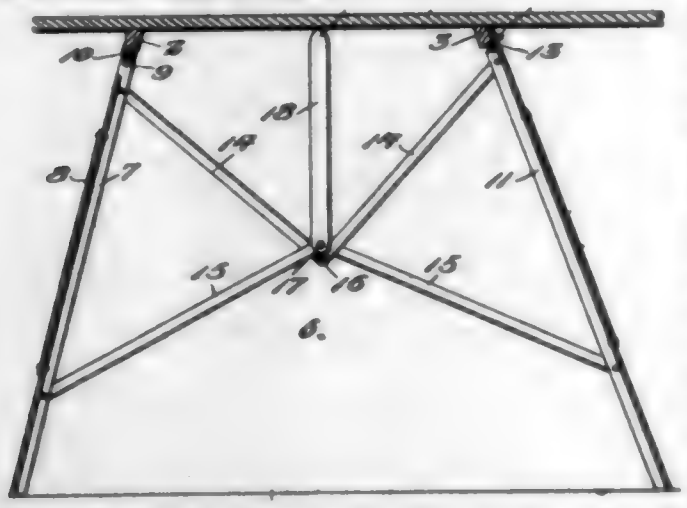
2. In a slide-gear, the combination of alined driving and driven members, gears carried thereby, a counter-shaft, a gearing member axially shiftable on said counter-shaft to connect and disconnect said gears, a second counter-shaft, reversing-gearing mounted thereon in train with said member, and means connecting said reversing-gearing and said member for conjoint shifting movements in the same direction.



3. In a slide-gear, the combination of alined driving and driven gears, a counter-shaft, an intermediate member shiftable on said counter-shaft, and having a gear connecting with the driving-gear in both forward and reverse driving, and a gear connecting with the driven gear in forward driving only, and reversing-gearing connecting with the driven gear and the first said bear of the intermediate member.

4. In a slide-gear, the combination of a gear axially shiftable and formed with a groove intermediate its ends, means occupying said groove for shifting said gear, and a second gear wider than the groove and slidable relative to the first said gear to engage either portion of the latter.

818,663. TABLE. LEWIS C. BULLOCK, Jr., Milesburg, Pa. Filed Feb. 17, 1905. Serial No. 246,131.

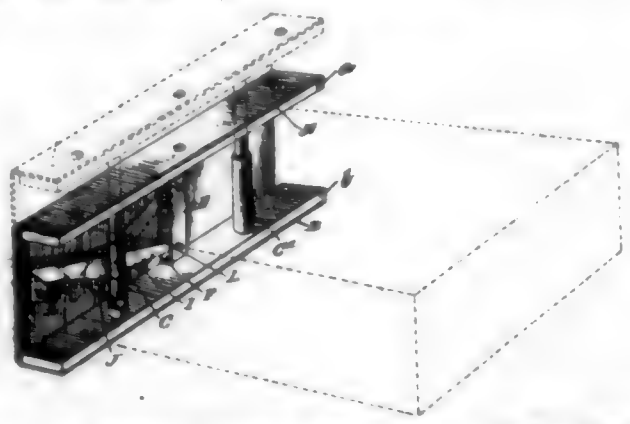


Claim.—In a device of the class described, a table, a collapsible supporting-frame therefor comprising foldable legs and upper and lower pairs of links extended between and pivotally connected with the legs, the pivotal axle of the lower links being disposed above that of the meeting ends of the upper links, a locking member fulcrumed upon the pivotal axle of the meeting ends of the lower links and adapted for engagement with the table to maintain the frame in unfolded condition.

818,664. LOOSE-LEAF BINDER. HENRY B. BURCKHART, Chicago, Ill. Filed Apr. 24, 1905. Serial No. 257,133.

Claim.—1. In a loose-leaf binder, the combination with two complementary vertically-movable sections, of means for locking and unlocking said sections, said means comprising ratchet connections mounted upon said sections, a lever operatively mounted upon one of said sections and having an operative slidable engagement with said ratchet connections, and a spring located between said lever and the back of one of said vertically-movable sections so as to normally hold said ratchet connections in engagement with each other.

2. In a loose-leaf binder, the combination with two complementary vertically-movable sections, of means for locking and unlocking said sections, said means comprising complementary ratchet connections mounted upon said sections respectively, a lever pivotally mounted upon one of said sections and slidably connected with the ratchet connection upon the other of said sections, and a spring located between the outer arm of said lever and the back of the section upon which said lever is pivotally mounted.



3. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a carrier-box secured to one of said sections, a lever adapted to engage said carrier-box, a ratchet within said box slidably mounted upon said lever, and a ratchet secured to the other section and arranged to engage said first-named ratchet.

4. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a slotted carrier-box secured to one of said sections, a lever adapted to engage said carrier-box, an engaging ratchet within said box slidably mounted upon said lever, and a rack secured to the other section and adapted to operate within the slot in said box to engage said ratchet.

5. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, coengaging ratchet connections secured to the sections, and a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer end of said lever terminating in a downwardly and laterally projecting flange.

6. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring carried by said lever.

7. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring carried by said lever and under greatest tension when said sections are in closed position.

8. In a loose-leaf binder, the combination with two right-angled complementary sections adapted to move vertically, of binder-posts, ratchet connections secured to the sections, a lever adapted to engage said ratchet connections through the medium of a slotted bearing on the inner arm of said lever, the outer arm of said lever terminating in a downwardly and laterally projecting flange, and a spring seated on the inner side of said lever and adapted to hold the above-mentioned ratchet connections in engagement.

9. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means.

10. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means comprising a threaded cylinder and a screw-bolt adapted to engage therewith.

11. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means, comprising a threaded cylinder

and a screw-bolt having an angular head adapted to engage therewith.

12. In a loose-leaf binder, the combination with two complementary sections arranged to move vertically, of binder-posts, means for controlling the movement of said sections, said means comprising a ratchet connection and a lever, and means carried by said lever for locking said controlling means, comprising a threaded cylinder and a screw-bolt having an angular head and adapted to be brought into contact with the back of one of said sections.

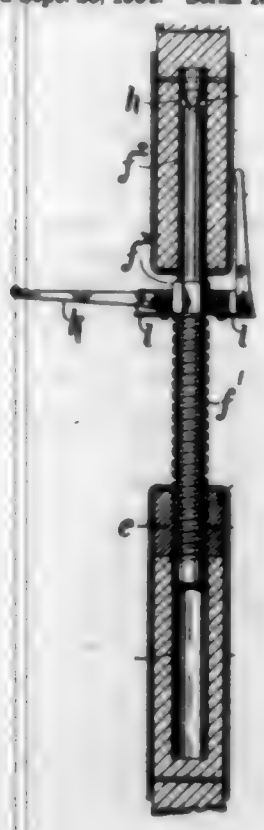
13. In a binder, the combination with two complementary sections movable vertically, of a slotted carrier-box attached to the upper member and carrying an engaging ratchet adapted to engage a rack secured to the lower member, a lever pivotally secured to the lower member, one arm of said lever entering said carrier-box and engaging said engaging ratchet, the other arm of said lever being provided with a downwardly and laterally projecting flange, a spring arranged to engage said lever so as to be under greatest tension when the binder is closed, a plate-spring interposed between said lever and the back of said bottom section, and a locking mechanism mounted upon said lever.

14. The combination with two clamping members, of coengaging guiding means upon said members, a ratchet carried by one of said members, a lever arranged to rock vertically and laterally upon the other of said members, a pawl operatively connected with one arm of said lever, and a spring engaging said lever so as to normally hold said pawl in engagement with said ratchet.

15. The combination with two clamping members, of coengaging guiding means upon said members, complementary ratchets carried by said members, and a lever having one arm in operative engagement with one of said ratchets, said lever being pivotally mounted upon the clamping member carrying the other of said ratchets, constructed and arranged so that the depression of the other arm of said lever will move the lever-arm in engagement with said ratchet laterally so as to disengage said ratchets from each other and vertically so as to move said clamping members out of clamping position, and a spring engaging said lever so as to normally hold said ratchets in engagement with each other..

16. A loose-leaf binder comprising two vertically-movable complementary sections, means for locking and unlocking said sections, said means comprising complementary coengaging ratchet connections mounted upon said sections respectively, and a lever operatively mounted upon one of said sections and having its inner arm in operative engagement with the ratchet connection upon the other of said sections, a spring arranged to normally hold said ratchet connections in engagement with each other, and a laterally and downwardly projecting flange upon the outer end of said lever, all constructed and arranged so that a downward pressure upon said flange will throw said ratchet connections out of engagement and will carry said complementary sections apart from each other.

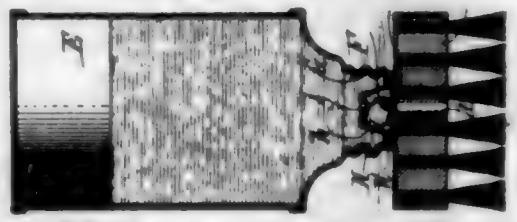
818,665. **ADJUSTABLE TENT-POLE.** ALFRED BURTON, Pretoria, Transvaal. Filed Sept. 20, 1904. Serial No. 225,184.



Claim.—1. A tent-pole comprising two members or sections each having a socket at its end, one of said sockets having a screw-threaded portion, a spindle having screw-threads at one end and adapted to coöperate with the screw-threaded socket, the other end of the spindle being plain and being adapted to be inserted in the other socket, a bearing at the base of said socket coöperating with the end of the spindle, said spindle having at least one arm for rotating the spindle to increase or decrease the effective length of the pole as required.

2. A tent-pole comprising two members or sections, each having a socket in its end, one of said sockets having a screw-threaded portion, a spindle having screw-threads at one end adapted to coöperate with the screw-threaded socket, the other end of the spindle being plain and being adapted to be inserted in the other socket, a conical bearing at the base of said socket, coöperating with the end of the spindle, said spindle having an angular portion and means adapted to coöperate with said angular portion for rotating the spindle to increase or decrease the effective lengths of the pole as required.

818,666. **FOUNTAIN-BRUSH.** JAMES CADDELL and ALEXANDER SUTHERLAND, Buffalo, N. Y. Filed June 3, 1905. Serial No. 263,531.



Claim.—1. A fountain-brush provided with a valve-chamber having an inlet and an outlet, and a single movable stopper operating to close either said inlet or said outlet, substantially as set forth.

2. A fountain-brush provided with a valve-chamber having an inlet and an outlet at opposite ends, and a ball-valve arranged in said chamber and adapted to close either said inlet or said outlet, substantially as set forth.

3. A fountain-brush comprising a stock having a delivery-conduit, a socket for receiving the neck of a fountain secured to said stock and having an outlet-opening which communicates with said delivery-conduit, a thimble bearing at one end against said socket and having an inlet-opening at its opposite end, said thimble and socket forming a valve-chamber, and a valve arranged in said chamber and adapted to close either of said openings, substantially as set forth.

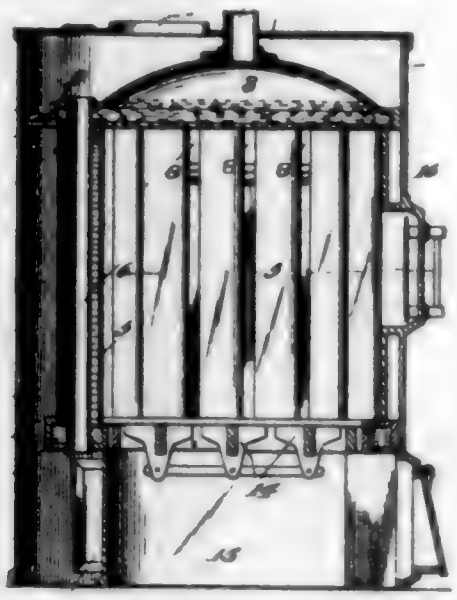
4. The combination of a brush provided in its stock with a liquid-delivery conduit, a screw-socket secured to said stock and having an outlet-opening communicating with said conduit, a thimble having an external flange fitting the bore of said socket and provided with an inlet-opening, said thimble and socket together forming a valve-chamber, a ball-valve arranged in said chamber and adapted to close either said inlet or said outlet opening, and a liquid-supply having a threaded neck which screws into said socket and bears against said flange of the thimble, substantially as set forth.

5. The combination of a brush provided in its stock with a liquid-delivery conduit, a screw-socket secured to said stock and having an outlet-opening communicating with said conduit, a thimble having an external flange at one end which rests on the bottom of said socket and tapering toward its opposite end and is provided at the last-mentioned end with an inlet-opening, said thimble and socket together forming a valve-chamber, a liquid-supply can or fountain having a threaded neck which screws into said socket and an internal flange in its neck which engages with the flange and the base of said thimble, and a ball-valve arranged in said chamber and adapted to close said inlet-opening or said outlet-opening, substantially as set forth.

818,667. **HOT-WATER HEATER.** CARL M. CLAUSEN, Elkhart, Ind. Filed June 22, 1905. Serial No. 266,449.

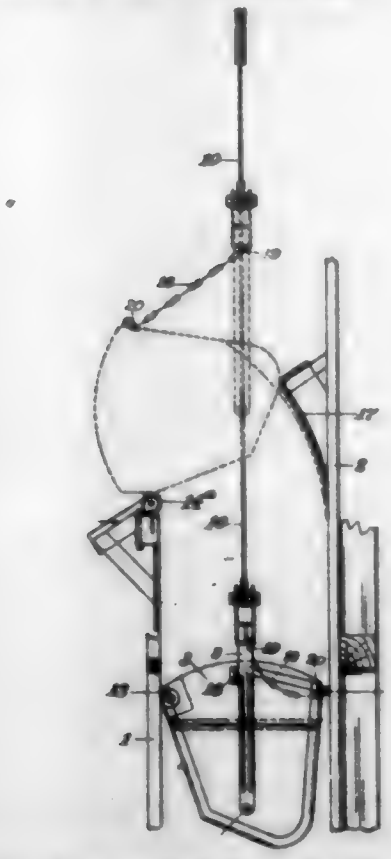
Claim.—1. A device of the character described comprising an outer casing, two water-compartments therein, a circular series of tubes connecting said compartments and arranged to form walls of the combustion-chamber, and having passages between them at their upper ends leading from the combustion-chamber into the outer chamber between the outer casing and said tubes, flues situated within the tubes, a partition connecting said tubes with the outer casing at the upper ends of the former and provided with direct-draft openings and a plate slidably mounted upon said partition and provided with corresponding openings designed to register with the openings in the partition, as and for the purpose set forth.

2. A device of the character described comprising an outer casing, two water-compartments therein, a circular series of tubes connecting said compartments and so arranged as to form the walls of a central combustion-chamber, said tubes having spaces between them at their upper ends constituting passages leading from the combustion-chamber into the outer chamber formed between said series of tubes and the outer casing, flues within said tubes, a circular partition 9 connecting the upper ends of said tubes with the outer casing and said partition being provided with a plurality of openings, and a horizontally-slidable plate 11 mounted on said partition and provided with openings designed to register with the openings in the partition, as and for the purpose set forth.



3. A device of the character described comprising an outer casing, upper and lower water-compartments therein, a circular series of tubes connecting said compartments and provided at their upper ends with passages leading from the interior of the series into the outer chamber formed between said series and the outer casing, flues within said tubes, the outer casing being provided with openings and closures therefor in vertical alinement with the upper end of said flues, a partition connecting the upper ends of said tubes with the adjacent portion of the outer casing, and said partition provided with a plurality of openings, and a horizontally-slidable plate mounted on said partition and provided with openings designed to register with the openings in the partition, as and for the purpose set forth.

818,668. **DUMPING-BUCKET.** CHARLES J. CLOSE, Columbus, Ohio. Filed Jan. 3, 1906. Serial No. 294,362.



Claim.—1. A bucket-dumping device comprising a bucket, a bail pivotally secured to its sides near the bottom thereof, a shaft, vertical guideways for said bucket disposed therein, means for hoisting said bucket in said shaft, the latter having a dumping-opening in the face thereof, means not connected with said guideways on the back side of said shaft opposite the dumping-opening and projecting into said shaft into the path of the bucket, whereby said bucket is caused to assume a dumping position.

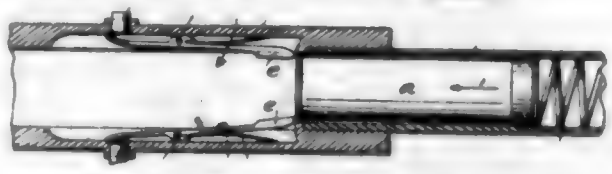
2. A bucket-dumping device comprising a bucket, a bail pivotally secured to its sides near the bottom thereof, a shaft, vertical guideways for said bucket disposed therein, means for hoisting said bucket in said shaft, the latter having a dumping-opening in the face thereof, means not connected with said guideways on the back side of said shaft opposite said dumping-opening and projecting into said shaft into the path of said bucket to overthrow the same outwardly, and flexible means to limit its dumping movement.

3. A bucket-dumping device comprising a bucket, a bail pivotally secured to its sides near the bottom thereof, a shaft, vertical guideways for said bucket disposed therein, means for hoisting said bucket therein, said shaft having a dumping-opening therein, a deflector not connected with said guideways substantially opposite said opening secured to said shaft and projecting into said shaft into the path of said bucket, whereby said bucket is gradually caused to assume a dumping position in said opening, and flexible means passing from said bail to said bucket and connecting the same, and adapted to limit the dumping movement.

4. A bucket-dumping device comprising a bucket, a bail pivotally secured thereto near the lower end thereof, a shaft having a dumping-opening therein, vertical guideways for said bucket disposed in said shaft, means for hoisting said bucket therein, a deflector mounted upon the wall of said shaft substantially opposite said opening, said deflector being curved outwardly into the path of said bucket and adapted to contact with the rear side thereof, to cause said bucket to assume a dumping position in said opening, a flexible connection between said bail and said bucket arranged to control the dumping movement of said bucket.

5. In an elevator-shaft, having a dumping-opening therein vertical guideways, a deflector not connected with said guideways and mounted on the wall of said shaft substantially opposite said opening, said deflector being curved outwardly into the path of a bucket rising in said shaft, and compelling the bucket forwardly to a dumping position by contacting with the rear face of said bucket.

818,669. **MAGAZINE-FIREARM.** HALE W. DE JARNATT, Centralia, Mo. Filed Mar. 27, 1906. Serial No. 308,331.



Claim.—1. The combination, with the magazine of a firearm and means operating therein with a tendency of ejecting the shells therefrom, of operative means consisting of centrally-pivoted shell-stops with their forward ends acting against the rear ends of the shells for holding the shells against being ejected, and means, consisting of loosely-supported buttons in the sides of the gun, arranged to act on the rear ends of the shell-stops to release the shells and allow the same to be ejected.

2. The combination, with the magazine of a firearm and means operating therein with a tendency of ejecting the shells therefrom, of operative means consisting of centrally-pivoted shell-stops with their forward ends acting against the rear ends of the shells for holding the shells against being ejected, and means, consisting of loosely-supported buttons in the sides of the gun, arranged to act on the rear end of the shell-stops to release the shells and allow the same to be ejected and projecting rims surrounding the outer portion of said buttons whereby the bearing for the buttons is lengthened.

818,670. **UNION CHECK-VALVE.** PERRY DUNBOLTON, Traverse City, Mich. Filed Jan. 15, 1904. Serial No. 189,180.

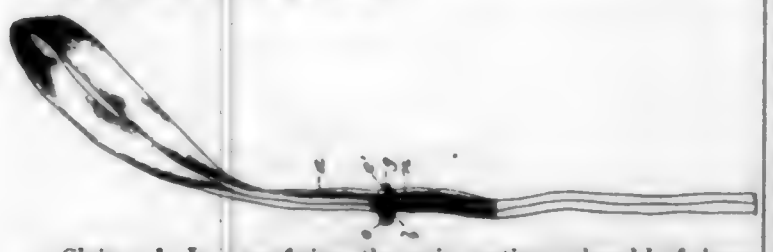
Claim.—1. The combination with a union, the members of which are provided at their adjacent ends with oppositely-disposed annular grooves, of a detachable valve-seat having a flange and provided at opposite faces with annular ribs fitting in the grooves and interlocked with the said members, said valve-seat being also provided with a hook arranged interiorly of the union in position to be closed by one of the members thereof when the parts are assembled, and a valve provided with means for engaging the hook, where-

by it is detachably hinged to the valve-seat and may be removed only when the members of the union are separated, substantially as described.



2. The combination of a union, the members of which are provided with oppositely-disposed tapering grooves, a detachable valve-seat provided on its opposite faces with tapered annular ribs fitting in the grooves and forming a gasket and interlocking the valve-seat to and between the members, and a valve coöperating with the valve-seat, substantially as described.

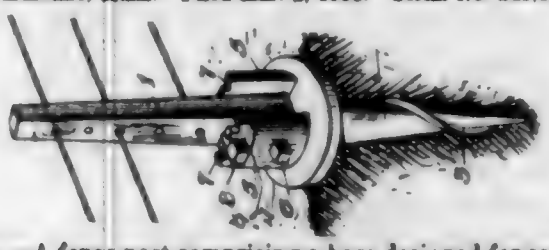
818,671. SCARF-RING. THOMAS F. DUNN, Providence, R. I. Filed Jan. 16, 1906. Serial No. 296,254.



Claim.—1. In a scarf-ring, the main portion or band *b* of shape to extend in front of and around the sides of the scarf and open at the back without inclosing the scarf; a swinging bar or wire pivotally connected at one end with one end of said main portion or band and adapted to engage at its other end with the opposite end of the main portion or band; and a pin rigid with said bar or wire and extending downward and inward toward the rear side of the scarf when the scarf is in position, whereby the bar or wire may be swung outward for the admission of the scarf into the ring and inward to inclose the scarf with the pin in engagement therewith.

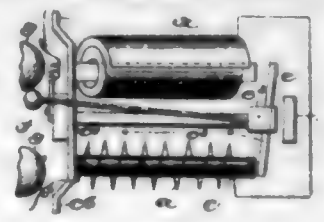
2. In a scarf-ring, the main portion or band *b* of shape to extend in front of and around the sides of the scarf and open at the back without inclosing the scarf; a socket secured to one end of said main portion or band; a swinging bar comprising the portion *g* adapted to extend across from one end of the main portion or band to the other end, the portion *k* parallel and integral with said portion *g* and formed outward at *g'* into a loop, and the pin *s* integral with said portions *k* and *g* and extending downward and inward toward the rear side of the scarf when the scarf-ring is in position; and a pivotal connection between said socket and loop whereby the bar or wire may be swung outward for the admission of the scarf into the ring.

818,672. FENCE-POST. THEODORE BOK and AUGUSTUS G. TRAUTWEIN, Muivane, Kans. Filed Mar. 2, 1905. Serial No. 248,135.



Claim.—A fence-post comprising a base designed for secure location in the earth or the like, and provided with two spaced-apart upwardly-extending wings 5 formed with notches 7 in their upper edges and with horizontal ledges 9 in a plane below said notches and outside of the frame, a body 1 pivotally mounted between said wings and an adjusting-pin 8 designed to be received in any of said notches and arranged for attachment to said body to hold the latter in different positions with relation to the wings, the said pin having a polygonal head resting upon one of the ledges and flush with the outer face thereof, as and for the purpose set forth.

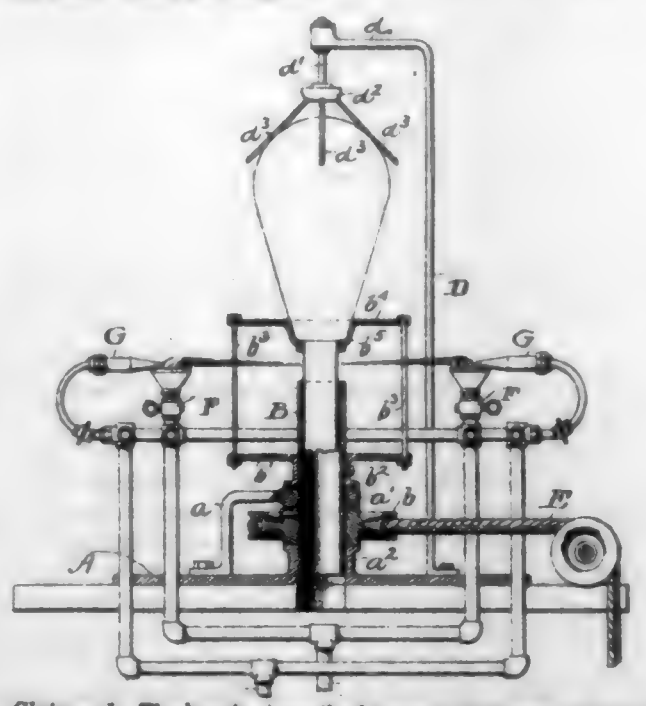
818,673. SIGNAL-BELL FOR TELEPHONE SYSTEMS. CHAS. E. BEAN, Columbus, Ohio, assignor to The Egan Electric and Telephone Manufacturing Company, Petersburg, Ill., a Corporation of Illinois. Filed Feb. 27, 1903. Renewed Sept. 21, 1905. Serial No. 279,506.



Claim.—1. In a signaling apparatus for telephone instruments, a combined ringer and condenser comprising a frame, a yoke of magnetic material, a pair of elongated cores extending from the said yoke parallel to each other, an insulated wire winding or bobbin upon one core, in approximately cylindrical shape, insulated conducting-sheets rolled and compressed upon the other core to form a condenser also approximately cylindrical in shape and of substantially the same diameter as the said bobbin, a pivoted armature mechanically held in proximity to the free ends of the parallel cores and disconnected for any operative electrical function from the other parts, a clapper-rod and clapper adapted to be actuated through said armature, sounding means adjacent to said clapper, and circuit connections permanently including said coil or bobbin and said condenser in series so that all current through the coil or bobbin must pass into said condenser, substantially as described.

2. In telephone apparatus, a combined ringer and condenser, a combined ringer and condenser comprising a frame, a yoke of magnetic material, a pair of elongated cores extending from the said yoke parallel to each other, an insulated wire coil or bobbin upon one core, in approximately cylindrical shape, insulated conducting-sheets rolled and compressed upon the other core to form a condenser also approximately cylindrical in shape and of substantially the same diameter as the said bobbin, a pivoted armature mechanically held in proximity to the free ends of the parallel cores and disconnected for any operative electrical function from the other parts, a clapper-rod and clapper adapted to be actuated through said armature, sounding means adjacent to said clapper, a line-circuit, a telephone receiver and transmitter connected to said circuit, and connections from the circuit to the combined ringer and condenser including the said coil or bobbin and the said condenser permanently in series with each other so that all current through the coil or bobbin must pass into said condenser, together with means for supplying periodic current to said circuit for signaling, and continuous current for the telephone-transmitter, substantially as described.

818,674. PROCESS OF BLOWING OFF THE NECKS OF LAMP-BULBS. ELIAS L. ELLIOTT, Cleveland, Ohio, assignor to The Brilliant Electric Company, Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 12, 1904. Serial No. 224,084.



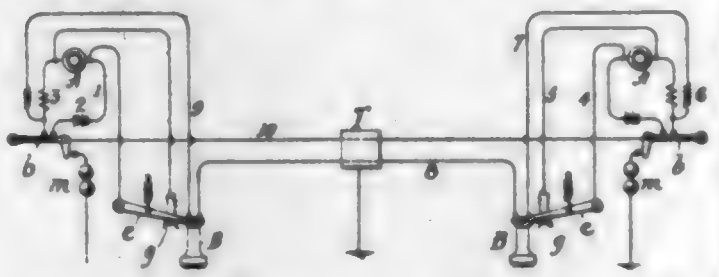
Claim.—1. The herein-described process of blowing off the neck portion of lamp-bulbs, which consists in first melting off the waste portion and softening the edge of the remaining portion thereof, and rapidly rotating the bulb to spread or flare out such softened edge.

2. The herein-described process of blowing off the neck portion of lamp-bulbs, which consists in first revolving such bulbs in suitable flames to melt off the waste portion of the tube therefrom and thereby softening the edge of the remaining portion, and then continuing to rotate said bulb in a manner such that the softened edge will be spread or flared out by centrifugal force.

3. The herein-described process of blowing off the neck portion of lamp-bulbs, which consists in first melting off the waste portion thereof by revolving it in suitable flames and softening the edge of the remaining portion, and continuing the rotation to spread or flare out such softened edge.

4. The herein-described process of blowing off the neck portion of lamp-bulbs which consists in rotating the bulb with its neck portion in suitable gas flames whereby the waste portion is permitted to blow off by gravity and the lower edge of the bulb is left soft, and in continuing to rotate said bulb whereby the soft glass is spread or flared out.

818,675. **TELEPHONE-SIGNAL.** ANDREAS VELTEN (called WILHELM) R. PROTTENSBURG, New York, N. Y. Filed Dec. 8, 1904. Serial No. 235,963.



Claim.—1. In a telephone system, the combination of a central office and a plurality of subscribers' stations connected therewith with means whereby interconnected subscribers can send call-signals to each other while the central office cannot call either of the connected subscribers.

2. In a telephone system, the combination of a central office and a plurality of subscribers' stations connected therewith, and each embracing a call-signal, with means for disconnecting the call-signals of interconnected substations, a second call-signal for each substation adapted to be thrown into circuit when the first call-signal is disconnected and means at each substation for operating the second call-signal.

3. In a telephone system, substations each provided with a call adapted to be actuated from the central office and with a second call adapted to be actuated from another substation.

4. In a telephone system, substations each provided with a call adapted to be actuated from the central office and with a second call adapted to be actuated from another substation, the second call being operative only when the first is inoperative.

5. The combination of two telephone substations each provided with a switch controlling the main circuit between the stations, means for transmitting calling-signals over said main circuit from one substation to another and signal devices at each station operative upon said calling-signals only when the telephone-receiver is connected for conversation.

6. In a telephone system, substations provided with means for sending a call-signal while the respective transmitters and receivers of the substations are connected for conversation.

7. In a telephone system, substations provided with means for sending and means for receiving a call-signal while the respective transmitters and receivers of the substations are connected for conversation.

8. In a telephone system, a plurality of substations each provided with means for sending a series of high-potential electric impulses over the line while the transmitter and receiver are connected for conversation.

9. In a telephone system, a plurality of substations each provided with means for sending a series of high-potential electric impulses over the line while the transmitter and receiver are connected for conversation, and call-signals at each station responsive to such signals when the transmitter and receiver are connected for conversation.

10. In a telephone system, substations provided with a hook-switch and two call-signals, said switch adapted, when sustaining an instrument, to connect one of the signals in circuit, and when not sustaining an instrument, to connect the other signal in circuit.

11. In a telephone system, substations provided with two hook-switches and two call-signals, one hook-switch, when actuated by the weight of an instrument, being adapted to send a signal-current over line, while the other hook-switch, when sustaining an instrument, holds one signal in condition to respond to calling-current.

12. In a telephone system, substations each provided with a call, a central office and means to actuate said calls and means to connect substations, and a call in each substation and means to actuate a similar call in a connected substation.

13. In a telephone system, a number of substations each provided with two hook-switches and two signal-calls, means controlled by one hook-switch for sending a signal over the line when actuated by the weight of an instrument, and means actuated by the other hook-switch for controlling one of the signal-calls and when actuated by the weight of an instrument, holding the said signal-call in an operative condition.

14. In a telephone system, the combination of a central office and a plurality of substations and wires for connecting the same therewith, means at the central office for connecting the wires of two selected substations, means at the substations for producing an electrical condition upon the connected wire indicative to the central office that the substations are in use, and means for sending signals between the substations during the continuance of the said electrical condition.

818,676. **GAME-COUNTER.** OTIS W. FIELD, Chicago, Ill. Filed June 12, 1905. Serial No. 264,911.



Claim.—1. A game-counter comprising a casing, and counting members normally occupying alined position therein and adapted to be moved therefrom to indicate a score, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the casing when in said position.

2. A game-counter comprising a casing, counting members normally occupying alined position therein and adapted to be moved therefrom to indicate a score, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the casing when in said position, and means for simultaneously restoring any number of said members to normal position after being moved therefrom.

3. A game-counter comprising a casing, counting members normally occupying alined position therein and adapted to be moved therefrom to indicate a score, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the casing when in said position, and means for simultaneously restoring any number of said members to normal position after being moved therefrom, embodying a slidable plate having projections for engaging with portions of the members.

4. A game-counter, comprising counting members normally occupying alined position with reference to each other, each being

held in such position by friction and adapted to be moved therefrom to indicate a score, and means for simultaneously restoring any number of said members to normal position after being moved therefrom, embodying a guided spring-retracted slidable plate having projections for engaging with portions of the members, and formed at an end thereof with an opening adapted to receive the end of a billiard-cue for actuating the plate.

5. A game-counter, comprising a casing, counting members normally occupying alined position therein, each being held in such position by friction and adapted to be moved therefrom to indicate a score, and means for simultaneously restoring any number of said members to normal position after being moved therefrom, embodying a spring-retracted plate having projections for engaging with portions of the members, and provided with an opening for receiving a hand-actuating device therefor.

6. A game-counter comprising a casing, counting members normally occupying alined position therein and adapted to be moved therefrom to indicate a score, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the casing when in said position, and means for simultaneously restoring any number of the members to normal position after being moved therefrom, embodying a spring-retracted slidable plate having projections for engaging with portions of the members.

7. A game-counter comprising a casing, counting members normally occupying alined position therein and adapted to be moved therefrom to indicate a score, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the casing when in said position, and means for simultaneously restoring any number of the members to normal position after being moved therefrom.

8. A game-counter, comprising a casing constructed of parallel members spaced apart, and counting members normally occupying alined position within the casing, each adapted to be moved from such position to indicate a score, and each also being constructed of duplicate parts separated from each other by a space and having lateral shoes for frictionally engaging with adjacent portions of the inner surfaces of said parallel members when the counting member is in normal position.

9. A game-counter, comprising a casing constructed of parallel members spaced apart, a series of consecutively-numbered counting members normally occupying alined position therein, each being resilient laterally to press against corresponding portions of the inner faces of said parallel members, and each adapted to be moved from such position to indicate a score, and means for simultaneously restoring any number of said counting members to normal position after being moved therefrom.

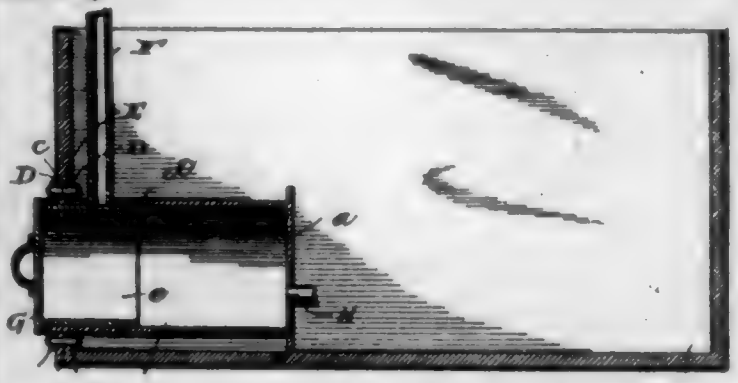
10. A game-counter, comprising a casing constructed of parallel members spaced apart, a series of consecutively-numbered counting members normally occupying alined position therein, each being constructed of duplicate parts spaced from each other and connected together by rods, and each being adapted to be moved from such position to indicate a score, and means for restoring any number of said counting members to normal position, after being moved therefrom, embodying a spring-retracted plate having projections each having a straight edge and an inclined edge.

11. A game-counter comprising a casing having a channel, and counting members movable into and out of the channel and provided with stems having curved enlargements extending outside the channel, each of said members being constructed of integrally-connected parts separated by a space and adapted to press against portions of the sides of the channel when the member is moved into the latter.

12. A game-counter comprising a casing having a channel, and counting members movable into and out of the channel and provided with stems having curved enlargements extending outside the channel, each member being constructed of integrally-connected parts separated by a space and having lateral feet adapted to press against portions of the sides of the channel when the member is moved into the channel.

818,677. **SUBMERGED HEATER.** DAVID M. FLORY and JOHN H. BARNHART, Logansport, Ind. Filed July 31, 1905. Serial No. 272,018.

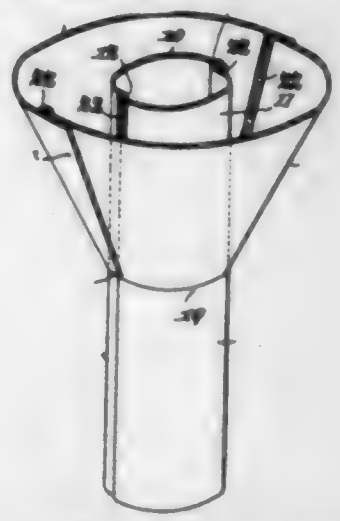
Claim.—1. In a submerged heater, the combination of a tank having an opening in its front wall, a heater-body arranged in the tank and having its forward end open and registered with the opening in the front wall of the body and also having a flange surrounding the said opening, an annulus surrounding the opening in the front wall of the body and disposed at the outer side of said wall, packing interposed between the body-flange and annulus and the front wall of the body, bolts connecting the annulus, wall and flange, a smoke-pipe extending upwardly from the forward portion of the body, a plug-like flanged door having an opening in its flange registered with the smoke-pipe, and an air-supply pipe connected to and extending from the front wall of the tank and alongside the heater-body and communicating with the lower portion of the rear end of said body.



2. In a submerged heater, the combination of a tank having an opening in its front wall, a heater-body arranged in the tank and having its forward end open and registered with the opening in the front wall of the body and also having a flange surrounding the said opening, an annulus surrounding the opening in the front wall of the body and disposed at the outer side of said wall, packing interposed between the body-flange and annulus and the front wall of the body, bolts connecting the annulus, wall and flange, a smoke-pipe extending upwardly from the forward portion of the body, a door for normally closing the forward end of the heater-body, and a pipe communicating with the atmosphere and the interior of the heater-body so as to supply air to the latter.

3. In a submerged heater, the combination of a tank having an opening in its forward wall, a heater-body arranged in said tank and having its forward end open and registered with the opening in the tank-wall, a door for normally closing the said opening, a smoke-pipe extending upwardly from the forward portion of the heater-body, and an air-supply pipe extending from a point outside of the tank to the rear portion of the heater-body.

818,678. **TREE-PROTECTOR.** ADAM C. GARRISON, Joplin, Mo. Filed Jan. 11, 1906. Serial No. 295,632.



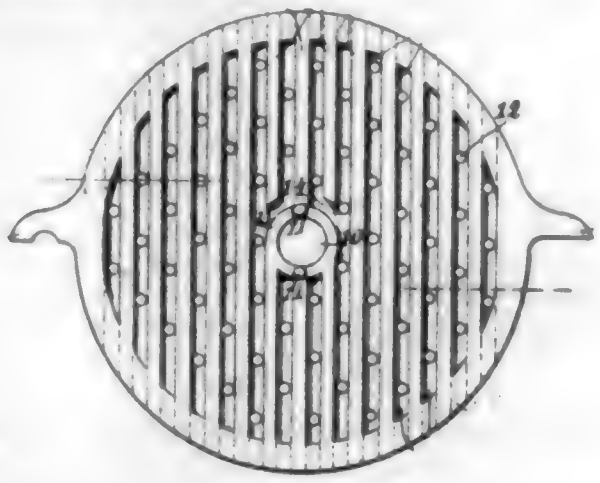
Claim.—1. A tree-protector comprising two semitubular sections having interfolding edges, each of said sections having a semiconical member connected thereto with the edges of said members overlapping when the semitubular sections are united.

2. A tree-protector comprising two semitubular sections having interfolding edges, each of said sections having a semiconical membe connected thereto with the edges of said members overlapping when the semitubular sections are united, and a plastic element applied to overlapping portions of the semiconical members and also to the interlapping joints of the semitubular sections.

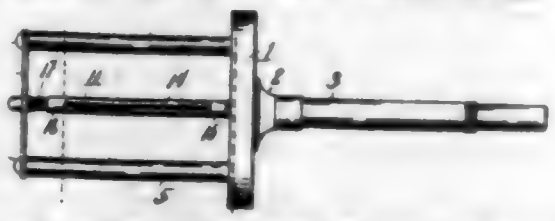
818,679. **FILTERING-PLATE.** GEORGE W. GERLACH, Louisville, Ky. Filed Feb. 23, 1906. Serial No. 302,490.

Claim.—In filter-plates, a web portion extending across the whole area of the plate; ribs projecting from each face of the web and crossing it vertically at short distances apart leaving grooves between the ribs, the bottoms of the grooves being the faces of the web; apertures through the web in the grooves; a rim around the edge of

the plate even with the plane of each face of the outer portions of the ribs, and apertures between the said web and the two rims, communicating with the said grooves as inlet and outlet continuations thereof substantially as shown and described.



818,680. STROPPING-MACHINE. EDWARD B. GIFFORD, Adrian, Mich., assignor to American Safety Razor Co., Adrian, Mich., a Corporation of Michigan. Filed Apr. 24, 1905. Serial No. 257,293.



Claim.—1. In a stropping-machine, the combination of the rotary sleeves and gears thereon, the rotary shaft carrying a gear meshing with the gears on said sleeves, said shaft having a narrow longitudinal slot therethrough to receive a thin blade, and a device on the shaft for locking the blade in said slot.

2. In a stropping-machine, a rotary blade-holder consisting of a shaft having a narrow longitudinal slot therethrough adapted to receive a thin blade, a fixed member on the shaft adapted to engage one end of said blade, and a movable member on the other end of the shaft adapted to engage the other end of the blade to hold it in said slot.

3. In a stropping-machine, a blade-holder consisting of a rotary shaft, said shaft having a longitudinal slot therethrough, a fixed collar at one end of the shaft which embraces a portion of said slot at one end, and a movable collar at the opposite end of the shaft embracing a portion of the opposite end of said slot.

4. In a stropping-machine, the combination of the rotary sleeves carrying the gear-wheels, the casing embracing said gear-wheels, the rods passing through the casing and through the sleeves, the end plate extending between the ends of said rods and attached thereby, the central shaft carrying a gear-wheel which meshes with the gear-wheel on the sleeves, said shaft having a longitudinal slot therethrough adapted to receive a thin blade, a fixed collar on said shaft adapted to engage one end of the blade, a sliding collar on the other end of the shaft adapted to engage the opposite end of the blade, and a handle attached to the casing for manipulating the device.

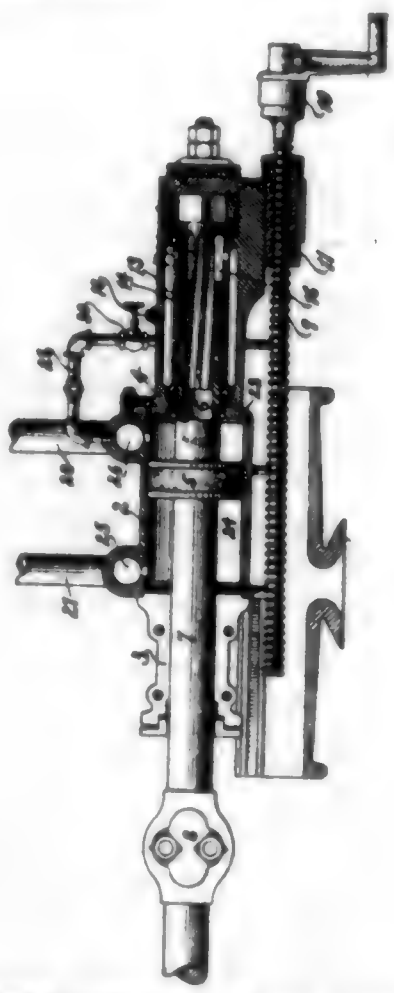
818,681. ROCK-DRILL. ARTHUR H. GIBSON, Easton, Pa., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y., a Corporation of West Virginia. Filed Aug. 26, 1905. Serial No. 275,851.

Claim.—1. A rock-drill piston having a tail-rod, a cylinder having a tail-rod chamber, and pipes for feeding the motive fluid to the opposite sides of the piston, said cylinder having a passage leading from one of the motive-fluid pipes to the tail-rod chamber.

2. A rock-drill piston having a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid to the opposite sides of the piston, said cylinder having a passage leading from one of the motive-fluid pipes to the tail-rod chamber and manually-controlled means for regulating the flow of air through said passage.

3. A rock-drill piston having a tail-rod, a cylinder having an extension provided with a tail-rod chamber and having a vent-opening leading from said chamber to the external atmosphere, and motive-fluid-pressure pipes for the cylinder, said cylinder having a passage leading from one of said pipes to the tail-rod chamber.

4. A rock-drill piston having a tail-rod, a cylinder having an extension provided with a tail-rod chamber and having a vent-opening leading from said chamber to the external atmosphere, motive-fluid-pressure pipes for the cylinder, said cylinder having a passage leading from one of said pipes to the tail-rod chamber and a manually-operated valve in said passage for controlling the flow of air from the pipe to the chamber.



5. A rock-drill piston having a tail-rod, a cylinder having an extension provided with a tail-rod chamber and having a vent-opening leading from the chamber to the external atmosphere including a screw having a tapered bore and a pin removably engaged with the bore, said pin having a flattened side.

6. A tool-piston, having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and means for bringing the tail-rod chamber into open communication with one of the pipes.

7. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and means for bringing the tail-rod chamber into open communication with the pipe which effects the forward stroke of the tool.

8. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a manually-operated valve for bringing the tail-rod chamber into and out of open communication with one of said pipes.

9. A tool-piston having a front rod and a tail-rod, a cylinder having a tail-rod chamber, pipes for feeding motive fluid alternately to the opposite sides of the piston and a manually-operated valve for bringing the tail-rod chamber into and out of open communication with the pipe which effects the forward stroke of the tool.

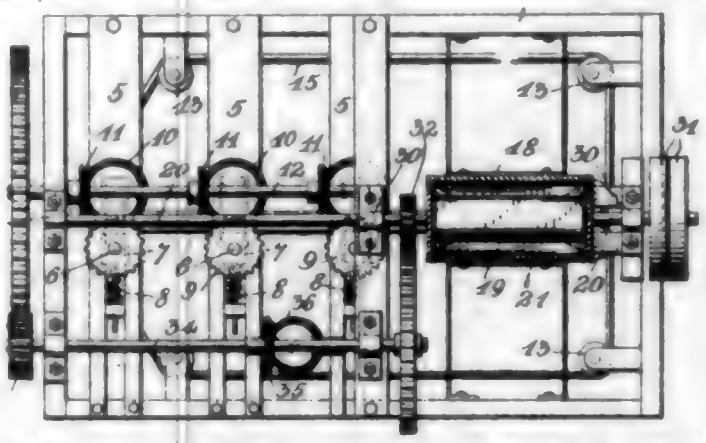
818,682. DIAMOND-FASTENER FOR TOOLS. CHARLES D. P. GIBSON, Jersey City, N. J., assignor of one-third to Charles G. Mallet and one-third to Walter Mallet, New York, N. Y. Filed July 22, 1905. Serial No. 270,773.



Claim.—In a diamond-fastener for tools, a threaded mortised stem, a perforated cap engaged thereby, an inclosed nip having a recessed head and a shank around which the stem is rotatable, and a tapering diamond between head and cap and projecting with its apex beyond the cap, substantially as specified.

818,683. CIDER-MILL. ELISHA R. GOINGS, Clay City, Ill. Filed July 17, 1905. Serial No. 270,025.

Claim.—1. A machine of the character described comprising two parallel series of pressure-rollers, guide-rollers, endless belts passed about said pressure and said guide rollers, a feed-chute projecting between said belts, a grinding-roller for grinding the material passed through said chute, a guard for directing the material discharged from said chute between said belt, a rotary belt-cleaner, and means for rotating said cleaner, said pressure-rollers and said grinding-roller, substantially as described.



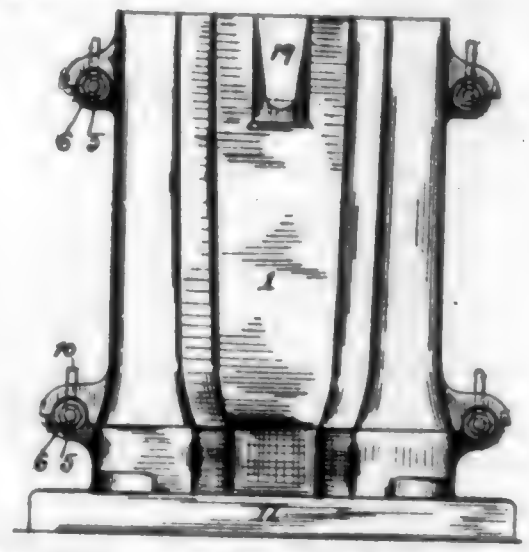
2. In a machine of the character described, the combination of vertically-disposed pressure-rollers, belts passing around said rollers and having their contiguous stretches in contact, a vertically-disposed feeding-chute having a beveled lower end projecting between said belts, a guard for directing the material discharged from said chute between said belts, a hopper mounted upon said chute, a grinding-roller between said hopper and said chute, and means for rotating said grinding-roller and said pressure-roller, substantially as described.

3. A machine of the character described comprising a suitable frame, pairs of vertically-disposed pressure-rollers, springs for moving one roller of each pair toward the other, meshing gears connecting the rollers of each pair, a beveled gear upon one roller of each pair, a shaft, beveled gears upon said shaft in mesh with the first-mentioned beveled gears, vertically-disposed guide-rollers mounted in said frame, endless belts passed about said guide-rollers and said pressure-rollers and having their contiguous stretches passing between said pressure-rollers, a chute for feeding the material between the contiguous stretches of said belt, a second shaft, a grinding-roller upon the latter disposed above said chute, a hopper surrounding said grinding-roller, and gearing connecting said shafts, substantially as described.

4. A machine of the character described comprising a suitable frame, pairs of vertically-disposed pressure-rollers, springs for moving one roller of each pair toward the other, meshing gears connecting the rollers of each pair, a beveled gear upon one roller of each pair, a shaft, beveled gears upon said shaft in mesh with the first-mentioned beveled gears, vertically-disposed guide-rollers mounted in said frame, endless belts passed about said guide-rollers and said pressure-rollers and having their contiguous stretches passing between said pressure-rollers, a chute for feeding the material between the contiguous stretches of said belt, a second shaft, a grinding-roller upon the latter disposed above said chute, a hopper surrounding said grinding-roller, a third shaft, gearing connecting the latter and the first-mentioned shaft, gearing connecting said second and said third shaft, a rotary cleaner adapted to coact with the outer stretch of one of said belts, and gearing between said cleaner and said third shaft, substantially as described.

818,684. INGOT-MOLD. HENRY GREY, New York, N. Y., assignor to American Universal Mill Company, New York, N. Y., a Corporation of West Virginia. Filed Oct. 3, 1902. Serial No. 125,848.

Claim.—1. A partible ingot-mold comprising a pair of upright sections having the arrangement and contour required to form opposite halves or portions, respectively, of the chamber of the mold, which mold-sections have a limited movement apart and are normally arranged close together; means externally of the mold, at each joint between the said mold-sections, for tying the said sections together, which means comprises a tie rod or bolt extending across the said joint, which bolt or rod has a slot arranged between and a suitable distance from the ends of the rod or bolt; two ears embracing the said bolt and formed upon the different mold-sections respectively, and one of the said ears partially covering the aforesaid slot; stop-forming members on the said bolt or rod at the outer ends of the said ears and instrumental in limiting endwise movement of the rod or bolt in opposite directions respectively; an elastic device upon the bolt or rod and confined between one of the said stop-forming members and the adjacent ear and acting to retain the aforesaid mold-sections in their normal position, and a tapering key or wedge engaging the aforesaid slot.

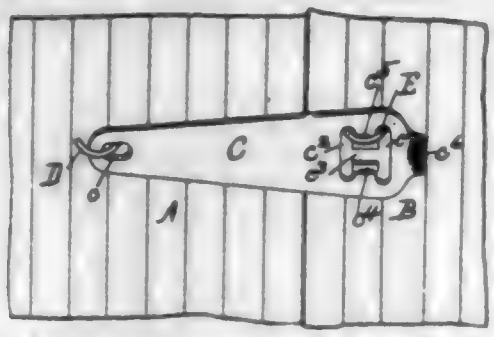


2. A partible ingot-mold comprising upright sections having the arrangement and contour required to form the chamber of the mold, which mold-sections have a limited movement apart and are normally arranged close together; means externally of the upper portion as well as externally of the lower portion of the mold, at each joint between the said mold-sections, for tying the said sections together, which means comprises a tie bolt or rod arranged in a horizontal plane and having a slot; two ears embracing the said bolt or rod at opposite sides respectively of the adjacent joint between the aforesaid mold-sections and projecting from the different mold-sections respectively, and one of the said ears normally covering a portion of the aforesaid slot; stop-forming members on the rod or bolt at the outer ends of the said ears and instrumental in limiting endwise movement of the bolt or rod in opposite directions respectively; a spiral spring on the bolt or rod and confined between one of the stop-forming members and adjacent ear and acting to retain the aforesaid mold-sections in their normal position, and a tapering key or wedge engaging the aforesaid slot.

3. A particle ingot-mold comprising upright sections forming the chamber of the mold, which sections have a limited movement apart and are normally arranged close together; means externally of the mold at each joint between the said mold-sections for tying the said sections together, which means comprises a tie bolt or rod arranged in a horizontal plane, which rod or bolt has a slot which is arranged between and a suitable distance from the ends of the bolt or rod; two ears embracing the said rod or bolt and formed upon the different mold-sections respectively, and one of the said ears normally covering a portion of the aforesaid slot; stop-forming members on the rod or bolt at the outer ends of the said ears and instrumental in limiting endwise movement of the bolt or rod in opposite directions respectively; an elastic device on the rod or bolt and confined between one of the said stop-forming members and the adjacent ear and acting to retain the aforesaid mold-sections in their normal positions; a tapering key or wedge engaging the aforesaid slot; and a shield-forming flange or member formed at the top and outer end of each ear and overhanging the adjacent portion of the bolt or rod and members upon the said rod or bolt at the outer end of the said ear.

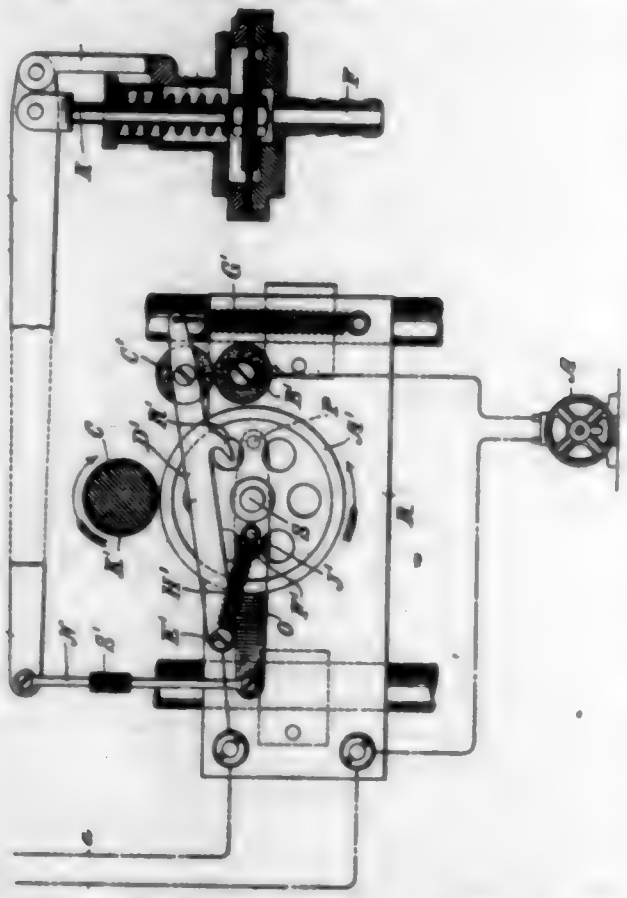
4. A partible ingot-mold comprising sections forming the chamber of the mold, which sections have a limited movement apart and are normally arranged close together; means externally of the mold at the joints between the said mold-sections for tying the said sections together, which means comprises tie bolts or rods arranged in a horizontal or approximately horizontal plane and having a diametrically-enlarged central portion which has a slot extending from the upper side of the said portion downwardly; two ears embracing each rod or bolt and formed upon the different mold-sections respectively, and one of the said ears normally covering the aforesaid slot; stop-forming members on each bolt or rod at the outer ends of the ears which embrace the said rod or bolt, which stop-forming members are instrumental in limiting endwise movement of the bolt or rod, and elastic means confined between one of the said stop-forming members and the adjacent ear and acting to retain the aforesaid mold-sections in their normal position, and the hole in one of the ears which embrace each rod or bolt being enlarged diametrically to receive the diametrically-enlarged central and slotted portion of the said bolt or rod, and downwardly-tapering keys engaging the slots in the rods or bolts.

818,685. HASP. JAMES C. GRIFFIN, Erie, Pa. Filed Oct. 17, 1904. Serial No. 228,556.



Claim.—A hasp having an opening therein through which a staple may be passed; and a lip extending into the opening from each side of the opening, each lip having its inner surface slanting outwardly toward the opening between the lips and projecting outwardly from the outer surface of the hasp, whereby a double guide for directing the staple to the opening is formed and the engagement with the staple when the hasp is in place made more secure.

818,686. MEANS FOR AUTOMATICALLY CONTROLLING THE OPERATION OF BEER OR OTHER PUMPS AND SIMILAR DEVICES. ALFRED C. GRISCOM, Newark, N. J., assignor to The Griscom Lehing Manufacturing Company, New York, N. Y., a Partnership. Filed July 6, 1905. Serial No. 268,587.



Claim.—1. In an apparatus of the class described, a motor, a power mechanism operated thereby, a motor-circuit make-and-break device operated by the motor, and means controlled by the power mechanism for controlling the motor-circuit make-and-break device.

2. In an apparatus of the class described, a motor, a pump driven therefrom, a motor-circuit make-and-break device operated from said motor, and means controlled by the pump for controlling the motor-circuit make-and-break device.

3. In an apparatus of the class described, a power mechanism, gearing for driving the same including a shaft, a motor for operating said shaft, means arranged to be engaged with and disengaged from said shaft for opening and closing the circuit of said motor, and means controlled by said power mechanism for effecting automatically the engagement and disengagement of said shaft and motor-circuit opening and closing means.

4. In an apparatus of the class described, a pump, a motor for actuating the same, a switch for opening and closing the circuit of the motor, gearing actuated by the motor for operating said switch, and means controlled by the pump for controlling the engagement and disengagement of said switch with and from its operating-gearing.

5. In an apparatus of the class described, a pump, a motor for operating the same, a switch for making and breaking the motor-circuit, means driven by the motor for operating said switch, and means controlled by the pump for automatically rendering the switch-operating means operative or inoperative as desired.

6. In an apparatus of the class described, a pump, a delivery-pipe therefor, a motor for driving the pump, a switch to control the motor-circuits, means driven by the motor for operating the switch to open said circuit, and a pressure mechanism communicating with the pump delivery-pipe for controlling the connection of said switch-operating means with its driving power.

7. In an apparatus of the class described, a pump, a driving-motor therefor, a switch for making and breaking the motor-circuit, a wheel for operating said switch, means for driving said wheel from the motor, and a pressure device operated by variations in pressure produced by the pump for connecting and disconnecting said wheel from its driving means.

8. In an apparatus of the class described, a pump, a shaft for driving the same, a motor for rotating said shaft, a switch for controlling the motor, a wheel for operating the switch and a pressure-actuated device under the control of the pump for moving said wheel into and out of peripheral driving contact with said shaft.

9. In an apparatus of the class described, a pump, a shaft for driving the same, a motor for rotating said shaft, a switch for controlling the motor, a wheel for operating the switch, a movable support for the wheel whereby said wheel may be moved into and out of peripheral driving engagement with said shaft so as to be driven by the motor, and a pressure-actuated device, under the control of the pump for moving said support.

10. In an apparatus of the class described, a pump, a shaft for driving the same, a motor for rotating said shaft, a switch for controlling the motor, a wheel for operating the switch, a pressure device under control of the pump for moving the wheel into and out of peripheral driving contact with said shaft, and means for preventing reverse movement of said wheel.

11. In an apparatus of the class described, an automatic switch comprising separable contacts, a means for separating said contacts, including a rotatable wheel, a spring having eccentric connection with said wheel, means for rotatively moving said wheel against the action of said spring until the dead-center line of said connection is passed, whereby said spring tends to operate thereafter to rotatively move said wheel to initial position, and means operated by the rotative movement of the wheel under the influence of the driving mechanism therefor for separating said contacts.

12. In an apparatus of the class described, an automatic switch, including relatively fixed and movable contacts, means for yieldingly maintaining said contacts in contacting relation, and means for moving said movable contact against the action of said yielding means, and including a rotatable wheel and a spring having eccentric connection with said wheel.

13. In an automatic switch comprising separable contacts, a spring normally maintaining said contacts closed upon each other, a rotatable wheel for separating said contacts, and a spring eccentrically connected at one end to said wheel, said last-mentioned spring initially opposing the rotative movement of said wheel, but finally assisting the rotative movement of said wheel and counteracting the tension of the spring which maintains said contacts closed.

14. An automatic switch comprising separable contacts, a spring normally operating to maintain the said contacts in closed relation; a rotatable wheel for separating said contacts, a spring eccentrically connected at one end to said wheel, a power mechanism for rotating said wheel, and means for automatically controlling the engagement of said wheel with its power-driving mechanism.

15. In an apparatus of the class described, a motor, a shaft driven therefrom, a pump operated from said shaft, contacts arranged in the motor-circuit, a lever carrying one of said contacts, a pivotally-mounted lever carrying a stud, a wheel journaled upon said stud, a roller mounted upon said wheel and arranged when said wheel is rotated to engage said contacting-lever to separate said contacts, and a pressure device under the control of the pump for rocking said wheel-supporting lever to carry said wheel into and out of driving relation with respect to said shaft.

16. In an apparatus of the class described, a motor, a shaft driven therefrom, a pump actuated by said shaft, contacts arranged in the motor-circuit, a lever carrying one of said contacts, a spring connected to said lever and operating to maintain said contacts closed upon each other, a pivotally-mounted lever carrying a stud, a wheel journaled to rotate upon said stud and having a roller upon the face thereof arranged to engage the contact-carrying lever to separate said contacts, a spring having one end connected eccentrically to said wheel, a

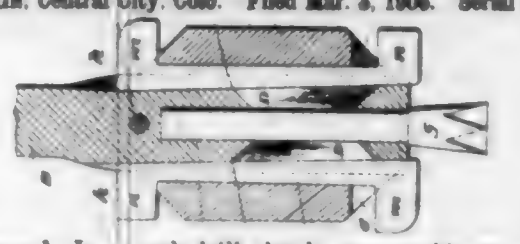
pressure device controlled by the pump, lever-and-link connections between said pressure device and said pivotally-mounted lever, whereby said wheel is automatically moved into and out of driving relation with respect to said shaft.

17. In an apparatus of the class described a motor, separable contacts controlling the circuit of said motor, a rotatable wheel having a pin or stud, means operated by said pin or stud for separating said contacts, means operated by the motor for rotating said wheel and a detent arranged to be engaged by said pin or stud for preventing reverse rotation of said wheel.

18. In an apparatus of the class described, a motor, separable contacts in the motor-circuit, a rotatable wheel having a pin or stud, a lever carrying one of said contacts and arranged to be engaged by said pin or stud to separate said contacts, means for rotating said wheel and means arranged to engage behind said pin or stud to prevent reverse rotation of said wheel.

19. The combination with a motor, an automatic switch for controlling said motor, including separable contacts, a lever carrying one of said contacts, said lever provided with a detent, a rotatable wheel having means to engage said lever to separate said contacts, said detent operating to prevent reverse rotation of said wheel, and means for automatically controlling the rotative movement of said wheel.

818,687. **ROCK-DRILL CHUCK.** JAMES S. HARRIS and JOHN R. HOSKIN, Central City, Colo. Filed Mar. 3, 1906. Serial No. 303,976.



Claim.—1. In a rock-drill chuck, the combination of a case open at its lower and upper ends, a rod extending through and secured in said case and having a bore in its lower portion and oppositely-tapered, longitudinal grooves or ways in its opposite sides and also having openings in the bottoms of the grooves or ways connecting said grooves or ways and the bore, friction shoes or gibs arranged in the said openings of the rod, and reversely-arranged taper keys disposed in the grooves or ways of the rod and between the friction shoes or gibs and the adjacent side walls of the case.

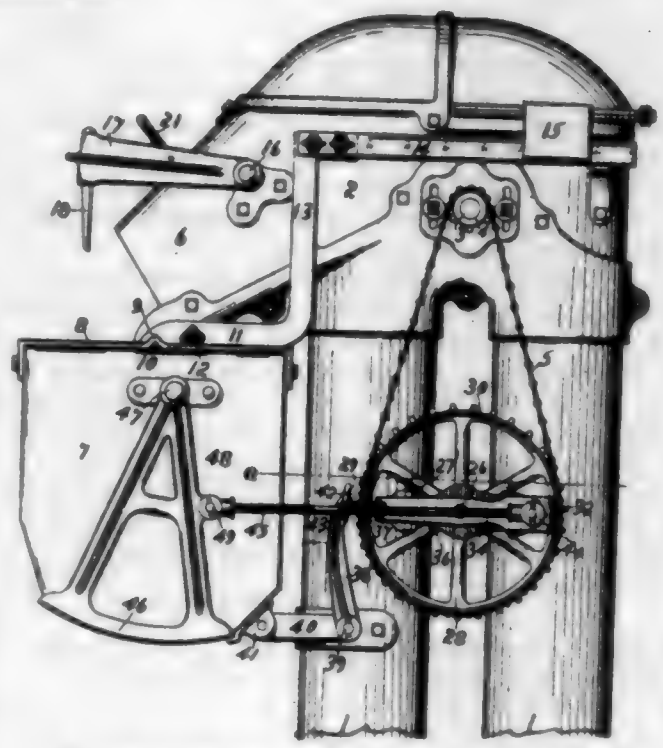
2. In a rock-drill chuck, the combination of a case open at its lower and upper ends and having alined apertures in the upper portions of its front and back walls, a rod extending longitudinally through the case and having an aperture alined with the apertures in the front and back walls thereof, and also having a bore in its lower portion, oppositely-tapered longitudinal grooves or ways in its opposite sides and openings in the bottoms of the grooves or ways connecting the same and the bore, friction shoes or gibs arranged in the said openings of the rod, reversely-arranged taper keys disposed in the grooves or ways of the rod and between the friction shoes or gibs and the adjacent side walls of the case and having enlargements at their opposite ends, and a fastening-pin extending through the alined apertures in the front and back walls of the case and the rod.

818,688. **AUTOMATIC WEIGHER.** JAMES R. HARRISON, Peoria, Ill., assignor to Hart Grain Weigher Co., Peoria, Ill., a Corporation of Illinois. Filed Apr. 20, 1905. Serial No. 256,666.

Claim.—1. In an automatic weigher, the combination with an elevator delivery-spout and a weigher-bucket, each having a control-gate, of a shaft extending from side to side of the elevator, clutch mechanism for intermittently operating the said shaft, an inclined releasing-face actuated by the weigher-bucket for disengaging the clutch mechanism, a stop, means on one side of the elevator operated by the shaft for actuating the spout-gate and means on the other side of the elevator operated by the shaft for actuating the bucket-gate.

2. In an automatic weigher, the combination with a delivery-spout and weigher-bucket, each having a controlled gate of a shaft extending from side to side of the elevator, a constantly-driven clutch member, a second clutch member movable axially of the shaft and adapted to engage the constantly-driven clutch member, a trip pivotally related to the weigher-bucket for controlling the said clutch mechanism, means on one side of the elevator, operated by the shaft for controlling the movement of the spout-gate and means, on the other side of the elevator, operated by the shaft for controlling the movement of the bucket-gate.

3. In an automatic weigher, the combination with a delivery-spout and a weigher-bucket, each having a control-gate, of a shaft, clutch mechanism for intermittently operating said shaft, an inclined trip for disengaging the clutch mechanism, a projecting part of the clutch mechanism on the shaft adapted to operate one of the aforesaid control-gates and means on said shaft for operating the other control-gate.



4. In an automatic weigher, the combination of a delivery-spout having a control-gate and a weigher-bucket having a movable gate at its bottom, of mechanism for operating said gates comprising a shaft extending from side to side of the elevator, a constantly-driven clutch member loosely mounted on said shaft, a second clutch member movable axially of the shaft and adapted to engage the constantly-driven clutch member, a stop and inclined releasing-face actuated by the weigher-bucket for controlling the said clutch mechanism, a rod, on one side of the elevator, operated by the shaft for controlling the gate of the delivery-spout and a rod, on the other side of the elevator, operated by the shaft for controlling the gate of the weigher-bucket.

5. In an automatic weigher, the combination with a delivery-spout and a weigher-bucket, each having a control-gate, of a shaft, a constantly-driven clutch member loosely mounted on said shaft, a second clutch member movable lengthwise of the shaft and adapted to engage the constantly-driven clutch member, a projecting portion of the clutch mechanism, adapted through intermediate means to operate one of the aforesaid control-gates, and means on the shaft for operating the other control-gate.

6. In an automatic weigher, the combination with a delivery-spout and a weigher-bucket each having a control-gate, of a shaft, a constantly-driven clutch member loosely mounted on said shaft, a spring-actuated clutch member movable lengthwise of the shaft and adapted to engage the constantly-driven clutch member, means for controlling the clutch mechanism, a holder for the spring of the aforesaid spring-actuated clutch member suitably connected to actuate one of the aforesaid control-gates and means for actuating the other control-gate.

7. In an automatic weigher, the combination of a delivery-spout having a control-gate and a weigher-bucket having a movable gage at its bottom, of mechanism for operating said gates comprising a shaft extending from side to side of the elevator, a constantly-driven clutch member on the shaft, a clutch member movable axially of said shaft and adapted to engage the constantly-driven clutch member on said shaft, a stop and inclined releasing-face actuated by the weigher-bucket, for gradually releasing and holding the clutch mechanism from engagement, oppositely-disposed parts on said shaft, one on each side of the elevator, and rods operated by said oppositely-disposed parts for actuating the gates of the delivery-spout and weigher-bucket respectively for the purposes specified.

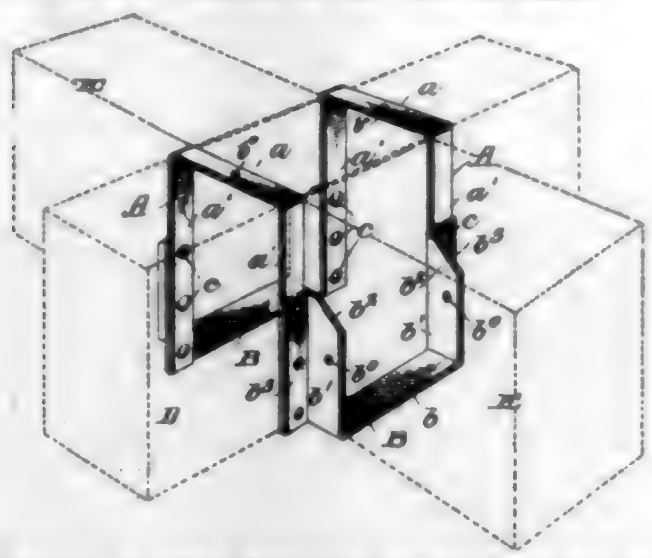
8. In an automatic weigher, the combination of a delivery-spout having a control-gate and a weigher-bucket having a movable gate at its bottom of mechanism for operating said gate, comprising a shaft extending from side to side of the elevator, a constantly-driven clutch member on the shaft a clutch member movable axially of said shaft, and adapted to engage the constantly-driven clutch member on said shaft, a stop and inclined releasing-face actuated by

the weigher-bucket for gradually releasing and holding the clutch mechanism from engagement, oppositely-disposed parts or extensions on said shaft, one on each side of the elevator, and means provided and suitably supported, operated by the said oppositely-disposed parts or extensions on the shaft, one to operate the gate of the delivery-spout and the other to operate the gate of the weigher-bucket respectively for the purposes specified.

9. In an automatic weigher, the combination with an elevator delivery-spout and a weigher-bucket, each having a control-gate, of a shaft extending from side to side of the elevator, clutch mechanism for intermittently operating said shaft, an inclined releasing member actuated by the weigher-bucket for disengaging the clutch mechanism, means for holding the shaft in its normal inoperative position, means on one side of the elevator operated by the shaft for actuating the spout-gate and means on the other side of the elevator operated by the shaft for actuating the bucket-gate.

10. In an automatic weigher, the combination with an elevator delivery-spout and a weigher-bucket, each having a control-gate, of a shaft extending from side to side of the elevator, a constantly-driven clutch member loose on said shaft, a second clutch member movable lengthwise of said shaft, a trip pivotally related to the weigher-bucket for operating the clutch mechanism by the movement thereof, means for holding the shaft in its normal inoperative position, means on one side of the elevator operated by the shaft for actuating the gate of the elevator-spout and means on the other side of the elevator operated by the shaft for actuating the gate of the weigher-bucket.

818,689. JOIST HANGER OR STIRRUP. FREDERICK L. HEUGENS, Rochester, N. Y. Filed Sept. 27, 1905. Serial No. 280,379.



Claim.—1. A double joist-hanger comprising two bent straps adapted to go over the beam, with depending legs, and stirrups each having a supporting-shelf with angle-iron sides made integral with said shelf, with rivets, bolts, screws, or pins connecting said angle-iron sides to said supporting-straps, substantially as described.

2. A double joist-hanger comprising two supporting-straps each composed of a flat piece of metal bent to fit the beam, and each provided with depending legs, a pair of stirrups, one on each side, each provided with a supporting-shelf, an upwardly-projecting rib integral with said shelf, and flanges projecting laterally from said ribs, with rivets, bolts, screws or pins securing said flanges to said depending legs, substantially as described.

3. In a hanger, the combination of straps bent to fit a beam, and stirrups connecting the lower ends of said straps together, each stirrup being formed of angle-iron with a notch cut out of one leg and then bent at right angles at each end of the notch, and means for securing said stirrups to said straps, substantially as described.

818,690. STOVE-LINING. GEORGE C. HICKS, Chicago, Ill. Filed June 16, 1906. Serial No. 265,497.

Claim.—1. As an improved article of manufacture, a mass of plastic stove-lining composition comprising ground refractory material, chlorid of magnesium and water.

2. The improved plastic stove-lining composition, comprising fire-clay, fire-brick, chlorid of magnesium and water.

3. An improved plastic stove-lining composition, comprising fire-clay, fire-brick, glucose, chlorid of magnesium and water.

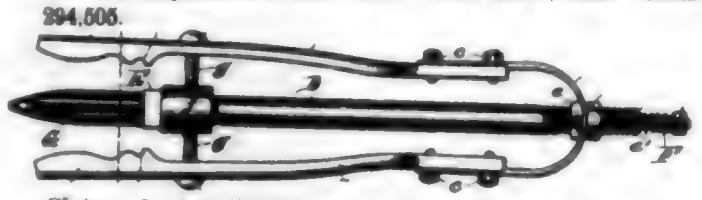
4. As an improved article of manufacture, a mass of plastic stove-lining composition, comprising ground refractory material, chlorid of magnesium and water, and an envelop of air-excluding material inclosing said mass.

5. As an improved article of manufacture, a mass of plastic stove-lining composition comprising ground refractory material, glucose, chlorid of magnesium and water, and an envelop of corrugated paper inclosing said mass and saturated with a solution of chlorid of magnesium.

6. As an improved article of manufacture, a mass of plastic stove-lining composition, comprising ground refractory material, a hygrometric material and water, and an air-excluding envelop of corrugated paper inclosing said mass and saturated with a solution of chlorid of magnesium.

7. As an improved article of manufacture, a slab or brick forming a stove-lining, composed of ground refractory material, chlorid of magnesium and water, and an air-excluding envelop of corrugated paper inclosing said slab or brick.

818,691. TOOL FOR SHAPING BOTTLE-NECKS. CHARLES HOUSE, Oneida, N. Y., assignor to Corrugated Bottle Company, Oneida, N. Y., a Corporation of New York. Filed Jan. 4, 1906. Serial No. 294,505.



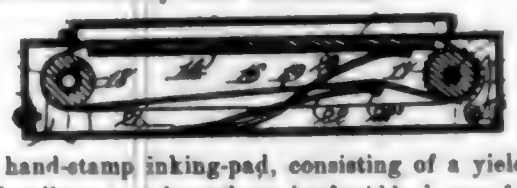
Claim.—1. A tool of the class specified comprising a pair of arms or handles united at one end by a spring forcing the same normally apart and provided on their opposite or forward ends with jaws for shaping the exterior of a bottle-neck, a tube disposed centrally and longitudinally between the arms and rigidly supported by the spring and terminating at its forward end adjacent to the jaws, a sleeve rigidly embracing said end of the tube and formed with a transverse plate having a central annular socket, transverse pins extending rigidly from said sleeve and passing loosely through the said arms and provided on their outer ends with heads for limiting the outward movement of the arms, a revoluble spindle disposed within the said tube and journaled at its rear ends therein and provided at its forward end with a tapering fluted head disposed between the jaws for shaping the interior of the bottle-neck, said head having a plain inner end portion by which it is journaled in the aforesaid socket and adapted to be moved out of the socket, and a spring exerting expansive force on the spindle for automatically returning the head to its normal position as and for the purpose set forth.

2. A tool of the class specified comprising a pair of arms or handles united at one end by a U-shaped spring forcing the same normally apart and provided on their free ends with jaws for shaping the exterior of a bottle-neck, a tube screw-threaded externally at both ends and disposed centrally and longitudinally between the arms, one end portion of said tube passing through the spring and provided with nuts clamping between them the said spring for rigidly supporting the tube, a sleeve rigidly embracing the forward end of the tube and formed with a transverse plate provided with a central annular socket, transverse pins extending rigidly from opposite sides of the sleeve and passing loosely through the arms and provided on their outer ends with heads limiting the outward movement of the arms, a bushing secured in the rear end of the tube, a revoluble spindle disposed within the tube and journaled in said bushing and extending beyond the latter, a collar on the spindle adapted to abut against the inner end of the bushing, a nut on the rear end of the spindle, a spiral spring surrounding the spindle and disposed between the said nut and end of the tube for forcing the spindle rearward, and a tapering fluted head firmly secured to the forward end of the said spindle and journaled in the aforesaid socket and disposed between the jaws for shaping the interior of the bottle-neck as set forth and shown.

818,692. INKING-PAD. ALBERT C. JACKSON, Harriman, Tenn. Filed Apr. 7, 1906. Serial No. 254,339.

Claim.—1. A hand-stamp inking-pad, consisting of a yieldingly-supported bed, rollers at or about the ends of said bed, one of said rollers being perforated and constituting an ink-reservoir and having an absorbent covering, the perforated roller directly acting as a fulcrum for one end of the bed, an endless ribbon trained over said bed and rollers, and means actuated by the depression of the bed to rotate one of said rollers and automatically move the ribbon.

2. A hand-stamp inking-pad, consisting of a yieldingly-supported bed, rollers at or about the ends of said bed, one of said rollers directly acting as a fulcrum for one end of the bed and constituting an ink-reservoir, an endless ribbon trained over said bed and rollers, and means actuated by the depression of the bed to rotate one of the rollers and automatically move the ribbon.



3. A hand-stamp inking-pad, consisting of a yieldingly-supported bed, rollers at or about the ends of said bed, one of said rollers constituting an ink-feeding reservoir and having an absorbent covering, an endless ribbon trained over said bed and rollers, an inclosed resilient tension means for engaging the under portion of the ribbon, and means actuated by the depression of the bed to rotate one of said rollers and automatically move the ribbon.

4. A hand-stamp inking-pad having a yieldingly-supported bed, rollers at or about the ends of said bed, one of the rollers being perforated and constituting an ink-reservoir, an endless ribbon trained over said bed and rollers, resilient means for holding the bed elevated, a resilient device inclosed within the pad for instituting a tension on the ribbon, and means actuated by the depression of the bed to rotate one of the rollers and automatically move the ribbon.

5. In an inking-pad of the class set forth, a depressible bed having rollers at opposite extremities, the one roller forming a fulcrum means for the bed, and the opposite roller depressible with the latter, an endless ribbon trained over the bed and rollers, and means for shifting the ribbon automatically when the bed is depressed.

6. In an inking-pad of the class set forth, a depressible bed having rollers at opposite extremities, one roller being vertically movable with the bed, an endless ribbon trained over the bed and rollers, and means coöperating with the roller vertically movable with the bed for automatically shifting the ribbon.

7. In an inking-pad of the class set forth, a depressible bed directly fulcrumed at one extremity and free to have vertical movement at the opposite extremity, an endless ribbon trained over the bed, the latter having movable devices at opposite extremities for direct engagement of the ribbon, these devices being the only parts of the pad structure controlling the feed of the ribbon over the bed, and means coöperating with the device at the vertically-movable end of the bed for automatically shifting the ribbon when the bed is depressed.

8. In an inking-pad, a depressible bed fulcrumed at one end and free to have vertical movement at the opposite end, the bed having movable devices at its opposite ends providing the sole engaging means for a ribbon with respect to the bed, an endless ribbon trained over the bed and said devices, and a yielding tension device loosely engaging the ribbon beneath the bed.

9. In an inking-pad, a depressible bed fulcrumed at one extremity and free to move vertically at the opposite extremity, said bed having rollers at opposite extremities, an endless ribbon trained over the bed and directly engaging the rollers, the rollers being the only part of the pad structure controlling the feed of the ribbon over the bed, and a tension device extending upwardly and bearing against the under intermediate portion of the ribbon.

10. In an inking-pad, a depressible bed having rollers directly carried by the opposite extremities thereof, the bed at one end being fulcrumed and free to move vertically at the opposite end, an endless ribbon tautly trained over the bed and normally having its lower portion longitudinally parallel with the bed, and a yielding tension device bearing against the lower portion of the ribbon and forcing the latter upwardly toward the bed and out of parallel alinement with the latter to exert an additional stress thereon.

11. In an inking-pad, a depressible bed fulcrumed at one extremity and free to have vertical movement at the opposite extremity, the movable devices being carried by the opposite ends of the bed, an endless ribbon trained over the bed and directly engaging said movable devices, these movable devices being the only parts of the pad structure controlling the feed of the ribbon over the bed, yielding devices engaging the under side of the bed to restore the same to normal elevated position, tension means engaging the under portion of the ribbon, and means for shifting the ribbon over the bed when the latter is operated.

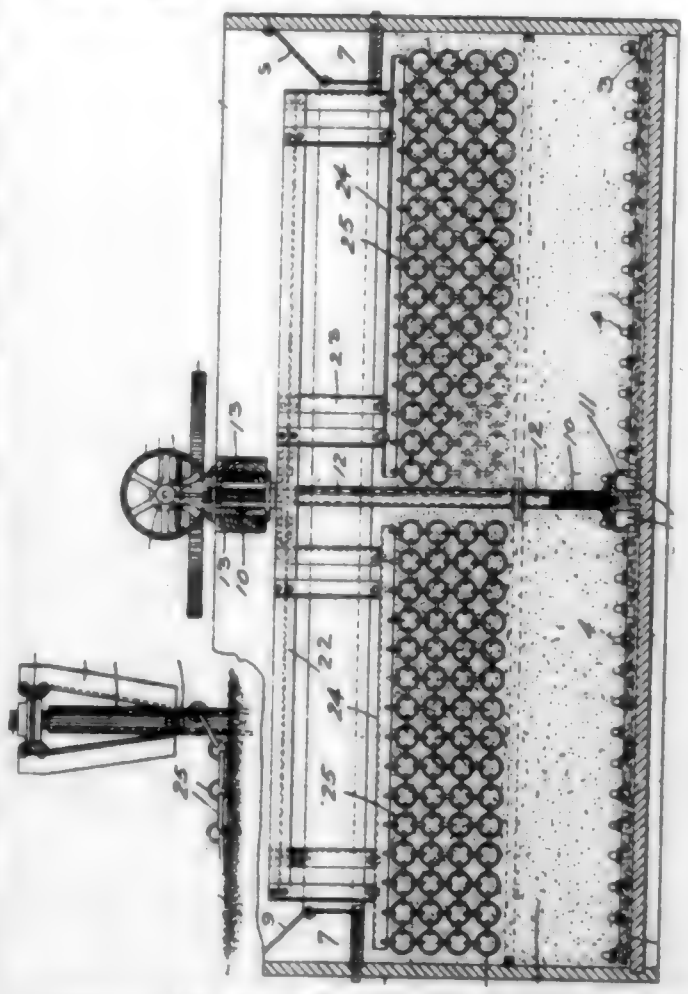
12. In an inking-pad of the class set forth, a depressible bed having rollers at opposite extremities, one of said rollers comprising a tubular spindle to receive ink and apertured for feeding purposes a plurality of absorbent sections removably disposed on the tubular spindle, an endless ribbon trained over the bed and rollers, and means for imparting to the ribbon a step-by-step shifting movement when the bed is depressed.

13. In an inking-pad of the class set forth, a bed having rollers at opposite extremities, one of said rollers comprising a tubular spindle with feeding-perforations therein and an absorbent covering, the tubular spindle being exteriorly accessible, an endless ribbon trained over the bed and rollers, and means for shifting the ribbon over the bed and rollers.

14. In an inking-pad of the class set forth, a casing having a bottom plate with an upwardly-extending flange at one extremity and coupling projections at the opposite extremity, an upper member having side and end flanges, one end flange fitting over the bottom-plate flange and the other end flange removably receiving the coupling projections, fastening devices engaging the overlapping flanges, the upper member having a top opening, a depressible bed held within the casing, an endless ribbon trained over the bed and exposed through the top opening, and means for imparting a step-by-step movement to the said ribbon.

15. In an ink-pad, an inclosing-casing, a depressible bed in the casing having rollers at opposite extremities, one of the rollers comprising a tubular perforate spindle with a spline thereon and terminally projecting outwardly through opposite sides of the casing and having on one end a removable cap, washers on the spindle adjacent to the inner surfaces of the sides of the casing, one of the washers being provided with a spline-slot and under normal conditions preventing withdrawal of the spindle, absorbent covering means removably mounted on the spindle, and an endless ribbon shiftably trained over the bed and rollers.

818,693. FILTER. LLEWELLYN W. JONES, Sewickley, Pa. Filed Apr. 13, 1905. Serial No. 255,375.



Claim.—1. The combination of a filter-bed, a stirrer therein, comprising a net formed of links, and means for withdrawing said net.

2. The combination of a filter-bed, a net extending down into said filter-bed, and means for moving said net through said filter-bed.

3. The combination of a filter-bed, a net extending down into the filter-bed, and means for moving said net around a center.

4. The combination of a filter-bed, a net composed of links extending down into said bed, and means for moving said net around a center.

5. The combination of a filter-bed, a rotary beam, and a net depending from said beam.

6. The combination of a filter-bed, a rotary beam, and a net composed of links depending therefrom.

7. The combination of a filter-bed having a trough extending

around same, a rotary net extending down into said bed and projecting under said trough.

8. The combination of a filter-bed, a vertical rotary shaft, a beam carried by said shaft, and a net carried by said beam.

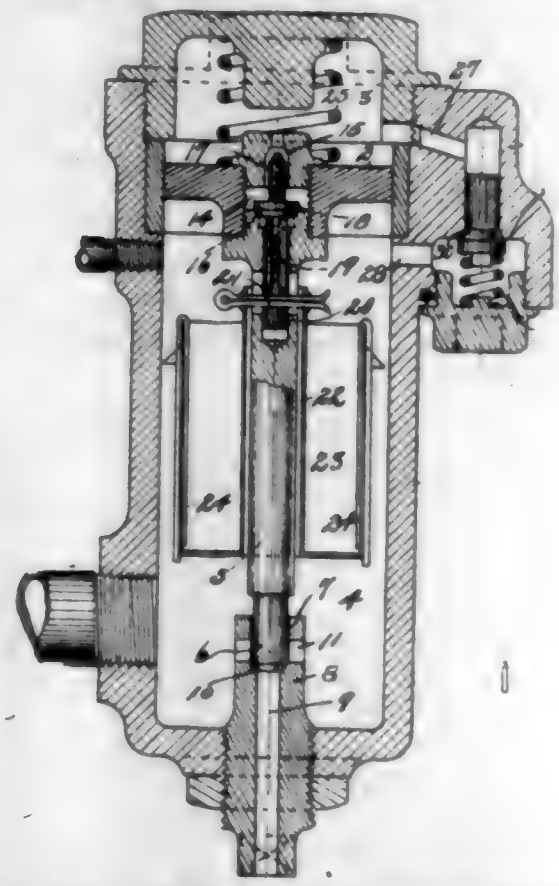
9. The combination of a filter-bed, a vertical rotary shaft, a beam carried by said shaft, a net secured to said beam on opposite sides of said shaft.

10. The combination of a filter-bed, nets comprising links extending down therein, means for moving said nets around a center, one of said nets being closer to said center than the other.

11. The combination of a filter-bed, a stirrer comprising a net extending down into said bed, and means for moving said net through said bed.

12. The combination of a filter-bed, a rotary frame, and a net carried by said frame.

818,694. **RELIEF-VALVE.** RICHARD N. KENNINGTON, Altoona, Pa. Filed Apr. 19, 1905. Serial No. 256,394.



Claim.—1. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a piston-valve controlling said outlet and pressure-controlled devices arranged within the casing and comprising means for automatically and intermittently discharging liquid through the exhaust-outlet.

2. In a relief-valve of the class described, a valve-casing having an exhaust-outlet for liquid of condensation and separate fluid-chambers therein, one of said chambers having upper and lower pipe connections with a trap or reservoir for liquid of condensation, and pressure-controlled devices arranged within the casing and comprising means for automatically and intermittently discharging liquid through the exhaust-outlet.

3. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a controlling-piston working in the casing and having a rod carrying a valve controlling said exhaust-outlet, and float-controlled valves carried by the piston.

4. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a piston-operated valve controlling said exhaust-outlet, float-controlled valves carried by the piston, and a normally closed pressure-opened by-pass valve controlling a by-pass connection between the chambers at opposite sides of the piston.

5. In a relief-valve of the class described, the valve-casing having an exhaust-outlet to the atmosphere, a piston working in the casing and provided with a circulating-passage therethrough and upper and lower valve-seats for the upper and lower ends of said passage, a piston-rod connected with the piston and carrying a valve member coöperating with the exhaust-outlet, a double valve carried by the piston and having its separate members coöperating with the upper and lower valve-seats thereof, and a float arranged within the casing and having a connection with said double valve.

6. In a relief-valve of the class described, a valve-casing having pipe connections with a trap or reservoir for liquid of condensation and also provided with an exhaust-outlet to the atmosphere, a piston working in the casing and having a circulating-passage therethrough and upper and lower valve-seats for said passage, a piston-rod connected with the piston and having a valve member controlling the exhaust-outlet, a valve-stem carried by the piston and having separate upper and lower cut-off valves respectively closing upward and downward and coöperating with said upper and lower valve-seats, a float mounted on the piston-rod and having a coupled connection with said valve-stem, a pressure-spring arranged at one side of the piston, and a normally closed auxiliary by-pass chamber having ports in communication with the separate chambers respectively at opposite sides of the piston.

7. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a piston-controlled valve for said exhaust-outlet, a valve carried by the pison to control communication between the chambers at opposite sides thereof, a float-cup working in one of the chambers and connected with the piston-valve, and a siphon carried by the float-cup for automatically siphoning the liquid therefrom under certain conditions.

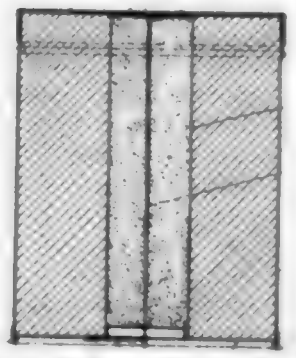
8. In a relief-valve of the class described, the valve-casing having an exhaust-outlet to the atmosphere, and pressure-controlled devices arranged within the casing and comprising means for automatically controlling the discharge through said outlet, said pressure-controlled devices including a float-cup having a plurality of siphons for transferring the liquid from the inside thereof to the chamber within which the cup works.

9. In a relief-valve of the class described, the combination of the valve-casing having an exhaust-outlet to the atmosphere, a valved piston separating the interior of the casing into upper and lower chambers, and a float arranged in the lower chamber comprising means for opening the passage through the piston before the lower chamber in the valve-casing is filled with condensed liquid.

10. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a piston-operated valve controlling said exhaust-outlet, float-controlled cut-off valves arranged to control communication between the separate chambers above and below the piston, and a normally closed pressure-opened by-pass valve controlling a by-pass connection between said chambers at opposite sides of the piston.

11. In a relief-valve of the class described, a valve-casing having an exhaust-outlet to the atmosphere, a controlling-piston working in the casing and having a rod carrying a valve controlling said outlet, float-controlled valves for controlling communication between the chambers above and below the piston, and a by-pass valve also arranged to control communication between the chambers above and below the piston.

818,695. **VESSEL FOR PACKING AND STORING WASHING-POWDERS CONTAINING ALKALINE PEROXIDS.** JULIUS VON KÖNIGSWARTER, Hanover, Germany. Filed Oct. 16, 1905. Serial No. 283,060.



Claim.—1. A receptacle for packing and storing washing-powder containing an alkali superoxid consisting of an outer vessel, a removable cover therefor and an inner vessel depending from said cover and removable therewith, the lower end of said inner vessel being normally closed by the bottom of the outer vessel.

2. A receptacle for packing and storing washing-powder, consisting of a vessel, a cover therefor, a tube connected to the cover and said tube having its lower end open, an expeller in said tube and a wire connected to the expeller and extending through the bottom of the vessel.

818,696. **BRUSH.** ROBERT KULENKAMPFF, Brooklyn, N. Y. Filed Feb. 27, 1906. Serial No. 303,542.

Claim.—1. A folding brush having in combination a frame,

oscillating bristle-carriers mounted within said frame each provided with a curved finger, a slidable bar coacting with said curved fingers to move the bristle-carriers into the operative or inoperative position, and rotatable means coacting with said bar to actuate same, said rotatable means being in all its positions within the limits of said frame.



2. A folding brush having in combination a frame, oscillating bristle-carriers mounted within said frame each provided with a curved finger, a slidable bar coacting with said curved fingers to move the bristle-carriers into the operative or inoperative position, an eccentric cam coacting with said bar to actuate same, and a handle or arm for actuating said cam, said handle or arm being in all its positions within the limits of said frame.

3. A folding brush having in combination a frame, oscillating bristle-carriers mounted within said frame each having a curved finger attached centrally thereto, a slidable bar coacting with said curved fingers to move the bristle-carriers into the operative or inoperative position, and rotatable means coacting with said bar to actuate same, said rotatable means being in all its positions within the limits of said frame.

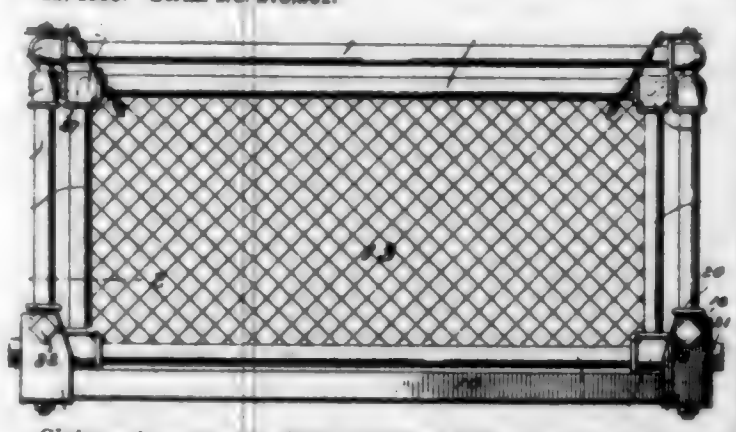
4. A folding brush having in combination a frame, oscillating bristle-carriers mounted within said frame, said bristle-carriers having a flattened or cut-away portion and each being provided with a curved finger, a slidable bar coacting with said curved fingers to move the bristle-carriers into the operative or inoperative position, and rotatable means coacting with said bar to actuate same, said rotatable means being in all its positions within the limits of said frame.

5. A folding brush having in combination a frame, a rotatable bristle-carrier, a curved finger connected thereto, a slidable bar engaging said finger, an eccentric cam coacting with said bar to actuate same, a handle for rotating said cam, and a flat strip located between the bristle-carrier and the slidable bar and provided with guiding means for said slidable bar.

6. A folding brush having in combination a frame, a rotatable bristle-carrier, a curved finger connected thereto, a slidable bar engaging said finger, an eccentric cam coacting with said bar to actuate same, a handle for rotating said cam, said handle being in all positions within the limits of the frame, and a flat strip located between the bristle-carrier and the slidable bar and provided with guiding means for said slidable bar.

7. A folding brush having in combination a frame, a rotatable bristle-carrier, a curved finger connected thereto, a slidable bar engaging said finger, and a strip located between said bristle-carrier and slidable bar and provided with guiding means for said finger and said slidable bar.

818,697. CRATE. ODELON J. LA BAUVE, Edna, Tex. Filed Aug. 22, 1905. Serial No. 275,261.

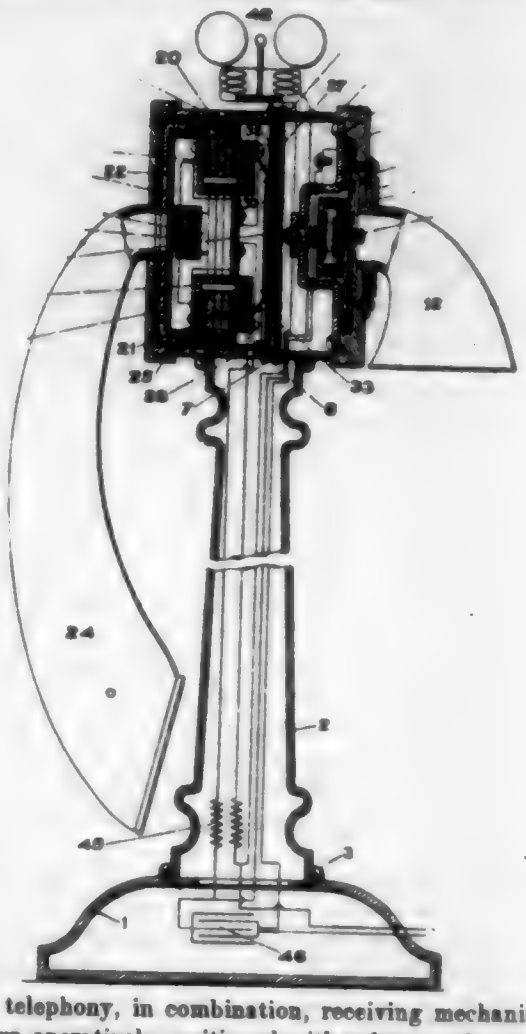


Claim.—A crate comprising a bottom, folding side walls having sockets at the top, folding end walls carrying projecting pins entering the aforesaid sockets when the walls are in upright position, pins extending upwardly from the top of the end walls, a top having vertical openings therein to receive the last-mentioned pins, and keys extending through the projecting ends of said pins.

818,698. TELEPHONE. SAMUEL P. LEVERETT, New York, N. Y. Filed Jan. 16, 1905. Serial No. 241,177.

Claim.—1. In telephony, in combination, transmitting mechanism, a member mounted adjacent said transmitting mechanism and provided with an opening, a mouthpiece adapted to fit said opening and provided with a flange resting against said member and an adjustable collar adapted to hold said flange against said member.

2. In telephony, in combination, receiving mechanism, a horn mounted in operative position with relation thereto and an earpiece pivotally mounted upon said horn, parts upon said horn extending inside of and parts surrounding said earpiece.



3. In telephony, in combination, receiving mechanism, a receiving-horn operatively positioned with reference thereto, an earpiece pivotally mounted upon said horn, parts upon said horn extending inside of and parts thereon surrounding said earpiece and flexible bands upon said horn at the points of contact thereof with said earpiece.

4. In telephony, in combination, receiving mechanism, a rotatable sound-amplifying horn of increasing diameter operatively positioned with reference thereto and an earpiece pivotally mounted upon said horn, said horn being provided with means adapted to permit a relative movement of said earpiece and prevent the formation of an opening between itself and the same.

5. In telephony, in combination, a supporting member, a casing mounted thereon, receiving mechanism mounted in said casing and a sound-insulating lining within said casing upon which said receiving mechanism is supported and by which said receiving mechanism is surrounded.

6. In a portable telephone, a portable supporting member, two casings mounted thereon, one of said casings containing receiving mechanism and the other containing transmitting mechanism, and a flat band of relatively flexible sound-insulating material embracing and secured to each of said casings and connecting them one with another.

7. In a portable telephone, in combination, a portable supporting member, two casings mounted thereon, one of said casings containing transmitting mechanism and the other of said casings containing receiving mechanism, a horn operatively positioned with reference to said receiving mechanism, and a flat band of sound-insulating material embracing and secured to each of said casings and connecting the same one with another.

8. In telephony, in combination, receiving mechanism comprising a diaphragm, transmitting mechanism, a mouthpiece in operative relation to said transmitting mechanism, and a sound-amplifying horn extending directly from said diaphragm in an unbroken curve of substantially uniformly-increasing diameter, the faces of said horn and said mouthpiece being non-parallel with reference one to another.

9. In telephony, in combination, receiving mechanism, transmitting mechanism, a mouthpiece in operative relation to said transmitting mechanism, and a sound-amplifying horn of substantially uniformly increasing diameter extending from said receiving mechanism, said horn comprising an earpiece, the exposed edge portions of which are movable with relation to the body of the horn and which

is adapted in all operative positions to form an even continuation of the general shape of the body of the horn.

10. In telephony, in combination, receiving mechanism, transmitting mechanism, a mouthpiece in operative relation to said transmitting mechanism, a sound-amplifying horn extending from said receiving mechanism in an unbroken curve of substantially uniformly increasing diameter, said horn comprising an earpiece, the exposed edge portions of which are movable with relation to the body of the horn and which is adapted in all operative positions to form an even continuation of the general shape of the body of the horn, and independent flexible means adapted to prevent the formation of an air-gap between said earpiece and the body of said horn.

11. In telephony, in combination, receiving mechanism, transmitting mechanism, a mouthpiece in operative relation to said transmitting mechanism, and a sound-amplifying horn extending from said receiving mechanism in an unbroken curve of substantially uniformly increasing diameter, said horn comprising an earpiece the exposed edge portions of which are movable with relation to the body of the horn and which is adapted in all operative positions to form an even continuation of the general shape of the body of the horn, and means upon said horn adapted to prevent the entry of foreign matter therein.

12. In telephony, in combination, receiving mechanism comprising a diaphragm, transmitting mechanism, a mouthpiece in operative relation to said transmitting mechanism, and a sound-amplifying horn extending directly from said diaphragm in an unbroken curve of substantially uniformly increasing diameter, said horn comprising an earpiece, the exposed edge portions of which are non-parallel with respect to the face of said mouthpiece and are movable with relation to the body of said horn and form in all operative positions thereof an even continuation of the general shape of the body of the horn.

13. In telephony, in combination, a portable telephone instrument comprising a support, receiving and transmitting mechanisms mounted upon said support, sound-insulating means interposed between said mechanisms, a sound-amplifying horn extending from said receiving mechanism in an unbroken curve of increasing diameter, a mouthpiece in operative relation to said transmitting mechanism, said horn being adapted to swing with reference to said support, connecting means adapted to be operated upon said horn being swung into operative position, and guiding means adapted to prevent a break in the curve of said horn with said horn in operative position.

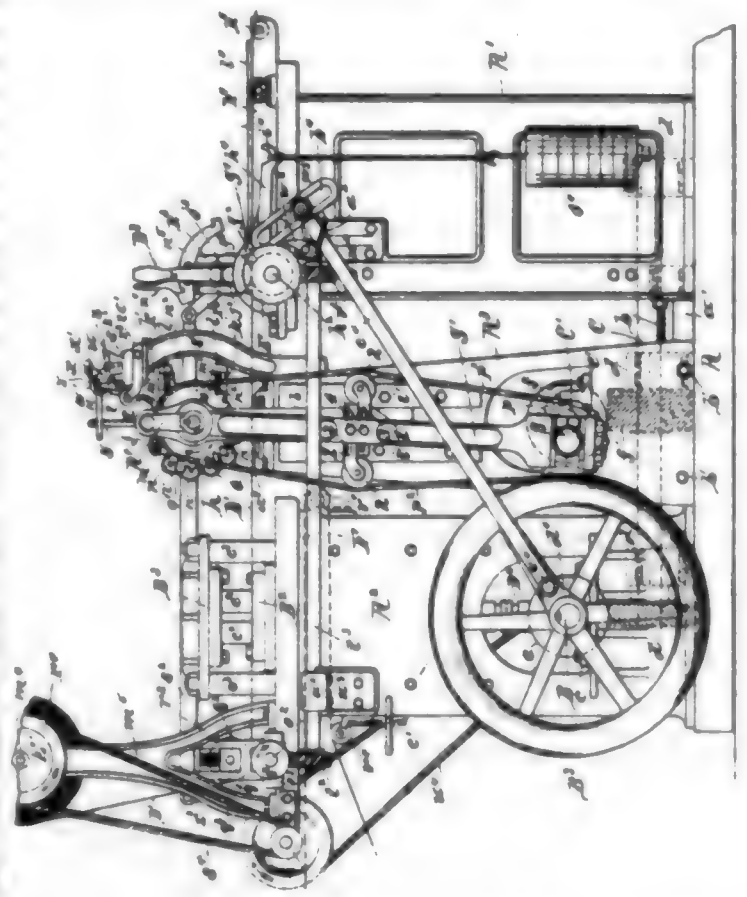
14. In telephony, in combination, a portable telephone instrument comprising a supporting member, receiving and transmitting mechanisms mounted upon said supporting member, sound-insulating means between said mechanisms, said receiving mechanism comprising a diaphragm, a mouthpiece in operative relation to said transmitting mechanism, a sound-amplifying horn extending directly from said diaphragm in an unbroken curve of substantially uniformly increasing diameter, said horn being adapted to be swung with relation to said support, connecting means adapted to be operated upon said horn being swung into operative position with the face thereof in non-parallel relation to the face of said mouthpiece, and guiding means adapted to prevent a break in the curved passage through said horn with said horn in operative position.

15. In telephony, in combination, a portable telephone instrument comprising a supporting member, receiving and transmitting mechanisms mounted upon said supporting member, sound-insulating means between said mechanisms, said receiving mechanism comprising a diaphragm, a mouthpiece in operative relation to said transmitting mechanism, a sound-amplifying horn extending directly from said diaphragm in an unbroken curve of substantially uniformly increasing diameter, said horn being adapted to be swung with relation to said support, connecting means adapted to be operated upon said horn being swung into operative position with the face thereof in non-parallel relation to the face of said mouthpiece, guiding means adapted to prevent a break in the curved passage through said horn with said horn in operative position, said horn comprising an earpiece the edge portions of which are movable with relation to the body of the horn and in all operative positions form an even continuation of the general shape thereof.

818,899. COMBINED PRINTING AND CUTTING MACHINE.

JAMES A. LOTSTER, Canonsville, N. Y. Filed Aug. 4, 1904. Serial No. 219,439.

Claim.—1. In a machine of the character described, the combination of an irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, means supplying the cylinder with ink and controlled by the movement thereof, ink-distributing rollers movable on the printing-cylinder, means operating said ink-distributing rollers, a platen supported below the printing-cylinder, and mechanism intermittently feeding a web over the platen as set forth.



2. In a machine of the character described, the combination of an irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, an ink-storing receptacle, rollers feeding the ink to the printing-cylinder, mechanism intermittently rotating the rollers, means carried with the cylinder for actuating said mechanism, ink-distributing rollers traveling around the printing-cylinder, means operating said ink-distributing rollers, and intermittently-operated web-feeding means as set forth.

3. In a machine of the character described, the combination of an irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, an ink-fountain comprising a reservoir and intermittently-rotated rollers feeding the ink to the printing-cylinder, one of said rollers being arranged to be engaged by the cylinder in its upward movement, suitably-supported ink-distributing rollers traveling around the cylinder, means operating said ink-distributing rollers, means actuated during the downward movement of the cylinder for rotating the ink-feeding rollers, and means intermittently feeding the web under the said printing-cylinder as set forth.

4. In a machine of the character described, the combination of an irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, an ink-fountain supported above the cylinder and comprising a reservoir, rollers feeding the ink therefrom to the cylinder, and pawl-and-ratchet mechanism rotating said rollers intermittently, means carried with the cylinder for actuating said pawl-and-ratchet mechanism, ink-distributing rollers carried on and adapted to travel around the printing-cylinder, means operating the latter rollers, a stationary platen disposed below the cylinder, and mechanism for intermittently feeding the web between said printing-cylinder and platen as set forth.

5. In the machine herein described, the combination with the frame, of an irrevoluble horizontal shaft, vertically-reciprocating supports for the ends of said shaft, means operating said supports, a printing-cylinder rigidly mounted on said shaft, a platen below the cylinder, an ink-fountain comprising a reservoir, rollers feeding the ink from the reservoir to the cylinder, and mechanism intermittently rotating said rollers, means carried on one of the shaft-supports for actuating said mechanism, ink-distributing rollers permanently in contact with the printing-cylinder, carriers for the latter rollers supported revolubly on the aforesaid shaft and causing the rollers to travel around the cylinder, means operating said carriers, and intermittently-operated web-feeding means as set forth.

6. In a machine of the character described, the combination of a

normally irrevoluble printing-cylinder, mechanism imparting vertically-reciprocating movement thereto, inking-rollers movable with and traveling around said printing-cylinder, an ink-fountain comprising a reservoir and rollers feeding the ink therefrom to the printing-cylinder, means rotating said ink-feeding rollers, and mechanism intermittently feeding the web to the printing-cylinder as set forth.

7. In a machine of the character described, the combination of a normally irrevoluble printing-cylinder, mechanism imparting vertically-reciprocating movement thereto, suitably-supported inking-rollers traveling around the printing-cylinder, means imparting longitudinally-reciprocating movement to said inking-rollers, an ink-fountain comprising a reservoir and feed-rollers supplying ink to the printing-cylinder, and means intermittently rotating said ink-feeding rollers as set forth.

8. In a machine of the character described, the combination of a normally irrevoluble printing-cylinder, suitably-operated longitudinally-reciprocating ink-distributing rollers traveling around the printing-cylinder, ink-supplying means, means imparting vertically-reciprocating movement to said printing-cylinder, geared web-feeding rollers disposed in front and back of the cylinder, and suitably-actuated pawl-and-ratchet mechanism intermittently rotating said web-feeding rollers as set forth.

9. In the herein-described machine, the combination with a suitable supporting-frame, of a normally irrevoluble transverse shaft, a printing-cylinder mounted on said shaft, mechanism imparting vertically-reciprocating movement to said shaft, a pair of rigidly-connected plates journaled on the shaft at opposite ends of the printing-cylinder, inking-rollers driven by said plates and lying on the printing-cylinder, and means rotating said plates to cause said inking-rollers to travel around the printing-cylinder as set forth.

10. In the herein-described machine, the combination with a suitable supporting-frame of a normally irrevoluble shaft, a printing-cylinder rigidly mounted on said shaft, mechanism imparting vertically-reciprocating movement to said shaft, inking-roller carriers, supports mounted revolubly and longitudinally shiftable on said shaft and driving said carriers, and means imparting shifting movement to said supports for the purpose set forth.

11. In the herein-described machine, the combination with a normally irrevoluble horizontal shaft, a printing-cylinder secured to said shaft, mechanism imparting vertically-reciprocating movement to said shaft, a pair of upright plates journaled on said shaft at opposite ends of the printing-cylinder, means rotating said plates, longitudinally-movable spring-pressed rods supported on said plates, carriers pivotally connected to said rods, and inking-rollers pivotally supported on said carriers, as set forth.

12. In the herein-described machine, the combination of a normally irrevoluble horizontal shaft, a printing-cylinder rigidly fastened to said shaft, mechanism imparting vertically-reciprocating movement to said shaft, a pair of plates journaled on the shaft at opposite ends of the printing-cylinder, means for rotating said plates, inking-rollers driven by the plates and held in contact with said printing-cylinder, annular cam-grooves provided in the ends of the printing-cylinder, and means on said plates engaging said cam-grooves for reciprocally shifting said plates for the purpose set forth.

13. In the herein-described machine, the combination with the irrevoluble printing-cylinder and means imparting vertically-reciprocating movement thereto, of inking-rollers, rotary inking-roller supports movable with the cylinder and carrying the rollers around the cylinder, and suitably-operated sprocket wheels and chains imparting movement to said inking-roller supports as set forth.

14. In the herein-described machine, the combination of a main shaft, a normally irrevoluble printing-cylinder, means transmitting vertically-reciprocating motion from the main shaft to said cylinder, inking-rollers traveling around the printing-cylinder and revoluble supports therefor, web-feeding rollers geared together, pawl-and-ratchet mechanism intermittently rotating said feed-rollers, sprocket wheels and chains rotating said inking-roller supports, and means transmitting motion from the main shaft to said sprocket wheels and chains and to the pawl-and-ratchet mechanism as set forth.

15. In the herein-described machine, the combination with the main frame and main shaft, of a suitably-journaled crank-shaft rotated by said main shaft, upright rods pivotally connected at their lower ends to said crank-shaft, a normally irrevoluble shaft carried on the upper ends of said rods and receiving vertically-reciprocating motion therefrom, a printing-cylinder mounted on said shaft, and vertically-movable guide-arms connected to said latter shaft as set forth.

16. In the herein-described machine, the combination with the frame and main shaft, of a shaft receiving rotation from the main shaft, cranks on the second shaft, a pair of upright rods disposed at opposite sides of the frame and pivotally connected at their lower ends to said cranks, a normally irrevoluble transverse shaft carried on the upper ends of said rods, a printing-cylinder rigidly secured to the latter shaft and receiving vertically-reciprocating motion therefrom, vertical guides on the frame, and arms pivotally connected to said shaft and sliding in said guides as set forth.

17. In the herein-described machine, the combination with the main frame, of a transverse main shaft, a longitudinal counter-shaft rotated thereby, a shaft supported parallel to the main shaft and provided with a pair of cranks at its ends, means transmitting motion from the counter-shaft to said crank-shaft, a pair of upright rods disposed at opposite sides of the frame and pivotally connected at their lower ends to the respective cranks, a normally irrevoluble transverse shaft carried on the upper ends of said rods and thereby receiving vertically-reciprocating motion, a printing-cylinder rigidly secured to the latter shaft, vertically-movable guide-arms for said rods and shaft, inking-roller supports mounted revolubly on said printing-cylinder shaft at opposite ends of the roller, sprocket-wheels journaled on said latter shaft and on the aforesaid cranks, chains connecting said sprocket-wheels, and means connecting the upper sprocket-wheels to the inking-roller supports as set forth.

18. In the herein-described machine, the combination with the main frame and main shaft, of a longitudinal counter-shaft, a shaft parallel to the main shaft and provided with cranks, gears transmitting motion from the main shaft to the counter-shaft and from the latter shaft to said crank-shaft, a pair of upright rods pivotally connected at their lower ends to said cranks, a normally irrevoluble shaft carried on the upper ends of said rods, a printing-cylinder rigidly secured on the upper shaft, vertically-movable guide-arms connected to the printing-cylinder shaft and sliding on the frame, a pair of upright plates journaled on the latter shaft at opposite ends of the printing-cylinder, inking-rollers driven by said plates and traveling around the printing-cylinder, and sprocket wheels and chains transmitting rotary motion from said cranks to the plates as set forth.

19. In the herein-described machine, the combination with the main frame and transverse main shaft, of a longitudinal counter-shaft, another shaft parallel to the main shaft and provided with cranks, worm-gears transmitting motion from the main shaft to the counter-shaft and from the latter shaft to the other shaft, a pair of upright rods pivotally connected at their lower ends to said cranks, upright arms connected to the upper end of said rods, vertical guides on the frame for said arms, a transverse shaft supported normally irrevolubly on the upper ends of the rods, a printing-cylinder rigidly mounted on the latter shaft, a pair of upright plates mounted revolubly on the printing-cylinder shaft at opposite ends of the cylinder, spring-pressed carriers pivotally supported on said plates, inking-rollers on said carriers and traveling around the printing-cylinder, a pair of sprocket-wheels journaled on the printing-cylinder shaft and imparting rotary motion to said plates, a pair of sprocket-wheels secured to the aforesaid cranks, and chains connecting the latter sprocket-wheels with the former as set forth.

20. In the herein-described machine, the combination with the frame and main shaft, a pair of vertically-movable upright rods, a crank-shaft actuating said rods, means transmitting motion from the main shaft to said crank-shaft, a transverse shaft supported normally irrevolubly on the upper ends of said rods, and receiving vertically-reciprocating movement therefrom, a printing-cylinder rigidly mounted on the latter shaft, a pair of upright plates journaled on said shaft at opposite ends of the printing-cylinder, inking-roller carriers driven by said plates, each of said plates provided with an aperture, sprocket-wheels journaled on said shaft and provided with horizontal pins loosely engaging said apertures and thereby imparting rotary movement to said plates and permitting the plates to be shifted longitudinally on the shaft, cam mechanism disposed between the ends of the printing-cylinder and plates for reciprocally shifting the latter, sprocket-wheels secured to the aforesaid cranks, and chains connecting the latter sprocket-wheels with the former as set forth.

21. In the herein-described machine, the combination with the frame, a suitably-journaled crank-shaft, means for rotating the same, a pair of upright rods pivotally connected at their lower ends to said shaft, a normally irrevoluble shaft carried on the upper ends of said rods and reciprocated vertically thereby, a printing-cylinder rigidly mounted on the latter shaft, vertical guides for said rods, inking-roller supports mounted revolubly on said printing-cylinder shaft, sprocket-wheels journaled on said shaft and connected to the respective inking-roller supports, sprocket-wheels fastened to the aforesaid cranks, chains connecting the latter sprocket-wheels with the former, horizontal arms secured longitudinally adjustable on the said rods,

and rollers pivoted to said arms and engaging the said chains for the purpose set forth.

22. In the herein-described machine, the combination with the main frame, a platen thereon, a vertically-reciprocating printing-cylinder supported normally irrevolubly over the platen, suitably-supported ink-distributing rollers traveling around the printing-cylinder, of an ink-storing reservoir, geared ink-feeding rollers, a ratchet-wheel connected to one of said ink-feeding rollers, a rock-arm, a pawl carried on said rock-arm and actuating the ratchet-wheel, and means movable with the cylinder for operating said rock-arm as set forth.

23. In the herein-described machine, the combination of a pair of suitably-supported vertically-movable upright rods, a normally irrevoluble shaft carried on the upper end of said rods, a printing-cylinder rigidly mounted on said shaft, means actuating said rods and thereby imparting vertically-reciprocating movement to the printing-cylinder, guide-arms for said rods, one of said guide-arms provided with an upward extension having a horizontal socket, a hand-crank fastened to the shaft and operative for inverting the printing-cylinder, and a spring-pressed pin supported on said hand-crank and engaging said socket as set forth.

24. In the herein-described machine, the combination with a vertically-reciprocating normally irrevoluble printing-cylinder and suitably operated ink-distributing rollers traveling around the cylinder, of an ink-fountain comprising a reservoir, a pair frictionally-engaged ink-feeding rollers, one feed-roller being arranged to supply ink to the printing-cylinder when the latter is moved upward, a gear fastened to the other feed-roller, a gear supported on the reservoir and meshing with the other gear, a ratchet-wheel connected to said second gear, a suitably-pivoted rock-arm, a pawl carried on said rock-arm and actuating said ratchet-wheel, and an arm movable with the printing-cylinder and adapted to actuate the rock-arm when the cylinder is moved downward as set forth.

25. In the herein-described machine, the combination of a normally irrevoluble printing-cylinder, means supporting said cylinder and imparting vertically-reciprocating movement thereto, means intermittently feeding a web to the printing-cylinder, suitably-operated die-press adapted to cut out printed portions of the web, a remnant or waste receiving drum or roller, and means for rotating the latter as set forth.

26. In the herein-described machine, the combination of a suitably-operated vertically-reciprocating printing-cylinder, inking-rollers adapted to travel around said cylinder, means operating said inking-rollers, a die-press, means operating said die-press independent of the printing-cylinder, and means intermittently feeding the web to said printing-cylinder and die-press as set forth.

27. In the herein-described machine, the combination of a vertically-reciprocating printing-cylinder adapted to produce a plurality of like impressions, web-cutting means comprising vertically-reciprocating dies for forming disks bearing said impressions, independently-operated mechanisms imparting movements to said cylinder and cutting means, two sets of web-feeding rollers disposed respectively in front of the printing-cylinder and back of the cutting means, and mechanism intermittently rotating said web-feeding rollers as set forth.

28. In the herein-described machine, the combination of a suitably-supported normally irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, ink-feeding means, ink-distributing rollers adapted to travel around said cylinder, mechanism operating the ink-feeding means and ink-distributing rollers, a die-press, means operating said die-press, rollers feeding the web to the printing-cylinder and die-press, and suitably-actuated pawl-and-ratchet mechanism intermittently rotating said web-feeding rollers as set forth.

29. In the herein-described machine, the combination of a suitably-supported irrevoluble web-printing cylinder adapted to produce a plurality of like impressions, inking-rollers disposed permanently in contact with the printing-cylinder, means operative for carrying the inking-rollers around the cylinder, web-cutting means adapted to cut from the web disks bearing the said impressions, intermittently-operated rollers feeding the web to said printing-cylinder and cutting means, and a suitably-operated conveyer disposed under the cutting means for receiving the printed disks as set forth.

30. In the herein-described machine, the combination of printing mechanism, cutting mechanism, means for feeding a web to said mechanisms, a suitably-operated conveyer traveling below said cutting mechanism, a drum or roller receiving web remnant or waste, and means for operating the said printing and cutting mechanisms and drum as set forth.

31. In the herein-described machine, the combination of a vertically-reciprocating web-printing cylinder adapted to produce a plurality of like impressions, suitably-operated ink-distributing rollers adapted to travel around said cylinder, ink-feeding means, a die-press operative for cutting disks or plates from the web bearing the impressions produced by the printing-cylinder, independent mechanisms simultaneously operating the printing-cylinder and die-press, suitably-rotated rollers intermittently feeding the web to said printing-cylinder and die-press, and a suitably-operated conveyer receiving the printed disks or plates formed by the die-press as set forth.

32. In the herein-described machine, the combination of a suitably-supported normally irrevoluble printing-cylinder, means imparting vertically-reciprocating movement thereto, a die-press comprising vertically-reciprocating male dies and a stationary female die-plate, suitably-operated web-feeding means, a conveyer receiving the cuttings from the die-press, and a suitably-operated drum or roller receiving the web remnant or waste as set forth.

33. In the herein-described machine, the combination with the frame and main shaft, of a pair of suitably-supported upright vertically-movable rods, a normally irrevoluble horizontal shaft carried on the upper ends of said rods, a printing-cylinder rigidly mounted on said shaft and reciprocated vertically by the rods, a crank-shaft operated by the main shaft and actuating said rods, a web-cutting device comprising vertically-reciprocating rods, a head mounted on said rods, and dies carried on said head, mechanism operated by the main shaft and operating said rods, and intermittently-actuated web-feeding means as set forth.

34. In the herein-described machine, the combination with the main frame, main shaft, and counter-shaft, a supplemental shaft parallel to the main shaft, cranks on the supplemental shaft, means transmitting motion from the counter-shaft to said supplemental shaft, a pair of vertically-movable upright rods and vertical guides therefor, said rods actuated by the cranks, a printing-cylinder carried on the upper ends of said rods and reciprocated vertically thereby, a crank connected to the main shaft, a vertically-movable plunger connected to said crank, a head moved by said plunger, male dies carried on said head, a stationary female die-plate on the frame, and suitably-actuated web-feeding means as set forth.

35. In the herein-described machine, the combination with the main frame and main shaft, of a counter-shaft, a supplemental shaft parallel to the main shaft, worm-gears transmitting motion from the main shaft to the counter-shaft and from the latter shaft to the supplemental shaft, a suitably-supported normally irrevoluble vertically-reciprocating printing-cylinder, means imparting motion from the supplemental shaft to said printing-cylinder, a die-press comprising a female die-plate and vertically-reciprocating male dies, means imparting movement from the main shaft to said male dies, web-feeding rollers, mechanism actuated by the main shaft and imparting intermittently rotary movement to said web-feeding rollers, and means for receiving the cuttings from the web produced by the said die-press as set forth.

36. In the herein-described machine, the combination with the main frame and main shaft, of a counter-shaft, a supplemental shaft disposed horizontally, worm-gears, connecting said shafts, cranks connected to the supplemental shaft, vertically-movable upright rods connected to said cranks, a normally irrevoluble printing-cylinder carried on said rods and reciprocated vertically thereby, guide-arms attached to said rods inking devices for the printing-cylinder, a crank connected to the main shaft, a die-press comprising a vertically-movable plunger operated by the latter crank, a head carried by the plunger, male dies fastened to said head, and a female die-plate supported on the frame, web-feeding rollers, pawl-and-ratchet mechanism imparting intermittent rotary motion to said web-feeding rollers, and a rod connected to the main shaft and pawl-and ratchet mechanism as set forth.

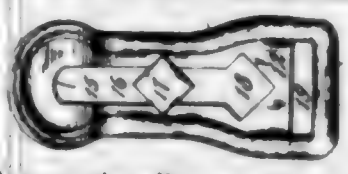
37. In the herein-described machine, the combination of web-cutting mechanism, web-feeding mechanism, printing devices comprising a suitably-supported irrevoluble cylinder for producing impressions on the web, inking-rollers traveling around said printing-cylinder, means imparting vertically-reciprocating movement to the printing-cylinder, a platen under said printing-cylinder, and chain-and-sprocket mechanism operating the inking-rollers and means for shifting the printing devices toward and from the cutting mechanism as set forth.

38. In the herein-described machine, the combination with the main frame comprising a fixed standard and an adjustable standard shiftable toward and from the fixed standard of printing mechanism supported on said adjustable standard and comprising a pair of ver-

tically-movable upright rods, a printing-cylinder carried on said rods and reciprocated vertically thereby, inking-rollers supported on the latter standard and traveling around the printing-cylinder sprocket-wheels and chains actuating said inking-rollers, and a suitably-rotated crank-shaft operating said rods, a web-cutting mechanism supported on the fixed standard, means operating the cutting mechanism, and suitably-operated web-feeding rollers as set forth.

39. In the herein-described machine, the combination with the main frame comprising a bed-plate, a fixed standard thereon, and an adjustable standard, a transverse main shaft journaled on the fixed standard, a suitably-journaled longitudinal counter-shaft, a supplemental shaft journaled on the adjustable standard and disposed parallel to the main shaft and provided with a pair of cranks, worm-gears transmitting motion from the main shaft to the counter-shaft, and from the latter shaft to the supplemental shaft, a pair of vertically-movable upright rods on the adjustable standard and connected to the respective cranks, an irrevoluble shaft carried on the upper ends of said rods, a printing-cylinder fixed to said latter shaft, a pair of rigidly-connected plates mounted revolubly on said printing-cylinder shaft, inking-rollers carried on said plates and traveling around the printing-cylinder, sprocket-wheels journaled on the printing-cylinder shaft and connected to the respective plates, sprocket-wheels fastened to said cranks, chains connecting said sprocket-wheels, a vertically-movable plunger supported on the aforesaid fixed standard, a crank on the main shaft, a pitman connecting said crank and plunger, male dies carried on the plunger, a female die-plate mounted on the latter standard, and suitably-operated web-feeding rollers as set forth.

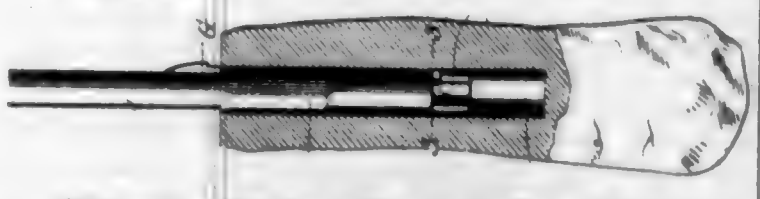
818,700. **SUPPORTING DEVICE.** WILLIAM B. MORWOOD, Elizabeth, N. J. Filed Nov. 17, 1905. Serial No. 287,915.



Claim.—1. A supporting-clip, comprising a strip of metal completely inclosed by an integral reinforcing-margin raised from the surface of the strip, one end of the clip terminating in a circular portion turned up at an obtuse angle to the body of the clip, the strip at the other end cut away adjacent to the margin, said margin forming a round strap-attaching bar, said clip being provided with a square bolt-head opening which passes through the strip adjacent to the strap-attaching bar with a diagonal disposed lengthwise of the strip, and said strip being further provided with a bolt-receiving slot extending from the bolt-head opening to a rounded wall in the center of the circular portion.

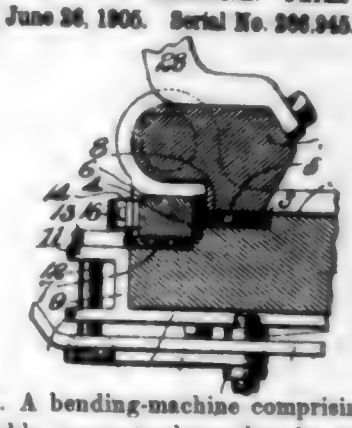
2. A supporting-clip, comprising a strip of metal completely inclosed by an integral reinforcing-margin raised from the surface of the strip, one end of the clip terminating in a circular portion turned up at an obtuse angle to the body of the clip, the strip at the other end cut away adjacent to the margin, said margin offset from the body of the clip and forming a round strap-attaching bar, said strip being provided with a square bolt-head opening which passes through the strip adjacent to the strap-attaching bar with a diagonal disposed lengthwise of the strip, and said strip being further provided with a bolt-receiving slot extending from the bolt-head opening to a rounded wall in the center of the circular portion.

818,701. **FASTENING DEVICE FOR UMBRELLA-HANDLES.** WALTER E. MOULTON, Plain City, Ohio. Filed May 19, 1905. Serial No. 261,115.



Claim.—In combination with an umbrella-handle, a tubular member or socket-piece mounted therein, said member being provided with a vertically-disposed slot in its upper end; a locking-pin secured in the tubular member, said pin standing to one side of the center of said member; a tubular staff having a section of less than half its diameter removed from the lower end and provided also with a slot F extending laterally from the cut-away portion; and a spring retaining device carried by the staff, said device standing in alinement with the slot F in the lower end of the staff, whereby when the parts are properly positioned the pin will pass into slot F, the retaining device will enter the slot in the upper end of the tubular member, and the parts be held against relative rotation and longitudinal separation.

818,702. **BENDING-MACHINE.** PETER H. MURPHY, St. Louis, Mo. Filed June 26, 1905. Serial No. 266,945.



Claim.—1. A bending-machine comprising a table, a former fixed on said table, means to clamp the edge of a sheet against said former, and a pivoted bending member arranged to bend said sheet over said former, said former terminating short of one side of the table, whereby the edge of the sheet may project beyond the end of said former.

2. A bending-machine comprising a table, a former fixed on said table, means to clamp the edge of a sheet against said former, and a pivoted bending member arranged to bend said sheet over said former, said former and the face of said bending member engaging the sheet terminating short of one side of said table, whereby the edge of a sheet having a flange on one edge may be bent.

3. A bending-machine comprising a table, a former fixed on said table, a clamping member provided with a plurality of guide-pins extending into the space between said former and said clamping member, means to move said clamping member toward and away from said former, and a pivotally-mounted bending member arranged to coöperate with said former.

4. A bending-machine comprising a table, a former fixed in said table, a clamping member movably mounted on said table and provided with slots, shafts rotatably mounted upon said table and having rigidly-mounted arms provided with pins entering said slots and rigidly-mounted arms connected together by a link, and a pivotally-mounted lever operatively connected to said shafts to rotate the same simultaneously.

5. A bending-machine comprising a table, a former fixed on said table, means to clamp the edge of a sheet against said former, and a pivoted bending member arranged to bend said sheet over said former and having a transverse groove in the face engaging said sheet, said former and said face of said bending member terminating short of one side of said table.

6. A bending-machine comprising a table having grooves at the opposite sides of the upper surface thereof, a former fixed on said table and terminating at the walls of said grooves, and a pivoted bending member arranged to bend a sheet over said former, whereby the edge of a sheet having a rebent flange on one edge can be bent.

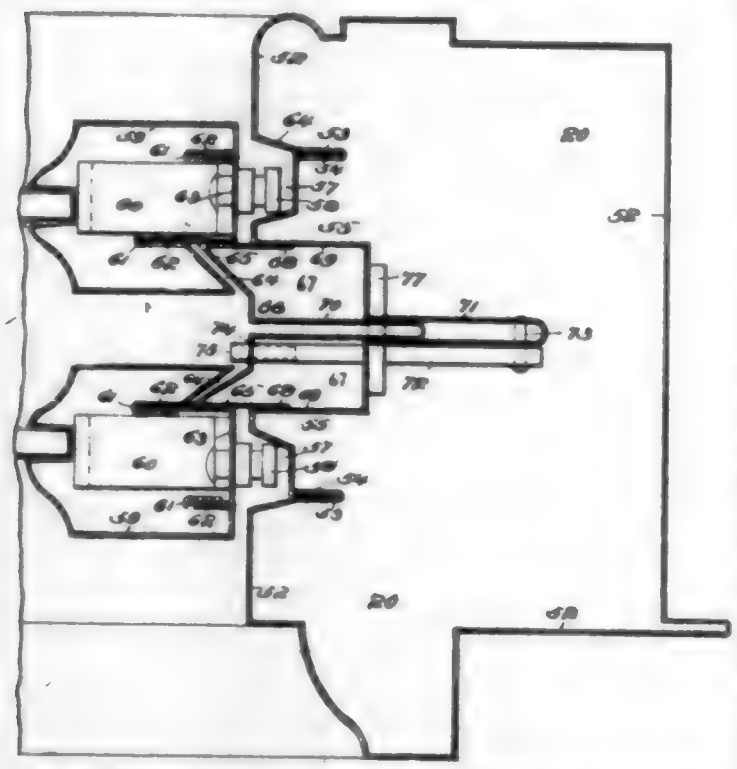
818,703. **METALLIC WINDOW.** CLAUDE A. MCGINNIS, Atlanta, Ga. Filed June 6, 1904. Serial No. 211,333.

Claim.—1. In a metallic window, a sash having a groove in a stile, a jamb provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, wings on said carrier and bearing against the sides of said guideway, a rib on said carrier registering with said socket, a guide-stop on said carrier, and means for operating said carrier to move said guide-stop into and out of engagement with said groove.

2. In a metallic window, a sash having a groove in a stile, a jamb provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, wings on said carrier and bearing against the sides of said guideway, a rib on said carrier registering with said socket, a guide-stop on said carrier, and cam mechanism for operating said carrier to move said guide-stop into and out of engagement with said groove.

3. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, and means for raising and lowering said carrier.

4. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, a lever pivoted to the wall of said socket and engaging at its free end with said carrier, and means for operating said lever to raise and lower said carrier.



5. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, a lever pivoted to the wall of said socket and engaging at its free end with said carrier, and a detachable handle for operating said lever to raise and lower said carrier.

6. In a metallic window, a member, such as a rail, composed of a main metal plate and a yoke connecting the edges of said plate, and a clip formed of a spur cut from said plate and bent over said yoke.

7. In a window, the jamb formed of folded and interlocked sheet metal; the facing of which is bent so as to form a central seat provided with a median hollow fold, whereby the interior of the jamb is partially divided into two compartments; a telescopic slideway received within said seat, and having also a median fold received within the hollow median fold of the seat; sashes which engage with the telescopic slideway; and means for projecting and retracting said slideway so as to engage or disengage it in relation to the sashes.

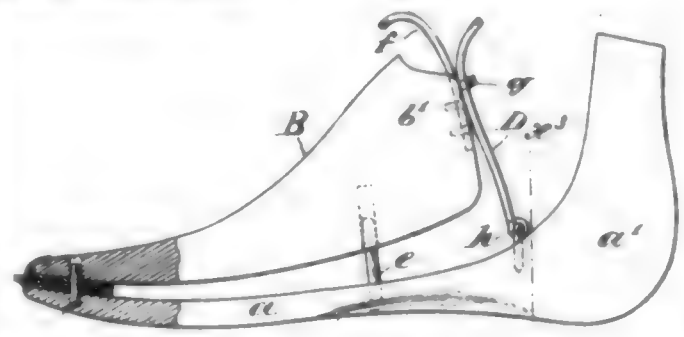
8. A metallic window-frame having a seat formed within its facing, with a hollow fold projecting inwardly across the jamb; a telescopic slideway fitting said seat, with a double fold which is received within the first-named hollow fold; a pin-and-slot connection between the hollow fold of the seat and the fold of the slideway which is received within it, the inclination of the slot being such that vertical motion of the slideway is translated into a motion of projection or retraction thereof; and a straight end to said slots whereby the slideway is locked in its projected position.

9. In a window-frame, the combination of the jamb with a seat; a slideway received within said seat; connections between the same whereby vertical motion of the slideway is translated into a motion of projection or retraction; and a handle-bar capable of being passed through a slot formed in the slideway to a fulcrum which is in fixed relation to the seat, whereby vertical movement of the handle-bar effects projection and retraction of the slideway.

10. In a metallic window-frame, the jamb the facing of which is formed of a piece of sheet metal bent to form two runways and a seat with a hollow median fold; and a collapsible slideway received within said seat and having a fold corresponding to and received within that of the seat.

818,704. SHOE-FORM. FREDERICK H. NIES, New York, N. Y. Filed Mar. 6, 1905. Serial No. 248,714.

Claim.—1. A shoe-form, comprising an instep-section and a sole-section, one of which is provided with a pin-socket and the two coupled together at the toe by a pin in one section loosely engaging said socket in the other section, the said pin, a detachable expansion-plate between the sections at the toe, through which plate said pin extends, and means for elevating and supporting the rear end of the said instep-section.

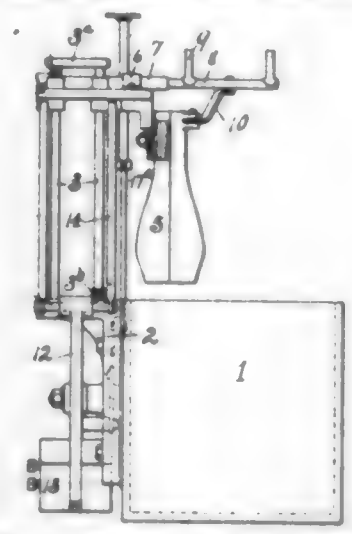


2. A shoe-form, comprising an instep-section and a sole-section, one of which is provided with a pin-socket, and said sections extending out to an equal extent at the toe, a pin in one of said sections at the toe thereof, which pin engages loosely said socket in the other section to form a coupling and fulcrum, a plurality of separable expansion-plates C between the toe portions of the two form-sections, and means for elevating and supporting the instep-section at its rear end.

3. A shoe-form, comprising an instep-section and a sole-section, said sections being superposed, extending out to an equal extent at the toe and coupled loosely together thereat, a detachable plate between the sections at the toe, and means for expanding the form at the instep portion.

4. A shoe-form, comprising an instep-section and a sole-section, coupled together loosely at the toe, means for expanding the form at the toe, and means for effecting the main expansion of the form, the last-named means consisting of a stud *g* on the rear end of the instep-section and a flat plate D, hinged at *h* to the sole-section, and provided with a series of holes *i* to engage the stud *g*.

818,705. GLASS-BLOWER'S DUMMY. PETER J. O'BRIEN, Toledo, Ohio. Filed July 6, 1905. Serial No. 268,417.



Claim.—1. In an apparatus of the class described, a water-tank, a vertically-movable member, a mold suspended from said member over the tank and having a hinged section, means for opening the mold, and means comprising a toggle and operating-treadle having connection with the toggle for effecting a lowering of said member and mold, said treadle passing through and above a platform disposed at the rear of and on a plane with the normal position of the vertically-movable member.

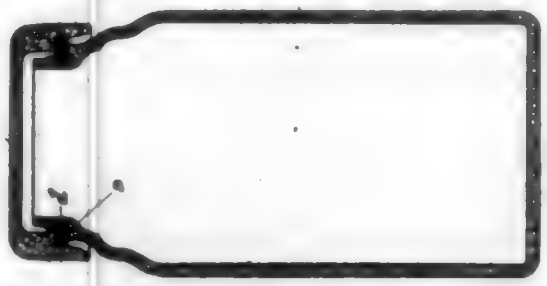
2. In an apparatus of the class described, a water-tank, a vertically-movable member, a two-part mold suspended from said member over the tank, means for opening the mold parts, toggle connection between said member and a fixed point in a vertical plane therewith, and means separate from the mold-opening means for effecting a movement of the toggle connection to cause a lowering of said member.

3. In a machine of the class described, a vertically-movable member, a mold suspended from said member and having a swinging part, personally-operated means for effecting an opening and closing of said mold, and means for causing a lowering of said member, comprising a counterpoise-lever and a common lever in link

connection, a foot-treadle connecting the common lever, and link connection between the counterpoise-lever and said member whereby a movement of the latter lever effects a movement of said member.

4. In a machine of the class described, the combination of a tank, a bracket secured to the side of the tank, vertical guide members arising from the bracket, a member mounted to have a vertical movement on said guide members, a two-part mold suspended from said member over the tank, means carried by said member for effecting an opening and closing of the mold, a counterpoise-lever pivoted below the bracket and having its light end formed with a bearing-head, two links pivoted at one end to opposite sides of the bearing-head of the lever and having their other ends in pivotal connection with the movable member whereby to cause a lowering of said member as the weighted end of the lever is raised, a treadle mounted in a platform at the rear of the movable member, and a lever and link connecting the treadle-rod and counterpoise-lever whereby to cause an elevation of the weighted end of the latter lever when the treadle is depressed.

818,706. JAR-CLOSURE. FRANK O'NEILL, Detroit, Mich. Filed June 10, 1905. Serial No. 264,634.



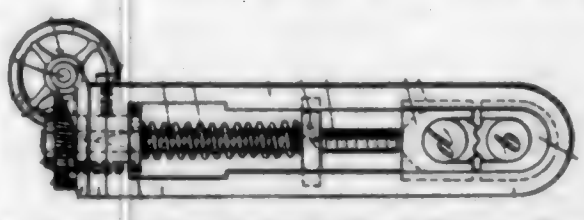
Claim.—1. The combination with a jar and cover having oppositely-arranged parallel faces, of a gasket having its upper and lower faces respectively contacting said faces on the jar and cover, and a flaring flange on said cover for peripherally compressing said gasket.

2. A jar and cover respectively provided with external and internal opposed faces, an annular gasket having parallel external and internal surfaces sleeved upon said external face of the jar and of greater width than the space between said face and the opposed face on the cover, a flaring flange upon said cover for peripherally compressing said gasket, and a shoulder on said jar for holding said gasket from longitudinal movement during the peripheral compression.

3. A jar and cover having opposed external and internal surfaces and opposed adjacent shoulders, an annular gasket having a substantially rectangular cross-section sleeved upon said external surface of the jar and resting upon the adjacent shoulder, said gasket being of greater width than the space between said jar and the opposed surface of the cover, and a flaring flange on said cover extending from said internal face, forming a means of peripherally compressing said gasket.

4. A jar and a cover respectively provided with external and internal opposed faces and adjacent opposed shoulders, said internal face on the cover being inclined to contract downwardly, a gasket sleeved upon said jar and resting upon the adjacent shoulder, and a flaring downwardly-projecting flange on said cover oppositely angled to said internal face, whereby in the depression of said cover upon said jar, said flange will peripherally compress said gasket and the incline of said internal surface will provide a slight expansion which will retain the cover to the jar.

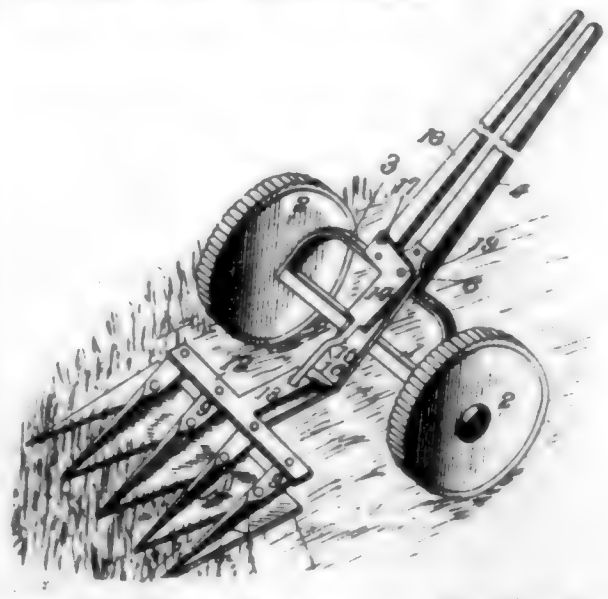
818,707. WOOL-COMBING MACHINE, GILL-BOX, &c. SETH ORMONDROYD and JOHN F. WHITE, Bradford, England, assignors to Joseph Cooper, Ilkley, England. Filed Oct. 17, 1904. Serial No. 228,744.



Claim.—1. In a combing-machine of the Noble type the combination of parts for mounting and adjusting the drawing-off rollers consisting of bearing-brackets provided with extended bearings beneath the brackets, slidable bearings mounted in the brackets and movable across the fixed bearings, screws engaging with the rear of the movable bearings at one end and provided at the other with squared ends, bearing-bushes engaging with the squared ends of the screws rotatably mounted in the ends of the bearing-brackets, nuts mounted on the screws, springs surrounding the screws and abutting against the nuts and bearing-bushes, a divisible adjusting-shaft, worms mounted on the shaft, worm-wheels mounted on the adjusting-screws and means for rotating the divisible shaft substantially as described.

2. In a gill-box or like machine the combination of parts for mounting and adjusting the fluted rollers consisting of ordinary bearings two of which are fixed while two of which are movable, screws engaging with the rear of the movable bearings at one end and provided at the other with squared ends, bearing-bushes engaging with the squared ends of the screws rotatably mounted in the end of the bearing-brackets, nuts mounted on the screws, springs surrounding the screws, and abutting against the nuts and bearing-bushes, a divisible adjusting-shaft, worms mounted on the shaft, worm-wheels mounted on the adjusting-screws and means for rotating the divisible shaft substantially as described.

818,708. LAWN-TRIMMER. HENRY B. PITNER, Olean, N. Y. Filed Sept. 18, 1905. Serial No. 278,918.

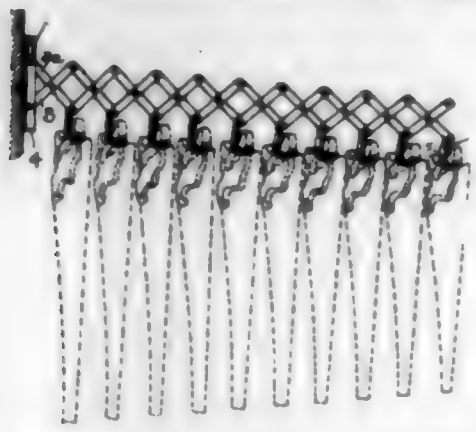


Claim.—1. In a device of the character described, the combination, with a wheeled frame and a handle fixed thereon, of a plate secured to the frame and arranged at an angle therewith, a plurality of cutting members formed integral with the plate, a plurality of cutting members pivotally mounted on the plate and adapted to present cutting edges to the cutting edges of the first-mentioned members, a T-shaped plate having the pivotally-mounted cutting members pivotally connected therewith at their rear ends, a bell-crank lever having a sliding pivotal connection with the T-shaped plate, and a handle fixed on the bell-crank lever whereby the same is actuated to impart oscillating or rocking motion to the pivotally-mounted cutting members.

2. In a device of the character described, a wheeled frame, a handle fixed thereon, a tongue carried by the frame, a plate formed integral with the tongue and arranged at an angle therewith, a plurality of cutting members formed integral with the plate, a plurality of cutting members pivotally mounted on the plate and adapted to present cutting edges to the cutting edges of the first-mentioned members, a T-shaped plate having the pivotally-mounted cutting members having a sliding pivotal connection therewith at their rear ends, a bell-crank lever pivotally connected with the T-shaped plate, and a handle fixed on the bell-crank lever whereby the same is actuated to impart rocking or oscillating motion to the pivotally-mounted cutting members.

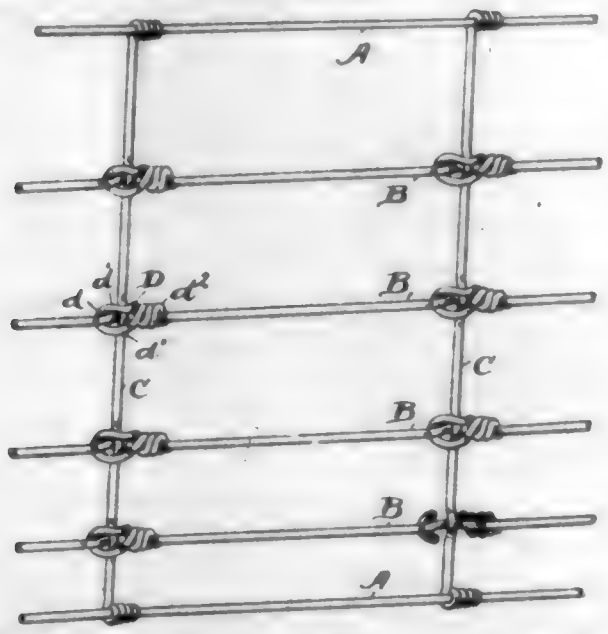
3. A device of the character described comprising a wheeled frame, a handle fixed thereon, a horizontally-arranged plate carried thereby, said plate having a plurality of cutting members formed integral therewith, a bell-crank lever pivoted on the frame, a handle fixed on one arm of the bell-crank lever, the other arm of said bell-crank lever terminating in a rounded part or projection, a T-shaped frame having a rounded opening in which the rounded point or projection on the bell-crank lever enters to form a pivot by means of which rocking or oscillating motion is imparted to the T-shaped frame when the bell-crank lever is rocked, and a cutting member pivotally mounted on the plate at each junction of the first-mentioned cutting members, each of the second cutting members being pivotally mounted at its rear end on the T-shaped frame by means of which rocking or oscillating motion is imparted thereto.

818,709. EXTENSIBLE DISPLAY-RACK. ERNST L. REICHEL, Saginaw, Mich. Filed Mar. 25, 1905. Serial No. 252,004.



Claim.—A display-rack comprising a lazy-tongs, suitably supported at one end, and hooks adapted to be secured to the lazy-tongs, each hook being recessed to receive a portion of the lazy-tongs, the walls of the recess operating to steady the hook against lateral movement.

818,710. WIRE FENCE. ALBERT E. ROBERTS, Norwalk, Ohio. Filed Aug. 17, 1905. Serial No. 274,525.



Claim.—1. A wire fence having running-wires and stay-wires, the intermediate running-wires being locked to the stay-wires by a wire loop which passes around one of said wires and then has both its arms pass across the other wire on the side opposite to the side of the wire first engaged, both arms of said loop being then coiled in the same direction around the wire first engaged.

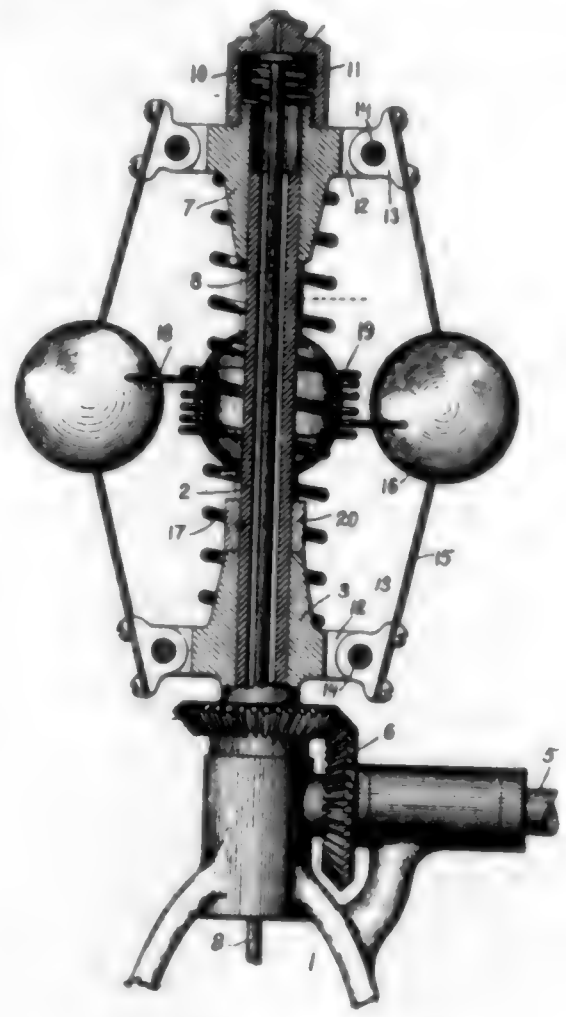
2. A lock for securing intersecting wires consisting of a wire loop which passes around one wire and has both arms passed across the opposite side of the other wire and then both arms coiled in the same direction around the first wire.

3. A lock for securing intersecting wires consisting of a wire loop which passes around one wire and has both arms passing across the opposite side of the other wire and then both arms coiling in the same direction around the first wire, the arms of said coil lying snugly against each other.

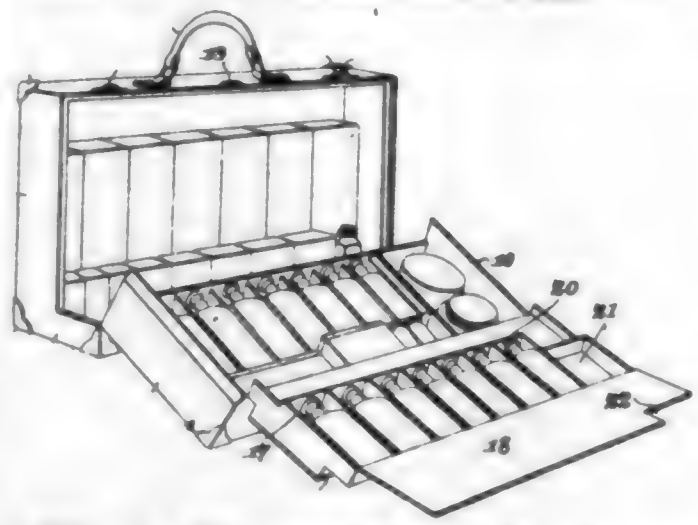
4. The combination with two wires crossing each other and kinked at the crossing, of a wire lock for the crossing consisting of a loop which takes around one wire and then across the other wire, the two arms of the loop lying on the same side of the last-mentioned wire, said two arms being coiled side by side in the same direction around the wire first mentioned.

818,711. STEAM-ENGINE GOVERNOR. WILLIAM N. RUSSELL, Laporte, Ind. Filed Sept. 20, 1905. Serial No. 279,213.

Claim.—In a governor, the combination, substantially as set forth, of a rotary governor-head mounted for movement in line of its axis, a governor-weight pendulously connected with said governor-head, a helical spring surrounding the axis of rotation of the governor-head and engaging the governor-head, a sleeve member loosely surrounding the spring in the general plane of revolution of the governor-weight, and a guard projecting inwardly from the governor-weight and adapted to engage the side of said sleeve member farthest from the governor-weight and limit the outward movement of the governor-weight.



818,712. PORTABLE DISPLAY-CASE. JOHN W. SHAW, Humboldt, Iowa. Filed Dec. 21, 1905. Serial No. 293,783.



Claim.—1. A display-case comprising a main section which is open throughout one side and provided with a base extension at the open side and rigidly connected to the main section, a supplemental section hinged to the base-section to fold thereagainst and close the case, a tray hinged to the top of the supplemental section and constituting a closure for the open side thereof, and a hinged cover for the open side of the tray.

2. A display-case comprising a main case-section open throughout its inner side and provided with a base extension at the open side of the section and rigidly connected thereto, a supplemental case-section hinged to the base extension and constituting a closure for the open side of the main case-section, a tray including a back hinged to the top of the supplemental section and provided with a compartment upon each side thereof, and hinged closures for the two compartments, the tray capable of being folded upon the supplemental section to form a closure therefor, and the supplemental section with the tray therein capable of being folded against the main case-section to close the latter.

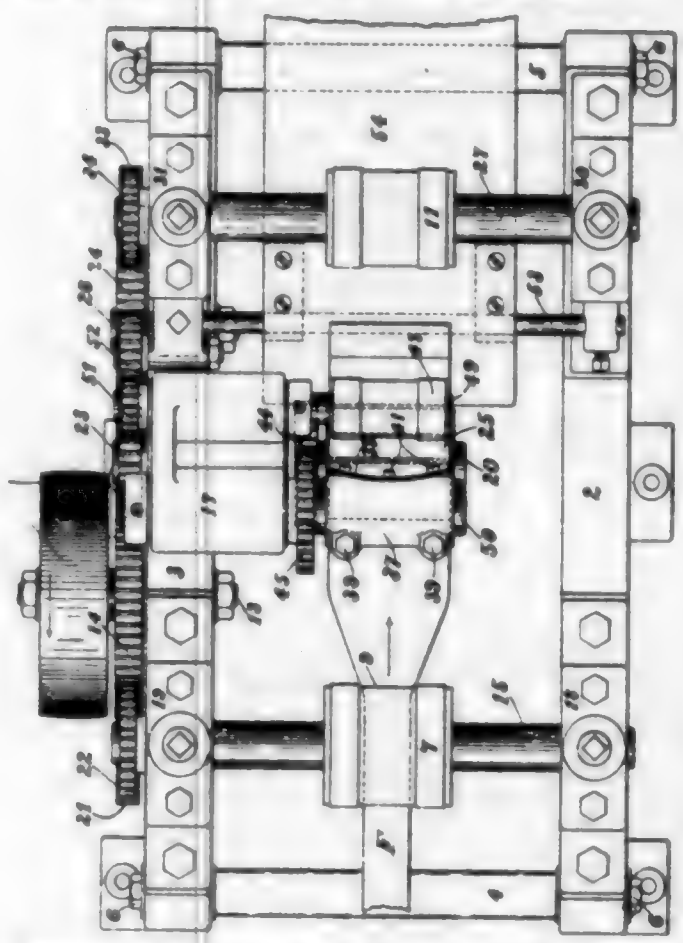
3. A display-case comprising a main case-section which is open throughout its inner side and is provided with a base extension at the open side of the section, a supplemental section hinged to the base-section with its bottom narrower than its top, a back member hinged

to the free edge of the top of the supplemental section, a walled compartment carried by one side of the back and terminating short of the hinged edge thereof, said compartment lying between the back and the supplemental section when the case is closed, a hinged cover for said compartment, another compartment carried by the other side of the back and terminating short of the hinged and free edges of the back, and a hinged cover for the latter compartment.

4. A display-case comprising a base, an upright section rigidly carried by the base and open at its inner side, a handle upon the top of the upright section, a supplemental upright section hinged to the base to swing outwardly from the main section and normally closing said main section, and locking means to detachably connect the supplemental section with the main section in the closed condition of the case.

5. A display-case comprising a base, two upright sections carried thereby and open at their inner sides, one section being rigid upon the base and provided upon its top with a handle, the other section being hinged to the base to fold outwardly therefrom, a tray hinged to the top of the foldable section and constituting a closure for the open side thereof, and a hinged cover for the open side of the tray.

818,713. CUTTING MECHANISM. CHARLES F. SMITH, Bridgeport, Conn., assignor to Continental Paper Bag Company, a Corporation of Maine. Filed Apr. 1, 1905. Serial No. 253,347.



Claim.—1. A float having a plurality of contiguous grooves lengthwise in one face thereof, said grooves being of a depth less than the thickness of the float, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves respectively, in the float, all combined and working together substantially as described.

2. The combination of a float having a plurality of grooves lengthwise in one face thereof, said grooves being of a depth less than the thickness of the float, a rotatable blade having its axis substantially at right angles to the length of the float, said blade having teeth for engagement with each groove respectively of the float, all combined and operating together substantially as described.

3. A float having a plurality of contiguous grooves lengthwise in one face thereof, a rotatable blade above the float, said blade having a transverse profile other than a straight line, and having a plurality of teeth for engagement with the grooves respectively in the float, all combined and working together substantially as described.

4. A float, having a plurality of contiguous grooves lengthwise in each side thereof, said grooves being of a depth less than the thickness of the float and sufficient in number to extend substantially the width of each side of said float, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves in the upper side of the float and a rotatable blade below the float, said blade having a plurality of teeth for engagement with the grooves in the lower side of the float, and means to maintain the float for engagement with said blades, all combined and operating together substantially as described.

5. A float having a plurality of contiguous grooves lengthwise in each side thereof, the grooves in one side of the float being so disposed as not to penetrate the grooves in the other side of the float, said grooves being sufficient in number to extend substantially the width of each side of said float, a rotatable blade above the float, said blade having teeth for engagement with each groove respectively in the upper side of the float and a rotatable blade below the float, said blade having teeth for engagement with each groove respectively in the lower side of the float, and means to maintain the float for engagement with said blades, all combined and operating together substantially as described.

6. The combination of a float having a plurality of contiguous grooves lengthwise in each side thereof, the grooves in one side of the float being so disposed as not to penetrate the grooves in the other side of the float, a rotatable roll above the float said roll having a plurality of teeth for engagement with the grooves in the upper side of the float, and a rotatable roll below the float said roll having a plurality of teeth for engagement with the grooves in the lower side of the float, all combined and operating together substantially as described.

7. The combination of a float having a series of lengthwise grooves crosswise in one face thereof, the adjacent edges of said grooves contacting with each other respectively on the face of the float, a rotatable blade having a cutting edge complementary to the cross-section profile of the series of grooves, means for feeding paper lengthwise on the face of the float and means to rotate the blade at a cutting-edge speed in excess of the speed of the paper-feeding means all combined and operating together substantially as described.

8. The combination of a float having a plurality of contiguous V-grooves, lengthwise in one face thereof said grooves having a longitudinal profile conforming to the arc of a circle, a rotatable blade above the float, said blade having a plurality of teeth complementary to and for engagement with the grooves in the float the teeth of said blade having a radius of rotation less than the radius of the longitudinal profile of the grooves all combined and operating together substantially as described.

9. The combination of a float having a plurality of grooves lengthwise in one face thereof, said grooves being of a depth less than the thickness of the float and of such cross-section profile and so spaced that adjoining grooves will contact with each other respectively, on the face of the float, a rotatable blade above the float said blade having a plurality of teeth for engagement with the grooves respectively, in the float all combined and operating together substantially as described.

10. The combination of a float having a plurality of grooves lengthwise in one face thereof, said grooves being of a depth less than the thickness of said float and of such cross-section profile and so spaced that their adjoining edges are in contact on the face of the float, a rotatable blade above the float said blade having a cutting-profile complementary to the cross-section profile of the series of grooves whereby a continuous line of coaction is attained within the limits of the engagement of the grooves and the rotatable blade all combined and operating together substantially as described.

11. A float having a plurality of contiguous grooves lengthwise in each side thereof, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves in the upper side of the float, a rotatable blade below the float, said blade having a plurality of teeth for engagement with the grooves in the lower side of the float, means for feeding paper lengthwise on each side of the float, means for rotating the blades to cause the teeth thereof to travel at a linear speed in excess of the speed of the paper-feeding means and means to maintain the float for engagement with the blades, all combined and operating together substantially as described.

12. A float having a plurality of contiguous grooves lengthwise in one face thereof, a rotatable blade above the float, said blade having a transverse profile other than a straight line and having a plurality of teeth for engagement with the grooves respectively in the float, means for feeding paper lengthwise on the face of the float and means to rotate the blade to cause the teeth thereof to travel at a linear speed in excess of the speed of the paper-feeding means all combined and operating together substantially as described.

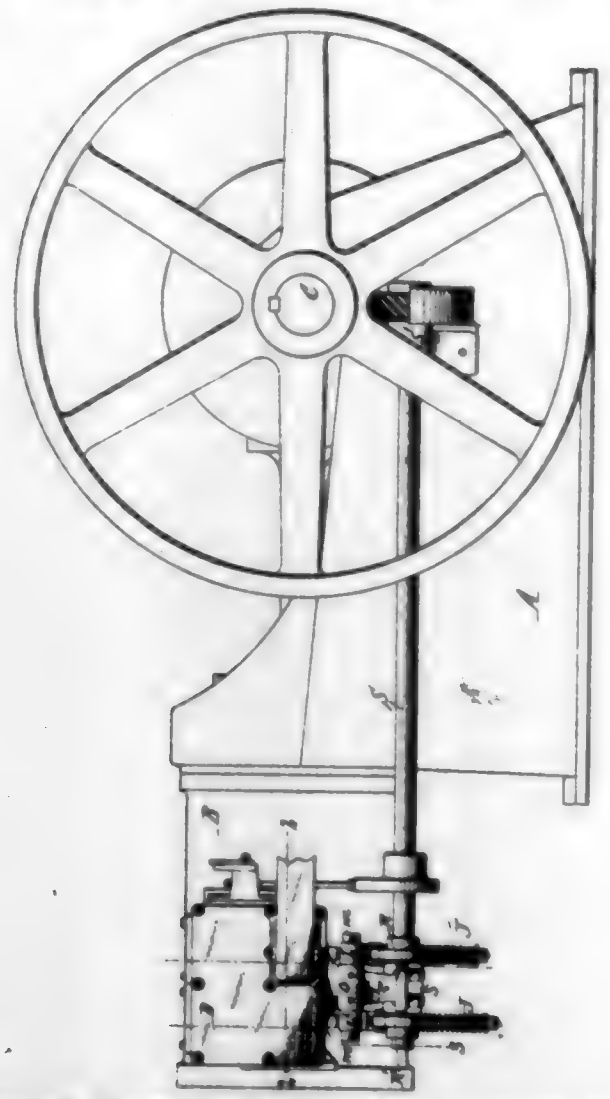
13. The combination of a float having a plurality of grooves lengthwise in one face thereof, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves

respectively in the float, means for feeding the paper over the float to the blade and means for feeding the paper away from the blade at a speed momentarily greater than that of the feed to the blade, all combined and operating together substantially as described.

14. The combination of a float having a plurality of grooves lengthwise therein, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves respectively, in the float, means for feeding paper lengthwise on the face of the float and means to rotate the blade at a cutting-edge speed in excess of the speed of the paper-feeding means, all combined and operating together substantially as described.

15. The combination of a float having a plurality of grooves lengthwise in one face thereof, said grooves being of a depth less than the thickness of said float, a rotatable blade above the float, said blade having a plurality of teeth for engagement with the grooves respectively, in the float, means for feeding paper lengthwise on the face of the float and means to rotate the blade at a cutting-edge speed in excess of the speed of the paper-feeding means, all combined and operating together substantially as described.

818,714. VALVE MECHANISM FOR GAS-ENGINES. HARRY J. SMITH, Buffalo, N. Y., assignor to The Alberger Company, Buffalo, N. Y. Filed Feb. 19, 1904. Serial No. 194,345.



Claim.—1. A valve mechanism comprising a valve-stem having a flat contact-face, a rock-arm having a circular bearing, and an oscillating shifter-block having a circular part turning in said bearing and a flat contact-face which coöperates with the corresponding flat face of said stem, substantially as set forth.

2. A valve mechanism comprising a reciprocating valve-stem, a shifter-collar secured to said stem and provided with a flat contact-face, a rock-arm having a circular bearing of which a peripheral portion is removed, and an oscillating shifter-block having a circular part turning in said bearing and a flat contact-face on its periphery which coöperates with the contact-face of said collar, substantially as set forth.

3. A valve mechanism comprising a reciprocating valve-stem, a shifter-collar secured to said stem and provided with a flat contact-face, a rock-arm having jaws between which said stem is arranged and each jaw having a circular bearing, and an oscillating shifter-block having circular ends which turn in the bearings of said jaws and a flat contact-face on its periphery which coöperates with the flat face of said collar, substantially as set forth.

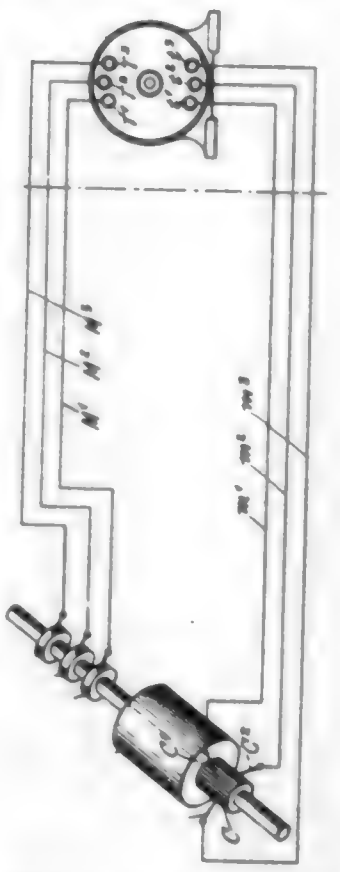
4. A valve mechanism comprising a reciprocating valve-stem, a shifter-collar secured to said stem and provided with a flat contact-face, a rock-arm having jaws each of which has a circular bearing, and an oscillating shifter-block having circular ends which turn in the bearings of said jaws, a flat contact-face on its periphery which coöperates with the face of said collar and a laterally-opening recess in its central part which receives said stem, substantially as set forth.

5. A valve mechanism comprising a reciprocating valve-stem, a shifter-collar secured to said stem and having a flat transverse contact-face, a rock-arm having a pair of jaws each of which has a circular bearing of which a peripheral part is removed, and a shifter-block having circular ends which turn in the bearings of said jaws, a flat contact-face on its periphery which projects through the open parts of said bearings into engagement with the contact-face of said collar and a laterally-opening recess between its ends which receives said valve-stem, substantially as set forth

6. A valve mechanism comprising a valve-stem, a hanger having an opening, an arbor having a head at one end and a shank at its opposite end which is seated in said opening and provided with an annular groove, a screw arranged on said hanger and engaging with said groove and a rock-arm for actuating the valve-stem pivoted on said arbor between its head and the hanger, substantially as set forth.

7. A valve mechanism comprising a valve, a stem connected with said valve and having a shoulder and a screw-thread below said shoulder, a threaded shifter-collar which is screwed on the thread of the stem and against the shoulder thereof, and a rock-lever engaging said collar, substantially as set forth.

818,715. MEANS FOR TRANSMITTING POWER BY ELECTRIC CURRENTS. WILLIAM STANLEY, Great Barrington, Mass. Filed July 19, 1904. Serial No. 217,171.



Claim.—1. In a system of power transmission, the combination of means for producing a plurality of sets of currents of differing frequencies, a motor having a rotor and a stator each energized by one of said sets of frequency-differing currents so as to have rotating magnetic fields impressed upon them respectively and means for changing the relative direction of rotation of said fields.

2. In a system of power transmission, the combination of means for producing a plurality of sets of currents of differing frequencies, a motor having a rotor element and a stator element each adapted to be energized by one of said sets of frequency-differing currents so as to have rotating magnetic fields impressed on them respectively, means for short-circuiting the winding of one of said motor elements when the second is energized and for short-circuiting the second of said elements when the first is energized.

3. In a system of power transmission, means for producing a plurality of sets of currents of different frequencies, mains leading

therefrom, a motor having rotor and stator elements, means for connecting said elements with said mains in various relations and means for alternately short-circuiting either of said elements and energizing the other so as to develop progressively-increasing speeds in said rotor element.

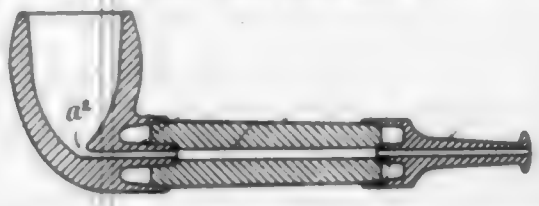
4. In a system of power transmission, the combination of means for producing frequency-differing currents, mains carrying said frequency-differing currents leading therefrom, a motor having rotor and stator elements mechanically disconnected from said generating means and electrically connected to said mains so as to be energized respectively by said frequency-differing currents, and means for short-circuiting one of said elements at one time and for connecting both of said elements to said mains respectively at another time.

5. In a system of power transmission, the combination of means for producing frequency-differing currents, mains leading therefrom, a motor having rotor and stator elements energized thereby and means for short-circuiting one of the said elements at one time and for connecting both of said elements with said mains at another time and means for changing at still another time the connections to said mains.

6. In a system of power transmission, the combination of means for producing frequency-differing currents, mains leading therefrom, a motor having rotor and stator elements adapted to be energized thereby and a controller having means for connecting one of the said motor elements to the mains of lower frequency while short-circuiting the second element, means for connecting both of said elements respectively to both of said mains, one of said elements being reversely connected, means for short-circuiting said second element while connecting the other to the higher-frequency mains and means for connecting both of said elements directly to said mains respectively.

7. In a system of power transmission, the combination of a multiphase multifrequency generator, a motor having one of its elements connected to mains of one frequency leading from said generator, and its other element connected to mains of a different frequency leading from said generator, and means for disconnecting one of said elements from its mains and reconnecting it therewith in changed relations thereto.

818,716. TOBACCO-PIPE. FREDERICK A. STROHER, Cincinnati, Ohio. Filed Sept. 14, 1905. Serial No. 278,407.



Claim.—A pipe consisting of a bowl having a short annular flange surrounding a nipple through which the smoke-passage is made, the bowl-flange and nipple being formed integral a mouthpiece having a similar flange and nipple and a stem of absorbent material with a longitudinal smoke-passage and having its ends shaped to fit within the flanges of the bowl and the mouthpiece and having the end of its smoke-passage formed to fit over the nipples.

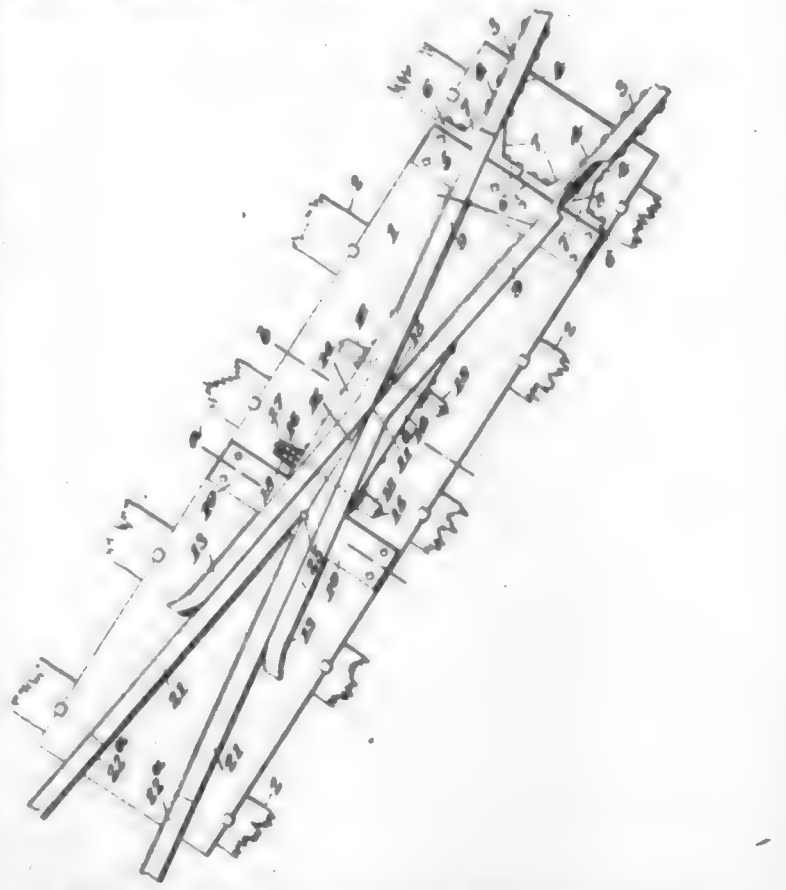
818,717. RAILWAY-FROG. HENRY THEIS and HENRY J. THEIS, Lawrenceburg, Ind., assignors to said Henry Theis. Filed Feb. 17, 1906. Serial No. 301,617.

Claim.—1. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails mounted for movement on the base-plate toward and from the point, rail ends adjacent to the ends of the wing-rails and straps connecting the rail ends with the base-plate and bridging the joint between said rail ends and the wing-rails.

2. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails pivotally held on the base-plate with bent ends movable toward and from the point, rail ends lapped on the base-plate adjacent to the pivotal ends of the wing-rails and straps connecting said rail ends with the base-plate and bridging the joint between said rail ends and the wing-rails and having beveled inner surfaces adjacent to and permitting pivotal movement of the wing-rails.

3. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails each having at one end a detachable pivotal connection with the base-plate and having its opposite end bent and movable toward and from the point and means, independent of the detachable pivot connection of each wing-rail with the base-plate for holding said wing-rail pressed on said base-plate.

4. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails each having at one end a socket in its under side and having its opposite end bent and movable toward and from the point, pivot-studs on the base-plate and engaged in the sockets at the under sides of the wing-rails and means carried by the base-plate and independent of said studs and having engagement with the wing-rails to hold the same upon the base-plate with their sockets engaged with said studs.



5. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails each having a socket in the under side of one end and having its opposite end bent and movable toward and from the point, pivot-studs on the base-plate and engaged in the sockets at the ends of the wing-rails, a brace transversely extended upon the base-plate with its central portion elevated above the surface thereof, said wing-rails having perforations in their webs and said brace being passed through said perforations to guide the wing-rails in their movement and retain them on the base-plate with their sockets engaged with said studs.

6. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails pivotally mounted on the base-plate with bent ends movable toward and from the point, reinforces held on the outer sides of the wing-rails opposite the bends therein and spring devices for pressing the wing-rails in contact with the point.

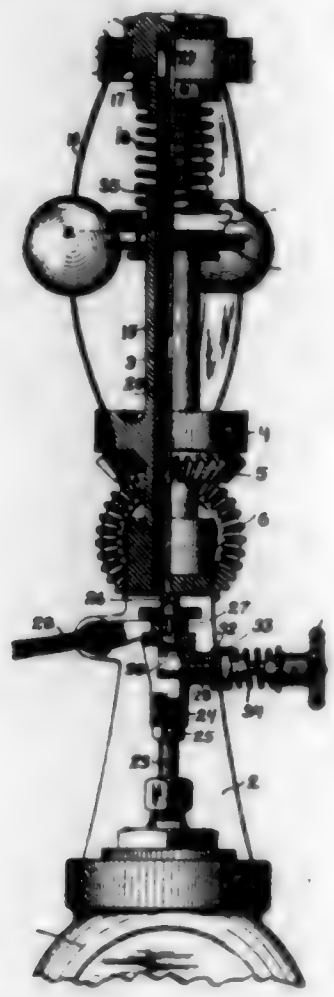
7. In a railway-frog, the combination of a base-plate, a point supported thereon, wing-rails pivoted on the base-plate with bent ends movable toward and from the point and spring devices for pressing the wing-rails into contact with the point and located at different points along the length of the wing-rails at opposite sides of the point of juncture with the point of the frog.

8. A railway-frog having a point formed from rail-sections having beveled faces fitted flush on each other and provided with a V-shaped filling or reinforce the arms of which are set into the spaces at opposite sides of said rail-sections between their ball-and-flange portions.

9. A railway-frog having a point formed from rail-sections jointed together in combination with a base-plate and a pin or bolt anchored in said base-plate and having its upper end extended between said rail-sections and provided with an enlargement engaged therewith to hold said sections from springing up above the base-plate.

10. In a railway-frog, the combination of a base-plate, a point supported thereon and having divergent rail-sections, wing-rails movable on the base-plate and having bent ends at opposite sides of the point, said rail-sections of the point and said wing-rails having alined openings in their webs, a tie-plate the ends of which are supported on the base-plate and the central part of which is elevated above the base-plate and passed through the alined openings in the rail-sections of the point and in the wing-rails and a pin or bolt anchored in the tie-plate with its upper end extended between the rail-sections of the point and provided with an enlargement engaged therewith to hold said point from springing up above the base-plate.

818,718. **ENGINE-GOVERNOR.** CHARLES N. WALSH and WILLIAM H. RUMELY, Laporte, Ind. Filed Oct. 14, 1905. Serial No. 282,722.



Claim.—1. In a governor, the combination, substantially as set forth, of a valve-stem, a rod in line therewith and arranged to be reciprocated by the governor mechanism, a housing secured to the valve-stem and having the foot of the rod arranged to slide in it, an eccentric mounted in the housing and having the foot of the rod resting upon its periphery, and means for turning and locking the eccentric.

2. In a governor, the combination, substantially as set forth, of a valve-stem, a rod in line therewith and arranged to be reciprocated by the governor mechanism, a housing adjustably screwed to the valve-stem and having the foot of the rod arranged to slide in it, an eccentric mounted in the housing and having the foot of the rod resting upon its periphery, and means for turning and locking the eccentric.

3. In a governor, the combination, substantially as set forth, of a valve-stem, a rod in line therewith and arranged to be reciprocated by the governor mechanism, a housing secured to the valve-stem and having the foot of the rod arranged to slide in it, an eccentric mounted in the housing and having the foot of the rod resting upon its periphery, a spindle journaled in the housing and carrying the eccentric, a handle on the spindle, intermembering serrated members carried by the housing and spindle, and a spring holding said serrated members yieldingly in engagement.

4. In a governor, the combination, substantially as set forth, of a fixed stud, a governor-head rotatable and slidable at the top thereof, balls connected with the governor-head, a member with an upwardly-presenting surface mounted on the stud below the governor-head, a plug screwed downwardly into the governor-head, and a helical spring compressed between said upwardly-presenting member and a downwardly-presenting surface carried by said plug.

5. In a governor, the combination, substantially as set forth, of a fixed stud, a governor-head rotatable and slidable at the top thereof and having a threaded bore extending through it, balls connected with the governor-head, a member with an upwardly-presenting surface mounted on the stud below the governor-head, a plug screwed downwardly into the governor-head, an adjusting-nut screwed upon the lower portion of the plug, and a helical spring compressed between said upwardly-presenting member and said nut.

6. In a governor, the combination, substantially as set forth, of a fixed stud, a governor-head rotatable and slidable at the top thereof and having a threaded bore extending through it, balls connected with the governor-head, a member with an upwardly-presenting surface mounted on the stud below the governor-head, a plug screwed downwardly into the governor-head, an adjusting-nut screwed upon the lower portion of the plug, and a helical spring compressed between said upwardly-presenting member and said nut, the bore of the governor-head having a diameter in excess of that of said nut or spring.

7. In a governor, the combination, substantially as set forth, of a fixed stud, a governor-head rotatable and slidable at the top thereof, balls connected with the governor-head, a whirl mounted to turn on the stud and having connection with the balls, a sleeve projecting upwardly from the whirl and carrying a collar, a plug screwed downwardly into the governor-head, a helical spring compressed between said collar and a downwardly-presenting surface carried by said plug, and guard-loops carried by the balls and inclosing the sleeve below said collar.

8. In a governor, the combination, substantially as set forth, of a fixed stud, a governor-head rotatable and slidable at the top thereof, balls connected with the governor-head, a whirl mounted to turn on the stud and having connection with the balls, a sleeve projecting upwardly from the whirl and carrying a collar, a plug screwed downwardly into the governor-head, a helical spring compressed between said collar and a downwardly-presenting surface carried by said plug, and guard-loops carried by the balls and inclosing the sleeve below said collar, said collar being disposed in the general plane of revolution of the balls and having a diameter suited to limit the inward movement of the balls.

9. In a governor, the combination, substantially as set forth, of a rotary disk, a notch in the periphery thereof having an inner wall with a concave contour, a spring-blade having its end seated in said notch against said wall, and means for forcibly curving the end of the spring into contact with the concave surface of said wall.

10. In a governor, the combination, substantially as set forth, of a rotary disk, a notch in the periphery thereof having an inner wall with a concave contour, a spring-blade having its end seated in said notch against said wall, and a screw engaging the end of the spring and the disk and serving to forcibly curve the spring against the wall of the notch.

11. In a governor, the combination, substantially as set forth, of a rotary disk, a notch in the periphery thereof having an inner wall with a concave contour, a spring-blade having its end seated in said notch against said wall, a screw engaging the end of the spring and the disk and serving to forcibly curve the spring aganist the wall of the notch, and a filling within the notch against the outer face of the end of the spring.

12. In a governor, the combination, substantially as set forth, of a rotary disk, a notch in the periphery thereof having an inner wall with a concave contour, a spring-blade having its end seated in said notch against said wall, a screw engaging the end of the spring and the disk and serving to forcibly curve the spring against the wall of the notch, a filling within the notch against the outer face of the end of the spring, and a band encircling the disk exterior to the filling.

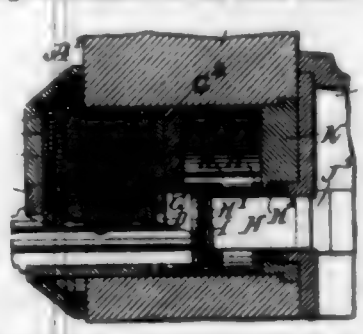
13. In a governor, the combination, substantially as set forth, of a fixed stud, a whirl mounted to turn thereon, a governor-head mounted to turn and reciprocate upon said stud, a support to prevent the whirl moving axially on the stud in a direction away from the governor-head, balls connected with the whirl and governor-head, a fixed first collar carried by the stud above the whirl and preventing the movement of the whirl axially upon the stud in a direction toward the governor-head, and a second collar carried by and rotating with the whirl between the first collar and the whirl, and a spring compressed between the second collar and the governor-head.

14. In a governor, the combination, substantially as set forth, of a fixed stud, a whirl mounted to turn thereon, a governor-head mounted to turn and reciprocate upon said stud, a support to prevent the whirl moving axially on the stud in a direction away from the governor-head, balls connected with the whirl and governor-head, a fixed first collar carried by the stud above the whirl and preventing the movement of the whirl axially upon the stud in a direction toward the governor-head, and a second collar carried by and rotating with the whirl between the first collar and the whirl, a spring compressed between the second collar and the governor-head, and an adjusting-nut carried by the governor-head and engaging said spring.

818,719. **TUMBLER-LOCK.** NICHOLAS W. WEBB, New York, N. Y. Filed Nov. 1, 1904. Serial No. 230,805.

Claim.—1. A tumbler-lock comprising a casing, a plug mounted to turn therein, sectional tumbler-pins slidable in the casing and plug, the plug-pin having a key-slot leading to a recess, and a friction-roller in the said recess.

2. A tumbler-lock provided with a turning plug having a chamber at the inner end thereof, a casing in which the plug is mounted to turn, tumbler-pins, and a normally retracted slidable bit partially received in said chamber, adapted to be turned with the plug on the insertion of a proper key in the lock, said bit being also adapted to be engaged by a portion of the key to project the same into engagement with the retracting mechanism for the main bolt.



3. A tumbler-lock comprising a casing, a plug mounted to turn therein, a spring-pressed bit slidable lengthwise on the plug and turning with the same, and spring-pressed tumbler-pins in the casing and plug, adapted to be engaged by the key the terminal of which engages the said bit for imparting lengthwise movement to the said bit to engage the latter with the retracting device for the main bolt.

4. A tumbler-lock provided with a tumbler-controlled plug having at its inner end a chamber, and a normally retracted spring-actuated bit partially received in the chamber and turning with the plug and adapted to be engaged by the terminal of a key for the latter to impart a sliding motion to the bit.

5. A lock provided with a plug adapted to be turned by a key, and a spring-pressed bit slidable lengthwise on the plug and adapted to be engaged by the key-terminal and shot outward against the tension of its spring.

6. A lock provided with a plug adapted to be turned by a key, a spring-pressed bit slidable lengthwise on the plug and adapted to be engaged by the key-terminal and shot outward against the tension of its spring, and key-controlled means for normally locking the plug against turning.

7. A lock provided with a tumbler-pin comprising a plug-section and a driver, the latter having a slot extending from its top downward, a spring seated in the bottom of the slot, and a guide-pin for the spring, having a head for the spring to abut against.

8. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same and a bearing for the bit to slide in and to turn with.

9. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same, a bearing for the bit to slide in and to turn with, and a rear face-plate in which the said bearing is mounted to turn.

10. A lock comprising a case, a plug mounted to turn therein, spring-pressed tumbler-pins in the said plug and case, and arranged at right angles to the axis of the said plug, to be engaged by the edge of the key, a spring-pressed bit slidable on the plug and turning with the same, the terminal of the key being adapted to engage the bit to impart a sliding movement to the same, a bearing for the bit to slide in and to turn with, and a rear face-plate removably connected with the said case and in which the said bearing is mounted to turn.

818,720. **EYEGLASSES.** JOEL C. WELLS, Southbridge, Mass. Filed Mar. 30, 1904. Serial No. 200,681.

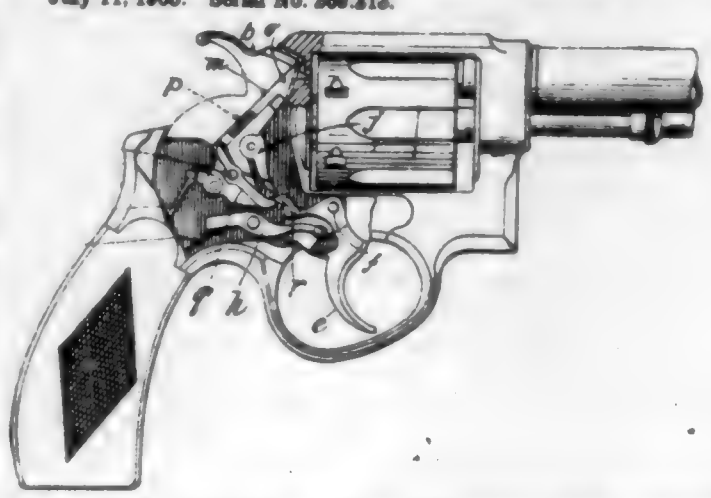


Claim.—1. In an eyeglass, the combination with a post having a longitudinal opening therein for the fastening-screw, and a transverse opening therethrough for the nose-guard and bow-spring, an end wall rigidly connecting the side walls of said transverse opening for the nose-guard and bow-spring to prevent spreading of the fastening-screw extending in said longitudinal opening, and a washer having a threaded opening therethrough to receive the threaded end of said screw, and extending in said transverse opening, and acting to bind the nose-guard and bow-spring in said transverse opening.

2. In an eyeglass, the combination with a post having a longitudinal opening therein for the fastening-screw, and a transverse opening therethrough for the nose-guard and bow-spring, an end wall rigidly connecting the side walls of said transverse opening for the nose-guard and bow-spring to prevent spreading, a central perforation in said end wall of the fastening-screw extending in said longitudinal opening, and a washer having a threaded opening therethrough to receive the threaded end of said screw, and a projection on said washer extending into said central perforation, said washer acting to bind the nose-guard and bow-spring in said transverse opening.

3. In an eyeglass, the combination with a post having a longitudinal opening therein for the fastening-screw, and a transverse opening therethrough for the nose-guard and bow-spring, an end wall rigidly connecting the side walls of said transverse opening for the nose-guard and bow-spring to prevent spreading of the fastening-screw extending in said longitudinal opening, and a washer having a threaded opening therethrough to receive the threaded end of said screw, said washer extending entirely within said transverse opening, and acting to bind the nose-guard and bow-spring in said transverse opening.

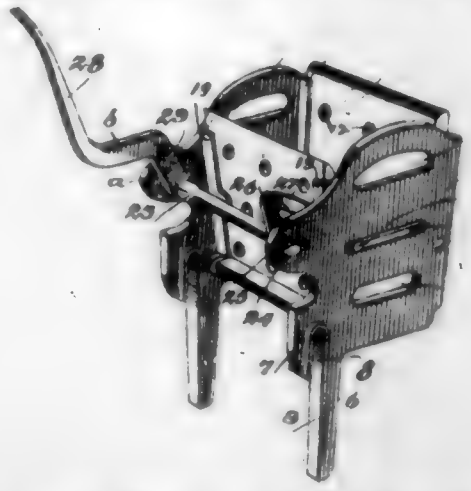
818,721. **FIREARM.** JOSEPH H. WESSON, Springfield, Mass. Filed July 11, 1905. Serial No. 269,313.



Claim.—1. In a firearm, a frame, a hammer pivotally mounted therein, a trigger, a wedge-block slidably mounted on the hammer, and a pivoted lever extending between the inner end of the wedge-block and a part of the trigger whereby the movement of the trigger toward its normal position after the firing operation will swing said lever to move said wedge-block to a position between the forward edge of the hammer and the frame to retract the hammer.

2. In a firearm, a hammer, a wedge-block slidably mounted thereon and extending to the face of the hammer, a spring between the hammer and the wedge-block to hold the latter normally flush with said hammer-face, and means actuated by a movement of the parts after the firing operation to force said wedge-block beyond the face of the hammer against a suitable abutment to retract the hammer from its firing position.

818,722. **MOP-WRINGER.** WILLIS H. WETMORE, Oneida, N. Y., assignor to Charles A. Lee, Oneida, N. Y. Filed Apr. 15, 1905. Serial No. 255,755.



Claim.—1. A mop-wringer comprising side frames formed with receptacle-receiving recesses, each of the frames being formed with

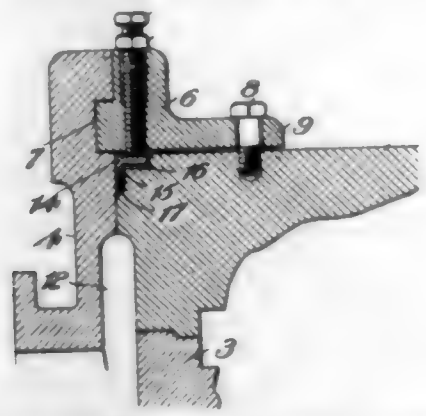
a horizontal slot, a back board joining the frames, a bottom board joining the frames and spaced from the lower edge of the back board, a follower having trunnions to engage said slots in the frames, an operating-shaft mounted in the side frames, a lever connected with said shaft, and links connecting said shaft and the follower-trunnions.

2. A mop-wringer body comprising side frames with horizontal slideways therein, a perforated back board joining the side frames and a bottom board all rigidly secured together, a follower having trunnions engaging in said slideways in the frames, an operating-shaft extending between and mounted in bearings in the side frames, cranks on the rock-shaft adjacent to and between the side walls, links connecting the said cranks with the said trunnions respectively on the inside of the side frames, and an operating-lever on said shaft, substantially as set forth.

3. A mop-wringer comprising side frames having horizontal slots therein respectively, a back board and bottom joining said side frames, a movable follower between the frames provided with trunnions engaging in said slots, a rock-shaft extending between and mounted in bearings in the side frames respectively having cranks adjacent to and on the inner side of the side frames respectively, links respectively connecting the said cranks with the trunnions between the side frames and the ends of the follower, and an operating-lever connected with said rock-shaft between the side frames, substantially as set forth.

4. The combination in a mop-wringer of side frames having respectively horizontal arranged slotways, a back board and bottom secured to said side frames, a movable follower provided with trunnions engaging in said slotways, a shaft extending between the side frames and journaled therein and having adjacent to the inner sides of the side frames crank-arms, links connecting said crank-arms with the said trunnions respectively, and an angular operating-lever provided on the rock-shaft between the frames, substantially as set forth.

818,723. ELASTIC-FLUID TURBINE. JAMES WILKINSON, Providence, R. I., assignor to Wilkinson Turbine Company, a Corporation of Alabama. Filed Aug. 9, 1905. Serial No. 273,425.



Claim.—1. An elastic-fluid turbine having a sectional casing, in combination with a shell or jacket surrounding said casing, elements projecting inwardly from said shell and disposed so as to hold the casing between them, and means to force the sections of said casing together.

2. An elastic-fluid turbine having a sectional casing, in combination with a shell or jacket surrounding said casing, abutments carried by said shell and adapted to engage the end sections of the casing, and adjustable means to force the sections of the casing together between said abutments.

3. An elastic-fluid turbine having a sectional casing, a shell or jacket surrounding said casing, means carried by said shell which engages one end of said casing, a detachable abutment connected to said shell and overhanging the other end of said casing, adjustable devices such as screws carried by said abutment and adapted to be forced against said casing to hold its parts in position.

4. An elastic-fluid turbine having end sections, a tubular shell or jacket provided with abutments adapted to engage said end sections, one of said abutments being removable, and adjustable means carried by an abutment and adapted to engage the adjacent end section.

5. An elastic-fluid turbine having a sectional casing, in combination with a shell or jacket surrounding said casing and provided with an abutment adapted to engage one end of said casing, a channel or groove in said shell, a locking-ring seated in said channel and projecting therefrom, means to prevent the disengagement of said ring from said channel, and screws carried by said ring and adapted to be screwed against the adjacent end of said casing to force the latter against said abutment.

6. An elastic-fluid turbine having an inner casing and an outer shell or jacket, a chamber formed between said shell and casing, a packing-chamber between said shell and casing, and a movable element adapted to enter said chamber and act upon the packing therein to pack the joint between said shell and casing.

7. An elastic-fluid turbine having an inner casing and an outer shell or jacket, a steam-chamber formed between said casing and shell, an annular packing-chamber formed between an end of said casing and said shell, a packing-ring, and adjustable means to force said ring into said packing-chamber.

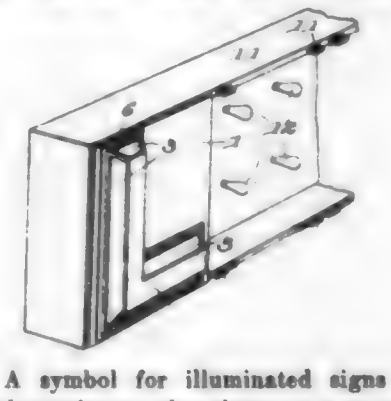
8. An elastic-fluid turbine having an inner casing and an outer shell or jacket, locking-abutments in said shell between which said inner casing is disposed, means to hold said casing in place between said abutments, a fluid-pressure chamber between said shell and casing, and means to prevent leakage from said chamber comprising an annular packing-chamber near an end of the casing, a segmental ring adapted to enter said chamber, and screw means to force said ring into said chamber.

9. An elastic-fluid turbine having a sectional casing, in combination with a shell or jacket surrounding said casing and provided with means adapted to engage one end of said casing, a detachable abutment carried by said shell near the other end of said casing, an annular packing-chamber between said shell and casing adjacent to said abutment, a packing-ring adapted to enter said packing-chamber, and set-screws carried by said abutment and adapted some of them to engage said ring and some the adjacent end of the casing, substantially as described.

10. A turbine comprising an inner sectional casing, an outer shell, a fluid-pressure chamber between said parts, an annular packing-chamber between the shell and casing near an end of the latter, and an annular element adapted to enter said chamber, packing for said chamber between the oppositely-disposed faces of said element and chamber, said faces being so inclined relatively to each other as to force said packing outwardly against the shell when moved together to compress it.

11. In an elastic-fluid turbine, an inner casing, an outer shell or jacket surrounding said casing, and means connecting the inner casing to the shell which comprise an element projecting inwardly from the shell and overhanging an end of the casing, and adjustable devices interposed between said element and casing.

818,724. ILLUMINATED SIGN. CHARLES L. WILLIAMS, Parkersburg, W. Va. Filed Oct. 16, 1905. Serial No. 283,021.



Claim.—1. A symbol for illuminated signs comprising an opaque body, and translucent edge plates set at an angle to the body, the body and the plates being in contrasting colors, to produce a shaded effect.

2. A symbol for illuminated signs comprising a back having an opening therein, an opaque symbol-body disposed opposite the opening at one side of the back, and translucent edge plates extending between the edge of the body and the edges of the opening, the symbol-body and plates being in contrasting colors to give a shaded effect to the symbol.

3. A symbol for illuminated signs comprising a back having an opening therein in the shape of a symbol, a seat extending around the edge of the opening, an opaque symbol-body disposed opposite the opening at one side of the back and provided with a peripheral seat, and translucent plates set at an angle to the body with their edges received within the seat of the body and the seat of the back, the body and plates being in contrasting colors.

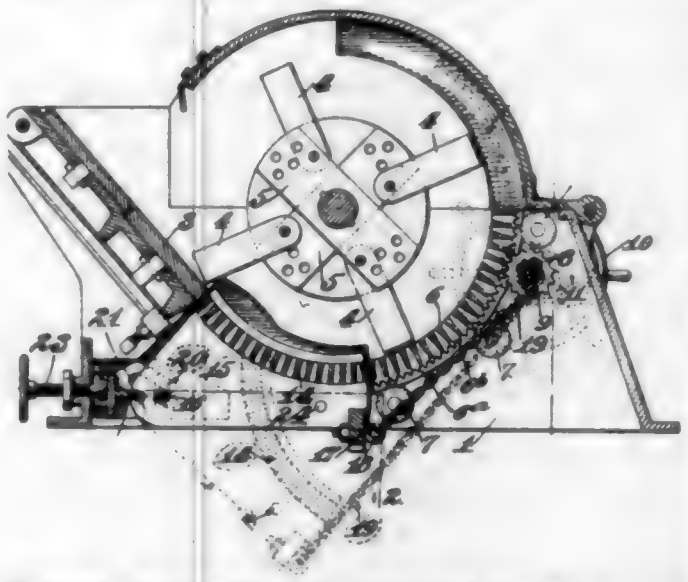
4. In an illuminated sign, the combination of a field having an opening therein in the shape of a symbol, an opaque symbol-body disposed opposite the opening at one side of the field and smaller than the opening, and translucent edge plates extending between the

edges of the symbol and the edges of the opening and inclined across the opening, the symbol-body and the plates being in contrasting colors.

5. A symbol for illuminated signs comprising a back having an opening therein in the shape of a symbol and provided with seats around the edges of the opening, an opaque symbol-body disposed opposite the opening at one side of the back and provided with peripheral edge seats, translucent plates set at an angle to the body with their edges received within the seats of the body and the back, and angle-bars connecting the abutted ends of adjacent translucent plates, the symbol-body and the plates being in contrasting colors.

6. A symbol for illuminated signs comprising an opaque back-plate having edge portions bent across the back of the plate to form attaching flanges and there being an opening formed in the plate and having the shape of the symbol to be exhibited, an opaque symbol-body of the same shape and of less size than the opening, and translucent edge plates extending between the edges of the opening and the edges of the symbol and inclined across the opening, the symbol-body and the plates being in contrasting colors and the plates forming a connection between the symbol-body and the back-plate.

818,725. **DUMPING-CAGE FOR CRUSHERS AND PULVERIZERS.** Milton F. Williams, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 24, 1905. Serial No. 275,648.



Claim.—1. In a machine of the character described, the combination with a cage composed of movable sections, one of which is pivoted, and means for swinging said pivoted section and imparting a sliding movement to the other section; substantially as described.

2. In a machine of the character described, the combination with a grinding-surface composed of sections, one of which is pivotally mounted, means for adjusting the pivotal support for said section, means for swinging said section on its pivot, said means being also operatively connected to other sections to move the same; substantially as described.

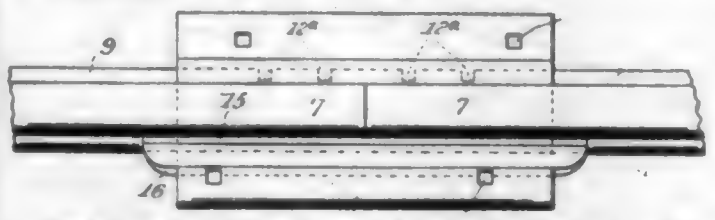
3. In a machine of the character described, the combination with a grinding-surface composed of movable sections, one of which is pivoted, a chain connected to the free end of said movable section, a winding-shaft around which said chain is wound, a pinion on said winding-shaft, and a rack on the other movable section in mesh with said pinion; substantially as described.

4. In a machine of the character described, the combination with a grinding-surface composed of movable sections, one of which is pivoted, antifriction-rollers for supporting the other of said movable sections, rack-teeth on the last-mentioned movable section, a chain connected to the free ends of the pivoted sections, a winding-shaft around which said chain is wound, a pinion on said winding-shaft meshing with the rack-teeth of said movable sections, and means for locking the winding-shaft against rotation in one direction; substantially as described.

5. In a machine of the character described, the combination of a casing having a slot in the side wall, a cage-section mounted on a pivot-rod whose end extends through said slot, a movable member provided with a slot arranged at an angle to the slot in the casing and through the slot in which movable member said pivot-rod also passes, and means for moving said movable member; substantially as described.

6. In a machine of the character described, the combination of a casing, revolving hammers or beaters, a movable grinding-surface, and means for adjusting said grinding-surface toward and from said revolving hammers or beaters, said means comprising a yoke whose side members are slidingly mounted upon flanges extending inwardly from the side walls of the casing, and means for moving said yoke; substantially as described.

818,726. **RAIL-JOINT.** Edward Willows, St. Henry, Canada. Filed May 27, 1905. Serial No. 262,540.

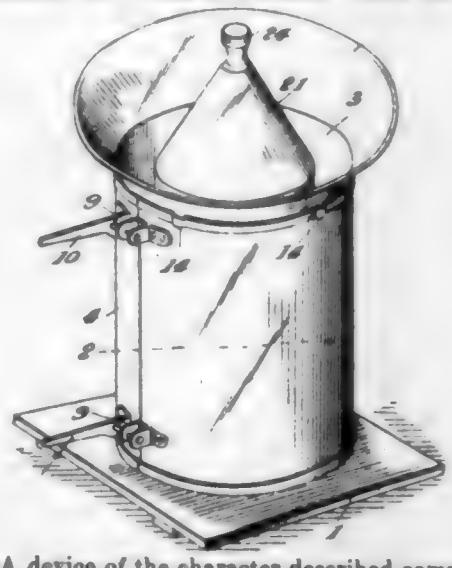


Claim.—1. In a device of the character described, a rail-chair comprising a seat, flanges on said seat, one of said flanges being perforated, studs projecting laterally from the other flange, and a longitudinally-slidable locking member adapted to be interposed between said perforated flange and a rail, said slidable member having recesses in the outer edge thereof which are adapted to register with the perforations in said perforated flange.

2. In a device of the character described, a rail-chair comprising a seat, a flange on said seat extending upwardly therefrom, studs on said flange projecting laterally therefrom, a flange on the opposite portion of said seat, there being perforations in said last-mentioned flange and a slidable member adapted to lock said chair in position, there being recesses in said slidable member adapted to register with said perforations.

3. In a device of the character described, a rail-chair comprising a seat, flanges at each longitudinal edge of said seat, one of said flanges being perforated, a recessed locking member, the recesses of which are adapted to register with said perforations, and laterally-projecting studs on said chair adapted to interlock with a rail thereon.

818,727. **PORTABLE MOLD FOR TILING.** Francis M. Wiltrout, Corunna, Ind. Filed Nov. 2, 1905. Serial No. 285,559.

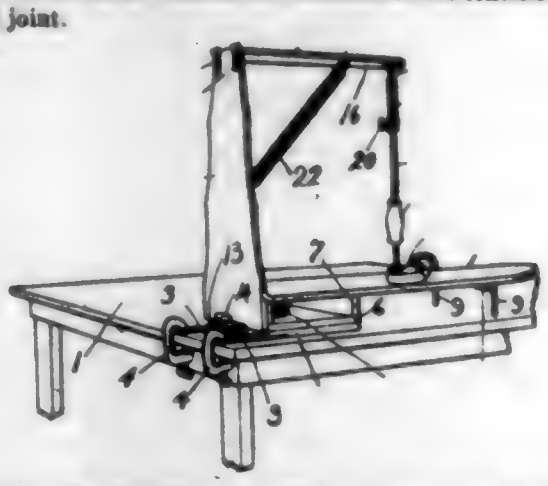


Claim.—A device of the character described comprising a pallet, an upwardly-projecting flat cylindrical flange or ring carried by the top thereof, an outer shell or casing encircling said flange, said outer shell or casing being formed in sections, ears mounted on the sections and having openings therethrough, a pintle extending through the openings in the ears whereby the sections are pivotally connected at their rear edges, means for locking the sections in position at their front edges, a core comprising one piece of resilient material bent to form a cylinder and resting upon the pallet within the ring or flange, means for locking the edges of the core together, a conical cap for the core, and a hopper removably mounted on the outer shell or casing.

818,728. **IRONING-MACHINE.** Herman Wonderlich, Providence, R. I. Filed May 8, 1905. Serial No. 259,288.

Claim.—1. An ironing-machine comprising an ironing-board, an upright member hinged thereto and provided with an overhanging hinged tension-arm, means for locking said member in an upright position, a spring connecting said upright member and said tension-arm, and a tension-rod secured to said tension-arm by a universal joint.

2. An ironing-machine comprising an ironing-board, an upright member hinged thereto and provided with an overhanging hinged tension-arm, means for locking said member in an upright position, a spring connecting said upright member and said tension-arm, and an extensible tension-rod secured to said tension-arm by a universal joint.



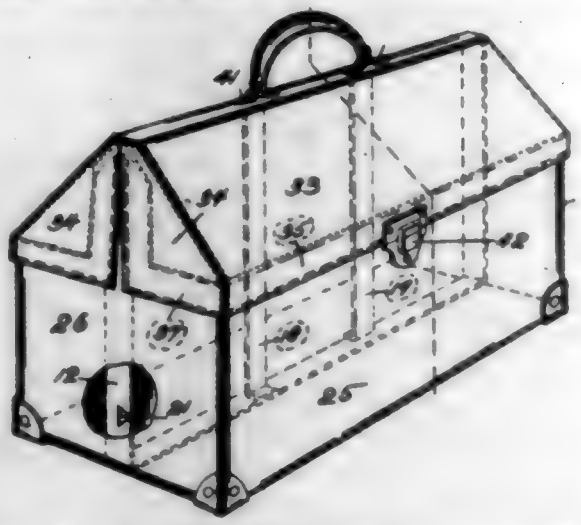
3. An ironing-machine comprising a base-plate provided with an ear, an ironing-board supported by said plate, an upright member hinged to said ironing-board and also provided with an ear, means for locking said ears together, whereby said upright member is rigidly supported, and mechanical means carried by said upright member for applying pressure to an iron placed upon said board.

4. An ironing-machine comprising a base-plate provided with a plurality of ears, an ironing-board pivotally supported by said plate, whereby its position may be varied, an upright member hinged to said board and also provided with an ear, means for uniting said latter ear with either of the ears of said plate, whereby said upright member is rigidly supported, and mechanical means carried by said upright member for applying pressure to an iron placed upon said board.

5. An ironing-machine comprising a base-plate, a second plate pivoted thereto and provided with upright end pieces, an ironing-board secured to said end pieces, a support for the free end of said ironing-board, an upright member pivoted to said ironing-board, means for rigidly supporting said upright member, and means carried by said upright member for applying pressure to an iron placed upon said ironing-board.

6. An ironing-machine comprising a base-plate provided with an ear, an ironing-board supported by said plate, an upright member hinged to said ironing-board and also provided with an ear, means for locking said ears together, whereby said upright member is rigidly supported, an overhanging tension-arm hinged to said upright member, a spring connecting said upright member and said tension-arm, and a tension-rod secured to said tension-arm by a universal joint.

818,729. HAND-BAG. JOHN D. WOOD, St. Louis, Mo. Filed Aug. 7, 1905. Serial No. 273,080.



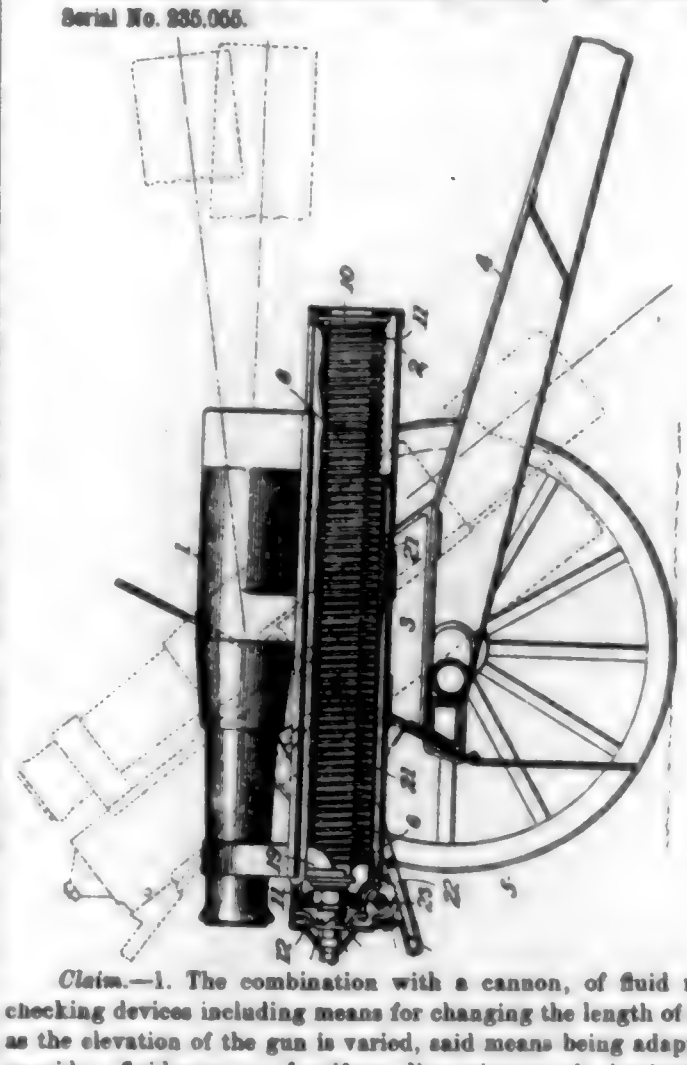
Claim.—1. In a hand-bag, a centrally-arranged metallic frame, cross-bars secured to the ends of said frame, a body built upon the frame and cross-bars and extending equally upon both sides of the frame, lids hinged to the top of the frame and arranged to close the open upper ends of the body, and a handle secured to the top of the center of the frame; substantially as specified.

2. In a hand-bag: a metallic frame comprising a lower bar, an upper bar, end bars connecting the ends of the lower and upper bars; cross-bars attached to the end bars; and side bars connecting the ends of the cross-bars; substantially as specified.

3. In a hand-bag: a metallic frame comprising a lower bar, an upper bar, end bars connecting the ends of the lower and upper bars; cross-bars attached to the end bars; side bars connecting the ends of the cross-bars; a body built upon said frame; and covers connected to the upper bar and extending outwardly and downwardly over the side bars; substantially as specified.

4. In a hand-bag: a metallic frame comprising a lower bar, an upper bar, end bars connecting the ends of the lower and upper bars; cross-bars attached to the end bars; side bars connecting the ends of the cross-bars; a body built upon said frame; covers connected to the upper bar and extending outwardly and downwardly over the side bars; and metallic stiffening-bars in said covers; substantially as specified.

818,730. RECOIL MECHANISM FOR CANNONS. FRANZ B. YNGLING, Düsseldorf, Germany, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed Dec. 1, 1904. Serial No. 235,065.



Claim.—1. The combination with a cannon, of fluid recoil-checking devices including means for changing the length of recoil as the elevation of the gun is varied, said means being adapted to provide a fluid-passage of uniform dimensions at the beginning of each recoil.

2. The combination with a cannon, of fluid recoil-checking devices including means for providing a fluid-passage of uniform dimensions at the beginning of each recoil, and means for closing said fluid-passage at different distances of rearward travel of the gun in recoil as the elevation of the gun is varied.

3. The combination with a cannon, of fluid recoil-checking devices including means for providing a fluid-passage of uniform dimensions at the beginning of each recoil, and means adjustable about the axis of the recoil-cylinder for closing said fluid-passage at different distances of rearward travel of the gun in recoil as the elevation of the gun is varied.

4. The combination with fluid recoil-checking devices for cannon, of means operating during the recoil and controlled by variations in the elevation of the gun for regulating the dimensions of the fluid-passage of said checking devices and adapted to vary said passage from its maximum to its minimum size at different distances in the rearward travel of the gun in recoil.

5. The combination with a cannon and fluid recoil-checking devices therefor, of means for varying the dimensions of the fluid-passage of said checking devices during recoil, and guide-surfaces extending longitudinally of the recoil devices and adapted to control the action of said means and cause the length of recoil to vary in accordance with changes in the elevation of the gun.

6. The combination with a cannon and fluid recoil-checking devices therefor including fluid-passages controlled by longitudinally-disposed guide-surfaces, of means arranged outside of the recoiling mechanism for controlling the position of said guide-surfaces and adapted to be adjusted as the elevation of the gun is varied to cause the length of recoil to vary in accordance with changes in the elevation of the gun.

7. The combination with a cannon, and fluid recoil-checking devices therefor including a rotary valve, of means controlled by variations in the elevation of the gun for rotating said valve during the recoil at different speeds, said means being adapted to return said valve to the same normal position at the completion of each counter-recoil movement.

8. The combination with a cannon, and fluid recoil-checking devices therefor including a rotary valve, of means adjustable about the axis of the recoil-cylinder for controlling the closing of said valve, the length of time required to complete a movement of said valve depending on the adjustment of said controlling means, and devices for automatically adjusting said controlling means as the elevation of the gun is varied.

9. The combination with a cannon, and fluid recoil-checking devices, of a roller reciprocating with the gun and movable about an axis extending parallel to the length of the gun, means actuated by said angular movement of the roller for operating the valve mechanism of the recoil devices, and means for changing the extent of said angular movement of the roller during the recoil to vary the time of operating the valve.

10. The combination with a cannon, and fluid recoil-checking devices, of a roller reciprocating with the gun and movable about an axis extending parallel to the length of the gun, means actuated by said angular movement of the roller for operating the valve mechanism of the recoil devices, and means controlled by variations in the elevation of the gun for changing the extent of said angular movement of the roller during the recoil to vary the time of operating the valve.

11. The combination with a cannon, and fluid recoil-checking devices, of a roller arranged outside of the recoil-cylinder and reciprocating with the gun, said roller being movable about an axis extending parallel to the length of the gun, means actuated by said angular movement of the roller for operating the valve mechanism of the recoil devices, and means for changing the extent of said angular movement of the roller during the recoil to vary the time of operating the valve.

12. The combination with a cannon, and fluid recoil-checking devices, of a cam-surface extending longitudinally of the recoil devices, a roller reciprocating with the gun in contact with said cam-surface, means actuated by said roller for operating the valve mechanism of the recoil devices, and means for adjusting said cam-surface to vary the path of movement of said roller, for the purpose described.

13. The combination with a cannon, and fluid recoil-checking devices, of a guide extending parallel to the length of the gun and provided with a plurality of longitudinally-extending curves or cam-surfaces, means for actuating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, and means for adjusting said guide to bring either of the cam-surfaces thereon into operative position.

14. The combination with a cannon, and fluid recoil-checking devices, of a guide adjustable about an axis extending parallel to the length of the gun and provided with a plurality of longitudinally-extending curves or cam-surfaces, means for operating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, and means for rotating the guide to bring any desired one of the cam-surfaces thereon into operative position.

15. The combination with a cannon, and fluid recoil-checking devices, of a guide adjustable about an axis extending parallel to the length of the gun and provided with a plurality of longitudinally-extending curves or cam-surfaces, means for operating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, and means for rotating said guide as the elevation of the gun is varied to bring into operative position the cam-surface thereon that is adapted to cause the desired operation of the valve mechanism of the recoil devices.

16. The combination with a cannon, and fluid recoil-checking devices, of a guide adjustable about an axis extending parallel to the length of the gun and provided with a plurality of longitudinally-extending curves or cam-surfaces, means for operating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, a rack adapted to move longitudinally as the elevation of the gun is varied, and gearing connecting said rack and guide whereby the latter will be rotated as the elevation of the gun is varied to bring into operative position the particular cam-surface on said guide that is adapted to cause the desired operation of the valve mechanism of the recoil devices.

17. The combination with a cannon, a cradle supporting the cannon and on which it is adapted to reciprocate, and fluid recoil-checking devices, of a guide mounted on the cradle and adjustable about a longitudinal axis, said guide having a plurality of longitudinally-extending cam-surfaces formed thereon, means for operating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, a shaft mounted in bearings on the cradle and geared to said guide, a pinion mounted on said shaft, and means for driving said pinion as the elevation of the gun is varied, whereby said guide will be adjusted to bring different cam-surfaces thereon successively into operative position as the elevation of the gun is varied.

18. The combination with a cannon, a cradle supporting the cannon and on which it is adapted to reciprocate, and fluid recoil-checking devices, of a guide mounted on the cradle and adjustable about a longitudinal axis, said guide having a plurality of longitudinally-extending cam-surfaces formed thereon, means for operating the valve mechanism of the recoil devices including a part adapted to reciprocate with the gun in contact with said guide, a shaft mounted in bearings on the cradle and geared to said guide, a pinion mounted on said shaft, and intermittently-acting means for rotating said pinion as the elevation of the gun is varied, substantially as and for the purpose described.

19. The combination with a cannon, of fluid recoil-checking devices including means for providing a fluid-passage of uniform dimensions at the beginning of each recoil, and means for varying the intervals of time elapsing between the commencement of recoil and the instant the maximum passage is provided and the closing of said passage after reaching said maximum, as the elevation of the gun is varied.

20. The combination with a cannon, of fluid recoil-checking devices including means for providing a fluid-passage of uniform dimensions at the beginning of each recoil, and means for varying the maximum size of said passage and the intervals of time elapsing between the commencement of said recoil and the instant said maximum is reached and the closing of said passage after said maximum as the elevation of the gun is varied.

21. The combination with a cannon and fluid recoil-checking devices, of a roller movable about an axis extending parallel to the length of the gun, means for so moving said roller during the recoil of the gun, means actuated by the rocking movement of said roller for operating the valve mechanism of the recoil-checking devices, and means for changing the extent of said rocking movement during recoil to vary the operation of said valve mechanism.

22. The combination with a cannon and fluid recoil-checking devices, of means including a plurality of elements, each adapted to control the recoil-checking devices and to cause said devices to act in a manner different from either of the others, and means for bringing said elements successively into operative position as the elevation of the gun is varied.

23. The combination with a cannon and fluid recoil-checking devices, of a rack adapted to be moved longitudinally as the elevation of the gun is varied, and means adapted to be actuated by said rack for varying the port area of the valve mechanism of the recoil-checking devices during recoil, whereby the length of recoil will be automatically varied with variations in the elevation of the gun.

24. The combination with a cannon and fluid recoil-checking devices, of intermittingly-acting means for adjusting the valve mechanism of said checking devices in conformity with variations in the elevation of the gun.

25. The combination with a cannon and fluid recoil-checking devices, of a gear adapted to adjust the valve mechanism of the recoil-checking devices to regulate the action of said checking device in conformity with variations in elevation of the gun, a rack for actuating said gear, and means for intermittingly reciprocating said rack as the elevation of the gun is changed.

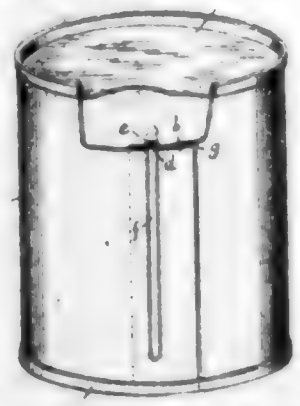
26. The combination with a cannon and fluid recoil-checking devices, of means adapted to adjust the valve mechanism of the recoil-checking devices to regulate the action of said checking devices in conformity with variations in the elevation of the gun, said means including a rack geared to said adjusting means and connected by a yielding connection with the frame of the gun-carriage, whereby it is adapted to be reciprocated as the elevation of the gun is changed.

means for normally preventing such reciprocation of the rack, and means for intermittingly withdrawing said stop or lock means.

27. The combination with a suitable carriage, a gun mounted thereon, and a variable-recoil mechanism for the gun, comprising means for obtaining constantly-increasing pressures at the moments of recoil as the elevation of the gun is increased, of means for uniformly decreasing the pressure during recoil, whereby the recoil will be properly checked at all angles of elevation of the gun.

28. The combination with a suitable carriage, a gun mounted thereon, and a variable-recoil mechanism for the gun, comprising means for obtaining constantly-increasing resistance at the moments of recoil as the elevation of the gun is increased, of means for uniformly decreasing the pressure during recoil, whereby the recoil will be properly checked at all angles of elevation of the gun.

818,731. SHEET-METAL CAN. BENJAMIN ADRIANCE and AMOS CALLESON, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Filed Apr. 1, 1902. Serial No. 101,004.



Claim.—1. In a sheet-metal can-body with lapped edges forming a longitudinal lap-joint body-seam, an imperforate bead resulting from a groove formed in one of the lapped edges, an imperforate groove with flaring sides in the other lapped edge matching with the bead, the contacting surfaces of the bead and groove being one a continuation of the inside surface and the other a continuation of the outside surface of the can-body, said bead and groove being shorter than the length of the can-body so as to provide smooth lapped seams where the ends are secured to the can-body, and a soldered joint adjoining the matching bead and groove and between the facing surfaces of the can-body at the lapped edges.

2. In a sheet-metal can-body with lapped edges forming a longitudinal lap-joint body-seam, an imperforate bead resulting from a groove formed in the outer lapped edge, an imperforate groove with flaring sides formed in the inner lapped edge matching with the bead, the surface of the bead which contacts with the groove being a continuation of the inside surface of the can-body, said bead and groove being shorter than the length of the can-body so as to provide smooth lapped seams where the ends are secured to the can-body, and a soldered joint adjoining the matching bead and groove and between the facing surfaces of the can-body at the lapped edges.

818,732. RULING ATTACHMENT FOR TYPE-WRITERS. HENRY ALTSHUL, New York, N. Y. Filed Mar. 17, 1903. Serial No. 148,203.



Claim.—1. The combination with a bar, of a ruling device carried thereby comprising a roller and a bearing for said roller, said roller and bearing being supported upon said bar in a vertical position relatively to the longitudinal axis of said bar and adapted for adjustment so as to print either a line parallel with or at right angles to the printing-line, substantially as specified.

2. The combination with a bar, of a ruling device carried thereby comprising a roller, and a bearing for said roller, said roller and bearing being supported upon said bar in a vertical position relatively to the longitudinal axis of said bar and adapted for adjustment so as to print either a line parallel with or at right angles to the printing-line, and means for securing said bearing to its adjusted positions, substantially as specified.

3. The combination with a bar, of a ruling device carried thereby comprising a roller, and a bearing for said roller carried by said bar and adapted for adjustment to a plurality of positions thereon, and locking means arranged partly on said bearing and partly upon said bar coöperating to hold said bearing to its adjusted positions, substantially as specified.

4. The combination with a bar, of a ruling device carried thereby, comprising a roller, and a bearing for said roller having a base, and adapted for adjustment to a plurality of positions upon said bar, a socket in said bar conforming to and adapted to receive the base on said bearing whereby to hold said bearing to its adjusted positions, substantially as specified.

5. The combination with a bar, of a ruling device carried thereby, comprising a roller, a bearing for said roller having a base thereon, and adapted for adjustment to a plurality of positions upon said bar, a socket in said bar conforming to and adapted to receive the base on said bearing, and spring means for holding said bearing locked to its adjusted positions upon said base, substantially as specified.

6. The combination with a bar, of a ruling device carried thereby comprising a roller and a bearing for said roller, said roller and bearing being supported upon said bar in a vertical position relatively to the longitudinal axis of said bar and adapted for adjustment so as to print either a line parallel with or at right angles to the printing-line, and an inking device for said roller, substantially as specified.

7. The combination with a bar, of a ruling device carried thereby comprising a roller, and a bearing for said roller, said roller and bearing being supported upon said bar in a vertical position relatively to the longitudinal axis of said bar and adapted for adjustment so as to print either a line parallel with or at right angles to the printing-line, an inking device carried by said bearing, and means for securing said bearing to its adjusted positions, substantially as specified.

8. The combination with a bar, of a ruling device carried thereby comprising a roller, and a bearing for said roller carried by said bar and adapted for adjustment to a plurality of positions thereon, an inking device supported upon said bearing, and locking means arranged partly on said bearing and partly upon said bar coöperating to hold said bearing to its adjusted positions, substantially as specified.

9. The combination with a bar, of a ruling device carried thereby, comprising a roller, and a bearing for said roller having a base, and adapted for adjustment to a plurality of positions upon said bar, a socket in said bar conforming to and adapted to receive the base on said bearing whereby to hold said bearing to its adjusted positions, and an inking device supported upon and adjustable with said bearing, substantially as specified.

10. The combination with a bar, of a ruling device carried thereby, comprising a roller, a bearing for said roller having a base thereon, and adapted for adjustment to a plurality of positions upon said bar, a socket in said bar conforming to and adapted to receive the base on said bearing, an inking device supported upon and movable with said bearing, and spring means for holding said bearing locked to its adjusted positions upon said base, substantially as specified.

11. The combination with a bar having an aperture therein, of a ruling device comprising a bearing adapted for adjustment to a plurality of positions, a roller mounted therein, a stem depending from said bearing and extending into the aperture in said bar, and means for holding said bearing to its adjusted positions within said aperture, substantially as specified.

12. The combination with a bar, having a recessed aperture therein, of a ruling device comprising a bearing adapted for adjustment to a plurality of positions, and revolubly disposed within said aperture, a roller mounted in said bearing, and spring means for holding said bearing to its adjusted position within the recessed aperture in the bar, substantially as specified.

13. The combination with a bar, having a socketed recess therein, an aperture extending from said socketed recess, of a ruling device comprising a bearing having a base, a stem depending therefrom and extending into the aperture in said bar, a roller mounted in said bearing, and a spring contacting with the base of said bearing being adapted to hold said ruling device seated within the socketed recess in the bar, substantially as specified.

14. The combination with a bar having a recess, a socket and an aperture connecting said recess and socket, of a ruling device comprising a bearing, a roller mounted therein, a base corresponding in outline with the recess in said bar, a stem depending from said base

and extending through the aperture, provided with a head, an annular recess above said base, and a spring having one end secured to the bar and its other end contacting with said base whereby to hold the same in position within its socket, substantially as specified.

15. The combination with a bar having a recess, a socket and an aperture connecting said recess and socket, of a ruling device comprising a bearing, a roller mounted therein, a base corresponding in outline with the recess in said bar, a stem depending from said base and extending through the aperture and provided at its lower end with a head, an annular recess above said base, and a spring having one end secured to the bar, and its other end forked and extending into the annular recess whereby to hold the device in position in the end of the bar, and locked against rotary movement, substantially as specified.

16. The combination with a bar, of a ruling device carried thereby comprising a bearing, a roller mounted therein, supporting means arranged upon the outer surface of said bearing, an inking device comprising a receptacle having an opening at its bottom and adapted to inclose the bearing and be supported upon the supporting means thereon, an opening in the top of said receptacle through which the roller is adapted to extend, pads removably disposed within said receptacle and contacting with the circumference of the roller, and means adapted to engage said pads to hold the same in position within said receptacle, substantially as specified.

17. The combination with a bar, of a ruling device carried thereby comprising a bearing, a roller mounted therein, shoulders upon the outer surface of said bearing, an inking device comprising a rectangular receptacle having an opening at its bottom, and adapted to inclose the bearing and be supported upon the shoulders thereon, an opening at its top through which the roller is adapted to extend, pads removably disposed within said receptacle at its opposite ends and contacting with the circumference of the roller, and inwardly-projecting engaging devices on said receptacle adapted to engage and hold said pads in position therein, substantially as specified.

818,733. **HANDLE FOR BURIAL-CASKETS, COFFINS, AND THE LIKE.** CHARLES BLESCH, Newport, Ky., assignor to The Crane & Breed Manufacturing Company, Cincinnati, Ohio, a Corporation of Ohio. Filed July 22, 1905. Serial No. 270,523.



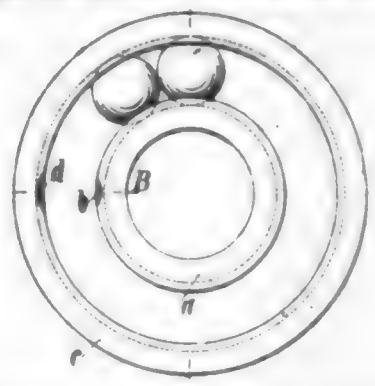
Claim.—1. A handle for caskets or coffins and the like comprising an escutcheon-plate of soft cast metal having an embedded hard-metal reinforce the vertical rear central portion or edge of which is adapted for resting contact or engagement on the casket or coffin wall and the opposite ends of which are extended at right angles thereto and provided with perforations adapted for the passage of attaching means, said reinforce having a bifurcated forwardly-extended portion and a member pivotally held to the escutcheon-plate and having engagement with the bifurcated forwardly-extended portion of the escutcheon-reinforce.

2. A handle for caskets or coffins and the like comprising an escutcheon-plate of soft cast metal having an embedded hard-metal reinforce the rear vertical edge of which is adapted for engagement on a casket or coffin wall, said escutcheon-plate having an integral forwardly-extended lug or bearing portion in which the forwardly-extended portion of the reinforce is embedded and a pivotal member having a pivot-pin engaged with the lug of the escutcheon-plate, the forwardly-extended portion of the escutcheon-reinforce having a downwardly-directed hook-like part engaged over said pivot-pin.

3. A handle for caskets or coffins and the like comprising an escutcheon-plate of soft cast metal having an embedded hard-metal reinforce the rear part of which is adapted for engagement on a casket or coffin wall, said reinforce having a forwardly-extended portion and the escutcheon-plate having a forwardly-extended lug in which the extended portion of the reinforce is embedded and from which said reinforce projects at its forward extremity, a cap held to the lug of the escutcheon-plate and extended over the projecting extremity of said reinforce and a pivotal member having a pivot-pin held between said cap and the lug of the escutcheon-plate and engaged with the projecting extremity of the escutcheon-reinforce.

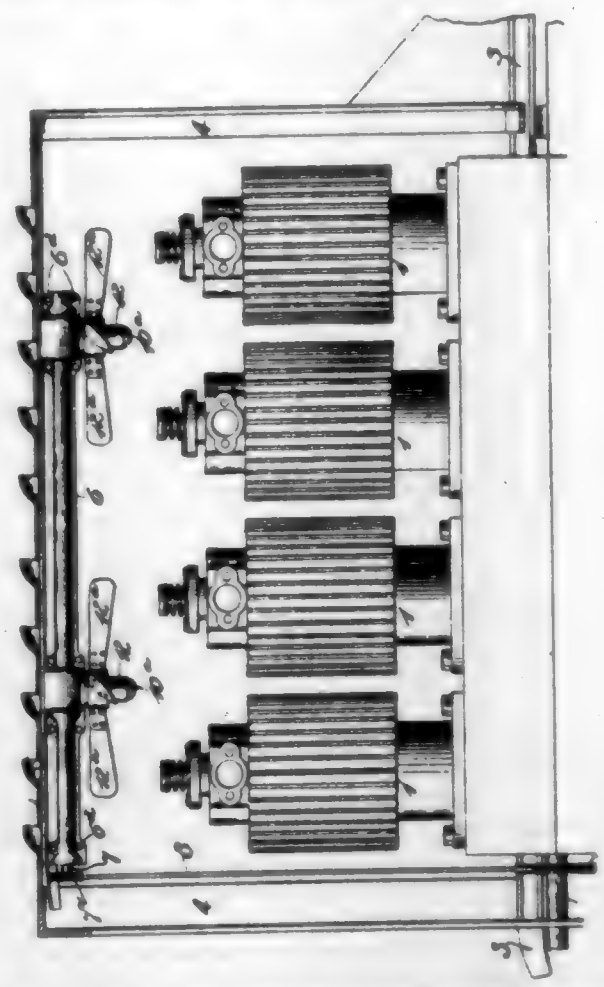
4. A handle for caskets or coffins and the like comprising an escutcheon-plate of soft cast metal having an embedded hard-metal reinforce the rear part of which is adapted for engagement on a casket or coffin wall, said reinforce having a forwardly-directed portion provided with a downwardly-extended hook-like part at its extremity and the escutcheon-plate having a forwardly-extended lug in which the extended portion of the reinforce is embedded and from which the hook-like forward extremity of said reinforce projects, a cap applied to the lug of the escutcheon-plate outside of and extended over said hook-like part of the escutcheon-reinforce, screws passed through the escutcheon-plate into the cap for holding the cap in position and a pivotal part having a pivot-pin held between said cap and the lug of the escutcheon-plate and engaged beneath the hook-like extremity of the escutcheon-reinforce.

818,734. **BALL-BEARING.** EUGÈNE BLIN, Aubervilliers, France, assignor to La Société des Établissements Malicet et Blin, Aubervilliers, France. Filed Oct. 22, 1904. Serial No. 229,619.



Claim.—A two-part ball-bearing and ball-retaining device comprising two annular concentric rings, ball-track grooves on the outer circumference of the inner ring and on the inner circumference of the outer ring, and notches *b d* in the edges of said rings of such depth that when the balls are inserted and spring into the ball-race the opening formed by the notches is slightly less than the diameter of the balls, which cannot therefore escape, substantially as set forth.

818,735. **MEANS FOR COOLING INTERNAL-COMBUSTION ENGINES.** FRED H. BOGART, New Britain, Conn., assignor to Corbin Motor Vehicle Corporation, New Britain, Conn., a Corporation of Connecticut. Filed Apr. 4, 1905. Serial No. 253,816.



Claim.—1. In an apparatus for cooling internal-combustion motors of the air-cooled variety, an engine-shaft, a fan-shaft substantially parallel therewith, an engine-cylinder between said shafts, a fan between said engine-cylinder and said fan-shaft, and a means of connection between said shafts.

2. In an apparatus for cooling internal-combustion engines of

the air-cooled variety, an engine-shaft, a fan-shaft substantially parallel therewith, a flexible connection between said shafts, a cylinder between said shafts, a fan between said fan-shaft and said cylinder.

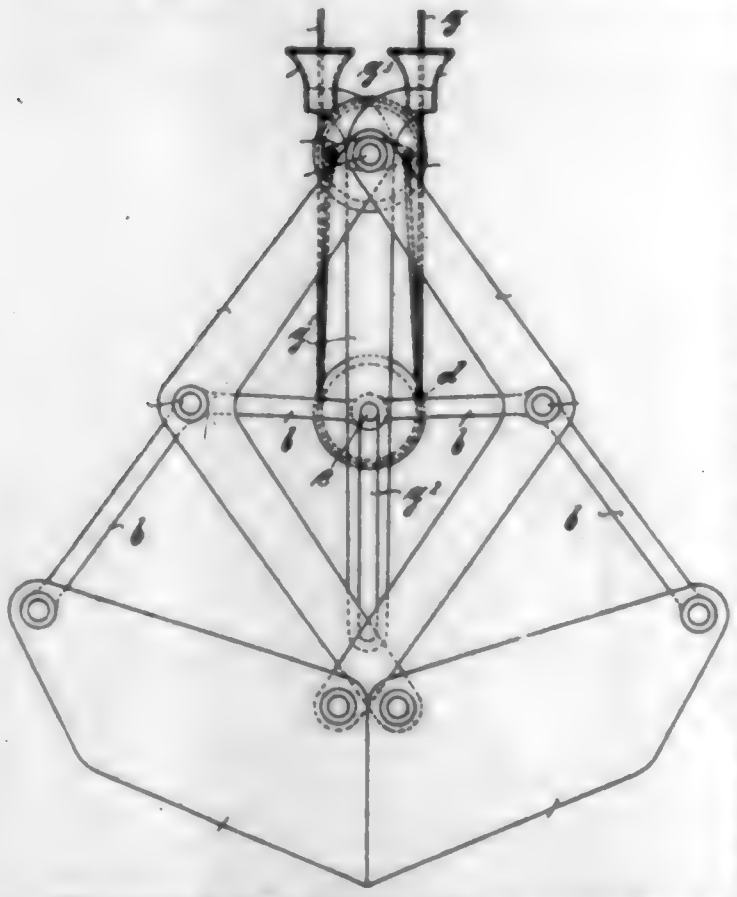
3. In an apparatus for cooling internal-combustion engines of the air-cooled variety, a fan-shaft, a pulley thereon, an engine-shaft, a pulley thereon, a belt connecting said pulleys, a fan arranged adjacent to said fan-shaft and revoluble in a plane substantially parallel therewith to create a draft of air, and a cylinder arranged in the line of said draft and adjacent to said fan.

4. In a device of the character described, an engine-shaft, a plurality of cylinders, a second shaft arranged adjacent to said cylinders in line therewith and substantially parallel to the engine-shaft, a flexible connection between said engine-shaft and second shaft, a revoluble fan, bevel-gear connections, and an inclosing case or frame enveloping said shaft and said bevel-gear.

5. In a device of the character described, an engine-shaft, a plurality of cylinders, a second shaft arranged adjacent to said cylinders in line therewith and substantially parallel to the engine-shaft, a flexible connection between said engine-shaft and second shaft, a revoluble fan, bevel-gear connections, an inclosing case or frame enveloping said shaft and said bevel-gear, and antifriction-bearings carried by said frames and supporting said second shaft and said gears.

6. In an air-cooling apparatus for air-cooled motors of the internal-combustion type for use on motor-vehicles, a shaft arranged adjacent to the motor and substantially parallel with the shaft thereof, a fan arranged between said first-mentioned shaft and the engine-cylinders, a frame supporting said first-mentioned shaft, an arbor for supporting said fan also supported by said frame, and beveled gears connecting said first-mentioned shaft and said fan-arbor.

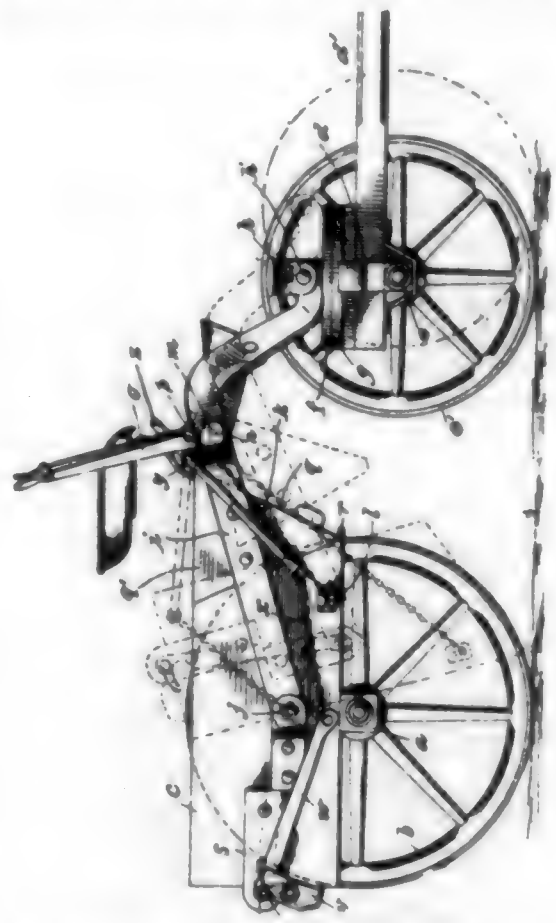
818,736. AUTOMATIC GRASPER. KARL BÖTTCHER and FRIEDRICH HEYN, Benrath, near Düsseldorf, Germany. Filed Feb. 12, 1906. Serial No. 300,637.



Claim.—An automatic grasper comprising in combination shovels, knee-levers pivotally connected at their one end with the outer edge of the said shovels, governing-levers rotatably carrying said knee-levers and pivotally secured to the inner edge of the shovels, stationary pulleys, a stationary axle upon which said stationary pulleys and said governing levers are mounted, movable pulleys, a movable axle carrying said movable pulleys and being connected with the other ends of said knee-levers, a rope wound around the movable and stationary pulleys and links carried by said stationary axle and provided with a slot engaging said movable axle.

818,737. DUMPING-WAGON. JAMES M. BROOKS, Moisea, Ga. Filed Apr. 20, 1905. Serial No. 256,094.

Claim.—1. In a dumping-wagon, the combination of front and rear axles and transporting wheels, a wagon-body mounted on the rear axle and adapted to tilt downward at its front end, this front end being open, and draft appliances connecting the tilting body with the front part of the vehicle, substantially as set forth.



2. In combination, a rear axle and a front axle mounted on wheels, a wagon-box rigidly mounted on said rear axle in such manner that the wagon-box shall normally tend downward at its forward end, a draft-frame pivotally connecting the wagon-body to the front part of the vehicle, and means for lifting the front part of the body and holding it up out of engagement with the ground.

3. In combination, a vehicle consisting of a rear axle mounted on wheels, a front truck, a wagon-box mounted on the rear axle and adapted to swing downward at its forward end on the spindles of the rear axle as pivots, draft devices connecting the cart-body with the front truck, the point of connection to the body being above the spindles of the rear axle, and means carried by the draft-frame for releasing the front end of the wagon-box and for elevating it after it is dumped.

4. In a dumping-wagon, the combination of a rear axle, a wagon-box mounted thereon and open at its front end, the forward part of the wagon-box being heavier than the rear part so as to normally tend to tilt downward, draft appliances and a front truck connected thereto, and means for lowering and raising the front end of the wagon-box.

5. In a dumping-wagon, the combination of a wagon-box mounted tiltingly on wheels, its front end being open, a front axle and wheels and means connecting the same to the wagon-box at a point above the tilting-point of the wagon-box, for the purpose set forth.

6. In a dumping-wagon, the combination of a rear axle mounted on wheels, a box or body mounted on the rear axle and adapted to tilt downward at its forward end to dump, a front truck and draft devices connecting the same to the wagon-body, means for raising and holding up the front end of the wagon-body, and a front end-gate mounted on the draft-frame, substantially as set forth.

7. In a dumping-cart, the combination of transporting-wheels, a wagon-box thereon open at its forward end and adapted to tilt forwardly to dump, and means for raising the box after dumping and holding it in its raised position, substantially as described.

8. In a vehicle of the class described, the combination, of wheels and a wagon-box open at its forward end and adapted to tilt and dump forwardly, the wagon-box being widened toward its front end, and means for raising and holding up the wagon-box after dumping.

9. In a dumping-cart, the combination of wheels and a wagon-box mounted thereon and open at its front end and adapted to tilt and dump forwardly, and positively-actuated dumping devices operated by the forward movement of the vehicle, substantially as described.

10. In a dump-cart, the combination of rear and front axles and wheels, a wagon-box mounted rigidly on the rear axle and open at its front end, a draft-frame pivotally connecting the front truck with the wagon-box, the pivotal point being located above the axle, and means for raising the front open end of the wagon-box and holding it in its raised position, substantially as set forth.

11. In a dump-wagon, the combination of rear and forward axles and their wheels, a box mounted on the rear axle and open at its forward end and adapted to tilt forward on the spindles of the rear axle, a draft-frame pivotally connecting the front axle to the wagon-box, means for raising the front end of the wagon-box and holding it up, and means for dumping the wagon-box consisting of a crank-shaft mounted at the rear end of the wagon-box and carrying brake-shoes adapted to engage the rear wheels, and means for applying the brake-shoes and holding them to the wheels during the act of dumping.

12. In a dump-wagon, the combination of rear and front axles and their wheels, a box mounted on the rear axle and open at its forward end and adapted to tilt forward on the spindles of the rear axle, a draft-frame pivotally connecting the front axle to the wagon-box, means for raising the front end of the wagon-box and holding it up, and means for dumping the wagon-box consisting of a crank-shaft mounted at the rear end of the wagon-box and carrying brake-shoes adapted to engage the rear wheels, an arm attached to the crank-shaft and extending forward, a chain pivotally connected to the forward end of this arm, this pivotal connection being coincident with the connection between the wagon-box and the draft-frame, and means for pulling on said chain to apply the brake-shoes and dump the box.

13. In a dump-wagon, the combination of rear and forward axles and their wheels, the rear axle being straight, a wagon-box adapted to discharge at its forward end and mounted over and upon the rear axle, a draft-frame pivotally connecting the front truck with the wagon-box at a point above the axle, and means for releasing the wagon-box after it is dumped and holding it in its raised position.

14. In a dump-wagon, the combination of rear and forward axles and their wheels, the rear axle being straight, a wagon-box adapted to discharge at its forward end and mounted over and upon the rear axle, a draft-frame pivotally connecting the front truck with the wagon-box at a point above the axle, and means for releasing the wagon-box after it is dumped and holding it in its raised position, and an end-gate mounted on the draft-frame in such a position as to close the front end of the wagon-box when it is raised.

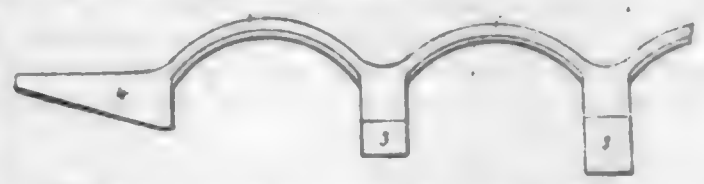
15. In a dump-wagon, the combination of a rear axle and wheels, a wagon-box mounted rigidly over and upon the same and adapted to tilt forward on the axle-spindles and adapted to discharge at its forward end, a front truck, a draft-frame pivotally connected at its forward end to the front truck and at its rear end to the wagon-box at a point above the rear axle, the axes of these pivots being horizontal, and means for lowering the front end of the wagon-box to dump the same and spread the load, said means being regulable so that the depth may be regulated.

16. In a dump-wagon, the combination of a rear axle and wheels, a wagon-box mounted rigidly over and upon the same and adapted to tilt forward on the axle-spindles and adapted to discharge at its forward end, a front truck, a draft-frame pivotally connected at its forward end to the front truck and at its rear end to the wagon-box at a point above the rear axle, the axes of these pivots being horizontal, an end-gate on the wagon-frame adapted to close the forward end of the wagon-box when it is in an elevated position, and means on the draft-frame for raising and holding up the forward end of the wagon-box.

17. In a dump-wagon, the combination of a rear axle and wheels, a wagon-box mounted rigidly over and upon the same and adapted to tilt forward on the axle-spindles and adapted to discharge at its forward end, a front truck, a draft-frame pivotally connected at its forward end to the front truck and at its rear end to the wagon-box at a point above the rear axle, the axes of these pivots being horizontal, an end-gate on the wagon-frame adapted to close the forward end of the wagon-box when it is in an elevated position, means on the draft-frame for raising and holding up the forward end of the wagon-box, means for lowering the front end of the wagon-box to dump the same and spread the load, said lowering means serving also as elevating means, and a device for locking said means, for the purposes set forth.

818,738. **LAMINATED MULTIPLE-ARCH CONCRETE DAM.** STEPHEN P. BROWN, Stratford, Conn. Filed Apr. 10, 1905. Serial No. 254,789.

Claim.—1. A laminated arch for concrete dams, the said arch consisting of a plurality of arch members superimposed one above the other and movable laterally for the accommodation of forces tending to disrupt the fabric of the arch.

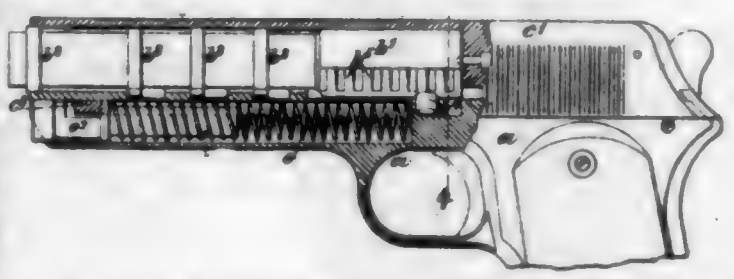


2. A laminated arch for concrete dams, the said arch consisting of a plurality of arch members superimposed one above the other and movable laterally with respect to each other and separated by films of asphalt.

3. A laminated arch for concrete dams, the said arch consisting of a plurality of arch members superimposed one above the other and movable laterally with respect to each other and having their upstream faces separated by grooves for the reception of calking and to act as self-calking "catchalls."

4. A laminated multiple-arch concrete dam consisting of a series of arches arranged with their convex faces against the water-pressure and supported by piers and end abutments, each arch consisting of a plurality of arch members superimposed one above the other and movable laterally with respect to each other for the accommodation of forces tending to disrupt the fabric of the dam.

818,739. **FIREARM.** JOHN M. BROWNING, Ogden, Utah. Filed Aug. 18, 1905. Serial No. 274,723.



Claim.—1. In a firearm, the combination with a frame having a forward extension, an uncovered seat upon the top surface of said frame, and a cam-groove in said seat, a barrel mounted from above upon said seat over said frame to slide and to rotate thereon, said barrel having a fixed stud to engage said cam-groove, and means movably carried upon said frame for confining the barrel vertically upon said frame.

2. In a firearm, the combination with a frame having an uncovered seat upon the top thereof and a cam-groove in said seat, and a barrel mounted from above upon said seat to slide and to rotate thereon, said barrel having a fixed projection to engage said cam-groove to limit the lengthwise and the rotatory movements of said barrel in both directions, of a breech-slide embracing said frame and sliding thereon, and having a forward extension to cover and to vertically confine said barrel upon said frame.

3. In a firearm, the combination with a frame having a forward extension, an uncovered seat upon the top thereof, a cam-groove and a recess in said seat, of a barrel mounted from above upon said seat to slide thereon, said barrel having a fixed stud to engage said cam-groove and an integral projection to depend into said recess, and a breech-slide movably held upon said frame and carrying an extension to cover said barrel and to hold the same vertically upon said frame, whereby said barrel is attached to said frame for lengthwise and rotatory movements, limited in all directions by a plurality of points of contact.

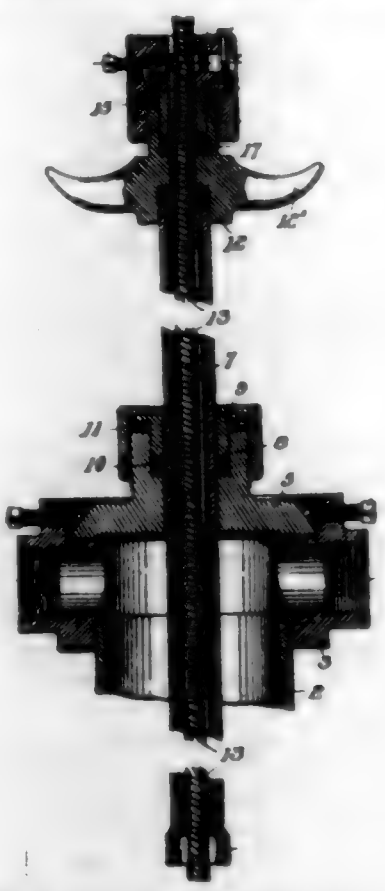
4. In a firearm, the combination with a frame having a forward extension, a seat upon the top surface thereof, a cam-groove in said seat, and a recess in said seat forward of said cam-groove, of a barrel mounted to slide upon said seat, having a stud to engage said cam-groove and having a projection depending into said recess, whereby the lengthwise and rotatory movements of said barrel upon said frame are limited by a plurality of points of contact, and a breech-slide embracing said frame and sliding thereon, said breech-slide comprising a breech-bolt and a forward extension inclosing said barrel, and means for interlocking said barrel and said breech-slide by the rotatory movement of said barrel.

5. In a firearm, the combination with a frame having a forward extension, a seat upon the top surface thereof and a cam-groove in said seat, of a barrel to engage said cam-groove whereby said barrel may have limited lengthwise and rotatory movements upon said

frame, a breech-slide embracing said frame and sliding thereon, said breech-slide comprising a breech-bolt and a forward extension inclosing said barrel, and locking-ribs on said barrel and locking-recesses in said breech-slide for interlocking said barrel and said breech-slide by the rotatory movement of said barrel.

6. In a firearm, the combination with a frame having a forward extension, a seat upon the top surface thereof, a cam-groove in said seat and a series of recesses in said seat forward of said cam-groove, of a barrel mounted to slide upon said seat, having a stud to engage said cam-groove, and having a series of projections depending into said recesses, whereby the lengthwise and rotatory movements of said barrel upon said frame are limited by a plurality of points of contact, and a breech-slide embracing said frame sliding thereon, said breech-slide comprising a breech-bolt and a forward extension inclosing said barrel, and locking-ribs on said barrel and locking recesses in said breech-slide for interlocking said barrel and said breech-slide by the rotatory movement of said barrel.

818,740. OIL-SAVER. JAMES T. CALLAHAN, Parkersburg, W. Va., assignor to The Parkersburg Machine Company, Parkersburg, W. Va., a Corporation of West Virginia. Filed Aug. 31, 1905. Serial No. 276,551.



Claim.—1. In an oil-saver, the combination of a casing-head, a vertically-reciprocating barrel forming a cable-passage, a stuffing-box secured to the upper end of the barrel, a gland-compressing head uniting with the stuffing-box and also provided with a cable-passage, and cable-securing means carried by the head.

2. In an oil-saver, the combination of a casing-head, a casing-head cap having a barrel-passage, a barrel, a stuffing-box formed on the upper side of the cap, a gland-compressing cap having threaded union with the casing-head cap, a cable stuffing-box carried by the upper end of the barrel, and cable-clamping means.

3. In an oil-saver, the combination with a barrel adapted to reciprocate vertically and form a cable-passage, a head secured to the upper end of the barrel, the head being extended to form a stuffing-box, a gland-compressing head uniting with the first-mentioned head, and cable-clamping means carried by the gland-compressing head.

4. In an oil-saver, the combination with a barrel adapted to reciprocate vertically and form a cable-passage, of a head carried by the barrel formed with a cable-passage and also with a transverse angular recess intersecting the cable-passage, a clamping-screw entering the passage, and an angular slide movable within the passage and of such form that any edge thereof may be presented to the clamping-screw, the slide having a cable-aperture.

5. A cable-securing device for oil-savers comprising a head having a vertical cable-passage and a transverse recess intersecting said passage, a cable-clamping slide operative within the recess, the slide being of such size and shape that it may be variously inserted within the head-recess with different portions thereof in engagement with the cable, and slide-actuating means.

6. A cable-securing device for oil-savers comprising a head having a vertical cable-passage and a transverse recess of rectangular form intersecting said passage and at one end open through a side face of the head, a substantially square cable-clamping slide adapted to be variously inserted within said recess thereby engaging different portions thereof with the cable, and slide-securing means.

818,741. CAP FOR BOTTLES AND JARS. AMOS CALLISON, Brooklyn, N. Y., assignor of one-half to Benjamin Adriance, Brooklyn, N. Y. Filed Feb. 28, 1905. Serial No. 247,630.



Claim.—1. The combination of a bottle, jar or the like having an annular bead or collar on its neck, and a metal cap fitted over the mouth thereof and consisting of a single circular piece of sheet metal shaped to form a plain imperforate disk-shaped top portion and a depending flange, said flange having the edge portion thereof bent in under said bead or collar and thereby locking said cap to the bottle, and said flange also having a weakening extending approximately from its inbent edge portion up to approximately its top portion and said weakening being of restricted width at its uppermost end, substantially as described.

2. The combination of a bottle, jar or the like having an annular bead or collar on its neck, and a metal cap fitted over the mouth thereof and consisting of a single circular piece of sheet metal shaped to form a plain imperforate disk-shaped top portion and a depending flange, said flange having the edge portion thereof bent in under said bead or collar and thereby locking said cap to the bottle, and said flange also having a cut extending approximately from its inbent edge portion up to approximately its top portion and said cut being of restricted width at its uppermost end, substantially as described.

3. The combination of a bottle, jar or the like having an annular bead or collar on its neck, and a metal cap fitted over the mouth thereof and consisting of a single circular piece of sheet metal shaped to form a plain imperforate disk-shaped top portion and a depending flange, said flange having the edge portion thereof bent in under said bead or collar and thereby locking said cap to the bottle, and said flange also having a tongue formed therein with its base abutting on the inbent edge portion of said flange, substantially as described.

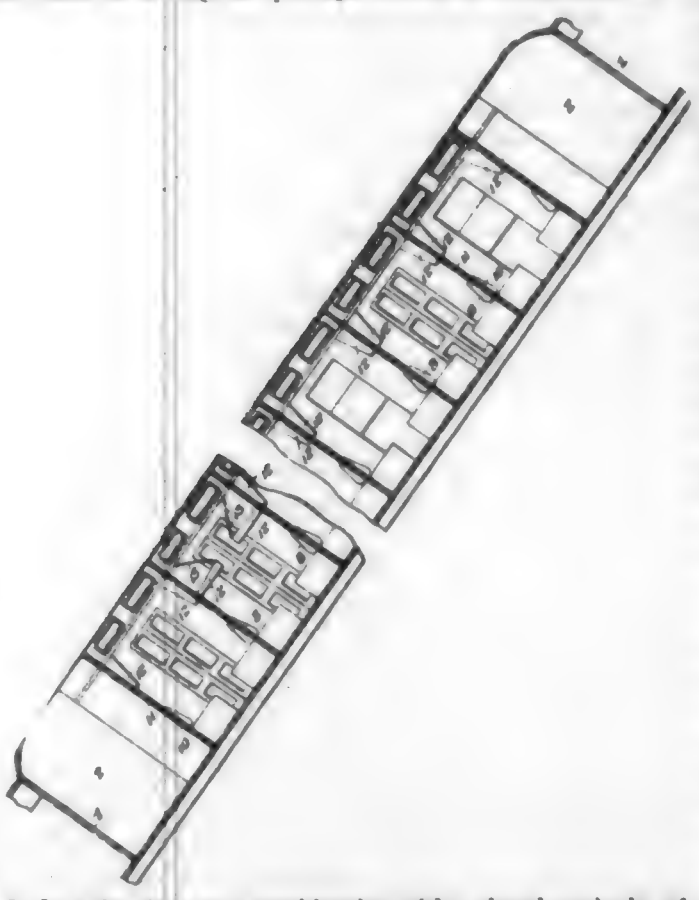
4. The combination of a bottle, jar or the like having an annular bead or collar on its neck, and a metal cap fitted over the mouth thereof and consisting of a single circular piece of sheet metal shaped to form a plain imperforate disk-shaped top portion and a depending flange, said flange having the edge portion thereof bent in under said bead or collar and thereby locking said cap to the bottle, and said flange also having a tongue formed therein by a cut penetrating the flange and having its ends abutting on the inbent edge portion of said flange, substantially as described.

818,742. SLEEPING-CAR. PATRICK P. CARROLL, Seattle, Wash. Filed Mar. 26, 1904. Serial No. 200,174.

Claim.—1. In a sleeping-car, the combination with a closed car-body provided with separate rooms at each corner thereof, of a series of compartments permanently arranged centrally and extending longitudinally of the car-body, the compartments being of less width than the width of the car-body to form an aisle on each side of the series of compartments, the compartments each comprising side walls and end partitions, doors in the side walls, seats located within each compartment, the seats facing each other, upper berths hinge-secured to the partitions, a central longitudinally-extending ventilating-trunk, the partitions extending thereinto and ventilating means in the trunk for ventilating the compartments.

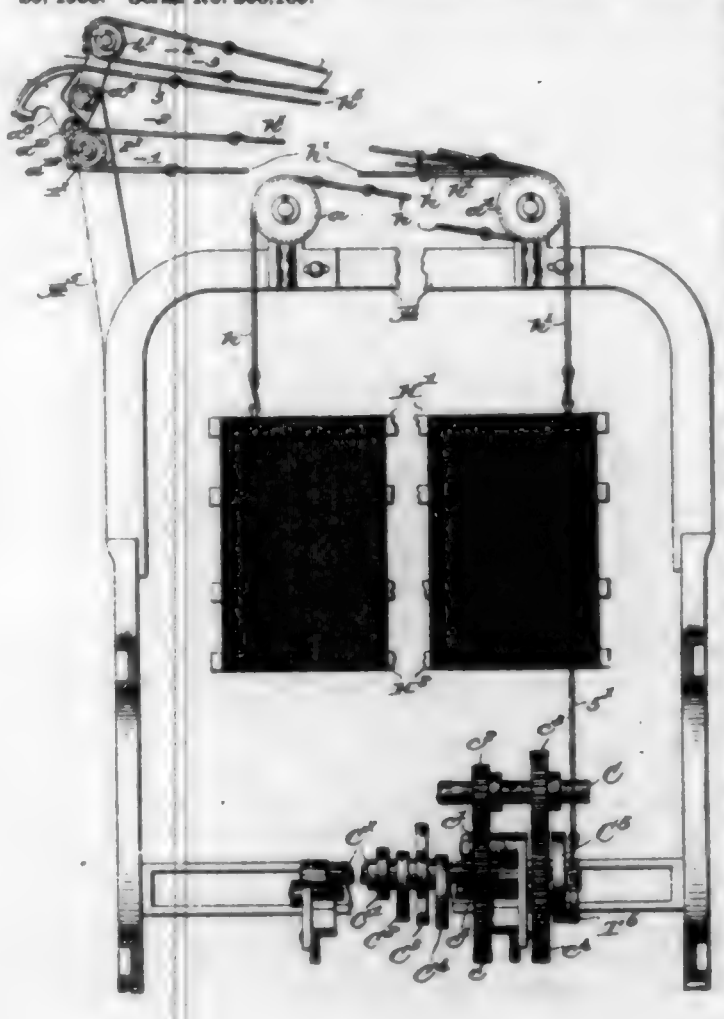
2. In a sleeping-car, the combination with a closed car-body, provided with separate rooms in each of the corners thereof, of a series of permanently-located compartments extending centrally and longitudinally of the car-body, the compartments comprising side walls and end partitions, the compartments being of less width than

the car-body to provide an aisle, seats located in each compartment and facing each other, upper berths hinge-secured to the partitions and movable toward and from each other, the partitions having openings formed therein above the seats and beneath the upper berths and opaque slides for closing the openings between the compartments.



3. In a sleeping-car a combination with a closed car-body, of a series of compartments permanently arranged centrally and extending longitudinally of the car-body, the compartments of less width than the width of the car-body to form an aisle on each side of the series of compartments, the compartments each comprising side walls and end partitions, doors in the side walls, seats located within each compartment, and upper berths hinge-secured to the partitions.

818,743. **HARNESS-CONTROLLING MECHANISM FOR LOOMS.** PATRICK CASSIDY and AIME A. ST. LAURENT, Salem, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed June 20, 1905. Serial No. 266,109.



Claim.—1. In a loom-harness mechanism, four vertically-movable harness-frames, means, including four flexible connectors arranged in pairs, to connect said frames in pairs, and a controlling-cam for and operatively connected with each harness-frame, combined with a compensating device comprising a main lever having a fixed fulcrum, an auxiliary lever pivotally mounted on the main lever below its fulcrum, a pair of coaxial, connected sheaves rotatably mounted on the upper end of the main lever, and a similar pair of sheaves rotatably mounted on the lower end of the auxiliary lever, the two pairs of connectors being oppositely wrapped around and fastened to the pairs of sheaves, respectively, and positively-acting controlling means for said compensating device connected with the auxiliary lever above its pivotal connection with the main lever.

2. In a loom-harness mechanism, four vertically-movable harness-frames, a flexible overead connection between each pair of said frames, and a controlling-cam for and operatively connected with each harness-frame, combined with a compensating device comprising pivotally-connected main and auxiliary members each having a pair of connected, axial sheaves rotatably mounted upon it to support respectively the two overhead connections, and a fixed fulcrum for the main member, located between the sheaves thereon and the point of connection with the auxiliary member, and positively-acting controlling means for said compensating device, operatively connected with the auxiliary member at a point above the fixed fulcrum.

3. In a loom-harness mechanism, four vertically-movable harness-frames flexibly connected in pairs overhead, and a controlling-cam for and operatively connected with each frame, combined with a compensating device comprising two pivotally-connected levers, a rotatable double sheave on each lever, each sheave coöperating with one of the overhead connections of the pairs of harness-frames, a fixed fulcrum for one of said levers, and positively-acting controlling means for the compensating device, including a cam operatively connected with the other of said levers.

4. In a loom-harness mechanism, four vertically-movable harness-frames flexibly connected in pairs overhead, a controlling-cam and a coöperating treadle connected with the bottom of each harness-frame, combined with a compensating device comprising main and auxiliary, pivotally-connected levers, a fixed fulcrum for the main lever, a double sheave on the latter above the fulcrum, coöperating with one of the flexible overhead connections, a similar double sheave on the auxiliary lever below its pivot, and coöperating with the other flexible overhead connection, and a controlling-cam positively connected with the upper end of the auxiliary lever and governing the operation of the compensating device.

5. In a loom-harness mechanism, four vertically-movable harness-frames flexibly connected overhead in pairs, and a controlling-cam for and operatively connected with each frame, combined with a compensating device coöperating with the overhead flexible connections, said compensating device including two pivotally-connected levers, each connected with the overhead connection of a pair of frames, and positively-acting controlling means connected with one of said levers and governing the operation of the compensating device, whereby the harness-frames of a pair may be simultaneously in the same or in different planes of the shed.

818,744. **SIGNAL APPARATUS.** CLARENCE W. COLEMAN, Westfield, N. J., assignor to The Hall Signal Company, a Corporation of Maine. Filed Feb. 6, 1906. Serial No. 299,684.

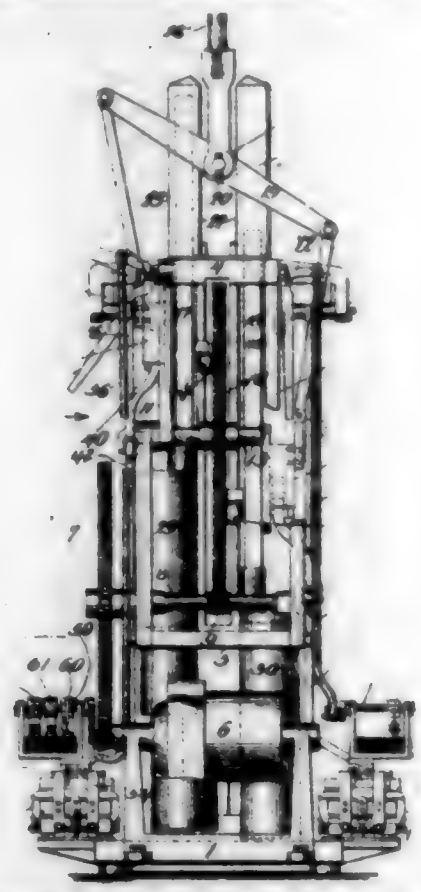
Claim.—1. In a multiposition signal, the combination of a signal-actuating connection; a plurality of cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

2. In a multiposition signal the combination of a flexible signal connection; a plurality of cam-pieces to actuate said flexible signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance; said signal connection having a return movement independent of the cam-pieces.

3. In a three-position signal, the combination of a signal-actuating connection; two cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

4. In a three-position signal, the combination of a flexible signal connection; two cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

5. In a multiposition signal, the combination of a plurality of thrust-pieces; a cam-piece to engage each thrust-piece; a cam to engage each cam-piece, and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece; a signal-actuating connection; and means connecting the thrust-pieces and said signal-actuating connection to move said connection a fractional distance upon the movement of each thrust-piece.



6. In a multiposition signal, the combination of a plurality of thrust-pieces; a cam-piece to engage each thrust-piece; a cam to engage each cam-piece and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece; a flexible signal connection and means connecting the thrust-pieces and said signal connection to move said signal connection a fractional distance upon the movement of each thrust-piece.

7. In a three-position signal, the combination of two thrust-pieces; a cam-piece to engage each thrust-piece; a cam to engage each cam-piece and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece; a signal-actuating connection; and means connecting the thrust-pieces and said signal-actuating connection to move said signal connection a fractional distance upon the movement of each thrust-piece.

8. In a three-position signal, the combination of two thrust-pieces; a cam-piece to engage each thrust-piece; a cam to engage each cam-piece and move its thrust-piece; each thrust-piece having a return movement independent of its cam-piece; a flexible connection; and means connecting the thrust-pieces and said signal connection to move said signal connection a fractional distance upon the movement of each thrust-piece.

9. In a three-position signal the combination of a floating lever; a signal-actuating connection pivoted to said lever between its ends; two thrust-pieces; means connecting the ends of said lever with the thrust-pieces; a cam-piece to engage each thrust-piece; and a cam to engage each cam-piece and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece.

10. In a three-position signal the combination of a floating lever; a signal-actuating connection pivoted to said lever between its ends; two thrust-pieces; links connecting the ends of said lever with the thrust-pieces; a cam-piece to engage each thrust-piece; and a cam to engage each cam-piece, and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece.

11. In a three-position signal, the combination of a floating lever; guiding means for said lever; a signal-actuating connection pivoted to said lever between its ends; two thrust-pieces; means connecting the ends of said lever with the thrust-pieces; a cam-piece to engage each thrust-piece; and a cam to engage each cam-piece to move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece.

12. In a three-position signal, the combination of a floating lever; a flexible signal connection; a pivot connection for said signal connection between the ends of said lever; guides on said pivot connection; parallel guideways for said guide; two thrust-pieces; means connecting the ends of said lever with the thrust-pieces; a cam-piece to engage each thrust-piece; and a cam to engage each cam-piece, and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece.

13. In a three-position signal, the combination of a floating lever; a flexible signal connection; a pivot connection for said signal connection between the ends of said lever; guide-rollers on said pivot connection; parallel guideways for said guide-rollers; two thrust-pieces; links connecting the ends of said lever with the thrust-pieces; a cam-piece to engage each thrust-piece; and a cam to engage each cam-piece and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece.

14. In a multiposition signal, the combination of a signal-actuating connection; a plurality of cam-pieces to actuate said signal connection; a cam to engage each cam-piece; and move said signal connection a fractional distance, said signal connection having a return movement independent of its cam-pieces; and a single motor for actuating said cams.

15. The combination of a thrust-piece; a pivoted cam-piece to engage said thrust-piece; and a cam to engage the cam-piece to move the thrust-piece, the thrust-piece having a return movement independent of the cam-piece.

16. The combination of a thrust-piece; a bracket fixed thereto; a cam-piece pivoted at one end to said bracket and adapted to engage said thrust-piece with its opposite end; and a cam to engage said cam-piece and move the thrust-piece, said thrust-piece having a return movement independent of the cam-piece.

17. The combination of a thrust-piece; a bracket fixed thereto; a cam-piece pivoted at one end to said bracket; a catch on the opposite end of the cam-piece to engage said thrust-piece; and a cam to engage said cam-piece and move the thrust-piece, said thrust-piece having a return movement independent of the cam-piece.

18. The combination of a thrust-piece; a bracket fixed thereto; a cam-piece pivoted at one end to the bracket; a catch on the opposite end of the cam-piece; a releasable latch on said thrust-piece to be engaged by said catch; a cam to engage said cam-piece and move the thrust-piece, said thrust-piece having a return movement independent of said cam-piece.

19. The combination of a thrust-piece; a bracket fixed thereto; a cam-piece pivoted at one end to the bracket; a catch on the opposite end of the cam-piece; a releasable latch on said thrust-piece to be engaged by said catch; a lever with a stationary fulcrum to hold said latch in engagement with said cam-piece; a cam to engage said cam-piece to move the thrust-piece, said thrust-piece having a return movement independent of said cam-pieces.

20. The combination of a thrust-piece, with a bracket fixed thereto; a cam-piece pivoted at one end to the bracket; a catch on the opposite end of the cam-piece; a releasable latch on said thrust-piece to be engaged by said catch; a lever with a stationary fulcrum to hold said latch in engagement with said cam-piece catch; a magnet controlling said lever; and a cam to engage said cam-piece to move the thrust-piece, said thrust-piece having a return movement independent of said cam-piece.

21. The combination of a thrust-piece; with a bracket fixed thereto; a cam-piece pivoted at one end to the bracket; a catch on the opposite end of the cam-piece; a releasable latch on said thrust-piece to be engaged by said catch; a lever with a stationary fulcrum to engage said latch to hold it in engagement with said cam-piece catch; a cam to engage said cam-piece to move the thrust-piece; a magnet controlling said lever, which lever, when released allows the cam-piece to swing on its pivot thereby giving the thrust-piece an independent return movement from any position.

22. The combination of a thrust-piece; with a bracket fixed thereto; a cam-piece pivoted at one end to the bracket; a catch on the opposite end of the cam-piece; a releasable latch on said thrust-piece to be engaged by said catch; a lever with a stationary fulcrum to hold said latch in engagement with said cam-piece catch; a magnet controlling said lever; means on said lever to lock the thrust-piece at the limit of its initial movement until released by said magnet; and a cam to engage said cam-piece to move the thrust-piece, said thrust-piece having a return movement independent of said cam-piece.

23. The combination of a thrust-piece, with a bracket fixed thereto; a cam-piece pivoted to said bracket; a releasable latch on said thrust-piece to engage with said cam-piece; a rotatable wheel; and a cam on said wheel to engage said cam-piece and move said thrust-piece, said thrust-piece having a return movement independent of said cam-piece when said latch releases said cam-piece.

24. The combination of a thrust-piece; an oscillating piece; means for engaging together said oscillating piece and thrust-piece;

a stationary magnet controlling said means; and a cam for moving said oscillating piece and thrust-piece.

25. In a multiposition signal, the combination of a signal-actuating connection; a plurality of pivoted cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

26. In a three-position signal, the combination of a flexible signal connection; two pivoted cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of each cam-piece.

27. In a multiposition signal, the combination of a plurality of thrust-pieces; a pivoted cam-piece to engage each thrust-piece; a cam to engage each cam-piece and move its thrust-piece, each thrust-piece having a return movement independent of its cam-piece; a flexible signal connection and means connecting the thrust-pieces and said signal connection to move said signal connection a fractional distance upon the movement of each thrust-piece.

28. In a three-position signal, the combination of a floating lever; guiding means for said lever; a signal-actuating connection pivoted to said lever between its ends; two thrust-pieces; means connecting the ends of said lever with the thrust-pieces; a pivoted cam-piece to engage each thrust-piece and move the signal, each thrust-piece having a return movement independent of its cam-piece.

29. In a signal apparatus, motor-operated and upwardly-movable actuating means; a flexible signal connection connected with said means at one end and with the signal at its other end; and a fixed guide for said flexible connection whereby a downward movement of the signal end of said flexible connection to move the signal is caused by an upward movement of said actuating means.

30. In a signal apparatus a signal-post; a signal-blade pivoted to said post at one side thereof; power-operated and upwardly-movable actuating means; a flexible signal connection attached at one end to said blade on the post side of its pivot connection, and at its other end to said actuating means; and a fixed guide for said flexible connection, whereby the direction of said flexible connection is changed and an upward movement of said actuating means causes a downward movement of the signal end of said flexible connection to move said blade.

31. In a multiposition signal apparatus, the combination of a signal-actuating connection; a plurality of cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

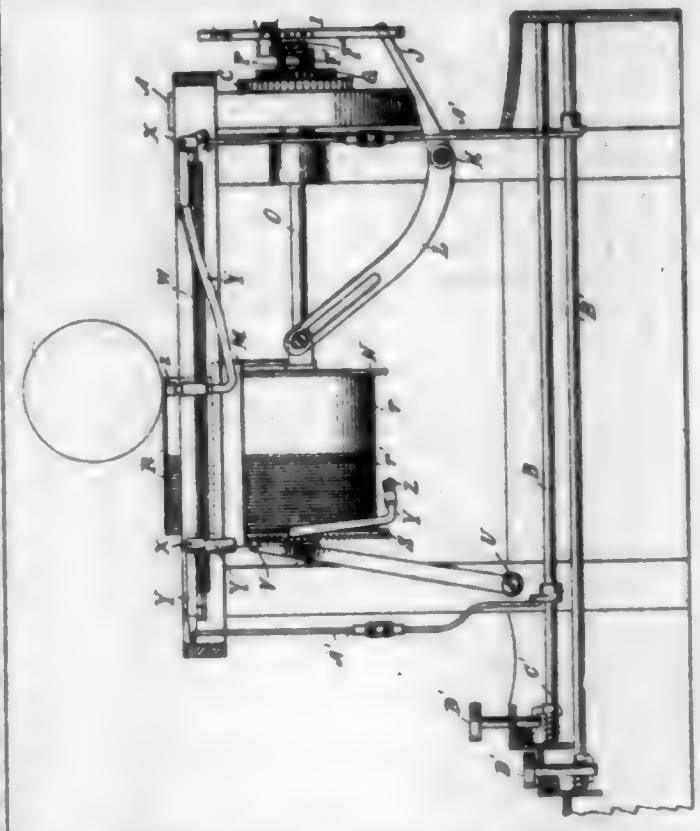
32. In a three-position signal apparatus, the combination of a signal-actuating connection; two cam-pieces to actuate said signal connection; a cam to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

33. In a three-position signal apparatus, the combination of a signal-actuating connection; two cam-pieces to actuate said signal connection; a rotatable power-wheel; a cam fixed to each side of said wheel to engage each cam-piece and move said signal connection a fractional distance, said signal connection having a return movement independent of the cam-pieces.

34. In a three-position signal apparatus, a motor; a signal-actuating floating lever upwardly movable at each end by said motor; a signal-blade; a guide fixed below said floating lever; a flexible signal connection attached at one end to said floating lever intermediate the ends of said lever, passing down around said guide and attached at its other end to said signal; whereby an upward movement of either end of said lever causes a downward pull on the signal connection at the end attached to the signal and moves the signal.

818,745. RIBBON-SHIFTING MECHANISM FOR TYPE-WRITERS. WILLIAM L. COOKE, Newport News, Va., assignor, by mesne assignments, to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed June 11, 1902. Serial No. 111,083.

Claim.—1. In a ribbon-shifting mechanism for type-writers, a multicolor ribbon, said colors running longitudinally of the ribbon the entire length of the same, spools over which the ribbon runs, said spools mounted and adapted to slide upon transverse shafts, a constantly-revolving crank-arm, a pitman pivoted at its upper end to the wrist-pin of said crank-arm, a rock-shaft adapted to be rocked by the movement of the pitman, mechanism connecting the rock-shaft with the ribbon-spools so that upon each complete revolution of the crank-arm the ribbon-spools will be slid laterally along the transverse shafts backward and forward the distance equal to the width of one of the colors of the ribbon, other wrist-pin bearings formed in the pitman, one bearing for each color upon the ribbon, the wrist-pin adapted to be transferred to another bearing when it is desired to write upon another color ribbon, and means to be operated from the keyboard of the machine for transferring the ribbon from one bearing to the other, as and for the purpose specified.



2. In a ribbon-shifting mechanism for type-writers, a colored ribbon, ribbon-spools over which said ribbon runs, transverse shafts upon which the spools are adapted to slide, a constantly-revolving crank-arm, a pitman composed of two spring side pieces running parallel with one another, said side pieces being bent outward in a semicircle at two points opposite one another so as to form two circular bearings for the wrist-pin of the crank, a rock-shaft, an arm extending outward from the rock-shaft to which the lower end of the pitman is pivoted, a yoke embracing each of the spools, slotted arms pivoted to the yokes at their upper ends, and at their lower ends to the rock-shaft, a key-lever secured to the rock-shaft, as and for the purpose specified.

3. In combination with a type-writer in which the ribbon is shifted from the carriage-spring, through gearing, a crank-arm, pitman, rock-shaft and yoke, a pitman connecting the revolving crank-arm with the rock-shaft, said pitman being provided with two or more bearing-places for the wrist-pin of the crank-arm, said bearings being formed by the bending outward of the spring-strips composing the pitman so that the wrist-pin may be forced between the spring-strips from one bearing to the other, and a key-lever secured rigidly to the rock-shaft and extending forward to the keyboard, for the purpose of causing the pitman to be raised or lowered so as to transfer the wrist-pin from one bearing to another, as and for the purpose specified.

4. In combination with a ribbon-shifting mechanism, of a type-writer in which the ribbon is shifted from the carriage-spring, through gearing, a crank-arm, pitman, rock-shaft and yoke, a pitman composed of a solid lower portion I' and a spring portion I^2, said spring portion being formed of a single strip of metal secured at each end to the solid portion, the two side strips of the spring portion extending upward close together and parallel with one another and being bent outward at different points opposite one another so as to form bearings for the wrist-pin, as and for the purpose specified.

5. In a type-writing machine, the combination of means for feeding the ribbon longitudinally, means for automatically reciprocating the ribbon transversely and means for changing the position of the connections between the ribbon and the automatic reciprocating means, to confine the contact of the type to different portions of the width of said ribbon as the same is reciprocated.

6. In a type-writing machine, the combination of a multiplex ribbon, holders for said ribbon, means for rotating said holders, automatic means for reciprocating said holders and means interposed between said holders and the automatic means, for changing the relation between said automatic means and said holders to confine the

contact of the type to different portions of the width of said ribbon as the same is reciprocated.

7. In a type-writing machine, the combination of a multiplex ribbon, holders for said ribbon, means for rotating said holders, automatic means for reciprocating said holders, and a spring-controlled connection between said holders and said automatic means, for changing the relations between the same to confine the contact of the type to different portions of the width of said ribbon as the same is reciprocated.

8. In a type-writing machine, the combination of means for automatically feeding a ribbon in two directions at substantially right angles to each other, and hand-actuated means for changing the relative disposition of the parts of said feeding means, so that limits of movements in one direction will be altered and different limited portions of the ribbon may be employed.

9. In a type-writing machine, the combination of a ribbon that is divided into fields or sections, a carrier therefor, automatically-operated means for moving said carrier so as to move different portions of the field or section of ribbon which is in the operative position past the printing-center, and hand-operated means for changing the relative positions of the parts of said automatically-operated parts so that any one of the various sections may be moved to the operative positions.

10. In a type-writing machine, the combination of a ribbon having fields of different characteristics, means for automatically moving the ribbon longitudinally, means for automatically moving the ribbon transversely, and means for controlling the ribbon so that as said ribbon is automatically moved the contact of the types is confined to whatever selected field of the ribbon may be in use.

11. In a type-writing machine, the combination of a ribbon having fields of different characteristics, means for automatically moving the ribbon longitudinally, means for automatically moving the ribbon transversely, and means for controlling the ribbon so that during the automatic longitudinal movement of the ribbon the contact of the types is confined to whatever ribbon-field is selected for use.

12. In a type-writing machine, the combination of a ribbon having fields of different characteristics, means for automatically feeding the ribbon longitudinally, means for automatically reciprocating the ribbon transversely, and means for shifting the ribbon so that as said ribbon is automatically fed the contact of the types is confined to whatever field of the ribbon may be selected.

13. In a type-writing machine, the combination of printing instrumentalities, a ribbon, means for feeding the ribbon longitudinally, means for automatically reciprocating the ribbon transversely, connections between said ribbon and said reciprocating means, and means for altering said connections so that the contact field of the printing instrumentalities may be restricted at pleasure to limited portions of the width of the ribbon as it moves over the printing-point during the operation of the machine.

14. In a type-writing machine, the combination of printing instrumentalities, a ribbon having fields of different characteristics, holders or spools for said ribbon, means for rotating said holders or spools, automatic means for reciprocating said holders or spools, and means for adjusting said automatic means so that the action of the printing instrumentalities may be confined to any desired field of the ribbon as the latter moves over the printing-point during the operation of the machine.

15. In a type-writing machine, the combination of means for automatically feeding the ribbon in two directions, one at an angle to the other, and hand-actuated means for changing the relations of the parts of said automatic feeding means so that the limits of movement in one direction will be altered and different limited portions of the ribbon may be employed.

16. In a type-writing machine, the combination of means for automatically feeding the ribbon in two directions simultaneously, and hand-actuated means for changing the relations of the parts of said feeding means so that the limits of movement in one direction will be altered and different limited portions of the ribbon may be employed.

17. In a type-writing machine, the combination of a ribbon having fields of different characteristics, a carrier therefor, automatic means operative on said carrier to bring to the printing-point different portions of whatever field of the ribbon may be in use, and hand-actuated means operative on said automatic means to bring any desired field of the ribbon into use.

18. In a type-writing machine, the combination of printing instrumentalities, inking-surfaces having different characteristics, means for automatically moving said inking-surfaces in one direction, means for automatically moving said inking-surfaces in another direction at an angle to the first direction, and means for moving any surface to a position to coöperate with said printing instrumentalities, said surface while in said coöperating position being automatically movable.

19. In a type-writing machine, the combination of inking-surfaces having different characteristics, means for moving any surface to operative position, and means for automatically moving said inking-surfaces in two directions at substantially right angles to each other, and for effecting an automatic movement of that inking-surface which is in operative position.

20. In a type-writing machine, the combination of inking-surfaces having different characteristics, means for automatically moving said inking-surfaces in one direction, means for automatically moving said inking-surfaces in another direction at an angle to the first direction, and means for moving any surface to operative position, the automatic movement of the inking-surfaces being effected when any field is in operative position.

21. In a type-writing machine, the combination of inking-surfaces having different characteristics, means for moving any surface to operative position, and means for automatically moving said inking-surfaces in two directions at angles to each other and so that only that surface or field which is in operative position will be presented to the action of the types and the inking-surfaces will be automatically moved when any field is in operative position.

22. In a type-writing machine, the combination of inking-surfaces having different characteristics, means for automatically moving said inking-surfaces in two directions at substantially right angles to each other, and means for moving any surface or field to operative position without affecting the said automatic movement of the surfaces.

23. In a type-writing machine, the combination of inking-surfaces of different colors, means for shifting said inking-surfaces so that any desired color may be moved to the printing-point, and means for automatically feeding the inking-surfaces in two directions and for automatically moving said surfaces when any color is at the printing-point.

24. In a type-writing machine, the combination of two or more inking-surfaces of different colors, with means for shifting said inking-surfaces so that any desired color may be moved to the printing-point, and means for automatically moving the inking-surfaces in two directions at substantially right angles to each other and for automatically moving said surfaces when any inking-surface is at the printing-point.

25. In a type-writing machine, the combination of a multicolored inking-ribbon having a plurality of color-fields, means for positioning said ribbon so that any one of the color-fields may be moved to the printing-point, and means for automatically moving said ribbon longitudinally and transversely while any desired field is at the printing-point.

26. In a type-writing machine, the combination of a ribbon having fields of different characteristics, means for positioning the ribbon so that any desired field will receive the impact of the types, means for automatically moving the ribbon longitudinally and transversely and so that only that field desired to be impacted by the types will be fed over the printing-point.

27. In a type-writing machine, the combination of a ribbon having fields of different characteristics, means for automatically moving the ribbon so that whichever field it is desired to use will be moved longitudinally and transversely over the printing-point, and independent means for changing the position of said fields relative to the printing-point.

28. In a type-writing machine, the combination of a ribbon having fields of different characteristics, ribbon-spools for holding the ribbon, means for automatically shifting said ribbon-spools axially and for revolving them, and independent means for effecting an axial shift of the spools to bring any field of the ribbon into the path of the types without affecting the operation of said automatic shifting means.

29. In a type-writing machine, the combination of a ribbon having fields of different characteristics, ribbon-spools on which said ribbon is wound, and means for moving said spools axially and for rotating them and which limit the axial movement of the spools so that any one field of the ribbon will be presented to the action of the types.

30. In a type-writing machine, the combination of a ribbon having fields of different characteristics, ribbon-spools on which said ribbon is mounted, means for revolving said spools while shifting them axially, and means to limit the axial movement of the spools to

any field of the ribbon without interfering with the revolution of said spools.

31. In a type-writing machine, the combination of a ribbon, ribbon-spools on which said ribbon is wound, means for automatically actuating said ribbon-spools, and hand-operated mechanism for changing the relation of the parts of said automatic actuating mechanism so that any one of a plurality of fields into which the ribbon is divided will be presented to the action of the types and be automatically fed when so presented.

32. In a type-writing machine, the combination of an automatically-reciprocated member, a ribbon-carrier operated thereby, and means for changing the relations between said carrier and said member, whereby different portions in the width of the ribbon may be presented at the printing-point and automatically fed thereover.

33. In a type-writing machine, the combination of an inking-ribbon having fields of different characteristics, ribbon-spools, means for automatically actuating said ribbon-spools, and hand-actuated means for changing the relative disposition of the parts of said actuating means so that any one of the ribbon-fields may be moved to operative position and the feed of the ribbon may be at the same time so restricted that only the last-named ribbon-field will be presented to the action of the types.

34. In a type-writing machine, the combination of an inking-ribbon divided longitudinally into fields of different characteristics, means for automatically feeding the ribbon lengthwise, mechanism for automatically feeding the ribbon transversely, and hand-operated means for changing the relation between the parts of said mechanism so that any one of the ribbon-fields may be presented at the printing-point and automatically fed thereover.

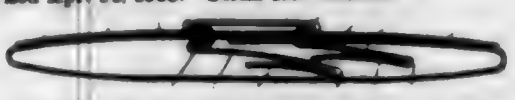
35. In a type-writing machine, the combination of a ribbon divided longitudinally into fields having different characteristics, ribbon-spools, means for automatically revolving said spools, means for automatically moving said spools axially, and hand-operated means for changing the relation between the parts of said mechanism so that any one of the different ribbon-fields may be caused to coöperate with the types as the ribbon-spools are automatically revolved.

36. In a type-writing machine, the combination of a ribbon divided longitudinally into fields having different characteristics, ribbon-spools upon which said ribbon is wound, spool-shafts upon which said spools are mounted, a revoluble crank-arm connected with one of said spool-shafts, a pitman connected with said crank-arm, a bell-crank lever having one arm connected with said pitman and the other arm with one of said ribbon-spools, and means for varying the distance between the points of connection of said crank-arm with said pitman and of said bell-crank lever with said pitman.

37. In a type-writing machine containing an ink-ribbon having fields of different characteristics, the combination with the carriage-operating mechanism of ribbon-feeding mechanism actuated thereby, said ribbon-feeding mechanism including means for moving the ribbon transversely, and of means for so regulating the relations between the ribbon and its feed mechanism as to render the latter operative to feed the ribbon at will with one field only of the ribbon exposed to the action of the types, the exposed field being whichever may be desired.

38. In a type-writing machine containing ink-ribbon having fields of different characteristics, the combination of ribbon shifting and holding means to render the types operative indefinitely on each of said fields of the ribbon, automatic ribbon-feed mechanism for feeding the ribbon longitudinally on whichever field thereof the types operate, and automatic mechanism for reciprocating the ribbon transversely.

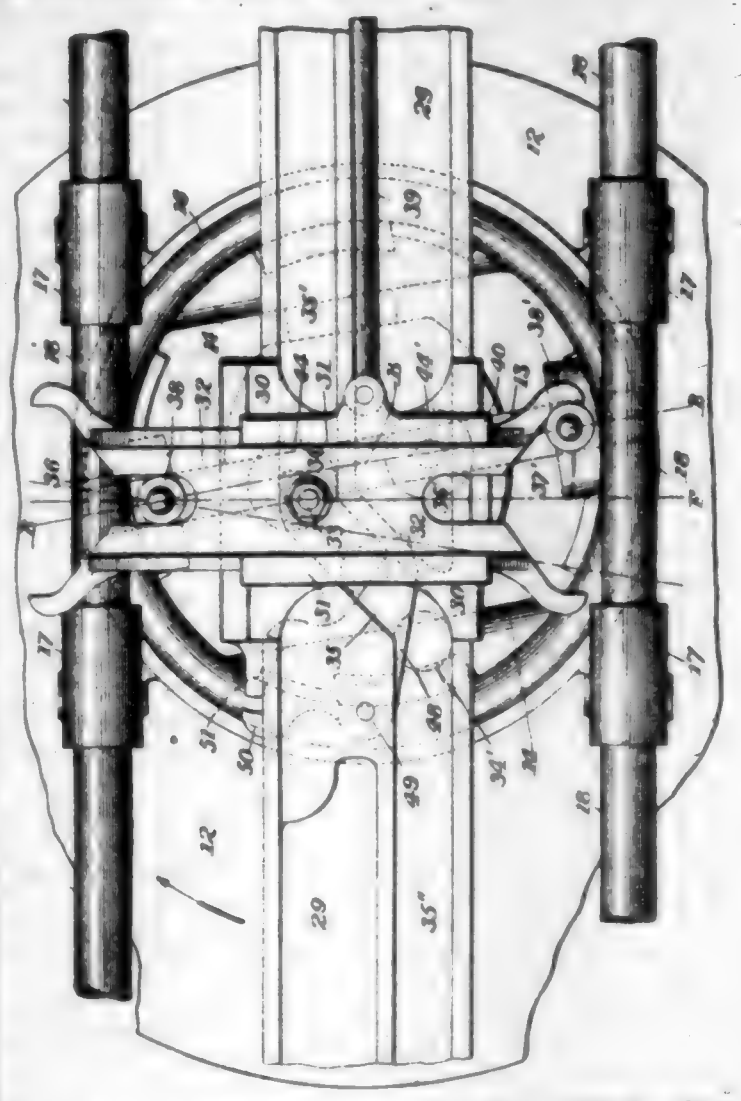
818,746. SEAL FOR ENVELOPS. FREDRICK CORRIGAN, Jeannette, Pa. Filed Apr. 14, 1905. Serial No. 255,620.



Claim.—A seal for envelops comprising a strip of material, the ends of said strip of material being bent upon themselves, one end being bent upon itself once and the other end being bent upon itself twice and both ends being then bent both toward one side of and tangentially to the central portion of said strip, the extreme ends of said strip being bent rearwardly and in the same direction upon the tangentially-disposed portions of said strip, substantially as described.

818,747. VARIABLE-SPEED FRICTION-GEARING. EDWARD P COWLES, Warren, Ohio. Filed Oct. 4, 1902. Serial No. 125,830.

Claim.—1. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, and means for adjusting said wheel to cause it to automatically traverse said disk on opposite sides of the center thereof.



2. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, means for changing the relative positions of said disk and wheel to cause the latter to engage the disk at points on opposite sides of its center, and means for adjusting the wheel angularly to cause it to automatically traverse either section of the disk from the center to the circumference or vice versa.

3. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel arranged to engage said disk, means for adjusting the wheel across the center of the disk, and means for adjusting the wheel angularly to cause it to automatically traverse the disk on either side of the center thereof.

4. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, a shaft connected to said wheel, means for shifting the point of contact of said wheel and disk from one side of the center of said disk to the opposite side of said center to vary the direction of rotation of the shaft, and means for causing the wheel to automatically traverse the disk on either side of its center to vary the speed of the shaft.

5. In a friction-gearing for motor-vehicles, the combination of a rotatable disk, a friction-wheel constantly engaging said disk, means for driving the vehicle permanently connected with said parts, and means for shifting the point of contact between said wheel and disk from one side of the center of said disk to the opposite side of said center and for causing said wheel to automatically traverse said disk, on either side of its center, from the center to the periphery of said disk, whereby the direction of movement of the vehicle can be reversed and the speed of such movement in either direction varied without disconnecting the disk and friction-wheel or disconnecting the means for driving the vehicle from said parts.

6. In a variable-speed friction-gearing for motor-vehicles, the combination of two frictionally-engaged members, means permanently connecting one of said members with a motor, a power-transmitting shaft permanently connected with the other of said members, and means for adjusting the friction member connected with said shaft to cause it to automatically vary its position relative to the other member to change the direction of movement of said shaft or its speed in either direction.

7. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel frictionally engaging said disk, a support for

said wheel mounted to move transversely across the engaged face of the disk and to oscillate about an axis extending at right angles to said disk, whereby the friction-wheel will be adjusted to follow the lateral movement of its support without sliding on the disk, means for moving said support adapted to engage the same at either of two points on opposite sides of the oscillating axis thereof, and means for automatically shifting the connection between said devices and support from one of said points to the other as the friction-wheel passes from one side of the center of the rotatable disk to the other side of said center.

8. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk and normally extending perpendicular to a radius of the disk passing through the point of contact of the wheel therewith, a support for said wheel permitting oscillation thereof to adjust it into position to automatically traverse the disk, toward or from the center thereof, two studs connected with said support and situated on opposite sides of the axis about which the wheel oscillates, and means adapted to engage said studs and move said support transversely of the rotatable disk, the parts being so arranged that when the said support is moved laterally of the disk the friction-wheel is oscillated and travels freely over the disk and when such movement of its support ceases rocks about the engaged stud as a pivot into its normal position perpendicular to a radius of the disk passing through the point of contact of the wheel and disk, the means for moving said support engaging said studs alternately.

9. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, a support for said wheel including two members having parallel faces, and a series of antifriction-balls arranged between said parallel faces, whereby the member connected with the wheel can oscillate slightly relative to the other member of said support, and means for moving said support and wheel transversely of the disk.

10. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, a support for said wheel, means for adjusting said wheel relative to the disk to compensate for wear, and means for moving said support and wheel transversely of the disk, without separating the wheel and disk and without sliding the wheel on the disk.

11. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, a support for said wheel, guides for said support extending across the face of the disk, said wheel being connected to said support to oscillate about an axis at right angles to the path of movement of the support across the disk, and means for sliding said support on its guides.

12. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel-support adapted to move transversely of said disk, a friction-wheel mounted on said support, to engage the rotatable disk and adapted to oscillate about an axis extending at right angles to said disk, two studs projecting from the wheel-support and arranged on opposite sides of the axis of oscillation of said wheel, a relatively stationary guide extending across the center of the disk between said studs, a plate mounted to move both longitudinally and transversely of said guide and adapted when moved longitudinally of said guide to engage one of the studs on the wheel-support to oscillate the friction-wheel and adjust it and its support transversely of the rotatable disk, and means for automatically moving said plate transversely of said guide, to release the previously-engaged stud of the wheel-support and engage the other of said studs, as the friction-wheel passes the center of the disk.

13. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel-support adapted to move transversely of said disk, a friction-wheel mounted on said support to engage the rotatable disk and adapted to oscillate about an axis extending at right angles to said disk, two studs projecting from the wheel-support and arranged on opposite sides of the axis of oscillation of said wheel, a guide extending between said studs and projecting on opposite sides of the center of the rotatable disk, said guide having formed in one face two oppositely-extending, unalined, ways or grooves connected at their inner ends, substantially in line with the center of the rotatable disk, by a shorter, diagonally-extending, groove, a plate mounted to move both longitudinally and transversely of said guide and having a roller adapted to travel in said ways or grooves, the ends of said plate being adapted to engage said studs on the wheel-support and said plate being of such length that it engages said studs alternately as it is moved transversely of its support, and means for moving said plate on said support.

14. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, means for adjusting the wheel transversely of the disk, and means for automatically rocking the wheel about an axis parallel to its axis of revolution as it approaches the center of the disk, whereby it will automatically pass said center.

15. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel-support adapted to move transversely of said disk, a friction-wheel mounted on said support to rock about an axis parallel to its axis of revolution, an arm connected with said wheel, means for moving the wheel-support transversely of the disk, and means for automatically rocking said arm and wheel as the latter approaches the center of the disk.

16. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel-support adapted to move transversely of said disk, a friction-wheel engaging the disk and connected to said support to rock about an axis parallel to its axis of revolution, a relatively stationary guide extending across the center of the disk, rollers connected with the friction-wheel and contacting with opposite sides of said guide and means for moving the wheel-support transversely of the disk, said guide having a gap or opening formed therein near its middle, whereby the wheel will be caused to automatically rock about the axis of its connection to said support as the rollers connected thereto come into alinement with the gap in said guide.

17. In a variable-speed friction-gearing, the combination of a rotatable disk, a wheel-support adapted to move transversely of said disk, a friction-wheel engaging the disk and connected to said support to rock about an axis parallel to its axis of revolution, a relatively stationary guide extending across the center of the disk and having a gap or opening in alinement with said disk-center, rollers connected with the friction-wheel and contacting with opposite sides of said guide, means for moving the wheel-support transversely of the disk, a pivoted stop for closing the gap in said guide, and means connected with said stop and extending into the path of movement of the wheel-support, whereby said stop may be automatically adjusted to permit the wheel to rock about an axis parallel to its axis of revolution as it approaches the center of the disk.

18. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, means for adjusting said wheel to cause it to automatically traverse said disk toward or from the center thereof, and means for causing said wheel to automatically pass the center of the disk.

19. In a variable-speed friction-gearing, the combination of a rotatable disk, a friction-wheel engaging said disk, means for causing said wheel to traverse the disk, and means for shifting the point of contact of the wheel and disk, as the wheel approaches the center of the disk, from the plane including the axis of the disk and the points at which the wheel contacts with the disk in traversing the latter, whereby the wheel will be automatically carried around the center of the disk.

20. In a variable-speed friction-gearing, the combination of two rotatable, frictionally-engaged, elements, means for adjusting one of said elements transversely of the other while engaged therewith, the point of contact between said elements following, during such traversing, a straight line extending through the center of the relatively stationary element, and means for moving the point of contact between said elements from said line as it approaches the center of the relatively stationary element, to cause such traversing element to automatically pass said center.

21. In a variable-speed friction-gearing, the combination of two rotatable, frictionally-engaged, elements, means for adjusting one of said elements transversely of the other while engaged therewith, the point of contact between said elements following, during such traversing, a horizontal line extending through the center of the relatively stationary element, and means for shifting the said point of contact vertically relative to said line, as the traversing element approaches the center of the other element whereby the traversing element will automatically pass said center.

22. In a variable-speed friction-gearing, the combination of two rotatable, frictionally-engaged, elements, means for causing one of said elements to move transversely of the other while engaged therewith, the point of contact between said elements following, during such traversing, a straight line that extends through the center of the relatively stationary element, and means for bodily moving the traversing element as it approaches the center of the relatively stationary element to shift the point of contact between the elements from said straight line, for the purpose specified.

23. In a variable-speed friction-gearing, the combination of two frictionally-engaged members, means for driving one of said members, means for adjusting the other friction member to cause it to automatically traverse the driven member to vary its speed, and an ex-

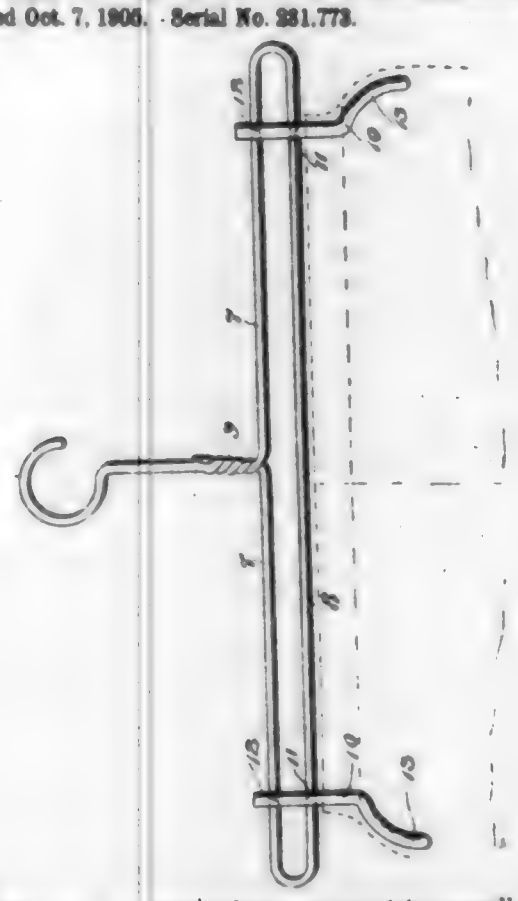
tensible power-transmitting shaft connected to the adjustable friction member.

24. In a variable-speed friction-gearing, the combination of two frictionally-engaged members, means for driving one of said members, a longitudinally-extensible power-transmitting shaft connected to the other friction member by a universal joint, and means for adjusting the last said member to cause it to automatically traverse the driven member and vary the speed of the transmitting-shaft.

25. In a variable-speed friction-gearing, the combination of two frictionally-engaged members, means for driving one of said members, a power-transmitting shaft, consisting of two freely-telescoping sections, connected to the other friction member, and means for adjusting the last said member to cause it to automatically traverse the driven friction member to vary the speed of the transmitting-shaft.

26. In a variable-speed friction-gearing, the combination of two frictionally-engaged members, means for driving one of said members, a power-transmitting shaft connected to the other friction member and consisting of two freely-telescoping sections, one having a series of longitudinally-extending peripheral ribs and the other having a corresponding series of longitudinally-extending grooves into which the ribs on the other section extend, and means for adjusting the friction member connected to said shaft transversely of the other friction member to vary the speed of the transmitting-shaft.

818,748. **GARMENT-HANGER.** SAMUEL N. CRAGIN, Akron, Ohio. Filed Oct. 7, 1905. Serial No. 281,773.



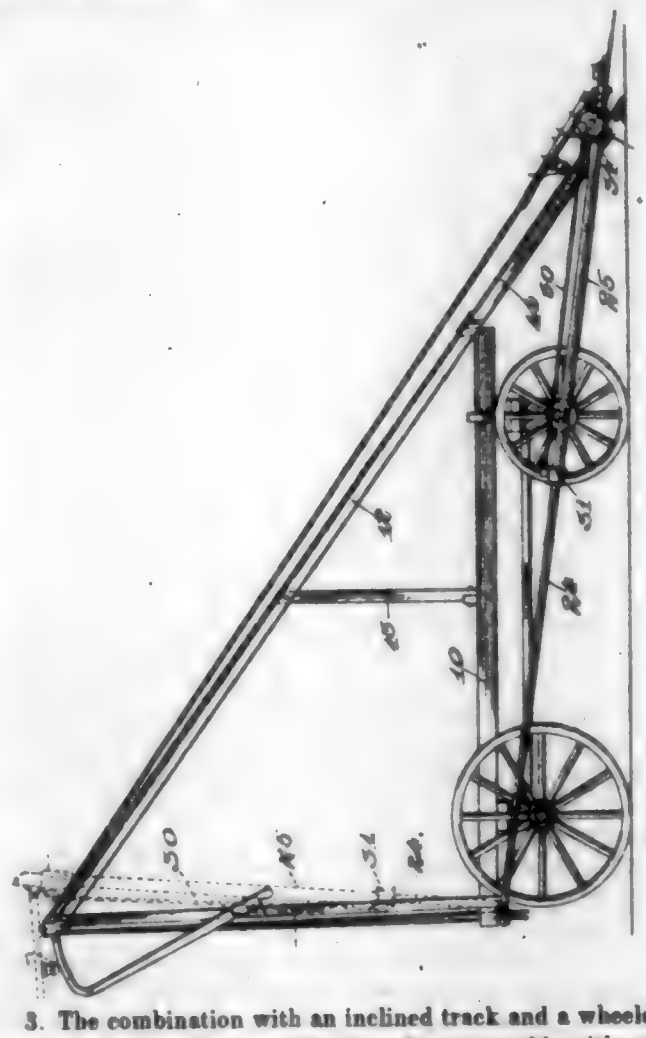
Claim.—1. A garment-hanger comprising parallel rods located one above the other and provided with a hook, and a pair of depending arms slidable in and out on the rods and shaped to support a garment, each arm having an opening near the top thereof and another below the same, through which openings the upper and lower rods respectively extend, the arms being offset outwardly at their lower ends so as to bind against one of the rods, at the openings, when a garment is hung thereon.

2. A garment-hanger comprising a piece of wire bent to form a hook and two parallel rods located one above the other and connected together at their outer ends, and a pair of depending garment-supporting arms engaging and slidable on both of the rods and having notches in their upper ends through which the upper rod extends, and holes below said notches through which the lower rod extends.

818,749. **HAY-STACKER.** JOSEPH DAIN, Ottumwa, Iowa. Filed Dec. 1, 1905. Serial No. 289,808.

Claim.—1. The combination with a carrier, a wheel therefor, and a track for said wheel, of a movable arm connected with said carrier, and interlocking devices carried by said wheel and arm to hold said wheel in position on the track, substantially as described.

2. The combination with a carrier, a wheel therefor, a flange projecting from one face of said wheel, and a track for said wheel, of a movable arm connected with said carrier, a sleeve into which said arm projects, means for connecting said sleeve with said carrier, and a lateral projection on said sleeve adapted to engage the said projecting flange to hold said wheel in position on the track, substantially as described.



3. The combination with an inclined track and a wheeled carrier adapted to run thereon, of a pivoted arm movable with said carrier, and a device carried by said arm adapted to directly engage a wheel of said carrier to hold it to its track, substantially as described.

4. The combination with an inclined track, a carrier adapted to run thereon, and a wheel for said carrier having a flange extending from its hub portion, of a pivoted arm movable with said carrier, and a device carried by said arm adapted to engage said flange, substantially as described.

5. The combination with an inclined track, a carrier adapted to run thereon, and a wheel for said carrier having a flanged portion extending out from one face thereof, of a pivoted arm movable with said carrier, and a device carried by said arm adapted to engage said flanged portion, substantially as described.

6. The combination with an inclined track, a carrier adapted to run thereon, and a wheel for said carrier having a flanged portion extending out from one face thereof, of a pivoted arm movable with said carrier, a sleeve through which said arm passes and by which it is connected to said carrier, and a recessed ear on said sleeve adapted to engage said flanged portion, substantially as described.

7. The combination with an inclined track, of a carrier, an axle secured thereto, a wheel on said axle provided with a flange projecting from one face thereof, a pivoted arm, means for connecting said arm and axle, and a recessed ear on said connecting means adapted to receive said flange on the wheel, substantially as described.

8. The combination with an inclined track, of a carrier, an axle secured thereto, a wheel on said axle adapted to run on said track, a pivoted arm, means for connecting said arm and axle, and interlocking devices carried by said wheel and said connecting means, substantially as described.

9. The combination with an inclined track, of a carrier, a wheel secured to said carrier and adapted to move on said track, a pivoted arm movable with said carrier, and means carried by said arm and wheel adapted to interlock, substantially as described.

10. In a hay-stacker, the combination with a stacker-head, a wheel therefor, an inclined track for said wheel, a pivoted arm movable with said stacker-head, a sleeve connecting said arm and stacker-head into which sleeve the forward end of said arm projects, and means carried by said sleeve and wheel adapted to interlock to hold said wheel in position on the track, substantially as described.

11. In a hay-stacker, the combination with a stacker-head, and wheels supporting said stacker-head, of inclined tracks for said wheels, pivoted bars movable with said stacker-head and means carried by said bars for engaging said wheels to hold them to the tracks, substantially as described.

12. In a hay-stacker, the combination with a stacker-head, an axle carried thereby, and a wheel on said axle, of an inclined track for said wheel, a pivoted arm movable with said stacker-head, a device consisting of two connected sleeves one above the other and at substantially right angles to each other, one of said sleeve portions fitting over the said arm and the other over said axle, and devices adapted to interlock carried respectively by said wheel and said double-sleeve device, substantially as described.

13. In a hay-stacker, the combination with a stacker-head, an axle carried thereby, and a wheel on said axle, of an inclined track for said wheel, a pivoted arm movable with said stacker-head, a device consisting of two connected sleeves one above the other and at substantially right angles to each other, one of said sleeve portions fitting over the said arm and the other over said axle, devices adapted to interlock carried respectively by said wheel and said double-sleeve device, and a truss-rod secured to said bar and extending over and bearing upon said double-sleeve device, substantially as described.

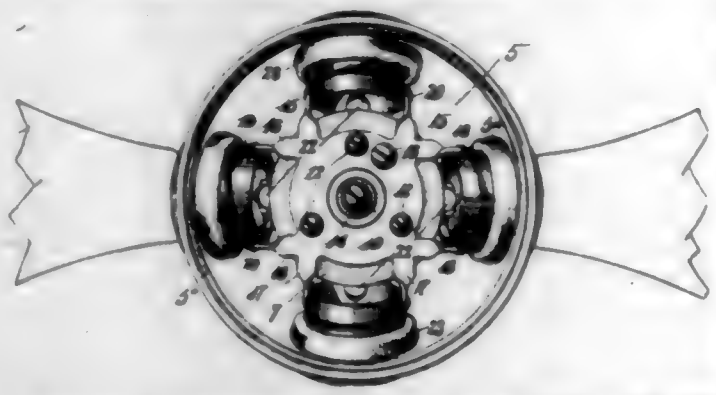
14. In a hay-stacker, the combination with a stacker-head, an axle carried thereby, and a wheel on said axle, of an inclined track for said wheel, a pivoted arm movable with said stacker-head, a device consisting of two connected sleeves one above the other and at substantially right angles to each other, one of said sleeve portions fitting over the said arm and the other over said axle, devices adapted to interlock carried respectively by said wheel and said double-sleeve device, and a truss-rod secured to said bar and extending over and bearing upon said double-sleeve device, said double-sleeve device being provided with means for holding said truss-rod in place, substantially as described.

15. The combination with a carrier, a wheel therefor provided with a projecting rim at one side of the tread portion thereof, and a track for said wheel, of a movable arm, a sleeve carried by said arm, interlocking devices carried by said wheel and sleeve, and a lateral lug on said sleeve projecting opposite the said rim of the wheel, substantially as specified.

16. The combination with a wheeled carrier and a track therefor, of a pivoted arm connected with said carrier, said arm being provided near its outer end with a lateral projection adapted to strike against the track if the carrier-wheel leaves the track, substantially as specified.

17. The combination with a wheeled carrier and a track therefor, of a pivoted arm, a sleeve on said arm connected with said carrier, and a lateral projection on said sleeve opposite said track, substantially as specified.

818,750. **CLUSTER LAMP-SOCKET.** JOHN H. DALE, New York, N. Y. Filed Feb. 4, 1905. Serial No. 244,093.



Claim.—1. An incandescent-lamp socket, comprising a threaded contact-shell flexibly supported upon the socket.

2. An incandescent-lamp socket, comprising a threaded contact-shell pivotally supported upon the socket.

3. An incandescent-lamp socket, comprising an external casing, a threaded contact-shell inside of said casing, a support within said casing to which said contact-shell is pivotally connected and an insulating-bushing interposed between the casing and the shell.

4. An incandescent-lamp socket comprising an external casing having a plurality of openings therein, a support located inside of said casing, and a plurality of threaded contact-shells arranged within said openings and flexibly connected with said support.

5. An incandescent-lamp socket having a plurality of threaded contact-shells and a single support therefor to which the shells are directly pivoted.

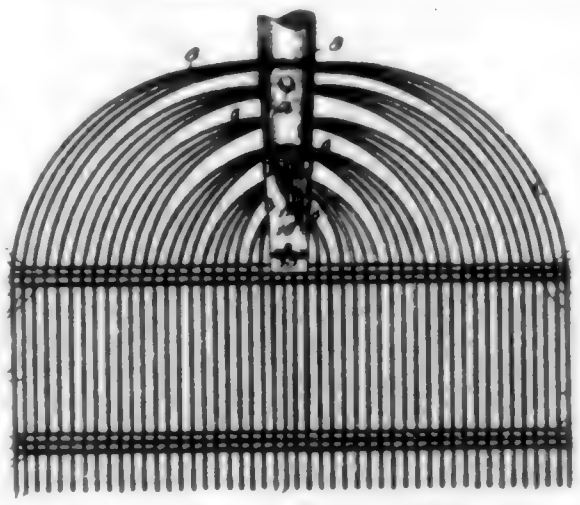
6. A cluster-socket for incandescent lamps, comprising an external casing having openings for the lamp-bases, a metallic plate inside of said casing, a plurality of threaded shells pivotally connected with said plate and respectively presented at the openings in the casing to receive the lamp-bases and a center contact for each shell.

7. A cluster-socket for electric lamps, comprising an external casing having openings for the lamp-bases, a metal plate therein having arms, a plurality of threaded contact-sleeves pivotally connected with said arms and respectively projecting into the openings of the casing and center contacts corresponding to each of the shells.

8. A cluster-socket for electric lamps, comprising an external casing having openings for the lamp-bases, a block of insulating material contained within said casing, two metal plates attached to said block and insulated from each other thereby, a plurality of threaded shells pivoted to one of said plates, and a plurality of tongues carried by the other plate, said shells and tongues constituting the contacts for the lamps, substantially as described.

9. In an incandescent-lamp socket, a casing having holes therein, bushings in said holes, threaded shells within said bushings, and a support pivoted to said shells and supported thereby.

818,751. **BROOM-RAKE.** NEWTON DORT, Cleveland, Ohio. Filed Jan. 31, 1906. Serial No. 298,786.



Claim.—1. A rake or broom comprising a handle, a plurality of tines having teeth at both ends and connected intermediately to the handle, and a stiffening-bar extending across the tines and secured thereto.

2. A rake or broom comprising tines bent so that both ends are in line and project in the same direction, a handle secured to the tines between the ends, and a stiffening-bar extending across the tines and secured thereto.

3. A rake or broom comprising a plurality of tines in the same plane and bent around a common center, so that both ends of all the tines are in line, and project in the same direction, a handle clamped upon the tines at the bend thereof, and a stiffening-bar extending across the tines and secured thereto.

4. The combination with the tines, of a ribbed plate extending across one side thereof, and a plate extending across the other side and having tongues which are bent through between the respective tines and over the other plate.

5. The combination with the plurality of bent tines, of plates between which the tines are clamped at the bend, one of the plates having tongues bent through between the tines and over the other plate, and a handle clamped upon said plates

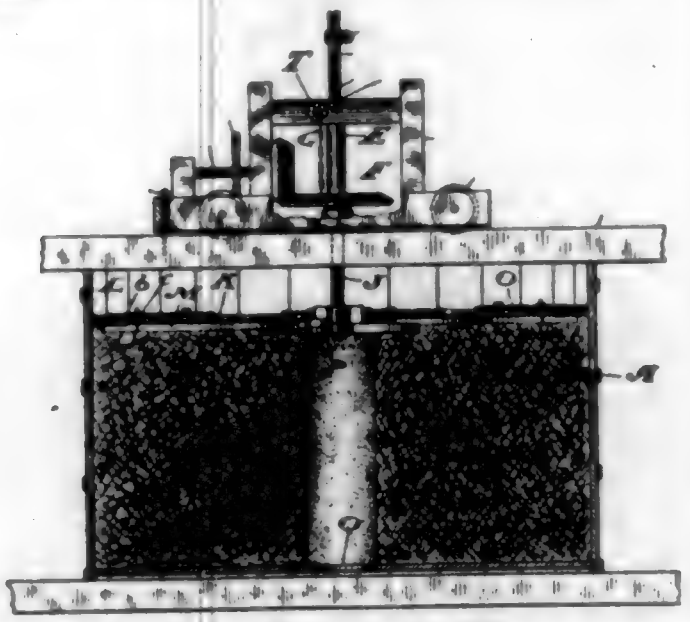
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818,752. **LEACH-PITCHER.** JAMES C. DUNN, Acton, Canada, assignor to The Acton Tanning Company Limited, Acton, Canada. Filed Nov. 9, 1904. Serial No. 232,063.

Claim.—1. In a leach-pitcher, the combination of a vat; a track over said vat; a car adapted to run on said track; an upright vertically-movable shaft supported from the car; a sweep secured to the lower end of said shaft; and means carried by the car for rotating the shaft but permitting its vertical movement, whereby the sweep may operate in the vat or be raised out of the vat to permit the car with its connected parts to be moved to another vat.

2. In a leach-pitcher the combination of a suitably-supported upright vertically-movable shaft; an arm secured to its lower end; a

coil-spring secured to and projecting beyond the end of the arm; and bark-moving means carried by the said arm, substantially as described.



3. In a leach-pitcher the combination of a suitably-supported upright vertically-movable shaft; an arm secured to its lower end; a curved sweep detachably secured to the said arm; and a short curved sweep connected with the lower end of the shaft, substantially as described.

4. In a leach-pitcher the combination of a suitably-supported upright vertically-movable shaft; an arm secured to its lower end; a coil-spring secured to and projecting beyond the end of the arm; and a curved sweep detachably secured to the said arm, substantially as described.

5. In a leach-pitcher the combination of a suitably-supported upright vertically-movable shaft; an arm secured to its lower end; a coil-spring secured to and projecting beyond the end of the arm; and a short curved sweep connected with the lower end of the shaft, substantially as described.

6. In a leach-pitcher, the combination of a vat, an upright vertically-movable shaft, a sweep secured to the lower end of the shaft, means for rotating the shaft while permitting its vertical movement whereby the sweep may be allowed to follow the varying height of the surface of the contents of the vat or be entirely raised out of the vat to permit the apparatus to be moved to a new vat, and means for holding the shaft at any desired height while permitting its rotation, substantially as described.

7. In a leach-pitcher the combination of a vat; a track over said vat; a car adapted to run on said track; an upright vertically-movable shaft journaled on the car; an arm secured to its lower end; and a curved sweep detachably secured to the said arm, substantially as described.

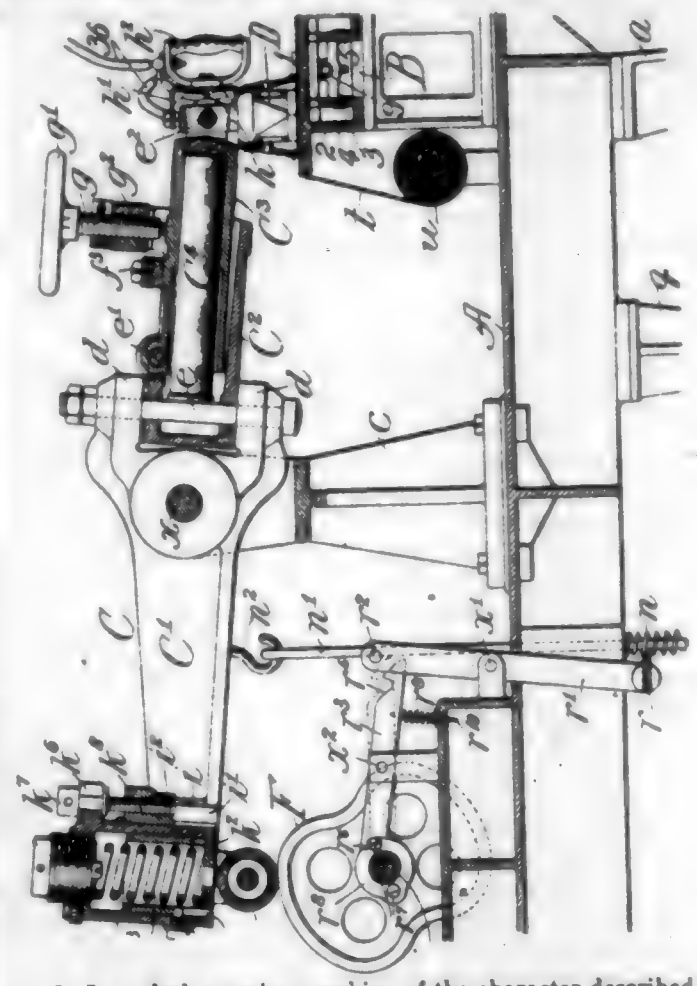
8. In a leach-pitcher the combination of a vat; a track over said vat; a car adapted to run on said track; an upright vertically-movable shaft journaled on the car; an arm secured to its lower end; a curved sweep detachably secured to the said arm; and a short curved sweep connected with the lower end of the shaft, substantially as described.

9. In a leach-pitcher the combination of a car; a sleeve journaled thereon and vertically movable above the car; an upright jointed shaft movable on a feather-key through the sleeve; bark-moving means secured to the lower end of the shaft; and means for rotating the aforesaid sleeve, substantially as described.

818,753. CLOTH-PRESSING MACHINE. JACOB ECKER, Chicago, Ill. Filed Jan. 25, 1905. Serial No. 242,657.

Claims.—1. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon to be rocked vertically and carrying a sad-iron equipped with means for heating it, water-spraying mechanism connected with said iron, and operative to direct the spraying water underneath the pressing-surface of the iron preparatory to depressing it against the work, a driving-shaft, and means for rocking said beam geared to said shaft to be actuated thereby, for the purpose set forth.

2. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon to be rocked vertically and carrying a sad-iron, spring-pressed legs on said iron and water-spraying mechanism connected therewith, a driving-shaft, and means for rocking said beam geared to said shaft to be actuated thereby, for the purpose set forth.



3. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon to be rocked vertically, a sad-iron pivotally connected with said beam and equipped with heating means, a dampening-cloth covering the face of said iron, valve-controlled water-spraying mechanism connected with said iron for dampening said cloth, a buck supported on the bed to coöperate with said iron and provided on one side with a roller for a roll of dampening-cloth to be stretched over its face and at its opposite side with clamps for releasably fastening said cloth from said roll, a driving-shaft, and means for rocking said beam geared to said shaft to be actuated thereby, for the purpose set forth.

4. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon to be rocked vertically, a sad-iron pivotally connected with said beam and equipped with means for heating it, a valve device on said iron adapted to be connected with a water-supply and having water-conducting tubes leading from it, a trigger for operating the valve, legs on said iron and perforated water-pipes on said legs connected with said tubes, a driving-shaft, and means for rocking said beam geared to said shaft to be actuated thereby, for the purpose set forth.

5. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam formed of a rear section at which it is fulcrumed to be rocked vertically, a section pivotally connected with said rear section to be swung laterally thereon, a section within and pivotally connected at its rear end with said swinging section to yield vertically, with a spring-support sustaining it in advance of the pivot, a set-screw device supported to bear against said spring-sustained section in opposition to its spring-support, a plunger in said last-named section longitudinally and rotatably movable therein, a sad-iron pivotally connected with the forward end of said plunger, a driving-shaft, and means for rocking said beam geared to said shaft to be actuated thereby, for the purpose set forth.

6. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and carrying a sad-iron pivotally on its forward end and provided on its rear end with a spring-head, a driving-shaft and a driven shaft geared together, and a cam on said driven shaft engaging said head, for the purpose set forth.

7. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended from its forward end and a vertically-adjustable spring-head on its rear end, a driving-shaft and a driven shaft geared together, and a cam on said driven shaft engaging said head, for the purpose set forth.

8. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended from its forward end and a spring-head on its rear end, a driving-shaft and a driven shaft geared together, and a double cam on said driven shaft engaging said head, for the purpose set forth.

9. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended on its forward end and a spring-head on its rear end equipped with a bearing-roller, driving-shaft and a driven shaft geared together, a double cam on said driven shaft engaging said roller, and a spring-pressed rod connected with the rear section of the beam to hold the roller resiliently against the cam, for the purpose set forth.

10. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended on its forward end and a spring-head on its rear end equipped with a bearing-roller, a driving worm-shaft provided with means for connecting it with the driving power, a driven shaft carrying a worm-wheel engaging the worm and a cam engaging said roller, a treadle device, and starting and stopping means for the drive-shaft operatively connected with said treadle device, for the purpose set forth.

11. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended on its forward end and a spring-head on its rear end equipped with a bearing-roller, a driving worm-shaft carrying tight and loose pulleys, a driven shaft carrying a worm-wheel engaging the worm and a cam engaging said roller, a reciprocating spring-pressed rod carrying at one end a belt-shifter, a treadle device connected with said rod for retracting it, and means for releasably arresting the cam operatively connected with said rod, for the purpose set forth.

12. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections with a sad-iron pivotally suspended on its forward end and a spring-head on its rear end equipped with a bearing-roller, a driving worm-shaft carrying tight and loose pulleys and a brake-ring, a driven shaft carrying a worm-wheel engaging the worm and a cam engaging said roller, a bell-crank fulcrumed on the bed and carrying a brake-shoe to engage said ring, a reciprocating spring-pressed rod carrying a belt-shifter and a finger to engage said bell-crank, and a treadle connected with said rod for retracting it, for the purpose set forth.

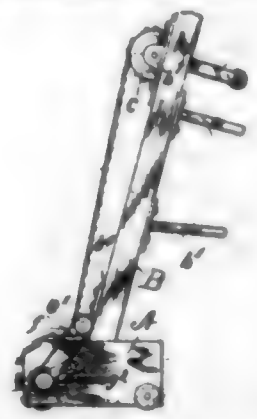
13. In a cloth-pressing machine of the character described, the combination with a bed, of a presser-beam fulcrumed thereon between its ends to be rocked vertically and formed of flexibly-connected sections, with a sad-iron pivotally suspended on its forward end and a spring-head on its rear end equipped with a bearing-roller, a driving worm-shaft carrying tight and loose pulleys and a brake-ring, a driven shaft carrying a worm-wheel engaging the worm, a double cam engaging said roller and a collar provided with trip-studs, a bell-crank fulcrumed on the bed and carrying a brake-shoe to engage said ring, a spring-sustained trip-lever extending at one end into the path of said studs, a locking-lever for said trip-lever releasably engaging its opposite end, a reciprocating spring-pressed rod carrying a belt-shifter and a finger to engage said bell-crank and with which said locking-lever is connected at its lower end, and a treadle device connected with said rod for retracting it, for the purpose set forth.

818,754. PROCESS OF MANUFACTURING ALUMINATE OF SODA. SIDNEY S. BERRY, Woodbury, N. J., assignor to The Eastern Dynamite Company, Wilmington, Del., a Corporation of New Jersey. Filed Apr. 10, 1905. Serial No. 254,780.

Claim.—1. The hereinbefore-described method of producing an aluminate of soda, free from impurities, from bauxite and sulfates of soda, which consists in calcining an admixture of bauxite, sulfate of soda and carbonaceous matter in the presence of air in excess of that required for combustion.

2. The hereinbefore-described method of producing an aluminate of soda free from impurities, from bauxite and sulfates of soda, which consists in calcining an admixture of bauxite, sulfate of soda and carbonaceous matter in the presence of an air-blast.

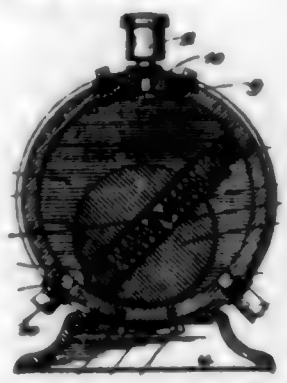
818,755. CARPET-SWEEPER. WILLIAM H. EMMERT, Chicago, Ill. Filed Sept. 20, 1905. Serial No. 279,225.



Claim.—1. A carpet-sweeper comprising a box, a brush rotatably mounted in said box, a standard secured to the top of said box and having a handle and a brace extending rearwardly therefrom, and means for rotating said brush, said means being mounted on the box and the standard.

2. A carpet-sweeper comprising a box, a brush rotatably mounted in said box and having its spindles journaled in adjustable plates, a standard adjustably secured to the top of the box, a handle and a brace extending rearwardly from said standard, a sprocket mounted on one of the spindles of the brush-plates adjustably secured to the top of the box, a rod journaled in said plates and having a sprocket on each end thereof, a sprocket mounted on the standard, a drive-chain connecting said sprocket with one of the sprockets on the rod, and a chain connecting the other sprocket on the rod with the sprocket on the brush-spindle, for the purpose set forth.

818,756. ROTARY ENGINE. JOSEPH P. BYRON, Edna, Pa. Filed Jan. 22, 1906. Serial No. 297,188.



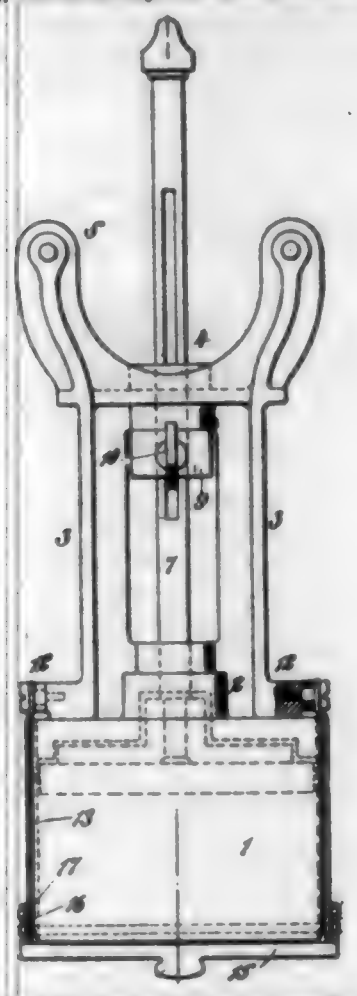
Claim.—1. A rotary engine embodying a cylinder, detachable end plates, a rotary blade-head eccentrically mounted within said cylinder, a blade-casing carried by said head, spring-pressed blades mounted in said casing and adapted to engage the inner walls of said cylinder, said cylinder having ports formed therein, communicating with a common supply-pipe, valves controlling said ports, a lubricating-cup carried by said cylinder, substantially as described.

2. A rotary engine embodying a base, a cylinder, carried by said base, a rotary blade-head eccentrically mounted within said cylinder, a sliding blade-casing mounted in said head, said blade-casing having a central partition, said blade-casing consisting of parallel plates and intermediately-disposed transverse plates, movable blades engaging the inner walls of said cylinder, said blades being formed with slots receiving said intermediate plates, said cylinder having ports formed therein, communicating with a common supply-pipe, means to control said ports, substantially as described.

818,757. BUTTER-CUTTER. CHARLES F. FOGG, New York, N. Y., assignor, by direct and mesne assignments, to Automatic Butter-Cutter-and-Weigher Co., a Corporation of Delaware. Filed Dec. 7, 1904. Renewed Oct. 10, 1905. Serial No. 282,168.

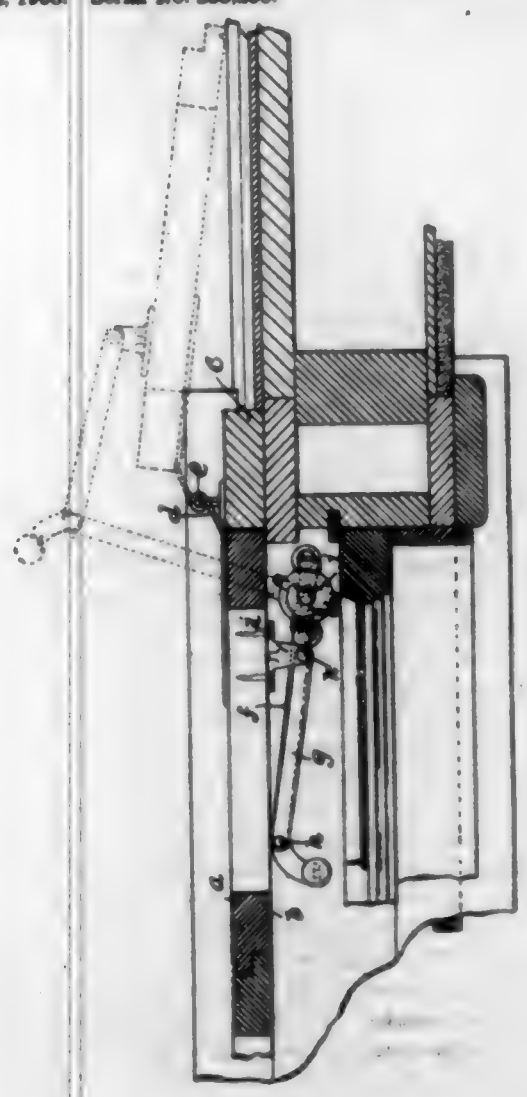
Claim.—1. A butter-cutter in which is comprised a casing closed at its upper extremity, from opposite sides whereof extend standards provided with horizontal handpieces, said standards being united by a perforated connecting-piece; a plunger within the casing provided with a graduated operating-rod, said rod bearing a thumb-piece and an adjustable stop-collar; and a swinging cutter connected to arms pivoted at the sides of the casing and adapted to swing entirely clear of the casing, the whole arranged to operate substantially as shown and described.

2. In a device of the character herein specified, the combination with a cutting-casing, of a cutter and carrying mechanism arranged to pass over the face thereof, or be swung out of the way entirely clear of the casing, substantially as shown and described.



3. In a device of the character herein specified, the combination with a cutting-casing, of a blade pivoted to swinging arms at the sides of the casing, said arms bearing stops, substantially as shown and described.

818,758. **BLIND-ADJUSTER.** IRAD L. GARSIDE, Paterson, N. J., assignor to The Garside Manufacturing Company, Paterson, N. J. Filed Apr. 12, 1905. Serial No. 255,260.

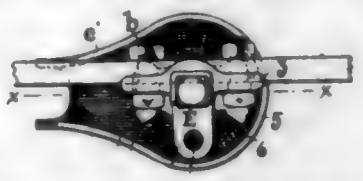


Claim.—The combination of the window-frame, a blind hinged therein and having its axis of pivotal movement beyond the plane of contact of the blind and frame in the closed position of the blind, a bracket on the blind, and folding arms pivotally connected the one to the frame and the other to said bracket, the articulating portion of said arms being closer to the blind than the pivot of the one arm and the frame when the blind is closed and the bracket being of such length that the pivot of the arm thereon is farther from the blind, when closed, than the other arm where the latter crosses said bracket, substantially as described.

818,759. **HOSE-SUPPORTER.** LOUELLA W. GREEN, Audubon, Iowa. Filed Dec. 18, 1905. Serial No. 292,390.

Claim.—In a device of the class set forth, a supporting-web, an open frame depending therefrom and having downwardly-diverging spring side bars, these side bars having downwardly-facing shoulders at their lower ends and being connected by a depending loop, a slide working on said frame-bars and adapted to engage under said shoulders when the slide is in locking position, and a button adapted to engage in said depending loop, substantially as set forth.

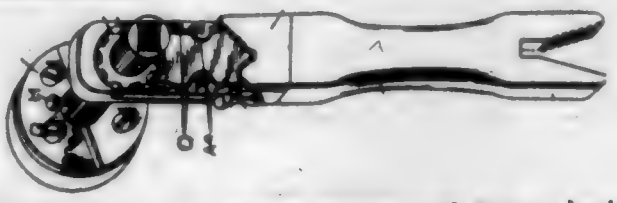
818,760. **CULTIVATOR ATTACHMENT.** ELIAS HAIMAN, Cleveland, Ohio. Filed Dec. 12, 1905. Serial No. 291,416.



Claim.—1. The standard having a head with a central bolt-hole, in combination with a bracket having a beam-engaging surface at its side and provided with downward projections beneath said surface and a central bolt-hole to match the hole in the standard-head and a bolt through said holes locking said parts together, said standard and said bracket constructed to interlock at their engaging portions, thereby holding the standard steadily to its work.

2. The bracket having a flanged surface to engage a beam and bolt-holes through said surface and segmental projections on its bottom and a lateral projection opposite said surface, in combination with a standard having a head with a flange inclosing said projections about their outside and a bolt locking the standard on the bracket.

818,761. **RATCHET-WRENCH.** FREDERICK A. HAWES and WILLIAM STAPLES, District of Muskoka, Canada. Filed Jan. 20, 1906. Serial No. 297,047.



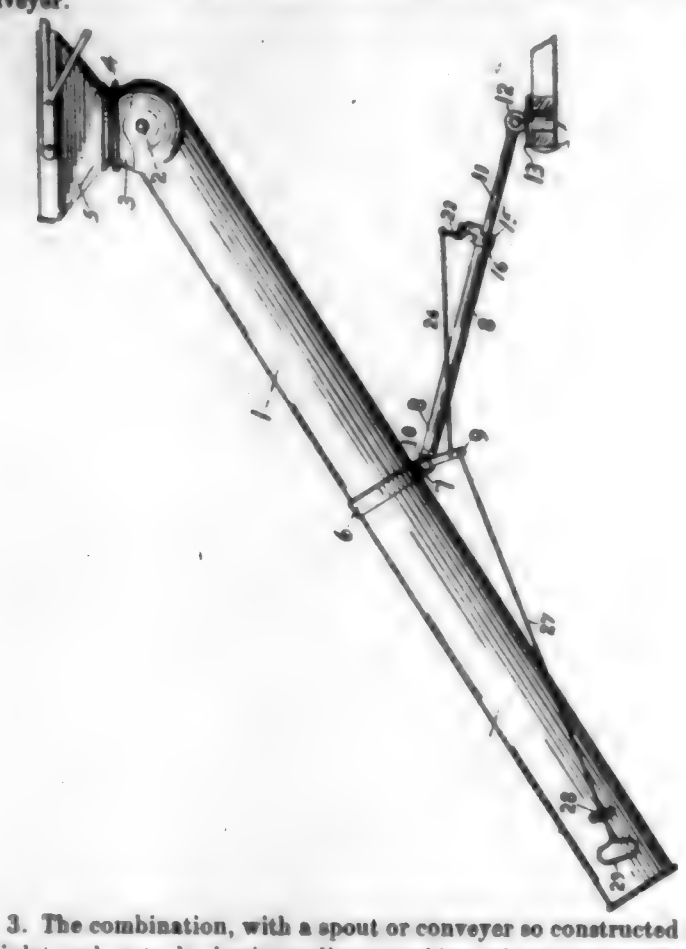
Claim.—In a wrench, the combination with the arm having an orifice formed in the end thereof, of a socket extending through such orifice and a pinion secured in the orifice, spring-pressed pawl-levers engaging therewith, pivoted catches located near the ends of the lever remote from the pinion, a knob provided with a divided plate extending into an annular groove in the socket and having a lug formed on one of the portions thereof, and adjusting-screws extending through the lug and having an enlarged head designed to be brought into a recess in the socket or in the lug, as and for the purpose specified.

818,762. **ADJUSTABLE SPOUT OR CONVEYER.** STACY B. HART, Peoria, Ill., assignor to Hart Grain Weigher Co., Peoria, Ill., a Corporation of Illinois. Filed Jan. 16, 1905. Serial No. 241,235.

Claim.—1. The combination with a conveyer horizontally and vertically vibratably supported at its inlet end, of mechanism operative from the outlet end thereof for adjusting the conveyer in various positions of its vibration.

2. The combination, with a pivoted and rotatable spout or conveyer, of a telescopical support therefor, a spring-pressed pin for ad-

justing the said telescopical support, and means for controlling the said spring-pressed pin from the outlet end of the aforesaid spout or conveyer.



3. The combination, with a spout or conveyer so constructed at the inlet end as to be horizontally rotatable and vertically adjustable, of a longitudinally-adjustable brace or support therefor, and means for controlling the adjustment of the said brace or support from the outlet end of the supported spout or conveyer.

4. The combination with a vibratably-supported conveyer, of an under-brace therefor, adapted to be operated from the outlet end of the conveyer to adjust the said conveyer in various positions of its vibration.

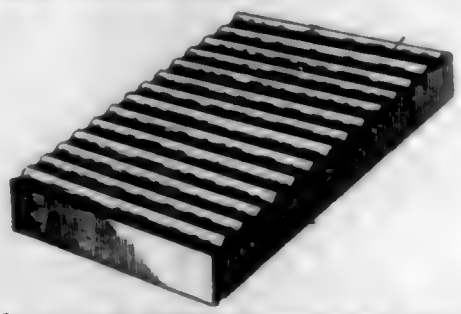
5. The combination with a laterally and vertically adjustable spout or conveyer of a telescopical support therefor, perforations in the telescoped portion of the support, and a spring-pressed pin arranged to engage the said perforations, and means for controlling the said spring-pressed pin from the outlet end of the conveyer.

6. The combination with a pivoted spout or conveyer of an adjustable support therefor, and means for adjusting the said support from the outlet end of the said spout or conveyer.

7. In a spout or conveyer rotatable about the feed-supply inlet and vertically adjustable, the combination therewith of an adjustable support therefor, and means for adjusting the said support from the outlet end of the spout or conveyer.

8. The combination with a horizontally-rotatable and vertically-vibratable conveyer of an under-brace therefor, mounted on a part rotatable about the axis of rotation of the elevator, and means for adjusting the said under-brace from the outlet end of the elevator for the purposes herein specified.

818,763. **STOVE-LINING.** GEORGE C. HICKS, Chicago, Ill. Filed June 16, 1905. Serial No. 265,498.



Claim.—1. As a new article of manufacture, a slab or brick of plastic fire-box-lining composition, provided on its surface to be exposed to the baking heat with a protecting-covering of combustible material adhering to said surface, for the purpose set forth.

2. As a new article of manufacture, a slab or brick of plastic fire-box-lining composition, having its surface to be exposed to the baking heat corrugated and provided with a protecting-covering composed of a corrugated sheet of combustible material adhering to said surface, for the purpose set forth.

3. As a new article of manufacture, a slab or brick of plastic fire-box-lining composition, having its surface to be exposed to the baking heat corrugated and provided with a protecting-covering composed of a sheet of combustible material corrugated on both surfaces and adhering at one of said surfaces to the corrugated surface of said plastic article, for the purpose set forth.

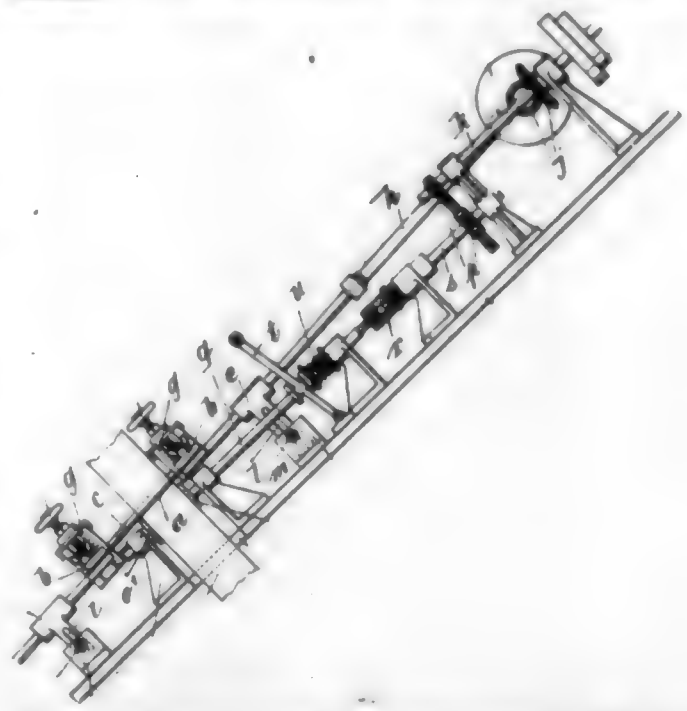
818,764. **WEATHER-STRIP.** ARTHUR E. HULL, Chicago, Ill., assignor to Benjamin S. McClellan, Chicago, Ill. Filed June 30, 1905. Serial No. 267,664.



Claim.—1. Weather-stripping means for windows, comprising, in combination, a rectangular tube of stiff material countersunk in and permanently secured to the edge of the sash, and provided with a longitudinally-extending slot, and a strip of flexible material having a shouldered edge portion fitting said tube and longitudinally insertible into and withdrawable from said tube wherein said strip is steadily confined at said edge portion to project through said slot.

2. In combination with a car-window sash and its casing, of a tube of stiff material, fastened in a recess in the side edge of the sash, provided with a longitudinally-extending slot and with a longitudinally-extending cinder-deflecting guard at its outer side overlapping the outer stop portion of the casing, and a strip of flexible material having a beaded edge portion, confined in said tube, and a free edge portion projecting through said slot into contact with the jamb portion of the casing.

818,765. **MACHINE FOR CUTTING STOPPERS.** AUGUST KAYSER, Höchst-on-the-Main, Germany. Filed Oct. 2, 1905. Serial No. 281,088.



Claim.—1. A machine for cutting stoppers out of a plate of raw material of sufficient size to make a plurality of stoppers, comprising a frame carrying devices for rotating said plate and providing space for its rotation, and a slender band-knife of such proportions in cross-section as to permit it to describe a circle within the plate to excise the stoppers, said knife being supported from its ends by means leaving space for the plate to travel around the knife.

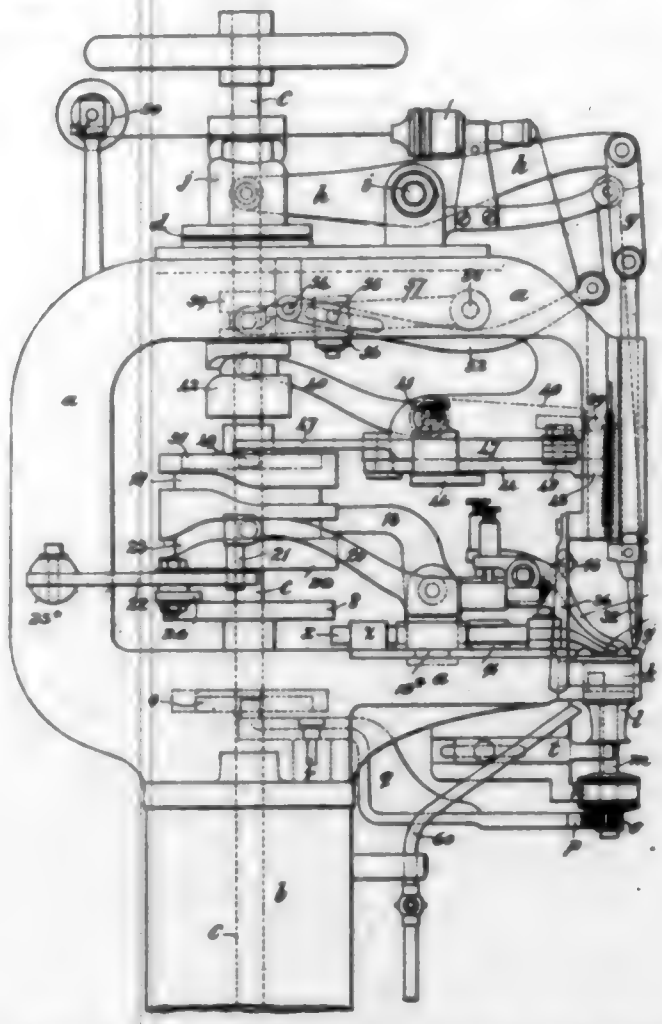
2. A machine for cutting stoppers out of a plate of raw material of sufficient size to make a plurality of stoppers, comprising a frame carrying devices for rotating said plate and providing space for its rotation, and a slender traveling band-knife of such proportions in cross-section as to permit it to describe a circle within the plate to excise the stoppers, said knife being supported by means leaving space for the plate to travel around the knife.

3. A machine for cutting stoppers out of a plate of raw material of sufficient size to make a plurality of stoppers, comprising a frame carrying devices for rotating said plate and providing space for its

rotation, a slender band-knife of such proportion in cross-section as to permit it to describe a circle within the plate to excise the stoppers, said knife being supported by means leaving space for the plate to travel around the knife and means for adjusting said knife angularly with respect to the axis of rotation of said plate.

4. A machine for cutting stoppers out of a plate of raw material of sufficient size to make a plurality of stoppers, comprising a frame carrying devices for rotating said plate and providing space for its rotation, a slender band-knife of such proportions in cross-section as to permit it to describe a circle within the plate to excise the stoppers, said knife being supported from its ends by means leaving space for the plate to travel around the knife, and means for reciprocating said knife.

818,766. **LASTING AND SEWING MACHINE FOR BOOTS AND SHOES.** JOHN C. KRATS, Northampton, England, administrator of John Krats, deceased, assignor to The Phoenix Boot Machinery Company Limited, Street, England. Filed Mar. 24, 1904. Serial No. 199,697.

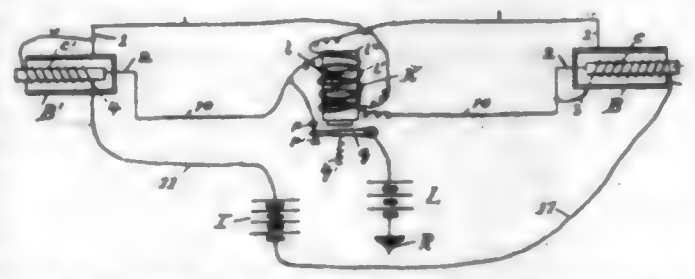


Claim.—1. In a lasting and sewing machine for boots and shoes comprising sewing and lasting mechanism mounted in one and the same framing and driven by cams on the same shaft, the combination of two pairs of grippers, mechanisms operating the grippers to pull respectively in longitudinal and lateral directions, comprising movable slides, segments supporting said slides, devices for rocking said segments and a hand-lever and connections for simultaneously moving the slides toward or away from the center of motion of said segments to regulate the draft of the grippers, substantially as described.

2. In a lasting and sewing machine, the combination with a presser-foot, vertical and horizontal supporting-slides therefor, levers for operating the presser-foot vertically and horizontally and devices for operating said levers, of a connecting-piece attached to the lever for operating the presser-foot horizontally and to its operating device and means whereby one of said points of attachment of said connecting-piece may be shifted to vary the throw of the lever and adjust the lateral travel of the horizontal slide, substantially as set forth.

3. In a lasting and sewing machine for boots and shoes, lasting-grippers, means for opening and closing their jaws, smoothing-grippers, means for opening and closing their jaws, slides for the lasting and smoothing grippers, devices for connecting the lasting and smoothing grippers pivotally to the said slides, pivoted segments forming guides for the slides, devices for continuously rocking the segments while the machine is at work and means for shifting the slides upon their segments to increase or diminish the stroke of the grippers as required, substantially as described.

818,767. **TELEPHONIC DEVICE.** ISIDOR KITSEE, Philadelphia, Pa. Filed June 15, 1903. Serial No. 161,619.



Claim.—1. In telephony a connecting-cord consisting of the cord proper, two plugs electrically connected to said cord, each of said plugs embracing an electromagnet and a source of current, said source of current connected in multiple arc as to the two conductors of said cord.

2. In telephony a device adapted to connect two outlying circuits electrically with each other, said device consisting of two conducting-lines, two plugs carrying the terminals of said lines, each plug provided with an electromagnet, a third line including a source of current and connected to the first two lines, said third line including the coils of said electromagnets.

3. In combination with two jacks to which the terminals of two outlying telephonic circuits are electrically connected, a connecting-cord consisting of two metallic conductors constituting the line proper, two plugs carrying the terminals of said conductors and adapted thereby to connect said conductors with said jacks, each plug provided with an electromagnet connected to a current-carrying circuit, said current-carrying circuit in electrical contact with said lines.

4. In combination with two outlying telephonic circuits, a jack for each of said circuits, each jack embracing a stationary soft iron and stationary and movable contacts, a plug for each of said jacks, each plug embracing an electromagnet and connecting means, said connecting means comprising metallic lines constituting the cord proper and a third line containing a source of current.

5. In combination a connecting-plug and jack for same, the plug embracing means, electromagnetic in their action, to retain the same in position when placed in said jack, said jack normally connected to a source of current.

6. As a means to electrically connect two telephonic circuits, a connecting-cord consisting of two conductors insulated from each other but electrically connected to a circuit containing a source of current, two electromagnets inserted in said circuit, each of said electromagnets carrying one of the terminals of each of said conductors.

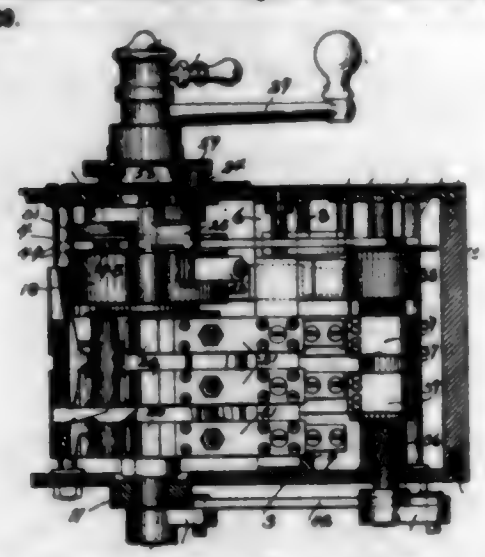
7. In telephony, a connecting-cord, an electromagnet provided with two coils, each of said coils connected to one of the lines forming said cord, in a manner so that the energizing influence of the coil inserted in one of said lines is neutralized by the energizing influence of the coil inserted in the second of said lines and means in proximity to the core of said electromagnet to connect to one or the other of said lines a grounded source of electricity.

8. In combination with the terminals of two telephonic circuits a connecting-cord electrically connecting said terminals with each other, said cord provided with means, electromagnetic in their action, to retain said connection as long as one or the other of said telephonic circuits is closed at the station of said circuit, and to break said connection automatically as soon as both of the circuits are open at their respective stations, said connecting-cord carrying with it the energy necessary for intercommunication between said stations.

9. In telephony, means to connect to outlying circuits, in combination with two jacks carrying the terminals of said outlying circuits, said jacks normally connected to one source of current and adapted to be disconnected from said source and connected with a second source through the insertion of the plugs of said connecting means, said jacks embracing stationary soft iron.

10. In a telephonic system wherein two or more outlying stations center in one exchange a connecting-cord for said exchange, said connecting-cord adapted to connect two of said outlying stations for the purpose of intercommunication, and embracing three conducting-lines, two electromagnetic plugs, and a source of current, this source of current connected through the coil of one of said electromagnets to one line of said plug and connected through the coil of the second electromagnetic plugs to the second line of said plug.

818,768. ELECTRICAL CONTROLLER FOR ELECTRIC VEHICLES. KARSTEN KNUDSEN, Chicago, Ill. Filed Jan. 13, 1902. Serial No. 89,529.



Claim.—1. The combination with contact-segments, of a drum connected to rotate therewith, a coiled spring mounted in the drum and having its opposite ends normally resting upon opposite sides of a lug on said drum, a segment-rotating device mounted opposite the end of the drum and having a pin projecting thereinto and located between the ends of the coiled spring whereby when said part is rotated in either direction, the spring is placed in tension in the corresponding direction and tends to rotate the drum therewith and means to hold the drum in contact position during a portion of the travel of said part in either direction and to then release the drum whereby the segments snap from one contact position to another, substantially as described.

2. The combination with an electric motor, of a controller therefor having contact-segments, a suitable support in which the segments are mounted to rotate, a single pawl to stop the segments in the several contact positions and operative when the segments are rotated in either direction, and a single cam to release said pawl when it is desired to rotate the segments, substantially as described.

3. The combination with an electric motor, of a controller therefor having contact-segments, a suitable support in which the segments are mounted to rotate, a single pawl to stop and hold the segments in the several contact positions and operative when the segments are rotated in either direction, and a single cam to release said pawl when it is desired to rotate the segments, substantially as described.

4. The combination with an electric motor, of a controller therefor having contact-segments, a suitable support in which the segments are mounted to rotate, a single pawl to stop the segments in the several contact positions and operative when the segments are rotated in either direction, and a single cam operated by the controller-lever for releasing said pawl to permit the segments to snap from one contact position to another, substantially as described.

5. The combination with an electric motor, of a controller therefor having contact-segments, a suitable support in which the segments are mounted to rotate, a single pawl to stop and hold the segments in the several contact positions, and a single eccentric cam adapted in the rotation of the controller-lever to engage and release said pawl, substantially as described.

6. The combination with contact-segments, of a suitable support in which the same are mounted to rotate, a pawl to stop the segments in the several contact positions, a roller carried by the pawl, a segment-operating handle, a single eccentric cam connected with said handle and adapted to engage said roller to release the pawl when the lever is operated in either direction, substantially as described.

7. The combination with contact-segments, of a shaft upon which said segments are mounted, a pawl connected to rotate with said segments, a stationary notched plate with which said pawl engages to hold the segments in contact position, a segment-operating handle supported upon the shaft of the contact-segments, and a cam connected with said handle to engage and release said pawl from the notched plate to permit the contact-segment to rotate, substantially as described.

8. The combination with segments arranged to rotate, of a drum connected therewith, a pawl carried by the drum, a stationary notched plate with which the pawl engages to hold the segments in contact position, a cam concentrically mounted with reference to the segments and adapted to release said pawl from the notched plate, a coiled spring connected with the drum and placed in tension in the operation of said cam, whereby when the pawl is released, the drum is rotated with a quick movement from one contact position to the succeeding position, substantially as described.

9. The combination with contact-segments, of a suitable support in which the segments are mounted to rotate, a pawl traveling with the segments, suitable stop devices engaged by said pawl in its travel to stop the segments in the several contact positions, and means to release said pawl when it is desired to rotate the segments, substantially as described.

10. The combination with contact-segments, of a suitable support in which the segments are mounted to rotate, a movable pawl arranged to travel with said segments, stationary stops engaged by said pawl to stop and hold the segments in the several contact positions, and means to automatically release the pawl when it is desired to rotate the segments, substantially as described.

11. The combination with contact-segments, of a suitable support in which the segments are mounted to rotate, a single pawl associated with the segments and adapted to travel therewith, stationary stops with which said pawl engages to stop and hold the segments in the several contact positions, and a cam operated by the controller-operating means for releasing said pawl to permit the segments to snap from one contact position to another, substantially as described.

12. The combination with contact-segments, of a pawl connected with said segments to rotate therewith, a stationary notched plate with which said pawl engages to hold the segments in the several contact positions, a segment-operating handle or means, and a cam connected with said handle or means to release said pawl from the notched plate to permit the contact-segments to rotate, substantially as described.

13. The combination with contact-segments, a drum carried thereby, a projection upon the drum, a concentrically-mounted segment-operating handle, and sleeve, and a pair of safety-plates mounted upon the last-named part, and a yielding connection between said segments and said handle to permit the segments to snap from one position to the next in the operation of the handle, said plate being adapted to engage said projection in the drum and positively move the segments to the contact position in case of failure of the yielding connection, substantially as described.

14. The combination with contact-segments adapted to be rotated, of an operating means therefor, a cam mounted upon said means, a plate mounted on each side of said cam, reversing-segments to change the direction of the current through the motor, and an intermediate rocker-arm between said reversing-segments and the cam to prevent the operation of the reversing-segments except in the normal position of said operating means, said arm being received and guided at one end by said plates, substantially as described.

15. The combination with a contact-segment-operating handle, a cam connected therewith, safety-plates mounted upon each side of the cam, reversing-segments mounted at one side of said handle, a rocker-arm extending between the said cam and reversing-segments and supported at one end by said safety-plates, said cam being adapted to cause said rocker-arm to lock the reversing-segments from movement in all except the normal position of the said handle, substantially as described.

16. The combination with a motor having two field-coils, of a generator, means for connecting said coils in series or in parallel relation, and a resistance in circuit with one winding of the said motor, substantially as described.

17. The combination with a motor having two field-coils, of a generator divided into two parts, contact-segments adapted to connect the generators with the motor in parallel with the field-coils first in series and next in parallel, and to also connect said generators in series with the motor, also with its coils in series and in parallel and a resistance connected in series at all times with one of the coils of the motor, substantially as described.

18. The combination with contact-segments mounted for rotation upon a sleeve, of means to rotate the same, reversing-segments to change the direction of the current through the motor mounted independent of said sleeve, a shaft passing through said sleeve means connecting said shaft with said reversing-segments, and means for rotating said shaft, substantially as described.

19. The combination with a sleeve, of a shaft loosely mounted in said sleeve, means independent of said shaft for rotating said sleeve, an insulated core surrounding said sleeve, a plurality of contact-segments mounted upon said core and insulating-disks between said segments and outside of the outer segments, substantially as described.

20. The combination with a motor, of a controller therefor hav-

ing contact-segments, a suitable support upon which said segments are mounted to rotate, a spring, means movable continuously in one direction for winding said spring to cause the latter to rotate said contact-segments, means to stop said segments in the several contact positions, and means operated by said spring-winding means for releasing said stopping means when it is desired to rotate the segments.

21. The combination with a motor having two field-coils, of a generator, means for connecting said coils in series or in parallel relation, and means for reducing the strength of one of said field-coils, substantially as described.

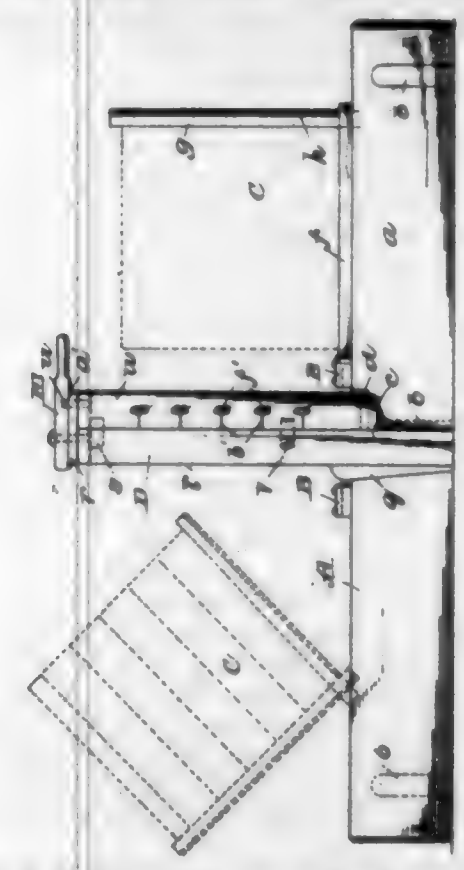
818,769. RAIL-JOINT. JUDSON B. LOMBERRA, Pittsburg, Pa. Filed Mar. 27, 1906. Serial No. 308,342.



Claim.—1. The combination with two rail-sections each having two holes extending through the head and the base of the rail on opposite sides of the web, of two plates arranged one on each side of the web, each plate having eyes at its ends and pointed rods or spikes extending through the holes in the rail-sections and through the eyes at the ends of said plates, and into a cross-tie.

2. In a rail-joint, the combination with two rail-sections, each having holes extending through the head and the base of the rail, of a plate formed with eyes at its ends, and rods or spikes extending through the said eyes the holes in the heads and bases of the rail-sections and into a tie, the upper ends of said rods or spikes being flush with the upper surfaces of the rail-section.

818,770. MACHINE FOR CUTTING BUTTER. EDWARD J. LUNMAN, San Francisco, Cal. Filed Feb. 21, 1906. Serial No. 302,234.



Claim.—1. In an apparatus for cutting butter and analogous substance, the combination with a plurality of cutters spaced apart; of a carrier movable with respect to the plurality of cutters and comprising members detachably connected together.

2. In an apparatus for cutting butter and analogous substance, the combination of a cutter, and a carrier movable with respect to the cutter and having members one of which is movable past the cutter and the other of which is adapted to be positioned so as to pass the cutter and be then restored to its original position relative to the first-mentioned member.

3. In an apparatus for cutting butter and analogous substance, the combination with one or more cutters; of a carrier movable with respect to the cutter or cutters, the said carrier being arranged to rock, and being made up of members detachably connected together.

4. In an apparatus for cutting butter and analogous substance, the combination with one or more cutters; of a carrier movable with respect to the cutter or cutters, the said carrier being arranged to rock or turn toward the cutter or cutters and being made up of a member having a socket adjacent to one end, and a member having a tongue at one end removably arranged in the socket of the first-mentioned member.

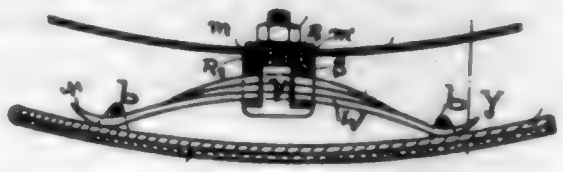
5. In an apparatus for cutting butter and analogous substance, the combination with a main frame, and a plurality of cutting-wires arranged transversely above the main frame; of a carrier movable on the main frame and adapted to be turned thereon, said carrier comprising members detachably connected to each other and arranged to rest against different sides of a mass of butter or the like.

6. In an apparatus for cutting butter and analogous substance, the combination of a main frame, a subframe rising from the main frame and provided with a fastening device, a wire frame removably arranged on the main frame and against the subframe and having an appurtenance for the engagement of the said fastening device, and a carrier movable on the main frame and adapted to rock and comprising a horizontal member and an upright member detachably engage with the horizontal member.

7. A carrier for the purpose described, comprising members provided with coöperating means whereby they are detachably held together at right angles to each other.

8. In an apparatus for cutting butter and analogous substance, the combination with a main frame having side bars provided in their upper edges with notches the outer walls of which are inclined, and a subframe rising from the main frame and provided with a fastening device; of a wire frame comprising uprights having lower rabbeted ends, a cross-bar arranged in the rabbets of said ends and having an edge inclined in conformity with the inclined walls of the notches, a crown-bar bearing an appurtenance for engaging with the fastening device, and wires stretched between the uprights.

818,771. TIRE FOR WHEELS. HANS MARKER, Wiesbaden, Germany. Filed Aug. 28, 1905. Serial No. 276,071.



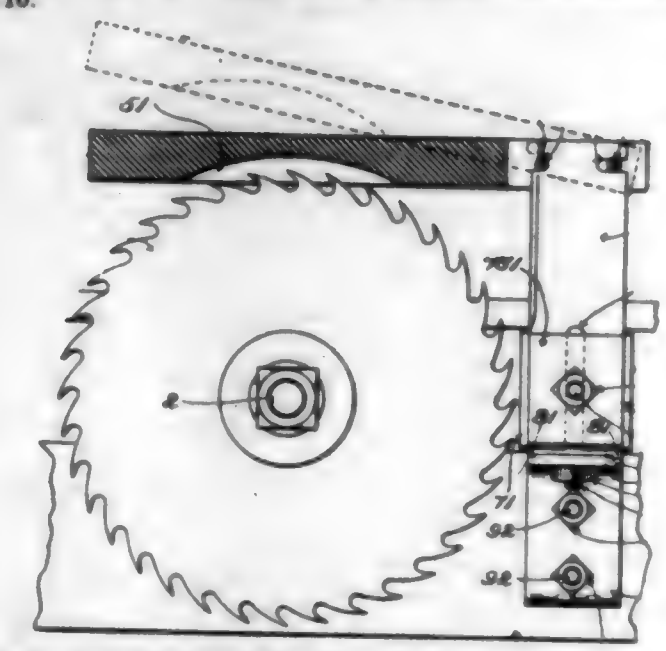
Claim.—1. In an elastic tire for wheels, in which the elastic tire proper is composed of a plurality of separate segments and of a like number of carriage-springs, each of which has its ends connected with one of said segments, and its middle portion secured to the inner or rigid tire of the wheel, the combination with each segment and its appurtenant spring, of yokes *b b* fixed to the inner side of the segment, and adapted to receive the ends of the spring, these ends being rebent outside of said yokes, and means adapted to prevent the spring with its segment from turning out of the plane of the wheel, said means being applied to the middle portion of the said spring, for the purpose as described.

2. In an elastic tire for wheels, in which the elastic tire proper is composed of a plurality of separate segments and of a like numbers of carriage-springs, each of which has its ends connected with one of said segments, and its middle portion secured to the inner or rigid tire of the wheel, the combination with each segment and its appurtenant spring, of yokes *b b* fixed to the inner side of the segment, and adapted to receive the ends of the spring, these ends being rebent outside of the yokes; a hole of rectangular shape provided in said spring; a bolt V having part of its shaft of the same section located in said hole; another hole provided in the inner rim and adapted to receive the screw-threaded portion of the bolt-shaft; a washer-disk S located between the inner rim and the spring and taking over the rectangular portion of said bolt, pins *m m'* secured to said washer-disk and taking into a suitably-provided portion of the inner rim, and a nut M screwed upon the inwardly-projecting end of the said bolt, substantially and for the purpose as described.

818,772. GUARD FOR CIRCULAR SAWS. HERVEY D. MELENDY, Nashua, N. H. Filed Apr. 2, 1904. Serial No. 201,251.

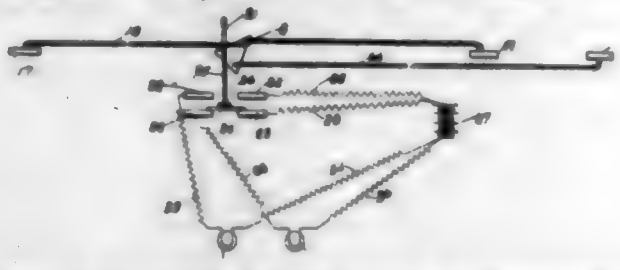
Claim.—1. In a guard for circular saws, the combination with a circular saw, a horizontally-extending guard-bar, an upright carrier-strip having the said guard-bar detachably mounted upon its upper end, and formed with a longitudinal slot, a stand 7, the bolt passing through the said slot and securing the carrier-strip to the said stand,

the bracket 9, the plate 8 intervening between the said stand and bracket and in sliding engagement with each of the latter to prevent turning movement of one part with relation to another, the stand being adjustable upon the plate and the plate adjustable upon the bracket in directions at right angles to each other, and the clamping-bolt 10.



2. In a guard for preventing the strip being sawed from being driven back by the saw, the combination with a circular saw, and a fixed support, of the upright carrier-strip having in its upper end the notches 61 and 62 opening at the front and rear edges thereof, respectively, the horizontally-extending guard-bar formed at its rear end with the slit receiving the said upper end of the carrier-strip and provided with the pin 53 and bolt 54 entering, respectively, the respective notches, the said bolt operating to clamp the slitted portion of the guard-bar upon the carrier-strip, the stand 7, the bolt securing the lower end of the carrier-strip to the said stand, the bracket 9, the plate 8 intervening between the said stand and bracket and in sliding engagement with each of the latter to prevent turning movement of one part with relation to another, the stand being adjustable upon the plate and the plate adjustable upon the bracket in directions at right angles to each other, and the clamping-bolt 10.

818,773. SWITCH-THROWING DEVICE. JOHN H. MEYER, New Kensington, Pa. Filed Dec. 21, 1905. Serial No. 292,758.

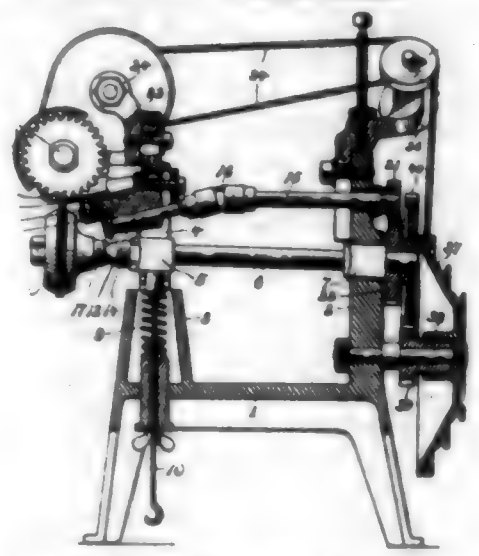


Claim.—1. In a switch-throwing device, the combination with a main track intersected by a siding-track, a switch-tongue controlling the passage-way of said tracks, of a casing located beneath said tracks, a plate pivotally mounted in said casing, said casing having slots formed therein, levers pivotally mounted in said casing and protruding through said slots, said levers being connected with said plate, a rod carried by said plate and connected with said switch-tongue, contact-blocks mounted in said casing and in circuit with a battery, signal-lamps carried adjacent to said track and in circuit with said blocks, an outwardly-extending arm carried by said plate, and adapted to contact with said blocks, substantially as described.

2. In a switch-throwing device, the combination with a switch-tongue, of a casing mounted beneath said tongue, a plate pivotally mounted in said casing and connected with said tongue, a plurality of levers pivotally mounted in said casing, and connected with said plate, and protruding outside of said casing, two sets of contact-blocks mounted in said casing and in circuit with a suitable source of electrical energy, lamps mounted adjacent to said casing, and in circuit with said source of electrical energy, a contact-arm carried by said plate and adapted to engage either one of said sets of blocks, means carried by a car to mechanically actuate said levers successively, to complete a circuit through one of said lamps and then through the other of said lamps, substantially as described.

3. In a switch-throwing device, the combination with a switch-tongue, of a casing mounted beneath said tongue, sets of contact-blocks mounted within said casing, a contact-arm adapted to engage said contact-blocks, said contact-arm being connected indirectly with said switch-tongue, lamps mounted adjacent to said switch-tongue, and in circuit with said blocks and a suitable source of electrical energy, means carried by a car to mechanically actuate said arm, to complete a circuit through one of said lamps and mechanically throw said switch-tongue, and means to mechanically return said arm and said switch-tongue to their normal positions, substantially as described.

818,774. LIP-TURNING MACHINE. ROBERT MITCHELL, Detroit, Mich. Filed Apr. 20, 1905. Serial No. 256,017.



Claim.—1. In a lip-turning machine, in combination with means for raising and turning the lip, of a horizontally-extending shaft adapted to be moved vertically at one end, a feed-wheel secured upon the vertically-movable end of the shaft, a feed-disk supported adjacent to the feed-wheel with one edge extending over the peripheral contact-surface of the wheel, a spring to raise the movable end of the shaft and clamp the work between the feed wheel and disk, and means for turning the disk and wheel at such relative speeds that the work will be fed by each at the same speed.

2. In a lip-turning machine, in combination with means for raising the lip, of a feed-wheel adapted to engage the under side of the horizontally-extending work, a feed-disk having a contact-face at the periphery of its lower side and journaled to revolve with said face in a plane extending at an inclination to the horizontal plane of the upper surface of the work, means for turning the disk and wheel at relative speeds, and a wiper-wheel revolving in a vertical plane above the point of contact of the disk with the work and at right angles to the path of the lip to engage and turn the same.

3. In a lip-turning machine, the combination with a vertically-movable feed-wheel adapted to engage the lower side of the work, a wiper-wheel to engage the lip in a vertical plane above the contact-point of the feed-wheel with the work and revolving in a plane at right angles to the path of the lip, and a plow at one side of the wiper-wheel to raise the lip; of a feed-disk journaled to be revolved with its lower face in contact with the upper side of the work in the vertical plane of the point of contact of the feed-wheel with the work and the wiper-wheel with the lip and means for revolving said disk.

4. In a lip-turning machine, the combination with a feed-wheel adapted to engage the lower side of the work, a wiper-wheel revolved in a plane at right angles to the lip and adapted to engage the same and a plow adjacent to one side of the wiper-wheel to raise the lip; of a presser-foot adjacent to the opposite side of the wiper-wheel, and a finger on said foot extending across the forward side of the wiper-wheel.

5. In a lip-turning machine, the combination with a vertically-movable feed-wheel to engage the lower side of the work, of a wiper-wheel revolving in a vertical plane at right angles to the path of the lip to engage and turn the same, a plow supported at one side of the wiper-wheel and having a recess in its lower side, a presser-foot supported at the opposite side of the wiper-wheel and having a recess in its lower side, a feed-disk journaled within the recesses of the plow and presser-foot to revolve in a horizontally-extending plane with its forward edge between the wiper-wheel and feed-wheel to engage the upper surface of the work, and means for revolving said disk.

6. In a lip-turning machine, the combination with a supporting-frame, a horizontally-extending shaft mounted in bearings on said frame and adapted to be moved vertically at one end, and a feed-wheel on the vertically-movable end of said shaft; of a short shaft

mounted in a bearing in the frame and extending rearwardly and upwardly at an inclination to the axis of the horizontally-extending shaft, a horizontal shaft mounted on the frame, a universal joint connecting the last-named shaft with the short shaft, a pinion on the said last-named shaft, a gear on the horizontally-extending shaft in mesh with the said pinion, a bevel-gear on the forward end of the inclined short shaft, a revoluble pin mounted in a bearing and extending at right angles to the said short shaft, a bevel-gear on the lower end of the pin in engagement with the other gear, a feed-disk on the upper end of said pin with its edge extending over the feed-wheel in contact with the upper side of the work, a wiper-wheel above the disk revoluble in a vertical plane at right angles to the path of the lip to be turned thereby, a plow supported at one side of the wiper-wheel over the disk and a presser-foot supported at the opposite side of the wiper-wheel above the disk.

7. In a lip-turning machine, the combination with lip raising and turning means, of a feed-wheel revoluble in a vertical plane, vertically-movable means for supporting the wheel, and a work-supporting table supported by and movable with said supporting means.

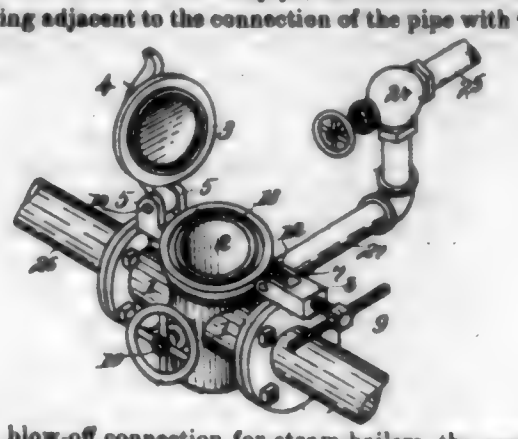
8. In a lip-turning machine, the combination with lip raising and turning means, of a horizontally-extending shaft, a vertically-movable bearing for said shaft, a feed-wheel secured to the end of said shaft to revolve in a vertical plane beneath the lip raising and turning means, a work-supporting table having an opening in its top through which the upper contact edge of the wheel projects, and side flanges on the table secured to the said vertically-movable bearing for the shaft.

9. In a lip-turning machine, the combination with the supporting-frame, of a vertically-movable feed-wheel supported on the frame and adapted to engage the lower side of the work, a plow adjustably secured to the frame above said wheel, a presser-foot secured to the frame at a short distance from said plow, a fixed shaft mounted in a bearing on the frame, a pulley loosely mounted on said shaft, a gear on the shaft to turn with the pulley, a second fixed shaft mounted in a bearing on the frame and extending parallel with the first shaft, a gear on the last-named shaft in mesh with the other gear, a wiper-wheel on the last-named shaft to turn with the gear on said shaft and revolving in a vertical plane between the plow and presser-foot at right angles to the path of the lip to be turned, and means for transmitting motion from said pulley to turn the feed-wheel.

10. In a lip-turning machine, the combination with a supporting-frame having vertical standards at each end, of a vertical guideway on the forward standard of the frame, a bearing-block movable in said way, a bearing-block loosely mounted in an opening in the rear standard, a shaft journaled in said blocks, a feed-wheel secured to the forward end of said shaft and revolving in a vertical plane, a supporting-block secured to the forward standard and provided with bearings a short shaft in one of said bearings, a pin in the other bearing on the block and extending at right angles to the short shaft, bevel-gears on the adjacent ends of said short shaft and pin, a feed-disk on the upper end of said pin with its edge extending over the feed-wheel to engage the upper surface of the work, a shaft mounted in a bearing on the rear standard, a universal joint connecting said shaft with the short shaft, a pinion on the rear end of said last-named shaft, a gear engaging said pinion and secured to the shaft upon which the feed-wheel is mounted, a bracket adjustably secured to the forward standard and provided with parallel bearings, fixed shafts in said bearings, pulleys on one of said fixed shafts free to turn thereon, a gear secured to one of said pulleys, a gear on the other shaft engaging said gear, a wiper-wheel secured to the last-named gear and revolving in a vertical plane with its lower side adjacent to and vertically above the feed-disk, a plow at one side of the wiper-wheel adjustably secured to the supporting-block and provided with a recess for the feed-wheel, a presser-foot adjustably secured to the supporting-block at the opposite side of the wiper wheel and provided with a recess for the feed-disk, a large pulley mounted on the frame, gears for transmitting motion from said pulley to the shaft upon which the feed-wheel is mounted, idlers journaled on the frame, and a cable engaging one of the pulleys on the fixed shaft and passing over the idlers into engagement with the large pulley.

818,775. BLOW-OFF CONNECTION FOR STEAM-BOILERS. PHILIP MUELLER and JOHN C. WHITE, Decatur, Ill., assignors to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Filed Sept. 15, 1905. Serial No. 278,673.

Claim.—1. In a blow-off connection for steam-boilers, the combination of a blow-off main, a boiler blow-off connection with the main, a valve to close the blow-off pipe, and a removable cap covering an opening adjacent to the connection of the pipe with the main.

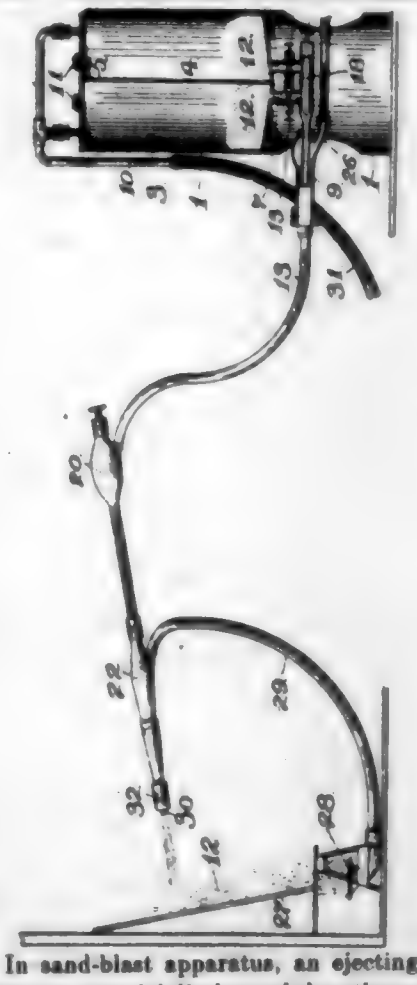


2. In a blow-off connection for steam-boilers, the combination of a blow-off main, a boiler blow-off connection with the main, a valve in the main adapted to close the pipe and a removable cap covering an opening adjacent to the valve.

3. In a blow-off connection for steam-boilers, the combination of a blow-off main, a boiler blow-off connection with the main, a valve-seat formed on the inner end of the connection of the pipe with the main, a valve closable against the seat and a cap covering an opening adjacent to the valve and the seat, said cap being removable, substantially as described.

4. In a blow-off connection for steam-boilers, the combination of a blow-off main, having an enlargement, a boiler blow-off connection with the main, a valve-seat formed on the inner end of the pipe, a valve closable toward the seat, and adapted to support an insertible disk when engaging said seat, and a removable cap covering an opening in the enlargement of the main.

818,776. SAND-BLAST APPARATUS. JOHN D. MURRAY, San Francisco, Cal. Filed May 5, 1905. Serial No. 258,965.



Claim.—1. In sand-blast apparatus, an ejecting-nozzle, a receiver for the abrasive material discharged therethrough, and a pipe connecting said receiver with said nozzle at the rear of the latter, whereby said material is returned and used continuously by the action of the air-blast, substantially as specified.

2. In sand-blast apparatus, a series of ejecting-nozzles acting cumulatively, a reservoir for abrasive material communicating with the rear nozzle of the series, means for supplying an air-blast a receiver for the abrasive material discharged from said nozzles, and a pipe connecting said receiver with the foremost nozzle at the rear thereof, for circulating said abrasive material, substantially as specified.

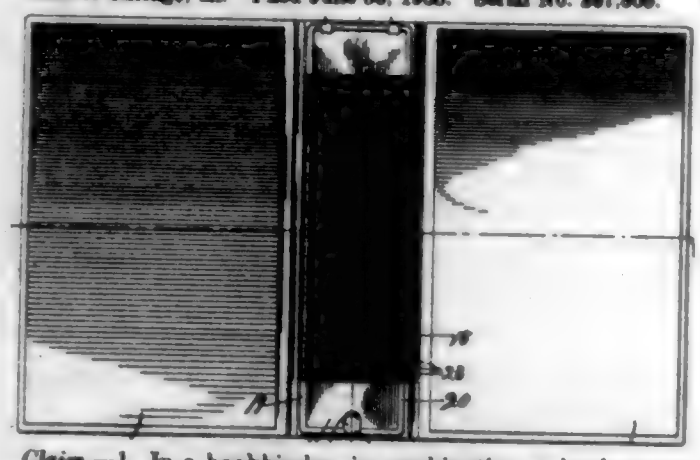
3. In sand-blast apparatus, a reservoir for containing abrasive material, means for supplying an air-blast, a series of ejecting-noz-

also connected by a pipe with said reservoir, an ejector between said air-supply and said pipe connection, and a hollow adjustable needle-valve, perforated in its sides, in said ejector, for regulating the air-blast and causing a graduated central discharge through the ejector, substantially as specified.

4. In sand-blast apparatus, a series of ejecting-nozzles, a suspensory reservoir for abrasive material, pipe connections between said nozzles and said reservoir, an ejector in said suspensory reservoir means for supplying and and air under pressure to said reservoir, and a hollow adjustable needle-valve to regulate the discharge through said ejector, substantially as specified.

5. In sand-blast apparatus, a nozzle to apply the abrading material, and a two-part receiver for the latter, the compartments thereof provided with valves communicating with the ejecting-nozzle, operative alternately, whereby a continuous supply can be furnished to the same nozzle, substantially as specified.

818,777. BOOKBINDER. DANIEL MCCANN, Chicago, Ill., assignor of one-third to F. Robert Bartsch and one-third to Lemuel C. Hatton, both of Chicago, Ill. Filed June 30, 1905. Serial No. 267,809.



Claim.—1. In a bookbinder, in combination, a book-cover; a frame removably secured to the cover; and a web carried by the frame and adapted for the attachment of sheets thereto.

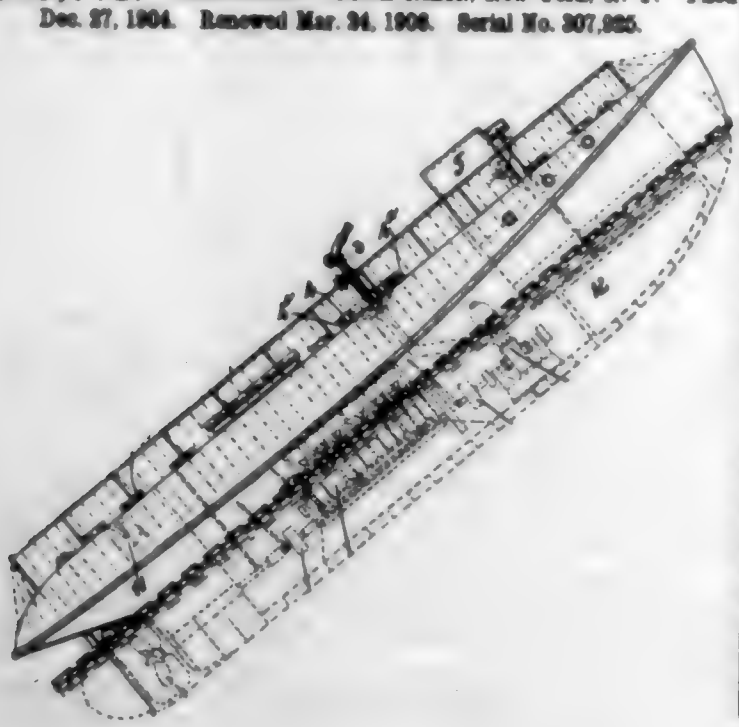
2. In a bookbinder, in combination, a book-cover, a binding-frame removably secured to the cover, and a canvas web carried by the frame to which the leaves to be bound may be independently secured.

3. In a bookbinder, in combination, a book-cover, a frame having rigid sides and flexible ends, means for securing the frame to the back of the cover, and means for attaching to the frame the leaves to be bound.

4. In a bookbinder, in combination, a pair of cover-boards; a back-section uniting the boards; a frame removably secured to the back-section; and a sheet-carrying web carried by the frame.

5. In a bookbinder, in combination, a book-cover; a frame pivotally secured at one end to the cover; means for securing the frame against pivotal movement; and a sheet-carrying web carried by the frame.

818,778. FIRE-BOAT. LEWIS NIXON, New York, N. Y. Filed Dec. 27, 1904. Renewed Mar. 24, 1906. Serial No. 307,925.



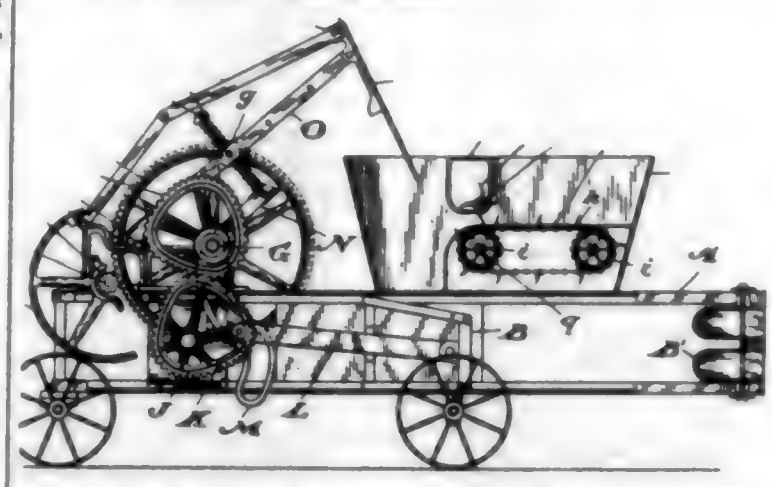
Claim.—1. In a fire-boat, a rigidly-mounted main nozzle near a point directly above the center of lateral resistance of said vessel.

2. In a fire-boat, a hollow rail extending round the deck thereof and elevated above the same, perforations in said rail through which jets of water may be forced to form a pinafore of protecting-streams.

3. In a fire-boat, the combination of a gas-engine, a pump, a clutch connection with said gas-engine, a centrally-located rigidly-mounted main nozzle, and automatic means for throwing and distributing water from said pump to cool the decks.

4. In a fire-boat, the combination of a gas-engine, a crank-shaft, a propeller, a water-pump, a centrally-located rigidly-mounted main nozzle, and clutch connections between said crank-shaft and said propeller and said water-pump, whereby either or both may be operated by said gas-engine or disconnected therefrom for the purpose specified.

818,779. BALING-PRESS. MOSES C. NIXON, Fort Wayne, Ind. Filed Jan. 5, 1901. Serial No. 42,224.



Claim.—1. In a baling-press of the class described, a frame; a power-transmitting gear operating a driving-shaft; a pair of gears carried by the said shaft and each distinguished by the following characteristics, the teeth at opposite ends of the gear are equal in number and are struck substantially from a common center but with different radii and the teeth at the sides are formed on curves suitably described to connect the arcs of the end teeth, in combination with a pair of coöperating gears, of similar form to the former gears, mounted upon stud-shafts fixed on the frame; a wrist-pin carried by the said second pair of gears; a compressing-plunger and a pitman connecting the wrist-pin and plunger.

2. In a baling-press of the class described, a frame; a power-transmitting gear operating a driving-shaft; a gear carried by the said shaft and distinguished by the following characteristics, the teeth at opposite ends of the gear are equal in number and are struck substantially from a common center but with different radii and the teeth at the sides are formed on curves suitably described to connect the arcs of the end teeth in combination with a coöperating gear of similar form mounted upon a shaft fixed on the frame; a wrist-pin carried by the said second gear; a compressing-plunger and a pitman connecting the wrist-pin and plunger.

3. In a baling-press of the class described, a frame or body and a plunger reciprocating therein, in combination with a hopper communicating therewith; an oscillating feeder adapted to push in material in front of the plunger; a bottom within the hopper behind the feeder; endless conveyers suitably arranged and driven to convey beneath the feeder material dropped on the bottom; a shaft rotating once for every full stroke of the plunger; a loose gear-wheel on the said shaft; a spring-actuated sliding clutch connection between the said shaft and gear-wheel; a lug on the sliding part of the clutch; a cam secured to some stationary part so that it is engaged by the said lug once every revolution of the shaft; and a driving-shaft arranged to drive the endless conveyers and geared to the said loose gear-wheel.

4. In a baling-press of the class described, a frame or body with a feed-opening in the top and a plunger reciprocating within the body, in combination with an oscillating feeder working through the feed-opening; conveying mechanism suitably arranged and driven to supply material beneath the feeder; a shaft rotating once for every full stroke of the plunger; a loose gear-wheel on the said shaft; a spring-actuated sliding clutch connection between the said shaft and gear-wheel; a lug on the sliding part of the clutch; a cam secured to some stationary part so that it is engaged by the said lug once every revolution of the shaft; and a driving-shaft arranged to drive the endless conveyers and geared to the said loose gear-wheel.

5. In a baling-press of the class described, a frame or body with a feed-opening in the top, and a plunger reciprocating within the body, in combination with an oscillating feeder working through the feed-opening; a slotted feed-platform adjacent to the feed-opening and having a portion extending downwardly toward the feed-opening; toothed chains carried by suitably-supported and driven sprocket-wheels so as to work through the said slots; a hollow slotted partition arranged across the machine above the forward end of the feed-platform, and suitably supported and driven rotating teeth working through the slots in the said partition.

6. In a baling-press of the class described, a frame or body with a feed-opening in the top and a plunger reciprocating within the body, in combination with an oscillating feeder working through the feed-opening; a slotted feed-platform adjacent to the feed-opening and having a portion extending downwardly toward the feed-opening; toothed chains carried by suitably supported and driven sprocket-wheels so as to work through the said slots; a hollow slotted partition arranged across the machine above the forward end of the feed-platform, and suitably supported and driven rotating teeth working through the slots in the said partition; and automatic means for stopping the drive of the chains and rotating teeth while the feeder is in its down position.

7. In a baling-press of the class described, a frame or body with a feed-opening in the top and a plunger reciprocating within the body, in combination with an oscillating feeder working through the feed-opening; a slotted feed-platform adjacent to the feed-opening and having a portion extending downwardly toward the feed-opening; toothed chains carried by suitably supported and driven sprocket wheels so as to work through the said slot; a hollow slotted partition arranged across the machine above the forward end of the feed-platform, and suitably supported and driven rotating teeth working through the slots in the said partition and driven at a greater speed than the teeth of the chains.

8. In a baling-press of the class described, a frame or body with a feed-opening in the top thereof, and a plunger reciprocating therein in combination with a hopper communicating therewith; a suitable conveyer for conveying material from said hopper to said feed-opening; means to drive said conveyer; a feeder adapted to push the material in front of the plunger; and automatic means for throwing the conveyer out of gear when the feeder enters the feed-opening and again throw said conveyer in gear when the feeder escapes therefrom.

9. In a baling-press of the class described, a frame; a driving-shaft; a gear carried by said shaft and distinguished by the following characteristics, the teeth at opposite ends of the gear are equal in number and struck substantially from the axial center but with different radii and the teeth at the sides are formed on curves suitably described to connect the arcs of the end teeth, in combination with a suitably-supported coöperating gear of similar form; a compressing-plunger; and driving connection between the plunger and said coöperating gear.

10. In a baling-press of the class described, a frame having in connection therewith suitable driving mechanism; a feeder-arm pivoted at one of its ends to the frame and having a feeder secured to the outer end; and a pivoted operating-lever having oscillating motion, and connected to said driving mechanism to be actuated thereby, and having driving connection with the feeder-arm at a point between the pivotal point thereof and the feeder.

11. In a baling-press of the class described, a frame or body with a feed-opening therein; a feeder adapted to move into and out of said feed-opening and push material therein; a conveyer to deliver material to said feed-opening; and automatic means to cause the conveyer to cease delivery of said material during the time the feeder is in the feed-opening.

12. In a baling-press of the class described, the combination of a frame; a feeder-arm pivoted on the frame; a feeder carried by the said arm; an oscillating operating-lever; a rod pivoted at one end to one arm of the operating-lever, and arranged longitudinally movable through the feeder-arm; a spring-retaining device at the free end of the said rod; a coil-spring placed on the rod between the operating-lever and the feeder-arm; another coil-spring between the feeder-arm and the spring-retaining device; and means in constant connection with the other arm of the operating-lever for oscillating the same.

13. In a baling-press of the class described, a frame or body with a feed-opening therein; a feeder working into and out of the feed-opening; a suitable conveyer for conveying material to said feed-opening; driving mechanism having connection with the feeder to actuate the same; a clutch, one member of which has fixed relation with the driving mechanism, and the other member of which has driving relation with the conveyer, the latter member being adapted to be engaged and driven by the former member; and automatic means to disengage one of said clutch members from the other, while the feeder extends into the feed-opening.

14. In a baling-press of the class described, a frame or body with a feed-opening therein and having a feeder adapted to work into and out of the feed-opening, the feeder having in connection therewith suitable driving mechanism to actuate the same; and a conveyer adapted to convey material to the feed-opening and having in connection with said driving mechanism suitable means to actuate the former, except while the feeder is in the feed-opening.

15. In a baling-press of the class described, a frame or body having a feed-opening therein; a plunger operating within the frame, a reciprocating feeder adapted to move into and out of the feed-opening; a conveyer for conveying material to the feed-opening; an intermittently-operated conveyer adapted to convey material to the opening; and suitable driving mechanism for actuating the plunger, feeder, and conveyer, the movement of the conveyer being so timed to the action of the feeder that the former will be idle when the latter extends into the opening.

16. In a baling-press, a compression-chamber having a feed-opening therein; a conveyer for conveying material to the feed-opening; a feeder adapted to force said material through the feed-opening into the compression-chamber; and means for rendering the conveyer inoperative while the feeder extends into the feed-opening.

17. In a baling-press of the class described, a frame or body with a feed-opening in the top thereof, and a plunger reciprocating therein; a suitable conveyer for conveying material to said feed-opening; a feeder adapted to push material in front of the plunger; suitable driving mechanism to actuate said plunger, conveyer and feeder; and automatic means in connection with the driving mechanism for throwing and holding the conveyer out of gear during the time the feeder extends into the feed-opening.

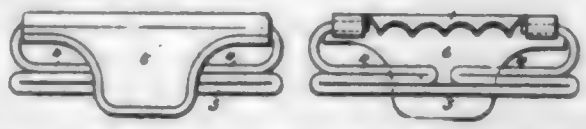
18. In a baling-press of the class described, a frame or body with a feed-opening therein; a feeder adapted to move into and out of said feed-opening and push material therein; a conveyer to deliver material to said feed-opening; driving mechanism in connection with the feeder and conveyer to actuate the same; and automatic means to disengage the driving connection between the driving mechanism and the conveyer when the feeder extends into the feed-opening.

19. In a baling-press, a frame or body with a feed-opening in the top thereof; a feeder adapted to move into and out of said feed-opening and push material therein; a suitable conveyer to deliver material to said feed-opening; driving mechanism in connection with the feeder and conveyer to actuate the same; and automatic means to cause the conveyer to become inoperative during the time the feeder extends into the feed-opening.

20. In a baling-press, in combination, a compression-chamber; a hopper; a conveyer for delivering material to said hopper; a feeder for forcing the material from the hopper into the compression-chamber; and means for rendering the conveyer inoperative during the action of said feeder.

21. In a baling-press, a compression-chamber with a feed-opening in the top thereof, a conveyer for delivering material to said feed-opening; a feeder for forcing material through said feed-opening into the compression-chamber; and means to cause the conveyer to cease delivery of material to the feed-opening while the feeder extends into said compression-chamber.

818,780. **BUCKLE.** WILBUR F. OSBORNE, Derby, Conn. Filed Oct. 16, 1905. Serial No. 283,914.



Claim.—In a suspender-buckle, the combination with a frame having an upper and a lower side forming a loop between them, said lower side formed by bending portions of the wires inward into the plane of and in contact with the central portion of the wire and parallel therewith, whereby a wide lower side is produced, of a lever pivoted to the upper side of the frame in position to have its clamping edge coact with the upper edge or top of the lower side of the frame, and a piece of webbing having one end attached to the lower side of the frame and a portion passed from front to rear through the said loop and engaged by the clamping edge of the lever which deflects it over or approximately over the upper edge or top of the lower side of the frame.

818,781. BRIDLE-BIT. GEORGE M. PEYERS, Cincinnati, Ohio. Filed Jan. 13, 1902. Serial No. 89,606.



Claim.—1. In a compound bit the combination of side members, having guides, a main bit portion, comprising spaced members disposed between the side members, a movable bit adapted to engage the guides and move between the said spaced members, and yielding means disposed between the side members and the movable bit for normally holding the latter entirely within the main bit portion to close the space formed between the members thereof.

2. In a compound bit the combination of side members, having guideways, a main bit portion comprising spaced members disposed between the side members, the space formed thereby being in a direct line with the guides, a movable bit normally standing entirely within the main bit, and a yielding member disposed between the side members and the moving bit for normally holding the latter seated in the main bit, said moving bit being adapted to be unseated from the main bit and moved through the guides against the tension of the yielding member.

3. In a compound bit, the combination with inner and outer bit portions, the outer bit portions arranged in parallel relation and suitably separated from each other to form a free open space therebetween, the inner bit portion adapted to be received in said open space, end rings or plates connected to the ends of said outer bit portions and having guides formed therein, laterally-extending arms connected to said inner bit portion and operating in said guides, whereby said movable portion is permitted to move laterally and in parallel relation with respect to said outer bit portion and means for yieldingly maintaining said inner bit portion in housed or closed relation with respect to said outer bit portions, as and for the purpose set forth.

4. In a compound bit, inner and outer bit portions, said outer bit portions being separated from each other to form a space therebetween adapted to receive the inner bit portion and permitting the withdrawal thereof laterally from and in parallel relation to said outer bit portion, end rings connected to said outer bit portions, and springs mounted on the inner faces of said end rings or plates and arranged to exert their tension upon said inner bit portion to normally maintain the same in housed relation with respect to said outer bit portion, as and for the purpose set forth.

5. In a compound bit, inner and outer bit portions, the outer bit portions being separated to form a space therebetween adapted to receive the inner bit portion, laterally-extending arms carried by the ends of said inner bit portion and carrying links to afford means for attaching the reins thereto, guides in which said arms are received and yielding means arranged to exert a tension upon said inner bit portion to maintain the same in housed relation but permitting the withdrawal thereof laterally and in parallel relation with respect to said outer bit portions, as and for the purpose set forth.

6. In a compound bit, the combination of inner and outer bit portions, the outer bit portions being suitably separated from each other to form a space therebetween adapted to receive therein the inner bit portion, rings or plates carried by the ends of said outer bit portions, said rings or plates having transverse guides on the inner faces thereof, laterally-extending arms connected to the ends of the inner bit portion and received in said guides, and springs mounted in said rings or plates and arranged to engage said arms to yieldingly maintain said inner bit portion in housed relation but permitting the withdrawal thereof laterally and in parallel relation with respect to said outer bit portions, as and for the purpose set forth.

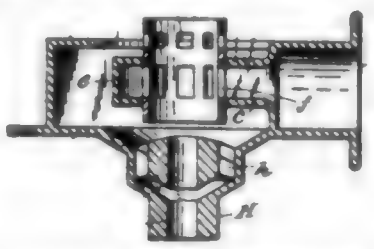
7. In a compound bit, the combination with inner and outer bit portions mounted for relative movement, and plates connected to said outer bit portions and having recesses or cavities on the inner faces thereof, bow-springs having their ends adapted to be received in said recesses or cavities and arranged to engage said inner bit portion to yieldingly maintain the same in incloosed or housed relation but permitting the withdrawal thereof laterally and in parallel relation with respect to said outer bit portions, as and for the purpose set forth.

8. In a compound bit, the combination of inner and outer bit portions, end rings carried by said outer bit portions and having openings therethrough, laterally-extending arms connected to the inner bit portion and having lugs extending through said openings, and links carried by said lugs, to form means for attaching the reins thereto, as and for the purpose set forth.

9. The combination in a compound bit, of an inner and an outer portion, end rings or plates carried by the outer portion and having guideways formed therein and openings therethrough, arms carried by the inner bit portion and received in said guideways, lugs carried by said arms and arranged to extend through said openings, links carried by said lugs, and means for yieldingly maintaining said bit portions in housed relation with respect to each other, as and for the purpose set forth.

10. In a compound bit, inner and outer bit portions, end rings or plates carried by said outer bit portions and made in sections adapted to be secured together to form openings therethrough, means for yieldingly maintaining said inner bit portion in housed relation with respect to the outer portion, lugs connected to said inner bit portion and extending through said openings, and links carried by said lugs to afford means for attaching the reins thereto, as and for the purpose set forth.

818,782. HYDRANT. WALTER S. PHELPS, Muncie, Ind. Filed June 30, 1905. Serial No. 267,709.



Claim.—1. A hydrant including a valve-box having a chamber therein to receive from a supply-pipe, a valve-cylinder extending through the chamber and having long ports opening into the chamber and also relatively shorter ports opening into the main portion of the valve-box exterior to the chamber, and a valve movable in the valve-cylinder and having two pistons spaced apart a distance approximately equal to the length of either of the long ports.

2. A hydrant including a valve-box having a chamber therein to receive from a supply-pipe, a main-valve cylinder extending through the chamber and having ports therein, a basin at the bottom of the valve-box, a drain-valve cylinder attached to the bottom of the basin, a drain-valve cylinder supported by brid,es in the basin, and a main valve in the main-valve cylinder and havi.g a drain-valve attached thereto and extending through one and into the other one of the drain-valve cylinders.

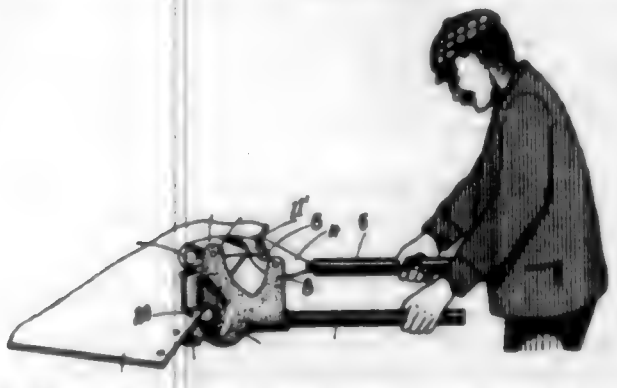
3. A hydrant including a valve-box having a main valve therein and a basin below the valve, a drain-valve attached to the main valve and having a bore therein and a lateral port to the bore, a drain-valve cylinder in the basin, a drain-valve cylinder beneath the basin, a stand-pipe attached to the valve-box, a rotative shaft mounted in the wall of the stand-pipe and carrying a crank-pin, and operative connections between the main valve and the crank-pin.

4. A hydrant including a valve-box having a basin in the bottom thereof, a main-valve cylinder ih the valve-box, a drain-valve cylinder in the basin of the valve-box, a drain-valve cylinder beneath the basin of the valve-box, a main valve in the main-valve cylinder, a drain-valve attached to the main valve and extending through one and into the other one of the drain-valve cylinders, the drain-valve being open when the main valve is closed and closed when the main valve is open, a stand-pipe attached to the valve-box and having a receiving-chamber therein, an air-chamber below the receiving-chamber, an air-chamber above the receiving-chamber, a guide in the top of the stand-pipe, a valve-rod attached to the main valve and extending into the guide, a rotative shaft mounted in the stand-pipe and carrying a crank-pin, and a connecting-rod pivotally connected to the crank-pin and also with the valve-rod.

818,783. HAND-PUNCH. THEODORE F. PHILIPPI, East St. Louis, Ill. Filed Dec. 23, 1905. Serial No. 293,122.

Claim.—1. In a punching-tool, a suitable body portion, a handle therefor, an operating-lever pivoted in proximity thereto, the short arm of said lever having an elongated slot, a reciprocating plunger mounted in the body portion a lever interposed between the plunger and operating-lever and movably connected to the plunger-

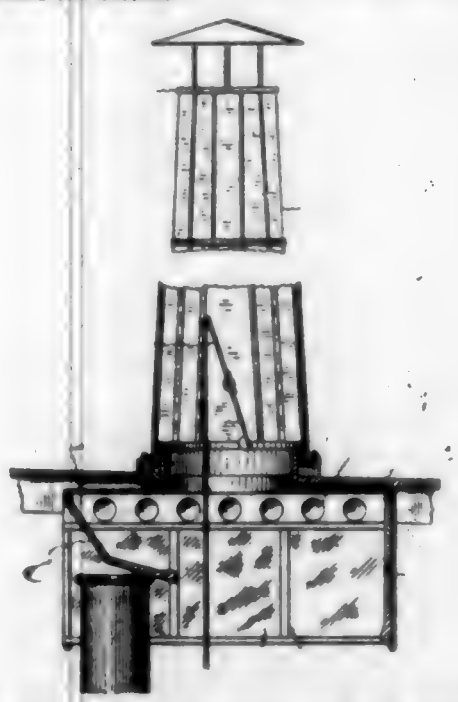
lever, the movement described by the plunger being along the versed sine of the arc of oscillation of the plunger-lever, substantially as set forth.



2. In a punching-tool, an oscillating lever pivoted at a point intermediate its length, a block carried at the end of one arm of the lever and free to rock therein, a T-shaped opening or slot formed in said block, a reciprocating plunger having a correspondingly-T-shaped head and neck adapted to be received in said opening thereby forming a movable connection between the plunger and lever during the oscillations of the latter, and an operating-lever for actuating the lever, substantially as set forth.

3. In a punching-tool, an oscillating lever pivoted at a point intermediate its length, a block carried at the end of one arm of the lever and free to rock therein, a slot formed in said block, a reciprocating plunger having one end received in said slot and forming a movable connection between the plunger and lever during the oscillations of the latter, and an operating-lever for actuating the lever aforesaid, substantially as set forth.

818,784. **HOOD AND SMOKE-PIPE FOR LOCOMOTIVE-ROUNDHOUSES.** EDWARD S. PIPER, Toronto, Canada. Filed May 8, 1905. Serial No. 259,432.



Claim.—1. In a device of the class described a hood open at its under side and provided at one end with a door normally tending to assume a closed position but adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into or out of the hood, substantially as described.

2. In a device of the class described a hood open at its under side and provided at one end with a door normally tending to assume a closed position but adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into or out of the hood, and with damper-controlled openings near its top, substantially as described.

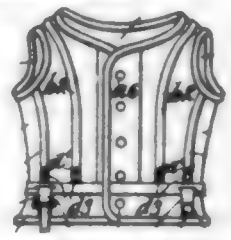
3. In a device of the class described a hood open at its under side and provided at one end with a door normally tending to assume a closed position, but adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into or out of the hood in combination with a smoke-pipe communicating with the top of the hood, substantially as described.

4. In a device of the class described a hood open at its under side and provided at one end with a door normally tending to assume a closed position but adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into or out of the hood, in combination with a smoke-pipe communicating with the top of the hood, both the hood and smoke-pipe being formed of sections of non-corrosible fireproof material connected by metal framing, substantially as described.

5. In a device of the class described, a hood open at its under side and provided at one end with a door horizontally hinged at or near its top on the hood whereby it tends to maintain a closed position, but is adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into or out of the hood, substantially as described.

6. In a device of the class described, a hood open at its under side and provided at one end with a door formed in two parts horizontally hinged together, the upper part being pivoted on the hood so as to tend to assume a closed position but adapted to be moved by the smoke-stack of a locomotive to permit the stack to pass into and out of the hood, substantially as described.

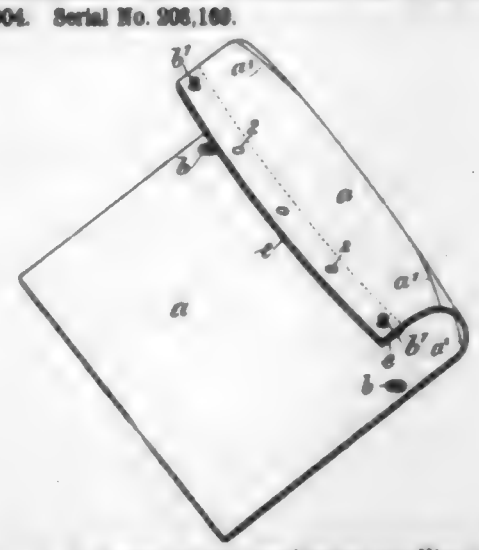
818,785. **GARMENT.** FRANK A. PLATE, Brooklyn, N. Y. Filed Mar. 16, 1904. Serial No. 198,331.



Claim.—1. In a garment of the class described, the combination with the body thereof having a band encircling the same at the waist, said garment having openings at the front thereof, and said band having slits below the openings of the body, of a band arranged at the inner side of the body and provided with fastening devices which engage said openings of the body for detachably connecting the band therewith, and suspending devices connected to said inner band and projected through the slits of the outer band.

2. In a garment of the class described, the combination with the body thereof, of a reinforced member arranged at the back of said body and extending from the upper portion thereof to the waist, said reinforced member having a fold formed at its lower end separated from the back of the garment, the latter having a series of slits in the back at a point below the fold of the reinforced member, and suspending devices projected through said slits, the upper ends of said suspending devices having fasteners connected to said fold and positioned between the same and the back of the body, whereby said fasteners are free from contact with the undergarments of the wearer, and the lower end of said suspending devices having fastening devices connected thereto.

818,786. **DEVICE FOR THE PRELIMINARY FORMING OF CIGAR-BUNCHES.** GEORGE J. PRENTICE, New York, N. Y. Filed May 16, 1904. Serial No. 208,160.



Claim.—1. A device for the preliminary rolling or forming of cigar-bunches, comprising an apron of flexible material and coacting engaging or fastening devices which are adapted to engage when the apron has been rolled to one complete turn of the cigar-binder around the filler.

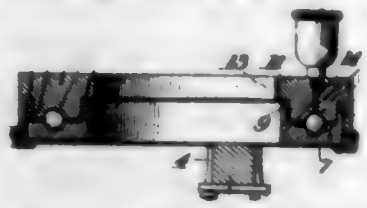
2. A device for the preliminary rolling or forming of cigar-bunches, comprising an apron of flexible material, coacting engaging or fastening devices at the corners at one end and at predetermined places along the opposite edges which are adapted to engage when the apron has been rolled to one complete turn of the cigar-binder around the filler.

3. A device for the preliminary rolling or forming of cigar-bunches, comprising an apron of flexible material, coacting engaging or fastening devices at the corners at one end and at predetermined places along the opposite edges which are adapted to engage when the apron has been rolled to one complete turn of the cigar-binder around the filler, and a plate of metal secured to the said flexible apron with similar parts of said fastening devices in a line at right angles to the line of movement of said apron for stiffening the apron in rolling up the binder and filler, substantially as set forth.

4. A device for the preliminary rolling or forming of cigar-bunches, comprising an apron of flexible material, with notches or gores at the sides and at one end, and coacting engaging or fastening devices at the corners at one end and at predetermined places along the opposite edges which are adapted to engage when the apron has been rolled to one complete turn of the cigar-binder around the filler.

5. A device for the preliminary rolling or forming of cigar-bunches, comprising an apron of flexible material, with notches or gores at the sides and at one end, and coacting engaging or fastening devices at the corners at one end and at predetermined places along the opposite edges which are adapted to engage when the apron has been rolled to one complete turn of the cigar-binder around the filler, and a plate of metal secured to the said flexible apron with similar parts of said fastening devices in a line at right angles to the line of movement of said apron for stiffening the apron in rolling up the binder and filler, substantially as set forth.

818,787. FIFTH-WHEEL. HARVEY S. RADER and WILLIAM H. WERT, Palmerton, Pa. Filed July 1, 1905. Serial No. 267,838.



Claim.—1. The herein-described fifth-wheel comprising a lower member having concentric upstanding flanges and a ball-race intermediate between said flanges, an upper member having a circular bearing portion working between said flanges and provided with a ball-race opposite the first-named ball-race and also having an annular guard or rim which encircles the lower member, antifriction-balls working in the ball-race, and means for feeding lubricating material to the balls and ball-race.

2. The herein-described fifth-wheel embodying a lower member having concentric upstanding flanges and an intermediate ball-race groove, an upper member having a bearing portion working between said flanges and provided with a ball-race groove, said upper member being grooved and rabbeted to receive said flanges and also having an annular guard or rim encircling the lower member, and a portion which overhangs the lower member at the inner edge, antifriction-balls arranged in the ball-race grooves, and an oil-cup communicating with the ball-race grooves.

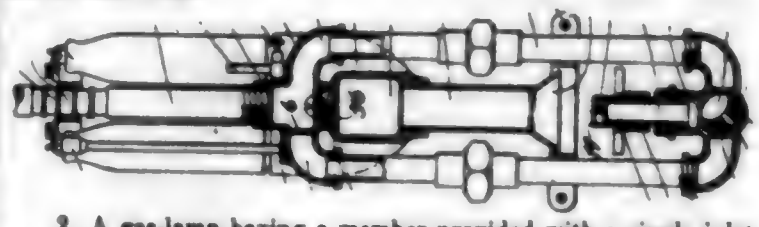
818,788. HAT-PIN. ENGELBERT RATING, Gelsenkirchen, Germany. Filed Sept. 28, 1905. Serial No. 280,409.



Claim.—A hat-pin composed of a wire having a rear loop, diverging inner shanks, corrugated outer arms passing through the rear loop and having intertwisted ends back of the loop, a handle carried by said intertwisted ends, and a keeper engaging the diverging inner shanks, substantially as specified.

818,789. GAS-LAMP. FOREST A. RAY, Boston, Mass. Filed Dec. 31, 1904. Serial No. 239,060.

Claim.—1. A gas-lamp having a plurality of primary burners, a tube open to the atmosphere communicating with said burners, a gas-conduit surrounding said tube, an outlet-valve in said conduit arranged to direct a jet of gas into the tube, an auxiliary burner connected with said conduit, and a valve mounted in said conduit having capabilities of adjustment whereby the supply of gas may be directed exclusively to said outlet-valve or to said auxiliary burner, or excluded from both.



2. A gas-lamp having a member provided with a single inlet and a plurality of outlets, each outlet leading to a burner, a tube connected at one end to the inlet of said member and open at its other end to the atmosphere, a gas-supplying conduit having a portion thereof formed as a loop with straight sides parallel to the tube extending on opposite sides of the tube and an intermediate portion perpendicular thereto extending over the open end of said tube, an outlet member connected to said supplying-conduit arranged to project a jet of gas into said tube, and an auxiliary burner connected with said supply-conduit.

3. A gas-lamp having a member provided with a single inlet and a plurality of outlets, each outlet leading to a burner, a tube connected at one end to the inlet of said member and open at its other end to the atmosphere, a gas-supplying conduit having a portion thereof formed as a loop with straight sides parallel to the tube extending on opposite sides of the tube and an intermediate portion perpendicular thereto extending over the open end of said tube, and an outlet member connected to said supplying-conduit arranged to project a jet of gas into said tube.

4. A gas-lamp having a member provided with a single inlet and a plurality of outlets, each outlet leading to a burner, a tube connected at one end to the inlet of said member and open at its other end to the atmosphere, a gas-supplying conduit having a portion thereof formed as a loop extending on opposite sides and over the open end of said tube, an outlet member connected to said supplying-conduit arranged to project a jet of gas into said tube, an auxiliary burner connected with said supply-conduit, and a valve located in said conduit between the outlet member and the auxiliary burner and adapted either to direct the gas exclusively to the outlet member or to the auxiliary burner, or to cut off the supply to both.

5. A gas-lamp having a burner-support provided with a single inlet and a plurality of outlets each outlet leading to a burner, a downwardly-extending open-ended tube connected to the inlet to said support, a yoke connected to said burner-support having an inlet centrally arranged with respect to said burners, an auxiliary burner connected to said yoke, a partition in said yoke between the inlet thereto and the point of attachment of the auxiliary burner, a loop of piping connected to the ends of said yoke and arranged to extend around and over the end of the tube, a gas-supply pipe connected to the inlet to said yoke, an outlet member connected to the loop in line with the tube arranged to direct a stream of gas into the open end thereof, and a three-way valve located in the loop between the outlet member and the auxiliary burner.

6. A gas-lamp having a gas-supplying conduit, a yoke connected thereto having a passage leading from one of its ends to the said conduit and a partition separating its other end from the conduit, a pilot-burner supported by said yoke communicating with said passage, an auxiliary burner connected with said yoke or the other side of the partition from the conduit, a main burner member supported by the yoke having a single inlet and a plurality of burners surrounding the conduit, an open-ended tube connected to the inlet to said burner member, a loop of piping connected to said yoke and extending over the open end of said tube, and an outlet connected to said loop and arranged to direct a jet of gas into the open end of said tube.

7. A gas-lamp having a gas-supplying conduit, a yoke connected thereto having a passage leading from one of its ends to the said conduit and a partition separating its other end from the conduit, a pilot-burner supported by said yoke communicating with said passage, an auxiliary burner connected with said yoke or the other side of the partition from the conduit, a main burner member supported by the yoke having a single inlet and a plurality of burners surrounding the conduit, an open-ended tube connected to the inlet to said burner member, a loop of piping connected to said yoke and extending over the open end of said tube, an outlet connected to said loop and arranged to direct a jet of gas into the open end of said tube, and a three-way valve located in the loop adjacent said outlet and adapted to admit gas exclusively to either the auxiliary burner or the outlet, or to cut off the supply from both, the supply to the pilot-burner being continuous regardless of the adjustment of the valve.

8. A gas-lamp having a central gas-conduit, a plurality of burn-

ers arranged about said conduit in close proximity thereto, a single tube having connections with each of said burners and being open at its lower end mounted below the burners extending downwardly therefrom, a continuation of the gas-conduit extending below the burner beside and parallel to the said tube, being separated therefrom throughout its entire extent, and across the open end of the tube, and an outlet member connected to the conduit below and in an axial line with the tube and arranged to direct a jet of gas into the open end thereof.

9. A gas-lamp having a gas-conduit, a burner supported thereby closely adjacent thereto, a tube open at its lower end connected to the burner and extending downwardly therefrom, the conduit extending below the burner and formed in its lower portion as a loop having parallel sides located beside the tube and an intermediate portion extending across the open end of the tube beneath the same, an outlet located in said intermediate portion in an axial line with the tube, a shield-support adjustably mounted on side portions of the loop, and a shield surrounding the tube and loop mounted on the said support.

10. A gas-lamp having a gas-conduit, a burner supported thereby, a tube connected to the burner extending downwardly therefrom and open at its lower end, the conduit being extended downward on opposite sides of the tube and across the open end thereof, a jet-valve connected to said conduit in line with the tube arranged to direct a jet of gas into the open end thereof, a shield-support mounted on the conduit, and a shield mounted on the support in position to surround the tube and extend below its open end.

11. A gas-lamp having a gas-conduit, a burner supported thereby, a tube connected to the burner extending downwardly therefrom and open at its lower end, the conduit being extended downward and across the open end of the tube, a jet-valve connected to said conduit in line with the tube arranged to direct a jet of gas into the open end thereof, a shield-support mounted on the conduit consisting of a ring clamped on said conduit, and a shield mounted on the support in position to surround the tube and extend below its open end.

12. A gas-lamp having a gas-conduit, a burner supported thereby, a tube connected to the burner extending downwardly therefrom and open at its lower end, the conduit being extended downward and across the open end of the tube, a jet-valve connected to said conduit in line with the tube arranged to direct a jet of gas into the open end thereof, a shield-support mounted on the conduit consisting of a split ring and means for clamping the ring to the conduit, and a shield mounted on the support in position to surround the tube and extend below its open end.

13. A gas-lamp having a main burner, an auxiliary burner, a single gas-supply for furnishing gas to both the main and auxiliary burners, a three-way valve for governing the flow of gas to said burners, a controller-bar for said valve, separate freely-depending members connected to the ends of the bar, and an intermediate, independent, articulated member connected to the bar between said members for manually operating the same.

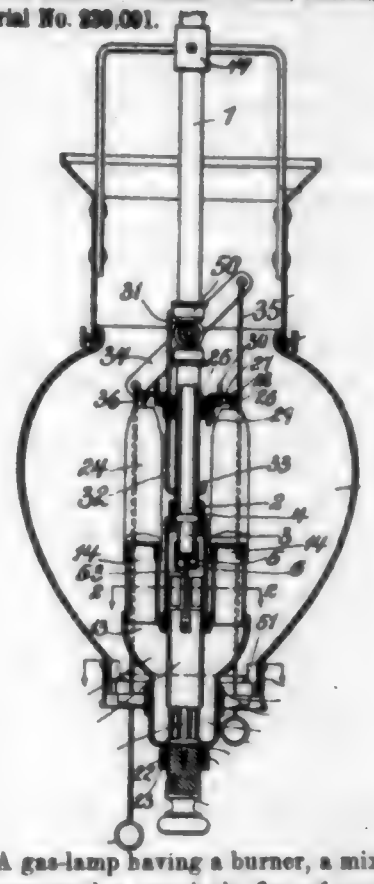
14. In a lamp having a main support and a burner, a mantle-support consisting of a collar mounted on the main support, a radial arm, and a holder of wire having a vertical portion held in an orifice in the arm and a portion extending throughout its entire length perpendicularly to the heated column of gases rising from the burner and terminating in a hook directly over the burner.

15. In a lamp having a main support and a burner, a mantle-support consisting of a collar mounted on the main support, a radial arm, a holder of wire having a vertical portion held in an orifice in the arm and a portion extending throughout its entire length perpendicularly to the heated column of gases rising from the burner and terminating in a hook directly over the burner, and upstanding projections on the arm on each side of the holder arranged to retain the latter in proper lateral relation to the burner.

16. A gas-lamp having a burner, a tube open at one end to the atmosphere connected to the burner, a gas-supply conduit having an outlet in line with the tube arranged to direct a stream of gas into the open end thereof, a shield adjustably mounted on the supply-conduit arranged normally to surround and guard the open end of the tube and the gas-outlet, and a globe or chimney supported by the shield and inclosing the burner.

17. A gas-lamp having a burner, a tube open at one end to the atmosphere connected to the burner, a gas-supply conduit having an outlet in line with the tube arranged to direct a stream of gas into the open end thereof, a support adjustably clamped to the supply-conduit provided with lateral arms having upward, centrally-notched projections, a shield provided with internal projections detachably engaged with the notches of the projections on said arms and supported thereby, the shield being arranged normally to surround and guard the open end of the tube and the gas-outlet, and a globe or chimney supported by the shield and inclosing the burner.

818,790. GAS-LAMP. FOREST A. RAY, Boston, Mass. Filed Dec. 31, 1904. Serial No. 239,091.



Claim.—1. A gas-lamp having a burner, a mixing-tube having an air-inlet and connected to permit the flow of a mixture of gas and air therefrom to the burner located beside the burner, and a gas-conduit arranged to discharge into the tube at approximately the level of and located in close proximity to the flame of the burner.

2. A gas-lamp having a burner, a gas-conduit located beside the burner closely adjacent the same, a mixing-tube in line with and forming a continuation of the conduit having a connection at one end with the burner and at its other end provisions for admitting air, and a contracted outlet to said conduit in line with said tube adjacent the air-admitting portion thereof.

3. A gas-lamp comprising a burner, a mixing-tube connected thereto, and means for forcing a jet of gas into said tube in the direction of its length and admitting air into the tube, at a point substantially on the level of the burner and close beside the same.

4. A gas-lamp comprising a burner-support, a plurality of burners mounted thereon, a mixing-tube connected at its lower end to the burner-support and located centrally among the burners in close proximity to each, having an air-inlet adjacent its other end, and a gas-conduit having an outlet adjacent the air-inlet of said tube and arranged to direct a jet of gas into the tube.

5. A gas-lamp comprising a burner-support having a single central inlet thereto and a plurality of outlets therefrom symmetrically arranged about the inlet, a tube, having provisions for the admission of air, connected to the inlet, a gas-supplying conduit arranged in line with said tube adapted to project a jet of gas into the same, the outlet for the jet from said conduit being substantially at the level of the burners, and burners connected to the outlets from said burner-support adjacent said conduit.

6. A gas-lamp comprising a burner-support having a single central inlet thereto and a plurality of outlets therefrom symmetrically arranged about the inlet, a tube, having provisions for the admission of air, connected to the inlet, a gas-supplying conduit arranged in line with said tube adapted to project a jet of gas into the same, the outlet for the jet from said conduit being substantially at the level of the burners, burners connected to the outlets from said burner-support adjacent said conduit, and mantles supported by said conduit above said burners.

7. A gas-lamp comprising a burner-support having a single central inlet thereto and a plurality of outlets therefrom symmetrically arranged about the inlet, a tube, having provisions for the admission of air, connected to the inlet, a gas-supplying conduit arranged to project a jet of gas into said tube at a point approximately at the level of the burners, and an adjustable valve or regulator for regulating the amount of gas delivered from the conduit.

8. A gas-lamp comprising a burner-support having a single central inlet thereto and a plurality of outlets therefrom symmetrically arranged about the inlet, a tube, having provisions for the admission

of air, connected to the inlet, a gas-supplying conduit arranged to project a jet of gas into said tube, an adjustable valve or regulator for regulating the amount of gas delivered from the conduit, the air-admission, gas-jet and valve being approximately at the level of the burners, and external means connected to said valve for adjusting the same.

9. A gas-lamp comprising a burner-support, burners mounted thereon, said support having an inlet centrally arranged with respect to said burners and passages leading therefrom to the burners, a tube connected to said inlet and extended therefrom having provisions for admission of air thereto, a gas-conduit connected to said tube, an outlet-valve therefor located in the tube, and means external to the tube and burner-support for adjusting said valve to regulate the flow of gas.

10. A gas-lamp comprising a burner-support, burners mounted thereon, said support having an inlet centrally arranged with respect to said burners and passages leading therefrom to the burners, a tube connected to said inlet and extended therefrom having provisions for admission of air thereto, a gas-conduit connected to said tube and having an outlet arranged to project a jet of gas into the tube, and a tube forming an extension of said before-mentioned tube extending into the interior of the burner-support.

11. A gas-lamp comprising a burner-support, burners mounted thereon, said support having an inlet centrally arranged with respect to said burners and passages leading therefrom to the burners, a tube connected to said inlet and extended therefrom having provisions for admission of air thereto, a gas-conduit connected to said tube and having an outlet arranged to project a jet of gas into the tube, an additional tube revolubly mounted in the above-named tube extending through the burner-support, a regulating-valve arranged in the outlet from said gas-conduit, and connections between said valve and the revoluble tube.

12. A gas-lamp comprising a burner-support, burners mounted thereon, said support having an inlet centrally arranged with respect to said burners and passages leading therefrom to the burners, a tube connected to said inlet and extended therefrom having provisions for admission of air thereto, a gas-conduit connected to said tube and having an outlet arranged to project a jet of gas into the tube, an additional tube revolubly mounted in the above-named tube extending through the burner-support, packing means surrounding the portion of the revoluble tube projecting from the burner-support and connected to said support for preventing leakage between the tube and support, a handle connected to said projecting portion of the revoluble tube, a regulating-valve arranged in the outlet from said gas-conduit, and connections between said valve and the revoluble tube.

13. In a gas-lamp, a burner-support carrying upwardly-extending burners, and having an inlet, an upwardly-extending tube, having provisions for admitting air to its interior, mounted in the inlet, and a gas-conduit connected to said tubes closely adjacent the burners among the same and arranged to project a jet of gas downwardly into said tube.

14. A gas-lamp comprising a gas-supplying conduit constituting a support, an outlet at the end thereof, a gas check or regulator for said outlet, a tube connected to said conduit and surrounding the outlet and gas-check, a burner-support connected to said tube below the gas-outlet, burners mounted on said burner-support beside the conduit, said tube having provisions for the admission of the atmosphere to its interior, and the support having passages leading from the tube to the burners, and mantles supported by the conduit over the burners.

15. A gas-lamp comprising a gas-supplying conduit constituting a support, an outlet at the end thereof, a gas check or regulator for said outlet, a tube connected to said conduit and surrounding the outlet and gas-check, a burner-support connected to said tube below the gas-outlet, burners mounted on said burner-support beside the conduit, said tube having provisions for the admission of the atmosphere to its interior and the support having passages leading from the tube to the burners, mantles supported by the conduit over the burners, a lower globe-support rigidly mounted on the burner-support beneath the burners, an upper globe-support slidingly mounted on the conduit above the mantles, and a transparent globe connected to said upper support and resting upon said lower support inclosing the burners and mantles.

16. A gas-lamp comprising a gas-supplying conduit constituting a support, an outlet at the end thereof, a gas check or regulator for said outlet, a tube connected to said conduit and surrounding the outlet and gas-check, a burner-support connected to said tube below the gas-outlet, burners mounted on said burner-support beside the conduit, said tube having provisions for the admission of the atmosphere to its interior and the support having passages leading from the tube to the burners, mantles supported by the conduit over the burners, a lower globe-support having radial arms rigidly mounted on the burner-support beneath the burners, an upper globe-support slidingly mounted on the conduit above the mantles, a globe inclosing the burners and mantles connected to said upper support, and a collar connected to the bottom of the globe provided with lugs adapted to engage and rest upon the arms of the lower support.

17. A gas-lamp comprising a gas-supplying conduit, a valve therein, a controller-bar connected to said valve, operating members for said bar connected thereto and depending therefrom, guides for the lower portions of said operating members, a Bunsen tube connected to the lower end of the conduit, a burner-support connected to said Bunsen tube, and burners mounted on said burner-support.

18. A gas-lamp comprising a gas-supplying conduit, a Bunsen tube connected to the lower end of said conduit and a gas-outlet from the conduit into the Bunsen tube a burner-support connected to said Bunsen tube, burners mounted thereon located beside the conduit, mantles supported by the conduit above said burners, a valve in said conduit above the gas-outlet for interrupting the flow of gas to the burners, a pilot-burner connected to the conduit above the valve, and a controller for operating said valve.

19. A gas-lamp comprising a gas-supplying conduit, a Bunsen tube connected to the lower end of said conduit and a gas-outlet from the conduit into the Bunsen tube, a burner-support connected to said Bunsen tube, burners mounted thereon located beside the conduit, mantles supported by the conduit above said burners, a valve in said conduit above the gas-outlet for interrupting the flow of gas to the burners, a pilot-burner connected to the conduit above the valve, a controller-bar connected to said valve, depending operating members connected to the ends of said bar, a globe or chimney surrounding the burners and mantles, and a support for the lower portion of said globe, said support having provisions for guiding the lower portions of the depending controller-operating members.

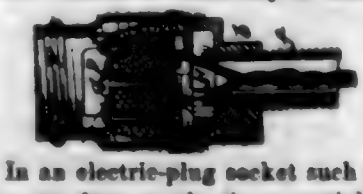
20. A gas-lamp comprising a gas-supplying conduit, a burner located in close proximity to the conduit whereby the latter is heated and the gas therein expanded, a Bunsen tube connected to deliver a mixture of gas and air to the burner, and an outlet connected to said conduit closely adjacent and approximately at the level of the burner and arranged to project a jet of gas into said tube.

21. In a lamp having a burner-support, burners and a globe inclosing said burners, a support for the globe comprising a member mounted on the burner-support having laterally-extending arms provided with upward projections, and a member of greater lateral extent than the arms of said first-named member adapted to be engaged with the lower edge of said globe and provided with inwardly-extending lugs arranged to be engaged with the ends of said arms, and to be disengaged therefrom by being raised and rotated a slight amount.

22. In a lamp having a burner-support, burners and a globe inclosing said burners, a support for the globe comprising a member mounted on the burner-support having laterally-extending arms provided with upward projections, and a ring greater in diameter than the lateral extent of said first-named member adapted to be engaged with the lower edge of said globe and provided with inwardly-extending lugs arranged to be engaged with the projections on the ends of said arms and to be disengaged therefrom by being raised and rotated a slight amount.

23. In a lamp having a central main support, a burner-support connected beneath the main support, and burners mounted on said burner-support, a member slidingly engaged with the main support above the burners and adapted to serve as a holder and guide for the upper portion of a globe, a globe inclosing the burners detachably connected to the said member, and a support for the globe comprising a clamp connected to the burner-support below the burners, arms extending therefrom and a ring engaged with the lower portion of said globe having inwardly-extending portions detachably engaged with said arms.

818,791. PLUG-SOCKET FOR ELECTRIC LAMPS, &c. FRANK J. RUSSELL, New York, N. Y. Filed July 12, 1906. Serial No. 326,434.



Claim.—1. In an electric-plug socket such as designated, the combination of a core of non-conducting material formed with a central longitudinal screw-hole having a flange partly surrounding its

outer end and terminating at its inner end in an angular recess in the back of the core, said core being also formed with longitudinal screw-holes parallel to the axial screw-hole and also opening into angular recesses formed in the back of the core, a central terminal-wire-binding screw passing through said axial screw-hole with its head within the said flange on the outer end of the core and its inner end engaging with a nut in the central angular recess, a metallic plug-holder formed with internal flanges and headed screws passing through said flanges and through the said parallel screw-holes in the core and engaging with nuts in the angular recesses formed in the back thereof, one of said last-mentioned screws constituting a binder for the terminal wire with which the said metallic plug-holder is connected, whereby the heads of all three screws are accessible through said plug-holder.

2. In an electric-plug socket such as designated, the combination of a core of non-metallic material formed with a central longitudinal screw-hole and two screw-holes parallel thereto, all three screw-holes terminating in angular recesses formed in the back of the core, said core being also formed with screw-holes parallel to the axis of the core whereby the latter may be secured to a base, and all of said screw-holes being accessible through the plug-socket, said plug-socket formed with internal flanges, headed screws passing through said flanges and the core and engaging nuts in the recesses at the rear of the core, one of said screws being utilized as a binder for the wire terminal with which the plug-socket is connected, and a central terminal-wire-binding screw passing through said axial screw-hole and engaging with a nut in the central recess formed in the back of the core, for the purpose described.

3. In an electric-plug socket such as designated, the combination of a plug-holder, a core of non-conducting material secured thereto, a base screw-holes formed in the core parallel to the longitudinal axis of the socket screws passing therethrough and securing the core to the base, said screws being accessible, through the plug-holder, and said base formed with female screw-threads for engagement with said securing-screws, for the purpose described.

4. In an electric-plug socket such as designated, the combination of a metallic plug-holder, a core of non-conducting material secured thereto, a base screw-holes formed in the core parallel to the longitudinal axis of the socket, said screw-holes being countersunk to receive and surround the heads of the screws, screws passing therethrough and securing the core to the base, said screws being accessible through the plug-holder, and said base formed with female screw-threads for engagement with said securing-screws, for the purpose described.

5. In an electric-plug socket such as designated the combination of a metallic plug-holder formed with internal flanges, a core of non-conducting material formed with holes parallel to the longitudinal axis of the socket, headed screws passing through said internal flanges on the metallic plug-holder and through two of said longitudinal holes in the core and engaging with nuts situated in recesses formed for their reception in the core, said nuts, a base, securing-screws passing through other of said longitudinal holes in the core and securing it to the base, all of said screws being accessible through the plug-holder, and said base formed with female screw-threads for engagement with said securing-screws, for the purpose described.

6. In an electric-plug socket such as designated the combination with a metallic plug-holder, of a core of non-metallic material formed with a longitudinal axial screw-hole, a headed terminal-wire-binding screw extending through said axial screw-hole in the core and a nut at the rear of the core with which said screw engages, whereby the head of said central screw is utilized to bind a wire terminal and as a contact for the plug, substantially as set forth.

7. In an electric plug such as designated, the combination with the metallic plug-holder, of a core of non-conducting material formed with a longitudinal axial screw-hole opening at the rear into an angular recess formed in the back of the core and having its front end surrounded in part by concentric annular flange formed on the face of the core, a terminal-wire-binding screw extending through said axial screw-hole and a nut in the said central recess with which said screw engages, for the purpose described.

8. In an electric-plug socket such as designated, the combination of a metallic plug-holder formed with internal flanges, a core of non-conducting material formed with holes parallel to the longitudinal axis of the socket, headed screws passing through said internal flanges on the metallic plug-holder and through two of said longitudinal holes in the core and engaging with nuts situated in recesses formed for their reception in the core, said nuts, a wire-terminal-binding screw passing through a longitudinal hole formed in the axis of the core between the plug-holder flanges, and a nut in a central recess in said core with which said central wire-terminal-binding screw engages, for the purpose described.

9. In an electric-plug socket such as designated, the combination of a metallic plug-holder formed with internal flanges, a core of non-conducting material formed with holes parallel to the longitudinal axis of the socket, headed screws passing through said internal flanges on the metallic plug-holder and through two of said longitudinal holes in the core and engaging with nuts situated in recesses formed for their reception in the core, said nuts, a wire-terminal-binding screw passing through a longitudinal hole formed in said core between the plug-holder flanges, a nut in a recess formed for its reception in said core with which said wire-terminal-binding screw engages, screws passing through other of said parallel longitudinal holes in the core and securing it to a base, and said base formed with female screw-threads for engagement with said securing-screws, for the purpose described.

10. In an electric-plug socket such as designated, the combination of a metallic plug-holder formed with internal flanges, a core of non-conducting material formed with holes parallel to the longitudinal axis of the socket, headed screws passing through said internal flanges on the metallic plug-holder and through two of said longitudinal holes in the core and engaging with nuts situated in recesses formed for their reception in the core, said nuts, a wire-terminal-binding screw passing through a longitudinal hole formed in the axis of said core, a nut in a central recess formed in said core with which said central wire-terminal-binding screw engages, screws passing through other of said parallel longitudinal holes in the core and securing it to a base, and said base formed with female screw-threads for engagement with said securing-screws, for the purpose described.

11. In an electric-plug socket such as designated, the combination with the plug-holder, of aicore of non-conducting material formed with screw-holes and wire-inlet holes extending longitudinally with relation to the axis of the socket and accessible through the plug-holder, together with the securing and binding screws, for the purpose described.

12. An electric-plug socket such as designated, formed with a metallic plug-holder, and with a wire-terminal-bindgin screw extending longitudinally with relation to the axis of the socket, said binding-screw being accessible through the said plug-holder and constituting a central contact for the plug inserted therein, for the purpose described.

13. An electric-plug socket such as designated, formed with a central wire-terminal and contact screw, a flanged plug-holder screwed to the core of insulating material, one of the screws by which the plug-holder is secured to the core constituting the other wire-terminal binder, and said core formed with a flange of insulating material interposed between the central contact and the flanges of the plug-holder for the purpose described.

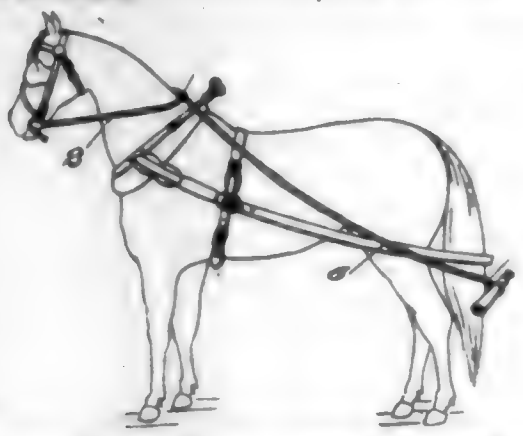
14. In an electric-plug socket substantially such as designated, the combination with the metallic plug-holder, and the core of insulating material formed with securing-screw holes parallel to the longitudinal axis of the socket and accessible through the plug-holder, of a sleeve formed with inwardly-projecting tongues fitting in between the core and the base to which the latter is secured together with said base, for the purpose described.

15. In an electric-plug socket substantially such as designated, the combination with the metallic plug-holder, and the core of insulating material formed with securing-screw holes parallel to the longitudinal axis of the socket and accessible through the plug-holder, of a sleeve formed with inwardly-projecting tongues fitting in between the core and the base to which the latter is secured, said core being formed with recesses for the reception of said tongues whereby the sleeve is locked in position for the purpose described together with said base.

16. In an electric-plug socket substantially such as designated, the combination with the plug-holder, core and sleeve, of a base for attachment to the screw-nipple of a fixture, said base being formed with a threaded shank for engagement with the fixture-nipple, the threaded shank being split transversely on one side to form a jaw which is threaded for engagement with a set-screw, together with said set-screw, for the purpose described.

17. In an electric-plug socket substantially such as designated, the combination with the plug-holder, core and sleeve, of a base for atachment to the screw-nipple of a fixture, said base being formed with a threaded shank for engagement with the fixture-nipple the threaded shank being split transversely on one side to form a jaw which is threaded for engagement with a set-screw, and said set-screw arranged with its head bearing against the inner surface of the base for the purpose described.

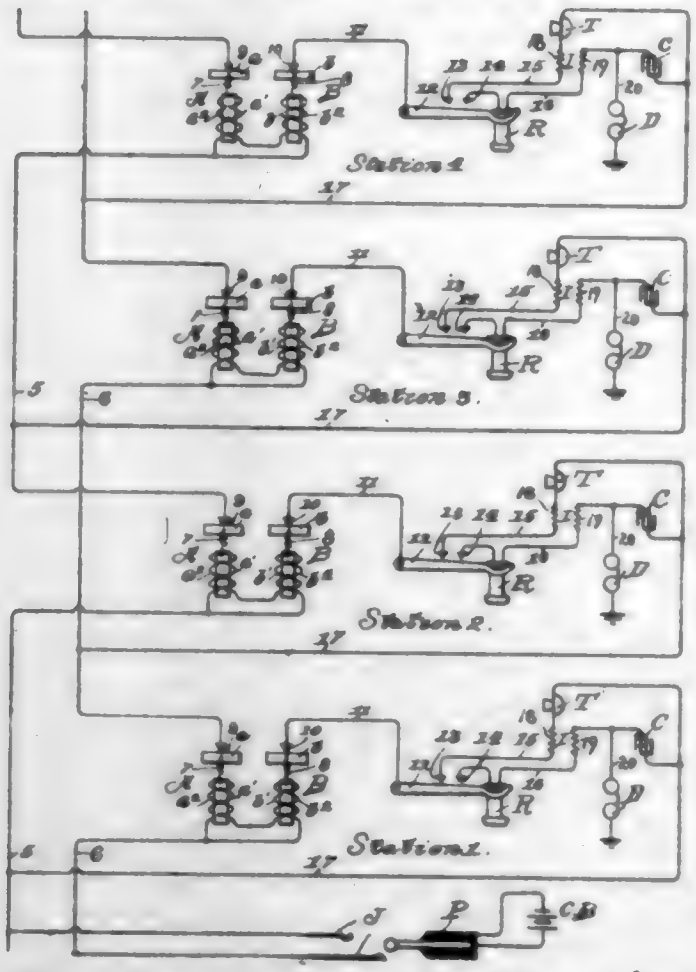
818,792. CHECK-BACK ATTACHMENT AND CLAMP FOR TEAMS. Theodore Schreiber, Davisville, Cal. Filed Sept. 2, 1905. Serial No. 276,819.



Claim.—1. A checking and restraining device for horses, said device consisting of the combination of a checkrein and a clamp adjustably fixed thereto and having a loop or attachment, and a line connecting with said clamp and extending diagonally rearward and connected to a portion of the draft apparatus.

2. A check and restraining device for horses, said device consisting of the combination with a checkrein of a U-shaped clamp adapted to fit and inclose the bight of the checkrein, a screw-shank passing through the sides of the clamp and the rein, said screw having an open loop or head, a single rein having one end attached to said loop and the other extending diagonally rearward and connected to a portion of the draft apparatus.

818,793. LOCK-OUT TELEPHONE SYSTEM. Louis A. Schmidt, Chicago, Ill. Filed Aug. 31, 1905. Serial No. 274,960.



Claim.—1. In a telephone system, a central station, parallel conductors therefrom, a plurality of normally open telephone sets bridged between said conductors, and in association with each such set means for controlling the continuity of a conductor therebeyond comprising a relay having its normally open armature arranged to control the continuity of the line, and having a winding in shunt between the said conductor and the bridge connections, whereby current flows therethrough in one direction to cause the attraction of the armature, and opening of the line therebeyond when the bridge is closed at such station, and in the other direction to leave the armature unattracted and the line closed when a circuit is completed at a point more remote from central station than such station referred to.

2. In a telephone system, a central source of current-supply, two conductors extending therefrom, a plurality of normally open telephone sets bridged between said conductors, and in association with each set, means for controlling the continuity of the normal bridge connections of such set comprising a relay having its armature arranged to control the bridge and to close the normal bridge connections, said relay having a winding in shunt between a line conductor at the bridge wherethrough current flows in one direction to cause the attraction of the armature and the opening of the bridge when the line-circuit is completed beyond such station, and to leave said armature unattracted when the bridge at such station is closed.

3. In a telephone system, a central station, line conductors leading therefrom, a plurality of normally open telephone sets bridged between said conductors, and at each subscriber's station means for controlling the continuity of the line beyond such station, and for controlling the continuity of the normal bridge connections of such station, such means comprising contact devices and relay-coils, said relay-coils being connected in shunt across the line and bridge conductors so that current-flow therethrough is in one direction, proper to actuate the contact devices to open the line and maintain the bridge closed when the bridge at such station is closed, and so that current-flow therethrough is in the opposite direction, suitable to open the bridge connection and maintain the line-contacts closed when the bridge at a station more remote from central is closed.

4. In a lock-out telephone system, a line conductor, a return-conductor, at each of a plurality of subscribers' stations a normally open bridge having associated therewith a telephone set including means for closing the normal opening of said bridge, a relay controlling the continuity of the line beyond the bridge, having opposite coils in parallel in the line and in series in the bridge, and a bridge-relay controlling the continuity of the normal bridge connection having opposing coils in series in the line and in parallel in the bridge.

5. In a telephone system, a central source of current-supply, line conductors extending therefrom, telephone sets at the respective subscribers' stations, and means at each station for automatically opening the bridge when a station therebeyond is conditioned for communication with central, and automatically opening the line therebeyond when such station is conditioned for communication with central, such means at each station comprising two relays controlling respectively the bridge and line connections, and each having coils wound to substantially neutralize each other in magnetic effect when a talking-circuit is completed through the connections which it controls.

6. In a lock-out telephone system, parallel line conductors and bridge telephone instruments, and at each subscriber's station a bridge-controlling relay and a line-controlling relay, each of said relays having two coils adapted when connected in parallel in a circuit to neutralize the relay-magnet, and when connected in series to energize the same, and each relay having also an armature connected to a point between the coils of the relay, said relay-coils being arranged in series in a loop connected at a proper point with a line conductor, the contact of one relay-armature being also connected with the same line conductor, whereby the line-circuit is established through the armature of said relay, and the contact-point of the armature of the remaining relay being connected through the telephone instruments with the opposite line conductor, whereby the bridge-circuit is established through the armature of said relay.

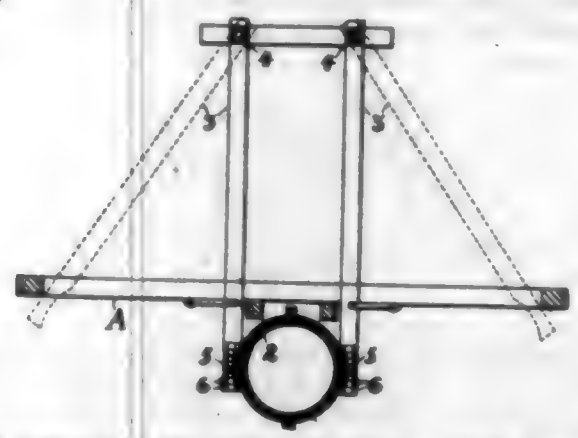
7. In a telephone system, a central station, line conductors extending therefrom, normally open bridged telephone sets, and in conjunction with each set electromagnetic devices controlling the continuity of the bridge and line connections, such devices being wound and connected for the passage of current through coils thereof in one direction when the bridge connections of such stations are closed, and for the passage of current therethrough in the opposite direction when the bridge connections at a station more remote than central are closed, a contact-bearing armature in the line arranged to respond to the magnetic conditions produced by current-flow through the bridge of such station to open the line therebeyond, and a contact-bearing armature arranged to respond only to the magnetic conditions produced by current-flow through the line therebeyond to open the bridge.

818,794. PILE AND LIKE CLAMP. Phil Sheridan, Berkeley, Cal. Filed June 19, 1905. Serial No. 265,926.

Claim.—1. A device for guiding and steadying piles while being driven, said device comprising a framework, clamps pivoted to the framework and closable horizontally to clasp the lower part of the pile, and members on the framework movable into contact with the closed clamps and holding said clamps against outward movement.

2. A device for guiding piles to be driven, said device compris-

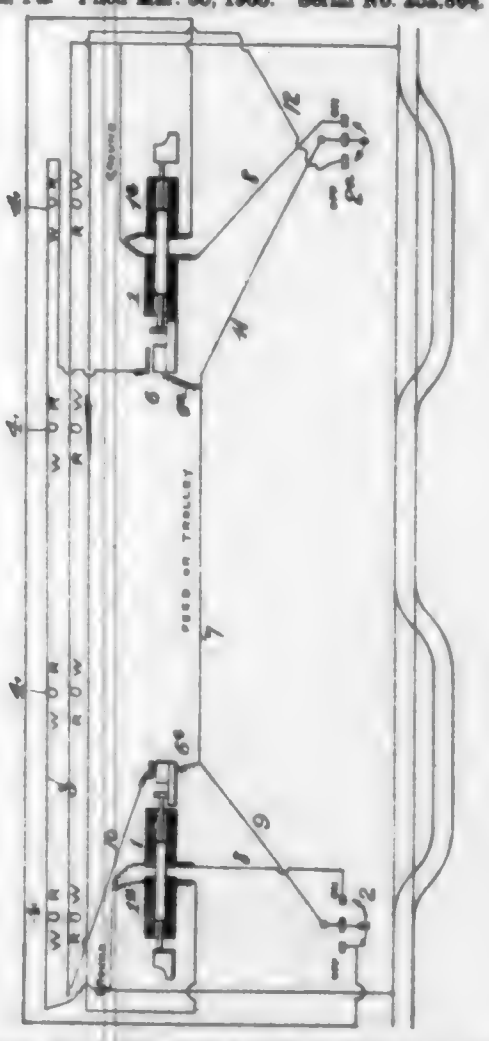
ing timbers pivoted to open and close horizontally with relation to the pile, said timbers having their inner guide-faces of contact made concaved, and pawls or stops engaging the clamps to hold them in position.



3. A device for guiding piles to be driven, said device comprising pivoted horizontally-movable clamping-timbers, having the inner guide-surfaces made concave, metal strips bolted to the timbers forming shoes for the concaved surfaces, and pawls or stops to retain the timbers in position.

4. In a device for guiding piles to be driven, pivoted horizontally opening and closing clamping-timbers having concaved faces adapted to fit about the sides of the pile, metal strips forming shoes for the concavities of the clamps, said strips having their contact-faces made convexed in vertical section, and pivoted pawls or stops having notches adapted to engage the outer edges of the clamps between the timbers to hold them in position.

818,795. RAILWAY SIGNALING DEVICE. CHARLES H. SMITH, Lebanon, Pa. Filed Mar. 30, 1905. Serial No. 252,864.



Claim.—1. In an electrical signaling apparatus, a pair of solenoids having a common axially-movable core or armature, means electrically connecting the solenoids and the armature-contacting points with signaling devices, and means for manually controlling the action of the aforesaid parts.

2. In an electrical signaling apparatus, a pair of solenoids having a common axially-movable core or armature, a set of signaling-lamps, means electrically connecting said solenoids and armature-contacting points with said signaling-lamps, and means for manually controlling the action of the aforesaid parts.

3. In an electrical signaling apparatus, pairs of solenoids, each pair having a common axially-movable core or armature, two sets of signaling-lamps effective in opposite directions, means electrically connecting said pairs of solenoids and the armature-contacting points with said sets of lamps, and means for manually controlling the action of the aforesaid parts.

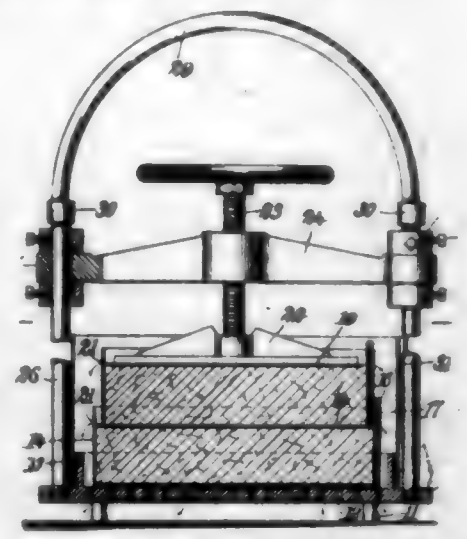
4. In electrical signaling apparatus, a pair of solenoids having a common axially-movable core or armature, a set of signaling devices, a trolley-feed wire, means electrically connecting said solenoids and the armature-contacting points with said trolley-feed wire, and means for manually controlling the aforesaid parts.

5. In a signaling apparatus of the character described, a solenoid having an axially-movable core or armature itself carrying a movable conductor, retaining contact-springs engaging the latter, signal-displaying means and an electrical circuit including therein said solenoid, said signaling means, said conductor, and said contact-springs, said movable conductor adapted to be acted upon by said core or armature in effecting its disengagement from said contact-springs.

6. In electrical signaling apparatus, a pair of solenoids having a common axially-movable core or armature, a set of signaling devices, a trolley-feed wire connecting with said signaling devices, said solenoids and the armature-contacting points, a manually-actuated switch, and means electrically connecting said switch, solenoids, and armature-contacting points.

7. In electrical signaling apparatus, a pair of solenoids having a common axially-movable core or armature, a set of signaling devices, a contact-point equipped with springs, said armature or core having a movable or sliding conductor and a headed end effective to engage said conductor when grasped by or in engagement with the springs of said contact-point and thus insure the instant disengagement of said conductor from the latter, means electrically connecting said solenoids, the armature-contacting point and said signaling devices, and means for manually controlling the action of the aforesaid parts.

818,796. HAND-PRESS. JACOB SPENGLER, Great Falls, Mont. Filed Sept. 27, 1905. Serial No. 280,309.

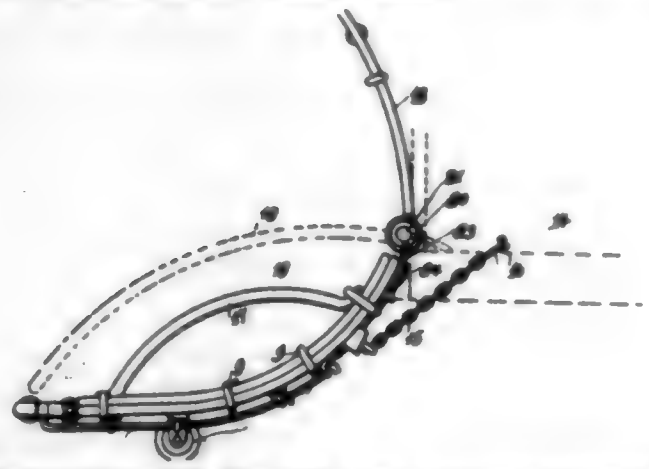


Claim.—1. A press having a perforated base provided with an upwardly-extending flange forming a receptacle, in combination with a series of boxes mounted one above another in said receptacle, for containing the material to be compressed, a series of perforated plates located between the several boxes, and means supported by the base for exerting a pressure on the material in the boxes; each of said boxes comprising side walls removably connected together at two opposite corners, said side walls being perforated near their upper edges.

2. A press having a series of boxes each provided with means for removably connecting the walls together at two opposite corners and each having a block in each of the remaining corners provided with a reëntrant angle for receiving the corner of a smaller box placed above, a series of perforated plates located between the several boxes, and adjustable means for exerting pressure.

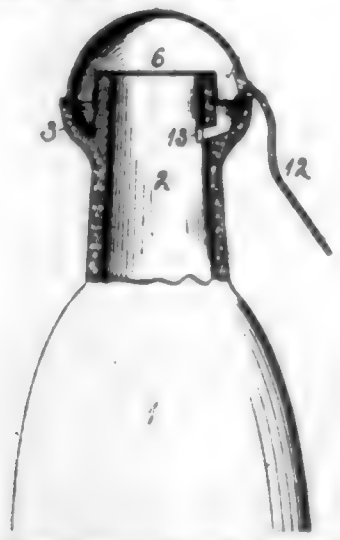
3. A press having a perforated base provided with an upwardly-extending flange forming a receptacle, in combination with a series of boxes mounted one above another in said receptacle, for containing the material to be compressed, a series of perforated plates located between the several boxes, means supported by the base for exerting a pressure on the material in the boxes, each of said boxes comprising side walls removably connected together at two opposite corners, said side walls being perforated near their upper edges, and a receptacle mounted outside of said flange for receiving and holding ice on the exterior of said boxes.

818,797. **FENDER.** JOHN STAWARTS, Homestead, Pa., assignor of one-fourth to James J. Casey and one-fourth to A. J. Kuhn, Homestead, Pa. Filed Aug. 16, 1905. Serial No. 274,417.



Claim.—The combination with a car, of a curved framework supported in front of said car, resilient material mounted upon said framework, curved bars carried by the sides of said framework, a spring-actuated auxiliary frame carried by said car, resilient material carried by said auxiliary frame, an actuating-frame mounted upon the first-named frame and adapted to normally hold said auxiliary frame in an elevated position, means to release said auxiliary frame, means to support the first-named frame, substantially as described.

818,798. **BOTTLE-CLOSURE.** EDWARD TAYLOR, Rockford, Ill. Filed Nov. 7, 1905. Serial No. 286,179.



Claim.—1. A bottle provided with a receptacle formed around the upper portion of its neck, and a cover having a hinge connection with the neck above the receptacle.

2. A bottle provided with a receptacle formed around the upper portion of its neck, a band secured to the neck above the receptacle, and a cover having a hinge connection with the band.

3. A bottle provided with a receptacle formed around the upper portion of its neck, a cap secured to the neck above the receptacle, and a cover having a hinge connection with the cap.

4. A bottle provided with a receptacle formed around the upper portion of its neck, the upper portion of the receptacle formed with an annular recess, and a cover having a hinge connection with the neck.

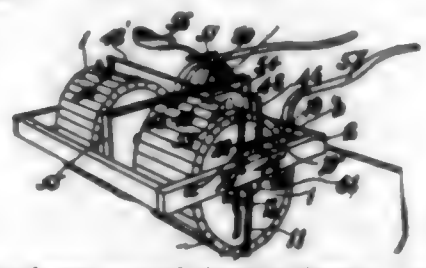
5. A bottle provided with a receptacle formed around the upper portion of its neck, a band secured to the neck above the receptacle, a portion of the band turned outward forming a section of a hinge-joint, and a cover having a hinge connection with the hinge-section.

818,799. **PLANTER.** JUDAH N. TAYLOR, Tolueca, Cal. Filed Jan. 3, 1906. Serial No. 295,056.

Claim.—1. A roller having a seed-chamber therein, a dropping-slide adapted to deliver seed through the periphery of said roller, an arm operatively connected with said slide, said arm extending across an end of said roller and moving therewith, and stationary operating means for said arm carried by said frame.

2. A roller having a seed-chamber therein, a dropping-slide adapted to deliver seed through the periphery of said roller and an arm operatively connected with said slide, said arm extending across an end of said roller and moving therewith, and automatic operating means for said arm.

3. In combination, a frame, a roller having a seed-chamber therein, and a dropping device adapted to deliver seed through the periphery of said roller, said dropping device including an operating-arm extending across the end of said roller and pivoted thereto, and a beveled lug mounted on the frame in the path of said arm to operate the same.



4. A roller having a seed-chamber therein, a seed-valve in the periphery of said roller, a plunger having a pocket adapted to receive seed from said valve, said plunger being provided with a movable jaw to discharge seed therefrom, a pivoted arm extending across the end of said roller and moving therewith, a frame, and a beveled lug mounted on said frame in the path of said lever to swing the same.

5. In a planter, a roller having a seed-chamber therein and a dropping device at one end, said roller having peripheral walls increasing in thickness from the end at which the dropping device is located toward the other end.

6. A planter provided with a roller having a seed-chamber therein, and a seed-dropping device for discharging seed from one end of said chamber, said chamber being of greater interior diameter at the end where the seed-dropping device is located than at the other end.

7. In a planter, a roller having a seed-chamber therein, a seed-valve in the periphery of said roller, a plunger having a pocket therein adapted to receive seed from said valve, an arm carried by said roller and pivoted thereto, said arm being adapted to move said valve and open said plunger, a frame, and means carried by said frame for actuating said arm.

8. In a planter, a roller having a seed-chamber therein, a seed-valve in the periphery of said roller, a plunger having a pocket therein adapted to receive seed from said valve, an arm carried by said roller and pivoted thereto, said arm being adapted to move said valve and open said plunger, a frame, and a beveled lug carried by said frame for actuating said arm.

9. In a planter, a roller having a seed-chamber therein, a seed-valve in the periphery of said roller, a plunger having a pocket therein adapted to receive seed from said valve, an arm carried by said roller and pivoted thereto, said arm being adapted to move said valve and open said plunger, a beveled bracket hinged to said frame, and means for swinging said bracket into and out of the path of said arm.

10. In a planter, a roller having a seed-chamber therein, a seed-valve in the periphery of said roller, a plunger having a pocket therein adapted to receive seed from said valve, an arm carried by said roller and pivoted thereto, said arm being adapted to move said valve and open said plunger, a frame, means carried by said frame for actuating said arm in one direction, and resilient means for restoring said valve and plunger to the normal position.

11. In a planter, a frame, a supporting-shaft therefor and a roller mounted on said shaft provided with a seed-chamber therein and inclosed by said frame, a dropping device adapted to deliver seed from said roller, an arm extending across, moving with and pivoted to said roller to operate said device, a beveled bracket mounted on the end of said frame above the shaft and means extending inwardly from the top of the roller for moving said brackets into and out of the path of said arm.

12. In a planter, a frame, a supporting-shaft therefor, a pair of rollers on said shaft provided with seed-chambers therein and inclosed by said frame, a dropping device adapted to deliver seed from each roller, an arm extending across and moving with and pivoted to each roller to operate said device, beveled brackets mounted on each end of said frame above the shaft, and means extending inwardly over the top of each roller for moving said brackets into and out of the paths of said arms.

13. In a planter; a frame; a supporting-shaft therefor; a roller mounted on said shaft having a seed-chamber therein; a seed-dropping device adapted to deliver seed through the periphery of said roller, said device comprising a dropping-slide and arm for operating the same, and a plunger adapted to receive seed from said slide and provided with a movable jaw and arm for operating the same; an arm extending across the end of the roller pivoted thereto and moving therewith, said last-named arm being connected with said first-named arms to simultaneously operate the same; and a lug mounted

on the frame in the path of the arm which extends across the end of the roller to operate the same.

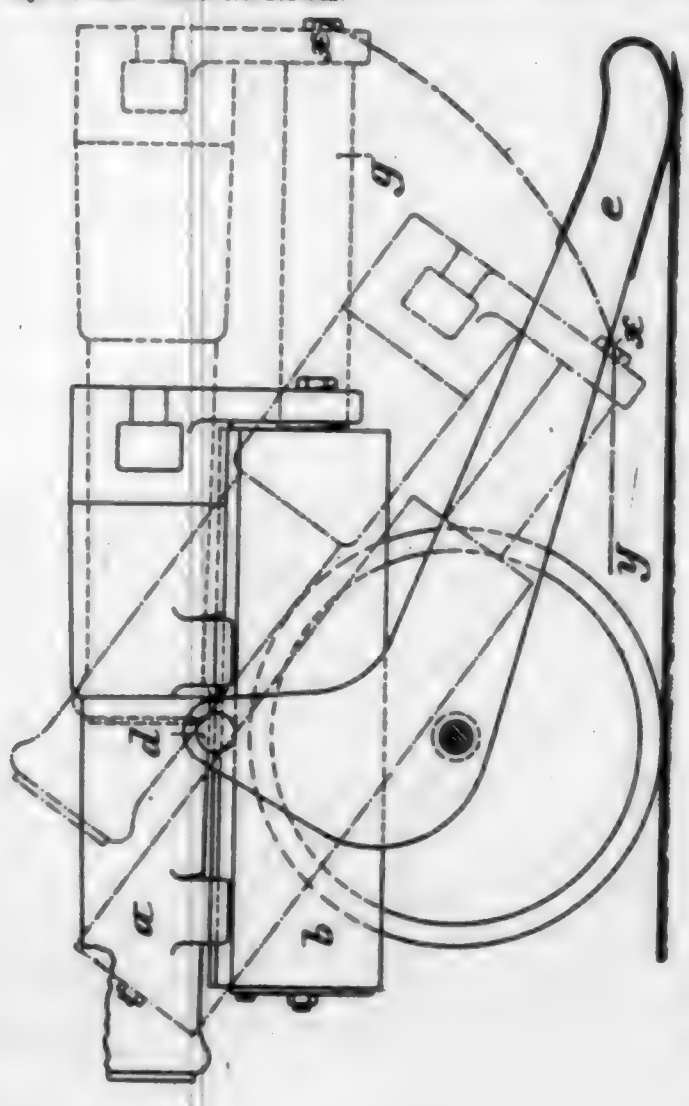
14. In a planter, a frame, a supporting-shaft therefor, a roller mounted on said shaft having a seed-chamber therein, a seed-dropping slide in the periphery of said roller, said slide having a slot therethrough, a portion of which is adapted to form a seed-pocket, a block adjustable along said slot to increase and diminish the size of said pocket, a hollow rod extending to the end of the roller for operating the slide, an adjusting-rod extending from the block through said hollow rod to the end of the roller for adjusting said block, an adjusting-nut inside said hollow rod and having a screw-threaded engagement with said adjusting-rod and accessible at the end of the roller, and means for automatically reciprocating said hollow rod.

818,800. RAILWAY STRUCTURE. EDWIN S. THOMAS, Fairfield, Iowa. Filed Feb. 14, 1906. Serial No. 301,026.



Claim.—In a railway structure, a railway-joint made up of two abutting rails each having a body portion comprising a top and a base connected by a web, and projecting from said body portion a lengthwise-extending rail extension formed at one end with a mortise in one of its outer faces and with a shoulder into which fits the extremity of the coöperating rail extension, and at its other end with a longitudinally-projecting tenon which fits into the mortise formed in the coöperating rail extension; said mortise-and-tenon connection serving to resist shearing stress and prevent relative vertical movement between the coöperating rail extensions; the outer side faces of the rail extensions lying in a vertical plane through the edges of the top of the body portion and the opposed inner side faces of the rail extensions lying in a vertical plane through the central line of the web, said rail extensions having each a thickness equal to half the width of the top of the body portion and a flange projecting outwardly from the outer side faces along the base; and the top of the rail extensions lying in prolongation of the top of the body portion of the rail.

818,801. AUTOMATIC BRAKE FOR TUBE RECOIL-GUNS. KARL VÖLLER, Düsseldorf, Germany, assignor to Rheinische Metallwaren-und-Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed Apr. 7, 1904. Serial No. 202,042.



Claim.—1. The combination, with a gun mounted for movement through different angles of elevation, and a device for regulating the recoil of the gun, of means actuated by the angular movement of the gun and arranged to shorten the recoil in varying ratio to the angular movement of the gun.

2. The combination, with a gun mounted for movement through different angles of elevation, and a device for regulating the recoil of the gun, of a variable-movement transmission device arranged to transmit the angular movement of the gun in varying ratio to the recoil-regulating device, whereby the recoil of the gun is varied otherwise than directly proportional to the change in the angle of elevation of the gun.

3. The combination, with a gun-carriage and a gun mounted thereon and adjustable to different angles of elevation, of a recoil device arranged to check the recoil of the gun, means for shortening the length of recoil of the recoil device, and a cam device having a curved operative surface arranged to adjust said means.

4. The combination, with a gun-carriage and a gun mounted thereon and adjustable to different angles of elevation, of a recoil device arranged to check the recoil of the gun, a cam device having a curved operative surface and means for shortening the length of recoil of the recoil device, said means being movable with relation to and arranged to be adjusted by the cam device.

818,802. DUST-CAP AND SOLAR EYEPIECE FOR TELESCOPES. FRANKLIN B. WARNER, New York, N. Y. Filed Dec. 19, 1905. Serial No. 292,413.



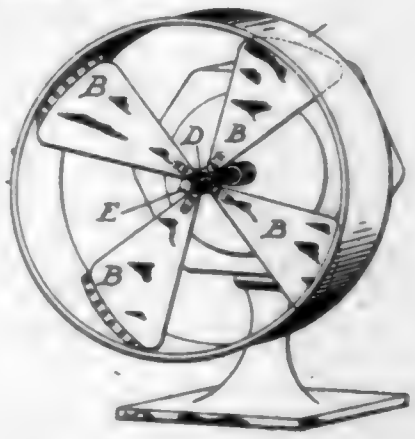
Claim.—For a telescope, a cap for the eye end, the said cap having a reëntrant portion, and a central outwardly-extended tubular member, and a colored lens in said tubular member.

818,803. FOUNTAIN-PEN. OTTO E. WEIDLICH, Norwood, Ohio. Filed June 8, 1905. Serial No. 264,251.



Claim.—A fountain-pen comprising a barrel having a finger-opening in its wall and having, adjacent to said opening, an enlarged screw-threaded portion, a compressible ink-reservoir in the barrel and provided with a metal strip extended along it with a central part exposed at the finger-opening of the barrel, and a sleeve one end of which has screw connection with the screw-threaded enlargement of the barrel, said sleeve having an opening adapted, when the sleeve is turned on its screw connection, to be moved in and out of registry with the opening in the barrel.

818,804. FAN. CHARLES F. WINCH, New York, N. Y. Filed Sept. 10, 1904. Serial No. 223,947.

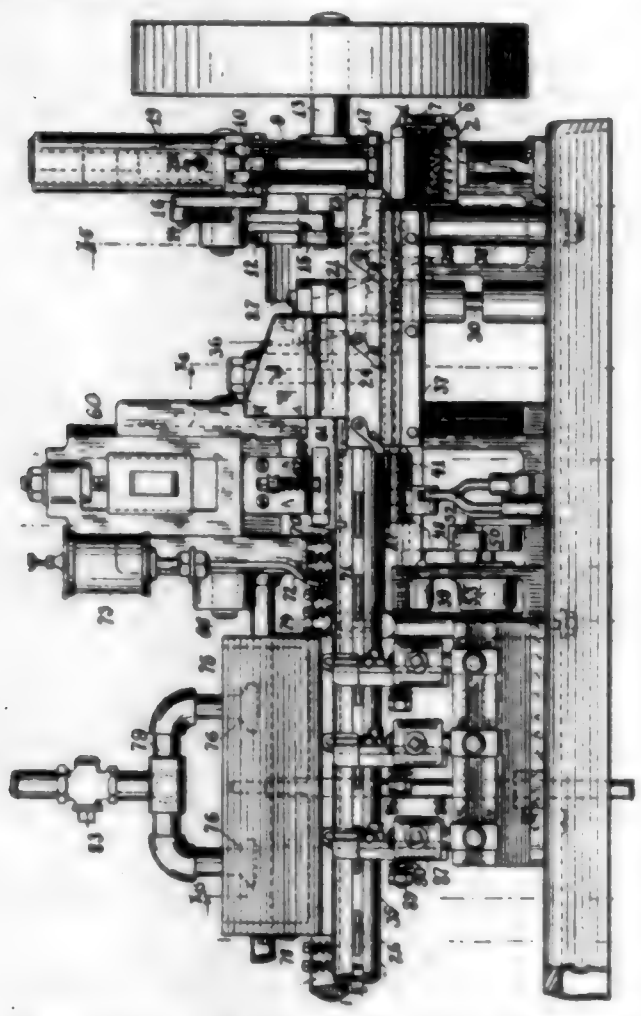


Claim.—1. In a rotary fan, the combination of blades or spokes of flexible material, and a continuous metal band forming a rim by which the spokes are permanently distended, as and for the purpose described.

2. In a rotary fan, the combination of a continuous hoop or band forming a wheel-rim and fan-blades of flexible material forming tension-spokes of said wheel.

818,805. CAN-MAKING MACHINE. BENJAMIN ADRIANCE and AMOS CALLESON, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Filed Apr. 1, 1903. Serial No. 151,003.

Claim.—1. The combination of a pick-up mechanism for sheet-metal blanks, a support for a pile of blanks under the pick-up mechanism, guides for the pile of blanks on the support, a support for a reserve pile of blanks at the side of the other support, a passage-way between the supports, and a latch in the passage-way, which latch forms one of the guides.



2. The combination of a pick-up mechanism for sheet-metal blanks, a support for the pile of blanks under the pick-up mechanism, guides for the pile of blanks on the support, a support for a reserve pile of blanks at the side of the other support and on a higher level, and a stepped passage-way between the supports.

3. The combination of a pick-up mechanism for sheet-metal blanks, a support for the pile of blanks under the pick-up mechanism, guides for the pile of blanks on the support, a support for a reserve pile of blanks at the side of the other support and on a higher level, a stepped passage-way between the supports, and a latch in the passage-way, which latch forms one of the guides.

4. The combination of a pick-up mechanism for sheet-metal blanks, consisting of devices for seizing the blanks, means for lifting and lowering the pick-up mechanism, a stop for the blanks slightly below the level of the points of contact of the pick-up devices in their raised position, and means for removing the blanks from the pick-up devices.

5. The combination of a pick-up mechanism for sheet-metal blanks consisting of magnets, means for lifting and lowering the magnets, an air-cushion for regulating the approach of the magnets to the blanks, and an adjustable vent for the air-cushion.

6. The combination of a horn, a clamping-bar for clamping sheet-metal body-blanks in contact with the horn, guides for the blanks supported by the clamping-bar, means for operating the clamping-bar, and means for forming can-bodies on the horn.

7. The combination of a horn, a clamping-bar for clamping sheet-metal body-blanks in contact with the horn, curved forming-dies hinged to the clamping-bar, and means for operating the clamping-bar and forming-dies for forming can-bodies on the horn.

8. The combination of a horn, a clamping-bar for clamping sheet-metal body-blanks in contact with the horn, guides for the blanks supported by the clamping-bar, curved forming-dies hinged to the clamping-bar, and means for operating the clamping-bar and forming-dies for forming can-bodies on the horn.

9. The combination of a horn, curved forming-dies, hinged supports for the forming-dies, links connected to the forming-dies, a lever to which the links from both dies are connected, the arrangement of the parts being such that the fulcrum of the lever will be approximately on a projection of a right line passing through the ends of the link connected to one of the dies when the dies are closed around the horn, and the fulcrum of the lever will be approximately on a right line passing through and between the ends of the link connected to the other die when the dies are open, and means for operating the lever.

10. The combination of a horn, curved forming-dies, hinged supports for the forming-dies, links connected to the forming-dies, a lever, a common point on the lever to which the links from both dies are connected, the arrangement of the parts being such that the fulcrum of the lever will be approximately on a projection of a right line passing through the ends of the link connected to one of the dies when the dies are closed around the horn, and the fulcrum of the lever will be approximately on a right line passing through and between the ends of the link connected to the other die when the dies are open, and means for operating the lever.

11. The combination of a horn, a clamping-bar for clamping sheet-metal body-blanks in contact with the horn, curved forming-dies, hinged supports for the forming-dies, links connected to the forming-dies, a cam for operating the clamping-bar and a lever to which the links from both dies are connected, the cam and lever being rigidly connected and mounted on a common pivot, and means for operating the cam and lever.

12. The combination of a horn, a clamping-bar for clamping sheet-metal body-blanks in contact with the horn, curved forming-dies, hinged supports for the forming-dies, links connected to the forming-dies, a cam for operating the clamping-bar, a gear-segment integral with the cam, a lever to which the links from both dies are connected, the cam, gear-segment and lever being rigidly connected and mounted on a common pivot, and means for operating the gear-segment.

13. The combination of a horn, curved forming-dies, hinged supports for the forming-dies, guiding-lugs on the forming-dies, and means for operating the forming-dies for forming can-bodies on the horn.

14. The combination of a horn, a longitudinal groove in the horn, means for folding sheet-metal blanks around the horn and lapping the ends over the groove in the horn, a punch for forming matching beads and grooves in the lapped ends, a confining-piece for the lapped ends supported by the punch, a spring for holding the confining-piece in contact with the lapped ends when the punch is withdrawn, and means for feeding the formed can-bodies along the horn.

15. The combination of a horn, means for forming sheet-metal blanks around the horn and lapping the ends over the horn, a punch for forming matching beads and grooves in the lapped ends, a longitudinal guiding-groove for the formed can-bodies, soldering devices adjoining the horn for the formed can-bodies, means adjoining the guiding-groove and between the punch and soldering devices for confining the lapped ends against the horn, and means for feeding the formed can-bodies along the horn between the punch and soldering devices.

16. The combination of a horn, a longitudinal groove in the horn, means for forming sheet-metal blanks around the horn and lapping the ends over the groove in the horn, a punch for forming matching beads and grooves in the lapped ends, soldering devices adjoining the horn for the formed can-bodies, means adjoining the groove in the horn and between the punch and soldering devices for confining the lapped ends against the horn, and means for feeding the formed can-bodies along the horn between the punch and soldering devices.

17. The combination of a horn, a longitudinal groove in the horn, means for forming sheet-metal blanks around the horn and lapping the ends over the groove in the horn, a punch for forming matching beads and grooves in the lapped ends, soldering devices adjoining the horn for the formed can-bodies, a series of confining-fingers adjoining the groove in the horn and between the punch and soldering devices, and means for feeding the formed can-bodies along the horn between the punch and soldering devices.

18. The combination of a horn for receiving formed can-bodies with lapped ends, a longitudinal guiding-groove for both lapped ends, means adjoining the guiding-groove for confining the lapped ends against the horn, soldering devices adjoining the horn for soldering the formed can-bodies, and means for feeding the formed can-bodies along the horn past the soldering devices.

19. In a machine for soldering the side seams of can-bodies with lapped ends bent to lie together but not locked, the lapped ends having matching beads and grooves and the inner lapped end of each can-body having an inwardly-projecting bead, the combination of a horn, a longitudinal guiding and holding groove in the horn for receiving the matching beads and grooves of the can-bodies, a pres-

sure member adjoining the groove in the horn for holding the matching beads and grooves of the can-bodies in the guiding and holding groove of the horn, soldering devices adjoining the horn for soldering the side seams of the formed can-bodies, and means for feeding the formed can-bodies along the horn past the soldering devices.

20. In a machine for soldering the side seams of can-bodies with lapped ends bent to lie together but not locked, the lapped ends having matching beads and grooves and the inner lapped end of each can-body having an inwardly-projecting bead, the combination of a horn, a longitudinal guiding and holding groove in the horn for receiving the matching beads and grooves of the can-bodies, a series of confining-fingers adjoining the groove in the horn for holding the matching beads and grooves of the can-bodies in the guiding and holding groove of the horn, soldering devices adjoining the horn for soldering the side seams of the formed can-bodies, and means for feeding the formed can-bodies along the horn past the soldering devices.

21. The combination of a horn, means for forming can-bodies around the horn, a soldering device, a longitudinally-adjustable solder-feeding device and a support on which the solder-feeding device is adjustable parallel with the horn, and means for feeding can-bodies along the horn.

22. The combination of a horn for receiving can-bodies, a soldering device, a plurality of longitudinally-adjustable solder-feeding devices and a support on which the solder-feeding devices are independently adjustable parallel with the horn, and means for feeding can-bodies along the horn.

23. The combination of a horn, means for forming can-bodies around the horn, a soldering device, a plurality of longitudinally-adjustable solder-feeding devices and a support on which the solder-feeding devices are independently adjustable parallel with the horn, and means for feeding can-bodies along the horn.

24. A solder-feeding device consisting of a reciprocating part, jaws carried by the reciprocating part, one of which is movable with respect to the reciprocating part, means for adjusting the amount of opening of the jaws, and means applied to the movable jaw for operating successively the jaws and reciprocating part.

25. A solder-feeding device consisting of a lever, a pair of jaws carried by the lever, one of which is movable with respect to the lever, means for adjusting the amount of opening of the jaws, and means applied to the movable jaw for operating successively the jaws and the lever.

26. The herein-described coöperating parts consisting of a chuck for holding a can-body and a device for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with separate means for vibrating one of the coöperating parts along two axes at right angles to the axes of the coöperating parts without rotating either coöperating part.

27. The herein-described coöperating parts consisting of a chuck for holding a can-body and a device for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part, and means for preventing the bodily rotation of both coöperating parts.

28. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with means for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part, and means for preventing the bodily rotation of both coöperating parts.

29. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn provided with means for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part, means for preventing the bodily rotation of both coöperating parts, and means for forming can-bodies from can-body blanks around the horn and forming the seams thereof.

30. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with flanging-shoulders and a recess between the shoulders, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

31. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with flanging-shoulders, a recess between the shoulders and a suitably-supported cushion-sleeve located within the recess, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

32. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with flanging-shoulders, a recess between the shoulders, a cushion-sleeve located within the recess, and spring-supports between the recess in the horn and the sleeve, the axes of the coöperating parts being normally coincident, in combination with means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

33. The herein-described coöperating parts consisting of a chuck for holding a can-body and a device for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with means for closing the chuck and means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

34. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with means for flanging the end of the can-body, the axes of the coöperating parts being normally coincident, in combination with means for closing the chuck and means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

35. The herein-described coöperating parts consisting of a chuck for holding a can-body and a horn for receiving the can-body provided with flanging-shoulders, a recess between the shoulders and a suitably-supported cushion-sleeve located within the recess, the axes of the coöperating parts being normally coincident, in combination with means for closing the chuck and means for imparting a circular vibratory motion to one of the coöperating parts shifting its axis about the axis of the other part.

36. A suitably-supported horn for receiving can-bodies which is provided with two facing peripheral flanging-shoulders located between the point of support for the horn and its free end, and means for forcing the can-bodies between the flanging-shoulders.

37. A suitably-supported horn for receiving can-bodies which is provided with two facing peripheral flanging-shoulders and a recess between the shoulders, all of which are located between the point of support for the horn and its free end, and means for forcing the can-bodies between the flanging-shoulders.

38. A suitably-supported horn for receiving can-bodies which is provided with two facing peripheral flanging-shoulders, a recess between the shoulders and a suitably-mounted cushion-sleeve located within the recess, all of which are located between the point of support for the horn and its free end, and means for forcing the can-bodies between the flanging-shoulders.

39. A suitably-supported horn for receiving can-bodies which is provided with two facing peripheral flanging-shoulders, a recess between the shoulders, and a suitably-mounted cushion-sleeve located within the recess and between the shoulders, all of which are located between the point of support for the horn and its free end, and means for forcing the can-bodies between the flanging-shoulders.

40. A horn for receiving can-bodies provided with flanging-shoulders, a recess between the shoulders, a suitably-mounted cushion-sleeve located within the recess, and confined between the shoulders against longitudinal movement.

41. A chuck for receiving can-bodies and simultaneously engaging all parts of the periphery of a can-body, and separate means for vibrating the chuck along two axes at right angles to the axis of the chuck.

42. A chuck for receiving can-bodies and simultaneously engaging all parts of the periphery of a can-body, and separate means for vibrating the chuck along two axes at right angles to each other and at right angles to the axis of the chuck.

43. A chuck for receiving can-bodies and simultaneously engaging all parts of the periphery of a can-body, and separate cams for vibrating the chuck along two axes at right angles to each other and at right angles to the axis of the chuck.

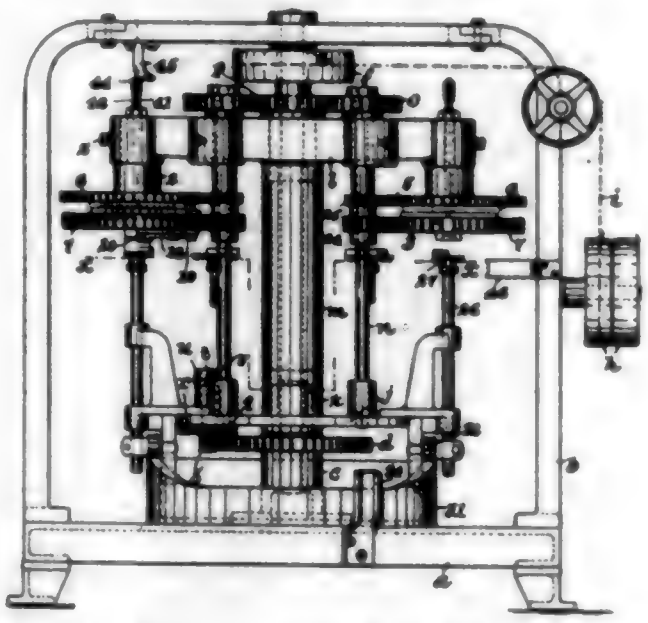
44. A chuck for receiving can-bodies, means for imparting a circular vibratory motion to the chuck, gaging-fingers supported by the chuck and means for setting the gaging-fingers.

45. A chuck for receiving can-bodies, in combination with means for closing the chuck, and means for imparting a circular vi-

bratory motion to the chuck shifting its axis without rotating the chuck.

46. A chuck for receiving can-bodies in combination with means for closing the chuck, means for imparting a circular vibratory motion to the chuck, gaging-fingers supported by the chuck, and means for setting the gaging-fingers.

818,806. CAN-HEADING MACHINE. BENJAMIN ADRIANCE and AMOS CALLESON, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Filed Oct. 24, 1903. Serial No. 178,280.



Claim.—1. In a machine for producing lock-joints between the component parts of sheet-metal vessels, the combination, with the frame, of a rotary structure, a plurality of joint-forming means each movable with and in said structure, means for holding the parts to be jointed while being operated upon, a source of power, and means, operatively connecting said source of power with the joint-forming means, for causing said joint-forming means to operatively engage and rotate about the work, substantially as described.

2. In a machine for producing lock-joints between the component parts of sheet-metal vessels, the combination, with the frame, of a rotary structure, a plurality of joint-forming means each movable with and in said structure, means for holding the parts to be jointed while being operated upon, a source of power, and means, movable with and in said structure and operatively connecting said source of power with the joint-forming means, for causing said joint-forming means to operatively engage and rotate about the work, substantially as described.

3. In a machine for producing lock-joints between the component parts of sheet-metal vessels, the combination, with the frame, of a rotary structure, a plurality of joint-forming means each movable with and in said structure, means for holding the parts to be jointed while being operated upon, a drive-shaft journaled in said frame and constituting the axis of said structure, and means, operatively connecting said shaft with the joint-forming means, for causing said joint-forming means to operatively engage and rotate about the work, substantially as described.

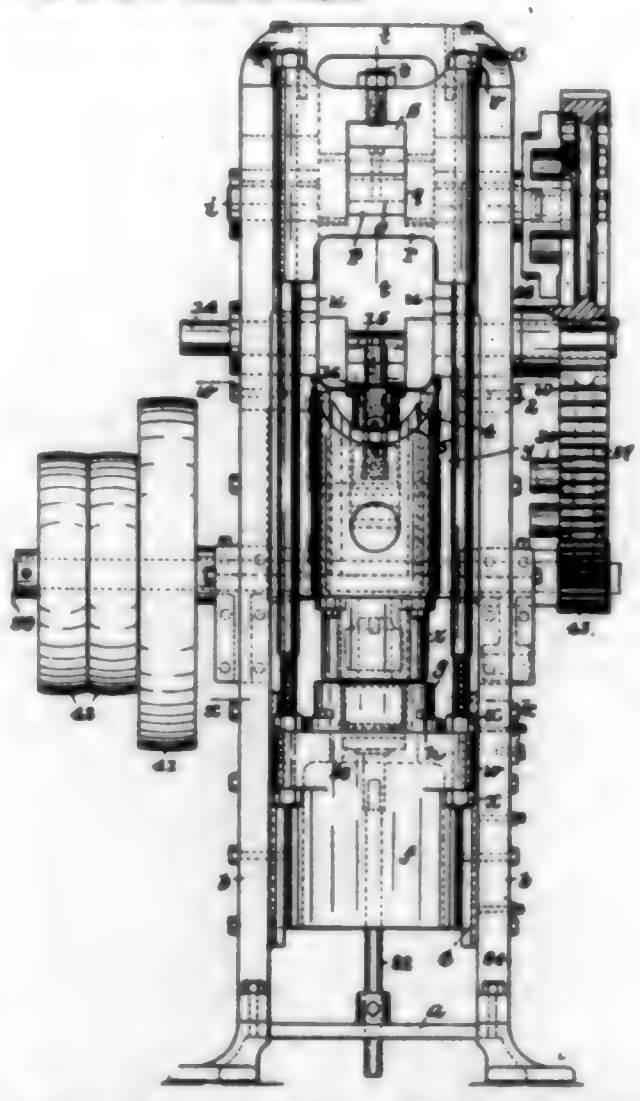
4. In a machine for producing a lock-joint between the component parts of a sheet-metal vessel, the combination, with the joint-forming means, of a stationary holding means forming a part of the supply for the can parts to be operated upon, and another holding means movable past the first and adapted to hold said can parts while being operated upon, said last-named holding means having a part movable through the space occupied by the can parts when on said first-named holding means, substantially as described.

5. In a machine for producing lock-joints between the component parts of sheet-metal vessels, the combination, with the frame, of a rotary structure, a plurality of joint-forming means each movable with said structure, means for holding the parts to be jointed while being operated upon, a rotary source of power, power-transmitting mechanism operatively connecting said structure and the source of power whereby to rotate said structure, each joint-forming means comprising a shaping device and an actuating-cam for said shaping device, one of which is rotatable with reference to the other, and power-transmitting mechanism operatively connecting said source of power with said joint-forming means whereby to effect the aforesaid relative rotation with regard to their respective cams and shaping devices, substantially as described.

6. In a machine for producing lock-joints between the component parts of sheet-metal vessels, the combination, with the frame, of a rotary structure, a rotary shaft journaled in said frame axially of said structure, a plurality of joint-forming means each movable with said structure, means for holding the parts to be jointed while being operated upon, each joint-forming means comprising a shaping device and an actuating-cam for said shaping device, one of which is rotatable with reference to the other, and gearing operatively connecting said shaft and the structure and said shaft and the joint-forming means whereby to rotate said structure and to effect the aforesaid relative rotation with regard to their respective cams and shaping devices, substantially as described.

7. The combination of a frame, a rotary structure, a plurality of joint-forming means arranged in said structure and each comprising a work-holding means, a shaping means and a means for actuating the shaping means, two of said three elements of each joint-forming means being rotary relatively to each other and to the third element around a common axis to effect the actuation, and progress around the work, of the shaping means, and means for rotating said structure and the rotative elements of said joint-forming means, substantially as described.

818,807. DRAWING-PRESS. BENJAMIN ADRIANCE and AMOS CALLESON, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Filed June 13, 1904. Serial No. 212,282.



Claim.—1. The combination, with the frame, of the male die member and the blank-holder member with which said male die member coacts in shaping the metal, one of said members being movable relatively to the other, means for sustaining the blank-holder member in the frame, and means, arranged in the frame between said blank-holder member and its sustaining means, for sustaining said male die member, the sustaining means for the member which is movable being also the actuating means therefor, substantially as described.

2. The combination, with the frame, of the male die or punch, the blank-holder member with which said die coacts in shaping the metal and the complementary blank-holder member, one of said blank-holder members being movable relatively to the other, and separate means for sustaining said blank-holder members in the frame, the means for sustaining one blank-holder member being disposed between the other blank-holder member and its sustaining means, and the sustaining means for the movable blank-holder member being the actuating means therefor, substantially as described.

3. The combination, with the frame, of the male die or punch, the lower blank-holder member, the upper blank-holder member, means for securing said upper blank-holder member in the frame, crank-shafts, one of which is arranged above the point of securing said upper blank-holder member in the frame, means for connecting the lower blank-holder member with the crank on said last-named shaft, and means for connecting the male die or punch with the crank on the other shaft, substantially as described.

4. The combination, with the frame, of the male die or punch, the lower blank-holder member, the upper blank-holder member, means for securing said upper blank-holder member in the frame, crank-shafts, one of which is arranged above the other and also above the point of securing said upper blank-holder member in the frame, means for connecting the lower blank-holder member with the crank on the last-named shaft, and means for connecting the male die with the crank on the other shaft, substantially as described.

5. The combination, with the frame, of the male die or punch, two blank-holder members, one of which is movable, means for operating the male die, a carrier for the movable blank-holder member, means for actuating said carrier, and means for adjustably connecting said movable blank-holder member with the carrier comprising threaded rods, threaded parts arranged in the carrier and engaged by the threaded portions of said rods, and intermeshing gearing connecting the several rods and adapted for turning the same in said threaded parts, substantially as described.

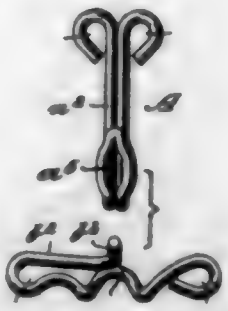
6. In a drawing-press, a male die or punch carrying and actuating means comprising a plunger, a pitman pivoted in the plunger at one end and adapted at the other end to be connected with the crank for operating the plunger, a bearing-piece interposed between a part of the plunger and the adjacent end of the pitman, and a wedge interposed between the plunger and the bearing-piece, substantially as described.

7. In a drawing-press, the combination of the frame, a male die or punch, the blank-holder comprising a movable member, a drive-shaft, a rotary part, power-transmitting mechanism operatively connecting said rotary part and the die and movable blank-holder member, disconnective connecting means between said rotary part and the shaft, a braking means for said rotary part, and a controlling part operatively connected with, and adapted to actuate, both said disconnective connecting means and the braking means, substantially as described.

8. In a drawing-press, the combination of the frame, a male die or punch, the blank-holder comprising a movable member, a drive-shaft, a rotary part, power-transmitting mechanism operatively connecting said rotary part and the die and movable blank-holder member, disconnective connecting means between said rotary part and the shaft, a braking means for said rotary part, a controlling part operatively connected with, and adapted to actuate, both said disconnective connecting means and the braking means, said disconnective connecting means being adapted to automatically hold the parts where the power is transmissible from the drive-shaft to said rotary part, and means, comprising a part carried by said power transmitting mechanism, for causing said controlling part to break the connection between the drive-shaft and said rotary part and release the braking means, substantially as described.

9. The combination, with the frame, of the female die, the male die or punch arranged above the female die, the upper blank-holder member coactive with the female die to hold the blank, rotary crank-shafts arranged above the plane of holding the work, operative connecting means between the male die or punch and the crank on one of said shafts, and a supporting structure for the female die suspended from the crank on the other shaft, substantially as described.

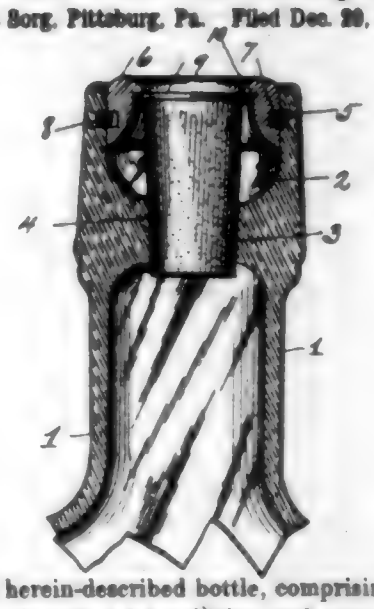
818,808. **HOOK AND EYE.** HORACE A. ALDRED, Philadelphia, Pa. Filed Dec. 21, 1905. Serial No. 292,691.



Claim.—1. Means for detachably fastening garments, comprising a hook with an open bill, and an eye with an intermediate projection, one end of said eye provided with a bar arranged substantially parallel to the plane of the eye and having a projection adapted to enter the open bill of said hook, substantially as and for the purposes described.

2. Means for detachably fastening garments, comprising a hook with an opening in the bill, and an eye having end loops and an intermediate substantially U-shaped projection arranged above the plane of the loops and body of the eye and one of the loops formed into a bar located substantially in the plane of the body of the eye and terminating in a projection adapted to enter the opening in the bill of said hook, substantially as and for the purposes described.

818,809. **BOTTLE.** FRED E. ALLEN, Pittsburg, Pa., assignor of one-half to Robert Sorg, Pittsburg, Pa. Filed Dec. 20, 1904. Serial No. 238,838.



Claim.—The herein-described bottle, comprising a bottle-neck having a contracted portion 3 in which a cork or stopper is placed, and a circumferential groove 5 formed within the said neck, an annular ring 6 having a groove 7 to register with that formed in the neck of the bottle and an inner overlapping flange 10, a breakable disk 9 engaging said flange, and a spring split ring arranged in said grooves all arranged and combined for service substantially as and for the purpose described.

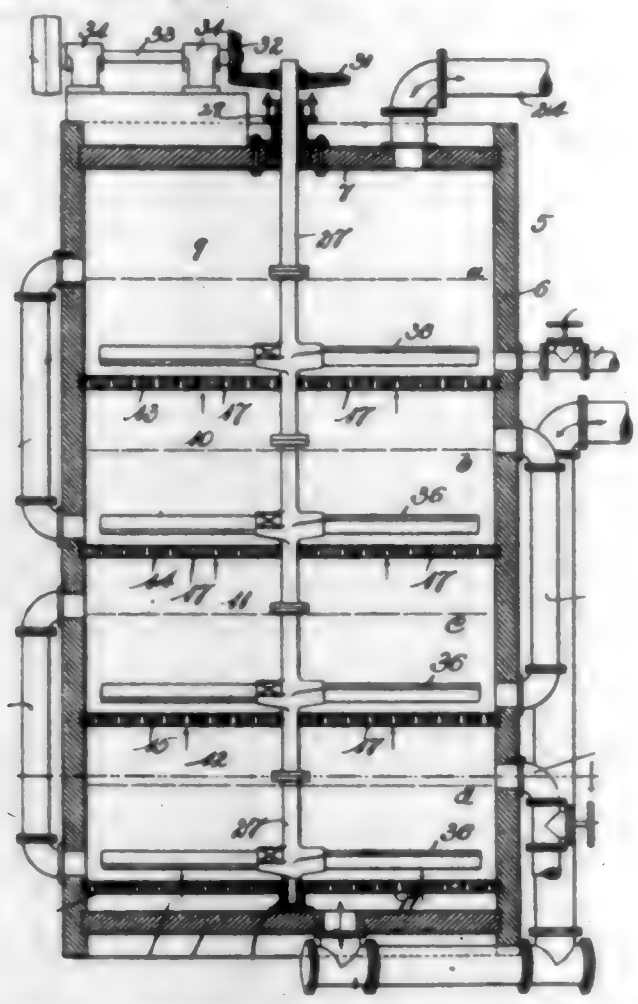
818,810. **TEMPERATURE-REGULATOR.** CLIFFORD BARGAMIN, Newport News, Va. Filed Apr. 6, 1905. Serial No. 254,151.



Claim.—1. The combination with a liquid-receptacle, of a gas-burner, a valve for controlling the flow of gas to said burner, a lever connected with said valve, a thermostat embodying a casing having a tubular extension which enters the liquid-receptacle, and a relatively movable member supported within said casing, said member being provided with a chamber adapted to be placed in communication with said tubular extension, a movable diaphragm contained in said chamber, a lever connected with and actuated by said diaphragm, connection between the two levers, and manually-operated means for moving said relatively movable member within said casing whereby the chamber of said member may be placed in communication with said tubular member or cut off therefrom.

2. The combination with a liquid-receptacle, of a gas-burner, a valve for controlling the flow of gas to said burner, a lever connected with said valve, a thermostat embodying a casing having a tubular extension which enters the liquid-receptacle, and a relatively movable member supported within said casing, said member being provided with a chamber adapted to be placed in communication with said tubular extension, a movable diaphragm contained in said chamber, a lever connected with and actuated by said diaphragm, connection between the two levers, manually-operated means for moving said relatively movable member within said casing whereby the chamber of said member may be placed in communication with said tubular member or cut off therefrom, and means for varying the degree of resistance to the movement of said diaphragm.

818,811. APPARATUS FOR THE MANUFACTURE OF BISULFITE LIQUORS. ELLIOTT R. BARKER, Berlin, N. H. Filed Oct. 21, 1905. Serial No. 283,787.

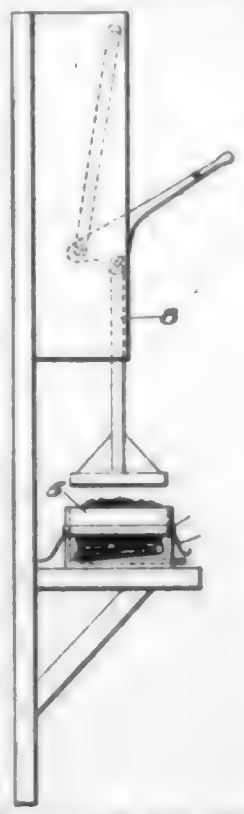


Claim.—1. An apparatus of the character described comprising a tank, a plurality of perforated partitions extending across the interior of said tank and dividing the same into a plurality of compartments, the lowermost of said partitions located at a distance from the bottom of said tank substantially less than the height of any of said compartments, and forming a gas-distributing chamber, means connecting said chamber to gas-receptacles, overflow-pipes connecting each of said compartments to the compartment therebelow, the overflow-pipe of the lowermost compartment leading to a receptacle for acid, an exhaust-pipe, and a supply-pipe connected to the uppermost compartment, and means to agitate the contents of said compartments.

2. An apparatus of the character described comprising a tank, a plurality of perforated partitions extending across the interior of said tank and dividing the same into a plurality of compartments, the lowermost of said partitions located at a distance from the bottom of said tank substantially less than the height of any of said compartments, and forming a gas-distributing chamber, means connecting said chamber to gas-receptacles, overflow-pipes connecting each of said compartments to the compartment therebelow, the overflow-pipe of the lowermost compartment leading to a receptacle for acid, an exhaust-pipe, a supply-pipe connected to the uppermost compartment, a shaft extending longitudinally of said tank through said compartments, agitator-blades fast to said shaft in each of said compartments, and mechanism to impart a rotary motion to said shaft.

3. An apparatus of the character described comprising a tank, a plurality of perforated partitions extending across the interior of said tank and dividing the same into a plurality of compartments, the lowermost of said partitions located at a distance from the bottom of said tank substantially less than the height of any of said compartments and forming a gas-distributing chamber, a pipe connecting said chamber to a gas-receptacle, said pipe extending upward from the bottom of said tank to a distance sufficient to prevent the liquor therein from flowing into said gas-receptacle, overflow-pipes connecting each of said compartments to the compartment therebelow, the overflow-pipe of the lowermost compartment leading to a receptacle for acid, an exhaust-pipe, and a supply-pipe connected to the uppermost compartment, and means to agitate the contents of said compartments.

818,812. FRUIT-PACKING DEVICE. FLEURY K. BARTHOLOMEW, Campbell, Cal. Filed June 5, 1905. Serial No. 263,780.



Claim.—1. A device for packaging dried fruits, said device comprising a box having a permanent bottom, ends, and one side, an independent removable side fitting the open side of the main box, a false bottom to which the side is fixed, an open bottom frame fitting upon the top of the main box, and a surrounding flange projecting downwardly from said frame inclosing the top of the main box and the false side thereby retaining the false bottom in position during compression.

2. In a device for packaging dried fruit, a main box or former having a fixed bottom, ends, and one side, a false side completing the box, a false bottom to which said side is fixed, slidable upon the bottom of the main box, a frame approximately fitting the top of the main box, and a downwardly-extending flange carried by said frame and overhanging the side and ends of the box or former and also the false side said flange adapted to lock the false side in position with relation to the main box.

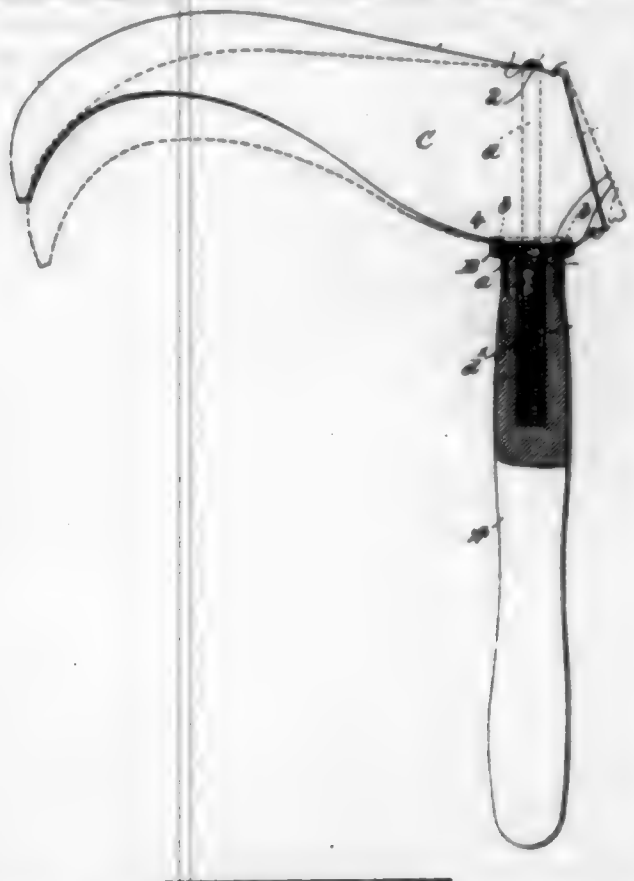
3. In a device for packaging dried fruit, a main box or former having one open side, a false bottom and side fitting the main box and completing its outline, a frame substantially fitting the top of the main box having a downwardly-extending flange fitting over and temporarily locking the supplemental side and bottom in place, and means by which the fruit with which the structure is filled is compressed into the main box.

818,813. HOOK FOR CUTTING CORN, &c. BENJAMIN F. BEAN, Gilford, N. H. Filed July 14, 1905. Serial No. 269,642.

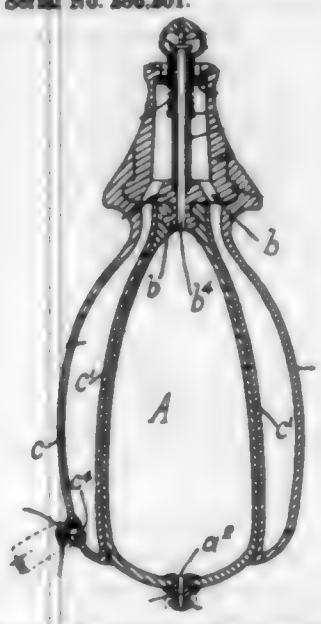
Claim.—1. An implement of the character described comprising a blade having at its upper end lower edges adjacent its butt convexedly-curved portions, a blade-clamp having a threaded shank and an eye to receive the butt of the blade at the convexedly-curved portions, and a handle having a nut and a loosely-sustained blade-seat, the convexedly-curved portions of the blade permitting said blade to be adjusted into different angular positions relative to the handle.

2. An implement of the class described comprising a blade presenting adjacent its butt on its top edge a convex surface terminating in shoulders and at its bottom edge a convex surface provided with a plurality of shoulders, a blade-clamp embracing said blade and en-

gaging the convex surface at the top edge of the blade, and a handle having a blade-seat to engage the convex surface at the lower edge of the blade, the construction being such that the blade may be adjusted into different angular positions with relation to the handle.



818,814. VAGINAL SYRINGE. MARTIN L. BOSWORTH, Bristol, R. I., assignor of one-half to Edward J. Brownell, Bristol, R. I. Filed Nov. 7, 1905. Serial No. 286,201.



Claim.—1. In a vaginal syringe the combination with an injection-receptacle for the cleansing liquid, of suctional means coacting with the injection-receptacle for removing the liquids, the egress and ingress passages being concentric and the egress-passage extended beyond and unobstructing the ingress-passage.

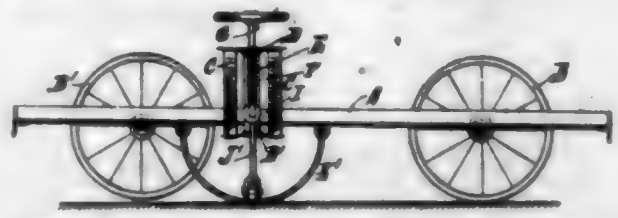
2. In a vaginal syringe the combination with a compressible injection-receptacle, of a compressible exhaust-receptacle, a neck-piece with concentric egress and ingress passages and the egress-passage extended beyond and unobstructing the ingress-passage, and valvular means for controlling the flow of liquid into the exhaust-receptacle after its discharge from the injection-receptacle.

3. In a vaginal syringe, the combination with a compressible injection-receptacle of a valve-controlled supply-inlet in the injection-receptacle, a compressible exhaust-receptacle, and a valve-controlled discharge-outlet in the exhaust-receptacle, a neck-piece with concentric egress and ingress passages and the egress-passage extending beyond and unobstructing the ingress-passage.

4. In a vaginal syringe the combination with a neck-piece, provided with concentric ingress and egress apertures, the egress-passage extended beyond and unobstructing the ingress-passage and a distending wall of a compressible injection-receptacle attached to the neck-piece an inlet-tube in the neck-piece, a nozzle on the inlet-tube, a second compressible receptacle on the neck-piece connecting with the apertures, and a valve controlling the flow through the inlet-tube.

5. A vaginal syringe comprising a neck-piece with chamber with apertures at the base and apertures at its outer end, a central tube, a perforated nozzle, a valve therein closing the outer end of said tube, a spring-actuated valve movable on said tube to close the said apertures in the outer end of the neck-piece, and concentric compressible receptacles secured to said neck-piece, the inner one communicating with said tube.

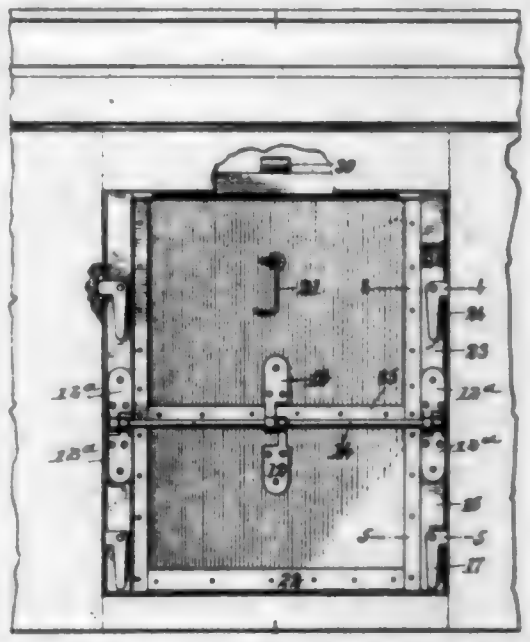
818,815. BRAKE FOR MOTOR-CARS. RASMUS BUGGE, London, England. Filed Mar. 26, 1905. Serial No. 251,868.



Claim.—1. In motor-cars, automobiles and other like vehicles, a brake consisting of a laterally-swinging bow, the arms of which are pivotally connected to the vehicle, a plate on the lowest point of said bow adapted to contact with the ground, means whereby said bow may be swung laterally to force said plate into contact with the ground, and operating means located within the vehicle actuating said last-mentioned means whereby said plate may be set from within the vehicle.

2. In motor-cars, automobiles or other like vehicles, a brake consisting of a laterally-swinging bow, the arms of which are pivotally connected to the vehicle, arranged on the under part of each side of the vehicle, a plate on the lowest point of each said bow having a wide bowl-shaped surface adapted to contact with the ground, a screw mounted on said vehicle, means rotating said screw, a traveler-nut mounted on said screw, and links the opposite ends of which respectively are pivoted to said nut and to one of said bows, whereby said bows are swung laterally.

818,816. GRAIN-DOOR. WILLIAM J. COCKLIN, Rising City, Nebr. Filed July 31, 1905. Serial No. 272,041.



Claim.—1. In a grain-door, the combination with a car having a door-opening therein, of upper and lower door-sections, means for hingedly connecting them, means for supporting the door-sections, a metallic binding-plate running along the vertical edges of the upper door-section, said binding-plate having its edges fastened respectively to the side faces of the door-section, and an intermediate portion projecting outward from the face of the door-section to form a strengthening bead or column, the door-section being arranged to bear against the inner side of the door-frame, and the said bead of the binding-plate abutting against the inner face of the door-frame and forming a rabbet receiving the inner vertical edge of said frame, and a metallic binding-plate running along each vertical edge of the lower door-section, said plate having its edges respectively fastened to the sides of the door, the plate having intermediate its edges an outwardly-projecting strengthening bead or column abutting against the inner face of the door-frame.

2. A grain-door having a metallic binding-plate running along the edge thereof, said plate having its edges respectively fastened to the sides of the door, the plate having intermediate its edges an outwardly-projecting strengthening bead or column.

3. A grain-door having a metallic binding-plate running along its edge, said binding-plate having its edges fastened respectively to the side faces of the door, and an intermediate portion projecting outward from the face of the door to form a strengthening bead or column, the door being arranged to bear against one side of the door-frame, and the said strengthening bead or column abutting against the inner face of the door-frame and forming a rabbet receiving the edge of the door-frame.

818,817. COLLAR-STAY. LEVA C. COLLINS, Philadelphia, Pa. Filed Apr. 21, 1905. Serial No. 256,808.



Claim.—1. In a device of the character described, a strip slitted uninterruptedly throughout substantially its entire length the slit of which is without the axis of the strip in combination with a tight cover for said strip.

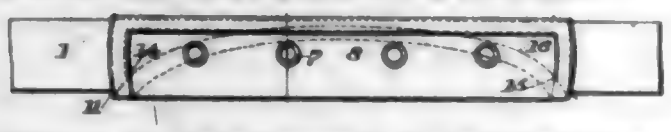
2. In a device of the character described, terminal stripe each divided longitudinally by a slit into portions of different width whose edges support each other and coöperating fastening devices secured to the stripe upon their wider portions.

3. In a device of the character described, a collar, terminal strips therefor, having slits therein, cover upon the strips and fastening devices upon the strips to secure the latter together.

4. In a device of the character described, a strip of uniform thickness, longitudinally slitted throughout substantially its length, and a tight-fitting tubular covering secured to the strip at its ends.

5. In a device of the character described, a single longitudinally-slitted strip integral at its ends, whereby the same is of uniform thickness, a tubular covering closely engaging the strip and means passing through the body of the strip for securing the covering thereto.

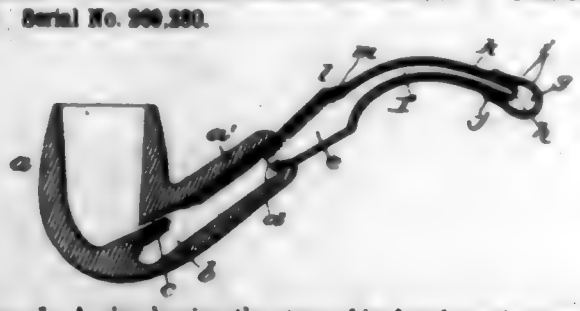
818,818. SKIRT AND WAIST SUPPORTER. LEVA C. COLLINS, Philadelphia, Pa. Filed May 24, 1905. Serial No. 261,991.



Claim.—1. In a garment-supporter the waist-attached flexible depending pad and flap, fastening devices on the pad and a belt secured to the waist and to the pad and lying between them and forming a pocket for securing the flap between the waist and pad.

2. In a garment-supporter, a waist-attached belt, a pad secured to the belt and waist at its top and ends in such a manner as to form an inverted pocket between the pad and waist-fastening devices on the pad and a flap on said pad adapted to be inserted in and retained within said pocket.

818,819. PIPE. CHARLES ELKIN, New York, N. Y. Filed July 12, 1905. Serial No. 269,230.



Claim.—1. A pipe having the stem of its bowl portion provided with a smoke-cooling straight-bore chamber *b* and with a contracted passage-way or duct *c* intersecting said chamber *b* above the bottom of the latter, said pipe having a stem in which is formed the upwardly-expanding or conical chamber *e* with a contracted inlet, and the mouthpiece of said stem having the chamber *g* with smoke-exit orifices at its top only.

2. A pipe provided in the smoke passage-way between the chamber of the bowl and the smoke-discharge outlet at the mouthpiece with three or more smoke-cooling or rarefaction chambers each having a contracted inlet, one of said chambers being formed in the stem portion of said bowl, one, at least, of said chambers being formed in the stem proper of the pipe, and one at the mouthpiece or smoke-exit end of the pipe.

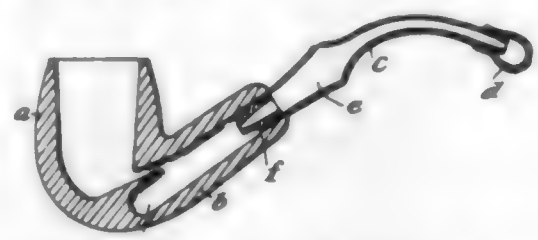
3. A pipe provided in the smoke passage-way between the chamber of the bowl and the smoke-discharge outlet at the mouthpiece with three or more smoke-cooling or rarefaction chambers each having a contracted inlet, one of said chambers being formed in the stem portion of said bowl, one, at least, of said chambers being formed in the stem proper of the pipe, and one at the mouthpiece or smoke-exit end of the pipe, the stem of said pipe being provided at its lower part or adjacent the said bowl with an air-inlet hole.

4. A pipe provided in the smoke passage-way between the chamber of the bowl and the smoke-discharge outlet at the mouthpiece with three or more smoke-cooling or rarefaction chambers each having a contracted inlet, one of said chambers being formed in the stem portion of the bowl, one, at least, of said chambers being formed in the stem proper of the pipe, and one at the mouthpiece or smoke-exit end of the pipe, the stem of said pipe being provided at its lower part or adjacent the said bowl with an air-inlet hole, and said stem having also an air-inlet hole adjacent the said mouthpiece.

5. A pipe having the stem of its bowl portion provided with a smoke-cooling straight-bore chamber *b* and with a contracted passage-way or duct *c* intersecting said chamber *b* above the bottom of the latter, said pipe having a stem in which is formed the upwardly-expanding or conical chamber *e* with a contracted inlet, and the mouthpiece of said stem having the chamber *g* with smoke-exit orifices at its top only and the said stem being provided, adjacent said mouthpiece, with an air-inlet hole *k*.

6. A pipe having the stem of its bowl portion provided with a smoke-cooling straight-bore chamber *b* and with a contracted passage-way or duct *c* intersecting said chamber *b* above the bottom of the latter, said pipe having a stem in which is formed the upwardly-expanding or conical chamber *e* with a contracted inlet, and the mouthpiece of said stem having the chamber *g* with smoke-exit orifices at its top only, and the said stem being provided, adjacent said mouthpiece, with an air-inlet hole *k*, and said stem having also the air-inlet hole *m* adjacent the bowl portion of the pipe.

818,820. PIPE. CHARLES ELKIN, New York, N. Y. Filed Nov. 11, 1905. Serial No. 286,922.



Claim.—1. A pipe provided with a stem having an expansion or smoke-cooling chamber in its lower part, combined with a plug removably fitted to the lower end of said stem and having through it a bore or passage-way which is small at its lower or outer end to afford a contracted inlet to said chamber.

2. The combination with the stem *e*, having the chamber *e*, of the plug *f* screwed into the lower end of said stem and having a taper bore diminishing in diameter outwardly to afford a contracted inlet to said chamber.

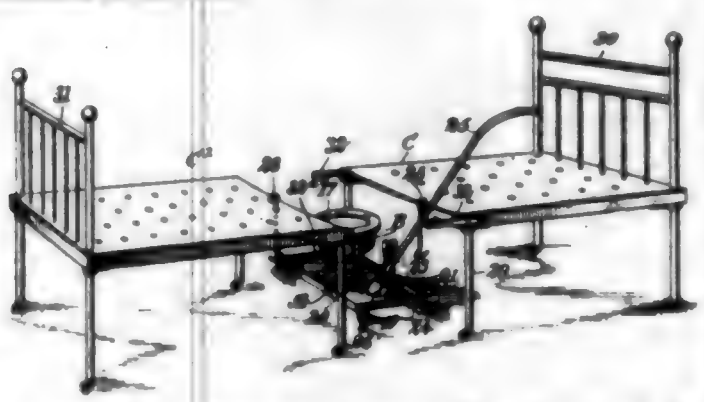
3. The combination with the stem *e* having the chamber *e*, of the plug *f* screwed into the lower end of said stem and having a taper bore diminishing in diameter outwardly to afford a contracted inlet to said chamber, said plug having flattened sides to facilitate turning.

818,821. COMMODE. WILLIAM C. PEELY, New York, N. Y. Filed June 24, 1905. Serial No. 266,580.

Claim.—1. A wheeled support, tubes secured thereto, a commode, side bars attached to the commode and mounted to slide in the said tubes, a lever fulcrumed upon the wheeled support, which lever is in operative connection with the commode to raise and lower the same, and a locking device for the lever.

2. A wheeled support, tubes secured to said support, a commode, adjusting-bars pivoted to the upper section of the commode, extending downwardly therefrom and into the said tubes, an exten-

sion from the lower portion of the commode, having an opening therein, a lever fulcrumed upon the said wheeled support, which lever passes through the opening in the said extension, and a locking mechanism for the lever.

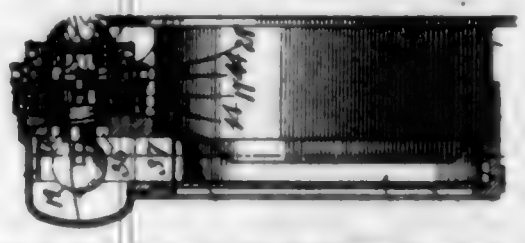


3. A wheeled support, tubes secured to the said support, bars mounted to slide in the said tubes, a commode having pivotal connection with the upper portion of the bars, means for limiting the rocking movement of the commode upon said bars, a lever fulcrumed upon the wheeled support, being connected with the said commode to raise and lower the same, locking devices for the lever, and means for temporarily connecting the commode to a bed or a like article of manufacture.

4. A portable base, supports adjustable in the base, a commode having rocking attachment to the said support, and devices for raising and lowering the commode and supports.

5. A truck-base, supporting-bars adjustable in the base, and a commode pivotally connected with the said bars, head and foot rests pivotally connected with said commode, an adjusting device for the commode, whereby to raise and lower the same and its supports, independent adjusting devices for the head-rest and the foot-rest, and locking devices for the said adjusting devices.

818,822. ILLUMINATED DIAL. CHARLES F. FERNALD, Roxbury, Mass., assignor to Star Brass Manufacturing Co., Boston, Mass., a Corporation of Massachusetts. Filed Aug. 2, 1905. Serial No. 272,449.



Claim.—1. In a device of the character described, a casing, a dial thereon, a cover for said dial, and an electric lamp located outside said casing, a socket for said lamp, a bracket extending outside said casing, means to clamp said socket to said bracket, ways upon said cover, and a detachable cover for said lamp adapted to slide in said ways.

2. In a device of the character described, a casing, a dial thereon, a cover for said dial, and an electric lamp located outside said casing, a socket for said lamp, a bracket extending outside said casing, means to clamp said socket to said bracket, ways upon said cover, a detachable cover for said lamp adapted to slide in said ways, and means to slide said detachable cover in said ways.

3. In a device of the character described, a casing, a dial thereon, a cover for said dial, and an electric lamp located outside said casing, a socket for said lamp, a bracket extending outside said casing, means to clamp said socket to said bracket, ways upon said cover, a detachable cover for said lamp adapted to slide in said ways, and a rotatable nut having screw-threaded engagement with said detachable cover, whereby said detachable cover is moved longitudinally in said ways.

818,823. PLACKET-CLASP. SAMUEL M. FISCHER, New York, N. Y. Filed Aug. 10, 1905. Serial No. 274,531.



Claim.—1. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members, and said tongue and socket members being adapted for slidable disconnection.

2. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members, and said tongue and socket members being adapted for slidable disconnection, together with means adapted to prevent premature separation of said members.

3. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members, and said tongue and socket members being adapted for slidable disconnection, together with downwardly-projecting wings carried by the keeper of said socket member adapted to prevent the premature separation of said socket and tongue members.

4. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members, said tongue and socket members being adapted for slidable disconnection, an auxiliary tongue carried by the keeper of said socket member, and an auxiliary socket formed in the tongue of said tongue member, said auxiliary tongue adapted to enter said auxiliary socket when said members are connected.

5. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members, said tongue and socket members being adapted for slidable disconnection, downwardly-projecting members carried by the keeper of said socket member, adapted to prevent the premature separation of said socket and tongue members, an auxiliary tongue carried by the keeper of said socket member, and an auxiliary socket formed in the tongue of said tongue member, said auxiliary tongue adapted to enter said auxiliary socket when said members are connected.

6. In a clasp, the combination of a socket member, comprising a base, a guard carried by said base and a keeper adjacent to said guard, said keeper being formed by a leaf projecting from said base; a tongue member comprising a base, a tongue formed by a leaf projecting from said base, and a guard carried by said tongue, said guards adapted to prevent lateral separation of said members and said tongue and socket members being adapted for slidable disconnection, downwardly-projecting wings carried by the keeper of said socket member, adapted to prevent premature separation of said tongue members, said downwardly-projecting wings embracing the tongue of said tongue member.

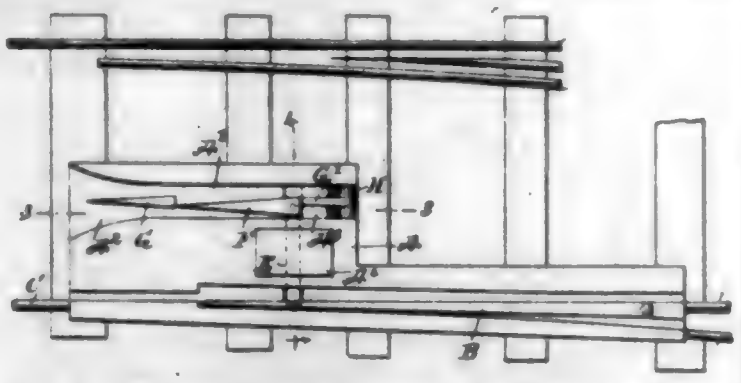
7. In a clasp, the combination of a socket member, composed of a base, a resilient guard integral therewith, a resilient keeper formed by a projecting leaf also integral with said base, a tongue member composed of a base, a tongue composed of a projecting leaf integral therewith, and a guard integral with said tongue, said members adapted for lateral connection and slidable separation lengthwise thereof.

8. A clasp, consisting of a socket member comprising a base, an overhanging resilient guard and an overhanging keeper, the latter provided with downwardly-projecting retaining-wings; and a tongue member comprising a base, a resilient overhanging keeper and a resilient guard overhanging said keeper, all arranged so that the said tongue and socket members are adapted for lateral interlocking and lengthwise slidable separation.

818,824. DEVICE FOR ACTUATING SWITCHES. ANDERSON FULLER, Amsterdam, N. Y., assignor of one-fourth to Lewis Pangburn and one-fourth to James H. Van Deusen, Amsterdam, N. Y. Filed Jan. 30, 1906. Serial No. 298,634.

Claim.—1. A switch provided with a switch-plate having a longitudinally-extending recess, the entrance end of which is inclined

downwardly and forwardly, the exit end of the recess having a raised resetting-lug, a longitudinal guide fixed in the entrance end of the said recess and having converging sides beginning at a point located at the beginning of the said entrance end, a switch-point-shifter bar extending lengthwise in the said recess in front of the said guide and having converging sides, a connection between the said switch-point-shifter bar and the switch-point to be shifted, and means on the car for entering the said recess on either side of the said guide.



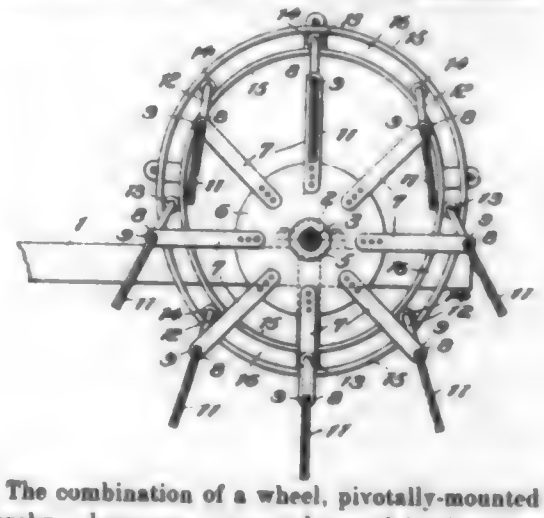
2. A switch provided with a switch-point having a longitudinally-extending recess, the entrance end of which is inclined downwardly and forwardly, the exit end of the recess having a raised resetting-lug, a longitudinal guide fixed in the entrance end of the said recess and having converging sides beginning at a point located at the beginning of the said entrance end, a switch-point-shifter bar extending lengthwise in the said recess in front of the said guide and having converging sides, a connection between the said switch-point-shifter bar and the switch-point to be shifted, and actuators fulcrumed on the car and under the control of the motorman to release either actuator, for the latter to swing downwardly into active position for engagement with the recess on the corresponding side of the said guide and for engagement with the switch-bar to shift the latter.

3. A switch provided with a switch-point having a longitudinally-extending recess, the entrance end of which is inclined downwardly and forwardly, the exit end of the recess having a raised resetting-lug, a longitudinal guide fixed in the entrance end of the said recess and having converging sides beginning at a point located at the beginning of the said entrance end, a switch-point-shifter bar extending lengthwise in the said recess in front of the said guide and having converging sides, a connection between the said switch-point-shifter bar and the switch-point to be shifted, actuators fulcrumed on the car and under the control of the motorman to release either actuator, for the latter to swing downwardly into active position for engagement with the recess on the corresponding side of the said guide and for engagement with the switch-bar to shift the latter, and spring-catches for the said actuators to normally hold the same in a non-active position and to lock the same automatically in a non-active position on the actuator being swung upwardly on coming in contact with the said resetting-lug.

4. A switch provided with a switch-point having a longitudinally-extending recess, the entrance end of which is inclined downwardly and forwardly, the exit end of the recess having a raised resetting-lug, a longitudinal guide fixed in the entrance end of the said recess and having converging sides beginning at a point located at the beginning of the said entrance end, a switch-point-shifter bar extending lengthwise in the said recess in front of the said guide and having converging sides, a connection between the said switch-point-shifter bar and the switch-point to be shifted, actuators fulcrumed on the car and under the control of the motorman to release either actuator, for the latter to swing downwardly into active position for engagement with the recess on the corresponding side of the said guide and for engagement with the switch-bar to shift the latter, spring-catches for the said actuators to normally hold the same in a non-active position and to lock the same automatically in a non-active position on the actuator being swung upwardly on coming in contact with the said resetting-lug, treadles under the control of the motorman, and connections between the treadles and the said spring-catches.

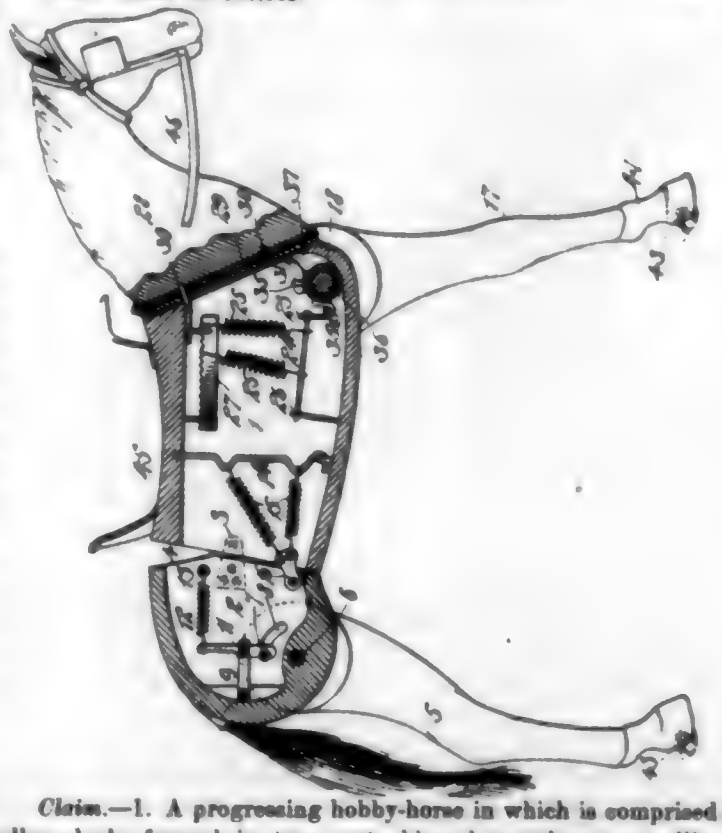
818,825. **FEATHERING-BLADE PADDLE-WHEEL.** JAMES A. HICKS, Atlanta, Ga. Filed Sept. 23, 1904. Serial No. 225,404.

Claim.—1. The combination with a wheel, pivotally-mounted blades carried thereby, each blade having a member connected thereto, and means engaging the members during the rotation of the wheel to move said members to progressively swing said blades on their pivots in such a manner that all of the blades submerged travel at the same means velocity at all points of submergence.



2. The combination of a wheel, pivotally-mounted blades carried thereby, a lever-arm connected to each blade and means for actuating said arms to swing the blades on their pivots so that all of the blades submerged travel at the same mean velocity at all points of submergence, said means consisting of a cam engaging said lever-arms, said cam having an elliptical portion the foci of which are on a vertical line passing centrally through the wheel-shaft, one focus being distant from the lowest point of the wheel twice the length of one of the lever-arms, the other focus being vertically distant a length varying inversely with the mean depth of submergence of the paddle-blades, the radii vectores being in sum equal to the focal distance increased by twice the difference of the distance between the radius of the wheel and the length of the lever-arm.

818,826. **PROGRESSING HOBBY-HORSE.** ADRIAN HITT, Jersey City, N. J., assignor to O. W. Badger, New York, N. Y. Filed Mar. 31, 1904. Serial No. 200,865.



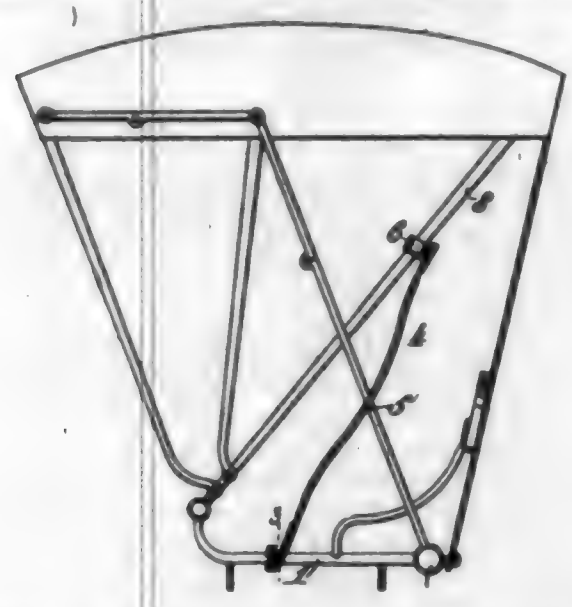
Claim.—1. A progressing hobby-horse in which is comprised a hollow body formed in two parts hinged together; controlling-springs within the body connected to each of said parts; spring-controlled legs pivoted to the body; a head and neck pivoted to the body, partially-rotatable feet carried by rods passing through the fore legs, and connections between said rods and the pivoted head and neck, substantially as shown and described.

2. A progressing hobby-horse in which is comprised a hollow body formed in two parts hinged together; springs within the body connected to each of said sections; adjustable springs within the body connected to a shaft carrying the fore legs; a head pivoted to the body, partially-rotatable feet carried by rods passing through the fore legs, and connections between said rods and the pivoted head and neck, substantially as shown and described.

3. In a device of the character herein specified, the combination with the legs and means for projecting the same forward, of stops carried at the rear of the hind feet and arranged to rest on the floor, substantially as shown and described.

4. In a hobby-horse of the character herein specified, the combination with the movable head and neck, of partially-rotatable shafts extending longitudinally through the front legs to the feet and means for actuating said shafts independent of the movement of the legs substantially as shown and described.

818,827. BUGGY-BOW SPRING ATTACHMENT. GEORGE A. JOHNSON, Clyde, Tex. Filed July 12, 1905. Serial No. 269,376.



Claim.—1. The combination with a buggy bow and rail having a stop, of a yielding attachment consisting of an elongated spring having a sleeve at the upper extremity thereof loosely embracing the bow, and a clamp adjustably mounted on the rail and having the lower end of the spring fulcrumed on a portion thereof.

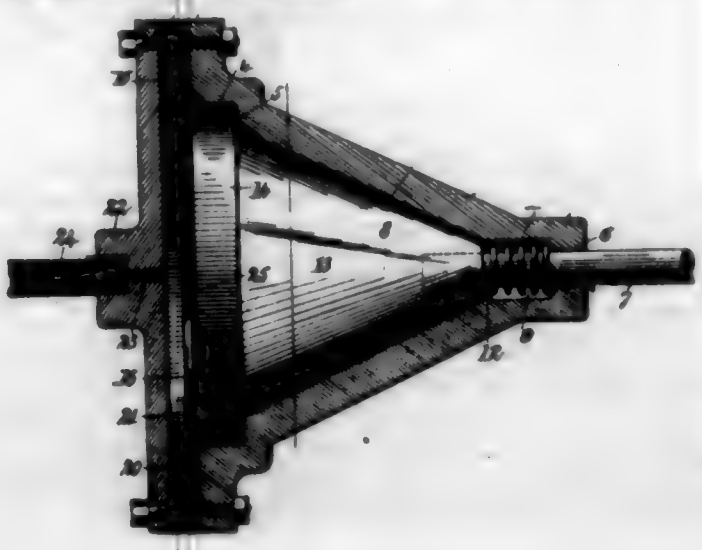
2. The combination with a bow and rail having a stop at the rear extremity thereof, of a yielding attachment consisting of an elongated spring having a sleeve at its upper extremity loosely embracing the bow and provided with an inner buffer, and a clamp readily applicable to and removable from the rail and having the lower end of the spring movably connected to a portion thereof.

3. The combination with a bow and rail having a stop at the rear portion thereof, of an elongated spring having means slidably engaging the bow, and a clamp secured on the rail and having an eyebolt projecting outwardly therefrom, the lower end of the spring being movably attached to the shank of the eyebolt.

4. The combination with a bow and rail having a stop at the rear portion thereof, of an elongated spring having means at the upper end for loosely engaging the bow, and a clamp secured on the rail and having an outward projection to which the lower end of the spring is movably connected.

5. The combination with a bow and a rail having a stop at the rear portion thereof, of an elongated spring having means at its upper end loosely embracing the bow, a clamp fitted over the rail and provided with outwardly-projecting jaws, an eyebolt disposed against the under jaw, and means for connecting the clamp-jaws and the eyebolt, the lower end of the spring being movably attached to the shank of the eyebolt.

818,828. CLUTCH. RUTGERS S. KASSON, Wilmington, Del. Filed Jan. 15, 1906. Serial No. 296,077.



Claim.—1. In a clutch, in combination, a case presenting a substantially conical bore, a cone mounted in said conical bore, a shaft rigidly attached to said cone, a diaphragm attached to said case and lying adjacent to the end of said cone, and means for applying fluid-pressure to said diaphragm.

2. In a clutch, in combination, a case having a substantially conical bore, a cone mounted therein, a shaft rigid with said cone, a diaphragm attached to said case and lying adjacent to the face of said cone, means for applying a fluid-pressure to said diaphragm, and means for normally maintaining said cone out of engagement with said case.

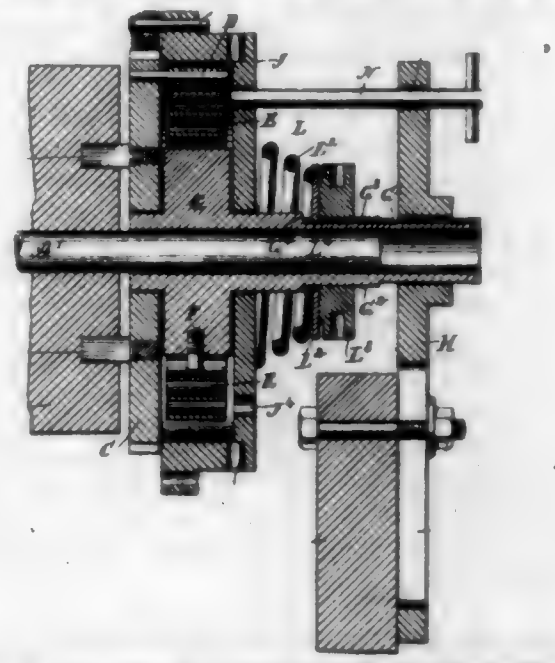
3. In a clutch, in combination, a case having a substantially conical bore and a chamber at the small extremity thereof, a cone mounted in said bore, a shaft rigid therewith, a spring within said chamber tending to hold said cone out of contact with said case, a diaphragm attached to said case and lying adjacent to the large end of said cone, and means for applying fluid-pressure to said diaphragm.

4. In a clutch, in combination, a case having a substantially conical bore, a cone mounted within said case, a shaft rigid with said cone, a diaphragm attached to said case and lying adjacent to said cone, a cover for said case and forming a chamber on the side of said diaphragm remote from said cone, and means for admitting fluid to said chamber.

5. In a clutch, in combination, a case having a substantially conical bore, a cone mounted in said bore, a shaft rigid with said cone, a cover for said case, a diaphragm between said cover and said cone, a ring between said diaphragm and said cover and forming a chamber, and means for admitting a fluid to said chamber through said cover.

6. In a clutch, in combination, a case having a substantially conical bore and a hub at the reduced extremity thereof, said hub having a bore therethrough, a shaft passing through said last bore, a cone rigid with said shaft and lying within said case, said hub having a chamber formed therein, a spring within said chamber and tending to force said cone away from contact with said conical bore, a cover attached to said case, a diaphragm and a ring between said cover and said case and forming a chamber at said diaphragm on the side remote from said cone, said cover having an opening therethrough, and a hollow shaft rigidly attached to said cover and communicating with said opening to admit a fluid to said chamber.

818,829. TENSION DEVICE FOR WARP-BEAMS. GOTTLIEB KELLER, New York, N. Y., assignor to Keller Machine Company, a Corporation of New York. Filed June 13, 1905. Serial No. 264,963.



Claim.—1. A tension device for warp-beams, comprising two rotatable members, a spiral spring connected at its ends with the said members, one of the members rotating with the warp-beam, an adjustable tension device for the other member, and means for locking the warp-beam member against return movement.

2. A tension device for warp-beams, comprising a warp-beam member rotating with the warp-beam, a resistance member having independent rotating motion relative to the said warp-beam member, a spiral spring connecting the members with each other, and a tension device for governing the rotating movement of the said resistance member, and a releasable connection between the tension device and the warp-beam member.

3. A tension device for warp-beams, comprising a warp-beam member rotating with the warp-beam, a resistance member having independent rotating motion relative to the said warp-beam member, a spiral spring connecting the members with each other, a tension device for governing the rotating movement of the said resistance member, a casing for the spring engaged by the said tension device, and a releasable connection between the casing and the warp-beam member.

4. A tension device for warp-beams, comprising a warp-beam member rotating with the warp-beam, a resistance member having independent rotating motion relative to the said warp-beam member, a spiral spring connecting the members with each other, a tension device for governing the rotating movement of the said resistance member, a rotatable casing for the said spring, and a releasable connection between the casing and the warp-beam member.

5. A tension device for warp-beams, comprising a warp-beam member rotating with the warp-beam, a resistance member having independent rotating motion relative to the said warp-beam member, a spiral spring connecting the members with each other, a tension device for governing the rotating movement of the said resistance member, a casing for the said spring adapted to turn with the said resistance member, and means for locking the casing against turning.

6. A tension device for warp-beams, comprising a warp-beam member rotating with the warp-beam, a resistance member having independent rotating motion relative to the said warp-beam member, a spiral spring connecting the members with each other, a tension device for governing the rotating movement of the said resistance member, a casing for the said spring, and a pawl-and-ratchet connection between the said casing and the said warp-beam member.

7. A tension device for warp-beams, comprising a ratchet-wheel turning with the warp-beam, a resistance-wheel mounted to turn independent of the said ratchet-wheel, a spiral spring connecting the ratchet-wheel with the said resistance-wheel, a revoluble casing for the said spring, and a pawl on the casing for engaging the said ratchet-wheel.

8. A tension device for warp-beams, comprising a ratchet-wheel turning with the warp-beam, a resistance-wheel mounted to turn independent of the said ratchet-wheel, a spiral spring connecting the ratchet-wheel with the said resistance-wheel, a revoluble casing for the said spring, a pawl on the casing for engaging the said ratchet-wheel, and a tension device for the said resistance-wheel.

9. A tension device for warp-beams, comprising a ratchet-wheel turning with the warp-beam, a resistance-wheel mounted to turn independent of the said ratchet-wheel, a spiral spring connecting the ratchet-wheel with the said resistance-wheel, a revoluble casing for the said spring, a pawl on the casing for engaging the said ratchet-wheel, and manually-controlled means for locking the casing in position.

10. A tension device for warp-beams, comprising a ratchet-wheel turning with the warp-beam, a resistance-wheel mounted to turn independent of the said ratchet-wheel, a spiral spring connecting the ratchet-wheel with the said resistance-wheel, a revoluble casing for the said spring, a pawl on the casing for engaging the said ratchet-wheel, and a tension device for the said resistance-wheel and engaging the said casing for winding up the spring on turning the casing.

11. A tension device for warp-beams, comprising a ratchet-wheel turning with the warp-beam, a resistance-wheel mounted to turn independent of the said ratchet-wheel, a spiral spring connecting the ratchet-wheel with the said resistance-wheel, a revoluble casing for the said spring, a pawl on the casing for engaging the said ratchet-wheel, a tension device for the said resistance-wheel and engaging the said casing for winding up the spring on turning the casing, and manually-controlled means for locking the casing against movement.

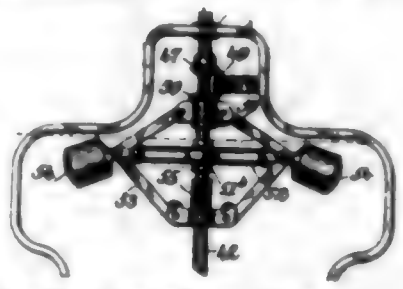
818,830. GOVERNOR FOR SPRING-MOTORS. WILLIAM B. KIRBY, Wellington, Tex. Filed Apr. 11, 1905. Serial No. 254,937.

Claim.—1. In a governor, a revoluble spindle, a centrifugal mechanism upon the spindle and brake-shoes carried by the centrifugal mechanism and engaging the said spindle.

2. In a governor, a revoluble spindle, brake-shoes mounted to revolve in a direction opposite to that of the spindle, and mechanism for forcing the shoes into engagement with the spindle.

3. In a governor, a revoluble spindle, a centrifugal mechanism mounted to revolve in a direction opposite to that of the spindle, and brake-shoes carried by the centrifugal mechanism and adapted to engage the said spindle.

4. In a governor, a revoluble spindle, a centrifugal mechanism mounted to turn on the spindle, means for operating the centrifugal mechanism from the spindle, and a brake carried by the centrifugal mechanism and moved into engagement with the spindle when the speed becomes excessive.

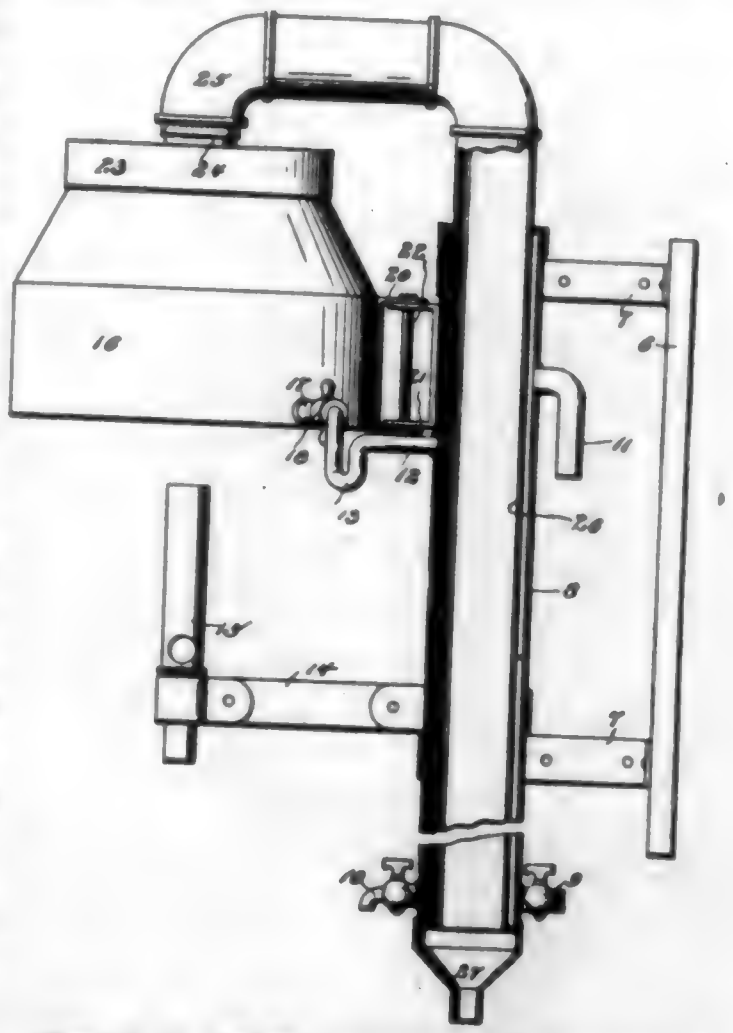


5. In a governor, a spindle, a centrifugal mechanism mounted to turn on the spindle, means for revolving the spindle and centrifugal mechanism in opposite directions, and a brake carried by the centrifugal mechanism and moved into engagement with the spindle when the speed becomes excessive.

6. In a governor, a spindle, weighted toggles mounted to turn on the spindle, means for revolving the spindle and toggles in opposite directions, links connected with the toggles, and brake-shoes carried by the said links.

7. In a governor, a spindle, spring-pressed toggles mounted to turn on the spindle and provided with weights, means for revolving the spindle and toggles in opposite directions, brake-shoes, and links pivoted to the brake-shoes and to the toggles.

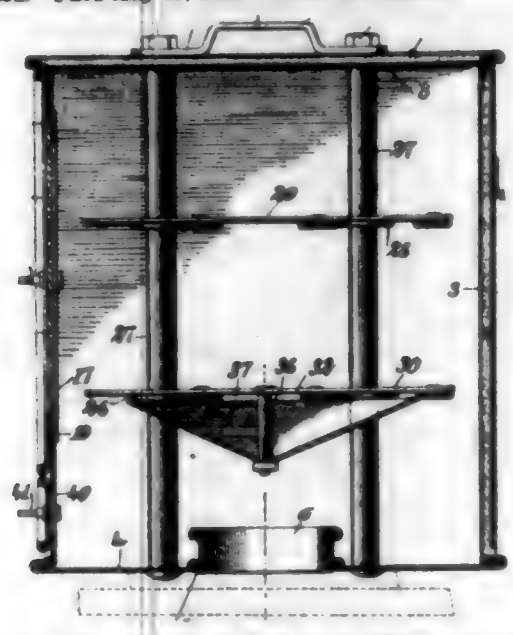
818,831. DISTILLING APPARATUS. LAMBERT KLEITZ, Chicago, Ill., assignor to Edward C. Wagner, La Fayette, Ind. Filed Oct. 23, 1905. Serial No. 283,966.



Claim.—1. In a distilling apparatus, a boiler connected by a slip-joint with a pipe leading to a condenser-tube, and a condenser-casing surrounding said tube and having a separable bracket-support for the boiler, and a supply-pipe leading from the casing to the boiler and having a coupling which may be opened to disconnect the boiler.

2. In a distilling apparatus, in combination, a boiler, a removable cover thereon having a separable joint with a pipe leading to a condenser-tube, a condenser-casing around said tube, a separable bracket between the casing and boiler, to support the latter, and a pipe connecting the condenser-casing and the boiler and having a coupling which may be opened to disconnect the boiler.

818,832. OVEN. HENRY C. G. KREUTZKAMP, New York, N. Y.; Barbara Kreutzkamp administratrix of said Henry C. G. Kreutzkamp, deceased. Filed May 15, 1905. Serial No. 260,518.



Claim.—1. An oven adapted to be applied to a gas-stove and having an opening in the bottom thereof, a loose sleeve normally hanging in said opening and adapted to pass upwardly into the interior of said oven to allow the same to rest upon a horizontal surface.

2. In an oven in combination, a body, a plurality of bolts passing upwardly therethrough, collars carried by said bolts and projecting laterally therefrom, and removable shelves supported on said collars.

3. In an oven in combination, a body, a plurality of bolts extending upwardly therethrough, a plurality of sleeves carried by said bolts, collars carried by said bolts between said sleeves, and shelves supported on said collars.

4. An oven having a body, a jacket surrounding the same, asbestos packing between said jacket and said body, a plurality of bolts passing upwardly through said body and attaching same to said jacket, said bolts having projecting extremities lying above said oven, and handles attached to said extremities.

818,833. ARTIFICIAL WOOD OR SUBSTITUTE MATERIAL. JACOB LAEUFER, Lima, Ohio. Filed Jan. 31, 1906. Serial No. 298,662.

Claim.—1. The herein-described substitute material, consisting of vegetable matter, Portland cement, plaster-of-paris, and swine blood, in or about the proportions mentioned.

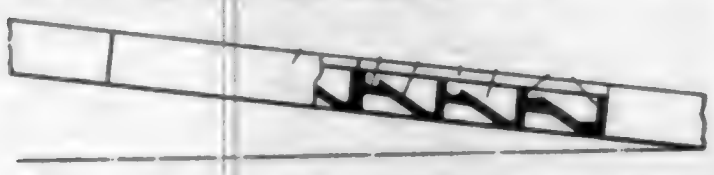
2. The herein-described material, consisting of vegetable matter, Portland cement, plaster-of-paris, sulfur, and swine blood, in or about the proportions mentioned.

3. The herein-described material, consisting of vegetable matter, Portland cement, plaster-of-paris, sulfur, sugar, and swine blood, in or about the proportions mentioned.

4. The herein-described substitute material, consisting of vegetable matter, Portland cement, plaster-of-paris, oil, and swine blood, in or about the proportions mentioned.

5. The herein-described substitute material, consisting of vegetable matter, Portland cement, plaster-of-paris, sulfur, oil, and swine blood, in or about the proportions mentioned.

818,834. GOLD-SAVING APPARATUS. ISAAC P. LARRING, Denver, Colo. Filed May 1, 1905. Serial No. 258,342.



Claim.—1. In a gold-saving apparatus, a sluice, a structure contained therein consisting of a succession of walls arranged substantially at right angles with the plane of the sluice, intermediate inclines having a steeper inclination than that of the sluice, transverse mercury-containing channels at the top of each incline and below the top of the walls, and other channels at the junction of the inclines with the bases of the walls.

2. In a gold-saving apparatus, an inclined sluice, a riffled bottom therefor, said bottom consisting of a succession of surfaces having an inclination greater than that of the sluice, intermediate transverse dams arranged substantially at right angles with the plane of the sluice, mercury-containing channels at the junction of the lower edges of the inclines and the dams, and other mercury-containing channels at the upper edges of the inclines and below the tops of the dams to receive the vertical fall therefrom.

3. In a gold-saving apparatus, a means for separating gold from associated mineral, said means consisting of a sluice having a bottom composed of a series of rapid inclines and intermediate dams arranged substantially at right angles with the plane of the sluice, with mercury-containing channels at the junction of the lower edges of the inclines and the bases of the dams, and other mercury-containing channels located between the upper edges of the inclines and the faces of the dams and below the upper edges of the dams.

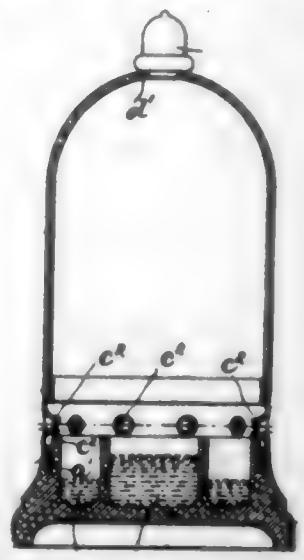
818,835. BILL-FILE. PLEASANT T. LEWASTER, Spartanburg, S. C. Filed Apr. 1, 1905. Serial No. 253,286.



Claim.—1. A bill-file consisting of a wire having ends of like construction with the parts thereof oppositely disposed, said ends being pointed, eyes located adjacent each said point, the eye of one end adapted to receive the point of the other end and vice versa.

2. A bill-file consisting of a wire having ends of like construction with the parts thereof oppositely disposed, said ends being pointed, each end having an eye located adjacent said point and grooves leading toward said eyes.

818,836. FLY-TRAP. BENJAMIN LENTHIER and JEAN B. ROUILLIARD, Boston, Mass. Filed Nov. 17, 1905. Serial No. 287,777.



Claim.—1. A fly-trap comprising a base having a bait-reservoir, an inverted cup above the base, and an intermediate inlet portion.

2. A fly-trap comprising a base having a bait-reservoir, an inverted cup above the base, and an intermediate portion having guarded inlets located between the cup and base.

3. A fly-trap comprising a base having a bait-reservoir, a transparent inverted cup above the base, and an intermediate inlet portion located between the cup and base.

4. A fly-trap comprising an opaque base having a bait-reservoir, a transparent inverted cup above the base, and an opaque intermediate inlet portion located between the cup and base.

5. A fly-trap comprising a base having a bait-reservoir, an inverted cup above the base, and an intermediate sheet-metal portion having inwardly-projecting frusto-conical passages or inlets guarded by prongs or spurs.

6. A fly-trap comprising a base having a bait-reservoir, and a groove surrounding the mouth of the reservoir, an inlet portion having its lower edge formed to enter said groove, the said inlet portion

having a shoulder adjacent to its upper edge, and an inverted cup adapted to rest on said shoulder.

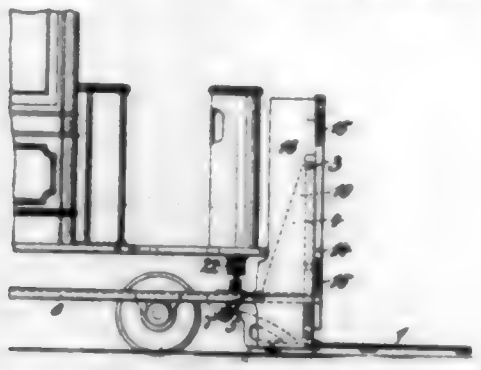
7. A fly-trap comprising a base having a grooved bait-reservoir, an inlet portion having a lower shoulder seated on the base at the outer side of the groove, and an upper shoulder adjacent to its upper edge, and an inverted cup adapted to rest on the said upper shoulder.

8. An insect-trap comprising a base having an outer and an inner reservoir, an inverted cup above the base, and an intermediate inlet portion.

9. A fly-trap comprising a base having a bait-reservoir, an inlet portion above the base, and an inverted cup above the inlet portion, said cup having a stoppered orifice in its upper portion.

10. A fly-trap comprising a base having a bait-reservoir, and a groove surrounding the mouth of the reservoir, the inner wall of said groove being higher than the outer wall, an inlet portion seated on the outer wall of the groove, and having guarded inlet-orifices, the lower portions of which are substantially flush with the inner wall of the groove, and an inverted cup seated on the said inlet portion.

818,837. **SAFETY GUARD OR FENDER FOR TRAMWAY AND THE LIKE VEHICLES.** PHILIPP LENTZ, Gross Lichterfilde, near Berlin, Germany. Filed Mar. 13, 1906. Serial No. 305,833.



Claim.—1. In a car-fender, a supporting-frame having upwardly-extending members at its forward end, a fender, links pivotally connecting the fender with the upwardly-extending members of the frame, whereby the fender is free to swing forwardly and rearwardly, and means engaging the rear end of the fender to lower the forward end thereof when swung rearwardly.

2. In a fender, a supporting-frame, a fender provided with a rearwardly-projecting arm, links pivotally connecting the fender with the frame to swing rearwardly and forwardly, and rollers on the supporting-frame and between which the arm of the fender extends.

3. In a fender, a pivoted and wheel-supported frame having upwardly-extending members, a fender provided with a rearwardly-projecting arm, links pivotally connecting the fender with the upwardly-projecting members of the frame, and grooved rollers on the frame and between which the arm of the fender extends, one of the rollers being yieldingly supported.

4. In a fender, a supporting-frame, a fender pivotally connected with the frame to swing forwardly and rearwardly, counterweights for the fender, and means for operating the counterweights upon the rearward movement of the fender.

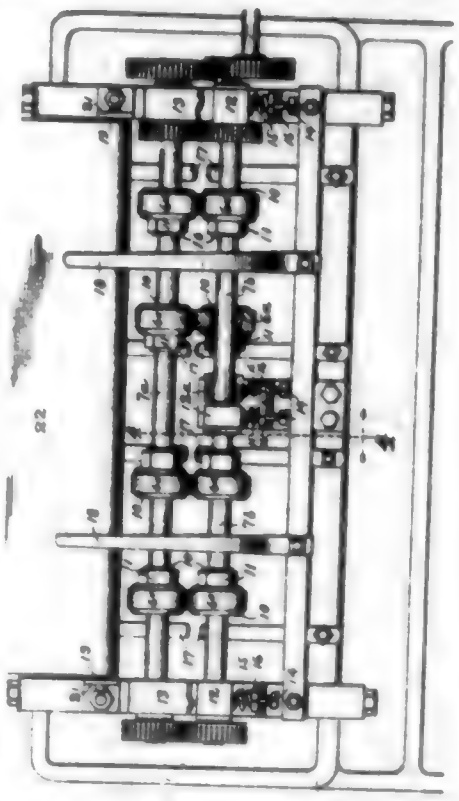
5. In a fender, a supporting-frame, a fender pivotally connected with the frame, pivotally and slidably mounted wings carried by the frame, and means for operating the wings upon the swinging of the fender.

6. In a fender, a supporting-frame, a fender pivotally connected with the frame to swing rearwardly and forwardly, pivotally and slidably mounted wings carried by the frame, means for holding the wings raised and in a closed position, said means being released on the rearward movement of the fender to allow the wings to slide downwardly, and means for swinging the wings outward on their descent.

7. In a fender, a supporting-frame, a fender pivotally connected with the frame to swing rearwardly and forwardly, wings pivotally and slidably mounted on the frame, interengaging hooks for holding the wings raised and in closed positions, said hooks being disengaged by the rearward movement of the fender, and wedges on the wings and frame for swinging the wings outward when released by the disengagement of the hooks.

818,838. **CATCHER FOR TINNING-MACHINES.** WILLIAM P. LEWIS and THOMAS R. WILLIAMS, Canton, Ohio. Filed July 14, 1905. Serial No. 269,585.

Claim.—1. A catcher for a tinning-machine comprising a pair of rolls having their peripheral parts made of tin.



2. A catcher for a tinning-machine comprising a series of adjacent short rolls having their peripheral parts made of tin.

3. A catcher for tinning-machines comprising a pair of positively-driven rollers having gripping portions provided with tin to prevent marking of the plates.

4. A plate-catcher having positively-driven catcher-rolls, said rolls having separated registering gripping portions of tin.

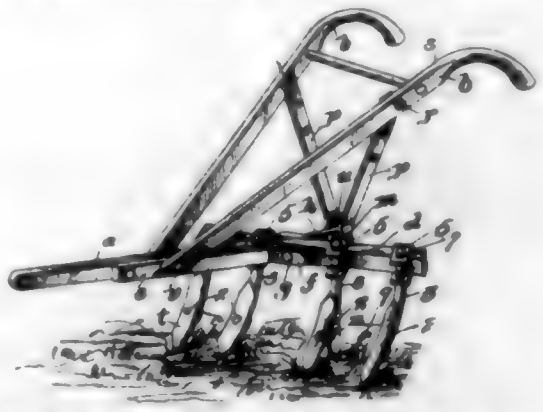
5. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine, and having tin-gripping portions, one of the rollers being divided in the middle with means for yieldingly pressing each divided part toward the other roller.

6. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine and having tin-gripping portions, one of the rollers being divided in the middle, with means for adjusting each divided part with reference to the other roller.

7. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine, and having soft gripping portions, one of the rollers being divided in the middle with means for yieldingly pressing each divided part toward the other roller.

8. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine and having soft gripping portions, one of the rollers being divided in the middle, with means for adjusting each divided part with reference to the other roller.

818,839. **CULTIVATOR.** ROBERT T. LOVE, West Monroe, La. Filed July 7, 1905. Serial No. 268,754.



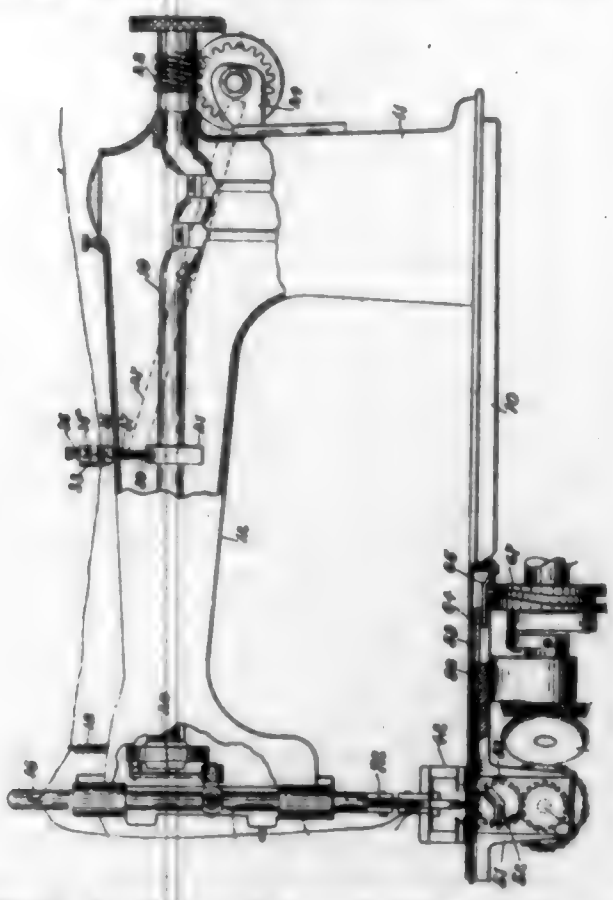
Claim.—1. In a cultivator, the combination of a horizontal draft-bar having a lateral offset bent portion, terminating in an oblique tooth-carrying bar meeting said offset bent portion in a right angle, and a horizontal brace-bar in the line of the draft-bar and connected thereto and to said tooth-carriyng bar, substantially as specified.

2. In a cultivator, the combination of a horizontal draft-bar having a lateral offset bent portion terminating in an oblique tooth-carrying bar meeting said offset bent portion in a right angle, a hori-

zontal brace-bar in the line of the draft-bar and connected thereto and to said tooth-carrying bar, and cultivator-teeth having angular shanks having bracing engagement with the forward face of the tooth-carrying bar, one of said teeth having its angular shank fitting closely in bracing engagement with the internal angle formed by the junction of the tooth-carrying bar and the lateral offset bent portion, substantially as specified.

3. In a cultivator, the combination of a horizontal draft-bar having a lateral offset bent portion terminating in an oblique tooth-carrying bar meeting said offset bent portion in a right angle, a horizontal brace-bar in line with the draft-bar and connected thereto and to said tooth-carrying bar, a rearward-extending bar in line with the draft-beam and connected to said tooth-carrying bar directly in rear of said horizontal brace-bar, and a heel-gage carried by said rear offset bar, substantially as specified.

818,840. STITCH-FORMING MEANS FOR SEWING-MACHINES. ROBERT L. LYONS, Waltham, Mass. Filed Dec. 19, 1904. Serial No. 237,376.



Claim.—1. A sewing-machine comprising stitch-forming means including a needle and a looper, and means for locking the thread against feeding movement during a series of loop-delivery actions of the needle.

2. A sewing-machine comprising stitch-forming means including a needle and a looper, thread-clamping means through which thread is supplied to the needle, and means for locking said clamping means during a series of loop-delivery movements of the needle.

3. A sewing-machine comprising stitch-forming means including a needle, a looper, means for taking up the thread, a thread-clamping means through which the thread is supplied to the take-up means, and means for locking said clamping means during a series of loop-delivery movements of the needle.

4. The combination with a sewing-machine comprising means for producing a relative movement between the needle and the work, and means for suspending such movement during the formation of a series of stitches, of means for locking the thread against feeding movement during the suspension of relative movement between the needle and the work.

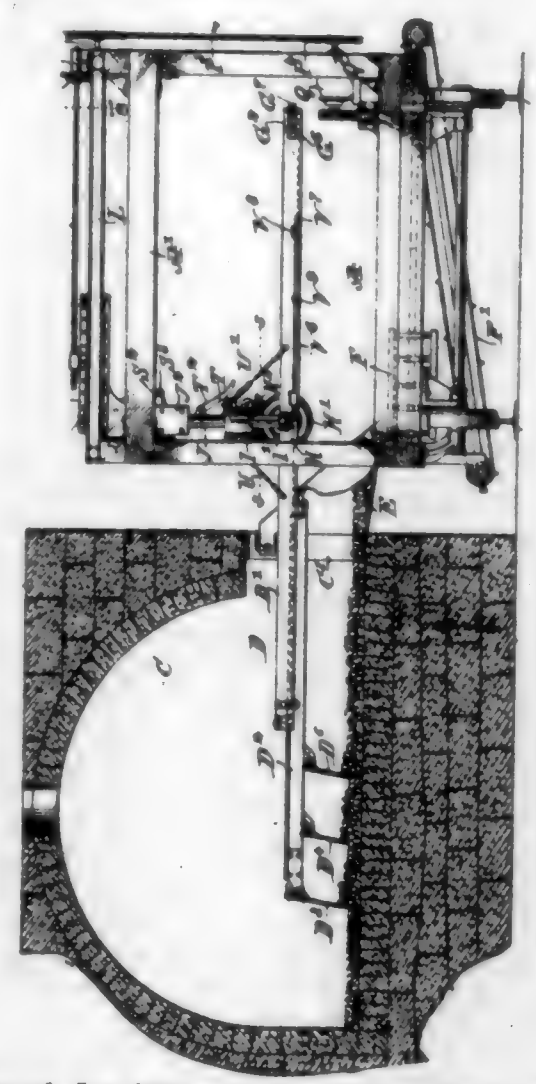
5. The combination with a sewing-machine comprising means for forming a group of stitches including a needle and a looper, and means for maintaining the relative positions of the work and the needle during a series of loop-delivery movements of the needle, of means timed with relation to the completion of the group of stitches, for locking the thread against feeding movement while the relative position of the needle and work is maintained.

6. The combination with a sewing-machine comprising means for producing a relative movement between the needle and the work, and means for suspending such movement during the formation of a series of stitches, of means for locking the thread against feeding movement whereby the continued loop-delivery movements of the needle will effect the drawing up of the chain-loops to form a knot and to ultimately break the thread.

7. The combination with a sewing-machine comprising a needle and operating mechanism therefor, of a needle-thread clamp, means for operating said clamp at each upward movement of the needle, and means for locking said clamp in the closed position during a series of movements of the needle.

8. The combination with a sewing-machine comprising a needle-bar, a drive-shaft therefor, a thread-clamp having a movable member adapted to be actuated by the rotation of said shaft, and means controlled by the rotation of said shaft for locking the movable member of the thread-clamp in the closed position during a series of rotations of the needle-bar shaft as described.

818,841. DRAWING-MACHINE FOR COKE-OVENS. RICHARD D. MARTIN, Las Esperanzas, Mexico. Filed Mar. 2, 1905. Serial No. 248,166.



Claim.—1. In a drawing-machine, the combination of a trackway, a carriage upon the trackway, a swivel supported by the carriage, a guideway mounted to swing up and down on the swivel, means for limiting the swinging movement of the guideway with respect to the swivel, a scraper-beam slidably mounted on the guideway, a scraper on the scraper-beam, means for moving the scraper-beam longitudinally of the guideway, and means whereby movement of the beam in one direction may swing the guideway downward and whereby movement in the opposite direction may swing the guideway upward.

2. A drawing-machine having a scraper, a shaft on which the scraper is fulcrumed to swing up and down, a swivel carrying the said shaft, and a carriage mounted to travel forward and backward, to move the scraper in and out of an operative position.

3. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, and means whereby the travel of the scraper-beam may swing the guideway.

4. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting a reciprocating mo-

tion to the said scraper-beam in its guideway, and means whereby the reciprocation of the scraper-beam may swing the guideway.

5. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically means for imparting a reciprocating motion to the said scraper-beam in its guideway, the said means comprising an endless sprocket-chain mounted to travel on the said scraper-guideway and connected with the said scraper-beam and a driving-gear for the said sprocket-chain, having a portion extending through the said swivel, and means whereby the reciprocation of the scraper-beam may swing the guideway.

6. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting a reciprocating motion to the said scraper-beam in its guideway, the said means comprising an endless sprocket-chain, sprocket-wheels journaled on the said guideway and over which passes the said sprocket-chain, a longitudinal shaft journaled on the said guideway, gear-wheels connecting the said longitudinal shaft with one of the said sprocket-wheels, a transverse shaft journaled in the said swivel and on which the said guideway is mounted to swing up and down, a gearing connecting the said longitudinal shaft with the said transverse shaft, a vertically-disposed shaft having its axis coinciding with that of the swivel, and a gearing connecting the said transverse shaft with the said vertically-disposed shaft.

7. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which th scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting a reciprocating motion to the said scraper-beam in its guideway, the said means comprising an endless sprocket-chain, sprocket-wheels journaled on the said guideway and over which passes the said sprocket-chain, a longitudinal shaft journaled on the said guideway, gear-wheels connecting the said longitudinal shaft with one of the said sprocket-wheels, a transverse shaft journaled in the said swivel and on which the said guideway is mounted to swing up and down, a gearing connecting the said longitudinal shaft with the said transverse shaft, a vertically-disposed shaft having its axis coinciding with that of the swivel, a gearing connecting the said transverse shaft with the said vertically-disposed shaft, a main driven shaft, and a manually-controlled gearing connecting and disconnecting the said main driven shaft with and from the said vertically-disposed shaft.

8. In a drawing-machine, the combination of a carriage, a swivel supported by the carriage, a guideway mounted to swing up and down on the swivel, means for limiting the swinging movement of the guideway, a scraper slidably mounted on the guideway, means for moving the scraper longitudinally of the guideway, and means whereby movement of the scraper in one direction may swing the guideway downward, and whereby movement in the opposite direction may swing the guideway upward.

9. In a drawing-machine, the combination of a swivel, a guideway mounted to swing up and down on the swivel, means for limiting the swinging movement of the guideway, a scraper slidably mounted on the guideway, means for moving the scraper longitudinally of the guideway, and means whereby movement of the scraper may impart a swinging motion to the guideway.

10. A drawing-machine having a scraper, a support, a swivel mounted to turn on the said support, the axis of the swivel being disposed vertically and the said scraper being mounted to swing up and down on the said swivel, a carriage carrying the said support, an overhead guideway for the said carriage to travel on, and means for imparting forward and backward motion to the said carriage.

11. In a drawing-machine, the combination of a swivel, a scraper mounted to swing up and down on the swivel, means for limiting the swinging motion of the scraper, means for moving the scraper longitudinally with respect to the swivel, and means whereby the longitudinal movement may swing the scraper.

12. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, and means whereby the travel of the scraper-beam may impart an up-and-down swinging motion to the said scraper-guideway.

13. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting an up-and-down swinging motion to the said scraper-guideway, the said means comprising a revoluble shaft journaled in the said swivel and forming the fulcrum for the said guideway, a brake-wheel secured on the said shaft, a brake-band for the said brake-wheel, having one end fixed on the said guideway, and means under the control of the operator and connected with the other end of the said brake-band, for adjusting the tension of the band.

14. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting an up-and-down swinging motion to the said scraper-guideway, the said means comprising a revoluble shaft journaled in the said swivel and forming the fulcrum for the said guideway, a brake-wheel secured on the said shaft, a brake-band for the said brake-wheel, having one end fixed on the said guideway, a sliding nut on the said guideway, connected with the other end of the said brake-band, a screw-rod having right and left hand screw-threads, of which one screws in the said sliding nut, and a nut fixed on the said guideway and in which screws the other screw-thread of the said screw-rod.

15. A drawing-machine having a scraper provided with a guideway, a scraper-beam mounted to travel on the said guideway, a scraper-blade on the scraper-beam, a swivel on which the scraper-guideway is fulcrumed to swing up and down, the axis of the swivel being disposed vertically, means for imparting an up-and-down swinging motion to the said scraper-guideway, the said means comprising a revoluble shaft journaled in the said swivel and forming the fulcrum for the said guideway, a brake-wheel secured on the said shaft, a brake-band for the said brake-wheel, having one end fixed on the said guideway, a sliding nut on the said guideway, connected with the other end of the said brake-band, a screw-rod having right and left hand screw-threads, of which one screws in the said sliding nut, a nut fixed on the said guideway and in which screws the other screw-thread of the said screw-rod, and means on the screw-rod for allowing the operator to turn the same.

16. A drawing-machine having a scraper, a support, a swivel mounted to turn on the said support, the axis of the swivel being disposed vertically and the said scraper being mounted to swing up and down on the said swivel, manually-controlled means for locking the said swivel to the said support, means for moving the scraper longitudnally with respect to the swivel, and means whereby said longitudinal movement may swing the scraper.

17. A drawing-machine having a scraper, a swivel on which the scraper is mounted to swing up and down, the axis of the swivel being disposed vertically, and flexible and extensible connections between the swivel and the scraper, to hold the scraper approximately in a horizontal position and to allow up-and-down movement thereof.

18. A drawing-machine having a scraper, a swivel on which the scraper is mounted to swing up and down, the axis of the swivel being disposed vertically, and flexible connections between the swivel and the scraper, to hold the scraper approximately in a horizontal position and to allow up-and-down movement thereof, each connection consisting of a chain and a spring.

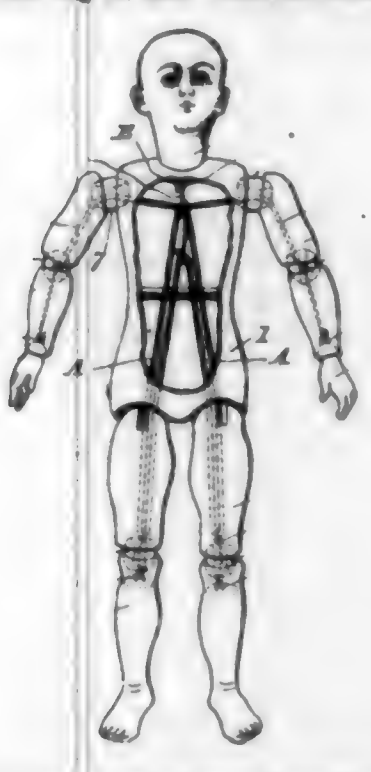
19. A drawing-machine having a scraper, a swivel on which the scraper is mounted to swing up and down, the axis of the swivel being disposed vertically, and flexible connections between the swivel and the scraper, to hold the scraper approximately in a horizontal position and to allow up-and-down movement thereof, each connection consisting of a chain connected at one end to the scraper and a spring connected at one end to the chain and at the other end to the swivel.

20. A drawing-machine having a scraper, a swivel on which the scraper is mounted to swing up and down, the axis of the swivel being disposed vertically, flexible connections extending obliquely from opposite sides of the swivel, to connect with the said scraper on opposite sides of its fulcrum, means for moving the scraper longitudinally of the swivel, and means whereby the longitudinal movement may swing the scraper.

21. A drawing device comprising a scraper, a swivel on which the said scraper is mounted to swing up and down, a carriage mounted to travel and on which the swivel is mounted to turn on a vertical axis, a screw-rod screwing in the said carriage and extending in the direction of the travel of the carriage, a driven shaft, and a manu-

ally-controlled reversing-gear for connecting the said driven shaft with the said screw-rod, to rotate the latter in either direction.

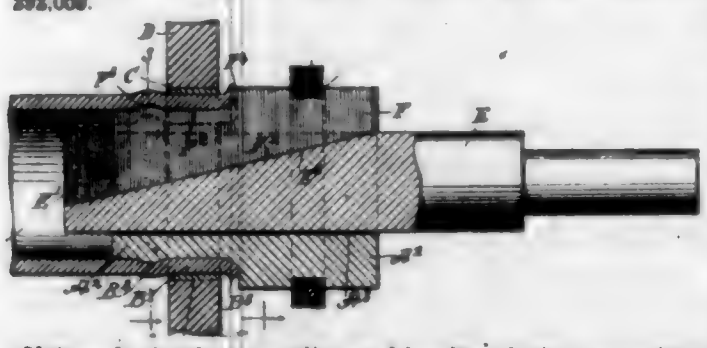
818,842. ARTICULATION OF DOLLS. HARRY W. MEYER, Baltimore, Md. Filed Aug. 15, 1905. Serial No. 274,300.



Claim.—1. An articulating device adapted to be placed in a doll, which consists of a single piece of elastic cord formed into leg-loops provided with hooks, and having its ends crossed and extending in opposite directions, combined with a hook at each end of the elastic cord, means to fasten the crossed ends of the said cord to the central portion of the cord, and a hook leading upward from the central portion of the cord, substantially as specified.

2. An elastic articulating device for a doll which comprises a head-hook, two arm-hooks, two leg-hooks, and an elastic cord whereby all of the said hooks are connected, the whole forming an entirety adapted to be placed as an entirety in the body or trunk of the doll, and the said hooks being applicable for attachment to the movable parts of the doll, and thereby effect a yielding connection between the same and the trunk, substantially as specified.

818,843. TUBE EXPANDING AND BEADING TOOL. WASHINGTON MCCORMICK, Hillyard, Wash. Filed Dec. 16, 1905. Serial No. 292,059.



Claim.—1. A tube expanding and beading device, comprising an integral body formed in two diameters and having a central bore and a slot extending lengthwise and leading to the said bore, a mandrel fitting the said bore and formed with a longitudinal recess having an inclined bottom portion and registering with the slot of the body, and an expanding and beading tool fitting the said slot and the said recess.

2. A tube expanding and beading device, comprising a body having a central bore and a slot extending lengthwise and leading to the said bore, a mandrel fitting the said bore and formed with a recess having an inclined bottom portion and registering with the said slot, an expanding and beading tool fitting the said slot and the said recess, and an elastic ring fitting an annular groove in the said body and a groove in the said tool.

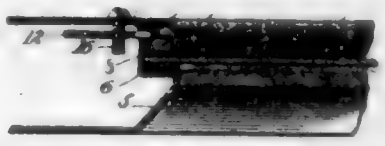
3. A tube expanding and beading device, comprising an integral body formed in two diameters and having a central bore and a slot extending lengthwise and leading to the said bore, a mandrel fitting the said bore and formed with a longitudinal recess having an inclined bottom portion and registering with the slot of the body, and an expanding and beading tool fitting the said slot and the said recess, the tool being provided with a straight expanding surface portion terminating at the inner end in a ridge and at the outer end in a shoulder.

4. A tube expanding and beading device, comprising an integral body formed in two diameters and having a central bore and a slot extending throughout the length thereof and leading to the said bore, a mandrel fitting the said bore and formed with a longitudinal recess having an inclined bottom portion and registering with the slot of the body, and an expanding and beading tool fitting the said slot and the said recess, the tool being provided with a straight expanding surface portion terminating at the inner end in a ridge and at the outer end in a shoulder having a curved bottom portion terminating in a vertical surface.

5. A tube expanding and beading device, comprising a body formed in two diameters, the smaller diameter having an annular exterior ridge near its end, the body being provided with a central bore and a longitudinal slot leading to said bore, a mandrel fitting the bore of the body and provided with a longitudinal recess having an inclined surface, and an expanding and beading tool fitting in the slot of the body and the recess of the mandrel, the tool being provided near its inner end with a ridge and at about the middle with a shoulder.

6. A tube expanding and beading device, comprising a body having a reduced inner end and provided with a central bore and a longitudinal slot leading to said bore, a mandrel fitting in the bore of the body and provided with a longitudinal recess having an inclined surface, and an expanding and beading tool fitting the slot of the body and the recess of the mandrel and having an inclined surface corresponding to that of the recess of the mandrel, said tool having a ridge near its inner end and an overhanging shoulder at about the middle of its length.

818,844. WINDOW-SASH. JOSEPH B. MCKROWN, Union Hill, N. J. Filed Aug. 4, 1905. Serial No. 272,663.



Claim.—1. A metal sash having outwardly-extended portions provided with slots, glass-securing strips, clips extended from the strips through said slots, walls of said slots forming fulcrums for the clips and means for moving the clips to cause the strips to engage closely against the glass.

2. A metallic window-sash having outwardly-extended portions provided with slots, securing-strips for the glass, clips extended from the said strips through said slots, and screws engaging the said clips for adjusting the strips against the glass.

3. A metal sash having an outwardly-extended portion provided with slots, tubular glass-securing strips having longitudinal slots, clip-plates having head portions arranged in the strips, the said clip-plates being extended through the slots of the outwardly-extended portions, and adjusting-screws engaging with said clips.

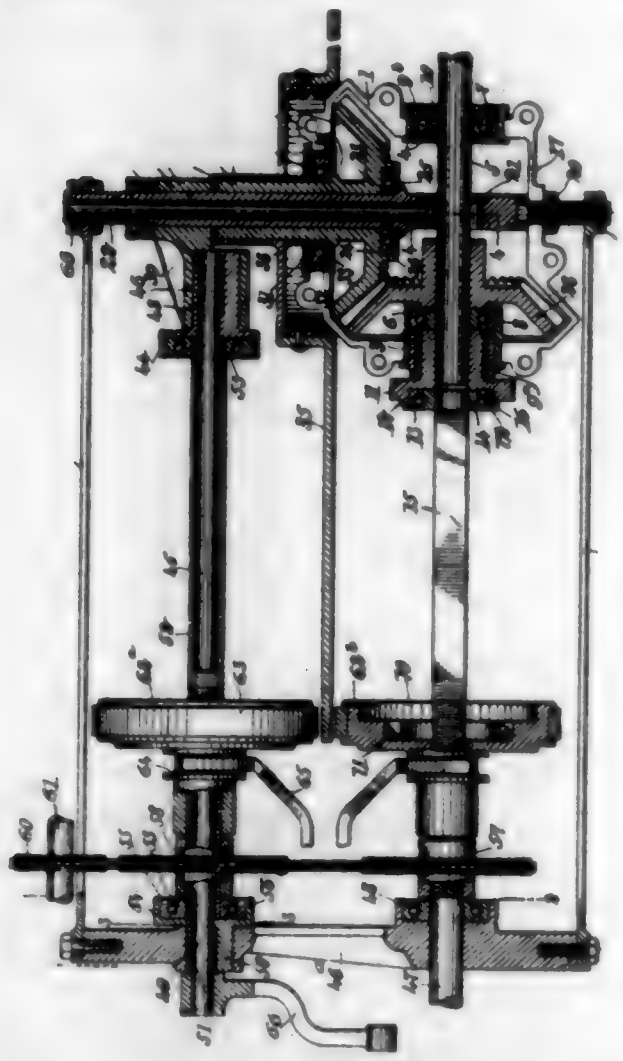
818,845. TRANSMISSION MECHANISM. EDWARD NELSON, New York, N. Y. Filed July 19, 1905. Serial No. 270,406.

Claim.—1. In a transmission mechanism, in combination, a rotatable friction-disk, a shaft adapted to be driven therethrough, a second shaft in alinement with said first shaft, a friction-roller carried on said second shaft and engaging said disk to rotate the same, means for advancing said roller along its shaft, and a member carried by said first shaft and coöperating with said roller to constitute a clutch.

2. In a transmission mechanism, in combination, a rotatable friction-disk, a shaft adapted to be driven therethrough, a second shaft in alinement with said first shaft, a friction-roller carried on said second shaft and engaging said disk to rotate the same, means for advancing said roller along its shaft, a member carried by said first shaft and coöperating with said roller to constitute a clutch, and means for rotatably mounting said second shaft on said first shaft.

3. In a transmission mechanism, in combination, a pair of substantially parallel shafts, a friction-disk rotating in a plane therebetween, friction-rollers carried by said shafts and adapted to clamp said disk therebetween, a shaft in substantial alinement with one of said first shafts, means for advancing said rollers toward the axis of rotation of said disk, and an eccentric mounting for one of said first shafts affording means for moving said rollers toward each other.

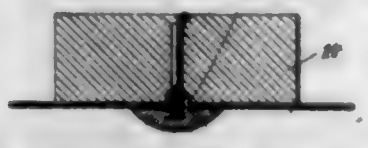
4. In a transmission mechanism, in combination, a speed-shaft, a second speed-shaft disposed substantially parallel therewith, a friction-disk adapted to rotate in a plane between said shafts, a roller carried by said first shaft, a second roller carried by said second shaft and coöperating with said first roller to clamp said disk therebetween, means for advancing said first roller, a driven shaft, means for driving said shaft through said disk, and a positive clutch connection between said first shaft and said driven shaft, said first roller affording means for closing said clutch.



5. In a transmission mechanism, in combination, a speed-shaft, a second shaft substantially parallel with said first shaft, an eccentric mounting for said second shaft, a friction-disk mounted to rotate in a plane between said shafts, a roller carried by said first shaft and adapted to engage said disk, a second roller carried by said second shaft and adapted to engage said disk behind said first roller a driven shaft in alinement with said first shaft, means for driving said driven shaft through said friction-disk, a clutch member carried by said driven shaft, and means for advancing said first roller toward the axis of rotation of said disk, said first roller constituting a clutch member and coöperating with said first clutch member to connect said first shaft and said driven shaft positively.

6. In a transmission mechanism, in combination, a spindle, a friction-disk mounted to rotate and slide thereupon, a friction-roller adapted to engage the face of said disk, a second roller opposite said first roller, means for moving one of said rollers to clamp said disk against the opposite roller, a spring normally maintaining said disk out of engagement with said roller, a driven shaft, means for driving the same through said friction-disk, a clutch member carried by said driven shaft, and means for advancing said first roller toward said spindle, said first roller constituting a clutch member and coöperating with said first clutch member to positively connect said driven shaft therewith.

818,846. VEHICLE-BODY. WILLIAM W. OGDEN, Chatham, and WALTER C. YELTON, Newark, N. J., assignors to J. M. Quinby & Co., Newark, N. J. Filed Oct. 13, 1905. Serial No. 283,241.



Claim.—1. A vehicle-body having a wooden frame, a metal shell, said shell consisting of a plurality of separated panels and the frame comprising elements located behind the joints between the panels and having grooves corresponding with said joints, and a molding or strip located on the outside of each joint and projecting into the groove in a corresponding part of the frame.

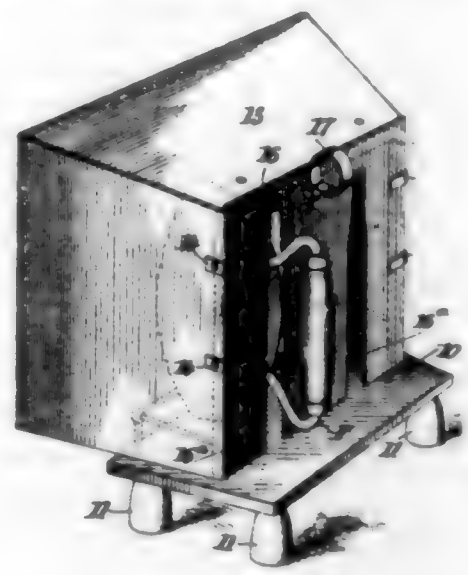
2. A vehicle-body having a wooden frame, a shell consisting of a plurality of sheet-metal panels, the frame comprising elements located behind the joints between the panels and having grooves corresponding with said joints, the edges of the grooves being flush with the edges of said plates, and a metal molding having a concave inner surface located on the outside of each joint and projecting into the groove in the frame.

3. A vehicle-body having a wooden frame, a metal shell, said shell consisting of a plurality of separated panels and the frame comprising elements located behind the joints between the panels and having grooves corresponding with said joints, and a molding or strip located on the outside of each joint; said molding being provided with a longitudinal projection engaging the edges of the plates and fitting in the grooves, and means extending from the back of the frame for securing the molding to the frame.

4. A vehicle-body having a wooden frame, a metal shell, said shell consisting of a plurality of separated panels and the frame comprising elements located behind the joints between the panels and having grooves corresponding with said joints, and a molding or strip located on the outside of each joint; the molding having a longitudinal projection extending into the groove in the frame, flanges adapted to clamp the panels between the molding and frame, and screws passing through the wooden frame and into sad projections for holding the molding firmly in position.

5. A molding for covering joints between the panels of a vehicle, comprising a metal plate having a concave under side, a longitudinal projection extending from the inner portion of said concavity at right angles to the body of the plate, the concave surface extending from the projection in substantially opposite directions and another projection extending from one side of the plate at an obtuse angle to the main body thereof.

818,847. IRON-HEATER. CORNELIUS PETTY, Bay Minette, Ala. Filed Sept. 1, 1904. Serial No. 222,971.



Claim.—1. In an iron-heater, the combination with a base, of a frame rising therefrom, a hood fixed to the frame and extending beyond the base, and means for holding an iron within the hood.

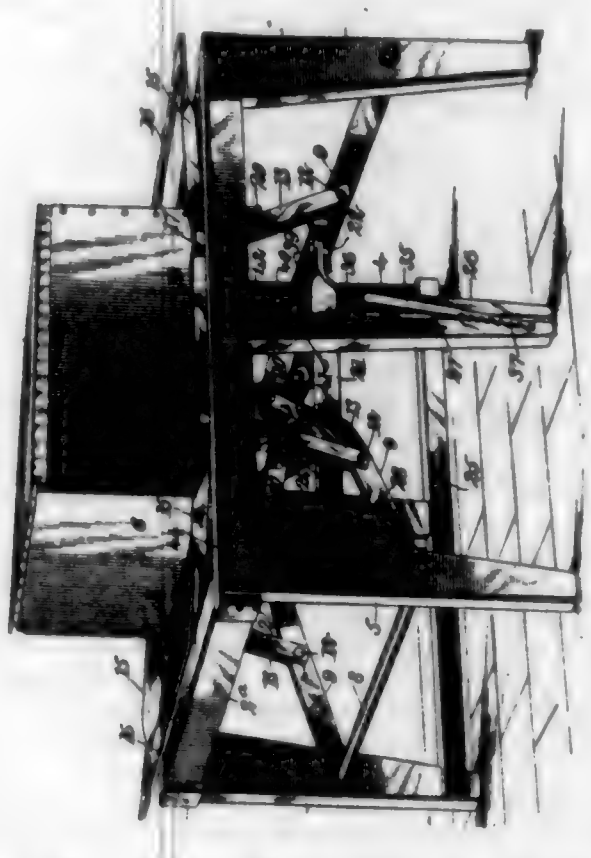
2. In an iron-heater, the combination with a base, of a frame rising therefrom, a hood fixed to the frame and extending beyond the base and flaring outwardly therefrom, and means for holding an iron within the hood.

3. In an iron-heater, the combination with a base, of a frame rising therefrom, cleats fixed to the frame at each side, a shield movable in the cleats, a hood fixed to the frame and extending outwardly from the shield, and means for holding an iron within the hood.

4. In an iron-heater, the combination with a base, a frame on the base, a hood supported by the frame, a shield movable at the rear of the hood, and means for holding an iron within the hood.

818,848. PRESSER-MACHINE FOR BOXING PURPOSES. GEORGE N. POND, Aspen, Colo. Filed Aug. 22, 1905. Serial No. 275,196.

Claim.—1. In boxing fruit and the like, a presser-machine, comprising means for supporting a box, presser devices for the lid of the box, and means for actuating the same to embrace the sides of the box and to press upon said lid, said second-named means embodying vertically-swinging arched members and links between the same and said devices.



2. In boxing fruit and the like, a presser-machine, comprising means for supporting a box, presser devices for the lid of the box, and means for actuating the same to embrace the sides of the box and to press upon said lid, said second-named means embodying vertically-swinging arched members, links connecting them with said devices, and a spring-controlled foot-treadle lever.

3. In boxing fruit and the like, a presser-machine, comprising means for supporting a box, presser devices for the lid of the box, normally occupying reverse positions horizontally, and means for carrying said devices to vertical positions to embrace the box, and for moving the same vertically to press upon and hold said lid in place while being secured to the box, said second-named means embodying a spring-controlled operating foot-lever, and a spring-controlled swing-plate having teeth for engaging said lever in lowered position.

4. In boxing fruit and the like, a presser-machine, comprising means for supporting a box, presser devices for the lid of the box, and means for actuating the same to embrace the sides of the box and to press upon said lid, said second-named means embodying vertically-swinging arched members and links between the same and said devices, and links connecting the devices together.

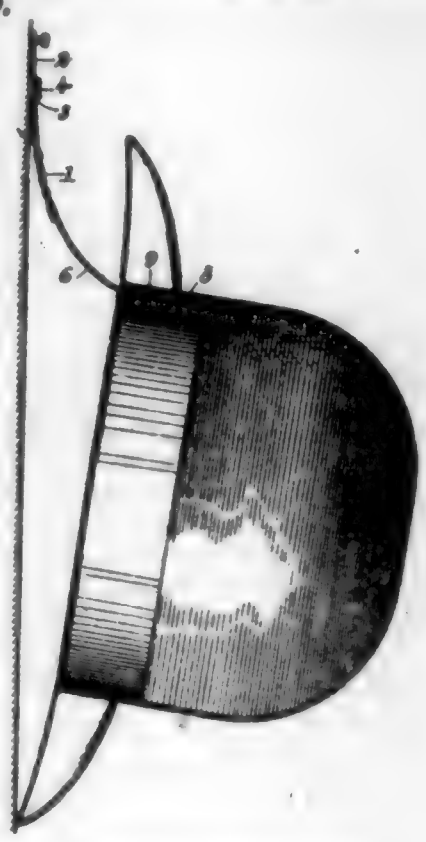
5. In boxing fruit and the like, a presser-machine, comprising parallel longitudinal beams and sets of supporting-legs therefor, connecting transverse beams between the two near their ends, inner transverse beams for supporting a box, a spring-controlled operating foot-lever, duplicate swinging arched members having movable connections with the foot-lever, reversely-disposed rectangular presser devices normally resting upon the inner transverse beams, and occupying reversed positions, links movably connecting the presser devices with each other, and links also movably connecting them with said arched members.

818,849. **HAT-HANGER.** MILTON W. POTTER, Red Lodge, Mont. Filed Aug. 1, 1905. Serial No. 272,160.

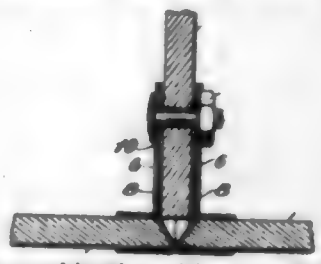
Claim.—1. A hat-hanger consisting of a single length of spring-wire having a loop portion at one end, outwardly-turned portions at the other end and said outwardly-turned portions being at an acute angle with relation to the body, and a clip-plate with which said outwardly-turned portions engage.

2. A hat-hanger comprising a length of wire having a loop portion at one end, the opposite end being provided with outwardly-turned portions arranged at an acute angle, a clip-plate with which said outwardly-turned portions connect, and a card of suitable material engaged by the clip.

818,849.



818,850. **SECURING DEVICE FOR PLATE-GLASS.** HENRY R. RANSOM, Pittsburg, Kans. Filed Dec. 5, 1905. Serial No. 290,389.

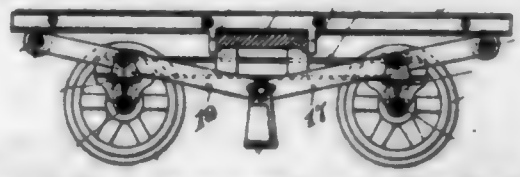


Claim.—1. The combination with recessed plates contacting at their adjoining edges; of a plate disposed in rear of and overlapping the abutting edges of the recessed plates; parallel metallic strips secured upon opposite faces of the inwardly-extending plate, hooks upon said plates and within the recesses, said hooks contacting and overlapping the outer faces of the recessed plates and means secured to the inwardly-extending plate for holding the recessed plates within the hooks.

2. The combination with plates having abutting edges, said edges having registering recesses therein; of a mullion-plate abutting against and overlapping the edges of the recessed plates, metallic strips secured to opposite faces of the mullion-plate and hooks integral with said strips and disposed within the recesses, said hooks engaging the recessed plates.

3. The combination with plates having abutting edges, said edges having registering recesses therein; of a mullion-plate in rear of and overlapping the abutting edges of the recessed plates, metallic strips secured to opposite faces of the mullion-plate and overlapping that edge of the mullion-plate contacting with the recessed plates, said strips contacting and seated within the recesses, each strip having an integral hook overlapping the outer face of the recessed plates.

818,851. **BRICK-CAR.** FRANK H. REID, Memphis, Tenn., assignor to Success Brick Machinery Company, Memphis, Tenn., a Corporation. Filed May 12, 1905. Serial No. 260,154.



Claim.—1. In combination with a car truck and wheels, a lifting-jack supported by the truck, a vertically-movable brick-support seated upon the truck, connections between the jack and said support, for imparting a vertical feed to the support, a crank shaft and arm for actuating the jack, lever mechanism pivotally connected to said arm and fulcrumed at opposite ends of the car-truck, means for reversing the direction of movement of the jack, and actuating de-

vices for the said reversing mechanism projected to the opposite ends of the truck, substantially as described.

2. In combination with a car truck and wheels, a platform straddling the truck, a jack mechanism secured to the under face of the said platform, said jack having a ratchet-bar movable vertically under the platform, a lever mechanism fulcrumed upon the truck, having a stirrup engaging under the end of said ratchet-bar, the upper ends of said lever mechanism projecting above the truck, and forming a seat for the movable support, means permitting a sliding engagement of the said supporting-lever ends with the said brick-support, means for feeding said ratchet-bar in either direction, and an actuating-lever, substantially as described.

3. In combination with a car truck and wheels, a platform straddling the truck, a movable brick-support, a jack mechanism secured to the under face of the platform and comprising a ratchet-bar movable vertically under the platform, a substantially U-shaped stirrup engaging under the end of the ratchet-bar, lever mechanism pivoted to the opposite arms of said stirrup, said lever mechanism being extended to the opposite ends of the truck and fulcrumed thereto substantially over the wheel-axles, the upper ends of said lever mechanism projecting above the truck and forming a seat, adapted to slidably engage and support the said movable brick-support, means for feeding the said ratchet-bar in opposite directions, and an actuating-lever, substantially as described.

4. In combination with a car truck and wheels, a platform straddling the truck, the said truck being provided with bolsters in line with the wheel-axles, a jack mechanism secured to the under face of the platform and comprising a ratchet-bar movable vertically under the platform, a substantially U-shaped stirrup engaging under the end of the said ratchet-bar, lever mechanism, the inner ends of which are pivoted to the upper ends of the said stirrup, said lever mechanism extending to opposite ends of said truck and fulcrumed upon said bolsters, the upper ends of said lever mechanism being extended above the opposite ends of the truck and forming a seat, adapted to slidably engage and support the brick-support, means for feeding said ratchet-bar, and an actuating lever mechanism therefor, substantially as described.

5. In combination with the car truck and wheels, a vertically-movable support, a platform, straddling the truck between the wheels, a vertically-feeding mechanism secured under the platform, a lever mechanism fulcrumed at the opposite ends of the truck, the inner ends of which engage the vertical feeding mechanism, the upper ends of said lever mechanism forming a sliding seat for the said support above the truck, substantially as described.

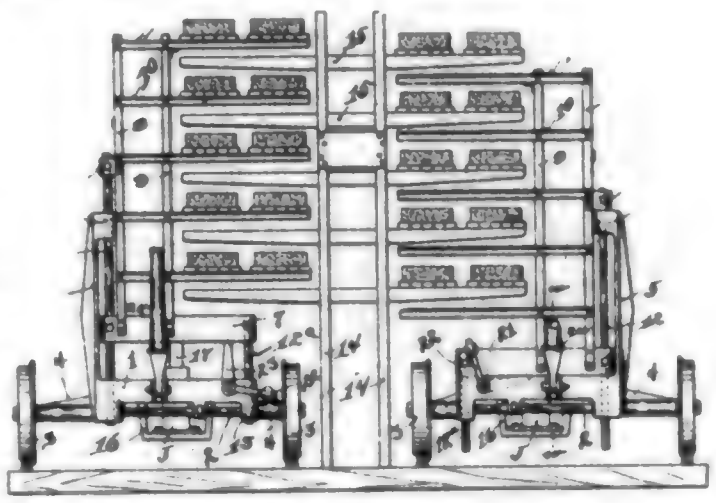
6. In combination with a car truck and wheels, a platform straddling the truck, a movable brick-support, a jack mechanism secured to the under face of the platform and comprising a ratchet-bar movable vertically under the platform, a substantially U-shaped stirrup engaging under the end of the ratchet-bar, lever mechanism pivoted to the opposite arms of said stirrup, said lever mechanism being extended to the opposite ends of the truck and fulcrumed thereto substantially over the wheel-axles, the upper ends of said lever mechanism projecting above the truck and forming a seat adapted to slidably engage and support the said movable brick-support, and an actuating-lever, substantially as described.

7. A brick-car having a truck, a brick-supporting deck vertically movable thereon, a platform supported across the truck, a jack mechanism secured to the platform, connections between the deck and the vertically-movable element of the jack, and reversing mechanism, whereby the jack may be fed in opposite directions, substantially as described.

8. In combination with a car truck and wheels, a lifting-jack supported by the truck, a vertically-movable brick-support seated upon the truck, connections between the jack and said support, a crank-shaft and arm for actuating the jack, a lever having connection with said arm for actuating said jack, and jack-reversing mechanism whereby said lever may be operated to raise or lower the brick-support, substantially as described.

818,852. **BRICK-CAR.** Frank H. Reid, Memphis, Tenn., assignor to Success Brick Machinery Company, Memphis, Tenn., a Corporation. Filed May 12, 1905. Serial No. 260,155.

Claim.—1. In combination with a car truck and wheels a vertically lifting and depressing mechanism supported by the body of the truck, a support seated upon the lifting mechanism above the truck, the said support consisting of an upright frame, a horizontal tier of shelves attached to said frame, the body of the truck being provided with an upwardly-extended side arm at each end having ears projecting transversely to the body of the truck, vertical bearings formed in the truck-body and in the said ears, rods securely attached to the said frame and engaging through the said bearings, forming a vertical guide for said support and adding rigidity to said frame, substantially as described.



2. In combination with a car truck and wheels, a depending platform suspended from the opposite sides of and swinging below the body of the truck, a jack mechanism seated upon said platform and comprising an upwardly-extended ratchet-bar, a support engaging the upper end of the ratchet-bar above the truck, vertical guide mechanism between the support and truck, and means for actuating the jack mechanism, substantially as described.

3. In combination with a car truck and wheels, a vertically lifting and depressing mechanism, a support having guideway connection with the truck and actuated by the said lifting mechanism, and a shaft having a radial strut engaging under the movable support and bearing toward the same, whereby the strut assumes the position of a vertical brace under the support at a predetermined height, substantially as described.

4. In combination with a car truck and wheels, a movable support having tiers of horizontal brackets with brick-supporting shelves adapted to engage between the series of stationary brackets, guide connections between the car-truck and movable support, adapted to permit movement of said support, substantially free from vibration, a jack mechanism on the truck, the vertically-movable element of which engages the base of the upright support, a rock-shaft and lever mechanism for actuating the vertically-movable element of the jack in steps in either direction, whereby under varying conditions the movable brackets may be raised to varying levels by reciprocating the lever, substantially as described.

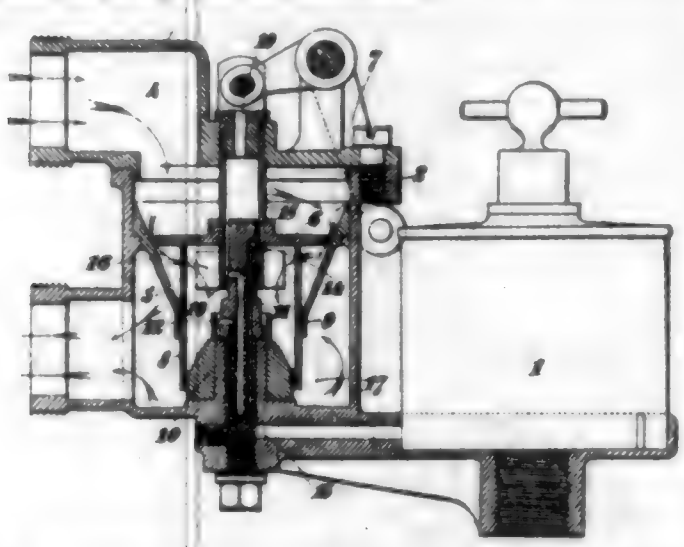
5. In a brick-car, a truck, a brick-support thereon having vertical guide connections with the frame, a platform suspended from the middle of the truck, a jack mechanism secured on the platform, the vertically-movable element of the jack engaging under the movable support for raising and lowering the same, a rock-shaft for actuating the jack, reversing mechanism for the jack, and a lever having connection with the rock-shaft for reciprocating the same in steps in either direction, substantially as described.

6. In combination with a car truck and wheels, a movable brick-support having vertical guide connections with the truck, a jack-support on the truck under the movable support, a jack mechanism secured on said support, having a vertical reciprocating ratchet-bar, connections between the movable support and the ratchet-bar for transmitting the vertical movement to the brick-support, and means for actuating this said ratchet-bar in step movements in either direction, whereby the brick-support may be raised or lowered in a series of step movements and so definitely adjusted vertically, substantially as described.

818,853. **CARBURETER.** Louis Renault, Billancourt, France. Filed May 29, 1905. Serial No. 262,588.

Claim.—1. A carbureter comprising a mixing-chamber, a spraying-nozzle provided with a plurality of outlet-passages of different lengths, said passages communicating with the mixing-chamber and a hydrocarbon-supply, a funnel-shaped member arranged within the mixing-chamber, a vertically-movable disk arranged within the mixing-chamber, a cylindrical member carried by said disk, positioned within said funnel-shaped member and having openings in the side thereof, and means carried by said disk for closing certain of the

outlet-passages of the nozzle and for establishing communication between the passages and the atmosphere.



2. A carbureter comprising a mixing-chamber, an air-inlet therefor, a chamber surrounding said mixing-chamber and adapted to communicate therewith, an outlet for said last-mentioned chamber, a verically-movable cylindrical member adapted to open and close communication between the two chambers, a nozzle extending within said mixing-chamber and provided with a plurality of outlet-passages of different lengths opening into the mixing-chamber and communicating with a hydrocarbon-supply, a vertically-movable disk attached to said cylindrical member, means carried by the disk and surrounding the nozzle and adapted to close certain of said passages to said mixing-chamber and to establish communication between said passages and the atmosphere, and means for vertically moving said closure means, thereby imparting a like movement to the disk and cylindrical member.

818,854. **HEAD-SUPPORT OR BOLSTER FOR BATH-TUBS.** CLARA ROSENDAHL, Berlin, Germany. Filed Oct. 26, 1903. Serial No. 178,519.



Claim.—A head-rest for bath-tubs, consisting of a frame made of a single rectangularly-bent wire, and a hook likewise made of a single bent wire secured to the frame and adapted to grip over the bath-rim, and a bolster fastened to the frame, substantially as described.

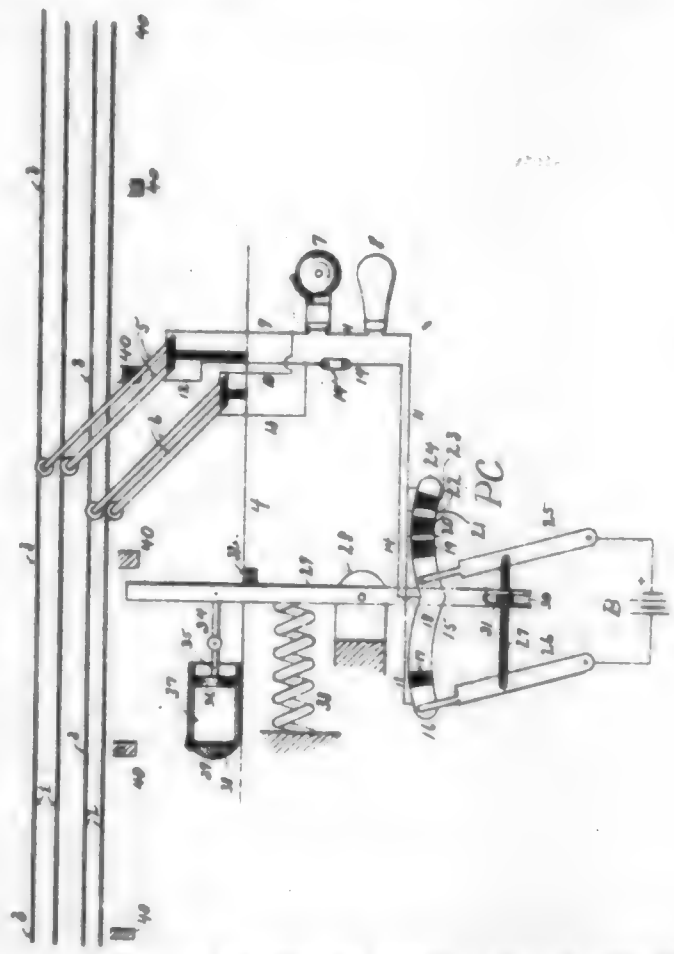
818,855. **RAILWAY SIGNAL SYSTEM.** ALFRED L. RUTHVEN, Topeka, Kans., assignor of one-half to William Peterson, Topeka, Kans. Filed Sept. 1, 1905. Serial No. 276,577.

Claim.—1. In a railway danger-signal system, a series of overlapping circuits arranged along the track, suitable connecting means with the train, a signaling device on the train, a battery, a pole-changer with several contacts, and an operating device therefor whereby in normal position a continuous signal is given, and in shifted position an intermittent signal is given.

2. In a railway danger-signal system, a series of circuits arranged along the track, suitable connecting means with the train, a signaling device on the train, a battery, a pole-changer adapted in one position to a continuous signal and in shifted position to an intermittent signal, and means for shifting the pole-changer at intervals.

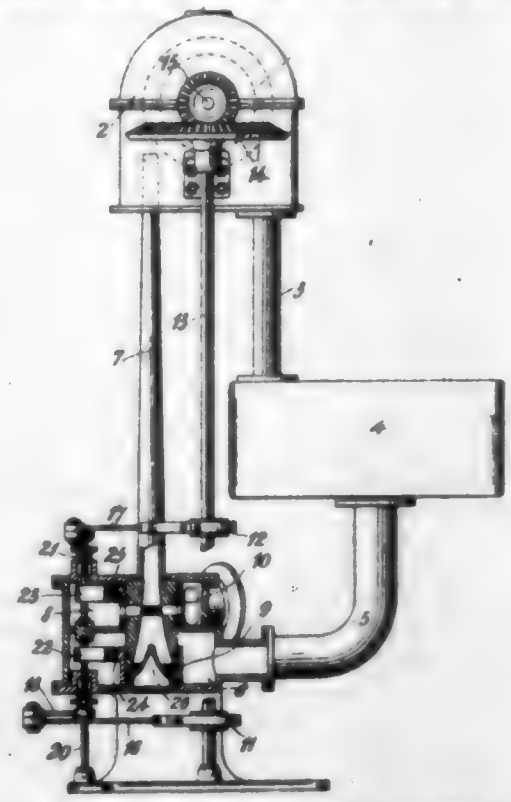
3. In a railway danger-signal system, a series of overlapping circuits, trolleys connecting same with the train, signaling devices on the train, a battery on the train, a pole-changer adapted to be returned slowly to normal position and to close circuit intermittently during such return, and means for shifting the pole-changer at intervals along the track.

4. In a railway danger-signal system, a series of overlapping circuits, trolleys connecting same with a moving train, signaling devices on the train, a pole-changer on the train, a battery, said pole-changer being adapted to return to normal position slowly and to close circuit intermittently during such return, an operating-lever for the pole-changer, and buffers along the track for operating the pole-changer at intervals.



5. In a railway danger-signal system, a series of overlapping circuits, trolleys connecting same with a moving train, signaling devices on the train, a battery, a pole-changer adapted in one position to afford continuous passage and in shifting position to afford intermittent passage for the current, an operating-lever therefor, and devices along the track for operating said lever.

818,856. **METHOD OF DRIVING TURBINES.** WILLIAM B. SAYERS, Glasgow, Scotland. Filed Nov. 8, 1904. Serial No. 231,885.



Claim.—1. The herein-described method of driving a rotatable reaction-body, consisting in causing working fluid of high specific gravity and driving fluid of low specific gravity to enter alternately a straight path to which they are confined for the length of said path and along which they are allowed to move in only one direction, the length and cross-sectional area of said path being such that each so admitted separate volume of said working fluid is caused to fill said path transversely like a piston and forced therealong against the reac-

tion-surfaces of said body by the succeeding volume of driving fluid and the velocity of impact or contact of each such volume of working fluid against said reaction-surfaces is substantially uniform throughout its length in the direction of its projection.

2. The herein-described method of driving a rotatable reaction-body, consisting in causing working fluid of high specific gravity and driving fluid of low specific gravity to enter alternately a straight path to which they are confined for the length of said path and along which they are allowed to move in only one direction, the length and cross-sectional area of said path being such that each so admitted separate volume of said working fluid is caused to fill said path transversely like a piston and has transferred to it during its travel therealong by way of acceleration and practically efficiently the energy of the volume of driving fluid immediately behind it and that the velocity of impact or contact of each projectile of working fluid so formed and expelled from said path against the reaction-surfaces of said body is substantially uniform or constant throughout its length in the direction of its projection.

3. The herein-described method of driving a rotatable reaction-body, consisting in causing working fluid of high specific gravity and driving fluid of low specific gravity to enter alternately a path to which they are confined for the length of said path and along which they are allowed to move in only one direction, said path being so straight and so long and of such cross-sectional area in relation to the volumes of working fluid and driving fluid admitted that each so admitted separate volume of said working fluid is caused to fill said path transversely like a piston and that the energy of each volume of driving fluid so admitted is efficiently transferred by way of expansion and acceleration to the corresponding volume of working fluid before any of the latter issues from said path.

4. The herein-described method of driving a rotatable reaction-body, consisting in causing working fluid of high specific gravity and driving fluid of low specific gravity to enter alternately a path to which they are confined for the length of said path and along which they are allowed to move in only one direction, said path being so straight and so long and of such cross-sectional area in relation to the volumes of working fluid and driving fluid admitted that each so admitted separate volume of said working fluid is caused to fill said path transversely like a piston and that the energy of each volume of driving fluid so admitted is efficiently transferred by way of expansion and acceleration to the corresponding volume of working fluid before any of the latter issues from said path, and each separate volume of said driving fluid being caused to enter said path suddenly so that as nearly as practicable full pressure is exerted upon the next preceding volume of working fluid admitted to said path before it has moved through any considerable portion of the length of said path.

5. The herein-described method of driving a rotatable reaction-body, consisting in causing working fluid of high specific gravity and driving fluid of low specific gravity to enter alternately a path to which they are confined for the length of said path and along which they are allowed to move in only one direction, said path being so straight and so long and of such cross-sectional area in relation to the volumes of working fluid and driving fluid admitted that each so admitted separate volume of said working fluid is caused to fill said path transversely like a piston and that the energy of each volume of driving fluid so admitted is efficiently transferred by way of expansion and acceleration to the corresponding volume of working fluid before any of the latter issues from said path, and each separate volume of said driving fluid being caused to enter said path suddenly so that as practicable the whole thereof enters said path before the next preceding volume of working fluid has moved through any considerable portion of the length of said path.

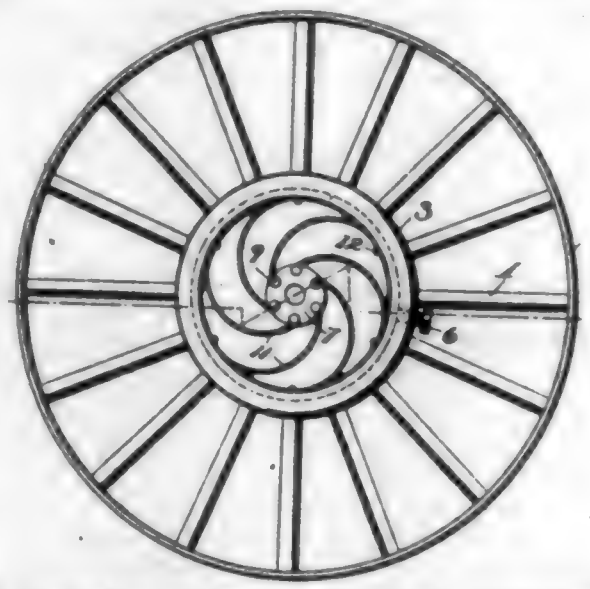
818,857. **WHEEL FOR VEHICLES.** GUSTAVE A. SCHULTZ, Hawkeye, Iowa. Filed Apr. 17, 1905. Serial No. 255,971.

Claim.—1. A wheel embodying in its structure a series of springs, rotatable means for simultaneously increasing or diminishing the resilient area of the springs, and means for preventing movement of said means laterally in relation to the wheel.

2. A wheel comprising a ring, a rim connected thereto, a hub, an adjusting-ring movably connected to the first-mentioned ring, springs secured at opposite ends to the hub and adjusting-ring, and means for locking the adjusting-ring against movement.

3. A wheel comprising a ring, a rim connected thereto, a hub, springs connected to the hub, means for holding the springs upon the ring, and means for sliding the springs within the ring.

4. A wheel comprising a ring and a rim connected thereto, a hub, springs connecting the hub and ring, and means for simultaneously increasing or diminishing the tension of the springs, said means being held against lateral and longitudinal movement by the ring.



5. A wheel comprising a ring and a rim connected thereto, a hub, bow-springs connected to the hub and ring, and means for simultaneously increasing or diminishing the tension of the springs, said means being held against lateral and longitudinal movement by the ring.

6. A wheel comprising a ring and a rim connected thereto, a hub, bow-springs extending from the hub and slidably connected to the ring, and means within the ring for simultaneously operating the springs to increase or diminish their tension.

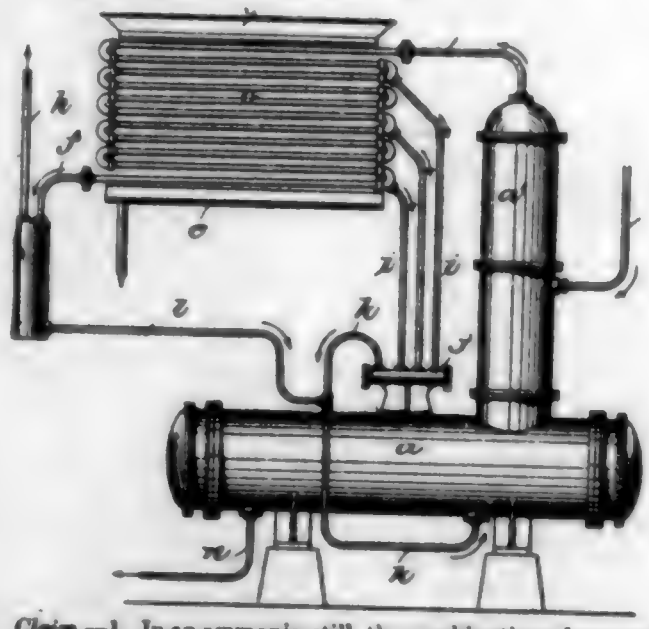
7. A wheel comprising a ring and a rim connected thereto, a hub, bow-springs extending from the hub, retaining-loops secured to the ring and forming guides for the springs, and means for drawing the springs simultaneously through the loops.

8. A wheel comprising a ring and a rim connected thereto, a hub, bow-springs extending from the hub, retaining-loops secured to the ring and forming guides for the springs, means for simultaneously moving the springs through the loops and a locking device for said means.

9. A wheel comprising a ring and a rim connected thereto, a hub, bow-springs extending from the hub, holding-loops secured to the ring and forming guides for the springs, an adjusting-ring surrounding and secured to the springs, and means for locking said ring against movement.

10. A wheel comprising a grooved ring and a rim connected thereto, a hub, bow-springs extending from the hub, retaining-loops secured to the ring and forming guides for the springs, an adjusting-ring rotatably mounted within the groove and secured to the springs, and means for locking the adjusting-ring against movement.

818,858. **AMMONIA-STILL.** BURCHARD THORNS, New York, N. Y. Filed Apr. 8, 1905. Serial No. 254,542.

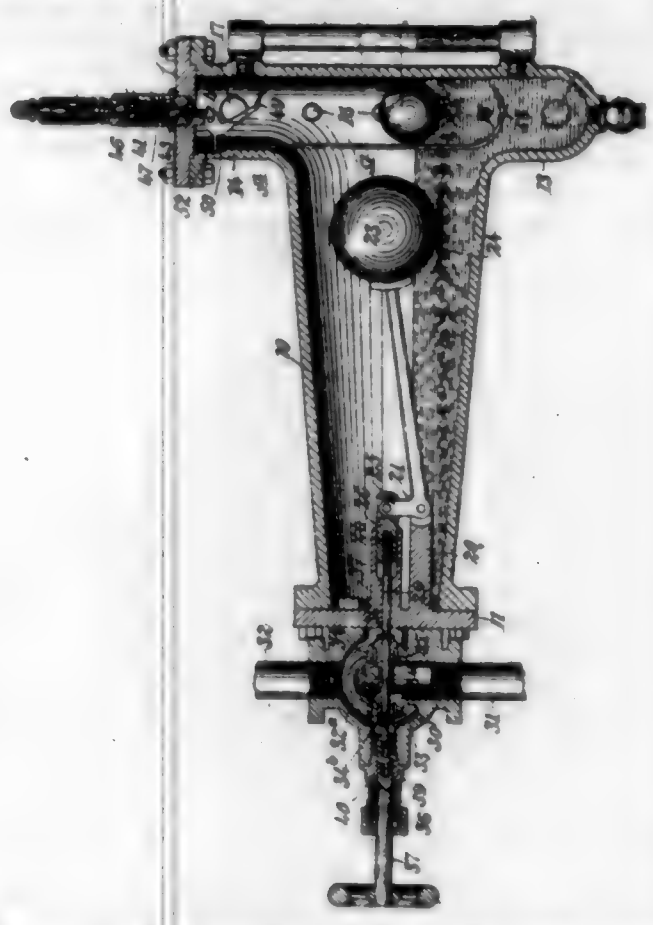


Claim.—1. In an ammonia-still, the combination of a generator, a rectifier-coil connected thereto, means for cooling said coil, pipe connections running from the bends of said coil to the bottom of said

generator, a separator connected to the outlet end of said coil, and a pipe running from said separator to a part of said pipe connections, substantially as described.

2. In an ammonia-still, the combination of a generator, a rectifier-coil connected to said generator, means for delivering a spray of water upon said coil, a manifold mounted on said generator, drain-pipes connected to said manifold and to the bends of said coil, a separator connected to the outlet end of said coil, a pipe connecting said manifold to said generator, and a pipe connecting said last-named pipe to said separator, substantially as described.

818,859. **FEED-WATER REGULATOR.** HARRY W. ADAMS, Fargo, N. D., assignor of one-half to Philip W. Farnham, Fargo, N. D. Filed May 10, 1905. Serial No. 259,693.



Claim.—1. A feed-water regulator comprising a casing, a valve associated with the casing, a float movable in the casing, an adjustable connection between the valve and float, and means operable from the outside of the casing for operating the valve and adjusting the connection between said valve and float.

2. A feed-water regulator comprising a casing, a valve associated with the casing, a lever fulcrumed in the casing, a float carried by the lever, a sliding member to which the lever is pivoted, and a rotatable valve-stem threaded into the sliding member.

3. A feed-water regulator comprising a casing, a valve associated with the casing, a lever fulcrumed in the casing, a float carried by the lever, and a valve-stem having independently-movable sections, one of which is adjustably connected with the said lever.

4. A feed-water regulator comprising a casing, a valve associated with the casing, a float movable in the casing and being connected with the valve, and a plate secured to the lower face of the float and extending beyond the adjacent surface thereof.

5. A feed-water regulator, comprising a main casing having an inwardly-extending tubular projection, a lever fulcrumed in the casing and carrying a float, a member slidable in the tubular projection of the casing and with which the float-lever is pivotally connected, a valve-casing at one end of the main casing and having an inlet and outlet, and a valve in the valve-casing and having its stem projecting into the tubular projection of the main casing and secured to the said sliding member.

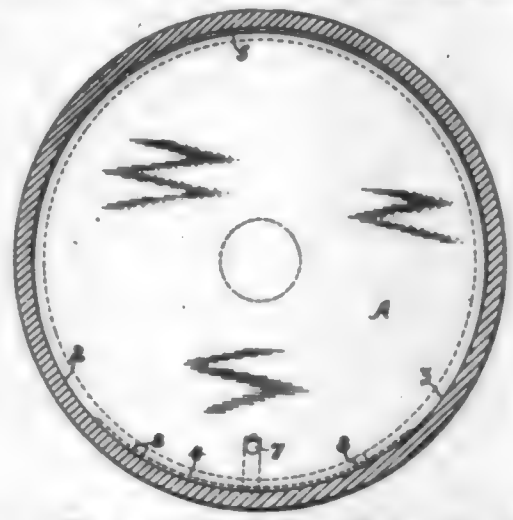
6. A feed-water regulator, comprising a main casing having an inwardly-extending tubular projection, an elbow-lever fulcrumed in the casing and provided with a float on one member, a member sliding in the tubular extension of the casing and to which the other member of the elbow-lever is pivoted, said sliding member having a threaded bore in its inner end, a valve-casing at one end of the main casing, a valve in the valve-casing, and a stem having its end threaded and projecting into the tubular projection of the main casing and screwing into the bore of the sliding member.

7. In a feed-water regulator, a main casing, a lever fulcrumed in the casing and carrying a float, a valve-casing, a valve in the casing, and a valve-stem formed of sections having a sliding connection with each other, one section extending into the main casing and pivotally connected with the float-lever and the other section extending out through the valve-casing and provided with a handle.

8. In a feed-water regulator, a main casing having an inwardly-extending tubular projection, a lever fulcrumed in the casing and carrying a float, a valve-casing, a valve-stem formed of sections having a sliding connection with each other, one section extending out through the valve-casing and provided with a handle, and the other extending into the tubular projection of the main casing, and a sliding member in the said tubular projection and into which the valve-stem screws.

9. In a feed-water regulator, a main casing, a lever fulcrumed in the casing and carrying a float, a valve-casing, a valve in the valve-casing and having a stem formed of sections having a sliding connection with each other, one section extending out through the valve-casing and provided with a handle, and means for adjustably connecting the other valve-stem section with the said lever.

818,860. **HORIZONTAL-CYLINDER PISTON.** FRANK L. BATES, San Francisco, Cal. Filed Oct. 12, 1905. Serial No. 282,494.



Claim.—1. The combination with a cylinder, of a piston reciprocable therein, said piston having a segment forming the lower portion, with a radius of curvature normally the same as the interior of the cylinder, and the remainder of the circumference of a curvature normally upon a smaller radius.

2. A piston, a cylinder within which it is adapted to reciprocate, said piston normally having the upper and larger portion of its circumference with a smaller radius than that of the cylinder to provide clearance, and the remaining portion of the piston having a curvature normally upon the same radius as that of the interior of the cylinder.

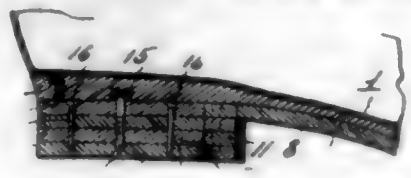
3. A horizontal cylinder, a piston adapted to reciprocate therein, said piston being normally of smaller diameter than the interior of the cylinder for a portion of its circumference and having the remainder of the circumference normally with a curvature of the same radius as that of the interior of the cylinder and resting upon the bottom of the cylinder, snap-rings fitting grooves in the piston to form tight joints between it and the cylinder, shallow grooves extending parallel with and between the snap-rings for a portion of the circumference approximately equal to the length of the lower curvature of the piston, and means for admitting fluid under pressure into said grooves.

4. A horizontal cylinder, a piston reciprocable therein, said piston-head having the upper and larger portions of its circumference normally with a smaller radius than that of the cylinder and the remaining portion normally upon the same radius as that of the cylinder-bore, snap-rings fitting grooves in the piston, and having their separated ends fixed within the space covered by the larger arc of the piston-head.

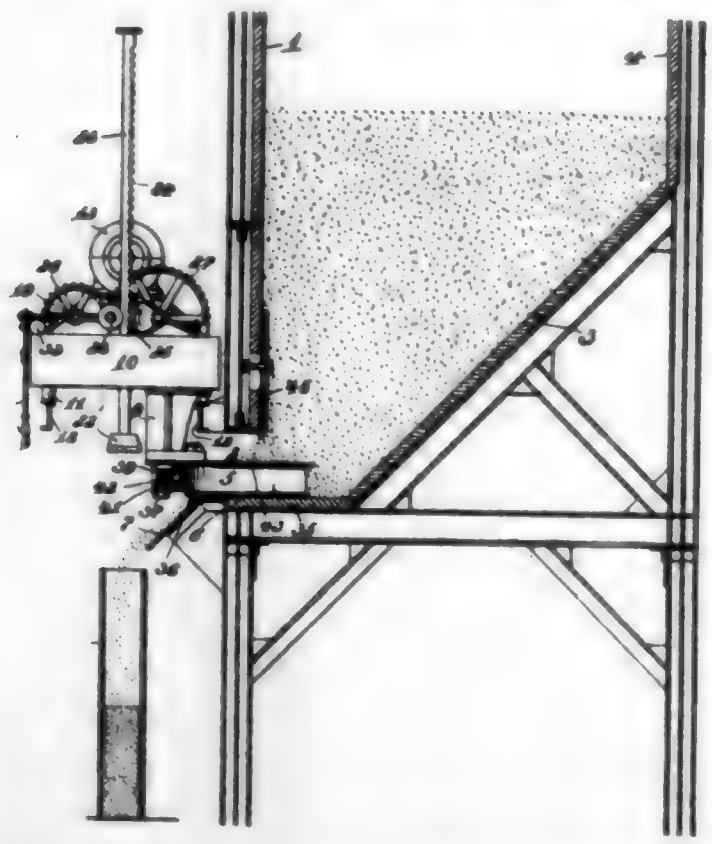
818,861. **SHOE-SOLE FASTENING.** WILLIAM BECK, Henderson, Minn., assignor of one-half to Frank Brahs, William Brahs, Charles Joyce, and John McGrann, one-tenth to Fred Johnson, and one-tenth to Thomas Welch, all of Henderson, Minn. Filed Mar. 21, 1904. Serial No. 199,224.

Claim.—In a device of the class described, the combination with a shoe-sole formed of a plurality of superposed lifts, of a heel, a marginal band secured to one of said lifts and provided with a plurality

of spaced depending spurs passing through the adjacent lifts, means for securing the marginal band in position on said lift, an engaging member secured to the upper lift of the sole, an attaching member extending through the heel and engaging the first-named member, a nut seated on each side of the marginal band between the depending spurs, and bolts having their threaded ends extending through the heel and engaging said nuts for securing the heel to the shoe.



818,862. CHARGING OR FEEDING DEVICE. WILLIAM H. BLAUVELT, Syracuse, N. Y. Filed Sept. 26, 1905. Serial No. 280,145.



Claim.—1. The combination of a container, having a longitudinal opening along the lower portion of one side and means connected therewith for maintaining material at natural slope, a deflector projecting into said opening having its deflecting-face inclined to the line of its travel, and means for moving said deflector.

2. The combination of a bin provided with a horizontal opening along the lower portion of one side, a deflector projecting into said opening, and means for reciprocating said deflector in directions parallel with the bin.

3. The combination of a bin provided with an opening along the lower portion of one side, a deflector having a deflecting-face at an angle with the lines of its travel, said deflector projecting into the bin through said opening, means for supporting the deflector and means for moving the supporting means in directions parallel with the bin.

4. The combination of a bin provided with a horizontal opening extending along the lower portion of one side, a deflector projecting into said opening, having oppositely-disposed deflecting-faces inclined to the lines of its travel, and means for moving said deflector in directions parallel with the bin.

5. The combination of a bin provided with a horizontal opening extending along the lower portion of one side, a deflector projecting into said opening, having oppositely-disposed deflecting-faces inclined to the lines of its travel, a cover-plate positioned above said deflector, and means for moving said deflector and cover-plate in directions parallel with the bin.

6. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to the lines of its travel, means for changing the inclination of said deflecting-face, and means for moving said deflector in a direction parallel with the bin.

7. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having oppositely-disposed deflecting-faces inclined to the lines of its travel, means for changing the inclination of said deflecting-faces, and means for moving said deflector in directions parallel to the bin.

8. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having oppositely-disposed deflecting-faces inclined to the lines of its travel, a cover-plate positioned above said deflector, means for changing the inclination of said deflecting-faces, and means for moving said deflector and cover-plate in directions parallel to the bin.

9. The combination of a bin having an opening extending along the lower portion of one side, a deflector projecting into said opening having oppositely-disposed deflecting-faces inclined to the lines of its travel, means for supporting said deflector, means for moving the supporting means in opposite directions parallel with the bin, and automatic means for reversing the direction of travel of said supporting means.

10. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, tamping means positioned approximate the point of discharge of the deflector, and means for moving said deflector and tamping means in directions parallel with the bin.

11. The combination of a bin having a horizontal opening along the lower portion of one side, adjustable means for varying the extent of said opening, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, and means for moving the deflector in opposite directions parallel with the bin.

12. The combination of a bin having a horizontal opening along the lower portion of one side, and having a bottom partly inclined and partly horizontal, a deflector projecting into said opening and over said horizontal portion, said deflector having its deflecting-face inclined to its line of travel, and means for moving the deflector in opposite directions parallel with the bin.

13. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening, having its deflecting-face inclined to its line of travel, a car for supporting said deflector, a motor for operating the car, and means for reversing the direction of movement of the car.

14. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, means for moving the deflector in opposite directions parallel with the bin, said moving means comprising a wheel-supported car, a motor oppositely-acting gear mechanism connected with different wheels of the car, and clutch mechanism for establishing operative relationship between said motor and each of said gear mechanisms alternately.

15. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, and means for moving the deflector in opposite directions parallel with the bin, said moving means comprising a wheel-supported car, a motor, oppositely-acting gear mechanism related with different wheels, clutch mechanism for establishing operative relationship between the motor and each of said gear mechanisms alternately, and automatic means for operating the clutch mechanism.

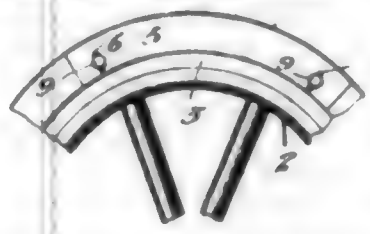
16. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, means for moving the deflector in opposite directions parallel with the bin, said moving means comprising a wheel-supported car, a motor, oppositely-acting gear mechanisms for different car-wheels, manually-operative clutch mechanism for establishing operative relationship between said motor and said gear mechanisms respectively.

17. The combination of a bin having a horizontal opening along the lower portion of one side, a deflector projecting into said opening having its deflecting-face inclined to its line of travel, a receptacle for receiving the deflected material, tamping means for operating upon the material in the receptacle, the relation between the deflecting means and the tamping means being such that the material is delivered into the receptacle just in advance of the operation thereon by the tamping means, and means for moving said deflector and tamping means in directions parallel with the bin.

818,863. TIRE. ISAAC N. BOWEN, Lead, S. D. Filed May 17, 1905. Serial No. 260,830.

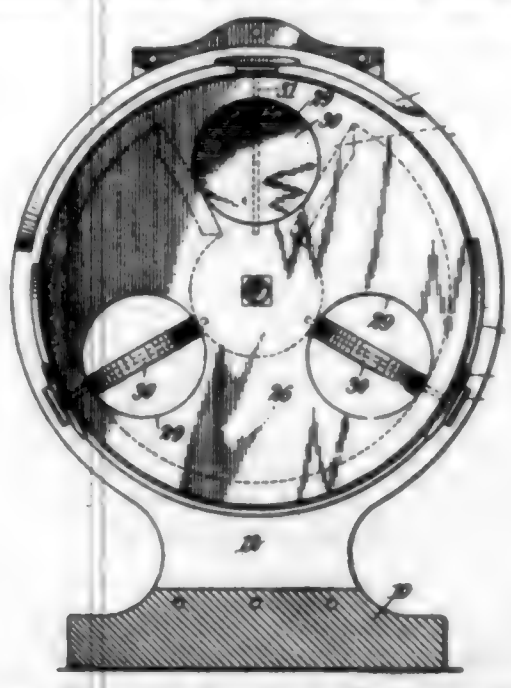
Claim.—1. A tire comprising a U-shaped rim, a plurality of tread-sections telescopically connected together, each of said sections comprising a tread portion and side plates projecting therefrom and having one end reduced internally and the other externally, said

side plates being designed to fit over the U-shaped rim and rest against the outer surface thereof, means adjustably connecting said side plates to the rim, and springs secured within the rim and bearing against the tread portion of the sections.



2. A wheel-tire comprising U-shaped rim a plurality of inverted, U-shaped tread-sections overlapping the rim and movably secured thereto by bolts, said sections being reduced internally at one end and externally at the other, said externally-reduced ends adapted to enter and engage said internally-reduced ends, coil-springs interposed between and bearing against the rim and tread-sections, and pins secured to the under sides of the tread-sections and projecting downwardly through the coil-springs.

818,864. REGULATOR OR GOVERNOR. JAMES W. BOYLE, Unity Station, Pa. Filed Apr. 1, 1905. Serial No. 253,356.



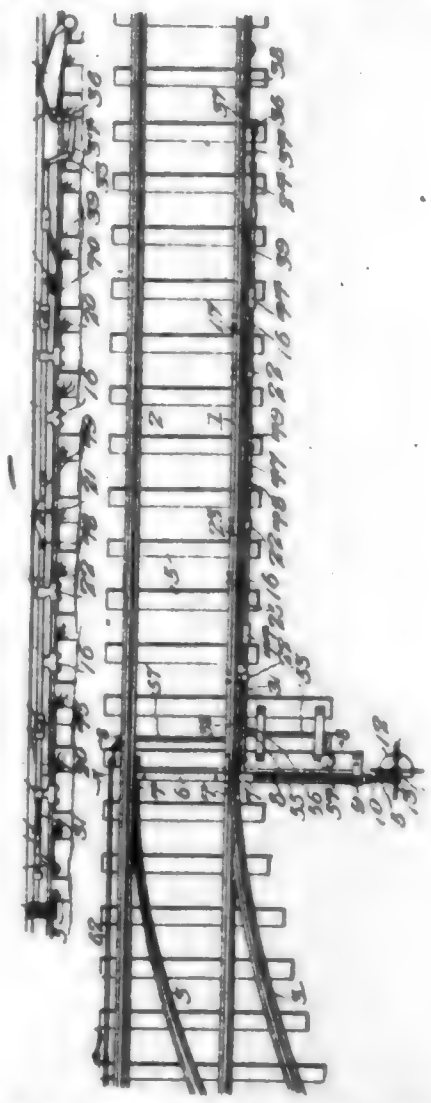
Claim.—1. The combination of a chambered stator, a rotor running therein and including a piston-like part adapted to displace fluid from the stator, means forming a by-pass connecting the receiving and discharge ports of the stator, two throttling-valves interposed in said by-pass for the purpose specified, and means for operating said valves.

2. The combination of a chambered stator, a rotor running therein and including a piston-like part adapted to displace fluid from the stator, means forming a by-pass connecting the receiving and discharge ports of the stator, two throttling-valves interposed in said by-pass for the purpose specified, and means for operating said valves, said means for operating the valves comprising springs pressing the valves into open position, and adjusting-screws for moving the valves against the pressure of said springs.

3. The combination of a chambered stator, a rotor running therein and including a piston-like part adapted to displace fluid from the stator, means forming a by-pass connecting the receiving and discharge ports of the stator, two throttling-valves interposed in said by-pass for the purpose specified, and means for operating said valves, said means for operating the valves comprising followers, stems connecting the followers respectively with the valves, springs pressing the followers to hold the valves yieldingly in open position, and adjusting-screws in connection with the followers to move the valves to closed position.

4. The combination of a chambered stator, a rotor running therein and including a piston-like part adapted to displace fluid from the stator, a chamber located outside of the rotor, means connecting the ends of the said chamber respectively with the admission and exhaust ports of the stator, a by-pass pipe connecting the end portions of the chamber, throttle-valves respectively controlling the fluid-flow through said end portions of the chamber, followers located in the chamber, stems connecting the followers respectively with the valves, springs pressing the followers to hold the valves yieldingly in open position, and adjusting-screws having connection with the followers to move the valves to closed position.

818,865. RAILWAY-SWITCH. CHARLES B. BRINKER, West Lebanon, Ind., assignor to The Brinker Safety Switch Attachment Company, West Lebanon, Ind., a Corporation of Indiana. Filed Apr. 20, 1905. Serial No. 256,561.



Claim.—1. In a device of the class described, a movable switch, means for shifting the same, means, including a locking member and track-lever, for automatically locking the switch in shifted position, said member and element being operatively connected, and means for automatically disconnecting said parts at predetermined intervals.

2. In a device of the class described, a movable switch, means for shifting the same, a member for locking the switch in shifted position, a device coupled to and operable by a passing vehicle for automatically actuating said member, and means for automatically uncoupling the device and member at predetermined intervals.

3. In a device of the class described, a movable switch, means for shifting the same, a movable locking-rod adapted to lock the switch in one position, a device operable by a passing train for actuating the rod, means for coupling the device to the rod, and means for automatically coupling or uncoupling said parts at predetermined intervals.

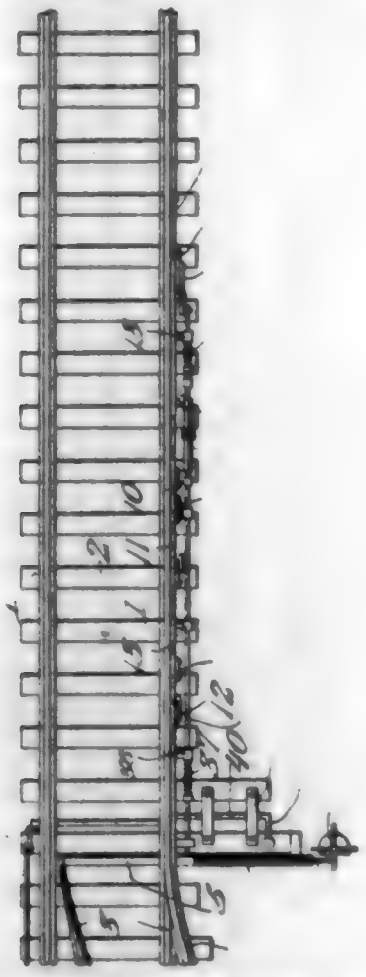
4. In a device of the class described, a movable switch, means for shifting the same, a switch-locking rod, a device designed to be coupled to, and automatically operable by a passing vehicle for actuating the rod, and an automatically-operable member for coupling or uncoupling the rod and device relatively at predetermined intervals.

5. In a device of the class described, a switch, means for shifting the same, a movable element comprising a pair of sections and adapted to lock the switch in shifted position, a member connected to, and operable by a passing vehicle for automatically actuating the element, a member for coupling the sections of the latter, and means for automatically moving the coupling member to coupling or uncoupling position.

6. In a device of the class described, a switch, means for shifting the same, an element for locking the switch in shifted position, a member automatically operable by a passing train, a coupling member designed to couple the member to the element for actuating the latter, an automatically-operated detector member operatively con-

nected with and adapted for moving the coupling member to coupling or uncoupling position, and operative connections between the detector member and locking element for locking the latter against movement at predetermined intervals.

818,866. RAILWAY-SWITCH. CHARLES B. BRINKER, West Lebanon, Ind., assignor to The Brinker Safety Switch Attachment Company, West Lebanon, Ind., a Corporation of Indiana. Filed Jan. 5, 1906. Serial No. 294,737.



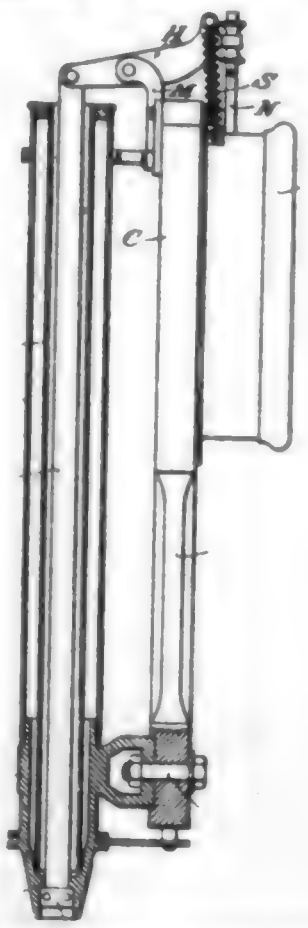
Claim.—1. In a device of the class described, a movable switch, means for shifting the same, a member for locking the switch in shifted position and having a tubular portion provided with an opening, said member including a relatively movable section slidably disposed in the tubular portion and having a seat adapted to register with said opening, a track device connected with said section, a coupling member having an engaging portion adapted to enter through said opening into the seat, and means for automatically moving the coupling member to release the section at determined intervals.

2. In a device of the class described, a movable switch, means for shifting the same, a member for locking the switch in shifted position, said member including a relatively movable section having slidable telescopic engagement therewith and provided with a seat, a track device connected with the section, a movable coupling-piece having an engaging portion designed for interlocking engagement with said seat, and means for automatically operating the coupling member at determined intervals to release the section.

818,867. PORTABLE HOT-BLAST PYROMETER. EDWARD BROWN, Philadelphia, Pa.; The Provident Life & Trust Company of Philadelphia, administrator of said Edward Brown, deceased. Filed Jan. 20, 1905. Serial No. 241,940.

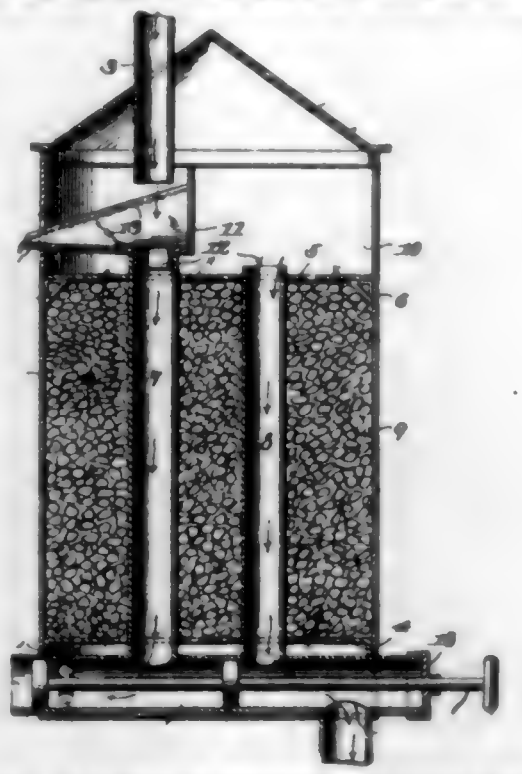
Claim.—1. In a hot-blast pyrometer, in combination, a hollow casting terminating in a tapering nozzle, a non-expanding bar the lower end of which is secured to one side of said casting, a lever pivotally carried by the upper end of said bar, an indicating-pointer operated through the movement of said lever, and an expansion-strip the lower end of which has a bearing in the hollow casting and the upper end of which is secured to the end of said lever opposite to the end operating the pointer-actuating means.

2. In a hot-blast pyrometer, in combination, a hollow casting terminating in a tapering nozzle, a non-expanding bar the lower end of which is secured to one side of said casting, a lever pivotally carried by the upper end of said bar, an indicating-pointer operated through the movement of said lever, an expansion-strip the upper end of which is in operative connection with the end of said lever opposite to that operating the pointer and the lower end of which carries a cross-bar adapted to engage and hold said lower end of said expansion-strip to the lower end of said casting, and a spring for keeping said expansion-strip in tension.



3. In a hot-blast pyrometer, in combination, a hollow casting adapted to be brought in contact with the blast, an expanding-strip the lower end of which is secured near the lower end of said casting, a lever pivoted upon a stationary support, one end of said lever being in operative connection with said expanding-strip and the other end of said lever with mechanism for operating an indicating-pointer, said stationary support, and said mechanism and pointer.

818,868. FILTER. MOSES L. S. BUCKNER and WILLIAM T. BUCKNER, Shelbyville, Ky. Filed July 3, 1905. Serial No. 268,156.



Claim.—1. In a filter, the combination of a tank having a pair of perforate partitions dividing the same into an intermediate and end compartments, the intermediate compartment being adapted to contain a filtering medium, a valve-chamber within one of the end compartments and provided with a drain-outlet and an outlet for filtered water, an inlet-pipe communicating with the other end compartment, a pipe communicating with the inlet-pipe and the valve-

chamber, another pipe communicating between the valve-chamber and the opposite end compartment, a valve controlling the filtered-water outlet and the second-mentioned pipe, and another valve controlling the drain-outlet.

2. In a filter, the combination of a tank, a pair of perforate partitions dividing the same into an intermediate and opposite end compartments, the intermediate compartment being adapted to receive a filtering element, a valve-chamber in one of the end compartments, an inlet-pipe leading into the other end compartment, a main pipe communicating between the inlet-pipe and the valve-chamber, a branch pipe communicating between the valve-chamber and the opposite end compartment, the valve-chamber being provided at one end with a filtered-water outlet and at its opposite end with a drain-outlet there being an opening in the valve-chamber at the inner side of the drain-outlet to communicate with the adjacent end compartment, a valve-stem working in the valve-chamber, and spaced valves carried by the stem, one of the valves being arranged for controlling the opening which communicates with the valve-chamber and the adjacent end compartment and the other valve controlling the branch pipe and the filtered-water outlet.

3. In a filter, the combination of a tank having spaced perforate partitions dividing the same into an intermediate compartment and upper and lower end compartments, the intermediate compartment being adapted to contain a filtering element, a valve-chamber within the lower end compartment and provided with a drain-outlet and an outlet for the filtered water, an inlet-pipe leading to the upper end compartment, a hopper contained within the upper end compartment to receive the water from the inlet-pipe, an inclined screen carried by the hopper across the path of the incoming water, the upper compartment of the tank having a side opening through which the lower end of the screen projects to discharge trash therethrough, a main pipe leading from the hopper through the intermediate compartment to the valve-chamber, a branch pipe leading upwardly from the valve-chamber to the upper compartment, the valve-chamber being provided with an opening communicating with the adjacent end compartment adjacent the drain-outlet, a valve working in the valve-chamber and controlling the said opening, and another valve working in the valve-chamber and controlling the branch pipe and the outlet for filtered water.

818,869. GOODS-HANDLER. WALTER R. CALVERT, Louisville, Ky. Filed Sept. 28, 1905. Serial No. 280,537.



Claim.—1. In a goods-handler, the combination of a tube having a longitudinal slot at its upper end, and a transverse slot near its lower end, a grip secured to the tube, a gripping-jaw secured within the tube on one side of the vertical slot and projecting laterally from the tube, a laterally-projecting lug secured to the tube adjacent to the transverse slot, a rod within the tube having its ends enlarged to fit the same and having the enlargement at its upper end beveled, a thumb-piece secured to the enlargement at the lower end and projecting through the transverse slot, a gripping-jaw secured to the bevel-surface of the upper enlargement and projecting through the longitudinal slot for coacting with the first-named jaw, a spring secured at one end to the tube and at the other to the gripping-jaw on the rod for normally maintaining the jaws in contact with each other, and sections of rubber tubing upon the gripping-jaws.

2. In a goods-handler, and in combination, a tube having a gripping-jaw secured to the upper end thereof, a lug near the lower end of the tube, a grip on the lower end of the tube, a rod mounted for oscillation within the tube, a lug on the rod projecting through an opening in the casing adjacent the first-named lug, a gripping-jaw on the upper end of the rod projecting through an opening in the tube adjacent to the first gripping-jaw and coöperating therewith, and a spring for normally maintaining the jaws in contact with each other.

3. In a goods-handler, and in combination, a tube having a gripping-jaw at one end and a grip attached to the other end, a rod within the tube having a gripping-jaw for coacting with the gripping-jaw on the tube, an elastic facing on the adjacent surfaces of the gripping-jaws, a spring for normally maintaining the jaws in contact, and means adjacent the grip whereby to rotate the rod to open the jaws.

4. In a goods-handler and in combination, a tube and a gripping-jaw attached to one end of the tube, a grip attached to the other end of the tube, a rod within the tube, a gripping-jaw on the rod for coacting with the gripping-jaw on the tube, means for normally maintaining the jaws in contact with each other, and means adjacent to the grip whereby to rock the rod to open the jaws.

5. In a goods-handler and in combination, a tube provided at one end with a gripping-jaw, a rod within the tube provided with a gripping-jaw for coacting with the gripping-jaw on the tube, means for normally maintaining the jaws in contact, and means at the opposite end of the tube whereby to rock the rod to open the jaws.

6. In a goods-handler, and in combination, a tube provided at one end with a gripping-jaw, a rod within the tube having a gripping-jaw for coacting with the gripping-jaw on the tube, and means at the opposite end of the tube whereby to partially rotate the rod to open the jaws.

7. In a goods-handler, and in combination, a tube having a gripping-jaw at one end thereof, a rod within the tube having a gripping-jaw for coacting with the gripping-jaw of the tube, and means whereby to rock the rod to open the jaws.

8. In a goods-handler and in combination, a tube, a grip on one end of the tube, a rod within the tube, coacting gripping-jaws on the rod and the tube on the opposite end of the tube from the grip, and means adjacent to the grip whereby to rock the rod to open and close the jaws.

9. In a goods-handler and in combination, a tube, a rod within the tube, coacting gripping-jaws on the rod and the tube, and means whereby to rock the rod to open and close the jaws.

818,870. SIGNAL. MATTHEW D. CAMPBELL, Charlestown, Mass. Filed Apr. 13, 1905. Serial No. 255,296.

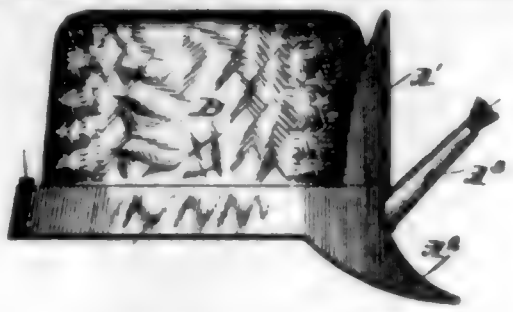


Claim.—A signal comprising a support having an opening, a mirror mounted in the opening, a holder surrounding the opening at one side, and cards provided with perforations furnishing characters carried by the holder.

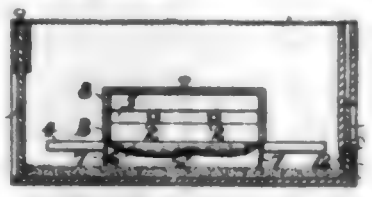
818,871. MINER'S LAMP. THOMAS T. CARTER and SAMUEL J. THOMPSON, Bluefield, W. Va. Filed Oct. 16, 1905. Serial No. 283,073.

Claim.—1. A miner's lamp consisting of an annular tank or reservoir, a wick-spout communicating therewith and projecting forwardly and upwardly from the front of said tank, a curved vizor-plate projecting forwardly and obliquely downwardly from the front of said tank and a shield-plate projecting vertically upward from the upper edge of said tank, said shield-plate being curved to form a convex front face located in the rear of the wick-spout.

2. A miner's lamp consisting of an annular tank or reservoir, a wick-tube communicating therewith and projecting upwardly and obliquely therefrom, an integral transversely-curved vizor-plate projecting forwardly and obliquely downwardly from the lower front edge of said tank, and an integral shield-plate projecting vertically upward from the front upper edge of said tank, said shield-plate being curved to form a convex front face located in rear of the wick-spout.



818,872. BROODER. LOUIS W. CLARK, Petaluma, Cal. Filed Aug. 21, 1905. Serial No. 275,031.

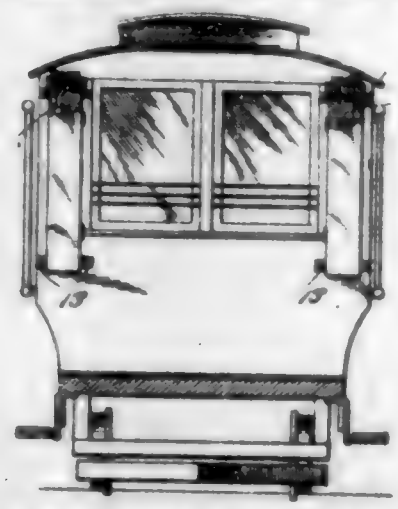


Claim.—1. In a brooder, the combination of an outer box, a shallow frame mounted in said box and shiftable in a horizontal plane therein, said frame inclosing a heating-chamber, communications between the heating-chamber and a source of heat, and a soft flexible bottom for said frame sagging below the frame to permit the back of the chicks therebeneath to come in light contact with it.

2. In a brooder, the combination of an outer box, a frame slidably mounted in said box and inclosing a heating-chamber, communications between said chamber and a source of heat, a flexible sagging bottom for said frame and composed of soft material arranged to contact with the back of the chicks therebeneath, and depending flexible strips secured to the frame.

3. In a brooder, the combination of an outer box, heating-pipes passing through said box, a frame slidably mounted in the box and through which the said heating-pipes pass, said frame having its ends cut away to accommodate the pipes, a removable cover for said frame, and a flexible sagging bottom for the frame, said bottom being in direct contact with the heated atmosphere of the heating-chamber and sagging to permit the backs of the chicks to come in light contact with it.

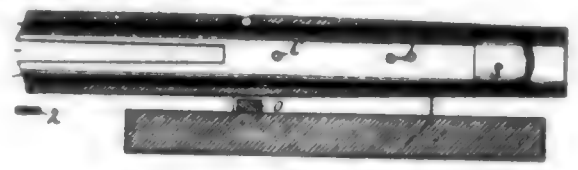
818,873. GUARD-RAIL FOR STREET-CARS. EDWARD P. DANDRIDGE, Philadelphia, Pa. Filed Dec. 7, 1905. Serial No. 290,715.



Claim.—1. In a device of the class described and in combination with a car having an end wall provided with a vertical guide-opening, a box or casing attached to the wall and having a pair of guide-openings, one of said openings being in registry with the guide-opening in the car-wall, a guard-rail having its end arranged for movement in the guide-openings, a rotary operating-shaft journaled at one end in the casing, a flexible hoisting element terminally engaged with the shaft and guard-rail, and a plurality of guide-rollers over which the cable travels.

2. In a device of the class described and in combination with a car having an end wall provided with a vertical guide-opening, a guard-rail having its end arranged for movement in said opening, a casing attached to the car-wall over the opening, an operating-shaft journaled in the casing, a rotary guide, and a flexible hoisting element arranged for travel on said guide and terminally engaged with the shaft and rail.

818,874. MUSICAL BELL. JOHN C. DEAGAN, Chicago, Ill. Filed Oct. 19, 1904. Serial No. 229,145.



Claim.—1. A musical bell of tubular formation, the wall of which is tapered in thickness uniformly from one end of the tube toward the other, substantially as described.

2. A musical bell of tubular formation which is longitudinally slotted and which is provided with an opening *p* transverse to the plane of slotting to permit a portion of the sound to pass therethrough, substantially as described.

3. A musical bell of tubular formation which is longitudinally slotted and which is provided with an opening *p* where said slotting terminates, substantially as described.

4. A musical bell of tubular formation which is provided with two longitudinal slots and which is provided with an opening *p* opposite the plane in which the said slots lie, substantially as described.

5. A musical bell of tubular formation which is provided with two longitudinal slots and which is provided with an opening *p* opposite the plane in which the said slots lie, the said opening being at that portion of the tube where the slots terminate, substantially as described.

6. A tubular bell having longitudinally-displaced anchorages, an anchorage including a screw or guide *f* and a spring-cushion with which the guide is provided, and provided for yieldingly maintaining the tubular bell in a given plane, substantially as described.

7. A slotted tubular bell provided with a sound-dampener adapted to enter a slot, substantially as described.

8. A slotted tubular bell provided with a sound-dampener adapted to engage opposed longitudinal slot-margins, substantially as described.

9. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which is tapered uniformly from one end toward the other, substantially as described.

10. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which is tapered from one end toward the other, the said bell being longitudinally slotted below the complete tubular wall portion, substantially as described.

11. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which is tapered uniformly from one end toward the other, the said bell being longitudinally slotted below the complete tubular wall portion, substantially as described.

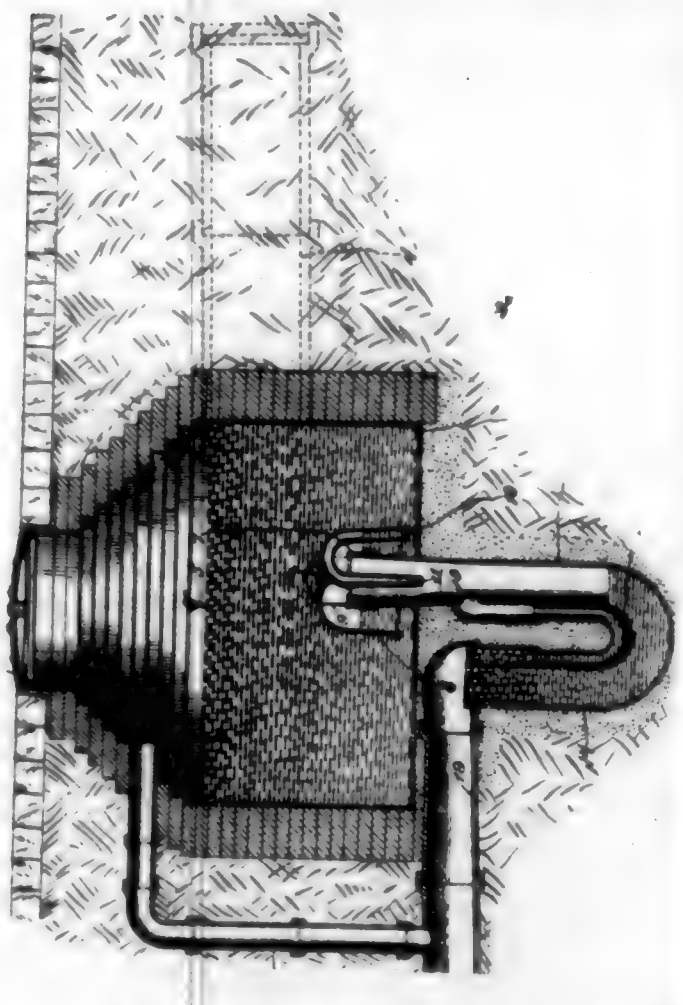
12. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which is tapered from one end toward the other, the said bell being longitudinally slotted below the complete tubular wall portion, the said taper terminating substantially where the slotting of the bell terminates, substantially as described.

13. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which is tapered uniformly from one end toward the other, the said bell being longitudinally slotted below the complete tubular wall portion, the said taper terminating substantially where the slotting of the bell terminates, substantially as described.

14. A tubular bell having longitudinally-displaced anchorages, each anchorage including a screw or guide *f* passing through the bell and surrounded by a rubber tube, a coil-spring surrounding the upper part of the screw, and a coil-spring surrounding the lower part of the tube, said springs being provided for yieldingly maintaining the tubular bell in a given plane, said bell being interposed between said springs, substantially as described.

15. A musical bell of tubular formation having a circumferentially-continuous tubular wall portion, the thickness of which varies longitudinally, the said bell being longitudinally slotted below the complete tubular wall portion, substantially as described.

818,875. FLUSHING-TANK FOR SEWERS. REVERDY C. DE LA HUNT, Cedar Rapids, Iowa. Filed July 26, 1905. Serial No. 271,630.



Claim.—1. In an apparatus of the character described the combination with a tank having a water-inlet; of an outlet-trap extending into the tank, a bell upon the inlet end of the trap, a siphon having both of its ends below the bell and one of said ends within the trap, and an adjustable device connecting the legs of the trap and constituting a means of communication between said portions.

2. In a flushing apparatus the combination with a tank open to atmospheric pressure and having a water-inlet; of an outlet-trap projecting into the tank, an adjustable secondary trap communicating with the inlet portion of the outlet-trap, means upon the outlet-trap constituting an air-trap to retard the discharge of water from the tank into the outlet-trap, and a siphon for supplying water to the outlet-trap from levels below the end thereof.

3. In a flushing apparatus the combination with a tank having a water-inlet; of an outlet-trap projecting into the tank and having its inlet end above the bottom of the tank, air-trapping means surrounding the inlet end of the trap for retarding the overflow of water from the tank into the trap, a siphon for feeding water to the trap from levels below the air-trapping means, and an adjustable secondary trap connecting opposite portions of the outlet-trap.

4. The combination with a trap having an opening in one leg thereof; of a longitudinally-adjustable secondary trap interposed between the legs of the first-mentioned trap and communicating at its ends with said opening and with the outlet end of the trap, respectively.

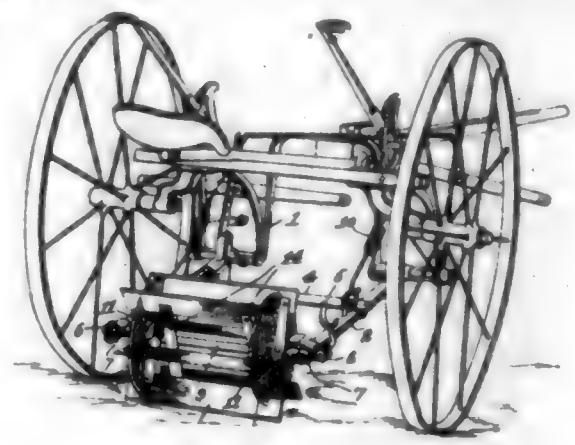
5. In a flushing apparatus an outlet-trap having an aperture in the long leg thereof and a sleeve communicating with said outlet, a sleeve upon the short leg of the trap and a by-pass mounted at its ends within the sleeves.

6. A controlling apparatus for flushing-tanks comprising an outlet-trap having legs of different lengths, a longitudinally-adjustable secondary trap connecting said legs, a bell upon and surrounding the inlet or long leg of the trap, and a siphon having its opposite ends within the trap and below the bell, respectively.

818,876. STALK-CUTTER. WILLIAM P. DORRIS, Moro, Tex. Filed Feb. 5, 1906. Serial No. 299,468.

Claim.—A stalk-cutter comprising a pair of rotary cutters having radial recesses in their edges, blades fitted in said recesses and extending between the rotary cutters and straps having their opposite ends detachably secured to the diametrically opposite blades and arranged adjacent to the rotary cutters.

818,876.



818,877. PIPE-WRENCH. CHARLES L. DUNHAM, Centerview, Ohio. Filed July 29, 1905. Serial No. 271,835.



Claim.—1. In a pipe-wrench of the character described, the shouldered sections provided respectively with small and large bearings for the pivotal pins, said pins and bearings arranged beyond the central line of the sections, substantially as described.

2. The within-described pipe-wrench, comprising the operating-handle, having a triangular bearing for the fulcrum-pin, the sections hinged to one another by pins passing through large and small bearings in said respective sections, whereby each section, has its free and independent play upon the connecting-pins, substantially as described.

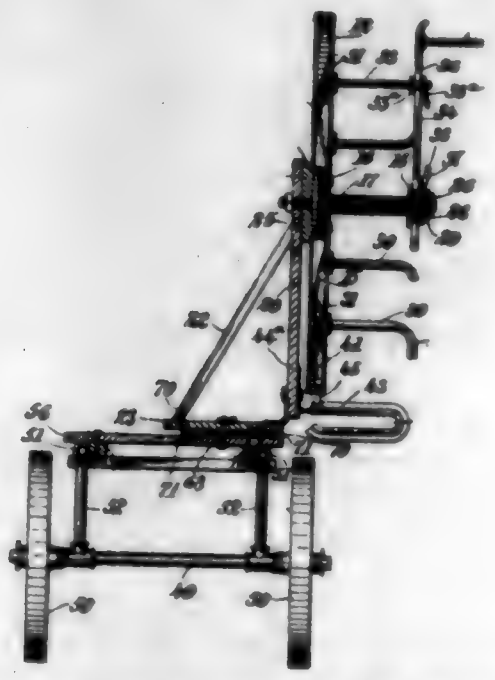
3. In a pipe-wrench of the character described, the respective sections provided with large and small bearings for the connecting-pins; the pivotal points of the sections arranged to one side of the center of each section, in combination with the lever provided with the triangular fulcrum-bearing, substantially as described.

4. In a sectional pipe-wrench, the hinged sections respectively provided with large and small bearings arranged outside of the central line of the connecting-sections, in combination with the fulcrum-section and a lever for operating said sections substantially as described.

818,878. WIRE-REEL. WALTER B. RICHHOFF, Cairo, Ill. Filed Dec. 19, 1903. Serial No. 185,334.

Claim.—1. In a disk-like reel, the combination of a reel-body, a plurality of arms secured to said body and disposed to form a winding-surface, said arms being at right angles to the body and support-

ed to move to and from the axis of the reel-body, and springs secured to said arms and tending to draw them toward the periphery of said body.



2. In a reel, a reel-body composed of a disk having a flanged rim portion which extends at an angle to the plane of said disk, and arms projecting at right angles from the disk, said arms being radially movable and yieldingly mounted.

3. A reel comprising a disk-like body having a plurality of radial slots, a plurality of arms fitted slidably in said slots and projecting at right angles from the body, and springs fastened to the reel-body and connected with said arms to normally impel them toward the periphery of said reel-body.

4. In a reel, a disk-like body provided with radial slots, arms mounted to slide in the said slots and provided with projections on their inner ends, and springs secured to the projections of the arms and to the body.

5. A reel comprising a flanged disk forming a housing, a plurality of arms presenting a winding-surface and connected with said disk for movement radially thereon, and springs housed within said flanged disk and connected to said arms.

6. A reel comprising a disk having radial guideways, a plurality of arms forming a winding-surface and fitted to said radial guideways to move freely therein, bent rods attached to said arms, and springs attached to the disk and to said bent rods.

7. A reel comprising a sheet-metal disk having a doubled rim, and a plurality of reinforcement-webs, radial guideways in said disk, a plurality of arms presenting a winding-surface and fitted to said radial guideways for movement freely therein, and means for normally impelling the arms toward the rim of the disk.

8. The combination of an attaching member, a spindle fixed thereto, a reel having a hub-sleeve mounted loosely on said spindle, a bolt fastened to the reel, a bar connecting said bolt and the outer end of the hub-sleeve, and arms attached to the reel-body and presenting a winding-surface.

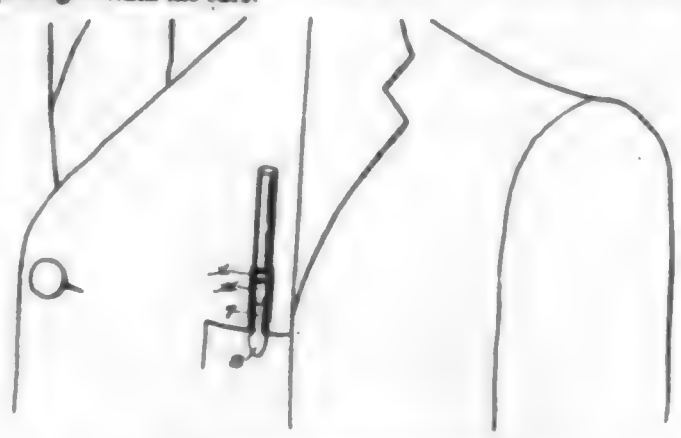
9. The combination of an attaching member, a spindle fixed thereto, a reel-body having an attached hub-sleeve and mounted loosely on said spindle, a bolt fastened to the reel-body, a slotted bar clamped adjustably to the bolt and to the hub-sleeve, and a plurality of arms attached to the reel-body and presenting a winding-surface.

10. A reel, comprising a disk-like body, a plurality of arms secured to the body, a hub projecting from the body, a bar secured to the outer end of the hub and provided with a handle at its outer end, and a bolt having one end secured to the body and its other end adjustably secured to the outer end of the bar.

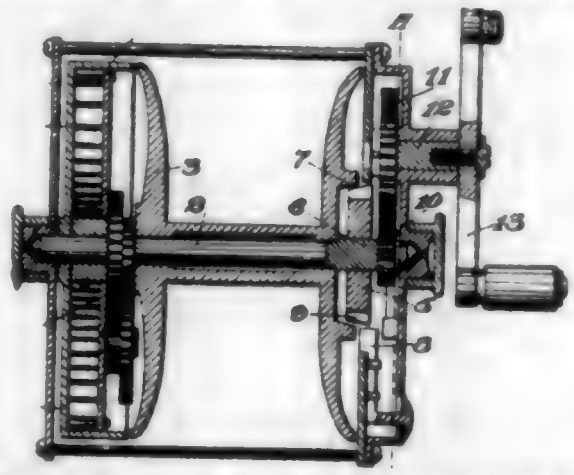
11. A reel comprising a disk-like body having a plurality of radial slots, arms held to slide in the slots of the body, springs secured to the arms and body for drawing them toward the periphery of said body, a hub projecting from the center of the body, a bar adjustably secured to the outer end of the hub and provided with a handle at its outer end, and a bolt connecting the outer end of the bar with the body.

818,879. PENCIL-HOLDER. ALVA R. ELSANDER, El Paso, Tex. Filed May 31, 1905. Serial No. 262,115.

Claim.—A pencil-holder comprising an expansible sleeve having apertured parallel ears at one end and a spring-arm integral with the other end and bent upon and overlapping the sleeve, said arm terminating in a hook, and a lever mounted between the ears and engaged at one end by the hook of the spring and having an enlarged pencil-engaging extension at its other end and tapered bearing extensions projecting from opposite sides of the lever and into the openings within the ears.



818,880. FISHING-REEL. WILLIAM BRENT and ALVA A. PATTON, San Francisco, Cal. Filed June 28, 1905. Serial No. 267,358.



Claim.—1. The combination in a fishing-reel of a shaft, a spool freely revoluble thereon, a clutch member slidable on the shaft and a companion member fixed to the spool, and a radially-operable member engageable with the shaft clutch member for holding it against rotation whereby the turning of the shaft will engage or disengage the clutch members.

2. In a fishing-reel, a frame, a shaft journaled therein, winding-gear connected with the shaft, a line-holding spool freely turnable upon the shaft, a clutch carried by the shaft said clutch comprising two members both concentric with the shaft and one of said members rotatable with the shaft and also capable of a longitudinal movement relative thereto, and radially-operating means to engage and disengage the movable clutch member with the spool.

3. In a fishing-reel, a frame, a shaft journaled therein, winding-gear connected with the shaft, a line-holding spool freely turnable upon the shaft and carrying a clutch member, a second clutch member carried by and concentric with the shaft, and a radially-operating slide by which said second member is interlocked with the spool member.

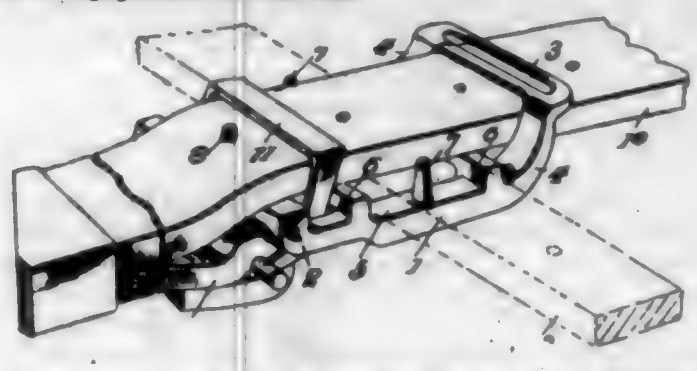
4. In a fishing-reel, a frame, a shaft journaled therein, winding-gear connected with the shaft, a line-holding spool freely turnable upon the shaft and carrying a clutch member, a second clutch member having screw-threads and adapted to advance or recede upon corresponding screw-threads on the shaft, engaging devices upon the clutch and a slide movable upon the frame to interlock said device, whereby the turning of the shaft will engage or disengage the clutch members.

5. In a fishing-reel, a frame, a shaft journaled therein, winding-gear and a crank connected with one end of the shaft, gearing fixed to the opposite end of shaft and a coil-spring actuated in unison with said gearing, a casing inclosing the spring and turnable by the shaft, a brake by which the casing may be arrested and the spring independently coiled and a winding-spool turnable upon the shaft and a clutch by which the spool may be connected to turn with the shaft or disengage therefrom.

818,881. TRACE-BUCKLE. EDWIN L. GOODRICH, Crane, Mo. Filed Aug. 2, 1905. Serial No. 272,416.

Claim.—1. In a trace-buckle, the combination of a frame com-

prising side pieces and connecting end cross-bars, said side pieces being formed with a depression and intermediate cross-bars being located on each side of the depression, said intermediate cross-bars projecting outwardly beyond the sides of the framework and the depressed portion of the side pieces and one of the end cross-bars being provided with studs, and a link member adapted to pass through the opening adjacent the cross-bar provided with the stud and hold the trace in engagement with said stud.



2. In a trace-buckle, the combination of a frame comprising side pieces and connecting end cross-bars, the side pieces being provided with a depression and intermediate cross-bars being located at each end of the depression, said cross-bars being raised beyond the plane of the side pieces, and one end of the frame being bent outwardly while the cross-bar at the opposite end projects beyond the plane of the side pieces, said cross-bar and the depressed portion of the side pieces being provided with studs, and a link member adapted to pass through the opening between the cross-bar provided with a stud and the adjacent intermediate cross-bar so as to clamp the trace against the projecting cross-bars and hold it in engagement with the stud.

818,882. MOSQUITO-NET. JOSEPH W. GRAHAM, U. S. Navy. Filed Dec. 12, 1905. Serial No. 291,379.



Claim.—1. The hammock-net herein described, comprising the netting weighted along one edge and provided along its opposite edge with a reinforcing-cord adapted, when stretched, to form a backbone for supporting the net and having at the ends of the net adjacent to said reinforcing-cord, corner-pieces provided with eyes, and a strap having a hook to engage said eyes, the net being of sufficient width to be returned upon itself to form an inclosure around the hammock, substantially as and for the purposes set forth.

2. A hammock-net provided along one edge with a reinforcing-cord, and having at its ends, adjacent to said cord, fastening means adapted to secure the net around the clews of a hammock, substantially as set forth.

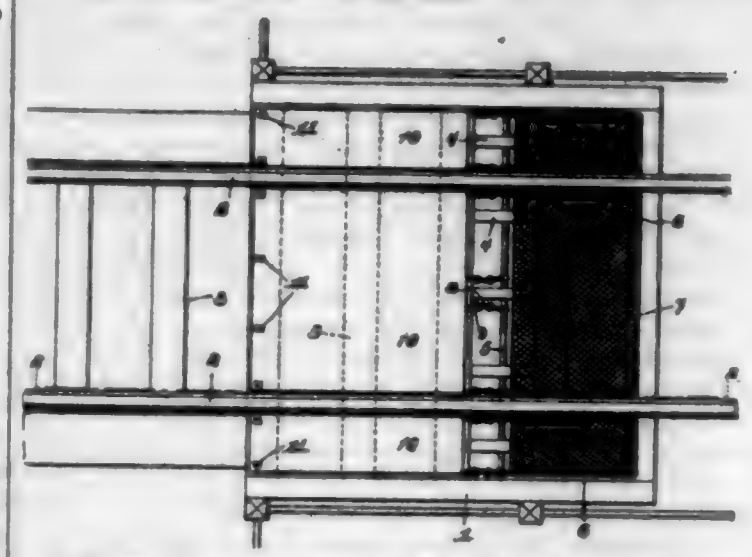
3. A mosquito-net provided along one edge with a reinforcing-cord, and having a snap-hook at one end of said cord, and provided adjacent to said cord, at the ends of the net, with fastening means adapted to encircle the clews of a hammock, substantially as set forth.

4. A net having a reinforce along one edge and provided at its ends adjacent to said reinforce with corner-pieces having eyes, and straps extending along said corner-pieces and adapted to encircle the clews of a hammock and provided with hooks for engagement with the eyes, substantially as set forth.

5. A hammock-net provided along one edge with a reinforce adapted to form a backbone, and at its ends adjacent to said reinforce with fastening means whereby it may be secured to the clews of a hammock, the net being of sufficient width to depend from said reinforce along one side of the hammock and be brought up the other side of the hammock and over the reinforce to inclose the hammock and its occupant, substantially as set forth.

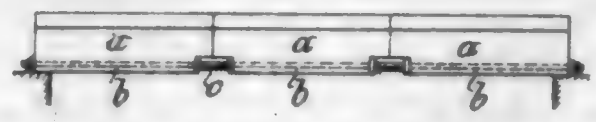
6. A hammock-net provided along one edge with a reinforcing-cord adapted to form a backbone to support a returned portion of the net and extended beyond the ends of the net for connection with hammock-supporting devices substantially as set forth.

818,883. CATTLE-GUARD. FRANK V. GRIMM, Centralia, Wash. Filed Oct. 3, 1905. Serial No. 281,144.



Claim.—The combination with ties having rails secured thereon, of a shaft rotatably mounted between two of the ties and extending under the rails, panels secured between and at the outer sides of the rails to said shaft, said panels having their ends projecting below the shaft, platform-sections located between and at the outer sides of the rails and having apertures along one edge, securing devices extending through the apertures and engaging one of the ties to movably hold said platform-sections to said tie, arms extending from the opposite edges of the platform-sections, and links pivoted to said arms and to the depending ends of the panels, said panels adapted by gravity to normally hold the free edges of the platform-sections raised from the ties.

818,884. SECTIONAL GIRDER AND COLUMN OF REINFORCED CONCRETE. RUDOLF GRIMM, Vienna, Austria-Hungary. Filed Jan. 13, 1906. Serial No. 296,660.

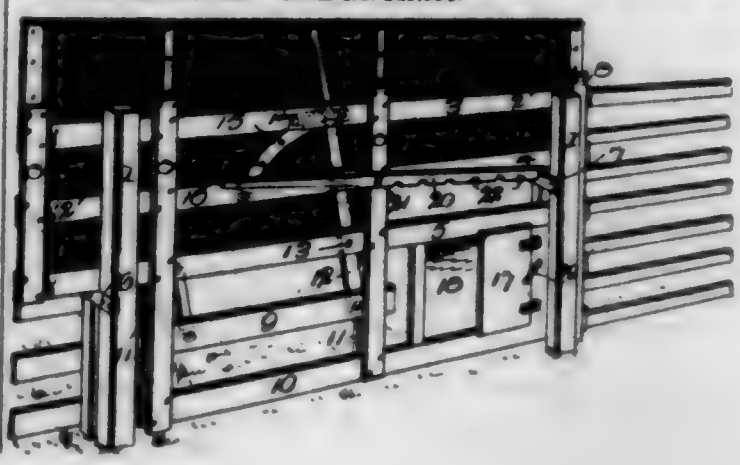


Claim.—1. A girder or column formed of a plurality of concrete sections, metallic inlays arranged in each of the sections and having screw-threaded ends projecting from the sections, and means mounted upon said screw-threaded ends of the inlays for connecting the sections together.

2. A girder or column formed of a plurality of recessed sections, metallic inlays arranged in each of the sections and having screw-threaded ends projecting into the recesses of the sections, and means arranged in the recesses of the sections and engaging the screw-threaded ends of the inlays for connecting the sections together.

3. A girder or column formed of a plurality of sections, metallic inlays arranged in each of the sections and having screw-threaded ends projecting from the section, and right and left hand threaded nuts mounted upon the screw-threaded ends of the inlays for connecting the sections together.

818,885. GATE CONSTRUCTION. LEWIS F. HAKE, Ottawa, Kans. Filed Jan. 14, 1905. Serial No. 241,096.



Claim.—1. The herein-described farm-gate comprising a gate proper made up of a plurality of horizontal bars and suitable uprights; the lower bars of the gate being of shorter extent than the upper bars whereby, when the gate is moved longitudinally, a space for the passage of an animal will be provided; a longitudinally-swinging bar 9 mounted at the lower portion of said gate; a controlling-lever for said bar; suitable means to secure said lever in an adjusted position whereby said bar will be held in a raised or lowered adjustment, and a locking device 20 having a plurality of notches designed to engage a cross-bar carried by the keeper-post when the gate is properly adjusted, all combined substantially as specified and for the purpose set forth.

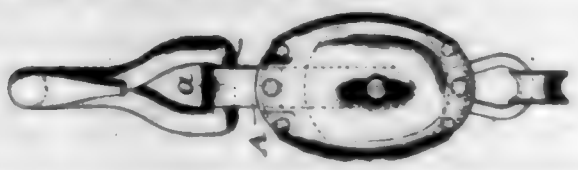
2. The herein-described farm-gate comprising uprights and a plurality of bars connecting the uprights, the lower bars being shorter than the upper bars, gate-posts upon opposite sides of the bars and supporting the gate, a swinging bar movably mounted upon the gate between its lower bars, means for adjusting and locking said swinging bar, and a securing device for holding the gate against longitudinal movement.

3. The herein-described farm-gate comprising uprights and a plurality of bars connecting them, the lower bars being shorter than the upper bars, posts upon opposite sides of the bars, cross-bars connecting the posts and constituting supports for the gate, said gate being movable longitudinally on the cross-bars, a lever and a link pivoted to one of the bars of the gate, a bar supported by said link and lever and interposed between the lower bars of the gate, and means for locking the lever in adjusted position.

4. The herein-described farm-gate comprising uprights and a plurality of bars connecting them, the lower bars being shorter than the upper bars, posts upon opposite sides of the bars, cross-bars connecting the posts and constituting supports for the gate, said gate being movable longitudinally on the cross-bars, a lever and a link pivoted to one of the bars of the gate, a bar supported by said link and lever and interposed between the lower bars of the gate, means for locking the lever in adjusted position, overlapping secondary gates mounted upon opposite sides of the lower bars, and means for holding them normally closed.

5. The herein-described farm-gate comprising uprights and a plurality of bars connecting them, the lower bars being shorter than the upper bars, posts upon opposite sides of the bars, cross-bars connecting the posts and constituting supports for the gate, said gate being movable longitudinally on the cross-bars, a lever and a link pivoted to one of the bars of the gate, a bar supported by said link and lever and interposed between the lower bars of the gate, means for locking the lever in adjusted position, overlapping secondary gates mounted upon opposite sides of thee lower bars, means for holding them normally closed, a notched lever pivoted to one of the uprights of the gate and adapted to engage a cross-bar to lock the gate.

818,886. TACKLE-BLOCK. HENRY V. HARTS, Cleveland, Ohio. Filed Aug. 16, 1905. Serial No. 274,413.



Claim.—1. A tackle-block having an outer strap of substantially U shape with a straight transverse bearing at its top, and an inner substantially U-shaped strap lying against the inside of the said bearing, and a hook having a straight transverse shank engaged in said straps against said bearing.

2. A tackle-block having a strap with a straight transverse bearing and a substantially U-shape auxiliary strap inside resting against said bearing transversely, said parts formed from flat pieces of metal bent to shape, in combination with a hook and a detaining-link having each a straight engaging shank transversely within said straps.

818,887. BATHING APPARATUS. HEINRICH HOSSLAUER, Munich, Germany. Filed Sept. 23, 1904. Renewed Nov. 4, 1905. Serial No. 285,365.



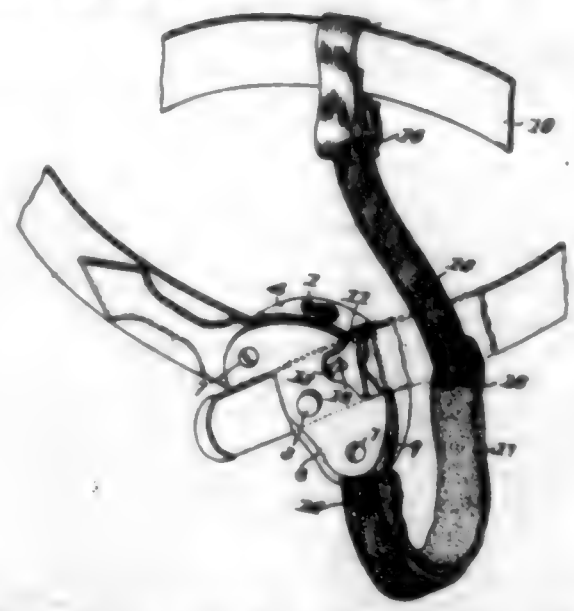
Claim.—1. The combination, with a bath-tub, of means acting from opposite ends thereof directly upon the water therein to cause a bodily longitudinal movement of the water in opposite directions.

2. The combination, with a bath-tub, of means acting alternately from opposite ends thereof directly upon the water therein to cause a bodily longitudinal movement of the water successively in opposite directions.

3. The combination, with a bath-tub, of a plunger arranged within one end thereof and means for alternately moving said plunger above and below the water in the tub.

4. The combination, with a bath-tub, of a plunger arranged at each end thereof, and means for moving said plungers against and away from the water in the tub.

818,888. TRUSS. ELIHU HOVEY and MILTON M. BLACK, Albion, Mich. Filed June 26, 1905. Serial No. 267,070.

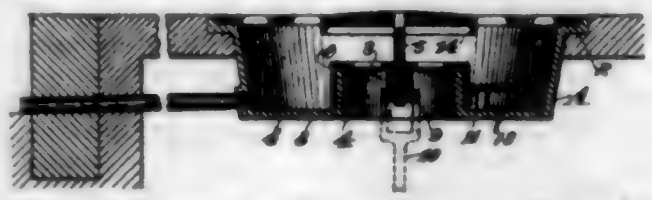


Claim.—1. In a truss, the combination with a pad provided with an air-inflating nipple, of an inner plate provided with an orifice through which the nipple projects, a pouch inclosing the pad and having its margins overturned upon the plate, an outer plate having an orifice to permit access to the nipple, a waist-strap and a crotch-strap each having one of its terminals disposed against the inner side of the plate, a guard disposed against the straps, and screws passing through the terminals of the straps, the guard, and into the inner plate.

2. In a truss, the combination with an inflatable pad, of a plate disposed upon the rear side of the pad, a pouch inclosing the front side of the pad and having its margins overturned upon the plate, an outer plate, waist and crotch straps each having one of its terminals disposed between the plates, and means for clamping the two plates together.

3. In a truss, the combination with an inflatable pad, of a plate disposed upon the inner side thereof, a pouch inclosing the pad and having its margin inturned upon the plate, a protecting-pad having one terminal disposed upon the plate, a guard disposed upon the plate and the terminal of the protecting-pad, a waist-strap and a crotch-strap each having one terminal disposed upon the guard, the crotch-strap being projected through an opening in the protecting-pad, and being adjustably connected with the waist-strap, a plate bearing upon the terminals of the two straps, and assembling-screws carried by the outer plate and engaging orifices in the inner plate.

818,889. BASEMENT AND LIKE VENTILATOR. PETER H. JACKSON, San Francisco, Cal. Filed Jan. 2, 1906. Serial No. 294,170.



Claim.—1. In a vault and like ventilator, a casing fixed in the covering-surface and having a closed bottom, a central upturned open flange and a perforated top cover, an open-ended sleeve turnably mounted on the outside of said flange and operable in the casing between the bottom and perforated top cover, and means by which said sleeve may be raised to close, and depressed to open the ventilating-passage.

2. In a vault and like ventilator, a casing fixed in the covering-surface and a cover therefor having its central portion closed and the

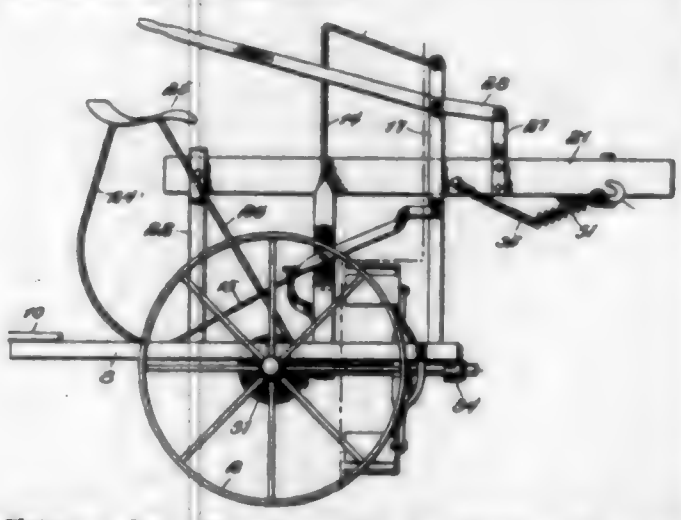
outer portion perforated, said casing having an annular closed bottom and a central upwardly-extended open tube, a rotatable sleeve surrounding the outside of the open tube and having its opposite ends contained between the closed bottom of the casing and the cover, and a screw by which the sleeve may be raised into contact with the center of the cover and close communication, or depressed to open it.

3. In a vault and like ventilator, a casing fixed in the covering-surface and a cover therefor, having exterior openings and a closed center, a closed annular bottom to the casing with an outward-discharge pipe, a central opening with upturned surrounding flange, a sleeve turnably fitting and vertically movable upon the flange, and arms or plows projecting into the annular chamber and turnable with the sleeve.

4. In a vault and like ventilator, a casing fixed in the covering-surface, a cover therefor having exterior openings, a central closed portion with a circular flange extending down from its lower surface, an annular closed bottom to the casing, with a central opening and an upwardly-extending surrounding rim, a sleeve turnable and vertically movable upon the rim, and closable against the cover-flange, said cover-flange being concentric with and adapted to inclose the upper end of the turnable sleeve when said sleeve is in its elevated position said flange thereby serving to prevent water and dust from passing through the central opening to the basement.

5. In a vault or like ventilator a casing, a cover having a perforated peripheral surface, a closed central portion, and a downwardly-extending flange between the closed and perforated portions, a closed annular bottom to the casing, a central opening with a surrounding upwardly-extending rim approximately coincident with the cover-flange, and a sleeve movable on said rim and closable against the cover interior to the flange thereof.

818,890. COTTON-CHOPPER. ANTON JEREK, Praha, Tex. Filed Nov. 21, 1905. Serial No. 288,379.



Claim.—1. In a cotton-chopper, the combination with a movable frame; of a rotatable transversely-movable hoe mounted upon the frame, means operated by the movement of the frame for actuating the hoe, and means for automatically flipping the hoe in the direction of its movement immediately subsequent to its engagement with the ground.

2. In a cotton-chopper, the combination with a movable frame; of a series of rotatable transversely-movable hoes mounted within the frame, mechanism operated by the movement of the frame for rotating the hoes, and springs adapted to be tensioned by the contact of the hoes with the ground and to flip said hoes in the direction of their movement when released from the ground.

3. In a cotton-chopper, the combination with a movable frame; of a longitudinally-extending shaft rotatably mounted on the frame, means operated by the movement of the frame for rotating the shaft, arms radiating from the shaft, hoes pivoted thereto, and springs connected to the hoes and adapted to flip them laterally in the direction of their movement subsequent to their chopping operation.

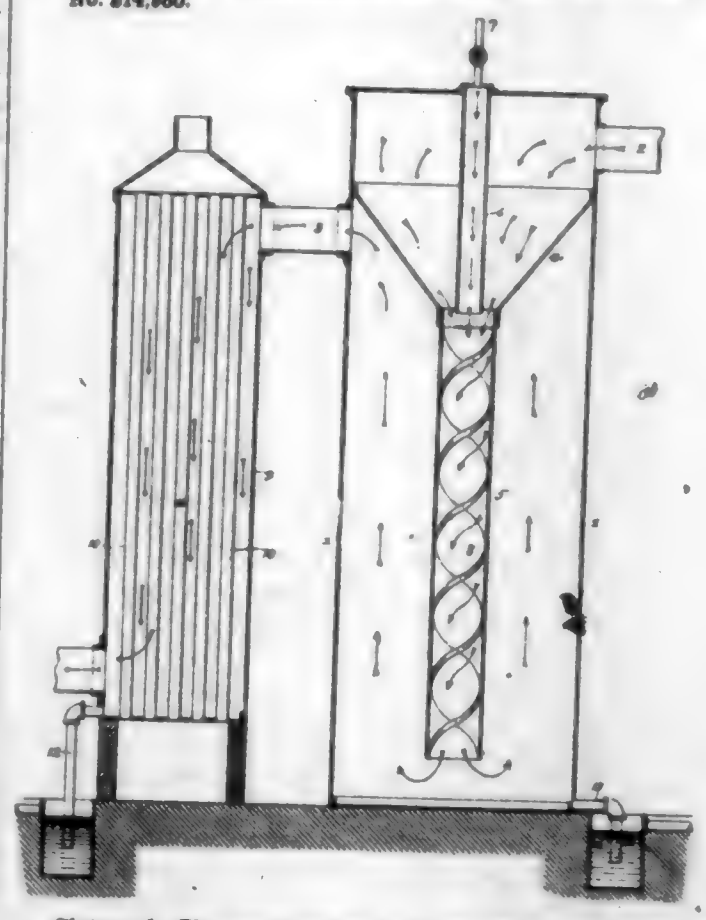
4. In a cotton-chopper, the combination with a rotatable arm; of a hoe pivotally connected thereto and a spring adapted to be tensioned when the hoe contacts with the surface of the ground and to flip the hoe when disengaged from the ground.

5. In a cotton-chopper, the combination with a rotatable arm; of a hoe, a side strip extending therefrom and pivoted between its ends to the arm, and a spring connecting the free end of the side strip to the arm for holding said arm normally in, and for automatically returning it to, a predetermined position.

6. In a cotton-chopper the combination with a movable frame pivotally supported between its ends, and actuating mechanism within the frame; of a longitudinally-extending rotatable shaft adapted to be operated by said mechanism said shaft extending to one end of the frame, a series of hoes connected to the shaft and rotatable therewith, a draft-beam pivotally supported upon and connected to the frame, a yoke extending from the forward end of the frame and slidably connected to the draft-beam, a rack rigidly secured to and extending from the frame, said rack and yoke being secured together, an adjusting-lever fulcrumed on the yoke and movably connected to the draft-beam, said lever adapted to engage the rack.

7. In a cotton-chopper the combination with traction-wheels and an axle rotatable therewith, of a frame pivotally mounted adjacent its center upon the axle, a draft-beam pivotally supported above and connected to the frame in rear of the axle, a yoke rigidly secured to the forward portion of the frame, said draft-beam being slidably mounted within the yoke, a rack rigidly connected to the frame, and secured to the yoke and a lever fulcrumed upon the yoke and movably connected to the draft-beam, said lever adapted to engage and be locked by the rack, and a series of rotatable hoes mounted in the forward end of the frame.

818,891. GAS-PURIFIER. EDWARD C. JONES, San Francisco, Cal., and SAMUEL T. WELLMAN, Cleveland, Ohio. Filed July 1, 1904. Serial No. 214,980.



Claim.—1. The combination, in a gas and vapor mixer, of a mixing vessel having a partition dividing it into two chambers with a mixing-pipe extending therefrom, a gas-supply pipe communicating with the chamber on one side of said partition, a discharge-pipe communicating with the chamber on the other side of same, and a vapor-pipe discharging into the mouth of the mixer-pipe so as to induce a flow of gas into and through the same, substantially as specified.

2. The combination in a gas and vapor mixer, of a mixing vessel having at the top an inverted conical partition with mixing-pipe extending downwardly therefrom and terminating at the bottom of said vessel, a gas-inlet communicating with the vessel above said partition, means for injecting vapor into said gas, an outlet below the partition for the mixed gas and vapor, and means for obstructing the direct flow of gas and vapor through the mixing-pipe, substantially as specified.

3. The combination in a gas and vapor mixer, of a mixing vessel having a partition therein, a mixing-pipe within the vessel extending downwardly from said partition and terminating adjacent to the bottom of said vessel, said pipe having a relatively tortuous passage through it, a gas-supply pipe communicating with the chamber on one side of said partition, a pipe extending to the entrance of said mixing-pipe for injecting vapor into the gas as it enters said pipe, and an outlet for the mixed gas and vapor from the chamber on the other side of the partition, substantially as specified.

4. The combination in a gas and vapor mixer, of a mixing vessel having a partition therein, a mixing-pipe extending from said partition and having means for preventing the direct flow of gas and vapor therethrough, means for injecting gas and vapor into the mouth of said pipe, and an escape-pipe for the mixed gas and vapor, said escape-pipe being so disposed that after the mixture of gas and vapor leaves the mixing-pipe, it is caused to flow in an opposite direction from that of its passage through said pipe, substantially as specified.

818,892. **TELEGRAPHY.** STARKE F. JOHNS, New York, N. Y., assignor of one-half to Postal Telegraph-Cable Company, New York, N. Y., a Corporation of New York. Filed Nov. 21, 1905. Serial No. 288,348.



Claim.—1. The combination with a telegraph-line at each of two or more stations, of a transformer-coil in the main line, a local circuit containing a receiving-relay in series with a condenser, a transformer-coil and the contact-points of a suitable transmitter; an alternating-current generator in a branch of said circuit, one terminal of which branch is connected to said transformer-coil at a point intermediate its ends, the other terminal of said branch and the terminals of said local circuit being connected to said transmitter-contacts in such a manner that when said transmitter is closed the alternating-current generator is included in circuit with one coil of said transformer, and when said transmitter is open the receiving-relay is included in circuit with both coils of said transformer.

2. The combination with a telegraph-line at each of two stations, of a transformer-coil in the main line, a local circuit including a receiving-relay, a transformer-coil and the contact-points of a suitable transmitter, an alternating-current generator in a branch of said circuit having one terminal connected to said transformer-coil at an intermediate point, the other terminal and the terminals of the local circuit being connected to transmitter-contacts in such a manner that when the transmitter is closed the generator is included in circuit with one coil of said transformer and when open the receiving-relay is included in circuit with both coils of said transformer.

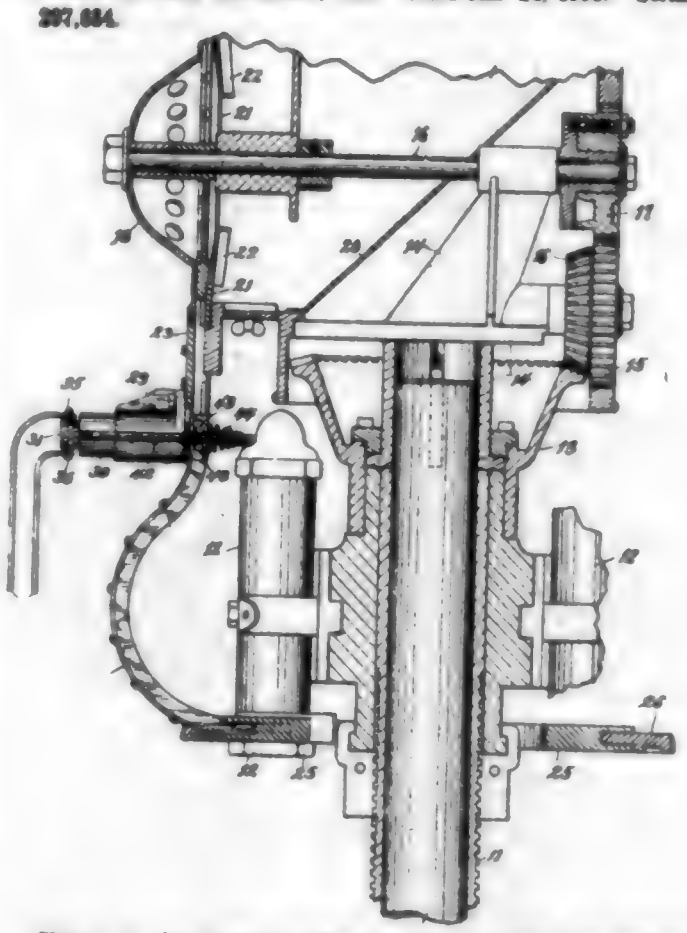
3. A telegraph-line having means for transmitting and receiving code-signals by varying the length and sequence of groups of alternating impulses with a local circuit and a transformer at one station, said transformer having one coil in the main line and one coil in the local circuit, the last-named coil divided into two unequal sections, the smaller coil being in circuit with the transmitting-generator.

4. The combination with a telegraph-line at each of two stations, of suitable alternating-current transmitting and receiving apparatus in a local circuit and a transformer having three coils, including a main-line coil, a transmitting-coil, and a receiving-coil, and means for including the two last-named coils in circuit in series with the receiving apparatus during the operation of receiving.

5. A telegraph-line having means for transmitting and receiving code-signals by varying the length and sequence of groups of alternating impulses, with a local circuit and a transformer at one station, said transformer having three coils, one coil in the main line, a transmitting-coil and a receiving-coil, and means whereby the transmitting-coil alone is included in circuit during the act of transmitting.

6. A telegraph-line having means for transmitting and receiving code-signals by varying the length and sequence of groups of alternating impulses, with a local circuit and a transformer at one station, said transformer having three coils, one coil in the main line, a transmitting-coil, and a receiving-coil, and means whereby both receiving and transmitting coils are included in circdit in series with the receiving apparatus during the operation of receiving.

818,893. **BRANDING-MACHINE FOR BOTTLE-CLOSURES.** OSCAR H. JUNG, Milwaukee, Wis. Filed Jan. 24, 1906. Serial No. 297,884.



Claim.—1. In a bottle-sealing machine, a chute for conducting crowns or closures, a movable sealing device fed with the crowns of closures by the chute at intervals, and a branding device in connection with the chute and moved by the movements of the sealing device for branding the crowns or closures between the intervals of their feed.

2. In a bottle-sealing machine, a chute for conducting crowns or closures, a movable sealing device receiving the crowns or closures from the chute at intervals, and an electrical branding device in connection with the chute and moved by the movements of the sealing device for branding the crowns or closures between the said intervals.

3. In a bottle-sealing machine, a chute for conducting crowns or closures, a movable sealing device for receiving the crowns or closures from the chute at intervals, a suitably-mounted plunger comprising an electrical heating-coil and a branding-tool heated thereby adapted to enter the chute and engage the crowns or closures therein, a projection carried by the plunger and standing in the path of movement of the sealing device to be moved thereby for moving the plunger in one direction, and means for moving the plunger in the other direction, said movements of the plunger serving to bring the branding-tool into and out of contact with the crowns or closures in the chute.

4. In a bottle-sealing machine, a chute for conducting crowns or closures, a movable sealing device for receiving the crowns or closures from the chute at intervals, a suitably-mounted plunger comprising an electrical heating-coil and a branding-tool heated thereby adapted to enter the chute and engage the crowns or closures therein, a projection carried by the plunger and standing in the path of

movement of the sealing device to be moved thereby for forcing the plunger to move and withdraw the branding-tool, and means for returning the plunger when the sealing device has passed out of engagement with the projection.

5. In a bottle-sealing machine, a chute for feeding crowns or closures, a movable sealing device for receiving the crowns or closures from the chutes at intervals, a suitably-mounted plunger comprising an electrical heating-coil and a branding-tool heated thereby adapted to enter the chute and engage the crowns or closures, a projection carried by the plunger and standing in the path of movement of the sealing device to be moved thereby for forcing the plunger to move and withdraw the branding-tool, and a spring between the chute and the projection for returning the plunger when the sealing device has passed out of engagement with the projection.

6. In a bottle-sealing machine, a chute for feeding crowns or closures, a movable sealing device for receiving the crowns or closures from the chute at intervals, a suitably-mounted plunger comprising an electrical heating-coil and a branding-tool heated thereby adapted to enter the chute and engage the crowns or closures, a U-shaped projection on the plunger embracing the chute and standing in the path of the sealing device to be engaged thereby for moving the plunger to withdraw the branding-tool, a stem on the projection, and a coil-spring surrounding the stem and bearing on the chute for returning the plunger when the sealing device has passed out of engagement with the projection.

7. In a bottle-sealing machine, a hopper for feeding crowns or closures, a chute for conveying the crowns or closures therefrom, a movable sealing device to which the crowns or closures are intermittently fed by the chute, a bracket secured to the hopper and having a cylindrical bearing, a shell slidably mounted in the bearing, an inner shell surrounded by heat-insulating material located within the first-named shell, a sleeve within the inner shell and surrounded by an electrical heating-coil, a branding-tool adjustably slidable within the sleeve and adapted to enter the chute and engage the caps or closures, a pin passing through the plunger, a U-shaped projection on the pin and embracing the chute, said projection standing in the path of the sealing device to be engaged thereby for moving the plunger rearwardly, and a coil-spring bearing on the chute and on the projection for returning said plunger when the sealing device has moved out of engagement with the projection.

8. In a bottle-sealing machine, a chute for feeding crowns or closures, a movable sealing device for receiving the crowns or closures from the chute at intervals, a suitably-mounted cylindrical bearing, a plunger operating therein and comprising an electrical heating-coil and a branding-tool heated thereby and adapted to pass through an opening in the chute to engage the crowns or closures, a pin passing through the plunger, a U-shaped projection on the pin and embracing the chute, guide-lugs on the chute between which the projection passes, said projection standing in the path of movement of the sealing device to be engaged thereby for moving the plunger, and a spring for returning the plunger when the sealing device has moved out of engagement with the projection.

818,894. **WRINGER-HOLDER AND WASHTUB-PROTECTOR.** VALENTIN KEMPF, Hoboken, N. J. Filed May 2, 1905. Serial No. 258,534.



Claim.—1. A protector or the like for washtubs comprising faces or sections having a soft filling with an antislip facing partially projected and exposed through one of the sections to engage a side of the tub, the opposite portions of the section being provided with means for engagement with a fastening device.

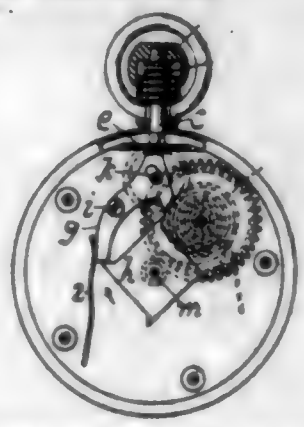
2. A protector comprising faces with an antislip surface exposed through one of the faces, the opposite face or section being recessed or provided with a seat for receiving a wringer-attaching screw.

3. A protector for washtubs or the like comprising a shell composed of sections flanged together, a filling and an antislip layer in the shell, one of the sections being perforated to expose the layer.

4. A protector for washtubs and the like comprising a shell composed of sections flanged together, a filling and an antislip layer in the shell, one of the sections being perforated to expose the layer and the latter being corrugated to secure a hold or friction.

5. A protector for washtubs and the like comprising a shell composed of sections flanged together, a filling and an antislip layer in the shell, one of the sections being perforated to expose the layer and said flanged parts being turned over to form a bearing for a loop or bail.

818,895. **GAME APPARATUS.** EDMUND KUHN, East Orange, N. J. Filed Sept. 13, 1904. Serial No. 224,269.



Claim.—1. A game apparatus comprising a loosely-mounted index having a staff with a contact portion, a driving-wheel with a shaft mounted parallel to the staff of the index and having projections to engage the contact portion of the staff of the index when the driving-wheel rotates, a spring for actuating the driving-wheel, a releasing and stop device for the driving-wheel, and a stem having longitudinal motion to oscillate the releasing and stop device and being made rotary and having a gear connection with the spring to wind the latter, said releasing and stop device and spring being all located in planes parallel with the plane of the driving-wheel to form a compact structure.

2. A game apparatus comprising a series of independently-rotatable spindles grouped about a common center point, a driver for giving an impulse to the spindles, a spring for the driver and a releasing device having a stop for the driver, said driver consisting of a wheel rotatable about said center point, and normally out of contact with the surrounding group of spindles and provided with projections made to momentarily contact with the spindles as the driver rotates.

3. A game apparatus comprising rotatable spindles, a driver made to contact with and rotate the spindles, a spring for rotating the driver, a winding-wheel for the spring, a releasing device and stop, and a rotatable and longitudinally-movable stem having gear connection with the winding-wheel and extended into contact with the releasing device.

4. A game apparatus comprising an index with a fly-wheel having a hub provided with a contact portion of soft material, and a star-wheel adapted to revolve and engage the contact portion to rotate the fly-wheel and index, said star-wheel being made to rotate about a fixed axis and being normally out of contact with the hub, the projections or points of the star being of such size or diameter as to extend to and contact with the hub as the star-wheel rotates.

5. A game apparatus comprising a dial and indexes, fly-wheels connected with the indexes, a star-wheel for giving an impulse to the fly-wheels, a spring connected to the star-wheel, a releasing device having a stop and a stem made to engage the releasing device and having a gear connection with the spring.

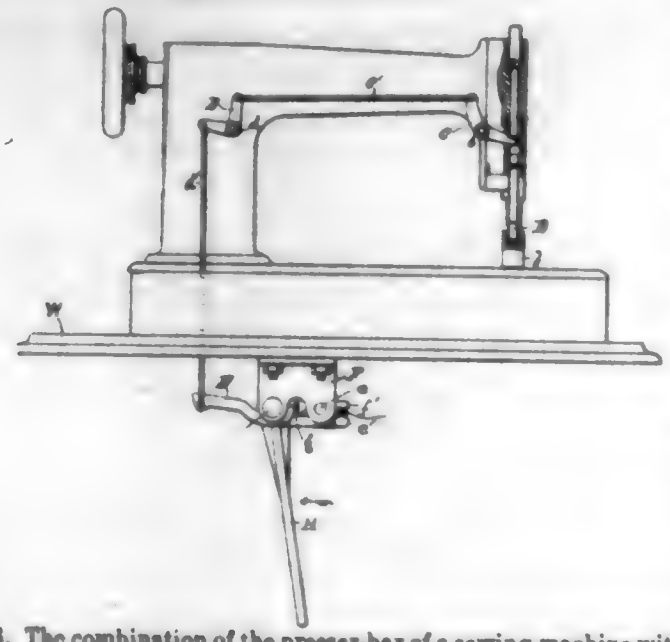
6. A game apparatus comprising a case, a spring in the case, a winding-gear for the spring, a star-wheel actuated by the spring, a releasing and stop mechanism for the star-wheel, a stem slidable through the winding-gear and made to contact with the releasing and stop mechanism and rotatable for rotating the gear to wind the spring, a set of spindles with fly-wheels and hubs independent of one another and grouped about the star-wheel, and indexes carried by the spindles, said star-wheel being normally out of contact with the hubs but having its points of such diameter or reach as to contact with the hubs when the star-wheel rotates.

818,896. **PRESSER-FOOT LIFTER FOR SEWING-MACHINES.** ALFRED L. MADISON, New York, N. Y., assignor to Willcox and Gibbs Sewing Machine Company, New York, N. Y., a Corporation of New York. Filed Feb. 6, 1905. Serial No. 244,413.

Claim.—1. The combination of the presser-bar of a sewing-machine with a knee-lever and its cross-shaft, a cam on the cross-shaft, and a lever on which the cam is adapted to bear and actuate the same in one direction only, and connections between said lever and the presser-bar.

2. The combination of the presser-bar of a sewing-machine with a knee-lever and its cross-shaft, a flanged cam on the cross-shaft, and

a lever acted on by the flanged cam, and connections between said lever and the presser-bar.

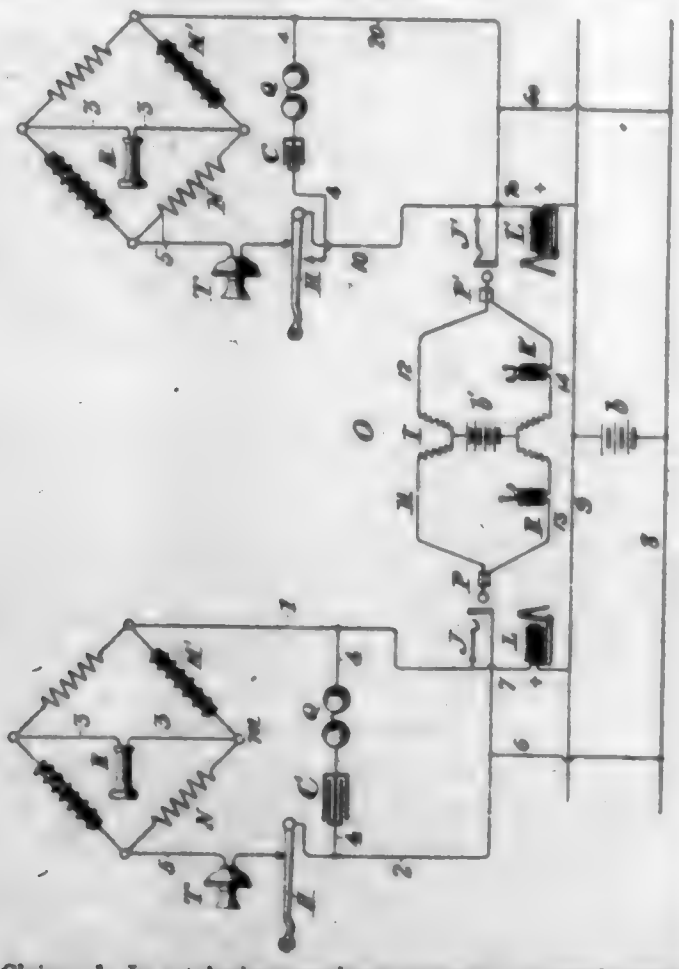


3. The combination of the presser-bar of a sewing-machine with a knee-lever and its cross-shaft, a cam on the cross-shaft, a spring-pressed lever acted on by said cam, and a stop and stop-lug to limit the movement of the lever, and connections between the latter and the presser-bar.

4. The combination of a knee-lever and its cross-shaft having a cam with brackets in which the cross-shaft is mounted, a lever pivoted to a stud on one of the brackets and adapted to be acted upon by the cam, the lever and stud having on one side of the pivot a stop and stop-lug, and on the other side of the pivot projections, between which is a spiral spring.

5. The combination of the presser-bar of a sewing-machine with a lever and connections to the bar, a shaft having a cam to act on the said lever, and a knee-lever having a wedge-shaped opening in its hub to fit over the end of shaft, and a set-screw to force the end of the shaft into the wedge.

818,897. **TELEPHONE SYSTEM.** RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed June 25, 1904. Serial No. 214,111.



Claim.—1. In a telephone-exchange system, a central station and a subscriber's station with a line-circuit interconnecting them, a source of current for the line at the central station, a telephone receiver and transmitter at the subscriber's station and a Wheatstone bridge circuit connection for the receiver, having its alternate arms containing inductive resistance, those intermediate thereof non-inductive resistance, the receiver in the bridge-wire, the extremities of the bridge to line, and the transmitter in series with the line and bridge, whereby battery-current may flow through the transmitter in considerable volume without producing any difference of potential across the terminals of the receiver, while voice-currents produced in the line will be forced practically all through the bridge-wire and the receiver.

2. In a telephone-exchange system, a subscriber's station and a central station with a line-circuit interconnecting them, a source of current for the line at the central station, a telephone receiver and transmitter at the subscriber's station, and circuit connections therefor so arranged that the entire supply of current will flow through the transmitter, while the receiver will be connected between points of equal potential for constant electromotive force on the line, but unequal for fluctuating electromotive forces.

3. A telephone-circuit comprising in operation instrumentalities arranged in the following manner. two stations with a line-circuit extending between them, a continuous current source in a bridge of the said line-circuit so as to furnish current to both stations in parallel, and a telephone set at each station including a receiver in a Wheatstone bridge balanced for continuous current but unbalanced for fluctuating currents, and a transmitter in series with the line and bridge.

4. In a telephone-exchange system, a central station and a subscriber's station with a line-circuit interconnecting them, a source of current connected to the line at the central station, a telephone transmitter and receiver at the substation, the transmitter in series with the line, and conductively-continuous balanced-circuit connections whereby the receiver will have its terminals maintained at the same or substantially the same potential for continuous current in the line, but not for fluctuating currents, substantially as described.

5. In a telephone-exchange system, a central station, a subscriber's station and a line interconnecting them, a source of continuous current connected to the line at the central station, a transmitter at the substation connected to the line to derive operating-current therefrom, a Wheatstone bridge also at the substation having its terminals connected to the line in series with the transmitter, and a receiver in the neutral or bridge wire, together with means whereby for steady electromotive forces or changing forces of low frequency the bridge remains balanced and no current will pass through the receiver, but for high-frequency changing or alternating forces current will pass through the receiver, substantially as described.

6. In a telephone system, a plurality of subscribers' stations and lines therefor, a common source of current therefor, means to interconnect the lines, a transmitter in series in the line at each substation and a Wheatstone bridge connected to the line also at each substation, a receiver in the neutral wire of each bridge, and means to balance the bridges for continuous current but not for alternating or changing currents, substantially as described.

7. The combination with an energizing source of electricity at the central office included in the line to furnish current to the substation for conversational purposes, of a circuit at the substation containing two paths, both conductively continuous for steady currents, portions of both being opaque to the passage of voice-currents, a telephone-transmitter at the substation in series with both paths, a telephone-receiver in a balanced path composed of those parts of the circuits not opaque to voice-currents, and a signaling-bell, substantially as described.

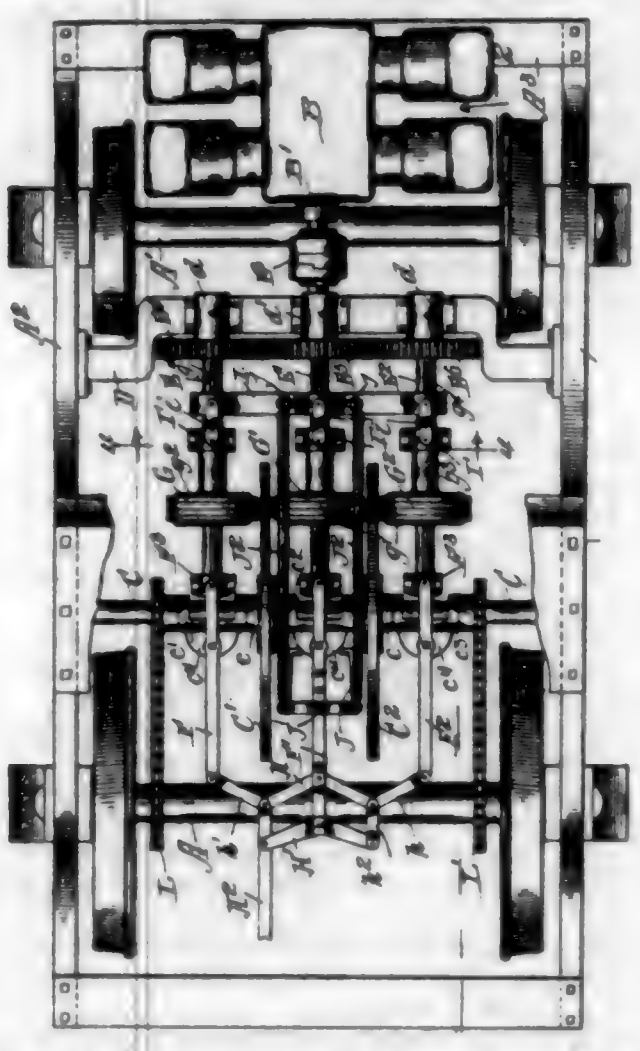
8. The combination with an energizing source of electricity at the central office included in the line to furnish current for conversational purposes, of parallel paths at the substation both conductively continuous, and each containing a resistance and a choking coil, a transmitter included in the path of the energizing-current, and in series with both paths, a receiver connected across the said two paths between the resistance and the choke-coil in each, and a call-bell at the substation connected when the line is not in use through a steady-current interrupter, substantially as described.

9. A telephone substation apparatus comprising a transmitter, a switch-hook, a receiver, a series connection in the line for the transmitter, and a Wheatstone bridge connection for the receiver, the four arms of the bridge containing equal resistances, but alternate arms containing also impedances, together with a signaling-bell connected to line through a steady-current interrupter when the line is idle, substantially as described.

10. A telephone substation apparatus comprising a transmitter and receiver, and a bridge connection for the latter composed of two coils wound upon an iron core, and two resistances non-inductive in

character associated with the coils, the coils and resistances being alternately connected to form the four arms of the bridge, the receiver connected across the points between the resistances and their associated coils, and the transmitter in series with the entire bridge and the line, substantially as described.

818,898. VARIABLE-SPEED MECHANISM. GEORGE W. MARBLE, Chicago, Ill. Filed Dec. 7, 1904. Serial No. 235,866.



Claim.—1. The combination with a transmission-shaft, of a friction-disk rigidly secured thereon, a driving-shaft, oppositely-rotating friction-rollers driven thereby and adapted to engage opposite faces of the driven friction-disk, a yoke, non-rotative collars pivotally engaged thereon in which said rollers are journaled and means for shifting said rollers into and out of engagement with the disk.

2. The combination with a transmission-shaft, of a friction-disk carried thereon, a driving-shaft, oppositely-rotative driving friction-rollers actuated thereby and engaging opposite sides the friction-disk, means adapted to shift the driving friction-rollers into and out of engagement with said disk, a non-rotative collar journaled on each roller, a yoke, links affording a pivotal connection between the collars and yoke and a lever acting to shift the rollers radially of the disk.

3. In a device of the class described the combination with a frame, of a rotative transmission member carried thereon, positively-driven rotative means adapted to engage each side of said transmission member, non-rotative collars journaled thereon, a yoke pivotally connected with said collars, an axle journaled in the frame and means for transmitting the motion of said transmission member to said axle.

4. In a device of the class described the combination with an axle and the wheels thereon, of a friction-disk operatively connected with the axle, positively-actuated driving friction-rollers adapted to simultaneously engage each side of said disk to rotate the same and a lever pivotally connected with each and bell-crank levers operatively connecting said levers at their outer ends and acting to vary the engagement of the rollers with said disk.

5. The combination with a driven shaft, of friction-disks thereon, a motor-shaft, oppositely-driven friction-rollers actuated thereby adapted to engage opposite sides of each friction-disk and means for simultaneously shifting the friction-rollers to grip either of said disks intermediate the same thereby reversing the rotation of said disks.

6. In a device of the class described the combination with a transmission-shaft, of a pair of friction-disks rigidly engaged thereon, driving friction-rollers arranged alternately with said disks, means for rotating said driving friction-rollers and means for throwing adjacent pairs thereof into gripping engagement with the disk intermediate the same and transmitting motion thereto.

7. In a device of the class described the combination with the frame of a vehicle, of a pair of driven friction members operatively engaged thereon, driving friction members arranged on each side of each driven friction member, means for throwing either pair of driving members into frictional engagement with the intermediate driven member and a motor-shaft adapted to actuate the driving friction members.

8. The combination with a transmission-shaft and a plurality of driven friction members thereon, of a plurality of oppositely-rotating driving friction members between adjacent ones of which each driven friction member projects, a motor-shaft actuating the driving friction members and toggle-levers acting to grip each driven member between the adjacent driving friction members.

9. The combination with a vehicle-frame and its axle of a shaft journaled therein, a pair of friction-disks rigidly engaged thereon, a plurality of driving-shafts arranged alternately with said disks, a driving friction-roller on each shaft, a shifting mechanism adapted to frictionally engage either disk between an oppositely-rotating pair of driving friction-rollers and means for transmitting the motion of said first-named shaft to said axle.

10. The combination with a vehicle-axle, of a shaft journaled parallel therewith, a pair of friction-disks rigidly engaged on said shaft, pivotally-supported friction-rollers between and adjacent the outer sides of said disks adapted to grip said disks between adjacent ones of the same, means for driving said driving friction-rollers and chain-and-sprocket connection between the shaft and axle.

11. The combination with a vehicle-axle, of a shaft journaled parallel therewith, means for transmitting motion of the shaft to the axle, a pair of friction-disks on said shaft, a driving-shaft projecting between the disks, a shaft parallel therewith and driven thereby on each side thereof, a friction-roller on each of said shafts, means acting to engage either friction-disk between the central friction-roller and one of the adjacent friction-rollers and means adapted to shift said friction-rollers radially of the disks.

12. A variable-speed mechanism comprising in combination, a rotative shaft, a pair of friction-disks rigidly engaged thereon, a plurality of pivotally-supported shafts equally spaced from said disks and one projecting between the same, a motor-shaft operatively connected with said shafts, a driving friction-roller on each of said pivoted shafts, means for throwing the central and either of the laterally-disposed driving friction-rollers into engagement with the friction-disk projecting between the same and means for simultaneously adjusting said driving friction-rollers longitudinally of their shafts.

13. In a device of the class described the combination with a frame, of a rotative shaft thereon, a pair of friction-disks rigidly engaged on said shaft, three rotative shafts pivotally supported on said frame, the central shaft projecting between the disks and one of the others on each side thereof, a driving friction-roller slidably engaged on each shaft, toggle-levers adapted to swing adjacent pivoted shafts laterally and oppositely thereby engaging two adjacent driving friction-rollers with the intermediate disk and releasing the other disk, a yoke operatively engaged with said driving friction-rollers and a lever connected therewith adapted to move the same radially of the disks.

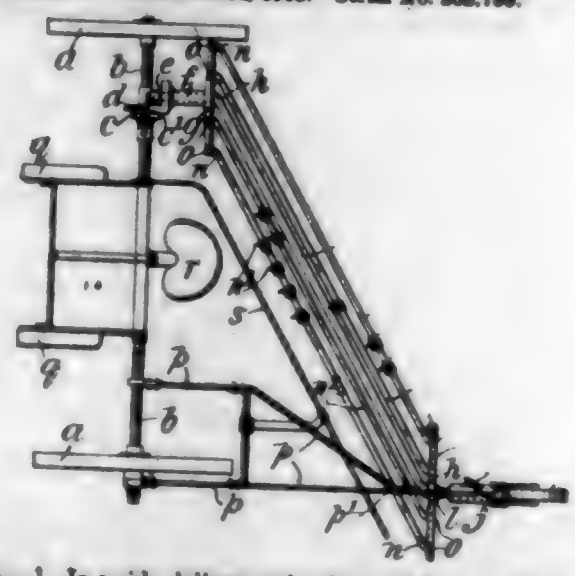
14. In a device of the class described the combination with rotative disks of coacting oppositely-rotative means adapted to simultaneously engage opposite faces of said disks between the same with equal force and lever-operated means for shifting such engagement from one disk to the other.

15. In a device of the class described the combination with a vehicle-frame, of a transverse shaft journaled thereon, a pair of friction-disks rigidly engaged on said shaft, a driving-shaft having a laterally-movable end, projecting between said disks, pivotally-supported driving-shafts parallel therewith and projecting along the outer side of each disk, coacting gears on said central and lateral driving-shafts acting to rotate the outer oppositely from the central shaft, driving friction-rollers slidably engaged on each shaft adapted to simultaneously engage either of said disks, an actuating-lever for each driving-shaft acting to support the end thereof and toggle-levers adapted to be simultaneously actuated and acting to adjust the central driving friction-roller and one of the lateral driving friction-rollers into or out of engagement with one of said friction-disks.

16. In a device of the class described the combination with a frame, of a shaft journaled transversely thereof, friction-disks rigidly engaged on said shaft, pivotally-supported shafts carried on said frame and arranged one between and one on the outer side of each of said disks, a friction-roller slidably engaged on each shaft and adapt-

ed to simultaneously engage both sides of one of said disks, means for shifting said rollers radially of said disks comprising an integral sleeve on each roller, a non-rotatable collar on each sleeve, a yoke connected with said collars and a shifting-lever engaged therewith.

818,899. SIDE-DELIVERY RAKE. WILLIAM E. MARTIN, Stamford, England. Filed Oct. 14, 1905. Serial No. 282,789.



Claim.—1. In a side-delivery rake the combination of a number of rakes of length to extend completely across the machine, set obliquely to the line of travel, and means for holding the teeth always in a hanging vertical position and giving to such teeth a rotary motion at right angles to the line of travel of the machine that is to say parallel to the main axle substantially as herein set forth.

2. In a side-delivery rake the combination of a number of rakes of length to extend completely across the machine, set obliquely to the line of travel, means for holding the teeth always in a hanging vertical position and giving to such teeth a rotary motion at right angles to the line of travel of the machine that is to say parallel to the main axle, a bent rod, the front and rear portions of which are parallel to each other and at right angles to the main axle, a sleeve mounted on one of the parallel portions of the rod, means for communicating motion to said sleeve from the main axle of the machine, a hub mounted on the other parallel portion of said rod, rake-heads of like shape to that of the bent rod and means carried by said sleeve and hub having bearings to receive the parallel ends of the rake-heads substantially as herein set forth.

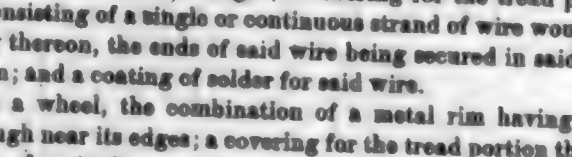
3. In a side-delivery rake the combination of a number of rakes of length to extend completely across the machine, set obliquely to the line of travel, means for holding the teeth always in a hanging vertical position and giving to such teeth a rotary motion at right angles to the line of travel of the machine that is to say parallel to the main axle, a bent rod, the front and rear portions of which are parallel to each other and at right angles to the main axle, a sleeve mounted on one of the parallel portions of the rod and hung on the main axle, means for communicating motion to said sleeve from the main axle of the machine, a hub mounted on the other parallel portion of said rod, rake-heads of like shape to that of the bent rod, means carried by said sleeve and hub having bearings to receive the parallel ends of the rake-heads, a swiveling wheel to support the other parallel portion of the bent rod, means for adjustment in height of that end of the bent rod and a steadying-stay hung on the main axle and bent to clear the rakes, substantially as herein set forth.

4. In a side-delivery rake, the combination of a number of rakes of length to extend completely across the machine set obliquely to the line of travel, means for holding the teeth always in a hanging vertical position and giving to such teeth a rotary motion at right angles to the line of travel of the machine, a bent rod hung at its forward end on the main axle of the machine and supported at its rear end by a swiveling wheel, and a double steadying-stay hung on said main axle having an upwardly and rearwardly inclined straight portion, a bent portion to clear the rotating rakes, and a vertical portion connected at its lower end to the said bent rod, substantially as set forth.

5. In a side-delivery rake, the combination of a number of rakes of length to extend completely across the machine set obliquely to the line of travel, means for holding the teeth always in a hanging vertical position and giving to such teeth a rotary motion at right angles to the line of travel of the machine, a bent rod hung at its forward end on the main axle of the machine and supported at its rear end by a swiveling wheel, of a steadying-stay having two members hung at one end on the main axle such members being arranged at a certain distance apart on the axle, parts of said members being parallel to each other and connected by a cross-piece, and one of said members being bent sidewise into contact with the other member to which it is fixed, such members forming a straight upwardly and rearwardly inclined stay, a bent portion of one of the members passing over the rotating rakes, and a vertical portion connected at its lower end to the said bent rod, substantially as set forth.

6. In a side-delivery rake, the combination of a number of rakes extending completely across the machine in an oblique direction the heads of such rakes having their ends parallel to the line of travel of the machine, means for holding the teeth of such rakes always in a hanging vertical position and for giving to such teeth a rotating motion at right angles to the line of travel of the machine, bolts passing vertically through the rake-heads and securing the teeth by nuts on each side thereof, and bars fixed to the upper sides of the oblique portions of the rake-heads by said bolts, substantially as set forth.

818,900. CAR-WHEEL. AARON MAST, Annapolis, Mo., assignor to Sheffield Car Company, Three Rivers, Mich. Filed Jan. 2, 1906. Serial No. 294,243.



Claim.—1. In a wheel, the combination of a metal rim having holes therethrough near its edges; a covering for the tread portion thereof consisting of a single or continuous strand of wire wound peripherally thereon, the ends of said wire being secured in said holes in said rim; and a coating of solder for said wire.

2. In a wheel, the combination of a metal rim having holes therethrough near its edges; a covering for the tread portion thereof, consisting of a single or continuous strand of wire wound peripherally thereon, the ends of said wire being secured in said holes in said rim, the coils of said wire being soldered together.

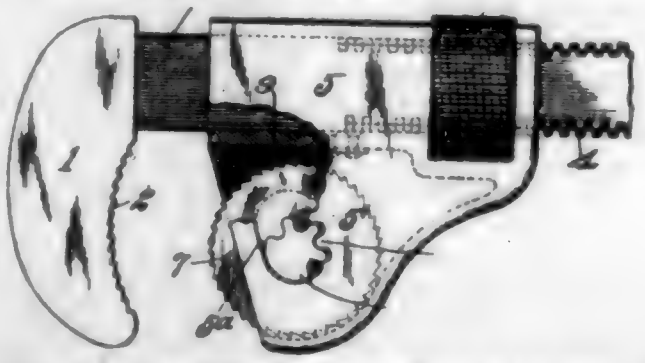
3. In a wheel, the combination of a metal rim having holes therethrough near its edges; a covering for the tread portion thereof, consisting of a single or continuous strand of wire wound peripherally thereon, the ends of said wire being secured in said holes in said rim.

4. In a wheel, the combination of a rim; a covering for the tread portion thereof, consisting of wire wound peripherally thereon; and a coating of solder for said wire.

5. In a wheel, the combination of a rim; a covering for the tread portion thereof, consisting of wire wound peripherally thereon, the coils of said wire being soldered together.

6. In a wheel, the combination of a rim; a covering for the tread thereof, consisting of wire wound thereon.

818,901. PIPE-WRENCH. ALEXANDER MEFFERT, St. Louis, Mo. Filed Nov. 27, 1905. Serial No. 289,177.



Claim.—1. In a wrench, the combination of a shank and a fixed jaw carried thereby, a movable jaw slidably fitted to said shank, and a rotatable gripping member loosely mounted in said movable jaw and having engagement with said movable jaw whereby it is rotated and moved in a direction transverse to its axis, substantially as set forth.

2. In a wrench, the combination of a shank and a fixed jaw carried thereby, a movable jaw slidably fitted to said shank, and a rotatable member loosely mounted in said movable jaw and geared to said movable jaw, substantially as set forth.

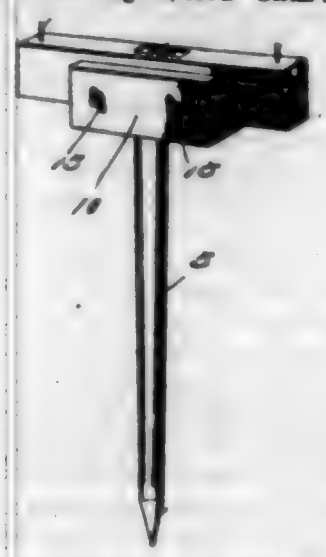
3. In a wrench, the combination of a shank and a fixed jaw carried thereby, a movable jaw slidably fitted to said shank and having side walls provided with elongated openings, and a rotatable gripping member mounted in said elongated openings and geared to said movable jaw, substantially as set forth.

4. In a wrench, the combination of a shank, and a fixed jaw carried thereby, a movable jaw slidably fitted to said shank, means for reciprocating said jaw, and a rotatable gripping member mounted in said movable jaw; said movable jaw having side walls provided with openings and said gripping member being provided with means located in said openings arranged to impart a forward movement to said gripping member, substantially as set forth.

5. In a wrench, the combination of a shank and a fixed jaw carried thereby, a movable jaw slidably fitted to said jaw, a rotatable gripping member mounted in said movable jaw and provided with rack members at its sides; said movable jaw having side walls between which said gripping member is located provided with openings and having teeth arranged in mesh with the teeth of said rack members, substantially as set forth.

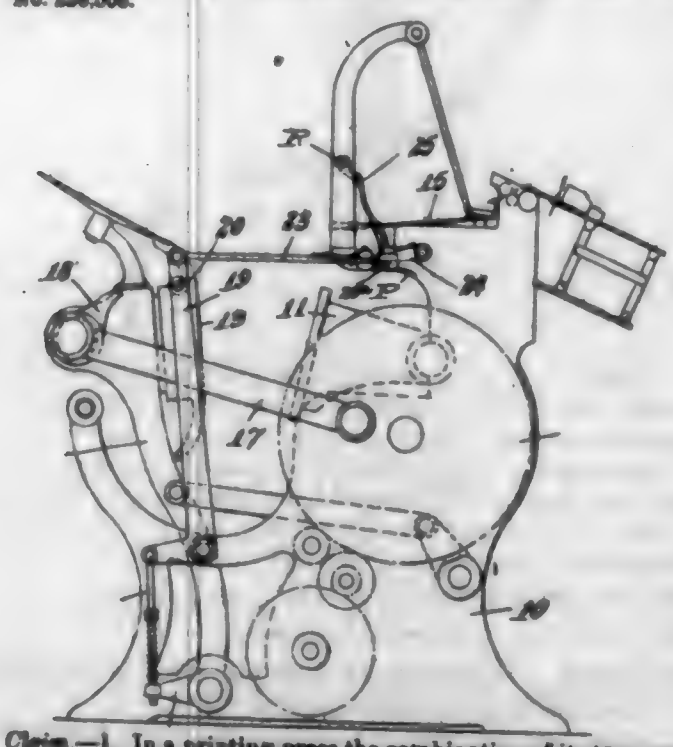
6. In a pipe-wrench, the combination of a shank and a fixed jaw carried thereby, a movable jaw slidably fitted to said shank and having side walls provided with openings, and teeth at the rear of said openings, a rotatable gripping member located between said side walls and provided with rack members meshing with said teeth, and a spring carried by said movable jaw and bearing against said gripping member, substantially as set forth.

818,902. COAL-FINDING INSTRUMENT. LEWIS B. MOONEY, Crickmer, W. Va. Filed Aug. 24, 1904. Serial No. 221,868.



Claim.—An instrument of the class described, comprising a staff, a head rotatably mounted upon the upper end of the staff, said head having a longitudinal channel in its upper face, a spirit-level disposed in said channel, and means piercing the sides of the said head for clamping the level in said channel.

818,903. TRIPPING MECHANISM FOR PRINTING-PRESSES. LEWIS B. MORRISON, Philadelphia, Pa. Filed Sept. 20, 1904. Serial No. 224,508.



Claim.—1. In a printing-press the combination of its two members, namely the platen and type-bed, means for operating one of the members, an eccentric piece for shifting the pivotal connection between the movable member and its operating means, a stop for operating the eccentric piece, a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

2. In a printing-press, the combination of the platen, the movable type-bed, means for operating the type-bed, an eccentric piece for shifting the pivotal connection between the type-bed and its operating means, a stop for operating the eccentric piece, a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

3. In a printing-press, the combination of the platen, the movable type-bed, a link for operating the type-bed, an eccentric piece connecting the link with the type-bed, a stop for operating the eccentric piece, a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

4. In a printing-press, the combination of the platen, the movable type-bed, a link for operating the type-bed, an eccentric piece with an extended arm connecting the link with the type-bed, a stop for operating the eccentric piece, a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

5. In a printing-press, the combination of the platen, the movable type-bed, an operating-link, an eccentric piece with an extended arm connecting the operating-link and type-bed, a stop for turning the eccentric piece, connections for normally moving the stop out of operative position, and a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

6. In a printing-press, the combination of the platen, the movable type-bed, an operating-link, an eccentric piece connecting the operating-link and type-bed, a stop for turning the eccentric piece, connections for normally moving the stop out of operative position, and a lock for said stop comprising a sliding rod, a latch and connections for releasing the latch by feeding a sheet to the press.

7. In a printing-press, the combination of the platen, the movable type-bed, a stop for preventing the printing operation of the type-bed, and means controlled by feeding a sheet of paper to the press for releasing the stop comprising a contact-wheel engaging the sheet of paper, and means operated by the contact-wheel for moving the stop.

8. In a printing-press, the combination of the platen, the movable type-bed, a stop for preventing the printing operation of the type-bed, and means controlled by feeding a sheet of paper to the press for releasing the stop comprising a contact-wheel engaging the sheet of paper, a spring-pressed shaft, a tape adapted to be unwound from the shaft by the contact-wheel, and a tape adapted to wind up on the shaft to move the stop.

9. In a printing-press, the combination of the platen, the movable type-bed, a stop for preventing the printing operation of the type-bed, means controlled by feeding a sheet of paper to the press for releasing the stop comprising a contact-wheel engaged by the sheet of paper, and connections from the contact-wheel for moving the stop and means for automatically pressing the contact-wheel into position to be engaged by a succeeding sheet.

10. In a printing-press, the combination of the platen, the movable type-bed, an operating-link, an eccentric piece connecting the operating-link and type-bed, a stop for turning the eccentric piece, connections for normally moving the stop out of operative position, a lock for said stop comprising a sliding rod, and a latch coöperating therewith, and means controlled by feeding a sheet to the press for releasing the latch comprising a contact-wheel engaged by the sheet, and connections from the contact-wheel for moving the latch.

11. In a printing-press, the combination of the platen, the movable type-bed, an operating-link, an eccentric piece connecting the operating-link and type-bed, a stop for turning the eccentric piece, connections for normally moving the stop out of operative position, a lock for said stop comprising a sliding rod and a latch, connections for releasing the latch by feeding a sheet of paper to the press comprising a contact-wheel engaging the sheet of paper, a spring-pressed shaft, a tape adapted to be unwound from the shaft by the contact-wheel and a tape adapted to wind up on the shaft to move the latch, and means for pressing the contact-wheel into position to be engaged by the succeeding sheet.

818,904. WIRE SPRING-CLIP. GEORGE W. McGILL, Riverdale-on-the-Hudson, N. Y. Filed Aug. 25, 1905. Serial No. 275,735.

Claim.—1. A spring-clip of the character described having the wire forming it folded into a plurality of clamping members differ-

ing in size, the greater member partly inclosing or forming a frame for the lesser, and the latter disposed over the area of the greater and set in coacting spring bearing with parts of its frame, and adapted to be sprung transversely through such frame and to bear alternately from opposite transverse direction against either side of said parts.



2. A spring-clip of the character described having the wire forming it folded into a plurality of clamping members differing in size, the greater member partly inclosing or forming a frame for the lesser, and the latter disposed over the area of the greater and set in coacting spring bearing with parts of the frame and adapted to be sprung transversely through such frame and to bear alternately from opposite transverse direction against either side of said parts, such lesser member being provided with a metal plate spanning the folds of the wire forming it and bracing such folds together and securing to them a unison of movement and an increased clamping force.

3. In a spring-clip constructed as described of an outer member and a lesser or inner member provided with a metal plate spanning its area and housing within the folded portions of its edges parts of the wire composing such member.

4. In a spring-clip of the character described the wire forming the clip folded in manner to provide a plurality of clamping members differing in size, the greater member having two short straight parallel sides connecting with two longer straight sides set parallel with each other and providing the clip an oblong outer frame having four straight sides set at right angles with each other, the wire in one of such sides being disconnected at the top of the axis of the clip and carried downward obliquely in opposite directions from said axis across the frame and set in part in spring bearing with its lower edge.

5. In a spring-clip of the character described the wire forming the clip folded in a manner to provide a plurality of clamping members differing in size, the greater member being of rectangular oblong configuration and partly inclosing or forming a frame for the lesser, with the uninclosed parts of the latter set in spring bearing with the frame of such greater member and adapted to be transversely sprung through such frame.

818,905. WIRE SPRING-CLIP. GEORGE W. MCGILL, Riverdale-on-the-Hudson, N. Y. Filed Sept. 7, 1905. Serial No. 277,361.



Claim.—1. A spring-clip of the character herein described having the wire providing its clamping members so disposed therein that two of such members may alternately be set to bear against either side of a third member.

2. A spring-clip of the character herein described having the wire providing its clamping members so disposed therein that two of such members may be moved laterally around the edges of a third member and set alternately to bear against either side of such third member.

3. A wire spring-clip of the character described having three clamping members so disposed therein that two of them are in constant resilient bearing with the third and are adapted to be moved apart laterally and sprung from one surface of the third member to its opposite surface so as to alternately bear against either of such surfaces, for the purposes herein described.

4. A spring-clip of the character described having the wire composing it folded in manner to provide it three clamping members consisting of a central body member extending in part crosswise the clip, and two wing members disposed one on each side of such body member and having their lower terminals set in the same plane and adapted to bear, in that position, against either side of the body member, and be moved from either side of such member to its opposite side.

5. A spring-clip of the character described in which the wire composing it is folded into three unitary clamping members consisting of a transversely-disposed body member and two wing members placed one on each side of the body member in manner to admit of their lower terminals being alternately moved apart and sprung from one surface of the body member to its opposite surface in alternately bringing the terminals jointly into resilient bearing against one or other of such surfaces.

6. A spring-wire clip of the character described having the wire composing it folded at its central part into a body member transversely disposed therein and having the free end parts of the wire carried outward from such body member in opposite directions and thence downward across its lower part in manner to provide the clip two spring-bearing wing members disposed one on each side of the body member and adapted to bear against it.

7. In a spring-clip of the character described, wherein the wire composing it is folded into three unitary clamping members consisting of a transversely-disposed body member and two wing members placed one on each side of the axis of the body member in manner to admit of their lower terminals being alternately moved apart and sprung from one surface of the body member to its opposite surface in alternately bringing the terminals jointly into resilient bearing against one or other of such surfaces, means admitting of such manipulation of the wing members without straining the normal set of their looped upper parts or impairing the lateral converging resilience of their lower terminals.

8. In a spring-clip of the character described, the upper portions of the wing members B, B, provided with areas sufficiently large, relatively, to admit of their lower extremities being moved apart laterally and sprung from one surface of the body member to its opposite surface without straining the normal spring set of such members or impairing the lateral converging resilience of their lower parts.

9. A spring-clip of the character described having the wire composing it folded in a manner to provide three clamping members consisting of a central body member extending in part crosswise the clip with the wires composing it folded outward in the same plane from the axis of the clip and merging into two wing members disposed one on each side of such axis, with the wires providing them converging downwardly and having their terminals folded back upwardly and set in spring-bearing with one side of the body member.

10. A spring-clip of the character described having the wire composing it folded in a manner to provide three clamping members consisting of a central body member extending in part crosswise the clip with the wire composing it folded outward laterally from the axis of the clip, and in the same plane, and merging into two dependent wing members of equal dimensions set adjacent to each other and bearing against the body member at a plurality of its crossings, and having the terminals of the wires carried back upwardly and in the same plane across the body member and in spring-bearing with it.

818,906. MEASURING INSTRUMENT. VICTOR J. O'CONNOR, Bend, Oreg. Filed Aug. 8, 1905. Serial No. 273,295.

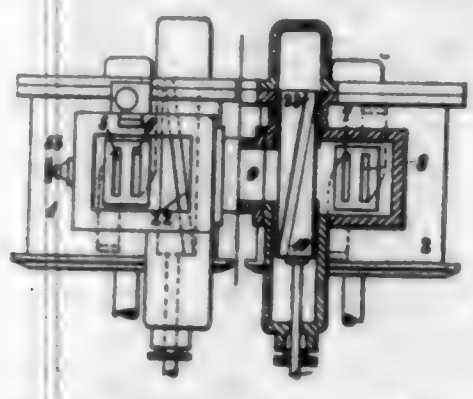


Claim.—A device of the kind described comprising legs pivoted together, one of the legs having a slot intermediate its ends and an opening in the face of said leg communicating with said slot, and an arm made up of pivotal sections, having scales on the upper surface, said arm being attached at one end to the other of said legs and with its remaining portion arranged for passage through the said slot and adjacent the opening, whereby the scales on the surface of said arm will be visible through said opening.

818,907. DUPLEX PUMP. PHILIP F. OSBUR, London, England. Filed Aug. 31, 1904. Serial No. 223,804.

Claim.—1. In a duplex pumping-engine, the combination of cylinders, a piston and piston-rod for each cylinder, a main valve for each cylinder, connections between said main valves and the oppo-

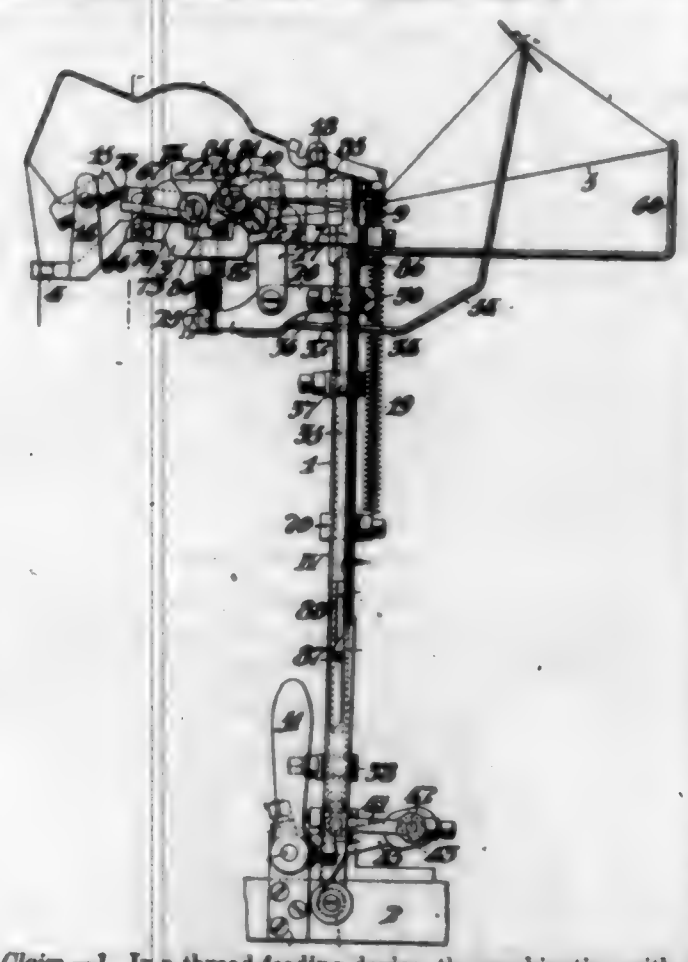
site piston-rods respectively, said main valves being formed with recesses or cavities, and expansion or cut-off valves located in said cavities, said main valves being located and operated in an exhaust-chamber common to both of the cylinders, substantially as described.



2. In a duplex pumping-engine, the combination of cylinders, a piston and piston-rod for each cylinder, a main valve for each cylinder, mechanism connecting said main valves with the opposite piston-rods respectively, said main valves being formed with recesses or cavities, and expansion or cut-off valves located in said cavities, said main valves being also provided with one or more exhaust-channels formed at or near the middle of the valve for one side of the engine, and with openings at the end of the valve for the other side of the engine, said openings communicating with the common exhaust-chamber containing said valves, substantially as described.

3. In a duplex pumping-engine, the combination of a casing, main valves located in said casing and having recesses or cavities therein, and expansion-valves located in said cavities, said cavities being closed at both ends by the heads of said expansion-valves, live steam entering between said heads, and the cut-off edges of said expansion-valves being located between the closing-valve heads, substantially as described.

818,908. **THREAD-FEEDING DEVICE FOR CIRCULAR-KNITTING MACHINES.** ELLIS I. O'NEILL and WILLIAM H. TAGGART, Philadelphia, Pa. Filed Apr. 20, 1904. Serial No. 203,503.



Claim.—1. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block, mounted to move on said frame; a pair of shear-blades carried by said block; and, means arranged to open and close said blades in definite relation with the movement of said block, substantially as set forth.

2. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member mounted on said block; and, means arranged to actuate said member, substantially as set forth.

3. In a thread-feeding device, the combination with a frame; of a thread-carrying block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member mounted to oscillate on said block; and, means arranged to oscillate said member from end to end of said block, substantially as set forth.

4. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member mounted to oscillate on said block; a pinion secured to said member at its axis; a sector pivoted to said block, in mesh with said pinion; and, means to oscillate said sector, substantially as set forth.

5. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member mounted to oscillate on said block; a pinion secured to said member at its axis; a sector pivoted to said block, in mesh with said pinion; a reciprocatory rod arranged to oscillate said sector; a pin on said rod; and, a detent arranged to engage said pin, substantially as set forth.

6. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member mounted to oscillate on said block; a pinion secured to said member at its axis; a sector pivoted to said block, in mesh with said pinion; a reciprocatory rod arranged to oscillate said sector; a detent arranged to normally engage said rod; and, a spring arranged to shift said rod and thereby oscillate said separating member when said detent is released, substantially as set forth.

7. In a thread-changing device, the combination with a frame; of a thread-carrying block mounted to reciprocate on said frame; a pair of shear-blades mounted on said block and arranged to open and close in accordance with the movement of said block; a thread-separating member; means to operate said member; and, a thread-take-up device arranged to operate in definite relation with the movement of said block, substantially as set forth.

8. In a thread-feeding device, arranged to continuously feed a main thread and to intermittently feed a splicing-thread along with said main thread; the combination with a frame; of a reciprocatory thread-carrying channel-block mounted in said frame, arranged to effect the clamping of said splicing-thread between said block and said frame; a thread-separating member arranged to separate said main thread from said splicing-thread; a pair of shear-blades arranged to shear said splicing-thread; and, a thread-take-up lever arranged to move in accordance with the movement of said channel-block, substantially as set forth.

9. In a thread-feeding device, arranged to continuously feed a main thread and to intermittently feed a splicing-thread along with said main thread; the combination with a frame; of a channel-block arranged to move in said frame; a thread-separating member arranged to separate said main thread from said splicing-thread; means arranged to actuate said separating member independently of the movement of said block; means arranged to shear said splicing-thread; and, means arranged to intermittently take up said splicing-thread between said channel-block and the source of said thread, substantially as set forth.

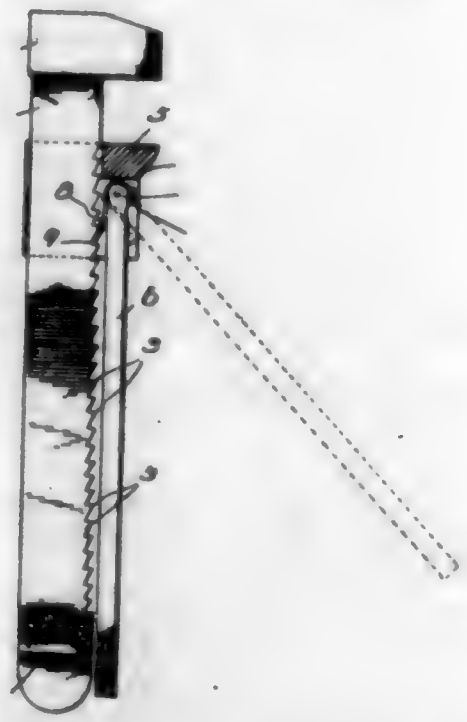
10. In a thread-feeding device, arranged to continuously feed a main thread and to intermittently feed a splicing-thread along with said main thread; the combination with a frame; of a reciprocatory thread-guiding block mounted in said frame; a thread-separating member arranged to oscillate and separate said main thread from said splicing-thread; means arranged to actuate said separating member independently of the movement of said block; a pair of shear-blades arranged to sever said splicing-thread; and, means arranged to reciprocate said block and thereby clamp said splicing-thread and simultaneously take up said splicing-thread, between its clamped portion and its source, substantially as set forth.

11. In a thread-feeding device, arranged to continuously feed a main thread and to intermittently feed a splicing-thread along with said main thread; the combination with a frame; of a reciprocatory

channel-block; a pair of shear-blades arranged to sever said splicing-thread in accordance with the movement of said channel-block; a thread-separating member arranged to oscillate; means arranged to oscillate said member independently of the movement of said channel-block; and, a thread-take-up lever arranged to oscillate in accordance with the movement of said channel-block, substantially as set forth.

12. In a thread-feeding device, the combination with a frame; of a thread-carrying channel-block mounted to reciprocate on said frame; a lever attached to said frame; a sleeve attached to said lever; a rock-shaft having a lever-arm arranged to reciprocate said sleeve, a pair of shear-blades pivoted to said block and arranged to open and close in accordance with the movement of said block; a thread-take-up lever pivoted to said frame; a thread-separating plate pivoted on and arranged to oscillate from end to end of said block; a pinion secured to said separating-plate at its axis; a sector pivoted to said block, in mesh with said pinion; a rod mounted to slide within said sleeve and arranged to oscillate said sector; a spring tending to shift said rod; a pin extending from said rod; and, a detent arranged to engage said pin against the pressure of said spring, substantially as set forth.

818,909. **WRENCH.** WILLIS F. O'NEILL, Waukegan, Ill., assignor to William O'Neill, Lake county, Ill. Filed May 31, 1905. Serial No. 263,191.



Claim.—1. A wrench comprising a stock having a fixed jaw at one of its ends, a series of rack-teeth formed on the inner edge face of said stock, a movable jaw slidably mounted upon the stock, a lever pivoted at one of its ends in said movable jaw, and a dog secured to said lever, said dog comprising a plate having its free end turned laterally and arranged for engagement with the teeth of said stock.

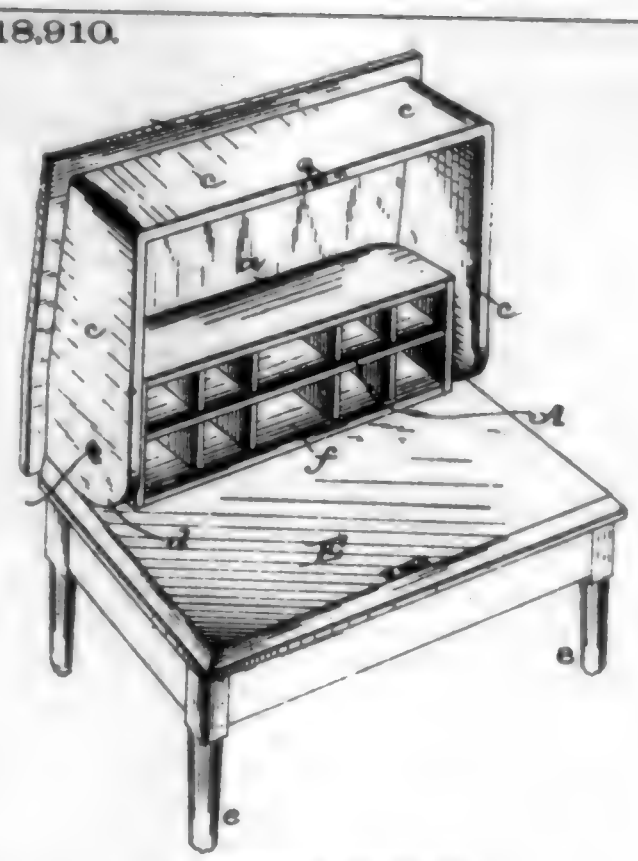
2. A wrench comprising a stock having a fixed jaw at one end and provided upon its inner edge face with a series of rack-teeth, a movable jaw slidably mounted upon the stock, a lever pivotally mounted at one of its ends in said movable jaw, and a dog comprising a plate secured at one of its ends to the outer face of said lever at its pivoted end and turned backwardly over the said end and having its free end portion turned laterally from said lever and arranged for engagement with teeth on said stock.

818,910. **ADJUSTABLE COMBINATION-DESK.** CHARLES S. OWENS, Dayton, Ohio. Filed Oct. 12, 1904. Serial No. 228,173.

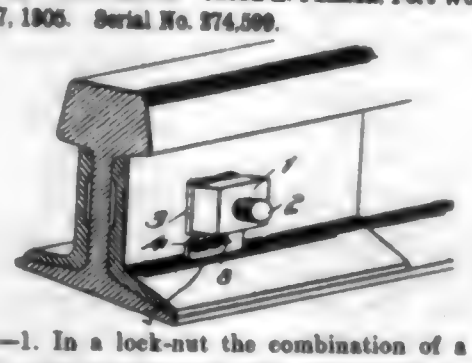
Claim.—1. In a desk, the combination, with a base having a flat top, of a pigeonhole-frame mounted upon said top, and an inclined top having a depending flange, said inclined top being pivotally connected to the pigeonhole-frame through said flange, substantially as and for the purposes described.

2. The combination in the herein-described desk; of the set of pigeonholes having a curved top; of an inclined top provided with a flange pivotally connected to said pigeonholes; and a horizontal base having a flat top provided with suitable supports; all substantially as and for the purposes set forth.

818,910.



818,911. **NUT-LOCK.** CLYDE B. PALMER, Fort Worth, Tex. Filed Aug. 17, 1905. Serial No. 274,599.

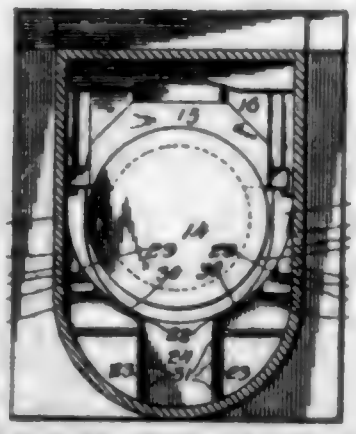


Claim.—1. In a lock-nut the combination of a spring-metal plate, a bolt, a nut engaging said bolt, and a locking projection, said plate having a spring-bearing struck therefrom and engaging the side of the nut and the locking projection and having resilient tongues bearing against said nut.

2. In a lock-nut, the combination of a bolt, a nut engaging said bolt, a spring-metal plate having a perforation therethrough for said bolt and resilient tongues struck from said plate on opposite sides of said perforation and pressing against said nut, and a locking projection, said plate having a spring-bearing adapted to engage the locking projection and to lock said nut.

3. A lock for nuts comprising a plate of metal having a hole therethrough for the passage of a bolt, and a spring consisting of a tongue struck from said metal and the inner edge thereof bent at an angle to said plate to form a lock for nuts and having the outer edge thereof in the plane of the washer to engage a suitable projection to prevent turning of said plate.

818,912. **RIBBED JOURNAL-BOX.** JAMES S. PATTEN, Baltimore, Md., assignor to The Baltimore Journal Box Company, Baltimore, Md., a Corporation of Maryland. Filed Apr. 27, 1905. Serial No. 257,627.



Claim.—1. A journal-box having at each side a series of alternating waste-supporting portions and oil-pockets.

2. A journal-box having at each side a longitudinally-extending series of alternating waste-supporting portions and oil-pockets.

3. A journal-box having at each side a plurality of longitudinal series of alternating waste-supporting portions and oil-pockets.

4. A journal-box having at each side a plurality of longitudinal series of alternating waste-supporting portions and oil-pockets, the waste-supporting portions converging downwardly of the box.

5. A journal-box having inwardly-directed ribs at its sides, each in a plane at an angle to the axis of a journal in the box, a portion of the free edge of each rib gradually approaching a journal in the box.

6. A journal-box having inwardly-directed ribs at its sides arranged to support waste in contact with a journal of the box and oil-receiving pockets between portions of said ribs.

7. A journal-box having vertical ribs projecting from the inner faces of its side walls, portions of said ribs gradually approaching a journal in the box in a downward direction.

8. A journal-box having vertical ribs projecting from the inner faces of its side walls, said ribs gradually increasing downwardly in projection, for portions of their lengths.

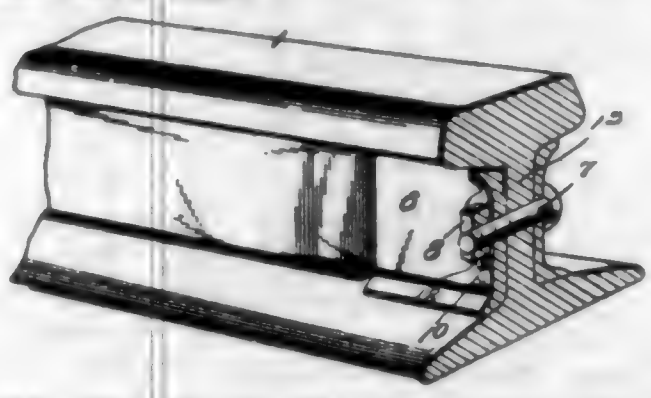
9. A journal-box having vertical ribs projecting from the inner faces of its side walls, said ribs gradually increasing downwardly in projection, for portions of their lengths, and oil-pockets between portions of said ribs.

10. A journal-box having inwardly-directed ribs at its sides, each in a plane at an angle to the axis of a journal in the box, portions of the free edges of which ribs gradually approach the journal in the box in a downward direction.

11. A journal-box having inwardly-directed ribs at its sides extending in the direction of and at right angles to the journal, the edges of the ribs in the direction of the journal gradually approaching the journal.

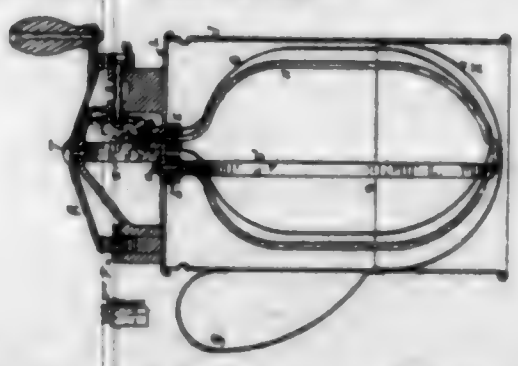
12. A journal-box having inwardly-directed ribs at its sides extending in the direction of and at right angles to the journal, the edges of the ribs in the direction of the journal gradually approaching the journal in a downward direction.

818,913. **NUT-LOCK.** LEWIS PAYNE, Elgin, Tex. Filed Oct. 30, 1903. Serial No. 179,156.



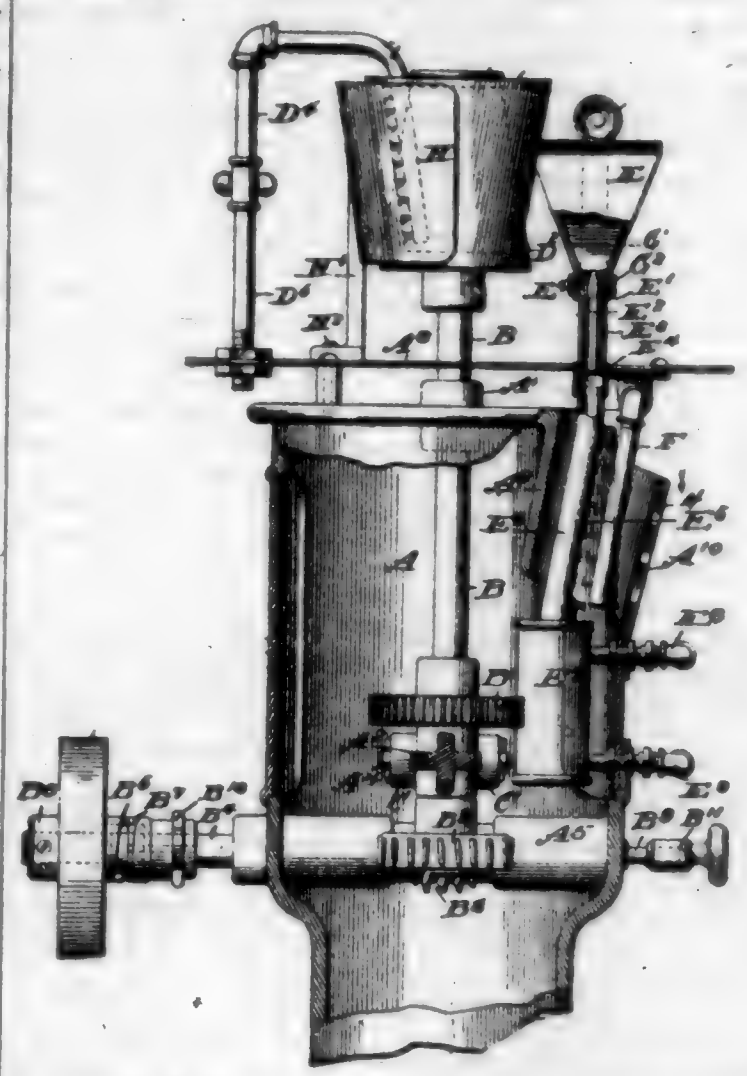
Claim.—The combination with a rail, a fish-plate, a bolt and a nut, of a washer-plate located on said bolt between said nut and said fish-plate, said washer-plate having a major and a minor tongue, said major tongue being bent back over said fish-plate to lie between the same and the said rail and said minor tongue being extended downwardly and then back upon itself and having its end in engagement with one of the faces of said nut, the bent-back portion of said minor finger lying in parallel relation with the downwardly-extending portion thereof and in spaced relation thereto.

818,914. **EGG-BEATER.** THOMAS H. PERRIN, Potsdam, N. Y. Filed Feb. 15, 1905. Serial No. 245,767.



Claim.—An egg-beater comprising a gear-wheel A mounted horizontally and provided with a handle, a pinion B meshing with said gear-wheel, a horizontal shaft to which the pinion is secured, a bevel-pinion also secured to said shaft, a float having a bevel-pinion meshing with the bevel-pinion on the horizontal shaft, the float also having a pinion E, a second float having a pinion E' intermeshing with pinion E, and a wire bent approximately into the same form as the floats about which said floats revolve.

818,915. **COLLAR AND CUFF SHAPER.** GEORGE L. RICHARDSON, Chicago, Ill., assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y., a Corporation of New York. Filed Sept. 24, 1904. Serial No. 226,342.



Claim.—1. In a machine of the class described, the combination with presser members, of a freely-rotatable nozzle adjacent thereto, and means for supplying steam to said nozzle.

2. In a machine of the class described, a freely-rotatable nozzle, means for supplying steam to said nozzle, and means for superheating the steam in its passage to said nozzle.

3. In a machine of the class described, a rotatable nozzle, means for supplying steam to said nozzle, means for superheating the steam in its passage to said nozzle, and a condensing-chamber beneath said superheater.

4. In a machine of the class described, a nozzle, means for supplying steam thereto, and a superheating burner adjacent to the steam-supply means for superheating the steam in its passage to said nozzle.

5. In a machine of the class described, a nozzle, means for supplying steam thereto, a superheating-burner adjacent to the steam-supply means for superheating the steam in its passage to said nozzle, coöperating cones disposed adjacent to said nozzle, and means for heating one of said cones.

6. In a machine of the class described, a pivotally-mounted nozzle, means for supplying steam thereto, coöperating cones disposed adjacent to and in alinement with said nozzle, and means for heating one of said cones.

7. In a machine of the class described, a nozzle, means for supplying steam thereto, coöperating cones adjacent to said nozzle, a vertically-disposed guide-plate spaced from one of said cones, and means at one side of one of said cones opposite the guide-plate for applying heat to said cone at that point.

8. In a machine of the class described, a nozzle, means for supplying steam thereto, a superheating-burner adjacent to the steam-supply means, coöperating cones disposed adjacent to said nozzle, means at one side of one of said cones for heating the same, a guide-plate spaced from said cone opposite the heating means therein, and

means for permitting a movement of one of said cones toward and from the other.

9. In a machine of the class described, the combination with coöperating cones, of a rotatable nozzle disposed adjacent to said cones, and means for supplying steam to said nozzle.

10. In a machine of the class described, the combination with coöperating cones, of a rotatable nozzle disposed adjacent to said cones, means for supplying steam to said nozzle, means for heating one of said cones, and a guide-plate disposed adjacent to the heated cone at the opposite side thereof from said nozzle.

11. In a machine of the class described, the combination with coöperating cones, of a rotatable nozzle disposed adjacent to said cones, means for supplying steam to said nozzle, means for heating one of said cones, a guide-plate disposed adjacent to the heated cone at the opposite side thereof from said nozzle, a superheating-burner disposed to heat the steam-passage to said nozzle, and a condensing-chamber communicating with said passage beneath the heater.

12. In a device of the class described, an elongated slotted steam-nozzle, and a roller supported to yieldingly contact with the slotted face of said nozzle intermediate of its ends.

13. In a device of the class described, an elongated slotted steam-nozzle, a roller supported to contact with the slotted face of said nozzle, and a looped supporting-spring extending from said roller to the base of the nozzle.

14. In a device of the class described, an elongated slotted steam-nozzle, a roller supported to contact with the slotted face of said nozzle, a looped supporting-spring extending from said roller to the base of the nozzle, coöperating cones at one side of said nozzle, and means for permitting a rotation of said nozzle and base relative to said cones.

15. In a machine of the class described, coöperating cones provided with driving-shafts one of which is provided with fixed bearings and has the widest portion of its cone uppermost, a pivotally-mounted bearing-box for the lower end of the opposite cone-shaft carried by the lower fixed bearing and constructed and arranged to travel in a downward path therefrom, and meshing gears carried by each of said shafts.

16. In a machine of the class described a driving-shaft mounted in fixed bearings and provided with a cone having its wider portion uppermost, and a coöperating oppositely-disposed and relatively movable cone carried by a driving-shaft having a pivotal mounting constructed and arranged to effect a direct movement of the coacting surfaces of the cones toward and from each other.

17. In a machine of the class described, a steam-discharge nozzle, a feed-pipe communicating therewith, a superheating-burner disposed parallel to said feed-pipe and having jets directed against said pipe, and a condensing-chamber at the lower end of said feed-pipe.

18. In a machine of the class described, a steam-discharge nozzle, a feed-pipe communicating therewith, a superheating-burner disposed parallel to said feed-pipe and having jets directed against said pipe, a condensing-chamber at the lower end of said feed-pipe, a casing surrounding said parts and provided with a partition-wall at the rear of the feed-pipe, and an apertured guard-wall at the front of said burner.

19. In a machine of the class described, a slotted steam-nozzle provided at its base with a ground bearing and a bushing projecting therefrom, and a stationary nipple provided with a ground joint at its upper portion to engage said bearing and adapted to inclose said bushing whereby the nozzle may be rotated upon said nipple.

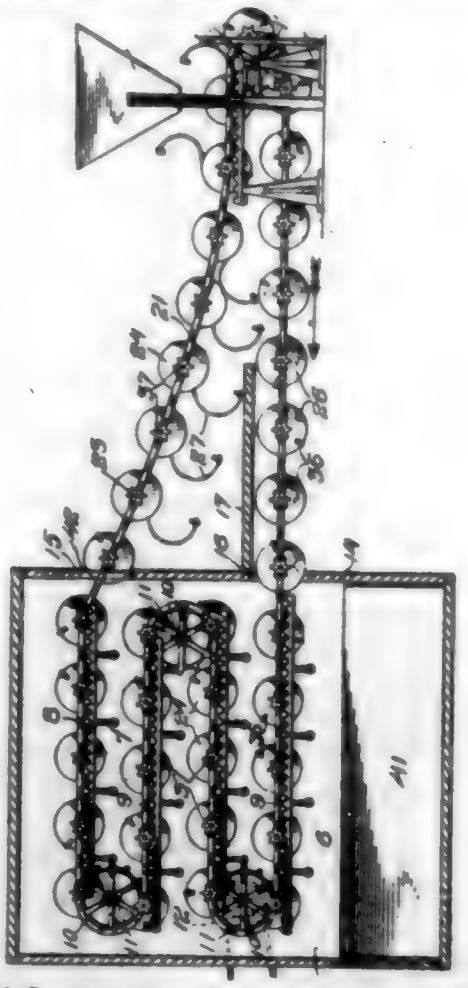
20. In a device of the class described, a metallic cone open at its upper portion, a heating-burner depending within said cone and provided with jets directed in one direction therefrom, and a guide-flange spaced from the outer wall of said cone opposite the burner therein.

21. In a device of the class described, a metallic cone open at its upper portion, a heating-burner disposed within said cone and provided with jets directed against the inner wall thereof, a guide-flange spaced from the outer wall of said cone opposite the burner therein, a coöperating oppositely-disposed clothed cone, and a pivotally-mounted discharge-nozzle adjacent to said cones.

22. In a machine of the class described, a casing having at its lower portion elongated bearings for a driving-shaft, a fixed bearing for a cone-shaft, an inwardly-projecting bracket having a bearing for said cone-shaft in alinement with said top bearing and provided with a pivoting member, an oscillating bearing for a parallel cone-shaft, a bearing for said parallel cone-shaft normally held in contact with the top of said casing, a steam-nozzle and conducting-pipe, a depending partition carried by the casing at the rear of said conducting-pipe, and a guard-plate carried by the casing at the front of said pipe.

23. In a machine of the class described, a casing having at its lower portion elongated bearings for a driving-shaft, a fixed bearing for a cone-shaft, an inwardly-projecting bracket having a bearing for said cone-shaft in alinement with said top bearing and provided with a pivoting member, an oscillating bearing for a parallel cone-shaft, a bearing for said parallel cone-shaft normally held in contact with the top of said casing, a steam-nozzle and conducting-pipe, a depending partition carried by the casing at the rear of said conducting-pipe, a guard-plate carried by the casing at the front of said pipe, bearings in said casing for a shifter-rod parallel to the driving-shaft bearings, and a removable closure-plate at one side of said casing.

818,916. **FRUIT-DRIER.** MACK RODGERS, Gravette, Ark. Filed Nov. 28, 1905. Serial No. 289,539.



Claim.—1. In a fruit-drier, the combination with a drying-room, and a heater therein, of a chain of fruit-carrying drums arranged for travel through said room, and means whereby said drums may be moved away from said heater during their passage through the said room.

2. In a fruit-drier, the combination with a drying-room and a heater therein, of a chain of fruit-carrying drums arranged for travel through said room, means for revolving said drums, and means for moving said drums step by step from the said heater during their passage through the said room.

3. In a fruit-drier, the combination with a drying-room and a heater therein, of a chain of fruit-carrying drums arranged for passage through said room, means for revolving said drums in alternately-opposite directions during their passage through the said room, and means for moving said drums step by step from said heater.

4. In a fruit-drier, the combination with a drying-room and a heater therein, of a chain of fruit-carrying drums arranged for passage through said room, means carried by opposite walls of said room for revolving the said drums during their passage through the said room, said means being arranged to revolve the drums in alternately-opposite directions and means for moving said drums backwardly and forwardly above said heater and step by step from the same.

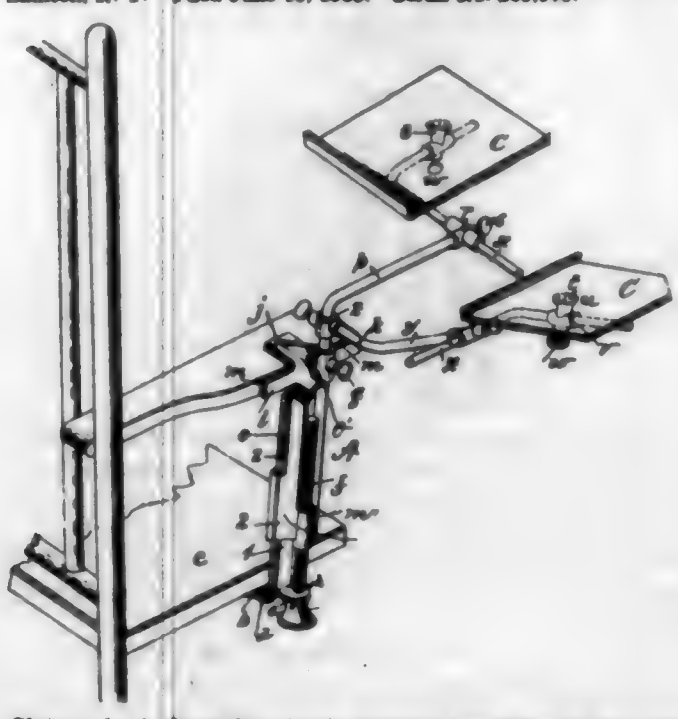
5. In a fruit-drier, the combination with a drying-room and a heater therein, of a chain of fruit-carrying drums arranged for passage through said room, and backwardly and forwardly above said heater and from the same, means for revolving said drums in alternately-opposite directions and means for moving said chain.

6. In a fruit-drier, the combination with a drying-room and a heater therein, of a pair of driven sprockets mounted upon opposite

walls of said room, idler-sprockets mounted upon said walls, tracks arranged above said sprockets and a track arranged below said driven sprocket, a shaft mounted exterior to said room, sprockets carried by said shaft, a chain engaged over said sprockets, fruit-carrying drums carried by said chain, means associated with said drums for engagement with said track whereby said drums may be revolved during their passage through the said room, closures for said drums, latches for holding said closures in closed position, and means for unlatching said closures subsequent to the passage of the drums from the said room.

7. In a fruit-drier, in combination with a drying-room and a heater therein, of driven sprockets mounted upon opposite walls of said room, idler-sprockets mounted upon said walls, tracks provided with rack-teeth disposed above said sprockets, standards mounted exterior to said room, a shaft mounted in said standards, sprockets carried by said shaft, chains engaged with said sprockets, drum-shafts connecting said chains, drums carried by said shafts and pinions carried by said shafts exterior to said drums, said drums including hinged closures, means for holding said closures in a closed position, means arranged for engagement therewith for releasing said closures, standards mounted between said drum and said first-named standards, tracks supported by the standards, said tracks being provided with rack-teeth, the said pinions being arranged for engagement with said first and last named tracks for revolving the said drum, and means for returning said closure to its normal position.

818,917. CLAMP FOR BOOK-SUPPORTS. FORREST B. ROGER, Binghamton, N. Y., assignor of one-half to Frank A. Blakslee, Binghamton, N. Y. Filed June 19, 1905. Serial No. 265,975.



Claim.—1. A clamp for a book-support, consisting of two members, one being provided with a padded extension to project over the arm of the chair and two similar extensions to project along the sides of the arm, and the other member being provided at its lower end with a padded extension to project under the seat of the chair, an adjusting-screw connected with one member, and a slide operatively connected with the screw, whereby, through the medium of the latter the two members may be clamped upon a chair.

2. A clamp for a book-support to a chair consisting of two relatively long members, each provided with a bar to slide one upon the other and provided with clamps, one engaging the arm and the other the seat of a chair, the bar of one member having flanges upon its sides, and the other member being provided with a combined nut and slide, the sides of the latter slide extending beyond the side edges of the said flanges, in combination with a screw tapped through the said nut and being prevented from moving longitudinally with the slide with which it is connected.

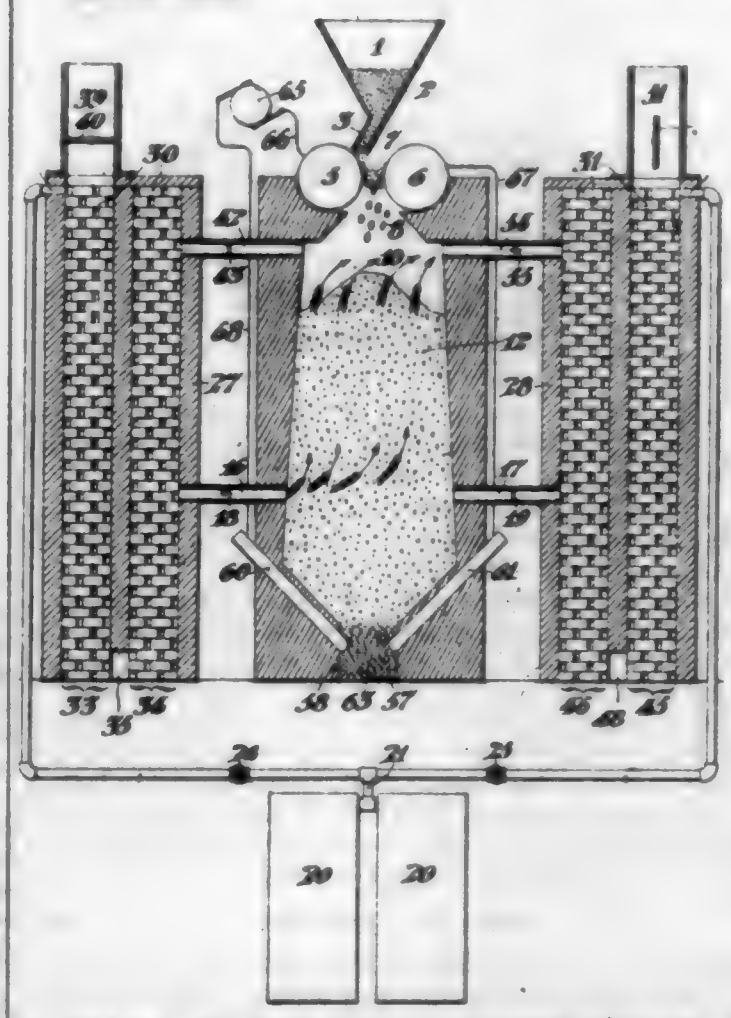
3. A clamp for a book-support to a chair consisting of two relatively long members, one provided with a padded extension to extend under the chair-seat, and the other having padded extensions to engage and extend over the arm of the chair and padded lateral extensions projecting in opposite directions from the first-named padded extension along the side of the arm, a screw extending longitudinally with the connections of the clamps and operatively connected therewith to secure the clamps to the chair and to release them therefrom, and a knob on the lower end of the screw to operate the same.

4. The combination, with a clamp for a book-support to a chair, said clamp consisting of two members—a lower member adapted to engage the seat of the chair, and an upper member provided with a clamp to extend over the arm of the chair, and having lateral extensions projecting in opposite directions along the side of the arm, an enlargement on the upper clamp, a hole extended through the said enlargement, a rod passed through said hole, a set-screw tapped into said enlargement and adapted to engage said rod, of a coupling on said rod, a rod passed transversely through the said coupling and a set-screw in said coupling to engage the said last-mentioned rod, and a book-support attached to the latter rod.

5. A clamp for securing a book-support to a chair, consisting of a clamping member to engage the seat of a chair, a second clamping member to engage the arm of the chair, having a part adapted to extend over and upon the arm and lateral extensions projecting in opposite directions along the side or edge of the arm, each of the said lateral extensions being equal or more than equal in length to the horizontal clamping extension projecting over and upon the upper surface of the arm, combined with book-trays and means connected with the top clamp on the chair-arm extending substantially horizontally therefrom for supporting the trays.

6. A clamp for securing a book-support to a chair, consisting of a clamping member to engage the seat of a chair, a second clamping member to engage the arm of the chair, having a part adapted to extend over and upon the arm and lateral extensions projecting in opposite directions along the side or edge of the arm, each to an extent equal or more than equal to the horizontal clamping extension on the upper surface of the arm, combined with a plurality of book-supporting trays and branching arms connected with the top clamp on the arm and extending substantially horizontally therefrom for supporting the said trays.

818,918. PROCESS OF MANUFACTURING IRON AND ITS ALLOYS. MARCUS RUTHENBURG, Lockport, N. Y. Filed Nov. 28, 1903. Serial No. 183,062.



Claim.—1. The continuous process of reducing ore to the metallic state, which consists in fritting comminuted particles of ore in coherent porous lumps, collecting the lumps in a confined heated atmosphere, then before said lumps have fallen below a reducing temperature, subjecting them to the action of reducing media in said confined heated atmosphere and reducing them without fusing them, and then increasing the temperature of said lumps, until the reduced metal is melted, substantially as set forth.

2. The continuous process of reducing ore to the metallic state, which consists in fritting comminuted particles of ore in coherent porous lumps, collecting the lumps in a confined heated atmosphere, then before said lumps have fallen below a reducing temperature,

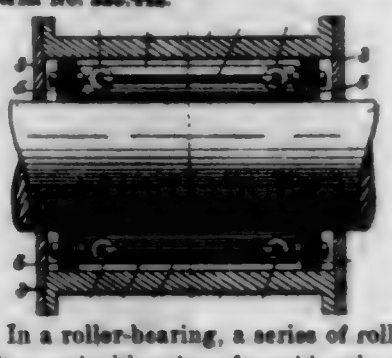
subjecting them to the action of reducing media while progressing them through a region heated to reducing temperature and reducing them without fusing them, and then progressing the reduced lumps at reducing temperature into a region at fusing temperature and melting the reduced metal, substantially as set forth.

3. The continuous process of reducing ore to the metallic state, which consists in assembling comminuted particles of ore to form a path for an electric current, so proportioned as to frit said particles into coherent porous lumps, collecting the lumps in a confined heated atmosphere, then before said lumps have fallen below a reducing temperature, subjecting them to the action of reducing media, and reducing them without fusing them, and then assembling the reduced lumps to form a path for an electric current, and melting the reduced metal by an electric current passed therethrough, substantially as set forth.

4. The continuous process of reducing ore to the metallic state, which consists in assembling comminuted particles of ore to form a path for an electric current so proportioned as to frit said particles into coherent porous lumps, collecting the lumps in a confined heated atmosphere, then before said lumps have fallen below the reducing temperature, subjecting them to the action of deoxidizing-gas, and reducing them without fusing them, and then assembling the reduced lumps to form a path for an electric current, and thereby melting the reduced metal, substantially as set forth.

5. The process of reducing ore to the metallic state, which consists in fritting comminuted particles of ore in coherent porous lumps, by an electric current, collecting the lumps in a confined heated atmosphere, then before said lumps have fallen below a reducing temperature, subjecting them to the action of deoxidizing-gas until they are reduced without being melted and then melting the reduced lumps by an electric current passed therethrough, substantially as set forth.

818,919. ROLLER-BEARING. GEORGE D. SCHIFFLER, Jackson, Mich., assignor, by mesne assignments, to George A. McKeel and Company, Limited, Jackson, Mich., a Corporation of Michigan. Filed Sept. 22, 1904. Serial No. 225,442.



Claim.—1. In a roller-bearing, a series of rolls having conical ends, rings having conical bearings for said ends, and rods flexibly connecting the rings.

2. In a roller-bearing, a series of rolls having conical ends, rings having conical bearings for said ends, eyebolts in the rings and connecting-rods flexibly connected to said eyebolts.

3. In a roller-bearing, a series of rolls having conical ends, a case surrounding the rolls, rings having conical bearings for the rolls and divided at opposite sides, longitudinally-adjustable eyebolts in the rings, and connecting-rods flexibly connected to the eyebolts.

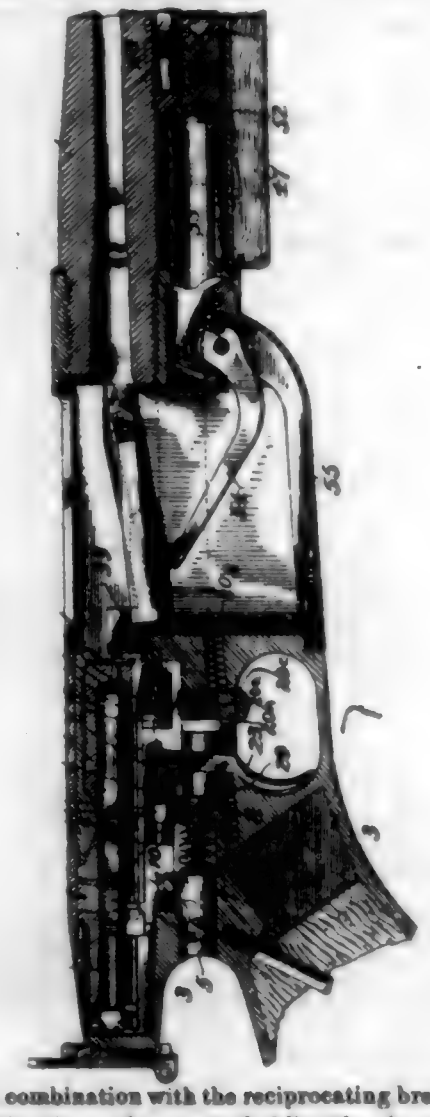
4. In a roller-bearing, a series of rolls, a case surrounding the rolls, rings having bearings for the rolls, eyebolts extending through said rings, nuts carried by said eyebolts and adapted to abut the inner and outer surfaces of the rings and connecting-rods flexibly connected to said eyebolts, said rings, the eyebolts and the connecting-rods constituting a flexible cage, substantially as described.

818,920. GAS-OPERATED RIFLE. MORRIS F. SMITH, Philadelphia, Pa., assignor of three-fourths to William D. Condit, Des Moines, Iowa. Filed Jan. 30, 1904. Serial No. 191,393.

Claim.—1. The combination with the movable breech-bolt, a firing-pin, and a sear, of a trigger for moving the sear out of engagement with the firing-pin, and connections between the trigger and the breech-bolt for moving the trigger out of engagement with the sear upon the movement of the breech-bolt.

2. The combination with the reciprocating breech-bolt, a firing-pin carried thereby and a pivoted sear for holding the firing-pin in firing position, of a trigger for engagement with the sear, and a connection between the reciprocating bolt and the trigger for moving the trigger out of engagement with the sear on the movement of the bolt.

3. The combination with the reciprocating breech-bolt, a firing-pin carried thereby, and a sear for holding the pin against movement, of a trigger for engagement with the sear, connection between the trigger and the part on which it is mounted comprising a pivot on one part and a slot in the other, a spring for holding the trigger in engagement with the sear, and connection between the breech-bolt and the trigger for moving the trigger out of engagement with the sear.



4. The combination with the reciprocating breech-bolt, a firing-pin carried thereby, and a sear for holding the pin against movement, of a trigger for engagement with the sear, connection between the trigger and the part on which it is mounted comprising a pivot on one part and a slot in the other, a spring for holding the trigger in engagement with the sear, and means for locking the sear against movement.

5. In a gun, the combination with the rearwardly-movable breech-bolt, a firing-pin, and a sear, of a trigger having connection with the sear for moving the sear out of engagement with the firing-pin, connections between the breech-bolt and the trigger for breaking the connection of the trigger with the sear when the breech-bolt moves rearwardly, and a lock for the sear; said trigger being movable out of connection with the sear when the trigger is pulled while the sear is locked.

6. In a gun, the combination with the rearwardly-movable breech-bolt provided with guide-faces on opposite sides thereof, of a pair of locking-dogs symmetrically arranged on opposite sides of the breech-bolt and provided with guide-faces which aline with the guides on the breech-bolt, and a single drive-rod connected to both locking-dogs.

7. In a gun, the combination with the rearwardly-movable breech-bolt provided with guide-faces on opposite sides thereof, of a pair of locking-dogs symmetrically arranged on opposite sides of the bolt and provided with guide-faces which aline with the guide-faces on the breech-bolt, and a drive-rod bifurcated at one end and having each member connected to one of the locking-dogs.

8. In a gun, the combination with the rearwardly-movable breech-bolt having enlarged longitudinal guiding portions on its opposite sides, of a pair of locking-dogs symmetrically arranged on opposite sides of the breech-bolt and provided with enlarged guiding portions, adapted, when the dogs are in unlocking position, to aline with the enlarged guiding portions on the breech-bolt.

9. In a gun, the combination with the frame having a recess opening in the rear thereof, of a barrel and a receiver separably connected to the forward end of the frame by an undercut, recessed lugs

on the inside of the receiver, a rabbet connection between the receiver and the frame, a sliding bolt positioned in the recess and adapted to engage the recessed lugs to hold the receiver to the frame.

10. In a gun, the combination of a frame and a receiver adapted to swing on the forward end of the frame, one of said parts being provided with a recess opening at the rear of the gun, and a bolt positioned in the recess operative through the rear opening of said recess and adapted to engage the other part on both sides of the gun.

11. In a gun, the combination with a breech-bolt, of a drive-rod connected with the breech-bolt and comprising a yoke, a pair of end members having a tongue-and-groove connection with the yoke, and means for locking the end members in the yoke.

12. In a gun, the combination with a breech-bolt, of a drive-rod connected with the breech-bolt and comprising a yoke, a pair of end members having a tongue-and-groove connection with the yoke, a single bolt for securing the end members to the yoke, and a forward member engaging the single bolt to hold it against movement.

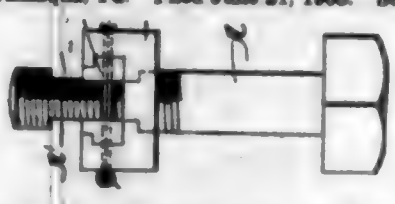
13. In a gun, the combination with a breech-bolt, of a drive-rod connected to the breech-bolt and comprising a yoke, a pair of end members having a tongue-and-groove connection with the yoke and notched on their upper edges, a bolt provided with a head fitted into the notches in both end members, and a forward member fitted into the yoke and engaging the bolt.

14. In a gun, the combination with the breech-bolt and a track on which the breech-bolt travels, of a pair of pivoted locking and guiding wings carried by the breech-bolt on opposite sides and movable out of the breech-bolt track to lock the bolt and into the breech-bolt track to unlock the bolt and travel therewith, and a drive-rod bifurcated at its rear end and having each member thereof connected with one of the wings to control the said wings.

15. In a gun, the combination of the stock carrying the trigger, the sear and the magazine, and the receiver separable from the stock and carrying the barrel, the breech-bolt, breech-bolt-locking means, the gas-operated drive-rod connected with the breech-bolt-locking means and a return spring acting on the gas-operated drive-rod to hold the breech-bolt in firing position within the receiver when the receiver and the stock are separated.

16. The combination with the breech-bolt and the firing-pin carried thereby, of a pair of locking-wings mounted on opposite sides of the breech-bolt and carrying lugs engaging the firing-pin on opposite sides to move the pin rearwardly within the bolt when the wings are moved to unlocking position.

818,921. **LOCK-NUT.** HENRY STEINERT and MICHAEL SCHIMELPFENNIG, Tamaqua, Pa. Filed June 21, 1905. Serial No. 266,249.

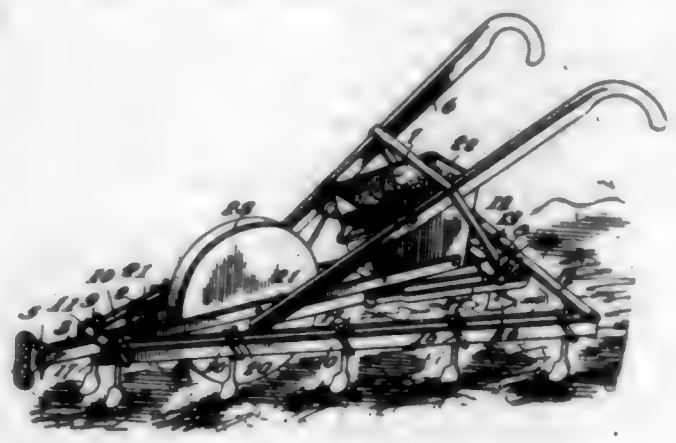


Claim.—In combination with a threaded bolt having opposite sides reduced intermediate the ends of its threaded portion, a nut adapted to be threaded on the bolt, a recess extending across one of the faces of the nut, the walls of the recess being stepped, a fork adapted to fit within the recess, the walls of the fork being stepped to conform to the steps of the walls of the recess, said fork embracing the reduced portion of the bolt, and means passing through the nut and the fork to hold the fork against displacement from the recess of the nut.

818,922. **CULTIVATOR AND PLANTER.** DE WITT W. STRICKLAND, Magnolia, Miss. Filed May 19, 1905. Serial No. 261,243.

Claim.—1. In a device of the character described a beam comprising parallel side members converging at their forward ends to produce an offset constituting stop-shoulders, a cross-piece receiving the converging ends of the beam and embodying upper and lower members, fastenings connecting said members, the outermost fastenings being adapted to abut against said stop-shoulders to limit the rearward movement of the cross-piece, and the middle fastening being inserted between the converging ends of the beam members, cultivator-bars pivoted at their front ends between the members of the cross-piece and carrying teeth, and an extensible connection between the rear ends of said cultivator-bars.

2. In a device of the character described a beam comprising similar side members having converging forward ends forming offsets constituting stop-shoulders, a cross-piece slipped upon the contracted forward ends of the beam and comprising upper and lower members, fastenings connecting said members and adapted to engage with the stop-shoulders of the beam members, whereby to limit the movement of said cross-piece, a middle fastening connecting the members of said cross-piece and inserted between the converged ends of the beam members, cultivator-bars pivoted at their front ends between the ends of the members forming said cross-piece and carrying cultivator-teeth, connecting-bars pivoted at their outer ends to the rear face of the cultivator-bars and having their inner ends overlapped, a link embracing said overlapped ends, and a wedge-key inserted between one side of said link and the adjacent edges of the beam members as and for the purpose set forth.



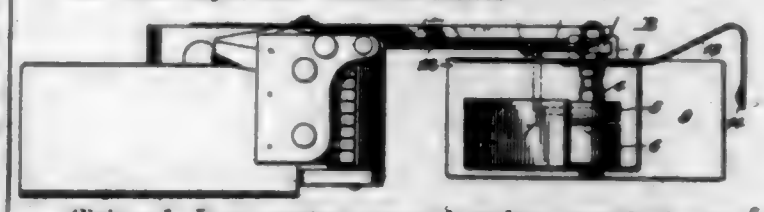
818,923. **CULTIVATOR.** DE WITT W. STRICKLAND, Magnolia, Miss. Filed May 19, 1905. Serial No. 261,244.



Claim.—1. In combination, a bar comprising companion members arranged in parallel relation and spaced apart and having alined notches in corresponding edges, cultivator-shovels having their shanks seated in said notches and adjustable along the bar, fastenings engaging the shanks of the cultivator-shovels at points opposite the space formed between the companion members thereof and passed between the latter, and clamp-plates engaging the edges of the bar members opposite to the toothed edges and serving to secure the cultivator-shovels to the bar in an adjusted position.

2. In a cultivator, the combination of a beam comprising similar members transversely spaced, a bar angularly disposed with reference to the beam and comprising spaced members having alined notches in corresponding edges, cultivator-shovels having their shanks seated in said notches, fastenings passed between the members of the bar and serving to secure the cultivator-shovels thereto in an adjusted position, means for connecting the beam and bar, the same comprising a clamp-plate spanning the members of the beam and grooved near its ends to receive the edge portions thereof, a bolt passed through corresponding openings in the clamp-plate and in the members of the toothed bar, and a spacing-sleeve mounted upon the bolt and coming between the members of the bar.

818,924. **ENVELOP-STACKER.** ROBERT H. STRONG, Galesburg, Ill. Filed May 8, 1905. Serial No. 259,382.



Claim.—1. In an envelop press and stacker, a standard or support and sealer, the standard having attached thereto a vertically-movable platform, means for moving the platform upward, a stop-bar attached to the standard and maintained in line with one end of the

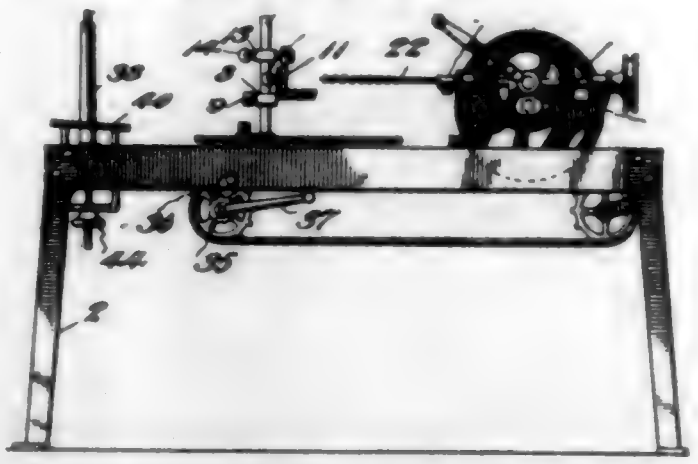
platform, a roller above the movable platform such roller being mounted on a shaft attached to the standard, and a guide-plate carried by the shaft and maintained in an oppositely-inclined position from the platform, substantially as shown.

2. In an envelop press and stacker, the combination with a vertical upright of a slide movable upon the upright and carrying a platform, means for exerting upon the platform an upward pressure of a varying nature, a shaft having thereon feed and pressure rollers and an inclined guide-plate carried by the shaft, substantially as shown and for the purpose set forth.

3. In an envelop press and stacker, the combination with a vertical upright having means for connecting the same with a device for sealing envelops, a slide maintained in movable engagement with the upright, a platform attached to the slide, means for exerting an upward pressure of a varying nature against the platform, an arm having a depending portion that is maintained in line with the platform, a shaft attached to the upper portion of the upright, a roller mounted on the shaft and an inclined guide-plate maintained in front of the roller.

4. An envelop press and stacker having a vertical standard or upright to which is attached a slotted bar for connecting the press and stacker in position to coöperate with an envelop-sealer, a platform-carrying slide which is movable vertically upon the standard, means for exerting an upward pressure upon the platform and slide attached thereto, a shaft maintained at right angles to the standard, rollers mounted on a shaft, a guide-plate carried by the shaft and a port having means for connecting the same to an envelop moistener bar maintained in adjustable engagement with the standard said bar having a member that depends in front of the platform, substantially as shown and for the purpose set forth.

818,925. **BORING-MACHINE.** ANDREW J. TURNER, Maynardville, Tenn. Filed Apr. 22, 1905. Serial No. 256,953.



Claim.—1. A boring-machine comprising a framework, a work-support mounted at one end of the framework, a drill-head movably supported at the opposite end of the framework, and a work-table hinged to one side of the framework intermediate the work-support and head, said work-table being adapted to be moved wholly out of line between the work-support and head, whereby said head is adapted for coöperation with either the work table or support.

2. A boring-machine comprising a framework, a work-support mounted at one end of the framework, a drill-head supported at the opposite end of the framework, a work-table hinged to one side of the framework intermediate the support and drill-head, said work-table being adapted for bodily movement into or out of operative alinement with the drill-head, and means for feeding the drill-head longitudinally of the framework.

3. A boring-machine comprising a framework, a work-support mounted at one end of the framework, a drill-head mounted at the opposite end of the framework, a feed-chain adapted to feed said head longitudinally of the framework, and a work-table hinged to one side of the framework intermediate the drill-head and work-support, whereby said table may be moved into and out of operative alinement between the drill-head and work-support.

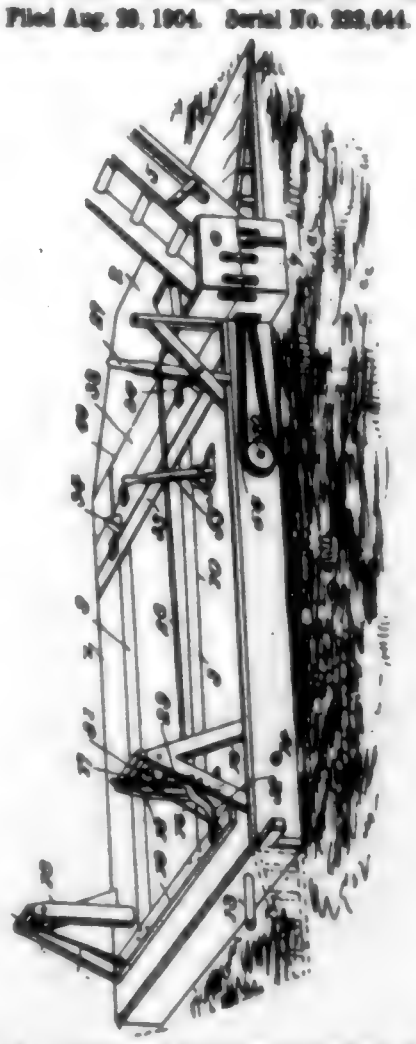
4. A boring-machine comprising a framework, a vertically-adjustable work-support mounted at one end of the framework, a drill-head mounted at the opposite end of the framework, a feed-chain adapted to feed said head longitudinally of the framework, and a work-table hinged to one side of the framework intermediate the drill-head and work-support, whereby said table may be moved into and out of operative alinement between the drill-head and work-support.

5. A boring-machine comprising a work-support, a drill-head, a framework for supporting said drill-head and work-support, an endless feed-chain arranged to feed said drill-head longitudinally of the framework, and a coil-spring forming a part of said feed-chain and tensioned in the movement of said chain, whereby the drill is moved longitudinally of the framework into contact with the material through the operation of the chain and fed for cutting the material by the tension of the spring, and means of moving the chain.

6. A boring-machine comprising a framework, a vertically-adjustable work-support mounted upon one end of the framework, a drill-head movably supported at the opposite end of the framework, and a work-table hinged to the framework intermediate the drill-head and work-support, said work-table being wholly movable into and out of operative alinement with the drill-head, and means carried by the work-table for adjustably clamping material thereto.

7. A boring-machine including a work-table and a drill-head, a chain having connection with the drill-head, means for feeding the chain to advance the drill-head toward a work-table, and a coil-spring forming a part of the length of said chain and adapted to be put under tension in the movement of said chain, whereby the drill-head is moved by the tension of said spring after being advanced to operative position in the movement of the chain.

818,926. **GRAIN DUMP AND ELEVATOR.** CHARLES S. UPHAM, Odell, Ill. Filed Aug. 29, 1904. Serial No. 223,644.



Claim.—1. In a device of the class described, the combination of a platform, dump-sills mounted thereon, means for operating the sills, a lock device coöperating with the sills to prevent movement thereof, and a chock-bar for preventing operation of the sill-actuating mechanism until the sills have been unlocked.

2. In a device of the class described, the combination of a platform, dump-sills mounted thereon, means for operating the sills a lock device engaging the sills, a chock-bar coöperating with the sill-actuating means, and connecting means between the chock-bar and lock device aforesaid, whereby said chock-bar must be engaged with the wagon-wheels before operation of the sills.

3. In a device of the class described, the combination of a platform, dump-sills mounted thereon, means for operating the sills, a lock device engaging the sills, an operating device governing the actuation of the sills, and a chock-bar engaging the operating device and operably connected with the lock device.

4. In a device of the class described, the combination of a platform, dump-sills mounted thereon, means for operating the sills, lock members engaging the sills to prevent movement thereof, a main operating-lever for actuating the sills, a chock-bar engaging

said lever, and connections between the chock-bar and the lock members.

5. In a device of the class described, the combination of a platform, sills pivoted to said platform, a power-shaft, a windlass for raising and lowering the sills operated by the power-shaft, spaced gears loose upon the power-shaft and adapted to actuate the windlass, a clutch-sleeve for throwing said gears into and out of action, a gear-wheel having sets of teeth arranged at different gear diameter, said teeth being in meshing relation to the first-mentioned spaced gears, and means for operating the clutch-sleeve.

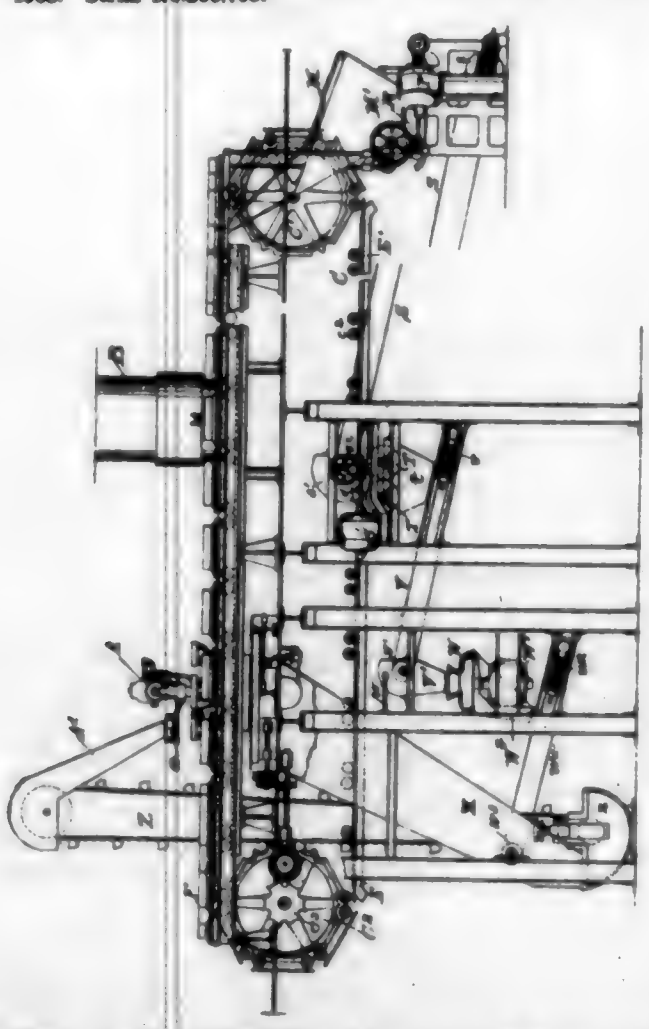
6. In a device of the class described, the combination of a platform, sills pivoted to said platform, a power-shaft, a windlass for raising and lowering the sills operated by the power-shaft, spaced gears loose upon the power-shaft and adapted to actuate the windlass, a clutch-sleeve for throwing said gear into and out of action, a shifter-bar operating the clutch-sleeve, a movable bar connected with the shifter-bar, an engaging member projected from said movable bar, and an arm operated by the sills and adapted to engage the engaging member aforesaid and the shifter-bar when said sills reach the limit of their upward and downward movement, respectively.

7. In a device of the class described, the combination of a platform, dumping mechanism carried by the platform, a trough adjacent one end of the platform, and a closure for said trough composed of wings movably mounted at opposite sides thereof.

8. In a device of the class described, the combination of a platform, dumping mechanism carried by the platform, a trough adjacent one end of the platform, a closure for said trough composed of wings movably mounted at opposite sides thereof, and means for actuating the wings simultaneously in opening the trough.

9. In a device of the class described, the combination of a platform, dumping mechanism carried by the platform, a trough adjacent one end of the platform, a closure for said trough composed of wings movably mounted at opposite sides thereof, end plates carried by the wings and closing one end thereof, and a pin-and-slot connection between said plates.

818,927. CASTING-MACHINE. EDWIN E. WAITE, Philadelphia, Pa., assignor to The Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa., a Corporation of Pennsylvania. Filed June 24, 1905. Serial No. 266,796.



Claim.—1. The combination of a conveyer having a series of platforms, a second conveyer having a series of frames to pass over the platform conveyer and traveling with it, with flasks arranged to be carried by the platforms, substantially as described.

2. The combination of a platform conveyer, a frame conveyer, one arranged to travel in planes at right angles to the other, the frame conveyer traveling over the platform conveyer, with flasks carried first by the platform conveyer and then by the frame conveyer, substantially as described.

3. The combination of an endless vertically-arranged conveyer, consisting of a series of enchained platforms, an endless horizontal conveyer consisting of a series of enchained frames, a portion of the horizontal conveyer extending over the carrying-run of the platform conveyer and arranged to travel at the same speed, flasks mounted within the frames and having bottoms supported by the platforms during the time the flasks are passing from the molding-point to the metal-pouring point and arranged to drop when the frames of the horizontally-arranged conveyer pass to one side of the platform, substantially as described.

4. The combination of a vertically-arranged conveyer having enchained platforms, a horizontally-arranged conveyer having enchained frames for the reception of the flasks, means for driving one conveyer, and couplings between the frames and platforms through which the other conveyer is driven, substantially as described.

5. The combination of a platform conveyer, a frame conveyer arranged above the platform conveyer and moving with it, with means for agitating the frames after they pass away from the platform conveyer whereby the sand is dislodged from the flasks carried by the frames, substantially as described.

6. The combination of a platform conveyer, a frame conveyer traveling over the platform conveyer in a horizontal plane, rails for carrying the frame conveyer after it leaves the platform conveyer, and means for agitating a section of said rails so as to agitate the frame to dislodge the sand from the flasks carried by the frames, substantially as described.

7. The combination of a platform conveyer traveling in a vertical plane, a frame conveyer traveling in a horizontal plane, means for driving the platform conveyer, lugs on each frame entering recesses in the platforms whereby the frame conveyer is driven by the platform conveyer, substantially as described.

8. The combination of a platform conveyer, a frame conveyer supported by the platform conveyer on the carrying-run, said frames being coupled together by links so formed that each frame will have freedom to move up and down to a limited extent, substantially as described.

9. The combination of a platform conveyer, a frame conveyer, a flask within each frame, each flask having a bottom board hinged thereto and supported by a platform while on the carrying-run, substantially as described.

10. The combination of a platform conveyer, a frame conveyer, a flask carried by each frame, each flask having a bottom board with a double hinge by which the bottom board is secured to the flask, the said bottom board being supported by the platform on the carrying-run, and when free of the platform, being adapted to swing clear of the flask so as to allow for the discharge of all the sand from the flasks, substantially as described.

11. The combination of a platform conveyer, a frame conveyer arranged to receive flasks, said frame conveyer being arranged to travel in a horizontal plane, a screen for receiving the sand and casting after the frames move away from the platforms, a screen for screening the sand, crushing-rolls, an endless belt leading from the screen to the crushing-rolls, a sand-mixer, an endless belt leading from the crushing-rolls to the sand-mixer, a bucket elevator, an endless belt leading from the mixer and discharging into the boot of the elevator, and a screen at the molding-machine into which the sand is discharged, substantially as described.

818,928. PIPE-PULLER. JAMES W. WALKER, Greenfield, Ind. Filed May 1, 1905. Serial No. 258,262.

Claim.—1. A pipe-puller comprising a head having upper and lower recesses and a passage communicating with one of the recesses intermediate the ends of the head, a rod secured in the lower recess, a removable wedge disposed upon the free end of the said rod, a collar slidably mounted upon the rod, gripping-arms carried by and movable with the collar onto the wedge, and means connected with the collar and passed through the said passage and the upper recesses of the head for moving the collar with the arms away from the wedge.

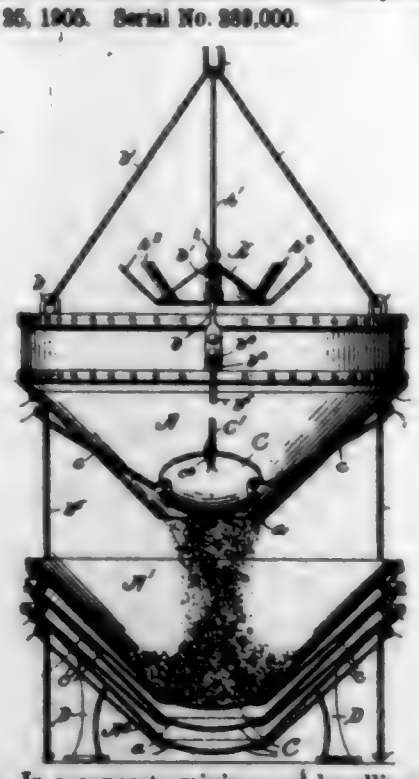
2. A pipe-puller comprising a head having upper and lower recesses and a passage communicating with one of the recesses intermediate the ends of the head, a rod secured in the lower recess, a removable wedge disposed upon the free end of the said rod, a collar slidably mounted upon the rod, gripping-arms carried by and mov-

able with the collar onto the wedge, means connected with the collar and passed through the said passage and the upper recesses of the head for moving the collar with the arms away from the wedge, a tubular guide connected removably to the head and projecting beyond the free end of the rod, and means connected with the head for manipulating the puller.



3. A pipe-puller comprising a head having a lower reduced end portion having upper and lower recesses, the recess in the lower end portion being threaded, a rod screwed into the threaded recess, said head having a passage leading from the recess in the upper end of the head through the face of the reduced end portion, a removable wedge screwed onto the free end portion of the rod, a collar slidably mounted upon the rod above the wedge, spring gripping-arms carried by and movable with the collar onto the wedge, means connected to the collar and passed through said passage and the recess in the upper end of the head for moving the collar with the arms away from the wedge, a tubular guide connected removably to the head and projecting beyond the free end of the rod, and means connected with the head for manipulating the puller.

818,929. CONCRETE-MIXER. CHARLES R. WEAVER, Baltimore, Md., assignor to Peter C. Hains, Jr., U. S. Army, New York, N. Y. Filed Nov. 25, 1905. Serial No. 289,000.



Claim.—1. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested one within the other, and means for connecting said hoppers in series to permit them to be successively raised from their nested position and cause the material to pass successively from one hopper to the other as they are raised.

2. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested one within the other, a preliminary mixing device associated with one of said hoppers, and means for connecting said hoppers in series to permit them to be successively raised from their nested position and cause the material to pass successively from one hopper to the other as they are raised.

3. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested within each other, a preliminary mixing device disposed within the top hopper, and means connecting said hoppers in series to permit them to be raised successively from their nested position and cause the material to pass successively from one to the other hopper of the series as they are raised.

4. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested within each other, doors for closing said openings, means connecting said hoppers in series to permit them to be successively raised from their nested position, and devices associated with said hoppers for automatically opening the doors of the upper hoppers as they are successively raised from said nested position.

5. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested within each other, doors for closing said openings, means for successively raising the hoppers from their nested position, and devices associated with said hoppers for opening the doors to permit the material to pass from one hopper to the other.

6. In a concrete mixing and handling apparatus, the combination of a plurality of hoppers having bottom openings and adapted to be nested within each other, doors for closing said openings, a preliminary mixing device disposed in the top hopper of the series, means for successively raising the hoppers from their nested position, and devices for opening the doors to permit the material to pass from one hopper to the other.

7. In a device of the character described, the combination of a plurality of hoppers having bottom openings and adapted to be nested within each other, a preliminary mixing device disposed in the top hopper, means for connecting said hoppers in series to permit them to be successively raised from their nested position, and means for raising the preliminary mixing device in the top hopper.

8. The combination of a hopper, a preliminary mixing device disposed within said hopper, and having guides for centering said device in said hopper, and means for raising the preliminary mixing device.

9. The combination of a hopper, having a bottom opening, a door for closing said opening, means for opening said door, a preliminary mixing device disposed within said hopper, and having guides for centering said device in said hopper and means for raising the preliminary mixing device.

10. A device of the character described comprising a plurality of hoppers having bottom openings, doors for closing said openings, means for connecting said hoppers in series to permit them to be successively raised, and automatic devices connected to the doors of the upper hoppers for successively opening the doors of the upper hoppers as they are raised.

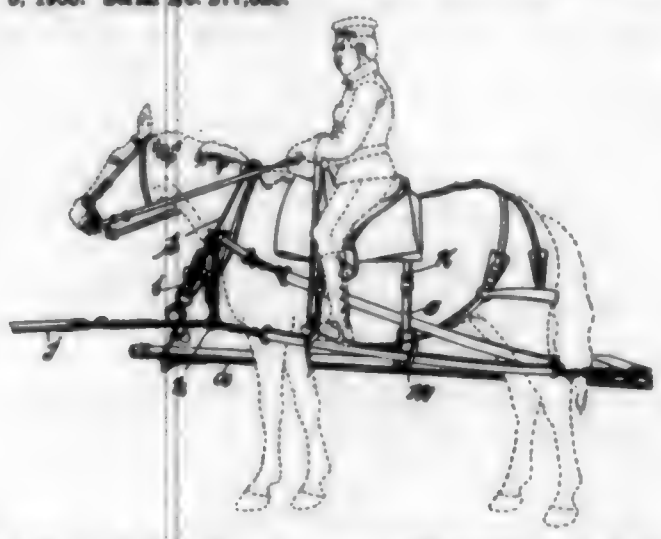
11. In a device of the character described, the combination of a plurality of hoppers having bottom openings and adapted to be nested in each other, hoisting-slings for lifting the top hopper, wire ropes connecting the other hoppers of the series with the top hopper and stops arranged on said ropes for raising the hoppers successively, said stops being disposed a distance apart to permit an upper hopper to be raised from the one beneath it before the latter is raised.

12. In a device of the character described, the combination of a plurality of hoppers having bottom openings and adapted to be nested in each other, doors for closing said bottom openings, a flexible connection between the doors of each of the upper hoppers and the next lower hopper, guides through which said connections pass, and means for successively raising the hoppers from their nested position to cause the doors of the upper hoppers to be successively opened and permit material to pass through the bottom openings of the upper hoppers.

13. In a device of the character described, the combination of a plurality of hoppers having bottom openings and adapted to be nested in each other, means for flexibly connecting said hoppers in series to permit them to be successively raised from their nested position and cause material to pass successively from one hopper to the other as they are raised, and supports for the bottom hopper to sustain the nested hoppers in position to receive a charge of materials to be mixed.

14. In a device of the character described, the combination of a plurality of hoppers having bottom openings and adapted to be nested in each other, doors for closing said bottom openings, automatically-operating devices for opening said doors, means for flexibly connecting said hoppers in series to permit them to be successively raised from their nested position and cause material to pass successively from one hopper to the other as they are raised and supports for the bottom hopper to sustain the nested hoppers in position to receive a charge of materials to be mixed.

818,930. HARNESS. EDGAR H. YULE, San Francisco, Cal., assignor of one-half to Frederick W. Yule, Tipton, Iowa. Filed Sept. 5, 1905. Serial No. 277,085.

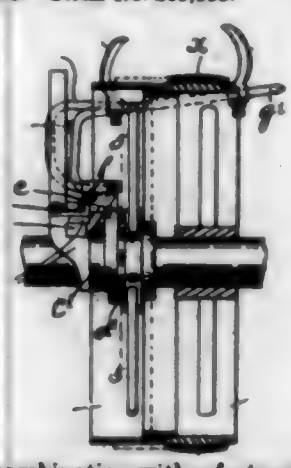


Claim.—1. In a harness, the combination of two sets of traces, one set adapted to be attached to the collars of the wheel-horses, and the other set to be attached to the collars of the swing or lead horses, guides for said traces, a double cockeye to which the rear end of each set of the traces is secured, and means for securing said cockeye to the swingletree, substantially as described.

2. In a harness, the combination of two sets of traces, one adapted to be attached to the collars of the wheel-horses, and the other to the collars of the swing-horses, guides for said traces, a double cockeye to which the rear end of one trace of each set is secured, and a coil-spring attached to said cockeye and adapted to be attached to the swingletree, substantially as described.

3. In a harness, the combination of two sets of traces, one adapted to be fastened to the collars of the wheel-horses, and the other to the collars of the swing-horses, a loin-strap adapted to pass over the wheel-horses and provided with two loops supporting said traces respectively, double cockeyes to each of which two of said traces are attached, a coil-spring connecting each of said cockeyes with the swingletree, and guides for the swing-horse traces extending downwardly from the collars of the wheel-horses, substantially as described.

818,931. BELT-SHIFTER. SAMUEL R. BAILEY, Amesbury, Mass. Filed July 12, 1905. Serial No. 269,533.



Claim.—1. In combination with a fast pulley and a belt driven thereby, an axially-movable idle pulley at one side of said fast pulley, a stop for limiting the movement of the belt onto the idle pulley at a position thereon in which its edge portion projects therefrom when out of engagement with the fast pulley and the idle pulley is in a remote position from the fast pulley, and means whereby said stop may be adjusted transversely of the idle pulley, substantially as described.

2. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, an idle pulley mounted at one side of said fast pulley and means for moving it axially, a stop for engaging the opposite edge of the belt from the fast pulley at a point remote from the rim of the idle pulley, as the belt leads onto it, said stop being located to limit the movement of the belt from said fast pulley onto the idle pulley at a position in which an edge portion of the belt lies between the adjacent edges of the rims of said pulleys, substantially as described.

3. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, an idle pulley mounted at one side of said fast pulley and means for moving it axially and a bracket supported adjacent said idle pulley, connected thereto to move axially therewith and held from movement about the axis thereof, said bracket having a stop mounted thereon to limit the transverse movement of the belt from the fast pulley onto the idle pulley in a position in which an edge portion of the belt lies between the adjacent edges of the rims of said pulleys, substantially as described.

4. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, an idle pulley mounted at one side of said fast pulley and means for moving it axially, and a bracket supported adjacent said idle pulley, connected thereto to move axially therewith and held from movement about the axis thereof, said bracket having a stop mounted thereon to limit the transverse movement of the belt from the fast pulley onto the idle pulley in a position in which an edge portion of the belt lies between the adjacent edges of the rims of said pulleys, said stop being adjustable on said bracket transversely of the rim of the idle pulley, substantially as described.

5. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, a hanger, an axially-movable idle pulley journaled thereon at one side of said fast pulley, an actuating device, held from rotation by said hanger, for moving said idle pulley axially, and a stop mounted on said actuating device located to limit the movement of the belt from the fast pulley onto the idle pulley in a position in which an edge portion of the belt lies between the adjacent edges of the rims of said pulleys, substantially as described.

6. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, a hanger, an axially-movable idle pulley rotatably mounted thereon at one side of said fast pulley and means for moving said idle pulley axially, a stop connected to said idle pulley to move axially therewith, and connected to said hanger to hold it from rotation therewith, said stop being disposed to engage the opposite edge of the belt from the fast pulley to limit its movement from the fast pulley onto the idle pulley at a position in which an edge portion thereof lies between the adjacent edges of the rims of said fast and loose pulleys, substantially as described.

7. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, a hanger, an idle pulley journaled thereon at one side of said fast pulley, means for moving said idle pulley axially, adjustable stops connected to said hanger for limiting the movement of said idle pulley in either direction, and a belt-stop held in a determined relation with said idle pulley for limiting the transverse movement of the belt from the fast pulley onto the idle pulley, substantially as described.

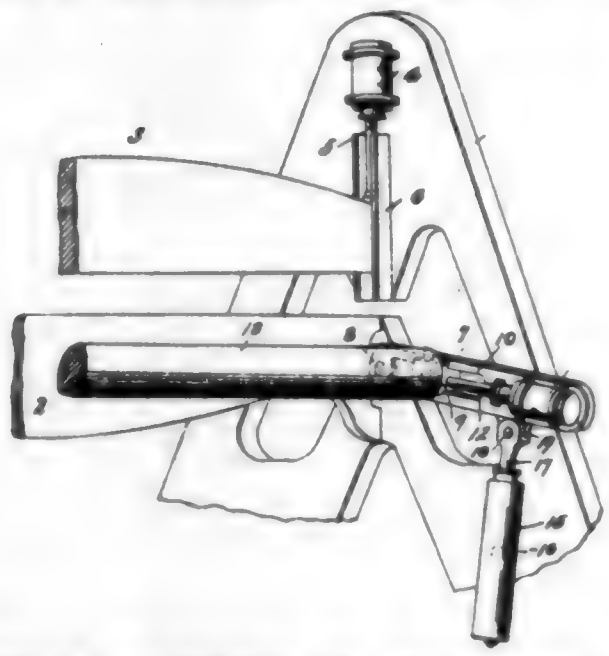
8. In combination with a main driving-shaft having a fast pulley thereon, and a belt to be driven by said pulley, a hanger, an idle pulley journaled thereon at one side of said fast pulley, means for moving said idle pulley axially, adjustable stops connected to said hanger for limiting the movement of the idle pulley in either direction, and an axially-adjustable belt-stop for limiting the transverse movement of the belt from the fast pulley onto the idle pulley, substantially as described.

9. In combination with a fast pulley and a belt driven thereby, an axially-movable idle pulley at one side of said fast pulley, means for holding the belt on the idle pulley with its edge portion projecting therefrom, when out of engagement with the fast pulley, and a supplemental rim extending from the rim of said fast pulley and adapted to pass within the rim of said idle pulley, the surfaces of said supplemental rim and the rim of the fast pulley being approximately continuous, substantially as described.

10. In combination with a normally driven main shaft having a fast pulley thereon, and a belt to be driven thereby, an idle pulley rotatably mounted at one side of said fast pulley, means for moving said idle pulley axially to carry the belt toward said fast pulley with the adjacent edge portion thereof projecting beyond the adjacent edge of the rim of said idle pulley, to bring said projecting edge portion of the belt into engagement with the rim of the fast pulley, and a supplemental rim connected to the rim of said fast pulley and pro-

jecting, within the periphery thereof, toward the idle pulley, the external diameter of said supplemental rim being less than the internal diameter of the rim of the idle pulley, substantially as described.

818,932. **METAL-BENDING MACHINE.** DAVID M. BAXTER, Newport News, Va., assignor of one-half to Maxwell Hill Baxter, Newport News, Va. Filed Oct. 25, 1905. Serial No. 284,318.



Claim.—1. The combination with a machine-frame, a rigid strong back connected thereto, and a movable strong back; of a pivoted arm, a roller journaled therein, means carried by said arm and connected to the roller for imparting lateral motion to said roller, and independent means connected to the arm for imparting vertical motion thereto.

2. In a metal-bending machine, a rigid strong back, a movable strong back, and a pair of arms pivoted in the machine, a roll journaled in each arm, means carried by each arm for moving its roll laterally, and independent means for imparting vertical movement to each arm, all combined substantially as described.

3. The combination in a metal-bending machine, a rigid strong back, a movable strong back, and a pair of arms pivoted in vertical alinement with said strong backs, rolls journaled in the arms at each side of the rigid strong back, means carried by each arm for independently moving the roll carried thereby, and means independently connected to each arm for imparting vertical movement thereto.

4. In a metal-bending machine, a rigid strong back, a movable strong back and guiding means therefor, and a hydraulic cylinder having its plunger connected to the movable strong back, a pair of arms pivoted in the machine, a roll journaled in each arm, means for moving each roll laterally, and means for moving each roll vertically.

5. The combination in a metal-bending machine of a movable strong back and an immovable strong back, with a slotted pivoted arm, a slide-block in said slotted arm, a hydraulic cylinder operatively connected to said block, and a roll having its end journaled in said block.

6. The combination in a metal-bending machine of a movable strong back and an immovable strong back, with a pair of slotted pivoted arms at one side of the immovable strong back, slide-blocks located in said slotted arms, a roll journaled in said slide-blocks, and a motive-fluid cylinder operatively connected to said slide-blocks.

7. The combination in a metal-bending machine of a movable strong back and an immovable strong back, with two pairs of slotted arms, each pair of arms being pivoted at a common center, slide-blocks in said slotted arms, a roll journaled in said blocks at each side of the pivot, and motive-fluid cylinders carried by the arms and operatively connected to the slide-blocks.

8. The combination in a metal-bending machine of a movable strong back and an immovable strong back, with a slotted pivoted arm, a slide-block in said slotted arm, a roll journaled in said block, a motive-fluid cylinder operatively connected to said block, and means for moving said arm on its pivot.

9. The combination with a movable strong back and an immovable strong back, with a slotted pivoted arm, a slide-block carrying a roll, in said slotted arm, a motive-fluid cylinder operatively connected to the block, and a motive-fluid cylinder pivoted to a rigid support and operatively connected to the pivoted arm.

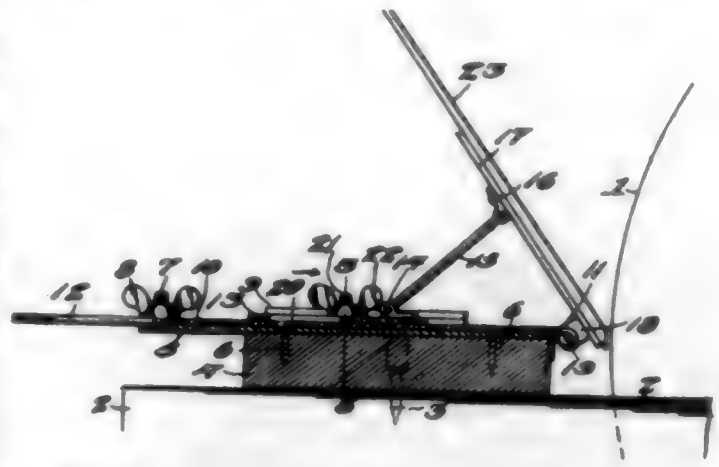
10. The combination in a metal-bending machine of a movable strong back and an immovable strong back, with a pair of slotted pivoted arms at one side of the immovable strong back, slide-blocks located in said slotted arms, a roll journaled in said slide-blocks, a motive-fluid cylinder carried by each arm and operatively connected to the slide-block thereon, and a motive-fluid cylinder pivoted in the machine and operatively connected to each arm.

11. The combination in a metal-bending machine of a movable and a rigid strong back, with two pairs of slotted arms, each of said pairs being pivoted at a common center, slide-blocks in the slotted arms, a roll journaled in said blocks at each side of the pivots, motive-fluid cylinders carried by each arm and operatively connected to a slide-block, and pivoted motive-fluid cylinders operatively connected to each said arm.

12. The combination in a metal-bending machine comprising a movable strong back and an immovable strong back of two pairs of movable arms, a roll journaled in each pair of arms, independent means carried by said arms for moving the ends of the rolls separately, and independent means for moving each arm of the pairs.

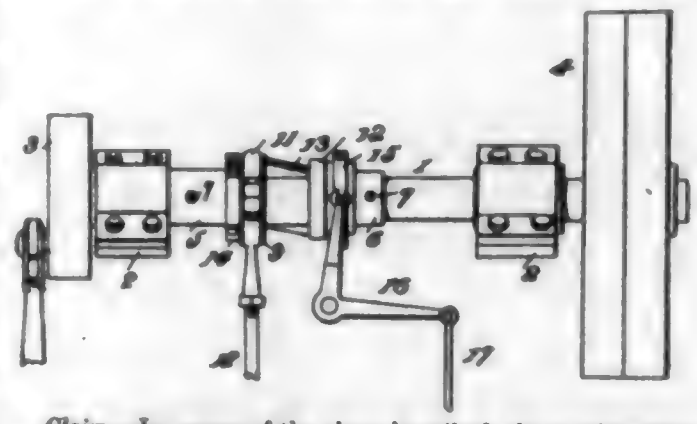
13. The combination in a metal-bending machine comprising a movable strong back and an immovable strong back of two pairs of arms, each of said pairs being pivoted at a common center, a roll journaled in each pair of arms, means carried by each arm for moving the roll ends independently in a lateral direction, and independent means connected to each arm for moving said arm vertically.

818,933. **GRINDSTONE ATTACHMENT.** BENJAMIN F. BELLOWS, Sioux City, Iowa. Filed Aug. 22, 1905. Serial No. 275,283.



Claim.—In a device of the class described, a base-plate having flanges, a longitudinally-adjustable slide engaged beneath said flanges, a movable platen operatively engaged with the slide and adapted for arrangement at an inclination, a second slide engaged beneath the flanges, a connecting element disposed between and pivotally engaged with the second slide and platen, and means for fixing the slides against movement.

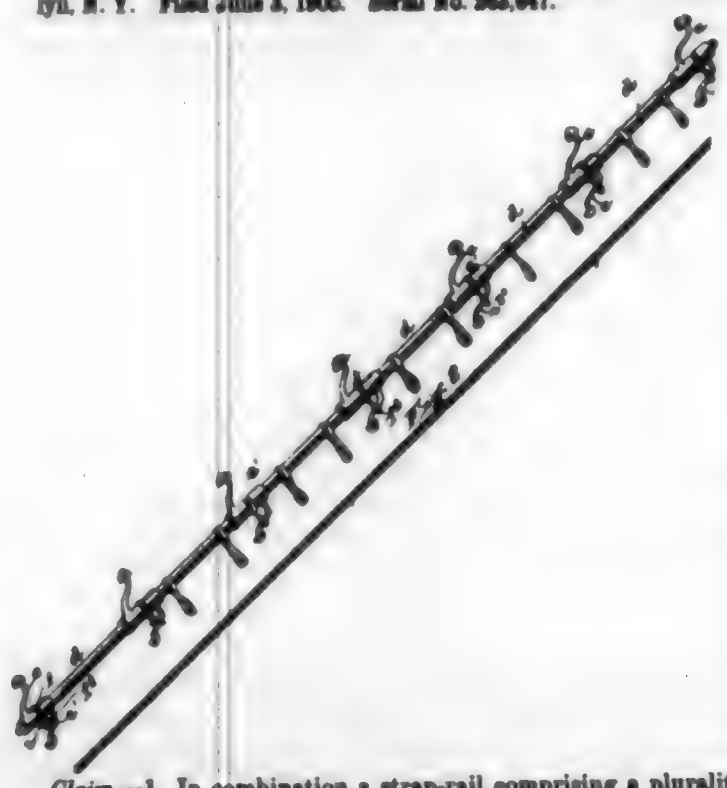
818,934. **SHIFTING ECCENTRIC FOR ENGINE-VALVES.** CLARENCE G. BENNETT, Melville, N. D., assignor of one-half to Guy A. Rich, Melville, N. D. Filed June 16, 1905. Serial No. 265,593.



Claim.—In means of the class described, the combination of a shaft, a sectional sleeve disposed on said shaft and comprising the sections 5 and 6 abutting at one end, the inner end of the section 6 being flattened upon opposite sides as shown at 8, the eccentric 9 provided with the diametrical slot 10 at one side of a central point thereof and fitted upon the flat-sided portion of the sleeve between the sections 5 and 6 aforesaid, an eccentric-actuator consisting of the collar 12 and the spaced arms 13 disposed upon the sleeve and slidable longitudinally thereof, the arms 13 being arranged upon oppo-

site sides of said sleeve and having their outer faces parallel and inclined with reference to the axis of the shaft, the gland 14 connecting the outermost ends of the arms 13, one of the arms 13 being grooved upon its inner side, the sleeve having a rib longitudinally thereof to enter the groove of the arm 13 aforesaid and afford a feather-and-spline connection between the sleeve and the eccentric-actuator, the eccentric being shiftable by longitudinal movement of the arms 13, the shipper-yoke 15 fitted to the collar and connecting the arms 13 at one end, and the shipper-lever 16 operatively connected with the yoke above mentioned.

818,935. COMBINED STRAP-HANGER, SIGNAL-BELL RINGER, AND REGISTER-RINGER. SAMUEL S. BROOKS, Brooklyn, N. Y. Filed June 3, 1905. Serial No. 263,647.



Claim.—1. In combination a strap-rail comprising a plurality of hollow alined sections spaced apart from each other and having screw-threaded ends, means for supporting the individual sections comprising brackets having a tubular portion screw-threaded at one end for engaging the end of the section, and an attaching-arm integral with the bracket, the attaching-arms on the adjacent brackets being oppositely disposed with respect to each other, a square operating-rod within the sections, means for connecting the adjacent brackets and for operating the rod, comprising a sleeve having a square opening for engaging the rod, and having reduced ends for entering the tubular portion of the brackets, a depending arm on the sleeve, one of said arms adjacent to the end of the strap-rail being provided with a hook and a pulling-strap engaging the hook.

2. In combination, a strap-rail comprising a plurality of hollow alined sections spaced apart from each other, brackets at either end of the individual sections for supporting the same, and comprising a tubular portion for receiving the end of the section, and an attaching-arm connected with the tubular portion, the attaching-arms at the opposite ends of the sections being oppositely disposed with respect to each other, a fare-register-operating rod within the sections, a sleeve between the adjacent brackets and having reduced ends for entering the tubular portions thereof, means whereby to oscillate the sleeve, and means whereby the sleeve may oscillate the rod.

3. In combination, a strap-rail, comprising a plurality of hollow alined sections spaced apart from each other, brackets at either end of the individual sections for supporting the same, and comprising a tubular portion to receive the end of the section, and an attaching-arm integral with the tubular portion, the attaching-arms on the adjacent brackets being oppositely disposed with respect to each other, a fare-register-operating rod within the sections, and means for operating the rod and for connecting the adjacent brackets.

4. In combination, a strap-rail, comprising a plurality of hollow alined sections spaced apart from each other, brackets at either end of the individual sections for supporting the same, and comprising a tubular portion for receiving the end of the section, and an attaching-arm integral with the tubular portion, the attaching-arms at the opposite ends of the sections being oppositely disposed with respect to each other, a fare-register-operating means within the sections, and means connecting the tubular portions of the brackets for actuating the register-operating means.

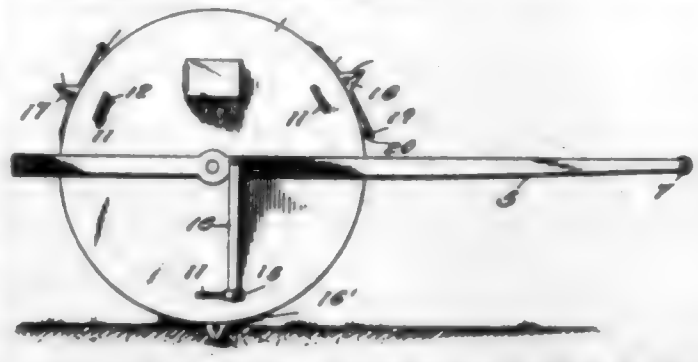
5. In combination, a strap-rail comprising a plurality of tubular alined sections spaced apart from each other, brackets at either end of the individual sections for supporting the same, and comprising a tubular portion for receiving the end of the section, and an attaching-arm connected with the tubular portion, means within the sections for operating a fare-register, a sleeve between the adjacent brackets and having reduced ends for entering the tubular portions thereof, means whereby to oscillate the sleeve, and means whereby the sleeve may actuate the register-operating means.

6. In combination, a strap-rail comprising a plurality of tubular alined sections spaced apart from each other, a square fare-register-operating rod within the sections, a sleeve between the adjacent ends of the sections, and having a square opening longitudinally thereof to receive the rod, means whereby to oscillate the sleeve, and means connecting the ends of the sleeve to the adjacent ends of the sections for supporting the parts.

7. In combination, a strap-rail comprising a plurality of tubular alined sections spaced apart from each other, a fare-register-operating rod within the sections, a sleeve between the adjacent ends of the sections, means whereby to oscillate the sleeve, means whereby the sleeve may actuate the rod, and means connecting the ends of the sleeve to the ends of the adjacent sections for supporting the parts.

8. In combination, a strap-rail comprising a plurality of tubular alined sections spaced apart from each other, brackets for supporting the individual sections comprising a tubular portion for receiving the ends of the sections, and an attaching-arm connected with the tubular portion, a fare-register-operating means, and means supported by the tubular portions of the brackets for actuating said operating means.

818,936. SEED-DROPPER. JOHN D. BUCKLEY, Fermoy, Pa. Filed Dec. 4, 1905. Serial No. 290,330.



Claim.—1. In an implement of the class described, the combination with a hollow revoluble member adapted for the reception of seed and having a seed-outlet passage opening through its periphery, of a closure for the outer end of the passage arranged for pivotal movement into and out of operative position, a finger connected with the closure for movement of the latter upon its pivot when the finger is moved, and means for holding the finger yieldably with the closure in operative position, said finger being adapted for engagement with the ground when the member is moved thereover to move the finger against the action of the holding means.

2. In an implement of the class described, the combination with a revoluble seed-receptacle adapted for movement over the ground and having a seed-outlet passage opening through its outer surface, of a closure for the outer end of the passage, said closure being adapted to enter the ground to form an opening therein as the seed-receptacle is revolved, said closure being movable into and out of operative position, means for holding the closure in operative position, and means for automatically moving the closure into inoperative position after it has entered the ground.

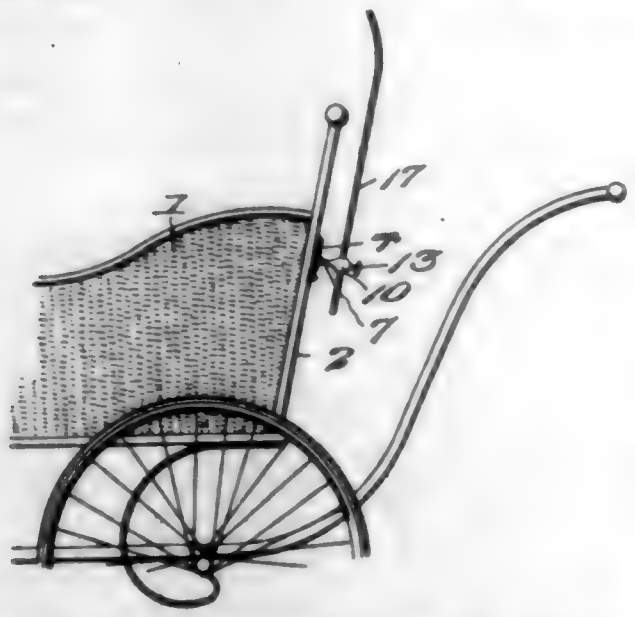
3. In an implement of the class described, the combination with a revoluble seed-receptacle having a seed-outlet passage opening through its outer surface, of a closure for the inner end of the passage arranged for movement into and out of operative position, means for holding said closure in inoperative position, means for moving the closure out of operative position as the receptacle is revolved, a closure for the outer end of the passage, means for holding the second-named closure yieldably in operative position, and means for moving the second-named closure out of operative position as the receptacle is revolved.

4. In an implement of the class described, the combination with a revoluble seed-receptacle having a seed-outlet passage opening through its outer surface, of jaws located at the outer end of the passage and movable into and out of position to close the latter, said jaws extending outwardly from the seed-receptacle, a finger carried by one of the jaws and extending circumferentially of the receptacle.

and a spring engaged between the finger and the receptacle to hold them yieldably in spaced relation and with the jaws in operative position, said finger being movable against the action of the spring to bring the jaws into inoperative position.

5. An implement of the class described comprising sills, a hollow receptacle journaled vertically between the sills, said receptacle having a transverse passage formed therethrough and extending into its inner surface and having a radial passage communicating with said transverse passage and opening through the outer periphery of the receptacle, a slide having an opening therethrough disposed in the transverse passage for movement longitudinally thereof into and out of position to register its opening with the radial passage, a spring secured to one end of the slide and to the receptacle to hold the slide yieldably with its opening out of registration with the radial passage, and a roller connected with one of the sills and disposed for engagement of the opposite end of the slide when the receptacle is revolved to move the slide against the action of the spring.

818,937. SHADE OR CANOPY SUPPORTING BRACKET. WILLIAM H. BURDEN, Detroit, Mich. Filed Sept. 20, 1905. Serial No. 280,240.



Claim.—1. A shade-supporting bracket for baby-carriages and go-carts comprising inner and outer clamping-plates, means for attaching the same to the body of the vehicle, and a bracket-arm carried by the outer clamping-plate and provided with means for securing the supporting member of the shade thereto.

2. A shade-supporting bracket for baby-carriages and go-carts comprising inner and outer clamping-plates, means for connecting the same to the body of the vehicle, and a bracket-arm pivotally connected to the outer plate and provided with means for securing the supporting member of the shade thereto.

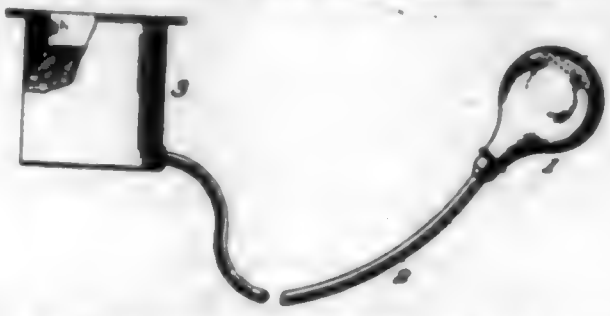
3. A shade-supporting bracket for baby-carriages and go-carts comprising a body portion adapted to be secured to the body of the vehicle, a clamping-arm connected with said body portion and provided with a head and clamping device for securing the supporting member of the shade thereto, the part of the arm between the body portion of the bracket and head being constructed to serve as a support for a parcel-holder.

4. A shade-supporting bracket for baby-carriages and go-carts comprising inner and outer clamping-plates, means for securing the same to the body of the vehicle, a bracket-arm connected at one end with the outer plate and provided at its outer end with a head having a vertical passage, the portion of the arm between its inner end and head being constructed to serve as a support for a parcel-holder, and a clamp carried by the head, substantially as described.

818,938. SPRINKLER. CLARENCE A. CRANE, Warren, Ohio. Filed July 3, 1905. Serial No. 268,116.

Claim.—1. A sprinkler comprising a fluid-containing bulb or receptacle having punctures formed therein, which punctures are normally closed to prevent outflow of the fluid and are opened to permit the fluid to pass outward in the form of sprays when the bulb is compressed.

2. A sprinkler comprising a fluid-containing bulb or receptacle of rubber or other yielding material having punctures formed therein, which punctures are normally closed by the action of the material composing the bulb, the fluid being ejected through such punctures in the form of sprays only when the bulb is compressed.



3. A sprinkler comprising a fluid-containing bulb or receptacle having a series of punctures normally closed by the action of the material forming the bulb, a fluid-supply tube leading to such bulb, and a valve for preventing the fluid in the bulb from reentering the tube.

818,939. PROCESS FOR COMPLETELY EXPLODING HIGH EXPLOSIVES. HANS VON DAHMEN, Vienna, Austria-Hungary. Filed May 2, 1905. Serial No. 258,508.

Claim.—1. The process of completely exploding aluminium explosives or all high explosives, picric acid, guncotton, &c., consisting in mixing the explosive with lead peroxid, sulfur, carbon and potassium nitrate and filling the whole into a strong container, and applying gunpowder thereto as igniter, substantially as described.

2. The process of completely exploding aluminium explosives or all high explosives, picric acid, guncotton, &c., consisting in mixing the explosive with lead peroxid, sulfur, carbon and potassium nitrate, placing the composition in a tube closed at one end, affixing a gunpowder-fuse at the other end of the tube, and inserting the fuse with the tube below into a projectile previously filled with the said explosive, substantially as described.

818,940. SALIVA-EJECTOR. HENRY S. DAVIS, San Francisco, Cal. Filed June 13, 1905. Serial No. 265,020.



Claim.—1. A saliva-ejector comprising a pipe connected with a source of water-supply, means for restricting the flow of water through said pipe at a predetermined point therein, and a mouth-tube in communication with the pipe at the point of restriction.

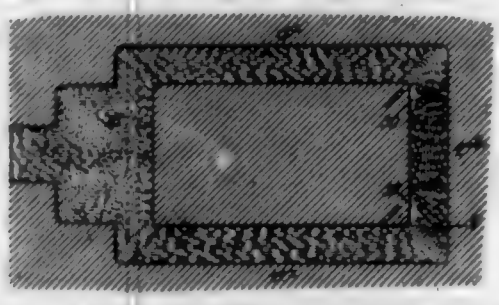
2. A saliva-ejector comprising a pipe formed with a coil, the bore of said pipe being equal throughout its length, and a mouth-tube in open communication with the pipe, said tube projecting within the pipe and forming a means for restricting the passage of the water through the pipe at the juncture of the tube and pipe.

3. A saliva-ejector comprising a pipe and a mouth-tube in open communication with the pipe, the wall of said tube serving to restrict the passage of water through the pipe.

4. A saliva-ejector comprising a pipe formed with a coil, and a mouth-tube in open communication with the pipe, the wall of said tube serving to restrict the passage of water through the pipe, the lower end of the tube being cut away to provide a port for the passage of water through the pipe.

5. A saliva-ejector including a pipe formed with a coil and having a straight outlet portion projecting from the coil, and a mouth-tube projecting from the bore within the pipe at the juncture of the coil and straight outlet portion, said tube providing a means for restricting the water-passage at the point of its juncture with the pipe.

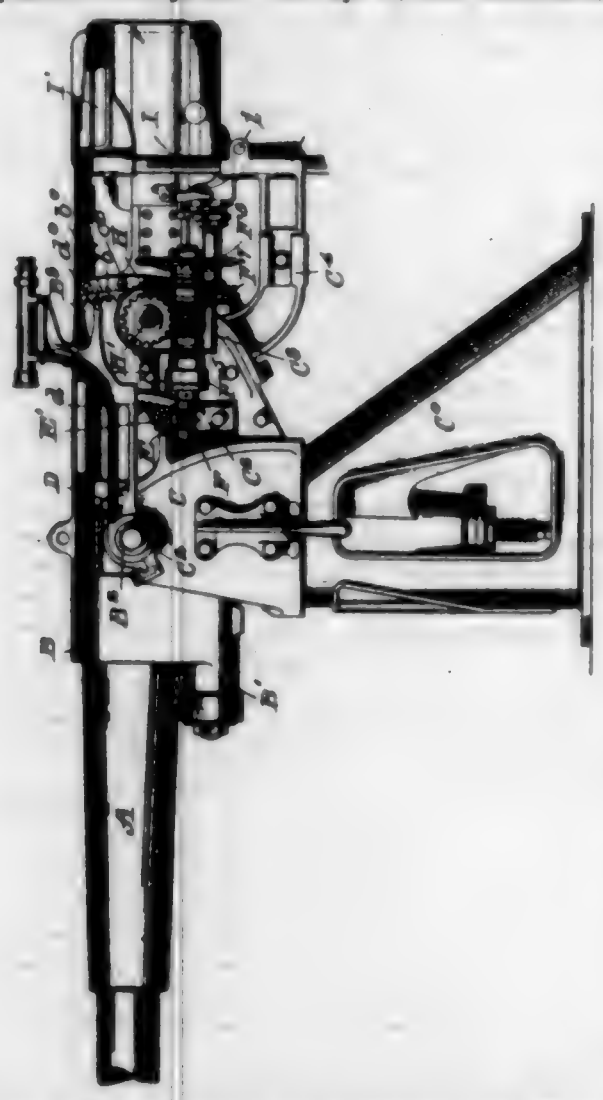
818,941. MOLD FOR CASTING. JAMES M. DODGE, Philadelphia, Pa. Filed Jan. 18, 1905. Serial No. 241,684.



Claim.—1. A mold for casting open quadrangular links and other objects having abrupt corners, said mold having passages into which the cast metal flows, and a closed cavity formed in the mold directly above the inner side of the passage and at a point beyond the inner corner into which the entrapped air may escape which is collected at this point in an eddy of the flowing metal, substantially as described.

2. A mold for casting open quadrangular links and other objects having abrupt corners, said mold having a passage into which the cast metal flows and a cavity on each side of the inner corner of the passage and above said passage and communicating only with the inner side of the passage so as to allow the entrapped air to enter the passage and prevent the formation of blow-holes in the castings, substantially as described.

818,942. GUN-MOUNT. LOUIS L. DRIGGS, Washington, D. C., assignor to The Driggs-Seabury Ordnance Corporation, Sharon, Pa., a Corporation of Pennsylvania. Filed Apr. 14, 1904. Serial No. 203,161.



Claim.—1. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, gearing for elevating said rocking slide and other gearing for elevating said sighting-arm, with means for operating the first gearing alone, and clutch mechanism connecting said gearing for operating both simultaneously, substantially as and for the purposes described.

2. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a hand-wheel and gearing operated thereby for elevating said rocking slide, other gearing for elevating said sighting-arm, with clutch mechanism normally connecting said latter gearing with said hand-wheel, substantially as described.

3. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, gearing for elevating said rocking slide and a shaft with other gearing for elevating said sighting-arm, a hand-wheel and sliding sleeve secured thereto for operating the first gearing alone, and clutch mechanism normally connecting said sleeve and shaft for operating both gearings simultaneously, substantially as and for the purposes described.

4. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, with clutch mechanism normally connecting said shaft and sleeve, substantially as described.

5. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve slid ng on said shaft, and gearing operated thereby for elevating said rocking slide, a hand-wheel fast on said sleeve, and a spring-impressed friction-clutch normally holding said sleeve in frictional engagement with said shaft, substantially as described.

6. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage carrying a graduated scale, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, and provided with a pointer registering with said scale, worm-gearing for elevating said rocking slide and other worm-gearing for elevating said sighting-arm, with means for operating the first worm-gearing alone, or both worm-gearings simultaneously, substantially as and for the purposes described.

7. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with hand-operated mechanism for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, gearing for elevating said rocking slide and other gearing for elevating said sighting-arm, with means for operating the first gearing alone, and clutch mechanism connecting said gearings for operating both simultaneously, substantially as and for the purposes described.

8. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with hand-operated mechanism for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a hand-wheel and gearing operated thereby for elevating said rocking slide, other gearing for elevating said sighting-arm, with clutch mechanism normally connecting said latter gearing with said hand-wheel, substantially as described.

9. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with a shoulder-bar fast to the upper carriage, and independent detachable means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, gearing for elevating said rocking slide and a shaft with other gearing for elevating said sighting-arm, a hand-wheel and sliding sleeve se-

cured thereto for operating the first gearing alone, and clutch mechanism normally connecting said sleeve and shaft for operating both gearings simultaneously, substantially as and for the purposes described.

10. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with a shoulder-bar fast to the upper carriage, and independent detachable means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, with clutch mechanism normally connecting said shaft and sleeve, substantially as described.

11. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with a shoulder-bar fast to the upper carriage, and independent detachable means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a sighting-arm pivoted about the axis of the trunnions of the rocking slide, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, a hand-wheel fast on said sleeve, and a spring-impressed friction-clutch normally holding said sleeve in frictional engagement with said shaft, substantially as described.

12. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a pivoted sighting-arm, gearing for elevating said rocking slide and other gearing for elevating said sighting-arm, with means for operating the first gearing alone, and clutch mechanism connecting said gearings for operating both simultaneously, substantially as and for the purposes described.

13. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a pivoted sighting-arm, a hand-wheel and gearing operated thereby for elevating said rocking slide, other gearing for elevating said sighting-arm, with clutch mechanism normally connecting said latter gearing with said hand-wheel, substantially as described.

14. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a pivoted sighting-arm, gearing for elevating said rocking slide and a shaft with other gearing for elevating said sighting-arm, a hand-wheel and sliding sleeve secured thereto for operating the first gearing alone, and clutch mechanism normally connecting said sleeve and shaft for operating both gearings simultaneously, substantially as and for the purposes described.

15. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a pivoted sighting-arm, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, with clutch mechanism normally connecting said shaft and sleeve, substantially as described.

16. In a gun-mount, the combination with a lower carriage and an upper carriage pivoted thereto, with means for training the upper carriage on the lower, of a rocking slide trunnioned in the upper carriage, with a gun mounted to recoil therein, a pivoted sighting-arm, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, a hand-wheel fast on said sleeve, and a spring-impressed friction-clutch normally holding said sleeve in frictional engagement with said shaft, substantially as described.

17. In an apparatus for pointing guns, the combination with a single hand-wheel, of mechanism operated thereby for varying the angle between the line of fire and the line of sight, and other mechanism also operated by said hand-wheel for moving both line of sight and line of fire simultaneously in elevation, when desired, substantially as described.

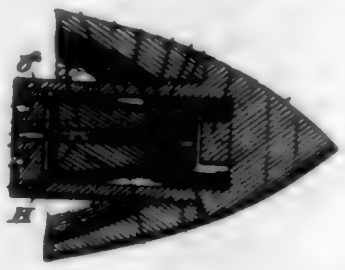
18. In a gun-mount, the combination of a rocking slide, a gun mounted to recoil therein, a pivoted sighting-arm, gearing for elevating said rocking slide, and other gearing for elevating said sighting-arm, with means for operating the first gearing alone, and clutch mechanism connecting said gearings for operating both simultaneously, substantially as described.

19. In a gun-mount, the combination of a rocking slide, a gun mounted to recoil therein, a pivoted sighting-arm, a hand-wheel, and gearing operated thereby for elevating said rocking slide, other gearing for elevating said sighting-arm, with clutch-mechanism normally connecting said latter gearing with said hand-wheel, substantially as described.

20. In a gun-mount, the combination with a rocking slide, and a gun mounted to recoil therein, of a pivoted sighting-arm, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, with clutch mechanism normally connecting said shaft and sleeve, substantially as described.

21. In a gun-mount, the combination with a rocking slide, of a gun mounted to recoil therein, a pivoted sighting-arm, a shaft with gearing operated thereby for elevating said sighting-arm, a sleeve sliding on said shaft, and gearing operated thereby for elevating said rocking slide, a hand-wheel fast on said sleeve, and a spring-impressed friction-clutch normally holding said sleeve in frictional engagement with said shaft, substantially as described.

818,943. **SHELL-FUSE.** WILLIAM H. DRIGGS, Washington, D. C., assignor to The Driggs-Seabury Ordnance Corporation, Sharon, Pa., a Corporation of Pennsylvania. Filed Mar. 11, 1905. Serial No. 249,636.



Claim.—1. In a shell-fuse, the combination of a fuse-stock, a plunger normally held against rotation therein, means operated by the sudden forward motion of the plunger in the fuse-stock for firing said fuse, and a spring-piece having resilient weighted arms secured to said plunger and normally obstructing the forward motion of the plunger in the fuse-stock but swinging outward under the action of centrifugal force when the shell is spun up and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

2. In a shell-fuse, the combination of a fuse-stock, a plunger normally held against rotation therein, means operated by the sudden forward motion of the plunger in the fuse-stock for firing said fuse, and a spring-piece provided with two oppositely-disposed resilient weighted arms secured to said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up, and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

3. In a shell-fuse, the combination with a fuse-stock, and cap, a plunger mounted in said fuse-stock, and provided with lugs engaging in a notch in said cap to normally prevent the plunger from rotating in said stock, and a spring-piece provided with two oppositely-disposed resilient weighted arms secured to said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

4. In a shell-fuse, the combination of a fuse-stock provided with an abutment having a recess at either side thereof, a plunger normally held against rotation in said stock, means operated by the sudden forward motion of the plunger for firing said fuse, and resilient weighted arms carried by said plunger and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

5. In a shell-fuse, the combination of a fuse-stock, provided with an abutment having a recess at either side thereof, a plunger normally held against rotation in said stock, means operated by the sudden forward motion of the plunger for firing said fuse, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the for-

ward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

6. In a shell-fuse, the combination with a fuse-stock, provided with an abutment and an annular recess around same, a cap for said stock provided with a notch, a plunger mounted in said fuse-stock, and provided with lugs engaging in said notch to normally prevent the plunger from rotating in said stock, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses, thereby removing said obstruction, substantially as described.

7. In a shell-fuse, the combination of a fuse-stock, a plunger normally held against rotation therein, means operated by the sudden forward motion of the plunger in the fuse-stock for firing said fuse, and a spring-piece secured to the base of said plunger provided with two forwardly-projecting oppositely-disposed resilient weighted arms carried by said plunger projecting to the front of said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up, and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

8. In a shell-fuse, the combination with a fuse-stock, and cap, a plunger mounted in said fuse-stock, and provided with lugs engaging in a notch in said cap to normally prevent the plunger from rotating in said stock, and a spring-piece secured between said lugs and provided with two oppositely-disposed resilient weighted arms carried by said plunger projecting to the front of said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

9. In a shell-fuse, the combination of a fuse-stock provided with an abutment having a recess at either side thereof, a plunger held against rotation in said stock, means operated by the sudden forward motion of the plunger for firing said fuse, and resilient weighted arms carried by said plunger and projecting in front thereof and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

10. In a shell-fuse, the combination of a fuse-stock, provided with an abutment having a recess at either side thereof, a plunger normally held against rotation in said stock, means operated by the sudden forward motion of the plunger for firing said fuse, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and projecting in front thereof and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

11. In a shell-fuse, the combination with a fuse-stock, provided with an abutment and an annular recess around same, a cap for said stock provided with a notch, a plunger mounted in said fuse-stock, and provided with lugs engaging in said notch to normally prevent the plunger from rotating in said stock, and a spring-piece secured between said lugs and provided with two oppositely-disposed resilient weighted arms carried by said plunger and projecting in front of and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses, thereby removing said obstruction, substantially as described.

12. In a shell-fuse, the combination of a fuse-stock, a plunger normally held against rotation therein, a friction-primer ignited by the sudden forward motion of the plunger in the fuse-stock, and resilient weighted arms carried by said plunger and normally obstructing the forward motion of the plunger in the fuse-stock but swinging outward under the action of centrifugal force when the shell is spun up and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

13. In a shell-fuse, the combination of a fuse-stock, a plunger normally held against rotation therein, a friction-primer ignited by the sudden forward motion of the plunger in the fuse-stock, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up, and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

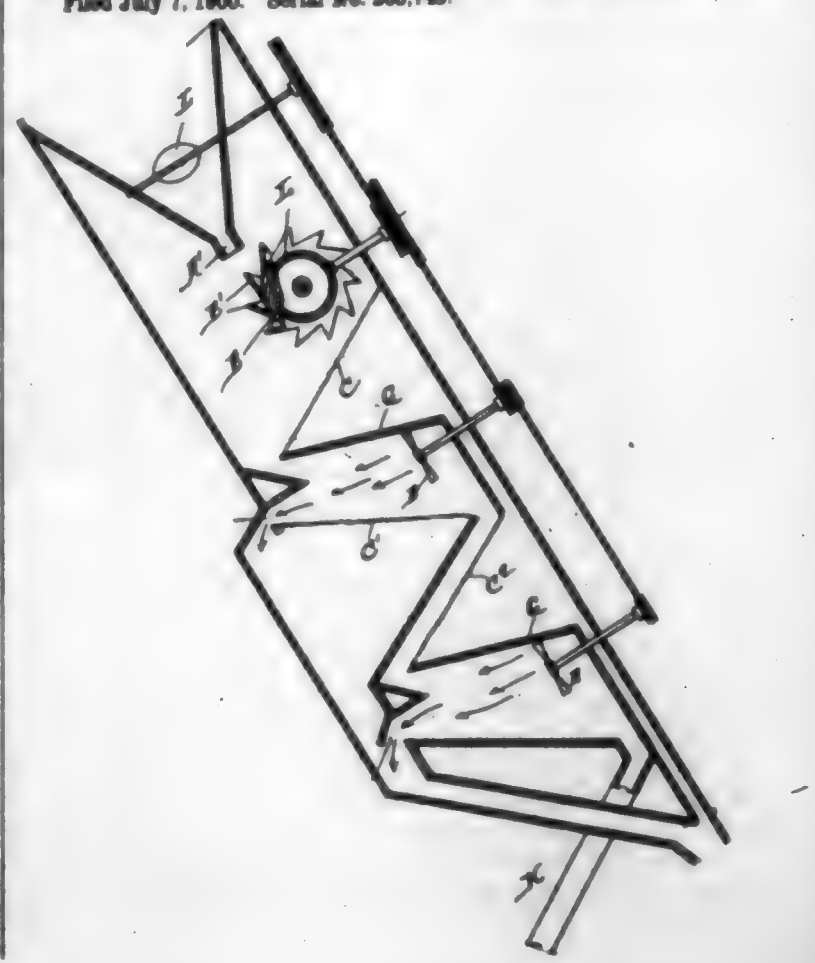
14. In a shell-fuse, the combination with a fuse-stock, and cap, a plunger mounted in said fuse-stock, and provided with lugs engaging in a notch in said cap to normally prevent the plunger from rotating in said stock, a friction-primer ignited by the sudden forward motion of the plunger in the fuse-stock, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the forward motion of the plunger in the fuse-stock, but swinging outward under the action of centrifugal force when the shell is spun up and then permitting said plunger to plunge forward when the motion of the shell is suddenly arrested, substantially as described.

15. In a shell-fuse, the combination of a fuse-stock provided with an abutment having a recess at either side thereof, a plunger normally held against rotation in said stock, a friction-primer ignited by the sudden forward motion of the plunger, and resilient weighted arms carried by said plunger and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

16. In a shell-fuse, the combination of a fuse-stock, provided with an abutment having a recess at either side thereof, a plunger normally held against rotation in said stock, a friction-primer ignited by the sudden forward motion of the plunger, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses thereby removing said obstruction, substantially as described.

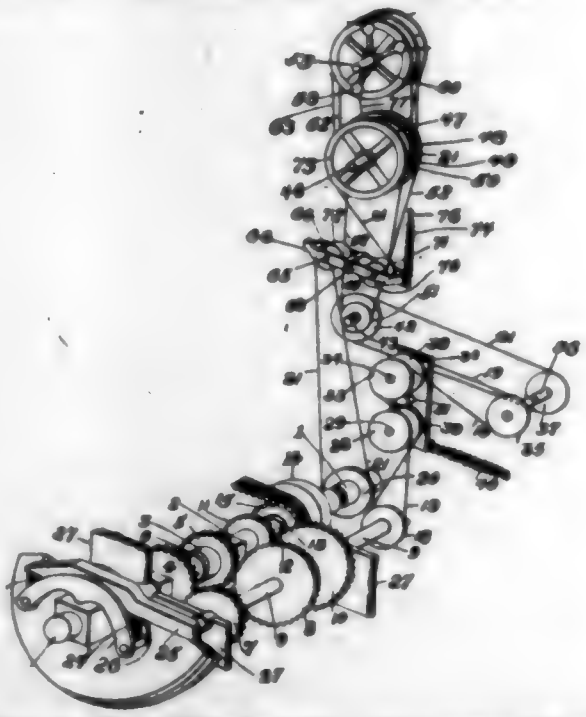
17. In a shell-fuse, the combination with a fuse-stock, provided with an abutment and an annular recess around same, a cap for said stock provided with a notch, a plunger mounted in said fuse-stock, and provided with lugs engaging in said notch to normally prevent the plunger from rotating in said stock, a friction-primer ignited by the sudden forward motion of the plunger in the fuse-stock, and a spring-piece provided with two oppositely-disposed resilient weighted arms carried by said plunger and normally obstructing the forward motion of said plunger but swinging outward under the action of centrifugal force when the shell is spun up and then registering with said recesses, and removing said obstruction, substantially as described.

818,944. GRAIN-CLEANER. AMOS W. RACHES, Rosemont, Pa. Filed July 7, 1905. Serial No. 268,743.



Claim.—In combination, an inclosed casing having a hopper at one end and terminating at the opposite end in a series of chutes, screens within the casing inclined in opposite directions and arranged one beneath the other and positioned intermediate the hopper and the chutes, each of said screens terminating at a point away from the walls of the casing, inclined partitions arranged beneath each screen, the lower edge of the screen being secured to an upper edge of a partition, a wheel arranged within the casing adapted to be revolved by a substance discharged from the chute of the casing, fans extending within the casing, said fans being rotated by the action of the wheel.

818,945. **SYNCHRONISM-INDICATOR.** ARTHUR H. PETTEE, Omaha, Nebr. Filed May 22, 1905. Serial No. 261,731.



Claim.—1. The combination with a pair of gears of different diameters and susceptible of variable speed and designed to be thrown into and out of mesh, means for actuating said gears, mechanically-actuated indicators for showing the peripheral speed of each of said gears, and means driven by said actuating means for actuating said indicators.

2. In combination with a pair of spur-gears of different diameters and capable of having variable speed and adapted to be thrown into and out of mesh, of means for actuating said gears, indicators adapted to be driven at different rates of speed by said actuating means to indicate the relative peripheral speed of two of said gears, a third indicator and means for actuating the same to indicate the peripheral speed of a third spur-gear relative to two of the first-mentioned gears.

3. In a mechanism of the class described, in combination a pair of gears adapted to be thrown into mesh, means adapted to drive said gears, and mechanically-actuated means connected with said last-mentioned means adapted to be rotated at speeds proportionate to the peripheral speeds of each of the same, and upon said peripheral speeds becoming equal to be rotated in unison.

4. In a mechanism of the class described, in combination, a pair of gears mounted upon a car and adapted to be thrown into mesh one with the other, movable means adapted to indicate the peripheral speeds of each of said gears, said means being mounted upon a portion of said car movable with respect to said gears, belting connecting said indicating means and said gears, and means adapted to maintain said belting in taut condition.

5. In a mechanism of the class described, in combination, a pair of gears mounted upon a car and adapted to be thrown into mesh one with the other, rotary indicating means mounted upon a portion of said car, movable relative to the gears, each of said indicating means being adapted to be driven at a speed proportionate to the peripheral speed of one of said gears, means adapted to drive said gears, belting connecting said last-mentioned means with said indicating means, and means adapted to maintain said belting in taut condition.

6. In a mechanism of the class described, in combination, a pair of gears mounted upon a car, a third gear mounted upon said car adjacent said first-mentioned gears and adapted to be thrown into mesh with either of the same, means mounted upon a portion of said car movable with respect to said gears and adapted to indicate the peripheral speed of each of said gears, means adapted to drive said gears, belting connecting said last-mentioned means with said indicating means, and means adapted to maintain said belting in taut condition.

7. In a mechanism of the class described, in combination, driving means, driven means, a pair of gears rotatable at different peripheral speeds with respect to each other and connected to one of said means, a gear connected with the other of said means and adapted to be thrown into mesh with either of said first-mentioned gears, and means adapted to indicate the peripheral speed of said last-mentioned gear with reference to the peripheral speed of either of said first-mentioned gears.

8. In a mechanism of the class described, in combination, a car, driving means mounted upon said car, means driven from said driving means adapted to propel said car, a pair of gears, rotatable or of different peripheral speeds connected with one of said means, a gear connected with the other of said means and adapted to be thrown into mesh with either of said first-mentioned gears and vary the speed at which the car is propelled, and means mounted upon said car adapted to indicate the peripheral speed of said last-mentioned gear with reference to the peripheral speed of either of the others of said gears.

9. In a mechanism of the class described, in combination, a car, driving means mounted upon said car, means driven from said driving means adapted to propel said car, a pair of gears rotatable at different peripheral speeds connected with one of said means, a gear connected with the other of said means and adapted to be thrown into mesh with either of said first-mentioned gears and vary the speed at which the car is propelled, and means mounted upon said car having parts adapted to rotate at speeds proportional to the peripheral speeds of each of said gears and upon the peripheral speeds of two of said gears becoming equal to rotate in unison.

10. In a mechanism of the class described, in combination, a car, driving means mounted upon said car, means driven from said driving means adapted to propel said car, a pair of gears of different peripheral speeds connected with one of said means, a gear connected with the other of said means and adapted to be thrown into mesh with either of said first-mentioned gears and vary the speed at which the car is propelled, means upon a portion of said car movable relatively to said gears adapted to indicate the peripheral speeds of each of the same, means connecting said indicating means with said driving means and said driven means, and means adapted to render said connecting means unaffected by relative movement of said indicating means and said gears.

11. In a mechanism of the class described, in combination, a car, driving means mounted thereon, means driven from said driving means and adapted to propel said car, a pair of gears connected with one of said means, a gear connected with the other of said means, mechanically-actuated indicating means mounted upon a portion of said car movable relatively to said gears and adapted to indicate the relative peripheral speeds of each of the same, belting connecting said indicating means with said gears, and means adapted to maintain said belting in taut condition.

818,946. **TIME CONTROLLING MECHANISM FOR PUMPS.** ISAAC FLOWERS, Martelle, Iowa. Filed May 1, 1905. Serial No. 258,315.

Claim.—1. The combination with a pump-rod and means for reciprocating the same; of a weight-operated drum, a scape-wheel, means for transmitting motion from the drum to the scape-wheel, a trip device, means for transmitting motion thereto from the scape-wheel and a clutch actuated by the trip device for operatively connecting the scape-wheel and the rod-actuating mechanism.

2. The combination with a pump-rod and mechanism for actuating the same; of a weight-operated drum, a scape-wheel, means for transmitting rotary motion from the drum to the scape-wheel, a cam, means for transmitting rotary motion thereto from the scape-wheel, a clutch for operatively connecting the scape-wheel with the rod-actuating mechanism and means actuated by the cam for operating the clutch.

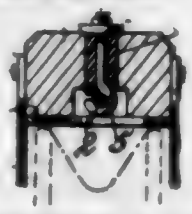
3. The combination with a pump-rod and mechanism for actuating the same; of a power device, means for transmitting rotary motion therefrom to the scape-wheel, a cam, means for transmitting rotary motion thereto from the scape-wheel, a clutch for operatively connecting the scape-wheel and the rod-actuating mechanism, clutch-operating means adapted to be actuated by the cam and means for adjusting the relation of the cam to said clutch-operating means.

4. The combination with a rod and actuating mechanism therefor; of oppositely-disposed power devices, a scape-wheel, means for

transmitting rotary motion from the power devices to the escape-wheel, a clutch for operatively connecting the escape-wheel and the rod-actuating mechanism, a recessed cam, means for transmitting rotary motion thereto from the escape-wheel, a clutch-operating lever adapted to be actuated by the cam, a stationary dial and an index movable with the cam for adjusting its recess to a desired relation with the lever.



818,947. SHOE-CONTACT. GEORGE H. PRETTS, Springfield, Mass. Filed May 13, 1905. Serial No. 260,316.



Claim.—1. The combination of an insulating-body, a contact-plate having upwardly-extending flanges, between which said body is fitted, bolts extending through the body and flanges to leave the under surface of the plate smooth, and means for clamping said body to a conducting-wire.

2. The combination of an insulating-body, a contact-plate, means for connecting the contact-plate and insulating-body, a clamping device for connecting the body to a conducting-wire and consisting of bolts, and bushings surrounding the same, the body being bored to receive the bolts and bushings, and each bolt and bushing having a wire-receiving seat.

3. The combination of an insulating-body, a contact-plate having upwardly-extending flanges between which said body is fitted, and bolts passing through the body and flanges to leave the under surface of the plate smooth and unobstructed, and means for clamping said body to a conducting-wire, the plate having pendent continuous flanges to constitute a trolley-wheel guide.

4. The combination of an insulating-body, a contact-plate fastened to the body, and clamping means for fastening the body to a trolley-wire, the plate having holes located directly under the clamping means.

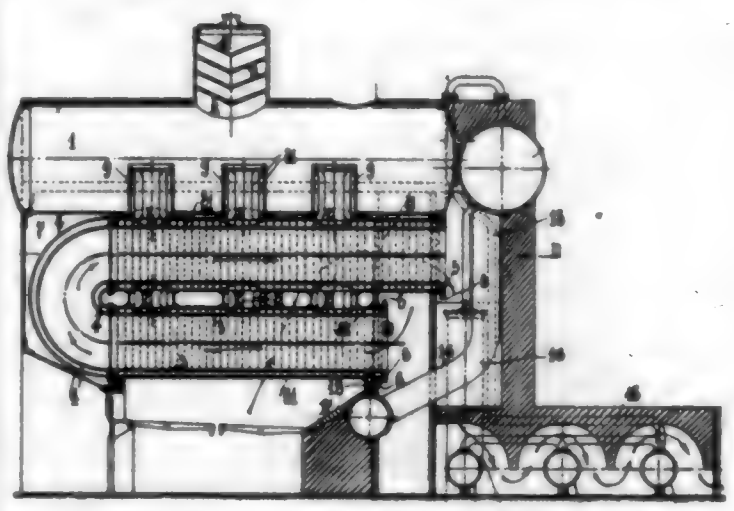
5. The combination of an insulating-body, a contact-plate connected with the body, and clamping-bolts carried by the body for connecting it with a trolley-wire, the plate having holes located directly under the respective bolts.

6. The combination of an insulating-body, a contact-plate having upwardly-extending flanges between which said body is fitted, bolts extending through the body and flanges, to unite the same, and to leave the under surface of the plate smooth, and clamping-bolts for uniting the body to a trolley-wire, carried thereby, the plate having holes located directly under the respective bolts.

7. The combination of an insulating-body having a longitudinal groove in its under surface, for the passage of a trolley-wire, a contact-plate fastened to the body, and the under surface of which is below the trolley-wire, and means in the groove for clamping the body to the trolley-wire.

8. The combination of an insulating-body having a longitudinal groove in its under surface, a contact-plate fastened to the body, a bolt extending through the body vertically thereof and having a hook at its lower end located in said groove to receive a trolley-wire, the plate having a hole located directly under the bolt.

818,948. STEAM-GENERATOR. FERNAND FROMONT, Molenbeek, near Brussels, Belgium. Filed Dec. 30, 1904. Renewed Feb. 7, 1906. Serial No. 300,850.



Claim.—1. In a steam-generator, the combination with the main generator-body, of upper and lower groups of heating-tubes, the tubes of each group arranged eccentrically within each other, means for securing said tubes together and allowing the free expansion thereof, curved sections connnecting the front ends of said heating-tubes, and means for closing the rear ends thereof, substantially as set forth.

2. In a steam-generator, the combination with the main generator-body, and the dome thereof, and a number of conical perforated sheet-metal plates within said dome, of upper and lower groups of heating-tubes, the tubes of each group arranged eccentrically within each other, means for securing said tubes together and allowing the free expansion thereof, curved sections connecting the front ends of said heating-tubes and means for closing the rear ends thereof, substantially as set forth.

3. In a steam-generator, the combination with the main generator-body, of upper and lower groups of heating-tubes, the tubes of each group arranged eccentrically within each other, means for securing said tubes together and allowing the free expansion thereof, curved sections connecting the front ends of said heating-tubes, connecting-tubes between the water-spaces of the lower and upper heating-tubes, tube-sections registering with said connecting-tubes and extending into the main generator-body above the water-level, and means for causing the hot gases to flow first along the outer walls of the heating-tubes and afterward through the lower and upper groups of heating-tubes, substantially as set forth.

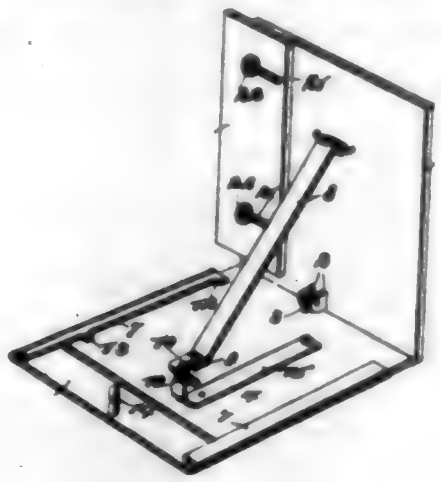
4. In a steam-generator, the combination with the main generator-body, of upper and lower groups of heating-tubes, the tubes of each group arranged eccentrically within each other, means for securing said tubes together and allowing the free expansion thereof, curved sections connecting the front ends of said heating-tubes, connecting-tubes between the water-spaces of the lower and upper heating-tubes, tube-sections registering with said connecting-tubes and extending into the main generator-body above the water-level, thin apertured and perforated sheet-metal plates within the annular water-spaces between the heating-tubes, the connecting-tubes and said tube-sections, substantially as set forth.

818,949. ADJUSTABLE FIRE-POT. CHARLES H. GATCHELL, Boston, Mass. Filed Apr. 6, 1905. Serial No. 254,208.

Claim.—1. An attachment of the class described, comprising a base-plate composed of two overlapping sections, one of said sections being provided at its edges with flanges adapted to receive the other and to hold the sections in sliding engagement, and the lower section being provided with a series of apertures, a spring-projected pin carried by the upper section and adapted to engage either of said apertures, a partition-plate hinged to said upper section, and a brace adapted to hold said partition-plate in an upright position.

2. An attachment of the character described, comprising a base-

plate composed of upper and lower sections, guide-flanges formed on said lower sections to receive the upper section, whereby the latter is held in sliding engagement with the lower section, a stop-pin arranged on said upper section to engage an offset on one of said guide-flanges to prevent the separation of said sections, a spring-projected stop-pin carried by said upper section to pass through a hole in said upper section, said lower section having a series of holes therein, with one of which said spring-projected stop is adapted to engage, a partition-plate hingedly connected to said upper section, a hinged brace-bar to support said partition-plate in an upright position, and a supplemental plate adjustably connected to said partition-plate, whereby the width of the latter may be increased, substantially as described.



818,950. FIREWORKS. WILLIAM A. GILMER, Broadview, Tenn., assignor of one-half to J. A. Smizer. Filed Sept. 14, 1905. Serial No. 278,418.



Claim.—1. The herein-described process of producing fireworks consisting of first inclosing an explosive charge within a receptacle extending a fuse into the charge and then winding threads upon the receptacle and about the fuse so as to produce an outer shell or body of threads and which completely incloses the charge.

2. A device of the character described comprising an explosive charge, a body inclosing the same and formed of threads wound about the charge, and a fuse extending from the charge.

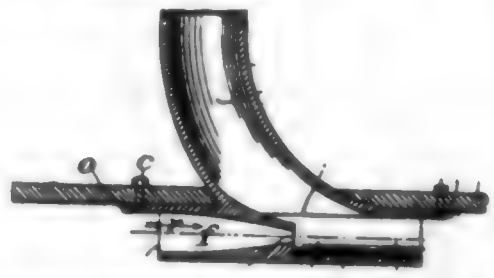
3. A device of the character described comprising a receptacle, an explosive charge therein, a fuse extending from the charge, and a body or shell inclosing the charge and its receptacle and surrounding the fuse, said body comprising threads wound about the charge.

4. A device of the character described comprising a body formed of wound fibrous material, an explosive charge inclosed by the body and disposed at the center thereof, and a fuse extending from said charge and through the body, said fuse having an enlarged portion adjacent the surface of the body.

5. A device of the character described comprising a spherical body formed of wound fibrous material, an explosive charge inclosed within the center of the body, and a fuse extending from said charge and through the body, said fuse having an enlarged portion adjacent the surface of the body to produce a flash.

818,951. SUBMERGED EXHAUST DEVICE FOR MARINE ENGINES. HERBERT M. GOODWIN, Newburyport, Mass. Filed Dec. 7, 1905. Serial No. 290,822.

Claim.—1. An exhaust-nozzle adapted to be fastened to the bottom of a boat comprising in its construction a casing provided with a passage extending longitudinally therethrough, said passage consisting of an inlet-chamber and an outlet-chamber, said inlet-chamber having an inlet and an outlet orifice, said outlet-orifice being of substantially smaller area than said inlet-orifice and opening into said outlet-chamber, said outlet-chamber provided with an outlet-orifice and with an intermediate orifice opening thereinto adjacent to said inlet-chamber outlet-orifice, said intermediate orifice adapted to be connected to the exhaust of an engine.

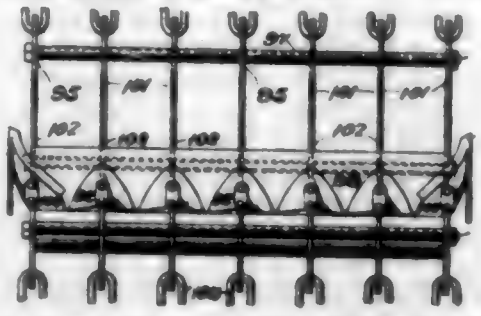


2. An exhaust-nozzle adapted to be fastened to the bottom of a boat comprising in its construction a casing provided with a passage extending longitudinally therethrough, said passage consisting of an inlet-chamber and an outlet-chamber, said inlet-chamber having an inlet and an outlet orifice, said outlet-orifice being of substantially smaller area than said inlet-orifice and opening into said outlet-chamber, said outlet-chamber provided with an outlet-orifice, said casing provided with a second passage opening into said outlet-chamber adjacent to said inlet-chamber outlet-orifice and adapted to be connected to the exhaust of an engine.

3. In combination, a boat and an exhaust-nozzle fast to the exterior of the bottom of said boat, said nozzle comprising in its construction a casing provided with a passage extending longitudinally therethrough, said passage consisting of an inlet-chamber and an outlet-chamber, said inlet-chamber having an inlet and an outlet orifice, said outlet-orifice of substantially smaller area than said inlet-orifice and opening into said outlet-chamber, said inlet-chamber opening toward the bow of said boat, said outlet-chamber provided with an outlet-orifice, said casing provided with a second passage opening into said outlet-chamber adjacent to said inlet-chamber outlet-orifice, said second passage extending into said boat and adapted to be connected to the exhaust of an engine.

4. An exhaust-nozzle adapted to be fastened to the bottom of a boat comprising in its construction a casing provided with a passage extending longitudinally therethrough, said passage consisting of an inlet-chamber and an outlet-chamber, said inlet-chamber having an inlet and on outlet orifice, said outlet-orifice being of substantially smaller area than said inlet-orifice, said inlet-chamber converging from said inlet-orifice toward said outlet-orifice, said inlet-chamber outlet-orifice opening into said outlet-chamber, said outlet-chamber provided with an outlet-orifice and with an intermediate orifice opening thereinto adjacent to said inlet-chamber outlet-orifice, said intermediate orifice adapted to be connected to the exhaust of an engine.

818,952. EXCAVATING-MACHINE. JOHN B. GORDON, Meridian, Miss. Filed Sept. 1, 1904. Serial No. 223,959.



Claim.—1. In an excavator, a chain of buckets consisting of the combination of hooks linked together, sheet metal carried by the hooks, and bolts and sleeves fastening said hooks together in groups.

2. In an excavator, the combination of parallel hooks, sleeves separating the same, bolts passing through said hooks and said sleeves, sheet metal connecting said hooks and bent to form a bucket, turning-plows on the end hooks, and cultivator-points on the intermediate hooks.

3. In an excavator, the combination of parallel hooks, sleeves separating the same, bolts passing through said hooks and said sleeves, sheet metal connecting said hooks and bent to form a bucket, and turning-plows on the end hooks.

4. In an excavator, the combination of hooks, rods connecting the same at certain distances apart, a bucket carried by the hooks, and guards in front of the hooks.

5. In an excavator, the combination of hooks, rods connecting

the same at certain distances apart, a bucket carried by the hooks, and guards in front of the hooks, and attached thereto.

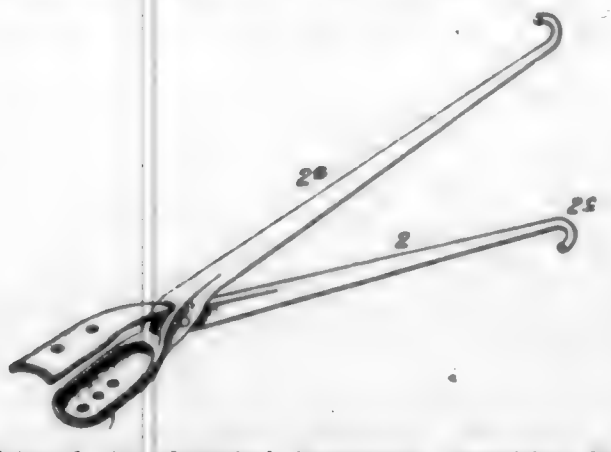
6. In an excavator, a chain of buckets consisting of the combination of hooks linked together, sheet metal carried by the hooks, bolts and sleeves fastening said hooks together in groups, and guards extending from the shanks of said hooks and bent toward the points of said hooks.

7. In an excavator, the combination of parallel hooks, sleeves separating the same, bolts passing through said hooks and said sleeves, sheet metal connecting said hooks and bent to form a bucket, turning-plows on the end hooks, cultivator-points on the intermediate hooks, and guards extending from the shanks of said hooks and bent toward the points of said hooks.

8. In an excavator, the combination of parallel hooks, sleeves separating the same, bolts passing through said hooks and said sleeves, sheet metal connecting said hooks and bent to form a bucket, turning-plows on the end hooks, and guards extending from the shanks of said hooks and bent toward the points of said hooks.

9. In an excavator, a chain of buckets consisting of the combination of hooks linked together, sheet metal carried by the hooks, bolts and sleeves fastening said hooks together in groups, guards extending from the shanks of said hooks and bent toward the points of said hooks, drums for supporting the upper and lower ends of the chain of buckets and means for rotating the upper drum.

818,953. OBSTETRICAL INSTRUMENT. JOHN G. GOTTLIEB, Fessenden, N. D. Filed Dec. 4, 1905. Serial No. 290,949.



Claim.—1. An obstetrical instrument, comprising handle-equipped pivoted-together jaw members, oblong in the direction of their lengths and dished or depressed in their opposed effective surfaces.

2. An obstetrical instrument, comprising handle-equipped pivoted-together jaw members, oblong in the direction of their lengths and dished or depressed in their opposed effective surfaces, and having the latter provided with cutter or fang receiving openings.

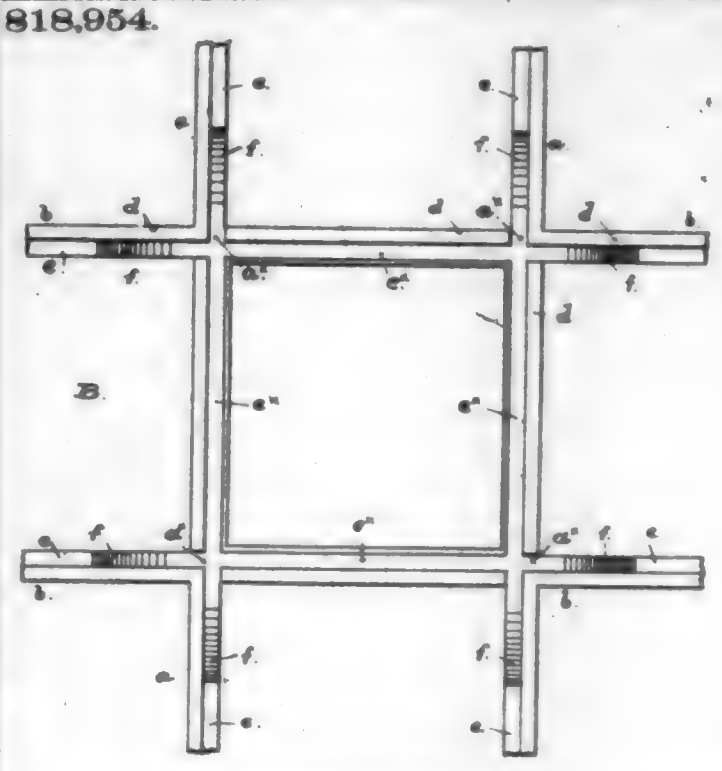
3. An obstetrical instrument, comprising handle-equipped pivoted-together jaw members, oblong in the direction of their lengths and dished or depressed in their opposed effective surfaces and having the latter equipped with cutters or fangs, a number being arranged upon each jaw member and those upon one jaw member alternating the cutters upon the other jaw member.

4. An obstetrical instrument, comprising handle-equipped pivoted-together jaw members, oblong in the direction of their lengths and dished or depressed in their opposed effective surfaces and having the latter equipped with cutters or fangs removably inserted therein, those of one jaw member alternating the cutters of the other jaw member, said cutters or fangs having laterally-extended cutting edges.

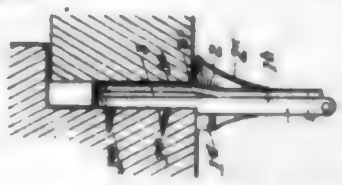
818,954. CONTINUOUS-RAIL CROSSING FOR STREET-RAILWAYS. OTTO GOTTSCHALK, San Francisco, Cal. Filed Aug. 4, 1904. Serial No. 218,420.

Claim.—In a railway-crossing, intersecting rails each having an elevated bearing or tread surface *d* continuous from end to end except at the intersections of the crossing rails where such elevated tread portions are severed to permit the passage of the flanged portions of the wheels, and the rails having also lower flanged portions *e* which the flanged portions of the wheels overhang, the said flanged portions of the rails being thickened and elevated at the crossing to constitute supplemental bearing-surfaces $e^{\times}$ that pass through the breaks of the elevated tread portions *d* of the intersecting rails, the elevated tread portions $e^{\times}$ of the rails being connected with the main flanged portions *e* thereof by the inclines *f*, substantially as set forth.

818,954.



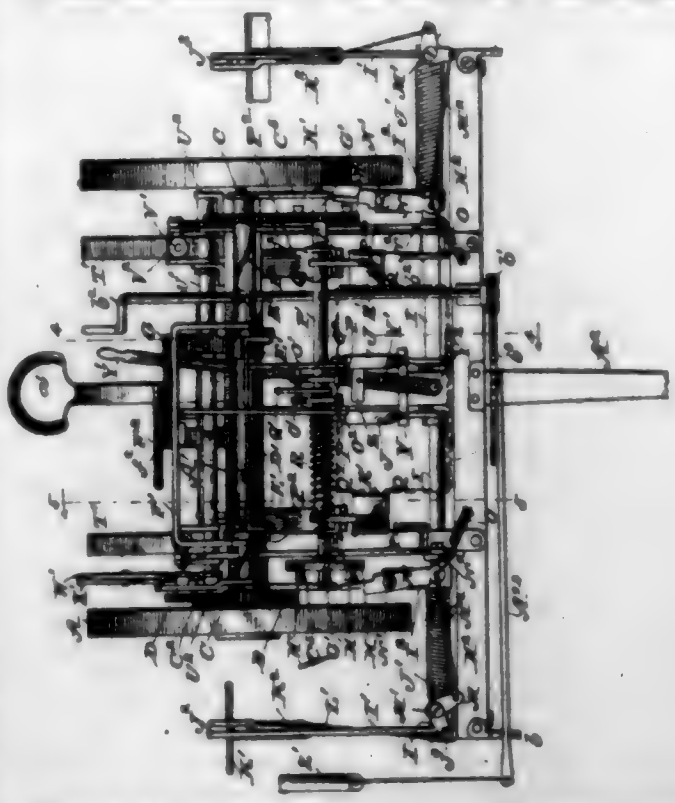
818,955. DOOR-SECURER. JOHN R. HALL, De Moss Springs, Oreg., assignor of one-half to Robert J. Ginn, Moro, Oreg. Filed Jan. 9, 1906. Serial No. 295,306.



Claim.—1. A device of the character described, comprising a gripping-plate having an axial slot remote from its gripping portion and an offset stud or stop terminating the inner end wall of said slot and extending beyond the latter to rest upon the door-facing, and a pivoted dog arranged to enter said slot and having a stepped inner and adapted to engage the door, said plate and said stop.

2. A device of the character described, comprising a gripping-plate having a longitudinal slot and a stop projecting outward from an end wall of the latter, a pivoted dog arranged within said slot and having a stepped free end, one of said steps being adapted to rest upon said gripping-plate, and pivoted wings or plates effective for filling-in purposes.

818,956. COMBINED POTATO AND CORN PLANTER. WILLIAM A. HALL, Sr., Pardeeville, Wis. Filed June 27, 1905. Serial No. 267,247.



Claim.—1. In a planter, the combination with a rock-shaft having a tappet-arm, and intermittently-acting devices for planting in

hills; of a revolving paddle arranged parallel to the rock-shaft within range of the tappet-arm, said paddle being provided with means for adjusting it both circularly and longitudinally to regulate the timing of its action as described.

2. In a planter, the combination with a rock-shaft having a tappet-arm, and dropping devices operated by the rock-shaft; of a revolving paddle arranged parallel to the rock-shaft within range of the tappet-arm, said paddle being provided with means for adjusting it both circularly and longitudinally to regulate the timing of the dropping devices substantially as described.

3. In a planter, the combination with a continuously-rotating shaft having pin-wheels and check-row-marking devices operated by the pin-wheel; of a revolving paddle arranged parallel to the said shaft and tripping devices arranged within range of the paddle, said paddle being provided with means for adjusting it both circularly and longitudinally to regulate the timing of the marking devices, substantially as described.

4. In a planter, the combination with a rock-shaft having a tappet-arm and intermittently-acting planting devices; of a revolving paddle arranged parallel to the rock-shaft within range of the tappet-arm and carrying pawls at its ends, a sleeve with ratchet-wheels at its ends engaging the pawls of the paddle, a shaft passing through the sleeve and having sliding spiral connection therewith and means for moving this sleeve longitudinally as described.

5. In a planter, the combination with a rock-shaft having a tappet-arm and intermittently-acting planting devices; of a revolving paddle arranged parallel to the rock-shaft within range of the tappet-arm, a sleeve, means for adjustably connecting the sleeve and paddle and a shaft passing through the sleeve and having a sliding spiral connection therewith substantially as described.

6. In a planter, the combination with a rock-shaft having a tappet-arm and intermittently-acting planting devices; of a revolving paddle arranged parallel to the rock-shaft within range of the tappet-arm, a sleeve, means for adjustably connecting the sleeve and paddle, a shaft passing through the sleeve and having a sliding spiral connection therewith, a bail embracing the shaft at opposite ends of the sleeve, a gear-wheel mounted on an axis on the bail and a stationary rock-bar engaging said gear-wheel substantially as shown and described.

7. In a planter, the combination of two horizontally-alined rock-shafts arranged at the front of the machine and bearing each three rearwardly-projecting arms, the outer one of which is provided with an articulated marker-hoe, a pivoted lifting-lever arranged on the middle arm, a wheel with lifting-pins for said lever, means for tripping the lever by the articulated hoe and means for alternately holding up the inner arms of each shaft substantially as shown and described.

8. In a planter, the combination with the articulated marker-hoe its supporting-arm and horizontal rock-shaft arranged in front of the machine and operating said hoe; of a rearwardly-projecting arm fixed to said rock-shaft at the inner end of the same, an elbow-lever having a downwardly-projecting arm with a latch adapted to catch and hold the rock-shaft arm, said elbow-lever having also a rearwardly-projecting arm and a revolving paddle arranged to strike the rearwardly-projecting arm of the elbow to disconnect its downwardly-projecting arm from the rock-shaft arm and drop the marker-hoe substantially as described.

9. In a planter, the combination with a front cross-bar H^3; of two alined rock-shafts I′ bearing rigidly-attached and rearwardly-projecting arms J, I′, I^2, the articulated hoes J^3 having spring and stop, the pull-rod L^2 with elbow-lever M and rod M^2, the lifting-lever N fulcrumed to the middle arm I^2, the rotary shaft with pin-wheels H, the holding and tripping lever O′ for the inner arms of the rock-shaft and a horizontally-swinging hand-lever Y′ pivoted at its front end and carrying a cross-bar Z adapted to hold one arm J up and allow the other one to drop to operative position according to the adjustment of the swinging lever substantially as described.

10. In a planter, a check-row-marking hoe having an articulated joint with spring, engaging mechanism for lifting and dropping the hoe, and means for setting into action the lifting devices for the hoe by the advance of the machine and the rearward deflection of the articulated hoe from its hold in the earth substantially as described.

11. In a planter, the combination with the dropping devices and the spout therefor; of a gate arranged at the bottom of the spout, an elbow-lever, a rod connecting therewith a crank-shaft bearing cranks connected to the said rod and a second crank with upwardly-extending rod, an elbow-lever having its rear end connected to the last-named rod and a paddle revolving under the said elbow-lever and arranged to operate the same and at the same time to operate the gate substantially as described.

12. In a planter, the combination with the planting devices; of the beams carrying the opener-shoe and coverers, a rod extending upward from the beam and having a spiral spring around it, a trunnioned cap above the spring and a head above this cap, a rock-shaft bearing crank-arms carrying the trunnioned caps, a rigid hand-lever with spring-actuated locking-bar and a double series of ratchet-teeth having the upper portion of teeth pointing upwardly and the lower series of teeth pointing downwardly to hold the lever and beams either up or down as described.

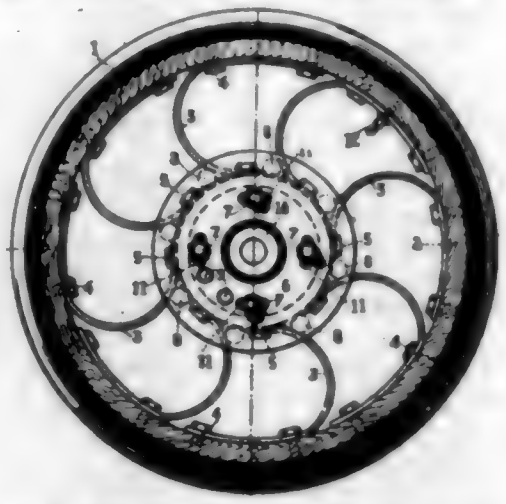
13. In a planter, the combination with the main wheel; of a rigidly-attached gear-wheel B, a continuously-rotating shaft bearing gear-wheel C′; a slotted bar D bearing intermediate gear-wheel C^3, a bar W^3 connected to bar D, a hand-lever W′ connected to bar W^3, a spring-actuated locking-bar, a rock-shaft rigidly attached to the hand-lever and bearing the opener-beams, and a double series of ratchet-teeth, the upper series engaging the locking-bar to hold the opener-beams up and the gear-wheel C^3 disengaged, and the lower series engaging the locking-bar to hold the opener-beams down and the gear-wheel C^3 engaged substantially as described.

14. A planter comprising the constantly-running shaft B′ with sleeve D′ and paddle E mounted on the same, the paddle being adjustable on the sleeve, and the sleeve having both a circular and longitudinal adjustment on the shaft, a bail embracing the sleeve and provided with rack and gear for adjusting it longitudinally, the constantly-running shaft G′ geared to shaft B′ and having pin-wheels H, the intermittent rock-shaft P′ with tappet-arm projecting into range of the paddle and having feeding devices and check-row-marking devices substantially as shown and described.

15. In a planter, a constantly-rotating shaft having a tappet connection made spirally adjustable on the shaft substantially as and for the purpose described.

16. In a planter the combination of a shaft and a sleeve on the shaft having a spirally-adjustable connection therewith, ratchet-wheels fastened at each end of the sleeve, a paddle adjustable on the sleeve, a bail embracing the sleeve and provided with a rack and a gear for longitudinal adjustment substantially as described.

818,957. ELASTIC VEHICLE-WHEEL. FRANK L. HARMON, Beverly, Mass. Filed Aug. 17, 1904. Serial No. 221,074.

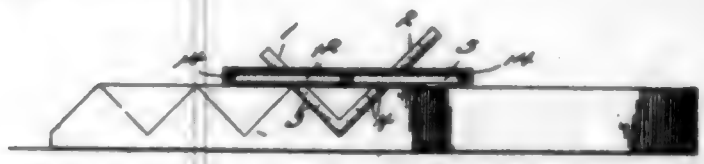


Claim.—An elastic vehicle-wheel comprising spokes which are springs, one end of each spoke being immovably secured at the rim or circular part of the wheel, and the other end of each spoke being immovably secured between the rim or circular part and the center of the wheel, said spokes extending in an indirect line from the center of the wheel to said rim or circular part, and said spokes being adapted to spring in the direction that the heel goes, and adjustable means whereby the wheel may be stiffened located between the points where said spokes are thus immovably secured.

818,958. CARPENTER'S TOOL. WARREN C. HAUSE and FRANCES M. MARLIN, Enumclaw, Wash. Filed Nov. 6, 1905. Serial No. 286,030.

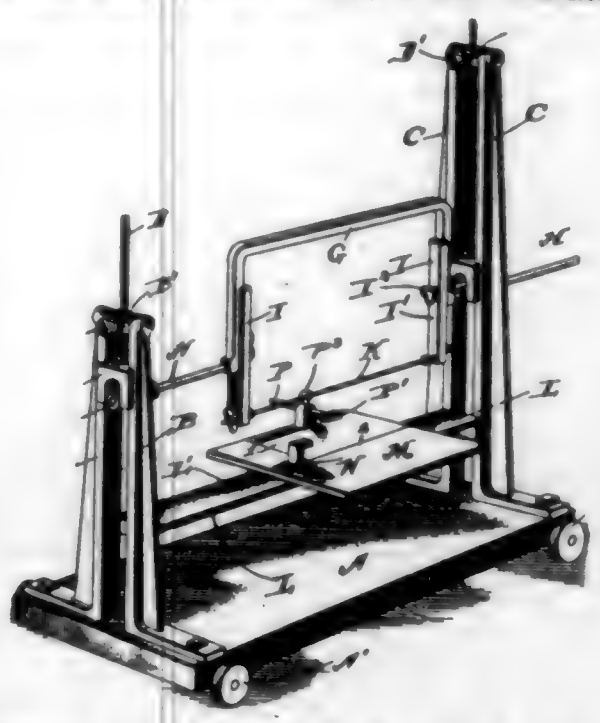
Claim.—1. A device of the class described comprising two resilient members each having a shoulder projecting from one face at both its ends, said members being disposed with the corresponding shoulders in mutual contact and the portions between the shoulders in spaced relation, resulting in a slot, securing means engaged with the shouldered portions of the members, a clamping-bolt engaged through the members intermediate of their ends, a thumb-nut for the

clamping-bolt, and a square having its legs engaged in the slot at opposite sides of the clamping-bolt and with its angle projecting from one face of the stock.



2. In an instrument of the character described, a stock comprising separate members in mutual engagement at their extremities, with an interspace intermediate their ends, each member having a longitudinal groove in its outer face, one of the members having a slot therethrough in registration with a perforation of the other member, a T-shaped bolt passed through the said slot and said perforation of the respective members, and a clamping-nut engaging the said bolt with its body portion in frictional engagement with the edges of the corresponding longitudinal groove.

818,959. **PIPE OR TILE CUTTING MACHINE.** ROSCOE L. HRAPER, Bloomington, Ill. Filed Aug. 23, 1905. Serial No. 276,061.



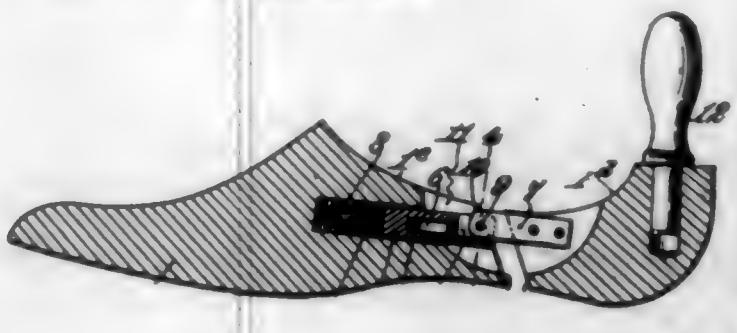
Claim.—1. In a machine of the kind described, the horizontally-adjustable table and means for locking the same, the fixed gage carried by the table and an adjustable gage arranged upon the table and at a right angle to the fixed gage.

2. In a machine of the kind described, the table, the fixed gage carried by the table, an adjustable bracket sliding in a slot in the table and a rod adjustable in the bracket and carrying a head at its inner end.

3. In a machine of the kind described, the combination with the standards, of the laterally-adjustable table, the adjustable boxes and means for locking the same, the bearing pivoted in said adjustable boxes, the bow-frame having journals turning in the bearings and the cutting-wire adjustably connected to the bow-frame.

4. In a machine of the kind described, the combination with the base and standards, of the supporting-plate, the table adjustable therein, and carrying the fixed gage, the adjustable gage carried by the table, the boxes having guide-rods and means for securing them, the pivoted bearings carried by the boxes, the bow-frame having journals, the adjustable arms and the cutting-wire connected to said arms all arranged as described.

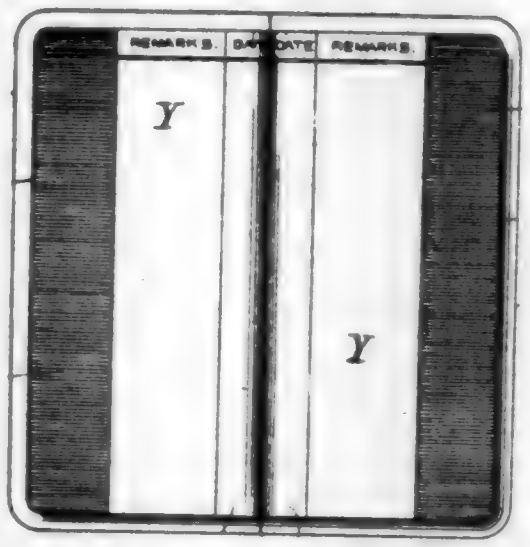
818,960. **SHOE-FORMER.** FRED H. HIGGINS, Brockton, Mass. Filed Aug. 2, 1905. Serial No. 272,381.



Claim.—1. In a shoe-former, the combination with a fore part and a separate heel part, one of said parts provided with a spring-pressed plunger and a slot, an arm connected to and projecting from the other part, pivotally connected with said plunger and engaging the walls of said slot, substantially as described and for the purpose set forth.

2. In a shoe-former, the combination with a fore part provided with a bore and a slot, of a separate heel part, a spring-pressed plunger arranged in the bore of the fore part, and an arm connected to and projecting from the heel part, pivotally connected to said plunger and engaging the walls of the slot in the fore part.

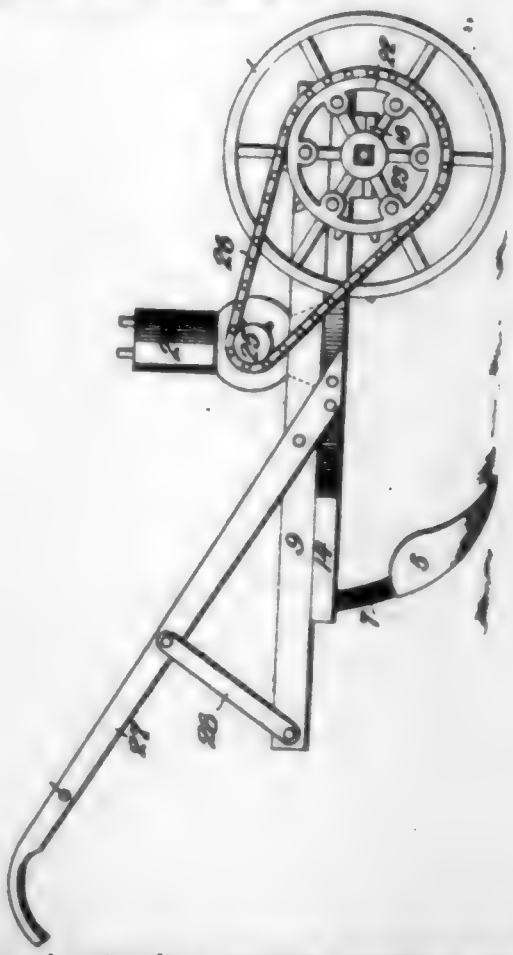
818,961. **BOOK, DIARY, ALBUM, &c., FOR THE PRESERVATION OF CIGAR BANDS OR LABELS.** JOSEPH HILL, Derby, England. Filed Dec. 9, 1903. Serial No. 184,389.



Claim.—1. A book for the preservation of cigar bands or labels, comprising sheets provided with vertical adhesive columns adjacent the outer edges thereof, and with blank spaces adjacent said columns.

2. A book for the preservation of cigar bands or labels, comprising sheets provided at each side with a vertical column of adhesive material, and a plurality of blank columns adjacent thereto.

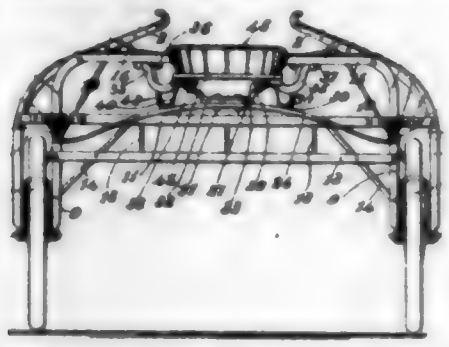
818,962. **MOTOR-PLOW.** ALONZO J. HOLLAND, Hypoluxo, Fla. Filed May 31, 1905. Serial No. 263,100.



Claim.—A motor-plow comprising laterally-spaced beams, an integral frame provided with shovels secured to the beams on their

under sides, said frame comprising an enlarged rear portion and a narrowed forward portion, said forward portion including parallel sides connected at their ends by an integral end portion, a motor-support connecting the sides intermediate the rear portion of the frame and the said end portion, bearing-blocks formed on the sides of the frame adjacent the end portion, an axle mounted in said bearing-block, traction-wheels mounted on said axle, a sprocket-wheel carried by each of said traction-wheels, a motor mounted upon the said motor-support, sprocket-heels carried by the shaft of the motor and a chain connecting each pair of sprocket-wheels.

818,963. ROAD-CART. ELMER P. HOLLISTER, Jersey City, N. J. Filed May 15, 1905. Serial No. 260,526.



Claim.—1. A longitudinally and vertically divided thill having side members spaced apart at their rear ends, and a reinforcing-plate inserted between the side members in front of their rear ends.

2. A longitudinally and vertically divided thill having side members spaced apart at their rear ends, and a resilient reinforcing-plate inserted between the side members in front of their rear ends.

3. In a road-cart, longitudinally and vertically divided thills, reinforcing-plates inserted between the side members of said thills, means for connecting said side members throughout a portion of their lengths, means for spacing apart the rear ends of said side members, and wheels journaled in the forks thus formed.

4. In a road-cart, longitudinally and vertically divided thills, reinforcing members interposed between the front ends of the side members of said thills, means for connecting said side members and reinforcing members, means for spacing apart the rear ends of the side members of the thills said side members being downturned in rear of the reinforcing members, and wheels supported for rotation in the forks thus formed.

5. In a road-cart, thills having rearwardly and downwardly curved bifurcated rear ends, and wheels supported for rotation near the extremities of the forks thus formed at points which are in advance of the rear extremities of the arcs presented by the downward curves of the thills.

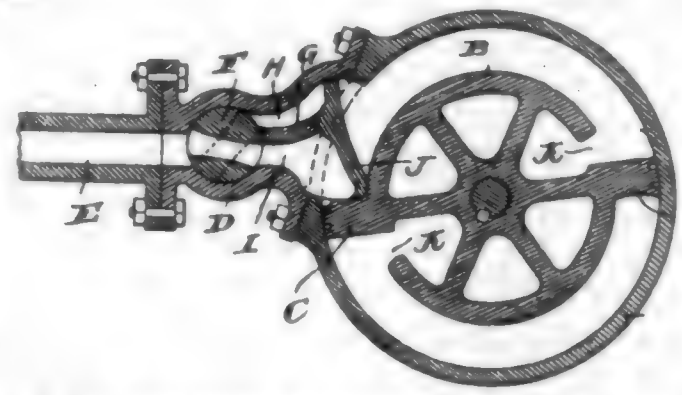
6. In a road-cart, thills having rearwardly and downwardly curved bifurcated rear ends, and wheels supported for rotation near the extremities of the forks thus formed at points which are in advance of the rear extremities of the arcs presented by the downward curves of the thills; in combination with bifurcated braces connecting the wheel-supports with the thills in front of the downward curves of the latter.

7. In a road-cart, longitudinally and vertically divided thills, reinforcing-plates between the thill members, connecting means for the latter, a cross-bar connecting the thills, a frame-bar extended between the thills and spacing the side members of the latter in rear of the cross-bar, an auxiliary frame-bar connecting the inner side members of the thills, struts connnectig the frame-bars, and wheels supported for rotation in the forks formed by the spaced side members of the thills.

8. In a road-cart, a pair of thills having downturned bifurcated rear ends, frame members connecting the thills, wheels supported for rotation in the forks of the thills, L-shaped bracket members supported upon one of the frame members, clevises supported by said bracket members, a seat-spring having terminal eyes, and clevises connected with said eyes and engaging the clevises supported by the bracket members; said interengaging clevises having offset engaging portions.

818,964. ROTARY ENGINE. JAMES H. HOWDEN, Neepawa, Canada. Filed Nov. 11, 1905. Serial No. 286,772.

Claim.—1. In a rotary engine, the combination of a cylinder, rotating piston therein, lateral steam-chamber divided longitudinally into two steam-passages, a rocking valve having a steamway adapted to admit steam into said passages alternately, and an intermediately-pivoted valve having its two flaps extending across the inner ends of the two steam-passages, one flap alternately closing and opening one steam-passage and serving as a steam-abutment when open.



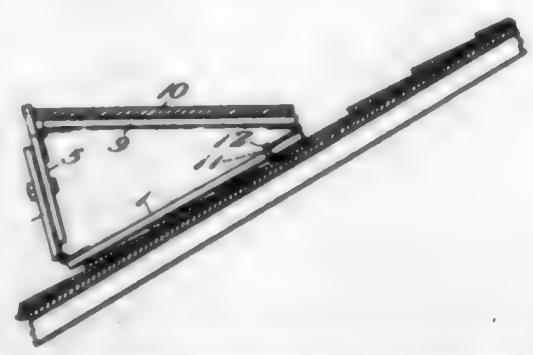
2. In a rotary engine, the combination of a cylinder, rotating cylindrical piston therein of smaller diameter having one or more vanes revolving close to the cylinder-walls, a lateral steam-chamber longitudinally divided into a main steam-passage and an auxiliary steam-passage, a rocking valve having a steamway which in one position admits steam into the main passage and in another position admits a relatively small quantity of steam to the auxiliary passage, and a swinging flap-valve at the inner end of said main passage having a tail-flap in the inner end of the auxiliary passage, said flap-valve alternately opening and closing the main steam-passage and serving as a steam-abutment when open.

3. In a rotary engine, the combination of a cylinder, rotating piston therein, lateral steam-passage, a swinging flap-valve which in one position closes said passage and in another position opens into the cylinder and constitutes a steam-abutment, said flap-valve having a tail-flap or part at the opposite side of its pivot, an auxiliary steam-passage behind said tail-flap, and means for directing steam alternately into the two steam-passages.

4. In a rotary engine, the combination with the cylinder, rotating piston therein, and communicating steam-chamber at the side of the cylinder, of a valve which in one position closes passage between said steam-chamber and cylinder and which in another position opens such passage and constitutes a steam-abutment, and means whereby steam-pressure acts alternately in opposite directions on said valve and thereby moves the same to and from such positions.

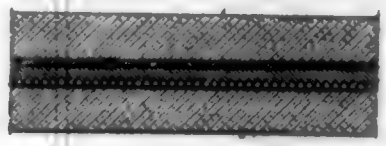
5. In a rotary engine, the combination of a cylinder, rotating piston therein, lateral steam-chamber, a longitudinal partition dividing said steam-chamber into two passages, a rocking valve having a steamway which admits steam into said passages alternately, and a flap-valve intermediately pivoted at the inner end of said partition having its flaps acted upon alternately by the steam in the two passages.

818,965. SCAFFOLD-BRACKET. RALPH E. IRWIN, Ligonier, Pa. Filed Dec. 23, 1905. Serial No. 293,366.



Claim.—A scaffold-bracket comprising a base-bar, an upright hinged at its lower end to one end of the base-bar and provided with a row of openings, a holding-bar hinged at its forward end to the opposite or forward end of the base-bar and provided at its rear end with a slotted or bifurcated portion, an extension arm or bar provided at its upper end with a tongue and hinged below the same to the bifurcated end of the holding-bar, said tongue being adapted to form a stop for the scaffold-board when the device is in use and to fold into the slotted portion to permit the upright and extension-bar to be swung outward and the respective bars to fold in parallel relation, and a bolt passing through the extension-bar and adapted to engage any one of the series of openings in the upright bar to adjustably connect the extension-bar thereto, said bolt being adapted to fasten said bars in folded or extended position.

818,966. DIFFRACTION-GRATING REPLICA. FREDERIC E. IVES, Woodcliffe-on-the-Hudson, N. J. Filed Sept. 29, 1905. Serial No. 280,693.



Claim.—1. A diffraction-grating replica consisting of a film-cast and a supporting-plate upon which said cast is mounted with the incised face of the cast next to the face of the plate.

2. A diffraction-grating replica consisting of a film-cast, a supporting-plate against which the incised face of the cast bears, a cover-plate on the back of the cast, and a securing agent therefor having substantially the same refractive index as the film-cast.

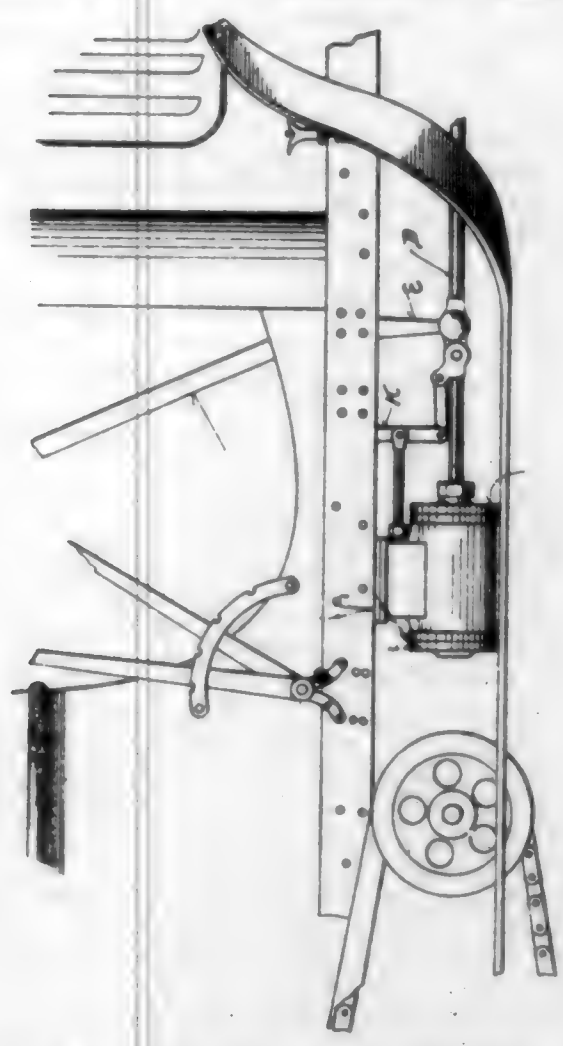
3. A diffraction-grating replica consisting of a film-cast, and a silvered supporting-plate in contact with the incised face of the cast.

4. A diffraction-grating replica for spectroscopic work, said replica consisting of a film-cast with incised face composed of ribs whose tops are in a true plane.

5. A diffraction-grating replica for spectroscopic work, said replica consisting of a film-cast with incised face composed of ribs whose tops are in a true plane, and a backing-plate with plane surface against which the back of the cast is cemented.

6. The combination of a diffraction-grating replica with plates between which said replica is sealed.

818,967. AUTOMOBILE STEERING DEVICE. CHARLES F. JENKINS, Washington, D. C., assignor of one-half to Charles C. Dieudonne, Washington, D. C. Filed Oct. 19, 1905. Serial No. 283,423.



Claim.—1. The combination, with the running-gear of an automobile, of a suitable power device connected with the steering-wheels, a steering-head connected also with the steering-wheels to turn them in either direction, and means whereby the operation of the steering-head shall automatically throw the power devices into and out of action.

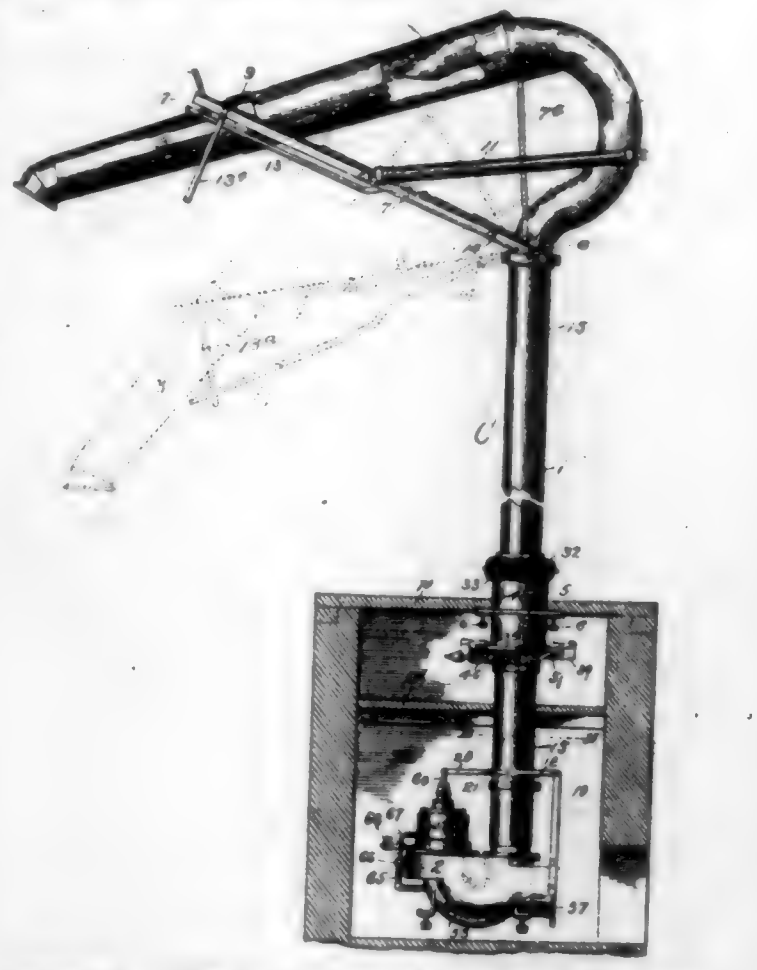
2. The combination of the running-gear of an automobile, of a power device connected with the steering-wheels and means whereby the power may be at will applied to turn the wheels to the right or left.

3. The combination of a steering-post, provided with devices for connecting with the steering-knuckles of an automobile, whereby the turning of the post turns the wheels, of a cylinder for fluid under pressure, a piston in the cylinder also connected with the steering-knuckles, and means whereby the operation of the steering-head to turn the wheels in either direction causes the admission of fluid under pressure to the cylinder compelling the piston to urge the turning of the wheels in the same direction.

4. The combination of the running-gear of an automobile, of a cylinder for fluids under pressure, a piston in the cylinder connected with the steering-knuckles, and means for admitting pressure to the cylinder.

5. The combination of the running-gear of an automobile, of a cylinder for fluid under pressure, a piston in said cylinder connected with the steering-wheels, a steering-post with a pinion mounted thereon, the pinion enmeshing with a rack connected to a lever controlling the admission of the fluid to the cylinder to turn the wheels to the right or left.

818,968. RAILWAY WATER-COLUMN. EDWARD E. JOHNSON, St. Paul, Minn. Filed Feb. 29, 1904. Serial No. 195,923.



Claim.—1. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a spout swinging loosely over the nozzle and draining away from the stand-pipe, and a support for the spout pivoted to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and below the uppermost level of the outlet of the spout, substantially as described.

2. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle and draining away from the stand-pipe, a support for the spout pivoted to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout describes in descending and ascending forward of the inlet end of the spout in its uppermost position, substantially as described.

3. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, a support for the spout pivoted to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and below the level of the outlet end and forward of the inlet end of the spout when in its uppermost position, substantially as described.

4. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a spout swinging loosely over the nozzle, and draining away from the stand-pipe, and a support for the spout pivoted to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and below the

outlet and forward of the inlet end of the spout in its uppermost position, substantially as described.

5. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, and a support for the spout pivoted to the stand-pipe approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and engaging the spout about midway of the length of the latter, substantially as described.

6. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle and draining away from the stand-pipe, and a support for the spout pivoted at its inner end to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and below the uppermost level of the mouth of the spout and secured at its outer end to the spout about midway of the length of the latter, substantially as described.

7. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a spout swinging loosely over the nozzle and draining away from the stand-pipe, and a support for the spout pivoted at its inner end to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and secured at its outer end to the spout about midway of its length, substantially as described.

8. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout draining away from the stand-pipe in all its positions having a support pivoted to the stand-pipe at a point below the outlet end of the spout and provided with means whereby the stand-pipe may be swung about horizontally, said pivot being located approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height, substantially as described.

9. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, and means for pivotally supporting the spout upon the stand-pipe, comprising a supporting-frame pivoted at its inner end to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and secured at its outer end to the spout about midway of the length of the latter, and a brace extending between the inner end of the supporting-frame and the inlet end of the spout, substantially as described.

10. A water-column comprising a stand-pipe terminating in a nozzle, a spout swinging loosely over the nozzle, means for pivotally supporting the spout upon the stand-pipe comprising a supporting-frame pivoted at its inner end to the stand-pipe at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height and secured at its outer end at about midway of the spout, and a brace between the inner end of the supporting-frame and the inlet end of the spout, and means for rotating the stand-pipe, substantially as described.

11. A water-column, comprising a stand-pipe, terminating at its upper end in a reversely-curved gooseneck, as shown, a swinging spout fitting loosely over the nozzle of the gooseneck, and a support for the spout pivoted to the stand-pipe, substantially as described.

12. A water-column comprising a stand-pipe terminating at its upper end in a reversely-curved gooseneck, as shown, a spout swinging loosely over the nozzle of the gooseneck and a support for the spout pivoted to the stand-pipe at the base of the gooseneck, the curvature of the gooseneck permitting the inlet end of the spout to swing backward past the vertical axis of its supporting-pivot, substantially as described.

13. A water-column, comprising a stand-pipe terminating in a nozzle, a spout swinging loosely over the nozzle, a support for the spout pivoted at its inner end to the stand-pipe and secured at its outer end to the spout about midway the length of the same and counterbalancing devices applied between the stand-pipe and spout-support, these devices being connected to the stand-pipe and the support at points above the pivot substantially as described.

14. A water-column comprising a stand-pipe terminating at its upper end in a nozzle, a spout swinging loosely over the nozzle, a support for the spout pivoted at its inner end to the stand-pipe and secured at its outer end to the spout about midway the length of the same and counterbalancing-springs applied between the stand-pipe and spout-support, these devices being connected to the stand-pipe and the support at points above the pivot substantially as described.

15. A water-column, comprising a stand-pipe terminating at its upper end in a gooseneck, a swinging spout fitting loosely over the nozzle of the gooseneck, a support for the spout pivoted to the stand-pipe at the base of the gooseneck, and counterbalancing devices applied between the support and gooseneck, substantially as described.

16. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, a support for the spout pivoted to the stand-pipe and engaging the spout about midway of the length of the latter, a valve-operating lever pivoted to the spout-support, a valve at the base of the stand-pipe, and connections between said valve and valve-operating lever, substantially as described.

17. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, a support for the spout pivoted to the stand-pipe and engaging the spout about midway of the length of the latter, a valve-operating lever pivoted to the spout-support and extending longitudinally of the latter, a guide for the lever depending from the outer end of said support, a shoulder of said guide beneath which the lever may be caught, a valve at the base of the column, and connections between said valve and lever, substantially as described.

18. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a pair of oppositely-extending curved lugs S carried by the standard, a spout having its inlet end telescoping over the nozzle said spout inclining downwardly away from the stand-pipe, a supporting-frame attached to the spout and pivoted at its inner end to said lugs; a valve at the foot of the stand-pipe, valve-operating rods at opposite sides of the stand-pipe and working in line with the pivots of the spout-carrying frame, and means on this frame for reciprocating said rods, for the purposes set forth.

19. A water-column, comprising a stand-pipe terminating at its upper end in a nozzle, a swinging spout fitting loosely over the nozzle, a support for the spout pivoted to the stand-pipe, a valve-operating lever pivoted to said spout-support, a valve at the foot of the stand-pipe, and exterior connections extending down the stand-pipe between the lever and valve, substantially as described.

20. A water-column comprising a stand-pipe terminating in a nozzle, a spout swinging loosely over the nozzle, a spout-support pivoted to the stand-pipe and rigidly secured to the spout, a valve-operating lever pivoted to said spout-support, exterior valve connections between the lever and the valve hinged to said lever so that in the normally closed position of the valve the pivots and hinges lie in a common axis, and a valve at the foot of the stand-pipe, substantially as described.

21. In a water-column, of the character described, the combination with a stand-pipe having an extended discharge-nozzle secured at the head thereof, a discharge-pipe whose inner end telescopes with said discharge-nozzle so as to be moved freely thereon, and which inclines downwardly away from said nozzle in all its positions, a connection uniting said discharge-pipe with the stand-pipe of the water-column and pivoted to said stand-pipe in a horizontal plane below the horizontal plane of the outlet of the discharge-pipe when in its fully-elevated position at a point approximately opposite the middle point of the arc the delivery end of the spout is usually required to describe in being adjusted to tanks of the average height, and means for counterbalancing the discharge-pipe, whereby the range of movement of said outlet is in a substantially vertical plane.

22. A water-column, comprising a stand-pipe terminating at its outer end in a reversely-curved gooseneck-nozzle, a swinging spout fitting loosely at its upper inlet end over said nozzle, and inclining downwardly away from the nozzle in all its positions, a support for the spout pivoted to the stand-pipe at a point below the discharge end of the spout, said reversely-curved gooseneck permitting the inlet end of the spout to swing backward past the vertical plane of the supporting-pivot, substantially as set forth.

23. A water-column, comprising a stand-pipe swiveled in a vertical standard, and a bearing between the stand-pipe and standard comprising a downwardly and an outwardly facing annular bearing-surface on the stand-pipe, an upwardly and an inwardly facing bearing-surface on the standard, a set of horizontal antifriction-rollers inserted between said inwardly and outwardly facing surfaces, a set of vertical rollers between the downwardly and upwardly facing surfaces and an annular cage inclosing the several rollers and holding them between the shoulders and bearing-surfaces, substantially as described.

24. A valve mechanism comprising a hollow cylindric main valve whose interior is in communication with the inlet when the valve is open, a housing into which the valve retreats, a leakage-chamber within said housing, and an opening in the side wall of the main valve through which communication is established between the

leakage-chamber and the discharge-pipe leading from the valve when the valve is closed, substantially as described.

25. A valve mechanism comprising a hollow cylindric main valve whose interior is in communication with the inlet when the valve is open, a housing into which the valve retreats, a packing through which the valve works, a leakage-chamber within said housing beyond the packing, and an inclined row of openings in the side wall of the main valve communicating with the discharge-pipe leading from the valve and arranged to be brought into communication with the leakage-chamber in succession in the closing movement of the valve, substantially as described.

26. A valve mechanism comprising a hollow cylindric main valve whose interior is in communication with the inlet when the valve is open, a housing into which the valve retreats, a packing through which the valve works, a leakage-chamber within said housing beyond the packing, and a series of apertures of graded sizes in the side wall of the main valve communicating with the discharge-pipe leading from the valve and arranged to be brought into communication with the leakage-chamber in succession in the closing movement of the valve, substantially as described.

27. A valve mechanism comprising a cylindric main valve, a housing into which the valve retreats and provided with a packing through which the valve works, and a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, substantially as described.

28. A valve mechanism comprising a cylindric main valve, a housing into which the valve retreats and provided with a packing through which the valve works, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, and means permitting a suitable flow of water into and out of these chambers at appropriate times in the operation of the valve movement, substantially as described.

29. A valve mechanism comprising a cylindric main valve, a housing into which the valve retreats and provided with a packing through which the valve works, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, and an opening through the main valve communicating alternately with the cushioning and leakage chambers as the valve is opened and closed, substantially as described.

30. A valve mechanism comprising a cylindric main valve, a housing into which the valve retreats and provided with a packing through which the valve works, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, and an inclined row of openings in the main valve arranged to be gradually brought into communication with the cushioning-chamber and leakage-chamber in alternation as the valve is opened and closed, substantially as described.

31. A valve mechanism comprising a cylindric main valve, a housing into which the valve retreats and provided with a packing through which the valve works, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, and a series of openings of graded sizes in the main valve arranged to be gradually brought into communication with the cushioning-chamber and leakage-chamber in alternation as the valve is opened and closed, substantially as described.

32. A valve mechanism comprising a hollow cylindric main valve, a housing into which the valve retreats, a packing for the valve separating the water-inlet from the interior of said housing, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, an opening through the main valve communicating alternately with the cushioning and leakage chambers as the valve is opened and closed, and a by-pass opening out of the cushioning-chamber and into the discharge, substantially as described.

33. A valve mechanism comprising a hollow cylindric main valve, a housing into which the valve retreats, a packing for the valve separating the water-inlet from the interior of said housing, a flange in the housing beyond the packing dividing it into separate cushioning and leakage chambers, an opening through the main valve communicating alternately with the cushioning and leakage chambers as the valve is opened and closed, and an external valved by-pass opening out of the cushioning-chamber and into the discharge to regulate the movement of the main valve, substantially as described.

34. A valve mechanism comprising a cylindric main valve, an annular seat for the valve, a housing into which the valve retreats, a hydraulic cylinder within the housing, and a piston within said cylinder connected with the main valve to open and close the latter, substantially as described.

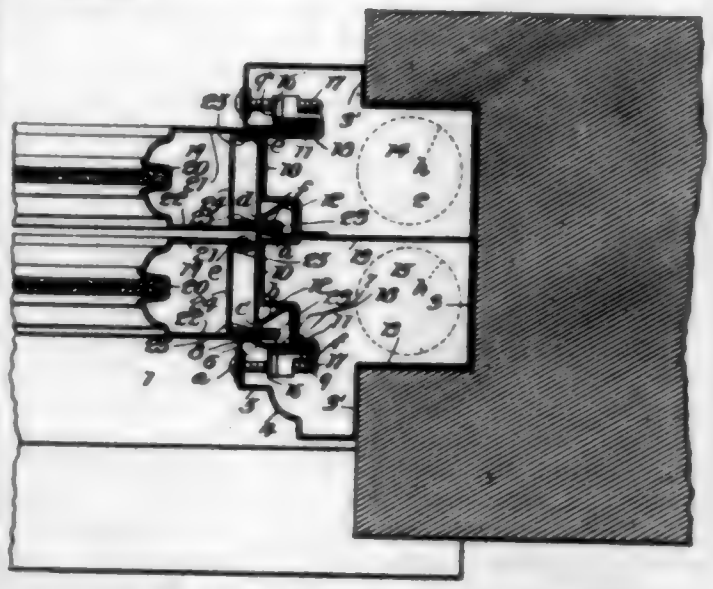
35. In combination with a casing having an annular valve-seat surrounding the outlet, a housing connected to said casing, a cylindric main valve adapted to seat on said valve-seat and adapted to retreat into said housing when it is open, a hydraulic cylinder extending into said housing, a piston working in said hydraulic cylinder and connected by a hollow piston-rod to said main valve, said hollow piston-rod being in communication at its inner end with the inlet of the casing, and a controlling-valve within the hollow piston-rod, substantially as set forth.

36. A valve mechanism comprising a cylindric main valve, a hydraulic cylinder, a piston within the hydraulic cylinder, a hollow piston-rod communicating with the inlet-pipe and hydraulic cylinder and serving to connect said piston and main valve, a hydraulic valve within the piston-rod for controlling the admission of water to and its escape from said cylinder, and a hollow valve-stem secured to the controlling-valve and affording an exhaust-passage from the hydraulic cylinder to the outlet-pipe, substantially as described.

37. A valve mechanism comprising an inlet-chamber and an outlet-chamber, a ring valve-seat surrounded by the inlet-chamber, a hollow cylindric main valve adapted to seat on said ring and having its interior open to the inlet-chamber when the valve is open, a housing into which the valve retreats separated from the inlet-chamber by a packing, an annular partition for dividing the housing into a leakage-chamber, and a cushioning-chamber, a by-pass connecting the cushioning-chamber with the discharge-chamber, means for operating the valve, said valve being provided with openings in its side wall, adapted to alternately communicate with the cushion-chamber and the leakage-chamber, and a normally closed valve in its head, said valve opening inwardly with respect to the main valve.

38. In a water-column, of the character described, the combination with a stand-pipe of an extended discharge-nozzle secured at the head thereof, a discharge-pipe whose inner end telescopes with said discharge-nozzle so as to be moved freely thereon, a connection uniting said discharge-pipe with the stand-pipe of the water-column and pivoted to said stand-pipe in a horizontal plane below the horizontal plane of the outlet of the discharge-pipe when in its fully-elevated position, and means for counterbalancing the discharge-pipe, whereby the range of movement of said outlet is in a substantially vertical plane.

818,969. **FIREPROOF METAL WINDOW FRAME AND SASH.** SMITH KNIGHLEY, Pittsburg, Pa. Filed Dec. 21, 1905. Serial No. 293,231.



Claim.—1. In a metal weather-strip and sash-guide, a metal strip having oppositely-disposed bearing-points extending toward each other, in combination with a metal sash having an extended weather-strip *f* adapted to move between said bearing-points, substantially as described.

2. In a metal fireproof window, a hollow-metal window-casing, pulley-stiles secured thereto, sash-guides formed in said stiles and provided with two oppositely-disposed bearing-points 8, *e*, in combination with a metal window-sash having one of its walls bent upon itself and inclosing a cross-strip to form a weather-strip *f* to move between said bearing-points, and an oppositely-disposed flange *e* to bear against the face of the pulley-stile to insure smooth operation of the parts, substantially as described.

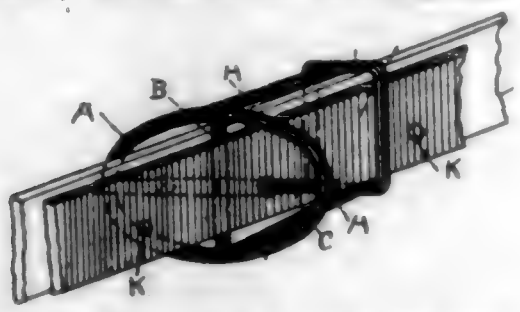
3. In a metal window, the combination of a pulley-stile provided with a sash-guide having oppositely-disposed bearing-points 8, *e*, and an enlarged guide-chamber back of said points, and a sash-frame having an inwardly-extending weather-strip or tongue *f* adapt-

ed to move between said bearing-points, and within the guide-chamber, and a flange *e* opposite the weather-strip or tongue adapted to bear against the facing of said pulley-stile, substantially as described.

4. A metal window-sash having its terminal inner edges bent to form a weather-strip *f* and a guide-flange *e* and inclosing a cross-strip 24, said parts being riveted together, in combination with a metal window-casing having a sash guide or chamber into which the weather-strip fits and slides, substantially as described.

5. In a metal window, the combination of pulley-stiles provided with terminal flanges 9×, 16, a window-casing, bolts passing through said casing and through said flanges for adjusting the pulley-stiles to compensate for the variation in the size of sash, sash-guides formed in said stiles and provided with oppositely-disposed bearing-points 8, *c*, and a sash having a projecting weather-strip *f* to fit between the oppositely-disposed bearing-points and move in the sash-guide, substantially as described.

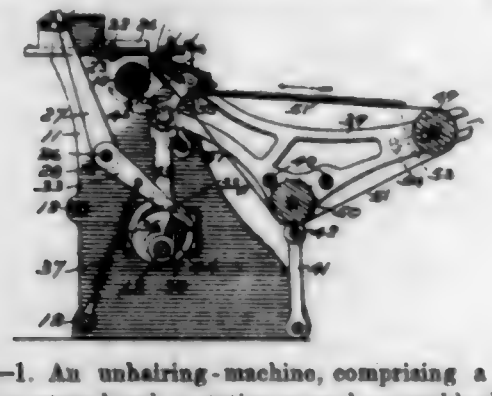
818,970. LINE AND REIN BUCKLE. FRANK M. KIBBEY, Rosendale, Mo. Filed Nov. 13, 1905. Serial No. 287,137.



Claim.—1. In a lines and rein buckle, the frame of a double buckle the vertical stationary axle therein, the oppositely-projected tongues carried by said axle, the keeper spaced from said buckle and the duplicate projected horizontal rods rigidly connecting said buckle and keeper, substantially as described and shown.

2. The combination in a buckle of a double frame, a central vertical axle therein the buckle-tongues on said axle, a rein and lines keeper and the horizontal rods connecting said keeper and buckle, substantially as shown and described.

818,971. UNHAIRING-MACHINE. ARTHUR LA MARCHE, West Hoboken, N. J., and ANTON HEDRAVNY, New York, N. Y. Filed Aug.



Claim.—1. An unhairing-machine, comprising a stationary main frame, a rotary brush, a stationary and a movable shear-blade, a rock-shaft and a driving-shaft in the stationary main frame; a cam set on the driving-shaft, an arm secured to the rock-shaft and connected to the movable shear-blade, a second arm secured to the same rock-shaft and a pin set in the arm in position to engage with the cam set on the driving-shaft, means for pressing the arm against the cam; posts pivoted to the main frame, a frame pivoted to the posts; eccentrics set on the driving-shaft, and rods connecting the eccentrics with the frame; a keen-edged bar; means for stretching and means for intermittently feeding a skin toward the edge of the bar, a brush-frame adjustably secured to the movable frame and means for securing it in adjusted position, a brush secured to the brush-frame, guide-slots in the stationary main frame and pins set in the movable frame and engaging in the guide-slots, and means for rotating the driving-shaft.

2. An unhairing-machine, comprising a stationary main frame, a rotary brush, a stationary and a movable shear-blade, a rock-shaft and a driving-shaft in the stationary main frame; a cam set on the driving-shaft, an arm secured to the rock-shaft and connected to the movable shear-blade, a second arm secured to the same rock-shaft and a pin set in the arm in position to engage with the cam set on the driving-shaft, means for pressing the arm against the cam; posts pivoted to the main frame, a frame pivoted to the posts; eccentrics set on the driving-shaft, and rods connecting the eccentrics with the frame; a keen-edged bar, a feed-roll and a stretch-roll, mounted in the frame, an endless apron stretched over the bar and over the feed and stretch rolls and means for propelling the endless apron over the edge of the bar; a brush-frame adjustably secured to the movable frame and means for securing it in adjusted position, a brush secured to the brush-frame, guide-slots in the stationary main frame and pins set in the movable frame and engaging in the guide-slots, and means for rotating the driving-shaft.

3. The combination with an unhairing-machine substantially as herein shown and described, of means for arresting the motion of the movable blade, comprising a movable blade an arm secured to the rock-shaft moving the blade, a pin set in the arm; a lever pivoted to the frame, a cam-shaped hook on one end of the lever and means for moving the lever to engage the pin set in the arm.

4. The combination with an unhairing-machine substantially as herein shown and described of means for intermittently feeding the fur-skin to be unhaired, comprising a frame, rolls set in the frame, one of the rolls being provided with prongs; an endless apron drawn over the rolls; means for stretching the apron; a cog-wheel and a frame set on the axle of the roll provided with prongs; a bar set to revolve on the axle of the feed-roll; a stud set in the frame; a pinion, meshing with the cog-wheel, a ratchet-wheel and a rack-rod set on the stud; a slotted block secured to the driving-shaft of the machine, a plate set in the block; a crank-pin set in the plate, and a link pivotally connecting the rack-rod with the crank-pin.

5. A combination with an unhairing-machine, substantially as herein shown and described, of means for protecting the fur-skin around the edges of holes, comprising a stationary blade, a shield, means for movably affixing the shield to the stationary shear-blade and means for shifting in and withdrawing the shield.

818,972. NECKTIE-FRAME. THOMAS J. LUMIS, New York, N. Y. Filed Aug. 12, 1905. Serial No. 273,855.



Claim.—1. A necktie-frame having a central keeper and a series of tie-holding wire loops on each side of the keeper.

2. A necktie-frame made of wire bent to form a central keeper and a series of tie-holding loops on each side of the keeper.

3. A necktie-frame having a central keeper and a series of tie-holding wire loops on each side of the keeper, in combination with a guard carried by the frame and providing space between it and the keeper for a button-head.

4. A necktie-frame having a central keeper and a series of tie-holding wire loops on each side of the keeper, in combination with a plate carried by the frame and adapted to hold a button-head by pressure between it and the keeper.

5. A necktie-frame having a central keeper and a series of tie-holding wire loops on each side of the keeper, in combination with a guard carried by the frame having a depression to receive the head of a button between the guard and keeper.

6. A necktie-frame having the side arms formed by a series of tie-holding wire loops *b*, and the central keeper of wire bent to form the button-opening 2 with narrow entrance-opening 1.

7. A necktie-frame having the side arms formed by wire loops *b*, and the central keeper of wire bent to form the button-opening 2 with narrow entrance-opening 1 in combination with the guard *c* having the depression 5.

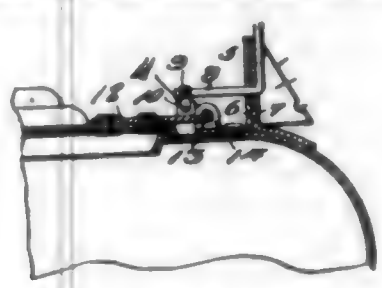
8. The keeper formed of wire with the button-opening 2 and narrow entrance-opening 1, in combination with the guard *c* formed of a spring-plate carried by arms 4 on the side arms of the keeper.

818,973. KETTLE. ROBERT MEDLEY and JAMES A. MEDLEY, Chippewa Falls, Wis. Filed July 18, 1905. Serial No. 270,258.

Claim.—1. In a device of the class described, a vessel having a lid, a hinge member fixed to the latter and pivotally connected with the vessel, an ear fixed upon the vessel, a handle pivoted to the ear to swing in a vertical plane, said handle being operatively connected with the hinge member for moving the lid to open position, said handle and ear being one provided with a cam portion designed to act upon the other for operating the handle to open the lid.

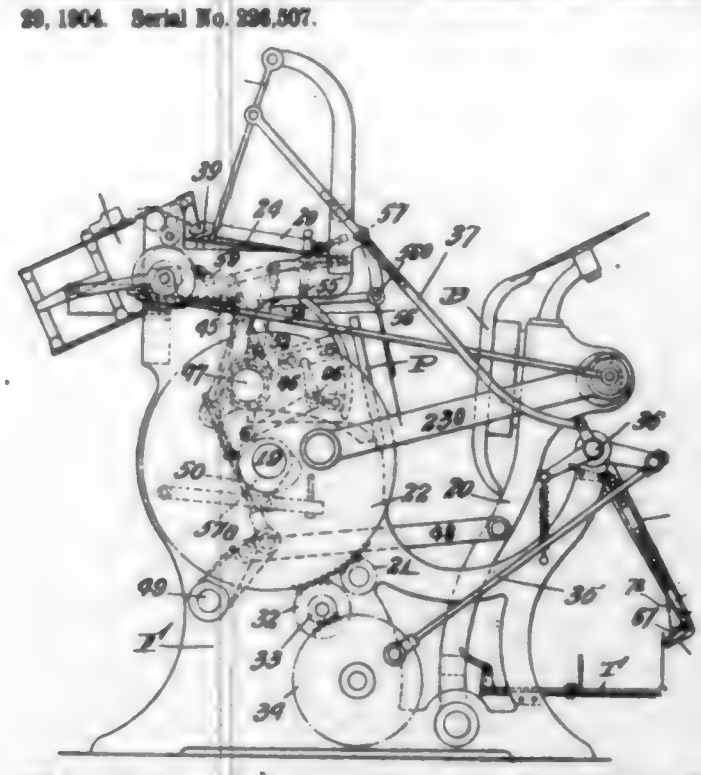
2. In a device of the class described, a vessel having a lid, a

hinge member fixed to the latter and pivotally connected with the vessel, an ear fixed to the latter and provided with a cam portion, and a handle pivoted in the ear to swing in a vertical plane and having an arm operatively connected with the hinge member, said cam portion being designed to act upon the handle for moving the lid to open position.



3. In a device of the class described and in combination with a vessel and its lid, of a hinge member fixed to the latter and pivotally connected with the vessel, an ear provided on the vessel and having a cam portion recessed to form a seat, a handle pivoted in said ear to swing in a vertical plane, an arm provided on the handle and a clip engaged with the arm and pivotally connected with the hinge member.

818,974. SHEET-MANIPULATING MECHANISM FOR PRINTING-PRESSES. Lewis E. Morrison, Philadelphia, Pa. Filed Sept. 29, 1904. Serial No. 226,507.



Claim.—1. In a printing-press, the combination of sheet-registering mechanism, means for presenting the registering sheets in position to be printed, and clamping-fingers for holding the sheets in place while being printed upon, and means for smoothing the sheets upon the platen.

2. In a printing-press, the combination of registering devices, means for presenting the registered sheets in position to be printed, means for smoothing the sheets upon the platen, clamping-fingers for holding the sheets while being printed upon, and a sheet-delivering device.

3. In a bed-and-platen printing-press, the combination of means for presenting the sheets in front of the platen in position to be printed, means for smoothing the sheets upon the platen, clamping-fingers for holding the sheets while being printed upon, and means for automatically operating said parts.

4. In a bed-and-platen printing-press, the combination of means for presenting the sheets to be printed upon the platen, means for smoothing the sheets upon the platen, clamping-fingers for holding the sheets in place while being printed upon, sheet-delivering mechanism, and means for automatically operating said parts.

5. In a bed-and-platen printing-press, the combination of sheet-registering devices, grippers for presenting the sheets in position to be printed upon the platen, means for smoothing the sheets upon the platen, clamping-fingers for holding the sheets in place while being printed, delivery-grippers for delivering the printed sheets printed side up, and means for automatically actuating said parts.

6. An automatic sheet-registering mechanism for printing-presses comprising a removable and adjustable registering-table, means engaging the rear edges of successive sheets to move the sheets forward over the registering-table, registering-stops for the front edge of the sheets, and means for automatically moving the stops out of the way to permit the sheets to be carried forward for printing.

7. An automatic registering mechanism for printing-presses comprising a removable and adjustable registering-table, guides for preventing the sheet from lifting or moving sidewise on the registering-table, means engaging the rear edges of the sheets for moving the sheets on the registering-table, stops for engaging the front edges of the sheets, and means for automatically moving said stops out of the way to permit the sheets to be carried forward for printing.

8. In a printing-press, the combination of a registering-table, means for presenting sheets thereon, and grippers for taking successive sheets from the registering-table, the registering-table being adjustably supported at its rear upon adjusting-screws, and being removable so that it may be taken out of the way to permit access to the press.

9. In a printing-press, the combination of a registering-table, means for removably supporting the registering-table near its front edge, adjustable supporting-screws for the rear edge of the registering-table, whereby the registering-table may be moved out of the way to allow access to the press, means for registering sheets upon the registering-table, and grippers for taking sheets from the registering-table.

10. In a bed-and-platen printing-press, the combination of the platen, the type-bed coöperating therewith, a registering-table supported by brackets at one end and adjusting means at the other and being bodily removable, said platen being movable in the framework of the press so that it may be moved from normal position to permit access thereto.

11. In a bed-and-platen printing-press, the combination of the platen, the type-bed coöperating therewith, a registering-table adjustable and bodily removable, registering mechanism mounted upon the table and removable with it, said platen being movable in the framework of the press so that it may be moved from normal position to permit access thereto.

12. In a bed-and-platen printing-press, the combination of a registering-table, a platen, and the type-bed coöperating therewith, the registering-table being bodily removable and the platen being movably mounted in the framework of the press, so that they can be moved from normal position when access is desired to the face of the platen.

13. In a bed-and-platen printing-press, the combination of a platen pivotally mounted in the framework of the press, a type-bed coöperating therewith, a registering-table mounted upon the framework above the platen bodily removable, said parts being arranged so that the registering-table can be removed and the platen turned up when access is desired to the face of the platen.

14. In a bed-and-platen printing-press, the combination of the platen and an automatic feeding mechanism with a smoothing mechanism to smooth the sheets upon the platen and a gripping mechanism to hold the sheets to the platen while being printed.

15. In a bed-and-platen printing-press, the combination of the platen and an automatic feeding mechanism with a smoothing mechanism to smooth the sheets upon the platen and a gripping mechanism to hold the sheets to the platen and means for operating them.

16. In a bed-and-platen printing-press, the combination of a registering-table, grippers carrying sheets from the registering-table, into position to be printed upon the platen, presser-fingers for holding the sheets in place while being printed, and means for operating the presser-fingers so that some of said presser-fingers are kept parallel with the face of the platen while being moved toward or away therefrom, and one or the other presser-fingers has a pivoted or swinging motion.

17. In a bed-and-platen printing-press, the combination of a pivoted platen, a registering-table, grippers carrying sheets from the registering-table into position to be printed on the platen, a smoothing mechanism for smoothing the sheets upon the platen, a curved track or way, and means for operating the same to open the grippers.

18. In a bed-and-platen printing-press, the combination of a pivoted platen, a registering-table, grippers carrying sheets from the registering-table into position to be printed upon the platen, a curved track or way mounted at the side of the platen and carried thereby, and means for moving the curved track to open the grippers.

19. In a bed-and-platen printing-press, the combination of means for automatically presenting the sheets in position to be printed upon on the platen, means for smoothing the sheets on the platen, and a sheet-delivery mechanism comprising swinging grippers for

taking the sheets from in front of the lower edge of the platen and delivering the sheets printed side up.

20. In a printing-press, the combination of the platen, a swinging frame carrying the type-bed coöperating with the platen, sheet-registering stops, grippers for carrying successive sheets into position to be printed upon the platen, and connections from the swinging frame for moving the registering-stops out of the way and for actuating the grippers.

21. In a printing-press, the combination of sheet-registering mechanism, means for presenting the successive sheets in position to be printed, a swinging delivery for the printed sheets, and connections from the swinging delivery for operating the sheet-registering mechanism.

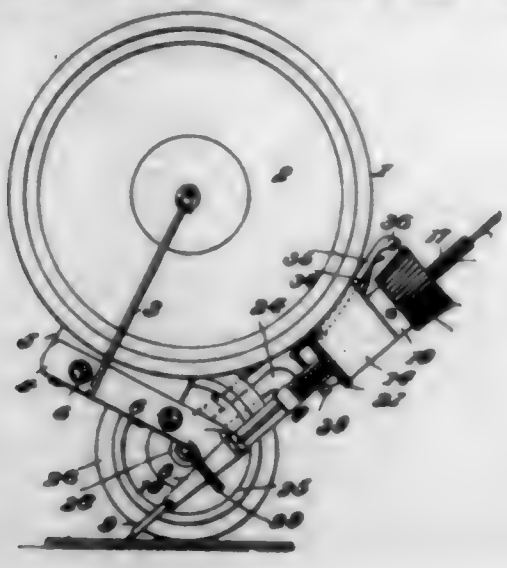
22. In a bed-and-platen printing-press, the combination of the platen, a swinging frame carrying a type-bed coöperating with the platen, a main crank-shaft connected to operate the swinging frame, registering-blocks for the sheets, grippers for presenting the sheets in position to be printed upon the platen, connections from the swinging frame, for moving the registering-blocks out of the way and for turning the grippers and connections from the main crank-shaft for opening the grippers.

23. In a bed-and-platen printing-press, the combination of a platen, a swinging frame carrying a type-bed coöperating therewith, a main crank-shaft connected to operate the swinging frame, registering-blocks for the sheets, grippers for presenting successive sheets in position to be printed upon the platen, clamping-fingers for holding the sheets in place while being printed upon, connections from the swinging frame for moving the registering-blocks out of the way and for operating the grippers, and connections from the main crank-shaft for opening the grippers and for operating the clamping-fingers.

24. In a bed-and-platen printing-press, the combination of a platen, a swinging frame carrying a type-bed coöperating with the platen, a main crank-shaft connected to operate the swinging frame, a registering-table, registering-stops, means for moving the sheets over the registering-table to engage the registering-stops, grippers for carrying the sheets from the registering-table into position to be printed upon the platen, a swinging delivery, connections from the swinging frame for moving the registering-stops out of the way and for operating the means to present the sheets in position to be printed on the platen, connections operated from the main crank-shaft for opening the grippers and connections from the rock-shaft of the swinging delivery for operating the means for carrying the sheets to registered position upon the registering-table.

25. In a bed-and-platen printing-press, the combination of a platen, a swinging frame carrying a type-bed coöperating therewith, a crank-shaft connected to operate the swinging frame, a registering-table, registering-stops, means for moving sheets upon the registering-table to engage the registering-stops, grippers for moving the sheets into position to be printed upon the platen, clamping-fingers for holding sheets in place while being printed, a swinging delivery, connections from the swinging frame for moving the registering-stops out of the way and for operating the grippers, connections from the crank-shaft for opening the grippers and for operating the clamping-fingers, and connections from the rock-shaft of the swinging delivery for operating the means for moving the sheets upon the delivery-table.

818,975. **TALKING-MACHINE.** MILARD A. POSSONS, Cleveland, Ohio. Filed Nov. 28, 1904. Renewed Sept. 7, 1905. Serial No. 277,264.



Claim.—1. In a talking-machine, a diaphragm, a rotatable needle phonetically connected with the diaphragm, a rotatable needle-carrier, a gear operatively connected therewith, a shaft carrying at one end a gear operatively connected with said needle-carrier gear, a wheel rotated by contact with the record, and a worm-gear connection between the wheel and the opposite end of said shaft.

2. In a talking-machine, a diaphragm, a rotatable needle phonetically connected therewith, means for rotating the needle, and automatically-actuated means for moving the needle longitudinally as the point thereof wears away.

3. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected therewith, and a means actuated by the movement of the record for rotating the needle and moving it longitudinally as the point of the needle wears away.

4. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, means for rotating and longitudinally moving the needle, the latter means controlled by the wearing away of the point of the needle.

5. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected therewith, means actuated by the movement of the record for rotating and longitudinally moving the said needle, the latter means controlled by the wearing away of the point of the needle.

6. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle, means for rotating the needle, means for moving the needle longitudinally, the latter means actuated by the downward movement of the diaphragm caused by the wearing away of the point of the needle.

7. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected therewith, means for rotating the needle, means for moving the needle longitudinally, the former means adapted to be actuated independently of and simultaneously with the latter means, and means controlled by the wearing away of the needle for throwing into operation the longitudinally-movable means.

8. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected therewith, means for rotating the needle, means for feeding the needle longitudinally, the rotatable means adapted to be operated independently of and simultaneously with the longitudinally-feeding means, and movable means in contact with the record adapted to throw the longitudinally-movable means into operation when the point of the needle wears away.

9. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable screw-threaded longitudinally-movable needle-carrier, a screw-threaded member engaging the screw-threaded needle-carrier and adapted to rotate therewith, and means for holding the screw-threaded member against rotation to cause the longitudinal movement of the needle.

10. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable and longitudinally-movable screw-threaded needle-carrier, a screw-threaded member in engagement therewith and adapted to rotate with it, and a lock adapted to hold the screw-threaded member against rotation to effect the longitudinal movement of the needle, the said lock controlled by the wearing away of the point of the needle.

11. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable and longitudinally-movable screw-threaded needle-carrier, a screw-threaded member in engagement with the screw-threaded portion of the needle-carrier and adapted to rotate therewith, a lock for the screw-threaded member, and a member in engagement with the record adapted to cause the lock to engage the screw-threaded member when the point of the needle wears away.

12. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable and longitudinally-movable screw-threaded needle-carrier, means actuated by the record for rotating the needle-carrier, a screw-threaded member in engagement with the needle-carrier and adapted to rotate therewith, a lock for the screw-threaded member adapted to be actuated by the downward movement of the diaphragm caused by the wearing away of the point of the needle and thereby carried into engagement with the screw-threaded member and holding it against rotation for causing the longitudinal movement of the needle-carrier.

13. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle, a rotatable and longitudinally-movable

screw-threaded needle-carrier, means in engagement with the record for rotating the needle-carrier, said means being movably connected with the diaphragm, a screw-threaded member in engagement with the needle-carrier and adapted to rotate therewith, a lock for the screw-threaded member to cause longitudinal movement of the needle-carrier as it is rotated, the lock adapted to be engaged by the needle-rotating means which is in engagement with the record when the diaphragm is lowered by the wearing away of the point of the needle.

14. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable and longitudinally-movable screw-threaded needle-carrier, a screw-threaded member in engagement with the needle-carrier and adapted to rotate therewith, a swinging member connected with the diaphragm, the swinging member carrying an operating-wheel in engagement with the record, the operating-wheel connected with the needle-carrier to rotate it, and a lock actuated by engagement with the swinging member for locking the screw-threaded member when the diaphragm is lowered by the wearing away of the point of the needle.

15. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected therewith, a rotatable sleeve, means actuated by the record and operatively connected with the sleeve to cause it to rotate, a rotatable and longitudinally-movable needle-carrier rotated by the said sleeve, the needle-carrier having a movement longitudinally through the sleeve, and means controlled by the wearing away of the point of the needle adapted to cause the needle-carrier to move longitudinally through the sleeve as the sleeve is being rotated.

16. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle phonetically connected with the diaphragm, a rotatable sleeve, means actuated by the record and operatively connected with the sleeve to cause it to rotate, a rotatable and longitudinally-movable needle-carrier passing through the sleeve and adapted to move longitudinally independently of the sleeve but locked against independent rotation, whereby the needle-carrier is rotated by the sleeve, a screw-threaded member in engagement with the screw-threaded portion of the needle-carrier and adapted to normally rotate therewith, a lock for the screw-threaded member, and means adapted to throw the lock in engagement with the screw-threaded member to hold it against rotation, said lock controlled in its engagement with the screw-threaded member by the wearing away of the point of the needle.

17. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle, a rotatable and longitudinally-movable screw-threaded needle-carrier, means actuated by the movement of the record and operatively connected with the needle-carrier to rotate it, the screw-threaded member adapted to normally rotate with the needle-carrier, a lock normally out of engagement with the screw-threaded member, and means controlled by the wearing away of the needle for causing the lock to be thrown in engagement with the screw-threaded member and holding it against rotation and thereby causing the longitudinal movement of the needle.

18. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle and adjustable jaws adapted to clamp the needle against lateral movement but permitting it to move longitudinally therethrough.

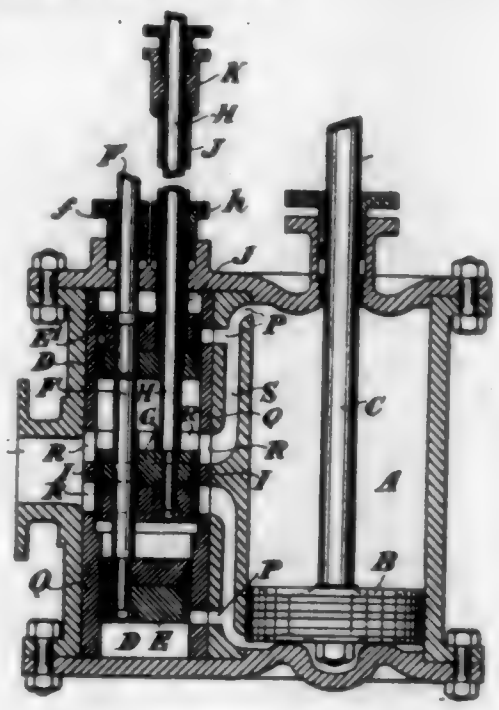
19. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle, clamping-jaws for the needle phonetically connected with the diaphragm, and means for adjusting the clamping-jaws to take up any wear caused by the rotation of the needle.

20. In a talking-machine, a diaphragm, a rotatable and longitudinally-movable needle, clamping-jaws phonetically connected with the diaphragm, said clamping-jaws consisting of arms longitudinally movable in a converging direction to clamp the needle, and means for moving the said jaws longitudinally.

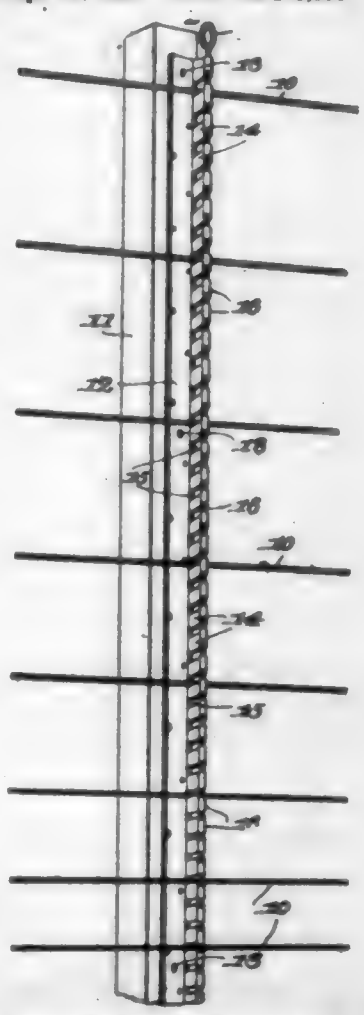
21. In a talking-machine, a diaphragm, a longitudinally-adjustable needle phonetically connected therewith, means automatically actuated by an operative part of the machine and adapted to adjust the needle longitudinally in proportion to its wear at the point.

818,976. PISTON-VALVE. ENOCH RICHARDSON, Hawthorn, Victoria, Australia. Filed Feb. 27, 1905. Serial No. 247,610.

Claim.—In combination with a cylinder and its piston, a steam-chest of varying interior diameters having inlet and exhaust ports to the cylinder, piston-valves E E′ located at each end of the steam-chest, and controlling the inlet-ports, a piston-valve G located between the valves E E′ and controlling the exhaust-port, the valve E being of smaller diameter than pistons E and G, means for moving the valves E E′ in unison said means comprising a rod passing through the three valves, valve E and E′ being rigidly secured to said rod and valve G having movement thereon, a sleeve J connected to the valve E′ and extending through the steam-chest, a packing-box at the outer end of said sleeve, a rod connected to the exhaust-valve G and extending through the valve E′ and the sleeve J and its packing-box and means for reciprocating said rod so as to move the valve G independently of the valves E E′.



818,977. WIRE-FASTENER. CHARLES W. ROUSH, Grand Island, Nebr. Filed Sept. 19, 1905. Serial No. 279,186.



Claim.—1. A wire-fastening attachment for posts and the like comprising a plate and tongues integral with one edge of and extending at an angle to the plate, the ends of said tongues being curled and the curls disposed at angles to and projecting above the tongues.

2. A wire-fastening attachment for posts and the like comprising a plate, obliquely-disposed spaced tongues integral with, and extending at an angle from one edge of the plate, and obliquely-disposed curls at the ends of the tongues and projecting thereabove to form retainers.

3. A wire-fastening attachment for posts and the like compris-

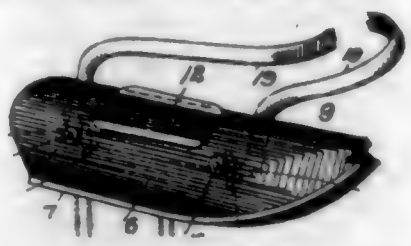
ing a plate, obliquely-disposed tongues extending therefrom and spaced apart, and curls disposed obliquely at the ends of the tongues and spaced from the plate, the openings in said curls alining.

4. A wire-fastening attachment for posts and the like comprising a plate, obliquely-disposed tongues extending therefrom and spaced apart, and curls disposed obliquely at the ends of the tongues and spaced from the plate, the openings in said curls alining, and a keeper removably mounted within the curls.

5. A wire-fastening attachment for posts and the like comprising a plate, obliquely-disposed tongues extending therefrom and spaced apart, and curls disposed obliquely at the ends of the tongues and spaced from the plate, the openings in said curls alining, and said curls extending above the tongues to constitute retainers.

6. A wire-fastening attachment for posts and the like comprising a plate, obliquely-disposed tongues extending therefrom and spaced apart, and curls disposed obliquely at the ends of the tongues and spaced from the plate, openings in said curls alining, and said curls extending above the tongues to constitute retainers and a keeper removably mounted within the curls.

818,978. **NAIL-RECEPTACLE.** MICHAEL A. SALMON, Denver, Colo. Filed Jan. 3, 1905. Serial No. 239,588.



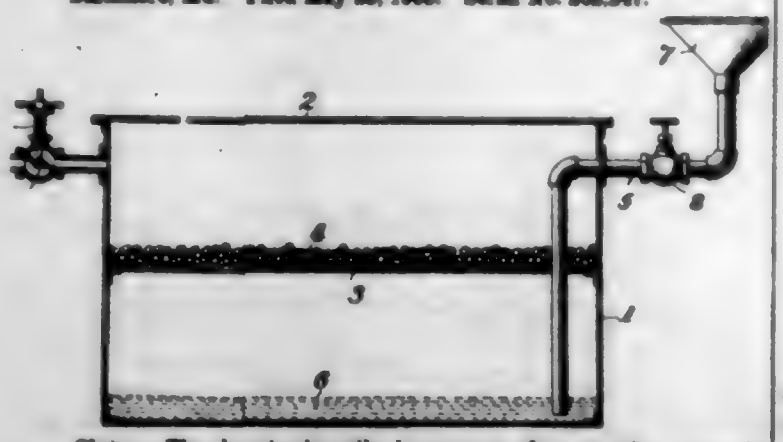
Claim.—1. A portable nail-receptacle having its body of pear shape in cross-section and having a prow-shaped extremity, said receptacle having a slot extending through its lowermost portion and upwardly through its prow-shaped end and a feed-opening in its upper surface.

2. A portable nail-receptacle made of a single piece of resilient material bent into pear shape in cross-section and having a prow-shaped extremity the edges of the material at the bottom being separated from each other so as to form a slot, said slot curving upwardly along the prow-shaped extremity and a feed-opening in the upper part of the receptacle.

3. A portable nail-receptacle made of a single piece of resilient material bent into pear shape in cross-section and having a prow-shaped extremity, the two edges of the piece of material being separated from each other at the bottom of the receptacle so as to form a slot, said slot extending upwardly along the prow-shaped extremity and means to adjustably retain the said edges in proximity to each other to control the width of the slot.

4. A nail-receptacle having a prow-shaped extremity, a feed-opening in its upper surface, downwardly-converging sides, the lower edges of which extend in close proximity to each other and curve upwardly through said extremity, screw-bolts secured to one of the sides, extending transversely through said receptacle and the opposite side, their protruding ends being provided with nuts.

818,979. **PROCESS OF PRESERVING ORGANIC MATTER.** WALTER T. SCHEELE, Baltimore, Md., assignor to William J. Hooper, Baltimore, Md. Filed May 25, 1905. Serial No. 262,247.



Claim.—The herein-described process of preserving organic matter, consisting in desiccating the same by exposing it to the vapors or gases which are liberated from a body of liquid air placed in close proximity thereto, in a closed chamber under the exclusion of the outer air.

818,980. **SULFUR DYE AND PROCESS OF MAKING SAME.** ALBRECHT SCHMIDT, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed July 31, 1905. Serial No. 271,937.

Claim.—1. The herein-described process for the manufacture of red, dark-red to violet sulfurized dyestuffs, which consists in heating hydroxylated azins and sulfurized dyestuffs derived therefrom with alkali polysulfid in presence of substances containing copper.

2. The product obtained by heating hydroxylated azins and sulfurized dyestuffs derived therefrom with alkali polysulfid in presence of substances containing copper, being soluble in sulfids of alkali metals when heated, dyeing unmordanted cotton red, dark red to violet in a bath of sulfids of alkali metals, the dyeings thus obtained turning muddy and afterward mostly blue when treated on the fiber with copper salts.

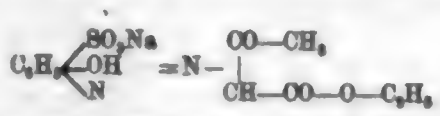
818,981. **YELLOW DYE AND PROCESS OF MAKING SAME.** FRANZ SCHOLL, Höchst-on-the-Main, Germany, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Feb. 4, 1905. Serial No. 244,173. (Specimens.)

Claim.—1. The process herein described for the manufacture of yellow mordant dyestuffs, which consists in reacting on aliphatic beta-diketones with diazo compounds of the ortho-amido salicylic acid.

2. The process herein described for the manufacture of a yellow mordant dyestuff, which consists in causing the diazo compound of ortho-amido-sulfo salicylic acid to react on ethyl aceto acetate.

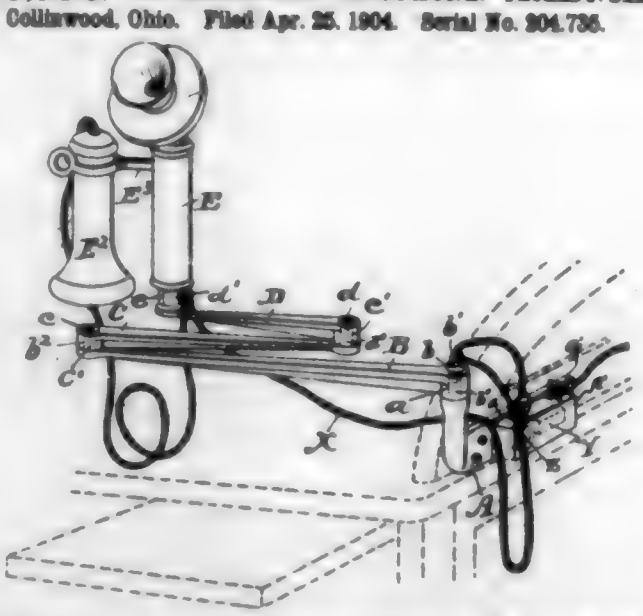
3. As new products the mordant dyestuffs obtained by combining diazotized ortho-amido salicylic acid or its substitution products with aliphatic beta-diketones, being sulfur-yellow to brick-red crystalline powders, soluble in water with yellow to orange-red color, soluble in concentrated sulfuric acid, insoluble in alcohol and petroleum ether; the aqueous solution becoming lighter on addition of mineral acid, but darker on addition of alkali.

4. As a new product, the yellow mordant dyestuff having the formula



obtained by the action of the diazo compound of ortho-amido-para-sulfo salicylic acid on ethyl aceto acetate, being a yellow crystalline powder, readily soluble in water with a yellow color, which on addition of mineral acids becomes lighter, and darker on addition of alkali, soluble in concentrated sulfuric acid with a greenish-yellow color, insoluble in alcohol and petroleum ether.

818,982. **EXTENSION-ARM TELEPHONE.** THOMAS J. SHELLEY, Collinwood, Ohio. Filed Apr. 25, 1904. Serial No. 204,736.



Claim.—1. In an extension-arm telephone, the combination of a base, an extensible arm pivoted thereto and carrying at its outermost end an upwardly-projecting pivot-pin, and a tubular telephone-pedestal having at its lower end a member which substantially closes the tube and is provided with a socket engaging such pivot-pin.

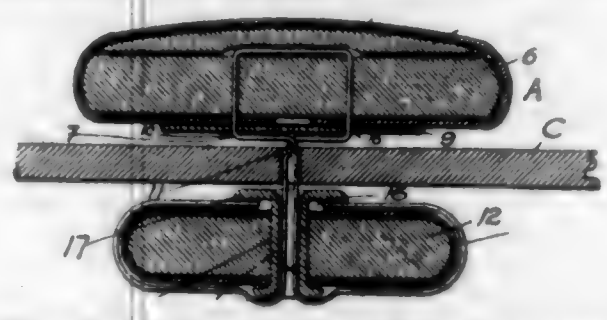
2. In an extension-arm telephone, in combination with a base having a vertical pivot, an extensible arm having a socket pivoted on said pivot, a pivot carried by the outer end of said arm, a telephone-

pedestal provided with a socket engaging upon the pivot of said arm, and screws for holding the sockets upon the pivots.

3. In an extension-arm telephone, in combination with a base, an arm pivoted thereto, a hollow upright telephone-pedestal swiveled upon said arm, the swiveling means being offset from the axis of the pedestal and there being an opening through the base of the pedestal adjacent thereto.

4. In an extension-arm telephone, in combination with a base, an extensible arm pivoted thereto, a pivot carried by the outer end of said arm, and a hollow upright telephone-pedestal provided with a socket engaging upon the pivot of said arm, said socket being offset from the axis of the pedestal and there being an opening through the base of the pedestal adjacent to said socket.

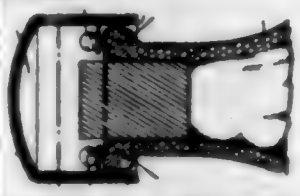
818,983. **BUTTON.** EDITH A. SMITH, Salt Lake City, Utah. Filed Feb. 28, 1905. Serial No. 247,727.



Claim.—1. A button comprising a pliable disk 6, a staple having its ends extending downwardly through the disk, a second pliable disk 5 superimposed on the disk 6 and covering the head of the staple, a covering 8 inclosing said disks and having its edges meeting at the bottom of the disk 6 and a metal bottom plate 9 having holes therein through which the legs of the staple are adapted to pass, said legs being entwined below said plate so as to press said plate and covering against the disk 6 to hold the parts in position.

2. A button comprising a pliable top member, a staple secured thereto, a pliable back member and a flanged eyelet in said member having recesses in the upper flanges, the legs of the staple passing through the eyelet and bent around the back member and the ends thereof being held in the said recesses.

818,984. **BOTTLE-LOCK.** JOSEPH SOLATNOW, Paterson, N. J., assignor of one-half to Frank Schmitter, Paterson, N. J. Filed Jan. 16, 1906. Serial No. 296,243.



Claim.—1. The combination, with a bottle provided adjacent to its mouth with frangible studs, of a locking member engaging said studs, and a cover interlocked with said member and retaining the same in engagement with said studs.

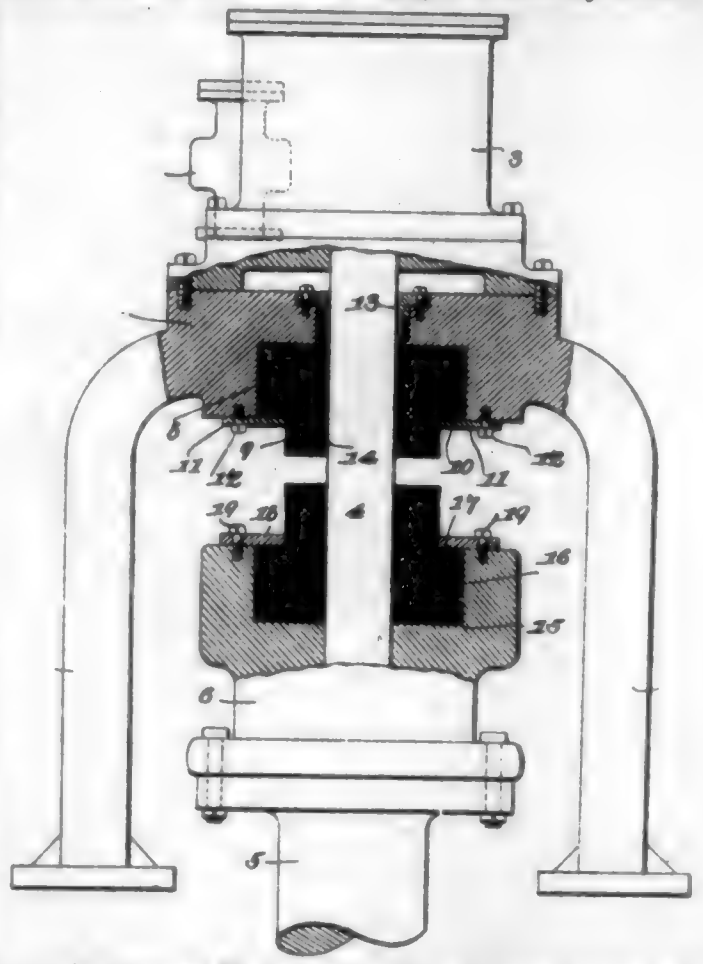
2. The combination, with a bottle provided with frangible studs adjacent to the mouth thereof, of a locking member engaging said studs and provided with spring-lips, and a cover inclosing said member and having a recessed portion sprung into engagement with said lips.

3. The combination, with a bottle having upon the rim thereof upwardly-extending ball-shaped studs, of a member of inverted-U shape having legs provided with inwardly-extending spaced lugs straddling said studs at their reduced lower portions, and means to permanently maintain said lugs in such engagement with said studs while the latter are unbroken.

4. The combination, with a bottle having upon the rim thereof diametrically located upwardly-extending frangible ball-shaped studs, of a spring straddling the mouth of said bottle and having inwardly-extending lugs straddling said studs at their lower portions, the lower ends of said spring being formed into spring-lips, and a cover maintaining said lugs in engagement with said studs and having a recessed lower edge engaging said lips of the spring.

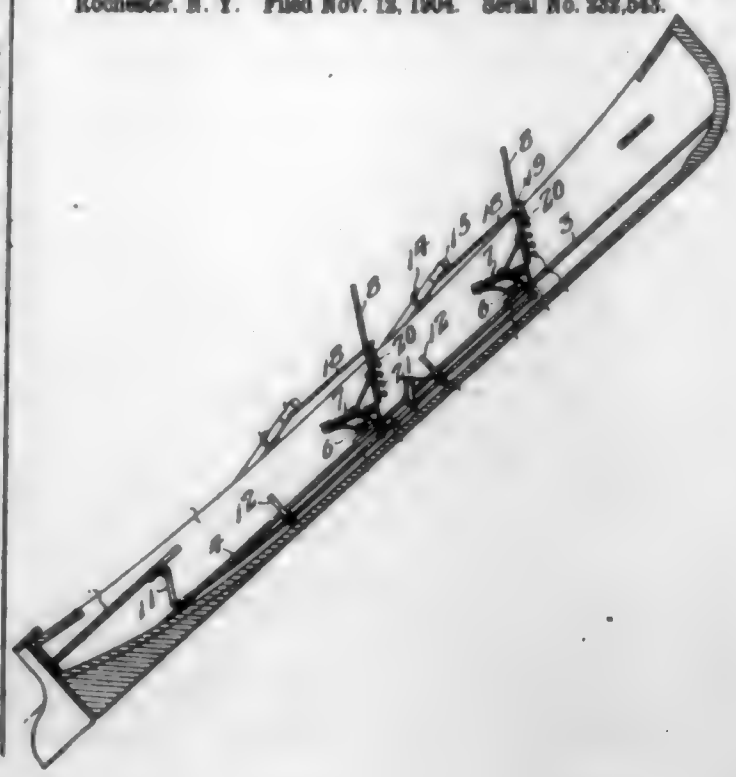
818,985. **STAMP-MILL.** JOSEPH F. SYMONS and WILLIAM H. PAUL, Lake Linden, Mich. Filed Nov. 18, 1905. Serial No. 288,083.

Claim.—1. In a stamp-mill, the combination of a frame having an elevated head pierced by a vertical opening, a stuffing-box within the upper end of the opening, a cylinder supported upon the top of the head, a piston-rod working through the opening in the head and through the stuffing-box, a stamp-shaft carried by the piston-rod, an elastic cushion let into the under side of the head and surrounding the piston-rod, and another elastic cushion let into the top of the shaft and projecting above the same to engage the stationary cushion.



2. In a stamp-mill, the combination of a frame having an elevated head, a cylinder supported upon the head, a piston-rod working through the head, a stamp-shaft carried by the piston, the under side of the head having a recess concentric with the piston-rod, an elastic cushioning element let into the recess and pierced by the piston-rod, the lower side of the cushion having a centrally-reduced portion projecting below the under side of the head, a retaining-ring secured to the under side of the head and embracing the reduced portion of the cushion, the upper end of the stamp-shaft having a recess concentric with the piston-rod, an elastic cushion let into the recess and pierced by the piston-rod, the upper side of the cushion having a reduced concentric portion projecting above the stamp-shaft, and a retaining-ring secured to the stamp-shaft and embracing the reduced portion of the cushion.

818,986. **POWER-GENERATING DEVICE.** DEAN C. TURBE, Rochester, N. Y. Filed Nov. 12, 1904. Serial No. 232,543.



Claim.—1. In a device of the class described, a pivoted seat, a plurality of relatively spaced engaging devices carried thereby, a pair of propelling members arranged respectively on opposite sides of the seat, flexible traction elements engaged with the propelling members, and a coupling member for connecting the ends of the traction elements, said coupling member being adapted for engagement with any one of the engaging members to connect the elements with the seat.

2. In a device of the class described, a pivoted seat, a plurality of vertically-spaced engaging hooks carried thereby, a pair of propelling members arranged respectively on opposite sides of the seat, flexible traction elements engaged with the propelling members, and a coupling-ring for connecting the ends of the traction elements, said ring being adapted for engagement with any one of the hooks to connect the elements with the seat.

818,987. AUTOMOBILE TORPEDO. THOMAS H. WHELPS, New York, N. Y. Filed Oct. 12, 1903. Serial No. 176,766.



Claim.—1. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel, comprising a pinion fast on the axis of said fly-wheel, a spur-gear meshing in said pinion, means for automatically moving said spur-gear longitudinally out of engagement with said pinion as its shaft revolves, and spring-controlled mechanism for rotating said spur-gear, substantially as described.

2. In an automobile torpedo, provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel comprising a pinion on the axis of said fly-wheel, a spur-gear meshing in said pinion, means for automatically moving said spur-gear longitudinally out of engagement with said pinion as its shaft revolves, and spring-controlled mechanism for rotating said spur-gear, with means automatically operated by the launching of the torpedo for setting in operation said spring-controlled mechanism, substantially as described.

3. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel, comprising a pinion on the fly-wheel axis, a shaft with screw-threads thereon, a spur-gear splined on said shaft and engaging said pinion, a nut held on said shaft and engaging said screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, and spring-controlled mechanism for rotating said shaft, substantially as described.

4. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel comprising a pinion on the axis of said fly-wheel, a shaft with screw-threads thereon, a spur-gear splined on said shaft and engaging said pinion, a nut held on said shaft and engaging said screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, and spring-controlled mechanism for rotating said shaft, with means automatically operated by the launching of the torpedo for setting in operation said spring-controlled mechanism, substantially as described.

5. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel, comprising a pinion on the fly-wheel axis, a shaft with screw-threads thereon, a spur-gear splined on said shaft and engaging said pinion, a nut held on said shaft and engaging said screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, spring-controlled mechanism for rotating said shaft, with means for holding the axis of the fly-wheel in a fixed direction relative to the axis of the torpedo, and means automatically operated by the rotation of said shaft for releasing said axis, substantially as described.

6. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel comprising a pinion on the axis of said fly-wheel, a shaft with screw-threads thereon, a spur-gear splined on said shaft and engaging said pinion, a nut held on said shaft and engaging said screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, spring-controlled mechanism for rotating said shaft, with means atuomatically operated by the launching of the torpedo for settingin operation said spring-controlled mechanism, with means for holding the axis of the fly-wheel in a fixed direction relative to the axis of the torpedo, and means automatically operated by the rotation of said shaft for releasing said axis, substantially as described.

7. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel, comprising a pinion on the fly-wheel axis, a shaft with screw-threads thereon, a spur-gear splined on said shaft and engaging said pinion, a nut held on said shaft and engaging said screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, spring-controlled mechanism for rotating said shaft, a lever connected to said nut for holding the axis of the fly-wheel in a fixed direction relative to the axis of the torpedo, and automatically moved by the rotation of said shaft thus releasing said axis when the wheel is spun up, substantially as described.

8. In an automobile torpedo provided with steering-rudders, the combination with a steering-engine operating said rudders, of an air-flask and connections for supplying fluid-pressure to said engine, a valve for controlling said fluid-pressure, a fly-wheel mounted in gimbal-rings for controlling said valve, and means for spinning up said fly-wheel comprising a pinion on the axis of said fly-wheel, a shaft with screw-threads thereon, a fly-wheel splined on said shaft and engaging said pinion, a nut held on said shaft and engaging the screw-threads and automatically moving said spur-gear longitudinally out of engagement with said pinion as said shaft revolves, spring-controlled mechanism for rotating said shaft, with means automatically operated by the launching of the torpedo for setting in operation said spring-controlled mechanism, and means automatically operated by the rotation of said shaft for releasing said axis, a lever connected to said nut for holding the axis of the fly-wheel in a fixed direction relative to the axis of the torpedo, and automatically moved by the rotation of said shaft thus releasing said axis when the wheel is spun up, substantially as described.

9. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a gyroscope for holding said valve in a substantially steady position irrespective of the lateral swervings of the torpedo, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

10. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a gyroscope for holding said valve in a substantially steady position irrespective of the lateral swervings of the torpedo, means for holding said gyroscope with its axis in a constant direction relative to the axis of the torpedo, and means for automatically spinning up said gyroscope and for releasing its axis, allowing it free motion when the torpedo is launched, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

11. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a fly-wheel journaled in gimbals having its axis horizontal and its outer gimbal-ring secured to said valve at one of its pivots, means for normally holding the axis of said fly-wheel in a fixed direction relative to the axis of the torpedo and for releasing same when desired, and means for automatically spinning up the fly-wheel when the torpedo is launched, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

12. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, and a rotary engine driven thereby for propelling the torpedo, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a gyroscope for holding said valve in a substantially steady position irrespective of the lateral swervings of the torpedo, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

13. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, and a rotary engine driven thereby for propelling the torpedo, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a gyroscope for holding said valve in a substantially steady position irrespective of the lateral swervings of the torpedo, means for holding said gyroscope with its axis in a constant direction relative to the axis of the torpedo, and means for automatically spinning up said gyroscope and for releasing its axis, allowing it free motion when the torpedo is launched, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

14. In an automobile torpedo, the combination with an air-flask containing air or other gas under pressure, and a rotary engine driven thereby for propelling the torpedo, of a steering-engine comprising two cylinders connected to said air-flask, a valve mounted between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a fly-wheel journaled in gimbals having its axis horizontal and its outer gimbal-ring secured to said valve at one of its pivots, means for normally holding the axis of said fly-wheel in a fixed direction relative to the axis of the torpedo and for releasing same when desired, and means for automatically spinning up the fly-wheel when the torpedo is launched, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

15. In an automobile torpedo, the combination with an air-flask containing air or gas under pressure, of a steering-engine comprising a casing containing two cylinders, each cylinder open at one end and also connected to said air-flask by passages in said casing, a valve mounted in said casing between said cylinders and adapted to supply fluid-pressure to one cylinder and to permit exhaust from the other cylinder, a gyroscope for holding said valve in a substantially steady position irrespective of the lateral swervings, pistons in said cylinders provided with piston-rods, steering-rudders pivoted to the torpedo, and a series of levers connecting said piston-rods with said rudders for turning said rudders by means of said steering-engine, substantially as described.

818,988. HAT-FASTENER. ROBERT WILLS, Philadelphia, Pa. Filed June 7, 1905. Serial No. 264,200.

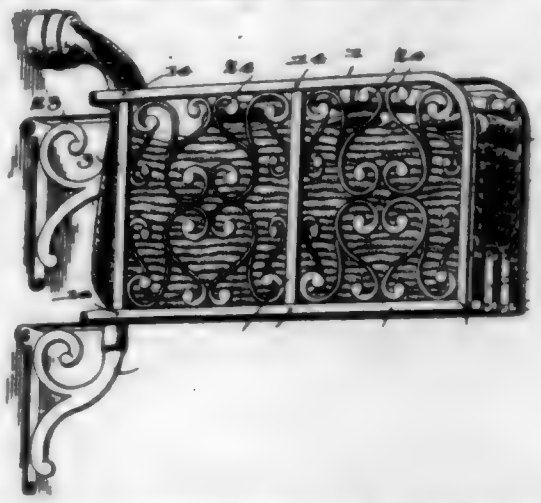


Claim.—1. In a device of the class described, a frame, a clamping device adjustably connected therewith and comprising a pair of coöperating clamping members provided with tubular seats, a pair of hat-engaging members disposed respectively in said seats and for relative longitudinal adjustment, and a hair-engaging member carried by the frame.

2. In a device of the class described, a frame including a transversely-extending part, a clamping device slidably engaged with said part and comprising a pair of coöperating clamping members provided with reversely-inclined seats, a pair of hat-engaging members disposed respectively in said seats for relative longitudinal adjustment, and a hair-engaging member carried by the frame.

3. In a device of the class described, a frame including a transversely-extending part, a clamping device slidably engaged with said part and comprising a pair of coöperating clamping members, a pair of hat-engaging members seated between the clamps and adapted for relative longitudinal adjustment, and a hair-engaging member carried by the frame.

818,989. SWINGING HOSE-RACK. REUBEN D. WERT, Philadelphia, Pa. Filed Nov. 16, 1904. Serial No. 233,043.

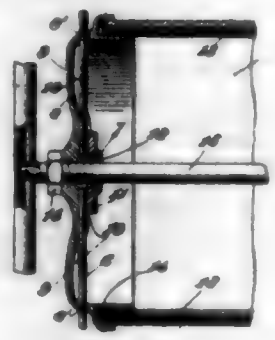


Claim.—1. A hose-rack comprising an upper and a lower frame member each bent to approximate U shape, and the terminals of the upper frame member being bent substantially at right angles to its length and connected with the lower frame member, and the longitudinal elements of the two frame members being disposed in parallelism, perforated ears secured at the crests of the two members, substantially U-shaped vertical braces connecting the upper and the lower frame members intermediate of their ends, transverse braces secured to the ends of the upper and lower frame members, and straight bottom braces secured to the bends of the vertical braces and having their terminals bent around and secured to the upper transverse brace.

2. A hose-rack constructed of angle-iron, and comprising an upper and a lower member each bent approximately into U form, and the terminals of the upper frame member being bent at approximate right angles to its length and connected with the lower frame member, and the longitudinal elements of the two frame members being disposed in parallelism, substantially U-shaped vertical braces se-

cured against the inner sides of the flanges of the two members, a pair of horizontal braces, one of which is constructed of angle-iron and serves to connect the terminals of the upper and lower frame members, and the other of which is constructed of flat iron, flat straight bottom braces secured to the bends of the vertical braces and having their terminals secured to the upper horizontal brace, and ears secured to the flanges of the upper and lower frame members at their crests.

818,990. HOSE-REEL. Reuben D. Wirt and Charles R. Parker, Philadelphia, Pa. Filed July 17, 1905. Serial No. 270,087.



Claim.—1. In a hose-reel, a drum comprising heads provided with marginal seats, a longitudinally-corrugated shell engaging the seats, and means for holding the heads assembled.

2. In a hose-reel, a drum comprising heads provided on their inner faces with grooves and at their margins with seats, a shell having its terminals engaging the seats, spokes engaging the grooves, and means for holding the heads detachably assembled.

3. In a hose-reel, a drum comprising heads having circumferential orifices, interior grooves and marginal seats, a shell having its terminals disposed within the seats, spokes passing through the orifices and engaging the grooves, and means for holding the heads detachably assembled.

4. In a hose-reel, a drum comprising heads having centrally-disposed hubs, circumferential orifices, interior grooves and marginal seats, a shell having its terminals in engagement with the seats, spokes projecting through the orifices and engaging the grooves and having their inner terminals held in engagement with the hubs, and an axle for holding the heads detachably assembled.

5. In a hose-reel, a drum comprising heads, each of which is provided with a centrally-disposed hub, with circumferential orifices, interior grooves and a marginal seat, a shell having its terminals resting in the seats, spokes projecting through the orifices and engaging the grooves and having their inner terminals bearing against the hub, a washer rigidly secured upon the hub and holding the spokes in position, and an axle for holding the heads detachably combined.

6. A reel comprising a drum consisting of a pair of heads each of which is provided with interior grooves, circumferential orifices and a marginal seat, a shell engaging the seats, spokes extending through the orifices and engaging the grooves, and rims through which the outer ends of the spokes project and are held against movement by engagement with the inner walls thereof.

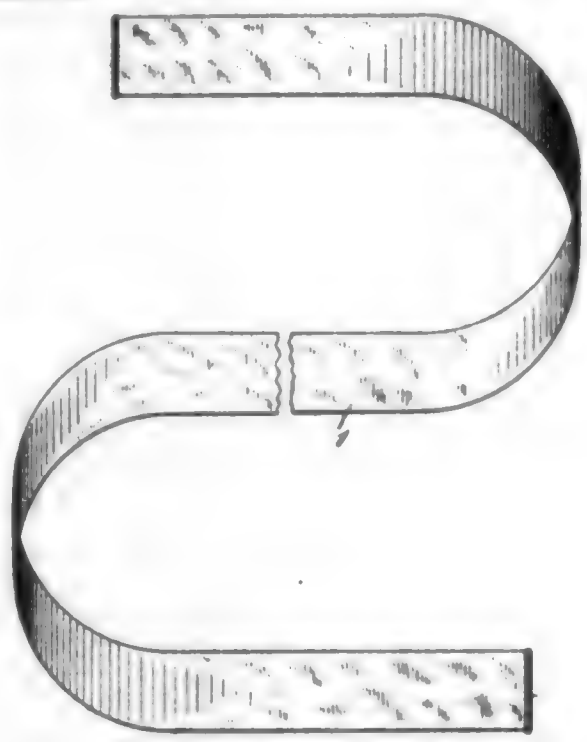
7. In a hose-reel, a drum comprising heads having centrally-disposed tapered hubs, circumferential orifices, interior grooves and marginal seats, a shell having its terminals in engagement with the seats, spokes projecting through the orifices and engaging the grooves and having their inner terminals in engagement with the hubs, washers secured to the hubs and bearing against the spokes, and an axle for holding the heads detachably assembled.

8. In a hose-reel, a drum comprising heads having centrally-disposed tapered hubs, circumferential orifices, interior grooves and marginal seats, a longitudinally-corrugated shell having its terminals in engagement with the seats, spokes projecting through the orifices and engaging the grooves and having their inner terminals in engagement with the hubs, washers secured to the hubs and bearing against the spokes, and an axle for holding the heads detachably assembled.

818,991. LACING. Sherman C. Abramson, Englewood, N. J., assignor to Hugo L. Hiller, New York, N. Y. Filed June 22, 1905. Serial No. 266,371.

Claim.—A flat lacing having at its end a transversely-disposed stiffening-piece permanently secured to the body of the lacing, the said stiffening-piece serving to hold the lacing laterally distended.

818,991.



818,992. ANTHRACENE DYE AND PROCESS OF MAKING SAME. Oscar Bally and Max H. Isler, Mannheim, Germany, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Original application filed Jan. 31, 1906, Serial No. 243,571. Divided and this application filed Oct. 10, 1905. Serial No. 282,217.

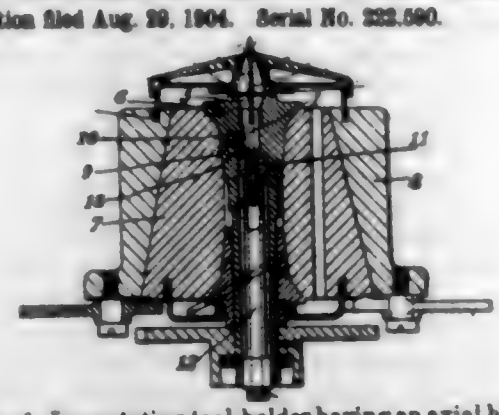
Claim.—1. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together an anthracene body which does not contain nitrogen, and glycerin.

2. The process for the production of anthracene coloring-matters by treating with caustic alkali a hereinbefore-defined benzanthrone compound obtainable by condensing together oxanthranol and glycerin.

3. As new articles of manufacture, the anthracene coloring-matters which can be obtained by treating with caustic alkali a benzanthrone obtainable from an anthracene body which does not contain nitrogen, which coloring-matters dissolve in concentrated sulfuric acid, yielding blue solutions, and which dissolved in alkaline hydrosulfite yielding blue to bluish-red vats which dye vegetable fiber substantively giving violet shades.

4. As a new article of manufacture the anthracene coloring-matter which can be obtained by treating with caustic alkali the benzanthrone obtainable from oxanthranol, which coloring-matter dissolves in concentrated sulfuric acid yielding a blue solution, and which dissolves in alkaline hydrosulfite yielding a bluish-red vat which dies vegetable fiber substantively yielding violet shades.

818,993. HOLDER OR QUILL FOR HOLDING THE ROTATING TOOLS OF ENGRAVING-MACHINES. Mark Barr, Cowley, near Uxbridge, England, assignor to The Linotype Company Limited, London, England. Original application filed May 31, 1901, Serial No. 62,614. New Patent No. 774,087, Nov. 1, 1904. Divided and this application filed Aug. 29, 1904. Serial No. 222,590.

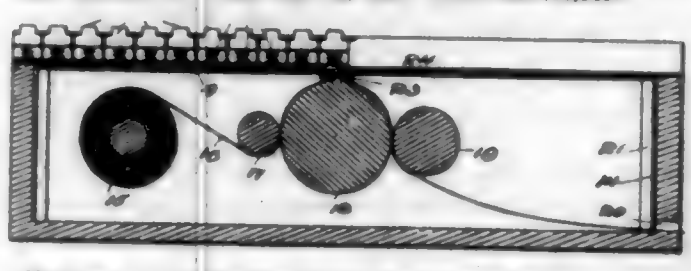


Claim.—1. In a rotating tool-holder having an axial hole extending completely through it and adapted to receive the tool, the combination of jaws integral with the holder and flexible in a direction radial to the axial hole; intermediate slots radiating from the axial hole and alternating with the jaws, and extending in one direction

toward, but not reaching, one end of the said holder; and a ring rigidly secured to the jaws and serving to both unite the jaws and close the ends of the slots at the opposite end of the holder, and adapted to maintain the proximate ends of the jaws concentric with the remaining portions of the holder.

2. In a tool-holder having an external cone and an axial hole the latter extending completely through the holder, the combination of said cone; flexible jaws; intermediate slots alternating with the jaws and extending in one direction toward, but not reaching, one end of the said holder; a ring rigidly secured to the jaws and serving to both unite the jaws and close the ends of the slots at the opposite end of the holder, and adapted to maintain the proximate ends of the jaws concentric with the remaining portions of the holder; and a cone adapted to coöperate with the first-named cone so as to symmetrically compress the jaws onto the tool.

818,994. **RECORDING APPARATUS.** AUGUSTIN M. BENEDIC, New Orleans, La. Filed Mar. 26, 1904. Serial No. 200,169.



Claim.—1. A mechanism of the class described, comprising a casing, impression-receiving means assembled with said casing, key-carrying means mounted upon said casing, comprising a hollow member formed from a single piece of material and having an opening extending its entire length, said member having an aperture formed therein upon the opposite side to the opening, and a movable type-key positioned within said member.

2. A device of the character described, comprising a casing, impression-receiving means positioned within said casing, key-carrying means movably mounted upon said casing, comprising a hollow member having a plurality of alined apertures formed upon its upper surface and an opening formed in and extending the entire length of the bottom thereof, and cushioned type-keys movably mounted within the apertured portion of said member and opening.

3. In a device of the character described, the combination with a slide-carrying casing, of a plurality of key-carrying slides assembled with said casing, each slide provided with a plurality of spaced cushioned type-keys, an auxiliary casing assembled with said slide-casing, a plurality of rolls journaled within said auxiliary casing in parallel position, and a sheet of material carried by one of said rolls and adapted to be passed around the remaining rolls.

4. In a device of the character described, the combination of a primary casing, an auxiliary casing assembled beneath said primary casing, said primary casing comprising a body portion having a plurality of parallel guideways and a transverse slot formed centrally therein, a slide secured normally within each of said guideways, said slide comprising a hollow casing having an upper and lower opening formed thereon, a type-carrying key mounted within said slide, means for normally exerting an upward pressure upon said key, a plurality of parallel rolls journaled within said secondary casing, impression-receiving means engaging said rolls, and inking means assembled with said primary casing and interposed between said rolls and the slotted portion formed in said primary casing.

5. In a device of the character described, the combination of a primary casing, an auxiliary casing secured in an assembled position therewith, supporting means formed upon the bottom of said primary casing and locking the same against longitudinal movement, inking means assembled with said supporting means, impression-receiving means assembled with said auxiliary casing, and type-carrying means assembled with said primary casing.

6. A device of the character described, comprising a frame, impression-receiving means carried thereby, a key-carrying slide assembled with said impression-receiving means, comprising a hollow casing rectangular in cross-section, said casing having openings formed therein in opposite positions, a type-key mounted within said casing and engaging said openings formed therein, said key comprising a body portion provided with a plurality of extensions projecting in opposite directions, and cushioning means engaging said key for normally retaining one of said extensions entirely within said casing.

7. A device of the character described, comprising primary and an auxiliary casing, a plurality of guideways formed upon said primary casing, said primary casing having a central transverse aperture-a plurality of cushioned type-carrying means mounted within each of said guideways, inking means assembled with said primary casing below said apertured portion thereof, and impression-receiving means assembled with said secondary casing and beneath said inking means.

8. A device of the character described, comprising a primary and an auxiliary casing, said primary casing comprising a plurality of parallel guideways, said primary casing having an aperture extending transversely thereof, a plurality of cushioned type-carrying means spaced apart and removably mounted within each of said guideways, inking means carried by said primary casing, comparatively rigid means assembled with said auxiliary casing, and impression-receiving means engaging said comparatively rigid means.

9. A device of the character described, comprising a primary and auxiliary casing, said auxiliary casing having an elongated aperture formed in one end thereof, frictional rolls journaled within said auxiliary casing, impression-receiving means carried by said rolls, said primary casing provided with removable type-carrying means, means for normally exerting upward pressure on said type-carrying means, assembling means for said primary and auxiliary casings, and inking means carried by said assembling means.

10. A device of the character described, comprising a primary and auxiliary casing, a paper-roll journaled within said auxiliary casing near one end thereof, an impression-roll journaled within said auxiliary casing, pressure-rolls journaled within said casings upon opposite sides of said impression-roll, said primary casing comprising a plurality of guideways, said primary casing having a transverse slot formed therein, removable slides mounted within said guideways comprising a hollow casing provided with openings formed in opposite walls thereof, a plurality of type-carrying keys mounted within said slides, a spring-carrying board removably mounted within said slides, a plurality of springs mounted upon said board, each spring adapted to engage a separate key, and inking means interposed between said apertured portion of the primary casing and said impression-receiving means.

11. A device of the character described, comprising a casing, a cover having an elongated aperture mounted upon said casing, an upper key-slide-carrying member mounted upon said auxiliary casing, a key-slide provided with removable cushioned keys assembled with said member, said member having an elongated aperture, and impression-receiving means mounted within said casing.

12. A recording mechanism, comprising a casing, revoluble means mounted within said casing, a removable cover having an aperture mounted upon said casing, removable key-slides mounted upon said cover, each of said key-slides comprising a hollow member, removable type-carrying keys mounted within said members, a supporting member mounted within each of said hollow members, a spring carried by each of said supporting members, said spring adapted to engage one of the keys positioned within said member, and inking means assembled with said casing and keys.

13. A device of the character described, comprising an impression-receiving mechanism, inking means assembled therewith, a key-slide mounted above said impression-receiving mechanism and coöperating therewith, comprising a hollow casing, a plurality of keys removably mounted within said casing, and removable means provided with cushioning means mounted within said casing normally in engagement with said keys.

818,995. **GAME APPARATUS.** AUGUSTIN M. BENEDIC, New Orleans, La. Filed Sept. 18, 1905. Serial No. 279,034.

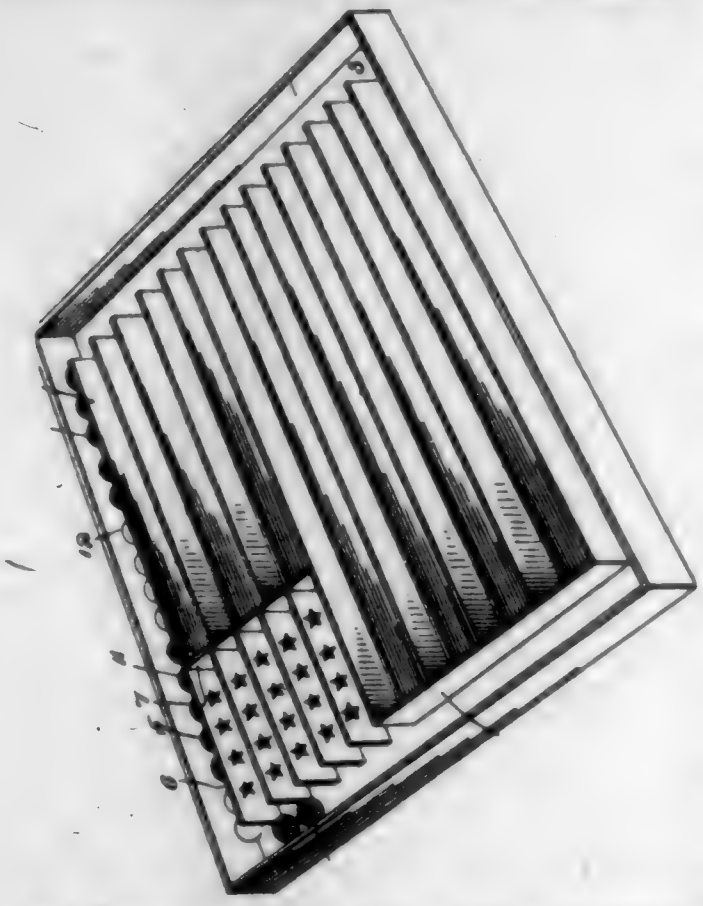
Claim.—1. A game apparatus comprising a substantially rectangular casing having a plurality of slats arranged to represent the stripes of the United States flag, said slats being subdivided to form the star portion of said flag, and a plurality of balls arranged to be placed in the compartments formed by said slats.

2. A game apparatus comprising a casing having a plurality of slats isolated from the walls of said casing and arranged to represent the United States flag, one portion of said slats being closed, and one corner of said slats being subdivided to form the stars of the flag, and a plurality of balls colored in the colors of the flag and arranged to enter into the respective stalls.

3. A game apparatus comprising a casing having a plurality of slats designed to represent the United States flag, a portion of said slats being subdivided to represent the stars of the said flag, and a plurality of balls having the colors of the United States flag and arranged to be placed in the respective compartments of the same color as the balls.

4. A game apparatus, comprising a casing, parallel slats ar-

ranged within said casing, a transverse partition positioned transversely of and intermediate the length of some of said slats, and inclosing means extending across the ends of some of said slats.



5. A game apparatus, comprising a casing, slats carried by said casing, and partitioning means extending transversely of said slats, said partitioning means extending across the ends of some of said slats and across some of said slats intermediate their ends.

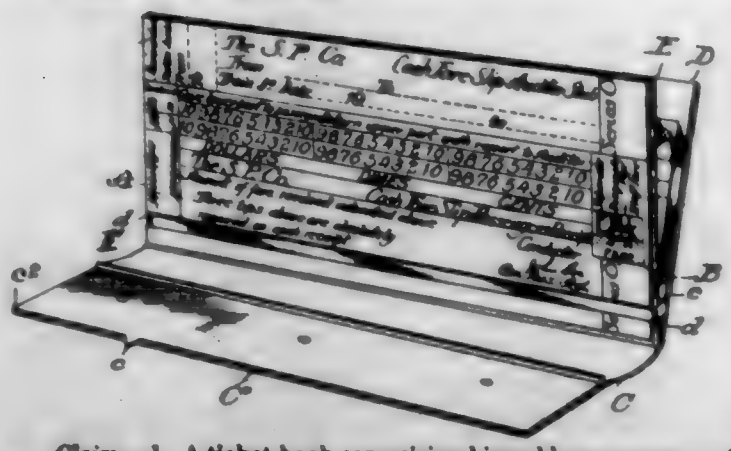
6. A game apparatus, comprising a casing provided with slats isolated from the walls of said casing, and a partition extending transversely across some of said slats intermediate their ends.

7. A game apparatus, comprising a casing, slats positioned within and isolated from the walls of said casing, a wall extending across the ends of some of said slats, and a wall or partition positioned intermediate the ends and extending transversely of the remaining slats.

8. A game apparatus, comprising a casing, parallel slats positioned within said casing, each two contiguous slats forming a compartment, all of said compartments open at one and the same side of said casing, some of said compartments closed at the opposite ends, and transverse partitioning means subdividing the remaining compartments.

9. A game apparatus, comprising a casing, longitudinally-extended, parallel slats positioned in said casing, all of said slats the same length, said slats producing compartments, transverse partitioning means carried by said casing and subdividing some of said compartments, means for closing one end of some of said compartments, and spheres positioned within said casing.

818,996. TICKET. ALLEN I. BLANCHARD, Chicago, Ill. Filed Mar. 8, 1904. Serial No. 197,092.



Claim.—1. A ticket-book comprising hinged leaves or covers C, D and E, a tearing edge on the leaf C, a supply of tickets on the leaf E, and means for holding the inner longitudinal edges of the leaves D and E together with a yielding pressure and for binding said tickets onto the leaf E; substantially as described.

2. A ticket-book comprising hinged leaves or covers C, D and E, the leaf C being of less width than the other covers and provided with a tearing edge, and an elastic band coöperating with the inner longitudinal edges of the leaves D and E and holding them and the supply of tickets together with a yielding pressure; substantially as described.

3. A ticket-book comprising hinged leaves C, D and E, a tearing edge on the leaf C, a supply of tickets on the leaf E, two opposite ends of the leaves D and E being correspondingly notched, and an elastic band received in said notches and embracing the inner edge of the tickets and of the leaves D and E and tending to hold the last-named leaves together; substantially as described.

4. The herein-described ticket having printed along its division-line series of figures 0 to 9 in separate divisions, and a symbol or scroll and an adjacent character near said division-line, said symbol or scroll being without significance until the ticket is severed for half-fare, whereupon the symbol or scroll in connection with the adjacent character indicates half-fare; substantially as described.

5. The herein-described ticket having printed along its division-line series of figures from 0 to 9 in separate divisions, and having printed on one portion and on one side of the division-line the words "Full fare" with an intermediate symbol or scroll which is without signification when the ticket is issued for full fares, but which, when severed along a line at an angle to said division-line, and through the letter "F" of the "Full" indicates half-fare; substantially as described.

6. The herein-described ticket having printed along its division-line series of figures from 0 to 9 in separate divisions and having printed on one portion and on one side of the division-line the words "Full fare" with an intermediate scroll consisting of two figures "2" (one of which is reversed) and a diagonal line between one of these figures and the lower end of the letter "F" of the said word "Full," whereby when a corner of said portion of the said ticket is severed at an angle to said divisional-line, such portion indicates "½ Fare;" substantially as described.

7. The herein-described ticket-book comprising the hinged leaves C E, the tearing edge C' arranged upon the leaf C and having the tearing-point *e*, and a supply of tickets removably secured to leaf E, each of such tickets having printed along its division-lines series of figures from 0 to 9, in separate divisions and also having near its longitudinal edge a series or row of figures from 1 to 31, such row being printed a distance from the edge substantially equaling the length of the tearing-point; substantially as described.

8. The herein-described ticket-book comprising the hinged leaves C E, a tearing edge arranged on the leaf C and having a tearing point or tooth, and a supply of tickets detachably secured to the leaf E, each of such tickets having printed near one edge a row of figures from 1 to 31, such row being printed a distance from the edge substantially equaling the length of the tearing-point; substantially as described.

818,997. VEHICLE DRAFT APPLIANCE. CHARLES J. BOLTE, Columbus, Wis. Filed Nov. 14, 1905. Serial No. 287,307.

Claim.—1. As a new article, a draft appliance for vehicles having bars movably disposed at opposite sides of the rear portion, and means for adjusting said bars relative to said appliance to adapt the bars for bearing between the axle-hounds of the vehicle.

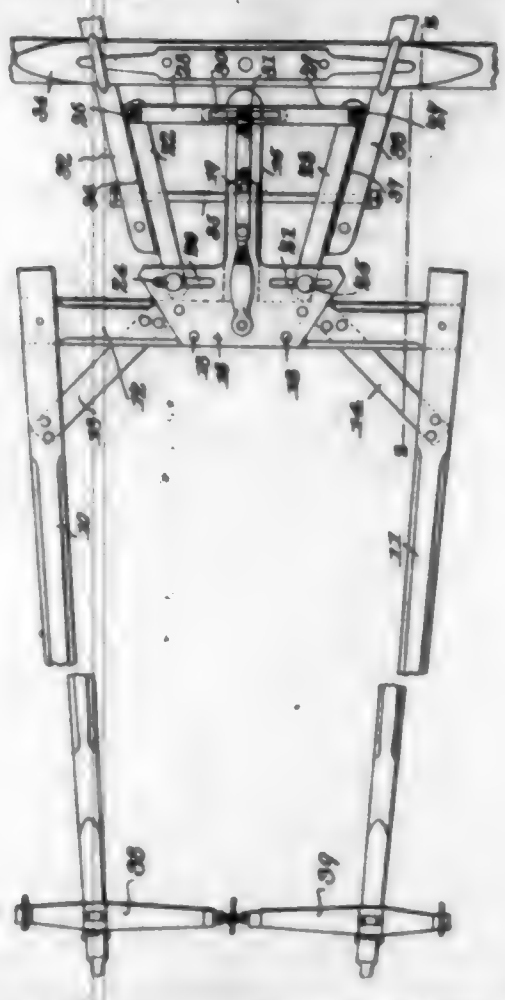
2. As a new article, a draft appliance for vehicles having an arm extending rearwardly thereof and with bars movably disposed at opposite sides of the arm, and means for adjusting said bars relative to said arm to adapt the bars for bearing between the axle-hounds of the vehicle.

3. As a new article, a draft appliance for vehicles having bars movably disposed at opposite sides of the rear portion, means for adjusting said bars relative to said appliance to adapt the bars for bearing between the axle-hounds of the vehicle, and a pivot-bolt extending transversely through said adjustable bars and the side members of the axle-hounds.

4. As a new article, a draft appliance for vehicles having an arm extending rearwardly thereof and with bars movably disposed at opposite sides of the arm, means for adjusting said bars relative to said arm to adapt the bars for bearing between the axle-hounds of the vehicle, and a pivot-bolt extending transversely through said adjustable bars and arm and the side members of the axle-hounds.

5. As a new article, a draft appliance for vehicles having an arm extending rearwardly thereof, spaced plates connecting said draft appliance and arm and provided with slots extending laterally of the

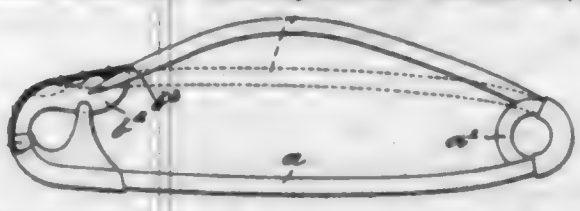
arm, bars disposed at one end between said plates and coupled adjustably thereto by clamp-bolts extending through the slots therein, slotted links pivoted at one end to the free ends of said bars and overlapping at said arm, and a clamp-bolt operating through said arm and the slots in said links.



6. A device of the class described comprising spaced tongues connected at the rear by a transverse bar, an arm extending rearwardly of said bar, spaced bars movably disposed at opposite sides of said arm, and means for adjusting said bars relative to said arm for adapting them to the axle-hounds of a vehicle.

7. A device of the class described comprising spaced tongues connected at the rear by a transverse bar, an arm extending rearwardly of said transverse bar, spaced plates connecting said transverse bar and arm and provided with slots extending laterally of the arm, bars disposed at one end between said plates and coupled adjustably thereto by clamp-bolts extending through the slots therein, slotted links pivoted at one end to the free ends of said bars and overlapping at said arm, and a clamp-bolt operating through said arm and the slots in said links.

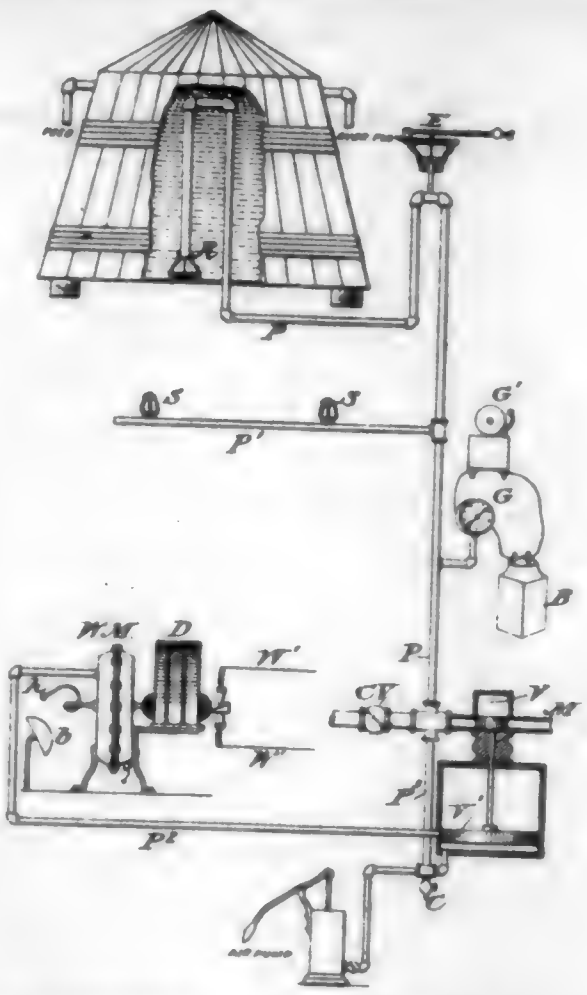
818,998. **SAFETY-PIN.** WILLIAM W. BROWN, Media, Pa., assignor to Robert P. Brown Manufacturing Company, New York, N. Y., a Corporation of New York. Filed May 23, 1905. Serial No. 261,750.



Claim.—A safety-pin having a shield or guard inclosing the outer end of the fixed member of the pin formed as a continuation of the spring-acting member thereof, the latter being provided with a notch near its free end and said spring-acting member when bent into angular position engaging the outer under edge of the shield or guard in the notch of the spring-acting member in such condition to become locked against disengagement.

818,999. **FIRE-EXTINGUISHING APPARATUS.** CHARLES E. BUELL, North Plainfield, N. J., assignor to General Fire Extinguisher Company, New York, N. Y., a Corporation of New York. Original application filed Apr. 30, 1892. Serial No. 429,825. Divided and this application filed Sept. 4, 1901. Serial No. 74,336.

Claim.—1. The combination with a system of automatic sprinklers, of a main-valve mechanism, means for automatically operating the said valve mechanism by variations of pressure in the pipes of the system, a motor having connection to said system through the valve mechanism, an electric generator connected to the said motor and circuit connections joined to said generator.



2. The combination with a sprinkler system of a mechanism for giving fire-alarms when a sprinkler opens by heat that comprises a motor operated by water admitted thereto automatically by a lowering of pressure in the pipes of the system, a generator of electricity driven by said motor, and having connections to an alarm apparatus, and an alarm apparatus having connection to the pipes of the system through a pressure-indicating device that is independent of the said motor.

3. The combination with an incased valve normally excluding water from the pipes of a sprinkler system, of a tank located above said valve and having a siphon connection thereto and to the system of sprinklers, means for maintaining air-pressure normally in the system that is adapted to prevent water from the tank acting to raise said valve until the pressure in the system is destroyed by the opening of a sprinkler, a water-motor provided with connections to an alarm apparatus, and pipe connections from said water-motor to the interior of the casing of said valve.

4. In a fire-extinguishing system the combination with a valve mechanism for normally excluding the water from the system, of a main supply-pipe, a main riser-pipe, and a valve closing the waterway between the said pipes, connections from the main riser to a supply of gaseous pressure, and a connection from the said valve mechanism to a combined water-motor and electric generater, the whole arranged and operating substantially as described.

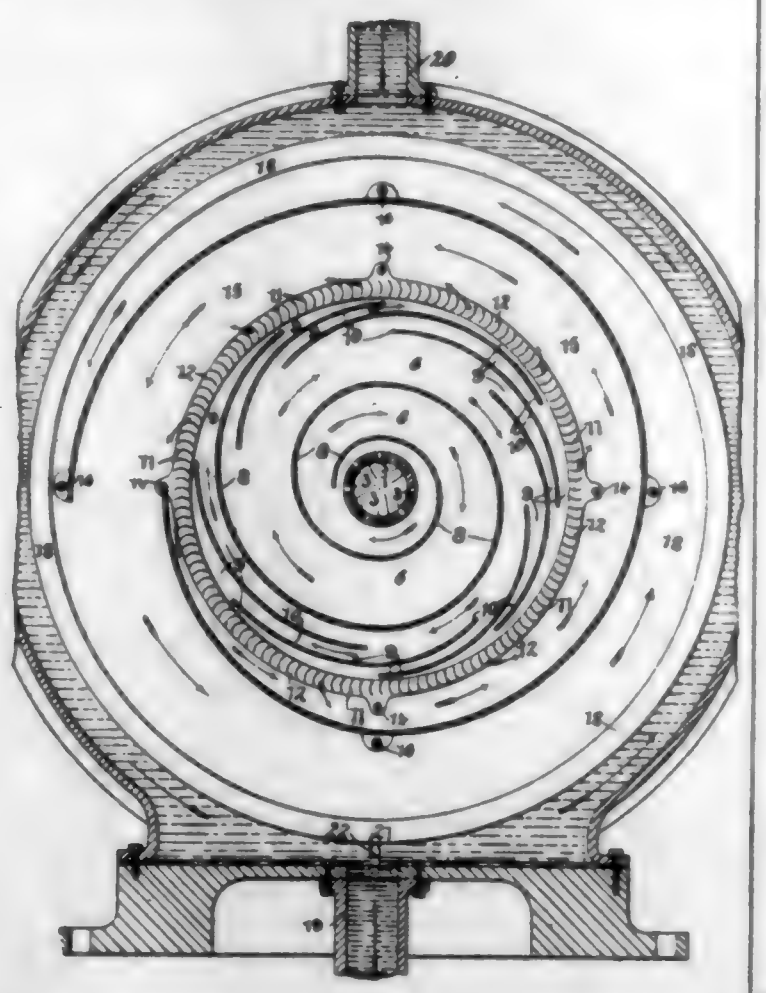
5. An alarm for automatic sprinklers comprising a dry-pipe-valve mechanism with pipe connections from the said mechanism at a point from which the water is normally excluded to a water-motor, an electric generator adapted to be operated by said motor, wire connections to a remote point, and a local alarm that is adapted to be made operative by the said motor.

6. The combination with a system of sprinklers, of a tank located above the sprinklers, means for maintaining gaseous pressure to normally hold the water from entering from the said tank into the said pipes, an auxiliary supply of water that is normally turned off and a valve for controlling the same that is adapted to be operated by the pressure from the tank to turn on the auxiliary water-supply when a sprinkler opens, a water-motor having connection to the system and adapted to receive water therefrom when the water from the tank operates the valve controlling the auxiliary supply, and an electric generator in operative relation to said motor for transmitting alarm-signals to denote the movement of said valve.

7. In a pressure-utilizing system the combination of a dry-pipe

valve for normally closing the waterway between the main supply and the pipes of the system, thermally-actuated devices sealing the distributing-pipes of the system, a pressure-controlled alarm apparatus connected to the system and mechanism for operating the main valve and normally excluding water from said alarm apparatus and adapted to admit water to said apparatus when a sprinkler opens.

819,000. TURBINE. WILLIAM CLARK, Campbeltown, Scotland. Filed July 25, 1905. Serial No. 271,210.



Claim.—1. A turbine having a spiral chamber, plates subdividing the chamber into parts in which the fluid expands, the nature of the spiral being such that the area of the chamber continually increases to permit of the expansion of the actuating fluid.

2. A turbine, having a spiral plate and side plates forming an inner spiral chamber, and plates subdividing said chamber into parts, in combination with an outer covering.

3. A turbine, having a spiral plate and side plates, forming an inner spiral chamber, bearings on which said chamber is rotated, and a pipe mounted in the bearings and provided with openings leading to said chamber, in combination with vanes around said chamber against which the steam impinges.

4. A turbine having a spiral plate and side plates forming a spiral chamber, and curved plates subdividing said chamber into parts in combination with an outer covering.

5. A turbine, having an outer casing, a spiral plate therein forming a spiral chamber, in combination with a chamber having curved subdividing-plates within said chamber.

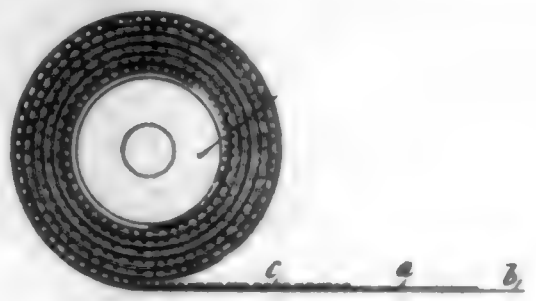
6. In turbines, the combination comprising an outer covering having a spiral plate therein forming a spiral chamber, a rotating subdivided chamber having curved spiral plates within said spiral chamber, and vanes between said spiral chamber and subdivided chamber.

7. In turbines, the combination comprising an outer covering having a spiral plate therein forming a spiral chamber, a rotating subdivided chamber having curved spiral plates within said spiral chamber, and circulating-pipes.

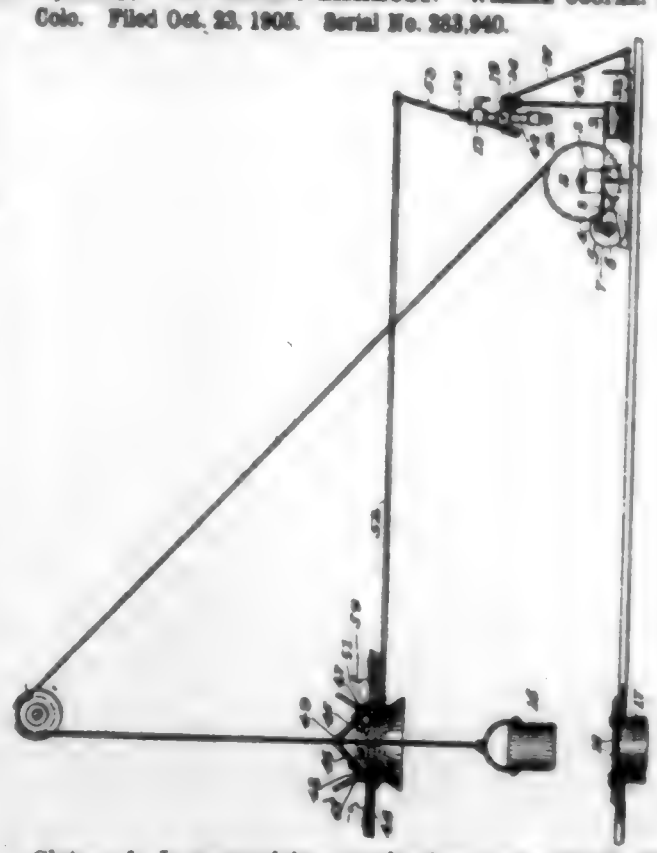
819,001. PACKAGE-ROLL OF METALLIC LEAF. WALTER H. COE, Providence, R. I. Filed June 14, 1905. Renewed Mar. 28, 1906. Serial No. 306,176.

Claim.—A package-roll of metallic leaf in which the fillet of metallic leaf is wound in connection with a strip of tissue-paper, having a supplementary paper strip as a backing.

819,001.



819,002. AUTOMATIC EXHAUST. WILLIAM COOPER, Denver, Colo. Filed Oct. 23, 1905. Serial No. 283,940.



Claim.—1. In power-driven mechanism, means for shutting off power from said mechanism, means for exhausting the power contained therein and automatic mechanism for operating both of said means when control is lost over said power-driven mechanism.

2. In steam-engines, means for exhausting the power contained in said engine and automatic means for operating said exhaust means when control is lost over said engine.

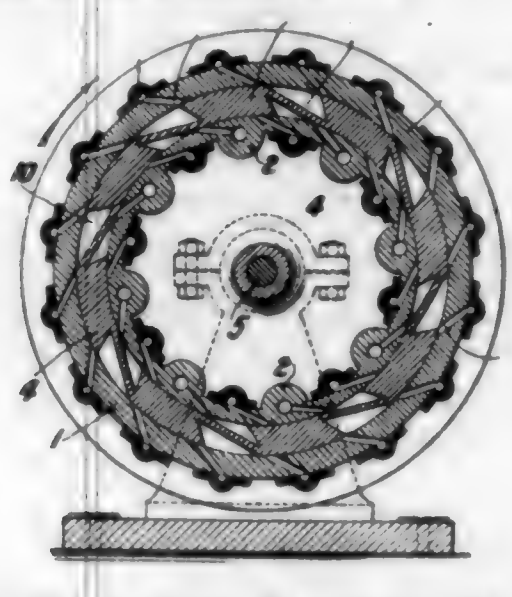
3. In hoists, hoisting mechanism, a hoisting-receptacle operated by said hoisting mechanism, means for exhausting the power contained in said hoisting mechanism and means whereby the ascension of said receptacle to a given point operates said exhaust means.

4. In hoists, hoisting mechanism, a hoisting-receptacle operated by said hoisting mechanism, means for shutting off the supply of power to said hoisting mechanism, means for exhausting the power contained in said mechanism and means whereby the ascension of said receptacle to a given point operates both said shutting-off and said exhaust means.

819,003. ROTARY ENGINE. JULES H. CORTHESY, London, England, assignor of one-half to Gerard Featherstone Griffin, London, England. Filed Feb. 1, 1905. Serial No. 243,616.

Claim.—1. In a rotary steam-engine, the combination with a drum having trough-like channels extending longitudinally and at equal distances apart around the periphery, the channels being each wedge-shaped in cross-section, and tapering in the opposite direction to the rotation of the drum, a number of partitions extending transversely across each channel to divide the latter into a number of chambers of unequal cubical capacities, a chamber of small capacity near one side of the cylinder, and then a chamber of larger capacity, and another chamber of still larger capacity, and so on toward the other side of the cylinder, and a shaft passing axially through the drum on which shaft the drum is fixed; of a stationary casing formed with steam-passages for the distribution of steam to the chambers, the admittance-passages to the chambers extending to the interior of the casing and inclined tangentially to the direction of motion of the drum, the steam-exit passages in the casing being located between the admittance-passages, the distance apart of the openings of the pas-

sages in the interior of the casing taken consecutively being less than the length of surface of the cylinder in a circular direction between the channels, the casing also having conveyance-passages communicating between the exhaust-passages serving one circular series of chambers and the admittance-passages serving a second larger circularly-arranged series of chambers and so on.



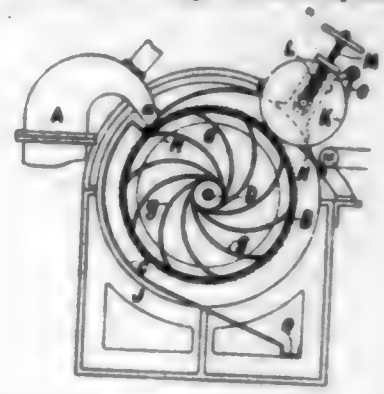
2. In a rotary steam-engine, the combination with a drum having trough-like channels extending longitudinally and at equal distances apart around the periphery, the channels being each wedge-shaped in cross-section, and tapering in the opposite direction to the rotation of the drum, a number of partitions extending transversely across each channel to divide the latter into a number of chambers of unequal cubical capacities to form a chamber of small capacity near one side of the cylinder, and then a chamber of larger capacity, and another chamber of still larger capacity and so on toward the other side of the cylinder, and a shaft passing axially through the drum on which shaft the drum is fixed; of a stationary casing having an annular channel 14 for pressure-steam and formed with high-pressure-steam-admittance passages 15 extending to the interior of the casing to serve the smallest chambers 9 of the drum with steam as they rotate, a circular series of exit-passages 16 located between the inlet-passages 15 for the exit of steam from the smallest chambers of the drum, the casing having inclined inlet-passages 18 to the next larger series of chambers 10, and passages 17 communicating between the passages 16 and 18 whereby the exhaust-steam from the chambers 9 is conveyed to the chambers 10, and similar passages conveying the steam from the chambers 10 to the chambers 11 and 12 the casing having exhaust-passages for carrying off the steam from the chambers 12, as set forth.

3. In a rotary steam-engine, the combination with a drum having trough-like channels on both its outer and inner peripheries extending longitudinally and at equal distances apart around the surfaces thereof, partitions extending transversely across each channel to divide the latter into chambers of unequal cubical capacity, and a shaft passing axially through the drum on which shaft the drum is fixed; of a stationary casing within which the drum is contained and can revolve, an inner stationary casing entering the drum and fitting its inner periphery, end covers for the stationary casing, bearings in the said covers for the drum-shaft, the outer casing having passages for the distribution of steam to the drum-chambers by which the steam after entering the smaller chambers on the exterior surface of the drum is as the drum revolves conducted therefrom through passages of the casing and allowed to expand into the next larger chamber and from that larger chamber as the drum revolves to a still larger chamber and so on for driving the drum in one direction, the inner casing 2 having similar passages for supplying and conducting steam to and from the series of chambers on the inner periphery of the drum, and means for supplying steam to either the passages in the outer casing or to the passages in the inner casing 2 according to which direction the engine is to be driven as set forth.

819,004. PAPER-MAKING APPARATUS. PETER COUPER, Flint, England. Filed Jan. 2, 1906. Serial No. 294,279.

Claim.—1. The combination of an outer stationary casing, a drum with foraminous surface rotating inside the said casing, a feed-pipe with a contracted mouthpiece in proximity to it but made the full width of the drum, and a device for delivering the wet pulp through the mouthpiece with force against the meshes and detain it thereon, but force the liquid to drain through.

2. The combination of an outer stationary casing, a drum with foraminous surface, rotating inside said casing, a feed-pipe whose mouthpiece is in proximity to said surface, a pump arranged to deliver the wet pulp with force against the meshes and detain it thereon, but force the liquid to drain through, and partitions or channels inside the drum to carry off the liquid that is separated from the pulp.

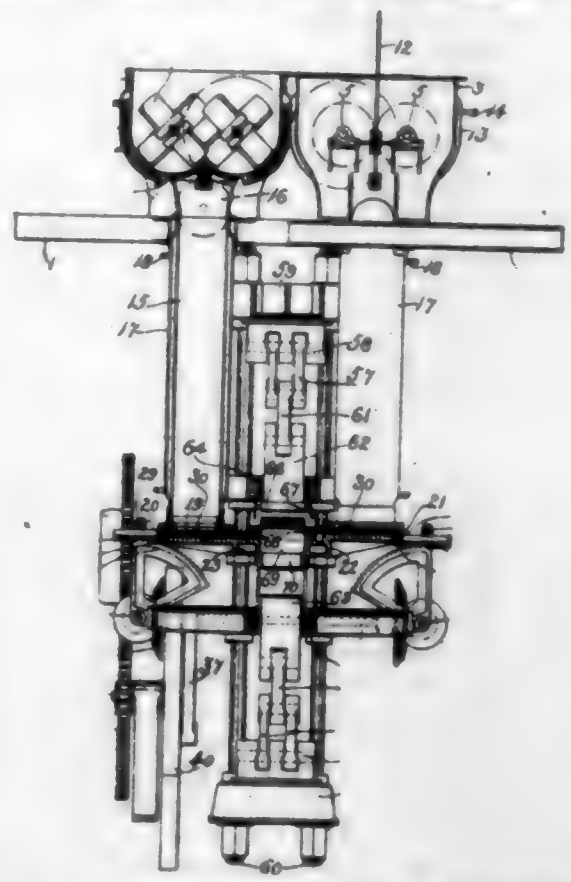


3. In apparatus for the purpose mentioned, a drum with foraminous surface through which the liquid from the wet pulp will drain, and a series of curved partitions and steep channels inside the said drum delivering the drainage to the outside at either end without falling on the lower part of the drum.

4. In apparatus for the purpose mentioned, a drum with foraminous surface through which the liquid from the wet pulp will drain, if the latter be delivered with force against the meshes so as to detain the solid matter thereon, of means outside the drum for further pressing the pulp and delivering it in uniform thickness.

5. In apparatus for the purpose mentioned, a drum with foraminous surface through which the liquid from the wet pulp driven against it, will drain, a cone-shaped center piece inside the drum, so arranged that the liquid will flow by gravity to either end, and compartments running longitudinally from one end of this cone-piece inside the drum to form channels for the liquid.

819,005. PLASTIC-BLOCK MACHINE. GEORGE W. CRICHFIELD, Jersey City, N. J., assignor of one-half to William T. S. Crichfield, New York, N. Y. Filed Mar. 24, 1905. Serial No. 251,859.



Claim.—1. In a plastic-block machine, the combination with a plurality of mixing-chambers and mixing devices wherein different plastic compounds may be mixed separately, of movable molds, mold-operating mechanism whereby different molds are moved to and from different mixing-chambers enabling the molds to receive different compounds, the said mechanism being adapted to arrange the molds and contents contiguously, and a press constructed to press the contents of different molds together causing them to cohere and form a single body.

2. In a plastic-block machine, the combination with a plurality

of mixing-chambers and mixing devices wherein different plastic compounds may be mixed separately, of movable molds, mold-operating mechanism whereby different molds are moved to and from different mixing-chambers enabling the molds to receive different compounds, the said mechanism being adapted to arrange the molds and contents contiguously, and a press independent of said molds and having plungers normally withdrawn from the molds and constructed to press the contents of different molds together causing them to cohere and form a single body.

3. In a plastic-block machine, the combination with a plurality of mixing-chambers and mixing devices wherein different plastic compounds may be mixed separately, of movable molds, mold-serving means arranged between said chambers and molds whereby the plastic compounds are delivered to said molds under pressure, mold-operating mechanism whereby different molds are moved to and from different mixing-chambers enabling the molds to receive different compounds, the said mechanism being adapted to arrange the molds and contents contiguously, and a press constructed to press the contents of different molds together causing them to cohere and form a single body.

4. In a plastic-block machine, the combination with a plurality of separate mixing-chambers and mixing devices, of movable molds adapted to receive plastic material, mold-serving cylinders vertically disposed and supporting the said mixing-chambers at a distance above the molds whereby plastic materials are delivered to the molds under hydrostatic pressure, mold-operating mechanism whereby the molds and plastic bodies formed in different molds are arranged contiguously, and a press adapted to compress such bodies together in the molds causing them to cohere and form a single body.

5. In a plastic-block machine, the combination with reciprocating molds having like mold-openings through them for the reception of plastic materials, of mold-operating mechanism whereby the molds and the plastic bodies formed in different molds are arranged contiguously, and a press having plungers normally withdrawn entirely from the molds and adapted to enter the mold-openings and to compress the said plastic bodies together causing them to cohere and form a single body.

6. In a plastic-block machine, the combination with a plurality of separate mixing-chambers and mixing devices, of movable molds adapted to receive plastic materials, mold-serving receptacles arranged between the mixing-chambers and molds for delivering the materials to the molds, means for heating the said receptacles, mold-operating mechanism whereby the molds and the plastic bodies formed in different molds are arranged contiguously, and a press adapted to compress the said bodies together in the molds causing them to cohere and form a single body.

7. In a plastic-block machine, the combination with movable molds, of mold-serving receptacles including vertically placed and extended portions fashioned and disposed to deliver plastic to the said molds under hydrostatic pressure exerted by the plastic, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies separately formed therein are arranged contiguously one above another, and a press adapted to compress such arranged plastic bodies together causing them to cohere and form a single body.

8. In a plastic-block machine, the combination with a table provided with extensions situated at different levels, of molds movable upon the said table extensions, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another, and a press adapted to compress such arranged plastic bodies together causing them to cohere and form a single body.

9. In a plastic-block machine, the combination with a table having extensions situated at different levels, of means for heating the tables, reciprocating molds movable upon the said extensions of the table, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another, and a press adapted to press the contents of different molds together causing them to cohere and form a single body.

10. In a plastic-block machine, the combination with a table having extensions situated at different levels, of molds movable upon the said table extensions, the said molds having openings closed at the bottom by the surface of the table when the molds are at separated positions, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another, and a press adapted to compress such arranged plastic bodies together causing them to cohere and form a single body.

11. In a plastic-block machine, the combination with a table having extensions situated at different levels, of means for heating the table, molds movable upon the said table and extensions, the said molds having openings closed at the bottom by the surface of the table when the molds are in separated positions, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another, and a press adapted to compress such arranged plastic bodies together causing them to cohere and form a single body.

12. In a plastic-block machine, the combination with a table having extensions situated at different levels, of means for heating the table, molds movable upon the said table and its extensions, the said molds having openings closed at the bottom by the surface of the table when the molds are in separated positions, mold-serving receptacles fashioned and disposed to deliver plastic to the said openings in the molds, means for heating said receptacles, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies separately formed therein are arranged contiguously one above another, and a press adapted to compress such arranged plastic bodies together causing them to cohere and form a single body.

13. In a plastic-block machine, the combination with a table having extensions situated at different levels and a middle opening, of molds movable upon the said table and extensions, the said molds having openings closed at the bottom by the surface of the table when the molds are at separated positions, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another and both above the middle opening of the said table, and a press having upper and lower plunger-heads adapted to enter the openings in the molds and table and compress such arranged plastic bodies together causing them to cohere and form a single body.

14. In a plastic-block machine, the combination with a table having extensions situated at different levels and a middle opening, of molds movable upon the said table and extensions, the said molds having openings closed at the bottom by the surface of the table when the molds are at separated positions, mold-guiding and mold-operating mechanism whereby the said molds and plastic bodies formed separately therein are arranged contiguously one above another and both above the middle opening of the table, a press having upper and lower plunger-heads adapted to enter the openings in the molds and table and compress such arranged plastic bodies together causing them to cohere and form a single body, press-actuating devices, and gearing interposed between the said devices and mold-operating mechanism constraining the said molds and press to move with predetermined relation to each other.

15. In a plastic-block machine, the combination with movable molds, of mold-operating mechanism whereby plastic bodies formed in different molds are carried by the molds and arranged contiguously, a press adapted to compress such arranged bodies together causing them to cohere and to form a single body, and press-actuating devices including contrivances constructed and disposed to maintain the force of the press at its maximum upon the said plastic bodies for a time until the material is set.

16. In a plastic-block machine, the combination with reciprocating molds having like mold-openings through them for the reception of plastic materials, of mold-operating mechanism whereby the molds and the plastic bodies formed in different molds are arranged contiguously, a press having plungers normally withdrawn from the molds and adapted to enter the mold-openings and to compress the said plastic bodies together causing them to cohere and to form a single body, and a block-ejector constructed to free the cohered bodies from the molds.

17. In a plastic-block machine, the combination with movable molds, of mold-operating mechanism whereby the plastic bodies formed in different molds are carried by the molds and arranged contiguously, a press adapted to compress such arranged bodies together causing them to cohere and to form a single body, the plunger of the said press having an independently-movable presser-head, and means for moving the said presser-head with respect to the plunger of the press and to the said molds thereby ejecting the cohered bodies.

18. In a plastic-block machine, the combination with reciprocating molds having mold-openings, of mold-operating mechanism whereby the openings in the molds are moved to register with each other, a press having plungers adapted to enter the said mold-openings, and a presser-head borne by one of the plungers and independently movable, and means constructed to move the said presser-head through the mold-openings to eject a plastic block formed therein.

19. In a plastic-block machine, the combination with movable molds having openings, of mold-operating mechanism whereby the

openings in the molds are moved to register with each other, a block-ejector, a block-shifting device constructed and arranged to shift the block to one side of the registered mold-openings, and gearing interposed between the said mold-operating mechanism and the block-ejector and block-shifting device constraining the said mold-operating mechanism, block-ejector and block-shifting device to move with predetermined relation to each other.

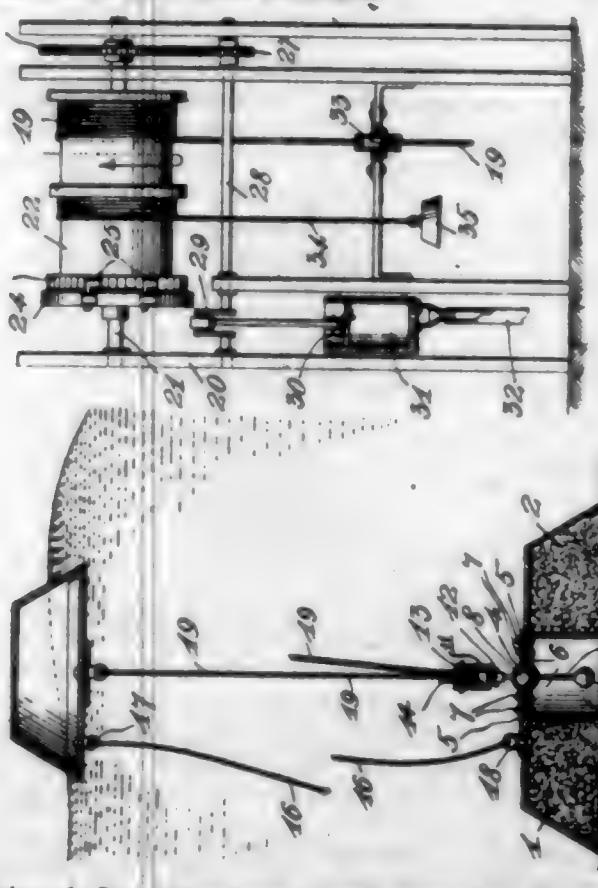
20. In a plastic-block machine, the combination with reciprocating molds, of mold-guiding devices constructed and arranged to guide the molds horizontally, mold-operating mechanism whereby the said molds and plastic bodies therein are arranged one above another, and a press adapted to compress the contents of the molds thus arranged whereby the contents of different molds cohere and form a single body.

21. In a plastic-block machine, the combination with bottomless reciprocating molds, of mold-guiding devices constructed and arranged to guide the molds horizontally, mold-operating mechanism, the said mold-guiding devices being supported at different levels whereby the said operating mechanism arranges the molds and contents one above another, and a press adapted to compress the contents within the molds whereby the contents of different molds cohere and form a single body.

22. In a plastic-block machine, the combination with bottomless reciprocating molds, of mold-guiding devices constructed and arranged to guide the molds horizontally, mold-operating mechanism, the said mold-guiding devices being supported at different levels whereby the said operating mechanism arranges the molds and contents one above another, a press adapted to enter the molds and to compress the contents together, and press-actuating devices including means constructed and disposed to maintain pressure upon the contents of the molds temporarily whereby the material sets under pressure.

23. In a plastic-block machine, the combination with a plurality of mixing-chambers and mixing devices for mixing different compounds separately, of bottomless molds, mold-guiding and mold-operating means whereby the molds are reciprocated and arranged one above another, a press adapted to enter the molds when thus arranged, press-actuating mechanism, the said molds having portions adapted to close the mouths of the mixing-chambers, the said mold-operating means including contrivances for holding the molds temporarily stationary at the limits of their reciprocating movements, and gearing connecting the said press-actuating mechanism and mold-operating means constraining the press and molds to move with respect to each other at predetermined rates of speed.

819,003. **WAVE-MOTOR.** FREDERICK M. DEMPSEY, Vallejo, Cal. Filed Dec. 21, 1905. Serial No. 293,805.



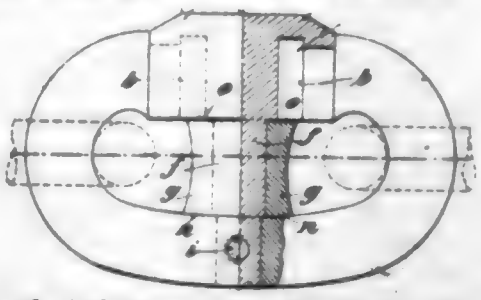
Claim.—1. In a wave-motor, a buoy adapted to rise and fall with the waves, an anchoring device connected to the buoy by a slack cable, a driving-cable connected to the buoy and passing around a pulley mounted upon a weighted ball, and a socket for said ball on said anchor, in combination with a winding mechanism, and means for storing the energy by the rise and fall of the buoy, substantially as described.

2. A wave-motor comprising a buoyant element, a weight or anchor, a cable connected to the buoyant element and passing around a pulley mounted upon the weighted ball, and a socket for said ball upon the weight or anchor, in combination with a winding-drum mounted loosely upon a shaft, a ratchet mechanism secured to said shaft to be rotated by the movement of the drum, substantially as described.

3. In a wave-motor, a buoyant element designed to ride the waves, a weight or anchor adapted to rest upon the bottom of the sea or other body of water, a flexible connection between said buoyant element and anchor, a pulley universally mounted upon said anchor, a cable connected to said buoy and passing around said pulley, said cable extending to a winding mechanism upon the shore, in combination with a drum mounted loosely upon a shaft, a ratchet mechanism fixed to said drum, a cable and counterweight for taking up the slack of the first-mentioned cable, and an air-pump operated by said shaft, substantially as described.

4. A wave-motor comprising a buoy, a weight or anchor, a flexible connection between said buoy and anchor, a socket formed in the upper wall of the anchor, a weighted ball adapted to move in said socket, a pulley connected to said ball, a cable connected to the buoy and extending around said pulley, said cable extending to and around a drum located upon the shore, said drum being loosely mounted upon a shaft, a ratchet mechanism fixed to said shaft at the side of said drum, a counterweight for taking up the slack of said cable, a gear-wheel on said shaft, a crank-shaft mounted in the frame, a pinion meshing with said gear-wheel, and an air-pump operated by said crank-shaft, substantially as described.

819,007. **CHAIN-LINK SHACKLE.** GUSTAV A. H. DRESSLER, Kiel, Germany. Filed Dec. 10, 1903. Serial No. 184,584.



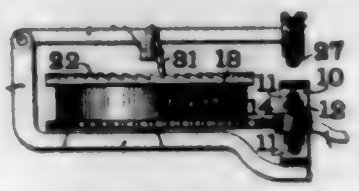
Claim.—1. A chain-connecting shackle comprising a link having an open section at one side, studs on the ends of the link at opposite sides of said open section, a closing member extending transversely across the link and at one end having a cap-like portion engaging said opposing studs and at its other end in engagement with the opposite side of the link, and a collar surrounding said connecting member and projecting outwardly in engagement with the sides of said studs and extending from said studs into engagement with the opposite side of the link.

2. A chain-connecting shackle comprising a link having an open section at one side and an opening in its opposite side, studs on the link at opposite sides of said open section, a closing member extending transversely across the link and at one end having a cap-like portion engaging said opposing studs, and at its other end received into the opening in the opposite side of the link, a collar surrounding said connecting member and projecting outwardly in engagement with the sides of said studs and extending from said studs into engagement with the opposite side of the link, said latter side of the link and the end of the closing member received therein having a registering transverse opening, and a pin received into said transverse opening to hold the closing member in operative position in the link.

3. A chain-connecting shackle comprising a link open at one side, studs on the ends of the link at opposite sides of the said opening, a closing member having a cap-like portion provided with recesses opening on its inner sides for engaging said opposing studs and a shank portion extending from the cap-like portion and terminating in a pin engaging a corresponding opening in the link, a sleeve surrounding the shank portion of the closing member between the cap-like portion and the said pin and bearing at one end against the inner side of the link and at its opposite end against the inner sides of the said studs and the cap-like portion of the closing member, and means for fastening the closing member in position on the link.

4. A chain-connecting shackle comprising a link having an open section at one side and an opening in its opposite side, studs on the link at opposite sides of said open section, a closing member extending transversely across the link, and at one end having a cap-like portion engaging said opposing studs, and at its other end having an integral portion received into the opening in the opposite side of the link, means engaging said latter portion to hold the transverse member in operative position, and means connected with the transverse member and engaging the inner sides of said studs to form a support for the same.

819,008. CARRIAGE-FEED MECHANISM FOR TYPE-WRITING MACHINES. EUGENE FAEL, St. Louis, Mo., assignor of one-fourth to Leonard Matthews, St. Louis, Mo. Filed Oct. 5, 1904. Serial No. 227,196.



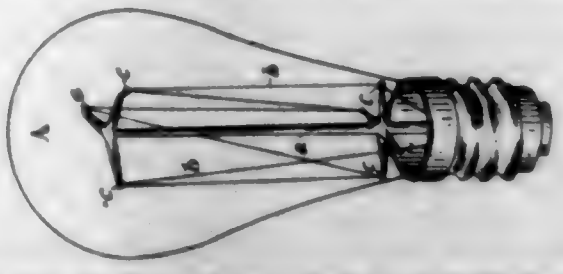
Claim.—1. In a feed-mechanism for type-writers, the combination with a carriage, of a rack on said carriage, a rotary toothed member meshing with said rack, ratchet-teeth on the face of said rotary member, an arm pivoted to swing toward and away from said rotary member to release the feed, connections for actuating said arm, a rocking bar pivoted to said arm, a pair of dogs carried by said rocking bar and coöperating with said ratchet-teeth to feed the carriage longitudinally for letter-spacing, one of said dogs having movement relative to said rocking bar, and connections for operating said rocking bar.

2. In a feed mechanism for type-writers, the combination with a carriage, of a rack on said carriage, a rotary toothed member meshing with said rack, ratchet-teeth on the face of said rotary member, an arm pivoted to swing toward and away from said rotary member to release the feed, connections for actuating said arm, a rocking bar pivoted to said arm substantially at right angles thereto, a pair of dogs carried by said rocking bar and coöperating with said ratchet-teeth to feed said carriage longitudinally for letter-spacing, one of said dogs having movement relative to said rocking bar, and connections for operating said rocking bar.

3. In a feed mechanism for type-writers, the combination with a carriage, of a rack on said carriage, a rotary toothed member meshing with said rack, ratchet-teeth on the face of said rotary member, an arm pivoted to swing toward and away from said rotary member to release the feed, a movable member with which said arm makes running contact, a rocking bar pivoted to said arm, a pair of dogs carried by said rocking bar and coöperating with said ratchet-teeth to feed said carriage longitudinally for letter-spacing, one of said dogs having movement relative to said rocking bar, and connections for operating said rocking bar.

4. In a feed mechanism for type-writers, the combination with a carriage, of a rack on said carriage, a rotary toothed member meshing with said rack, ratchet-teeth on the face of said rotary member, an arm pivoted to swing toward and away from said rotary member to release the feed, a movable member with which said arm makes running contact, a rocking bar pivoted to said arm substantially at right angles thereto, a pair of dogs carried by said rocking bar and coöperating with said ratchet-teeth to feed said carriage longitudinally for letter-spacing, one of said dogs having movement relative to said rocking bar, and connections for operating said rocking bar.

819,009. ELECTRIC INCANDESCENT LAMP. OTTO FEUERLEIN, Charlottenburg, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Filed June 14, 1904. Serial No. 212,480.



Claim.—1. An electric incandescent lamp comprising a continuous metallic filament, and insulating means to support the same in a plurality of substantially straight lengths or sections, each length or section being supported by said insulating means at both its ends.

2. An electric incandescent lamp comprising a continuous metallic filament, and a pair of insulating supporting means suitably spaced apart, and supporting the filament in a plurality of substantially straight lengths or sections, each length or section being supported at both its ends by said insulating supporting means.

3. An electric incandescent lamp comprising a continuous metallic filament, and insulating means supporting the filament in a plurality of substantially straight lengths or sections, each length or section being supported at both its ends by said insulating means, and no two lengths or sections being parallel.

4. An electric incandescent lamp comprising two sets of insulating supports spaced apart, and a continuous metallic filament supported thereby in a plurality of substantially straight lengths or sections each engaged at both its ends by the insulating supports.

5. An electric incandescent lamp, comprising a rod, two groups of radially-extending insulating supports mounted thereon, and a continuous metallic filament supported between the two groups in a plurality of substantially straight sections, no two sections being parallel and each section being supported at both its ends by the radially-extending supports.

6. An electric incandescent lamp, comprising a glass rod, two groups of radially-projecting glass arms thereon, hooks at the outer ends of said glass arms, and a continuous metallic filament strung back and forth between the two groups upon said hooks in substantially straight lengths or sections.

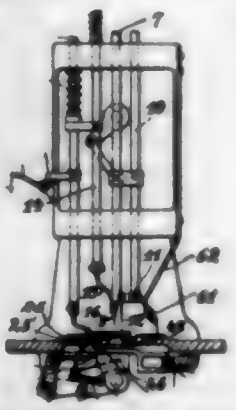
7. An electric incandescent lamp, comprising a glass rod, two groups of radially-projecting glass arms thereon, hooks at the outer ends of said glass arms, and a continuous metallic filament strung back and forth between the two groups upon said hooks in substantially straight lengths or sections, no two lengths or sections being parallel.

8. An incandescent lamp comprising a rod and two groups of radially-projecting insulating-arms mounted thereon the arms of one group being in staggered relation with the arms of another group, and a continuous filament strung back and forth between the two said groups upon said arms in a plurality of substantially straight lengths or sections.

9. An electric incandescent lamp, comprising a framework having two groups of radially-projecting insulating-arms, and a continuous filament looped over said arms, the side members of each group diverging one from the other for the purpose described.

10. An electric incandescent lamp comprising a glass rod, two groups of radially-projecting glass arms thereon the arms of one group being in staggered relation with the arms of the other, hooks at the extremities of said arms and a continuous filament strung between the two said groups over said hooks in a plurality of straight lengths or sections.

819,010. MACHINE FOR EXTRACTING THREADS FROM FABRICS. HERMANN C. FISCHER, Vienna, Austria-Hungary. Filed Dec. 6, 1905. Serial No. 290,610.



Claim.—1. A machine for extracting longitudinal threads from woven fabrics, comprising means for engaging and deflecting a short portion of a thread or threads, and means for removing the deflected portion, as set forth.

2. In a machine for extracting threads, means comprising a laterally-toothed reciprocating blade, to deflect a short portion of a thread or threads, and means for removing the deflected portion, as set forth.

3. In a machine for extracting threads, means comprising a reciprocating blade having lateral teeth arranged in steps, to deflect a short portion of a thread or threads, and means for removing the deflected portion, as set forth.

4. In a machine for extracting threads, means for engaging and deflecting a short portion only of a thread or threads, and means for severing the deflected portion, as set forth.

5. In a machine for extracting threads, means constructed to deflect a short portion of a thread or threads, said means comprising a reciprocating blade, and a cutter movable against the deflected portion, as set forth.

6. In a machine for extracting threads, means comprising a laterally-toothed reciprocating blade to deflect a short portion of a thread or threads, and a reciprocating cutter for severing the deflected portion, as set forth.

7. In a machine for extracting threads, means constructed to deflect a short portion of a thread or threads, said means comprising a reciprocating blade, and an oscillating cutter for severing the deflected portion, as set forth.

8. In a machine for extracting threads, a thread-separating device, means for engaging and deflecting a short portion of a thread or threads, and means for removing the deflected portion, as set forth.

9. In a machine for extracting threads, a reciprocating piercer and thread-separator, a reciprocating thread-deflector, and a cutter for severing the deflected thread portion, as set forth.

10. In a machine for extracting threads, a fabric-support having openings, means for feeding the fabric step by step, a reciprocating piercer and thread-separator, a reciprocating thread-deflector, and a cutter for severing the deflected thread portion, as set forth.

11. In a machine for extracting threads, a fabric-support having openings, a presser-foot having a pointer, means for feeding the fabric step by step, a reciprocating piercer and thread-separator, a reciprocating thread-deflector, and a cutter for severing the deflected thread portion, as set forth.

12. In a machine for extracting threads, a fabric-support having openings, a presser-foot having a pointer, a magnifying-lens, means for feeding the fabric step by step, a thread-separator, a thread-deflector, and a cutter for severing the deflected thread portion, as set forth.

13. In a machine for extracting threads, a fabric-support having openings, means for feeding the fabric step by step, a reciprocating thread-separator, a reciprocating thread-deflector, a cutter for severing the deflected thread portion, and a screen for the moving parts, as set forth.

14. In a machine for extracting threads, a fabric-support having an opening, means for feeding the fabric step by step, a thread-deflector constructed to engage a short portion of a thread or threads and force them through said opening, and means for removing the deflected thread portion, as set forth.

15. In a machine for extracting threads, a fabric-support, means for feeding the fabric step by step and for drawing it tight as it advances, a thread-deflector, and means for removing the deflected thread portion, as set forth.

16. In a machine for extracting threads, a fabric-support, means for feeding the fabric step by step and for drawing it tight at each step, comprising reciprocating feeders and means for separating said feeders as they advance, a thread-deflector, and means for removing the deflected thread portion, as set forth.

17. In a machine for extracting threads, a fabric-support, means for feeding the fabric step by step and for drawing the fabric tight as it advances, a thread-separator, a thread-deflector, and means for removing the deflected thread portion, as set forth.

18. In a machine for extracting threads, an initial thread-cutter, a thread-deflector, and means for removing the deflected thread portion, as set forth.

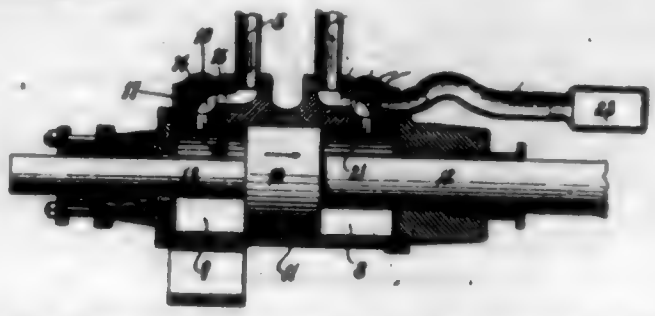
19. In a machine for extracting threads, an initial thread-cutter, a thread-separator, a thread-deflector, and means for removing the deflected thread portion, as set forth.

20. In a machine for extracting threads, an initial thread-cutter, means for feeding the fabric and for spreading it laterally as it advances, a thread-separator, a thread-deflector, and means for removing the deflected thread portion, as set forth.

819,011. **ELECTROPNEUMATIC CHANNELER.** ARTHUR H. GIBSON, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 15, 1905. Serial No. 291,848.

Claim.—1. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and means for closing communication between the space at one side of the piston and one of the pipes and opening the said space to atmosphere.

2. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and means for closing communication between the space at one side of the piston and one of the pipes and opening the said space to atmosphere through a restricted outlet.



3. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and means for closing communication between the space at the back side of the piston and one of the pipes and opening the said space to atmosphere.

4. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and means for closing communication between the space at the back side of the piston and one of the pipes and opening the said space to atmosphere through a restricted outlet.

5. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and a manually-operated valve for closing communication between the space at one side of the piston and one of the pipes and opening the said space to atmosphere.

6. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and a manually-operated valve for closing communication between the space at one side of the piston and one of the pipes and opening the said space to atmosphere through a restricted outlet.

7. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and a manually-operated valve for closing communication between the space at the back side of the piston, and one of the pipes, and opening the said space to atmosphere.

8. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston and a manually-operated valve for closing communication between the space at the back side of the piston and one of the pipes and opening the said space to atmosphere through a restricted outlet.

9. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston, a reserve-fluid chamber, a valve and passages leading respectively from one of the pipes, from the space at one side of the piston and from the reserve-fluid chamber to the face of the valve, the said valve being arranged to close communication between the said space and pipe and to open communication between the said space and reserve-fluid chamber.

10. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston, a reserve-fluid chamber, a manually-operated valve and passages leading respectively from one of the pipes, from the space at one side of the piston and from the reserve-fluid chamber to the face of the valve, the said valve being arranged to close communication between said space and pipe and to open communication between the said space and reserve-fluid chamber.

11. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston, a reserve-fluid chamber, a valve and passages leading respectively from one of the pipes, from the space at the front side of the piston and from the reserve-fluid chamber to the face of the valve, the said valve being arranged to close communication between the space at the front side of the piston and said pipe and to open communication between said space and the reserve-fluid chamber.

12. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston, a reserve-fluid chamber, a manually-operated valve and passages leading respectively from one of the pipes, from the space at the front side of the piston and from the reserve-fluid chamber to the face of the valve, said manually-operated valve being arranged to close communication between the space at the front side of the piston and said pipe and to open communication between said space and the reserve-fluid chamber.

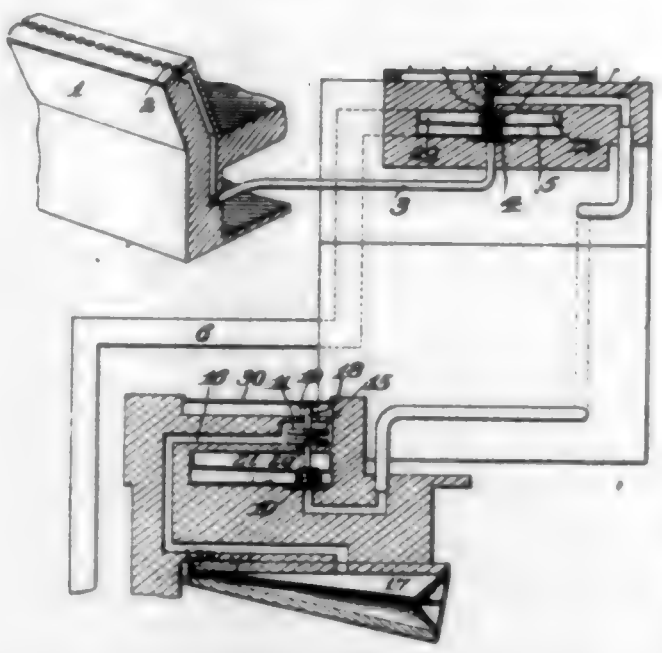
13. A tool-piston, its cylinder, pipes for supplying motive fluid alternately to the opposite sides of the piston, a reserve-fluid chamber, means for closing communication between the space at one side of the piston and one of the pipes and opening said space to atmosphere and means for closing communication between the space at the

other side of the piston and the other of the pipes and opening communication btween said space and the reserve-fluid chamber.

819,012. COMPOUND WHICH FORMS AN EMULSION WITH WATER TO BE APPLIED TO THE SURFACES OF ROADS OR OTHER PLACES. EDWARD HARDCASTLE, Stockport, England. Filed Jan. 3, 1906. Serial No. 294,121.

Claim.—The herein-described compound consisting of coal-tar creosote and resinate of soda holding pitch or asphaltum in solution which forms an emulsion with water, for the purpose of preventing the formation of dust and allaying it.

819,013. VALVE FOR PNEUMATICALLY-OPERATED DEVICES. JOHN J. HEALY, Rochester, N. Y., assignor of one-half to Solomon F. Hess, Rochester, N. Y. Original application filed Dec. 26, 1903, Serial No. 136,530. Divided and this application filed Oct. 17, 1904. Serial No. 228,690.



Claim.—1. In a musical instrument, the combination with a board or support having an air-passage therein, of a valve-head closing the passage a frame-piece located at each side of the valve-head and a flexible connection engaging the head and secured to said frame-pieces.

2. In a musical instrument, the combination with a board or support provided with an aperture and having an air-passage communicating therewith, of a valve embodying a stem and heads adapted to alternately engage opposite sides of the board and flexible connections secured to the heads and attached to the board at opposite sides thereof.

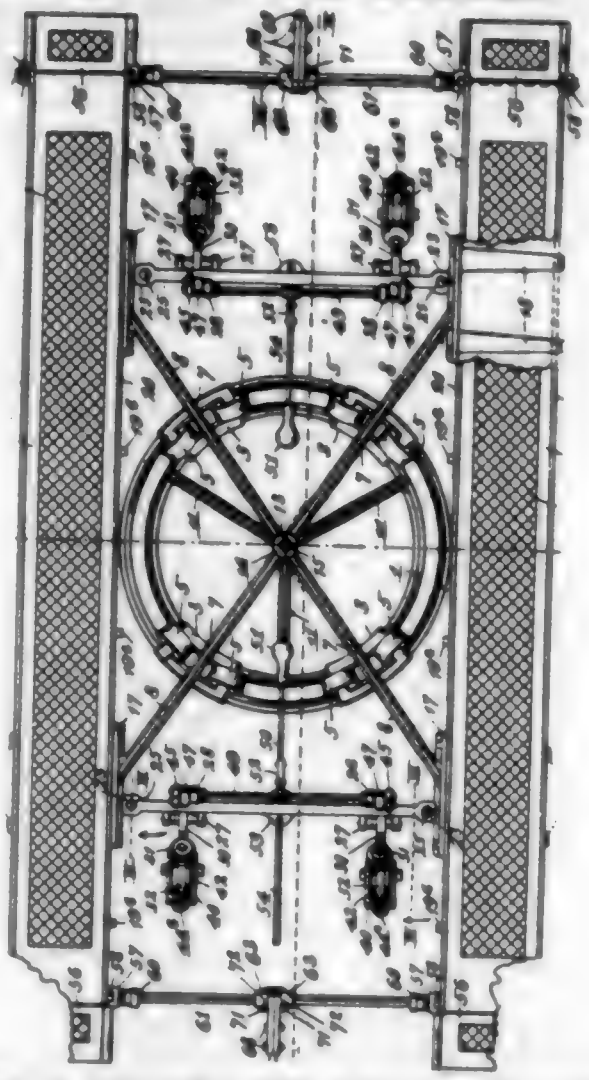
3. In a musical instrument, the combination with a board or support having an aperture and provided with an air-passage communicating therewith, of a valve embodying a stem arranged in the aperture in the board, said stem being flattened and having the edges engaging the sides of the aperture, heads coöperating with the stem adapted to alternately engage opposite sides of the board and means connected to the heads for centering the valve.

4. In a wind instrument, the combination with a board having an aperture and provided with an air-passage connected thereto, of a valve embodying a stem arranged in the aperture, said stem being flattened and provided with apertures and having the edges engaging the sides of the aperture, heads on the stem adapted to alternately engage opposite sides of the board and flexible connection attached to the heads and connected to the board at opposite sides of the valve.

5. In a wind instrument, the combination with a board having a plurality of air-passages therein, of a valve for each passage, said valves being arranged in a row and a flexible guiding connection attached to the several valves to center them.

6. In a wind instrument, the combination with a board having a plurality of air-passages therein, of a valve for each passage said valves being arranged in a row, a flexible connection attached to the several valves to center them and connected to the board beyond the valves at each end of the row and flexible binding-pieces extending transversely of the said row and connected to the valve-supporting strip.

819,014. PORTABLE TURN-TABLE. CHARLES W. HELLENBRAND, Kansas City, Kans., assignor of seven-eighths to Nathaniel C. Barnes, Kansas City, Mo. Filed Nov. 6, 1905. Serial No. 286,018.



Claim.—1. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, and a pair of runways carried by said arms.

2. A turn-table consisting of a centrally-disposed annular track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, and a pair of runways carried by said arms.

3. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, diagonally-arranged supporting-arms carried by the trucks, and a pair of runways carried by said arms.

4. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, diagonally-arranged supporting-arms carried by the trucks, transverse bars uniting said arms in pairs, and a pair of runways carried by said arms.

5. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks and pivotally secured to the center of the track, and a pair of runways carried by said arms.

6. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, and inclined approaches at the ends of said runways.

7. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, and adjustable approaches pivoted to the ends of said runways.

8. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, adjustable approaches pivoted to the ends of said runways so that said approaches may be raised or lowered, and means for reliably holding said approaches either in a raised or lowered position.

9. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, and transporting-wheels suitably secured to the turn-table.

10. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, transporting-wheels suitably secured to the turn-table, and means for raising and lowering said transporting-wheels, substantially as described.

11. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, adjustable approaches pivoted to the ends of said runways, and shoes for supporting the ends of said runways.

12. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, transporting-wheels suitably secured to the turn-table, and a draft-rod detachably secured to the turn-table.

13. A turn-table consisting of a pair of runways, supporting-arms carrying said runways, trucks carrying the supporting-arms, an annular track upon which said trucks are mounted, a centrally-disposed hub, radial arms connecting the hub to the track, and a king-bolt pivotally securing the supporting-arms to the hub.

14. A turn-table consisting of a track, trucks arranged to travel in a circle thereon, diagonally-arranged supporting-arms mounted upon said trucks and crossing each other at their central portions, hubs integral with said central portions, a king-bolt pivotally securing said hubs to the center of the track, longitudinal flanges at the ends of the supporting-arms, fingers extending laterally from said flanges, and runways carried by said fingers.

15. A turn-table consisting of a track, trucks arranged to travel in a circle thereon, bearings on said trucks, supporting-arms carried by the trucks and provided with sockets which loosely fit the bearings, and runways carried by said arms.

16. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, and guides integral with the opposite sides of said runways.

17. A turn-table consisting of a centrally-disposed track, trucks arranged to travel in a circle thereon, supporting-arms carried by the trucks, a pair of runways carried by said arms, longitudinal flanges integral with the supporting-arms, bosses on said flanges, and a pair of transverse bars provided at their ends with sockets which receive said bosses.

18. In a turn-table, a track, runways rotatably mounted thereon, levers fulcrumed to the turn-table, yokes pivotally secured to said levers, frames suitably secured to said yokes, transporting-wheels mounted in said frames, and means for operating the levers so that the transporting-wheels may be lowered to support the turn-table, or raised so that the track will support said turn-table.

19. In a turn-table, a track, runways rotatably mounted thereon, levers fulcrumed to the turn-table, yokes pivotally secured to said levers, frames pivotally secured to said yokes, transporting-wheels mounted in said frames, and means for operating the levers so that the transporting-wheels may be lowered to support the turn-table, or raised so that the track will support said turn-table.

20. In a turn-table, a track, runways rotatably mounted thereon, levers fulcrumed to the turn-table, yokes pivotally secured to said levers, frames suitably secured to said yokes, transporting-wheels mounted in said frames, links pivotally secured to the levers, crank-arms pivotally secured at their free ends to said links, shafts secured to said crank-arms, hand-levers secured to said shafts, and counterweights secured to said hand-levers, for the purpose described.

21. In a turn-table, a plurality of levers fulcrumed thereto, circular bearings integral with said levers, a plurality of yokes, circular bearings integral with said yokes and abutting against the bearings on the levers, upwardly-extending spindles on the yoke-bearings pivotally secured to the lever-bearings, horizontal frames, trunnions projecting from the ends of said frames and pivotally secured in the ends of the yokes, transporting-wheels mounted in the frames, and means for operating the levers so that said wheels may be raised or lowered, substantially as described.

22. In a turn-table, a pair of approaches pivotally secured thereto, a shaft fixed at its ends to said approaches, a hand-lever for operating said shaft, and means interposed between the shaft and the hand-lever whereby the initial movement of the latter will be independent of the former.

23. In a turn-table, a pair of approaches pivotally secured thereto, a shaft fixed at its ends to said approaches, a casting fixed on said shaft, a pair of flanges on said casting having recesses, and a lever pivotally secured to the casting and provided with lugs which fit loosely in the recesses so that the initial movement of the lever will be independent of the casting.

24. In a turn-table, a pair of parallel runways rotatably mounted, a plurality of shoes for supporting the ends of said runways, and means for raising said shoes preparatory to rotating the runways.

25. In a turn-table, a pair of parallel runways rotatably mounted, means for raising and lowering said runways, and shoes for supporting the ends of the runways when the latter are in their lowermost position.

26. In a turn-table, a pair of runways rotatably mounted, approaches adjustably secured to the ends of said runways so they may be raised and lowered, and shoes for supporting the ends of the runways, said shoes being carried by the approaches so they will be raised and lowered therewith.

27. In a turn-table, a pair of runways rotatably mounted, approaches adjustably secured to the runways so they may be raised and lowered, lugs depending from said approaches, a plurality of shoes, and ears on said shoes pivotally secured to said lugs.

819,015. **SAFETY-CLOSURE FOR BOTTLES, JARS, AND OTHER RECEPTACLES.** JOSEPH V. HULL, Brooklyn, N. Y., assignor to Harry C. Blye, New York, N. Y. Filed July 14, 1905. Serial No. 269,596.



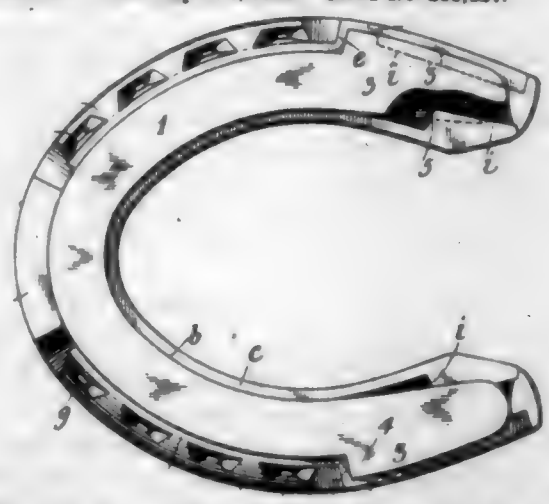
Claim.—1. A bottle and means for closing the mouth of same, combined with a locking-band fixedly encompassing the exterior surface of said bottle about said mouth and engaging said closing means, said band having at one end a tongue and at the other end a slit to receive said tongue, and said tongue having at its opposite edges locking-lips cut therefrom and held to the tongue by weak parts and adapted to engage the edge of said slit; substantially as set forth.

2. A bottle and means for closing the mouth of same, combined with a locking-band fixedly encompassing the exterior surface of said bottle about said mouth and engaging said closing means, said band having at one end a tongue and at the other end a slit to receive said tongue, and said tongue having at its opposite edges a series of locking-lips cut therefrom and held to the tongue by weak parts and adapted to engage the edge of said slit; substantially as set forth.

3. A bottle and means for closing the mouth of same, combined with a locking-band fixedly encompassing the exterior surface of said bottle about said mouth and engaging said closing means, said band having at one end a tongue and at the other end a slit to receive said tongue, and said tongue having at its opposite edges locking-lips to engage the edge of said slit, said lips being formed by slitting the tongue transversely and longitudinally at opposite sides and bending the lips from the tongue, and said lips being held to the tongue by weak parts left at adjacent portions of said slits; substantially as set forth.

4. A bottle and means for closing the mouth of same, combined with a locking-band fixedly encompassing the exterior surface of said bottle about said mouth and engaging said closing means, said band having at one end a tongue and at the other end a slit to receive said tongue, and said tongue having at its opposite edges a series of locking-lips to engage the edge of said slit, said lips being formed by cutting triangular slits in opposite sides of said tongue and bending the lips therefrom, and said lips being held to the tongue by weak parts left at adjacent portions of said slits; substantially as set forth.

819,016. **ELASTIC-TREAD HORSESHOE.** ALFRED W. JONES, St. Louis, Mo. Filed Sept. 26, 1905. Serial No. 280,127.



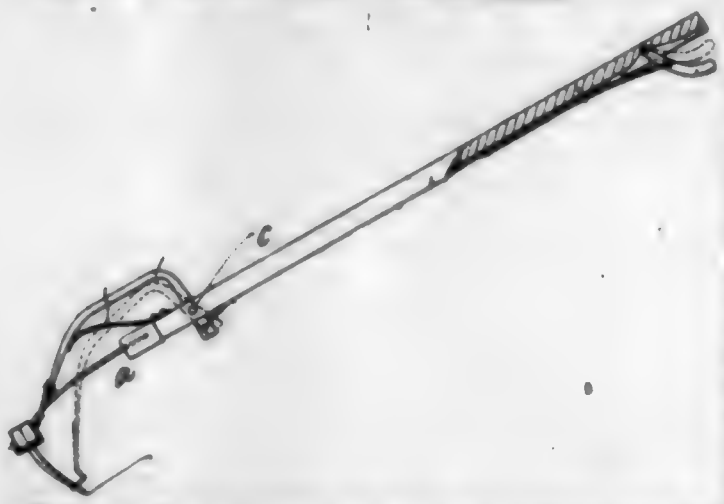
Claim.—1. A horseshoe having a channel in its lower side widened at the toe and heel, provided with inwardly-extending flanges at the toe and heel, and having the intermediate portions be-

tween the toe and heel contracted to form insets on the outer sides of said channel, in combination with a detachable elastic cushion shaped to fit the irregularities of said channel, substantially as described.

2. A horseshoe having a channel in its lower side, widened at the toe and heel, provided with inwardly-extending flanges at the toe and heel, and having the intermediate portions between the toe and heel contracted to form insets on the outer sides of said channel and provide spaces in the shoe on the outer sides of said contracted intermediate portions for the nail-holes so that the nail-holes are clear and on the outer sides of the intermediate portions of the channel, in combination with a detachable elastic cushion shaped to fit the irregularities of said channel, substantially as described

3. A horseshoe having a channel in its lower side, widened at the toe and heel, provided with inwardly-extending flanges at the toe and heel, and having the intermediate portions between the toe and heel contracted to form insets on the outer sides of said channel and provide spaces in the shoe on the outer sides of said contracted intermediate portions for the nail-holes so that the nail-holes are clear and on the outer sides of the intermediate portions of the channel, in combination with a detachable elastic cushion to fit in said channel and having widened portions to fit in the widened toe and heel portions of the channel, said cushion having a flange at its toe portion to engage the recess at the toe portion of the shoe and having grooves in its heel portion to receive the flanges at the heel portions of the channel and to detachably lock the toe and heel portions of the cushion in the toe and heel portions of the channel, substantially as described.

819,017. **SELF-CLEARING RAKE.** EDMUND C. MACARTNEY, Philadelphia, Pa., assignor of one-half to Harmon B. Amering, Philadelphia, Pa. Filed Dec. 2, 1905. Serial No. 289,971.



Claim.—1. The combination with a rake of a spring-controlled inverted generally U-shaped member comprising a single piece pivotally secured at one of its ends to the rake-handle, a clearing-plate mounted upon the opposite end of said member, a lever pivoted to the rake-handle, and a connection between the said lever and spring-controlled member, substantially as described.

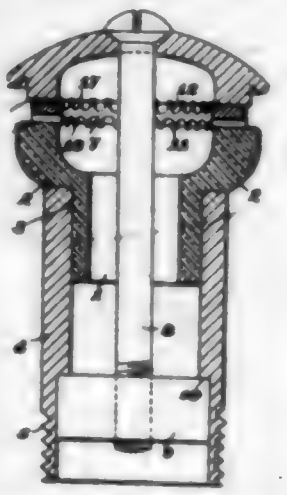
2. The combination with a rake of a member comprising a single piece pivotally secured at its inner end to the rake-handle and carrying at its outer end a clearing-plate, a spring interposed between the top of the handle and said member, a lever pivoted to the rake-handle and a connection between the said lever and member the rake-handle being grooved as at *j*, for the said connection, substantially as described.

3. The combination with a rake-head and its slotted handle secured thereto of a movable plate having perforations for the passage of the rake-teeth, a member having one of its ends pivotally secured within the slotted portion and rising above the said rake-handle and bent downwardly for attachment to the movable plate, a spring arranged between the top of the handle and said member a hand-lever pivoted to the handle and a connection between the lever and the said member, substantially as described.

819,018. **GAS-BURNER.** GEORGE MACKLEY, Jr., Elizabeth, N. J. Original application filed Dec. 1, 1903, Serial No. 183,232. Divided and this application filed July 13, 1905. Serial No. 270,255.

Claim.—1. A gas-burner comprising a tubular body, a cap therefor, and an intervening screen comprising a ring notched in its top and bottom surfaces and having projections to interlock with both said body and said cap, the notches radiating and forming jets, and being larger at their inlet ends than at their outlet ends.

2. A gas-burner comprising a tubular member, a cap, and an intervening notched ring, the notches alternating on its top and bottom surfaces, and being outwardly directed, and forming jets, and being deeper at their inlet ends than at their outlet ends, said ring formed with projections to interlock with said cap and said tubular member.



3. A gas-burner comprising a tubular body having a rim, a cap therefor having a rim, and an intervening notched ring operating as a screen to prevent entrance of flame into said tubular body, the notches being outwardly directed, and formed alternately in the top and bottom surfaces of the ring, projections extending upwardly from the ring and downwardly from the ring to fit within said rims, and means detachably securing said cap and ring upon said tubular body; the top notches being close to the bottom notches, so that the vapor issuing from all the notches burns in a single flame.

4. A gas-burner comprising a tubular body having an interior fixed nut, a cap for said body, the cap having a rim of the same diameter as the tubular body, a notched ring intervening between said cap and body, a screw passing down through said cap and threaded into said nut, and similar projections extending both upwardly and downwardly from the ring, to interlock the latter with said cap and said body.

5. A gas-burner comprising a tubular body having a rim, a cap therefor having a rim, an intervening notched ring, said ring having outwardly-directed notches formed alternately in its top and bottom surfaces, and having similar projections extending upwardly and downwardly to fit within said rims, the latter being similar, a fastening device passing down through said tubular body, and means within the tube engaged by said fastening device.

6. In a gas-burner, a ring having radiating notches, said ring being also provided with a flange through which said notches are prolonged; said notches serving as jets for the gas, and each extending continuously from edge to edge of the ring, and the notched flange operating to hold the ring in position on the burner.

7. In a gas-burner, a notched ring having a flange, the notches radiating and each notch in the ring extending also through the flange, the notches radiating and serving as jets for the gas, each notch larger at its inlet end than at its outlet end.

8. In a gas-burner, a notched ring having top and bottom flanges, the notches formed alternately in the top and bottom surfaces of the ring and each notch prolonged to extend through the flange.

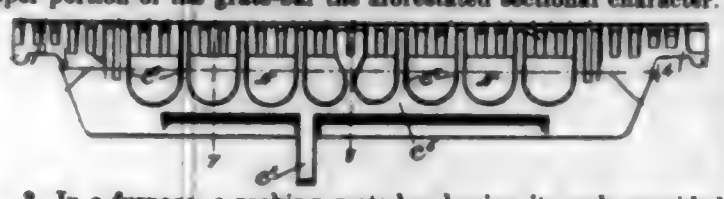
9. In a gas-burner, a notched ring having top and bottom flanges, the notches formed alternately in the top and bottom surfaces of the ring and each notch prolonged to extend through the flange, the notches radiating and serving as jets for the gas, and each notch larger at its inlet end than at its outlet end.

819,019. **FURNACE-GRATE BAR.** THOMAS R. MARTIN, Chicago, Ill. Filed Dec. 26, 1901. Serial No. 87,240.

Claim.—1. In a furnace, a grate-bar having an upper portion composed of a plurality of sections arranged end to end, and having a continuous lower portion, the said upper and lower portions being connected by end uprights, and also by a number of slender intermediate uprights, the end uprights being split vertically for some distance below the lower edge of the said upper portion of the grate-bar, and the middle upright being split or divided vertically to a point substantially on a line with the lower edge of said upper portion of the grate-bar, whereby each intermediate section of the upper portion of the grate-bar is supported at its ends and also at intermediate points.

2. In a furnace, a grate-bar having a relatively light toothed upper portion composed of sections arranged end to end, and having

a relatively heavy and continuous lower portion, the said upper and lower portions being connected by end and intermediate uprights, the end uprights being relatively thick or heavy, while the intermediate uprights are relatively light or slender, the upper ends of said uprights being adapted to serve as teeth, and certain of said uprights being split or divided vertically for the purpose of giving the upper portion of the grate-bar the aforestated sectional character.



3. In a furnace, a rocking grate-bar having its ends provided with bearing portions, and having also a sectional upper portion and a continuous lower portion, the upper portion containing considerably less metal than the lower portion, and the said bar having also a plurality of uprights connecting the said upper and lower portions, certain of said uprights being split or divided vertically in order to give the upper portion of the bar the aforestated sectional character, and the intermediate uprights being relatively light or slender and so disposed that each intermediate section of the upper portion of the grate-bar is supported at its ends and also at intermediate points.

4. A grate-bar for use in furnaces, having a relatively light upper portion composed of sections arranged end to end, and having also a relatively heavy continuous lower portion, the said upper and lower portions being connected by uprights that are thicker than the upper portion and which extend to the crest of the latter, so that the upper portion of said uprights may serve as teeth for the upper portion of said grate-bar, the end sections of the upper portion of the bar being provided with laterally-projecting teeth arranged outside of the said uprights, and the intermediate sections of the upper portions of the grate-bar being also provided with laterally-projecting teeth arranged between the upper end portions of said uprights.

5. A grate-bar, provided with a relatively light upper portion divided into a plurality of lengths arranged end to end, and having also a relatively heavy continuous lower portion, the end sections of the upper portion being connected with the lower portion by means of thickened or relatively heavy uprights, and the intermediate sections of the upper portion being connected with the lower portion by means of a plurality of slender or relatively light uprights.

6. A grate-bar provided with a relatively light upper portion and a relatively heavy lower portion, the ends of said relatively heavy and light portions being connected by relatively thick or heavy uprights, and having also a number of relatively light or slender uprights connecting the intermediate parts of said upper and lower portions.

7. A grate-bar having a horizontal upper portion consisting of a plurality of thin webs arranged end to end, a relatively heavy and continuous lower portion, teeth projecting laterally from the upper portion, uprights connecting the heavy and continuous lower portion of the bar with the said webs which constitute the relatively light portion, and bearing portions for the ends of the bar, certain of said uprights being split or divided vertically for the purpose of giving the upper portion of the bar the aforestated sectional character.

8. In a furnace, a grate-bar having a relatively thin and laterally-toothed upper portion composed of sections arranged end to end, and having a relatively heavy and continuous lower portion, the said upper and lower portions being connected by uprights, the end and middle uprights being split vertically for the purpose of giving the upper portion of the grate-bar the aforestated sectional character.

9. A grate-bar provided with a laterally-toothed upper portion divided into sections arranged end to end, and having a continuous lower portion, the said upper and lower portions being connected by a plurality of uprights, certain of said uprights being split or divided vertically in order to give the said upper portion the aforestated sectional character.

10. In a furnace, a grate-bar having an upper portion composed of a plurality of thin web-like sections arranged end to end, and having a continuous lower portion, the said upper and lower portions being connected by inflexible end portions, and also by a number of flexible intermediate uprights, the said uprights being so disposed that an intermediate part of the upper portion of the grate-bar is supported at its ends and also at intermediate points.

11. In a furnace, a grate-bar having a relatively light toothed upper portion composed of sections arranged end to end, and having a relatively heavy and continuous lower portion, the said upper and lower portions being connected by end and intermediate uprights, the end uprights being relatively thick or heavy, while the intermediate uprights are relatively light or slender and of a character to flex or bend when the upper portion of the bar expands endwise, the upper ends of said uprights being adapted to serve as teeth.

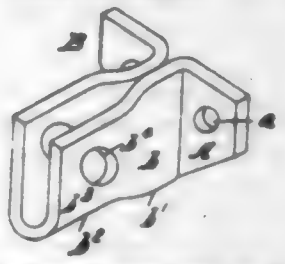
12. In a furnace, a rocking grate-bar having its ends provided with bearing portions, and having also a sectional upper portion and a continuous lower portion, the upper portion containing considerably less metal than the lower portion, and the said bar having also a plurality of uprights connecting the said upper and lower portions, certain of said uprights being split or divided vertically in order to give the upper portion of the bar the aforestated sectional character, and the intermediate uprights being relatively light or slender and so disposed that an intermediate part of the upper portion of the grate-bar is supported at its ends and also at intermediate points.

13. A grate-bar for use in furnaces, having a relatively light upper portion composed of sections arranged end to end, and having also a relatively heavy continuous lower portion, the said lower and upper portions being connected by uprights that are thicker than the upper portion and which extend to the crest of the latter, so that the upper portions of said uprights may serve as teeth for the upper portion of said grate-bar, the end sections of the upper portion of the bar being provided with laterally-projecting teeth arranged outside of the said uprights, and an intermediate part of the upper portion of the grate-bar being also provided with laterally-projecting teeth arranged between the upper end portions of said uprights.

14. A grate-bar, provided with a relatively light upper portion divided into a plurality of sections arranged end to end, and having also a relatively heavy continuous lower portion, the end sections of the upper portion being connected with the lower portion by means of thickened or relatively heavy end portions, and an intermediate part of the upper portion being connected with the lower portion by means of a plurality of slender or relatively light uprights adapted to flex or bend with the endwise expansion of the upper portion of the bar.

15. A grate-bar provided with a relatively light upper portion and a relatively heavy lower portion, the ends of said relatively heavy and light portions being connected by relatively thick or heavy end portions, and having also a number of flexible uprights connecting the intermediate parts of said upper and lower portions.

819,020. **BOILER-BRACE.** LINCOLN G. MOSS, Erie, Pa., assignor to Erie City Iron Works, Erie, Pa., a Corporation of Pennsylvania. Filed Nov. 2, 1905. Serial No. 285,615.



Claim.—1. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured.

2. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured, the walls b^3 b^3 being connected by the turn b^3.

3. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured; and the neck portion having the walls b b formed in continuation of the walls b^3 b^3, the walls b b being close together.

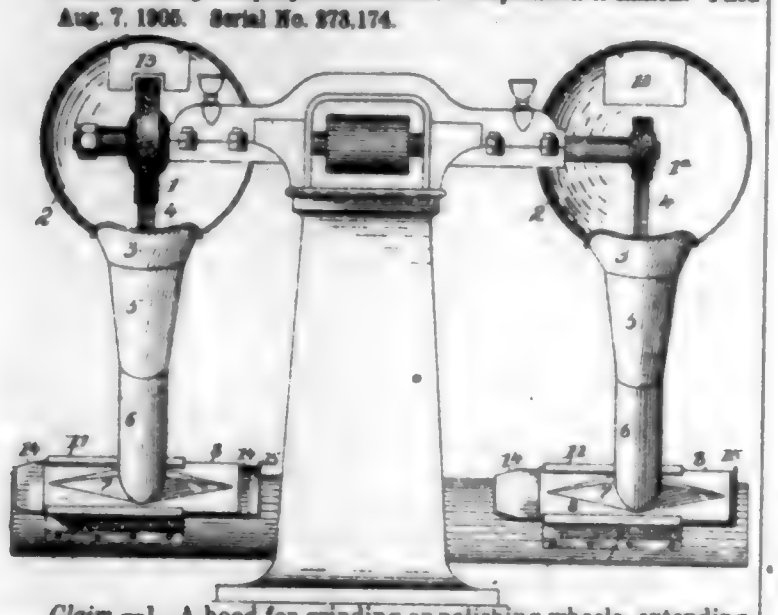
4. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured; and the neck portion having the walls b b formed in continuation of the walls b^3 b^3, the walls b b being close together and connected by the turn b'.

5. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured, the walls b^3 b^3 being connected by the turn b^3; and the neck portion having the walls b b formed in continuation of the walls b^3 b^3, the walls b b being close together.

6. A boiler-brace comprising the feet A A adapted to be secured to a boiler, and the shank formed integrally therewith and having the separated walls b^3 b^3 between which a brace-rod may be placed and secured, the walls b^3 b^3 being connected by the turn b^3; and the

neck portion having the walls *b b* formed in continuation of the walls b^3 b^3, the walls *b b* being close together and connected by the turn *b'*.

819,021. GRINDING OR POLISHING MACHINE. PHILIP MUELLER and JOHN BOLAND, Decatur, Ill.; said Mueller assignor to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Filed Aug. 7, 1905. Serial No. 273,174.



Claim.—1. A hood for grinding or polishing wheels, extending behind, below and partly above the wheel, a down-leg leading from the lower part of the hood, and a narrow depression in the back part of the hood extending downward to the down-leg and forming a laterally-contracted conduit.

2. A hood for grinding or polishing wheels, comprising a concave shell in an approximately vertical position, a horizontal extension of the lower part of the shell, a down-leg leading from the lower part of the hood and the extension thereof, and a narrow depression in the back part of the hood extending downward to the down-leg and forming a laterally-contracted conduit.

3. A hood for grinding or polishing wheels, comprising an approximately hemispherical shell extending in a generally vertical direction and merging with a narrower horizontal extension and a down-leg connected with the lower part of the hood.

4. In a grinding or polishing machine, the combination of a horizontal suction-pipe, a grinding or polishing wheel mounted on a shaft parallel with the suction-pipe, an approximately hemispherical hood for the wheel, and a down-leg for the hood communicating with the suction-pipe and slidable lengthwise thereof.

5. In a grinding or polishing machine, the combination of a horizontal suction-pipe, a grinding or polishing wheel the axis whereof is parallel with the suction-pipe, a hood for the wheel, a down-leg for the hood, and an elongated foot on the leg slidable lengthwise of the pipe in communication therewith.

6. In a grinding or polishing machine, the combination of a horizontal suction-pipe, a grinding or polishing wheel, a drive-shaft parallel with the suction-pipe and adapted to carry a wheel at different places along its length, a hood for the wheel, a down-leg for the hood and an elongated foot for the leg, slidable lengthwise of the pipe in communication therewith.

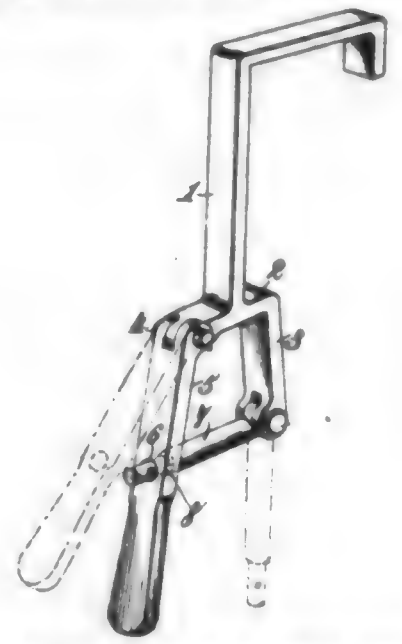
7. In a grinding or polishing machine, the combination of a horizontal suction-pipe, a grinding or polishing wheel the axis whereof is parallel with the suction-pipe, and an approximately hemispherical hood for the wheel communicating with the pipe and movable lengthwise thereof.

8. In a grinding or polishing machine, the combination of a suction-pipe having a flat side, a dust-collecting hood, a down-leg for the hood, a plate on the lower end of the down-leg slidable on the flat side of the pipe, and an apertured plate slidable between the plate of the down-leg and the flat side of the pipe for controlling the opening between the down-leg and the pipe.

9. In a grinding or polishing machine, the combination of a suction-pipe having an elongated side opening, a dust-collecting hood, a down-leg for the hood, a plate on the lower end of the down-leg slidable on the open side of the pipe, and an apertured plate slidable between the plate of the down-leg and the pipe for controlling the passage-way from the down-leg to the pipe.

819,022. BOAT HOLDING-DOWN AND DETACHING DEVICE. BENJAMIN F. MCHORNEY and EDWARD J. KELLEY, Norfolk, Va. Filed Oct. 28, 1905. Serial No. 284,396.

Claim.—1. A boat holding-down and detaching device comprising a gripping-arm, a supporting-arm therefor, a member depending from said supporting-arm, a locking-lever pivoted to said supporting-arm, and a lash-holding bar pivoted at one end to said member and adapted to have its other end extend through said lever.



2. A boat holding-down and detaching device comprising a gripping-arm, a supporting-arm therefor, a member depending from said supporting-arm, a locking-lever pivoted to said supporting-arm, and a lash-holding bar pivoted at one end to said member and adapted to have its other end extend through said lever, said bar provided with a shoulder for limiting the movement of said lever in one direction.

3. A boat holding-down and detaching device comprising a gripping-arm, a supporting-arm therefor, a depending member connected to said supporting-arm, a depending locking-lever pivoted to said supporting-arm, said lever extending substantially in the same direction as said member, and a lash-holding bar pivoted at one end to said member and adapted to have its other end extend through said lever.

4. A boat holding-down and detaching device comprising a gripping-arm, a supporting-arm therefor, a depending member connected to said supporting-arm, a depending locking-lever pivoted to said supporting-arm, said lever extending substantially in the same direction as said member, and a lash-holding bar pivoted at one end to said member and adapted to have its other end extend through said lever, said bar provided with means to limit the movement of said lever in one direction.

5. A boat holding-down and detaching device comprising a gripping-arm, an inverted-L-shaped element connected at the lower end of said arm, a locking-lever pivoted to one end of said element, and a lash-holding bar pivoted to the other end of said element, said lever extending in an opposite direction with respect to the direction in which said bar extends, and said bar adapted to have its free end extend through said lever.

6. A boat holding-down and detaching device comprising a gripping-arm, an inverted-L-shaped element connected at the lower end of said arm, a locking-lever pivoted to one end of said element, and a lash-holding bar pivoted to the other end of said element, said lever extending in an opposite direction with respect to the direction in which said bar extends, and said bar adapted to have its free end extend through said lever, said bar provided with means to limit the movement in one direction of said lever.

819,023. HOLDER FOR JARS AND OTHER LIKE ARTICLES. PHILIP B. PERRY, Lexington, Mass. Filed Feb. 5, 1906. Serial No. 299,436.



Claim.—1. As a new article of manufacture, a holder for jars or other like articles comprising a bail having pendent arms, a bowed

jaw carried by said arms and a second bowed jaw disposed oppositely thereto, one end of said last-mentioned jaw being permanently connected to one of said arms and the other end thereof being slidably mounted on the other said arm, whereby said jaws open vertically.

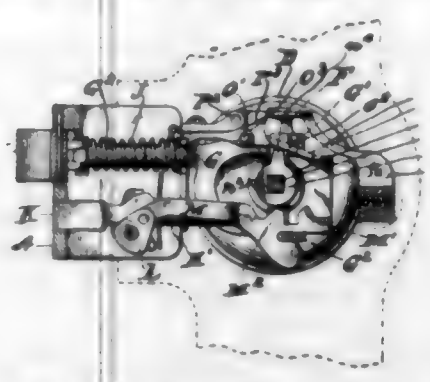
2. As a new article of manufacture, a holder for jars or other like articles comprising a bail having pendent spring-arms, a bowed jaw of spring metal carried by said arms, and a second bowed jaw of spring metal disposed oppositely thereto permanently connected at one end thereof to one of said arms, and the other end thereof being slidably mounted on the other said arm, whereby said jaws open vertically.

3. As a new article of manufacture, a holder for jars and other like articles comprising a continuous strand of wire bent to form a bail having pendent arms, a bowed jaw supported by said arms and a second bowed jaw disposed oppositely thereto extending from one said arm and slidably mounted on the other, whereby said jaws open vertically.

4. As a new article of manufacture, a holder for jars and other like articles, comprising a continuous strand of wire having a substantially straight central section forming a cross-head, the opposite ends of said wire being bent downwardly to form pendent arms, outwardly and laterally from each said arm to the other to form the oppositely-disposed jaws of the holder, and into a hook or loop on each end encircling a pendent arm, whereby said jaws open vertically.

5. As a new article of manufacture, a holder for jars and other like articles comprising a continuous strand of wire having a substantially straight central section forming a cross-head, the opposite ends of said wire being bent downwardly to form pendent arms, outwardly and laterally from each said arm to the other to form the oppositely-disposed jaws of the holder, and into a hook or loop on each end encircling a pendent arm whereby said jaws open vertically, and a handle-grip mounted on said cross-head.

819,024. LOCK. BYRON PHELPS, Seattle, Wash. Original application filed Apr. 29, 1904, Serial No. 205,445. Divided and this application filed Dec. 15, 1904. Serial No. 236,930.



Claim.—1. In a lock mechanism, the combination of a bolt operable by means of a key, an indicating device independent of said bolt, and connections for operation of said indicating device to exposed position by means of said key independently of and in advance of the extension of the bolt.

2. In a lock, a bolt, key-controlled bolt-actuating mechanism normally operative from either side of the lock, an indicator arranged at the outer side of the lock, means for normally holding said indicator in one position and connections between said actuating mechanism and said indicator operable only from the inner side of the lock to permit said indicator to automatically move to another position when the bolt-operating key is introduced into the lock and turned.

3. In a lock, a bolt, a bolt-actuating device operable by means of a key, an indicating device adapted to be set in motion by said key, means moving with said indicating device arranged to prevent the removal of the key when said indicating device is exposed to indicate that the key is inserted and has been partly turned.

4. In a lock, a bolt, key-controlled bolt-actuating mechanism, a signal arranged at the outer side of the lock, means for moving said signal, said means being operable by a key inserted at the inner side of the lock and means operable by the turning of said key for preventing the operation of a key from the outside of the lock when said indicating device is exposed to indicate that the room is occupied.

5. In a lock, a bolt, independent key-controlled bolt-actuating mechanism on the outer and inner sides of said lock, a signal or indicator arranged for display at the outer side of the lock, means of connection between said signal and the key-operated means at the inner side of the lock only whereby the turning of said key will display said indicator and means for preventing the withdrawal of the key so long as the indicator is exposed.

6. In a lock, key-controlled bolt-operating means, a hinged signal arranged to be displayed at the outer side of the lock, means set in operation by the movement of the key for tilting said signal to normally move the same to one position and means between the key-controlled mechanism and said signal for moving the latter to an opposite position.

7. In a lock mechanism, the combination of a bolt, bolt-operating mechanism accessible from the outer side of the lock, independent bolt-operating mechanism accessible from the inner side of the lock, an indicating device normally in position indicating "out," mechanism for throwing said indicating device into position indicating "in" when the bolt-operating mechanism accessible from the inner side of the lock is operated to extend the bolt, and returning said indicating device to its "out" position when said bolt-operating mechanism accessible from the inner side of the lock is operated to retract the bolt, said indicating device being independent of the action of said bolt-operating mechanism accessible from the outer side of the lock.

8. In a lock mechanism, an indicating device arranged to be visible at the outer side of the lock, key-controlled means operable from the inside of the lock for causing the movement of said indicating device, means for permitting independent movement of the key after the indicating device is moved and means for preventing the removal of the key while the indicating device shows "in."

9. In a lock, the combination of independent bolt-operating mechanisms accessible from the opposite sides of the lock, an indicating device, means for normally holding it in the "out" position, key-controlled means for releasing said holding means, and a spring for throwing said indicating device to the "in" position when said holding means is released.

10. In a lock mechanism, the combination of a bolt, a key-controlled operating-spindle, a roll-back on said spindle, a slide for said bolt whose operation is controlled by the movement of said roll-back, an indicating device normally held in the "out" position by said roll-back, but adapted to be released to move to the "in" position when said roll-back is turned.

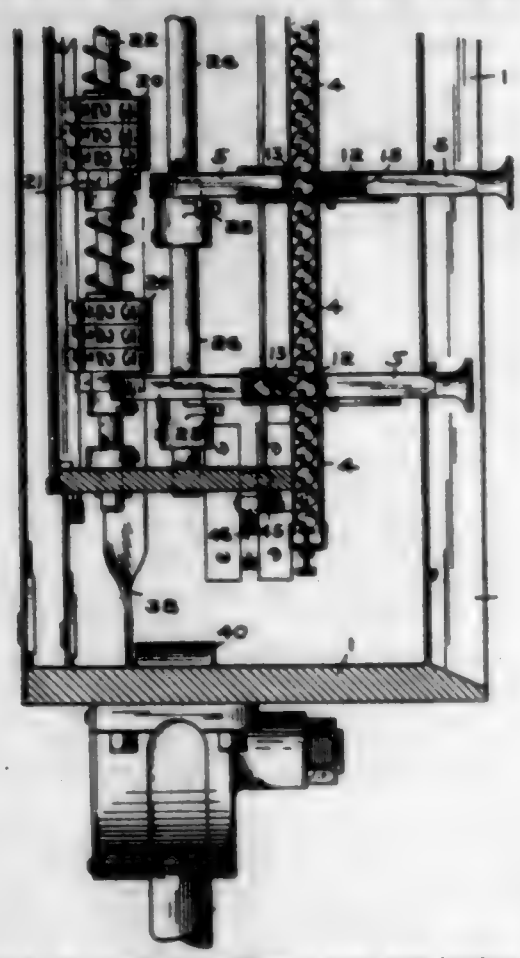
11. In a lock mechanism, the combination of a key-operable locking-bolt, an indicator-carrier with connections for operation by the key and means for preventing the withdrawal of the key from the lock except when the carrier is in its normal position.

819,025. DRILL-CHUCK. GEORGE R. RICH, Chicago, Ill., assignor to Geo. R. Rich Manufacturing Company, Buchanan, Mich., a Corporation of Illinois. Filed Oct. 10, 1904. Serial No. 227,791.



Claim.—In a device of the class described, the combination with a hollow chuck-body provided with a longitudinal slot, of a backing-block longitudinally movable within the chuck, projections on the backing-block extending out through the slot, a ring on the chuck-body and engaging the projections on the backing-block to move the same longitudinally in the chuck, jaws adapted to grasp a drill, and means for closing the jaws independently of the movement of the backing-block.

819,026. **INTERLOCK MECHANISM FOR VOTING-MACHINES.** WILLIAM L. SANDAGE, Indianapolis, Ind., assignor to The National Voting Machine Company, Indianapolis, Ind., a Corporation of Indiana. Original application filed Apr. 10, 1903, Serial No. 152,005. Divided and this application filed Dec. 8, 1903. Serial No. 184,280.



Claim.—1. In a voting-machine, a race unit having laterally-movable sections.

2. In a voting-machine, a race unit composed of a series of both fixed and laterally-movable sections.

3. In a voting-machine, a race unit composed of both fixed and laterally-movable sections, the latter carrying a plurality of race-apertures which can be alternately moved into or out of alinement with the former.

4. In a voting-machine, a race unit composed of both fixed and laterally-movable sections, the latter provided with a plurality of race-apertures, balls within said sections, and means engaging with the movable sections for displacing balls into the fixed sections.

5. In a voting-machine, a race unit composed of both fixed and laterally-movable sections, the latter provided with a plurality of race-apertures, slots bisecting the apertures, and means engaging with the slots for displacing the balls.

6. In a voting-machine, a race unit composed of both fixed and laterally-movable sections, the movable sections provided with primary and secondary race-apertures the former having the walls formed on inclinations to accelerate the displacement of the balls.

7. In a voting-machine, a race unit comprising a series of both fixed and movable race-sections, and means for connecting the fixed sections of the race unit.

8. In a voting-machine, a race unit comprising a series of both fixed and movable race-sections, and curved race-sections connecting the fixed sections of the race unit.

9. In a voting-machine, a race unit comprising a series of both fixed and laterally-movable race-sections, and means for connecting the fixed sections of the race unit.

10. In a voting-machine, a race unit comprising a series of both fixed and laterally-movable race-sections, and curved race-sections connecting the fixed sections of the race unit.

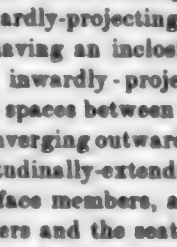
11. In a voting-machine, a race unit comprising a series of both fixed and laterally-movable race-sections, and limiting means within the race unit to limit the movement of the movable sections of the race.

12. In a voting-machine, a race unit comprising a series of both fixed and laterally-movable race-sections, limiting means within the race unit to limit the movement of the movable sections of the race unit, and means in the movable race-sections to carry the limiting means into and out of the race unit.

13. In a voting-machine, a race unit comprising a series of both fixed and movable race-sections, limiting means within the race unit to limit the movement of the movable sections of the race, means in the movable sections of the race unit to carry the limiting means into and out of the race unit, and means for connecting the fixed sections of the race unit.

14. In a voting-machine, a race unit comprising a series of both fixed and movable race-sections, limiting means within the race unit to limit the movement of the movable sections of the race unit, means in the movable sections of the race unit to carry the limiting means into and out of the race unit, and curved race-sections connecting the fixed sections of the race unit.

819,027. **FLEXIBLE TUBING.** SALVATORE SCOGNAMILLO, New York, N. Y. Filed May 13, 1905. Serial No. 260,347.



Claim.—1. A flexible tubing consisting of an outer casing composed of movably-connected convolutions formed with concavo-convex surface members and inwardly-projecting locking members with contiguous outwardly-converging sides, parts of the latter being inclosed by the surface members and forming closures for portions of the spaces between the said locking members, and an inner resilient core having convolutions fitting closely in the spaces provided between the locking members.

2. A flexible tubing consisting of an outer casing composed of movably-connected convolutions having inwardly-projecting locking members with outwardly-converging contiguous portions, and also formed with concavo-convex surface members having their convex sides outermost, the inwardly-projecting locking members including flange-terminals inclosed by the said surface members and freely movable in the latter and forming closures for a portion of the spaces between the said locking members, and a resilient sustaining-core having the convolutions thereof closely fitted in the said spaces, and bearing against the outwardly-converging portions of the locking members.

3. A flexible tubing consisting of an outer casing composed of movably-connected convolutions having inwardly-projecting locking members with outwardly-converging contiguous portions continuous with concavo-convex surface members and terminal flanges extending longitudinally of the tubing inside of the surface members, and a resilient core having convolutions snugly bearing against the outwardly-converging locking members.

4. A flexible tubing having an inclosing casing composed of convolutions formed with inwardly-projecting locking members terminating in longitudinally-extending seat-flanges and continuous with outer concavo-convex surface members, the seat-flanges forming pockets with the said surface members and freely movable in relation to the latter, a packing-strip mounted in said pockets, and a resilient core having convolutions bearing snugly against the contiguous portions of the inwardly-projecting locking members.

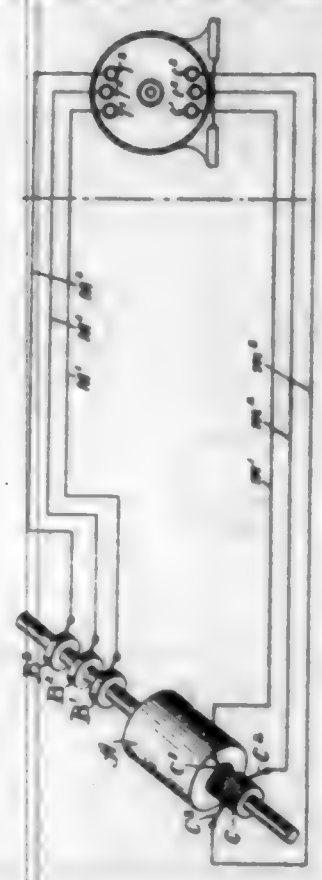
5. A flexible tubing having an inclosing casing composed of convolutions formed with inwardly-projecting locking members providing inner and outer spaces between the contiguous portions thereof, the inner spaces converging outwardly and the locking members terminating in longitudinally-extending seat-flanges located within concavo-convex surface members, a packing-strip mounted between the surface members and the seat-flanges, and a resilient core having convolutions snugly bearing in the outwardly-converging spaces between the locking members.

6. A flexible tubing having an inclosing casing composed of convolutions formed with outer surface members continuing at one side into inwardly-projecting locking members having their contiguous portions converged outwardly and terminating in seat-flanges which project longitudinally with respect to the tubing and lie within the surface members to form pockets with the latter, the opposite sides of the convolutions having inwardly-projecting flanges of less extent than the locking members, a packing-strip in the said pockets, and a sustaining-core having its convolutions bearing against the outwardly-converged portions of the locking members.

7. A flexible tubing having an inclosing casing composed of convolutions formed with outer surface members continuing at one side into inwardly-projecting locking members having their contiguous portions converged outwardly and terminating in flanges lying within the surface members and extending longitudinally of the tubing, the opposite sides of the surface members having inwardly-

projecting flanges of less extent than the inwardly-projecting locking members, and a sustaining-core having its convolutions snugly bearing against the outwardly-converged portions of the locking members.

819,028. METHOD OF TRANSMITTING POWER BY ELECTRIC CURRENTS. WILLIAM STANLEY, Great Barrington, Mass. Original application filed July 19, 1904, Serial No. 217,171. Divided and this application filed Nov. 10, 1904. Serial No. 232,122.



Claim.—1. The method of transmitting power at varying speeds by alternating currents which consists in impressing upon the rotor element of a motor a field due to alternate currents of one frequency, and impressing upon the stator element a field due to alternating currents of a different frequency and varying the relative direction of rotation of the impressed fields.

2. The method of transmitting power at varying speeds by alternating currents which consists in supplying one member of a motor with alternate currents of a given frequency and short-circuiting the windings of the second member and subsequently supplying said second member with currents of different frequency and short-circuiting the windings of said first-mentioned member, said frequencies being both independent of the rate of rotation of said rotor.

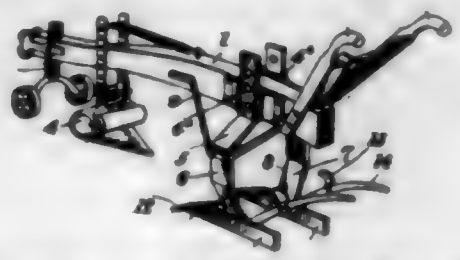
3. The method of transmitting power at varying speeds by alternating currents which consists in supplying one member of a motor with alternate currents of a given frequency and short-circuiting the windings of the second member and subsequently supplying said second member with currents of higher frequency and short-circuiting the windings of said first-mentioned member and at an intermediate time supplying both elements with currents of different frequencies so as to produce an intermediate speed.

4. The method of transmitting power at varying speeds by alternating currents which consists in supplying one member of a motor with alternate currents of a given frequency and short-circuiting the windings of the second member and subsequently supplying said second member with currents of higher frequency and short-circuiting the windings of said first-mentioned member and at a still later time supplying both members respectively with said frequency-differing currents so as to produce a still higher speed of the rotor element.

819,029. BEET-HARVESTER. LOUIS STUMART, Green Bay, Wis. Filed July 20, 1905. Serial No. 270,560.

Claim.—1. In a device of the class described, a pair of suitably-supported beet-lifting members having beveled front ends, in combination with rearwardly-converging rods connected with the lifting members and extending upwardly from the latter to elevate the beets and to deposit them in the furrow from which they have been taken upon the loose soil sifting back into the furrow between said rods.

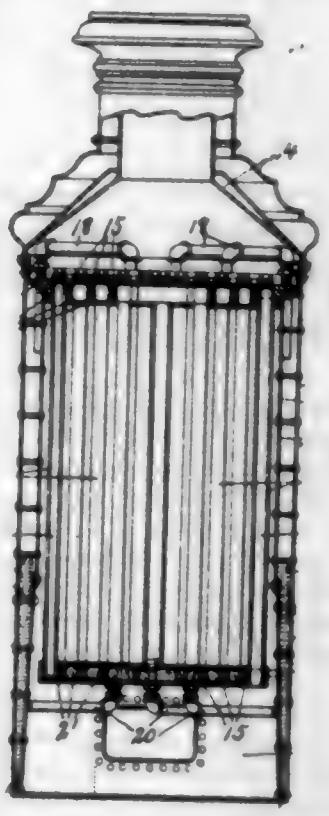
2. Rearwardly-converging beet-lifting members having beveled and flanged front ends, earth-engaging cutting members supporting said lifting members, and rearwardly-converging guides connected with the latter.



3. In a beet-harvester, a pair of rearwardly-converging beet-lifting members having beveled and flanged front ends, earth-engaging cutting members supporting said lifting members, rearwardly-converging guides connected with the latter, and earth-engaging blades upon said guides.

4. In a beet-harvester, a pair of suitably-supported beet-lifting members, in combination with upwardly and rearwardly converging guides connected with said lifting members, and earth-engaging blades upon said guides.

819,030. UPRIGHT FLUE-BOILER. WILLIAM WÖRNLE, Seneca Falls, N. Y., assignor of one-third to Frank MAXSON and one-third to Charles Herbert, Seneca Falls, N.Y. Filed May 13, 1905. Serial No. 260,230.



Claim.—1. An upright flue-boiler, comprising a double-wall outer shell, forming a steam and water chamber, a steam-drum within and resting upon the upper end of the shell, a series of concentric rows of water-tubes secured to and depending from the drum, a water-base secured to the lower ends of the tubes and communicating therewith, and a plurality of series of concentric rows of fire-flues each passing through one of the water-tubes and secured to the drum, a water-base and return-flow pipes leading from the water-chamber of the shell into the water-base, and steam-pipes leading from the steam-drum into the steam-chamber of the shell and terminating above the water-line.

2. An upright flue-boiler, comprising an outer upright shell having an annular water and steam chamber, a steam-drum composed of a series of hollow concentric rings supported in the upper end of the shell, a series of steam-pipes, each leading from one of the rings into the steam-chamber of the shell and terminating above the water-line in said shell, a water-base within the shell, a series of concentric rows of water-tubes, those of each row connecting one of the rings of the steam-drum with the water-base, and a plurality of fire-flues, each passing through one of the water-tubes and having their lower and upper ends secured respectively to the water-base, and to one of said rings of the steam-drum.

3. A boiler comprising an upright water-leg inclosing a combustion-chamber, a steam-drum supported within the upper end of the water-leg, a water-base divided into a series of separate compartments, separate pipes, each connecting one of the compartments of the water-base with the water-leg, water-tubes connecting each

compartment of the water-base with the steam-drum, and a series of fire-flues, each passing through one of the water-tubes and having its lower and upper ends secured respectively to the water-base and steam-drum.

4. In a multiple water-tube boiler, an upright cylindrical water-leg in combination with a series of hollow concentric rings lying in substantially the same horizontal plane, one within the other, and separate pipes, each connecting one of the rings with the water-leg.

5. A boiler comprising an upright cylindrical water-leg, a steam-drum composed of a series of hollow concentric rings spaced apart, forming intervening fire-passages, the outer ring resting upon the top of the water-leg, tie-pieces connecting said rings at intervals across the intervening spaces, separate pipes, each connecting one of the rings with the water-leg, a water-base composed of a series of concentric rings spaced apart, forming intervening fire-passages, a plurality of concentric rows of water-tubes, those of each row connecting one of the rings of the steam-drum with the corresponding ring of the water-base, a series of fire-flues each passed through one of the water-tubes, a series of separate pipes, each connecting one of the rings of the steam-drum to the water-leg, and additional pipes, each connecting one of the rings of the water-base with said water-leg.

6. An upright multiple water-tube boiler comprising two shells united at the top and bottom and spaced apart between their ends to form a water-leg, a steam-drum seated in and removable through the upper end of one of the shells, water-tubes secured to and depending from the bottom of said drum, smoke-flues secured to and depending from the top of said drum through the water-tubes, and a water-base secured to and supported by the lower ends of said tubes and flues, and circulating-pipes leading respectively from the steam-drum and water-base to the water-leg.

819,031. **RANGE-FINDER.** Conrad Beck and Horace C. Beck, London, England, assignors to Conrad Beck, London, England, George Maxwell Lawford, Westminster, England, and David Sing Capper, London, England. Filed Jan. 23, 1906. Serial No. 297,508.



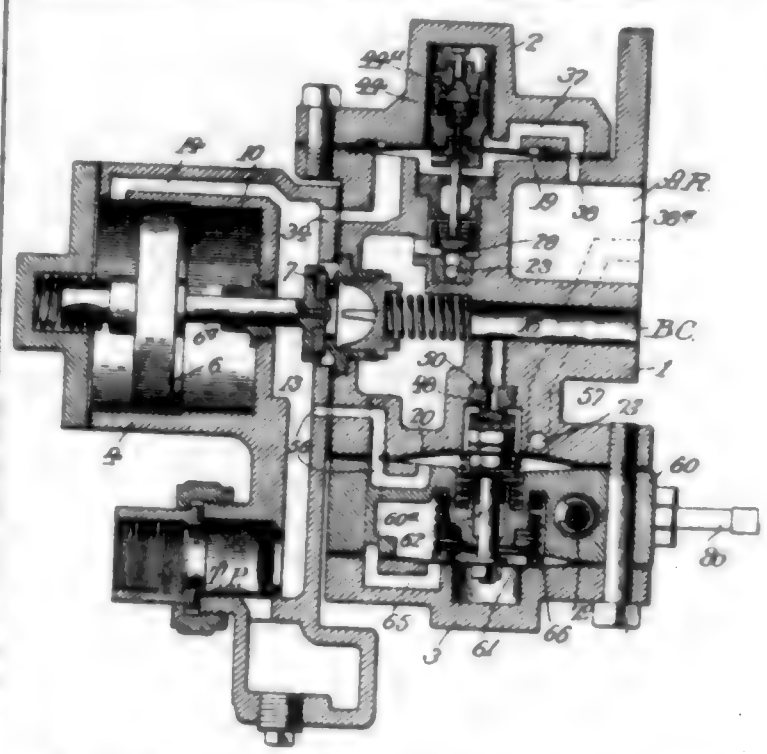
Claim.—1. In a range-finder, the combination of a base member, two similar and equal isoflexial light-receiving elements relatively adjustable to and fro on said member, two similar and equal deflecting-prisms, and a sighting device, all arranged so that one beam of light from the sighted object passes to the sighting device by way of one light-receiving element and one deflecting-prism and that another beam passes to the same sighting device by way of the other light-receiving element and the other deflecting-prism in order that the two beams shall for the purpose described follow similar and equal courses in the similar and equal light-receiving elements and prisms.

2. In a range-finder, the combination of a fixed cross-bar, a fixed telescope on said bar divided longitudinally into two portions, two similar and equal isoflexial prisms relatively adjustable to and fro on said bar, and two similar and equal deflecting-prisms, all arranged so that one beam of light from the sighted object passes to the telescope by way of one isoflexial prism and one deflecting-prism and that another beam passes to the telescope by way of the other isoflexial prism and the other deflecting-prism in order that the two beams shall for the purpose described, follow similar courses in the similar and equal prisms.

3. In a range-finder, the combination of a fixed cross-bar, a fixed telescope on said bar, a septum dividing the telescope longitudinally into two portions and parallel to the cross-bar, two glass blocks in the telescope having two polished surfaces in contact extending in continuation of the septum in the neighborhood of the eyepiece, and two isoflexial prisms relatively adjustable to and fro on said bar and cooperating with the telescope to give the range.

819,032. **FLUID-PRESSURE BRAKE.** William P. A. Macfarlane, Chicago, Ill. Filed Nov. 4, 1905. Serial No. 285,332.

Claim.—1. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure in service applications of the brakes for augmenting the pressure therein and assisting in the release of the brakes.



2. In a fluid-pressure brake system, the combination, with the triple valve, of fluid-pressure-actuated means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure in service applications of the brakes for augmenting the pressure therein and assisting in the release of the brakes.

3. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure in service applications of the brakes and to thereby admit auxiliary-reservoir pressure to the train-pipe.

4. In a fluid-pressure brake system, the combination, with the triple valve, of a fluid-pressure-actuated valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure in service applications of the brakes and to thereby admit auxiliary-reservoir pressure to the train-pipe.

5. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure in service applications of the brakes and to thereby admit auxiliary-reservoir pressure to the train-pipe a movable abutment controlling said valve and operated by variations in train-pipe pressure.

6. In a fluid-pressure brake system, the combination with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and operated by variations in train-pipe pressure, said valve having a movement independent of its abutment.

7. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and operated by variations in train-pipe pressure, said valve being normally held away from its abutment and toward its seat with a yielding pressure.

8. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling

said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe.

9. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, a spring acting on said abutment and assisting the indirect pressure, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe.

10. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe, comprising fluid-pressure mechanism controlling the release of said indirect pressure.

11. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe, comprising a second movable abutment and a valve actuated thereby to release said indirect pressure in the operation of restoring the train-pipe pressure.

12. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe, comprising a second movable abutment, and a valve actuated thereby to release said indirect pressure in the operation of restoring the train-pipe pressure, said second abutment being also exposed on one side to direct train-pipe pressure and on the other side to indirect train-pipe pressure.

13. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe, comprising a second movable abutment and a valve actuated thereby to release said indirect pressure in the operation of restoring the train-pipe pressure, said second abutment being exposed on one side to train-pipe pressure and having a check-valved passage to admit train-pipe pressure to the other side.

14. In a fluid-pressure brake system, the combination, with the triple valve, of a valve governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure and to thereby admit auxiliary-reservoir pressure to the train-pipe, a movable abutment controlling said valve and exposed to train-pipe pressure directly on one side and indirectly on the other, and means for releasing such indirect pressure to permit the direct pressure to move the abutment and open the valve to thereby admit auxiliary-reservoir air direct to the train-pipe, comprising a second movable abutment and a valve actuated thereby to release said indirect pressure in the operation of restoring the train-pipe pressure, said second abutment being exposed on one side to train-pipe pressure and having a passage to admit train-pipe pressure to its other side, and means in said passage for permitting free retrogression of pressure from said other side but restricting the passage of pressure thereto.

15. In a fluid-pressure brake system, the combination, with the triple valve having service and emergency mechanisms, of means independent of such mechanisms for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure for augmenting the pressure therein and assisting in the release of the brakes, said means comprising an abutment movable in a chamber having on one side free communication and on the other side restricted communication with the train-pipe, and a valve controlled by said abutment and governing a passage from the auxiliary reservoir to the train-pipe.

16. In a fluid-pressure brake system, the combination, with the triple valve having service and emergency mechanisms, of means independent of such mechanisms for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure for augmenting the pressure therein and assisting in the release of the brakes, said means comprising a piston-chamber communicating with the train-pipe, a piston fitting loosely therein to permit restricted flow of pressure from one side to the other, and a valve controlled by said piston and governing a passage from the auxiliary reservoir to the train-pipe.

17. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure for augmenting the pressure therein and assisting in the release of the brakes, said means comprising a piston operated by the operation of restoration of train-pipe pressure and provided with a socket, and a valve arranged in said socket and adapted to govern a passage from the auxiliary reservoir to the train-pipe.

18. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure for augmenting the pressure therein and assisting in the release of the brakes, said means comprising a piston operated by the operation of restoration of train-pipe pressure and provided with a socket, and a valve arranged in said socket and adapted to govern a passage from the auxiliary reservoir to the train-pipe, said valve having a movement independent of its piston and tending to be projected therefrom with a yielding pressure.

19. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure for augmenting the pressure therein and assisting in the release of the brakes, said means comprising a piston operated by the operation of restoration of train-pipe pressure and provided with a socket, a valve arranged in said socket and adapted to govern a passage from the auxiliary reservoir to the train-pipe, and a spring tending to hold the valve projected outwardly from its socket.

20. In a fluid-pressure brake system, the combination, with the triple valve, of means for closing the service-valve when the brake-cylinder pressure exceeds a predetermined amount, and means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure to release the brakes.

21. In a fluid-pressure brake system, the combination, with the triple valve, of means for closing the service-valve when the brake-cylinder pressure exceeds a predetermined amount, and means connected and coöperating with the triple valve and arranged to control a direct passage from the auxiliary reservoir to the train-pipe and to admit auxiliary-reservoir pressure to the train-pipe in the operation of restoring the brakes.

22. In a fluid-pressure brake system, the combination, with the triple valve, of means for closing the service-valve when the brake-cylinder pressure exceeds a predetermined amount, and means for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure to release the brakes, both of said means being under the control of variations in train-pipe pressure.

23. In a fluid-pressure brake system, the combination, with the triple valve, of a movable abutment under the control of the brake-cylinder pressure for closing the service-valve when the brake-cylinder pressure exceeds a predetermined amount, and means coöperat-

ing with the triple valve for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure to release the brakes.

24. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, and a pressure-reducing valve coöperating with the brake-cylinder and controlled in action by said mechanism, such valve being operative or inoperative accordingly as the said mechanism is operative or inoperative.

25. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve coöperating with the brake-cylinder, and means for rendering said mechanism inoperative and by that act cutting the reducing-valve out of service.

26. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, and means for admitting pressure to that side of the abutment thus exposed to atmospheric pressure and by that act cutting the reducing-valve out of service.

27. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, and means for admitting reservoir-pressure to that side of the abutment thus exposed to atmospheric pressure and by that act cutting the reducing-valve out of service.

28. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, a valve controlling a passage from the brake-cylinder to the pressure-reducing valve, and means for admitting reservoir-pressure to that side of the abutment thus exposed to atmospheric pressure and by that act closing said controlling-valve to thereby cut the reducing-valve out of service.

29. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, a valve controlling a passage from the brake-cylinder to the pressure-reducing valve and open when said mechanism is in condition for empty-car braking, and means for admitting pressure to that side of the abutment thus exposed to atmospheric pressure and by that act closing said controlling-valve to thereby cut the reducing-valve out of service.

30. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, a valve controlling a passage from the brake-cylinder to the pressure-reducing valve and open when said mechanism is in condition for empty-car braking, fluid-pressure-actuated mechanism for actuating said controlling-valve, and means for admitting pressure to that side of the abutment exposed to atmospheric pressure and also to said fluid-pressure-actuated mechanism to close the controlling-valve.

31. In a fluid-pressure brake system, the combination, with the triple valve, of mechanism for holding the service-valve closed when the brake-cylinder exceeds a predetermined amount, means for rendering said mechanism inoperative, a pressure-reducing valve cooperating with the brake-cylinder, said mechanism comprising an abutment exposed on one side to brake-cylinder pressure and on the other side to atmospheric pressure for empty-car braking, a valve controlling a passage from the brake-cylinder to the reducing-valve and having an operating-piston, and means for equalizing the pressure on opposite sides of the abutment and admitting pressure against said piston, whereby both said mechanism and the reducing-valve are rendered inoperative to permit of loaded-car braking.

32. In combination with a triple valve and a device for braking cars according to weight empty or loaded, a pressure-reducing valve for reducing the brake-cylinder pressure and means for governing communication between the brake-cylinder and the reducing-valve.

33. In combination with a triple valve and a device for braking cars according to weight empty or loaded, a pressure-reducing valve for reducing the brake-cylinder pressure and fluid-pressure-actuated means for governing communication between the brake-cylinder and the reducing-valve.

34. In combination with a triple valve and a device for braking cars according to weight empty or loaded, a pressure-reducing valve for reducing the brake-cylinder pressure and means for cutting said valve out of action for loaded-car braking.

35. In combination with a triple valve and a device for braking cars according to weight empty or loaded, a pressure-reducing valve for reducing the brake-cylinder pressure, and controlling means for closing the feed of auxiliary-reservior pressure to the brake-cylinder when the brake-cylinder pressure exceeds a predetermined amount.

36. In combination with a triple valve and a device for braking cars according to weight empty or loaded, a pressure-reducing valve for reducing the brake-cylinder pressure, controlling mechanism for closing the feed of auxiliary-reservoir pressure to the brake-cylinder when the brake-cylinder pressure exceeds a predetermined amount, and means for cutting out of action said pressure-reducing valve and said mechanism when braking loaded cars.

37. In a device for braking cars a valve device auxiliary to a triple valve and arranged to vent the auxiliary-reservoir pressure to the train-pipe when releasing the brakes after a service application thereof.

38. A device for reducing brake-cylinder pressure comprising a movable abutment exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, and means for admitting brake-cylinder pressure to the other side of said abutment for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve.

39. A device for reducing brake-cylinder pressure comprising a movable abutment exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, said abutment having a passage communicating between its opposite pressure areas and opened to brake-cylinder pressure when the valve is opened.

40. A device for reducing brake-cylinder pressure comprising a movable abutment exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, a chamber in which the abutment operates and which is provided with an exhaust-port, an exhaust-valve governing such port and arranged to close the same when abutment operates to open the valve, and means for admitting brake-cylinder pressure to that side of the valve normally exposed to atmospheric pressure through said port.

41. In a fluid-pressure brake system, the combination, with the triple valve, of means controlled by variations in train-pipe pressure for admitting auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure in service applications of the brakes for augmenting the pressure thereon and assisting in the release of the brakes.

42. In a fluid-pressure brake system, the combination, with the triple valve, of a valve controlled wholly by variations in train-pipe pressure and governing a direct passage from the auxiliary reservoir to the train-pipe, said valve normally closing said passage and also during application of the brakes but arranged to open upon restoration of the train-pipe pressure to thereby admit auxiliary-reservoir pressure to the train-pipe.

43. In a device for braking cars, a valve auxiliary to a triple valve and arranged to vent the auxiliary-reservoir pressure to the train-pipe in the operation of restoring the train-pipe pressure in either the service or emergency applications of the brakes.

44. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary reservoir pressure to

the train-pipe in the operation of restoring the train-pipe pressure in either the service or emergency applications of the brakes.

45. In a fluid-pressure brake system, the combination, with the triple valve, of means for admitting auxiliary-reservoir pressure to the train-pipe upon the initial restoration of the train-pipe pressure in the operation of releasing the brakes.

46. In a fluid-pressure brake system, the combination, with the triple valve, of a direct passage from the auxiliary reservoir to the train-pipe, and means coöperating with such passage for admitting the auxiliary-reservoir pressure to the train-pipe upon the initial restoration of the train-pipe pressure in the operation of releasing the brakes.

47. A device for reducing brake-cylinder pressure comprising a movable abutment exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, and means for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve, and cutting off the pressure from the brake-cylinder side of the abutment as the valve seats, thereby venting the pressure to the opposite side of the abutment until the valve is fully seated.

48. A device for reducing brake-cylinder pressure comprising a movable abutment exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, said abutment being normally exposed on its other side to atmospheric pressure, and means for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve.

49. A device for reducing brake-cylinder pressure comprising a movable abutment operating in the chamber and exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, said abutment being normally exposed on its other side to atmospheric pressure through a normally open passage in said chamber, means for closing said passage upon the opening movement of the valve, and means for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve.

50. A device for reducing brake-cylinder pressure comprising a movable abutment operating in the chamber and exposed on one side to brake-cylinder pressure and carrying a valve proper normally closing the exhaust from the brake-cylinder, said abutment being normally exposed on its other side to atmospheric pressure through a normally open passage in said chamber, means for closing said passage upon the opening movement of the valve, and means for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve, consisting of a passage through the abutment and forming a communication between its opposite sides.

51. A device for reducing brake-cylinder pressure comprising a piston 123 provided with a tubular extension 124 and having at the inner end of said extension a valve proper normally closing the exhaust from the brake-cylinder, said abutment being exposed on one side at the valve proper to brake-cylinder pressure and exposed as to the remainder of said side to atmospheric pressure and normally exposed on its other side to atmospheric pressure, and means for equalizing the air-pressure on opposite sides of the abutment after the same moves to open the valve.

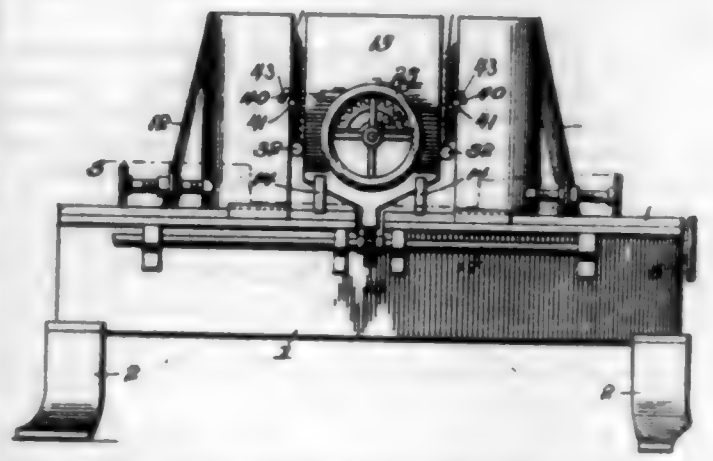
52. A device for reducing brake-cylinder pressure comprising a piston 123 movable in a chamber communicating by a passage with the brake-cylinder and having a central tubular extension forming a valve normally closing said brake-cylinder passage, said piston having on its valve side an annular pressure area normally exposed to atmospheric pressure, the other side of the piston being normally exposed to atmospheric pressure, and means for equalizing the air-pressure on opposite sides of the abutment after the latter moves to open the valve.

53. In a fluid-pressure brake system, the combination, with the triple valve, of means operating independent of the auxiliary-reservoir pressure for admitting such pressure to the train-pipe upon the initial restoration of the train-pipe pressure in the operation of releasing the brakes.

54. In a fluid-pressure brake system, the combination, with a triple valve having service and emergency mechanisms, of means independent of said mechanisms for admitting auxiliary-reservoir pressure to the train-pipe.

819,033. WOODWORKING-MACHINE. BERTHOLD A. LANGE, St. Louis, Mo. Continuation of application Serial No. 116,616, filed July 23, 1902. This application filed Jan. 28, 1905. Serial No. 243,157.

Claim.—1. In a machine for woodworking, the combination of a frame, saws adjustably mounted thereon, a work-holder mounted upon said frame, a clamp carried by said work-holder comprising sockets mounted on the work-holder, a bar rigidly secured in said sockets and provided with beveled lugs, and a clamping-bar having teeth on one edge and notches on the opposite edge, said notches receiving said beveled lugs, and means for moving said clamping-bar longitudinally so as to cause the beveled lugs and the notches to move the clamp-bar laterally, simultaneously with its longitudinal movement.



2. In a woodworking-machine, obliquely-arranged saws, a shield for said saws, a weighted bell-crank lever pivotally mounted on said shield, a guide-blade carried by said lever, a work-holder mounted in said machine, means for rocking and reciprocating said work-holder, a clamping-bar mounted on said work-holder, means for moving said clamping-bar longitudinally, and means for moving said clamping-bar laterally, substantially as described.

3. In a machine of the character described, the combination of the rocking work-holder, a pair of saws in fixed relation to said work-holder, adjusting means for said saws and means to prevent vertical displacement of the work, comprising two bars having coöperating lugs and notches thereon, one of said bars being fixed in position, and the other having a toothed edge and being movable on the fixed bar, and means for releasing the toothed bar from engagement with the work, substantially as described.

4. In a woodworking-machine, the combination of a frame, a work-holder, pivoted adjustable arms arranged on said work-holder, sockets carried by the work-holder, a stationary bar fixed in said sockets, lugs carried by said stationary bar, a toothed bar mounted on said stationary bar, said toothed bar having notches in its rear edge engaging said lugs and means for moving said toothed bar lengthwise on the said stationary bar, substantially as described.

5. In a machine of the character described, the combination of a work-holder, having sockets, a pair of bars fitting into said sockets, lugs on one of said bars, coöperating notches on the other, one of said bars being provided with teeth on one edge, and a thumb-screw connected to said last-named bar and adapted to adjust the same, substantially as described.

6. In a machine of the character described, a work-holder provided with horizontal arms having slots therein, pivoted arms secured in said slots, said work-holder having sockets formed therein, two bars secured in said sockets, beveled notches in one bar, lugs on the other bar adapted to slide in said beveled notches, one of the said bars having teeth on one edge, and means for moving said toothed bar into and out of engagement with the work in said work-holder, substantially as described.

7. In a machine for woodworking, the combination with a frame therein, of independently-adjustable oblique and vertical saws, means for adjusting said saws, shields for the saws, a pivoted guide-blade secured to said shields, a work-holder rockingly and reciprocatingly mounted on the frame, means for rocking the same, means for reciprocating the work-holder, means for preventing the vertical displacement of the work held therein, comprising a bar having an adjustable toothed bar mounted thereon and means for moving said toothed bar into and out of engagement with the work, substantially as described.

8. In a woodworking-machine, the combination with the frame, of saws arranged thereon, a work-holder adapted to be moved between the saws to present its load or shook to the saws, a clamp comprising a bar provided with lugs, a clamping-bar slidably arranged upon the first-named bar and adapted to be brought into engagement with the load or shook by means of the lugs, and means for sliding the clamping-bar.

9. In a machine of the type set forth, a work-holder consisting of two members arranged in spaced relation, a pair of spaced inwardly-projecting arms carried by each of said members at each end of the top and bottom thereof, means for adjustably securing adjacent pairs of arms to each other, and levers having their lower ends pivotally held between the lower pairs of arms and their upper ends adjustably retained between the upper pairs of arms.

10. In a machine of the type set forth, a work-holder embodying two members, spaced arms carried by each of said members and projecting inwardly to have adjacent arms engage and be secured to one another, and levers pivoted to the lower of the arms and adjustably secured to the upper of the arms.

11. In a machine of the type set forth, the combination with the work-holder and means for mortising the work, means for guiding and supporting the work upon its withdrawal from said cutting means which embodies a pivoted weighted element having its free end movable in a vertical rotary plane to engage in said mortises.

12. A work-holder consisting of a pair of members adjustable toward and away from one another, means carried by each of the members at the upper and lower portions thereof for overlapping engagement with one another to enable said members to be rigidly secured in adjusted position, and rocking means between the members supported from the lower of said means and adjustably secured to the upper of said means to retain the work.

13. A work-holder consisting of a pair of spaced adjustable members having overlapping and connected parts extending in said space to support the work thereon, and means borne by each of said members and spanning the space therebetween to engage the work, said means extending in and maintaining its relation to said space in any adjusted position of said members.

14. A work-holder consisting of a pair of spaced members having means to support the work thereon, the ends of said work extending beyond said members, and means secured to each of said members and spanning the space therebetween to bite horizontally and simultaneously into each of the projecting ends of the individual pieces of the work.

15. A work-holder consisting of a pair of spaced adjustable members having means to support the work extending in said space, and a device supported adjacent its ends from each of said members and spanning the space therebetween, said device embodying a toothed element, and means to impel said element inwardly to engage the work.

16. A work-holder consisting of spaced and adjustable members to support the work in vertical position, pivoted elements carried by said members and disposed in said space to receive the work and rock the same to different positions, the work having its ends extending beyond said members, and means carried by said members and spanning the space between said members to engage the work in any position to which the same may be rocked.

17. A work-holder consisting of a pair of spaced coöperating adjustable members, adjustable rocking elements carried by said members in said space to receive the work therebetween, means to secure said elements in adjusted position, and means carried by the members to horizontally engage the work between said elements at any position to which the same may be rocked.

18. A work holder consisting of a pair of spaced members adjustable toward and away from one another to support the work in vertical position therebetween, rockable means carried by said members in said space to clamp and rock the work, and means carried by said members and spanning the space between the members, to horizontally engage the work.

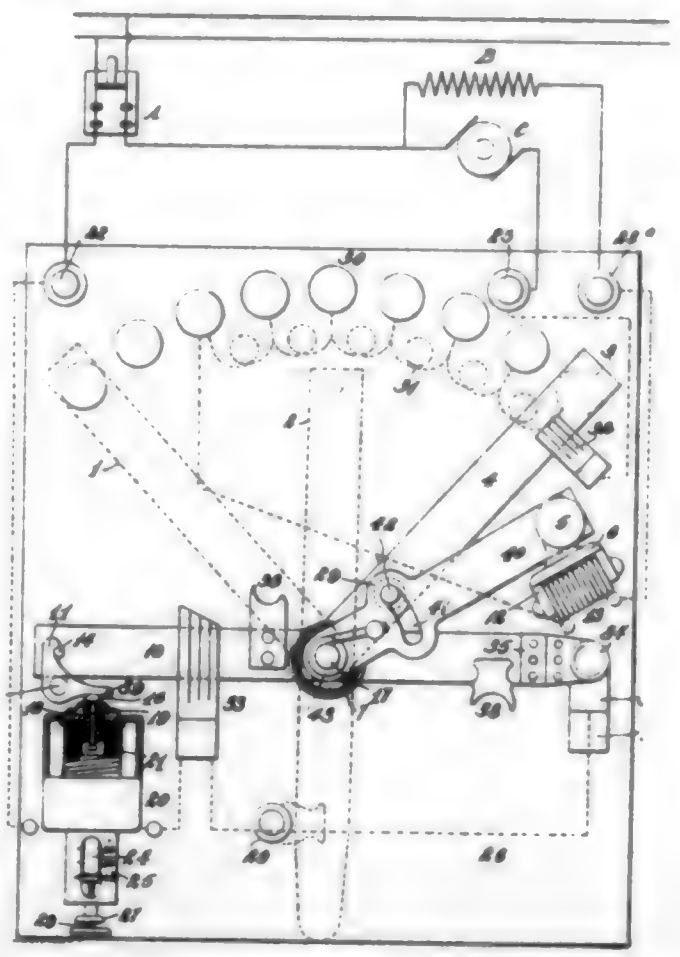
19. In combination with a work-holder embodying spaced members to clamp the work and carrying means to rock the same to different positions, a toothed device secured by its ends to each of said members and spanning the space between said members, and means to impart a synchronous lateral and longitudinal movement to said toothed device to cause the teeth thereof to bite into the individual pieces of the work.

20. A work-holder consisting of a pair of spaced members each having inwardly-extending overlapping parts to adjustably engage one another, and rocking elements to receive the work therebetween pivoted by their lower and adjustably secured by their upper ends to said parts.

21. A work-holder consisting of a pair of spaced members having connecting parts, rocking elements pivotally secured at one end and adjustably secured at their opposite end to said parts, and means to engage the work between said elements in any position of the latter secured to each of said members and spanning the space therebetween.

REISSUES.

12,473. **ELECTRIC-CIRCUIT CONTROLLER.** HARRY W. LEONARD, Bronxville, N. Y. Filed July 13, 1905. Serial No. 269,566. Original No. 681,716, dated Sept. 3, 1901.



Claim.—1. In a circuit-controller, the combination of two independently-movable switch-levers, an electroresponsive device for controlling one of said levers and responding to failure or abnormal decrease of current to release said lever, means for moving said lever when released to affect the circuit, an electroresponsive device for controlling the other lever and responding to abnormal increases of current to release said second lever, means for moving said lever when released to affect the circuit, and means for imparting blows to said switch-lever to start them when released.

2. In a circuit-controller, the combination of two independently-movable switch-levers, an electroresponsive device for controlling one of said levers and responding to failure or abnormal decrease of current to release said lever, means for moving said lever when released to affect the circuit, a mechanical latch for holding the other lever in its normal position, an electroresponsive device responding to abnormal increases of current to release said lever, means for moving said lever when so released to affect the circuit, and means for imparting blows to said switch-levers to start them when released.

3. In a circuit-controller, the combination of two independently-movable switch-levers, an electroresponsive device for controlling one of said levers and responding to failure or abnormal decrease of current to release said lever, means for moving said lever when released to affect the circuit, a mechanical latch for holding the other lever in its normal position, an electroresponsive device responding to abnormal increases of current to impart a blow to said latch to release said lever, means for moving said lever when so released to affect the circuit, and means for imparting blows to said switch-levers to start them when released.

4. In a circuit-controller, the combination with a movable switch member, and a stationary member with which said movable member is designed to make heavy rubbing contact, of means controlled by an electroresponsive device for imparting a blow to said movable switch member, said electroresponsive means responding to failure or abnormal decrease of current.

5. In a circuit-controlling rheostat, the combination with a series of contact-pieces with which the sections of the resistance are

connected, and a movable arm adapted to make contact with said series of contact-pieces and heavy rubbing contact with a final contact-piece, of means controlled by an electroresponsive device for imparting a blow to said movable arm.

6. In a circuit-controller, the combination with stationary switch members, of two movable members independently movable, an electroresponsive device for controlling one of said movable members and responding to abnormal decreases in current to release said member, means for imparting a blow to said member to start it when released, and means for moving said member when so released to affect the circuit.

7. In a circuit-controller, the combination with stationary switch members, of two movable members independently movable, a latch for holding one of said members in its normal position, an electroresponsive device responding to abnormal increases in current to effect the release of said member, an electroresponsive device responding to abnormal decreases in current to release the second movable member, means for imparting a blow to said second movable member to start it when released, and means for moving said member when so released to affect the circuit.

8. In a circuit-controller, the combination with stationary switch members, of two movable members independently movable, a latch for holding one of said members in its normal position, an electroresponsive device responding to abnormal increases in current to impart a blow to said latch to release said member, an electroresponsive device responding to abnormal decreases in current to release the second movable member, means for imparting a blow to said second movable member to start it when released, and means for moving said member when so released to affect the circuit.

9. In a circuit-controller, the combination with stationary switch members, of two movable members independently movable, an electroresponsive device for controlling one of said movable members and responding to abnormal increases in current to effect the release of said member, an auxiliary break for said member, an electroresponsive device responding to abnormal decreases in current to release the second movable member, means for imparting a blow to said second movable member to start it when released, and means for moving said member when so released to affect the circuit.

10. In a circuit-controller, the combination with stationary switch members, of two movable members independently movable, an electroresponsive device for controlling one of said movable members and responding to abnormal increases in current to effect the release of said member, an auxiliary break for said member, means for adjusting said electroresponsive device for different currents, an electroresponsive device responding to abnormal decreases in current to release the second movable member, means for imparting a blow to said second movable member to start it when released, and means for moving said member when so released to affect the circuit.

11. In a circuit-controlling rheostat, the combination with a series of contact-pieces with which the sections of the resistance are connected, a movable arm adapted to make contact with said series of contact-pieces and heavy rubbing contact with the final contact-piece, means controlled by an electroresponsive device responding to abnormal decreases in current for imparting a blow to said arm, means for moving said arm to its initial or starting position after the blow is struck, and a switch controlled by an electroresponsive device responding to abnormal increases in current to affect the circuit.

12. In a circuit-controller, the combination with a pivoted knife-switch lever, of switch-contacts coöperating with one end of said lever, an auxiliary break coöperating with the other end of said lever, an electroresponsive device for controlling said lever and responding to abnormal variations in current to release said lever, and means for imparting a blow to said lever when released.

13. In a circuit-controller, the combination with a pivoted knife-switch lever, of switch-contacts coöperating with one end of said lever, an auxiliary break coöperating with the other end of said lever, means for holding said lever in its normal position, an electroresponsive device for releasing said lever, and means for imparting a blow to said lever when released.

14. In a circuit-controller, the combination with a centrally-pivoted circuit-controlling switch-arm, stationary switch-contacts upon opposite sides of the pivot of said arm, and with which said arm makes contact, means for imparting a blow to said switch-arm, and an electroresponsive device for controlling said means.

15. In a circuit-controller, the combination with stationary switch-contacts, a movable contact-arm, a slotted operating-arm for said movable contact-arm, the latter having a projection working in the slot of said operating-arm, a spring placed under tension by said operating-arm, and whereby said arm is caused to impart a blow to said contact-arm, and an electroresponsive device controlling the action of said operating-arm.

16. In a circuit-controller, the combination with a centrally-pivoted circuit-controlling switch-arm, stationary switch-contacts upon opposite sides of the pivot of said arm and with which said arm makes contact, a slotted operating-arm for said switch-arm, the latter having a projection working in the slot of said operating-arm, a spring placed under tension by said operating-arm, and whereby said arm is caused to impart a blow to said switch-arm, and an electroresponsive device controlling the action of said operating-arm.

17. In a motor-controller, the combination of an overload-switch, an independently-movable underload-switch, two electroresponsive devices for controlling the automatic operation of said switches and responding respectively to overloads and underloads, said overload device and both switches being arranged for connection in series in the armature-circuit of a motor, and said underload device being arranged for connection in series with both switches and said overload device in the field-circuit of the motor, and said devices responding independently of each other to abnormal conditions and whereby either switch is caused to affect the motor-circuit.

18. In a motor-rheostat, the combination of the resistance and its switch, an independently-movable switch, an electroresponsive device responding to underloads for controlling the automatic operation of said resistance-switch, an electroresponsive device responding to overloads for controlling the automatic operation of the other switch, said underload device being arranged for connection in the field-circuit of a motor, and said overload device being arranged for connection in the armature-circuit of the motor, and said devices responding independently of each other to abnormal conditions and whereby either switch is caused to affect the motor-circuit.

19. In a motor-rheostat, the combination of the resistance and its switch, an independently-movable switch, an electroresponsive device responding to underloads for controlling the automatic operation of said resistance-switch, an electroresponsive device responding to overloads for controlling the automatic operation of the other switch, said underload device being arranged for connection in series with the overload device, both switches and the resistance in the field-circuit of the motor, and said overload device being arranged for connection in series with both switches in the armature-circuit of the motor and said devices responding independently of each other to abnormal conditions and whereby either switch is caused to affect the motor-circuit.

20. A translating device, an automatic switch whose automatic movement is dependent upon a current other than the current passing through said translating device, a second automatic switch whose automatic movement is dependent upon the current through said translating device, said switches being functionally connected.

21. A device producing an electromotive force by magnetic induction, an automatic switch whose automatic movement is dependent upon a current other than the current passing through said device, a second automatic switch whose automatic movement is dependent upon the current through said device, said switches being functionally connected.

22. An electroresponsive device in series with a shunt field-winding of an electric motor, a resistance-controlling switch controlled thereby, an electrically-controlled switch electrically connected therewith, said two switches being functionally connected.

23. An electroresponsive device in series with a shunt field-winding of an electric motor, a resistance-controlling switch controlled thereby, an automatic overload-switch electrically connected therewith, said switches being functionally connected

24. An electroresponsive device in series with a shunt field-winding of an electric motor, a switch controlled thereby, an automatic overload-switch electrically connected therewith, said switches being functionally connected.

25. Two automatic switches protectively related as to their relative movement under certain conditions, one being responsive to the current in one branch of a divided circuit, and the other being responsive to a current in another branch.

26. An electromotive-force-producing device, an overload magnetic circuit-breaker in series therewith, and an automatic switch, which switch remains unaffected as regards movement when the circuit is opened by said overload magnetic circuit-breaker.

27. The combination of a spring-actuated resistance-controlling switch, restraining means therefor controlled by magnetism due to a current other than the armature-current of a motor, and an automatic magnetic circuit-breaker, the coil and switch of which carry

the motor armature-current, the two switches being functionally connected.

28. The combination of a spring-actuated device, restraining means therefor controlled by magnetism due to a current other than the armature-current of a motor, a resistance-controlling arm moved thereby and having a limited independent movement relative thereto and an overload protective switch functionally related to the first-named device.

29. In a motor-controlling switch, the combination with a switch comprising two functionally-connected movable switch elements, of an electroresponsive device responding to overloads and arranged for connection in the armature-circuit of a motor, a second electroresponsive device responding to underloads and arranged for connection in the field-circuit of the motor, said electroresponsive devices responding independently of each other to abnormal conditions to control the motor-circuit.

30. An electromotive-force-producing device, two pivotally-connected automatically-movable switches in series therewith, one switch being automatically movable in response to abnormal current through the device, and the other switch being automatically movable in response to abnormal current in a circuit other than that through the device.

31. An electromotive-force-producing device, two pivotally and functionally connected automatically-movable switches in series therewith, one switch being automatically movable in response to abnormal current through the device, and the other switch being automatically movable in response to abnormal current in a circuit other than that through the device.

32. The combination of a resistance, a resistance-controlling switch, an independently-movable switch, an electroresponsive device for controlling the automatic operation of said resistance-controlling switch, an electroresponsive device for controlling the automatic operation of the other switch, said first electroresponsive device being arranged for connection in the field-circuit of a motor, and the said other electroresponsive device being arranged for connection in the armature-circuit of the motor, and said switches being functionally connected and responding independently of each other to abnormal conditions.

33. In a motor-controller, two independently-movable functionally-connected switches controlled by separate electroresponsive devices, one switch being controlled by an electroresponsive device in series with the motor-armature, and the other switch being controlled by an electroresponsive device not in series with the motor-armature.

34. An electric motor having a field-winding energized by a current other than its armature-current, two functionally-connected switches in series with each other and with the motor-armature, one switch being controlled under certain conditions by an electroresponsive device in series with the motor-armature, and the other switch being controlled under certain conditions by an electroresponsive device responsive to a current other than the armature-current.

35. A translating device, an adjustable resistance in series therewith, an overload protective device in series with the translating device, a protective device energized by a current other than that passing through the translating device, and means for preventing the closing of the circuit through the translating device except after a protective amount of resistance has been inserted in the circuit.

36. A translating device, two switches in series therewith, means for opening the circuit at either switch, means for preventing the closing of one switch except when the other switch is in a protective position, and two independent electroresponsive devices for automatically protecting the translating device upon occurrence of failure of supply electromotive force and upon excessive current in the circuit respectively, one of said electroresponsive devices in series with the said translating device and the other not in series therewith.

37. A translating device, an automatic overload-switch in series therewith automatically responsive to predetermined overload-current through the translating device, and a resistance-controlling switch responsive to a current other than the current through the translating device, said switches being functionally connected.

38. Two switches in series with each other and with the armature of an electric motor, one switch being a resistance-controlling switch which must be moved to a certain position before the other switch can be closed, and two independent electroresponsive devices for protecting the motor-armature under abnormal conditions, one of said electroresponsive devices being in series with the motor-armature, and the other being not in series with it.

39. Two automatically-movable functionally-connected switches, two independent electroresponsive devices controlling the automatic movement of said switches respectively, one of said electroresponsive devices being responsive to a certain current, and the other being responsive to a different current.

40. An electromotive-force-producing device, two automatic switches, and means for preventing the closing of said switches except in definite sequence, one of the said automatic switches being responsive to a current other than that through the device.

41. Two electrically-controlled automatically-movable electric switches, means for preventing their closing except in definite sequence, an electromotive-force-producing device, one of said switches being automatically responsive to abnormal current through the electromotive-force-producing device.

42. Two automatically-movable electric switches, means for preventing their closing except in definite sequence, an electromotive-force-producing device, one of said switches being automatically responsive to abnormal current through the electromotive-force-producing device and the other switch being automatically responsive to abnormal electromotive force upon said electromotive-force-producing device.

43. An electric circuit, two functionally-related switches connected therewith, and means whereby said switches are independently and automatically movable each in response to a different condition of the said circuit respectively.

44. An electromotive-force-producing device, two switches in series therewith which can be closed only in definite sequence, and two independent electroresponsive devices, one of which is in series with the electromotive-force-producing device, and the other of which is not in series with it.

45. Two switches having a common electrical contact-surface between them, one switch being a resistance-controlling switch, the other switch being an automatic overload circuit-breaker normally restrained in its closed position by mechanical restraining means, which upon predetermined overload-current is released by a hammer-blow due to a mass moving under the influence of magnetism and an electroresponsive protective device responsive to a current different from that through the winding of the circuit-breaker.

46. Two independently-movable automatic switches in series with the counter-electromotive-force element of an electric motor and with each other, said two switches being responsive to currents in different circuits respectively and being so related that a definite sequence of closing the two switches is necessary, mechanical restraining means for one of said switches, means for delivering a hammer-blow due to the relative action of magnetism and gravity for the purpose of releasing said mechanical restraining means, and means for automatically moving said switch when so released.

47. Two different electric circuits, a translating device, two switches functionally related to each other and each being in series with the translating device, means for moving said switches automatically and independently of each other in response to certain conditions of said circuits respectively.

48. A translating device, two functionally-related automatic switches, each switch being in series with the translating device, one switch being responsive to a condition of current through the translating device, and the other switch being responsive to a condition of the voltage supplied to the translating device.

49. A switch automatically responsive to abnormal voltage conditions, a second switch automatically responsive to abnormal current conditions, and means whereby one switch is related to the other as regards its closing movement.

50. A motor having a shunt-field winding, two switches in series with the armature of the motor and closable only in definite sequence, and two electroresponsive protective windings one in series with the motor-field winding and the other in series with the motor-armature each of said windings producing a magnetic field independent of that produced by the other winding.

51. Two switches in series with each other and with a motor-armature, a single means controlling the closing movement of said switches, and two electroresponsive devices for automatically protecting the motor-armature circuit against overload-current and no voltage respectively, the no-voltage electroresponsive device being not in series with the armature relative to the source of supply, but being always in a local closed circuit with the motor-armature.

52. A motor-armature, a switch in series therewith, a resistance-controlling switch, also in series therewith whose movement effects the closing of the first-named switch, and two independent electromagnetic windings, which act automatically and independently to protect the circuit under two different abnormal conditions

respectively, one of said windings being not in series with the armature.

53. A hand-operated armature-controlling switch, a second switch whose closure is effected by the movement of the hand-operated switch, and independent electroresponsive means for protecting the armature-circuit upon occurrence of excessive current or supply electromotive-force failure, one of said electroresponsive means being not in series with the armature.

54. A motor-armature, two switches electrically connected therewith having a common electrical contact-surface between them, closable only in definite sequence, a controlling electroresponsive winding for each switch, one of said windings being not in series with the armature.

55. A motor-armature, a no-voltage automatic switch, and an overload automatic switch, protectively related to said armature, the no-voltage switch being moved automatically only upon no voltage, and the overload-switch being moved automatically only upon overload-current.

56. The combination in motor-controlling mechanism of protective electroresponsive means in series with the shunt-field winding, protective electroresponsive means in series with the armature, two switches in series with each other and with the armature, the closure of one switch being caused by the movement of the other switch.

57. An electric motor having a field-winding energized by a current independent of its armature-current, two switches in series with each other and with the motor-armature, a single means controlling the closing movement of said switches, and two electromagnetic automatically-protective windings one in series with said field-winding and one in series with the motor-armature.

58. Two different circuits, a motor-armature functionally related thereto, two switches in series with the armature and with each other, said switches being protectively related to each other as to their relative movement under certain conditions, and means whereby said switches are electroresponsively automatically movable in response to abnormal conditions in said different circuits respectively.

59. A motor-armature, two switches in series therewith and with each other, said switches being mechanically protectively related to each other as to their movement under certain conditions, and two protective electromagnets one having its winding in series with the motor-armature and the other having its winding not in series with the motor-armature relative to the source of supply, but being always in a local closed circuit with the motor-armature.

60. A motor-armature, three switches in series with each other and with the motor-armature, one being a manually-operated switch, and each of the other two switches being an automatic electrically-controlled switch, and two electroresponsive devices for protecting the motor-armature circuit against abnormal conditions, one of said devices being not in series with the motor-armature.

61. In a motor-controlling switch, the combination with the switch elements, of an electroresponsive device responding to overloads and arranged for connection in the armature-circuit of a motor, a second electroresponsive device responding to underloads and arranged for connection in the field-circuit of the motor, said electroresponsive devices responding independently of each other to abnormal conditions to control the motor-circuit.

62. In a motor-controlling switch, the combination with the switch elements, of an electroresponsive device responding to overloads and arranged for connection in the armature-circuit of a motor, a second electroresponsive device responding to underloads and arranged for connection in the field-circuit of the motor, said electroresponsive devices responding independently of each other to abnormal conditions to control the armature-circuit of the motor.

63. In a motor-rheostat, the combination with the resistance and switch elements, of an electroresponsive device responding to overloads and arranged for connection in the armature-circuit of a motor, a second electroresponsive device responding to underloads and arranged for connection in the field-circuit of the motor, said electroresponsive devices responding independently of each other to abnormal conditions to control the motor-circuit.

64. In a motor-rheostat, the combination with the resistance and switch elements, of an electroresponsive device responding to overloads and arranged for connection in the armature-circuit of a motor, a second electroresponsive device responding to underloads and arranged for connection in the field-circuit of the motor, said electroresponsive devices responding independently of each other to abnormal conditions to control the armature-circuit of the motor.

65. In a motor-controller, the combination of an overload-switch, an independently-movable underload-switch, two electroresponsive devices for controlling the automatic operation of said switches and responding respectively to overloads and underloads, said overload device being arranged for connection in the armature-circuit of a motor and said underload device being arranged for connection in the field-circuit of the motor, and said devices responding independently of each other to abnormal conditions and whereby either switch is caused to affect the motor-circuit.

66. A field-winding of an electric motor, two independently-movable current-carrying elements each in series therewith under certain conditions, said movable elements being mechanically protectively related to each other as to their movement under certain conditions, and two protective electromagnetic windings, one in series with the said field-winding, and the other in series with the motor-armature, each of said windings producing a magnetic field independent of that produced by the other winding.

67. The combination in motor-controlling mechanism of electroresponsive means in series with the shunt-field winding, electroresponsive means in series with the armature, two switches each at times in series with the shunt-field winding, the movement of one of said switches being caused under certain conditions by the movement of the other switch.

68. An electric motor having a field-winding energized by a current independent of its armature-current, two switches each in series with said field-winding under certain conditions, and two electromagnetic windings, one in series with said field-winding and one in series with the motor-armature, each of said windings producing a magnetic field independent of that produced by the other winding.

69. An electric motor having a field-winding energized by a current independent of its armature-current, two switches each in series with the said field-winding under certain conditions, and two electromagnetic windings, one in series with the motor-armature and one not in series with the motor-armature, each of said windings producing a magnetic field independent of that produced by the other winding.

70. In a motor-controlling switch, the combination of two mechanically functionally related, independently-movable, current-carrying elements, of an electroresponsive winding in series with the armature of the motor, a second electroresponsive winding in series with a field-winding of the motor, said windings responding to abnormal conditions to control the armature and field circuit of the motor.

71. A translating device, an adjustable resistance in series therewith, protective means comprising an electromagnetic winding in series with said device, a pivotally-connected switch movable to its operative position through the agency of the movable element of the adjustable resistance, said resistance-controlling movable element being automatically moved in response to abnormal electrical conditions affecting the translating device.

72. An electric motor having a field-winding energized by a current other than its armature-current, an armature-protective device automatically movable to protect the motor-armature, electroresponsive means comprising two electromagnetic windings, one of which is in series with the armature and the other of which is in series with the said field-winding, said electroresponsive means controlling the automatic movement of the armature-protective device, and a pivotally-connected movable element by which the armature-protective device is moved to its normal operative position.

73. An electric motor having a field-winding energized by a current other than its armature-current, an electromagnetic winding in series with the armature, an electromagnetic winding in series with the said field-winding, current-controlling means automatically movable and controlled by said windings, said current-controlling means comprising a resistance-controlling movable element and a pivotally-connected switch device, the movement of the switch device being controlled under certain conditions by the resistance-controlling element.

74. An electric motor having a field-winding in parallel with its armature relative to the source of supply, two functionally-related independently-movable switches for controlling the motor, a resistance in series with the field-winding relative to the source when the full working electromotive force is upon the motor-armature, and means insuring that said resistance shall not be in series with the field-winding when the starting-current is applied to the motor-armature, and two protective electromagnetic windings for automatically controlling the motor-circuit, each of said windings producing a magnetic field independent of that produced by the other winding.

75. A circuit containing a motor-armature and an electroresponsive winding, which circuit is maintained permanently closed, a movable switch element controlled by said winding and automat-

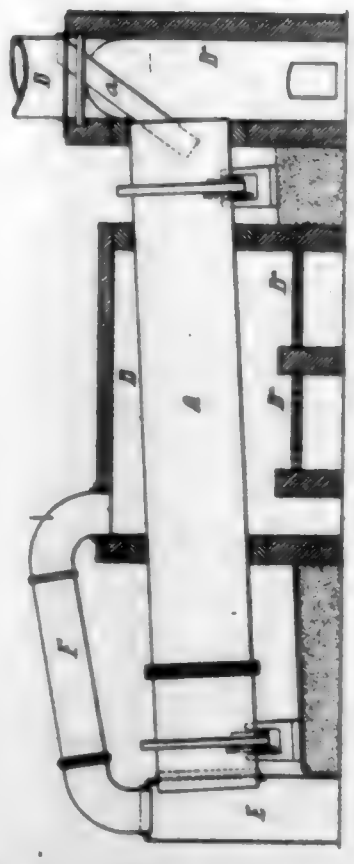
ically movable in response to abnormally low voltage on said motor-armature, and a second independently-movable switch element automatically movable in response to a different abnormal condition affecting the motor-armature, each of said switch elements being in series with the motor-armature relative to the source of supply.

76. A circuit containing a motor-armature and an electroresponsive winding responsive to abnormally low voltage upon the motor-armature, said circuit being maintained permanently closed, a circuit containing the source of supply, said motor-armature and an electroresponsive winding responsive to overload-current through said motor-armature, and two functionally-related, independently-movable switch elements controlling said motor-armature, each switch element being in series with the motor-armature relative to the source of supply, each of said windings producing a magnetic field independent of that produced by the other winding.

77. A circuit containing a motor-armature and also an electroresponsive device responsive to a condition of abnormally low voltage in said circuit, a switch for controlling said motor-armature and controlled by said electroresponsive device, and a second switch protectively functionally related to said first switch, said second switch being normally restrained against a force tending to move it.

78. A circuit containing a motor-armature and also an electroresponsive device responsive to abnormally low voltage, a switch for controlling said motor-armature and controlled by said electroresponsive device, a second switch protectively functionally related to said first switch and in series with it and with the armature relative to the main supply-lines, and means independent of the opening of said circuit containing the armature and electroresponsive device for protecting the motor-armature upon occurrence of overload.

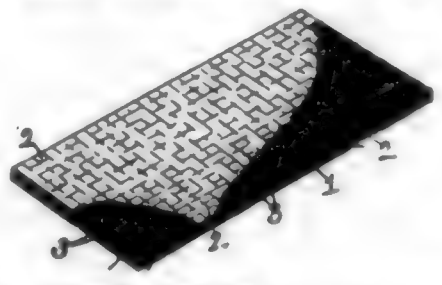
12,474. DRIER. CHARLES A. MATCHAM, Allentown, Pa. Filed Mar. 26, 1906. Serial No. 308,190. Original No. 783,970, dated Feb. 28, 1905.



Claim.—1. The combination in a drier, of an inclined drum, bearings at each end supporting said drum, an annular rack on the drum by which it is rotated, a furnace inclosing a portion only of said drum, a chamber with which the outlet end of the drum communicates, an outside flue extending from the furnace to the chamber, and a stack with which the inlet end of the drum communicates, so that the products will pass around a portion of the drum, then through the flue to the interior of the drum to the stack, substantially as described.

2. The combination in a drier, of an inclined drum, bearings at each end supporting said drum, an annular rack on the drum by which it is rotated, a furnace inclosing a portion only of said drum, a chamber with which the outlet end of the drum communicates, a flue extending from the upper portion of the furnace to the chamber, and a stack with which the inlet end of the drum communicates so that the products of combustion will pass around the drum to the upper portion of the furnace, then through the flue to the interior of the drum to the stack, substantially as described.

12,475. ROOFING AND SIDING MATERIAL. FRANK D. JACOBS, Northampton, Mass., assignor to Protected Metal Company, Springfield, Mass., a Corporation of Massachusetts. Filed Mar. 26, 1906. Serial No. 308,193. Original No. 783,858, dated Apr. 25, 1905.



Claim.—1. A roofing and siding material, embodying a base or body portion consisting of a continuous sheet of metal, and having on each side a protective layer of fibrous fireproof material, *e. g.* asbestos or mineral wood, affixed to said sheet by an asphalt cement, with their exterior surfaces in their normal or fireproofing condition.

2. A roofing and siding material, comprising a base or body portion consisting of a sheet of annealed steel, a protective layer of asbestos sheeting on each side of said base, and intermediate layers of uniting composition consisting of an admixture of rubber solution and asphalt.

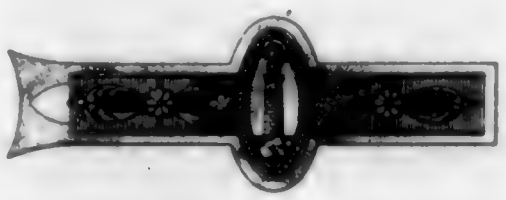
DESIGNS.

37,963. BADGE. WILLIAM C. MARTEN, Carbondale, Ill. Filed Dec. 28, 1906. Serial No. 293,684. Term of patent 14 years.



Claim.—The ornamental design for a badge, as shown.

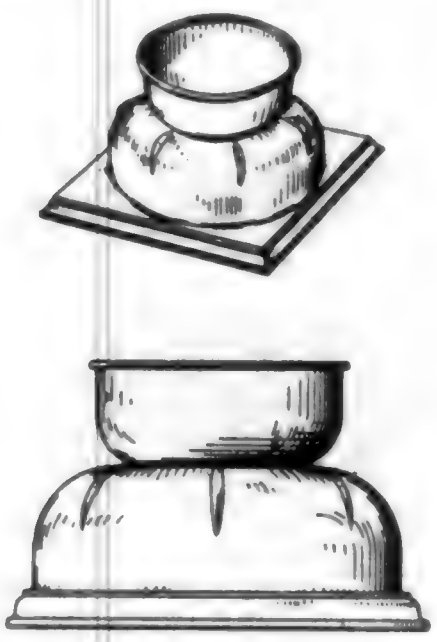
37,964. CIGAR-BAND. LOUIS C. WAGNER, New York, N. Y. Filed Mar. 10, 1906. Serial No. 306,410. Term of patent 7 years.



Claim.—The ornamental design for a cigar-band, as shown.

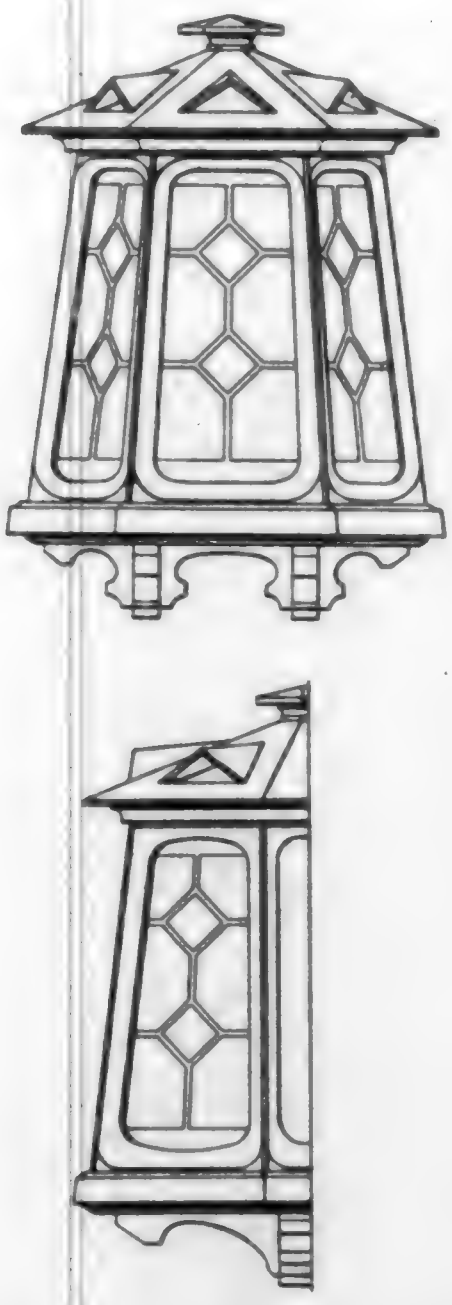
37,965. SHELL FOR COFFER-MILLS. ADELBERT H. BRONSON, Jr., Cleveland, Ohio. Filed Mar. 8, 1906. Serial No. 305,184. Term of patent 14 years.

37,965.



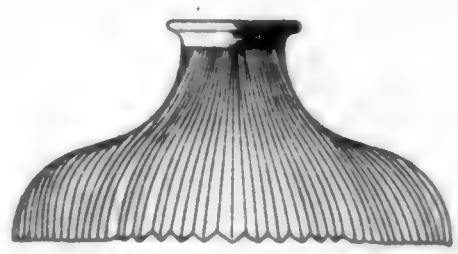
Claim.—The ornamental design for a shell for a coffee-mill, as shown.

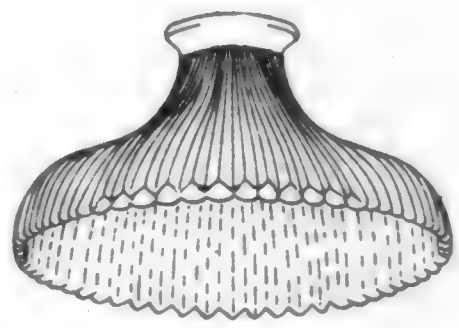
37,966. LAMP-CASE. LINDSLEY SCHERMERHORN, New York, N. Y., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Feb. 22, 1906. Serial No. 302,641. Term of patent 14 years.



Claim.—The ornamental design for a lamp-case as shown.

37,967. REFLECTOR. OTIS A. MYGATT, New York, N. Y. Filed July 14, 1905. Serial No. 269,726. Term of patent 14 years.





Claim.—The ornamental design for a reflector of the form shown having external reflecting-prisms which are visible on the interior of the reflector, as described.

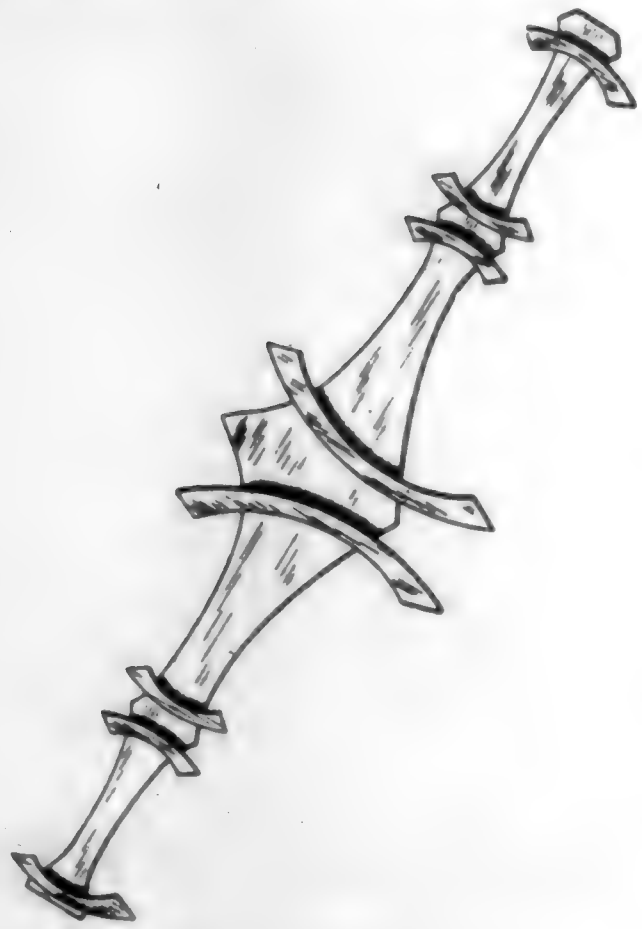
37,968. CASING OF VENDING-MACHINES. JERRY E. CAHILL, Baltimore, Md. Filed Mar. 9, 1906. Serial No. 305,182. Term of patent 7 years.





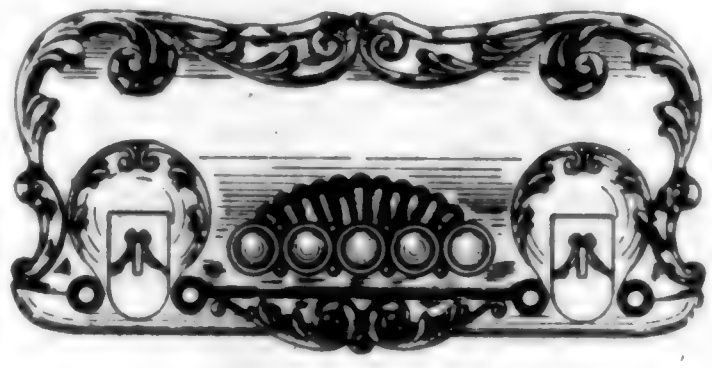
Claim.—The ornamental design for casing of a vending-machine as shown.

37,969. LADY'S BELT. ANNE E. TOMLINSON, New York, N. Y. Filed Dec. 8, 1905. Serial No. 291,154. Term of patent 3½ years.



Claim.—The ornamental design for lady's belt as shown.

37,970. CASKET-TRIMMING. WILLIAM B. STEVENS, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed Feb. 27, 1906. Serial No. 303,313. Term of patent 14 years.





Claim.—The ornamental design for a casket-trimming, as shown.

TRADE-MARKS

PUBLISHED APRIL 24, 1906.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

SER. No. 200. ASPHALT MASTIC. GABRIEL & SCHALL, New York, N. Y. Filed Apr. 1, 1905. Used ten years.



The words "BRUNSWICK GERMANY," in connection with the letters and character "G. & S." inclosed in a circular figure.

SER. No. 985. BROOMS AND BRUSHES. JAMES S. BARROW & CO., New York, N. Y. Filed Apr. 10, 1905.



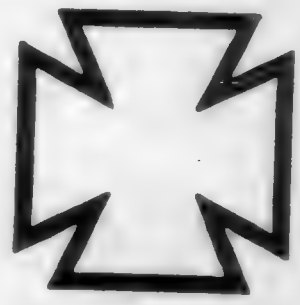
The representation of a bear, associated with the word "ON."

SER. No. 1,351. CAPS OR PRIMERS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING CO'Y, New York, N. Y. Filed Apr. 13, 1905. Used ten years.



The representation of a Maltese cross, across one of the arms of which are the words "GOLD CROSS." Above the cross are the words "GOLD MEDAL" arranged in a curve, and below the cross is the symbol "XXXX."

SER. No. 1,189. WHEAT-FLOUR AND BUCKWHEAT-FLOUR. THE TOPEKA MILLING COMPANY, Topeka, Kans. Filed Apr. 12, 1905.



The representation of a Maltese cross having its edge bordered in blue.

SER. No. 1,353. CAPS OR PRIMERS FOR BLASTING PURPOSES. THE METALLIC CAP MANUFACTURING CO'Y, New York, N. Y. Filed Apr. 13, 1905. Used ten years.



The representation of a Maltese cross, across one of the arms of which are the words "SILVER CROSS." Above the cross are the

words "SILVER MEDAL" arranged in a curve, and below the cross is the symbol "XXXX."

SER. No. 1,448. MEDICINAL PREPARATION FOR EXTERNAL AND INTERNAL USE AND INTENDED FOR THE ALLEVIATION OF PAIN. DAVIS AND LAWRENCE CO., New York, N. Y. Filed Apr. 14, 1905. Used ten years.

PAINKILLER

The word "PAINKILLER."

SER. No. 1,460. SALVE FOR THE TREATMENT OF SORE EYES. THE B. B. SUTHERLAND MEDICINE CO., Paducah, Ky. Filed Apr. 14, 1905.



The representation of a human eye, above which is the representation of an eagle with outstretched swings

SER. No. 1,502. VARNISHES, STAINS, JAPANS, AND SURFACERS. CHICAGO VARNISH CO., Chicago, Ill. Filed Apr. 14, 1905. Used ten years.

NONPAREIL

The arbitrarily-selected word "NONPAREIL."

SER. No. 1,710. VARNISHES. CHASE, ROBERTS & COMPANY, Dobb's Ferry, N. Y. Filed Apr. 15, 1905.

OZONE

The arbitrarily-selected word "OZONE."

SER. No. 2,127. FANCY SMOKED HAMS, FANCY SMOKED BACON, AND FANCY CUTS OF PORK. THOMAS STOKES & SON, New York, N. Y. Filed Apr. 18, 1905.

DUTCHESS

The word "DUTCHESS."

SER. No. 2,269. LAGER-BEER. BRADLEIGH & WOERZ, New York, N. Y. Filed Apr. 19, 1905. Used ten years.

SER. No. 2,269.



The representation of a tiger's head inclosed in an oval border.

SER. No. 2,702. DUMB-WAITERS. JOHN GEORGE SPEIDEL, Reading, Pa. Filed Apr. 22, 1905. Used ten years.

COLUMBIA

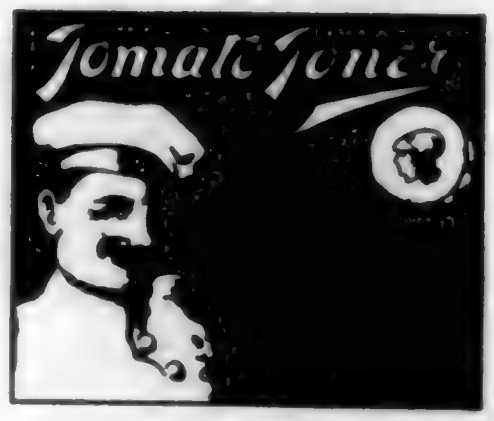
The word "COLUMBIA," with a paraph beneath the word formed by a continuation of the first letter "C."

SER. No. 2,747. SOAPS FOR HYGIENIC AND ANTISEPTIC PERSONAL USE. LAMBERT PHARMACAL CO., St. Louis, Mo. Filed Apr. 24, 1905.

LISTERINE

The word "LISTERINE."

SER. No. 3,392. TOMATO TONIC AND BEVERAGE. THE RAITER-HEINLY CO., Danville, Ill. Filed Apr. 26, 1905.



The words "TOMATO TONER," accompanied by a picture representing a chef and a design of a seal bearing a woman's head with a helmet thereon, all arranged on a black rectangular background.

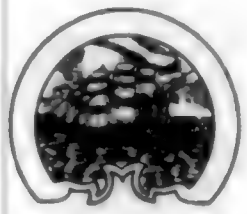
SER. No. 3,416. PRESERVATIVE PAINT FOR THE BOTTOMS OF SHIPS AND BOATS. TARR & WONSON, LIMITED, Gloucester, Mass. Filed Apr. 26, 1905. Used ten years.

RACING

The word "RACING."

SER. No. 3,418. PRESERVATIVE PAINT FOR THE BOTTOMS OF VESSELS AND BOATS. TARR & WONSON, LIMITED, Gloucester, Mass. Filed Apr. 26, 1905. Used ten years.

SER. No. 3,418.



The representation of a sailing vessel at sea.

SER. No. 3,431. METAL-POLISH. AYLING BROS., Chicago, Ill. Filed Apr. 28, 1905. Used ten years.

B-K

The letters and character "B-K."

SER. No. 3,432. SHOE-POLISH OR LEATHER-DRESSING. AYLING BROS., Chicago, Ill. Filed Apr. 28, 1905. Used ten years.



A rectangular green panel having in its lower center portion a red triangular figure and the word "RADIANT" on the panel following the lines of the triangular figure, the letter "I" appearing directly above the apex of the triangular figure.

SER. No. 3,449. COMPOUND USED AS A TONIC AND FLAVORING. BENJAMIN F. MINER, Montague, Mass. Filed Apr. 28, 1905.

VANILLO



The word "VANILLO" above a pictorial illustration of a percolator, a jar containing liquid, and a bundle of vanilla-beans inclosed within a border.

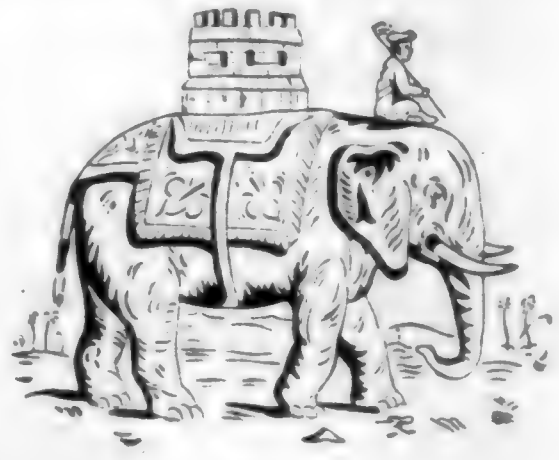
SER. No. 3,663. DRESS-SHIELDS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Apr. 29, 1905.

SER. No. 3,663.

ONANDOFF

The word "ONANDOFF."

SER. No. 4,362. COTTON PIECE GOODS. MINOT, HOOPER & CO., New York, N. Y. Filed May 5, 1905. Used ten years.

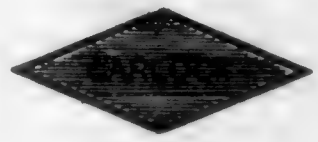


GREAT FALLS

E

A representation of an elephant carrying on its head a man in oriental costume seated, and on its back a basket-like structure beneath which is a rug or blanket retained by a band encircling the animal's belly. Below the elephant are the words "GREAT FALLS" in an arch about a capital letter "E."

SER. No. 4,487. PISTON-ROD AND VALVE PACKING. THE GARLOCK PACKING CO., Palmyra, N. Y. Filed May 6, 1905.



A diamond-shaped figure with the word "GARLOCK" inclosed therein.

SER. No. 5,177. SOAP. SIEGEL, COOPER & CO., Chicago, Ill. Filed May 11, 1905. Used ten years.

MILFORD

The word "MILFORD."

SER. No. 4,847. CANNED, BOTTLED, OR PRESERVED FRUITS AND VEGETABLES. WILSON GROCERY COMPANY, Peoria, Ill. Filed May 8, 1905.

ANCHOR BRAND



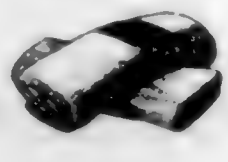
The words "ANCHOR BRAND" and a representation of an anchor lying on the seashore.

SER. No. 5,269. COTTON PIECE GOODS. YORK MANUFACTURING CO., Saco, Me. Filed May 11, 1905. Used ten years.

YORK MF'G CO

The word and abbreviations "YORK M'F'G CO."

SER. No. 5,272. BLANKETS, COMFORTABLES, AND SPREADS. SMITH, HOGE & CO., New York, N. Y. Filed May 11, 1905.



The representation of two folded blankets placed one across the other.

SER. No. 5,325. MANUFACTURED COLORS FOR PRINTING AND DYEING. AMERICAN DYEWOOD CO., Philadelphia, Pa. Filed May 12, 1905.

TETRANIL

The word "TETRANIL."

SER. No. 5,427. JAMS, JELLIES, AND PRESERVES. SIEGEL, COOPER & CO., Chicago, Ill. Filed May 12, 1905.

SER. No. 5,427.

HAZEL

The word "HAZEL" and a design showing a hazel-leaf and hazel-nuts.

SER. No. 5,476. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. PARK STEEL COMPANY, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

CORONA

The word "CORONA."

SER. No. 5,493. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y. Filed May 13, 1905. Used ten years.



A rectangular panel bearing four smaller rectangular panels and two circular panels, the name "NEW YORK" appearing within the circular panels and the words "REUTERS SOAP, NEW YORK, PRICE 25 CENTS," appearing in one of the rectangular panels, and the words "NONE GENUINE WITHOUT THE SIGNATURE OF JOHN REUTER, M. D., NEW YORK," appearing in another panel, and words descriptive of the goods and its uses appearing in the remaining panels.

SER. No. 5,494. MEDICINAL SOAP. BARCLAY & BARCLAY, New York, N. Y. Filed May 13, 1905. Used ten years.

John Reuter M.D.

A facsimile of the signature of John Reuter, M. D., deceased.

SER. No. 5,495. HAIR AND SKIN TONIC. BARCLAY & BARCLAY, New York, N. Y. Filed May 13, 1905.

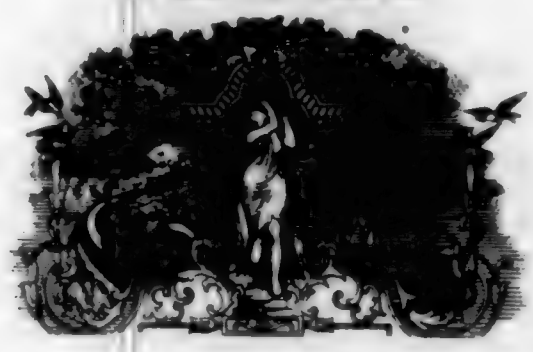
SER. No. 5,495.



The words "O TRICOFERO DE BARRY" and the pictorial representation of the head and bust of a woman, the face being shown in three-quarter view and the hair flowing.

SER. No. 5,496. HAIR AND SKIN TONIC. BARCLAY & BARCLAY, New York, N. Y. Filed May 13, 1905.

TRICOFERO



The word "TRICOFERO," associated with which is the representation of a female figure standing in an ornamental panel, at one side of which is the pictorial representation of water with ships thereon, and at the other side is the representation of a railway, on which a train of cars is shown; also, in connection with the pictorial matter is the representation of clouds, doves, and scrolls.

SER. No. 5,518. STEEL BARS, RODS, BILLETS, BLOOMS, SHEETS, PLATES, SLABS, STRIPS, BLOCKS, AND FORGINGS. CRUCIBLE STEEL COMPANY OF AMERICA, Pittsburg, Pa. Filed May 13, 1905. Used ten years.

PARAGON.

The word "PARAGON."

SER. No. 5,598. FIELD-SEEDS—VIZ., CLOVERS, TIMOTHY, MILLETS, REDTOP, BLUE GRASS, AND ORCHARD-GRASS. WILLIAM H. MORRHOUSE, Toledo, Ohio. Filed May 13, 1905.



The word "CRESCENT" and the representation of a crescent having the letter "M" thereon.

SER. No. 5,613. CEREAL FOODS MADE FROM OATS. THE AMERICAN CEREAL COMPANY, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Filed May 15, 1905. Used ten years.

BUCKEYE

The word "BUCKEYE."

SER. No. 5,622. MOLASSES. THE EASTERN REFINING CO., New York, N. Y. Filed May 15, 1905.



The letters, abbreviations, and characters "E. R. Co.," associated with the representation of a crescent.

SER. No. 5,877. CANNED CORN, SUGAR-CORN OR SWEET CORN, AND SUCCOTASH. SACO VALLEY CANNING COMPANY, Portland, Me. Filed May 17, 1905. Used ten years.

CONQUEROR

The word "CONQUEROR."

SER. No. 5,878. CANNED CORN AND CANNED SUCCOTASH. SACO VALLEY CANNING COMPANY, Portland, Me. Filed May 17, 1905. Used ten years.

YANKEE

The word or word-symbol "YANKEE."

SER. No. 5,879. CANNED CORN, SUGAR-CORN OR SWEET CORN, SUCCOTASH, AND BEANS. SACO VALLEY CANNING COMPANY, Portland, Me. Filed May 17, 1905. Used ten years.

FALMOUTH

The word-symbol "FALMOUTH."

SER. No. 6,642. ENAMELED-STEEL KITCHEN UTENSILS. WELLS & HELLBAR COMPANY, Chicago, Ill. Filed May 25, 1905.

SER. No. 6,642.



The representation of a red keystone having a white panel extending horizontally thereacross and the words "CRYSTAL WHITE WARE" appearing on the keystone.

SER. No. 6,688. HANDKERCHIEFS. DAWSON, HALLIWELL & COMPANY, Manchester, England. Filed May 26, 1905.



The pictorial illustration of a girl sitting in a hammock holding a handkerchief in each hand and having a mandolin and fan on her left and flowers at her right, the whole being surrounded by a wavy border inclosing the representation of flowers.

SER. No. 6,689. CANNED SUGAR-CORN. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905. Used ten years.

WEBB'S CREAM SUGAR

The word-symbol "WEBB'S CREAM SUGAR."

SER. No. 6,690. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905.

White Cross

The words or word-symbol "WHITE CROSS."

SER. No. 6,692. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905. Used ten years.

ORIENTAL

The word-symbol "ORIENTAL."

SER. No. 6,693. CANNED SUCCOTASH AND CANNED LIMA BEANS. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905. Used ten years.

WEBB'S CREAM

The words or word-symbol "WEBB'S CREAM."

SER. No. 6,694. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905. Used ten years.

WINTER'S Luxury

The word-symbol "WINTER'S LUXURY."

SER. No. 6,695. CANNED CORN AND CANNED SUCCOTASH. H. F. WEBB COMPANY, Portland, Me. Filed May 26, 1905. Used ten years.

PLEASANT MOUNTAIN

The word-symbol "PLEASANT MOUNTAIN."

SER. No. 6,697. CARBON-PAPER. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y. Filed May 26, 1905. Used ten years.

CARTER'S

The word "CARTER'S."

SER. No. 6,749. WORSTED, WOOLEN, AND COTTON-MIXED PIECE GOODS FOR LADIES', MEN'S, AND CHILDREN'S WEAR. GRIFFON COMPANY, New York, N. Y. Filed May 26, 1905.

SER. NO. 6,749.

GILT EDGE

The words "GILT EDGE."

SER. NO. 6,843. MEDICAL PREPARATIONS FOR NASAL CATARRH, CATARRH OF THE HEAD, BRONCHITIS, CATARRHAL DEAFNESS, HAY-FEVER, ASTHMA, HEADACHE, AND COLDS. DOCTOR BLOSSER COMPANY, Atlanta, Ga. Filed May 27, 1905. Used ten years.

[illegible]

The name "DR. BLOSSER'S."

SER. NO. 7,442. CHEROOTS. THREEFOOT BROS. & CO., Meridian, Miss. Filed June 5, 1905.



The words "RED ROSE CHEROOTS" arranged above the representation of a red rose, across the stem and leaves of which appear our firm name and address and at each side of which appears a conventional figure bearing the characters "3 FOR 5 CTS.," and the figure "3," in connection with the representation of a human foot.

SER. NO. 7,489. WINES OF ALL KINDS. A. DE LUZE & FILS, Bordeaux, France. Filed June 5, 1905.

SER. NO. 7,489.

A. DE LUZE & FILS
BORDEAUX

A groundwork on which is supported a quartered shield surmounted by a helmet, with a leopard couchant on one side of the shield and a leopard rampant on the other side of the shield, together with scrollwork above the same, the shield being quartered and displaying extended wings on the first and fourth fields and a chevron above a fleur-de-lis on the second and third fields, with the words "A. DE LUZE & FILS BORDEAUX."

SER. NO. 7,528. MINERAL COLORING-MATTER FOR MORTAR AND BRICKS. CHATTANOOGA PAINT CO., Chattanooga, Tenn. Filed June 6, 1905.

ECLIPSE

The word "ECLIPSE" and the representation of a red Maltese cross, the word "ECLIPSE" extending across the same.

SER. NO. 7,626. REMEDY FOR COUGHS AND COLDS. OTTO CLETUS BAUMANN GROM, New York, N. Y. Filed June 8, 1905.

O-SEE-BEE-GEE

The hyphenated syllables "O-SEE-BEE-GEE."

SER. NO. 7,688. WHISKY. H. G. WILLIAMS & CO., Norfolk, Va. Filed June 8, 1905.

SOLACE

The word "SOLACE" within the design of a shield bordered at each side by a scroll.

SER. NO. 8,053. HOSIERY. JAMES JAMISON, East Orange, N. J. Filed June 13, 1905.

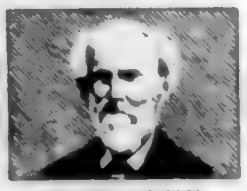
Ser. No. 8,053.



A central figure representing a boy waving his hat, and across the lower portion of the figure the word "Teddy" is produced. This figure occupies a central panel, and in four side panels four other figures of boys are individually produced represented as engaged in various sports.

Ser. No. 8,127. OINTMENTS. William B. Smith, New London, Conn. Filed June 14, 1905.

SMITH'S

S  C

SURE CURE

OINTMENT

The portrait of applicant and the letters "S C," associated with the words "Smith's Sure Cure Ointment."

Ser. No. 8,182. WHISKY. Meyer Marx Co., Birmingham, Ala. Filed June 15, 1905.



The word "Zu Zu," under which, surrounded by a scroll, is the figure of a clown.

Ser. No. 8,249. INDIA-RUBBER OR GUTTA-PERCHA TOBACCO-POUCHES. Adolph Frankau & Co. Ltd., London, England. Filed June 15, 1905.

DIANA

The designation "Diana."

Ser. No. 8,250. TOBACCO-PIPES, CIGAR AND CIGARETTE TUBES. Adolph Frankau & Co. Ltd., London, England. Filed June 15, 1905.



The letters "B B B" and a parallelogram inclosing them.

Ser. No. 8,340. CANNED FISH, CANNED LOBSTERS, CANNED CLAMS, AND CANNED CLAM-CHOWDER. Hartley C. Baxter, Brunswick, Me. Filed June 16, 1905. Used ten years.

BEST RESERVE

The words "Best Reserve."

Ser. No. 8,615. MEDICINAL TONIC OR CORDIAL. Udolpho Wolfe Co., New York, N. Y. Filed June 20, 1905.



An oblong diamond shaded with horizontal lines, upon which rests the cross of Malta pendent from an ornamental bar, upon which are the words "Diamond Cross." Underneath the foregoing is a two-wheeled chariot drawn by three lions at full speed occupied by a crowned female figure holding in her right hand a spear and in her left hand a bottle.

Ser. No. 8,616. MEDICINAL TONIC OR CORDIAL. Udolpho Wolfe Co., New York, N. Y. Filed June 20, 1905.



The letters and characters "W. A. S." in white on a blue diamond-shaped ground, which is superimposed upon a ground of straight parallel lines, the whole being inclosed by a straight-line border.

SER. No. 8,937. WHISKY. MILTON L. EPPSTEIN, Fort Worth, Tex. Filed June 24, 1905. Used ten years.



The words "JERSEY CREAM" above a picture showing a cow and a milkmaid. The girl has a pail in her right hand and her left arm rests on the cow's back. In the background are shown trees.

SER. No. 8,958. WHISKY. MORRIS-POWERS MERC. CO., Kansas City, Mo. Filed June 24, 1905.

FAIRMOUNT CLUB

The words "FAIRMOUNT CLUB."

SER. No. 8,979. WHISKY. LOUIS E. BOUKOFSKY, Louisville, Ky. Filed June 24, 1905.

OLD
STONEY FORT

The words "OLD STONEY FORT."

SER. No. 8,999. COCOA AND CHOCOLATE FOR USE IN FOOD PRODUCTS AND BEVERAGES. HAWLEY & HOOPS, New York, N. Y. Filed June 24, 1905. Used ten years.



A monogram of the letters and numeral "A. No. 1."

SER. No. 9,020. AUTOMOBILES AND PARTS THEREOF. POPE MANUFACTURING COMPANY, Hartford, Conn. Filed June 26, 1905.

A heavy circle or flat circular band.

SER. No. 9,028. WHISKY. KANE DISTILLING CO., St. Louis, Mo. Filed June 26, 1905.

SER. No. 9,028.

MOSS RUN

The words "MOSS RUN."

SER. No. 9,103. WHISKY. JOHN MCGLINN, Philadelphia, Pa. Filed June 26, 1905.



The words "CLOVER CLUB" and an oval design, in the center of which is a monogram of the letters, character, and abbreviation "B & McG."

SER. No. 9,105. WHISKY. JOHN MCGLINN, Philadelphia, Pa. Filed June 26, 1905.



The letters "L. A. W.," accompanied by a drawing which represents a man and woman in cycling costume, the woman standing erect, one hand resting on the handle-bar of a bicycle, the other outstretched, holding a glass. The man has one arm resting upon a table, and in his other hand he holds a bottle tilted toward the glass in the woman's hand. In the background is a fence. On either side of the picture is a wing projecting from and apparently attached to a circle inclosed in a rectangular design.

SER. No. 9,253. POROUS PLASTERS. ALLCOCK MANUFACTURING CO., New York, N. Y. Filed June 27, 1905. Used ten years.

ALLCOCK'S

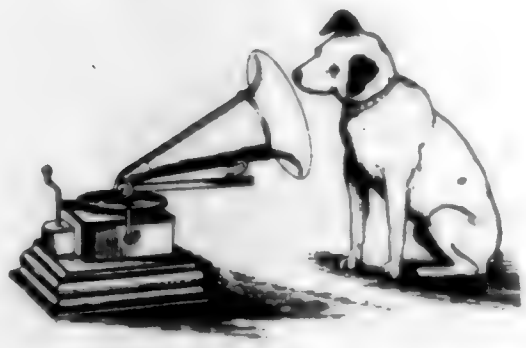
The designation "ALLCOCK'S."

SER. No. 9,257. PILLS. ALLCOCK MANUFACTURING CO., New York, N. Y. Filed June 27, 1905. Used ten years.

BRANDRETH

The designation "BRANDRETH."

SER. No. 9,273. SMOKING-TOBACCO AND CIGARETTES. VICTOR TALKING MACHINE CO., Camden, N. J. Filed June 27, 1905.



The picture of a dog in the act of listening to a sound-reproducing machine.

SER. No. 9,507. WHISKY. WILMERDING-LOEWE CO., San Francisco, Cal. Filed June 30, 1905. Used ten years.

KELLOGG'S

The name "KELLOGG'S."

SER. No. 9,520. COFFEE EXTRACT. THE CAFOLIN CO. LTD., London, England. Filed June 30, 1905.

CAFOLIN

The word "CAFOLIN."

SER. No. 9,533. WRENCHES AND VISES. J. H. WILLIAMS & CO., New York, N. Y. Filed June 30, 1905.

AGRIPPA

The word "AGRIPPA."

SER. No. 9,601. BOURBON WHISKIES. ROTH & CO., San Francisco, Cal. Filed July 1, 1905.

CAPITOL

The word "CAPITOL."

SER. No. 9,669. SHOTGUNS AND RIFLES. WINCHESTER REPEATING ARMS CO., New Haven, Conn. Filed July 3, 1905. Used ten years.

SER. No. 9,669.

WINCHESTER

The word "WINCHESTER."

SER. No. 9,831. LINIMENTS. FREDERICK AYER, Boston, Mass. Filed July 6, 1905.

FERNOLINE
BALSAM

The words "FERNOLINE BALSAM."

SER. No. 9,953. CANNED FRUITS AND VEGETABLES. FISCHER BROTHERS, Seattle, Wash. Filed July 10, 1905.

CARDINAL

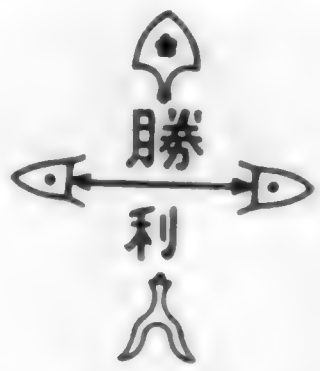
The word-symbol "CARDINAL."

SER. No. 10,041. WHISKY. TUCKER & MCCORMACK, Memphis, Tenn. Filed July 11, 1905.

The Nation's Pride

The words "THE NATION'S PRIDE."

SER. No. 10,123. ILLUMINATING-OILS. STANDARD OIL CO. OF NEW YORK, New York, N. Y. Filed July 1, 1905.



The representation of an arrow, upon the shaft of which the Japanese characters "SHO-RI," meaning victory, are shown, and which is crossed by a double-headed arrow or spear.

SER. No. 10,172. WATCHES AND PARTS THEREOF. ADOLPHE SCHWOB, New York, N. Y. Filed July 12, 1905.



The monogram of letters "V W C."

SER. No. 10,219. SOAP. THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 12, 1905. Used ten years.

PICNIC

The word "PICNIC."

SER. No. 10,332. TAPS, DIES, AND SCREW-PLATES. WELLS BROTHERS COMPANY, Greenfield, Mass. Filed July 14, 1905. Used ten years.

Little Giant.

The words "LITTLE GIANT."

SER. No. 10,429. TORPEDO-FIREWORKS. EDWARD H. WAGNER, New York, N. Y. Filed July 17, 1905.

Son of a Gun

The words "SON OF A GUN."

SER. No. 10,454. SALT FOR TABLE, COOKING, DAIRY, AND GENERAL HOUSEHOLD USES. CRYSTALINE SALT COMPANY, Boston, Mass. Filed July 17, 1905. Used ten years.

CRYSTALINE

The word "CRYSTALINE."

SER. No. 10,491. HORSE AND MULE SHOES. PHOENIX HORSE SHOE CO., Chicago, Ill. Filed July 17, 1905. Used ten years.



The figure or design of a triangle.

SER. No. 10,492. HORSE AND MULE SHOES. PHOENIX HORSE SHOE CO., Chicago, Ill. Filed July 17, 1905. Used ten years.

SER. No. 10,492.



The fanciful figure or design of a letter "W" or double "V," one of which is partially superimposed upon the other, forming substantially the letter "W."

SER. No. 10,608. PRINTING AND WRITING PAPER. DILL & COLLINS CO., Philadelphia, Pa. Filed July 20, 1905.



The letter "D" inclosed by a diamond-shaped figure.

SER. No. 10,613. CHOCOLATES AND OTHER BONBONS. THE WALTER M. LOWNEY COMPANY, Boston, Mass. Filed July 20, 1905. Used ten years.

"NAME ON EVERY PIECE."

The words "NAME ON EVERY PIECE" inclosed in quotation-marks.

SER. No. 10,669. LEATHER BOOTS AND SHOES. CLAPP & TAPLEY, Danvers, Mass. Filed July 21, 1905.

THE C. & T. SHOE

The words and letters "THE C. & T. SHOE."

SER. No. 10,708. LIQUIDS FOR USE IN SHARPENING EDGED INSTRUMENTS. ERNEST HUNOLD, Providence, R. I. Filed July 22, 1905.

"HONAH"

The word "HONAH" inclosed in quotation-marks.

SER. No. 10,709. LEATHER BOOTS AND SHOES FOR MEN, WOMEN, YOUTHS, BOYS, AND CHILDREN. ENDICOTT-JOHNSON COMPANY, Boston, Mass. Filed July 22, 1905.

BAR OF QUALITY

The words "BAR OF QUALITY."

SER. No. 10,717. STATIONARY STEAM-ENGINES. SOUTHERN ENGINE & BOILER WORKS, Jackson, Tenn. Filed July 22, 1905.



A diamond-shaped figure bearing the word "SOUTHERN" and the name and place of business of the applicant and the date of incorporation, as follows: "SOUTHERN ENGINE & BOILER WORKS, INCORPORATED, 1884, JACKSON, TENN., U. S. A."

SER. No. 10,776. AUTOMOBILES. BENJAMIN A. GRAHN, Chillicothe, Ohio. Filed July 25, 1905.

"THAT CAR OF QUALITY"

The words "THAT CAR OF QUALITY" inclosed in quotation-marks.

SER. No. 10,870. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed July 27, 1905. Used ten years.



A representation of a fractured corroding pot printed in red containing sheets of corroded lead, associated with the words and abbreviations "McBIRNEY & JOHNSTON CO. CHICAGO, ILL."

SER. No. 10,871. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed July 27, 1905.



A crescent printed in red, associated with the words and abbreviations "SOUTHERN COMPANY ST. LOUIS & CHICAGO."

SER. No. 10,872. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed July 27, 1905. Used ten years.



The words "COLLIER COMPANY."

SER. No. 10,924. CIGARS. JULIUS G. HANSEN, Reading, Pa. Filed July 27, 1905. Used ten years.



The words "ISLAND OF CUBA" and the outline-map of the Island of Cuba, with the words "ISLA DE CUBA" inclosed within said outline-map.

SER. No. 10,978. BOLT AND NUT MAKING MACHINERY. THE ACME MACHINERY CO., Cleveland, Ohio. Filed July 26, 1905.

ACME

The word-symbol "ACME."

SER. No. 11,079. LEATHER BOOTS, SHOES, AND SLIPPERS. M. D. WELLS CO., Chicago, Ill. Filed July 31, 1905.

SER. No. 11,079.

Arbutus

The word "ARBUTUS."

SER. No. 11,241. PREPARATIONS FOR THE CLEANSING AND PRESERVATION OF THE TEETH AND OF THE MOUTH. K. K. LANDESPRIV. MILLY-KERNEN-, SEIFEN-UND GLYCERIN-FABRIK, VON F. A. SARG'S SOHN & CO., Vienna, and Liesing, near Vienna, Austria-Hungary. Filed Aug. 4, 1905.



The representation of the head of a smiling woman looking over her shoulder and wearing a broad-brimmed hat, the strings of which hang down in front and on the brim of which appears the word "KALODONT" in capital letters arranged semicircularly, the words "SCHÖNHEIT DER ZÄHNE" extending across the base of the neck and the left shoulder of the woman.

SER. No. 11,258. LEATHER-WELTED BOOTS AND SHOES. UNITED SHOE MACHINERY COMPANY, Boston, Mass. Filed Aug. 4, 1905. Used ten years.

GOODYEAR WELT

The words "GOODYEAR WELT."

SER. No. 11,322. BAKING-POWDER. CLEVELAND BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 7, 1905. Used ten years.



A representation of a disk comprising a dark central field and border of red, the field bearing the words "PURITY STRENGTH PERFECTION."

SER. No. 11,424. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 8, 1905. Used ten years.



The words "LA FLOR DE YNCLAN DE F. YNCLAN, HABANA," within a double ellipse, the words "LA FLOR DE YNCLAN" being within the upper half of the border of the ellipse, the words "DE F. YNCLAN" being within the inner ellipse, and the word "HABANA" being within the lower half of the ellipse.

SER. No. 11,527. POLISH FOR CLEANING AND POLISHING RUSSET AND TAN-COLORED SHOES. WHITTEMORE BROS. AND CO., Cambridge, Mass. Filed July 20, 1905.

WHITTEMORE'S

STAR

The words "WHITTEMORE'S STAR."

SER. No. 11,704. SHOVELS, SCOOPS, AND SPADES. ST. LOUIS SHOVEL CO., St. Louis, Mo. Filed Aug. 16, 1905.



The representation of a snake coiled in the form of the figure 8 and the words "SOCKET TAPER STRAP ST. LOUIS SHOVEL CO.," all inclosed by an ornamental rectangular dotted border.

SER. No. 11,811. WHITE LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Aug. 19, 1905. Used ten years.



The words and abbreviations "ATLANTIC ROBERT COLGATE & CO."

SER. No. 11,880. LAUNDRY STARCH. OSWEGO MAIZE PRODUCTS CO., Oswego, N. Y. Filed Aug. 21, 1905.

SER. No. 11,880.

VELVET

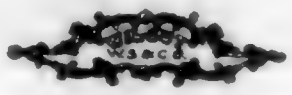
The word "VELVET."

SER. No. 11,906. CREAM OF TARTAR. ROYAL BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 22, 1905. Used ten years.

ROYAL

The word "ROYAL."

SER. No. 12,150. CULINARY KNIVES. THE WILKINSON SHEAR & CUTLERY CO., Reading, Pa. Filed Sept. 1, 1905.



The word "WILCUT" and the letters, character, and abbreviation "W. S. & C. Co." inclosed in an ornamental border of scroll-work.

SER. No. 12,189. WHEAT-FLOUR. THE SWEET SPRINGS MILLING COMPANY, Sweet Springs, Mo. Filed Sept. 2 1905.

GENUINE
VIGORAL



The words "GENUINE VIGORAL" and, inclosed in a garter, which bears the words and character "HEALTH & STRENGTH," the representation of a man lifting a weight, upon which are the word, figures, and abbreviation "200 LBS. WEIGHT."

SER. No. 12,347. BEER. THE JOHN EICHLER BREWING CO., New York, N. Y. Filed Sept. 7, 1905.

Eichler

The word "EICHLER" written on an upwardly-extending slant in script type, and beneath the same is the representation of a spread-eagle and a shield, and the monogram "E J" appearing upon the latter.

SER. No. 12,361. CANNED FRUITS AND VEGETABLES. THE CASENOVIA CANNING CO., Casenovia, N. Y. Filed Sept. 7, 1905.

PIER

The word "PIER."

SER. No. 12,362. CANNED FRUITS AND CANNED VEGETABLES. THE CASENOVIA CANNING CO., Casenovia, N. Y. Filed Sept. 7, 1905.

SEMINARY

The word "SEMINARY."

SER. No. 12,363. CANNED FRUITS AND VEGETABLES. THE CASENOVIA CANNING CO., Casenovia, N. Y. Filed Sept. 7, 1905.

OWAHGENA

The word "OWAHGENA."

SER. No. 12,365. CANNED FRUITS AND VEGETABLES. THE CASENOVIA CANNING CO., Casenovia, N. Y. Filed Sept. 7, 1905.

VALLEY BRAND

The words "VALLEY BRAND."

SER. No. 12,379. CHEMICALS USED FOR REDUCING, DISCHARGING, AND BLEACHING PURPOSES—FOR EXAMPLE, IN THE REDUCTION OR ACIDIFYING OF DYESTUFFS AND THE LIKE. BADISCHE ANILIN- & SODA-FABRIK, Ludwigshafen-on-the-Rhine, Germany. Filed Sept. 8, 1905.

Rongalite

The word "RONGALITE."

SER. No. 12,382. HOMEOPATHIC MEDICAL PREPARATIONS FOR THE PREVENTION AND CURE OF DISEASES. MUNYON'S HOMEOPATHIC HOME REMEDY CO., Philadelphia, Pa. Filed Sept. 14, 1905. Used ten years.



The wordr "MUSTON'S HOMŒOPATHIC HOME REMEDIES," a panel on which said words are placed, and an ornamental border inclosing said panel.

SER. No. 12,652. WHISKY. DEITZ, WEIL & Co., Paducah, Ky. Filed Sept. 15, 1905. Used ten years.



The name "PETER COOPER," associated with a circular figure bearing a monogram of the letters and abbreviation "D W Co" within a circle upon a Maltese cross surrounded by a circle.

SER. No. 12,756. REMEDIES FOR BRONCHIAL AFFECTIONS. JOSEPH WERTHEIM, Meerane, Germany. Filed Sept. 18, 1905.



The word-symbol "GLANDULEN."

SER. No. 12,799. WOOD-FINISH, WHICH IS USED FOR FINISHING ALL KINDS OF WOOD SURFACES. EDWIN JOHNSON, Pittsburg, Pa. Filed Sept. 20, 1905.

WASH-UP

The hyphenated word "WASH-UP."

SER. No. 12,961. BAKING-POWDER. SCHWABACHER BROS & Co., INC., Seattle, Wash. Filed Sept. 25, 1905.



The word "WESTOVER" and the representation of a horse standing in a field with a house and trees in the background surrounded by a border of two concentric circles.

SER. No. 12,825. WHITE LEAD. JOHN T. LEWIS & BROS. Co., Philadelphia, Pa. Filed Sept. 20, 1905. Used ten years.



The words and abbreviations "WESTERN WHITE LEAD CO. PHILAD'A."

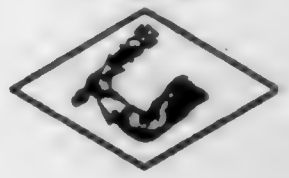
SER. No. 12,826. WHITE LEAD JOHN T. LEWIS & BROS. Co., Philadelphia, Pa. Filed Sept. 20, 1905. Used ten years.



The words and abbreviations "PHILAD'A LEAD WORKS, PHILAD'A."

SER. No. 12,986. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.

GOLDEN SCEPTRE
BRAND



A representation of a human arm clothed in a sleeve and attached cuff holding in its hand a conventional representation of a scepter terminated by a Maltese cross, such arm and scepter being inclosed in a rhombus or diamond-shaped border, associated with the words "GOLDEN SCEPTER BRAND."

SER. No. 12,989. CANNED SALMON. FIDALGO ISLAND PACKING CO., Anacortes, Wash. Filed Sept. 25, 1905.

HEATHER-BELL



The representation of a spray of the heather-bell plant, associated with the words "HEATHER-BELL."

SER. No. 12,991. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.

BEYMER, BAUMAN & CO PITTSBURGH

The words and abbreviations "BEYMER, BAUMAN & CO. PITTSBURGH."

SER. No. 12,994. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.

FAHNESTOCK, HASLETT & SCHWARTZ

PITTSBURGH, PA.

The words and abbreviations "FAHNESTOCK, HASLETT & SCHWARTZ PITTSBURGH, PA."

SER. No. 12,997. WHITE LEAD AND OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.

SER. No. 12,997.

M. B. SUYDAM & CO. PITTSBURGH.

The words and abbreviations "M. B. SUYDAM & CO. PITTSBURGH."

SER. No. 12,998. OXIDS OF LEAD. NATIONAL LEAD & OIL CO. OF PA., Pittsburg, Pa. Filed Sept. 25, 1905. Used ten years.

BENDER & ALLDRED PITTSBURG, PENNA.

The words and abbreviations "BENDER & ALLDRED PITTSBURG, PENNA."

SER. No. 13,112. ALE. SUFFOLK BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905.

Stanley's Medallion Ale.

The words "STANLEY'S MEDALLION ALE" and a tablet bearing in relief the figure of a dragon in the form of the letter S with the words "ARROW BRAND" on the dragon.

SER. No. 13,117. ALE. NEW ENGLAND BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905.

SER. No. 13,117.



An oval-shaped panel bearing in its center the letter "B" printed in blue and having thereon the name "HAFFENREFFER & CO. BOYLSTON BREWERY" and surrounded by ornamental panels bearing the same name and the words "BOYLSTON SPARKLING ALE BOTTLED, AT THE BREWERY, BOSTON."

SER. No. 13,119. MALT WINE. NEW ENGLAND BREWING COMPANY, Boston, Mass. Filed Sept. 28, 1905. Used ten years.



The name and words "HAFFENREFFER & CO. MALT WINE" printed in script.

SER. No. 13,158. FEED-WATER HEATERS. STEWART HEATER CO., Buffalo, N. Y. Filed Sept. 30, 1905. Used ten years.



The representation of a shield with the words "THE OTIS TUBULAR HEATER & LIME EXTRACTOR. STEWART HEATER CO., BUFFALO, N. Y.," appearing thereon.

SER. No. 13,320. CANNED LOBSTER. H. C. BAXTER & BRO., Brunswick, Me. Filed Oct. 5, 1905.

MONOPOLE

The word "MONOPOLE."

SER. No. 13,325. LAXATIVE FOR THE HUMAN SYSTEM. MICHAEL HAYES JOHNSTON, Galesburg, Ill. Filed Oct. 5, 1905.

LAXIENNAS

The word "LAXIENNAS."

SER. No. 13,213. OVERCOATS AND SUITS. FRIEND BROS CLO. CO., Milwaukee, Wis. Filed Oct. 2, 1905.



A representation of a shield diagonally crossed by a band having the words "ALMA MATER" thereon, the shield having thereon representations of a foot-ball, a pipe, a mortar-board cap, a tennis-racket, and a base ball bat and a golf-stick crossed.

SER. No. 13,326. BENT-WOOD FURNITURE. THONET BROTHERS, Vienna, Austria. Filed Oct. 5, 1905.



A panel having a background of interlaced parallel lines simulating canework, the outlines of the panel being surrounded by curved approximately parallel lines. In the center of the panel are spaces bearing the words "THONET" and "WIEN," and at the ends of the panel are ovals bearing a monogram of the letters "T G."

SER. No. 13,356. HEADACHE REMEDY. C. S. A. CHEMICAL CO., Portsmouth, Va. Filed Oct. 6, 1905.



The letters "C. S. A." having a paraph therebeneath. The words "CELERY-SEDATIVE-APERIENT" appear on the paraph.

SER. No. 13,391. VEGETABLE-SAUCE. FREDERICK FOSTER PLANK, Petaluma, Cal. Filed Oct. 6, 1905.



A rectangular panel having a blue border and diagonally-arranged red bars crossing the same in the center of the panel, said panel having thereon the words "PLANK'S CALIFORNIA VEGETABLE SAUCE. PREPARED BY F. F. PLANK, PETALUMA, CAL."

SER. No. 13,394. SOAP OF PASTE-LIKE CONSISTENCY. HAVILAH ARMON BLAKESLEE, Hartford, Conn. Filed Oct. 6, 1905.

SKAT

The word "SKAT."

SER. No. 13,398. WHISKY. BEAM BROS. & Co., Lynchburg, Va. Filed Oct. 7, 1905. Used ten years.

NATURAL BRIDGE

The words "NATURAL BRIDGE."

SER. No. 13,486. PORTLAND CEMENT. WESTERN PORTLAND CEMENT CO., Yankton, S. D. Filed Oct. 11, 1905.



A circular band superimposed upon a diamond-shaped figure, with the words "WESTERN PORTLAND CEMENT CO., YANKTON, SO. DAK.," on said circular band and the word "YANKTON" on the diamond-shaped figure.

SER. No. 13,537. JAMS, JELLIES, MARMALADES, PRESERVED AND CONSERVED FRUITS. SUNLIT FRUIT COMPANY, San Francisco, Cal. Filed Oct. 12, 1905.

Sunlit

The arbitrary word "SUNLIT."

SER. No. 13,583. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 13, 1905.

H.S.B & CO.
REV-O-NOC

The word "REV-O-NOC" and the letters, character, and abbreviation "H. S. B & Co."

SER. No. 13,579. WHISKY. JOSEPH F. SINNOTT, Philadelphia, Pa. Filed Oct. 13, 1905.



The word "RECORD," in conjunction with the words "GIBSON'S RYE WHISKEY" and a representation of a distillery, associated with the words "MOORE & SINNOTT, PROPRIETORS & SUCCESSORS TO JOHN GIBSON'S SON & CO., GIBSONTON MILLS, MONONGAHELA RIVER, PA." To the left of the picture of the distillery is a shield-shaped figure containing the following wording: "PRINCIPAL OFFICES 234 SOUTH FRONT STREET, PHILA.," and to the right of the said picture of the distillery is another shield-shaped figure containing the following wording: "AGENCIES NEW YORK, BOSTON, NEW ORLEANS, SAN FRANCISCO."

SER. No. 13,633. CLOTHES-WRINGERS. THE AMERICAN WRINGER COMPANY, New York, N. Y. Filed Oct. 14, 1905.

UNIVERSAL

The word "UNIVERSAL."

SER. No. 13,704. PANAMA HATS. JACOB J. SEEDS & Co., Philadelphia, Pa. Filed Oct. 17, 1905.



The words "THE PERFECT PANAMA," the monogram of the letters "J J S C," the character "&" preceding said monogram and the letter "o" succeeding the same, and the representation of a striped field, on which said monogram, character, and letter are placed and a buckled strap inclosing said field.

SER. No. 13,745. RUGS. THE HARTFORD CARPET CORPORATION, Thompsonville, Conn., and New York, N. Y. Filed Oct. 19, 1905. Used ten years.

SAXONY RUGS.

The words "SAXONY RUGS."

SER. No. 13,767. COTTON DAMASK. ROSEMARY MANUFACTURING COMPANY, Roanoke Rapids, N. C. Filed Oct. 19, 1905.

SER. No. 13,767.

500

The number "500."

SER. No. 13,807. EFFERVESCENT POWDER FOR MAKING APERIENT MINERAL WATER. CHARLES J. THATCHER, Easton, Pa. Filed Oct. 21, 1905.

FOR-DINE

The word "FOR-DINE."

SER. No. 13,839. SHOTGUNS, RIFLES, PISTOLS, AND PARTS THEREOF. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

The coined word "HIBSPEBAR."

SER. No. 13,850. KITCHEN UTENSILS MADE OF TIN. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905. Used ten years.

OVB
OUR VERY BEST

The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST."

SER. No. 13,853. POCKET-KNIVES, TABLE-KNIVES, BUTCHER-KNIVES, STICKING-KNIVES, SKINNING-KNIVES, PARING-KNIVES, CARVING-KNIVES, AND RAZORS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905. Used ten years.

OVB
OUR VERY BEST

The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST."

SER. No. 13,854. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905.

HIBSPEBAR

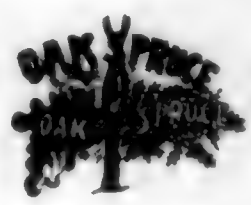
The coined word "HIBSPEBAR."

SER. No. 13,855. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Oct. 21, 1905. Used ten years.

OVB
OUR VERY BEST

The letters "O V B" with a panel extending across the same, upon which appear the words "OUR VERY BEST."

SER. No. 13,916. SHEEP, CALF, GOAT, AND KID LEATHER. A. B. CLARK CO., New York, N. Y. Filed Oct. 25, 1905.



The representation of a twin tree, one half showing oak-leaves, with the word "OAK" thereon, and the other half spruce branches and leaves, with the word "SPRUCE" thereon, associated with the words "OAK SPRUCE" appearing above the tree.

SER. No. 13,919. SHEEP, GOAT, CALF, AND KID LEATHER. A. B. CLARK CO., New York, N. Y. Filed Oct. 25, 1905.



The representation of a plurality of shipping-tags arranged one above the other and upon one of which tags appear the words "BLUE TAG LINE."

SER. No. 13,928. NEEDLES FOR SEWING BY HAND AND BY MACHINE. THE SINGER MANUFACTURING COMPANY, New York, N. Y. Filed Oct. 25, 1905. Used ten years.

SINGER

The word "SINGER."

SER. No. 13,929. LUBRICATING-OIL. THE SINGER MANUFACTURING COMPANY, New York, N. Y. Filed Oct. 25, 1905. Used ten years.

SINGER

The word "SINGER."

SER. No. 14,018. ROUND AND FLAT LEATHER BELTING. TROY BELTING AND SUPPLY COMPANY, Troy, N. Y. Filed Oct. 28, 1905.

SER. No. 14,018.

FRICTIONITE

The word "FRICTIONITE."

SER. No. 14,101. LIQUID, SEMILIQUID, GRANULAR, AND CAKE SOAP FOR TOILET USE. GEO. A. SCHMIDT CO., Chicago, Ill. Filed Oct. 30, 1905.

A "Happy Home" Maker

The arbitrary words "A "HAPPY HOME" MAKER."

SER. No. 14,160. LADIES' HATS. CAROLYN & CO., New York, N. Y. Filed Nov. 1, 1905.

Carolyn

The name "CAROLYN" in the handwriting of Carolyn Turner, sole member of the firm.

SER. No. 14,231. OILSTONES, WATER-STONES, WHETSTONES, HONES, AND GRINDSTONES. THE SCRANTON WHETSTONE AND ABRASIVE WHEEL CO., Scranton, Pa. Filed Nov. 3, 1905.



The words "RED CLOUD" and the representation of the head of an Indian appearing on the representation of a keystone, which is superimposed on a serrated seal.

SER. No. 14,240. PROPRIETARY REMEDIES FOR THE RELIEF AND CURE OF STOMACH, LIVER, AND BOWEL COMPLAINTS AND OTHER AILMENTS RESULTING THEREFROM, COLDS, HEADACHES, AND SIMILAR DISEASES AND DISORDERS. P. F. & J. A. WELLENBERGER, New York, N. Y. Filed Nov. 3, 1905.

Bestfrend

The arbitrary word "BESTFREND."

SER. No. 14,415. CASTOR-OIL. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed Nov. 8, 1905. Used ten years.

SER. No. 14,415.

COLLIER CO.
ST. LOUIS

The words and abbreviations "COLLIER CO. ST. LOUIS."

SER. No. 14,454. CANNED OYSTERS. GIBBS PRESERVING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Nov. 9, 1905. Used ten years.



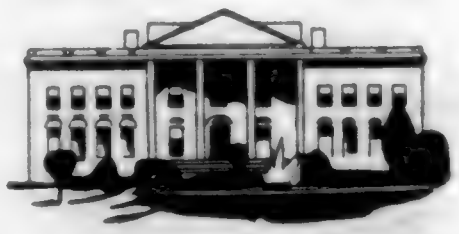
A pictorial representation of a bull's head.

SER. No. 14,457. BOOTS, SHOES, AND SLIPPERS COMPRISED WHOLLY OR IN PART OF LEATHER AND ADAPTED FOR PERSONAL WEAR OF BOTH SEXES. GEO G SNOW CO, Brockton, Mass. Filed Nov. 9, 1905. Used ten years.

"Snow"

The word "SNOW" inclosed in quotation-marks, the said word being written in the peculiar and distinctive style in which the founder of our business, George G. Snow, wrote his name.

SER. No. 14,529. SALT. PETER J. L. SEARING, New York, N. Y. Filed Nov. 13, 1905.



White-House

A conventional representation of the White House and the hyphenated word "WHITE-HOUSE."

SER. No. 14,635. WIRE FENCES AND COMBINATION WOOD-AND-WIRE FENCES. THE HODGE FENCE & LUMBER CO., LT'D, Lake Charles, La. Filed Nov. 14, 1905. Used ten years.

HODGE

The word "HODGE."

SER. No. 14,665. UMBRELLAS AND PARASOLS. GORHAM MFG. CO., Providence, R. I. Filed Nov. 15, 1905. Used ten years.

Gorham

The word "GORHAM."

SER. No. 14,743. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 17, 1905.



The representation of a bell, its clapper, the bell-support, and the bell-ringing device.

SER. No. 14,745. BLEACHED AND UNBLEACHED SHIRTINGS AND SHEETINGS, CAMBRICS, AND LONG CLOTH. GRINNELL WILLIS & CO., New York, N. Y. Filed Nov. 17, 1905.



BIG INJUN

The words "BIG INJUN," associated with the bust representation of an Indian chief in full feather headdress.

SER. No. 14,766. WATCH-MOVEMENTS. LOUIS MANHEIMER & BROS., Chicago, Ill. Filed Nov. 17, 1905.

SER. No. 14,766.

LOCOMOTIVE SPECIAL

The words "LOCOMOTIVE SPECIAL."

SER. No. 14,768. MEN'S LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Lynchburg, Va. Filed Nov. 17, 1905.



The fanciful bust picture of a young man in business dress, said picture being arranged above the lower end portion of an upwardly-inclined panel, upon which appears the word "BILTRITE" printed in the distinctive style shown and below the upper end portion of which appears the word "SHOE" printed on a horizontal line in letters having their tops inclined correspondingly to the panel.

SER. No. 14,792. TYPE-WRITER RIBBONS. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y. Filed Nov. 18, 1905.

IDEAL

The word "IDEAL."

SER. No. 14,925. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y. Filed Nov. 23, 1905.



The fanciful representation of a winged zebra in a flying position.

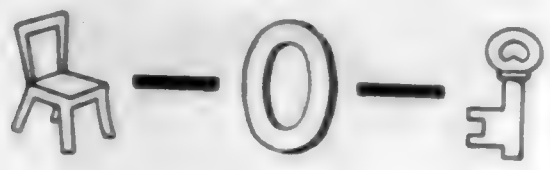
SER. No. 14,931. SILK THREADS AND CORDS. THE BRAINERD & ARMSTRONG COMPANY, New London, Conn. Filed Nov. 23, 1905. Used ten years.

ROMAN FLOSS

The words "ROMAN FLOSS."

SER. No. 14,998. REMEDY FOR IMPOVERISHED BLOOD AND NERVES. ISAIE CROTEAU, Providence, R. I. Filed Nov. 25, 1905.

SER. No. 14,998.



The representation of a chair and a key with the capital letter "O" arranged between them, all arranged in a horizontal line and separated from one another by hyphens.

SER. No. 15,012. RUBBER PACKING, RUBBER GASKETS, RUBBER DISKS, RUBBER RINGS, AND RUBBER WASHERS. ALFRED B. JENKINS, New York, N. Y., and Boston, Mass. Filed Nov. 27, 1905. Used ten years.

JENKINS

The arbitrary word "JENKINS."

SER. No. 15,013. RUBBER PACKING, RUBBER GASKETS, RUBBER DISKS, RUBBER RINGS, AND RUBBER WASHERS. ALFRED B. JENKINS, New York, N. Y., and Boston, Mass. Filed Nov. 27, 1905. Used ten years.



The word "JENKINS" inclosed within a diamond space or border.

SER. No. 15,080. SHEET-MUSIC AND MUSIC-BOOKS. LEO. FEIST, New York, N. Y. Filed Nov. 27, 1905.



The letters "L. F." inclosed within a wreath. In the drawing the wreath is represented as composed of two branches, one of oak-leaves and the other of holly leaves and berries, tied with a ribbon.

SER. No. 15,056. UNMANUFACTURED IRON TERNES IN SHEET FORM. GRIFFITHS CHARCOAL IRON MILLS, Washington, Pa. Filed Nov. 28, 1905. Used ten years.

GRIFFITHS' CHARCOAL BLOOM

The words "GRIFFITHS' CHARCOAL BLOOM."

SER. No. 15,120. COMBINED TYPE-WRITING AND ADDING MACHINES. THE ARITHMOGRAPH COMPANY, Chicago, Ill. Filed Dec. 1, 1905.



The word "ARITHMOGRAPH" and the date "1904" arranged in the space between two concentric circles, while in the inner circle are arranged the signs "+," "—," and "×."

SER. No. 15,176. ROLL-PAPER HOLDERS AND CUTTERS. THE NATIONAL CANDY MOLD AND MANUFACTURING COMPANY, Dayton, Ohio. Filed Dec. 4, 1905. Used ten years.

GEM

The word "GEM."

SER. No. 15,189. BASE-BALL GLOVES AND MITTS. A. G. SPALDING & BROTHERS, New York, N. Y. Filed Dec. 4, 1905.

SCOOP

The arbitrarily-coined word "SCOOP."

SER. No. 15,273. FILES AND RASPS. CARVER FILE COMPANY, Philadelphia, Pa. Filed Dec. 8, 1905.

DELTA

The word "DELTA."

SER. No. 15,309. BEDSPREADS AND QUILTS. HENRY SCHADWALD, Philadelphia, Pa. Filed Dec. 9, 1905. Used ten years.

CLARENDALE

The word "CLARENDALE."

SER. No. 15,387. ANTISEPTIC NON-FATTY AND SOLUBLE LUBRICATING-JELLY. VAN HORN & SAWTELL, New York, N. Y. Filed Dec. 13, 1905.

K-Y

The arbitrary letters "K-Y" connected by a hyphen.

SER. No. 15,415. BASE-BALLS, FOOT-BALLS, AND TENNIS-BALLS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Dec. 14, 1905.

SER. No. 15,415.



The representation of a rooster with the word "CRUSO" appearing across the body thereof.

SER. No. 15,433. MEDICINAL TONIC FOR WOMEN. THE PARKER BLAKE CO. LTD., New Orleans, La. Filed Dec. 15, 1905.

CREOLE



The word "CREOLE," associated with the bust picture of a young woman, the same presenting a nearly full face or front view, the hair being shown parted and falling upon the shoulders on each side of the neck, and an ornamental band passing over the top of the head and having a flower attached on one side.

SER. No. 15,450. MEDICINES TO BE TAKEN INTERNALLY AND COMPOSED OF OR HAVING FOR THEIR BASE SALINE COMPOUNDS. FRANCIS X. HART, New York, N. Y. Filed Dec. 15, 1905.

ANTI-AUTO-TOX

The word-symbol "ANTI-AUTO-TOX."

SER. No. 15,460. HATS AND CAPS WHICH HAVE BEEN TREATED TO RENDER THEM WATERPROOF. HIRSH BROTHERS, New Haven, Conn. Filed Dec. 16, 1905.



The word "ANTI WET" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.

SER. No. 15,461. LEATHER AND CANVAS BOOTS AND SHOES WHICH HAVE BEEN TREATED TO RENDER THEM WATERPROOF. HIRSH BROTHERS, New Haven, Conn. Filed Dec. 16, 1905.

SER. No. 15,461.



The word "ANT I WET" upon the representation of a seal, the letter "I" of the word occupying a circle in the central portion of the seal.

SER. No. 15,565. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE. COLGATE & CO., New York, N. Y. Filed Dec. 21, 1905. Used ten years.

COLGATE'S

The word "COLGATE'S."

SER. No. 15,653. PIANOS. GOETZ AND CO., Brooklyn, N. Y. Filed Dec. 26, 1905.



A monogram composed of the letters "G C & O."

SER. No. 15,813. REMEDIES FOR DYSPEPSIA, CATARRH, LIVER COMPLAINTS, RHEUMATISM, KIDNEY DISEASES SCROFULA, SCROFULOUS HUMORS, SYPHILITIC HUMORS, PAINS IN THE BACK, FEMALE WEAKNESS, CONSTIPATION, AND ALL DISEASES OF THE BLOOD, LIVER, KIDNEYS, AND STOMACH. HARRY DAVID RUCKER, La Fayette, Ind. Filed Jan. 2, 1906.

Korak Wonder

The words "KORAK WONDER."

SER. No. 15,881. MEDICAMENT COMPRISING MENTHOL DISSOLVED IN THE MENTHOL ETHER OF VALERIC ACID. VEREINIGTE CHININFABRIKEN ZIMMER & CO., GES. MIT BESCHRÄNKTER HAFTUNG, Frankfort-on-the-Main, Germany. Filed Jan. 4, 1906.

VALIDOL

The arbitrary or fanciful word "VALIDOL."

SER. No. 15,882. DERIVATIVES OF CINCHONA ALKALOIDS. VEREINIGTE CHININFABRIKEN ZIMMER & CO., GES. MIT BESCHRÄNKTER HAFTUNG, Frankfort-on-the-Main, Germany. Filed Jan. 4, 1906.

EUQUININE

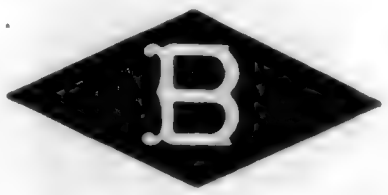
The arbitrary or fanciful word "EUQUININE."

SER. No. 15,958. MEN'S, WOMEN'S, AND CHILDREN'S SHOES MADE WHOLLY OR IN PART OF LEATHER. THE C. M. CLAPP CO., Buffalo, N. Y. Filed Jan. 6, 1906.

FELEZIA

The word "FELEZIA."

SER. No. 15,965. COAL-TAR PAINT. BARRETT MANUFACTURING COMPANY, New York, N. Y. Filed Jan. 6, 1906. Used ten years.



The letter "B" upon a diamond-shaped background.

SER. No. 15,991. WRAPPING-PAPER. THE DAYTON PAPER NOVELTY CO., Dayton, Ohio. Filed Jan. 8, 1906.



The representation of a disk, substantially in the center of which there is a picture of a maple-leaf. The words "SILVER LEAF" are printed above the leaf, and the word "FIBER" is written below the leaf.

SER. No. 16,028. PREPARATION FOR USE AS A DISINFECTANT, ANTISEPTIC, INSECTICIDE, GERMICIDE, AND DETERGENT. NATIONAL COAL TAR COMPANY, Boston, Mass. Filed Jan. 8, 1906.

CARBONOL

The word "CARBONOL."

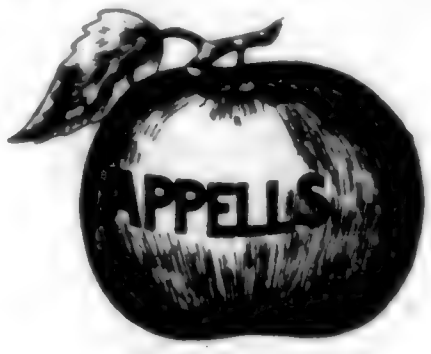
SER. No. 16,121. HOLLOW SILVERWARE. REED & BARTON CORPORATION, Taunton, Mass. Filed Jan. 11, 1906.

Goldyn=Bronz

The compound word "GOLDYN-BRONZ."

SER. No. 16,166. WATER-BAGS. THE ADAM APPELL COMPANY, Portland, Oreg. Filed Jan. 13, 1906.

SER. No. 16,166.



SOUTH AFRICAN
WATER BAG

The representation of an apple bearing the name "APPELLS," associated with the words "SOUTH AFRICAN WATER BAG."

SER. No. 16,167. WATER-BAGS. THE ADAM APPELL COMPANY, Portland, Oreg. Filed Jan. 13, 1906.



SOUTH AMERICAN
WATER BAG

The representation of an apple bearing the name "APPELLS," associated with the words "SOUTH AMERICAN WATER BAG."

SER. No. 16,178. BASE-BALL BATS. CHARLES P. YOUNG, York, Pa. Filed Jan. 13, 1906.

PNEUMATICO

The word "PNEUMATICO."

SER. No. 16,187. JUTE BAGGING. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y. Filed Jan. 13, 1906. Used ten years.

AMERICAN

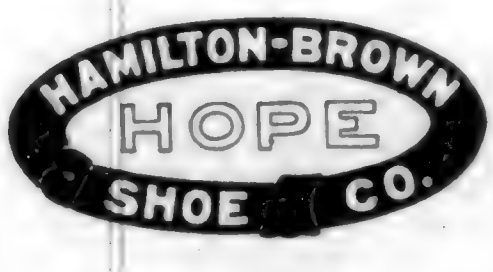
The word "AMERICAN."

SER. No. 16,195. SHADE-CLOTHS AND COTTON PIECE GOODS. AMORY, BROWNE & Co., Boston, Mass., and New York, N. Y. Filed Jan. 15, 1906.



A wheel with a wing attached thereto.

SER. No. 16,242. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Jan. 17, 1906.



The word "HOPE" inclosed in the representation of a belt, on which are printed the words "HAMILTON-BROWN SHOE Co."

SER. No. 16,243. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Jan. 17, 1906.



The word "LOVE" inclosed in a representation of a belt on which are printed the words "HAMILTON-BROWN SHOE Co."

SER. No. 16,244. MEN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Jan. 17, 1906.



The word "FAITH" inclosed in a representation of a belt, on which are printed the words "HAMILTON-BROWN SHOE Co."

SER. No. 16,247. MEN'S, BOYS', WOMEN'S, MISSES', AND CHILDREN'S LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Jan. 17, 1906.

SER. No. 16,247.



The words "HIGHLAND CALF" inclosed in a representation of a belt, on which are printed the words "HAMILTON-BROWN SHOE Co."

SER. No. 16,248. MEN'S AND BOYS' LEATHER SHOES. HAMILTON-BROWN SHOE COMPANY, St. Louis, Mo. Filed Jan. 17, 1906.



The words "COUNTRY CLUB" inclosed in a representation of a belt, on which are printed the words "HAMILTON-BROWN SHOE Co."

SER. No. 16,319. CHILDREN'S EXPRESS-WAGONS, PATROL WAGONS, HOOK-AND-LADDER WAGONS, COASTER-WAGONS AND TOY CARTS. GENDRON WHEEL Co., Toledo, Ohio. Filed Jan 19, 1906.

Pioneer

The word "PIONEER."

SER. No. 16,350. PREPARATION FOR INSECTICIDE, GERMICIDE, DEODORIZING, AND DISINFECTING PURPOSES. CHARLES L. HOWE, Boston, Mass. Filed Jan. 20, 1906.

RED DRAGON

The words "RED DRAGON."

SER. No. 16,406. CIGARETTES. BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Jan. 23, 1906.

SER. No. 16,406.

SILKO

The word "SILKO."

SER. No. 16,419. WHISKY. JOSEPHSON BROS. & CO., Louisville, Ky. Filed Jan. 23, 1906. Used ten years.

DENMARK



The word "DENMARK" and the representation of a horse's head and a branch bearing leaves, the design surrounded by a circle.

SER. No. 16,420. WHISKY. JOSEPHSON BROS. & CO., Louisville, Ky. Filed Jan. 23, 1906.

AMICK SPRING

The words "AMICK SPRING."

SER. No. 16,511. WHEAT-FLOUR. GOLDEN EAGLE TEA CO INC., Wilmington, Del. Filed Jan. 25, 1906.

KING OF ALL



The words "KING OF ALL," associated with a picture representing a knight in armor striding a running steed, also in armor, the knight holding a shield in front of him with one hand, and in the other hand a spear is carried in position for charging.

SER. No. 16,525. PILLS. JOSEPH BEECHAM, St. Helens, England. Filed Jan. 26, 1906. Used ten years.



Two concentric circles inclosing in the upper portion the words "BEECHAM'S PATENT PILLS. PRICE, SOLD BY THE PROPRIETOR, ST. HELENS."

SER. No. 16,550. FOOD PREPARATION OF BONE MARROW, AND MALT. VIROL, LIMITED, London, England. Filed Jan. 26, 1906.

Virol

The word "VIROL."

SER. No. 16,620. ROOF-PAINTS. EDWIN W. GRAFTON, Washington, D. C. Filed Jan. 30, 1906.



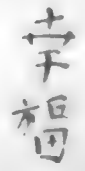
A circular panel bearing a representation of a cat and two rectangular panels extending from each side of the circular panel, one of which bears the hyphenated word "GRAF-TONIC."

SER. No. 16,628. LUBRICATING-OIL. PIERCE BROTHERS REFINING CO., New York, N. Y. Filed Jan. 30, 1906.

SPRAYOLEUM

The word "SPRAYOLEUM."

SER. No. 16,660. COLLARETTES AND CHAINS. JOHN J. SOMMER, North Attleborough, Mass. Filed Feb. 1, 1906.



The representation of two Japanese characters or word-symbols meaning "GOOD LUCK."

SER. No. 16,687. TRAS. ARBUCKLE BROS., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Filed Feb. 2, 1906.

DRINKSOME

The word "DRINKSOME."

SER. No. 16,700. POLISHING PREPARATIONS FOR GLASS OR BRIGHT METAL. THE PELLUCIDE COMPANY, San Francisco, Cal. Filed Feb. 2, 1906.



A circular panel bearing the representation of a railroad-track entering a tunnel, with a pair of eyeglasses suspended over the tunnel and the word "PELLUCIDE" appearing on the track. The words "KEEPS GLASS CLEAR," "WITH," "WITHOUT," "NO FOG," "NO MIST," and "NO OBSTRUCTION TO THE SIGHT" also appear on the panel.

SER. No. 16,702. WHEAT-FLOUR. RANDOLPH MILLING COMPANY, Baldwin, Ill. Filed Feb. 2, 1906.



The word "ELITE" printed in a curved line in the center of a circular border and associated with the words "RANDOLPH MILLING CO, 98 LBS., SPECIAL HIGH PATENT, BALDWIN, ILL."

SER. No. 16,757. FEVER CURES. PAMALINE MALARIAL REMEDY COMPANY, New York, N. Y. Filed Feb. 5, 1906.



The word-symbol "PAMALINE" displayed on an ornamental shield.

SER. No. 16,764. FOOT-BALLS, BASE-BALLS, AND TENNIS-BALLS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Feb. 5, 1906.



The word "AJAX" and the representation of the bust of Ajax wearing a helmet and holding in one hand a Grecian sword, all surrounded by an annular strap bearing the name "HIBBARD, SPENCER, BARTLETT & CO."

SER. No. 16,781. SHOES AND SLIPPERS MANUFACTURED FROM LEATHER. HANAN-MATHEWSON COMPANY, Cleveland, Ohio. Filed Feb. 6, 1906.



The bust picture of an American Indian wearing a feathered headdress, surrounding which are two encircling sprays to form a wreath, and beneath all is a curved panel bearing the word "WAU-KON."

SER. No. 16,794. PLASTER FOR CURING CANCER, CARBUNCLES, BOILS, BURNS, CUTS, BRUISES, SORES, AND KINDRED AILMENTS. WILLIAM C. DEVOLD, Red Lodge, Mont. Filed Feb. 6, 1906.

POULTICINE

The word "POULTICINE."

SER. No. 16,814. WATER-CLOSET AND BATH-ROOM SEATS AND TANKS COVERED WITH A PYROXYLIN COMPOUND. EDGAR M. JOSALEMON, Newark, N. J. Filed Feb. 7, 1906.

CELLUVARNO

The word "CELLUVARNO."

SER. No. 16,827. CHOCOLATE, COCOA, SWEET CHOCOLATE, MILK-CHOCOLATE, CHOCOLATE COATINGS, CHOCOLATE LIQUORS, AND CHOCOLATE POWDER. MILTON S. HERSHEY, Derry Church, Pa. Filed Feb. 8, 1906. Used ten years.

Hershey's

The word "HERSHEY'S."

SER. No. 16,850. DYE FOR HAIR AND WHISKERS. THE CHARLES N. CRITTENTON COMPANY, New York, N. Y. Filed Feb. 9, 1906. Used ten years.



The words "HILL'S INSTANTANEOUS HAIR AND WHISKER DYE," with the side view of the bust of a man in the act of dressing his whiskers.

SER. No. 16,887. VARIOUS KINDS OF CHOCOLATES AND BON-BONS. HENRY HEIDE, New York, N. Y. Filed Feb. 10, 1906. Used ten years.

Heide's

The word "HEIDE'S."

SER. No. 16,888. PEANUT-BUTTER. HENRY HEIDE, New York, N. Y. Filed Feb. 10, 1906.



The representation of a red diamond and the letters "P P B" arranged within the same.

SER. No. 16,903. RAT, VERMIN, AND INSECT DESTROYER OR EXTERMINATOR. EPHRAIM S. WELLS, Jersey City, N. J. Filed Feb. 10, 1906.

ROUGH ON RATS

The words "ROUGH ON RATS."

SER. No. 16,961. LIQUID PAINT. ALBERT SAMUEL LALIBERTE, Williamstown, Mass. Filed Feb. 12, 1906.



Concentric diamond-shaped figures with the word "POSTO" on the outer figure and the words "THE WOOD POSTO PRESERVATIVE" on the inner figure.

SER. No. 17,080. TIME-REGISTERS. DEY TIME REGISTER CO., Syracuse, N. Y. Filed Feb. 16, 1906. Used ten years.

DEY

The word "DEY."

SER. No. 17,081. TIME-REGISTERS. DEY TIME REGISTER CO., Syracuse, N. Y. Filed Feb. 16, 1906. Used ten years.

DRUM

The word "DRUM."

SER. No. 17,082. TIME-REGISTERS. DEY TIME REGISTER CO., Syracuse, N. Y. Filed Feb. 16, 1906. Used ten years.

DRUMDIAL

The word "DRUMDIAL."

SER. No. 17,083. TIME-REGISTERS. DEY TIME REGISTER CO., Syracuse, N. Y. Filed Feb. 16, 1906. Used ten years.

DIAL

The word "DIAL."

SER. No. 17,089. CHAMPAGNE-WINE. G. H. MUMM & CO., Reims, France. Filed Feb. 16, 1906.

CORDON ROUGE

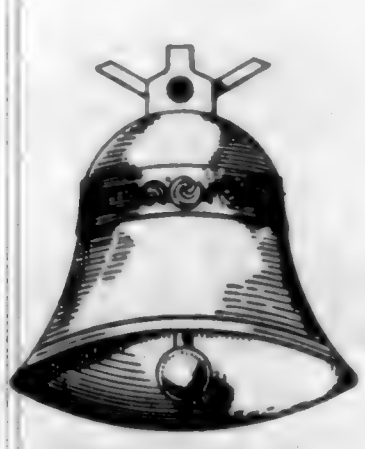
The arbitrarily-selected words "CORDON ROUGE."

SER. No. 17,117. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass. Filed Feb. 17, 1906. Used ten years.



The representation of a turkey.

SER. No. 17,118. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass. Filed Feb. 17, 1906. Used ten years.



The representation of a bell.

SER. No. 17,120. SPICED SEASONINGS. THE WILLIAM G. BELL COMPANY, Boston, Mass. Filed Feb. 17, 1906. Used ten years.

BELL'S

The word "BELL'S."

SER. No. 17,140. COAL. ANDREW K. MCKEE, Philadelphia, Pa. Filed Feb. 17, 1906.

HOT COAL

The words "HOT COAL" and the representation of flames shooting from said words.

SER. No. 17,151. AXES, HATCHETS, AND ADZES. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Feb. 17, 1906.



A representation of a rooster with the word "CRUSO" appearing across the body thereof.

SER. No. 17,174. WINDMILLS. THE HELLER-ALLER CO., Napoleon, Ohio. Filed Feb. 19, 1906. Used ten years.

BAKER

The word "BAKER."

SER. No. 17,177. PORTLAND CEMENT. WESTERN STATES PORTLAND CEMENT COMPANY, Independence, Kans. Filed Feb. 19, 1906.



The representation of a running horse with a cowboy astride throwing a lasso, the same being arranged within a circle.

SER. No. 17,199. BURIAL-CASKETS, COFFINS, AND FIXTURES THEREFOR. NATIONAL CASKET CO., New York, N. Y. Filed Feb. 20, 1906. Used ten years.

NATIONAL CASKET CO.

The words "NATIONAL CASKET CO."

SER. No. 17,208. CUT-GLASS ARTICLES. THE LIBBEY GLASS COMPANY, Toledo, Ohio. Filed Feb. 20, 1906. Used ten years.

Libbey

The word "LIBBEY."

SER. No. 17,212. ANTISEPTIC DRESSING. WILLIAM G. HUGHES COMPANY, Los Angeles, Cal. Filed Feb. 20, 1906.

Picea-Lini

The hyphenated word "PICEA-LINI."

SER. No. 17,235. WHISKY. WM. LANAHAN & SON, Baltimore, Md. Filed Feb. 21, 1906.



The representation of a man upon horseback clad in hunter's garb and with his hat held in an uplifted hand.

SER. No. 17,240. FOUNDRY-FACINGS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Feb. 22, 1906.

RAMONA

The word "RAMONA."

SER. No. 17,305. MECHANICAL PIANO-PLAYERS. THE AEOLIAN COMPANY, New York, N. Y. Filed Feb. 22, 1906.

SER. No. 17,305.

THEMODIST

The word "THEMODIST."

SER. No. 17,378. HAVANA CIGARS. HAVANA COMMERCIAL COMPANY, Jersey City, N. J., and New York, N. Y. Filed Feb. 27, 1906. Used ten years.



The words and abbreviations "LA ROSA AROMATICA DE A. LOPEZ Y CA." and "HABANA" surrounded by a border.

SER. No. 17,408. LAUNDRY SOAPS. JOHN B. MATHIS, Detroit, Tex. Filed Feb. 26, 1906.

ARKANA POUCH

The words "ARKANA POUCH."

SER. No. 17,439. SILVER-PLATED FLAT WARE, HOLLOW WARE, AND TABLEWARE. WM A ROGERS LTD., New York, N. Y. Filed Mar. 1, 1906.

BUSTER BROWN

The words "BUSTER BROWN."

SER. No. 17,480. SHINGLE-STAINS. DEXTER BROTHERS CO., Boston, Mass. Filed Mar. 3, 1906.



The representation of a human hand with the palm thereof in an outstretched position and the index-finger pointing upward, the other three fingers being bent down upon the palm and the thumb extending upwardly and outwardly. Diagonally disposed across and behind this representation of the hand is arranged the word

"DEXTER" within two parallel lines or panel, the letters "DEX" being arranged to the upper left-hand side of the hand and the letters "TER" upon the lower right-hand side thereof, forming the word "DEXTER."

SER. No. 17,482. CHEWING-GUM. ROBERT A. BRACHVOGEL, Chicago, Ill. Filed Mar. 3, 1906.

NIX-E WON'T TELL

The words "NIX-E WON'T TELL."

SER. No. 17,519. STAINS FOR STAINING WOOD OR OTHER SURFACES, THE SAME BEING USED ESPECIALLY FOR STAINING SHINGLES AND OTHER WOOD SURFACES. NASHVILLE CHEMICAL COMPANY, Nashville, Tenn. Filed Mar. 5, 1906.

PICKLEWOOD

The word "PICKLEWOOD."

SER. No. 17,523. TOILET, HOUSEHOLD, AND LAUNDRY SOAP FOR MEDICINAL AND GENERAL CLEANING PURPOSES. NATIONAL SOAP CO., Detroit, Mich. Filed Mar. 5, 1906.

LIN-OIL-JEL

The hyphenated word "LIN-OIL-JEL."

SER. No. 17,551. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

ALLISON & ADDISON'S

The words and character "ALLISON & ADDISON'S."

SER. No. 17,571. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

NORFOLK & CAROLINA CHEMICAL CO'S.

The words, character, and abbreviation "NORFOLK & CAROLINA CHEMICAL CO'S."

SER. No. 17,590. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 6, 1906. Used ten years.

JAS. G. TINSLEY & CO'S.

The words and abbreviations "JAS. G. TINSLEY & CO'S."

SER. No. 17,608. TOILET AND LAUNDRY SOAP. THE ERICKA MFG. CO. INCORPORATED, Springfield, Mass. Filed Mar. 6, 1906.

ERICKA

The word "ERICKA."

SER. No. 17,610. ORGANS. THE PACKARD COMPANY, Fort Wayne, Ind. Filed Mar. 6, 1906. Used ten years.

Packard

The word "PACKARD."

SER. No. 17,617. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y. Filed Mar. 6, 1906.

FLYING ZEBRA

The words "FLYING ZEBRA."

SER. No. 17,621. COMFORTS. THE CHAS. A. MAISH CO., Cincinnati, Ohio. Filed Mar. 6, 1906.



A rectangular dark background, on the left half of which is displayed a square pad of white cotton showing the laminated effect on the sides and a thin coverlet on top. On the right of the cotton pad are displayed the words "MAISH LAMINATED COTTON DOWN COMFORT."

SER. No. 17,629. LEATHER PURSES AND HAND-BAGS. GORHAM MFG. CO., Providence, R. I. Filed Mar. 7, 1906. Used ten years.

SER. No. 17,629.

GORHAM

The word "GORHAM."

SER. No. 17,666. COTTON PIECE GOODS. INDIAN HEAD MILLS OF ALABAMA. Cordova, Ala. Filed Mar. 3, 1906.



SOPOSA

The pictorial representation of an Indian baby in an Indian cradle or baby-pack on a ground covered with vegetation, wigwams and Indians appearing in the background, associated with the word "SOPOSA."

SER. No. 17,683. LEATHER-DRESSING. ALFRED ANDRESEN & Co., Minneapolis, Minn. Filed Mar. 6, 1906.



A circular panel having thereon a representation of an ice floe with the sun in the background, with a whale resting on the ice floe and the words "WHALE AMBER" appearing on the side of the whale.

SER. No. 17,719. VARNISHES. MURPHY VARNISH COMPANY, Newark, N. J. Filed Mar. 10, 1906. Used ten years.

Murphy Varnish Company

The words "MURPHY VARNISH COMPANY."

SER. No. 17,720. PRIMING, COATING, AND PREPARING MATERIAL USED IN CONNECTION WITH VARNISHES. MURPHY VARNISH COMPANY, Newark, N. J. Filed Mar. 10, 1906. Used ten years.

Murphy

The word "MURPHY."

SER. No. 17,726. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Mar. 10, 1906.

ALLIGATOR

The word "ALLIGATOR."

SER. No. 17,747. WOVEN COTTON PIECE GOODS. J. S. REEVES & Co., Nashville, Tenn. Filed Mar. 12, 1906.

OLD HICKORY

The words "OLD HICKORY."

SER. No. 17,839. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed Mar. 15, 1906. Used ten years.

DURHAM FERTILIZER CO'S.

The words and abbreviation "DURHAM FERTILIZER Co's."

SER. No. 17,876. FERTILIZERS. GEORGIA CHEMICAL WORKS, Augusta, Ga. Filed Mar. 15, 1906.

CARDINAL

The word "CARDINAL."

SER. No. 17,907. ROCK-CRUSHERS. CLIMAX ROAD MACHINE CO., Marathon, N. Y. Filed Mar. 15, 1906. Used ten years.

CLIMAX

The word "CLIMAX."

SER. No. 17,908. SPECTACLES AND EYEGLASSES AND PARTS THEREOF. SOUTHERN OPTICAL COMPANY, Knoxville, Tenn. Filed Mar. 15, 1906.

SER. No. 17,908.

S. O. CO.

The letters "S. O. Co."

SER. No. 17,920. FERTILIZERS. RASIN-MONUMENTAL COMPANY OF ANNE ARUNDEL COUNTY, Baltimore, Md. Filed Mar. 15, 1906. Used ten years.

RASIN'S

The word "RASIN'S."

SER. No. 18,005. VARNISH, JAPAN, DRIERS, AND LIQUID FILLERS. BOSTON VARNISH COMPANY, Everett, Mass. Filed Mar. 19, 1906.

Dryol

The word "DRYOL."

SER. No. 18,017. NOSE-GUARDS FOR EYEGLASSES. THE W. H. REISNER MANUFACTURING CO., Hagerstown, Md. Filed Mar. 19, 1906.

Target

The word "TARGET" and the representation of a target.

SER. No. 18,022. EXPLOSIVE-ENGINES. THE FOOS GAS ENGINE COMPANY, Springfield, Ohio. Filed Mar. 19, 1906. Used ten years.

Foos

The word "Foos."

SER. No. 18,026. VARNISH-STAINS. THE DAVID B. CROCKETT COMPANY, Bridgeport, Conn. Filed Mar. 19, 1906.

SER. No. 18,026.

OPAL-GLOSS

The arbitrarily-selected words "OPAL-GLOSS."

SER. No. 18,035. GEARS. BENJAMIN ATHA & COMPANY, Newark, N. J. Filed Mar. 19, 1906.

TITAN

The word "TITAN."

SER. No. 18,166. KNIVES AND RAZORS. EWALD KRUBUS, New York, N. Y. Filed Mar. 22, 1906.

KB
EXTRA

The letters "K B," associated with the word "EXTRA."

SER. No. 18,178. SAW-SETS, SAW-POINTERS, AND SAW-GAGES. GUSTAF Y. ANDERSON, Chicago, Ill. Filed Mar. 23, 1906.

HANDY ANDY

The words "HANDY ANDY."

SER. No. 18,245. WAGONS. MOLINE WAGON COMPANY, Moline, Ill. Filed Mar. 24, 1906. Used ten years.

THE NEW MOLINE

The words "THE NEW MOLINE."

SER. No. 18,281. SHOE-LACES. THE NARROW FABRIC CO., Wyomissing, Pa. Filed Mar. 26, 1906.

Fashond

The arbitrary word "FASHOND" appearing in fancy script form with a paraph simulating the pointed end of a shoe-lace.

SER. No. 18,303. PICKLED LIMES. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed Mar. 26, 1906.



The word "HOME" and the representation of a house of cottage style.

SER. No. 18,305. CAPERS. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed Mar. 26, 1906.

HOME

The word "HOME."

SER. No. 18,304. HORSERADISH-CREAM. GRIGGS, COOPER & COMPANY, St. Paul, Minn. Filed Mar. 26, 1906.



The word "HOME" and the representation of a house of cottage style.

SER. No. 18,342. BREWERS' VARNISHES AND ENAMELS. JNO. WERNER & Co. G. M. B. H., Mannheim, Germany. Filed Mar. 29, 1906.

Salvator

The arbitrarily-selected word "SALVATOR."

PHOTO-LITHOGRAPHED BY
SACKETT & WILHELMS
LITHOGRAPHING & PRINTING CO.
NEW YORK

TRADE-MARKS

REGISTERED APRIL 24, 1906.

51,676. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.

The representation of a fish, associated with the words "FISH BRAND."

Filed April 17, 1905. Serial No. 2,013. PUBLISHED FEBRUARY 27, 1906.

51,677. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.

The word "TOPAZ."

Filed May 18, 1905. Serial No. 6,053. PUBLISHED AUGUST 15, 1905.

51,678. GROUND PRODUCTS OF ALFALFA. CALIFORNIA STOCK FOOD CO., Fresno, Cal.

The word "CALFALFA."

Filed May 26, 1905. Serial No. 7,298. PUBLISHED FEBRUARY 27, 1906.

51,679. COTTON PLAIDS, CHECKS, STRIPES, AND CHEVIOTS. SAMUEL A. CROZER & SON, Upland, Pa.

The words "TOLEDO PREMIUM" produced in two panels, one above the other, which panels are contained within a decorative border outlined by a line of clover-leaf figures, a line of star figures, and lines of connected arch figures with intervening spade-like figures, one corner of the said panel being distinguished by a diagonal bar-panel having zigzag figures therein and a semicircular panel decorated with a Grecian border, which latter decoration appears at one end of the panel containing the word "TOLEDO," and at the other end of the same panel a semicircular decorative figure is produced, including pointed figures, semicircular, plain, and plume figures. Beneath the word "PREMIUM" and the panel another panel appears on which an open fan is represented bearing the monogram composed of the letters, character, and abbreviation "J W L & Co," and at one side of the fan-panel another panel appears upon which a representation of a standing female figure is produced dressed in a fancy costume, the figure-panel and the fan-panel being separated by a vertical panel having a lattice effect and semicircular figures appearing at the apparent openings therein. Used ten years.

Filed April 29, 1905. Serial No. 3,646. PUBLISHED FEBRUARY 27, 1906.

51,680. BRAIDS AND TAPES. DIECKERHOFF, RAFFLOER & Co., New York, N. Y.

A triangular-shaped figure having the letter "C" thereon.

Filed May 6, 1905. Serial No. 4,580. PUBLISHED FEBRUARY 27, 1906.

51,681. BEER. THE HOSTER-COLUMBUS ASSOCIATED BREWERIES Co., Columbus, Ohio.

The representation of a winged "H," associated with the representation of a globe and a wreath.

Filed April 29, 1905. Serial No. 3,626. PUBLISHED FEBRUARY 27, 1906.

51,682. GLASS BOTTLES. L. ROSE & Co., LIMITED, London, England.

A floral device representing branches, showing leaves and fruit of the lime-tree. In the middle of the device are shown branches crossed at the top and bottom and forming a wreath of oval shape. On either side are smaller representations of branches of the lime-tree.

Filed May 11, 1905. Serial No. 5,100. PUBLISHED FEBRUARY 27, 1906.

51,683. CEMENT FOR BUILDING PURPOSES, GYPSUM, AND LIME. LIEBOLD & Co., Berlin, Germany.

The arbitrarily-selected word "LUX."

Filed May 20, 1905. Serial No. 6,122. PUBLISHED FEBRUARY 27, 1906.

51,684. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The representation of one face of an ancient Roman coin, said coin being of irregular outline. Upon the coin the head and shoulders of a soldier are depicted, wearing a helmet and carrying a sword in position of rest over one shoulder, together with a grouping of letters forming a partial border around the coin.

Filed May 10, 1905. Serial No. 4,997. PUBLISHED FEBRUARY 27, 1906.

51,685. RUSTIC CHAIRS, SETTEES, TABLES, AND STOOLS. THE OLD HICKORY CHAIR Co., Martinsville, Ind.

The words "OLD HICKORY" and a bust portrait of Andrew Jackson. Below the portrait is a representation of an arm-chair, and at one side of the chair are the words "ANDREW JACKSON CHAIR."

Filed May 26, 1905. Serial No. 6,755. PUBLISHED FEBRUARY 27, 1906.

51,686. VELVET RIBBONS. WM. OPENHYM & SONS, New York, N. Y.

The word "WASHINGTON." Used ten years.

Filed May 11, 1905. Serial No. 5,070. PUBLISHED FEBRUARY 27, 1906.

51,687. PREPARED COTTON. OSTERMOOR & Co., New York, N. Y.

The arbitrarily-selected words "PATENT ELASTIC FELT."

Filed April 28, 1905. Serial No. 3,401. PUBLISHED FEBRUARY 27, 1906.

51,688. STERILIZED CREAM. PACIFIC CREAMERY COMPANY, Buena Park and Los Angeles, Cal.

The representation of three calla lilies and leaves, associated with the word "LILY" and the words "CALIFORNIA STERILIZED CREAM MANUFACTURED BY PACIFIC CREAMERY CO. LOS ANGELES, CALIFORNIA."

Filed May 23, 1905. Serial No. 6,409. PUBLISHED FEBRUARY 27, 1906.

51,689. PANAMA HATS. SAMUEL C. PARIS, Philadelphia, Pa.

A monogram of the letters "G P."

Filed June 5, 1905. Serial No. 7,478. PUBLISHED FEBRUARY 27, 1906.

51,690. HOSIERY. RICHARDSON ROBERTS DRY GOODS Co., St. Joseph, Mo.

The words "THE DRAGON" and the representation of a flying dragon.

Filed May 31, 1905. Serial No. 7,094. PUBLISHED FEBRUARY 27, 1906.

51,691. CIGARS. RODRIGUEZ, ARGUELLES & COMPANY, Havana, Cuba.

The words "LA MAR."

Filed May 22, 1905. Serial No. 6,235. PUBLISHED FEBRUARY 27, 1906.

51,692. CHOCOLATES. THE SHUPE-WILLIAMS CANDY Co., Ogden, Utah.

The hyphenated word "U-TAH-NA."

Filed May 20, 1905. Serial No 6,123. PUBLISHED FEBRUARY 27, 1906.

51,693. LAGER-BEER. THE WILLIAM PETER BR'G. Co., Union, N. J.

The hyphenated words "PETER-BRÄU" arranged on a scroll and a bunch of hops and barley arranged back of the scroll and extending above and below the same.

Filed May 27, 1905. Serial No. 6,782. PUBLISHED FEBRUARY 27, 1906.

51,694. CAKE-SOAP. A. KLIPSTEIN & COMPANY, New York, N. Y.

The arbitrary word "CARMEL," associated with a conventional representation of sprigs of olive. Used ten years.

Filed May 24, 1905. Serial No. 6,461. PUBLISHED FEBRUARY 27, 1906.

51,695. DOLLS. ABRAHAM & STRAUS, Brooklyn, N. Y.

The words "BABY VIOLET."

Filed May 25, 1905. Serial No. 6,644. PUBLISHED FEBRUARY 27, 1906.

51,696. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word "COMET" and the representation of a comet, the word appearing upon the tail of a comet.

Filed May 11, 1905. Serial No. 5,158. PUBLISHED FEBRUARY 27, 1906.

51,697. WHISKY. L. GILLIAMS & Co., Philadelphia, Pa.

A broken circular border, within which appear the monogram "L G & Co." and words "GILLIAMS' RYE WHISKEY L. GILLIAMS & Co. PHILADELPHIA."

Filed May 26, 1905. Serial No. 6,685. PUBLISHED FEBRUARY 27, 1906.

51,698. WHISKY. THE GINTER GROCERY COMPANY, Boston, Mass.

The word "MENTOR" inclosed in a rectangular outline.

Filed July 11, 1905. Serial No. 10,033. PUBLISHED FEBRUARY 27, 1906.

51,699. CIGARS. LOPEZ Y CIA., Havana, Cuba.

The words "LA HERMANDAD."

Filed July 27, 1905. Serial No. 10,878. PUBLISHED FEBRUARY 27, 1906.

51,700. CIGARS. LOPEZ Y CIA., Havana, Cuba.

The word "BELINDA."

Filed July 27, 1905. Serial No. 10,879. PUBLISHED FEBRUARY 27, 1906.

51,701. SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS. PARKS BROS. & ROGERS, Providence, R. I.

The representation of a four-leaf clover inclosed by a horseshoe.

Filed May 12, 1905. Serial No. 5,294. PUBLISHED FEBRUARY 27, 1906.

51,702. SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS. PARKS BROS. & ROGERS, Providence, R. I.

A representation of the world, upon which appear portions of both the Eastern and Western hemispheres and surrounded by concentric circles, between which appears the sentence "THE FIELD IS THE WORLD."

Filed May 12, 1905. Serial No. 5,295. PUBLISHED FEBRUARY 27, 1906.

51,703. ORANGES, LEMONS, GRAPE-FRUIT, AND CITRON. RIVERSIDE NAVEL ORANGE COMPANY, Riverside, Cal.

A conventional representation of Uncle Sam holding a bunch of oranges in one hand suspended over a circular panel surrounded by scrollwork and in which appears the legend "I GROW THESE MYSELF IN," while below the circular panel appears the word "CALIFORNIA" inclosed in an oblong panel surrounded by scrollwork. In the background is a rectangular panel having scrollwork thereupon.

Filed May 15, 1905. Serial No. 5,725. PUBLISHED FEBRUARY 27, 1906.

51,704. STOCK-FOOD. MARION W. SAVAGE, Minneapolis, Minn.

The words "INTERNATIONAL STOCK FOOD," a monogram of the letters "M W S," the head of a horse, a steer, a hog, and a sheep, and the pictorial representation of a farm scene and stock-train. Used ten years.

Filed May 12, 1905. Serial No. 5,317. PUBLISHED FEBRUARY 27, 1906.

51,705. COTTON PIECE GOODS. TREMONT & SUFFOLK MILLS, Lowell, Mass.

The letter "S" in silver color.

Filed May 11, 1905. Serial No. 5,258. PUBLISHED FEBRUARY 27, 1906.

51,706. DYNAMITE, DYNAMITE-CARTRIDGES, BLASTING-GELATIN, AND LOW-POWDER. THE ÆTNA POWDER CO., Chicago, Ill.

The word "ÆTNA." Used ten years.

Filed May 15, 1905. Serial No. 5,660. PUBLISHED FEBRUARY 27, 1906.

51,707. WATCHCASES. THE DUEBER WATCH CASE MFG. CO., Canton, Ohio.

A horizontally-arranged elongated panel having pointed ends, a curved panel having pointed ends and arranged beneath the horizontally-arranged panel, and a shield beneath the latter, and the words "DUEBER STERLING" arranged respectively upon the panels.

Filed April 26, 1905. Serial No. 3,178. PUBLISHED FEBRUARY 27, 1906.

51,708. COTTON RUBBER-LINED HOSE. EUREKA FIRE HOSE CO., Jersey City, N. J.

The word "VULCAN."

Filed April 20, 1905. Serial No. 2,408. PUBLISHED FEBRUARY 27, 1906.

51,709. LEATHER BOOTS AND SHOES. GUTHMANN CARPENTER & TELLING, Chicago, Ill.

The word "IROQUOIS."

Filed May 8, 1905. Serial No. 4,644. PUBLISHED FEBRUARY 27, 1906.

51,710. PLASTERING AND FINISHING-CEMENT. J. B. KING & Co., New York, N. Y.

The word "WINDSOR." Used ten years.

Filed April 27, 1905. Serial No. 3,244. PUBLISHED FEBRUARY 27, 1906.

51,711. RUBBER BOOTS AND SHOES. LAMBERTVILLE RUBBER COMPANY, Lambertville, N. J.

The word "SNAG-PROOF" in quotation-marks, associated with the representation of a rubber boot and a pair of rubber shoes. One of said shoes is shown as floating in a stream in the background to one side of the boot and the other of the shoes appears in the foreground. In and around said boot and shoes are numerous dwarfish figures or gnomes, who are represented as unsuccessfully endeavoring by means of various implements to puncture the boot and shoes. A ladder resting against the boot is breaking under the weight of a number of such dwarfish figures or gnomes. Others of said dwarfish figures or gnomes are shown as operating a steam-drill against the boot and working with other tools. On the leg of the boot appears a label bearing the word "SNAG-PROOF" and the representation of a boot around which a number of dwarfish figures or gnomes are represented as performing antics similar to those above set forth.

Filed April 15, 1905. Serial No. 1,620. PUBLISHED FEBRUARY 27, 1906.

51,712. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y.

The words "MEURER'S OLD METHOD." Used ten years.

Filed April 26, 1905. Serial No. 3,095. PUBLISHED FEBRUARY 27, 1906.

51,713. VELVETEENS AND CORDUROYS. WM. OPENHYM & SONS, New York, N. Y.

The arbitrary word-symbol "NU VELVET"

Filed May 11, 1905. Serial No. 5,073. PUBLISHED FEBRUARY 27, 1906.

51,714. CIGARS. RODRIGUEZ, ARGUELLES & COMPANY, Havana, Cuba.

The words "ROMEO Y JULIETA."

Filed May 9, 1905. Serial No. 4,814. PUBLISHED FEBRUARY 27, 1906.

51,715. WATCH-MOVEMENTS. BYRON L. STRASBURGER, New York, N. Y.

The word "IMPERIAL," associated with the representation of a scroll bearing the word "NON-MAGNETIC," the scroll extending across a shield-like figure from which the conventional representation of flashes of lightning diverge.

Filed May 5, 1905. Serial No. 4,400. PUBLISHED FEBRUARY 27, 1906.

51,716. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.

The words "TRI=TIRE."

Filed April 15, 1905. Serial No. 1,594. PUBLISHED FEBRUARY 27, 1906.

51,717. CARTRIDGES. WINCHESTER REPEATING ARMS CO., New Haven, Conn.

The arbitrary word "AUTO."

Filed April 27, 1905. Serial No. 3,267. PUBLISHED FEBRUARY 27, 1906.

51,718. OILED CLOTHING. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.

The word "HERDERS." Used ten years.

Filed May 29, 1905. Serial No. 6,892. PUBLISHED FEBRUARY 27, 1906.

51,719. OILED CLOTHING OF ALL KINDS. A. J. TOWER COMPANY, Portland, Me., and Boston, Mass.

The letters "A. J. T.," in connection with an arrow.

Filed May 29, 1905. Serial No. 6,893. PUBLISHED FEBRUARY 27, 1906.

51,720. RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word-symbol "ATLANTIC."

Filed May 11, 1905. Serial No 5,154. PUBLISHED FEBRUARY 27, 1906.

51,721. HARD-RUBBER COMBS. AMERICAN HARD RUBBER CO., New York, N. Y.

The word-symbol "HERCULES."

Filed May 11, 1905. Serial No. 5,163. PUBLISHED FEBRUARY 27, 1906.

51,722. AXES. AMERICAN TOOL COMPANY Highland Park, Ky.

The representation of a shield with the conventional figure of Uncle Sam appearing thereon and holding an ax, together with a scroll associated with the shield.

Filed October 6, 1905. Serial No. 13,362. PUBLISHED FEBRUARY 27, 1906.

51,723. WHISKY. SIMON BINSWANGER & BRO., St. Joseph, Mo.

The word "SUBURBAN" upon a circular panel having a circular border and inclosing three horses' heads, the circular panel and border being crossed at each side by a small rectangular panel.

Filed April 26, 1905. Serial No. 3,122. PUBLISHED FEBRUARY 27, 1906.

51,724. HOSIERY. COOPER WELLS & Co., St. Joseph, Mich.

The words "IRON CLAD" arranged within a panel and associated with the words "ST. JOE KNIT HOSIERY."

Filed May 22, 1905. Serial No. 6,330. PUBLISHED FEBRUARY 27, 1906.

51,725. MATTRESSES AND CUSHIONS. CHARLES A. FISHER, Chicago, Ill.

The representation of the conventional king of a playing-card. In the upper left-hand corner and lower right-hand corner of the card is shown a representation of a leather tuft, such as is used in tufting mattresses.

Filed October 2, 1905. Serial No. 13,201. PUBLISHED FEBRUARY 27 1906.

51,726. TRIMMINGS FOR LADIES' UNDERWEAR. FRIEDBERGER-AARON MFG. CO., Philadelphia, Pa.

An eagle in flight, associated with trimming which floats sinuously for some distance on each side of and under the eagle, the eagle holding the trimming in its beak, and the words "BRAIDS LACES EDGINGS" appearing on the portion of the trimming below the eagle.

Filed August 15, 1905. Serial No. 11,663. PUBLISHED FEBRUARY 27, 1906.

51,727. FUR GARMENTS. A. JACOBSON & BRO., New York, N. Y.

The word "KOLISNABLE" printed in modified script with the letter "S" capitalized.

Filed August 17, 1905. Serial No. 11,726. PUBLISHED FEBRUARY 27, 1906.

51,728. CORSETS. JOHN C. LEWIS Co., Louisville, Ky.

The words "LA VERA."

Filed August 10, 1905. Serial No. 11,522. PUBLISHED FEBRUARY 27, 1906.

51,729. DRUMS. LYON & HEALY, Chicago, Ill.

The word "MONARCH."

Filed August 7, 1905. Serial No. 11,372. PUBLISHED FEBRUARY 27, 1906.

51,730. COTTON PIECE GOODS. THE PARKHILL MFG. CO., Fitchburg, Mass.

The words "TOILE DU NORD."

Filed April 26, 1905. Serial No. 3,185. PUBLISHED FEBRUARY 27, 1906.

51,731. CITRUS FRUITS AND PINEAPPLES. THE PASO REAL FRUIT COMPANY, Cincinnati, Ohio.

An oval design containing a pineapple with full top attached standing upright, surrounded at the base with a group of oranges, lemons, and other fruits, a ridge of hills appearing in the extreme background. A smaller oval appears at the bottom of the principal oval, containing the monogram of the letters "P R F C." The upper part of the border of the principal oval contains the words "THE PASO REAL FRUIT COMPANY." At the base of the smaller oval are the words "PINAR DEL RIO" and immediately below the same the words "CUBA. W. I."

Filed September 26, 1905. Serial No. 13,030. PUBLISHED FEBRUARY 27, 1906.

51,732. NON-ALCOHOLIC MEDICINAL BEVERAGES. RUSSELL M. HUGHES & Co., Louisville, Ky.

The monogram "O & H."

Filed May 26, 1905. Serial No. 6,756. PUBLISHED FEBRUARY 27, 1906.

51,733. CIGARS. SANCHEZ & HAYA Co., Tampa, Fla.

The word "MIRAFLOR" and the representation of the head and bust of a beautiful woman, showing the face in profile with powdered and plumed hair and wearing a bodice of blue and apparently leaning with arms upon a support, the whole being almost surrounded by a highly-ornamental border comprising scrolls and flowers.

Filed May 29, 1905. Serial No. 6,918. PUBLISHED FEBRUARY 27, 1906.

51,734. COATS, VESTS, AND TROUSERS. SYKES & A. B. KIRSCHBAUM & Co., New York, N. Y.

The hyphenated word "FOUR-IN-HAND" and the representation of a number of boys, to which are connected reins held in the hand of another boy holding a whip and acting as a driver.

Filed April 25, 1905. Serial No. 2,993. PUBLISHED FEBRUARY 27, 1906.

51,735. SCARFS. WILLIAM TREVOR, New York, N. Y.

The words "DU BARRY."

Filed October 5, 1905. Serial No. 13,316. PUBLISHED FEBRUARY 27, 1906.

51,736. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio.

The word "LENOX," associated with the representation of a grand stand at a racing-track and a horse race, showing three horses racing. Used ten years.

Filed April 3, 1905. Serial No. 257. PUBLISHED FEBRUARY 27, 1906.

51,737. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "AUTOCYCLE."

Filed April 15, 1905. Serial No. 1,560. PUBLISHED FEBRUARY 27, 1906.

51,738. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "CHAINLESS."

Filed April 15, 1905. Serial No. 1,574. PUBLISHED FEBRUARY 27, 1906.

51,739. SLEDS AND SLEIGHS. B. F. & H. L. SWEET COMPANY, Fond du Lac, Wis.

The words "COMMON SENSE SLEIGH." Used ten years.

Filed May 26, 1905. Serial No. 6,682. PUBLISHED FEBRUARY 27, 1906.

51,740. WHISKY. BREEN & KENNEDY, Chicago, Ill.

The words "CALUMET CLUB."

Filed May 11, 1905. Serial No. 5,173. PUBLISHED FEBRUARY 27, 1906.

51,741. WHISKY. CALHOUN DISTILLING COMPANY, Birmingham, Ala.

The word "CALHOUN," accompanied by a drawing of John C. Calhoun inclosed in a double circle. Used ten years.

Filed May 11, 1905. Serial No. 5,196. PUBLISHED FEBRUARY 27, 1906.

51,742. WINDMILLS. FLINT AND WALLING MANUFACTURING COMPANY, Kendallville, Ind.

The word "STAR" or the representation of a star.

Filed May 18, 1905. Serial No. 5,998. PUBLISHED FEBRUARY 27, 1906.

51,743. ELECTRIC SWITCHES. THE HART & HEGEMAN MFG. Co., Hartford, Conn.

The word "HART." Used ten years.

Filed May 15, 1905. Serial No. 5,636. PUBLISHED FEBRUARY 27, 1906.

51,744. BOOKS OF FICTION. LOTHROP, LEE & SHEPARD COMPANY, Boston, Mass.

The arbitrary word "PANSY."

Filed April 12, 1905. Serial No. 1,198. PUBLISHED FEBRUARY 27 1906.

51,745. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y.

The word "FLUSHING." Used ten years.

Filed April 26, 1905. Serial No. 3,091. PUBLISHED FEBRUARY 27, 1906.

51,746. TIN PLATES AND ROOFING-TIN. JACOB MEURER, Brooklyn, N. Y.

The word "PULLMAN." Used ten years.

Filed April 26, 1905. Serial No. 3,094. PUBLISHED FEBRUARY 27, 1906.

51,747. CANNED PINEAPPLES. THE PLANTERS PACKING AND PRESERVING CO., Delray, Fla.

The word "FLOWERLAND," accompanied by the picture of the royal poinciana in bloom, with a procession of fairies passing thereunder headed by a queen. Under and to the right of the picture is the figure of a crown having sprays of fern and arc-shaped panels extending under and to each side thereof. On said panels occur the words "QUEEN OF FLOWERLAND." Above the crown occur the words "ROYAL POINCIANA."

Filed May 11, 1905. Serial No. 5,066. PUBLISHED FEBRUARY 27, 1906.

51,748. MOPS. PALMER, HILL & Co., Cincinnati, Ohio.

The word "STAR" and the representation of a star.

Filed May 11, 1905. Serial No. 5,110. PUBLISHED FEBRUARY 27, 1906.

51,749. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "LENOX." Used ten years.

Filed April 15, 1905. Serial No. 1,578. PUBLISHED FEBRUARY 27, 1906.

51,750. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "LOCOMOBILE."

Filed April 15, 1905. Serial No. 1,583. PUBLISHED FEBRUARY 27, 1906.

51,751. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "LEAGUE."

Filed April 15, 1905. Serial No. 1,599. PUBLISHED FEBRUARY 27, 1906.

51,752. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "TOURIST."

Filed April 15, 1905. Serial No. 1,584. PUBLISHED FEBRUARY 27, 1906.

51,753. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "PNEUMATIC."

Filed April 15, 1905. Serial No. 1,585. PUBLISHED FEBRUARY 27, 1906.

51,754. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "MOTORCYCLE."

Filed April 15, 1905. Serial No. 1,789. PUBLISHED FEBRUARY 27, 1906.

51,755. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The words "NEW FAN."

Filed April 15, 1905. Serial No. 1,798. PUBLISHED FEBRUARY 27, 1906.

51,756. PLAYING-CARDS. THE UNITED STATES PLAYING CARD Co., Cincinnati, Ohio.

The word "LANTERN."

Filed April 15, 1905. Serial No. 1,802. PUBLISHED FEBRUARY 27, 1906.

51,757. WHEAT-FLOUR. WELLS ABBOTT NIEMAN COMPANY, Schuyler, Nebr.

The word "WANCO" surrounded by a wreath of ivy-leaves.

Filed August 10, 1905. Serial No. 11,469. PUBLISHED FEBRUARY 27, 1906.

51,758. HARNESS, SOLE, AND SKIRTING LEATHER. A. B. PATRICK & Co., San Francisco, Cal.

The letters "A. B. P. S. F." inclosed in an oval-shaped figure.

Filed July 25, 1905. Serial No. 10,778. PUBLISHED FEBRUARY 27 1906.

51,759. CAST-STEEL. BRAEBURN STEEL COMPANY, Braeburn, Pa.

A monogram consisting of the letters "B S."

Filed August 3, 1905. Serial No. 11,224. PUBLISHED FEBRUARY 27, 1906.

51,760. INDIA-RUBBER BAGS AND POUCHES. CONTINENTAL CAOUTCHOUC COMPANY, New York, N. Y.

The representation of a prancing horse upon uneven ground at the center of concentric circles, the inner one of which is made up of small circles and between which appear the characters "C. C. & G. P. Co H."

Filed July 29, 1905. Serial No. 11,010. PUBLISHED FEBRUARY 27, 1906.

51,761. CORSETS, CORSET-WAISTS, DRESS-STAYS, AND BUST-FORMS. CORONET CORSET Co., Jackson, Mich., and New York, N. Y.

The word "FLEXIBONE."

Filed May 25, 1905. Serial No. 6,667. PUBLISHED FEBRUARY 27, 1906.

51,762. BLOTTING-PAPER. THE EATON-DIKEMAN Co., Lee, Mass.

The word "MAGNET" and the representation of a horseshoe-magnet, the magnet being placed between the syllable "MAG" and the syllable "NET."

Filed July 3, 1905. Serial No. 9,639. PUBLISHED FEBRUARY 27, 1906.

51,763. LIQUID PUTTY OR GLAZING PREPARATION. F. O. PIERCE COMPANY, New York, N. Y.

The coined word "MASTICA."

Filed July 31, 1905. Serial No. 11,043. PUBLISHED FEBRUARY 27, 1906.

51,764. CONTRACTORS' DUMPING-CONVEYERS. JAMES J. HAROLD, Jersey City, N. J., assignor to Thomas A. Hill, New York, N. Y.

The word "CYCLOPEAN."

Filed July 20, 1905. Serial No. 10,627. PUBLISHED FEBRUARY 27, 1906.

51,765. CANNED CORN. P. HOHENADEL, Jr., Janesville, Wis., and Rochelle, Ill.

The words "KEY CITY" and the design of a key.

Filed July 12, 1905. Serial No. 10,164. PUBLISHED FEBRUARY 6, 1906.

51,766. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England.

A square and bordered panel with rounded ornamental edges inclosing a representation of a partially-shaded garter and ornamental buckle, the garter bearing the words "SUPERIOR READING BISCUITS" and several rosettes and inclosing the words "HUNTLEY & PALMERS BISCUITS," arranged in circular shape and in turn inclosing an oblong panel with inwardly-rounded edges.

Filed June 30, 1905. Serial No. 9,443. PUBLISHED FEBRUARY 27, 1906.

51,767. BISCUITS AND CAKES. HUNTLEY & PALMERS, LTD., Reading, England.

A square and bordered panel with rounded ornamental edges inclosing a circular band-like panel bearing the words "HUNTLEY & PALMERS READING" and inclosing an approximately oblong panel, above which appears the word "SUPERIOR" and below which is displayed the word "BISCUITS."

Filed June 30, 1905. Serial No. 9,444. PUBLISHED FEBRUARY 27, 1906.

51,768. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.

The representation of a stout Chinaman with scroll bearing Chinese characters "ICHI-DAN-WA-KI," meaning a harmonious community.

Filed July 13, 1905. Serial No. 10,246. PUBLISHED FEBRUARY 27, 1906.

51,769. MAGAZINES. MARIE D. MCANULTY, New York, N. Y.

The words "MY BUSINESS FRIEND."

Filed August 9, 1905. Serial No. 11,454. PUBLISHED FEBRUARY 27, 1906.

51,770. SHIRTS, COLLARS, AND CUFFS. NEW COLUMBIA SHIRT CO., New York, N. Y.

The words "THE NEW" printed in fancy type and the word "COLUMBIA" printed in script. Used ten years.

Filed July 27, 1905. Serial No. 10,887. PUBLISHED FEBRUARY 27, 1906.

51,771. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.

The word "NAUTILUS."

Filed July 28, 1905. Serial No. 10,937. PUBLISHED FEBRUARY 27, 1906.

51,772. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.

The words "GOLDEN GATE."

Filed July 28, 1905. Serial No. 10,939. PUBLISHED FEBRUARY 27, 1906.

51,773. CURED FISH, (SMOKED, DRIED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.

The words "WATER WHITE."

Filed July 28, 1905. Serial No. 10,940. PUBLISHED FEBRUARY 27, 1906.

51,774. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass.

An outline map of the State of Massachusetts, associated with the representation of a fish. Used ten years.

Filed July 20, 1905. Serial No. 10,594. PUBLISHED FEBRUARY 27, 1906.

51,775. CORDS, LINES, TWINES, AND ROPES. SAMSON CORDAGE WORKS, Boston, Mass.

A picture representing Samson and the lion. Used ten years.

Filed July 20, 1905. Serial No. 10,595. PUBLISHED FEBRUARY 27, 1906.

51,776. ALE. BOSTON BEER COMPANY, Boston, Mass.

The word "RELIANCE" surrounded by an ornamental border, with the phrases "BOSTON BEER COMPANY," "OLD STOCK ALE," and "BOSTON'S BEST BREW" outside the border, with hops and oats pictorially represented, and a circular band bearing a star and the words "BOSTON BEER COMPANY" surrounds the letters "B. B. C." and the date "1828" above the ornamental border, the whole being inclosed in an oval band.

Filed September 13, 1905. Serial No. 12,514. PUBLISHED FEBRUARY 27, 1906.

51,777. CHEMICAL PREPARATIONS FOR USE IN MAKING LEMONADES. CHEMISCHE INDUSTRIE A.-G. ST. MARGRETHEN, St. Margrethen, Switzerland.

The word "CITROL," together with a branch of a lemon-tree and part of the figure of a woman placing a tablet in a glass of water with one hand and holding in the other hand a package containing tablets.

Filed January 2, 1906. Serial No. 15,821. PUBLISHED FEBRUARY 27, 1906.

51,778. WHISKY. CHICAGO DISTILLING CO., Chicago, Ill.

The word "BERMINGHAM'S." Used ten years.

Filed July 11, 1905. Serial No. 10,043. PUBLISHED FEBRUARY 27, 1906.

51,779. COFFEE. CLARK, COGGIN AND JOHNSON COMPANY, Boston, Mass.

The hyphenated word "DE-TAN-ATED."

Filed August 23, 1905. Serial No. 11,946. PUBLISHED FEBRUARY 27, 1906.

51,780. WHISKY. CLOVER LEAF WINE CO., New York, N. Y., assignor to Jaros Importing and Distributing Co., New York, N. Y., a corporation.

The word "TUXEDO."

Filed July 21, 1905. Serial No. 10,655. PUBLISHED FEBRUARY 27, 1906.

51,781. BREAD. DAVID R. CONE, New Carlisle, Ohio.

The representation of a lighthouse on a rock rising above waves and a ray of light carrying the words "LIGHT-HOUSE BREAD" radiating from the top of the lighthouse, the whole picture appearing against a black background and forming a circular panel.

Filed August 15, 1905. Serial No. 11,676. PUBLISHED FEBRUARY 27, 1906.

51,782. MACARONI, SPAGHETTI, VERMICELLI, AND NOODLES. CRESCENT MACARONI & CRACKER CO., Davenport, Iowa.

The words "GOLDEN ROD."

Filed August 16, 1905. Serial No. 11,699. PUBLISHED FEBRUARY 27, 1906.

51,783. CLEANING COMPOUND. E. C. DAVIS, Rockland, Me.

The word "EVAPERO," spelled with an initial and final capital.

Filed July 22, 1905. Serial No. 10,716. PUBLISHED FEBRUARY 27, 1906.

51,784. UNDERSHIRTS AND DRAWERS AND UNION SUITS. THE DEIMEL LINEN-MESH SYSTEM COMPANY, San Francisco, Cal., and New York, N. Y.

The word "DEIMEL" arranged in the particular and distinctive form of script shown in the drawing.

Filed June 10 1905. Serial No. 7,859. PUBLISHED FEBRUARY 27, 1906.

51,785. GIN. P. DEMPSEY & Co., Boston, Mass.

The word "PURITAN," beneath which are the representation of a sailing vessel and a picture representing a Puritan with a gun over his shoulder, the latter drawing being inclosed in a circle.

Filed September 15, 1905. Serial No. 12,670. PUBLISHED FEBRUARY 27, 1906.

51,786. WHISKY. P. DEMPSEY & Co., Boston, Mass.

The word "MIAMI" and a monogram composed of the letters, character, and abbreviation "P D & Co" inclosed in a double circle with a fanciful scroll design on either side. Used ten years.

Filed September 15, 1905. Serial No. 12,672. PUBLISHED FEBRUARY 27, 1906.

51,787. CORDIALS. P. DEMPSEY & Co., Boston, Mass.

The word "BUTTERFLY" and the representation of a butterfly.

Filed September 15, 1905. Serial No. 12,674. PUBLISHED FEBRUARY 27, 1906.

51,788. WHISKY. P. DEMPSEY & Co., Boston, Mass.

The word "OVERMARCH."

Filed September 15, 1905. Serial No. 12,678. PUBLISHED FEBRUARY 27, 1906.

51,789. DRY AND WET BATTERIES. ERICSSON TELEPHONE COMPANY, New York, N. Y.

A crescent and star, associated with the words "ERICSSON BATTERY," disposed upon a contrasting background, with the rays of said star extending over said words.

Filed August 24, 1905. Serial No. 11,980. PUBLISHED FEBRUARY 27, 1906.

51,790. PUNCH. THE GINTER GROCERY COMPANY, Boston, Mass.

The word "MARDI-GRAS" inclosed in a fancy scroll border.

Filed July 11, 1905. Serial No. 10,037. PUBLISHED FEBRUARY 27, 1906.

51,791. FIXTURES FOR DISPLAYING GOODS IN STORES. THE HEIMANN-MILLER MANUFACTURING COMPANY, St. Louis, Mo.

The representation of an ape-like animal grasping a rod in the toes of one foot and supporting a ball with the toes of the other foot, and the index-finger of one of its hands pointing to said ball and the index-finger of the other hand pointing to its forehead.

Filed September 21, 1905. Serial No. 12,842. PUBLISHED FEBRUARY 27, 1906.

51,792. TEA. HEWLETT & LEE, New York, N. Y.

The words "WHITE BEAR CHOP" over the figure of a white bear.

Filed September 21, 1905. Serial No. 12,892. PUBLISHED FEBRUARY 27, 1906.

51,793. BLENDED FEEDS AND DISTILLERS' AND BREWERS' DRIED GRAINS. THE J. W. BILES CO., Cincinnati, Ohio.

A wreath made up of a spray of barley ears and blades on the left side, with a spray of hop-vines on the right side, the two sprays almost meeting at the top, with a bunch of ears of corn and leaves forming the lower part of the wreath between the two sprays and leaving a blank space in the center.

Filed July 24, 1905. Serial No. 10,728. PUBLISHED FEBRUARY 27, 1906.

51,794. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING CO., St. Louis and Springfield, Mo.

The pictorial representation of an albatross standing on a rocky shore, below which is a panel in which appears the word "ALBA-

TROSS." Above the pictorial representation appear the words "JOHN F. MEYER & SONS" arranged in a semicircle, and below the panel appear the words "BEST PATENT SPRINGFIELD, MO.," all of which words and the pictorial representation are arranged within a heavy circular border-line. Used ten years.

Filed August 17, 1905. Serial No. 11,743. PUBLISHED FEBRUARY 27, 1906.

51,795. WHEAT-FLOUR. JOHN F. MEYER & SONS MILLING CO., St. Louis and Springfield, Mo.

The words "WESTERN DELIGHT" arranged in a semicircle above the pictorial representation of a cowboy in the act of lassoing a steer. Above this pictorial representation and below the words appear the representation of the sun and a scroll on which appear the words "FULL PATENT." Below the pictorial representation appear the words "JOHN F. MEYER & SONS SPRINGFIELD, MO.," all of which words and pictorial representations are inclosed in a heavy circular border-line. Used ten years.

Filed August 17, 1905. Serial No. 11,746. PUBLISHED FEBRUARY 27, 1906.

51,796. WASHING FLUIDS. EDWARD F. KAESTNER, New York, N. Y.

The words "UZA CAPITOL BRAND" appearing upon a seal.

Filed September 1, 1905. Serial No. 12,154. PUBLISHED FEBRUARY 27, 1905.

51,797. HOES. HENRY KEIDEL, Baltimore, Md.

The words "AMERICAN CROWN," associated with the representation of a crown in a circular figure located between the words.

Filed June 15, 1905. Serial No. 8,293. PUBLISHED FEBRUARY 27, 1906.

51,798. MEN'S, WOMEN'S, AND CHILDREN'S HOSIERY. H. A. LANG & Co., Philadelphia, Pa.

The representation of a shield with diagonal bar and the letter "L" thereon. Beneath the shield is a conventional wreath of leaves. Above the shield is the word "LANGDON," and below the wreath are the words "FAST DYE."

Filed January 9, 1906. Serial No. 16,067. PUBLISHED FEBRUARY 27, 1906.

51,799. FURNACES. THE LENNOX FURNACE CO., Marshalltown, Iowa.

The words "LENNOX TORRID ZONE." Used ten years.

Filed November 21, 1905. Serial No. 14,865. PUBLISHED FEBRUARY 27, 1906.

51,800. HOSIERY. LORD & TAYLOR, New York, N. Y.

The letter and numerals "E 310."

Filed June 21, 1905. Serial No. 8,657. PUBLISHED FEBRUARY 27, 1906.

51,801. HOSIERY. LORD & TAYLOR, New York, N. Y.

The letter and numerals "E 602."

Filed June 21, 1905. Serial No. 8,659. PUBLISHED FEBRUARY 27, 1906.

51,802. ALE AND STOUT. C. MACHEN & HUDSON, Liverpool, England.

An oval panel having an outer band divided centrally by a straight band. In the upper half of the panel is the representation of a beaver with a twig in his mouth standing upon a bank, part of a tree being shown on one side and the background consisting of a water scene. In the panel, above the picture, are the words "BEAVER BRAND." On the central band is the name "C. MACHEN & HUDSON." On an ornamental scroll below the straight band are the words "EXPORT BEER MERCHANTS LIVERPOOL."

Filed September 25, 1905. Serial No. 12,966. PUBLISHED FEBRUARY 27, 1906.

51,803. AERATED OR CARBONATED BOTTLED SODA-WATER AND SYRUP FOR THE SAME. BENJAMIN H. MCDONALD, Fort Worth, Tex.

The words "JERSEY CREAM."

Filed August 1, 1905. Serial No. 11,103. PUBLISHED FEBRUARY 27, 1906.

51,804. CLOTH HAVING A POLISHED FINISH. JOHN MILLOY AND CO., Chicago, Ill.

The word "SILKIXED."

Filed June 26, 1905. Serial No. 9,070. PUBLISHED FEBRUARY 27, 1906.

51,805. KNIT UNDERWEAR. MURPHY, GRANT & Co., New York, N. Y., and San Francisco, Cal.

The words "EL DORADO," associated with the representation of a female figure holding in her hands a horn of plenty, and a tropical landscape in connection therewith surrounded by an approximately circular ornamental border.

Filed January 13, 1906. Serial No. 16,168. PUBLISHED FEBRUARY 27, 1906.

51,806. KNIT HOSIERY. MURPHY, GRANT & Co., New York, N. Y., and San Francisco, Cal.

The words "EL DORADO," associated with the representation of a female figure holding in her hands a horn of plenty, and a tropical landscape in connection therewith surrounded by an approximately circular ornamental border.

Filed January 13, 1906. Serial No. 16,169. PUBLISHED FEBRUARY 27, 1906.

51,807. SOAP OF ALL KINDS. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England.

The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.

Filed January 9, 1906. Serial No. 16,061. PUBLISHED FEBRUARY 27, 1906.

51,808. ILLUMINATING AND HEATING OILS. PRICE'S PATENT CANDLE CO. LIMITED, London, Battersea, and Bromborough Pool Works, England.

The representation of a large ship under full sail on the sea. Another ship is seen in the distance astern. The whole is inclosed in a substantially rectangular border.

Filed January 9, 1906. Serial No. 16,062. PUBLISHED FEBRUARY 27, 1906.

51,809. FLAVORING EXTRACTS OF ALL VARIETIES. SCHWABACHER BROS. & CO., INC. Seattle, Wash.

The representation of a silver shield, within which are inscribed the words "SILVER SHIELD BRAND."

Filed August 21, 1905. Serial No. 11,835. PUBLISHED FEBRUARY 27, 1906.

51,810. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill.

The word "LUCKY." Used ten years.

Filed June 20, 1905. Serial No. 8,607. PUBLISHED FEBRUARY 27, 1906.

51,811. HORSE-NAILS. UNION HORSE NAIL COMPANY, New Haven, Conn., and Chicago, Ill.

The representation of a star. Used ten years.

Filed June 20, 1905. Serial No. 8,610. PUBLISHED FEBRUARY 27, 1906.

51,812. PIANOS. W. W. KIMBALL COMPANY, Chicago, Ill.

The word "HINZE." Used ten years.

Filed August 14, 1905. Serial No. 11,640. PUBLISHED FEBRUARY 27, 1906.

51,813. PLOWS, CULTIVATORS, AND HARROWS. B. F. AVERY & SONS, Louisville, Ky.

The words "EL COLONO" on a curved panel, the representation of an iron cross appearing on a circular panel, and the letter "A" appearing in the center and the letters "V E R Y" appearing on the arms of the cross, and the representation of a plantation owner wearing a sombrero and smoking a cigar arranged to one side of the words "EL COLONO." associated with a cane scene, and the portrait of B. F. Avery, associated with the name "B. F. AVERY." arranged on the other side thereof.

Filed September 15, 1905. Serial No. 12,631. PUBLISHED FEBRUARY 27, 1906.

51,814. BLANK BOOKS, PADS, AND TABLETS. BOORUM & PEASE COMPANY, New York, N. Y.

The representation of a banner suspended from a staff having thereon the words and figures "STANDARD 16 OZ. TO THE LB. 36 IN. TO THE YD. 25 SHEETS (100 PAGES) TO THE QUIRE."

Filed August 26, 1905. Serial No. 12,043. PUBLISHED FEBRUARY 27, 1906.

51,815. LADIES', MISSES', AND CHILDREN'S LEATHER SHOES. WM. B. CARHART, Atlanta, Ga.

A representation of a bale of cotton having thereon the words "QUEEN COTTON," the said bale being open on one side and showing a shoe encircled by a crown, the words "QUEEN COTTON" appearing on the top facing of the shoe.

Filed September 14, 1905. Serial No. 12,548. PUBLISHED FEBRUARY 27, 1906.

51,816. TEA. HEWLETT & LEE, New York, N. Y.

The words "BLACK BEAR CHOP" over the figure of a black bear.

Filed September 21, 1905. Serial No. 12,891. PUBLISHED FEBRUARY 27, 1906.

51,817. LOAVES OF BREAD. LOUIS HEYING, Baltimore, Md. The words "GOLDEN WEDDING."

Filed August 30, 1905. Serial No. 12,102. PUBLISHED FEBRUARY 27 1906.

51,818. GINGER-ALE. ADOLF R. HOLTHUSEN, New York, N. Y.

The representation of a seal bearing a monogram of the letters "A R H" and associated with the word "WHITESEAL," both the seal and the word appearing against a rectangular background formed by radiating lines.

Filed August 30, 1905. Serial No. 12,091. PUBLISHED FEBRUARY 27, 1906.

51,819. ROPES, CORDS, TWINE, AND BINDER-TWINE. INTERNATIONAL HARVESTER CO. OF AMERICA, Chicago, Ill. The word "CHAMPION."

Filed August 31, 1905. Serial No. 12,106. PUBLISHED FEBRUARY 27, 1906.

51,820. SCENIC RAILWAYS. THE L. A. THOMPSON SCENIC RAILWAY CO., New York, N. Y.

The words "THOMPSON SCENIC RAILWAY." Used ten years.

Filed September 1, 1905. Serial No. 12,144. PUBLISHED FEBRUARY 27, 1906.

51,821. DRY BATTERIES. NUNGESSER ELECTRIC BATTERY CO., Cleveland, Ohio.

The word and figures "THE 1900."

Filed August 25, 1905. Serial No. 12,002. PUBLISHED FEBRUARY 27, 1906.

51,822. PLOWS. PARLIN & ORENDORFF CO., Canton, Ill.

The words "CANTON CLIPPER."

Filed September 5, 1905. Serial No. 12,229. PUBLISHED FEBRUARY 27, 1906.

51,823. HORSERADISH. THOMAS F. RIGHTMIRE, New York, N. Y.

The representation of a red horse, associated with the letters "I S H."

Filed September 15, 1905. Serial No. 12,648. PUBLISHED FEBRUARY 27, 1906.

51,824. PANORAMIC CAMERAS. ROCHESTER PANORAMIC CAMERA COMPANY, Rock Springs, Wyo.

The word "CIRKUT."

Filed August 28, 1905. Serial No. 12,054. PUBLISHED FEBRUARY 27, 1906.

51,125. BASE, CRICKET, BASKET, AND FOOT BALLS. A. J. REACH CO., Philadelphia, Pa.

The words "REACH'S SPECIAL." Used ten years.

Filed June 21, 1905. Serial No. 8,692. PUBLISHED FEBRUARY 27, 1906.

51,826. MATCHES OF ALL KINDS. AKTIEBOLAGET SÖDERTELJE TÄNDSTICKSFABRIK, Södertelje, Sweden.

The representation of a tulip inclosed in an ellipse, the cup of which is red. Below and at the right side of the ellipse there are in a bent line the words "SAFETY MATCH." Above the line are the words "THE RED TULIP IMPREGNATED" and below the same the words "MANUFACTURED BY ERIC HOLMBERG SÖDERTELJE, SWEDEN."

Filed January 18, 1906. Serial No. 16,277. PUBLISHED FEBRUARY 27, 1906.

51,827. MINCE-MEAT. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr.

The letter "C" inclosed in a diamond figure, the word "DIAMOND," and the letter "C" inclosed in quotation-marks.

Filed November 7, 1905. Serial No. 14,394. PUBLISHED FEBRUARY 27, 1906.

51,828. CHESTS, BOXES, AND CABINETS. ISAAC N. DEITSCH, New York, N. Y.

The letters "I N D," each inclosed in a diamond-shaped figure, the figures being arranged to form a larger figure of similar outline, but with one of the smaller figures omitted or only partially indicated between two others.

Filed June 28, 1905. Serial No. 9,344. PUBLISHED FEBRUARY 27, 1906.

51,829. SOLE-LEATHER. J. M. DELANEY & CO., New York, N. Y.

The letters "O K" inclosed in an octagonal border.

Filed November 9, 1905. Serial No. 14,441. PUBLISHED FEBRUARY 27, 1906.

51,830. WOMEN'S, MISSES', AND CHILDREN'S LEATHER BOOTS AND SHOES. DOROTHY DODD SHOE COMPANY, Montclair, N. J., and Boston, Mass.

The words "LITTLE DOROTHY."

Filed November 6, 1905. Serial No. 14,371. PUBLISHED FEBRUARY 27, 1906.

51,831. METAL PLATES FOR CEILINGS AND SIDE WALLS. ALFRED DU MONTIER, Washington, D. C.

The word "LOKTILE."

Filed December 21, 1905. Serial No. 15,569. PUBLISHED FEBRUARY 27, 1906.

51,832. MARASCHINO. FRANCESCO DRIOLI, Zara, Austria-Hungary. The word "CALCENIGA."

Filed June 23, 1905. Serial No. 8,862. PUBLISHED FEBRUARY 27, 1906.

51,833. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass.

The word "UNEEDA."

Filed January 17, 1906. Serial No. 16,253. PUBLISHED FEBRUARY 27, 1906.

51,834. CLEANING COMPOUNDS FOR DUCK AND CANVAS. F. H. YOUNG COMPANY, Boston, Mass.

The word "WHITE" arranged above the pictorial representation of a duck.

Filed January 17, 1906. Serial No. 16,255. PUBLISHED FEBRUARY 27, 1906.

51,835. PURE OLIVE-OIL. GENNERICH & VON BREMEN, New York, N. Y.

The representation in cherry-red color of a diamond composed of four bars intersecting each other surrounded by an open floral wreath having its branches tied together by a ribbon with ends spread apart and of the word-symbol "CHERRY DIAMOND" set underneath.

Filed October 19, 1905. Serial No. 13,763. PUBLISHED FEBRUARY 27, 1906.

51,836. BITTERS. GEO BENZ & SONS, St. Paul, Minn.

The word "APPETINE."

Filed January 8, 1906. Serial No. 15,971. PUBLISHED FEBRUARY 27, 1906.

51,837. BRANDY. GEO. BENZ & SONS, St. Paul, Minn.

The word "VITALINE."

Filed January 8, 1906. Serial No. 15,978. PUBLISHED FEBRUARY 27 1906.

51,838. CHOCOLATE AND ALL KINDS OF CANDY. THE GREAT AMERICAN AUTOMATIC VENDING MACHINE COMPANY, Hoboken, N. J.

The representation of a diagonal-striped flag having thereon the letters "T. G. A. A. V. M. Co." and associated with groups of dots and the words "GREAT AMERICAN STANDARD," all inclosed in concentric circles.

Filed June 9, 1905. Serial No. 8,143. PUBLISHED FEBRUARY 27, 1906.

51,839. WOMEN'S LIQUID AND PASTE SHOE-DRESSING. HAMILTON-BROWN SHOE CO., St. Louis, Mo.

The words "AMERICAN LADY."

Filed January 17, 1906. Serial No. 16,239. PUBLISHED FEBRUARY 27, 1906.

51,840. MEN'S LIQUID AND PASTE SHOE-DRESSING. HAMILTON-BROWN SHOE CO., St. Louis, Mo.

The words "AMERICAN GENTLEMAN."

Filed January 17, 1906. Serial No. 16,240. PUBLISHED FEBRUARY 27, 1906.

51,841. WINE. FRITZ HANDRICH, New York, N. Y.

A fanciful Bacchus head inclosed in a circular band bearing the motto "VINUM PELLIT CURAS" and a monogram composed of the letters "F H."

Filed June 15, 1905. Serial No. 8,286. PUBLISHED FEBRUARY 27, 1906.

51,842. PLUG CHEWING-TOBACCO. SAMUEL F. HASEROT-Cleveland, Ohio.

The word "REDSKIN," with two crossed pipes above and three crossed arrows below said word, the whole inclosed in a diamond shaped figure. Used ten years.

Filed June 23, 1905. Serial No. 8,801. PUBLISHED FEBRUARY 27, 1906.

51,843. WROUGHT-IRON HOLLOW WARE. HERMAN WUPPERMAN GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Pinneberg, Germany.

A conventional representation of an anchor with a scutcheon upon either side of the shank of said anchor over the flukes thereof, one of said scutcheons bearing the capital letter "U" and the other the capital letter "E," and the subordinate feature of a rectangular border inclosing the before-described portion of the mark.

Filed June 20, 1905. Serial No. 8,603. PUBLISHED FEBRUARY 27, 1906.

51,844. COTTON SHEETINGS AND DRILLS. KENZO IWAHARA, New York, N. Y.

The representation of a donkey ridden by a man with lifted right arm and wearing a derby hat.

Filed December 12, 1905. Serial No. 15,363. PUBLISHED FEBRUARY 27 1906.

51,845. FOUNDRY FACINGS OR BLACKING. THE J. S. MCCORMICK CO., Pittsburg, Pa.

The word "VULCAN."

Filed November 9, 1905. Serial No. 14,437. PUBLISHED FEBRUARY 27, 1906.

51,846. WHISKY. JESSE MOORE HUNT CO., San Francisco, Cal.

The word "BEDFORD." Used ten years.

Filed June 24, 1905. Serial No. 8,928. PUBLISHED FEBRUARY 27, 1906.

51,847. PLAYING-CARDS. THE NEW YORK CONSOLIDATED CARD COMPANY, New York, N. Y.

The number "913." Used ten years.

Filed June 27, 1905. Serial No. 9,221. PUBLISHED FEBRUARY 27, 1906.

51,848. LEATHER BOOTS AND SHOES AND LEATHER USED IN THEIR MANUFACTURE. RICE & HUTCHINS, INCORPORATED, Boston, Mass., assignor to Rice and Hutchins Incorporated, a Corporation of Maine.

The words "REX CALF." Used ten years.

Filed June 10, 1905. Serial No. 7,797. PUBLISHED FEBRUARY 20, 1906.

51,849. MOIST-PROOF MALINE. THEO. TIEDEMANN & SON, New York, N. Y.

The word "MALINETTE."

Filed December 8, 1905. Serial No. 15,275. PUBLISHED FEBRUARY 27, 1906.

51,850. PARASOLS AND UMBRELLAS. WEINBERG, HEYMAN & COMPANY, New York, N. Y.

The words "THE ARMOR" and the representation of a breastplate having crossed swords back of the same and bearing on its face the heraldic representation of a mythological bird.

Filed October 21, 1905. Serial No. 13,836. PUBLISHED FEBRUARY 27, 1906.

51,851. CORSETS. WEINGARTEN BROS., New York, N. Y.

The word "REDUSO."

Filed December 12, 1905. Serial No. 15,364. PUBLISHED FEBRUARY 27, 1906.

51,852. POISON OR EXTERMINATOR FOR RATS, VERMIN, AND INSECTS. EPHRAIM S. WELLS, Jersey City, N. J.

The representation of a dead rat and three representations of skulls and cross-bones and the word "POISON," associated with the words "ROUGH ON RATS," two of the representations of the skull and cross-bones appearing on either side of the word "ON."

Filed August 2, 1905. Serial No. 11,154. PUBLISHED FEBRUARY 27, 1906.

51,853. WHISKY. FERDINAND WESTHEIMER & SONS, Cincinnati, Ohio.

The word "PENNLAND." Used ten years.

Filed January 8, 1906. Serial No. 15,999. PUBLISHED FEBRUARY 27, 1906.

51,854. CLOCKS AND WATCHES. THE WESTERN CLOCK MFG. CO., La Salle, Ill.

The words "LA SALLITA."

Filed November 9, 1905. Serial No. 14,443. PUBLISHED FEBRUARY 27 1906.

51,855. GINGER-ALE. THE WHITE ROCK MIN. SPG. CO., Waukesha, Wis.

The words "WHITE ROCK" and the representation of Psyche kneeling on a rock and looking down into the water. Used ten years.

Filed June 16, 1905. Serial No. 8,356. PUBLISHED FEBRUARY 27, 1906.

51,856. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.

The representation of the head of a girl with spectacles on her nose and a cap on her head.

Filed June 21, 1905. Serial No. 8,709. PUBLISHED FEBRUARY 27, 1906.

51,857. CANDY. PHILIP WUNDERLE, Philadelphia, Pa.

The representation of a bird, twigs of berries on which the bird is perched, and sprays of flowers intermixed with said twigs and beside the bird.

Filed June 21, 1905. Serial No. 8,710. PUBLISHED FEBRUARY 27, 1906.

51,858. BLOTTING-PAPER. THE ALBEMARLE PAPER MFG. CO., Richmond, Va.

The word "MOIRE" preceded by the word "VIENNA." Both words are disposed in a scroll.

Filed January 2, 1906. Serial No. 15,834. PUBLISHED FEBRUARY 27, 1906.

51,859. WHEAT-FLOUR. ALVA ROLLER MILLS, Alva, Okla. Ter.

The words "HONEY BEE."

Filed May 6, 1905. Serial No. 4,534. PUBLISHED OCTOBER 24, 1905.

51,860. HARD-RUBBER SYRINGES. AMERICAN HARD RUBBER CO., New York, N. Y.

The word-symbol "EUREKA."

Filed May 11, 1905. Serial No. 5,160. PUBLISHED FEBRUARY 27, 1906.

51,861. PLOWS, HARROWS, CULTIVATORS, AND PLANTERS. B. F. AVERY & SONS, Louisville, Ky.

The representation of an iron cross, on the arms and in the center of which are arranged the letters "A V E R Y." Used ten years.

Filed June 13, 1905. Serial No. 8,057. PUBLISHED FEBRUARY 27, 1906.

51,862. EXTRACTS AND ESSENCES OF MEAT. BOVRIL LIMITED, London, England.

The word "BOVRIL."

Filed June 8, 1905. Serial No. 7,714. PUBLISHED FEBRUARY 7, 1906.

51,863. WHISKY. MAURICE J. DORAN, Rochester, N. Y.

The word "LYNNBROOK" and the picture of a brook with trees upon the banks thereof inclosed in an ornamental circular border.

Filed August 7, 1905. Serial No. 11,394. PUBLISHED FEBRUARY 27, 1906.

51,864. IRISH AND SWEET POTATOES. EASTERN SHORE OF VIRGINIA PRODUCE EXCHANGE, Onley, Va.

The words "BELL BRAND," the representation of a bell, and the letters and abbreviations "E. S. VA. PRO. EX."

Filed June 21, 1905. Serial No. 8,688. PUBLISHED FEBRUARY 27, 1906.

51,865. MONTHLY PERIODICAL. THE GARDNER PUBLISHING COMPANY, Cleveland, Ohio.

The arbitrary word-symbol "WOOD CRAFT."

Filed December 12, 1905. Serial No. 15,358. PUBLISHED FEBRUARY 27, 1906.

51,866. CANNED EXTRACT OF GREEN CORN. THE HASEROT CANNERIES COMPANY, Cleveland, Ohio.

The word "KORNLET." Used ten years.

Filed June 23, 1905. Serial No. 8,802. PUBLISHED FEBRUARY 27, 1906.

51,867. COTTON PIECE GOODS. MASSACHUSETTS COTTON MILLS, Lowell, Mass.

The representation of a swan swimming on a body of water partly surrounded by foliage, the swan being shown with partially-uplifted wings.

Filed May 10, 1905. Serial No. 4,978. PUBLISHED FEBRUARY 27, 1906.

51,868. CANNED SARDINES. CLARENCE B. MITCHELL, Boston, Mass.

The words "FISHER BOY."

Filed June 29, 1905. Serial No. 9,284. PUBLISHED FEBRUARY 27, 1906.

51,869. CHAMPAGNE-WINE. G. H. MUMM & Co., Rheims, France.

The representation of an eagle with head erect and wings extended, holding a twig in his claws, and encircled by the words "G. H. MUMM & Co." above and "G. DE BARY" below the eagle, the whole being inclosed by a circular border.

Filed November 1, 1905. Serial No. 14,154. PUBLISHED FEBRUARY 27, 1906.

51,870. DRESS-SILKS. THE NORFOLK SILK COMPANY, Paterson, N. J., and Norfolk, Va.

The word "SERVISILK."

Filed October 23, 1905. Serial No. 13,877. PUBLISHED FEBRUARY 27, 1906.

51,871. DRESS-SILKS. THE NORFOLK SILK COMPANY, Paterson, N. J., and Norfolk, Va.

The words "PEAU DE CREPE."

Filed October 23, 1905. Serial No. 13,878. PUBLISHED FEBRUARY 27, 1906.

51,872. MALT EXTRACT. OTTO HUBER BREWERY, Brooklyn, N. Y.

The hyphenated letters "O-H."

Filed December 2, 1905. Serial No. 15,144. PUBLISHED FEBRUARY 17, 1906.

51,873. LEATHER BOOTS, SHOES, AND SLIPPERS. PARKER, HOLMES & COMPANY, Boston, Mass.

The head of a lion holding in its mouth by the staff a flag on which is displayed the hyphenated word "SHU-KING."

Filed August 14, 1905. Serial No. 11,647. PUBLISHED FEBRUARY 6, 1906.

51,874. CURED FISH, (DRIED, SMOKED, OR SALTED.) GEORGE H. PERKINS, Gloucester, Mass.

An anchor, whether expressed in word or pictorially.

Filed July 28, 1905. Serial No. 10,934. PUBLISHED FEBRUARY 27, 1906.

51,875. SHEETINGS, DRILLS, AND DUCKS. STARK MILLS, Manchester, N. H.

The representation of a greyhound standing erect and in profile.

Filed May 27, 1905. Serial No. 6,812. PUBLISHED FEBRUARY 27, 1906.

51,876. WHISKY. THE UNION DISTILLING CO., Cincinnati, Ohio.

The words "SOUTHERN BOUQUET," associated with the profile bust picture of a lady in evening dress and carrying a bouquet.

Filed April 3, 1905. Serial No. 260. PUBLISHED FEBRUARY 27, 1906.

51,877. WHISKY. EDWARD WEIL, Houston, Tex.

The words "CLEAR ROCK."

Filed January 20, 1906. Serial No. 16,335. PUBLISHED FEBRUARY 27, 1906.

51,878. WHISKY. S. N. WEIL & Co., Cincinnati, Ohio.

The word "STERLING" and a picture showing a pair of scales by a pyramid of bars ready for weighing, with two filled bags at the foot of the scales. Used ten years.

Filed April 20, 1905. Serial No. 2,402. PUBLISHED FEBRUARY 27, 1906.

51,879. SMOKING-TOBACCO. BRITTAIN TOBACCO WORKS, Columbia, Tenn.

The words "WILD CAT." Used ten years.

Filed January 18, 1906. Serial No. 16,284. PUBLISHED FEBRUARY 27, 1906.

51,880. MEDICATED OILS. DAVID M. BYE, Indianapolis, Ind.

The phrase "COMBINATION OIL CURE." Used ten years.

Filed September 11, 1905. Serial No. 12,451. PUBLISHED FEBRUARY 27, 1906.

51,881. LAWN-MOWERS. ADELBERT B. CASE, Springfield, Mass.

The word "MONEYBACK."

Filed November 4, 1905. Serial No. 14,331. PUBLISHED FEBRUARY 27, 1906.

51,882. SOAP. THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr.

The letter "C" inclosed in a diamond figure, the word "DIAMOND," and the letter "C" inclosed in quotation-marks.

Filed November 7, 1905. Serial No. 14,395. PUBLISHED FEBRUARY 27, 1906.

51,883. MATTRESSES. DUBUQUE MATTRESS FACTORY, Dubuque, Iowa.

A representation of a Greek cross having a circular figure superposed thereon and inclosed in a rectangular border.

Filed July 6, 1905. Serial No. 9,854. PUBLISHED FEBRUARY 27, 1906.

51,884. EYEGLASSES, SPECTACLES, AND PARTS AND REPAIRS AND CASES THEREFOR. E. KIRSTEIN SONS CO., Rochester, N. Y.

The word "SHUR-ON."

Filed January 26, 1906. Serial No. 16,542. PUBLISHED FEBRUARY 27, 1906.

51,885. ANALGESICS. EL ZERNAC CO., New York, N. Y.

The words "CACHET GAU."

Filed September 5, 1905. Serial No. 12,217. PUBLISHED FEBRUARY 27, 1906.

51,886. COTTON RUBBER-LINED HOSE. EUREKA FIRE HOSE CO., Jersey City, N. J.

The word "PIONEER."

Filed April 20, 1905. Serial No. 2,401. PUBLISHED FEBRUARY 27, 1906.

51,887. SENSITIZING DYESTUFFS. FARBENFABRIKEN OF ELBERFELD CO., New York, N. Y.

The word "HOMOCOL."

Filed December 18, 1905. Serial No. 15,502. PUBLISHED FEBRUARY 27, 1906.

51,888. LIQUID PAINT. GEO. D. WETHERILL & CO., INC., Philadelphia, Pa.

The name "REVERE" and the pictorial representation of the patriot Paul Revere mounted upon a horse and depicted in his famous ride, within a circular border, in the foreground of a minor scene comprising houses, there being also in the background the representation of an old church and church-tower.

Filed January 23, 1906. Serial No. 16,434. PUBLISHED FEBRUARY 27, 1906.

51,889. VARNISHES AND VARNISH-STAINS. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio.

The representation of two female figures in Japanese costume, one standing and one sitting in the foreground, each of whom holds a fan in her right hand. A screen near said figures bears the words "WEARS LIKE IRON." The background shows a sheet of water and some trees in the distance upon the left, while a wall cuts off the view upon the right.

Filed January 23, 1906. Serial No. 16,425. PUBLISHED FEBRUARY 27, 1906.

51,890. MOUTH-HARMONICAS. FIRM OF M. HOHNER, New York, N. Y.

The words "THE CHIMEWOOD."

Filed January 25, 1906. Serial No. 16,512. PUBLISHED FEBRUARY 27, 1906.

51,891. SUSPENSORY BANDAGES. J. ELLWOOD LEE COMPANY, Conshohocken, Pa.

The letters "J. P." Used ten years.

Filed February 2, 1906. Serial No. 16,688. PUBLISHED FEBRUARY 27, 1906.

51,892. FOUNDRY FACINGS OR BLACKING. THE J. S. MCCORMICK CO., Pittsburg, Pa.

The word "AJAX."

Filed November 9, 1905. Serial No. 14,436. PUBLISHED FEBRUARY 27, 1906.

51,893. SOFT AND STIFF FELT HATS AND CAPS. JOHN B. STETSON COMPANY, Philadelphia, Pa.

The words "THE BOSS RAW EDGE" arranged on the representation of a scroll.

Filed August 15, 1905. Serial No. 11,665. PUBLISHED FEBRUARY 27, 1906.

51,894. RAZOR-STROPS. ANDREW J. JORDAN, St. Louis, Mo.

The words "OLD FAITHFUL."

Filed January 23, 1906. Serial No. 16,435. PUBLISHED FEBRUARY 27, 1906.

51,895. SCISSORS AND SHEARS. KEITH, SIMMONS & CO., Nashville, Tenn.

A symbol consisting of a disk from which extend at equidistant points four bell-shaped figures with concave sides and convex

bases and intercepting two concentric rings, equal arcs or segments of which appear in the spaces between said figures, said symbol appearing between the words "KEEN" and "EDGE."

Filed January 29, 1906. Serial No. 16,589. PUBLISHED FEBRUARY 27 1906.

51,896. INDIA-RUBBER STAIR-NOSINGS. KNAPP RUBBER BINDING CO., New York, N. Y.

The representation of a flight of three steps the treads of which are protected by coverings and the edges of the treads of which are protected by nosings, the nosings of the two upper steps being shown loose at one end. At the side of the flight of steps is shown a piece of nosing upon which appears the arbitrary and fanciful word "ANTISLIPPIN," and upon the rise of the upper step appear the words and abbreviations "KNAPP RUBBER BINDING CO., N. Y.," the whole inclosed within a square border interlocked at each corner.

Filed January 25, 1906. Serial No. 16,498. PUBLISHED FEBRUARY 27, 1906.

51,897. INDIA-RUBBER STAIR-NOSINGS. KNAPP RUBBER BINDING CO., New York, N. Y.

The representation of two flights of steps meeting in a common landing, starting toward which upon the lowermost step of one flight is shown a man and leaving which on the lowermost step of the other flight is shown a woman, and upon which appear the words and abbreviations "KNAPP RUBBER BINDING CO. N. Y.," the edges of the treads of the steps being protected by nosings. Upon the side of the steps is shown a piece of nosing upon which appears the arbitrary and fanciful word "ANTISLIPPIN."

Filed January 25, 1906. Serial No. 16,499. PUBLISHED FEBRUARY 27, 1906.

51,898. MEDICAL COMPOUND TO BE USED AS AN ASTRINGENT. KNOLL & CO., Ludwigshafen-on-the-Rhine, Germany.

The arbitrarily-selected word "TANNALBIN."

Filed July 14, 1905. Serial No. 10,291. PUBLISHED FEBRUARY 27, 1906.

51,899. MEDICAL COMPOUND TO BE USED AS A HEMOSTATIC. KNOLL & CO., Ludwigshafen-on-the-Rhine, Germany.

The arbitrarily-selected word-symbol "STYPTOL."

Filed July 14, 1905. Serial No. 10,292. PUBLISHED FEBRUARY 27, 1906.

51,900. OAK-TANNED COWHIDE, HARNESS-LEATHER, SKIRTING, AND CUT STOCK. KULLMAN, SALZ & COMPANY, San Francisco, Cal.

The words "MONARCH OF THE OAKS."

Filed June 14, 1905. Serial No. 8,140. PUBLISHED FEBRUARY 27, 1906.

51,901. BROOMS. LEE BROOM & DUSTER COMPANY, Lincoln, Nebr.

The word "FYNELYTE."

Filed January 25, 1906. Serial No. 16,505. PUBLISHED FEBRUARY 27, 1906.

51,902. CLEANING AND POLISHING POWDER. LEXINGTON MANUFACTURING CO., Baltimore, Md.

A conventional bust representation of the fictitious character Uncle Sam, above which is the word "UNCLE" and below the word "SAM," the letters of these words being studded with stars. Upon the left of said figure are the words "THE GREAT," and upon the right appears the word "CLEANSER."

Filed December 19, 1905. Serial No. 15,512. PUBLISHED FEBRUARY 27, 1906.

51,903. PROPRIETARY MEDICINE. CHARLES A. MAYNARD, Springfield, Mass.

The words "GOLDEN TABLETS."

Filed September 5, 1905. Serial No. 12,249. PUBLISHED FEBRUARY 27, 1906.

51,904. WHISKY. THE MOUNTAIN DISTG. CO., Cincinnati, Ohio.

The words "OLD RIPPLE."

Filed January 23, 1906. Serial No. 16,432. PUBLISHED FEBRUARY 27, 1906.

51,905. MILK-CANS. OAKES & BURGER, Cattaraugus, N. Y.

The words "EMPIRE STATE." Used ten years.

Filed November 25, 1905. Serial No. 14,994. PUBLISHED FEBRUARY 27, 1906.

51,906. RUGS, ART SQUARES, AND MATTING MADE OF GRASS TWINE. OSHKOSH GRASS MATTING CO., Oshkosh, Wis.

The representation of a triangle inclosed within a circular border, in connection with the word "DELTOX" arranged across the lower portion or base of the triangle.

Filed April 28, 1905. Serial No. 3,445. PUBLISHED FEBRUARY 27, 1906.

51,907. PERFUMED POWDERS. EDDY PALMER, New York, N. Y.

The word "PALMER." Used ten years.

Filed December 27, 1905. Serial No. 15,675. PUBLISHED FEBRUARY 27, 1906.

51,908. INTERNAL REMEDY FOR ASTHMA, CATARRH, AND SIMILAR DISEASES. LORENZO D. QUINN, Athens, Ala.

The word "ROOTO."

Filed June 30, 1905. Serial No. 9,539. PUBLISHED FEBRUARY 27, 1906.

51,909. PAPER FOR WRAPPING FOOD PRODUCTS. GEORGE STARER, New York, N. Y.

The word "KOSMOS."

Filed January 26, 1906. Serial No. 16,538. PUPLISHED FEBRUARY 27, 1906.

51,910. BATH-TUBS AND SINKS. STANDARD SANITARY MFG. CO., Pittsburg, Pa.

The letters or initials "S M Co." Used ten years.

Filed October 18, 1905. Serial No. 13,721. PUBLISHED FEBRUARY 27, 1906.

51,911. COMBS. DR. HEINRICH TRAUN & SÖHNE, Hamburg, Germany.

The word "VICTORIA."

Filed July 21, 1905. Serial No. 10,677. PUBLISHED FEBRUARY 27, 1906.

51,912. KERSEYS AND CASSIMERES. W. J. DICKEY & SONS, INCORPORATED, Baltimore, Md.

The word "SHEEP." Used ten years.

Filed April 26, 1905. Serial No. 3,139. PUBLISHED FEBRUARY 27, 1906.

51,913. WHISKY. EDWARD WEIL, Houston, Tex.

The words "TIDAL WAVE."

Filed January 20, 1906. Serial No. 16,334. PUBLISHED FEBRUARY 27, 1906.

51,914. TOOTHPICKS. THE WEIS MFG. CO., Toledo, Ohio.

The words "EASY PICKIN."

Filed December 20, 1905. Serial No. 15,540. PUBLISHED FEBRUARY 27, 1906.

51,915. CARAMELS AND CANDIES. AMERICAN CARAMEL CO., Lancaster, Philadelphia, and York, Pa.

The representation of a keystone with a key appearing thereupon, associated with the words "KEYSTONE CONFECTIONS," all inclosed in a rectangular border.

Filed May 25, 1905. Serial No. 6,553. PUBLISHED JANUARY 30, 1906.

51,916. ANTISEPTICS FOR INTERNAL AND EXTERNAL USE. THORWALD ANDA, Chicago, Ill.

The word "ECHINOL."

Filed October 12, 1905. Serial No. 13,525. PUBLISHED FEBRUARY 27, 1906.

51,917. SOAP. ANTI-GRIME SOAP COMPANY, Elmira, N. Y.

The arbitrary and fanciful word "ANTI-GRIME."

Filed January 19, 1906. Serial No. 16,315. PUBLISHED FEBRUARY 27, 1906.

51,918. CASTOR-OIL. THE BAKER CASTOR OIL COMPANY, New York, N. Y.

The arbitrary letter-symbol "A A."

Filed June 1, 1905. Serial No. 7,164. PUBLISHED FEBRUARY 27, 1906.

51,919. MEDICINE EMPLOYED AS A TONIC, APPETIZER, AND STRENGTHENER. JAMES F. BALLARD, St. Louis, Mo.

The arbitrary letter "P" and the word "PURITY" below the same.

Filed June 26, 1905. Serial No. 9,121. PUBLISHED FEBRUARY 27, 1906.

51,920. LINIMENT. EDWARD F. BAUTZ, Pittsburg, Pa.
The word "FIRE."
Filed October 16, 1905. Serial No. 13,949. PUBLISHED FEBRUARY 27, 1906.

51,921. EXTERNAL AND INTERNAL REMEDIES. MARION B. BAXTER, Seattle, Wash.
The letters "M. H. O."
Filed June 6, 1905. Serial No. 7,552. PUBLISHED FEBRUARY 27, 1906.

51,922. CERTAIN NAMED MEDICINES. BRISTOL-MYERS COMPANY, Brooklyn, N. Y.
The words "SAL HEPATICA."
Filed May 25, 1905. Serial No. 6,555. PUBLISHED FEBRUARY 27, 1906.

51,923. TEA. CHARLES & Co., New York, N. Y.
The words "MISSION GARDEN."
Filed January 18, 1906. Serial No. 16,294. PUBLISHED FEBRUARY 27, 1906.

51,924. HOT-AIR HEATING-FURNACES. CHARLES SMITH COMPANY, Chicago, Ill.
The words "NEW HERO."
Filed February 2, 1906. Serial No. 16,697. PUBLISHED FEBRUARY 27, 1906.

51,925. INTERNAL AND EXTERNAL REMEDY. D. RANSOM, SON AND COMPANY, Buffalo, N. Y.
The abbreviation, initials, and words "DR. J. R. MILLER'S UNIVERSAL MAGNETIC BALM" inclosed within a border consisting of two concentric circles, the inner one being comparatively heavy, said circular border having ornamental corners, which give a substantially square outline thereto. Between the abbreviation, initials, and words "DR. J. R. MILLER'S" and "UNIVERSAL" an ornamental design or scroll appears, and curved lines or scrolls appear above and below the word "MAGNETIC," the whole being inclosed within a rectangular outline.
Filed May 16, 1905. Serial No. 5,862. PUBLISHED FEBRUARY 27, 1906.

51,926. DRESSING FOR BOOTS AND SHOES. F. H. YOUNG COMPANY, Boston, Mass.
The word "EMPRESS."
Filed January 18, 1906. Serial No. 16,278. PUBLISHED FEBRUARY 27, 1906.

51,927. CLEANING COMPOUNDS FOR DUCK AND CANVAS. F. H. YOUNG COMPANY, Boston, Mass.
The word "WHITEINE."
Filed January 18, 1906 Serial No. 16,280. PUBLISHED FEBRUARY 27, 1906.

51,928. MONTHLY MAGAZINES. GAS POWER PUBLISHING. Co., St. Joseph, Mich.
The words "GAS POWER."
Filed January 19, 1906. Serial No. 16,313. PUBLISHED FEBRUARY 27, 1906.

51,929. WHISKY. GEO. BENZ & SONS, St. Paul, Minn.
The word "OLDAYS."
Filed January 23, 1906. Serial No. 16,429. PUBLISHED FEBRUARY 27, 1906.

51,930. NICKEL SALTS. THE HANSON & VAN WINKLE Co., Newark, N. J.; New York, N. Y., and Chicago, Ill.
The word "CAPSTONE."
Filed December 15, 1905. Serial No. 15,448. PUBLISHED FEBRUARY 27, 1906.

51,931. VEGETABLE BITTERS. ELEANOR S. HAY and EDWARD A. HAY, Portland, Me., executors of Henry H. Hay, deceased.
The letters "L F."
Filed May 31, 1905. Serial No. 7,080. PUBLISHED FEBRUARY 27, 1906.

51,932. MEDICINAL PREPARATION. FERDINAND HERB, Superior, Wis.
The compound word "SWEAT-O-No."
Filed May 23, 1905. Serial No. 6,410. PUBLISHED FEBRUARY 27, 1906.

51,933. SEWING-MACHINES AND SEWING-MACHINE PARTS. HOUSEHOLD SEWING MACHINE Co., Providence, R. I.
The word "HOUSEHOLD."
Filed July 18, 1905. Serial No. 10,516. PUBLISHED FEBRUARY 27, 1906.

51,934. DRY PREPARATION FOR MAKING A NON-INTOXICATING BEVERAGE. J. C. ENO, LIMITED, London, England.
The arbitrary words "FRUIT SALT" in large type arranged in the center of an oblong panel having a border representing leaves and fruit of the vine clinging to a framework composed of two parallel branches traversing the edge of the label on each side and fastened at each corner. Above the words "FRUIT SALT" is the name "ENO'S" in large type, and beneath the words "FRUIT SALT" and occupying the rest of the space in smaller type are the words "FRUIT SALINE, OR FRUIT POWDER," beneath which are two parallel lines. At the foot of the label, in the center of the bottom border, upon a disk are the words "TRUTH AND LIGHT," and on either side, between the branches forming the bottom border, are the words "HATCHAM FRUIT SALT WORKS," and below the disk is the word "LONDON."
Filed September 25, 1905. Serial No. 12,967. PUBLISHED FEBRUARY 27, 1906.

51,935. WHISKY. JOHN C. WELLER Co., Louisville, Ky.
The letters "J. C. W." above the representation of a well, on the wall of which appear the letters "E R." Above the well is a windlass with rope attached running down into the well.
Filed January 23, 1906. Serial No. 16,422. PUBLISHED FEBRUARY 27, 1906.

51,936. POISON FOR ANIMALS AND INSECTS. DAVID J. KAUFMANN, Perth Amboy, N. J.
The word "KILRATO."
Filed September 19, 1905. Serial No. 12,783. PUBLISHED FEBRUARY 27, 1906.

51,937. INDIA-RUBBER BINDING. KNAPP RUBBER BINDING Co., New York, N. Y.
The words "KNAPP RUBBER BINDING Co." Used ten years.
Filed January 19, 1906. Serial No. 16,306. PUBLISHED FEBRUARY 27, 1906.

51,938. INDIA-RUBBER BINDING. KNAPP RUBBER BINDING Co., New York, N. Y.
The representation of a frame upon the upper cross-bars of which is supported a piece of rubber binding and between said cross-bars of which is secured a piece of matting, the upper edge of which is bound and the lower edge of which is ragged and upon which appear the words "BIND THE RAGGED EDGE." Upon the front upper cross-bar appear the words and abbreviations "KNAPP RUBBER BINDING Co., N. Y."
Filed January 19, 1906. Serial No. 16,307. PUBLISHED FEBRUARY 27, 1906.

51,939. REMEDIES FOR CERTAIN NAMED DISEASES. MAX LICHTENSTEIN, Jerome, Ariz. Ter.
The word "HUSTLER."
Filed June 24, 1905. Serial No. 8,987. PUBLISHED FEBRUARY 27, 1906.

51,940. OINTMENT. L. C. NICKERSON, Denver, Colo.
The word "ORGULATUM."
Filed September 30, 1905. Serial No. 13,179. PUBLISHED FEBRUARY 27, 1906.

51,941. COMBS. JOSEPH P. NOYES & COMPANY, Binghamton, N. Y.
The word "STAG."
Filed December 11, 1905. Serial No. 15,323. PUBLISHED FEBRUARY 27, 1906.

51,942. MEDICAL COMPOUNDS. THE OWL DRUG Co., San Francisco, Cal.
A picture representing the head and body of an owl standing upright with arms and hands holding a gun perpendicularly and directly in front of the figure, with skull-cap on left side of head, the picture being used in combination with the words "CAPTAIN JOHN'S ORDERLEYS" printed in Roman letters, and both words and figure being inside of a rectangle.
Filed October 12, 1905. Serial No. 13,527. PUBLISHED FEBRUARY 27, 1906.

51,943. PERFUMES, EXTRACTS, ESSENCES, COLOGNES, AND TOILET WATERS. EDDY PALMER, New York, N. Y.
The word "PALMER." Used ten years.
Filed December 27, 1905. Serial No. 15,676. PUBLISHED FEBRUARY 27, 1906.

51,944. LOTIONS FOR AFFECTIONS OF THE SKIN. EDDY PALMER, New York, N. Y.

The word "PALMER'S." Used ten years.

Filed December 27, 1905. Serial No. 15,677. PUBLISHED FEBRUARY 27, 1906.

51,945. PLAIN BRAIDS. A. H. RICE & Co., Pittsfield, Mass.

The representation of a Maltese cross, a circle upon the cross, and a square within the circle.

Filed June 2, 1905. Serial No. 7,261. PUBLISHED FEBRUARY 13, 1906.

51,946. SPIRITS OF TURPENTINE. STANDARD OIL COMPANY, Louisville, Ky.

Two concentric circles, in the upper part of the outer concentric circle being the words "PINE GUM BRAND." Inclosed in the inner concentric circle is the representation of a woodland scene, in the direct foreground being a tree, near the base of which appears a pail into which sap is running from the bark of the tree.

Filed January 18, 1906. Serial No. 16,287. PUBLISHED FEBRUARY 27, 1906.

51,947. TONIC. CARLETON F. TAYLOR, Hot Springs, Ark.

The word "LIVONA."

Filed October 17, 1905. Serial No. 13,699. PUBLISHED FEBRUARY 27, 1906.

51,948. POWDER FOR TOILET AND NURSERY PURPOSES. JOSEPH TETLOW, Philadelphia, Pa.

The title "SWAN DOWN."

Filed October 13, 1905. Serial No. 13,566. PUBLISHED FEBRUARY 27, 1906.

51,949. FACE-POWDER. JOSEPH TETLOW, Philadelphia, Pa.

The word "GOSSAMER."

Filed October 13, 1905. Serial No. 13,567. PUBLISHED FEBRUARY 27, 1906.

51,950. OINTMENT FOR HUMAN USE. TRENCH'S REMEDIES LTD., Dublin, Ireland.

Two crossed letters "T" inclosed in a circle or ring having a somewhat heart-shaped interior outline, beneath the letters and inside the circle or ring being a heart-shaped spot or dot.

Filed June 26, 1905. Serial No. 9,072. PUBLISHED FEBRUARY 27, 1906.

51,951. MEDICAL PREPARATIONS FOR EXTERNAL AND INTERNAL USE BY MAN TRENCH'S REMEDIES LTD., Dublin, Ireland.

Two crossed letters "T" having beneath them a pentagonal stop or spot. These are inclosed in an unequal-sided hexagonal border having on the outside at the meeting angles pentagonal devices connected by a border-line of small crossed letters "T" frequently repeated. On the top side of the hexagon is a device composed of four pentagonal bodies arranged in the form of a cross.

Filed November 16, 1905. Serial No. 14,733. PUBLISHED FEBRUARY 27, 1906.

51,952. WHISKY. EDWARD WEIL, Houston, Tex.

The words "SEA GULL."

Filed January 20, 1906. Serial No. 16,333. PUBLISHED FEBRUARY 27, 1906.

51,953. BLOOD AND LIVER PURIFIERS. ASCHENBACH & MILLER, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated, a Corporation of Pennsylvania.

The words "MEXICAN BLOOD AND LIVER PURIFIER." Used ten years.

Filed July 10, 1905. Serial No. 10,004. PUBLISHED FEBRUARY 20, 1906

51,954. PAINTS AND COLORS. C. A. WILLEY COMPANY, New York, N. Y.

The word "WILLEY'S." Used ten years.

Filed November 20, 1905. Serial No. 14,850. PUBLISHED DECEMBER 19, 1905.

51,955. ELASTIC TUBING ADAPTED FOR USE AS HOSE OR PACKING. NEW JERSEY CAR SPRING & RUBBER CO., Jersey City, N. J.

The word "GIBRALTAR."

Filed January 25, 1906. Serial No. 16,513. PUBLISHED FEBRUARY 27, 1906.

51,956. KNIT HEAD-GEAR, INCLUDING TAMS, TOQUES, AND CAPS. STEPHENSON & Co., Woodbine, N. J., and Philadelphia, Pa.

The word "DEBUTANTE."

Filed January 20, 1906. Serial No. 16,343. PUBLISHED FEBRUARY 27, 1906

LABELS

REGISTERED APRIL 24, 1906.

12,795.—*Title:* "PORTLAND POINTERS." (For Cigars.) CALEB BRINTON, Lewiston, Idaho. Filed March 24, 1906.

12,796.—*Title:* "CHEROKEE MAID." (For Cigars.) COLE LITHOGRAPHING CO., Chicago, Ill. Filed March 29, 1906.

12,797.—*Title:* "MANHATTAN." (For Malt Extract.) PARAGON MALT EXTRACT CO., New York, N. Y. Filed March 26, 1906.

12,798.—*Title:* "PUNGENT AROMATIC GINGER ALE." (For Ginger-Ale.) WESTERN CARBONIC ACID GAS CO., San Francisco, Cal. Filed March 30, 1906.

12,799.—*Title:* "BALLANTINE." (For Beer.) THE MILWAUKEE LITHOGRAPHING COMPANY, Milwaukee, Wis. Filed March 23, 1906.

12,800.—*Title:* "PROS'T." (For Beer.) PH. KLING BREWING CO., Detroit, Mich. Filed March 26, 1906.

12,801.—*Title:* "LITHIA HOLLAND GIN." (For Gin.) LEWIS M. SMITH, Philadelphia, Pa. Filed March 27, 1906.

12,802.—*Title:* "OLD JONES VALLEY WHISKEY." (For Whisky.) BIRMINGHAM DISTILLING CO., Birmingham, Ala. Filed March 27, 1906.

12,803.—*Title:* "FOUNTAIN HEIGHTS WHISKEY." (For Whisky.) BIRMINGHAM DISTILLING CO., Birmingham, Ala. Filed March 27, 1906.

12,804.—*Title:* "100 GOOD THINGS TO EAT." (For Preserved Fruits, Vegetables, and Table Delicacies.) ERIE PRESERVING COMPANY, Brand and Buffalo, N. Y. Filed March 19, 1906.

12,805.—*Title:* "'ZENITH BRAND' METAL CLASP ENVELOPES." (For Envelops.) CHARLES J. COHEN & SON, Philadelphia, Pa. Filed March 24, 1906.

12,806.—*Title:* "THE SCOTT HIP-FORM AND BUSTLE." (For Hip-Forms.) CHARLES H. SCOTT, New York, N. Y. Filed January 19, 1906.

12,807.—*Title:* "MAZO." (For Soap.) THE MAZO MANUFACTURING COMPANY, St. Louis, Mo. Filed March 28, 1906.

12,808.—*Title:* "DR. SYLVESTER'S." (For Veterinary Preparations.) AUGUSTUS AARONS, New Orleans, La. Filed March 6, 1906.

12,809.—*Title:* "KERMER'S LITTLE CANNON BALL PILLS." (For a Liver-Pill.) THE KERMER REMEDY COMPANY, East St. Louis, Ill. Filed February 7, 1906.

12,810.—*Title:* "CELERI." (For Vegetable Tonics.) WILMANNS BROS. CO., Milwaukee, Wis. Filed March 28, 1906.

12,811.—*Title:* "B-BLY-D." (For Insecticides.) LEGGETT & BRO., New York, N. Y. Filed March 28, 1906.

12,812.—*Title:* "VERBENA HAIR TONIC." (For Hair-Tonic.) J. OTTMANN LITHOGRAPHING CO., New York, N. Y. Filed March 28, 1906.

12,813.—*Title:* "LA ROUGE CLAIRE." (For a Fluid Preparation for Beautifying the Complexion.) M. E. ST. CLAIRE RANSFORD, New York, N. Y. Filed March 29, 1906.

12,814.—*Title:* "PURITAN MASSAGE CREAM." (For Massage-Cream.) PURITAN MASSAGE CREAM CO., Philadelphia, Pa. Filed March 12, 1906.

12,815.—*Title:* "SAPOLIN GLASS FROSTING." (For Glass-Frosting.) GERSTENDORFER BROS., New York, N. Y. Filed March 28, 1906.

12,816.—*Title:* "HAVALAWN." (For Grass-Seed Mixture.) ST. LOUIS SEED COMPANY, St. Louis, Mo. Filed March 23, 1906.

12,817.—*Title:* "THE NIGHTINGALE." (For Talking-Machine Records.) THE ENGLEWOOD CO. CONSOLID FACTORIES, Chicago, Ill. Filed March 30, 1906.

12,818.—*Title:* "CAVENDISH BRIDGE SCORE." (For Bridge Scoring Devices.) BRENTANOS, New York, N. Y. Filed March 30, 1906.

PRINTS

REGISTERED APRIL 25, 1906.

1,625.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed March 27, 1906.

1,626.—*Title:* "SOME-UP-DATE MOTHER GOOSE." (For Shoes.) V. SCHOENECKER BOOT & SHOE COMPANY, Milwaukee, Wis. Filed March 26, 1906.

1,627.—*Title:* "ASBESTOL." (For Gloves and Mittens.) THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill. Filed March 29, 1906.

1,628.—*Title:* "JUANITA." (For Flour.) THE SCOTT COUNTY MILLING CO., Sikeston and Oran, Mo. Filed February 24, 1906.

1,629.—*Title:* "THE BEST IN THE BASKET." (For Flour.) WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed March 29, 1906.

1,630.—*Title:* "THE MAIDS DILEMMA." (For Beer.) JOSEPH SCHLITZ BREWING COMPANY, Milwaukee, Wis. Filed March 31, 1906.

1,631.—*Title:* "BOG I HRVATI." (For a Liquor Made from White Corn Whisky and Brandy.) JANKO KOVAČEVIĆ, Youngstown, Ohio. Filed March 21, 1906.

1,632.—*Title:* "MOTOR CAR AND LANTERN BACKS BICYCLE PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Cincinnati, Ohio. Filed March 23, 1906.

1,633.—*Title:* "TABASCO HEATERS." (For Heaters.) KEWANEE BOILER COMPANY, Kewanee, Ill. Filed March 26, 1906.

51,944. LOTIONS FOR AFFECTIONS OF THE SKIN. EDDY PALMER, New York, N. Y.

The word "PALMER'S." Used ten years.

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12,797.—*Title:* "MANHATTAN." (For Malt Extract.) PARAGON MALT EXTRACT Co., New York, N. Y. Filed March 26, 1906.

12,798.—*Title:* "PUNGENT AROMATIC GINGER ALE." (For Ginger-Ale.) WESTERN CARBONIC ACID GAS Co., San Francisco, Cal. Filed March 30, 1906.

12,799.—*Title:* "BALLANTINE." (For Beer.) THE MILWAUKEE LITHOGRAPHING COMPANY, Milwaukee, Wis. Filed March 23, 1906.

12,800.—*Title:* "PROS'T." (For Beer.) PH. KLING BREWING Co., Detroit, Mich. Filed March 26, 1906.

12,801.—*Title:* "LITHIA HOLLAND GIN." (For Gin.) LEWIS M. SMITH, Philadelphia, Pa. Filed March 27, 1906.

12,802.—*Title:* "OLD JONES VALLEY WHISKEY." (For Whisky.) BIRMINGHAM DISTILLING Co., Birmingham, Ala. Filed March 27, 1906.

12,803.—*Title:* "FOUNTAIN HEIGHTS WHISKEY." (For Whisky.) BIRMINGHAM DISTILLING Co., Birmingham, Ala. Filed March 27, 1906.

12,804.—*Title:* "100 GOOD THINGS TO EAT." (For Preserved Fruits, Vegetables, and Table Delicacies.) ERIE PRESERVING COMPANY, Brand and Buffalo, N. Y. Filed March 19, 1906.

12,805.—*Title:* "'ZENITH BRAND' METAL CLASP ENVELOPES." (For Envelops.) CHARLES J. COHEN & SON, Philadelphia, Pa. Filed March 24, 1906.

12,806.—*Title:* "THE SCOTT HIP-FORM AND BUSTLE." (For Hip-Forms.) CHARLES H. SCOTT, New York, N. Y. Filed January 19, 1906.

12,807.—*Title:* "MAZO." (For Soap.) THE MAZO MANUFACTURING COMPANY, St. Louis, Mo. Filed March 28, 1906.

12,808.—*Title:* "DR. SYLVESTER'S." (For Veterinary Preparations.) AUGUSTUS AARONS, New Orleans, La. Filed March 6, 1906.

12,809.—*Title:* "KERMER'S LITTLE CANNON BALL PILLS." (For a Liver-Pill.) THE KERMER REMEDY COMPANY, East St. Louis, Ill. Filed February 7, 1906.

12,810.—*Title:* "CELERI." (For Vegetable Tonics.) WILMANNS BROS. Co., Milwaukee, Wis. Filed March 28, 1906.

12,811.—*Title:* "B-BLY-D." (For Insecticides.) LEGGETT & BRO., New York, N. Y. Filed March 28, 1906.

12,812.—*Title:* "VERBENA HAIR TONIC." (For Hair-Tonic.) J. OTTMANN LITHOGRAPHING Co., New York, N. Y. Filed March 28, 1906.

12,813.—*Title:* "LA ROUGE CLAIRE." (For a Fluid Preparation for Beautifying the Complexion.) M. E. ST. CLAIRE RANSFORD, New York, N. Y. Filed March 29, 1906.

12,814.—*Title:* "PURITAN MASSAGE CREAM." (For Massage-Cream.) PURITAN MASSAGE CREAM Co., Philadelphia, Pa. Filed March 12, 1906.

12,815.—*Title:* "SAPOLIN GLASS FROSTING." (For Glass-Frosting.) GERSTENDORFER BROS., New York, N. Y. Filed March 28, 1906.

12,816.—*Title:* "HAVALAWN." (For Grass-Seed Mixture.) ST. LOUIS SEED COMPANY, St. Louis, Mo. Filed March 23, 1906.

12,817.—*Title:* "THE NIGHTINGALE." (For Talking-Machine Records.) THE ENGLEWOOD CO. CONSOLID FACTORIES, Chicago, Ill. Filed March 30, 1906.

12,818.—*Title:* "CAVENDISH BRIDGE SCORE." (For Bridge Scoring Devices.) BRENTANOS, New York, N. Y. Filed March 30, 1906.

PRINTS

REGISTERED APRIL 25, 1906.

1,625.—*Title:* "MEN'S APPAREL." (For Men's Apparel.) W. C. BOTH, Chicago, Ill. Filed March 27, 1906.

1,626.—*Title:* "SOME-UP-DATE MOTHER GOOSE." (For Shoes.) V. SCHOENECKER BOOT & SHOE COMPANY, Milwaukee, Wis. Filed March 26, 1906.

1,627.—*Title:* "ASBESTOL." (For Gloves and Mittens.) THE JOSEPH N. EISENDRATH COMPANY, Chicago, Ill. Filed March 29, 1906.

1,628.—*Title:* "JUANITA." (For Flour.) THE SCOTT COUNTY MILLING Co., Sikeston and Oran, Mo. Filed February 24, 1906.

1,629.—*Title:* "THE BEST IN THE BASKET." (For Flour.) WASHBURN-CROSBY COMPANY, Minneapolis, Minn. Filed March 29, 1906.

1,630.—*Title:* "THE MAIDS DILEMMA." (For Beer.) JOSEPH SCHLITZ BREWING COMPANY, Milwaukee, Wis. Filed March 31, 1906.

1,631.—*Title:* "BOG I HRVATI." (For a Liquor Made from White Corn Whisky and Brandy.) JANKO KOVAČEVIĆ, Youngstown, Ohio. Filed March 21, 1906.

1,632.—*Title:* "MOTOR CAR AND LANTERN BACKS BICYCLE PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Cincinnati, Ohio. Filed March 23, 1906.

1,633.—*Title:* "TABASCO HEATERS." (For Heaters.) KEWANEE BOILER COMPANY, Kewanee, Ill. Filed March 26, 1906.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BRYANT, WOLCOTT, AND DAVIDSON.

Decided January 20, 1906.

1. INTERFERENCE—REFUSAL TO MAKE SUGGESTED CLAIMS—PATENTABILITY OF CLAIMS NOT REVIEWED.

Where a party refuses to make claims suggested for interference purposes, his request that the patentability of the claims be reviewed or that proceedings be instituted for the purpose of permitting him to show that the invention has gone into use and that there are intervening rights to the allowance of the claims in a reissue application will be denied.

2. SAME—SAME—PARTY ENTITLED TO NO RECOGNITION.

Where a party refuses to make claims suggested for interference purposes, *Held* that he stands in the same position as any other member of the public and is not entitled to recognition as a party in interest opposing the allowance of the claims or to any information of the case in which they are allowed.

ON PETITION.

LUBRICATOR.

Messrs. E. S. Wheeler & Co. and *Messrs. Dodge & Sons* for the petitioners.

ALLEN, *Commissioner:*

The petitioners call attention to the fact that certain claims have been suggested to them for the purpose of interference, and it appears that thay do not regard those claims as patentable and do not wish to make them. By the present petition they seek to prevent the allowance of the claims to the other party to the proposed interference. The petition therefore amounts to a protest against the allowance of a patent to any one including the claims.

It appears from the papers that the petitioners do not know who has made the suggested claims and secured their allowance, but suppose it to be a party who was previously involved in interference with them. They further suppose that the claims were made in a reissue application and were allowed by the Examiners-in-Chief.

It is urged by them that the suggested claims are substantially the same as claims held unpatentable in the interference, and it is asked that the decision allowing the present claims be reviewed and reversed. It is asked as an alternative that proceedings be instituted analogous to public-use proceedings, in which they shall be permitted to present proofs showing that the invention has gone into use and that there are intervening rights which should prevent the allowance of the claims in a reissue application.

So long as the petitioners do not make the claims they are entitled to no information as to the case in which they are made and allowed or as to the proceedings therein. They stand in the same position as any other member of the public and are not entitled to recognition as a party in interest opposed to the allowance of the claims. While this Office might accept their assistance in procuring evidence of intervening rights in a case where it is regarded as necessary to investigate that matter, it would do so only in pursuance of its own investigation and not because of supposed rights of the petitioners.

The records relating to the matter referred to in the petition have been examined sufficiently to make it appear that there is no occasion for reviewing the favorable decision upon the question of patentability or for investigating the question of intervening rights.

The petition is dismissed.

DUNBAR *v.* SCHELLENGER.

Decided January 22, 1906.

1. INTERFERENCE—INVENTION MADE BY THIRD PARTY NO GROUND FOR REOPENING INTERFERENCE.

Where it is alleged that one of the parties to an interference testified in another proceeding that the invention was disclosed to him by a third party, *Held* that if true it cannot change the award of priority so long as he was in possession of the invention before his opponent and that although it might lead to the rejection of his claims if final judgment is in his favor it furnishes no ground for reopening the interference for the admission of further evidence.

2. INTERFERENCE—MOTION TO REOPEN—DECISION OF EXAMINER OF INTERFERENCES NOT DISTURBED ON INTERLOCUTORY APPEAL.

Where the Examiner of Interferences denied a motion to reopen the interference for the purpose of introducing testimony given by one of the parties as a witness in another proceeding and which, it is claimed, tends to discredit his testimony in the present interference, *Held* that in the absence of a showing of an abuse of discretion by the Examiner of Interferences his decision will not be disturbed on interlocutory appeal; but should it appear on consideration of the entire record on appeal that the decision on priority would be changed the case may be reopened to admit the said testimony.

APPEAL on motion.

TELEPHONE SYSTEM.

Messrs. Jones & Addington and *Mr. A. L. Ames* for Dunbar.

Mr. Charles A. Brown and *Mr. Henry A. Seymour* for Schellenger.

ALLEN, *Commissioner:*

This is an appeal by Dunbar from the decision of the Examiner of Interferences denying his motion to reopen the above-entitled interference for the admission of further evidence.

It appears that testimony was taken, and in view thereof judgment was entered in favor of Schellenger. Dunbar

filed an appeal from that decision and thereafter filed his motion to reopen in view of newly-discovered evidence. The new evidence is said to consist of testimony given by Schellenger as a witness in another interference after the date of the decision in this case. That testimony is to the effect that a certain invention was disclosed to Schellenger by a party named Clausen at a date prior to that alleged by Schellenger for his invention in the present case. It is said that the invention described as having been disclosed by Clausen embodies some of the counts of the present issue.

Dunbar contends that he should be permitted to offer that deposition in evidence for two reasons:

First. It consists of an admission against interest and is practically a disclaimer by Schellenger of those counts of the issue included in the alleged disclosure by Clausen.

Second. It discredits Schellenger, since it is contrary to the allegations made by him in the present case.

The first ground clearly has no force. If Schellenger was in possession of the invention before Dunbar, as found by the Examiner of Interferences, it is very clear that Dunbar cannot be adjudged the prior inventor. (*Foster* v. *Antisdel*, 88 O. G., 1527; *Prindle* v. *Brown*, 112 O. G., 957.)

It makes no difference that the evidence that Schellenger is not an original inventor consists of his own admissions and not the testimony of other witnesses. The fact, however proved, cannot change the award of priority, although it might lead to the rejection of the claims in Schellenger's case even if the final judgment of priority is in his favor.

The newly-discovered evidence is to be admitted, if at all, only because of its tendency to discredit Schellenger, who has testified in this case. On behalf of Schellenger it is contended that the evidence would not discredit Schellenger even if admitted, and it was held by the Examiner of Interferences that even if it did discredit Schellenger the decision upon the question of priority would not be changed or affected. He regards the testimony of other witnesses as sufficient to prove possession by him of the invention prior to Dunbar's date of invention. It is to be noted that the inventor's testimony is given little weight in any case and is accepted only where corroborated, and it is said that there are several corroborating witnesses in this case. Neither Schellenger's original testimony in this case nor the deposition subsequently given in the other interference is contradictory of the testimony of those witnesses. In both of his depositions Schellenger claims to have been in possession of the invention prior to the date alleged by his corroborating witnesses. No one, therefore, could be discredited by the testimony save Schellenger.

It does not appear that there was any abuse of discretion by the Examiner of Interferences in refusing to reopen the case. If it should appear upon consideration of the entire record upon appeal that the decision upon the question of priority would be changed by evidence that Schellenger's testimony is not entitled to full faith and credit, the case may be reopened for further testimony. The Examiner of Interferences, who has considered the entire record, is of the opinion that such reopening is not justified, and no good reason is seen for disturbing his decision upon interlocutory appeal.

The decision of the Examiner of Interferences is affirmed.

MARCONI *v.* SHOEMAKER *v.* FESSENDEN.

Decided January 30, 1906.

1. TESTIMONY—EXCLUSION—CROSS-EXAMINATION CONTAINING MATTER NOT REFERRED TO IN DIRECT EXAMINATION.

Where a witness upon direct examination refuses to answer practically every question regarding particular apparatus and no questions are asked thereon about the detailed structure of the apparatus or about theories, principles, operations, or results, a deposition on cross-examination setting forth such matters throughout fifty or more type-written pages is *prima facie* bad.

2. SAME—STRIKING OUT IMPROPER CROSS-EXAMINATION.

Held that a party who makes no proper cross-examination is not deprived of any right by an action striking out his improper examination.

3. SAME—CROSS-EXAMINATION LIMITED BY DIRECT EXAMINATION OF SAME WITNESS.

Held that cross-examination of a witness must be limited by the scope of the direct examination of the same witness and cannot be based upon the entire record.

4. SAME—OPINION OF THE WITNESS AS TO MATTERS TO BE DECIDED BY TRIBUNAL HEARING THE CASE.

Held that testimony which intrudes the opinion of the witness upon a question which it is the duty of the tribunal hearing the case to decide from the facts uninfluenced by conclusions thereon by others should be struck out.

5. SAME—TESTIMONY DIRECTED TO INSUFFICIENCY OF OPPONENT'S APPLICATION NOT PROPER REBUTTAL TESTIMONY.

The insufficiency of an opponent's application to sustain judgment against a party to interference proceedings is clearly part of that party's *prima facie* case. *Held*, therefore, that testimony directed to the insufficiency of the application offered as part of a party's case in rebuttal should be struck out upon proper objection and motion made.

6. SAME—SURREBUTTAL TESTIMONY—WHEN ADMISSIBLE

Surrebuttal testimony should only be accepted from a party where new matter is introduced in his opponent's proofs which is in the nature of a surprise to the party seeking surrebuttal proofs.

7. SAME—TYPE-WRITTEN RECORD—MATTER STRUCK OUT SHOULD BE CANCELED BY RED LINES.

In the type-written record of testimony in interference proceedings the questions and answers struck out should be canceled by red lines and proper marginal notes should be made, as when matter is canceled in the specification of an application for patent.

8. SAME—PRINTED RECORD—MATTER STRUCK OUT AND NOT PRINTED IN BODY OF THE TESTIMONY.

In the printed record of testimony in interference proceedings questions and answers which have been struck out should be omitted from their places in the body of the testimony and a notice inserted that they had been struck out, giving the date of the decision in which the order striking out was made.

9. SAME—WHEN EXCLUDED MAY BE PRINTED AS AN APPENDIX TO PRINTED RECORD.

Held that a party against whom an order striking out testimony is directed may, if he desires to do so, print the excluded testimony, properly designated, as an appendix to his record or separately.

APPEALS on motions.

SIGNALING BY ELECTROMAGNETIC WAVES.

Messrs. Betts, Betts, Sheffield & Betts and *Mr. T. E. Robertson* for Marconi.

Mr. Philip Farnsworth and *Messrs. Foster, Freeman & Watson* for Shoemaker.

Mr. Darwin S. Wolcott and *Messrs. Kenyon & Kenyon* for Fessenden.

ALLEN, *Commissioner:*

This case is before me upon two appeals by Shoemaker and one by Marconi from decisions of the Examiner of Interferences upon motions regarding the striking out of testimony and the taking of testimony in rebuttal.

It appears that while Marconi was taking his testimony

in rebuttal De Forest, who is vice-president of the company to which the Shoemaker applications in interference are assigned, appeared upon subpœna as a witness for Marconi. He answered a number of questions concerning his professional career and stated, in answer to questions, that he was familiar with the apparatus used in the past and with that used at present at the so-called "Galilee station" and that apparatus had been removed from this station on account of the expiration of a lease. He also stated that the apparatus removed was all of the interior wireless-telegraph apparatus, including the transmitter and receiver apparatus, and that the antenna-wires were taken down. He was then asked to describe the apparatus removed from the Galilee station and refused to do so. Several questions followed as to what apparatus was removed, each of which the witness refused to answer. The direct examination was then closed. The cross-examination consisted of two questions, in answer to which the witness made statements of his general experience in wireless telegraphy, of his investigations with specific apparatus, and of theories and conclusions, and also statements regarding supposed principles, controversies, and motives, none of which appear to be based in any proper sense upon his direct examination.

Marconi brought a motion before the Examiner of Interferences to strike out the cross-examination of De Forest, which was granted. One of Shoemaker's appeals is taken from this action of the Examiner of Interferences. Where the witness upon direct examination refuses to answer practically every question regarding particular apparatus and no questions are asked thereon about the detailed structure of the apparatus or about theories, principles, operations, or results, a deposition on cross-examination setting forth such matters throughout fifty or more type-written pages is *prima facie* bad. Upon examination of the deposition in question I find that it is in fact bad. Shoemaker claims that his examination of De Forest was justified as necessary to rebut inferences which might be drawn from the witness's refusal to answer questions on the direct examination. Consideration of the deposition shows, however, that the so-called "cross-examination" is not directed to this end, but that it constitutes, as charged by Marconi, a flagrant attempt upon the part of Shoemaker to inject surrebuttal testimony by his own expert into Marconi's rebuttal record. On the appeal Shoemaker contends that to grant the motion is to deprive him of the right of cross-examination. It seems too clear for argument that a party who makes no proper examination is not deprived of any right by an action striking out his improper examination. It is also contended by Shoemaker that the action of the Examiner of Interferences granting the motion to strike out was erroneous, because based only on the witness's deposition and not upon the entire record. This contention also is erroneous. Cross-examination of a witness must be limited by the scope of the direct examination of the same witness. The conclusion of the Examiner of Interferences that the cross-examination of De Forest should be struck out was correct.

Following the grant by the Examiner of Interferences of Marconi's motion to strike out the cross-examination of the witness De Forest from Marconi's record, Shoemaker brought a motion for time in which to take surrebuttal testimony and asked that the cross-examination of De Forest, which had been struck out, be made part of such testimony. By this motion it was also sought, as an alternative to the authorization of surrebuttal testimony, that Marconi's rebuttal proofs be struck out as improper rebuttal evidence. The Examiner of Interferences denied the motion to authorize surrebuttal testimony and also denied the request to strike out except as to question 15 of the testimony of the witness Cross. Shoemaker has appealed from the refusal to authorize surrebuttal testimony or to strike out Marconi's rebuttal proofs, and Marconi has appealed from the action striking out question 15 of the testimony of Cross.

The question of striking out Marconi's rebuttal proofs will be first considered. The portion of these proofs objected to here by Shoemaker is the so-called "hysteresis" testimony of Cross. In question 15 of this testimony and the answer thereto an attempt is made to show that Shoemaker's applications do not show appreciation by Shoemaker of what this witness in answer to previous questions has asserted to be the fundamental principles of invention involved by the various counts in issue. This testimony is therefore an attack upon Shoemaker's standing in the interference, which attack should have been made, if at all, as part of Marconi's testimony-in-chief. The insufficiency of an opponent's application to sustain judgment against a party to interference proceedings is clearly part of that party's *prima facie* case, and testimony directed to that end should not be offered as part of the party's case in rebuttal. When so offered, it should be struck out upon proper objection and motion made. The conclusion of the Examiner of Interferences that question 15 and answer of the testimony of Cross in Marconi's rebuttal proofs should be struck out was correct.

The motion of Shoemaker to strike out was directed to substantially all of the deposition of Cross, and Shoemaker on this appeal seeks to have the rest of the testimony of this witness struck out so far as it deals with the principle of magnetic hysteresis. Upon examination of the deposition it is found that questions 6, 9, 10, 11, 13, and 14 and their answers should be struck from the record and that the answer to question 8 beginning with the next to the last line from the end of type-written page 66 and extending to the end of the answer should also be removed. Questions 6 and 13 and their answers bring out that the witness has compared various Marconi exhibits. This appears to be entirely irrelevant to Marconi's rebuttal proofs. The portion of the answer to question 8 referred to above and questions 9, 10, and 11 and their answers set forth that Marconi's applications and exhibits, in the opinion of the witness, come within the issue of the interference. These matters likewise appear to belong to Marconi's case in chief and to have no proper place in his rebuttal proofs. Question 14 attacks the sufficiency of one of Shoemaker's applications to support the issue and calls for the conclusion of the witness from the evidence as to when Shoemaker conceived and disclosed the invention. In the former respect the question and its answer are objectionable as improper rebuttal; in the latter respect they are objectionable as intruding the opinion of the witness upon a question as to which it is the duty of the tribunal hearing the case to decide from the facts uninfluenced by conclusions thereon by others. The opinion of the expert on the latter matter is not proper evidence. No sufficient

reason is found for striking out the remaining portion of the testimony of this witness.

The only question remaining to be considered is whether Shoemaker shall be permitted to take surrebuttal testimony. This question was well disposed of by the Examiner of Interferences. As pointed out in his decision, surrebuttal testimony should only be accepted from a party where new matter is introduced in his opponent's proofs which is in the nature of a surprise to the party seeking surrebuttal proofs. The alleged surprise in Marconi's rebuttal proofs consists in the testimony regarding magnetic hysteresis. The portion of this testimony, as now understood, which is not struck out by this decision is confined to attempts on the part of the witness to show that certain Shoemaker exhibits do not involve the principle of magnetic hysteresis and that this principle is involved by the issue of this interference. In view of the reference to this principle quoted by the Examiner of Interferences from the decision of the Primary Examiner rendered January 11, 1904, in interference No. 22,360, on motion to dissolve and in view of the reference thereto made by counsel for Shoemaker in the paper filed on February 26, 1904, in interference No. 22,360, also quoted by the Examiner of Interferences in his decision, Shoemaker's position that he has been surprised by this testimony is not well taken. Testimony regarding the relation of magnetic hysteresis to the issue and to Shoemaker's exhibits, if forming any proper part of Shoemaker's case, should have been presented as part of his regular proofs. The rules necessary to orderly procedure require that he shall abide the consequence of his failure to offer such testimony at that time.

It is proper to point out here the manner in which the ruling that portions of testimony should be struck out shall be carried into effect. In the type-written record the questions and answers struck out should be canceled by red lines and proper marginal notes should be made, as when matter is canceled in the specification of an application for patent. In the printed record questions and answers which have been struck out should be omitted from their places in the body of the testimony and a notice inserted that they had been struck out, giving the date of the decision in which the order striking out was made. If the party against whom the order is directed desires to do so, he may print the excluded testimony, properly designated, as an appendix to his record or separately. By pursuing this course the main body of the records is not confused or encumbered with matter not in the case; yet this matter is conveniently accessible in the event of subsequent question as to propriety of exclusion. Moreover, the burden of printing the excluded matter and of bringing it to the attention of the court upon final appeal is thereby placed, as it would seem it should be, upon the party who seeks to have the same considered and who, in view of the decisions against him thereon, is presumptively in error in asserting the propriety thereof.

The decision of the Examiner of Interferences granting Marconi's motion to strike out the cross-examination of the witness De Forest comprising questions 36 and 37 and answers, pages 126 to 185 of Marconi's type-written rebuttal proofs, is affirmed.

The decision of the Examiner of Interferences granting Shoemaker's motion to strike out Marconi's rebuttal proofs as to question 15 and answer of the testimony of Cross is affirmed.

The decision of the Examiner of Interferences denying Shoemaker's motion to strike out Marconi's rebuttal proofs is reversed as to questions 6, 9, 10, 11, 13, and 14 and answers and as to the portion of the answer to question 8 specified above of Cross's deposition.

The decision of the Examiner of Interferences denying Shoemaker's motion for allowance of surrebuttal testimony is affirmed.

DALTON *v.* HOPKINS *v.* NEWMAN.

Decided February 2, 1906.

INTERFERENCE—EXTENDING TIME FOR TAKING TESTIMONY—NO APPEAL.

Where it appeared that a substitute attorney because of his unfamiliarity with the case closed his proofs without the introduction of evidence necessary to the success of his cause and the Examiner of Interferences thereupon reopened the proofs and set new times for taking testimony, *Held* that the case is not of such peculiar difficulty as to constitute an exception to the general rule that decisions by the Examiner of Interferences extending times for taking testimony will not be reviewed on appeal.

ON PETITION.

ADDING AND WRITING MACHINE.

Mr. John D. Rippey and *Mr. George R. Hamlin* for Dalton and Hopkins.

Messrs. Rector & Hibben for Newman.

ALLEN, *Commissioner:*

This is a motion for the allowance of a special appeal from the decision of the Examiner of Interferences of January 31, 1906, extending the time within which testimony on behalf of Hopkins may be taken and also asking for a stay pending the final determination of such appeal. This is one of those cases in which ordinarily no appeal will be entertained from the decision of the Examiner of Interferences, and he has set no limit of appeal from his decision. It is urged that the circumstances of this case are unusual enough to constitute it an exception to the rule that no appeal will lie from such extension of the time for taking testimony.

It appears that Hopkins's attorney, taking the testimony of Dalton, a witness for Hopkins, made the statement that he should take no further proofs in behalf of Hopkins, Thereupon the taking of testimony terminated and the case was closed, no testimony being introduced on behalf of Dalton. An order was entered January 15, 1906, requiring Hopkins to show cause why judgment should not be rendered against him. Upon the return of this order it appeared to the satisfaction of the Examiner of Interferences that Hopkins's attorney at the session in question had been substituted for the regular attorney of record and was somewhat unfamiliar with the case, and therefore erred in his judgment in this course, and on this account the proofs were reopened and times set for taking further testimony.

I believe that the conclusion of the Examiner of Interferences in this regard should not be disturbed and that it is not a case of such peculiar difficulty that it should constitute an exception to the general rule that no appeal will lie from the decision of the Examiner of Interferences in respect to extensions of time for taking testimony.

This petition of Newman for the allowance of a special appeal and for a stay of proceedings is therefore denied.

ROSENZWEIG *v.* FORBES.

Decided March 19, 1906.

1. TRADE-MARKS—EFFECT OF PRIOR REGISTRATION OF LABEL INCLUDING THE TRADE-MARK.

Copyrights and trade-marks are separate and distinct rights, and the trade-mark is not the mere name of the copyright picture, but is the symbol by which the goods are known. *Held*, therefore, that the registration of a label embodying a trade-mark will not operate to prevent the registration of such trade-mark for particular goods.

2. SAME—DISCREPANCY IN STATEMENT OF DATE OF ADOPTION IN APPLICATION AND IN TESTIMONY.

Where a party alleges in his application an adoption of his mark in 1899 and in his testimony claims adoption late in 1894 or early in 1895, *Held* that the discrepancy is suspicious and calls for a close scrutiny of the testimony on his behalf seeking to prove the earlier date.

APPEAL on motion.

TRADE-MARK FOR WHISKY.

Mr. Arthur E. Wallace for Rosenzweig.

Mr. Charles E. Riordon for Forbes.

ALLEN, *Commissioner:*

This is an appeal by Rosenzweig from the decision of the Examiner of Interferences adjudging Forbes to have been the first to adopt and use the trade-mark in controversy.

The issue is as follows:

The words "Old Rose," or the words "Jack Rose," for whisky.

Rosenzweig's mark consists of the words "Old Rose," and that of Forbes consists of the words "Jack Rose." The appellant raises the preliminary question whether there is an actual conflict of rights due to the use of these marks and asks that the interference be dissolved upon the ground that there is no interference in fact.

It does not appear that any motion for dissolution was made by Rosenzweig, and it is too late now to raise the question for the first time. The Examiner having found that a conflict exists and that finding having been acquiesced in by the parties and by the Examiner of Interferences, it should not be disturbed except upon the conclusion that it was obviously erroneous. There was no obvious error here; but, on the contrary, it is believed that the Examiner's ruling was right.

The appellant further urges that registration should not be granted Forbes because he has registered under the copy, right laws a label embodying his present trade-mark. It is urged that to register the trade-mark now would be to extend the monopoly secured by the copyright registration and that such extension would be contrary to the intent of the law. The appellant seems to suppose that the same principle is involved as that underlying the decisions of the courts, to the effect that the name given to a patented article is public property after the expiration of the patent. I cannot agree that the principle applies. Copyrights and trade-marks are separate and distinct rights, and the trade-mark is not the mere name of the copyrighted picture. It is the symbol by which the goods are known. Others may make the picture and call it what they please after the expiration of the copyright and may adopt it as a trade-mark for goods. The registrant has an equal right with others in that respect. If, as here, he adopts it as a trade-mark for particular goods, others may not adopt and use it for the same goods unless they were first in the field.

Even if it should be found that Forbes is not entitled to registration, for the reasons above stated, it is not apparent what benefit would result to Rosenzweig. Judgment could be rendered in favor of Rosenzweig only upon the finding that he was the first to adopt and use the mark.

Considering the question of priority, it clearly and satisfactorily appears that Forbes adopted and used the mark as early as the spring of 1895. Rosenzweig alleged in his application adoption in 1899, but in his testimony claims adoption late in 1894 or early in 1895. This discrepancy is suspicious and calls for a close scrutiny of the testimony on his behalf seeking to prove the earlier date. There is no testimony by any witness and no corroborating circumstance tending to support his claim. The earliest corroborated date is in the summer of 1896, which is long after the adoption and use by Forbes.

The Examiner was right in adjudging that Forbes was the first to adopt and use the mark, and therefore his decision is affirmed.

MILLER *v.* PERHAM.

Decided April 18, 1906.

1. INTERFERENCE—MOTION FOR DISSOLUTION—MOVING PARTY'S RIGHT TO MAKE CLAIMS.

There is no apparent reason why the Office should consider the question of a party's right to make claims on his request after having once decided that he had the right to make them.

2. SAME—WITHDRAWING CLAIMS TO INVENTION—CONCESSION, ABANDONMENT, OR DEFAULT.

Where claims are made by a party upon suggestion under Rule 96 and the party thereafter concludes that he has no right to make the claims, he may properly concede priority to his opponent or abandon the invention represented by the claims, or he may permit judgment by default to be rendered against him.

APPEAL on motion.

SHUTTLE-BOX.

Messrs. Munn & Co. for Miller.

Messrs. Wright, Brown, Quinby & May for Perham.

ALLEN, *Commissioner:*

This is an appeal by Miller from the decision of the Examiner of Interferences refusing to transmit his motion alleging that the moving party Miller has not the right to make the claims corresponding to the counts of the issue.

The Examiner of Interferences held that the right of the moving party to make the claims corresponding to the issue cannot properly be raised on a motion to dissolve an interference and that if such party does not wish to contest the interference, because he is of the opinion that he has no right to make the claims, he should take action in accordance with the provisions of Rule 125, conceding priority or abandoning the invention.

Appellant's contention is that he should not be required to concede priority of an invention to which he does not assert a claim and that he connot abandon that which he claims he never possessed. These contentions are not in accordance with appellant's actions in the case. The issue of the interference describes an invention. This invention was disclosed and claimed by Perham, appellant's opponent in the interference. The claims were suggested to appellant under the provisions of Rule 96. When appellant accepted the claims and included them in his application, he laid claim to possession of the invention which they define. If now the appellant wishes to withdraw the claim to the possession of the invention disclosed in the issue, he may properly do so by conceding priority or abandoning the invention; or if the appellant does not now regard the invention claimed as his own he need take no action whatever in the interference

with respect thereto and permit judgment by default to be rendered against him.

The Office has once decided that the appellant had a right to make the claims in question. There is no apparent reason why the Office should reconsider this decision, favorable to appellant, on his motion.

The decision of the Examiner of Interferences refusing to transmit Miller's motion is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BALL *v.* FLORA.

Decided December 14, 1905.

1. JUDICIAL NOTICE.

The process of taking judicial notice does not necessarily imply that the judge at the moment actually knows and feels sure of the truth of the matter submitted. It merely relieves the party from offering evidence, because the matter is one which the judge either knows or can easily discover.

2. INTERFERENCE—PRIORITY.

Held that the appellant had not discharged the burden upon him of satisfactorily establishing conception of his invention prior to the filing of the appellee's application and that the decision appealed from should be affirmed.

Mr. Geo. R. Hamlin and *Mr. A. Parker Smith* for the appellant.

Mr. L. S. Bacon for the appellee.

McCOMAS, *J.*:

This is an appeal from the Commissioner of Patents.

The Examiner of Interferences, the Board of Examiners-in-Chief, and the Commissioner of Patents have been unanimous in decisions in favor of the appellee, Flora.

The contention of the appellant in this case has been considered at length and with apparent care by each of the experienced tribunals of the Patent Office and has by each, in turn, been declared unfounded. For that reason alone it would require a clear and satisfactory showing of error to warrant us in reversing their decisions. (*McBerty* v. *Cook*, 16 App. D. C., 136.)

The appellee filed his application on May 3, 1902.

The appellant filed his application on August 18, 1902.

To overcome the decision in the appellee's favor, the appellant must prove prior conception coupled with diligence or prior conception and prior reduction to practice.

The decisions of the Patent Office so clearly and fully explain the case that we are relieved from an extended discussion in this opinion. Priority of invention to the appellee was awarded by the Examiner of Interferences, the Examiners-in-Chief, and the Commissioner of Patents in respect of the following counts:

1. In combination with a tracker-board of a mechanical musical instrument, a supplemental removable tracker-board.
2. In combination with a tracker-board of a mechanical musical instrument, a removable superposed tracker-board.
3. In combination with a tracker-board of a mechanical musical instrument, a second removable registering tracker-board.
4. A mechanical musical instrument provided with two coacting tracker-boards, one fixed and the other removable.
5. A mechanical musical instrument provided with two coacting tracker-boards, one fixed and the other removable, and the removable board adjustable on the fixed board.
6. In an automatic playing attachment for musical instruments, the combination of a permanent tracker-bar, a detachable tracker-bar, and means for securing the detachable tracker-bar to the permanent tracker-bar.

Upon a careful consideration of the record, we conclude that the appellant has failed to fix definitely a date of conception earlier than May 3, 1902, the date of the appellee's application. The appellant's own testimony tends to show that he conceived the invention in February, 1902. It appears that the appellant had exchanged one pianola for another at the beginning of the year 1902; that he received the new pianola on January 23, 1902, the date being fixed by a payment shown by the stub in his check-book, which also shows he finished paying for the pianola on April 28, 1902.

The appellant says that upon the arrival of the pianola he conceived the specific arrangement or construction of the device and very shortly after he made a working device which was placed on this musical instrument. The weather was so cold that it was necessary for appellant in his workshop to work with an oil-stove while making the device. This device and the music-sheet to be used therewith, appellant testifies were made by him in February, 1902. Appellant's preliminary statement alleges that he conceived the invention, made drawings, and explained the invention to others about the first day of February, 1902, and that about the first day of May, 1902, he made a full-sized embodiment of his device which was then tested and thus reduced to practice. It is not quite clear whether the reduction to practice by the appellant was made very soon after he received the pianola in January, 1902, or very soon after he completed the payment therefor, which was April 28, 1902.

The witness Twitchell made drawings for appellant but failed to satisfactorily fix dates. Twitchell made many other drawings for appellant and had no memorandum whereby to actually fix the date of the drawing attached to the specification in this case.

The witness, Van Slyck, produced by the appellant, says, as nearly as he can recollect, it was on one of the last Sundays in March, 1902, that he was in appellant's work-room and saw him make the experiment of placing a removable tracker-board upon the tracker-board of a pianola and passing a perforated music-sheet over such tracker-board. The witness recalls that the weather was extremely cold and Mr. Ball lighted a large Rochester-burner lamp in his workshop to take the chill off the room, and witness believed that it could not have been later in the year than one of the last Sundays in March by reason of that incident. His testimony is quite definite that he saw the experiment he describes on a Sunday and a cold Sunday. Because it was cold he believes it was a late Sunday in March. In that latitude there might have been a cold Sunday forty days thereafter.

Van Slyck gives other testimony relating to the reduction to practice but no more definite testimony concerning the date of the test.

The incidents whereby appellant seeks to establish a priority are all so near the time, May 3, 1902, when the appellee made his application, that if, as has been urged, the state of the weather was material to support Van Slyck's impression that it was a cold Sunday in March, it would have been competent and convenient to produce official records of the variations of the thermometer near by Flushing, N. Y., where appellant then lived. The court would take judicial notice if such record were properly brought to its attention. The process of taking judicial notice does not necessarily imply that the judge at the moment actually knows and feels sure of the truth of the matter submitted; it merely relieves the party from offering evidence because the matter is one which the judge either knows or can easily discover. No such matter was here suggested and indeed the brief period of intervening time indicates that such information about the weather would have availed little to make more definite Van Slyck's statement.

In the face of the appellee's application, we are not prepared to differ with all the Examiners and the Commissioner of Patents in their impression that the disclosure to which Van Slyck testified was not satisfactorily shown to be earlier than May 3, 1902. We are not satisfied that appellant is entitled to a date of either conception or reduction to practice prior to the date of the appellee's application.

The burden of proof was upon the appellant to satisfactorily establish the fact of the conception of his invention prior to May 3, 1902. We agree with the Commissioner of Patents that the appellant has not succeeded in this.

The question in this case is a question of fact. We are convinced the rule in *Beckman* v. *Wood* (15 App. D. C., 484) does not apply. This needs no argument.

The decision of the Commissioner of Patents must be affirmed, and the clerk of this court is directed to certify the proceedings in this court to the Commissioner of Patents according to law. Affirmed.

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with respect thereto and permit judgment by default to be rendered against him.

The Office has once decided that the appellant had a right to make the claims in question. There is no apparent reason why the Office should reconsider this decision, favorable to appellant, on his motion.

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DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BALL *v.* FLORA.

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The question in this case is a question of fact. We are convinced the rule in *Beckman* v. *Wood* (15 App. D. C., 484) does not apply. This needs no argument.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, ETC.

OFFCIAL GAZETTE—MARCH-APRIL, 1906.

DIGEST OF DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*).]

ABANDONMENT.

(See Abandonment of Applications; Delay in Filing Application; Interference, 7; Priority of Invention, 4; Suggested Claims, 3.)

INTERFERENCE—DISSOLUTION.

The alleged abandonment of an invention claimed in a reissue application by reason of the failure to make claims thereto in the original application goes to the right of the party to make such claims and cannot be considered under the head or irregularity in the declaration. [Feising v. Nelson, 1347.

ABANDONMENT OF APPLICATIONS.

(See Abandonment.)

1. RESPONSIVE ACTION.

Where claims are placed under rejection, an applicant is not excused from making a proper response to said rejection merely because the claims had at one time been regarded by the Examiner as allowable. [*Ex parte* Ruthenburg, 337.

2. DELAY IN BRINGING PETITION.

Where an applicant delayed one year after notice that his case was abandoned in bringing his petition, *Held* that he was not in an equitable position to demand any leniency in considering the question whether he had complied with the rule requiring diligent and proper prosecution of his case. [Id.

3. UNVERIFIED STATEMENT—INTENTIONAL DELAY.

Where it appears from an unverified statement that an amendment was mailed in Berlin in time to reach this Office before the expiration of the year allowed by law for taking action, but the amendment was not actually received until two days after the expiration of the year, *Held* that the showing is insufficient, as the statement is not verified, and it seems probable that action was intentionally delayed. [*Ex parte* Botzky, 338.

4. UNAVOIDABLE DELAY.

Where the year for taking action expired September 2, 1905, and it appears that on August 17, 1906, the inventor, who was abroad, mailed a letter of instructions to the attorney, which letter was misland and was not again called to the attorney's attention until October 26, at which time it was found that the instructions were incomplete and further communication with the inventor was necessary, and no amendment of the application was filed until November 18, 1905, *Held* that the delay was not unavoidable. [*Ex parte* Marburg, Jr., 687.

5. RESPONSIVE ACTION.

Where an applicant took advantage of a technical error in the citation of one of numerous references to delay his reply for two years and then made reply only to a portion of the Examiner's action, *Held* that the action was not such as the condition of the case required, and the same is abandoned. [*Ex parte* Sperry, 687.

6. SAME.

Where an applicant presented an amendment canceling two of his six rejected claims and substituted others therefor and no action whatever was taken as to the remaining claims, *Held* that the action was insufficient to save the case from abandonment. [*Ex parte* Schmitt and Tanody, 688.

7. SAME.

Where after a certain action by the Examiner the applicant's amendment purporting to be in response to a prior action by the Examiner and not in fact responsive to the last action of the Examiner and where the applicant was notified that said amendment was not so responsive and failed to take responsive action within the year from the Examiner's action, *Held* that the application was abandoned. [*Ex parte* Woods, 689.

8. NOTICE OF OFFICE ACTION—FAILURE TO RESPOND NOT EXCUSED.

Held that failure to receive an Office action will not excuse failure to respond where the applicant received notice of said action and took no steps to secure a copy thereof. [Id.

9. INSUFFICIENT ACTION.

A mere request for reconsideration without giving any reasons therefor, especially where a party has abandoned all hope or expectation of securing a patent, is not sufficient to save an application from abandonment. [*Ex parte* Krejci, 1011.

10. SAME.

Where claims are rejected, a mere request for reconsideration filed within the year allowed by law, unaccompanied by some statement or argument which controverts the ruling of the Examiner or throws light upon the facts of the case, is not sufficient to save the application from abandonment for failure to prosecute. [*Ex parte* Einstein, 1675.

ACCESS TO PENDING APPLICATIONS.

INTERFERENCE—NOT GRANTED TO APPLICATION NOT RELIED UPON IN INTERFERENCE.

Where in an interference proceeding one of the parties admits on cross-examination that an application has been filed on the matter disclosed in certain blue-prints offered in evidence, but the application is not introduced in evidence and is not relied upon for any purpose whatever, *Held* that a request by the other party to the proceeding for access to said application should be denied. [Lindstrom v. Lipschutz, 1977.

AFFIDAVITS.

(See Prosecution of Interference by Assignee; Reissue Applications, 4; Rejection of Claims, 1; Trade-Marks, 8.)

TIME OF FILING—WHEN VERIFIED SHOWING IS REQUIRED.

Where affidavits are offered as evidence that the rejection of the claims by the Primary Examiner was erroneous, they should ordinarily be submitted to the Primary Examiner before the prosecution of the case before him has been closed by final rejection or appeal; otherwise they should be accompanied by a verified showing of reasons for the delay, similar to that required under Rule 68. [*Ex parte* Peirce, 1347.

AGREEMENT OF PARTIES IN INTERFERENCE.

(See Trade-Marks, 6, 13.)

AMENDMENTS.

(See Abandonment of Applications, 3, 6, 7; Rejection of Claims, 2, 3; Trade-Marks, 10, 15, 20.

AMENDMENTS TO PRELIMINARY STATEMENTS.

(See Preliminary Statement; Priority of Invention, 2.)

APPEAL.

(See Interference, 8, 10; Trade-Marks, 15, 16.)

1. FROM INTERLOCUTORY DECREE BY CIRCUIT COURT—MANDAMUS TO COMPEL CIRCUIT COURT OF APPEALS TO ENTERTAIN.

Where the Circuit Court in a suit upon a patent held part only of the claims valid and a part only of the valid claims infringed and referred the cause to a master to take and state an account, and granted an injunction against further infringement, and defendant took an appeal from that part of the decree granting the injunction, a writ of mandamus from the Supreme Court of the United States commanding the Circuit Court of Appeals to entertain a cross-appeal by complainants from that part of the decree adverse to them will not be granted, since the decree is merely interlocutory and not final.

[*Ex parte* National Enameling and Stamping Company and Lalance & Grosjean Manufacturing Company, 1679.

2. SAME—INSEPARABLE CONTROVERSY—DECREE PARTIALLY ADVERSE NOT A DISMISSAL.

Where suit is brought on a single patent against a single defendant and a decree is entered holding a part of the claims invalid and a part of the valid claims not infringed, granting an injunction, and referring the cause to a master, such decree does not amount to a dismissal of the bill from which appeal may be taken, as the controversy is not separable either as to parties or subject-matter. [*Id.

3. SAME—DISMISSAL OF BILL.

Where an appeal is taken in a patent case from an interlocutory order granting an injunction and the appellate court is satisfied that the patent is void on its face, it may dismiss the bill and end the litigation, as it would be a waste of time and an unnecessary continuance of litigation simply to enter an order setting aside the injunction and remanding the case for further proceedings. [*Id.

APPEAL FROM THE EXAMINERS-IN-CHIEF.

(See Interference, 8.)

APPEAL FROM FAVORABLE DECISION.

(See Motion to Dissolve Interference, 6, 7.)

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Designs, 2.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Designs, 1.)

APPEAL TO THE SUPREME COURT OF THE UNITED STATES.

(See Appeal, 1.)

APPLICANT AND REGISTRANT.

(See Trade-Marks, 7.)

APPLICATIONS.

(See Abandonment; Abandonment of Applications; Access to Pending Applications; Claims; Delay in Filing Application; Designs; Drawings; Incomplete Applications; Interference, 1; Prints; Reissue Applications; Rejection of Claims; Trade-Marks.)

CONTINUOUS—EFFECT OF FOREIGN PATENTS.

Where it is urged that Struble is barred from obtaining a patent upon the invention in issue by his foreign patents in view of his failure to refer to his prior applications and in view of the statements in the oath which forms part of the application in interference excluding foreign patents, *Held* that if the invention in issue was disclosed in the earlier applications, then the latter application is a continuation of said earlier applications and the foreign patents are no bar to the issue of a patent thereon.

[Struble *v.* Young, 339.

ARGUMENT.

(See Abandonment of Applications, 10; Interference, 20; Rejection of Claims, 1.)

ASSIGNEES.

(See Interference, 5; Prosecution of Interference by Assignee.)

ATTORNEYS.

(See Abandonment of Applications, 4; Interference, 23, 26; Reissue Applications, 4; Trade-Marks, 19.)

BAR TO PATENT.

(See Applications.)

BLUE-PRINTS.

(See Access to Pending Applications.)

BURDEN OF PROOF.

(See Interference, 6, 28.)

CANCELATION.

(See Testimony, 7.)

CANCELATION OF DRAWINGS.

(See Drawings.)

CAVEATS.

(See Reissue Applications, 1.)

CERTIFIED COPIES OF PARTS OF APPLICATION.

(See Motion to Dissolve Interference, 2, 3, 4.)

CIRCUIT COURT OF APPEALS.

(See Appeal, 1.)

CLAIMS.

(See Designs, 1, 3; Interference, 8, 10, 11, 27; Patentability; Reissue Applications, 3, 4; Rejection of Claims; Suggested Claims.)

1. FAILURE TO MAKE UNDER RULE 109.

The purpose of Rule 109 is clearly to avoid a second interference, and where a party fails to take advantage of that rule he loses the right to contest the question of priority as to the claims made by his opponent.

[*Ex parte* Sutton, Steele, and Steele, 1012.

2. SAME—MADE BY NEWLY-APPEARING PARTY.

Where a party fails to make claims under Rule 109 which are made by his opponent in the interference, *Held* that he is estopped from thereafter making the claims, notwithstanding that there is a newly-appearing party before the Office making them. [Id.

CONCEPTION OF INVENTION.

(See Interference, 28; Priority of Invention, 1, 3, 4.)

CONFLICTING DECISIONS.

(See Public Use and Sale, 3.)

CONSENT OF PARTIES IN INTERFERENCE.

(See Trade-Marks, 5.)

CONSTRUCTION OF CLAIMS.

(See Interference, 11.)

CONSTRUCTION OF RULES.

(See Affidavits; Claims; Interference, 2, 7, 8; Motion to Dissolve Interference, 4, 6; Public Use and Sale, 3, 4; Trade-Marks, 10, 11.)

CONSTRUCTION OF STATUTES.

(See Designs, 1; Trade-Marks, 7, 9, 15.)

CONTINUOUS APPLICATIONS.

(See Applications.)

COPIES OF PENDING APPLICATIONS.

(See Interference, 19; Reissue Applications, 1, 2.)

COPYRIGHT.

(See Trade-Marks, 21.)

CORPORATIONS.

(See Trade-Marks, 18, 19.)

CROSS-EXAMINATION.

(See Testimony, 1, 2, 3.)

DATE OF FILING APPLICATION.

(See Incomplete Applications 2, 3; Interference, 1.)

DECISIONS OF THE COMMISSIONER OF PATENTS.

(See Patentability, 1.)

DECISIONS OF THE COMMISSIONER OF PATENTS AFFIRMED.

(See Interference, 28.)

DECISIONS OF THE COMMISSIONER OF PATENTS SUSTAINED.

(See Motion to Dissolve Interference, 6.)

DECREE.

(See Appeal, 2.)

DELAY.

(See Abandonment of Applications, 3, 4.)

DELAY IN APPLYING FOR REISSUE.

(See Reissue Applications, 2, 4.)

DELAY IN BRINGING MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 19.)

DELAY IN FILING APPLICATION.

(See Interference, 23.)

1. INTERFERENCE—REDUCTION TO PRACTICE.
Where two years elapsed between a party's alleged reduction to practice and the filing of his application for a patent, during which interval his rival entered the field and secured a patent, *Held* that such delay standing by itself does not constitute an abandonment of his rights to a patent based on priority of invention. [*Rolfe v. Hoffman, 1350.

2. ABANDONMENT OF INVENTION—PROOF.
Where two years elapsed between an alleged reduction to practice and the filing of an application for patent, *Held* that neither abandonment nor forfeiture of a right to receive a patent can be presumed, but must be proved. [*Id.

DELAY IN FILING PETITION.

(See Abandonment of Applications, 2.)

DELAY IN PROSECUTING APPLICATION.

(See Abandonment of Applications, 2, 3, 4, 5; Affidavits.)

DESCRIPTION.

(See Designs, 2, 3; Trade-Marks, 14.)

DESIGNS.

1. REFUSAL OF CLAIMS—APPEAL.
Where an applicant for a design patent presents a claim and the Patent Office rules that the applicant cannot have the claims presented and can have no claim but a suggested one, *Held* that such ruling is, in effect, a rejection of the claim presented and when twice refused is appealable to the Examiners-in-Chief under section 4909 of Revised Statutes. [*In re Mygatt, 1676.

2. DESCRIPTION—APPEAL.
Held that the question whether the description in a design case is a proper one is not reviewable by the Court of Appeals except in an extraordinary case. [*Id.

3. CLAIMS—DESCRIPTION OF SALIENT FEATURES.
While many if not a large majority of designs can be sufficiently disclosed by a drawing and a claim for the ornamental design as shown is in general the better form of claim, *Held* that the design in this case relates to that class where a description is not only proper, but necessary, and that the claim should carry a description of the salient features of the design. [*Id.

DILIGENCE.

(See Abandonment of Applications, 2; Priority of Invention, 1, 3.)

DISCLAIMERS.

(See Trade-Marks, 10, 11, 12.)

DISCLOSURE OF INVENTION.

(See Applications; Designs, 3; Incomplete Applications, 3; Interference, 9, 13, 14, 15, 16, 24; Priority of Invention, 1, 3, 4.)

DISMISSAL OF BILL.

(See Appeal, 2, 3.)

DISSOLUTION OF INTERFERENCES.

(See Interference, 3, 10, 19, 20.)

DRAWINGS.

(See Designs, 3; Incomplete Applications, 2, 3; Interference, 23.)

CANCELATION OF FIGURES.
Whether certain figures should remain in the drawing depends upon the question whether the state of the art is such as to render it necessary to limit the claims to the form of the device shown in the other figures. [*Ex parte* Engel, 1011.

EARLIER APPLICATION.

(See Applications; Interference, 1.)

ESTOPPEL.

(See Claims, 2; Interference, 3.)

EVIDENCE.

(See Access to Pending Applications; Interference, 1, 3, 4, 13, 21, 22, 24, 26; Judicial Notice; Public Use and Sale, 2.)

EXAMINER OF INTERFERENCES.

(See Interference, 1, 6, 25, 26.)

EXAMINER OF TRADE-MARKS.

(See Trade-Marks, 12, 14, 15, 16.)

EXAMINERS' ACTION.

(See Rejection of Claims, 2, 3.)

EXAMINERS-IN-CHIEF.

(See Public Use and Sale, 3, 4.)

EXAMINERS' LETTERS.

(See Patentability, 2.)

EX PARTE RIGHTS.

(See Interference, 4.)

EXTENSION OF TIME FOR TAKING TESTIMONY.

(See Interference, 26.)

FAILURE TO PROSECUTE APPLICATIONS.

(See Abandonment of Applications, 10.)

FAVORABLE DECISION.

(See Supervisory Authority of the Commissioner of Patents.)

FEES.

(See Incomplete Applications, 1; Trade-Marks, 1, 2, 16.)

FIRST AND ORIGINAL INVENTOR.

(See Priority of Invention, 4.)

FOREIGN PATENTS.

(See Applications.)

FORMER DECISION CITED.

(See Interference, 6.)

FORMER DECISION CONSTRUED.

(See Motion to Dissolve Interferences, 6, 7.)

FORMER DECISION REFERRED TO.

(See Public Use and Sale, 3; Trade-Marks, 16.)

INCOMPLETE APPLICATIONS.

1. SKETCH—FEE.
Where the Office receives from a party a sketch, together with fifteen dollars, and a letter asking that he be forwarded blank forms for the preparation of an application, *Held* that the letter, sketch, and fifteen dollars should not have been regarded as an incomplete application, but that the money should have been entered to the applicant's credit unapplied to any case.
[*In re* Elberson, 338.

2. FILING DATE—PARTS OF DRAWINGS NOT RECEIVED.
Where the specification refers to a "Figure 1" of the drawing and no figure of that number appears on the sheets filed, *Held* that the application clerk properly refused to give the papers a filing date as a complete application.
[*Ex parte* Michaelis, 1349.

3. SAME—SAME—PRACTICE.
Where a filing date is refused by the Office on account of the omission of certain figures from the drawings and said figures, in the applicant's opinion, do not involve substantial additions to or departures from the disclosure in the papers originally filed, the proper practice is to file a petition for the earlier date, accompanied by the omitted figures. [Id.

INFRINGEMENT.

(See Appeal, 1, 2.)

INJUNCTION.

(See Appeal.)

INOPERATIVENESS.

(See Rejection of Claims, 1.)

INTERFERENCE.

(See Abandonment; Access to Pending Applications; Claims; Delay in Filing Applications; Judicial Notice; Motion to Dissolve Interference; Preliminary Statement; Priority of Invention; Prosecution of Interference by Assignee; Public Use and Sale; Reduction to Practice; Supervisory Authority of Commissioner of Patents; Testimony; Trade-Marks, 6, 7, 8, 9, 11, 12, 13; Witnesses.)

1. EARLIER APPLICATION IN EVIDENCE—CONSIDERED WITH PRIORITY.
The question of whether an applicant in interference is entitled to the benefit of the dates of his earlier applications, raised by the introducing of his earlier applications in evidence and by the testimony taken concerning them, should be considered by the Examiner of Interferences and appellate tribunals as part of the case upon priority of invention.
[Struble *v.* Young, 339.

2. RULE 126—MOTION FOR DISSOLUTION THEREUNDER IMPROPER.
Held that Rule 126 does not provide for the filing of motions and that a motion to dissolve purporting to be brought thereunder should not be transmitted or considered.
[Struble *v.* Young, 340.

3. SUSPENSION—ESTOPPEL.
An interference will not be suspended for the purpose of considering the question of estoppel against one party where dissolution of the interference would apparently leave the way clear to the allowance of a patent to another party who may not be the first inventor. [Dunbar *v.* Schellenger, 687.

4. SAME—CONSIDERATION OF EX PARTE RIGHTS.
Where all of the evidence is before the Office upon which to base a final determination upon priority, such final determination should in general be reached before consideration of *ex parte* rights is undertaken. [Id.

5. PRELIMINARY STATEMENT BY ASSIGNEE.
Where an applicant has taken no action in his case and has not filed a preliminary statement and the time for filing statements has expired, a statement filed within the time fixed by the assignee of an undivided part interest whose assignment is of record in this Office will be accepted. [Lottridge *v.* Eustice, 689.

6. BURDEN OF PROOF.
The question of shifting the burden of proof is a matter within the jurisdiction of the Examiner of Interferences and not the Primary Examiner, and there is no appeal from his decision prior to final judgment. (*Raulet and Nicholson* v. *Adams*, 114 O. G., 1827.) [Scott *v.* Southgate, 689.

7. ABANDONMENT OF INVENTION—RULE 125.
Held that the only abandonment which can be accepted under Rule 125 is an unequivocal, unconditional, unlimited declaration of abandonment of the invention which forms the subject-matter of the issue of the interference under consideration.
[Gabrielson *v.* Felbel, 691.

8. PRIORITY—APPEAL—CLAIMS FINALLY REJECTED UNDER RULE 132—STANDING IN COURT.
Where a party to an interference did not appeal from the adverse decision of the Examiners-in-Chief upon priority, so that under Rule 132 of the Patent Office the claims which were involved in that interference stand finally rejected, *Held* that such party has no standing before the court in the interference as to those claims. [*Fowler *v.* Boyce, 1014.

9. SAME.
Where Fowler is limited by his preliminary statement to a disclosure and reduction to practice subsequent to Boyce's record date, *Held* that priority should be awarded to Boyce.
[*Id.

10. DISSOLUTION—PATENTABILITY OF ISSUE OVER ISSUE OF PRIOR INTERFERENCE.
Where it is alleged that there has been irregularity in declaring the interference because the senior party had been involved in a prior interference in which the issue was substantially the same as the present issue and that in such prior interference such party had been defeated on the question of priority, *Held* that the question presented is one involving the right of the senior party to make the claims in issue and will therefore not be considered on direct appeal from the Primary Examiner under the head of irregularity.
[Eschinger *v.* Drummond and Lieberknecht, 1348.

11. ISSUE—NOT LIMITED BY CONSTRUCTION.
Where the counts of the issue are claims made by both parties and allowed by the Primary Examiner and they are clear as to scope, they will not be limited by construction beyond the plain import of their terms. [Id.

12. FAILURE TO PRINT TESTIMONY—JUDGMENT.
Where no motion to dispense with the printing of the testimony in interference proceedings was made and no excuse for failure to print was offered by the junior party, *Held* that judgment was properly entered in favor of the senior party.
[Levering Coffee Company *v.* The Union Pacific Tea Company, 1977.

13. EVIDENCE—PRESUMPTION ARISING FROM SPECIAL KNOWLEDGE OF PARTIES.
As between two parties each claiming disclosure of the invention to the other, where one of such parties has a practical knowledge of the art and the other has not there is a strong presumption in favor of the one having such practical knowledge.
*Alexander *v.* Blackman, 1979.

14. SAME—CIRCUMSTANCES INDICATING FALSITY OF TESTIMONY.
Where one of the parties to an interference testifies to a conversation between him and the other contestant relative to a disclosure of the invention by the former to the latter and a clerk in the store in which such alleged conversation took place testifies to precisely the same conversation twenty months after it took place and it appears that at the time the conversation took place such clerk was waiting upon a customer, the remarkable likeness in the two versions under the circumstances indicates a manufactured story, and the testimony is weakened rather than strengthened by the attempted corroboration.
[*Id.

15. SAME—FAILURE TO CALL WITNESS—PRESUMPTION.
The failure to call a witness who could clear up a number of doubtful points raises the inference that the testimony of such witness would be unfavorable. [*Id.

16. SAME—WITNESS FALSIFYING A FACT—PRESUMPTION.
Where a witness falsifies a fact in respect of which he cannot be presumed liable to mistake, courts are bound "upon the principles of law, morality and justice to apply the maxim, '*falsus in uno, falsus in omnibus.*'" [*Id.

17. SUSPENSION OF PROCEEDINGS ON ONE MOTION DOES NOT EXTEND TWENTY-DAY PERIOD FOR OTHER MOTIONS.
Where proceedings are suspended pending the final determination of a motion brought within the twenty days, such suspension does not operate to extend the period for bringing other motions, and a motion brought after the twenty days should not be transmitted, although the case is still under suspension. [Moore v. Curtis, 2325.

18. JURISDICTION OF PRIMARY EXAMINER.
Where an interference is transmitted to the Primary Examiner for the consideration of one question, he is without jurisdiction to consider an entirely independent question. [Id.

19. DELAY IN BRINGING MOTION—SHOWING INSUFFICIENT.
A delay of three months in bringing a motion to dissolve is not excused because of alleged delay to the moving party in procuring copies of two applications which are referred to in the preliminary statement of the opposing party. It was not necessary to the bringing of the motion to procure copies of such applications, as they were not included in the interference and could not, therefore, form a basis for its dissolution. [Id.

20. DISSOLUTION—APPEAL ON MOTION—INTERFERENCE IN FACT AND RIGHT OF PARTY TO MAKE CLAIM.
Where the argument on a motion to dissolve on the ground of no interference in fact raises the question whether a party is entitled to make the claim corresponding to the count, *Held* that this question of his right to make the claim is to be reviewed, if at all, with the final decision in the interference and not upon interlocutory appeal. [Zimmermann v. Zamboni, 2326.

21. PRIORITY—REDUCTION TO PRACTICE—EVIDENCE NECESSARY TO ESTABLISH SUCCESSFUL OPERATION.
Where a device embodying the invention in issue is shown to have been constructed and the question is whether or not such device operated successfully and satisfactorily, the testimony of the inventor and of two witnesses who showed that they were thoroughly familiar with the construction, that the device operated successfully, and that they used it a number of times is sufficient to warrant the conclusion that such device was an actual reduction to practice, and it is unnecessary that the facts on which they base their conclusion appear in the record. [*Seeberger v. Russel, 2328.

22. SAME—CIRCUMSTANCES CREATING UNFAVORABLE INFERENCE AS TO SUCCESSFUL TEST.
Where the invention in issue related to an auxiliary traveling platform in combination with an escalator and it appears that after an alleged successful operation the platform was removed from the escalator and never replaced and some of the parts disappeared and twelve escalators were built without the platform, *Held* that these circumstances when unexplained tend strongly to create the inference that the alleged test was not regarded as successful: but when a reasonable and satisfactory explanation thereof is given such an inference is unwarranted. [*Id.

23. SAME—DELAY IN FILING APPLICATION AFTER REDUCTION TO PRACTICE.
Where the reduction to practice of the invention was clearly established, a delay of two and a half years in filing the application therefor is not sufficient to destroy the weight of proof of actual reduction to practice, especially where it appears that drawings showing substantially the same construction as the original device were sent to applicant's attorneys more than a year before the application was filed and before any one else had entered the field. [*Id.

24. INVENTION MADE BY THIRD PARTY NO GROUND FOR REOPENING INTERFERENCE.
Where it is alleged that one of the parties to an interference testified in another proceeding that the invention was disclosed to him by a third party, *Held* that if true it cannot change the award of priority so long as he was in possession of the invention before his opponent and that although it might lead to the rejection of his claims if final judgment is in his favor it furnishes no ground for reopening the interference for the admission of further evidence. [Dunbar v. Schellenger, 2663.

25. MOTION TO REOPEN—DECISION OF EXAMINER OF INTERFERENCES NOT DISTURBED ON INTERLOCUTORY APPEAL.
Where the Examiner of Interferences denied a motion to reopen the interference for the purpose of introducing testimony given by one of the parties as a witness in another proceeding and which, it is claimed, tends to discredit his testimony in the present interference, *Held* that in the absence of a showing of an abuse of discretion by the Examiner of Interferences his decision will not be disturbed on interlocutory appeal; but should it appear on consideration of the entire record on appeal that the decision on priority would be changed the case may be reopened to admit the said testimony. [Id.

26. EXTENDING TIME FOR TAKING TESTIMONY—NO APPEAL.
Where it appeared that a substitute attorney because of his unfamiliarity with the case closed his proofs without the introduction of evidence necessary to the success of his cause and the Examiner of Interferences thereupon reopened the proofs and set new times for taking testimony, *Held* that the case is not of such peculiar difficulty as to constitute an exception to the general rule that decisions by the Examiner of Interferences extending times for taking testimony will not be reviewed on appeal. [Dalton v. Hopkins v. Newman, 2666.

27. MOTION FOR DISSOLUTION—MOVING PARTY'S RIGHT TO MAKE CLAIMS.
There is no apparent reason why the Office should consider the question of a party's right to make claims on his request after having once decided that he had the right to make them. [Miller v. Perham, 2667.

28. PRIORITY.
Held that the appellant had not discharged the burden upon him of satisfactorily establishing conception of his invention prior to the filing of the appellee's application and that the decision appealed from should be affirmed. [*Ball v. Flora, 2668.

INTERLOCUTORY APPEALS.

(See Interference, 20, 25.)

INTERLOCUTORY DECREE.

(See Appeal, 1.)

INVENTION.

(See Patentability.)

1. PATENTABILITY—COMBINATION IN WHICH ONE ELEMENT IS NOVEL.
Where it was old in a time-recording mechanism to provide a revolving drum operated by clockwork, a record-sheet to be wound thereon as the drum revolved, and a marking-point which made a mark on the record-sheet when placed in contact therewith, and it was also old to make a record on a lampblacked surface by the removal of a portion of such surface by means of a coacting stylus, it does not involve invention to use in a time-recording mechanism a record-sheet having a removable surface in combination with a stylus which removes a portion of said surface, although the record-sheet itself may be novel. [*In re Hawley, 691.

2. SAME—SUBSTITUTION OF NEW ELEMENT IN OLD COMBINATION.
The substitution for an old element in a combination of an element performing a similar function, but constructed in a different way, does not render the combination itself patentable where there is no resultant change in the operation. In such a case, although the substituted element may be superior, the invention lies in the element and not in the combination. [*Id.

3. SAME—WORK OF A SKILLED MECHANIC.
Held, in view of the state of the art relating to combined funnels and valves and the Baker patent, which shows a reversible funnel in combination with a valve, that using the neck of a funnel as part of a plug-valve to be opened by turning the funnel involves nothing more than the work of a skilled mechanic. [*In re Baker, 1352.

JUDGMENT.

(See Interference, 12; Trade-Marks, 11, 12.)

JUDGMENT BY DEFAULT.

(See Suggested Claims, 3.)

JUDICIAL DECISION.

(See Trade-Marks, 15.)

JUDICIAL NOTICE.

INTERFERENCE.
The process of taking judicial notice does not necessarily imply that the judge at the moment actually knows and feels sure of the truth of the matter submitted. It merely relieves the party from offering evidence, because the matter is one which the judge either knows or can easily discover. [*Ball v. Flora, 2668.

JURISDICTION OF THE EXAMINER.

(See Interference, 18.)

JURISDICTION OF THE EXAMINER OF INTERFERENCES.

(See Interference, 6.)

LABELS.

(See Trade-Marks, 21.)

LACHES.

(See Reissue Applications, 3, 4.)

LIMITATION OF CLAIMS.

(See Drawings; Interference, 11.)

LIMIT OF TIME.

(See Interference, 5, 17; Prosecution of Interference by Assignee; Trade-Marks, 2, 17.)

MANDAMUS.

(See Appeal, 1.)

MECHANICAL SKILL.

(See Invention, 3.)

MERITS OF THE CASE.

(See Abandonment.)

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 2, 19, 20, 27; Trade-Marks, 6, 13.)

1. TRANSMISSION.
Where the motion for dissolution presents matters which can be considered in connection with or as part of the determination of priority and which should only be so considered, *Held* that it raises no proper question for consideration by the Primary Examiner and transmission was properly refused.
[Struble v. Young, 339.

2. BASED ON CERTIFIED COPIES.
Where Fagan files a certified copy of those parts of his application which are supposed to relate to the subject-matter of the interference and a motion for dissolution is based on said copy denying Fagan's right to make the claims, *Held* that it will be assumed that the certified copy includes everything pertinent to the subject-matter in issue. [Fagan v. Graybill, 1013.

3. SAME.
The Examiner may upon a motion for dissolution of an interference wherein one party has filed a certified copy determine whether or not it is necessary for the other party to see other parts or the whole of the original application. [Id.

4. CERTIFIED COPIES UNDER RULE 105.
Where a rejected claim is included in a certified copy under Rule 105, *Held* that all actions relative thereto should be included in the copy. [Id.

5. INTERFERENCE IN FACT.
Where the claims of the issue cover only such elements of the structures as are common to the two cases and the specific differences in the structures shown are not such as to make the terms have different meanings in the two cases, *Held* that there is an interference in fact. [Noble v. Sessions, 1348.

6. INTERFERENCE—APPEAL FROM AFFIRMATIVE DECISION UNDER RULE 124.
Held that the Court of Appeals in the case of *Podlesak and Podlesak* v. *McInnerney* (120 O. G., 2127) is not believed to have departed from its position announced in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters' Compress Company*, (116 O. G., 2253,) wherein it sustained the Office in its refusal to permit appeals from decisions upon motions for dissolution which affirmed the merits of a party's claim.
[Miel v. Young, 1350.

7. CONSIDERATION OF RIGHT TO CLAIM UPON APPEAL UPON PRIORITY OF INVENTION.
Held that the case of *Podlesak and Podlesak* v. *McInnerney* (120 O. G., 2127) is believed to emphasize and carry forward the suggestions contained in the case of *Allen, Commissioner of Patents*, v. *The United States of America, ex rel. George A. Lowry and Planters' Compress Company*, (116 O. G., 2253,) to the effect that an opponent's right to make claims might be questioned upon appeal from decisions upon priority of invention where a holding of right on the part of one party to make the claims operates to deny a patent to another party who, if such holding be in error, is the first inventor. [Id.

8. INTERFERENCE—INSUFFICIENCY OF OATH ACCOMPANYING APPLICATION.
A motion to dissolve setting up irregularity on account of the insufficiency of the oath to the application of the opposing party by reason of the failure of the officer administering the same to impress his seal thereon should not be transmitted to the Primary Examiner where it appears from an affidavit of such officer that at the time he administered the oath he was empowered to do so and that he was not provided with a seal and from a certificate of the clerk of the county in which the oath was executed that at the time it was executed such officer did, in fact, have power to administer it.
[Scott v. Hayes and Berger, 2326.

NEW ELEMENTS.

(See Invention, 1, 2.)

NEW MATTER.

(See Testimony, 6.)

NOTARIAL SEAL.

(See Motion to Dissolve Interference, 8.)

NOTARY PUBLIC.

(See Motion to Dissolve Interference, 8.)

OATH.

(See Applications; Motion to Dissolve Interference, 8; Trade-Marks, 18, 19.)

OLD COMBINATION.

(See Invention, 2.)

OPPOSITION.

(See Trade-Marks, 1, 2, 17, 18, 19.)

OWNERSHIP OF TRADE-MARK.

(See Trade-Marks, 8, 9.)

PARTIES IN INTEREST.

(See Suggested Claims, 1, 2.)

PATENTABILITY.

(See Interference, 10; Invention, 1, 2; Suggested Claims, 1, 2; Supervisory Authority of the Commissioner of Patents.)

1. DECISION OF COMMISSIONER OF PATENTS.
The decision of the Commissioner of Patents refusing a patent upon a grain-door construction for car-doors affirmed as to claims 1, 2, 3, 5, 8, 9, 10, 11, 12, 13, 17, 18, 19, and 20 and reversed as to 6 and 7. [*In re Hill, 340.

2. STRIKING FROM RECORD GENERAL STATEMENTS BY EXAMINER.
Held that a general statement that claims are "manifestly" unpatentable in view of the prior art, where the Examiner subsequently cited a reference and rejected the claims, does not cast a cloud upon or express a doubt as to the validity of the allowed claims and should not be canceled from the record.
[*Ex parte* Holzer, 1011.

PRELIMINARY STATEMENT.

(See Interference, 5, 9, 19; Priority of Invention, 2; Prosecution of Interference by Assignee.)

INTERFERENCE—PROOF OF DATES EARLIER THAN THOSE GIVEN.
Where a party has been refused permission to put back his dates as set out in his preliminary statement after seeing his adversary's dates, any attempt to prove the earlier dates is contrary to the rules of the Patent Office and to the general rules applicable to pleading in courts of law.
[*Fowler v. McBerty, 1015.

PRESUMPTION.

(See Interference, 14, 15; Trade-Marks, 9.)

PRESUMPTION OF INVENTION.

(See Interference, 13.)

PRINTED RECORD.

(See Testimony, 8, 9.)

PRINTS.

1. TITLE GIVEN NOT ON PRINT.
Where the title given to a print does not appear on it, *Held* that registration was properly refused.
[*Ex parte* Ruppert, 2327.

2. SAME—CURING OBJECTION.
Where objection is made that the title does not appear upon the print, *Held* that the objection may be cured by filing copies having the proper title printed thereon or by changing the title to that which appears upon the present copies. [Id.

3. INDICATION OF MERCHANDISE.
Held that a print for malt liquors which includes as an essential feature a representation of a beer-keg is a sufficient indication of the merchandise for which it was designed. [Id.

PRIORITY OF INVENTION.

(See Delay in Filing Application; Interference, 1, 4, 8, 9, 10, 21, 22, 24, 25, 28; Motion to Dissolve Interference, 1; Public Use and Sale, 2, 4; Suggested Claims, 3.)

1. INTERFERENCE.
Held that Fowler, who is the first to conceive and disclose, but is the later to reduce to practice, has failed to show diligence and that priority should be awarded to Dyson.
[*Fowler v. Dyson, 1015.

2. TESTIMONY REGARDING DATES EARLIER THAN ALLEGED IN PRELIMINARY STATEMENT DISREGARDED.
Where a party in order to prevail depends upon earlier dates than those alleged in his preliminary statement and permission to amend the statement to set out said earlier dates has been refused, *Held* that testimony relating to such earlier dates must be disregarded. [*Fowler v. McBerty, 1015.

3. INTERFERENCE—REDUCTION TO PRACTICE—DILIGENCE.
Where Fowler conceived and disclosed in August and was the last to reduce to practice, *Held* that McBerty, who was the first to conceive and who reduced to practice in the following January, was reasonably diligent. [*Id.

4. SAME.
Held that Rolfe did not abandon his invention or conceal it from the public, and being the first to conceive, the first to disclose to others, and the first to reduce to practice is the first inventor and entitled to award of priority.
[*Rolfe v. Hoffman, 1350.

PROSECUTION OF INTERFERENCE BY ASSIGNEE.

(See Interference, 5.)

INTERFERENCE.
Where the assignee of an undivided interest of an invention makes an affidavit that he is unable to obtain any information from an applicant and the record shows that the applicant has taken no action in the interference and has filed no preliminary statement, the assignee will be allowed to prosecute the interference. [Lottridge v. Eustice, 689.

PUBLICATION OF TRADE-MARKS.

(See Trade-Marks, 14, 20.)

PUBLIC USE AND SALE.

1. INTERFERENCE.
Where the evidence taken in an interference shows, in the opinion of the Examiner, that the subject-matter of the issue was in public use for more than two years before any of the applications involved were filed, *Held* that the Office is not justified in continuing the interference without investigating and finally determining the question of public use.
[Niedringhaus v. Marquard v. McConnell, 337.

2. SAME—EVIDENCE.
Evidence which was presented upon the issue of priority of invention and not upon that of public use cannot be used by this Office as a basis for a final determination of the question of public use without giving the parties an opportunity to take further testimony in explanation or rebuttal. [Id.

3. CONFLICTING DECISIONS OF LOWER TRIBUNALS—REFERENCE TO HIGHER TRIBUNAL—PRACTICE.
Where the Examiners-in-Chief, under Rule 126, call attention to the fact that in their opinion the evidence in an interference showed public use of the invention in issue for more than two years prior to the filing date of any of the parties and that the issue was therefore unpatentable and the case is referred to the Primary Examiner for consideration and report, and he agrees with the Examiners-in-Chief, the fact that the Primary Examiner previously held the issue patentable does not present a case of conflicting decisions of lower tribunals which the Commissioner should decide under the practice announced in *Snider v. Bunnell*, (103 O. G., 890; C. D., 1903, 117.)
[Niedringhaus v. Marquard v. McConnell, 338.

4. SHOWN BY EVIDENCE IN INTERFERENCE—ACTION BY EXAMINERS-IN-CHIEF UNDER RULE 126—REFERENCE TO PRIMARY EXAMINER.
Where the Examiners-in-Chief, under Rule 126, call attention to the fact that in their opinion the evidence in an interference shows that the issue is not patentable because of two years' public use, the question presented is whether the interference should be stopped for the purpose of permitting the parties to present further evidence upon the question of public use, so that judgment can be rendered upon this question prior to a final determination of the question of priority. Under these circumstances the case is referred to the Primary Examiner for his report and not for decision. [Id.

REBUTTAL TESTIMONY.

(See Testimony, 5, 6.)

RECONSIDERATION.

(See Abandonment of Applications, 9, 10; Rejection of Claims.)

RECORD IN INTERFERENCE CASES.

(See Testimony, 7, 8, 9.)

REDUCTION TO PRACTICE.

(See Delay in Filing Application; Interference, 9, 21, 22, 23; Priority of Invention, 1, 3, 4.)

INTERFERENCE.
Where the Rolfe exhibits were made and tested. *Held* that it is considered that his work as an inventor was finished, physically as well as mentally, and that there was a complete reduction to practice. [*Rolfe v. Hoffman, 1350.

REFERENCES.

(See Abandonment of Applications, 5; Trade-Marks, 7, 8, 9.)

REGISTRATION.

(See Prints; Trade-Marks, 3, 4, 5, 7, 8, 9, 21.)

REISSUE APPLICATIONS.

(See Abandonment; Suggested Claims, 1.)

1. SHOWING NECESSARY TO OBTAIN COPIES.
The reasons for preserving original applications and caveats in secrecy do not exist in reissue applications, as the reissue applicant has no secret invention to be concealed from the public, and therefore the same character of showing is not required to warrant furnishing copies.
[*In re* New York Woven Wire Mattress Company, 688.

2. REFERRED TO IN PATENT IN SUIT—COPIES.
Where suit has been brought against a party and the record of the patent in suit contains a reference to a reissue application which makes it necessary to see the application in order to understand the views of the patentee and the Office in the patent case, *Held* that the party is entitled to obtain copies of the file and contents of the reissue application. [Id.

3. BROADER CLAIMS—LACHES.
A valid reissue patent with an enlarged claim cannot be obtained upon an application filed nearly three and one-half years after the issue of the original patent when, so far as has been shown, such application might have been made as soon as the original patent could have been received and read or at any time thereafter during the two years in which the courts have held that reissues with enlarged claims should ordinarily be applied for. [Felbel v. Aguilar, 1012.

EXCUSE FOR DELAY INSUFFICIENT.

An affidavit setting forth the inventor's inability to procure an attorney and unfamiliarity with the English language is insufficient to account for a delay of nearly three and one-half years in applying for a reissue, especially where the prosecution of the original application and the character of the claims obtained in the patent show that the inventor was sufficiently familiar with the language and with the law to read the patent and determine that the combination of parts to which the new claims of the reissue application are drawn was not claimed in the patent. [Id.

REJECTED CLAIMS.

(See Abandonment of Applications, 6; Interference, 8; Motion to Dissolve Interference, 4; Patentability, 2.)

REJECTION OF CLAIMS.

(See Abandonment of Applications, 1, 2; Affidavits; Designs, 1; Interference, 24.)

1. FINAL—EXAMINER'S EXPLANATION NOT A NEW REASON.

Where the Examiner rejects the claims on the ground of inoperativeness and the applicant files a letter and an affidavit seeking to show that the device is operative and asks for a reconsideration, which is given, and the claims are finally rejected for the same reasons, *Held* that the final rejection cannot be considered premature simply because the Examiner in his final rejection entered into an explanation to meet the arguments of the applicant. [*Ex parte* Schmid, 1675.

2. SAME—EXAMINER'S ACTION UNDERSTOOD.

Where the applicant understood the Examiner's first action in all essential particulars and the next Office action merely restated the original ground of rejection, *Held* that a request that an amendment filed after final rejection be admitted should be denied. [*Ex parte* Kinney and Schultz, 2325.

3. SAME—ADDITIONAL EXPLANATION—CASE NOT REOPENED.

Where the final rejection referred to no new reasons or references and the invention was simple, the fact that a more extended explanation of the same ground of rejection was given furnishes no reason for reopening the case for the consideration of additional claims. [Id.

REOPENING OF INTERFERENCE.

(See Interference, 24, 25.)

REOPENING OF REJECTED CASES.

(See Rejection of Claims, 3.)

RESPONSIVE ACTION BY APPLICANT.

(See Abandonment of Applications.)

SCOPE OF CLAIM.

(See Interference, 11.)

SECRET ARCHIVES.

(See Reissue Applications.)

SKETCHES.

(See Incomplete Applications, 1.)

SPECIFICATIONS.

(See Incomplete Applications, 2.)

SUGGESTED CLAIMS.

(See Designs, 1.)

1. INTERFERENCE—REFUSAL TO MAKE—PATENTABILITY OF CLAIMS NOT REVIEWED.

Where a party refuses to make claims suggested for interference purposes, his request that the patentability of the claims be reviewed or that proceedings be instituted for the purpose of permitting him to show that the invention has gone into use and that there are intervening rights to the allowance of the claims in a reissue application will be denied.

[*Ex parte* Bryant, Wolcott, and Davidson, 2663.

2. SAME—SAME—PARTY ENTITLED TO NO RECOGNITION.

Where a party refuses to make claims suggested for interference purposes, *Held* that he stands in the same position as any other member of the public and is not entitled to recognition as a party in interest opposing the allowance of the claims or to any information of the case in which they are allowed. [Id.

3. SAME—WITHDRAWING CLAIMS TO INVENTION—CONCESSION, ABANDONMENT, OR DEFAULT.

Where claims are made by a party upon suggestion under Rule 96 and the party thereafter concludes that he has no right to make the claims, he may properly concede priority to his opponent or abandon the invention represented by the claims, or he may permit judgment by default to be rendered against him.

[Miller v. Perham 2667.

SUPERVISORY AUTHORITY OF THE COMMISSIONER OF PATENTS.

INTERFERENCE—PATENTABILITY.

The supervisory authority of the Commissioner will not be exercised to review a favorable decision on the question of patentability except in a very clear case.

[Eschinger v. Drummond and Lieberknecht, 1343.

SUPREME COURT OF THE UNITED STATES.

(See Appeal, 1.)

SURPRISE.

(See Testimony, 6.)

SURREBUTTAL TESTIMONY.

(See Testimony, 6.)

SUSPENSION OF INTERFERENCE.

(See Interference, 3.)

SUSPENSION OF PROCEEDINGS.

(See Interference, 17.)

TEST.

(See Interference 22.)

TESTIMONY.

(See Interference, 12, 14, 15, 16, 21, 22, 25; Priority of Invention, 2; Public Use and Sale, 2; Trade-Marks, 22; Witnesses.)

1. EXCLUSION—CROSS-EXAMINATION CONTAINING MATTER NOT REFERRED TO IN DIRECT EXAMINATION.

Where a witness upon direct examination refuses to answer practically every question regarding particular apparatus and no questions are asked thereon about the detailed structure of the apparatus or about theories, principles, operations, or results, a deposition on cross-examination setting forth such matters throughout fifty or more type-written pages is *prima facie* bad. [Marconi v. Shoemaker v. Fessenden, 2664.

2. STRIKING OUT IMPROPER CROSS-EXAMINATION.

Held that a party who makes no proper cross-examination is not deprived of any right by an action striking out his improper examination. [Id.

3. CROSS-EXAMINATION LIMITED BY DIRECT EXAMINATION OF SAME WITNESS.

Held that cross-examination of a witness must be limited by the scope of the direct examination of the same witness and cannot be based upon the entire record. [Id.

4. OPINION OF THE WITNESS AS TO MATTERS TO BE DECIDED BY TRIBUNAL HEARING THE CASE.

Held that testimony which intrudes the opinion of the witness upon a question which it is the duty of the tribunal hearing the case to decide from the facts uninfluenced by conclusions thereon by others should be struck out. [Id.

5. DIRECTED TO INSUFFICIENCY OF OPPONENT'S APPLICATION NOT PROPER REBUTTAL.

The insufficiency of an opponent's application to sustain judgment against a party to interference proceedings is clearly part of that party's *prima facie* case. *Held*, therefore, that testimony directed to the insufficiency of the application offered as part of a party's case in rebuttal should be struck out upon proper objection and motion made. [Id.

6. SURREBUTTAL—WHEN ADMISSIBLE.
Surrebuttal testimony should only be accepted from a party where new matter is introduced in his opponent's proofs which is in the nature of a surprise to the party seeking surrebuttal proofs. [Id.

7 TYPE-WRITTEN RECORD—MATTER STRUCK OUT SHOULD BE CANCELED BY RED LINES.
In the type-written record of testimony in interference proceedings the questions and answers struck out should be canceled by red lines and proper marginal notes should be made, as when matter is canceled in the specification of an application for patent. [Id.

8. PRINTED RECORD—MATTER STRUCK OUT AND NOT PRINTED IN BODY.
In the printed record of testimony in interference proceedings questions and answers which have been struck out should be omitted from their places in the body of the testimony and a notice inserted that they had been struck out, giving the date of the decision in which the order striking out was made. [Id.

9. WHEN EXCLUDED MAY BE PRINTED AS AN APPENDIX TO PRINTED RECORD.
Held that a party against whom an order striking out testimony is directed may, if he desires to do so, print the excluded testimony, properly designated, as an appendix to his record or separately. [Id.

TITLE.

(See Prints.)

TRADE-MARKS.

(See Interference, 12.)

1 OPPOSITION—FEE ESSENTIAL TO DATE.
The fee constitutes a necessary part of the notice of opposition, since it is required to be paid on filing such notice. An effective date cannot be given to an opposition earlier than that upon which the fee was paid.
[John Wagner & Sons v. Thixton, Millett & Co., 690.

2. OPPOSITION FILED TOO LATE.
The Office has no authority to extend in any case the period allowed by law for oppositions, and where the fee was paid more than thirty days after publication, *Held* that the opposition came too late to be entitled to consideration. [Id.

3 IMMATERIAL VARIATIONS.
Where the trade-mark as a whole seems to be a mere imitation of Ostermoor's, made with immaterial variations, and the differences are clearly not such as would avoid confusion between the marks by purchasers, the mark should not be registered.
[*Ex parte* The J. C. Hirschman Company, 690.

4 DESCRIPTIVE MARK REFUSED—PEERLESS.
The word "Peerless" refused registration as a trade-mark on the ground that it is descriptive.
[*Ex parte* Paragon Malt Extract Company, 690.

5. MARK DESCRIPTIVE.
The words "In Curve" as a trade-mark for corsets, *Held* descriptive of the goods and registration denied.
[*Ex parte* Kops Brothers, 1675.

6. INTERFERENCE—MOTION TO DISSOLVE—CONSENT OF PARTIES.
Where the trade-marks involved in an interference include as their dominating feature the same name by which the goods would be known, it is immaterial that there are differences in the appearance of the actual labels, and a motion to dissolve the interference on the ground of non-interference in fact must be denied, notwithstanding both parties consent to it.
[The Windsor Milling and Elevator Company v. Brunner, 1676.

SAME—DISSOLVED ON MARK REGISTERED UNDER ACT OF 1870.
Where an interference declared between two applications for the registration of a trade-mark was dissolved on reference to a mark registered by a third party on March 14, 1871, *Held* that the registration under the act of 1870, and over thirty years ago, is a proper reference until overcome in some way by the applicant. [Schneider v. The Union Distilling Co., 1676.

8 SAME—REFERENCE TO BE OVERCOME NOT BY INTERFERENCE PROCEEDING, BUT BY AFFIDAVITS.
Where reference is made to an expired registration, applicant's remedy is not by an interference proceeding with the registered mark, since interferences can be declared only as to applications and existing marks, but by a showing in the form of affidavits to overcome the presumption that this registrant under the act of 1870 is still the owner of the mark. [Id.

9. SAME—IF REFERENCE OVERCOME, PRESENT INTERFERENCE TO CONTINUE.
Where in a trade-mark interference a reference is found in the form of an expired registration under the act of 1870, *Held* that if a showing is made overcoming the presumption of ownership raised by the reference the interference should continue. [Id.

10 SAME—ADMISSION OF AMENDMENTS AND DISCLAIMERS.
There is nothing in the trade-mark rules in regard to the admission of amendments and disclaimers, but under Rule 44 they may be entered in accordance with the provisions of Rule 107 of the rules relating to applications for patents.
[Lewis & Brothers' Company v. Phoenix Paint & Varnish Company v. National Lead Company, 1978.

11. SAME—PRACTICE.
Where a disclaimer is filed in a trade-mark application involved in an interference, *Held* that judgment should be entered disposing of the claims of the parties to the matter disclaimed. [Id.

12. SAME—SAME.
Where the disclaimer covers only a part of the issue, judgment should be entered as to that part, and if there is any question as to the existence of an interference as to what remains the cases should be referred to the Examiner of Trade-Marks for consideration. [Id.

13. SAME—MOTION TO DISSOLVE—INTERFERENCE IN FACT—CONSENT OF PARTIES.
Where the trade-marks in interference include the words "Walnut Hill" and "Walnut Creek," respectively, but are entirely different in appearance, and the parties to the proceeding join in the request for dissolution, *Held* that doubts, if any exist, should be resolved in favor of their contentions.
[The Ullman Einstein Company v. C. H. Graves & Sons, 1978.

14. PUBLICATION NO BAR TO REQUIREMENT OF DESCRIPTION.
The fact that the trade-mark has been published is no good reason why the Examiner of Trade-Marks may not require a description of the trade-mark as shown in the drawing.
[*Ex parte* Sleepy Eye Milling Company, 2327.

15. EXAMINER'S RULING A JUDICIAL DECISION SUBJECT TO APPEAL.
The action of the Examiner of Trade-Marks holding that an application filed prior to the passage of the act of February 20, 1905, was not a pending case and refusing to permit an amendment to the application to bring it under the provisions of the act was a judicial decision subject to review on appeal.
[*Ex parte* The Chapot-Shirlaw Company, 2327.

16. RETURN OF FEE.
Where the applicant accepted the decision of the Examiner without appeal and filed a new application, *Held* he is not entitled to the return of the filing fee on said application, notwithstanding the decision in *ex parte Griserin-Werke Paul Camphausen G. M. B. H.*, (120 O. G., 327.) [Id.

17. NOTICE OF OPPOSITION—TIME FOR FILING.
Where the notice of opposition to the registration of a trade-mark was filed one day after the expiration of the thirty days allowed by law, *Held* that said notice is of no force or effect.
[Bass, Ratcliff & Gretton, Lim., v. Hartmann Brewing Company, 2328.

18. SAME—MUST BE MADE BY EXECUTIVE OFFICERS OF CORPORATION.
Where a notice of opposition is filed in behalf of a corporation, *Held* that the oath should be furnished by one of the executive officers of said corporation, together with a statement of his authority to act as the agent of the corporation. [Id.

19. SAME—DISMISSED WHEN MADE BY ATTORNEY.
Where a notice of opposition filed in behalf of a corporation was made by its attorney, *Held* that there is no more authority for accepting the notice of opposition and oath of an attorney for a corporation than for accepting a corresponding notice and oath for an individual, and the Examiner was right in dismissing the opposition. [Id.

20. AMENDMENT TO APPLICATION—REPUBLICATION UNNECESSARY.
Where after the publication of the mark an amendment is made to the application for a trade-mark eliminating some of the goods upon which the mark is used, *Held* that there is no necessity for republishing the trade-mark. [Id.

21. EFFECT OF PRIOR REGISTRATION OF LABEL INCLUDING THE TRADE-MARK.
Copyrights and trade-marks are separate and distinct rights, and the trade-mark is not the mere name of the copyright picture, but is the symbol by which the goods are known. *Held*, therefore, that the registration of a label embodying a trade-mark will not operate to prevent the registration of such trade-mark for particular goods.
[Rosenzweig v. Forbes, 2067.

22. DISCREPANCY IN STATEMENT OF DATE OF ADOPTION IN APPLICATION AND IN TESTIMONY.
Where a party alleges in his application an adoption of his mark in 1899 and in his testimony claims adoption late in 1894 or early in 1895, *Held* that the discrepancy is suspicious and calls for a close scrutiny of the testimony on his behalf seeking to prove the earlier date. [Id.

VALIDITY OF CLAIMS.

(See Patentability, 2.)

VOID PATENTS.

(See Appeal, 3.)

WITNESSES.

(See Interference, 14, 15, 16, 21, 22, 25; Testimony, 1, 3, 4.)

INTERFERENCE—TESTIMONY—OFFICE CANNOT COMPEL WITNESS TO ANSWER.
This Office has no machinery for compelling a witness to answer questions. [Lindstrom v. Lipschutz, 1977.

[Claim

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ALPHABETICAL LIST OF PATENTEES

FOR THE

MONTHS OF MARCH AND APRIL, 1906.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, Labels, Prints, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. Schrader's Son. (See Schrader, George H. F., assignor.)						
A. B. Dick Company. (See Cox, Edwin A., assignor.)						
A. B. Dick Company. (See Dick, Albert B., assignor.)						
Aab, William. (See Bacon and Aab.)						
Abadie-Léotard, Edouard, Paris, France. Waistband, belt, and the like	815,056	Mar. 13	2116	445-6	121	517
Abbé, Max F., New York, N. Y. Tubular ball-mill	818,211	Apr. 17	3318	709-10	121	2197
Abbott, Emery J., Orleans, Minn. Wagon-reach adjuster	815,057	Mar. 13	2117	446	121	517
Abbott, Ira, Wyandotte, Mich. Rotary engine	816,285	Mar. 27	4656	988-9	121	1171
Abel, Bernard. (See Cowan and Abel.)						
Abelspies, John F. C., Charlestown, England. Ore-concentrating apparatus	814,896	Mar. 13	1781	373	121	447
Abercrombie, William R., assignor to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Bobbin-case for sewing-machines	814,341	Mar. 6	701	141	121	154
Abizaid, Ameen G., Washington, D. C. Non-refillable bottle	816,699	Apr. 3	305	71	121	1428
Abraham, Edward C., Santa Cruz, Cal. Clod-crusher and harrow	814,499	Mar. 6	1002	206	121	219
Abramson, Sherman C., Englewood, N. J., assignor to H. L. Hiller, New York, N. Y. Lacing	818,991	Apr. 24	4877	1047	121	2586
Abrey, Daniel, Philadelphia, Pa. Hoisting mechanism	818,212	Apr. 17	3320	710-11	121	2197
Ackerman, Harrison K. (See Barton and Ackerman.)						
Ackerman, Jacob, Spinnerstown, Pa. Collapsible or knockdown crate	814,500	Mar. 6	1004	207	121	219
Ackley, Thaddeus, assignor of one-half to W. D. Ackley, Warren, Ohio. Engraver's tool	815,892	Mar. 20	3883	821	121	951
Ackley, William D. (See Ackley, Thaddeus, assignor.)						
Acme Manufacturing and Supply Company. (See Nevins, Ennis M., assignor.)						
Acme Novelty Company. (See Stoltz, Melville, assignor.)						
Actien Gesellschaft für Anilin Fabrikation. (See Andresen, Magerstedt, and Ollendorff, assignors.)						
Acton Tanning Company. (See Dunn, James C., assignor.)						
Adair, Julius E., Gatliff, Tenn. Railway-signal	817,685	Apr. 10	2230	478	121	1902
Adames, Edward G., Caledonian Road, county of Middlesex, England. Decorating wood or other material	817,608	Apr. 10	2101	444	121	1874
Adams, Charles D., Sylvania, Ga. Agricultural implement	817,540	Apr. 10	1976	418	121	1848
Adams, Charles I., Bath, and C. O. Clark, Ealing, England; said Adams assignor to said Clark. Hat-holder	815,893	Mar. 20	3884	821	121	951
Adams, Clarence F., Camden, N. J. Automatic switch	815,397	Mar. 20	2874	597-8	121	733
Adams Company. (See Farwell, Fay O., assignor.)						
Adams Drill Company. (See Adams, Thomas E., assignor.)						
Adams, Earl E., Battle Creek, Mich. Screw-propeller	816,836	Apr. 3	573	120	121	1486
Adams, Gilbert L., Altoona, Pa. Wagon-brake	817,032	Apr. 3	969	199	121	1575
Adams, Harry W., assignor of one-half to P. W. Farnham, Fargo, N. D. Feed-water regulator	818,859	Apr. 24	4631	995	121	2533
Adams, James, Phillipsburg, N. J. Knockdown box	815,670	Mar. 20	3388	708	121	847
Adams, Joe M. (See Dwigans and Adams.)						
Adams, Joseph W., Pasadena, Cal. Window-screen	817,461	Apr. 10	1828	383	121	1818
Adams, Thomas E., assignor to Adams Drill Company, Cleveland, Ohio. Chuck for rock-drills	817,609	Apr. 10	2102	445	121	1874
Adelsperger, Dow L., assignor to Foos Manufacturing Company, Springfield, Ohio. Mill	817,610	Apr. 10	2103	445	121	1874
Admiral Hay Press Co. (See Tuttle and Cookson, assignors.)						
Adrian Wire Fence Company. (See Sturtevant, Orange S., assignor.)						
Adriance, Arthur E., Buffalo, N. Y. Chime-ringing apparatus	816,525	Mar. 27	5177	1098	121	1283
Adriance, Benjamin. (See Calleson, Amos, assignor.)						
Adriance, Benjamin, and A. Calleson, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Sheet-metal can	818,731	Apr. 24	4376	937	121	2478
Adriance, Benjamin, and A. Calleson, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Can-making machine	818,805	Apr. 24	4531	969-71	121	2511
Adriance, Benjamin, and A. Calleson, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Can-heading machine	818,806	Apr. 24	4540	972	121	2514
Adriance, Benjamin, and A. Calleson, Brooklyn, N. Y.; said Calleson assignor to said Adriance. Drawing-press	818,807	Apr. 24	4544	972-4	121	2514
Adt, Leo F., Troy, N. Y. Eyeglasses	816,837	Apr. 3	574	120	121	1486
Adt, Leo F., Troy, N. Y. Lens-mount and connection for eyeglasses	816,838	Apr. 3	576	120	121	1487
Adt, Leo F., Troy, N. Y. Lens-mount and connection for eyeglasses	816,839	Apr. 3	578	120	121	1487
Advance Signal Company. (See Taylor, Herbert B., assignor.)						
Aeolian Co. (See Votey, Edwin S., assignor.)						
Agar, Charles B., Camden, N. J., assignor to B. P. Obdyke, Philadelphia, Pa. Die for cutting out metal plates	817,611	Apr. 10	2106	445-6	121	1875
Agey, Frank G. (See Agey, Joseph C. and F. G.)						
Agey, Joseph C. and F. G., Indiana, Pa. Harrow	815,894	Mar. 20	3885	821	121	951

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drs.	Vol.	Pag.
Ahlander, Ernst H., Chicago, Ill., assignor to Thomas Wrigley Company. Intermittent grip device	815,895	Mar. 20	3886	822	121	951
Ahrendt, Johannes, Hamburg, Germany. Horse-collar	817,359	Apr. 10	1604	339	121	1771
Ahrweiler, Henry G., New York, N. Y. Butter-pat-printing machine	815,896	Mar. 20	3889	822	121	952
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Molding apparatus	817,831	Apr. 17	2543	546-7	121	2028
Aiken, Robert H., Winthrop Harbor, Ill. Making iron from the ore	816,142	Mar. 27	4388	.....	121	1114
Ainley, Thomas E., Sherbrooke, Canada. Fleece-carrier	816,417	Mar. 27	4966	1055	121	1236
Akin, John H., Ames, Iowa. Husking-peg	816,286	Mar. 27	4660	989	121	1172
Aktiebolaget Stockholms Vapenfabrik. (See Kjellman, Rudolf H., assignor.)						
Alberger Company. (See Smith, Harry J., assignor.)						
Albert, Eugen, Munich, Germany, assignor to F. Wesel, New York, N. Y. Apparatus for producing matrices for electrotypes and the like	814,927	Mar. 13	1833	384	121	458
Albert, Eugen, Munich, Germany, assignor to F. Wesel, New York, N. Y. Making matrices	815,001	Mar. 13	1990	418	121	488
Albree, Edward C., Swampscott, Mass. Punching and printing system	817,291	Apr. 10	1480	311	121	1743
Albright, Francis R., and J. S. Joseph, Norristown, Pa. Potato dropper and planter	817,612	Apr. 10	2108	446	121	1875
Aldred, Horace A., Philadelphia, Pa. Hook and eye	818,808	Apr. 24	4547	974	121	2515
Aldrich, James M., Adrian, Mich. Lawn-edge trimmer and ditcher	818,510	Apr. 24	3916	843	121	2376
Aldrich, Truman H., Birmingham, Ala. Reciprocating electric machine	814,259	Mar. 6	508	105-6	121	109
Alexander, Tony, Brookhaven, Miss. Excavator-shovel	816,057	Mar. 27	4211	893	121	1075
Alford, John J. (See McBride and Alford.)						
Alford, William H. (See Parrish, William N., assignor.)						
Alkins, Charles A., Memphis, Tenn., assignor, by mesne assignments, to Niagara Forged Steel Company, Buffalo, N. Y. Rail-brace	815,248	Mar. 13	2511	523	121	606
Allen, C. H. (See Sletto, Oscar K., assignor.)						
Allen, Charles A., Galion, Ohio. Nut-lock	816,143	Mar. 27	4389	928	121	1114
Allen, David H., Miamisburg, Ohio. Tray for glasses	817,148	Apr. 10	1185	245	121	1683
Allen, David H., Miamisburg, Ohio. Tray for glasses	817,149	Apr. 10	1186	245	121	1683
Allen, Edgar. (See Rich, William M., assignor.)						
Allen, Edward B., assignor to Singer Manufacturing Company, Elizabeth, N. J. Button-hole-cutting device for sewing-machines	815,501	Mar. 20	3058	637-8	121	774
Allen, Eugene D., Detroit, Mich. Locking and squaring device	817,740	Apr. 17	2347	504	121	1985
Allen, Fred E., assignor of one-half to R. Sorg, Pittsburg, Pa. Bottle	818,809	Apr. 24	4549	975	121	2515
Allen, George W., and W. D. Beach, Clyde, Kans. Billiard-cue-tip fastener	818,011	Apr. 17	2925	631	121	2113
Allen, James, U. S. Army. Relay	814,501	Mar. 6	1005	207	121	219
Allen, Lemuel E., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Harrow-tooth fastener	817,150	Apr. 10	1187	245	121	1683
Allen, Robert L., Syracuse, N. Y. Skeleton-tower structure	818,511	Apr. 24	3917	843	121	2377
Allen, Stanton. (See Bradley, Lynde, assignor.)						
Allen, Walter M., assignor to Warner & Swasey Company, Cleveland, Ohio. Roller-feed mechanism	817,151	Apr. 10	1188	245-6	121	1683
Allen, William A. (See Geisendorfer and Allen.)						
Allis-Chalmers Company. (See Barth, Charles F., assignor.)						
Allis-Chalmers Company. (See Fullagar, Hugh F., assignor.)						
Allis-Chalmers Company. (See McKee, Robert A., assignor.)						
Allis-Chalmers Company. (See Sheridan, Thomas F., assignor.)						
Allis-Chalmers Company. (See Sprado, Carl G., assignor.)						
Allis-Chalmers Company. (See Trout, William H., assignor.)						
Allsopp & Allsopp. (See Allsopp, Thomas, assignor.)						
Allsopp, Thomas, assignor to Allsopp & Allsopp, Newark, N. J. Adjustable collar holder or supporter	814,419	Mar. 6	865	178	121	188
Alpha Portland Cement Company. (See Hitzel, Harry, assignor.)						
Alroth, Friedrich, Plauen-Dresden, Germany. Self-moving cradle	814,420	Mar. 6	868	178	121	189
Alsip, Frank, Chicago, Ill. Clay-working machine	815,398	Mar. 20	2876	596	121	733
Alsop Process Company. (See Mitchell and Parks, assignors.)						
Alstad, George. (See Neil and Alstad.)						
Altshul, Henry, New York, N. Y. Ruling attachment for type-writers	818,732	Apr. 24	4377	937	121	2478
Altstock, Marcus, Lemberg, Austria-Hungary. Halm-plucking mechanism for potato-digging machines	817,891	Apr. 17	2677	582	121	2054
Amann, Charles. (See Amann, Martin L., assignor.)						
Amann, Martin L., assignor of one-half to C. Amann, Warren, Pa. Trolley-wheel	817,292	Apr. 10	1483	311	121	1744
America Company. (See Richardson, Harry H., assignor.)						
American Automatic Arms Company. (See Young and Sheriff, assignors.)						
American Automatic Switch Company. (See Warren, Aldred K., assignor.)						
American Brake Shoe & Foundry Company. (See Sargent, William D., assignor.)						
American Can Company. (See Hallbauer, Ernst M., assignor.)						
American Can Company. (See Larkin, Bernard H., assignor.)						
American Can Company. (See Murphy, Edward D., assignor.)						
American Can Company. (See Rudolphi and Geiger, assignors.)						
American Can Company. (See Sharp, Lee C., assignor.)						
American Can Company. (See Sherman, Charles, assignor.)						
American Can Company. (See Wells, William H., assignor.)						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Car & Foundry Company. (See King, George I., assignor.) (Reissue.)						
American Car & Foundry Company. (See Wolff, Herbert W., assignor.)						
American Cigar Company. (See Woodford, Allan G., assignor.)						
American Colortype Company. (See Wood, Thaddeus F., assignor.)						
American Couch Company. (See Plunkett, Charles L., assignor.)						
American Electric Alarm Company. (See Heinrich, Stephen J., assignor.)						
American Electric Telephone Company. (See Carliss, Albert, assignor.)						
American Electrolytic Company. (See Harmon, Willis E., assignor.)						
American Hard Rubber Company. (See Gurnee, Isaac Q., assignor.)						
American Harrow Company. (See Garst, Stephen H., assignor.)						
American Mechanical Cashier Company. (See Dement, Isaac S., assignor.)						
American Mechanical Cashier Company. (See Dement and Hull, assignors.)						
American Mechanical Cashier Company. (See Hull, Foster J., assignor.)						
American Multigraph Company. (See Gammeter, Harry C., assignor.)						
American Nail-Less Horse Shoe Company. (See Crannell, Charles W., assignor.)						
American Novelty Company. (See Boykin, Christopher C., assignor.)						
American Paper Bottle Company. (See Kimsey, James C., assignor.)						
American Rolling Mill Company. (See Charls, George H., assignor.)						
American Safety Razor Co. (See Gibford, Edward B., assignor.)						
American Seeding Machine Company. (See Jones and Towle, assignors.)						
American Silver Company. (See Trowbella, Charles E., assignor.)						
American Standard Fire-Proofing Co. (See Brandstedt, Paul F., assignor.)						

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
American Steel and Wire Company of New Jersey. (See Dunn, Horace, assignor.)						
American Street Sign Company. (See Griffin, Burdett W., assignor.)						
American Textile Specialty Machinery Company. (See Carey, Daniel J., assignor.)						
American Textile Specialty Machinery Company. (See Foerster, Norbert, assignor.)						
American Textile Specialty Machinery Company. (See Foerster and Carey, assignors.)						
American Textile Specialty Machinery Company. (See Foerster, Carey, and Foster, assignors.)						
American Tobacco Company. (See Shedlock, Alfred, assignor.)						
American Toy Manufacturing Company. (See Healey, James A., assignor.)						
American Universal Mill Company. (See Grey, Henry, assignor.)						
American Valve & Meter Company. (See Anderson, Frank C., assignor.)						
American Vending Machine Co. (See Gunder, Claude A., assignor.)						
American Waltham Watch Company. (See Ohlson, Olof, assignor.)						
American Zinc and Chemical Company. (See Dewey, Chauncey E., assignor.)						
Amerling, Harmon B. (See Macartney, Edmund C., assignor.)						
Ames, Addison H., assignor of one-half to J. B. Stahl, Philadelphia, Pa. Emergency-brake	814,659	Mar. 13	1315	277	121	345
Ames, John F., Portland, Oreg. Mold for depositing printing-roller composition on fabrics	816,144	Mar. 27	4390	928	121	1114
Ames, John M., New Brighton, assignor to B. A. Hegeman, Jr., North Plainfield, N. J. Transportation-car and the like	814,660	Mar. 13	1317	277–8	121	345
Ames, Joseph A., Chillicothe, Ohio. Hitching-post strap	817,686	Apr. 10	2232	478	121	1903
Amoroux, Martin F., Atlanta, Ga. Car-floor and floor-frame	815,249	Mar. 13	2511	523	121	606
Amos, Daniel W., and C. H. Jones, Saxton, Pa. Flue or tube cutter	818,213	Apr. 17	3322	711	121	2198
Amphion Piano Player Company. (See Doman, Lewis B., assignor.)						
Ams, Max, Mount Vernon, N. Y. Mold compound	814,007	Mar. 6	1	.....	121	3
Amsden, Orville O., Cuba, N. Y. Rotary cheese-paraffining machine	815,575	Mar. 20	3194	672	121	803
Anderson, Adolf. (See Thorelius, John E., assignor.)						
Anderson, Alfred, assignor of three-fourths to A. G. Wedge, H. Rasmusson, and P. K. Haslerud, Detroit City, Minn. Switch operating and locking mechanism	818,651	Apr. 24	4215	906	121	2443
Anderson, Anders, Plainfield, N. J. Reciprocating bed-actuating apparatus for printing-presses and other machines	817,215	Apr. 10	1326	277	121	1713
Anderson, August, Birmingham, Ala. Horseshoe	815,399	Mar. 20	2878	598	121	734
Anderson, August M., Moorhead, Minn. Excavator	818,214	Apr. 17	3323	711–12	121	2198
Anderson, August M., Moorhead, Minn. Excavator	818,215	Apr. 17	3327	712–13	121	2198
Anderson, David, Westcliff-on-Sea, England. Burner for incandescent gas-lighting	815,777	Mar. 20	3635	764	121	898
Anderson, Edward, Harvey, Ill. Stay for screen-doors	814,763	Mar. 13	1543	326	121	397
Anderson, Floyd L., Auburn, Nebr. Cultivator	815,323	Mar. 20	2701	562	121	695
Anderson, Frank C., assignor of one-half to American Valve & Meter Company, Cincinnati, Ohio. Double automatic latch	815,136	Mar. 13	2282	477	121	553
Anderson, Frank W., Westfield, N. Y. Horse-hoe	816,418	Mar. 27	4967	1055–6	121	1236
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesboro, Pa. Separator	818,216	Apr. 17	3331	714	121	2199
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesboro, Pa. Tank for traction-engines	818,217	Apr. 17	3332	714	121	2199
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesboro, Pa. Wheel-bearing	818,218	Apr. 17	3333	714	121	2200
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesboro, Pa. Gang-plow	818,219	Apr. 17	3334	714–15	121	2200
Anderson, James C., Highland Park, Ill. Bottle	816,419	Mar. 27	4970	1056	121	1237
Anderson, James C., Highland Park, Ill. Bottle	817,033	Apr. 3	970	199	121	1575
Anderson, James S., Ames, Nebr. Automatic railway-signal	817,293	Apr. 10	1484	312	121	1744
Anderson, Joachim, Seattle, Wash. Variable-speed gearing	814,502	Mar. 6	1006	207	121	219
Anderson, John. (See Thannheimer, Josef, assignor.)						
Anderson, Julian C., assignor to Duplex Envelope and Printing Company, Inc., Richmond, Va. Coin-holding card	815,502	Mar. 20	3062	638	121	775
Anderson, Louis. (See Durn and Anderson.)						
Anderson, Robert, Cincinnati, Ohio. Electrical speed-indicator	815,778	Mar. 20	3637	764–5	121	898
Anderson, Swan, assignor of one-half to I. N. Funk, W. A. Kelly, Ottumwa, Iowa, and J. B. Roach, Aurora, Ill. Drain-cock for steam-cylinders	817,294	Apr. 10	1488	312	121	1745
Anderson, Theodore M., Bellingham, Wash. Soap bar	818,652	Apr. 24	4217	906	121	2444
Anderson, Thomas M., and R. Wormald, Oldham, England. Machine for rolling screw-nut blanks	817,360	Apr. 10	1604	339	121	1771
Anderson Tool Company. (See Dunn, Frank P., assignor.)						
Anderson, William J., and J. W. Horney, Loda, Ill. Corn-planter	814,182	Mar. 6	348	71	121	76
André, Henri E. A., Paris, France, assignor to Western Electric Company, Chicago, Ill. Apparatus for telephone-switchboards	816,894	Apr. 3	689	142	121	1511
Andrée, William E., Chicago, Ill., assignor to Nelson & Kreuter Company. Centrifugal machine	816,058	Mar. 27	4212	893	121	1075
Andresen, Momme, O. Magerstedt, and G. Ollendorff, assignors to Actien Gesellschaft für Anilin Fabrikation, Berlin, Germany. Receptacle	814,503	Mar. 6	1008	207	121	220
Andrews, Edwin E., assignor to Automatic Clutch Company, Akron, Ohio. Friction-clutch	818,331	Apr. 17	3556	761–2	121	2246
Andrews, Guy H., Eastland, Cal. Electric clock	817,892	Apr. 17	2677	582–3	121	2055
Andrews, Horace W., assignor to Canton Steel Roofing Company, Canton, Ohio. Division-plate and tablet-holder	818,012	Apr. 17	2926	632	121	2113
Andrews, John M., assignor of one-third to J. O. Check, Columbia, Tenn. Cotton-chopper	817,613	Apr. 10	2109	446	121	1575
Angerer, Victor, Ridley Park, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Railway-switch	814,504	Mar. 6	1009	208	121	220
Angerer, Victor, Ridley Park, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Railway-switch	814,505	Mar. 6	1010	208	121	220
Anker-Holth, Severin C., Riverside, Ill., assignor to International Harvester Company. Journal-bearing	814,822	Mar. 13	1663	348	121	422
Annand, Robert C., South Shields, England. Manufacture of stereotypes and the like	815,999	Mar. 27	4076	863	121	1043
Anson, Ulysses G., Park City, Utah. Finger-exerciser	818,332	Apr. 17	3560	762	121	2247
Antes, Margaretha. (See Antes, Mathias, assignor.)						
Antes, Mathias, assignor to M. Antes, New York, N. Y. Non-refillable bottle	814,008	Mar. 6	1	1	121	3
Anthony, Thomas L. (See Shary and Anthony.)						
Appleton Machine Company. (See Goodrick, Edward W., assignor.)						
Apstein, David, Bridgeport, Conn. Pneumatic-tire plug	818,402	Apr. 24	3701	795	121	2333
Arents, George, Jr., *et al.* (See Tyberg and Mantle, assignors.)						
Arey, Fred C., assignor to Railway Appliances Company, Chicago, Ill. Locomotive snow and ice flanger	816,526	Mar. 27	5179	1099	121	1283
Arithmetical Scale Co. (See Culmer, John W., assignor.)						
Arm-Spear Manufacturing Company. (See Spear, Furman D., assignor.)						
Armann, Halldor E. H., Gardar, N. D. Scrubbing device	815,324	Mar. 20	2702	562	121	695

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Armbrust, Charles W., Chicago, Ill. Brake-shoe	817,541	Apr. 10	1978	419	121	1849
Armbrust, Charles W., Chicago, Ill. Brake-shoe	817,893	Apr. 17	2682	583	121	2056
Armbrust, Charles W., Chicago, Ill. Brake-shoe	817,894	Apr. 17	2684	583	121	2056
Armentrout, Luther E., Coaldale, W. Va. Means for operating the gates of coal-tipples	814,009	Mar. 6	2	1	121	3
Armitage-Herschell Company. (See Armitage, James W., assignor.)						
Armitage, James W., assignor to Armitage-Herschell Company, North Tonawanda, N. Y. Riding-gallery	815,503	Mar. 20	3063	638	121	775
Armstrong, Charles G., and C. A. Dresser, assignors to G. A. E. and F. W. Kohler, Chicago, Ill. Electrical door-opener for elevators	814,928	Mar. 13	1837	385	121	458
Armstrong, Charles G., and C. A. Dresser, assignors to G. A. E. and F. W. Kohler, Chicago, Ill. Automatic checking device for elevators	814,929	Mar. 13	1839	385	121	459
Armstrong, Clara S., Columbus, Ohio. Curtain-pole lifter	817,741	Apr. 17	2348	504	121	1985
Armstrong Oiler Company. (See Mooney, Ernest, assignor.)						
Arnold, Bion J., Chicago, Ill. Power mechanism	818,512	Apr. 24	3922	844	121	2378
Arrieta y Sanz, Pedro, Pamplona, Spain. Vehicle-fender or obstruction-remover for road-vehicles	814,930	Mar. 13	1842	385–6	121	460
Arrowsmith, James W., Morristown, N. J. Arch-prop	815,897	Mar. 20	3892	823	121	963
Arthur Beet Harvester and Implement Co. (See Arthur, James W., assignor.)						
Arthur, Edgar, assignor of one-half to W. C. Arthur, Bethany, Mo. Stock-loader	815,898	Mar. 20	3894	823–4	121	963
Arthur, James W., Denver, Colo., assignor to Arthur Beet Harvester and Implement Co. Beet-harvester	815,325	Mar. 20	2704	563–4	121	695
Arthur, Willie C. (See Arthur, Edgar, assignor.)						
Artom, Alessandro, Turin, Italy. Wireless-telegraph receiving apparatus	816,205	Mar. 27	4510	957	121	1139
Artom, Alessandro, Turin, Italy. Apparatus for producing electric waves	817,137	Apr. 3	1154	239	121	1616
Aschenbach, John C. and J. W., Philadelphia, Pa. Lamp	814,183	Mar. 6	351	72	121	76
Aschenbach, Joseph W. (See Aschenbach, John C. and J. W.)						
Ascher, Otto K. (See McGahan and Ascher.)						
Ashe, Fred M. (See Bailor and Ashe.)						
Ashford, Alfred J., Kinston, N. C. Non-refillable bottle	815,250	Mar. 13	2512	523	121	607
Ashley, Frank M., New York, N. Y. Ink-well	818,403	Apr. 24	3702	795	121	2333
Ashworth, Daniel, Wappingers Falls, N. Y. Mechanical movement	814,010	Mar. 6	5	1–2	121	3
Atha, Herbert B., East Orange, N. J. Making composite gears	814,342	Mar. 6	702	141	121	154
Athey, Elijah F., Lucerne, Colo. Grain-pan for threshers	814,931	Mar. 13	1844	386	121	460
Atlanta Horse Collar Company. (See Estes, William B., assignor.)						
Atwater, Ada C., Manchester, Iowa. Treating ores of the precious metals	817,411	Apr. 10	1716	.....	121	1794
Atwell, Ernest T., Waukomis, Okla. Ter. Broom-handle	815,058	Mar. 13	2118	446	121	517
Auer, David, Milan, Mo. Spike-puller	816,287	Mar. 27	4662	989	121	1172
Aufhauser, Samuel. (See Grossmann, Rudolph C., assignor.)						
Aurora Automatic Machinery Company. (See Levedahl, Axel, assignor.)						
Aurora Automatic Machinery Company. (See Norling, Reinhold A., assignor.)						
Austin, George W., Hollister, Cal. Wrench	814,343	Mar. 6	704	141–2	121	155
Austin, Herbert, assignor to Wolseley Tool and Motor Car Company, Limited, Birmingham, England. Valve mechanism for internal-combustion engines	814,421	Mar. 6	869	178	121	189
Austin, Joel, and R. McKendrick, Windber, Pa. Steel cross-tie and rail-fastener	815,251	Mar. 13	2513	523	121	607
Austin Separator Company. (See Humphrey, Henry H., assignor.)						
Automatic Adding Machine Company. (See Kodama and Gancher, assignors.)						
Automatic Butter-Cutter and Weigher Co. (See Fogg, Charles F., assignor.)						
Automatic Clutch Company. (See Andrews, Edwin E., assignor.)						
Automatic Electric Company. (See Keith and Erickson, assignors.)						
Automatic Machine Glass Company. (See Dixon and Marsh, assignors.)						
Automatic Stamping Machine Company. (See Heene, George W., assignor.)						
Averill, Charles F. (See Doyle and Averill.)						
Avery, Percy C., Dayton, Ohio. Gas-tank	816,059	Mar. 27	4214	893	121	1075
Avril, Paul V., Paris, France. Engraving-machine	818,137	Apr. 17	3169	680–1	121	2165
Avril, Paul V., Paris, France. Engraving-machine	818,138	Apr. 17	3172	681–3	121	2166
Avril, Paul V., Paris, France. Engraving-machine	818,139	Apr. 17	3177	683–4	121	2166
Awtry, Edmund L., assignor of one-third to H. B. McDaniel, Atlanta, Ga. Mosquito-net frame	816,895	Apr. 3	692	142	121	1512
Aylsworth, Jonas W., East Orange, assignor to Edison Storage Battery Company, West Orange, N. J. Apparatus for nickel-plating	817,152	Apr. 10	1190	246–7	121	1684
Azzoni, Oreste E. S., Philadelphia, Pa. Non-refillable bottle	817,034	Apr. 3	973	200	121	1575
Bachmann, John, Jersey City, N. J. Producing multicolor prints	814,108	Mar. 6	206	.....	121	45
Backman, Charles, Alameda, Cal. Cutter-head for shapers	816,953	Apr. 3	821	168	121	1540
Backus, Clarence G., assignor to Zucker & Levett & Loeb Company, New York, N. Y. Polishing or buffing wheel	817,462	Apr. 10	1830	384	121	1818
Backus, Clarence G., and G. L. Wallace, assignors to Zucker & Levett & Loeb Company, New York, N. Y. Electroplating-tank	817,832	Apr. 17	2550	547	121	2028
Backus, John C., Smethport, Pa. Pin spotter and setter for bowling-alleys	814,897	Mar. 13	1783	373	121	447
Bacon, Benjamin J., Sydney, New South Wales, Australia. Suspenders	814,344	Mar. 6	705	142	121	155
Bacon, Benjamin J., Sydney, New South Wales, Australia. Trousers-suspenders	814,345	Mar. 6	707	142	121	155
Bacon, Daniel, New York, N. Y. Electromagnetic beam-tension regulator	815,326	Mar. 20	2707	564	121	696
Bacon, Daniel, New York, N. Y. Electromagnetic governor	818,513	Apr. 24	3924	844	121	2378
Bacon, Daniel, Brooklyn, assignor to Magnetic Control Company, New York, N. Y. Magnetic actuator	817,687	Apr. 10	2233	479	121	1903
Bacon, George T., Grinnell, Iowa, and W. Aab, Seattle, Wash. Flue-stopper	816,060	Mar. 27	4215	894	121	1076
Bacon, Milton L. (See Seibold, Curran, and Bacon.)						
Baden, Henry, Hamler, Ohio. Roofing-plate	818,333	Apr. 17	3561	762	121	2247
Bader, Edward, St. Louis, Mo. Piston-rod packing	818,653	Apr. 24	4218	906	121	2444
Badger, George L., Quincy, Mass. Impact-tool	814,661	Mar. 13	1319	278	121	345
Badger, O. W. (See Hitt, Adrian, assignor.)						
Badische Anilin & Soda Fabrik. (See Bally and Isler, assignors.)						
Badische Anilin & Soda Fabrik. (See Bally and Wolff, assignors.)						
Badische Anilin & Soda Fabrik. (See Behaghel and Schumann, assignors.)						
Badische Anilin & Soda Fabrik. (See Isler, Max H., assignor.)						
Badische Anilin & Soda Fabrik. (See Mettler, Carl, assignor.)						
Baer, Harry E., assignor to H. M. and M. Toch, New York, N. Y. Film-support	817,614	Apr. 10	2111	447	121	1876
Bager, Frederic E. (See Ferris and Bager.)						
Bagga, Herbert G. (See Dorman, Smith, and Bagga.)						
Bagley, Charles W. (See Lewis and Bagley.)						
Bahl, Joseph and J. C., Chicago, Ill. Music-leaf-turning stand	818,404	Apr. 24	3706	795–6	121	2334
Bahl, Joseph C. (See Bahl, Joseph and J. C.)						
Bail, Louis N. (See McLaughlin, Wharton B., assignor.)						
Bailey, Charles A., Cromwell, Conn., assignor to National Novelty Corporation, Westfield, N. Y. Toy bank	815,935	Mar. 27	3957	838	121	1019
Bailey, Francis P. (See Jacob, Frank A., assignor.)						
Bailey, George H., Brooklyn, N. Y. Fastening device for game apparatus	817,668	Apr. 10	2234	479	121	1904

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Bailey, Henry C., St. Louis, Mo., assignor to Electra-Pura Water Company, New York, N. Y. Apparatus for purifying water by electrolysis	814,764	Mar. 13	1544	326–7	121	398
Bailey, James, Walsall, England. Razor-strop	815,252	Mar. 13	2515	524	121	607
Bailey, James F., Valdosta, Ga. Railway-tie	817,098	Apr. 3	1076	223	121	1596
Bailey, Samuel R., Amesbury, Mass. Belt-shifter	818,654	Apr. 24	4220	907–8,	121	2444
Bailey, Samuel R., Amesbury, Mass. Belt-shifter	818,931	Apr. 24	4763	1024	121	2561
Bailey, William S., *et al.* (See Woodward, Anderson, assignor.)						
Bailie, William L., Jr., Norfolk, Va. Nursing-garment	816,840	Apr. 3	580	121	121	1488
Bailleul, Louis P. A. A., Paris, France. Valve-gear for explosion-engines	815,779	Mar. 20	3639	765	121	998
Baillot, Alphonse, Haybes, France. Cupola	817,412	Apr. 10	1717	361–2	121	1795
Bailly, Dona C., Real, assignor of one-half to S. H. Barry, Fenton, Minn. Heat-screen for steam-chests	815,789	Mar. 20	3641	765	121	899
Bailor, Silas E., and F. M. Ashe, Tarkio, Mo. Draft-equalizer	818,599	Apr. 24	4106	882	121	2417
Baily, Edith E. (See Baily, Josiah T., assignor.)						
Baily, Josiah T., assignor to E. E. Baily, Chicago, Ill. Detachable closet-seat	817,731	Apr. 10	2326	500	121	1927
Bair-&-Gazzam Manufacturing Company. (See Sons, Ernest L., assignor.)						
Baird, Mortimer M., Scranton, Pa., assignor to Bi-Lock Hook and Eye Company, Rochester, N. Y. Hook	816,206	Mar. 27	4513	957	121	1140
Baker, Charles E., and A. W. Burwell, Cleveland, Ohio. Treating ores	816,061	Mar. 27	4218	894	121	1077
Baker, David, Wayne, Pa., assignor of one-half to A. B. Neumann, Joliet, Ill. Furnace-charging mechanism	814,506	Mar. 6	1011	208	121	220
Baker, David F., Dundee, Oreg. Rotary engine	816,288	Mar. 27	4662	989–90	121	1173
Baker, Irvin, Latty, Ohio. Invalid-bed attachment	817,951	Apr. 17	2802	607	121	2085
Baker, John W., assignor of one-half to A. L. Holcomb, Halls, Tenn. Clothes-pin	815,253	Mar. 13	2516	524	121	607
Baker, William H., Central Falls, R. I. Kinematograph	814,662	Mar. 13	1334	278–9	121	350
Baker, William H., Central Falls, R. I. Picture and sound reproducing apparatus	814,663	Mar. 13	1338	279–80	121	351
Balcom, Frank G., *et al.* (See Clark, Frank M., assignor.)						
Baldauf, George L. (See Neumaier, John, assignor.)						
Baldwin Company. (See Macy, John W., assignor.)						
Baldwin, Rollin A., and G. D. Foote, New Haven, Conn., assignors to Baldwin & Rowland Switch & Signal Co. Railway signal system	817,463	Apr. 10	1831	384	121	1819
Baldwin & Rowland Switch & Signal Co. (See Baldwin and Foote, assignors.)						
Ball Brothers Glass Manufacturing Company. (See Bingham, Alvah L., assignor.)						
Ball, James G. (See Ball, William R. A. and J. G.)						
Ball, William R. A. and J. G. St. Thomas, N. D. Storm-sash ventilator	814,260	Mar. 6	512	106	121	110
Ballentyne, Brig, Sumpter, Oreg. Ore-concentrator	818,334	Apr. 17	3562	762–3	121	2247
Ballew, Marion H., and R. A. Mead, assignors of one-third to R. R. Dixon, Los Angeles, Cal. Sash-pulley	818,335	Apr. 17	3566	763	121	2248
Bally, Oscar, Mannheim, and H. Wolff, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Blue dye and making same	818,336	Apr. 17	3567	.....	121	2248
Bally, Oscar, and M. H. Isler, Mannheim, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthracene dye and making same	818,992	Apr. 24	4878	.....	121	2586
Baltimore Journal Box Company. (See Patten, James S., assignor.)						
Balze, John C. F., assignor to R. Hoe, New York, N. Y. Web-guide	818,655	Apr. 24	4224	908	121	2445
Baney, Frank E. (See Baney and Osterholt.)						
Baney, Lewis W. and F. E., and J. Osterholt, Platteville, Wis. Drill	815,002	Mar. 13	1992	418	121	486
Banks, Alexander F. (See Campbell, Robert B., assignor.)						
Banks, Charles, assignor of one-half to H. Lohse, Pittsburg, Pa. Cake-turner	815,781	Mar. 20	3642	766	121	899
Banks, Oscar T., London, England. Adjustable support for incandescent electric lamps	816,636	Apr. 3	190	45	121	1403
Baptiste, Traynere. (See Romain, Stephen, assignor.)						
Barabasz, Mieczyslaw, Baltimore, Md. Detachable buckle	817,464	Apr. 10	1835	384	121	1819
Barbagelata, Joseph, Jr., New York, N. Y. Plastering construction	816,420	Mar. 27	4973	1056	121	1237
Barber, Maximilian T. (See Hall and Barber.)						
Bardwell, Arthur F., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Combined door check and closer	818,600	Apr. 24	4109	882–3	121	2418
Bargamin, Clifford, Newport News, Va. Temperature-regulator	818,810	Apr. 24	4550	975	121	2515
Barger, Nathaniel S., St. Joseph, Mo. Cultivator	814,011	Mar. 6	7	2–3	121	4
Barker, Elliott R., Berlin, N. H. Apparatus for the manufacture of bisulfite liquors	818,811	Apr. 24	4551	975–6	121	2516
Barker, Henry P., Marysville, Cal. Scraper	818,140	Apr. 17	3180	684	121	2167
Barker, James. (See Winfield and Barker.)						
Barker, Ralph E. (See Everest and Barker.)						
Barlow, John B., Grand Rapids, Mich. Loose-leaf binder	816,421	Mar. 27	4974	1056	121	1237
Barnes, Charles A., and A. E. Cronin, Springfield, Mass. Hoisting-support	815,254	Mar. 13	2516	524	121	607
Barnes, Edmund A., Bryan, Idaho. Adjustable bedstead	817,295	Apr. 10	1489	312	121	1745
Barnes, John E. L. (See Sloan, Barnes, and Ogden.)						
Barnes, Nathaniel C. (See Hillenbrand, Charles W., assignor.)						
Barnes, Ned E., Willis, Tex. Rail tie and brace	815,059	Mar. 13	2119	446	121	517
Barnes, William R., Atlanta, Ga. Flue swaging and plugging machine	818,337	Apr. 17	3567	763–4	121	2248
Barnett, George W., Chicago, Ill., assignor to Thornton & Barnett Mfg. Co. Curtain-holder	816,289	Mar. 27	4664	990	121	1173
Barnett, Ira S., Louisville, Ky. Gas-engine	816,062	Mar. 27	4219	894–5	121	1077
Barnett, Morrisson J., San Francisco, Cal., assignor, by mesne assignments, to Whitson Autopress Company. Gripper for printing-presses and means for operating same	818,338	Apr. 17	3570	764	121	2249
Barnett, Robert H., *et al.* (See Chadborn, Frederic C., assignor.)						
Barnhart, John H. (See Flory and Barnhart.)						
Barr, Mark, assignor, by mesne assignments, to Linotype & Machinery Limited, London, England. Tracer and tool for engraving-machines	816,700	Apr. 3	306	71	121	1428
Barr, Mark, Cowley, near Uxbridge, assignor to Linotype Company Limited, London, England. Holder or quill for holding the rotating tools of engraving-machines	818,993	Apr. 24	4879	1048	121	2586
Barr, Norman S., Tombstone, Ariz. Ter. Balanced throttle-valve	817,153	Apr. 10	1194	247	121	1685
Barrett, Charles W., Hanford, Cal. Checkrein-fastener	814,507	Mar. 6	1015	209	121	221
Barrett, Ernest D., Plainfield, N. J. Flush-valve	816,290	Mar. 27	4666	990	121	1173
Barrie, Robert C., Philadelphia, Pa. Water-filter	814,261	Mar. 6	513	106	121	110
Barron, Walter J. (See Merritt and Barron.)						
Barry, John, and M. L. Shaughnessy, Westphalia, Kans. Combined measuring and registering device	818,405	Apr. 24	3710	796	121	2334
Barry, John J., Nashville, Tenn. Hydraulic pressure device	814,508	Mar. 6	1015	209	121	221
Barry, Samuel H. (See Bailly, Dona C., assignor.)						
Barth, Charles F., assignor to Allis-Chalmers Company, Milwaukee, Wis. Steam-turbine	816,207	Mar. 27	4514	958	121	1140
Barth, Henry, Cincinnati, Ohio. Producing printing-surfaces	818,656	Apr. 24	4227	909	121	2446
Barth, Johannes D., *et al.* (See Knopf, Carl, assignor.)						
Bartholomew, Fleury K., Campbell, Cal. Fruit-packing device	818,812	Apr. 24	4554	976	121	2516
Bartholomew, John B., Peoria, Ill., assignor, by mesne assignments, to Sattley Stacker Company, Indianapolis, Ind. Straw-stacker	817,895	Apr. 17	3685	584	121	2057
Bartholomew, John B., Peoria, Ill., assignor, by mesne assignments, to Sattley Stacker Company, Indianapolis, Ind. Straw-stacker	817,896	Apr. 17	3689	585–6	121	2058

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Bartholomew, John B., Peoria, Ill., assignor, by mesne assignments, to Sattley Stacker Company, Indianapolis, Ind. Straw-stacker	817,897	Apr. 17	2700	586	121	2061
Bartholomew, John B., Peoria, Ill., assignor, by mesne assignments, to Sattley Stacker Company, Indianapolis, Ind. Straw-stacker	817,952	Apr. 17	2805	608-9	121	2086
Bartholomew, John B., Peoria, Ill., assignor to Sattley Stacker Company, Indianapolis, Ind. Straw-stacker	818,339	Apr. 17	3572	764-5	121	2249
Bartlett, Arthur W., Monteagle Valley, Canada. Mechanical motor and brake	818,406	Apr. 24	3712	796	121	2335
Bartlett, Frank V., Detroit, Mich. Toy car	815,504	Mar. 20	3064	638	121	775
Bartlett, Henry E., Chicago, Ill. Automatic railway safety-gate	814,012	Mar. 6	12	3	121	5
Bartlett, Robert S., Nocona, Tex. Windmill	818,013	Apr. 17	2927	632	121	2114
Barton, David, and H. K. Ackerman, Paterson, N. J. Winding-machine	818,514	Apr. 24	3925	844	121	2378
Barton, Delbert E., Racine, Wis. Hub	818,340	Apr. 17	3575	765	121	2250
Bartosh, Joseph M., Mount Vernon, Iowa. Attachment for traction-engines	817,833	Apr. 17	2552	548	121	2029
Bartrum, Charles W., assignor to Sweet, Orr & Company, Newburgh, N. Y. Suspender-loop	814,509	Mar. 6	1016	209	121	222
Bartsch, F. Robert, *et al.* (See McCann, Daniel, assignor.)						
Bass, Max, *et al.* (See Fontaine, Thomas A., assignor.)						
Bassell, John Y., and F. C. Blenkner, Columbus, Ohio. Retaining device for gun-barrel hand-protectors	814,664	Mar. 13	1341	280	121	352
Bassinger, William H., Passaic, N. J. Combination envelop and message blank	818,657	Apr. 24	4228	909	121	2446
Bateman, Miles. (See Fuller and Bateman.)						
Bates, Frank L., San Francisco, Cal. Horizontal-cylinder piston	818,860	Apr. 24	4633	995	121	2533
Bates, Percy A. C., London, England. Garment-fastening	817,615	Apr. 10	2112	447	121	1876
Battey, Charles C., Concord, N. H. Track-clearing device	816,208	Mar. 27	4515	958	121	1149
Bauer & Black. (See Toles, Justin K., assignor.)						
Baumann, Fritz, Kaiserslautern, Germany. Cover for road-manholes	814,013	Mar. 6	17	4	121	6
Baumer, Francis, New York, N. Y. Resilient base for candle-holders	814,636	Mar. 6	1263	265	121	274
Baxter, David M., assignor of one-half to M. H. Baxter, Newport News, Va. Metal-bending machine	818,932	Apr. 24	4766	1024	121	2562
Baxter, Maxwell H. (See Baxter, David M., assignor.)						
Baxter, William, Jr., Jersey City, N. J. Type-writer	816,552	Apr. 3	1	1	121	1355
Baxter, William, Jr., Jersey City, N. J. Type-writer	816,637	Apr. 3	192	45	121	1403
Bayles, Lewis C. (See Hellman and Bayles.)						
Baylor, Elwood O., Adrian, Mich. Gate-latch	814,665	Mar. 13	1343	280	121	352
Baynard, William H., Boston, assignor to A. E. Little & Company, Lynn, Mass. Shank-piece for boots and shoes	815,327	Mar. 20	2708	564	121	696
Beach, Warren D. (See Allen and Beach.)						
Beall, Albert E., Clinton, Iowa. Chair	816,209	Mar. 27	4517	959	121	1141
Beall, Harry T., and I. V. Guy, Fort Thomas, Ky. Crib attachment for bedsteads	817,542	Apr. 10	1980	419	121	1849
Beall, William L., assignor to Gale Manufacturing Company, Albion, Mich. Sulky-plow	816,771	Apr. 3	435	98	121	1454
Beals, Erl V., Boston, Mass. Areameter	818,601	Apr. 24	4111	883-4	121	2419
Beaman, William M., Washington, D. C. Attachment for surveying instruments	816,422	Mar. 27	4976	1057	121	1237
Bean, Benjamin F., Gilford, N. H. Hook for cutting corn, &c.	818,813	Apr. 24	4556	976	121	2516
Bean, Joseph A., Franklin township, Hendricks county, Ind. Riding-cultivator	818,071	Apr. 17	3033	655	121	2134
Beard, James W., and J. Salter, Bienville, La. Base for posts	817,742	Apr. 17	2349	504	121	1985
Beatty, Hugh, Pittsburg, Pa. Brake	814,422	Mar. 6	871	178	121	190
Beatty, Hugh, Pittsburg, Pa. Window-cleaner	815,782	Mar. 20	3643	766	121	899
Beauchemin, Louis N., assignor of one-half to G. H. Simpson, Montreal, Canada. Nail-less horseshoe	814,184	Mar. 6	354	72	121	77
Beaudry, Arthur, Manistique, Mich. Box-top-securing device	814,932	Mar. 13	1845	388	121	480
Beaver Dam Manufacturing Company. (See Nelson, Nicholas R., assignor.)						
Becherer, Jay W., Brooklyn, N. Y., assignor to Coston Signal Company. Signal box or package	815,783	Mar. 20	3643	766	121	899
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Rotary printing-press	814,510	Mar. 6	1017	209-11	121	222
Beck, Conrad and H. C., assignors to C. Beck, London, G. M. Lawford, Westminster, and D. S. Capper, London, England. Range-finder	819,031	Apr. 24	4957	1044	121	2804
Beck, Horace C. (See Beck, Conrad and H. C.)						
Beck, Leopold, Sömmerda, Germany. Automatic setting-key for setting the firing-charge rings of time-fuses	817,616	Apr. 10	2113	447-8	121	1876
Beck, William, assignor of seven-tenths to F. and W. Brahs, C. Joyce, J. McGrann, F. Johnson, and T. Welch, Henderson, Minn. Shoe-sole fastening	818,861	Apr. 24	4635	995	121	2533
Becke, Max, Höchst-on-the-Main, Germany. Producing multicolored dye effects in woolen fabrics, &c.	815,671	Mar. 20	3390	.....	121	847
Becker, Philip, Anderson, Ind., assignor, by mesne assignments, to Geneva Toy & Game Company. Game apparatus	816,553	Apr. 3	4	1	121	1355
Beckwith, William, assignor of one-half to B. E. Davis, Lowell, Mass. Spinning-flier	816,701	Apr. 3	307	72	121	1428
Bedell, Richard M., New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	816,841	Apr. 3	581	121	121	1498
Beebe, Dow R., Bridgeport, Conn. Coat-hanger	815,060	Mar. 13	2120	447	121	517
Beebe, Joseph E., Harlan, Iowa. Foldable milking-stool and pail-holder	815,672	Mar. 20	3391	708-9	121	847
Beecher, Adolphus H., Mason City, Iowa. Safety starting mechanism for motors	815,137	Mar. 13	2284	477	121	554
Beetlestone, Edward, West Smethwick, England. Glass-rolling machinery	818,141	Apr. 17	3183	685	121	2167
Behaghel, Wilhelm, and G. K. Schumann, assignors to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Making phenylglycin salts	818,341	Apr. 17	3577	.....	121	2250
Belair, Albert, assignor to J. T. Morin, Montreal, Canada. Burial-casket	818,220	Apr. 17	3337	716	121	2201
Belber, Aaron S., Philadelphia, Pa. Trunk-tray support	816,423	Mar. 27	4979	1057	121	1238
Belcher, George E., Stoughton, Mass. Last	818,407	Apr. 24	3714	797	121	2335
Belden, Joseph C., and A. Beutler, assignors to Belden Manufacturing Company, Chicago, Ill. Attachment for desk-telephones	818,602	Apr. 24	4114	884	121	2419
Belden Manufacturing Company. (See Belden and Beutler, assignors.)						
Bell, James T., Lansing, Mich. Fruit-picker	818,342	Apr. 17	3578	765	121	2250
Bell, Robert, London, England. Treating surfaces to be protected from fouling	817,743	Apr. 17	2350	.....	121	1986
Bell, Thaddeus, Grafton, W. Va. Railway-brake	816,702	Apr. 3	308	72	121	1429
Bell, Wilhelm, Burgbrohl, Germany. Drying apparatus	814,666	Mar. 13	1345	281	121	353
Bell, William G., Newton, Mass. Bag or package	815,255	Mar. 13	2519	524	121	908
Belloff, John C., and A. Roth, New Brunswick, N. J. Frame for drying-racks	815,061	Mar. 13	2121	447	121	518
Bellows, Benjamin F., Sioux City, Iowa. Grindstone attachment	818,933	Apr. 24	4768	1025	121	2562
Belluzzo, Giuseppe, Milan, Italy. Elastic-fluid turbine	814,423	Mar. 6	873	179	121	190
Bemis, Sumner A., Springfield, Mass. Railway-car truck	815,784	Mar. 20	3645	767	121	900
Bemis, Thomas, Indianapolis, Ind. Adjustable fence for saws	816,424	Mar. 27	4980	1057	121	1238
Bender Car Door Company. (See Bender, Jacob S., assignor.)						
Bender, Jacob P. (See Lumgair, David, assignor.)						
Bender, Jacob S., Kansas City, Mo., assignor to Bender Car Door Company. Combined grain-door and loading and unloading platform for box-cars	814,014	Mar. 6	18	4	121	6
Bender, Oscar, Treptow, near Berlin, Germany. Combustion	818,221	Apr. 17	3339	716	121	2201

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bendickson, Iver E., assignor of two-thirds to C. Legreid and F. Woellfer, Cambridge, Wis. Conveying device	814,933	Mar. 13	1847	387	121	461
Benedic, Augustin M., New Orleans, La. Recording apparatus	818,994	Apr. 24	4880	1048	121	2587
Benedic, Augustin M., New Orleans, La. Game apparatus	818,995	Apr. 24	4884	1049	121	2587
Benedict, Charles F. (See Cleff and Benedict.)						
Benedict, Frank H., Detroit, Mich. Tie for wire fencing	816,210	Mar. 27	4519	959	121	1141
Bengough, James, J. A. Tansley, and W. J. Reidell, assignors to Carter-Crume Company, Limited, Niagara Falls, N. Y. Manifolding apparatus	816,063	Mar. 27	4224	895	121	1077
Benjamin, Frederick W., Jefferson, Ohio. Potato-digger	814,346	Mar. 6	708	142	121	156
Benjamin, George H., New York, N. Y. Metallurgical furnace	817,099	Apr. 3	1077	223–4	121	1597
Benjamin, Morris, Atlanta, Ga. Bearing for grinding-mills	817,898	Apr. 17	2703	587	121	2062
Bennett, Clarence G., assignor of one-half to G. A. Rich, Melville, N. D. Shifting eccentric for engine-valves	818,934	Apr. 24	4769	1025	121	2562
Bennett, Joseph J., Lisbon, Ohio. Credit-accounting appliance	815,785	Mar. 20	3651	768	121	901
Bennett, Thomas G., assignor to Winchester Repeating Arms Co., New Haven, Conn. Spreader for shot-cartridges	814,511	Mar. 6	1024	211	121	223
Bennett, William H., Newark, N. J. Closure for cream and milk jars or bottles	815,062	Mar. 13	2123	447	121	518
Bennitt, Fred, *et al.* (See Vaughan, Bernard G., assignor.)						
Bens, Samuel J., assignor to R. L. Muir, San Francisco, Cal. Log-turner	818,142	Apr. 17	3184	685	121	2168
Benson, Omar, New Bedford, assignor to Draper Company, Hopedale, Mass. Thread-parting mechanism for looms	815,786	Mar. 20	3653	768	121	902
Benson, William P., Sterling, Ill. Door-hanger	818,603	Apr. 24	4116	884	121	2420
Bent, Quincy, Lebanon, Pa. Concentrator	815,673	Mar. 20	3392	709	121	848
Bent, Quincy, Lebanon, Pa. Gas-purifier	815,674	Mar. 20	3394	709	121	848
Bentley, Frank, Niles, Ohio. Brick-pallet	817,689	Apr. 10	2235	479	121	1903
Bentley, William. (See Thompson and Bentley.)						
Bergenthal, Victor W., Chicago, Ill. Electric signal system	818,515	Apr. 24	3926	845–6	121	2379
Berger, Ernst, assignor to Firm of H. Levy, Rorschach, Switzerland. Shuttle for embroidering-machines	817,744	Apr. 17	2350	504	121	1985
Berger, Francis M., Basin, Mont. Eccentric	817,617	Apr. 10	2115	448	121	1877
Berger, Max, assignor to Firm of C. Zeiss, Jena, Germany. Prism-telescope casing	818,014	Apr. 17	2929	632	121	2114
Bergman, Frank A., Chicago, Ill. Screw-cap for cans	817,100	Apr. 3	1079	224	121	1597
Bergström, Sven T. (See Cardell and Bergström.)						
Bernel, Louis B., *et al.* (See Durboraw, Charles L., assignor.)						
Bernheisel, William F., Wheeling, W. Va. Stamp-affixing machine	815,138	Mar. 13	2285	477	121	554
Berrey, Samuel H., Providence, R. I. Hinge for gates	816,527	Mar. 27	5181	1099	121	1283
Berry, John J., assignor to Indianapolis Watchman Clock Company, Indianapolis, Ind. Combined telephone and watchman's alarm system	816,000	Mar. 27	4077	864	121	1043
Berry, Shepherd W., Lawrence, Kans. Attachment for grain-binders	814,347	Mar. 6	709	143	121	156
Berry, William S., and L. A. Sturgeon, Lindsay, Cal. Double-acting deep-well pump	816,064	Mar. 27	4227	896	121	1078
Berthier, Andre, Constantinople, Turkey. Arrangement for fixing bayonets	816,964	Apr. 3	823	168	121	1540
Besemfelder, Eduard R., Charlottenburg, Germany. Transporting and heat-interchanging appliance	817,101	Apr. 3	1080	224–5	121	1598
Bessey, Joseph B., London, England. Producing fuel from peat by means of the electric current	817,899	Apr. 17	2705	.....	121	2063
Besson, William, Duluth, Minn. Tubular rock-boring drill	817,296	Apr. 10	1490	313	121	1745
Bethlehem Steel Company. (See Meigs and Gathmann, assignors.)						
Bethlehem Steel Company. (See Meigs and Jakobsson, assignors.)						
Bettendorf Metal Wheel Company. (See Einfeldt, Emil, assignor.)						
Bettington, Claude A. (See Robeson and Bettington.)						
Betts, Anson G. (See Valentine and Betts.)						
Betts, Anson G., Troy, N. Y. Electric furnace	816,554	Apr. 3	5	1–2	121	1355
Betts, Anson G., Troy, N. Y. Smelting lead sulfid	816,772	Apr. 3	439	.....	121	1455
Betts, Anson G., Troy, N. Y. Smelting lead sulfid	816,773	Apr. 3	440	.....	121	1455
Betts, Charles L., Brooklyn, assignor to R. E. Dietz Company, New York, N. Y. Lamp or lantern	817,297	Apr. 10	1492	313	121	1746
Betz, Charles L. (See Koehler and Betz.)						
Beuckman, Frank, East St. Louis, Ill. Meat-tenderer and vegetable-chopper	816,955	Apr. 3	824	169	121	1540
Beutler, Albert. (See Belden and Beutler.)						
Bevans, William H., Bridgeport, Conn. Mount for ordnance	814,348	Mar. 6	710	143	121	156
Bewley, Claude E., assignor of one-half to J. C. Bewley, Los Angeles, Cal. Hose-coupling	816,703	Apr. 3	309	71	121	1429
Bewley, John C. (See Bewley, Claude E., assignor.)						
Beyer, William E., assignor to M. Koster, Cleveland, Ohio. Fastener for glass joints	814,637	Mar. 6	1265	266	121	274
Bi-Lock Hook and Eye Company. (See Baird, Mortimer M., assignor.)						
Bible, Hunley, and L. A. Robinson, Sherman, Tex. Wood-boring machine	815,256	Mar. 13	2519	525	121	606
Bierd, Richard E., Carrollton, Mich. Punching-bag support	818,604	Apr. 24	4118	885	121	2421
Bigelow, George H., San Francisco, Cal. Hair-pin	816,956	Apr. 3	826	169	121	1541
Bihl, Ignatz, Newport, Ky. Fire-escape	816,896	Apr. 3	693	143	121	1512
Biladeau, Calice, West Bridgewater, and A. P. Chapdelaine, Brockton, Mass., assignors to United-Xpedite Finishing Company, Berwick, Me., and Boston, Mass. Machine for polishing boots or shoes. (Reissue)	12,466	Mar. 27	5239	1111	121	1297
Billings, Charles A. (See Hayes and Billings.)						
Bim, Josef, Vienna, Austria-Hungary. Loom-shuttle	814,349	Mar. 6	711	143	121	156
Bingham, Alvah L., assignor to Ball Brothers Glass Manufacturing Company, Muncie, Ind. Glass-blowing machine	817,745	Apr. 17	2351	505–7	121	1986
Binnie, Robert, Sr., Bolivar, Pa. Rock-drill	818,015	Apr. 17	2929	633	121	2114
Binnings, Charles E., Stamford, Tex., assignor to E. P. Swenson, New York, N. Y. Mixing plant	814,667	Mar. 13	1348	281	121	353
Birchard, George H., Lincoln, Nebr. Concrete foundation for scales	815,576	Mar. 20	3197	672	121	803
Bird, James P., Worcester, Mass. Machine for securing flies to boxes	815,003	Mar. 13	1993	419–20	121	489
Bird & Son, F. W. (See Wyman, George R., assignor.)						
Birney, James E., Leslie, Mich. Attachment for ice-cream freezers	814,109	Mar. 6	213	42	121	46
Bischoff, Frederick F., Chicago, Ill., assignor to Universal Caster and Foundry Company. Caster	816,211	Mar. 27	4520	959	121	1141
Bishop, Arthur S. (See Bishop, Frederick R., assignor.)						
Bishop, Frederick R., Southbridge, assignor of one-half to A. S. Bishop, North Attleboro, Mass. Die for curbing chains	817,618	Apr. 10	2117	448	121	1877
Bishopric & Company. (See Bishopric, George F., assignor.)						
Bishopric, George F., assignor to Bishopric & Company, Toronto, Canada. Composite roofing	817,619	Apr. 10	2118	449	121	1878
Bitting, Jeremiah A., South Bethlehem, Pa. Music-leaf turner	816,704	Apr. 3	311	72	121	1429
Black, Charles A., Jr., Hightstown, N. J. Ventilator-lifter	816,212	Mar. 27	4521	960	121	1141
Black & Clawson Company. (See Harris, James W., assignor.)						
Black, Milton M. (See Hovey and Black.)						
Black, Russell. (See Owens and Black.)						
Blackall, Robert H., Edgewood Park, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	817,953	Apr. 17	2813	609	121	2069

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Blacker, Frank E., Brentwood, N. Y. Packet-holder	815,505	Mar. 20	3065	639	121	776
Blackington, Alva D. (See Sanderson, James G., assignor.)						
Blackman, John J., New Britain, assignor to G. P. Bradstreet, Thomaston, Conn. Surface-finishing for floors, ceilings, &c.	814,934	Mar. 13	1848	387	121	461
Blackmore, Henry S., Mount Vernon, N. Y. Making carbon acids and ketones	817,600	Apr. 10	2236	480	121	1903
Blackstone, Clarence W., assignor of one-half to F. H. Knapp, Chicago, Ill. Power-hammer	816,291	Mar. 27	4069	991	121	1174
Blain, Charles F., and G. S. Jackson, Webb City, Mo. Thill-coupling	817,102	Apr. 3	1083	225	121	1599
Blaisdell, Hiram W., Los Angeles, Cal. System of excavating and filling vats	816,065	Mar. 27	4229	896	121	1079
Blaisdell, Robert W., assignor to Garden City Strength Testing Machine Company, Beverly, Mass. Exercising-machine	816,957	Apr. 3	827	160	121	1541
Blake, Hubert V., Accrington, England. Hydraulic ram	816,145	Mar. 27	4393	928–9	121	1115
Blake, John A., Lafayette, Ind. Holder for staples, &c.	815,787	Mar. 20	3655	769	121	902
Blake, John A., Wolcott, Ind. Fence-post	815,788	Mar. 20	3657	769	121	903
Blake, John F., Port Monmouth, N. J., assignor of one-tenth to H. M. Schaap, New York, N. Y. Snow-melting machine	818,072	Apr. 17	3036	655–6	121	2135
Blake, Lucien I., Lawrence, Kans. Electrostatic apparatus	817,746	Apr. 17	2360	507	121	1987
Blaksiee, Frank A. (See Ruger, Forrest E., assignor.)						
Blanc, Auguste, St. Croix, Switzerland, assignor to La Société Savy Jeanjean et Cie., Paris, France. Machine for wrapping chocolate tablets or similar articles	815,675	Mar. 20	3396	710	121	849
Blanchard, Allen I., Chicago, Ill. Ticket	818,996	Apr. 24	4885	1049	121	2588
Blauhorn, Emanuel, Vienna, Austria-Hungary. Injector	817,620	Apr. 10	2119	449	121	1878
Blauvelt, William H., Syracuse, N. Y. Charging or feeding device	818,862	Apr. 24	4636	995–6	121	2534
Blaxter, George H., New Brighton, assignor to Pittsburgh Seamless Tube Company, Beaver Falls, Pa. Swaging-mill	816,146	Mar. 27	4394	929	121	1115
Bleakley, Orrin D., *et al.* (See Hutchinson, Charles G., assignor.)						
Blechschmidt, Charles E., Bellevue, Ky. Permutation-lock	816,842	Apr. 3	583	121	121	1488
Blenkner, Fred C. (See Bassell and Blenkner.)						
Bleoo, John H., assignor to A. B. Levy, New York, N. Y. Valve for air-brake systems	814,350	Mar. 6	712	144	121	156
Bleuch, Charles, Newport, Ky., assignor to Crane & Breed Manufacturing Company, Cincinnati, Ohio. Handle for burial-caskets, coffins, and the like	818,733	Apr. 24	4380	938	121	2479
Blesh, Robert S. (See Smith, Jed A., assignor.)						
Blettner, John H., Pittsburg, Pa. Coating	814,424	Mar. 6	875	179	121	190
Blin, Eugène, assignor to La Société des Établissements Malicet et Blin, Aubervilliers, France. Ball-bearing	818,734	Apr. 24	4383	938	121	2479
Bliss, Anthony H., North Attleboro, Mass. Bracelet	815,899	Mar. 20	3895	824	121	963
Blitsch, Michael, and T. F. McDonnell, Waterloo, Iowa. Folding scaffold-bracket	814,015	Mar. 6	20	4	121	6
Block, Emile, New Orleans, La. Combined hand-torch and soldering-iron	816,425	Mar. 27	4981	1057	121	1238
Blomstrom, Charles H., assignor to C. H. Blomstrom Motor Company, Detroit, Mich. Cooling device for cylinders	815,257	Mar. 13	2521	525	121	608
Bloomberg, Milton L., Greensboro, N. C. Clamp	814,898	Mar. 13	1788	374	121	448
Blose, William H., New Paris, Ohio. Combined folding bed and cabinet	815,400	Mar. 20	2879	598–9	121	734
Blossom, Burton S., *et al.* (See Fritch, Joseph C., assignor.)						
Blount, Lewis, Jr., *et al.* (See Blount, Lewis, assignor.)						
Blount, Lewis, Athens, assignor of two-thirds to C. B. Young and L. Blount, Jr., Augusta, Ga. Cotton-picker	815,676	Mar. 20	3402	711	121	850
Blumhard, Charles A., *et al.* (See Prideaux, Lewis, assignor.)						
Blye, Harry C. (See Hull, Joseph V., assignor.)						
Blynt, Herbert S., Steubenville, Ohio. Insulator	815,506	Mar. 20	3067	639	121	776
Boardman, Richard, Tiverton, R. I., and W. H. Sharples, Fall River, Mass. Electrical warp stop-motion	815,789	Mar. 20	3667	769	121	903
Boas, Alfred, and C. Rodrigues-Ely, Paris, France. Apparatus for reflecting and directing light	817,621	Apr. 10	2120	450	121	1878
Bobbitt, James W., and E. Hayes, Joplin, Mo. Support for vehicle tongues or shafts	818,406	Apr. 24	3715	797	121	2335
Bockhoff, William F., Indianapolis, Ind., and E. J. von Pein, Dayton, Ohio, assignors to National Cash Register Company, Jersey City, N. J., and Dayton, Ohio. Cash-register	816,066	Mar. 27	4234	897	121	1060
Bodman, Walter L., Maywood, Ill. Tea or coffee pot	814,262	Mar. 6	514	106	121	110
Boese, Charles W., Temple, Tex. Clothes-pin	818,658	Apr. 24	4230	910	121	2446
Boettler, George, St. Peters, Mo. Separator	816,067	Mar. 27	4240	898	121	1061
Bogardus, Van Ness H., assignor of one-half to W. T. Noad, Torrington, Conn. Sewing-cabinet	818,073	Apr. 17	3037	656	121	2135
Bogart, Fred H., assignor to Corbin Motor Vehicle Corporation, New Britain, Conn. Means for cooling internal-combustion engines	818,735	Apr. 24	4383	938–9	121	2479
Bogga, Herbert, Cobourg, Canada. Oil-lamp	814,668	Mar. 13	1360	282	121	353
Bogue, David A. (See Gorsuch and Bogue.)						
Boland, John. (See Mueller and Boland.)						
Bole, Robert E., Bakersfield, Cal. Oil-well pump	817,543	Apr. 10	1983	419	121	1850
Bollenbach, Friedrich, assignor of two-thirds to E. E. Herman and W. M. Holzinger, Allegheny, Pa. Loose-leaf ledger	818,605	Apr. 24	4119	885	121	2421
Bollhoefer, Eddie, Colfax, Iowa. Display-rack	817,216	Apr. 10	1328	278	121	1714
Bollman, George W., Pittsburg, Pa., assignor to Otis Elevator Company, East Orange, N. J. Hoist	817,747	Apr. 17	2361	507	121	1987
Bolte, Charles J., Columbus, Wis. Vehicle draft appliance	818,997	Apr. 24	4888	1049	121	2588
Bolton, Alice, Kansas City, Mo. Game	818,409	Apr. 24	3716	797	121	2336
Bolton, Werner von, Charlottenburg, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Electric incandescent lamp	817,732	Apr. 10	2327	500	121	1927
Bolton, Werner von, Charlottenburg, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Homogeneous body of highly-refractory metals	817,733	Apr. 10	2328	.....	121	1927
Bolton, Werner von, Charlottenburg, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Incandescing body for lighting purposes	817,734	Apr. 10	2330	501	121	1927
Bonroe, Frank A., St. Louis, Mo. Tobacco-press	815,790	Mar. 20	3662	770	121	904
Bonvillain, Philibert, Paris, France. Manufacturing pattern-plates	814,263	Mar. 6	514	107	121	111
Bonvillain, Philibert, Paris, France. Apparatus for use in manufacturing small metallic pattern-plates	814,638	Mar. 6	1206	266	121	274
Bonvillain, Philibert, Paris, France. Hydraulic molding-press	815,577	Mar. 20	3199	672–3	121	804
Bonvillain, Philibert, Paris, France. Machine for manipulating foundry-molds	818,410	Apr. 24	3718	797–8	121	2336
Boomer, Isaac N., and S. P. Linkswiler, Salix, Iowa. Railway-tie	818,606	Apr. 24	4121	885	121	2421
Boone, Robert B., *et al.* (See Tatum, James W., assignor.)						
Booth, Charles W. (See Menzel, William G., assignor.)						
Booth, Emmons R., Cincinnati, Ohio. Lock	816,705	Apr. 3	313	73	121	1429
Booth, Irving E., *et al.* (See Flynt, Louis W. G., assignor.)						
Booth, Quentin W., *et al.* (See Flynt, Louis W. G., assignor.)						
Booth, William H., Atkinson, N. C. Sliding-door fastener	818,143	Apr. 17	3185	685	121	2168
Borden, Bradford, assignor, by mesne assignments, to Borden Company, Warren, Ohio. Adjustable die-stock	814,561	Mar. 6	1159	242	121	251
Borden, Bradford, assignor to Borden Company, Warren, Ohio. Adjustable die-stock	817,217	Apr. 10	1330	278	121	1714

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Borden Company. (See Borden, Bradford, assignor.)						
Borini, Giuseppe, Reggio Emilia, Italy. Iron-framed wood pad for track-rails	816,774	Apr. 3	441	100	121	1456
Bormann, Johann G. L., Charlottenburg, Germany. Gas-generator	817,035	Apr. 3	974	200	121	1576
Born, Paul B. F., Grover, S. D. Windmill-governor	816,213	Mar. 27	4522	980	121	1142
Borsch, John L., Jr., Philadelphia, Pa. Tool for grinding lenses	816,555	Apr. 3	8	2	121	1356
Borst, Frank A., assignor to Ideal Concrete Machinery Company, South Bend, Ind. Sill and lintel machine	817,413	Apr. 10	1718	362	121	1795
Boss, Homer C., Leroy, N. Y. Draft-equalizer	814,110	Mar. 6	214	42	121	46
Boss, Martin P., San Francisco, Cal. Stamp-mill	815,936	Mar. 27	3959	839	121	1019
Boss, Martin P., San Francisco, Cal. Stamp-mill	815,937	Mar. 27	3960	839	121	1020
Bostrom, Axel G. (See Holmes and Bostrom.)						
Bostrom-Brady Manufacturing Company. (See Bostrom, Ernst A., assignor.)						
Bostrom, Ernst A., Atlanta, Ga., assignor to Bostrom-Brady Manufacturing Company. Leveling instrument	814,111	Mar. 6	217	42	121	47
Bostrom, John M. (See Holmes and Bostrom.)						
Bosworth, Martin L., assignor of one-half to E. J. Brownell, Bristol, R. I. Vaginal syringe	818,814	Apr. 24	4556	976	121	2517
Bott, George M., assignor of one-half to F. R. Marks, Ashland, Ohio. Spring for doors, gates, and the like	816,556	Apr. 3	10	3	121	1356
Böttcher, Karl, and F. Heym, Benrath, near Düsseldorf, Germany. Automatic grasper	818,736	Apr. 24	4385	939	121	2480
Bouery, Pierre, Weaverville, Cal. Dredger and bed-rock cleaner	816,958	Apr. 3	828	169	121	1541
Boulden, Herbert D. (See Boulden, William M., W. I., and H. D.)						
Boulden, William I. (See Boulden, William M., W. I., and H. D.)						
Boulden, William M., W. I., and H. D., Chester, Pa. Drop and cellar-door hinge	817,748	Apr. 17	2363	508	121	1988
Bouton, Georges. (See Dion and Bouton.)						
Bowen, Isaac N., Lead, S. D. Tire	818,863	Apr. 24	4638	996	121	2534
Bower, Abram L., Boyertown, Pa. Automatic block-signal system	817,036	Apr. 3	976	200	121	1576
Bowers, David. (See Keller and Bowers.)						
Bowman, Mary E. (See Klein, Daniel, assignor.)						
Bowman, Newton K., North Lawrence, Ohio. Switch-operating mechanism	814,582	Mar. 6	1161	242-3	121	251
Boyce, Arthur, Des Moines, Iowa. Hot-air furnace	816,528	Mar. 27	5183	1099	121	1284
Boyce, John E., New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Elevator-brake	814,669	Mar. 13	1350	282	121	354
Boyd, Frederic R. C., Lynn, Mass., assignor to General Electric Company. Nozzle for elastic-fluid turbines	814,425	Mar. 6	876	179	121	191
Boyd, Robert W. (See Van Dusen, Henry L., assignor.)						
Boykin, Christopher C., assignor to American Novelty Company, Incorporated, Norfolk, Va. Apparatus for filling capsules	817,622	Apr. 10	2121	450	121	1878
Boyle, James W., Unity Station, Pa. Regulator or governor	818,864	Apr. 24	4640	996-7	121	2535
Boynton, Francis W., Auckland, New Zealand. Cardboard box	814,264	Mar. 6	516	107	121	111
Brace George B., Santa Ana, Cal. Gate	816,843	Apr. 3	585	122	121	1488
Brackett, Don O., Forest City, N. C. Tire-shrinking machine	815,900	Mar. 20	3896	824	121	954
Bradford, Edward S., Jr. (See Napier, Charles, assignor.)						
Bradish, John O., *et al.* (See Dodge, Jasper L., assignor.)						
Bradish, Leola P., *et al.* (See Dodge, Jasper L., assignor.)						
Bradley, Christopher C. (See Kohlbrenner, Peter, assignor.)						
Bradley Felix M., Blacksher, Ala. Cotton-blocker	816,638	Apr. 3	194	45-6	121	1403
Bradley, Lynde, assignor of one-half to S. Allen, Milwaukee, Wis. Resistance device for electric-current controllers	815,317	Mar. 13	2648	554	121	635
Bradley, William A., Chesterton, Ind. Folding chair	815,507	Mar. 20	3068	630	121	776
Bradley, William C., Woonsocket, R. I., assignor to Curtis & Marble Machine Company, Worcester, Mass. Lappet-shearing machinery	815,938	Mar. 27	3962	839-40	121	1020
Bradner, Harry E., Lansing, Mich. Vehicle-body	814,823	Mar. 13	1665	348	121	423
Bradner, Harry E., Lansing, Mich. Vehicle-body	814,824	Mar. 13	1666	348	121	423
Bradshaw, Robert Y., Chicago, Ill. Receptacle	814,265	Mar. 6	517	107	121	111
Bradstreet, George P. (See Blackman, John J., assignor.)						
Bradway, Chattin, Schenectady, N. Y., assignor to General Electric Company. Nozzle for elastic-fluid turbines	814,426	Mar. 6	878	180	121	191
Bragg, Charles N., *et al.* (See Fageol, Rollie B., assignor.)						
Bragg, George J., Newark, N. J. Centrifugal liquid-separator	817,465	Apr. 10	1836	385	121	1820
Braggins, John E., Los Angeles, Cal. Picture-frame jointer	817,466	Apr. 10	1839	385	121	1820
Braha, Frank, *et al.* (See Beck, William, assignor.)						
Braha, William, *et al.* (See Beck, William, assignor.)						
Braly, Walter M., Blackwell, Okla. Ter. Machine for calculating interest and percentage	818,222	Apr. 17	3340	716-17	121	2201
Brammer, Henry, St. Louis, Mo. Mechanical movement	814,185	Mar. 6	355	72	121	77
Brammer, Henry, St. Louis, Mo. Machine for making tubs	815,139	Mar. 13	2287	478	121	555
Brandes, Herman H., Corydon, Ky. Heater	817,900	Apr. 17	2706	587	121	2063
Brandstedt, Paul F., assignor to American Standard Fire-Proofing Co., Washington, D. C. Fireproof window and casing	817,138	Apr. 3	1156	239-40	121	1616
Brandstetter, Georg, Gratz, and R. Freund, Vienna, Austria-Hungary. Apparatus for automatically feeding boilers	817,037	Apr. 3	978	200	121	1576
Brandt Cashier Company. (See Brandt, Edward J., assignor.)						
Brandt, Edward J., Watertown, Wis., assignor to Brandt Cashier Company, Chicago, Ill. Pencil-holder	814,670	Mar. 13	1354	282	121	354
Brandt, Heinrich O., Manchester, England. Hydraulic apparatus for opening and shutting bulkhead-doors	817,691	Apr. 10	2238	480-1	121	1904
Brantingham, Allen C., Toledo, Ohio. Gyratory sifter	817,901	Apr. 17	2707	587	121	2063
Brantingham, Allen C., Toledo, Ohio. Gyratory sifter	818,607	Apr. 24	4122	886	121	2421
Brasor, Frederick S., *et al.* (See Pilcher, Frank A., assignor.)						
Bratschie, Amiel, New Castle, Pa. Dirigible air-ship	816,706	Apr. 3	316	73	121	1430
Brauer, Otto M., Marshalltown, Iowa. Acetylene-gas generator	816,775	Apr. 3	442	100	121	1455
Brauer, Otto M., Marshalltown, Iowa. Acetylene-gas generator	816,776	Apr. 3	445	100-1	121	1456
Bräunlein, Georg, Nuremberg, Germany. Process and apparatus for making metal-coated paper strips	818,144	Apr. 17	3187	685-6	121	2168
Brauns, August, Green Bay, Wis. Rubber eraser	814,899	Mar. 13	1789	374	121	448
Brawner, Harry O., Baltimore, Md. Bottle-stopper	817,038	Apr. 3	980	201	121	1577
Bray, Oscar E., Warsaw, N. Y. Distributing-nozzle for pneumatic conveyer-pipes	816,897	Apr. 3	695	143	121	1513
Breckon, Joseph A., assignor of one-fourth to J. Cartan, Toronto, Canada. Fire-escape	815,401	Mar. 20	2881	599	121	734
Bredel, Jacob, Höchst-on-the-Main, Germany. Manufacture of quartz-glass from quartz-sand, &c.	816,707	Apr. 3	318	.....	121	1430
Bredel, Jacob, Höchst-on-the-Main, Germany. Manufacture of articles from quartz-glass	816,708	Apr. 3	318	.....	121	1431
Breeze, Frank A., Philadelphia, Pa. Roller-stand	814,900	Mar. 13	1790	374	121	448
Brekke, Lewis O., Minneapolis, Minn. Footboard for iron bedsteads	815,258	Mar. 13	2522	525	121	609
Brennan, Martin J., Dayton, Ohio. Leaf-turner	816,068	Mar. 27	4242	898	121	1082
Brent, John T., Jr., Cold Spring, N. Y. Adjustable seat and desk	816,292	Mar. 27	4671	991-2	121	1175

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Brenzinger, Julius, assignor to Max Ams Machine Company, New York, N. Y. Can-flanging machine	814,639	Mar. 6	1267	266–7	121	274
Brenzinger, Julius, assignor to Max Ams Machine Company, New York, N. Y. Machine for making can-bodies	815,791	Mar. 20	3666	771–2	121	904
Brenzinger, Julius, assignor to Max Ams Machine Company, New York, N. Y. Machine for lining can-covers	817,154	Apr. 10	1196	248–9	121	1685
Brenzinger, Julius, assignor to Max Ams Machine Co., Mount Vernon, N. Y. Cap-flanging machine	816,001	Mar. 27	4093	865	121	1050
Brett, Charles N., Vassar, Mich. Heating-furnace	815,140	Mar. 13	2290	478–9	121	555
Brew, John P., and E. P. Suiter, Basin, Mont. Revolving drum-screen	816,426	Mar. 27	4983	1058	121	1239
Brewer, Horatio J., New York, N. Y. Battery-zinc	814,825	Mar. 13	1667	348–9	121	423
Brian, William S. (See White, Phylander C., assignor.)						
Bridge, James W. (See Moore and Bridge.)						
Bridger, James, assignor to New Inverted Incandescent Gas Lamp Company, Limited, London, England. Inverted incandescent gas-burner	816,427	Mar. 27	4985	1058	121	1230
Briet, Maurice, Paris, France. Mechanical lubricator	815,506	Mar. 20	3069	640	121	776
Briganti, Pasquale, New York, N. Y. Sterilizing and antiseptic case with stand for surgical instruments	816,959	Apr. 3	830	170	121	1542
Briggs, Francis W., Lewiston, Me. Extended ledger system	815,259	Mar. 13	2523	526–30	121	600
Briggs, Frank J., Everett, Mass. Apparatus for feeding electrolytic cells	814,583	Mar. 6	1163	243	121	252
Briggs, Nelson. (See Montgomery, Henry J., assignor.)						
Briggs, William F., Bristol, R. I. Clothes-line prop	814,266	Mar. 6	518	107	121	111
Brigham, Charles H., New York, N. Y., and G. P. Harvey, Jersey City, N. J. Machine for preparing coated materials	814,351	Mar. 6	717	145	121	158
Brigham, Fredrick H., Baltimore, Md. Overalls	815,063	Mar. 13	2125	447	121	518
Brill, George M., assignor to J. A. Brill, Philadelphia, Pa. Brake-hanger	816,293	Mar. 27	4673	992	121	1175
Brill, John A. (See Brill, George M., assignor.)						
Brill, John A. (See Curwen, Samuel M., assignor.)						
Brill, John A. (See Pickles, Charles K., assignor.)						
Brill, John A., and S. M. Curwen, Philadelphia, Pa.; said Curwen assignor to said Brill. Car-truck	816,294	Mar. 27	4674	992–3	121	1175
Brilliant Electric Company. (See Elliott, Elias L., assignor.)						
Brimmon, Gilbert C., and O. A. Nelson, Homestead, N. D. Planter	815,328	Mar. 20	2709	564–5	121	696
Brining, Frank P., Westgrove, Pa. Casket-fastener	818,224	Apr. 17	3348	717	121	2202
Brining, Frank P., and J. Stackhouse, Philadelphia, Pa. Coffin-fastener	818,223	Apr. 17	3347	717	121	2202
Brinker, Charles B., assignor to Brinker Safety Switch Attachment Company, West Lebanon, Ind. Railway-switch	818,865	Apr. 24	4642	997	121	2535
Brinker, Charles B., assignor to Brinker Safety Switch Attachment Company, West Lebanon, Ind. Railway-switch	818,866	Apr. 24	4646	998	121	2536
Brinker Safety Switch Attachment Company. (See Brinker, Charles B., assignor.)						
Brinton, Walter, High Bridge, N. J. Forming castings	816,709	Apr. 3	319	74	121	1431
Brisco, Charles N., assignor to Union Stopper Company, Morgantown, W. Va. Stopper	814,352	Mar. 6	718	145	121	158
Briscoe, Frank, assignor to Briscoe Manufacturing Company, Detroit, Mich. Radiator	817,692	Apr. 10	2241	481	121	1904
Briscoe Manufacturing Company. (See Briscoe, Frank, assignor.)						
Bristol Brass Company. (See Holley, Everett D., assignor.)						
Britton, Louis H., assignor of three-fourths to G. B. Harvey and H. V. George, Lisbon, Ohio. Fire-alarm apparatus	816,960	Apr. 3	831	170	121	1542
Broadbooks, Peter, Batavia, assignor to Utica Drop Forge and Tool Company, Utica, N. Y. Pliers	818,343	Apr 17	3579	766	121	2250
Broadwell, Edward C. (See Lyons and Broadwell.)						
Brock, Clarence R., assignor of one-half to C. M. Stark, Perry, Kans. Fan-motor	814,267	Mar. 6	519	108	121	111
Brockton Folding Machine Company. (See Rollins, George E., assignor.)						
Broderick, John K., St. Louis, Mo. Rotary motor	816,147	Mar. 27	4397	929–30	121	1115
Bronder, Gaston A., Brooklyn, N. Y. Lubricating device	815,260	Mar. 13	2527	530	121	600
Bronder, Gaston A., Brooklyn, N. Y. Measuring-drum	817,834	Apr. 17	2553	548	121	2029
Bronson, George M. (See Whitcomb, Beecher D., assignor.)						
Brook, Frank, Huddersfield, England. Employee's time-recorder	816,844	Apr. 3	586	122	121	1480
Brookfield, Henry M. (See Schorling, William H., assignor.)						
Brooks, Edward J., East Orange, N. J. Seal	818,344	Apr. 17	3580	766	121	2251
Brooks, Edward J., East Orange, N. J. Snap-seal	818,659	Apr. 24	4232	910	121	2446
Brooks, James M., Molena, Ga. Dumping-wagon	818,737	Apr. 24	4386	939–40	121	2480
Brooks, Karmell, New York, N. Y. Shot-feed for drills	814,427	Mar. 6	880	180	121	191
Brooks, Karmell, New York, N. Y. Equalizing weight-feed for drill-shanks	816,295	Mar. 27	4677	993–4	121	1176
Brooks, Samuel S., Brooklyn, N. Y. Combined strap-hanger, signal-bell ringer, and register-ringer	818,935	Apr. 24	4771	1025	121	2563
Broome, Lewis H., Jersey City, N. J. Sash-cord fastener	817,039	Apr. 3	981	201	121	1577
Brosey, Christian, administrator. (See Feigly, David.)						
Brosious, Adam, Catawissa, Pa. Railway-signal	818,660	Apr. 24	4234	910	121	2447
Brosius, William B., assignor to W. L. Girard, St. Louis, Mo. Pallet setting and adjusting tool	817,955	Apr. 17	2817	610	121	2069
Brossoit, James J., Grand Rapids, Wis. Drill-sharpening machine	816,961	Apr. 3	834	170–1	121	1543
Brouillard, Louis N., Niagara, Wis. Pushing device	817,693	Apr. 10	2242	481	121	1904
Brouyette, Charles D., assignor of one-half to F. W. Kinney, Chicago, Ill. Spring-brace	817,954	Apr. 17	2815	609	121	2069
Brower, George W., Santa Monica, Cal. Suspended railway	818,608	Apr. 24	4124	886–8	121	2422
Brown Albert E., Brookfield, and C. H. Rhodes, Herkimer, N. Y.; said Rhodes assignor to said Brown. Clamping device	818,227	Apr. 17	3655	719	121	2204
Brown, Alexander T., assignor to Brown-Lipe Gear Company, Syracuse, N. Y. Power-transmitting mechanism	814,268	Mar. 6	521	108	121	112
Brown, Arthur H., Hamilton, Mo. Crown and bridge work	818,661	Apr. 24	4235	910	121	2447
Brown, Arthur J., Norwood, Ohio, assignor to Bullock Electric Manufacturing Company. Controller-operating means	815,578	Mar. 20	3201	673	121	804
Brown, Benoni S., deceased, Onset, Mass.; S. A. Brown, executor. Dental-tool holder or clutch	816,069	Mar. 27	4244	898	121	1082
Brown, Daniel, Cranston, R. I. Rifle set-lock and safety set-trigger	814,584	Mar. 6	1165	244	121	252
Brown, Edward, deceased, Philadelphia, Pa.; Provident Life & Trust Company of Philadelphia, administrator. Portable hot-blast pyrometer	818,867	Apr. 24	4643	998	121	2536
Brown, Edward A., and A. Williams, Carbondale, Ill. Railway-track gage	814,826	Mar. 13	1670	349	121	424
Brown, Fred H., Los Angeles, Cal. Electrical apparatus for determining the location of metallic ores	817,749	Apr. 17	2365	508	121	1968
Brown, George W., Hyde Park, Mass. Cable-reel winder and brake	815,261	Mar. 13	2528	530	121	610
Brown, Hamet, New York, N. Y. Conveyer	818,225	Apr. 17	3349	718	121	2202
Brown, Hannah E., Magnolia, Mass. Wearing-apparel	815,399	Mar. 20	2711	565	121	697
Brown, Homer J., Washington, D. C. Lubricator	814,269	Mar. 6	523	108	121	112
Brown, Horace F., Chicago, Ill. Reducing ores	817,414	Apr. 10	1721	362–3	121	1796

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Brown, Horace F., Chicago, Ill. Ore-reducing furnace	817,415	Apr. 10	1723	363	121	1796
Brown, Howard J., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper tray	815,004	Mar. 13	1999	420	121	490
Brown, James. (See Brown, William and J.)						
Brown, James H. (See Gilman and Brown.)						
Brown, Jerome A., and B. Bybee, Portsmouth, Ohio. Rural mail-box	814,428	Mar. 6	881	180	121	192
Brown, John W., and C. W. Jenkins, Washington, D. C. Trolley-shield	816,148	Mar. 27	4399	930	121	1116
Brown, Lewis R., South Orange, N. J., and F. H. Wentworth, New York, N. Y.; said Wentworth assignor of thirty one-hundredths to said Brown. Electric switch	818,226	Apr. 17	3351	716	121	2208
Brown-Lipe Gear Company. (See Brown, Alexander T., assignor.)						
Brown, Marshall W., Pittsburg, Pa. Supporting forms used in the construction of concrete and other masonry	814,585	Mar. 6	1167	244	121	253
Brown, Orestes S., Milwaukee, Wis. Shade-roller and support therefor	818,516	Apr. 24	3930	846	121	2379
Brown, Robert H., and J. Hirsch, Los Angeles, Cal. Saw	817,361	Apr. 10	1605	340	121	1771
Brown, Seth A., executor. (See Brown, Benoni S.)						
Brown, Stephen P., Stratford, Conn. Laminated multiple-arch concrete dam	818,738	Apr. 24	4389	940	121	2481
Brown, Susan A. (See O'Donnell, Felix, assignor.)						
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Hopper-bottom car	816,070	Mar. 27	4246	899	121	1082
Brown, Thomas W., Iowa Falls, Iowa. Shocker attachment for binders	815,141	Mar. 13	2292	479–80	121	556
Brown, Walter S., and H. W. Enderis, Lincoln, Nebr. Feeding attachment for printing-presses	815,262	Mar. 13	2530	531	121	610
Brown, William and J., Vancouver, Canada. Carbureter	817,218	Apr. 10	1331	278	121	1714
Brown, William B., Baltimore, Md. Optometer	814,512	Mar. 6	1025	211–12	121	223
Brown, William E. (See Browning, Edmound T., assignor.)						
Brown, William F., San Francisco, Cal. Jeweler's implement	816,777	Apr. 3	448	101	121	1457
Brown, William H., Indianapolis, Ind. Automatically-tightening railway rail-holder and tie	817,544	Apr. 10	1985	419	121	1850
Brown, William L., Little Rock, Ark. Railway water-tank	815,142	Mar. 13	2296	480	121	556
Brown, William W., Media, Pa., assignor to Robert P. Brown Manufacturing Company, New York, N. Y. Safety-pin	818,998	Apr. 24	4889	1049	121	2589
Brownell, Edward J. (See Bosworth, Martin L., assignor.)						
Brownfield, Ewing, assignor of one-half to T. L. Klaffke, Oklahoma, Okla. Ter. Street-railway switch	814,827	Mar. 13	1671	349	121	424
Browning, Earl H. (See Browning, Victor R. and E. H.)						
Browning, Edmound T., assignor of one-half to W. E. Brown, Stockton, Cal. Automatic time circuit-breaker	817,362	Apr. 10	1606	340	121	1772
Browning, John M., Ogden, Utah. Firearm	818,739	Apr. 24	4390	940	121	2481
Browning, Victor R. and E. H., Nottingham, Ohio. Safety lowering device	814,828	Mar. 13	1673	350	121	425
Bruce, John L., Kogarah, New South Wales, Australia. Automatic lighter and extinguisher for gas-burners	816,962	Apr. 3	835	171–2	121	1543
Bruman, Otto F., Schenectady, N. Y., assignor to General Electric Company. Emergency-governor for steam-engines	818,345	Apr. 17	3582	766–7	121	2251
Brunswick-Balke-Collender Company. (See McCarthy, Dennis F., assignor.)						
Brush, Charles F. (See Linde, Carl, assignor.)						
Bryant, Richard S., Columbus, Ohio Vehicle-wheel	816,149	Mar. 27	4401	930	121	1116
Bryant, William E., G. M. Wolcott, and R. Davidson, assignors to Michigan Lubricator Company, Detroit, Mich. Lubricator	814,016	Mar. 6	21	4–5	121	6
Bryce, Henry, Cohoes, N. Y. Guide for sewing-machines	814,513	Mar. 6	1029	212–13	121	224
Bryon, William J., Jr., New York, N. Y. Punching-bag apparatus	815,677	Mar. 20	3404	711	121	851
Buchanan, Duncan J., Detroit, Mich. Revolver-lock	814,017	Mar. 6	24	5	121	7
Buchanan, Ernest L. (See Christiansen, Noll, and Buchanan.)						
Buchanan, George P., Allegheny, Pa. Attachment for stringed instruments	816,898	Apr. 3	696	143	121	1513
Bucher & Gibbs Plow Company. (See Allen, Lemuel E., assignor.)						
Bucher & Gibbs Plow Company. (See Niesz and Stewart, assignors.)						
Bucher & Gibbs Plow Company. (See Stewart, Jonathan M., assignor.)						
Buck, Daniel J. F., Chicago, Ill. Gas water-heater	817,219	Apr. 10	1333	279	121	1715
Buck, Frank C., Prahran, Victoria, Australia. Valve and cock	817,040	Apr. 3	982	201	121	1577
Buck, Harold W., Niagara Falls, N. Y., assignor to General Electric Company. Electric cable	816,428	Mar. 27	4987	1059	121	1239
Buckham, George T. (See Dawson and Buckham.)						
Buckingham, Albert E., Oakland, assignor to Buckingham Manufacturing Company, San Francisco, Cal. Cigarette-making device	816,150	Mar. 27	4403	930	121	1117
Buckingham Manufacturing Company. (See Buckingham, Albert E., assignor.)						
Buckley, Henry, *et al.* (See Smith, Frank A., assignor.)						
Buckley, John D., Fermoy, Pa. Seed-dropper	818,936	Apr. 24	4772	1025–6	121	2563
Buckley, Louis H. (See Cather and Buckley.)						
Buckley, Patrick J., Waukesha, Wis. Peat-oven	816,214	Mar. 27	4523	960–1	121	1142
Bucklin, Charles S., Baltimore, Md., assignor to National Canning & Manufacturing Company. Can-lining machine	815,402	Mar. 20	2882	599–600	121	735
Buckner, Charles A. (See Smith, Dea C., assignor.)						
Buckner, Moses L. S. and W. T., Shelbyville, Ky. Filter	818,868	Apr. 24	4649	998	121	2536
Buckner, William T. (See Buckner, Moses L. S. and W. T.)						
Buckwalter, Daniel T., Royersford, Pa. Mail-box	815,263	Mar. 13	2532	532	121	611
Buckwalter, Frank B., *et al.* (See Skidmore, Charles, assignor.)						
Bucyrus Company. (See Ferris and Bager, assignors.)						
Bucyrus Company. (See Knox and Ferris, assignors.)						
Budd, Edward G., assignor to Hale-Kilburn Metal Company, Philadelphia, Pa. Car-seat	814,514	Mar. 6	1032	213	121	225
Budd, Mary. (See Cooper, James G., assignor.)						
Budenbach, William F., Scranton, Pa. Horseshoe-calk	817,155	Apr. 10	1200	250	121	1686
Buell, Charles E., North Plainfield, N. J., assignor to General Fire Extinguisher Company, New York, N. Y. Fire-extinguishing apparatus	818,999	Apr. 24	4890	1050	121	2589
Bufano, Pasquale. (See Pierboni and Bufano.)						
Buffer Spring Mattress Company. (See Martin, Francis, assignor.)						
Buffum, Herbert H., assignor to H. H. Buffum Company, Abington, Mass. Slide-gear	818,662	Apr. 24	4237	911	121	2447
Buggé, Rasmus, London, England. Brake for motor-cars	818,815	Apr. 24	4557	977	121	2517
Buley, Olga E., Shepherd's Bush, London, England. Appliance for retaining blankets, rugs, and similar coverings in position	816,710	Apr. 3	320	74	121	1431
Bull, Thomas J., New York, N. Y. Lamp-rheostat	815,330	Mar. 20	2712	565	121	697
Bullard, James H., Springfield, Mass. Speedometer	816,639	Apr. 3	196	46	121	1404
Bullock Electric Manufacturing Company. (See Brown, Arthur J., assignor.)						
Bullock, Lewis C., Jr., Milesburg, Pa. Table	818,663	Apr. 24	4239	911–12	121	2448
Bullock, William C. A., Jackson, Miss. Combined undergarment and testes-supporter	816,963	Apr. 3	837	172	121	1543
Bumpus, Fred R., and J. Kyle, Franklin, Pa. Floor-dressing machine	817,041	Apr. 3	984	201	121	1577
Bundsen, Adolf E., Chicago, Ill. Clasp	814,112	Mar. 6	219	43	121	47

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Bunker, Carey E., Oregon, Mo. Reflector for magnifying-glasses	817,902	Apr. 17	2709	586	121	2064
Burch, Charles E. S., Seattle, Wash. Dredging-machine	814,270	Mar. 6	525	109	121	112
Burchett, George W., Belleville, N. J. Self-playing piano	817,545	Apr. 10	1986	420	121	1851
Burckhart, Henry B., Chicago, Ill. Loose-leaf binder	818,664	Apr. 24	4240	912	121	2448
Burden, William H., Detroit, Mich. Shade or canopy supporting bracket	818,937	Apr. 24	4774	1026	121	2564
Burger, Leopold F., assignor to Woolley Foundry & Machine Works, Anderson, Ind. Tandem gas-engine	816,215	Mar. 27	4526	961-2	121	1143
Burgess, Alexander, Detroit, Mich. Batter-mixing machine	814,935	Mar. 13	1851	387	121	462
Burke, Patrick H., assignor to North & Judd Manufacturing Company, New Britain, Conn. Strap-buckle	818,074	Apr. 17	3038	656	121	2135
Burley, Harry S., Chicago, Ill., assignor to General Machinery & Supply Company. Animal-shears	814,113	Mar. 6	220	43	121	48
Burnham, Arthur M., Gardiner, Me., assignor of one-half to W. G. Crawford, Washington, D. C. Shutter-worker	818,346	Apr. 17	3584	767	121	2251
Burnham, Williams & Company. (See Linton, Morris, assignor.)						
Burnham, Williams & Company. (See Webster, Walter O., assignor.)						
Burns, James F., Albany, N. Y. Device for supporting cables of electric lamps	816,429	Mar. 27	4988	1059	121	1240
Burns, James J. (See Shaffer, John E., assignor.)						
Burns, Jeremiah D., Washington, D. C., assignor of twenty-four one-hundredths to L. Guynn, Wabash, Ind., and W. J. Sheets, Washington, D. C. System of preventing the collection of ice on rails	814,671	Mar. 13	1355	282-3	121	354
Burns, Thomas, Leeds, England. Boring-tool, reamer, and the like	817,042	Apr. 3	985	202	121	1578
Burns, William, Sr., Dayton, Ohio. Flushing-tank	814,353	Mar. 6	721	145	121	159
Burr, Nelson, Batavia, Ill. Feed-mill	814,114	Mar. 6	224	43-4	121	49
Burrowes, Marcus R., Sarnia, Canada. Stamp-affixing device	814,936	Mar. 13	1853	388	121	462
Burt, Fred N. (See Oesterreich, Albin, assignor.)						
Burt, Homer A., Detroit, Mich. Brush-soap	816,002	Mar. 27	4096	865	121	1050
Burt, Newton B., New York, N. Y. Implement for bias-cutting	816,529	Mar. 27	5184	1100	121	1284
Burton, Alfred, Pretoria, Transvaal. Adjustable tent-pole	818,665	Apr. 24	4243	912	121	2449
Burton, Roscoe C., Tarrytown, N. Y. Musical transposition-chart	815,402	Mar. 20	2886	600	121	735
Burwell, Arthur W. (See Baker and Burwell.)						
Bush, Bertrand B., Chicago, Ill. Water-motor wheel	817,546	Apr. 10	1992	420	121	1852
Bush, Charles A., North East, Pa. Back-pressure valve	818,411	Apr. 24	3720	798	121	2336
Bussey, Everett E., Cambridge, and H. D. Waterhouse, Quincy, Mass. Cigar-tip cutter	814,937	Mar. 13	1855	388	121	463
Bütikofer, Eduard, Biel, Switzerland. Motor-cycle	818,609	Apr. 24	4131	888	121	2424
Butler, Arthur C., Wollaston, Mass. Tachometer	817,547	Apr. 10	1992	420	121	1852
Butler, Ernest, Sheldon, Iowa. Clothes-drier	818,228	Apr. 17	3358	719	121	2204
Butler, Hugh M., Kirkstall Forge, near Leeds, England. Metallic axle	815,678	Mar. 20	3407	711-12	121	852
Butler, Joseph, Naumai, New Zealand, assignor to Lidgerwood Manufacturing Company. Logging apparatus	816,640	Apr. 3	200	46-7	121	1405
Butler, Mike. (See Sachs, Martin K., assignor.)						
Butler, Thomas H., Baltimore, Md. Reversing-gear	815,331	Mar. 20	2715	566	121	697
Butterfield, James H., Logan Ohio. Nut-lock	814,516	Mar. 6	1036	214	121	226
Butterfield, Wells D., Detroit, Mich. Monolithic building	814,765	Mar. 13	1547	327	121	398
Butterworth, Frank L., Brooklyn, N. Y. Hat-brim flange and center block or frame therefor	818,610	Apr. 24	4133	888	121	2425
Buttler, William, Indianapolis, Ind. Apparatus for making wire-glass	814,515	Mar. 6	1034	214	121	225
Button Machinery Company. (See Hormby, John, assignor.)						
Buyer, Samuel, *et al.* (See Meyer, Sophie, assignor.)						
Bybee, Burt. (See Brown and Bybee.)						
Bye, Martin, assignor to Harrington & Richardson Arms Co., Worcester, Mass. Cylinder-stop for revolvers	818,075	Apr. 17	3039	656	121	2136
Byers, John G., and J. W. Myer, San Diego, Cal. Rock-crusher	817,298	Apr. 10	1493	313	121	1746
Byrd, Britton E., Durham, N. C., assignor of three-fourths to V. G. Davis, Bracey, Va., J. I. Rose and F. L. Walker, Durham, N. C. Jewel-setting pliers	818,347	Apr. 17	3585	767	121	2252
Byrne, Dennis, Jr. (See Swengel and Byrne.)						
Byrne, Hugh H., La Crosse, Wis. Toilet-case	818,412	Apr. 24	3721	799	121	2337
C. B Cottrell & Sons Company. (See Cottrell, Edgar H., assignor.)						
C. B. Cottrell & Sons Company. (See Greenway, Richard J., Jr., assignor.)						
C. H. Blomstrom Motor Company. (See Blomstrom, Charles H., assignor.)						
C. H. Wheeler Manufacturing Company. (See Wheeler, Clifton H., assignor.)						
C. H. Wheeler Manufacturing Company. (See Wheeler and Mullan, assignors.)						
Caddell, James, and A. Sutherland, Buffalo, N. Y. Fountain-brush	818,666	Apr. 24	4244	912	121	2449
Cahen, Emile D., assignor to Société Anonyme d'Electricité et d'Automobiles Mors, Paris, France. Safety steering mechanism for automobile carriages	814,586	Mar. 6	1170	244	121	253
Cain, William G., Victoria, La. Means for locating and raising sunken vessels	814,517	Mar. 6	1037	215	121	226
Cairns, John, Bangor, Ireland. Pneumatic alarm	816,430	Mar. 27	4989	1059	121	1240
Caldwell, Charles W. (See Mickey and Caldwell.)						
Caldwell, Henry C., assignor to A. B. Underhill, Buffalo, N. Y. Combined metal core vent and support	818,413	Apr. 24	3722	799	121	2337
Caldwell, William L., Indianapolis, Ind. Folding bed	818,517	Apr. 24	3932	846-7	121	2380
Caler, David R., Groveland, Pa. Window	816,431	Mar. 27	4990	1059	121	1240
Caley, Charles J., New Britain, Conn., assignor to Russell & Erwin Manufacturing Company. Sash-center	817,220	Apr. 10	1337	279	121	1716
Calkins, Albert C., Los Angeles, Cal. Crushing-rolls	815,332	Mar. 20	2716	566	121	697
Calkins, Albert C., Los Angeles, Cal. Grinding-machine	815,333	Mar. 20	2718	566-7	121	698
Callanan, James T., assignor to Parkersburg Machine Company, Parkersburg, W. Va. Oil-saver	818,740	Apr. 24	4394	940	121	2482
Calleson, Amos. (See Adriance and Calleson.)						
Calleson, Amos, assignor of one-half to B. Adriance, Brooklyn, N. Y. Cap for bottles and jars	818,741	Apr. 24	4395	941	121	2482
Callow, William D., Newark, N. J., assignor to Roth & Engelhardt, New York, N. Y. Piano	816,641	Apr. 3	202	47	121	1406
Calvert, Walter R., Louisville, Ky. Goods-handler	818,869	Apr. 24	4651	968	121	2537
Calvi, Eduardo. (See Genovese and Calvi.)						
Cameron, Ewan, Brooklyn, assignor to United States Recording Automatic Scales Company, New York, N. Y. Weighing-machine	817,221	Apr. 10	1338	279-80	121	1716
Cammeyer, William H., Boonton, N. J. Mold for undercut tiles	818,348	Apr. 17	3586	768	121	2252
Campagna, Eugene W., Randolph, Mass. Measuring instrument	815,509	Mar. 20	3070	640	121	776
Campbell, Allan, Chicago, Ill. Ice-making apparatus	814,115	Mar. 6	227	44	121	49
Campbell, Clell D., Lincoln, Nebr. Carpenter's implement or tool	815,064	Mar. 13	2126	448	121	519
Campbell, Harry H., Steelton, Pa. Concentrator	815,679	Mar. 20	3409	712	121	852
Campbell, James W., Salem, Va. Safety-gear for skips, cages, and the like	817,623	Apr. 10	2125	450-1	121	1879
Campbell, Jeremiah, Providence, R. I. Apparatus for handling coal, &c	814,271	Mar. 6	528	109-10	121	113
Campbell, Jeremiah, Providence, R. I. Hoisting apparatus	816,071	Mar. 27	4248	900-1	121	1083
Campbell, Matthew D., Charlestown, Mass. Signal	818,870	Apr. 24	4652	999	121	2537

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Campbell, Milton T., assignor of one-half to J. C. Ertel, Indianapolis, Ind. Electric time-switch	815,792	Mar. 20	3672	772–3	121	906
Campbell, Robert B., Joliet, assignor of one-half to A. F. Banks, Evanston, Ill. Press	817,735	Apr. 10	2332	501–2	121	1927
Canada Cycle and Motor Company. (See Russell, Thomas A., assignor.)						
Canton Steel Roofing Company. (See Andrews, Horace W., assignor.)						
Cantwell, James D., Milwaukee, Wis. Portable ticket-holder	817,624	Apr. 10	2129	451	121	1880
Capper, David S., *et al.* (See Beck, Conrad and H. C., assignors.)						
Cappa, Lewis E., Seattle, Wash. Optical tool	816,845	Apr. 3	589	123	121	1489
Car Builders Supply Company. (See Harvey, George L., assignor.)						
Card, Frank S. (See Card, William L. and F. S.)						
Card, Joseph B., Chicago, Ill. Preserving wood	815,404	Mar. 20	2888	601	121	736
Card, William L. and F. S., Denver, Colo. Lubricator for slide-bearings	816,778	Apr. 3	449	101	121	1457
Cardell, Olof W., and S. T. Bergström, Gothemburg, Sweden. Sealing device for bottles	815,902	Mar. 20	3900	825	121	954
Carey, Augustus C., Boston, Mass. Drying-machine	814,938	Mar. 13	1857	389	121	463
Carey, Daniel J. (See Foerster and Carey.)						
Carey, Daniel J. (See Foerster, Carey, and Foster.)						
Carey, Daniel J., assignor to American Textile Specialty Machinery Company, New York, N. Y. Shuttle-box	815,939	Mar. 27	3964	840	121	1020
Carl, Harriet A., West Fulton, N. Y. Air-cushion	814,829	Mar. 13	1675	350	121	425
Carliss, Albert, assignor to American Electric Telephone Company, Chicago, Ill. Automatic ringing and listening key	815,405	Mar. 20	2892	601	121	736
Carlsen, Breder, Bodö, Norway. Life-saving apparatus	814,518	Mar. 6	1038	215	121	226
Carlson, Charles A., and D. H. Haywood, New York, N. Y.; said Haywood assignor to said Carlson. Amusement apparatus	817,156	Apr. 10	1200	250–1	121	1686
Carlton, Harvey B., Rochester, N. Y. Reel	815,143	Mar. 13	2299	480	121	557
Carlton, Harvey B., Rochester, N. Y. Landing-net frame	815,144	Mar. 13	2301	481	121	557
Carlyle Johnson Machine Company. (See Johnson, Moses C., assignor.)						
Carman, Bert C., assignor of one-half to P. T. and S. M. Weaver, Canastota, N. Y. Phonograph-record cabinet	817,956	Apr. 17	2819	610	121	2090
Carmickle, Mark, Thief River Falls, Minn. Milking-machine	815,145	Mar. 13	2303	481	121	558
Carnegie Steel Company. (See Weber, Peter M., assignor.) (Reissue.)						
Carpenter, Benjamin F., Roselle Park, N. J. Safeguard for automatic railways	815,320	Mar. 13	2654	555–6	121	637
Carpenter, Delos. (See Green and Carpenter.)						
Carpenter, Myron J., La Grange, Ill. Telegraph system	818,145	Apr. 17	3189	686	121	2169
Carpenter, Noah. (See Graham and Lovelace, assignors.)						
Carpenter, Rolla C., Ithaca, N. Y. Apparatus for making cement	815,680	Mar. 20	3411	712–13	121	852
Carr, Robert. (See Phipps, Abner A., assignor.)						
Carr, William H., Meridian, N. Y. Adjustable head and back rest	814,272	Mar. 6	531	110	121	114
Carrick, William D. (See Pax and Carrick.)						
Carroll, Daniel, Columbus, Ohio. Fire-exit door	815,334	Mar. 20	2720	567	121	698
Carroll, J. S. (See Galliher, Lawrence M., assignor.)						
Carroll, John B., Chicago, Ill. Acetylene-gas burner	817,750	Apr. 17	2368	508	121	1989
Carroll, John B., Chicago, Ill. Burning acetylene gas	817,751	Apr. 17	2369	508	121	1989
Carroll, Louis W., Anamosa, Iowa, assignor to Kellogg Switchboard & Supply Company, Chicago, Ill. Telephone system	814,330	Mar. 13	1676	350	121	425
Carroll, Patrick P., Seattle, Wash. Sleeping-car	818,742	Apr. 24	4397	941	121	2482
Carscadin, Charles A., assignor of one-half to G. A. Woodman, Chicago, Ill. Car-coupling	814,831	Mar. 13	1677	350–1	121	426
Cartan, John. (See Breckon, Joseph A., assignor.)						
Carter-Crume Company. (See Bengough, Tansley, and Reidel, assignors.)						
Carter, John R., Augusta, Ky., assignor to E. H. Huenefeld, Cincinnati, Ohio. Hinge	814,354	Mar. 6	722	146	121	159
Carter, John R., Augusta, Ky., assignor to E. H. Huenefeld, Cincinnati, Ohio. Hinge	814,355	Mar. 6	723	146	121	160
Carter, Thomas T., and S. J. Thompson, Bluefield, W. Va. Miner's lamp	818,871	Apr. 24	4653	999	121	2537
Carver, Edwin, Winchester, Ind. Machine for making plugs for paper-rolls	818,016	Apr. 17	2933	634–5	121	2115
Case, Estella, New York, N. Y. Artificial flower and making the same	815,005	Mar. 13	2000	421	121	490
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Fluid-pressure system	815,903	Mar. 20	3900	825	121	955
Case, Frank E., Schenectady, N. Y., assignor to General Electric Company. Control system	818,349	Apr. 17	3587	768	121	2252
Case, Harold E., Bridgeport, Conn. Electric switch	817,222	Apr. 10	1342	280	121	1717
Case, Theodore G. (See Cooley, Daniel P., assignor.)						
Casein Company of America. (See Dunham, Henry V., assignor.)						
Casey, James H., *et al.* (See Wagner, William F., assignor.)						
Casey, James J., *et al.* (See Stawartz, John, assignor.)						
Cash, Arthur W., Newark, N. J. Back-pressure valve	816,216	Mar. 27	4530	962	121	1144
Cassidy, Patrick, and A. A. St. Laurent, Salem, assignors to Draper Company, Hopedale, Mass. Harness-controlling mechanism for looms	818,743	Apr. 24	4398	941–2	121	2483
Castellon, Modesto, Merida, Mexico. Decorticating-machine	816,296	Mar. 27	4679	994–5	121	1176
Castle, Cornelius E. (See Sprangel, Volney M., assignor.)						
Cather, Birt, Lebanon, Oreg. Violin-tailpiece	815,793	Mar. 20	3674	773	121	906
Cather, Charles E., and L. H. Buckley, Worcester, Mass. Sleeve-protector	817,416	Apr. 10	1727	364	121	1797
Cavanaugh, Leander J. (See Young and Cavanaugh.)						
Cerasoli, Alberto, Rome, Italy. Gas-producer	815,794	Mar. 20	3675	773–4	121	906
Cerruti, Frank A., New York, N. Y. Amusement-railway	814,939	Mar. 13	1858	389–90	121	463
Chadborn, Frederic C., assignor of seventy one-hundredths to M. J. and M. H. Keogh, D. S. Gerow, and R. H. Barnett, Newburgh, N. Y. Automatic ventilating apparatus	818,229	Apr. 17	3359	719	121	2205
Chadeloid Chemical Company. (See Ellis, Carleton, assignor.)						
Chamberlain, Clarence M., Lead, S. D. Extraction vessel	814,940	Mar. 13	1861	390	121	464
Chambers Brothers Company. (See King, Howard K., assignor.)						
Chambers, Hamline J., Council Bluffs, Iowa. Stilt	815,795	Mar. 20	3677	774	121	907
Chambers, John E., Shelbyville, Ind. Incubator	816,003	Mar. 27	4097	866	121	1050
Chambers, John S., Wilmington, N. C. Throttle-valve	816,217	Mar. 27	4533	962–3	121	1144
Chambers, Joseph E., St. Louis, Mo. Suture-bridge	815,264	Mar. 13	2533	532	121	611
Chambers, Worthy L. C., Chicago, Ill. Removable back for seats	814,766	Mar. 13	1548	327	121	306
Champion Shoe Machinery Company. (See Corcoran and Dobyne, assignors.)						
Channon, James H., Chicago, Ill. Means for hanging and operating theater-curtains	815,904	Mar. 20	3902	825–6	121	955
Chapdelaine, Adelard P. (See Biladeau and Chapdelaine.) (Reissue.)						
Chaplin-Fulton Manufacturing Company. (See Fulton, Louis B. assignor.)						
Chapman, Charles E., assignor of one-half to J. Goodfellow, Fort Edward, N. Y. Pulp-screen	818,230	Apr. 17	3362	720	121	2205
Chapman, Frank M., Port Edward, assignor to Mill Machinery Manufacturers, Sandy Hill, N. Y. Paper and pulp screen	814,567	Mar. 6	1170	245	121	254
Chapman, William E. (See Haight and Chapman.)						
Chaquette, Ephraiem, New Rochelle, N. Y. Powder brush or puff	817,694	Apr. 10	2243	482	121	1904
Charky, John, Esplen Borough, Pa. Journal-box	816,432	Mar. 27	4991	1060	121	1240

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Charles H. Collins & Sons. (See Harris, Thomas, assignor.)						
Charls, George H., assignor to American Rolling Mill Company, Middletown, Ohio. Wall-tie	816,297	Mar. 27	4663	995	121	1177
Charlton, Richard C., assignor to Henry Disston and Sons, Incorporated, Philadelphia, Pa. Side-dressing tool for saw-teeth	816,433	Mar. 27	4993	1060	121	1240
Charron, Ferdinand, and L. Girardot, Paris, France. Carbureter for petroleum-motors.	816,846	Apr. 3	591	123	121	1499
Chase, Joseph E., and J. S. McCreary, Canal Dover, Ohio. Theater-chair	816,899	Apr. 3	699	143	121	1513
Chase, Newton D., assignor of one-half to W. H. Roberts, Henley, Cal. Spirit-level	817,467	Apr. 10	1841	386	121	1820
Chase Rolling Mill Co. (See Moshier, James W., assignor.)						
Chase-Shawmut Company. (See Luther, Benjamin S., assignor.)						
Chattanooga Plow Company. (See Moore, Josiah H., assignor.)						
Cheek, J. O. (See Andrews, John M., assignor.)						
Cheek, Henry M., Pleasant Plains, Ark. Fastening-stud	816,779	Apr. 3	451	101	121	1457
Chelberg, Axel, New York, N. Y. Trousers-hanger	814,429	Mar. 6	883	180	121	192
Chemische Fabrik auf Actien, (vorm. E. Schering.) (See Emilewicz, Thaddaeus, assignor.)						
Chemische Fabriken Gladbeck, Gesellschaft mit beschränkter Haftung. (See Pauling, Arthur and H., assignors.)						
Cheney, Eston S., East Oakland, Cal. Mount	817,043	Apr. 3	986	202	121	1578
Cherry, Copway C., Seattle, Wash. Steam-boiler	816,530	Mar. 27	5186	1100	121	1285
Chesbrough, Horace H., Seattle, Wash. Time egg-boiler	816,072	Mar. 27	4252	901-2	121	1084
Chicago Grain Door Company. (See Hill, Edward A., assignor.)						
Child, James J., *et al.* (See Palmer and Waterman, assignors.)						
Childs, Frank A. (See Fleming and Childs.)						
Chiles, Sinclair W., South Bethlehem, Pa. Air-lock	816,642	Apr. 3	202	47-8	121	1406
Chiles, Sinclair W., South Bethlehem, Pa. Stuffing-box for traveling cables, rods, &c.	816,643	Apr. 3	206	48	121	1406
Chisholm, Charles L., North Sydney, Canada. Pitch-indicating attachment for sound-reproducing machines	814,941	Mar. 13	1363	390-1	121	464
Choquette, Joseph A. (See Ferland, Napoleon H., assignor.)						
Choralcelo Manufacturing Company. (See Gevery and Sinclair, assignors.)						
Christensen, Jesse, Clarinda, Iowa. Knob-latch	814,186	Mar. 6	356	73	121	78
Christensen, Lars, Sioux City, Iowa. Cement post	817,752	Apr. 17	2370	509	121	1989
Christiansen, Charles, F. F. Noll, and E. L. Buchanan, Grand Rapids, Mich. Music-turner.	818,350	Apr. 17	3591	768	121	2253
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Ore-car	814,273	Mar. 6	532	110-11	121	114
Christie, Eliza J., assignor to S. J. Christie, Marion, Iowa. Rotary engine	814,018	Mar. 6	26	6	121	7
Christie, Sarah J. (See Christie, Eliza J., assignor.)						
Christie, Thomas S., assignor to Z and Z Company, Detroit, Mich. Weather-strip	817,223	Apr. 10	1343	281	121	1718
Christy, Will, Akron, Ohio Vehicle-tire	817,957	Apr. 17	2821	610	121	2090
Church, Alonzo N., Beacon, Iowa. Watering device	816,557	Apr. 3	11	3	121	1356
Church, Andrew and C. A., Adrian, Mich. Combined wire stretcher and splicer	816,298	Mar. 27	4684	995	121	1177
Church, Benjamin S., New York, N. Y., assignor to J. K. Lanning, trustee, Boston, Mass. Expansible-fluid turbine. (Reissue)	12,469	Apr. 3	1178	243-4	121	1622
Church, Charles A. (See Church, Andrew and C. A.)						
Church, Charles N., Burlington, N. J. Apparatus for forming beads on cast-iron pipe	814,519	Mar. 6	1038	215	121	226
Chutter, George F., Penarth, England. Machine for molding dough or other plastic material	814,274	Mar. 6	534	111	121	115
Cihalewski, Julijan, assignor to J. Cihalewski Farm Hill Manufacturing Company, Chicago, Ill. Mill	814,672	Mar. 13	1357	283-4	121	355
Cincinnati Butchers Supply Co. (See Gaddum, Alexander W., assignor.)						
Cincinnati Butchers Supply Co. (See Schmidt and Pflum, assignors.)						
Circuit Protecting Relay Company. (See Wright, Selden R., assignor.)						
Cissna, William E., Mount Vernon, Ind. Land-anchor	817,044	Apr. 3	988	202	121	1578
Claflin, William H., Oakdale, Wis. Wrench	816,434	Mar. 27	4994	1060	121	1241
Clark, Adolph C. and T. J., Perth Amboy, N. J. Apparatus for casting metals	818,076	Apr. 17	3041	657	121	2136
Clark, Charles O. (See Adams and Clark.)						
Clark Dredging Company. (See Clark, Horace J., assignor.)						
Clark, Dwight G., Plainville, Conn. Sash-pulley	818,231	Apr. 17	3364	720	121	2206
Clark, Edward S., Boston, Mass. Adjustable pressure-pump	816,964	Apr. 3	839	172	121	1543
Clark, Emma, New Orleans, La. Invalid-robe	818,351	Apr. 17	3592	769	121	2253
Clark, Francis W. (See Thomson and Clark.)						
Clark, Frank M., assignor of two-thirds to C. H. Philbrick, Tilton, N. H., and F. G. Balcom, Medford, Mass. Clock	814,767	Mar. 13	1549	327-8	121	399
Clark, George P. (See Perry, William C., assignor.)						
Clark, Homer I., Youngstown, Ohio. Hat-fastener	815,265	Mar. 13	2534	532	121	611
Clark, Horace J., Boise, Idaho, assignor to Clark Dredging Company, Chicago, Ill. Gold-dredge	814,019	Mar. 6	28	7	121	8
Clark, Howard M., New Paynesville, Minn. Wrench	817,468	Apr. 10	1842	386	121	1820
Clark, James M., 2d, North Attleboro, assignor to Daggett & Clap Co., Attleboro, Mass. Bracelet	818,146	Apr. 17	3191	686	121	2169
Clark, Joseph M., Apollo, assignor of sixty-two and one-half one-hundredths to P. Wise, Avonmore, and J. F. Lambing, Paulton, Pa. Whip-socket	817,543	Apr. 10	1996	421	121	1853
Clark, Louis W., Petaluma, Cal. Brooder	818,372	Apr. 24	4654	999	121	2538
Clark, Rice O., Jr., Hobsonville, New Zealand. Machine for flanging, socketing, or otherwise shaping earthenware pipes, &c	817,045	Apr. 3	991	208	121	1579
Clark, Thomas J. (See Clark, Adolph C. and T. J.)						
Clark, William, Campbeltown, Scotland. Turbine	819,000	Apr. 24	4892	1050	121	2590
Clark, William B. (See Martin, George F., assignor.)						
Clark, Wilmont E., New York, N. Y. Gas turbine-engine	814,187	Mar. 6	359	73-4	121	78
Clarke, Mary E., assignor to S. F. Clarke, Syracuse, N. Y. Skirt and waist retainer	817,417	Apr. 10	1728	364	121	1797
Clarke, Sarah F. (See Clarke, Mary E., assignor.)						
Clarke, Sidney E. (See Doebler, John F., Jr., assignor.)						
Clarkson, Eluide J. (See Clarkson, William H., assignor.)						
Clarkson, William H., assignor to E. J. Clarkson, Edwards Station, Ill. Expansion-bit for coal-drills	814,768	Mar. 13	1562	328	121	400
Clauberg, Frederick A., Weehawken Heights, N. J. Safety-razor	816,299	Mar. 27	4686	995	121	1177
Clausen, Carl M., Elkhart, Ind. Hot-water heater	818,667	Apr. 24	4245	913	121	2449
Clay, Harry C., assignor to Reeves & Company, Columbus, Ind. Coupling	816,218	Mar. 27	4534	963	121	1145
Cleff, Robert vom, Jr., Jersey City, N. J., and C. F. Benedict, Brooklyn, N. Y. Guide clamp	814,188	Mar. 6	360	74	121	78
Cleland, Edward A., Lynchburg, Va. Non-siphoning trap	817,469	Apr. 10	1843	386	121	1821
Clemans, William M. (See Myers and Clemans.)						
Clemmensen, Erik C. (See Heitmann and Clemmensen.)						
Clemons, De Leaki T., Hornellsville, N. Y. Double-belt sander	818,518	Apr. 24	3933	847-8	121	2380
Cleveland, David H., Kansas City, Kans. Combination-lock	818,414	Apr. 24	3723	799	121	2337
Cleveland, Philo, Seattle, Wash. Railway-switch	814,673	Mar. 13	1358	284	121	355
Clifford, Harlon A., Millers Falls, Mass. Hand-controlled tool	814,920	Mar. 6	32	7	121	9

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Clifford, Thomas G., assignor of two-thirds to W. McGrath, Hoboken, and G. F. D. Trask, Orange, N. J. Folding car-step	817,224	Apr. 10	1344	281	121	1718
Clinch-Jones, Frederick J., Leamington, England. Apparatus for heating metals	818,147	Apr. 17	3192	686–7	121	2169
Cline, Fred N., Chicago, Ill. Cupola	814,769	Mar. 13	1554	328	121	400
Clinton Wire Cloth Company. (See Perry, John C., assignor.)						
Close, Charles J., Columbus, Ohio. Dumping-bucket	818,668	Apr. 24	4247	913	121	2450
Clough, Henry H., Elyria, Ohio. Railway-tie	816,644	Apr. 3	208	48	121	1406
Clough, Henry H., Elyria, Ohio. Railway-tie plate and means for securing rails thereto	816,645	Apr. 3	209	48–9	121	1407
Clowry, William H., assignor of one-half to J. Hess, Chicago, Ill. Locomotive sand-box	816,073	Mar. 27	4254	902	121	1085
Clugsten, William P., Hamburg, Ill. Antislipping device for shoes	817,958	Apr. 17	2822	610	121	2090
Coates, Harry E., Sacramento, Cal. Toy	817,549	Apr. 10	1997	421	121	1853
Coates, Ray G., Pasadena, Cal. Mowing-machine	815,681	Mar. 20	3414	713	121	853
Cobb, Benjamin J., Leesville, La. Car-coupling	816,711	Apr. 3	321	74	121	1431
Coburn, Raymond C., Upper Sandusky, Ohio. Inhaler	815,510	Mar. 20	3074	641	121	777
Cochran, Edward. (See Cochran, James T., assignor.)						
Cochran, Edwin J. (See Lincoln, Ward W., assignor.)						
Cochran, James T., assignor of one-half to E. Cochran, Sylacauga, Ala. Supporting device for railway-tracks	816,004	Mar. 27	4100	866	121	1051
Cocklin, William J., Rising City, Nebr. Grain-door	818,816	Apr. 24	4558	977	121	2517
Coe, Walter H., Providence, R. I. Package-roll of metallic leaf	819,001	Apr. 24	4893	1050	121	2590
Coffin, Charles L., assignor to Electric Metal Working Company, Detroit, Mich. Metallic vessel	816,558	Apr. 3	II	3	121	1357
Coffman, Seburn E., Bagwell, Tex. Wrench	816,151	Mar. 27	4404	931	121	1117
Colby, Clarence L., Richmond, Ind. Combined door and automatic closing means therefor	814,356	Mar. 6	724	146–7	121	160
Coldwell, Joseph, Fall River, assignor to J. K. Lanning, Boston, Mass. Loom-stopping mechanism	818,352	Apr. 17	3593	769–70	121	2253
Coldwell, William H., Newburgh, N. Y. Lawn-mower	817,157	Apr. 10	1205	251	121	1687
Cole, Allan D. (See Williams, Gilbert M., assignor.)						
Cole, Clifford E., Birmingham, Ala. Tap and die holder	815,146	Mar. 13	2304	482	121	558
Cole, Edward S. (See Cole, John A. and E. S.)						
Cole, Frank E., Boston, Mass. Compensating spool	815,511	Mar. 20	3076	641	121	778
Cole, Giles F., Lansing, Mich. Heat-resisting fabric	818,415	Apr. 24	3725	800	121	2337
Cole, James M., Tacoma, Wash. Means for preserving foods	818,353	Apr. 17	3597	770	121	2254
Cole, John A., Chicago, Ill., and E. S. Cole, Upper Montclair, N. J. Pitot-tube connection	817,470	Apr. 10	1845	386–7	121	1821
Cole, Samuel J., *et al.* (See Williams, Harry A., assignor.)						
Cole, William E., Norfolk, Va. Fuel-economizer	815,512	Mar. 20	3079	641	121	778
Cole, William F., Waco, Tex. Gun-stock	816,074	Mar. 27	4256	902	121	1085
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Railway-traffic-controlling apparatus	814,021	Mar. 6	33	8	121	9
Coleman, Clarence W., Westfield, N. J., assignor to Hall Signal Company. Signal apparatus	818,744	Apr. 24	4402	942–3	121	2483
Coleman, Frank, Bridgewater, Canada. Rail-tie	815,065	Mar. 13	2127	448	121	519
Coleman, Franklin M., Moultrie, Ga. Sash-lock	816 780	Apr. 3	452	102	121	1457
Coleman, George D., Boston, Mass. Apparatus for corroding metal	814,430	Mar. 6	884	181	121	192
Coleman, Lucius E., Santa Ana, assignor to W. H. Spake, Anaheim, Cal. Adding device	816,781	Apr. 3	454	102	121	1458
Collet, Albert, Paris, France. Portable apparatus for transmitting motion to tools	815,066	Mar. 13	2128	448	121	519
Collet, Albert, Paris, France. Portable insulated support for double-wire electric lines	816,900	Apr. 3	700	144	121	1514
Collier, William H., Jackson, Tenn. Valve-gear for steam and other fluid-pressure engines	814,275	Mar. 6	535	112	121	115
Collins, Aeneas. (See McGann, Thomas W. J., assignor.)						
Collins, Archie F., New York, N. Y. Wireless telephony	814,942	Mar. 13	1866	392	121	465
Collins Brothers. (See Milson, John R., assignor.)						
Collins, Dennis, New Hampton, Iowa. Feeding device	816,219	Mar. 27	4535	963	121	1145
Collins, James W., New Martinsville, W. Va. Collar for lamps	814,431	Mar. 6	886	182	121	193
Collins, James W., New Martinsville, W. Va. Fastening metal collars to glass lamps	814,432	Mar. 6	887	182	121	193
Collins, John A., Fall River, Mass. Stop-indicator for looms	818,148	Apr. 17	3193	687	121	2170
Collins, Leva C., Philadelphia, Pa. Collar-stay	818,817	Apr. 24	4560	978	121	2518
Collins, Leva C., Philadelphia, Pa. Skirt and waist supporter	818,818	Apr. 24	4562	978	121	2518
Collins, Walter A., Penns Manor, Pa. Railway-tie	814,022	Mar. 6	44	8	121	12
Collis, John, Des Moines, Iowa, assignor to W. P. Collis, New York, N. Y. Boiler-furnace	814,640	Mar. 6	1270	268	121	275
Collis, W. P. (See Collis, John, assignor.)						
Collister, John H. (See Schultz, August L., assignor.)						
Colloseus, Heinrich, Berlin, Germany. Treatment of blast-furnace slag for production of material similar to trass, &c	817,158	Apr 10	1207	.....	121	1688
Colman, William R., Quincy Ill. Baling-press	818,232	Apr. 17	3365	720	121	2206
Colorado Iron Works Company. (See Fitts, Norman V., assignor.)						
Colt, Samuel S., Orange, N. J. Door holding and releasing device	818,077	Apr. 17	3046	657	121	2137
Colton, Emma J. (See Dyer, William H., assignor.)						
Columbus Brass Company. (See Reed and Heald, assignors.)						
Columbus Heating & Ventilating Company. (See Ebinger, David A., assignor.)						
Combet, Louis, Paris, France. Power-transmitting mechanism for bicycles	817,225	Apr. 10	1345	281–2	121	1718
Combination Urn Manufacturing Company. (See Heibel, Henry, assignor.)						
Combs, Rogers M., Chicago, Ill. Attachment for telephone toll-boxes	814,276	Mar. 6	538	112	121	116
Combustion Utilities Company. (See Ellis, Carleton, assignor.)						
Commichau, Gotthard, Magdeburg, Germany. Crushing-mill	814,832	Mar. 13	1679	351	121	426
Commons, William H., Chicago, Ill. Work-stand	815,067	Mar. 13	2130	449	121	520
Computing Scale Company. (See Hopkinson, Joseph, assignor.)						
Comstock, Alphonso S., Evanston, Ill. Carbureter	817,903	Apr. 17	2710	588	121	2064
Comstock, Edgar M., Ypsilanti, Mich. Package-tie	818,354	Apr. 17	3598	771	121	2254
Condit, William D. (See Smith, Morris F., assignor.)						
Condra, Elizabeth S., Corona, Cal. Hat-pin	814,833	Mar. 13	1680	351	121	426
Conhaim, Fred, St. Louis, Mo. Apparatus for dressing windows	815,796	Mar. 20	3678	774–5	121	907
Conklin, Charles A., Adrian, Mich. Coffin-fastener	818,233	Apr. 17	3367	720	121	2207
Conklin, Roy, Toledo, Ohio. Fountain-pen	814,520	Mar. 6	1040	215	121	227
Conkling, Charles E., McKeesport, assignor to Mesta Machine Company, Pittsburg, Pa. Speed-governor	814,433	Mar. 6	888	182	121	193
Conkling, John F., Hawley, Pa. Water-polo apparatus	814,674	Mar. 13	1360	284	121	356
Connell, David W., assignor to Velie Carriage Company, Moline, Ill. Vehicle-body	816,782	Apr. 3	456	102	121	1458
Connelly, Owen M., Philadelphia, Pa. Amusement apparatus	816,435	Mar. 27	4996	1060–1	121	1241
Connelly, Patrick F., Sioux Falls, S. D. Curbing and sidewalk dressing implement	818,416	Apr. 24	3725	800	121	2338
Conner, Lendell A., Jr. (See Krakau and Conner.)						
Connett, Albert N. London, England, assignor to J. G. White and Company, Incorporated, New York, N. Y. Point or switch for electric tramways working upon the slot-conduit system	816,646	Apr. 3	212	49–50	121	1407

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Connett, Albert N., London, England, assignor to J. G. White and Company, Incorporated, New York, N. Y. Point or switch for electric tramways working upon the slot-conduit system	816,647	Apr. 3	214	50	121	1408
Connolly, Patrick, New York, N. Y. Fluid-supply fitting	816,550	Apr. 3	13	4	121	1357
Connors, Michael J., Kansas City, Mo. Valve	818,519	Apr. 24	3938	848	121	2381
Conrad, Max, Aschaffenburg, Germany. Making dialkylbarbituric acids	817,159	Apr. 10	1209	.....	121	1688
Conran, William F., Jr., New York, N. Y. Stand-pipe system	816,152	Mar. 27	4405	931–2	121	1117
Consolidated Car Heating Company. (See McElroy, James F., assignor)						
Consolidated Engine Stop Company. (See Whitaker and Wood, assignors.)						
Consolidated Gas Company. (See Harrington, Walter K., assignor.)						
Constable, Stevenson, New York, N. Y. Railway-car attachment	817,103	Apr. 3	1084	225	121	1599
Conter, Herman L. (See Place and Conter.)						
Continental Can Company. (See Taliaferro, John C., assignor.)						
Continental Paper Bag Company. (See Smith, Charles F., assignor.)						
Continental Paper Bag Company. (See Strasburg, Frederick E., assignor.)						
Continuous Extracting Press Corporation. (See Fiddyment and McNally, assignors.)						
Conway, Harvey W., Columbus, Ohio. Damper for stovepipes, flues, &c	816,712	Apr. 3	323	74–5	121	1431
Cook, Charles O., Bernardston, Mass. Ice-creeper	818,520	Apr. 24	3941	848	121	2382
Cook, Frank B., Chicago, Ill. Thermal protector and alarm	815,006	Mar. 13	2003	421	121	491
Cook, Frank B., Chicago, Ill. Automatic electrical self-soldering reset for thermal protectors	815,406	Mar. 20	2894	601	121	737
Cook, Frank B., Chicago, Ill. Iron-framed distributing-board for telephone-exchanges	816,847	Apr. 3	592	124	121	1490
Cook, Frank B., Chicago, Ill. Heat-coil	817,160	Apr. 10	1209	251	121	1688
Cook, James F., Cambridge, Ill. Connecting-rod	815,068	Mar. 13	2131	449	121	520
Cook, James H., Detroit, Mich. Spring-seat structure	816,075	Mar. 27	4257	902	121	1085
Cook, James M., Jr., Johnstown, Pa. Track-brake	816,531	Mar. 27	5187	1100–1	121	1285
Cook, Milton H., San Francisco, Cal. Conveyer-belt	814,943	Mar. 13	1869	392	121	465
Cook, Thomas D., Glendon-Torquay, England. Floating breakwater	817,904	Apr. 17	2712	588	121	2064
Cooke, Alfred C., Rockyhill, Conn. Truss	815,682	Mar. 20	3416	714	121	853
Cooke, William L., Newport News, Va., assignor, by mesne assignments, to Wyckoff, Seamans & Benedict, Ilion, N. Y. Ribbon-shifting mechanism for type-writers	818,745	Apr. 24	4408	943–4	121	2485
Cookson, Charles L. (See Tuttle and Cookson.)						
Cooley, Daniel P., Granby, assignor of one-half to T. G. Case, Hartford, Conn. Seed-cleaning apparatus	816,560	Apr. 3	14	4	121	1357
Coomber, James, assignor, by mesne assignments, to H. Reisinger, New York, N. Y. Cork-extractor	814,641	Mar. 6	1273	268	121	276
Cooper, Augustus S., Berkeley, Cal. Separator for gas, oil, water, and sand	815,407	Mar. 20	2899	601	121	738
Cooper, Garrett D., Providence, R. I. Sewing-machine stand	816,300	Mar. 27	4688	996	121	1178
Cooper, George H. (See Mohr and Cooper.)						
Cooper, Henry D., administrator. (See Cooper, James G.)						
Cooper Hewitt Electric Company. (See Hewitt, Peter C., assignor.)						
Cooper, James G., deceased; H. D. Cooper, administrator, assignor, by mesne assignments, of three-fifths to M. Budd, New York, N. Y. Hydraulic and hand steering-gear	815,266	Mar. 13	2535	533	121	611
Cooper, Joseph. (See Ormondroyd and White, assignors.)						
Cooper, William, Denver, Colo. Automatic exhaust	819,002	Apr. 24	4894	1051	121	2590
Coopersmith, Rudolph, St. Louis, Mo. Davenport-pad	817,139	Apr. 3	1160	240	121	1617
Copeland, Arthur, assignor of one-half to M. G. Copeland, Washington, D. C. Fixture for awnings, curtains, and the like	814,770	Mar. 13	1557	329	121	400
Copeland, Hugh B., Denver, Colo. Portable wall	815,513	Mar. 20	3080	641–2	121	778
Copeland, Martin G. (See Copeland, Arthur, assignor.)						
Copilovich, Henry, Hinckley, assignor to Standard Turpentine Manufacturing Co., St. Paul, Minn. Wood-still	814,901	Mar. 13	1791	374	121	449
Coppridge, Joel A., and T. B. Stultz, Roanoke, Va. Hot-water heater	818,355	Apr. 17	3599	771	121	2255
Corbin Motor Vehicle Corporation. (See Bogart, Fred H., assignor.)						
Corcoran, George L., and G. A. Dobyne, assignors to Champion Shoe Machinery Company, St. Louis, Mo. Shuttle-actuating mechanism for sewing-machines	815,069	Mar. 13	2133	449–50	121	520
Corcoran, George L., and G. A. Dobyne, assignors to Champion Shoe Machinery Company, St. Louis, Mo. Heating system for wax-thread sewing-machines	818,417	Apr. 24	3727	800	121	2338
Cordes, John F. (See Rau, John F., assignor.)						
Cornacker, Charles, *et al.* (See Schenck, August, assignor.)						
Cornelison, Robert W., Bloomfield, N. J. Composition for coloring or painting	816,648	Apr. 3	215	.....	121	1408
Corner, John L., *et al.* (See Garrard, William D., assignor.)						
Cornwell, George F. (See Terry, Howell P., assignor.)						
Cornwell, George H., Park Ridge, N. J., assignor of two-fifths to W. F. Pippey, New York, N. Y. Fish-plate	818,418	Apr. 24	3728	800	121	2338
Corrigan, Fredrick, Jeannette, Pa. Seal for envelops	818,746	Apr. 24	4414	944	121	2487
Corrugated Bottle Company. (See House, Charles, assignor.)						
Corson, Clarence W. (See Linderman and Corson.)						
Corthésy, Jules H., assignor of one-half to G. F. Griffin, London, England. Rotary engine	819,003	Apr. 24	4897	1051–2	121	2590
Coset, Charles C., Bismarck, N. D. Bobbin	815,683	Mar. 20	3418	714	121	854
Coston Signal Company. (See Becherer, Jay W., assignor.)						
Cotter, Samuel, Newark, N. J. Pen and pencil holder	816,783	Apr. 3	457	102	121	1458
Cottier, William T., Chicago, Ill. Ventilator	814,357	Mar. 6	726	147	121	160
Cottrell, Charles E. (See Iverson, John G., assignor.)						
Cottrell, Edgar H., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Folding machinery	819,611	Apr. 24	4135	888–9	121	2425
Coughlin, Joseph D., assignor of fifty-one one-hundredths to B. W. O'Neil, Boston, Mass. Corkscrew	814,834	Mar. 13	1681	351–2	121	426
Couper, Peter, Flint, England. Paper-making apparatus	819,004	Apr. 24	4899	1052	121	2591
Courtot, Georges, Paris, France. Stencil-plate for printing in colors	818,521	Apr. 24	3942	849	121	2382
Courtright, Otho C., and A. D. Mika, Fort Madison, Iowa. Photographic-printing cabinet	815,267	Mar. 13	2537	533	121	611
Covel, William L., Biloxi, Miss. Saw-swaging machine	815,269	Mar. 13	2541	534	121	612
Covell, Charles, Grand Valley, Pa. Automatic air-relief for pipe-lines	815,268	Mar. 13	2540	533	121	612
Cover, Owen C., Goshen, Ind. Electric-light socket and key	816,436	Mar. 27	4997	1061	121	1241
Covington, Edward, Salt Lake City, Utah. Fireproof and waterproof composition	816,532	Mar. 27	5190	.....	121	1286
Cowan, Harry I., and B. Abel, Woburn, Mass. Oculometroscope	817,046	Apr. 3	993	203	121	1579
Cowardin, Samuel P., Richmond, Va. Electric rail-bond and making same	814,771	Mar. 13	1559	329	121	401
Cowham, William F. (See Normandin, Levi P., assignor.)						
Cowham, William F. (See Robertson, Alonzo P., assignor.)						
Cowham, William F. (See Wiltse, Sidney L., assignor.)						
Cowles, Edward P., Warren, Ohio. Variable-speed friction-gearing	818,747	Apr. 24	4416	944–5	121	2487
Cox, Alfred H., Cincinnati, Ohio. Automatic stopple and non-refillable bottle	815,147	Mar. 13	2305	482	121	558
Cox, Daniel M., Moulton, Iowa. Hay and stook rack	816,561	Apr. 3	15	4–5	121	1357

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Cox, Edwin A., London, England, assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	815,905	Mar. 20	3903	826	121	955
Cox, Israel V. B. (See Hukill, William V., assignor.)						
Cox, James J., Jackson, Mich. Plastic-block-molding machine	814,358	Mar. 6	727	147	121	161
Cox, John. (See Marshall and Cox.)						
Cox, John, Vandalia, Ill. Treadle-pump	818,522	Apr. 24	3943	849	121	2382
Craft, Edward B., assignor to Western Electric Company, Chicago, Ill. Switch-key	814,277	Mar. 6	540	113	121	116
Craft, Edward B., assignor to Western Electric Company, Chicago, Ill. Alarm-fuse for telephone-exchanges	817,959	Apr. 17	2823	611	121	2090
Cragin, Samuel N., Akron, Ohio. Garment-hanger	818,748	Apr. 24	4423	946	121	2489
Craighill, George P., and G. A. Kerr, assignors to M. C. Manson, Jr., Lynchburg, Va. Treating wood for the production of paper-pulp, terpenes, and resinous substances	817,960	Apr. 17	2825	.....	121	2091
Cramer, Howard, Newberry, assignor of one-half to C. H. Knapp and N. B. Wright, Williamsport, Pa. Railway-rail joint	816,533	Mar. 27	5190	1101	121	1286
Crandall, Nathan W., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Door-check	815,579	Mar. 20	3203	673–4	121	805
Crane & Breed Manufacturing Company. (See Blesch, Charles, assignor.)						
Crane, Clarence A., Warren, Ohio. Sprinkler	818,938	Apr. 24	4775	1026	121	2564
Crane Company. (See Lloyd, William H., assignor.)						
Crane, Edward W., Dalton, assignor of one-half to R. L. Parks, Russell, Mass. Umbrella	815,797	Mar. 20	3680	776	121	906
Crane, George W., Vedersburg, Ind. Shredder-feeder	815,408	Mar. 20	2900	602	121	739
Crane, James P., Chicago, Ill. Stopper for bottles, &c	815,940	Mar. 27	3966	840	121	1021
Crane, John P., Millbury, assignor to Draper Company, Hopedale, Mass. Spinning or twisting ring	814,189	Mar. 6	361	74	121	79
Cranmer, Clyde C., Athens, Ohio. Miner's drill	816,562	Apr. 3	17	5	121	1358
Cranmer, Clyde C., Athens, Ohio. Miner's drill	816,563	Apr. 3	18	5	121	1358
Crannell, Charles W., Rocky Ford, Colo., assignor to American Nail-Less Horse Shoe Company. Nailless horseshoe	817,625	Apr. 10	2130	451	121	1880
Cranston, Albert E., Pollock, S. D. Hay-rack	817,626	Apr. 10	2134	452	121	1881
Crapp, Thomas S., assignor of one-half to R. C. Finch, Indianapolis, Ind. Card-displaying apparatus	814,588	Mar. 6	1172	245–6	121	254
Craven, Austin O., Providence, R. I. Combined comb case and cleaner	815,798	Mar. 20	3682	776	121	908
Cravens, Graham H., De Queen, Ark. Apparatus for raising the superstructure of and ballasting railway road-beds	816,076	Mar. 27	4258	903	121	1086
Craver, Albert L., Linwood, N. C. Brake	815,514	Mar. 20	3082	642	121	779
Crawford, Hezekiah H., El Paso, Tex. Rail-joint chair	817,161	Apr. 10	1214	251	121	1690
Crawford, Samuel E., Avalon, Pa. Gas-meter	814,359	Mar. 6	730	148	121	161
Crawford, William H., Dugger, Ind. Flower stand or support	816,077	Mar. 27	4262	903	121	1087
Crawford, Wm. Gordon. (See Burnham, Arthur M., assignor.)						
Crichfield, George W., Jersey City, N. J., assignor of one-half to W. T. S. Crichfield, New York, N. Y. Plastic-block machine	819,005	Apr. 24	4901	1052–3	121	2591
Crichfield, William T. S. (See Crichfield, George W., assignor.)						
Crompton, George, *et al.* (See Crompton, Randolph, assignor.)						
Crompton & Knowles Loom Works. (See Ott, Frederick, assignor.)						
Crompton, Randolph, assignor to R. and G. Crompton, E. D. Thayer, and W. B. Scofield, Worcester, Mass. Brake mechanism for looms	816,534	Mar. 27	5192	1101	121	1286
Crompton, Randolph, assignor to R. and G. Crompton, E. D. Thayer, and W. B. Scofield, Worcester, Mass. Shed-forming mechanism for looms	816,535	Mar. 27	5193	1102	121	1286
Cromwell, John C., Cleveland, Ohio. Driving mechanism	814,023	Mar. 6	46	9	121	12
Cronin, Alexander E. (See Barnes and Cronin.)						
Croskey, John H., assignor to Duquesne Glass Company, Pittsburg, Pa. Apparatus for manufacturing glass articles	817,835	Apr. 17	2555	548–9	121	2030
Croskey, John H., assignor to Duquesne Glass Company, Pittsburg, Pa. Apparatus for manufacturing glass articles	817,836	Apr. 17	2558	549	121	2030
Crosser, David H., Cleveland, Ohio. Garment-supporter	815,906	Mar. 20	3907	827	121	956
Crossin, John, Ava, Ill. Hog-trough	817,627	Apr. 10	2137	452	121	1881
Crouan, Henry, Clichy, France. Regulator for gas and petroleum motors	818,612	Apr. 24	4139	889–90	121	2426
Crow, Herbert M., Oakdale, Cal. Lift-pump	816,965	Apr. 3	840	172	121	1544
Crown Cork and Seal Co. (See Gillette, George H., assignor.)						
Cue, William, Parker, S. D. Woven-wire stretcher	814,024	Mar. 6	48	9	121	13
Culmer, John W., Cleveland, Ohio. Computing-scale	815,684	Mar. 20	3419	714–15	121	854
Culmer, John W., Cleveland, Ohio. Computing-scale	816,714	Apr. 3	327	76	121	1432
Culmer, John W., Cleveland, Ohio, assignor to Arithmetical Scale Co., Chattanooga, Tenn. Cheese-cutting machine	816,713	Apr. 3	324	75	121	1432
Culver, William W., Wichita, Kans. Grain-separator	815,070	Mar. 13	2136	450	121	521
Cummings, Robert A., Beaver, Pa. Concrete and metal structure	815,409	Mar. 20	2902	602	121	740
Cummiskey, James A., Cloverdale, Cal. Sawing-machine	817,628	Apr. 10	2137	452–3	121	1882
Cunniff, Edward, New Bedford, assignor to Draper Company, Hopedale, Mass. Hopper for filling-replenishing looms	817,047	Apr. 3	994	203	121	1579
Cunningham, Hugh B., Arnot, Pa. Pipe-pulling jack	817,363	Apr. 10	1610	340–1	121	1772
Curley, James R., New York, N. Y. Stropping-machine	815,685	Mar. 20	3426	715–16	121	855
Curran, Thomas. (See Seibold, Curran, and Bacon.)						
Currier, John W., Boston, Mass. Fork	816,536	Mar. 27	5196	1102	121	1287
Curtain, Clarence. (See Curtain, John, assignor.)						
Curtain, John, Elkfalls, Kans., assignor of one-half to C. Curtain, Circleville, Ohio. Checking system for harness	814,835	Mar. 13	1682	352	121	426
Curtain Supply Company. (See Forsyth, Henry H., assignor.)						
Curtis, Arthur R., Golden, Colo. Igniter for internal-combustion engines	817,104	Apr. 3	1085	225	121	1599
Curtis, Henry D. (See Curtis, Robert H. and H. D.)						
Curtis & Marble Machine Co. (See Marble, Edwin T. and E. H., assignors.)						
Curtis & Marble Machine Company. (See Bradley, William C., assignor.)						
Curtis, Robert H., Long Branch, and H. D. Curtis, Red Bank, N. J. Sweat-band	816,301	Mar. 27	4691	996	121	1179
Curtis, Zenas A., Channing, Tex. Toy	815,410	Mar. 20	2906	603	121	740
Curwen, Samuel M. (See Brill and Curwen.)						
Curwen, Samuel M., Haverford, assignor to J. A. Brill, Philadelphia, Pa. Disappearing seat	816,537	Mar. 27	5197	1103	121	1287
Cushman, Frederick, Cleveland, Ohio. Safety car-fender	817,299	Apr. 10	1495	313	121	1746
Cyclone Drill Company. (See Tschantz, William H., assignor.)						
Cyphers, Ernest M., Greenville, Mich. Pencil-holder	815,515	Mar. 20	3083	642	121	779
Cyphers Incubator Company. (See Hare, Franklin C., assignor.)						
D'Ailly, Richard H. A., Tiptonville, Tenn. Button	816,416	Mar. 27	4965	1055	121	1236
D'Arsi, Fortunato M., New York, N. Y. Illuminated display apparatus	816,154	Mar. 27	4413	932	121	1119
Dabney, Ann B., Washington, D. C. Hook and eye	816,966	Apr. 3	841	173	121	1544
Dackiewicz, Charles, assignor of fifty-one one-hundredths to C. Freihofer and F. Hanson, Philadelphia, Pa. Mechanical motor	816,437	Mar. 27	4909	1002	121	1242

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Daft, Leo, Ealing, and A. Williams, Wimbledon, assignors to Electrical Ore Finding Company Limited, London, England. Apparatus for detecting and localizing mineral deposits	817,736	Apr. 10	2334	502	121	1928
Daggett & Clap Co. (See Clark, James M., 2d, assignor.)						
Dahl, Peter C., Clarkfield, Minn. Rotary engine	816,784	Apr. 3	458	103	121	1459
Dahlin, John, Chisholm, Minn. Safety device for hoisting apparatus	818,523	Apr. 24	3944	849	121	2383
Dahlstrom, Charles, Jamestown, N. Y. Step or mat	817,837	Apr. 17	2560	549	121	2031
Dahlund, Frank, Esmond, N. D. Staying device for sliding doors	814,434	Mar. 6	891	183	121	194
Dahmen, Hans von, Vienna, Austria-Hungary. Completely exploding high explosives	818,939	Apr. 24	4776	.....	121	2564
Dailey, Carolus E., Brooklyn, N. Y. Machine for decorticating Manila fiber and like substances	815,799	Mar. 20	3683	776	121	906
Dain, Joseph, Ottumwa, Iowa. Hay-rack	818,524	Apr. 24	3946	850	121	2383
Dain, Joseph, Ottumwa, Iowa. Hay-stacker	818,749	Apr. 24	4423	946–7	121	2489
Dalby, William H., Indianapolis, Ind. Automatic adjustable-grip pipe-wrench	818,419	Apr. 24	3730	801	121	2338
Dale, John H., New York, N. Y. Cluster lamp-socket	818,750	Apr. 24	4427	947	121	2490
Dalgarno, William. (See Hill and Dalgarno.)						
Dalhaug, Johan M. (See Johnson, John E., assignor.)						
Dalrymple, James W., Solsberry, Ind. Clod-crusher	816,153	Mar. 27	4410	932	121	1118
Dalton, John W., Sandwich, Mass. Life-saving device	814,116	Mar. 6	230	44	121	50
Daly, Jennie, Waverly, N. Y. Dish-drier	818,613	Apr. 24	4142	890	121	2426
Daly, Martin R., *et al.* (See Wagner, William F., assignor.)						
Dalzell, Samuel W., Glasgow, Scotland. Rail for railways and tramways	815,580	Mar. 20	3205	674	121	805
Damhorst, Franz, A. Kemper, and E. Utke, Berlin, Germany. Applying powder to patterns	815,297	Mar. 13	2597	.....	121	625
Dana, Clarence M., and E. Kibben, Grand Rapids, Mich. Printing-press attachment	815,071	Mar. 13	2137	450–1	121	521
Dandridge, Edward P., Philadelphia, Pa. Guard-rail for street-cars	818,873	Apr. 24	4655	999–1000	121	2538
Daniel, Paul, Levallois-Perret, near Paris, France. Motive-power engine	817,905	Apr. 17	2713	589	121	2065
Daniels, Jay V., London, England. Hand-gear vibratory massaging-machine	816,564	Apr. 3	20	6	121	1358
Danke, Arthur E., Neenah, Wis. Water-level regulator	818,525	Apr. 24	3948	850	121	2384
Dann, Ernest G., Chicago, Ill. Eraser	817,838	Apr. 17	2562	550	121	2031
Danner, Michael, Panola, Ill. Electric automatic mail-carrier	816,649	Apr. 3	216	50–1	121	1408
Danner, Simon P. (See Knorzer and Danner.)						
Darby, Edwin, assignor of one-half to B. J. Hardy, Iowa City, Iowa. Crude-oil burner	814,360	Mar. 6	732	148	121	162
Darby, Thomas A., trustee. (See McCarty, William F. M., assignor.)						
Darche, Augusta Y., executrix. (See Darche, George C.)						
Darche, George C., deceased; A. Y. Darche, Chicago, Ill., executrix. Electric alarm-clock	815,072	Mar. 13	2139	451	121	522
Darling, John, Rutherglen, assignor to Darling's Patent Automatic Coupling Limited, Glasgow, Scotland. Car-coupling	816,565	Apr. 3	21	6	121	1359
Darling's Patent Automatic Coupling. (See Darling, John, assignor.)						
Darlington, Philip J., Chicago, Ill. Electric hoist	818,078	Apr. 17	3062	658	121	2138
Dashiell, Eleanor R., executrix. (See Dashiell, Robert B.)						
Dashiell, Robert B., deceased, U. S. Navy; E. R. Dashiell, executrix. Breech-loading ordnance	818,420	Apr. 24	3731	801–2	121	2388
Dauber, Charles G. (See Kratsch and Dauber.)						
Dauchy Iron Works. (See Ross and Dauchy, assignors.)						
Dauchy, Samuel. (See Ross and Dauchy.)						
Davenport, John, Stamford, Conn. Piano-action bracket	814,117	Mar. 6	231	45	121	50
Daves, William, assignor to W. A. Freese, Bloomington, Ill., G. W. Quackenbush, Marshall, Mo., and C. A. King, Chicago, Ill. Rail-joint	816,848	Apr. 3	595	124	121	1491
David, Orlando E., Bradford, Pa. Pipe-coupling	817,300	Apr. 10	1497	314	121	1747
Davids, Thaddeus, Little Neck, N. Y. Propulsion of vessels	815,270	Mar. 13	2542	535	121	612
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper tray	815,007	Mar. 13	2007	422	121	492
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper-delivery	815,008	Mar. 13	2009	422	121	492
Davidson, Frank B., Marseilles, Ill., assignor to Howe and Davidson Company, East Orange, N. J. Paper tray	816,302	Mar. 27	4692	996	121	1179
Davidson, Robert. (See Bryant, Wolcott, and Davidson.)						
Davidson Rubber Company. (See Lockwood, Rhodes G., assignor.)						
Davidson, William N. L. (See Jumeaux and Davidson.)						
Davies, Charles W. T., assignor to Good Form Manufacturing Company, New York, N. Y. Necktie	817,364	Apr. 10	1612	341	121	1773
Davies, Jonah, Drums, Pa. Rail-joint	814,772	Mar. 13	1560	329	121	401
Davis, Albert L., Grand Rapids, Mich. Knife-sharpener	817,226	Apr. 10	1346	282	121	1718
Davis, Bertie E. (See Beckwith, William, assignor.)						
Davis, C. Schuyler, *et al.* (See McNeal, Luther C., assignor.)						
Davis, Charles B. (See Davis, Thomas A., assignor.)						
Davis, Clarence C., Providence, assignor of one-half to W. Halkyard, North Kingston, R. I. Rotary blower	814,190	Mar. 6	363	74	121	79
Davis, Clarence F., Sherwood, assignor of one-half to A. L. Locke, Bronson, Mich. Cement-block machine	816,438	Mar. 27	5000	1062	121	1242
Davis, Cleveland G., Manistee, Mich. Dental expander or dilator	815,907	Mar. 20	3909	827	121	966
Davis, Emilie P., New York, N. Y. Dress-shield	817,961	Apr. 17	2827	611	121	2091
Davis, Frank, Jr., St. John, Ill. Shaft-tug	816,439	Mar. 27	5002	1062	121	1243
Davis, George W. (See Uhler, Francis M., assignor.)						
Davis, Grace P. (See Davis, Lewis K., assignor.)						
Davis, Henry S., San Francisco, Cal. Saliva-ejector	818,940	Apr. 24	4777	1026	121	2564
Davis, John H., Glens Falls, N. Y. Graphite-separator	816,303	Mar. 27	4694	997	121	1180
Davis, Kenneth C., Ely, Nev. Combined drilling and bolt-cutting machine	814,589	Mar. 6	1176	246	121	255
Davis, Leonard L., assignor to W. R. Temple, Newport News, Va. Lifting-hook	815,148	Mar. 13	2307	482	121	559
Davis, Lewis K., Indianapolis, Ind. Fuel-feeding device	815,686	Mar. 20	3431	716	121	856
Davis, Lewis K., assignor to G. P. Davis, Indianapolis, Ind. Retaining-wall for reservoirs	815,687	Mar. 20	3433	716	121	856
Davis, Nathan, *et al.* (See Metzger, Emanuel, assignor.)						
Davis, Spencer, Hazelton, Kans. Cutting apparatus for mowing-machines	816,650	Apr. 3	221	51–2	121	1409
Davis, Theodore D., Boston, Mass. Lamp	814,361	Mar. 6	734	149	121	162
Davis, Thomas A., Findlay, assignor of one-half to C. B. Davis, Todds Point township, Ill. Plant-irrigation system	818,356	Apr. 17	3601	771	121	2255
Davis, Thomas A., assignor of one-half to W. W. Harbert, Findlay, Ill. Animal-trap	818,357	Apr. 17	3602	772	121	2255
Davis, Thomas V., Portland, Oreg. Letter-carrier's mail-deposit box	817,048	Apr. 3	996	204	121	1580
Davis, V. G., *et al.* (See Byrd, Britton E., assignor.)						
Davis, Walter M. (See Moses, Walter D.)						
Davis, William A., Manitou, Colo. Bottle attachment	815,688	Mar. 20	3434	717	121	857
Davis, William M., Chicago, Ill., assignor, by mesne assignments, to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone-exchange system	816,078	Mar. 27	4264	903	121	1067
Davis, Willie E., and W. W. Norman, Wyndal, W. Va. Switch-point connector	817,365	Apr. 10	1614	341	121	1773

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Davy, Charles F., Mohawk, N. Y. Fire-escape	818,526	Apr. 24	3950	850	121	2384
Daw, George W., *et al.* (See Palmer and Waterman, assignors.)						
Dawes, John L., Pittsburg, Pa. Sign	815,073	Mar. 13	2141	452	121	522
Dawson, Arthur T., and G. T. Buckham, London, assignors to Vickers Sons & Maxim, Limited, Westminster, England. Mounting for recoiling guns	818,358	Apr. 17	3603	772	121	2256
Dawson, Frederick Y., Washington, D. C. Weather-strip	815,941	Mar. 27	3967	840	121	1021
Day, Albert A., New York, N. Y. Sliding extensible screen	817,471	Apr. 10	1848	387	121	1821
Day, Alfred B., Knoxville, Tenn. Core-oven	816,967	Apr. 3	842	173	121	1544
Day, Benjamin, West Hoboken, N. J. Universal adjuster for printing-films	816,968	Apr. 3	844	173–4	121	1545
Day, James H. (See Parks and Day.)						
Day, W. E. (See Wertz, Joseph E., assignor.)						
Day Winterton J., Schenectady, N. Y., assignor to General Electric Company. Rheostat for starting and controlling electric motors	815,908	Mar. 20	3910	827	121	956
De Jarnatt, Hale W., Centralia, Mo. Magazine-firearm	818,669	Apr. 24	4248	913–14	121	2450
De la Corte, Antonio V., San Luis Potosi, Mexico. Extracting rubber and the like from wood	814,675	Mar. 13	1361	285	121	356
De La Cour, Joseph C., Conshohocken, Pa., assignor to Johnson and Johnson, New Brunswick, N. J. Dental-floss holder	817,050	Apr. 3	999	204	121	1580
De La Hunt, Reverdy C., Cedar Rapids, Iowa. Flushing-tank for sewers	818,875	Apr. 24	4659	1000	121	2539
De la Rue, Evelyn, London, England. Fountain-pen	814,805	Mar. 13	1630	342	121	415
De la Saulx, Frederic K., Seraing, near Liege, Belgium. Supply-controlling mechanism for gas-engines	817,193	Apr. 10	1283	266	121	1703
De Long, Charles E., assignor to F. McIntyre, South McAlester, Ind. Ter. Banking-screw for watches	815,271	Mar. 13	2544	535	121	613
De Nike, Joseph H., Albany, N. Y. Moistening device	817,105	Apr. 3	1068	226	121	1599
De Voe, Albert H., assignor to Singer Manufacturing Company, Elizabeth, N. J. Folder for sewing-machines	814,944	Mar. 13	1870	393	121	465
De Wilde, Frederick P., Chicago, Ill. Circuit-breaking apparatus	815,074	Mar. 13	2142	452	121	522
Deagan, John C., Chicago, Ill. Musical bell	818,874	Apr. 24	4656	1000	121	2538
Deal, Willie H., *et al.* (See Winterburn, Clarence L., assignor.)						
Dean, Clayton C., Ivanhoe, Ill. Amusement apparatus	816,220	Mar. 27	4537	963	121	1145
Dean Electric Company. (See Manson, Ray H., assignor.)						
Dean, Frank L., *et al.* (See Whitney, Charles E., assignor.)						
Dean, Mark, East Orange, N. J. Union for pipes	815,581	Mar. 20	3206	674	121	805
Dean, Mark, East Orange, N. J. Joint for pipes	816,155	Mar. 27	4415	933	121	1119
Dean, Mark, Boston, Mass., assignor to Herendeen Manufacturing Company, Geneva, N. Y. Steam and hot-water boiler	816,567	Apr. 3	23	7	121	1359
Dean, William W., assignor to Kellogg Switchboard & Supply Company, Chicago, Ill. Telephone system	814,118	Mar. 6	233	45	121	51
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone-transmitter	817,140	Apr. 3	1162	241	121	1618
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	818,527	Apr. 24	3952	851	121	2384
Dearborn, Charles A., New York, N. Y. Sewing-machine	814,025	Mar. 6	49	10	121	13
Dearborn, Charles A., New York, N. Y. Feed mechanism for sewing-machines	814,026	Mar. 6	58	11	121	15
Dearborn, Charles A., New York, N. Y. Stitch-forming mechanism for sewing-machines	814,642	Mar. 6	1275	268–9	121	276
Decker, Frank L., Sand Fork, W. Va. Churn	817,049	Apr. 3	997	204	121	1580
Décor, Paul, Oran, Algeria. Rotary engine	817,472	Apr. 10	1850	387–9	121	1822
Defiance Lantern & Stamping Company. (See Hill, James H., assignor.)						
Degen, Julius assignor, by mesne assignments, to Lea Degen Pump Company, Trenton, N. J. Means for balancing centrifugal pumps	814,902	Mar. 13	1792	375–6	121	449
Dehart, Lucy W., assignor to Weldeyer and Betts, New York, N. Y. Scalp-comb	816,221	Mar. 27	4538	964	121	1146
Del Mar, Harry, New York, N. Y. Steam-boiler	817,418	Apr. 10	1730	364	121	1797
Delano, Frederic A., Chicago, Ill. Box-car door	816,651	Apr. 3	223	52	121	1410
Delaunay-Belleville, Louis M. G., Neuilly-sur-Seine, France. Device for lubricating under pressure	817,629	Apr. 10	2140	453	121	1882
Delaunay-Belleville, Louis M. G., Neuilly-sur-Seine, France. Oil-pump	817,630	Apr. 10	2142	454	121	1882
Delavan, Frederick M. and S. E., Chicago, Ill. Pompadour-wave	816,969	Apr. 3	849	175	121	1546
Delavan, Sophia E. (See Delavan, Frederick M. and S. E.)						
Delavan, Willard M., Pittsfield, Mass., and W. I. T. Fosdick, Bridgeport, Conn., assignors to Triumph Voting Machine Company, Pittsfield, Mass. Friction device for voting-lever shafts	817,473	Apr. 10	1853	389	121	1822
Delehant, John J., Chicago, Ill. Combined reamer and die-stock	816,304	Mar. 27	4696	997	121	1180
Dellamore, Albert, S. T. and A. M. Norton, Los Angeles, Cal. Apparatus for mixing and making plaster and mortar	816,156	Mar. 27	4416	933–4	121	1119
Dellinger, Abraham M. (See Stoll, John, assignor.)						
Demartini, Frank L., St. Louis, Mo. Tray-support	817,301	Apr. 10	1498	314	121	1747
Dement, Isaac S., East Orange, N. J., assignor to American Mechanical Cashier Company, New York, N. Y. Register	818,235	Apr. 17	3372	722–4	121	2207
Dement, Isaac S., East Orange, N. J., and F. J. Hull, Brooklyn, N. Y., assignors, by mesne assignments, to American Mechanical Cashier Company. Register	818,234	Apr. 17	3369	721–2	121	2207
Demming, William J., Horley, England. Machine for the manufacture of glass bottles and the like	814,191	Mar. 6	365	75	121	79
Demo, George A., Newport, Minn. Window-shade fastening	818,359	Apr. 17	3604	772	121	2256
Dempsey, Frederick M., Vallejo, Cal. Wave-motor	819,006	Apr. 24	4906	1054	121	2593
Dempster, John T., Schenectady, N. Y., assignor to General Electric Company. Flicker-photometer	815,800	Mar. 20	3685	777	121	909
Denegre, Edward, assignor to McCord & Company, Chicago, Ill. Axle-box cover	817,753	Apr. 17	2371	509	121	1989
Dengler, Ernest, Gibbon, Nebr. Door-securer	817,962	Apr. 17	2828	611	121	2091
Denne, Mark T., Rushden, England. Thread-measuring mechanism for boot and shoe sewing machines	818,360	Apr. 17	3605	773	121	2256
Denning, Joseph M., Cedar Rapids, Iowa. Wire-fence-making machine	816,538	Mar. 27	5198	1103–5	121	1287
Denning, Patrick F., Newark, N. J. Hat-hanger	818,421	Apr. 24	3737	803	121	2339
Dennis, Adolphus S., assignor, by mesne assignments, to National Adding Machine Company, Cleveland, Ohio. Combined type-writer and adding-machine	817,302	Apr. 10	1500	314	121	1747
Dennis, Joseph A. (See Jones and Dennis.)						
Denny, Hosea N., and T. W. Richards, Brooklyn, N. Y. Liquid-meter	818,017	Apr. 17	2937	635	121	2115
Densmore Typewriter Company. (See Merritt and Barron, assignors.)						
Densmore Typewriter Company. (See Smith, George H., assignor.)						
Dentler, Frank, Vicksburg, Mich. Door	814,192	Mar. 6	367	75	121	80
Denzer, August. (See Hoehne and Denzer.)						
Depew, Charles M., and H. E. McCoy, assignors to Pumice Stone Construction Company, San Francisco, Cal. Building material	815,801	Mar. 20	3687	.....	121	909
Dessauer Vertical-Ofen Gesellschaft m. b. H. (See Körting, Ernst, assignor.)						
Devereux, Walter B., Glenwood Springs, Colo. Agitating device	815,272	Mar. 13	2545	535	121	613

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Devers, William J., assignor of two-thirds to D. R. Lathrop and C. W. Treverton, Scranton, Pa. Slate-picking machine	816,901	Apr. 3	702	145	121	1514
Devillers, Octave, Jumet, Belgium. Manufacture of plates or slabs imitating marble	817,963	Apr. 17	2829	.....	121	2092
Dewar, James, Cambridge, England. Absorbing gases or vapors and the production of high vacuums	815,942	Mar. 27	3968	841	121	1021
Dewey, Chauncey E., assignor to American Zinc and Chemical Company, Denver, Colo. Apparatus for converting zinc-sulfate solution into zinc oxid	815,516	Mar. 20	3084	642–3	121	779
Dewhurst, Nathan, J. W. Moore, and R. T. Griffiths, Accrington, England. Simultaneous locking of doors of railway-carriages	815,943	Mar. 27	3970	841	121	1021
Dexter, Talbot C., Pearl River, N. Y. Friction-clutch	815,909	Mar. 20	3912	827–8	121	957
Dexter, Talbot C., and H. Hallstream, Pearl River, N. Y.; said Hallstream assignor to said Dexter. Sheet-handling machinery for printing-presses and other machines	814,522	Mar. 6	1044	216–17	121	228
Dexter, Thomas F., Providence, R. I. Automatic steam and water trap for steam-heating systems	815,335	Mar. 20	2722	567	121	698
Dey, Alexander. (See Dey, John and A.)						
Dey, John, Syracuse, N. Y., and A. Dey, Glasgow, Scotland. Type-writer	814,119	Mar. 6	235	45	121	51
Deyarmond, Richard H. (See Houghton and Deyarmond.)						
Di Vecchio, Stefano, San Francisco, Cal. Refrigerator	814,523	Mar. 6	1053	217	121	229
Dial Voting Machine Company. (See Harrington, Charles F., assignor.)						
Diamant, John, New York, N. Y. Marine lock	816,970	Apr. 3	850	175	121	1546
Dibert, Loyd C. (See Tofanelli, Sebastiano, assignor.)						
Dick, Albert B., assignor to A. B. Dick Company, Chicago, Ill. Duplicating apparatus	815,689	Mar. 20	3435	717	121	857
Dickinson, Joseph H. (See Miller and Dickinson.)						
Dickinson, Willett J. (See Sullivan and Dickinson.)						
Dickson, Frank H., Oswego, N. Y. Amusement apparatus	818,079	Apr. 17	3053	658	121	2139
Diecks, Henry, Eastport, Me. Can-soldering machine	817,754	Apr. 17	2373	509–10	121	1990
Dieffenbach, Otto, Darmstadt, Germany. Electrolytic manufacture of metal tubes	817,419	Apr. 10	1731	.....	121	1797
Diehl, Frank, Sheboygan Falls, assignor to G. P. Myers, Shebogyan, Wis. Woodworking-machine	816,079	Mar. 27	4267	904	121	1068
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company. Sewing-machine thread-case	815,517	Mar. 20	3086	643	121	780
Diehl, Philip, and A. Grieb, assignors to Singer Manufacturing Company, Elizabeth, N. J. Feeding mechanism for sewing-machines	814,027	Mar. 6	62	11	121	15
Diemer, George A., Newburgh, N. Y. Box-covering machine	817,631	Apr. 10	2143	454	121	1883
Dieter, Louis F., Buffalo, N. Y., assignor to Peter Gerlach Company. Stave-jointer	815,518	Mar. 20	3088	643–5	121	780
Dietz Company, R. E. (See Everett, Ernest C., assignor.)						
Dietz, Herman F., assignor of one-half to J. and B. Shehadi, Syracuse, N. Y. Car-window	816,539	Mar. 27	5211	1105	121	1200
Dieudonne, Charles C. (See Jenkins, Charles F., assignor.)						
Dill, Charles H., Danville, Ind., assignor of two-thirds to E. C. Dill, Arkansas City, Kans., and W. H. Harah, Shawnee, Okla. Ter. Motor	814,362	Mar. 6	736	149	121	163
Dill, Enoch C., *et al.* (See Dill, Charles H., assignor.)						
Dill, Louis M., Avoca, La. Feeder for sugar-cane carriers	816,971	Apr. 3	852	175–6	121	1547
Dillen, John A., Clearfield, Pa. Burglar-alarm	816,005	Mar. 27	4101	866	121	1051
Dimick, Winslow A., Vancouver, Wash. Plumb, level, and inclinometer	815,690	Mar. 20	3438	718	121	857
Dimmick, Frederick D., and A. M. Ford, Birmingham, Ala. Machine for forming pipe-cores	814,028	Mar. 6	65	12	121	18
Dingens, Joseph A. (See Hempel, Henry A., assignor.)						
Dion, Albert de, and G. Bouton, Puteaux, France. Internal-combustion engine	815,802	Mar. 20	3688	777–8	121	909
Dirand, Louis J., assignor to Torrington Novelty Manufacturing and Supply Company, Torrington, Conn. Removable dust-protective cover	816,568	Apr. 3	27	8	121	1360
Dixon, George E., Chicago, Ill. Water-heating attachment for furnaces	815,273	Mar. 13	2546	536	121	613
Dixon, George E., Chicago, Ill. Water-heating attachment	815,274	Mar. 13	2547	536	121	613
Dixon, Henry L., and G. A. Marsh, assignors to Automatic Machine Glass Company Pittsburg, Pa. Feeding glass	814,773	Mar. 13	1561	330–1	121	401
Dixon, Henry L., and G. A. Marsh, assignors to Automatic Machine Glass Company, Pittsburg, Pa. Apparatus for shearing glass	814,774	Mar. 13	1566	331	121	402
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Gas-lamp	814,120	Mar. 6	239	45	121	52
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Gas-lamp	814,121	Mar. 6	243	46	121	54
Dixon, Robert R. (See Ballew and Mead, assignor.)						
Dobelin, Chas. W., *et al* (See Rieff, John G., assignor.)						
Dobson, William A., Philadelphia, Pa. Antitorpedo construction for men-of-war vessels	817,227	Apr. 10	1348	282–3	121	1719
Dobyne, George A. (See Corcoran and Dobyne.)						
Dodd, Clarence, assignor of one-half to F. Roach, Waterville, Ohio. Cement fence-post	816,715	Apr. 3	330	76	121	1433
Dodge, George B., Boston, Mass. Embalming compound	814,775	Mar. 13	1568	.....	121	402
Dodge, James M., Philadelphia, Pa. Sprocket-wheel	817,632	Apr. 10	2145	455	121	1883
Dodge, James M., Philadelphia, Pa. Mold for casting	818,941	Apr. 24	4778	1027	121	2565
Dodge, Jasper L., assignor of two-thirds to J. Q. and L. P. Bradish, Providence, R. I. Music-holder	817,550	Apr. 10	1999	421	121	1863
Dodge, Philip T., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	816,849	Apr. 3	596	125	121	1491
Doebler, John F., Jr., assignor to himself and S. E. Clarke, Hartford, Conn. Mop	815,336	Mar. 20	2723	568	121	699
Doehle, Frits. (See Ellingen and Doehle.)						
Doherty, Henry L., Madison, Wis. Operating cement-kilns	818,018	Apr. 17	2939	635	121	2116
Doherty, Patrick, Philadelphia, Pa. Self-registering faucet	814,945	Mar. 13	1872	393	121	465
Dolan, Christopher C., Lockport, N. Y. Automobile sleighing attachment	815,910	Mar. 20	3914	828	121	957
Doll, Henri, assignor to Peignages & Filatures de Bourre de Soie, Paris, France. Preparatory machine and spinning, doubling, winding, and the like processes and apparatus therefor	815,075	Mar. 13	2146	452	121	523
Dolloff, John E. (See Seager, Herbert A., assignor.)						
Doman, Herman C., Oshkosh, Wis. Carbureter for explosive motors or engines	817,061	Apr. 3	1000	204	121	1580
Doman, Lewis B., assignor to Amphion Piano Player Company, Elbridge, N. Y. Playing apparatus for musical instruments	814,676	Mar. 13	1362	285–7	121	357
Doman, Lewis B., assignor to Amphion Piano Player Company, Elbridge, N. Y. Pneumatic playing apparatus for musical instruments	814,677	Mar. 13	1368	287	121	357
Doman, Lewis B., assignor to Amphion Piano Player Company, Elbridge, N. Y. Self-playing musical instrument	814,678	Mar. 13	1372	287	121	358
Doman, Lewis B., assignor to Amphion Piano Player Company, Elbridge, N. Y. Pneumatic self-playing musical instrument	814,679	Mar. 13	1373	287	121	358
Domestic Gas Machine Company. (See Verret and Palmer, assignors.)						
Donahoo, Thomas W., Tishomingo, Ind. Ter. King-bolt	817,303	Apr. 10	1501	315	121	1747
Donaldson, Edward L. (See Sawger, Matthews, assignor.)						
Donaldson, Frank E., Palos Park, assignor of one-half to H. W. Donaldson, Chicago, Ill. Water-heating attachment	818,149	Apr. 17	3194	687	121	2170

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Donaldson, Harry W. (See Donaldson, Frank E., assignor.)						
Donaldson, Harvey J., trustee. (See Johnson, Arthur H., assignor.)						
Donnelly, Bertram C., St. Joseph, Mo. Fire-shutter	816,080	Mar. 27	4269	904–5	121	1088
Donohoe, Martin, California, Pa. Smoking-pipe	816,902	Apr. 3	706	145	121	1515
Dorman, Charles M., R. A. Smith, and H. G. Bagge, Salford, England. Electrical switch and cut-out	818,614	Apr. 24	4142	891	121	2426
Dorment, Frank C., assignor to National Vaporizer Company, Kalamazoo, Mich. Atomizer or nebulizer	815,411	Mar. 20	2907	603	121	740
Dornfeld, John F., Chicago, Ill. Malt-stirring apparatus	815,275	Mar. 13	2548	536–7	121	613
Dornfeld, John F., Chicago, Ill. Dumping-floor	816,716	Apr. 3	331	77	121	1433
Dorris, William P., Moro, Tex. Stalk-cutter	818,876	Apr. 24	4662	1000	121	2539
Dorsey, Henry, Dallas, Tex. Cabinet	815,076	Mar. 13	2147	453	121	523
Dort, Newton, Cleveland, Ohio. Broom-rake	818,751	Apr. 24	4429	947	121	2490
Dosch, Peter, Bridgeport, Conn. Sheet-metal pulley-housing	817,228	Apr. 10	1352	284	121	1719
Dotson, Christopher C., Huzzah, Mo. Wrench	816,157	Mar. 27	4418	935	121	1119
Dougherty, Johannah V., Detroit, Mich. Bedstead	815,077	Mar. 13	2149	453	121	523
Dougherty, John W., Steelton, Pa. Blast-furnace-charging apparatus	816,222	Mar. 27	4539	964	121	1146
Dougherty, John W., Steelton, Pa. Blast-furnace-charging apparatus	818,615	Apr. 24	4145	891	121	2427
Douglas, Henderson B., assignor of one-half to J. S. Douglas, Butler, Pa. Magnetic rivet-holder	816,540	Mar. 27	5213	1105	121	1291
Douglas, Henderson B., assignor of one-half to J. S. Douglas, Butler, Pa. Magnetic rivet-holder	816,541	Mar. 27	5214	1106	121	1291
Douglas, John S. (See Douglas, Henderson B., assignor.)						
Douglas, Raiford W., Spokane, Wash. Rule or gage	815,944	Mar. 27	3971	841	121	1022
Douglas, Robert R., Dunedin, New Zealand. Link of bucket dredging machinery	814,590	Mar. 6	1178	247	121	256
Douglas, William A., Utica, N. Y. Sash-lock	815,803	Mar. 20	3691	778	121	910
Dow, Alonzo. (See Sigler and Dow.)						
Dowling, Katherine M., Little Rock, Ark. Hose-supporter	814,363	Mar. 6	738	149	121	163
Downes, William A., Detroit, Mich. Steam-injector	818,422	Apr. 24	3739	803	121	2340
Downey, Marshall, Henry, Ill. Curtain-display cabinet	815,078	Mar. 13	2150	453–4	121	524
Downs, Walter. (See Maddison and Downs.)						
Doyle, John, and C. F. Averill, New York, N. Y. Coin attachment for prepayment-meters	815,945	Mar. 27	3973	842	121	1022
Doyle, Joseph P., Cleveland, Ohio. Vessel-trimmer	817,229	Apr. 10	1353	284	121	1719
Doyle, William, West Lorne, Canada. Coat-holder	817,755	Apr. 17	2377	510	121	1990
Draper, Clare H., assignor to Draper Company, Hopedale, Mass. Shedding mechanism for looms	818,019	Apr. 17	2941	635	121	2116
Draper Company. (See Benson, Omar, assignor.)						
Draper Company. (See Cassidy and St. Laurent, assignors.)						
Draper Company. (See Crane, John P., assignor.)						
Draper Company. (See Cunniff, Edward, assignor.)						
Draper Company. (See Draper, Clare H., assignor.)						
Draper Company. (See Gustafson and Olsson, assignors.)						
Draper Company. (See Perkins and St. Laurent, assignors.)						
Draper Company. (See Rhoades, Alonzo E., assignor.)						
Draper Company. (See Roper, Charles F., assignor.)						
Dresler, Gustav A. H., Kiel, Germany. Chain-link shackle	819,007	Apr. 24	4908	1054	121	2593
Dressel, Charles H., assignor to Dressel Railway Lamp Works, New York, N. Y. Lamp-burner	814,591	Mar. 6	1179	247	121	256
Dressel Railway Lamp Works. (See Dressel, Charles H., assignor.)						
Dresser, Charles A. (See Armstrong and Dresser.)						
Dresser, Charles A., assignor to G. A. E. and F. W. Kohler, Chicago, Ill. Controlling device for motors	814,946	Mar. 13	1873	393	121	466
Driggs, Louis L., Washington, D. C., assignor to Driggs-Seabury Ordnance Corporation, Sharon, Pa. Gun-mount	818,942	Apr. 24	4779	1027–8	121	2565
Driggs-Seabury Ordnance Corporation. (See Driggs, Louis L., assignor.)						
Driggs-Seabury Ordnance Corporation. (See Driggs, William H., assignor.)						
Driggs, William H., Washington, D. C., assignor to Driggs-Seabury Ordnance Corporation, Sharon, Pa. Shell-fuse	818,943	Apr. 24	4784	1028	121	2566
Drinkwater, Edgar L., Chicago, Ill. Bottle-holder	814,524	Mar. 6	1056	218	121	229
Drinkwater, James H., Winchester, Canada. Ballast-trimmer	816,223	Mar. 27	4542	964–6	121	1146
Driscoll, Robert H. (See Seybers, Frank, assignor.)						
Droste, Joseph T. (See Zwilling and Droste.)						
Drum, Alphonsus L., Lake Forest, Ill. Lamp-regulator	814,364	Mar. 6	739	150	121	163
Drummond, Dugald, Surbiton, England. Spark-preventer for locomotives	817,474	Apr. 10	1854	389	121	1823
Drummond, Rogers D., Poughkeepsie, N. Y. Cheese-cutter	818,528	Apr. 24	3963	851	121	2387
Dry Amalgamation Co. (See Thomas, Herbert A., assignor.)						
Du Brul, Napoleon, Cincinnati, Ohio. Cigar-cutter	816,569	Apr. 3	29	8	121	1360
Du Brul, Napoleon, Cincinnati, Ohio. Cigarette and making same	818,150	Apr. 17	3196	687	121	2170
Du Pont, Francis I., Wilmington, Del. Device for relative feed	818,556	Apr. 24	4015	861	121	2397
Du Pont, Francis I., assignor to E. I. Du Pont de Nemours Powder Company, Wilmington, Del. Ballistic gun	815,468	Mar. 20	3002	626	121	761
Du Vernay, Oliver J., Leominster, Mass. Switch-operating device	814,278	Mar. 6	541	113	121	116
Duane, Harry B., Boston, Mass. Combined label and premium-coupon	814,592	Mar. 6	1180	247	121	256
Dube, Raphael E. and W. A., Faribault, Minn. Carpet-cutting machine	814,947	Mar. 13	1877	394	121	466
Dube, Wilfrid A. (See Dube, Raphael E. and W. A.)						
Dubinski, Benjamin, San Antonio, Tex. Phonograph-machine	817,756	Apr. 17	2378	511	121	1991
Duchemin, William, Somerville, Mass. Sewing-machine feed	817,304	Apr. 10	1502	315	121	1747
Duenkel, Charles L. (See Pattee and Duenkel.)						
Dugmore, James, Quinton, England. Machine for stropping razors	817,230	Apr. 10	1355	284–5	121	1720
Duke, B. N., *et al.* (See Tatum, James W., assignor.)						
Dukerschien, Louis W., and F. Engle, Oshkosh, Wis. Radiator-valve union nipple-wrench	817,695	Apr. 10	2244	482	121	1905
Dulaney, John B., Ector, Tex. Acetylene-gas generator	816,717	Apr. 3	333	77	121	1434
Dumbolton, Perry, Traverse City, Mich. Union check-valve	818,670	Apr. 24	4249	914	121	2450
Duncan, Thomas, La Fayette, Ind. Electric meter	817,305	Apr. 10	1504	315	121	1748
Dungan, Harry C., assignor of one-half to E. Jones, Jackson, Ohio. Transfer and indicating mechanism for calculating-machines	814,593	Mar. 6	1181	247	121	256
Dunham, Caleb D., Boston, Mass. Ball-caster	818,080	Apr. 17	3064	658	121	2139
Dunham, Charles L., Center View, Ohio. Pipe-wrench	818,877	Apr. 24	4663	1001	121	2539
Dunham, Clayton A., Marshalltown, Iowa. Vacuum heating system	816,972	Apr. 3	856	176–7	121	1548
Dunham, Frank A., Brockton, Mass. Faucet	816,440	Mar. 27	5003	1063	121	1243
Dunham, Henry V., Bellows Falls, Vt., assignor to Casein Company of America. Precipitating and preserving casein	814,594	Mar. 6	1183	.....	121	256
Dunlap and Company. (See Keator, Charles E., assignor.)						
Dunlap, Samuel P., Chicago, Ill. Cuff-holder	818,616	Apr. 24	4148	892	121	2427

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Dunn, Charles L. (See Marshall and Dunn.)						
Dunn, Frank P., assignor to Anderson Tool Company, Anderson, Ind. Computing-pump apparatus	816,305	Mar. 27	4697	997	121	1180
Dunn, Horace, Cleveland, Ohio, assignor to American Steel and Wire Company of New Jersey, Worcester, Mass. Attachment for shapers for making curved surfaces	818,423	Apr. 24	3741	803–4	121	2340
Dunn, James C., assingor to Acton Tanning Company, Limited, Acton, Canada. Leach-pitcher	818,752	Apr. 24	4430	947–8	121	2490
Dunn, Michael, *et al.* (See Naughton, Thomas H., assignor.)						
Dunn, Pierce A., Green Island, N. Y. Coin-controlled atomizer	817,231	Apr. 10	1357	285–6	121	1720
Dunn, Thomas F., Providence, R. I. Scarf-ring	818,671	Apr. 24	4251	914	121	2451
Dunne, Joseph E., and C. A. Fletcher, Chicago, Ill. Ice-cream freezer	816,652	Apr. 3	224	52–3	121	1410
Dunne, Ralph, Dunedin, New Zealand. Miter-clamp	817,906	Apr. 17	2715	589	121	2065
Duplex Envelope and Printing Company. (See Anderson, Julian C., assignor.)						
Duplex Printing Press Company. (See Bechman, Henry F., assignor.)						
Duquesne Glass Company. (See Croskey, John H., assignor.)						
Durand, Ernest F., London, England. Sewing-machine	817,475	Apr. 10	1855	389–90	121	1823
Durant, Joseph H., Marlboro, N. H. Collapsible barrel	817,420	Apr. 10	1733	364–5	121	1797
Durboraw, Charles L., assignor of one-half to W. F. Seim, Baltimore, Md. Hair-pin	817,839	Apr. 17	2563	550	121	2031
Durboraw, Charles L., assignor of three-fourths to W. F. Seim, A. Lehman, and L. B. Bernei, Baltimore, Md. Track-fastener	814,525	Mar. 6	1057	218	121	229
Durell, George M., Toledo, Ohio. Gage attachment for lead-cutters, &c	814,193	Mar. 6	370	75–6	121	81
Durn, John, and L. Anderson, New Britain, Conn. Blind-fastener	816,224	Mar. 27	4544	966	121	1147
Duryea, Charles E., Reading, Pa. Tire-valve	816,006	Mar. 27	4102	867	121	1061
Dutcher, Frank, Versailles, Pa. Railway signal-torpedo	815,079	Mar. 13	2152	454	121	524
Dwigans, William W., and J. M. Adams, Arkadelphia, Ark. Rafter-scale	814,948	Mar. 13	1878	394	121	467
Dwyer, John W., Hartford, Conn. Lock-hinge	818,081	Apr. 17	3055	650	121	2139
Dyblie, Julius A., Joliet, Ill. Valve mechanism	816,306	Mar. 27	4699	998	121	1181
Dye, Charles O., McCrory, Ark. Cotton-scraper attachment	817,696	Apr. 10	2245	482	121	1905
Dyer, Albert W., and A. G. Spinney, assignors to W. W. Thomas, trustee, Portland, Me. Time light-extinguisher	817,840	Apr. 17	2564	550	121	2031
Dyer, William H., assignor of one-half to E. J. Colton, Ionia, Mich. Exhaust-valve for steam-engines	814,435	Mar. 6	892	183	121	194
E. Goldman & Company. (See Gohrband, Bernard, assignor.)						
E. Jenckes Manufacturing Company. (See Rowe, James E., assignor.)						
E. I. Du Pont de Nemours Powder Company. (See Du Pont, Francis I., assignor.)						
E-Z Manufacturing Company. (See Nelson, Charles F., assignor.)						
E. W. Bliss Company. (See Leavitt, Frank M., assignor.)						
Eaches, Amos W., Rosemont, Pa. Grain-cleaner	818,944	Apr. 24	4787	1029	121	2567
Eachus, Holton, assignor to Fairbank Canning Company, Chicago, Ill. Vacuum soldering-machine	817,306	Apr. 10	1507	316	121	1749
Eagle Glass & Manufacturing Company. (See Paull and Neville, assignors.)						
Earl, Spencer D., Norristown, Pa. Combination clock and fan	816,903	Apr. 3	707	146	121	1515
Earle, James G., Dedham, Mass. Spindle	818,082	Apr. 17	3057	650	121	2140
Early, Earl J., Philadelphia, Pa. Holder for illustrated post-cards	816,904	Apr. 3	708	146	121	1515
Earp-Thomas, George H., Wellington, New Zealand. Preparing and growing and distributing organisms which fix or gather atmospheric nitrogen	816,850	Apr. 3	598	.....	121	1491
Easterday, William T., San Francisco, Cal. Key-fastener	817,697	Apr. 10	2246	482	121	1905
Eastern Dynamite Company. (See Emery, Sidney S., assignor.)						
Eastman, Albert N., Chicago, Ill. Shears	814,029	Mar. 6	68	12	121	16
Eastman, Arthur M. (See Eastman, Floyd K. and A. M.)						
Eastman, Floyd K. and A. M., Mancelona, Mich. Door	816,441	Mar. 27	5005	1063	121	1243
Eastman, George N., Chicago, Ill. Safety device for alternating-current distribution	818,424	Apr. 24	3744	804	121	2341
Eastman, George N., assignor to Minerallac Company, Chicago, Ill. Plural-speed electrical controller	814,643	Mar. 6	1281	269	121	276
Eastman, James B., assignor to Marshall & Stearns Company, Los Angeles, Cal. Tilting or wall bed	816,718	Apr. 3	334	77	121	1434
Eastman, John P., Chicago, Ill., and T. F. Hawley, Milwaukee, Wis. Ticket printing and issuing machine	817,421	Apr. 10	1734	365–6	121	1798
Eastman, John P., Chicago, Ill., and T. F. Hawley, Milwaukee, Wis. Self-inking stamp	817,422	Apr. 10	1739	366	121	1799
Easton, Ansel M., Millbrae, Cal. Controller for sliding doors	816,551	Mar. 27	5232	1110	121	1298
Eastwood, Arthur C., Cleveland, Ohio. Arc-welding apparatus	818,361	Apr. 17	3607	773	121	2257
Eaton, William S., Sag Harbor, N. Y. Engraving-machine	816,307	Mar. 27	4702	998	121	1181
Ebinger, David A., assignor to Columbus Heating & Ventilating Company, Columbus, Ohio. Gas-furnace	818,151	Apr. 17	3197	688	121	2171
Eck, Theodore, and A. G. Trautwein, Mulvane, Kans. Fence-post	818,672	Apr. 24	4252	914	121	2451
Ecker, Jacob, Chicago, Ill. Cloth-pressing machine	818,753	Apr. 24	4432	948–50	121	2491
Eckstein, Henry G., Chicago, Ill. Apparatus for the manufacture of moisture-proof cartons	814,122	Mar. 6	245	46	121	55
Eclipse Railway Supply Co. (See Lev, Benjamin, assignor.)						
Eddy, Arthur H., Windsor, Conn. Ammonia-pump	815,911	Mar. 20	3916	828–9	121	957
Eddy, Arthur H., Windsor, Conn. Expansion-valve	815,912	Mar. 20	3919	829	121	958
Eddy, Charles D., Blue Creek township, Paulding county, Ohio. Weeder attachment	816,851	Apr. 3	602	125	121	1432
Edey, Charles E. C., Tacoma, Wash. Alarm-latch	818,362	Apr. 17	3609	773–4	121	2257
Edgar, Andrew. (See Williams and Edgar.)						
Edgar, Ellis F., Woodbridge, N. J. Boiler-furnace	814,949	Mar. 13	1880	394–5	121	467
Edick, Harvin, Johnstown, N. Y. Wheelbarrow	818,529	Apr. 24	3966	851–2	121	2388
Edison Storage Battery Company. (See Aylsworth, Jonas W., assignor.)						
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Treating alkaline storage batteries	817,162	Apr. 10	1216	.....	121	1090
Edmonds, Jay D., assignor to Edmonds-Metzel Manufacturing Company, Chicago, Ill. Tool for straightening bolts and retracing the threads thereon	816,570	Apr. 3	30	8	121	1360
Edmonds-Metzel Manufacturing Company. (See Edmonds, Jay D., assignor.)						
Edmondson, Robert, South Bend, Ind. Machine for manufacturing solid concrete building-blocks or veneer-blocks	816,542	Mar. 27	5215	1106	121	1291
Edward, John C., Chicago, Ill. Handle and socket-plate for caskets	816,653	Apr. 3	227	53	121	1410
Edwards, Alonzo L., Wheeling, W. Va. Lantern crank mechanism	814,644	Mar. 6	1282	269	121	277
Edwards, Edgar A., Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee. Locomotive-headlight casing	814,030	Mar. 6	69	13	121	17
Edwards, Edgar A., Cincinnati, Ohio, assignor, by mesne assignments, to Metropolitan Trust & Savings Bank, trustee. Regulation of electric circuits	817,232	Apr. 10	1359	286	121	1720
Edwards, Josiah P., Shirley, assignor to Gedge Brothers Iron Roofing Company, Anderson, Ind. Stock-watering tank	818,425	Apr. 24	3747	804	121	2342
Edwards, Thomas A., Boston, Mass. Needle, &c	818,152	Apr. 17	3199	688	121	2171
Egan, Charles E., Columbus, Ohio, assignor to Egan Electric and Telephone Manufacturing Company, Petersburg, Ill. Signal-bell for telephone systems	818,673	Apr. 24	4253	915	121	2451

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Egan Electric and Telephone Manufacturing Company. (See Egan, Charles E., assignor.)						
Eggleston, Edward G. (See Primus and Eggleston.)						
Eggleton, Alfred J., Dunedin, New Zealand. Plant or flower pot	814,595	Mar. 6	1184	248	121	256
Ehebald, Adam, New York, N. Y. Game device	818,153	Apr. 17	3201	688	121	2171
Ehret, Cornelius D., Ardmore, Pa. Space signaling system	818,236	Apr. 17	3376	724	121	2208
Ehret, Cornelius D., Ardmore, Pa. Signaling through space	818,363	Apr. 17	3613	774	121	2258
Ehrlich, Bernhard, Vienna, Austria-Hungary. Telephone attachment	814,660	Mar. 13	1375	288	121	359
Eichhoff, Walter E., Cairo, Ill. Wire-reel	818,878	Apr. 24	4665	1001	121	2539
Eichhorn, Charles J. (See Marten and Eichhorn.)						
Eickemeyer, Carl, Yonkers, N. Y., assignor to Turner Atherton & Co., Ltd., Stockport, England. Machine for blocking and shaping hats	815,149	Mar. 13	2308	482-3	121	559
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Wagon bolster and stake construction	814,436	Mar. 6	893	183	121	194
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Wagon bolster and stake construction	814,526	Mar. 6	1058	218	121	229
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Axle	815,582	Mar. 20	3207	674	121	806
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Axle	815,583	Mar. 20	3208	675	121	806
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Running-gear for vehicles	816,852	Apr. 3	603	125-6	121	1492
Eisele, John E., West Seneca, N. Y. Folding chair	816,853	Apr. 3	607	127	121	1494
Ekenberg, Martin, Stockholm, Sweden. Filter-press	818,154	Apr. 17	3202	688-9	121	2171
Elburn, Richard F., Chestertown, Md. Game-board	818,237	Apr. 17	3380	725	121	2209
Elchinger, Anton, Leipsic, Germany. Curtain-rod	814,903	Mar. 13	1797	376	121	450
Elder, Frederick L. (See Elder, James E. and F. L.)						
Elder, James E. and F. L., Dayton, Wash. Weeder and cultivator	817,052	Apr. 3	1002	205	121	1581
Elder, John, Corona, N. Y. Thread-cutting die and making the same	818,020	Apr. 17	2943	636	121	2117
Elder, Willis M., and C. W. Turner, Waverly, Tenn. Animal-chase	816,081	Mar. 27	4272	905	121	1089
Eldredge, Alva R., El Paso, Tex. Pencil-holder	818,879	Apr. 24	4668	1002	121	2540
Electra-Pura Water Company. (See Bailey, Henry C., assignor.)						
Electric Candy Machine Company. (See Morrison, William J., assignor.)						
Electric Candy Machine Company. (See Zoeller, Theodore J., assignor.)						
Electric Metal Working Company. (See Coffin, Charles L., assignor.)						
Electric & Steam Ry. Supply Co. (See Hoffman and Powers, assignors.)						
Electric Thermo-Vibra Company. (See Fraley, George B., assignor.)						
Electrical Concrete Post Company. (See Low, Harold A., assignor.)						
Electrical Heating & Manufacturing Company. (See Shipp, Frederic F., assignor.)						
Electrical Ore Finding Company. (See Daft and Williams, assignors.)						
Elers, Karl F., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Flexible connection and suspension means for gearless motors	816,571	Apr. 3	30	8-9	121	1360
Elkin, Charles, New York, N. Y. Pipe	818,819	Apr. 24	4563	978	121	2518
Elkin, Charles, New York, N. Y. Pipe	818,820	Apr. 24	4564	978	121	2518
Eller, George, St. Louis, Mo. Permutation-lock	817,551	Apr. 10	2001	422	121	1853
Ellermann, Emil, Berlin, Germany. Drying apparatus for malt	817,698	Apr. 10	2247	483	121	1905
Ellett, Walter M., and R. M. Vick, Alliance, Ohio. Credit-cabinet	818,083	Apr. 17	3058	659	121	2140
Ellingen, Wilhelm, Cologne, Germany, and F. Doehle, Geneva, Switzerland, assignors to J. Pohlig, Aktien-Gesellschaft, Cologne-Zollstock, Germany. Cable-grip for cable-hauled trucks and the like	817,053	Apr. 3	1003	205	121	1582
Elliot Frog & Switch Company. (See Elliot, Henry, Jr., and W. H., assignors.)						
Elliot, Henry, Jr., and W. H., St. Louis, Mo., assignors to Elliot Frog & Switch Company, East St. Louis, Ill. Adjustable switch-rod	815,150	Mar. 13	2310	484	121	559
Elliot, Joseph M., Germantown, Pa. Mounting photographs or pictures	818,084	Apr. 17	3058	659	121	2140
Elliot, William H. (See Elliot, Henry, Jr., and W. H.)						
Elliott, Alexander, Littlerock, Cal. Copper separation	814,836	Mar. 13	1683	352	121	427
Elliott, Elias L., assignor to Brilliant Electric Company, Cleveland, Ohio. Blowing off the necks of lamp-bulbs	818,674	Apr. 24	4255	915	121	2451
Elliott, Harry W., Prescott, Ariz. Ter. Lubricating system	818,364	Apr. 17	3616	775	121	2259
Elliott, John D. W. (See Gibb and Elliott.)						
Ellis, Carleton, White Plains, N. Y. Apparatus for producing gas	814,279	Mar. 6	543	113	121	117
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Gas-producer	815,913	Mar. 20	3920	829	121	959
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Gas producing and consuming apparatus	816,973	Apr. 3	858	177	121	1548
Ellis, Carleton, assignor to Combustion Utilities Company, New York, N. Y. Apparatus for manufacturing cement	817,163	Apr. 10	1217	252	121	1690
Ellis, Carleton, assignor to Chadeloid Chemical Company, New York, N. Y. Non-inflammable paint and varnish remover	817,141	Apr. 3	1164	.....	121	1618
Ellis, James J., *et al.* (See Ross, Thomas S., assignor.)						
Ellis, Linnaeus T., La Park, Cal. Magazine for holding toilet-paper	815,337	Mar. 20	2724	568	121	699
Ellison, Rodman W. C. (See Sullivan, Pritchard, and Ellison.)						
Elmira Heater Company. (See Frost, John E., assignor.)						
Elmore, Willard P., Adrian, Mich. Machine for making cement blocks and the like	817,964	Apr. 17	2830	611-14	121	2092
Elsaessische Apparatefabrik & Metallgiesserei A. Struedel & J. Guntz. (See Hellich, Mathis, assignor.)						
Elsner, Hermann, Irvington, N. J. Cooking utensil	817,476	Apr. 10	1857	360	121	1824
Elvin, Albert G., Franklin, Pa. Axle-box lubricator	818,021	Apr. 17	2944	636	121	2117
Elvin, Albert G., Franklin, Pa. Axle-box lubricator	818,022	Apr. 17	2946	636	121	2117
Ely, William H., Middletown, Conn. Eyeglass-bridge	814,194	Mar. 6	373	76	121	81
Emerson, Lewis H., and S. P. Kerstetter, De Young, Pa. Oil-well rig	815,519	Mar. 20	3094	646	121	781
Emery, Albert H., Stamford, Conn. Gun-carriage	817,841	Apr. 17	2565	550-2	121	2032
Emery, Joseph W., Quincy, Ill. Heating-stove	818,617	Apr. 24	4149	892	121	2427
Emery, Sidney S., Woodbury, N. J., assignor to Eastern Dynamite Company, Wilmington, Del. Manufacturing aluminate of soda	818,754	Apr. 24	4438	.....	121	2492
Emilewicz, Thaddaeus, assignor to Chemische Fabrik auf Actien, (vorm. E. Schering,) Berlin, Germany. Benzoylalkylaminoethanols and making same	817,164	Apr. 10	1220	.....	121	1691
Emmerling, John V., Buffalo, N. Y. Game apparatus	817,233	Apr. 10	1361	286	121	1721
Emmert, William H., Chicago, Ill. Carpet-sweeper	818,755	Apr. 24	4438	951	121	2492
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. System of electrical regulation	816,442	Mar. 27	3006	1063	121	1243
Emmet, William L. R., Schenectady, N. Y., assignor to General Electric Company. Packing-ring for shafting	818,365	Apr. 17	3617	775	121	2259
Emory, Charles E., Pittsburg, Pa. Combined washbench and step-ladder	814,904	Mar. 13	1797	376	121	450
Endean, Theo, Cleveland, Ohio. Photographer's return-envelop	814,437	Mar. 6	894	183	121	196
Enderis, Henry W. (See Brown and Enderis.)						
Engel, John J., Mount Oliver, Pa. Heater	817,757	Apr. 17	2382	511	121	1991
Engel, William A., Split Rock, Wis. Car-coupling	817,307	Apr. 10	1511	316-17	121	1750
Engel, William H., *et al.* (See Winterburn, Clarence L., assignor.)						
Engelke, Joseph W., Modale, Iowa. Corn-crib	817,165	Apr. 10	1221	252	121	1691

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Engineering and Development Company of New York. (See Staahlgren, Karl A. A., assignor.)						
England, Joseph W., assignor to Smith, Kline & French Co., Philadelphia, Pa. Disinfecting compound	817,166	Apr. 10	1223	.....	121	1691
Engle, Fred. (See Dukerschien and Engle.)						
Engle, Joseph A., Claremont Ill. Mail-bag clamp	817,308	Apr. 10	1512	317	121	1750
Ennisson, Walter J., New York, N. Y., assignor to Unitype Company, Manchester, Conn. Type-setting machine	814,681	Mar. 13	1376	288–90	121	359
Enright, Bernard, Fordwick, Va. Manufacture of hydraulic cement and apparatus therefor	815,090	Mar. 13	2154	454–5	121	525
Enterprise Manufacturing Company of Pennsylvania. (See Waite, Edwin E., assignor.)						
Erb, Elias C., Hunter, and A. L. Powlison, Erie, assignors of one-third to D. H. Huston, Hunter, N. D. Rotary-disk plowing attachment	816,543	Mar. 27	5216	1106–7	121	1291
Erickson, Charles, Brooklyn, N. Y. Folding stool	816,158	Mar. 27	4419	935	121	1120
Erickson, Charles, Brooklyn, N. Y. Camp-stool	816,905	Apr. 3	709	146	121	1516
Erickson, Charles J. (See Keith and Erickson.)						
Erickson, John. (See Keith and Erickson.)						
Ericson, Charles O., Helmetta, N. J. Speed-indicator	814,905	Mar. 13	1798	377	121	450
Ericsson, Edward J., San Francisco, Cal. Automatic feed device	815,691	Mar. 20	3440	718	121	858
Erie City Iron Works. (See Mong, Lincoln G., assignor.)						
Ernst, William, and A. A. Patton, San Francisco, Cal. Fishing-reel	818,880	Apr. 24	4669	1002	121	2540
Erskine, James D., Chicago, Ill. Heater	818,085	Apr. 17	3059	660	121	2140
Ertel, John C. (See Campbell, Milton T., assignor.)						
Ervin, Robert L., Princeton, Ky. Wheel-gage	816,159	Mar. 27	4421	935	121	1120
Eshelman, Benjamin F., Tacoma, Wash. Pipe-stem cleaner	817,633	Apr. 10	2146	455	121	1884
Eskilsson, Theodor. (See Lundsten, Fritz, assignor.)						
Esmueller Mill Furnishing Company. (See Schmidt, Ludwig, assignor.)						
Estes, William B., assignor to Atlanta Horse Collar Company, Atlanta, Ga. Horse-collar	814,596	Mar. 6	1185	248	121	257
Estorff, Hermann. (See King and Estorff.)						
Ettenger, Robert L., Washington, D. C. Car construction	815,946	Mar. 27	3976	842	121	1022
Eulberg, Joseph, Alton, Iowa. Horse-collar	816,785	Apr. 3	461	103	121	1459
Evans, Alfred T., and V. C. Gahagan; said Gahagan assignor to W. A. McGregor, Guffey, Pa. Well-pump	814,365	Mar. 6	743	150	121	165
Evans, Clarence R., Baltimore, Md. Filing-folder	814,950	Mar. 13	1881	395	121	467
Evans, John A. (See Evans, Newton R., assignor.)						
Evans, Newton R., assignor to J. A. Evans, Richmond, Ind. Window-lifter	815,914	Mar. 20	3921	830	121	950
Evans, Newton R., assignor to J. A. Evans, Richmond, Ind. Greenhouse-sash opener	817,758	Apr. 17	2383	512	121	1992
Evans, Samuel, Washington, Pa. Bottle-stopper	815,151	Mar. 13	2312	484	121	560
Eveleth, Charles E., Schenectady, N. Y., assignor to General Electric Company. Thermal cut-out	815,804	Mar. 20	3693	779	121	910
Eveleth, Charles E., Schenectady, N. Y., assignor to General Electric Company. Expulsion-fuse	816,443	Mar. 27	5008	1064	121	1244
Everest, Augustine R., and R. E. Barker, Lynn, Mass., assignors to General Electric Company. Electric switch	816,444	Mar. 27	5011	1064	121	1245
Everett, Ernest C., assignor to R. E. Dietz Company, New York, N. Y. Tubular lantern	815,276	Mar. 13	2551	537	121	614
Everett, James N., Pacific, Mo. Vehicle-brake	816,654	Apr. 3	230	53	121	1411
Everett, L. T. (See Owens and Black, assignors.)						
Eversmann, Emil P., New York, N. Y. Machine for making chenille bindings or trimmings	817,965	Apr. 17	2835	614	121	2093
Ewart, Charles J., Roscoe, N. Y. Road-sweeper	816,082	Mar. 27	4273	905–6	121	1059
Eyer, Irving, Wilmington, Del. Stamping-machine	815,805	Mar. 20	3694	779	121	912
Eynon, Joseph F., Edna, Pa. Rotary engine	818,756	Apr. 24	4440	951	121	2492
Ezzell, John T., Piedmont, Ala. Curtain-pole	816,780	Apr. 3	461	103	121	1459
Faas, Martin, New York, N. Y. Folding seat for metal beds	816,974	Apr. 3	861	178	121	1549
Faber, Eberhard. (See Foster, Jonas R., assignor.)						
Facette, Joseph, Hartford, Conn. Purse and means for suspending the same	815,277	Mar. 13	2552	537	121	614
Faessler, Charles A., Buffalo, N. Y. Reciprocating tool or engine	814,597	Mar. 6	1187	249	121	257
Fageol, Rollie B., assignor of one-half to J. C. Tate and C. N. Bragg, Des Moines, Iowa. Inclined suspended railway	817,099	Apr. 10	2249	483–4	121	1905
Fagerstrom, Victor A., assignor of one-half to C. S. Gustafson, Rockford, Ill. Stool	817,234	Apr. 10	1363	286	121	1721
Fagerstrom, Victor A., assignor of one-half to C. S. Gustafson, Rockford, Ill. Table	817,634	Apr. 10	2147	455–6	121	1884
Fahl, Eugene, assignor of one-fourth to L. Matthews, St. Louis, Mo. Carriage-feed mechanism for type-writing machines	819,008	Apr. 24	4910	1054	121	2594
Fairbank Canning Company. (See Eschus, Holton, assignor.)						
Fairbanks, Morse & Company. (See Hobart, Franklin G., assignor.)						
Faison, Leo P., Goleonda, Nev. Horse-detacher	817,423	Apr. 10	1743	367	121	1800
Faitoute, Charles W., Summit, N. J. Tire	816,225	Mar. 27	4545	966	121	1147
Falick, Joseph, New York, N. Y. Hot-blast apparatus	815,915	Mar. 20	3922	830	121	950
Fallon, Margaret, *et al.* (See Schenck, August, assignor.)						
Farber, William, Long Prairie, assignor of one-half to A. Fitzer, Ramsey county, Minn. Threshing-machine tongue	816,572	Apr. 3	32	9	121	1361
Farbwerke, vorm. Meister, Lucius & Brüning. (See Fussgänger, Victor, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Schmidt, Albrecht, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Scholl, Franz, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Stolz, Friedrich, assignor.)						
Farish, Edward A., St. Louis, Mo., and E. W. McClure, Quincy, Ill. Clothes-hanger	815,338	Mar. 20	2725	568	121	699
Farland, Alfred A., Plainfield, N. J. Key for stringed instruments	814,682	Mar. 13	1395	290	121	365
Farlow, John S., Salisbury, Md. Air-brake coupling	818,155	Apr. 17	3205	689	121	2172
Farmer, John P., Portland, Oreg. Automatic regulator for ovens	817,106	Apr. 3	1089	226	121	1600
Farmer, Matthew S., Washington, D. C. Switch	816,308	Mar. 27	4705	998	121	1182
Farnham, Philip W. (See Adams, Harry W., assignor.)						
Farrand, Dudley, Newark, N. J. Spring-wheel	817,235	Apr. 10	1364	287	121	1722
Farrand, Hiram A., New York, N. Y. Camera	815,584	Mar. 20	3210	675–6	121	806
Farrar, Charles F., Howell, Mich., assignor to E. L. Harrington, Glens Falls, N. Y., and J. A. Farrar, Howell, Mich. Rural mail-box	815,585	Mar. 20	3212	676	121	807
Farrar, James H., Passaic Junction, N. J. Swivel-loom	815,152	Mar. 13	2312	484	121	560
Farrar, Julia A., *et al.* (See Farrar, Charles F., assignor.)						
Farwell, Fay O., assignor of one-half to Adams Company, Dubuque, Iowa. Current-controller for igniting devices for hydrocarbon-engines	816,083	Mar. 27	4274	906	121	1060
Farwell, O. M. (See Hoehne and Denzer, assignors.)						
Fassett, Riley D., assignor of one-half to W. H. Neff, Denver, Colo. Pocket-rule holder	816,544	Mar. 27	5220	1107	121	1293
Faust, William H., *et al.* (See Gray, Jesse L., assignor.)						
Fearrington, Fred S., New York, N. Y. Life-net	817,107	Apr. 3	1089	226	121	1600
Fechtenburg, Andreas V. R., New York, N. Y. Telephone-signal	818,675	Apr. 24	4256	915	121	2452
Feder, Harry, New York, N. Y. Moisture-proof structure	816,226	Mar. 27	4546	966	121	1147

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Federal Construction Company. (See Strickler, William H., assignor.)						
Feely, William C., New York, N. Y. Commode	818,821	Apr. 24	4565	979	121	2518
Fehrenbach, Charles. (See Hope and Robinson, assignors.)						
Feigly, David, deceased; C. Brosey, Medway, Ohio, administrator. Nursery tree-digger	815,901	Mar. 20	3896	825	121	954
Feist, Felix L., Barclay, Tex. Wire-stretcher	817,907	Apr. 17	2716	589	121	2065
Felbel, Jacob, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	815,339	Mar. 20	2726	568-9	121	699
Felbel, Jacob, New York, N. Y., assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	815,340	Mar. 20	2734	570	121	702
Fell, Henry L., Battle Creek, Mich. Fence-post	816,719	Apr. 3	336	78	121	1435
Fellows, Samuel W. (See Morgan and Fellows.)						
Felsberg, Frederick W., Dayton, Ky. Stuffing-box	816,445	Mar. 27	5013	1064	121	1245
Fenn, William B., Sheepshead Bay, N. Y. Closure device for bottles, jars, and other vessels	816,720	Apr. 3	338	78	121	1435
Fenner, George P., New London, Conn. Inking arrangement for printing-presses	818,238	Apr. 17	3381	725-6	121	2209
Fenner, Irvin R., San Francisco, Cal. Trousers-press	817,108	Apr. 3	1091	227	121	1600
Fenner, Nicholas P., Jr. (See Nugent, Richard C., assignor.)						
Fenton, Ephraim H., Kansas City, Mo. Pneumatic dust removing and collecting apparatus	814,837	Mar. 13	1685	352-3	121	427
Feraro, Angelo, Brooklyn, N. Y. Non-refillable bottle	817,700	Apr. 10	2251	484	121	1906
Ferguson, Harry C., assignor to Vacuum Storage Cask Company, Canton, Ohio. Vacuum preserving-receptacle	815,081	Mar. 13	2158	455	121	526
Ferguson, Pies F. (See Pelham, Walter O., assignor.)						
Ferguson, William C. (See Ward, Wilfred B., assignor.)						
Fergusson, Alan R., New York, N. Y. Bracket	815,947	Mar. 27	3978	843	121	1023
Ferland, Napoleon H., assignor of one-third to J. A. Choquette, Manchester, N. H. Automatic fire-alarm	814,123	Mar. 6	247	47	121	55
Fernald, Charles F., Roxbury, assignor to Star Brass Manufacturing Co., Boston, Mass. Illuminated dial	818,822	Apr. 24	4567	979	121	2519
Fernandez, Anthony, Dunkirk, N. Y. Taper-boring machine	816,854	Apr. 3	609	127-8	121	1494
Ferres, Nana A., Johnstown, N. Y. Curtain-fastener	817,477	Apr. 10	1858	390-1	121	1824
Ferris, Elmer C. (See Rousseau and Ferris.)						
Ferris, Henry L., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill. Wheel	815,520	Mar. 20	3095	646	121	782
Ferris, Henry L., assignor to Hunt, Helm, Ferris & Company, Harvard, Ill. Feed and litter carrier	815,521	Mar. 20	3096	646-7	121	782
Ferris, Walter. (See Knox and Ferris.)						
Ferris, Walter, and F. E. Bager, assignors to Bucyrus Company, South Milwaukee, Wis. Operating mechanism for excavators, dredges, and the like	816,573	Apr. 3	33	9-10	121	1361
Ferro-Phosphat-Gesellschaft Emilio Schramm & Co. (See Gross, Robert, assignor.)						
Fertig, Adam, and R. T. Knoll, New York, N. Y. Work-holding attachment	814,366	Mar. 6	745	150	121	165
Fertig, August, *et al.* (See Prideaux, Lewis, assignor.)						
Fessenden, Reginald A., Washington, D. C., assignor to National Electric Signaling Company, Pittsburg, Pa. Capacity	814,951	Mar. 13	1881	395	121	467
Fessler, Walter W., New York, N. Y. Door-lock	815,009	Mar. 13	2011	423	121	493
Fettback, Franz, and G. Lieckfeld, Hanover, Germany, assignors to G. Weinhagen, Milwaukee, Wis. Winding mechanism	815,692	Mar. 20	3442	718-19	121	858
Fetters, Arthur H., Omaha, Nebr. Synchronism-indicator	818,945	Apr. 24	4788	1029-30	121	2568
Feuerlein, Otto, Charlottenburg, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Electric incandescent lamp	819,009	Apr. 24	4911	1055	121	2594
Fiddyment, John C., Brinkley, Ark., and J. J. McNally, assignors to Continuous Extracting Press Corporation, Norfolk, Va. Press	816,446	Mar. 27	5014	1064-5	121	1245
Fiddyment, John C., Brinkley, Ark., and J. J. McNally, assignors to Continuous Extracting Press Corporation, Norfolk, Va. Press	816,447	Mar. 27	5017	1065	121	1246
Fiebeger Heating Company. (See Hough, Hiram J., assignor.)						
Field, Bertrand L., assignor of one-half to A. L. Straight, Minneapolis, Minn. Seat-back.	816,545	Mar. 27	5221	1107	121	1293
Field, Charles E. (See Packard, William F., assignor.)						
Field, Oscar L., Ithaca, N. Y. Mechanical movement	816,546	Mar. 27	5222	1108	121	1294
Field, Otis W., Chicago, Ill. Game-counter	818,676	Apr. 24	4259	915	121	2452
Fields, Emanuel, Allegheny, Pa. Switch	815,693	Mar. 20	3443	719	121	859
Fiers, William T., assignor of one-half to A. W. Kehrer, Redkey, Ind. Pump	815,082	Mar. 13	2160	455	121	526
Filley, William S., Toledo, Ohio. Railway-engine-signaling device	814,776	Mar. 13	1570	331-2	121	403
Filteau, Victor, assignor of one-third to T. M. Graham, Montreal, Canada. Carrier	817,842	Apr. 17	2569	553	121	2033
Filter & Brautechnische Maschinen-Fabrik Act. Ges. (See Seilenscheidt, Carl, assignor.)						
Finan, John F., Cumberland, Md. Roll-paper holder and cutter	814,598	Mar. 6	1191	249	121	258
Finch, Robert C. (See Crapp, Thomas S., assignor.)						
Firneez, Edward, *et al.* (See Salmen, Carl R., assignor.)						
Firnhaber, Edward, Janesville, Minn. Animal-trap	818,239	Apr. 17	3382	726	121	2209
Firth Sterling Steel Company. (See Wheeler and McKenna, assignors.)						
Fischer, Hermann C., Vienna, Austria-Hungary. Machine for extracting threads from fabrics	819,010	Apr. 24	4914	1055	121	2594
Fischer, Robert, assignor to C. P. Goldsmith & Company, New York, N. Y. Clutch for studs	818,530	Apr. 24	3966	852	121	2388
Fischer, Samuel M., New York, N. Y. Placket-clasp	818,823	Apr. 24	4569	979	121	2519
Fischer, Willy F. (See Wenke, Franz, assignor.)						
Fish, Charles H., Dover, N. H. Apparatus for steaming fabrics	814,124	Mar. 6	249	47	121	55
Fish, Oren, Cleveland, Ohio. Brush	818,531	Apr. 24	3968	852	121	2388
Fishel, Frank. (See Thomas, Martin E., assignor.)						
Fisher, Charles F. (See Kootz and Fisher.)						
Fisher, Charles W., Columbia City, Ind. Valance for buggies	814,195	Mar. 6	374	76	121	81
Fisher, Fred, assignor to J. Madlinger, Ironton, Mo. Pipe-wrench	815,694	Mar. 20	3446	719	121	860
Fisher, Fred, assignor to C. Madlinger, Ironton, Mo. Wagon-brake	818,240	Apr. 17	3384	726	121	2210
Fisher, George F., North Tonawanda, N. Y. Building construction	817,478	Apr. 10	1859	391	121	1824
Fisher, Henry W., assignor of one-half to J. W. Marsh, Pittsburg, Pa. Game-board	817,142	Apr. 3	1166	241	121	1618
Fisher, Homer O., Cleveland, Ohio. Apparatus for treating liquids	816,448	Mar. 27	5020	1066	121	1247
Fisher, John, *et al.* (See Salmen, Carl R., assignor.)						
Fisher, Waldo E., Collinsville, Ill. Hay-press	815,083	Mar. 13	2161	455-6	121	526
Fiske, Henry P., assignor to I. W. Parmenter, New York, N. Y. Hair-waver	815,278	Mar. 13	2553	538	121	614
Fissel, John S., West Philadelphia, Pa. Button-fastener	814,683	Mar. 13	1396	291	121	365
Fitts, Norman V., assignor to Colorado Iron Works Company, Denver, Colo. Vibrating screen	814,952	Mar. 13	1883	396	121	468
Fitz, Amos G., Auburn, Me. Last	817,906	Apr. 17	2837	614	121	2094
Fitzer, August. (See Farber, William, assignor.)						
Fitzpatrick, Eugene F., assignor of one-half to T. E. Reilly, New York, N. Y. Fireproof fixture	816,309	Mar. 27	4706	998-9	121	1182
Fiveash, Zion E., Rawles Springs, Miss. Still	817,552	Apr. 10	2005	422-3	121	1854
Flather, Frederick A., assignor to Lowell Machine Shop, Lowell, Mass. Cap for cap spinning and twisting	817,167	Apr. 10	1224	252	121	1692

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Fleeger, Austin, Chicora, Pa. Combined belt tightener and fastener	815,341	Mar. 20	2739	570–1	121	704
Fleigel, Benjamin, Boston, Mass. Guide for sewing-machines	815,342	Mar. 20	2742	571	121	704
Fleming, Philip, Burton View, Ill. Riding-harrow	816,449	Mar. 27	5022	1066	121	1247
Fleming, Robert, trustee. (See Shaw, Angus W., assignor.)						
Fleming, Samuel W., and F. A. Childs, New London, Ohio. Illuminated sign	814,684	Mar. 13	1397	291	121	365
Fletcher, Addison C., New York, N. Y. Fastening device for keys, windows, &c	816,787	Apr. 3	482	104	121	1459
Fletcher, Clarence A. (See Dunne and Fletcher.)						
Fletcher, John S., Mound City, Kans. Pawl and ratchet	815,084	Mar. 13	2163	456	121	526
Fletcher, William H., assignor of one-half to J. McCallum, White River, Canada. Railway-car-wheel skid	814,645	Mar. 6	1283	270	121	277
Flindall, John, Chicago, Ill. Chair-lounge	816,084	Mar. 27	4277	907	121	1090
Flint, Albert E., *et al.* (See Waldo, Charles W., assignor.)						
Flint, Edgar L., East Hiram, Me. Trap	814,527	Mar. 6	1060	218–19	121	230
Flora, Ellsworth E., Chicago, Ill. Detachable key-changer for pneumatic piano-players	815,412	Mar. 20	2910	603	121	741
Flores, Alfredo, New York, N. Y., assignor of two-thirds to J. L. Weaver, Boise, Idaho. Motor power-machine	818,366	Apr. 17	3618	775–6	121	2239
Florsheim & Son, S. (See Gardner, Marshall B., assignor.)						
Flory, Daniel S., North English, Iowa. Door-spring	817,168	Apr. 10	1228	252	121	1062
Flory, David M., and J. H. Barnhart, Logansport, Ind. Submerged heater	818,677	Apr. 24	4263	916	121	2482
Floto, William H., Meyersdale, Pa. Wrench	817,701	Apr. 10	2252	484	121	1906
Flowers, George R., Philadelphia, Pa. Egg-beater	817,635	Apr. 10	2148	456	121	1884
Flowers, Isaac, Martelle, Iowa. Time controlling mechanism for pumps	818,946	Apr. 24	4792	1030	121	2566
Floyd, John L., Ashpole, N. C. Seed-planter	815,413	Mar. 20	2911	604	121	742
Flynn, John E., Logue, Pa. Grab-hook	815,085	Mar. 13	2165	457	121	527
Flynn, William D., Spray, N. C. Suspenders	814,125	Mar. 6	251	47	121	56
Flynt, Louis W. G., assignor to Q. W. and I. E. Booth, Rochester, N. Y. Clutch	817,309	Apr. 10	1513	317	121	1750
Focht, Henry. (See Kissinger, Amos, assignor.)						
Foehl, Charles. (See Kolb and Foehl.)						
Foerster, Norbert, New York, N. Y. Weft-replenishing mechanism for looms	817,237	Apr. 10	1370	288	121	1722
Foerster, Norbert, Passaic, N. J. Warp stop-motion for looms	818,367	Apr. 17	3620	776–7	121	2260
Foerster, Norbert, Passaic, N. J. Warp stop-motion	818,368	Apr. 17	3622	777	121	2260
Foerster, Norbert, assignor, by mesne assignments, of two-fifths to American Textile Specialty Machinery Company, New York, N. Y. Automatic filling-replenishing mechanism for looms	815,948	Mar. 27	3980	843	121	1023
Foerster, Norbert, assignor, by mesne assignments, of two-fifths to American Textile Specialty Machinery Company, New York, N. Y. Shuttle for weft-replenishing mechanisms	815,949	Mar. 27	3984	844	121	1024
Foerster, Norbert, and D. J. Carey; said Carey assignor to said Foerster and American Textile Specialty Machinery Company, New York, N. Y. Filling-replenishing mechanism for looms	817,236	Apr. 10	1365	287–8	121	1722
Foerster, Norbert, D. J. Carey, and W. A. Foster; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y. Shuttle-box	815,950	Mar. 27	3985	844	121	1024
Foerster, Norbert, D. J. Carey, and W. A. Foster; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y. Weft-replenishing loom	815,951	Mar. 27	3987	844–5	121	1025
Foerster, Norbert, D. J. Carey, and W. A. Foster; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y. Filling stop-motion for looms	815,952	Mar. 27	3989	845	121	1025
Foerster, Norbert, D. J. Carey, and W. A. Foster; said Carey assignor to American Textile Specialty Machinery Company, New York, N. Y. Shuttle	815,953	Mar. 27	3992	845–6	121	1025
Fogg, Charles F., New York, N. Y., assignor to Automatic Butter-Cutter and Weigher Co. Butter-cutter	818,757	Apr. 24	4441	951	121	2492
Folberth, William, Cleveland, Ohio. Transmission-gear	817,908	Apr. 17	2717	590	121	2066
Folger, Henry C., West Somerville, Mass. Vehicle-tire	815,279	Mar. 13	2556	538	121	615
Follett, Charles S. (See Thompson, Guy M., assignor.)						
Fontaine, Thomas A., assignor of two-thirds to C. W. Pitts and M. Bass, Chicago, Ill. Auxiliary apparatus for supplying steam to radiators	817,909	Apr. 17	2720	590	121	2066
Foor, Frank E., Indianapolis, Ind. Combination-tool	815,916	Mar. 20	3023	830–1	121	959
Foos Manufacturing Company. (See Adelsperger, Dow L., assignor.)						
Foote, Abram L., Fayette, Iowa. Disk land-cultivator, road-machine, and farm-wagon	816,085	Mar. 27	4279	907	121	1091
Foote, George D. (See Baldwin and Foote.)						
Forbes, James L., Pine Apple, Ala. Churn	817,310	Apr. 10	1515	317–18	121	1750
Ford, Albert M. (See Dimmick and Ford.)						
Ford, Hannibal C., Jamaica, N. Y. Railway system	815,086	Mar. 13	2166	457	121	527
Ford, Lizzie N., *et al.* (See Graham, Ernest A., assignor.)						
Forehand, James E., Seattle, Wash. Shade-bracket and curtain-pole support	816,856	Apr. 3	612	128	121	1494
Forest, Edwin J. (See Johnson, John A., assignor.)						
Forman, Allan. (See Hammarlund, Oscar, assignor.)						
Forman, George L., Louisville, Ky. Harness-saddle	816,450	Mar. 27	5024	1067	121	1248
Forrester, Eli T., Denver, Colo. Rail-fastener	816,788	Apr. 3	464	104	121	1460
Forsyth, Henry H., Chicago, Ill., assignor to Curtain Supply Company, Newark, N. J. Curtain-fixture	817,759	Apr. 17	2386	512	121	1992
Forsyth, James D., assignor of one-half to C. J. Koenig, Springfield, Ill. Churn	814,196	Mar. 6	375	76	121	83
Forsyth, Joseph E., Chicago, Ill. Train-pipe-coupling support	815,280	Mar. 13	2557	538	121	616
Forsyth, William H., assignor to "Nercumoff" Button Company, Limited, Bristol, England. Button	817,311	Apr. 10	1517	318	121	1751
Forter-Miller Engineering Company. (See Miller, William R., assignor.)						
Forwood, Francis A., Chester, Pa. Implement for truing the internal forms of tubes	816,451	Mar. 27	5027	1067	121	1249
Fosberg, Henry C., Falconer, N. Y. Eyeglass-cleaner	816,227	Mar. 27	4547	967	121	1147
Fosdick, William I. T. (See Delavan and Fosdick.)						
Foster, James H. (See Gartshore and Foster.)						
Foster, Jonas R., assignor to E. Faber, New York, N. Y. Pen-wiper	816,086	Mar. 27	4281	907	121	1091
Foster, William A. (See Foerster, Carey, and Foster.)						
Fourneaux, Emile A., assignor to H. A. Metz, New York, N. Y. Making zinc formaldehyde hydrosulfite, (S)	814,031	Mar. 6	70	.....	121	17
Fourneaux, Emile A., assignor to H. A. Metz, New York, N. Y. Making basic zinc formaldehyde hydrosulfite, (S)	814,032	Mar. 6	71	.....	121	17
Foust, William N., Summit township, Crawford county, Pa. Noodle-cutter	818,426	Apr. 24	3748	806	121	2343
Fowler, Hamilton P., Simpsonville, S. C. Razor-sharpener	817,479	Apr. 10	1862	392	121	1824
Fowler, John, Jacksonville, Fla. Rotary engine	814,126	Mar. 6	252	48	121	56
Fox, Arthur W. (See Haviland, Henry F., assignor.)						
Fox, Washington I., Burlington, Vt., assignor of one-fourth to G. A. Showell, Lawrence, Mass. Lock-indicator	816,310	Mar. 27	4707	999	121	1153
Foxlee, John E., Billericay, England. Oil-lamp	817,967	Apr. 17	2838	615	121	2094
Fraley, George B., assignor to Electric Thermo-Vibra Company, Philadelphia, Pa. Massage apparatus	818,618	Apr. 24	4150	892	121	2428
Frame, Joseph N., Lewistown, Mo. Corn-planter	818,532	Apr. 24	3969	852	121	2389
Francis, Albert W., assignor of one-half to E. C. Rebeske, Beaver Falls, Pa. Regulator	815,806	Mar. 20	3698	779	121	911

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Frank, Otto, and P. J. McCaffrey, Brooklyn, N.Y. Electric switch for electric-railway cars.	817,306	Apr. 10	1615	342	121	1773
Franke, Herman L., Chicago, Ill. Card-holder	814,438	Mar. 6	895	184	121	195
Frankem, Isaac L., Indianapolis, Ind. Dish-washing machine	818,427	Apr. 24	3748	805	121	2343
Frankenstein, Arthur, *et al.* (See Meyer, Sophie, assignor.)						
Frankenstein, Edwin, *et al.* (See Meyer, Sophie, assignor.)						
Franquist, Gustave E., New York, N. Y. Clutch	816,906	Apr. 3	711	146	121	1516
Fraser, Ethelbert M., Yonkers, N. Y., assignor to Fraser Hydraulic Compensator Company, San Francisco, Cal. Rotary pump and motor	815,522	Mar. 20	3098	647	121	783
Fraser, George H. (See Weikly, James N., assignor.)						
Fraser Hydraulic Compensator Company. (See Fraser, Ethelbert M., assignor.)						
Fraser, Robert D., Lewiston, Me. Loom-shuttle	814,033	Mar. 6	72	13	121	17
Fraser, Robert G., Philadelphia, Pa. Window-fastener	814,439	Mar. 6	895	184	121	195
Frazer, Joseph C. W. (See Morse and Frazer.)						
Frazier, George W., Detroit, Mich., assignor of one-half to G. F. Merriman. Skirt-marker	817,760	Apr. 17	2389	513	121	1993
Frazier, James L., Peoria, Ill. Splicing-socket for cables	816,721	Apr. 3	340	78	121	1435
Frazier, Lee. (See Morris, George, assignor.)						
Frazier, Thomas, Hiawatha, Kans. Plate-securer	817,109	Apr. 3	1092	227	121	1601
Fréchette, Isaie, Montreal, Canada. Hair and hat securing device	817,238	Apr. 10	1371	288	121	1723
Frederick, Brainard M. (See Walker and Frederick.)						
Frederick, Edward P., St. Louis, Mo. Grip for aerial-tramway cables	818,428	Apr. 24	3750	805	121	2343
Frederick, Edward P., St. Louis, Mo. Grip for aerial-tramway cables	818,429	Apr. 24	3751	806	121	2343
Fredrick, Henry, Newark, N. J. Water-meter	818,430	Apr. 24	3753	806-7	121	2344
Freeborn, Grant E., Belfast, N. Y. Dental-plate swage	815,807	Mar. 20	3699	780	121	911
Freel, William S., Bay City, Mich. Non-refillable bottle	816,789	Apr. 3	465	104	121	1460
Freeman, George A., Grampian, and C. E. Zortman, Cresson, Pa. Combined rail and spike brace	816,452	Mar. 27	5029	1067	121	1249
Freeman, John R., Providence, R. I. Drawer-support	814,197	Mar. 6	376	77	121	82
Freese, Frank G., Philadelphia, Pa. Cushion-tire	815,523	Mar. 20	3101	648	121	783
Freese, W. A., *et al.* (See Daves, William, assignor.)						
Freihofer, Charles, *et al.* (See Dackiewicz, Charles, assignor.)						
French, George F., and W. H. Pinch, Hulme, Manchester, England. Means for plaiting hanging curtains	817,968	Apr. 17	2840	615	121	2094
French, Leroy B., and T. Sheets, Columbus, Ohio. Gas heating-stove	814,280	Mar. 6	544	113	121	117
French, Stephen, Swanscombe, assignor to Industrial Patents Limited, London, England. Boot and shoe tree	816,453	Mar. 27	5030	1067	121	1249
Freschl, Alfred, Chicago, Ill. Means for sealing boxes, &c	816,007	Mar. 27	4104	867	121	1052
Fretts, George H., Springfield, Mass. Shoe-contact	818,947	Apr. 24	4794	1030	121	2569
Freund, Joseph, Beaver, Pa., assignor to H. Hoenigsberger, Bensonhurst, Long Island, N. Y. Railway-tie	817,169	Apr. 10	1229	253	121	1692
Freund, Richard. (See Brandstetter and Freund.)						
Freyer, Otto, Chicago, Ill. Pocket-holder for weapons	814,509	Mar. 6	1192	249	121	258
Frickey, Edward H., assignor, by mesne assignments, to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Feeding mechanism for shredding-machines	815,087	Mar. 13	2172	458	121	528
Fridley, Charles H. (See Smith, Orison, assignor.)						
Friedel, Harry W. (See Luts and Friedel.)						
Frieseke, Karl A., Atlanta, Ga. Dispensing-bottle	814,953	Mar. 13	1886	397	121	468
Friestedt, Luther P. (See Nye, George E., assignor.)						
Frink, Gerald, assignor to Washington Iron Works Company, Seattle, Wash. Cable or rope guide	817,553	Apr. 10	2008	423	121	1855
Fritch, Joseph C., assignor of forty-five one-hundredths to F. Stovering and B. S. Blossom, Cleveland, Ohio. Window-sash lock	814,281	Mar. 6	545	114	121	117
Fritts, J. W., *et al.* (See Riddle, Gust A., assignor.)						
Fritz, Charles P., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental tool	815,153	Mar. 13	2314	484	121	560
Froggatt, William H. Jr., Philadelphia, Pa. Punch-holder	816,722	Apr. 3	341	78	121	1436
Fromont, Fernand, Molenbeek, near Brussels, Belgium. Steam-generator	818,948	Apr. 24	4795	1031	121	2569
Froom, A. H. (See Machado, Manuel C., assignor.)						
Frost, John E., Watkins, assignor to Elmira Heater Company, Elmira, N. Y. Grate	818,533	Apr. 24	3970	853	121	2389
Frost, Paul, Berlin, Germany. Weighing-scale	815,414	Mar. 20	2913	604	121	742
Frostenson, Charles O., Ashland, Wis. Washing-machine	816,454	Mar. 27	5030	1068	121	1249
Fruin, John L., New York, N. Y. Combined plumber's fitting and pipe-support	817,110	Apr. 3	1093	227	121	1601
Fry, George H., Ashburton, New Zealand. Bicycle-lock	814,031	Mar. 6	73	13-14	121	17
Frye, Edward. (See McGillivary and Frye.)						
Fugal, Christian A. (See Oler, Fugal, and Hayes.)						
Fullagar, Hugh F., Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J. Turbine	815,154	Mar. 13	2315	485	121	561
Fullagar, Hugh F., Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J. Turbine	815,155	Mar. 13	2319	485	121	562
Fullagar, Hugh F., Newcastle-upon-Tyne, England, assignor to Allis-Chalmers Company, Jersey City, N. J. Steam-turbine	815,281	Mar. 13	2559	538-9	121	616
Fuller, Anderson, assignor of one-half to L. Pangburn and J. H. Van Deusen, Amsterdam, N. Y. Device for actuating switches	818,824	Apr. 24	4571	980	121	2519
Fuller, Bernard A., and M. Bateman, Centerville, Iowa. Stump-puller	815,586	Mar. 20	3213	676	121	807
Fuller, W. W., *et al.* (See Tatum, James W., assignor.)						
Fullwood, John I., Cedartown, Ga. Mail collection and delivery box	818,241	Apr. 17	3385	726	121	2210
Fulmer, Joseph H., Nazareth, Pa. Snow-guard for roofs	817,480	Apr. 10	1864	392	121	1825
Fulton, Charles W., Paisley, Scotland. Mounting or suspension for vehicle-wheels	814,198	Mar. 6	378	77	121	82
Fulton, Louis B., assignor to Chaplin-Fulton Manufacturing Company, Pittsburg, Pa. Diaphragm for controlling valves	816,455	Mar. 27	5031	1068	121	1250
Funk, Isaac N., *et al.* (See Anderson, Swan, assignor.)						
Furbish, Zachry T., assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Ratchet-tool	814,528	Mar. 6	1062	219	121	230
Furbish, Zachry T., assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Push-drill	814,529	Mar. 6	1064	219	121	231
Fürst, Gustav, Pozsony, Austria-Hungary. Time-register for telephones	816,456	Mar. 27	5033	1068-9	121	1250
Fussgänger, Victor, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Blue fibrous material and dyeing same	816,457	Mar. 27	5035	.....	121	1250
Gaddum, Alexander W., assignor to Cincinnati Butchers Supply Co., Cincinnati, Ohio. Lid-holding tie	817,312	Apr. 10	1518	318	121	1751
Gadue Dustless Flour Sifter Company. (See Gadue, William G., assignor.)						
Gadue, William G., assignor to Gadue Dustless Flour Sifter Company, Burlington, Vt. Flour-sifter	815,415	Mar. 20	2914	604	121	743
Gadue, William G., assignor to Gadue Dustless Flour Sifter Company, Burlington, Vt. Dustless flour-can and flour-holder. (Reissue)	12,464	Mar. 20	3954	837	121	966
Gaede, Samuel A., Chicago, Ill. Railway safety device	817,702	Apr. 10	2253	484-5	121	1906

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Gage, Oscar S., Tecumseh, Okla. Ter. Twine-holder	817,143	Apr. 3	1167	241	121	1619
Gagnon, Arthur, and G. Paquette, Montreal, Canada. Receptacle for garbage	816,087	Mar. 27	4282	907	121	1091
Gahagan, Vernon C. (See Evans and Gahagan.)						
Gahley, Frank. (See Powers, Francis A., assignor.)						
Gainer, Peter B. (See Spitz, Samuel A., assignor.)						
Galbraith, Edward, South Omaha, Nebr. Foot-rest	817,969	Apr. 17	2842	615	121	2094
Gale Manufacturing Company. (See Beall, William L., assignor.)						
Gallihor, Lawrence M., Lexington, Miss., assignor of one-half to J. S. Carroll, Hays county, Tex. Self-locking nut	814,199	Mar. 6	393	78	121	84
Gally, Merritt, Brooklyn, N. Y. Impression throw-off for bed-and-platen presses	814,282	Mar. 6	546	114	121	118
Gally, Merritt, Brooklyn, N. Y. Telephonic repeater	817,761	Apr. 17	2390	513	121	1993
Gamble, John, assignor to G. A. Reach, Philadelphia, Pa. Catcher's mask	814,127	Mar. 6	254	48	121	56
Gameson, Charles H., Coldfield, near Birmingham, England. Oil-separator	818,431	Apr. 24	3757	807-8	121	2345
Gammeter, Harry C., assignor to American Multigraph Company, Cleveland, Ohio. Duplicating-machine	816,311	Mar. 27	4709	999-1000	121	1183
Gancher, Abraham I. (See Kodama and Gancher.)						
Gano, John C., assignor to International Electric Meter Company, Chicago, Ill. Electrical measuring instrument	817,843	Apr. 17	2573	553-4	121	2034
Garaghty, Louisa, Chester, Pa. Apparatus for moving invalids	817,703	Apr. 10	2256	485	121	1907
Garbutt, Harland, Seamer, England. Churn	814,685	Mar. 13	1399	291	121	366
Garden, Charles T. and H., Macon, Ga. Drawer-stop	816,574	Apr. 3	36	10	121	1362
Garden City Strength Testing Machine Company. (See Blaisdell, Robert W., assignor.)						
Garden, Harry. (See Garden, Charles T. and H.)						
Gardin, Theodor, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Rail-securing means	816,575	Apr. 3	37	10	121	1362
Gardiner, Anwyl O., assignor of one-half to D. Knabbe, Oakland, Cal. Scaffold-support	816,458	Mar. 27	5037	1070	121	1250
Gardner, James W., Jarratt, assignor to L. L. and W. T. Pond, Pinopolis, Va. Harness-saddle	815,917	Mar. 20	3927	831	121	960
Gardner, Kirtland C., assignor to United Engineering & Foundry Company, Pittsburg, Pa. Machine for bending and straightening metal	815,282	Mar. 13	2565	539-40	121	618
Gardner, Marshall B., Aurora, assignor to G. Florsheim & Son, Chicago, Ill. Garment-clasp	816,228	Mar. 27	4548	967	121	1147
Garfield, Julius D., Springfield, Mass. Photographic camera	816,907	Apr. 3	713	147	121	1516
Garland, Stephen A., Knoxville, Tenn. Elevating-truck	815,416	Mar. 20	2916	604-5	121	743
Garlock, Olin J., Palmyra, N. Y. Rod-packing	818,023	Apr. 17	2948	636	121	2118
Garlock, Olin J., Palmyra, N. Y. Rod-packing	818,432	Apr. 24	3759	808	121	2345
Garnet, George H., Allentown, Pa. Scrubber	815,343	Mar. 20	2744	571	121	705
Garrard, William D., assignor of six-ninths to J. L. Corner, H. A. McDonald, and J. J. Plaster, Bedias, Tex. Wrench	815,156	Mar. 13	2322	486	121	563
Garrett, George K., Philadelphia, Pa., assignor to National Umbrella Frame Company. Umbrella	814,035	Mar. 6	75	14	121	17
Garrison, Adam C., Joplin, Mo. Tree-protector	818,678	Apr. 24	4264	916	121	2453
Garrison, Perry J., Three Rivers, Mich. Car-wheel	817,636	Apr. 10	2149	456	121	1884
Garside, Irad L., assignor to Garside Manufacturing Company, Paterson, N. J. Blind-adjuster	818,758	Apr. 24	4442	951	121	2493
Garside Manufacturing Company. (See Garside, Irad L., assignor.)						
Garst, Perry, Portsmouth, N. H. Pencil-sharpener	818,433	Apr. 24	3760	808-9	121	2345
Garst, Stephen H., assignor to American Harrow Company, Detroit, Mich. Mechanical movement	814,686	Mar. 13	1400	292	121	366
Garst, Stephen H., assignor to American Harrow Company, Detroit, Mich. Manure-distributer	817,704	Apr. 10	2257	485-6	121	1907
Gartshore, Matthew W., and J. H. Foster, assignors to Pariah & Bingham Company, Cleveland, Ohio. Plug	816,856	Apr. 3	613	128	121	1496
Garver, Martin V., Bryan, Ohio. Wheelbarrow-shoe	816,655	Apr. 3	231	53	121	1411
Gas and Electric Protective Company. (See Larish, Joseph W., assignor.)						
Gass, Robert, Shubenacadie, Canada. Railway-car	814,777	Mar. 13	1573	332	121	403
Gaston, William E., Pleasantville, N. Y. Lifting-jack	817,637	Apr. 10	2151	457	121	1884
Gatchell, Charles H., Boston, Mass. Adjustable fire-pot	818,949	Apr. 24	4797	1031	121	2569
Gates, James A., assignor of one-half to J. Hinchman, Detroit, Mich. Edge-trimmer	816,459	Mar. 27	5038	1070	121	1251
Gates, William H. (See Rogers, Leonard R., assignor.)						
Gathmann, Emil A. (See Meigs and Gathmann.)						
Gatwood, Walter, Manchester, England. Pocket for draw-bars	814,128	Mar. 6	254	48-9	121	56
Gatzen, Wilhelm, San Francisco, Cal. Safety lever-frame for car-windows	818,156	Apr. 17	3206	690	121	2172
Gault, Frank M., Oklahoma, Okla. Ter. Jointed vehicle-step	814,687	Mar. 11	1402	292	121	366
Gay, Daniel G., assignor of one-half to J. W. Lynd, Freewater, Oreg. Syringe	817,054	Apr. 3	1005	206	121	1582
Gaynor, Joseph, New York, N. Y. Sound-box	816,908	Apr. 3	718	148	121	1517
Gedge Brothers Iron Roofing Company. (See Edwards, Josiah P., assignor.)						
Geiger, David F., Barlow, N. D. Belt-reel	818,157	Apr. 17	3208	690	121	2173
Geiger, William A. (See Rudolphi and Geiger.)						
Geisel, Theodor R., Springfield, Mass. Exercising device	818,242	Apr. 17	3387	727	121	2210
Geisendorfer, George, and W. A. Allen, Upton, Cal.; said Allen assignor to said Geisendorfer. Automatic distributer for blower-separators	816,460	Mar. 27	5038	1070	121	1251
Geiser Manufacturing Company. (See Anderson, Gustaf A., assignor.)						
Gem Fibre Package Company. (See Harbeck, Jervis R., assignor.)						
Gem Hammock and Fly Net Company. (See Knoernschild, Charles, assignor.)						
General Chemical Company. (See Knietsch, Rudolf, assignor.)						
General Electric Company. (See Boyd, Frederic R. C., assignor.)						
General Electric Company. (See Bradway, Chattin, assignor.)						
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General Electric Company. (See Case, Frank E., assignor.)						
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General Electric Company. (See Dempster, John T., assignor.)						
General Electric Company. (See Emmet, William L. R., assignor.)						
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General Electric Company. (See Herkner, Paul E., assignor.)						
General Electric Company. (See Herman, Reinhold, assignor.)						
General Electric Company. (See Hewlett, Edward M., assignor.)						
General Electric Company. (See Hill, George H., assignor.)						
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General Electric Company. (See Jones, Walter J., assignor.)						
General Electric Company. (See Lemp, Hermann, assignor.)						
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General Electric Company. (See Moody, Walter S., assignor.)						
General Electric Company. (See Persson, Otto F., assignor.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Pratt, William H., assignor.)						
General Electric Company. (See Read, Robert H., assignor.)						
General Electric Company. (See Rice, Richard H., assignor.)						
General Electric Company. (See Riddell, John, assignor.)						
General Electric Company. (See Ryan, Walter D., assignor.)						
General Electric Company. (See Sanford, Frank W., assignor.)						
General Electric Company. (See Savage, Arthur C., assignor.)						
General Electric Company. (See Schattner, Ernest, assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Stone, Charles W., assignor.)						
General Electric Company. (See Tournier, Julius C., assignor.)						
General Electric Company. (See Troy, Matthew O., assignor.)						
General Fire Extinguisher Company. (See Buell, Charles E., assignor.)						
General Fire Extinguisher Company. (See Grinnell, Frederick, assignor.)						
General Machinery & Supply Company. (See Burley, Harry S., assignor.)						
Geneva Furniture Manufacturing Company. (See Hulse, Edwin M., assignor.)						
Geneva Toy & Game Company. (See Becker, Philip, assignor.)						
Genovese, Giuseppe, and E. Calvi, New York, N. Y. Candle-wick	816,790	Apr. 3	467	104	121	1460
Geo. R. Rich Manufacturing Company. (See Rich, George R., assignor.)						
Geoffroy, Albert, Erath, La. Windmill	814,283	Mar. 6	547	114–15	121	118
George A. McKeel and Company. (See Scheiffler, George D., assignor.)						
George, Harry V., *et al.* (See Britton, Louis H., assignor.)						
George, Orrie, and P. Smith, assignors to P. Smith Co., Sidney, Ohio. Anchor	816,857	Apr. 3	615	129	121	1495
Gerard, Léon, Brussels, Belgium, assignor to P. Thompson, East Orange, N. J. Process and apparatus for testing water for decoloration	814,036	Mar. 6	77	14	121	18
Gerard, Léon, Brussels, Belgium, assignor to P. Thompson, East Orange, N. J. Apparatus for indicating the character of electrical effluvia	818,534	Apr. 24	3972	853	121	2389
Gerber, Alphonse, Paterson, N. J. Rubbing, breaking, and polishing machine for silk or silk-mixed goods	818,434	Apr. 24	3763	809	121	2346
Gerike, Hugo, Klein Schönebeck, assignor to G. Heyden, Schöneiche, near Berlin, Germany. Device for protecting the seals of the bungs or other closures of casks	817,910	Apr. 17	2721	590	121	2067
Gerike, Hugo, Klein Schönebeck, assignor to G. Heyden, Schöneiche, near Berlin, Germany. Bung and seal closure for casks	817,970	Apr. 17	2842	615	121	2095
Gerlach, George W., Louisville, Ky. Filtering-plate	818,679	Apr. 24	4265	916	121	2453
Gerner, Daniel, Chicago, Ill. Sign-printer and stencil-cutter	815,808	Mar. 20	3701	780	121	912
Gerow, Daniel S., *et al.* (See Chadborn, Frederic C., assignor.)						
Gesner, George W., deceased; H. C. Gesner, New York, N. Y., executrix. Filter	815,417	Mar. 20	2919	.....	121	744
Gesner, George W., deceased; H. C. Gesner, New York, N. Y., executrix. Insulator for electric apparatus	815,418	Mar. 20	2920	.....	121	744
Gesner, George W., deceased; H. C. Gesner, New York, N. Y., executrix. Production of articles of alloy of iron and hydrogen agglomerated in strong coherent bodies	815,419	Mar. 20	2920	606	121	744
Gesner, Harleston C., executrix. (See Gesner, George W.)						
Geyler, Philip J., Hillsboro, Ohio. Rocker attachment	816,088	Mar. 27	4283	908	121	1092
Ghegan, John J., Newark, N. J. Telegraph-key	815,800	Mar. 20	3703	780	121	912
Gibb, Robert H., London, England, and J. D. W. Elliott, Wanganui, New Zealand. Nailless horseshoe	817,638	Apr. 10	2154	457	121	1885
Gibbs, Frank J., Tyrone, Pa. Trolley	815,283	Mar. 13	2567	540	121	618
Gibford, Edward B., assignor to American Safety Razor Co., Adrian, Mich. Stropping-machine	818,680	Apr. 24	4266	916	121	2454
Gibson, Albert F., Milwaukee, Wis. Non-refillable bottle	814,284	Mar. 6	549	115	121	118
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Coal-cutting machine	818,619	Apr. 24	4152	893	121	2428
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Electropneumatic channeler	819,011	Apr. 24	4917	1055–6	121	2595
Gibson, Arthur H., Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Rock-drill	818,681	Apr. 24	4267	917	121	2454
Gibson, Charles D. P., Jersey City, N. J., assignor of two-thirds to C. G. and W. Malliet, New York, N. Y. Diamond-fastener for tools	818,682	Apr. 24	4269	917	121	2454
Gibson, James, Westboro, Mass. Press for punching tubing	814,200	Mar. 6	384	78	121	84
Gibson, John W., assignor of one-half to W. H. Lowe, Mystic, Iowa. Watch barrel-arbor	816,723	Apr. 3	342	79	121	1436
Giessel, Henry, Wapakoneta, Ohio. Staple-receiving clip for concrete posts	817,762	Apr. 17	2392	513	121	1994
Giffin, John E., Juniata, Pa. Adjustable gage	814,530	Mar. 6	1065	219–20	121	231
Gifford, Squire D., assignor of one-half to J. P. Shafer, Terra Alta, W. Va. Eye mechanism for dolls	817,055	Apr. 3	1007	206	121	1582
Gilbert, Charles R., Los Angeles, Cal. Salt-shaker	817,844	Apr. 17	2575	554	121	2034
Gilbert, Henry K., Niagara Falls, N. Y., assignor of one-third to F. J. Robinson, Hyattsville, Md. Bottle-stopper	815,954	Mar. 27	3995	846	121	1026
Gilbert, Sidney C., Jackson, Ohio. Vending device	816,975	Apr. 3	962	178	121	1549
Gilfillan, Essington N., Chicago, Ill., assignor to W. M. Hayner, Troy, Ohio. Bottle-stopper	814,778	Mar. 13	1575	332	121	498
Gillette, George H., New York, N. Y., assignor to Crown Cork and Seal Co., Baltimore, Md. Seal for bottles	814,531	Mar. 6	1067	220	121	231
Gillette, George H., New York, N. Y., assignor to Crown Cork & Seal Company, Baltimore, Md. Seal for bottles	814,532	Mar. 6	1072	220	121	232
Gillette, George H., New York, N. Y., assignor to Crown Cork & Seal Company, Baltimore, Md. Seal for bottles	815,344	Mar. 20	2745	571	121	705
Gillette, Herbert B., Grand Rapids, Mich. Vehicle-wheel	816,576	Apr. 3	30	11	121	1362
Gilman, George H., St. Paul, Minn., and J. H. Brown, South Tacoma, Wash. Emergency-knuckle for car-couplings	818,369	Apr. 17	3624	777	121	2260
Gilmer, William A., Broadview, Tenn., assignor of one-half to J. A. Smiser. Fireworks	818,950	Apr. 24	4798	1031	121	2570
Gilmore, Louis C., San Pedro, Cal. Acetylene-gas generator	816,976	Apr. 3	964	179	121	1550
Ginn, Robert J. (See Hall, John R., assignor.)						
Girard, William L. (See Brosius, William B., assignor.)						
Girardot, Claude, Vitry-le-François, assignor to Société J. et a Pavin de Lafarge, Viviers, France. Machine for manufacturing pipes or conduits from cement, &c	818,158	Apr. 17	3209	690	121	2173
Girardot, Léonce. (See Charron and Girardot.)						
Gitterman, Alfred N., New York, N Y Corn-holder	814,668	Mar. 13	1403	292	121	366
Giussani, Giovanni, London, England. Shedding motion for looms	817,763	Apr. 17	2393	513–14	121	1994
Given, James B., Chicago, Ill. Toy building-block	814,367	Mar. 6	747	150	121	165
Gladney, Richard A., Marion, Ark. Ribbon-holder	817,554	Apr. 10	2009	423	121	1855

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Glancey, Joseph A., Seaton, Ill. Revolving derrick	817,461	Apr. 10	1865	392-3	121	1825
Glass, James H. (See Harris, William J., assignor.)						
Gleason, John L., Jamaica Plain, Mass. Box for electric moldings	814,906	Mar. 13	1799	377	121	450
Gleason, John L., Boston, Mass. Junction-box for electric wires in buildings	814,907	Mar. 13	1801	377	121	451
Gleason, Lewis, Franklin, Pa. Lubricator	815,068	Mar. 13	2174	458	121	529
Gledhill, Benjamin H., Philadelphia, Pa. Tapestry-yarn printing	817,313	Apr. 10	1519	319	121	1751
Glenn, Joseph E., Doty, Wash. Nut-lock	815,524	Mar. 20	3102	648	121	783
Glinicke, Franz. (See Tressenreuter, Gustav, assignor.)						
Globe Exhibiting Company. (See Liebhardt, Julius C., assignor.)						
Goble, Bert G., Allegheny, Pa. Ball-bearing	817,737	Apr. 10	2340	502	121	1928
Goble, William, Monon, Ind. Pump-operating mechanism	817,639	Apr. 10	2156	457	121	1885
Gohrband, Bernard, assignor to E. Goldman & Company, Chicago, Ill. Bottle-washer brush	818,086	Apr. 17	3060	660	121	2140
Goings, Elisha R., Clay City, Ill. Cider-mill	818,683	Apr. 24	4270	917	121	2454
Gold, Edward E., New York, N. Y. Pressure-regulator	814,285	Mar. 6	551	115-16	121	119
Gold, Edward E., New York, N. Y. Heater	815,695	Mar. 20	3447	720	121	860
Gold, Edward E., New York, N. Y. Hose-coupling	816,312	Mar. 27	4712	1000	121	1183
Goldfein, August, Cleveland, Ohio. Trap for liquids	815,420	Mar. 20	2921	606	121	744
Goldie, Alexander S., Uddingston, Scotland. Furnace for steam-boilers, &c.	814,533	Mar. 6	1073	221	121	233
Goldie, William, Wilkinsburg, Pa. Making composite railway-ties	816,909	Apr. 3	719	148	121	1518
Goldie, William, Wilkinsburg, Pa. Railway composite tie	816,977	Apr. 3	867	179	121	1550
Golding, John F., Washington, D. C., assignor to Monolith Steel Company, Incorporated. Metal open-work fabric	814,689	Mar. 13	1405	292	121	367
Golding, John F., Washington, D. C., assignor to Monolith Steel Company, Incorporated. Tension-bar for use in concrete and the like	815,157	Mar. 13	2323	486	121	563
Goldman, Matthew S., Pittsburg, Pa. Garment-support	814,440	Mar. 6	896	184	121	195
Goldsmith & Company, C. P. (See Fischer, Robert, assignor.)						
Goldsworthy, Emelia M. (See Goldsworthy, John and E. M.)						
Goldsworthy, John and E. M., Indianapolis, Ind. Adjustable artist's desk and easel	815,810	Mar. 20	3704	780	121	912
Goller, Charles H., Hicksville, Ohio. Extension-table	816,791	Apr. 3	468	105	121	1461
Gonyo, Bert, Trudeau, N. Y. Door-check	818,435	Apr. 24	3764	809	121	2346
Good Form Manufacturing Company. (See Davies, Charles W. T., assignor.)						
Good Manufacturing Co. (See Schulz, Fritz, assignor.)						
Goodfellow, Joseph. (See Chapman, Charles E., assignor.)						
Goodlett, Joseph E. J., Memphis, Tenn. Stop mechanism for steam-engines	814,838	Mar. 13	1689	353-4	121	427
Goodman, William H., assignor of one-third to H. Woodward, Knoxville, Tenn. Candy-spinner	815,811	Mar. 20	3706	781	121	913
Goodrich, Edwin L., Crane, Mo. Trace-buckle	818,881	Apr. 24	4670	1002	121	2540
Goodrick, Edward W., assignor of one-half to Appleton Machine Company, Appleton, Wis. Pulp-screening machine	815,421	Mar. 20	2922	606-7	121	745
Goodwin, Herbert N., Newburyport, Mass. Submerged exhaust device for marine engines	818,951	Apr. 24	4799	1032	121	2570
Goodwin, John M., Mount Vernon, N. Y. Gravity drop-door	815,284	Mar. 13	2570	540	121	619
Goodwin, John M., Mount Vernon, N. Y. Gravity-chute	815,285	Mar. 13	2573	541	121	620
Goodwin, John M., Mount Vernon, N. Y. Body-bolster for vehicles	815,286	Mar. 13	2575	541-2	121	621
Goodwin, John M., Mount Vernon, N. Y. Vehicle girder and bulkhead	815,287	Mar. 13	2577	542	121	621
Goodwin, John M., Mount Vernon, N. Y. Buffer for railway-vehicles	815,288	Mar. 13	2579	542	121	622
Goodwin, John M., Mount Vernon, N. Y. Vehicle-frame construction	815,289	Mar. 13	2580	543	121	622
Goodwin, John M., Mount Vernon, N. Y. Apparatus for operating dumping-vehicles by fluid-pressure	816,008	Mar. 27	4105	867	121	1052
Goodwin, John M., Mount Vernon, N. Y. Dumping-vehicle	816,009	Mar. 27	4107	867-9	121	1052
Goodwin, John M., Mount Vernon, N. Y. Truck-bolster	816,010	Mar. 27	4109	869-70	121	1053
Goodyear Tire and Rubber Company. (See Scott, Charles S., assignor.)						
Goodyear, William E., Newark, N. J. Stop-motion for high-speed machines	818,159	Apr. 17	3211	691	121	2173
Googins, Eben H., *et al.* (See Poole, John H., assignor.)						
Gordon, Inde F., Pittsburg, Kans. Bottle	817,705	Apr. 10	2260	486	121	1908
Gordon, John B., Meridian, Miss. Excavating-machine	818,952	Apr. 24	4801	1032	121	2570
Gordon, William W., Washington, D. C. Car-coupling	815,525	Mar. 20	3104	648	121	783
Gorsuch, John W., and D. A. Bogue, La Junta, Colo. Cattle-guard	817,367	Apr. 10	1618	342	121	1774
Gorton, George, Racine, Wis. Clearance-space grinding-disk	816,461	Mar. 27	5040	1070	121	1251
Goss, John H., assignor to Scovill Manufacturing Company, Waterbury, Conn. Powder-can top	816,313	Mar. 27	4714	1000	121	1184
Gottlieb, John G., Fessenden, N. D. Obstetrical instrument	818,953	Apr. 24	4803	1032	121	2571
Gottschalk, Otto, San Francisco, Cal. Continuous-rail crossing for street-railways	818,954	Apr. 24	4804	1033	121	2571
Gow, Alexander M., Edgewood Park, assignor to G. Westinghouse, Pittsburg, Pa. Gas-purifying apparatus	815,812	Mar. 20	3707	781	121	913
Goyett, Warner L., Canon City, Colo. Apple-box press	814,954	Mar 13	1888	397	121	468
Gradwohl, Harry C., St. Louis, Mo. Floor drain and trap	814,441	Mar. 6	898	184	121	195
Graebing, Charles E., Freedom, Pa. Lubricator	818,160	Apr. 17	3216	691	121	2175
Graeme, Joseph W., U. S. Navy. Mosquito-net	818,882	Apr. 24	4671	1002	121	2541
Graham, Charles W., assignor to Utica Industrial Company, Rome, N. Y. Carrier-support for can-machines	814,442	Mar. 6	899	185	121	196
Graham, Charles W., assignor to Utica Industrial Company, Rome, N. Y. Soldering	814,779	Mar. 13	1576	333	121	404
Graham, Ernest A., assignor of two-thirds to F. M. Graham and L. N. Ford, Bar Harbor, Me. Bracket-hook	815,813	Mar. 20	3709	782	121	913
Graham, Frank M., *et al.* (See Graham, Ernest A., assignor.)						
Graham, George and W. Lovelace, assignors of one-fourth to N. Carpenter, Dorchester, Va. Oil-flask	815,158	Mar. 13	2326	486	121	563
Graham, John D., Brooklyn, N. Y., assignor, by mesne assignments, to Marine Torch Company of Baltimore City. Marine torch	816,160	Mar. 27	4423	936	121	1121
Graham, John L., Hazlewood, Mich. Band-resaw	815,955	Mar. 27	3996	846	121	1026
Graham, Thomas M. (See Filteau, Victor, assignor.)						
Granger, Frank C., *et al.* (See Poole, John H., assignor.)						
Granke, Otto, La Crosse, Wis. Banana-shipping crate	814,534	Mar. 6	1074	221	121	233
Grant, David S., Stoneham, Mass. Non-grinding power-transmission device	818,161	Apr. 17	3217	692	121	2175
Graves, Spencer, Poulan, Ga. Gearing	817,239	Apr. 10	1373	289	121	1723
Gravity Conveyor Company. (See Schwab, Martin C., assignor.)						
Gray, Ernest W., Des Moines, Iowa. Twine-holder	817,240	Apr. 10	1375	289	121	1723
Gray, Francis M., Decatur, Ill. Vise	818,535	Apr. 24	3973	853	121	2389
Gray, Jesse L., assignor of one-half to P. F. Rice, Santa Ana, and W. H. Faust, Los Angeles, Cal. Sound reproducing and magnifying means	814,539	Mar 13	1691	354	121	423
Gray Lithograph Company. (See Seaman, Henry B., assignor.)						
Gray Telephone Pay Station Company. (See Long, George A., assignor.)						
Gray, William C., and W. McKenzie, Ayr, Scotland. Loom for weaving pile fabrics	815,526	Mar. 20	3105	648-9	121	784
Gray, William J., Sauk Center, Minn. Lifting-jack	818,436	Apr. 24	3765	809	121	2346
Greece, James, Uniontown, Pa. Horse-detacher	817,424	Apr. 10	1744	367	121	1800
Green, Byron E., Ilion, N. Y. Overhead-trolley support and switch	817,268	Apr. 10	1620	342	121	1774

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Green, Charles M., Lynn, Mass., assignor to General Electric Company. Means for preventing accumulation of static electricity upon belting	815,814	Mar. 20	3710	782	121	914
Green, Charles V., Bradford, Pa. Combined rule and square	814,690	Mar. 13	1407	293	121	367
Green, James A., Milldale, Va. Thill-coupling	818,437	Apr. 24	3766	810	121	2346
Green, Louella W., Audubon, Iowa. Hose-supporter	818,759	Apr. 24	4443	952	121	2493
Green, Oliver H. P., and D. Carpenter, Orion, Mich. Lock	816,792	Apr. 3	471	105	121	1461
Green, Theodore L., Memphis, Tenn. Building-column	817,241	Apr. 10	1377	289	121	1724
Greene, Henry H., Milwaukee, Wis. Temporary hinge	817,845	Apr. 17	2576	554	121	2034
Greenfield, Edwin T., Monticello, N. Y. Machine for forming metal tubes	817,056	Apr. 3	1006	206–8	121	1583
Greenfield, Edwin T., Monticello, N. Y. Flexible metallic tube	817,057	Apr. 3	1014	209	121	1583
Greenfield, Edwin T., Monticello, N. Y. Coupling for armored hose	817,058	Apr. 3	1015	209	121	1583
Greenfield, Edwin T., Monticello, N. Y. Flexible tube	817,059	Apr. 3	1017	209	121	1584
Greenfield, Edwin T., Monticello, N. Y. Hose	817,060	Apr. 3	1018	209	121	1584
Greenwald, Charles E. (See Leatherman, Franklin T., assignor.)						
Greenway, Richard J., Jr., Westerly, R. I., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Attachment for ink-fountains of printing-presses	814,037	Mar. 6	78	14	121	18
Greenwood, George W., Cleveland, Ohio. Pressure-exerting machine	814,955	Mar. 13	1890	397–8	121	469
Greenwood, George W., Cleveland, Ohio. Clutch	815,010	Mar. 13	2012	423–4	121	493
Greenwood, John E., Utica, N. Y. Trolley-head and current-collector	817,846	Apr. 17	2578	554–5	121	2035
Greer Filter Company. (See Greer, James B., assignor.)						
Greer, James B., Pittsburg, assignor to Greer Filter Company, Philadelphia, Pa. Strainer for filters	815,290	Mar. 13	2583	543	121	623
Gregg, Alexander, Detroit, Mich. Window-screen	818,162	Apr. 17	3219	692	121	2176
Gregory, Fred L., assignor to Innovate Manufacturing Company, Chicago, Ill. Adjustable suspension device	815,422	Mar. 20	2924	607	121	745
Gregory, Julius, Weehawken, N. J. Delivery device	814,368	Mar. 6	747	151	121	165
Gregory, Mary E., Norwalk, Conn. Nursing-bottle holder	815,815	Mar. 20	3711	782	121	914
Grellner, Christopher J. (See Spencer, George M., assignor.)						
Gressom, James H., North Hudson, Wis. Vehicle running-gear	815,527	Mar. 20	3110	650	121	784
Grey, Henry, assignor to American Universal Mill Company, New York, N. Y. Ingot-mold	818,684	Apr. 24	4272	918	121	2455
Grice, Arthur G., Carnoustie, Scotland. Stone-sawing machinery	817,847	Apr. 17	2579	555–6	121	2035
Grieb, Alfred. (See Diehl and Grieb.)						
Griesser, Wilhelm, Joplin, Mo. Metallic railway-tie	814,840	Mar. 13	1694	354	121	428
Griesser, Wilhelm, Joplin, Mo. Metallic railway-tie	814,841	Mar. 13	1696	355	121	429
Griesser, Wilhelm, Joplin, Mo. Metallic railway-tie	814,842	Mar. 13	1697	355	121	429
Griffin, Benjamin, Adrian, assignor to A. M. Keeney, Ann Arbor, Mich. Metal-fence tie	814,369	Mar. 6	751	151	121	166
Griffin, Burdett W., assignor to American Street Sign Company, Toledo, Ohio. Street-sign	817,061	Apr. 3	1020	210	121	1584
Griffin, Gerard F. (See Corthésy, Jules H., assignor.)						
Griffin, James C., Erie, Pa. Hasp	818,685	Apr. 24	4276	918	121	2456
Griffin, Walter T., Plainfield, N. J. Making and burning fuel-gas	816,314	Mar. 27	4715	1001	121	1184
Griffith, Lawrence, Yonkers, N. Y. Electric signal apparatus	814,535	Mar. 6	1076	222	121	233
Griffith, Lawrence, Yonkers, N. Y. Safety device for railway switch and signal apparatus	814,537	Mar. 6	1080	223	121	235
Griffith, Lawrence, Yonkers, N. Y. Safety device for railway switch and signal apparatus	814,658	Mar. 6	1311	276	121	283
Griffiths, George, Los Angeles, Cal. Production of heat and smudge	814,646	Mar. 6	1284	270	121	277
Griffiths, Robert T. (See Dewhurst, Moore, and Griffiths.)						
Grigsby, William W., assignor of one-half to W. S. Wilkinson, New Orleans, La. Crib	814,538	Mar. 6	1083	223	121	235
Grimes, Burnard M. (See Trump and Grimes.)						
Grimes, Frank V., Centralia, Wash. Cattle-guard	818,883	Apr. 24	4673	1003	121	2541
Grimm, Rudolf, Vienna, Austria-Hungary. Sectional girder and column of reinforced concrete	818,894	Apr. 24	4674	1003	121	2541
Grinnell, Frederick, New Bedford, Mass., assignor to General Fire Extinguisher Company, New York, N. Y. Valve apparatus	817,911	Apr. 17	2722	591	121	2067
Griscom, Alfred C., Newark, N. J., assignor to Griscom Lehing Manufacturing Company, New York, N. Y. Means for automatically controlling the operation of beer or other pumps and similar devices	818,686	Apr. 24	4277	918–19	121	2456
Griscom Lehing Manufacturing Company. (See Griscom, Alfred C., assignor.)						
Griswold, Marius E., Chicago, Ill. Wrench	814,201	Mar. 6	386	78	121	85
Groel, Adam H., Orange, N. J., assignor to Spool Cotton Company. Combined weight and flier for spool-holders	815,956	Mar. 27	3997	847	121	1026
Grohmann, Carl L., New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	818,243	Apr. 17	3389	727	121	2210
Grosbernt, Frederick H. (See Treditin and Grosbernt.)						
Gross, Robert, Rastenberg, Thuringia, assignor to Ferro-Phosphat-Gesellschaft Emilio Schramm & Co., Hamburg, Germany. Making medicines	816,547	Mar. 27	5224	.....	121	1294
Grosshauser, Charles C., Shakopee, Minn. Vehicle	814,780	Mar. 13	1578	333	121	404
Grossmann, Rudolph C., Jersey City, N. J., assignor to S. Aufhauser, New York, N. Y. Machine for forming finger-rings	818,620	Apr. 24	4154	893	121	2429
Groth, Hans H., Cincinnati, Ohio. Medical applicator	814,038	Mar. 6	79	15	121	19
Grove, George H., Hummelstown, Pa. Railway-rail joint	815,159	Mar. 13	2327	486	121	564
Grubb, Samuel J., Dooley, Va. Tie-plate or seat for railway-rails	818,370	Apr. 17	3625	778	121	2260
Grubbs, J. A. (See Kaufman, George H., assignor.)						
Gruenther, Christian M. (See Parker, Albert G., assignor.)						
Grüninger, Joseph, New York, N. Y. Folding clothes-rack	814,370	Mar. 6	752	152	121	166
Gruver, George W., Healdsburg, Cal. Firearm	817,764	Apr. 17	2394	514–15	121	1994
Gruwell, Robert E., and A. Wiebke, Miles City, Mont. Trace-holder	815,423	Mar. 20	2927	607	121	746
Gschwind, Leon, Youngstown, Ohio, assignor to Youngstown Furnace Company. Grate	815,160	Mar. 13	2329	487	121	564
Guerin, P. E. (See Schwarz, Frederick J., assignor.)						
Gufler, Anton, New York, N. Y. Cooking utensil	814,129	Mar. 6	255	49	121	56
Guitel, Emile and P., Moreuil, France. Pulley-tackle	817,848	Apr. 17	2581	556	121	2036
Guitel, Paul. (See Guitel, Emile and P.)						
Guinick, Uriah. (See Lane and Guinick.)						
Gulowsen, Gulow A., Huguenot Park, N. Y. Speed-varying mechanism	815,345	Mar. 20	2746	572	121	705
Gunckel, Winfield O., assignor of one-half to P. N. Staff, Terre Haute, Ind. Air-brake valve	815,816	Mar. 20	3712	782	121	914
Gunder, Claude A., assignor to American Vending Machine Co., Jeffersonville, Ind. Vending-machine	817,912	Apr. 17	2724	591	121	2067
Gunn, Elijah S., and H. R. Romberger, Winona, Miss. Means for oiling tracks and applying the air-brakes for stopping railway-trains	814,371	Mar. 6	753	152	121	166
Gurnee, Isaac O., Butler, N. J., assignor to American Hard Rubber Company. Atomizer	816,656	Apr. 3	222	54	121	1411
Gustafson, Carl S. (See Fagerstrom, Victor A., assignor.)						
Gustafson, Ernest G., and H. G. Olsson, North Grosvenor Dale, Conn., assignors to Draper Company, Hopedale, Mass. Selvage stop-motion for looms	817,144	Apr. 3	1168	241	121	1619

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Gustaveson, Carl, Chicago, Ill. Woodworking-clamp	816,011	Mar. 27	4111	870	121	1053
Gutman, Simon, *et al.* (See Kislik, Alexander, assignor.)						
Gutz, Harry F., *et al.* (See Wagner, William F., assignor.)						
Guy, Isaiah V. (See Beall and Guy.)						
Guynn, Lincoln, *et al.* (See Burns, Jeremiah D., assignor.)						
H. Mueller Manufacturing Company. (See Mueller and Boland, assignors.)						
H. Mueller Manufacturing Company. (See Mueller and White, assignors.)						
H. H. Buffum Company. (See Buffum, Herbert H., assignor.)						
H. L. Judd Company. (See Lathrop, Frank L., assignor.)						
Haag, Arthur, New York, N. Y. Combined square and bevel	815,528	Mar. 20	3112	650	121	785
Haar, David, New York, N. Y. Exhibition-board	814,372	Mar. 6	757	152	121	168
Haase, Albert, Essen-Rüttenscheid, assignor to F. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Steel projectile	816,577	Apr. 3	41	11	121	1363
Habermann, George C. H., McKeesport, Pa. Rail-joint	814,443	Mar. 6	903	185	121	197
Hagaman, Orie E., Newark, N. J. Propelling device	818,536	Apr. 24	3975	854	121	2390
Hageman, James E. (See Hageman, Randolph F. and J. E.)						
Hageman, Randolph F. and J. E., New Madison, Ohio. Sink-frame	817,765	Apr. 17	2402	515	121	1995
Hagen, Henry J., Orange, N. J., assignor to Universal Talking Machine Manufacturing Company. Talking-machine	816,978	Apr. 3	870	180	121	1551
Haggenjos, Frank, St. Louis, Mo. Metal mold for making brass castings	816,315	Mar. 27	4717	1001	121	1184
Hagman, William J., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Counterbalance device	815,696	Mar. 20	3449	720	121	860
Hagman, William J., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Machine for drilling, boring, milling, &c	815,697	Mar. 20	3449	720	121	860
Hahn, Andrew, Chicago, Ill. Tank	817,314	Apr. 10	1520	319	121	1751
Hahn, George W., Mansfield, Ill. Horse-collar	818,621	Apr. 24	4156	893–4	121	2429
Hahn, Gustav. (See Zander and Hahn.)						
Hahn, John J., Kansas City, Mo. Door for grain-cars	814,202	Mar. 6	388	78	121	85
Haigh, Ben, Montreal, Canada. Smoke-consumer	818,024	Apr. 17	2949	637	121	2118
Haight, Charlotte H., Oswego, Ill. Griddle-greaser	814,203	Mar. 6	390	79	121	85
Haight, Louis W., White Plains, and W. E. Chapman, New York, N. Y. Shade	816,316	Mar. 27	4718	1001–2	121	1184
Haiman, Elias, Cleveland, Ohio. Farming implement	815,698	Mar. 20	3452	720–1	121	861
Haiman, Elias, Cleveland, Ohio. Cultivator attachment	818,760	Apr. 24	4444	952	121	2493
Hains, Peter C., Jr. (See Weaver, Charles R., assignor.)						
Hake, Lewis F., Ottawa, Kans. Gate construction	818,885	Apr. 24	4674	1003	121	2541
Halderman, Oscar E., Marion, Ind. Grate	814,956	Mar. 13	1893	398	121	469
Hale, George W., Norfolk, Va. Barber's appliance	817,111	Apr. 3	1094	227	121	1601
Hale & Kilburn Manufacturing Company. (See Kilburn, John B., assignor.)						
Hale-Kilburn Metal Company. (See Budd, Edward G., assignor.)						
Hale, Stephen H., St. Joseph, Mo. Steam-boiler	816,012	Mar. 27	4112	870	121	1054
Halkyard, William. (See Davis, Clarence C., assignor.)						
Hall, Adrian and J. M., Greenfield, Ind. Conveying apparatus	816,910	Apr. 3	722	148	121	1518
Hall, Albert, Jersey City, N. J. Button	817,170	Apr. 10	1230	253	121	1693
Hall, C. Roe. (See Hancock, Charles E., assignor.)						
Hall, Charles A., New Orleans, La. Broom-bridle	817,971	Apr. 17	2843	616	121	2095
Hall, Edward C. (See Hall, William H. and E. C.)						
Hall, Erasmus C. (See Weaver, Mathew J., assignor.)						
Hall, Frank D., Waukegan, Ill. Cutter-head	815,161	Mar. 13	2330	487	121	564
Hall, Frank S., Akron, Ohio. Writing or printing with metallic leaf	817,315	Apr. 10	1522	319	121	1752
Hall, James, Reddish, and M. T. Barber, assignors to Printers' Engineers Limited, Manchester, England. Taking-off disk for feeding paper in printing and the like machines	814,539	Mar. 6	1084	224	121	235
Hall, John L., Schenectady, N.Y., assignor to General Electric Company. Signaling system	818,244	Apr. 17	3391	727	121	2211
Hall, John M. (See Hall, Adrian and J. M.)						
Hall, John R., De Moss Springs, assignor of one-half to R. J. Ginn, Moro, Oreg. Door-securer	818,955	Apr. 24	4806	1033	121	2571
Hall, Samuel N., assignor of one-half to J. Lawlor, Houston, Tex. Wrench	818,371	Apr. 17	3626	778	121	2261
Hall Signal Company. (See Coleman, Clarence W., assignor.)						
Hall Signal Company. (See Hewett, Robert J., assignor.)						
Hall Signal Company. (See Lane, William H., assignor.)						
Hall, William A., Sr., Pardeeville, Wis. Combined potato and corn planter	818,956	Apr. 24	4807	1033–4	121	2571
Hall, William H., Glendale, and E. C. Hall, Cincinnati, Ohio. Fireproof safe and filling the walls of the same	816,724	Apr. 3	343	79	121	1430
Hallbauer, Ernst M., Chicago, Ill., assignor to American Can Company, New York, N. Y. Sheet-metal display can or box	815,957	Mar. 27	4000	847	121	1027
Halliburton, Martin J., assignor of one-half to H. G. Illig, Portageville, Mo. Bridle	815,424	Mar. 20	2928	607	121	746
Halliday, John, Detroit, Mich. Cheese-cutter	816,462	Mar. 27	5042	1071	121	1251
Hallock, Howard B., Germantown, assignor to S. S. Williamson, Philadelphia, Pa. Storage battery	814,691	Mar. 13	1408	293	121	367
Hallstead, Bert W., Scranton, Pa. Spark-plug	818,372	Apr. 17	3629	778	121	2261
Hallstream, Henry. (See Dexter and Hallstream.)						
Halphen, L. & G. (See Kun, Michael, assignor.)						
Ham, Alice M., Kent, Wash. Vegetable-boiler	816,858	Apr. 3	617	129	121	1495
Ham, Henry C., assignor to Rude Brothers Manufacturing Company, Liberty, Ind. Grain-drill tube	814,957	Mar. 13	1894	398	121	469
Hamachek, Frank, Kewaunee, Wis. Guard-finger for harvesters, &c	817,425	Apr. 10	1746	367	121	1800
Hames, Joseph C., Colorado City, Colo. Rack-and-pinion mechanism	817,369	Apr. 10	1621	343	121	1774
Hames, William J. M., Atlanta, Ga. Cleaning and polishing device	817,766	Apr. 17	2403	515	121	1996
Hamilton, Charles M., *et al.* (See Woodward, Anderson, assignor.)						
Hamilton, Harrison A., Myers, Ky. Combination-tool	814,039	Mar. 6	81	15	121	19
Hamilton, James, New York, N. Y. Dredging apparatus	816,161	Mar. 27	4424	936	121	1121
Hamilton, Merrill T., Newport, Vt. Milking-stool	815,425	Mar. 20	2930	608	121	746
Hammarlund, Oscar, assignor of one-half to A. Forman, New York, N. Y. Stand for liquid-containing vessels	816,317	Mar. 27	4720	1002	121	1185
Hammer, Frank A. (See Yahraus and Hammer.)						
Hammesfahr, Ernst, Solingen, near Foche, Germany. Manufacturing cutlery	815,699	Mar. 20	3454	.....	121	861
Hammond, John F., New York, N. Y. Dynamometer	814,373	Mar. 6	758	153	121	168
Hammond, John F., Brewster, N. Y. Electric furnace	817,767	Apr. 17	2405	515	121	1996
Hammond, Robert O., Buffalo, N. Y. Combined cigar-clipper and match-safe	815,700	Mar. 20	3455	721	121	862
Hamrock, Arnold J., Chicago, Ill. Alarm-bell	814,444	Mar. 6	904	185	121	197
Hanby, William F. (See McGee, James W., assignor.)						
Hanchett, Philemon H., Fairbury, Nebr. Windmill	814,600	Mar. 6	1193	250	121	258
Hancock, Charles E., Marion, Ind., assignor of one-half to C. R. Hall, Palestine, Tex. Corn picker and husker	815,817	Mar. 20	3714	783	121	915
Hancock, Eddie W., Savannah, Ga. Journal-lubricator	818,373	Apr. 17	3631	779	121	2262

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Hancock, John, Alton, Ill. Rocking swing	818,622	Apr. 24	4158	894	121	2430
Hand, Robert, East Cleveland, Ohio. Fumigating plants	817,849	Apr. 17	2581	556	121	2036
Handschug, August B., Kirchberg, assignor to Gebrüder Jacob, Zwickau, Saxony, Germany. Automatic gas-igniter	817,640	Apr. 10	2157	458	121	1686
Handy Car Equipment Company. (See Sullivan and Dickinson, assignors.)						
Handy Match Scratcher Company. (See Smith, Gustavus A., assignor.)						
Hanes, Frederick A., and W. Staples, District of Muskoka, Canada. Ratchet-wrench	818,761	Apr. 24	4445	952	121	2493
Haney, Allen O., Shakespeare, Ind. Air and gas engine	817,706	Apr. 10	2261	487	121	1906
Haney, Samuel, North Manchester, Ind. Journal-box	818,163	Apr. 17	3220	692	121	2176
Hanimann, Charles, Flushing, assignor to M. G. Lewis, New York, N. Y. Bench-vise	816,162	Mar. 27	4428	937	121	1122
Hannagan, Paul, Lawrence, Mass. Cover and trap for catch-basins and the like	818,164	Apr 17	3220	692–3	121	2176
Hannah, C. G., *et al.* (See Terrell, George W., assignor.)						
Hannah, Thomas, *et al.* (See Rosentreter, Albert J., assignor.)						
Hannay, Gerald, *et al.* (See Rosentreter, Albert J., assignor.)						
Hannum, Philip E. (See Kee, Henry C., assignor.)						
Hansen, Henry, Chicago, Ill. Sash-cord fastener	815,587	Mar. 20	3216	676	121	808
Hansen, Peter C., Fairfield, Wash. Automatic cut-off	817,707	Apr. 10	2263	487	121	1906
Hansen, William L., and A. Hayes, Coalville, Utah. Automatic device for dumping cars	817,972	Apr. 17	2844	616	121	2095
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Mechanism for actuating chucks	814,647	Mar. 6	1286	270–1	121	278
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Chuck for metal-working machines	814,648	Mar. 6	1291	271–2	121	279
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Feed-adjusting device for the cross-slides of metal-working machines	814,649	Mar. 6	1296	272	121	280
Hanson, Frederick, *et al.* (See Dackiewicz, Charles, assignor.)						
Hanson, Hans, Minneapolis, Minn. Calculating-machine	816,318	Mar. 27	4723	1002–4	121	1186
Hanson, Hans, Brooklyn, N. Y. Calculating-machine and type-writer attachment	816,319	Mar. 27	4737	1004–7	121	1188
Hanson, Sigvart, Racine, Wis. Floor-hinge	815,011	Mar. 13	2021	424	121	496
Hanstine, Harry S., and J. F. Thompson, Pittsburg, Pa. Fastener	814,445	Mar. 6	905	186	121	197
Harah, William H., *et al.* (See Dill, Charles H., assignor.)						
Harbeck, Jervis R., assignor to Gem Fibre Package Company, Detroit, Mich. Container-closure	814,374	Mar. 6	759	153	121	168
Harber, Thomas W., Dudenville, Mo. Spike-puller	815,701	Mar. 20	3458	722	121	862
Harbert, William W. (See Davis, Thomas A., assignor.)						
Harbin, Zeddie L., assignor of one-half to G. H. Smathers, Canton, N. C. Churn	818,537	Apr. 24	3976	854	121	2390
Harcharick, Emro, Wilkes-Barre, Pa. Air-feeding device	814,650	Mar. 6	1297	272–3	121	280
Hardcastle, Edward, Stockport, England. Compound which forms an emulsion with water to be applied to the surfaces of roads or other places	819,012	Apr. 24	4919	.....	121	2596
Hardee, Virginia E., Beaumont, Tex. Bandage	815,426	Mar. 20	2932	606	121	747
Harden, William I. F., Hartford, Kans. Railway-tie	816,463	Mar. 27	5044	1071	121	1252
Hardenburg, Howard R., and F. Sager, Saginaw, Mich. Well-reamer	815,012	Mar. 13	2026	425	121	497
Hardenburgh, Julius, *et al.* (See Metzger, Emanuel, assignor.)						
Hardesty, Thornton S., Rivesville, W. Va. Chain-machine splitter-bit	817,850	Apr. 17	2583	557	121	2036
Hardie, Robert W., New York, N. Y. Barrel	814,375	Mar. 6	761	153	121	168
Harding, James, Maiden Bradley, near Bath, England. Apparatus for making cheese	814,040	Mar. 6	83	15	121	20
Harding, Melvin L., and A. I. Hoxworth, Mannington, W. Va. Toy	817,316	Apr. 10	1524	320	121	1752
Hardison, Edwin A., Bakersfield, Cal. Wrench	818,025	Apr. 17	2950	637	121	2118
Hardman, Shannon A., Elkins, W. Va. Controlling attachment for type-writers	817,242	Apr. 10	1378	289–90	121	1724
Hardy, Benjamin J. (See Darby, Edwin, assignor.)						
Hare, Franklin C., assignor to Cyphers Incubator Company, Buffalo, N. Y. Brooder	814,041	Mar. 6	84	15–16	121	20
Hargrave, Russell W., Ann Arbor, Mich. Speed-meter	816,089	Mar. 27	4284	908	121	1092
Hargreaves, Frank L., North Adams, Mass. Window-sash ventilator	815,818	Mar. 20	3716	783	121	915
Harlan, Byron G. (See Klein, Rudolph, assignor.)						
Harllee, Elizabeth C., Raleigh, N. C. Traveler's grip-cot	815,819	Mar. 20	3717	783–4	121	915
Harman, James L. (See Shafer and Harman.)						
Harmon, Frank L., Beverly, Mass. Elastic vehicle-wheel	818,957	Apr. 24	4812	1035	121	2572
Harmon, Willis E., Mechanic Falls, Me., assignor to American Electrolytic Company, Philadelphia, Pa. Mercurial alkaline process	814,692	Mar. 13	1410	.....	121	368
Harn, George U., Jr. (See Smith and Harn.)						
Harriman, Joseph W., Washington, D. C. Percussion-fuse	815,958	Mar. 27	4003	847	121	1028
Harrington, Charles F., assignor to Dial Voting Machine Company, Lyndhurst, N. J. Voting-machine	818,165	Apr. 17	3222	693–4	121	2176
Harrington, Eben L., *et al.* (See Farrar, Charles F., assignor.)						
Harrington, Joseph L., Chicago, Ill., and S. C. Hodge, Milwaukee, Wis.; said Hodge assignor to said Harrington. Ventilator	814,651	Mar. 6	1299	273	121	281
Harrington & Richardson Arms Co. (See Bye, Martin, assignor.)						
Harrington, Walter K., Andover, N. J., assignor to Consolidated Gas Company, New York, N. Y. Gas-meter	814,958	Mar. 13	1895	398–9	121	470
Harris Air Pump Company. (See Harris, Walter B., assignor.)						
Harris, Calloway J., Mangham, La. Attachment for pneumatic conveyers	814,130	Mar. 6	256	49	121	57
Harris, Charles A., Brattleboro, Vt. Brush-holder	816,793	Apr. 3	473	106	121	1461
Harris, Charles E., Syracuse, N. Y. Photographic developing apparatus	817,766	Apr. 17	2409	516	121	1997
Harris, Coleman B., Wilmington, Del. Carbureter	817,641	Apr. 10	2159	458	121	1686
Harris, Edward R., New York, N. Y. Hand lining-tool	816,794	Apr. 3	474	106	121	1462
Harris, Edwin, Athens, Tex. Wire-fence tool	816,578	Apr. 3	42	11	121	1363
Harris, Hollis H. (See Thew and Harris.)						
Harris, James D., assignor of one-half to W. E. Wimpy, Atlanta, Ga. Exterminator	814,131	Mar. 6	257	50	121	57
Harris, James S., and J. R. Hoskin, Central City, Colo. Rock-drill chuck	818,687	Apr. 24	4281	919	121	2457
Harris, James W., assignor, by mesne assignments, to Black & Clawson Company, Hamilton, Ohio. Winder	817,426	Apr. 10	1749	368	121	1801
Harris, Joseph B., assignor of one-half to J. B. Hicks, Branson, Mo. Subsoil-plow	816,548	Mar. 27	5225	1108	121	1294
Harris, Nicholas R., San Francisco, Cal. Dredger	814,204	Mar. 6	390	79	121	86
Harris, Robert A., Tucson, Ariz. Ter. Pneumatic tire	815,346	Mar. 20	2748	572	121	706
Harris, Thomas, Handsworth, near Birmingham, assignor to Charles H. Collins & Sons, Birmingham, England. Stud, dress-fastener, and the like	818,087	Apr. 17	3061	660	121	2141
Harris, Walter B., assignor to Harris Air Pump Company, Indianapolis, Ind. Air or gas lift for fluids	814,601	Mar. 6	1194	250	121	259
Harris, Walter L., Salem, Mass. Combined hoe and rake	816,320	Mar. 27	4760	1007	121	1193
Harris, William J., assignor of one-half to J. H. Glass, Knoxboro, N. Y. Hospital or invalid's bed	814,286	Mar. 6	554	116	121	119
Harrison, Amos, Chicago, Ill. Automatic relief-valve and trap	817,112	Apr. 3	1095	228	121	1601
Harrison, James D. (See Pealing and Harrison.)						
Harrison, James R., assignor to Hart Grain Weigher Co., Peoria, Ill. Automatic weigher	818,688	Apr. 24	4283	919–20	121	2457
Harriss, Jefferson D., and C. F. Hogan, assignors of one-third to H. A. Waters, Travilah, Md Bottle	818,623	Apr. 24	4160	894	121	2430
Harrold, Elmer, and C. G. Wilderson, Leetonia, Ohio. Band-saw machine	814,652	Mar. 6	1301	273–4	121	281

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Harshaw, Seth T., Cohoes, N. Y. Looping-machine	818,374	Apr. 17	3633	779-80	121	2262
Hart Grain Weigher Co. (See Harrison, James R., assignor.)						
Hart Grain Weigher Co. (See Hart, Stacy B., assignor.)						
Hart, John P., Bridgeport borough, Pa. Hotel-register	817,851	Apr. 17	2584	557	121	2036
Hart Manufacturing Company. (See Leppert, Henry E., assignor.)						
Hart, Stacy B., assignor to Hart Grain Weigher Co., Peoria, Ill. Adjustable spout or conveyer	818,762	Apr. 24	4446	952	121	2402
Hart, William, *et al.* (See Wagner, William F., assignor.)						
Hart, William, Kirksville, Mo. Graphophone-reproducer	817,062	Apr. 3	1021	210	121	1585
Harter, Joseph, Tiffin, Ohio. Dirt-scraper	814,446	Mar. 6	907	186	121	197
Hartley, James, Philadelphia, Pa. Fire-alarm and sprinkler attachment	814,781	Mar. 13	1580	333	121	404
Hartley, John H., Whiteoak, Mo. Clothes-line support	815,529	Mar. 20	3113	650	121	785
Hartman, John M., Philadelphia, Pa. Cinder-car	815,162	Mar. 13	2333	488	121	565
Hartmann & Braun A. G. (See Hartmann-Kempf, Robert, assignor.)						
Hartmann, Frantisek, assignor of one-half to J. Oliak, Prague, Austria-Hungary. Remontoir winding-watch	816,321	Mar. 27	4760	1007	121	1193
Hartmann-Kempf, Robert, assignor to Hartmann & Braun A. G., Frankfort-on-the-Main, Germany. Speed-indicator	817,555	Apr. 10	2009	424	121	1855
Hartmann, Wilhelm, Berlin, Germany. Valve-gear	818,166	Apr. 17	3231	694-5	121	2178
Hartmann, William C., assignor to Omega Separator Company, Lansing, Mich. Bowl for centrifugal cream-separators	815,347	Mar. 20	2750	572-3	121	706
Hartmann, William C., assignor to Omega Separator Company, Lansing, Mich. Driving mechanism for centrifugal separators	817,913	Apr. 17	2726	591-2	121	2068
Hartway, Charles F., Alvy, W. Va. Amusement device	817,556	Apr. 10	2013	424	121	1855
Hartwig, Rudolf, Rüttenscheid, near Essen-on-the-Ruhr, assignor to F. Krupp, Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Explosion-engine	814,287	Mar. 6	555	116	121	119
Hartz, George F., Durant, Iowa. Inhaler	817,708	Apr. 10	2266	487	121	1909
Hartz, Henry V., Cleveland, Ohio. Tackle-block	818,886	Apr. 24	4676	1003	121	2542
Harvey, Albert L. (See Witcher and Harvey.)						
Harvey, George B., *et al.* (See Britton, Louis H., assignor.)						
Harvey, George L., Chicago, Ill. Spring	817,482	Apr. 10	1867	393	121	1826
Harvey, George L., assignor to Car Builders Supply Company, Chicago, Ill. Journal-box	817,427	Apr. 10	1753	368	121	1802
Harvey, George P. (See Brigham and Harvey.)						
Harvey, Harry D., *et al.* (See Krause, William T., assignor.)						
Harvey, Samuel C., Bowling Green, Ohio. Railway signaling device	814,376	Mar. 6	761	153-4	121	100
Haseltine, Seward A., Springfield, Mo. Pill and tablet counting machine	817,852	Apr. 17	2586	558	121	2037
Haskell, Louis W., and E. W. Thompson, New York, N. Y. Press-box	815,291	Mar. 13	2584	544	121	623
Haskins, James H., San Diego, Cal., assignor of one-half to International Harvester Company, Chicago, Ill. Bolt-threading machine	816,322	Mar. 27	4761	1007-9	121	1193
Haslam, John, Darlinghurst, New South Wales, Australia. Construction of skylights	818,624	Apr. 24	4161	894	121	2430
Haslerud, Peter K., *et al.* (See Anderson, Alfred, assignor.)						
Hat Manufacturers Supply Co. (See Taylor, Joseph, assignor.)						
Hatch, George, South Windham, Conn. Mangle	815,820	Mar. 20	3720	784	121	916
Hatch, Melvin D., Lincoln, Nebr. Corn-harvester	815,530	Mar. 20	3114	650-1	121	786
Hatfield, Frank K., assignor to F. F. Hicks, Boston, Mass. Burnishing-machine	818,167	Apr. 17	3234	695	121	2178
Hatfield, Samuel P., New York, N. Y. Apparatus for laying electric conductors	815,163	Mar. 13	2335	488	121	565
Hathamite Company. (See Hathaway, George M., assignor.)						
Hathaway, George M., deceased; L. E. Hathaway, administratrix, assignor to Hathamite Company, Wellsboro, Pa. Explosive compound	815,821	Mar. 20	3723	.....	121	917
Hathaway, Lelia E., administratrix. (See Hathaway, George M.)						
Hatherly, James T. and T. H., New Westminster, Canada. Adjuster for electric-light cords	817,557	Apr. 10	2014	424	121	1856
Hatherly, Thomas H. (See Hatherly, James T. and T. H.)						
Hatton, Lemuel C., *et al.* (See McCann, Daniel, assignor.)						
Hauck, Arthur E., New York, N. Y. Propeller attachment for boats	818,245	Apr. 17	3398	728	121	2212
Hauf, George, Milwaukee, Wis. Horseshoe	814,782	Mar. 13	1581	333	121	405
Haugen, John H. (See Strand and Haugen.)						
Haugh, William S., *et al.* (See Hellstrom, John A., assignor.)						
Hause, Warren C., and F. M. Marlin, Enumclaw, Wash. Carpenter's tool	818,958	Apr. 24	4813	1035	121	2572
Hauser Company. (See Woodford, Frank E., assignor.)						
Hausfeld, Joseph E., Cincinnati, Ohio, and V. E. Treise, Dayton, Ky., assignors to E. H. Huenefeld, Cincinnati, Ohio. Hinge	814,288	Mar. 6	557	117	121	120
Hausmann, Caspar F., St. Gall, Switzerland. Uterine dilator	817,973	Apr. 17	2845	616	121	2095
Hausmann, Paul F. (See Turner and Hausmann.)						
Haviland, Henry F., East Orange, N. J., assignor of one-half to A. W. Fox, Brooklyn, N. Y. Socket for bottles	816,979	Apr. 3	372	180	121	1552
Hawes, Charles A., Cambridge, Mass. Pocket-case for mileage-books, baggage-checks, &c.	814,205	Mar. 6	391	79	121	88
Hawes, Winfield S., Butte, Mont. Combined envelop and souvenir-album	814,843	Mar. 13	1698	355	121	429
Hawkes, Charles W., Chicago, Ill. Steam-boiler	814,206	Mar. 6	392	79-80	121	88
Hawkes, Charles W., Springfield, Ill. Water-jacket	815,013	Mar. 13	2028	425	121	497
Hawkins, George E., H. M. and C. P. Stevens, Welborn, Fla. Quail-trap	814,207	Mar. 6	394	80	121	87
Hawkins, Harold E., Kansas City, Mo. Paper-clip	815,348	Mar. 20	2751	573	121	706
Hawkins, Lorenzo P., Portland, Me. Skiving-machine	815,702	Mar. 20	3460	722	121	863
Hawkins, Rollyn, Indianapolis, Ind. Dust deflector and catcher for radiators	818,026	Apr. 17	2951	637-8	121	2118
Hawkins, Thomas, London, England. Apparatus for embossing paper	816,657	Apr. 3	233	54	121	1412
Hawley, Charles G., assignor to Holland Company, Chicago, Ill. Flexible fluid-joint	814,289	Mar. 6	558	117	121	120
Hawley, John B., Walton, N. Y. Cutting-tool	814,447	Mar. 6	908	186	121	196
Hawley, Tracy F. (See Eastman and Hawley.)						
Hawthorne, Ellsworth A., *et al.* (See Pancoast, Edwin A., assignor.)						
Hay-Hay, Charles, Red Lodge, Mont. Bridle	815,703	Mar. 20	3461	722	121	863
Hayden, Joel, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company. Ring spinning and twisting apparatus	814,783	Mar. 13	1582	334	121	405
Hayden, Joel, Jr., Boston, Mass., assignor, by mesne assignments, to Hayden Machinery Company. Ring spinning and twisting apparatus	814,844	Mar. 13	1700	355	121	429
Hayden Machinery Company. (See Hayden, Joel, Jr., assignor.)						
Hayes, Alfred. (See Hansen and Hayes.)						
Hayes, Alfred, Coalville, Utah. Wrench	817,709	Apr. 10	2267	486	121	1909
Hayes, Edward. (See Bobbitt and Hayes.)						
Hayes, Franklin W., and C. A. Billings, Wendling, Cal. Pulling-machine for steamboats, &c.	815,014	Mar. 13	2029	425-6	121	497
Hayes, Junius J. (See Oler, Fugal, and Hayes.)						
Hayes Manufacturing Company. (See Thompson, Bert E., assignor.)						
Hayes, Watson W. (See Moore, Sargant Z., assignor.)						
Hayner, William E., Springboro, Ohio. Halter	815,164	Mar. 13	2336	488	121	566

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hayner, William M. (See Gilfillan, Ecsington N., assignor.)						
Hayward Company. (See Morris, Charles A., assignor.)						
Hayward, Eugene, assignor of one-half to S. F. Rush and one-third to J. B. Morris, Chicago, Ill. Railway frog and crossing	816,911	Apr. 3	724	149	121	1519
Hayward, Jonathan B. (See Strong, Arthur J., assignor.)						
Haywood, Daniel H. (See Carlson and Haywood.)						
Hazel, George W., Aurora, Ill. Tide and wave motor	817,317	Apr. 10	1526	320	121	1753
Hazel, George W., Aurora, Ill. Tide or wave motor	817,318	Apr. 10	1527	320–1	121	1753
Heafer, Roscoe L., Bloomington, Ill. Match-box	818,246	Apr. 17	3402	728	121	2213
Heafer, Roscoe L., Bloomington, Ill. Pipe or tile cutting machine	818,959	Apr. 24	4814	1035	121	2573
Heagele, Arthur, assignor of one-half to J. Price, Philadelphia, Pa. Portable cabinet for cuspidors	817,710	Apr. 10	2268	488	121	1909
Heald, John. (See Reed and Heald.)						
Heald Machine Company. (See McAfee, Morgan E., assignor.)						
Healey, James A., Wakefield, Mass., assignor to American Toy Manufacturing Company. Educational appliance	814,653	Mar. 6	1302	274	121	282
Healy, John J., assignor of one-half to S. F. Hess, Rochester, N. Y. Valve for pneumatically-operated devices	819,013	Apr. 24	4919	1056	121	2596
Healy, William H., San Francisco, Cal. Cylinder-pier construction	814,959	Mar. 13	1898	399	121	470
Healy, William P. (See Miller, Julius J., assignor.)						
Heath, Frank, National City, Cal. Pocket-camera	817,243	Apr. 10	1380	290–1	121	1724
Heath, Frank, National City, Cal. Pocket-camera	817,244	Apr. 10	1385	291	121	1726
Heath, Frank, National City, Cal. Pocket-camera	817,245	Apr. 10	1387	292	121	1726
Heaton, John S., assignor of two-thirds to H. McCreight and C. M. Lewis, Shelbyville, Ky. Car-rail hose-bridge	817,558	Apr. 10	2016	425	121	1856
Hebig, Max. (See Vogt and Hebig.)						
Heckart, William, Bradner, Ohio. Shock-loader	817,370	Apr. 10	1623	343	121	1775
Heckert, William, Findlay, assignor of one-half to H. W. Seney, Toledo, Ohio. Engine.	816,464	Mar. 27	5046	1071–2	121	1253
Heckert, William, Findlay, assignor of one-half to H. W. Seney, Toledo, Ohio. Gas-engine	816,549	Mar. 27	5226	1108	121	1294
Hedbavny, Anton. (See La Marche and Hedbavny.)						
Hedges, Hardin W., Chase, Kans. Carbon-sheet holder	817,769	Apr. 17	2411	516	121	1998
Heene, George W., Cleveland, Ohio, assignor to Automatic Stamping Machine Company, Phœnix, Ariz. Ter. Blank	815,349	Mar. 20	2752	573	121	706
Heermans, Thaddeus W., Evanston, Ill. Automatic brake for power-actuated elevators	815,015	Mar. 13	2031	426	121	498
Hegbom, Marselius, assignor to F. Voss, Chicago, Ill. Supporting means for metallic laths	815,292	Mar. 13	2586	544	121	623
Hegeman, Benjamin A., Jr. (See Ames, John M., assignor.)						
Heggem, John B., Chicago, Ill. Paddle-wheel	817,711	Apr. 10	2269	488	121	1909
Heibel, Henry, Chicago, Ill., assignor, by mesne assignments, to Combination Urn Manufacturing Company. Coffee-urn	814,960	Mar. 13	1899	399	121	470
Heichert, Herman S., Pittsburg, Pa. Apparatus for teeming metal	817,063	Apr. 3	1022	210–11	121	1585
Heierding, Fred E., Oklahoma, Okla. Ter. Perch-support	818,538	Apr. 24	3978	854	121	2390
Heim, Lewis R., Danbury, Conn. Machine for ironing fold-collars	818,247	Apr. 17	3403	729	121	2215
Heindorf, Oscar, London, England, assignor to J. Murphy, Brooklyn, N. Y. Solderless seam for sheet-metal vessels	818,438	Apr. 24	3769	810	121	2347
Heindorf, Oscar, London, England, assignor to J. Murphy, Brooklyn, N. Y. Forming hermetic seams in sheet metal	818,439	Apr. 24	3770	810	121	2347
Heinle, Albert W., Crafton, assignor of one-half to J. Noland, Pittsburg, Pa. Metal-bending machine	817,246	Apr. 10	1390	293	121	1727
Heinrich, Stephen J., Bellevue, assignor to American Electric Alarm Company, Pittsburg, Pa. Fire-alarm box	816,465	Mar. 27	5051	1073	121	1254
Heinze, John O., Jr., Lowell, Mass. Dynamo-magnetic-power transmission device	816,912	Apr. 3	726	149–50	121	1519
Heitmann, Arnold H. C., and E. C. Clemmensen, assignors to Parke, Davis & Company, Detroit, Mich. Alkyl-oxyacetyl-cyanamid and making same	814,693	Mar. 13	1411	.....	121	368
Heizer, Alexander L. (See Heizer, Edward L. and A. L.)						
Heizer, Edward L. and A. L., Anderson, Ind. Weighing-scoop	817,974	Apr. 17	2847	617	121	2096
Hele-Shaw, Henry S., Liverpool, England. Clutch mechanism	814,132	Mar. 6	258	50–2	121	57
Hele-Shaw, Henry S., Liverpool, England. Starting, stopping, speed-controlling, and reversing gear	814,133	Mar. 6	262	52	121	58
Hellich, Mathis, Guensbach, assignor to Elsaessische Apparatefabrik & Metallgiesserei A. Struedel & J. Guntz, Strassburg-Königshofen, Germany. Device for applying cops to loom-shuttle spindles	817,770	Apr. 17	2413	516	121	1998
Hellman, Henry, and L. C. Bayles, Johannesburg, Transvaal. Rock-drill or rock-drilling machine	816,090	Mar. 27	4285	908	121	1092
Hellmann, Heinrich W., Berlin, Germany. Steering-propeller for boats	816,163	Mar. 27	4431	937	121	1122
Hellstrom, John A., Pittsburg, assignor of two-thirds to W. S. Haugh, Allegheny, and J. T. Rowley, Pittsburg, Pa. Hotbed	816,323	Mar. 27	4766	1009–10	121	1194
Helm, John E. (See Kinzey, Mortimer, assignor.)						
Helmer, Robert, Hector, Minn. Mechanical toy	817,771	Apr. 17	2414	517	121	1998
Helmer, Robert, Hector, Minn. Dancing toy	817,772	Apr. 17	2417	517	121	1999
Hemingway, John, Lynn, Mass. Pelt-cleaner	816,466	Mar 27	5056	1073–4	121	1254
Hempel, Henry A., assignor of one-half to J. A. Dingens, Buffalo, N. Y. Printer's quoin.	816,324	Mar. 27	4768	1010	121	1194
Henderson, Alexander, assignor to J. Henderson, Jersey City, and M. Schalscha, Hoboken, N. J. Dumping-bucket	816,579	Apr. 3	44	11	121	1364
Henderson, Edwin L., Pleasant Ridge, assignor to Kemper-Thomas Company, Norwood, Ohio. Bill-file for bills, receipts, and the like	815,427	Mar. 20	2932	608	121	747
Henderson, George W. (See McKinney and Henderson.)						
Henderson, James, assignor to Sheffield Car Company, Three Rivers, Mich. Nozzle	814,694	Mar. 13	1412	293	121	368
Henderson, John, *et al.* (See Henderson, Alexander, assignor.)						
Hendrix, Jacob R., Elizabethton, Tenn. Feed-regulator	818,375	Apr. 17	3638	780–1	121	2263
Henerlau, Otto L., Newark, N. J. Shirt-stud	814,042	Mar. 6	85	16	121	20
Henneböhle, Frank, Chicago, Ill. Balanced hydraulic valve	817,773	Apr. 17	2418	517–18	121	1999
Henrich, John G., London, England. Siphon-bottle	816,091	Mar. 27	4290	909	121	1093
Henrichsen, Olaf, New York, N. Y. Race-course machine	815,165	Mar. 13	2337	480	121	586
Henry Disston and Sons. (See Charlton, Richard C., assignor.)						
Hepp, Daniel, Chicago, Ill. Workman's time-recorder	814,602	Mar. 6	1197	260–1	121	259
Herbert, Charles, *et al.* (See Wöehle, William, assignor.)						
Herbert, William J., New York, N. Y. Street-car	814,043	Mar. 6	88	16–17	121	20
Hercules, George W., and T. J. Martin, Beaver, Pa. Switch-throwing device	816,913	Apr. 3	726	150	121	1520
Hercules Manufacturing Company. (See Sheakley, Arthur M., assignor.)						
Herendeen Manufacturing Company. (See Dean, Mark, assignor.)						
Hergert, Frederick W. (See Lummis and Hergert.)						
Herkner, Paul E., Berlin, Germany, assignor to General Electric Company. System of trolley-wire suspension	816,467	Mar. 27	5057	1074	121	1255

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Herman, Elmer E., *et al.* (See Bollenbach, Friedrich, assignor.)						
Herman, Frederick, Lincoln, Nebr. Blindstitching sewing-machine	814,603	Mar. 6	1201	251-2	121	260
Herman, Reinhold, Crafton, Pa., assignor to General Electric Company. Relay	815,822	Mar. 20	3724	784-5	121	917
Hermetic Closure Co. (See Landsberger, Julius A., assignor.)						
Héroult, Paul L. T., La Praz, assignor to Société Electro-Metallurgique Francaise, Froges, Isère, France. Smelting iron ore	815,016	Mar. 13	2037	426	121	499
Héroult, Paul L. T., La Praz, assignor to Société Electro-Metallurgique Francaise, Froges, Isère, France. Apparatus for smelting iron ore	815,293	Mar. 13	2587	544	121	624
Herrnecker, George H., Hornellsville, N. Y. Cabinet	818,248	Apr. 17	3405	730	121	2214
Hersey Manufacturing Company. (See Tilden, James A., assignor.)						
Hertenstein, Emil, assignor of one-half to M. Port, Meriden, Conn. Permutation-lock	815,166	Mar. 13	2339	490	121	566
Heskett, Thomas J. (See Moore and Heskett.)						
Hess, Charles E., Saco, Mont. Neck-yoke	818,168	Apr. 17	3236	695	121	2179
Hess, John. (See Clowry, William H., assignor.)						
Hess, Solomon F. (See Healy, John J., assignor.)						
Hess, Wendell, Jr., Troy, N. Y., assignor to International Shirt & Collar Co. Shirt	818,440	Apr. 24	3771	810	121	2347
Hesser, Otto, Cannstatt, Germany. Adhesive-applying device	817,559	Apr. 10	2017	425	121	1856
Hetherington, Edwin, Cedar Rapids, Iowa. Hub-attaching device	817,113	Apr. 3	1098	228	121	1602
Hetherington, Frederick A., Indianapolis, Ind. Screen and storage-bin for asphalt	816,229	Mar. 27	4550	967	121	1148
Hetzel, Frederic V., assignor to Link Belt Engineering Company, Philadelphia, Pa. Chain-link	816,325	Mar. 27	4769	1010	121	1194
Hetzel, Frederic V., and F. F. Waechter, assignors to Link Belt Engineering Company, Philadelphia, Pa. Hoisting-bucket	815,823	Mar. 20	3728	785	121	918
Heughes, Frederick L., Rochester, N. Y. Joist hanger or stirrup	818,689	Apr. 24	4285	920	121	2458
Heupel, Frederick K., assignor of two-thirds to A. Holloran and G. M. Winship, Washington, D. C. Sash-fastener	817,712	Apr. 10	2270	489	121	1910
Heward, James L., Cardiff, England. Tire for vehicle-wheels	817,560	Apr. 10	2019	425	121	1856
Hewett, Robert J., Westfield, N. J., assignor to Hall Signal Company. Electrical circuit and device	818,169	Apr. 17	3237	695-6	121	2179
Hewett, Robert J., Westfield, N. J., assignor to Hall Signal Company. Electrical device and circuit	818,170	Apr. 17	3241	696	121	2180
Hewitt, Peter C., assignor to Cooper Hewitt Electric Company, New York, N. Y. Vapor electric lamp	814,695	Mar. 13	1413	294	121	368
Hewitt, Peter C., assignor to Cooper Hewitt Electric Company, New York, N. Y. Produci g light	814,696	Mar. 13	1414	294	121	369
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. High-potential switch or circuit-breaker	815,824	Mar. 20	3729	785-6	121	918
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Electric switch	815,825	Mar. 20	3734	786	121	919
Hewlett, Edward M., Schenectady, N.Y., assignor to General Electric Company. Making and breaking high-potential circuits	816,468	Mar. 27	5059	1074-5	121	1255
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Fuse-box	816,469	Mar. 27	5062	1075	121	1256
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Arc-extinguishing cut-out	818,376	Apr. 17	3640	781-2	121	2264
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Reverse-current relay	818,377	Apr. 17	3642	782	121	2264
Heyden, Gustav. (See Gerike, Hugo, assignor.)						
Heylman, Edward M., assignor to Janesville Machine Company, Janesville, Wis. Plow	817,114	Apr. 3	1101	228-30	121	1603
Heym, Friedrich. (See Böttcher and Heym.)						
Heyne, Bernhard. (See Reichert and Heyne.)						
Hibbard, Henry D., Plainfield, N. J. Safe or vault door seating machine	817,774	Apr. 17	2420	518	121	2000
Hibbard, John O. (See Lowe and Hibbard.)						
Hibbard, Maury W., Chicago, Ill. Fluid-pressure brake	816,859	Apr. 3	618	129-30	121	1496
Hibner, George F., Concordia, Kans. Foot-scraper	817,171	Apr. 10	1232	253	121	1693
Hickok, Lester E., Mechanicsburg, Pa. Vehicle-gear	814,845	Mar. 13	1701	356	121	430
Hickok, Lester E., Mechanicsburg, Pa. Vehicle-gear	814,846	Mar. 13	1702	356	121	430
Hicks, Francis F. (See Hatfield, Frank K., assignor.)						
Hicks, George C., Chicago, Ill. Stove-lining	818,690	Apr. 24	4287	920	121	2458
Hicks, George C. Chicago, Ill. Stove-lining	818,763	Apr. 24	4447	953	121	2494
Hicks, George C., Jr., assignor to P. H. & F. M. Roots Company, Connersville, Ind. Wheel-fastening	818,171	Apr. 17	3245	696	121	2181
Hicks, James A., Atlanta, Ga. Feathering-blade paddle-wheel	818,825	Apr. 24	4573	980	121	2520
Hicks, James B. (See Harris, Joseph B., assignor.)						
Higbee, Harriet A., Worcester, Mass., assignor to H. D. Perky, Glencoe, Md. Cooking-machine	814,540	Mar. 6	1085	224-5	121	236
Higgin, Henry, assignor to Higgin Manufacturing Company, Newport, Ky. Laundry-tag	818,441	Apr. 24	3772	811	121	2348
Higgin Manufacturing Company. (See Higgin, Henry, assignor.)						
Higgins, Fred H., Brockton, Mass. Shoe-former	818,900	Apr. 24	4815	1036	121	2573
Higgins, James F., New Orleans, La. Hydrocarbon-burner	816,470	Mar. 27	5063	1075	121	1256
Higgins, Joseph, New York, N. Y. Trimmer and binder for sewing-machines	815,428	Mar. 20	2933	608-9	121	747
Hile, Oliver, Princeton, and C. Rocke, Lincoln, Nebr. Anchor	815,588	Mar. 20	3217	677	121	808
Hill, Charles G., Daybrook, England. Stop-motion for circular looms	814,290	Mar. 6	560	118-19	121	121
Hill, Edward A., assignor to Chicago Grain Door Company, Chicago, Ill. Grain-door	816,230	Mar. 27	4551	968-9	121	1148
Hill, George H., Schenectady, N. Y., assignor to General Electric Company. Train-control system	815,826	Mar. 20	3737	786-7	121	920
Hill, Jacob G., Reading, Pa. Saw-guard	816,326	Mar. 27	4770	1010	121	1195
Hill, James H., assignor to Defiance Lantern & Stamping Company, Rochester, N. Y. Lantern	817,914	Apr. 17	2727	592	121	2008
Hill, Joseph, Derby, England. Book, diary, album, &c., for the preservation of cigar bands or labels	818,961	Apr. 24	4817	1036	121	2573
Hill, Stephen R., Battle Creek, Nebr. Riding attachment for harrows	815,531	Mar. 20	3118	651	121	787
Hill, Walter, St. Paul, and W. Dalgarno, Minneapolis, Minn. Muffler	816,231	Mar. 27	4554	969	121	1148
Hill, William, Alexandria, La. Cotton-compress	818,172	Apr. 17	3247	696-7	121	2182
Hill, William A., St. Paul, Ark. Rail-joint	817,064	Apr. 3	1024	211	121	1585
Hillen, George P., Louisville, Ky. Stop and waste cock	816,795	Apr. 3	475	105	121	1462
Hillenbrand, Charles W., assignor of seven-eighths to N. C. Barnes, Kansas City, Mo. Portable turn-table	819,014	Apr. 24	4921	1056-7	121	2596
Hiller, Hugo L. (See Abramson, Sherman C., assignor.)						
Hillis, Robert, East Orange, N. J., and W. J. Hillis, New York, N. Y. Gas-pressure regulator and governor	814,604	Mar. 6	1206	252	121	261
Hillis, William J. (See Hillis, Robert and W. J.)						
Hillman, Hubert E., Hu kleberry, Ohio. Fence-post	815,069	Mar. 13	3175	456	121	529
Hills, Richard C., Denver, Colo. Briqueting-machine	815,532	Mar. 20	3119	652-4	121	787
Hills, Richard C., Denver, Colo. Conveyer	817,115	Apr. 3	1115	230-1	121	1603

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Hilton, Thomas, Fall River, Mass. Weft-fork for looms	817,915	Apr. 17	2729	592	121	2068
Hinchman, John. (See Gates, James A., assignor.)						
Hinckley, Henry D., assignor to C. R. Keeney and Hinckley Specialty Company, Hartford, Conn. Antislip attachment for ladders	816,914	Apr. 3	730	151	121	1520
Hinckley Specialty Company *et al.* (See Hinckley, Henry D., assignor.)						
Hiniker, Frank, Chinese Camp, Cal. Hay-baler	814,697	Mar. 13	1415	294	121	369
Hinkle, Benjamin B. (See Hodson, Edwin D., assignor.)						
Hinkly, Ray B., Luverne, Minn. Rotary engine	814,044	Mar. 6	90	17	121	21
Hinkson, James R., New York, N. Y. Cigar-box	814,784	Mar. 13	1584	334	121	405
Hinman, Robert M., Akron, Ohio. Fire-pot	815,959	Mar. 27	4005	848	121	1028
Hipp, Frank J., New Brighton, Minn. Folding crate	816,164	Mar. 27	4433	937–8	121	1123
Hipwell, John B., assignor to Windsor Machine Company, Reading, Pa. Knitting-machine	815,167	Mar. 13	2341	490–1	121	567
Hipwell, John B., assignor to Windsor Machine Co., Reading, Pa. Knitting-machine	817,775	Apr. 17	2423	518–20	121	2000
Hipwell, John B., assignor to Windsor Machine Co., Reading, Pa. Picker mechanism for knitting-machines	817,776	Apr. 17	2430	520	121	2002
Hirsch, Isaac, Chicago, Ill. Scale-beam for weighing-scales	817,428	Apr. 10	1755	368	121	1802
Hirsch, Joseph. (See Brown and Hirsch.)						
Hirsch, Morris, New York, N. Y. Folding box	815,704	Mar. 20	3463	723	121	863
Hirth, Michael, Butler, Pa. Gas-light chandelier	814,448	Mar. 6	910	187	121	198
Hitt, Adrian, Jersey City, N. J., assignor to O. W. Badger, New York, N. Y. Progressing hobby-horse	818,826	Apr. 24	4575	981	121	2520
Hitzel, Harry, assignor to Alpha Portland Cement Company, Alpha, N. J. Rotary cement-kiln	815,705	Mar. 20	3466	723–4	121	864
Hjelkrem, Olof, Chicago, Ill. Tank	818,088	Apr. 17	3062	660	121	2141
Hoagland, Ellery M., San Francisco, Cal. Door-securer	816,327	Mar. 27	4771	1011	121	1195
Hoar, Samuel, Hibbing, Minn. Snap-hook	817,561	Apr. 10	2021	426	121	1856
Hoard, James L. (See Taylor and Hoard.)						
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill. Gas-purifier	814,698	Mar. 13	1417	295	121	369
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill. Gas-producer	817,853	Apr. 17	2589	558	121	2037
Hobson, John S., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Clip for detector-bars	816,658	Apr. 3	234	54–5	121	1412
Hodge, Schuyler C. (See Harrington and Hodge.)						
Hodson, Edwin D., assignor of one-half to B. B. Hinkle, Canton, Ill. Miner's lamp	816,725	Apr. 3	344	79	121	1436
Hoe, Robert. (See Balze, John C. F., assignor.)						
Hoe, Robert. (See Scull, George F., assignor.)						
Hoeglauer, Heinrich, Munich, Germany. Bathing apparatus	818,887	Apr. 24	4677	1004	121	2542
Hoehne, Ferdinand F., and A. Denzer, assignors of one-third to O. M. Farwell, Kaukauna, Wis. Friction-clutch	815,168	Mar. 13	2346	491	121	568
Hoenigsberger, Henry. (See Freund, Joseph, assignor.)						
Hoey, John J., New York, N. Y. Memorandum-book	814,699	Mar. 13	1419	295	121	370
Hofer, Hans, New York, N. Y. Assorting silks	815,169	Mar. 13	2348	.....	121	568
Hoffa, William, St. Paul, Nebr. Flue-cutter	817,319	Apr. 10	1529	321	121	1753
Hoffman, Charles A., Minneapolis, Minn. Combined eyeglass and spectacle mounting	815,827	Mar. 20	3745	787	121	922
Hoffman, Edmund, Brooklyn, assignor to S. S. Stafford, Incorporated, New York, N. Y. Paste-pot cover	816,659	Apr. 3	235	55	121	1412
Hoffman, Frank K., Dunkirk, N. Y. Railway switch mechanism	815,533	Mar. 20	3125	654	121	788
Hoffman, Joseph M., assignor of one-half to J. F. Nelson, Brooklyn, N. Y. Antislipping removable sole for shoes	818,173	Apr. 17	3249	697	121	2182
Hoffman, William W., La Fayette, and F. W. Powers, West Lafayette, assignors to Electric & Steam Ry. Supply Co., La Fayette, Ind. Railway-switch	818,378	Apr. 17	3644	782–3	121	2265
Hoffmann, Otto, Chicago, Ill. Caster	818,442	Apr. 24	3773	811	121	2348
Hofmann, Alfred, Gothenburg, Sweden. Apparatus for printing yarns	816,796	Apr. 3	476	106	121	1462
Hogan, Charles F. (See Harriss and Hogan.)						
Hogan Manufacturing Company. (See Hogan, Matthew, assignor.)						
Hogan, Matthew, assignor to Hogan Manufacturing Company, Hartford, Conn. Flush-tank	814,208	Mar. 6	395	80	121	87
Hogan, Peter W., Durand, Mich. Appliance for car-couplings	814,449	Mar. 6	911	187	121	199
Hoggard, Charles W., Plumstead, England. Device for testing strings for musical instruments	814,541	Mar. 6	1087	225	121	236
Hoisington, Daniel J., Crescent, Okla. Ter. Steam-engine valve	815,828	Mar. 20	3747	787–8	121	922
Holcomb, A. L. (See Baker, John W., assignor.)						
Holden, Edward P. (See Howe, Rix, and Holden.)						
Holden, George, Merchantville, N. J., assignor to Merritt and Company. Locking device	818,443	Apr. 24	3774	811	121	2348
Holden, George, Merchantville, N. J., assignor to Merritt and Company. Reticulated sheet-metal structure	818,444	Apr. 24	3775	811	121	2348
Holden, Joseph E. (See Southworth and Holden.)						
Holden, Maria E., Yonkers, N. Y. Storm-curtain for open cars	817,562	Apr. 10	2023	426	121	1857
Holes, Frank M., Ridgway, Pa. Tobacco-pipe	814,045	Mar. 6	91	17	121	21
Holland, Alonzo J., Hypoluxo, Fla. Motor-plow	818,962	Apr. 24	4818	1036	121	2573
Holland, Charles E., New York, N. Y., assignor to Holland Metal Recovery Company. Reclaiming waste gold and other valuable metals from water and other liquids	818,174	Apr. 17	3251	697	121	2183
Holland Company. (See Hawley, Charles G., assignor.)						
Holland, Jasper L. (See Martin, Ivison B., assignor.)						
Holland, John P., Newark, N. J. Submarine boat	815,350	Mar. 20	2753	573–4	121	706
Holland Metal Recovery Company. (See Holland, Charles E., assignor.)						
Holland, William, Philadelphia, Pa. Printing-press	814,785	Mar. 13	1584	334	121	405
Hollerith, Herman, Garrett Park, Md., assignor, by mesne assignments, to Tabulating Machine Company. Apparatus for use in tabulating and other like systems	814,700	Mar. 13	1420	295–6	121	370
Holley, Everett D., Forestville, assignor to Bristol Brass Company, Bristol, Conn. Lamp-burner	816,232	Mar. 27	4555	970	121	1149
Holliday, George E., Rock Rapids, Iowa, Grain-separator	815,017	Mar. 13	2039	427	121	499
Hollister, Elmer P., Jersey City, N. J. Road-cart	818,963	Apr. 24	4818	1037	121	2574
Holloran, Andrew, *et al.* (See Heupel, Frederick K., assignor.)						
Hollowell, John A., Memphis, Tenn. Candy-forming machine	817,563	Apr. 10	2024	426–7	121	1857
Holly, Forrest C., Yazoo City, Miss. Collapsible tube	814,605	Mar. 6	1207	252	121	261
Holman, John W., *et al.* (See Miller, Ernest H., assignor.)						
Holmes, Alexander, Eureka, Cal. Window-shade and roller adjustment	815,294	Mar. 13	2589	545	121	624
Holmes, Fred A. (See Leighton and Holmes.)						
Holmes, Fred A., Eastport, Me. Ice-cream freezer	816,092	Mar. 27	4291	909	121	1098
Holmes, George W., Greenfield, Ill. Wire-stretcher	818,379	Apr. 17	3649	783	121	2265
Holmes, Gustav E., A. G. and J. M. Bostrom, Milwaukee, Wis. Convertible sofa-bed	818,089	Apr. 17	3064	661	121	2141

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Holmes, Phineas, National Soldiers Home, Tenn. Railway-tie	814,701	Mar. 13	1425	296	121	371
Holms, James, Jr., Waimahaka, New Zealand. End for the spreaders of draft-chains and the like	814,291	Mar. 6	563	119	121	121
Holstein, Adolph M., Syracuse, N. Y. Making patterns for metal castings	814,209	Mar. 6	398	80-1	121	87
Holstein, P. A., *et al.* (See Terrell, Elah, assignor.)						
Holston, William H., New York, N. Y. Paper-clip for hats	818,380	Apr. 17	3651	784	121	2266
Holt, Alfred, California, Pa. Gage	815,829	Mar. 20	3751	788	121	923
Holt, Benjamin, Stockton, Cal. Wheel	815,295	Mar. 13	2591	545	121	624
Holt, James D., Carnegie, Pa. Reel	816,328	Mar. 27	4773	1011	121	1196
Holt, Seth M., Grays, Ky. Buckle	817,065	Apr. 3	1025	211	121	1585
Holton, Howard, Amsterdam, N. Y. Berry-seed separator	818,445	Apr. 24	3776	812	121	2340
Holub, Louis W., New York, N. Y. Grinding-machine	816,550	Mar. 27	5230	1109	121	1295
Holzinger, William M., *et al.* (See Bollenbach, Friedrich, assignor.)						
Homans, Thomas S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	814,542	Mar. 6	1090	226	121	237
Homberger, Herman E. (See Robbins, Edward P., assignor.)						
Honecker, Carl V., and O. W. Klipple, Brookville, Ind. Window-lock	814,702	Mar. 13	1426	297	121	371
Hood, James H., Springfield, Ill. Composite structure	814,134	Mar. 6	264	53	121	58
Hooper, James R., Pittsburg, Pa. Apparatus for producing images of objects	815,170	Mar. 13	2349	491-2	121	568
Hooper, Joseph C., San Francisco, Cal. Metallic reinforce for harness-collars	816,660	Apr. 3	236	55	121	1412
Hooper, William J. (See Scheele, Walter T., assignor.)						
Hoover, Frank K., and A. J. Mason, Chicago, Ill. Coal-pocket	816,797	Apr. 3	479	107	121	1462
Hope, Walter R., and G. A. Robinson, assignors of one-third to C. Fehrenbach, Wilmington, Del. Match-making machine	814,210	Mar. 6	402	81-4	121	87
Hope, William H., Providence, R. I. Door lock and latch	817,713	Apr. 10	2271	489	121	1910
Hopkins, Alton, Denver, Colo. Adjustable electrolier	815,830	Mar. 20	3752	789	121	923
Hopkins, James M. (See Stimson, Oscar M., assignor.)						
Hopkinson, Joseph, assignor to Computing Scale Company, Dayton, Ohio. Computing-scale	816,093	Mar. 27	4292	909	121	1093
Hopkinson, Joseph, assignor to Computing Scale Company, Dayton, Ohio. Price-scale	817,777	Apr. 17	2432	520	121	2002
Hopper, Henry S., Norfolk, Va. Toothpick and forming the same	815,534	Mar. 20	3127	654	121	789
Horgen, Charles J., New York, N. Y. Hoisting and conveying apparatus	815,706	Mar. 20	3468	724	121	864
Hormby, John, Woonsocket, R. I., assignor to Button Machinery Company, New York, N. Y. Gripping device or carrier for button-making machines	816,094	Mar. 27	4293	909	121	1094
Hornauer, Andreas W., Charlottenburg, Germany. Apparatus for observing the oscillations of light-beams	815,831	Mar. 20	3755	789	121	924
Horner, Jacob W., Columbus, Ind. Hypodermic syringe	814,543	Mar. 6	1092	226	121	237
Horney, James W. (See Anderson and Horney.)						
Horton, John T., New York, N. Y. Safety mechanism for hoists and the like	817,916	Apr. 17	2730	592	121	2069
Hoskin, John R. (See Harris and Hoskin.)						
Hoskin, William, and J. A. Noonan, Central City, Colo. Protector for pianos	814,544	Mar. 6	1094	227	121	238
Hosley, Nelson D., assignor to Wilcox & White Company, Meriden, Conn. Automatic combination-piano	816,726	Apr. 3	346	79-80	121	1437
Hottinger, Friedrich. (See Soller and Hottinger.)						
Hough, Hiram J., assignor to Fiebeger Heating Company, Akron, Ohio. Stove or furnace	814,703	Mar. 13	1427	297	121	372
Houghton, Philip S., and R. H. Deyarmond, Grand Forks, N. D. Gang-plow	814,046	Mar. 6	92	17-18	121	21
Houlahan, Denis, assignor of one-half to J. O'Connor, Toronto, Canada. Street-car fender	817,320	Apr. 10	1530	321-2	121	1753
Houldsworth, William, Manchester, England. Roller-bearing	816,798	Apr. 3	480	107	121	1463
House, Charles, assignor to Corrugated Bottle Company, Oneida, N. Y. Tool for shaping bottle-necks	818,691	Apr. 24	4288	920	121	2458
House, Everett T., Brooklyn, N. Y. Headed fastening device	816,095	Mar. 27	4295	910	121	1094
House, George V., Mount Vernon, N. Y. Truss	818,446	Apr. 24	3777	812	121	2349
House, Henry A., Bridgeport, Conn. Chain	816,096	Mar. 27	4296	910	121	1094
House, Henry A., Bridgeport, Conn. Air-pressure and vacuity indicator	817,778	Apr. 17	2435	521	121	2003
Houston, Frank P. (See Houston, Louis C., assignor.)						
Houston, Louis C., assignor of one-half to F. P. Houston, Parkersburg, W. Va. Car-wheel jack-stand	817,321	Apr. 10	1533	322	121	1754
Hovey, Alfred E. (See Tapley and Hovey.)						
Hovey, Alfred E., and J. E. Tapley, Cass Lake, Minn. Station-indicator	818,447	Apr. 24	3779	812	121	2349
Hovey, Elihu, and M. M. Black, Albion, Mich. Truss	818,888	Apr. 24	4679	1004	121	2542
Howard, Clara, Rice Lake, Wis. Soap-holder	816,860	Apr. 3	624	130	121	1497
Howard, Clarence H., St. Louis, Mo. Locomotive-engine frame	818,448	Apr. 24	3782	813	121	2350
Howard Electric Blasting Machine Company. (See Howard, James W., assignor.)						
Howard, Frederick M., Hamilton, Canada. Organ and piano	818,539	Apr. 24	3978	855	121	2390
Howard, Henry, Brookline, Mass. Steam-drying apparatus for motor-vehicles	818,625	Apr. 24	4162	895	121	2431
Howard, James W., assignor to Howard Electric Blasting Machine Company, Connellsville, Pa. Electric-fuse-igniting apparatus	817,483	Apr. 10	1868	393	121	1826
Howard, Leslie E., La Grange, Ill., assignor to Simonds Manufacturing Company, Fitchburg, Mass. Apparatus for casting crucible steel	817,714	Apr. 10	2273	489-90	121	1911
Howard Miniature Lamp Company. (See Plass, Herbert E., assignor.)						
Howden, James H., Neepawa, Canada. Rotary engine	818,964	Apr. 24	4821	1037	121	2574
Howe, Charles E. (See Wilson and Howe.)						
Howe, Charles E., Wabash, Ind., B. F. Rix, Kalamazoo, Mich., and E. P. Holden, Chicago, Ill., assignors to Wabash Manufacturing Company, Wabash, Ind. Wheel and making the same	818,175	Apr. 17	3252	697	121	2183
Howe and Davidson Company. (See Brown, Howard J., assignor.)						
Howe and Davidson Company. (See Davidson, Frank B., assignor.)						
Howe, Frank F., Marietta, Ohio. Telephone-receiver support	817,564	Apr. 10	2027	427	121	1868
Howze, James A. (See Shipp, Frederic F., assignor.)						
Hoxworth, Albert I. (See Harding and Hoxworth.)						
Hubbell, Harvey, Bridgeport, Conn. Insulating screw-shell	817,484	Apr. 10	1870	394	121	1826
Hubbell, Harvey, Bridgeport, Conn. Chain-guide for pull-sockets	817,486	Apr. 10	1871	394	121	1826
Hubbell, Harvey, Bridgeport, Conn. Incandescent-lamp cluster	817,642	Apr. 10	2161	456	121	1886
Hubert, Conrad, New York, N. Y. Portable electric light	818,449	Apr. 24	3783	813	121	2350
Hubley, Edwin J., assignor to J. L. McLaughlin, Lancaster, Pa. Wood-filler	814,847	Mar. 13	1704	.....	121	430
Huckleberry, Charles R., Paris, Ill. Broom-corn-cutting machine	815,018	Mar. 13	2040	427-8	121	499
Huebner, Irwin F. (See Keller and Bowers, assignors.)						
Huenefeld, Ernst H. (See Carter, John R., assignor.)						
Huenefeld, Ernst H. (See Hausfeld and Tresise, assignors.)						
Huff, George A., Chicago, Ill. Snap-hook	814,135	Mar. 6	266	53	121	59
Huffaker, Simpson, Woodruff, Utah. Wagon-body protector	817,565	Apr. 10	2029	428	121	1868
Huffer, Tilghman A., Lewisville, Tex. Bottle-neck	817,247	Apr. 10	1392	293	121	1727
Huffman, Irvin C., assignor of one-half to J. S. Huffman, Dublin, Ga. Lifting-jack	817,917	Apr. 17	2732	593	121	2069

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Huffman, J. S. (See Huffman, Irvin C., assignor.)						
Huffman, John S., Rockford, Ill. Fruit-jar and cover	815,171	Mar. 13	2350	492	121	560
Huffman, John S., Rockford, Ill. Bottle-stopper	815,172	Mar. 13	2351	492	121	560
Hughes, John W., Rogers, Ark. Milking-shield	815,429	Mar. 20	2936	609	121	748
Hughes, Thomas H., S. A. Johnson, and J. H. Sayle, St. Paul, Minn. Truck	817,779	Apr. 17	3437	521	121	2003
Hukill, William V., Bethany, W. Va., assignor to I. V. B. Cox, Ethel, Mo. Gun-sight	815,090	Mar. 13	2177	459	121	529
Hulett, Frank E., assignor to Wellman-Seaver-Morgan Company, Cleveland, Ohio. Operating mechanism for clam-shell buckets	818,626	Apr. 24	4163	895-6	121	2431
Hulett, George H., assignor to Wellman-Seaver-Morgan Company, Cleveland, Ohio. Car-dumping apparatus	814,704	Mar. 13	1429	297-8	121	372
Hull, Arthur E., assignor to B. S. McClellan, Chicago, Ill. Window	816,580	Apr. 3	46	[illegible]	121	1364
Hull, Arthur E., assignor to B. S. McClellan, Chicago, Ill. Weather-strip	818,764	Apr. 24	4448	953	121	2494
Hull, Foster J. (See Dement and Hull.)						
Hull, Foster J., Brooklyn, assignor to American Mechanical Cashier Company, New York, N. Y. Register	818,249	Apr. 17	3407	730	121	2214
Hull, Joseph V., Brooklyn, assignor to H. C. Blye, New York, N. Y. Safety-closure for bottles, jars, and other receptacles	819,015	Apr. 24	4925	1057	121	2597
Hull, Matthew R., assignor to Rex Buggy Company, Connersville, Ind. Storm-shield for vehicles	816,013	Mar. 27	4113	871	121	1054
Hull, William H. (See Spaulding, Frank M., assignor.)						
Hulse, Edwin M., Columbus, Ohio, assignor to Geneva Furniture Manufacturing Company, Geneva, N. Y. Combined couch and bed	818,250	Apr. 17	3409	731	121	2215
Humbert, Frank J., Max, N. D. Horse-detacher	818,176	Apr. 17	3254	698	121	2184
Hummel, Mathilde. (See Hummel, Philipp, assignor.)						
Hummel, Philipp, assignor to M. Hummel, Strassburg, Germany. Conveyer-band for cigarette-making machines	814,906	Mar. 13	1802	377	121	451
Hummer, Arthur C., Seattle, Wash. Butter-cutter	817,486	Apr. 10	1873	394	121	1826
Hummer, Arthur C., Seattle, Wash. Butter-cutter	817,487	Apr. 10	1874	396	121	1827
Humphrey Company. (See Humphrey, Herbert S., assignor.)						
Humphrey, Henry H., assignor to Austin Separator Company, Detroit, Mich. Steam-separator	817,715	Apr. 10	2276	490	121	1911
Humphrey, Herbert S., assignor to Humphrey Company, Kalamazoo, Mich. Water-heater	817,116	Apr. 3	1118	232	121	1600
Humphrey, James D., Towanda, Pa. Numbering and stamping machine	817,429	Apr. 10	1756	380	121	1802
Hungerford, Churchill, Philadelphia, Pa., assignor to Hungerford Filter Corporation, Jersey City, N. J. Filter-valve	814,136	Mar. 6	267	53	121	59
Hungerford, Churchill, Philadelphia, Pa., assignor to Hungerford Filter Corporation, Jersey City, N. J. Filter-valve	814,211	Mar. 6	411	84	121	90
Hungerford Filter Corporation. (See Hungerford, Churchill, assignor.)						
Hunkins, Adelbert B., Austin, Minn. Addressing-machine	815,832	Mar. 20	3756	789-90	121	924
Hunnicutt, Charles, Wilmington, Ohio. Single-delivery match-box	816,799	Apr. 3	482	107	121	1463
Hunt, Helm, Ferris & Company. (See Ferris, Henry L., assignor.)						
Hunt, James H., Massillon, Ohio. Razor-blade holder	817,566	Apr. 10	2030	428	121	1859
Hunter, David E., Cambridge, assignor to Library Bureau, Boston, Mass. Rod for card-indexes	816,097	Mar. 27	4299	910	121	1096
Hunter, David E., Cambridge, assignor to Library Bureau, Boston, Mass. Card-holder	818,090	Apr. 17	3067	661	121	2142
Hunter, James E., North Adams, Mass. Variable-speed counter-shaft mechanism	818,450	Apr. 24	3787	813-14	121	2351
Hunter, Robert, Spokane, Wash. Reversible handle attachment for planes	816,980	Apr. 3	873	181	121	1552
Hunter, Sidney, St. Louis, Mo. Pneumatic tire	817,066	Apr. 3	1026	211	121	1596
Hurford, Oliver P., Chicago, Ill. Hog-hoist	816,233	Mar. 27	4556	970	121	1149
Hurley, Daniel, Providence, R. I., assignor to General Electric Company. Governing mechanism for turbines	815,833	Mar. 20	3762	790-1	121	925
Hurley, William H. (See Mathein, Frank J., assignor.)						
Hurry, Edward H., Bethlehem, Pa. Pulverizing-mill	814,961	Mar. 13	1902	400	121	471
Huser, Frank A., Hamilton, Ohio. Vending-machine	815,173	Mar. 13	2352	492	121	560
Hussey, John R., Indianapolis, Ind. Drier	817,643	Apr. 10	2162	459-60	121	1887
Huston, David H. (See Erb and Powlison, assignors.)						
Hutchins, Francis E., Warren, Ohio. Instrument for measuring angles	814,292	Mar. 6	564	119-20	121	121
Hutchinson, Charles G., Philadelphia, assignor of three-fifths to J. W. Rowland, O. D. Bleakley, and C. W. Mackey, Franklin, Pa. Individual car-lift	815,834	Mar. 20	3765	792	121	926
Hutchinson, George, Seatoun, New Zealand. Milking-machine	814,212	Mar. 6	412	85	121	90
Hutchison, Joseph C., Philadelphia, Pa. Conveyer for pie-making machines	815,707	Mar. 20	3471	724	121	865
Hutchison, Joseph C., Philadelphia, Pa. Machine for making pies	817,488	Apr. 10	1876	395	121	1827
Hutchison, Maurice F., Floris, Va., assignor of one-fourth to C. E. Riordon, Washington, D. C. Lock	817,567	Apr. 10	2031	428	121	1859
Huth, Albert G., Onondaga Valley, N. Y. Blouse	817,172	Apr. 10	1233	254	121	1603
Huther, Angus E. (See Huther, Warren B., assignor.)						
Huther, Warren B., assignor of one-half to A. E. Huther, Rochester, N. Y. Cutting-head	817,568	Apr. 10	2033	428	121	1859
Hyatt, Benjamin S. (See Robbins and Hyatt.)						
Hyatt, John W., Newark, N. J. Shoe for pneumatic tires	814,377	Mar. 6	764	154-5	121	169
Hyde, Samuel W., Boise, Okla. Ter. Hymn-indicator	814,213	Mar. 6	415	86	121	90
Hyman, Robert L. (See Turner and Hyman.)						
Ideal Concrete Machinery Company. (See Borst, Frank A., assignor.)						
Ihle, Gustav, Berlin, assignor to M. Steinberg, Charlottenburg, near Berlin, and M. Tritter, Berlin, Germany. Speed-indicator	815,708	Mar. 20	3472	725	121	865
Ilohan, Anthony H., Oakland, Cal. Cross-arm for electric or signal wires	816,981	Apr. 3	874	181	121	1552
Illig, Edward E., New York, N. Y. Filing-case	815,535	Mar. 20	3128	654	121	789
Illig, Henry G. (See Halliburton, Martin J., assignor.)						
Illinois-Pacific Glass Company. (See Mackin, Francis J., assignor.)						
Imperial Ore Separator Company. (See Moffatt, Richard R., assignor.)						
Independent Manufacturing Company. (See Scotford, Louis K., assignor.)						
Indianapolis Watchman Clock Company. (See Berry, John J., assignor.)						
Industrial Patents. (See French, Stephen, assignor.)						
Ingersoll-Rand Company. (See Gibson, Arthur H., assignor.)						
Ingersoll-Rand Company. (See Prellwitz, William, assignor.)						
Ingersoll-Rand Company. (See Sergeant, Henry C., assignor.)						
Ingersoll-Sergeant Drill Company. (See Gibson, Arthur H., assignor.)						
Ingersoll-Sergeant Drill Company. (See Longacre, Frederick V., assignor.)						
Ingersoll-Sergeant Drill Company. (See Prellwitz, William, assignor.)	818,451	Apr. 24	3790	814	121	2351
Ingledue, Harvey R., Chicago, Ill. Hay-rake	817,489	Apr. 10	1877	396-6	121	1827
Inman, Orion D. W., Beloit, Wis. Molding-machine	816,008	Mar. 27	4301	911	121	1005
Inman, Wesley J., assignor of five-eighths to J. H. Warren and C. H. McCormick, Fort Worth, Tex. Exhaust-controlling valve						
Inman, William H. (See Lord, Peter, assignor.)						
Innes, John T., Mount Gambier, South Australia, Australia. Water-feeding device for steam-boilers	816,471	Mar. 27	3065	1075	121	1264

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Insley, Harry E. (See Moler, Insley, and Phillips.)						
International Cigar Machinery Company. (See Luckett, William S., assignor.)						
International Cigar Machinery Company. (See Woodford, Allan G., assignor.)						
International Electric Meter Company. (See Gano, John C., assignor.)						
International Electric Meter Company. (See Lea, John M., assignor.)						
International Electric Meter Company. (See Patrick, Joshua, assignor.)						
International Harvester Company. (See Anker-Holth, Severin C., assignor.)						
International Harvester Company. (See Haskins, James H., assignor.)						
International Harvester Company. (See Podlesák, Henry J., assignor.)						
International Harvester Company. (See Sperry, Herbert B., assignor.)						
International Harvester Company. (See Stone, John A., assignor.)						
International Register Company. (See Woodward, Arthur H., assignor.)						
International Separator Company. (See Snyder, Frederick T., assignor.)						
International Shirt & Collar Co. (See Hess, Wendell, Jr., assignor.)						
Iron Telephone Company. (See Reynolds, Egbert A., assignor.)						
Irving, James A., Philadelphia, Pa. Toy top	814,962	Mar. 13	1907	401	121	471
Irwin, Harold, Hawkes Bay, New Zealand. Alarm	815,709	Mar. 20	3473	725–6	121	866
Irwin, Ralph E., Ligonier, Pa. Scaffold-bracket	818,965	Apr. 24	4822	1037	121	2574
Irwin, William W., Juneau, Alaska. Rake	814,705	Mar. 13	1430	298–9	121	372
Isaacs, Irving C., Chicago, Ill. Brush	817,117	Apr. 3	1121	232	121	1609
Isacke, Clarence E., New York, N. Y. Show device	814,706	Mar. 13	1432	299	121	373
Isler, Max H. (See Bally and Isler.)						
Isler, Max H., Mannheim, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Anthraquinon compound and making same	814,137	Mar. 6	268	.....	121	59
Iverson, John G., assignor to C. E. Cottrell, Minneapolis, Minn. Machine for sizing barrel-hoops and securing the ends thereof	815,835	Mar. 20	3768	792–6	121	927
Ives, Frederic E., Woodcliffe-on-the-Hudson, N. J. Diffraction-grating replica	818,966	Apr. 24	4824	1037	121	2575
Ives, Herbert E., Woodcliffe-on-the-Hudson, N. J. Diffraction color photograph and making same	817,569	Apr. 10	2034	429	121	1859
Iwan, William L., Streator, Ill. Combination implement	818,627	Apr. 24	4165	896	121	2431
J. Cihalewski Farm Hill Manufacturing Company. (See Cihalewski, Julijan, assignor.)						
J. Pohlig, Aktien-Gesellschaft. (See Ellingen and Doehle, assignors.)						
J. E. Mergott Company. (See Witte, Ernst E., assignor.)						
J. G. White and Company. (See Connett, Albert N., assignor.)						
J. I. Case Plow Works. (See Sobey, William, assignor.)						
J. M. Quinby & Co. (See Ogden and Yelton, assignors.)						
Jackson, Albert C., Harriman, Tenn. Inking-pad	818,692	Apr. 24	4290	921	121	2458
Jackson, Alexander M., Schenectady, N. Y., assignor to General Electric Company. Vapor electric apparatus	815,836	Mar. 20	3776	796	121	927
Jackson, Calvin, assignor to H. J. Potts, Reading, Pa. Display apparatus	817,322	Apr. 10	1534	322–3	121	1754
Jackson, Dugald C., Chicago, Ill. Induction-motor	818,027	Apr. 17	2954	638	121	2119
Jackson, George S. (See Blain and Jackson.)						
Jackson, Henry M., Lancaster, Ohio. Roofing	816,581	Apr. 3	47	12	121	1364
Jackson, John P., Orleans, Ind. Attachment for spectacles	814,707	Mar. 13	1434	299–300	121	373
Jackson, Peter H., San Francisco, Cal. Sidewalk, floor, and roof light construction	816,234	Mar. 27	4560	970	121	1150
Jackson, Peter H., San Francisco, Cal. Illuminating-tile construction	816,982	Apr. 3	877	181–2	121	1553
Jackson, Peter H., San Francisco, Cal. Basement and like ventilator	818,889	Apr. 24	4680	1004	121	2542
Jackson, Ray P. (See Perkins and Jackson.)						
Jackson, Sheldon E., and E. B. Lee, Weston, Mich. Wire-working die	817,570	Apr. 10	2037	429	121	1860
Jacob, Frank A., assignor to F. P. Bailey, Indianapolis, Ind. Davenport	814,606	Mar. 6	1206	252–3	121	261
Jacob Gebrüder. (See Handschug, August B., assignor.)						
Jacobs, Frank D., Northampton, assignor to Protected Metal Company, Springfield, Mass. Machine for making roofing material	816,661	Apr. 3	237	55–6	121	1413
Jacobs, Frank D., Northampton, assignor to Protected Metal Company, Springfield, Mass. Roofing and siding material. (Reissue)	12,475	Apr. 24	4986	1067	121	2612
Jacobs, George B., Danville, Pa. Candy-cutter	817,854	Apr. 17	2590	558–9	121	2037
Jacobs, Joseph, *et al.* (See Kislik, Alexander, assignor.)						
Jacobs, Walter V., West Salem, Ohio. Brooder	818,028	Apr. 17	2958	638–9	121	2119
Jacox, Edward H., Bassett, Nebr. Wire-reeling truck	817,248	Apr. 10	1393	294	121	1727
Jaeger, Paul, Esslingen, Germany. Lattice	817,716	Apr. 10	2277	491	121	1911
Jakobsson, Herman G. (See Meigs and Jakobsson.)						
James, Guy R., Rome, Miss. Laundry-register	815,174	Mar. 13	2355	493	121	570
James, Willard C., Los Angeles, Cal. Folding bed	817,371	Apr. 10	1626	344	121	1775
James, William H., Iowa City, Iowa. Photographic sheet	816,861	Apr. 3	625	130	121	1497
Jamieson, Robert W., assignor to R. W. Jamieson Company, New York, N. Y. Dough-mixer	817,644	Apr. 10	2166	460	121	1888
Jamieson, William. (See Odling and Jamieson.)						
Jandus Electric Company. (See Stowe, Bernard A., assignor.)						
Jane, Thomas H., Chicago, Ill. Hot-water heating apparatus	817,855	Apr. 17	2592	559	121	2038
Janes, Henry E., assignor to Janes & Kirtland, New York, N. Y. Stove and furnace	818,628	Apr. 24	4166	896	121	2431
Janes & Kirtland. (See Janes, Henry E., assignor.)						
Janesville Machine Company. (See Heylman, Edward M., assignor.)						
Janoushek, Frank, Jr., Milwaukee, Wis. Device for facilitating the bronzing of printed matter	818,091	Apr. 17	3069	662	121	2142
Jarriel, Nathan B., Manassas, Ga. Stay-bolt for boilers	817,571	Apr. 10	2039	429	121	1861
Jarvis, George F., Dartmouth, England. Surface heating or cooling apparatus	817,490	Apr. 10	1880	396–7	121	1828
Jeffery, Thomas B., Kenosha, Wis. Pneumatic-tired wheel	815,430	Mar. 20	2939	610	121	749
Jeffrey, James C., Beaumont, Tex. Shear-sharpener	816,662	Apr. 3	240	56–7	121	1413
Jeffries, Lincoln, Birmingham, England. Spring air-gun	816,983	Apr. 3	879	182	121	1553
Jeklin, John, Spokane, Wash. Condenser and feed-water heater	815,431	Mar. 20	2941	610	121	749
Jenkins, Charles F., Washington, D. C. Heating apparatus	817,173	Apr. 10	1234	254	121	1603
Jenkins, Charles F., assignor of one-half to C. C. Dieudonne, Washington, D. C. Automobile steering device	818,967	Apr. 24	4825	1038	121	2575
Jenkins, Charles W. (See Brown and Jenkins.)						
Jenney, Robert T. (See Van de Walker and Jenney.)						
Jennings, John T., Kings Norton, near Birmingham, England. Turbine	817,067	Apr. 3	1027	212	121	1586
Jennings, William F., Hot Springs, Ark. Wagon-brake	816,099	Mar. 27	4303	911	121	1095
Jensen, Andrew, Exira, Iowa. Safety attachment for windmill-pumps	814,607	Mar. 6	1210	253	121	263
Jewett, George S., Norridgewock, Me. Self-heating can	818,002	Apr. 17	3071	662	121	2142
Jeřek, Anton, Praha, Tex. Cotton-chopper	818,890	Apr. 24	4682	1004–5	121	2543
Jobling, William G., Ridgedale, Tenn. Reversible disk plow	816,663	Apr. 3	242	57	121	1414
Johanson, Emil G., Rockford, assignor to J. Martenson and F. Johnson, Chicago, Ill. Sewing-machine cabinet	814,450	Mar. 6	912	187	121	199
John C. Moore Corporation. (See Moore, Henry J., assignor.)						
Johnson, Arthur H., Rahway, N. J., assignor, by mesne assignments, to H. J. Donaldson, trustee, Ballston Spa, N. Y. Safety system for electric-road crossings	816,014	Mar. 27	4116	571–2	121	1055

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Johnson, Cephas C., Piedmont, Ohio. Clothes-line	816,664	Apr. 3	245	58	121	1414
Johnson, Charles H., Buffalo, N. Y. Bottle-cap	815,837	Mar. 20	3777	796	121	928
Johnson, Charles H., Shelton, Conn. Weight-supporting device for spring-beds	817,918	Apr. 17	2733	593	121	2069
Johnson and Company, Isaac G. (See Johnson, Elias M., assignor.)						
Johnson, Delbert E., Chicago, Ill. Mechanism for transmitting power from car-axles	814,293	Mar. 6	568	120-1	121	122
Johnson, Don C., Frederick, Okla. Ter. Rain-spout cut-off	814,214	Mar. 6	416	86	121	91
Johnson, Edward E., St. Paul, Minn. Railway water-column	818,968	Apr. 24	4826	1038-9	121	2575
Johnson, Eldridge R., Philadelphia, Pa., assignor to Victor Talking Machine Company. Motor for talking-machines	814,047	Mar. 6	95	18	121	21
Johnson, Eldridge R., Philadelphia, Pa., assignor to Victor Talking Machine Company. Talking-machine	814,786	Mar. 13	1587	335	121	406
Johnson, Eldridge R., Merion, Pa., assignor to Victor Talking Machine Company. Amplifying-horn	814,848	Mar. 13	1704	356	121	430
Johnson, Elias M., assignor to I. G. Johnson and Company, New York, N. Y. Projectile	814,378	Mar. 6	767	155	121	169
Johnson, Frank, *et al.* (See Johanson, Emil G., assignor.)						
Johnson, Frank A., New York, N. Y., assignor to Unitype Company, Manchester, Conn. Type-packing mechanism	814,048	Mar. 6	96	18	121	22
Johnson, Fred, *et al.* (See Beck, William, assignor.)						
Johnson, Frederick W., assignor of one-half to J. P. Peterson, Dawson, Canada. Apparatus for marking sunken vessels	814,536	Mar. 6	1079	222	121	234
Johnson, George A., Clyde, Tex. Buggy-bow spring attachment	818,827	Apr. 24	4577	981	121	2521
Johnson, George W., Chicago, Ill. Horseshoe	817,323	Apr. 10	1537	323	121	1755
Johnson, Gilbert B., Chicago, Ill. Temporary door-retainer and the like	815,432	Mar. 20	2943	610-11	121	749
Johnson, Godfrey B., London, England. Corrugating-machine	815,710	Mar. 20	3475	726-7	121	866
Johnson, Jacob H., Pittsburg Pa. Attachment for jars	817,572	Apr. 10	2040	429	121	1861
Johnson, Jacob T., Philadelphia, Pa. Shutter-fastener	815,589	Mar. 20	3218	677	121	808
Johnson, John A., Winamac, assignor of one-half to E. J. Forest, Indianapolis, Ind. Mold-filling device	818,093	Apr. 17	3072	662-3	121	2143
Johnson, John E., assignor of one-third to J. M. Dalhaug, New Paynesville, Minn. Hose-clamp	814,606	Mar. 6	1211	253	121	262
Johnson, John F., Chester, Pa. Sparking ignition mechanism	816,472	Mar. 27	5068	1076	121	1257
Johnson and Johnson. (See De La Cour, Joseph C., assignor.)						
Johnson, Joseph E., assignor to Pritchard-Strong Company, Rochester, N. Y. Tubular lantern	817,372	Apr. 10	1630	344	121	1777
Johnson, Joseph W. (See Jones and Johnson.)						
Johnson, Lorenzo R., Elmira, N. Y. Combined inkstand, paper-holder, and pen-rack	818,094	Apr. 17	3074	663	121	2143
Johnson, Luema G., Portland, Oreg. Holder for banners and the like	815,838	Mar. 6	3779	797	121	928
Johnson, Mary E. (See Mossberg, Oscar F., assignor.)						
Johnson, Montgomery H., Utica, N. Y. Electric switch	816,100	Mar. 20	4305	911	121	1096
Johnson, Moses C., assignor to Carlyle Johnson Machine Company, Hartford, Conn. Reversible driving mechanism	815,433	Mar. 20	2945	611	121	750
Johnson, Moses E., Pittsburg, Pa. Fence-post	814,138	Mar. 6	270	54	121	59
Johnson, Moses E., Pittsburg, Pa. Wire-fence stretcher	814,139	Mar. 6	271	54	121	60
Johnson, Otto, Brereton, Ill. Carrier	816,473	Mar. 27	5072	1076	121	1258
Johnson, Otto W., Chicago, Ill. Hair-clipper	816,235	Mar. 27	4562	971	121	1150
Johnson, Sidney A. (See Hughes, Johnson, and Sayle.)						
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Tubular-magazine firearm	816,015	Mar. 27	4120	872	121	1055
Johnson, W. Edgar. (See Lewis, Frank E., assignor.)						
Johnson, Warren S., Milwaukee, Wis. Steam-trap	816,474	Mar. 27	5073	1076-7	121	1258
Johnson, William A., Mount Vernon, Ga. Pea-harvesting machine	815,711	Mar. 20	3480	728	121	867
Johnson, William B., assignor of one-half to E. Pinney, Gallup, N. Mex. Ter. Railway-tie plate	815,590	Mar. 20	3219	677	121	809
Johnson, Woolsey M., Hartford, Conn. Treating matte	814,049	Mar. 6	100	.....	121	23
Johnson, Woolsey M., Iola, Kans. Electrical smelting	814,050	Mar. 6	102	19	121	23
Johnston, Gray W., Washington, D. C. Block-signal train-controlling apparatus	814,963	Mar. 13	1908	401	121	472
Johnston, John H., Paris, France. Carbureter for explosive-engines	815,712	Mar. 20	3484	728	121	868
Johnston, Joseph A., Chicago, Ill. Self-closing basin-cock	816,329	Mar. 27	4774	1011	121	1195
Johnston, Orra S., Leavenworth county, Kans. Tug-holder for swingletrees	818,095	Apr. 17	3075	663	121	2143
Johnston, Thomas J., Brooklyn, N. Y., assignor to General Electric Company. Frictionless bearing for electric meters	816,330	Mar. 27	4776	1011	121	1196
Johnstone, Spence M., New York, N. Y. Hat-fastener	814,451	Mar. 6	914	188	121	199
Jones, Alfred W., St. Louis, Mo. Elastic-tread horseshoe	819,016	Apr. 24	4927	1058	121	2597
Jones, Arthur E., Union City, assignor to S. O. & C. Co., Ansonia, Conn. Machine for setting gromets and similar articles	817,780	Apr. 17	3438	521-2	121	2003
Jones, Charles H. (See Amos and Jones.)						
Jones, Charles H. (See Leonard and Jones.)						
Jones, Edward C., San Francisco, Cal., and S. T. Wellman, Cleveland, Ohio. Gas-purifier	818,891	Apr. 24	4684	1005	121	2543
Jones, Edward T., Minneapolis, Minn. Spinning-top	815,591	Mar. 20	3220	677	121	809
Jones, Edwin. (See Dungan, Harry C., assignor.)						
Jones, George C., Manchester, N. H. Guard for water-glasses	816,016	Mar. 27	4121	872	121	1055
Jones, George H., Philadelphia, Pa. Frame for motor-propelled vehicles	815,918	Mar. 20	3928	831	121	960
Jones, George H., Los Angeles, Cal. Medicated nest-egg	817,573	Apr. 10	2041	430	121	1861
Jones, George W., Owens, Fla. Trunk-harness	818,251	Apr. 17	3410	731	121	2215
Jones, Harry S. (See Jones, William G., assignor.)						
Jones, James R., Dunmore, Pa. Railway-car	817,068	Apr. 3	1029	213	121	1586
Jones, Jesse E., Sycamore, Ind. Cultivator	818,252	Apr. 17	3411	731-2	121	2215
Jones, Joab O., Beverly, Mass. Upper-holding clamp for lasting boots and shoes	817,373	Apr. 10	1631	344-5	121	1777
Jones, John M., Utica, N. Y. Ladder and bracket construction	817,174	Apr. 10	1235	254	121	1694
Jones, Joseph F., and C. T. Odena, Hampton, Miss. Apparatus for filling and packing bags	815,091	Mar. 13	2178	459-60	121	529
Jones, Judson R., Rockton, Ill. Harrow	814,051	Mar. 6	104	19	121	24
Jones, Llewellyn W., Sewickley, Pa. Filter	818,693	Apr. 24	4293	921	121	2459
Jones, Monrowe W., and J. A. Dennis, Ardmore, Ind. Ter. Filling-machine	815,175	Mar. 13	2356	493	121	570
Jones, Robert J., Barneston, Nebr. Grain-elevator and wagon-dump	816,017	Mar. 27	4123	873-4	121	1056
Jones, Samuel H., Hess, Okla. Ter. Bag-cutting machine	817,919	Apr. 17	2734	593-4	121	2070
Jones, Sterns F., assignor of one-half to Postal Telegraph-Cable Company, New York, N. Y. Telegraphy	818,892	Apr. 24	4686	1006	121	2544
Jones, Sylvester H., and E. E. Towle, Richmond, Ind., assignors to American Seeding Machine Company, Jersey City, N. J. Speed device for seeding-machines	816,331	Mar. 27	4778	1012	121	1196
Jones, Walter J., Hackensack, N. J., assignor to General Electric Company. Incandescent-lamp socket	818,253	Apr. 17	3413	732	121	2215
Jones, Wilbur G., and J. W. Johnson, Toronto, Canada. Heating apparatus	815,839	Mar. 20	3780	797	121	928
Jones, William F., Little Falls, N. J. Bucket or conveyer	816,332	Mar. 27	4780	1012-13	121	1197
Jones, William G., assignor of one-half to H. S. Jones, Chicago, Ill. Binder	816,915	Apr. 3	731	151	121	1520

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Jones, William R., North Enid, Okla. Ter. Combined walking-cane and stool	817,324	Apr. 10	1536	323	121	1755
Jordan, Frank P., New York, N. Y. Motor-cutter	814,964	Mar. 13	1911	401-2	121	473
Jordan, Julius S., Sidney, S. C. Chop-grader	814,140	Mar. 6	273	54-5	121	60
Joseph, James S. (See Albright and Joseph.)						
Joseph, Thomas B., San Francisco Cal. Metal-leaching	814,452	Mar. 6	915	.....	121	190
Joslin, Hiram L., Eureka Springs, Ark. Spraying device	815,713	Mar. 20	3485	729	121	868
Joubert, Joseph, and F. Suter, Lyon, France. Apparatus for slaying warps	818,381	Apr. 17	3551	784	121	2266
Joyce, Charles, *et al.* (See Beck, William, assignor.)						
Joyneon, Joseph, Rock Springs, Wyo. Rail chair and joint combined	817,325	Apr. 10	1540	323	121	1756
Judge, James L., Minneapolis, Minn. Air-valve for steam-radiators	816,475	Mar. 27	5077	1077	121	1259
Judie, James A., South Bend, Ind. Mold for bricks	818,452	Apr. 24	3791	814	121	2351
Jumeaux, Benjamin, and W. N. L. Davidson, Brighton, England. Trichromatic photography	814,215	Mar. 6	418	.....	121	91
Jung, Oscar H., Milwaukee, Wis. Branding-machine for bottle-closures	818,893	Apr. 24	4687	1005-6	121	2544
Junkers, Hugo, Aachen, Germany. Apparatus for producing boiling water	816,101	Mar. 27	4307	911	121	1096
Just, John A., Pulaski, assignor to Just Mining & Extraction Co., Syracuse, N. Y. Recovery of precious metals from ores, &c.	814,294	Mar. 6	572	.....	121	123
Just Mining & Extraction Co. (See Just, John A., assignor.)						
Justus, Ocie and O., Clarksburg, W. Va. Display-rack	817,374	Apr. 10	1632	345	121	1777
Justus, Ora. (See Justus, Ocie and O.)						
Kacso, Sando, Allegheny, Pa. Safety device for elevators	816,333	Mar. 27	4782	1013	121	1197
Kaczander, Leopold, assignor to Nathan Manufacturing Company, New York, N. Y. Combined stop and check valve	817,069	Apr. 3	1031	213	121	1587
Kagey, Henry H., Ashland, Ohio. Milking-stool	818,254	Apr. 17	3414	732	121	2216
Kahn, Julius, assignor to Trussed Concrete Steel Company, Detroit, Mich. Tension member for composite construction	816,334	Mar. 27	4784	1013	121	1197
Kahn, Julius, assignor to Trussed Concrete Steel Company, Detroit, Mich. Railway cross-tie	816,800	Apr. 3	483	108	121	1463
Kaiser, William I., Seattle, Wash. Stopper	815,351	Mar. 20	2755	574	121	707
Kalla, Alexander, New York, N. Y. Carpenter's plane	816,335	Mar. 27	4784	1013-14	121	1198
Kallmerten, A. (See Lutz, Thomas J., Jr., assignor.)						
Kampfe, Otto, New York, N. Y. Hook	815,019	Mar. 13	2043	428	121	500
Karlson, Charles A., New York, N. Y. Cabinet	815,592	Mar. 20	3221	678	121	800
Kasson, Rutgers S., Wilmington, Del. Clutch	818,828	Apr. 24	4578	982	121	2521
Katsch, Charles E., New Haven, Conn. Electric time-switch	817,175	Apr. 10	1235	254-5	121	1694
Kaufman, George H., assignor of one-half to J. A. Grubbs, Marienville, Pa. Fence-post	817,738	Apr. 10	2342	503	121	1920
Kaufmann, Ernst, Solingen, Germany. Pocket-knife	817,240	Apr. 10	1396	294	121	1727
Kaufmann, Ernst, Solingen, Germany. Knife-casing	817,250	Apr. 10	1396	294	121	1727
Kavanaugh, Elwin C., Holyoke, Mass. Gas-engine	814,609	Mar. 6	1212	253-4	121	262
Kay, Montford, Clapton, England. Inverted incandescent gas-burner	818,255	Apr. 17	3416	732	121	2216
Kayseer, August, Höchst-on-the-Main, Germany. Machine for cutting stoppers	818,765	Apr. 24	4450	953	121	2494
Kearney, Robert L., Greenville, N. C. Plow	815,092	Mar. 13	2181	460	121	530
Keator, Charles E., Brooklyn, assignor of one-half to Dunlap and Company, New York, N. Y. Hat-guard	815,714	Mar. 20	3486	729	121	868
Keats, John, deceased; J. C. Keats, Northampton, administrator, assignor to Phoenix Boot Machinery Company Limited, Street, England. Lasting and sewing machine for boots and shoes	818,766	Apr. 24	4451	954-5	121	2495
Keats, John C., administrator. (See Keats, John.)						
Kee, Henry C., assignor of one-half to P. E. Hannum, Carthage, Mo. Sectional mattress	814,654	Mar. 6	1304	274	121	282
Keel, Charles E., Indianapolis, Ind. Ellipse-compasses	817,645	Apr. 10	2167	460	121	1888
Keeler, Herbert E., New York, N. Y. Car-rack	815,352	Mar. 20	2756	574	121	707
Keeler, Herbert E., New York, N. Y. Sash-adjuster	816,916	Apr. 3	732	151	121	1521
Keenan, Hugh J. (See Tracy and Keenan.)						
Keene, George A., Lynn, Mass. Sink-cleaner	816,665	Apr. 3	246	58	121	1414
Keene, George C., Cincinnati, Ohio. Cornice-brake	816,917	Apr. 3	735	151	121	1521
Keeney, Alanson M. (See Griffin, Benjamin, assignor.)						
Keeney, Charles H., Hartford, Conn. Tobacco-curing apparatus	815,093	Mar. 13	2183	461	121	530
Keeney, Charles R., *et al.* (See Hinckley, Henry D., assignor.)						
Kehl, F. A. (See Seaton, Benjamin C., assignor.)						
Kehrer, Albert W. (See Fiers, William T., assignor.)						
Keiff, Frederick A., Saginaw, Mich. Cuspidor	818,096	Apr. 17	3076	663	121	2143
Keighley, Smith, Pittsburg, Pa. Fireproof metal window frame and sash	818,969	Apr. 24	4835	1039	121	2577
Keiner, Henry A. (See Wallace and Keiner.)						
Keith, Alexander E., J. and C. J. Erickson, assignors to Automatic Electric Company, Chicago, Ill. Automatic telephone connector-switch	815,176	Mar. 13	2357	493-5	121	570
Keith, Alexander E., J. and C. J. Erickson, assignors to Automatic Electric Company, Chicago, Ill. Automatic telephone selector-switch	815,221	Mar. 13	2665	556-8	121	630
Keith, G. H., *et al.* (See Terrell, George W., assignor.)						
Keich, John C. F., Celina, Ohio. Land-roller	818,097	Apr. 17	3077	664	121	2144
Kelchner, William H., New York, N. Y. Folding crate	816,801	Apr. 3	485	108	121	1464
Keller, Charles F. (See Mulvaney and Keller.)						
Keller, Frederick, Allentown, and D. Bowers, Emaus, assignors of one-third to I. F. Huebner, Allentown, Pa. Car-coupling	816,336	Mar. 27	4787	1014	121	1198
Keller, Gottlieb, New York, N. Y., assignor to Keller Machine Company. Tension device for warp-beams	818,829	Apr. 24	4579	982	121	2521
Keller, Karl, *et al.* (See Yancey, George R., assignor.)						
Keller, Louis E., Oil City, Pa. Sheet-metal support or bracket	815,020	Mar. 13	2045	428	121	500
Keller Machine Company. (See Keller, Gottlieb, assignor.)						
Keller, Peter, Chicago, Ill. Gas-burner	815,536	Mar. 20	3129	655	121	789
Keller, William A., *et al.* (See Yancey, George R., assignor.)						
Kellerman, Frederick W., Weymouth, Mass. Sad-iron	815,296	Mar. 13	2592	545-6	121	624
Kelley, Augustus I. (See McGowen, William R., assignor.)						
Kelley, Edward J. (See McHorney and Kelley.)						
Kelley, Lelio E. (See Seaton, Andrew, assignor.)						
Kelley, Manley, Colo, Iowa. Centrifugal cream-separator	815,094	Mar. 13	2184	461	121	530
Kellogg, George W., Rochester, N. Y. Pump	816,476	Mar. 27	5079	1077	121	1259
Kellogg, George W., Rochester, N. Y. Carburetor	816,477	Mar. 27	5080	1077-8	121	1260
Kellogg, Milo G., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Multiple switchboard for telephone-exchanges	817,781	Apr. 17	2444	522	121	2005
Kellogg Switchboard & Supply Company. (See Carroll, Louis W., assignor.)						
Kellogg Switchboard & Supply Company. (See Dean, William W., assignor.)						
Kellogg Switchboard and Supply Company. (See Kellogg, Milo G., assignor.)						
Kellogg Switchboard and Supply Company. (See Post, Howard M., assignor.)						
Kellogg Switchboard and Supply Company. (See Roberts, John G., assignor.)						
Kellogg Switchboard & Supply Company. (See Simpson, Charles A., assignor.)						
Kelly, David J., Salt Lake City, Utah. Apparatus for separating or filtering slimes	815,021	Mar. 13	2046	429	121	500

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Kelly, David J., Salt Lake City, Utah. Sand and slime separator	815,096	Mar. 13	2186	461	121	531
Kelly, James W., Chicago, Ill. Pipe-fitting	814,295	Mar. 6	577	121	121	124
Kelly, William A., *et al.* (See Anderson, Swan, assignor.)						
Kelso, William, Pittsburg, Pa. Car-coupling	816,165	Mar. 27	4434	938–9	121	1123
Kemmerer, Ira D., Nora, Nebr. Digging holes	814,849	Mar. 13	1706	356	121	431
Kemmerer, Ira D., Lincoln, Nebr. Tool for digging holes	814,850	Mar. 13	1707	357	121	431
Kemmerich, Max, Aix-la-Chapelle, Germany. Bearing with weight-controlled lubricant	817,118	Apr. 3	1122	232	121	1610
Kemp Hydro-Carbon Furnace Company. (See Kemp, William, assignor.)						
Kemp, Joseph S., Newark Valley, N. Y. Fertilizer-distributer	818,098	Apr. 17	3078	664–5	121	2144
Kemp, William, Tucson, Ariz. Ter., assignor to Kemp Hydro-Carbon Furnace Company. Burner for hydrocarbon vapors	818,256	Apr. 17	3417	733	121	2216
Kemper, August. (See Damhorst, Kemper, and Utke.)						
Kemper-Thomas Company. (See Henderson, Edwin L., assignor.)						
Kempf, Valentin, Hoboken, N. J. Wringer-holder and washtub-protector	818,894	Apr. 24	4690	1006	121	2545
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	817,646	Apr. 10	2160	461	121	1888
Kennedy, Frederick W., Shelbyville, Ind. Lining for traction-vehicles	818,257	Apr. 17	3419	733	121	2217
Kennedy, Julian, Pittsburg, Pa. Door for hot-blast stoves and furnaces	817,070	Apr. 3	1032	213–14	121	1587
Kennington, Richard N., Altoona, Pa. Relief-valve	818,694	Apr. 24	4295	921	121	2460
Kenny, John, Amherst, Canada. Railway-tie	817,119	Apr. 3	1124	233	121	1610
Kent, Horace L., Brooklyn, N. Y. Screening apparatus	817,975	Apr. 17	2848	617	121	2096
Keogh, Mark J., *et al.* (See Chadborn, Frederic C., assignor.)						
Keogh, Michael H., *et al.* (See Chadborn, Frederic C., assignor.)						
Kepner, Elmer E., Springfield, Oreg. Pen	818,258	Apr. 17	3420	733	121	2217
Kern, Heinrich, Aarau, Switzerland. Compasses	814,453	Mar. 6	918	188	121	199
Kerr, Charles M., Idaho Falls, Idaho. Railway-spike	816,802	Apr. 3	487	108	121	1464
Kerr, George, Dallas, Oreg. Non-refillable bottle	816,582	Apr. 3	47	12	121	1365
Kerr, George A. (See Craighill and Kerr.)						
Kerr, Hanford L., Kansas City, Kans. Railway-car	818,629	Apr. 24	4167	897	121	2432
Kerstetter, Samuel P. (See Emerson and Kerstetter.)						
Ketterlinus Lithographic Manufacturing Company. (See Thompson, John B., assignor.)						
Keyes, James A., New York, N. Y. Packing-machine	814,454	Mar. 6	919	188–9	121	200
Keyes, James A., New York, N. Y. Packing-machine	817,375	Apr. 10	1634	345–6	121	1777
Keyser, Charles C., Newport News, Va. Clutch	814,545	Mar. 6	1095	227	121	238
Kibben, Edward. (See Dana and Kibben.)						
Kibbey, Frank M., Rosendale, Mo. Line and rein buckle	818,970	Apr. 24	4836	1039	121	2578
Kidd, Joseph, Duluth, Minn. Ship construction	818,259	Apr. 17	3421	734	121	2217
Kienzl, Raimund, assignor of one-half to G. Schmidt, Pittsburg, Pa. Bolt threading and tapering machine	814,655	Mar. 6	1305	274–5	121	282
Kiewics, John, Hyde Park, Mass., assignor, by mesne assignments, to Wheeler Manufacturing Company. Buttonhole-sewing-machine clamp	814,216	Mar. 6	419	86	121	91
Kilbon, George B., Springfield, Mass. Stamp and seal handling device	814,708	Mar. 13	1435	300	121	373
Kilbourne & Jacobs Manufacturing Company. (See Stagg, Thomas H., assignor.)						
Kilburn, John B., assignor to Hale & Kilburn Manufacturing Company, Philadelphia, Pa. Car-seat	814,455	Mar. 6	923	190	121	200
Kiler, Edmond F., Sr., Santa Barbara, Cal. Steaming grain	814,909	Mar. 13	1802	378	121	451
Killen, Marcus H., Chicago, Ill., assignor of one-half to M. L. Killen. Automatic stereopticon apparatus	817,251	Apr. 10	1396	294–5	121	1727
Killen, Mark L. (See Killen, Marcus H., assignor.)						
Killman, Thomas A., Liberty, Tenn. Automatic weighing and computing scale	816,984	Apr. 3	880	182–3	121	1563
Killmeyer, Jacob, Pittsburg, Pa. Window-lock	816,337	Mar. 27	4793	1015	121	1199
Kimball, Charles B., Cleveland, Ohio. Wheel for automobiles	816,666	Apr. 3	247	58	121	1414
Kimberly & Clark Company. (See Thom, Peter R., assignor.)						
Kimple, Harry G., Dicksonburg, Pa. Hinge	814,546	Mar. 6	1096	227	121	238
Kimsey, James C., assignor to American Paper Bottle Company, Philadelphia, Pa. Paper box or container	816,338	Mar. 27	4794	1015	121	1199
Kindelan, Joseph, Leadville, Colo. Candlestick	814,456	Mar. 6	924	190	121	201
Kindrick, Eliza C., Nashville, Tenn. Refrigerator	817,782	Apr. 17	2450	523	121	2006
King, Asbury S., Lancaster, Pa. Dish-drying device	817,120	Apr. 3	1125	233	121	1610
King, C. A., *et al.* (See Daves, William, assignor.)						
King, Charles C., Little Rock, Ark. Harness	818,260	Apr. 17	3422	734	121	2218
King, Dora, Tamaroa, Ill. Article-holding means	815,353	Mar. 20	2758	574	121	706
King, George I., Middletown, Pa. Dump-car	814,141	Mar. 6	276	55	121	60
King, George I., Middletown, Conn., assignor to American Car & Foundry Company, St. Louis, Mo. Underframing for box-cars. (Reissue)	12,463	Mar. 13	2695	561	121	643
King, Homer A., Colton, Cal. Trailing cylinder-head rotary engine	818,029	Apr. 17	2959	639	121	2120
King, Howard K., Philadelphia, Pa., assignor to Chambers Brothers Company. Cut-off mechanism for brick-machines	815,022	Mar. 13	2051	429–30	121	502
King, James M., Frazee, Minn. Rotary engine	816,727	Apr. 3	348	80	121	1437
King, William C., and H. Estorff, Colfax, Cal. Sled-propelling mechanism	817,071	Apr. 3	1033	214	121	1587
Kingsbury, Harry T., Keene, N. H. Auto-aerial ladder-truck	818,261	Apr. 17	3423	735	121	2218
Kingsbury, Harry T., Keene, N. H. Auto-aerial ladder-truck	818,262	Apr. 17	3425	735	121	2219
Kingsley, William H., San Francisco, Cal. Bar-knife	818,263	Apr. 17	3427	736	121	2219
Kinnear, Peter. (See Loftus, John, assignor.)						
Kinnear, William R., New York, N. Y. Radiator	815,354	Mar. 20	2759	575	121	706
Kinney, Frank W. (See Brouyette, Charles D., assignor.)						
Kinney, James D. (See McLean and Kinney.)						
Kinraide, Thomas B., Jamaica Plain, Mass. Ultra-violet lamp	817,976	Apr. 17	2850	617	121	2096
Kinzer, John D., Indianapolis, Ind. Ice-cream mold	814,052	Mar. 6	104	19	121	24
Kinzey, Mortimer, assignor to J. E. Helm, Newark, N. J. Ventilator	815,434	Mar. 20	2946	611	121	750
Kip, Frederic E., Montclair, N. J. Filling-carrier	814,709	Mar. 13	1438	300	121	374
Kirby, William B., Wellington, Tex. Governor for spring-motors	818,830	Apr. 24	4582	982	121	2522
Kircher, Julius C., East St. Louis, Ill. Lamp-socket lock	815,096	Mar. 13	2190	461	121	532
Kirk, William P., Bridgeport, Conn. Fireproof window frame and sash	816,862	Apr. 3	626	130–1	121	1497
Kirker-Bender Fire Escape Company. (See Logan, William H., assignor.)						
Kirkwood, Robert G., Pittsburg, Pa. Oil-burner	818,030	Apr. 17	2961	639	121	2120
Kirnan, William H., Bayonne, N. J. Device for regulating heating apparatus	817,783	Apr. 17	2450	522–4	121	2006
Kirschning, Emma A., administratrix. (See Kirschning, Hermann.)						
Kirschning, Hermann, deceased; E. A. Kirschning, Berlin, Germany, administratrix. Packing-ring	816,478	Mar. 27	5062	1078	121	1200
Kislik, Alexander, assignor to S. Gutman and J. Jacobs, New York, N. Y. Pressed belting	818,031	Apr. 17	2964	640	121	2121
Kissinger, Amos, assignor of one-half to H. Focht, Reading, Pa. Sash-fastener	815,537	Mar. 20	3121	654	121	789
Kistner, Eber H. (See Prahl and Kistner.)						
Kitchen, John G. A., Lancaster, England. Incandescent gas-lamp	814,142	Mar. 6	277	56	121	61
Kitsee, Isidor, Philadelphia, Pa. Metering of telephonic services	817,920	Apr. 17	2736	594	121	2070

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Kitsee, Isidor, Philadelphia, Pa. Electric transmission of intelligence	817,921	Apr. 17	3738	594	121	2071
Kitsee, Isidor, Philadelphia, Pa. Telephonic device	818,767	Apr. 24	4454	955	121	2495
Kittrell, James D., Hope, Ark. Animal-trap	816,102	Mar. 27	4308	912	121	1096
Kjellman, Rudolf H., assignor to Aktiebolaget Stockholms Vapenfabrik, Stockholm, Sweden. Automatic firearm	814,547	Mar. 6	1098	227–9	121	239
Klafke, Theodore L. (See Brownfield, Ewing, assignor.)						
Klausman, Edward, Milwaukee, Wis. Heater for thermal cars	814,296	Mar. 6	578	121–2	121	124
Klay, Andrew, Bluffton, Ohio. Building-block	815,097	Mar. 13	2191	462	121	532
Klay, Andrew, Bluffton, Ohio. Cement-block machine	815,098	Mar. 13	2193	462–3	121	532
Klehm, Henry. (See Stearns and Klehm.)						
Klein, Daniel, West Chester, Pa., assignor of one-third to M. E. Bowman, Salem, Va. Milking-machine	816,563	Apr. 3	51	13	121	1366
Klein, Rudolph, New York, N. Y., assignor of one-fifth to B. G. Harlan, Orange, N. J. Disk-talking-machine blank	814,053	Mar. 6	105	19	121	24
Klein, William B., Chicago, Ill. Filter	816,479	Mar. 27	5084	1078	121	1260
Kleitz, Lambert, Chicago, Ill., assignor to E. C. Wagner, La Fayette, Ind. Distilling apparatus	818,831	Apr. 24	4583	982	121	2522
Klepetko, Frank, New York, N. Y. Roasting-furnace	814,297	Mar. 6	580	122	121	124
Klepetko, Frank, New York, N. Y. Roasting-furnace	814,298	Mar. 6	582	122	121	125
Klepetko, Frank, New York, N. Y. Roasting-furnace	814,299	Mar. 6	585	123	121	126
Kline, David C., assignor to Pritchard-Strong Company, Rochester, N. Y. Lever-lift for lantern-globes	817,430	Apr. 10	1759	369	121	1803
Kline, Henry P., Randolph, Ohio. Planter	817,376	Apr. 10	1639	347	121	1779
Kline, Lewis T. (See Stockwell, Homer K., assignor.)						
Kline, Rudolph D., Streator, Ill. Transplanting device	816,236	Mar. 27	4563	971	121	1150
Klipple, Ophir W. (See Honecker and Klipple.)						
Klohs, Samuel F., Chicago, Ill. Car-coupling	814,379	Mar. 6	768	155	121	169
Klumpp, Gottlob, Brooklyn, N. Y. Filter	818,264	Apr. 17	3427	736	121	2219
Knabbe, D. (See Gardiner, Anwyl O., assignor.)						
Knackstedt, John N., Omemee, N. D. Kitchen furniture	814,965	Mar. 13	1913	402	121	473
Knapp, Charles H., *et al.* (See Cramer, Howard, assignor.)						
Knapp, Fred H. (See Blackstone, Clarence W., assignor.)						
Knauff, Mary E., Avalon, Pa. Nipple for nursing-bottles	815,435	Mar. 20	2948	612	121	750
Knaus, James M., Sedalia, Mo. Stair	815,840	Mar. 20	3783	798	121	929
Knecht, Johann J., Chemnitz, Germany. Embroidering-machine	815,177	Mar. 13	2375	495	121	575
Knee, Frank H., assignor of one-half to A. L. Long, New Castle, Pa. Pipe-expander	814,300	Mar. 6	587	123	121	126
Kneuper, George M., New York, N. Y. Filter	817,252	Apr. 10	1399	295	121	1728
Kneuper, George M., New York, N. Y. Filter	817,253	Apr. 10	1401	295	121	1728
Knietsch, Rudolf, Ludwigshafen-on-the-Rhine, Germany, assignor, by mesne assignments, to General Chemical Company. Making sulfuric acid	816,918	Apr. 3	737	152	121	1522
Kniffler, Bruno, Stoneham, Mass. Dissolving size for paper-making	816,863	Apr. 3	629	131	121	1498
Kniffler, Bruno, Stoneham, Mass. Apparatus for dissolving size for paper-making	816,864	Apr. 3	630	131	121	1498
Kniffler, Bruno, Stoneham, Mass. Dissolving size for paper-making	816,865	Apr. 3	632	131	121	1499
Knight, Charles R., and J. Tennesen, Denver, Colo. Portable brick-drying rack	814,966	Mar. 13	1915	402–3	121	473
Knight, Frederick C., and H. V. Pearce, Denver, Colo.: said Knight assignor of one-third to said Pearce. Natural-draft regenerator for furnace-flues	817,072	Apr. 3	1034	214	121	1587
Knight, Jesse E., Blue Canyon, Wash. Log-chock	816,339	Mar. 27	4796	1015	121	1200
Knight, Richard H. W., and L. Nagel, London, England. Conduit or casing for electrical conductors	814,217	Mar. 6	421	87	121	91
Knocker, Andrew, Humboldt, Kans. Pump-rod clamp	815,178	Mar. 13	2376	496	121	576
Knoderer, Levi F., Columbus, Ohio. Gas-heater	815,099	Mar. 13	2197	463	121	533
Knoderer, Levi F., Columbus, Ohio. Regulating-valve for gas-burners	815,179	Mar. 13	2377	496	121	576
Knoernschild, Charles, assignor to Gem Hammock and Fly Net Company, Milwaukee, Wis. Hammock-supporting frame	816,340	Mar. 27	4798	1016	121	1200
Knoll, Richard T. (See Fertig and Knoll.)						
Knopf, Carl, Hemelingen, near Bremen, assignor to J. D. Barth, Bremen, and P. H. Minck, Hemelingen, Germany. Apparatus for obtaining pure cotton or fibrous material for textile and like purposes from waste products	814,967	Mar. 13	1917	403	121	474
Knorzer, Augustus T., and S. P. Danner, Middletown, Conn. Spring edge-supporting hook	815,436	Mar. 20	2950	612	121	750
Knott, Warren E., assignor of one-fourth to C. Walker, Erie, Pa. Button-blank grinding and feeding machine	817,121	Apr. 3	1126	233	121	1610
Knott, Warren E., assignor of one-fourth to C. Walker, Erie, Pa. Button-blank grinding and feeding machine	817,122	Apr. 3	1128	234	121	1611
Knowles, William L., Hatton, Ohio. Well-drilling machine	816,341	Mar. 27	4800	1016–17	121	1201
Knox, Levi J., Nowata, Ind. Ter. Topping attachment for harvesters	815,437	Mar. 20	2951	612–13	121	751
Knox, Orville M., Oneida, N. Y. Culinary vessel	818,099	Apr. 17	3082	665	121	2144
Knox, Samuel L. G., Milwaukee, and W. Ferris, assignors to Bucyrus Company, South Milwaukee, Wis. Railway pile-driver and the like	816,584	Apr. 3	58	14	121	1368
Knudsen, Karsten, Chicago, Ill. Electrical controller for electric vehicles	818,768	Apr. 24	4458	956	121	2496
Koblenzer, Martin, Vienna, Austria-Hungary, assignor to Welsbach Light Company, Gloucester City, N. J. Incandescent gas-mantle	818,032	Apr. 17	2965	640	121	2121
Koch, Alfred S., Lancaster, Pa. Cigar-bunching machine	817,254	Apr. 10	1402	296–7	121	1729
Koch, Gustav, New York, N. Y. Dusting-brush	815,593	Mar. 20	3222	678	121	809
Kodama, Nobyoshi H., and A. I. Gancher, assignors to Automatic Adding Machine Company, New York, N. Y. Adding-machine	816,342	Mar. 27	4802	1017–18	121	1201
Koeber, German, Harburg, near Hamburg, Germany. Oil-press	818,265	Apr. 17	3429	736–7	121	2220
Koehler, Henry B., and C. L. Betz, Rochester, Pa. Glass-press	815,180	Mar. 13	2379	496	121	576
Koehler, Otto. (See Lacroix, Fred, assignor.)						
Koenig, Carl J. (See Forsyth, James D., assignor.)						
Koeniges, Martin. (See Myer and Koeniges.)						
Kohlbrenner, Peter, assignor to C. C. Bradley, Syracuse, N. Y. Machine for forming hollow split bushings	816,237	Mar. 27	4564	971–2	121	1151
Köhler, Curt, Altenburg, Germany. Nutritive preparation	814,968	Mar. 13	1919	.....	121	475
Kohler, Franklin W., *et al.* (See Armstrong and Dresser, assignors.)						
Kohler, Franklin W., *et al.* (See Dresser, Charles A., assignor.)						
Kohler, G. A. Edward, *et al.* (See Armstrong and Dresser, assignors.)						
Kohler, G. A. Edward, *et al.* (See Dresser, Charles A., assignor.)						
Kolb, Henry M., and C. Foehl, Philadelphia, Pa. Firearm	818,177	Apr. 17	3256	698	121	2184
Komorowski, Ludwik, New York, N. Y. Wardrobe	814,457	Mar. 6	925	190	121	201
Königswarter, Julius von, Hanover, Germany. Vessel for packing and storing washing-powders containing alkaline peroxids	818,695	Apr. 24	4399	922	121	2489
Koontz, George W. (See Ramey, Francis A., assignor.)						
Kootz, Albert, and C. F. Fisher, Parkersburg, W. Va. Boring tool and arbor	817,377	Apr. 10	1640	347	121	1779
Koppers, Heinrich, Essen-on-the-Ruhr, Germany. Gas-furnace or coke-oven	818,033	Apr. 17	2966	640–1	121	2121
Koppers, Heinrich, Essen-on-the-Ruhr, Germany. Coke-oven	818,266	Apr. 17	3431	737–8	121	2220

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Kormil, Alexander, and F. Radloff, Goldendale, Wash. Fork-scraper	818,100	Apr. 17	3083	665	121	2145
Korn, George W., Little Valley, N. Y. Razor	815,355	Mar. 20	2761	575	121	708
Koroknay, Julius v., Raab, Austria-Hungary. Universal joint	817,922	Apr. 17	2739	594	121	2071
Körting, Ernst, Mariendorf, near Berlin, assignor to Dessauer Vertical-Ofen Gesellschaft m. b. H., Berlin, Germany. Retort-charging apparatus	815,438	Mar. 20	2953	613	121	751
Kose, Louis, Indianapolis, Ind. Veneer-cutter	817,784	Apr. 17	2457	524	121	2007
Koster, Martin. (See Beyer, William E., assignor.)						
Kottas, Joseph L., Renfrow, Okla. Ter. Hoof trimmer and cleaner	817,717	Apr. 10	2278	491	121	1912
Kovačević, Janko, Allegheny, Pa. Telescopic elevator	815,594	Mar. 20	3223	678	121	809
Kraemer, Henry, Nazareth, Pa. Singeing-machine	816,018	Mar. 27	4126	874–5	121	1056
Kraetzer, Edwin J., Somerville, assignor of three-sixteenths to F. F. Raymond, 2d, Newton, Mass. Buckle	815,538	Mar. 20	3132	655	121	790
Krainik, Stephen, Manitowoc, Wis. Mop-wringer	815,539	Mar. 20	3135	655	121	790
Krakau, Harry T., Cleveland, Ohio, and L. A. Conner, Jr., Pittsburg, Pa., assignors to National Malleable Castings Company, Cleveland, Ohio. Frictional draft-rigging	815,023	Mar. 13	2054	430	121	502
Krakauer, Joseph, New York, N. Y. Ice-pitcher	817,123	Apr. 3	1130	234	121	1611
Kramer, Christian, New York, N. Y. Fire-escape	814,458	Mar. 6	927	191	121	202
Kramer, Erwin, Berlin, Germany. Inverted incandescent gas-burner	814,459	Mar. 6	929	191	121	202
Kramer, Erwin, Berlin, Germany. Electromagnetic brake	814,910	Mar. 13	1803	378	121	451
Krandt, Hermann, Berlin, Germany. Blotter or blotting-pad	817,073	Apr. 3	1035	215	121	1588
Kratsch, William H., and C. G. Dauber, Oshkosh, Wis. Shingle-machine	817,177	Apr. 10	1244	257–8	121	1696
Krausch, Walter T., La Grange, Ill. Coal unloading, breaking, and loading apparatus	814,710	Mar. 13	1439	301–2	121	374
Krause, William T., assignor of two-thirds to D. R. Steele and H. D. Harvey, Baltimore, Md. Casting mechanism	815,181	Mar. 13	2381	496–7	121	577
Krautzberger, Albert, Friedland, Germany. Spraying apparatus	814,218	Mar. 6	422	87	121	91
Krebs, Edward, Albany, N. Y. Tire-shoe	814,143	Mar. 6	279	56	121	61
Kreutzkamp, Barbara, administratrix. (See Kreutzkamp, Henry C. G.)						
Kreutzkamp, Henry C. G., deceased, New York, N. Y.; B. Kreutzkamp, administratrix. Oven	818,832	Apr. 24	4584	983	121	2523
Kreuzberger, Bartlet, Meriden, Conn. Hat or garment holder	816,238	Mar. 27	4566	972	121	1151
Kridelbaugh, Lonie M., Hiteman, Iowa. Churn	814,548	Mar. 6	1102	229	121	239
Krieghbaum, Hiram C., South Bend, Ind., assignor to E. Tyden, Hastings, Mich. Attachment for extension-tables	815,100	Mar. 13	2199	463	121	533
Kristofek, Frank J., assignor to Meek Company, Coshocton, Ohio. Pin	816,728	Apr. 3	349	80	121	1437
Kritsch, Charles E., Washington, D. C. Joint for artificial limbs	817,785	Apr. 17	2459	524	121	2008
Krogh, Carl A. (See Krogh, Ferdinand W. and C. A.)						
Krogh, Ferdinand W., San Francisco, Cal. Centrifugal pump	815,540	Mar. 20	3136	656	121	790
Krogh, Ferdinand W. and C. A., San Francisco, Cal. Centrifugal pump	815,439	Mar. 20	2954	613–14	121	752
Kronier, Jean. (See Miller and Kronier.)						
Kronquest, France E., Loomis, Nebr. Churn	816,166	Mar. 27	4437	939	121	1123
Kronquest, France E., Loomis, Nebr. Windmill-regulator	816,167	Mar. 27	4438	939–40	121	1124
Kruckewitt, John, Pittsburg, Pa. Coffee-boiler	814,460	Mar. 6	933	191	121	203
Krueger, Rudolph H., Spencer, S. D. Hoisting apparatus	815,440	Mar. 20	2956	614	121	752
Kruger, Anton, Allegheny, Pa. Invalid bed, cot, and table	815,715	Mar. 20	3487	729	121	868
Krüger, Johannes, Stettin, Germany. Machine for cutting up or mitering flanged metal beams or girders	818,453	Apr. 24	3793	815	121	2352
Krunscheid, Peter, Boston, Mass. Piano-action, mechanical player	818,630	Apr. 24	4170	897	121	2432
Krupp Aktiengesellschaft, Fried. (See Gardin, Theodor, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Haase, Albert, assignor.)						
Krupp Aktiengesellschaft, Fried. (See Hartwig, Rudolf, assignor.)						
Krupp Aktiengesellschaft Grusonwerk, Fried. (See Lehmann, Hermann, assignor.)						
Krus, Andrew, Chicago, Ill. Lathe-dog	818,454	Apr. 24	3796	815	121	2352
Kuchler, George W. (See Nienstadt, August E., assignor.)						
Kugelmann, Bernhard, Bad Kissingen, Germany. Automatic telephonic installation	814,219	Mar. 6	424	87	121	92
Kuhn, A. J., *et al.* (See Stawartz, John, assignor.)						
Kuhn, Edmond, East Orange, N. J. Game apparatus	818,895	Apr. 24	4691	1006–7	121	2545
Kuhn, Sarah E., Washington, D. C. Game-board	815,960	Mar. 27	4007	848	121	1028
Kulenkampff, Robert, Brooklyn, N. Y. Brush	818,696	Apr. 24	4300	922	121	2460
Kulhawik, John, Grand Rapids, Mich. Pantaloons-creaser	817,718	Apr. 10	2270	491–2	121	1912
Kun, Michael, Budapest, assignor to L. & G. Halphen, Prague, Austria-Hungary. Adding-machine	817,786	Apr. 17	2460	525–7	121	2006
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	815,101	Mar. 13	2201	463–4	121	534
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	815,596	Mar. 20	3224	678–9	121	810
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	816,585	Apr. 3	62	15	121	1369
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	816,919	Apr. 3	739	152	121	1522
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	817,923	Apr. 17	2740	595	121	2071
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	817,924	Apr. 17	2745	595–6	121	2073
Kunkel, Friedrich L., Milwaukee, Wis. Bed-spring	814,220	Mar. 6	428	88	121	92
Kunz, Jean, Cronberg in the Taunus, Germany. Hand-lever with locking device	814,301	Mar. 6	589	123–4	121	127
Kuster, Charles A., Rutherford, N. J., assignor to J. A. Weser, New York, N. Y. Mechanical musical instrument	817,856	Apr. 17	2594	559–61	121	2038
Küster, Julius, Dortmund, Germany. Paper-clip	817,574	Apr. 10	2043	430	121	1861
Kyle, John. (See Bumpus and Kyle.)						
L. S. Starrett Co. (See Starrett, Laroy S., assignor.)						
La Bauve, Odelon J., Edna, Tex. Crate	818,697	Apr. 24	4302	922–3	121	2461
La Marche, Arthur, West Hoboken, N. J., and A. Hedbavny, New York, N. Y. Unhairing-machine	818,971	Apr. 24	4837	1040	121	2578
La Rose, Eugene E., New Bedford, Mass. Ball-bearing pulley-block	817,074	Apr. 3	1036	215	121	1588
La Société Civile d'Études de l'Indéchirable Grimson. (See Sechiari, Paraschova, assignor.)						
La Société des Établissements Malicet et Blin. (See Blin, Eugène, assignor.)						
La Société Savy Jeanjean et Cie. (See Blanc, Auguste, assignor.)						
Laas, Edward. (See Sponenburg, Hiram H., assignor.)						
Lacroix, Fred, assignor of one-half to O. Koehler, San Antonio, Tex. Electrical signal system	814,302	Mar. 6	591	124	121	127
Lacroix, Fred, assignor of one-half to O. Koehler, San Antonio, Tex. Electrical signal system	814,303	Mar. 6	593	124	121	128
Ladd, Frank E., Springfield, Mass. Clip	814,851	Mar. 13	1708	357	121	431
Lade, Robert R., Cleveland, Ohio. Recuperator	817,326	Apr. 10	1542	324	121	1756

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Lescher, Jacob, Lima, Ohio. Artificial wood or substitute material	818,833	Apr. 24	4585	.....	121	2523
Laforêt, Jean, Stein, France, assignor to A. B. Strange, Paterson, N. J. Shuttle-check for looms	818,034	Apr. 17	2968	641	121	2122
Laible, Philip D., Newark, N. J. Bottle-washing machine	816,920	Apr. 3	741	152–3	121	1523
Laidig, Clinton J., St. Louis, Mo. Folding chicken-coop	816,103	Mar. 27	4309	912	121	1096
Laitner, Samuel C., Detroit, Mich. Sealed magazine for stoves	815,716	Mar. 20	3488	729–30	121	869
Lally, John, Waltham, Mass. Combined column cap and base	816,480	Mar. 27	5086	1079	121	1261
Lamb, George B., assignor to Waterbury Farrel Foundry and Machinery Company, Waterbury, Conn. Press	814,054	Mar. 6	106	20–1	121	24
Lamb, Walter, St. John's, Newfoundland. Fish preservation	816,343	Mar. 27	4808	.....	121	1202
Lambing, Isaac P., Denver, Colo. Gold-saving apparatus	818,834	Apr. 24	4587	963	121	2523
Lambing, J. F., *et al.* (See Clark, Joseph M., assignor.)						
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System for variable-speed operation of alternating-current motors	814,380	Mar. 6	769	155	121	170
Lamont, Hugh H., San Francisco, Cal. Flax-threshing machine	818,101	Apr. 17	3085	666	121	2145
Lamoureux, Lottie. (See Lamoureux, Theodore C., assignor.)						
Lamoureux, Theodore C., assignor to L. Lamoureux, Luton, Iowa. Draft-equalizer	815,298	Mar. 13	2598	546	121	626
Lancaster, Frederick J., New York, N. Y. Vehicle-wheel	817,787	Apr. 17	2465	527	121	2009
Lancaster, John P., Cincinnati, Ohio. Railway-tie and fastener	816,921	Apr. 3	744	154	121	1523
Lancaster, Warren N., Baltimore, Md. Fountain-pen	816,344	Mar. 27	4808	1018	121	1202
Land, Edmund, Grand Rapids, Mich. Telephone-exchange system	818,540	Apr. 24	3961	855–6	121	2391
Land, Henry C., Altman, Tex. Wrench	817,327	Apr. 10	1543	324	121	1757
Landau, Dewis, San Francisco, Cal. Siphon-head	816,729	Apr. 3	350	80	121	1437
Landau, Dewis, San Francisco, Cal. Stand and charging apparatus for siphons	816,985	Apr. 3	886	183	121	1555
Landers, Frary & Clark. (See Warner, Alonzo A., assignor.)						
Landing, Lars M., Glenwood, Minn. Loose-leaf ledger	817,255	Apr. 10	1415	298	121	1731
Landis, Luther E., and W. S. Myers, York, Pa. Plow attachment	815,441	Mar. 20	2958	615	121	753
Lundmann, Louis, Nevada, Mo. Mold	814,304	Mar. 6	597	124–5	121	129
Landsberger, Julius A., Alameda, Cal., assignor to Hermetic Closure Co., Chicago, Ill. Packing-gasket	816,803	Apr. 3	488	109	121	1464
Lane, Almeron M., Meriden, Conn. Motor-spring	817,378	Apr. 10	1641	348	121	1779
Lane, Henry H., and T. B. Swift, Elizabeth, N. J. Glove-display form	818,178	Apr. 17	3257	698	121	2184
Lane, James H., and U. Gulnick, Newark, N. J. Trolley-wire support	818,631	Apr. 24	4170	898	121	2432
Lane, Johnson, Jamestown, Cal. Cap and brush for bottles	816,481	Mar. 27	5089	1079	121	1261
Lane, William H., Westfield, N. J., assignor to Hall Signal Company. Electrical device and circuit	815,961	Mar. 27	4008	848	121	1029
Lang, Herbert, Oakland, Cal. Heat-conserving apparatus	818,541	Apr. 24	3990	856	121	2392
Lange, Berthold A., St. Louis, Mo. Woodworking-machine	819,033	Apr. 24	4970	1065–6	121	2607
Lange, Ferdinand H., Jr., Wilkes-Barre, Pa. Sliding-door hanger	815,182	Mar. 13	2384	497	121	577
Lange, Paul M. H., assignor to Toledo Machine and Tool Company, Toledo, Ohio. Drawing-press. (Reissue)	12,462	Mar. 13	2691	580–1	121	642
Langer, Carl, Ynspenllwch, Clydach, assignor to Mond Nickel Company, Limited, Westminster, England. Treating nickel ores	815,717	Mar. 20	3490	730	121	869
Lanning, James K. (See Coldwell, Joseph, assignor.)						
Lanning, James K., trustee. (See Church, Benjamin S., assignor.) (Reissue.)						
Lanphier, Robert C., Springfield, Ill. Electric meter	816,922	Apr. 3	746	154	121	1524
Lanterman, Frank D., Los Angeles, Cal. Opera-chair hat and wrap rack	818,542	Apr. 24	3991	856	121	2392
Lanyon, Charles W., Shady Creek, Pa. Toy	818,102	Apr. 17	3087	666	121	2146
Lanz, Eva, executrix. (See Lanz, John G.)						
Lanz, John G., deceased, New York, N. Y.; E. Lanz, executrix. Broiling apparatus	817,145	Apr. 3	1170	242	121	1619
Lapham, Charles C., New York, N. Y. Sulky-seat	815,841	Mar. 20	3784	798	121	930
Laplerre, Leon. (See Meadowcroft, Henry L., assignor.)						
Larish, Joseph W., assignor to Gas and Electric Protective Company, Boston, Mass. Electric sprinkler apparatus	814,852	Mar. 13	1709	357	121	431
Larkin, Bernard H., Maywood, Ill., assignor to American Can Company, New York, N. Y. Hinged cover for square or rectangular sheet-metal cans or boxes	815,962	Mar. 27	4012	848	121	1030
Larock, Frederick J., East Hartford, Conn. Culinary utensil	818,455	Apr. 24	3797	816	121	2353
Larsen, Martinus, New York, N. Y. Self-striking match-box	815,596	Mar. 20	3233	679	121	812
Larsson, Henry W., Springfield, Mass. Braiding-machine	814,711	Mar. 13	1442	302–3	121	375
Lathrop, Dwight R., *et al.* (See Devera, William J., assignor.)						
Lathrop, Frank L., Wallingford, Conn., assignor to H. L. Judd Company, New York, N. Y. Curtain-rod support	814,911	Mar. 13	1805	378	121	452
Lathrop, William A., Wilkes-Barre, Pa. Machine for cutting headings	816,923	Apr. 3	750	154–6	121	1524
Latimer, Harry, High Bridge, N. J. Adjustable sheet-metal pipe	818,267	Apr. 17	3434	738	121	2221
Latta, Emmit G., Friendship, assignor of one-half to H. A. Moyer, Syracuse, N. Y. Typewriting machine	814,144	Mar. 6	280	56	121	61
Lattin, Albert N., New York, assignor to S. Sternau & Company, Brooklyn, N. Y. Bath-spray	816,924	Apr. 3	755	156	121	1526
Launer, Charles, Fitzgerald, Ga. Sash-balance	817,491	Apr. 10	1884	397	121	1829
Laur, Charles F., assignor to Lodge & Shipley Machine Tool Company, Cincinnati, Ohio. Variable-speed mechanism	818,632	Apr. 24	4172	898	121	2433
Laurent, Henri, Paris, France. Masticator	816,104	Mar. 27	4310	912	121	1096
Lavin, Francis G., Haywards, Cal. Leaf-turner	815,183	Mar. 13	2386	497	121	578
Lavis, Samuel J., Bowmanville, Canada. Combined helmet and face-protector	817,075	Apr. 3	1038	216	121	1588
Lawford, George M., *et al.* (See Beck, Conrad and H. C., assignors.)						
Lawhon, James C., and G. P. Long, Lake City, Fla. Resawing-machine	818,456	Apr. 24	3798	816	121	2353
Lawlor, James. (See Hall, Samuel N., assignor.)						
Lawrence Switch Co. (See Stevens, Sylvester G., assignor.)						
Lawrence, William E., Brooklyn, N. Y. Hacksaw	815,597	Mar. 20	3234	679	121	812
Layman, Peter, Akron, Ohio. Gage	817,492	Apr. 10	1884	397	121	1829
Layton, Abel M., Pueblo, Colo. Hammer	815,442	Mar. 20	2950	615	121	753
Le Corgne, Philip C. (See Thilborger and Le Corgne.)						
Le Fever, Eugene, Rosendale, N. Y. Axle-lubricator	815,842	Mar. 20	3786	798	121	930
Le Manquais, Ernest R., New York, N. Y. Panel-board	814,146	Mar. 6	286	57	121	63
Le Messurier, Frank C., assignor to Sherwood Manufacturing Company, Buffalo, N. Y. Lubricator	814,147	Mar. 6	287	57	121	63
Le Rond, Louis J. J.-B., Paris, France. Engine	815,104	Mar. 13	2208	465	121	536
Lea Degen Pump Company. (See Degen, Julius, assignor.)						
Lea, James E., East Rand, Transvaal. Liquid-flow measurer and recorder	815,102	Mar. 13	2202	464	121	534
Lea, John M., assignor to International Electric Meter Company, Chicago, Ill. Electrical measuring instrument	817,857	Apr. 17	2600	561–2	121	2039
Leadbeater, Frederick, Detroit, Mich. Boiler-feeder	814,305	Mar. 6	600	125	121	129
Leatherman, Franklin T., assignor of one-half to C. E. Greenwald, Whiting, Ind. Nut-lock	815,541	Mar. 20	3138	656	121	791
Leavitt, Frank M., New York, assignor to E. W. Bliss Company, Brooklyn, N. Y. Starting-valve for automobile torpedoes	814,065	Mar. 6	111	21	121	25

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Leavitt, Frank M., New York, assignor to E. W. Bliss Company, Brooklyn, N. Y. Gyroscope spinning device	814,969	Mar. 13	1930	403	121	475
Leavitt, Frank M., New York, assignor to E. W. Bliss Company, Brooklyn, N. Y. Retarding device for automobile torpedoes	816,019	Mar. 27	4130	875	121	1057
Leavitt Machine Co. (See Williams, Thomas B., assignor.)						
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric and Manufacturing Company. System of excitation for induction-machines	815,356	Mar. 20	2762	576–7	121	709
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric & Manufacturing Company. Excitation for induction-machines	815,357	Mar. 20	2771	577–8	121	710
Lee, Charles A. (See Wetmore, Willis H., assignor.)						
Lee, Edward W., South Atlanta, Ga. Electric signaling for trolley-railways	817,256	Apr. 10	1417	298	121	1731
Lee, Ephraim B. (See Jackson and Lee.)						
Lee, John H., Peckham, England. Revolving spinning bait	817,257	Apr. 10	1419	298	121	1731
Lee, Mary W., Eastbourne, England. Veil-holder	814,221	Mar. 6	429	88	121	93
Lee, Milo B., Columbus, Ohio. Flue-stop	814,853	Mar. 13	1711	357	121	432
Leetham, Sidney, York, assignor to Ozonized Oxygen Company, Limited, Manchester, England. Apparatus for bleaching and sterilizing	816,482	Mar. 27	5090	1079	121	1361
Lefferts, Charles S., Council Bluffs, Iowa, assignor of one-half to C. T. Peavey, Omaha, Nebr. Car-dump	814,610	Mar. 6	1214	254	121	263
Leffingwell, Closson M., Little Falls, Minn. Dental-matrix retainer	814,056	Mar. 6	113	22	121	26
Legg, Benjamin A., Pittsburg, Pa. Metallic tie	815,718	Mar. 20	3491	731	121	869
Legler, Adam, Hastings, Nebr. Gate	817,925	Apr. 17	2751	596	121	2075
Legreid, Crist, *et al.* (See Bendickson, Iver E., assignor.)						
Lehman, Abraham, *et al.* (See Durboraw, Charles L., assignor.)						
Lehman, Isador, Cleveland, Ohio. Engine	814,145	Mar. 6	283	57	121	62
Lehmann, Hermann, Magdeburg, assignor to F. Krupp Aktiengesellschaft Grusonwerk, Magdeburg-Buckau, Germany. Firing mechanism for guns	814,864	Mar. 13	1712	358	121	432
Lehnbeuter, Joseph, St. Louis, Mo. Polishing-machine	814,787	Mar. 13	1592	335	121	408
Lehrman, John, Allentown, assignor to J. G. Speidel, Reading, Pa. Elevator	817,076	Apr. 3	1039	215–16	121	1588
Leiberman, Meyer J., New York, N. Y. Trousers	815,596	Mar. 20	3235	680	121	813
Leibert, Owen F., Bethlehem, Pa. Ice-creeper	817,977	Apr. 17	2851	617	121	2097
Leighton, William E., Pembroke, and F. A. Holmes, Eastport, Me. Vending-machine	814,712	Mar. 13	1447	303	121	376
Leinert, Gustav, Brooklyn, N. Y. Roundabout	815,103	Mar. 13	2205	464–5	121	535
Leistenschneider, August, assignor to Firm of C. Zeiss, Jena, Germany. Exposure appliance	818,543	Apr. 24	3993	856–7	121	2393
Lemaster, Pleasant T., Spartanburg, S. C. Bill-file	818,835	Apr. 24	4588	983	121	2523
Lemberg, Otto H., Lockhart, Minn. Violin	814,549	Mar. 6	1103	230	121	239
Lemp, Hermann, Lynn, Mass., assignor, by mesne assignments, to General Electric Company. System of water regulation for flash-boilers	818,382	Apr. 17	3654	785	121	2286
Lenhart, Philip F., Brooklyn, assignor to Perfect Sewer Trap Manufacturing Company, New York, N. Y. Sewer valve or trap	814,788	Mar. 13	1594	335	121	408
Lenthier, Benjamin, and J. B. Rouilliard, Boston, Mass. Fly-trap	818,836	Apr. 24	4589	984	121	2523
Lentz, Hugo, Berlin, Germany. Cylinder for steam-lubricators	814,148	Mar. 6	290	58	121	64
Lentz, Hugo, Berlin, Germany. Guiding means for turbines	816,020	Mar. 27	4132	875–6	121	1058
Lentz, Philipp, Gross Lichterfelde, near Berlin, Germany. Safety guard or fender for tramway and the like vehicles	818,837	Apr. 24	4590	984	121	2524
Léon, Libermond A., Montreal, Canada. Electric door-releasing device	814,461	Mar. 6	934	191–2	121	204
Leonard, Harry W., Bronxville, N. Y. Electrical-circuit controller	817,719	Apr. 10	2280	492–4	121	1912
Leonard, Harry W., Bronxville, N. Y. Automatic electric-circuit controller	817,720	Apr. 10	2291	494	121	1915
Leonard, Harry W., Bronxville, N. Y. Electric-circuit controller. (Reissue)	12,473	Apr. 24	4975	1066	121	2608
Leonard, Hjalmar, Chicago, Ill. Artificial limb	816,866	Apr. 3	633	132	121	1499
Leonard, Peter, and C. H. Jones, Great Crosby, near Liverpool, England. Holder for electric incandescent lamps	816,483	Mar. 27	5092	1080	121	1262
Leppert, Henry E., New Britain, assignor to Hart Manufacturing Company, Hartford, Conn. Electric switch	818,035	Apr. 17	2969	641	121	2122
Leusch, Frederick M., Traer, Iowa. Artificial-stone roofing tile or shingle	814,970	Mar. 13	1921	403	121	475
Leuz, Daniel, Iowa City, Iowa. Scaffold	818,268	Apr. 17	3435	738	121	2221
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Life-guard fender for cars	815,105	Mar. 13	2210	465	121	536
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Tripping member for car-fenders	815,106	Mar. 13	2212	466	121	537
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Fender for motor-cars	815,919	Mar. 20	3929	831	121	961
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Separable fender for motor-cars	815,920	Mar. 20	3931	832	121	961
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Spring-buffer for car-fenders	815,921	Mar. 20	3933	832	121	962
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Chain-bracket for car-fenders	815,922	Mar. 20	3934	832	121	962
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Detachable car-fender	815,923	Mar. 20	3936	833	121	962
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Car-fender spring	815,924	Mar. 20	3937	833	121	962
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Fender-carrier	815,925	Mar. 20	3938	833	121	962
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Automatic car-fender	815,926	Mar. 20	3939	834	121	963
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Tubular car-fender	815,927	Mar. 20	3940	834	121	963
Lev, Benjamin, Cleveland, Ohio, assignor to Eclipse Railway Supply Co., Kansas City, Mo. Cushioning-roller for car-fenders	815,928	Mar. 20	3943	835	121	964
Levedahl, Axel, assignor to Aurora Automatic Machinery Company, Aurora, Ill. Pneumatic hammer	814,306	Mar. 6	902	125–6	121	130
Levenberg, Samuel P., New York, N. Y. Telephone	818,608	Apr. 24	4303	923	121	2461
Leverone, James, New London, Conn. Surgical truss	816,867	Apr. 3	634	132	121	1499
Levett, Benjamin A., New York, N. Y. Pipe, cigar, or cigarette holder	815,443	Mar. 20	2960	616	121	753
Levin, Judah L., Detroit, Mich. Calculating-machine	815,542	Mar. 20	3139	657	121	791
Levison, Alexander, *et al.* (See Levison, Benjamin, assignor.)						
Levison, Benjamin, assignor of two-thirds to A. and H. Levison, San Francisco, Cal. Twine-holder	814,462	Mar. 6	936	192	121	204
Levison, Harry, *et al.* (See Levison, Benjamin, assignor.)						
Levy, Abraham B. (See Bleco, John H., assignor.)						
Levy, Henri. (See Berger, Ernst, assignor.)						
Lewis, Alfred, Kettering, assignor to Mobbs and Lewis, Limited, Carrington Foundry, Kettering, England. Filler for boots and shoes	815,599	Mar. 20	3237	660	121	813
Lewis, Arthur W., Moscow, Ky. Car-coupling and draw-head	817,077	Apr. 3	1042	216	121	1589

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Lewis Blind Stitch Machine Company. (See Lewis and Bagley, assignors.)						
Lewis, Charles M., *et al.* (See Heaton, John S., assignor.)						
Lewis, Edward, Winnipeg, Canada. Fifth-wheel for vehicles	816,168	Mar. 27	4440	940	121	1124
Lewis, Emily S., Philadelphia, Pa. Holder for nursing-bottles	816,105	Mar. 27	4310	913	121	1097
Lewis, Frank E., assignor to W. E. Johnson, Troy, Ohio. Motor	815,444	Mar. 20	2963	616	121	754
Lewis, Frederick A., Melbourne, Victoria, Australia. Apparatus for preventing smoke	814,550	Mar. 6	1104	230	121	240
Lewis, James E., Steelton, assignor to Pennsylvania Steel Company, Philadelphia, Pa. Railway-frog	815,719	Mar. 20	3492	731	121	869
Lewis, Jay C., Shelby, Ohio. Carburetor	817,721	Apr. 10	2296	494	121	1918
Lewis, John G., and C. W. Bagley, assignors to Lewis Blind Stitch Machine Company, St. Louis, Mo. Work-holding device for sewing-machines	814,057	Mar. 6	114	22	121	26
Lewis, Mortimer G. (See Hanimann, Charles, assignor.)						
Lewis, William P., and T. R. Williams, Canton, Ohio. Catcher for tinning-machines	818,838	Apr. 24	4592	984–5	121	2524
Leyers, Charles J., East Rutherford, N. J. Apparatus for making wire-core hair-pins	814,058	Mar. 6	116	22–3	121	26
Leyh, Carl A., assignor to I. Seligstein, St. Louis, Mo. Millinery-box	815,543	Mar. 20	3143	657–8	121	792
Leyner, John G., Denver, Colo. Rock-drill	815,299	Mar. 13	2599	546–7	121	626
Leyner, John G., Denver, Colo. Drill-bit-rotating mechanism for rock-drilling engines	816,021	Mar. 27	4134	876	121	1058
Libby, Sam H., East Orange, N. J., assignor to Sprague Electric Company. Automatic carrier	816,484	Mar. 27	5093	1080	121	1262
Liberman, Bernard, Philadelphia, Pa. Cigar-rolling table and wrapper-cutter	817,493	Apr. 10	1886	397–8	121	1830
Library Bureau. (See Hunter, David E., assignor.)						
Lickman, Albert E., Baltimore, Md. Toothpick	817,978	Apr. 17	2853	618	121	2097
Lidgerwood Manufacturing Company. (See Butler, Joseph, assignor.)						
Lidgerwood Manufacturing Company. (See Locher, Charles H., assignor.)						
Liebhardt, Julius C., Belleville, N. J., assignor, by mesne assignments, to Globe Exhibiting Company, New York, N. Y. Clutch mechanism for exhibiting-machines	817,178	Apr. 10	1250	258–9	121	1697
Liebknecht, Otto, Frankfort-on-the-Main, Germany, assignor to Roessler & Hasslacher Chemical Company, New York, N. Y. Magnesium perborate	816,925	Apr. 3	757	.....	121	1526
Liebold, Richard, Weimar, Germany. Manufacture of acid-proof and impermeable cements. (Reissue)	12,470	Apr. 3	1183	.....	121	1623
Lieckfeld, Georg. (See Fettback and Lieckfeld.)						
Lien, Christian, Salt Lake City, Utah. Anticreeper	816,926	Apr. 3	757	156	121	1526
Lightbody, William P., Johannesburg, Transvaal. Mechanism for sharpening rock-drills	815,720	Mar. 20	3494	731	121	870
Lightbody, William P., Johannesburg, Transvaal. Mechanism for sharpening rock-drills	815,843	Mar. 20	3787	798–9	121	930
Lightbody, William P., Johannesburg, Transvaal. Mechanism for shaping and swaging rock-drills	815,844	Mar. 20	3788	799	121	931
Lightbody, William P., Johannesburg, Transvaal. Mechanism for shaping and swaging rock-drills	815,845	Mar. 20	3789	800	121	931
Lightfoot, H. W. (See Stone, Francis I., assignor.)						
Lilienfeld, Leon, Vienna, Austria-Hungary. Producing metallic or lustrous colors for printing on fabrics	815,600	Mar. 20	3238	.....	121	813
Lincoln, Ward W., Rock Falls, assignor of one-half to E. J. Cochran, Sterling, Ill. Reeling-machine	815,184	Mar. 13	2388	497	121	578
Lindall, John, Boston, and P. Winsor, Weston, Mass. Rail-cleaning apparatus	816,485	Mar. 27	5097	1080	121	1264
Lindberg, Johan, Crookston, Minn. Steam-engine	815,185	Mar. 13	2390	498	121	579
Linde, Carl, Munich, Germany, assignor of one-third to C. F. Brush, Cleveland, Ohio. Apparatus for liquefying gas and separating its elements	815,544	Mar. 20	3144	658	121	792
Linde, Carl, Munich, Germany, assignor of one-third to C. F. Brush, Cleveland, Ohio. Apparatus for producing pure nitrogen	815,601	Mar. 20	3239	680	121	813
Linden, John J. (See Rockwell and Linden.)						
Linderman, Charles V., and C. W. Corson, East Pittsburg, Pa. Toy	814,463	Mar. 6	937	192	121	204
Lindgren, Alexus C., Moline, Ill., assignor to Moline Plow Company. Cultivator-yoke	815,602	Mar. 20	3240	680	121	813
Lindgren, Alexus C., Moline, Ill., assignor to Moline Plow Company. Corn-planter	815,603	Mar. 20	3242	681	121	814
Lindgren, Alexus C., Moline, Ill., assignor to Moline Plow Company. Balancing mechanism for wheel-cultivators	816,868	Apr. 3	636	132	121	1499
Lindgren, Erick W., Hagalund, near Stockholm, Sweden. Coin-controlled liquid-vending apparatus	817,788	Apr. 17	2466	527	121	2009
Lindner, Stephan, and M. G. Roberts, Detroit, Mich. Hot-water heating-furnace	816,927	Apr. 3	760	157	121	1527
Lindquist, Albert V., Alexandria, Minn. Film-developing machine	815,300	Mar. 13	2603	547	121	627
Lindsay, Anson J., Toronto, Canada. Power-transmission means	816,022	Mar. 27	4140	877	121	1050
Lindsay, Clarence A., New York, N. Y. Inflatable toy	816,106	Mar. 27	4311	913	121	1097
Lindsay, George F., Sherman, Tex. Hame and trace connector	814,222	Mar. 6	429	88	121	93
Lindström, Charles A., Allegheny, assignor to Pressed Steel Car Company, McKees Rocks, Pa. Truck-bolster	817,789	Apr. 17	2468	528	121	2010
Linebarger, Oliver, Council Bluffs, Iowa. Shade-hanger	814,149	Mar. 6	291	58	121	64
Link Belt Engineering Company. (See Hetzel, Frederic V., assignor.)						
Link Belt Engineering Company. (See Hetzel and Waechter, assignors.)						
Linkswiler, Stirling P. (See Boomer and Linkswiler.)						
Linotype Company. (See Barr, Mark, assignor.)						
Linotype & Machinery. (See Barr, Mark, assignor.)						
Linotype and Machinery Limited. (See North, Thomas M., assignor.)						
Linton, Morris, Moorestown, N. J., assignor to Burnham, Williams & Company, Philadelphia, Pa. Brake-beam hanger	815,094	Mar. 13	2056	430	121	503
Linton, Morris, Moorestown, N. J., assignor to Burnham, Williams & Company, Philadelphia, Pa. Means for adjusting the height of spring-planks for railway-trucks	817,078	Apr. 3	1043	216	121	1589
Lipkowits, Sarah, New York, N. Y. Supporter	815,604	Mar. 20	3248	682	121	815
Lippman, Jacob. (See Smith, Andrew J., assignor.)						
Lipsey, Samuel T., Georgetown, S. C. Saw-swage	818,179	Apr. 17	3258	668–9	121	2184
Litsey, John P., Chicago, Ill. Globe-supporting device	818,103	Apr. 17	3068	666	121	2146
Little, Albert H., New York, N. Y. Propeller-wheel	817,494	Apr. 10	1888	398	121	1830
Little & Company, A. E. (See Baynard, William H., assignor.)						
Little, H. W., *et al.* (See Waldo, Charles W., assignor.)						
Littmann, Otto G. A., Charlottenburg, Germany. Motor-driven vehicle	817,258	Apr. 10	1420	299	121	1731
Litts, Edward A., Sioux City, Iowa. Clamp-bracket	818,457	Apr. 24	3800	817	121	2353
Lloyd, Cyrus S., Minneapolis, Minn. Forming wire cables	817,328	Apr. 10	1544	325	121	1757
Lloyd, William F., assignor of one-third to C. A. Stimpson, Philadelphia, Pa. Engine-indicator	814,971	Mar. 13	1923	404	121	475
Lloyd, William H., assignor to Crane Company, Chicago, Ill. Waste-trap	816,023	Mar. 27	4142	877	121	1050
Lobingier, Judson B., Pittsburg, Pa. Rail-joint	818,769	Apr. 24	4462	966	121	2497
Locher, Charles H., Lemont, Ill., assignor to Lidgerwood Manufacturing Company. Conveying apparatus	815,963	Mar. 27	4013	849	121	1030
Locke, A. Le Roy. (See Davis, Clarence F., assignor.)						
Lockie, Lillian, San Francisco, Cal. Dress-shield	815,186	Mar. 13	2392	498	121	579

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Lockwood, Rhodes G., assignor to Davidson Rubber Company, Boston, Mass. Fountain-pen-filling device	816,345	Mar. 27	4809	1018-19	121	1202
Lodder, Ernest, Don, Tasmania, Australia. System for supporting cables, &c	818,269	Apr. 17	3437	739	121	2221
Lodge & Shipley Machine Tool Company. (See Laur, Charles F., assignor.)						
Loeffler, Fritz, New York, N. Y. Ball-bearing	817,124	Apr. 3	1130	234	121	1611
Loepp, John, near Tacoma, Wash. Vehicle	817,739	Apr. 10	2343	503	121	1929
Loepsinger, Albert J., assignor to Rhode Island Automatic Machine Company, Providence, R. I. Die-engraving machine	814,611	Mar. 6	1215	255	121	263
Loew, Charles H., Lakewood, Ohio. Pasteurizer	817,495	Apr. 10	1889	398	121	1830
Löffler, Oswald, and W. Weidle, Vienna, Austria-Hungary. Filtering material	815,846	Mar. 20	3791	.....	121	931
Loftus, John, assignor of one-half to P. Kinnear, Albany, N. Y. Stove-grate	815,445	Mar. 20	2964	616-17	121	754
Logan, William H., Louisville, Ky. Spiral slideway	814,856	Mar. 13	1713	358	121	432
Logan, William H., assignor to Kirker-Bender Fire Escape Company, Louisville, Ky. Spiral slideway	818,383	Apr. 17	3657	785	121	2267
Lohda, Robert, assignor to Northwestern Manufacturing Company, Fort Atkinson, Wis. Antitip-over device for bob-sleighs	818,544	Apr. 24	3995	857	121	2393
Lohr, Carl A., Wilkinsburg, Pa. Transformer	817,926	Apr. 17	2753	596	121	2076
Lohse, Hermann. (See Banks, Charles, assignor.)						
Lonergan, William J., Brookfield, Wis. Reading-desk	814,381	Mar. 6	772	156	121	171
Long, Agnes L. (See Knee, Frank H., assignor.)						
Long, Frank B., Los Angeles, Cal. Piano-action	814,972	Mar. 13	1924	404	121	475
Long, George A., assignor to Gray Telephone Pay Station Company, Hartford, Conn. Telephone toll apparatus	815,107	Mar. 13	2213	466	121	537
Long, George M., Latrobe, Pa. Rake	816,486	Mar. 27	5100	1081	121	1264
Long, George P. (See Lawhon and Long.)						
Long, Herbert S., Marion, Ohio. Dumping-cart	814,059	Mar. 6	118	23	121	27
Long, John R., Akron, Ohio. Wrench	818,180	Apr. 17	3262	699	121	2185
Long, Louis. (See Shaw and Long.)						
Long Manufacturing Company. (See Stolp and Wright, assignors.)						
Long, Samuel J. (See Rollins, William A., assignor.)						
Long, Sidney L., Minneapolis, Minn. Coin-controlled vending-machine	816,107	Mar. 27	4312	913-14	121	1097
Long William H., Brooklyn, N. Y. Comb-cleaner	814,713	Mar. 13	1449	303	121	376
Longacre, Frederick V., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Means for operating the electric unloaders of air-compressors	815,025	Mar. 13	2058	431	121	504
Longhenry, John E., assignor to H. L. Smith, Gloversville, N. Y. Kettle attachment	814,714	Mar. 13	1450	304	121	377
Lonski, Frank, Plymouth, Pa. Mining-drill	814,856	Mar. 13	1714	358	121	432
Look, Dexter G., *et al.* (See Parks, Clarence W., assignor.)						
Lord, John S., Ogden, Iowa. Portable grist-mill	816,108	Mar. 27	4314	914	121	1097
Lord, Peter, assignor of one-half to W. H. Inman, Worcester, Mass. Saw-file	818,633	Apr. 24	4174	898	121	2433
Lorenz, Richard, Rummelsburg, Germany. Wire-drawing machine	817,979	Apr. 17	2853	618	121	2097
Lorimer, George W., Piqua, Ohio. Means for blowing automobile-horns	817,125	Apr. 3	1131	235	121	1612
Loring, Ernest J., Somerville, Mass. Speed-indicator	815,108	Mar. 13	2217	466	121	539
Lott, Alexander, Seminary, Miss. Vehicle-thill	816,667	Apr. 3	248	58	121	1415
Lott, William C., North Chicago, Ill. Wrench	815,446	Mar. 20	2966	617	121	754
Loughrey, Carl, Los Angeles, Cal. Horse-blanket	814,656	Mar. 6	1309	275	121	283
Lourie, Lloyd S., Chicago, Ill. Dental instrument for raising barbs upon wires	816,668	Apr. 3	249	59	121	1415
Love, Andrew C., Sacramento, Cal. Car-wheel-flange lubricator	818,384	Apr. 17	3658	785-6	121	2267
Love, Robert T., West Monroe, La. Cultivator	818,839	Apr. 24	4594	985	121	2524
Lovelace, William. (See Graham and Lovelace.)						
Lovett, John, Martinsburg, W. Va. Building-block	814,973	Mar. 13	1925	404	121	476
Low, Charles F. G., Charlton, England. Variable-speed gear	814,060	Mar. 6	121	23	121	27
Low, Harold A., assignor to Electrical Concrete Post Company, Lake City, Iowa. Transformable mold for building-blocks	814,657	Mar. 6	1309	275	121	283
Lowe, Ernest A., North Plainfield, N. J. Electrical connector for electric lamps	815,605	Mar. 20	3249	682	121	815
Lowe, James L., and J. O. Hibbard, Detroit, Mich. Machine for stringing bags	815,606	Mar. 20	3251	682-3	121	816
Lowe, John, Hutchinson, Kans. Milk-pail	817,575	Apr. 10	2044	430	121	1861
Lowe, Leon P., San Francisco, Cal. Manufacturing gas	817,126	Apr. 3	1133	235	121	1612
Lowe, Leon P., San Francisco, Cal. Gas-washing device	817,127	Apr. 3	1136	235	121	1612
Lowe, Leon P., San Francisco, Cal. Gas-making apparatus	817,647	Apr. 10	2171	461	121	1889
Lowe, Leon P., San Francisco, Cal. Apparatus for making gas	817,648	Apr. 10	2172	461	121	1889
Lowe, Leon P., San Francisco, Cal. Apparatus for manufacturing and delivering gas	817,649	Apr. 10	2174	462	121	1889
Lowe, Leon P., San Francisco, Cal. Gas-purifier	817,650	Apr. 10	2175	462	121	1890
Lowe, William H. (See Gibson, John W., assignor.)						
Lowe, William M., Appleby, Tex. Railway-gate	817,259	Apr. 10	1422	299	121	1732
Lowell Machine Shop. (See Flather, Frederick A., assignor.)						
Lowrey, Clyde W., Centerville, Ala. Churn	815,358	Mar. 20	2779	578	121	710
Loyster, James A., Cazenovia, N. Y. Combined printing and cutting machine	818,699	Apr. 24	4306	923-5	121	2462
Lubbers, John H., New Kensington, Pa. Making glass sheets	814,612	Mar. 6	1218	255-6	121	264
Lucas, William H., Newark, Ohio. Cistern-mold	815,447	Mar. 20	2967	617	121	754
Luck, Hans C., Telluride, Colo. Air-brake appliance	814,974	Mar. 13	1926	404-5	121	476
Lucke, Charles E. (See Parr and Lucke.)						
Luckett, William S., East Orange, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Machine for handling cigar bunches	815,359	Mar. 20	2781	579	121	710
Ludwig, Edmund B., Kansas City, Mo. Carbureting-lamp	816,669	Apr. 3	251	59	121	1415
Lueck, John, Fairbury, Nebr. Windmill pump-rod	816,586	Apr. 3	68	15-16	121	1371
Lugabill, Christian, Bluffton, Ohio. Building-block	815,607	Mar. 20	3256	683	121	817
Luhman, Edward J., San Francisco, Cal. Machine for cutting butter	818,770	Apr. 24	4463	956-7	121	2497
Luhrs, Margaret A. E., Hoboken, N. J. Folding attachment for sewing-machines	815,026	Mar. 13	2060	431	121	504
Lumgair, David, West Bay City, assignor of one-half to J. P. Bender, Bay City, Mich. Steam-turbine	816,487	Mar. 27	5101	1081	121	1265
Lumis, Thomas J., New York, N. Y. Necktie-frame	818,972	Apr. 24	4841	1040	121	2578
Lummen, Clement V. de, Brussels, Belgium. Lasting-machine	816,587	Apr. 3	69	16-17	121	1371
Lummis, Henry M., and F. W. Hergert, Elizabeth, N. J. Faucet attachment	814,715	Mar. 13	1451	304	121	377
Lundahl, Charlie E., Minneapolis, Minn. Rail-joint	818,385	Apr. 17	3659	786	121	2268
Lundin, Gustaf L., East Boston, assignor of two-thirds to T. von Rosenvinge and E. J. O'Brien, Boston, Mass. Smoking-pipe	817,379	Apr. 10	1642	348	121	1779
Lundsten, Fritz, Corona, assignor of one-half to T. Eskilsson, Astoria, N. Y. Safety device for elevators	817,431	Apr. 10	1760	370	121	1803
Lungren, Charles M., Bayonne, N. J., assignor to Safety Car Heating & Lighting Company. Mantle suspension	814,912	Mar. 13	1806	378	121	452
Lunsford, Richard E., Dorsey, Ga. Plow	814,551	Mar. 6	1106	230	121	240
Lunt, Daniel A., Newburyport, assignor to Lunt, Moss & Co., Boston, Mass. Machine for sawing logs	817,496	Apr. 10	1892	399	121	1831
Lunt, Isaac H., Barre, Vt. Trolley-harp	816,239	Mar. 27	4567	972	121	1151
Lunt, Moss & Co. (See Lunt, Daniel A., assignor.)						
Luten, Daniel B., Indianapolis, Ind. Arch structure	818,386	Apr. 17	3660	786	121	2268

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Luther, Benjamin S., Boston, assignor to Chase-Shawmut Company, Newburyport, Mass. Electric fuse	815,964	Mar. 27	4015	850	121	1030
Luther, William C., Newark, N. J. Fountain-pen	815,721	Mar. 20	3496	732	121	870
Lutz, Harry J., and H. W. Friedel, Wheeling, W. Va. Non-refillable bottle	818,181	Apr. 17	3264	699	121	2185
Lutz, Robert H., Rotterdam, N. Y. Metallic railway-tie	818,182	Apr. 17	3266	699	121	2186
Lutz, Thomas J., Jr., assignor of one-half to A. Kallmerten, Mansfield, Ohio. Explosive-engine	816,109	Mar. 27	4318	915	121	1099
Lydon, Timothy, New York, N. Y. Means for filtering streams and the like	815,722	Mar. 20	3498	732	121	870
Lynam, Daniel E., Chicago, Ill. Valve-seat-dressing device	817,260	Apr. 10	1423	299	121	1732
Lynch, Arthur C., Richmond Hill, assignor to Sterling Blower & Pipe Manufacturing Company, New York, N. Y. Pneumatic conveying apparatus	815,965	Mar. 27	4016	850	121	1031
Lynch, Arthur C., Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn. Dust collector and separator	815,966	Mar. 27	4017	850	121	1031
Lynch, Arthur C., Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn. Dust-collector and like apparatus	815,967	Mar. 27	4019	850–1	121	1031
Lynch, Arthur C., Richmond Hill, N. Y., assignor to Sterling Blower & Pipe Manufacturing Company, Hartford, Conn. Separable pipe-joint	815,968	Mar. 27	4021	851	121	1031
Lynch, Joseph H., Red Bank, N. J. Signal system	817,497	Apr. 10	1894	399–400	121	1831
Lynd, James W. (See Gay, Daniel G., assignor.)						
Lyndon, Lamar, New York, N. Y. Device for recharging the storage batteries of automobiles	815,360	Mar. 20	2788	579–81	121	712
Lynn, Hugh L., Glenville, Ky. Brake	814,223	Mar. 6	431	88	121	93
Lynn, Robert H., Bolivar, Pa. Veneering-machine	814,382	Mar. 6	773	156	121	171
Lyon, Lora B., Detroit, Mich. Bust-supporter	818,104	Apr. 17	3090	667	121	2146
Lyons, John A., and E. C. Broadwell, Chicago, Ill. Producing ammonia	816,928	Apr. 3	762	157	121	1528
Lyons, John W., Philadelphia, Pa. Saggar for baking pottery	817,722	Apr. 10	2297	495	121	1918
Lyons, Robert L., Waltham, Mass. Stitch-forming means for sewing-machines	818,840	Apr. 24	4596	986	121	2525
MacArthur, Alexander W., Philadelphia, Pa. Advertising device	814,383	Mar. 6	775	156–7	121	171
MacCorquodale, Peter H. (See Stearns and MacCorquodale.)						
MacKean, Frank, Chicago, Ill. Insulator-pin	814,613	Mar. 6	1220	256	121	264
MacLeod, John N., Chicago, Ill. Hog-scalder	814,384	Mar. 6	777	157	121	172
Macartney, Edmund C., assignor of one-half to H. B. Amerling, Philadelphia, Pa. Self-clearing rake	819,017	Apr. 24	4928	1058	121	2598
Macauley, Frank I., Alameda, Cal. Fly-catcher	816,929	Apr. 3	763	157	121	1528
Macdonald, Hugh R., Alexandria, Canada. Whey-measuring apparatus	818,545	Apr. 24	3996	857	121	2393
Macdonell, Allan, Laredo, Tex. Combined land-roller, furrow opener, and marker	814,716	Mar. 13	1452	304	121	377
Macfarlane, Thomas, Ottawa, Canada. Dry closet	815,969	Mar. 27	4022	851	121	1032
Macfarlane, William P. A., Chicago, Ill. Fluid-pressure brake	819,032	Apr. 24	4960	1064	121	2604
Machado, Manuel C., Morro, assignor of one-half to A. H. Froom, Santa Maria, Cal. Sidehill-harrow draft attachment	816,986	Apr. 3	887	183	121	1555
Machlet, George, Jr., Elizabeth, N. J. Gas-burner	819,018	Apr. 24	4929	1058	121	2598
Mackey, Chas. W., *et al.* (See Hutchinson, Charles G., assignor.)						
Mackin, Francis J., assignor of two-thirds to Illinois-Pacific Glass Company, San Francisco, Cal. Apparatus for molding glass articles	817,576	Apr. 10	2045	430–1	121	1862
Mackintosh, Edward D., New York, N. Y. Drawing and plotting device	814,789	Mar. 13	1597	335	121	409
Macmillan, James R., Menomonee, Wis., assignor to Northwestern Storage Battery Company, Chicago, Ill. Storage battery	817,498	Apr. 10	1899	400	121	1832
Macrate, Michael N., assignor to himself and J. A. Toomey, trustees, San Francisco, Cal. Oil-burner	817,128	Apr. 3	1137	235	121	1613
Macy, John W., assignor to Baldwin Company, Cincinnati, Ohio. Pneumatic-motor governor	816,169	Mar. 27	4441	940	121	1124
Madden, Patrick L., and G. Pfender, Pittsburg, Pa. Cuspidor	814,385	Mar. 6	779	157	121	172
Maddison, William E., and W. Downs, Irthlingborough, England. Nailing, slugging, or like machine for use in boot and shoe manufacture	817,179	Apr. 10	1253	259–60	121	1696
Madir, Juan, Frankfort-on-the-Main, Germany. Bottle-stopper	817,380	Apr. 10	1643	348	121	1780
Madison, Alfred L., assignor to Wilcox and Gibbs Sewing Machine Company, New York, N. Y. Presser-foot lifter for sewing-machines	818,896	Apr. 24	4603	1007	121	2545
Madlinger, Charles. (See Fisher, Fred, assignor.)						
Madlinger, Joseph. (See Fisher, Fred, assignor.)						
Maechling, Frederick, St. Louis, Mo. Base-ball bat	814,857	Mar. 13	1715	356	121	433
Maerker, Hans, Wiesbaden, Germany, Tire for wheels	818,771	Apr. 24	4465	957	121	2497
Magee Furnace Company. (See Magee, John, assignor.)						
Magee, John, Malden, assignor to Magee Furnace Company, Boston, Mass. Heater	814,224	Mar. 6	432	89	121	93
Magerstedt, Otto. (See Andresen, Magerstedt, and Ollendorff.)						
Magnetic Control Company. (See Bacon, Daniel, assignor.)						
Magnuson, Axel, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J. System of motor control	816,804	Apr. 3	490	109	121	1464
Magnuson, Axel, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J. System of motor control	816,805	Apr. 3	495	109	121	1466
Magnuson, Axel, New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Electric traction-elevator	816,806	Apr. 3	500	110	121	1466
Magnuson, Axel, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J. Electric-elevator system	816,809	Apr. 3	637	133	121	1500
Magnuson, Axel, New York, N. Y., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J. System of motor control	816,930	Apr. 3	764	158	121	1528
Magnuson, Axel, New York, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. System of motor control	816,931	Apr. 3	768	158	121	1529
Mahoney, James, Mount Alton, Pa. Hook for sucker-rod elevators	815,723	Mar. 20	3500	732	121	871
Mahoney, Jeremiah, Cincinnati, Ohio. Sole and sole-placer	814,061	Mar. 6	122	24	121	28
Mahoney, Jeremiah L., assignor of one-half to F. F. Schaffer, Naugatuck, Conn. Striped rubber tubing	817,079	Apr. 3	1045	217	121	1590
Mahoney, Jeremiah L., assignor of one-half to F. F. Schaffer, Naugatuck, Conn. Method of and apparatus for making striped fabric from plastic material	817,080	Apr. 3	1046	217	121	1590
Main, George A., Alfred, N. Y. Printing-machine	816,110	Mar. 27	4323	916	121	1099
Majoros, John, assignor of one-half to D. Schroeder, Hamilton, Ohio. Cask-repairing device	817,980	Apr. 17	2854	618	121	2097
Malcolm, William K., Butte, Mont. Dresser	818,458	Apr. 24	3802	817–18	121	2354
Mallett, John P., Madison, Wis., assignor to Northern Electrical Manufacturing Company. Dynamo-electric machine	815,847	Mar. 20	3792	801	121	931
Malliet, Charles G., *et al.* (See Gibson, Charles D. P., assignor.)						
Malliet, Walter, *et al.* (See Gibson, Charles D. P., assignor.)						
Mallory, Lorenzo D., Longbeach, Cal. Propeller for marine vessels	817,981	Apr. 17	2856	619	121	2098
Maltby, Julius, assignor to Waterbury Buckle Company, Waterbury, Conn. Fastening device for men's garters	814,464	Mar. 6	939	192	121	205
Manahan, Thomas, New York, N. Y. Bag	814,150	Mar. 6	292	58	121	64
Mandonnet, Edward, San Francisco, Cal. Device to prevent refilling of bottles	814,307	Mar. 6	611	126	121	139

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Maney, William T., New York, N. Y. Lamp	814,225	Mar. 6	435	89-90	121	94
Mangin, Joseph, Sigourney, Iowa. Pellet-coating machine	815,608	Mar. 20	3257	683	121	817
Manker, Carey A., Pearl, Ill. Marine vessel	815,187	Mar. 13	2393	498	121	579
Mann, George W., San Louis Obispo, Cal. Beehive	818,270	Apr. 17	3438	739	121	2222
Mann, Orin B., Meeteetse, Wyo. Hay rake and stacker	816,346	Mar. 27	4810	1019-20	121	1203
Manning, Bowman & Company. (See Savage, George E., assignor.)						
Mans, Albert, Dieghem, Belgium. Antivibration device for carriage-springs	815,188	Mar. 13	2394	499	121	579
Manson, M. C., Jr. (See Craighill and Kerr, assignors.)						
Manson, Ray H., assignor to Dean Electric Company, Elyria, Ohio. Telephone system	818,897	Apr. 24	4604	1007	121	2546
Mantle, Joseph G. C. (See Tyberg and Mantle.)						
Mantz, Catherine, Peoria, Ill. Lace-making holder	814,151	Mar. 6	293	59	121	65
Manypenny, John, New Brighton, Pa. Brick-kiln	815,189	Mar. 13	2395	499	121	580
Manzel Brothers. (See Manzel, Charles W., assignor.)						
Manzel, Charles W., assignor to Manzel Brothers, Buffalo, N. Y. Force-feed lubricator	815,301	Mar. 13	2606	547-8	121	628
Marble, Edwin H. (See Marble, Edwin T. and E. H.)						
Marble, Edwin T. and E. H., assignors to Curtis & Marble Machine Co., Worcester, Mass. Adjustable guiding mechanism for skewing bridge-threaded fabrics	815,970	Mar. 27	4024	851-2	121	1032
Marble, George W., Chicago, Ill. Variable-speed mechanism	818,898	Apr. 24	4698	1008	121	2547
Marchessault, Charles E., Minneapolis, Minn. Folding-seat back	815,190	Mar. 13	2396	499	121	580
Marean, William M., Belvidere, Ill. Telephone-exchange	814,386	Mar. 6	780	158	121	172
Marentette, William R., Detroit, Mich. Vehicle-heater	814,700	Mar. 13	1599	336	121	409
Marine Torch Company of Baltimore City. (See Graham, John D., assignor.)						
Markham Air Rifle Company. (See Markham, William F., assignor.)						
Markham, Charles F., Providence, R. I. Pin	814,465	Mar. 6	940	193	121	205
Markham, William F., assignor to Markham Air Rifle Company, Plymouth, Mich. Folding truck	814,858	Mar. 13	1716	359	121	433
Markoff, Samuel A., New York, N. Y. Photographic mailing-card	816,870	Apr. 3	643	133	121	1501
Marks, Francis R. (See Bott, George M., assignor.)						
Marks, Joseph C., Birmingham, Ala. Skid	815,848	Mar. 20	3793	801	121	932
Marks, Morris. (See South, Richard, assignor.)						
Marlin, Frances M. (See Hause and Marlin.)						
Marneffe, Henri de, Liege, Belgium. Apparatus for tanning leather	816,670	Apr. 3	255	59	121	1416
Marriage, George R., assignor of one-half to C. A. Thompson, Mullinville, Kans. Gang-plow	814,552	Mar. 6	1107	230	121	240
Marriott, James C., New Dorp, N. Y. Curb-conduit	814,308	Mar. 6	612	126-7	121	132
Mars, Thomas H., Chicago, Ill. Automatically-tripping trolley-pole	817,858	Apr. 17	2603	562	121	2039
Marsh, Albert, London, England. Check perforating and indicating apparatus	814,553	Mar. 6	1108	231	121	240
Marsh, Benjamin F., *et al.* (See Smith, John C., assignor.)						
Marsh, George A. (See Dixon and Marsh.)						
Marsh, Joseph W. (See Fisher, Henry W., assignor.)						
Marshall, Charles H., Brockwayville, Pa. Bread-raiser	817,499	Apr. 10	1901	400	121	1833
Marshall, Ellsworth D., Sidney, Ohio. Magazine heating-stove	816,024	Mar. 27	4144	877	121	1060
Marshall, Ernest W., Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J. Hoist	817,790	Apr. 17	2469	528	121	2010
Marshall, George, and J. Cox, Tarkio, Mo. Draft-equalizer	815,361	Mar. 20	2794	581	121	713
Marshall, George H., and C. L. Dunn, St. Johns, Mich. Rail-joint	816,671	Apr. 3	257	60	121	1417
Marshall, James. (See Sheldon, Irving L., assignor.)						
Marshall, Norman, Newton, Mass. Machine for shaping tubular articles	815,362	Mar. 20	2796	581-2	121	714
Marshall & Stearns Company. (See Eastman, James B., assignor.)						
Marten, Albert S., East Orange, N. J. Horn-support	815,448	Mar. 20	2969	618	121	755
Marten, Albert S., East Orange, and C. J. Eichhorn, assignors to Tea Tray Company, Newark, N. J. Shade-holder	815,545	Mar. 20	3147	658-9	121	793
Martenson, John, *et al.* (See Johanson, Emil G., assignor.)						
Martin, Alonzo T., Niagara Falls, Canada. Monkey-wrench	815,449	Mar. 20	2970	618	121	755
Martin, Columbus M., Forest City, N. C. Wire-chain line	815,849	Mar. 20	3794	801	121	932
Martin, Daniel B., Gettysburg, Ohio. Detachable stock for revolvers	815,609	Mar. 20	3259	684	121	818
Martin, Francis, San Francisco, Cal., assignor to Buffer Spring Mattress Company. Mattress	815,610	Mar. 20	3259	684	121	818
Martin, Frank F., Beloit, Wis. Cement-block-molding machine	816,488	Mar. 27	5102	1081-2	121	1265
Martin, Frederick J., Putney, Vt. Draft attachment for hames	816,987	Apr. 3	889	184	121	1556
Martin, George F., Pittsburg, assignor of one-half to W. B. Clark, Wilkinsburg, Pa. Wood-clip	817,432	Apr. 10	1763	370	121	1804
Martin, George W., Akron, Ohio. Drafting-table	818,271	Apr. 17	3439	739-40	121	2222
Martin, Ivison B., assignor of one-fourth to J. L. Holland, Paris, Tenn. Hame and breeching tug	814,554	Mar. 6	1111	231	121	241
Martin, Johann, Galveston, Tex. Spirit-level	815,191	Mar. 13	2397	500	121	580
Martin, Myron R., Superior, Wis. Grain-grinding mill	817,859	Apr. 17	2605	562	121	2040
Martin, Richard D., Las Esperanzas, Mexico. Drawing-machine for coke-ovens	818,841	Apr. 24	4598	986-7	121	2525
Martin, Robert L., Jr., assignor to Pittsburgh Coal Washer Company, Pittsburg, Pa. Coal-washing apparatus	816,672	Apr. 3	258	60	121	1417
Martin, Thomas E., Chicago, Ill. Furnace-grate bar	819,019	Apr. 24	4931	1058	121	2598
Martin, Thomas J. (See Hercules and Martin.)						
Martin, Washington A. (See Smith and Martin.)						
Martin, William A., Waxahachie, Tex. Cultivator	814,309	Mar. 6	614	127	121	133
Martin, William E., Stamford, England. Side-delivery rake	818,899	Apr. 24	4702	1008-9	121	2548
Martindale, Frederick N., Rochester, N. Y. Curtain-pole fixture	818,036	Apr. 17	2970	641	121	2122
Martindale, Rolland F., Memphis, Tenn. Vehicle-wheel	815,611	Mar. 20	3261	684	121	818
Martineau, Clarence R., Albany, N. Y., assignor to Typewriter Adding Machine Company. Adding device for type-writing machines	815,724	Mar. 20	3501	733-5	121	871
Martineau, Clarence R., Albany, N. Y., assignor to Typewriter Adding Machine Company. Mechanical adding device	815,725	Mar. 20	3504	735-8	121	872
Marum, Simon C., New York, N. Y. Container for cigars	816,673	Apr. 3	262	61	121	1418
Marvin, Frederick B., Paterson, N. J. Current-motor	815,302	Mar. 13	2600	548	121	628
Marx, Richard, Philadelphia, Pa. Ink-distributing device for printing-presses	815,850	Mar. 20	3795	801-2	121	932
Mason, Arthur J. (See Hoover and Mason.)						
Mason David, assignor to J. A. Woods, New York, N. Y. Recording apparatus for motor-vehicles	815,303	Mar. 13	2612	548	121	629
Mason, Frederic H., Spokane, Wash. Valve	814,791	Mar. 13	1601	336	121	409
Mason, Frederic H., Spokane, Wash. Automatic balanced valve	814,975	Mar. 13	1927	405	121	476
Mason, Leonard A. (See Peters and Mason.)						
Mason, Sidney, Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J. Incandescent gas-light	817,081	Apr. 3	1048	217	121	1599
Massie, Mitford C. (See Stewart, James M., assignor.)						
Mast, Aaron, Annapolis, Mo., assignor to Sheffield Car Company, Three Rivers, Mich. Car-wheel	818,900	Apr. 24	4704	1009	121	2548

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Matcham, Charles A., Allentown, Pa. Pulverized-fuel burner for furnaces	815,929	Mar. 20	3945	835	121	964
Matcham, Charles A., Allentown, Pa. Drier. (Reissue)	12,474	Apr. 24	4985	1067	121	2612
Mathein, Frank J., assignor to W. H. Hurley, New Haven, Conn. Pencil-tip calendar	817,651	Apr. 10	2176	462	121	1890
Mather, Lewis P., Pittsburg, Pa. Draft-gear for railway-cars	817,433	Apr. 10	1764	370	121	1804
Mathewson, C. J., *et al.* (See Riddle, Gust A., assignor.)						
Matson, Charles I., Chicago, Ill. Amusement apparatus	817,381	Apr. 10	1644	348	121	1780
Matson, Harry J., Havre, France. Life-saving raft	818,183	Apr. 17	3267	700	121	2186
Matteson, George, near Colvin, Ill. Milk-cooler	814,614	Mar. 6	1221	256	121	264
Matthews, Leonard. (See Fahl, Eugene, assignor.)						
Matz, Bernard G., and M. Wozniewski, Chicago, Ill. Signal for switches	817,860	Apr. 17	2606	563	121	2040
Max Ams Machine Company. (See Brenzinger, Julius, assignor.)						
Maxson, Frank, *et al.* (See Wöehle, William, assignor.)						
Maxwell, Bert C., Canton, Ohio. Account-cabinet	816,025	Mar. 27	4145	878	121	1061
Maxwell, Roscoe I., White Plains, N. Y. Corkless non-refillable bottle	816,170	Mar. 27	4443	940	121	1125
May, Rudolf A., Akron, Ohio. Grate	815,450	Mar. 20	2971	619	121	756
Mayer, Casper P., Bridgeville, Pa. Turn-table	817,434	Apr. 10	1766	370-1	121	1805
Mayhew, George S., assignor to G. W. Mellor, London, England. Process and apparatus for preparing and cutting veneers	814,062	Mar. 6	123	24	121	28
Mayhew, James T., Chino, Cal. Roller seeding-machine	815,451	Mar. 20	2974	619	121	756
Maynard, Moses, Hancock, Mich. Device for lifting heavy metallic plates	815,452	Mar. 20	2975	619	121	756
Mazerov, Morris, Duquesne, Pa. Stuffing-machine	816,871	Apr. 3	644	133-4	121	1502
McAdam, John V., Granite City, Ill. Car-bolster	814,470	Mar. 6	952	195	121	207
McAdams, William A., New York, N. Y. Dish-drainer	815,855	Mar. 20	3806	805	121	934
McAfee, Morgan E., Atlanta, Ga., assignor to Heald Machine Company, Worcester, Mass. Sash-trimming machine	817,866	Apr. 17	2621	568	121	2044
McAllister, Addams S., Ithaca, N. Y. Alternating-current machinery	815,459	Mar. 20	2986	622-3	121	758
McBerty, Frank R., Evanston, assignor to Western Electric Company, Chicago, Ill. Supervisory signal for telephone-switchboards	817,867	Apr. 17	2622	568	121	2044
McBride, Joseph M., Poteau, Ind. Ter. Churn-motor	816,353	Mar. 27	4834	1025	121	1208
McBride, William J., and J. J. Alford, Fort Worth, Tex. Road-working machine	817,087	Apr. 3	1057	219	121	1593
McCabe, Henry, Arcola, Ill. Mail-delivery apparatus	816,876	Apr. 3	652	135	121	1503
McCaffrey, Peter J. (See Frank and McCaffrey.)						
McCahon, Alexander, St. Joseph, Mo. Mold for cement building-walls	814,154	Mar. 6	298	59	121	66
McCalla, John B., Knoxville, Tenn. Foot-ball-player's shoulder-guard	817,656	Apr. 10	2182	464	121	1891
McCallum, Archibald J., Eagle Harbor, Mich. Railway-tie	814,796	Mar. 13	1616	339	121	412
McCallum, John. (See Fletcher, William H., assignor.)						
McCann, Daniel, assignor of two-thirds to F. R. Bartsch and L. C. Hatton, Chicago, Ill. Bookbinder	818,777	Apr 24	4477	959	121	2500
McCann, Joseph. (See Rottel, Herman W., assignor.)						
McCanse, William, Frederick, Okla Ter. Nut-lock	818,635	Apr. 24	4177	899	121	2434
McCarter, Charles, Indianapolis, Ind. Car-coupling	814,979	Mar. 13	1934	406-7	121	477
McCarthy, Charles, and M. M. Phenice, Columbus, Ohio. Vehicle-tire tool	816,354	Mar. 27	4835	1025	121	1209
McCarthy, Dennis F., Lowell, Mass., assignor to Brunswick-Balke-Collender Company, New York, N. Y. Bowling-alley	817,504	Apr. 10	1911	402	121	1836
McCartney, Robert L., Ottumwa, Iowa. Clamping attachment for miter-boxes and the like	818,275	Apr. 17	3445	741	121	2223
McCarty, William F. M., Rocky Ridge, Md., assignor to T. A. Darby, trustee, New York, N. Y. Apparatus for decomposing water by electrolysis	814,155	Mar. 6	299	60	121	66
McCarty, William F. M., Rocky Ridge, Md., assignor to T. A. Darby, trustee, New York, N. Y. Apparatus for decomposing water by electrolysis	816,355	Mar. 27	4836	1025	121	1209
McClain, Thomas J., and R. S. McDaniel, Twist, Tex. Derrick	816,590	Apr. 3	75	18	121	1372
McClarty, C. C., *et al.* (See Trabue, William, assignor.)						
McClave, James M., Toronto, Ohio. Hot-blast furnace	816,877	Apr. 3	655	136	121	1504
McClean Arms and Ordnance Company. (See McClean, Samuel N., assignor.)						
McClean, Samuel N., Washington, Iowa, assignor to McClean Arms and Ordnance Company, Cleveland, Ohio. Automatic gas-operated firearm	816,591	Apr. 3	76	18-19	121	1373
McClellan, Benjamin S. (See Hull, Arthur E., assignor.)						
McClennan, Frederick L., Albany, N. Y. Parcel-rack	815,201	Mar. 13	2426	506	121	589
McCloskey, Charles, and J. McLaughlin, Sedalia, Mo. Furniture-display rack	814,980	Mar. 13	1937	407	121	478
McClung, William W., Butler, Pa. Switch	815,202	Mar. 13	2427	506	121	589
McClure, Charles W., Saginaw, Mich. Silo	814,067	Mar. 6	131	25	121	30
McClure, Edward W. (See Farish and McClure.)						
McCollum, James H. K., Toronto, Canada. Electric controlling device for cars	817,264	Apr. 10	1427	300-1	121	1733
McCollum, Joseph C., assignor of two-thirds to L. Westenhaver and K. C. Spence, Bloomfield, Mo. Churn	816,732	Apr. 3	354	81	121	1438
McConnell, Henry, Minneapolis, Minn. Culinary vessel	816,356	Mar. 27	4838	1025	121	1210
McCord, Andrew J., Chattanooga, Tenn. Sash holder and lock	818,547	Apr. 24	3999	858	121	2394
McCord & Company. (See Denegre, Edward, assignor.)						
McCord, James R., Jackson, Ga. Damper	817,183	Apr. 10	1260	262	121	1699
McCormack, William A., Bloomington, Ill. Paring device	818,276	Apr. 17	3446	741	121	2223
McCormick, C. H., *et al.* (See Inman, Wesley J., assignor.)						
McCormick, Charles. (See Pring, John R., assignor.)						
McCormick, Charles J., Akron, Ohio. Automatic gas shut-off	817,505	Apr. 10	1913	402	121	1836
McCormick, Washington, Hillyard, Wash. Tube expanding and beading tool	818,843	Apr. 24	4605	988	121	2527
McCoy, Hollis E. (See Depew and McCoy.)						
McCoy, Robert, New York, N. Y. Level-surfacing machine	815,460	Mar. 20	2990	623	121	759
McCready, Andrew J., Parksley, Va. Vine-cutter	815,203	Mar. 13	2430	507	121	590
McCreary, John S. (See Chase and McCreary.)						
McCreight, Harry, *et al.* (See Heaton, John S., assignor.)						
McCullough, John, Newark, N. J. Switching device for electric lamps	817,146	Apr. 3	1173	242	121	1620
McCully, John J., Mexico, Mo. Mine-car wheel	818,108	Apr. 17	3098	668	121	2148
McCune, Frank, Pittsburg, Pa. Sheet-steel railway tie and rail brace	815,972	Mar. 27	4027	852	121	1033
McDaniel, Henry B. (See Awtry, Edmund L., assignor.)						
McDaniel, Robert S. (See McClain and McDaniel.)						
McDonald, Duncan, Cape North, Canada. Horse-hoof cutter	816,733	Apr. 3	355	81	121	1438
McDonald, Frank, Roaring Spring, Pa. Electrolytic apparatus	814,864	Mar. 13	1726	362	121	435
McDonald, Harvey A., *et al.* (See Garrard, William D., assignor.)						
McDonald, John I., St. Joseph, Mo. Pavement	814,797	Mar. 13	1617	339	121	412
McDonald, Joseph H., New York, N. Y. Apparatus for purifying water	816,357	Mar. 27	4839	1026	121	1210
McDonald, William E., Tuscumbia, Mo. Car-coupling	817,068	Apr. 3	1059	220	121	1593
McDonnell, Patrick E., Sr., Chicago, Ill. Lowering river-tunnels	817,657	Apr. 10	2183	464	121	1891
McDonnell, Thomas F. (See Blitsch and McDonnell.)						
McDowell, William C., Beaver, Pa. Game apparatus	815,204	Mar. 13	2432	507	121	590
McElhenny, James J., Philadelphia, Pa. Overshoe for horses	814,914	Mar. 13	1812	379	121	453
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Electrical switch	816,028	Mar. 27	4150	878	121	1062

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McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Hose-coupling	816,029	Mar. 27	4151	879	121	1062
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Dynamic trap or drain valve	816,245	Mar. 27	4579	974	121	1153
McElroy, John H., Chicago, Ill. Locked-seam-can-body machine	818,109	Apr. 17	3099	668-9	121	2148
McElroy, John H., Chicago, Ill. Can-making machinery	818,110	Apr. 17	3106	669-71	121	2150
McElvain, Fred B., Allendale, Mo. Car-door hanger	815,461	Mar. 20	2992	623	121	759
McElvaney, Charles T., Denison, Tex. Piston-rod connection	818,277	Apr. 17	3448	741	121	2224
McEwen, John, Bradford, Pa. Attachment for pump-pistons	818,636	Apr. 24	4178	899	121	2434
McGahan, Alexander W., and O. K. Ascher, Los Angeles, Cal. Pipe-vise	814,228	Mar. 6	438	90	121	95
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Adjustable horseshoe-calk	817,578	Apr. 10	2052	432	121	1863
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Adjustable horseshoe-calk	817,579	Apr. 10	2054	432	121	1864
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable heel-calk for horseshoes	817,580	Apr. 10	2056	433	121	1864
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable heel-calk for horseshoes	817,581	Apr. 10	2057	433	121	1864
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable heel-calk for horseshoes	817,582	Apr. 10	2058	433	121	1865
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable heel-calk for composite rubber-pad horseshoes	817,583	Apr. 10	2059	433	121	1865
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable calk for rubber-pad horseshoes	817,584	Apr. 10	2061	434	121	1865
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable heel-calk for horseshoes	817,585	Apr. 10	2062	434	121	1866
McGann, Thomas W. J., assignor of one-half to A. Collins, Washington, D. C. Detachable calk for horseshoes	817,586	Apr. 10	2063	434	121	1866
McGarry, John J., assignor to E. Resch, Redfern, New South Wales, Australia. Bottle-clip	816,244	Mar. 27	4578	974	121	1153
McGeary, Albert M., Canon City, Colo. Horse-controlling attachment for vehicles	814,915	Mar. 13	1813	379	121	454
McGee, James W., assignor of one-half to W. F. Hanby, Bessemer, Ala. Brake-beam fulcrum	814,865	Mar. 13	1727	362	121	435
McGill, George W., Riverdale-on-the-Hudson, N. Y. Wire spring-clip	818,904	Apr. 24	4709	1010	121	2549
McGill, George W., Riverdale-on-the-Hudson, N. Y. Wire spring-clip	818,905	Apr. 24	4712	1011	121	2550
McGillivary, Angus, and E. Frye, Quincy, Mass Anchor or stay for poles, derricks, &c.	814,229	Mar. 6	440	91	121	95
McGinn, Michael J., Proctor, Minn. Wrench	817,506	Apr. 10	1914	402	121	1836
McGinnis, Claude A., Atlanta, Ga. Metallic window	818,703	Apr. 24	4319	926-7	121	2465
McGlone, Daniel, Far Rockaway, N. Y. Key-box for fire-alarms	816,932	Apr. 3	771	158	121	1530
McGowan, Michael J., Jr., Newark, N. J. Fire-alarm signal-box	817,437	Apr. 10	1772	372	121	1806
McGowen, William R., Knoxville, assignor of one-half to A. I. Kelley, Bushnell, Ill. Line-guide	817,723	Apr. 10	2290	495	121	1918
McGrann, John, *et al.* (See Beck, William, assignor.)						
McGrath, William, *et al.* (See Clifford, Thomas G., assignor.)						
McGregor, William A. (See Evans and Gahagan, assignors.)						
McGuigan, John, and A. Priddle, San Francisco, Cal. Vault-light	816,115	Mar. 27	4336	918	121	1102
McHorney, Benjmane F., and E. J. Kelley, Norfolk, Va. Boat holding-down and detaching device	819,022	Apr. 24	4937	1059	121	2600
McIlvain, John W., Canyoncreek, Mont. Vehicle-brake	814,559	Mar. 6	1124	234	121	244
McIntyre, Fred. (See De Long, Charles E., assignor.)						
McIntyre, George T., Riverside, Cal. Apparatus for molding plastics	817,383	Apr. 10	1648	349-50	121	1780
McKay, James, Gilman, Iowa. Pump-rod balance	817,794	Apr. 17	2481	530	121	2013
McKee, Jacob R., Mount Calm, Tex. Cotton-chopper	814,916	Mar. 13	1815	380	121	454
McKee, Robert A., assignor to Allis-Chalmers Company, Milwaukee, Wis. Steam-turbine packing	815,973	Mar. 27	4027	853	121	1033
McKee, Warner W., Belleville, N. J. Spring-wheel	817,265	Apr. 10	1434	302	121	1734
McKee, Willis, Elyria, Ohio. Machine for manufacturing tie-plates	817,795	Apr. 17	2482	530-1	121	2013
McKeen, Benjamin and G., Peabody, Mass. Glazing or rolling machine	817,507	Apr. 10	1915	403	121	1836
McKeen, Gordon. (See McKeen, Benjamin and G.)						
McKeen, William R., Jr., Omaha, Nebr. Heating and ventilating system	817,658	Apr. 10	2186	464-5	121	1892
McKendrick, Robert. (See Austin and McKendrick.)						
McKenna, Alexander G. (See Wheeler and McKenna.)						
McKenna, James P., Brooklyn, N. Y. Fire-escape	815,030	Mar. 13	2069	434	121	506
McKenzie, Angus, Canton, Ohio. Curtain and counterbalance for book and other cases	816,496	Mar. 27	5117	1085	121	1268
McKenzie, William. (See Gray and McKenzie.)						
McKeown, Joseph B., Union Hill, N. J. Window-sash	818,844	Apr. [illegible]	4607	988	121	2527
McKiernan Drill Company. (See Sturtevant, Thomas E., assignor.)						
McKim, Frederick G., London, England. Pneumatic tire	814,068	Mar. 6	132	25-6	121	30
McKinney, Dennis L., and G. W. Henderson, Fairmont, W. Va. Window-sash fastener	816,116	Mar. 27	4337	919	121	1102
McKnight, William R., Columbus, Ohio. Rotary swing	814,156	Mar. 6	300	60	121	66
McKoy, Edwin A., Atlanta, Ga. Sap-receiving receptacle	818,278	Apr. 17	3449	742	121	2224
McLachlan, John C., Toronto, Canada. Sparking igniter for gasolene-engines	816,990	Apr. 3	894	185	121	1557
McLaren, William W., Ensley, Ala. Bottle	816,358	Mar. 27	4843	1026	121	1210
McLaughlin, John. (See McCloskey and McLaughlin.)						
McLaughlin, John C., assignor to Underwood Typewriter Company, New York, N. Y. Card-holding device for type-writers	816,174	Mar. 27	4450	942	121	1126
McLaughlin, John L. (See Hubley, Edwin J., assignor.)						
McLaughlin, Wharton B., assignor of one-half to L. N. Ball, New York, N. Y. Window-tent	815,622	Mar. 20	3288	689	121	824
McLean, Embury, New York, N. Y. Regulation of furnaces	817,438	Apr. 10	1774	372-3	121	1806
McLean, John, Manistique, Mich. Apparatus for holding saws	815,462	Mar. 20	2993	624	121	760
McLean, Lachlan, Brooklyn, N. Y. Veterinary pocket mouth-speculum	817,650	Apr. 10	2189	465	121	1893
McLean, William S., Vancouver, and J. D. Kinney, New Westminster, Canada. Inserted saw-tooth	816,592	Apr. 3	95	19	121	1378
McLendon, Nancy A. E., Sanford, Colo. Car-step	818,279	Apr. 17	3450	742	121	2224
McMahon, James P., assignor of two-thirds to J. W. Russell and C. H. Potts, Renovo, Pa. Smoke-consuming apparatus for furnaces	814,230	Mar. 6	441	91-2	121	95
McMeekin, Adam, Doagh, Ireland. Spinning yarn from flax, cotton, &c.	815,623	Mar. 20	3291	689-90	121	825
McMillan, Gilbert N., Buffalo, N. Y. Starting device for explosive-engines	817,266	Apr. 10	1436	302	121	1734
McMillin, Edward A., North Adams, Mass. Buckle	817,184	Apr. 10	1262	262	121	1609
McNally, John J. (See Fiddyment and McNally.)						
McNally, Thomas W., assignor of one-third to H. B. Nelson, Bristol, Pa. Hair-clipper	818,462	Apr. 24	3809	819	121	2355
McNeal, Luther C., assignor of one-fourth to H. L. Osgood and C. S. Davis, Rochester, N. Y. Temporary binder	818,548	Apr. 24	4001	858-9	121	2395
McNeil, Leonard A., Maywood, Ill. Suspending aerial cables	816,991	Apr. 3	896	185	121	1557
McNiel, Daniel T., Ann Arbor, Mich. Belt-pulley	817,439	Apr. 10	1778	373-4	121	1807
McVey, John C., Kansas City, Mo. Churn	816,992	Apr. 3	898	186	121	1558

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Mead, Reuben A. (See Ballew and Mead.)						
Meadowcroft, Henry L., Pawtucket, R. I., assignor of two-fifths to L. Lapierre, Lynn, Mass. Adjustable shade-roller bracket	814,226	Mar. 6	436	90	121	94
Meaker, Guy L., Chicago, Ill. Electroplating apparatus	815,027	Mar. 13	2061	432	121	504
Meaker, John W., Chicago, Ill., assignor, by mesne assignments, to Meaker Sales Company. Coin holding and delivering machine	817,927	Apr. 17	2755	596-7	121	2076
Meaker Sales Company. (See Meaker, John W., assignor.)						
Mears Ear Phone Company. (See Schneider, Eugene W., assignor.)						
Mecherle, Walter R., Bloomington, Ill. Nut-lock	814,555	Mar. 6	1112	231	121	241
Mechtersheimer, George, San Francisco, Cal. Propeller	816,347	Mar. 27	4816	1020	121	1204
Meckfessel, Gottfred, *et al.* (See Vale, Elizabeth T., assignor.)						
Medhus, Ole, Faribault, Minn. Combination-tool	816,674	Apr. 3	262	61	121	1418
Medley, Harry, Germantown, Pa. Game apparatus	817,928	Apr. 17	2759	597	121	2077
Medley, James A. (See Medley, Robert and J. A.)						
Medley, Robert and J. A., Chippewa Falls, Wis. Kettle	818,973	Apr. 24	4842	1041	121	2578
Meek Company. (See Kristofek, Frank J., assignor.)						
Meer, Gustav ter, Hanover, Germany. Centrifugal machine	815,363	Mar. 20	2798	582	121	714
Meermans, John, Cleveland, Ohio. Non-refillable bottle	817,500	Apr. 10	1902	401	121	1834
Mefford, Oral E., Denver, Colo. Adjustable seat for electric-car motormen	815,546	Mar. 20	3149	659	121	793
Meffert, Alexander, St. Louis, Mo. Pipe-wrench	818,901	Apr. 24	4705	1009	121	2548
Mehlig, Charles F. C., New York, N. Y. Flexible shaft	815,726	Mar. 20	3512	738	121	873
Mehlig, Charles F. C., New York, N. Y. Flexible shaft	816,240	Mar. 27	4569	972	121	1151
Mehring, George, Chicago, Ill. Steam-pipe thimble	814,976	Mar. 13	1930	406	121	477
Meier, Albert J., Kirkwood, Mo. Surgical clip	816,026	Mar. 27	4147	878	121	1061
Meier, Harry W., Baltimore, Md. Articulation of dolls	818,842	Apr. 24	4604	988	121	2527
Meigs, John F., and E. A. Gathmann, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Combination time and percussion fuse	814,860	Mar. 13	1718	359	121	433
Meigs, John F., and H. G. Jakobsson, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Pedestal-mount	814,859	Mar. 13	1717	359	121	433
Meigs, John F., and H. G. Jakobsson, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Telescopic sight for guns	818,546	Apr. 24	3996	858	121	2394
Melchert, Ernst, Mount Olive, Ill. Brake mechanism for railway-cars	814,792	Mar. 13	1604	336-7	121	410
Melendy, Hervey D., Nashua, N. H. Guard for circular saws	818,772	Apr. 24	4466	957	121	2497
Meller, Johannes, Wandsbek, Germany. Life-buoy	817,652	Apr. 10	2177	462	121	1890
Mellor, George W. (See Mayhew, George S., assignor.)						
Mellowes, Frank W., Sheffield, England. Glazing device	816,807	Apr. 3	504	110	121	1469
Melvin, Ira H., Laurel, Del. Barrel-forming device	816,872	Apr. 3	646	134	121	1502
Menzel, William G., Fond du Lac, assignor of one-half to C. W. Booth, Milwaukee, Wis. Brake-shoe	815,612	Mar. 20	3263	685	121	819
Mercer, Frederick, Marton, New Zealand. Sprayer	815,192	Mar. 13	2398	500	121	580
Mercer, Frederick J., Hyde Park, Mass. Spring	814,387	Mar. 6	784	158	121	173
Mercer, Isaac B., and H. D. Orchard, Bloomington, Ind. Bottle-seal	816,489	Mar. 27	5104	1082	121	1265
Merck, Firm of E. (See Wolfes, Otto, assignor.)						
Meredith, Pearl C. and T. O., Marne, Iowa. Sod and cornstalk cutter	818,105	Apr. 17	3091	667	121	2146
Meredith, Thomas O. (See Meredith, Pearl C. and T. O.)						
Meredith, Z Albert, Tahlequah, Ind. Ter. Cornet	814,615	Mar. 6	1222	257-8	121	265
Mergenthaler Linotype Company. (See Bedell, Richard M., assignor.)						
Mergenthaler Linotype Company. (See Dodge, Philip T., assignor.)						
Mergenthaler Linotype Company. (See Grohmann, Carl L., assignor.)						
Mergenthaler Linotype Company. (See Homans, Thomas S., assignor.)						
Mergenthaler Linotype Company. (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See Morehouse, Melvin W., assignor.)						
Mergenthaler Linotype Company. (See Muehleisen, Carl, assignor.)						
Merrill, Charles W., Alameda, Cal. Refining hydrometallurgical products containing precious metals	815,851	Mar. 20	3799	.....	121	933
Merrill, George S., Peace Dale, R. I. Coking	815,453	Mar. 20	2976	620	121	757
Merrill, William, assignor to Mitts & Merrill, Saginaw, Mich. Wood-cutting machine	817,382	Apr. 10	1646	349	121	1780
Merriman, Grace F. (See Frazier, George W., assignor.)						
Merritt and Company. (See Holden, George, assignor.)						
Merritt, Gordon, Ridgewood, N. J. Pulley device	815,613	Mar. 20	3264	685	121	819
Merritt, Henry W., Springfield, Mass., and W. J. Barron, Brooklyn, assignors to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	814,310	Mar. 6	615	127	121	133
Mershon, Ralph D., New York, N. Y. Reverse-relay device	816,111	Mar. 27	4326	916-17	121	1100
Mershon, Ralph D., New York, N. Y. Circuit-controlling apparatus	816,112	Mar. 27	4331	917	121	1101
Mertes, August, Emsworth, Pa. Drawing-pen	817,861	Apr. 17	2608	563	121	2041
Mertsheimer, Frederick, Kansas City, Mo. Car-mover	816,873	Apr. 3	648	134	121	1502
Merwin, Erwin C. (See O'Bleness and Merwin.)						
Mesker, John L., St. Louis, Mo. Window	814,616	Mar. 6	1224	258	121	265
Messig, Walter E., assignor of two-thirds to F. A. and H. A. Richter, Minneapolis, Minn. Garment-hanger	816,808	Apr. 3	505	110	121	1469
Messmore, Herbert L., New York, N. Y. Wall-covering	815,547	Mar. 20	3150	660	121	793
Messner, David A., *et al.* (See Williams, Harry A., assignor.)						
Mesta Machine Company. (See Conkling, Charles E., assignor.)						
Metal Sectional Furniture Company. (See Shoemaker, George A., assignor.)						
Metcalf, Foster M., Battle Creek, Mich. Steam pumping-engine	814,793	Mar. 13	1606	337-8	121	410
Metheany, George H., Lima, Ohio. Switch-receptacle	818,387	Apr. 17	3663	786-7	121	2296
Metropolitan Air Goods Company. (See Whall, Richard A., assignor.)						
Metropolitan Trust & Savings Bank, trustee. (See Edwards, Edgar A., assignor.)						
Metten, John F., Philadelphia, Pa. Cooling system for braking and clutch mechanisms	817,180	Apr. 10	1255	260	121	1606
Mettler, Carl, Munich, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Production of aromatic alcohols	815,193	Mar. 13	2399	.....	121	581
Mettler, Charles, Munich, Germany. Producing aromatic alcohols and their derivatives	815,548	Mar. 20	3151	.....	121	793
Metz, Henry, Bascom, Ohio. Adjustable shoe-top	815,194	Mar. 13	2400	500	121	581
Metz, Herman A. (See Fourneaux, Emile A., assignor.)						
Metzger, Emanuel, assignor of two-thirds to J. Hardenburgh and N. Davis, Kingston, N. Y. Car-cuspidor	816,809	Apr. 3	506	111	121	1469
Meyer, August R., deceased; E. J. Meyer, executrix, assignor to United Zinc & Chemical Company, Kansas City, Mo. Extraction of precious metals from zinc ores	815,614	Mar. 20	3266	.....	121	819
Meyer, Emma J., executrix. (See Meyer, August R.)						
Meyer, George W., Waterloo, Iowa. Journal-box	818,634	Apr. 24	4175	898	121	2433
Meyer, Henry, West Hoboken, N. J. Shade-bracket	815,195	Mar. 13	2401	500	121	581
Meyer, John H., New Kensington, Pa. Switch-throwing device	818,773	Apr. 24	4469	958	121	2498
Meyer, Sophie, assignor to A. and E. Frankenstein and S. Buyer, New York, N. Y. Back and bust supporter	817,663	Apr. 10	2178	463	121	1890
Meyersberg, Gustav, Berlin, Germany, assignor to General Electric Company. Nozzle for elastic-fluid turbines	814,466	Mar. 6	942	193	121	205
Meynert, Henry, Palestine, Tex. Machine for grinding valve-seats	817,435	Apr. 10	1799	371	121	1805

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Michelena & Ifiarra, Nicolas, Renteria, Spain. Artificial-stone post or column	816,171	Mar. 27	4444	941	121	1125
Michigan Lubricator Company. (See Bryant, Wolcott, and Davidson, assignors.)						
Mick, Richard M., Bussey, Iowa. Carbureter	814,617	Mar. 6	1227	258	121	265
Mickey, Simon P., Monarat, and C. W. Caldwell, Galax, Va. Railway-track machine	815,727	Mar. 20	3514	738-9	121	874
Mickle, Robert T., Philadelphia, Pa., assignor to Ridgely and Johnson Tool Company. Starting mechanism for pneumatic tools	818,037	Apr. 17	2971	642	121	2123
Middleton, John Y. (See Middleton, William and J. Y.)						
Middleton, William and J. Y., Newcastle-upon-Tyne, England. Terminal or coupling for electric cables	817,329	Apr. 10	1546	325	121	1757
Midgard, Andrew J., Stoughton, Wis. Manifolding-book	818,388	Apr. 17	3665	787	121	2269
Mihills, Frank N., Boston, Mass. Rail-tie	815,364	Mar. 20	2800	583	121	715
Mika, Albert D. (See Courtright and Mika.)						
Mill Machinery Manufacturers. (See Chapman, Frank M., assignor.)						
Millar, John, Cincinnati, Ohio. Belt-fastener	817,501	Apr. 10	1905	401	121	1835
Miller, Anna G., Muskegon, Mich. Hook and eye	814,556	Mar. 6	1113	232	121	241
Miller, Charles, Binghamton, N. Y. Tire	818,184	Apr. 17	3268	700	121	2186
Miller, Conrad, Denver, Colo. Dumping-wagon	814,861	Mar. 13	1720	359-60	121	434
Miller, Ernest H., assignor of two-thirds to J. W. Holman and C. V. Rote, Lancaster, Pa. Electromagnet	815,365	Mar. 20	2801	583	121	715
Miller, Francis M., Neutral, Kans. End-gate	815,454	Mar. 20	2979	620	121	757
Miller, Gustav A., Wichita, Kans. Theatrical scenic apparatus	817,577	Apr. 10	2050	431-2	121	1863
Miller, Gustav F., and J. Kronier, Frankfort-on-the-Main, Germany. Packing for water-tube boilers	815,930	Mar. 20	3946	836	121	964
Miller, Henry J., Goshen, N. Y. Sulky	815,615	Mar. 20	3267	685-6	121	819
Miller, Henry J., Goshen, N. Y. Sulky	815,616	Mar. 20	3271	687	121	820
Miller, John W., Chicago, Ill. Cylinder-compression-relief valve	816,348	Mar. 27	4817	1020-1	121	1204
Miller, John W., Akron, Ohio. Well-drilling machine	816,988	Apr. 3	890	184	121	1556
Miller, Julius J., St. Joseph, Mich., assignor to W. P. Healy, Chicago, Ill. Machine for making wire-bound box-blanks	815,196	Mar. 13	2403	501-3	121	581
Miller, Julius J., St. Joseph, Mich., assignor to W. P. Healy, Chicago, Ill. Machine for use in making metal-bound packages	815,197	Mar. 13	2415	503-5	121	586
Miller, Rudolph, Wheaton, Minn. Draft-equalizer	818,038	Apr. 17	2973	642	121	2123
Miller, Samuel C., Louisville, Ky. Bottle-capping machine	817,129	Apr. 3	1138	236	121	1613
Miller, Thomas, Auburn, R. I. Mechanism for molding and vulcanizing rubber soles on shoes	817,791	Apr. 17	2471	528	121	2011
Miller, Thomas S., South Orange, and J. H. Dickinson, Montclair, N. J. Hoisting and conveying apparatus	814,717	Mar. 13	1454	305	121	378
Miller, Thomas S., South Orange, and J. H. Dickinson, Montclair, N. J. Conveyer	815,852	Mar. 20	3800	802-3	121	933
Miller, Thomas W., Akron, Ohio. Water bag or bottle	815,366	Mar. 20	2803	584	121	715
Miller, William A., Boston, Mass. Self-sealing bottle	817,181	Apr. 10	1258	261	121	1698
Miller, William H., Galveston, Tex. Window construction	816,241	Mar. 27	4570	973	121	1152
Miller, William H., Galveston, Tex. Fireproof window	816,242	Mar. 27	4573	973-4	121	1152
Miller, William R., assignor to Forter-Miller Engineering Company, Pittsburg, Pa. Continuous-heating furnace	815,198	Mar. 13	2422	505	121	588
Milliken, Walter L. (See Shick, Daniel W., assignor.)						
Mills, James N., Oak Station, Pa. Curtain-pole	816,490	Mar. 27	5105	1062	121	1265
Mills, Melvin A., Lawrence, Mass. Refining-engine for paper-pulp	818,039	Apr. 17	2975	642-4	121	2123
Milson, John R., Providence, assignor of one-fourth to Collins Brothers, Pawtucket, R. I. Spinning and twisting machine	816,675	Apr. 3	264	61-2	121	1418
Minck, Paul H., *et al.* (See Knopf, Carl, assignor.)						
Mineralac Company. (See Eastman, George N., assignor.)						
Minnich, Johann, Rummelsburg, near Berlin, Germany. Fire-screen for locomotive-furnaces	817,654	Apr. 10	2179	463	121	1891
Minton, John W., Washington, Pa. Flushing apparatus	818,185	Apr. 17	3269	700	121	2187
Mire, Benjamin C., New Orleans, La. Mosquito-guard for cisterns and tanks	818,389	Apr. 17	3666	787	121	2269
Mitchell, Alfred S., Oakland, Cal. Ore-washing machine	815,853	Mar. 20	3801	803	121	934
Mitchell, Charles E., New York, N. Y. Plane	814,718	Mar. 13	1456	305	121	378
Mitchell, David R. (See Zachary, William H., assignor.)						
Mitchell, James D., Lakewood, Ohio. Facing-tool	817,502	Apr. 10	1907	401	121	1835
Mitchell, John E., and D. Parks, assignor to Alsop Process Company, St. Louis, Mo. Apparatus for subjecting air to electric discharges	817,082	Apr. 3	1049	218	121	1591
Mitchell, Robert, Detroit, Mich. Lip-turning machine	818,774	Apr. 24	4470	958	121	2498
Mitchell, Samuel P., Philadelphia, Pa. Derrick-car	817,862	Apr. 17	2609	563-6	121	2041
Mitchell, Samuel P., Philadelphia, Pa. Derrick	817,863	Apr. 17	2614	566-7	121	2042
Mitchell, Samuel P., Philadelphia, Pa. Derrick-car	817,864	Apr. 17	2616	567-8	121	2042
Mitts & Merrill. (See Merrill, William, assignor.)						
Moak, William V., Utica, N. Y. Mechanism for operating railway-signals	816,676	Apr. 3	267	62	121	1419
Moats, Harlan G., Villisca, Iowa. Culvert	818,272	Apr. 17	3441	740	121	2222
Mobbs and Lewis. (See Lewis, Alfred, assignor.)						
Moeller, John, Bay Port, Mich. Colter	817,083	Apr. 3	1052	218	121	1591
Moening, Herman, Ottawa, Ohio. Attachment for corn-harvesters	816,874	Apr. 3	650	134	121	1503
Moffat, John, Berlin, Canada. Boiler attachment	818,459	Apr. 24	3803	818	121	2354
Moffatt, Richard R., Brooklyn, N. Y., assignor to Imperial Ore Separator Company. Magnetic ore-separator	816,491	Mar. 27	5106	1063	121	1265
Mognett, Lewis B., Crickmer, W. Va. Coal-finding instrument	818,902	Apr. 24	4706	1009	121	2549
Möhlenbruck, Henri, Lausanne, Switzerland. Gearing-indicator for screw-cutting lathes.	814,467	Mar. 6	946	193	121	206
Mohns, Carl J., Chemnitz, assignor to Wanderer Fahrradwerke vorm. Winklhofer & Jaenicke A.-G., Schönau, Germany. Interchangeable platen for type-writers	814,719	Mar. 13	1458	306	121	379
Mohr, Ernst, Milwaukee, Wis., assignor to National Enameling and Stamping Company. Handle for vessels or receptacles	818,273	Apr. 17	3442	740	121	2223
Mohr, Helena E., and G. H. Cooper, Denver, Colo. Skirt-marker	815,455	Mar. 20	2980	620	121	757
Mohr, Martin, Newport, Ky., assignor of one-third to G. B. Poole, Cincinnati, Ohio. Lock.	816,492	Mar. 27	5107	1063	121	1266
Mohr, Rosalia, San Francisco, Cal. Window and screen attachment	814,468	Mar. 6	948	194	121	206
Molen, Evert V., Chicago, Ill. Musical instrument	815,854	Mar. 20	3803	804	121	934
Moler, Jesse R., H. E. Insley, and S. L. Phillips, Denver, Colo. Garbage-can	816,989	Apr. 3	893	185	121	1557
Molesworth, Clyde E., Oklahoma, Okla. Ter. Ice-cream freezer	816,810	Apr. 3	507	111	121	1470
Moline Plow Company. (See Lindgren, Alexus C., assignor.)						
Molt, William F., Indianapolis, Ind. Means for controlling vibrators	815,728	Mar. 20	3516	739	121	874
Monarch Telephone Manufacturing Co. (See Yaxley, Ernest E., assignor.)						
Monarch Typewriter Company. (See Ney, Louis, assignor.)						
Mond Nickel Company. (See Langer, Carl, assignor.)						
Mond, Robert L. (See Wildermann and Mond.)						
Monetti, Giovanni, Taylorville, Ill. Whip-stock	815,199	Mar. 13	2424	505	121	588
Mong, Lincoln G., assignor to Erie City Iron Works, Erie, Pa. Boiler-brace	819,020	Apr. 24	4934	1059	121	2500
Moniot, Achille D., Philadelphia, Pa. Pattern-card-reproducing machine	817,792	Apr. 17	2473	529	121	2011
Monolith Steel Company. (See Golding, John F., assignor.)						
Monroe, Charles D., Elgin, Ill. Emulsifier	814,720	Mar. 13	1458	306	121	379

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Monteith, Jabus H., Santa Cruz, Cal. Lifting-jack	818,040	Apr. 17	2981	644	121	2124
Montgomery, Henry J., assignor of one-half to N. Briggs, Silver Creek, N. Y. Hat-display stand	815,456	Mar. 20	2981	620	121	757
Montgomery, William, *et al.* (See Woodward, Anderson, assignor.)						
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company. Transformer	815,729	Mar. 20	3519	739–40	121	874
Moon, Philip, Brandon, Canada. Grain cleaning and separating machine	815,457	Mar. 20	2982	621	121	758
Mooney, Ernest, assignor of one-half to Armstrong Oiler Company, Limited, York, England. Woven fabric for lubricating-pads	814,152	Mar. 6	294	59	121	68
Moore, Albert, Jr. (See Stokes, Delmer F., assignor.)						
Moore, Carlos B., Worcester, Mass. Mirror-holder	816,588	Apr. 3	71	17	121	1371
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Producing vacuum-lamps	814,794	Mar. 13	1610	338	121	411
Moore, Edward Y., Cleveland, Ohio. Grapple	814,388	Mar. 6	785	158	121	173
Moore, Edward Y., Cleveland, Ohio, Hoist	816,349	Mar. 27	4822	1021	121	1205
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore, George, Boston, Mass. Machine for embossing and printing upon leather, silk, &c.	815,931	Mar. 20	3947	836	121	965
Moore, George, London, England. Ore-separator	817,655	Apr. 10	2180	463	121	1891
Moore, George C., Detroit, Mich. Snow-plow	814,977	Mar. 13	1932	406	121	477
Moore, Henry J., assignor to John C. Moore Corporation, Rochester, N. Y. Loose-leaf-binder frame and leaf therefor	816,493	Mar. 27	5108	1083	121	1268
Moore, Henry J., assignor to John C. Moore Corporation, Rochester, N. Y. Loose-leaf-binder frame and leaf therefor	816,494	Mar. 27	5113	1084	121	1267
Moore, John C., New York, N. Y., assignor to North & Judd Manufacturing Company, New Britain, Conn. Wire buckle and loop	818,041	Apr. 17	2983	644	121	2125
Moore, John M. (See Plaster, Purl C., assignor.)						
Moore, John W. (See Dewhurst, Moore, and Griffiths.)						
Moore, Josiah H., assignor to Chattanooga Plow Company, Chattanooga, Tenn. Plow	817,793	Apr. 17	2478	530	121	2012
Moore, Kate M., Middletown, Ohio. Lap-board or sewing-table	815,200	Mar. 13	2425	506	121	583
Moore, Montague, Melbourne, and T. J. Heskett, Brunswick, Victoria, Australia. Apparatus for the treatment of ore for the manufacture of iron and steel therefrom	814,557	Mar. 6	1114	232–3	121	241
Moore, Sargant Z., assignor of one-half to W. W. Hayes, Dallas, Tex. Fire-escape	816,495	Mar. 27	5116	1084	121	1268
Moore & White Company. (See White, Joseph A., assignor.)						
Moore, William E., Connellsville, and J. W. Bridge, Newhaven, Pa. Lubricating device	817,084	Apr. 3	1053	218	121	1592
Moran, Edward, Lowell, Wash. Piston	817,330	Apr. 10	1547	325	121	1757
Morehead, John, assignor to D. Stott, Detroit, Mich. Governor for steam systems and meter therefor	816,589	Apr. 3	[illegible]	17–18	121	1372
Morehouse, Melvin W., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	818,274	Apr. 17	3443	740	121	2223
Moreland, Joseph S., assignor of one-half to M. Mosely, Rochester, N. Y. Sparking-ignition-controlling means for explosive-engines	818,460	Apr. 24	3806	818	121	2354
Morewood, William B., Elizabeth, N. J. Supporting device	818,700	Apr. 24	4315	925	121	2465
Morgan, Doctor F., Chicago, Ill. Diaphragm-valve	814,063	Mar. 6	125	24	121	28
Morgan, Edmund C., Chicago, Ill., assignor to Morgan Electric Machine Company, East Chicago, Ind. Rheostat	814,913	Mar. 13	1809	379	121	453
Morgan Electric Machine Company. (See Morgan, Edmund C., assignor.)						
Morgan, Henry W., Rochester, N. Y. Nailing-machine	816,350	Mar. 27	4823	1021–3	121	1206
Morgan, Rovena G., Fort Worth, Tex. Combined lifting-jack and shaft-support	816,113	Mar. 27	4332	917	121	1101
Morgan, William H., Los Angeles, Cal. Amalgamator	816,243	Mar. 27	4576	974	121	1153
Morgan, William S., and S. W. Fellows, Russell, Minn. Pin-setting apparatus	814,227	Mar. 6	437	90	121	94
Moriarty, Thomas J., Newport, R. I. Means for carrying and handling torpedoes on vessels	818,390	Apr. 17	3667	787–9	121	2269
Morin, J. Tancrede. (See Belair, Albert, assignor.)						
Morison, Donald B., Hartlepool, England. Apparatus for condensing steam	816,811	Apr. 3	510	111–12	121	1470
Morris, Charles A., Bloomfield, N. J., assignor to Hayward Company, New York, N. Y. Dredging-bucket	814,618	Mar. 6	1228	259–60	121	208
Morris, George, Fruithurst, Ala., assignor of one-third to L. Frazier, Lawrenceburg, Tenn. Sawing-machine	815,028	Mar. 13	2065	432	121	505
Morris, John B., *et al.* (See Hayward, Eugene, assignor.)						
Morris, John R., Jewell, Kans. Combined cane and whip	815,458	Mar. 20	2984	622	121	758
Morris, Robert, Winthrop, Me. Spinning-spindle	815,367	Mar. 20	2804	584	121	716
Morrison, Archibald, Covington, Tenn. Plow	814,721	Mar. 13	1460	306	121	379
Morrison, Lewis E., Philadelphia, Pa. Tripping mechanism for printing-presses	818,903	Apr. 24	4707	1010	121	2549
Morrison, Lewis E., Philadelphia, Pa. Sheet-manipulating mechanism for printing-presses	818,974	Apr. 24	4844	1041–2	121	2579
Morrison, William J., assignor to Electric Candy Machine Company, Nashville, Tenn. Candy-machine	816,114	Mar. 27	4333	918	121	1103
Morse, Alonzo C., Shelby, Ohio. Crutch	815,368	Mar. 20	2806	584	121	716
Morse, Harmon N., and J. C. W. Frazer, assignors of one-third to R. B. Morse, Baltimore, Md. Electric heater	816,172	Mar. 27	4445	941	121	1125
Morse, Orville M., Jackson, Mich. Pallet for molds	815,109	Mar. 13	2221	467	121	530
Morse, Robert B. (See Morse and Frazer, assignors.)						
Morse, Sumner L., Athol, Mass. Inclosure for infants	818,106	Apr. 17	3092	667	121	2147
Mortensen, William C., and G. M. Thenn, Salt Lake City, Utah. Switch mechanism	816,812	Apr. 3	515	112	121	1472
Morton, Hezekiah, Thomasville, N. C. Plow	816,173	Mar. 27	4448	941	121	1125
Morton, Rolla A., San Jose, Cal. Power-transmission mechanism	818,107	Apr. 17	3093	667–8	121	2147
Mosely, Moss. (See Moreland, Joseph S., assignor.)						
Mosee, Frank D., Trenton, N. J. Stove	817,182	Apr. 10	1259	261	121	1699
Mosee, Walter D., (by judicial change of name now Walter M. Davis,) New York, N. Y. Means for governing the tempo in mechanical musical instruments	814,521	Mar. 6	1042	216	121	227
Mosee, William S., Tracy, Minn. Rotary engine	814,389	Mar. 6	787	158–9	121	174
Moshier, James W., assignor to Chase Rolling Mill Co., Waterbury, Conn. Machine for making metal bars or rods	817,085	Apr. 3	1055	219	121	1593
Mossberg, Oscar F., assignor to M. E. Johnson, Fitchburg, Mass., executrix of I. Johnson, deceased. Breech-loading firearm	818,461	Apr. 24	3808	819	121	2355
Mosses, Henry F., Boston, Mass. Card-catalogue	815,110	Mar. 13	2222	467	121	530
Moulton, Walter E., Plain City, Ohio. Fastening device for umbrella-handles	818,701	Apr. 24	4316	925	121	2465
Mouser, Adam C., Richmond, Ind. Gas-burner	817,261	Apr. 10	1423	299	121	1732
Mouterde, Francois, Lyon, France. Storage battery	814,064	Mar. 6	126	24	121	29
Mowat, Oliver M., McKeesport, assignor to National Tube Company, Pittsburg, Pa. Countersinking or facing machine	815,029	Mar. 13	2066	433	121	506
Mowbray, James W., Walton, Canada. Governor for marine engines	817,262	Apr. 10	1424	300	121	1732
Moxley, Delozier, *et al.* (See Trabue, William, assignor.)						
Moyer, Harvey A. (See Latta, Emmit G., assignor.)						
Moyer, Herman, Denver, Colo. Butter-cutting device	814,558	Mar. 6	1122	233	121	244
Moyer, Jacob T., Milford Square, Pa. Clamp for rules	814,722	Mar. 13	1461	306	121	379

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Mrazay, John, *et al.* (See Salmen, Carl R., assignor.)						
Mudge, Charles A., New York, N. Y. System of electric-motor control	815,304	Mar. 13	2614	548-9	121	629
Muehleisen, Carl, Berlin, Germany, assignor to Mergenthaler Linotype Company. Linotype-machine	814,469	Mar. 6	949	194-5	121	207
Mueller, Carl L., Wapakoneta, Ohio. Metallic railway-tie	814,978	Mar. 13	1933	406	121	477
Mueller and Co., C. F. (See Mueller, Samuel, assignor.)						
Mueller, Philip, and J. Boland: said Mueller assignor to H. Mueller Manufacturing Company, Decatur, Ill. Grinding or polishing machine	819,021	Apr. 24	4935	1059	121	2600
Mueller, Philip, and J. C. White, assignors to H. Mueller Manufacturing Company, Decatur, Ill. Blow-off connection for steam-boilers	818,775	Apr. 24	4474	958	121	2499
Mueller, Samuel, assignor to C. F. Mueller and Co., Jersey City, N. J. Noodle-dough-cutting apparatus	814,862	Mar. 13	1723	360-1	121	434
Mueser, William, New York, N. Y. Material of construction	815,617	Mar. 20	3275	687	121	821
Mueser, William, New York, N. Y. Materials of construction	815,618	Mar. 20	3277	688	121	822
Mueser, William, New York, N. Y. Concrete-steel construction	815,619	Mar. 20	3279	688	121	822
Mueser, William, New York, N. Y. Concrete-steel construction	815,620	Mar. 20	3281	688	121	823
Muir, John, Brantford, Canada. Measuring device for concrete-mixers	817,436	Apr. 10	1771	371	121	1806
Muir, Reginald L. (See Bens, Samuel J., assignor.)						
Mulally, Thomas, Princeville, Ill. Cultivator	816,351	Mar. 27	4828	1023-4	121	1207
Mullan, Joseph J. (See Wheeler and Mullan.)						
Mulry, Joseph L., assignor of one-half to W. K. Toole, Pawtucket, R. I. Portable electric lamp	814,065	Mar. 6	128	25	121	29
Multi-Vending Company. (See Packard, John E., assignor.)						
Mulvaney, James T., and C. F. Keller, Chicago, Ill. Combined bottle holder and opener	815,971	Mar. 27	4026	852	121	1032
Mundorff, Theodore, New York, N. Y. Machine for making bifocal lenses	817,503	Apr. 10	1908	401-2	121	1835
Munro, Arthur B. (See Munro, Edward A. and A. B.)						
Munro, Edward A. and A. B., New York, N. Y. Ceiling-plate	815,369	Mar. 20	2807	584	121	716
Murdock, Henry D., Wilkinsburg, Pa. Insulating-cleat	818,186	Apr. 17	3271	700	121	2187
Murdock, John M., assignor to H. K. Townsend, Chicago, Ill. Window-shade fixture	815,621	Mar. 20	3284	688	121	823
Murmann, Frederick J., and A. B. Shreve, Mount Vernon, N. Y. Safety equipment for series electrical distribution systems	815,370	Mar. 20	2808	585	121	716
Murphy, Barney, assignor of one-half to F. Wallace, New Haven, Conn. Trolley-harp	816,875	Apr. 3	651	135	121	1503
Murphy, Charles J., Annapolis, Md. Shaft-support	816,027	Mar. 27	4148	878	121	1061
Murphy, Daniel H., Milwaukee, Wis., assignor to Safety Armorite Conduit Company, Pittsburg, Pa. Conduit for electric wires	817,086	Apr. 3	1056	219	121	1592
Murphy, Edward D., assignor to American Can Company, New York, N. Y. Device for closing the caps or covers on friction-top cans	817,865	Apr. 17	2619	568	121	2043
Murphy, Harold T., Springfield, Mass. Fire-extinguisher	816,352	Mar. 27	4831	1024	121	1208
Murphy, John. (See Heindorf, Oscar, assignor.)						
Murphy, Peter H., St. Louis, Mo. Bending-machine	818,702	Apr. 24	4317	925-6	121	2465
Murray, Charles T., Kansas City, Mo., assignor to Murray Machinery Co. Metal cutting and trimming machine	817,263	Apr. 10	1426	300	121	1732
Murray, Christopher A. (See Weaver, Albert S., assignor.)						
Murray, Frank M., Cadyville, N. Y. Shield for potato-digging machines	816,730	Apr. 3	351	81	121	1438
Murray, John D., San Francisco, Cal. Sand-blast apparatus	818,776	Apr. 24	4475	959	121	2499
Murray, Lebbeus A. (See Race, William B., assignor.)						
Murray Machinery Co. (See Murray, Charles T., assignor.)						
Murray, Thomas E., Brooklyn, N. Y. Elevator	816,677	Apr. 3	270	63	121	1419
Murray, Thomas E., Brooklyn, N. Y. Elevator	816,678	Apr. 3	272	63	121	1420
Murray, Thomas E., Brooklyn, N. Y. Elevator	816,679	Apr. 3	274	64	121	1420
Myer, Harry, and M. Koenigee, New York, N. Y. Twine and thread cutter	814,152	Mar. 6	296	59	121	65
Myer, James W. (See Byers and Myer.)						
Myers & Bro., F. E. (See Myers, Philip A., assignor.)						
Myers, David E. (See Warren and Myers.)						
Myers, George M., Midland, Tex. Animal-trap	814,066	Mar. 6	129	25	121	29
Myers, George P. (See Diehl, Frank, assignor.)						
Myers, George S., Philadelphia, Pa. Railway-tie and rail-joint fastener therefor	816,731	Apr. 3	353	81	121	1438
Myers, Henry, Philadelphia, Pa. Elastic bandage	814,795	Mar. 13	1615	338	121	412
Myers, Irvin, and C. Simensen, Spokane, Wash. Cattle-guard	814,863	Mar. 13	1725	361	121	435
Myers, Philip A., assignor to F. E. Myers & Bro., Ashland, Ohio. Door-hanger	815,371	Mar. 20	2811	585	121	717
Myers, Richard A., Warren, Pa. Well-operating apparatus	818,042	Apr. 17	2984	645	121	2125
Myers, Theodore A., and W. M. Clemans, assignors of one-third to C. C. Schmidt, Wheeling, W. Va. Thermostatic alarm	815,111	Mar. 13	2224	467	121	540
Myers, William S. (See Landis and Myers.)						
Nachod, Julius E., Philadelphia, Pa. Envelop-sealing apparatus	816,175	Mar. 27	4452	942	121	1127
Nachod, Julius E., Philadelphia, Pa. Envelop-sealing apparatus	816,176	Mar. 27	4455	943	121	1127
Nacken, Mathias, Würselen, near Aix-la-Chapelle, Germany. Blackboard-trestle with adjustable map-displayer and roll-support	815,974	Mar. 27	4029	853	121	1033
Nagel, Ludwig. (See Knight and Nagel.)						
Nagy, Ignaz. (See Watzke, Eduard, assignor.)						
Nakdimen, I. H. (See Shamblin, Andrew J., assignor.)						
Naletoff, Michel, St. Petersburg, Russia. Submarine boat	817,130	Apr. 3	1140	236	121	1613
Napier, Charles, assignor of one-half to E. S. Bradford, Jr., Springfield, Mass. Saw-setting machine	817,440	Apr. 10	1781	374	121	1808
Nash, Ebon F., assignor of one-third to W. F. Pond, Mount Carmel, Ohio. Feeder for corn huskers and shredders	818,549	Apr. 24	4004	859	121	2305
Nash, John T., Lexington, Ky. Mail-bag-delivery apparatus	816,878	Apr. 3	658	136-7	121	1504
Nathan Manufacturing Company. (See Kaczander, Leopold, assignor.)						
National Adding Machine Company. (See Dennis, Adolphus S., assignor.)						
National Biscuit Company. (See Rommer, Isaac A., assignor.)						
National Canning & Manufacturing Company. (See Bucklin, Charles S., assignor.)						
National Cash Register Company. (See Bockhoff and Pein, assignors.)						
National Cash Register Company. (See Osborn, Francis C., assignor.)						
National Coal Dump Car Company. (See Otis, Spencer, assignor.)						
National Electric Signaling Company. (See Fessenden, Reginald A., assignor.)						
National Enameling and Stamping Company. (See Mohr, Ernst, assignor.)						
National Malleable Castings Company. (See Krakau and Conner, assignors.)						
National Malleable Castings Company. (See Tower, Clinton A., assignor.)						
National Novelty Corporation. (See Bailey, Charles A., assignor.)						
National Tube Company. (See Mowat, Oliver M., assignor.)						
National Tube Company. (See Nicholson, John H., assignor.)						
National Umbrella Frame Company. (See Garrett, George K., assignor.)						
National Vaporizer Company. (See Dorment, Frank C., assignor.)						
National Voting Machine Company. (See Sandage, William L., assignor.)						
Nau, John B., New York, N. Y. Reversing-valve for regenerative furnaces	816,813	Apr. 3	517	112	121	1473
Nauer, Albert R., St. Louis, Mo. Folding-machine	817,929	Apr. 17	2760	598	121	2077

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Naughton, Mary A., *et al.* (See Naughton, Thomas H., assignor.)						
Naughton, Thomas H., assignor, by mesne assignments, to M. A. Naughton, Boston, and M. Dunn, Springfield, Mass. Apparatus for recovering waste alcohol from liquor casks and barrels	815,463	Mar. 20	2994	624	121	760
Naughton, Thomas H., assignor, by mesne assignments, to M. A. Naughton, Boston, and M. Dunn, Springfield, Mass. Recovering waste alcohol from liqu r casks and barrels	815,464	Mar. 20	2997	624	121	760
Naylor, Isaac, Los Angeles, Cal. Packing-box or carrier for oranges	814,069	Mar. 6	135	26	121	30
Naysmith, Robert, assignor to Pittsburg Tube Company, Pittsburg, Pa. Bed-spring frame	818,111	Apr. 17	3117	671	121	2153
Naysmith, Robert, assignor to Pittsburg Tube Company, Pittsburg, Pa. Bed-spring frame	818,112	Apr. 17	3119	671	121	2153
Naysmith, Robert, assignor to Pittsburg Tube Company, Pittsburg, Pa. Spring-support for beds	818,113	Apr. 17	3121	672	121	2154
Naysmith, Robert, assignor to Pittsburg Tube Company, Pittsburg, Pa. Bed-spring fastener	818,187	Apr. 17	3273	701	121	2187
Neemes Bros. (See Neemes, Spencer, assignor.)						
Neemes, Spencer, assignor to Neemes Bros., Troy, N. Y. Journal-bearing	814,390	Mar. 6	791	159	121	175
Neff, William H. (See Fassett, Riley D., assignor.)						
Neher, William H., Inglewood, Cal. Crude-oil generator	814,866	Mar. 13	1729	362–3	121	436
Neidhardt, August, Albany, N. Y. Composition of matter for removing old paint, varnish, &c	816,359	Mar. 27	4844	.....	121	1210
Neil, William, and G. Alstad, Chicago, Ill.; said Alstad assignor to said Neil. Pump	814,867	Mar. 13	1733	363–4	121	436
Nelms, Thomas L., assignor of one-half to J. F. Page, Spartanburg, S. C. Ironing-table	815,465	Mar. 20	2999	625	121	761
Nelson, Arthur W., Chicago, Ill. Cutter-head	815,549	Mar. 20	3152	660	121	793
Nelson, Charles F., assignor to E-Z Manufacturing Company, Galesburg, Ill. Animal-trap	816,814	Apr. 3	519	113	121	1472
Nelson, Chris, Memphis, Tenn. Oil-press	817,930	Apr. 17	2762	598	121	2077
Nelson, Edward, New York, N. Y. Transmission mechanism	818,845	Apr. 24	4608	988–9	121	2527
Nelson, Hugh B. (See McNally, Thomas W., assignor.)						
Nelson, John F. (See Hoffman, Joseph M., assignor.)						
Nelson & Kreuter Company. (See Andrée, William E., assignor.)						
Nelson, Martin, Toronto, Canada. Machine for drilling nuts and the like	817,587	Apr. 10	2066	436	121	1866
Nelson, Nicholas R., assignor to Beaver Dam Manufacturing Company, Beaver Dam, Wis. Combined grain-seeder and cultivator	814,070	Mar. 6	136	27	121	31
Nelson, Ole A. (See Brimmon and Nelson.)						
Nelson, Otto A., Ballard, Wash. Split pulley	816,117	Mar. 27	4338	919	121	1103
Nelson, Peter, Chicago, Ill. Hame-fastener	815,205	Mar. 13	2434	507	121	590
Nelson, Reuben C., Healdsburg, Cal. Hydrocarbon-fuel-feeding apparatus	814,311	Mar. 6	623	128	121	135
Nelson, Robert, San Martin, Cal. Plow	816,360	Mar. 27	4844	1027	121	1210
Nelson, Robert B., Cornplanter township, Venango county, Pa. Branch clamp for oil-wells	816,361	Mar. 27	4847	1027	121	1211
"Nercumoff" Button Company. (See Forsyth, William H., assignor.)						
Ness, Jens M. J., Maddock, N. D. Heating-drum	817,185	Apr. 10	1263	262	121	1700
Neubauer, Julius K., assignor to R. Schwartz, Rankin, and I. Schwartz, McKees Rocks, Pa. Nail-making machine	815,305	Mar. 13	2620	549	121	631
Neuberth, George E., Newark, N. J. Caster	816,177	Mar. 27	4457	943	121	1127
Neumaier, John, assignor of three-fourths to G. L. Baldauf, Milwaukee, Wis. Automatic railway-signal	817,131	Apr. 3	1141	236–7	121	1613
Neumann, Albrecht B. (See Baker, David, assignor.)						
Neumann, Ludwig, Gleiwitz, Germany. Mechanism for converting rotary motion into reciprocatory motion	816,933	Apr. 3	772	158–9	121	1530
Neville, Asa G. (See Paull and Neville.)						
Neville, John H., Bay City, Mich. Machine for shaping wood articles	816,030	Mar. 27	4153	879	121	1062
Nevins, Ennis M., assignor to Acme Manufacturing and Supply Company, Beaumont, Tex. Pump	814,312	Mar. 6	624	128	121	186
New Haven Clock Company. (See Porter, Wilson E., assignor.)						
New Inverted Incandescent Gas Lamp Company. (See Bridger, James, assignor.)						
New Jersey Patent Company. (See Aiken, Edward L., assignor.)						
Newbold, Harry, London, England. Spectacles	815,975	Mar. 27	4031	853	121	1034
Newell, Charles E., assignor of one-half to W. L. Von, San Francisco, Cal. Wave-motor	816,934	Apr. 3	774	159	121	1531
Newell, Frank C., Wilkinsburg, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Electric heating system for cars	814,981	Mar. 13	1936	407–8	121	478
Newhall, George M., Philadelphia, Pa. Condenser	815,031	Mar. 13	2071	434	121	506
Ney, Louis, Springfield, Mass., assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	816,118	Mar. 27	4339	919	121	1103
Niagara Forged Steel Company. (See Atkins, Charles A., assignor.)						
Nicholls, William T., Wellsburg, W. Va. Manufacture of sheet or plate glass	814,471	Mar. 6	954	196	121	208
Nichols, Samuel A., Los Angeles, Cal. Table	818,550	Apr. 24	4006	859	121	2396
Nicholson & Co., Wm. H. (See Nicholson, William, Jr., assignor.)						
Nicholson, John H., Pittsburg, Pa., assignor to National Tube Company, New York, N.Y. Apparatus for cross-rolling tubular bodies or blanks	817,796	Apr. 17	2483	531	121	2013
Nicholson, John I. and T. E., Washington, Iowa. Sleigh-runner attachment for vehicles	817,982	Apr. 17	2858	619	121	2096
Nicholson, Thomas E. (See Nicholson, John I. and T. E.)						
Nicholson, William, Jr., assignor to W. H. Nicholson & Co., Wilkes-Barre, Pa. Tube-expander	817,060	Apr. 3	1060	220	121	1593
Nichter, Frank, Scranton, Pa. Spiral separator	815,356	Mar. 20	3000	906	121	935
Nickels, Helen P. (See Stecker, Alfred J., assignor.)						
Nickerson, Mary E., Cleveland, Ohio. Clip	814,723	Mar. 13	1462	307	121	380
Niebling, Andrew E. (See Urban, Joseph S., assignor.)						
Niels, Valentine J., Pittsburg, Pa. Metallic structure	817,506	Apr. 10	1917	403–4	121	1837
Nienstadt, August E., Newark, N. J., assignor of fifty-one one-hundredths to G. W. Kuchler, New Rochelle, N. Y. Bleaching composition	817,267	Apr. 10	1438	.....	121	1734
Nies, Frederick H., New York, N. Y. Shoe-form	818,704	Apr. 24	4322	927	121	2466
Nieas, Franklin B., and J. M. Stewart, assignors to Bucher & Gibbs Plow Company, Canton, Ohio. Plow	817,441	Apr. 10	1783	373	121	1808
Niles-Bement-Pond Company. (See Hagman, William J., assignor.)						
Niles-Bement-Pond Company. (See Sears, Willard T., assignor.)						
Niles-Bement-Pond Company. (See Teas, Daniel H., assignor.)						
Niles, Edward S. (See Washburn and Niles.)						
Nissim, Louis, Southend-on-Sea, England. Speed-indicating apparatus	814,071	Mar. 6	137	27–8	121	31
Nixon, Jacob, Stockport, Iowa. Ditching-machine	814,982	Mar. 13	1942	408	121	478
Nixon, Lewis, New York, N. Y. Fire-boat	818,778	Apr. 24	4477	969	121	2500
Nixon, Moses C., Fort Wayne, Ind. Baling-press	818,779	Apr. 24	4479	969–80	121	2500
Noad, William T. (See Bogardus, Van Ness H., assignor.)						
Noben, Nels P., and E. E. Wang, Hitterdal, Minn. Rotary beater for threshing-machines	817,931	Apr. 17	2763	896–9	121	2078

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Noble, Thomas, St. Annes on the Sea, England. Railway-chair	818,391	Apr. 17	3673	789	121	2270
Noblett, Edward J., Chicago, Ill. Grain-door for railway-cars	817,983	Apr. 17	2859	619–20	121	2099
Noël, André L., Paris, France. Expanding pulley	818,280	Apr. 17	3452	743	121	2224
Noland, John. (See Heinle, Albert W., assignor.)						
Noll, Frank F. (See Christiansen, Noll, and Buchanan.)						
Nolle, Ernst, Weissenfels, Germany. Boot and shoe tacking machine	817,660	Apr. 10	2190	405–6	121	1898
Noon, Michael H., *et al.* (See Ross, Thomas S., assignor.)						
Noonan, Albert S., Rome, N. Y. Fire-escape	814,472	Mar. 6	956	196	121	308
Noonan, James A. (See Hoskin and Noonan.)						
Noonan, James H., San Diego, Cal. Playing-cards	816,119	Mar. 27	4342	919	121	1103
Norfolk, Thomas F., Ottumwa, Iowa. Attachment for steel squares	814,157	Mar. 6	302	60	121	66
Norling, Reinhold A., Aurora, Ill., assignor to Aurora Automatic Machinery Company, Aurora, Ill. Pneumatic hammer	814,983	Mar. 13	1943	408–9	121	479
Norling, Reinhold A., assignor to Aurora Automatic Machinery Company, Aurora, Ill. Throttle-valve for pneumatic tools	816,246	Mar. 27	4580	975	121	1154
Norling, Reinhold A., assignor to Aurora Automatic Machinery Company, Aurora, Ill. Pneumatic motor	817,384	Apr. 10	1653	350–1	121	1781
Norman, William W. (See Davis and Norman.)						
Normandin, Levi P., assignor to W. F. Cowham, Jackson, Mich. Machine for molding building-blocks	817,661	Apr. 10	2192	406–7	121	1893
Norris, Almon E., Cambridge, Mass. Electrical hoisting apparatus	816,879	Apr. 3	661	137	121	1505
Norris, Almon E., Cambridge, Mass. Hoisting-drum	817,268	Apr. 10	1439	302	121	1734
North Brothers Manufacturing Company. (See Furbish, Zachry T., assignor.)						
North, John and W. H., Kansas City, Mo. Bailing hay and similar materials	817,932	Apr. 17	2765	599	121	2078
North, John and W. H., Kansas City, Mo. Baling-press	817,984	Apr. 17	2862	620	121	2099
North & Judd Manufacturing Company. (See Burke, Patrick H., assignor.)						
North & Judd Manufacturing Company. (See Moore, John C., assignor.)						
North & Pfeiffer Manufacturing Company. (See Pfeiffer, Christian, assignor.)						
North, Thomas M., assignor to Linotype and Machinery Limited, London, England. Printing-machine	815,857	Mar. 20	3811	807	121	935
North, William H. (See North, John and W. H.)						
Northern Electrical Manufacturing Company. (See Mallett, John P., assignor.)						
Northrup, Elmer C., San Jose, Cal. Box-nailing machine	817,509	Apr. 10	1918	404	121	1837
Northrup, Herbert E., *et al.* (See Palmer and Waterman, assignors.)						
Northwestern Manufacturing Company. (See Lobda, Robert, assignor.)						
Northwestern Storage Battery Company. (See Macmillan, James R., assignor.)						
Norton, Albert M. (See Dellamore and Norton.)						
Norton, Arthur O. (See Trefethen, Ervin T., assignor.)						
Norton, Sallie I., Washington, D. C. Hat-holder for ladies' dressing-cases	814,313	Mar. 6	625	128	121	136
Norton, Samuel T. (See Dellamore and Norton.)						
Norton, William A., Marshalltown, Iowa. Hot-air drum	815,624	Mar. 20	3293	690	121	825
Notkin, Naum, Moscow, Russia. Superheater	816,993	Apr. 3	899	186	121	1558
Nott, Sydney C., Chicago, Ill. Loose-leaf binder	816,734	Apr. 3	356	82	121	1438
Nottage, Herbert P., Goshen, Mass. Feeding device for poultry	815,625	Mar. 20	3295	690	121	826
Noyes, Lewis W., Mechanicsville, N. Y. Producing paper for lithographic prints	816,497	Mar. 27	5119	1085	121	1268
Nugent, Richard C., assignor to N. P. Fenner, Jr., Cincinnati, Ohio. Loose pulley	817,724	Apr. 10	2300	495	121	1918
Nunamaker, John W., assignor to Nunamaker Manufacturing Company, Chicago, Ill. Recording and computing mechanism	814,158	Mar. 6	303	61–2	121	67
Nunamaker Manufacturing Company. (See Nunamaker, John W., assignor.)						
Nunn, Henry C., Canterbury, W. Va. Guard-rail fastener	814,868	Mar. 13	1737	364	121	437
Nye, George E., assignor to L. P. Friestedt, Chicago, Ill. Interlocking sheet-piling	816,994	Apr. 3	900	186	121	1558
Nyser, John C. F., Hartford, Conn. Photographic-printing-frame attachment	815,206	Mar. 13	2435	508	121	591
Nyswonger, William A., Montrose, Colo. Hoe	816,362	Mar. 27	4848	1027	121	1211
O'Bleness, Harry C., and E. C. Merwin, Athens, Ohio. Apparatus for elevating liquids	814,072	Mar. 6	141	28	121	31
O'Brian, Harry R. (See Vanness and O'Brian.)						
O'Brien, Edward J., *et al.* (See Lundin, Gustaf L., assignor.)						
O'Brien, Hugh. (See Williamson and O'Brien.)						
O'Brien, Patrick K. (See Rudkins, Thomas P., assignor.)						
O'Brien, Peter J., Toledo, Ohio. Glass-blower's dummy	818,705	Apr. 24	4324	927	121	2466
O'Connell, James, Mount Sterling, Ky. Shaft tug or support	815,730	Mar. 20	3523	749	121	875
O'Connor, Jeremiah. (See O'Haire, William J., assignor.)						
O'Connor, John. (See Houlahan, Denis, assignor.)						
O'Connor, Patrick W., Lincoln, Nebr. Tire	814,560	Mar. 6	1125	234	121	244
O'Connor, Victor J., Bend, Oreg. Measuring instrument	818,906	Apr. 24	4714	1011	121	2550
O'Dell, Stacy B., and H. W. Smiley, Odon, Ind. Non-refillable bottle	815,112	Mar. 13	2225	467	121	540
O'Donnell, Daniel J. (See Rider and O'Donnell.)						
O'Donnell, Felix, assignor of one-half to S. A. Brown, Pawtucket, R. I. Weft-replenishing mechanism for looms	816,364	Mar. 27	4851	1028	121	1212
O'Donnell, William J., Rochester, N. Y. Heat-applying device	815,208	Mar. 13	2437	508	121	591
O'Haire, William J., assignor of one-half to J. O'Connor, Washington, D. C. Submarine boat	814,369	Mar. 13	1738	364	121	437
O'Neil, Benjamin W. (See Coughlin, Joseph D., assignor.)						
O'Neill, Ellis I., and W. N. Taggart, Philadelphia, Pa. Thread-feeding device for circular-knitting machines	818,906	Apr. 24	4717	1012	121	2551
O'Neill, Frank, Detroit, Mich. Jar-closure	818,706	Apr. 24	4326	927	121	2467
O'Neill, William. (See O'Neill, Willis F., assignor.)						
O'Neill, Willis F., Waukegan, assignor to W. O'Neill, Lake county, Ill. Wrench	818,909	Apr. 24	4720	1012	121	2552
O'Shea, John J., Chicago, Ill. Furnace	816,248	Mar. 27	4585	976	121	1155
Obdyke, Benjamin P. (See Agar, Charles B., assignor.)						
Obermaier, Otto, Lambrecht, Germany. Apparatus for treating textile fabrics	815,306	Mar. 13	2624	550	121	631
Obernesser, Robert, Paris, France. Curved fly-remover for spinning-frames	816,031	Mar. 27	4157	880	121	1064
Oddie, Philip F., London, England. Duplex pump	818,907	Apr. 24	4715	1011–12	121	2550
Odell, Theodore F., Nyack, N. Y. Fireproof sizing	815,207	Mar. 13	2436	.....	121	591
Odell, Theodore F., Nyack, N. Y. Wall decoration	815,307	Mar. 13	2627	.....	121	631
Odena, Charlie T. (See Jones and Odena.)						
Odenkirk, Harry C., Cleveland, Ohio. Car-wheel	816,363	Mar. 27	4849	1028	121	1211
Odling, Francis J., and W. Jamieson, Melbourne, Victoria, Australia. Wet magnetic ore-separator	815,113	Mar. 13	2227	468	121	540
Oertel, George, New York, N. Y. Tape-stretcher	816,032	Mar. 27	4157	880	121	1064
Oesterreich, Albin, Hanover, Germany, assignor to G. Weinhagen, Milwaukee, Wis. Paper-box-making machine	815,626	Mar. 20	3297	690–1	121	826
Oesterreich, Albin, Hanover, Germany, assignor, by mesne assignments, to F. N. Burt, Buffalo, N. Y. Manufacture of paper boxes	815,858	Mar. 20	3813	807–8	121	936
Ogan, William J., Dayton, Ohio. Strainer for air-compressors	817,797	Apr. 17	2486	532	121	2014

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Ogden, Percy. (See Sloan, Barnes, and Ogden.)						
Ogden, William W., Chatham, and W. C. Yelton, assignors to J. M. Quinby & Co., Newark, N. J. Vehicle-body	818,846	Apr. 24	4611	989	121	2528
Ohlson, Olof, Newton, Mass., assignor to American Waltham Watch Company, Waltham, Mass. Watch-regulator	818,043	Apr. 17	2985	645	121	2125
Oil Well Supply Company. (See Sands, Louis C., assignor.)						
Oldham, Samuel, Philadelphia, Pa. Hose-coupling	815,627	Mar. 20	3302	692	121	827
Oler, James, C. A. Fugal, and J. J. Hayes, Pleasant Grove, Utah. Speed-regulator	818,281	Apr. 17	3455	743–4	121	2225
Oliak, Josef. (See Hartmann, Frantisek, assignor.)						
Oliver, Ellis S., Newark, N. J. Horn-support for talking-machines	816,178	Mar. 27	4458	944	121	1126
Ollendorff, Gerhard. (See Andresen, Magerstedt, and Ollendorff.)						
Olson, John N., Butte, Mont. Rifle-sight	817,331	Apr. 10	1548	326	121	1758
Olson, Olof, Bancroft, Iowa. Post-retaining band	817,332	Apr. 10	1550	326	121	1758
Olson, William, Mount Vernon, N. Y. Vibrator for massage treatment	816,365	Mar. 27	4854	1029	121	1212
Olsson, Hjalmar G. (See Gustafson and Olsson.)						
Omega Separator Company. (See Hartmann, William C., assignor.)						
Ongley, Charles E., New York, N. Y. Pipe	815,318	Mar. 13	2651	554	121	636
Ongley, Charles E., assignor of three-fourths to G. S. Terry and E. L. Ongley, New York, N. Y. Button-sewing attachment for sewing-machines	816,815	Apr. 3	321	113	121	1473
Ongley, Ella L., *et al.* (See Ongley, Charles E., assignor.)						
Oppermann, Emil L., assignor to X Electric Accumulator Company, Limited, London, England. Secondary battery	815,628	Mar. 20	3303	.....	121	827
Orchard, Frederick W., Minneapolis, Minn. Shade-cloth trimmer	816,247	Mar. 27	4583	975	121	1154
Orchard, Harry D. (See Mercer and Orchard.)						
Ormondroyd, Seth, and J. F. White, Bradford, assignors to J. Cooper, Ilkley, England. Wool-combing machine, gill-box, &c.	818,707	Apr. 24	4327	928	121	2467
Orrman, Hjalmar L., Dayton, Ohio. Centrifugal sieving apparatus	817,333	Apr. 10	1551	326–7	121	1758
Osborn, Francis C., Detroit, Mich., assignor, by mesne assignments, to National Cash Register Company, Jersey City, N. J. Cash-register	817,725	Apr. 10	2301	496–7	121	1919
Osborne, Wilbur F., Derby, Conn. Buckle	818,780	Apr. 24	4483	960	121	2501
Osgood, Howard L., *et al.* (See McNeal, Luther C., assignor.)						
Oster, Herman W., Cleveland, Ohio, assignor to Oster Manufacturing Company. Gearing for thread-cutting machines	818,114	Apr. 17	3123	672	121	2154
Oster Manufacturing Company. (See Oster, Herman W., assignor.)						
Osterholt, John. (See Baney and Osterholt.)						
Otis Elevator Company. (See Bollman, George W., assignor.)						
Otis Elevator Company. (See Boyce, John E., assignor.)						
Otis Elevator Company. (See Magnuson, Axel, assignor.)						
Otis Elevator Company. (See Marshall, Ernest W., assignor.)						
Otis Elevator Company. (See Otis and Sundh, assignors.)						
Otis, Norton P., and A. Sundh, Yonkers, N. Y., assignors to Otis Elevator Company, East Orange, N. J. Emergency-brake for elevators	815,629	Mar. 20	3304	692	121	827
Otis, Spencer, Chicago, Ill. Dump-car	816,498	Mar. 27	5121	1085–6	121	1268
Otis, Spencer, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D. Dump-car	814,159	Mar. 6	311	62	121	68
Otis, Spencer, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D. Dump-car	814,231	Mar. 6	443	92	121	96
Otis, Spencer, Chicago, Ill., assignor to National Coal Dump Car Company, Rapid City, S. D., and Chicago, Ill. Dump-car	815,032	Mar. 13	2073	434–5	121	507
Ott, Frederick, Woonsocket, R. I., assignor to Crompton & Knowles Loom Works. Temple for looms	817,334	Apr. 10	1554	327	121	1759
Otte, Otho M., Pittsburg, Pa. Fireproof window	817,269	Apr. 10	1440	303–4	121	1735
Otte, Otho M., Pittsburg, Pa. Window-sash	817,270	Apr. 10	1443	304	121	1735
Otto, Frank, *et al.* (See Peden, Joseph W., assignor.)						
Oven, Ernest von, Naperville, Ill. Marking implement for green clay articles	815,238	Mar. 13	2496	520	121	603
Owen, Arthur W., assignor to Wm. L. Gilbert Clock Company, Winsted, Conn. Clock	817,147	Apr. 3	1177	242	121	1621
Owen, Charles P., Chicago, Ill. Tool-carrier for boring-bars	815,630	Mar. 20	3306	693	121	829
Owen, George A., Springfield, Mass. Mailing-box	817,186	Apr. 10	1265	262–3	121	1700
Owens, Charles S., Dayton, Ohio. Adjustable combination-desk	818,910	Apr. 24	4721	1013	121	2552
Owens, Robert, and R. Black, assignors of one-third to L. T. Everett, Catlettsburg, Ky. Steam-valve	817,385	Apr. 10	1660	351	121	1782
Ozonized Oxygen Company. (See Leetham, Sidney, assignor.)						
P. H. & F. M. Roots Company. (See Hicks, George C., Jr., assignor.)						
Pacific Surgical Manufacturing Company. (See Sweeney, William W., assignor.)						
Pacific Wireless Telegraph Company. (See Plecher, Andrew, assignor.)						
Packard, Benjamin L., Denver, Colo. Meat roller or wringer	817,510	Apr. 10	1922	405	121	1838
Packard, John E., Los Angeles, Cal., assignor to Multi-Vending Company, Pierre, S. D. Vending-machine	815,731	Mar. 20	3525	740–1	121	876
Packard, William F., assignor of one-half to C. E. Field, Brockton, Mass. Sole-edge-trimming machine	818,637	Apr. 24	4179	899	121	2434
Padgett, James M., Topeka, Kans. Vulcanizer	815,209	Mar. 13	2438	508	121	591
Page, Charles F., Pineville, La. Air-ship	817,442	Apr. 10	1785	375	121	1809
Page, Ernest A., Williamsport, Pa. Wire-coiling machine	818,463	Apr. 24	3810	819	121	2355
Page, James F. (See Nelms, Thomas L., assignor.)						
Paige, David O., Detroit, Mich., assignor to Pfaudler Co., Rochester, N. Y. Tank	814,160	Mar. 6	312	62–3	121	69
Paige, David O., Detroit, Mich., assignor to Pfaudler Company, Rochester, N. Y. Apparatus for use in perforating the flanges of tank-sections	816,593	Apr. 3	95	19–20	121	1378
Painter, Carl T., Chattanooga, Tenn. Hoisting apparatus	818,115	Apr. 17	3124	672–3	121	2154
Palin, Henry P., North Attleboro, Mass. Tire-protector	814,798	Mar. 11	1618	339	121	412
Palis, August L., Upland, Cal. Retinoscope	815,859	Mar. 20	3817	808	121	936
Palmenberg, Emil T., New York, N. Y. Garment-form	817,511	Apr. 10	1924	405	121	1838
Palmer, Clyde E., Fort Worth, Tex. Nut-lock	818,911	Apr. 24	4722	1013	121	2552
Palmer, Frank H., New York, N. Y. Cat-guard	814,984	Mar. 13	1951	410	121	480
Palmer, Isaac E., Middletown, Conn. Apparatus for washing fabrics	816,179	Mar. 27	4462	944–5	121	1128
Palmer, Isaac E., Middletown, Conn. Temple-roll	817,443	Apr. 10	1786	376	121	1809
Palmer, James. (See Verret and Palmer.)						
Palmer, Merritt W., assignor of one-fourth to H. N. Parker, Hamilton, Mich. Non-refillable bottle	814,619	Mar. 6	1230	260	121	266
Palmer, Noyes F., New York, N. Y. Machine for molding artificial stones	815,372	Mar. 20	2813	596	121	718
Palmer, Stephen, deceased, (W. G. Palmer, executor,) and M. M. Waterman, assignors to M. M. Waterman, J. K. P. Pine, G. W. Daw, J. J. Child, and H. E. Northrup, Troy, N. Y. Apparatus for making fibrous conduits	817,187	Apr. 10	1270	263–4	121	1701
Palmer, William G., executor. (See Palmer, Stephen.)						
Palmer, William H., Jr., New York, N. Y. Storage battery	817,132	Apr. 3	1145	237	121	1614
Palmer, William S., Blairsville, Pa. Miner's pick	817,512	Apr. 10	1926	406	121	1838

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Panama Hay Press Co. (See Tuttle and Cookson, assignors.)						
Pancoast, Edwin A., Montclair, N. J., assignor to E. A. Hawthorne, Springfield, Mass., H. Sheble, Philadelphia, Pa., and J. O. Prescott, Montclair, N. J. Talking-machine	816,995	Apr. 3	902	187	121	1559
Pangburn, Lewis, *et al.* (See Fuller, Anderson, assignor.)						
Paquette, George. (See Gagnon and Paquette.)						
Parfitt, Samuel, Cardiff, England. Manufacture of metallic compounds	818,044	Apr. 17	2967	.....	121	2125
Parish & Bingham Company. (See Gartshore and Foster, assignors.)						
Parke, Davis & Company. (See Heitmann and Clemmensen, assignors.)						
Parker, Albert G., assignor of one-half to C. M. Gruenther, Platte Center, Nebr. Mining	818,188	Apr. 17	3275	701	121	2186
Parker, Arthur H., Sr., Auburn, N. Y. Grip-tread for pneumatic tires	817,933	Apr. 17	2767	599	121	2078
Parker, Charles R. (See Wirt and Parker.)						
Parker, George H., New York, N. Y., assignor to C. H. Platt, New Haven, Conn. Window-stop and burglar-alarm	814,314	Mar. 6	627	128-9	121	136
Parker, George H., New York, N. Y., assignor to C. H. Platt, New Haven, Conn. Swinging window	814,315	Mar. 6	631	129	121	137
Parker, George H., New York, N. Y., assignor to C. H. Platt, New Haven, Conn. Swinging window	814,316	Mar. 6	636	129-30	121	139
Parker, George H., New York, N. Y., assignor to C. H. Platt, New Haven, Conn. Window-retaining apparatus	814,317	Mar. 6	639	130	121	140
Parker, George H., New York, N. Y., assignor to C. H. Platt, New Haven, Conn. Detachable hinge for windows and the like	814,391	Mar. 6	798	160	121	175
Parker, H. N. (See Palmer, Merritt W., assignor.)						
Parker, John H., Saugus, Mass. Rosette for electric-light wires	816,033	Mar. 27	4158	880	121	1064
Parker, Ralph, Lakewood, N. J. Plumber's clamp	817,513	Apr. 10	1926	406	121	1839
Parkersburg Machine Company. (See Callanan, James T., assignor.)						
Parkinson, Joseph C., Ramet Yvoz, Val St. Lambert, Belgium. Removable wall and ceiling covering	815,550	Mar. 20	3153	660	121	794
Parks, Clarence W., assignor to D. G. Look and W. A. Watts, Lowell, Mich. Sprayer	818,392	Apr. 17	3674	789	121	2270
Parks, Dennis. (See Mitchell and Parks.)						
Parks, John R., and J. H. Day, Wood Lake, Nebr. Draft-equalizer	816,816	Apr. 3	523	113	121	1473
Parks, Russell L. (See Crane, Edward W., assignor.)						
Parmenter, Isaac W. (See Fiske, Henry P., assignor.)						
Parr, Harry L., Yonkers, and C. E. Lucke, New York, N. Y. Reversing mechanism for engines	815,732	Mar. 20	3531	741	121	876
Parrish, E. J., *et al.* (See Tatum, James W., assignor.)						
Parrish, Ezekiel L., Crockett, Tex. Ventilating apparatus	814,620	Mar. 6	1233	260	121	267
Parrish, William N., assignor of one-half to W. H. Alford, Richmond, Ind. Wire-fabric-making machine	816,034	Mar. 27	4159	880-1	121	1064
Parsons, Charles A., Newcastle-upon-Tyne, England. Gramophone	814,561	Mar. 6	1126	234	121	245
Parsons, Charles A., Newcastle-upon-Tyne, England. Sound-producing instrument	816,180	Mar. 27	4464	945	121	1129
Parsons, Charles A., Newcastle-upon-Tyne, England. Sound reproducer or intensifier applicable to phonographs, gramophones, &c	817,868	Apr. 17	2626	569	121	2045
Parsons, Francis W., Osterville, Mass. Railway coupling and draw-bar	817,444	Apr. 10	1786	376	121	1809
Parsons, Reginald B., Kingston-upon-Hull, England. Spring-wheel	817,934	Apr. 17	2769	599	121	2079
Partenheimer, Joseph P. (See Smith and Partenheimer.)						
Pascall, Richard H., assignor to Pickering Governor Company, Portland, Conn. Governor for engines	815,114	Mar. 13	2230	468	121	541
Pask, George L., Elgin, Ill. Letter-box	816,366	Mar. 27	4855	1029	121	1213
Pass & Seymour. (See Seymour, Albert P., assignor.)						
Passos, Fernando C. dos, Augusta, Ga. Retaining device	818,282	Apr. 17	3458	744	121	2226
Patchogue Manufacturing Co. (See Schöchli, Rudolf, assignor.)						
Patrick, Joshua, assignor to International Electric Meter Company, Chicago, Ill. Electrical measuring instrument	817,869	Apr. 17	2629	569-70	121	2045
Pattee, Herbert H., New York, N. Y. Spherical amusement-vehicle	815,210	Mar. 13	2439	508-9	121	591
Pattee, Herbert H., East Orange, N. J., and C. L. Duenkel, New York, N. Y. Amusement-vehicle	815,211	Mar. 13	2443	509-10	121	592
Patten, James S., assignor to Baltimore Journal Box Company, Baltimore, Md. Ribbed journal-box	818,912	Apr. 24	4723	1013	121	2552
Patterson, John W., Tiskilwa, Ill. Wagon-bracket	818,283	Apr. 17	3459	744	121	2226
Patterson, Joseph C., Meadville, Pa. Table-screen	814,473	Mar. 6	958	196	121	209
Patterson, Rufus L., *et al.* (See Tyberg and Mantle, assignors.)						
Pattisson, John W. (See Rea and Pattisson.)						
Patton, Alva A. (See Ernst and Patton.)						
Patton, William J., Springdale, Ark. Current water-wheel	817,870	Apr. 17	2630	570	121	2046
Pauling, Arthur and H., Bismarck, assignors to Chemische Fabriken Gladbeck, Gesellschaft mit beschränkter Haftung, Gladbeck, Germany. Making nitric acid from air	814,917	Mar. 13	1817	380	121	455
Pauling, Harry. (See Pauling, Arthur and H.)						
Paull, James, and A. G. Neville, assignors to Eagle Glass & Manufacturing Company, Wellsburg, W. Va. Glass article	815,033	Mar. 13	2075	435	121	507
Paull, William H. (See Symons and Paull.)						
Pax, Edward, and W. D. Carrick, Milwaukee, Wis. Combined signal-flag, staff, and holder	815,115	Mar. 13	2232	468	121	542
Pay, Charles, Providence, R. I. Wagon-tipping device	816,035	Mar. 27	4164	882	121	1065
Payne, Darius W., Minneapolis, Minn. Combined cooler, cream-ripener, and pasteurizer	816,181	Mar. 27	4466	945-6	121	1130
Payne, Harry E., Woodstock, Vt. Bottle-stopper	816,120	Mar. 27	4344	920	121	1108
Payne, Lewis, Elgin, Tex. Nut-lock	818,913	Apr. 24	4725	1014	121	2553
Payton, Lewis A., and C. M. Powell, assignors of one-third to O. E. Powell, Ellendale, Okla. Ter. Weather-strip for doors	818,464	Apr. 24	3812	820	121	2356
Pealing, Joseph J., and J. D. Harrison, Liverpool, England. Lathe	815,733	Mar. 20	3534	741-2	121	877
Pearce, Harold V. (See Knight and Pearce.)						
Pearson, Ellis S., Bradford, Ohio. Street-cleaning machine	817,662	Apr. 10	2194	468	121	1894
Pearson, John B., Stoneham, Mass. One-piece blouse garment	816,367	Mar. 27	4857	1029-30	121	1213
Pearson, John M., Bellevue, assignor to Pearson Manufacturing Company, Allegheny Pa. Barge and other like vessel	815,551	Mar. 20	3154	661	121	794
Pearson, John M., Bellevue, assignor to Pearson Manufacturing Company, Allegheny, Pa. Barge	815,631	Mar. 20	3311	693	121	829
Pearson Manufacturing Company. (See Pearson, John M., assignor.)						
Peavey, Charles T. (See Lefferts, Charles S., assignor.)						
Peck, William A., Jersey City, N. J. Head for bit-stocks	814,318	Mar. 6	642	130	121	141
Peck, William A., Jersey City, N. J. Ratchet-movement	814,319	Mar. 6	644	131	121	141
Peck, William A., Jersey City, N. J. Jaw of bit-stocks	814,320	Mar. 6	645	131	121	141
Peden, Joseph W., Marshall, assignor to R. C. Teague, W. J. Vaughn, and F. Otto, Detroit, Mich. Vending-machine	816,594	Apr. 3	99	20	121	1379
Peerless Motor Car Company. (See Schmidt, Charles, assignor.)						
Peery, Maceanus B., Rogers, Ark. Coffee-pot	814,724	Mar. 13	1462	307	121	380

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Peete, Benjimin B., Belle Mina, Ala. Shock-support	816,595	Apr. 3	100	20–1	121	1379
Peignages & Filatures de Bourre de Soie. (See Doll, Henri, assignor.)						
Pelkard, Fredrick, Rhinelander, Wis. Securing device for logging-chains	816,249	Mar. 27	4586	976	121	1155
Pein, Edward J. von. (See Bockhoff and Pein.)						
Peirce, John R., New York, N. Y. Polishing-machine	817,796	Apr. 17	2487	532	121	2014
Pelham, Walter O., assignor of one-half to P. F. Ferguson, Monett, Mo. Fluid-actuated valve	818,264	Apr. 17	3460	744–5	121	2226
Pélissier, Fénelon, Gonaïves, Haiti. Propelling mechanism	816,368	Mar. 27	4858	1030	121	1213
Pelstring, George J. and H. G., Latonia, Ky. Changeable illuminated sign	816,680	Apr. 3	276	64	121	1421
Pelstring, Henry G. (See Pelstring, George J. and H. G.)						
Pence, Edward L., assignor to Southern Bale Tie Company, Memphis, Tenn. Bale-tie	815,116	Mar. 13	2233	460	121	542
Pendlebury, James T., Manchester, England. Watchcase	814,232	Mar. 6	448	92–3	121	97
Pennington, John, Camden, N. Y. Union undergarment	816,920	Apr. 3	663	138	121	1506
Pennsylvania Steel Company. (See Lewis, James E., assignor.)						
Penther, Hermann, Hanover, Germany. Apparatus for separating rubber from canvas, metal, and other material	816,735	Apr. 3	359	82–3	121	1439
Pepper, John Jr., Utica, N. Y. Fishpole	814,321	Mar. 6	647	131	121	141
Percy, Frank T., Rochester, N. Y. Coin-controlled dispensing apparatus	815,860	Mar. 20	3818	808–9	121	937
Perdew, Douglas, Constitution, Ohio. Grindstone-turning apparatus	815,034	Mar. 13	2076	435	121	508
Perfect Sewer Trap Manufacturing Company. (See Lenhart, Philip F., assignor.)						
Perkins, Elmer E., Melrose, Mass. Apparatus for drying starch, &c	815,373	Mar. 20	2814	596	121	718
Perkins, John A., and A. A. St. Laurent, Salem, assignors to Draper Company, Hopedale, Mass. Feeler stop-motion for automatic looms	817,445	Apr. 10	1788	376	121	1809
Perkins, Thomas S., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Reversing-switch for electrical circuits	814,322	Mar. 6	649	131–2	121	142
Perkins, Thomas S., and R. P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. System of remote control for electric motors	814,323	Mar. 6	651	132	121	142
Perkins, Thomas S., and R. P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. Controller-switch	814,324	Mar. 6	657	132	121	144
Perkins, Thomas S., and R. P. Jackson, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. Controller-operating means	814,325	Mar. 6	659	132–3	121	144
Perks, Albert J., assignor to Webster and Perks Tool Company, Springfield, Ohio. Paper-trimmer	817,271	Apr. 10	1444	304	121	1736
Perky, Henry D. (See Higbee, Harriet A., assignor.)						
Perraud, Jean B. (See Perrin and Perraud.)						
Perrin, Jean M., and J. B. Perraud, Lyon, France. Jacquard-machine	815,035	Mar. 13	2078	435	121	509
Perrin, Thomas H., Potsdam, N. Y. Egg-beater	818,914	Apr. 24	4726	1014	121	2553
Perry, Albert W., Northville, S. D. Drill-cup	814,326	Mar. 6	663	133	121	145
Perry, Alvy G., Coldwater, Miss. Plow	815,036	Mar. 13	2079	436	121	509
Perry, Clayton W., South Dayton, N. Y. Head-rest for car-seats	818,045	Apr. 17	2988	645	121	2125
Perry, Henry B., Sheldon, Iowa. Photographic shutter	815,552	Mar. 20	3156	661	121	794
Perry, Herbert W., Trichinopoly, India. Renewable cap for permanent way-rails	818,116	Apr. 17	3126	673	121	2155
Perry, John C., assignor to Clinton Wire Cloth Company, Clinton, Mass. Machine for making wire goods	814,392	Mar. 6	795	160–5	121	176
Perry, John C., La Junta, Colo., assignor to Clinton Wire Cloth Company, Boston, Mass. Machine for making interposed fabric	814,393	Mar. 6	806	165–7	121	177
Perry, Philip E., Lexington, Mass. Holder for jars and other like articles	819,023	Apr. 24	4938	1060	121	2600
Perry, William, and W. Pierpoint, Jr., Yonkers, N. Y. Non-refillable bottle	816,121	Mar. 27	4344	920	121	1104
Perry, William A., Chicago, Ill. Bed-spring attachment	818,046	Apr. 17	2989	646	121	2126
Perry, William C., Charlestown, assignor of one-fourth to G. P. Clark, Hopkinton, R. I. Machine for measuring, counting, and cutting off fabric	815,861	Mar. 20	3822	809–10	121	937
Perry, William H., Concord, N. H. Rotary fender and cleaner for surface railways	815,308	Mar. 13	2627	550	121	631
Persons, Ernest L., West Concord, N. H. Egg-beater holder	817,272	Apr. 10	1447	305	121	1726
Persson, Otto F., Lynn, Mass., assignor to General Electric Company. Speed-changing device	816,369	Mar. 27	4860	1030–1	121	1214
Persoff, Nicolas, St. Petersburg, Russia. Coupling for internally and externally armored hose	816,596	Apr. 3	101	21	121	1379
Peter Gerlach Company. (See Dieter, Louis F., assignor.)						
Peter Manufacturing Company. (See Spooner, Lee C., assignor.)						
Peterman, Tolbert G., Cumberland, Md. Railway spike and tie-plate	816,370	Mar. 27	4862	1031	121	1214
Peters, George A., Toronto, Canada. Self-registering electrically-operated sectional target	815,117	Mar. 13	2234	459	121	542
Peters, Gershom M., Cincinnati, Ohio. Bridle-bit	818,781	Apr. 24	4484	960	121	2502
Peters, Robert H., Batavia, and L. A. Mason, assignors to Textile Specialty Company, Buffalo, N. Y. Diaper	816,036	Mar. 27	4165	882	121	1065
Peters, Thomas E., Moberly, Mo. Grease-cup	815,734	Mar. 20	3536	742	121	877
Peters, William, assignor of one-half to W. Stathers, Melvin, Ill. Stove-leg caster	814,562	Mar. 6	1127	234	121	245
Peterson, John P. (See Johnson, Frederick W., assignor.)						
Peterson, Nels J., Omaha, Nebr. Building-block	818,551	Apr. 24	4007	859	121	2396
Peterson, William. (See Ruthven, Alfred L., assignor.)						
Petiet, Charles M. J., assignor to Société Anonyme des Automobiles Ariés, Villeneuve-la-Garenne, France. Motor-vehicle	816,250	Mar. 27	4587	976	121	1156
Petiet, Charles M. J., assignor to Société Anonyme des Automobiles Ariés, Villeneuve la Garenne, France. Steering mechanism for motor-vehicles	816,935	Apr. 3	775	159	121	1531
Petmecky, Fred, Austin, Tex. Combined minnow bucket and trap	816,251	Mar. 27	4588	977	121	1156
Pettijohn, John W., Montesano, Wash. Latch	815,553	Mar. 20	3158	661	121	795
Pettit, Harry M., New York, N. Y. Theatrical device	818,189	Apr. 17	3276	701–2	121	2188
Pettit, Silas W. (See Waite, Charles N., assignor.)						
Petty, Cornelius, Bay Minette, Ala. Iron-heater	818,847	Apr. 24	4613	989	121	2528
Petty, Howard H., Pomona, Cal. Fruit-clipper	814,799	Mar. 13	1619	340	121	413
Petty, Howard H., Pomona, Cal. Fruit-clipper	818,562	Apr. 24	4009	860	121	2396
Peust, Albert, Hanover, Germany. Elastic metallic tire	814,161	Mar. 6	315	63	121	69
Pfaudler Company. (See Paige, David O., assignor.)						
Pfeiffer, Christian, assignor to North & Pfeiffer Manufacturing Company, New Britain, Conn. Boot-calk	817,090	Apr. 3	1061	220	121	1593
Pfender, George. (See Madden and Pfender.)						
Pflager, Harry M., Chicago, Ill. Sleeping-car	816,037	Mar. 27	4167	882–3	121	1066
Pflugradt, Alfred, assignor to A. L. Pflugradt, Milwaukee, Wis. Thill-coupling	816,597	Apr. 3	102	21	121	1379
Pflugradt, Amanda L. (See Pflugradt, Alfred, assignor.)						
Pfium, Harry P., New York, N. Y. Washing-machine	814,394	Mar. 6	812	167	121	178
Pfium, Joseph F. (See Schmidt and Pfium.)						
Phelps, Byron, Seattle, Wash. Lock and latch mechanism	815,976	Mar. 27	4032	854	121	1034
Phelps, Byron, Seattle, Wash. Knob for locks and latches	815,977	Mar. 27	4033	854	121	1034
Phelps, Byron, Seattle, Wash. Lock	819,024	Apr. 24	4940	1060	121	2601
Phelps, Walter S., Muncie, Ind. Hydrant	818,782	Apr. 24	4487	961	121	2502
Phelps, William J., Detroit, Mich. Electric incandescent lamp	814,162	Mar. 6	315	63	121	69

Alphabetical list of patentees for March and April—Continued.

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Phenice, Millroy M. (See McCarthy and Phenice.)						
Philbrick, Charles H., *et al.* (See Clark, Frank M., assignor.)						
Philippi, Theodore F., East St. Louis, Ill. Hand-punch	818,783	Apr. 24	4489	961	121	2502
Philippoteaux, Albert, Reims, France. Bottle-making device	814,800	Mar. 13	1620	340	121	413
Philippoteaux, Albert, Reims, France. Apparatus for making glass bottles and the like.	815,037	Mar. 13	2083	436-8	121	510
Phillippe, Benjamin H., Fitchburg, Mass. Swivel for window-blind shutters	815,862	Mar. 20	3826	810	121	938
Phillips, Clarence A., Washington, D. C. Can-opener	817,799	Apr. 17	2490	538	121	2015
Phillips, Hyman, Cincinnati, Ohio. Compartment-box for bottles or the like	818,190	Apr. 17	3282	702	121	2190
Phillips, John L., Rochester, N. Y. Door-fastener	815,466	Mar. 20	2990	625	121	761
Phillips, Morris T. (See Webster, George, assignor.)						
Phillips, Orville, Braymer, Mo. Planter	815,554	Mar. 20	3150	661-2	121	795
Phillips, Samuel L. (See Moler, Insley, and Phillips.)						
Phillips, Willis E., Colloran, Colo. Camera attachment	818,553	Apr. 24	4010	860	121	2396
Phipps, Abner A., New York, N. Y., assignor to R. Carr, Oak Park, Ill. Display apparatus	816,598	Apr. 3	103	21-2	121	1380
Phoenix Boot Machinery Company. (See Keats, John, assignor.)						
Pickavance, John H., Johannesburg, Transvaal. Safety mechanism for hoisting apparatus	814,870	Mar. 13	1740	365	121	438
Pickering Governor Company. (See Pascall, Richard H., assignor.)						
Pickett, Daniel L., Keene, N. H. Ice-creeper	817,800	Apr. 17	2491	533	121	2015
Pickles, Charles K., assignor to J. A. Brill, Philadelphia, Pa. Brake-hanger	817,871	Apr. 17	2632	570-1	121	2046
Pickrell, Charles E., Georgetown, Canada. Metal-bending appliance	817,386	Apr. 10	1660	351	121	1783
Pickup, George A., Brooklyn, N. Y. Loom for weaving tubular fabrics	815,555	Mar. 20	3161	662-4	121	795
Pierboni, Geremia, and P. Bufano, Connellsville, Pa. Coke-oven	814,621	Mar. 6	1234	260	121	267
Pierce, Frederick W., Syracuse, N. Y. Display-rack for rugs, curtains, and similar articles	814,801	Mar. 13	1622	340	121	413
Pierce, George L., New York, N. Y. Antislipping device for shoes, &c.	814,474	Mar. 6	959	197	121	209
Pierce, Joel B. F., Oxford, Mass. Fly-trap	816,499	Mar. 27	5124	1086	121	1260
Pierce, Leslie D., Indianapolis, Ind. Fastener for clothing	814,475	Mar. 6	960	197	121	209
Pierce, Simeon F., St. Paul, Minn. Boiler-furnace	814,073	Mar. 6	144	29	121	33
Pierce, Simeon F., St. Paul, Minn. Boiler-flue	814,074	Mar. 6	146	29	121	33
Pierce, Simeon F., St. Paul, Minn. Trolley-catcher	814,075	Mar. 6	147	30	121	33
Pierpoint, William, Jr. (See Perry and Pierpoint.)						
Pierrepont, Evelyn, London, England. Tooth-mold	815,374	Mar. 20	2818	586-7	121	719
Pifer, George N., Cleveland, Ohio. Photographic postal or mailing card	817,663	Apr. 10	2196	468	121	1894
Pike, Charles A., Paw Paw, Mich. Weather-strip	814,076	Mar. 6	148	30	121	33
Pike Manufacturing Company. (See Pippy, Charles F., assignor.)						
Pilain, François, Lyon, France. Automobile	815,735	Mar. 20	3537	742	121	878
Pilcher, Frank A., assignor of two-thirds to F. S. Brasor and S. S. Porter, Marietta, Ohio. Automatic musical-instrument player	814,725	Mar. 13	1464	307	121	380
Pilcher, Frank A., assignor of two-thirds to F. S. Brasor and S. S. Porter, Marietta, Ohio. Solo attachment for musical instruments	815,978	Mar. 27	4034	854	121	1034
Piller, Anton, Spandau, Germany. Life-saving apparatus	816,681	Apr. 3	277	64	121	1421
Pilling Air Engine Company. (See Pilling, James L., assignor.)						
Pilling, James L., Bucyrus, Ohio, assignor to Pilling Air Engine Company, Detroit, Mich. Oscillating engine	815,632	Mar. 20	3313	694	121	830
Pinch, William H. (See French and Pinch.)						
Pinches, Conrad H., New York, N. Y. Soap-holder	817,985	Apr. 17	2364	520	121	2100
Pine, James K. P., *et al.* (See Palmer and Waterman, assignors.)						
Pinkham, Charles F., assignor to F. W. Whitcher, Boston, Mass. Machine for forming lacing-tips	817,872	Apr. 17	2633	571-3	121	2047
Pinney, Erastus. (See Johnson, William B., assignor.)						
Piper, Edmund F., Fargo, N. D. Traction-wheel	815,633	Mar. 20	3314	694	121	830
Piper, Edward E., *et al.* (See Poole, John H., assignor.)						
Piper, Edward S., Toronto, Canada. Hood and smoke-pipe for locomotive-round-houses	818,784	Apr. 24	4491	961	121	2503
Pippey, W. F. (See Cornwell, George H., assignor.)						
Pippy, Charles F., Calgary, Canada, assignor to Pike Manufacturing Company, Pike, N. H. Oilstone-box	816,599	Apr. 3	106	23	121	1380
Piscicelli, Roberto T., Naples, Italy. Machine for printing and issuing railway-tickets	814,985	Mar. 11	1952	410-13	121	480
Pitner, Henry B., Olean, N. Y. Lawn-trimmer	818,708	Apr. 24	4329	928	121	2467
Pittock, John W., Philadelphia, Pa. Washing apparatus	817,801	Apr. 17	2492	533	121	2015
Pittock, John W., Philadelphia, Pa. Washing apparatus	817,802	Apr. 17	2493	533	121	2016
Pitts, Charles W., *et al.* (See Fontaine, Thomas A., assignor.)						
Pittsburg Tube Company. (See Naysmith, Robert, assignor.)						
Pittsburgh Coal Washer Company. (See Martin, Robert L., Jr., assignor.)						
Pittsburgh Seamless Tube Company. (See Blaxter, George H., assignor.)						
Place, James W., and H. L. Conter, Decatur, Ind. Shipping-book	814,871	Mar. 13	1743	365	121	439
Plagman, Adolph, assignor to White Lily Washer Company, Davenport, Iowa. Mechanical movement	815,309	Mar. 13	2630	551	121	632
Plant, Harry N., Biddeford, Me. Dress-chart	815,467	Mar. 20	3001	626	121	761
Plass, Herbert E., New York, N. Y., assignor to Howard Miniature Lamp Company. Electric-light fitting	816,996	Apr. 3	903	187	121	1559
Plaster, Joseph J., *et al.* (See Garrard, William D., assignor.)						
Plaster, Purl C., Indianapolis, Ind., assignor of two-thirds to J. M. Moore, Cromwell, Ind. Combination step and extension ladder	815,736	Mar. 20	3538	743	121	878
Platt, Charles H. (See Parker, George H., assignor.)						
Platz, Frank A., Brooklyn, N. Y. Garment	818,785	Apr. 24	4492	961	121	2503
Platz, Heinrich, assignor to F. Schorg, (Inhaber L. Schorg & K. Lohner,) Munich, Germany. Air-purifier	816,371	Mar. 27	4863	1031	121	1214
Playsted, Frank W., Milwaukee, Wis. Gas-saving device	818,554	Apr. 24	4013	860	121	2397
Plecher, Andrew, Los Angeles, Cal., assignor to Pacific Wireless Telegraph Company. Contact device	817,664	Apr. 10	2196	468	121	1895
Plummer, Ralph, Baraboo, Wis. Speed-indicator	818,117	Apr. 17	3127	673	121	2155
Plunkett, Charles L., assignor to American Couch Company, New York, N. Y. Couch or couch-bed	815,118	Mar. 13	2238	469-70	121	543
Plunkett, Christopher F., assignor of one-fourth to J. J. Plunkett, New York, N. Y. Pipe-coupling for water-closets, &c.	818,393	Apr. 17	3676	789	121	2271
Plunkett, James J. (See Plunkett, Christopher F., assignor.)						
Poalk, James L., Wyncote, Pa. Sad-iron	815,634	Mar. 20	3315	695	121	830
Pocock, Alfred W., Woking, England. Mechanical toy	818,555	Apr. 24	4013	860-1	121	2397
Podlešák, Henry J., Chicago, Ill., assignor to International Harvester Company. Valve-controlling mechanism for gas-engines	816,817	Apr. 3	524	113	121	1474
Poggensee, Henry H., Chicago, Ill. Bottle-washing device	816,818	Apr. 3	525	114	121	1474
Poindexter, Robert E., Indianapolis, Ind. Saw-set	817,514	Apr. 10	1929	406	121	1839
Polimeni, Domenick, Windber, Pa. Carpenter's square	817,515	Apr. 10	1929	407	121	1839

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Pollard, Albert, Providence, R. I. Gem-setting	816,997	Apr. 3	905	187	121	1559
Pond, Ezra S., Toledo, Ohio. Garbage-can	814,563	Mar. 6	1128	235	121	245
Pond, George N., Aspen, Colo. Presser-machine for boxing purposes	818,848	Apr. 24	4614	990	121	2528
Pond, L. L., *et al.* (See Gardner, James W., assignor.)						
Pond, W. T., *et al.* (See Gardner, James W., assignor.)						
Pond, William F. (See Nash, Ebon F., assignor.)						
Pool, James P., New York, N. Y. Navigable vessel	815,635	Mar. 20	3316	696	121	830
Pool, James P., New York, N. Y. Navigable vessel	815,737	Mar. 20	3541	743	121	879
Poole, George B. (See Mohr, Martin, assignor.)						
Poole, John H., Braintree, assignor to F. C. Granger, Randolph, E. H. Googins, Cambridge, and E. E. Piper, Randolph, Mass. Blind-hinge	818,285	Apr. 17	3462	745	121	2226
Poplin, Lemuel L., Rocky Mount, N. C. Bench	815,556	Mar. 20	3164	664	121	796
Porritt, Edwin, New York, N. Y. Boiler and furnace	815,636	Mar. 20	3320	695–6	121	831
Port, Morris. (See Hertenstein, Emil, assignor.)						
Portable Wagon Dump and Elevator Company. (See White, John F., assignor.)						
Porten, William, St. Paul, Minn. Molding concrete bricks or blocks	818,286	Apr. 17	3463	745–6	121	2227
Porter, Fay T., Morristown, Ind. Alarm for incubators	815,557	Mar. 20	3165	664	121	796
Porter, Peter J., Boston, Mass. Covering for shoe-racks	815,932	Mar. 20	3950	837	121	965
Porter, Samuel S., *et al.* (See Pilcher, Frank A., assignor.)						
Porter Screen Manufacturing Company. (See Southworth, Henry E., assignor.)						
Porter, Walter H., Mansfield, Mass. Skirt-scribing platform	818,557	Apr. 24	4017	862	121	2396
Porter, Wilson E., assignor to New Haven Clock Company, New Haven, Conn. Clock	817,803	Apr. 17	3494	534	121	2016
Posson, Edward, Chicago, Ill. Coupling for railway engines and cars	816,038	Mar. 27	4170	883	121	1066
Possons, Minard A., Cleveland, Ohio. Talking-machine	818,975	Apr. 24	4848	1042	121	2580
Post, Charles W., Zion City, Ill. Combined propelling and steering apparatus for boats	817,935	Apr. 17	2770	600	121	2079
Post, Howard M., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Two-division telephone system	816,819	Apr. 3	526	114	121	1474
Postal Telegraph-Cable Company. (See Jones, Sterne F., assignor.)						
Potter, Henry N., New Rochelle, N. Y., assignor to G. Westinghouse, Pittsburg, Pa. Vacuum electric furnace	814,726	Mar. 13	1465	307–8	121	380
Potter, Henry N., New Rochelle, N. Y., assignor to G. Westinghouse, Pittsburg, Pa. Electric pressure-furnace	814,727	Mar. 13	1469	308	121	381
Potter, Henry S., Bromley, England. Throttle-valve for pneumatic hammers	816,998	Apr. 3	906	187–8	121	1560
Potter, Milton W., Red Lodge, Mont. Hat-hanger	818,849	Apr. 24	4616	990	121	2529
Potter, Oscar, Wilmington, Del. Continuous steel-billet-casting machine	814,728	Mar. 13	1472	308–9	121	382
Potter, William, New York, N. Y. Combination draft-excluder and lock	814,802	Mar. 13	1624	341	121	414
Potter, William B., Schenectady, N. Y., assignor to General Electric Company. Hoisting apparatus	816,372	Mar. 27	4864	1032	121	1215
Potts, C. H., *et al.* (See McMahon, James P., assignor.)						
Potts, Howard J. (See Jackson, Calvin, assignor.)						
Pouliot, Louis Z., assignor of one-half to A. P. Simar, Montreal, Canada. Pulley for window-shade rollers	816,820	Apr. 3	533	114	121	1476
Powell, Charles M. (See Payton and Powell.)						
Powell, Jonathan D., Imlay City, Mich. Silo	817,986	Apr. 17	2966	621	121	2100
Powell, John R., Plymouth, Pa. Compound squib	815,119	Mar. 13	2243	470	121	545
Powell, John R., Plymouth, Pa. Squib-holder	815,212	Mar. 13	2447	510	121	593
Powell, Ora E. (See Payton and Powell, assignors.)						
Power, Nicholas, New York, N. Y. Take-up mechanism	818,047	Apr. 17	2990	646	121	2126
Powers, Eugene S., Merchantville, N. J. Treating clay	818,287	Apr. 17	3465	.....	121	2227
Powers, Francis A., assignor of one-half to F. Gahley, Parma, Idaho. Seed and grain cleaning machine	814,918	Mar. 13	1819	381	121	455
Powers, Francis W. (See Hoffman and Powers.)						
Powers, James F., Elkton, Md. Brake-shoe	816,373	Mar. 27	4866	1032	121	1215
Powlison, Allen L. (See Erb and Powlison.)						
Poynton, Henry N., Seymour, Victoria, Australia. Car-coupling	817,665	Apr. 10	2198	469	121	1895
Prahl, Hans H., and E. H. Kistner, Independence, Kans. Bench-stop	816,999	Apr. 3	908	188	121	1560
Pratt, Charles W., assignor of one-half to T. J. Taylor, Martin, Tenn. Brick-making machine	816,374	Mar. 27	4867	1032–3	121	1215
Pratt, Eugene E., *et al.* (See Whitney, Charles E., assignor.)						
Pratt & Whitney Company. (See Hanson, Bengt M. W., assignor.)						
Pratt, William H., Lynn, Mass., assignor to General Electric Company. Electric meter	816,375	Mar. 27	4870	1033	121	1216
Precht, Heinrich, Neustassfurt, Germany. Making acetylene chlorid	817,188	Apr. 10	1272	.....	121	1702
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Channeling-machine	818,558	Apr. 24	4019	862	121	2399
Prellwitz, William, Phillipsburg, N. J., assignor to Ingersoll-Rand Company, New York, N. Y. Hammer-drill	818,638	Apr. 24	4181	900	121	2435
Prendergast, Frank P., Dagus Mines, Pa. Wheel construction	814,077	Mar. 6	150	30	121	34
Prentice, George J., New York, N. Y. Device for the preliminary forming of cigar-bunches	818,786	Apr. 24	4494	962	121	2503
Prescott, Edwin, Arlington, Mass. Mechanism for operating shutters, &c	816,881	Apr. 3	664	138	121	1506
Prescott, John O., *et al.* (See Pancoast, Edwin A., assignor.)						
Preslar, Charles F., assignor to Preslar-Crawley Manufacturing Company, Cincinnati, Ohio. Feeding mechanism for drilling machinery	816,500	Mar. 27	5125	1086	121	1270
Preslar-Crawley Manufacturing Company. (See Preslar, Charles F., assignor.)						
Pressed Prism Plate Glass Company. (See Wadsworth, Frank L. O., assignor.)						
Pressed Steel Car Company. (See Lindström, Charles A., assignor.)						
Prest, John E., Worcester, Mass. Thread-board for spinning-frames	817,273	Apr. 10	1448	305	121	1737
Preston, Albert F., Boston, Mass. Heel-loading machine	816,882	Apr. 3	668	138–9	121	1506
Price, John. (See Heagele, Arthur, assignor.)						
Price, Lot W., Whitten, Iowa. Forceps for handling boiled clothes	818,465	Apr. 24	3813	820	121	2356
Price, Milbert F., Iowa City, Iowa. Coin-controlled apparatus	816,936	Apr. 3	776	160	121	1531
Price, Ned S., Erie, Pa. Device for drenching horses	818,466	Apr. 24	3814	820	121	2356
Price, Orvey, Plainfield, N. J. Artificial-stone shingle	816,252	Mar. 27	4590	977	121	1156
Price, Orvey, Plainfield, N. J. Building construction. (Reissue)	12,467	Mar. 27	5241	1111	121	1298
Price, Theodore H., and W. P. Quentell, assignors to Utility Cotton Picker Company, New York, N. Y. Cotton-harvester	817,666	Apr. 10	2199	469	121	1895
Price, Theodore H., and W. P. Quentell, assignors to Utility Cotton Picker Company, New York, N. Y. Cotton-harvester	817,667	Apr. 10	2201	470	121	1896
Price, William G., Kingston, N. Y. Brake	818,639	Apr. 24	4183	900–1	121	2435
Price, William G., Pittsburg, Pa. Car-truck	818,640	Apr. 24	4188	901	121	2437
Price, William G., Pittsburg, Pa. Slack-adjuster	818,641	Apr. 24	4191	902	121	2438
Price, William G., Pittsburg, Pa. Bolster swing-damper	818,642	Apr. 24	4195	902	121	2439
Priddle, Arthur. (See McGuigan and Priddle.)						
Prideaux, Lewis, assignor of two-thirds to C. A. Blumhard and A. Fertig, Philadelphia, Pa. Non-refillable bottle	815,375	Mar. 20	2819	587	121	719

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Price, Herman. (See Williamson and Price.)						
Priest, George E., Orange, Mass. Gang matching-machine	816,039	Mar. 27	4173	884	121	1067
Primus, Frank T., and E. G. Eggleston, Vinton, Iowa. Chalk-holder	814,872	Mar. 13	1744	365	121	439
Prine, Thomas M., Toledo, Ohio. Clover-seed-cleaning machine	818,118	Apr. 17	3128	674	121	2155
Pring, John R., Shawnee, Okla. Ter. Whiffletree-coupling	817,335	Apr. 10	1556	327	121	1759
Pring, John R., assignor of one-sixth to C. McCormick, Shawnee, Okla. Ter. Rail-joint.	817,336	Apr. 10	1558	327	121	1760
Printers' Engineers. (See Hall and Barber, assignors.)						
Prinz, Faustin, Milwaukee, Wis. Sieve-cleaner for grain-separators	816,821	Apr. 3	534	115	121	1478
Pritchard, Albert R., Rochester, N. Y. Ball-support for lanterns	817,387	Apr. 10	1661	352	121	1783
Pritchard, Charles A. G., Cleveland, Ohio. Sound-box	818,119	Apr. 17	3130	674	121	2156
Pritchard-Strong Company. (See Johnson, Joseph E., assignor.)						
Pritchard-Strong Company. (See Kline, David C., assignor.)						
Pritchard, Thomas W. (See Sullivan, Pritchard, and Ellison.)						
Pritchard, William C., Augusta, Ga. Attachment for swingletrees	816,501	Mar. 27	5127	1067	121	1270
Prosser, Henry B., Chicago, Ill. Propeller for boats	815,738	Mar. 20	3545	744	121	880
Protected Metal Company. (See Jacobs, Frank D., assignor.) (Reissue.)						
Prouty, Homer E., Genoa, Ill. Tire-armor	816,182	Mar. 27	4469	946	121	1131
Provident Life & Trust Company of Philadelphia, administrator. (See Brown, Edward.)						
Prugh, John H. (See Spence, Prugh, and Zimmer.)						
Pruitt, Eugene R. (See Weitzel and Pruitt.)						
Pruver, Albert, New York, N. Y. Cord-stitch-buttonhole machine	815,739	Mar. 20	3546	744	121	880
Pallander, Charles A., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Suspension means for electric-railway motors	816,600	Apr. 3	108	23	121	1360
Pugh, Kate, Central City, Colo. Fire-escape	816,183	Mar. 27	4471	947	121	1131
Pulliam, George W., Columbia, Mo. Bicycle attachment	816,122	Mar. 27	4345	920	121	1104
Pumice Stone Construction Company. (See Depew and McCoy, assignors.)						
Punt, Walter, Johannesburg, Transvaal. Adjustable gripping-tool	815,376	Mar. 20	2820	587	121	720
Purcell, Frank W., Luverne, Minn. Sealing device	816,376	Mar. 27	4871	1034	121	1216
Purdy, Daniel J., White Plains, N. Y. Expansible brush	817,337	Apr. 10	1559	328	121	1760
Pursell, William W., Pittston, Pa. Picture-hanger	814,163	Mar. 6	318	64	121	69
Purvis, Elmer K., Manchester, Iowa. Screw-propeller	815,740	Mar. 20	3549	745	121	880
Pusey, Joshua, Media, Pa. Pneumatic gun	814,078	Mar. 6	152	31	121	34
Putnam, Thomas J., Peru, N. Y. Mop-wringer	818,467	Apr. 24	3815	820	121	2357
Quackenbush, G. W., *et al.* (See Davee, William, assignor.)						
Quaintance, Elsworth E., Como, Colo. Combination-lock	817,388	Apr. 10	1662	352	121	1783
Quentell, William P. (See Price and Quentell.)						
Quertier, Hilary, Dunedin, New Zealand. Apparatus for cleaning the rails of tramways and the like	815,213	Mar. 13	2449	510-11	121	503
Quinlen, William C., Barre, Vt. Cutting-machine	817,000	Apr. 3	909	187-8	121	1560
Quittmeyer, George E., Bridgeport, Conn. Curtain-bracket	817,446	Apr. 10	1791	377	121	1810
R. E. Dietz Company. (See Betts, Charles L., assignor.)						
R. W. Jamieson Company. (See Jamieson, Robert W., assignor.)						
Race, William B., assignor of one-half to L. A. Murray, Lake, Idaho. Screen for irrigating-ditches	818,288	Apr. 17	3466	746	121	2227
Radcliffe, John, Elland, England. Gas-generator	816,123	Mar. 27	4346	921	121	1104
Rader, Harvey S., and W. H. Wert, Palmerton, Pa. Fifth-wheel	818,787	Apr. 24	4496	962	121	2504
Radloff, Fredrick. (See Kormil and Radloff.)						
Rail Joint Company. (See Weber, George A., assignor.)						
Railway Appliances Company. (See Arey, Fred C., assignor.)						
Railway Appliances Company. (See Scott, George W., assignor.)						
Raisbeck, George, Newark, assignor of one-half to J. A. Raisbeck, New Durham, N. J. Shoe-last	818,048	Apr. 17	2991	646	121	2126
Raisbeck, Joseph A. (See Raisbeck, George, assignor.)						
Rall, Theodor, Chicago, Ill. Movable bridge	817,516	Apr. 10	1931	407-8	121	1839
Ramey, Francis A., assignor of one-half to G. W. Koontz, Woodstock, Va. Car-coupling	817,001	Apr. 3	911	188	121	1561
Rampendahl, Otto, St. Helena, Cal. Trace-buckle	818,559	Apr. 24	4021	862	121	2399
Ramsaier, William J., New York, N. Y. Registering device for presses	818,191	Apr. 17	3284	703	121	2190
Ramseur, Harvey M., Birmingham, Ala. Car-dump	816,736	Apr. 3	361	83-4	121	1439
Rand, James H., Newtonville, Mass. Wrapper for salesmen's slips, &c.	815,214	Mar. 13	2451	511	121	594
Randall, Eleazer A., Monmouth, Ill. Stringed musical instrument	818,289	Apr. 17	3468	746	121	2228
Randall, Frank J., Jennings, Mo. Device for lubricating journal-bearings	816,253	Mar. 27	4595	977	121	1158
Randolph, Commodore V., Paducah, Ky. Journal-bearing	815,469	Mar. 20	3003	636	121	762
Rands, William C., Detroit, Mich. Means for attaching canopy-tops	817,517	Apr. 10	1934	408	121	1840
Ransom, Henry R., Pittsburg, Kans. Securing device for plate-glass	818,850	Apr. 24	4617	990	121	2529
Ransome, Ernest L., New York, N. Y. Concrete-mixing machinery	814,803	Mar. 13	1626	341	121	414
Ranson, Charles, Brussels, Belgium, assignor to H. W. de Stucklé, Dieuze, Germany. Manufacturing caustic alkalies and zinc sulfid	818,192	Apr. 17	3286	703	121	2191
Rantine, Daniel W., New York, N. Y. Propelling mechanism	817,091	Apr. 3	1062	220-1	121	1593
Raphael, Robert, Chicago, Ill. Garment-pad	814,395	Mar. 6	814	167	121	178
Rapa, Georg, Stolberg, Germany. Mixing apparatus for dry materials	814,233	Mar. 6	449	93	121	97
Rasmussen, Anders, New Albany, Ind. Ventilator	817,002	Apr. 3	913	188	121	1561
Rasmusson, Halvor, *et al.* (See Anderson, Alfred, assignor.)						
Raspberry, Pinkney H., Birmingham, Ala. Draft-rigging	814,564	Mar. 6	1130	235	121	245
Rateau, Auguste C. E., and G. Sautter, Paris, France, assignors to Rateau Turbine Company, Chicago, Ill. Making turbine-blades	814,804	Mar. 13	1629	342	121	415
Rateau Turbine Company. (See Rateau and Sautter, assignors.)						
Rathbone, Alfred D., Grand Rapids, Mich. Gas-grate	816,737	Apr. 3	364	84	121	1440
Rathbun, Ransom E., Sioux City, Iowa. Cushion-tire	814,729	Mar. 13	1474	309	121	383
Rating, Engelbert, Gelsenkirchen, Germany. Hat-pin	818,788	Apr. 24	4497	962	121	2504
Rau, John F., assignor of one-half to J. F. Cordes, Chicago, Ill. Resilient vehicle-tire	814,164	Mar. 6	319	64	121	69
Rawley, Oren C., Cortland, N. Y. Fertilizer-distributer	814,079	Mar. 6	154	31	121	34
Rawson, Edward, Cincinnati, Ohio. Hog-scraper	817,873	Apr. 17	2640	573	121	2047
Ray, F. A., *et al.* (See Terrell, Elah, assignor.)						
Ray, Forest A., Boston, Mass. Gas-lamp	818,789	Apr. 24	4498	962-3	121	2504
Ray, Forest A., Boston, Mass. Gas-lamp	818,790	Apr. 24	4502	963	121	2505
Raymond, Freeborn F., 2nd. (See Kraetzer, Edwin J., assignor.)						
Raymond, Harry, Kenosha, Wis. Railway-switch	816,254	Mar. 27	4596	978	121	1158
Raymond, John C., New York, N. Y. Tire	817,668	Apr. 10	2203	470	121	1896
Rea, Claude, and J. W. Pattisson, Savannah, Mo. Cake and cracker box and package-stand	814,165	Mar. 6	321	64-5	121	70
Reach, George A. (See Gamble, John, assignor.)						
Read, George B., Bloomington, Ill. Elevator-coupling	815,470	Mar. 20	3005	627	121	762
Read, Robert H., Schenectady, N. Y., assignor to General Electric Company. High-tension circuit-breaker	818,290	Apr. 17	3469	747	121	2228

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Read, Robert H., Schenectady, N. Y., assignor to General Electric Company. Electric cut-out	818,291	Apr. 17	3471	747	121	2229
Ready, Charles A., Niagara Falls, N. Y. Horseshoe	818,049	Apr. 17	2993	646	121	2126
Rebeske, Edward C. (See Francis, Albert W., assignor.)						
Rechnitz, Otto. (See Schubert and Rechnitz.)						
Reckard, Henry L., assignor to A. H. Walker, trustee, New York, N. Y. Photomechanical printing	815,310	Mar. 13	2631	551	121	632
Reed, Charles, Portland, Ind. Molding-machine	814,476	Mar. 6	961	197–8	121	209
Reed, Charles J., Philadelphia, Pa., assignor to Reed-Morrill Electric Co. Stop mechanism for expansible pulleys	814,986	Mar. 13	1961	413	121	483
Reed, Charles J., Philadelphia, Pa., assignor to Reed-Morrill Electric Co. Expansible pulley	816,184	Mar. 27	4472	947	121	1131
Reed, Elmo H., Wichita, Kans. Convertible molding-machine	817,189	Apr. 10	1273	284	121	1702
Reed, Ferdinand E., Joliet, Ill. Ripper	814,080	Mar. 6	156	32	121	35
Reed, Frank E., and J. Heald, Jamestown, N. Y., assignors to Columbus Brass Company, Columbus, Ohio. Lining for wooden tanks	816,682	Apr. 3	278	65	121	1421
Reed, Laura, Fremont, Nebr. Garment	815,933	Mar. 20	3951	837	121	965
Reed-Morrill Electric Co. (See Reed, Charles J., assignor.)						
Reed, Ora B., Decatur, Ill. Window shade and curtain hanger	815,120	Mar. 13	2245	470–1	121	545
Reed, William M., Chicago, Ill. Elevated railway	815,377	Mar. 20	2821	587	121	720
Reeder, Isaac. (See Schofield and Reeder.)						
Rees, Thomas, Chicago, Ill. Smoke-consumer	816,738	Apr. 3	365	84	121	1441
Rees, Thomas, Chicago, Ill. Smoke-consumer	816,739	Apr. 3	366	85	121	1441
Reeves & Company. (See Clay, Harry C., assignor.)						
Reeves, Frank N., New York, N. Y. Illusion device	817,092	Apr. 3	1064	221	121	1594
Regan, Florence E., New York, N. Y. Hair-pin	818,468	Apr. 24	3817	821	121	2357
Regina Company. (See Sampere, Jose, assignor.)						
Reichert, Carl, and B. Heyne, Vienna, Austria-Hungary. Pivotable microscope-stand	814,565	Mar. 6	1132	236	121	246
Reichert, John, Racine, Wis. Harness snap-hook device	818,193	Apr. 17	3289	703	121	2191
Reichle, Ernst L., Saginaw, Mich. Extensible display-rack	818,709	Apr. 24	4330	929	121	2468
Reid, Frank H., assignor to Success Brick Machinery Company, Memphis, Tenn. Brick-car	818,851	Apr. 24	4618	991	121	2529
Reid, Frank H., assignor to Success Brick Machinery Company, Memphis, Tenn. Brick-car	818,852	Apr. 24	4620	991–2	121	2530
Reid, William, Geneva, N. Y. Foot-rest for stoves	817,447	Apr. 10	1792	377	121	1810
Reid, William W., Winnsboro, Tex. Buckle-hook	818,292	Apr. 17	3473	747	121	2229
Reidell, William J. (See Bengough, Tansley, and Reidell.)						
Reilly, Thomas E. (See Fitzpatrick, Eugene F., assignor.)						
Reinhardt, Charles F., Newark, N. J. Bottle-filling apparatus	815,741	Mar. 20	3550	745–6	121	881
Reising, John A., Aurora, Ill. Wire-clamp	817,588	Apr. 10	2067	435	121	1867
Reisinger, Hugo. (See Coomber, James, assignor.)						
Remington and Sherman Company. (See Williams, James H., assignor.)						
Remppis, William F. (See Schaeffer, William G., assignor.)						
Renaud, Ernest, Montreal, Canada. Train-stopping means	815,637	Mar. 20	3323	696	121	832
Renault, Louis, Billancourt, France. Carbureter	818,853	Apr. 24	4623	992	121	2530
Reno, Jesse W., New York, N. Y. Apparatus for lining tunnels with concrete	816,040	Mar. 27	4173	884	121	1067
Reno, Jesse W., New York, N. Y. Inclined elevator	817,338	Apr. 10	1561	328	121	1760
Reppeto, Augustus O., Blachly, Oreg. Saw-jointer	818,120	Apr. 17	3135	674	121	2157
Reech, Edmund. (See McGarry, John J., assignor.)						
Rex Buggy Company. (See Hull, Matthew R., assignor.)						
Reynolds, Egbert A., assignor to Iron Telephone Company, New York, N. Y. Coin-controlled telephone system	817,389	Apr. 10	1665	352–3	121	1783
Reynolds, Egbert A., assignor to Iron Telephone Company, New York, N. Y. Privacy device and busy-signal for telephone apparatus and systems	817,390	Apr. 10	1673	353–4	121	1785
Reynolds, Lewis G., Dayton, Ohio. Paper carton	816,124	Mar. 27	4349	921	121	1104
Reynolds, William J., Chicago, Ill. Dust-collecting shield for radiators	814,234	Mar. 6	450	93	121	97
Rhead, John, Camden, N. J. Water-closet	816,185	Mar. 27	4473	947	121	1131
Rheinische Metallwaren-und Maschinenfabrik. (See Völler, Karl, assignor.)						
Rheinische Metallwaren-und Maschinenfabrik. (See Yingling, Frank B., assignor.)						
Rhoades, Alonzo E., assignor to Draper Company, Hopedale, Mass. Balling-machine	815,378	Mar. 20	2822	588	121	720
Rhoades, Alonzo E., assignor to Draper Company, Hopedale, Mass. Bobbin-holder	816,502	Mar. 27	5129	1087	121	1270
Rhoades, Alonzo E., assignor to Draper Company, Hopedale, Mass. Warper-comb	817,093	Apr. 3	1070	221	121	1595
Rhoades, Alonzo E., assignor to Draper Company, Hopedale, Mass. Slasher-comb	818,560	Apr. 24	4022	863	121	2399
Rhode Island Automatic Machine Company. (See Loepsinger, Albert J., assignor.)						
Rhodes, Charles H. (See Brown and Rhodes.)						
Riblet, Byron C., Spokane, Wash. Tramway bucket and rope clip	814,622	Mar. 6	1236	261	121	267
Rice, Charles D., Hartford, Conn. Shipping box or crate	817,669	Apr. 10	2305	470	121	1897
Rice, Percy F., *et al.* (See Gray, Jesse L., assignor.)						
Rice, Richard H., Swampscott, Mass., assignor to General Electric Company. Nozzle for elastic-fluid turbines	814,477	Mar. 6	965	198–9	121	210
Rice, Richard H., Swampscott, Mass., assignor to General Electric Company. Governing mechanism for turbines	815,743	Mar. 20	3565	748–9	121	884
Rice, Richard H., Lynn, Mass., assignor to General Electric Company. Governing mechanism for turbines	815,742	Mar. 20	3556	746–8	121	882
Rice, William H., Rochester, N. Y. Agricultural implement	815,744	Mar. 20	3569	749–50	121	885
Rich, George R., Chicago, Ill., assignor to Geo. R. Rich Manufacturing Company, Buchanan, Mich. Drill-chuck	819,025	Apr. 24	4943	1060–1	121	2601
Rich, Guy A. (See Bennett, Clarence G., assignor.)						
Rich, Lester M., Cedar Rapids, Iowa. Adjustable stool back-rest	818,293	Apr. 17	3474	748	121	2229
Rich, William M., assignor of one-half to E. Allen, Cooper, Iowa. Transformable draft-equalizer	817,726	Apr. 10	2316	497–8	121	1924
Richards, Emanuel L., New London, Conn. Punch-holder for tablet-machines	818,194	Apr. 17	3292	704	121	2191
Richards, Francis H., Hartford, Conn. Mechanical movement	815,979	Mar. 27	4037	855	121	1035
Richards, Hubert P., Hartford, Conn. Chuck	817,936	Apr. 17	2771	600	121	2079
Richards, Thomas W. (See Denny and Richards.)						
Richardson, Enoch, Hawthorn, Victoria, Australia. Piston-valve	818,976	Apr. 24	4853	1043	121	2581
Richardson, George L., Chicago, Ill., assignor to Troy Laundry Machinery Company, Limited, Troy, N. Y. Collar and cuff shaper	818,915	Apr. 24	4726	1014–15	121	2553
Richardson, Harry H., Beaver Falls, Pa., assignor to America Company, Rockford, Ill. Fish-line reel	817,987	Apr. 17	2868	621	121	2101
Richardson, Hugh, Atlanta, Ga. Switch	816,377	Mar. 27	4872	1034	121	1217
Richardson, John E., Elmira Heights, N. Y. Lamp-extinguisher	815,215	Mar. 13	2452	511	121	504
Richardson, Joseph C., Altonpark, Tenn. Oil-press	814,987	Mar. 13	1963	413	121	482
Richmond & Backus Company. (See Winfield and Barker, assignors.)						
Richter, Fred A., *et al.* (See Messig, Walter E., assignor.)						
Richter, Fred O. and G. A., Buckholts, Tex. Cattle-guard	815,379	Mar. 20	2823	588	121	720

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Richter, Gustav A. (See Richter, Fred O. and G. A.)						
Richter, Herman A., *et al.* (See Messig, Walter E., assignor.)						
Ricks, George L., Yuma, Ariz. Ter. Insulator	815,471	Mar. 20	3006	627	121	763
Riddell, John, Schenectady, N. Y., assignor to General Electric Company. Boring-bar	818,294	Apr. 17	3476	748	121	2230
Riddle, Gust A., assignor of two-thirds to J. W. Fritts and C. J. Mathewson, Pittsburg, Pa. Manufacture of brick	817,988	Apr. 17	2869	.....	121	2101
Rider, Samuel S., and D. J. O'Donnell, Washington, D. C. Dispensing-receptacle	816,822	Apr. 3	538	115–16	121	1476
Ridgely and Johnson Tool Company. (See Mickle, Robert T., assignor.)						
Rieder, Richard, Osterwieck, Germany. Dyeing leather	816,378	Mar. 27	4875	1034	121	1217
Rieff, John G., London, assignor of two-thirds to T. E. Wiedenbeck and C. W. Dobelin, Madison, Wis. Horseshoe heel and toe calk splitting machine	815,311	Mar. 13	2638	551	121	633
Riegel, Thomas M., Fullerton, Nebr. Cultivator	814,873	Mar. 13	1746	365–6	121	439
Riel, George, Manchester, N. H. Sewing-machine	814,730	Mar. 13	1475	309–10	121	383
Riethmüller, Robert, Hanover, Germany. Holder for cravats or ties	814,919	Mar. 13	1821	381	121	455
Riker, George W., Russell, Iowa. Wire-stretcher	817,190	Apr. 10	1276	265	121	1702
Riley, John, Minneapolis, Minn. Grain-door	816,740	Apr. 3	368	85	121	1441
Ring, Edmund, Kingston, Wis. Loading apparatus	817,274	Apr. 10	1449	305	121	1737
Riordon, Charles E. (See Hutchison, Maurice F., assignor.)						
Riotte, Carl C., Jersey City, N. J. Lubricating mechanism	816,741	Apr. 3	369	86	121	1442
Ritchie, Hazen, Peterboro, Canada. Playing-ball	818,050	Apr. 17	2994	647	121	2127
Ritter, Georg, Stuttgart, Germany. Telephone or telegraph system	814,478	Mar. 6	968	199	121	211
Rivett, Joseph P., Denver, Colo. Printer's galley	815,980	Mar. 27	4040	855	121	1036
Rix, Benjamin F. (See Howe, Rix, and Holden.)						
Roach, Edward, Chesterfield, England. Fluid-pressure engine	818,121	Apr. 17	3136	674	121	2158
Roach, Frank. (See Dodd, Clarence, assignor.)						
Roach, Joseph B., *et al.* (See Anderson, Swan, assignor.)						
Roach, Thomas W., Lyman, Wash. Device for dressing saws	818,195	Apr. 17	3293	704	121	2192
Roach, William, Roswell, S. D. Car-derailer	817,518	Apr. 10	1936	408	121	1841
Robb, William, Waltham, Mass. Bread and cake dough mixer	817,804	Apr. 17	2495	534	121	2016
Robbins, Edward P., assignor of one-half to H. E. Homberger, Mansfield, Ohio. Switch	818,561	Apr. 24	4023	863	121	2399
Robbins, William A., and B. S. Hyatt, Vinita, Ind. Ter. Type-writing machine	814,623	Mar. 6	1238	261	121	268
Robby, William C., assignor to M. Rumely Company, Laporte, Ind. Clover-huller	816,823	Apr. 3	542	116	121	1477
Robert P. Brown Manufacturing Company. (See Brown, William W., assignor.)						
Roberts, Albert E., Norwalk, Ohio. Wire fence	818,710	Apr. 24	4331	929	121	2468
Roberts, George H., Richburg, N. Y. Fruit-gatherer	816,186	Mar. 27	4475	947	121	1132
Roberts, Henry P., New York, N. Y. Sound-recording device	816,742	Apr. 3	371	86	121	1442
Roberts, John G., Detroit, Mich., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephonic apparatus	815,380	Mar. 20	2825	588–9	121	721
Roberts, Marshal G. (See Lindner and Roberts.)						
Roberts, Samuel T., Springfield, Mo. Strap	815,216	Mar. 13	2454	512	121	459
Roberts Water Heater Company. (See Roberts, William H., assignor.)						
Roberts, William H., assignor to Roberts Water Heater Company, Oakland, Cal. Domestic water-heater	817,589	Apr. 10	2068	435	121	1867
Roberts, Willis H. (See Chase, Newton D., assignor.)						
Robertshaw, William H., East Orange, N. J. Gasolene-dispensing can	817,391	Apr. 10	1678	354	121	1787
Robertson, Alonzo P., Rochester, assignor to W. F. Cowham, Jackson, Mich. Method of and machine for forming cement posts	817,670	Apr. 10	2206	471	121	1897
Robertson, James D., assignor to Thames Arms Company, Norwich, Conn. Ejector mechanism for revolvers	816,125	Mar. 27	4350	922	121	1105
Robertson, James L., Jr., New York, N. Y. Indicator reducing-wheel	815,038	Mar. 13	2087	438	121	510
Robertson, Norman A., New York, N. Y. Apparatus for extruding metals	814,731	Mar. 13	1477	310–11	121	383
Robertson, Norman A., New York, N. Y. Apparatus for extruding metals	814,732	Mar. 13	1480	311	121	384
Robertson, Peter L., Canfield, Canada. Combination-tool	815,381	Mar. 20	2837	589–90	121	724
Robeson, Anthony M., Johannesburg, Transvaal, and C A. Bettington, Boston, Mass. Furnace for burning pulverized fuel and other substances	817,989	Apr. 17	2870	621–2	121	2101
Robeson, Anthony M., Johannesburg, Transvaal, and C. A. Bettington, Boston, Mass. Burning fuel and other materials	817,990	Apr. 17	2875	622	121	2102
Robin, Max, New York, N. Y. Washtub	815,472	Mar. 20	3007	627	121	763
Robinson, Arthur, Clear Lake, Minn. Mail-case	817,003	Apr. 3	915	189	121	1561
Robinson, Daniel E., Otego, N. Y. Fish-hook	814,624	Mar. 6	1244	262	121	269
Robinson, Ernest C., West Hartlepool, England. Vessel propelled by steam	817,519	Apr. 10	1938	409	121	1841
Robinson, Franklin J. (See Gilbert, Henry K., assignor.)						
Robinson, George A. (See Hope and Robinson.)						
Robinson, George R., Bienville, La. Cotton-chopper	817,339	Apr. 10	1562	329	121	1761
Robinson, John R., Elmira, N. Y. Fountain-pen	815,217	Mar. 13	2455	512	121	595
Robinson, John R., Elmira, N. Y. Fountain-pen	815,218	Mar. 13	2457	512	121	595
Robinson, Lee A. (See Bible and Robinson.)						
Robinson, Leonard G., New York, N. Y. Foot-ball card game	817,191	Apr. 10	1277	265	121	1703
Robson, John, Wallsend, England. Ammonia-vaporizer	816,743	Apr. 3	373	86–7	121	1442
Rock, Charlie L., Fall River, Kans. Washing-machine	817,192	Apr. 10	1281	266	121	1703
Rocke, Christian. (See Hile and Rocke.)						
Rockwell, Lucius A., and J. J. Linden, New York, N. Y.; said Linden assignor to said Rockwell. Dough-breaker	818,196	Apr. 17	3294	704	121	2192
Roddy, John W., Washington, D. C. Resilient vehicle-wheel	814,479	Mar. 6	973	199	121	212
Rodery, Leo B., Rector, Ark. Window-sash	816,187	Mar. 27	4476	948	121	1132
Rodgers, Mack, Gravette, Ark. Fruit-drier	818,916	Apr. 24	4730	1015	121	2554
Rodgers, Stephen D., St. Louis, Mo. Bottle neck and stopper	816,744	Apr. 3	374	87	121	1443
Rodrigues-Ely, Camille. (See Boas and Rodrigues-Ely.)						
Roessler & Hasslacher Chemical Company. (See Liebknecht, Otto, assignor.)						
Rogers, George H., Birmingham, Ala. Shoe-polishing outfit	815,934	Mar. 20	3952	837	121	966
Rogers, John E., Elkhart, Ind. Electric time-switch	817,392	Apr. 10	1679	354	121	1787
Rogers, Leonard R., assignor to W. H. Gates, Worcester, Mass. Detachable drive-chain	818,469	Apr. 24	3818	821	121	2357
Rogers, Michael W., Lexington, Ky. Guard-rail for cars	814,081	Mar. 6	157	32	121	35
Rogers, Morgan P., and E. C. Rouse, San Jose, Cal. Safety-lock for gun-locks	817,004	Apr. 3	917	189	121	1562
Rohrdantz, Kathrine, Buffalo, N. Y. Wax-holder	817,275	Apr. 10	1452	306	121	1738
Rollins, George E., East Bridgewater, Mass., assignor to Brockton Folding Machine Company. Welt	816,601	Apr. 3	109	23	121	1381
Rollins, William A., Caddo, Ind. Ter., assignor of one-half to S. J. Long, Stephenville, Tex. Railway-tie	814,327	Mar. 6	666	134	121	145
Rollinson, Earl H., Albany, N. Y. Variable-voltage electric transformer for cautery and diagnostic work	815,863	Mar. 20	3827	810	121	938
Romain, Stephen, New Orleans, La., assignor of one-half to T. Baptiste, Mobile, Ala. Railway-signal	815,039	Mar. 13	2068	438–9	121	511
Romberger, Harry R. (See Gunn and Romberger.)						
Romine, Raymond, Waldo, W. Va. Rail-joint	817,805	Apr. 17	2497	534	121	2017

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Rommel, Karl H., Rochester, Minn. Coffee and cereal roaster	816,379	Mar. 27	4877	1034-5	121	1217
Rommer, Isaac A., Newark, N. J., assignor to National Biscuit Company. Forming or molding device	816,937	Apr. 3	779	160	121	1533
Romünder, Hermann, Milwaukee, Wis. Tub, tank, and other like receptacle	814,625	Mar. 6	1246	262	121	370
Ronell, August L., Forest City, Iowa. Electric program-clock	816,938	Apr. 3	783	161	121	1533
Rook, William T., Cheyenne, Okla. Ter. Mail-bag catching and delivering mechanism	818,470	Apr. 24	3819	821-2	121	2357
Rooll, William, Los Angeles, Cal. Cigar cutter and lighter	815,219	Mar. 13	2459	512	121	595
Roper, Charles F., Hopedale, Mass., assignor to Draper Company, Portland, Me. Harness-motion for looms	817,806	Apr. 17	2498	534-5	121	2017
Rose, John I., *et al.* (See Byrd, Britton E., assignor.)						
Rose, William R., Washington, D. C. Metal sheathing for fire-walls	818,122	Apr. 17	3137	675	121	2158
Rosenbluth, Edwin M., Philadelphia, Pa. Acetylene-gas generator	815,745	Mar. 20	3574	750	121	887
Rosenkranz, Rudolf, Pittsburg, Pa. Artificial limb	817,340	Apr. 10	1565	329	121	1761
Rosenstein, Moses, Medford, Mass. Tooth-brush	814,235	Mar. 6	452	93	121	97
Rosenthal, Isaac B., Philadelphia, Pa. Churning attachment	815,864	Mar. 20	3828	811	121	938
Rosentreter, Albert J., Boonton, N. J., assignor to himself, T. Hannah, Pittsburg, Pa., and G. Hannay, Newark, N. J. Door closer and check	817,393	Apr. 10	1680	354-5	121	1787
Rosenvinge, Theodore von, *et al.* (See Lundin, Gustaf L., assignor.)						
Rosier, Leo A., Detroit, Mich. Clamping-band	815,558	Mar. 20	3166	665	121	796
Rosland, Arne, New Orleans, La. Scarf-holder	817,005	Apr. 3	918	189	121	1562
Ross, Christian H., and S. Dauchy, Chicago, Ill., assignors to Dauchy Iron Works. Sidewalk-light	816,566	Apr. 3	22	6	121	1359
Ross, Thomas M., Carthage, Mo. Disk jointer	818,562	Apr. 24	4028	864	121	2400
Ross, Thomas S., Baltimore, Md., assignor of two-thirds to M. H. Noon and J. J. Ellis. Bevel-square	817,991	Apr. 17	2880	622	121	2104
Ross, Thomas S., Baltimore, Md., assignor of two-thirds to M. H. Noon and J. J. Ellis. Bevel-square rule	818,051	Apr. 17	2995	647	121	2127
Ross, Vernon, Kansas City, Mo. Stop and guide for metal windows	816,041	Mar. 27	4175	885	121	1067
Ross, Vernon, Kansas City, Mo. Sheet-metal window	816,126	Mar. 27	4352	922	121	1105
Rosedam, Clara, Berlin, Germany. Head-support or bolster for bath-tubs	818,854	Apr. 24	4624	992	121	2531
Rote, Charles V., *et al.* (See Miller, Ernest H., assignor.)						
Roth, Anton. (See Belloff and Roth.)						
Roth Bros. & Co. (See Roth, Charles H., assignor.)						
Roth, Charles H., assignor to Roth Bros. & Co., Chicago, Ill. Electric motor	817,807	Apr. 17	2500	535-6	121	2017
Roth & Engelhardt. (See Callow, William D., assignor.)						
Rothwell, William R., West Philadelphia, assignor to E. M. Vasey, Philadelphia, Pa. Fountain-pen	818,052	Apr. 17	2996	647	121	2127
Rottel, Herman W., assignor of one-half to J. McCann, Milwaukee, Wis. Indicator for pneumatic carriers	818,471	Apr. 24	3822	822	121	2358
Rouilliard, Jean B. (See Lenthier and Rouilliard.)						
Rouse, Ernest C. (See Rogers and Rouse.)						
Roush, Charles W., Grand Island, Nebr. Wire-fastener	818,977	Apr. 24	4854	1043	121	2581
Rousseau, Albert, Bordeaux, France. Mask for administering anesthetics	818,123	Apr. 17	3138	675	121	2158
Rousseau, Canfield J., New York, N. Y., and E. C. Ferris, Stamford, Conn. Oil-engine	817,671	Apr. 10	2208	471	121	1896
Rowe, David H., Oakland, Cal. Truck	814,874	Mar. 13	1747	366	121	440
Rowe, James E., assignor to E. Jenckes Manufacturing Company, Pawtucket, R. I. Knitting-machine	818,295	Apr. 17	3478	748-9	121	2231
Rowland, Charles L., Brooklyn, N. Y. Welding apparatus	817,992	Apr. 17	2881	623	121	2104
Rowland, James W., *et al.* (See Hutchinson, Charles G., assignor.)						
Rowley, Frank, Battle Creek, Mich. Vehicle for cripples	816,745	Apr. 3	376	87	121	1443
Rowley, John T., *et al.* (See Hellstrom, John A., assignor.)						
Roy, Joseph E., Montreal, Canada. Printing-press	817,276	Apr. 10	1453	306	121	1738
Rude Brothers Manufacturing Company. (See Ham, Henry C., assignor.)						
Rudio, Hercules A. de, Los Angeles, Cal. Advertising device	818,197	Apr. 17	3296	705	121	2192
Rudkins, Thomas P., assignor of one-half to P. K. O'Brien, Mitiamo, Victoria, Australia. Means for moving goods	818,053	Apr. 17	2997	647	121	2127
Rudolphi, Frank, and W. A. Geiger, Chicago, Ill., assignors to American Can Company, New York, N. Y. Sheet-metal display-can	815,981	Mar. 27	4042	855	121	1037
Rueter, Henry A., Boston, Mass. Faucet-knob	817,993	Apr. 17	2886	624	121	2106
Ruger, Forrest E., assignor of one-half to F. A. Blakslee, Binghamton, N. Y. Book-support	816,380	Mar. 27	4878	1035-6	121	1218
Ruger, Forrest E., assignor of one-half to F. A. Blakslee, Binghamton, N. Y. Clamp for book-supports	818,917	Apr. 24	4732	1016	121	2555
Ruggles, Hiram C., Pasadena, Cal. Condenser	816,602	Apr. 3	111	24	121	1381
Rule, John A., Cincinnati, Ohio. Newspaper-vending machine	818,296	Apr. 17	3490	750	121	2233
Rumbel, Gordon A., Omaha, Nebr. Bale-tie machine	816,381	Mar. 27	4880	1036-8	121	1218
Rumely Company, M. (See Robby, William C., assignor.)						
Rumely, William N. (See Walsh and Rumely.)						
Rumely, William N., Laporte, Ind. Steam-engine governor	818,711	Apr. 24	4332	929	121	2468
Rush, Samuel F., *et al.* (See Hayward, Eugene, assignor.)						
Rush, William M., Greensburg, Pa. Combined curtain-stretcher and clothes-drier	815,382	Mar. 20	2838	590	121	724
Russell, A. C. (See Wilson, John, assignor.)						
Russell, Andrew H., Washington, D. C. Breech-loading gun	816,603	Apr. 3	112	24-5	121	1382
Russell, Charles C., Cleveland, Ohio. Shower-bath	816,604	Apr. 3	117	25	121	1383
Russell, Dula M. (See Taylor and Russell.)						
Russell & Erwin Manufacturing Company. (See Caley, Charles J., assignor.)						
Russell & Erwin Manufacturing Company. (See Crandall, Nathan W., assignor.)						
Russell and Erwin Mfg. Co. (See Shepard, Amos, assignor.)						
Russell, Flora S., Boston, Mass. Medical appliance	816,746	Apr. 3	379	88	121	1443
Russell, Frank J., New York, N. Y. Plug-socket for electric lamps, &c	818,791	Apr. 24	4507	963-4	121	2506
Russell, Gilbert H., Laurinburg, N. C. Sleeve-fastener	814,328	Mar. 6	606	134	121	146
Russell, J. W., *et al.* (See McMahon, James P., assignor.)						
Russell, Joseph N., London, England. Water-circulating apparatus	816,939	Apr. 3	787	161-2	121	1533
Russell, Joseph R., Chicago, Ill. Burner for liquid fuel	814,396	Mar. 6	815	168	121	178
Russell, Joseph R., Chicago, Ill. Furnace	814,397	Mar. 6	816	168	121	179
Russell, Joseph R., Chicago, Ill. Furnace	814,398	Mar. 6	819	169	121	179
Russell, Marie J., Chicago, Ill. Eyeglass-holder	818,297	Apr. 17	3492	750	121	2233
Russell, Thomas A., assignor to Canada Cycle and Motor Company, Limited, Toronto, Canada. Skate	815,121	Mar. 13	2247	471	121	545
Russell, Ulysses G., Marysville, Kans. Window-ventilator	814,920	Mar. 13	1821	381	121	455
Rust, Henry, Worthington, Minn. Corn-husker	815,220	Mar. 13	2461	513	121	596
Ruthenburg, Marcus, Lockport, N. Y. Electric furnace	815,221	Mar. 13	2463	513	121	596
Ruthenburg, Marcus, Lockport, N. Y. Manufacturing iron and its alloys	818,918	Apr. 24	4734	1016	121	2555
Ruthven, Alfred L., assignor of one-half to W. Peterson, Topeka, Kans. Railway signal system	818,855	Apr. 24	4624	993	121	2531
Rutledge, Uel A., Berkley, Va. Steam-turbine	817,590	Apr. 10	3070	436	121	1867

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Rutterford, Percy F., London, England. Instrument for stopping teeth	815,040	Mar. 13	2091	439	121	511
Rutterford, Percy F., London, England. Instrument for stopping teeth	815,041	Mar. 13	2092	439	121	512
Ruts, Charles, New York, N. Y. Lubricator	814,062	Mar. 6	160	32	121	36
Ryan, Edward J., Danville, Ill. Trap	817,006	Apr. 3	919	189-90	121	1562
Ryan, George F., Chicago, Ill. Combined waste and vent fitting	817,094	Apr. 3	1071	222	121	1595
Ryan, Walter D., Lynn, Mass., assignor to General Electric Company. Device for comparing luminous areas	815,865	Mar. 20	3829	811	121	939
Ryder, Malcolm P., White Plains, N. Y. Generator of intermittent electric currents	814,083	Mar. 6	161	33	121	36
Rypinski, Maurice C., New York, N. Y. Pin-guard	814,084	Mar. 6	166	33	121	37
S. O. & C. Co. (See Jones, Arthur E., assignor.)						
S. S. Stafford, Incorporated. (See Hoffman, Edmund, assignor.)						
S. S. White Dental Manufacturing Company. (See Fritz, Charles P., assignor.)						
Sabroe, Axel, Aastrup, Germany. Clay-cleaning apparatus	816,747	Apr. 3	380	86	121	1444
Sachs, Martin K., Houston, assignor to M. Butler, Austin, Tex. Brick-truck	817,520	Apr. 10	1940	409-10	121	1842
Sachse, William F., Sheboygan, Wis. Horse-collar pad	816,127	Mar. 27	4352	922	121	1105
Safety Armorite Conduit Company. (See Murphy, Daniel H., assignor.)						
Safety Car Heating & Lighting Company. (See Dixon, Robert M., assignor.)						
Safety Car Heating & Lighting Company. (See Lungren, Charles M., assignor.)						
Saffell, Silas B., Indianapolis, Ind. Combined minnow bucket and trap	814,480	Mar. 6	974	199	121	212
Sager, Fredrick. (See Hardenburg and Sager.)						
Saget, Jules L., New Orleans, La. Firearm	817,937	Apr. 17	2774	600-1	121	2079
Saighman, Edward S., Chicago, Ill. Massage appliance	816,748	Apr. 3	381	88	121	1444
Sakurai, Keizo, San Francisco, Cal. Treating clays containing gypsum	818,124	Apr. 17	3130	.....	121	2158
Salmen, Carl R., Montreal, Canada, assignor of four-fifths to J. Fisher, F. Sarbay, Catasauqua, Pa., J. Mrazay and E. Firnesz, Montreal, Canada. Automatic car-coupling	817,095	Apr. 3	1072	222	121	1596
Salmon, Michael A., Denver, Colo. Nail-receptacle	818,978	Apr. 24	4855	1043	121	2582
Salter, James. (See Beard and Salter.)						
Salzmann, Benno, Berlin, Germany. Telephone-exchange	815,042	Mar. 13	2093	439	121	512
Sampere, Jose, assignor to Regina Company, Rahway, N. J. Automatic piano-player	816,605	Apr. 3	118	26	121	1383
Sandage, William L., assignor to National Voting Machine Company, Indianapolis, Ind. Interlock mechanism for voting-machines	819,026	Apr. 24	4944	1061-2	121	2602
Sandberg, Andrew, Anaconda, Mont. Screen-door fastening	815,638	Mar. 20	3326	697	121	833
Sandefur, Elvis P., Manda, Ky. Railway-rail joint	818,298	Apr. 17	3493	750	121	2233
Sanderson, James G., Scranton, assignor of one-half to A. D. Blackington, Dunmore, Pa. Street-cleaner	816,606	Apr. 3	120	26	121	1383
Sands, Louis C., assignor to Oil Well Supply Company, Pittsburg, Pa. Pipe-coupling	814,806	Mar. 13	1630	342	121	415
Sands, Robert. (See Stephan, Adam, assignor.)						
Sanford, Frank W., Schenectady, N. Y., assignor to General Electric Company. Snap-switch	818,299	Apr. 17	3494	750	121	2234
Sanguinetti, Herbert, London, England. Oscillating cylindrical pulp-strainer	817,007	Apr. 3	921	190	121	1562
Sansom, Edward H., Goodwick, England. Rock and ore breaking machine	817,672	Apr. 10	2209	471	121	1898
Sarbay, Francis, *et al.* (See Salmen, Carl R., assignor.)						
Sargent, Charles E., Chicago, Ill. Gas-calorimeter	816,042	Mar. 27	4176	885	121	1067
Sargent & Company. (See Sargent, Henry B., assignor.)						
Sargent, Henry B., assignor to Sargent & Company, New Haven, Conn. Plane	818,472	Apr. 24	3823	822	121	2358
Sargent, William D., assignor to American Brake Shoe & Foundry Company, New York, N. Y. Making brake-shoes	818,300	Apr. 17	3496	751	121	2234
Sartain, Louis M., Coalmont, Tenn. Train-pipe coupling	814,733	Mar. 13	1482	311	121	384
Sasse, William, Chicago, Ill. Air-feeding device	815,473	Mar. 20	3009	627	121	763
Sattley Stacker Company. (See Bartholomew, John B., assignor.)						
Sauerman, John F., Russellville, Ark. Ore and coal crushing machine	814,085	Mar. 6	167	33	121	37
Saugstad, Olaf, assignor to W. B. Wadsworth, Plainfield, N. J. Damper-operating motor	815,559	Mar. 20	3167	665	121	797
Saugstad, Olaf, assignor to W. B. Wadsworth, Plainfield, N. J. Damper-regulator and motor therefor	817,277	Apr. 10	1454	306	121	1738
Saunders, Alton A., New York, N. Y. Folding bed	814,921	Mar. 13	1822	382	121	455
Saunders, Daniel G., Jr., Kansas City, Mo. Sash-fastener	817,521	Apr. 10	1941	410	121	1842
Sautter, Gaston. (See Rateau and Sautter.)						
Savage, Arthur C., Schenectady, N. Y., assignor to General Electric Company. Fuse-clamping terminal	815,746	Mar. 20	3578	751	121	887
Savage, George E., assignor to Manning, Bowman & Company, Meriden, Conn. Coffee-percolator	814,399	Mar. 6	821	169	121	179
Savard, Arthur, Omaha, Nebr. Trap for sinks, bath-tubs, and the like	814,481	Mar. 6	976	200	121	212
Sawdon, Joseph, Stronghurst, Ill. Mailing-envelop	817,874	Apr. 17	2642	574	121	2048
Sawger, Matthews, assignor of one-half to E. L. Donaldson, Portland, Oreg. Saw-handle	816,883	Apr. 3	673	139	121	1507
Sawvel, William H., Kansas City, Mo. Self-adjusting window-screen	816,940	Apr. 3	789	162	121	1534
Sayers, William B., Glasgow, Scotland. Driving turbines	818,856	Apr. 24	4626	993-4	121	2531
Sayle, James H. (See Hughes, Johnson, and Sayle.)						
Sayre, Thomas S., Cape May, N. J. Lawn-mower	818,301	Apr. 17	3498	751	121	2234
Schaaf, Jakob, Frankfort-on-the-Main, Germany. Repetition-action for pianos	818,473	Apr. 24	3824	823	121	2358
Schaal, Frederick E., Seward, Nebr. Cultivator	816,382	Mar. 27	4389	1039	121	1220
Schaap, Herman M. (See Blake, John F., assignor.)						
Schade, Edmund A., assignor to Stanley Rule & Level Company, New Britain, Conn. Screw-driver	814,734	Mar. 13	1483	312	121	385
Schaefer, August, St. Louis, Mo. Hame-clasp	817,673	Apr. 10	2210	472	121	1898
Schaefer, Fredrick W., Rockham, S. D. Gate	816,188	Mar. 27	4478	948	121	1132
Schaefer, Julius C., Peoria, Ill. Attachment for electric chandeliers	815,474	Mar. 20	3011	628	121	763
Schaeffer, William G., assignor to W. F. Remppis, Reading, Pa. Saddle-post	815,475	Mar. 20	3013	628	121	764
Schaffer, August, Columbus, Ohio. Hose-coupling	815,476	Mar. 20	3013	628	121	764
Schaffer, Frederick F. (See Mahoney, Jeremiah L., assignor.)						
Schaffert, Louis, Walton, N. Y. Shovel	815,122	Mar. 13	2248	471	121	546
Schallinger, Carl, and M. Sondergaard, Hutchinson, Minn. Aerating device for pasteurizing	817,875	Apr. 17	2644	574	121	2048
Schalscha, Max, *et al.* (See Henderson, Alexander, assignor.)						
Schattner, Ernest, Schenectady, N. Y., assignor to General Electric Company. Motor-starter	816,383	Mar. 27	4891	1039	121	1220
Schauman, Fridolf. (See Wiman and Schauman.)						
Scheele, Walter T., assignor to W. J. Hooper, Baltimore, Md. Preserving organic matter	818,979	Apr. 24	4857	1044	121	2582
Scheer, Charles, Silverton, Colo. Boiler-flue cleaner	815,043	Mar. 13	2095	440	121	512
Schehr, George A., Cincinnati, Ohio. Drop-handle	814,735	Mar. 13	1484	312	121	385
Scheiffler, George D., assignor, by mesne assignments, to G. A. McKeel and Company, Limited, Jackson, Mich. Roller-bearing	818,919	Apr. 24	4736	1016	121	2556
Schellenbach, William L., Cincinnati, Ohio. Variable-speed driving mechanism	816,128	Mar. 27	4353	922-3	121	1105
Schenck, August, assignor of one-third to M. Fallon, J. Siegler, and C. Cornacker, Chicago, Ill. Non-refillable bottle	815,639	Mar. 20	3327	697	121	833

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Scherer, Albert E., Glenville, Ohio. Eaves-trough hanger	816,941	Apr. 3	791	162	121	1534
Schetzel, Marx P., Oakland, Cal. Race-track observatory	814,875	Mar. 13	1749	366	121	440
Schierberg, Frederick A., St. Louis, Mo. Car-register	818,563	Apr. 24	4029	864	121	2400
Schimelpfennig, Michael. (See Steinert and Schimelpfennig.)						
Schleicher, John C., Mount Vernon, N. Y. Vehicle-wheel	816,189	Mar. 27	4479	948–9	121	1133
Schleicher, John C., Mount Vernon, N. Y. Vehicle-wheel	818,198	Apr. 17	3298	705	121	2193
Schleicher, William A., Cleveland, Ohio. Fifth-wheel	815,044	Mar. 13	2096	440	121	512
Schlichter, Enos F., assignor to H. T. Schlichter, Philadelphia, Pa. Silo	817,522	Apr. 10	1943	410	121	1842
Schlichter, Harvey T. (See Schlichter, Enos F., assignor.)						
Schluter, August, Jr., New York, N. Y. Candle-holder	817,394	Apr. 10	1683	355	121	1788
Schmeiser, Theodore, Davisville, Cal. Check-back attachment and clamp for teams	818,792	Apr. 24	4512	964	121	2508
Schmid, Christian, Erkelenz, Germany. Tool for pressing and piercing seamless pipe-joints	817,876	Apr. 17	2645	574	121	2048
Schmid-Keller, Alfred, Zürich, Switzerland. Kneading-trough	816,683	Apr. 3	279	65	121	1421
Schmidt, Albrecht, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Sulfur dye and making same	818,980	Apr. 24	4857	.....	121	2582
Schmidt, Charles, assignor to Peerless Motor Car Company, Cleveland, Ohio. Automobile	815,045	Mar. 13	2096	440–1	121	512
Schmidt, Charles C. (See Myers and Clemans, assignors.)						
Schmidt, Charles G. and G., and J. F. Pflum, assignors to Cincinnati Butchers Supply Co., Cincinnati, Ohio. Overhead trolley-track	816,255	Mar. 27	4599	978	121	1158
Schmidt, Frank J., Jersey City, N. J. Pulley clothes-line attachment	815,123	Mar. 13	2249	471–2	121	546
Schmidt, George. (See Kienzl, Raimund, assignor.)						
Schmidt, Gustav. (See Schmidt and Pflum.)						
Schmidt, Louis A., Chicago, Ill. Lock-out telephone system	818,793	Apr. 24	4512	964	121	2508
Schmidt, Ludwig, assignor to Esamueller Mill Furnishing Company, St. Louis, Mo. Coffee-roaster	817,674	Apr. 10	2210	472	121	1809
Schmidt, Martin, Secor, Ill. Scale-register	816,749	Apr. 3	385	89	121	1444
Schmidt, Wilhelm, Wilhelmshöhe, Germany. Piston-valve	816,607	Apr. 3	122	27	121	1384
Schmitt, Frank, Philadelphia, Pa. Corset and abdominal supporter	815,747	Mar. 20	3579	751	121	888
Schmitt, Otto G. C., assignor to Wagner & Brand, Frankfort-on-the-Main, Germany. Electromagnetic device for distributing-machines	815,748	Mar. 20	3581	751–3	121	888
Schmitter, Frank. (See Solatinow, Joseph, assignor.)						
Schmitthenner, Carlos, assignor to J. M. Voith, Heidenheim-on-the-Brenz, Germany. Governor mechanism for motors	814,400	Mar. 6	822	170	121	180
Schneider, Eugene W., assignor to Mears Ear Phone Company, New York, N. Y. Battery	816,384	Mar. 27	4894	1040	121	1220
Schnitzer, Carl T., Cleveland, Ohio. Machine for making metal balls	814,807	Mar. 13	1632	342	121	415
Schöchli, Rudolf, Zurich, Switzerland, assignor to Patchogue Manufacturing Co., Patchogue, N. Y. Festoon-stitch and similar machine	814,236	Mar. 6	453	94	121	98
Schock, Clarence, Mount Joy, Pa. Measuring vessel	818,643	Apr. 24	4199	903	121	2440
Schock, George W., South Bend, Ind. Wire-fence machine	815,640	Mar. 20	3329	697	121	833
Schoeneman, David A., George, Iowa. Building-block	815,641	Mar. 20	3332	698	121	834
Schoeneman, David A., George, Iowa. Molding-machine	817,008	Apr. 3	922	190	121	1562
Schofield, Charles, and I. Reeder, assignors to William Schofield Company, Philadelphia, Pa. Lap-feeding device for carding-machines	818,302	Apr. 17	3500	751	121	2235
Scholl, Franz, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Yellow dye and making same	818,981	Apr. 24	4860	.....	121	2582
Scholl, Nicholas, Chillicothe, Ohio. Combined mop head and wringer	816,824	Apr. 3	543	116	121	1478
Schöllhorn, Thomas, Neustadt-on-the-Hardt, Germany. Skirt support and lifter	815,749	Mar. 20	3584	753	121	889
Schorg, (Inhaber L. Schorg & K. Lohner,) Franz. (See Platz, Heinrich, assignor.)						
Schorling, William H., Brooklyn, assignor to H. M. Brookfield, Ardsley-on-Hudson, N. Y. Device for supporting glass insulators or other glass articles while plastic	815,222	Mar. 13	2465	514	121	597
Schrader, George H. F., Greenburg, assignor to A. Schrader's Son, Incorporated, New York, N. Y. Stopper for hot-water bags	816,503	Mar. 27	5130	1087	121	1271
Schreiber, John, Jersey City, N. J. Truck	816,825	Apr. 3	545	116	121	1478
Schreidt, Frank, Mansfield, Ohio. Valve	818,474	Apr. 24	3825	823	121	2358
Schroeder, Albert F., Cleveland, Ohio. Tumbling-barrel	814,166	Mar. 6	322	65	121	70
Schroeder, Daniel. (See Majoros, John, assignor.)						
Schubert, Max, and O. Rechnitz, Cottbus, Germany. Nut	815,982	Mar. 27	4046	856	121	1037
Schüler, Hans, Hamburg, Germany. Double bogie for railway-cars and other vehicles	814,922	Mar. 13	1824	382	121	456
Schultz, August L., assignor of one-half to J. H. Collister, Cleveland, Ohio. Automatic alarm for gas-pipes	817,009	Apr. 3	924	191	121	1563
Schultz, Charles L., Wheeling, W. Va. Automatic car-brake	814,876	Mar. 13	1750	367	121	440
Schultz, Frederick W., Baltimore, Md. Machine for securing solder rings to metal caps	816,942	Apr. 3	793	163	121	1535
Schultz, Frederick W., Baltimore, Md. Machine for forming and securing solder to metal caps	816,943	Apr. 3	796	163–4	121	1535
Schultz, Gustave A., Hawkeye, Iowa. Wheel for vehicles	818,857	Apr. 24	4629	994	121	2532
Schulz, Adelheid, New York, N. Y. Insecticide	817,194	Apr. 10	1286	.....	121	1704
Schulz, August, Podejuch, Germany. Car-coupling	818,564	Apr. 24	4031	864	121	2401
Schulz, Fritz, assignor to Good Manufacturing Co., Chicago, Ill. Punch-press	814,167	Mar. 6	323	65	121	71
Schulz, Fritz, assignor to Good Manufacturing Co., Chicago, Ill. Spindle-bearing	814,168	Mar. 6	326	65	121	71
Schumann, Albert, Berlin, Germany. Artificial track for skee-runners, sledges, and the like	814,626	Mar. 6	1249	262	121	370
Schumann, Gustav K. (See Behaghel and Schumann.)						
Schutte, Louis, Philadelphia, Pa. Condenser	816,043	Mar. 27	4178	885–6	121	1066
Schütze, Victor H., Riga, Russia. Crystallizing sugar, &c	817,010	Apr. 3	925	191	121	1563
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company. Gravity-conveyer	817,278	Apr. 10	1456	306	121	1739
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company, New York, N. Y. Spiral chute	817,341	Apr. 10	1567	329	121	1762
Schwartz, I., *et al.* (See Neubauer, Julius K., assignor.)						
Schwartz, R., *et al.* (See Neubauer, Julius K., assignor.)						
Schwarz, Frederick J., assignor to P. E. Guerin, New York, N. Y. Knob-fastening	818,565	Apr. 24	4032	865	121	2401
Scofield, Edson M., Philadelphia, Pa. Retaining-wall or the like	815,866	Mar. 20	3831	812	121	939
Scofield, Edward H., Minneapolis, Minn. Brake-hanger	817,994	Apr. 17	2887	624	121	2106
Scofield, William B., *et al.* (See Crompton, Randolph, assignor.)						
Scognamillo, Salvatore, New York, N. Y. Flexible tubing	819,027	Apr. 24	4947	1062	121	2602
Scotford, Louis K., Chicago, Ill. Numbering-machine	815,124	Mar. 13	2251	472–3	121	546
Scotford, Louis K., Chicago, Ill., assignor to Independent Manufacturing Company, Muskegon, Mich. Hand-stamp	817,195	Apr. 10	1286	266	121	1704
Scott, Alexander, Aspen, Colo. Combined step-ladder and ironing-board	814 877	Mar. 13	1752	367	121	440
Scott, Alexander A., Knoxville, Tenn. Treating plastic material	816,385	Mar. 27	4895	1040–1	121	1221
Scott, Alexander A., Knoxville, Tenn. Treating plastic material	816,386	Mar. 27	4904	1041–2	121	1223
Scott, Alexander A., Knoxville, Tenn. Treating plastic material	816,387	Mar. 27	4910	1042–3	121	1224
Scott, Charles S., Cadiz, Ohio assignor, by mesne assignments, to Goodyear Tire and Rubber Company. Detachable pneumatic tire	816,884	Apr. 3	674	139	121	1508

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Scott, George W., assignor to Railway Appliances Company, Chicago, Ill. Auxiliary coupling device	817,342	Apr. 10	1569	330	121	1762
Scott, John M., Racine, Wis. Rail-anchor	814,627	Mar. 6	1250	263	121	271
Scott, John M., Racine, Wis. Rail-anchor	815,383	Mar. 20	2840	590	121	724
Scott, John M., Racine, Wis. Nut-lock	816,044	Mar. 27	4180	886	121	1069
Scott, John T., Simpsonville, Tex. Machine for baling vines, hay, and the like in cylindrical form	814,736	Mar. 13	1486	312	121	385
Scott, Marcus, Jacksonville, Fla. Gas-mixer	816,045	Mar. 27	4181	886	121	1069
Scott, Sidney C., and J. C. Watson, Marion, Kans. Water-distributer for sickles	817,523	Apr. 10	1945	410	121	1843
Scott, Walter. (See Zeisberger and Scott.)						
Scott, William H., Norwich, England. Braking mechanism for electric motors	815,750	Mar. 20	3585	753	121	889
Scotti, Karl, Frankfort-on-the-Main, Germany. Liquid-meter	818,566	Apr. 24	4033	865	121	2401
Scouten, Asahel E., Riding Mountain, Canada. Coupling device	816,129	Mar. 27	4357	923	121	1107
Scovel, James D., Detroit, Mich. Animal-shears	817,524	Apr. 10	1946	411	121	1843
Scovill Manufacturing Company. (See Goss, John H., assignor.)						
Scull, George F., assignor to R. Hoe, New York, N. Y. Inking mechanism	814,086	Mar. 6	169	34	121	38
Seager, Herbert A., assignor of one-half to J. E. Dolloff, Monroe, Wash. Key-holding attachment for locks	818,199	Apr. 17	3299	705	121	2193
Seaman, Charles G., Spokane, Wash. Sash-fastener	818,303	Apr. 17	3502	752	121	2235
Seaman, Henry B., New York, N. Y., assignor to Gray Lithograph Company. Advertising device	815,867	Mar. 20	3833	812	121	939
Sears, Willard T., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Speed-changer	815,642	Mar. 20	3333	698	121	834
Sears, Willard T., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Valve	818,054	Apr. 17	2999	648	121	2128
Seaton, Andrew, assignor of one-half to L. E. Kelley, Osborn, Mo. Device for operating mail-box lids	817,591	Apr. 10	2072	437	121	1868
Seaton, Benjamin C., assignor of three-eighths to F. A. Kehl, St. Louis, Mo. Tire	814,737	Mar. 13	1487	313	121	386
Seattle Rotary Engine Company. (See Smith, Norman R., assignor.)						
Sechiari, Parascheva, Paris, assignor to La Société Civile d'Etudes de l'Indéchirable Grimson, Lyon, France. Frictional transmission element	816,388	Mar. 27	4914	1043	121	1225
See, Filer S., Gem, Kans. Device for transporting passengers from cars	815,868	Mar. 20	3835	812–13	121	940
Seegers, John H., Sharon, Pa. Combined curtain-pole, bracket, and window-shade holder	816,684	Apr. 3	279	65	121	1422
Seeley, Charles E., Bradford, Pa. Door-jamb and weather-strip	817,395	Apr. 10	1685	355	121	1788
Seerup, Wilhelm T., Copenhagen, Denmark. Can-opener	816,256	Mar. 27	4602	978	121	1150
Seiberling, Frank A., Akron, Ohio. Vehicle-wheel	814,087	Mar. 6	173	34	121	39
Seiberling, Frank A., Akron, Ohio. Vehicle-wheel	814,088	Mar. 6	175	35	121	39
Seibold, Joseph, T. Curran, and M. L. Bacon, Antigo, Wis. Pop-gun	815,223	Mar. 13	2465	514	121	597
Seifert, Frank A., St. Louis, Mo. Supporting-slab for plaster	815,751	Mar. 20	3587	754	121	889
Seim, William F., *et al.* (See Durboraw, Charles L., assignor.)						
Seitz, Theodore A., Grand Rapids, Mich. Line-holder	814,806	Mar. 13	1633	343	121	416
Self, John W., Kansas City, Mo. Ball-bearing caster	816,944	Apr. 3	800	164	121	1536
Seligstein, Isse. (See Leyh, Carl A., assignor.)						
Sellenscheidt, Carl, assignor to Filter & Brautechnische Maschinen-Fabrik Act. Ges., Berlin, Germany. Apparatus for decanting liquids	814,169	Mar. 6	327	66	121	71
Selover, Lee G., Winona, Minn. System of power generation	814,237	Mar. 6	454	94	121	98
Semenoff, Ivan, St. Petersburg, Russia. Machine for making paper mouthpieces and applying the same to cigarette-tubes	814,738	Mar. 13	1489	313–16	121	386
Seney, Henry W. (See Heckert, William, assignor.)						
Sergeant, Henry C., Westfield, N. J., assignor to Ingersoll-Rand Company, New York, N. Y. Valve-operating device for compressors	818,567	Apr. 24	4035	866	121	2401
Serrell, John A., Bayonne, N. J., assignor to Warren Webster and Company. Temperature-regulating apparatus	816,046	Mar. 27	4183	886–7	121	1069
Severy, Melvin L., Arlington Heights, and G. B. Sinclair, Winthrop, Mass., assignors to Choralcelo Manufacturing Company. Electric musical instrument	814,878	Mar. 13	1755	367	121	441
Sevier, Charles A., Jackson, Tenn. Shield and moistener for dental tools	816,685	Apr. 3	280	65	121	1422
Seyhers, Frank, assignor of one-fourth to R. H. Driscoll, Lead, S. D. Rail-joint support	818,394	Apr. 17	3677	790	121	2271
Seymour, Albert P., Syracuse, assignor to Pass & Seymour, Incorporated, Solvay, N. Y. Receptacle for incandescent electric lamps	817,396	Apr. 10	1686	356	121	1788
Seymour, Albert P., Syracuse, assignor to Pass & Seymour, Incorporated, Solvay, N. Y. Receptacle for incandescent electric lamps	817,449	Apr. 10	1796	377	121	1811
Shafer, Jacob P. (See Gifford, Squire D., assignor.)						
Shaffer, Daniel, Aurora, Ill. Water-heater	817,525	Apr. 10	1948	411	121	1843
Shaffer, George W., and J. L. Harman, Florence, Mont. Sled-brake	818,475	Apr. 24	3827	823	121	2359
Shaffer, John E., assignor to J. J. Burns, Cumberland, Md. Horseshoe	817,526	Apr. 10	1950	411	121	1844
Shallenberger, Charles S., St. Louis, Mo. Body-bolster for railway-cars. (Reissue)	12,468	Mar. 27	5244	1112	121	1299
Shallenberger, Ralph G., Braddock, Pa. Combination hand-tool	816,885	Apr. 3	676	140	121	1508
Shamblin, Andrew J., assignor of one-half to I. H. Nakdimen, Muldrow, Ind. Ter. Wagon-jack	817,877	Apr. 17	2646	574	121	2048
Shanahan, Edward J., Tribes Hill, N. Y. Poultry appliance	817,448	Apr. 10	1794	377	121	1810
Sharbaugh, Edward W., East Pittsburg, Pa. Hat-stretcher	814,628	Mar. 6	1251	263	121	271
Sharp, Harry E., Rockville, assignor of one-half to G. Ulrich, Hartford, Conn. Car-switching mechanism	815,560	Mar. 20	3168	665	121	797
Sharp, Lee C., Omaha, Nebr., assignor to American Can Company, New York, N. Y. Can-opener	815,477	Mar. 20	3015	628	121	764
Sharp, Thomas, Carlisle, Pa. Lamp-holder	816,504	Mar. 27	5132	1088	121	1271
Sharples, William H. (See Boardman and Sharples.)						
Shary, Arnold J., and T. L. Anthony, Wilber, Nebr. Windmill attachment	817,808	Apr. 17	2503	536	121	2018
Shaughnessy, Micheal L. (See Barry and Shaughnessy.)						
Shaw, Alva A., Arkadelphia, Ark. Railway-switch	816,257	Mar. 27	4603	979	121	1160
Shaw, Angus W., Toronto, Canada, assignor to R. Fleming, trustee. Aerial ladder	818,304	Apr. 17	3504	752–3	121	2235
Shaw, Charles A., Chicago, Ill. Fish-hook	816,130	Mar. 27	4359	923	121	1107
Shaw, Edward R., Lynn, Mass. Implement for cutting leather and the like	815,643	Mar. 20	3335	698–9	121	835
Shaw, Francis M. (See Shaw, Henry M., assignor.)						
Shaw, Frank, Syracuse, N. Y. Shaft-coupling	818,476	Apr. 24	3828	823–4	121	2359
Shaw, George J., and L. Long Buchanan, N. Y. Belt-holder	815,125	Mar. 13	2263	473	121	549
Shaw, Henry M., assignor to F. M. Shaw, East Orange, N. J. Static discharger and lightning-arrester	815,384	Mar. 20	2842	591	121	725
Shaw, John W., Humboldt, Iowa. Portable display-case	818,712	Apr. 24	4333	929	121	2468
Shaw, Ora D., Boston, Mass. Headwear	814,080	Mar. 6	178	35	121	39
Shaw, Ora D., Boston, Mass. Cap	817,343	Apr. 10	1571	330	121	1763
Shaw Propulsion Company. (See Shaw, Robert W., assignor.)						
Shaw, Robert W., Stamford, Conn., assignor to Shaw Propulsion Company. Propeller	818,125	Apr. 17	3140	675–6	121	2158
Shawver, John W., Portland, Ind. Well-drilling machine	817,527	Apr. 10	1950	412–13	121	1844

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Shea, Christopher A., Philadelphia, Pa., assignor to Underwood Typewriter Company, New York, N. Y. Adjustable line-predetermining device for type-writers	815,644	Mar. 20	3341	700	121	836
Sheakley, Arthur M., assignor to Hercules Manufacturing Company, Stockton, Cal. Fiber-crating machine	815,478	Mar. 20	3016	629	121	765
Sheble, Horace, *et al.* (See Pancoast, Edwin A., assignor.)						
Shedlock, Alfred, Jersey City, N. J., assignor, by mesne assignments, to American Tobacco Company, New York, N. Y. Cigar-machine	817,809	Apr. 17	2505	536	121	2018
Sheehy, Robert J., New York, N. Y. Printing-telegraph	818,477	Apr. 24	3829	824	121	2359
Sheen, Daniel R., Peoria, Ill. Bow-facing rowing mechanism	817,810	Apr. 17	2507	537	121	2018
Sheetz, Tom. (See French and Sheetz.)						
Sheetz, William J., *et al.* (See Burns, Jeremiah D., assignor.)						
Sheffield Car Company. (See Henderson, James, assignor.)						
Sheffield Car Company. (See Mast, Aaron, assignor.)						
Shehadi, Beshara, *et al.* (See Dietz, Herman F., assignor.)						
Shehadi, Joseph, *et al.* (See Dietz, Herman F., assignor.)						
Shelby, Charles F., Globe, Ariz. Ter. Latch device for dumping structures	815,645	Mar. 20	3342	700	121	836
Sheldon, Charles R., Port Huron, Mich. Collapsible table	816,258	Mar. 27	4605	979	121	1160
Sheldon, Fred L., Tacoma, Wash. Traction-increasing mechanism	816,505	Mar. 27	5138	1088	121	1271
Sheldon, Irving L., assignor of one-half to J. Marshall, Fall River, Mass. Pasteboard-bending machine	815,479	Mar. 20	3018	629–30	121	765
Shellaberger, Michael M., De Kalb, Ill. Weather-strip	815,646	Mar. 20	3344	700	121	836
Shelly, Nathan S., Manheim, Pa. Bran-distributer	814,809	Mar. 13	1635	343	121	416
Shelton, James L., Richmond, Va. Water-wheel	816,826	Apr. 3	546	117	121	1478
Shelton, William G., St. Louis, Mo. Massage instrument	816,506	Mar. 27	5137	1088–9	121	1272
Shepard, Amos, Plantsville, assignor to Russell and Erwin Mfg. Co., New Britain, Conn. Latch	817,878	Apr. 17	2647	575	121	2049
Sheridan, Phil, Berkeley, Cal. Pile and like clamp	818,794	Apr. 24	4515	965	121	2508
Sheridan, Richard B., Knoxville, Tenn. Running-gear for vehicles	817,879	Apr. 17	2649	575	121	2049
Sheridan, Thomas F., Chicago, Ill., assignor to Allis-Chalmers Company, Milwaukee, Wis. Roasting-furnace	814,238	Mar. 6	458	95	121	99
Sheriff, James E. (See Young and Sheriff.)						
Sherman, Charles, Maywood, Ill., assignor to American Can Company, New York, N. Y. Handled head for sheet-metal cans	815,983	Mar. 27	4047	856	121	1037
Sherman, Emil, Chicago, Ill. Foot-rest	815,046	Mar. 13	2099	441	121	513
Sherman, Louis A., Detroit, Mich. Tool for truing emery-wheels	817,528	Apr. 10	1955	413	121	1844
Sherwood, Louis A., *et al.* (See Vaughan, Bernard G., assignor.)						
Sherwood Manufacturing Company. (See Le Messurier, Frank C., assignor.)						
Shiek, Daniel W., Chicago, Ill., assignor of one-half to W. L. Milliken, Indianapolis, Ind. Computing-machine	817,450	Apr. 10	1798	378–9	121	1812
Shiess, Elder E., Newport, Ark. Carbureter	817,592	Apr. 10	2073	437	121	1868
Shigley, Cyrus C., Hart, Mich. Magazine-phonograph	816,608	Apr. 3	123	27–8	121	1384
Shinn, Joseph A., Pittsburg, Pa., Slag cement and making the same	816,389	Mar. 27	4915	1043–4	121	1225
Shipman, John D., San Angelo, Tex. Equalizing device for pump-rods	817,675	Apr. 10	2212	472	121	1899
Shipman, Lester E., assignor to A. L. Shipman's Sons, New York, N. Y. Leaf for ledgers	814,239	Mar. 6	460	95	121	99
Shipman's Sons, Asa L. (See Shipman, Lester E., assignor.)						
Shipp, Frederic F., assignor of one-half to J. A. Howze, St. Louis, Mo. Electric water-heater	817,593	Apr. 10	2074	437	121	1868
Shipp, Frederic F., assignor to Electrical Heating & Manufacturing Company, St. Louis, Mo. Electrical water-heater	817,594	Apr. 10	2075	438	121	1869
Shoecraft, Judson, Eskridge, Kans. Automatic gearing device	816,259	Mar. 27	4607	979	121	1161
Shoemaker, George, assignor to William Wharton, Jr., & Company, Incorporated, Philadelphia, Pa. Railway-track structure	815,809	Mar. 20	3837	813	121	940
Shoemaker, George A., Chicago, Ill., assignor to Metal Sectional Furniture Company, Portland, Me. Filing-card and lock therefor	814,170	Mar. 6	331	66–7	121	73
Shonnard, Harold W., East Orange, N. J. Basin-sterilizer	816,886	Apr. 3	678	140	121	1509
Shontz, Fred A., Eureka, Utah. Adjustable plane-handle	817,096	Apr. 3	1073	222	121	1596
Showell, George A. (See Fox, Washington I., assignor.)						
Shreffler, John F., Chicago, Ill. Horse-power indicator and engine-overload alarm	816,686	Apr. 3	281	66	121	1422
Shreve, Albert B. (See Murmann and Shreve.)						
Shuart, Benjamin F., Oberlin, Ohio. Drop-light	814,968	Mar. 13	1965	414	121	482
Shuler, Chester E., Clifton, Kans. Music-leaf turner	815,047	Mar. 13	2099	441	121	513
Shuman, Frank, Philadelphia, Pa. Setting concrete piles	817,595	Apr. 10	2076	438	121	1869
Shuter, Albert A., administrator. (See Talbot, Milton S.)						
Shwayder, Solomon, Denver, Colo. Receptacle for storing alcoholic liquors	818,478	Apr. 24	3832	824	121	2360
Siebenthal, Jacob F., San Diego, Cal. Ironing-board	817,096	Apr. 10	2078	438	121	1869
Siedentop, Henry, New York, N. Y. Hat-fastener	816,900	Apr. 3	139	29	121	1391
Sieder, Frederick, Swissvale, Pa. Game apparatus	818,126	Apr. 17	3142	676	121	2159
Sieger, Josef, Hörde, Germany. Stuffing-box	816,190	Mar. 27	4480	949	121	1133
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Flexible connection for gearless motors	816,610	Apr. 3	140	29	121	1391
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Flexible connection and suspension device for gearless motors	816,611	Apr. 3	142	29–30	121	1392
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Flexible connection for gearless motors	816,612	Apr. 3	145	30	121	1393
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Helical spring	817,133	Apr. 3	1150	237	121	1615
Siegler, Johanna, *et al.* (See Schenck, August, assignor.)						
Siemens & Halske Aktiengesellschaft. (See Bolton, Werner von, assignor.)						
Siemens & Halske Aktiengesellschaft. (See Feuerlein, Otto, assignor.)						
Sieurin, Paul W., Gothenburg, Sweden. Automatic collecting and hoisting of goods	817,811	Apr. 17	2509	537	121	2019
Sievert, Hermann A., U. S. Army. Bridle-bit	815,385	Mar. 20	2844	591	121	725
Sigler, George F., and A. Dow, Wooster, Ohio. Dish-washing machine	814,329	Mar. 6	667	134	121	146
Silva, Emanuel and J. O., Springfield, Ill. Machine for making cement blocks	816,613	Apr. 3	147	30–1	121	1394
Silva, James O. (See Silva, Emanuel and J. O.)						
Silveira, John V. da, Oakland, Cal. Washing-machine	814,969	Mar. 11	1967	414	121	483
Silven, Carl D., Jennings, La. Display-rack	815,480	Mar. 20	3019	630	121	765
Silvera, Herbert A., New York, N. Y. Skate	814,879	Mar. 13	1757	368	121	441
Silverman, Joseph, San Francisco, Cal. Telephone attachment	815,752	Mar. 20	3588	754	121	889
Silverman, Joseph, San Francisco, Cal. Telephone attachment	815,753	Mar. 20	3589	754	121	889
Silverstein, Joseph. (See Sturm and Silverstein.)						
Simar, Alexandre P. (See Pouliot, Louis Z., assignor.)						
Simecek, Vaclav, Flatonia, Tex. Automatic air-brake coupling	815,870	Mar. 20	3838	813–14	121	941
Simensen, Charles. (See Myers and Simensen.)						
Simmons, Oliver G., Washington, D. C. Thread-cutting tool for lathes	817,451	Apr. 10	1805	379	121	1814
Simms, Frederick R., London, England. Buffer for use on motor-vehicles	814,171	Mar. 6	332	67	121	73

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Simon, Albert and A., Cherbourg, France. Apparatus for crushing grain	816,390	Mar. 27	4916	1044–5	121	1225
Simon, Auguste. (See Simon, Albert and A.)						
Simonds Manufacturing Company. (See Howard, Leslie E., assignor.)						
Simpkin, William, Orange, N. J. Briqueting-machine	815,647	Mar. 20	3345	700–1	121	837
Simpson, Carman M., Millvale, Pa. Rail	814,401	Mar. 6	827	171	121	180
Simpson, Charles A., assignor to Kellogg Switchboard & Supply Company, Chicago, Ill. Transfer-circuit for telephone-exchange systems	816,131	Mar. 27	4359	923	121	1107
Simpson, Charles E., Portsmouth, Ohio. Valve	814,402	Mar. 6	828	171	121	180
Simpson, G. Herbert. (See Beauchemin, Louis N., assignor.)						
Sims, Edward B., Western, Nebr. Tire for vehicles	818,568	Apr. 24	4036	866	121	2402
Sinclair, George B. (See Severy and Sinclair.)						
Singer, Frank K., Wheeling, W. Va. Lightning-arrester	814,482	Mar. 6	977	200	121	213
Singer Manufacturing Company. (See Allen, Edward B., assignor.)						
Singer Manufacturing Company. (See De Voe, Albert H., assignor.)						
Singer Manufacturing Company. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company. (See Diehl and Grieb, assignors.)						
Sinnott, James, Chatham, Ill. Fountain-pen	814,990	Mar. 13	1969	414	121	483
Sjöstrand, Ulrik S., Sundbyberg, Sweden. Device for searching submarine mines, &c	818,479	Apr. 24	3834	825	121	2360
Sjöström, Victor, Los Angeles, Cal. Spiral pump and propeller	815,224	Mar. 13	2467	514	121	597
Skelley, Thomas J., Collinwood, Ohio. Extension-arm telephone	818,982	Apr. 24	4862	1044	121	2582
Skene, Norman L., Somerville, Mass. Mooring and towing chock	816,827	Apr. 3	549	117	121	1478
Skidmore, Charles, assignor of two-thirds to D. B. Stidworthy and F. B. Buckwalter, Homer, Nebr. Journal-bearing	817,676	Apr. 10	2212	473	121	1899
Skinner, Nancy E., West Lorne, Canada. Strainer	817,397	Apr. 10	1689	356	121	1789
Skinner, Nancy E., West Lorne, Canada. Strainer	817,452	Apr. 10	1806	379	121	1814
Slagle, Sylvestre, State College, Pa. Eyeglass-lens	815,648	Mar. 20	3348	701	121	837
Slater, Charles E., Colebrook River, Conn. Axle-nut wrench	816,191	Mar. 27	4481	949	121	1133
Sletto, Oscar K., assignor of one-half to C. H. Allen, Blackduck, Minn. Vending-machine	817,727	Apr. 10	2318	498–9	121	1925
Slick, Edwin E., Pittsburg, Pa. Rolling-mill	817,344	Apr. 10	1573	330–2	121	1763
Slick, Edwin E., Pittsburg, Pa. Rolling angles	817,345	Apr. 10	1576	332–3	121	1764
Sloan, George, North Yakima, Wash. Lubricator	817,529	Apr. 10	1955	413	121	1844
Sloan, Robert A., J. E. L. Barnes, Liverpool, and P. Ogden, Bristol, England. Automatically-regulated feeding apparatus for cigarette-making machines	817,880	Apr. 17	2650	575–7	121	2049
Slusser, Clyde, Charleston, W. Va. Binding-post	818,480	Apr. 24	3835	825	121	2360
Small, Henry J., San Francisco, and J. B. Speed, Berkeley, Cal. Railway tank-car	814,880	Mar. 13	1758	368	121	442
Smart, Campbell, Swansea, England. Apparatus for commuting electric currents passing through lamps, &c	817,597	Apr. 10	2078	438–9	121	1869
Smathers, George H. (See Harbin, Zeddie L., assignor.)						
Smejkal, Emil and R., Brooklyn, N. Y. Safety gas-burner	816,260	Mar. 27	4609	979	121	1161
Smejkal, Rudolf. (See Smejkal, Emil and R.)						
Smeltzer, Daniel B. D., *et al.* (See Smith, Voorhees G., assignor.)						
Smeltzer, George D., *et al.* (See Smith, Voorhees G., assignor.)						
Smering, Edward, Chester, S. C. Book-support	816,507	Mar. 27	5140	1089	121	1273
Smiley, Frank D., Ithaca, N. Y. Mail-bag catcher	814,090	Mar. 6	180	36	121	89
Smiley, Herschel W. (See O'Dell and Smiley.)						
Smiser, J. A. (See Gilmer, William A., assignor.)						
Smith, Andrew E., Fredonia, N. Y. Garment-fastener	816,750	Apr. 3	388	89	121	1445
Smith, Andrew J., assignor of one-eighth to J. Lippman, Los Angeles, Cal. Pocket-book lock	815,225	Mar. 13	2468	514	121	598
Smith, Arthur W., Jersey City, N. J., assignor to Yost Writing Machine Company, Ilion, N. Y. Type-writing machine	818,569	Apr. 24	4037	866	121	2402
Smith, Augustus, New York, N. Y. Apparatus for handling coal and other granular material	816,391	Mar. 27	4918	1044–5	121	1225
Smith, Bion E., Bainbridge, N. Y. Wheelbarrow	817,677	Apr. 10	2215	473	121	1899
Smith Cannery Machines Company. (See Smith, Edmund A., assignor.)						
Smith, Captain A., Uniontown, Pa. Neck-yoke	814,881	Mar. 13	1760	368	121	442
Smith, Carroll B., Redlands, Cal. Furrow smoother and packer	815,048	Mar. 13	2101	442	121	514
Smith, Cassius M., and S. B. Welcome, Los Angeles, Cal., assignors to Western Iron Works. Valve mechanism for gas-engines	816,047	Mar. 27	4186	887–8	121	1070
Smith, Charles B., New York, N. Y. Telephone system	816,132	Mar. 27	4363	924	121	1108
Smith, Charles F., Bridgeport, Conn., assignor to Continental Paper Bag Company. Cutting mechanism	818,713	Apr. 24	4335	930	121	2469
Smith, Charles H., Lebanon, Pa. Railway signaling device	818,795	Apr. 24	4516	965	121	2509
Smith Co., Philip. (See George and Smith, assignors.)						
Smith & Company, H. D. (See Ward, William S., assignor.)						
Smith, Datus C., New York, N. Y. Wire-splicer	815,754	Mar. 20	3590	755	121	890
Smith, Datus C., New York, N. Y. Wire-splicer	815,755	Mar. 20	3592	755	121	890
Smith, Datus C., New York, N. Y. Wire-clamp	815,871	Mar. 20	3840	814	121	941
Smith, Dea C., assignor of one-half to C. A. Buckner, Mexico, Mo. Artist's palette	817,196	Apr. 10	1288	267	121	1704
Smith, Edith A., Salt Lake City, Utah. Button	818,983	Apr. 24	4863	1044	121	2583
Smith, Edmund A., assignor to Smith Cannery Machines Company, Seattle, Wash. Means for dressing fish	818,305	Apr. 17	3508	753	121	2236
Smith, Edwin C., Providence, R. I. Shifting device	815,650	Mar. 20	3351	701	121	838
Smith, Elmer C., Columbus, Nebr. Forming foundations	814,240	Mar. 6	460	95	121	99
Smith, Elvah C., Newton, Iowa. Coffee-cutting mill	815,126	Mar. 13	2264	473–4	121	549
Smith, Everett, Schenectady, N. Y. Putting-mat	815,649	Mar. 20	3350	701	121	838
Smith, Frank A., assignor of two-thirds to G. W. Thomas and H. Buckley, Victor, Colo. Miner's lamp	814,241	Mar. 6	461	96	121	99
Smith, Frank F. (See Woodruff, Augustus H., assignor.)						
Smith, Franklin S., Philadelphia, Pa. Pneumatic-despatch apparatus	816,261	Mar. 27	4610	980	121	1161
Smith, Franklin S., Philadelphia, Pa. Pneumatic-despatch apparatus	816,262	Mar. 27	4617	980	121	1163
Smith, Frederick L. (See Smith, Martin J., assignor.)						
Smith, George B., Gallatin, Mo. Fence-post	814,403	Mar. 6	829	171	121	180
Smith, George D., Owen Sound, Canada. Wood-scraping tool	814,404	Mar. 6	830	171	121	181
Smith, George H., Evanston, Ill., assignor to Densmore Typewriter Company, Syracuse, N. Y. Type-writing machine	814 739	Mar. 13	1496	317	121	387
Smith, George L., U. S. Navy. Magazine-firearm	818,395	Apr. 17	3678	790–1	121	2272
Smith, George M., Ivanhoe, Colo. Axle	817,881	Apr. 17	2657	577	121	2051
Smith, Gustavus A., Laurel, assignor to Handy Match Scratcher Company, Des Moines, Iowa. Match-scratcher	817,995	Apr. 17	2889	624	121	2106
Smith, H. L. (See Longhenry, John E., assignor.)						
Smith, Harry E., London, England. Reducing agent or composition for use in photography	816,751	Apr. 3	389	.....	121	1445
Smith, Harry J., assignor to Alberger Company, Buffalo, N. Y. Valve mechanism for gas-engines	818,714	Apr. 24	4339	930	121	2470

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Smith, Ira E., Sacramento, Cal. Oil-burning system	814,091	Mar. 6	181	36	121	40
Smith, Jacob S., Chicago, Ill. Apparatus for producing gas	817,279	Apr. 10	1457	307	121	1739
Smith, Jacob S., Chicago, Ill. Producing gas	817,280	Apr. 10	1462	307	121	1740
Smith, Jed A., assignor of one-half to R. S. Blesh, Ligonier, Pa. Wrench	815,872	Mar. 20	3843	814	121	941
Smith, John A., Dayton Ky., assignor to United States Electric Tool Company, Cincinnati, Ohio. Electric motor	814,740	Mar. 13	1500	317	121	388
Smith, John C., assignor of two-thirds to J. P. Williamson and B. F. Marsh, Lynchburg, Va. Hangman's scaffold	818,306	Apr. 17	3513	753	121	2237
Smith, John H., Allegheny, Pa. Still	814,405	Mar. 6	831	172	121	181
Smith, John M., Waite Park, Minn. Railway-switch	814,172	Mar. 6	333	68	121	73
Smith, John W., *et al.* (See Tatum, James W., assignor.)						
Smith, John W., and G. U. Harn, Jr., Columbus, Ohio. Cutting attachment for printing-presses	816,945	Apr. 3	802	164–5	121	1536
Smith, Kline & French Co. (See England, Joseph W., assignor.)						
Smith, Madison, and J. P. Partenheimer, Princeton, Ind. Head for reaper or mower blades	816,614	Apr. 3	151	31	121	1395
Smith, Magnus, Winnipeg, Canada. Film-holder for picture-exhibiting machines	814,406	Mar. 6	835	172	121	181
Smith, Martin J., assignor of one-half to F. L. Smith, Brockton, Mass. Apparatus for rubbing or treeing boots and shoes	817,453	Apr. 10	1807	380	121	1814
Smith, Martin V., New York, N. Y. Apparatus for treating sewage	817,996	Apr. 17	2890	624–5	121	2106
Smith, Morris F., Philadelphia, Pa. Gas-operated machine-gun	817,197	Apr. 10	1289	267–8	121	1705
Smith, Morris F., Philadelphia, Pa., assignor of three-fourths to W. D. Condit, Des Moines, Iowa. Automatic gas-operated firearm	814,242	Mar. 6	462	96–7	121	100
Smith, Morris F., Philadelphia, Pa., assignor of three-fourths to W. D. Condit, Des Moines, Iowa. Gun	817,134	Apr. 3	1150	238	121	1615
Smith, Morris F., Philadelphia, Pa., assignor of three-fourths to W. D. Condit, Des Moines, Iowa. Gas-operated firearm	817,198	Apr. 10	1295	268–70	121	1706
Smith, Morris F., Philadelphia, Pa., assignor of three-fourths to W. D. Condit, Des Moines, Iowa. Gas-operated rifle	818,920	Apr. 24	4737	1017–18	121	2556
Smith, Nan E., Dowell, Tex. Bed attachment	815,481	Mar. 20	3020	630	121	765
Smith, Nathan H., Seattle, Wash. Dental contour-pliers	816,828	Apr. 3	551	117	121	1479
Smith, Norman R., assignor to Seattle Rotary Engine Company, Seattle, Wash. Rotary engine	815,482	Mar. 20	3021	631	121	766
Smith, Orbin F., Albia, Iowa. Stacker-head	817,882	Apr. 17	2658	578	121	2051
Smith, Orison, assignor of one-half to C. H. Fridley, Anoka, Minn. Rotary harrow	818,307	Apr. 17	3515	754	121	2238
Smith, Persifor F., Jr., Dennison, Ohio. Spreader-car	818,127	Apr. 17	3144	676	121	2159
Smith, Philip. (See George and Smith.)						
Smith, Reginald A. (See Dorman, Smith, and Baggs.)						
Smith, Reuben C., Nashville, Mich. Fodder-bundle binder	817,011	Apr. 3	928	191	121	1565
Smith, Samuel W., Ansonia, Conn. Developing-receptacle for photographic films	816,392	Mar. 27	4919	1045	121	1226
Smith, Stephen C., Watsontown, Pa. Blind-slat clipper	816,263	Mar. 27	4621	981	121	1163
Smith, Thomas C., and W. A. Martin, Chicago, Ill. Photographic flash-light apparatus	814,243	Mar. 6	469	97–8	121	102
Smith, Voorhees G., assignor of one-half to D. B. D. and G. D. Smeltzer, Iola, Kans. Drill-rod coupling	817,398	Apr. 10	1689	356	121	1789
Smith, Wilber H., Bar Harbor, Me. Vehicle-brake	817,678	Apr. 10	2216	473	121	1900
Smith, William W., Pittsburg, Pa. Puzzle	818,128	Apr. 17	3145	677	121	2160
Smithem, William P., Crystalrun, N. Y. Fastening device	815,561	Mar. 20	3170	666	121	797
Smithers, Richard, Nortonville, Kans. Hedge-trimming machine	814,483	Mar. 6	979	200–1	121	213
Smouse, William J., Cedar Rapids, Iowa. Halter	817,135	Apr. 3	1151	238	121	1615
Smyth, Lee F., Buffalo, N. Y. Assembler-slide brake	815,651	Mar. 20	3354	702	121	838
Smythe, Edwin H., assignor to Western Electric Company, Chicago, Ill. Winding-machine	817,883	Apr. 17	2659	578–9	121	2051
Snearer, Charles H., Cleveland, Ohio. Sash-fastener	815,483	Mar. 20	3023	631	121	766
Sneddon, James P., Barberton, Ohio, assignor to Stirling Consolidated Boiler Company, New York, N. Y. Regulating the temperature of superheated steam	814,629	Mar. 6	1253	263	121	272
Snigo, John A., Pittsburg, Pa. Ice-cream freezer	816,887	Apr. 3	680	140	121	1509
Snow, William H., Brattleboro, Vt. Parallel bench-vise	816,508	Mar. 27	5141	1089	121	1273
Snow, William J., Vilonia, Ark. Lamp-chimney holder	814,566	Mar. 6	1133	236	121	248
Snowden, George E., New Cumberland, W. Va. Downdraft-kiln	816,752	Apr. 3	390	89	121	1445
Snyder, Frederick T., Oak Park, Ill. Metallurgical process	814,810	Mar. 13	1636	343	121	416
Snyder, Frederick T., Oak Park, assignor, by mesne assignments, to International Separator Company, Chicago, Ill. Magnetic separation	817,399	Apr. 10	1691	356–7	121	1789
Snyder, Willoughby E., Nazareth, Pa. Cement-burning furnace	816,753	Apr. 3	392	90	121	1446
Sobey, William, assignor to J. I. Case Plow Works, Racine, Wis. Cultivator	817,012	Apr. 3	929	192	121	1564
Soblik, Maximilian, Düsseldorf, Germany. Pneumatic type-writer	818,200	Apr. 17	3300	706	121	2193
"Société Anonyme d'Electricité et d'Automobiles Mors." (See Cahen, Emile D., assignor.)						
Société Anonyme des Automobiles Ariés. (See Petiet, Charles M. J., assignor.)						
Société Electro Metallurgique Francaise. (See Héroult, Paul L. T., assignor.)						
Société J. et a Pavin de Lafarge. (See Girardot, Claude, assignor.)						
Soistmann, Adolph G., Philadelphia, Pa. Straining-hook for musical instruments	816,754	Apr. 3	395	90	121	1446
Solatinow, Joseph, assignor of one-half to F. Schmitter, Paterson, N. J. Bottle-lock	818,984	Apr. 24	4864	1044	121	2583
Soller, Eugen, Basel, and F. Hottinger, Berne, Switzerland. Change-speed gearing	815,380	Mar. 20	2846	591	121	726
Sommerville, John R., Washington, D. C. Suspensory	816,888	Apr. 3	681	141	121	1510
Sondergaard, Mads. (See Schallinger and Sondergaard.)						
Sona, Ernest L., assignor to Bair-&-Gazzam Manufacturing Company, Pittsburg, Pa. Icing-machine	815,226	Mar. 13	2469	515	121	596
Soper, William E., Yonkers, N. Y. Leader-link	816,264	Mar. 27	4622	981	121	1164
Sorenson, Ole, Fowler, Colo. Beet-cultivator	815,652	Mar. 20	3356	702	121	839
Sorg, Robert. (See Allen, Fred E., assignor.)						
Soucek, Charles H., Lamont, Okla. Ter. Lister attachment	817,812	Apr. 17	2510	537	121	2019
Souders, David C. (See Winger, William D., assignor.)						
Soulas, Christophe Jerusalem, Wanganui, New Zealand. Swing-bed for use on board ship	815,127	Mar. 13	2266	474	121	549
Soulas, Christophe, Okato, New Zealand. Telescope	818,055	Apr. 17	3000	648	121	2128
South, Richard, assignor of one-half to M. Marks, Los Angeles, Cal. Oil-burning brick-kiln	818,129	Apr. 17	3147	677	121	2160
Southern Bale Tie Company. (See Pence, Edward L., assignor.)						
Southworth, Harrison E., Chicago, Ill. Face-mask	814,741	Mar. 13	1503	317–18	121	389
Southworth, Henry E., Colchester, assignor to Porter Screen Manufacturing Company, Burlington, Vt. Window and door screen	815,484	Mar. 20	3024	631–2	121	766
Southworth, Richard, and J. E. Holden, Mimico, Canada. Floor-brick for downdraft-kilns	818,308	Apr. 17	3516	754	121	2238
Spade, Henry E. (See Spade, Herbert O. and H. E.)						
Spade, Herbert O. and H. E., Vicksburg, Mich. Oil-feeding or charge-delivering device	817,997	Apr. 17	2892	625	121	2107

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Spake, William H. (See Coleman, Lucius E., assignor.)						
Spaulding, Frank M., assignor to W. H. Hull, St. Joseph, Mich. Reversible propeller-wheel	817,728	Apr. 10	2320	499	121	1925
Speakman, Willard A., Wilmington, Del. Faucet	816,133	Mar. 27	4371	924	121	1110
Spear, Frank N., Los Angeles, Cal. Fine-fuel furnace	815,562	Mar. 20	3172	666	121	708
Spear, Furman D., Brooklyn, assignor to Arm-Spear Manufacturing Company, New York, N. Y. Signal-lamp	816,509	Mar. 27	5142	1089-90	121	1274
Spears, Henry H., Louisville, Ky. Machine for pressing concrete bricks	814,742	Mar. 13	1503	318	121	389
Speed, James B. (See Small and Speed.)						
Speed, Joshua, Grand Rapids, Mich. Shelf-support	814,811	Mar. 13	1640	343	121	417
Speidel, John G. (See Lehrman, John, assignor.)						
Spence, Aaron T., J. H. Prugh, and S. B. Zimmer, San Francisco, Cal. Surfacing and polishing machine	817,013	Apr. 3	933	192	121	1565
Spence, Charles H., St. Paul, Minn. Motor-boat	816,755	Apr. 3	396	90	121	1446
Spence, Krateo C., *et al.* (See McCollum, Joseph C., assignor.)						
Spencer, Christopher M., Windsor, assignor to Universal Machine Screw Company, Hartford, Conn. Threading mechanism for automatic screw-machines	816,393	Mar. 27	4921	1045-6	121	1226
Spencer, Christopher M., Windsor, assignor to Universal Machine Screw Company, Hartford, Conn. Automatic screw-machine	816,510	Mar. 27	5144	1091-2	121	1274
Spencer, George F. (See Spencer, William H., assignor.)						
Spencer, George M., assignor of one-half to C. J. Grellner, St. Louis, Mo. Automatic reduction and quick-action triple valve	815,227	Mar. 13	2473	516	121	599
Spencer, Gertrude, New York, N. Y. Dropper	815,984	Mar. 27	4048	856	121	1038
Spencer, Guilford L., Washington, D. C. Apparatus for measuring and delivering liquids	818,481	Apr. 24	3836	825	121	2360
Spencer, William H., Brooklyn, N. Y., assignor to G. F. Spencer, Newark, N. J. Combined reflector and socket hood	816,756	Apr. 3	397	91	121	1447
Spengler, Charles C., Rockford, Ill. Change-maker	817,530	Apr. 10	1957	413-15	121	1844
Spengler, Jacob, Great Falls, Mont. Hand-press	818,796	Apr. 24	4518	965	121	2509
Sperling, Ellsworth, Longview, Tex. Crate or coop	814,882	Mar. 13	1761	369	121	442
Sperry, Elmer A. (See Townsend, Clinton P., assignor.)						
Sperry, Herbert B., Springfield, Ohio, assignor to International Harvester Company. Hay-tedder	814,244	Mar. 6	473	98	121	102
Sphung, Charles C., Huntspur, Mich. Animal-trap	816,394	Mar. 27	4923	1046	121	1227
Spies, Albert, Louisville, Ky. Railway-gate	814,330	Mar. 6	669	134-5	121	146
Spink, Arthur M., San Francisco, Cal. Fluid-pressure door opener and closer	817,014	Apr. 3	935	193	121	1566
Spinney, Andrew G. (See Dyer and Spinney.)						
Spitz, Samuel A., assignor of one-half to P. B. Gainer, David City, Nebr. Cultivator	814,567	Mar. 6	1134	236-7	121	246
Splittstoser, Ferdinand, North Branch, Minn. Poison-distributer	817,813	Apr. 17	2511	538	121	2019
Spohd, Rudolph, Königsberg, Germany. Smoke-consuming apparatus for steam-boilers	814,331	Mar. 6	671	135	121	147
Sponenburg, Hiram H., Wadsworth, Ill., assignor of one-half to E. Laas, Ottumwa, Iowa. Railway-rail stay	816,265	Mar. 27	4623	961	121	1164
Sponenburg, Hiram H., Wadsworth, Ill., assignor of one-half to E. Laas, Ottumwa, Iowa. Railway-rail stay	816,946	Apr. 3	806	165	121	1537
Sponenburg, Hiram H., Wadsworth, Ill., assignor of one-half to E. Laas, Ottumwa, Iowa. Railway-rail stay	816,947	Apr. 3	808	166	121	1538
Spool Cotton Company. (See Groel, Adam H., assignor.)						
Spooner, Lee C., assignor to Peter Manufacturing Company, St. Louis, Mo. Vending-machine	814,332	Mar. 6	671	135-6	121	147
Sprado, Carl G., assignor to Allis-Chalmers Company, Milwaukee, Wis. Adjustable piston-rod and cross-head connection	815,312	Mar. 13	2638	552	121	633
Sprague Electric Company. (See Libby, Sam H., assignor.)						
Sprague Electric Company. (See Sprague, Frank J., assignor.)						
Sprague, Frank J., assignor to Sprague Electric Company. System of electrical control	815,756	Mar. 20	3594	755-6	121	890
Sprangel, Volney M., assignor of one-half to C. E. Castle, Wagoner, Ind. Ter. Magazine-firearm	818,570	Apr. 24	4039	866-7	121	2403
Springfield Furnace Company. (See Thompson, Ralph S., assignor.)						
Squier, William, Denver, Colo. Door-holder	816,757	Apr. 3	400	91	121	1447
St. Laurent, Aimé A. (See Cassidy and St. Laurent.)						
St. Laurent, Aimé A. (See Perkins and St. Laurent.)						
Staahlgren, Karl A. A., New York, N. Y., assignor to Engineering and Development Company of New York. Rotary engine	817,814	Apr. 17	2513	538	121	2020
Staats, William H., Cohoes, N. Y. Pneumatic or elastic spring for vehicles	816,687	Apr. 3	284	66	121	1423
Stackhouse, John. (See Brining and Stackhouse.)						
Städtler, Otto, Gehrden, Germany. Stethoscope	814,923	Mar. 13	1825	383	121	456
Staff, Peter N. (See Gunckel, Winfield O., assignor.)						
Stagg, Thomas H., assignor to Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Making scraper-bowls	814,568	Mar. 6	1136	237	121	247
Stahl, James B. (See Ames, Addison H., assignor.)						
Stahmer, Louis A., Oak Park, Ill. Time feeding device	817,884	Apr. 17	2662	579	121	2052
Stakelbeck, Herman F., Philadelphia, Pa. Electric hand-lamp	817,346	Apr. 10	1579	333	121	1765
Stalker, Neil, West Hartford, Conn. Check-piece for bridle-bits	816,615	Apr. 3	152	31	121	1395
Standard Steel Car Company. (See Christianson, Andrew, assignor.)						
Standard Turpentine Manufacturing Co. (See Copilovich, Henry, assignor.)						
Stanley, Irving, New York, N. Y. Dough or bread mixer	817,400	Apr. 10	1693	357	121	1700
Stanley Rule & Level Company. (See Schade, Edmund A., assignor.)						
Stanley Rule & Level Company. (See Traut, Justus A., assignor.)						
Stanley, William, Great Barrington, Mass. Electrical generator	816,192	Mar. 27	4483	950	121	1133
Stanley, William, Great Barrington, Mass. Means and method of transmitting power	817,998	Apr. 17	2894	625	121	2107
Stanley, William, Great Barrington, Mass. Means for transmitting power by electric currents	818,715	Apr. 24	4342	931	121	2470
Stanley, William, Great Barrington, Mass. Transmitting power by electric currents	819,028	Apr. 24	4950	1062-3	121	2603
Staples, Joseph, Chicago, Ill. Clamp for conduits	814,092	Mar. 6	183	37	121	40
Staples, William. (See Hanes and Staples.)						
Star Brass Manufacturing Co. (See Fernald, Charles F., assignor.)						
Stark, Charles M. (See Brock, Clarence R., assignor.)						
Stark, Harold M., Fort Wayne, Ind. Device for straightening and leveling rails	815,757	Mar. 20	3602	756	121	892
Stark, Oly, Hardin, Mo. Land-scraper	817,999	Apr. 17	2898	625-6	121	2108
Starr, Fred, San Francisco, Cal. Wave-motor	817,347	Apr. 10	1580	333-4	121	1766
Starr, John E., New York, N. Y. Means for pumping liquids	814,883	Mar. 13	1763	369	121	443
Starrett, Aaron E., Kellogg, Iowa. Adjustable stock-chute	818,571	Apr. 24	4042	867	121	2403
Starrett, Laroy S., assignor to L. S. Starrett Co., Athol, Mass. Screw-holding screw-driver	815,758	Mar. 20	3603	756	121	892
Stathers, William. (See Peters, William, assignor.)						
Stawartz, John, assignor of one-half to J. J. Casey and A. J. Kuhn, Homestead, Pa. Fender	818,797	Apr. 24	4520	966	121	2510
Stealey, George C., Denver, Colo. Rotary engine	817,679	Apr. 10	2218	474-5	121	1900
Stearns, Albert, and P. H. MacCorquodale, Syracuse, N. Y.; said MacCorquodale assignor to said Stearns. Wrapping-machine	818,572	Apr. 24	4043	867-8	121	2404

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Stearns, Roswell H., and H. Klehm, Milwaukee, Wis. Shifter	817,815	Apr. 17	2515	539	121	2020
Stebbins, George A., Watertown, N. Y. Gas-filter	816,266	Mar. 27	4625	981-2	121	1164
Stechow, Karl von, Wiesbaden, Germany. Extraction of pure raw rubber from rubber-plants	814,407	Mar. 6	336	.....	121	182
Stecker, Alfred J., Detroit, Mich., assignor to H. P. Nickels, New York, N. Y. Track instrument for automatic railway block-signaling	817,348	Apr. 10	1583	334-5	121	1766
Steel, Matthew, Gosforth, England. Carbureting apparatus	816,267	Mar. 27	4627	982	121	1165
Steele, David R., *et al.* (See Krause, William T., assignor.)						
Steele, Frederick A., New Rochelle, N. Y. Toilet article	814,408	Mar. 6	339	173	121	182
Stegner, Frederick A., Cincinnati, Ohio. Tobacco-pipe	818,716	Apr. 24	4345	931	121	2471
Stein, Jacob M., Washington, D. C. Coat-hanger	815,759	Mar. 20	3604	757	121	893
Steinberg, Max, *et al.* (See Ible, Gustav, assignor.)						
Steindorf, Otto W., Wheeling, W. Va. Tripod for cameras	816,268	Mar. 27	4628	982	121	1165
Steiner, Elmer E., Knightstown, Ind. Automatic intercommunicating train-reporting system	817,281	Apr. 10	1464	307	121	1740
Steinert, Henry, and M. Schimelpfennig, Tamaqua, Pa. Lock-nut	818,921	Apr. 24	4741	1018	121	2557
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Alternating-current generator	816,395	Mar. 27	4924	1046	121	1227
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	816,511	Mar. 27	5148	1092	121	1275
Steinmeyer, Gustav, Sr., St. Louis, Mo. Car-roof construction	814,743	Mar. 13	1506	319	121	390
Stender, William, Streator, Ill. Apparatus for feeding articles into ovens	818,573	Apr. 24	4046	868-9	121	2404
Stengel, Charles, Hamilton, Ohio. Caster	816,269	Mar. 27	4630	983	121	1165
Stephan, Adam, Waverly, near Sydney, assignor to R. Sands, Sydney, New South Wales, Australia. Half-tone photolithography and the like	818,574	Apr. 24	4048	.....	121	2405
Sterling Blower & Pipe Manufacturing Company. (See Lynch, Arthur C., assignor.)						
Stern, Philip K., New York, N. Y. Railway and railway-car	814,245	Mar. 6	474	98-9	121	103
Sternau & Company, S. (See Lattin, Albert N., assignor.)						
Stettner, William A., Elgin, Ill. Umbrella	814,884	Mar. 13	1765	369	121	443
Stevens, Alton E., Fall River, Mass. Controller for automatic telephone systems	816,948	Apr. 3	810	166	121	1538
Stevens, Charles P. (See Hawkins and Stevens.)						
Stevens, Charles S. J., Oakland, Ind. Ter. Combined chair and couch	817,816	Apr. 17	2518	539	121	2021
Stevens, Horace M. (See Hawkins and Stevens.)						
Stevens, Sylvester G., assignor to Lawrence Switch Co., Duluth, Minn. Attachment for locomotives	816,688	Apr. 3	286	66	121	1423
Stevens, Thomas G., Greenhithe, England. Bearing-spring for motor-vehicles	816,396	Mar. 27	4926	1047	121	1227
Stevenson, Charles M., Harvard, Ill. Merry-go-round	816,689	Apr. 3	288	67	121	1424
Stevenson, Charles R., Boston, Mass. Tooth-brush	818,000	Apr. 17	2899	626	121	2108
Stevenson, John H., Ann Arbor, Mich. Adjustable lamp-support	815,563	Mar. 20	3175	666	121	798
Stevenson, Samuel P., Chester, Pa. Door-frame	817,199	Apr. 10	1300	271	121	1707
Stevenson, William, Devonport, New Zealand. Combined dining and billiard table	817,097	Apr. 3	1075	223	121	1596
Steventon, Thomas, Bridgeport, Conn. Music-leaf turner	815,873	Mar. 20	3844	815	121	941
Steward, Demetrius M., Chattanooga, Tenn. Refractory material for electric insulation and other purposes	816,270	Mar. 27	4632	.....	121	1166
Steward, Demetrius M., Chattanooga, Tenn. Producing new refractory material for the manufacture of insulators and other uses	816,271	Mar. 27	4634	.....	121	1166
Stewart, Alfred C., Los Angeles, Cal. Automobile-engine suspension	814,991	Mar. 13	1970	414	121	484
Stewart, David C., Payne, Ohio. Composition fence-post	817,282	Apr. 10	1466	307	121	1741
Stewart, George C., Marengo, Ind. Railway-car truck	814,409	Mar. 6	340	173	121	182
Stewart, James M., assignor of one-fourth to M. C. Massie, Washington, D. C. Wire screen	817,680	Apr. 10	2220	475	121	1900
Stewart, James W., Franklin, Tex. Clothes-pin	815,128	Mar. 13	2267	474	121	550
Stewart, John, Tarentum, Pa. Chimney-fastener for lamps	816,949	Apr. 3	813	167	121	1539
Stewart, John K., Chicago, Ill. Driving-clutch for power transmission	814,093	Mar. 6	184	37	121	40
Stewart, John K., Chicago, Ill. Jointed shaft	815,485	Mar. 20	3025	632	121	767
Stewart, John K., Chicago, Ill. Flexible shaft	817,283	Apr. 10	1467	308	121	1741
Stewar , Jonathan M. (See Niesz and Stewart.)						
Stewart, Jonathan M., assignor to Bucher & Gibbs Plow Company, Canton, Ohio. Connection for harrow-disks	814,744	Mar. 13	1507	319	121	390
Stewart, Lemuel N., Agency, Mo. Attachment for listers, plows, and the like	814,569	Mar. 6	1138	238	121	247
Stewart, Robert W., Findlay, Ohio. Kiln	815,387	Mar. 20	2851	592	121	727
Stewart, Robert W., Findlay, Ohio. Kiln	815,388	Mar. 20	2852	592	121	727
Stichelen, Albert V., Gand, Belgium. Flexible tire	816,889	Apr. 3	681	141	121	1510
Stichweh, Louis F., Dayton, Ohio. Game apparatus	816,758	Apr. 3	401	91-2	121	1447
Stickel, Frederick, Chicago, Ill. Apparatus for drawing beer, &c	814,094	Mar. 6	187	37	121	41
Stickney, Allison M., Medford, Mass., assignor to Wellman Sole Cutting Machine Company, Portland, Me. Knife-carrying mechanism for sole-cutting machines	815,486	Mar. 20	3028	632	121	767
Stickney, Allison M., Medford, Mass., assignor to Wellman Sole Cutting Machine Company, Portland, Me. Machine for cutting blanks with beveled edges	815,564	Mar. 20	3176	666-7	121	798
Stickney, Burnham C., Elizabeth, assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	815,565	Mar. 20	3177	667	121	799
Stidworthy, Daniel B., *et al.* (See Skidmore, Charles, assignor.)						
Stiles, George A., Somerville, Mass. Eyeglass-fitting	815,487	Mar. 20	3028	632	121	767
Stillman, Walter S., New Brighton, N. Y. Display-form	815,566	Mar. 20	3179	667	121	799
Stimart, Louis, Green Bay, Wis. Beet-harvester	819,029	Apr. 24	4953	1063	121	2603
Stimpson, Clarence A. (See Lloyd, William F., assignor.)						
Stimson, Oscar M., assignor to J. M. Hopkins, Chicago, Ill. Safety-bracket for car-doors	817,015	Apr. 3	937	193	121	1566
Stirling Consolidated Boiler Company. (See Sneddon, James P., assignor.)						
Stockdell, Clarence L., Atlanta, Ga. Handle or grip	814,570	Mar. 6	1140	238	121	247
Stockman, William H., assignor to T. H. Wall, Buffalo, N. Y. School-desk	816,272	Mar. 27	4637	983	121	1166
Stockwell, Homer K., Onaway, assignor to L. T. Kline, Alpena, Mich. Machine for turning and boring articles, such as spools, &c	815,567	Mar. 20	3181	668	121	800
Stoetzel, Joseph J., Chicago, Ill., assignor to Universal Pneumatic Transmission Company, of Maine. Pneumatic-despatching-tube system	817,016	Apr. 3	939	193-4	121	1567
Stokes, Delmer F., assignor of one-half to A. Moore, Jr., Kenton, Ohio. Mail-bag catcher	814,630	Mar. 6	1264	264	121	272
Stoll, Heinrich, Jr., Reutlingen, Germany. Lamb knitting-machine	815,760	Mar. 20	3606	757	121	893
Stoll, John, assignor to A. M. Dellinger, Lancaster, Pa. Belt clamp-plate	814,095	Mar. 6	189	38	121	41
Stoll, William, Ashtabula, Ohio. Machine for making hat-frames	814,992	Mar. 13	1972	415	121	484
Stolp, Frank H., and C. Wright, assignors to Long Manufacturing Company, Chicago, Ill. Making radiator-tubes	817,938	Apr. 17	2777	601	121	2080
Stolp, Frank H., and C. Wright, assignors to Long Manufacturing Company, Chicago, Ill. Machine for making radiator-tubes	817,939	Apr. 17	2779	601-2	121	2081
Stolpe, Hugo, Pankow, Germany. Twine holder and cutter	817,598	Apr. 10	2082	439-40	121	1870
Stoltz, Melville, New York, N. Y., assignor to Acme Novelty Company, of New York. Amusement device	817,401	Apr. 10	1696	358	121	1790

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Stolz, Friedrich, assignor to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Alkylaminoacetopyrocatechol and making same	815,653	Mar. 20	3357	.....	121	839
Stone, Charles W., Schenectady, N. Y., assignor to General Electric Company. Interlocking switch	818,309	Apr. 17	3516	754	121	2238
Stone, Francis I., assignor of one-fourth to H. W. Lightfoot, Atlanta, Ga. Dye-vat	814,173	Mar. 6	334	68	121	72
Stone, John A., Chicago, Ill., assignor to International Harvester Company. Corn harvester and husker	814,812	Mar. 13	1640	344	121	417
Stone, Nathaniel B., Outlook, Wash. Cue-rack	815,228	Mar. 13	2480	516	121	599
Stone, Nathaniel B., Outlook, Wash. Convertible sofa and table	816,616	Apr. 3	152	31-2	121	1396
Stoner, Nathan C., Sistersville, W. Va. Lining working barrels and pipes	816,890	Apr. 3	683	141	121	1510
Storm, Charles E., Trowbridge, Ill. Corn-harvesting machine	817,200	Apr. 10	1300	271	121	1707
Storm, Ralph L., Waterloo, Iowa. Safety match-box	814,745	Mar. 13	1508	319	121	390
Stott, David. (See Morehead, John, assignor.)						
Stovering, Frank, *et al.* (See Fritch, Joseph C., assignor.)						
Stow, Audley H., Switchback, W. Va. Match-holder attachment for lamps	818,201	Apr. 17	3302	706	121	2193
Stowe, Bernard A., assignor to Jandus Electric Company, Cleveland, Ohio. Means for producing air-currents	816,759	Apr. 3	402	92-3	121	1448
Straight, A. L. (See Field, Bertrand L., assignor.)						
Strand, John B., and J. H. Haugen, Chicago, Ill. Sofa-bed	816,134	Mar. 27	4374	925	121	1110
Strange, Albert B. (See Laforêt, Jean, assignor.)						
Stransky, John A., Pukwana, S. D. Cement fence-post	817,017	Apr. 3	944	194	121	1568
Stransky, Maurice, New York, N. Y. Bail-supporting device	814,246	Mar. 6	484	100	121	104
Stransky, Maurice, New York, N. Y. Strainer	815,874	Mar. 20	3847	815	121	942
Strasburg, Frederick E., Rumford Falls, Me., assignor to Continental Paper Bag Company. Paper-bag machine	816,193	Mar. 27	4486	951-3	121	1134
Strauss, Joseph, Washington, D. C. Making armor-plate	815,985	Mar. 27	4049	856	121	1038
Strecker, Hans H. (See Strecker, Otto C. and H. H.)						
Strecker, Otto C., Darmstadt, and H. H. Strecker, Mainz, Germany. Deep etching of zinc by electrolysis	815,875	Mar. 20	3848	.....	121	942
Strickland, De Witt W., Magnolia, Miss. Cultivator and planter	818,922	Apr. 24	4741	1019	121	2557
Strickland, De Witt W., Magnolia, Miss. Cultivator	818,923	Apr. 24	4744	1019	121	2557
Strickland, George H., Warren, Ohio. Wrench	818,310	Apr. 17	3518	755	121	2238
Strickler, William H., assignor to Federal Construction Co., Chicago, Ill. Amusement apparatus	817,402	Apr. 10	1697	358-9	121	1791
Strickler, William H., assignor to Federal Construction Company, Chicago, Ill. Inclined railway	817,940	Apr. 17	2782	602	121	2081
Stripe, Henry, Milan, Kans. Corn-cultivator	815,229	Mar. 13	2481	516-17	121	600
Strobel, Edward F., Pittsburg, Pa. Bottle-locking device	815,654	Mar. 20	3357	702	121	839
Strobel, Fredrick H., Baltimore, Md. Beer-cooler	818,056	Apr. 17	3001	648	121	2128
Stromberg-Carlson Telephone Manufacturing Company. (See Davis, William M., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Stroud, Harold D., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Webster, Harry G., assignor.)						
Strong, Arthur J., assignor of one-half to J. B. Hayward, Dayton, Ohio. Tapping and drilling machine	814,247	Mar. 6	486	100	121	104
Strong, Robert H., Galesburg, Ill. Envelop-stacker	818,924	Apr. 24	4745	1019-20	121	2557
Stroud, Harold D., Chicago, Ill., assignor, by mesne assignments, to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone-exchange system	816,135	Mar. 27	4375	925	121	1111
Stroud, James F., Emerson, assignor of one-half to S. Stroud, Mills county, Iowa. Gate.	814,746	Mar. 13	1509	319	121	390
Stroud, Sylvester. (See Stroud, James F., assignor.)						
Stroup, Emery W., Rollersville, Ohio. Pump	818,001	Apr. 17	2901	626	121	2109
Struthers, Joshua, Franklin, Pa. Device for controlling generators	815,129	Mar. 13	2267	474	121	550
Stuart, Henry W., Fernbank, Ohio. Folding box	817,531	Apr. 10	1963	415	121	1845
Stubblefield, James P., Buchanan, Tenn. Toilet-case	818,575	Apr. 24	4051	869	121	2405
Stucki, Arnold, Allegheny, Pa. Trussed car-bolster	817,403	Apr. 10	1699	359	121	1791
Stucki, Arnold, Allegheny, Pa. Car-truck bolster	817,404	Apr. 10	1701	359	121	1791
Stucki, Arnold, Allegheny, Pa. Side frame for railway-car trucks	817,405	Apr. 10	1704	359-60	121	1792
Stucki, Arnold, Allegheny, Pa. Truck for railway-cars	817,406	Apr. 10	1706	360	121	1792
Stuckle, Henry W. de. (See Ranson, Charles, assignor.)						
Stultz, Thomas B. (See Coppridge and Stultz.)						
Sturgeon, Leonard A. (See Berry and Sturgeon.)						
Sturm, Moses M., and J. Silverstein, New York, N. Y. Hose-supporter	817,201	Apr. 10	1303	272	121	1708
Sturtevant, Orange S., assignor to Adrian Wire Fence Company, Adrian, Mich. Dies for tying intersecting wires	814,885	Mar. 13	1766	370	121	444
Sturtevant, Thomas E., assignor to McKiernan Drill Company, Dover, N. J. Valve for air-compressors	815,488	Mar. 20	3029	633	121	767
Stute, Charles, Newark, N. J. Carbureter	817,941	Apr. 17	2785	603	121	2082
Stuteon, Ada T., Columbus, Ohio. Draft connection for vehicles	815,655	Mar. 20	3359	703	121	839
Success Brick Machinery Company. (See Reid, Frank H., assignor.)						
Sudre, Charles, Paris, France. Glycerin-still	815,761	Mar. 20	3607	757	121	893
Suiter, Edwin P. (See Brew and Suiter.)						
Sullivan, Charles L., and W. J. Dickinson; said Dickinson assignor to Handy Car Equipment Company, Chicago, Ill. Boltless rail-splice	818,311	Apr. 17	3519	755	121	2239
Sullivan, Edward A., Toronto, Canada, T. W. Pritchard, Germantown, and R. W. C. Ellison, Bryn Mawr, Pa. Non-refillable-bottle attachment	818,312	Apr. 17	3522	756	121	2239
Sullivan, Edward A., Toronto, Canada, T. W. Pritchard, Germantown, and R. W. C. Ellison, Bryn Mawr, Pa. Non-refillable-bottle attachment	818,313	Apr. 17	3524	756	121	2240
Sullivan, George B., Evanston, Ohio. Car-lever	818,576	Apr. 24	4052	869	121	2405
Sullivan, Mortimer P., Boston, Mass. Branding-tool	818,482	Apr. 24	3838	825	121	2361
Sullivan, Timothy J., Read, Colo. Beet-harvester	814,747	Mar. 13	1510	320	121	391
Sumic, Nicholas, Allegheny, Pa. Rail-joint	815,762	Mar. 20	3609	758	121	893
Summer, Henry W., East Rochester, Ohio. Box-machine	814,333	Mar. 6	674	136-8	121	147
Summerall, William B., Atlanta, Ga. Perpetual calendar	818,577	Apr. 24	4053	870	121	2406
Summers, Bertrand S., Port Huron, Mich., assignor to Summers Fiber Company, Chicago, Ill. Preparing fibers	815,876	Mar. 20	3850	815	121	942
Summers Fiber Company. (See Summers, Bertrand S., assignor.)						
Summers, John W., Mattoon, Ill. Invalid-bed	816,048	Mar. 27	4189	888	121	1070
Sunderman, Richard, Buffalo, N. Y. Attachment for carton-making machines	816,273	Mar. 27	4639	984	121	1167
Sundh, August. (See Otis and Sundh.)						
Superior Bank Company. (See Woolums, William H., assignor.)						
Suter, Frédéric. (See Joubert and Suter.)						
Sutherland, Alexander. (See Caddell and Sutherland.)						
Sutherland, Dimock W. (See Wheildon, William M., assignor.)						
Swaggert, Bert C., Eureka, Cal. Undercut-saw guide	814,886	Mar. 13	1768	370	121	444

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Swahn, Carl G., New York, N. Y. Kitchen-cabinet	817,302	Apr. 10	1304	272	121	1706
Swain, Samuel R., Philadelphia, Pa. Window-cleaner	818,002	Apr. 17	2902	626	121	2109
Swan, Charles, Corry, Pa. Plate-shears	818,578	Apr. 24	4056	870	121	2406
Swan, Charles C., New London, Iowa. Hog-loader	814,096	Mar. 6	190	38	121	42
Swan, Milton G., Lancaster, Pa. Detachable leaf for books	818,130	Apr. 17	3148	678	121	2160
Swank, Reuben B., Dayton, Ohio. Railway-joint	817,729	Apr. 10	2323	499	121	1926
Swanson, Carl W., Chicago, Ill. Floor-dressing device	817,407	Apr. 10	1709	360	121	1793
Swanson, Hans, Warren, Minn. Insulator attachment	814,887	Mar. 13	1769	370	121	444
Swanson, Olof, Chicago, Ill. Flue-expander	814,248	Mar. 6	488	100	121	105
Swartwout, Denton K., Cleveland, Ohio. Separating device	815,656	Mar. 20	3360	703	121	840
Swartz, Carl H., Freeport, Ill. Reversing-gear	817,817	Apr. 17	2519	539	121	2021
Swasey, Ambrose, assignor to Warner & Swasey Company, Cleveland, Ohio. Panorama-sight	815,657	Mar. 20	3361	703	121	840
Sweeney, William W., assignor to Pacific Surgical Manufacturing Company, Los Angeles, Cal. Portable sterilizing apparatus	815,313	Mar. 13	2639	552	121	633
Sweet, Emma L., Wallace, Idaho. Book purse	818,202	Apr. 17	3303	706	121	2194
Sweet, Orr & Company. (See Bartrum, Charles W., assignor.)	816,136	Mar. 27	4381	926	121	1112
Sweeten, George J., Russellville, Ark. Rotary flour-sifter	816,397	Mar. 27	4928	1047	121	1228
Swengel, John F., and D. Byrne, Jr., Clyde, Kans. Vehicle-heater	815,489	Mar. 20	3031	633	121	768
Swenson, Charles O., Minneapolis, Minn. Combined fire-pot and twyer-iron	816,829	Apr. 3	552	118	121	1479
Swenson, Eric P. (See Binnings, Charles E., assignor.)	815,130	Mar. 13	2269	475	121	550
Swett, Warren P., Arlington, Mass. Non-refillable bottle	816,760	Apr. 3	408	93	121	1448
Swezey, Clark L., West Haven, Conn. Cash-carrier	814,813	Mar. 13	1642	344–5	121	417
Swick, Seward E., assignor of one-half to F. E. Weckel, Marysville, Ohio. Calculating-machine	818,057	Apr. 17	3002	648–9	121	2128
Swift, George W., Jr., Bordentown, N. J. Rotary shearing mechanism	817,018	Apr. 3	946	194	121	1569
Swift, R K, Sterling, Ill. Hay-loader	814,249	Mar. 6	489	100–1	121	105
Swift, Thomas B. (See Lane and Swift.)	816,398	Mar. 27	4929	1048	121	1228
Swigert, John, Rossmoyne, Ohio. Horseshoe	816,617	Apr. 3	154	32	121	1395
Swindell, James H., Pittsburg, Pa. Gas-producer	818,579	Apr. 24	4057	871	121	2406
Swint, Jesse J., Langdale, Ala. Animal-trap	818,580	Apr. [illegible]	4058	871	121	2407
Swisher, George W., Clifton Forge, Va. Beamless car-brake	818,581	Apr. [illegible]	4059	871	121	2407
Swope, William P., Owenton, Ky. Copy-holder	817,019	Apr. 3	947	194	121	1569
Swope, William P., Owenton, Ky. Rotary copy-holder	815,230	Mar. 13	2483	517	121	600
Swope, William P., Owenton, Ky. Ink-well	814,888	Mar. 13	1770	370	121	444
Sykes, Harry T., London, England. Elastic woven fabric	818,985	Apr. 24	4865	1045	121	2583
Symington, Thomas H., Baltimore, Md., assignor to T. H. Symington Co. of Baltimore City. Cover for journal-boxes	814,889	Mar. 13	1771	371	121	445
Symonds, Herbert. East St. Louis, Ill. Hot-air register	814,890	Mar. 13	1774	371	121	445
Symons, Joseph F., and W. H. Paull, Lake Linden, Mich. Stamp-mill	815,658	Mar. 20	3362	704	121	840
T. H. Symington Co. of Baltimore City. (See Symington, Thomas H., assignor.)	816,830	Apr. 3	555	.....	121	1480
Tabulating Machine Company. (See Hollerith, Herman, assignor.)	814,334	Mar. 6	690	138	121	152
Tacy, Samuel H., San Francisco, Cal. Bubble-fountain	818,483	Apr. 24	3839	826	121	2361
Tacy, Samuel H., San Francisco, Cal. Bubble-fountain	817,942	Apr. 17	2789	603	121	2083
Taggart, William N. (See O'Neill and Taggart.)	814,097	Mar. 6	191	38	121	42
Talbert, William F., Funkstown, Md. Churn	815,131	Mar. 13	2270	475	121	550
Talbot, Milton S., deceased; A. A. Shuter, Durban, Natal, administrator. Explosive compound	816,512	Mar. 27	5151	1092	121	1276
Taliaferro, John C., Baltimore, Md., assignor to Continental Can Company, New York, N. Y. Recovering tin or tin and lead	817,532	Apr. 10	1964	415	121	1846
Tansley, John A. (See Bengough, Tansley, and Reidell.)	816,891	Apr. 3	685	141	121	1510
Tapley, John E. (See Hovey and Tapley.)	817,885	Apr. 17	2663	579	121	2052
Tapley, John E., and A. E. Hovey, Cass Lake, Minn. Station-indicator	818,798	Apr. 24	4521	966	121	2510
Tapp, James W., Wichita, Kans. Brake	815,877	Mar. 20	3851	815–16	121	943
Tartsch, Henry H., McCook, Nebr. Anchor for decoys	816,399	Mar. 27	4931	1048	121	1228
Tate, J. C., *et al.* (See Fageol, Rollie B., assignor.)	816,950	Apr. 3	815	167	121	1539
Tatum, James W., Durham, N. C., assignor of five-sixths to B. N. Duke, W. W. Fuller, New York, N. Y., E. J. Parrish, J. W. Smith, and R. B. Boone, Durham, N. C. Electric railway signaling apparatus	818,203	Apr. 17	3304	707	121	2194
Taussig, Hugo, Cleveland, Ohio. Extension-pedal	815,231	Mar. 13	2484	517	121	600
Taylor, Alice M., Pittsburg, Pa. Bottle-closure	817,454	Apr. 10	1808	380	121	1814
Taylor, Cecil and C. S., Drayton, Canada. Combined seat and life-raft	818,314	Apr. 17	3526	756	121	2240
Taylor, Charles G., Hartford, Conn. Lathe attachment	818,799	Apr. 24	4522	966	121	2510
Taylor, Charles S. (See Taylor, Cecil and C. S.)	816,400	Mar. 27	4936	1049	121	1229
Taylor, Edward, Rockford, Ill. Bottle-closure	815,232	Mar. 13	2486	517	121	601
Taylor Electric Truck Company. (See Taylor, John, assignor.)	818,131	Apr. 17	3149	678	121	2160
Taylor, George B., Birmingham, England. Lathe-chuck	814,335	Mar. 6	691	139	121	152
Taylor, George H., Norfolk, Va. Letter-copying press	817,455	Apr. 10	1811	380–1	121	1815
Taylor, Henry W., Aurora, and D. M. Russell, Naperville, Ill. Railway-tie	817,349	Apr. 10	1586	335	121	1767
Taylor, Herbert B., assignor to Advance Signal Company, Newark, N. J. Railway-signal-controlling circuit	818,315	Apr. 17	3527	756	121	2240
Taylor, Izora. (See Taylor, James H. and I.)	815,986	Mar. 27	4050	857	121	1038
Taylor, James H. and I., Philadelphia, Pa. Garment-fastener	815,669	Mar. 20	3363	704	121	841
Taylor, John, assignor to Taylor Electric Truck Company, Troy, N. Y. Car-wheel	815,319	Mar. 13	2652	555	121	636
Taylor, Joseph, assignor to Hat Manufacturers Supply Co., Ltd., Stockport, England. Hat	816,194	Mar. 27	4491	963	121	1135
Taylor, Judah N., Toluca, Cal. Planter	818,204	Apr. 17	3307	707	121	2195
Taylor, Richard J., Como, N. C. Fertilizer-distributer						
Taylor, Samuel W., Baltimore, Md. Adjustable eccentric						
Taylor, Thomas E., Detroit, Mich. Gas-oven						
Taylor, Thomas J. (See Pratt, Charles W., assignor.)						
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Changeable combination key-lock						
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Latch						
Taylor, William F., Superior, Wis. Emergency knuckle-sleeve						
Taylor, William M., Mecklenburg, Va. Auxiliary rudder						
Taylor, William P., and J. L. Hoard, McKeesport, Pa. Pleasure-railway						
Tea Tray Company. (See Marten and Eichhorn, assignors.)						
Teague, Ralph C., *et al.* (See Peden, Joseph W., assignor.)						
Teas, Daniel H., New Haven, Conn., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Lathe-driver						
Teel, Howard R., Medford, Mass. Tire-case						
Teeter, Robert I., Ellis, Minn. Nose-ring for animals						
Teilman, Ingvart, Fresno, Cal. Method and means for procuring water for irrigating and other purposes						

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Temple, Walter R. (See Davis, Leonard L., assignor.)						
Tennesen, Jacob. (See Knight and Tennesen.)						
Terhune, Leonard L., Newark, N. J. Horn for receiving and delivering sound	814,891	Mar. 13	1775	371	121	446
Terpening, Elmer A., Genesco, Ill. Telephone system	814,571	Mar. 6	1141	238-9	121	247
Terrell, Elah, assignor of two-thirds to P. A. Holstein and F. A. Ray, Columbus, Ohio. Engraving-machine	815,233	Mar. 13	2487	518	121	601
Terrell, George W., assignor of one-half to G. H. Keith and C. G. Hannah, Atlanta, Ga. Door-hanger for sliding doors	817,886	Apr. 17	2665	580	121	2052
Terry, George S., *et al.* (See Ongley, Charles E., assignor.)						
Terry, Howell P., Elizabeth, N. J. Window-cleaning platform	818,434	Apr. 24	3843	826	121	2362
Terry, Howell P., Elizabeth, N. J., assignor to G. F. Cornwell, Brooklyn, N. Y. Lawn-mower	815,132	Mar. 13	2274	475	121	551
Texier, Hippolyte, Watchung, N. J. Fourchette	815,878	Mar. 20	3853	816	121	943
Textile Specialty Company. (See Peters and Mason, assignors.)						
Thames Arms Company. (See Robertson, James D., assignor.)						
Thannheimer, Josef, assignor of one-half to J. Anderson, Detroit, Mich. Change-speed gear	816,401	Mar. 27	4936	1049	121	1230
Thatcher, Frederick B., Providence, R. I. Closure for sealing bottles or similar articles	816,513	Mar. 27	5152	1092	121	1276
Thayer, Edward D., *et al.* (See Crompton, Randolph, assignor.)						
Theis, Henry and H. J., Lawrenceburg, Ind., assignors to said Henry Theis. Railway-frog	818,717	Apr. 24	4346	932	121	2471
Theis, Henry J. (See Theis, Henry and H. J.)						
Thenn, George M. (See Mortensen and Thenn.)						
Therrell, Daniel M., Charleston, S. C. Telephony	815,322	Mar. 13	2680	558-60	121	641
Thew, Richard, and H. H. Harris, Lorain, Ohio. Pneumatic wheel	818,060	Apr. 17	3010	651	121	2130
Thilborger, Edward J., and P. C. Le Corgne, New Orleans, La. Candy or cracker sample case	814,572	Mar. 6	1145	239	121	248
Thode, Gustav A., Omaha, Nebr. Washing-machine	818,058	Apr. 17	3005	649-50	121	2129
Thoens, Burchard, New York, N. Y. Ammonia-still	818,858	Apr. 24	4630	994	121	2532
Thollander, Axel, Chicago, Ill. Scrubber or brush	818,316	Apr. 17	3528	757	121	2241
Thom, John C., South Amboy, N. J. Check-valve	818,485	Apr. 24	3845	827	121	2362
Thom, Peter R., Appleton, assignor of two-thirds to Kimberly & Clark Company, Neenah, Wis. Machine for screening fibrous pulp	814,748	Mar. 13	1512	320-1	121	391
Thoma, James G. D. (See Thoma, James K. and J. G. D.)						
Thoma, James K., near Cooperstown, and J. G. D. Thoma, Oneonta, N. Y. Collar and cuff button	818,486	Apr. 24	3846	827	121	2363
Thomas, Ashley D., Belleville, Wis. Sawbuck	814,336	Mar. 6	694	139	121	152
Thomas, Edwin S., Fairfield, Iowa. Railway structure	818,800	Apr. 24	4525	967	121	2511
Thomas, Eugene A., Chicago, Ill. Carpet cleaning and disinfecting machine	815,987	Mar. 27	4053	858-9	121	1039
Thomas, George W., *et al.* (See Smith, Frank A., assignor.)						
Thomas, Herbert A., assignor to Dry Amalgamation Co., Chicago, Ill. Amalgamating process	814,814	Mar. 13	1644	345	121	418
Thomas, James L., Winlock, Wash. Wagon-brake	815,568	Mar. 20	3183	669	121	800
Thomas, Martin E., Batavia, Iowa, assignor of one-half to F. Fishel, Batavia, N. Y. Electrical gun	815,490	Mar. 20	3033	633	121	768
Thomas, Stephen M., Chicago, Ill. Game-board	818,582	Apr. 24	4061	871	121	2407
Thomas, William W., trustee. (See Dyer and Spinney, assignors.)						
Thomas Wrigley Company. (See Ahlander, Ernst H., assignor.)						
Thompson, Bert E., assignor to Wilson & Hayes Mfg. Co., Detroit, Mich. Mud-guard fastening	817,203	Apr. 10	1306	272	121	1708
Thompson, Bert E., assignor to Hayes Manufacturing Company, Detroit, Mich. Fastener for fenders	817,204	Apr. 10	1307	272	121	1708
Thompson, Charles A. (See Marriage, George R., assignor.)						
Thompson, Emery, New Rochelle, N. Y. Freezing device	814,993	Mar. 13	1973	415	121	484
Thompson, Erwin W. (See Haskell and Thompson.)						
Thompson, Everett E., J. O., and J. A., Kaufman, Tex. Insect-exterminator	818,059	Apr. 17	3008	650-1	121	2130
Thompson, Guy M., assignor of one-fourth to C. S. Follett, Seattle, Wash. Railway-switch	815,314	Mar. 13	2642	553	121	634
Thompson, Harvey W., Pitman Grove, N. J. Apparel-pad	817,020	Apr. 3	949	195	121	1569
Thompson, Hiram M., deceased, Logan, Mont.; M. E. Thompson, administratrix. Hay-stacker	814,098	Mar. 6	193	38-9	121	42
Thompson, Ida M., Jamestown, N. D. Window-kitchen. (Reissue)	12,471	Apr. 10	2344	503	121	1929
Thompson, James F. (See Hanstine and Thompson.)						
Thompson, John B., Philadelphia, Pa., assignor to Ketterlinus Lithographic Manufacturing Company. Easel	816,274	Mar. 27	4642	984	121	1168
Thompson, Julius O. (See Thompson, Everett E., J. O., and J. A.)						
Thompson, Junious A. (See Thompson, Everett E., J. O., and J. A.)						
Thompson, Mattie E., administratrix. (See Thompson, Hiram M.)						
Thompson, Percy. (See Gerard, Léon, assignor.)						
Thompson, Ralph S., assignor to Springfield Furnace Company, Springfield, Ohio. Furnace	816,275	Mar. 27	4643	985	121	1168
Thompson, Ralph S., assignor to Springfield Furnace Company, Springfield, Ohio. Gas-furnace	816,276	Mar. 27	4645	985-6	121	1168
Thompson, Samuel J. (See Carter and Thompson.)						
Thompson, William H., Leominster, Mass. Hair-pin rubbing and polishing machine	816,137	Mar. 27	4382	926	121	1112
Thompson, William J. D., and W. Bentley, Toronto, Canada. Sliding window	817,284	Apr. 10	1468	308	121	1741
Thomsen, Ingebert J., Minden, Nebr. Pneumatic horse-collar	816,761	Apr. 3	412	93	121	1449
Thomson, William, Largs, and F. W. Clark, Glasgow, Scotland. Mariner's compass	816,618	Apr. 3	156	32	121	1396
Thoreen, Fritz E. J., New York, N. Y. Coffee-roaster	817,533	Apr. 10	1965	416	121	1846
Thorelius, John E., assignor of one-half to A. Anderson, Iron Mountain, Mich. Draft attachment for cook-stoves	818,003	Apr. 17	2903	627	121	2109
Thornton & Barnett Mfg. Co. (See Barnett, George W., assignor.)						
Thornton, Solomon, Jr., Washington, D. C. Soap-holder	818,004	Apr. 17	2905	627	121	2110
Thorsen, Theodore M., Philadelphia, Pa. Gun-lock	815,879	Mar. 20	3854	816	121	943
Threlkeld, Charles D., Piggott, Ark. Book-index	816,138	Mar. 27	4384	926-7	121	1113
Thullen, Louis H., Edgewood, assignor to Union Switch and Signal Company, Swissvale, Pa. Apparatus for controlling the passage of cars or vehicles along a railway	816,762	Apr. 3	413	94	121	1449
Tideman, Henry, Menominee, Mich. Telephone desk-stand	816,619	Apr. 3	157	32	121	1396
Tilden, James A., Hyde Park, assignor to Hersey Manufacturing Company, South Boston, Mass. Meter	817,887	Apr. 17	2667	580	121	2053
Tillman, Edward G., Thayer, W. Va. Car-brake	815,880	Mar. 20	3854	817	121	943
Timberlake, John B., Jackson, Mich. Display-easel	814,573	Mar. 6	1146	239	121	248
Timberlake, Paul J., Jackson, Mich. Holder for nursing-bottles	814,574	Mar. 6	1148	239	121	249
Tiner, John F., Uvalde, Tex. Wrench	814,575	Mar. 6	1150	240	121	249
Tittel, Clemens, Josefsthal, near Laibach, Austria-Hungary. Apparatus for supplying coloring material in paper-making machines for the manufacture of one-side-colored, clouded-colored, and marbled papers	815,763	Mar. 20	3611	758	121	893

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Tittel, Clemens, Josefsthal, near Laibach, Austria-Hungary. Paper-making machine	816,402	Mar. 27	4938	1049–50	121	1230
Tobey, Avery, Los Angeles, Cal. Sash-holder	817,681	Apr. 10	2223	475–6	121	1901
Toch, Henry M., *et al.* (See Baer, Harry E., assignor.)						
Toch, Maximilian, *et al.* (See Baer, Harry E., assignor.)						
Todd, Andrew B., Meriden, Conn. Folding baby-carriage	818,487	Apr. 24	3847	827	121	2363
Tofanelli, Sebastiano, assignor of one-half to L. C. Dibert, San Francisco, Cal. Paste-press	814,410	Mar. 6	342	173–4	121	183
Toledo Machine and Tool Company. (See Lange, Paul M. H., assignor.) (Reissue.)						
Toler, Henry W., Longview, Tex. Fruit-canner	814,250	Mar. 6	491	101	121	106
Toles, Justin K., assignor to Bauer & Black, Chicago, Ill. Machine for forming sacks for suspensory bandages	818,583	Apr. 24	4062	872	121	2406
Tomlinson, Charles H., assignor to Tomlinson Coupler Company, Denver, Colo. Car-coupling	814,924	Mar. 13	1826	383	121	456
Tomlinson Coupler Company. (See Tomlinson, Charles H., assignor.)						
Tompkins, Ernest, Troy, N. Y. Loop-unifying and cast-off bur	816,403	Mar. 27	4939	1050	121	1230
Tonry, Stephen W., Brockton, Mass. Bicycle-track	818,488	Apr. 24	3848	828	121	2363
Toole, William K. (See Mulry, Joseph L., assignor.)						
Toomey, John A., *et al.*, trustees. (See Macrate, Michael N., assignor.)						
Torres, William, Vacherie, La. Fertilizer-distributer	818,396	Apr. 17	3687	792	121	2274
Torrington Novelty Manufacturing and Supply Company. (See Dirand, Louis J., assignor.)						
Tournier, Julius C., Schenectady, N. Y., assignor to General Electric Company. Electric plug connection	815,764	Mar. 20	3612	758	121	894
Toussaint, Effie A., Philadelphia, Pa. Girdle attachment for supporting garments	814,994	Mar. 13	1974	415	121	485
Tower, Clinton A., assignor to National Malleable Castings Company, Cleveland, Ohio. Draft-rigging	815,049	Mar. 13	2103	442–3	121	514
Tower, Clinton A., assignor to National Malleable Castings Company, Cleveland, Ohio. Draft-rigging	815,050	Mar. 13	2106	443	121	515
Towle, Elmer E. (See Jones and Towle.)						
Townley, Early R., Ronceverte, W. Va. Combination keyhole bit and saw	816,277	Mar. 27	4646	986	121	1169
Townsend, Clinton P., Washington, D. C., assignor to E. A. Sperry, Brooklyn, N. Y. Reduction of ores	815,881	Mar. 20	3856	.....	121	944
Townsend, Herbert K. (See Murdock, John M., assignor.)						
Toy, George D., Jr., R. H., and H. T., Sidney, Ohio. Land-anchor	818,061	Apr. 17	3012	652	121	2131
Toy, Hugh T. (See Toy, George D., Jr., R. H., and H. T.)						
Toy, Robert H. (See Toy, George D., Jr., R. H., and H. T.)						
Trabue, William, assignor of two-thirds to D. Moxley and C. C. McClarty, Louisville, Ky. Automatic gun	814,749	Mar. 13	1515	321	121	391
Tracht, Allen, Galion, Ohio. Pliers	816,278	Mar. 27	4647	986	121	1169
Tracy, David D., and H. J. Keenan, Jackson, Mich. Molding-machine	816,831	Apr. 3	555	118–19	121	1480
Tracy, William H. H., Troy, N. Y. Creasing-machine	815,234	Mar. 13	2489	518	121	601
Trafford, Joseph, Boston, Mass. Window-fastener	814,995	Mar. 13	1975	415–16	121	485
Trapp, Edward A., New York, N. Y. Telescope	818,489	Apr. 24	3849	828–9	121	2363
Trapp, Edward A., New York, N. Y. Submarine telescope and means for mounting the same	818,490	Apr. 24	3856	830	121	2364
Trask, Charles H., Lynn, Mass. Machine for making hay from corn and other stalks	816,763	Apr. 3	417	94–5	121	1450
Trask, George F. D., *et al.* (See Clifford, Thomas G., assignor.)						
Traut, Frank L., New Britain, Conn. Measuring instrument	817,205	Apr. 10	1308	273	121	1709
Traut, Justus A., assignor to Stanley Rule & Level Company, New Britain, Conn. Try-square	815,389	Mar. 20	2853	592	121	728
Trautwein, Augustus G. (See Eck and Trautwein.)						
Travis, George E., Henry, Ill. Grate	814,815	Mar. 13	1646	345	121	418
Treatt, Ethelred W., Plaistow, England. Lock-nut	818,584	Apr. 24	4064	872	121	2406
Tredtin, John I., and F. H. Grosbernt, Dayton, Ohio. Hose coupling or connector	817,818	Apr. 17	2520	540	121	2022
Trefethen, Ervin T., Boston, Mass., assignor to A. O. Norton, Coaticook, Canada. Lifting-jack	814,576	Mar. 6	1152	240	121	250
Tresenreuter, Gustav, assignor to F. Glinicke, Berlin, Germany. Carbureter	818,397	Apr. 17	3689	792	121	2274
Treise, Victor E. (See Hausfeld and Treise.)						
Treverton, Charles W., *et al.* (See Devers, William J., assignor.)						
Trewhella, Charles E., Meriden, assignor to American Silver Company, Bristol, Conn. Percolator	816,514	Mar. 27	5153	1093	121	1276
Tripp, Benjamin F., Medford, Mass. Door-locking mechanism	816,049	Mar. 27	4191	889–90	121	1071
Tritter, Max, *et al.* (See Ihle, Gustav, assignor.)						
Triumph Voting Machine Company. (See Delavan and Fosdick, assignors.)						
Trogden, Wiley H., Santa Clara, Cal. Miter-cutter	816,279	Mar. 27	4648	986	121	1169
Troselj, John M., Baltimore, Md. Hammock-support	817,534	Apr. 10	1967	416	121	1846
Trouard, Leonce J. B., New Orleans, La. Cane-loading apparatus	818,644	Apr. 24	4203	903–4	121	2440
Trout, William H., Milwaukee, Wis., assignor to Allis-Chalmers Company, Chicago, Ill. Set-works for sawmill-carriages	817,888	Apr. 17	2670	581	121	2053
Trowbridge, John, Cambridge, Mass. Telephonic relay	814,411	Mar. 6	846	174–5	121	184
Troy Laundry Machinery Company. (See Richardson, George L., assignor.)						
Troy, Matthew O., Schenectady, N. Y., assignor to General Electric Company. Electric transformer	815,765	Mar. 20	3612	758–9	121	894
Trum, Emanuel J., New York, N. Y Easel	815,235	Mar. 13	2490	519	121	601
Trump, David P., and B. M. Grimes, Holcomb, W. Va.; said Trump assignor to said Grimes. Sash-holder	814,392	Mar. 13	1776	372	121	446
Trump, Edward N., Syracuse, N. Y. Coke-handling apparatus	814,412	Mar. 6	850	175	121	184
Trump, Edward N., Syracuse, N. Y. Feeding device	818,585	Apr. 24	4065	872–3	121	2406
Trump, Fuller, assignor to Trump Manufacturing Company, Springfield, Ohio. Relief-valve for pipes	815,236	Mar. 13	2493	519	121	602
Trump Manufacturing Company. (See Trump, Fuller, assignor.)						
Trussed Concrete Steel Company. (See Kahn, Julius, assignor.)						
Tschantz, William H., assignor to Cyclone Drill Company, Orrville, Ohio. Carpet-cutting machine	815,491	Mar. 20	3035	633	121	769
Tubbs, Dean C., Rochester, N. Y. Power-generating device	818,986	Apr. 24	4866	1045	121	2583
Tuck, Clarence A., Watertown, S. D. Brooder	817,021	Apr. 3	950	195	121	1569
Tucker, Frank W., Milford, Conn. Vending-machine	815,882	Mar. 20	3858	817–18	121	944
Tucker, Frank W., Milford, Conn. Coin-controlled vending-machine	816,515	Mar. 27	5154	1093	121	1277
Tucker, Livy T., Whiteside, Mo. Barrel-draining device	818,491	Apr. 24	3860	830–1	121	2365
Tucker, Stiles H., Seymour, Conn. Expansible bit	818,062	Apr. 17	3013	652	121	2131
Tuggle, Margaret, Atlanta, Ga. Piano-shield	814,174	Mar. 6	336	68	121	71
Tupper, Clara H. Somers, Conn. Means of attachment for erasers	814,413	Mar. 6	853	176	121	185
Turner, Andrew J., Maynardville, Tenn. Boring-machine	818,925	Apr. 24	4747	1020	121	2558
Turner Atherton & Co. (See Eickemeyer, Carl, assignor.)						
Turner, Charles E., and R. L. Hyman, Macon, Ga. Lock	817,456	Apr. 10	1813	381	121	1816
Turner, Clarence W. (See Elder and Turner.)						
Turner, Edward A., Chicago, Ill. Automobile turn-table	816,620	Apr. 3	159	33	121	1396

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Turner, Joseph, Worcester, Mass. Safety-razor	816,195	Mar. 27	4491	953	121	1135
Turner, Joseph S., and P. F. Hausmann, Los Angeles, Cal. Telescopic trestle	818,005	Apr. 17	2906	627	121	2110
Turner, Joseph W., Schenectady, N. Y. Conduit-sealing	815,237	Mar. 13	2494	520	121	603
Turner, Kelley M., New York, N. Y. Head band or support for telephone-receivers	817,457	Apr. 10	1816	381	121	1816
Tuttle, Arthur S., New York, N. Y. Venturi tube	816,280	Mar. 27	4649	987	121	1169
Tuttle, Josiah S., and C. L. Cookson, assignors to Panama Hay Press Co., Kansas City, Mo. Baling-press	814,251	Mar. 6	492	102	121	106
Tuttle, Josiah S., and C. L. Cookson, assignors to Admiral Hay Press Co., Kansas City, Mo. Baling-press	814,252	Mar. 6	494	102–3	121	106
Tuttle, Willard S., Brooklyn, N. Y. Pulley-block	816,196	Mar. 27	4493	953	121	1135
Twaha, Jaim B. S. P., Spokane, Wash. Horse-releaser	817,599	Apr. 10	2085	440	121	1871
Twentieth Century Roller Washer Co. (See Wheatley, Arthur, assignor.)						
Twomey, Patrick, New York, N. Y. Truck	817,350	Apr. 10	1588	335–6	121	1767
Tyberg, Oluf, and J. G. C. Mantle, assignors to R. L. Patterson and G. Arents, Jr., New York, N. Y. Adhesive-supplying mechanism	814,414	Mar. 6	854	176	121	185
Tyden, Emil. (See Krieghbaum, Hiram C., assignor.)						
Tynan, Joseph J., Philadelphia, Pa. Annealing apparatus	815,569	Mar. 20	3184	669	121	800
Typewriter Adding Machine Company. (See Martineau, Clarence R., assignor.)						
Tyra, Joseph, Minneapolis, Minn. Metallic window sash and frame	816,690	Apr. 3	289	67–8	121	1424
Uhler, Francis M., assignor of one-half to G. W. Davis, Lincoln, Nebr. Internal-combustion engine	815,492	Mar. 20	3036	634	121	769
Ulett, George, assignor of one-half to J. H. Yetten, Waltham, Mass. Holder for sad-irons	814,253	Mar. 6	499	103	121	107
Ulrich, George. (See Sharp, Harry E., assignor.)						
Underhill, Arthur B. (See Caldwell, Henry C., assignor.)						
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See McLaughlin, John C., assignor)						
Underwood Typewriter Company. (See Shea, Christopher A., assignor.)						
Underwood Typewriter Company. (See Wagner, Franz X., assignor.) (Reissue.)						
Ungerman, Josef, Pittsburg, Pa. Toy	818,132	Apr. 17	3150	678	121	2160
Union Match Company. (See Wyman, William H., assignor.)						
Union Special Sewing Machine Company. (See Woodward, Russel G., assignor.)						
Union Stopper Company. (See Brisco, Charles N., assignor.)						
Union Switch and Signal Company. (See Hobson, John S., assignor.)						
Union Switch and Signal Company. (See Thullen, Louis H., assignor.)						
Union Switch and Signal Company. (See Wilson, Asbury G., assignor.)						
Union Typewriter Company. (See Felbel, Jacob, assignor.)						
Union Typewriter Company. (See Stickney, Burnham C., assignor.)						
United Engineering & Foundry Company. (See Gardner, Kirtland C., assignor.)						
United States Electric Tool Company. (See Smith, John A., assignor.)						
United States Recording Automatic Scales Company. (See Cameron, Ewan, assignor.)						
United-Xpedite Finishing Company. (See Biladeau and Chapdelaine, assignors.) (Reissue.)						
United Zinc & Chemical Company. (See Meyer, August R., assignor.)						
Unitype Company. (See Ennisson, Walter J., assignor.)						
Unitype Company. (See Johnson, Frank A., assignor.)						
Universal Caster and Foundry Company. (See Bischoff, Frederick F., assignor.)						
Universal Machine Screw Company. (See Spencer, Christopher M., assignor.)						
Universal Pneumatic Transmission Company. (See Stoetzel, Joseph J., assignor.)						
Universal Talking Machine Manufacturing Company. (See Hagen, Henry J., assignor.)						
Upham, Charles S., Odell, Ill. Grain dump and elevator	818,926	Apr. 24	4749	1020–1	121	2558
Urban, Joseph S., assignor of one-half to A. E. Niebling, Indianapolis, Ind. Vegetable-cutter	814,577	Mar. 6	1153	240–1	121	250
Urdahl, Arent C., Viroqua, Wis. Tobacco self-transplanter	818,586	Apr. 24	4068	873–4	121	2409
Urfer, Fred G., Portland, Oreg. Sectional tire	814,175	Mar. 6	336	66	121	74
Uthe, Albert J. (See Uthe, Leonard F. and A. J.)						
Uthe, Leonard F., North Amherst, and A. J. Uthe, Elyria, Ohio. Channeling-machine	816,050	Mar. 27	4193	890–1	121	1071
Uthus, Charles L., Harvard, Ill. Fruit-picker	815,660	Mar. 20	3366	704	121	841
Utica Drop Forge and Tool Company. (See Broadbooks, Peter, assignor.)						
Utica Industrial Company. (See Graham, Charles W., assignor.)						
Utility Cotton Picker Company. (See Price and Quentell, assignors.)						
Utke, Ernst. (See Damhorst, Kemper, and Utke.)						
Vacuum Storage Cask Company. (See Ferguson, Harry C., assignor.)						
Vaile, John I., River Forest, Ill. Cart	818,205	Apr. 17	3308	707	121	2195
Vains, Antoine R. de. (See Varannes and Vains.)						
Vale, Elizabeth T., assignor to G. Meckfessel, Sheridanville, and J. W. Vale, Oakdale, Pa. Domestic apparatus for consuming garbage	817,022	Apr. 3	952	195	121	1570
Vale, John W., *et al.* (See Vale, Elizabeth T., assignor.)						
Valentine, William, and A. G. Betts, Troy, N. Y. Smelting lead ores	816,764	Apr. 3	422	95	121	1451
Van Amber, Frank, Syracuse, N. Y. Means for preventing differential movement of clamping-jaws	815,988	Mar. 27	4059	860	121	1040
Van Blarcom, Samuel M., New York, N. Y. Condiment-holder	815,883	Mar. 20	3861	818	121	944
Van de Walker, Charles W., and R. T. Jenney, Two Rivers, assignors to Western Steel & Iron Works, Green Bay, Wis. Post-hole digger	815,133	Mar. 13	2276	476	121	552
Van Deusen, James H., *et al.* (See Fuller, Anderson, assignor.)						
Van Dusen, Henry L., assignor of one-half to R. W. Boyd, Lockhart, Tex. Churning-machine	816,621	Apr. 3	161	33	121	1397
Van Gale, Louis, Newark, N. J. Combined frame and handle for toilet articles, &c	814,415	Mar. 6	857	176–7	121	186
Van Pelt, Isaac N., Lamar, Mo. Cultivator	818,492	Apr. 24	3861	831	121	2365
Van Sant, George W., Bellevue, Ky. Ice-shaving machine	816,281	Mar. 27	4650	987	121	1170
Van Steenkiste, Achille, Brussels, Belgium. Retting process for textile fibers	816,622	Apr. 3	162	.....	121	1397
Van Westrum, Leonard S., Berlin, Germany. Composition of matter	814,750	Mar. 13	1517	.....	121	392
Vanes, Arthur B., Uitenhage, Cape Colony. Latch	815,493	Mar. 20	3038	634	121	770
Vanness, John T., and H. R. O'Brian, Oxford, Ohio. Envelop sealing and stamping machine	815,494	Mar. 20	3041	635	121	770
Varannes, Marius L., and A. R. de Vains, St. Vincent de Blanzat, near Cébazat, France. Manufacture of paper-pulp	818,206	Apr. 17	3310	.....	121	2195
Vasey, Eugene M. (See Rothwell, William R., assignor.)						
Vaughan, Bernard G., assignor of two-thirds to F. Bennitt and L. A. Sherwood, Joliet, Ill. Match-making machinery	816,623	Apr. 3	164	33–4	121	1397
Vaughan, David L., Haddonfield, N. J. Railway-spike	815,766	Mar. 20	3614	759	121	894
Vaughn, John W., Noroton Heights, Conn. Acetylene-generator	815,390	Mar. 20	2854	593	121	728
Vaughn, Ralph B., Kingston, Pa. Motor-vehicle running-gear	816,282	Mar. 27	4652	987	121	1170
Vaughn, Wilbur J., *et al.* (See Peden, Joseph W., assignor.)						
Veit, Joseph W., Wapakoneta, Ohio. Fence	818,493	Apr. 24	3863	831	121	2365
Veitch, Frederick J., New York, N. Y. Hanger-support for tanks, basins, and the like	818,587	Apr. 24	4070	874	121	2409

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Velie Carriage Company. (See Connell, David W., assignor.)						
Velschow, Asger, Oakland, Cal. Inhaling apparatus	814,484	Mar. 6	981	201	121	214
Veon, Andrew E., Brainerd, Minn. Folding ax	817,880	Apr. 17	2674	582	121	2064
Verret, Nicholas J., and J. Palmer, Newport, assignors to Domestic Gas Machine Company, Little Rock, Ark. Carbureter	818,207	Apr. 17	3311	707–8	121	2195
Vicars, John, Jr. (See Vicars, Thomas and J., Jr.)						
Vicars, Thomas and J., Jr, Earlestown, England. Biscuit stamping and cutting machine.	814,485	Mar. 6	982	201	121	214
Vicars, Thomas and J., Jr., Earlestown, England. Biscuit stamping and cutting machine.	814,486	Mar. 6	983	202	121	214
Vick, Rollo M. (See Ellett and Vick.)						
Vickers Sons & Maxim. (See Dawson and Buckham, assignors.)						
Victor Talking Machine Company. (See Johnson, Eldridge R., assignor.)						
Villmow, John A. H., Milwaukee, Wis. Trunk	817,351	Apr. 10	1589	336	121	1766
Vissing, William C. A., Jr., Salt Lake City, Utah. Closet-tank	815,661	Mar. 20	3367	704–5	121	842
Vogt, Theodore, Grandview, and M. Hebig, Jersey City Heights, N. J. Detachable clamp for gas-tubing or the like	817,285	Apr. 10	1470	308	121	1741
Voith, J. M. (See Schmitthenner, Carloe, assignor.)						
Volkert, Ferdinand N., Chicago, Ill. Paper-binder	816,691	Apr. 3	291	68	121	1424
Völler, Karl, Düsseldorf, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Automatic brake for tube recoil-guns	818,801	Apr. 24	4526	967–8	121	2611
Von, William L. (See Newell, Charles E., assignor.)						
Voorhees, John J., Jersey City, N. J. Fabric belt for conveyers	814,416	Mar. 6	860	177	121	187
Vorbach, John, Renwicktown, New Zealand. Potato-digger	815,051	Mar. 13	2106	444	121	515
Vorce, Firman E., Fresno, Cal. Adjustable hame-clip	815,767	Mar. 20	3615	759	121	894
Vorwerk, Carl, Barmen, Germany. Jacquard mechanism	814,337	Mar. 6	695	140	121	153
Voss, Clifton, Brooklyn, N. Y. Weather-strip	814,893	Mar. 13	1778	372	121	446
Voss, Frederic. (See Hegbom, Marselius, assignor.)						
Voss, William H., Davenport, Iowa. Segmental rack	817,286	Apr. 10	1472	309	121	1742
Votey, Edwin S., Summit, N. J., assignor to Aeolian Co., New York, N. Y. Pneumatically-actuated musical instrument	814,176	Mar. 6	338	69	121	74
Vreeland, Aaron, Singac, N. J. Open double plumb-rule	815,570	Mar. 20	3186	669–70	121	801
Vuillemot, Eugene H. and H. E., Syracuse, N. Y. Kitchen utensil	818,063	Apr. 17	3014	652	121	2121
Vuillemot, Hermon E. (See Vuillemot, Eugene H. and H. E.)						
Wabash Manufacturing Company. (See Howe, Rix, and Holden, assignors.)						
Waddell, Montgomery. (See Zarbock, Ernst F., assignor.)						
Wade, John E., New York, N. Y. Car-coupling	816,951	Apr. 3	816	167	121	1539
Wadleigh, William M., Chicago, Ill. Woven-wire fence	815,052	Mar. 13	2106	444	121	515
Wadsworth, Frank L. O., Morgantown, W. Va. Manufacture of glass	814,631	Mar. 6	1255	264	121	272
Wadsworth, Frank L. O., Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y. Prism-glass	818,208	Apr. 17	3313	708	121	2196
Wadsworth, Frank L. O., Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y. Apparatus for the manufacture of sheets of glass	818,209	Apr. 17	3314	708–9	121	2196
Wadsworth, Frank L. O., Morgantown, W. Va., assignor to Pressed Prism Plate Glass Company, New York, N. Y. Apparatus for the manufacture of glass sheets	818,210	Apr. 17	3316	709	121	2197
Wadsworth, William B. (See Saugstad, Olaf, assignor.)						
Waechter, Ferdinand F. (See Hetzel and Waechter.)						
Wagg, Solomon R., Appleton, Wis. Refining-engine	818,494	Apr. 24	3864	831–2	121	2366
Waggener, Oscar P., Klamath Falls, Oreg. Lawn-sprinkler	815,495	Mar. 20	3045	635	121	771
Wagner, Albert, New York, N. Y. Fountain paint-brush	816,765	Apr. 3	424	96	121	1452
Wagner, Albin, Oberplanitz, Germany. Watch	815,989	Mar. 27	4061	860	121	1040
Wagner & Brand. (See Schmitt, Otto G. C., assignor.)						
Wagner, Bruno O., El Paso, Tex. Combined system of electric signaling and switch-setting for railways	818,133	Apr. 17	3151	679	121	2161
Wagner, Edward C. (See Kleitz, Lambert, assignor.)						
Wagner, Franz X., assignor, by mesne assignments, to Underwood Typewriter Company, New York, N. Y. Type-writing machine. (Reissue)	12,465	Mar. 27	5234	1110	121	1296
Wagner, Theodore B., Chicago, Ill. Machine for molding lump-starch	816,624	Apr. 3	166	34–5	121	1398
Wagner, William F., assignor of four-fifths to M. R. Daly, W. Hart, Peru, J. H. Casey and H. F. Gutz, Noblesville, Ind. End-gate for wagons	814,099	Mar. 6	195	39	121	43
Wagner, William J., East Bradford, Pa. Device for removing rings from wells	814,338	Mar. 6	697	140	121	153
Wagret, Paul, Escautpont, near Fresnes, France. Manufacture of bottles, flasks, and the like	818,134	Apr. 17	3165	679	121	2165
Waite, Charles N. Lansdowne, assignor, by mesne assignments, to S. W. Pettit, Philadelphia, Pa. Manufacture of filaments and films from viscose	816,404	Mar. 27	4941	.....	121	1230
Waite, Edwin E., assignor to Enterprise Manufacturing Company of Pennsylvania, Philadelphia, Pa. Casting-machine	818,927	Apr. 24	4753	1021–2	121	2559
Waldo, Charles W., assignor to himself, A. E. Flint, Worcester, Mass., and H. W. Little, New York, N. Y. Garment-supporter	818,064	Apr. 17	3015	652	121	2131
Waldron Company, John. (See Waldron, William H., assignor.)						
Waldron, William H., assignor to J. Waldron Company, New Brunswick, N. J. Adjusting device for printing-blocks	815,662	Mar. 20	3370	705	121	842
Wales, Charles, Detroit, Mich. Crank-arm sleeve-bearing	814,751	Mar. 13	1518	321	121	392
Walker, Albert H., trustee. (See Reckard, Henry L., assignor.)						
Walker, Charles, Chicago, Ill. Cream-separator	815,239	Mar. 13	2498	520	121	603
Walker, Clara. (See Knott, Warren E., assignor.)						
Walker, Daniel G., Lindsay, Nebr. Meat-roaster	814,752	Mar. 13	1519	322	121	392
Walker, F. L., *et al.* (See Byrd, Britton E., assignor.)						
Walker, James W., Greenfield, Ind. Pipe-puller	818,928	Apr. 24	4757	1023	121	2559
Walker, Joseph, and B. M. Frederick, San Francisco, Cal. Animal-trap	815,663	Mar. 20	3371	705	121	842
Walkup, Liberty, Rockford, Ill. Air-brush	817,819	Apr. 17	2521	540	121	2022
Wall, John H., Bristol, R. I. Shoe-dipping machine	817,408	Apr. 10	1711	361	121	1793
Wall, Thomas H. (See Stockman, William H., assignor.)						
Wallace, Alexander, Salt Lake City, Utah. Ironing-board	817,023	Apr. 3	953	196	121	1570
Wallace, Elmer D., Minneapolis, Minn. Attachment for harness-pegs	816,692	Apr. 3	294	68	121	1425
Wallace, Fred. (See Murphy, Barney, assignor.)						
Wallace, George L. (See Backus and Wallace.)						
Wallace, John W., Brooklyn, N. Y. Tank	814,753	Mar. 11	1520	322	121	392
Wallace, John W., and H. A. Keiner, New York, N. Y. Tank or can	816,625	Apr. 3	168	35	121	1398
Wallace, Robert, Castle Douglas, Scotland. Milking appliance	814,487	Mar. 6	985	202	121	215
Wallace, William G., Proctorknott, Minn. Smoke-stack	816,061	Mar. 27	4196	891	121	1072
Wallick, George W., Sturgis, Mich. Refrigerator	817,136	Apr. 3	1152	238	121	1616
Walsh, Charles N., and W. N. Rumely, Laporte, Ind. Engine-governor	818,718	Apr. 24	4349	932	121	2472
Walsh, James, Jr., Philadelphia, Pa. Valve and faucet	817,535	Apr. 10	1966	416	121	1846
Walsh, John B., Providence, R. I. Making leather packing-rings for hydraulic pumps and the like	816,197	Mar. 27	4495	954	121	1136
Walstead, Gustav A., Chicago, Ill. Machine for forming butter patties	817,352	Apr. 10	1592	336	121	1768
Walter, Adolph, Toledo, Ohio. Railway car and locomotive headlight	816,139	Mar. 27	4385	927	121	1113
Walter, John, Ottawa, Ill. Lunch-pail	814,578	Mar. 6	1154	241	121	250

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Waltz, Philip W., Vallejo, Cal. Wood-turning machine	817,943	Apr. 17	2791	604	121	2063
Wanderer Fahrradwerke vorm. Winklhofer & Jaenicke A.-G. (See Mohns, Carl J., assignor.)						
Wang, Edward E. (See Noben and Wang.)						
Wangenheim, Gustavus, Los Angeles, Cal. Sanitary garbage-can	815,496	Mar. 20	3046	636	121	771
Ward, Richard J., New York, N. Y. Combination saw, square, and miter	814,754	Mar. 13	1521	322	121	392
Ward, Wilfred B., assignor of one-half to W. C. Ferguson, Richmond, Ind. Hose-coupling	815,990	Mar. 27	4061	860	121	1040
Ward, William J., New Rochelle, N. Y. Paper-cutting device	818,065	Apr. 17	3017	653	121	2132
Ward, William S., assignor to H. D. Smith & Company, Plantsville, Conn. Carpenter's chisel	816,626	Apr. 3	169	35	121	1398
Wardroper, Annie, London, England. Stocking-suspenders	818,317	Apr. 17	3529	757	121	2241
Warfield, Henry, Topeka, Kans. Convertible cultivator and planter	816,693	Apr. 3	294	69	121	1425
Warne, Casler, Asbury Park, N. J. Game-card	814,996	Mar. 13	1977	416	121	485
Warner, Alonzo A., assignor to Landers, Frary & Clark, New Britain, Conn. Alcohol-lamp	815,884	Mar. 20	3861	819	121	945
Warner, Arthur P. and C. H., Beloit, Wis. Flexible shaft	815,240	Mar. 13	2499	520	121	604
Warner, Charles H. (See Warner, Arthur P. and C. H.)						
Warner, Franklin B., New York, N. Y. Dust-cap and solar eyepiece for telescopes	818,802	Apr. 24	4529	968	121	2511
Warner & Swasey Company. (See Allen, Walter M., assignor.)						
Warner & Swasey Company. (See Swasey, Ambrose, assignor.)						
Warren, Aldred K., assignor to American Automatic Switch Company, New York, N. Y. System of operating railway-switches	818,495	Apr. 24	3867	832–3	121	2366
Warren, Alfred, San Lucas, Cal. Tube-cutter	818,135	Apr. 17	3165	679	121	2165
Warren, Charles B., and D. E. Myers, Lordsburg, Cal. Window-sash fastener	814,177	Mar. 6	341	70	121	74
Warren, J. H., *et al.* (See Inman, Wesley J., assignor.)						
Warren Webster and Company. (See Serrell, John A., assignor.)						
Washburn, William H., Portland, Oreg. Truss for hernia	817,600	Apr. 10	2086	441	121	1871
Washburn, William S., Brockton, and E. S. Niles, Boston, Mass. Car-brake	815,768	Mar. 20	3616	759	121	894
Washburne, James V., Syracuse, N. Y. Radiator	817,287	Apr. 10	1473	309	121	1742
Washington Iron Works Company. (See Frink, Gerald, assignor.)						
Wasley, Cora M., Empire, Ohio. Attachment for culinary vessels	816,892	Apr. 3	687	142	121	1511
Waterbury Buckle Company. (See Maltby, Julius, assignor.)						
Waterbury Farrel Foundry and Machinery Company. (See Lamb, George B., assignor.)						
Waterhouse, Harold D. (See Bussey and Waterhouse.)						
Waterman, Marcus M. (See Palmer and Waterman.)						
Waters, Dudley E., Grand Rapids, Mich. Coin-tray	814,178	Mar. 6	342	70	121	75
Waters, Hattan A. (See Harriss and Hogan, assignors.)						
Waters, William L., Milwaukee, Wis. Dynamo-electric machine	814,417	Mar. 6	862	177	121	187
Watkins, John W., Philadelphia, Pa. Sheet-metal window-sash	815,769	Mar. 20	3617	760	121	895
Watson, Harry, Brandon, Miss. Clasp	817,024	Apr. 3	953	196	121	1570
Watson, Henry P., Louisville, Ky. Nut-lock	815,497	Mar. 20	3047	636	121	771
Watson, Henry W. and W. W., Jamestown, N. Y. Guide-strip for sliding screens	817,409	Apr. 10	1714	361	121	1794
Watson, John C. (See Scott and Watson.)						
Watson, Leslie J., assignor of one-half to A. S. White, Port Huron, Mich. Governor	814,579	Mar. 6	1156	241	121	250
Watson, William H., Danvers, Mass. Computing device	814,488	Mar. 6	986	202–3	121	215
Watson, William W. (See Watson, Henry W. and W. W.)						
Watt, John A., Halifax, Canada. Cart	816,627	Apr. 3	169	36	121	1398
Wattles, Cyra B., Providence, R. I. Floor-dressing machine	817,410	Apr. 10	1715	361	121	1794
Watts, Thomas A., Springfield, Ohio. Game apparatus	815,053	Mar. 13	2110	444–5	121	516
Watts, William A., *et al.* (See Parks, Clarence W., assignor.)						
Watzke, Eduard, assignor of one-half to I. Nagy, Friedberg, Austria-Hungary. Machine for spinning, trimming, and stacking capsules	816,694	Apr. 3	296	69	121	1425
Waugh, James M., Chicago, Ill. Draft-rigging for railway-cars	818,066	Apr. 17	3020	653	121	2122
Weaser, William H., Pittsfield, Mass. Eyeglasses	816,766	Apr. 3	426	96	121	1452
Weaver, Albert S., Providence, assignor of one-half to C. A. Murray, Pawtucket, R. I. Eyeglass-mounting	818,006	Apr. 17	2907	627	121	2110
Weaver, Andrus S., Sodus, N. Y. Trolley-pole	815,991	Mar. 27	4063	861	121	1040
Weaver, Cartter, Pittsburg, Pa. Marking device for umbrellas, &c	815,054	Mar. 13	2112	445	121	516
Weaver, Charles R., Baltimore, Md., assignor to P. C. Hains, Jr., U. S. Army, New York, N. Y. Concrete-mixer	818,929	Apr. 24	4758	1023	121	2560
Weaver, John L. (See Flores, Alfredo, assignor.)						
Weaver, Mathew J., assignor of one-half to E. C. Hall, Plattsburg, Mo. Railway-tie	818,318	Apr. 17	3529	757	121	2241
Weaver, Philip T., *et al.* (See Carman, Bert C., assignor.)						
Weaver, Stephen M., *et al.* (See Carman, Bert C., assignor.)						
Webb, Nicholas W., New York, N. Y. Lock	816,405	Mar. 27	4942	1050–1	121	1231
Webb, Nicholas W., New York, N. Y. Tumbler-lock	818,719	Apr. 24	4352	932	121	2472
Weber, August, Sr., and August, Jr., Schenectady, N. Y.; said Weber, Jr., assignor to said Weber, Sr. Fuse-plug	816,406	Mar. 27	4945	1051	121	1231
Weber, George A., Stamford, Conn., assignor, by mesne assignments, to Rail Joint Company, New York, N. Y. Railway-rail joint	817,820	Apr. 17	2523	540	121	2023
Weber, George A., assignor, by mesne assignments, to Rail Joint Company, New York, N. Y. Rail-joint	817,821	Apr. 17	2526	541	121	2023
Weber, George A., assignor, by mesne assignments, to Rail Joint Company, New York, N. Y. Rail-joint	817,822	Apr. 17	2528	541–2	121	2024
Weber, George A., assignor, by mesne assignments, to Rail Joint Company New York, N. Y. Rail-joint	817,823	Apr. 17	2529	542–3	121	2024
Weber, George A., assignor, by mesne assignments, to Rail Joint Company, New York, N. Y. Rail-joint	817,824	Apr. 17	2531	544	121	2024
Weber, George A., assignor, by mesne assignments, to Rail Joint Company, New York, N. Y. Step-joint	817,825	Apr. 17	2533	544–5	121	2025
Weber, Peter M., Homestead, assignor to Carnegie Steel Company, Pittsburg, Pa. Rolling-mill. (Reissue)	12,472	Apr. 17	3696	794	121	2276
Weber, Thomas, Egg Harbor City, N. J. Bell-buoy	817,206	Apr. 10	1309	273	121	1709
Webster, Frank E., Buffalo, N. Y. Gold-catcher for fountain-spittoons	814,925	Mar. 13	1830	383	121	457
Webster, George, Christiana, assignor to M. T. Phillips, Pomeroy, Pa. Dehorner	814,100	Mar. 6	197	39	121	43
Webster, George S., Minneapolis, Minn. Adjustable bearing for rod-brasses	818,319	Apr. 17	3532	758	121	2242
Webster, Harry G., Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone-exchange system	816,052	Mar. 27	4197	891	121	1072
Webster, Hosea, Montclair, N. J. Furnace	818,588	Apr. 24	4072	874	121	2410
Webster and Perks Tool Company. (See Perks, Albert J., assignor.)						
Webster, Robert J., Jarrow, England. Calking-tool	816,952	Apr. 3	820	167–8	121	1540
Webster, Walter O., assignor to Burnham, Williams & Company, Philadelphia, Pa. Brake-hanger	814,489	Mar. 6	988	203	121	215
Weckel, Fred E. (See Swick, Seward E., assignor.)						
Wedge, Asahel G., *et al.* (See Anderson, Alfred, assignor.)						
Wedmore, Daniel A., Philadelphia, Pa. Cord-fastening device	816,140	Mar. 27	4387	927	121	1113
Weed, Henry B., Williamsport, Pa. Hose-supporter	814,997	Mar. 13	1979	416	121	485

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Weel, Ira E., Cleveland, Ohio. Card holding or display device	814,101	Mar. 6	198	40	121	43
Wegner, William F., assignor of one-half to A. Wendelburg, New York, N. Y. Electric hammer	818,589	Apr. 24	4073	874	121	2410
Weiderman, George. (See Willard, Frederick L., assignor.)						
Weidle, Wilhelm. (See Löffler and Weidle.)						
Weidlich, Otto E., Norwood, Ohio. Fountain-pen	818,803	Apr. 24	4529	968	121	2511
Weikly, James N., Jersey City, N. J., assignor to G. H. Fraser, Brooklyn, N. Y. Fluid-pressure brake and other apparatus	818,320	Apr. 17	3533	758	121	2242
Weinhagen, Georg. (See Fettback and Lieckfeld, assignors.)						
Weinhagen, George. (See Oesterreich, Albin, assignor.)						
Weinman, Christian J., Dayton, Ohio. Fastener for window-sash cords	816,283	Mar. 27	4654	988	121	1171
Weinstock, Henry, Marietta, Ohio. Stair-carpet holder	815,391	Mar. 20	2856	593	121	728
Weir, Welby D., Winnsboro, Tex. Electric conductor	815,498	Mar. 20	3049	636	121	772
Weiss, Charles, Chicago, Ill. Separable button	815,055	Mar. 13	2115	445	121	517
Weiss, Edward, Denver, Colo. Bricklayer's tool	814,926	Mar. 13	1831	384	121	457
Weiss, George W., New York, N. Y. Power-fan	814,998	Mar. 13	1980	417	121	485
Weiss, Louis T., Brooklyn, N. Y. Pump	814,179	Mar. 6	343	70	121	75
Weiss, Ludwig, Budapest, Austria-Hungary. Binding agent and forming same	814,490	Mar. 6	989	.....	121	216
Weitzel, Henry C., and E. R. Pruitt, Baltimore, Md. Automatic clean-sweep waste for outside hoppers	814,755	Mar. 13	1522	322	121	393
Welch, John A., Loyal, Wis. Fifth-wheel	816,832	Apr. 3	568	119	121	1485
Welch, Thomas, *et al.* (See Beck, William, assignor.)						
Welcome, Solon B. (See Smith and Welcome.)						
Weldeyer and Betts. (See Dehart, Lucy W., assignor.)						
Weller, John L., St. Catharines, Canada. Electric-transmission pole	816,628	Apr. 3	170	36	121	1399
Welles, George S., Chicago, Ill. Apparatus for feeding pulverized fuel	818,590	Apr. 24	4075	875	121	2410
Wellman, Samuel T. (See Jones and Wellman.)						
Wellman-Seaver-Morgan Company. (See Hulett, Frank E., assignor.)						
Wellman-Seaver-Morgan Company. (See Hulett, George H., assignor.)						
Wellman Sole Cutting Machine Company. (See Stickney, Allison M., assignor.)						
Wells, Joel C., Southbridge, Mass. Eyeglasses	818,720	Apr. 24	4353	933	121	2473
Wells, William H., Chicago, Ill., assignor to American Can Company, Jersey City, N. J. Key-opening can	814,102	Mar. 6	200	40	121	44
Welsbach, Carl A. von, Vienna, Austria-Hungary. Support for osmium filaments	814,632	Mar. 6	1257	264	121	272
Welsbach Light Company. (See Koblenzer, Martin, assignor.)						
Welsbach Light Company. (See Mason, Sidney, assignor.)						
Welter, Frank J. (See Welter, Sebastian J., assignor.)						
Welter, Sebastian J., assignor of one-half to F. J. Welter, Chicago, Ill. Hand-vise	814,633	Mar. 6	1258	264	121	273
Wendelburg, Alex. (See Wegner, William F., assignor.)						
Wendling, George X., San Francisco, Cal. Collar-button	817,536	Apr. 10	1969	416	121	1847
Wenke, Franz, assignor of one-third to W. F. Fischer, Fort Wingate, N. Mex. Ter. Pen and pencil rack	815,241	Mar. 13	2501	521	121	604
Wentworth, Fred H. (See Brown and Wentworth.)						
Wentz, George F., St. Louis, Mo. Distilling apparatus	815,392	Mar. 20	2857	593–4	121	729
Werd, William E., assignor of one-half to G. Wilson, Deer Lodge, Mont. Trap	817,601	Apr. 10	2087	441	121	1871
Werner, Oscar, New York, N. Y. Seat suspension for motor-vehicles	817,682	Apr. 10	2224	476	121	1901
Wert, William H. (See Rader and Wert.)						
Wertz, Joseph E., Newhaven, assignor of one-half to W. E. Day, Connellsville, Pa. Electric pressure-indicator	816,407	Mar. 27	4949	1051	121	1232
Wésel, Ferdinand. (See Albert, Eugen, assignor.)						
Wesel, Ferdinand, Brooklyn, N. Y. Metal-cutting machine	816,198	Mar. 27	4496	954	121	1136
Weser, John A. (See Kuster, Charles A., assignor.)						
Weser, John A., New York, N. Y. Piano	818,496	Apr. 24	3870	833	121	2367
Wessels, Rudolf C., Cotati, Cal. Gate	814,103	Mar. 6	201	40	121	44
Wesson, Joseph H., Springfield, Mass. Firearm	818,721	Apr. 24	4355	933	121	2473
West, Fred A., Portage, Wis. Centrifugal cream-separator	816,199	Mar. 27	4499	954–5	121	1136
Westenhaver, Lee, *et al.* (See McCollum, Joseph C., assignor.)						
Westerman, William H., Marietta, Ohio. Working barrel for oil and other pumps	814,491	Mar. 6	991	203	121	216
Western Electric Company. (See André, Henri E. A., assignor.)						
Western Electric Company. (See Craft, Edward B., assignor.)						
Western Electric Company. (See McBerty, Frank R., assignor.)						
Western Electric Company. (See Smythe, Edwin H., assignor.)						
Western Iron Works. (See Smith and Welcome, assignors.)						
Western Steel & Iron Works. (See Van de Walker and Jenney, assignors.)						
Westinghouse Air Brake Company. (See Blackall, Robert H., assignor.)						
Westinghouse Air Brake Company. (See Newell, Frank C., assignor.)						
Westinghouse Air Brake Company. (See Winsor, Paul, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Elers, Karl F., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Leblanc, Maurice, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Perkins, Thomas S., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Perkins and Jackson, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Psilander, Charles A., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Siegfried, Robert, assignor.)						
Westinghouse, George. (See Gow, Alexander M., assignor.)						
Westinghouse, George. (See Potter, Henry N., assignor.)						
Westinghouse, George, Pittsburg, Pa. Supporting structure for trolley-conductors	814,339	Mar. 6	696	140	121	153
Westinghouse, George, Pittsburg, Pa. Fluid-pressure turbine	816,516	Mar. 27	5155	1093–4	121	1277
Westman, Leroy A., Cleveland, Ohio. Screw-thread cutter	818,007	Apr. 17	2908	628	121	2110
Weston, George. (See Weston, William E. and G.)						
Weston, Herbert T., Beatrice, Nebr. Counter	818,591	Apr. 24	4077	875	121	2411
Weston, William E. and G., Kansas City, Mo. Mail-box	815,770	Mar. 20	3618	760	121	895
Wetherbee, Leslie, Adrian, Mich. Stovepipe-holder	814,254	Mar. 6	500	103	121	107
Wetmore, Willis H., assignor to C. A. Lee, Oneida, N. Y. Mop-wringer	818,722	Apr. 24	4357	933	121	2473
Weyer, Joseph G., Providence, R. I. Composition for molds	816,833	Apr. 3	569	.....	121	1486
Whalen, Augustus P., South Portland, Me. Combined faucet and filter	816,517	Mar. 27	5160	1094	121	1279
Whalen, Michael H., New York, N. Y. Journal-box	817,683	Apr. 10	2226	477	121	1901
Whaler, John H., Canton, Ohio. Drinking-fountain for fowls	815,885	Mar. 20	3863	819	121	945
Whall, Richard A., assignor of one-half to Metropolitan Air Goods Company, Reading, Mass. Pneumatic mattress, cushion, &c	818,321	Apr. 17	3542	759	121	2243
Wheatley, Artnur, assignor to Twentieth Century Roller Washer Co., Philadelphia, Pa. Washing-machine	817,826	Apr. 17	2535	545	121	2026
Whedon, James P., Chicago, Ill. Medical appliance	817,288	Apr. 10	1475	309	121	1742
Wheeler, Charles H., Lincoln, Ill. Display-stand	817,353	Apr. 10	1595	337	121	1769
Wheeler, Charles V., and A. G. McKenna, Pittsburg, Pa., assignors to Firth Sterling Steel Company. Projectile and its band	815,992	Mar. 27	4065	861	121	1041

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Wheeler, Clifton H., assignor, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa. Condenser	818,322	Apr. 17	3543	759	121	2243
Wheeler, Clifton H., and J. J. Mullan, assignors, by mesne assignments, to C. H. Wheeler Manufacturing Company, Philadelphia, Pa. Condenser	817,458	Apr. 10	1817	381	121	1816
Wheeler, George A., New York, N. Y. Card-file	814,816	Mar. 13	1649	346	121	419
Wheeler, George A., New York, N. Y. Card-index	814,817	Mar. 13	1651	346	121	420
Wheeler, Harold L., Buffalo, N. Y. Camera-support	817,207	Apr. 10	1311	273	121	1709
Wheeler Manufacturing Company. (See Kiewicz, John, assignor.)						
Wheeler, William A., Indianapolis, Ind. Mail-box	816,200	Mar. 27	4500	955	121	1137
Wheeler & Wilson Manufacturing Company. (See Abercrombie, William R., assignor.)						
Wheildon, William M., assignor of one-half to D. W. Sutherland, Boston, Mass. Loose-leaf binder	814,492	Mar. 6	992	204	121	216
Wheless, Thomas H., New York, N. Y. Torpedo conveying and launching apparatus	815,393	Mar. 20	2860	594–6	121	729
Wheless, Thomas H., New York, N. Y. Automobile torpedo	818,987	Apr. 24	4967	1045–6	121	2584
Whitaker, John S., Portsmouth, N. H., and H. P. Wood, Brooklyn, assignors to Consolidated Engine Stop Company, New York, N. Y. Transfer-switch for testing circuits.	815,993	Mar. 27	4067	861	121	1041
Whitcher, Frank W. (See Pinkham, Charles F., assignor.)						
Whitcomb, Beecher D., Shawomet Beach, assignor of one-half to G. M. Bronson, Providence, R. I. Automatic overhead-trolley contact device for operating electric signals.	815,499	Mar. 20	3053	637	121	773
White, Albert E., Eau Claire, Wis. Saw-swage	816,695	Apr. 3	300	70	121	1427
White, Arthur S. (See Watson, Leslie J., assignor.)						
White, Charles H., Sparrows Point, Md. Safety gas-burner	816,893	Apr. 3	687	142	121	1511
White, James J., Chicago, Ill. Knockdown box	816,629	Apr. 3	171	36	121	1399
White, John C. (See Mueller and White.)						
White, John F. (See Ormondroyd and White.)						
White, John F., Bloomington, Ill., assignor to Portable Wagon Dump and Elevator Company. Portable derrick	818,645	Apr. 24	4205	904	121	2441
White, Joseph A., assignor to Moore & White Company, Philadelphia, Pa. Paper-winding machine	817,025	Apr. 3	955	196–7	121	1571
White, Joseph A., assignor to Moore and White Company, Philadelphia, Pa. Paper-winding machine	817,026	Apr. 3	958	197	121	1571
White Lily Washer Company. (See Plagman, Adolph, assignor.)						
White, Phylander C., assignor of one-half to W. S. Brian, Memphis, Tenn. Planter	815 771	Mar. 20	3620	760	121	895
White, Thomas E., Okisko, N. C. Hat-pin	818,323	Apr. 17	3544	759	121	2244
White, William B., Cleveland, Ohio. Mechanism for vehicle-lanterns	816,696	Apr. 3	302	70	121	1427
Whiteker, Bosque M., Pinkerton, Tex. Match-box	818,324	Apr. 17	3545	759–60	121	2244
Whitesell, Edward B. (See Whitesell, William T. and E. B.)						
Whitesell, William T. and E. B., Fishersville, Va. Mail-bag catcher	818,592	Apr. 24	4079	876	121	2411
Whitfield, William, Justin, Tex. Spinning-top	814,818	Mar. 13	1656	347	121	421
Whitmore, William S., Cricklewood, England. Water-heating apparatus	817,602	Apr. 10	2091	441	121	1872
Whitney, Charles E., assignor of one-half to E. E. Pratt and F. L. Dean, Webster, S. D. Straw-rack for threshing-machines	817,289	Apr. 10	1476	310	121	1743
Whitney, Pardon A., Southington, Conn. Journal-bearing	816,630	Apr. 3	172	36	121	1399
Whitney, William C., Newark, N. J., assignor to S. E. Wilmore, New York, N. Y. Vending-machine	818,593	Apr. 24	4081	876–7	121	2412
Whitney, William C., Newark, N. J., assignor to S. E. Wilmore, New York, N. Y. Vending-machine	818,594	Apr. 24	4087	878–9	121	2413
Whitson Autopress Company. (See Barnett, Morrisson J., assignor.)						
Whittemore, William E., Hartford, Conn. Brush	818,497	Apr. 24	3872	833	121	2368
Wiard, Harry, Syracuse, N. Y Plow	816,518	Mar. 27	5163	1094–5	121	1279
Wickel, Fritz C., Nuremberg, Germany. Method and apparatus for coating bands of fabric	815,664	Mar. 20	3371	705	121	843
Widdicombe, Thomas H. H., Hobart, Tasmania, Australia. Means for cutting up large blocks of butter into smaller blocks of predetermined sizes	817,027	Apr. 3	960	198	121	1572
Widdop, Thomas, Lonetree, Wyo. Preserving apparatus	817,208	Apr. 10	1312	273–4	121	1709
Widmer, Charles J., Sidney, Ohio. Guy-anchor	816,631	Apr. 3	173	37	121	1400
Wiebke, August. (See Gruwell and Wiebke.)						
Wiedenbeck, Theo. D., *et al.* (See Rieff, John G., assignor.)						
Wiesenfeld, Robert S., Baltimore, Md. Safety-razor	816,141	Mar. 27	4387	927	121	1113
Wikstrom, Malcolm, Shelby, Ohio. Life-preserver	815,394	Mar. 20	2870	596	121	732
Wilcox, Albert E., Millville, Mass. Oiler for vehicle-wheels	814,104	Mar. 6	203	41	121	44
Wilcox, Elmore O., Cleveland, Ohio. Apparatus for display advertising	816,632	Apr. 3	176	37–8	121	1400
Wilcox, Everett W., Springfield, Mass. Store-service apparatus	818,595	Apr. 24	4092	879–80	121	2414
Wilcox, Thomas, Birmingham, England. Locket, photograph-pendant, frame, charm, and the like	817,944	Apr. 17	2793	604–5	121	2084
Wilcox & White Company. (See Hosley, Nelson D., assignor.)						
Wilder, William H., Gardner, Mass, Oil-stove	816,201	Mar. 27	4501	955–6	121	1137
Wildermann, Meyer, and R. L. Mond, London, England. Chronograph	816,767	Apr. 3	427	96–7	121	1452
Wildermuth, La Fayette, Columbus, Ohio. Grass-collector for lawn-mowers	815,242	Mar. 13	2502	521	121	606
Wilderson, Clinton G. (See Harrold and Wilderson.)						
Wiley, William R., Evanston, Ill. Combined mop head and wringer	818,498	Apr. 24	3873	834	121	2368
Wilhelm, Gilbert, Traverse City, Mich. Block-molding machine	816,408	Mar. 27	4952	1052	121	1233
Wilhelm, James O., Limaville, Ohio. Account-file	817,537	Apr. 10	1970	417	121	1847
Wilhelm, Walter, Mount Savage, Md. Pressure-retaining valve for air-brake systems	816,409	Mar. 27	4953	1052–3	121	1233
Wilkin, Theodore S., Milwaukee, Wis. Sawmill set-works	815,665	Mar. 20	3373	706	121	843
Wilkinson, Alfred, assignor to Wilkinson Manufacturing Company, Incorporated, Bridgeport, Pa. Grate-bar	817,028	Apr. 3	961	198	121	1572
Wilkinson, Eleazar T., Philadelphia, Pa. Automatic fireproof window	815,772	Mar. 20	3621	761–2	121	895
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Controller mechanism for turbines	814,756	Mar. 13	1523	323	121	393
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Steam Turbine Company. Governor for elastic-fluid turbines	818,008	Apr. 17	2911	628–9	121	2111
Wilkinson, James, Birmingham, Ala., assignor to Wilkinson Turbine Company. Controller mechanism for multiple-stage turbines	818,499	Apr. 24	3874	834	121	2368
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Turbine-bucket wheel	814,757	Mar. 13	1528	324	121	394
Wilkinson, James, Providence, R. I., assignor to Wilkinson Turbine Company. Elastic-fluid turbine	818,723	Apr. 24	4358	933	121	2474
Wilkinson, John A., Washington, D. C. Metallic tie	818,067	Apr. 17	3024	654	121	2133
Wilkinson, John A., Shelton, Conn. Paper	818,500	Apr. 24	3879	834	121	2369
Wilkinson Manufacturing Company. (See Wilkinson, Alfred, assignor.)						
Wilkinson Steam Turbine Company. (See Wilkinson, James, assignor.)						
Wilkinson Turbine Company. (See Wilkinson, James, assignor.)						
Wilkinson, Walter S. (See Grigsby, William W., assignor.)						
Willard, Frederick L., Brooklyn, assignor of one-half to G. Weiderman, New York, N. Y. Electric controlling device	817,945	Apr. 17	2794	605	121	2084

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Willcox and Gibbs Sewing Machine Company. (See Madison, Alfred L., assignor.)						
Willhoit, Elmer T., Woodruff, Mo. Cuspidor	817,029	Apr. 3	963	198	121	1573
William Schofield Company. (See Schofield and Reeder, assignors.)						
William Wharton, Jr., & Company, Incorporated. (See Angerer, Victor, assignor.)						
William Wharton, Jr., & Company, Incorporated. (See Shoemaker, George, assignor.)						
Williams, Alfred. (See Daft and Williams.)						
Williams, Allen. (See Brown and Williams.)						
Williams, Alva E., Aurora, Nebr. Train-order-holding device	815,500	Mar. 20	3065	637	121	773
Williams, Arthur G. R., Cambridge, Waikato, New Zealand. Basting apparatus	814,255	Mar. 6	501	104	121	107
Williams, Cad P., Sanders, Ky. Device for facilitating the removal of bandages	817,946	Apr. 17	2796	605	121	2064
Williams, Charles H., Milton, Mass. Semaphore	817,603	Apr. 10	2091	442	121	1872
Williams, Charles L., Parkersburg, W. Va. Illuminated sign	818,724	Apr. 24	4361	934	121	2474
Williams Electric Machine Company. (See Williams, Harry A., assignor.)						
Williams, Elkanah G., Harpster, Ohio. Rail-joint	815,243	Mar. 13	2504	521	121	605
Williams, George H., Los Angeles, Cal. Vehicle-wheel	814,580	Mar. 6	1158	242	121	251
Williams, George L., Chicago, Ill. Eyeglasses	818,325	Apr. 17	3546	760	121	2244
Williams, George M., Fresno, Cal. Truck	818,326	Apr. 17	3548	760	121	2244
Williams, George W., Braddock, Pa. Line-reel	816,410	Mar. 27	4956	1053	121	1233
Williams, Gilbert M., assignor to A. D. Cole, Maysville, Ky. Collapsible tube	817,890	Apr. 17	2675	582	121	2054
Williams, Harry A., Akron, Ohio. Electrical friction-clutch	817,730	Apr. 10	2324	500	121	1926
Williams, Harry A., assignor to Williams Electric Machine Company, Akron, Ohio. Magnetic friction-clutch	817,210	Apr. 10	1318	275	121	1711
Williams, Harry A., assignor of five-twelfths to S. J. Cole and D. A. Messner, Akron, Ohio. Machine for making pipes	817,209	Apr. 10	1313	274–5	121	1710
Williams, Henry, Finchley Road, county of Middlesex, England. Combined lift and bed-support for invalids	816,697	Apr. 3	303	70–1	121	1427
Williams, Henry A., Wollaston, Mass. Worker-cylinder for machines for pulling, tearing, &c., cop-waste, &c	815,395	Mar. 20	2871	596–7	121	732
Williams, James H., assignor to Remington and Sherman Company, Philadelphia, Pa. Bolt construction for safe or vault doors	816,519	Mar. 27	5166	1096	121	1280
Williams, John K., Akron, Ohio. Machine for making continuously-formed articles from plastic material	815,571	Mar. 20	3188	670	121	801
Williams, John K., Akron, Ohio. Vehicle-tire	815,572	Mar. 20	3191	671	121	802
Williams, John M., Shaler township, Allegheny county, Pa. Timber-jack	814,105	Mar. 6	204	41	121	44
Williams, John R., East Orange, N. J. Metal sheet-piling	818,327	Apr. 17	3549	760	121	2245
Williams, John R., East Orange, N. J. Metal sheet-piling	818,596	Apr. 24	4099	880–1	121	2416
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Preliminary breaker for crushers and pulverizers	818,328	Apr. 17	3552	761	121	2245
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Dumping-cage for crushers and pulverizers	818,725	Apr. 24	4362	934	121	2475
Williams Patent Crusher & Pulverizer Company. (See Frickey, Edward H., assignor.)						
Williams Patent Crusher & Pulverizer Company. (See Williams, Milton F., assignor.)						
Williams, Robert, Coaldale, Pa. Power-transmission system	817,604	Apr. 10	2093	442	121	1872
Williams, Thomas B., assignor to Leavitt Machine Co., Orange, Mass. Rotary cutting device	814,418	Mar. 6	863	177	121	188
Williams, Thomas R. (See Lewis and Williams.)						
Williams, William J., Elyria, Ohio. Tie-plate	815,244	Mar. 13	2506	521	121	605
Williams, William J., Jr., and A. Edgar, Caledonia, N. Y. Stanchion	815,994	Mar. 27	4070	862	121	1041
Williamson, Henry C., and H. Pries, Michigan City, Ind. Underframing for cars	817,947	Apr. 17	2797	606	121	2064
Williamson, James, and H. O'Brien, Chicago, Ill. Hose-coupling	815,995	Mar. 27	4071	862	121	1042
Williamson, James P., *et al.* (See Smith, John C., assignor.)						
Williamson, James R., Chicago, Ill. Journal-box for railway-cars	818,501	Apr. 24	3880	834	121	2369
Williamson, John, Chicago, Ill. Valve for water-gas plants	817,211	Apr. 10	1320	275–6	121	1712
Williamson, John S., Elizabethtown, N. C. Tie for packages	814,758	Mar. 13	1530	324	121	394
Williamson, Samuel S. (See Hallock, Howard B., assignor.)						
Williamson, William A., Friendly, W. Va. Oil-saver	816,284	Mar. 27	4655	988	121	1171
Willis, Robert, Philadelphia, Pa. Hat-fastener	818,968	Apr. 24	4873	1047	121	2585
Willis, Samuel A., Parry Sound, Canada. Skate	814,819	Mar. 13	1658	347	121	421
Willits, Brutus D., Des Moines, Iowa. Track-sanding apparatus	814,256	Mar. 6	502	104	121	108
Willows, Edward, St. Henry, Canada. Rail-joint	818,726	Apr. 24	4364	934	121	2475
Wills, William, Philadelphia, Pa. Cut-off and reversing valve mechanism for engines	814,493	Mar. 6	993	204	121	216
Wills, William, Philadelphia, Pa. Compound steam-engine	816,411	Mar. 27	4957	1053	121	1234
Wilmore, Silas E. (See Whitney, William C., assignor.)						
Wilson, Asbury G., Wilkinsburg, assignor to Union Switch and Signal Company, Swissvale, Pa. System of charging storage batteries	817,827	Apr. 17	2538	545	121	2026
Wilson, Charles C., Dayton, Ohio. Vehicle-wheel	815,573	Mar. 20	3192	671	121	802
Wilson, Grant. (See Ward, William E., assignor.)						
Wilson & Hayes Mfg. Co. (See Thompson, Bert E., assignor.)						
Wilson, James W., New York, N. Y. Billiard-cue	818,597	Apr. 24	4103	881	121	2417
Wilson, Jerome B., Lansing, Mich. Wire-mattress stretcher	818,502	Apr. 24	3882	835	121	2370
Wilson, John, assignor of one-half to A. C. Russell, Springfield, Ohio. Smoke-consumer	815,574	Mar. 20	3193	671	121	802
Wilson, John C., Boston, Mass. Time-printing and numbering machine	816,202	Mar. 27	4503	966	121	1137
Wilson, Joseph G., Neosho Falls, Kans. Wrench	816,203	Mar. 27	4507	966	121	1138
Wilson, Samuel A. (See Wilson, William H. and S. A.)						
Wilson, Stephen G., Philadelphia, Pa. Divided tenpin	814,257	Mar. 6	503	104	121	108
Wilson, William H., New Bedford, Mass. Loom-shuttle	814,494	Mar. 6	995	204	121	217
Wilson, William H. and S. A., Flint, Mich. Railway signal apparatus	817,459	Apr. 10	1820	382–3	121	1817
Wilson, William R., and C. E. Howe, Wabash, Ind. Steel sled	817,605	Apr. 10	2095	442	121	1873
Wilt, Samuel W., Alvada, Ohio. Hot-air heater	816,412	Mar. 27	4959	1053	121	1234
Wiltrout, Francis M., Corunna, Ind. Portable mold for tiling	818,727	Apr. 24	4365	935	121	2475
Wiltse, Sidney L., assignor to W. F. Cowham, Jackson, Mich. Machine for molding cement blocks	817,684	Apr. 10	2227	477–8	121	1903
Wiman, Gustaf A., Malmö, and F. Schauman, Stockholm, Sweden. Paddle-wheel	814,495	Mar. 6	996	204–5	121	217
Wimpy, William E. (See Harris, James D., assignor.)						
Winch, Charles F., New York, N. Y. Fan	818,804	Apr. 24	4531	968	121	2511
Winchell, Alvin T., Albion, Mich. Stationary switch and adjustable car-wheel for use thereon	815,666	Mar. 20	3380	706–7	121	845
Winchester Repeating Arms Co. (See Bennett, Thomas G., assignor.)						
Winchester Repeating Arms Co. (See Johnson, Thomas C., assignor.)						
Windsor Machine Company. (See Hipwell, John B., assignor.)						
Winfield, William N., and J. Barker, assignors to Richmond & Backus Company, Detroit, Mich. Ledger	814,594	Mar. 13	1779	372	121	446
Winger, William D., assignor of one-half to D. C. Souders, Lancaster, Pa. Toy	815,667	Mar. 20	3381	707	121	845
Winget, Jasper S., York, Pa. Cigar-moistener	816,413	Mar. 27	4960	1054	121	1234
Wingren, Charles O., Pasadena, Cal. Electric furnace	817,212	Apr. 10	1321	276	121	1712
Winkley, Erastus E., Lynn, Mass. Sole-pressing machine	818,503	Apr. 24	3883	835–6	121	2370

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Winkley, Erastus E., Lynn, Mass. Sole-pressing machine	818,504	Apr. 24	3889	836-8	121	2371
Winn, Marjorie H., New York, N. Y. Tag or label	817,460	Apr. 10	1827	383	121	1818
Winship, Gilmor M., *et al.* (See Heupel, Frederick K., assignor.)						
Winslow, Edward J., Chicago, Ill. Affixing plastics	815,886	Mar. 20	3865	819	121	945
Winsor, Paul. (See Lindall and Winsor.)						
Winsor, Paul, Weston, Mass., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. System of automatic brakes	814,999	Mar. 13	1962	417	121	486
Winsor, Robert P., Providence, R. I. Shock-absorber for vehicles	818,646	Apr. 24	4208	904	121	2442
Winsor, Robert P., Providence, R. I. Shock-absorber for spring-vehicles	818,647	Apr. 24	4209	905	121	2442
Winterburn, Clarence L., assignor of two-thirds to W. H. Engel, Kalamazoo, and W. H. Deal, Oshtemo, Mich. Beet-harvesting machine	816,633	Apr. 3	178	38-9	121	1401
Wirt, Charles, Germantown, Pa., assignor to Wirt Electric Company, Incorporated. Rheostat	815,996	Mar. 27	4073	862	121	1042
Wirt Electric Company. (See Wirt, Charles, assignor.)						
Wirt, Reuben D., Philadelphia, Pa. Swinging hose-rack	818,989	Apr. 24	4874	1047	121	2585
Wirt, Reuben D., and C. R. Parker, Philadelphia, Pa. Hose-reel	818,990	Apr. 24	4875	1047	121	2586
Wise Furnace Company. (See Wise, Wilbert G., assignor.)						
Wise, Peter, *et al.* (See Clark, Joseph M., assignor.)						
Wise, Wilbert G., assignor to Wise Furnace Company, Akron, Ohio. Furnace	818,398	Apr. 17	3690	792	121	2275
Witcher, Otho H., and A. L. Harvey, Sweet Springs, Mo. Sawing-machine	817 948	Apr. 17	2798	606	121	2084
Witmer, Benjamin, Plattsville, Canada. Cider-press	816,414	Mar. 27	4962	1054	121	1235
Witt, George C., Cincinnati, Ohio. Can-seaming apparatus	814,759	Mar. 13	1531	324	121	395
Wittbold, Louis, Chicago, Ill. Floral display-stand	816,053	Mar. 27	4200	891	121	1073
Witte, Ernst E., Newark, N. J., assignor to J. E. Mergott Company. Bag-fastener	815,668	Mar. 20	3382	707	121	846
Wittenberg, Ludwig, Breslau, Germany. Means for quickly emptying crowded theaters, &c	815,997	Mar. 27	4074	863	121	1042
Wittmer, Owen W., Columbus, Ohio. Brake-lever fulcrum	814,895	Mar. 13	1780	373	121	447
Wixford, John F., St. Louis, Mo. System of water purification	814,180	Mar. 6	345	71	121	75
Wixford, John F., St. Louis, Mo. Water-purification system	814,634	Mar. 6	1260	265	121	273
Wixon, Howard, Chicago, Ill. Compound air-pump	817,528	Apr. 10	1971	418	121	1847
Wm. L. Gilbert Clock Company. (See Owen, Arthur W., assignor.)						
Wöehle, William, assignor of two-thirds to F. Maxson and C. Herbert, Seneca Falls, N. Y. Upright flue-boiler	819,030	Apr. 24	4955	1063	121	2603
Woelfer, Frank, *et al.* (See Bendickson, Iver E., assignor.)						
Wohle, Salo, London, England. Detergent for scouring wool	818,648	Apr. 24	4211	.....	121	2442
Wojciechowski, Jakob, Warsaw, Russia. Machine for loosening cut-up tobacco	817,354	Apr. 10	1597	337	121	1769
Wolcott, George M. (See Bryant, Wolcott, and Davidson.)						
Wolf, Felix, New York, N. Y. Pneumatic color-applying apparatus	818,649	Apr. 24	4211	905	121	2442
Wolfe, Laura J., Columbus, Ohio. Artificial breast	814,181	Mar. 6	347	71	121	76
Wolfe, Matt L., Miamisburg, Ohio. Cooling apparatus	815,773	Mar. 20	3624	762	121	896
Wolfes, Otto, assignor to Firm of E. Merck, Darmstadt, Germany. Making barbituric acids	814,496	Mar. 6	997	.....	121	217
Wolff, Fredrich J., Kansas City, Mo. Traveling hopper-scale	818,505	Apr. 24	3896	838-9	121	2373
Wolff, Fredrick J., Kansas City, Mo. Sack-cleaning machine	815,396	Mar. 20	2873	597	121	733
Wolff, Herbert W., assignor to American Car & Foundry Company, St. Louis, Mo. End brace for cars	814,497	Mar. 6	999	205	121	217
Wolff, Hugo. (See Bally and Wolff.)						
Wolff, William E., New York, N. Y. Wristlet	815,998	Mar. 27	4075	863	121	1043
Wolseley Tool and Motor Car Company. (See Austin, Herbert, assignor.)						
Wonderlich, Herman, Providence, R. I. Ironing-machine	818,728	Apr. 24	4367	935	121	2475
Wood, Asa C., Waterloo, Iowa Display-rack	818,329	Apr. 17	3552	761	121	2245
Wood, Franz J., Des Moines Iowa. Threshing-machine	818,009	Apr. 17	2917	629-30	121	2112
Wood, Harry P. (See Whitaker and Wood.)						
Wood, John, Cincinnati, Iowa. Stove lifter and mover	817,030	Apr. 3	965	198	121	1573
Wood, John D., St. Louis, Mo. Hand-bag	818,729	Apr. 24	4368	935-6	121	2476
Wood, Marcus D., Centralia, Wash. Harness-snap	818,330	Apr. 17	3554	761	121	2246
Wood, Thaddeus E., assignor to American Colortype Company, New York, N. Y. Jointed cut-out figure	814,340	Mar. 6	699	140	121	154
Wood, Wilfred R., London, England. Underfeed-furnace	818,010	Apr. 17	2923	630-1	121	2113
Wood, William A., Montreal, Canada. Workman's time-recorder	814,760	Mar. 13	1533	325	121	395
Wood, William H., Cleveland, Ohio. Atomizer	814,820	Mar. 13	1659	347	121	421
Woodall, Charles H., Albany, Ga. Pedal-guard	816,834	Apr. 3	570	119	121	1486
Woodall, Russell A., Richwood, W. Va. Camera attachment	818,136	Apr. 17	3167	680	121	2165
Woodard, Edward C., assignor of one-half to H. F. Woodard, Campello, Mass. Last	817,828	Apr. 17	2542	546	121	2027
Woodard, Horace F. (See Woodard, Edward C., assignor.)						
Woodbury, Urban A., Burlington, Vt. Automatic railway-switch	815,887	Mar. 20	3867	819	121	946
Woodbury, Urban A., Burlington, Vt. Automatic railway-switch	815,888	Mar. 20	3869	820	121	946
Woodford, Allan G., Jersey City, N. J., assignor to American Cigar Company, New York, N. Y. Mold-opening tool	817,829	Apr. 17	2543	546	121	2027
Woodford, Allan G., Jersey City, N. J., assignor to International Cigar Machinery Company, New York, N. Y. Cutting mechanism for cigar-machines	817,830	Apr. 17	2546	546	121	2027
Woodford, Frank E., assignor to Hauser Company, Chicago, Ill. Car-handling apparatus	814,498	Mar. 6	1000	205-6	121	218
Wooding, Benjamin F., Denver, Colo. Railway electric signaling apparatus	815,315	Mar. 13	2644	553	121	634
Woodland, Frank O., Worcester, Mass. Labeling-machine	818,506	Apr. 24	3899	839	121	2373
Woodman, George A. (See Carscadin, Charles A., assignor.)						
Woodman, George A., Chicago, Ill. Dust-guard	815,000	Mar. 13	1983	418	121	487
Woodruff, Augustus H., Irvington, assignor of one-half to F. F. Smith, Newark, N. J. Lock and gravity-bolt for windows	815,669	Mar. 20	3384	707-8	121	846
Woodruff, Augustus H., Irvington, assignor of one-half to F. F. Smith, Newark, N. J. Gravity-bolt and fusible connection for metallic frames and windows therefor	815,774	Mar. 20	3625	762-3	121	896
Woodruff, Oliver D., Southington, Conn. Dough mixer and kneader	815,775	Mar. 20	3630	763	121	897
Woods, John A. (See Mason, David, assignor.)						
Woodward, Anderson, assignor of three-fourths to W. S. Bailey, C. M. Hamilton, and W. Montgomery, Leeper, Mo. Hat-pin	818,507	Apr. 24	3905	840	121	2375
Woodward, Arthur H., assignor to International Register Company, Chicago, Ill. Fare-register	818,508	Apr. 24	3906	840-2	121	2375
Woodward, Arthur H., assignor to International Register Company, Chicago, Ill. Hundred-indicator	818,509	Apr. 24	3914	842-3	121	2376
	818,598	Apr. 24	4104	881	121	2417
Woodward, Frank L., Clinton, Mich. Plow						
Woodward, Hu. (See Goodman, William H., assignor.)						
Woodward, Russel G., Waukegan, assignor to Union Special Sewing Machine Company, Chicago, Ill. Folding and guiding attachment for sewing-machines	815,134	Mar. 13	2277	476	121	552
Woolley Foundry & Machine Works. (See Burger, Leopold F., assignor.)						
Woolums, William H., Chicago, assignor to Superior Bank Company, Cook county, Ill. Coin-receptacle	814,821	Mar. 13	1660	347	121	421

Alphabetical list of patentees for March and April—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Wormald, Roscoe. (See Anderson and Wormald.)						
Wozniewski, Michael. (See Matz and Wozniewski.)						
Wray, Charles F., Rochester, N. Y. Pump	816,520	Mar. 27	5167	1096	121	1280
Wright, Arthur H., South St. Paul, Minn. Rotary engine	818,399	Apr. 17	3092	793	121	2275
Wright, Christopher. (See Stolp and Wright.)						
Wright, Clarence E., Cleveland, assignor to D. A. Yoder, Toledo, Ohio. Registering apparatus for telephone-exchanges	818,068	Apr. 17	3028	654	121	2133
Wright, Harry A., Springfield, Mass., assignor to Yost Electric Manufacturing Company, Toledo, Ohio. Shade-holder for incandescent electric lamps	815,245	Mar. 13	2507	522	121	606
Wright, Napoleon B., *et al.* (See Cramer, Howard, assignor.)						
Wright, Robert, Cleveland, Ohio. Vehicle-tire	818,400	Apr. 17	3096	793–4	121	2276
Wright, Selden R., Morton, assignor to Circuit Protecting Relay Company, Rochester, N. Y. Telegraphic safety device	814,761	Mar. 13	1537	325	121	396
Wuest, Frederick A., Lawrenceburg, Ind. Saw-set	816,054	Mar. 27	4202	892	121	1073
Wyand, William, Collingswood, N. J. Rotary engine	815,135	Mar. 13	2280	476	121	553
Wyckoff, Seamans & Benedict. (See Cooke, William L., assignor.)						
Wycoff, Orange E., Winfield, Kans. Rule	818,401	Apr. 17	3097	794	121	2276
Wylie, Walter, Los Angeles, Cal. Ledger	816,521	Mar. 27	5168	1096	121	1281
Wyman, George R., assignor to F. W. Bird & Son, East Walpole, Mass. Nail cap-plate	816,522	Mar. 27	5170	1097	121	1281
Wyman, William H., Oshkosh, Wis., assignor, by mesne assignments, to Union Match Company, Duluth, Minn. Match-machine	816,634	Apr. 3	182	39–44	121	1402
Wynkoop, John A., Washington, D. C. House-heating system	816,523	Mar. 27	5171	1097	121	1281
X Electric Accumulator Company. (See Oppermann, Emil L., assignor.)						
Yahraus, Charles, and F. A. Hammer, Woonsocket, R. I. Rubber heel for boots and shoes	817,355	Apr. 10	1598	338	121	1770
Yale & Towne Manufacturing Company. (See Bardwell, Arthur F., assignor.)						
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yancey, Georg R., assignor of one-half to W. A. and K. Keller, Louisville, Ky. Electric brake	817,606	Apr. 10	2096	443	121	1873
Yarnell, Eugene A., Washington, D. C. Gas-check pad	818,069	Apr. 17	3031	654	121	2134
Yaxley, Ernest E., assignor to Monarch Telephone Manufacturing Co., Chicago, Ill. Telephone-transmitter	815,889	Mar. 20	3872	820	121	947
Yeager, Thomas C., Canton, Mo. Pickle-grading machine	814,762	Mar. 13	1540	326	121	397
Yelton, Walter C. (See Ogden and Yelton.)						
Yentzer, Francis M., Ottawa, Ill. Hay-carrier	816,698	Apr. 3	304	71	121	1428
Yetten, Jasper H. (See Ulett, George, assignor.)						
Yingling, Frank B., Düsseldorf, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Recoil mechanism for cannons	818,730	Apr. 24	4309	936–7	121	2476
Yoder, David A. (See Wright, Clarence E., assignor.)						
Yost Electric Manufacturing Company. (See Wright, Harry A., assignor.)						
Yost Writing Machine Company. (See Smith, Arthur W., assignor.)						
Youlten, William, Westminster, England. Ginning or burring machine	817,607	Apr. 10	2098	443–4	121	1873
Young, Charles A., Elvira, Iowa. Corn-cutting machine	818,650	Apr. 24	4213	905	121	2443
Young, Charles B., *et al.* (See Blount, Lewis, assignor.)						
Young, Edward T., and L. J. Cavanaugh, Boston, Mass. Rotary engine	815,246	Mar. 13	2508	522	121	606
Young, Edwin A., Mitchell, S. D. Feathering paddle-wheel	815,776	Mar. 20	3633	763–4	121	898
Young, Franklin K., Boston, Mass., and J. E. Sheriff, New York, N. Y., assignors to American Automatic Arms Company, Saco, Me. Cartridge-conveyer	814,635	Mar. 6	1262	265	121	274
Young, Gust, Hallock, Minn. Door-holding catch	817,356	Apr. 10	1600	338	121	1770
Young, Harriet M., trustee. (See Young, James S., assignor.)						
Young, Harry L., Pueblo, Colo. Electric railway switching mechanism	817,290	Apr. 10	1477	310–11	121	1743
Young, James K., Camden county, Ga. Wheel-cultivator	814,258	Mar. 6	505	104–5	121	108
Young, James S., Bethel, Vt., assignor to H. M. Young, trustee. Stone-cutting saw	816,768	Apr. 3	431	97	121	1453
Young, James S., Bethel, Vt., assignor to H. M. Young, trustee. Stone-cutting saw	816,769	Apr. 3	432	97	121	1453
Young, Joseph A., New York, N. Y. Non-slipping tire and brake	817,539	Apr. 10	1974	418	121	1848
Young, Samuel M., New York, N. Y. Electric signaling system	815,890	Mar. 20	3877	820	121	949
Young, Samuel M., New York, N. Y. Electric signaling system	815,891	Mar. 20	3881	821	121	950
Youngs, Fred E., San Francisco, Cal. Draft-regulator for hydrocarbon-burners	815,316	Mar. 13	2647	554	121	635
Youngstown Furnace Company. (See Gschwind, Leon, assignor.)						
Yule, Edgar H., San Francisco, Cal., assignor of one-half to F. W. Yule, Tipton, Iowa. Harness	818,930	Apr. 24	4762	1023	121	2561
Yule, Frederick W. (See Yule, Edgar H., assignor.)						
Z and Z Company. (See Christie, Thomas S., assignor.)						
Zachary, William H., assignor of one-half to D. R. Mitchell, Maysville, Ind. Ter. Wrench	817,213	Apr. 10	1323	276	121	1712
Zahn, Clara, Newark, N. J. Device for teaching the fundamental operations with numbers	816,204	Mar. 27	4508	957	121	1139
Zander, Henry, and G. Hahn, Wilmerding, Pa. Trolley	816,415	Mar. 27	4963	1054	121	1235
Zander, Henry L., New Orleans, La. Sheet-piling	816,770	Apr. 3	434	98	121	1454
Zangerle, Nickolas, South Bend, Ind. Boring-bit or auger	815,247	Mar. 13	2510	522	121	606
Zarbock, Ernst F., Centralia, Ill., assignor to M. Waddell, New York, N. Y. Razor-strop	816,635	Apr. 3	190	44	121	1403
Zeisberger, Frank, and W. Scott, London, England. Boot tree and last	817,949	Apr. 17	2800	606	121	2085
Zeiss, Firm of Carl. (See Berger, Max, assignor.)						
Zeiss, Firm of Carl. (See Leistenschneider, August, assignor.)						
Zesiger, John L., Cleveland, Ohio. Spring-latch	816,835	Apr. 3	572	119	121	1486
Ziegler, John C., Seymour, Tex. Wind-motor	816,524	Mar. 27	5173	1097–8	121	1282
Ziesing, Richard, Cleveland, Ohio. Retort	818,070	Apr. 17	3032	655	121	2134
Zimmer, Samuel B. (See Spence, Prugh, and Zimmer.)						
Zimmerman, Frank T., Auburn, Ind. Tower-cap	814,106	Mar. 6	205	41	121	45
Zimmerman, Thomas, Springfield, Ohio. T-square	817,214	Apr. 10	1324	276–7	121	1713
Zimmermann, Louis J. and P., New York, N. Y. Delivery-box	814,107	Mar. 6	206	41–2	121	45
Zimmermann, Peter. (See Zimmermann, Louis J. and P.)						
Zoeller, Theodore J., assignor to Electric Candy Machine Company, Nashville, Tenn. Centrifugal melting device	816,055	Mar. 27	4203	892	121	1073
Zoeller, Theodore J., assignor to Electric Candy Machine Company, Nashville, Tenn. Converting into filaments substances liquefiable by heat	816,056	Mar. 27	4209	893	121	1075
Zortman, Charles E. (See Freeman and Zortman.)						
Zucker & Levett & Loeb Company. (See Backus, Clarence G., assignor.)						
Zucker & Levett & Loeb Company. (See Backus and Wallace, assignors.)						
Zugelder, Frederick G., Gunnison, Colo. Gage-line holder	817,357	Apr. 10	1600	338	121	1770
Zuleger, Alfred, Leipsic, Germany. Mechanically-playing accordion	817,950	Apr. 17	2801	607	121	2085
Zweigbergk, Thorsten von, Preston, England. Controller	817,031	Apr. 3	966	199	121	1573
Zwilling, Henry, and J. T. Droste, St. Louis, Mo. Wagon-brake	817,358	Apr. 10	1601	338–9	121	1770

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Page.
A. M. Collins Manufacturing Company. (See Stone, Howard A., assignor.)				
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	37,890	Mar. 13	121	644
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	37,891	Mar. 13	121	644
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	37,892	Mar. 13	121	645
Ahrenfeldt, Charles J., New York, N. Y. Plate or similar article	37,893	Mar. 13	121	645
Ahrenfeldt, Charles J., New York, N. Y. Covered dish or similar article	37,894	Mar. 13	121	645
American Silver Company. (See Large, Samuel J., assignor.)				
American Soda Fountain Company. (See Conlin, John F., assignor.)				
American Thermo-Ware Company. (See Wolfstein, Edward, assignor.)				
Andresen, Alfred, Minneapolis, Minn. Bottle	37,906	Mar. 20	121	967
Atwood, William H., New Haven, Conn. Automobile-body	37,952	Apr. 10	121	1932
Barton & Spooner. (See Spooner, Ralph P., assignor.)				
Bennett, Ernest H., East Orange, N. J., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,938	Apr. 3	121	1624
Bennett, Ernest H., East Orange, N. J., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,939	Apr. 3	121	1624
Bennett, Ernest H., East Orange, N. J., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	37,940	Apr. 3	121	1624
Birkin, Charles W., Nottingham, England. Levers lace	37,883	Mar. 6	121	287
Bookwalter, John R., Oklahoma, Okla. Ter. Spoon or similar article	37,866	Mar. 6	121	284
Boubel, Elmore F., Denver, Colo. Curtain	37,909	Mar. 20	121	968
Bromley & Sons, John. (See Bennett, Ernest H., assignor.)				
Bronson, Adelbert E., Jr., Cleveland, Ohio. Shell for coffee-mills	37,965	Apr. 24	121	2612
Burley, Frank E., Chicago, Ill. Condiment-container	37,901	Mar. 20	121	966
Burley, Frank E., Chicago, Ill. Grape-fruit holder	37,905	Mar. 20	121	967
Cahill Iron Works. (See Zipp, John, assignor.)				
Cahill, Jerry E., Baltimore, Md. Casing of vending-machines	37,968	Apr. 24	121	2613
Carr, Edmond J., and E. T. Rushton, Portland, Oreg. Ring	37,915	Mar. 27	121	1299
Charles Smith Company. (See Smith, Charles, assignor.)				
Cole, Ernest C., Chicago, Ill. Cooking-stove	37,908	Mar. 20	121	968
Conlin, John F., Chelsea, assignor to American Soda Fountain Company, Boston, Mass. Glass-holder	37,943	Apr. 10	121	1930
Crosby, Joseph H., Jacksonville, Fla. Bodkin	37,871	Mar. 6	121	285
Dayton, Edwin W., New York, N. Y. Cigar-cutter	37,958	Apr. 17	121	2277
Dieges, Charles J., New York, N. Y. Badge	37,865	Mar. 6	121	284
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Lamp	37,948	Apr. 10	121	1931
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Lamp	37,949	Apr. 10	121	1931
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Lamp	37,950	Apr. 10	121	1931
Dorst, Arno A., Cincinnati, Ohio. Ring	37,916	Mar. 27	121	1300
Electric Vehicle Company. (See Steinbeck, Paul W., assignor.)				
Ellis, Vaughn M., Seattle, Wash. Badge-button	37,887	Mar. 13	121	644
Erickson, Fred E., Chicago, Ill. Grille-curtain	37,882	Mar. 6	121	287
Faber, Eberhard, New York, N. Y. Pencil	37,869	Mar. 6	121	285
Faber, Eberhard, New York, N. Y. Pencil	37,870	Mar. 6	121	285
Faber, Eberhard, New York, N. Y. Display-case	37,877	Mar. 6	121	286
Faber, Eberhard, New York, N. Y. Display-case	37,878	Mar. 6	121	286
Feagans, George E. (See Shepard, Chester B., assignor.)				
French, Charles H., Canton, Mass., assignor to French & Ward, New York, N. Y. Knit fabric	37,936	Apr. 3	121	1624
French, Charles H., Canton, Mass., assignor to French & Ward, New York, N. Y. Knit fabric	37,937	Apr. 3	121	1624
French & Ward. (See French, Charles H., assignor.)				
Gebhardt, Edwin, Cincinnati, Ohio. Lapel-button	37,899	Mar. 20	121	966
Geraghty, John F., New York, N. Y., assignor to W. R. Noe, East Orange, N. J. Wall-lamp holder	37,947	Apr. 10	121	1930
Gilbert and Barker Manufacturing Company. (See Lossberg, Victor F. von, assignor.)				
Goodwin, John B., Baltimore, Md. Badge or similar article	37,888	Mar. 13	121	644
Goodwin, John B., assignor to Sovereign Grand Lodge of the Independent Order of Odd Fellows, Baltimore, Md. Badge	37,914	Mar. 27	121	1299
Hausold, Alvin, Allegheny, assignor to Keystone Electric and Manufacturing Company, Pittsburg, Pa. Arc-lamp housing	37,895	Mar. 13	121	645
Higgins, Arthur S., New York, N. Y. Plate or similar dish	37,904	Mar. 20	121	967
Hochstadter, Sigmund, New York, N. Y. Bottle	37,956	Apr. 17	121	2277
Horner, William C., assignor to C. P. McDougall, Indianapolis, Ind. Kitchen-cabinet top	37,897	Mar. 13	121	646
International Silver Co. (See Prior, Charles M., assignor.)				
Jacobs, Winthrop L., Rutherford, N. J., assignor to W. & J. Sloane, New York, N. Y. Carpet	37,911	Mar. 20	121	968
Jameson, William A., Niagara Falls, N. Y. Handle of spoons, forks, or similar articles	37,955	Apr. 17	121	2277
Jones, William, New York, N. Y. Box	37,944	Apr. 10	121	1930
Keystone Electric and Manufacturing Company. (See Hausold, Alvin, assignor.)				
Knowles, George E., Brooklyn, N. Y. Picture-display cabinet	37,879	Mar. 6	121	286
Langmaid, George A., Haverhill, Mass. Eyelet	37,918	Mar. 27	121	1300
Large, Samuel J., assignor to American Silver Company, Bristol, Conn. Handle of spoons or similar articles	37,942	Apr. 10	121	1929
Lossberg, Victor F. von, New York, N. Y., assignor to Gilbert and Barker Manufacturing Company, Springfield, Mass. Incandescent gas-burner	37,880	Mar. 6	121	287
Marten, William C., Carbondale, Ill. Badge	37,963	Apr. 24	121	2612
Mason, Sidney, Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J. Incandescent gas-globe	37,925	Mar. 27	121	1301
McDougall, Charles P. (See Horner, William C., assignor.)				
McLean, Walter M., Pittsburg, Pa. Show-case	37,934	Apr. 3	121	1624
McNab, John S., assignor to W. & J. Sloane, New York, N. Y. Carpet	37,912	Mar. 20	121	968
McNab, John S., assignor to W. & J. Sloane, New York, N. Y. Carpet	37,913	Mar. 20	121	968
Mehesy, Edward, Jr., Salt Lake City, Utah. Spoon-handle	37,867	Mar. 6	121	285
Mendel, Isidor, Cincinnati, Ohio. Trunk-trimming	37,950	Apr. 17	121	2277
Meyers, Ernest, Taunton, Mass., assignor to Reed & Barton Corporation. Mount for silverware	37,900	Mar. 20	121	966
Mischler, William, New York, assignor to F. H. and H. T. Webster, Brooklyn, N. Y. Bread-tray	37,868	Mar. 6	121	285
Mygatt, Otis A., New York, N. Y. Illuminator	37,924	Mar. 27	121	1301
Mygatt, Otis A., New York, N. Y. Illuminator	37,946	Apr. 10	121	1930
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	37,960	Apr. 17	121	2278

Alphabetical list of patentees of designs for March and April—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Mygatt, Otis A., New York, N. Y. Prismatic-glass reflector	37,961	Apr. 17	121	2278
Mygatt, Otis A., New York, N. Y. Reflector	37,967	Apr. 24	121	2613
Nehr, Herman F., New York, N. Y. Rosary	37,875	Mar. 6	121	285
Newell, Isaiah, Haverhill, Mass. Water receptacle or bottle	37,907	Mar. 20	121	967
Noe, William R. (See Geraghty, John F., assignor.)				
Onondaga Pottery Company. (See Robineau, Adelaide A., assignor.)				
Owen China Company. (See Owen, Edward J., assignor.)				
Owen, Edward J., assignor to Owen China Company, Minerva, Ohio. Plate	37,903	Mar. 20	121	967
Peterson, John, Buffalo, N. Y. Tablet or lozenge	37,874	Mar. 6	121	285
Pick, Albert, Chicago, Ill. Goblet	37,917	Mar. 27	121	1300
Pilkington Brothers. (See Pilkington, William W., assignor.)				
Pilkington, William W., Prescot, assignor to Pilkington Brothers Limited, St. Helens, England. Sheet-glass	37,953	Apr. 10	121	1932
Prior, Charles M., New York, N. Y., assignor to International Silver Co., Meriden, Conn. Handle for spoons, forks, or similar articles	37,931	Apr. 3	121	1623
Reed & Barton Corporation. (See Meyers, Ernest, assignor.)				
Robineau, Adelaide A., assignor to Onondaga Pottery Company, Syracuse, N. Y. Plate or dish	37,889	Mar. 13	121	644
Rogers, Cephas B., Danbury, Conn. Inkstand	37,941	Apr. 10	121	1929
Rose, Arthur M., assignor to W. & J. Sloane, New York, N. Y. Carpet	37,910	Mar. 20	121	968
Rushton, Elmer T. (See Carr and Rushton.)				
Safety Car Heating & Lighting Company. (See Dixon, Robert M., assignor.)				
Safety Car Heating & Lighting Company. (See Schepmoes, Lindsley, assignor.)				
Sanford Day Iron Works. (See Thiem, Rudolph, assignor.)				
Sargent & Company. (See Stevens, William E., assignor.)				
Schaaf, Albert E., Toledo, Ohio. Frame of radiators for automobiles	37,881	Mar. 6	121	287
Schehr, George A., Cincinnati, Ohio. Drop-handle	37,935	Apr. 3	121	1624
Schepmoes, Lindsley, New York, N. Y., assignor to Safety Car Heating & Lighting Company. Lamp-case	37,966	Apr. 24	121	2613
Schlegel, Charles P., Rochester, N. Y. Ribbon	37,884	Mar. 6	121	287
Schlegel, Charles P., Rochester, N. Y. Ribbon	37,885	Mar. 6	121	288
Schlegel, Charles P., Rochester, N. Y. Ribbon	37,886	Mar. 6	121	288
Shepard, Chester B., Melrose, Mass., assignor to G. E. Feagans, Joliet, Ill. Handle for spoons, forks, or similar articles	37,932	Apr. 3	121	1623
Smith, Charles, assignor to Charles Smith Company, Chicago, Ill. Heating-furnace front	37,927	Mar. 27	121	1301
Sovereign Grand Lodge of the Independent Order of Odd Fellows. (See Goodwin, John B., assignor.)				
Spooner, Ralph P., assignor to Barton & Spooner, Cornwall-on-the-Hudson, N. Y. Wooden mug	37,902	Mar. 20	121	966
Stanley Rule and Level Company. (See Wood, George E., assignor.)				
Steinbeck, Paul W., New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J. Automobile-body	37,928	Mar. 27	121	1302
Steinbeck, Paul W., New Haven, Conn., assignor to Electric Vehicle Company, Jersey City, N. J. Automobile-body	37,929	Mar. 27	121	1302
Sterling, Charles O., Washington, D. C. Whip-socket for automobiles	37,951	Apr. 10	121	1931
Stevens, William E., assignor to Sargent & Company, New Haven, Conn. Casket-trimming	37,970	Apr. 24	121	2614
Stockstrom, Louis, St. Louis, Mo. Gas-stove	37,926	Mar. 27	121	1301
Stone, Howard A., assignor to A. M. Collins Manufacturing Company, Philadelphia, Pa. Card-mount	37,945	Apr. 10	121	1930
Teubner, Bruno, New York, N. Y. Rosary	37,876	Mar. 6	121	286
Thiem, Rudolph, Hamilton, Ohio, assignor to Sanford Day Iron Works, Knoxville, Tenn. Stove	37,933	Apr. 3	121	1623
Tomlinson, Anne E., New York, N. Y. Lady's belt	37,969	Apr. 24	121	2614
Tower, John J., Montclair, N. J. Tool-handle	37,920	Mar. 27	121	1300
Tower, John J., Montclair, N. J. Tool-handle	37,921	Mar. 27	121	1301
Tower, John J., Montclair, N. J. Tool-handle	37,922	Mar. 27	121	1301
Tower, John J., Montclair, N. J. Tool-handle	37,923	Mar. 27	121	1301
Vandergaw, Edward B., Brooklyn, N. Y. Printed textile fabric	37,898	Mar. 13	121	646
Vandergaw, Edward B., Brooklyn, N. Y. Printed textile fabric	37,930	Mar. 27	121	1302
Vandergaw, Edward B., Brooklyn, N. Y. Printed textile fabric	37,962	Apr. 17	121	2278
W. & J. Sloane. (See Jacobs, Winthrop L., assignor.)				
W. & J. Sloane. (See McNab, John S., assignor.)				
W. & J. Sloane. (See Rose, Arthur M., assignor.)				
Wagner, Louis C., New York, N. Y. Cigar-band	37,872	Mar. 6	121	285
Wagner, Louis C., New York, N. Y. Cigar-band	37,873	Mar. 6	121	285
Wagner, Louis C., New York, N. Y. Cigar-band	37,964	Apr. 24	121	2612
Walte, Charles M., New York, N. Y. Badge	37,864	Mar. 6	121	284
Webster, Frederick H., *et al.* (See Mischler, William, assignor.)				
Webster, Hawley T., *et al.* (See Mischler, William, assignor.)				
Welsbach Light Company. (See Mason, Sidney, assignor.)				
Wisniewski, Antoni, Buffalo, N. Y. Badge	37,954	Apr. 17	121	2277
Wolfstein, Edward, assignor to American Thermo-Ware Company, New York, N. Y. Barometer-case	37,919	Mar. 27	121	1300
Wood, George E., Plantsville, assignor to Stanley Rule and Level Company, New Britain, Conn. Tool-handle	37,896	Mar. 13	121	646
Zipp, John, Chattanooga, Tenn., assignor to Cahill Iron Works. Washbasin	37,957	Apr. 17	121	2277

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A Baldwin & Co. Limited, New Orleans, La. Plows	50,580	Mar. 27	121	1335
A. Klipstein & Company, New York, N. Y. Cake-soap	51,694	Apr. 24	121	2650
A. Santaella & Co., Chicago, Ill. Cigars	51,391	Apr. 17	121	2312
A. Santaella & Co., Chicago, Ill. Cigars	51,392	Apr. 17	121	2312
A. Santaella & Co., Chicago, Ill. Cigars	51,393	Apr. 17	121	2312
A. Slauson & Co., New York, N. Y. Lozenges	51,431	Apr. 17	121	2313
A. Slauson & Co., New York, N. Y. Lozenges	51,432	Apr. 17	121	2313
A Slauson & Co., New York, N. Y. Lozenges	51,433	Apr. 17	121	2313
A Slauson & Co., New York, N Y. Lozenges	51,434	Apr. 17	121	2313
A. B. Patrick & Co., San Francisco, Cal. Harness, sole, and skirting leather	51,758	Apr. 24	121	2652
A. C. Simmons Jr. Medicine Co., Sherman, Tex. Liver remedy	51,490	Apr. 17	121	2315
A. D. Kerr Co., Buffalo, N. Y. Whisky	51,113	Apr. 3	121	1670
A. G. Spalding & Bros., New York, N. Y. Base-ball bats	50,636	Mar. 27	121	1337
A. H. Heisey & Co., Inc., Newark, Ohio. Pressed glassware	50,121	Mar. 6	121	327
A. H. Lewis Medicine Co., St. Louis, Mo. Medicines for the regulation of the liver and purification of the blood	50,795	Mar. 27	121	1343
A. J. Reach Co., Philadelphia, Pa. Base-balls	50,637	Mar. 27	121	1337
A. J. Reach Co., Philadelphia, Pa. Dressing for softening and preserving leather	51,435	Apr. 17	121	2313
A. J. Reach Co., Philadelphia, Pa. Base, cricket, basket, and foot balls	51,825	Apr. 24	121	2655
A. J. Tower Company, Boston, Mass. Oiled clothing	50,709	Mar. 27	121	1340
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	51,676	Apr. 24	121	2649
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing	51,718	Apr. 24	121	2651
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing of all kinds	51,719	Apr. 24	121	2651
A. M. McPhail Piano Co., Boston, Mass. Pianos	51,006	Apr. 3	121	1665
A. P. Hotaling & Co., San Francisco, Cal. Whisky	51,541	Apr. 17	121	2317
A. Y. McDonald & Morrison Manufacturing Company, Dubuque, Iowa. Stop and waste cocks	50,601	Mar. 27	121	1336
Abraham & Straus, Brooklyn, N. Y. Knit underwear	51,300	Apr. 10	121	1972
Abraham & Straus, Brooklyn, N. Y. Dolls	51,695	Apr. 24	121	2650
Acker, Merrall & Condit Company, New York, N. Y. Tea	51,007	Apr. 3	121	1665
Adam Roth Grocery Company, St. Louis, Mo. Condensed milk and evaporated cream	50,257	Mar. 6	121	332
Adler, Louis, Reading, Pa. Medicinal preparation for the cure of rheumatism	50,532	Mar. 20	121	1006
Adler, Louis J., Pittsburg, Pa. Whisky	51,542	Apr. 17	121	2318
Advance Publishing Co., Chicago, Ill. Magazine periodical	50,568	Mar. 20	121	1008
Aetna Powder Co., Chicago, Ill. Dynamite, dynamite-cartridges, blasting-gelatin, and low-powder	51,706	Apr. 24	121	2650
Aktiebolaget Södertelje Tändsticksfabrik, Södertelje, Sweden. Matches of all kinds	51,826	Apr. 24	121	2655
Aktien-Gesellschaft Vereinigte Berner & Zurcher Chocolade-Fabriken Lindt & Sprungli, Berne, Switzerland. Certain named chocolate and cocoa preparations	51,382	Apr. 17	121	2311
Alabastine Company, Grand Rapids, Mich. Wall paint or coating	50,358	Mar. 13	121	682
Albany Wine & Liquor Co., Albany, N. Y. Whisky	51,008	Apr. 3	121	1665
Albemarle Paper Mfg Co., Richmond, Va. Blotting-paper	51,858	Apr. 24	121	2656
Albert Dickinson Company, Chicago, Ill. Popcorn	50,249	Mar. 6	121	332
Albert Dickinson Company, Chicago, Ill. Poultry-food	51,054	Apr. 3	121	1667
Albrecht, Wilhelm, Boston Mass. Whisky	50,638	Mar. 27	121	1337
Alva Roller Mills, Alva, Okla. Ter. Wheat-flour	51,859	Apr. 24	121	2656
American Box Ball Co., Indianapolis, Ind. Portable bowling-alleys	51,544	Apr. 17	121	2318
American Brake Shoe & Foundry Company, New York, N. Y. Brake-shoes	50,122	Mar. 6	121	327
American Broom & Brush Co., Amsterdam, N. Y. Brooms	50,141	Mar. 6	121	328
American Broom & Brush Co., Amsterdam, N. Y. Brooms	50,142	Mar. 6	121	328
American Broom & Brush Co., Amsterdam, N. Y. Brooms	50,200	Mar. 6	121	330
American Broom & Brush Co., Amsterdam, N. Y. Brooms	50,201	Mar. 6	121	330
American Broom & Brush Co., Amsterdam, N. Y. Brooms	50,202	Mar. 6	121	330
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	50,741	Mar. 27	121	1341
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	51,915	Apr. 24	121	2656
American Chicle Co., New York, N. Y. Chewing-gum	50,258	Mar. 6	121	332
American Glue Co., Boston, Mass. Gelatin	50,675	Mar. 27	121	1338
American Hard Rubber Co., New York, N. Y. Rubber combs	51,383	Apr. 17	121	2311
American Hard Rubber Co., New York, N. Y. Rubber combs	51,412	Apr. 17	121	2312
American Hard Rubber Co., New York, N. Y. Rubber combs	51,413	Apr. 17	121	2312
American Hard Rubber Co., New York, N. Y. Rubber combs	51,696	Apr. 24	121	2650
American Hard Rubber Co., New York, N. Y. Rubber combs	51,720	Apr. 24	121	2651
American Hard Rubber Co., New York, N. Y. Hard-rubber combs	51,721	Apr. 24	121	2651
American Hard Rubber Co., New York, N. Y. Hard-rubber syringes	51,860	Apr. 24	121	2656
American Hoist & Derrick Company, St. Paul, Minn. Rope-clips	50,804	Apr. 3	121	1657
American Hominy Company, Indianapolis, Ind. Product of Indian corn in flake form	51,009	Apr. 3	121	1665
American Hominy Company, Indianapolis, Ind. Product of corn in flake form	51,114	Apr. 3	121	1670
American Hominy Company, Indianapolis, Ind. Hominy feed	51,491	Apr. 17	121	2315
American Lead Pencil Co., New York, N. Y. Lead-pencils	51,414	Apr. 17	121	2312
American Offset Company, New York, N. Y. "Anti-set-off" compositions	50,710	Mar. 27	121	1340
American Peroxide and Chemical Company, New York, N. Y. Liquid dentifrices	50,250	Mar. 6	121	332
American Separator Co., Bainbridge, N. Y. Centrifugal cream-separator	50,438	Mar. 20	121	1003
American Terra Cotta and Ceramic Company, Chicago, Ill. Ornamental pottery-ware	50,994	Apr. 3	121	1665
American Tool Company, Highland Park, Ky. Axes	51,722	Apr. 24	121	2651
American Washboard Company, Cleveland, Ohio. Washboards	50,425	Mar. 13	121	685
American Washboard Company, Cleveland, Ohio. Washboards	51,415	Apr. 17	121	2313
American Woolen Company, Boston, Mass. Woolen cloths	50,166	Mar. 6	121	329
Ammo Phenin Chemical Company, St. Louis, Mo. Antipyretics	50,533	Mar. 20	121	1006
Ammon & Person, Jersey City, N. J. Shortening for pastry	51,010	Apr. 3	121	1666
Amory, Browne & Co., Boston, Mass., and New York, N. Y. Shade-cloths	50,773	Mar. 27	121	1343
Anda, Thorwald, Chicago, Ill. Antiseptics for internal and external use	51,916	Apr. 24	121	2658
Andrew McLean Co., Passaic, N. J., and New York, N. Y. Upholstery textile fabrics	51,513	Apr. 17	121	2316
Anger Baking Co., New York, N. Y. Macaroni, spaghetti, vermicelli, and noodles	50,217	Mar. 6	121	331
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	50,895	Apr. 3	121	1660

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	51,436	Apr. 17	121	2313
Anti-Grime Soap Company, Elmira, N. Y. Soap	51 917	Apr. 24	121	2658
Antiseptic Pharmacal Company, St. Louis, Mo. Medicine for external use	50,742	Mar. 27	121	1341
Arabol M'f'g. Co., New York, N. Y. Turkey-red oil and soluble grease	51,416	Apr. 17	121	2313
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Coffee	50,439	Mar. 20	121	1003
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Coffee	50,455	Mar. 20	121	1003
Armspear Manufacturing Company, New York, N. Y. Railway lamps and lanterns	50,956	Apr. 3	121	1663
Armstrong Mfg. Co., Bridgeport, Conn. Certain named tools	51,310	Apr. 10	121	1972
Artists' Model Corset Co., Cleveland, Ohio. Corsets	51,311	Apr. 10	121	1973
Aschenbach & Miller, Incorporated. (See Aschenbach & Miller, assignors.)				
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Bird-food.	51,115	Apr. 3	121	1670
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Blood and liver purifiers	51,953	Apr 24	121	2660
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	51,677	Apr. 24	121	2649
Austin Cartridge Co., Cleveland, Ohio. Shotgun-shells	51,543	Apr. 17	121	2318
Austin, Young & Co., Chelsea, Mass. Crackers, cakes, and bread	51,312	Apr. 10	121	1972
Autopiano Company, New York, N. Y. Self-playing pianos and piano-players	51,161	Apr. 3	121	1672
Ayres & Sons, William, Philadelphia, Pa. Horse covers, nets, saddle-housings, lap-robes, and dusters	51,630	Apr. 17	121	2321
Aztec Turquois Company, New York, N. Y. Genuine mined and cut turquoise	51,108	Apr. 3	121	1669
B. Makover Co., New York, N. Y. Silk and mixed cotton and silk piece goods	50,191	Mar. 6	121	330
B. F. Avery & Sons, Louisville, Ky. Plows, cultivators, and harrows	51,813	Apr. 24	121	2654
B. F. Avery & Sons, Louisville Ky. Plows, harrows, cultivators, and planters	51,861	Apr. 24	121	2656
B. F. & H. L. Sweet Company, Fond du Lac, Wis. Sleds and sleighs	51,739	Apr. 24	121	2651
B. H. Bacon Co., Rochester, N. Y. Remedy for the nerves	51,011	Apr. 3	121	1665
Babcock & Co., John, Boston, Mass. Varnishes	50,867	Apr. 3	121	1659
Bachman, Joseph S., Reading, Pa. Pretzels	50,602	Mar. 27	121	1336
Bacon Brothers, Seattle, Wash. Carbon copying-paper	51,368	Apr. 17	121	2311
Baker Castor Oil Company, New York, N. Y. Castor-oil	51,918	Apr. 24	121	2658
Baker Extract Company, Portland, Me., and Springfield, Mass. Flavoring extracts and preparations	51,116	Apr. 3	121	1670
Baker, James G., Fairfield, Ill. Remedy for headaches and liver disorders	51,492	Apr. 17	121	2316
Baker, William H., Winchester, Va. Chocolate, cocoa, and sweet chocolate	51,012	Apr. 3	121	1665
Ballard, James F., St. Louis, Mo. Topical remedies	51,337	Apr. 10	121	1973
Ballard, James F., St. Louis, Mo Liniment	51,603	Apr. 17	121	2320
Ballard, James F., St. Louis, Mo. Germicide and antiseptic compound	51,604	Apr. 17	121	2320
Ballard, James F., St. Louis, Mo. Medicine employed as a tonic, appetizer, and strengthener	51,919	Apr. 24	121	2658
Ballou, Harry G., Rhyolite, Nev. Medicinal preparations for diseases of the blood, brain, and nerves	50,359	Mar. 13	121	682
Banner Cigar M'f'g. Co., Detroit, Mich. Cigars	50,395	Mar. 13	121	683
Barclay & Barclay, New York, N. Y. Medicinal soap	50,534	Mar. 20	121	1006
Barclay & Barclay, New York, N. Y. Medicinal soap	50,535	Mar. 20	121	1007
Barnet Leather Co., New York, N. Y. Dull-black and colored calf-leather	50,603	Mar. 27	121	1336
Barrett Manufacturing Company, New York, N. Y. Ready tar-and-felt roofing	50,360	Mar. 13	121	682
Barrett Manufacturing Company, New York, N. Y. Building, roofing, and sheathing paper	50,846	Apr. 3	121	1658
Barrett Manufacturing Company, New York, N. Y. Tar and pitch	51,166	Apr. 3	121	1672
Barrett Manufacturing Company, New York, N. Y. Roofing-felt	51,437	Apr. 17	121	2313
Bartel, Rudolph F., New York, N. Y. Suspenders for wearing-apparel	50,711	Mar. 27	121	1340
barts, Wygant & Brown, Hornellsville, N. Y. Electric motors	50,639	Mar. 27	121	1337
Bates, Theodore C., North Brookfield, Mass. Spring-water	50,847	Apr. 3	121	1658
Baumeister, Hattie, New York, N. Y. Pianos	50,581	Mar. 27	121	1335
Bautz, Edward F., Pittsburg, Pa. Liniment	51,920	Apr. 24	121	2659
Baxter, Marion B., Seattle, Wash. External and internal remedies	51,921	Apr. 24	121	2659
Bay State Milling Company, Winona, Minn., and Boston, Mass. Wheat-flour	50,604	Mar. 27	121	1336
Bay State Optical Company, Attleboro, Mass. Spectacle and eyeglass frames	50,805	Apr. 3	121	1657
Beam, John H., Early Times, Ky. Whisky	51,259	Apr. 10	121	1970
Bean, Moses L., Salisbury, N. C. Whisky	51,577	Apr. 17	121	2319
Beaumont, Ferdinand, New York, N. Y. Croustades	50,218	Mar. 6	121	331
Beaumont, Ferdinand, New York, N. Y. Croustades	51,338	Apr. 10	121	1973
Becker, Simon, Spartanburg, S. C. Ginger-ale	51,438	Apr. 17	121	2313
Beerwald & Levin, New York, N. Y. Lubricating-grease	50,456	Mar. 20	121	1003
Bentley & Olmsted Company, Des Moines, Iowa. Rubber boots, shoes, and sandals	51,069	Apr. 3	121	1668
Bentley & Olmsted Company, Des Moines, Iowa. Leather boots and shoes	51,181	Apr. 10	121	1967
Berel, Arthur, New York, N. Y. Covert cloths, venetians, broadcloths, and cheviots	50,774	Mar. 27	121	1343
Berger & Co., Albert, New York, N. Y. Watch-glasses	50,957	Apr. 3	121	1663
Berkefeld-Filter Gesellschaft, G. m. b. H., Celle, Germany. Filtering apparatus and filter-cylinders.	50,921	Apr. 3	121	1661
Bernheim Distilling Co., Inc., Louisville, Ky. Malt extracts	50,087	Mar. 6	121	326
Beyer Bros. Co., Rochester, Ind. Butter	51,277	Apr. 10	121	1970
Bickmore Gall Cure Company, Oldtown, Me. Salve	50,712	Mar. 27	121	1340
Bigelow Carpet Company, Boston, Mass. Woven carpets and rugs	51,117	Apr. 3	121	1670
Binswanger & Bro., Simon, St. Joseph, Mo. Whisky	51,723	Apr. 24	121	2651
Bird-Archer Company, New York, N. Y. Chemical compounds	50,995	Apr. 3	121	1665
Bird, Clinton H., New Haven, Conn. Instrument for measuring the capacity of the lungs	50,457	Mar. 20	121	1003
Bird & Son, F. W., Walpole, Mass. Waterproof papers	50,676	Mar. 27	121	1339
Birdsey & Somers, New York, N. Y. Corsets	51,167	Apr. 3	121	1672
Birmingham Small Arms Co. Ltd., Birmingham, England. Automobiles and their component parts	50,830	Apr. 3	121	1658
Birmingham Small Arms Co. Ld., Birmingham, England. Cycles, motor-cycles, and parts thereof.	50,890	Apr. 3	121	1660
Bisbee, Fred S., Benton Harbor, Mich. Certain named fabrics	51,220	Apr. 10	121	1968
Bischoff & Co., C., New York, N. Y. Anilin dyestuffs	51,631	Apr. 17	121	2321
Bischoff, Ernst, New York, N. Y. Iron tonics	51,203	Apr. 10	121	1968
Bishop, Herbert F., Washington, D. C. Certain named medical compound	50,958	Apr. 3	121	1663
Bissell, Leavitt P., Suffield, Conn. Cigars	51,394	Apr. 17	121	2312
Black Diamond Manufacturing Company, Cincinnati, Ohio. Belt-dressings	51,204	Apr. 10	121	1968
Black Diamond Manufacturing Company, Cincinnati, Ohio. Belt-dressings	51,205	Apr. 10	121	1968
Black Diamond Medicine Company, Cowlesville, N. Y. Medical preparations	51,182	Apr. 10	121	1967
Blackburn, Ira R., Dayton, Ohio. Castor-oil in the form of pellets	50,361	Mar. 13	121	682
Blair, Henry A., San Antonio, Tex. Remedies for certain named diseases	50,922	Apr. 3	121	1661
Bland, Frank G., Clarksburg, W. Va. Liquid vegetable compound for the cure of rheumatism	50,959	Apr. 3	121	1663
Bligh, Martin J., Logansport, Ind. Whisky	51,260	Apr. 10	121	1970
Block, Harry E., St. Louis, Mo. Whisky	50,960	Apr. 3	121	1663
Block Light Company, New York, N. Y. Incandescent mantles for gas-lamps	51,013	Apr. 3	121	1665
Blood & Co., John, Philadelphia, Pa. Hosiery	50,143	Mar. 6	121	328
Blue Rock Mineral Spring Company, Louisville, Ky. Natural, concentrated, and carbonated mineral water	50,677	Mar. 27	121	1339
Blumenthal, Sigmund, New York, N. Y. Strings for violins, guitars, zithers, and banjos	50,123	Mar. 6	121	327

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Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Blumenthal, Sigmund, New York, N. Y. Strings for violins, guitars, zithers, and banjos	50,124	Mar. 6	121	327
Bluthenthal & Bickart, Atlanta, Ga. Whisky	50,167	Mar. 6	121	329
Bluthenthal & Bickart, Atlanta, Ga. Whisky	51,118	Apr. 3	121	1670
Boekel and Company, William, Philadelphia, Pa. Laryngoscopes	50,323	Mar. 13	121	681
Boettger, Fredrick, Peoria, Ill. Medicine for stopping excessive perspiration	50,219	Mar. 6	121	331
Boker, Carl F., New York, N. Y. Scissors	50,458	Mar. 20	121	1003
Böker & Co., Heinrich, Solingen, Germany. Pocket-knives	50,868	Apr. 3	121	1659
Bon Ami Company, New York, N. Y. Scouring-soap	50,848	Apr. 3	121	1658
Bond, Harry L., Wheeling, W. Va. Leather boots and shoes	50,605	Mar. 27	121	1336
Bonyman, Frederick E., Boston, Mass. Medicine for diphtheria and rheumatism	50,220	Mar. 6	121	331
Boogher, Force & Goodbar Hat Company, St. Louis, Mo. Hats	50,961	Apr. 3	121	1663
Boorum & Pease Company, New York, N. Y. Blank books, pads, and tablets	51,814	Apr. 24	121	2654
Borated Specialty Company, New York, N. Y. Catamenial bandages	50,831	Apr. 3	121	1668
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk and evaporated cream	51,313	Apr. 10	121	1972
Boston Beer Company, Boston, Mass. Ale	51,776	Apr. 24	121	2653
Boston & Lockport Block Company, Boston, Mass. Pulleys, blocks, and parts thereof	50,869	Apr. 3	121	1659
Boucher, William, Baltimore, Md. Cigars	50,088	Mar. 6	121	326
Boutwell Milling & Grain Co., Troy, N. Y. Rye-flour	50,294	Mar. 6	121	334
Bovril Limited, London, England. Extracts and essences of meat	51,862	Apr. 24	121	2656
Boynton, Frederic G., Boston, Mass. Condition-powders	50,775	Mar. 27	121	1343
Bradham, Caleb D., Newbern, N. C. Medicinal preparation	51,314	Apr. 10	121	1972
Bradley, Ada B., San Francisco, Cal. Certain named medicine	51,514	Apr. 17	121	2316
Bradley & Son, D. R., New York, N. Y. Toilet soap	50,536	Mar. 20	121	1007
Braeburn Steel Company, Braeburn, Pa. Cast steel	51,759	Apr. 24	121	2652
Brandreth Co., Ossining and New York, N. Y. Certain proprietary remedy for external application to animals	51,632	Apr. 17	121	2321
Brandt, L. A. H., Buffalo, N. Y. Hair-restorer	50,713	Mar. 27	121	1340
Brassar Company. (See Hinton, Jno., assignor.)				
Braun & Fitts, Inc., Chicago, Ill. Butterin or oleomargarin	51,119	Apr. 3	121	1670
Brede-Lang Co., Dubuque, Iowa. Whisky	50,496	Mar. 20	121	1005
Breen & Kennedy, Chicago, Ill. Whisky	51,740	Apr. 24	121	2651
Briggs & Co., John, Boston, Mass. Bronze green paints	51,278	Apr. 10	121	1970
Bristol-Myers Company, Brooklyn, N. Y. Certain named medicines	51,922	Apr. 24	121	2659
Brittain Tobacco Works, Columbia, Tenn. Smoking-tobacco	51,395	Apr. 17	121	2312
Brittain Tobacco Works, Columbia, Tenn. Smoking-tobacco	51,879	Apr. 24	121	2657
Brown & Co., H. H., Boston, Mass. Leather boots and shoes	50,962	Apr. 3	121	1663
Brown & Sharpe Manufacturing Company, Providence, R. I. Hair-clippers	50,806	Apr. 3	121	1657
Brown & Sons, J. T. S., Louisville, Ky. Whisky	50,259	Mar. 6	121	333
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	50,582	Mar. 27	121	1335
Buchanan Foster Company, Philadelphia Pa. Ready felt roofing	50,849	Apr. 3	121	1658
Buckley, Kate A., Washington, D. C. Whisky	51,279	Apr. 10	121	1971
Buffalo Pure Food Company, Buffalo, N. Y. Cereal coffee	51,315	Apr. 10	121	1972
Burd, Monte W., Louisville, Ky. Dress-linings	50,537	Mar. 20	121	1007
Burkstrom, Carl O. F., Chicago, Ill. Certain named medicine	50,776	Mar. 27	121	1343
Burrus Mill & Elevator Company, Fort Worth, Tex. Wheat-flour	50,479	Mar. 20	121	1004
Bush, Louis, Washington, D. C. Whisky	50,362	Mar. 13	121	682
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	50,870	Apr. 3	121	1659
Bye, David M., Indianapolis, Ind. Medicated oils	51,880	Apr. 24	121	2657
Byfield Snuff Co., Byfield, Mass. Snuff	50,871	Apr. 3	121	1659
C. A. Willey Co., New York, N. Y. Paints and colors	51,954	Apr. 24	121	2660
C. F. Mueller Co., Jersey City, N. J. Egg-noodles and macaroni	50,606	Mar. 27	121	1336
C. G. Gunther's Sons, New York, N. Y. Manufactured furs for wearing-apparel	50,144	Mar. 6	121	328
G. H. Evans & Sons, Hudson, N. Y. Ale	50,407	Mar. 13	121	684
C. L. Hauthaway & Sons, Incorporated, Portland, Me., and Boston, Mass. Liquid dressing for boots and shoes	50,066	Mar. 6	121	325
C. L. Hauthaway & Sons, Incorporated, Portland, Me., and Boston, Mass. Liquid dressing for leather boots and shoes	50,067	Mar. 6	121	325
C. M. Robbins Co., Attleboro, Mass. Souvenir articles	50,667	Mar. 27	121	1338
C. S. Bell Co., Hillsboro, Ohio. Farm, church, and school bells	50,832	Apr. 3	121	1658
Cable Company, Chicago, Ill. Pianos	51,369	Apr. 17	121	2311
Cahn, Belt & Co., Baltimore, Md. Whisky	51,515	Apr. 17	121	2316
Calhoun Distilling Company, Birmingham, Ala. Whisky	51,741	Apr. 24	121	2651
California Stock Food Co., Fresno, Cal. Ground products of alfalfa	51,678	Apr. 24	121	2649
Camel Company, Chicago, Ill. Trimmings for freight-car doors	50,872	Apr. 3	121	1659
Camel Company, Chicago, Ill. Freight-car door hangers, fasteners, and guide-brackets	50,896	Apr. 3	121	1660
Campe & Co., Henry, San Francisco, Cal. Brandy	50,260	Mar. 6	121	333
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	50,450	Mar. 20	121	1003
Capewell Horse Nail Company, Hartford, Conn. Horse-nails	51,221	Apr. 10	121	1968
Carborundum Company, Niagara Falls, N. Y. Carborundum abrasive material	50,104	Mar. 6	121	326
Carey, Bayne & Smith Company, (Incorporated,) New York, N. Y. Sheetings	50,168	Mar. 6	121	329
Carhart, William B., Atlanta, Ga. Ladies', misses', and children's leather shoes	51,815	Apr. 24	121	2654
Carney, Hugh A., Boston, Mass. Coffee	51,461	Apr. 17	121	2314
Carno Chemical Co., Jersey City, N. J. Disinfectant, preservative, and bactericide	50,963	Apr. 3	121	1663
Carpenter Chemical Co., Detroit, Mich. Liquid court-plaster	50,777	Mar. 27	121	1343
Carter-Crume Co., Limited, Niagara Falls, N. Y. Autographic registers	50,346	Mar. 13	121	682
Carter-Crume Co., Limited, Niagara Falls, N. Y. Duplicate sales-slip books and paper pads therefor	50,583	Mar. 27	121	1335
Carter & Sons, H. W., Lebanon, N. H. Overalls	50,145	Mar. 6	121	328
Carter & Sons, H. W., Lebanon, N. H. Overalls	50,146	Mar. 6	121	328
Carters' Ink Company, Boston, Mass., and New York, N. Y. Mucilage, paste, and adhesive cements	50,451	Mar. 20	121	1003
Carver File Company, Philadelphia, Pa. Files and rasps	50,089	Mar. 6	121	326
Carver File Company, Philadelphia, Pa. Files and rasps	50,538	Mar. 20	121	1007
Case, Adelbert B., Springfield, Mass. Lawn-mowers	51,881	Apr. 24	121	2657
Case, Alfred W., Manchester, Conn. Pulp-board	51,261	Apr. 10	121	1970
Cassella Color Company, New York, N. Y. Dyestuff	50,221	Mar. 6	121	331
Cassella Color Company, New York, N. Y. Dyestuff	50,222	Mar. 6	121	331
Cassella Color Company, New York, N. Y. Dyestuff	50,497	Mar. 20	121	1005
Cassella Color Company, New York, N. Y. Dyestuff	50,778	Mar. 27	121	1343
Catlin & Co., New York, N. Y. Cotton piece goods	50,169	Mar. 6	121	329
Cayey-Caguas Tobacco Company, New York, N. Y., and Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	50,678	Mar. 27	121	1330
Cayey Caguas Tobacco Company, New York, N. Y., and Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	50,850	Apr. 3	121	1658
Central Kansas Milling Company, Lyons, Kans. Wheat-flour	51,055	Apr. 3	121	1667
Century Inkstand Company, New York N. Y. Inkstands	51,014	Apr. 3	121	1665

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Century Pen Company, Whitewater, Wis. Fountain-pens	51,262	Apr. 10	121	1970
Challenge Cutlery Corp., Bridgeport, Conn. Razors	50,923	Apr. 3	121	1661
Chamberlain Medicine Co., Des Moines, Iowa. Remedy for colic, cholera, diarrhœa, and like complaints	50,363	Mar. 13	121	682
Chambers, John J., Seattle, Wash. Liquid medical compound	51,015	Apr. 3	121	1665
Chandler, Justin E., Brockton, Mass. Wax	50,440	Mar. 20	121	1003
Chapin & Gould Paper Co., Springfield, Mass. Writing-paper	51,183	Apr. 10	121	1967
Chapin-Stephens Company, New Hartford, Conn. Rules, yardsticks, board-measures, and log-measures	51,545	Apr. 17	121	2318
Charles & Co., New York, N. Y. Tea	51,923	Apr. 24	121	2659
Charles Hammesfahr Company, Chicago, Ill. Blood tonic or nutriment	50,223	Mar. 6	121	331
Charles Jacquin et Cie. Inc., New York, N. Y. Vermuth	51,184	Apr. 10	121	1967
Charles Jacquin et Cie. Inc., New York, N. Y. Corn brandy	51,280	Apr. 10	121	1971
Charles Jacquin et Cie. Inc., New York, N. Y. Dry gin	51,281	Apr. 10	121	1971
Charles Smith Company, Chicago, Ill. Hot-air heating-furnaces	51,924	Apr. 24	121	2659
Chas. A. Stevens & Bros., Chicago, Ill. Underwear, drawers, tights, vests, and union suits	50,964	Apr. 3	121	1663
Chas. E. Meyer & Co., Freeport, Ill. Vinegar used for pickling	50,261	Mar. 6	121	333
Chas. E. Meyer & Co., Freeport, Ill. Spirit-vinegar	50,262	Mar. 6	121	333
Chas. E. Meyer & Co., Freeport, Ill. Cider-vinegar	51,120	Apr. 3	121	1670
Chas. H. Gillespie & Sons, Jersey City, N. J. Varnishes, finishes, japans, and fillers	51,263	Apr. 10	121	1970
Chas. H. Phillips Chemical Co., New York, N. Y. Acid phosphate and a syrup of phosphates	51,493	Apr 17	121	2316
Chemische Fabrik für Leim & Dünger, "Zimmermann," Ludwigshafen-on-the-Rhine, Germany. Glue.	50,679	Mar. 27	121	1339
Chemische Industrie A.-G. St. Margrethen, St. Margrethen, Switzerland. Chemical preparations for use in making lemonades	51,777	Apr. 24	121	2653
Chesterton & Co., A. W., Boston, Mass. Boiler-tube cleaners or scrapers	50,459	Mar. 20	121	1004
Chicago Distilling Co., Chicago, Ill. Whisky	51,778	Apr. 24	121	2653
Chicago Feather Duster Co., Chicago, Ill. Feather dusters	51,016	Apr. 3	121	1666
Chiquola Manfg. Co., Honea Path, S. C. Cotton piece goods	51,633	Apr. 17	121	2321
Christian Moerlein Brewing Co., Cincinnati, Ohio. Beer	51,206	Apr. 10	121	1968
Citizens' Wholesale Supply Co., Columbus, Ohio. Desiccated cocoanut	50,251	Mar. 6	121	332
Citizens' Wholesale Supply Co., Columbus, Ohio. Ground spices	50,452	Mar. 20	121	1003
Clark, Coggin, and Johnson Company, Boston, Mass. Coffee	51,779	Apr. 24	121	2653
Clarke, Audley, Brooklyn, N. Y. Portland cement	50,090	Mar. 6	121	326
Clarke's Pyramid and Fairy Light Company, Limited, London, England. Candle-lamps	50,324	Mar. 13	121	681
Clarke's Pyramid and Fairy Light Company, Limited, London, England. Lamps	50,408	Mar. 13	121	684
Clarke's Pyramid and Fairy Light Company, Limited, London, England. Short thick candles	50,498	Mar. 20	121	1005
Clarke's Pyramid and Fairy Light Company, Limited, London, England. Short thick candles	50,499	Mar. 20	121	1005
Clarke's Pyramid and Fairy Light Company, Limited, London, England. Short thick candles	50,500	Mar. 20	121	1005
Clauss, Henrie, Fremont, Ohio. Shears and scissors	51,546	Apr. 17	121	2318
Clemson, George N., Middletown, N. Y. Saws	50,640	Mar. 27	121	1337
Clendinning, Francis, Brooklyn Hills and Richmond Hills, N. Y. Remedy for catarrh	51,547	Apr. 17	121	2318
Cleveland & Whitehill Company, Newburgh, N. Y. Overalls, aprons, coats, and pants	50,743	Mar. 27	121	1341
Clifton Manufacturing Co., Clifton, S. C. Cotton piece goods	50,924	Apr. 3	121	1662
Climax Cleaner Mfg. Co., Cleveland, Ohio. Fresco, calcimine, and wall-paper cleaner	50,092	Mar. 6	121	326
Clinton Iron and Steel Company, Pittsburg, Pa. Pig-iron	51,516	Apr. 17	121	2316
Clocheesy, John, New York, N. Y. Paper bags	50,641	Mar. 27	121	1337
Clover Leaf Wine Co., assignor to Jaros Importing and Distributing Co., New York, N. Y. Whisky.	51,780	Apr. 24	121	2653
Cluett Peabody & Co., Troy, N. Y. Shirts, collars, and cuffs	50,779	Mar. 27	121	1343
Coe Brass Manufacturing Company, Torrington, Conn. Extruded metals	50,625	Mar. 27	121	1337
Coen, Albert E., Wilkinsburg, Pa. Metallic and roofing paint	51,264	Apr. 10	121	1970
Cohn, George, Louisville, Ky. Whisky	51,316	Apr. 10	121	1972
Colburn, Birks & Co., Peoria, Ill. Tonic	50,224	Mar. 6	121	331
Colburn, Birks & Co., Peoria, Ill. Cordials	51,578	Apr. 17	121	2319
Colburn, Birks & Co., Peoria, Ill. Cherry-rye phosphates	51,634	Apr. 17	121	2321
Cole Lithographing Company, Chicago, Ill. Advertising-cartons	50,925	Apr. 3	121	1662
Coleman, Georgie A., Washington, D. C. Remedy for skin diseases	51,339	Apr. 10	121	1973
Coles Company, Middletown, Conn. Wheat-flour	50,480	Mar. 20	121	1004
Colgate & Co., New York, N. Y. Perfumery	50,364	Mar. 13	121	682
Collins Company, Collinsville, Conn. Axes, hatchets, and adzes	50,138	Mar. 6	121	328
Collins Company, Collinsville, Conn. Axes, hatchets, and adzes	50,481	Mar. 20	121	1004
Collins & Fairbanks Company, Boston, Mass. Hats, caps, and bonnets	50,926	Apr. 3	121	1662
Collins, William A., Philadelphia, Pa. Powder for use in making ice-cream and ices	50,569	Mar. 20	121	1006
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	50,125	Mar. 6	121	327
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	50,460	Mar. 20	121	1004
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	50,584	Mar. 27	121	1335
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	50,585	Mar. 27	121	1335
Columbia Hosiery Co., New York, N. Y. Stockings	50,570	Mar. 20	121	1006
Columbian Rope Company, Auburn, N. Y. Rope	50,586	Mar. 27	121	1335
Comfort Heel Cushion Company, Philadelphia, Pa. Air-cushioning heel-pads and insoles for boots and shoes	50,347	Mar. 13	121	682
Compagnie Générale de Phonographes Cinématographes et Appareils de Précision, Paris, France. Photographic films	50,807	Apr. 3	121	1657
Cone, David R., New Carlisle, Ohio. Bread	51,781	Apr. 24	121	2653
Conrad & Company, Felix, New York, N. Y. Plate, dry-plate, and window glass	51,017	Apr. 3	121	1666
Consumers Park Brewing Co., New York, N. Y. Lager-beer	50,665	Mar. 27	121	1338
Consumers Supply Company, St. Louis, Mo. Coffee	51,018	Apr. 3	121	1666
Continental Caoutchouc Company, New York, N. Y. India-rubber bags and pouches	51,439	Apr. 17	121	2351
Continental Caoutchouc Company, New York, N. Y. India-rubber bags and pouches	51,760	Apr. 24	121	2673
Cook, Arthur J., Westfield, Mass. Whips	51,265	Apr. 10	121	1902
Cook & Bernheimer Co., New York, N. Y. Bottles of square or cubical form	50,666	Mar. 27	121	1338
Cooper, Wells & Co., St. Joseph, Mich. Hosiery	50,780	Mar. 27	121	1343
Cooper Wells & Co., St. Joseph, Mich. Hosiery	51,724	Apr. 24	121	2651
Corning and Company, Peoria, Ill. Whisky	51,494	Apr. 17	121	2316
Corning and Company, Peoria, Ill. Whisky	51,517	Apr. 17	121	2316
Corona Kid Company, assignor to Corona Kid Manufacturing Company, Boston, Mass. Finished or dressed leather	51,121	Apr. 3	121	1670
Corona Kid Company, assignor to Corona Kid Manufacturing Company, Boston, Mass. Finished or dressed leather	51,122	Apr. 3	121	1670
Corona Kid Manufacturing Company. (See Corona Kid Company, assignor.)				
Coronet Corset Co., Jackson, Mich., and New York, N. Y. Corsets, corset-waists, dress-stays, &c.	51,761	Apr. 24	121	2652
Cotton States Belting & Supply Co., Atlanta, Ga. Babbitt and antifriction metal	50,808	Apr. 3	121	1657
Couch Brothers & J. J. Eagan Co., Atlanta and East Point, Ga. Collars, collar-pads, and back-bands	50,927	Apr. 3	121	1662
Courtenay Mfg. Co., Newry, S. C. Sheetings	51,177	Apr. 3	121	1672
Cover, Harvey S., South Bend, Ind. Respirators	50,461	Mar. 20	121	1004
Craddock-Terry Company, Lynchburg, Va. Leather boots and shoes	51,396	Apr. 17	121	2312

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Crescent Electrical & Manufacturing Company, Valparaiso, Ind. Electric time-switches	50,426	Mar. 13	121	685
Crescent Macaroni & Cracker Co., Davenport, Iowa. Macaroni, spaghetti, vermicelli, and noodles.	51,782	Apr. 24	121	2653
Crescent Manufacturing Co., Seattle, Wash. Baking-powder	51,340	Apr. 10	121	1973
Crew Levick Co., Philadelphia, Pa. Lubricating-oils	50,851	Apr. 3	121	1659
Cross, John H., Lynn, Mass. Leather boots and shoes	50,147	Mar. 6	121	328
Crouse-Hinds Company, Syracuse, N. Y. Electric-conduit fittings	50,462	Mar. 20	121	1004
Crouse-Hinds Company, Syracuse, N. Y. Electric-conduit fittings	50,463	Mar. 20	121	1004
Crowley, Charles H., New York, N. Y. Needles	50,091	Mar. 6	121	326
Crown Oil & Wax Company, Wilmington, Del., and Baltimore, Md. Liquid wax used in shoemaking	51,317	Apr. 10	121	1972
Crown Pipe and Foundry Co., Jackson, Ohio. Soil-pipes, fittings, and connections therefor	50,427	Mar. 13	121	685
Croxer & Son, Samuel A., Upland, Pa. Cotton plaids, checks, stripes, and cheviots	51,679	Apr. 24	121	2649
Crucible Steel Company of America, Pittsburg, Pa. Steel	50,642	Mar. 27	121	1337
Crucible Steel Company of America, Pittsburg, Pa. Steel	50,643	Mar. 27	121	1337
Crucible Steel Company of America, Pittsburg, Pa. Steel	50,897	Apr. 3	121	1660
Crucible Steel Company of America, Pittsburg, Pa. Steel	50,898	Apr. 3	121	1660
Crucible Steel Company of America, Pittsburg, Pa. Steel	50,899	Apr. 3	121	1660
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Lard	50,295	Mar. 6	121	334
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Beef extract	50,296	Mar. 6	121	334
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Lard	50,297	Mar. 6	121	334
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Soap powder combined with mineral ingredients	50,697	Mar. 27	121	1339
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Mince-meat	51,827	Apr. 24	121	2655
Cudahy Packing Co., Chicago, Ill., and South Omaha, Nebr. Soap	51,882	Apr. 24	121	2657
Cuesta, Rey & Co., West Tampa, Fla. Cigars	50,409	Mar. 13	121	684
Currier-Todd Co., Lawrence, Mass. Butter	51,019	Apr. 3	121	1666
D. Levy & Sons Co., Baltimore, Md. Ladies' shirt-waists and shirt-waist suits	51,285	Apr. 10	121	1971
D. Ransom, Son and Company, Buffalo, N. Y. Ointment	51,518	Apr. 17	121	2317
D. Ransom, Son and Company, Buffalo, N. Y. Liniment	51,519	Apr. 17	121	2317
D. Ransom, Son and Company, Buffalo, N. Y. Internal and external remedy	51,925	Apr. 24	121	2659
D. E. Wood Butter Co., Elgin, Ill. Butter	51,058	Apr. 3	121	1667
Daggett Remedy Company, Boston, Mass. Remedy for distemper	51,605	Apr. 17	121	2320
Dahl, Harald A. C., Brooklyn, N. Y. Dyspepsia-cakes	50,714	Mar. 27	121	1340
Dahl, Harald A. C., Brooklyn, N. Y. Dyspepsia-cakes	50,715	Mar. 27	121	1340
Dairymens Supply Company, Philadelphia, Pa. Milk-coolers	51,123	Apr. 3	121	1670
Dallas Brewery, Dallas, Tex. Non-intoxicating malt beverage	50,809	Apr. 3	121	1657
Dallemand & Company, Chicago, Ill. Whisky	50,539	Mar. 20	121	1007
Danbury Hat Company, New York, N. Y. Hats of all kinds	51,124	Apr. 3	121	1670
Daniel, Jno. B., Atlanta, Ga. Flavoring-syrup for beverages	50,928	Apr. 3	121	1662
David B. Crockett Company, Bridgeport, Conn. Varnishes	51,222	Apr. 10	121	1968
Davies, Rose & Co., Ltd., Boston, Mass. Cough-drops	50,571	Mar. 20	121	1006
Davis, B. T., Huntington, W. Va. Liquid preparation for the cure of rheumatism	51,635	Apr. 17	121	2321
Davis, Baxter & Company, Portland, Me. Canned fruits and vegetables	51,462	Apr. 17	121	2314
Davis, E. C., Rockland, Me. Cleaning compound	51,783	Apr. 24	121	2653
Davis Milling Comp., St. Joseph, Mo. Self-rising flour	51,056	Apr. 3	121	1667
Davison, John T., Pueblo, Colo. Medicinal tea	50,965	Apr. 3	121	1663
De Long Hook & Eye Company, Philadelphia, Pa. Hooks and eyes	51,282	Apr. 10	121	1971
De Long Hook & Eye Company, Philadelphia, Pa. Hooks and eyes	51,283	Apr. 10	121	1971
Decker Medicine Co., Dr., Paterson, N. J. Remedy for chills, fever and ague, and malarial diseases.	50,365	Mar. 13	121	682
Deimel Linen-Mesh System Company, San Francisco, Cal., and New York, N. Y. Undershirts and drawers and union suits	50,796	Mar. 27	121	1344
Deimel Linen-Mesh System Company, San Francisco, Cal., and New York, N. Y. Undershirts and drawers and union suits	51,784	Apr. 24	121	2653
Deisel-Wemmer Co., Lima, Ohio. Cigars	51,417	Apr. 17	121	2313
Deitsch, Isaac N., New York, N. Y. Chests, boxes, and cabinets	51,828	Apr. 24	121	2655
Delaney & Co., J. M., New York, N. Y. Sole-leather	51,829	Apr. 24	121	2655
Delaware Chair Co., Delaware, Ohio. Double-caned chairs and rockers	50,626	Mar. 27	121	1337
Dempsey & Co., P., Boston, Mass. Gin	51,785	Apr. 24	121	2653
Dempsey & Co. P., Boston, Mass. Whisky	51,786	Apr. 24	121	2653
Dempsey & Co., P., Boston, Mass. Cordials	51,787	Apr. 24	121	2653
Dempsey & Co., P., Boston, Mass. Whisky	51,788	Apr. 24	121	2653
Denzer, Goodhart & Scheuer, New York, N. Y. Stiff-felt, soft-felt, and straw hats	51,223	Apr. 10	121	1968
Denzer, Goodhart & Scheuer, New York, N. Y. Stiff-felt, soft-felt, and straw hats	51,224	Apr. 10	121	1968
Denzer, Goodhart & Scheuer, New York, N. Y. Stiff-felt, soft-felt, and straw hats	51,579	Apr. 17	121	2319
Desenberg & Co., B., Kalamazoo, Mich. Tea	51,284	Apr. 10	121	1971
Diagraph Company, St. Louis, Mo. Machines for cutting stencils	50,914	Apr. 3	121	1661
Diamond Elevator & Milling Company, Minneapolis, Minn. Cornmeal, both bolted and granulated.	50,482	Mar. 20	121	1004
Diamond Elevator & Milling Company, Minneapolis, Minn. Wheat-flour, Graham flour, and rye-flour	51,384	Apr. 17	121	2311
Dieckerhoff, Raffloer & Co., New York, N. Y. Toilet-pins	50,366	Mar. 13	121	682
Dieckerhoff, Raffloer & Co., New York, N. Y. Buttons	50,744	Mar. 27	121	1341
Dieckerhoff, Raffloer & Co., New York, N. Y. Braids and tapes	51,680	Apr. 24	121	2649
Dilworth, Gilbert & Towne, Incorporated, New York, N. Y. Metal	51,548	Apr. 17	121	2318
Dios Tejada, Juan de, New York, N. Y. Acetylene-gas generators	50,829	Apr. 3	121	1658
Disbrow, Wm. E., New York, N. Y. Traveling toilet-cases	50,126	Mar. 6	121	327
Doerr & Reinhart, Worms, Germany. Calfskin, patent-leather, and waxed calf	50,587	Mar. 27	121	1335
Doniphan & Co., St. Joseph, Mo. Cough-candy	51,520	Apr. 17	121	2317
Donley & Co., Providence, R. I. Pins, earrings, and studs	50,501	Mar. 20	121	1005
Doran, Maurice J., Rochester, N. Y. Whisky	51,863	Apr. 24	121	2656
Dorothy Dodd Shoe Company, Montclair, N. J., and Boston, Mass. Women's, misses', and children's leather boots and shoes	51,830	Apr. 24	121	2655
Dort, Elizabeth, Buffalo, N. Y. Nerve-elixir	50,502	Mar. 20	121	1005
Dosch, Peter, Bridgeport, Conn. Sash-pulleys	51,207	Apr. 10	121	1968
Douglas Manufacturing Company, Newark, N. J. Liquid substitute for court-plasters	50,252	Mar. 6	121	332
Doulton & Co., Limited, London, England. Pottery, earthenware, and china	50,410	Mar. 13	121	684
Doulton & Co., Limited, London, England. Pottery, earthenware, and china	50,411	Mar. 13	121	684
Dr. Pepper Co., Dallas, Tex. Aerated tonic beverages and syrups for the same	50,668	Mar. 27	121	1338
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Liniment	50,526	Mar. 20	121	1006
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Preparation for diseases of the stomach and bowels	50,527	Mar. 20	121	1006
Dr. Pierre Chemical Company, Chicago, Ill. Suppositories	51,636	Apr. 17	121	2321
Draper, J. S., Cincinnati, Ohio. Wines	51,208	Apr. 10	121	1968
Dreyfuss, Weil & Co., Paducah, Ky. Whisky	50,263	Mar. 6	121	333
Drioli, Francesco, Zara, Austria-Hungary. Maraschino	51,832	Apr. 24	121	2655
Du Montier, Alfred, Washington, D. C. Metal plates for ceilings and side walls	51,831	Apr. 24	121	2655
Dubuque Mattress Factory, Dubuque, Iowa. Mattresses	51,883	Apr. 24	121	2657
Dueber Watch Case Mfg. Co., Canton, Ohio. Watchcases	51,707	Apr. 24	121	2650

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Duff & Sons, P., Pittsburg, Pa. Molasses	51,440	Apr. 17	121	2313
Dunham, Carrigan & Hayden Co., San Francisco, Cal. Flax packing	50,148	Mar. 6	121	328
Dunlap & Co., New York, N. Y. Hats and caps of all kinds	51,125	Apr. 3	121	1670
Dunlevy & Brother, Pittsburg, Pa. Cured meats	51,126	Apr. 3	121	1670
Dunn, Adam E., Chicago, Ill. Periodical	50,149	Mar. 6	121	328
Dunwoody Bros. Soap Company, Denver, Colo. Soap	50,503	Mar. 20	121	1005
Duplex Manufacturing Company, St. Louis, Mo. Banjo-heads and drumheads	50,540	Mar. 20	121	1007
Durkee & Co., E. R., New York, N. Y. Spices	50,225	Mar. 6	121	331
Durkee & Co., E. R., New York, N. Y. Salad-dressing and sauces	51,127	Apr. 3	121	1670
E. Kirstein Sons Co., Rochester, N. Y. Eyeglasses, spectacles, and parts and repairs and cases therefor	51,884	Apr. 24	121	2657
E. A. Williams, Incorporated, Newark, N. J. Wheat bread	51,418	Apr. 17	121	2313
E. C. Atkins & Company, Indianapolis, Ind. Wood and cabinet scrapers	50,810	Apr. 3	121	1657
E. H. Gato Cigar Company, Key West, Fla. Cigars	50,068	Mar. 6	121	325
E. H. Gato Cigar Company, Key West, Fla. Cigars	50,093	Mar. 6	121	326
E. H. Gato Cigar Company, Key West, Fla. Cigars	51,225	Apr. 10	121	1968
E. J. Hart & Co., Limited, New Orleans, La. Tonics	51,286	Apr. 10	121	1971
E. O. Whitford Company, Washington, D. C. Butter	51,287	Apr. 10	121	1971
E. and T. Fairbanks and Company, St. Johnsbury, Vt. Weighing-machines and parts thereof	51,226	Apr. 10	121	1969
Eagle Lye Works, Milwaukee, Wis. Lye and potash	50,226	Mar. 6	121	331
Eagle Lye Works, Milwaukee, Wis. Lye and potash	50,227	Mar. 6	121	331
Eagle Paper Co., Richmond, Va. Bags of paper, cloth, and like materials	50,873	Apr. 3	121	1659
Eagle Pencil Company, New York, N. Y. Lead-pencils	50,127	Mar. 6	121	327
Eagle Pencil Company, New York, N. Y. Penholders	50,128	Mar. 6	121	327
Eagle Pencil Company, New York, N. Y. Lead-pencils	51,020	Apr. 3	121	1666
Eagle Pencil Company, New York, N. Y. Lead-pencils	51,070	Apr. 3	121	1668
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	50,716	Mar. 27	121	1340
Eagle & Phenix Mills, Columbus, Ga. Tickings	51,021	Apr. 3	121	1666
Eagle & Phenix Mills, Columbus, Ga. Tickings	51,022	Apr. 3	121	1666
Eagle & Phenix Mills, Columbus, Ga. Cotton plaids and stripes	51,023	Apr. 3	121	1666
Eagle & Phenix Mills, Columbus, Ga. Tickings	51,128	Apr. 3	121	1670
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	51,129	Apr. 3	121	1670
Eagle & Phenix Mills, Columbus, Ga. Cotton piece goods	51,168	Apr. 3	121	1672
Easley Cotton Mills, Easley, S. C. Sheetings and drills	51,521	Apr. 17	121	2317
Eastern Shore of Virginia Produce Exchange, Onley, Va. Irish and sweet potatoes	51,864	Apr. 24	121	2656
Eaton-Dikeman Co., Lee, Mass. Blotting-paper	51,762	Apr. 24	121	2652
Eclipse Cement & Blacking Co., Philadelphia, Pa. Leather and rubber cement	51,419	Apr. 17	121	2313
Economy Fuel Co., Montgomery, W. Va., and Cincinnati, Ohio. Bituminous and anthracite coal	50,504	Mar. 20	121	1005
Economy Fuel Co., Montgomery, W. Va., and Cincinnati, Ohio. Bituminous and anthracite coal	50,505	Mar. 20	121	1005
Economy Manufacturing Co., New Haven, Conn. Concrete washtrays	50,607	Mar. 27	121	1336
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery textile fabrics	50,192	Mar. 6	121	330
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	50,193	Mar. 6	121	330
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,561	Mar. 20	121	1008
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,562	Mar. 20	121	1008
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,563	Mar. 20	121	1008
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,578	Mar. 20	121	1008
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,732	Mar. 27	121	1341
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,733	Mar. 27	121	1341
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,734	Mar. 27	121	1341
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,756	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,757	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,758	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,759	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,760	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Cotton textile fabrics	50,761	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,762	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,763	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Haircloth cheviots	50,764	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,765	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,766	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Drapery and upholstery cretonnes	50,767	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Textile fabrics	50,768	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Shirtings	50,769	Mar. 27	121	1342
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	50,996	Apr. 3	121	1665
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	51,057	Apr. 3	121	1667
Egerton Bros., Baltimore, Md. Molasses	51,071	Apr. 3	121	1668
Eisenlohr & Bros., Otto, Philadelphia, Pa. Cigars and cheroots	50,874	Apr. 3	121	1659
Ekenberg Milk Products Co., Cortland, N. Y. Preparation made from skim-milk	50,608	Mar. 27	121	1336
Ekenberg Milk Products Co., Cortland, N. Y. Preparation made from skim-milk	50,609	Mar. 27	121	1336
El Zernac Co., New York, N. Y. Analgesics	51,885	Apr. 24	121	2657
Electric Appliance Co., Burlington, Kans. Insoles	50,506	Mar. 20	121	1005
Elgin National Watch Co., Elgin and Chicago, Ill. Watches	50,094	Mar. 6	121	326
Elgin National Watch Company, Elgin and Chicago, Ill. Watches	50,966	Apr. 3	121	1663
Elias Bros. & Co., New York, N. Y. Dress-shirts as distinguished from undershirts	50,717	Mar. 27	121	1340
Eminence Distillery Co., St. Paul, Minn. Whisky	51,637	Apr. 17	121	2321
Englewood Co., Chicago, Ill. Talking-machine records	50,594	Mar. 27	121	1335
Eppstein, Milton L., Fort Worth, Tex. Whisky	50,264	Mar. 6	121	333
Eppstein, Milton L., Fort Worth, Tex. Whisky	50,265	Mar. 6	121	333
Eppstein, Milton L., Fort Worth, Tex. Bitters	50,412	Mar. 13	121	684
Epstein Bros. Co. Ltd., New Orleans, La. Whisky	51,580	Apr. 17	121	2319
Ericsson Telephone Company, New York, N. Y. Dry and wet batteries	51,789	Apr. 24	121	2653
Erste Wiener Export Malzfabrik Hauser & Sobotka, Stadlau, near Vienna, Austria-Hungary. Alimentary products	50,852	Apr. 3	121	1659
Etly, David J., Pittsburg, Pa. Granulated toast	50,588	Mar. 27	121	1335
Eucaline Medicine Co., Dallas, Tex. Remedy for certain named diseases	51,495	Apr. 17	121	2316
Eugene Rimmel Limited, London, England. Perfumed soap	51,581	Apr. 17	121	2319
Eugene Rimmel Limited, London, England. Perfumery	51,638	Apr. 17	121	2321
Eureka Chemical Co., Omaha, Nebr. Obtundent or local anesthetic	51,318	Apr. 10	121	1972
Eureka Fire Hose Co., Jersey City, N. J. Cotton rubber-lined hose	51,708	Apr. 24	121	2660
Eureka Fire Hose Co., Jersey City, N. J. Cotton rubber-lined hose	51,886	Apr. 24	121	2657
Evans, Clarence D., Healdsburg, Cal. Preparation for the face and skin	50,367	Mar. 13	121	683

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Evansville Tool Works, Evansville, Ind. Axes, adzes, and hatchets	50,589	Mar. 27	121	1335
Ewa Plantation Co., Honolulu, Hawaii. Foodstuff	51,024	Apr. 3	121	1666
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,266	Apr. 10	121	1970
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,319	Apr. 10	121	1972
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,320	Apr. 10	121	1972
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,341	Apr. 10	121	1973
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,522	Apr. 17	121	2317
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,523	Apr. 17	121	2317
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,524	Apr. 17	121	2317
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,525	Apr. 17	121	2317
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,549	Apr. 17	121	2318
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,550	Apr. 17	121	2318
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,551	Apr. 17	121	2318
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,607	Apr. 17	121	2320
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	51,608	Apr. 17	121	2320
Eye-Fix Remedy Company, Detroit, Mich. Remedies for diseases of the eye	51,609	Apr. 17	121	2320
F. Korbel & Bros., Inc., San Francisco, Cal. Champagne and still-wine	51,526	Apr. 17	121	2317
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather boots and shoes	50,095	Mar. 6	121	326
F. A. Poth & Sons, Incorporated, Philadelphia, Pa. Lager-beer	50,129	Mar. 6	121	327
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	50,069	Mar. 6	121	325
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	51,397	Apr. 17	121	2312
F. H. Young Company, Boston, Mass. Cleaning compounds for duck and canvas	51,833	Apr. 24	121	2655
F. H. Young Company, Boston, Mass. Dressing for boots and shoes	51,834	Apr. 24	121	2655
F. H. Young Company, Boston, Mass. Cleaning compounds for duck and canvas	51,926	Apr. 24	121	2659
F. O. Pierce Company, New York, N. Y. Liquid putty or glazing preparation	51,927	Apr. 24	121	2659
F. R. Penn Tob. Co., Reidsville, N. C. Granulated smoking-tobacco	51,763	Apr. 24	121	2652
Faber, Eberhard, New York, N. Y. Certain named articles of stationery	50,735	Mar. 27	121	1341
Fairbanks Co., New York, N. Y. Bearing metal	51,227	Apr. 10	121	1969
Fairbanks Co., New York, N. Y. Gas and gasolene engines	50,948	Apr. 3	121	1663
Fairchild Bros. & Foster, New York, N. Y. Certain named medicine	51,582	Apr. 17	121	2319
Fairchild Bros. & Foster, New York, N. Y. Preparation of hydrochloric acid in combination with proteid	50,967	Apr. 3	121	1663
Family Doctor Publishing Co., New York, N. Y. Monthly periodical	50,968	Apr. 3	121	1663
Fandrey, Joseph, Los Angeles, Cal. Lotion used in the treatment of hernia	50,348	Mar. 13	121	682
Farbenfabriken of Elberfeld Co., New York, N. Y. Sensitizing dyestuffs	50,541	Mar. 20	121	1007
Faultless Starch Co., Kansas City, Mo. Powdered laundry starch	51,887	Apr. 24	121	2657
Feiner, Bernard S., Springfield, Mass. Charcoal	51,025	Apr. 3	121	1666
Feirstein, Isaac, Hopkinsville, Ky. Anesthetic	50,782	Mar. 27	121	1343
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	50,969	Apr. 3	121	1663
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	51,288	Apr. 10	121	1971
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	51,321	Apr. 10	121	1972
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	51,322	Apr. 10	121	1972
Figge Doyle Co., Milwaukee, Wis. Whisky	51,463	Apr. 17	121	2314
Filleau, Axel L., Brooklyn, N. Y. Blood remedies or purifiers	50,718	Mar. 27	121	1340
Finley, Frank M., Washington, D. C. Non-alcoholic carbonated beverages	50,228	Mar. 6	121	331
Fischer Chemical Importing Co., New York, N. Y. Remedies for pulmonary diseases	51,228	Apr. 10	121	1969
Fischer Chemical Importing Co., New York, N. Y. Remedies for pulmonary diseases	50,368	Mar. 13	121	682
Fishel, Nessler & Co., New York, N. Y. Hair-pins and hair ornaments	50,542	Mar. 20	121	1007
Fisher, Charles A., Chicago, Ill. Mattresses and cushions	51,552	Apr. 17	121	2318
Flinn, Fitz Allen, New York, N. Y. Paper and envelops	51,725	Apr. 24	121	2651
Flint and Walling Manufacturing Company, Kendallville, Ind. Windmills	51,072	Apr. 3	121	1668
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,742	Apr. 24	121	2651
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,209	Apr. 10	121	1968
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,210	Apr. 10	121	1968
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,229	Apr. 10	121	1969
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,230	Apr. 10	121	1969
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,231	Apr. 10	121	1969
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,232	Apr. 10	121	1969
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,233	Apr. 10	121	1969
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,342	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,343	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,344	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,345	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,346	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,347	Apr. 10	121	1973
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,639	Apr. 17	121	2321
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,640	Apr. 17	121	2321
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	51,641	Apr. 17	121	2321
Ford, Perry M., Columbus, Ohio. Cure for consumption	51,642	Apr. 17	121	2321
Fort Smith Commission Company, Fort Smith, Ark. Roasted coffee	51,169	Apr. 3	121	1672
Foster, Edward C., Providence, R. I. Dyeing preparation	50,464	Mar. 20	121	1004
Foster-Milburn Co., Buffalo, N. Y. Ointments	50,229	Mar. 6	121	331
Foster Milburn Company, Buffalo, N. Y. Astringent remedies for bowel and similar complaints	50,929	Apr. 3	121	1662
Fowler, Henry E., Guilford, Conn. Liquid preparation for external application for rheumatism	51,610	Apr. 17	121	2320
Fox River Butter Company, Aurora, Ill. Butter	50,745	Mar. 27	121	1341
Foy, M. M., St. Louis, Mo. Medical compound	50,483	Mar. 20	121	1004
Francis H. Leggett & Company, New York, N. Y. Canned meats	50,543	Mar. 20	121	1007
Francis H. Leggett & Company, New York, N. Y. Syrup and molasses	50,370	Mar. 13	121	682
Francis H. Leggett & Company, New York, N. Y. Butter	50,610	Mar. 27	121	1336
Frank, George, San Jose, Cal. Canned fruits and vegetables	51,441	Apr. 17	121	2318
Frank H. Fleer & Company, Philadelphia, Pa. Chewing-gum	50,369	Mar. 13	121	682
Frank Miller Company, New York, N. Y. Leather-dressings in liquid, paste, and solid form	51,267	Apr. 10	121	1970
Frankel Regenthal and Damler, St. Paul, Minn. Bitters	50,698	Mar. 27	121	1339
Frankfeld & Co., B., New York, N. Y. Sausages	50,170	Mar. 6	121	329
Frederick Brown Company, Philadelphia, Pa. Preparation of ginger	51,464	Apr. 17	121	2314
Freiberg, J. & A., Cincinnati, Ohio. Whisky	51,289	Apr. 10	121	1971
Freiberg, J. & A., Cincinnati, Ohio. Whisky	50,266	Mar. 6	121	333
Freiberg, J. & A., Cincinnati, Ohio. Whisky	51,527	Apr. 17	121	2317
Freiberg, Meyer & Co., Cincinnati, Ohio. Whisky	51,553	Apr. 17	121	2318
Freiler, Philip, Elgin, Ill. Whisky	50,371	Mar. 13	121	682
Freiler, Philip, Elgin, Ill. Whisky	50,507	Mar. 20	121	1005
Frensdorf & Brown, Baltimore, Md. Whisky	51,268	Apr. 10	121	1970
Friedberger-Aaron Mfg. Co., Philadelphia, Pa. Trimmings for ladies' underwear	51,611	Apr. 17	121	2320
Frink, Byron, Detroit, Mich. Corn-file	51,726	Apr. 24	121	2652
Fruit-Grower Company, St. Joseph, Mo. Monthly magazine	50,644	Mar. 27	121	1337
	51,398	Apr. 17	121	2312

Alphabetical list of registrants of trade-marks for March and April—Continued.

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Fügen, Joseph, New York, N. Y. Bitters	51,211	Apr. 10	121	1968
Funke, Albert H., New York, N. Y. Acetylene lamps and generators	50,572	Mar. 20	121	1008
G. C. Hanford Manufacturing Co., Syracuse, N. Y. Remedy for certain named diseases	51,073	Apr. 3	121	1668
G. & C. Merriam Company, Springfield, Mass. Dictionaries	50,645	Mar. 27	121	1337
G. & C. Merriam Company, Springfield, Mass. Dictionaries	50,646	Mar. 27	121	1337
Gabriel Horn Mfg. Co., Cleveland, Ohio. Automobile-horns	51,032	Apr. 3	121	1666
Gage Brothers & Company, Chicago, Ill. Hats	50,508	Mar. 20	121	1005
Galena Axle Grease Co., Galena, Ill. Cup-grease and lubricating-oils	51,465	Apr. 17	121	2314
Galena-Signal Oil Company, Franklin, Pa. Lubricating-oils	50,900	Apr. 3	121	1661
Gallagher, Charles J., Philadelphia, Pa. Whisky	51,583	Apr. 17	121	2319
Gansert, William L., Rock Island, Ill. Chocolates	50,413	Mar. 13	121	681
Gardner Publishing Company, Cleveland, Ohio. Monthly periodical	51,865	Apr. 24	121	2656
Garrettson & Co., F. P., Newport, R. I., and New York, N. Y. Hams	51,130	Apr. 3	121	1670
Gas Power Publishing Co., St. Joseph, Mich. Monthly magazines	51,928	Apr. 24	121	2659
Gavitt Medical Co., W. W., Topeka, Kans. Certain named medicine	51,253	Apr. 10	121	1970
Geisler, Max, Omaha, Nebr. Song-birds	50,853	Apr. 3	121	1659
General Specialty Company, Philadelphia, Pa. Paper-fasteners	50,325	Mar. 13	121	681
General Specialty Company, Philadelphia, Pa. Locks	51,554	Apr. 17	121	2318
Gennerich & Von Bremen, New York, N. Y. Canned fruits	51,026	Apr. 3	121	1666
Gennerich & Von Bremen, New York, N. Y. Pure olive-oil	51,835	Apr. 24	121	2655
Geo. A. Newman Co., Louisville, Ky. Nerve and nutritive tonic	51,234	Apr. 10	121	1969
Geo. Benz & Sons, St. Paul, Minn. Whisky	51,643	Apr. 17	121	2321
Geo. Benz & Sons, St. Paul, Minn. Whisky	51,644	Apr. 17	121	2321
Geo. Benz & Sons, St. Paul, Minn. Bitters	51,836	Apr. 24	121	2655
Geo. Benz & Sons, St. Paul, Minn. Brandy	51,837	Apr. 24	121	2655
Geo. Benz & Sons, St. Paul, Minn. Whisky	51,929	Apr. 24	121	2659
Geo. D. Wetherill & Co., Inc., Philadelphia, Pa. Liquid paint	51,888	Apr. 24	121	2657
Geo. E. Keith Company, Brockton, Mass. Leather and canvas boots and shoes	51,496	Apr. 17	121	2316
George F. Hewett Co., Worcester, Mass. Cocktails	50,171	Mar. 6	121	329
George F. Hewett Co., Worcester, Mass. Ginger-ale	50,267	Mar. 6	121	333
George G. London Manufacturing Company, Lynn, Mass. Instep-supporter or arch-prop	50,564	Mar. 20	121	1008
George Ziegler Co., Milwaukee, Wis. Certain candies	50,441	Mar. 20	121	1003
Gibbs, John W., New York, N. Y. Devices for use in applying electricity	50,326	Mar. 13	121	681
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned fruits and vegetables	50,442	Mar. 20	121	1003
Gibford, Edward B., Adrian, Mich. Razor-strops	51,442	Apr. 17	121	2313
Gilbert Manufacturing Company, New York, N. Y. Cotton piece goods	50,544	Mar. 20	121	1007
Gilbert Son & Co., Murray, Ky. Plug chewing-tobacco	50,680	Mar. 27	121	1339
Gill, John A., Philadelphia, Pa. Whisky	51,131	Apr. 3	121	1671
Gilleaudeau, Joseph R., New York, N. Y. Hats	51,584	Apr. 17	121	2319
Gilliams & Co., L., Philadelphia, Pa. Whisky	51,697	Apr. 24	121	2650
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	50,509	Mar. 20	121	1005
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	51,185	Apr. 10	121	1967
Gin-Seng-Gin Company, Cincinnati, Ohio. Liquid medicine for organic and nervous diseases	50,930	Apr. 3	121	1662
Ginter Grocery Company, Boston, Mass. Whisky	51,698	Apr. 24	121	2650
Ginter Grocery Company, Boston, Mass. Punch	51,790	Apr. 24	121	2653
Girard Company, Incorporated, Philadelphia, Pa. Alkaline antiseptic and germicide	50,719	Mar. 27	121	1340
Glasner & Barzen Distilling & Importing Co., Kansas City, Mo. Whisky	50,647	Mar. 27	121	1337
Glaub, Rose, Crittenden, Ky. Toilet wash for the skin	50,720	Mar. 27	121	1340
Glens Falls Portland Cement Co., Glens Falls, N. Y. Portland cement	50,862	Apr. 3	121	1659
Glens Falls Portland Cement Co., Glens Falls, N. Y. Portland cement	51,235	Apr. 10	121	1969
Glidden Varnish Company, Cleveland, Ohio. Varnishes and varnish-stains	51,889	Apr. 24	121	2657
Gloversville Knitting Co., Gloversville, N. Y. Knitted covers for hot-water bottles	50,590	Mar. 27	121	1335
Gohmann Bros. & Kahler Co., New Albany, Ind. Stoves, ranges, and furnaces and castings therefor	50,875	Apr. 3	121	1659
Gold Spirit Chemical Co., South Bend, Ind. Antiseptic and germicide preparations	51,555	Apr. 17	121	2318
Goldman, Benjamin T., St. Paul, Minn. Hair-restorers	50,573	Mar. 20	121	1008
Goldman & Co., M., New York, N. Y., and Cleveland, Ohio. Skirts	50,783	Mar. 27	121	1343
Goldsberry, Edgar, La Fayette, Ind. Leather boots and shoes	50,611	Mar. 27	121	1336
Good, Milton D., assignor to U-tah-na Co., Kansas City, Mo. Inhalers and respirators	50,372	Mar. 13	121	683
Goodhue, Wells, Chicago, Ill. Monthly publication	51,290	Apr. 10	121	1971
Gordon Manufacturing Company, New Rochelle, N. Y. Suspenders for trousers	51,027	Apr. 3	121	1666
Gould Coupler Co., New York, N. Y. Car-couplings, car-buffers, and draft-gears and parts thereof	50,443	Mar. 20	121	1003
Goyer Alliance Refining Company, Memphis, Tenn. Stock-food	51,466	Apr. 17	121	2315
Graaff & Co. G. m. b. H., Berlin, Germany. Chemical fire-extinguishers	51,645	Apr. 17	121	2321
Graves & Sons, C. H., Boston, Mass. Alcoholic punch	51,236	Apr. 10	121	1969
Grean, Alexandre M., New York, N. Y. Skirt-distenders	51,170	Apr. 3	121	1672
Great American Automatic Vending Machine Company, Hoboken, N. J. Chocolate and all kinds of candy	51,838	Apr. 24	121	2655
Great Western Cereal Co., Chicago, Ill. Crushed oats	51,059	Apr. 3	121	1667
Green, David, Kansas City, Mo. Whisky	50,510	Mar. 20	121	1006
Green Green & Co., Dayton, Ohio. Crackers and biscuits	51,028	Apr. 3	121	1666
Greene, Tweed & Co., New York, N. Y. Belt-fasteners	50,373	Mar. 13	121	683
Greene, Tweed & Co., New York, N. Y. Force-feed lubricators and the parts thereof	50,612	Mar. 27	121	1336
Greene Tweed & Co., New York, N. Y. Belt-couplings	51,556	Apr. 17	121	2318
Grendel Mills, Greenwood, S. C. Sheetings and drillings	50,511	Mar. 20	121	1006
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	50,230	Mar. 6	121	331
Griggs, Cooper and Company, St. Paul, Minn. Bluing	50,901	Apr. 3	121	1661
Griggs, Cooper and Company, St. Paul, Minn. Chocolates	50,902	Apr. 3	121	1661
Griggs, Cooper & Company, St. Paul, Minn. Syrup	51,132	Apr. 3	121	1671
Griggs, Cooper & Company, St. Paul, Minn. Cracker-meal	51,133	Apr. 3	121	1671
Grinnell Willis & Co., New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,432	Mar. 13	121	685
Grinnell Willis & Co., New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,433	Mar. 13	121	685
Grinnell Willis & Co., New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,434	Mar. 13	121	685
Grinnell Willis & Co., New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,435	Mar. 13	121	685
Grinnell Willis & Co., New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,436	Mar. 13	121	685
Groesman, Maurice H., Philadelphia, Pa. Blood, nerve, and brain food	50,231	Mar. 6	121	331
Grosvenor & Co., J. M., Boston, Mass. Tooth-paste	51,323	Apr. 10	121	1972
Groves Sons, H., Madison, Wis. Whisky	50,269	Mar. 6	121	333
Gruen & Sons, D., Cincinnati, Ohio. Watches, watchcases, and watch-movements	50,545	Mar. 20	121	1007
Guiterman Bros., St. Paul, Minn. Outing-shirts for men and women	50,512	Mar. 20	121	1006
Gulden, Charles, New York, N. Y. Preserved olives	50,232	Mar. 6	121	331
Gulfport Grocery Company, Gulfport, Miss. Cornmeal	50,444	Mar. 20	121	1003
Gump & Sons, G., Baltimore, Md. Rye whisky	50,648	Mar. 27	121	1337
Guthmann Carpenter & Telling, Chicago, Ill. Leather boots and shoes	51,709	Apr. 24	121	2650
Gwinn Bros. & Co., Huntington, W. Va., and Washington Court House, Ohio. Wheat-flour	50,613	Mar. 27	121	1336
H. Webster Company, New York, N. Y. Whisky	51,134	Apr. 3	121	1671
H. G. Tombler Grocery Co., Easton, Pa. Coffee	51,109	Apr. 3	121	1670

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
H. H. Babcock Company, Watertown, N. Y. Carriages	50,811	Apr. 3	121	1657
H. J. Heinz Company, Allegheny, Pa. Vinegar	51,029	Apr. 3	121	1666
H. K. Mulford Company, Philadelphia, Pa. Antiseptic for local and internal use	51,646	Apr. 17	121	2322
H. K. Mulford Company, Philadelphia, Pa. Medicinal mineral oil	51,647	Apr. 17	121	2322
H. K. Mulford Company, Philadelphia, Pa. Remedy for remittent and pernicious malarial fevers	51,648	Apr. 17	121	2322
H. K. Mulford Company, Philadelphia, Pa. Medicinal preparation in suppository or ointment form	51,649	Apr. 17	121	2322
H. K. Mulford Company, Philadelphia, Pa. Granular effervescent salt	51,650	Apr. 17	121	2322
H. N. Martin & Co., Louisville, Ky. Plug chewing-tobacco and smoking-tobacco	51,385	Apr. 17	121	2311
H. & W. Company, Newark, N. J. Children's underwaists	50,349	Mar. 13	121	682
H. W. Huguley Company, Boston, Mass. Whisky	50,173	Mar. 6	121	329
Haas Bros., New York, N. Y. Oysters	50,614	Mar. 27	121	1336
Hadley, William B., New York, N. Y. Liniment	50,784	Mar. 27	121	1343
Hahne & Company, Newark, N. J. Ladies' shoes	50,649	Mar. 27	121	1337
Håkansson, Per, Esløf, Sweden. Antiseptic compound	50,233	Mar. 6	121	331
Haldeman, Jere B., St. Louis, Mo. Powdered preparation for cleaning precious metals	50,465	Mar. 20	121	1004
Hall, John W., Baltimore, Md. Non-alcoholic beverages made of cola-nuts	50,650	Mar. 27	121	1337
Hamer's Sure Cure Company, Vermont, Ill. Veterinary remedy	50,746	Mar. 27	121	1341
Hamilton-Brown Shoe Co., St. Louis, Mo. Women's liquid and paste shoe-dressing	51,839	Apr. 24	121	2655
Hamilton-Brown Shoe Co., St. Louis, Mo. Men's liquid and paste shoe-dressing	51,840	Apr. 24	121	2655
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	50,150	Mar. 6	121	328
Hamilton, Mable A., Boston, Mass. Medicine for kidney affections	51,074	Apr. 3	121	1668
Hammer Dry Plate Company, St. Louis, Mo. Photographic dry-plates	50,931	Apr. 3	121	1662
Hamrick Tank & Barrel Hard Shell Enameling Co., Philadelphia, Pa. Enamel	50,915	Apr. 3	121	1661
Hanan & Son, New York, N. Y. Leather and cloth boots, shoes, and slippers	50,970	Apr. 3	121	1663
Hance Bros. & White, Philadelphia, Pa. Gelatinous elastic capsules	50,414	Mar. 13	121	684
Handbleistift Cie. C. Wm. Bock, Schweinau, near Nuremburg, Germany. Pencils	51,186	Apr. 10	121	1967
Handrich, Fritz, New York, N. Y. Wine	51,841	Apr. 24	121	2655
Hanlin, Faith L., Chicago, Ill. Insecticides	50,785	Mar. 27	121	1343
Hannach & Stiffel, Memphis, Tenn. Men's outer shirts	51,075	Apr. 3	121	1668
Hanson, J. Edward, Pass Christian, Miss. Remedy for certain named diseases	51,171	Apr. 3	121	1672
Hanson & Van Winkle Co., Newark, N. J.; New York, N. Y., and Chicago, Ill. Nickel salts	51,930	Apr. 24	121	2659
Hardy, Richard T., Baltimore, Md. Face-lotion	51,030	Apr. 3	121	1666
Harold, James J., Jersey City, N. J., assignor to T. A. Hill, New York, N. Y. Contractors' dumping-conveyers	51,764	Apr. 24	121	2652
Harris & Bro., Robt., Reidsville, N. C. Chewing and smoking tobacco	51,420	Apr. 17	121	2313
Harris, Charles R., North Windham, Conn. Chains, fobs, chatelaines, and chain-trimmings	50,130	Mar. 6	121	327
Harris, Marcus, Cincinnati, Ohio. Whisky	50,374	Mar. 13	121	683
Hart & Hegeman Mfg. Co., Hartford, Conn. Electric switches	51,743	Apr. 24	121	2651
Hartman, Goldsmith & Co., New York, N. Y. Whisky	50,203	Mar. 6	121	330
Hartman, Samuel B., Columbus, Ohio. Laxative medicines	50,786	Mar 27	121	1343
Hartwig, Otto J., Chicago, Ill. Remedies for skin and scalp diseases	51,348	Apr. 10	121	1973
Harvey Hubbell, Incorporated, Bridgeport, Conn. Pull-sockets	50,234	Mar. 6	121	331
Haserot Canneries Company, Cleveland, Ohio. Canned extract of green corn	51,866	Apr 24	121	2656
Haserot, Samuel F., Cleveland, Ohio. Plug chewing-tobacco	51,842	Apr. 24	121	2655
Haskins Bros. & Co., Sioux City, Iowa, and Omaha, Nebr. Toilet and laundry soap	50,903	Apr. 3	121	1661
Hauger, Charles C., Indianapolis, Ind., and Dayton and Columbus, Ohio. Coats, vests, trousers, and overcoats	50,971	Apr. 3	121	1664
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	51,237	Apr. 10	121	1969
Havana Commercial Company, New York, N. Y., and Jersey City, N. J. Havana cigars	51,291	Apr. 10	121	1971
Hawkridge Bros., Boston, Mass. Tool-steel and steel bars, rods, and sheets	50,932	Apr. 3	121	1662
Hawkridge Brothers, Boston, Mass. Tool steel and steel bars, rods, and sheets	51,349	Apr. 10	121	1973
Hay, Edward A., *et al.*, executors. (See Hay, Henry H.)				
Hay, Eleanor S., *et al.*, executors. (See Hay, Henry H.)				
Hay, Henry H., deceased; E. S. and E. A. Hay, Portland, Me., executors. Vegetable bitters	51,931	Apr. 10	121	2659
Hayden Automatic & Equipment Company, New York, N. Y. Shovels, scoops, and spades	51,187	Apr. 10	121	1967
Haynes Milling Company, Portland, Ind. Wheat-flour	51,467	Apr. 17	121	2315
Hazelwood Company, Limited, Spokane, Wash.; Galena Ill.; Sioux City, Iowa; New York, N. Y., and Portland, Oreg. Candies of all kinds	50,681	Mar. 27	121	1339
Heberton, George V. G., Philadelphia, Pa. Cosmetic hair and skin tonics	51,612	Apr. 17	121	2320
Heilmann, Loth & Gutman, New York, N. Y. Undershirts and drawers for men and women	50,513	Mar. 20	121	1006
Heimann-Miller Manufacturing Company, St. Louis, Mo. Fixtures for displaying goods in stores	51,791	Apr. 24	121	2653
Heine & Co., New York, N. Y. Oils used in making perfume	50,375	Mar. 13	121	683
Henry B. Gilpin Co., Baltimore, Md. Rye whisky	50,160	Mar. 6	121	329
Henry B. Gilpin Co., Baltimore, Md. Rye whisky	50,298	Mar. 6	121	334
Henry Block Co., Limited, New Orleans, La. Wine	50,268	Mar. 6	121	333
Henry Heil Chemical Co., St. Louis, Mo. Liquid medicinal preparation	50,270	Mar. 6	121	333
Henry Milward & Sons, Limited, Redditch, England. Needles for hand and machine sewing	51,557	Apr. 17	121	2318
Henry Pollock Trunk Co., Dallas, Tex. Trunks, suit-cases, traveling-bags, satchels, and telescopes	50,615	Mar. 27	121	1336
Herb, Ferdinand, Superior, Wis. Medicinal preparation	51,932	Apr. 24	121	2659
Herendeen Manufacturing Co., Geneva, N. Y. Steam and hot-water heaters and parts thereof	51,497	Apr. 17	121	2316
Herman Wupperman Gesellschaft mit beschränkter Haftung, Pinneberg, Germany. Wrought-iron hollow ware	51,843	Apr. 24	121	2656
Herrmann, Oscar, New York, N. Y. Organs	51,031	Apr. 3	121	1666
Hess-Bright Manufacturing Co., Philadelphia, Pa. Ball-bearings	50,105	Mar. 6	121	326
Hess & Clark, Dr., Ashland, Ohio. Worm-powder	50,235	Mar. 6	121	332
Hess & Clark, Dr., Ashland, Ohio. Food and medicine for poultry	51,558	Apr. 17	121	2318
Hess & Clark, Dr., Ashland, Ohio. Gall cure	51,559	Apr. 17	121	2318
Hess & Clark, Dr., Ashland, Ohio. Powder for killing vermin and disinfecting	51,560	Apr. 17	121	2318
Hessberg, Magnus, Richmond, Va. Sole and harness leather	50,972	Apr. 3	121	1664
Hewlett & Lee, New York, N. Y. Cotton cloth	50,721	Mar. 27	121	1340
Hewlett & Lee, New York, N. Y. Cotton cloth	50,722	Mar. 27	121	1340
Hewlett & Lee, New York, N. Y. Cotton cloth	50,723	Mar. 27	121	1340
Hewlett & Lee, New York, N. Y. Tea	51,792	Apr. 24	121	2653
Hewlett & Lee, New York, N. Y. Tea	51,816	Apr. 24	121	2654
Heying, Louis, Baltimore, Md. Loaves of bread	51,817	Apr. 24	121	2655
Highland Drug Company, Newburgh, N. Y. Remedy for diseases of the liver and digestive tract	51,651	Apr. 17	121	2322
Higley, Christina J., New York, N. Y. Garters	50,787	Mar. 27	121	1343
Higley, Christina J., New York, N. Y. Hose-supporters	51,652	Apr. 17	121	2322
Hill, Thomas A. (See Harold, James J., assignor.)				
Hillerich & Son, J. F., Louisville, Ky. Base-ball bats	50,812	Apr. 3	121	1657
Hills Bros., San Francisco, Cal. Coffee	51,468	Apr. 17	121	2315
Hinds & Coon, Boston, Mass. Metal-polish	50,070	Mar. 6	121	325
Hinton, Jno., assignor, by mesne assignments, to Brassar Company, Incorporated, Richmond, Va. Non-alcoholic tonic beverage	51,443	Apr. 17	121	2314
Hirsh Brothers, New Haven, Conn. Garment-supporter clasps	50,327	Mar. 13	121	681

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette.	
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Hirshberg, Simon, Boston, Mass. Ladies', men's, and children's leather shoes	51,076	Apr. 3	121	1666
Hite, William T., Walnut, Kans. Ointment	51,561	Apr. 17	121	2318
Hochbaum, Jacob, Little Rock, Ark. Cakes	51,292	Apr. 10	121	1971
Hochstadter, Sigmund, New York, N. Y. Gin	51,238	Apr. 10	121	1969
Hochstadter, Sigmund, New York, N. Y. Cordials	51,239	Apr. 10	121	1969
Hoerber Brewing Co., J. L., Chicago, Ill. Beer	51,293	Apr. 10	121	1971
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	50,528	Mar. 20	121	1006
Hogansville Manufacturing Company, Hogansville, Ga. Cotton duck	50,174	Mar. 6	121	329
Hogansville Manufacturing Company, Hogansville, Ga. Cotton duck	50,546	Mar. 20	121	1007
Högyes' Asbestos Sock Coy., Dr., London, England. Asbestos sock-soles	50,833	Apr. 3	121	1658
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn	51,765	Apr. 24	121	2652
Hohner, Firm of M., New York, N. Y. Mouth-harmonicas	51,890	Apr. 24	121	2657
Holley & Co., S. C., Danbury, Conn. Stiff fur hats	51,077	Apr. 3	121	1666
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags and sacks	50,651	Mar. 27	121	1337
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,135	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,136	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,137	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,138	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,139	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,140	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,141	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,142	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,143	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags, and paper sacks.	51,144	Apr. 3	121	1671
Hollingsworth & Whitney Company, Boston, Mass. Writing-paper	51,145	Apr. 3	121	1671
Holthusen, Adolf R., New York, N. Y. Ginger-ale	51,818	Apr. 24	121	2655
Holzman, Samuel, New York, N. Y. Pills and cough medicine	50,724	Mar. 27	121	1340
Home Remedy Co., South Haven, Mich. Remedy for catarrh, hay-fever, and cold in the head	51,350	Apr. 10	121	1973
Hone, Daniel, London, England. Natural and artificial whalebone	50,204	Mar. 6	121	330
Hood, James M., Albertville, Ala. Liniment	50,747	Mar. 27	121	1341
Hood Rubber Co., Boston, Mass. Tennis-shoes	50,547	Mar. 20	121	1007
Hoover & Bros., P. L., Carlisle, Ind. Liniment	50,788	Mar. 27	121	1343
Hopkins, Ferdinand T., New York, N. Y. Face-powder	51,613	Apr. 17	121	2320
Horton Mfg. Co., Bristol, Conn. Steel fishing-rods	50,916	Apr. 3	121	1661
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	51,681	Apr. 24	121	2649
Hot Shot Medicine Co., Kane, Pa. Remedies for rheumatism for internal and external use	50,789	Mar. 27	121	1343
Household Sewing Machine Co., Providence, R. I. Sewing-machines and sewing-machine parts	51,212	Apr. 10	121	1968
Household Sewing Machine Co., Providence, R. I. Sewing-machines and parts thereof	51,933	Apr. 24	121	2659
Howe Brown & Co. Ltd., Pittsburg, Pa. Steel	50,876	Apr. 3	121	1660
Hower, Frank B., Buffalo, N. Y. Lubricating oils and grease	50,466	Mar. 20	121	1004
Hubbard & Co., J., Boston, Mass. Vegetable germicides	51,351	Apr. 10	121	1974
Hubbs & Corning Co., Baltimore, Md. Wrapping-papers	50,973	Apr. 3	121	1664
Hudgin, Louis, Nogales, Ariz. Ter. Game-boards	50,813	Apr. 3	121	1657
Hull Coal & Coke Corporation, Roanoke, Va. Coal	50,814	Apr. 3	121	1657
Hulman & Co., Terre Haute, Ind. Coffee	50,236	Mar. 6	121	332
Hulman & Co., Terre Haute, Ind. Baking-powder	50,272	Mar. 6	121	333
Hunt & Co., F. W., Boston, Mass. Whisky	50,205	Mar. 6	121	330
Hunt & Co., F. W., Boston, Mass. Whisky	50,271	Mar. 6	121	333
Huntley & Palmers, Ltd., Reading, England. Biscuits and cakes	51,444	Apr. 17	121	2314
Huntley & Palmers, Ltd., Reading, England. Biscuits and cakes	51,766	Apr. 24	121	2652
Huntley & Palmers, Ltd., Reading, England. Biscuits and cakes	51,767	Apr. 24	121	2652
Hurley & Co., Boston, Mass. Whisky	50,151	Mar. 6	121	328
Hurley & Co., Boston, Mass. Whisky	50,273	Mar. 6	121	333
Hurley, Horace O., Louisville, Ky. Medicine for certain named diseases	50,237	Mar. 6	121	332
Hurley, Horace O., Louisville, Ky. Certain named medicines	50,548	Mar. 20	121	1007
Hutchinson, Pierce & Co., New York, N. Y. Shirts, shirt-waists, and blouses	51,146	Apr. 3	121	1671
Hydrex Felt & Engineering Co., Portland, Me.; East Walpole, Mass.; New York, N. Y., and Chicago, Ill. Asphaltic waterproofing compound	50,854	Apr. 3	121	1659
Hyndman, Robert J., Cincinnati, Ohio. Sheet-metal roofing-plates	50,815	Apr. 3	121	1657
I. Trager Co., Cincinnati, Ohio. Whisky	50,301	Mar. 6	121	334
I. Trager Co., Cincinnati, Ohio. Whisky	50,428	Mar. 13	121	685
Illinois Laboratories, Chicago, Ill. Tablets for diseases of the entire digestive tract	50,300	Mar. 6	121	334
Illinois Laboratories, Chicago, Ill. Medicinal and toilet oil for skin diseases	50,529	Mar. 20	121	1006
Independence Coffee and Spice Co., Pueblo, Colo. Coffee	50,299	Mar. 6	121	334
Independent Brewing Ass'n, Chicago, Ill. Beer	51,469	Apr. 17	121	2315
Independent Packers Fertilizer Co., Columbus, Ohio. Fertilizers	50,484	Mar. 20	121	1004
India Alkali Works, Boston, Mass. Preparation for scouring, cleansing, and washing	50,855	Apr. 3	121	1659
Industrial Press, New York, N. Y. Annual publication	50,161	Mar. 6	121	329
International Cutlery Company, Fremont, Ohio. Snips, shears, and scissors	51,653	Apr. 17	121	2322
International Harvester Co. of America, Chicago, Ill. Harvesters and extra and repair parts and pieces therefor	50,467	Mar. 20	121	1004
International Harvester Co. of America, Chicago, Ill. Harvesters and repair parts and pieces therefor	50,468	Mar. 20	121	1004
International Harvester Co. of America, Chicago, Ill. Ropes, cords, twine, and binder-twine	51,819	Apr. 24	121	2655
International Paper Company, New York, N. Y. Papers made from wood-pulp	50,974	Apr. 3	121	1664
International Power Company, Providence, R. I. Fire-engines	50,816	Apr. 3	121	1657
International Silver Company, Meriden, Conn. Silver-plated hollow ware	51,078	Apr. 3	121	1668
International Silver Company, Meriden, Conn. Silver-plated hollow ware	51,079	Apr. 3	121	1668
International Silver Company, Meriden, Conn. Silver-plated hollow ware	51,188	Apr. 10	121	1967
International Sprinkler Co., Philadelphia, Pa. Automatic fire-extinguishing apparatus	50,274	Mar. 6	121	333
Iowa Soap Company, Burlington, Iowa. Pumice-soap	50,071	Mar. 6	121	325
Irons & Russell, Providence, R. I. Solid-gold badges	50,328	Mar. 13	121	681
Italian Swiss Colony, San Francisco, Cal. Wine	50,096	Mar. 6	121	326
Italian Swiss Colony, San Francisco, Cal. Wine	50,097	Mar. 6	121	326
Italian Swiss Colony, San Francisco, Cal. Wine	51,421	Apr. 17	121	2313
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	50,549	Mar. 20	121	1007
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and shirtings	50,574	Mar. 20	121	1008
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	51,294	Apr 10	121	1971
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	51,768	Apr. 24	121	2653
Iwahara, Kenzo, New York, N. Y. Cotton sheetings and drills	51,844	Apr. 24	121	2656
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages	51,891	Apr. 24	121	2657
J. A. Wright & Co., Keene, N. H. Polishes	51,240	Apr. 10	121	1969
J. B. Brooks & Co., Limited, Birmingham, England. Cycle-saddles	50,131	Mar. 6	121	327
J. C. Eno, Limited, London, England. Dry preparation for making a non-intoxicating beverage	51,934	Apr. 24	121	2659
J. C. Marks Liquor Co., Birmingham, Ala. Whiskies	50,997	Apr. 6	121	1665
J. D. & R. S. Christian Co., Richmond, Va. Baking-powder	51,224	Apr. 10	121	1973

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J. & F. Schroth Pack. Co., Cincinnati, Ohio. Hams, shoulders, and bacon	51,325	Apr. 10	121	1972
J. J. Douglas Co., Louisville, Ky. Whisky	50,949	Apr. 3	121	1663
J. M. Carpenter Tap & Die Co., Pawtucket, R. I. Certain named tools	50,950	Apr. 3	121	1663
J. M. Robinson, Norton & Co., Louisville, Ky. Men's negligée and dress shirts	50,975	Apr. 3	121	1664
J. P. Baden Produce Co., Winfield, Kans. Butter	50,485	Mar. 20	121	1005
J. P. Eustis Mfg. Co., Boston, Mass. Water-sprayers, showers, and parts, fixed or portable	50,652	Mar. 27	121	1338
J. S. McCormick Co., Pittsburg, Pa. Foundry facings or blacking	51,845	Apr. 24	121	2656
J. S. McCormick Co., Pittsburg, Pa. Foundry facings or blacking	51,892	Apr. 24	121	2657
J. T. Kenny & Co., St. Paul, Minn. Soap chips	50,682	Mar. 27	121	1339
J. W. Biles Co., Cincinnati, Ohio. Blended feeds and distillers' and brewers' dried grains	51,793	Apr. 24	121	2653
Jack Frost Baking Powder Co., St. Louis, Mo. Baking-powder	50,616	Mar. 27	121	1336
Jacobson & Bro., A., New York, N. Y. Fur garments	51,727	Apr. 24	121	2651
James H. Rhodes & Company, Chicago, Ill. Natural stone used for rubbing purposes	51,445	Apr. 17	121	2314
Janowitz, Julius, New York, N. Y. Corset bones or stays	50,514	Mar. 20	121	1006
Jaros Importing and Distributing Co. (See Clover Leaf Wine Co., assignor.)				
Jas. E. Pepper & Co., Lexington, Ky. Whisky	50,275	Mar. 6	121	333
Jas. R. Ross & Co., Indianapolis, Ind. Whisky	51,269	Apr. 10	121	1970
Jesse Moore Hunt Co., Louisville, Ky. Whisky	50,175	Mar. 6	121	329
Jesse Moore Hunt Co., San Francisco, Cal. Whisky	51,846	Apr. 24	121	2656
John B. Canepa Company, Chicago, Ill. Cereal paste goods	50,396	Mar. 13	121	683
John B. Stetson Company, Philadelphia, Pa. Soft and stiff felt hats and caps	51,893	Apr. 24	121	2657
John Bardenheier Wine and Liquor Co., St. Louis, Mo. Whisky	50,933	Apr. 3	121	1662
John Bardenheier Wine & Liquor Co., St. Louis, Mo. Bitters	51,352	Apr. 10	121	1974
John Brenner Brewing Co., Covington, Ky. Beer	50,736	Mar. 27	121	1341
John Breuner Company, San Francisco, Cal. Mattresses	51,110	Apr. 3	121	1670
John C. Lewis Co., Louisville, Ky. Corsets	51,728	Apr. 24	121	2651
John C. Weller Co., Louisville, Ky. Whisky	51,935	Apr. 24	121	2659
John Callahan and Co., Inc., Seattle, Wash. Boiler-cleaning compounds	50,976	Apr. 3	121	1664
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	51,794	Apr. 24	121	2653
John F. Meyer & Sons Milling Co., St. Louis and Springfield, Mo. Wheat-flour	51,795	Apr. 24	121	2654
John Finn Metal Works, San Francisco, Cal. Babbitt metal and antifriction and bearing metals	50,817	Apr. 3	121	1657
John Finn Metal Works, San Francisco, Cal. Babbitt metal and antifriction and bearing metals	50,818	Apr. 3	121	1657
John Finn Metal Works, San Francisco, Cal. Antifriction and bearing metals	50,819	Apr. 3	121	1657
John Goodwin Company, New York, N. Y. Silk dress material	50,377	Mar. 13	121	683
John M. Wolf Company, Brooklyn, N. Y. Stove-polishes and stove-varnishes	50,379	Mar. 13	121	683
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	51,399	Apr. 17	121	2312
John T. Lewis & Bros. Co., Philadelphia, Pa. Pigment colors and colored paints	51,400	Apr. 17	121	2312
Johnson, Henry H., East Orange, N. J. Hair-tonics	51,295	Apr. 10	121	1971
Johnson & Johnson, New Brunswick, N. J. Tooth-paste	50,378	Mar. 13	121	683
Johnson & Watson Co., Greensboro, N. C. Leather boots and shoes	51,060	Apr. 3	121	1667
Johnston, Thomas, Freeport, N. Y. Medicine for the treatment of alcoholism	50,977	Apr. 3	121	1664
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	51,562	Apr. 17	121	2318
Joliet Stove Works, Joliet, Ill. Heating and cooking stoves	51,654	Apr. 17	121	2322
Jones and Co., W. H., Boston, Mass. Whisky	50,935	Apr. 3	121	1662
Jones and Co., W. H., Boston, Mass. Whisky	51,296	Apr. 10	121	1971
Jones & Co., W. H., Boston, Mass. Whisky	51,655	Apr. 17	121	2322
Jones & Co., W. H., Boston, Mass. Whisky	51,656	Apr. 17	121	2322
Jones Dry Goods Co., Kansas City, Mo. Coats, vests, and trousers	51,614	Apr. 17	121	2320
Jones, Frank, Kansas City, Mo. Whisky	50,934	Apr. 3	121	1662
Jones, Robert H., Bath, N. Y. Champagne	50,820	Apr. 3	121	1657
Jordan, Andrew J., St. Louis, Mo. Razor-strops	51,894	Apr. 24	121	2657
Jordan Stabler Co., Baltimore, Md. Flavoring extracts	50,238	Mar. 6	121	332
Joseph Burnett Co., Boston, Mass. Flavoring extracts	50,460	Mar. 20	121	1004
Joseph Campbell Company, Camden, N. J. Tabasco catchup and tomato catchup	50,239	Mar. 6	121	332
Joseph Campbell Company, Camden, N. J. Chilli sauce, tabasco sauce, and salad-dressing	50,240	Mar. 6	121	332
Joseph G. Dill, Inc., Richmond, Va. Plug, cut-plug, and smoking tobacco	50,096	Mar. 6	121	326
Joseph N. Eisendrath Company, Chicago, Ill. Gloves and mittens	50,213	Mar. 6	121	331
Joseph N. Eisendrath Company, Chicago, Ill. Gloves and mittens	51,270	Apr. 10	121	1970
Joveite Manufacturing Company, Alexandria, Va. Nitro compounds	50,617	Mar. 27	121	1336
Jungmann, J., New York, N. Y. Remedy for the cure of liver complaints, constipation, and biliousness	50,376	Mar. 13	121	683
Kabo Corset Company, Chicago, Ill. Corsets	50,176	Mar. 6	121	329
Kaestner, Edward F., New York, N. Y. Washing fluids	51,796	Apr. 24	121	2654
Kahama Chemical Co., St. Louis, Mo. Remedies for certain named diseases	50,429	Mar. 13	121	685
Kahn Bros., New York, N. Y. Whisky	50,415	Mar. 13	121	684
Kahn, Harry, Cincinnati, Ohio. Whisky	50,153	Mar. 6	121	328
Kahn, Harry, Cincinnati, Ohio. Whisky	51,033	Apr. 3	121	1666
Kalamazoo Stove Co., Kalamazoo, Mich. Ranges, cooking-stoves, and heating-stoves	51,297	Apr. 10	121	1971
Kansas Portland Cement Co., Iola, Kans. Portland cement	50,877	Apr. 3	121	1660
Kaufmann, Baer & Co., Cincinnati, Ohio. Whisky	50,276	Mar. 6	121	333
Kaufmann, David J., Perth Amboy, N. J. Poison for animals and insects	51,936	Apr. 24	121	2659
Keidel, Henry, Baltimore, Md. Bicycles	51,353	Apr. 10	121	1974
Keidel, Henry, Baltimore, Md. Hoes	51,797	Apr. 24	121	2654
Keith, Simmons & Co., Nashville, Tenn. Scissors and shears	51,895	Apr. 24	121	2657
Kellogg-Mackay-Cameron Co., Chicago, Ill. Boilers and radiators	51,615	Apr. 17	121	2320
Kellogg-Mackay-Cameron Co., Chicago, Ill. Bath-tubs and lavatories	51,616	Apr. 17	121	2320
Kelly & Co., M. R., Joliet, Ill. Corn-killing plasters	50,099	Mar. 6	121	328
Kendall Mfg. Co., Providence, R. I. Polishing-soap	50,878	Apr. 3	121	1660
Kendall Mfg. Co., Providence, R. I. Soap	50,879	Apr. 3	121	1660
Kenneweg Company, Cumberland, Md. Wheat-flour	51,162	Apr. 3	121	1672
Kent Lubricating Company, Milwaukee, Wis. Grease	50,100	Mar. 6	121	328
Kerins, Thomas J., Addison, N. Y. Cigars	51,422	Apr. 17	121	2313
Kickapoo Indian Medicine Co., Clintonville, Conn. Cough cure	50,565	Mar. 20	121	1008
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	50,627	Mar. 27	121	1337
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	50,834	Apr. 3	121	1658
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Wheelbarrows and the parts thereof	51,563	Apr. 17	121	2318
King & Co., J. B., New York, N. Y. Plastering and finishing cement	51,710	Apr. 24	121	2650
King & Son, Charles, Alexandria, Va. Wheat-flour	51,496	Apr. 17	121	2316
Klinger, Richard, Gumpoldskirchin, Austria-Hungary. Packing for stuffing-boxes and the like	50,978	Apr. 3	121	1664
Knapp Rubber Binding Co., New York, N. Y. India-rubber stair-nosings	51,896	Apr. 24	121	2658
Knapp Rubber Binding Co., New York, N. Y. India-rubber stair-nosings	51,897	Apr. 24	121	2658
Knapp Rubber Binding Co., New York, N. Y. India-rubber binding	51,937	Apr. 24	121	2659
Knapp Rubber Binding Co., New York, N. Y. India-rubber binding	51,938	Apr. 24	121	2659
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Medical compound to be used as an astringent	51,898	Apr. 24	121	2658

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Medical compound to be used as a hemostatic.	51,899	Apr. 24	121	2658
Knox, Charles B., Johnstown, N. Y. Compound for curing blood and skin diseases	50,380	Mar. 13	121	683
Knox, Edward M., New York, N. Y. Hats and caps	50,790	Mar. 27	121	1343
Kny-Scheerer Company, Brooklyn, N. Y. Certain named toilet preparation	51,326	Apr. 10	121	1973
Kohn, David, Philadelphia, Pa. Whisky	51,585	Apr. 17	121	2319
Köller & Co., F., Solingen, Germany. Pocket-knives	50,904	Apr. 3	121	1661
Köller & Co., F., Solingen, Germany. Scissors	51,564	Apr. 17	121	2318
Kopp, Charles R., York, Pa. Soothing-syrup	51,172	Apr. 3	121	1672
Kops Bros., New York, N. Y. Corsets, corset-waists, and corset-steels	50,936	Apr. 3	121	1662
Krank, Alfred J., St. Paul, Minn. Dandruff and skin cure	51,657	Apr. 17	121	2322
Krauser & Brother, E., Milton, Pa. Liquid extract of smoke for preserving meats	50,416	Mar. 13	121	684
Kriete, John E., Dunnsville, Va. Canned fruits and vegetables	51,080	Apr. 3	121	1668
Kullman, Salz & Company, San Francisco, Cal. Oak-tanned cowhide, harness-leather, skirting, and cut stock	51,900	Apr. 24	121	2658
L. Rose & Co., Limited, London, England. Glass bottles	51,682	Apr. 24	121	2649
L. A. Thompson Scenic Railway Co., New York, N. Y. Scenic railways	51,820	Apr. 24	121	2655
La Bastie Glass Co., Ottawa, Ill. Glass lamp-chimneys	50,618	Mar. 27	121	1336
Lacey & Co. C. E., Aberdeen, S. D. Insecticides	51,241	Apr. 10	121	1969
Lambertville Rubber Company, Lambertville, N. J. Rubber boots and shoes	51,711	Apr. 24	121	2650
Lang & Co., H. A., Philadelphia, Pa. Men's, women's, and children's hosiery	51,798	Apr. [illegible]	121	2654
Lanman & Kemp, New York, N. Y. Hair-tonics	50,979	Apr. 3	121	1664
Larom, Frank W., New York, N. Y. Ladies' and gentlemen's kid, cloth, and chamois gloves	51,586	Apr. 17	121	2319
Lauber, Carl F., Philadelphia, Pa. Gins	51,081	Apr. 3	121	1668
Lauber, Carl F., Philadelphia, Pa. Brandies and fruit-brandies	51,082	Apr. 3	121	1668
Lawrence, Benjamin B., New York, N. Y. Local anesthetics	50,725	Mar. 27	121	1341
Lawrence & Son, W. A., Chester, N. Y. Neufchâtel cheese	50,619	Mar. 27	121	1336
Leclanché Battery Co., New York, N. Y. Electric batteries	50,937	Apr. 3	121	1662
Lee Broom & Duster Company, Lincoln, Nebr. Brooms	51,901	Apr. 24	121	2658
Lehmaier, Louis A., New York, N. Y. Writing-paper	50,550	Mar. 20	121	1007
Lehn & Fink, New York, N. Y. Spices	51,470	Apr. 17	121	2315
Lennox Furnace Co., Marshalltown, Iowa. Furnaces	51,799	Apr. 24	121	2654
Leo, V. de, Tampa, Fla. Medicinal preparation	50,781	Mar. 27	121	1343
Levalley, Christopher W., Milwaukee, Wis. Shaft-hangers	50,620	Mar. 27	121	1336
Levi, Simon, Terre Haute, Ind. Wool blankets	50,178	Mar. 6	121	329
Levi Strauss & Co., San Francisco, Cal. Outer garments	50,748	Mar. 27	121	1341
Levi Strauss & Company, San Francisco, Cal. Overshirts	51,528	Apr. 17	121	2317
Levinstein, Israel, Baltimore, Md. Leather boots and shoes	50,132	Mar. 6	121	328
Levinstein, Israel, Baltimore, Md. Leather boots and shoes	50,155	Mar. 6	121	328
Levy & Co., Lee, St. Louis, Mo. Whisky	50,277	Mar. 6	121	333
Lewis Pharmacal Co., Baltimore, Md. Headache remedy	50,575	Mar. 20	121	1008
Lexington Manufacturing Co., Baltimore, Md. Powder for cleaning and polishing	51,902	Apr. 24	121	2658
Lichtenstein, Max, Jerome, Ariz. Ter. Remedies for certain named diseases	51,939	Apr. 24	121	2659
Lieberman, Samuel, Brooklyn, N. Y. Whisky	50,278	Mar. 6	121	333
Liebold & Co., Berlin, Germany. Cement for building purposes, gypsum, and lime	51,683	Apr. 24	121	2649
Lindsay, Samuel W., Omaha, Nebr. Gold rings	50,980	Apr. 3	121	1664
Lion Extract Co., Winnsboro, S. C. Flavoring extracts	51,327	Apr. 10	121	1973
Little & Company, A. E., Lynn, Mass. Boots and shoes of leather and of leather and cloth	50,329	Mar. 13	121	681
Livingston Seed Co., Columbus, Ohio. Garden, flower, and field seeds	50,530	Mar. 20	121	1006
Lloyd Brothers, Cincinnati, Ohio. Antiseptics	50,515	Mar. 20	121	1006
Lloyd Brothers, Cincinnati, Ohio. Escharotics	50,516	Mar. 20	121	1006
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation	50,517	Mar. 20	121	1006
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation	50,518	Mar. 20	121	1006
Lloyd Brothers, Cincinnati, Ohio. Antiseptics or germicides	50,519	Mar. 20	121	1006
Logan, Millie B., Rochester, N. Y. Gold, silver, and plated spoons	50,938	Apr. 3	121	1662
Lonke, John, New York, N. Y. Woolen dress goods	51,588	Apr. 17	121	2319
Loonen, Charles, Paris, France. Tooth-brushes	50,470	Mar. 20	121	1004
Lopez y Cia., Havana, Cuba. Cigars	51,699	Apr. 24	121	2650
Lopez y Cia., Havana, Cuba. Cigars	51,700	Apr. 24	121	2650
Loray Mills, Gastonia, N. C. Sheetings and drills	51,271	Apr. 10	121	1970
Lord & Taylor, New York, N. Y. Hosiery	51,800	Apr. 24	121	2654
Lord & Taylor, New York, N. Y. Hosiery	51,801	Apr. 24	121	2654
Los Angeles Olive Growers Association, Los Angeles, Cal. Olive-oil	51,298	Apr. 10	121	1971
Lothrop, Lee & Shepard Company, Boston, Mass. Books of fiction	51,744	Apr. [illegible]	121	2652
Louderbough, Harry, Jersey City, N. J. Marine paint	51,423	Apr. 17	121	2313
Low Moor Company, Limited, Low Moor, near Bradford, England. Rivets	51,189	Apr. 10	121	1967
Low Moor Company, Limited, Low Moor, near Bradford, England. Iron bars, rods, sheets, plates, hooping, and tires	51,242	Apr. 10	121	1969
Lowell Weaving Company, Lowell and Boston, Mass. Cotton duck	51,589	Apr. 17	121	2319
Lowell Weaving Company, Lowell and Boston, Mass. Cotton duck	51,590	Apr. 17	121	2319
Lowenstein & Co., Atlanta, Ga. Carbonated ginger-ale	50,683	Mar. 27	121	1339
Lunkenheimer Company, Cincinnati, Ohio. Grease-cups	50,453	Mar. 20	121	1003
Lunkenheimer Company, Cincinnati, Ohio. Oil-cups	50,595	Mar. 27	121	1336
Luyties Brothers, New York, N. Y. Sherry	51,213	Apr. 10	121	1968
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	50,133	Mar. 6	121	328
Lyon & Healy, Chicago, Ill. Guitars and mandolins	50,591	Mar. 27	121	1335
Lyon & Healy, Chicago, Ill. Strings for violins and guitars	50,981	Apr. 3	121	1664
Lyon & Healy, Chicago, Ill. Pianos	51,190	Apr. 10	121	1967
Lyon & Healy, Chicago, Ill. Strings for violins	51,299	Apr. 10	121	1971
Lyon & Healy, Chicago, Ill. Self-playing pianos without keyboards	51,370	Apr. 17	121	2311
Lyon & Healy, Chicago, Ill. Strings for violins	51,371	Apr. 17	121	2311
Lyon & Healy, Chicago, Ill. Guitars and mandolins	51,372	Apr. 17	121	2311
Lyon & Healy, Chicago, Ill. Banjos	51,373	Apr. 17	121	2311
Lyon & Healy, Chicago, Ill. Strings for musical instruments	51,374	Apr. 17	121	2311
Lyon & Healy, Chicago, Ill. Drums	51,729	Apr. 24	121	2651
M. A. Packard Company, Brockton, Mass. Boots and shoes made of leather	50,551	Mar. 20	121	1007
M.I.S.T. Co., Toledo, Ohio. Medicines for purifying the blood	50,798	Mar. 27	121	1344
M.I.S.T. Co., Toledo, Ohio. Medicines for purifying the blood	50,799	Mar. 27	121	1344
Macbeth-Evans Glass Company, Pittsburg, Pa. Lamp glasses and globes	50,330	Mar. 13	121	681
Machen & Hudson, C., Liverpool, England. Ale and stout	51,802	Apr. 24	121	2654
Macleod, Warren M., Philadelphia, Pa. Medical tablet	51,083	Apr. 3	121	1668
Magnus & Co., Jos. A., Cincinnati, Ohio. Whisky	50,279	Mar. 6	121	333
Mahan Supply Co., Wichita, Kans. Whisky	51,591	Apr. 17	121	2319
Mahoney, J. & E., Portsmouth, Va. Whisky	50,179	Mar. 6	121	329
Main Belting Co., Philadelphia, Pa. Machine-belting	51,471	Apr. 17	121	2315
Maline Mills Company, Salem, N. C. Covers for corsets, ladies pants and vests	50,998	Apr. 3	121	1666
Malleable Iron Fittings Company, Branford, Conn. Metal pipe-fittings	51,529	Apr. 17	121	2317

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Malone Manufacturing Company, Malone, N. Y. Men's and boys' pants	51,530	Apr. 17	121	2317
Mandis, Anthony K., Washington, D. C. Remedy for epilepsy	50,241	Mar. 6	121	332
Manss Shoe Manufacturing Company, Cincinnati, Ohio. Leather boots and shoes	51,061	Apr. 3	121	1667
Manufacturers' Record Publishing Company, Baltimore, Md. Newspaper	50,331	Mar. 13	121	681
Maple City Soap Works, Monmouth, Ill. Toilet and laundry soap	50,684	Mar. 27	121	1339
Maple City Soap Works, Monmouth, Ill. Soap	50,856	Apr. 3	121	1659
Mariani & Co., New York, N. Y. Cordials	50,939	Apr. 3	121	1662
Marietta Knitting Co., Marietta, Ga. Hosiery	50,982	Apr. 3	121	1664
Marino, Charles G., Coney Island, N. Y. Medicines for venereal diseases	50,749	Mar. 27	121	1342
Marschner, Alfred, Omaha, Nebr. Chewing-tobacco in cigar form	50,857	Apr. 3	121	1659
Marshall Field & Company, Chicago, Ill. Quilts	51,592	Apr. 17	121	2319
Martin L. Cohn Co., New York, N. Y. Dress goods and linings	51,034	Apr. 3	121	1666
Martin & McAndrews, Baltimore, Md. Whisky	50,653	Mar. 27	121	1338
Martindale & Co., Thomas, Philadelphia, Pa. Champagne	51,214	Apr. 10	121	1968
Martine, Mary B., New York, N. Y. Ribbon, ribbon-bows, and galloon-bindings	50,381	Mar. 13	121	683
Maryland Distilling Co., Chicago, Ill. Whisky	50,180	Mar. 6	121	329
Mason, Albert G., Cleveland, Ohio. Sewing-machines	51,531	Apr. 17	121	2317
Mason & Hamlin Co., Cambridge, Mass. Pianos	51,446	Apr. 17	121	2314
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	50,750	Mar. 27	121	1341
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	50,751	Mar. 27	121	1341
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	51,684	Apr. 24	121	2649
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	51,867	Apr 24	121	2656
Masurite Explosive Company, Masury, Ohio. Explosives	50,654	Mar. 27	121	1338
Maynard, Charles A., Springfield, Mass. Proprietary medicine	51,903	Apr. 24	121	2658
Mayor, Henry A., Kansas City, Mo. Hair color-restorer or hair-dye	50,940	Apr. 3	121	1662
McAnulty, Marie D., New York, N. Y. Magazines	51,769	Apr. ■	121	2652
McBride, John H., Des Moines, Iowa. Clothes-pins	50,417	Mar. 13	121	684
McCart Mosset Co., Cleveland, Ohio. Whisky	50,302	Mar. 6	121	334
McClellan, Hugh H., Troy, N. Y. Outer and dress shirts	51,084	Apr. 3	121	1669
McCloskey Brothers, New Orleans, La. Wheat-flour	51,472	Apr. 17	121	2315
McConway & Torley Co., Pittsburg, Pa. Iron and steel castings and forgings	50,628	Mar. 27	121	1337
McDonald, Benjamin H., Fort Worth, Tex. Aerated or carbonated bottled soda-water and syrup for the same	51,803	Apr. 24	121	2654
McDonough, Michael F., Philadelphia, Pa. Whisky	50,941	Apr. 3	121	1662
McIlhenny's Son, E., Avery's Island, La. Pepper-sauce	51,035	Apr. 3	121	1666
McKesson & Robbins, New York, N. Y. Pharmaceutical preparations for the treatment of kidney diseases	50,752	Mar. 27	121	1342
McKesson & Robbins, New York, N. Y. Chemical preparation	50,983	Apr. 3	121	1664
McKinney, William C., New Brighton, assignor to Porcela Company, Pittsburg, Pa. Preparations for cleaning enameled and porcelain ware	50,471	Mar. 20	121	1004
McKinney, William C., New Brighton, assignor to Porcela Company, Pittsburg, Pa. Preparations for cleaning enameled and porcelain ware	51,447	Apr. 17	121	2314
Meadville, Pennsylvania Distilling Company, Meadville, Pa. Whiskies	50,280	Mar. 6	121	333
Medical Lake Salts Mfg. Co., Spokane, Wash. Toilet soap	50,885	Apr. 3	121	1660
Medicinal Balsam Company, San Francisco and Palo Alto, Cal. Remedy for catarrh, tuberculosis, and allied diseases	50,797	Mar 27	121	1344
Megler, Joseph G., Brookfield, Wash. Canned salmon	50,281	Mar. 6	121	333
Megler, Joseph G., Brookfield, Wash. Canned salmon	50,282	Mar. 6	121	333
Mellier Drug Company, St. Louis, Mo. Tonic and general stimulant	51,499	Apr. 17	121	2316
Mellier Drug Company, St. Louis, Mo. Specific for neuralgia and rheumatism	51,500	Apr. 17	121	2316
Menard, Robert P., Macon, Ga. Remedy for croup and colds	50,791	Mar. 27	121	1343
Mendleson's Sons, A., Albany, N. Y. Potash, lye, and caustic soda	50,792	Mar. 27	121	1343
Menendez, Joaquin, New York, N. Y. Butter	51,375	Apr. 17	121	2311
Mercer Chemical Company, Mercer, Pa. Antiseptic solution	51,593	Apr. 17	121	2319
Merchant & Evans Co., Camden, N. J. Antifriction metals	50,472	Mar. 20	121	1004
Merchants Coal Company, Baltimore, Md. Coal	50,858	Apr. 3	121	1659
Merrell-Soule Company, Syracuse, N. Y. Condensed mince-meat	50,242	Mar. 6	121	332
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	51,712	Apr. 24	121	2650
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	51,745	Apr. 24	121	2652
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	51,746	Apr. 24	121	2652
Michaelis & Sons, M., New York, N. Y. Cocoa-oatmeal preparations	51,147	Apr. 3	121	1671
Michelson & Bros., I., Cincinnati, Ohio. Whisky	50,152	Mar. 6	121	328
Michelson & Bros., I., Cincinnati, Ohio. Whisky	50,418	Mar. 13	121	684
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	51,401	Apr. 17	121	2312
Michigan Condensed Milk Co., Lansing, Mich., and New York, N. Y. Condensed milk	51,424	Apr. 17	121	2313
Midget Fly Plate Company, San Francisco, Cal. Sticky fly-paper	50,999	Apr. 3	121	1665
Midland Manufacturing Co., Tarkio, Mo. Cultivators	51,617	Apr. 17	121	2320
Migranose Importing Co., Philadelphia, Pa. Headache specific put up in tabular form	50,382	Mar. 13	121	683
Miller, Charles A., Buffalo, N. Y. Games	51,473	Apr. 17	121	2315
Miller, Du Brul & Peters Mfg. Co., Cincinnati, Ohio. Cigarettes	50,893	Apr. 3	121	1660
Miller, Sidney F., Brooklyn, N. Y. Whisky	50,655	Mar. 27	121	1338
Milliken, Tomlinson Co., Portland, Me. Coffee-berry, either whole or ground	50,473	Mar. 20	121	1004
Milloy and Co., John, Chicago, Ill. Cloth having a polished finish	51,804	Apr. 24	121	2654
Minor & Son, P. W., Batavia, N. Y. Rubber heels for boots and shoes	50,206	Mar. 6	121	330
Minor & Son, P. W., Batavia, N. Y. Leather boots and shoes	50,283	Mar. 6	121	333
Mitchell, Clarence B., Boston, Mass. Canned sardines	50,284	Mar. 6	121	333
Mitchell, Clarence B., Boston, Mass. Canned sardines	51,868	Apr. 24	121	2656
Model Milling & Elevator Company, Greeley, Colo. Wheat-flour	50,303	Mar. 6	121	334
Monaghan, Michael W., Woodhaven, N. Y. Liquid rheumatic remedy	51,191	Apr. 10	121	1967
Morris Bros. Allegheny, Pa. Castor-oil	50,726	Mar. 27	121	1341
Morris and Company, Yardville, N. J. Carpets	51,085	Apr. 3	121	1669
Morris & Company, Nelson, Chicago, Ill. Hash and hashed meats	51,474	Apr. 17	121	2315
Morrison, John C., New York, N. Y Hat-fasteners	50,332	Mar. 13	121	681
Morse, Hazen, New Rochelle, N. Y. Nutritive tonics and tissue-builders	51,658	Apr. 17	121	2322
Mossberg Wrench Company, Central Falls, R. I. Counter-shafts and appurtenances thereto	50,835	Apr. 3	121	1658
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md Cotton duck	50,181	Mar. 6	121	329
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	50,182	Mar. 6	121	329
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md Cotton duck	51,173	Apr. 3	121	1672
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Fabric of cotton duck	51,532	Apr. 17	121	2317
Mountain Distg. Co., Cincinnati, Ohio. Whisky	51,659	Apr. 17	121	2322
Mountain Distg. Co., Cincinnati, Ohio. Whisky	51,660	Apr. 17	121	2322
Mountain Distg. Co., Cincinnati, Ohio. Whisky	51,661	Apr. 17	121	2322
Mountain Distg. Co., Cincinnati Ohio. Whisky	51,662	Apr. 17	121	2322
Mountain Distg. Co., Cincinnati, Ohio. Whisky	51,904	Apr. 24	121	2658
Mountain Valley Springs Company, Mountain Valley Springs, Ark. Mineral-spring water	51,448	Apr. 17	121	2314
Mueller, Wathen & Kobert, Lebanon, Ky. Whisky	50,207	Mar. 6	121	330

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Mulconroy Co., Inc., Philadelphia, Pa. Rod-packing	51,193	Apr. 10	121	1967
Mulconroy Co., Inc., Philadelphia, Pa. Rubber hose	51,193	Apr. 10	121	1967
Mulconroy Co., Inc., Philadelphia, Pa. Rubber hose	51,194	Apr. 10	121	1967
Mülhens & Kropff, New York, N. Y. Toilet soaps	50,685	Mar. 27	121	1339
Mülhens & Kropff, New York, N. Y. Glycerin soap	51,386	Apr. 17	121	2311
Mumford, Chas. B., Kansas City, Mo. Remedies for the cure of blood diseases and rheumatism	50,942	Apr. 3	121	1662
Mumm & Co., G. H., Rheims, France. Champagne-wine	51,869	Apr. 24	121	2657
Municipal Engineering Company, Indianapolis, Ind. Magazine	50,333	Mar. 13	121	681
Munyon's Homœopathic Home Remedy Co., Philadelphia, Pa. Pills for biliousness and constipation	51,143	Apr. 3	121	1671
Munyons Homœopathic Home Remedy Co., Philadelphia, Pa. Stomach-bitters	51,618	Apr. 17	121	2320
Murphy, Grant & Co., New York, N. Y., and San Francisco, Cal. Knit underwear	51,805	Apr. 24	121	2654
Murphy, Grant & Co., New York, N. Y., and San Francisco, Cal. Knit hosiery	51,806	Apr. 24	121	2654
Myers, Angelo, Philadelphia, Pa. Whisky	50,552	Mar. 20	121	1007
Myers, Henry R., Covington, Ky. Gin	50,183	Mar. 6	121	329
Myers, Henry R., Covington, Ky. Whisky	50,520	Mar. 20	121	1006
N. K. Fairbank Company, Chicago, Ill. Prepared fatty, oleaginous, or unctuous food substances	50,430	Mar. 13	121	685
N. K. Fairbank Company, Chicago, Ill. Soap	51,243	Apr. 10	121	1969
N. K. Fairbank Company, Chicago, Ill. Soap	51,425	Apr. 17	121	2313
N. W. Taussig Co., New York, N. Y. Molasses	50,445	Mar. 20	121	1003
N. Z. Graves Co., Inc., Philadelphia, Pa. Black paints and japans	51,426	Apr. 17	121	2313
N. Z. Graves Co., Inc., Philadelphia, Pa. Black paints and japans	51,451	Apr. 17	121	2314
Nashville Tobacco Works, Nashville, Tenn. Any form of smoking or chewing tobacco	51,402	Apr. 17	121	2312
Nath'l Fisher & Co., New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	51,149	Apr. 3	121	1671
National Distilling Co., Milwaukee, Wis. Gin	50,184	Mar. 6	121	330
National Lead Company, Jersey City, N. J., and New York, N. Y. Castor-oil	50,553	Mar. 20	121	1007
National Lead Company, Jersey City, N. J. White lead and oxids of lead	50,859	Apr. 3	121	1659
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	51,244	Apr. 10	121	1969
National Lead Company, Jersey City, N. J., and New York N. Y. White lead	51,245	Apr. 10	121	1969
National Lead Company, Jersey City, N. J. and New York, N. Y. White lead	51,300	Apr. 10	121	1971
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	51,301	Apr. 10	121	1971
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	51,302	Apr. 10	121	1971
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	51,303	Apr. 10	121	1972
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	51,403	Apr. 17	121	2312
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	51,404	Apr. 17	121	2312
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	51,405	Apr. 17	121	2312
National Lead Company, Jersey City, N. J., and New York, N. Y. Babbitt metal	51,565	Apr. 17	121	2318
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplings	50,951	Apr. 3	121	1663
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplings	50,952	Apr. 3	121	1663
National Specialty Manufacturing Company, Philadelphia, Pa. Coffee-grinders	50,474	Mar. 20	121	1004
Nazareth Waist Co., Reading, Pa., and New York, N. Y. Children's underwaists	51,328	Apr. 10	121	1973
Nelson, Louisa, Nashville, Tenn. Whisky	51,195	Apr. 10	121	1967
Nesmith Shoe Company, Brockton and Boston, Mass. Leather boots and shoes	50,134	Mar. 6	121	328
New Columbia Shirt Co., New York, N. Y. Shirts, collars, and cuffs	51,594	Apr. 17	121	2320
New Columbia Shirt Co., New York, N. Y. Shirts, collars, and cuffs	51,770	Apr. 24	121	2653
New England Confectionery Co., Boston, Mass. Lozenges	50,475	Mar. 20	121	1004
New Jersey Car Spring & Rubber Co., Jersey City, N. J. Elastic tubing adapted for use as hose or packing	51,955	Apr. 24	121	2660
New London Milling Company, New London and Willmar, Minn. Wheat-flour	51,036	Apr. 3	121	1666
New Orleans Coffee Co., Ltd., New Orleans, La. Coffee	50,446	Mar. 20	121	1003
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,073	Mar. 6	121	325
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,074	Mar. 6	121	325
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,075	Mar. 6	121	325
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,076	Mar. 6	121	325
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,077	Mar. 6	121	325
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,106	Mar. 6	121	326
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,107	Mar. 6	121	326
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,108	Mar. 6	121	326
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,109	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,110	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,111	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,112	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,113	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	50,114	Mar. 6	121	327
New York Consolidated Card Company, New York, N. Y. Playing-cards	51,449	Apr. 17	121	2314
New York Consolidated Card Company, New York, N. Y. Playing-cards	51,450	Apr. 17	121	2314
New York Consolidated Card Company, New York, N. Y. Playing-cards	51,475	Apr. 17	121	2315
New York Consolidated Card Company New York, N. Y. Playing-cards	51,847	Apr. 24	121	2656
New York Gas Tubing Company, New York, N. Y. Flexible gas-tubing	51,476	Apr. 17	121	2315
New York Glucose Co., New York, N. Y. Laundry starch	50,419	Mar. 13	121	684
New York Leather Belting Co., New York, N. Y. Belt-cement	51,246	Apr. 10	121	1969
Newman, William J., Boston, Mass. Leather boots and shoes	51,150	Apr. 3	121	1671
Nicholson File Company, Providence, R. I., and Beaver Falls, Pa. Files and rasps	50,135	Mar. 6	121	328
Nicholson File Company, Providence, R. I. Files and rasps	50,136	Mar. 6	121	328
Nicholson File Company, Providence, R. I. Files, rasps, and handles and holders therefor	50,137	Mar. 6	121	328
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,880	Apr. 3	121	1660
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,881	Apr. 3	121	1660
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,882	Apr. 3	121	1660
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,883	Apr. 3	121	1660
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,905	Apr. 3	121	1661
Nicholson File Company, Providence, R. I. Files and rasps and handles and holders therefor	50,906	Apr. 3	121	1661
Nickerson, L. C., Denver, Colo. Ointment	51,940	Apr. 24	121	2659
Nobel's Explosives Company Limited, Glasgow, Scotland. Explosives	51,566	Apr. 17	121	2318
Noelle, Gebr., Lüdenscheid, Germany. Knives, forks, and spoons made of Britannia metal	50,984	Apr. 3	121	1664
Non-Corrosive Coating Co., Connellsville, Pa. Soldering fluid	50,821	Apr. 3	121	1657
Nonotuck Silk Company, Florence and Boston, Mass. Thread	50,194	Mar. 6	121	330
Nordenholz, Ernest E., Baltimore, Md. Whisky	50,656	Mar. 27	121	1338
Norfolk Silk Company, Paterson, N. J., and Norfolk, Va. Dress-silks	51,870	Apr. 24	121	2657
Norfolk Silk Company, Paterson, N. J., and Norfolk, Va. Dress-silks	51,871	Apr. 24	121	2657
Norris & Christian Stone & Lime Co., Marion, Ohio. Lime	51,406	Apr. 17	121	2312
Norris Sash Pulley Company, Baltimore, Md. Sash-pulleys	50,822	Apr. 3	121	1657
North American Metaline Co., Long Island City, N. Y. Metal bearings, bushings, and journals	51,247	Apr. 10	121	1969
Noyes & Company, Joseph P., Binghamton, N. Y. Combs	51,941	Apr. 24	121	2659
Nungesser Electric Battery Co., Cleveland, Ohio. Dry batteries	51,821	Apr. 24	121	2655
Nuyens & Cie., Bordeaux, France. Apricot brandy	50,554	Mar. 20	121	1007

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Name, residence, and title.	No.	Date.	Official Gazette.	
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O. W. Peirce Company, La Fayette, Ind. Wheat-flour	51,329	Apr. 10	121	1373
O. W. Peirce Company, La Fayette, Ind. Coffee	51,477	Apr. 17	121	2315
O'Callaghan & Fedden, New York, N. Y. Hosiery	50,156	Mar. 6	121	328
O'Keefe, Thomas E., Oswego, N. Y. Whisky	50,658	Mar. 27	121	1338
Oakes & Burger, Cattaraugus, N. Y. Milk-cans	51,905	Apr. 24	121	2658
Offterdinger, Henry T., Washington, D. C. Cigars	50,657	Mar. 27	121	1338
Ohmer Fare Register Co., Dayton, Ohio. Ticket issuing and recording machines	50,823	Apr. 3	121	1657
Okonite Company, Limited, New York, N. Y. Rubber insulating compound	50,130	Mar. 6	121	328
Old Hickory Chair Co., Martinsville, Ind. Rustic chairs, settees, tables, and stools	51,685	Apr. 24	121	2649
Old Veteran Rheumatic Cure Company, Adairville, Ky. Rheumatic cure	50,243	Mar. 6	121	332
Olds, Edward A., New York, N. Y. Solid and liquid soaps	50,334	Mar. 13	121	681
Olds, Edward A., New York, N. Y. Soap	51,086	Apr. 3	121	1669
Oliver Typewriter Company, Chicago, Ill. Type-writing machines	51,111	Apr. 3	121	1670
Oneida Hosiery Company, Oneida, N. Y. Hosiery	50,943	Apr. 3	121	1662
Openhym & Sons, Wm., New York, N. Y. Velveteens, corduroys, and other cotton-velvet fabrics	50,944	Apr. 3	121	1662
Openhym & Sons, Wm., New York, N. Y. Velvet ribbons	51,686	Apr. 24	121	2649
Openhym & Sons, Wm., New York, N. Y. Velveteens and corduroys	51,713	Apr. 24	121	2650
Oregon Nursery Company Limited, Salem, Oreg. Fruit-trees, buds, and scions therefor	50,621	Mar. 27	121	1336
Oshkosh Grass Matting Co., Oshkosh, Wis. Rugs, art squares, and matting made of grass twine	51,533	Apr. 17	121	2317
Oshkosh Grass Matting Co., Oshkosh, Wis. Rugs, art squares, and matting made of grass twine	51,906	Apr. 24	121	2658
Ostermoor & Co., New York, N. Y. Prepared cotton	51,687	Apr. 24	121	2649
Ott, Francis S., Sacramento, Cal. Remedy for malaria, chills, and fever	51,354	Apr. 10	121	1973
Otto Gas Engine Works, Philadelphia, Pa. Gas and gasolene engines	50,486	Mar. 20	121	1005
Otto Huber Brewery, Brooklyn, N. Y. Malt extract	51,872	Apr. 24	121	2657
Owl Drug Co., San Francisco, Cal. Medical compounds	51,942	Apr 24	121	2659
P. Hohenadel, Jr., Canning Co., Rochelle, Ill. Canned corn	51,040	Apr. 3	121	1667
P. Hohenadel, Jr., Co., Janesville, Wis. Canned corn	51,039	Apr. 3	121	1666
P. Rielly & Son, Newark, N. J. Chrome-tanned leather	50,592	Mar. 27	121	1335
P. J. Bowlin Liquor Co., St. Paul, Minn. Wine	50,101	Mar. 6	121	326
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	50,185	Mar. 6	121	330
P. J. Bowlin Liquor Co., St. Paul, Minn. Wine	50,420	Mar. 13	121	685
P. J. Bowlin Liquor Co., St. Paul, Minn. Brandy	51,037	Apr. 3	121	1666
P. J. Bowlin Liquor Co., St. Paul, Minn. Brandy	51,038	Apr. 3	121	1666
P. J. Bowlin Liquor Co., St. Paul, Minn. Rock and rye	51,567	Apr. 17	121	2312
Paas Dye Co., Newark, N. J. Dyes	50,727	Mar. 27	121	1341
Paas Dye Co., Newark, N. J. Dyes	50,728	Mar. 27	121	1341
Pacific Coast Borax Company, San Francisco, Cal. Borax soap	50,383	Mar. 13	121	683
Pacific Coast Borax Company, San Francisco, Cal. Borax soap	50,555	Mar. 20	121	1007
Pacific Creamery Company, Buena Park and Los Angeles, Cal. Sterilized cream	51,688	Apr. 24	121	2649
Palami Company, Boston, Mass. Cleansing and scouring preparation	50,686	Mar. 27	121	1339
Palmer, Eddy, New York, N. Y. Perfumed powders	51,907	Apr. 24	121	2658
Palmer, Eddy, New York, N. Y. Perfumes, extracts, essences, colognes, and toilet waters	51,943	Apr. 24	121	2659
Palmer, Eddy, New York, N. Y. Lotions for affections of the skin	51,944	Apr. 24	121	2660
Palmer, Hill & Co., Cincinnati, Ohio. Mops	51,748	Apr. 24	121	2652
Paracamph Company, Louisville, Ky. Laxatives	50,253	Mar. 6	121	332
Paragon Malt Extract Company, New York, N. Y. Malt extract	50,907	Apr. 3	121	1661
Pardridge & Blackwell, Detroit, Mich. Toilet soap	51,272	Apr. 10	121	1970
Paris Medicine Co., St. Louis, Mo. Antiseptic healing-oil	50,244	Mar. 6	121	332
Paris Medicine Co., St. Louis, Mo. Antiseptic healing-oil	50,245	Mar. 6	121	332
Paris Medicine Co., St. Louis, Mo. Remedies for malarial diseases	50,285	Mar. 6	121	334
Paris, Samuel C., Philadelphia, Pa. Panama hats	51,689	Apr. 24	121	2649
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	51,151	Apr. 3	121	1671
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	51,174	Apr. 3	121	1672
Parker, Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	51,873	Apr. 24	121	2657
Parkhill Mfg. Co., Fitchburg, Mass. Cotton piece goods	51,730	Apr. 24	121	2651
Parks Bros. & Rogers, Providence, R. I. Certain named jewelry	50,384	Mar. 13	121	683
Parks Bros. & Rogers, Providence, R. I. Sleeve and collar buttons and studs	51,701	Apr. 24	121	2650
Parks Bros. & Rogers, Providence, R. I. Sleeve and collar buttons and studs	51,702	Apr. 24	121	2650
Parlin & Orendorff Co., Canton, Ill. Riding and walking plows	50,593	Mar 27	121	1335
Parlin & Orendorff Co., Canton, Ill. Plows	51,663	Apr. 17	121	2328
Parlin & Orendorff Co., Canton, Ill. Plows	51,822	Apr. 24	121	2655
Parsons, Charles A., Newcastle-upon-Tyne, England. Electric generators and motors and parts thereof	51,568	Apr. 17	121	2319
Paso Real Fruit Company, Cincinnati, Ohio. Citrus fruits and pineapples	51,731	Apr. 24	121	2651
Passavant & Co., New York, N. Y. Ribbons	51,087	Apr. 3	121	1669
Passavant & Co., New York, N. Y. Ribbons	51,248	Apr. 10	121	1969
Pater, Joseph J., Hamilton, Ohio. Remedy for hog-cholera	50,793	Mar. 27	121	1343
Patten, John H., Butler, Mo. Salve	51,041	Apr. 3	121	1667
Patterson, Gottfried & Hunter, Limited, New York, N. Y. Leather belting	50,157	Mar. 6	121	329
Patterson Sargent Co., Cleveland, Ohio. Carbon paints	51,407	Apr. 17	121	2312
Paul Bros. Medicine Co., Alton, Ill. Medicine for certain named diseases	50,576	Mar. 20	121	1008
Peacock Chemical Co., St. Louis, Mo. Medicinal preparation used as a nerve sedative	51,534	Apr. 17	121	2317
Pearl & Co., I. L., Johnson, Vt. Trousers	51,619	Apr. 17	121	2321
Peckham Seamless Ring Mfg. Co., New York, N. Y. Solid-gold finger-rings	51,152	Apr. 3	121	1671
Peltier, Ella A., Delphos, Ohio. Games and toys	51,478	Apr. 17	121	2315
Pen-Mar Distilling Co., Waynesboro, Pa. Whisky	50,397	Mar, 13	121	683
Penn Wall Paper Company, Pittsburg, Pa. Wall-paper	50,985	Apr. 3	121	1664
Perkins, Charles B., Boston, Mass. Cigars	50,884	Apr. 3	121	1660
Perkins, Charles B., Boston, Mass. Cigars	50,886	Apr. 3	121	1660
Perkins, George H., Gloucester, Mass. Cured fish, (dried, smoked, or salted)	51,771	Apr. 24	121	2653
Perkins, George H., Gloucester, Mass. Cured fish, (dried, smoked, or salted)	51,772	Apr. 24	121	2653
Perkins, George H. Gloucester, Mass. Cured fish, (smoked, dried, or salted)	51,773	Apr. 24	121	2653
Perkins, George H., Gloucester, Mass. Cured fish, (dried, smoked, or salted)	51,874	Apr. 24	121	2657
Perry & Company, Limited, Birmingham, England. Steel, fountain, and stylographic pens and penholders	50,986	Apr. 3	121	1664
Personeni, Joseph, New York, N. Y. Solid salts for making beverages	51,196	Apr. 10	121	1967
Pfister & Vogel Leather Company, Milwaukee, Wis. Leather for shoes, gloves, and harness	51,427	Apr. 17	121	2313
Phelps Company, Meadville, Pa. Chocolates	50,669	Mar. 27	121	1338
Phenix Cheese Co., South Edmeston, N. Y. Cheese	50,286	Mar. 6	121	334
Phillips Drug Co., Warren, Pa. Rheumatic remedies	51,088	Apr. 3	121	1669
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated wire and wire cables	50,824	Apr. 3	121	1657
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated conducting-wires	50,826	Apr. 3	121	1657
Phoenix Cap Company, New York, N. Y. Caps and corks	50,892	Apr. 3	121	1660
Phoenix Jewelry Co., New York, N. Y. Certain named jewelry	51,479	Apr. 17	121	2315
Picchianti, Elvira, Chicago, Ill. Sauce for spaghetti	51,042	Apr. 3	121	1667
Pickering Governor Co., Portland, Conn. Engine-governors	51,569	Apr. 17	121	2319

Alphabetical list of registrants of trade-marks for March and April—Continued.

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Pillsbury-Washburn Flour Mills Company Limited, Minneapolis, Minn. Wheat-flour	51,480	Apr. 17	121	2315
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	50,622	Mar. 27	121	1336
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	50,687	Mar. 27	121	1339
Pillsbury-Washburn Flour Mills Company, Ltd., Minneapolis, Minn. Wheat-flour	50,802	Mar. 27	121	1344
Pinet, Elise, Minneapolis, Minn. Toilet waters	50,987	Apr. 3	121	1664
Piso Company, Warren, Pa. Consumption remedy	50,770	Mar. 27	121	1342
Piso Company, Warren, Pa. Remedy for catarrh	50.771	Mar 27	121	1342
Pittsburgh Milling Co., Allegheny, Penn. Wheat-flour	50,476	Mar. 20	121	1004
Planten, John R., New York, N. Y. Filled gelatin capsules	51,355	Apr. 10	121	1974
Planten, John R., New York, N. Y. Filled gelatin capsules	51,356	Apr. 10	121	1974
Planters Packing and Preserving Co., Delray, Fla. Canned pineapples	51,747	Apr. 24	121	2652
Platt, Mary E., New York, N. Y. Liquid disinfectants	50.246	Mar. 6	121	332
Pleasant Valley Wine Co., Rheims, N. Y. Wine	50,335	Mar. 13	121	681
Pond's Extract Company, New York, N. Y. Cream for the treatment of the skin	51,089	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Certain medical compound	51,090	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Certain medical compound	51,091	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Ointments	51,092	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Certain medical compound	51,093	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Catarrh remedies	51,094	Apr. 3	121	1660
Pond's Extract Company, New York, N. Y. Veterinary remedies for horses and all domestic animals	51,095	Apr. 3	121	1669
Pond's Extract Company, New York, N. Y. Toilet-paper	51,408	Apr. 17	121	2312
Pope, Henry C., Birmingham, Ala. Antiseptic remedy	50,729	Mar. 27	121	1341
Porcela Company. (See McKinney William C., assignor.)				
Postum Cereal Co., Limited, Battle Creek, Mich. Breakfast-foods prepared from cereals	51,153	Apr. 3	121	1671
Potter Drug & Chemical Corporation, Boston, Mass. Medicine for internal use	50,753	Mar. 27	121	1342
Potter Drug & Chemical Corporation, Boston, Mass. Ointment	50,754	Mar. 27	121	1342
Powell, Chas. A., Whitesboro N. Y. Corset-covers and corset-waists	51,273	Apr. 10	121	1970
Power Specialty Co., Detroit, Mich. Tools for cleaning steam-boilers	50,826	Apr. 3	121	1658
Pratt Food Co., Philadelphia, Pa. Washes or lotions to rid animals of vermin	51,096	Apr. 3	121	1669
Pratt & Lambert, Buffalo, N. Y. Liquid driers	50,688	Mar. 27	121	1339
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	50,623	Mar. 27	121	1336
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	51,043	Apr. 3	121	1667
Presto Pharmacal Company, Reading, Pa. Soothing-syrup	51,097	Apr. 3	121	1669
Presto Pharmacal Company, Reading, Pa. Salves	51,620	Apr. 17	121	2321
Preston B. Keith Shoe Co., Brockton, Mass. Leather boots, shoes, and slippers	50,659	Mar. 27	121	1338
Price Baking Powder Company, Chicago, Ill. Baking-powder	50,421	Mar. 13	121	685
Price's Patent Candle Co. Limited, London, Battersea, and Bromborough Pool Works. England. Soap of all kinds	51,807	Apr. 24	121	2654
Price's Patent Candle Co. Limited, London, Battersea, and Bromborough Pool Works, England. Illuminating and heating oils	51,808	Apr. 24	121	2654
Prince's Metallic Paint Company, Allentown, Pa. Metallic paint	50,945	Apr. 3	121	1662
Progressive Mfg. Co., Torrington, Conn. Internal-combustion engines	50,836	Apr. 3	121	1658
Prouty-Bowler Soap Company, Des Moines, Iowa. Laundry soap	51,044	Apr. 3	121	1667
Provident Chemical Works, St. Louis, Mo. Powdered acid phosphate of lime	51,357	Apr. 10	121	1974
Punch Brothers, St. Louis, Mo. Skirts	51,098	Apr. 3	121	1669
Purcell Mill & Elevator Company, Purcell, Ind. Ter. Wheat-flour	50,304	Mar. 6	121	334
Purdy, Charles G., Brooklyn, N. Y. Butter made from nuts	50.422	Mar. 13	121	685
Putnam & Co., W. W., Staunton, Va. Organs	50,072	Mar. 6	121	325
Quinn, Lorenzo D., Athens, Ala. Internal remedy for asthma, catarrh, &c	51,908	Apr. 24	121	2658
Quinn & Nolan Beverwyck Brewing Company, Albany, N. Y. Lager-beer	51,249	Apr. 10	121	1969
R. Schiffmann Company, St. Paul, Minn. Remedy for certain named diseases	51,358	Apr. 10	121	1974
R. L. Perry Co., Boston, Mass. Chocolates and bonbons	50,287	Mar. 6	121	334
R. L. Perry Co., Boston, Mass. Chocolates and bonbons	50,689	Mar. 27	121	1339
R. M. Rose Co., Atlanta, Ga. Whisky	51,571	Apr. 17	121	2319
R. & W. Jenkinson Co., Pittsburg, Pa. Stogies	50,737	Mar. 27	121	1341
Radam, Ida, New York, N. Y. Microbe-killer	50,521	Mar. 20	121	1006
Radermacher, John L., New York, N. Y. Mattresses	51,197	Apr. 10	121	1967
Ralston Purina Co., St. Louis, Mo. Stock-feed	51,428	Apr. 17	121	2313
Randall Mattress Company, Cleveland, Ohio. Mattresses, pillows, and feathers	51,000	Apr. 3	121	1665
Ray, Rachel B., Eureka Springs, Ark. Ointment	50,730	Mar. 27	121	1341
Red Diamond Clothing Co., St. Louis, Mo. Overalls, coats, and trousers	51,154	Apr. 3	121	1671
Red Snapper Sauce Co., Memphis, Tenn. Sauces and relishes	50,385	Mar. 13	121	683
Reinert, Adolphus, New York, N. Y. Cordial for blending whiskies	50,660	Mar. 27	121	1338
Renal Pharmacal Co., Mount Vernon, N. Y. Rheumatic cure	50,288	Mar. 6	121	334
Renal Pharmacal Co., Mount Vernon, N. Y. Remedy for diabetes	50,289	Mar. 6	121	334
Republic of France, Paris, France. Smoking-tobacco, chewing-tobacco, snuff, and tobacco extracts	51,452	Apr. 17	121	2314
Republic of France, Paris, France. Smoking-tobacco	51,453	Apr. 17	121	2314
Reversible Collar Company, Boston and Cambridge, Mass. Shirt-fronts and false shirt-bosoms	51,595	Apr. 17	121	2320
Review Publishing Company, New York, N. Y. Monthly magazine	50,158	Mar. 6	121	329
Rex Chemical Co., Toledo, Ohio. Certain named medicine	51,250	Apr. 10	121	1969
Reymer & Brothers, Incorporated, Pittsburg, Pa. Candy	50,690	Mar. 27	121	1339
Reynolds, Bion F., Brockton, Mass. Leather boots and shoes	51,198	Apr. 10	121	1967
Rhuma-Sulphur Co., St. Louis, Mo. Germicides	50,531	Mar. 20	121	1006
Rice & Co., A. H., Pittsfield, Mass. Plain braids	51,945	Apr. 24	121	2660
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins Incorporated. Leather boots and shoes and leather used in their manufacture	51,848	Apr. 24	121	2656
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	51,535	Apr. 17	121	2317
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	51,536	Apr. 17	121	2317
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	51,596	Apr. 17	121	2320
Rice, Stix Dry Goods Company, St. Louis, Mo. Hosiery	51,597	Apr. 17	121	2320
Richardson & Boynton Company, New York, N. Y. Stoves, ranges, heaters, furnaces, and parts thereof	51,570	Apr. 17	121	2319
Richardson, George, Grayslake, Ill. Remedies for asthma	51,215	Apr. 10	121	1968
Richardson, Roberts Dry Goods Co., St. Joseph, Mo. Pants, overalls, coats, and vests	50,988	Apr. 3	121	1664
Richardson Roberts Dry Goods Co., St. Joseph, Mo. Hosiery	51,690	Apr. 24	121	2649
Ridenour-Baker Grocery Company, Kansas City, Mo. Coffee	51,155	Apr. 3	121	1671
Rightmire, Thomas F., New York, N. Y. Horseradish	51,823	Apr. 24	121	2655
Rindge Kalmbach Logie & Co., Lt'd, Grand Rapids, Mich. Leather boots, shoes, and slippers	50,522	Mar. 20	121	1006
Ritter Dental Mfg. Co., Rochester, N. Y. Dental chairs	50,556	Mar. 20	121	1007
Ritter Dental Mfg. Co., Rochester, N. Y. Dental chairs	50,557	Mar. 20	121	1007
Riverside Navel Orange Company, Riverside, Cal. Oranges, lemons, grape-fruit, and citron	51,703	Apr. 24	121	2650
Robert Smith Ale Brewing Company, Philadelphia, Pa. Ale	50,917	Apr. 3	121	1661
Robertson, Arthur R., Boston, Mass. Hammers	51,501	Apr. 17	121	2316
Rochester Panoramic Camera Company, Rock Springs, Wyo. Panoramic cameras	51,824	Apr. 24	121	2655
Rock Hill Buggy Co., Rockhill, S. C. Buggies and carriages	51,664	Apr. 17	121	2322

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Rock Hill Buggy Co., Rockhill, S. C. Buggies and carriages	51,665	Apr. 17	121	2322
Rock-Spring Distg. Co., Owensboro, Ky. Whisky	50,208	Mar. 6	121	330
Rodriguez, Arguelles & Company, Havana, Cuba. Cigars	51,691	Apr. 24	121	2649
Rodriguez, Arguelles & Company, Havana, Cuba. Cigars	51,714	Apr. 24	121	2650
Rogers & Hubbard Co., Middletown, Conn. Bone rings	51,274	Apr. 10	121	1970
Rogers Paper Mfg. Co. Inc'd, Manchester, Conn. Press-board or press-paper	51,330	Apr. 10	121	1973
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	50,186	Mar. 6	121	330
Rosenbaum Company, Pittsburg, Pa. Waists, dresses, and suits	51,537	Apr. 17	121	2317
Rosenzweig, Louis, Chicago, Ill. Fruit-wine	50,102	Mar. 6	121	326
Rosenzweig, Louis, Chicago, Ill. Whisky	50,661	Mar. 27	121	1338
Ross Brothers, Worcester, Mass. Chicken-feed	50,691	Mar. 27	121	1339
Ross & Co., Charles H., Baltimore, Md. Whisky	51 359	Apr. 10	121	1974
Ross, Lewis P., Rochester, N. Y. Lumbermen's rubbers and rubber boots	51,099	Apr. 3	121	1669
Roth, Charles, Cincinnati, Ohio. Whisky	51,045	Apr. 3	121	1667
Roth & Co., San Francisco, Cal. Whisky	51,046	Apr. 3	121	1667
Roth & Engelhardt, New York, N. Y. Pneumatically-actuated pianofortes	50,386	Mar. 13	121	683
Rothenburg & Schloss, Kansas City, Mo. Havana cigars	50,887	Apr. 3	121	1660
Round Top Cement Company, Bloomfield, N. J. Artificial Portland and hydraulic cement	50,387	Mar. 13	121	683
Round Top Cement Company, Bloomfield, N. J. Natural and artificial Portland and hydraulic cement	51,502	Apr. 17	121	2316
Roussy de Sales, Jules F. G. de, Paris, France. Soaps	51,454	Apr. 17	121	2314
Rowe Patent Square Shoulder Shoe Calk Co., Hartford, Conn. Horseshoes and horseshoe-calks	50,336	Mar. 13	121	681
Roxbury Carpet Company, Boston, Mass. Tapestry Brussels and tapestry velvet carpets	51,621	Apr. 17	121	2321
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,187	Mar. 6	121	330
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,188	Mar. 6	121	330
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,337	Mar. 13	121	681
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,338	Mar. 13	121	681
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,339	Mar. 13	121	681
Royal Worcester Corset Co., Worcester, Mass. Corsets	50,340	Mar. 13	121	681
Royal Worcester Corset Co., Worcester, Mass. Corset steels and clasps	50,341	Mar. 13	121	681
Rumford Chemical Works, Providence, R. I. Yeast-powder	50,290	Mar. 6	121	334
Rumford Chemical Works, Providence, R. I. Sparkling, effervescent tonic beverages	51,387	Apr. 17	121	2311
Russ Company, South Bend, Ind. Laundry bluing	50,103	Mar. 6	121	326
Russell & Co., Cambridge, Mass. Chocolates, bonbons, and similar candies	50,908	Apr. 3	121	1661
Russell M. Hughes & Co., Louisville, Ky. Non-alcoholic medicinal beverages	51,732	Apr. 24	121	2651
Ryan-Hampton Tobacco Co., Newburg, Ind. High grade of chewing-tobacco	50,692	Mar. 27	121	1339
Ryan-Hampton Tobacco Co., Newburg, Ind. Especially high grade of plug-tobacco	50,909	Apr. 3	121	1661
Ryan-Hampton Tobacco Co., Newburg, Ind. Chewing-tobacco	50,910	Apr. 3	121	1661
S. Bolton's Sons, Troy, N. Y. Ale	50,523	Mar. 20	121	1006
S. Grabfelder & Co., Louisville, Ky. Whisky	50,189	Mar. 6	121	330
S. B. & B. W. Fleisher, Incorporated, Philadelphia, Pa. Worsted yarns	50,388	Mar. 13	121	683
S. H. Frank & Co., San Francisco, Cal. Sole-leather	50,209	Mar. 6	121	330
S. H. Wetmore Co., New York, N. Y. Suspensory bandages and jock-straps	50,629	Mar. 27	121	1337
S. S. Pierce Co., Boston, Mass. Cigars	50,693	Mar. 27	121	1339
S. W. Noggle Wholesale & Mfg. Co., Kansas City, Mo. Laundry starch	51,163	Apr. 3	121	1672
Sakabe, Jiro, New York, N. Y. Brushes	50,342	Mar. 13	121	681
Sample & Co., New York, N. Y. Whisky	51,047	Apr. 3	121	1667
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	50,827	Apr. 3	121	1658
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	50,828	Apr. 3	121	1658
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	51,774	Apr. 24	121	2653
Samson Cordage Works, Boston, Mass. Cords, lines, twines, and ropes	51,775	Apr. 24	121	2653
Samuel Westheimer & Son Wholesale Liquor Co., St. Joseph, Mo. Whisky	50,694	Mar. 27	121	1339
Samuel Westheimer & Son Wholesale Liquor Company, St. Joseph, Mo. Whisky	51,156	Apr. 3	121	1672
Samuels & Bro., J., Providence, R. J. Coats and trousers	50,794	Mar. 27	121	1343
Sanchez & Haya Co., Tampa, Fla. Cigars	51,733	Apr. 24	121	2651
Savage, Marion W., Minneapolis, Minn Stock-food	50,447	Mar. 20	121	1003
Savage, Marion W., Minneapolis, Minn. Healing pine-oil	50,946	Apr. 3	121	1662
Savage, Marion W., Minneapolis, Minn. Breakfast-food made from wheat	51,157	Apr. 3	121	1672
Savage, Marion W., Minneapolis, Minn. Poultry-food	51,388	Apr. 17	121	2312
Savage, Marion W., Minneapolis, Minn. Antiseptics and germicides	51,503	Apr. 17	121	2316
Savage, Marion W., Minneapolis, Minn. Stock-food	51,704	Apr. 24	121	2650
Sawyer Crystal Blue Company, Boston, Mass. Washing-blue	50,918	Apr. 3	121	1661
Sawyer Crystal Blue Company, Boston, Mass. Washing-blue	51,455	Apr. 17	121	2314
Schaefer, William H., Toledo, Ohio. Cap-mantles	51,100	Apr. 3	121	1669
Schall & Co., New York, N. Y. Candies	51,409	Apr. 17	121	2312
Scharff, L. & A., St. Louis, Mo. Whisky	50,154	Mar. 6	121	328
Schenck, Joseph H., Philadelphia, Pa. Medicinal, restorative, and regulative compounds	51,622	Apr. 17	121	2321
Schilling & Company, A., San Francisco, Cal. Spices	50,448	Mar. 20	121	1003
Schilling & Company, A., San Francisco, Cal. Coffee	50,477	Mar. 20	121	1004
Schilling & Company, A., San Francisco, Cal. Baking-powder, bicarbonate of soda, and cream of tartar	50,478	Mar. 20	121	1004
Schilling & Company, A., San Francisco, Cal. Coffee	50,624	Mar. 27	121	1337
Schilling & Company, A., San Francisco, Cal. Spices	50,662	Mar. 27	121	1338
Schlaepfer, Ulrich F., Zurich, Switzerland. Medicine for certain named diseases	50,803	Mar. 27	121	1344
Schmidt, Alexander O., San Francisco, Cal. Medicine for diseases peculiar to females	51,331	Apr. 10	121	1973
Schmidt, Geo. A., Chicago, Ill. Soap	50,695	Mar. 27	121	1339
Schoble & Co., Frank, Philadelphia, Pa. Men's and boys' hats and caps	50,989	Apr. 3	121	1664
Schoble & Co., Frank, Philadelphia, Pa. Hats and caps	51,275	Apr. 10	121	1970
Schott, Charles H., New York, N. Y., and Providence, R. I. Button parts	51,101	Apr. 3	121	1669
Schrader & Ehlers, New York, N. Y. Combs	50,990	Apr. 3	121	1664
Schulten and Co., Jno. J., Louisville, Ky. Leather boots and shoes	50,343	Mar. 13	121	681
Schütz, Christian, Vienna, Austria-Hungary. Cigarette-paper	51,199	Apr. 10	121	1968
Schwabacher Bros. & Co. Inc., Seattle, Wash. Spices of all varieties and mustard	51,048	Apr. 3	121	1667
Schwabacher Bros. & Co. Inc., Seattle, Wash. Coffee	51,332	Apr. 10	121	1973
Schwabacher Bros. & Co., Inc., Seattle, Wash. Canned fish	51,389	Apr. 17	121	2312
Schwabacher Bros. & Co., Inc., Seattle, Wash. Canned fish	51,504	Apr. 17	121	2316
Schwabacher Bros. & Co. Inc., Seattle, Wash. Flavoring extracts of all varieties	51,809	Apr. 24	121	2654
Schwartz, Joseph H., Plymouth, Pa. Whisky	51,102	Apr. 3	121	1669
Schwartz, Joseph H., Plymouth, Pa. Whisky	51,103	Apr. 3	121	1669
Schwartz, Joseph H., Plymouth, Pa. Whisky	51,104	Apr. 3	121	1669
Schwartz, Joseph H., Plymouth, Pa. Whisky	51,105	Apr. 3	121	1669
Scranton Stove Works, Scranton, Pa. Stoves, ranges, and furnaces and parts thereof	50,344	Mar. 13	121	681
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oilstones, water-stones, whetstones, hones, and grindstones	50,699	Mar. 27	121	1339
Seamless Rubber Co., New Haven, Conn. Rubber nipples for nursing-bottles	50,162	Mar. 6	121	329
Seinsheimer, Henry A., Cincinnati, Ohio. Boys' suits	51,538	Apr. 17	121	2317

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Selby Smelting and Lead Company, San Francisco, Cal. Lead	50,389	Mar. 13	121	683
Semon Bache & Company, New York, N. Y. Sheet and picture glass	50,345	Mar. 13	121	682
Seneca, Stephen J., Havre de Grace, Md. Canned vegetables and fruits	50,291	Mar. 6	121	334
Shafer, George L., Sacramento, Cal. Preparation for the relief of rheumatism and kindred ailments.	50,731	Mar. 27	121	1341
Sharood, Charles K., St. Paul, Minn. Leather boots, shoes, and slippers	51,481	Apr. 17	121	2315
Sheboygan Knitting Company, Sheboygan, Wis. Hosiery	50,163	Mar. 6	121	329
Shedd, Freeman B., Lowell, Mass. Cologne	51,539	Apr. 17	121	2317
Sheffield-King Milling Co., Minneapolis, Minn. Wheat-flour	51,482	Apr. 17	121	2315
Shimer, Elmer S., Milton, Pa. Antifriction metals	50,911	Apr. 3	121	1661
Shire, Nathaniel N., New York, N. Y. Ointment for the cure of eczema	50,991	Apr. 3	121	1664
Shortell & Timmins, Boston, Mass. Whisky	50,524	Mar. 20	121	1006
Shupe-Williams Candy Co., Ogden, Utah. Chocolates	51,692	Apr. 24	121	2649
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, salted, and canned fish	50,247	Mar. 6	121	332
Shute, William T., Gloucester, Mass. Dried, smoked, pickled, and canned fish	50,390	Mar. 13	121	683
Sibley, William E., Freeport, Ill. Tea	51,333	Apr. 10	121	1973
Sichel Chemische Fabrik Limmer, Ferdinand, Limmer by Hanover, Germany. Uniting agents for colors	51,505	Apr. 17	121	2316
Sieber & Trussell Mfg. Co., St. Louis, Mo. Loose-leaf binders	50,577	Mar. 20	121	1008
Siegel, Abraham, assignor to Waldorf-Astoria Segar Co., New York, N. Y. Cigars	50,449	Mar. 20	121	1003
Sill Stove Works, Rochester, N. Y. Stoves, ranges, and gas-stoves and attachments and parts and repairs therefor	50,888	Apr. 3	121	1660
Sill Stove Works, Rochester, N. Y. Stoves, ranges, gas-stoves, and attachments and parts and repairs therefor	50,912	Apr. 3	121	1661
Sill Stove Works, Rochester, N. Y. Stoves and ranges and repairs and parts therefor	51,623	Apr. 17	121	2321
Silver, Bennett C., New York, N. Y. Remedies for the relief and cure of asthma, consumption, and pulmonary diseases	51,367	Apr. 10	121	1974
Silver & Company, New York, N. Y. Tea and coffee pots and coffee-urns	50,525	Mar. 20	121	1006
Silver & Company, Brooklyn, and New York, N. Y. Tea and coffee pots and coffee-urns	51,158	Apr. 3	121	1672
Silverson Milling Co., New Ulm, Minn. Wheat-flour	51,304	Apr. 10	121	1972
Singer Manufacturing Company, New York, N. Y. Cotton, silk, hemp, and other fiber threads	50,196	Mar. 6	121	330
Smith, Hogg & Co., New York, N. Y. Ginghams	50,992	Apr. 3	121	1664
Smith Premier Typewriter Company, Syracuse, N. Y. Type-writing machines	51,572	Apr. 17	121	2319
Smith, Sara B., Livermore, Cal. Wines	50,860	Apr. 3	121	1659
Smith, Sara B., Livermore, Cal. Chemically-pure borax	51,175	Apr. 3	121	1672
Smith, William W., Poughkeepsie, N. Y. Cough-drops	50,947	Apr. 3	121	1663
Sneed & Wood, Tyler, Tex. Peach-trees	50,212	Mar. 6	121	331
Société Anonyme "Luna," Lausanne, Switzerland. Photographic paper and films	50,664	Mar. 27	121	1338
Soden, Charles T., Boston, Mass. Glue	50,696	Mar. 27	121	1339
Solon Vendophone Co., Solon Springs, Wis. Mineral waters	50,292	Mar. 6	121	334
Soltmann, Edward G., New York, N. Y. Lead-pencils	51,483	Apr. 17	121	2315
Southern Manufacturing Co., Richmond, Va. Baking-powder	51,062	Apr. 3	121	1667
Spang, Chalfant & Co., Pittsburg, Pa. Iron and steel tubes	50,663	Mar. 27	121	1338
Spiritline Chemical Company, Wilmington, N. C. Pine-wood oil	51,506	Apr. 17	121	2316
Splaine & Co., Richard A., Haverhill, Mass. Whisky	51,666	Apr. 17	121	2322
Sprague Co., Fred'k H., Orange, Mass. Men's vests and waistcoats	51,108	Apr. 3	121	1660
Sprague, Warner & Company, Chicago, Ill. Tea	51,484	Apr. 17	121	2315
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	50,211	Mar. 6	121	331
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	50,293	Mar. 6	121	334
Staber, George, New York, N. Y. Paper for wrapping food products	51,159	Apr. 3	121	1672
Staber, George, New York, N. Y. Paper for wrapping food products	51,909	Apr. 24	121	2658
Stamford Manufacturing Company, New York, N. Y. Tanning extract	50,398	Mar. 13	121	684
Stamford Mfg. Co., New York, N. Y. Tanning extract	51,507	Apr. 17	121	2316
Stamford Mfg. Co., New York, N. Y. Tanning extract	51,508	Apr. 17	121	2316
Stamford Mfg. Co., New York, N. Y. Dyestuff or coloring mixture for leather	51,509	Apr. 17	121	2316
Standard Button Company, Attleboro, Mass. Links, sleeve-buttons, collar-buttons, studs, and blouse-button sets	50,190	Mar. 6	121	330
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	50,889	Apr. 3	121	1660
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	51,049	Apr. 3	121	1667
Standard Oil Company, Louisville, Ky. Spirits of turpentine	51,946	Apr. 24	121	2660
Standard Paint Company, New York, N. Y. Flexible waterproof fabric	50,919	Apr. 3	121	1661
Standard Paint Company, New York, N. Y. Preservative and insulating varnishes	51,456	Apr. 17	121	2314
Standard Paper M'f'g. Co., Manchester, Va. Blotting-paper	50,159	Mar. 6	121	329
Standard Printing Ink Company, Cincinnati, Ohio, and Chicago, Ill. Printing-ink	51,001	Apr. 3	121	1665
Standard Table Oil Cloth Co., New York, N. Y. Oil-cloths	50,993	Apr. 3	121	1665
Standard Sanitary Mfg. Co., Pittsburg, Pa. Bath-tubs and sinks	51,910	Apr. 24	121	2658
Star Electric Fuse Works, Wilkes-Barre, Pa. Electric fuses with or without cap	51,667	Apr. 17	121	2322
Star Yeast Cake Co., Richmond, Va. Yeast-cake	51,276	Apr. 10	121	1970
Stark Mills, Manchester, N. H., and Boston, Mass. Woven cotton goods	50,391	Mar. 13	121	683
Stark Mills, Manchester, N. H. Sheetings, drills, and ducks	51,875	Apr. 24	121	2657
Steinhardt Bros. & Co., New York, N. Y. Whisky	51,050	Apr. 3	121	1667
Steketee, George G., Grand Rapids, Mich. Worm-destroyer or vermifuge	51,508	Apr. 17	121	2320
Steketee, George G., Grand Rapids, Mich. Neuralgia-drops	51,509	Apr. 17	121	2320
Stephenson & Co., Woodbine, N. J., and Philadelphia, Pa. Knit head-gear, including tams, toques, and caps	51,956	Apr. 24	121	2660
Stephenson Mfg. Co., Albany, N. Y. Belt-dressing	51,251	Apr. 10	121	1969
Sterling Whip Company, Westfield, Mass. Whip-centers	50,953	Apr. 3	121	1663
Stern Brothers, New York, N. Y. Kid and lambskin gloves	50,755	Mar. 27	121	1342
Stern Brothers, Kansas City, Mo. Whisky	51,334	Apr. 10	121	1973
Stern & Saalberg Company, New York, N. Y. Powdered dessert jelly preparation	51,390	Apr. 17	121	2312
Stewart, Howe and May Coy., Jersey City, N. J.; New York, N. Y.; Boston, Mass.; St. Louis, Mo.; Chicago, Ill., and San Francisco, Cal. Petticoats and underskirts	51,540	Apr. 17	121	2317
Storage Battery Supply Co., New York, N. Y. Storage batteries	50,837	Apr. 3	121	1658
Stork Company, Boston, Mass. Toilet powder	50,800	Mar. 27	121	1344
Storz Brewing Co., Omaha, Nebr. Beer	51,429	Apr. 17	121	2313
Stowell Manufacturing Company, Jersey City, N. J. Asphalt roofing	50,423	Mar. 13	121	685
Stowell Manufacturing Company, Jersey City, N. J. Asphalt roofing	50,424	Mar. 13	121	685
Strasburger, Byron L., New York, N. Y. Watch-movements	51,715	Apr. 24	121	2650
Straus, Aaron, Chicago, Ill. Cigars	51,457	Apr. 17	121	2314
Straus Brothers Company, Chicago, Ill. Whisky	50,558	Mar. 20	121	1007
Strauss, Henry P., New York, N. Y. Cigarettes and cigarette-tobacco	50,392	Mar. 13	121	683
Studebaker Brothers Manufacturing Company, South Bend, Ind. Harness	50,210	Mar. 6	121	331
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	51,600	Apr. 17	121	2320
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	51,668	Apr. 17	121	2322
Summit City Soap Works, Fort Wayne, Ind. Soap	50,487	Mar. 20	121	1005
Summit City Soap Works, Fort Wayne, Ind. Washing-powder	50,488	Mar. 20	121	1005
Summit City Soap Works, Fort Wayne, Ind. Soap	50,586	Mar. 20	121	1008

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Sun Manufacturing Company, Columbus, Ohio. Coffee-mills	51,624	Apr. 17	121	2321
Sun Manufacturing Company, Columbus, Ohio. Coffee-mills	51,625	Apr. 17	121	2321
Supplee Hardware Co., Philadelphia, Pa. Adzes, hatchets, and axes	51,217	Apr. 10	121	1968
Supplee Hardware Company, Philadelphia, Pa. Locks	50,913	Apr. 3	121	1661
Supplee Hardware Company, Philadelphia, Pa. Axes and hatchets	51,216	Apr. 10	121	1968
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	51,626	Apr. 17	121	2321
Supplee Hardware Company, Philadelphia, Pa. Lawn-mowers	51,627	Apr. 17	121	2321
Swank, Arthur H., Fremont, Ohio. Germicides	51,176	Apr. 3	121	1672
Swartchild & Co., Chicago, Ill. Mainsprings	51,107	Apr. 3	121	1669
Sweet Candy Co., Salt Lake City, Utah. Candy	51,510	Apr. 17	121	2316
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	50,630	Mar. 27	121	1337
Sweet Springs Milling Company, Sweet Springs, Mo. Flour	51,063	Apr. 3	121	1667
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	51,064	Apr. 3	121	1668
Swift and Company, Chicago, Ill. Lard and lard compounds	51,051	Apr. 3	121	1667
Sykes & A. B. Kirschbaum & Co., New York, N. Y. Coats, vests, and trousers	51,734	Apr. 24	121	2651
T. G. Hawkes & Company, Corning, N. Y. Cut glass and engraved glass	50,559	Mar. 20	121	1007
Tafts Asthmalene Company, New York, N. Y. Remedy for asthma	50,248	Mar. 6	121	332
Tait & Sons, George, Norfolk, Va. Garden, trucking, and flower seeds and bulbs	51,052	Apr. 3	121	1667
Taussig, Oscar, New York, N. Y. Whisky	51,573	Apr. 17	121	2319
Taylor, Carleton F., Hot Springs, Ark. Tonic	51,947	Apr. 24	121	2660
Taylor, Thomas D., Boston, Mass. Blank books	51,160	Apr. 3	121	1672
Taylor, William G., Richmond, Va. Lithia-water	50,861	Apr. 3	121	1659
Tedcastle & Co., A. W., Boston, Mass. Leather boots and shoes	51,200	Apr. 10	121	1968
Terre Haute Brewing Co., Terre Haute, Ind. Lager-beer and bottled beer	51,485	Apr. 17	121	2315
Terry, George F., Waterville, Me. Magazine or periodical	51,053	Apr. 3	121	1667
Tetlow, Joseph, Philadelphia, Pa. Face-powder	50,393	Mar. 13	121	683
Tetlow, Joseph, Philadelphia, Pa. Powder for toilet and nursery purposes	51,948	Apr. 24	121	2660
Tetlow, Joseph, Philadelphia, Pa. Face-powder	51,949	Apr. 24	121	2660
Texas Nursery Company, Sherman, Tex. Peach-trees, scions, cuttings, grafts, roots, and stocks	51,486	Apr. 17	121	2315
Theobald and Son Co., Columbus, Ohio. Whisky	51,628	Apr. 17	121	2321
Theodore W. Foster & Bro. Co., Providence, R. I. Sterling-silver flat ware, hollow ware, and table-ware	50,670	Mar. 27	121	1338
Thomas J. Taylor Company, New York, N. Y. Celluloid hair-pins	51,669	Apr. 17	121	2322
Thomas Walker & Son, Ltd., Birmingham, England. Ship-logs and sounding-machines	50,840	Apr. 3	121	1658
Thomas Walker & Son Ltd., Birmingham, England. Ships' logs	51,574	Apr. 17	121	2319
Thompson, Amund G., Chicago, Ill. Medicinal beverage	50,701	Mar. 27	121	1340
Thompson Medical Company, Titusville, Pa. Medicine for the cure of liver and kidney diseases	50,801	Mar. 27	121	1344
Thornton & Chester Milling Co., Buffalo, N. Y. Wheat-flour	50,305	Mar. 6	121	334
Threefoot Bros. & Co., Meridian, Miss. Cornmeal	50,454	Mar. 20	121	1003
Tichenor, G. H., New Orleans, La. Antiseptic refrigerants for wounds	50,560	Mar. 20	121	1008
Tiedemann & Son, Theo., New York, N. Y. Moist-proof maline	51,849	Apr. 24	121	2656
Tiffin Wagon Co., Tiffin, Ohio. Wagons	50,631	Mar. 27	121	1337
Toch Brothers, New York, N. Y. Paints	50,490	Mar. 20	121	1005
Toch Brothers, New York, N. Y. Varnishes	50,702	Mar. 27	121	1340
Toch Brothers, New York, N. Y. Paint and varnish remover	50,703	Mar. 27	121	1340
Toch Brothers, New York, N. Y. White lead	50,704	Mar. 27	121	1340
Toch Brothers, New York, N. Y. Chemical coating	51,335	Apr. 10	121	1973
Tomkins, Calvin, New York, N. Y. Calcined plaster	50,118	Mar. 6	121	327
Tomlinson, Anne E., New York, N. Y. Ladies' belts	51,670	Apr. 17	121	2322
Tongue & Bros., R. E., Philadelphia, Pa. Lamp-chimneys and lantern-globes	51,458	Apr. 17	121	2314
Tower & Lyon Co., New York, N. Y. Handcuffs and leg-irons	50,400	Mar. 13	121	684
Tradesmen's Publishing Company, St. Louis, Mo. Weekly publication	51,376	Apr. 17	121	2311
Tradesmen's Publishing Company, St. Louis, Mo. Weekly publication	51,377	Apr. 17	121	2311
Transo-Paper Company, Chicago, Ill. Envelops	50,165	Mar. 6	121	329
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	51,671	Apr. 17	121	2322
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	51,672	Apr. 17	121	2323
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	51,911	Apr. 24	121	2658
Traut & Hine Mfg. Co., New Britain, Conn. Upholsterers' nails	50,115	Mar. 6	121	327
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	51,360	Apr. 10	121	1974
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	51,705	Apr. 24	121	2650
Trench's Remedies Ltd., Dublin, Ireland. Ointment for human use	51,950	Apr. 24	121	2660
Trench's Remedies Ltd., Dublin, Ireland. Medical preparations for external and internal use by man	51,951	Apr. 24	121	2660
Trevor, William, New York, N. Y. Scarfs	50,579	Mar. 20	121	1006
Trevor, William, New York, N. Y. Scarfs	51,735	Apr. 24	121	2651
Tribune Co., Chicago, Ill. Magazines	50,633	Mar. 27	121	1337
Trommer Company, Fremont, Ohio. Malt extracts	50,700	Mar. 27	121	1340
Trost Bros., Louisville, Ky. Whisky	51,065	Apr. 3	121	1666
Truman, Lorinda B., Springfield, Mo. Medicines for the cure of female disorders	51,201	Apr. 10	121	1968
Tubular Rivet & Stud Company, Boston, Mass. Lacing-hooks and lacing-studs	50,214	Mar. 6	121	331
Turner, Albert, Holt Town, Manchester, England. Black and colored inks in fluid, crystal, and powdered form	50,696	Mar. 27	121	1335
Tyler, Frank R., Staunton, Va. Germicidal and antiseptic liquid	50,394	Mar. 13	121	683
U-tah-na Co. (See Good, Milton D., assignor.)				
U. S. Chemical Co., Tampa, Fla. Remedies for consumption	51,218	Apr. 10	121	1968
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber in sheet form	51,410	Apr. 17	121	2312
Ulman, Boykin & Co., Baltimore, Md. Rye whisky	50,671	Mar. 27	121	1338
Ulrich, John D., Brooklyn, N. Y. Whisky	50,215	Mar. 6	121	331
Union Bag & Paper Company, New York, N. Y. Paper bags	50,838	Apr. 3	121	1656
Union Distilling Co., Cincinnati, Ohio. Whisky	51,736	Apr. 24	121	2651
Union Distilling Co., Cincinnati, Ohio. Whisky	51,876	Apr. 24	121	2657
Union Distlg. Co., Cincinnati, Ohio. Whisky	51,164	Apr. 3	121	1672
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	51,810	Apr. 24	121	2654
Union Horse Nail Company, New Haven, Conn., and Chicago, Ill. Horse-nails	51,811	Apr. 24	121	2654
United Fast Color Eyelet Company, Boston, Mass. Eyelets and lacing-hooks	50,738	Mar. 27	121	1341
United Injector Co., New York, N. Y. Ejectors	50,632	Mar. 27	121	1337
United Shoe Machinery Company, Boston, Mass. Wire	50,597	Mar. 27	121	1335
United States Food Co., Pleasant City, Ohio. Medicated food for horses, cattle, sheep, and hogs	50,401	Mar. 13	121	684
United States Paper Cutter Co., St. Louis, Mo. Roll-paper holders and cutters	50,841	Apr. 3	121	1658
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,078	Mar. 6	121	326
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,079	Mar. 6	121	326
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,116	Mar. 6	121	327
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,117	Mar. 6	121	327
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,350	Mar. 13	121	682
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,351	Mar 13	121	682
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	50,352	Mar. 13	121	682

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title	No.	Date.	Official Gazette. Vol.	Page.
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,202	Apr. 10	121	1968
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,378	Apr. 17	121	2311
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,379	Apr. 17	121	2311
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,380	Apr. 17	121	2311
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,716	Apr. 24	121	2650
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,737	Apr. 24	121	2651
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,738	Apr. 24	121	2651
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,749	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,750	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,751	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,752	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,753	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,754	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,755	Apr. 24	121	2652
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	51,756	Apr. 24	121	2652
United States Wood Preserving Company, New York, N. Y. Wood blocks for paving	50,863	Apr. 3	121	1659
United Wine and Trading Company, New York, N. Y. Whisky	50,140	Mar. 6	121	328
Upham Bros. Co., Stoughton, Mass. Leather boots and shoes	50,355	Mar. 13	121	682
Upham Bros. Co., Stoughton, Mass. Leather boots and shoes	50,431	Mar. 13	121	685
Uri, Nathan M., Louisville, Ky. Whisky	50,306	Mar. 6	121	334
Valentin Blatz Brewing Co., Milwaukee, Wis. Malt extract	50,080	Mar. 6	121	325
Valentine & Company, New York, N. Y. Varnishes and japans	50,705	Mar. 27	121	1340
Valentine's Meat Juice Company, Richmond, Va. Preparations of meat-juice and compound of meat-juice and glycerin	51,066	Apr. 3	121	1668
Van Antwerp & Son, G., Mobile, Ala. Internal remedies for headaches	51,673	Apr. 17	121	2323
Van Duzer, S. R., New York, N. Y. Hair-restoratives	50,254	Mar. 6	121	332
Van Duzer, S. R., New York, N. Y. Hair-restorer	50,255	Mar. 6	121	332
Van Houten & Zoon, C. J., Weesp, Netherlands. Cocoa	50,864	Apr. 3	121	1659
Van Lissel, Johanna W., Pella, Iowa. Remedies for the cure of rheumatism	51,252	Apr. 10	121	1970
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	50,402	Mar. 13	121	684
Vautier Frères, Carouge, Switzerland. Files	50,920	Apr. 3	121	1661
Vedanta Society, New York, N. Y. Printed books	50,954	Apr. 3	121	1663
Venus Chemical Co., New York, N. Y. Embalming fluids	51,178	Apr. 3	121	1672
Victor Talking Machine Company, Camden, N. J. Records for talking-machines	50,081	Mar. 6	121	325
Victor Talking Machine Company, Camden, N. J. Talking-machines and parts thereof	50,082	Mar. 6	121	325
Victor Talking Machine Company, Camden, N. J. Records for talking-machines	50,598	Mar. 27	121	1335
Voigt & Co., Chattanooga, Tenn. Liquid preparation of sodium phosphate	51,361	Apr. 10	121	1974
Von Bremen, MacMonnies & Co., New York, N. Y. Sardines	50,634	Mar. 27	121	1337
W. H. Coe Mfg. Co., Providence, R. I. Metal leaf	51,575	Apr. 17	121	2319
W. H. Rankin Company, Elizabeth, N. J. Sheathing-paper	50,083	Mar. 6	121	326
W. H. Rankin Company, Elizabeth, N. J. Tarred roofing-felt	51,305	Apr. 10	121	1972
W. J. Dickey & Sons, Incorporated, Baltimore, Md. Kerseys and cassimeres	51,912	Apr. 24	121	2658
W. W. Kimball Company, Chicago, Ill. Pianos	51,812	Apr. 24	121	2654
Wahle Foundry and Machine Works, Davenport, Iowa. Washing-machines	50,706	Mar. 27	121	1340
Waldorf-Astoria Segar Co. (See Siegel, Abraham, assignor.)				
Walker, Richard S., Midlothian, Tex. Antiseptic	50,256	Mar. 6	121	332
Walsh, Arthur Q., New York, N. Y. Cigarette-holders	50,894	Apr. 3	121	1660
Walsh, James J., Quincy, Ill. Liniment	50,307	Mar. 6	121	334
Walworth M'f'g. Co., Boston, Mass. Wrenches	50,842	Apr. 3	121	1658
Wamsutta Mills, New Bedford, Mass. Shirtings and sheetings	51,002	Apr. 3	121	1665
Wamsutta Mills, New Bedford, Mass. Shirtings and sheetings	51,003	Apr. 3	121	1665
Wanamaker, John, Philadelphia, Pa. Leather boots, shoes, and slippers	51,487	Apr. 17	121	2315
War Eagle Fuel Company, War Eagle, W. Va. Bituminous coal	50 567	Mar. 20	121	1008
Ward Salve Co., Washington, D. C. Salves	51,254	Apr. 10	121	1970
Warner Bros. Co., Bridgeport, Conn. Ladies' and children's underwaists	51,601	Apr. 17	121	2320
Warner Sugar Refining Company, Waukegan, Ill. Corn-starch	51,067	Apr. 3	121	1668
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	50,084	Mar. 6	121	326
Warren-Ehret Company, Philadelphia, Pa. Pitch	50,085	Mar. 6	121	326
Watson, Paul E., Salisbury, Md. Cigars	50,086	Mar. 6	121	326
Watson-Plummer Shoe Company, Chicago, Ill. Children's leather shoes	51,068	Apr. 3	121	1668
Wattles & Son, G. M., Buffalo, N. Y. Hens' eggs	50,491	Mar. 20	121	1005
Weber Piano Company, New York, N. Y. Pianos	51,459	Apr. 17	121	2314
Weber Wagon Company, Chicago, Ill Wagons	50,843	Apr. 3	121	1658
Webley & Scott Revolver & Arms Co. Ld., Birmingham, England. Guns, rifles, pistols, revolvers, and parts thereof	50,353	Mar. 13	121	682
Wedderburn, Gertrude F., Chevy Chase, Md. Card-holder	51,255	Apr. 10	121	1970
Weideman Company, Cleveland, Ohio. Whisky	50,164	Mar. 6	121	329
Weideman Company, Cleveland, Ohio; Chicago, Ill., and New York, N. Y. Canned fruits and vegetables	51,306	Apr. 10	121	1972
Weideman Company, Cleveland, Ohio; Chicago, Ill. and New York, N. Y. Canned fruits and vegetables	51,307	Apr. 10	121	1972
Weil & Co., S. N., Cincinnati, Ohio. Whisky	51,878	Apr. 24	121	2657
Weil, Edward, Houston, Tex. Whisky	51,877	Apr. 24	121	2657
Weil, Edward, Houston, Tex. Whisky	51,913	Apr. 24	121	2658
Weil, Edward, Houston, Tex. Whisky	51,952	Apr. 24	121	2660
Weinberg, Heyman & Company, New York, N. Y. Parasols and umbrellas	51,850	Apr. 24	121	2656
Weingarten Bros., New York, N. Y. Corsets	51,851	Apr. 24	121	2656
Weinreich, Joseph, Dayton, Ohio. Cigars	50,119	Mar. 6	121	327
Weis Mfg. Co., Toledo, Ohio. Toothpicks	51,914	Apr. 24	121	2658
Weisert Brothers Tobacco Company, St. Louis, Mo. Plug cut tobacco	50,739	Mar. 27	121	1341
Weiss Eichold Liquor Co., Mobile, Ala Whisky	50,356	Mar. 13	121	682
Wellington Typewriter Company, New York, N. Y. Type-writing machines	50 844	Apr 3	121	1658
Wells Abbott Nieman Company, Schuyler, Nebr. Wheat-flour	51 757	Apr. 24	121	2652
Wells, Clarence L., Troy, N. Y. Remedy for certain named diseases	51,004	Apr. 3	121	1665
Wells, Ephraim S., Jersey City, N. J. Poison or exterminator for rats, vermin, and insects	51,852	Apr. 24	121	2656
Welsbach Light Company, Gloucester City, N. J. Incandescent manties, lamps and lamp-fittings	51,488	Apr. 17	121	2315
Wertheimer-Swarts Shoe Co., St Louis, Mo. Leather boots and shoes	51.179	Apr. 3	121	1672
Western Clock Mfg. Co., La Salle, Ill. Clocks and watches	51 854	Apr. 24	121	2656
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	51,674	Apr. 17	121	2323
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	51,675	Apr 17	121	2323
Westheimer & Sons, Ferdinand, Cincinnati, Ohio. Whisky	51,853	Apr. 24	121	2656
Wetzel, (a Firm,) New York, N Y. Certain named garments	51,005	Apr. 3	121	1665
Wharton Chemical Co., Nashville, Tenn. Tonic beverages and extracts for making the same	50,492	Mar 20	121	1006
Wheeler Condenser & Engineering Co., New York, N. Y. Steam pumping-engines and steam-pumps	50,403	Mar. 13	121	684
Whetzel, Frank P., Garrett, Ind. Liquid preparation for scalp and hair	50,404	Mar. 13	121	684

Alphabetical list of registrants of trade-marks for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Whitcher, Frank W., Boston, Mass. Imitation leather	50,357	Mar. 13	121	682
Whitcher, Frank W., Boston, Mass. Heel-protectors	50,599	Mar. 27	121	1335
Whitcher, Frank W., Boston, Mass. Box-toe material and inner soling	50,600	Mar. 27	121	1336
White, Hentz & Co., Philadelphia, Pa. Whisky	51 256	Apr. 10	121	1970
White, Joseph J., New Lisbon, N. J. Cranberries	50,493	Mar. 20	121	1005
White Rock Min. Spg. Co., Waukesha, Wis. Ginger-ale	51,855	Apr. 24	121	2656
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	51,576	Apr. 17	121	2319
Whitman & Co., Clarence, New York, N. Y. Silk piece goods	51,165	Apr. 3	121	1672
Whitman Grocery Company, Orange, Mass. Cereal coffee	50,405	Mar. 13	121	684
Whitman & Son, Stephen F., Philadelphia, Pa. Candies and chocolates of all descriptions	50,865	Apr. 3	121	1659
Whitman & Son, Stephen F., Philadelphia, Pa. Candies and chocolates of all descriptions	50,866	Apr. 3	121	1659
Wichman, Lutgen & Co., San Francisco, Cal. Malt whisky	50,308	Mar. 6	121	334
Wiebusch & Hilger, Limited, New York, N. Y. Anvils	50,635	Mar. 27	121	1337
Wiley Manufacturing Co., Atlanta, Ga. Soda-water syrup and a drink made from such syrup	50,489	Mar. 20	121	1004
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction or bearing metals	51,511	Apr. 17	121	2316
William E. Hooper & Sons Co. of Baltimore City, Baltimore, Md. Cotton duck	51,336	Apr. 10	121	1973
William H. Lee & Co., St. Louis, Mo. Whisky	50,197	Mar. 6	121	330
William Peter Br'g. Co., Union, N. J. Lager-beer	51,693	Apr. 24	121	2649
William Skinner Manufacturing Company, Holyoke and Boston, Mass.; New York, N. Y.; Chicago, Ill., and Philadelphia, Pa. Silks and satins	50,198	Mar. 6	121	330
William Underwood Company, Boston, Mass. Canned sardines	50,406	Mar. 13	121	684
William Underwood Company, Boston, Mass. Canned sardines	50,494	Mar. 20	121	1005
Williams & Bros., J., Meyersdale, Pa. Stogies	50,672	Mar. 27	121	1338
Williams & Co., Frank S., Washington, D. C. Skin-lotions	51,257	Apr. 10	121	1970
Williams, Martin & Gray, Inc., Norfolk, Va. Ready-mixed paints	51,512	Apr. 17	121	2316
Williams, Robert J., West Liberty, Iowa. Washing fluid	51,411	Apr. 17	121	2312
Williamsville Manufacturing Company, Killingly, Conn. Cotton-cloth buff-wheels	50,120	Mar. 6	121	327
Willis & Co., Grinnell, New York, N. Y. Shirtings, sheetings, cambrics, and long-cloth	50,172	Mar. 6	121	325
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,309	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,310	Mar. 6	121	339
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,311	Mar. 6	121	334
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,312	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,313	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,314	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,315	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,316	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,317	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,318	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,319	Mar. 6	121	335
Willis & Co., Grinnell, New York, N. Y. Shirtings and sheetings, cambrics, and long-cloth	50,320	Mar. 6	121	335
Wilmerding-Loewe Co., San Francisco, Cal. Whisky	51,602	Apr. 17	121	2320
Wimpfheimer and Brother, A., New York, N. Y. Velveteens	50,772	Mar. 27	121	1342
Winand Distilling Company of Baltimore County, Pikesville, Md. Whisky	50,399	Mar. 13	121	684
Winans, George H., Kalamazoo, Mich. Folding canvas boats	51,219	Apr. 10	121	1968
Winchester Repeating Arms Co., New Haven, Conn. Cartridges	51,717	Apr. 24	121	2650
Wing, John, New Bedford, Mass. Lubricating-oil for watches and clocks	51,258	Apr. 10	121	1970
Wingo, Ellett & Crump Shoe Co., Richmond, Va. Leather boots and shoes	50,674	Mar. 27	121	1338
Wintersmith Medicine Co., Louisville, Ky. Tonics	51,112	Apr. 3	121	1678
Wintersmith Medicine Co., Louisville, Ky. Antimalarial tonics	51,180	Apr. 3	121	1670
Wisconsin Cigar Co., Madison, Wis. Cigars, cheroots, and stogies	50,707	Mar. 27	121	1340
Wise & Co., David, Chicago, Ill. Whisky	50,321	Mar. 6	121	335
Wise Furnace Co., Akron, Ohio. Hot-air furnaces	50,839	Apr. 3	121	1652
Wm. A. Coombs Milling Company, Coldwater, Mich. Wheat-flour	50,322	Mar. 6	121	335
Wm. Bergenthal Co., Milwaukee, Wis. Whisky	50,196	Mar. 6	121	330
Wm. H. Horstmann Company, Philadelphia, Pa.; New York, N. Y.; Boston, Mass.; Baltimore, Md.; Detroit, Mich., and Paris and Lyon, France. Yarns of all descriptions	50,216	Mar. 6	121	331
Wolf & Co., A. A., Pittsburg, Pa. Whisky	50,199	Mar. 6	121	330
Wolff Process Leather Company, Philadelphia, Pa. Enameled leather	51,489	Apr. 17	121	2315
Wonderful Dream Salve Co., Detroit, Mich. Salves	50,955	Apr. 3	121	1663
Woodbury & Company, E. S., Boston, Mass. Leather boots and shoes	51,460	Apr. 17	121	2314
Woodman-Davis Co., Worcester, Mass. Tooth-powder	50,740	Mar. 27	121	1341
Wood's Sons, T. B., Chambersburg, Pa. Clutches	50,845	Apr. 3	121	1658
Woodside Sterling Company, New York, N. Y. Silver tableware, hollow ware, and flat ware	51,430	Apr. 17	121	2313
Wortmann, Morris, New York, N. Y. Whisky	50,673	Mar. 27	121	1338
Wright & Taylor, Louisville, Ky. Whisky	50,437	Mar. 13	121	685
Wunderle, Philip, Philadelphia, Pa. Candy	51,856	Apr. 24	121	2656
Wunderle, Philip, Philadelphia, Pa. Candy	51,857	Apr. 24	121	2656
Wyeth Hardware & Manufacturing Co., St. Joseph, Mo. Horse-collars	51,381	Apr. 17	121	2311
X-Ray Stove Polish Co., New York, N. Y. Powdered stove-polish	50,495	Mar. 20	121	1005
Yeska, Joseph, New York, N. Y. Men's coats, trousers, and vests	51,308	Apr. 10	121	1972
Young & Co., Chas. W., Philadelphia, Pa. Soap in form of cakes or bars	51,365	Apr. 10	121	1974
Young & Co., Chas. W., Philadelphia, Pa. Toilet soap	51,366	Apr. 10	121	1974
Zucca, Antonio, New York, N. Y. Olive-oil	50,708	Mar. 27	121	1340

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ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. Moses Sons & Co., Inc., New York, N. Y. "Comparto." (For Sponges)	12,700	Mar. 6	121	336
Aarons, Augustus, New Orleans, La. "Dr. Sylvester's." (For Veterinary Preparations)	12,808	Apr. 24	121	2661
Acheson Harden Company, Passaic, N. J. "The Hibernia." (For Handkerchiefs)	12,722	Mar. 20	121	1009
Acheson Harden Company, Passaic, N. J. "The Old Time Irish Linen Hdkfs." (For Handkerchiefs)	12,723	Mar. 20	121	1009
Acheson Harden Company, Passaic, N. J. "The New Linene Handkerchiefs." (For Handkerchiefs)	12,724	Mar. 20	121	1009
Acheson Harden Company, Passaic, N. J. "The Compactum Handkerchief." (For Handkerchiefs)	12,725	Mar. 20	121	1009
Adolf Schmidt's Kloster Brewery, Brooklyn, N. Y. "Kardinal." (For Beer)	12,779	Apr. 10	121	1975
Allen, Thomas A., Binghamton, N. Y. "Denol." (For Tablets)	12,698	Mar. 6	121	336
Amazon Chemical Manufacturing Co., Manistee, Mich. "Amazon Vegetable Boiler Compound." (For a Vegetable Boiler Compound)	12,739	Mar. 27	121	1345
Ballard, Alice, New York, N. Y. "Ballard's Heleo-Rosa." (For a Preparation for the Cure of Dandruff)	12,699	Mar. 6	121	336
Barckhoff & Co., E. G., Pittsburg, Pa. "Wilt's Hair Restorer." (For Hair-Restorer)	12,709	Mar. 13	121	686
Beyer, Wesley B., Birdsboro, Pa. "U. S. Army Standard, Uncle Sam." (For Seamless Half-Hose)	12,777	Apr. 3	121	1673
Birmingham Distilling Co., Birmingham, Ala. "Old Jones Valley Whiskey." (For Whisky)	12,802	Apr. 24	121	2661
Birmingham Distilling Co., Birmingham, Ala. "Fountain Heights Whiskey." (For Whisky)	12,803	Apr. 24	121	2661
Boardman & Sons Co., Wm., Hartford, Conn. "Boardman's Putnam Coffee Java & Mocha." (For Coffee)	12,788	Apr. 17	121	2324
Brentanos, New York, N. Y. "Cavendish Bridge Score." (For Bridge Scoring Devices)	12,818	Apr. 24	121	2661
Brinton, Caleb, Lewiston, Idaho. "Portland Pointers." (For Cigars)	12,795	Apr. 24	121	2661
Brooklyn Varnish M'f'g Co., Brooklyn, N. Y. "K-a-u-r-i." (For Varnish)	12,794	Apr. 17	121	2324
C. W. C. Medicine Company, Carrollton, Ga. "C. W. C. Camps Wonderful Cure." (For Medicine)	12,769	Apr. 3	121	1673
Canby, Ach & Canby Co., Dayton, Ohio. "Holiday Coffee." (For Coffee)	12,731	Mar 27	121	1345
Cargill-Wight Co., Columbus, Ga. "Marigold Breakfast Syrup." (For Syrup)	12,707	Mar. 13	121	686
Castle Brothers—Incorporated, San Francisco, Cal. "Diamond C Brand California Peaches." (For Peaches)	12,757	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Our Pride California Peaches." (For Peaches)	12,758	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Flora Brand California Moorpark Apricots." (For Apricots)	12,759	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Climax Brand Apricots." (For Apricots)	12,760	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Laurel Brand California Apricots." (For Apricots)	12,761	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Cowboy Brand Selected California Prunes." (For Prunes)	12,762	Apr. 3	121	1673
Castle Brothers—Incorporated, San Francisco, Cal. "Souvenir Brand California Prunes." (For Prunes)	12,763	Apr. 3	121	1673
Charles E. Hires Company, Philadelphia, Pa. "Hires The Only Rootbeer." (For Carbonated Rootbeer)	12,729	Mar. 27	121	1345
Cohen & Son, Charles J., Philadelphia, Pa. "'Zenith Brand' Metal Clasp Envelopes." (For Envelops)	12,805	Apr. 24	121	2661
Cole Lithographing Co., Chicago, Ill. "Cherokee Maid." (For Cigars)	12,796	Apr. 24	121	2661
Columbia Wax Works, New York, N. Y. "Starchluster." (For Starch-Luster)	12,776	Apr. 3	121	1673
D. Holzman & Company, Spokane, Wash. "Robt. Hamilton Old Tom Gin." (For Gin)	12,720	Mar. 20	121	1009
Dakin Drug Co., Randolph, Mass. "Dr. Bent's No. 1." (For Medicine)	12,768	Apr. 3	121	1673
Diehl, Peter, Syracuse, N. Y. "Best in the World Salve." (For a Salve)	12,770	Apr. 3	121	1673
Dubetz, Louis, Chicago, Ill. "Jack-Knife Rye." (For Whisky)	12,706	Mar. 13	121	686
Elder-Harrison Co., Baltimore, Md. "Mirthful Scotch Whiskey." (For Scotch Whisky)	12,787	Apr. 17	121	2324
Empire Soluble Sulphur Corporation, New York, N. Y. "Sulphosol, A Life Preserver." (For Soluble Sulfur)	12,708	Mar. 13	121	686
Englewood Co. Consolidated Factories, Chicago, Ill. "The Nightingale." (For Talking-Machine Records)	12,817	Apr. 24	121	2661
Erie Preserving Company, Brant and Buffalo, N. Y. "100 Good Things to Eat." (For Preserved Fruits, Vegetables, and Table Delicacies)	12,804	Apr. 24	121	2661
Facial Toilet Manufacturing Company, Grand Rapids, Mich. "Cleopatra Massage Cream and Skin Food." (For a Toilet Lotion)	12,740	Mar. 27	121	1345
Frank & Co., Richard, New York, N. Y. "Champagne Ginger Ale." (For Ginger-Ale)	12,786	Apr. 17	121	2324
Garonzik, Moses P., Baltimore, Md. "La Garon." (For Cigars)	12,744	Apr. 3	121	1673
Garrison, Jane, Atlantic City, N. J. "Garrison's Croup Salve." (For Salve)	12,716	Mar. 20	121	1009
Gerstendorfer Bros., New York, N. Y. "Sapolin Glass Frosting." (For Glass-Frosting)	12,815	Apr. 24	121	2661
Girard Spring Water Co., North Providence, R. I. "Arabian Coffee Phosphate." (For a Beverage)	12,748	Apr. 3	121	1673
Gitt, Charles D., Danville, Va. "Gitt's Anti Kry." (For Medicine)	12,785	Apr. 17	121	2324
Grainer & Co., J. S., Grand Rapids, Mich. "Royal Anti-Rust Enamel." (For Enamel)	12,793	Apr. 17	121	2324
Grand Rapids Novelty Manufacturing Company, Grand Rapids, Mich. "The Clincher Curtain Fastener." (For Curtain-Fasteners)	12,711	Mar. 13	121	686
Gray Lithograph Co., New York, N. Y. "Oriental Toilet Powder." (For Toilet Powder)	12,773	Apr. 3	121	1673
Herbert, Kilian, Chicago, Ill. "Herbs H T Tonic." (For a Tonic)	12,783	Apr. 17	121	2324
Hitchner Biscuit Company, West Pittston, Pa. "Creso." (For Biscuit)	12,732	Mar. 27	121	1345
Home Brewing Company, St. Louis, Mo. "Heidelberg." (For Beer)	12,705	Mar. [illegible]	121	686
J. Ottmann Lithographing Co., New York, N. Y. "Verbena Hair Tonic." (For Hair-Tonic)	12,812	Apr. 24	121	2661
Jennings Manufacturing Co., Grand Rapids, Mich. "Lady Alice." (For Perfumery)	12,715	Mar. 20	121	1009
John H. Voss Company, Delray, Mich. "Crystal Brand." (For Sal-Soda)	12,789	Apr. 17	121	2324
Kermer Remedy Company, East St. Louis, Ill. "Kermer's Little Cannon Ball Pills." (For a Liver-Pill)	12,809	Apr. 24	121	2661
Kinney, A. T., St. Paul, Minn. "Imported." (For Cigars)	12,781	Apr. 17	121	2324
Klein, Carl H. von, Chicago, Ill. "Malt Juice." (For Malt-Juice)	12,694	Mar. 6	121	336
Koelle-Mueller Label Co., St. Louis, Mo. "Our National Friend." (For Cigars)	12,701	Mar. 13	121	686
Landis Machine Company, St. Louis, Mo. "Fleming Shoe Machine Thread." (For Shoe-Machine Thread)	12,792	Apr. 17	121	2324

Alphabetical list of registrants of labels for March and April—Continued.

Name, residence, and title.	No.	Date.	Official Gazette.	
			Vol.	Page.
Laurent & Sons, F., Philadelphia, Pa. "Laurent's Honey and Glycerine Jujubes." (For a Preparation of Honey and Glycerin)	12,772	Apr. 3	121	1673
Le Dane, Thomas H., Hagerstown, Md. "Big Two, or The Great Western Cholera and Cramp Cure." (For Medicine)	12,717	Mar. 20	121	1009
Leggett & Bro., New York, N. Y. "B-Bly-D." (For Insecticides)	12,811	Apr. 24	121	2661
Lewis, Warner C., Chicago, Ill. "Hickory Carbon Paper." (For Carbon-Paper)	12,778	Apr. 3	121	1673
Linnebach, Emil, New York, N. Y. "Prof. Emil Linnebach's Mysterious Remedy for Toothache and Facial Neuralgia." (For Medicine)	12,741	Mar. 27	121	1345
Liquid Carbonic Company, Chicago, Ill. "Kola Mint." (For Kola Mint)	12,704	Mar. 13	121	686
Lowry, S. M. and J. I., Atlanta, Ga. "Fel Bovis Button Tablets." (For Medicine)	12,742	Mar. 27	121	1345
Mack Mahon, J., Dayton, Ohio. "Words are Flowers Fruits are Facts Texas Post Oak." (For Medicine)	12,718	Mar. 20	121	1009
Maxwell, Joseph W., Louisville, Ky. "Nevoburna." (For Fireproofing Starch Compound)	12,791	Apr. 17	121	2324
Maywood Packing Co., Ltd., Corning, Cal. "Maywood Brand." (For Prunes)	12,764	Apr. 3	121	1673
Mazo Manufacturing Company, St. Louis, Mo. "Mazo." (For Soap)	12,807	Apr. 24	121	2661
McGuire, Frank H., Detroit, Mich. "Wavenlock." (For Hair-Tonic)	12,712	Mar. 20	121	1009
Milwaukee Lithographing Company, Milwaukee, Wis. "Bohemian." (For Beer)	12,693	Mar. 6	121	336
Milwaukee Lithographing Company, Milwaukee, Wis. "Ballantine." (For Beer)	12,799	Apr. 24	121	2661
Moosbrugger, Chas. A., Newark, N. J. "The Ideal Washing Fluid." (For a Washing Fluid)	12,775	Apr. 3	121	1673
O. L. Schwencke Lithographic Co., New York, N. Y. "Plumsure." (For Cigars)	12,743	Apr. 3	121	1673
O'Donnell, John F., Kansas City, Mo. "Century Maidens." (For Cigars)	12,695	Mar. 6	121	336
Otis Lithograph Co., Cleveland, Ohio. "Fabrica de Tabacos, Cigaros Exquisitos." (For Cigars)	12,782	Apr. 17	121	2324
Paragon Malt Extract Co., New York, N. Y. "Manhattan." (For Malt Extract)	12,797	Apr. 24	121	2661
Park, Louis M., Minneapolis, Minn. "Hiawatha." (For Natural Lithia-Spring Water)	12,703	Mar. 13	121	686
Parker Blake Co. Ltd. New Orleans, La. "Old Legal Whiskey." (For Whisky)	12,727	Mar. 27	121	1345
Pederson Mercantile Company, Moorhead, Minn. "Havarye." (For Whisky)	12,751	Apr. 3	121	1673
Pederson Mercantile Company, Moorhead, Minn. "Good Old Age Bourbon." (For Bourbon Whisky)	12,752	Apr. 3	121	1673
Pederson Mercantile Company, Moorhead, Minn. "Detroit Lake Rye." (For Rye Whisky)	12,753	Apr. 3	121	1673
Pederson Mercantile Company, Moorhead, Minn. "Good-Shot Rye." (For Rye Whisky)	12,754	Apr. 3	121	1673
Ph. Kling Brewing Co., Detroit, Mich. "Pros't." (For Beer)	12,800	Apr. 24	122	2661
Pioneer Canning & Pickling Co., St. Nazianz, Wis. "Old Settlers." (For Canned Peas)	12,765	Apr. 3	121	1673
Pritchard, Morgan C., Warrensburg, N. Y. "The New Chemical Felt." (For a Felt for Polishing Gold and Silver)	12,726	Mar. 20	121	1009
Puritan Massage Cream Co., Philadelphia, Pa. "Puritan Massage Cream." (For Massage-Cream)	12,814	Apr. 24	121	2661
Quirk, Harry, Boston, Mass. "Gyp-C-Qure." (For Horse Remedy)	12,767	Apr. 3	121	1673
Ransford, M. E. St. Claire, New York, N. Y. "La Rouge Claire." (For a Fluid Preparation for Beautifying the Complexion)	12,813	Apr. 24	121	2661
Red Star Massage Cream Co., St. Louis, Mo. "Red Star." (For Massage-Cream)	12,714	Mar. 20	121	1009
Rehfuss, Martin, Jr., Indianapolis, Ind. "The Indianapolis Whip." (For Whips)	12,710	Mar. 13	121	686
Rider, Edward T., Malone, N. Y. "Franklin Tablets." (For Medicine)	12,784	Apr. 17	121	2324
Robert Portner Brewing Company, Alexandria, Va. "Army and Navy Export Beer." (For Bottled Beer)	12,750	Apr. 3	121	1673
Schmidt & Co., New York, N. Y. "Santo Colorado." (For Cigars)	12,745	Apr. 3	121	1673
Schmidt & Co., New York, N. Y. "Santa Humo." (For Cigars)	12,746	Apr. 3	121	1673
Schmidt & Co., New York, N. Y. "Swissess." (For Cigars)	12,747	Apr. 3	121	1673
Schroeder, Kleine Grocer Co., Dubuque, Iowa. "Mitt." (For Smoking-Tobacco)	12,702	Mar. 13	121	686
Schroeder, William, Dubuque, Iowa. "Canon Cracker." (For Popcorn)	12,756	Apr. 3	121	1673
Scott, Charles H., New York, N. Y. "The Scott Hip-Form and Bustle." (For Hip-Forms)	12,806	Apr. 24	121	2661
Scott Paper Co., Philadelphia, Pa. "Astanby." (For Toilet-Paper)	12,790	Apr. 17	121	2324
Simmons, Norman L., Schenectady, N. Y. "A 2 Z." (For a Liquid Cleaner)	12,774	Apr. 3	121	1673
Smith, Lewis M., Philadelphia, Pa. "Lithia Holland Gin." (For Gin)	12,801	Apr. 24	121	2661
Smith, Thomas E., Mobile, Ala. "Brainalgine." (For Medicine)	12,697	Mar. 6	121	336
Sommer Company, H., Quakertown, Pa. "Decree." (For Cigars)	12,730	Mar. 27	121	1345
St. Louis Brewing Association, St. Louis, Mo. "Red Seal." (For Beer)	12,719	Mar. 20	121	1009
St. Louis Seed Company, St. Louis, Mo. "Havalawn." (For Grass-Seed Mixture)	12,816	Apr. 24	121	2661
Tacoma Chemical Co., Pittsburg, Pa. "Beau Teint, Crême Tacoma a Permanent Cold Cream." (For Cold-Cream)	12,771	Apr. 3	121	1673
Taylor Provision Co., Trenton, N. J. "John Taylor's Ham." (For Ham)	12,738	Mar. 27	121	1345
Traunmiller, F. Joseph, St. Louis, Mo. "Red Feather." (For Beer)	12,749	Apr. 3	121	1673
Trowbridge Chocolate Chip Co., Meadville, Pa. "Trowbridge's Chocolate Trowco Puffs." (For Confectionery)	12,755	Apr. 3	121	1673
Van Emden Cocoa Co., San Francisco, Cal. "Van Emden Ground Chocolate." (For Chocolate)	12,721	Mar. 20	121	1009
W. H. Hutchinson & Son, Chicago, Ill. "Orcherade." (For Extracts and Beverages)	12,728	Mar. 27	121	1345
Wayne County Preserving Co., Newark, N. Y. "Faultless." (For Canned Corn)	12,733	Mar. 27	121	1345
Wayne County Preserving Co., Newark, N. Y. "Newark." (For Canned Corn)	12,734	Mar. 27	121	1345
Wayne County Preserving Co., Newark, N. Y. "Arcadia Beauty." (For Canned Corn)	12,735	Mar. 27	121	1345
Wayne County Preserving Co., Newark, N. Y. "Wayne." (For Canned Corn)	12,736	Mar. 27	121	1345
Wayne County Preserving Co., Newark, N. Y. "Burnham." (For Canned Corn)	12,737	Mar. 27	121	1345
Western Brewing Company, Belleville, Ill. "Kaiser Beer." (For Beer)	12,780	Apr. 10	121	1978
Western Carbonic Acid Gas Co., San Francisco, Cal. "Pungent Aromatic Ginger Ale." (For Ginger-Ale)	12,798	Apr. 24	121	2661
Wilmanns Bros. Co., Milwaukee, Wis. "Celeri." (For Vegetable Tonics)	12,810	Apr. 24	121	2661
Wilson, C. R., Louisville, Ky. "Cupidine." (For a Lotion)	12,713	Mar. 20	121	1009
Wintersteen, Charles H., Cameron, Mo. "The Barnett Hog Remedy and Stock Food." (For a Combined Food and Condition-Powder for Live Stock)	12,766	Apr. 3	121	1673
Wolverton's N. Y. Co., Brooklyn, N. Y. "Radium-I-See." (For Medicine)	12,696	Mar. 6	121	336

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Atlanta Antiseptic Co., Atlanta, Ga. "A A Dentifrice Cream." (For a Dentifrice)	1,589	Mar. 6	121	336
Auerbach & Sons, D., New York, N. Y. "Uncle John." (For Confectionery)	1,600	Mar. 20	121	1009
Belding Bros. & Co., New York, N. Y. "Belding's Yardwide Guaranteed Satin." (For Satins)	1,598	Mar. 20	121	1009
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	1,588	Mar. 6	121	336
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	1,593	Mar. 13	121	686
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	1,621	Apr. 17	121	2324
Both, W. C., Chicago, Ill. "Men's Apparel." (For Men's Apparel)	1,625	Apr. 24	121	2661
Bulman, Elvah O., Grand Rapids, Mich. "The Gem Folding Take-Up Twine and Paper Bag Holder." (For Twine-Holders)	1,624	Apr. 17	121	2324
Crescent Burner Manufacturing Company, New York, N. Y. "Crescent Acetylene Burners." (For Acetylene-Burners)	1,612	Mar. 27	121	1345
David Adler & Sons Clothing Co., Milwaukee, Wis. "Fashions of the Spring Season 1906." (For Men's Spring Apparel)	1,592	Mar. 13	121	686
David Adler & Sons Clothing Co., Milwaukee, Wis. "Adler's Young Men's Summer Styles." (For Men's Summer Apparel)	1,599	Mar. 20	121	1009
Emerson Drug Company, Baltimore, Md. "(Next Morning.) Bromo-Seltzer." (For Bromo-Seltzer)	1,601	Mar. 20	121	1009
Flick, Frederick L., Brooklyn, N. Y. "Flick's Antiseptic Catarrh Salve." (For a Salve)	1,595	Mar. 13	121	686
Gerstendorfer Bros., New York, N. Y. "Star Enamel and Sapolin Varnish Stain." (For Enamel and Varnish)	1,591	Mar. 6	121	336
Gerstendorfer Bros., New York, N. Y. "Star Enamel and Sapolin Floor Stain." (For Enamel and Floor-Stain)	1,613	Mar. 27	121	1345
Gerstendorfer Bros., New York, N. Y. "Sapolin Carriage Gloss Colors." (For Carriage Gloss-Colors)	1,614	Mar. 27	121	1345
Green, G. G., Woodbury, N. J. "August Flower." (For Medicine)	1,594	Mar. 13	121	686
Hummel & Downing Co., Milwaukee, Wis. "A Trip Around Candies, Johnston." (For Confections and Candies)	1,606	Mar. 27	121	1345
J. Stevens Arms & Tool Co., New York, N. Y. "Stevens." (For Firearms)	1,618	Apr. 3	121	1674
Joseph N. Eisendrath Company, Chicago, Ill. "The Sign of the Best Glove." (For Gloves and Mittens)	1,609	Mar. 27	121	1345
Joseph N. Eisendrath Company, Chicago, Ill. "Asbestol." (For Gloves and Mittens)	1,627	Apr. 24	121	2661
Joseph Schlitz Brewing Company, Milwaukee, Wis. "The Maid's Dilemma." (For Beer)	1,630	Apr. 24	121	2661
Kewanee Boiler Company, Kewanee, Ill. "Tabasco Heaters." (For Heaters)	1,633	Apr. 24	121	2661
Kokomo Rubber Company, Kokomo, Ind. "Chief Kokomo." (For Rubber Tires)	1,603	Mar. 20	121	1009
Kovačević, Janko, Youngstown, Ohio. "Bog i Hrvati." (For a Liquor Made from White Corn Whisky and Brandy)	1,631	Apr. 24	121	2661
Krusen, Geo. C., Philadelphia, Pa. "Velvo." (For a Face Massage-Cream)	1,623	Apr. 17	121	2324
Pepsi-Cola Company, Newbern, N. C. "Drink Pepsi-Cola." (For a Health-Drink)	1,620	Apr. 10	121	1975
Romünder, Hermann, Milwaukee, Wis. "The Eureka" The Standard Water Softener & Purifier of the World. (For a Water Softening and Purifying Apparatus)	1,607	Mar. 27	121	1345
Ruppert, Jacob, New York, N. Y. "Centennial Prize Medal." (For Malt Liquors)	1,622	Apr. 17	121	2324
Samuel Mundheim Co., Brooklyn, N. Y. "Imperial Hats 1906." (For Hats)	1,587	Mar. 6	121	336
Samuel Mundheim Co., Brooklyn, N. Y. "Imperial Hat Ads 1906." (For Hats)	1,597	Mar. 20	121	1009
Samuel Mundheim Co., Brooklyn, N. Y. "The Second Mundy." (For Hats)	1,615	Apr. 3	121	1674
Samuel Mundheim Co., Brooklyn, N. Y. "The Mundy Hat." (For Hats)	1,616	Apr. 3	121	1674
Scott County Milling Co., Sikeston and Oran, Mo. "Juanita." (For Flour)	1,628	Apr. 24	121	2661
Shaw-Torrey Co., Grand Rapids, Mich. "Oldsmobile Model B—Straight Dash." (For an Automobile)	1,604	Mar. 20	121	1009
Shaw-Torrey Co., Grand Rapids, Mich. "Oldsmobile Model L." (For an Automobile)	1,605	Mar. 20	121	1009
Shaw-Torrey Co., Grand Rapids, Mich. "Oldsmobile Model S." (For Automobiles)	1,606	Mar. 20	121	1009
Tettenborn, Frederick, Cincinnati, Ohio. "Refrigeratora." (For Refrigerators)	1,619	Apr. 3	121	1674
United States Playing Card Company, Cincinnati, Ohio. "Motor Car and Lantern Backs Bicycle Playing Cards." (For Playing-Cards)	1,632	Apr. 24	121	2661
V. Schoenecker Boot & Shoe Company, Milwaukee, Wis. "Some Up-To-Date Mother Goose." (For Shoes)	1,626	Apr. 24	121	2661
Vona, Pell, Pittsburg, Pa. "The Pell Vona Seamless Coat." (For Coats)	1,617	Apr. 3	121	1674
Washburn-Crosby Company, Minneapolis, Minn. "The Best in the Basket." (For Flour)	1,629	Apr. 24	121	2661
Willis W. Russell Card Co., New York, N. Y. "Wrapper for Playing Cards." (For Playing-Cards)	1,590	Mar. 6	121	336
Willis W. Russell Card Co., New York, N. Y. "Print for Playing Cards." (For Playing-Cards)	1,596	Mar. 13	121	686
Willis W. Russell Card Co., Milltown, N. J., and New York, N. Y. "Design for Card Box." (For Playing-Cards)	1,602	Mar. 20	121	1009
Willis W. Russell Card Co., Milltown, N. J., and New York, N. Y. "Royal Wrapper." (For Playing-Cards)	1,610	Mar. 27	121	1345
Willis W. Russell Card Co., Milltown, N. J , and New York, N. Y. "Royal Ace." (For Playing-Cards)	1,611	Mar. 27	121	1345

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Page.
Marconi, Guglielmo, London, England; disclaimer filed by assignee. Transmitting electrical impulses and signals and apparatus therefor. (Reissue)	11,913	Mar. 10, 1906	121	1016

ALPHABETICAL LIST OF TRADE-MARK APPLICANTS.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
A. Priesmeyer Shoe Co. Jefferson City, Mo. Leather boots and shoes	11,566	Mar. 20	121	984
A. A. Berry Seed Company, Clarinda, Iowa. Popcorn	15,948-9	Apr. 10	121	1957
A. B. Clark Co., New York, N. Y. Sheep, kid, calf, and goat leather	13,918	Apr. 3	121	1643
A. B. Clark Co., New York, N. Y. Sheep, calf, goat, and kid leather	13,916	Apr. 24	121	2633
A. B. Clark Co., New York, N. Y. Sheep, goat, calf, and kid leather	13,919	Apr. 24	121	2633
A. D. Granger Co., New York, N. Y. Water-tube boilers	5,203	Apr. 17	121	2282
A. D. Porter Company, New York, N. Y. Periodically-issued story-paper	7,616	Mar. 27	121	1311
A. F. MacLaren Imperial Cheese Co., Limited, Toronto, Canada. Cheese, especially cream-cheese	2,869	Mar. 20	121	971
A. G. Spalding & Bros., New York, N. Y. Golf-balls	13,563	Mar. 6	121	312
A. G. Spalding & Brothers, New York, N. Y. Base-ball gloves and mitts	15,189	Apr. 24	121	2636
A. J. Bates Co., Webster, Mass. Leather shoes for ladies, men, and children	16,341	Apr. 3	121	1651
A. J. Bates Co., Webster, Mass. Leather shoes for ladies, men, and children	16,340	Apr. 10	121	1959
A. J. Hague & Co., New York, N. Y. Razors	16,175	Apr. 3	121	1650
A. J. Tower Company, Portland, Me., and Boston, Mass. Oiled clothing of all kinds	6,890	Apr. 3	121	1631
A. M. Collins Manufacturing Company, Philadelphia, Pa. Picture-frames	16,139	Apr. 17	121	2304
Abbott Alkaloidal Co., Chicago, Ill. Medicinal tablets and granules	15,782	Apr. 3	121	1649
Abraham & Straus, New York, N. Y. Gloves	2,183	Mar. 20	121	970
Ackermann & Goedecke, New York, N. Y. Silks	11,266	Mar. 6	121	303
Acme Cement Plaster Co., St. Louis, Mo. Wall-plaster, plaster-of-paris, calcined plaster, and stucco	13,444-5	Apr. 17	121	2296
Acme Cement Plaster Co., St. Louis, Mo. Wall-plaster, plaster-of-paris, calcined plaster, and stucco	13,447-8	Apr. 17	121	2296
Acme Machinery Co., Cleveland, Ohio. Bolt and nut making machinery	10,978	Apr. 24	121	2626
Adler & Co., Jacob, New York, N. Y. Gloves	8,020	Mar. 20	121	977
Adler, Louis J., Pittsburg, Pa. Whisky	6,298	Apr. 3	121	1630
Adler, Louis J., Pittsburg, Pa. Whisky	6,297	Apr. 10	121	1938
Adolph Frankau & Co., Ltd., London, England. Tobacco-pipes, cigar and cigarette tubes	8,251	Apr. 3	121	1632
Adolph Frankau & Co., Ltd., London, England. India-rubber or gutta-percha tobacco-pouches	8,249	Apr. 24	121	2622
Adolph Frankau & Co., Ltd., London, England. Tobacco-pipes, cigar and cigarette tubes	8,250	Apr. 26	121	2622
Aeolian Company, New York, N. Y. Mechanical piano-players	17,305	Apr. 24	121	2644
Aerocar Company, Detroit, Mich. Automobiles	17,250-1	Mar. 27	121	1333
Aetna Powder Co., Chicago, Ill. Detonating caps and blasting-fuses	5,659	Mar. 27	121	1309
Agar Packing Company, Des Moines, Iowa. Fresh beef, pork, and mutton	6,212	Mar. 27	121	1309
Akerman & Tuffley, North San Diego, Cal. Olives	14,911	Mar. 13	121	672
Akerman & Tuffley, North San Diego, Cal. Olive-oil	14,910	Mar. 20	121	994
Akron Belting Company, Akron, Ohio. Belting	8,790	Mar. 13	121	659
Alaska Packers Association, San Francisco, Cal. Canned salmon	8,138	Apr. 17	121	2287
Albany Perforated Wrapping Paper Co., Albany, N. Y. Dispensing-cabinets	9,941	Mar. 13	121	662
Albert Dickinson Company, Chicago, Ill. Grass, grain, timothy, clover, hemp, canary, and rape seeds	8,589	Mar. 6	121	298
Albert & J. M. Anderson Manufacturing Company, Boston, Mass. Circuit-controllers or switches	17,166	Mar. 20	121	1001
Alberti, John, New York, N. Y. All sizes of cork of suitable shape to be sued in corking bottles of various sizes and shapes	12,504	Apr. 10	121	1948
Albo Chemical Co., Cincinnati, Ohio. Germicide disinfectant	13,096	Mar. 20	121	989
Alfred Andresen & Co., Minneapolis, Minn. Leather-dressing	17,683	Apr. 24	121	2646
Allcock Manufacturing Co., New York, N. Y Plasters	11,560	Apr. 3	121	1637
Allcock Manufacturing Co., New York, N. Y. Pills	9,249	Apr. 17	121	2289
Allcock Manufacturing Co., New York, N. Y. Porous plasters	9,253	Apr. 24	121	2623
Allcock Manufacturing Co., New York, N. Y. Pills	9,257	Apr. 24	121	2623
Allen, Benjamin, Chicago, Ill. Mainsprings for timepieces	12,352	Mar. 27	121	1321
Alliance Milling Company, Denton, Tex. Flour	7,061	Mar. 13	121	655
Alma Manufacturing Co., Baltimore, Md. Buttons	14,798	Mar. 27	121	1326
Althen & Mende, Halle-on-the Saale, Germany. Albumen preparations for use as food	10,338	Apr. 10	121	1942
Altmayer, Sallie, Macon, Ga. Whisky	5,966	Apr. 10	121	1937
Ambrose, Eugene E., Denver, Colo. Skin preparation or special prepared composition used as a foot-powder	13,177	Mar. 13	121	668
Ambrosio, Luigi d', New York, N. Y. Remedies for diphtheria and other diseases of the throat	9,849	Mar. 27	121	1315
American Agricultural Chemical Co., New York, N. Y. Phosphatic fertilizers	9,861	Mar. 13	121	661
American Broom & Brush Co., Amsterdam, N. Y. Brooms	12,354	Mar. 13	121	666
American Broom & Brush Co., Amsterdam, N. Y. Brooms	16,747	Mar. 13	121	676
American Caramel Co., Lancaster, Philadelphia, and York, Pa. Caramels and candies	6,552	Mar. 13	121	654
American Cereal Company, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Prepared cereal food	5,612	Mar. 20	121	975
American Cereal Company, Akron, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Breakfast-food-rolled oats, and oatmeal	10,855	Mar. 20	121	983
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Oatmeal, rolled oats, cracked wheat, rolled wheat, &c	2,308	Apr. 17	121	2279
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	5,608-11	Apr. 17	121	2283
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Flours made from wheat, oats, rye, &c., and meals made from rye, corn, and oats	14,719	Apr. 17	121	2299
American Cereal Company, Akron and Ravenna, Ohio; Chicago, Ill., and Cedar Rapids, Iowa. Cereal foods made from oats	5,613	Apr. 24	121	2619
American Chemical Works, Chicago, Ill. Boiler compounds for preventing or removing incrustation	15,564	Apr. 3	121	1647
American Chicle Co., New York, N. Y. Chewing-gum	8,145	Apr. 10	121	1940
American Chicle Co., New York, N. Y. Chewing-gum	8,147	Apr. 10	121	1940
American Chicle Co., New York, N. Y. Chewing-gum	8,155	Apr. 10	121	1940
American Chicle Co., New York, N. Y. Chewing-gum	8,160	Apr. 10	121	1940
American Cigar Company, New York, N. Y. Cigars	7,380	Mar. 13	121	655
American Crayon Co., Sandusky, Ohio. Crayons	17,246-7	Mar. 27	121	1333
American Dyewood Co., Philadelphia, Pa. Manufactured colors for printing and dyeing	5,325	Apr. 24	121	2618

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
American Glue Co., Boston, Mass. Glue	15,102–3	Mar. 20	121	995–6
American Glue Co., Boston, Mass. Gelatin	15,105	Mar. 20	121	996
American Hard Rubber Co., New York, N. Y. Hard-rubber combs	16,777–8	Mar. 6	121	322
American Horse Shoe Company, Philipsburg, N. J. Horse and mule shoes	12,759	Apr. 10	121	1949
American-La France Fire Engine Co., Elmira, N. Y. Fire-extinguishers	14,641	Apr. 17	121	2296
American Manufacturing Company, New York, N. Y. Jute bagging	16,187	Apr. 24	121	2638
American Oak Leather Company, Cincinnati, Ohio. Leather for harness and saddlery	6,447	Apr. 3	121	1630
American Perfumer Company, Springfield, Mass. Hand-soap	8,450	Mar. 6	121	298
American Petroleum Products Co., New York, N. Y. Lubricating-oils	14,020	Mar. 6	121	314
American Powder Mills, Boston, Mass. Gunpowder	8,513	Mar. 27	121	1313
American Powder Mills, Boston, Mass. Gunpowder	8,512	Apr. 3	121	1633
American Powder Mills, Boston, Mass. Gunpowder	8,511	Apr. 17	121	2287
American Printing Company, Fall River, Mass. Calicoes	3,852	Mar. 13	121	650
American Screw Company, Providence, R. I. Screws, bolts, nuts, rivets, burs, washers, and wire nails	11,862	Apr. 17	121	2292
American Seeding Machine Company, Jersey City, N. J.; Springfield, Ohio; Richmond, Ind.; Louisville, Ky., and Shortsville and Macedon, N. Y. Seeding-machines	17,049	Mar. 13	121	680
American Standard Publishing Company, New York, N. Y. Weekly newspaper	16,594	Mar. 6	121	321
American Steel & Wire Company, Chicago, Ill. Woven-wire fencing	14,573	Apr. 17	121	2296
American Tool Company, Highland Park, Ky. Axes	13,363	Mar. 27	121	1322
American Wine Co., St. Louis, Mo. Champagne or sparkling wine	2,397	Mar. 20	121	971
American Wringer Company, New York, N. Y. Clothes-wringers and the parts composing the same	13,624	Mar. 13	121	669
American Wringer Company, New York, N. Y. Wringers	13,620	Mar. 20	121	990
American Wringer Company, New York, N. Y. Carpet-sweepers	13,618	Apr. 10	121	1951
American Wringer Company, New York, N. Y. Wringing-machines	13,619	Apr. 10	121	1951
American Wringer Company, New York, N. Y. Clothes-wringers and the parts thereof	13,625–6	Apr. 10	121	1951
American Wringer Company, New York, N. Y. Clothes-wringers and the parts thereof	13,628–9	Apr. 10	121	1951
American Wringer Company, New York, N. Y. Clothes-wringers	13,630–2	Apr. 10	121	1951
American Wringer Company, New York, N. Y. Clothes-wringers	13,634–7	Apr. 10	121	1951–2
American Wringer Company, New York, N. Y. Clothes-wringers	13,623	Apr. 17	121	2296
American Wringer Company, New York, N. Y. Wringers	13,627	Apr. 17	121	2296
American Wringer Company, New York, N. Y. Clothes-wringers	13,633	Apr. 24	121	2632
Amory, Browne & Co., Boston, Mass., and New York, N. Y. Shade-cloths and cotton piece goods	16,195	Apr. 24	121	2639
Anderson Computing Scale Company, Anderson, Ind. Counter-scales	15,956	Apr. 10	121	1958
Anderson Computing Scale Company, Anderson, Ind. Computing cheese-cutters	17,623	Apr. 10	121	1965
Anderson Cotton Mills, Anderson, S. C. Cotton piece goods	15,259	Apr. 10	121	1955
Anderson, Gustaf Y., Chicago, Ill. Saw sets, jointers, and gages	18,178	Apr. 24	121	2647
Andrew Jergens Co., New York, N. Y., and Cincinnati, Ohio. Toilet and bath soap and soap for cleaning kitchen utensils, &c	9,994	Apr. 10	121	1942
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,768	Mar. 20	121	980
Anheuser-Busch Brewing Association, St. Louis, Mo. Extract of malt and hops	9,769	Mar. 20	121	980
Anheuser-Busch Brewing Association, St. Louis, Mo Extract of malt and hops	9,781	Mar. 20	121	980
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,782	Mar. 27	121	1315
Anheuser-Busch Brewing Association, St. Louis, Mo. Beer	9,780	Apr. 17	121	2290
Ansted & Burk Company, Springfield, Ohio. Wheat-flour	12,168	Mar. 20	121	986
Apollinaris Company, Limited, London, England. Mineral water	14,314	Mar. 20	121	993
Apollinaris Company, Limited, London, England. Mineral water	14,313	Apr. 17	121	2297
Appell Company, Adam, Portland, Oreg. Water-bags	16,166–7	Apr. 24	121	2638
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Cocoa and preparations thereof	16,685	Mar. 6	121	322
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Chocolate and preparations thereof	16,686	Mar. 6	121	322
Arbuckle Bros., New York, N. Y.; Pittsburg, Pa., and Chicago, Ill. Teas	16,687	Apr. 24	121	2641
Arithmograph Company, Chicago, Ill. Combined type writing and adding machines	15,120	Apr. 24	121	2636
Arnold Print Works, North Adams, Mass. White, printed, or dyed textile fabrics of cotton, wool, or silk	13,953	Apr. 3	121	1643
Artesia Cream Company, Waco, Tex. Face-powder	16,454	Mar. 6	121	321
Artesia Cream Company, Waco, Tex. Soap	16,453	Apr. 10	121	1950
Asbestos Manufacturing and Roofing Co., St. Louis, Mo. Prepared sheet-felt roofing	11,955	Mar. 20	121	985
Aschenbach & Miller, Philadelphia, Pa., assignors to Aschenbach & Miller, Incorporated. Medicine for horses, cattle, and poultry	9,933	Mar. 13	121	662
Aschenbach & Miller, Philadelphia, Pa., assignor to Aschenbach & Miller, Incorporated. Herb bitters	9,931	Mar. 20	121	980
Aspegren & Co., New York, N. Y. Ground wood and wood-pulp	4,954	Apr. 3	121	1628
Atlantic Chemical Co., New York, N. Y. Dressed and dyed furs	16,390	Mar. 6	121	319
Atlantic Refining Company, Cleveland, Ohio. Waterproof structural and roof paint	16,863	Mar. 6	121	324
Atlantic Refining Company, Franklin and Philadelphia, Pa. Lubricating-oils	6,051	Apr. 17	121	2285
Atwood, Lemuel G., Franklin, N. H. Remedies for canines	14,936	Apr. 3	121	1645
Auburn Wagon Co., Martinsburg, W. Va. Wagons, carts, drays, and trucks	12,486	Mar. 20	121	988
Augustus Wright Company, Petersburg, Va. Leather shoes	15,471	Mar. 27	121	1329
Aultman & Taylor Machinery Company, Mansfield, Ohio. Water-tube boilers	542	Mar. 20	121	969
Avery Stamping Company, Cleveland, Ohio. Shovels, spades, and scoops	16,993–4	Mar. 13	121	679
Avery Stamping Company, Cleveland, Ohio. Sidewalk and ice scrapers	16,992	Mar. 20	121	999
Ayer, Frederick, Boston, Mass. Liniments	9,851	Apr. 24	121	2624
Ayling Bros., Chicago, Ill. Metal-polish	3,431	Apr. 24	121	2617
Ayling Bros., Chicago, Ill. Shoe-polish or leather-dressing	3,432	Apr. 24	121	2617
Ayres & Sons, William, Philadelphia, Pa. Horse-blankets	15,622	Apr. 10	121	1955
Azure Mining Co., New York, N. Y. American turquoises	15,611	Apr. 10	121	1955
B. F. Goodrich Company, Akron, Ohio. Pneumatic tires	16,506	Apr. 17	121	2305
Bacon Brothers, Seattle, Wash. Type-writer ribbon	7,459	Apr. 17	121	2286
Badische Anilin- & Soda-Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	12,182–7	Mar. 6	121	307
Badische Anilin- & Soda-Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	12,264–70	Mar. 6	121	308
Badische Anilin- & Soda-Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	12,376–8	Mar. 6	121	308
Badische Anilin- & Soda-Fabrik, Ludwigshafen-on-the-Rhine, Germany. Dyestuff	12,380–1	Mar. 6	121	308–9
Badische Anilin- & Soda-Fabrik, Ludwigshafen-on-the-Rhine, Germany. Chemicals for reducing, discharging, and bleaching purposes	12,379	Apr. 24	121	2628
Baeck Wall Paper Co., New York, N. Y. Wall-papers	16,670	Mar. 20	121	999
Baird, Archie F., Boston, Mass. Toilet-paper	7,071	Mar. 13	121	655
Baker, Harry J., Fulton, N. Y. Green salve	8,797	Apr. 3	121	1634
Ball Chemical Co., Allegheny, Pa. Spirit-varnish	14,357	Apr. 3	121	1644
Ball, Thomas J., Chelsea Station, Mass. Food for babies and invalids	12,160	Apr. 17	121	2293
Ballard & Ballard Co., Louisville, Ky. Wheat-flour	12,833–4	Mar. 27	121	1321
Ballard, James F., St. Louis, Mo. Non-irritant germicide and an antiseptic compound for internal and external and hypodermic administration	7,318	Apr. 3	121	1316

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Ballard, James F., St. Louis, Mo. Antiseptics or germicides	8,472–3	Apr. 3	121	1633
Ballard, James F., St. Louis, Mo. Vermifuge	15,489	Apr. 10	121	1955
Baltimore Copper Smelting & Rolling Co., Baltimore, Md. Copper ingots, ingot-bars, cakes, and wire bars	11,622	Mar. 20	121	984
Bamberg & Risser, New York, N. Y. Ribbons	12,470	Mar. 20	121	988
Banta & Son, F. J., Lima, Ohio. Chewing-gum	15,251	Mar. 27	121	1328
Barclay & Barclay, New York, N. Y. Medicinal soap	5,493–4	Apr. 24	121	2618
Barclay & Barclay, New York, N. Y. Hair and skin tonic	5,495–6	Apr. 24	121	2618–19
Barnet Leather Co., New York, N. Y. Enameled leather	2,924	Mar. 20	121	972
Barrett & Barrett, St. Paul, Minn. Cider	13,078	Apr. 3	121	1641
Barrett, Denton & Lynn Company, Dalton, Ga. Wheat-flour	14,972–5	Mar. 20	121	995
Barrett Manufacturing Company, New York, N. Y. Ready tar-and-felt roofing	12,038	Mar. 20	121	986
Barrett Manufacturing Company, New York, N. Y. Coal-tar paint	15,965	Apr. 24	121	2638
Barrett-White Company, Springfield, Ohio. Chemical compound to be put into certain liquids to eradicate the danger of explosions from same, such as gasolene, naphtha, &c	13,071	Mar. 13	121	667
Basilea & Calandra, New York, N. Y. Cordials	13,131	Mar. 6	121	311
Bastrup, Louis, *et al.*, administrators. (See Canepa, John B.)				
Batjer & Co., New York, N. Y. Rye whisky	3,029	Apr. 10	121	1934
Bauer, Charles W., St. Louis, Mo. Whisky	2,493	Mar. 27	121	1305
Bauer & Co., Berlin, Germany. Dietetic albuminous preparations	16,310	Mar. 27	121	1331
Baumann-Klage Co., Chicago, Ill. Absorbent paints or stains	14,781	Mar. 13	121	672
Baxter & Bro., H. C., Brunswick, Me. Canned lobster	13,320	Apr. 24	121	2631
Baxter Bros. Co., Brunswick, Me. Canned vegetables	8,350	Mar. 6	121	296
Baxter, Hartley C., Brunswick, Me. Canned lobster and mackerel	16,125	Mar. 20	121	999
Baxter, Hartley C., Brunswick, Me. Canned fruits and vegetables	10,988	Apr. 17	121	2292
Baxter, Hartley C., Brunswick, Me. Canned fish, lobsters, clams, and clam-chowder	8,340	Apr. 24	121	2622
Bay State Milling Company, Winona, Minn., and Boston, Mass. Wheat-flour	12,201	Apr. 3	121	1638
Bayles Distributing Co., Kansas City, Mo. Antiseptic adhesive poultice-plaster	7,560	Mar. 20	121	976
Beadleston & Woerz, New York, N. Y. Beer	2,266	Mar. 27	121	1305
Beadleston & Woerz, New York, N. Y. Lager-beer	2,269	Apr. 24	121	2616
Beals & Torrey Shoe Co., Milwaukee, Wis. Men's, youths', and boys' leather shoes	14,570	Mar. 6	121	316
Beck, Victor E., New York, N. Y. Tonic and remedies for dyspepsia and stomach and intestinal disorders	12,796	Mar. 20	121	989
Becker, Ferdinand W., Philadelphia, Pa. Carbonated water	16,580	Apr. 10	121	1959
Becker, Francis L., deceased; G. L. Becker, executor, New York, N. Y. Pegs and chin and shoulder rests for violins, guitars, &c	15,682	Apr. 17	121	2302
Becker, Gustav L., executor. (See Becker, Francis L.)				
Beckwith, Philo D., deceased, Dowagiac, Mich.; F. E. Lee and W. G. Howard, executors. Steel range	12,476	Mar. 6	121	309
Beecham, Joseph, St. Helens, England. Pills	16,525	Apr. 24	121	2640
Bell, Jesse D., Dawson, Ga. Pomade	13,934	Apr. 10	121	1952
Ben J. Goldman Co., San Francisco, Cal. Whisky	5,138	Mar. 6	121	292
Ben J. Goldman Co., San Francisco, Cal. Whisky	5,137	Apr. 10	121	1936
Benbow-Brammer Manufacturing Company, St. Louis, Mo. Rotary washing-machines	15,019	Mar. 6	121	316
Benbow-Brammer Manufacturing Company, St. Louis, Mo. Rotary washing-machines	15,018	Mar. 13	121	673
Benjamin Atha & Company, Newark, N. J. Gears	18,035	Apr. 24	121	2647
Berger Bros. Co. Philadelphia, Pa. Oven-turnbuckles and wrought-iron pipe-strap	4,264	Apr. 10	121	1935
Bergner & Engel Brewing Co., Philadelphia, Pa. Beer	7,873	Mar. 20	121	977
Bergstrom Stove Co., Neenah, Wis. Stoves and ranges	2,083	Mar. 6	121	290
Berry & Co., C., Boston, Mass. Whisky	16,135	Apr. 17	121	2303
Berry & Co., C., Boston, Mass. Cocktails	16,136	Apr. 17	121	2303
Best, Ernst M., New York, N. Y. Magazine	12,500	Apr. 3	121	1639
Best Gum Co., Louisville, Ky. Chewing-gum	8,988	Apr. 10	121	1941
Best, John H., Galva, Ill. Display-racks	16,261	Apr. 3	121	1651
Betts, Edwin, Newark, N. J. Powders used with the plates of false teeth to improve the fit of the artificial plates and produce a perfect suction of the same in the mouth	7,057	Mar. 6	121	295
Beyer Brothers Commission Company, Providence, R. I.; Boston, Mass., and New York, N. Y. Eggs	14,386	Apr. 10	121	1953
Bickmore Gall Cure Company, Old Town, Me. Salve	10,691	Mar. 27	121	1317
Bickmore Gall Cure Company, Old Town, Me. Gall cure	10,693	Mar. 27	121	1317
Bickmore Gall Cure Company, Old Town, Me. Salve	10,692	Apr. 3	121	1636
Bickmore Gall Cure Company, Old Town, Me. Salve or ointment for use in curing minor wounds and sores of animals	11,050	Apr. 3	121	1636
Bigbie Bros. & Co., Lynchburg, Va. Whisky	13,398	Apr. 24	121	2632
Bigelow Carpet Company, Boston, Mass. Woven carpets and rugs	12,446	Mar. 20	121	988
Bigham, John, Pittsburg, Pa. Rolling-ball puzzles	12,697	Apr. 3	121	1639
Billings, Edith E., West Springfield, Mass. Squabs	10,077	Apr. 17	121	2290
Binswanger & Bro., Simon, St. Joseph, Mo. Malt whisky	15,066	Mar. 13	121	674
Bird & Co., J A & W, Boston, Mass. Insulating and sheathing paper and cloth	17,106	Mar. 20	121	1000
Bird & Son, F. W., Walpole, Mass. Paper for covering roofs, &c	13,129	Mar. 6	121	311
Birdsey & Somers, New York, N. Y. Corsets	14,404	Mar. 13	121	670
Birdsey & Somers, New York, N. Y. Corsets	14,403	Mar. 20	121	993
Birdsey & Somers, New York, N. Y. Corsets	14,438	Mar. 20	121	993
Birdsey & Somers, New York, N. Y. Corsets	14,440	Mar. 20	121	993
Birdsey Somers Co., New York, N. Y. Corsets	16,787	Mar. 6	121	323
Bischoff, Ernst, New York, N. Y. Remedy for the cure of rheumatism and gout	16,173	Mar. 27	121	1330
Bischoff, Frederick, New York, N. Y. Cocoa and chocolate products—namely, breakfast-cocoa, cocoa and chocolate powders, &c	13,518	Mar 6	121	312
Bissell, Leavitt P., Suffield, Conn. Cigars	16,019	Apr. 3	121	1650
Blair, Henry A., San Antonio, Tex. Pills, powders, and potions for the treatment of headache, coughs, &c	2,548	Mar. 20	121	971
Blakeslee, Havilah A., Hartford, Conn. Soap of paste-like consistency	13,394	Apr. 24	121	2632
Blakey's Boot Protectors, Limited, Leeds, Engand. Boot-protectors of metal and of metal and rubber together	8,013	Apr. 3	121	1632
Blakey's Boot Protectors, Limited, Leeds, England. Boot-protectors of metal	8,014	Apr. 3	121	1632
Block Bros. Tobacco Co., Wheeling, W. Va. Chewing and smoking tobacco	15,193	Mar. 27	121	1328
Block & Co., Edward, Kansas City, Mo. Whisky	11,504	Mar. 27	121	1319
Block & Co., Edward, Kansas City, Mo. Whisky	11,506	Apr. 10	121	1945
Blodgett & Orswell Co., Pawtucket, R. I. Spool-cotton	11,779	Mar. 6	121	306
Blodgett & Orswell Co., Pawtucket, R. I. Spool-cotton	15,952	Mar. 6	121	318
Blood, Ernest, Philadelphia, Pa. Hosiery	16,189	Mar. 27	121	1330
Bloomington Canning Co., Bloomington, Ill. Canned fruits and vegetables	173	Mar. 6	121	289
Blue Ribbon Candy Company of Baltimore City, Baltimore, Md. Chocolate creams, caramels, and candies	7,541	Apr. 17	121	2286
Blue Seal Supply Co., Boston, Mass. Carbonated tonic beverage and extract for making same	12,506	Mar. 27	121	1321
Blue Valley Creamery Company, St. Joseph, Mo. Butter	11,512	Apr. 3	121	1637

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Blumenthal Bros., New York, N. Y. Dentifrice	10,920	Mar. 6	121	302
Blumenthal, Sigmund, New York, N. Y. Violin, guitar, zither, and banjo strings	4,880	Mar. 6	121	292
Blumenthal, Sigmund, New York, N. Y. Violin, guitar, zither, and banjo strings	4,882	Mar. 6	121	292
Bluthenthal & Bickart, Atlanta, Ga. Whisky	343	Mar. 13	121	648
Bluthenthal & Bickart, Atlanta, Ga. Whisky	3,356	Mar. 20	121	972
Bluthenthal & Bickart, Atlanta, Ga. Whisky	3,352	Mar. 27	121	1306
Boker, Carl F., New York, N. Y. Pocket-knives	5,680	Mar. 20	121	975
Boker, Carl F., New York, N. Y. Pocket-knives	5,679	Apr. 3	121	1620
Bondy, B., New York, N. Y. Whisky	14,481	Mar. 6	121	315
Book-Keeper Publishing Company, Ltd., Detroit, Mich. Monthly magazines	16,583	Mar. 6	121	321
Booth Packing Company, Baltimore, Md. Canned fruits and vegetables	9,675	Mar. 27	121	1315
Booth Packing Company, Baltimore, Md. Canned oysters	13,800	Mar. 27	121	1324
Booth Packing Company, Baltimore, Md. Canned pineapple	13,797	Apr. 3	121	1643
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	7,815	Mar. 6	121	296
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	11,101	Mar. 13	121	664
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	15,838-43	Mar. 13	121	675
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	7,814	Mar. 20	121	977
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	7,817-19	Mar. 20	121	977
Borden's Condensed Milk Co., Jersey City, N. J., and New York, N. Y. Condensed milk	7,821-2	Mar. 20	121	977
Boston Varnish Company, Everett, Mass. Varnish, japan, driers, and liquid fillers	7,824	Apr. 17	121	2286
Botany Worsted Mills, Passaic, N. J. Woolen or worsted fabrics	18,005	Apr. 24	121	2647
Boukofsky, Louis E., Louisville, Ky. Whisky	1,182	Mar. 20	121	970
Bowlby & Co., R. Y., Denton, Tex. Brazing compound	8,979	Apr. 24	121	2623
Bowles, Homer E., Muncie, Ind. Remedy for exterminating parasites from body of human beings and animals	10,335	Mar. 6	121	301
Bowsky, Max, New York, N. Y. Furs in the piece and fur garments	16,973	Apr. 17	121	2307
Brachvogel, Robert A., Chicago, Ill. Chewing-gum	13,597	Mar. 27	121	1323
Bradham, Caleb D., Newbern, N. C. Non-alcoholic tonic beverages	17,482	Apr. 24	121	2645
Bradley & Metcalf Company, Milwaukee, Wis. Leather boots and shoes	9,403	Mar. 6	121	299
Bradley & Son, D. R., New York, N. Y. Perfumes, toilet waters, &c	1,033	Mar. 27	121	1304
Brainerd & Armstrong Company, New London, Conn. Silk threads and cords	15,371	Apr. 17	121	2302
Brand Brothers Company, Chicago, Ill. Tonic for the regulation of the alimentary organs	14,931	Apr. 24	121	2635
Brand Brothers Company, Chicago, Ill. Whisky	9,584	Mar. 13	121	661
Brandle & Smith Co., Philadelphia, Pa. Candy	17,327	Apr. 10	121	1961
Brandreth Co., Ossining-on-Hudson, N. Y. Certain proprietary medicine for external application	5,215	Mar. 6	121	293
Brandreth Co., Ossining-on-Hudson, N. Y. Medical compound for the correction of irritation, inflammation, pain, &c	9,302	Apr. 3	121	1634
Brennan, John J., Worcester, Mass. Medical compounds for internal use as a remedy for constipation	9,301	Apr. 10	121	1941
Bristol-Myers Company, Brooklyn, N. Y. Laxatives	8,789	Apr. 3	121	1634
Bristol-Myers Company, Brooklyn, N. Y. Medicinal preparations in liquid and solid form for internal use	6,554	Mar. 13	121	654
Bronson-Walton Company, Cleveland, Ohio. Coffee-mills	16,717-18	Mar. 27	121	1332
Broom & Newman, New York, N. Y. Men's dress-shirts	17,522	Apr. 17	121	2308
Brown & Co., James S., New York, N. Y. Brooms and brushes	13,801	Apr. 17	121	2297
Brown & Company, L. P., Chicago, Ill. Electric soldering-tools	985	Apr. 24	121	2615
Brown, Durrell & Co., assignors, by mesne assignments, to Brown, Durrell Co., Boston, Mass. Skirts and petticoats	10,743	Mar. 27	121	1317
Brown, Durrell & Co., assignors to Brown Durrell Co., Boston, Mass. Gloves	13,343	Mar. 27	121	1322
Brown Knitting Co., Philadelphia, Pa. Hosiery	15,496	Apr. 3	121	1647
Brown & Shaw, New York, N. Y. Ice-cream salt and salt for salting hides	15,567	Apr. 3	121	1647
Brown & Shaw, New York, N. Y. Table, dairy, and ice-cream salt and salt for salting hides	11,400	Mar. 27	121	1319
Brownley, Walter, Washington, D. C. Candy	11,400	Apr. 17	121	2292
Bruce, William G., Milwaukee, Wis. Monthly magazine	16,567	Mar. 13	121	676
Brugerolle, Leopold, Matha, France. Liquors or cordials	9,538	Mar. 13	121	660
Brumer Bros., Clinton, Iowa. Solution for soldering and cleaning metals	7,068	Mar. 6	121	295
Bruno, Charles, New York, N. Y. Accordions	6,124	Apr. 10	121	1938
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	15,278	Mar. 27	121	1328
Bryden Horse Shoe Company, Catasauqua, Pa. Horseshoes	15,589	Apr. 3	121	1648
Buckeye Manufacturing Company, Anderson, Ind. Explosive-engines	15,591	Apr. 3	121	1648
Bucknam & Vanderpoel, New York, N. Y. Dessert-jelly	13,588	Apr. 17	121	2296
Buffalo Cotton Mills, Buffalo, S. C. Sheetings and drillings	15,031	Apr. 3	121	1645
Burchell, N. Landon, Washington, D. C. Coffee	14,424-5	Mar. 27	121	1325
Burnham & Morrill Company, Portland, Me. Canned lobsters	14,459	Mar. 20	121	993
Burnham & Morrill Company, Portland, Me. Canned lobsters	6,184-5	Mar. 13	121	653
Burnham & Morrill Company, Portland, Me. Clams, clam juice and chowder	6,187	Mar. 13	121	653
Burton Bros & Co., New York, N. Y. Cotton fabric having an old Irish-linen finish	7,558	Mar. 13	121	656
Bussey, William J., Albany, N. Y. Liquid polish for wood and metals	13,306	Mar. 13	121	668
Buster Brown Stocking Company, New York, N. Y. Hosiery	16,865	Mar. 13	121	678
Butler, Annie S., London, England. Powdered paper, being a preparation for the skin or toilet use	2,526-7	Mar. 6	121	291
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	10,664	Mar. 13	121	663
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	8,829	Mar. [illegible]	121	298
Butler-Butler, (Incorporated,) New York, N. Y. Little cigars	11,280	Mar. 6	121	304
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	14,484	Mar. 6	121	315
Butler-Butler, (Incorporated,) New York, N. Y. Little cigars	16,407-8	Mar. 6	121	319
Butler-Butler, (Incorporated,) New York, N. Y. Smoking-tobacco	16,411	Mar. 6	121	320
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	16,413	Mar. 6	121	320
Butler-Butler, (Incorporated,) New York, N. Y. Cigarettes	16,409	Apr. 17	121	2304
C. Howard Hunt Pen Co., Camden, N. J. Steel and plated pens	16,406	Apr. 24	121	2639
C. Poyet, Inc., New York, N. Y. Candies, chocolates, licorice confections, candied and glacé fruits, and bonbons	16,221	Mar. 13	121	676
C. Poyet, Inc., New York, N. Y. Candies, chocolates, licorice confections, candied and glacé fruits, and bonbons	6,821	Mar. 13	121	654
C. Schmidt and Sons Brewing Company, Philadelphia, Pa. Lager-beer	7,882	Mar. 13	121	657
C. J. Kindel Bedding Company, St. Louis, Mo. Davenport-beds	5,125	Mar. 20	121	974
C. M. Clapp Co., Buffalo, N. Y. Men's, women's, and children's shoes made wholly or in part of leather	16,988	Mar. 13	121	679
C. S. A. Chemical Co., Portsmouth, Va. Headache remedy	15,958	Apr. 24	121	2638
C. S. Bell Co., Hillsboro, Ohio. Mills for grinding grain, coffee, spices, chocolate, &c	13,356	Apr. 24	121	2631
C. S. Morey Mercantile Company, Denver, Colo. Coffee	16,318	Apr. 10	121	1959
Caco Chemical Co., Baltimore, Md. Liniment	12,063	Mar. 6	121	306
Cafolin Co. Ltd., London, England. Coffee extract	12,729	Apr. 3	121	1639
California Canneries Co., San Francisco, Cal. Canned fruits	9,520	Apr. 24	121	2624
	2,936	Mar. 20	121	972

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Calman & Co., Emil, New York, N. Y. Plastic black insulating compound for armature and field coils and other electrical apparatus	16,403	Mar. 27	121	1331
Camors & Co., J. B., New Orleans, La. Wheat-flour	3,453	Apr. 3	121	1626
Campbell, Morrell & Co., Passaic, N. J. Food for poultry and pigeons	12,084	Mar. 13	121	665
Campe & Co., Henry, San Francisco, Cal. Whisky	6,475	Apr. 10	121	1938
Canepa, John B., deceased; L. Bastrup and K. Scanlan, administrators and assignors to John B. Canepa Company, Chicago, Ill. Macaroni, vermicelli, spaghetti, and noodles	8,374	Mar. 27	121	1312
Canton Steel Company, Pittsburg, Pa. Steel rods, bars, blooms, &c	5,489	Apr. 3	121	1629
Cantrell & Cochrane, Limited, Dublin, Ireland, and New York, N. Y. Soda-water	12,135	Apr. 10	121	1947
Carey-Bayne & Smith Company, (Incorporated,) New York, N. Y. Sheetings	14,427	Mar. 27	121	1325
Cargill Cleveland & Co., Westfield, Mass. Whips	16,045	Mar. 6	121	318
Carolyn & Co., New York, N. Y. Ladies' hats	14,160	Apr. 24	121	2634
Carpenter, Owen J., Covington, Ky. Whisky	10,379	Mar. 20	121	983
Carpenter, Owen J., Covington, Ky. Whisky	16,503	Apr. 17	121	2305
Carpenter Steel Company, Reading, Pa. Steel for tools, dies, drills, rolls, and gears	12,730	Mar. 20	121	989
Carroll, James M., Torrington, Conn. Whisky	13,779	Mar. 20	121	990
Carruth, Charles T., Boston, Mass. Roofing felt and paper	16,151	Apr. 10	121	1959
Carson Pirie Scott & Co., Chicago, Ill. Men's, women's, children's, and infants' knitted hosiery, undershirts, &c	5,830	Apr. 3	121	1629
Carstairs Bros., Highlandstown, Md. Whisky	14,073	Mar. 6	121	314
Carter Medicine Company, New York, N. Y. Pills used for the cure of headache, dizziness, biliousness, &c	5,871	Apr. 10	121	1937
Carter's Ink Company, Boston, Mass., and New York, N. Y. Carbon-paper	6,697	Apr. 24	121	2620
Carter's Ink Company, Boston, Mass., and New York, N. Y. Type-writer ribbons	14,792	Apr. 24	121	2635
Carver File Company, Philadelphia, Pa. Files and rasps	15,273	Apr. 24	121	2636
Case Brothers Cutlery Co., Little Valley, N. Y. Blades for pocket, table, kitchen, butcher, &c., knives, metal ink-erasers, and razors	13,405	Apr. 17	121	2296
Cassella Color Company, New York, N. Y Anilin dyes	16,084	Mar. 6	121	318
Cassella Color Company, New York, N. Y. Dyestuff	8,091	Mar. 20	121	977
Cassella Color Company, New York, N. Y. Anilin dyes	16,085	Apr. 10	121	1958
Castle Brothers, Incorporated, San Francisco, Cal. Dried fruit	15,760	Apr. 3	121	1648
Castor Oil Tablet Co., New York, N. Y. Castor-oil confection	15,036	Mar. 20	121	995
Cayey-Caguas Tobacco Co., New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	8,433	Mar. 27	121	1313
Cayey-Caguas Tobacco Company, New York, N. Y. Cigars, cheroots, and cigarettes made of cigar-tobacco	16,915–16	Mar. 13	121	678
Cayey-Caguas Tobacco Company, New York, N. Y., and Caguas, Porto Rico. Cigars, cheroots, and cigarettes made of cigar-tobacco	12,940	Mar. 20	121	989
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and vegetables	12,361–3	Apr. 24	121	2628
Cazenovia Canning Co., Cazenovia, N. Y. Canned fruits and vegetables	12,365	Apr. 24	121	2628
Celero Drug Co., Boston, Mass. Headache cure	13,937	Apr. 3	121	1643
Central Stamping Company, New York, N. Y. Dust-pans	10,199	Mar. 20	121	981
Cephalgine Company, Spencer, Mass. Medicine for the cure of nervous headache, rheumatic pain, &c	1,012	Apr. 3	121	1626
Chaffard & Couderc, Salon, Bouches-du-Rhone, France. Olive-oil	13,442	Mar. 6	121	312
Challenge Cutlery Corporation, Bridgeport, Conn. Razors	1,777	Mar. 13	121	648
Chanavas & Slazenger, Inc., New York, N. Y. Leather leggings	16,666	Mar. 6	121	322
Chapman Double Ball Bearing Co. of America, New York, N. Y. Journal-bearings	12,541	Mar. 13	121	667
Charles & Co., New York, N. Y. Wine	7,526	Mar. 27	121	1311
Charles N. Crittenton Company, New York, N. Y. Remedy for coughs, colds, influenza, &c	16,847	Apr. 17	121	2307
Charles N. Crittenton Company, New York, N. Y. Hair-restorer	16,848–9	Apr. 17	121	2306–7
Charles N. Crittenton Company, New York, N. Y. Remedy for toothache	16,851–2	Apr. 17	121	2307
Charles N. Crittenton Company, New York, N. Y. Tonic, digestive, and nutrient preparation	16,853	Apr. 17	121	2307
Charles N. Crittenton Company, New York, N. Y. Dye for the hair	16,855–6	Apr. 17	121	2307
Charles N. Crittenton Company, New York, N. Y. Dye for hair and whiskers	16,850	Apr. 24	121	2642
Chas. A. Maish Co., Cincinnati, Ohio. Comforts	17,621	Apr. 24	121	2645
Chas. H. Phillips Chemical Co., New York, N. Y. Liquid magnesia preparation	15,846	Mar. 20	121	998
Chas. Shaffner & Co., Chicago, Ill. Whisky	8,166	Apr. 17	121	2287
Chase & Co., E. M., Nebraska City, Nebr. Baking-powder	8,677	Mar. 20	121	978
Chase, Roberts & Company, Dobbs Ferry, N. Y. Varnishes	1,710	Apr. 24	121	2616
Chatland & Lenhart, Brownsville, Pa. Crackers	17,095	Mar. 13	121	680
Chattanooga Paint Co., Chattanooga, Tenn. Mineral coloring-matter for mortar and bricks	7,528	Apr. 24	121	2621
Chelf Chemical Co., Richmond, Va. Nervine, sedative, febrifuge, laxative, and diuretic in liquid, granular, or tablet form, put up in bottles, capsules, or other impervious packages	12,553	Mar. 20	121	988
Cheney Bros., South Manchester, Conn. Printed and piece-dyed silks	14,923	Apr. 17	121	2299
Chicago Concentrating Company, Chicago, Ill. Sugar-syrup and maple-syrup	9,408	Apr. 3	121	1634
Chicago Distilling Co., Chicago, Ill. Whisky	10,045	Mar. 27	121	1315
Chicago Varnish Co., Chicago, Ill. Varnishes, stains, japans, and surfacers	1,502	Apr. 24	121	2616
Chipman's Sons, Charles, Easton, Pa. Hosiery	13,175	Apr. 3	121	1641
Christian Feigenspan, a Corporation, Newark, N. J. Lager-beer	15,927	Mar. 13	121	675
Church & Dwight Company, New York, N. Y. Baking-soda, either alone or mixed with a powdered acid, as is common to form a baking-powder	1,106	Mar. 13	121	648
Cifuentes, Fernandez y Ca., Havana, Cuba. Cigars	8,944	Apr. 10	121	1941
Cincinnati Soap Company, Cincinnati, Ohio. Toilet soap	14,846	Mar. 13	121	672
Clapp & Tapley, Danvers, Mass. Leather boots and shoes	10,669	Apr. 24	121	2625
Clarey, James, New York, N. Y. Bread, biscuits, rolls, pies, cakes, and crackers	16,664	Apr. 17	121	2305
Clark Mile-End Spool Cotton Co., East Newark, N. J. Cotton-thread	13,053	Mar. 13	121	667
Clarke, Audley, Brooklyn, N. Y. Portland cement	8,011	Mar. 6	121	296
Clarke, Charles J., Paris, Ky. Poultry medicine for limber-neck and roup	16,155	Mar. 27	121	1330
Clauberg & Co., F. A., New York, N. Y. Razors	11,536	Apr. 3	121	1637
Clawson, Clement C., Flagtown, N. J. Ice-shaving machines	11,705–6	Mar. 6	121	305
Cleveland Baking Powder Company, New York, N. Y. Baking-powder	11,320–1	Mar. 27	121	1318
Cleveland Baking Powder Company, New York, N. Y. Baking-powder	11,322	Apr. 24	121	2627
Cleveland & Sandusky Brewing Company, Cleveland, Ohio. Beer in bottles	12,463	Mar. 6	121	309
Cleveland Twist Drill Company, Cleveland, Ohio. Nail-sets	17,751	Apr. 10	121	1965
Cleveland Twist Drill Company, Cleveland, Ohio. End, lathe, and heading mills	17,752	Apr. 10	121	1965
Cleveland Twist Drill Company, Cleveland, Ohio. Sockets, sleeves, arbors, mandrels, collets, drill and turret tool-holders, and chucks for holding tools	17,754	Apr. 17	121	2309
Climax Road Machine Co., Marathon, N. Y. Rock-crushers	17,907	Apr. 24	121	2646
Clincher Automobile Tire Manufacturers' Association, Akron, Ohio. Metallic rims for vehicle-wheels	6,220	Mar. 13	121	653
Cling-Surface Company, Buffalo, N. Y. Preservatives and fillers for belts	15,831	Apr. 3	121	1649
Coalite Company, Boston, Mass. Compound for treating waste materials containing carbon to render them combustible	16,543	Mar. 13	121	676
Cochrane Manufacturing Co., East Dedham and Malden, Mass., and New York, N. Y. Handkerchiefs	10,514	Mar. 6	121	302

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Cohen & Son, Charles J., Philadelphia, Pa. Envelops and paper	14,983-5	Mar. 27	121	1327
Colgate & Co., New York, N. Y. Soaps for toilet, laundry, and household use	15,565	Apr. 24	121	2637
Collin County Mill & Elevator Company, McKinney, Tex. Wheat-flour	7,762	Apr. 17	121	2286
Collins Company, Collinsville, Conn. Plows and parts thereof	12,912	Mar. 6	121	311
Collins, James M., Salt Lake City, Utah. Blood and nerve tonics	12,883	Apr. 10	121	1949
Colorado Bedding Co., Pueblo, Colo. Mattresses	13,011	Apr. 3	121	1641
Colorado Iron Works Co., Denver, Colo. Ore smelting and milling machinery	8,442	Apr. 3	121	1633
Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Pistols	11,091-2	Mar. 27	121	1318
Columbia Knitting Company, Milwaukee, Wis. Men's, boys', ladies', misses', and children's hosiery	13,548	Apr. 10	121	1951
Columbia Refining Co., New York, N. Y. Oil and water-color paints	5,012	Mar. 6	121	292
Columbian Hdw. Co., Cleveland, Ohio. Spring-hinges	18,074-8	Apr. 17	121	2310
Compañia Vinicola del Norte de España, Bilbao, Spain. White wine in bottles	11,427	Mar. 13	121	664
Compañia Vinicola del Norte de España, Bilbao, Spain. Claret in bottles	11,428	Mar. 13	121	665
Conklin, Horace E., Binghamton, N. Y. Field and grass seeds, including clover-seeds	17,445	Mar. 27	121	1334
Connor, John P., Lowell, Mass. Whisky	10,719-20	Mar. 6	121	302
Consumers Park Brewing Co., New York, N. Y. Lager-beer	15,129	Mar. 13	121	674
Continental Color and Chemical Co. (See Kuttroff, Pickhardt & Company, assignor.)				
Cook and Van Evera Co., Chicago, Ill. Cooking ranges and stoves	17,531	Apr. 17	121	2308
Cook's Sons, Adam, New York, N. Y. Lubricating-grease	4,550	Mar. 6	121	292
Cook's Sons, Adam, New York, N. Y. Lubricating-grease	4,253	Mar. 20	121	973
Cooper, Edwin, Vienna, Austria-Hungary. Packing materials for steam and water joints	12,466	Apr. 10	121	1948
Copeland, Charles C., Milton, Mass. Carbonated tonic beverage	10,523	Apr. 10	121	1943
Corbin & Co., H. F., Cincinnati, Ohio. Whisky	8,914	Apr. 17	121	2288
Cordell Gin & Milling Company, Cordell, Okla. Ter. Wheat-flour	15,422	Mar. 27	121	1329
Corrizo Extract Co., New York, N. Y. Vanilla-oil	14,366	Mar. 27	121	1325
Cough Checker Manufacturing Co., Newburgh, N. Y. Cough mixture	3,166	Mar. 13	121	649
Countie, Charles J., Boston, Mass. Toilet cream	6,817	Apr. 17	121	2285
Cox, William H., Stuart, Iowa. Liniment for the cure of cuts and flesh wounds	16,600	Apr. 3	121	1653
Cracker Jack Liniment Company, Burkes Garden, Va. Liniments for man and beast	11,292	Apr. 10	121	1945
Cranston, John M., Augusta, Ga. Whisky	8,878	Mar. 20	121	978
Cranston, John M., Augusta, Ga. Whisky	8,879	Apr. 17	121	2288
Crescent Burner Manufacturing Co., New York, N. Y. Burners for acetylene and other gases	12,962	Mar. 20	121	989
Crescent Macaroni & Cracker Co., Davenport, Iowa. Macaroni, spaghetti, vermicelli, and noodles	11,700	Apr. 10	121	1947
Crimmings-Megrath Co., Inc., Boston, Mass. Tooth-powder containing phenol	15,657	Apr. 3	121	1648
Crist, Scott & Parshall, Cooperstown, N. Y. Monthly magazines	15,528	Apr. 3	121	1647
Cristadoro, Alexander, New York, N. Y. Hair-dyes	12,955	Mar. 13	121	667
Cromley, James B., New York, N. Y. A rheumatism cure	11,629	Apr. 10	121	1946
Croteau, Isaie, Providence, R. I. Remedy for impoverished blood and nerves	14,998	Apr. 24	121	2635
Crowder-Mason Shoe Co., Indianapolis, Ind. Leather boots and shoes	16,641	Mar. 13	121	676
Crown Oil & Wax Company, Wilmington, Del., and Baltimore, Md. Dry paste	12,243	Mar. 13	121	665
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	5,502	Mar. 13	121	652
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, slabs, blocks, strips, and forgings	5,513	Mar. 13	121	652
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	17,137	Mar. 20	121	1000
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, strips, blocks, and forgings	17,179	Mar. 27	121	1333
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, bars, billets, blooms, plates, slabs, &c.	5,500	Apr. 3	121	1629
Crucible Steel Company of America, Pittsburg, Pa. Steel rods, bars, blooms, billets, plates, sheets, &c.	5,514	Apr. 10	121	1937
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, &c.	5,510	Apr. 17	121	2283
Crucible Steel Company of America, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, &c.	5,518	Apr. 24	121	2619
Crystaline Salt Company, Boston, Mass. Salt for table, cooking dairy, and general household uses	10,454	Apr. 24	121	2625
Cuesta, Rey & Co., West Tampa, Fla. Cigars	13,392	Apr. 3	121	1642
Currier-Boyce Company, Chicago, Ill. Magazine or periodical	15,650	Mar. 27	121	1330
Curtin & Clark Hardware Company, St. Joseph, Mo. Silver table-cutlery	4,030	Apr. 3	121	1628
D. Goff & Sons, Pawtucket, R. I. Mercerized cotton braid	15,849	Apr. 10	121	1956
D. E. Wood Butter Co., Elgin, Ill. Butter	15,769	Apr. 3	121	1648
D. & W. Fuse Co., Providence, R. I. Electric switches and parts thereof and mountings and inclosures therefor	5,130	Mar. 27	121	1308
Dalzelle, Sanford J., Beaumont, Tex. Remedy for malaria, chills and fever, liver complaint, &c.	12,958	Mar. 13	121	667
Dandrucide Company, Phoenix, Miss. Dandruff cure and hair-dressing	11,737	Apr. 10	121	1947
Daniel, Charles A., Philadelphia, Pa. Machinery-packing	14,759	Mar. 13	121	672
Darby Candy Co., Baltimore, Md. Candy	13,529	Mar. 27	121	1323
Darrell & Co., E. F., New York, N. Y. Oil-meal made from linseed	13,556	Mar. 6	121	313
Daussa & Co., P., New York, N. Y. Wheat-flour	6,389	Mar. 6	121	294
David B. Crockett Company, Bridgeport, Conn. Varnish-stains	18,026	Apr. 24	121	2647
David E. Foutz Co., Baltimore, Md. Condimental foods for horses, cattle, swine, and other stock	8,043	Mar. 13	121	658
David and Lawrence Co., New York, N. Y. Medicinal preparation for external and internal use to alleviate pain	1,448	Apr. 24	121	2616
Davie, Thomas P., Rio Vista, Va. Cornmeal	7,607	Mar. 13	121	656
Davis, B. F., Huntington, W. Va. Pills for liver and bowel complaints	10,603	Mar. 27	121	1317
Davis, Joseph M., Minneapolis, Minn. Whisky	9,036	Mar. 27	121	1314
Dawson, Halliwell & Company, Manchester, England. Handkerchiefs	6,688	Apr. 24	121	2620
Dayton Paper Novelty Co., Dayton, Ohio. Wrapping-paper	15,990	Apr. 17	121	2303
Dayton Paper Novelty Co., Dayton, Ohio. Wrapping-paper	15,991	Apr. 24	121	2638
De-Fi Manufacturing Co., New York, N. Y. Carbon-paper	4,053	Mar. 13	121	650
De Groff & Son, Lewis, New York, N. Y. Canned tomatoes, corn, beans, asparagus, beets, peas, pumpkin, spinach, succotash, and squash	14,515	Mar. 20	121	993
De Laval Separator Company, New York and Poughkeepsie, N. Y. Centrifugal separators	9,447	Mar. 20	121	979
De Laval Separator Company, New York and Poughkeepsie, N. Y. Centrifugal separators	10,661	Mar. 27	121	1317
Decatur Cereal Coffee Works, Decatur, Ill. Cereal substitute for coffee	15,136	Apr. 10	121	1954
Decker & Son, New York, N. Y. Pianos	10,196	Mar. 27	121	1316
Deimel Linen-Mesh System Company, San Francisco, Cal. Undershirts and drawers and union suits	7,858	Apr. 17	121	2287
Delamothe, Louis G., East Syracuse, N. Y. Blood remedies and tonics	13,403	Apr. 3	121	1642
Demarest and Carver, New York, N. Y. Packing gages and cutters	16,832	Mar. 13	121	678
Densten, Joseph C., Scranton, Pa. Remedy for the treatment of rheumatism, malaria, la grippe, &c., in the form of powder	7,135	Apr. 3	121	1631

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Devolld, William C., Red Lodge, Mont. Plaster for curing cancer, carbuncles, &c	16,794	Apr 24	121	2641
Dexter Brothers Co., Boston, Mass. Shingle-stains	17,480	Apr. 24	121	2644
Dey Time Register Co., Syracuse, N. Y. Time-registers	17,080	Apr. 24	121	2642
Dey Time Register Co., Syracuse, N. Y. Time-registers	17,083	Apr. 24	121	2643
Die Actiengesellschaft Apollinaris Brunnen, Neuenahr, Germany. Mineral water	14,306	Apr. 3	121	1644
Dill & Collins Co., Philadelphia, Pa. Printing-paper	10,609	Mar. 13	121	663
Dill & Collins Co., Philadelphia, Pa. Printing and writing paper	10,608	Apr. 24	121	2625
Dilling & Co., Indianapolis, Ind. Candy	16,793	Mar. 6	121	324
Dock & Coal Co., Plattsburg, N. Y. Cattle-food	16,782	Apr. 17	121	2306
Doctor Blosser Company, Atlanta, Ga. Medical preparation for nasal catarrh, catarrh of the head, bronchitis, catarrhal deafness, &c	6,843	Apr. 24	121	2621
Dolan Mercantile Co., Atchison, Kans. Tea	11,097	Mar. 13	121	664
Dolan Mercantile Co., Atchison, Kans. Coffee	11,099	Mar. 13	121	664
Dolan Mercantile Co., Atchison, Kans. Rice	11,100	Mar. 13	121	664
Doll, William F., New York, N. Y. Watchcases	16,263	Apr. 10	121	1950
Dorman, Carrie V., Washington, D. C. Liquid antiseptic and disinfectant	14,495	Mar. 13	121	671
Dorman, Carrie V., Washington, D. C. Hair-dressing	14,496	Mar. 20	121	993
Dorman, Carrie V., Washington, D. C. Remedy for croup, coughs, and bronchial affections	14,497	Apr. 10	121	1953
Dort, Elizabeth, Buffalo, N. Y. Stomachic and carminative	8,016	Mar. 6	121	296
Downer, Hawes and Company, Incorporated, Bridgeport, Conn. Corsets	16,096	Mar. 6	121	319
Dr. A. Gude & Co., G. m. b. H., Leipsig, Germany. Preparation for the cure of anemia, chlorosis, and for a general tonic and reconstructive	12,152	Mar. 13	121	666
Dr. Miles Medical Co., Elkhart, Ind. Tonics, blood, heart, and nerve medicines	3,425	Apr. 3	121	1626
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Medicinal preparation for the treatment of diseases of the blood and skin	5,918	Mar. 6	121	294
Dr. Peter Fahrney & Sons Co., Chicago, Ill. Periodical publication	12,953	Apr. 17	121	2295
Dr. Shoop Family Medicine Co., Racine, Wis. Laxative put up in concrete form or compressed tablets	13,508	Mar. 6	121	312
Dreka Company, Philadelphia, Pa. Steel pens	6,016	Mar. 6	121	294
Dreyfuss & Co., A. L., New York, N. Y. Velvets	12,495	Mar. 13	121	666
Dreyfuss, Weil & Co., Paducah, Ky. Whisky	12,652	Apr. 24	121	2629
Drumm, Robert, Fort Worth, Tex. Poison for insects	15,578	Apr. 3	121	1647
Duncan, George S., Edinburgh, Scotland. Set-off liquor and printers' paste	8,120	Mar. 6	121	297
Duncan & Moorhead, Inc., Philadelphia, Pa. Cigars	11,910	Apr. 3	121	1638
Dunham, Carrigan & Hayden Co., San Francisco, Cal. Valves	11,347	Apr. 3	121	1637
Dunham Manufacturing Company, New York, N. Y. Prepared cocoanut	16,462	Apr. 10	121	1959
Dunlevy & Brother, Pittsburg, Pa. Lard	4,697	Apr. 17	121	2280
Dunne, Chas. M., Norwich, N. Y. Tooth-paste	11,876	Apr. 10	121	1947
Durkee & Co., E. R., New York, N. Y. Spices and mustard	3,965	Mar. 13	121	650
Durkee & Co., E. R., New York, N. Y. Spices	3,975-6	Apr. 3	121	1627
Durkee & Co., E. R., New York, N. Y. Spices and mustard	3,984-5	Apr. 3	121	1627
Durkee & Co., E. R., New York, N. Y. Baking-powder, cream of tartar, saleratus, and bicarbonate of soda	15,616	Apr. 3	121	1648
Durkee & Co., E. R., New York, N. Y. Extracts of lemon, vanilla, almond, and ginger	4,291	Apr. 17	121	2280
Durkee & Co., E. R., New York, N. Y. Spices and mustard	13,152	Apr. 17	121	2295
E. Godel and Sons, Peoria, Ill. Hams, shoulders, and bacon	8,306	Mar. 13	121	658
E. A. Williams, Incorporated, Newark, N. J. Wheat bread	16,132	Apr. 10	121	1958
E. E. Sutherland Medicine Co., Paducah, Ky. Salve for the treatment of sore eyes	1,460	Apr. 24	121	2616
E. H. Hotchkiss Co., Norwalk, Conn. Strips of united staples for fastening together papers, &c.	15,894	Apr. 3	121	1649
E. H. Taylor, Jr. & Sons, Incorporated, Frankfort, Ky. Whisky	1,077	Mar. 27	121	1304
E. H. Wright Company, Ltd., Kansas City, Mo. Liquid smoke distilled from wood	5,818	Mar. 27	121	1309
E. J. Hart & Co, Limited, New Orleans, La. Remedies for stomach, intestinal, and bowel disorders	11,387	Mar. 6	121	304
E. O. Hall and Son, Ltd., Honolulu, Hawaii. Lubricating-oil	12,738	Apr. 3	121	1639
Eagle Pencil Company, New York, N. Y. Metallic tips for lead-pencils	15,729	Mar. 20	121	998
Earl & Wilson, Troy, N. Y. Collars	13,275	Mar. 6	121	311
Eastern Granite Roofing Company, New York, N. Y. Roofing consisting of flexible sheets of waterproof material	10,276	Apr. 17	121	2291
Eastern Refining Co., New York, N. Y. Molasses	5,622	Apr. 24	121	2619
Eastern Shore of Virginia Produce Exchange, Onley, Va. Irish and sweet potatoes	8,687	Mar. 6	121	298
Eberhardt, John H., New York, N. Y. Antiseptic solution	10,280	Mar. 6	121	301
Eberle & Co., J. N., Augsburg, Germany. Saws	9,738	Apr. 3	121	1634
Eddystone Manufacturing Co., Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	9,928	Mar. 20	121	980
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Moreens	9,656	Mar. 13	121	661
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Bleached, unbleached, printed, and dyed textile fabrics	9,808	Mar. 13	121	661
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,367	Mar. 13	121	662
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Art-drapery robes	10,649	Mar. 13	121	663
Eddystone Manufacturing Company, Eddystone and Philadelphia, Pa. Printed and dyed textile fabrics	10,310	Apr. 10	121	1942
Edel's Sons, S. T., Baltimore, Md. Butter	11,511	Mar. 6	121	305
Edgar Allen & Co. Limited, Sheffield, England. Steel in various forms	12,587	Apr. 10	121	1948
Edison Portland Cement Company, West Orange and New Village, N. J. Portland cement	10,570	Apr. 17	121	2291
Edison and Swan United Electric Light Company Limited, London, England. Incandescent electric lamps and fittings of ordinary metal for same	9,366	Mar. 13	121	660
Edison and Swan United Electric Light Company Limited, London, England. Incandescent electric lamps	9,367	Mar. 20	121	979
Edison and Swan United Electric Light Company Limited, London, England. Incandescent electric lamps and electric-lighting apparatus	9,368	Mar. 20	121	979
Edmondson, Robert E., New York, N. Y. Financial-news bulletins	11,714	Apr. 3	121	1627
Edsall, Henry F., San Francisco, Cal. Internal remedies for the treatment of intestinal inflammations and stomach disorders	14,148	Mar. 6	121	314
Edsall, Henry F., San Francisco, Cal. Internal remedies having tonic and alterative properties.	14,149	Mar. 6	121	314
Edsall, Henry F., San Francisco, Cal. Internal remedy for the treatment of rheumatism, sciatica, neuralgia, and gout	15,362	Mar. 27	121	1329
Edward Katzinger Company, Chicago, Ill. Baking-pans	17,041	Mar. 13	121	680
Edward L. Baldwin Co., San Francisco, Cal. Preparation for the cure of chronic constipation, headache, &c	15,746	Apr. 3	121	1643
Egerton Bros., Baltimore, Md. Wheat-flour	1,197	Mar. 6	121	290
Ehret, George, New York, N. Y. Lager-beer	2,273	Apr. 10	121	1934
Eisenman & Co., Charles, Cleveland, Ohio. Men's shirts and boys' shirts, waists, and blouses	8,857	Apr. 17	121	2288
Eising & Co., E., New York, N. Y. Whisky	14,131	Apr. 3	121	1644
El Zernac Company, New York, N. Y. Laxative preparations	13,660	Mar. 27	121	1323
Electric Cigar Company, Boston, Mass. Cigars	7,353	Mar. 6	121	296

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Electric Lustre Starch Company, Boston, Mass. Laundry starch	6,768	Mar. 6	121	295
Eley Brothers Limited, London, England. Percussion-caps	14,773	Apr. 17	121	2299
Ellendale Milling Company, Ellendale, N. D. Wheat-flour	15,024	Mar. 27	121	1327
Elliott, Samuel K., Los Angeles, Cal. Alterative, tonic, and blood-purifying compounds	16,218	Mar. 27	121	1331
Emerald Manufacturing Co., Superior, Wis. Cereal food for infants, invalids, dyspeptics, and convalescents	7,065	Mar. 13	121	655
Emerson Piano Company, Boston, Mass. Pianos	16 058	Apr. 10	121	1958
Empire State Dry Battery Co., New York, N. Y. Dry batteries	13,647	Mar. 27	121	1323
Enders and Mechener, Seattle, Wash. Cocoa	4,268	Apr. 3	121	1628
Endicott-Johnson Company, Boston, Mass. Leather boots and shoes for men, women, youths, boys, and children	10,709	Apr. 24	121	2626
Engineering & Mining Journal, Incorporated, New York, N. Y. Weekly magazine	9,537	Mar. 20	121	980
Eppstein, Milton L., Fort Worth, Tex. Syrup for beverages	8,943	Mar. 27	121	1314
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,936	Apr. 17	121	2288
Eppstein, Milton L., Fort Worth, Tex. Whisky	8,937	Apr. 24	121	2633
Equitable Coal & Coke Company, Chicago and Du Quoin, Ill. Coal	17,806	Apr. 10	121	1966
Erb, Fred H., Jr., Lafayette, Ind. Foods for live stock and other animals	16,140	Mar. 13	121	676
Ericka Mfg. Co. Incorporated, Springfield, Mass. Toilet and laundry soap	17,608	Apr. 24	121	2645
Ericsson Telephone Company, New York, N. Y. Telephone transmitters and receivers	7,025	Mar. 20	121	976
Ernst, Wilhelm, Hannover, Germany. Suppositories for the treatment of hemorrhoids and analogous afflictions	12,143	Apr. 3	121	1638
Estes Mills, Fall River, Mass. Mops	16,706–10	Mar. 6	121	322–3
Eureka Fire Hose Company, Jersey City, N. J. Fabric hose	17,260–1	Apr. 3	121	1653
Eureka Refrigerator Co., Indianapolis, Ind. Refrigerators	17,189	Mar. 27	121	1333
Evans & Son, Geo. T., Indianapolis, Ind. Wheat-flour	12,195	Mar. 20	121	987
Evans & Son, Geo. T., Indianapolis, Ind. Wheat-flour	12 194	Apr. 3	121	1638
Everett Mills, Lawrence, Mass. Cotton piece goods	14,344	Mar. 13	121	670
Everett Mills, Lawrence, Mass. Cotton piece goods	16,834	Mar. 27	121	1332
Excelsior Needle Company, Torrington, Conn. Sewing-machine needles	17,218	Mar. 20	121	1001
Excelsior Needle Company, Torrington, Conn. Sewing-machine needles	17,220	Mar. 20	121	1001
Excelsior Needle Company, Torrington, Conn. Needles	17,402	Apr. 10	121	1962
Exposition Cotton Mills, Atlanta, Ga. Sheetings and drillings	15,584	Apr. 3	121	1648
F. Mayer Boot & Shoe Co., Milwaukee, Wis. Leather shoes	13,539	Apr. 3	121	1642
F. O. Pierce Company, New York, N. Y. Red paint	11,041	Mar. 6	121	302
F. O. Pierce Company, New York, N. Y. Color-varnish	11,042	Mar. 6	121	303
F. O. Pierce Company, New York, N. Y. Red paint	11,044	Mar. 6	121	303
F. S. Royster Guano Co., Norfolk, Va. Bone fertilizer	2,469	Mar. 27	121	1305
F. W. Poe Mfg. Co., Greenville, S. C. Cotton piece goods	15,248	Apr. 3	121	1646
Faber, Eberhard, New York, N. Y. Rubber erasers	13,489	Mar. 13	121	669
Fahnestock, Benjamin S., Pittsburg, Pa. Worm medicines	3,696	Mar. 13	121	650
Falk Mercantile Co. Ltd., Boise, Idaho. Evaporated milk and cream	9,837	Mar. 20	121	980
Fall River Bleachery, Fall River, Mass. Bleached cotton goods	9,095	Mar. 20	121	979
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Antiseptics and deodorants	12,710	Mar. 6	121	310
Farbwerke vorm. Meister Lucius & Brüning, Höchst-on-the-Main, Germany. Anesthetics	14,207	Mar. 27	121	1325
Faultless Rubber Co., Akron, Ohio. Rubber water-bottles, rubber fountain-syringe bags, &c	15,933	Apr. 3	121	1649
Fearey, Anna S., Albany, N. Y. Leather boots and shoes	10,471	Mar. 6	121	301
Feist, Leo, New York, N. Y. Sheet-music and music-books	15,030	Apr. 24	121	2636
Fellows Medical M'f'g Co., Limited, New York, N. Y. Preparation of hypophosphites	8,440	Apr. 3	121	1633
Fernando Fruit Growers Association, Fernando, Cal. Oranges, lemons, and grape-fruit	8,107	Mar. 6	121	297
Ferriss, John M., Jr., Tacoma, Wash. Wheeled lever	15,154	Mar. 27	121	1328
Feuchter Bros., Cairo, Ill. Whisky	6,241	Mar. 27	121	1309
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,988	Apr. 3	121	1640
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,986	Apr. 24	121	2629
Fidalgo Island Packing Co., Anacortes, Wash. Canned salmon	12,989	Apr. 24	121	2630
Fiebeger Heating Company, Akron, Ohio. Stoves and furnaces for heating buildings	7,971	Mar. 13	121	657
Finck & Son, A., New York, N. Y. Lager-beer	3,607	Apr. 10	121	1935
Fischer Brothers, Seattle, Wash. Canned fruits and vegetables	9,953	Apr. 24	121	2624
Fischer Chemical Importing Co., New York, N. Y. Cold-cream	14,163	Mar. 6	121	314
Fiske Brothers Refining Co., New York, N. Y. Lubricating-oil	16,628	Apr. 24	121	2640
Fleischmann Co., Cincinnati, Ohio, and New York, N. Y. Compressed yeast for making bread and breadstuffs	8,706–7	Mar. 27	121	1314
Fleischmann, Paul, East Boston, Mass. Bread	15,788	Apr. 3	121	1649
Fletcher Manufacturing Company, Providence, R. I. Lamp and candle wicks	2,885	Mar. 20	121	971
Flinn, Fitz Allen, New York, N. Y. Paper and envelops, including both ruled and unruled commercial and correspondence paper, both sheet and bound form	13,946	Mar. 27	121	1324
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	17,280	Mar. 20	121	1002
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	17,599	Apr. 10	121	1965
Florence Manufacturing Company, Northampton, Mass. Tooth-brushes	17,602–3	Apr. 10	121	1965
Fluhrer Tobacco Company, Boonville, Ind. Smoking and chewing tobacco in twist form	10,770	Apr. 3	121	1636
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,620	Mar. 6	121	299
Follansbee Brothers Company, Pittsburg, Pa. Tin and terne plates	9,633	Apr. 3	121	1634
Forquignon, Emil, New York, N. Y. Scissors and shears	13,109	Mar. 27	121	1321
Foss Gas Engine Company, Springfield, Ohio. Explosive-engines	18,022	Apr. 24	121	2647
Foss, Packard & Co., Boston, Mass. Leather and canvas shoes	15,723	Apr. 17	121	2302
Foster-McClellan Company, Buffalo, N. Y. Cathartics, pills, and tablets	16,209–10	Mar. 27	121	1330
Foster-McClellan Company, Buffalo, N. Y. Ointments	16,212	Mar. 27	121	1331
Fownes Brothers & Co., London, England, and New York, N. Y. Gloves	14,031	Mar. 6	121	314
Fox River Butter Company, Aurora, Ill. Butter	676	Mar. 13	121	647
Francis H. Leggett & Company, New York, N. Y. Olives	8,487	Mar. 13	121	658
Francis H. Leggett & Company, New York, N. Y. Canned vegetables and fruits	8,495	Mar. 13	121	659
Francis H. Leggett & Company, New York, N. Y. Dried fruits	9,316	Mar. 13	121	660
Francis H. Leggett & Company, New York, N. Y. Flavoring extracts	12,971	Mar. 13	121	667
Francis H. Leggett & Company, New York, N. Y. Prepared cereal breakfast-foods	12,977	Mar. 13	121	667
Franciscan Company, a Corporation, Santa Barbara, Cal. Cordial bitters	16,323	Apr. 17	121	2304
Franklin, Lewis W., Boston, Mass. Leather shoes	10,121	Apr. 17	121	2290
Fraser, George H., New York, N. Y. Pulverizing machinery	16,635–6	Apr. 10	121	1960
Frederick Stearns & Co., Detroit, Mich. Laxatives	16,301	Mar. 27	121	1331
Frederick Stearns & Co., Detroit, Mich. Neuralgia and headache remedy	16,302–3	Mar. 27	121	1331
Frederick Stearns & Co., Detroit, Mich. Medicine for gonorrhea, &c	16,304	Mar. 27	121	1331
Frederick Stearns & Co., Detroit, Mich. Medicine for affections of the throat and bronchial tubes	16,305	Mar. 27	121	1331
Frederick Stearns & Co., Detroit, Mich. Medicated wine	16,630	Apr 10	121	1960
Freeman Brothers, New York, N. Y. Men's and boys' stiff, soft, and straw hats	1,002	Mar. 13	121	648
Freiberg, J. & A., Cincinnati, Ohio. Gin	12,118	Mar. 13	121	666
Freiberg & Kahn, Cincinnati, Ohio. Whisky	8,948	Mar. 27	121	1314

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Freiberg & Kahn, Cincinnati, Ohio. Whisky	8,949	Apr. 3	121	1634
Freiberg & Workum, Cincinnati, Ohio. Whisky	1,881	Mar. 27	121	1304
Freiberg & Workum, Cincinnati, Ohio. Whisky	4,961	Apr. 10	121	1936
Freiler, Philip, Elgin, Ill. Whisky	2,335	Mar. 20	121	970
Freiler, Philip, Elgin, Ill. Whisky	2,332	Mar. 27	121	1306
Freiler, Philip, Elgin, Ill. Brandy	2,341	Mar. 27	121	1306
Freiler, Philip, Elgin, Ill. Whisky	2,334	Apr. 3	121	1626
Fremery & Company, James de, San Francisco, Cal. Confectionery having chocolate as a principal ingredient	15,379	Apr. 3	121	1646
French & Ward, New York, N. Y., and West Stoughton, Mass. Knit goods in the piece	17,102	Mar. 20	121	1000
French, William W., Gloucester and Boston, Mass. Food for cats and kittens	17,299	Mar. 20	121	1002
Freystadt Straussfeder Fabrik, W., Berlin, Germany. Ostrich feathers	10,582	Mar. 27	121	1316
Frictionless Metal Company, Richmond, Va. Bearing metal	4,901	Mar. 13	121	651
Frictionless Metal Company, Richmond, Va. Bearing metal	4,908–9	Mar. 13	121	651
Friend Bros. Clo. Co., Milwaukee, Wis. Overcoats and suits	13,213	Apr. 24	121	2631
Frink, I. P., New York, N. Y. Electric and gas light reflectors for store, show-window, and stage lighting	12,784	Apr. 10	121	1949
Frostlene Manufacturing Company, Boston, Mass. Chemical and vegetable substitute for egg-whites, &c	8,961	Apr. 3	121	1634
Fruhauf & Co., Max, Cincinnati, Ohio. Whisky	5,377	Apr. 10	121	1937
Fry & Friedsam, New York, N. Y. Ribbons of different shades and colors	15,230	Mar. 27	121	1328
Fulton Bag & Cotton Mills, Atlanta, Ga. Twine	3,364	Mar. 13	121	649
Fulton Company, Knoxville, Tenn. Heat-regulators for use on boilers, furnaces, and stoves	13,722	Apr. 3	121	1642
Fulton Tool Works, Canal Fulton, Ohio. Coal-miners' picks	11,674	Apr. 17	121	2292
Funke, Albert H., New York, N. Y. Horns for motor-vehicles	11,807	Mar. 13	121	665
Gabarró y Castelló, Alejo, Igualada, Province of Barcelona, Spain. Playing-cards	7,602	Apr. 10	121	1939
Gabriel & Schall, New York, N. Y. Asphalt mastic	200	Apr. 24	121	2615
Gandy, Katherine, New York, N. Y. Women's bonnets, hats, and head-dresses	3,603	Mar. 27	121	1307
Gargiulo & Co., P., New York, N. Y. Wines	8,781	Mar. 27	121	1314
Garlock Packing Co., Palmyra, N. Y. Piston-rod and valve packing	4,487	Apr. 24	121	2617
Garretteon & Co., F. P., Newport, R. I., and New York, N. Y. Tea	4,572	Apr. 10	121	1935
Garretteon & Co., F. P., Newport, R. I., and New York, N. Y. Laundry soap	4,576	Apr. 10	121	1935
Gary, Presley, Tiptonville, Tenn. Ointment	16,198	Mar. 27	121	1330
Geary Milling & Elevator Company, Geary, Okla. Ter. Wheat-flour	14,901	Mar. 27	121	1327
Gebauer, Max, New York, N. Y. Remedies for the relief and cure of coughs, colds, hoarseness, &c	14,640	Mar. 13	121	671
Gelbtrunk, Isidoro, New York, N. Y. Cotton piece goods	12,305	Mar. 6	121	306
Gellenbeck, Albert H., Cincinnati, Ohio. Whisky	5,541	Apr. 3	121	1629
Gem City Stove Co., Dayton, Ohio. Gas-stoves	7,192	Apr. 3	121	1631
Gem City Stove Manufacturing Co., Quincy, Ill. Heating and cooking stoves	9,936	Apr. 17	121	2290
Gendron Wheel Co., Toledo, Ohio. Children's express, patrol, hook-and-ladder, and coaster wagons and toy carts	16,319	Apr. 24	121	2639
General Safety Mantle Light Co., New York, N. Y. Burning fluids for use in lamps	10,829	Mar. 13	121	664
General Safety Mantle Light Co., New York, N. Y. Carbureting-lamps	10,830	Apr. 17	121	2291
Gennerich & Von Bremen, New York, N. Y. Canned fish	11,172	Mar. 6	121	303
Gennerich & Von Bremen, New York, N. Y. Dried fruits	13,764	Mar. 6	121	313
Gennerich & Von Bremen, New York, N. Y. Canned or bottled vegetables	13,766	Mar. 6	121	313
Gennerich & Von Bremen, New York, N. Y. Spices	13,765	Mar. 27	121	1324
Geo. A. Schmidt Co., Chicago, Ill. Toilet soap	14,102	Apr. 3	121	1643
Geo. A. Schmidt Co., Chicago, Ill. Liquid, semiliquid, granular, and cake soap for toilet use	14,101	Apr. 24	121	2634
Geo. Benz & Sons, St. Paul, Minn. Wine	15,979	Apr. 17	121	2303
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	16,128	Apr. 3	121	1650
Geo. D. Witt Shoe Co., Lynchburg, Va. Leather boots and shoes	13,462	Apr. 10	121	1950
Geo. E. Keith Company, Brockton, Mass. Leather boots and shoes	7,847	Mar. 13	121	657
Geo. E. Keith Company, Brockton, Mass. Shoe-dressing	8,701	Mar. 27	121	1314
Geo. F. Eberhard Company, San Francisco, Cal. Disinfectants, antiseptics, and germicides	9,855	Mar. 13	121	661
Geo. G. Snow Co., Brockton, Mass. Boots, shoes, and slippers made wholly or in part of leather	14,457	Apr. 24	121	2634
George Bieler Sons Company, Cincinnati, Ohio. Whisky	5,113	Apr. 17	121	2282
George Frost Company, Boston, Mass. Hose-supporters	17,221	Apr. 3	121	1653
George Martin Leather Co., Milwaukee, Wis. Calfskin	16,763	Apr. 17	121	2306
George Wostenholm and Son Limited, Sheffield, England. Razors, pocket, butchers', bowie, farriers', hunting, and table knives	13,785	Apr. 17	121	2297
Georgia Chemical Works, Augusta, Ga. Fertilizers	17,871–3	Apr. 17	121	2310
Georgia Chemical Works, Augusta, Ga. Fertilizers	17,876	Apr. 24	121	2646
Gerhard, Philip H., Austin, Tex. Wood-preserving compounds	5,667	Mar. 6	121	294
Gerstendorfer Bros., New York, N. Y. Oil and varnish paints, enamels, varnishes, and wood-stains	3,062	Mar. 6	121	291
Gerstendorfer Bros., New York, N. Y. Metallic water-colors	14,840	Mar. 13	121	672
Gerstendorfer Bros., New York, N. Y. Bronze powders, leaf-brocades, flitters, metallics, and aluminum powders and bronzing liquids	3,060	Mar. 27	121	1305
Gerstle Medicine Co., Chattanooga, Tenn. Remedy for diseases of the liver, dropsy, &c	13,093	Apr. 10	121	1950
Gibbens & Stream, New Orleans, La. Rubber packing	15,326	Apr. 3	121	1646
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned oysters	11,142	Mar. 6	121	303
Gibbs Preserving Company of Baltimore City, Baltimore, Md. Canned oysters	14,454	Apr. 24	121	2634
Gilbert Manufacturing Company, New York, N. Y. Cotton piece goods with a moiré finish	10,530	Apr. 3	121	1635
Gilbert, Son & Co., Murray, Ky. Smoking and chewing tobacco	16,950	Mar. 13	121	678
Gilliam, John, New York, N. Y. Canned lobsters	2,733	Mar. 20	121	971
Gilliams, Jones & Co., Philadelphia, Pa. Rye whisky	9,059	Mar. 20	121	979
Gilmaker Bros., San Francisco, Cal. Leather shoes	16,514	Apr. 17	121	2306
Gilpin, Langdon & Company, Incorporated, Baltimore, Md. Insect-powder	14,361	Mar. 13	121	670
Ginter Grocery Company, Boston, Mass. Gin	14,050–1	Apr. 3	121	1643
Glasner & Barzen Distilling & Importing Co., Kansas City, Mo. Whisky	13,334	Mar. 27	121	1322
Glassup, Frederick, assignor to J. Gow & Company, New York, N. Y. Whisky	16,148	Mar. 6	121	319
Glencoe Lime & Cement Company, St. Louis, Mo. Plaster	6,926	Mar. 13	121	655
Glidden Varnish Company, Cleveland, Ohio. Varnish for window sills and sashes, the spars and woodwork of vessels, &c	14,726	Mar. 6	121	316
Globe Overall Co., Cincinnati, Ohio. Overalls for workingmen	15,544	Mar. 27	121	1329
Goetz and Co., Brooklyn, N. Y. Pianos	15,653	Apr. 24	121	2637
Goetz Silk Manufacturing Company, Holyoke, Mass. Silk linings and dress-silks	14,843	Mar. 20	121	994
Goldberg, Brown & Company, San Francisco, Cal. Malt whisky	16,647	Mar. 27	121	1332
Golden and Company, Washington, D. C. Hams, shoulders, and bacon	16,266	Apr. 3	121	1651
Golden Eagle Tea Co. Inc., Wilmington, Del. Wheat-flour	16,511	Apr. 24	121	2640
Goldman & Co., M., New York, N. Y., and Cleveland, Ohio. Women's, misses', and children's outer skirts	14,032	Mar. 13	121	670
Goldman, Mary T., St. Paul, Minn. Tonic for the cure of stomach troubles, dyspepsia, indigestion, eczema, and eruptions	14,504	Mar. 6	121	315

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Goldsmith, Edwin M., Philadelphia, Pa. Men's coats and trousers	7,516	Mar. 20	121	976
Goldsmith's Sons, P., Cincinnati, Ohio. Gloves for athletic sports	3,140	Mar. 13	121	649
Gollings, Ellick H., Chicago, Ill. Laundry soap	16,098	Apr. 3	121	1650
Goodall, Perkins & Co., San Francisco, Cal. Blasting-fuses	17,414	Apr. 10	121	1962
Goodhart-Hartman Co., Chicago, Ill. Whisky	8,232	Mar. 20	121	977
Goodlander Milling Company, Fort Scott, Kans. Wheat-flour	12,167	Mar. 6	121	307
Goodrich Drug Co., Omaha, Nebr. Liquid liniment for both external and internal use	11,567	Apr. 10	121	1946
Goodrich Drug Co., Omaha, Nebr. Liquid medicine for a blood purifier and tonic, &c.	11,568	Apr. 10	121	1946
Goodrich & Jennings, Anoka, Minn. Liniment	7,513	Apr. 3	121	1632
Gorham Mfg. Co., Providence, R. I. Silver-polish in liquid, powder, or paste form	14,666	Mar. 20	121	993
Gorham Mfg. Co., Providence, R. I. Umbrellas and parasols	14,665	Apr. 24	121	2635
Gorham Mfg. Co., Providence, R. I. Leather purses and hand-bags	17,629	Apr. 24	121	2645
Gorham Rubber Company, San Francisco, Cal. Rubber belting	13,904	Mar. 6	121	314
Gorham Rubber Company, San Francisco, Cal. Rubber packing	5,169	Mar. 13	121	651
Gottschalk Co., Baltimore, Md. Whisky	11,610	Mar. 13	121	665
Gottschalk Co., Baltimore, Md. Whisky	12,072	Mar. 20	121	985
Gow & Company, John. (See Glassup, Frederick, assignor.)				
Graef, A., New York, N. Y. Razors	10,334	Apr. 3	121	1635
Graef, A., New York, N. Y. Razors	17,098	Apr. 17	121	2308
Graef & Schmidt, New York, N. Y. Pocket-knives	11,691	Mar. 20	121	984
Grafton, Edwin W., Washington, D. C. Roof-paints	16,620	Apr. 24	121	2640
Graham Bros. & Co., Chicago, Ill. Skin-foods and complexion creams and ointments	10,578	Mar. 27	121	1316
Gramm, Benjamin A., Chillicothe, Ohio. Automobiles	10,776	Apr. 24	121	2626
Grand Union Tea Co., Brooklyn, N. Y. Laundry and toilet soap	9,863	Mar. 13	121	662
Grand Union Tea Co., Brooklyn, N. Y. Baking-powder	9,866	Mar. 13	121	662
Grant, George S., Inveraven, Scotland. Pure malt Scotch whisky	16,555	Mar. 27	121	1332
Graves & Sons, C. H., Boston, Mass. Whisky	6,871	Apr. 10	121	1939
Greeder Manufacturing Company, Cincinnati, Ohio. Pad containing a substance which cleanses and furnishes a polish to the bottom of a flat-iron	14,015	Mar. 20	121	992
Green, Albert W., deceased; E. M. Green, executor, St. Louis, Mo. Cotton sheetings	10,914	Apr. 10	121	1944
Green, Edwin M., executor. (See Green Albert W.)				
Greene Tweed & Co., New York, N. Y. Belt awls and punches	15,265	Mar. 6	121	317
Greene Tweed & Co., New York, N. Y. Belt-fasteners	14,968-9	Mar. 13	121	673
Greene, Tweed & Co., New York, N. Y. Packing for the wearing and bearing parts of machines and mechanical devices	15,266	Apr. 10	121	1955
Greenwood Cotton Mill, Greenwood, S. C. Cotton sheetings and drillings	5,648	Mar. 27	121	1309
Griffin, Horatio M., Galt, Canada. Aromatic food preparations for animals	7,076	Apr. 10	121	1939
Griffin & Skelley Co., San Francisco, Cal. Dried and evaporated fruits	14,979	Apr. 17	121	2301
Griffiths Charcoal Iron Mills, Washington, Pa. Unmanufactured iron ternes in sheet form	15,056	Apr. 24	121	2636
Griffon Company, New York, N. Y. Worsted, woolen, and cotton mixed piece goods	13,416	Mar. 27	121	1322
Griffon Company, New York, N. Y. Worsted, woolen, and cotton mixed piece goods	7,136	Apr. 17	121	2286
Griffon Company, New York, N. Y. Worsted, woolen, and cotton-mixed goods for ladies', men's, and children's wear	6,749	Apr. 24	121	2620
Griggs, Cooper & Co., St. Paul, Minn. Syrup	9,543	Mar. 13	121	660
Griggs, Cooper and Company, St. Paul, Minn. Castor-oil	9,642	Mar. 6	121	299
Griggs, Cooper & Company, St. Paul, Minn. Canned lobster	9,643	Mar. 13	121	661
Griggs, Cooper & Company, St. Paul, Minn. Canned fruits and vegetables	9,647	Mar. 20	121	980
Griggs, Cooper and Company, St. Paul, Minn. Olives	9,649	Apr. 17	121	2290
Griggs, Cooper & Company, St. Paul, Minn. Pickled limes	18,303	Apr. 24	121	2648
Griggs, Cooper & Company, St. Paul, Minn. Horseradish-cream	18,304	Apr. 24	121	2648
Griggs, Cooper & Company, St. Paul, Minn. Capers	18,305	Apr. 24	121	2648
Grom, Otto C. B., New York, N. Y. Remedy for coughs and colds	7,626	Apr. 24	121	2621
Grosvenor & Co., J. M., Boston, Mass. Medicinal plasters	11,213-14	Mar. 6	121	303
Grunert, Ferdinand, Chicago, Ill. Butter	15,256	Mar. 27	121	1328
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	6,277	Mar. 6	121	294
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	6,278	Mar. 27	121	1310
Guckenheimer & Bros., Asher, Pittsburg, Pa. Whisky	6,279	Apr. 3	121	1629
Gulf Refining Company, Port Arthur, Tex., and Pittsburg, Pa. Petroleum lubricating-oils	8,767	Mar. 20	121	978
Gulf Refining Company, Port Arthur, Tex., and Pittsburg, Pa. Petroleum lubricating-oils	8,769	Mar. 20	121	978
Gutchess, Hubert C., Port Byron, N. Y. Pie-fillings	11,230	Mar. 20	121	983
H. Jayess Remedy Co., Baltimore, Md. Liquid remedy for liver and bowel ailments	11,981	Mar. 6	121	306
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,672-3	Apr. 17	121	2298
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,675	Apr. 17	121	2298
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,677	Apr. 17	121	2298
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,679-80	Apr. 17	121	2298
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,682	Apr. 17	121	2298
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,684	Apr. 17	121	2299
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	14,686-92	Apr. 17	121	2299
H. A. Metz & Co., New York, N. Y. Materials suitable for the sizing and finishing of textile fibers	14,693	Apr. 17	121	2299
H. A. Metz & Co., New York, N. Y. Dyestuffs and coloring-matters	15,078	Apr. 17	121	2301
H. D. Smith Co., Cincinnati, Ohio. Chewing-gum	5,111	Apr. 3	121	1628
H. F. Webb Co., Portland, Me. Canned corn and succotash	6,686	Apr. 24	121	2620
H. F. Webb Company, Portland, Me. Canned sugar-corn	6,689	Apr. 24	121	2620
H. F. Webb Company, Portland, Me. Canned corn and succotash	6,690	Apr. 24	121	2620
H. F. Webb Company, Portland, Me. Canned corn and succotash	6,692-3	Apr. 24	121	2620
H. F. Webb Company, Portland, Me. Canned succotash and canned Lima beans	6,694	Apr. 24	121	2620
H. G. Williams & Co., Norfolk, Va. Whisky	7,688	Apr. 24	121	2621
H. K. Mulford Company Philadelphia, Pa. Valuable alkaline antiseptic and deodorant mouth and tooth wash	10,481	Apr. 3	121	1635
H. L. Griesedieck Dist'g Co., St. Louis, Mo. Whisky	8,479	Mar. 27	121	1313
H. T. Paiste Co., Philadelphia, Pa. Devices for connecting branch and main circuits	17,396	Mar. 27	121	1334
H. T. Paiste Co., Philadelphia, Pa. Current-distributing cut-out boards	17,397	Apr. 3	121	1654
H & W Company, Newark, N. J. Corsets and corset-waists	11,553	Mar. 20	121	984
H. W. Huguley Company, Boston, Mass. Whisky	6,332	Mar. 6	121	294
Haan, Rudolph M., New York, N. Y. Scotch whisky	16,785	Apr. 10	121	1960
Hagan & Dodd Co., Atlanta, Ga. Ginger-ale	10,519	Apr. 10	121	1943
Halderman & Michael, Chicago, Ill. Facial cream	7,296	Mar. 6	121	296
Hallaman, Michael, New York, N. Y. Elastic foot-coverings for horses	16,152	Mar. 6	121	319
Hamann, Adolf, Dresden, Germany. Porcelain ware of all kinds	10,775	Mar. 20	121	983
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's leather shoes	16,242-4	Apr. 24	121	2639
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's, boys', women's, misses', and children's leather shoes	16,247	Apr. 24	121	2639
Hamilton-Brown Shoe Company, St. Louis, Mo. Men's and boys' leather shoes	16,248	Apr. 24	121	2639
Hanan-Matheweon Company, Cleveland, Ohio. Leather shoes and slippers	15 781	Apr. 24	121	2641
Hanan & Son, New York, N. Y. Leather and cloth boots, slippers, and shoes	4,752	Apr. 3	121	1628

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hance Bros. & White, Philadelphia, Pa. Antiseptic or disinfecting chemical compound	5,686	Mar. 20	121	975
Haney-Frazier Milling Co., Danville, Pa. Wheat-flour	11,391	Mar. 6	121	304
Hansen, Julius G., Reading, Pa. Cigars	10,924	Apr. 24	121	2626
Harper, Charles W., Boston, Mass. Electrical appliances for assisting the hearing	13,464	Apr. 17	121	2296
Harris, Thomas, New York, N. Y. Scrapple	12,375	Mar. 27	121	1321
Hart & Crouse Co., Utica, N. Y. Steam and hot-water and hot-air heaters	8,130	Mar. 20	121	977
Hart, Francis X., New York, N. Y. Medicines to be taken internally and composed of or having for their base saline compounds	15,450	Apr. 24	121	2637
Hart Manufacturing Company, Hartford, Conn. Switches and sockets, receptacles, connections, and fittings therefor for electrical use	6,365	Mar. 27	121	1310
Hartford Carpet Corporation, Thompsonville, Conn., and New York, N. Y. Rugs	13,745	Apr. 24	121	2632
Hartmiller, Frank J., Lebanon, Mo. Remedy for all disorders of the stomach, liver, and bowels	16,387	Apr. 3	121	1652
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	9,056	Mar. 13	121	659
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	9,055	Mar. 20	121	979
Harvard Brewing Co., Lowell, Mass. Beer and lager-beer	9,058	Apr. 17	121	2289
Harvey, Theodore R., Westfield, N. J. Tooth-powder and antiseptic mouth-wash	16,354	Apr. 17	121	2304
Hauck, Louise, New York, N. Y. Shampoo and scalp-cleansing preparations	15,222	Mar. 20	121	997
Hauck, Louise, New York, N. Y. Polishing and cleansing preparations	15,223	Mar. 20	121	997
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	11,422	Mar. 20	121	984
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,376-7	Apr. 10	121	1962
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	11,424	Apr. 24	121	2627
Havana Commercial Company, Jersey City, N. J., and New York, N. Y. Havana cigars	17,378	Apr. 24	121	2644
Hawkes, A. K., Atlanta, Ga. Spectacles, eyeglasses, and lenses for spectacles and eyeglasses	14,161	Mar. 27	121	1325
Hawley & Hoops, New York, N. Y. Cocoa and chocolate for food products and beverages	8,999	Apr. 24	121	2623
Hayes Mfg. Co., Paterson, N. J. Range-boilers	17,092	Mar. 20	121	1000
Heide, Henry, New York, N. Y. Chocolates and bonbons	16,887	Apr. 24	121	2642
Heide, Henry, New York, N. Y. Peanut-butter	16,888	Apr. 24	121	2642
Heine & Co., New York, N. Y. Oils used in the manufacture of perfume	11,123	Apr. 10	121	1945
Heisel, Joseph H., Leetonia, Ohio. Wheat-flour	16,692	Apr. 10	121	1960
Heller-Aller Co., Napoleon, Ohio. Windmills	17,174	Apr. 24	121	2643
Hellert & Sons, H. J., Vincennes, Ind. Whisky	6,472	Apr. 17	121	2285
Henke, Elizabeth, Stanley, Wis. Remedy for dropsy	10,056	Mar. 13	121	662
Henry Block Co. Limited, New Orleans, La. Wine	5,310	Mar. 27	121	1308
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,104-5	Apr. 17	121	2297
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,110	Apr. 17	121	2297
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,114-15	Apr. 17	121	2297
Henry Disston & Sons, Incorporated, Philadelphia, Pa. Saws	14,118	Apr. 17	121	2297
Henry E. Frankenberg Company, New York, N. Y. Woolen, worsted, and mohair yarns	13,815-16	Mar. 13	121	669
Henry Lang Company, Newark, N. J. Patent, enamel, and fancy-colored leather for the shoe, carriage, upholstery, harness, and horse-collar trade	4,825	Mar. 13	121	651
Henry Milward & Sons, Limited, Redditch, England. Fish-hooks	13,192	Mar. 13	121	668
Henry Milward & Sons, Limited, Redditch, England. Needles for hand and machine sewing	13,197	Mar. 13	121	668
Henry Milward & Sons, Limited, Redditch, England. Fish-hooks, artificial flies and baits	13,193	Apr. 10	121	1950
Henry Tobias and Company, New York, N. Y. Cigars	16,126	Apr. 3	121	1650
Hentz, Jacob H., Jr., Philadelphia, Pa. Rye whisky	6,069	Apr. 17	121	2285
Herbst Importing Co., S. C., Milwaukee, Wis. Cocktails	9,066	Apr. 17	121	2289
Herring-Hall-Marvin Safe Company, Hamilton, Ohio, and New York, N. Y. Safes	7,107	Mar. 27	121	1310
Hersey, Oscar H., Portland, Me. Wooden toothpicks	12,741	Mar. 6	121	310
Hershey, Milton S., Derry Church, Pa. Sweetened chocolate and candy of all kinds	16,773-5	Mar. 13	121	677
Hershey, Milton S., Derry Church, Pa. Chocolate, cocoa, sweet chocolate, milk-chocolate, &c	16,827	Apr. 24	121	2642
Hess-Bright Manufacturing Co., Philadelphia, Pa. Ball-bearings	7,064	Apr. 10	121	1939
Hess & Clark, Dr., Ashland, Ohio. Insect killer or exterminator	8,189	Mar. 6	121	297
Hess & Clark, Dr., Ashland, Ohio. Heave-powder	8,185	Mar. 27	121	1312
Hess & Clark, Dr., Ashland, Ohio. Compound usually put up in powdered form used as a food and medicine for cattle and other stock	8,186	Apr. 3	121	1633
Hess, Lippman E., Philadelphia, Pa. Rainproof coats	1,364	Mar. 27	121	1304
Heuter, E. L., San Francisco, Cal. Varnish	10,270	Apr. 17	121	2290
Heyman & Co., Oscar, New York, N. Y. Corks	16,051	Mar. 6	121	318
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Silver-plated hollow, flat, and table ware	13,581	Mar. 20	121	989
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Pocket, table, butcher, sticking, skinning, paring, and carving knives and razors and parts thereof	13,582	Mar. 20	121	990
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Harnesses, saddles, and parts thereof	13,584	Mar. 20	121	990
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Telephones and parts thereof	13,585	Mar. 20	121	990
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Sewing-machines and parts thereof	13,838	Mar. 20	121	990
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Harnesses, saddles, and parts thereof	13,840	Mar. 20	121	990
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Pocket, table, butcher, sticking, skinning, paring, and carving knives and razors and parts thereof	13,841	Mar. 20	121	991
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Silver-plated hollow, flat, and table ware	13,842	Mar. 20	121	991
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Pocket, table, butcher, sticking, skinning, paring, and carving knives and razors	15,133	Mar. 20	121	996
Hibbard, Spencer Bartlett & Company, Chicago, Ill. Lawn-mowers and parts thereof	15,414	Apr. 3	121	1646
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shovels, spades, scoops, and spading-forks	15,416	Apr. 10	121	1955
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shears and scissors	17,742	Apr. 17	121	2308
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Saws and saw-blades	17,743	Apr. 17	121	2308
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Food and meat choppers	17,745	Apr. 17	121	2309
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatches, and adzes	13,583	Apr. 24	121	2632
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Shotguns, rifles, pistols, and parts thereof	13,839	Apr. 24	121	2633
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Kitchen utensils made of tin	13,850	Apr. 24	121	2633
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Pocket, table, butcher, sticking, skinning, paring, and carving knives and razors	13,853	Apr. 24	121	2633
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatchets, and adzes	13,854-5	Apr. 24	121	2633
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Base, foot, and tennis balls	15,415	Apr. 24	121	2636
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Foot, base, and tennis balls	16,764	Apr. 24	121	2641
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Axes, hatches, and adzes	17,151	Apr. 24	121	2643
Higdon, John C., St. Louis, Mo. Automobiles	12,740	Apr. 17	121	2294
Higginsville Milling Company, Higginsville, Mo. Wheat-flour	12,166	Mar. 20	121	986
Highland Milling Company, Highland, Ill. Wheat-flour	14,964	Mar. 27	121	1327
Hilbert Mercantile Co., San Francisco, Cal. Whisky	9,033	Mar. 20	121	978
Hildreth, Herbert L., Boston, Mass. Candy	15,830	Mar. 6	121	318
Hill, James B., Los Angeles, Cal. Metal-polish	9,745	Mar. 13	121	661
Hill, Joseph P., Worcester, Mass. Ash-sifters	7,716	Mar. 27	121	1311
Hill, Robert, New York, N. Y. Olive-oil	15,163-5	Mar. 20	121	996-7
Hill Top Oil Co. Ltd., New Orleans, La. Axle-grease	15,143	Apr. 10	121	1954
Himes, Jacob E., Kansas City, Mo. Brewers' pitch	4,431	Apr. 3	121	1628
Hinkley Bone Liniment Company, Saginaw, Mich. Liniment for rheumatism, neuralgia, wounds, sore throat, colic, toothache, chilblains, &c	13,327	Apr. 3	121	1642

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Hirsch & Co., S., Kansas City, Mo. Whisky	15,639	Mar. 6	121	317
Hirschman, Harris, Baltimore, Md. Black Graham bread	13,042	Mar. 13	121	667
Hirsh Brothers, New York, N. Y. Waterproof textile fabrics and garments for external wear, including overcoats, coats, vests, and trousers made therefrom	11,840	Mar. 6	121	306
Hirsh Brothers, New Haven, Conn. Waterproof hats and caps	15,460	Apr. 24	121	2637
Hirsh Brothers, New Haven, Conn. Waterproof leather and canvas boots and shoes	15,461	Apr. 24	121	2637
Hochstadter, Sigmund, New York, N. Y. Bitters	14,333	Apr. 10	121	1953
Hodge Fence & Lumber Co., Ltd., Lake Charles, La. Wire fences and combination wood-and-wire fences	14,635	Apr. 24	121	2635
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	5,145	Mar. 27	121	1308
Hoffheimer Bros. Co., Cincinnati, Ohio. Whisky	5,141	Apr. 3	121	1628
Hoffman and Co., Red Hook, N. Y. Chewing and smoking tobacco	5,143–4	Apr. 10	121	1936–7
Hohenadel, P., Jr., Janesville, Wis., and Rochelle, Ill. Canned corn	1,708	Mar. 13	121	648
Holberg, Abraham S., Mobile, Ala. Ginger-ale	10,163	Mar. 27	121	1315
Holgate, George H., Philadelphia, Pa. Self-carbureting lamps	16,427	Mar. 6	121	320
Holland Medicine Company, Washington, D. C., and Philadelphia, Pa. Oil commonly known as "Haarlem oil"	13,646	Apr. 3	121	1642
Holland Rusk Co., Holland, Mich. Biscuits known as rusks	5,688–9	Apr. 17	121	2284
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks.	9,944	Mar. 6	121	300
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks.	15,909	Apr. 3	121	1649
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper and paper bags and sacks.	15,911	Apr. 3	121	1649
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags and sacks	15,918	Apr. 3	121	1649
Hollingsworth & Whitney Company, Boston, Mass. Wrapping-paper, paper bags and sacks	15,914	Apr. 10	121	1957
Holloway, William, Philadelphia, Pa. Medicated ointment	15,919	Apr. 10	121	1957
Holophane Glass Company, New York, N. Y. Periodical publication	10,942	Apr. 3	121	1636
Hook & Crownfield, Baltimore, Md. Chocolate-coated candy	15,680	Apr. 17	121	2302
Hooker Medicine Company, Hillsboro, Tex. Cure for tetter	16,314	Mar. 6	121	319
Hoon, Nettie M., Mercer, Pa. Antiseptic solution	16,437	Apr. 3	121	1652
Horn, James A., Horn Springs, Tenn. Mineral water	14,470	Mar. 6	121	315
Horton Manufacturing Company, Bristol, Conn. Fishing-rods	17,409	Apr. 3	121	1654
Horton, Stephen D., Peekskill, N. Y. Fire-bricks for lining stoves and furnaces	15,186	Mar. 20	121	997
Horwood, Edward H., New York, N. Y. Underwaists	6,055	Mar. 20	121	976
Hoster-Columbus Associated Breweries Co., Columbus, Ohio. Beer	12,779	Apr. 10	121	1949
Hovey & Co., C. F., Boston, Mass. Dress-shields	3,633	Apr. 17	121	2280
Howard, Wm. G., *et al.*, executors. (See Beckwith, Philo D.)	11,053	Apr. 3	121	1637
Howe, Charles L., Boston, Mass. Preparation for insecticide, germicide, deodorizing, and disinfecting purposes	16,350	Apr. 24	121	2639
Howells Mining Drill Co., Plymouth, Pa. Coal and rock drills, machines for drilling coal and rock, and parts thereof	14,468	Mar. 13	121	671
Hoyt, Joseph M., Danvers, Mass. Checking, school, and marking crayons	17,609	Apr. 10	121	1965
Hubbs & Corning Co., Baltimore, Md. Wrapping cord and twine	16,828	Mar. 13	121	677
Hubbs & Corning Co., Baltimore, Md. Toilet-papers	16,829	Mar. 13	121	678
Hudon, Charles B., Manchester, N. H. Internal remedy for headache	15,890	Mar. 20	121	998
Hudson & Co. Inc., New York, N. Y. Preparation for the treatment of the head and hair	3,207	Mar. 27	121	1306
Hudson County Consumers Brewing Co., West Hoboken, N. J. Lager-beer	15,128	Mar. 13	121	674
Hughes Company, William G., Los Angeles, Cal. Antiseptic dressing	17,212	Apr. 24	121	2644
Hughes, Russell M., Louisville, Ky. Fruit-juice beverage	5,896	Mar. 13	121	652
Hull Coal and Coke Corporation, Roanoke, Va. Coal and coke	385	Mar. 6	121	289
Hulman & Co., Terre Haute, Ind. Spices and mustard	8,647	Apr. 3	121	1633
Humphreys, Godwin & Co., Memphis, Tenn. Cotton-seed meal and nut-cake	4,284	Apr. 10	121	1935
Hungarian Milling & Elevator Co., Denver, Colo. Wheat-flour	5,644	Mar. 13	121	652
Hunold, Ernest, Providence, R. I. Liquids for use in sharpening edged instruments	10,706	Apr. 24	121	2626
Hunter, J. B., Zanesville, Ohio. Leather boots and shoes	3,100–1	Mar. 27	121	1305–6
Huntington & Son, Hugh, Cleveland, Ohio. Asphalt	5,573	Mar. 20	121	975
Hutchison Acoustic Company, New York, N. Y. Telephones	16,895	Apr. 17	121	2307
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	3,655–9	Mar. 20	121	972
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	3,661	Mar. 20	121	973
I. B. Kleinert Rubber Company, New York, N. Y. Hose-supporters	3,664–5	Mar. 20	121	973
I. B. Kleinert Rubber Company, New York, N. Y. Dress-shields	3,663	Apr. 24	121	2617
Idone, Angelicus R., Pittsburg, Pa. Plasters for rheumatism, pain, soreness, and inflammation	7,060	Mar. 6	121	295
Illuminating Engineering Publishing Co., New York, N. Y. Periodical publication	15,946	Apr. 17	121	2303
Importers Coffee Company, Duluth, Minn. Roasted coffee in cans or other packages	2,126	Mar. 20	121	970
Independent Snuff Company, Chicago, Ill. Smoking and chewing tobacco	16,515	Apr. 3	121	1652
Independent Tobacco Manufacturers Promoting Company, Chicago, Ill. Cigars, stogies, and cheroots	17,310	Apr. 3	121	1654
Indian Head Mills of Alabama, Cordova, Ala. Cotton piece goods	17,666	Apr. 24	121	2646
Industrie-Gesellschaft für Schappe, Basel, Switzerland. Spun silk	10,774	Apr. 10	121	1944
Ingram, Frederick F., Detroit, Mich. Face-creams	9,636	Mar. 6	121	299
Inland Chemical Co., Indianapolis, Ind. Laxatives	9,604	Mar. 13	121	661
Interior Hardwood Co., Indianapolis, Ind. Liquid-varnish coating for interior woodwork	1,770	Apr. 17	121	2279
International Harvester Co. of America, Chicago, Ill. Self-binding harvesters, reapers, mowers, and separate parts thereof	12,112	Mar. 6	121	306
International Harvester Co. of America, Chicago, Ill. Grain-binding, corn, and rice harvesters, mowers and reapers, as well as extra and repair parts and pieces for such apparatus	12,108	Mar. 13	121	666
International Harvester Company of America, Chicago, Ill. Grain-binding, corn, and rice harvesters, mowers and reapers, and extra and repair parts for same	11,453	Mar. 6	121	304
International Harvester Company of America, Chicago, Ill. Grain-binding, corn, and rice harvesters, mowers and reapers, and extra and repair parts for same	5,910	Apr. 17	121	2285
International Silver Company, Meriden, Conn. Silver-plated hollow ware	14,477	Mar. 20	121	993
International Silver Company, Meriden, Conn. Silver-plated flat and hollow ware	15,236	Mar. 20	121	997
International Union of Journeymen Horseshoers, Denver, Colo. Horseshoes	16,060	Mar. 27	121	1330
Isaac Harter Milling Company, Toledo, Ohio. Wheat-flour	15,467	Mar. 20	121	997
Ives & Co., W. P., Norfolk, Va. Whisky	4,692	Apr. 10	121	1936
J. Ellwood Lee Company, Conshohocken, Pa. Elastic hosiery	16,689	Mar. 11	121	676
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages and trusses	17,057	Mar. 13	121	680
J. Ellwood Lee Company, Conshohocken, Pa. Suspensory bandages	17,058	Mar. 20	121	999
J. Ellwood Lee Company, Conshohocken, Pa. Adhesive plasters	17,059	Mar. 20	121	1000
J. Ellwood Lee Company, Conshohocken, Pa. Trusses	17,067–8	Mar. 20	121	1000
J. Hauff & Co. G. m. b. H., Feuerbach, near Stuttgart, Germany. Photographic developers	15,774–5	Apr. 10	121	1956
J. B. Ford Company, Ford, Mich. Dry soluble alkali powders for cleaning, cleansing, and washing, for household, factory, and other purposes	15,065	Apr. 3	121	1645
J. D. Riedel Aktiengesellschaft, Berlin, Germany. Medicinal preparation for cure of syphilis, tabes, bilious and bladder diseases	14,502	Apr. 17	121	2298
J. & G. Butler Co., Columbus, Ohio. Whisky	8,504	Mar. 27	121	1313
J. G. Haas Soap Co., St. Louis, Mo. Laundry soap	960	Mar. 27	121	1302

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
J. H. Williams & Co., New York, N. Y. Wrenches and vises	9,533	Apr. 24	121	2624
J. J. Douglas Co., Louisville, Ky. Gin	16,032	Apr. 10	121	1957
J. L. Iles Co., Davenport, Iowa. Wheat and Graham flour	12,221	Apr. 3	121	1638
J. M. Horton Ice Cream Co., New York, N. Y. Ice-cream, ices, and frozen custards	10,396	Mar. 6	121	301
J. & P. Coats, Ltd., Paisley, Scotland. Sewing-cotton wound on spools or reels	13,692	Apr. 3	121	1642
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	1,102	Mar. 6	121	289
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless codfish	1,103	Mar. 6	121	290
Jacob J. Seeds & Co., Philadelphia, Pa. Panama hats	13,704	Apr. 24	121	2632
Jaenecke Printing Ink Co., Newark, N. J. Printing and lithographing inks, printing-ink varnishes, and dry colors	13,522	Apr. 10	121	1951
James A. Banister Company, Newark, N. J. Men's and boys' leather boots, shoes, and slippers	17,269	Mar. 27	121	1333
James C. Lindsay Hardware Co., Pittsburg, Pa. Pocket and butcher knives	16,461	Apr. 17	121	2305
James Hanley Brewing Co., Providence, R. I. Ale	16,047	Mar. 6	121	318
Jamison, James, East Orange, N. J. Hosiery	8,053	Apr. 24	121	2621
Jay C. Wemple Co., New York, N. Y. Window-shade cloth and shades	14,355	Mar. 27	121	1325
Jenkins, Alfred B., New York, N. Y., and Boston, Mass. Rubber packing, gaskets, disks, rings, and washers	15,012–13	Apr. 24	121	2636
Jennings, Albert G., New York, N. Y. Hair-nets	14,432–3	Mar. 6	121	315
Jewett Piano Co., Leominster, Mass. Pianos	16,904	Mar. 13	121	678
Jno. Werner & Co. G. m. b. H., Mannheim, Germany. Brewers' varnishes and enamels	18,342	Apr. 24	121	2648
Joern, Theodore, St. Louis, Mo. Preparation for cleaning clothes, colored kid gloves, carpets, and washing hair				
John B. Canepa Company. (See Canepa, John B., assignor.)	6,244	Mar. 20	121	976
John B. Canepa Company, Chicago, Ill. Cereal paste foods, such as macaroni, spaghetti, and vermicelli				
John B. Stetson Company, Philadelphia, Pa. Hats and caps	12,214	Mar. 27	121	1321
John Boehm Co., Pittsburg, Pa. Noodles and vermicelli	1,457	Mar. 6	121	290
John Eichler Brewing Co., New York, N. Y. Beer	13,950	Apr. 10	121	1952
John F. Wiessner & Son's Brewing Co. of Baltimore City, Baltimore, Md. Lager-beer	12,347	Apr. 24	121	2628
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	4,738	Mar. 20	121	974
John J. Clark & Co., Pawtucket, R. I. Spool-cotton	11,758–9	Mar. 6	121	305–6
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	11,761–3	Mar. 6	121	306
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	3,571–3	Mar. 27	121	1305
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	3,575	Mar. 27	121	1306
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	3,577–8	Mar. 27	121	1306
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	3,580–4	Mar. 27	121	1306
John L. Whiting & Son Co., Boston, Mass. Brushes of all kinds	3,586–92	Mar. 27	121	1307
John Lane Company, New York, N. Y. Monthly magazine	3,579	Apr. 3	121	1626
John Morrell & Company, Limited, Ottumwa, Iowa. Bacon and hams	16,656	Mar. 6	121	322
John T. Lewis & Bros. Co., Philadelphia, Pa. White lead	15,260	Mar. 6	121	317
John W. Masury & Son, Brooklyn, N. Y. Mixed paints	12,825–6	Apr. 24	121	2629
Johnson, Edwin, Pittsburg, Pa. Wood-finish for finishing all kinds of wood surfaces	12,509	Mar. 20	121	988
Johnson & Johnson, New Brunswick, N. J. Adhesive plasters	12,799	Apr. 24	121	2629
Johnson & Johnson, New Brunswick, N. J. Felted absorbent cotton	13,991	Mar. 27	121	1324
Johnson & Johnson, New Brunswick, N. J. Felted absorbent cotton	14,005	Mar. 27	121	1325
Johnson, Robert H. N., London, England. Aperient pills and pills for the treatment of the liver and kidneys	14,009	Mar. 27	121	1325
Johnson & Son, S. C., Racine, Wis. Wax suitable for finishing floors, woodwork, and furniture	12,232	Mar. 27	121	1320
Johnson & Son, W. S., Henderson, Ky. Laxatives	4,032	Mar. 6	121	291
Johnston, Michael H., Galesburg, Ill. Laxative for the human system	7,945–6	Mar. 13	121	657
Johnston, William J., New York, N. Y. Weekly periodical	13,325	Apr. 24	121	2631
Jonas Brook & Bros., Limited, Meltham, England. Sewing cotton and thread	12,140	Mar. 20	121	986
Jones Bros. Overall Company, Dubuque, Iowa. Children's suits and parts of suits	13,085	Mar. 6	121	311
Jones and Co., W. H., Boston, Mass. Whisky	8,541	Apr. 17	121	2287
Jones & Co., W. H., Boston, Mass. Wine	247	Mar. 13	121	647
Jones and Co., W. H., Boston, Mass. Whisky	16,007	Mar. 13	121	676
Jones and Co., W. H., Boston, Mass. Whisky	251	Mar. 20	121	969
Jones and Co., W. H., Boston, Mass. Wine	250	Mar. 27	121	1303
Jones and Co., W. H., Boston, Mass. Cocktails and punch	4,130	Mar. 27	121	1306
Joralemon, Edgar M., Newark, N. J. Water-closet and bath-room seats and tanks covered with a pyroxylin compound	252	Apr. 10	121	1933
Joseph Burnett Co., Boston, Mass. Color-pastes	16,814	Apr. 24	121	2642
Joseph Schlitz Brewing Company, Milwaukee, Wis. Lager-beer	14,500	Apr. 3	121	1645
Joseph W. Woods and Son Corporation, Boston, Mass. Printed cotton fabrics	11,277	Mar. 6	121	303
Josselson Bros. & Co., Louisville, Ky. Whisky	16,257	Apr. 17	121	2304
Judd, Henry S., Chicago, Ill. Washing-machines	16,419–20	Apr. 24	121	2640
Jungmann, J., New York, N. Y. Remedy for cure of diseases of the respiratory organs	15,274	Apr. 3	121	1646
K K K Medicine Company, Keokuk, Iowa. Laxatives	10,646	Apr. 17	121	2291
K K K Medicine Company, Keokuk, Iowa. Liniments and ointments, externally and internally applied pain cures, &c	65	Mar. 27	121	1303
K. k. landespriv. Milly-Kerzen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co., Vienna and Liesing, near Vienna, Austria-Hungary. Preparations for the cleansing and preservation of the teeth and mouth	67	Apr. 3	121	1625
Kahle, Francis U., Buffalo, N. Y. Remedy for fevers, tuberculosis, &c	11,241	Apr. 24	121	2627
Kahn & Bros., F & L, Hamilton, Ohio. Stoves and furnaces	5,814	Apr. 10	121	1937
Kahn & Co., L., Cleveland, Ohio. Whisky	8,544	Mar. 13	121	659
Kamp Distilling Co., St. Louis, Mo. Whisky	3,724	Mar. 13	121	650
Karpati Medicine Co., G., New Orleans, La. Medicine for fevers used in liquid form	9,028	Apr. 24	121	2623
Kastor & Bros., Adolph, New York, N. Y. Scissors	9,853	Mar. 6	121	300
Kastor & Bros., Adolph, New York, N. Y. Pocket-knives	17,201	Mar. 20	121	1001
Kathairo Chemical Co., New York, N. Y. Disinfectants	7,288	Mar. 27	121	1310
Kaufmann, Baer & Co., Cincinnati, Ohio. Whisky	14,021	Apr. 3	121	1643
Kaufmann Bros. & Co., Toledo, Ohio. Whisky	4,509	Mar. 27	121	1308
Keatinge, John R., New York, N. Y. Type-writer ribbons	8 951	Apr. 17	121	2289
Kef Chemical Co., Washington, D. C. Headache medicine	15,033	Mar. 27	121	1328
Kefilac Company, Atlanta, Ga. Lozenges or tablets for fermentation purposes	16,384	Apr. 3	121	1652
Kehlmann, Leopold, New York, N. Y. Cigarette-paper in all forms	15,060	Mar. 6	121	317
Keidel, Henry, Baltimore, Md. Razors	17,365	Mar. 27	121	1333
Keidel, Henry, Baltimore, Md. Steel axes and hatchets	8,294	Mar. 6	121	297
Keith Brothers & Co., Chicago, Ill. Hats and caps for men and boys	11,827	Mar. 13	121	665
Kellom, Charles F., Philadelphia, Pa. Lubricating oils and grease	11,523–4	Apr. 10	121	1945–6
Kelly, George W., Belmont, Ohio. Cigars	15,618	Apr. 17	121	2302
Kennedy, Dennis F., Haverhill, Mass. Patent kid and patent colt skins	16,222	Mar. 27	121	1331
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	14,211	Apr. 10	121	1953
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	3,654	Mar. 20	121	972
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons and dump-carts	3,652	Mar. 27	121	1307
	4,413	Mar. 27	121	1308

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Kentucky Wagon Manufacturing Company, Louisville, Ky. Farm-wagons	5,355	Mar. 27	121	1306
Kerrin, Patrick, New York, N. Y. Chemical solution for preserving materials from rust, decay, and scaling	12,408	Apr. 10	121	1943
Kertell, Charles P., San Francisco, Cal. Prepared food for animals and poultry	16,436	Apr. 17	121	2304
Kevil & Sons, R. W., Princeton, Ky. Wheat-flour	7,026	Mar. 13	121	655
Kiefer & Co., Los Angeles, Cal. Whisky	9,311	Apr. 17	121	2289
Kilbourne & Jacobs Manufacturing Company, Columbus, Ohio. Earth-scrapers	13,204	Mar. 27	121	1322
Kirk-Geary & Company, Sacramento and San Francisco, Cal. Intensifiers for weak negatives	16,395	Mar. 6	121	319
Klein, Jacob, South Omaha, Nebr. Whisky	9,726	Apr. 10	121	1943
Kleinschmidt, Augustus A., St. Louis, Mo. Blood-purifier and liver-tonic	2,002	Mar. 20	121	970
Klemm, Charles W., Bloomington, Ill. Children's suits	16,293	Apr. 3	121	1651
Kline & Co., Louis, San Francisco, Cal. Hats and caps	12,276	Apr. 10	121	1947
Kline, John J., New York, N. Y. Salve for cure of freckles	13,305	Apr. 17	121	2296
Kloczewski & Co., K., Washington, D. C. A vegetable compound to be used for medical purposes as a cure for malaria, &c	267	Apr. 3	121	1625
Knerr, Levi J., Philadelphia, Pa. General and nerve tonics and nutrients, &c	12,236	Mar. 13	121	666
Knickerbocker Brace Co., Easton, Pa. Shoulder-braces, chest-expanders, and suspenders	6,396	Mar. 13	121	653
Knickerbocker Chocolate Company, New York, N. Y. Rock-candy and rock-candy syrups	14,509	Apr. 10	121	1963
Knoll & Co., Ludwigshafen-on-the-Rhine, Germany. Medicine for kidney and heart diseases	13,680	Mar. 6	121	313
Kops Bros., New York, N. Y. Corsets	14,209	Mar. 20	121	993
Körting & Mathiesen Aktiengesellschaft, Leutzsch, Germany. Electric lamps of all kinds	16,999	Mar. 13	121	679
Krementz & Co., Newark, N. J. Brooches, scarf-pins, and cuff-pins	12,023	Apr. 10	121	1947
Kroto Pharmaceutical Company, Albany, N. Y. Specific for the treatment of whooping-cough	10,250	Mar. 13	121	662
Krusius, Ewald, New York, N. Y. Knives and razors	18,166	Apr. 24	121	2647
Kuhlmann, Elizabeth, Cincinnati, Ohio. Whisky	14,466	Mar. 6	121	315
Kupfer & Co., Henry, New York, N. Y. Velvets and velveteens	16,199	Apr. 3	121	1650
Kuttroff, Pickhardt & Company, assignor to Continental Color and Chemical Co., New York, N. Y. Dyestuff	14,914–17	Mar. 13	121	673
L. E. Waterman Company, New York, N. Y. Fountain-pens	4,348	Mar. 6	121	291
Labatt, John, London, Canada. Ale	4,087	Mar. 27	121	1307
Laliberte, Albert S., Williamstown, Mass. Liquid paint	16,961	Apr. 24	121	2642
Lambert, Moses H., New Haven, Conn. Shirts, collars, and cuffs	16,480	Mar. 6	121	321
Lambert Pharmacal Co., St. Louis, Mo. Soaps for hygienic and antiseptic personal use	2,747	Apr. 24	121	2616
Landau & Co., Louis, St. Louis, Mo. Canned corn, peas, pineapples, hominy, tomatoes, &c	15,601	Apr. 3	121	1648
Lang, Schenck & Co., Columbus, Ohio. Whisky	9,440	Mar. 13	121	660
Lang, Schenck & Co., Columbus, Ohio. Whisky	9,437	Mar. 20	121	979
Lanigan, Edward N., St. Louis, Mo. Toilet powders and creams	10,494	Apr. 10	121	1942
Lanman & Kemp, New York, N. Y. Sarsaparilla	15,088	Mar. 13	121	674
Lansingh, Van Rensselaer, New York, N. Y. Periodical publication	15 681	Apr. 17	121	2302
Lattemann, John J., New York, N. Y. Ankle-supporting leather shoes	13,178	Apr. 17	121	2295
Laughlin, Elmyr A., Chicago, Ill. Prepared roofing-felt	4,368	Mar. 6	121	292
Lavoris Chemical Company, Minneapolis, Minn. Astringent, antiseptic, &c., medicine for use as a mouth, nose, and throat wash	14,378	Apr. 17	121	2297
Lawall's Son & Co., Cyrus, Easton, Pa. Vermicide	12,370	Mar. 20	121	988
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	12,725	Mar. 6	121	310
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	12,727	Mar. 6	121	310
Lawrenceburg Roller Mills Company, Lawrenceburg, Ind., and Boston, Mass. Wheat-flour	12,726	Apr. 10	121	1949
Lawton, Harry A., Cleveland, Ohio. Mineral compound for cleaning brass and other metals	14,611	Mar. 13	121	671
Lazarus, Louis, Lynchburg, Va. Whisky	4,492	Mar. 20	121	974
Lazarus & Nassauer, Cairo, Ill. Whisky	7,008	Apr. 17	121	2285
Le Compte, Benjamin W., Galveston, Tex. Whisky	17,476	Apr. 10	121	1963
Leak, William H., Watertown, N. Y. Root-canal filling	8,262	Mar. 13	121	658
Ledeboer & Van Der Held, Rotterdam, Holland. Wheat-flour	15,022	Mar. 13	121	674
Lee Broom & Duster Company, Lincion, Nebr. Brooms	16,857	Apr. 10	121	1961
Lee, Frank, Newport News, Va. Medicine for poultry	4,414	Mar. 13	121	651
Lee, Fred E., *et al.*, executors. (See Beckwith, Philo D.)				
Lee, William H., Chicago, Ill. Diaries	15,343	Mar. 6	121	317
Leffler, Thiele & Co., New York, N. Y. Hollow enameled steelware	15,312	Mar. 27	121	1329
Leggett & Brother, New York, N. Y. Insecticides	2,812	Mar. 20	121	971
Leona Garment Company, Chicago, Ill. Women's combination undergarments	9,747	Apr. 3	121	1635
Leonard & Co., George H., Boston, Mass. Sumac, gambier, oak, and hemlock extracts	9,008	Mar. 13	121	659
Leonhardt & Co., Schoeneberg, Germany. Horseshoe-studs	4,044	Apr. 3	121	1628
Leonhardt, Oscar F., Baltimore, Md. Toothache-wax	11,263	Mar. 13	121	664
Lester Piano Company, Philadelphia, Pa. Upright and grand pianos	14,835	Apr. 10	121	1953
Lever Brothers Company, Cambridge, Mass. Soap	16,860	Apr. 10	121	1961
Levi Strauss and Company, San Francisco, Cal. Undervests, jerseys, and drawers	6,726	Apr. 3	121	1630
Levy & Co., L. W., Galveston, Tex. Whisky	4,877	Apr. 10	121	1936
Lewinsohn, E., Berlin, Germany. Fancy leathers, ostrich-feathers, and feather trimmings	10,575	Apr. 17	121	2291
Libbey Glass Company, Toledo, Ohio. Cut-glass articles	17,208	Apr. 24	121	2644
Liberty Mills, Nashville, Tenn. Wheat-flour	16,712	Mar. 13	121	676
Liberty Mills, Nashville, Tenn. Wheat-flour	16,715–16	Mar. 13	121	676
Liberty Mills, Nashville, Tenn. Wheat-flour	16,714	Apr. 17	121	2306
Liberty Silk Company, New York, N. Y. Dress-silk	13,880	Mar. 6	121	313
Lichtenstein's Sons, L., Richmond, Va. Linen thread	11,255	Apr. 3	121	1637
Liebig Extract Company, New York, N. Y. Beef extracts and beef, iron, and wine	11,791	Mar. 20	121	985
Lilly Coal Co., Altoona, Pa. Semibituminous coal used for welding and forging iron and steel	2,035	Mar. 13	121	649
Lion Fence Co., Adrian, Mich. Wire fencing	16,516	Mar. 6	121	321
Lipman, Albert, Cincinnati, Ohio. Whisky	6,526	Mar. 20	121	976
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Culinary utensils made of copper ware	17,165	Mar. 20	121	1001
Lisk Manufacturing Co. Limited, Canandaigua, N. Y. Culinary utensils made of galvanized ware	17,064	Mar. 27	121	1333
Lisk Manufacturing Co. Limited, Canandaigua, N. Y. Cooking utensils made of tinware	3,218	Apr. 10	121	1936
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of enameled steelware	15,429	Apr. 10	121	1955
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Culinary articles made of tin	2,502	Apr. 17	121	2279
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of galvanized ware	15,430	Apr. 17	121	2302
Lisk Manufacturing Co., Limited, Canandaigua, N. Y. Household articles made of copper ware	15,431	Apr. 17	121	2302
Lloyd Brothers, Cincinnati, Ohio. Pharmaceutical preparation manufactured from oil of wintergreen and used as an antiseptic	9,924	Mar. 6	121	290
Lloyd Brothers, Cincinnati, Ohio. Anodynes	7,734	Mar. 13	121	657
Lodge and Shipley Machine Tool Company, Cincinnati, Ohio. Book of directions for technical instructions	6,440	Mar. 13	121	654
Loeb, Adolph, Cincinnati, Ohio. Whisky	8,965	Apr. 17	121	2289
London Needle Company, New York, N. Y. Self-threading needles	13,433	Mar. 6	121	312
Londonderry Lithia Spring Water Company, Nashua, N. H. Lithia-spring water	6,422	Mar. 13	121	653
Loonen, Charles, Paris, France. Tooth-brushes	10,698	Apr. 3	121	1636

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Loonen, Charles, Paris, France. Tooth-brushes	10,657	Apr. 10	121	1943
Lorillard Refrigerator Co., New York, N. Y. Refrigerators	12,489	Mar. 6	121	309
Lorillard Refrigerator Co., New York, N. Y. Refrigerators	13,961	Mar. 13	121	669
Lowenthal, William, Cohoes, N. Y. Packages of cotton-batting of various sizes and weights prepared for the market, trade, and commerce	14,884	Mar. 20	121	994
Lowenthal, William, Cohoes, N. Y. Packages of cotton-batting of various sizes and weights prepared for the market and for trade and commerce	14,883	Mar. 27	121	1327
Lubelsky & Son, Moses, New York, N. Y. White lead	13,083	Apr. 17	121	2295
Luedere & Co., George, New York, N. Y.; Chicago, Ill., and San Francisco, Cal. Olive and salad oil for table use and cooking	1,697	Mar. 20	121	970
Luedere & Co., George, New York, N. Y.; Chicago, Ill., and San Francisco, Cal. Vanillin and coumarin	1,696	Mar. 20	121	970
Lunkenheimer Company, Cincinnati, Ohio. Grease-cups	10,793	Mar. 13	121	663
Lunkenheimer Company, Cincinnati, Ohio. Blow-off valves	10,798	Mar. 13	121	663
Lustig Bros., New York, N. Y. Panama hats	11,147	Mar. 6	121	303
Lustig Bros., New York, N. Y. Hats	10,663	Apr. 3	121	1636
Luyties Brothers, New York, N. Y. Gin	14,652	Apr. 17	121	2298
Luze & fils, A. de, Bordeaux, France. Wines	7,489	Apr. 24	121	2621
Lynchburg Shoe Co., Lynchburg, Va. Leather boots and shoes	14,544–5	Apr. 10	121	1953
Lyon, Amos M., New York, N. Y. Chewing-gum	16,046	Apr. 3	121	1650
Lyon & Healy, Chicago, Ill. Concertinas and accordions	11,350	Apr. 3	121	1637
Lyon & Healy, Chicago, Ill. Musical boxes and tune-disks	11,355	Apr. 3	121	1637
Lyon & Healy, Chicago, Ill. Guitars and mandolins	11,360	Apr. 3	121	1637
Lyon & Healy, Chicago, Ill. Guitars and mandolins	11,364	Apr. 3	121	1637
Lyons Ink, Limited, Manchester, England. Liquid glue, gum, and mucilage	11,357	Apr. 10	121	1945
M. Wile & Company, Buffalo, N. Y. Coats, vests, trousers, and overcoats	11,652	Mar. 27	121	1319
M. D. Wells Co., Chicago, Ill. Leather boots, shoes, and slippers	12,074	Mar. 27	121	1320
M K Goetz Brewing Co., St. Joseph, Mo. Malt extracts	11,079	Apr. 24	121	2626
M. K. Goetz Brewing Co., St. Joseph, Mo. Malt extracts	14,765	Mar. 20	121	994
Macbeth-Evans Glass Company, Pittsburg, Pa. Carbons for lamp chimneys and globes	16,104	Apr. 10	121	1958
Mackrell, Susanna W., Asbury Park, N. J. Remedy for the cure of St. Vitus dance or chorea	17,368	Apr. 10	121	1961
Macomber & Whyte Rope Company, Chicago, Ill. Wire rope	10,122	Mar. 20	121	961
Magic Curler Company, Philadelphia, Pa. Hair-curlers	16,091	Apr. 10	121	1958
Magnet Wire Company, New York, N. Y. Magnetic-wire for trolley use	17,384	Mar. 27	121	1334
Magnolia Metal Company, New York, N. Y. Antifriction metals or alloys	6,047	Apr. 10	121	1937
Magnus & Co., Jos. A., Cincinnati, Ohio. Whisky	17,390–1	Apr. 10	121	1962
Malarine Medical Company, Providence, R. I. Medicine for various forms of fever	2,040	Mar. 27	121	1304
Manheimer & Bros., Louis, Chicago, Ill. Watch-movements	15,507	Apr. 10	121	1955
Manitou Mineral Springs Company, Manitou, Colo. Ginger-champagne	14,766	Apr. 24	121	2635
Manitou Mineral Springs Company, Manitou, Colo. Effervescent or carbonated mineral water	5,812	Apr. 17	121	2284
Manitou Mineral Springs Company, Manitou, Colo. Ginger-champagne	5,813	Apr. 17	121	2284
Manning, Joseph A., Boston, Mass. Leather and cloth shoes	11,729	Apr. 17	121	2292
Manufacture Française D'Oeillets Métalliques, (ancienne Maison G. Bac,) Paris, France. Eyelets for shoes	6,519	Apr. 10	121	1938
Manufacturing Company of America, Philadelphia, Pa. Mint candy	12,387	Mar. 20	121	987
Manufacturing Company of America, Philadelphia, Pa. Candy	15,655	Mar. 6	121	318
Marcus Bros., New York, N. Y. Taffeta silk, crêpe de chine, &c.	15,930	Apr. 10	121	1957
Mariani & Co., New York, N. Y. Tonics and medicated wines	13,284	Apr. 10	121	1950
Marine Paint Corporation, Norfolk, Va. Mixed paints	13,956	Mar. 27	121	1324
Marsh & Riley, Pine Bluff, Ark. Wheat-flour	15,749	Apr. 10	121	1956
Marshuetz & Co., A. G., New York, N. Y. Whisky	11,150	Apr. 10	121	1945
Martin & Bro., G. W., New York, N. Y. Eggs	4,155	Apr. 17	121	2280
Martin, William L., New York, N. Y. Tooth and nail brushes	12,925	Apr. 10	121	1949
Maryland Distilling Co., Baltimore, Md. Whisky	17,454	Apr. 3	121	1654
Maryland Distilling Co., Chicago, Ill. Whisky	11,613	Mar. 20	121	984
Mason, Albert G., Cleveland, Ohio. Sewing-machines	4,479	Apr. 17	121	2280
Massachusetts Chemical Company, Walpole, Mass. Insulating-tape	11,960	Mar. 6	121	306
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	15,383	Mar. 27	121	1329
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,983	Mar. 6	121	302
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,236	Mar. 6	121	293
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,257	Mar. 6	121	293
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,245	Mar. 13	121	652
Massachusetts Cotton Mills, Lowell, Mass. Denims	5,250	Mar. 13	121	652
Massachusetts Cotton Mills, Lowell, Mass. Blue denims	4,982	Mar. 20	121	974
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,231	Mar. 20	121	975
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	5,232	Apr. 10	121	1937
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,987–8	Apr. 17	121	2281
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,990–3	Apr. 17	121	2281
Massachusetts Cotton Mills, Lowell, Mass. Cotton piece goods	4,996	Apr. 17	121	2282
Masurite Explosive Company, Masury, Ohio. Electrical exploders	4,998	Apr. 17	121	2282
Mathis, John B., Detroit, Tex. Laundry soaps	13,546	Apr. 10	121	1951
Maw, Son & Sons, S., London, England. Tooth and hair brushes and brushes for personal use	17,408	Apr. 24	121	2644
May and Fiebeger, Akron, Ohio. Air-heating furnaces for buildings	6,730	Mar. 27	121	1310
May, James O., deceased; A. H. Dayton and G. T. Wigmore, administrators, Naugatuck, Conn. Emulsified preparations, cough mixtures, and lotions for the skin	7,972	Mar. 13	121	657
Mayer & Co., J., Baltimore, Md. Women's shirt-waists and shirt-waist suits	12,535	Apr. 17	121	2293
Mayer, Sons & Co., Philadelphia, Pa. Whisky	15,605	Mar. 27	121	1329
McCaskey, John G., Pittsburg, Pa. Sauer-kraut	8,518–21	Apr. 17	121	2287
McCleary, Wallin & Crouse, Amsterdam, N. Y. Rugs	14,636	Mar. 6	121	316
McCray Refrigerator Co., Kendallville, Ind. Refrigerators	12,105	Apr. 17	121	2293
McFahoney, John, Brooklyn, N. Y. Tea	16,733	Mar. 6	121	323
McGlinn, John, Philadelphia, Pa. Whisky	7,766	Apr. 3	121	1632
McGlinn, John, Philadelphia, Pa. Whisky	9,103	Apr. 24	121	2623
McIlhenny's Son, E., Avery's Island, La. Pepper-sauce	9,105	Apr. 24	121	2623
McIlhenny's Son, E., Avery's Island, La. Pepper-sauce	8,775	Apr. 17	121	2288
McKee, Andrew K., Philadelphia, Pa. Coal	8,777	Apr. 17	121	2288
McKee, John A., Toronto, Canada. Pills as a remedy in kidney diseases	17,140	Apr. 24	121	2643
McKesson & Robbins, New York, N. Y. Chemical preparations for the treatment of malarial fevers and diseases characterized by intestinal fermentation and in anemias and cachexia	10,318	Mar. 6	121	301
McKesson & Robbins, New York, N. Y. Laxative remedy	4,891	Mar. 20	121	974
McNab & Harlin Manufacturing Company, New York, N. Y. Steam, gas, oil, and water pipes, fittings, and connections therefor	4,894	Apr. 17	121	2281
McQuade, Elias A., Lowell, Mass. Whisky	4,398	Mar. 20	121	974
Meier, Hermann F., Dresden-Blasewitz, Germany. Hollow-walled vessels containing cooling material within the hollow walls	16,426	Apr. 17	121	2304
	10,965	Mar. 6	121	302

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Merkel & Sons, Isaac, Plattsburg, N. Y. Whisky	5,537	Mar. 6	121	293
Merkel & Sons, Isaac, Plattsburg, N. Y. Whisky	5,536	Mar. 20	121	975
Mertz, Edward P., Washington, D. C. Medicines for the relief and cure of epilepsy, St. Vitus' dance, and all nervous disorders	16,507	Apr. 3	121	1652
Meserole, William H., New York, N. Y. Portland cement	2,153	Mar. 6	121	290
Metallic Cap Manufacturing Co'y, New York, N. Y. Primers or caps for blasting purposes	1,352	Apr. 10	121	1934
Metallic Cap Manufacturing Co'y, New York, N. Y. Caps or primers for blasting purposes	1,351	Apr. 24	121	2615
Metallic Cap Manufacturing Co'y, New York, N. Y. Caps or primers for blasting purposes	1,353	Apr. 24	121	2615
Metropolitan Manufacturing Company, Boston, Mass. Wringers and the rolls thereof	14,330	Mar. 6	121	315
Meukow & Co., A. C., Cognac, France. Cognac brandy	13,965	Mar. 6	121	314
Meurer, Jacob, Brooklyn, N. Y. Tin plates and roofing-tin	3,092-3	Mar. 6	121	291
Meyer Brothers Coffee and Spice Company, St. Louis, Mo. Coffee	12,707	Mar. 6	121	310
Meyer Marx Co., Birmingham, Ala. Whisky	8,182	Apr. 24	121	2622
Michaels, David, Boston, Mass. Liquid medicinal compound or remedy to be taken internally for diseases such as gonorrhea, gleet, &c.	16,598	Apr. 3	121	1652
Michigan Alkali Company, Ford City, Mich. Soda-ash and caustic soda	7,470	Apr. 3	121	1630
Michigan Carbon Works, Detroit, Mich. Gelatin	7,851	Mar. 13	121	657
Migranose Importing Co., Philadelphia, Pa. Headache specific put up in tabular form	13,504	Mar. 27	121	1323
Miller & Co., Clifford L., New York, N. Y. Plaster-of-paris, calcined, finishing, and casting plaster	14,201	Mar. 20	121	992
Miller, Cyrus R., Milwaukee, Wis. Bread	16,345	Apr. 17	121	2304
Miller, Harry D., Bridgeport, Conn. Corsets	17,652	Apr. 17	121	2308
Miller, Thomas A., Toledo, Ohio. Tonic remedy for anemia, debility, neurasthenia, and other conditions resulting from impurity of the blood	5,560	Mar. 6	121	293
Milliken, Tomlinson Co., Portland, Me. Hermetically-sealed canned fruits and vegetables	14,928	Mar. 20	121	994
Minard's Liniment Manufacturing Company, Boston, Mass. Liniment	12,959	Mar. 6	121	311
Miner, Benjamin F., Montague, Mass. Hair-tonic	3,447	Mar. 13	121	649
Miner, Benjamin F., Montague, Mass. Remedy for inflammation	3,448	Mar. 13	121	649
Miner, Benjamin F., Montague, Mass. Compound used as a tonic and flavoring	3,449	Apr. 24	121	2617
Minot, Hooper & Co., New York, N. Y. Cotton piece goods	4,362	Apr. 24	121	2617
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	16 984	Mar. 13	121	679
Missouri Valley Milling Company, Mandan, N. D. Wheat-flour	6,710-11	Apr. 3	121	1630
Mittag, Frank O., Park Ridge, N. J. Type-writer ribbons	17,515-16	Apr. 3	121	1654
Molassine Company, Ld., London, England. Prepared food and compounds for use as and for admixture with food for stock	11,986	Mar. 27	121	1320
Moline Wagon Company, Moline, Ill. Wagons	18,245	Apr. 24	121	2647
Monahan Antiseptic Co., Chicago, Ill. Soap	1,754	Mar. 27	121	1304
Monroe Foundry & Furnace Co., Monroe, Mich. Heating-furnaces and boilers	17,175	Mar. 20	121	1001
Montgomery Bros Inc., Philadelphia, Pa. Rubber-cement	14,575-80	Mar. 13	121	671
Monticello Distilling Company, Baltimore, Md. Whisky	7,670	Mar. 20	121	976
Moody, William A., Boston, Mass. Leather boots, shoes, and slippers	12,496	Apr. 17	121	2293
Moras, Edmond R., Chicago, Ill. Medicine in tablet form to prevent physical and mental ailments	9,660	Apr. 17	121	2290
Morehouse, William H., Toledo, Ohio. Field-seeds—viz., clovers, timothy, millets, redtop, &c.	5,598	Apr. 24	121	2619
Morey, Charles I., New York, N. Y. Cocktail-sauce	10,078	Mar. 6	121	300
Morgenthau, Mengo L., New York, N. Y. Candies, bonbons, and chocolate candy	10,966	Mar. 27	121	1318
Moro Medical Co., Montreal, Canada. Tonic remedy for treatment of heart, lung, kidney, liver, nerve, and other organic diseases	12,149	Mar. 27	121	1320
Morrin-Powers Merc. Co., Kansas City, Mo. Whisky	8,959	Mar. 20	121	978
Morrin-Powers Merc. Co., Kansas City, Mo. Whisky	8,958	Apr. 24	121	2623
Morse & Rogers, New York, N. Y. Boots, shoes, and slippers of leather or textile material, or both, and soles therefor	9,524	Mar. 6	121	299
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	10,501	Apr. 10	121	1943
Mount Vernon-Woodberry Cotton Duck Company, Baltimore, Md. Cotton duck	12,636	Apr. 10	121	1948
Mueller, Edward P., Milwaukee, Wis. Molasses food for horses and cattle	12,456	Mar. 6	121	309
Muller, Frederick, Jr., Hoboken, N. J. Medicine for the cure of constipation and bowel and stomach ailments	8,367	Mar. 13	121	658
Mumm & Co., G. H., Reims, France. Champagne-wine	17,089	Apr. 24	121	2643
Munson Supply Company New York, N. Y. Cushion finger-keys	16,908	Mar. 13	121	678
Munyon's Homœopathic Home Remedy Co., Philadelphia, Pa. Toilet soap	12,563	Mar. 6	121	310
Munyon's Homœopathic Home Remedy Co., Philadelphia, Pa. Homeopathic medical preparations	12,562	Apr. 24	121	2628
Murphy Varnish Company, Newark, N. J. Varnishes	17,719	Apr. 24	121	2646
Murphy Varnish Company, Newark, N. J. Priming, coating, and preparing material used in connection with varnishes	17,720	Apr. 24	121	2646
Murray, Edgar A., Detroit, Mich. Compound for exterminating vermin	14,222	Mar. 6	121	314
Myers, Angelo, Philadelphia, Pa. Whisky	10,352	Mar. 6	121	301
Myers & Bro., F. E., Ashland, Ohio. Hay-carriers	15,082	Mar. 13	121	674
Myers & Bro., F. E., Ashland, Ohio. Pumps	2,009	Apr. 10	121	1934
Myers & Brother, F. E., Ashland, Ohio. Water-pumps	6,900	Mar. 13	121	654
Myers, Henry R., Covington, Ky. Wine	7,698	Apr. 17	121	2286
N. Benjamin Son Inc., Brooklyn, N. Y. Beer	15,051	Mar. 20	121	996
N. K. Fairbank Company, Chicago, Ill. Soap	41-2	Mar. 20	121	969
N. K. Fairbank Company, Chicago, Ill. Soap	48	Mar. 20	121	969
N. K. Fairbank Company, Chicago, Ill. Soap	52	Mar. 20	121	969
N. K. Fairbank Company, Chicago, Ill. Soap	10,201	Mar. 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,204-5	Mar 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,209	Mar. 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,211	Mar. 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,213	Mar. 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,216	Mar. 20	121	981
N. K. Fairbank Company, Chicago, Ill. Soap	10,218	Mar. 20	121	982
N. K. Fairbank Company, Chicago, Ill. Soap	10,221-3	Mar. 20	121	981-2
N. K. Fairbank Company, Chicago, Ill. Soap	10,224-6	Mar. 20	121	982
N. K. Fairbank Company, Chicago, Ill. Soap	10,228-31	Mar. 20	121	982
N. K. Fairbank Company, Chicago, Ill. Prepared fatty, oleaginous, or unctuous food substances.	10,234	Mar. 20	121	982
N. K. Fairbank Company, Chicago, Ill. Soap	49	Mar. 27	121	1308
N. K. Fairbank Company, Chicago, Ill. Soap	10,210	Mar. 27	121	1316
N. K. Fairbank Company, Chicago, Ill. Soap	10,214	Mar. 27	121	1316
N. K. Fairbank Company, Chicago, Ill. Soap	11,161	Mar. 27	121	1318
N. K. Fairbank Company, Chicago, Ill. Soap	10,202	Apr. 3	121	1635
N. K. Fairbank Company, Chicago, Ill. Soap	10,206-8	Apr. 3	121	1635
N. K. Fairbank Company, Chicago, Ill. Soap	10,220	Apr. 3	121	1635
N. K. Fairbank Company, Chicago, Ill. Soap	63	Apr. 3	121	1625
N. K. Fairbank Company, Chicago, Ill. Soap	11,158	Apr. 10	121	1945
N. K. Fairbank Company, Chicago, Ill. Lard	16,081	Apr. 10	121	1958

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Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
N. K. Fairbank Company, Chicago, Ill. Lard	16,083	Apr. 10	121	1958
N. K. Fairbank Company, Chicago, Ill. Soap	10,219	Apr. 24	121	2625
Narrow Fabric Co., Wyomissing, Pa. Shoe-laces	18,281	Apr. 24	121	2647
Nash, George, New York, N. Y. Unmanufactured steel, including steel blanks, shapes, rods, billets, and sheets	16,959	Mar. 20	121	999
Nashville Chemical Company, Nashville, Tenn. Stains for staining shingles and wood or other surfaces	17,519	Apr. 24	121	2645
National Candy Mold and Manufacturing Company, Dayton, Ohio. Roll-paper holders and cutters	15,176	Apr. 24	121	2636
National Cash Register Co., Jersey City, N. J., and Dayton, Ohio. Cash-registers and autographic registers	8,672	Apr. 3	121	1633
National Casket Co., New York, N. Y. Burial-caskets, coffins, and fixtures therefor	17,199	Apr. 24	121	2644
National Coal Tar Company, Boston, Mass. Preparation for use as a disinfectant, antiseptic, insecticide, &c	16,028	Apr. 24	121	2638
National Cutlery Co., Detroit, Mich. Axes and hatchets	7,640	Mar. 6	121	296
National Grocer Company, Chicago, Ill. Syrup and molasses	15,643	Mar. 6	121	318
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	10,870	Apr. 24	121	2626
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead and oxids of lead	10,871–2	Apr. 24	121	2626
National Lead Company, Jersey City, N. J., and New York, N. Y. White lead	11,811	Apr. 24	121	2627
National Lead Company, Jersey City, N. J., and New York, N. Y. Castor-oil	14,415	Apr. 24	121	2634
National Lead & Oil Co. of Pa., Pittsburg, Pa. Linseed-oil	12,999	Apr. 17	121	2296
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,991	Apr. 24	121	2630
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,994	Apr. 24	121	2630
National Lead & Oil Co. of Pa., Pittsburg, Pa. White lead and oxids of lead	12,997	Apr. 24	121	2630
National Lead & Oil Co. of Pa., Pittsburg, Pa. Oxids of lead	12,998	Apr. 24	121	2630
National Lock Washer Company, Newark, N. J. Lock-washers and nut-locks	13,977	Mar. 13	121	670
National Malleable Castings Company, Cleveland, Ohio. Vertical-plane car-couplers	1,335	Mar. 27	121	1304
National Malleable Castings Company, Cleveland, Ohio, and Indianapolis, Ind. Railway-car castings	1 334	Apr. 3	121	1626
National Malleable Castings Company, Cleveland and Toledo, Ohio. Railway-car castings	1,227	Apr. 10	121	1933
National Malleable Castings Company, Cleveland, Ohio, and Sharon, Pa. Railway-car castings	1,338	Apr. 10	121	1933
National Medical Company, Sheldon, Iowa. Antiseptic germ, insect, and worm destroyer	3,880	Apr. 3	121	1626
National Musical String Co., New Brunswick, N. J. Harmonicas	16,795	Mar. 13	121	677
National Pipe Bending Company, New Haven, Conn. Feed-water heaters	14,845	Mar. 27	121	1326
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	13,350	Mar. 6	121	312
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	13,351	Mar. 13	121	668
National School of Salesmanship, Minneapolis, Minn. Books on salesmanship	13,352	Mar. 27	121	1322
National Soap Co., Detroit, Mich. Toilet, household, and laundry soap for medicinal and general cleaning purposes	17,523	Apr. 24	121	2645
Natural Food Company, Niagara Falls, N. Y. Biscuit or crackers	7,383–4	Mar. 27	121	1310
Natural Food Company, Niagara Falls, N. Y. Biscuit or crackers	13,896	Mar. 27	121	1324
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	17,856	Apr. 17	121	2309
Navassa Guano Company of Wilmington, Wilmington, N. C. Fertilizers	17,859–62	Apr. 17	121	2309
Nelson Distilling Co., St. Louis, Mo. Whisky	7,655	Apr. 17	121	2286
Nelson, Louisa, Nashville, Tenn. Whisky	6,601	Mar. 6	121	294
Nelson, Nathaniel M., Haverhill, Mass. Leather boots and shoes	16,898	Mar. 20	121	999
Neostyle Company, New York, N. Y. Duplicating-ink	5,928	Apr. 17	121	2285
Neurihrer, Julius, Newark, N. J. Biscuits	12,896	Mar. 6	121	310
Neuse, Hesslein & Co., New York, N. Y. Bleached, gray, printed, and fancy damasks	12,246	Apr. 17	121	2293
Nevermyss Fire Extinguisher Company, Middletown, N. Y. Fire-extinguisher in powdered form	14,725	Mar. 20	121	994
Neverslip Manufacturing Company, New Brunswick, N. J. Horseshoes and calks	11,569	Mar. 27	121	1319
New England Brewing Company, Boston, Mass. Beer	13,116	Apr. 17	121	2295
New England Brewing Company, Boston, Mass. Ale	13,117	Apr. 24	121	2630
New England Brewing Company, Boston, Mass. Malt wine	13,119	Apr. 24	121	2631
New Orleans Coffee Co. Ltd., New Orleans, La. Laundry starch	4,001	Mar. 13	121	650
New Orleans Coffee Co. Ltd., New Orleans, La. Roasted and ground coffee	4,008	Apr. 3	121	1628
New Orleans Import Co., Limited, New Orleans, La. Mixed teas	11,458–9	Apr. 10	121	1945
New Process Raw Hide Co., Syracuse, N. Y. Specially-prepared rawhide	7,113	Mar. 13	121	655
New Process Yeast Co., Chicago, Ill. Yeast	16,658	Apr. 17	121	2305
New Winona Mfg. Co. Winona, Minn. Mills for grinding all kinds of grain, seeds, and drugs	1,089	Apr. 10	121	1933
New York Central Iron Works Co., Geneva, N. Y. Steam and hot-water boilers for heating purposes	6,121	Apr. 17	121	2285
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,223–4	Mar. 6	121	298–9
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,131	Mar. 6	121	300
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,134	Mar. 6	121	300
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,146	Mar. 6	121	301
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,152	Mar. 6	121	301
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,220	Mar. 13	121	659
New York Consolidated Card Company, New York, N. Y. Playing-cards	3,962	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,303	Mar. 20	121	973
New York Consolidated Card Company New York, N. Y. Playing-cards	4,310	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,313	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,317	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,327	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,329	Mar. 20	121	973
New York Consolidated Card Company, New York, N. Y. Playing-cards	5,006	Mar. 20	121	974
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,573	Mar. 27	121	1314
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,575	Mar. 27	121	1315
New York Consolidated Card Company, New York, N. Y. Playing-cards	9,578	Mar. 27	121	1315
New York Consolidated Card Company, New York, N. Y. Playing-cards	3,951	Apr. 3	121	1627
New York Consolidated Card Company, New York, N. Y. Playing-cards	3,958	Apr. 10	121	1935
New York Consolidated Card Company, New York, N. Y. Playing-cards	4,301	Apr. 10	121	1935
New York Consolidated Card Company, New York, N. Y. Playing-cards	5,010	Apr. 10	121	1936
New York Consolidated Card Company, New York, N. Y. Playing-cards	10,150	Apr. 10	121	1942
New York Glucose Co., New York, N. Y. Corn-starch or flour	8,721	Mar. 6	121	298
New York Insulated Wire Company, New York, N. Y. Insulated wire and adhesive tapes commonly used for insulating	10,371	Mar. 13	121	662
New York Insulated Wire Company, New York, N. Y. Insulated wire and adhesive tapes for insulating	10,372	Apr. 17	121	2291
New York Standard Watch Co., Jersey City, N. J. Watches, watch cases and movements, and parts thereof	2,271	Mar. 27	121	1305
Nichols, Howard E., St. Louis, Mo. Hair tonics, stains, removers, and dandruff cures	9,353	Apr. 17	121	2289
Ninety Six Cotton Mill, Ninety Six, S. C. Cotton piece goods	15,252	Apr. 10	121	1954
Norfolk Novelty Corporation, Norfolk, Va. Burglar-alarms	14,646	Mar. 13	121	671
Norwich Pharmacal Company, Norwich, N. Y. Reconstructive food and tonic for invalids and convalescents	15,418	Apr. 3	121	1646

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Nostrand Trading Co., New York, N. Y. Extract of sarsaparilla	13,920-2	Mar. 20	121	991
Nuhring, Charles, Cincinnati, Ohio. Machinery-packing	12,274	Mar. 27	121	1321
Nusbaum, Samuel, Albany, N. Y. Bags for bonnets and hats or other wearing articles and articles for decoration and ornamentation	14,976	Mar. 13	121	673
O'Bryan Bros., Nashville, Tenn. Coats, vests, trousers, and overalls	1,007	Apr. 3	121	1625
O'Callaghan & Fedden, New York, N. Y. Hosiery	14,658	Mar. 6	121	316
Obernauer & Co., H., Pittsburg, Pa. Whisky	12,577	Apr. 3	121	1639
Odom, James L., Lester, S. C. Remedies for the cure of rheumatism, &c	6,856	Mar. 27	121	1310
Oehm & Co., Baltimore, Md. Men's, youths', boys', and children's ready-made coats, overcoats, pants, and vests	11,279	Mar. 6	121	304
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Roasted coffees	16,416	Mar. 20	121	999
Oklahoma Wholesale Grocer Co., Oklahoma, Okla. Ter. Spices	16,418	Mar. 27	121	1332
Okonite Company, Limited, New York, N. Y. Adhesive tape	14,017	Apr. 10	121	1952
Old Kentucky Distillery, Louisville, Ky. Whisky	8,242-3	Apr. 10	121	1940
Old Kentucky Distillery, Louisville, Ky. Whisky	8,245-7	Apr. 10	121	1941
Old Lexington Club Distilling Co., Newport, Ky. Whisky	7,021	Apr. 3	121	1631
Oldfield, John M., Philadelphia, Pa. Remedy for the treatment and prevention of diseases peculiar to women	2,082	Mar. 20	121	970
Olds, Edward A., New York, N. Y. Toilet and medicinal lotions	13,974	Apr. 10	121	1952
Olympia Brewing Co., Olympia, Wash. Lager-beer	9,946	Mar. 6	121	300
Ordway, Aaron P., New York, N. Y. Bitters	3,685	Mar. 13	121	649
Orrine Company of the District of Columbia, Washington, D. C. Medicines for the cure of alcoholic and drug habits	16,806	Apr. 3	121	1653
Oscar Onken Co., Cincinnati, Ohio. Tables, chairs, cabinets, couches, &c	4,396	Mar. 13	121	650
Ostermayer, Philipp, Jersey City, N. J. Heel and black ball and polishing-wax for shoemakers' use	13,286	Mar. 6	121	312
Oswego Maize Products Co., Oswego, N. Y. Laundry starch	11,880	Apr. 24	121	2627
Ottenheimer, Alfred, New York, N. Y. Corsets	15,196	Apr. 10	121	1904
Ottenheimer & Sons, E., Louisville, Ky. Baking-powder	15,427	Apr. 10	121	1905
Outing Publishing Company, Deposit, N. Y. Magazines issued at intervals throughout the year	13,270	Apr. 10	121	1950
Overholt & Co., A., Pittsburg, Pa. Whisky	9,829	Mar. 6	121	299
Owl's Head Creamery Company, Enosburg Falls, Vt. Butter	11,694	Mar. 27	121	1319
P. C. Murphy Trunk Company, St. Louis, Mo. Trunks, valises, satchels, dress-suit cases, wardrobe-trunks, and parts of same	15,515	Mar. 13	121	675
P. J. Bowlin Liquor Co., St. Paul, Minn. Rock and rye	8,633	Mar. 20	121	978
P. J. Bowlin Liquor Co., St. Paul, Minn. Whisky	8,625	Mar. 27	121	1313
P. J. Bowlin Liquor Co., St. Paul, Minn. Brandy	8,630	Mar. 27	121	1313
Packard Company, Fort Wayne, Ind. Pianos	13,708	Apr. 17	121	2297
Packard Company, Fort Wayne, Ind. Organs	17,610	Apr. 24	121	2641
Packard & Field, Brockton, Mass. Leather boots, shoes, and slippers and upper and sole leather used in their manufacture	6,800	Mar. 27	121	1310
Paine Lumber Company, Limited, Oshkosh, Wis. Doors	14,995	Apr. 17	121	2301
Palmer, Eddy, New York, N. Y. Soap	9,143	Apr. 10	121	1941
Pamaline Malarial Remedy Company, New York, N. Y. Fever cures	16,757	Apr. 24	121	2645
Pardridge & Blackwell, Detroit, Mich. Whisky	15,442	Apr. 3	121	1647
Park Steel Company, Pittsburg, Pa. Steel bars, rods, blooms, billets, plates, sheets, slabs, strips, blocks, and forgings	5,471-2	Mar. 13	121	652
Park Steel Company, Pittsburg, Pa. Steel bars, rods, billets, blooms, sheets, plates, slabs, &c	5,476	Apr. 24	121	2618
Parker Blake Co. Ltd., New Orleans, La. Vermifuge	15,432	Apr. 3	121	1647
Parker Blake Co. Ltd., New Orleans, La. Vermifuge	15,642	Apr. 3	121	1648
Parker Blake Co. Ltd., New Orleans, La. Medicinal tonic for women	15,433	Apr. 24	121	2637
Parker & Co., E. L., Baltimore, Md. Tin and terne plates, tin and black taggers, and sheet-iron	10,566-8	Apr. 17	121	2291
Parker Holmes & Company, Boston, Mass. Leather boots, shoes, and slippers	11,646	Mar. 20	121	984
Parsons, Charles A., Newcastle-upon-Tyne, England. Turbo-compressors and pumps	7,313	Mar. 6	121	296
Parsons, Charles A., Newcastle-upon-Tyne, England. Steam-turbines and parts thereof	7,314	Mar. 6	121	296
Passavant & Co., New York, N. Y. Silk piece goods	13,404	Mar. 13	121	668
Paul F. Beich Co., Bloomington, Ill. Candy	13,323	Apr. 17	121	2296
Paul Taylor Brown Co., New York, N. Y. Canned pineapples	12,795	Mar. 20	121	989
Paul Weidmann Brwg. Co., New York, N. Y. Beer put up in bottles, kegs, barrels, or casks	13,603	Apr. 3	121	1642
Payot, Upham & Co., San Francisco, Cal. Steel pens	15,503-4	Mar. 27	121	1329
Peacock Chemical Company, St. Louis, Mo. Preparation of chionanthus Virginica, a remedy for diseases of the liver	16,031	Apr. 17	121	2303
Pearl & Co., I. L., Johnson, Vt. Trousers	15,393	Apr. 3	121	1646
Peck, Frederick W., Cohoes, N. Y. Axes, adzes, and hatchets	13,034	Mar. 6	121	311
Peerless Smelting & Refining Co., Philadelphia, Pa. Babbitt metal	9,600	Apr. 10	121	1942
Peirce & Son, Thomas F., Providence, R. I. Leather boots and shoes	14,856	Mar. 20	121	994
Pellucide Company, San Francisco, Cal. Polishing preparations for glass or bright metal	16,700	Apr. 24	121	2641
Pelton Water Wheel Co., San Francisco, Cal. Water-wheels and water-wheel motors	7,682	Mar. 6	121	296
Peninsular Paper Co., Ypsilanti, Mich. Book and cover paper	10,459	Mar. 20	121	983
Pennsylvania Baking Company, Scranton, Pa. Ginger-snaps	13,208	Mar. 13	121	668
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Potash	5,714	Apr. 17	121	2284
Pennsylvania Salt Manuf'g Co., Philadelphia, Pa. Bicarbonate of soda	5,882	Apr. 17	121	2285
Pennsylvania Soap Company, Lancaster, Pa. Soap	17,297	Apr. 17	121	2307
Peoria Drill and Seeder Co., Peoria, Ill. Broadcast seeding-machines	14,859	Mar. 13	121	672
Perkins, Charles B., Boston, Mass. Cigars	16,783	Mar. 13	121	677
Perkins, Charles B., Boston, Mass. Cigars	16,873	Mar. 13	121	678
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	10,938	Mar. 27	121	1318
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	10,936	Apr. 3	121	1638
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	10,941	Apr. 3	121	1636
Perkins, George H., Gloucester, Mass. Cured fish, (smoked, dried, or salted)	10,935	Apr. 10	121	1944
Perry & Co., Philadelphia, Pa. Coats, vests, pantaloons, overcoats, and men's and boys' suits	14,867	Mar. 20	121	994
Person's Sons, C., Buffalo, N. Y. Whisky	4,549	Apr. 17	121	2280
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,415	Apr. 3	121	1639
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,952	Apr. 3	121	1640
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,032	Apr. 3	121	1641
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,099	Apr. 3	121	1641
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,176	Apr. 3	121	1642
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,233	Apr. 10	121	1947
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,368	Apr. 10	121	1948
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,462	Apr. 10	121	1948
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,596	Apr. 10	121	1948
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	12,699	Apr. 10	121	1949
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,216	Apr. 10	121	1950
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,252	Apr. 10	121	1950
Peter Schoenhofen Brewing Company, Chicago, Ill. Lager-beer	13,133	Apr. 17	121	2296

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Petraccione, Louis, New York, N. Y. Combination sash adjusters and locks	9,740	Mar. 27	121	1315
Pfabe, Hugo, Delavan, Wis. Flash-light compounds	3,506	Mar. 6	121	291
Pfeifer & Co., Chas M., Cincinnati, Ohio. Whisky	16,970	Apr. 3	121	1653
Pfromm, Adam, Philadelphia, Pa. Bluing	11,697–8	Apr. 10	121	1946
Ph. Hamburger Company, Pittsburg, Pa. Whisky	16,203	Apr. 3	121	1651
Philadelphia Watch Case Co., Riverside, N. J. Watches and watch cases and movements	4,595	Mar. 27	121	1308
Philip Hano & Co., New York, N. Y. Carbon-paper manifolding-books, autographic registers, and printed rolls for manifolding	11,614	Mar. 6	121	305
Phillips Insulated Wire Co., Pawtucket, R. I. Insulated wires	17,024	Mar. 20	121	990
Phoenix Flour Mill, Evansville, Ind. Wheat-flour	6,707	Apr. 3	121	1630
Phoenix Flour Mill, Evansville, Ind. Wheat-flour	16,985	Mar. 13	121	679
Phoenix Glass Co., Pittsburg, Pa. Decorated vase-lamps made of glass	15,032	Apr. 10	121	1954
Phoenix Horse Shoe Co., Chicago, Ill. Horse and mule shoes	10,491–2	Apr. 24	121	2625
Pickering Governor Company, Portland, Conn. Engine-governors	14,839	Mar. 20	121	994
Piedmont Mfg. Co., Piedmont, S. C. Cotton sheetings and drillings	5,672	Mar. 27	121	1309
Pillsbury-Washburn Flour Mills Company, Limited, Minneapolis, Minn. Wheat-flour	14,474	Mar. 6	121	315
Pimbley Paint & Glass Co., St. Joseph, Mo. House-paints	7 538	Mar. 13	121	656
Pioneer Packing Company, Omaha, Nebr. Extract of beef	13,741	Mar. 27	121	1323
Pioneer Suspender Company, Philadelphia, Pa. Suspenders	12,646	Mar. 13	121	667
Piorkowski, Max, Berlin, Germany. Venereal-disease remedies	14,993	Apr. 17	121	2301
Piper, George W., New York, N. Y. Mixed paints	15,571	Apr. 3	121	1647
Pittman & Harrison Co., Sherman, Tex. Cornmeal and corn-chop	5,819	Apr. 17	121	2284
Plank, F. F., Petaluma, Cal. Vegetable-sauce	13,391	Apr. 24	121	2631
Platt & Company, Baltimore, Md. Canned fruits and vegetables	13,341	Mar. 20	121	990
Poe Mfg. Co., F. W., Greenville, S. C. Cotton piece goods	15,249	Apr. 10	121	1954
Pomeroy Company, New York, N. Y. Elastic stockings	6,830	Mar. 13	121	654
Pond's Extract Company, New York, N. Y. Talcum powder	16,444	Mar. 6	121	320
Pond's Extract Company, New York, N. Y. Skin-cream	16,445	Mar. 6	121	320
Pond's Extract Company, New York, N. Y. Dentifrices in powder, paste, or liquid form	16,446	Mar. 6	121	320
Pope Manufacturing Company, Hartford, Conn. Automobiles and parts thereof	9,020	Apr. 24	121	2622
Popper Gray & Co., New York, N. Y. Cheese	16,423	Mar. 27	121	1332
Postum Cereal Co., Limited, Battle Creek, Mich. Non-alcoholic food drinks which are produced from a cereal	4,100	Mar. 20	121	973
Potter Drug & Chemical Corporation, Boston, Mass. Medicated and perfumed soap	14,664	Apr. 17	121	2296
Pratt Food Co., Philadelphia, Pa. Remedies for bloat in animals	12,658	Mar. 20	121	988
Pratt-Low Preserving Co., San Jose, Cal. Canned fruits and vegetables	6,549	Apr. 3	121	1630
Premier Motor Manufacturing Company, Indianapolis, Ind. Motor-vehicles, commonly known as automobiles	14,875–6	Mar. 27	121	1326–7
Prescott, Amos L., New York, N. Y. Polish for stoves and stovepipes, ranges, furnaces, boilers, and engines	14,206	Mar. 20	121	992
Prescott, Jesse, Webster, Mass. Wall-ties	10,620	Apr. 3	121	1636
Preston B. Keith Shoe Company, Brockton, Mass. Leather boots, shoes, and slippers	16,541	Apr. 3	121	1652
Preston Manufacturing Company, Portland, Oreg. Antiseptic and disinfectant mineral soap	17,203	Apr. 17	121	2306
Price Baking Powder Company, Chicago, Ill. Baking-powder	11,571	Mar. 20	121	984
Price Fireproofing Company, Poughkeepsie, N. Y. Fireproof starch	4,797	Mar. 20	121	974
Price Fireproofing Company, Poughkeepsie, N. Y. Fireproof starch	4,795	Apr. 3	121	1628
Price's Patent Candle Co. Limited, London, Battersea, and Bromborough Pool Works, England. Glycerin	16,063	Mar. 6	121	318
Price's Patent Candle Company, Limited, London, Battersea, and Bromborough Pool Works, England. Candles and tapers	13,609	Mar. 6	121	313
Putnam, Frederic H., Boston, Mass. Medicinal tablets for the cure of la grippe, constipation, coughs, colds, and bronchial troubles	14,880	Apr. 3	121	1645
R. Hudnut's Pharmacy, New York, N. Y. Soap	14,521	Mar. 6	121	316
R. Hudnut's Pharmacy, New York, N. Y. Toilet and sachet powder	14,522	Mar. 6	121	316
R. E. Dietz Company, New York, N. Y. Lantern-burners	17,172	Mar. 20	121	1001
R. L. Perry Co., Boston, Mass. Chocolates and bonbons	7,750	Apr. 3	121	1632
Radam, Ida, New York, N. Y. Microbe-killer	5,001	Mar. 13	121	651
Railway Educational Association, New York, N. Y. Educational books for railway employees.	11,804	Mar. 20	121	985
Railway Educational Association, New York, N. Y. Educational books for railway employees.	11,806	Mar. 20	121	985
Rainer-Heinly Co., Danville, Ill. Tomato tonic and beverage	3,392	Apr. 24	121	2616
Randall-Adams Co., Lynn, Mass. Leather boots and shoes	13,652	Mar. 6	121	313
Randolph Milling Company, Baldwin, Ill. Wheat-flour	16,702	Apr. 24	121	2641
Ransom & Randolph Co., Toledo, Ohio. Fireproof and acid-proof composition in sheet form for protecting furniture	12,122	Apr. 10	121	1947
Rasin-Monumental Company, Baltimore, Md. Artificial fertilizers	5,772	Apr. 3	121	1629
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,902	Apr. 17	121	2310
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,917–19	Apr. 17	121	2310
Rasin-Monumental Company of Anne Arundel County, Baltimore, Md. Fertilizers	17,920	Apr. 24	121	2647
Rath, Chas., Philadelphia, Pa. Metal-polishes	11,083	Mar. 20	121	983
Records & Goldsborough, Baltimore, Md. Whisky	76	Mar. 13	121	647
Red Jacket Manufacturing Company, Davenport, Iowa. Piston well-pumps	13,544	Mar. 13	121	669
Reddick, William A., Niles, Mich. Animal-traps	4,164	Apr. 10	121	1935
Reed & Barton Corporation, Taunton, Mass. Hollow silverware	16.121	Apr. 24	121	2638
Reed Manufacturing Co., Newark, N. Y. Culinary utensils made of tinware	5,634	Apr. 3	121	1629
Reeves & Co., J. S., Nashville, Tenn. Woven cotton piece goods	17,747	Apr. 24	121	2646
Reins & Meise, Cincinnati, Ohio. Hosiery	16,824	Apr. 17	121	2306
Reisinger, Hugo, New York, N. Y. Carbons for electrical purposes	17,231	Mar. 20	121	1002
Reiss & Brady, New York, N. Y. Dried fruits	12,315	Apr. 10	121	1948
Rendle, Arthur E., New York, N. Y. Windows and skylights	16,149	Apr. 10	121	1950
Renziehausen, Frederick C., Pittsburg, Pa. Whisky	6,362	Mar. 6	121	294
Review Publishing Company, New York, N. Y. Semimonthly magazine	11,942	Mar. 27	121	1320
Reymer & Brothers Incorporated, Pittsburg, Pa. Candy	15,822	Apr. 10	121	1956
Reynolds & Co., James E., New York, N. Y. Carpet-warps	14,152	Mar. 20	121	992
Reynolds, James E., New York, N. Y. Carpet-warps	14,153	Mar. 13	121	670
Reynolds, James E., East Orange, N. J. Twine	15,310	Apr. 3	121	1646
Rhomberg Bros. & Co., Dubuque, Iowa. Whisky	7,013	Apr. 10	121	1939
Rhomberg Bros. & Co., Dubuque, Iowa. Whisky	8,560	Apr. 10	121	1941
Rice & Co., A. H., Pittsfield, Mass. Silk thread	7,200	Apr. 3	121	1631
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,781	Mar. 6	121	298
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice and Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	8,992	Mar. 6	121	298
Rice & Hutchins, Incorporated, Boston, Mass., assignor to Rice & Hutchins, Incorporated. Leather boots and shoes and leather used in their manufacture	7,795	Mar. 20	121	976
Rice, Stearns & Co., Hanford, Cal. Skin preparation of specially-prepared composition used as a foot-powder	9,984	Mar. 13	121	662

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Rice's Sons, Bernard, New York, N. Y. Silver-plated hollow ware	6,257	Apr. 10	121	1938
Richard B. Green & Co., Limited, Liverpool, England. Canned and tinned salmon	7,472	Apr. 17	121	2286
Richford Garment Company, Richford, Vt. Overalls, bibs, and coats, constituting complete overall-suits	17,202	Mar. 20	121	1001
Richmond & Backus Co., Detroit, Mich. Ledgers	16,811	Apr. 17	121	2306
Richter, Friedrich A., New York, N. Y., and Rudolstadt, Germany. Perfuming extracts	9,729	Mar. 13	121	661
Rice, Jacob, Shakopee, Minn. Carbonated tonic beverage	1,626	Apr. 10	121	1934
Riggs, George C., New York, N. Y. Linen piece goods and piece goods containing both linen and cotton	10,508–0	Apr. 10	121	1943
Ring Paper Clip Company, Providence, R. I. Spring paper-clips	2,482	Mar. 13	121	649
River Co., Waterbury, Conn. Corrugated brass shoe-nails	14,023	Mar. 20	121	992
Robards Tobacco Co., Mayfield, Ky. Twist-tobacco	7,266	Mar. 6	121	295
Robert F. Mackenzie Co., Cleveland, Ohio. Cough-drops	16,734	Mar. 6	121	323
Robert F. Mackenzie Co., Cleveland, Ohio. Candy	16,025	Mar. 20	121	998
Robert F. Mackenzie Co., Cleveland, Ohio. Candy	8,202	Mar. 27	121	1312
Robert Smith Ale Brewing Co., Philadelphia, Pa. Ale	16,754	Apr. 17	121	2306
Robert Smith Ale Brewing Company, Philadelphia, Pa. Stout	414	Mar. 13	121	647
Robert Smith Ale Bwg Co., Philadelphia, Pa. Ale	15,776–7	Apr. 10	121	1956
Robert Smith Ale Bwg Co., Philadelphia, Pa. Porter	12,643	Mar. 6	121	310
Robertson & Son, John, Bellows Falls, Vt. Toilet-paper	16,177	Mar. 6	121	319
Rochester Candy Works, Rochester, N. Y. Candies	16,289	Apr. 17	121	2304
Rochester Nonrust Tinware Co., Rochester, N. Y. Sheet-metal vessels for domestic or household purposes	16,769	Apr. 10	121	1960
Rock Plaster Co. of New York & New Jersey, New York, N. Y. Lime and plaster	4,147	Mar. 20	121	973
Rockey, Joseph W., Miamisburg, Ohio. Peach-trees	10,456	Mar. 20	121	983
Rockford Silver Plate Co., Rockford, Ill. Electro gold and silver plated hollow, table, and flat ware	16,671	Mar. 6	121	322
Roderick Leon Mfg. Co., Mansfield, Ohio. Harrows	15,068	Mar. 6	121	317
Roe, Wm. H., New York, N. Y. Silk dress goods	3,904	Apr. 3	121	1627
Rogers & Hubbard Co., Middletown, Conn. Fertilizers	7,510	Mar. 13	121	656
Rogers & Hubbard Co., Middletown, Conn. Bone for case-hardening, coloring, and annealing	2,721	Mar. 6	121	291
Rogers & Thompson, New York, N. Y. Silk piece goods	13,806	Mar. 6	121	313
Rogers & Thompson, New York, N. Y. Silk dress goods in the piece	9,213	Mar. 6	121	298
Romm & Company, New York, N. Y. Dress and shirt waists for women	9,211	Apr. 10	121	1941
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	15,824	Apr. 10	121	1956
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	13,770	Mar. 20	121	990
Rosemary Manufacturing Company, Roanoke Rapids, N. C. Cotton damask	13,768	Mar. 27	121	1323
Rosenbaum Company, Pittsburg, Pa. Corsets	13,767	Apr. 24	121	2632
Rosenbush & Co., Al. A., Boston, Mass. Leather boots and shoes	16,820	Mar. 6	121	324
Rosenwasser Bros., New York, N. Y. Leggings	7,474	Mar. 27	121	1311
Roth & Co., San Francisco, Cal. Bourbon whiskies	16,625	Mar. 6	121	321
Royal Baking Powder Company, New York, N. Y. Flavoring extracts	9,601	Apr. 24	121	2624
Royal Baking Powder Company, New York, N. Y. Cream of tartar	11,905	Apr. 3	121	1638
Royal Metal Steel Co., New York, N. Y. Tool-steel	11,906	Apr. 24	121	2628
Rubber & Celluloid Harness Trimming Co., Newark, N. J. Lather-brushes	13,484	Mar. 6	121	312
Rucker, Harry D., La Fayette, Ind. Remedies for all diseases of the blood, liver, kidneys, and stomach	9,843	Apr. 10	121	1942
Rumford Chemical Works, Providence, R. I. Phosphatic powder suitable to be used in place of cream of tartar for culinary purposes	15,813	Apr. 24	121	2637
Runkel Brothers, Incorporated, New York, N. Y. Cocoa	5,771	Apr. 3	121	1629
Runkel Brothers, Incorporated, New York, N. Y. Chocolate	13,007	Mar. 6	121	311
Russell & Company, Fort Ogden, Fla., and New York, N. Y. Oranges, lemons, grape-fruit, tangerines, and mandarins	13,008	Mar. 6	121	311
Ryan-Hampton Tobacco Co., Newburg, Ind. Plug-tobacco	14,996	Mar. 20	121	995
S. Grabfelder & Co., Louisville, Ky. Whisky	10,111	Mar. 20	121	981
S. Hamill Company, Keokuk, Iowa. Canned fruits and vegetables	6,327	Apr. 10	121	1938
S. C. Herbst Importing Co., Milwaukee, Wis. Rye and Bourbon and all kinds of whiskies	78	Mar. 27	121	1303
S. C. Tooker & Co., Minneapolis, Minn. Dried fruits	2,252	Mar. 20	121	970
S. H. Frank & Co. San Francisco, Cal. Tanned heavy leathers	15,336	Mar. 27	121	1329
S. M. Howes Company, Boston, Mass. Dampers for hot-air and smoke pipes	8,614	Mar. 20	121	978
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Wax	16,792	Mar. 6	121	323
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Tooth-paste	12,856	Apr. 3	121	1639
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Investment and impression compounds	12,857	Apr. 3	121	1639
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Dental rubber	12,860	Apr. 3	121	1639
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Gutta-percha tooth-filling	12,864	Apr. 3	121	1639
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Cavity-linings	12,865–6	Apr. 3	121	1639–40
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Investment and impression compounds	12,868	Apr. 3	121	1640
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Polishing and abrading strips	12,869	Apr. 3	121	1640
S. S. White Dental Mfg. Co., Philadelphia, Pa.; Chicago, Ill.; New York, Brooklyn, and Rochester, N. Y.; Boston, Mass.; Atlanta, Ga.; New Orleans, La.; Toronto, Canada; Buenos Ayres, Argentine Republic; Berlin, Germany, and St. Petersburg, Russia. Abrading disks, wheels, and points	12,854	Apr. 10	121	1949
Sachs and Sons, D., Louisville, Ky. Whisky	12,855	Apr. 10	121	1949
Saco Valley Canning Company, Portland, Me. Canned corn, sugar or sweet corn, and succotash	3,052	Mar. 20	121	973
Saco Valley Canning Company, Portland, Me. Canned corn and succotash	5,877	Apr. 24	121	2619
	5,878	Apr. 24	121	2619

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Seco Valley Canning Company, Portland, Me. Canned corn, sugar or sweet corn, succotash, and beans	5,879	Apr. 24	121	2619
Saginaw Milling Company, Saginaw, Mich. Wheat-flour	10,724	Mar. 27	121	1317
Salt Lake City Soda Water Co., Salt Lake City, Utah. Tonic beverage	13,980	Mar. 6	121	314
Sample & Co., New York, N. Y. Whisky	4,513	Apr. 10	121	1935
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames of metal	12,591	Apr. 17	121	2294
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames and ribs of metal	12,592	Apr. 17	121	2294
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames	12,612–14	Apr. 17	121	2294
Samuel Fox & Co., Limited, Stocksbridge Works, near Sheffield, England. Umbrella-frames of metal	12,615–16	Apr. 17	121	2294
Sanches & Haya Co., Tampa, Fla. Cigars	6,913	Mar. 6	121	295
Saunders, Frederick, San Francisco, Cal. Fresh mince-meat	14,069	Apr. 10	121	1952
Savage, Marion W., Minneapolis, Minn. Stock-food	16,892	Mar. 13	121	678
Savage, Marion W., Minneapolis, Minn. Incubators and brooders	16,963	Mar. 13	121	679
Savage, Marion W., Minneapolis, Minn. Stock-food	8,196	Mar. 27	121	1312
Savage, Marion W., Minneapolis, Minn. Poultry-food	8,197	Mar. 27	121	1312
Scanlan, Kickham, *et al.*, administrators. (See Canepa, John B.)				
Scarlett, Wm. G., Baltimore, Md. Grass and field seeds	11,968	Mar. 27	121	1320
Schabinger Co., L. J., Cleveland, Ohio. Medicine for stomach diseases	13,170	Apr. 10	121	1950
Schadewald, Henry, Philadelphia, Pa. Bedspreads and quilts	15,309	Apr. 24	121	2636
Schaeffer Bros. & Powell Manufacturing Company, St. Louis, Mo. Bar-soap	185	Apr. 10	121	1933
Schenley Distilling Company, Schenley, Pa. Whisky	17,484	Apr. 10	121	1963
Scherer, Fred S., Utica, N. Y. Whisky	13,872–3	Mar. 20	121	991
Schlenker & Kienzle, Schwenningen, Germany. Clock-movements	9,390	Mar. 13	121	660
Schmidt, Florian J., Chicago, Ill. Medicine to purify the blood and regulate the kidneys, liver, and bowels	7,747	Mar. 27	121	1311
Schmidt, Fritz, New York, N. Y. Gloves	773	Apr. 10	121	1933
Schneider, John R., Augusta, Ga. Wines	11,903	Apr. 3	121	1638
Schoble & Co., Frank, Philadelphia, Pa. Soft and stiff fur-felt, straw, and silk hats, caps for men and boys, and ladies' hats	8,112	Mar. 6	121	297
Schoble & Co., Frank, Philadelphia, Pa. Soft and stiff fur-felt, straw, and silk hats, caps for men and boys, and ladies' hats	8,114	Mar. 6	121	297
Schoble & Co., Frank, Philadelphia, Pa. Soft and stiff fur-felt, straw, and silk hats, caps for men and boys, and ladies' hats	8,116	Mar. 6	121	297
Schülke & Mayr, Hamburg, Germany. Disinfectants and antiseptics	15,406–7	Mar. 6	121	317
Schwabacher Bros & Co, Inc., Seattle, Wash. Canned fruits	12,130–1	Apr. 17	121	2293
Schwabacher Bros & Co, Inc., Seattle, Wash. Canned fruits and vegetables	11,830	Mar. 13	121	665
Schwabacher Bros & Co., Inc., Seattle, Wash. Baking-powder	11,831	Mar. 13	121	669
Schwartz, Joseph H., Plymouth, Pa. Whisky	12,961	Apr. 24	121	2629
Schwartz, Joseph H., Plymouth, Pa. Whisky	12,663	Mar. 20	121	988
Schwob, Adolphe, New York, N. Y. Watches and parts thereof	12,666	Mar. 27	121	1321
Scott-Blake Co., Portland, Me. Hat-pins	10,172	Apr. 24	121	2624
Scott Paper Co., Philadelphia, Pa. Toilet-paper	13,221	Apr. 17	121	2295
Scott Paper Co., Philadelphia, Pa. Toilet-paper	15,246	Apr. 3	121	1645
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oil, water, and whet stones, hones, and grindstones	17,142	Apr. 10	121	1961
Scranton Whetstone and Abrasive Wheel Co., Scranton, Pa. Oil, water, whet, and grind stones and hones	14,232	Mar. 20	121	993
Scranton Whetstone and Abrasive Wheel Company, Scranton, Pa. Oil, water, and whet stones, hones, and grindstones	14,231	Apr. 24	121	2634
Seamless Rubber Co., New Haven, Conn. Nipples for nursing-bottles	14,229–30	Apr. 3	121	1644
Searing, Peter J. L., New York, N. Y. Salt	6,326	Apr. 3	121	1630
Searing, Peter J. L., New York, N. Y. Salt	14,527	Mar. 27	121	1325
Secor, May, Weehawken Heights, N. J. Liquid preparation for the complexion to be used externally	14,529	Apr. 24	121	2634
Security Milling Company, Abilene, Kans. Wheat-flour	10,668	Mar. 13	121	663
Selby Smelting & Lead Company, San Francisco, Cal. Shot	13,300	Mar. 27	121	1322
Selby Smelting & Lead Company, San Francisco, Cal. Solder, Babbitt, or other antifriction metal	17,084	Mar. 20	121	1000
Selby Smelting and Lead Company, San Francisco, Cal. Lead traps and bends	17,085	Mar. 20	121	1000
Semel & Co., J. H., New York, N. Y. Knit underwear	17,086	Mar. 20	121	1000
Seneca Mill & Elevator Company, Seneca, Mo. Wheat-flour	16,797	Apr. 17	121	2306
Senour Manufacturing Co., Chicago Ill. Mixed paints	14,303–4	Apr. 3	121	1644
Shackamaxon Worsted Co., Philadelphia, Pa. Woolen and worsted piece goods	6,770	Apr. 3	121	1630
Sheboygan Chair Company, Sheyboygan, Wis. Chairs	6,416	Apr. 3	121	1630
Sheeline Son & Co., D., New York, N. Y. Paper wrappers for rolls of ribbon	12,622	Apr. 17	121	2294
Sheer Cut Shear Co., Chicago, Ill. Shears	15,063	Apr. 17	121	2301
Sheffield-King Milling Co., Minneapolis, Minn. Wheat-flour	10,926	Apr. 10	121	1944
Sheffield-King Milling Co., Minneapolis, Minn. Wheat-flour	16,363	Mar. 6	121	319
Sibley, Edward L., Bennington, Vt. Press or machine for setting and removing eyelets, sometimes called "fasteners," "binders," and "rivets"	16,366	Mar. 6	121	319
Sidney Fairchild Company, New York, N. Y. Cordial	17,258	Mar. 27	121	1333
Siegel, Cooper & Co., Chicago, Ill. Soap	16,910	Apr. 10	121	1961
Siegel, Cooper & Co., Chicago, Ill. Jams, jellies, and preserves	5,177	Apr. 24	121	2617
Siegert & Hijos, Dr. J. G. B., Port of Spain, Trinidad. Bitters	5,427	Apr. 24	121	2618
Siemssen & Co., Hamburg, Germany. Cotton sheetings, shirtings, drills, and tickings	6,025	Mar. 27	121	1309
Silberstein, Albert L., New York, N. Y. Razors and pocket-knives	11,430	Apr. 3	121	1637
Silver & Company, New York, N. Y. Tea and coffee pots	8,808	Mar. 13	121	659
Silver & Company, New York, N. Y. Tea and coffee pots and coffee-urns	15,941	Apr. 17	121	2303
Silver Lake Co., Boston, Mass. Braided cord	15,942	Apr. 17	121	2302
Silver Lake Company, Boston, Mass. Cords, lines, twines, and ropes	2,090	Apr. 10	121	1934
Simmons Hardware Company, St. Louis, Mo. Saws, saw-blades, and saw-handles	17,036–7	Mar. 13	121	680
Simmons Hardware Company, St. Louis, Mo. Planes and plane-irons	14,938	Apr. 17	121	2300
Simmons Hardware Company, St. Louis, Mo. Chisels and gouges	14,939	Apr. 17	121	2300
Simmons Hardware Company, St. Louis, Mo. Razors	14,941	Apr. 17	121	2300
Simmons Hardware Company St. Louis, Mo. Pocket-knives	14,943	Apr. 17	121	2300
Simmons Hardware Company, St. Louis, Mo. Augers, bits, and gimlets	14,944	Apr. 17	121	2300
Simmons Hardware Company, St. Louis, Mo. Files and rasps	14,945	Apr. 17	121	2300
Simmons Hardware Company, St. Louis, Mo. Corn and hay knives	14,946	Apr. 17	121	2301
Simon, Gus, Cincinnati, Ohio. Whisky	14,947	Apr. 17	121	2301
Singer Manufacturing Company, New York, N. Y. Needles for sewing by hand and machine	10,610	Mar. 13	121	663
Singer Manufacturing Company, New York, N. Y. Lubricating-oil	13,928	Apr. 24	121	2633
	13,929	Apr. 24	121	2633

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Sinnott, Joseph F., Philadelphia, Pa. Whisky	12,839	Mar. 20	121	988
Sinnott, Joseph F., Philadelphia, Pa. Whisky	13,579	Apr. 24	121	2632
Sir Isaac Pitman & Sons Ltd., Bath, England. Writing-paper, whether in loose sheets or connected	11,988	Apr. 3	121	1638
Sleepy Eye Milling Company, Sleepy Eye, Minn. Self-raising flour	8,384	Mar. 13	121	656
Sleepy Eye Milling Company, Sleepy Eye, Minn. Breakfast-food and farina made from wheat	8,385	Mar. 13	121	656
Smedley, James L., New York, N. Y. Cure for rheumatism	15,836	Mar. 20	121	998
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	14,986	Mar. 13	121	673
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	14,932	Apr. 3	121	1645
Smith-Briscoe Shoe Company, Lynchburg, Va. Leather boots and shoes	14,988	Apr. 3	121	1645
Smith-Briscoe Shoe Company, Lynchburg, Va. Men's leather boots and shoes	14,768	Apr. 24	121	2635
Smith, Charles E., Reading, Pa. Knitted underwear	11,865	Mar. 13	121	665
Smith, Charles W., Warren, Pa. Medicinal oil for external use	8,475	Mar. 13	121	656
Smith & Co., S. C., Cleveland, Ohio. Catsup-spice	9,129	Mar. 20	121	979
Smith & Hemenway Company, New York, N. Y. Razors	11,657	Apr. 10	121	1946
Smith & Hemenway Company, New York, N. Y. Nail-clippers	17,644	Apr. 10	121	1965
Smith & Hemenway Company, New York, N. Y. Razors	17,645	Apr. 10	121	1965
Smith, Hogg & Co., New York, N. Y. Blankets comfortables, and spreads	5,272	Apr. 24	121	2618
Smith & Kaufmann, New York, N. Y. Ribbons	15,277	Mar. 13	121	675
Smith, Sidney S., Allegheny, Pa. Cigars and stogies	16,631	Apr. 10	121	1960
Smith & Wheeler, Newark, N. J. Extracts for coffee	11,011	Apr. 17	121	2292
Smith, William B., New London, Conn. Ointments	8,127	Apr. 24	121	2622
Smoot Drug Co., Provo, Utah. External remedy for croup	16,665	Apr. 17	121	2305
Snow Flake Canning Co , Brunswick, Me. Canned fish, lobsters, clams, and fish and clam chowder	8,349	Mar. 6	121	297
Société Anonyme de la Distillerie de la Liqeur Bénédictine de l'Abbaye de Fécamp, Fécamp, France. Cordial	15,878	Apr. 3	121	1649
Société Anonyme "Luna," Lausanne, Switzerland. Photographic paper and films	5,617	Mar. 20	121	975
Société Générale Suisse de Chocolats, Vevey, Switzerland. Chocolate	11,935	Mar. 27	121	1319
Société Générale Suisse de Chocolats, Vevey, Switzerland. Chocolate	11,953	Mar. 27	121	1320
Soltmann, Edward G., New York, N. Y. Lead and drawing pencils and drawing-charcoal	531	Apr. 3	121	1625
Sommer, John J., North Attleboro, Mass. Collarettes and chains	16,660	Apr. 24	121	2640
Southern Engine & Boiler Works, Jackson, Tenn. Stationary steam-engines	10,717	Apr. 24	121	2626
Southern Hog Remedy Co., Fort Worth, Tex. Remedy for diseases of swine, and particularly hog-cholera	13,161	Apr. 3	121	1641
Southern Optical Company, Knoxville, Tenn. Spectacles and eyeglasses and parts thereof	17,906	Apr. 24	121	2646
Southern Refining Company, Los Angeles, Cal. Refined asphaltum	7,742	Apr. 3	121	1632
Southern Spring Bed Company, Atlanta, Ga. Mattresses	7,386	Apr. 10	121	1939
Speck, Marshall & Co., Pittsburg, Pa. Spiral, sectional ring, flax, and sheet packing	17,126	Mar. 20	121	1000
Speck, Marshall & Co., Pittsburg, Pa. Rubber hose	17,127	Mar. 20	121	1000
Speck, Marshall & Co., Pittsburg, Pa. Rubber belting	17,128	Mar. 20	121	1000
Speidel, John G., Reading, Pa. Dumb-waiters	2,703	Apr. 10	121	1934
Speidel, John G., Reading, Pa. Dumb-waiters	2,702	Apr. 24	121	2616
Spencer, Clinton A., Boston, Mass. Pure chestnut-oak extract for tanning and dyeing	756	Mar. 6	121	289
Spencerian Pen Co., New York, N. Y. Metallic pens	4,468	Mar. 27	121	1308
Spencerian Pen Co., New York, N. Y. Metallic pens	1,616	Apr. 10	121	1934
Spiegelberger, Mathilde, Fürth, Bavaria, Germany. Hand-beaten leaf metals	5,097	Apr. 3	121	1628
Sprague, Warner & Company, Chicago, Ill. Flavoring extracts	16,649	Mar. 6	121	321
Sprague, Warner & Company, Chicago, Ill. Baking-powder	16,651	Mar. 6	121	321
Sprague, Warner & Company, Chicago, Ill. Spices	16,652	Mar. 6	121	321
Sprague, Warner & Company, Chicago, Ill. Syrup	16,653	Mar. 6	121	323
Sprague, Warner & Company, Chicago, Ill. Canned fruits and vegetables	9,794	Mar. 20	121	990
Sprague, Warner & Company, Chicago, Ill. Coffee	16,473	Mar. 20	121	990
Sprague, Warner & Company, Chicago, Ill. Tea	16,474	Mar. 20	121	990
Sprague, Warner & Company, Chicago, Ill. Baking-powder	9,793	Mar. 27	121	1315
Sprague, Warner & Company, Chicago, Ill. Lemon, vanilla, and orange extract	9,798	Mar. 27	121	1315
Sprague, Warner & Company, Chicago, Ill. Wheat-flour	16,472	Apr. 10	121	1950
Sprague, Warner & Company, Chicago, Ill. Candy	9,795	Apr. 17	121	2290
Sprigg, Thomas F., Baltimore, Md. Toilet-paper	15,649	Mar. 20	121	997
Sprigg, Thomas F., Baltimore, Md. Toilet-paper	15,648	Mar. 27	121	1330
Springfield Breweries Company, Springfield, Mass. Beer	7,843	Apr. 10	121	1939
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	14,890	Mar. 6	121	316
Squibb & Co., W. P., Lawrenceburg, Ind. Whisky	14,891	Mar. 13	121	672
Squire Dingee Co., Chicago, Ill. Pickles	4,885	Apr. 10	121	1936
St. Joseph Pump Co., St. Joseph, Mo. Purifying pumps otherwise known as bucket or chain pumps	8,596	Mar. 13	121	650
St. Louis Shovel Co., St. Louis, Mo. Shovels, scoops, and spades	11,704	Apr. 24	121	2627
St. Paul Roofing, Cornice & Ornament Company, St. Paul, Minn. Waterproof roofing-felt	16,088	Apr. 17	121	2303
St. Paul Roofing, Cornice & Ornament Company, St. Paul, Minn. Eaves-troughs	16,089	Apr. 17	121	2303
Stafford Drug Co. of Baltimore City, Baltimore, Md. Remedy for corns, bunions, and ingrown nails	12,100	Apr. 17	121	2292
Stahl, John M., Chicago, Ill. Agricultural newspapers	16,517	Apr. 17	121	2305
Standard Bottling & Extract Co., Boston, Mass. Ginger-ale	11,326	Mar. 13	121	664
Standard Emulsion Co., New York, N.Y. Emulsions for use in all conditions of malnutrition	16,633	Apr. 3	121	1653
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	9,170	Mar. 13	121	659
Standard Horse Nail Company, New Brighton, Pa. Horse-nails	9,898	Mar. 13	121	662
Standard Oil Co. of New York, New York, N. Y. Illuminating-petroleum	11,718	Mar. 13	121	665
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	9,858	Mar. 20	121	980
Standard Oil Co. of New York, New York, N. Y. Turpentine	8,332	Mar. 27	121	1312
Standard Oil Co. of New York, New York, N.Y. Illuminating-oils manufactured from petroleum	16,772	Apr. 10	121	1960
Standard Oil Co. of New York, New York, N. Y. Illuminating-oils	10,123	Apr. 24	121	2624
Standard Sanitary Mfg. Co., Pittsburg, Pa. Bath-tubs	13,134	Mar. 27	121	1322
Star Distillery Co., Cincinnati, Ohio. Whisky	6,490	Mar. 6	121	294
Star Distillery Co., Cincinnati, Ohio. Whisky	7,661	Mar. 6	121	296
Star Distillery Co., Cincinnati, Ohio. Whisky	6,285	Mar. 13	121	653
Star Distillery Co., Cincinnati, Ohio. Whisky	6,488	Mar. 13	121	654
Star Distillery Co., Cincinnati, Ohio. Whisky	6,487	Mar. 27	121	1310
Star Distillery Co., Cincinnati, Ohio. Whisky	6,282	Apr. 10	121	1938
Stark Bro's. Nurseries & Orchards Company, Louisiana, Mo. Hybrid seedling varieties of grape-vines, cuttings, scions, &c., known as Delaware and Lindley grapes	16,779	Mar. 6	121	323
Stark Bro's. Nurseries & Orchards Company, Louisiana, Mo. Grape-vines, cuttings, scions, &c., reproduced from the seedling of the Brilliant grape	16,780	Mar. 6	121	323
Starkey, John B., San Diego, Cal. Remedies for the cure of corns, bunions, &c	12,413	Mar. 13	121	666
Steel, Robert, Philadelphia, Pa. Whisky	16,805	Apr. 10	121	1961
Steeves, John W., Baltimore, Md. Apparatus for administering magnetic currents to invalids	5,099	Mar. 13	121	651
Steibel, Elizabeth M., Washington, D. C. Skin lotions and washes	15,172	Apr. 17	121	2301

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Stephenson & Co., Woodbine, N. J. Knit jackets and sweaters	11,692	Mar. 13	121	665
Sterling Remedy Company, Kramer, Ind. Cathartic medicine	6,825	Mar. 6	121	295
Sterling Remedy Company, Kramer, Ind. Medicine for indigestion	9,536	Mar. 13	121	660
Steurer, Charles D., New York, N. Y. Magazine	12,638	Mar. 13	121	667
Stevens and Company, Providence, R. I. Spectacles and eyeglasses and their mountings and parts	14,879	Mar. 13	121	672
Stewart Heater Co., Buffalo, N. Y. Feed-water heaters	13,158	Apr. 24	121	2631
Stillwagon, Alexander H., Connellsville, Pa. Preservative coatings for metals	9,532	Apr. 17	121	2280
Stockham, Edward V., Perryman, Md. Canned vegetables	11,439	Mar. 6	121	304
Stokes & Smith Company, Philadelphia, Pa. Electrically-played pianos and electrical players for pianos	16,568	Mar. 6	121	321
Stokes & Son, Thomas, New York, N. Y. Fancy smoked hams and bacon and fancy cuts of pork	2,127	Apr. 24	121	2616
Stone, Charles Z., Barre, Vt. Liniment for rheumatism and sprains	5,908	Apr. 3	121	1629
Stork Company, Boston, Mass. Waterproof sheetings	778	Mar. 13	121	647
Stransky, Maurice, New York, N. Y. Enameled-steelware household and cooking utensils	13,432	Mar. 27	121	1322
Strasburger, Byron L., New York, N. Y. Watch-movements	16,907	Mar. 13	121	678
Straub, John P., Chicago, Ill. Whisky	4,546	Mar. 6	121	292
Strauss, Henry P., New York, N. Y. Cigars, cheroots, stogies, together with tobacco used for making the same	6,386	Mar. 6	121	294
Strauss, Pritz & Co., Cincinnati, Ohio. Whisky	10,344	Apr. 17	121	2291
Strawbridge & Clothier, Philadelphia, Pa. Dolls	15,520	Apr. 3	121	1647
Streator Metal Stamping Co., Streator, Ill. Carpet-sweepers	12,021	Mar. 13	121	665
Streett & Company, J. D., St. Louis, Mo. Cylinder and valve oil	10,859	Mar. 13	121	664
Streit & Co., Samuel, New York, N. Y. Port-wine	1,864	Mar. 13	121	649
Streit & Co., Samuel, New York, N. Y. Gin	1,867	Apr. 17	121	2279
Stromberg, Alice E., Denver, Colo. Anodyne possessing analgesic and antipyretic qualities	9,862	Apr. 3	121	1635
Strong & Garfield Co., East Weymouth, Mass. Leather boots and shoes	1,291	Mar. 13	121	648
Stuebner, Gustavus L., Long Island City, N. Y. Bottom-dumping buckets	15,541	Apr. 3	121	1647
Suffern & Co., New York, N. Y. Cotton piece goods, sheetings, shirtings, and drills	16,669	Mar. 6	121	322
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	14,925	Apr. 24	121	2635
Suffern, Robert A., New York, N. Y. Sheetings, shirtings, and drills	17,617	Apr. 24	121	2645
Suffolk Brewing Company, Boston, Mass. Ale	13,112	Apr. 24	121	2630
Sumner, William P., Jacksonville, Fla. Butter	3,889	Apr. 3	121	1627
Sumter Telephone Mfg. Co., Sumter, S. C. Telephone-switchboards	15,118	Mar. 27	121	1328
Sunlit Fruit Company, San Francisco, Cal. Beverages prepared from fruit-juices, also concentrated extracts and essences, &c., unfermented wines, and non-alcoholic champagne	13,538	Mar. 13	121	669
Sunlit Fruit Company, San Francisco, Cal. Jams, jellies, marmalades, preserved and conserved fruits	13,537	Apr. 24	121	2632
Supplee Hardware Company, Philadelphia, Pa. Axes, hatchets, and adzes	13,825	Mar. 20	121	990
Supplee Hardware Company, Philadelphia, Pa. Pocket-knives	13,820	Mar. 27	121	1324
Supplee Hardware Company, Philadelphia, Pa. Shovels	13,824	Mar. 27	121	1324
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	12,191-2	Mar. 20	121	987
Sweet Springs Milling Company, Sweet Springs, Mo. Wheat-flour	12,189	Apr. 24	121	2628
Swope & Mangold, Incorporated, Dallas, Tex. Whisky	17,249	Apr. 10	121	1961
Sykes & Ab. Kirschbaum & Co, New York, N. Y. Suits and overcoats for young men	14,158	Apr. 10	121	1953
Syracuse Dry Goods Co., Syracuse, N. Y. Coats, pants, and overalls	6,102	Mar. 13	121	653
Taber, Fred J., Boston, Mass. Whisky	10,583	Mar. 27	121	1316
Taber, Fred J., Boston, Mass. Whisky	10,647-8	Mar. 27	121	1317
Talbot Mills, Billerica, Mass. Woolen cloth	14,966	Mar. 20	121	994
Tanzer, Adolph, New York, N. Y. Rings	15,726	Apr. 10	121	1956
Taro Food Co. Inc'd, Danbury, Conn. Prepared food for infants and invalids	2,120	Apr. 17	121	2279
Tarr & Wonson, Limited, Gloucester, Mass. Preservative paint for the bottom of ships and boats	3,416	Apr. 24	121	2616
Tarr & Wonson, Limited, Gloucester, Mass. Preservative paint for the bottom of ships and boats	3,418	Apr. 24	121	2616
Taylor & Co., W. A., New York, N. Y. Whisky	10,694	Mar. 6	121	302
Taylor & Co., W. A., New York, N. Y. Madeira wines	10,696	Mar. 6	121	302
Taylor & Co., W. A., New York, N. Y. Whisky	10,695	Apr. 10	121	1943
Taylor & Co., W. A., New York, N. Y. Jamaica rum	10,697	Apr. 10	121	1944
Taylor & Co., W. A., New York, N. Y. Wines	10,698	Apr. 10	121	1944
Taylor, Horace B., Philadelphia, Pa. Pennyroyal and tansy pills	8,680	Apr. 17	121	2288
Tefft Weller Company, New York, N. Y. Stockings	15,883-4	Apr. 10	121	1957
Temple Pump Company, Chicago, Ill. Buckets for pump-bucket chains	16,949	Mar. 27	121	1332
Temple Pump Company, Chicago, Ill. Gas or oil engines	17,374	Mar. 27	121	1334
Tengwall Company, Chicago, Ill. Loose-leaf ledgers, binders, files, and leaves therefor	14,143	Apr. 10	121	1952
Teofani & Co., London, England. Cigarettes	12,969	Apr. 3	121	1640
Terre Haute Brewing Co., Terre Haute, Ind. Lager-beer and bottled beer	2,901	Mar. 20	121	971
Tetlow, Joseph, Philadelphia, Pa. Face-powder	13,565	Mar. 6	121	313
Thatcher, Charles J., Easton, Pa. Effervescent powder for making aperient mineral water	13,807	Apr. 24	121	2633
Theo. B. Robertson Soap Co., Chicago, Ill. Soap for general cleaning purposes and for laundry and family use	16,380	Apr. 3	121	1651
Theodore W. Foster & Bro. Co., Providence, R. I. Sterling-silver jewelry for personal adornment	7,755	Mar. 27	121	1311
Thomas Stationery Manufacturing Company, Springfield, Ohio. Paper-fasteners	15,194	Apr. 17	121	2302
Thomas Walker & Son Limited, Birmingham, England. Ship-logs and sounding-machines	11,753	Mar. 20	121	984
Thomas Walker & Son Ltd., Birmingham, England. Ships' logs and sounding-machines	15,049	Mar. 13	121	674
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs	11,755	Mar. 20	121	984
Thomas Walker & Son Ltd., Birmingham, England. Ship-logs and sounding-machines	11,756	Mar. 20	121	985
Thompson & Christie, New York, N. Y. Smoking-jackets, bath and lounging robes for men, kimonos, dressing-sacks, and eiderdown wrappers	12,436	Mar. 6	121	309
Thonet Brothers, Vienna, Austria. Bent-wood furniture	13,326	Apr. 24	121	2631
Threefoot Bros. & Co., Meridian, Miss. Wheat-flour	7,444	Apr. 10	121	1939
Threefoot Bros. & Co., Meridian, Miss. Cheroots	7,442	Apr. 24	121	2621
Thüringische Nadel & Stahlwaaren Fabrik Wolff, Knippenberg & Co., Actien Gesellschaft, Ichtershausen, Germany. Needles of all kinds	5,826	Mar. 13	121	652
Timen, Gust, Chicago, Ill. Tonic for the scalp and skin	10,913	Mar. 27	121	1318
Timson, Charles O., Lynn, Mass. Leather turned shoes	5,563	Mar. 27	121	1308
To-Kalon Wine Co., Washington, D. C. Wines	73	Apr. 17	121	2279
Toch Bros., New York, N. Y. Artists' white colors	11,582	Apr. 10	121	1946
Toch Brothers, New York, N. Y. Ready-mixed paints	11,575	Mar. 6	121	305
Toch Brothers, New York, N. Y. Waterproofing paint	11,580	Mar. 6	121	305
Toch Brothers, New York, N. Y. Metal and wood preservative paint	11,583	Mar. 6	121	305
Toch Brothers, New York, N. Y. Metallic paints	11,589	Mar. 6	121	305
Toch Brothers, New York, N. Y. Artists' blue colors	11,577	Apr. 10	121	1946
Tolhausen & Klein, Frankfort-on-the-Main, Germany. Albumen obtained from the treatment of starch	11,940	Mar. 27	121	1319
Tone Bros., Des Moines, Iowa. Baking-powder	3,319	Apr. 17	121	2280
Topeka Milling Company, Topeka, Kans. Wheat and buckwheat flour	1,189	Apr. 24	121	2615
Torsch Packing Co., Baltimore, Md. Canned fruits and vegetables	5,553	Mar. 6	121	293

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Translucent Fabric Co., Quincy, Ill. Fabric composed of a foundation of reticulated or perforated material and a translucent covering	5,115	Apr. 10	121	1936
Traun Rubber Co., New York, N. Y. Rubber for dental purposes	9,281	Mar. 6	121	299
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	10,678	Mar. 6	121	302
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	10,676	Apr. 3	121	1636
Traun & Söhne, Dr. Heinrich, Hamburg, Germany. Combs	10,679	Apr. 3	121	1636
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,964	Apr. 17	121	2281
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods embodying sheetings, shirtings, tickings, ducks, &c	4,965	Apr. 17	121	2281
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	4,967	Apr. 17	121	2281
Tremont & Suffolk Mills, Lowell, Mass. Cotton piece goods	5,259–60	Apr. 17	121	2282
Triumph Voting Machine Company, Pittsfield, Mass. Voting-machines	16,699	Apr. 3	121	1653
Tropic Fruit Company, Ltd., Colony of Wahiawa, Hawaii. Combination of papaya, pineapple, and sugar	16,367	Apr. 3	121	1651
Tropic Fruit Company, Ltd., Colony of Wahiawa, Hawaii. Mixture of the juice of the guava and sugar	16,368	Apr. 3	121	1651
Tropic Fruit Company, Ltd., Colony of Wahiawa, Hawaii. Mixture of pulp of the guava and sugar	16,369	Apr. 10	121	1959
Troy Belting and Supply Company, Troy, N. Y. Round and flat leather belting	14,018	Apr. 24	121	2633
Tsakona, Aristotle, San Francisco, Cal. Puddings	17,273	Mar. 20	121	1002
Tucker & McCormack, Memphis, Tenn. Whisky	10,041	Apr. 24	121	2622
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	11,962	Mar. 20	121	986
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	13,963	Mar. 20	121	991
U. S. Rubber Reclaiming Works of New York, New York, N. Y. Reclaimed rubber	14,162	Mar. 20	121	992
U. T. Hungerford Brass & Copper Co., New York, N. Y. Wire, sheet, rod, tube, angle, channel, and molding composed of copper, brass, bronze, and German silver	13,246	Mar. 13	121	668
U. T. Hungerford Brass & Copper Co., New York, N. Y. Elbows, couplings, unions, return-bends, plugs, crosses, branches, offsets, reducers, caps, bushings, and tees	13,247	Mar. 13	121	668
Udolpho Wolfe Co., New York, N. Y. Medicinal tonic or cordial	8,615–16	Apr. 24	121	2624
Udolpho Wolfe Company, New York, N. Y. Medicinal tonic and cordial	8,617	Mar. 27	121	1313
Ullman Einstein Co., Columbus, Ohio. Whisky	9,692	Apr. 10	121	1942
Ullmann Dreifus & Co., Cincinnati, Ohio. Flavoring extracts	8,240	Mar. 13	121	658
Ulrici, Charles J., New York, N. Y. Remedies for diseases of the throat, nasal organs, and lungs	13,431	Mar. 6	121	312
Ultramarine Company, New York, N. Y. Bluing	16,901	Apr. 17	121	2307
Underwood, Charles E., Dayton, Ohio. Candies	9,127	Mar. 6	121	298
Union Bag & Paper Company, New York, N. Y. Paper bags	17,001	Mar. 13	121	679
Union Bag & Paper Company, New York, N. Y. Paper bags	17,013	Mar. 13	121	679
Union Bag & Paper Company, New York, N. Y. Paper bags	17,016	Mar. 13	121	680
Union Bag & Paper Company, New York, N. Y. Paper bags	17,021	Mar. 13	121	680
Union Bag & Paper Company, New York, N. Y. Paper bags	17,458	Apr. 3	121	1654
Union Bag & Paper Company, New York, N. Y. Paper bags	17,457	Apr. 10	121	1962
Union Bag & Paper Company, New York, N. Y. Paper bags	17,726	Apr. 24	121	2646
Union Distilling Co., Cincinnati, Ohio. Whisky	16,791	Apr. 3	121	1653
Union Fibre Co., Winona, Minn. Fabrics for insulating, deafening, sheathing, building, &c	8,198	Mar. 27	121	1312
Union Hoe Co., Atlanta, Ga. Hoes	15,046	Apr. 10	121	1954
Union Metallic Cartridge Company, Bridgeport, Conn. Cartridges and bullets	10,804–5	Mar. 27	121	1318
Union Metallic Cartridge Company, Bridgeport, Conn. Gun and pistol cartridges and parts thereof	10,817	Apr. 10	121	1944
Union Special Machine Co., Chicago, Ill. Sewing-machines and parts thereof	16,563–4	Apr. 3	121	1652
United Iron Works, Oakland, Cal. Hydraulic pumps	10,271	Mar. 20	121	982
United Shoe Machinery Co., Boston, Mass. Leather welted boots and shoes	11,258	Apr. 24	121	2627
United Shoe Machinery Company, Boston, Mass. Nails	17,681	Apr. 17	121	2308
United States Brewing Company of Chicago, Chicago, Ill. Beer	16,281	Apr. 3	121	1651
United States Graphite Company, Saginaw, Mich. Foundry-facings	17,240	Apr. 24	121	2644
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,575	Mar. 6	121	290
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,607	Mar. 6	121	290
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,791	Mar. 6	121	290
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	10,297	Mar. 6	121	301
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	11,209	Mar. 6	121	303
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,579	Mar. 13	121	648
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	16,489	Mar. 20	121	999
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	1,588	Mar. 27	121	1304
United States Playing Card Co., Cincinnati, Ohio. Playing-cards	13,075	Apr. 10	121	1949
Utica Cement Mfg. Co., Utica, Ill. Hydraulic cement	15,168	Mar. 27	121	1328
Utica Heater Co., Utica, N. Y. Boilers	12,115	Apr. 10	121	1947
Utica Hydraulic Cement Co., Utica, Ill. Hydraulic cement	15,167	Apr. 3	121	1645
V. Schoenecker Boot & Shoe Company, Milwaukee, Wis. Leather boots and shoes	12,690	Mar. 6	121	310
Valentine Franz Co., Philadelphia, Pa. Bitters	9,100	Apr. 3	121	1634
Valk & Bro., S. J., New York, N. Y. Stuffed olives	16,433	Mar. 27	121	1332
Valk & Bro., S. J., New York, N. Y. Jelly-powder	14,087	Apr. 3	121	1643
Valvoline Oil Company, Edgewater, N. J., and New York, N. Y. Lubricating-oils	1,477	Apr. 3	121	1626
Van Duzer, S. R., New York, N. Y. Hair-restoratives	9,378	Apr. 10	121	1942
Van Horn & Sawtell, New York, N. Y. Antiseptic non-fatty and soluble lubricating-jelly	15,387	Apr. 24	121	2636
Van Kannel Revolving Door Co., New York, N. Y. Doors and windows	5,359	Mar. 27	121	1308
Van Vleet-Mansfield Drug Co., Memphis, Tenn. Whisky	11,181	Mar. 20	121	983
Vandyck Churchill Company, New York, N. Y. Lathes	14,732	Mar. 13	121	672
Vane-Calvert Paint Co., St. Louis, Mo. Mixed liquid paint	11,317	Apr. 17	121	2292
Vegetarian Meat Company, Washington, D. C. Vegetable compositions made up to resemble flesh meats	12,519	Mar. 6	121	309
Vereinigte Chemische Werke Aktiengesellschaft, Charlottenburg, Germany. Medicine for Graves' disease	13,888	Apr. 10	121	1952
Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung, Frankfort-on-the-Main, Germany. Medicament comprising menthol dissolved in the menthol ether of valeric acid	15,881	Apr. 24	121	2637
Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung, Frankfort-on-the-Main, Germany. Derivatives of cinchona alkaloids	15,882	Apr. 24	121	2637
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,831	Mar. 27	121	1311
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,834–5	Mar. 27	121	1311
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	7,837–8	Mar. 27	121	1311–12
Vermont Condensed Milk Co., Richmond, Vt., and New York, N. Y. Condensed milk	11,116	Mar. 27	121	1318
Victor Koechl & Co., New York, N. Y. Medicinal preparation having antipyretic, analgesic, hypnotic, &c., properties	14,801	Apr. 17	121	2299
Victor Talking Machine Co., Camden, N. J. Smoking-tobacco and cigarettes	9,275	Apr. 24	121	2624
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,545–6	Apr. 3	121	1654

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Official Gazette. Page.
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,548	Apr. 3	121	1654
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,557-9	Apr. 3	121	1654-5
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,561-4	Apr. 3	121	1655
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,566	Apr. 3	121	1655
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,568	Apr. 3	121	1655
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,581-9	Apr. 3	121	1655-6
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,596	Apr. 3	121	1656
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,539	Apr. 10	121	1963
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,547	Apr. 10	121	1963
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,552-4	Apr. 10	121	1963
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,565	Apr. 10	121	1963
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,569	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,573	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham. N. C., and Memphis, Tenn. Fertilizers	17,575	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,577	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,579-80	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,593	Apr. 10	121	1964
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis Tenn. Fertilizers	17,595	Apr. 10	121	1965
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk. Va.; Charleston. S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,829	Apr. 17	121	2309
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,833	Apr. 17	121	2309
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham. N. C., and Memphis, Tenn. Fertilizers	17,847-8	Apr. 17	121	2309
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,551	Apr. 24	121	2645
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,571	Apr. 24	121	2645
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,590	Apr. 24	121	2645
Virginia-Carolina Chemical Company, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Fertilizers	17,839	Apr. 24	121	2646
Virol, Limited, London, England. Food preparation of bone-marrow and malt	16,550	Apr. 24	121	2640
Vischer & Co., Basel, Switzerland, and New York, N. Y. Ribbons	8,033-4	Apr. 10	121	1940
Voigt & Co., Chattanooga, Tenn. Liquid antiseptic for internal and external uses	8,348	Mar. 20	121	978
Vulcan Plow Co., Evansville, Ind. Plows and cultivators	12,231	Mar. 6	121	307
W. Schneider W. W. & L. Co., St. Louis, Mo. Whisky	3,142	Mar. 13	121	649
W. A. Castle Co., Springfield, Mass. Olive-oil	9,003	Apr. 10	121	1941
W. H. Coe Mfg. Company, Providence, R. I. Package-rolls of gold, silver, aluminum, composition, or other metal leaf	16,740	Mar. 6	121	323
W. H. Reisner Manufacturing Co., Hagerstown, Md. Nose-guards for eyeglasses	18,017	Apr. 24	121	2647
W. J. Dickey & Sons, Incorporated, Baltimore, Md. Kerseys and cassimeres	3,160	Apr. 3	121	1626
W. L. Douglas Shoe Co., Portland, Me. Leather boots and shoes	14,489-90	Apr. 17	121	2296
W. S. Tyler Company, Cleveland, Ohio. Wire cloths and screens	16,971	Mar. 13	121	679
Wacker & Birk Br'g & M'lt'g Co., Chicago, Ill. Beer	15,327	Apr. 17	121	2301
Waco Mill & Elevator Company, Waco, Tex. Wheat-flour	14,963	Mar. 13	121	673
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	10 428	Mar. 27	121	1316
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	10,431	Mar. 27	121	1316
Wagner, Edward H., New York, N. Y. Hand stick-fireworks	10,434	Mar. 27	121	1316
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	10,435	Mar. 27	121	1316
Wagner, Edward H., New York, N. Y. Non-explosive fire and smoke emitting fireworks	14,238	Apr. 3	121	1644
Wagner, Edward H., New York, N. Y. Torpedo-fireworks	10,429	Apr. 24	121	2625
Waite, Merton E., Syracuse, N. Y. Toilet lotion for the cure of blackheads and facial pimples	13,890	Mar. 6	121	314

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
Walker, James W., San Francisco, Cal. Hair invigorators and color-restorers	7,078	Apr. 10	121	1930
Wall, Jerrie B., Ardmore, Ind. Ter.; St. Louis, Mo., and San Francisco, Cal. Hair-vigor and dandruff cure	11,771	Mar. 20	121	985
Wallerstein, Max, New York, N. Y. Water-hardening compounds	15,809	Apr. 10	121	1956
Walter M. Lowney Company, Boston, Mass. Chocolates and other bonbons	10,613	Apr. 24	121	2625
Walworth Manufacturing Co., Boston, Mass. Wrenches	12,147	Mar. 6	121	307
Walworth Manufacturing Company, Boston, Mass. Wrenches	17,791	Apr. 10	121	1966
Ward, William P., New York, N. Y. Remedy for baldness and falling off of the hair	7,623	Mar. 13	121	656
Ward, William P., New York, N. Y. Balm for beautifying the complexion	7,624	Mar. 13	121	656
Ward, William P., New York, N. Y. Puddings and custards	7,625	Mar. 13	121	656
Warner & Co., William R., Philadelphia, Pa. Medicines in pill form	1,498	Mar. 20	121	970
Warren Brothers Company, Boston, Mass. Bituminous pavements and compositions or cements for making the same	7,728	Mar. 13	121	657
Warren Chemical & Manufacturing Company, New York, N. Y. Roofing, sheathing, and building felt	12,537	Mar. 6	121	309
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	12,538	Mar. 6	121	309
Warren Chemical & Manufacturing Company, New York, N. Y. Asphalt	12,539	Apr. 10	121	1948
Warren-Ehret Company, Philadelphia, Pa. Roofing, sheathing, waterproofing, and building felt	12,039	Mar. 27	121	1320
Warren & Williams, Providence, R. I. Rings	17,138	Mar. 20	121	1001
Warwick China Co., Wheeling, W. Va. Earthenware made from a semiporcelain body	10,194	Apr. 3	121	1635
Washburn-Crosby Company, Minneapolis, Minn. Wheat-flour	12,170	Mar. 20	121	987
Waterloo Milling Company, Waterloo, Ill. Wheat-flour	12,240	Mar. 6	121	307
Watson Mill Company, Wichita, Kans. Wheat-flour	15,931	Apr. 3	121	1650
Wayne County Preserving Co., Newark, N. Y. Canned fruits and vegetables	13,057–60	Apr. 3	121	1641
Wedl, Anton, New York, N. Y. Linen piece goods, linen sheets, pillow and bolster cases, damasks, towels, embroidered linens, &c	13,817	Mar. 13	121	669
Wedl, Anton, New York, N. Y. Cotton piece goods, lawns, muslins, &c., and embroidered cotton goods	13,818	Mar. 13	121	669
Weeks, Frank A., New York, N. Y. Solid composition eraser for cleaning leather, cloth, paper, &c	12,871	Apr. 3	121	1640
Weideman Co., Cleveland, Ohio; Chicago, Ill., and New York, N. Y. Coffee	3,044	Mar. 20	121	972
Weimer, Wright & Watkin, Philadelphia, Pa. Misses', children's, infants', and little gents' leather and canvas shoes	8,269	Apr. 3	121	1632
Weiner, Michael, Milwaukee, Wis. Whisky	17,487	Apr. 10	121	1963
Weinreich, Joseph, Dayton, Ohio. Cigars	7,953	Mar. 13	121	657
Weinreich, Joseph, Dayton, Ohio. Cigars	8,529	Mar. 13	121	660
Weinreich, Joseph, Dayton, Ohio. Cigars	7,961	Mar. 27	121	1312
Weinreich, Joseph, Dayton, Ohio. Cigars	7,952	Apr. 17	121	2287
Weld, Colburn & Wickens, New York, N. Y. Suspenders for trousers	17,309	Apr. 3	121	1653
Weldarine Manufacturing Company, Topeka, Kans. Metallic brazing compound	13,017	Apr. 3	121	1641
Wellenberger, P. F. & J. A., New York, N. Y. Proprietary remedies for the relief and cure of stomach, liver, and bowel complaints, &c	14,240	Apr. 24	121	2634
Weller & Sons, W. L., Louisville, Ky. Whisky	2,568	Mar. 27	121	1305
Wells Brothers Company, Greenfield, Mass. Taps, dies, and screw-plates	10,332	Apr. 24	121	2625
Wells, Ephraim S., Jersey City, N. J. Rat, vermin, and insect destroyer or exterminator	16,903	Apr. 24	121	2642
Wells & Nellegar Company, Chicago, Ill. Enameled-steel kitchen utensils	6,642	Apr. 24	121	2619
Wells & Richardson Company, Burlington, Vt. Preparations for coloring butter	12,426	Mar. 20	121	988
Wells & Richardson Company, Burlington, Vt. Preparations for coloring butter	12,425	Apr. 17	121	2294
Welsbach Light Company, Gloucester, N. J. Gas-burners and mantles therefor	13,700	Mar. 27	121	1323
Wertheim, Joseph, Meerane, Germany. Remedies for bronchial affections	12,756	Apr. 24	121	2629
Wertheimer-Swarts Shoe Co., St. Louis, Mo. Leather shoes for men	11,907	Apr. 17	121	2293
West India Oil Company, New York, N. Y. Illuminating-oil	13,986	Mar. 20	121	992
Western Brewery Co., Belleville, Ill. Beer	6,178	Mar. 13	121	653
Western Clock Mfg. Co., La Salle, Ill. Clocks and watches	14,444	Mar. 27	121	1325
Western Clock Mfg. Co., La Salle, Ill. Alarm-clocks	14,445	Apr. 10	121	1953
Western Flour Mill Co., Davenport, Iowa. Wheat-flour	14,140	Mar. 13	121	670
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	2,574–7	Apr. 10	121	1934
Western Leather Company, Milwaukee, Wis. Pasted leather sheets	2,579–82	Apr. 17	121	2280
Western Portland Cement Co., Yankton, S. D. Portland cement	13,486	Apr. 24	121	2632
Western States Portland Cement Company, Independence, Kans. Portland cement	17,177	Apr. 24	121	2643
Wheatena Company, New York, N. Y. Wheat breakfast-food	9,356	Mar. 27	121	1314
Wheeler Condenser & Engineering Co., New York, N. Y. Centrifugal pumps	8,382	Apr. 17	121	2287
White, Charles W., Waco, Tex. Mattresses	5,834	Mar. 20	121	975
White, Edward B., Lancaster, Ohio. Cure or specific for neuralgia	15,847	Mar. 20	121	998
White & Son, John, Memphis, Tenn. Solid-fuel-burning heating and cooking stoves	7,042	Apr. 3	121	1631
Whitman & Barnes Manufacturing Company, Akron, Ohio. Wrenches	14,591	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Mower, binder, reaper, and header knife and sickle heads	14,594	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Grindstone-frames	14,597	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Tack-claws	14,712	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Screw-drivers	14,716	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Knife-sections, including mower, reaper, binder, and header knife sections	14,717	Mar. 27	121	1326
Whitman & Barnes Manufacturing Company, Akron, Ohio. Cultivators	15,445	Mar. 27	121	1329
Whitman & Co., O. M., Boston, Mass. Refrigerators	16,037	Apr. 10	121	1958
Whitman Grocery Company, Orange, Mass. Prepared tapioca	8,172	Mar. 6	121	297
Whittemore Bros. and Co., Cambridge, Mass. Polish for cleaning and polishing russet and tan shoes	11,527	Apr. 24	121	2627
Whittemore Brothers and Company, Cambridge, Mass. Polish for russet and tan-colored shoes	11,528	Mar. 6	121	305
Whittemore Brothers and Company, Cambridge, Mass. Burnishing-ink for finishing and polishing heels, shanks, and edges of boots, &c	15,216	Apr. 3	121	1645
Wiebke, Louis, New York, N. Y. Leather boots and shoes	16,736	Mar. 6	121	323
Wiebusch & Hilger, Limited, New York, N. Y. Pocket-knives	1,783	Mar. 13	121	648
Wilburine Oil Works, Ltd., New York, N. Y. Lubricating-oils	13,146	Mar. 6	121	311
Wilburine Oil Works, Ltd., New York, N. Y. Petroleum or mineral jelly	13,147	Mar. 6	121	311
Wilkinson, Gaddis & Co., Newark, N. J. Canned lobster	8,391	Mar. 27	121	1313
Wilkinson, Gaddis & Co., Newark, N. J. Canned fruits and vegetables	8,392	Mar. 27	121	1313
Wilkinson Shear & Cutlery Co., Reading, Pa. Culinary knives	12,150	Apr. 24	121	2626
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines and their parts and attachments	17,318	Mar. 27	121	1333
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines and their parts and attachments	17,320	Mar. 27	121	1333
Willcox & Gibbs Sewing Machine Co., New York, N. Y. Sewing-machines	17,317	Apr. 10	121	1961
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction and bearing metals	5,937	Mar. 13	121	653
William A. Hardy & Son's Co., Fitchburg, Mass. Antifriction and bearing metals	5,940	Mar. 13	121	653
William Barker Company, Watervliet, U. Y. Collars and cuffs	4,806	Mar. 27	121	1308

Alphabetical list of trade-mark applicants published during March and April—Continued.

Name, residence, and title.	Serial No.	Date.	Official Gazette. Vol.	Page.
William G. Bell Company, Boston, Mass. Spiced seasonings	17,117-18	Apr. 24	121	2643
William G. Bell Company, Boston, Mass. Spiced seasonings	17,120	Apr. 24	121	2643
William M. Crane Co., New York, N. Y. Gas-stoves	10,538	Mar. 27	121	1316
William Skinner Manufacturing Co., Holyoke and Boston, Mass.; New York, N.Y.; Chicago, Ill., and Philadelphia, Pa. Silk and mohair braids	9,562	Mar. 13	121	660
William Underwood Company, Boston, Mass. Canned sardines	12,390	Mar. 27	121	1321
Williams & Brenckle Cigar Manufacturing Co., Milwaukee, Wis. Cigars	13,488	Mar. 27	121	1323
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,754	Apr. 3	121	1645
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,743	Apr. 24	121	2635
Willis & Co., Grinnell, New York, N. Y. Bleached and unbleached shirtings and sheetings, cambrics, and long-cloth	14,745	Apr. 24	121	2635
Wilmerding-Loewe Co., San Francisco, Cal. Whisky	9,507	Apr. 24	121	2624
Wilson, George, Farrell, Miss. Catarrhal remedy	11,623	Mar. 27	121	1319
Wilson Grocery Company, Peoria, Ill. Canned, bottled, and preserved fruits and vegetables	4,646	Mar. 20	121	974
Wilson Grocery Company, Peoria, Ill. Canned, bottled, or preserved fruits and vegetables	4,647	Apr. 24	121	2618
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	11,627	Mar. 27	121	1319
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	14,216	Apr. 3	121	1644
Winchester Repeating Arms Co., New Haven, Conn. Shotguns and rifles	9,669	Apr. 24	121	2624
Wing, George H. G., Boston, Mass. Cigarettes	15,344	Mar. 20	121	997
Winter, Basilius, Rock Island, Ill. Whisky	5,303	Apr. 17	121	2283
Witte, Alexis, New York, N. Y. Razors	10,831	Mar. 13	121	663
Wittemann Bros., New York, N. Y. Flavoring extracts	16,678-81	Apr. 17	121	2305-6
Wm. A. Rogers, Ltd., New York, N. Y. Silver-plated flat, hollow, and table ware	17,439	Apr. 24	121	2644
Wm. Bergenthal Co., Milwaukee, Wis. Gin	6,575	Mar. 20	121	976
Wm. Hoelscher and Co., Incorporated, San Francisco, Cal. Wine	16,755	Apr. 17	121	2306
Wm. L. Gilbert Clock Company, Winsted, Conn. Alarm-clocks	10,754	Apr. 17	121	2291
Wm. Lanahan & Son, Baltimore, Md. Whisky	17,235	Apr. 24	121	2644
Wm. Numsen & Sons, Inc., Baltimore, Md. Fruits and vegetables in tins or glass	1,688	Apr. 3	121	1626
Wolf & Co., A. A., Pittsburg, Pa. Whisky	1,923	Apr. 3	121	1626
Wolley & Co., A. Herbert, Nottingham, England. Silk nets for the hair	13,474	Mar. 13	121	669
Wood & Sons, J. R., New York, N. Y. Solid-gold finger-rings in solid bands or with a setting	8,597	Apr. 17	121	2287
Woodbury & Company, E. S., Boston, Mass. Leather boots and shoes	16,875	Mar. 6	121	324
Woodford Distilling Co., Chicago, Ill. Whisky	17,536	Apr. 10	121	1963
Woolrich & Co., Palmer, Mass. Prepared foods for infants and invalids	10,635	Apr. 10	121	1943
World Polish Mfg. Co., York, Pa. Polish and dressing for russet and tan shoes and leather articles	6,826	Apr. 3	121	1631
World Today Company, Chicago, Ill. Monthly magazines	15,234	Mar. 20	121	997
Wrensch, Henry E., Jr., Montclair, N. J. Liniment to be used as embrocation for rheumatism, sprains, &c	13,894	Apr. 17	121	2297
Wright & Co., Hoboken, N. J. Bust-forms	16,101	Mar. 6	121	319
Wunderle, Philip, Philadelphia, Pa. Candy	7,181	Mar. 13	121	655
Wunderle, Philip, Philadelphia, Pa. Candy	7,183	Mar. 20	121	976
Wunderle, Philip, Philadelphia, Pa. Candy	8,708	Apr. 3	121	1633
Wunderle, Philip, Philadelphia, Pa. Candy	7,582	Apr. 10	121	1939
Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machines	16,174	Apr. 10	121	1959
X-Ray Stove Polish Co., New York, N. Y. Powdered stove-polish	4,649	Mar. 6	121	292
Yates, Harry, Buffalo and Orchard Park, N. Y. Milk and cream	6,046	Apr. 10	121	1937
Year Clock Company, Mount Vernon, N. Y. Clocks	12,164	Mar. 20	121	986
York Manufacturing Co., Saco, Me. Cotton, worsted, and mixed cotton-and-wool piece goods	5,270	Apr. 17	121	2283
York Manufacturing Co., Saco, Me. Cotton piece goods	5,269	Apr. 24	121	2618
Young, Albert B., Buffalo, N. Y. External remedy for animals	15,803-4	Mar. 20	121	996
Young, Charles P., York, Pa. Base-ball bats	16,178	Apr. 24	121	2638
Zabriskie, Frank L., New York, N. Y. Baking-powder	13,808	Mar. 27	121	1324

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ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Accordion. Mechanically-playing	A. Zuleger	817,950	Apr. 17	2801	607	121	2085
Account-cabinet	B. C. Maxwell	816,025	Mar. 27	4145	878	121	1061
Accounting appliance. Credit-	J. J. Bennett	815,785	Mar. 20	3651	768	121	901
Acetylene chlorid. Making	H. Precht	817,188	Apr. 10	1272	.....	121	1702
Acetylene-generator	J. W. Vaughn	815,390	Mar. 20	2854	593	121	728
Acid from air. Making nitric	A. and H. Pauling	814,917	Mar. 13	1817	380	121	455
Acid. Making sulfuric	R. Knietsch	816,918	Apr. 3	737	152	121	1522
Acids and ketones. Making carbon	H. S. Blackmore	817,690	Apr. 10	2236	480	121	1903
Acids. Making barbituric	O. Wolfes	814,496	Mar. 6	997	.....	121	217
Acids. Making dialkylbarbituric	M. Conrad	817,159	Apr. 10	1209	.....	121	1688
Adding device	L. E. Coleman	816,781	Apr. 3	454	102	121	1458
Adding device. Mechanical	C. R. Martineau	815,725	Mar. 20	3504	735–8	121	872
Adding-machine	N. H. Kodama and A. I. Gancher	816,342	Mar. 27	4802	1017–18	121	1201
Adding-machine	M. Kun	817,786	Apr. 17	2460	525–7	121	2008
Addressing-machine	A. B. Hunkins	815,832	Mar. 20	3756	789–90	121	924
Adhesive-applying device	O. Hesser	817,559	Apr. 10	2017	426	121	1856
Adhesive-supplying mechanism	O. Tyberg and J. G. C. Mantle	814,414	Mar. 6	854	176	121	185
Adjustable gage	J. E. Giffin	814,530	Mar. 6	1065	219–20	121	231
Adjustable seat and desk	J. T. Brent, Jr	816,292	Mar. 27	4671	991–2	121	1175
Advertising apparatus. Display-	E. O. Wilcox	816,632	Apr. 3	176	37–8	121	1400
Advertising device	A. W. MacArthur	814,383	Mar. 6	775	156–7	121	171
Advertising device	H. B. Seaman	815,867	Mar. 20	3833	812	121	939
Advertising device	H. A. de Rudio	818,197	Apr. 17	3296	705	121	2192
Aerating device for pasteurizing	C. Schallinger and M. Sondergaard	817,875	Apr. 17	2644	574	121	2048
Aerial cables. Suspending	L. A. McNeil	816,991	Apr. 3	896	185	121	1557
Agitating device	W. B. Devereux	815,272	Mar. 13	2545	535	121	613
Agricultural implement	W. H. Rice	815,744	Mar. 20	3569	749–50	121	885
Agricultural implement	C. D. Adams	817,540	Apr. 10	1976	418	121	1843
Air and gas engine	A. O. Haney	817,706	Apr. 10	2261	487	121	1908
Air-brake appliance	H. C. Luck	814,974	Mar. 13	1926	404–5	121	476
Air-brake coupling	J. S. Farlow	818,155	Apr. 17	3205	689	121	2172
Air-brake coupling. Automatic	V. Simecek	815,870	Mar. 20	3838	813–14	121	941
Air-compressor strainer	W. J. Ogan	817,797	Apr. 17	2486	532	121	2014
Air-compressors. Means for operating the electric unloaders of	F. V. Longacre	815,025	Mar. 13	2058	431	121	504
Air-currents. Means for producing	B. A. Stowe	816,759	Apr. 3	402	92–3	121	1448
Air-cushion	H. A. Carl	814,829	Mar. 13	1675	350	121	425
Air-feeding device	E. Harcharick	814,650	Mar. 6	1297	272–3	121	280
Air-feeding device	W. Sasse	815,473	Mar. 20	3009	627	121	763
Air-lock	S. W. Chiles	816,642	Apr. 3	202	47–8	121	1405
Air-pressure and vacuity indicator	H. A. House	817,778	Apr. 17	2435	521	121	2003
Air-purifier	H. Platz	816,371	Mar. 27	4863	1031	121	1214
Air-ship	C. F. Page	817,442	Apr. 10	1785	375	121	1809
Air-ship. Dirigible	A. Bratschie	816,706	Apr. 3	316	73	121	1430
Air to electric discharges. Apparatus for subjecting	J. E. Mitchell and D. Parks	817,062	Apr. 3	1049	218	121	1591
Alarm: *See* Burglar-alarm. Fire-alarm. Incubator-alarm. Pneumatic alarm. Thermostatic alarm.							
Alarm	H. Irwin	815,709	Mar. 20	3473	725–6	121	866
Alcohol from liquor casks and barrels. Apparatus for recovering waste	T. H. Naughton	815,463	Mar. 20	2994	624	121	760
Alcohol from liquor casks and barrels. Recovering waste	T. H. Naughton	815,464	Mar. 20	2997	624	121	760
Alcohols and their derivatives. Producing aromatic	C. Mettler	815,548	Mar. 20	3151	.....	121	793
Alcohols. Production of aromatic	C. Mettler	815,193	Mar. 13	2399	.....	121	581
Alcoholic liquors. Receptacle for storing	S. Shwayder	818,478	Apr. 24	3832	824	121	2360
Alkalies and zinc sulfid. Manufacturing caustic	C. Ranson	818,192	Apr. 17	3286	703	121	2191
Alkaline process. Mercurial	W. E. Harmon	814,692	Mar. 13	1410	.....	121	368
Alkyl-oxyacetyl-cyanamid and making same	A. H. C. Heitmann and E. C. Clemmensen.	814,693	Mar. 13	1411	.....	121	368
Alkylaminoacetopyrocatechol and making same	F. Stolz	815,653	Mar. 20	3357	.....	121	830
Alloy of iron and hydrogen agglomerated in strong coherent bodies. Production of articles of	G. W. Gesner	815,419	Mar. 20	2920	606	121	744
Amalgamating	H. A. Thomas	814,814	Mar. 13	1644	345	121	418
Amalgamator	W. H. Morgan	816,243	Mar. 27	4576	974	121	1153
Ammonia. Producing	J. A. Lyons and E. C. Broadwell	816,928	Apr. 3	762	157	121	1528
Ammonia-vaporizer	J. Robson	816,743	Apr. 3	373	86–7	121	1442
Amusement apparatus	C. C. Dean	816,220	Mar. 27	4537	963	121	1145
Amusement apparatus	O. M. Connelly	816,435	Mar. 27	4995	1060–1	121	1241
Amusement apparatus	C. A. Carlson and D. H. Haywood	817,156	Apr. 10	1200	250–1	121	1686
Amusement apparatus	C. I. Matson	817,381	Apr. 10	1644	348	121	1780
Amusement apparatus	W. H. Strickler	817,402	Apr 10	1697	358–9	121	1791
Amusement apparatus	F. H. Dickson	818,079	Apr. 17	3053	658	121	2130
Amusement device	M. Stoltz	817,401	Apr. 10	1696	358	121	1790
Amusement device	C. F. Hartway	817,556	Apr. 10	2013	424	121	1865
Amusement-vehicle	H. H. Pattee and C. L. Duenkel	815,211	Mar. 13	2443	509–10	121	592
Amusement-vehicle. Spherical	H. H. Pattee	815,210	Mar. 13	2439	508–9	121	591
Anchor	O. Hile and C. Rocke	815,588	Mar. 20	3217	677	121	806

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Anchor	O. George and P. Smith	816,857	Apr. 3	615	120	121	1496
Anchor. Guy-	C. J. Widmer	816,631	Apr. 3	173	37	121	1400
Anchor. Land-	W. E. Ciasna	817,044	Apr. 3	988	202	121	1578
Anchor. Land-	G. D., Jr., R. H., and H. T. Toy	818,061	Apr. 17	3012	652	121	2131
Anesthetics. Mask for administering	A. Rousseau	818,123	Apr. 17	3138	675	121	2158
Animal-chase	W. M. Elder and C. W. Turner	816,081	Mar. 27	4272	905	121	1089
Animal-shears	H. S. Burley	814,113	Mar. 6	220	43	121	48
Animal-shears	J. D. Scovel	817,524	Apr. 10	1946	411	121	1843
Animal-trap	G. M. Myers	814,066	Mar. 6	129	25	121	29
Animal-trap	J. Walker and B. M. Frederick	815,663	Mar. 20	3371	705	121	842
Animal-trap	J. D. Kittrell	816,102	Mar. 27	4306	912	121	1096
Animal-trap	C. C. Sphung	816,394	Mar. 27	4923	1046	121	1227
Animal-trap	J. J. Swint	816,398	Mar. 27	4929	1048	121	1228
Animal-trap	C. F. Nelson	816,814	Apr. 3	519	113	121	1472
Animal-trap	E. Firnhaber	818,239	Apr. 17	3382	726	121	2209
Animal-trap	T. A. Davis	818,357	Apr. 17	3602	772	121	2255
Annealing apparatus	J. J. Tynan	815,569	Mar. 20	3184	669	121	800
Anthraquinon compound and making same	M. H. Isler	814,137	Mar. 6	268	.....	121	59
Anticreeper	C. Lien	816,926	Apr. 3	757	156	121	1526
Apparel-pad	H. W. Thompson	817,020	Apr. 3	949	195	121	1569
Apparel. Wearing-	H. E. Brown	815,329	Mar. 20	2711	565	121	697
Apple-box press	W. L. Goyett	814,954	Mar. 13	1888	397	121	468
Arch-prop	J. W. Arrowsmith	815,897	Mar. 20	3892	823	121	953
Arch structure	D. B. Luten	818,386	Apr. 17	3660	786	121	2208
Areameter	E. V. Beals	818,601	Apr. 24	4111	883-4	121	2419
Armor-plate. Making	J. Strauss	815,965	Mar. 27	4049	856	121	1088
Article-holding means	D. King	815,353	Mar. 20	2758	574	121	708
Asphalt screen and storage bin	F. A. Hetherington	816,229	Mar. 27	4550	967	121	1148
Assembler-slide brake	L. F. Smyth	815,651	Mar. 20	3354	702	121	838
Atomizer	W. H. Wood	814,830	Mar. 13	1659	347	121	421
Atomizer	I. Q. Gurnee	816,656	Apr. 3	232	54	121	1411
Atomizer. Coin-controlled	P. A. Dunn	817,231	Apr. 10	1357	285-6	121	1720
Atomizer or nebulizer	F. C. Dorment	815,411	Mar. 20	2907	603	121	740
Automatic carrier	S. H. Libby	816,484	Mar. 27	5093	1080	121	1262
Automatic switch	C. F. Adams	815,397	Mar. 20	2874	597-8	121	733
Automobile	C. Schmidt	815,045	Mar. 13	2096	440-1	121	512
Automobile	F. Pilain	815,735	Mar. 20	3537	742	121	878
Automobile carriages. Safety steering mechanism for	E. D. Cahen	814,586	Mar. 6	1170	244	121	263
Automobile-engine suspension	A. C. Stewart	814,991	Mar. 13	1970	414	121	484
Automobile-horns. Means for blowing	G. W. Lorimer	817,125	Apr. 3	1131	235	121	1612
Automobile sleighing attachment	C. C. Dolan	815,910	Mar. 20	3914	828	121	957
Automobile steering device	C. F. Jenkins	818,967	Apr. 24	4825	1038	121	2575
Automobile-wheel	C. B. Kimball	816,666	Apr. 3	247	58	121	1414
Automobiles. Device for recharging the storage batteries of	L. Lyndon	815,360	Mar. 20	2788	579-81	121	712
Awning, curtain, and the like fixture	A. Copeland	814,770	Mar. 13	1557	329	121	400
Ax. Folding	A. E. Veon	817,889	Apr. 17	2674	582	121	2054
Axle	E. Einfeldt	815,582	Mar. 20	3207	674	121	806
Axle	E. Einfeldt	815,583	Mar. 20	3208	675	121	806
Axle	G. M. Smith	817,881	Apr. 17	2657	577	121	2051
Axle-box cover	E. Denegre	817,753	Apr. 17	2371	509	121	1989
Axle-box lubricator	A. G. Elvin	818,021	Apr. 17	2944	636	121	2117
Axle-box lubricator	A. G. Elvin	818,022	Apr. 17	2946	636	121	2117
Axle-lubricator	E. Le Fever	815,842	Mar. 20	3786	798	121	930
Axle. Metallic	H. M. Butler	815,678	Mar. 20	3407	711-12	121	852
Axles. Mechanism for transmitting power from car-	D. E. Johnson	814,293	Mar. 6	568	120-1	121	122
Back and bust supporter	S. Meyer	817,653	Apr. 10	2178	463	121	1890
Bag: *See* Hand-bag. Water-bag.							
Bag	T. Manahan	814,150	Mar. 6	292	58	121	64
Bag-cutting machine	S. H. Jones	817,919	Apr. 17	2734	593-4	121	2070
Bag-fastener	E. E. Witte	815,668	Mar. 20	3382	707	121	846
Bag filling and packing apparatus	J. F. Jones and C. T. Odena	815,091	Mar. 13	2178	459-60	121	529
Bag or package	W. G. Bell	815,255	Mar. 13	2519	524	121	608
Bag-stringing machine	J. L. Lowe and J. O. Hibbard	815,606	Mar. 20	3251	682-3	121	816
Ball-supporting device	M. Stransky	814,246	Mar. 6	484	100	121	104
Bait. Revolving spinning	J. H. Lee	817,257	Apr. 10	1419	298	121	1731
Bale-tie	E. L. Pence	815,116	Mar. 13	2233	469	121	542
Bale-tie machine	G. A. Rumbel	816,381	Mar. 27	4880	1036-8	121	1218
Baler. Hay-	F. Hiniker	814,697	Mar. 13	1415	294	121	360
Baling hay and similar materials	J. and W. H. North	817,932	Apr. 17	2765	590	121	2078
Baling-press	J. S. Tuttle and C. L. Cookson	814,251	Mar. 6	492	102	121	106
Baling-press	J. S. Tuttle and C. L. Cookson	814,252	Mar. 6	494	102-3	121	106
Baling-press	J. and W. H. North	817,984	Apr. 17	2862	620	121	2090
Baling-press	W. R. Colman	818,232	Apr. 17	3365	720	121	2206
Baling-press	M. C. Nixon	818,779	Apr. 24	4479	959-60	121	2500
Baling vines, hay, and the like in cylindrical form. Machine for	J. T. Scott	814,736	Mar. 13	1486	312	121	395
Ball: *See* Playing-ball.							
Ball-mill. Tubular	M. F. Abbé	818,211	Apr. 17	3318	709-10	121	2197
Ball-player's shoulder-guard. Foot-	J. B. McCalla	817,656	Apr. 10	2182	464	121	1891
Balls. Machine for making metal	C. T. Schnitzer	814,907	Mar. 13	1632	342	121	415
Balling-machine	A. E. Rhoades	815,378	Mar. 20	2822	588	121	720
Ballast-trimmer	J. H. Drinkwater	816,223	Mar. 27	4542	954-6	121	1146
Bandage	V. E. Hardee	815,426	Mar. 20	2932	608	121	747
Bandage. Elastic	H. Myers	814,795	Mar. 13	1615	338	121	412
Bandages. Device for facilitating the removal of	C. P. Williams	817,946	Apr. 17	2796	605	121	2084
Bandages. Machine for forming sacks for suspensory	J. K. Toles	818,583	Apr. 24	4062	873	121	2408
Banners and the like. Holder for	L. G. Johnson	815,838	Mar. 20	3779	797	121	928
Bar: *See* Boring-bar. Grate-bar. Furnace-grate bar.							
Bar-knife	W. H. Kingsley	818,263	Apr. 17	3427	736	121	2219

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Barber's appliance	G. W. Hale	817,111	Apr. 3	1094	227	121	1601
Barge	J. M. Pearson	815,631	Mar. 20	3311	693	121	829
Barge and other like vessel	J. M. Pearson	815,551	Mar. 20	3154	661	121	794
Barrel	R. W. Hardie	814,375	Mar. 6	761	153	121	166
Barrel. Collapsible	J. H. Durant	817,420	Apr. 10	1733	364-5	121	1797
Barrel-draining device	L. T. Tucker	818,491	Apr. 24	3860	890-1	121	2365
Barrel-forming device	I. H. Melvin	816,872	Apr. 3	646	134	121	1502
Barrels and pipes. Lining working	N. C. Stoner	816,890	Apr. 3	683	141	121	1510
Basement and like ventilator	P. H. Jackson	818,880	Apr. 24	4680	1004	121	2542
Basins and the like. Cover and trap for catch-	P. Hannagan	818,164	Apr. 17	3220	692-3	121	2176
Basting apparatus	A. G. R. Williams	814,255	Mar. 6	501	104	121	107
Bat. Base-ball	F. Maschling	814,857	Mar. 13	1715	358	121	433
Bath:							
See Shower-bath.							
Bath-spray	A. N. Lattin	816,924	Apr. 3	755	156	121	1526
Bath-tub head-support or bolster	C. Rossdam	818,854	Apr. 24	4624	992	121	2531
Bathing apparatus	H. Hoeglauer	818,887	Apr. 24	4677	1004	121	2542
Batter-mixing machine	A. Burgess	814,935	Mar. 13	1851	387	121	462
Batteries. System of charging storage	A. G. Wilson	817,827	Apr. 17	2538	545	121	2026
Batteries. Treating alkaline storage	T. A. Edison	817,162	Apr. 10	1216	.....	121	1690
Battery:							
See Secondary battery. Storage battery.							
Battery	E. W. Schneider	816,384	Mar. 27	4894	1040	121	1220
Bayonet-fixing arrangement	A. Berthier	816,954	Apr. 3	823	168	121	1540
Beam-tension regulator. Electromagnetic	D. Bacon	815,326	Mar. 20	2707	564	121	696
Bearing. Ball-	F. Loeffler	817,124	Apr. 3	1130	234	121	1611
Bearing. Ball-	B. G. Goble	817,737	Apr. 10	2340	502	121	1928
Bearing. Ball-	E. Blin	818,734	Apr. 24	4383	938	121	2479
Bearing. Crank-arm sleeve-	C. Wales	814,751	Mar. 13	1518	321	121	392
Bearing for electric meters. Frictionless	T. J. Johnston	816,330	Mar. 27	4776	1011	121	1196
Bearing for grinding-mills	M. Benjamin	817,898	Apr. 17	2703	587	121	2062
Bearing for rod-brasses. Adjustable	G. S. Webster	818,319	Apr. 17	3532	758	121	2242
Bearing lubricator. Slide-	W. L. and F. S. Card	816,778	Apr. 3	449	101	121	1457
Bearing. Roller-	W. Houldsworth	816,798	Apr. 3	480	107	121	1463
Bearing. Roller-	G. D. Scheiffler	818,919	Apr. 24	4736	1016	121	2556
Bearing. Spindle-	F. Schulz	814,168	Mar. 6	326	65	121	71
Bearing. Wheel-	G. A. Anderson	818,218	Apr. 17	3333	714	121	2200
Bearing with weight-controlled lubricant	M. Kemmerich	817,118	Apr. 3	1122	232	121	1610
Bed and cabinet. Combined folding	W. H. Blose	815,400	Mar. 20	2879	598-9	121	734
Bed attachment	N. E. Smith	815,481	Mar. 20	3020	630	121	765
Bed attachment. Invalid-	I. Baker	817,951	Apr. 17	2802	667	121	2085
Bed. Convertible sofa-	G. E. Holmes, A. G. and J. M. Bostrom.	818,089	Apr. 17	3064	661	121	2141
Bed, cot, and table. Invalid	A. Kruger	815,715	Mar. 20	3487	729	121	868
Bed. Folding	A. A. Saunders	814,921	Mar. 13	1822	382	121	455
Bed. Folding	W. C. James	817,371	Apr. 10	1626	344	121	1775
Bed. Folding	W. L. Caldwell	818,517	Apr. 24	3932	846-7	121	2380
Bed. Hospital or invalid's	W. J. Harris	814,286	Mar. 6	554	116	121	119
Bed. Invalid-	J. W. Summers	816,048	Mar. 27	4189	888	121	1070
Bed. Sofa-	J. B. Strand and J. H. Haugen	816,134	Mar. 27	4374	925	121	1110
Bed-spring	F. L. Kunkel	814,220	Mar. 6	428	88	121	92
Bed-spring attachment	W. A. Perry	818,046	Apr. 17	2988	646	121	2126
Bed-spring fastener	R. Naysmith	818,187	Apr. 17	3273	701	121	2187
Bed-spring frame	R. Naysmith	818,111	Apr. 17	3117	671	121	2153
Bed-spring frame	R. Naysmith	818,112	Apr. 17	3119	671	121	2153
Bed-spring support	R. Naysmith	818,113	Apr. 17	3121	672	121	2154
Bed. Tilting or wall	J. B. Eastman	816,718	Apr. 3	334	77	121	1434
Beds. Folding seat for metal	M. Faas	816,974	Apr. 3	861	178	121	1549
Beds. Weight-supporting device for spring-	C. H. Johnson	817,918	Apr. 17	2733	593	121	2069
Bedstead	J. V. Dougherty	815,077	Mar. 13	2149	453	121	523
Bedstead. Adjustable	E. A. Barnes	817,295	Apr. 10	1489	312	121	1745
Bedstead footboard. Iron-	L. O. Brekke	815,258	Mar. 13	2522	525	121	609
Bedsteads. Crib attachment for	H. T. Beall and I. V. Guy	817,542	Apr. 10	1980	419	121	1849
Beehive	G. W. Mann	818,270	Apr. 17	3438	739	121	2222
Beer, &c. Apparatus for drawing	F. Stickel	814,094	Mar. 6	187	37	121	41
Beer-cooler	F. H. Strobel	818,056	Apr. 17	3001	648	121	2128
Bell. Alarm-	A. J. Hamrock	814,444	Mar. 6	904	185	121	197
Bell. Musical	J. C. Deagan	818,874	Apr. 24	4656	1000*	121	2538
Belt clamp-plate	J. Stoll	814,095	Mar. 6	189	38	121	41
Belt. Conveyer-	M. H. Cook	814,943	Mar. 13	1869	392	121	465
Belt-fastener	J. Millar	817,501	Apr. 10	1905	401	121	1835
Belt for conveyers. Fabric	J. J. Voorhees	814,416	Mar. 6	860	177	121	187
Belt-holder	G. J. Shaw and L. Long	815,125	Mar. 13	2263	473	121	549
Belt-reel	D. F. Geiger	818,157	Apr. 17	3208	690	121	2173
Belt sander. Double-	D. T. Clemons	818,518	Apr. 24	3933	847-8	121	2380
Belt-shifter	S. R. Bailey	818,654	Apr. 24	4220	907-8	121	2444
Belt-shifter	S. R. Bailey	818,931	Apr. 24	4763	1024	121	2561
Belt tightener and fastener. Combined	A. Fleeger	815,341	Mar. 20	2739	570-1	121	704
Belting. Pressed	A. Kislik	818,031	Apr. 17	2964	640	121	2121
Bench	L. L. Poplin	815,556	Mar. 20	3164	664	121	796
Bench-stop	H. H. Prahl and E. H. Kistner	816,999	Apr. 3	908	188	121	1560
Bending-machine	P. H. Murphy	818,702	Apr. 24	4317	925-6	121	2465
Benzoylalkylaminoethanols and making same	T. Emilewicz	817,164	Apr. 10	1220	.....	121	1691
Bias-cutting implement	N. B. Burt	816,529	Mar. 27	5184	1100	121	1284
Bicycle attachment	G. W. Pulliam	816,122	Mar. 27	4345	920	121	1104
Bicycle-lock	G. H. Fry	814,034	Mar. 6	73	13-14	121	17
Bicycle-track	S. W. Tonry	818,488	Apr. 24	3843	826	121	2363
Bicycles. Power-transmitting mechanism for	L. Combet	817,225	Apr. 10	1345	281-2	121	1718
Billiard-cue	J. W. Wilson	818,597	Apr. 24	4103	881	121	2417
Billiard-cue-tip fastener	G. W. Allen and W. B. Beach	818,011	Apr. 17	2925	631	121	2113
Binder	W. G. Jones	816,915	Apr. 3	731	151	121	1520
Binder frame and leaf therefor. Loose-leaf-	H. J. Moore	816,493	Mar. 27	5108	1083	121	1266
Binder frame and leaf therefor. Loose-leaf-	H. J. Moore	816,494	Mar. 27	5113	1084	121	1267
Binder. Loose-leaf	W. M. Wheildon	814,492	Mar. 6	992	204	121	216
Binder. Loose-leaf	J. B. Barlow	816,421	Mar. 27	4974	1056	121	1237

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Binder. Loose-leaf	S. C. Nott	816,734	Apr. 3	356	82	121	1438
Binder. Loose-leaf	H. B. Burckhart	818,664	Apr. 24	4240	912	121	2448
Binder. Temporary	L. C. McNeal	818,548	Apr. 24	4001	858-9	121	2395
Binding agent and forming same	L. Weiss	814,490	Mar. 6	989	.....	121	216
Binding-post	C. Slusser	818,480	Apr. 24	3835	825	121	2360
Biscuit stamping and cutting machine	T. and J. Vicars, Jr	814,485	Mar. 6	982	201	121	214
Biscuit stamping and cutting machine	T. and J. Vicars, Jr	814,486	Mar. 6	983	202	121	214
Bit: *See* Boring-bit. Expansible bit. Bridle-bit. Keyhole-bit.							
Bit-stock head	W. A. Peck	814,318	Mar. 6	642	130	121	141
Bit-stock jaw	W. A. Peck	814,320	Mar. 6	645	131	121	141
Blackboard-trestle with adjustable map-displayer and roll-support.	M. Nacken	815,974	Mar. 27	4029	853	121	1033
Blank	G. W. Heene	815,349	Mar. 20	2752	573	121	706
Blanks with beveled edges. Machine for cutting	A. M. Stickney	815,564	Mar. 20	3176	666-7	121	798
Blankets, rugs, and similar coverings in position. Appliance for retaining	O. E. Buley	816,710	Apr. 3	320	74	121	1431
Bleaching and sterilizing apparatus	S. Leetham	816,482	Mar. 27	5090	1079	121	1261
Bleaching composition	A. E. Nienstadt	817,267	Apr. 10	1438	.....	121	1734
Blind-adjuster	I. L. Garside	818,758	Apr. 24	4442	951	121	2493
Blind-fastener	J. Durn and L. Anderson	816,224	Mar. 27	4544	966	121	1147
Blind-slat clipper	S. C. Smith	816,263	Mar. 27	4621	981	121	1163
Block: *See* Building-block. Tackle-block. Pulley-block. Toy building-block.							
Block-molding machine	G. Wilhelm	816,408	Mar. 27	4952	1052	121	1233
Block-signal system. Automatic	A. L. Bower	817,036	Apr. 3	976	200	121	1576
Blotter or blotting-pad	H. Krandt	817,073	Apr. 3	1035	215	121	1588
Blouse	A. G. Huth	817,172	Apr. 10	1233	254	121	1603
Blower. Rotary	C. C. Davis	814,190	Mar. 6	363	74	121	79
Board: *See* Exhibition-board. Lap-board. Game-board. Panel-board. Ironing-board.							
Boat holding-down and detaching device	B. F. McHorney and E. J. Kelley	819,022	Apr. 24	4937	1059	121	2600
Boat. Motor-	C. H. Spence	816,755	Apr. 3	396	90	121	1446
Boat. Submarine	W. J. O'Haire	814,869	Mar. 13	1738	364	121	437
Boat. Submarine	J. P. Holland	815,350	Mar. 20	2753	573-4	121	706
Boat. Submarine	M. Naletoff	817,130	Apr. 3	1140	236	121	1613
Bobbin	C. C. Cost	815,683	Mar. 20	3418	714	121	854
Bobbin-holder	A. E. Rhoades	816,502	Mar. 27	5129	1067	121	1270
Boiler: *See* Coffee-boiler. Upright flue-boiler. Egg-boiler. Vegetable-boiler. Steam-boiler. Steam and hot-water boiler.							
Boiler and furnace	E. Porritt	815,636	Mar. 20	3320	695-6	121	831
Boiler attachment	J. Moffat	818,459	Apr. 24	3803	818	121	2354
Boiler blow-off connection. Steam-	P. Mueller and J. C. White	818,775	Apr. 24	4474	958	121	2499
Boiler-brace	L. G. Mong	819,020	Apr. 24	4934	1059	121	2599
Boiler-flue	S. F. Pierce	814,074	Mar. 6	146	29	121	33
Boiler-flue cleaner	C. Scheer	815,043	Mar. 13	2095	440	121	512
Boiler-furnace	S. F. Pierce	814,073	Mar. 6	144	29	121	32
Boiler-furnace	J. Collis	814,640	Mar. 6	1270	268	121	275
Boiler-furnace	E. F. Edgar	814,949	Mar. 13	1880	394-5	121	467
Boiler stay-bolt	N. B. Jarriel	817,571	Apr. 10	2039	429	121	1861
Boiler water-feeding device. Steam-	J. T. Innes	816,471	Mar. 27	5065	1075	121	1256
Boilers, &c. Furnace for steam-	A. S. Goldie	814,533	Mar. 6	1073	221	121	233
Boilers. Smoke-consuming apparatus for steam-	R. Spohd	814,331	Mar. 6	671	135	121	147
Boilers. System of water regulation for flash-	H. Lemp	818,382	Apr. 17	3654	785	121	2266
Bolt: *See* Boiler stay-bolt. King-bolt. Gravity-bolt.							
Bolt threading and tapering machine	R. Kienzl	814,655	Mar. 6	1305	274-5	121	282
Bolt-threading machine	J. H. Haskins	816,322	Mar. 27	4761	1007-9	121	1193
Bolts and retracing the threads thereon. Tool for straightening	J. D. Edmonds	816,570	Apr. 3	80	8	121	1360
Book-leaf. Detachable	M. G. Swan	818,130	Apr. 17	3148	678	121	2160
Book. Manifolding-	A. J. Midgard	818,388	Apr. 17	3665	787	121	2269
Book. Memorandum-	J. J. Hoey	814,699	Mar. 13	1419	295	121	370
Book. Shipping-	J. W. Place and H. L. Conter	814,871	Mar. 13	1743	365	121	439
Book-support	F. E. Ruger	816,380	Mar. 27	4878	1035-6	121	1218
Book-support	E. Smering	816,507	Mar. 27	5140	1089	121	1273
Book-support clamp	F. E. Ruger	818,917	Apr. 24	4732	1016	121	2555
Bookbinder	D. McCann	818,777	Apr. 24	4477	959	121	2500
Boot and shoe filler	A. Lewis	815,599	Mar. 20	3237	680	121	813
Boot and shoe manufacture. Nailing, slugging, or like machine for use in	W E. Maddison and W. Downs	817,179	Apr. 10	1253	259-60	121	1606
Boot and shoe shank-piece	W. H. Baynard	815,327	Mar. 20	2706	564	121	696
Boot and shoe tacking machine	E. Nolle	817,660	Apr. 10	2190	465-6	121	1893
Boot and shoe tree	S. French	816,453	Mar. 27	5030	1067	121	1249
Boot-calk	C. Pfeiffer	817,090	Apr. 3	1061	220	121	1593
Boot or shoe polishing machine	C. Biladeau and A. P. Chapdelaine. (Reissue.)	12,466	Mar. 27	5239	1111	121	1297
Boot tree and last	F. Zeisberger and W. Scott	817,949	Apr. 17	2900	606	121	2085
Boots and shoes. Apparatus for rubbing or treeing	M. J. Smith	817,453	Apr. 10	1807	380	121	1814
Boring-bar	J. Riddell	818,294	Apr. 17	3476	748	121	2230
Boring-bars. Tool-carrier for	C. F. Owen	815,630	Mar. 20	3308	693	121	829
Boring-bit or auger	N. Zangerle	815,247	Mar. 13	2510	522	121	606
Boring-machine	A. J. Turner	818,925	Apr. 24	4747	1020	121	2558
Boring machine. Taper-	A. Fernandes	816,854	Apr. 3	609	127-8	121	1494
Boring-tool and arbor	H. Kootz and C. F. Fisher	817 377	Apr. 10	1640	347	121	1779
Boring-tool, reamer, and the like	T. Burns	817,042	Apr. 3	985	202	121	1578
Bottle	W. W. McLaren	816,258	Mar. 27	4843	1026	121	1210

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Bottle	J. C. Anderson	816,419	Mar. 27	4970	1056	121	1237
Bottle	J. C. Anderson	817,033	Apr. 3	970	199	121	1575
Bottle	I. F. Gordon	817,705	Apr. 10	2260	486	121	1908
Bottle	J. D. Harriss and C. F. Hogan	818,623	Apr. 24	4160	894	121	2430
Bottle	F. E. Allen	818,809	Apr. 24	4549	975	121	2515
Bottle and jar cap	A. Calleson	818,741	Apr. 24	4395	941	121	2482
Bottle attachment	W. A. Davis	815,688	Mar. 20	3434	717	121	857
Bottle attachment. Non-refillable-	E. A. Sullivan	818,312	Apr. 17	3522	756	121	2239
Bottle attachment. Non-refillable-	E. A. Sullivan, T. W. Pritchard, and R. W. C. Ellison.	818,313	Apr. 17	3524	756	121	2239
Bottle-cap	C. H. Johnson	815,837	Mar. 20	3777	796	121	928
Bottle cap and brush	J. Lane	816,481	Mar. 27	5089	1079	121	1261
Bottle-capping machine	S. C. Miller	817,129	Apr. 3	1138	236	121	1613
Bottle-clip	J. J. McGarry	816,244	Mar. 27	4578	974	121	1153
Bottle-closure	A. M. Taylor	817,532	Apr. 10	1964	415	121	1846
Bottle-closure	E. Taylor	818,798	Apr. 24	4521	966	121	2510
Bottle-closure-branding machine	O. H. Jung	818,893	Apr. 24	4687	1005-6	121	2544
Bottle. Corkless non-refillable	R. I. Maxwell	816,170	Mar. 27	4443	940	121	1125
Bottle. Dispensing-	K. A. Frieseke	814,953	Mar. 13	1886	397	121	468
Bottle-filling apparatus	C. F. Reinhardt	815,741	Mar. 20	3550	745-6	121	881
Bottle-holder	E. L. Drinkwater	814,524	Mar. 6	1056	218	121	229
Bottle holder and opener. Combined	J. T. Mulvaney and C. F. Keller	815,971	Mar. 27	4026	852	121	1032
Bottle holder. Nursing-	P. J. Timberlake	814,574	Mar. 6	1148	239	121	240
Bottle holder. Nursing-	M. E. Gregory	815,815	Mar. 20	3711	782	121	914
Bottle holder. Nursing-	E. S. Lewis	816,105	Mar. 27	4310	913	121	1097
Bottle-lock	J. Solatinow	818,984	Apr. 24	4864	1044	121	2583
Bottle-locking device	E. F. Strobel	815,654	Mar. 20	3357	702	121	839
Bottle-making device	A. Philippoteaux	814,800	Mar. 13	1620	340	121	413
Bottle-neck	T. A. Huffer	817,247	Apr. 10	1392	293	121	1727
Bottle neck and stopper	S. D. Rodgers	816,744	Apr. 3	374	87	121	1443
Bottle-neck-shaping tool	C. House	818,691	Apr. 24	4288	920	121	2458
Bottle. Non-refillable	M. Antes	814,008	Mar. 6	1	1	121	3
Bottle. Non-refillable	A. F. Gibson	814,284	Mar. 6	549	115	121	118
Bottle. Non-refillable	M. W. Palmer	814,619	Mar. 6	1230	260	121	266
Bottle. Non-refillable	S. B. O'Dell and H. W. Smiley	815,112	Mar. 13	2225	467	121	540
Bottle. Non-refillable	A. J. Ashford	815,250	Mar. 13	2512	523	121	607
Bottle. Non-refillable	L. Prideaux	815,375	Mar. 20	2819	587	121	719
Bottle. Non-refillable	A. Schenck	815,639	Mar. 20	3327	697	121	833
Bottle. Non-refillable	W. Perry and W. Pierpoint, Jr	816,121	Mar. 27	4344	920	121	1104
Bottle. Non-refillable	G. Kerr	816,582	Apr. 3	47	12	121	1365
Bottle. Non-refillable	A. G. Abizaid	816,699	Apr. 3	305	71	121	1428
Bottle. Non-refillable	W. S. Freel	816,789	Apr. 3	465	104	121	1460
Bottle. Non-refillable	W. P. Swett	816,829	Apr. 3	552	118	121	1479
Bottle. Non-refillable	O. E. S. Azzoni	817,034	Apr. 3	973	200	121	1575
Bottle. Non-refillable	J. Meermans	817,500	Apr. 10	1902	401	121	1834
Bottle. Non-refillable	A. Feraro	817,700	Apr. 10	2251	484	121	1906
Bottle. Non-refillable	H. J. Lutz and H. W. Friedel	818,181	Apr. 17	3264	699	121	2185
Bottle. Self-sealing	W. A. Miller	817,181	Apr. 10	1258	261	121	1696
Bottle. Siphon-	J. G. Henrich	816,091	Mar. 27	4290	909	121	1093
Bottle-socket	H. F. Haviland	816,979	Apr. 3	872	180	121	1552
Bottle-stopper	E. N. Gilfillan	814,778	Mar. 13	1575	332	121	403
Bottle-stopper	S. Evans	815,151	Mar. 13	2312	484	121	560
Bottle-stopper	J. S. Huffman	815,172	Mar. 13	2351	492	121	569
Bottle-stopper	H. K. Gilbert	815,954	Mar. 27	3995	846	121	1026
Bottle-stopper	H. E. Payne	816,120	Mar. 27	4344	920	121	1103
Bottle-stopper	H. O. Brawner	817,038	Apr. 3	980	201	121	1577
Bottle-stopper	J. Madir	817,380	Apr. 10	1643	348	121	1780
Bottle-washing device	H. H. Poggensee	816,818	Apr. 3	525	114	121	1474
Bottle-washing machine	P. D. Laible	816,920	Apr. 3	741	152-3	121	1523
Bottles. Device to prevent refilling of	E. Mandonnet	814,307	Mar. 6	611	126	121	132
Bottles, flasks, and the like. Manufacture of	P. Wagret	818,134	Apr. 17	3165	679	121	2165
Bottles, jars, and other receptacles. Safety-closure for	J. V. Hull	819,015	Apr. 24	4925	1057	121	2597
Bottles, jars, and other vessels. Closure device for	W. B. Fenn	816,720	Apr. 3	338	78	121	1435
Bottles, &c. Stopper for	J. P. Crane	815,940	Mar. 27	3966	840	121	1021
Bowling-alley	D. F. McCarthy	817,504	Apr. 10	1911	402	121	1836
Bowling-alley pin spotter and setter	J. C. Backus	814,897	Mar. 13	1783	373	121	447
Box: *See* Car journal-box. Cardboard box. Cigar-box. Compartment-box. Delivery-box. Fire-alarm box. Fire-alarm key-box. Fire-alarm signal-box. Folding box. Fuse-box. Journal-box. Knockdown box. Letter-box. Locomotive sand-box. Mail-box. Mail-deposit box. Mailing-box. Match-box. Millinery-box. Oilstone-box. Packing-box. Paper box. Press-box. Shipping-box Shuttle-box. Signal-box. Sound-box. Stuffing-box.							
Box-blanks. Machine for making wire-bound	J. J. Miller	815,196	Mar. 13	2403	501-3	121	581
Box-covering machine	G. A. Diemer	817,631	Apr. 10	2143	454	121	1883
Box-machine	H. W. Summer	814,333	Mar. 6	674	136-8	121	147
Box-nailing machine	E. C. Northrup	817,509	Apr. 10	1918	404	121	1837
Box-top-securing device	A. Beaudry	814,932	Mar. 13	1845	386	121	460
Boxes. Machine for securing flies to	J. P. Bird	815,003	Mar. 13	1993	419-20	121	489
Boxing purposes. Presser-machine for	G. N. Pond	818,848	Apr. 24	4614	990	121	2528
Brace: *See* Boiler-brace. Car end brace. Rail-brace. Rail and spike brace. Spring-brace. Track-brace.							
Bracelet	A. H. Bliss	815,899	Mar. 20	3896	824	121	963
Bracelet	J. M. Clark, 2d	818,146	Apr. 17	3191	686	121	2169

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Bracket: *See* Car-door safety-bracket. Clamp-bracket. Curtain-bracket. Piano-action bracket. Scaffold-bracket. Shade-bracket. Shade or canopy supporting bracket. Shade-roller bracket. Wagon-bracket.							
Bracket	A. R. Fergusson	815,947	Mar. 27	3078	843	121	1023
Bracket-hook	E. A. Graham	815,813	Mar. 20	3709	782	121	913
Braiding-machine	H. W. Larsson	814,711	Mar. 13	1442	302–3	121	375
Brake: *See* Assembler-slide brake. Car-brake. Cornice-brake. Electric brake. Electromagnetic brake. Elevator-brake. Elevator emergency-brake. Emergency-brake. Fluid-pressure brake. Railway-brake. Sled-brake. Vehicle-brake. Wagon-brake.							
Brake	H. L. Lynn	814,223	Mar. 6	431	88	121	93
Brake	H. Beatty	814,422	Mar. 6	871	178	121	190
Brake	A. L. Craver	815,514	Mar. 20	3082	642	121	779
Brake	J. W. Tapp	817,942	Apr. 17	2789	603	121	2083
Brake	W. G. Price	818,639	Apr. 24	4183	900–1	121	2435
Brake-beam fulcrum	J. W. McGee	814,365	Mar. 13	1727	362	121	435
Brake-beam hanger	M. Linton	815,024	Mar. 13	2056	430	121	503
Brake-hanger	W. O. Webster	814,489	Mar. 6	988	203	121	215
Brake-hanger	G. M. Brill	816,293	Mar. 27	4673	992	121	1175
Brake-hanger	C. K. Pickles	817,871	Apr 17	2632	770–1	121	2046
Brake-hanger	E. H. Scofield	817,994	Apr. 17	2887	624	121	2106
Brake-lever fulcrum	O. W. Wittmer	814,395	Mar. 13	1780	373	121	447
Brake-shoe	W. G. Menzel	815,612	Mar. 20	3263	685	121	819
Brake-shoe	J. F. Powers	816,373	Mar. 27	4866	1032	121	1215
Brake-shoe	C. W. Armbrust	817,541	Apr. 10	1978	419	121	1849
Brake-shoe	C. W. Armbrust	817,893	Apr. 17	2682	583	121	2056
Brake-shoe	C. W. Armbrust	817,894	Apr. 17	2684	583	121	2056
Brake-shoes. Making	W. D. Sargent	818,300	Apr. 17	3496	751	121	2234
Brake system. Automatic	P. Winsor	814,099	Mar. 13	1982	417	121	486
Braking and clutch mechanisms. Cooling system for	J. F. Metten	817,180	Apr. 10	1255	260	121	1698
Braking mechanism for electric motors	W. H. Scott	815,750	Mar. 20	3585	753	121	889
Bran-distributer	N. S. Shelly	814,909	Mar. 13	1636	343	121	416
Branding-tool	M. P. Sullivan	818,482	Apr. 24	3838	825	121	2361
Bread-raiser	C. H. Marshall	817,499	Apr. 10	1901	400	121	1833
Breakwater. Floating	T. D. Cook	817,904	Apr. 17	2712	568	121	2064
Breast. Artificial	L. J. Wolfe	814,181	Mar. 6	347	71	121	76
Brick-drying rack. Portable	C. R. Knight and J. Tennesen	814,966	Mar. 13	1915	402–3	121	473
Brick-kiln	J. Manypenny	815,189	Mar. 13	2395	490	121	580
Brick-kiln. Oil-burning	R. South	818,129	Apr. 17	3147	677	121	2160
Brick-machines. Cut-off mechanism for	H. K. King	815,022	Mar. 13	2051	429–30	121	502
Brick-making machine	C. W. Pratt	816,374	Mar. 27	4867	1032–3	121	1215
Brick. Manufacture of	G. A. Riddle	817,988	Apr. 17	2869	.....	121	2101
Brick-mold	J. A. Judie	818,452	Apr. 24	3791	814	121	2351
Brick-pallet	F. Bentley	817,689	Apr. 10	2235	479	121	1903
Bricklayer's tool	E. Weiss	814,926	Mar. 13	1831	384	121	457
Bridge. Movable	T. Rall	817,516	Apr. 10	1931	407–8	121	1839
Bridle	M. J. Halliburton	815,424	Mar. 20	2928	607	121	746
Bridle	C. Hay-Hay	815,703	Mar. 20	3461	722	121	863
Bridle-bit	H. A. Sievert	815,385	Mar. 20	2844	591	121	725
Bridle-bit	G. M. Peters	818,781	Apr. 24	4484	960	121	2502
Bridle-bit cheek-piece	N. Stalker	816,615	Apr. 3	152	31	121	1396
Briqueting-machine	R. C. Hills	815,532	Mar. 20	3119	652–4	121	787
Briqueting-machine	W. Simpkin	815,647	Mar. 20	3345	700–1	121	837
Broiling apparatus	J. G. Lanz	817,145	Apr. 3	1170	242	121	1619
Bronzing of printed matter. Device for facilitating the	F. Janonshek, Jr	818,091	Apr. 17	3069	662	121	2142
Brooder	F. C. Hare	814,041	Mar. 6	84	15–16	121	20
Brooder	C. A. Tuck	817,021	Apr. 3	960	195	121	1560
Brooder	W. V. Jacobs	818,028	Apr. 17	2958	638–9	121	2119
Brooder	L. W. Clark	818,872	Apr. 24	4654	999	121	2538
Broom-bridle	C. A. Hall	817,971	Apr. 17	2843	616	121	2096
Broom-corn-cutting machine	C. R. Huckleberry	815,018	Mar. 13	2040	427–8	121	499
Broom-handle	E. T. Atwell	815,058	Mar. 13	2118	446	121	517
Broom-rake	N. Dort	818,751	Apr. 24	4429	947	121	2490
Brush	I. C. Isaacs	817,117	Apr. 3	1121	232	121	1609
Brush	W. E. Whittemore	818,497	Apr. 24	3872	833	121	2368
Brush	O. Fish	818,531	Apr. 24	3968	852	121	2388
Brush	R. Kulenkampff	818,696	Apr. 24	4300	922	121	2460
Brush. Air	L. Walkup	817,819	Apr. 17	2521	540	121	2022
Brush. Bottle-washer	B. Gohrband	818,086	Apr. 17	3060	660	121	2140
Brush. Dusting	G. Koch	815,593	Mar. 20	3222	678	121	809
Brush. Expansible	D. J. Purdy	817,337	Apr. 10	1559	328	121	1760
Brush. Fountain	J. Caddell and A. Sutherland	818,666	Apr. 24	4244	912	121	2449
Brush. Fountain paint	A. Wagner	816,765	Apr. 3	424	96	121	1452
Brush-holder	C. A. Harris	816,793	Apr. 3	473	106	121	1461
Brush or puff. Powder	E. Chaquette	817,694	Apr. 10	2243	482	121	1904
Brush. Tooth	M. Rosenstein	814,235	Mar. 6	452	93	121	97
Brush. Tooth	C. R. Stevenson	818,000	Apr. 17	2899	626	121	2108
Bubble-fountain	S. H. Tacy	814,889	Mar. 13	1771	371	121	445
Bubble-fountain	S. H. Tacy	814,890	Mar. 13	1774	371	121	445
Bucket and trap. Combined minnow	S. B. Saffell	814,480	Mar. 6	974	199	121	212
Bucket and trap. Combined minnow	F. Petmecky	816,251	Mar. 27	4588	977	121	1156
Bucket. Dumping	A. Henderson	816,579	Apr. 3	44	11	121	1364
Bucket. Dumping	C. J. Close	818,668	Apr. 24	4247	913	121	2450
Bucket-operating mechanism. Clam-shell	F. E. Hulett	818,626	Apr. 24	4163	895–6	121	2431
Bucket or conveyer	W. F. Jones	816,332	Mar. 27	4780	1012–13	121	1197
Buckle	E. J. Kraetzer	815,538	Mar. 20	3132	665	121	790
Buckle	S. M. Holt	817,065	Apr. 3	1025	211	121	1585

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Buckle	E. A. McMillin	817,184	Apr. 10	1262	202	121	1699
Buckle	W. F. Osborne	818,780	Apr. 24	4483	960	121	2501
Buckle and loop. Wire	J. C. Moore	818,041	Apr. 17	2983	644	121	2125
Buckle. Detachable	M. Barabasz	817,464	Apr. 10	1835	384	121	1819
Buckle-hook	W. W. Reid	818,292	Apr 17	3473	747	121	2229
Buckle. Line and rein	F. M. Kibbey	818,970	Apr. 24	4836	1039	121	2578
Buckle. Strap-	P. H. Burke	818,074	Apr. 17	3038	656	121	2135
Buckle. Trace-	O. Rampendahl	818,559	Apr. 24	4021	862	121	2399
Buckle. Trace-	E. L. Goodrich	818,881	Apr. 24	4670	1002	121	2540
Buggy-bow spring attachment	G. A. Johnson	818,827	Apr. 24	4577	981	121	2521
Buggy-valance	C. W. Fisher	814,195	Mar. 6	374	76	121	81
Building-block	J. Lovett	814,973	Mar. 13	1925	404	121	476
Building-block	A. Klay	815,097	Mar. 13	2191	462	121	532
Building-block	C. Lugabill	815,607	Mar. 20	3256	683	121	817
Building-block	D. A. Schoeneman	815,641	Mar. 20	3332	698	121	834
Building-block	N. J. Peterson	818,551	Apr. 24	4007	859	121	2396
Building-block mold. Transformable	H. A. Low	814,657	Mar. 6	1309	275	121	283
Building-block-molding machine	L. P. Normandin	817,661	Apr. 10	2192	466-7	121	1893
Building construction	O. Price. (Reissue)	12,467	Mar. 27	5241	1111	121	1298
Building construction	G. F. Fisher	817,478	Apr. 10	1859	391	121	1824
Building material	C. M. Depew and H. E. McCoy	815,801	Mar. 20	3687	.....	121	909
Building. Monolithic	W. D. Butterfield	814,765	Mar. 13	1547	327	121	393
Bulkhead-doors. Hydraulic apparatus for opening and shutting	H. O. Brandt	817,691	Apr. 10	2238	480-1	121	1904
Bung and seal closure for casks	H. Gerike	817,970	Apr. 17	2842	615	121	2095
Buoy. Bell-	T. Weber	817,206	Apr. 10	1309	273	121	1709
Bur. Loop-unifying and cast-off	E. Tompkins	816,403	Mar. 27	4939	1050	121	1230
Burglar-alarm	J. A. Dillen	816,005	Mar. 27	4101	866	121	1051
Burial-casket	A. Belair	818,220	Apr. 17	3337	716	121	2201
Burial-caskets, coffins, and the like. Handle for	C. Bleech	818,733	Apr. 24	4380	938	121	2479
Burner: *See* Gas-burner. Gas-lighting burner. Hydrocarbon-burner. Hydrocarbon-vapor burner. Lamp-burner. Liquid-fuel burner. Oil-burner.							
Burning fuel and other materials	A. M. Robeson and C. A. Bettington.	817,990	Apr. 17	2875	622	121	2102
Burnishing-machine	F. K. Hatfield	818,167	Apr. 17	3234	695	121	2178
Bushings. Machine for forming hollow split	P. Kohlbrenner	816,237	Mar. 27	4564	971-2	121	1151
Bust-supporter	L. B. Lyon	818,104	Apr. 17	3080	667	121	2146
Butter-cutter	A. C. Hummer	817,486	Apr. 10	1873	394	121	1826
Butter-cutter	A. C. Hummer	817,487	Apr. 10	1874	395	121	1827
Butter-cutter	C. F. Fogg	818,757	Apr. 24	4441	951	121	2492
Butter-cutting device	H. Moyer	814,558	Mar. 6	1122	233	121	244
Butter-cutting machine	E. J. Luhman	818,770	Apr. 24	4463	956-7	121	2497
Butter into smaller blocks of predetermined sizes. Means for cutting up large blocks of	T. H. H. Widdicombe	817,027	Apr. 3	960	198	121	1572
Butter-pat-printing machine	H. G. Ahrweiler	815,896	Mar. 20	3889	822	121	952
Butter-patty-forming machine	G. A. Walstead	817,352	Apr. 10	1592	336	121	1768
Button	R. H. A. D'Ailly	816,416	Mar. 27	4965	1055	121	1236
Button	A. Hall	817,170	Apr. 10	1230	253	121	1693
Button	W. H. Forsyth	817,311	Apr. 10	1517	318	121	1751
Button	E. A. Smith	818,963	Apr. 24	4863	1044	121	2583
Button-blank grinding and feeding machine	W. E. Knott	817,121	Apr. 3	1126	233	121	1610
Button-blank grinding and feeding machine	W. E. Knott	817,122	Apr. 3	1128	234	121	1611
Button. Collar-	G. X. Wendling	817,536	Apr. 10	1969	416	121	1847
Button. Collar and cuff	J. K. and J. G. D. Thoma	818,486	Apr. 24	3846	827	121	2363
Button-fastener	J. S. Fissel	814,683	Mar. 13	1396	291	121	365
Button-making machines. Gripping device or carrier for	J. Hornby	816,094	Mar. 27	4293	909	121	1094
Button. Separable	C. Weiss	815,055	Mar. 13	2115	445	121	517
Buttonhole machine. Cord-stitch-	A. Pruver	815,739	Mar. 20	3546	744	121	880
Cabinet	H. Dorsey	815,076	Mar. 13	2147	453	121	523
Cabinet	C. A. Karlson	815,592	Mar. 20	3221	678	121	809
Cabinet	G. H. Herrnecker	818,248	Apr. 17	3405	730	121	2214
Cabinet. Credit-	W. M. Ellett and R. M. Vick	818,083	Apr. 17	3058	659	121	2140
Cabinet. Kitchen-	C. G. Swahn	817,202	Apr. 10	1304	272	121	1708
Cable grip. Aerial-tramway-	E. P. Frederick	818,428	Apr. 24	3750	805	121	2343
Cable grip. Aerial-tramway-	E. P. Frederick	818,429	Apr. 24	3751	806	121	2343
Cable-grip for cable-hauled trucks and the like	W. Ellingen and F. Doehle	817,053	Apr. 3	1003	205	121	1582
Cable or rope guide	G. Frink	817,553	Apr. 10	2008	423	121	1855
Cable-reel winder and brake	G. W. Brown	815,261	Mar. 13	2528	530	121	610
Cable-splicing socket	J. L. Frazier	816,721	Apr. 3	340	78	121	1435
Cable terminal or coupling. Electric-	W. and J. Y. Middleton	817,329	Apr. 10	1546	326	121	1757
Cables. Forming wire	C. S. Lloyd	817,328	Apr. 10	1544	325	121	1757
Cables, &c. System for supporting	E. Lodder	818,269	Apr. 17	3437	739	121	2221
Cake and cracker box and package stand	C. Rea and J. W. Pattisson	814,165	Mar. 6	321	64-5	121	70
Cake-turner	C. Banks	815,781	Mar. 20	3642	766	121	899
Calculating-machine	J. L. Levin	815,542	Mar. 20	3139	657	121	791
Calculating-machine	H. Hanson	816,318	Mar. 27	4723	1002-4	121	1186
Calculating-machine	S. E. Swick	816,760	Apr. 3	408	93	121	1448
Calculating-machine and type-writer attachment	H. Hanson	816,319	Mar. 27	4737	1004-7	121	1188
Calculating machine. Interest and percentage	W. M. Braly	818,222	Apr. 17	3340	716-17	121	2201
Calculating-machines. Transfer and indicating mechanism for	H. C. Dungan	814,593	Mar. 6	1181	247	121	256
Calendar. Pencil-tip	F. J. Mathein	817,651	Apr. 10	2176	462	121	1890
Calendar. Perpetual	W. B. Summerall	818,577	Apr. 24	4053	870	121	2406
Calking-tool	R. J. Webster	816,962	Apr. 3	820	167-8	121	1540
Camera	H. A. Farrand	815,584	Mar. 20	3210	675-6	121	806
Camera attachment	R. A. Woodall	818,136	Apr. 17	3167	680	121	2165
Camera attachment	W. E. Phillips	818,553	Apr. 24	4010	860	121	2396
Camera. Photographic	J. D. Garfield	816,907	Apr. 3	713	147	121	1516
Camera. Pocket-	F. Heath	817,243	Apr. 10	1380	290-1	121	1724
Camera. Pocket-	F. Heath	817,244	Apr. 10	1385	291	121	1726
Camera. Pocket-	F. Heath	817,245	Apr. 10	1387	292	121	1726
Camera-support	H. L. Wheeler	817,207	Apr. 10	1311	273	121	1709

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Can:							
See Display-can. Flour-can. Garbage-can. Gasolene-dispensing can. Key-opening can. Self-heating can. Sheet-metal can.							
Can-body machine. Locked-seam-	J. H. McElroy	818,109	Apr. 17	3099	668-9	121	2148
Can-body-making machine	J. Brenzinger	815,791	Mar. 20	3666	771-2	121	904
Can-cover-lining machine	J. Brenzinger	817,154	Apr. 10	1196	248-9	121	1685
Can-flanging machine	J. Brenzinger	814,639	Mar. 6	1267	266-7	121	274
Can-heading machine	B. Adriance and A. Calleson	818,806	Apr. 24	4540	972	121	2514
Can-lining machine	C. S. Bucklin	815,402	Mar. 20	2882	599-600	121	735
Can-machine carrier-support	C. W. Graham	814,442	Mar. 6	899	185	121	196
Can-making machine	B. Adriance and A. Calleson	818,805	Apr. 24	4531	969-71	121	2511
Can-making machinery	J. H. McElroy	818,110	Apr. 17	3106	669-71	121	2150
Can-opener	L. C. Sharp	815,477	Mar. 20	3015	628	121	764
Can-opener	W. T. Seerup	816,256	Mar. 27	4602	978	121	1159
Can top. Powder-	C. A. Phillips	817,799	Apr. 17	2490	533	121	2015
Cans. Device for closing the caps or covers on friction-top	J. H. Goss	816,313	Mar. 27	4714	1000	121	1184
Cans. Handled head for sheet-metal	E. D. Murphy	817,865	Apr. 17	2619	568	121	2043
Cans or boxes. Hinged cover for square or rectangular sheet-metal	C. Sherman	815,983	Mar. 27	4047	856	121	1037
Cans. Screw-cap for	B. H. Larkin	815,962	Mar. 27	4012	848	121	1030
Canner. Fruit-	F. A. Bergman	817,100	Apr. 3	1079	224	121	1597
Candle-holder	H. W. Toler	814,250	Mar. 6	491	101	121	106
Candle-holders. Resilient base for	A. Schluter, Jr.	817,394	Apr. 10	1683	355	121	1788
Candlestick	F. Baumer	814,636	Mar. 6	1263	265	121	274
Candy-cutter	J. Kindelan	814,456	Mar. 6	924	190	121	201
Candy-forming machine	G. B. Jacobs	817,854	Apr. 17	2590	558-9	121	2037
Candy-machine	J. A. Hollowell	817,563	Apr. 10	2024	426	121	1857
Candy or cracker sample case	W. J. Morrison	816,114	Mar. 27	4333	918	121	1102
Candy-spinner	E. J. Thilborger and P. C. Le Corgne.	814,572	Mar. 6	1145	239	121	248
Cane and stool. Combined walking-	W. H. Goodman	815,811	Mar. 20	3706	781	121	913
Cane and whip. Combined	W. R. Jones	817,324	Apr. 10	1538	323	121	1755
Cane carriers. Feeder for sugar-	J. R. Morris	815,458	Mar. 20	2984	622	121	758
Cane-loading apparatus	L. M. Dill	816,971	Apr. 3	852	175-6	121	1547
Cannon recoil mechanism	L. J. B. Trouard	818,644	Apr. 24	4203	903-4	121	2440
Canopy-tops. Means for attaching	F. B. Yingling	818,730	Apr. 24	4369	936-7	121	2470
Cap	W. C. Rands	817,517	Apr. 10	1934	408	121	1846
Capacity	O. D. Shaw	817,343	Apr. 10	1571	330	121	1763
Capsule-filling apparatus	R. A. Fessenden	814,951	Mar. 13	1881	395	121	467
Capsule spinning, trimming, and stacking machine	C. C. Boykin	817,622	Apr. 10	2121	450	121	1878
Car and the like. Transportation-	E. Watzke	816,694	Apr. 3	296	69	121	1425
Car attachment. Railway-	J. M. Ames	814,660	Mar. 13	1317	277-8	121	345
Car body-bolster. Railway-	S. Constable	817,103	Apr. 3	1084	225	121	1599
Car-bolster	C. S. Shallenberger. (Reissue)	12,468	Mar. 27	5244	1112	121	1299
Car-bolster. Trussed	J. V. McAdam	814,470	Mar. 6	952	195	121	207
Car-brake	A. Stucki	817,403	Apr. 10	1699	359	121	1791
Car-brake	W. S. Washburn and E. S. Niles	815,768	Mar. 20	3616	759	121	894
Car-brake. Automatic	E. G. Tillman	815,880	Mar. 20	3854	817	121	943
Car-brake. Beamless	C. L. Schultz	814,876	Mar. 13	1750	367	121	440
Car brake mechanism. Railway-	G. W. Swisher	816,617	Apr. 3	154	32	121	1395
Car brake. Motor-	E. Melchert	814,792	Mar. 13	1604	336-7	121	410
Car. Brick-	R. Buggé	818,815	Apr. 24	4557	977	121	2517
Car. Brick-	F. H. Reid	818,851	Apr. 24	4618	991	121	2529
Car. Cinder-	F. H. Reid	818,852	Apr. 24	4620	991-2	121	2530
Car construction	J. M. Hartman	815,162	Mar. 13	2333	488	121	565
Car-controlling device. Electric	R. L. Ettenger	815,946	Mar. 27	3976	842	121	1022
Car-coupling	J. H. K. McCollum	817,264	Apr. 10	1427	300-1	121	1733
Car-coupling	S. F. Klohs	814,379	Mar. 6	768	155	121	169
Car-coupling	C. A. Carscadin	814,831	Mar. 13	1677	350-1	121	426
Car-coupling	C. H. Tomlinson	814,924	Mar. 13	1826	383	121	456
Car-coupling	C. McCarter	814,979	Mar. 13	1934	406-7	121	477
Car-coupling	W. W. Gordon	815,525	Mar. 20	3104	648	121	783
Car-coupling	W. Kelso	816,165	Mar. 27	4434	938-9	121	1123
Car-coupling	F. Keller and D. Bowers	816,336	Mar. 27	4787	1014	121	1198
Car-coupling	J. Darling	816,565	Apr. 3	21	6	121	1359
Car-coupling	B. J. Cobb	816,711	Apr. 3	321	74	121	1431
Car-coupling	J. E. Wade	816,951	Apr. 3	816	167	121	1539
Car-coupling	F. A. Ramey	817,001	Apr. 3	911	188	121	1561
Car-coupling	W. E. McDonald	817,088	Apr. 3	1069	220	121	1593
Car-coupling	W. A. Engel	817,307	Apr. 10	1511	316-17	121	1750
Car-coupling	H. N. Poynton	817,665	Apr. 10	2198	469	121	1895
Car-coupling and draw-head	A. Schulz	818,564	Apr. 24	4031	864	121	2401
Car-coupling appliance	A. W. Lewis	817,077	Apr. 3	1042	216	121	1589
Car-coupling. Automatic	P. W. Hogan	814,449	Mar. 6	911	187	121	199
Car-couplings. Emergency-knuckle for	C. R. Salmen	817,095	Apr. 3	1072	222	121	1596
Car-derailer	G. H. Gilman and J. H. Brown	818,369	Apr. 17	3624	777	121	2260
Car. Derrick-	W. Roach	817,518	Apr 10	1936	408	121	1841
Car. Derrick-	S. P. Mitchell	817,862	Apr. 17	2609	563-6	121	2041
Car door. Box-	S. P. Mitchell	817,864	Apr. 17	2616	567-8	121	2042
Car door. Grain-	F. A. Delano	816,651	Apr. 3	223	52	121	1410
Car-door hanger	J. J. Hahn	814,202	Mar. 6	388	78	121	85
Car-door safety-bracket	F. B. McElvain	815,461	Mar. 20	2992	623	121	759
Car draft-gear. Railway-	O. M. Stimson	817,015	Apr. 3	937	193	121	1566
Car draft-rigging. Railway-	L. P. Mather	817,433	Apr. 10	1764	370	121	1804
Car. Dump-	J. M. Waugh	818,066	Apr. 17	3020	653	121	2123
Car. Dump-	G. I. King	814,141	Mar. 6	276	55	121	60
Car. Dump-	S. Otis	814,159	Mar. 6	311	62	121	68
Car. Dump-	S. Otis	814,231	Mar. 6	443	92	121	96
Car. Dump-	S. Otis	815,032	Mar. 13	2073	434-5	121	507
Car-dump	S. Otis	816,496	Mar. 27	5121	1085-6	121	1263
Car-dump	C. S. Lefferts	814,610	Mar. 6	1214	254	121	263
Car-dumping apparatus	H. M. Ramseur	816,736	Apr. 3	361	83-4	121	1430
	G. H. Hulett	814,704	Mar. 13	1429	297-8	121	372

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Car-dumping device. Automatic	W. L. Hansen and A. Hayes	817,972	Apr. 17	2844	616	121	2095
Car end brace	H. W. Wolff	814,497	Mar. 6	999	205	121	217
Car-fender. Automatic	B. Lev	815,926	Mar. 20	3939	834	121	963
Car-fender chain-bracket	B. Lev	815,922	Mar. 20	3934	832	121	962
Car-fender. Detachable	B. Lev	815,923	Mar. 20	3936	833	121	962
Car fender. Motor-	B. Lev	815,919	Mar. 20	3929	831	121	961
Car-fender. Safety	F. Cushman	817,299	Apr. 10	1495	313	121	1746
Car-fender spring	B. Lev	815,924	Mar. 20	3937	833	121	962
Car-fender spring-buffer	B. Lev	815,921	Mar. 20	3933	832	121	962
Car fender. Street-	D. Houlahan	817,320	Apr. 10	1530	321–2	121	1753
Car-fender tripping member	B. Lev	815,106	Mar. 13	2212	466	121	537
Car-fender. Tubular	B. Lev	815,927	Mar. 20	3940	834	121	963
Car-fenders. Cushioning-roller for	B. Lev	815,928	Mar. 20	3943	835	121	964
Car-floor and floor-frame	M. F. Amorous	815,249	Mar. 13	2511	523	121	606
Car grain-door. Railway-	E. J. Noblett	817,983	Apr. 17	2859	619–20	121	2099
Car guard-rail	M. W. Rogers	814,081	Mar. 6	157	32	121	35
Car guard-rail. Street-	E. P. Dandridge	818,873	Apr. 24	4655	999–1000	121	2538
Car-handling apparatus	F. E. Woodford	814,498	Mar. 6	1000	206–6	121	218
Car-heater. Thermal	E. Klausman	814,296	Mar. 6	578	121–2	121	124
Car-heating system. Electric	F. C. Newell	814,981	Mar. 13	1938	407–8	121	478
Car. Hopper-bottom	T. R. Brown	816,070	Mar. 27	4246	899	121	1082
Car journal-box. Railway-	J. R. Williamson	818,501	Apr. 24	3880	834	121	2360
Car-lever	G. B. Sullivan	818,576	Apr. 24	4052	869	121	2405
Car life-guard fender	B. Lev	815,105	Mar. 13	2210	465	121	536
Car-lift. Individual	C. G. Hutchinson	815,834	Mar. 20	3765	792	121	926
Car motormen. Adjustable seat for electric-	O. E. Mefferd	815,546	Mar. 20	3149	650	121	793
Car-mover	F. Mertsheimer	816,873	Apr. 3	648	134	121	1502
Car. Ore-	A. Christianson	814,273	Mar. 6	532	110–11	121	114
Car-rack	H. E. Keeler	815,352	Mar. 20	2756	574	121	707
Car-rail hose-bridge	J. S. Heaton	817,558	Apr. 10	2016	425	121	1856
Car. Railway-	R. Gass	814,777	Mar. 13	1573	332	121	403
Car. Railway-	J. R. Jones	817,068	Apr. 3	1029	213	121	1586
Car. Railway-	H. L. Kerr	818,629	Apr. 24	4167	897	121	2432
Car. Railway tank-	H. J. Small and J. B. Speed	814,880	Mar. 13	1758	368	121	442
Car-register	F. A. Schierberg	818,563	Apr. 24	4029	864	121	2400
Car-roof construction	G. Steinmeyer, Sr	814,743	Mar. 13	1506	319	121	380
Car-seat	J. B. Kilburn	814,455	Mar. 6	923	190	121	200
Car-seat	E. G. Budd	814,514	Mar. 6	1032	213	121	225
Car-seat head-rest	C. W. Perry	818,045	Apr. 17	2988	645	121	2125
Car separable fender. Motor-	B. Lev	815,920	Mar. 20	3931	832	121	961
Car. Sleeping-	H. M. Pflager	816,037	Mar. 27	4167	882–3	121	1066
Car. Sleeping-	P. P. Carroll	818,742	Apr. 24	4397	941	121	2482
Car. Spreader-	P. F. Smith, Jr	818,127	Apr. 17	3144	676	121	2150
Car-step	N. A. E. McLendon	818,279	Apr. 17	3450	742	121	2224
Car-step. Folding	T. G. Clifford	817,224	Apr. 10	1344	281	121	1718
Car storm-curtain. Open-	M. E. Holden	817,562	Apr. 10	2023	426	121	1857
Car. Street-	W. J. Herbert	814,043	Mar. 6	88	16–17	121	20
Car-switching mechanism	H. E. Sharp	815,560	Mar. 20	3168	665	121	797
Car-underframing	H. C. Williamson and H. Pries	817,947	Apr. 17	2797	606	121	2084
Car underframing. Box-	G. I. King. (Reissue)	12,463	Mar. 13	2695	561	121	643
Car-wheel	H. C. Odenkirk	816,363	Mar. 27	4849	1028	121	1211
Car-wheel	J. Taylor	817,454	Apr. 10	1808	380	121	1814
Car-wheel	P. J. Garrison	817,636	Apr. 10	2149	456	121	1884
Car-wheel	A. Mast	818,900	Apr. 24	4704	1009	121	2548
Car-wheel-flange lubricator	A. C. Love	818,384	Apr. 17	3658	785–6	121	2267
Car wheel jack-stand	L. C. Houston	817,321	Apr. 10	1533	322	121	1754
Car wheel. Mine-	J. J. McCully	818,108	Apr. 17	3008	668	121	2148
Car-wheel skid. Railway-	W. H. Fletcher	814,645	Mar. 6	1283	270	121	277
Car-window	H. F. Dietz	816,539	Mar. 27	5211	1105	121	1290
Car-windows. Safety lever-frame for	W. Gatzen	818,156	Apr. 17	3206	690	121	2172
Cars and other vehicles. Double bogie for railway-	H. Schüler	814,922	Mar. 13	1824	382	121	456
Cars. Combined grain-door and loading and unloading platform for box-	J. S. Bender	814,014	Mar. 6	18	4	121	6
Cars. Device for transporting passengers from	F. S. See	815,868	Mar. 20	3835	812–13	121	940
Cars. Electric switch for electric-railway	O. Frank and P. J. McCaffrey	817,366	Apr. 10	1615	342	121	1773
Cars or vehicles along a railway. Apparatus for controlling the passage of	L. H. Thullen	816,762	Apr. 3	413	94	121	1449
Carbon-sheet holder	H. W. Hedges	817,709	Apr. 17	2411	516	121	1998
Carbureter	R. M. Mick	814,617	Mar. 6	1227	258	121	265
Carbureter	G. W. Kellogg	816,477	Mar. 27	5080	1077–8	121	1260
Carbureter	W. and J. Brown	817,218	Apr. 10	1331	278	121	1714
Carbureter	E. E. Shiess	817,592	Apr. 10	2073	437	121	1868
Carbureter	C. B. Harris	817,641	Apr. 10	2159	458	121	1896
Carbureter	J. C. Lewis	817,721	Apr. 10	2296	494	121	1918
Carbureter	A. S. Comstock	817,903	Apr. 17	2710	588	121	2064
Carbureter	C. Stute	817,941	Apr. 17	2785	603	121	2082
Carbureter	N. J. Verret and J. Palmer	818,207	Apr. 17	3311	707–8	121	2195
Carbureter	G. Tresenreuter	818,397	Apr. 17	3689	792	121	2274
Carbureter. Explosive-engine	L. Renault	818,853	Apr. 24	4623	992	121	2530
Carbureter for explosive motors or engines	J. H. Johnston	815,712	Mar. 20	3484	728	121	868
Carbureter for petroleum-motors	H. C. Doman	817,051	Apr. 3	1000	204	121	1580
Carbureting apparatus	F. Charron and L. Girardot	816,846	Apr. 3	591	122	121	1489
Card. Game-	M. Steel	816,267	Mar. 27	4627	992	121	1165
Card-holder	C. Warne	814,996	Mar. 13	1977	416	121	485
Card-holder	H. L. Franke	814,438	Mar. 6	895	184	121	195
Card holding or display device	D. E. Hunter	818,090	Apr. 17	3067	661	121	2142
Card-reproducing machine. Pattern-	I. E. Weel	814,101	Mar. 6	198	40	121	43
Cards. Playing-	A. D. Moniot	817,792	Apr. 17	2473	529	121	2011
Cardboard box	J. H. Noonan	816,119	Mar. 27	4342	919	121	1103
Carding-machine lap-feeding device	F. W. Boynton	814,264	Mar. 6	516	107	121	111
Carpenter's implement or tool	C. Schofield and I. Reeder	818,302	Apr. 17	3500	751	121	2235
Carpenter's tool	C. D. Campbell	815,064	Mar. 13	2126	448	121	519
Carpet cleaning and disinfecting machine	W. C. Hause and F. M. Marlin	818,958	Apr. 24	4813	1035	121	2572
Carpet-cutting machine	E. A. Thomas	815,987	Mar. 27	4053	858–9	121	1039
Carpet-cutting machine	R. E. and W. A. Dube	814,947	Mar. 13	1877	394	121	466
	W. H. Tschants	815,491	Mar. 20	3035	633	121	769

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Carpet holder. Stair-	H. Weinstock	815,301	Mar. 20	2856	593	121	728
Carpet-sweeper	W. H. Emmert	818,755	Apr. 24	4438	951	121	2492
Carriage. Folding baby-	A. B. Todd	818,487	Apr. 24	3847	827	121	2363
Carriage-spring antivibration device	A. Mans	815,188	Mar. 13	2394	499	121	579
Carrier: *See* Automatic carrier. Cash-carrier. Feed and litter carrier. Fender-carrier. Filling-carrier. Fleece-carrier. Hay-carrier. Mail-carrier.							
Carrier	O. Johnson	816,473	Mar. 27	5072	1076	121	1258
Carrier	V. Filteau	817,842	Apr. 17	2569	553	121	2033
Cart	J. A. Watt	816,627	Apr. 3	169	36	121	1396
Cart	J. I. Valle	818,205	Apr. 17	3308	707	121	2195
Cart. Dumping-	H. S. Long	814,059	Mar. 6	118	[illegible]	121	27
Cart. Road-	E. P. Hollister	818,963	Apr. 24	4818	1037	121	2574
Carton-making-machine attachment	R. Sunderman	816,273	Mar. 27	4639	984	121	1167
Cartons. Apparatus for the manufacture of moisture-proof	H. G. Eckstein	814,122	Mar. 6	245	46	121	55
Cartridge-conveyer	F. K. Young and J. E. Sheriff	814,635	Mar. 6	1262	265	121	274
Cartridges. Spreader for shot-	T. G. Bennett	814,511	Mar. 6	1024	211	121	223
Case: *See* Comb-case. Display-case. Filing-case. Mail-case. Pocket-case. Sewing-machine bobbin-case. Sewing-machine thread-case. Tire-case. Toilet-case. Watchcase.							
Casein. Precipitating and preserving	H. V. Dunham	814,594	Mar. 6	1183	.....	121	256
Cash-carrier	C. L. Swezey	815,130	Mar. 13	2269	475	121	550
Cash-register	W. F. Bockhoff and E. J. von Pein.	816,066	Mar. 27	4234	897	121	1060
Cash-register	F. C. Osborn	817,725	Apr. 10	2301	496–7	121	1919
Cask-repairing device	J. Majoros	817,960	Apr. 17	2854	618	121	2097
Casket-fastener	F. P. Brining	818,224	Apr. 17	3348	717	121	2202
Casket handle and socket-plate	J. C. Edward	816,653	Apr. 3	227	53	121	1410
Caster	G. E. Neuberth	816,177	Mar. 27	4457	943	121	1127
Caster	F. F. Bischoff	816,211	Mar. 27	4520	959	121	1141
Caster	C. Stengel	816,269	Mar. 27	4630	983	121	1165
Caster	O. Hoffmann	818,442	Apr. 24	3773	811	121	2348
Caster. Ball-	C. D. Dunham	818,080	Apr. 17	3054	668	121	2139
Caster. Ball-bearing	J. W. Self	816,944	Apr. 3	800	164	121	1536
Caster. Stove-leg	W. Peters	814,562	Mar. 6	1127	234	121	245
Casting apparatus. Metal-	A. C. and T. J. Clark	818,076	Apr. 17	3041	657	121	2136
Casting crucible steel. Apparatus for	L. E. Howard	817,714	Apr. 10	2273	489–90	121	1911
Casting-machine	E. E. Waite	818,927	Apr. 24	4753	1021–2	121	2559
Casting machine. Continuous steel-billet-	O. Potter	814,728	Mar. 13	1472	308–9	121	382
Casting mechanism	W. T. Krause	815,181	Mar. 13	2381	496–7	121	577
Casting-mold	J. M. Dodge	818,941	Apr. 24	4778	1027	121	2565
Castings. Forming	W. Brinton	816,709	Apr. 3	319	74	121	1431
Castings. Making patterns for metal	A. M. Holstein	814,209	Mar. 6	398	80–1	121	87
Castings. Metal mold for making brass	F. Haggenjos	816,315	Mar. 27	4717	1001	121	1184
Cat-guard	F. H. Palmer	814,984	Mar. 13	1951	410	121	480
Catalogue. Card-	H. F. Moses	815,110	Mar. 13	2222	467	121	539
Cattle-guard	I. Myers and C. Simensen	814,863	Mar. 13	1725	361	121	435
Cattle-guard	F. O. and G. A. Richter	815,379	Mar. 20	2823	588	121	720
Cattle-guard	J. W. Gorsuch and D. A. Bogue	817,367	Apr. 10	1618	342	121	1774
Cattle-guard	F. V. Grimes	818,883	Apr. 24	4673	1003	121	2541
Ceiling-plate	E. A. and A. B. Munro	815,369	Mar. 20	2807	584	121	716
Cement and apparatus therefor. Manufacture of hydraulic	B. Enright	815,080	Mar. 13	2154	454–5	121	525
Cement and making the same. Slag	J. A. Shinn	816,389	Mar. 27	4915	.....	121	1225
Cement-block machine	A. Klay	815,098	Mar. 13	2193	462–3	121	532
Cement-block machine	C. F. Davis	816,438	Mar. 27	5000	1062	121	1242
Cement-block-making machine	E. and J. O. Silva	816,613	Apr. 3	147	30–1	121	1394
Cement-block-molding machine	F. F. Martin	816,488	Mar. 27	5102	1061–2	121	1265
Cement-block-molding machine	S. L. Wiltse	817,684	Apr. 10	2227	477–8	121	1902
Cement blocks and the like. Machine for making	W. P. Elmore	817,964	Apr. 17	2830	611–14	121	2092
Cement-building-wall mold	A. McCahon	814,154	Mar. 6	298	59	121	66
Cement-burning furnace	W. E. Snyder	816,753	Apr. 3	392	90	121	1446
Cement-kiln. Rotary	H. Hitzel	815,705	Mar. 20	3466	723–4	121	864
Cement-kilns. Operating	H. L. Doherty	818,018	Apr. 17	2939	636	121	2116
Cement, &c. Machine for manufacturing pipes or conduits from	C. Girardot	818,158	Apr. 17	3209	690	121	2173
Cement-making apparatus	R. C. Carpenter	815,630	Mar. 20	3411	712–13	121	852
Cement-manufacturing apparatus	C. Ellis	817,163	Apr. 10	1217	252	121	1690
Cement post	L. Christensen	817,752	Apr. 17	2370	509	121	1989
Cement posts. Method and machine for forming	A. P. Robertson	817,670	Apr. 10	2206	471	121	1897
Cements. Manufacture of acid-proof and impermeable	R. Liebold. (Reissue)	12,470	Apr. 3	1183	.....	121	1623
Centrifugal machine	G. ter Meer	815,363	Mar. 20	2798	582	121	714
Centrifugal machine	W. E. Andrés	816,058	Mar. 27	4212	893	121	1075
Chain	H. A. House	816,096	Mar. 27	4296	910	121	1094
Chain. Detachable drive-	L. R. Rogers	818,469	Apr. 24	3818	821	121	2357
Chain-guide for pull-sockets	H. Hubbell	817,485	Apr. 10	1871	394	121	1826
Chain line. Wire-	C. M. Martin	815,849	Mar. 20	3794	801	121	933
Chain-link	F. V. Hetzel	816,325	Mar. 27	4769	1010	121	1194
Chain-machine splitter-bit	T. S. Hardesty	817,850	Apr. 17	2583	547	121	2036
Chain-securing device. Logging-	F. Pelkard	816,249	Mar. 27	4586	976	121	1155
Chains. Die for curbing	F. R. Bishop	817,618	Apr. 10	2117	448	121	1877
Chair: *See* Folding chair. Opera-chair. Rail-joint chair. Railway-chair. Theater-chair.							
Chair	A. E. Beall	816,209	Mar. 27	4517	969	121	1141
Chair and couch. Combined	C. S. J. Stevens	817,816	Apr. 17	2618	539	121	2021
Chair-lounge	J. Flindall	816,084	Mar. 27	4277	907	121	1090
Chalk-holder	F. T. Primus and E. G. Eggleston	814,872	Mar. 13	1744	366	121	439

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Chandelier attachment. Electric-	J. C. Schaefer	815,474	Mar. 20	3011	626	121	763
Chandelier. Gas-light	M. Hirth	814,448	Mar. 6	910	187	121	198
Change-maker	C. C. Spengler	817,530	Apr. 10	1957	413-15	121	1844
Channeling-machine	L. F. and A. J. Uthe	816,050	Mar. 27	4193	890-1	121	1071
Channeling-machine	W. Prellwitz	818,558	Apr. 24	4019	862	121	2399
Charging or feeding device	W. H. Blauvelt	818,862	Apr. 24	4636	995-6	121	2534
Chart. Dress-	H. N. Plant	815,467	Mar. 20	3001	626	121	761
Check-back attachment and clamp for teams	T. Schmeiser	818,792	Apr. 24	4512	964	121	2506
Check perforating and indicating apparatus	A. Marsh	814,553	Mar. 6	1108	231	121	240
Checkrein-fastener	C. W. Barrett	814,507	Mar. 6	1015	209	121	221
Cheese-cutter	J. Halliday	816,462	Mar. 27	5042	1071	121	1251
Cheese-cutter	R. D. Drummond	818,528	Apr. 24	3963	851	121	2387
Cheese-cutting machine	J. W. Culmer	816,713	Apr. 3	324	75	121	1432
Cheese-making apparatus	J. Harding	814,040	Mar. 6	83	15	121	20
Cheese-paraffining machine. Rotary	O. O. Amsden	815,575	Mar. 20	3194	672	121	803
Chenille bindings or trimmings. Machine for making	E. P. Eversmann	817,965	Apr. 17	2835	614	121	2093
Chime-ringing apparatus	A. E. Adriance	816,525	Mar. 27	5177	1096	121	1283
Chisel. Carpenter's	W. S. Ward	816,626	Apr. 3	169	35	121	1398
Chock. Mooring and towing	N. L. Skene	816,827	Apr. 3	549	117	121	1478
Chocolate tablets or similar articles. Machine for wrapping	A. Blanc	815,675	Mar. 20	3396	710	121	849
Chop-grader	J. S. Jordan	814,140	Mar. 6	273	54-5	121	60
Chopper: *See* Cotton-chopper.							
Chronograph	M. Wildermann and R. L. Mond	816,767	Apr. 3	427	96-7	121	1452
Chuck	H. P. Richards	817,936	Apr. 17	2771	600	121	2079
Chuck-actuating mechanism	B. M. W. Hanson	814,647	Mar. 6	1286	270-1	121	278
Chuck. Drill-	G. R. Rich	819,025	Apr. 24	4943	1060-1	121	2601
Chuck for metal-working machines	B. M. W. Hanson	814,648	Mar. 6	1291	271-2	121	279
Chuck. Lathe-	G. B. Taylor	815,877	Mar. 20	3851	815-16	121	943
Chuck. Rock-drill	T. E. Adams	817,609	Apr. 10	2102	445	121	1874
Chuck. Rock-drill	J. S. Harris and J. R. Hoskin	818,687	Apr. 24	4281	919	121	2457
Churn	J. D. Forsyth	814,196	Mar. 6	375	76	121	82
Churn	L. M. Kridelbaugh	814,548	Mar. 6	1102	229	121	239
Churn	H. Garbutt	814,685	Mar. 13	1390	291	121	366
Churn	C. W. Lowrey	815,358	Mar. 20	2729	578	121	710
Churn	W. F. Talbert	815,658	Mar. 20	3362	704	121	840
Churn	F. E. Kronquest	816,166	Mar. 27	4437	939	121	1123
Churn	J. C. McCollum	816,732	Apr. 3	354	81	121	1438
Churn	J. C. McVey	816,992	Apr. 3	898	186	121	1558
Churn	F. L. Decker	817,049	Apr. 3	997	204	121	1580
Churn	J. L. Forbes	817,310	Apr. 10	1515	317-18	121	1750
Churn	Z. L. Harbin	818,537	Apr. 24	3976	854	121	2390
Churn-motor	J. M. McBride	816,353	Mar. 27	4834	1025	121	1208
Churning attachment	I. B. Rosenthal	815,864	Mar. 20	3828	811	121	938
Churning-machine	H. L. Van Dusen	816,621	Apr. 3	161	33	121	1397
Chute. Adjustable stock-	A. E. Starrett	818,571	Apr. 24	4042	867	121	2403
Chute. Gravity-	J. M. Goodwin	815,285	Mar. 13	2573	541	121	620
Chute. Spiral	M. C. Schwab	817,341	Apr. 10	1567	329	121	1762
Cider-mill	E. R. Goings	818,683	Apr. 24	4270	917	121	2454
Cider-press	B. Witmer	816,414	Mar. 27	4962	1054	121	1235
Cigar bands or labels. Book, diary, album, &c., for the preservation of	J. Hill	818,961	Apr. 24	4817	1036	121	2573
Cigar-box	J. R. Hinkson	814,784	Mar. 13	1584	334	121	405
Cigar-bunch-handling machine	W. S. Luckett	815,359	Mar. 20	2781	579	121	710
Cigar-bunches. Device for the preliminary forming of	G. J. Prentice	818,786	Apr. 24	4494	962	121	2503
Cigar-bunching machine	A. S. Koch	817,254	Apr. 10	1402	296-7	121	1729
Cigar-clipper and match-safe. Combined	R. O. Hammond	815,700	Mar. 20	3455	721	121	862
Cigar-container	S. C. Marum	816,673	Apr. 3	262	61	121	1418
Cigar-cutter	N. Du Brul	816,569	Apr. 3	29	8	121	1360
Cigar cutter and lighter	W. Rooll	815,219	Mar. 13	2459	512	121	595
Cigar-machine	A. Shedlock	817,809	Apr. 17	2505	536	121	2018
Cigar-machine cutting mechanism	A. G. Woodford	817,830	Apr. 17	2546	546	121	2027
Cigar-moistener	J. S. Winget	816,413	Mar. 27	4960	1054	121	1234
Cigar-rolling table and wrapper-cutter	B. Liberman	817,493	Apr. 10	1886	397-8	121	1830
Cigar-tip cutter	E. E. Bussey and H. D. Waterhouse.	814,937	Mar. 13	1855	388	121	463
Cigarette and making same	N. Du Brul	818,150	Apr. 17	3196	667	121	2170
Cigarette-making device	A. E. Buckingham	816,150	Mar. 27	4403	930	121	1117
Cigarette-making machines. Automatically-regulated feeding apparatus for	R. A. Sloan, J. E. L. Barnes, and P. Ogden.	817,890	Apr. 17	2650	575-7	121	2049
Cigarette-making machines. Conveyer-band for	P. Hummel	814,906	Mar. 13	1802	377	121	451
Cigarette-tubes. Machine for making paper mouthpieces and applying the same to	I. Semenoff	814,738	Mar. 13	1489	313-16	121	286
Circuit-breaker. Automatic time	E. T. Browning	817,362	Apr. 10	1606	340	121	1772
Circuit-breaker. High-tension	R. H. Read	818,290	Apr. 17	3469	747	121	2228
Circuit-breaking apparatus	F. P. De Wilde	815,074	Mar. 13	2142	452	121	522
Circuit-controlling apparatus	R. D. Mershon	816,112	Mar. 27	4331	917	121	1101
Circuits. Making and breaking high-potential	E. M. Hewlett	816,468	Mar. 27	5059	1074-5	121	1255
Circuits. Transfer-switch for testing	J. S. Whitaker and H. P. Wood	815,993	Mar. 27	4067	861	121	1041
Cistern-mold	W. H. Lucas	815,447	Mar. 20	2967	617	121	754
Cisterns and tanks. Mosquito-guard for	B. C. Mire	818,389	Apr. 17	3666	787	121	2269
Clamp: *See* Book-support clamp. Guide-clamp. Hose-clamp. Mail-bag clamp. Miter-clamp. Pile and like clamp. Plumber's clamp. Pump-rod clamp. Rule-clamp. Sewing-machine clamp. Wire-clamp. Woodworking-clamp.							
Clamp	M. L. Bloomberg	814,898	Mar. 13	1788	374	121	448
Clamp-bracket	E. A. Litts	818,457	Apr. 24	3800	817	121	2353
Clamping-band	L. A. Rosier	815,558	Mar. 20	3166	665	121	796
Clamping device	A. E. Brown and C. H. Rhodes	818,227	Apr. 17	3355	719	121	2204

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Clamping-jaws. Means for preventing differential movement of	F. Van Amber	815,968	Mar. 27	4059	860	121	1040
Clasp:							
See Garment-clasp. Hame-clasp. Placket-clasp.							
Clasp	A. E. Bundsen	814,112	Mar. 6	219	43	121	47
Clasp	H. Watson	817,024	Apr. 3	953	196	121	1570
Clay articles. Marking implement for green	E. von Oven	815,238	Mar. 13	2496	520	121	603
Clay-cleaning apparatus	A. Sabroe	816,747	Apr. 3	380	88	121	1444
Clay. Treating	E. S. Powers	818,287	Apr. 17	3465	.....	121	2227
Clay-working machine	F. Alsip	815,398	Mar. 20	2876	598	121	733
Clays containing gypsum. Treating	K. Sakurai	818,124	Apr. 17	3139	.....	121	2158
Cleaner:							
See Boiler-flue cleaner. Comb-cleaner. Eyeglass-cleaner. Grain-cleaner. Grain-separator sieve-cleaner. Felt-cleaner. Pipe-stem cleaner. Sink-cleaner. Window-cleaner.							
Cleaning and polishing device	W. J. M. Hames	817,766	Apr. 17	2403	515	121	1996
Clip:							
See Bottle-clip. Detector-bar clip. Hame-clip. Paper-clip. Spring-clip. Surgical clip. Wood-clip.							
Clip	M. E. Nickerson	814,723	Mar. 13	1462	307	121	380
Clip	F. E. Ladd	814,851	Mar. 13	1708	357	121	431
Clipper. Hair-	T. W. McNally	818,462	Apr. 24	3809	819	121	2355
Clock	F. M. Clark	814,767	Mar. 13	1549	327–8	121	399
Clock	A. W. Owen	817,147	Apr. 3	1177	242	121	1621
Clock	W. E. Porter	817,803	Apr. 17	2494	534	121	2016
Clock and fan. Combination	S. D. Earl	816,903	Apr. 3	707	146	121	1515
Clock. Electric	G. H. Andrews	817,892	Apr. 17	2677	582–3	121	2055
Clock. Electric alarm-	G. C. Darche	815,072	Mar. 13	2139	451	121	522
Clock. Electric program-	A. L. Ronell	816,938	Apr. 3	783	161	121	1533
Clod-crusher	J. W. Dalrymple	816,153	Mar. 27	4410	932	121	1118
Clod-crusher and harrow	E. C. Abraham	814,499	Mar. 6	1002	206	121	219
Closet:							
See Dry closet. Water-closet.							
Closet-seat. Detachable	J. T. Baily	817,731	Apr. 10	2326	500	121	1927
Closet-tank	W. C. A. Vissing, Jr	815,661	Mar. 20	3367	704–5	121	842
Cloth-pressing machine	J. Ecker	818,753	Apr. 24	4432	948–50	121	2491
Clothes-drier	E. Butler	818,228	Apr. 17	3358	719	121	2204
Clothes-hanger	E. A. Farish and E. W. McClure	815,338	Mar. 20	2725	568	121	699
Clothes-line	C. C. Johnson	816,664	Apr. 3	245	58	121	1414
Clothes-line attachment. Pulley	F. J. Schmidt	815,123	Mar. 13	2249	471–2	121	546
Clothes-line prop	W. F. Briggs	814,266	Mar. 6	518	107	121	111
Clothes-line support	J. H. Hartley	815,529	Mar. 20	3113	650	121	785
Clothes-pin	J. W. Stewart	815,128	Mar. 13	2267	474	121	550
Clothes-pin	J. W. Baker	815,253	Mar. 13	2516	524	121	607
Clothes-pin	C. W. Boese	818,658	Apr. 24	4230	910	121	2446
Clothes-rack. Folding	J. Grüninger	814,370	Mar. 6	752	152	121	166
Clothing-fastener	L. D. Pierce	814,475	Mar. 6	960	197	121	209
Clover-huller	W. C. Robby	816,823	Apr. 3	542	116	121	1477
Clutch	C. C. Keyser	814,545	Mar. 6	1095	227	121	238
Clutch	G. W. Greenwood	815,010	Mar. 13	2012	423–4	121	493
Clutch	G. E. Franquist	816,906	Apr. 3	711	146	121	1516
Clutch	L. W. G. Flynt	817,309	Apr. 10	1513	317	121	1750
Clutch	R. S. Kasson	818,828	Apr. 24	4578	982	121	2521
Clutch. Electrical friction-	H. A. Williams	817,730	Apr. 10	2324	500	121	1926
Clutch. Friction-	F. F. Hoehne and A. Denzer	815,168	Mar. 13	2346	491	121	568
Clutch. Friction-	T. C. Dexter	815,909	Mar. 20	3912	827–8	121	957
Clutch. Friction-	E. E. Andrews	818,331	Apr. 17	3556	761–2	121	2246
Clutch. Magnetic friction-	H. A. Williams	817,210	Apr. 10	1318	275	121	1711
Clutch mechanism	H. S. Hele-Shaw	814,132	Mar. 6	258	50–2	121	57
Coal and other granular material. Apparatus for handling	A. Smith	816,391	Mar. 27	4918	1044–5	121	1225
Coal, &c. Apparatus for handling	J. Campbell	814,271	Mar. 6	528	109–10	121	113
Coal-cutting machine	A. H. Gibson	818,619	Apr. 24	4152	893	121	2428
Coal-drills. Expansion-bit for	W. H. Clarkson	814,768	Mar. 13	1552	328	121	400
Coal-finding instrument	L. B. Mognett	818,902	Apr. 24	4706	1009	121	2549
Coal-pocket	F. K. Hoover and A. J. Mason	816,797	Apr. 3	479	107	121	1462
Coal-tipples. Means for operating the gates of	L. E. Armentrout	814,009	Mar. 6	2	1	121	3
Coal unloading, breaking, and loading apparatus	W. T. Krausch	814,710	Mar. 13	1439	301–2	121	374
Coal-washing apparatus	R. L. Martin, Jr	816,672	Apr. 3	258	60	121	1417
Coat-hanger	D. R. Beebe	815,060	Mar. 13	2120	447	121	517
Coat-hanger	J. M. Stein	815,759	Mar. 20	3604	757	121	893
Coat-holder	W. Doyle	817,755	Apr. 17	2377	510	121	1990
Coated materials. Machine for preparing	C. H. Brigham and G. P. Harvey	814,351	Mar. 6	717	145	121	158
Coating	J. H. Blettner	814,424	Mar. 6	875	179	121	190
Cock for steam-cylinders. Drain-	S. Anderson	817,294	Apr. 10	1488	312	121	1745
Cock. Self-closing basin-	J. A. Johnston	816,329	Mar. 27	4774	1011	121	1195
Cock. Stop and waste	G. P. Hillen	816,795	Apr. 3	475	106	121	1462
Coffee and cereal roaster	K. H. Rommel	816,379	Mar. 27	4877	1034–5	121	1217
Coffee-boiler	J. Kruckewitt	814,460	Mar. 6	933	191	121	203
Coffee-cutting mill	E. C. Smith	815,126	Mar. 13	2264	473–4	121	549
Coffee-percolator	G. F. Savage	814,399	Mar. 6	821	169	121	179
Coffee-pot	M. B. Peery	814,724	Mar. 13	1462	307	121	380
Coffee-roaster	F. E. J. Thoreen	817,533	Apr. 10	1965	416	121	1846
Coffee-roaster	L. Schmidt	817,674	Apr. 10	2210	472	121	1899
Coffee-urn	H. Heibel	814,960	Mar. 13	1899	399	121	470
Coffin-fastener	F. P. Brining and J. Stackhouse	818,223	Apr. 17	3347	717	121	2202
Coffin-fastener	C. A. Conklin	818,233	Apr. 17	3367	720	121	2207
Coin-controlled apparatus	M. F. Price	816,936	Apr. 3	776	160	121	1531
Coin holding and delivering machine	J. W. Meaker	817,927	Apr. 17	2755	596–7	121	2076
Coin-holding card	J. C. Anderson	815,502	Mar. 20	3062	638	121	775
Coin-receptacle	W. H. Woolums	814,821	Mar. 13	1660	347	121	421

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Coin-tray	D. E. Waters	814,178	Mar. 6	342	70	121	75
Coke-handling apparatus	E. N. Trump	814,412	Mar. 6	850	175	121	184
Coke-oven	G. Pierboni and P. Bufano	814,621	Mar. 6	1234	260	121	267
Coke-oven	H. Koppers	818,266	Apr. 17	3431	737-8	121	2220
Coke-ovens. Drawing-machine for	R. D. Martin	818,841	Apr. 24	4598	996-7	121	2525
Coking process	G. S. Merrill	815,453	Mar. 20	2976	620	121	787
Collapsible table	C. R. Sheldon	816,258	Mar. 27	4606	979	121	1160
Collapsible tube	F. C. Holly	814,605	Mar. 6	1207	252	121	261
Collapsible tube	G. M. Williams	817,390	Apr. 17	2675	552	121	2054
Collar and cuff shaper	G. L. Richardson	818,915	Apr. 24	4726	1014-15	121	2553
Collar holder or supporter. Adjustable	T. Allsopp	814,419	Mar. 6	965	178	121	188
Collar. Horse-	W. B. Estes	814,596	Mar. 6	1185	248	121	257
Collar. Horse-	J. Eulberg	816,785	Apr. 3	461	103	121	1450
Collar. Horse-	J. Ahrendt	817,350	Apr. 10	1604	330	121	1771
Collar. Horse-	G. W. Hahn	818,621	Apr. 24	4156	893-4	121	2429
Collar pad. Horse-	W. F. Sachse	816,127	Mar. 27	4352	922	121	1105
Collar. Pneumatic horse-	I. J. Thomsen	816,761	Apr. 3	412	98	121	1449
Collar-stay	L. C. Collins	818,817	Apr. 24	4560	978	121	2518
Collars. Metallic reinforce for harness-	J. C. Hooper	816,660	Apr. 3	296	55	121	1412
Color-applying apparatus. Pneumatic	F. Wolf	818,649	Apr. 24	4211	905	121	2462
Colors for printing on fabrics. Producing metallic or lustrous	L. Lilienfeld	815,600	Mar. 20	3228		121	813
Coloring or painting composition	R. W. Cornelison	816,446	Apr. 3	215		121	1408
Colter	J. Moeller	817,283	Apr. 3	1052	218	121	1591
Column. Building-	T. L. Green	817,241	Apr. 10	1377	287	121	1724
Column cap and base. Combined	J. Lally	816,490	Mar. 27	3986	1079	121	1961
Comb: *See* Scalp-comb. Warper-comb. Slasher-comb.							
Comb case and cleaner. Combined	A. O. Craven	815,798	Mar. 20	3682	776	121	906
Comb-cleaner	W. H. Long	814,713	Mar. 13	1449	303	121	376
Combing machine, gill-box, &c. Wool-	S. Ormondroyd and J. F. White	818,707	Apr. 24	4327	928	121	2467
Combination-lock	E. E. Quaintance	817,388	Apr. 10	1662	352	121	1783
Combination-lock	D. H. Cleveland	818,414	Apr. 24	3723	799	121	2337
Combustion. Method of	O. Bender	818,221	Apr. 17	3339	716	121	2201
Commode	W. C. Feely	818,821	Apr. 24	4565	979	121	2518
Compartment-box for bottles or the like	H. Phillips	816,190	Apr. 17	3282	702	121	2190
Compass. Mariner's	W. Thomson and F. W. Clark	816,618	Apr. 3	156	32	121	1396
Compasses	H. Kern	814,453	Mar. 6	918	188	121	190
Compasses. Ellipse-	C. E. Keel	817,645	Apr. 10	2167	460	121	1888
Composite construction. Tension member for	J. Kahn	816,334	Mar. 27	4784	1013	121	1197
Composition of matter	L. S. Van Westrum	814,750	Mar. 13	1517		121	392
Computing device	W. H. Watson	814,488	Mar. 6	986	202-3	121	215
Computing-machine	D. W. Shiek	817,450	Apr. 10	1798	378-9	121	1812
Concentrator	Q. Bent	815,673	Mar. 20	3392	709	121	848
Concentrator	H. H. Campbell	815,679	Mar. 20	3409	712	121	852
Concrete and metal structure	R. A. Cummings	815,409	Mar. 20	2902	602	121	740
Concrete and other masonry. Supporting forms used in the construction of	M. W. Brown	814,585	Mar. 6	1167	244	121	253
Concrete and the like. Tension-bar for use in	J. F. Golding	815,157	Mar. 13	2323	486	121	563
Concrete. Apparatus for lining tunnels with	J. W. Reno	816,040	Mar. 27	4173	884	121	1067
Concrete-brick-pressing machine	H. H. Spears	814,742	Mar. 13	1503	318	121	389
Concrete bricks or blocks. Molding	W. Porten	818,286	Apr. 17	3463	745-6	121	2227
Concrete building-blocks or veneer-blocks. Machine for manufacturing solid	R. Edmondson	816,542	Mar. 27	5215	1106	121	1201
Concrete dam. Laminated multiple-arch	S. P. Brown	818,738	Apr. 24	4389	940	121	2481
Concrete foundation for scales	G. H. Birchard	815,576	Mar. 20	3197	672	121	803
Concrete-mixer	C. R. Weaver	818,929	Apr. 24	4758	1023	121	2560
Concrete-mixing machinery	E. L. Ransome	814,803	Mar. 13	1626	341	121	414
Concrete piles. Setting	F. Shuman	817,595	Apr. 10	2076	438	121	1860
Concrete posts. Staple-receiving clip for	H. Giessel	817,762	Apr. 17	2392	513	121	1994
Concrete. Sectional girder and column of reinforced	R. Grimm	818,884	Apr. 24	4674	1003	121	2541
Concrete-steel construction	W. Mueser	815,619	Mar. 20	3279	688	121	822
Concrete-steel construction	W. Mueser	815,620	Mar. 20	3281	688	121	823
Condenser	G. M. Newhall	815,031	Mar. 13	2071	434	121	506
Condenser	L. Schutte	816,043	Mar. 27	4178	885-6	121	1068
Condenser	H. C. Ruggles	816,602	Apr. 3	111	24	121	1381
Condenser	C. H. Wheeler and J. J. Mullan	817,458	Apr. 10	1817	381	121	1816
Condenser	C. H. Wheeler	818,322	Apr. 17	3543	759	121	2243
Condenser and feed-water heater	J. Jeklin	815,431	Mar. 20	2941	610	121	740
Condiment-holder	S. M. Van Blarcom	815,883	Mar. 20	3861	818	121	944
Conduit-clamp	J. Staples	814,092	Mar. 6	183	37	121	40
Conduit. Curb-	J. C. Marriott	814,308	Mar. 6	612	126-7	121	132
Conduit-sealing	J. W. Turner	815,237	Mar. 13	2494	520	121	603
Conduits. Apparatus for making fibrous	S. Palmer and M. M. Waterman	817,187	Apr. 10	1270	263-4	121	1701
Connecting-rod	J. F. Cook	815,068	Mar. 13	2131	449	121	520
Construction material	W. Mueser	815,617	Mar. 20	3275	687	121	821
Construction materials	W. Mueser	815,618	Mar. 20	3277	688	121	822
Contact device	A. Plecher	817,664	Apr. 10	2196	468	121	1895
Contact. Shoe-	G. H. Fretts	818,947	Apr. 24	4794	1030	121	2569
Container-closure	J. R. Harbeck	814,374	Mar. 6	759	153	121	168
Control system	F. E. Case	818,349	Apr. 17	3587	768	121	2252
Controller	T. von Zweigbergk	817,031	Apr. 3	966	199	121	1573
Controller-operating means	T. S. Perkins and R. P. Jackson	814,325	Mar. 6	660	132-3	121	144
Controller-operating means	A. J. Brown	815,578	Mar. 20	3201	673	121	804
Controller-switch	T. S. Perkins and R. P. Jackson	814,324	Mar. 6	657	132	121	144
Conveyer	T. S. Miller and J. H. Dickinson	815,852	Mar. 20	3800	802-3	121	933
Conveyer	R. C. Hills	817,115	Apr. 3	1115	230-1	121	1608
Conveyer	H. Brown	818,225	Apr. 17	3349	718	121	2202
Conveyer attachment. Pneumatic-	C. J. Harris	814,130	Mar. 6	256	49	121	57
Conveyer. Gravity-	M. C. Schwab	817,278	Apr. 10	1456	306	121	1739
Conveyer-pipes. Distributing-nozzle for	O. E. Bray	816,897	Apr. 3	695	143	121	1513
Conveying apparatus	C. H. Locher	815,963	Mar. 27	4013	849	121	1030
Conveying apparatus	A. and J. M. Hall	816,910	Apr. 3	722	148	121	1513
Conveying apparatus. Pneumatic	A. C. Lynch	815,965	Mar. 27	4016	850	121	1031
Conveying device	I. E. Bendickson	814,933	Mar. 13	1847	387	121	461

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Cooking-machine	H. A. Higbee	814,540	Mar. 6	1085	224–5	121	236
Cooking utensil	A. Gufler	814,129	Mar. 6	255	49	121	56
Cooking utensil	H. Elsner	817,476	Apr. 10	1857	390	121	1824
Cooler: *See* Beer-cooler. Milk-cooler.							
Cooler, cream-ripener, and pasteurizer. Combined	D. W. Payne	816,181	Mar. 27	4466	945–6	121	1130
Cooling apparatus	M. L. Wolfe	815,773	Mar. 30	3624	762	121	896
Coop. Folding chicken-	C. J. Laidig	816,103	Mar. 27	4309	912	121	1096
Cop-waste, &c. Worker-cylinder for machines for pulling, tearing, &c.,	H. A. Williams	815,305	Mar. 20	2871	596–7	121	732
Copper separation	A. Elliott	814,536	Mar. 13	1683	352	121	427
Copy-holder	W. P. Swope	818,579	Apr. 24	4057	871	121	2406
Copy-holder. Rotary	W. P. Swope	818,580	Apr. 24	4058	871	121	2407
Copying press. Letter-	G. H. Taylor	816,390	Mar. 27	4931	1048	121	1228
Cord-fastening device	D. A. Wedmore	816,140	Mar. 27	4387	927	121	1113
Core-oven	A. B. Day	816,967	Apr. 3	842	173	121	1544
Core vent and support. Combined metal	H. C. Caldwell	818,413	Apr. 24	3722	790	121	2337
Cork-extractor	J. Coomber	814,641	Mar. 6	1273	268	121	276
Corkscrew	J. D. Coughlin	814,834	Mar. 13	1681	351–2	121	426
Corn-crib	J. W. Engelke	817,165	Apr. 10	1221	252	121	1691
Corn-cutting machine	C. A. Young	818,650	Apr. 24	4213	905	121	2443
Corn-holder	A. N. Gitterman	814,688	Mar. 13	1403	292	121	366
Corn-husker	H. Rust	815,220	Mar. 13	2461	513	121	596
Corn huskers and shredders. Feeder for	E. F. Nash	818,549	Apr. 24	4004	859	121	2395
Corn picker and husker	C. E. Hancock	815,817	Mar. 20	3714	783	121	915
Cornet	Z A. Meredith	814,615	Mar. 6	1222	257–8	121	265
Cornice-brake	G. C. Keene	816,917	Apr. 3	735	151	121	1521
Corrugating-machine	G. B. Johnson	815,710	Mar. 20	3475	726–7	121	866
Corset and abdominal supporter	F. Schmitt	815,747	Mar. 20	3579	751	121	888
Cot. Traveler's grip-	E. C. Harilee	815,819	Mar. 20	3717	783–4	121	915
Cotton-blocker	F. M. Bradley	816,638	Apr. 3	194	45–6	121	1403
Cotton-chopper	J. R. McKee	814,916	Mar. 13	1815	380	121	454
Cotton-chopper	G. R. Robinson	817,339	Apr. 10	1562	329	121	1761
Cotton-chopper	J. M. Andrews	817,613	Apr. 10	2109	446	121	1875
Cotton-chopper	A. Jelek	818,890	Apr. 24	4682	1004–5	121	2543
Cotton-compress	W. Hill	818,172	Apr. 17	3247	696–7	121	2182
Cotton or fibrous material for textile and like purposes from waste products. Apparatus for obtaining pure	C. Knopf	814,967	Mar. 13	1917	403	121	474
Cotton-picker	L. Blount	815,676	Mar. 20	3402	711	121	860
Cotton-scraper attachment	C. O. Dye	817,696	Apr. 10	2245	482	121	1905
Couch and bed. Combined	E. M. Hulse	818,250	Apr. 17	3409	731	121	2215
Couch or couch-bed	C. L. Plunkett	815,118	Mar. 13	2238	469–70	121	543
Counter	H. T. Weston	818,591	Apr. 24	4077	875	121	2411
Counter-shaft mechanism. Variable-speed	J. E. Hunter	818,450	Apr. 24	3787	813–14	121	2351
Counterbalance device	W. J. Hagman	815,696	Mar. 20	3449	720	121	860
Countersinking or facing machine	O. M. Mowat	815,029	Mar. 13	2066	433	121	505
Coupling: *See* Air-brake coupling. Car-coupling. Drill-rod coupling. Elevator-coupling. Engine and car coupling. Hose-coupling. Pipe-coupling. Shaft-coupling. Thill-coupling. Whiffletree-coupling.							
Coupling	H. C. Clay	816,218	Mar. 27	4534	963	121	1145
Coupling device	A. E. Scouten	816,129	Mar. 27	4357	923	121	1107
Coupling device. Auxiliary	G. W. Scott	817,342	Apr. 10	1569	330	121	1762
Cover. Removable dust-protective	L. J. Dirand	816,568	Apr. 3	27	8	121	1360
Cradle. Self-moving	F. Alroth	814,420	Mar. 6	868	178	121	189
Crate	O. J. La Bauve	818,697	Apr. 24	4302	922–3	121	2461
Crate Banana-shipping	O. Granke	814,534	Mar. 6	1074	221	121	233
Crate. Collapsible or knockdown	J. Ackerman	814,500	Mar. 6	1004	207	121	219
Crate. Folding	F. J. Hipp	816,164	Mar. 27	4433	957–8	121	1123
Crate. Folding	W. H. Kelchner	816,801	Apr. 3	485	103	121	1464
Crate or coop	E. Sperling	814,882	Mar. 13	1761	369	121	442
Cravat or tie holder	R. Riethmüller	814,919	Mar. 13	1821	381	121	455
Cream-separator	C. Walker	815,239	Mar. 13	2496	520	121	603
Cream-separator bowl. Centrifugal-	W. C. Hartmann	815,347	Mar. 20	2750	572–3	121	706
Cream-separator. Centrifugal	M. Kelley	815,094	Mar. 13	2184	461	121	530
Cream-separator. Centrifugal	F. A. West	816,199	Mar. 27	4490	964–5	121	1136
Creasing-machine	W. H. H. Tracy	815,234	Mar. 13	2489	518	121	601
Crib	W. W. Grigsby	814,538	Mar. 6	1083	223	121	235
Cross-tie and rail-fastener. Steel	J. Austin and R. McKendrick	815,251	Mar. 13	2513	523	121	607
Crown and bridge work	A. H. Brown	818,661	Apr. 24	4235	910	121	2447
Crusher: *See* Clod-crusher. Rock-crusher.							
Crushers and pulverizers. Dumping-cage for	M. F. Williams	818,726	Apr. 24	4362	934	121	2475
Crushers and pulverizers. Preliminary breaker for	M. F. Williams	818,328	Apr. 17	3552	761	121	2245
Crushing-mill	G. Commichau	814,832	Mar. 13	1679	351	121	426
Crushing-rolls	A. C. Calkins	815,332	Mar. 20	2716	566	121	696
Crutch	A. C. Morse	815,368	Mar. 20	2806	584	121	716
Cue-rack	N. B. Stone	815,228	Mar. 13	2480	516	121	599
Cuff-holder	S. P. Dunlap	818,616	Apr. 24	4143	892	121	2427
Culinary utensil	F. J. Larock	818,455	Apr. 24	3797	816	121	2353
Culinary vessel	H. McConnell	816,356	Mar. 27	4838	1025	121	1210
Culinary vessel	O. M. Knox	818,099	Apr. 17	3082	665	121	2144
Culinary-vessel attachment	C. M. Wasley	816,892	Apr. 3	687	142	121	1511
Cultivator	N. S. Barger	814,011	Mar. 6	7	2–3	121	4
Cultivator	W. A. Martin	814,309	Mar. 6	614	127	121	133
Cultivator	S. A. Spitz	814,567	Mar. 6	1134	236–7	121	246
Cultivator	T. M. Riegel	814,873	Mar. 13	1746	365–6	121	430
Cultivator	F. L. Anderson	815,323	Mar. 20	2701	562	121	695
Cultivator	T. Mulally	816,351	Mar. 27	4828	1023–4	121	1207
Cultivator	F. E. Schaal	816,382	Mar. 27	4880	1030	121	1220
Cultivator	W. Sobey	817,012	Apr. 3	929	192	121	1564
Cultivator	J. E. Jones	818,253	Apr. 17	3411	731–2	121	2215

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Cultivator	I. N. Van Pelt	818,492	Apr. 24	3861	831	121	2365
Cultivator	R. T. Love	818,839	Apr. 24	4594	985	121	2524
Cultivator	D. W Strickland	818,923	Apr. 24	4744	1019	121	2557
Cultivator and planter	D. W. Strickland	818,922	Apr. 24	4741	1019	121	2557
Cultivator and planter. Convertible	H. Warfield	816,693	Apr. 3	294	69	121	1425
Cultivator attachment	E. Haiman	818,760	Apr. 24	4444	952	121	2493
Cultivator. Beet-	O. Sorenson	815,652	Mar. 20	3356	702	121	639
Cultivator. Corn-	H. Stripe	815,229	Mar. 13	2481	516–17	121	600
Cultivator. Riding-	J. A. Bean	818,071	Apr. 17	3033	655	121	2134
Cultivator, road-machine, and farm-wagon. Disk land-	A. L. Foote	816,085	Mar. 27	4279	907	121	1091
Cultivator. Wheel-	J. K. Young	814,258	Mar. 6	505	104–5	121	108
Cultivators. Balancing mechanism for wheel-	A. C. Lindgren	816,868	Apr. 3	636	132	121	1499
Culvert	H. G. Moats	818,272	Apr. 17	3441	740	121	2222
Cup: *See* Drill-cup. Grease-cup.							
Cupola	F. N. Cline	814,769	Mar. 13	1554	328	121	400
Cupola	A. Baillot	817,412	Apr. 10	1717	361–2	121	1795
Curbing and sidewalk dressing implement	P. F. Connelly	818,416	Apr. 24	3725	800	121	2338
Current distribution. Safety device for alternating-	G. N. Eastman	818,424	Apr. 24	3744	804	121	2341
Current generator. Alternating-	C. P. Steinmetz	816,395	Mar. 27	4924	1046	121	1237
Current machinery. Alternating-	A. S. McAllister	815,450	Mar. 20	2986	622–3	121	758
Current-motor	F. B. Marvin	815,302	Mar. 13	2609	548	121	628
Curtain and counterbalance for book and other cases.	A. McKenzie	816,496	Mar. 27	5117	1085	121	1268
Curtain-bracket	G. E. Quittmeyer	817,446	Apr. 10	1791	377	121	1810
Curtain-fastener	N. A. Ferree	817,477	Apr. 10	1858	390–1	121	1824
Curtain-fixture	H. H. Forsyth	817,750	Apr. 17	2386	512	121	1992
Curtain-holder	G. W. Barnett	816,289	Mar. 27	4664	990	121	1173
Curtain-pole	J. N. Mills	816,490	Mar. 27	5105	1082	121	1265
Curtain-pole	J. T. Ezell	816,786	Apr. 3	461	103	121	1459
Curtain-pole, bracket, and window-shade holder. Combined	J. H. Seegers	816,684	Apr. 3	379	65	121	1422
Curtain-pole fixture	F. N. Martindale	818,036	Apr. 17	2970	641	121	2122
Curtain-pole lifter	C. S. Armstrong	817,741	Apr. 17	2348	504	121	1985
Curtain-rod	A. Elchinger	814,903	Mar. 13	1797	376	121	450
Curtain-rod support	F. L. Lathrop	814,911	Mar. 13	1805	378	121	452
Curtain-stretcher and clothes-drier. Combined	W. M. Rush	815,382	Mar. 20	2838	590	121	724
Curtains. Means for plaiting hanging	G. F. French and W. H. Pinch	817,988	Apr. 17	2840	615	121	2094
Curved surfaces. Attachment for shapers for making.	H. Dunn	818,423	Apr. 24	3741	803–4	121	2340
Cushion: *See* Air-cushion.							
Cuspidor	P. L. Madden and G. Pfender	814,385	Mar. 6	779	157	121	172
Cuspidor	E. T. Willhoit	817,029	Apr. 3	963	198	121	1573
Cuspidor	F. A. Keiff	818,096	Apr. 17	3076	663	121	2143
Cuspidor. Car-	E. Metzger	816,909	Apr. 3	506	111	121	1469
Cuspidors. Portable cabinet for	A. Heagele	817,710	Apr. 10	2268	488	121	1909
Cut-off. Automatic	P. C. Hansen	817,707	Apr. 10	2263	487	121	1908
Cut-off. Rain-spout	D. C. Johnson	814,214	Mar. 6	416	86	121	91
Cut-out. Arc-extinguishing	E. M. Hewlett	818,376	Apr. 17	3640	781–2	121	2264
Cut-out. Thermal	C. E. Eveleth	815,804	Mar. 20	3693	779	121	910
Cutlery. Manufacturing	E. Hammesfahr	815,699	Mar. 20	3454	.....	121	861
Cutter: *See* Butter-cutter. Candy-cutter. Cheese-cutter. Cigar-cutter. Cigar-tip cutter. Flue-cutter. Flue or tube cutter. Hoof-cutter. Miter-cutter. Motor-cutter. Noodle-cutter. Screw-thread cutter. Sod and cornstalk cutter. Stalk-cutter. Tube-cutter. Twine and thread cutter. Vegetable-cutter. Veneer-cutter. Vine-cutter.							
Cutter-head	F. D. Hall	815,461	Mar. 13	2330	487	121	564
Cutter-head	A. W. Nelson	815,549	Mar. 20	3152	660	121	793
Cutter-head for shapers	C. Backman	816,953	Apr. 3	821	168	121	1540
Cutting device. Rotary	T. B. Williams	814,418	Mar. 6	863	177	121	188
Cutting-head	W. B. Huther	817,568	Apr. 10	2033	428	121	1859
Cutting headings. Machine for	W. A. Lathrop	816,923	Apr. 3	750	154–6	121	1524
Cutting-machine	W. C. Quinlen	817,000	Apr. 3	909	187–8	121	1560
Cutting mechanism	C. F. Smith	818,713	Apr. 24	4335	930	121	2469
Cutting-tool	J. B. Hawley	814,447	Mar. 6	908	186	121	198
Cycle. Motor-	E. Bütikofer	818,609	Apr. 24	4131	888	121	2424
Cylinder-cooling device	C. H. Blomstrom	815,257	Mar. 13	2521	525	121	606
Damper	J. R. McCord	817,183	Apr. 10	1260	262	121	1699
Damper. Bolster swing-	W. G. Price	818,642	Apr. 24	4195	902	121	2439
Damper for stovepipes, flues, &c	H. W. Conway	816,712	Apr. 3	323	74–5	121	1431
Damper-operating motor	O. Saugstad	815,559	Mar. 20	3167	665	121	797
Damper-regulator and motor therefor	O. Saugstad	817,277	Apr. 10	1454	306	121	1738
Davenport	F. A. Jacob	814,606	Mar. 6	1206	252–3	121	261
Davenport-pad	R. Coopersmith	817,139	Apr. 3	1160	240	121	1617
Decanting apparatus. Liquid-	C. Sellenscheidt	814,169	Mar. 6	327	66	121	71
Decorticating-machine	M. Castellon	816,296	Mar. 27	4679	994–5	121	1176
Decorticating Manila fiber and like substances. Machine for	C. E. Dailey	815,790	Mar. 20	3683	776	121	908
Decoys. Anchor for	H. H. Tartsch	814,097	Mar. 6	191	38	121	42
Dehorner	G. Webster	814,100	Mar. 6	197	39	121	43
Delivery-box	L. J. and P. Zimmermann	814,107	Mar. 6	206	41–2	121	45
Delivery device	J. Gregory	814,368	Mar. 6	747	151	121	165
Dental contour-pliers	N. H. Smith	816,828	Apr. 3	551	117	121	1479
Dental expander or dilator	C. G. Davis	815,907	Mar. 20	3809	827	121	956
Dental-floss holder	J. C. De La Cour	817,050	Apr. 3	909	204	121	1580
Dental instrument for raising barbs upon wires	L. S. Lourie	816,668	Apr. 3	249	59	121	1415
Dental-matrix retainer	C. M. Leffingwell	814,056	Mar. 6	113	22	121	26
Dental-plate swage	G. E. Freeborn	815,807	Mar. 20	3699	780	121	911
Dental tool	C. P. Fritz	815,153	Mar. 13	2314	484	121	560

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dental-tool holder or clutch	B. S. Brown	816,069	Mar. 27	4244	886	121	1063
Dental-tool shield and moistener	C. A. Sevier	816,685	Apr. 3	280	65	121	1422
Derrick	T. J. McClain and R. S. McDaniel	816,590	Apr. 3	75	18	121	1372
Derrick	S. P. Mitchell	817,863	Apr. 17	2614	566-7	121	2042
Derrick. Portable	J. F. White	818,645	Apr. 24	4205	904	121	2441
Derrick. Revolving	J. A. Glancey	817,481	Apr. 10	1865	392-3	121	1825
Desk. Adjustable combination	C. S. Owens	818,910	Apr. 24	4721	1013	121	2552
Desk and easel. Adjustable artist's	J. and E. M. Goldsworthy	815,810	Mar. 20	3704	780	121	912
Desk. Reading	W. J. Lonergan	814,381	Mar. 6	772	156	121	171
Desk. School	W. H. Stockman	816,272	Mar. 27	4637	983	121	1166
Detector-bar clip	J. S. Hobson	816,658	Apr. 3	234	54-5	121	1412
Dial. Illuminated	C. F. Fernald	818,822	Apr. 24	4567	979	121	2619
Diaper	R. H. Peters and L. A. Mason	816,036	Mar. 27	4186	892	121	1065
Die:							
See Wire-working die.							
Die-stock. Adjustable	B. Borden	814,581	Mar. 6	1159	242	121	251
Die-stock. Adjustable	B. Borden	817,217	Apr. 10	1330	278	121	1714
Digger:							
See Post-hole digger. Potato-digger.							
Digging holes	I. D. Kemmerer	814,849	Mar. 13	1706	356	121	431
Digging tool. Hole	I. D. Kemmerer	814,850	Mar. 13	1707	357	121	431
Dining and billiard table. Combined	W. Stevenson	817,097	Apr. 3	1076	228	121	1596
Disappearing seat	S. M. Curwen	816,537	Mar. 27	5197	1103	121	1287
Dish-drainer	W. A. McAdams	815,855	Mar. 20	3806	806	121	934
Dish-drier	J. Daly	818,613	Apr. 24	4142	890	121	2426
Dish-drying device	A. S. King	817,120	Apr. 3	1125	238	121	1610
Dish-washing machine	G. F. Sigler and A. Dow	814,329	Mar. 6	667	134	121	146
Dish-washing machine	I. L. Frankem	818,427	Apr. 24	3748	806	121	2343
Disinfecting compound	J. W. England	817,166	Apr. 10	1223	.....	121	1691
Disk jointer	T. M. Ross	818,562	Apr. 24	4028	864	121	2400
Dispensing apparatus. Coin-controlled	F. T. Percy	815,860	Mar. 20	3818	808-9	121	937
Dispensing-receptacle	S. S. Rider and D. J. O'Donnell	816,822	Apr. 3	538	115-16	121	1476
Display apparatus	A. A. Phippe	816,598	Apr. 3	103	21-2	121	1380
Display apparatus	C. Jackson	817,322	Apr. 10	1534	322-3	121	1754
Display apparatus. Illuminated	F. M. D'Arsi	816,154	Mar. 27	4413	932	121	1119
Display cabinet. Curtain	M. Downey	815,078	Mar. 13	3150	453-4	121	524
Display can or box. Sheet-metal	E. M. Hallbauer	815,957	Mar. 27	4000	847	121	1027
Display-can. Sheet-metal	F. Rudolphi and W. A. Geiger	815,981	Mar. 27	4042	855	121	1037
Display-case. Portable	J. W. Shaw	818,712	Apr. 24	4333	929	121	2468
Display-easel	J. B. Timberlake	814,573	Mar. 6	1146	239	121	248
Display-form	W. S. Stillman	815,566	Mar. 20	3179	667	121	799
Display form. Glove	H. H. Lane and T. B. Swift	818,178	Apr. 17	3257	698	121	2184
Display-rack	C. D. Silven	815,480	Mar. 20	3019	630	121	765
Display-rack	E. Bollhoefer	817,216	Apr. 10	1328	278	121	1714
Display-rack	O. and O. Justus	817,374	Apr. 10	1632	345	121	1777
Display-rack	A. C. Wood	818,329	Apr. 17	3552	761	121	2245
Display-rack. Extensible	E. L. Reichle	818,709	Apr. 24	4330	929	121	2468
Display-rack for rugs, curtains, and similar articles	F. W. Pierce	814,801	Mar. 13	1622	340	121	413
Display rack. Furniture	C. McCloskey and J. McLaughlin	814,980	Mar. 13	1937	407	121	478
Display-stand	C. H. Wheeler	817,353	Apr. 10	1595	337	121	1769
Display-stand. Floral	L. Wittbold	816,053	Mar. 27	4200	891	121	1073
Display stand. Hat	H. J. Montgomery	815,456	Mar. 20	2981	620	121	757
Displaying apparatus. Card	T. S. Crapp	814,588	Mar. 6	1172	245-6	121	254
Distilling apparatus	G. F. Wentz	815,392	Mar. 20	2857	593-4	121	729
Distilling apparatus	L. Kleitz	818,831	Apr. 24	4583	982	121	2522
Ditching-machine	J. Nixon	814,982	Mar. 13	1942	408	121	478
Division-plate and tablet-holder	H. W. Andrews	818,012	Apr. 17	2926	632	121	2113
Dolls. Articulation of	H. W. Meier	818,842	Apr. 24	4604	988	121	2527
Dolls. Eye mechanism for	S. D. Gifford	817,055	Apr. 3	1007	206	121	1582
Door	F. Dentler	814,192	Mar. 6	367	75	121	80
Door	F. K. and A. M. Eastman	816,441	Mar. 27	5005	1063	121	1243
Door and automatic closing means therefor. Combined	C. L. Colby	814,356	Mar. 6	724	146-7	121	160
Door-check	N. W. Crandall	815,579	Mar. 20	3203	673-4	121	805
Door-check	B. Gonyo	818,435	Apr. 24	3764	809	121	2346
Door check and closer. Combined	A. F. Bardwell	818,600	Apr. 24	4109	882-3	121	2418
Door closer and check	A. J. Rosentreter	817,393	Apr. 10	1680	354-5	121	1787
Door controller. Sliding	A. M. Easton	816,551	Mar. 27	5232	1110	121	1296
Door-fastener	J. L. Phillips	815,466	Mar. 20	2999	625	121	761
Door fastener. Sliding	W. H. Booth	818,143	Apr. 17	3185	685	121	2166
Door fastening. Screen	A. Sandberg	815,638	Mar. 20	3326	697	121	833
Door. Fire-exit	D. Carroll	815,334	Mar. 20	2720	567	121	666
Door-frame	S. P. Stevenson	817,199	Apr. 10	1300	271	121	1707
Door, gate, and the like spring	G. M. Bott	816,556	Apr. 3	10	3	121	1356
Door. Grain	E. A. Hill	816,230	Mar. 27	4551	968-9	121	1148
Door. Grain	J. Riley	816,740	Apr. 3	368	85	121	1441
Door. Grain	W. J. Cocklin	818,816	Apr. 24	4558	977	121	2517
Door. Gravity drop	J. M. Goodwin	815,284	Mar. 13	2570	540	121	619
Door-hanger	P. A. Myers	815,371	Mar. 20	2811	585	121	717
Door-hanger	W. P. Benson	818,603	Apr. 24	4116	884	121	2420
Door-hanger for sliding doors	G. W. Terrell	817,886	Apr. 17	2665	580	121	2052
Door hanger. Sliding	F. H. Lange, Jr	815,182	Mar. 13	2384	497	121	577
Door-holder	W. Squier	816,757	Apr. 3	400	91	121	1447
Door holding and releasing device	S. S. Colt	818,077	Apr. 17	3046	657	121	2137
Door-holding catch	G. Young	817,356	Apr. 10	1600	338	121	1770
Door-jamb and weather-strip	C. E. Seeley	817,395	Apr. 10	1685	355	121	1788
Door-lock	W. W. Fessler	815,009	Mar. 13	2011	423	121	493
Door lock and latch	W. H. Hope	817,713	Apr. 10	2271	489	121	1910
Door-locking mechanism	B. F. Tripp	816,049	Mar. 27	4191	889-90	121	1071
Door opener and closer. Fluid-pressure	A. M. Spink	817,014	Apr. 3	935	193	121	1566
Door-releasing device. Electric	L. A. Léon	814,461	Mar. 6	934	191-2	121	204
Door-retainer and the like. Temporary	G. B. Johnson	815,432	Mar. 20	2943	610-11	121	749
Door-securer	E. M. Hoagland	816,327	Mar. 27	4771	1011	121	1195
Door-securer	F. Dengler	817,962	Apr. 17	2828	611	121	2091
Door-securer	J. R. Hall	818,955	Apr. 24	4806	1033	121	2571
Door-spring	D. S. Flory	817,168	Apr. 10	1228	252	121	1692

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Door stay. Screen-	E. Anderson	814,763	Mar. 13	1543	326	121	397
Door-staying device. Sliding-	F. Dahlund	814,434	Mar. 6	891	183	121	194
Dough-breaker	L. A. Rockwell and J. J. Linden	818,196	Apr. 17	3294	704	121	2192
Dough-mixer	R. W. Jamieson	817,644	Apr. 10	2166	460	121	1888
Dough mixer and kneader	O. D. Woodruff	815,775	Mar. 20	3630	763	121	897
Dough mixer. Bread and cake	W. Robb	817,804	Apr. 17	2495	534	121	2016
Dough or bread mixer	I. Stanley	817,400	Apr. 10	1693	357	121	1790
Dough or other plastic material. Machine for molding	G. F. Chutter	814,274	Mar. 6	534	111	121	115
Downdraft-kiln	G. E. Snowden	816,752	Apr. 3	390	89	121	1445
Draft-chains and the like. End for the spreaders of	J. Holms, Jr.	814,291	Mar. 6	563	119	121	121
Draft-equalizer	H. C. Boss	814,110	Mar. 6	214	42	121	46
Draft-equalizer	T. C. Lamoureux	815,298	Mar. 13	2598	546	121	626
Draft-equalizer	G. Marshall and J. Cox	815,361	Mar. 20	2794	581	121	713
Draft-equalizer	J. R. Parks and J H. Day	816,816	Apr. 3	523	113	121	1473
Draft-equalizer	R. Müller	818,038	Apr. 17	2973	642	121	2123
Draft-equalizer	S. E. Bailor and F. M. Asbe	818,599	Apr. 24	4106	882	121	2417
Draft-equalizer. Transformable	W. M. Rich	817,726	Apr. 10	2316	497–8	121	1924
Draft-excluder and lock. Combination	W. Potter	814,802	Mar. 13	1624	341	121	414
Draft-rigging	P. H. Raspberry	814,564	Mar. 6	1130	235	121	245
Draft-rigging	C. A. Tower	815,049	Mar. 13	2103	442–3	121	514
Draft-rigging	C. A. Tower	815,050	Mar. 13	2105	443	121	515
Draft-rigging. Frictional	H. T. Krakau and L. A. Conner, Jr.	815,023	Mar. 13	2054	430	121	502
Drafting-table	G. W. Martin	818,271	Apr. 17	3439	739–40	121	2222
Draw-bar pocket	W. Gatwood	814,128	Mar. 6	254	48–9	121	56
Drawer-stop	C. T. and H. Garden	816,574	Apr. 3	36	10	121	1362
Drawer-support	J. R. Freeman	814,197	Mar. 6	376	77	121	82
Drawing and plotting device	E. D. Mackintosh	814,789	Mar. 13	1597	335	121	409
Drawing-press	P. M. H. Lange. (Reissue)	12,462	Mar. 13	2691	560–1	121	642
Drawing-press	B. Adriance and A. Calleson	818,807	Apr. 24	4544	972–4	121	2514
Dredger	N. R. Harris	814,204	Mar. 6	390	79	121	86
Dredger and bed-rock cleaner	P. Bouery	816,958	Apr. 3	828	169	121	1541
Dredging apparatus	J. Hamilton	816,161	Mar. 27	4424	936	121	1121
Dredging-bucket	C. A. Morris	814,618	Mar. 6	1228	259–60	121	266
Dredging-machine	C. E. S. Burch	814,270	Mar. 6	525	109	121	112
Dredging machinery. Link of bucket	R. R. Douglas	814,590	Mar. 6	1178	247	121	256
Dress-shield	L. Lockie	815,186	Mar. 13	2392	498	121	579
Dress-shield	E. P. Davis	817,961	Apr. 17	2827	611	121	2091
Dresser	W. K. Malcolm	818,458	Apr. 24	3802	817–18	121	2354
Drier:							
See Clothes-drier. Dish-drier. Fruit-drier.							
Drier	J. R. Hussey	817,643	Apr. 10	2162	459–60	121	1887
Drier	C. A. Matcham. (Reissue)	12,474	Apr. 24	4985	1067	121	2612
Dry closet	T. Macfarlane	815,969	Mar. 27	4022	851	121	1032
Drying apparatus	W. Bell	814,666	Mar. 13	1345	281	121	353
Drying-machine	A. C. Carey	814,938	Mar. 13	1857	389	121	463
Drying-rack frame	J C. Belloff and A. Roth	815,061	Mar. 13	2121	447	121	518
Drill:							
See Hammer-drill. Miner's drill. Mining-drill. Push-drill. Rock-drill. Rock-boring drill.							
Drill	L. W. and F. E. Baney and J. Osterholt.	815,002	Mar. 13	1992	418	121	488
Drill-cup	A. W. Perry	814,326	Mar. 6	663	133	121	145
Drill-rod coupling	V. G. Smith	817,398	Apr. 10	1689	356	121	1789
Drill-shanks. Equalizing weight-feed for	K. Brooks	816,295	Mar. 27	4677	993–4	121	1176
Drills. Shot-feed for	K. Brooks	814,427	Mar. 6	880	180	121	191
Drilling and bolt-cutting machine. Combined	K. C. Davis	814,589	Mar. 6	1176	246	121	255
Drilling, boring, milling, &c. Machine for	W. J. Hagman	815,697	Mar. 20	3449	720	121	860
Drilling-machinery feeding mechanism	C. F. Preslar	816,500	Mar. 27	5125	1086	121	1270
Drilling nuts and the like. Machine for	M. Nelson	817,587	Apr. 10	2066	435	121	1866
Drinking-fountain. Fowl	J. H. Whaler	815,885	Mar. 20	3863	819	121	945
Driving mechanism	J. C. Cromwell	814,023	Mar. 6	46	9	121	12
Driving mechanism. Reversible	M. C. Johnson	815,433	Mar. 20	2945	611	121	750
Driving mechanism. Variable-speed	W. L. Schellenbach	816,128	Mar. 27	4353	922–3	121	1105
Drop-handle	G. A. Schehr	814,735	Mar. 13	1484	312	121	385
Drop-light	B. F. Shuart	814,988	Mar. 13	1965	414	121	482
Dropper:							
See Potato-dropper. Seed-dropper.							
Dropper	G. Spencer	815,984	Mar. 27	4048	856	121	1038
Drum. Heating-	J. M. J. Ness	817,185	Apr. 10	1263	262	121	1700
Drum. Hot-air	W. A. Norton	815,624	Mar. 20	3293	690	121	825
Drum-screen. Revolving	J. P. Brew and E. P. Suiter	816,426	Mar. 27	4983	1058	121	1239
Dumping structures. Latch device for	C. F. Shelby	815,645	Mar. 20	3342	700	121	836
Duplicating apparatus	A. B. Dick	815,689	Mar. 20	3435	717	121	857
Duplicating apparatus	E. A. Cox	815,905	Mar. 20	3903	826	121	955
Duplicating-machine	H. C. Gammeter	816,311	Mar. 27	4709	999–1000	121	1183
Dust-collector and like apparatus	A. C. Lynch	815,967	Mar. 27	4019	850–1	121	1031
Dust collector and separator	A. C. Lynch	815,966	Mar. 27	4017	850	121	1031
Dust-guard	G. A. Woodman	815,000	Mar. 13	1988	418	121	487
Dust removing and collecting apparatus. Pneumatic	E. H. Fenton	814,837	Mar. 13	1685	352–3	121	427
Dye and making same. Anthracene	O. Bally and M. H. Isler	818,992	Apr. 24	4878	.....	121	2586
Dye and making same. Blue	O. Bally and H. Wolff	818,336	Apr. 17	3566	.....	121	2248
Dye and making same. Sulfur	A. Schmidt	818,980	Apr. 24	4857	.....	121	2582
Dye and making same. Yellow	F. Scholl	818,981	Apr. 24	4860	.....	121	2582
Dye effects in woolen fabrics, &c. Producing multi-colored	M. Becke	815,671	Mar. 20	3390	.....	121	847
Dye-vat	F. I. Stone	814,173	Mar. 6	334	68	121	73
Dynamic trap or drain valve	J. F. McElroy	816,245	Mar. 27	4579	974	121	1153
Dynamometer	J. F. Hammond	814,373	Mar. 6	758	153	121	168
Easel	E. J. Trum	815,235	Mar. 13	2490	519	121	601
Easel	J. B. Thompson	816,274	Mar. 27	4642	984	121	1166
Eaves-trough hanger	A. E. Scherer	816,941	Apr. 3	791	162	121	1534
Eccentric	F. M. Berger	817,617	Apr. 10	2115	448	121	1877

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Eccentric. Adjustable	S. W. Taylor	815,232	Mar. 13	2486	517	121	601
Edge-trimmer	J. A. Gates	816,459	Mar. 27	5038	1070	121	1251
Educational appliance	J. A. Healey	814,653	Mar. 6	1302	274	121	282
Egg-beater	G. R. Flowers	817,635	Apr. 10	2148	456	121	1884
Egg-beater	T. H. Perrin	818,914	Apr. 24	4726	1014	121	2553
Egg-beater holder	E. L. Persons	817,272	Apr. 10	1447	305	121	1736
Egg-boiler. Time	H. H. Chesbrough	816,072	Mar. 27	4252	901–2	121	1084
Egg. Medicated nest-	G. H. Jones	817,573	Apr. 10	2041	430	121	1861
Electric apparatus. Vapor	A. M. Jackson	815,836	Mar. 20	3776	796	121	927
Electric brake	G. R. Yancey	817,606	Apr. 10	2096	443	121	1873
Electric cable	H. W. Buck	816,428	Mar. 27	4987	1059	121	1239
Electric-circuit controller	H. W. Leonard. (Reissue)	12,473	Apr. 24	4975	1066	121	2608
Electric-circuit controller. Automatic	H. W. Leonard	817,720	Apr. 10	2291	494	121	1915
Electric-circuit regulation	E. A. Edwards	817,232	Apr. 10	1359	286	121	1720
Electric conductor	W. D. Weir	815,498	Mar. 20	3049	636	121	772
Electric conductors. Apparatus for laying	S. P. Hatfield	815,163	Mar. 13	2335	488	121	565
Electric controlling device	F. L. Willard	817,945	Apr. 17	2794	605	121	2084
Electric-current controllers. Resistance device for	L. Bradley	815,317	Mar. 13	2648	554	121	635
Electric currents. Generator of intermittent	M. P. Ryder	814,083	Mar. 6	161	33	121	36
Electric currents passing through lamps, &c. Apparatus for commuting	C. Smart	817,597	Apr. 10	2078	438–9	121	1869
Electric cut-out	R. H. Read	818,291	Apr. 17	3471	747	121	2229
Electric-elevator system	A. Magnuson	816,869	Apr. 3	637	133	121	1500
Electric furnace	M. Ruthenburg	815,221	Mar. 13	2463	513	121	596
Electric furnace	A. G. Betts	816,554	Apr. 3	5	1–2	121	1355
Electric furnace	C. O. Wingren	817,212	Apr. 10	1321	276	121	1712
Electric furnace	J. F. Hammond	817,767	Apr. 17	2405	515	121	1996
Electric furnace. Vacuum	H. N. Potter	814,726	Mar. 13	1465	307–8	121	380
Electric heater	H. N. Morse and J. C. W. Frazer	816,172	Mar. 27	4445	941	121	1125
Electric hoist	P. J. Darlington	818,078	Apr. 17	3052	658	121	2138
Electric-light-cord adjuster	J. T. and T. H. Hatherly	817,557	Apr. 10	2014	424	121	1856
Electric-light fitting	H. E. Plass	816,996	Apr. 3	903	187	121	1559
Electric light. Portable	C. Hubert	818,449	Apr. 24	3783	813	121	2350
Electric-light socket and key	O. C. Cover	816,436	Mar. 27	4997	1061	121	1241
Electric-light wires. Rosette for	J. H. Parker	816,033	Mar. 27	4158	880	121	1064
Electric machine. Dynamo-	W. L. Waters	814,417	Mar. 6	862	177	121	187
Electric machine. Dynamo-	J. P. Mallett	815,847	Mar. 20	3792	801	121	931
Electric machine. Dynamo-	C. P. Steinmetz	816,511	Mar. 27	5148	1092	121	1275
Electric machine. Reciprocating	T. H. Aldrich	814,259	Mar. 6	508	105–6	121	109
Electric meter	W. H. Pratt	816,375	Mar. 27	4870	1033	121	1216
Electric meter	R. C. Lanphier	816,922	Apr. 3	746	154	121	1524
Electric meter	T. Duncan	817,305	Apr. 10	1504	315	121	1748
Electric motor	J. A. Smith	814,740	Mar. 13	1500	317	121	388
Electric motor	C. H. Roth	817,807	Apr. 17	2500	535–6	121	2017
Electric motors. System of remote control for	T. S. Perkins and R. P. Jackson	814,323	Mar. 6	651	132	121	142
Electric or signal wires. Cross-arm for	A. H. Iliohan	816,981	Apr. 3	874	181	121	1552
Electric plug connection	J. C. Tournier	815,764	Mar. 20	3612	758	121	894
Electric pressure-furnace	H. N. Potter	814,727	Mar. 13	1469	308	121	381
Electric pressure-indicator	J. E. Wertz	816,407	Mar. 27	4949	1051	121	1232
Electric-road crossings. Safety system for	A. H. Johnson	816,014	Mar. 27	4116	871–2	121	1055
Electric switch	E. M. Hewlett	815,825	Mar. 20	3734	786	121	919
Electric switch	M. H. Johnson	816,100	Mar. 27	4305	911	121	1096
Electric switch	A. R. Everest and R. E. Barker	816,444	Mar. 27	5011	1064	121	1245
Electric switch	H. E. Case	817,222	Apr. 10	1342	280	121	1717
Electric switch	H. E. Leppert	818,035	Apr. 17	2969	641	121	2122
Electric switch	L. R. Brown and F. H. Wentworth.	818,226	Apr. 17	3351	718	121	2203
Electric time-switch	M. T. Campbell	815,792	Mar. 20	3672	772–3	121	906
Electric time-switch	C. E. Katsch	817,175	Apr. 10	1235	254–5	121	1694
Electric time-switch	J. E. Rogers	817,392	Apr. 10	1679	354	121	1787
Electric traction-elevator	A. Magnuson	816,806	Apr. 3	500	110	121	1468
Electric tramways working upon the slot-conduit system. Point or switch for	A. N. Connett	816,646	Apr. 3	212	49–50	121	1407
Electric tramways working upon the slot-conduit system. Point or switch for	A. N. Connett	816,647	Apr. 3	214	50	121	1408
Electric transmission of intelligence	I. Kitsee	817,921	Apr. 17	2738	594	121	2071
Electric-transmission pole	J. L. Weller	816,628	Apr. 3	170	36	121	1399
Electric waves. Apparatus for producing	A. Artom	817,137	Apr. 3	1154	239	121	1616
Electric-wire conduit	D. H. Murphy	817,066	Apr. 3	1056	219	121	1592
Electric wires in buildings. Junction-box for	J. L. Gleason	814,907	Mar. 13	1801	377	121	451
Electrical circuit and device	R. J. Hewett	818,169	Apr. 17	3237	695–6	121	2179
Electrical-circuit controller	H. W. Leonard	817,719	Apr. 10	2280	492–4	121	1912
Electrical circuits. Reversing-switch for	T. S. Perkins	814,322	Mar. 6	649	131–2	121	142
Electrical-conductor conduit or casing	R. H. W. Knight and L. Nagel	814,217	Mar. 6	421	87	121	91
Electrical-control system	F. J. Sprague	815,756	Mar. 20	3594	755–6	121	890
Electrical controller. Plural-speed	G. N. Eastman	814,643	Mar. 6	1281	269	121	276
Electrical device and circuit	W. H. Lane	815,961	Mar. 27	4006	848	121	1029
Electrical device and circuit	R. J. Hewett	818,170	Apr. 17	3241	696	121	2180
Electrical distribution systems. Safety equipment for series	F. J. Murmann and A. B. Shreve	815,370	Mar. 20	2808	585	121	716
Electrical effluvia. Apparatus for indicating the character of	L. Gerard	818,534	Apr. 24	3972	853	121	2389
Electrical generator	W. Stanley	816,192	Mar. 27	4483	950	121	1133
Electrical-regulation system	W. L. R. Emmet	816,442	Mar. 27	5006	1063	121	1243
Electrical switch	J. F. McElroy	816,028	Mar. 27	4150	878	121	1062
Electrical switch and cut-out	C. M. Dorman, R. A. Smith, and H. G. Baggs.	818,614	Apr. 24	4142	891	121	2428
Electricity upon belting. Means for preventing accumulation of static	C. M. Green	815,814	Mar. 20	3710	782	121	914
Electrolier. Adjustable	A. Hopkins	815,830	Mar. 20	3752	789	121	923
Electrolytic apparatus	F. McDonald	814,864	Mar. 13	1726	362	121	435
Electrolytic cells. Apparatus for feeding	F. J. Briggs	814,583	Mar. 6	1163	243	121	252
Electromagnet	E. H. Miller	815,365	Mar. 20	2801	583	121	715
Electromagnetic brake	E. Kramer	814,910	Mar. 13	1803	378	121	451
Electromagnetic device for distributing-machines	O. G. C. Schmitt	815,748	Mar. 20	3581	751–3	121	888
Electroplating apparatus	G. L. Meaker	815,027	Mar. 13	2061	432	121	504

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Electroplating-tank	C. G. Backus and G. L. Wallace	817,832	Apr. 17	2550	547	121	2028
Electropneumatic channeler	A. H. Gibson	819,011	Apr. 24	4917	1005-6	121	2595
Electrostatic apparatus	L. I. Blake	817,746	Apr. 17	2360	507	121	1987
Electrotypes and the like. Apparatus for producing matrices for	E. Albert	814,927	Mar. 13	1833	384	121	458
Elevator: *See* Electric traction-elevator. Grain-elevator. Inclined elevator. Telescopic elevator.							
Elevator	T. E. Murray	816,677	Apr. 3	270	63	121	1419
Elevator	T. E. Murray	816,678	Apr. 3	272	63	121	1420
Elevator	T. E. Murray	816,679	Apr. 3	274	64	121	1420
Elevator	J. Lehrman	817,076	Apr. 3	1039	215-16	121	1588
Elevator-brake	J. E. Boyce	814,669	Mar. 13	1350	282	121	354
Elevator-checking device. Automatic	C. G. Armstrong and C. A. Dresser	814,929	Mar. 13	1839	385	121	459
Elevator-coupling	G. B. Read	815,470	Mar. 20	3005	627	121	762
Elevator emergency-brake	N. P. Otis and A. Sundh	815,629	Mar. 20	3304	692	121	827
Elevator safety device	S. Kacso	816,333	Mar. 27	4782	1013	121	1197
Elevator safety device	F. Lundsten	817,431	Apr. 10	1760	370	121	1803
Elevators. Automatic brake for power-actuated	T. W. Heermans	815,015	Mar. 13	2031	426	121	498
Elevators. Electrical door-opener for	C. G. Armstrong and C. A. Dresser	814,928	Mar. 13	1837	385	121	458
Embalming compound	G. B. Dodge	814,775	Mar. 13	1568	.....	121	402
Embossing and printing upon leather, silk, &c. Machine for	G. Moore	815,931	Mar. 20	3947	836	121	965
Embroidering-machine	J. J. Knecht	815,177	Mar. 13	2375	495	121	575
Embroidering-machine shuttle	E. Berger	817,744	Apr. 17	2350	504	121	1985
Emergency-brake	A. H. Ames	814,659	Mar. 13	1315	277	121	345
Emery-wheels. Tool for truing	L. A. Sherman	817,528	Apr. 10	1955	413	121	1844
Emulsifier	C. D. Monroe	814,720	Mar. 13	1458	306	121	379
End-gate	F. M. Miller	815,454	Mar. 20	2979	620	121	757
End-gate. Wagon	W. F. Wagner	814,099	Mar. 6	195	39	121	43
Engine: *See* Air and gas engine. Explosion-engine. Explosive-engine. Fluid-pressure engine. Gas-engine. Internal-combustion engine. Motive-power engine. Oil-engine. Oscillating engine. Paper-pulp-refining engine. Pumping-engine. Refining-engine. Rotary engine. Steam-engine. Turbine-engine.							
Engine	I. Lehman	814,145	Mar. 6	283	57	121	62
Engine	L. J. J.-B. Le Rond	815,104	Mar. 13	2208	465	121	536
Engine	W. Heckert	816,464	Mar. 27	5046	1071-2	121	1253
Engine and car coupling. Railway	E. Posson	816,038	Mar. 27	4170	883	121	1066
Engine attachment. Traction-	J. M. Bartosh	817,833	Apr. 17	2552	548	121	2029
Engine frame. Locomotive-	C. H. Howard	818,448	Apr. 24	3782	813	121	2350
Engine igniter. Internal-combustion-	A. R. Curtis	817,104	Apr. 3	1085	225	121	1599
Engine-indicator	W. F. Lloyd	814,971	Mar. 13	1923	404	121	475
Engine reversing mechanism	H. L. Parr and C. E. Lucke	815,732	Mar. 20	3531	741	121	876
Engine-signaling device. Railway-	W. S. Filley	814,776	Mar. 13	1570	331-2	121	403
Engine sparking igniter. Gasolene-	J. C. McLachlan	816,990	Apr. 3	894	185	121	1557
Engine sparking-ignition-controlling means. Explosive-	J. S. Moreland	818,460	Apr. 24	3805	818	121	2354
Engine-starting device. Explosive-	G. N. McMillan	817,266	Apr. 10	1436	302	121	1734
Engine stop mechanism. Steam-	J. E. J. Goodlett	814,838	Mar. 13	1689	353-4	121	427
Engine tank. Traction-	G. A. Anderson	818,217	Apr. 17	3332	714	121	2199
Engines. Current-controller for igniting devices for hydrocarbon-	F. O. Farwell	816,083	Mar. 27	4274	906	121	1090
Engines. Drill-bit-rotating mechanism for rock-drilling	J. G. Leyner	816,021	Mar. 27	4134	876	121	1058
Engines. Means for cooling internal-combustion	F. H. Bogart	818,735	Apr. 24	4383	938-9	121	2479
Engines. Submerged exhaust device for marine	H. N. Goodwin	818,951	Apr. 24	4799	1032	121	2570
Engines. Supply-controlling mechanism for gas-	F. K. De la Saulx	817,193	Apr. 10	1283	266	121	1703
Engraver's tool	T. Ackley	815,892	Mar. 20	3883	821	121	951
Engraving-machine	E. Terrell	815,233	Mar. 13	2487	518	121	601
Engraving-machine	W. S. Eaton	816,307	Mar. 27	4702	998	121	1181
Engraving-machine	P. V. Avril	818,137	Apr. 17	3169	680-1	121	2165
Engraving-machine	P. V. Avril	818,138	Apr. 17	3172	681-3	121	2166
Engraving-machine	P. V. Avril	818,139	Apr. 17	3177	683-4	121	2166
Engraving machine. Die-	A. J. Loepsinger	814,611	Mar. 6	1215	255	121	263
Engraving-machine tracer and tool	M. Barr	816,700	Apr. 3	306	71	121	1428
Engraving-machines. Holder or quill for holding the rotating tools of	M. Barr	818,993	Apr. 24	4879	1048	121	2586
Envelop and message blank. Combination	W. H. Bassinger	818,657	Apr. 24	4228	909	121	2446
Envelop and souvenir-album. Combined	W. S. Hawes	814,843	Mar. 13	1698	355	121	429
Envelop. Mailing-	J. Sawdon	817,874	Apr. 17	2642	574	121	2048
Envelop-stacker	R. H. Strong	818,924	Apr. 24	4745	1019-20	121	2557
Eraser	E. G. Dann	817,838	Apr. 17	2562	550	121	2031
Eraser. Rubber	A. Brauns	814,899	Mar. 13	1789	374	121	448
Erasers. Means of attachment for	C. H. Tupper	814,413	Mar. 6	853	176	121	185
Etching on zinc by electrolysis. Deep	O. C. and H. H. Strecker	815,875	Mar. 20	3848	.....	121	942
Excavating-machine	J. B. Gordon	818,952	Apr. 24	4801	1032	121	2570
Excavator	A. M. Anderson	818,214	Apr. 17	3323	711-12	121	2198
Excavator	A. M. Anderson	818,215	Apr. 17	3327	712-13	121	2198
Excavator-shovel	T. Alexander	816,057	Mar. 27	4211	893	121	1075
Excavators, dredges, and the like. Operating mechanism for	W. Ferris and F. E. Bager	816,573	Apr. 3	33	9-10	121	1361
Exercising device	T. R. Geisel	818,242	Apr. 17	3387	727	121	2210
Exercising-machine	R. W. Blaisdell	816,957	Apr. 3	827	169	121	1541
Exhaust. Automatic	W. Cooper	819,002	Apr. 24	4894	1051	121	2590
Exhibiting-machines. Clutch mechanism for	J. C. Liebhardt	817,178	Apr. 10	1250	258-9	121	1697
Exhibition-board	D. Haar	814,372	Mar. 6	757	152	121	168
Expansible bit	S. H. Tucker	818,062	Apr. 17	3013	652	121	2131
Explosion-engine	R. Hartwig	814,287	Mar. 6	555	116	121	119
Explosive compound	G. M. Hathaway	815,821	Mar. 20	3723	.....	121	917

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Explosive compound	M. S. Talbot	816,830	Apr. 3	555	.....	121	1480
Explosive-engine	T. J. Lutz, Jr	816,109	Mar. 27	4318	915	121	1099
Explosives. Completely exploding high	H. von Daßmen	818,939	Apr. 24	4776	.....	121	2564
Exposure appliance	A. Leistenschneider	818,543	Apr. 24	3993	856–7	121	2393
Extension-table	C. H. Goller	816,791	Apr. 3	468	105	121	1461
Exterminator	J. D. Harris	814,131	Mar. 6	257	50	121	57
Extraction vessel	C. M. Chamberlain	814,940	Mar. 13	1861	390	121	464
Extractor: *See* Cork-extractor.							
Eyeglass and spectacle mounting. Combined	C. A. Hoffman	815,827	Mar. 20	3745	787	121	922
Eyeglass-bridge	W. H. Ely	814,194	Mar. 6	373	76	121	81
Eyeglass-cleaner	H. C. Fosberg	816,227	Mar. 27	4547	967	121	1147
Eyeglass-fitting	G. A. Stiles	815,487	Mar. 20	3028	632	121	767
Eyeglass-holder	M. J. Russell	818,297	Apr. 17	3492	750	121	2233
Eyeglass-lens	S. Slagle	815,648	Mar. 20	3348	701	121	837
Eyeglass-mounting	A. S. Weaver	818,006	Apr. 17	2907	627	121	2110
Eyeglasses	W. H. Weaser	816,766	Apr. 3	426	96	121	1452
Eyeglasses	L. F. Adt	816,837	Apr. 3	574	120	121	1486
Eyeglasses	G. L. Williams	818,325	Apr. 17	3547	760	121	2244
Eyeglasses	J. C. Wells	818,720	Apr. 24	4353	933	121	2473
Eyeglasses. Lens-mount and connection for	L. F. Adt	816,838	Apr. 3	576	120	121	1487
Eyeglasses. Lens-mount and connection for	L. F. Adt	816,839	Apr. 3	578	120	121	1487
Fabric: *See* Heat-resisting fabric. Woven fabric. Metal open-work fabric.							
Fabric. Machine for making interposed	J. C. Perry	814,393	Mar. 6	806	165–7	121	177
Fabric. Method and apparatus for coating bands of	F. C. Wickel	815,664	Mar. 20	3371	705	121	843
Fabric-steaming apparatus	C. H. Fish	814,124	Mar. 6	249	47	121	55
Fabrics. Adjustable guiding mechanism for skewing bridge-threaded	E. T. and E. H. Marble	815,970	Mar. 27	4024	851–2	121	1032
Fabrics. Apparatus for treating textile	O. Obermaier	815,306	Mar. 13	2624	550	121	631
Fabrics. Machine for extracting threads from	H. C. Fischer	819,010	Apr. 24	4914	1055	121	2594
Facing-tool	J. D. Mitchell	817,502	Apr. 10	1907	401	121	1835
Fan	C. F. Winch	818,804	Apr. 24	4531	968	121	2511
Fan-motor	C. R. Brock	814,267	Mar. 6	519	108	121	111
Fan. Power-	G. W. Weiss	814,998	Mar. 13	1980	417	121	485
Fare-register	A. H. Woodward	818,508	Apr. 24	3906	840–2	121	2375
Farming implement	E. Haiman	815,698	Mar. 20	3452	720–1	121	861
Fastener	H. S. Hanstine and J. F. Thompson	814,445	Mar. 6	905	186	121	197
Fastening device	W. P. Smithem	815,561	Mar. 20	3170	666	121	797
Fastening device. Headed	E. T. House	816,095	Mar. 27	4295	910	121	1094
Faucet	W. A. Speakman	816,133	Mar. 27	4371	924	121	1110
Faucet	F. A. Dunham	816,440	Mar. 27	5003	1063	121	1243
Faucet and filter. Combined	A. P. Whalen	816,517	Mar. 27	5160	1094	121	1279
Faucet attachment	H. M. Lummis and F. W. Hergert	814,715	Mar. 13	1451	304	121	377
Faucet-knob	H. A. Rueter	817,993	Apr. 17	2886	624	121	2106
Faucet. Self-registering	P. Doherty	814,945	Mar. 13	1872	393	121	465
Feed and litter carrier	H. L. Ferris	815,521	Mar. 20	3096	646–7	121	782
Feed device. Automatic	E. J. Ericsson	815,691	Mar. 20	3440	718	121	858
Feed device. Relative-	F. I. du Pont	818,556	Apr. 24	4015	861	121	2397
Feed mechanism. Roller-	W. M. Allen	817,151	Apr. 10	1188	245–6	121	1683
Feed-mill	N. Burr	814,114	Mar. 6	224	43–4	121	49
Feed-regulator	J. R. Hendrix	818,375	Apr. 17	3638	780–1	121	2263
Feed-water regulator	H. W. Adams	818,859	Apr. 24	4631	995	121	2533
Feeder. Boiler-	F. Leadbeater	814,305	Mar. 6	600	125	121	129
Feeding boilers automatically. Apparatus for	G. Brandstetter and R. Freund	817,037	Apr. 3	978	200	121	1576
Feeding device	D. Collins	816,219	Mar. 27	4535	963	121	1145
Feeding device	E. N. Trump	818,585	Apr. 24	4065	872–3	121	2408
Feeding device. Poultry-	H. P. Nottage	815,625	Mar. 20	3295	690	121	826
Feeding device. Time	L. A. Stahmer	817,884	Apr. 17	2662	579	121	2052
Fence	J. W. Veit	818,493	Apr. 24	3863	831	121	2365
Fence machine. Wire-	G. W. Schock	815,640	Mar. 20	3329	697	121	833
Fence-making machine. Wire-	J. M. Denning	816,538	Mar. 27	5198	1103–5	121	1287
Fence-post	M. E. Johnson	814,138	Mar. 6	270	54	121	59
Fence-post	G. B. Smith	814,403	Mar. 6	829	171	121	180
Fence-post	H. E. Hillman	815,089	Mar. 13	2175	458	121	529
Fence-post	J. A. Blake	815,788	Mar. 20	3657	769	121	903
Fence-post	H. L. Fell	816,719	Apr. 3	336	78	121	1435
Fence-post	G. H. Kaufman	817,738	Apr. 10	2342	503	121	1929
Fence-post	T. Eck and A. G. Trautwein	818,672	Apr. 24	4252	914	121	2451
Fence-post. Cement	C. Dodd	816,715	Apr. 3	330	76	121	1433
Fence-post. Cement	J. A. Stransky	817,017	Apr. 3	944	194	121	1568
Fence-post. Composition	D. C. Stewart	817,282	Apr. 10	1466	307	121	1741
Fence stretcher. Wire-	M. E. Johnson	814,139	Mar. 6	271	54	121	60
Fence tie. Metal-	B. Griffin	814,369	Mar. 6	751	151	121	166
Fence tool. Wire-	E. Harris	816,578	Apr. 3	42	11	121	1363
Fence. Wire	A. E. Roberts	818,710	Apr. 24	4331	929	121	2468
Fence. Woven-wire	W. M. Wadleigh	815,052	Mar. 13	2108	444	121	515
Fencing tie. Wire-	F. H. Benedict	816,210	Mar. 27	4519	959	121	1141
Fender: *See* Car-fender. Car life-guard fender. Car separable fender. Vehicle-fender.							
Fender	J. Stawartz	818,797	Apr. 24	4520	966	121	2510
Fender-carrier	B. Lev	815,925	Mar. 20	3938	833	121	962
Fender-fastener	B. E. Thompson	817,204	Apr. 10	1307	272	121	1708
Fertilizer-distributer	O. C. Rawley	814,079	Mar. 6	154	31	121	34
Fertilizer-distributer	R. J. Taylor	816,400	Mar. 27	4936	1049	121	1229
Fertilizer-distributer	J. S. Kemp	818,098	Apr. 17	3078	664–5	121	2144
Fertilizer-distributer	W. Torres	818,396	Apr. 17	3687	792	121	2274
Fiber-crating machine	A. M. Sheakley	815,478	Mar. 20	3016	629	121	765
Fibers. Preparing	B. S. Summers	815,876	Mar. 20	3850	815	121	942
Fibrous material and dyeing same. Blue	V. Fussgänger	816,457	Mar. 27	5035	.....	121	1250
Fifth-wheel	W. A. Schleicher	815,044	Mar. 13	2096	440	121	513
Fifth-wheel	J. A. Welch	816,832	Apr. 3	566	119	121	1485
Fifth-wheel	H. S. Rader and W. H. Wert	818,787	Apr. 24	4496	962	121	2504
Fifth-wheel. Vehicle	E. Lewis	816,168	Mar. 27	4440	940	121	1124

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Figure. Jointed cut-out	T. E. Wood	814,340	Mar. 6	699	140	121	154
Filaments and films from viscose. Manufacture of	C. N. Waite	816,404	Mar. 27	4941	.....	121	1230
Filaments substances liquefiable by heat. Converting into	T. J. Zoeller	816,056	Mar. 27	4209	893	121	1075
Filaments. Support for osmium	C. A. von Welsbach	814,632	Mar. 6	1257	264	121	272
File. Account-	J. O. Wilhelm	817,537	Apr. 10	1970	417	121	1847
File. Bill-	P. T. Lemaster	818,835	Apr. 24	4588	983	121	2523
File. Card-	G. A. Wheeler	814,816	Mar. 13	1649	346	121	419
File for bills, receipts, and the like. Bill-	E. L. Henderson	815,427	Mar. 20	2932	608	121	747
Filing-card and lock therefor	G. A. Shoemaker	814,170	Mar. 6	331	66–7	121	73
Filing-case	E. E. Illig	815,535	Mar. 20	3128	654	121	789
Filing-folder	C. R. Evans	814,950	Mar. 13	1881	395	121	467
Filing-machine	M. W. Jones and J. A. Dennis	815,175	Mar. 13	2356	493	121	570
Filing-carrier	F. E. Kip	814,709	Mar. 13	1438	300	121	374
Film-developing machine	A. V. Lindquist	815,300	Mar. 13	2603	547	121	627
Film-support	H. E. Baer	817,614	Apr. 10	2111	447	121	1876
Filter	G. W. Gesner	815,417	Mar. 20	2919	.....	121	744
Filter	W. B. Klein	816,479	Mar. 27	5084	1078	121	1260
Filter	G. M. Kneuper	817,252	Apr. 10	1399	295	121	1728
Filter	G. M. Kneuper	817,253	Apr. 10	1401	295	121	1728
Filter	G. Klumpp	818,264	Apr. 17	3427	736	121	2219
Filter	L. W. Jones	818,693	Apr. 24	4293	921	121	2459
Filter	M. L. S. and W. T. Buckner	818,868	Apr. 24	4649	998	121	2536
Filter-press	M. Ekenberg	818,154	Apr. 17	3202	688–9	121	2171
Filter-strainer	J. B. Greer	815,290	Mar. 13	2583	543	121	623
Filter. Water-	R. C. Barrie	814,261	Mar. 6	513	106	121	110
Filtering material	O. Löffler and W. Weidle	815,846	Mar. 20	3791	.....	121	931
Filtering-plate	G. W. Gerlach	818,679	Apr. 24	4265	916	121	2453
Filtering streams and the like. Means for	T. Lydon	815,722	Mar. 20	3498	732	121	870
Fine-fuel furnace	F. N. Spear	815,562	Mar. 20	3172	666	121	798
Finger-exerciser	U. G. Anson	818,332	Apr. 17	3560	762	121	2247
Fire-alarm and sprinkler attachment	J. Hartley	814,781	Mar. 13	1580	333	121	404
Fire-alarm apparatus	L. H. Britton	816,960	Apr. 3	831	170	121	1542
Fire-alarm. Automatic	N. H. Ferland	814,123	Mar. 6	247	47	121	55
Fire-alarm box	S. J. Heinrich	816,465	Mar. 27	5051	1073	121	1254
Fire-alarm key-box	D. McGlone	816,932	Apr. 3	771	158	121	1530
Fire-alarm signal-box	M. J. McGowan, Jr.	817,437	Apr. 10	1772	372	121	1806
Fire-boat	L. Nixon	818,778	Apr. 24	4477	959	121	2500
Fire-escape	C. Kramer	814,458	Mar. 6	927	191	121	202
Fire-escape	A. S. Noonan	814,472	Mar. 6	956	196	121	208
Fire-escape	J. P. McKenna	815,030	Mar. 13	2069	434	121	506
Fire-escape	J. A. Breckon	815,401	Mar. 20	2881	599	121	734
Fire-escape	K. Pugh	816,183	Mar. 27	4471	947	121	1131
Fire-escape	S. Z. Moore	816,495	Mar. 27	5116	1084	121	1268
Fire-escape	I. Bihl	816,896	Apr. 3	693	143	121	1512
Fire-escape	C. F. Davy	818,526	Apr. 24	3950	850	121	2384
Fire-extinguisher	H. T. Murphy	816,352	Mar. 27	4831	1024	121	1208
Fire-extinguishing apparatus	C. E. Buell	818,999	Apr. 24	4890	1050	121	2589
Fire-pot	R. M. Hinman	815,959	Mar. 27	4005	848	121	1028
Fire-pot. Adjustable	C. H. Gatchell	818,949	Apr. 24	4797	1031	121	2569
Fire-pot and twyer-iron. Combined	C. O. Swenson	815,489	Mar. 20	3031	633	121	768
Fire-walls. Metal sheathing for	W. R. Rose	818,122	Apr. 17	3137	675	121	2158
Firearm	G. W. Gruver	817,764	Apr. 17	2394	514–15	121	1994
Firearm	J. L. Saget	817,937	Apr. 17	2774	600–1	121	2079
Firearm	H. M. Kolb and C. Foehl	818,177	Apr. 17	3256	698	121	2184
Firearm	J. H. Wesson	818,721	Apr. 24	4355	933	121	2473
Firearm	J. M. Browning	818,739	Apr. 24	4390	940	121	2481
Firearm. Automatic	R. H. Kjellman	814,547	Mar. 6	1098	227–9	121	239
Firearm. Automatic gas-operated	M. F. Smith	814,242	Mar. 6	462	96–7	121	100
Firearm. Automatic gas-operated	S. N. McClean	816,591	Apr. 3	76	18–19	121	1373
Firearm. Breech-loading	O. F. Mossberg	818,461	Apr. 24	3808	819	121	2355
Firearm. Gas-operated	M. F. Smith	817,198	Apr. 10	1295	268–70	121	1706
Firearm. Magazine-	G. L. Smith	818,395	Apr. 17	3678	790–1	121	2272
Firearm. Magazine-	V. M. Sprangel	818,570	Apr. 24	4039	866–7	121	2403
Firearm. Magazine-	H. W. De Jarnatt	818,669	Apr. 24	4248	913–14	121	2450
Firearm. Tubular-magazine	T. C. Johnson	816,015	Mar. 27	4120	872	121	1055
Fireproof and waterproof composition	E. Covington	816,532	Mar. 27	5190	.....	121	1286
Fireproof fixture	E. F. Fitzpatrick	816,309	Mar. 27	4706	998–9	121	1182
Fireproof metal window frame and sash	S. Keighley	818,969	Apr. 24	4835	1039	121	2577
Fireproof safe and filling the walls of the same	W. H. and E. C. Hall	816,724	Apr. 3	343	79	121	1436
Fireproof sizing	T. F. Odell	815,207	Mar. 13	2436	.....	121	591
Fireproof window	W. H. Miller	816,242	Mar. 27	4573	973–4	121	1152
Fireproof window	O. M. Otte	817,269	Apr. 10	1440	303–4	121	1735
Fireproof window and casing	P. F. Brandstedt	817,138	Apr. 3	1156	239–40	121	1616
Fireproof window. Automatic	E. T. Wilkinson	815,772	Mar. 20	3621	761–2	121	895
Fireproof window frame and sash	W. P. Kirk	816,862	Apr. 3	626	130–1	121	1497
Fireworks	W. A. Gilmer	818,950	Apr. 24	4798	1031	121	2570
Fish-dressing means	E. A. Smith	818,305	Apr. 17	3508	753	121	2236
Fish-hook	D. E. Robinson	814,624	Mar. 6	1244	262	121	269
Fish-hook	C. A. Shaw	816,130	Mar. 27	4359	923	121	1107
Fish-line reel	H. H. Richardson	817,987	Apr. 17	2868	621	121	2101
Fish-plate	G. H. Cornwell	818,418	Apr. 24	3728	800	121	2338
Fish preservation	W. Lamb	816,343	Mar. 27	4806	.....	121	1202
Fishing-reel	W. Ernst and A. A. Patton	818,880	Apr. 24	4669	1002	121	2540
Fishpole	J. Pepper, Jr.	814,321	Mar. 6	647	131	121	141
Flag, staff, and holder. Combined signal-	E. Pax and W. D. Carrick	815,115	Mar. 13	2232	468	121	542
Flanging machine. Cap-	J. Brenzinger	816,001	Mar. 27	4093	865	121	1050
Flask: *See* Oil-flask.							
Fleece-carrier	T. E. Ainley	816,417	Mar. 27	4966	1055	121	1236
Flexible tube	E. T. Greenfield	817,059	Apr. 3	1017	209	121	1584
Floor drain and trap	H. C. Gradwohl	814,441	Mar. 6	898	184	121	195
Floor-dressing device	C. W. Swanson	817,407	Apr. 10	1709	360	121	1793
Floor-dressing machine	F. R. Bumpus and J. Kyle	817,041	Apr. 3	984	201	121	1577
Floor-dressing machine	C. B. Wattles	817,410	Apr. 10	1715	361	121	1794
Floor. Dumping-	J. F. Dornfeld	816,716	Apr. 3	331	77	121	1433

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Floors, ceilings, &c. Surface-finishing for	J. J. Blackman	814,934	Mar. 13	1848	387	121	461
Flour-can and flour-holder. Dustless	W. G. Gadue. (Reissue)	12,464	Mar. 20	3954	837	121	906
Flower and making same. Artificial	E. Case	815,005	Mar. 13	2000	421	121	490
Flower stand or support	W. H. Crawford	816,077	Mar. 27	4262	903	121	1087
Flue-cutter	W. Hoffa	817,319	Apr 10	1529	321	121	1753
Flue-expander	O. Swanson	814,248	Mar. 6	488	100	121	105
Flue or tube cutter	D. W. Amos and C. H. Jones	818,213	Apr. 17	3322	711	121	2196
Flue-stop	M. B. Lee	814,853	Mar. 13	1711	357	121	432
Flue-stopper	G. T. Bacon and W. Aab	816,060	Mar. 27	4215	894	121	1076
Flue swaging and plugging machine	W. R. Barnes	818,337	Apr. 17	3567	763–4	121	2248
Fluid-joint. Flexible	C. G. Hawley	814,289	Mar. 6	558	117	121	120
Fluid-pressure brake	M. W. Hibbard	816,859	Apr. 3	618	129–30	121	1496
Fluid-pressure brake	R. H. Blackall	817,953	Apr. 17	2813	609	121	2089
Fluid-pressure brake	W. P. A. Macfarlane	819,032	Apr. 24	4960	1064	121	2604
Fluid-pressure brake and other apparatus	J. N. Weikly	818,320	Apr. 17	3533	758	121	2242
Fluid-pressure engine	E. Roach	818,121	Apr. 17	3136	674	121	2158
Fluid-pressure system	F. E. Case	815,903	Mar. 20	3900	825	121	955
Fluid-supply fitting	P. Connolly	816,559	Apr. 3	13	4	121	1357
Fluids. Air or gas lift for	W. B. Harris	814,601	Mar. 6	1194	250	121	259
Flush-tank	M. Hogan	814,206	Mar. 6	395	80	121	87
Flushing apparatus	J. W. Minton	818,185	Apr. 17	3269	700	121	2187
Flushing-tank	W. Burns, Sr	814,353	Mar. 6	721	145	121	159
Fly-catcher	F. I. Macauley	816,929	Apr. 3	763	157	121	1528
Fly-trap	J. B. F. Pierce	816,499	Mar. 27	5124	1086	121	1269
Fly-trap	B. Lenthier and J. B. Rouilliard	818,836	Apr. 24	4589	984	121	2523
Fodder-bundle binder	R. C. Smith	817,011	Apr. 3	928	191	121	1563
Folding box	M. Hirsch	815,704	Mar. 20	3463	723	121	863
Folding box	H. W. Stuart	817,531	Apr. 10	1963	415	121	1845
Folding chair	W. A. Bradley	815,507	Mar. 20	3068	639	121	776
Folding chair	J. E. Eisele	816,853	Apr. 3	607	127	121	1494
Folding-machine	A. R. Nauer	817,929	Apr. 17	2760	598	121	2077
Foot-rest	E. Sherman	815,046	Mar. 13	2099	441	121	513
Foot-rest	E. Galbraith	817,969	Apr. 17	2842	615	121	2094
Force-feed lubricator	C. W. Manzel	815,301	Mar. 13	2606	547–8	121	628
Forceps for handling boiled clothes	L. W. Price	818,465	Apr. 24	3813	820	121	2356
Fork	J. W. Currier	816,536	Mar. 27	5196	1102	121	1287
Fork-scraper	A. Kormil and F. Radloff	818,100	Apr. 17	3083	665	121	2145
Form. Garment-	E. T. Palmenberg	817,511	Apr. 10	1924	405	121	1838
Forming or molding device	I. A. Rommer	816,937	Apr. 3	779	160	121	1532
Fouling Treating surfaces to be protected from	R. Bell	817,743	Apr. 17	2350	.....	121	1985
Foundations. Forming	E. C. Smith	814,240	Mar. 6	460	95	121	99
Foundry-molds. Machine for manipulating	P. Bonvillain	818,410	Apr. 24	3718	797–8	121	2336
Fountain:							
See Bubble-fountain. Drinking-fountain.							
Fourchette	H. Texier	815,878	Mar. 20	3853	816	121	943
Frame:							
See Bed-spring frame. Mosquito-net frame. Binder-frame. Necktie-frame. Door-frame. Net-frame. Drying-rack frame. Sink-frame. Engine-frame. Truck side frame. Fireproof window-frame. Vehicle-frame. Hammock-supporting frame.							
Freezing device	E. Thompson	814,993	Mar. 13	1973	415	121	434
Fruit-clipper	H. H. Petty	814,799	Mar. 13	1619	340	121	413
Fruit-clipper	H. H Petty	818,552	Apr. 24	4009	860	121	2396
Fruit-drier	M. Rodgers	818,916	Apr. 24	4730	1015	121	2554
Fruit-gatherer	G. H. Roberts	816,186	Mar. 27	4475	947	121	1132
Fruit-jar and cover	J. S. Huffman	815,171	Mar. 13	2350	492	121	569
Fruit-packing device	F. K. Bartholomew	818,812	Apr. 24	4554	976	121	2516
Fruit-picker	C. L. Uthus	815,660	Mar. 20	3366	704	121	841
Fruit-picker	J. T. Bell	818,342	Apr. 17	3578	765	121	2250
Fuel-economizer	W. E. Cole	815,512	Mar. 20	3079	641	121	778
Fuel-feeding apparatus. Hydrocarbon-	R. C. Nelson	814,311	Mar. 6	623	128	121	135
Fuel-feeding apparatus. Pulverized-	G. S. Welles	818,590	Apr. 24	4075	875	121	2410
Fuel-feeding device	L. K. Davis	815,686	Mar. 20	3431	716	121	856
Fuel from peat by means of the electric current. Producing	J. B. Bessey	817,899	Apr. 17	2705	.....	121	2063
Fumigating plants	R. Hand	817,849	Apr. 17	2581	556	121	2036
Furnace:							
See Boiler-furnace. Heating-furnace. Cement-burning furnace. Hot-air furnace. Hot-blast furnace. Electric furnace. Metallurgical furnace. Electric pressure-furnace. Ore-reducing furnace. Roasting-furnace. Fine-fuel furnace. Underfeed-furnace. Gas-furnace.							
Furnace	J. R. Russell	814,397	Mar. 6	816	168	121	179
Furnace	J. R. Russell	814,398	Mar. 6	819	169	121	179
Furnace	J. J. O'Shea	816,248	Mar. 27	4585	976	121	1155
Furnace	R. S. Thompson	816,275	Mar. 27	4643	985	121	1168
Furnace	W. G. Wise	818,398	Apr. 17	3690	792	121	2275
Furnace	H. Webster	818,588	Apr. 24	4072	874	121	2410
Furnace-charging apparatus. Blast-	J. W. Dougherty	816,222	Mar. 27	4539	964	121	1146
Furnace-charging apparatus. Blast-	J. W. Dougherty	818,615	Apr. 24	4145	891	121	2427
Furnace-charging mechanism	D. Baker	814,506	Mar. 6	1011	208	121	220
Furnace-flues. Natural-draft regenerator for	F. C. Knight and H. V. Pearce	817,072	Apr. 3	1034	214	121	1587
Furnace for burning pulverized fuel and other substances.	A. M. Robeson and C. A. Bettington.	817,989	Apr. 17	2870	621–2	121	2101
Furnace-grate bar	T. E. Martin	819,019	Apr. 24	4931	1058	121	2598
Furnaces. Fire-screen for locomotive-	J. Minnich	817,654	Apr. 10	2179	463	121	1891
Furnaces. Pulverized-fuel burner for	C. A. Matcham	815,929	Mar. 20	3945	835	121	964
Furnaces. Regulation of	E. McLean	817,438	Apr. 10	1774	372–3	121	1806
Furnaces. Smoke-consuming apparatus for	J. P. McMahon	814,230	Mar. 6	441	91–2	121	95

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Furnaces. Water-heating attachment for	G. E. Dixon	815,273	Mar. 13	2546	536	121	613
Furniture. Kitchen	J. N. Knackstedt	814,965	Mar. 13	1913	402	121	473
Furrow smoother and packer	C. B. Smith	815,048	Mar. 13	2101	442	121	514
Fuse-box	E. M. Hewlett	816,469	Mar. 27	5062	1075	121	1256
Fuse-clamping terminal	A. C. Savage	815,746	Mar. 20	3578	751	121	887
Fuse. Combination time and percussion	J. F. Meigs and E. A. Gathmann	814,860	Mar. 13	1718	359	121	433
Fuse. Electric	B. S. Luther	815,964	Mar. 27	4015	850	121	1030
Fuse. Expulsion-	C. E. Eveleth	816,443	Mar. 27	5008	1064	121	1244
Fuse-igniting apparatus. Electric-	J. W. Howard	817,483	Apr. 10	1868	393	121	1826
Fuse. Percussion-	J. W. Harriman	815,958	Mar. 27	4003	847	121	1028
Fuse-plug	A., Sr., and A. Weber, Jr	816,406	Mar. 27	4945	1051	121	1231
Fuse. Shell-	W. H Driggs	818,943	Apr. 24	4784	1028	121	2566
Fuses. Automatic setting-key for setting the firing-charge rings of time-	L. Beck	817,616	Apr. 10	2113	447–8	121	1876
Gage: *See* Adjustable gage. Railway-track gage. Wheel-gage.							
Gage	A. Holt	815,829	Mar. 20	3751	788	121	923
Gage	P. Layman	817,492	Apr. 10	1884	397	121	1829
Gage-line holder	F. G. Zugelder	817,357	Apr. 10	1600	338	121	1770
Game	A. Bolton	818,409	Apr. 24	3716	797	121	2336
Game apparatus	T. A. Watts	815,053	Mar. 13	2110	444–5	121	516
Game apparatus	W. C. McDowell	815,204	Mar. 13	2432	507	121	590
Game apparatus	P. Becker	816,553	Apr. 3	4	1	121	1355
Game apparatus	L. F. Stichweh	816,758	Apr. 3	401	91–2	121	1447
Game apparatus	J. V. Emmerling	817,233	Apr. 10	1361	286	121	1721
Game apparatus	H. Medley	817,928	Apr. 17	2759	597	121	2077
Game apparatus	F. Sieder	818,126	Apr. 17	3142	676	121	2159
Game apparatus	E. Kuhn	818,895	Apr. 24	4691	1006–7	121	2545
Game apparatus	A. M. Benedic	818,995	Apr. 24	4884	1049	121	2587
Game-apparatus fastening device	G. H. Bailey	817,688	Apr. 10	2234	479	121	1903
Game-board	S. E. Kuhn	815,960	Mar. 27	4007	848	121	1028
Game-board	H. W. Fisher	817,142	Apr. 3	1166	241	121	1618
Game-board	R. F. Elburn	818,237	Apr. 17	3380	725	121	2209
Game-board	S. M. Thomas	818,582	Apr. 24	4061	871	121	2407
Game-counter	O. W. Field	818,676	Apr. 24	4259	915	121	2452
Game device	A. Ehebald	818,153	Apr. 17	3201	688	121	2171
Game. Foot-ball card	L. G. Robinson	817,191	Apr. 10	1277	265	121	1703
Garbage-can	E. S. Pond	814,5[illegible]	Mar. 6	1128	235	121	245
Garbage-can	J. R. Moler, H. E. Insley, and S. L. Phillips	816,989	Apr. 3	893	185	121	1557
Garbage-can. Sanitary	G. Wangenheim	815,496	Mar. 20	3046	636	121	771
Garbage-consuming apparatus. Domestic	E. T. Vale	817,022	Apr. 3	952	195	121	1570
Garbage-receptacle	A. Gagnon and G. Paquette	816,087	Mar. 27	4282	907	121	1091
Garment	L. Reed	815,933	Mar. 20	3951	837	121	965
Garment	F. A. Platz	818,785	Apr. 24	4492	961	121	2503
Garment-clasp	M. B. Gardner	816,228	Mar. 27	4548	967	121	1147
Garment-fastener	J. H. and I. Taylor	815,231	Mar. 13	2484	517	121	600
Garment-fastener	A. E. Smith	816,750	Apr. 3	388	89	121	1445
Garment-fastening	P. A. C. Bates	817,615	Apr. 10	2112	447	121	1876
Garment-hanger	W. E. Messig	816,808	Apr. 3	505	110	121	1460
Garment-hanger	S. N. Cragin	818,748	Apr. 24	4423	946	121	2489
Garment. Nursing-	W. L. Baillie, Jr	816,840	Apr. 3	580	121	121	1488
Garment. One-piece blouse	J. B. Pearson	816,367	Mar. 27	4857	1029–30	121	1213
Garment-pad	R. Raphael	814,395	Mar. 6	814	167	121	178
Garment-support	M. S. Goldman	814,440	Mar. 6	896	184	121	195
Garment-supporter	D. H. Crosser	815,906	Mar. 20	3907	827	121	956
Garment-supporter	C. W. Waldo	818,064	Apr. 17	3015	652	121	2131
Garments. Girdle attachment for supporting	E. A. Toussaint	814,994	Mar. 13	1974	415	121	485
Garter-fastening device. Men's	J. Maltby	814,464	Mar. 6	939	192	121	205
Gas and separating its elements. Apparatus for liquefying	C. Linde	815,544	Mar. 20	3144	658	121	792
Gas-burner	P. Keller	815,536	Mar. 20	3129	655	121	789
Gas-burner	A. C. Mouser	817,261	Apr. 10	1423	299	121	1733
Gas-burner	G. Machlet, Jr	819,018	Apr. 24	4929	1058	121	2598
Gas burner. Acetylene-	J. B. Carroll	817,750	Apr. 17	2368	508	121	1989
Gas-burner. Inverted incandescent	E. Kramer	814,459	Mar. 6	929	191	121	202
Gas-burner. Inverted incandescent	J. Bridger	816,427	Mar. 27	4985	1058	121	1239
Gas-burner. Inverted incandescent	M. Kay	818,255	Apr. 17	3416	732	121	2216
Gas-burner. Safety	E. and R. Smejkal	816,260	Mar. 27	4609	979	121	1161
Gas-burner. Safety	C. H. White	816,893	Apr. 3	687	142	121	1511
Gas-burners. Automatic lighter and extinguisher for	J. L. Bruce	816,962	Apr. 3	835	171–2	121	1543
Gas. Burning acetylene	J. B. Carroll	817,751	Apr. 17	2369	508	121	1989
Gas-calorimeter	C. E. Sargent	816,042	Mar. 27	4176	885	121	1067
Gas-check pad	E. A. Yarnell	818,069	Apr. 17	3031	654	121	2134
Gas-engine	E. C. Kavanaugh	814,609	Mar. 6	1212	253–4	121	262
Gas-engine	I. S. Barnett	816,062	Mar. 27	4219	894–5	121	1077
Gas-engine	W. Heckert	816,549	Mar. 27	5226	1108	121	1294
Gas-engine. Tandem	L. F. Burger	816,215	Mar. 27	4526	961–2	121	1143
Gas-filter	G. A. Stebbins	816,266	Mar. 27	4625	981–2	121	1164
Gas-furnace	R. S. Thompson	816,276	Mar. 27	4645	985–6	121	1168
Gas-furnace	D. A. Ebanger	818,151	Apr. 17	3197	688	121	2171
Gas-furnace or coke-oven	H. Koppers	818,033	Apr. 17	2966	640–1	121	2121
Gas-generator	J. Radcliffe	816,123	Mar. 27	4346	921	121	1104
Gas-generator	J. G. L. Bormann	817,035	Apr. 3	974	200	121	1575
Gas generator. Acetylene-	E. M. Rosenbluth	815,745	Mar. 20	3574	750	121	887
Gas generator. Acetylene-	J. B. Dulaney	816,717	Apr. 3	333	77	121	1434
Gas generator. Acetylene-	O. M. Brauer	816,775	Apr. 3	442	100	121	1455
Gas generator. Acetylene-	O. M. Brauer	816,776	Apr. 3	445	100–1	121	1456
Gas generator. Acetylene-	L. C. Gilmore	816,976	Apr. 3	864	179	121	1550
Gas-heater	L. F. Knoderer	815,099	Mar. 13	2197	463	121	533
Gas-igniter. Automatic	A. B. Handschug	817,640	Apr. 10	2157	458	121	1886
Gas-light. Incandescent	S. Mason	817,081	Apr. 3	1048	217	121	1590
Gas-lighting burner. Incandescent-	D. Anderson	815,777	Mar. 20	3635	764	121	898
Gas. Making and burning fuel-	W. T. Griffin	816,314	Mar. 27	4715	1001	121	1184
Gas-making apparatus	L. P. Lowe	817,647	Apr. 10	2171	461	121	1889

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Gas-making apparatus	L. P. Lowe	817,648	Apr. 10	2172	461	121	1889
Gas-mantle. Incandescent	M. Koblenzer	818,032	Apr. 17	2965	640	121	2121
Gas. Manufacturing	L. P. Lowe	817,126	Apr. 3	1133	235	121	1612
Gas manufacturing and delivering apparatus	L. P. Lowe	817,649	Apr. 10	2174	462	121	1889
Gas-meter	S. E. Crawford	814,359	Mar. 6	730	148	121	161
Gas-meter	W. K. Harrington	814,958	Mar. 13	1896	398–9	121	470
Gas-mixer	M. Scott	816,045	Mar. 27	4181	896	121	1069
Gas, oil, water, and sand separator	A. S. Cooper	815,407	Mar. 20	2899	601	121	738
Gas-pipes. Automatic alarm for	A. L. Schults	817,009	Apr. 3	924	191	121	1563
Gas-pressure regulator and governor	R. and W. J. Hillis	814,604	Mar. 6	1206	252	121	261
Gas-producer	J. H. Swindell	814,249	Mar. 6	489	100–1	121	105
Gas-producer	A. Cerasoli	815,794	Mar. 20	3675	773–4	121	906
Gas-producer	C. Ellis	815,913	Mar. 20	3920	829	121	959
Gas-producer	F. G. Hobart	817,853	Apr. 17	2589	558	121	2037
Gas. Producing	J. S. Smith	817,280	Apr. 10	1462	307	121	1740
Gas producing and consuming apparatus	C. Ellis	816,973	Apr. 3	858	177	121	1548
Gas-producing apparatus	C. Ellis	814,279	Mar. 6	543	113	121	117
Gas-producing apparatus	J. S. Smith	817,279	Apr. 10	1457	307	121	1739
Gas-purifier	F. G. Hobart	814,698	Mar. 13	1417	295	121	369
Gas-purifier	Q. Bent	815,674	Mar. 20	3394	709	121	848
Gas-purifier	L. P. Lowe	817,650	Apr. 10	2175	462	121	1890
Gas-purifier	E. C. Jones and S. T. Wellman	818,891	Apr. 24	4684	1005	121	2543
Gas-purifying apparatus	A. M. Gow	815,812	Mar. 20	3707	781	121	913
Gas-saving device	F. W. Playsted	818,554	Apr. 24	4013	860	121	2397
Gas shut-off. Automatic	C. J. McCormick	817,505	Apr. 10	1913	402	121	1836
Gas-tank	P. C. Avery	816,059	Mar. 27	4214	893	121	1075
Gas-tubing or the like. Detachable clamp for	T. Vogt and M. Hebig	817,285	Apr. 10	1470	308	121	1741
Gas-washing machine	L. P. Lowe	817,127	Apr. 3	1136	235	121	1612
Gases or vapors and the production of high vacuums. Absorbing	J. Dewar	815,942	Mar. 27	3968	841	121	1021
Gasolene-dispensing can	W. H. Robertshaw	817,391	Apr. 10	1678	354	121	1787
Gate: *See* End-gate. Railway safety-gate. Railway-gate.							
Gate	R. C. Wessels	814,103	Mar. 6	201	40	121	44
Gate	J. F. Stroud	814,746	Mar. 13	1509	319	121	390
Gate	F. W. Schaefer	816,188	Mar. 27	4478	948	121	1132
Gate	G. B. Brace	816,843	Apr. 3	585	122	121	1488
Gate	A. Legler	817,925	Apr. 17	2751	596	121	2075
Gate construction	L. F. Hake	818,885	Apr. 24	4674	1003	121	2541
Gear. Change-speed	J. Thannheimer	816,401	Mar. 27	4936	1049	121	1230
Gear for skips, cages, and the like. Safety-	J. W. Campbell	817,623	Apr. 10	2125	450–1	121	1879
Gear. Reversing-	T. H. Butler	815,331	Mar. 20	2715	566	121	697
Gear. Reversing-	C. H. Swartz	817,817	Apr. 17	2519	539	121	2021
Gear. Slide-	H. H. Buffum	818,662	Apr. 24	4237	911	121	2447
Gear. Starting, stopping, speed-controlling, and reversing	H. S. Hele-Shaw	814,133	Mar. 6	262	52	121	58
Gear. Transmission-	W. Folberth	817,908	Apr. 17	2717	590	121	2066
Gear. Variable-speed	C. F. G. Low	814,060	Mar. 6	121	23	121	27
Gears. Making composite	H. B. Atha	814,342	Mar. 6	702	141	121	154
Gearing	S. Graves	817,239	Apr. 10	1373	289	121	1723
Gearing. Change-speed	E. Soller and F. Hottinger	815,386	Mar 20	2846	591	121	726
Gearing device. Automatic	J. Shoecraft	816,259	Mar. 27	4607	979	121	1161
Gearing. Variable-speed	J. Anderson	814,502	Mar. 6	1006	207	121	219
Gearing. Variable-speed friction-	E. P. Cowles	818,747	Apr. 24	4416	944–5	121	2487
Gem-setting	A. Pollard	816,997	Apr. 3	905	187	121	1559
Generator: *See* Acetylene-generator. Gas-generator. Current-generator. Oil-generator. Electrical generator. Steam-generator.							
Generator-controlling device	J. Struthers	815,129	Mar. 13	2267	474	121	550
Ginning or burring machine	W. Youlten	817,607	Apr. 10	2098	443–4	121	1873
Glass: *See* Prism-glass.							
Glass article	J. Paull and A. G. Neville	815,033	Mar. 13	2075	435	121	507
Glass-article-molding apparatus	F. J. Mackin	817,576	Apr. 10	2045	430–1	121	1862
Glass articles. Apparatus for manufacturing	J. H. Croskey	817,835	Apr. 17	2555	548–9	121	2030
Glass articles. Apparatus for manufacturing	J. H. Croskey	817,836	Apr. 17	2558	549	121	2030
Glass-blower's dummy	P. J. O'Brien	818,705	Apr. 24	4324	927	121	2466
Glass-blowing machine	A. L. Bingham	817,745	Apr. 17	2351	505–7	121	1996
Glass bottles and the like. Apparatus for making	A. Philippoteaux	815,037	Mar. 13	2083	436–8	121	510
Glass bottles and the like. Machine for the manufacture of	W. J. Demming	814,191	Mar. 6	365	75	121	79
Glass. Feeding	H. L. Dixon and G. A. Marsh	814,773	Mar. 13	1561	330–1	121	401
Glass from quartz-sand, &c. Manufacture of quartz-	J. Bredel	816,707	Apr. 3	318	.....	121	1430
Glass-joint fastener	W. E. Beyer	814,637	Mar. 6	1265	266	121	274
Glass-making apparatus. Wire-	W. Buttler	814,515	Mar. 6	1034	214	121	225
Glass. Manufacture of	F. L. O. Wadsworth	814,631	Mar. 6	1256	264	121	272
Glass. Manufacture of articles from quartz-	J. Bredel	816,708	Apr. 3	318	.....	121	1431
Glass. Manufacture of sheet or plate	W. T. Nicholls	814,471	Mar. 6	954	196	121	208
Glass-press	H. B. Koehler and C. L. Betz	815,180	Mar. 13	2379	496	121	576
Glass. Prism-	F. L. O. Wadsworth	818,208	Apr. 17	3313	708	121	2196
Glass-rolling machinery	E. Beetlestone	818,141	Apr. 17	3183	685	121	2167
Glass-securing device. Plate-	H. R. Ransom	818,850	Apr. 24	4617	990	121	2529
Glass-shearing apparatus	H. L. Dixon and G. A. Marsh	814,774	Mar. 13	1566	331	121	402
Glass sheets. Apparatus for the manufacture of	F. L. O. Wadsworth	818,209	Apr. 17	3314	708–9	121	2196
Glass sheets. Apparatus for the manufacture of	F. L. O. Wadsworth	818,210	Apr. 17	3316	709	121	2197
Glass sheets. Making	J. H. Lubbers	814,612	Mar. 6	1218	265–6	121	264
Glazing device	F. W. Mellowes	816,807	Apr. 3	504	110	121	1469
Glazing or rolling machine	B. and G. McKeen	817,507	Apr. 10	1915	403	121	1836
Globe-supporting device	J. P. Litsey	818,103	Apr. 17	3088	666	121	2146
Gold and other valuable metals from water and other liquids. Reclaiming waste	C. E. Holland	818,174	Apr. 17	3251	697	121	2183
Gold-dredge	H. J. Clark	814,019	Mar. 6	28	7	121	8
Gold-saving apparatus	I. P. Lambing	818,834	Apr. 24	4587	983	121	2523
Goods. Automatic collecting and hoisting of	P. W. Sieurin	817,811	Apr. 17	2509	537	121	2019

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Goods-handler	W. R. Calvert	818,869	Apr. 24	4651	998	121	2537
Governor	L. J Watson	814,579	Mar. 6	1156	241	121	250
Governor. Electromagnetic	D. Bacon	818,513	Apr. 24	3924	844	121	2378
Governor. Engine-	R. H. Pascall	815,114	Mar. 13	2230	468	121	541
Governor. Engine-	C. N. Walsh and W. N. Rumely	818,718	Apr. 24	4349	932	121	2472
Governor for steam-engines. Emergency-	O. F. Bruman	818,345	Apr. 17	3582	766-7	121	2251
Governor for steam systems and meter therefor	J. Morehead	816,589	Apr. 3	72	17-18	121	1372
Governor. Marine-engine	J. W. Mowbray	817,262	Apr. 10	1424	300	121	1732
Governor mechanism. Motor	C. Schmitthenner	814,400	Mar. 6	822	170	121	180
Governor. Speed-	C. E. Conkling	814,433	Mar. 6	888	182	121	193
Governor. Spring-motor	W. B. Kirby	818,830	Apr. 24	4582	982	121	2522
Governor. Steam-engine	W. N. Rumely	818,711	Apr. 24	4332	920	121	2468
Grab-hook	J. E. Flynn	815,085	Mar. 13	2165	457	121	527
Grain-binder attachment	S. W. Berry	814,347	Mar. 6	709	143	121	156
Grain-cleaner	A. W. Eaches	818,944	Apr. 24	4787	1029	121	2567
Grain cleaning and separating machine	P. Moon	815,457	Mar. 20	2982	621	121	758
Grain-crushing apparatus	A. and A. Simon	816,390	Mar. 27	4916	1043-4	121	1225
Grain-drill tube	H. C. Ham	814,957	Mar. 13	1894	398	121	469
Grain dump and elevator	C. S. Upham	818,926	Apr. 24	4749	1020-1	121	2558
Grain-elevator and wagon-dump	R. J. Jones	816,017	Mar. 27	4123	873-4	121	1056
Grain-separator	G. E. Holliday	815,017	Mar. 13	2039	427	121	499
Grain-separator	W. W Culver	815,070	Mar. 13	2136	450	121	521
Grain-separator sieve-cleaner	F. Prinz	816,821	Apr. 3	534	115	121	1476
Grain. Steaming	E. F. Kiler, Sr	814,909	Mar. 13	1802	378	121	451
Gramophone	C. A. Parsons	814,561	Mar. 6	1126	234	121	245
Graphite-separator	J. H. Davis	816,303	Mar. 27	4694	997	121	1180
Graphophone-reproducer	W Hart	817,062	Apr. 3	1021	210	121	1585
Grapple	E Y. Moore	814,388	Mar. 6	785	158	121	173
Grasper. Automatic	K. Böttcher and F. Heym	818,736	Apr. 24	4385	939	121	2480
Grate	G. E. Travis	814,815	Mar. 13	1646	345	121	418
Grate	O. E. Halderman	814,956	Mar. 13	1893	398	121	469
Grate	L. Gschwind	815,160	Mar. 13	2329	487	121	564
Grate	R. A. May	815,450	Mar. 20	2971	619	121	756
Grate	J. E. Frost	818,533	Apr. 24	3970	853	121	2389
Grate-bar	A. Wilkinson	817,028	Apr. 3	961	198	121	1572
Grate. Gas-	A. D. Rathbone	816,737	Apr. 3	364	84	121	1440
Gravity-bolt and fusible connection for metallic frames and windows therefor.	A. H. Woodruff	815,774	Mar. 20	3625	762-3	121	896
Grease-cup	T. E. Peters	815,734	Mar. 20	3536	742	121	877
Griddle-greaser	C. H. Haight	814,203	Mar. 6	390	79	121	85
Grinding-disk. Clearance-space	G. Gorton	816,461	Mar. 27	5040	1070	121	1251
Grinding-machine	A. C. Calkins	815,333	Mar. 20	2718	566-7	121	698
Grinding-machine	L. W. Holub	816,550	Mar. 27	5230	1109	121	1295
Grinding mill. Grain-	M. R. Martin	817,859	Apr. 17	2605	562	121	2040
Grinding or polishing machine	P. Mueller and J. Boland	819,021	Apr. 24	4935	1059	121	2600
Grindstone attachment	B. F. Bellows	818,933	Apr. 24	4768	1025	121	2562
Grindstone-turning apparatus	D. Perdew	815,034	Mar. 13	2076	435	121	508
Grip device. Intermittent	E. H. Ahlander	815,895	Mar. 20	3886	822	121	951
Gripping-tool. Adjustable	W. Punt	815,376	Mar. 20	2820	587	121	720
Grist-mill. Portable	J. S. Lord	816,108	Mar. 27	4314	914	121	1097
Gromets and similar articles. Machine for setting	A. E. Jones	817,780	Apr. 17	2438	521-2	121	2003
Guide-clamp	R. vom Cleff, Jr., and C. F. Benedict.	814,188	Mar. 6	360	74	121	78
Gun	M. F. Smith	817,134	Apr. 3	1150	238	121	1615
Gun. Automatic	W. Trabue	814,749	Mar. 13	1515	321	121	391
Gun. Ballistic	F. I. Du Pont	815,468	Mar. 20	3002	626	121	761
Gun-barrel hand-protectors. Retaining device for	J. Y. Bassell and F. C. Blenkner	814,664	Mar. 13	1341	280	121	352
Gun. Breech-loading	A. H. Russell	816,603	Apr. 3	112	24-5	121	1382
Gun-carriage	A. H. Emery	817,841	Apr. 17	2565	550-2	121	2032
Gun. Electrical	M. E. Thomas	815,490	Mar. 20	3033	633	121	768
Gun firing mechanism	H. Lehmann	814,854	Mar. 13	1712	358	121	432
Gun. Gas-operated machine-	M. F. Smith	817,197	Apr. 10	1289	267-8	121	1705
Gun-lock	T. M. Thorsen	815,879	Mar. 20	3854	816	121	943
Gun-locks. Safety-lock for	M. P. Rogers and E. C. Rouse	817,004	Apr. 3	917	189	121	1562
Gun-mount	L. L. Driggs	818,942	Apr. 24	4779	1027-8	121	2565
Gun mounting. Recoiling-	A. T. Dawson and G. T. Buckham	818,358	Apr. 17	3603	772	121	2256
Gun. Pneumatic	J. Pusey	814,078	Mar. 6	152	31	121	34
Gun-sight	W. V. Hukill	815,090	Mar. 13	2177	459	121	529
Gun. Spring air-	L. Jeffries	816,983	Apr. 3	879	182	121	1553
Gun-stock	W. F. Cole	816,074	Mar. 27	4256	702	121	1085
Guns. Automatic brake for tube recoil-	K. Völler	818,801	Apr. 24	4526	967-8	121	2511
Guns. Telescopic sight for	J. F. Meigs and H. G. Jakobsson	818,546	Apr. 24	3998	858	121	2394
Hair and hat securing device	I. Fréchette	817,238	Apr. 10	1371	288	121	1723
Hair-clipper	O. W. Johnson	816,235	Mar. 27	4562	971	121	1150
Hair-pin	G. H. Bigelow	816,956	Apr. 3	826	169	121	1541
Hair-pin	C. L. Durboraw	817,839	Apr. 17	2563	550	121	2031
Hair-pin	F. E. Regan	818,468	Apr. 24	3817	821	121	2357
Hair-pin rubbing and polishing machine	W. H. Thompson	816 137	Mar. 27	4382	926	121	1112
Hair-pins. Apparatus for making wire-core	C. J. Leyers	814,058	Mar. 6	116	22-3	121	26
Hair-waver	H. P. Fiske	815,278	Mar. 13	2553	538	121	614
Halter	W. E. Hayner	815,164	Mar. 13	2336	488	121	566
Halter	W. J. Smouse	817,135	Apr. 3	1151	238	121	1615
Hame and trace connector	G. F. Lindsay	814,222	Mar. 6	429	88	121	93
Hame-clasp	A. Schaefer	817,673	Apr. 10	2210	472	121	1898
Hame-clip. Adjustable	F. E. Vorce	815,767	Mar. 20	3615	759	121	894
Hame-fastener	P. Nelson	815,206	Mar. 13	2434	507	121	590
Hames. Draft attachment for	F. J. Martin	816,987	Apr. 3	889	184	121	1556
Hammer	A. M. Layton	815,442	Mar. 20	2959	615	121	753
Hammer-drill	W. Prellwitz	818,638	Apr. 24	4181	900	121	2435
Hammer. Electric	W. F. Wegner	818,589	Apr. 24	4073	874	121	2410
Hammer. Pneumatic	A. Levedahl	814,306	Mar. 6	602	125-6	121	130
Hammer. Pneumatic	R. A. Norling	814,983	Mar. 13	1943	408-9	121	479
Hammer. Power-	C. W. Blackstone	816,291	Mar. 27	4669	991	121	1174
Hammock-support	J. M. Troselj	817,534	Apr. 10	1967	416	121	1846
Hammock-supporting frame	C. Knoernschild	816,340	Mar. 27	4798	1016	121	1200
Hand-bag	J. D. Wood	818,729	Apr. 24	4368	935-6	121	2476

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Hand-press	J. Spengler	818,796	Apr. 24	4518	965	121	2509
Handle: *See* Broom-handle. Casket-handle. Drop-handle. Plane-handle. Saw-handle. Vessel or receptacle handle.							
Handle or grip	C. L. Stockdell	814,570	Mar. 6	1140	238	121	247
Hanger: *See* Brake-hanger. Brake-beam hanger. Car-door hanger. Clothes-hanger. Coat-hanger. Door-hanger. Eaves-trough hanger. Garment-hanger. Hat-hanger. Joist-hanger. Picture-hanger. Shade-hanger. Shade and curtain hanger. Strap-hanger. Trousers-hanger.							
Harness	C. C. King	818,260	Apr. 17	3422	734	121	2218
Harness	E. H. Yule	818,930	Apr. 24	4762	1023	121	2561
Harness-checking system	J. Curtain	814,835	Mar. 13	1682	352	121	426
Harness-peg attachment	E. D. Wallace	816,692	Apr. 3	294	68	121	1425
Harrow	J. R. Jones	814,051	Mar. 6	104	19	121	24
Harrow	J. C. and F. G. Agey	815,894	Mar. 20	3885	821	121	951
Harrow-disk connection	J. M. Stewart	814,744	Mar. 13	1507	319	121	390
Harrow draft attachment. Sidehill-	M. C. Machado	816,986	Apr. 3	887	183	121	1556
Harrow. Riding-	P. Fleming	816,449	Mar. 27	5022	1066	121	1247
Harrow riding attachment	S. R. Hill	815,531	Mar. 20	3118	651	121	787
Harrow. Rotary	O. Smith	818,307	Apr. 17	3515	754	121	2238
Harrow-tooth fastener	L. E. Allen	817,150	Apr. 10	1187	245	121	1683
Harvester and husker. Corn	J. A. Stone	814,812	Mar. 13	1640	344	121	417
Harvester attachment. Corn-	H. Moening	816,874	Apr. 3	650	134	121	1503
Harvester. Beet-	T. J. Sullivan	814,747	Mar. 13	1510	320	121	391
Harvester. Beet-	J. W. Arthur	815,325	Mar. 20	2704	563–4	121	695
Harvester. Beet-	L. Stimart	819,029	Apr. 24	4953	1063	121	2603
Harvester. Corn-	M. D. Hatch	815,530	Mar. 20	3114	650–1	121	786
Harvester. Cotton-	T. H. Price and W. P. Quentell	817,666	Apr. 10	2199	469	121	1895
Harvester. Cotton-	T. H. Price and W. P. Quentell	817,667	Apr. 10	2201	470	121	1896
Harvester topping attachment	T. J. Knox	815,437	Mar. 20	2951	612–13	121	751
Harvesters, &c. Guard-finger for	F. Hamachek	817,425	Apr. 10	1746	367	121	1800
Harvesting machine. Beet-	C. L. Winterburn	816,633	Apr. 3	178	38–9	121	1401
Harvesting machine. Corn-	C. E. Storm	817,200	Apr. 10	1300	271	121	1707
Harvesting machine. Pea-	W. A. Johnson	815,711	Mar. 20	3480	728	121	867
Hasp	J. C. Griffin	818,685	Apr. 24	4276	918	121	2456
Hat	J. Taylor	818,314	Apr. 17	3526	756	121	2240
Hat blocking and shaping machine	C. Eickemeyer	815,149	Mar. 13	2308	482–3	121	559
Hat-brim flange and center block or frame therefor	F. L. Butterworth	818,610	Apr. 24	4133	888	121	2425
Hat-fastener	S. M. Johnstone	814,451	Mar. 6	914	188	121	199
Hat-fastener	H. I. Clark	815,265	Mar. 13	2534	532	121	611
Hat-fastener	H. Siedentop	816,609	Apr. 3	139	29	121	1391
Hat-fastener	R. Willis	818,988	Apr. 24	4873	1047	121	2585
Hat-frame-making machine	W. Stoll	814,992	Mar. 13	1972	415	121	484
Hat-guard	C. E. Keator	815,714	Mar. 20	3486	729	121	868
Hat-hanger	P. F. Denning	818,421	Apr. 24	3737	803	121	2339
Hat-hanger	M. W. Potter	818,849	Apr. 24	4616	990	121	2529
Hat-holder	C. I. Adams and C. O. Clark	815,893	Mar. 20	3884	821	121	951
Hat-holder for ladies' dressing-cases	S. I. Norton	814,313	Mar. 6	625	128	121	136
Hat or garment holder	B. Kreuzberger	816,238	Mar. 27	4566	972	121	1151
Hat-pin	E. S. Condra	814,833	Mar. 13	1680	351	121	426
Hat-pin	T. E. White	818,323	Apr. 17	3544	759	121	2244
Hat-pin	A. Woodward	818,507	Apr. 24	3905	840	121	2375
Hat-pin	E. Rating	818,788	Apr. 24	4497	962	121	2504
Hat-stretcher	E. W. Sharbaugh	814,628	Mar. 6	1251	263	121	271
Hats. Paper-clip for	W. H. Holston	818,380	Apr. 17	3651	784	121	2266
Hay and stock rack	D. M. Cox	816,561	Apr. 3	15	4–5	121	1357
Hay-carrier	F. M. Yantzer	816,698	Apr. 3	304	71	121	1428
Hay from corn and other stalks. Machine for making	C. H. Trask	816,763	Apr. 3	417	94–5	121	1450
Hay-loader	D. K. Swift	818,057	Apr. 17	3003	648–9	121	2128
Hay-press	W. E. Fisher	815,083	Mar. 13	2161	455–6	121	526
Hay-rack	A. E. Cranston	817,626	Apr. 10	2134	452	121	1881
Hay-rack	J. Dain	818,524	Apr. 24	3946	850	121	2383
Hay-rake	H. R. Ingledue	818,451	Apr. 24	3790	814	121	2351
Hay rake and stacker	O. B. Mann	816,346	Mar. 27	4810	1019–20	121	1203
Hay-tedder	H. B. Sperry	814,244	Mar. 6	473	98	121	102
Head and back rest. Adjustable	W. H. Carr	814,272	Mar. 6	531	110	121	114
Headlight casing. Locomotive-	E. A. Edwards	814,030	Mar. 6	69	13	121	17
Headlight. Railway car and locomotive	A. Walter	816,139	Mar. 27	4385	927	121	1113
Headwear	O. D. Shaw	814,069	Mar. 6	178	35	121	39
Heat and smudge. Production of	G. Griffiths	814,646	Mar. 6	1284	270	121	277
Heat-applying device	W. J. O'Donnell	815,208	Mar. 13	2437	508	121	591
Heat-coil	F. B. Cook	817,160	Apr. 10	1209	251	121	1688
Heat-conserving apparatus	H. Lang	818,541	Apr. 24	3990	856	121	2392
Heat-resisting fabric	G. F. Cole	818,415	Apr. 24	3725	800	121	2337
Heater: *See* Car-heater. Electric heater. Gas-heater. Hot-air heater. Hot-water heater. Iron-heater. Submerged heater. Vehicle-heater. Water-heater.							
Heater	J. Magee	814,224	Mar. 6	432	80	121	93
Heater	E. E. Gold	815,695	Mar. 20	3447	720	121	860
Heater	J. J. Engel	817,757	Apr. 17	2382	511	121	1991
Heater	H. H. Brandes	817,900	Apr. 17	2706	587	121	2063
Heater	J. D. Erskine	818,085	Apr. 17	3059	660	121	2140
Heating and ventilating system	W. R. McKeen, Jr	817,658	Apr. 10	2186	464–5	121	1892
Heating apparatus	W. G. Jones and J. W. Johnson	815,839	Mar. 20	3780	797	121	928
Heating apparatus	C. F. Jenkins	817,173	Apr. 10	1234	254	121	1693

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Heating apparatus. Hot-water	T. H. Jane	817,555	Apr. 17	2592	559	121	2038
Heating-apparatus-regulating device	W. H. Kirnan	817,783	Apr. 17	2450	523–4	121	2006
Heating-furnace	C. N. Brett	815,140	Mar. 13	2290	478–9	121	555
Heating furnace. Continuous-	W. R. Miller	815,198	Mar. 13	2422	505	121	588
Heating-furnace. Hot-water	S. Lindner and M. G. Roberts	816,927	Apr. 3	760	157	121	1527
Heating or cooling apparatus. Surface	G. F. Jarvis	817,490	Apr. 10	1880	396–7	121	1828
Heating system. House-	J. A. Wynkoop	816,523	Mar. 27	5171	1097	121	1281
Heating system. Vacuum	C. A. Dunham	816,972	Apr. 3	856	176–7	121	1548
Heating systems. Automatic steam and water trap for steam-	T. F. Dexter	815,335	Mar. 20	2722	567	121	698
Hedge-trimming machine	R. Smithers	814,483	Mar. 6	979	200–1	121	213
Heel-loading machine	A. F. Preston	816,882	Apr. 3	668	138–9	121	1506
Helical spring	R. Siegfried	817,133	Apr. 3	1150	237	121	1615
Helmet and face-protector. Combined	S. J. Lavis	817,075	Apr. 3	1038	215	121	1588
High-potential switch or circuit-breaker	E. M. Hewlett	815,824	Mar. 20	3729	785–6	121	918
Hinge	J. E. Hausfeld and V. E. Treise	814,288	Mar. 6	557	117	121	120
Hinge	J. R. Carter	814,354	Mar. 6	722	146	121	159
Hinge	J. R. Carter	814,355	Mar. 6	723	146	121	160
Hinge	H. G. Kimple	814,546	Mar. 6	1096	227	121	238
Hinge. Blind-	J. H. Poole	818,285	Apr. 17	3462	745	121	2226
Hinge. Drop and cellar-door	W. M., W. I., and H. D. Boulden	817,748	Apr. 17	2363	508	121	1988
Hinge. Floor-	S. Hanson	815,011	Mar. 13	2021	424	121	496
Hinge for windows and the like. Detachable	G. H. Parker	814,391	Mar. 6	793	160	121	175
Hinge. Gate-	S. H. Berrey	816,527	Mar. 27	5181	1099	121	1283
Hinge. Lock-	J. W. Dwyer	818,081	Apr. 17	3055	659	121	2139
Hinge. Temporary	H. H. Greene	817,845	Apr. 17	2576	554	121	2034
Hitching-post strap	J. A. Ames	817,686	Apr. 10	2232	478	121	1903
Hobby-horse. Progressing	A. Hitt	818,826	Apr. 24	4575	981	121	2520
Hoe	W. A. Nyswonger	816,362	Mar. 27	4848	1027	121	1211
Hoe and rake. Combined	W. L. Harris	816,320	Mar. 27	4760	1007	121	1193
Hoe. Horse-	F. W. Anderson	816,418	Mar. 27	4967	1055–6	121	1236
Hog-hoist	O. P. Hurford	816,233	Mar. 27	4556	970	121	1149
Hog-loader	C. C. Swan	814,096	Mar. 6	190	38	121	42
Hog-scalder	J. N. MacLeod	814,384	Mar. 6	777	157	121	172
Hog-scraper	E. Rawson	817,873	Apr. 17	2640	573	121	2047
Hog-trough	J. Crossin	817,627	Apr. 10	2137	452	121	1881
Hoist	E. Y. Moore	816,349	Mar. 27	4822	1021	121	1205
Hoist	G. W. Bellman	817,797	Apr. 17	2361	507	121	1987
Hoist	E. W. Marshall	817,790	Apr. 17	2469	528	121	2010
Hoists and the like. Safety mechanism for	J. T. Horton	817,916	Apr. 17	2730	592	121	2069
Hoisting and conveying apparatus	T. S. Miller and J. H. Dickinson	814,717	Mar. 13	1454	305	121	378
Hoisting and conveying apparatus	C. J. Horgen	815,706	Mar. 20	3468	724	121	864
Hoisting apparatus	R. H. Krueger	815,440	Mar. 20	2956	614	121	752
Hoisting apparatus	J. Campbell	816,071	Mar. 27	4248	900–1	121	1083
Hoisting apparatus	W. B. Potter	816,372	Mar 27	4864	1032	121	1215
Hoisting apparatus	C. T. Painter	818,115	Apr. 17	3124	672–3	121	2154
Hoisting apparatus. Electrical	A. E. Norris	816,879	Apr. 3	661	137	121	1505
Hoisting-apparatus safety device	J. Dahlin	818,523	Apr. 24	3944	849	121	2383
Hoisting-apparatus safety mechanism	J. H. Pickavance	814,870	Mar. 13	1740	365	121	438
Hoisting-bucket	F. V. Hetzel and F. F. Waechter	815,823	Mar. 20	3728	785	121	918
Hoisting-drum	A. E. Norris	817,268	Apr. 10	1439	302	121	1734
Hoisting mechanism	D. Abrey	818,212	Apr. 17	3320	710–11	121	2197
Hoisting-support	C. A. Barnes and A. E. Cronin	815,254	Mar. 13	2516	524	121	607
Hoof cutter. Horse-	D. McDonald	816,733	Apr. 3	355	81	121	1438
Hoof trimmer and cleaner	J. L. Kottas	817,717	Apr. 10	2278	491	121	1912
Hook: *See* Bracket-hook. Buckle-hook. Fish-hook. Grab-hook. Lifting-hook. Snap-hook. Spring edge-supporting hook.							
Hook	O. Kampfe	815,019	Mar. 13	2043	428	121	500
Hook	M. M. Baird	816,206	Mar. 27	4513	957	121	1140
Hook and eye	A. G. Miller	814,556	Mar. 6	1113	232	121	241
Hook and eye	A. B. Dabney	816,906	Apr. 3	841	173	121	1544
Hook and eye	H. A. Aldred	818,808	Apr. 24	4547	974	121	2515
Hook for cutting corn, &c	B. F. Bean	818,813	Apr. 24	4555	976	121	2516
Hoops and securing the ends thereof. Machine for sizing barrel-	J. G. Iverson	815,835	Mar. 20	3768	792–6	121	927
Hoppers. Automatic clean-sweep waste for outside	H. C. Weitzel and E. R. Pruitt	814,755	Mar. 13	1522	322	121	393
Horn. Amplifying-	E. R. Johnson	814,848	Mar. 13	1704	356	121	430
Horn-support	A. S. Marten	815,448	Mar. 20	2969	618	121	755
Horse-blanket	C. Loughrey	814,656	Mar. 6	1309	275	121	283
Horse-detacher	L. P. Faison	817,423	Apr. 10	1743	367	121	1800
Horse-detacher	J. Greece	817,424	Apr. 10	1744	367	121	1800
Horse-detacher	F. J. Humbert	818,176	Apr. 17	3254	698	121	2184
Horse-drenching device	N. S. Price	818,466	Apr. 24	3814	820	121	2356
Horse-overshoe	J. J. McElhenny	814,914	Mar. 13	1812	379	121	453
Horse-power indicator and engine-overload alarm	J. F. Shreffler	816,686	Apr. 3	281	66	121	1422
Horse-releaser	J. B. S. P. Twaha	817,599	Apr. 10	2085	440	121	1871
Horseshoe	G. Hauf	814,782	Mar. 13	1581	333	121	405
Horseshoe	A. Anderson	815,399	Mar. 20	2878	598	121	734
Horseshoe	J. Swigert	817,018	Apr. 3	946	194	121	1509
Horseshoe	G. W. Johnson	817,323	Apr. 10	1537	323	121	1756
Horseshoe	J. E. Shaffer	817,526	Apr. 10	1950	411	121	1844
Horseshoe	C. A. Ready	818,049	Apr. 17	2993	646	121	2126
Horseshoe-calk	W. F. Budenbach	817,155	Apr. 10	1200	250	121	1686
Horseshoe-calk. Adjustable	T. W. J. McGann	817,578	Apr. 10	2052	432	121	1863
Horseshoe-calk. Adjustable	T. W. J. McGann	817,579	Apr. 10	2054	432	121	1864
Horseshoe-calk. Detachable	T. W. J. McGann	817,586	Apr. 10	2063	434	121	1866
Horseshoe. Elastic-tread	A. W. Jones	819,016	Apr 24	4927	1058	121	2597
Horseshoe heel and toe calk splitting machine	J. G. Rieff	815,311	Mar. 13	2638	551	121	633
Horseshoe heel-calk. Detachable	T. W. J. McGann	817,580	Apr. 10	2056	433	121	1864
Horseshoe heel-calk. Detachable	T. W. J. McGann	817,581	Apr. 10	2057	433	121	1864
Horseshoe heel-calk. Detachable	T. W. J. McGann	817,582	Apr. 10	2058	433	121	1865
Horseshoe heel-calk. Detachable	T. W. J. McGann	817,585	Apr. 10	2062	434	121	1866
Horseshoe. Nailless	L. N. Beauchemin	814,184	Mar. 6	354	72	121	77

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Horseshoe. Nailless	C. W. Crannell	817,625	Apr. 10	2130	451	121	1880
Horseshoe. Nailless	R. H. Gibb and J. D. W. Elliott	817,638	Apr. 10	2154	457	121	1885
Horseshoes. Detachable calk for rubber-pad	T. W. J. McGann	817,584	Apr. 10	2061	434	121	1865
Horseshoes. Detachable heel-calk for composite rubber-pad	T. W. J. McGann	817,583	Apr. 10	2059	433	121	1865
Hose	E. T. Greenfield	817,060	Apr. 3	1018	209	121	1584
Hose-clamp	J. E. Johnson	814,608	Mar. 6	1211	253	121	262
Hose-coupling	A. Schaffer	815,476	Mar. 20	3013	628	121	764
Hose-coupling	S. Oldham	815,627	Mar. 20	3302	692	121	827
Hose-coupling	W. B. Ward	815,990	Mar. 27	4061	860	121	1040
Hose-coupling	J. Williamson and H. O'Brien	815,995	Mar. 27	4071	862	121	1042
Hose-coupling	J. F. McElroy	816,029	Mar. 27	4151	879	121	1062
Hose-coupling	E. E. Gold	816,312	Mar. 27	4712	1000	121	1183
Hose-coupling	C. E. Bewley	816,703	Apr. 3	309	72	121	1429
Hose coupling. Armored	E. T. Greenfield	817,058	Apr. 3	1015	209	121	1583
Hose coupling. Internally and externally armored	N. Perzoff	816,596	Apr. 3	101	21	121	1379
Hose coupling or connector	J. I. Tredtin and F. H. Grosbernt	817,818	Apr. 17	2520	540	121	2022
Hose-rack. Swinging	R. D. Wirt	818,989	Apr. 24	4874	1047	121	2585
Hose-reel	R. D. Wirt and C. R. Parker	818,990	Apr. 24	4875	1047	121	2586
Hose-supporter	K. M. Dowling	814,363	Mar. 6	738	149	121	163
Hose-supporter	H. B. Weed	814,997	Mar. 13	1979	416	121	485
Hose-supporter	M. M. Sturm and J. Silverstein	817,201	Apr. 10	1303	272	121	1708
Hose-supporter	L. W. Green	818,759	Apr. 24	4443	952	121	2493
Hot-air furnace	A. Boyce	816,528	Mar. 27	5183	1099	121	1284
Hot-air heater	S. W. Wilt	816,412	Mar. 27	4959	1053	121	1234
Hot-air register	H. Symonds	814,888	Mar. 13	1770	370	121	444
Hot-blast apparatus	J. Fallek	815,915	Mar. 20	3922	830	121	959
Hot-blast furnace	J. M. McClave	816,877	Apr. 3	655	136	121	1504
Hot-water-bag stopper	G. H. F. Schrader	816,503	Mar. 27	5130	1087	121	1271
Hot-water heater	J. A. Coppridge and T. B. Stultz	818,355	Apr. 17	3599	771	121	2255
Hot-water heater	C. M. Clausen	818,667	Apr. 24	4245	913	121	2449
Hotbed	J. A. Hellstrom	816,323	Mar. 27	4766	1009–10	121	1194
Hotel-register	J. P. Hart	817,851	Apr. 17	2584	557	121	2036
Hub	D. E. Barton	818,340	Apr. 17	3575	765	121	2250
Hub-attaching device	E. Hetherington	817,113	Apr. 3	1098	228	121	1602
Huller: *See* Clover-huller.							
Hundred-indicator	A. H. Woodward	818,509	Apr. 24	3914	842–3	121	2376
Husking-peg	J. H. Akin	816,286	Mar. 27	4660	989	121	1172
Hydrant	W. S. Phelps	818,782	Apr. 24	4487	961	121	2502
Hydraulic pressure device	J. J. Barry	814,508	Mar. 6	1015	209	121	221
Hydrocarbon-burner	J. F. Higgins	816,470	Mar. 27	5063	1075	121	1256
Hydrocarbon-burners. Draft-regulator for	F. E. Youngs	815,316	Mar. 13	2647	554	121	635
Hydrocarbon-vapor burner	W. Kemp	818,256	Apr. 17	3417	733	121	2216
Hymn-indicator	S. W. Hyde	814,213	Mar. 6	415	86	121	90
Ice-cream freezer	F. A. Holmes	816,092	Mar. 27	4291	909	121	1093
Ice-cream freezer	J. E. Dunne and C. A. Fletcher	816,652	Apr. 3	224	52–3	121	1410
Ice-cream freezer	C. E. Molesworth	816,810	Apr. 3	507	111	121	1470
Ice-cream freezer	J. A. Snigo	816,887	Apr. 3	680	140	121	1509
Ice-cream-freezer attachment	J. E. Birney	814,109	Mar. 6	213	42	121	46
Ice-cream mold	J. D. Kinzer	814,052	Mar. 6	104	19	121	24
Ice-creeper	D. L. Pickett	817,800	Apr. 17	2491	533	121	2015
Ice-creeper	O. F. Leibert	817,977	Apr. 17	2851	617	121	2097
Ice-creeper	C. O. Cook	818,520	Apr. 24	3941	848	121	2382
Ice-making apparatus	A. Campbell	814,115	Mar. 6	227	44	121	49
Ice-shaving machne	G. W. Van Sant	816,281	Mar. 27	4650	987	121	1170
Icing-machine	E. L. Sons	815,226	Mar. 13	2469	515	121	598
Ignition mechanism. Sparking	J. F. Johnson	816,472	Mar. 27	5068	1076	121	1257
Illusion device	F. N. Reeves	817,092	Apr. 3	1064	221	121	1504
Images of objects. Apparatus for producing	J. R. Hooper	815,170	Mar. 13	2349	491-2	121	568
Impact-tool	G. L. Badger	814,661	Mar. 13	1319	278	121	345
Implement. Combination	W. L. Iwan	818,627	Apr. 24	4165	896	121	2431
Inclined elevator	J. W. Reno	817,338	Apr. 10	1561	328	121	1760
Incubator	J. E. Chambers	816,003	Mar. 27	4097	866	121	1050
Incubator-alarm	F. T. Porter	815,557	Mar. 20	3165	664	121	796
Index. Book-	C. D. Threlkeld	816,138	Mar. 27	4384	926–7	121	1113
Index. Card-	G. A. Wheeler	814,817	Mar. 13	1651	346	121	420
Index rod. Card-	D. E. Hunter	816,097	Mar. 27	4299	910	121	1095
Indicator: *See* Air-pressure and vacuity indicator; Electric pressure-indicator; Engine-indicator; Horse-power indicator; Hundred-indicator; Hymn-indicator; Lock-indicator; Loom stop-indicator; Pneumatic-carrier indicator; Speed-indicator; Station-indicator; Synchronism-indicator.							
Indicator reducing-wheel	J. L. Robertson, Jr	815,038	Mar. 13	2087	436	121	510
Induction-machines. Excitation for	M. Leblanc	815,357	Mar. 20	2771	577–8	121	710
Induction-machines. System of excitation for	M. Leblanc	815,356	Mar. 20	2762	576–7	121	709
Induction-motor	D. C. Jackson	818,027	Apr. 17	2954	638	121	2119
Infants. Inclosure for	S. L. Morse	818,106	Apr. 17	3092	667	121	2147
Ingot-mold	H. Grey	818,684	Apr. 24	4272	918	121	2455
Inhaler	R. C. Coburn	815,510	Mar. 20	3074	641	121	777
Inhaler	G. F. Hartz	817,708	Apr. 10	2266	487	121	1909
Inhaling apparatus	A. Veleschow	814,484	Mar. 6	981	201	121	214
Injector	E. Blauhorn	817,620	Apr. 10	2119	449	121	1878
Injector. Steam-	W. A. Downes	818,422	Apr. 24	3739	803	121	2340
Ink-well	F. M. Ashley	818,403	Apr 24	3702	795	121	2333
Ink-well	W. P. Swope	818,581	Apr. 24	4059	871	121	2407
Inking mechanism	G. F. Scull	814,086	Mar. 6	160	34	121	38
Inking-pad	A. C. Jackson	818,692	Apr. 24	4290	921	121	2458
Inkstand, paper-holder, and pen-rack. Combined	L. R. Johnson	818,094	Apr. 17	3074	663	121	2143
Insect-exterminator	E. E., J. O., and J. A. Thompson	818,059	Apr. 17	3008	650–1	121	2130
Insecticide	A. Schulz	817,194	Apr. 10	1286	.....	121	1704

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Insulated support for double-wire electric lines. Portable	A. Collet	816,900	Apr. 3	700	144	121	1514
Insulating-cleat	H. D. Murdock	818,186	Apr. 17	3271	700	121	2187
Insulating screw-shell	H. Hubbell	817,484	Apr. 10	1870	394	121	1826
Insulation and other purposes. Refractory material for electric	D. M. Steward	816,270	Mar. 27	4632	.....	121	1166
Insulator	G. L. Ricks	815,471	Mar. 20	3006	627	121	763
Insulator	H. S. Blynt	815,506	Mar. 20	3067	639	121	776
Insulator attachment	H. Swanson	814,887	Mar. 13	1769	370	121	444
Insulator for electric apparatus	G. W. Gesner	815,418	Mar. 20	2920	.....	121	744
Insulator-pin	F. MacKean	814,613	Mar. 6	1220	256	121	264
Insulators and other uses. Producing new refractory material for the manufacture of	D. M. Steward	816,271	Mar. 27	4634	.....	121	1166
Insulators or other glass articles while plastic. Device for supporting glass	W. H. Schorling	815,222	Mar. 13	2465	514	121	597
Interlocking switch	C. W. Stone	818,309	Apr. 17	3516	754	121	2238
Internal-combustion engine	F. M. Uhler	815,492	Mar. 20	3036	634	121	769
Internal-combustion engine	A. de Dion and G. Bouton	815,802	Mar. 20	3688	777–8	121	909
Invalid lift and bed-support. Combined	H. Williams	816,697	Apr. 3	303	70–1	121	1427
Invalid-moving apparatus	L. Garaghty	817,703	Apr. 10	2256	485	121	1907
Iron: *See* Sad-iron.							
Iron and its alloys. Manufacturing	M. Ruthenburg	818,918	Apr. 24	4734	1016	121	2555
Iron from the ore. Making	R. H. Aiken	816,142	Mar. 27	4388	.....	121	1114
Iron-heater	C. Petty	818,847	Apr. 24	4613	989	121	2528
Ironing-board	A. Wallace	817,023	Apr. 3	953	196	121	1570
Ironing-board	J. F. Siebenthal	817,596	Apr. 10	2078	438	121	1869
Ironing fold-collars. Machine for	L. R. Heim	818,247	Apr. 17	3403	729	121	2213
Ironing-machine	H. Wonderlich	818,728	Apr. 24	4367	935	121	2475
Ironing-table	T. L. Nelms	815,465	Mar. 20	2999	625	121	761
Irrigating-ditch screen	W. B. Race	818,288	Apr. 17	3466	746	121	2227
Irrigation system. Plant-	T. A. Davis	818,356	Apr. 17	3601	771	121	2255
Jack: *See* Lifting-jack. Pipe-pulling jack. Timber-jack. Wagon-jack.							
Jacquard-machine	J. M. Perrin and J. B. Perraud	815,035	Mar. 13	2078	435	121	509
Jacquard mechanism	C. Vorwerk	814,337	Mar. 6	695	140	121	153
Jar: *See* Fruit-jar.							
Jar attachment	J. H. Johnson	817,572	Apr. 10	2040	429	121	1861
Jar-closure	F. O'Neill	818,706	Apr. 24	4326	927	121	2467
Jar or bottle closure. Cream and milk	W. H. Bennett	815,062	Mar. 13	2123	447	121	518
Jars and other like articles. Holder for	P. E. Perry	819,023	Apr. 24	4938	1060	121	2600
Jeweler's implement	W. F. Brown	816,777	Apr. 3	448	101	121	1457
Joint: *See* Fluid-joint. Limb-joint. Pipe-joint. Rail-joint. Railway-rail joint. Step-joint. Universal joint.							
Joist hanger or stirrup	F. L. Heughes	818,689	Apr. 24	4285	920	121	2458
Journal-bearing	S. Neemes	814,390	Mar. 6	791	159	121	175
Journal-bearing	S. C. Anker-Holth	814,822	Mar. 13	1663	348	121	422
Journal-bearing	C. V. Randolph	815,469	Mar. 20	3003	626	121	762
Journal-bearing	P. A. Whitney	816,630	Apr. 3	172	36	121	1399
Journal-bearing	C. Skidmore	817,676	Apr. 10	2212	473	121	1899
Journal-box	J. Charky	816,432	Mar. 27	4991	1060	121	1240
Journal-box	G. L. Harvey	817,427	Apr. 10	1753	368	121	1802
Journal-box	M. H. Whalen	817,683	Apr. 10	2226	477	121	1901
Journal-box	S. Haney	818,163	Apr. 17	3220	692	121	2176
Journal-box	G. W. Meyer	818,634	Apr. 24	4175	898	121	2433
Journal-box cover	T. H. Symington	815,230	Mar. 13	2483	517	121	600
Journal-box. Ribbed	J. S. Patten	818,912	Apr. 24	4723	1013	121	2552
Journal-lubricator	E. W. Hancock	818,373	Apr. 17	3631	779	121	2262
Kettle	R. and J. A. Medley	818,973	Apr. 24	4842	1041	121	2578
Kettle attachment	J. E. Longhenry	814,714	Mar. 13	1450	304	121	377
Key: *See* Ringing and listening key. Stringed-instrument key. Switch-key. Telegraph-key.							
Key-fastener	W. T. Easterday	817,097	Apr. 10	2246	482	121	1906
Key-lock. Changeable combination	W. H. Taylor	814,335	Mar. 6	691	139	121	152
Key-opening can	W. H. Wells	814,102	Mar. 6	200	40	121	44
Keys, windows, &c. Fastening device for	A. C. Fletcher	816,787	Apr. 3	462	104	121	1459
Keyhole bit and saw. Combination	E. R. Townley	816,277	Mar. 27	4646	986	121	1169
Kiln: *See* Brick-kiln. Cement-kiln. Downdraft-kiln.							
Kiln	R. W. Stewart	815,387	Mar. 20	2851	592	121	727
Kiln	R. W. Stewart	815,388	Mar. 20	2852	592	121	727
Kilns. Floor-brick for downdraft-	R. Southworth and J. E. Holden	818,308	Apr. 17	3516	754	121	2238
Kinematograph	W. H. Baker	814,662	Mar. 13	1334	278–9	121	350
King-bolt	T. W. Donahoo	817,303	Apr. 10	1501	315	121	1747
Kitchen utensil	E. H. and H. E. Vuillemot	818,063	Apr. 17	3014	652	121	2131
Kitchen. Window-	I. M. Thompson. (Reissue)	12,471	Apr. 10	2344	503	121	1929
Kneading-trough	A. Schmid-Keller	816,683	Apr. 3	279	65	121	1421
Knife: *See* Bar-knife. Pocket-knife.							
Knife-casing	E. Kaufmann	817,250	Apr. 10	1396	294	121	1727
Knitting-machine	J. B. Hipwell	815,167	Mar. 13	2341	490–1	121	567
Knitting-machine	J. B. Hipwell	817,775	Apr. 17	2423	518–20	121	2000
Knitting-machine	J. E. Rowe	818,295	Apr. 17	3478	748–9	121	2231
Knitting-machine. Lamb	H. Stoll, Jr	815,760	Mar. 20	3606	757	121	893
Knitting-machine picker mechanism	J. B. Hipwell	817,776	Apr. 17	2430	520	121	2002
Knitting-machine thread-feeding device. Circular-	E. I. O'Neill and W. N. Taggart	818,906	Apr. 24	4717	1012	121	2551
Knob-fastening	F. J. Schwarz	818,565	Apr. 24	4032	865	121	2401
Knob for locks and latches	B. Phelps	815,977	Mar. 27	4033	854	121	1034

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Knockdown box	J. Adams	815,670	Mar. 20	3388	708	121	847
Knockdown box	J. J. White	816,629	Apr. 3	171	36	121	1399
Label and premium-coupon. Combined	H. B. Duane	814,592	Mar. 6	1180	247	121	256
Labeling-machine	F. O. Woodland	818,506	Apr. 24	3899	839	121	2373
Lace-making holder	C. Mantz	814,151	Mar. 6	293	59	121	65
Lacing	S. C. Abramson	818,991	Apr. 24	4877	1047	121	2586
Lacing-tip-forming machine	C. F. Pinkham	817,872	Apr. 17	2633	571-3	121	2047
Ladder. Aerial	A. W. Shaw	818,304	Apr. 17	3504	752-3	121	2235
Ladder and bracket construction	J. M. Jones	817,174	Apr. 10	1235	254	121	1694
Ladder and ironing-board. Combined step-	A. Scott	814,877	Mar. 13	1752	367	121	440
Ladder. Combination step and extension	P. C. Plaster	815,736	Mar. 20	3538	743	121	878
Ladders. Antislip attachment for	H. D. Hinckley	816,914	Apr. 3	730	151	121	1520
Lamp	J. C. and J. W. Aschenbach	814,183	Mar. 6	351	72	121	76
Lamp	W. T. Maney	814,225	Mar. 6	435	89-90	121	94
Lamp	T. D. Davis	814,361	Mar. 6	734	149	121	162
Lamp. Alcohol-	A. A. Warner	815,884	Mar. 20	3861	819	121	945
Lamp-bulbs. Blowing off the necks of	E. L. Elliott	818,674	Apr. 24	4255	915	121	2451
Lamp-burner	C. H. Dressel	814,591	Mar. 6	1179	247	121	256
Lamp-burner	E. D. Holley	816,232	Mar. 27	4555	970	121	1149
Lamp. Carbureting-	E. B. Ludwig	816,669	Apr. 3	251	59	121	1415
Lamp-chimney fastener	J. Stewart	816,949	Apr. 3	813	167	121	1539
Lamp-chimney holder	W. J. Snow	814,566	Mar. 6	1133	236	121	246
Lamp cluster. Incandescent-	H. Hubbell	817,642	Apr. 10	2161	458	121	1896
Lamp-collar	J. W. Collins	814,431	Mar. 6	886	182	121	193
Lamp. Electric hand-	H. F. Stakelbeck	817,346	Apr. 10	1579	333	121	1765
Lamp. Electric incandescent	W. J. Phelps	814,162	Mar. 6	315	63	121	69
Lamp. Electric incandescent	W. von Bolton	817,732	Apr. 10	2327	500	121	1927
Lamp. Electric incandescent	O. Feuerlein	819,009	Apr. 24	4911	1055	121	2594
Lamp-extinguisher	J. E. Richardson	815,215	Mar. 13	2452	511	121	594
Lamp. Gas-	R. M. Dixon	814,120	Mar. 6	239	45	121	52
Lamp. Gas-	R. M. Dixon	814,121	Mar. 6	243	46	121	54
Lamp. Gas-	F. A. Ray	818,789	Apr. 24	4498	962-3	121	2504
Lamp. Gas-	F. A. Ray	818,790	Apr. 24	4502	963	121	2505
Lamp-holder	T Sharp	816,504	Mar. 27	5132	1088	121	1271
Lamp holder. Electric-incandescent-	P. Leonard and C. H. Jones	816,483	Mar. 27	5092	1080	121	1262
Lamp. Incandescent gas-	J. G. A. Kitchen	814,142	Mar. 6	277	56	121	61
Lamp. Miner's	F. A. Smith	814,241	Mar. 6	461	96	121	99
Lamp. Miner's	E. D. Hodson	816,725	Apr. 3	344	79	121	1436
Lamp. Oil-	T. T. Carter and S. J. Thompson	818,871	Apr. 24	4653	999	121	2537
Lamp. Oil-	H. Boggs	814,668	Mar. 13	1350	282	121	353
Lamp or lantern	J. E. Foxlee	817,967	Apr. 17	2838	615	121	2094
Lamp. Portable electric	C. L. Betts	817,297	Apr. 10	1492	313	121	1746
Lamp-regulator	J. L. Mulry	814,065	Mar. 6	128	25	121	29
Lamp-rheostat	A. L. Drum	814,364	Mar. 6	739	150	121	163
Lamp shade-holder. Incandescent-electric-	T. J. Bull	815,330	Mar. 20	2712	565	121	697
Lamp. Signal-	H. A. Wright	815,245	Mar. 13	2507	522	121	606
Lamp-socket. Cluster	F. D. Spear	816,509	Mar. 27	5142	1089-90	121	1274
Lamp socket. Incandescent-	J. H. Dale	818,750	Apr. 24	4427	947	121	2490
Lamp-socket lock	W. J. Jones	818,253	Apr. 17	3413	732	121	2215
Lamp-support. Adjustable	J. C. Kircher	815,096	Mar. 13	2190	461	121	532
Lamp switching device. Electric-	J. H. Stevenson	815,563	Mar. 20	3175	666	121	798
Lamp. Ultra-violet	J. McCullough	817,146	Apr. 3	1173	242	121	1620
Lamp. Vapor electric	T. B. Kinraide	817,976	Apr. 17	2850	617	121	2096
Lamps. Adjustable support for incandescent electric	P. C. Hewitt	814,695	Mar. 13	1413	294	121	368
Lamps. Device for supporting cables of electric	O. T. Banks	816,636	Apr. 3	190	45	121	1403
Lamps. Electrical connector for electric	J. F. Burns	816,429	Mar. 27	4988	1059	121	1240
Lamps. Fastening metal collars to glass	E. A. Lowe	815,605	Mar. 20	3249	682	121	815
Lamps. Match-holder attachment for	J. W. Collins	814,432	Mar. 6	887	182	121	193
Lamps, &c. Plug-socket for electric	A. H. Stow	818,201	Apr. 17	3302	706	121	2193
Lamps. Producing vacuum-	F. J. Russell	818,791	Apr. 24	4507	963-4	121	2506
Lamps. Receptacle for incandescent electric	D. M. Moore	814,794	Mar. 13	1610	338	121	411
Lamps. Receptacle for incandescent electric	A. P. Seymour	817,396	Apr. 10	1686	356	121	1788
Land-roller	A. P. Seymour	817,449	Apr. 10	1796	377	121	1811
Land-roller, furrow opener, and marker. Combined	J. C. F. Kelch	818,097	Apr. 17	3077	664	121	2144
Lantern	A. Macdonell	814,716	Mar. 13	1452	304	121	377
Lantern crank mechanism	J. H. Hill	817,914	Apr. 17	2727	592	121	2068
Lantern-globes. Lever-lift for	A. L. Edwards	814,644	Mar. 6	1282	269	121	277
Lantern mechanism. Vehicle-	D. C. Kline	817,430	Apr. 10	1759	369	121	1803
Lantern. Tubular	W. B. White	816,696	Apr. 3	302	70	121	1427
Lantern. Tubular	E. C. Everett	815,276	Mar. 13	2551	537	121	614
Lanterns. Bail-support for	J. E. Johnson	817,372	Apr. 10	1630	344	121	1777
Lap-board or sewing-table	A. R. Pritchard	817,387	Apr. 10	1661	352	121	1783
Last	K. M. Moore	815,200	Mar. 13	2425	506	121	588
Last	E. C. Woodard	817,828	Apr. 17	2542	546	121	2027
Last	A. G. Fitz	817,966	Apr. 17	2837	614	121	2094
Last. Shoe-	G. E. Belcher	818,407	Apr. 24	3714	797	121	2335
Lasting and sewing machine for boots and shoes	G. Raisbeck	818,048	Apr. 17	2991	646	121	2126
Lasting boots and shoes. Upper-holding clamp for	J. Keats	818,766	Apr. 24	4451	954-5	121	2495
Lasting-machine	J. O. Jones	817,373	Apr. 10	1631	344-5	121	1777
Latch	C. V. de Lummen	816,587	Apr. 3	69	16-17	121	1371
Latch	A. B. Vanes	815,493	Mar. 20	3038	634	121	770
Latch	J. W. Pettijohn	815,553	Mar. 20	3158	661	121	795
Latch	W. H. Taylor	817,455	Apr. 10	1811	380-1	121	1815
Latch. Alarm-	A. Shepard	817,878	Apr. 17	2647	575	121	2049
Latch. Double automatic	C. E. C. Edey	818,362	Apr. 17	3609	773-4	121	2257
Latch. Gate-	F. C. Anderson	815,136	Mar. 13	2282	477	121	553
Latch. Knob-	E. O. Baylor	814,665	Mar. 13	1343	280	121	352
Latch. Spring-	J. Christensen	814,186	Mar. 6	356	73	121	78
Lath-supporting means. Metallic-	J. L. Zesiger	816,835	Apr. 3	572	119	121	1486
Lathe	M. Hegbom	815,292	Mar. 13	2586	544	121	623
Lathe attachment	J. J. Pealing and J. D. Harrison	815,733	Mar. 20	3534	741-2	121	877
Lathe-dog	C. G. Taylor	817,885	Apr. 17	2663	579	121	2052
Lathe-driver	A. Krus	818,454	Apr. 24	3796	815	121	2352
Lathes. Gearing-indicator for screw-cutting	D. H. Teas	815,659	Mar. 20	3363	704	121	841
Lathes. Thread-cutting tool for	H. Möhlenbruck	814,467	Mar. 6	946	193	121	206
	O. G. Simmons	817,451	Apr. 10	1806	379	121	1814

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lattice	P. Jaeger	817,716	Apr. 10	2277	491	121	1911
Laundry-register	G. R. James	815,174	Mar. 13	2355	493	121	570
Lawn-edge trimmer and ditcher	J. M. Aldrich	818,510	Apr. 24	3916	843	121	2376
Lawn-sprinkler	O. P. Waggener	815,495	Mar. 20	3045	635	121	771
Lawn-trimmer	H. B. Pitner	818,708	Apr. 24	4329	928	121	2467
Leach-pitcher	J. C. Dunn	818,752	Apr. 24	4430	947–8	121	2490
Lead-cutters, &c. Gage attachment for	G. M. Durell	814,193	Mar. 6	370	75–6	121	81
Leaf-turner	F. G. Lavin	815,183	Mar. 13	2386	497	121	578
Leaf-turner	M. J. Brennan	816,068	Mar. 27	4242	898	121	1087
Leather and the like. Implement for cutting	E. R. Shaw	815,643	Mar. 20	3335	698–9	121	835
Leather. Dyeing	R. Rieder	816,378	Mar. 27	4875	1034	121	1217
Ledger	W. N. Winfield and J. Barker	814,894	Mar. 13	1779	372	121	446
Ledger	W. Wylie	816,521	Mar. 27	5168	1096	121	1281
Ledger-leaf	L. E. Shipman	814,239	Mar. 6	460	95	121	99
Ledger. Loose-leaf	L. M. Landing	817,255	Apr. 10	1415	298	121	1731
Ledger. Loose-leaf	F. Bollenbach	818,605	Apr. 24	4119	885	121	2421
Ledger system. Extended	F. W. Briggs	815,259	Mar. 13	2523	526–30	121	609
Lens-grinding tool	J. L. Borsch, Jr	816,555	Apr. 3	8	2	121	1356
Lenses. Machine for making bifocal	T. Mundorff	817,503	Apr. 10	1906	401–2	121	1835
Letter-box	G. L. Pask	816,366	Mar. 27	4855	1029	121	1213
Level. Spirit-	J. Martin	815,191	Mar. 13	2397	500	121	580
Level. Spirit-	N. D. Chase	817,467	Apr. 10	1841	386	121	1830
Level-surfacing machine	R. McCoy	815,460	Mar. 20	2990	623	121	759
Leveling instrument	E. A. Boetrom	814,111	Mar. 6	217	42	121	47
Lever with locking device. Hand-	J. Kunz	814,301	Mar. 6	589	123–4	121	127
Lid-holding tie	A. W. Gaddum	817,312	Apr. 10	1518	318	121	1751
Life-buoy	J. Meller	817,652	Apr. 10	2177	462	121	1890
Life-net	F. S. Fearrington	817,107	Apr. 3	1089	226	121	1600
Life-preserver	M. Wikstrom	815,394	Mar. 20	2870	596	121	732
Life-saving apparatus	B. Carlsen	814,518	Mar. 6	1038	215	121	226
Life-saving apparatus	A. Piller	816,681	Apr. 3	277	64	121	1421
Life-saving device	J. W. Dalton	814,116	Mar. 6	230	44	121	50
Life-saving raft	H. J. Matson	818,183	Apr. 17	3267	700	121	2186
Lifter: *See* Curtain-pole lifter. Stove-lifter. Ventilator-lifter. Window-lifter.							
Lifting heavy metallic plates. Device for	M. Maynard	815,452	Mar. 20	2975	619	121	756
Lifting-hook	L. L. Davis	815,148	Mar. 13	2307	482	121	559
Lifting-jack	E. T. Trefethen	814,576	Mar. 6	1152	240	121	250
Lifting-jack	W. E. Gaston	817,637	Apr. 10	2151	457	121	1884
Lifting-jack	I. C. Huffman	817,917	Apr. 17	2732	593	121	2069
Lifting-jack	J. H. Monteith	818,040	Apr. 17	2981	644	121	2124
Lifting-jack	W. J. Gray	818,436	Apr. 24	3765	809	121	2346
Lifting-jack and shaft-support. Combined	R. G. Morgan	816,113	Mar. 27	4332	917	121	1101
Light: *See* Drop-light. Electric light. Gas-light. Sidewalk-light. Vault-light.							
Light-beams. Apparatus for observing the oscillations of	A. W. Hornauer	815,831	Mar. 20	3755	789	121	924
Light-extinguisher. Time	A. W. Dyer and A. G. Spinney	817,840	Apr. 17	2564	550	121	2031
Light. Producing	P. C. Hewitt	814,696	Mar. 13	1414	294	121	369
Light reflecting and directing apparatus	A. Boas and C. Rodrigues-Ely	817,621	Apr. 10	2120	450	121	1878
Lighting purposes. Incandescing body for	W. von Bolton	817,734	Apr. 10	2330	501	121	1927
Lightning-arrester	F. K. Singer	814,482	Mar. 6	977	200	121	213
Limb. Artificial	H. Leonard	816,866	Apr. 3	633	132	121	1499
Limb. Artificial	R. Rosenkranz	817,340	Apr. 10	1565	329	121	1761
Limb joint. Artificial-	C. E. Kritsch	817,785	Apr. 17	2459	524	121	2008
Line-guide	W. R. McGowen	817,723	Apr. 10	2299	495	121	1918
Line-holder	T. A. Seitz	814,808	Mar. 13	1633	343	121	416
Line-reel	G. W. Williams	816,410	Mar. 27	4956	1053	121	1233
Lining-tool. Hand	E. R. Harris	816,794	Apr. 3	474	106	121	1462
Link. Leader-	W. E. Soper	816,264	Mar. 27	4622	981	121	1164
Linotype-machine	C. Muehleisen	814,469	Mar. 6	949	194–5	121	207
Linotype-machine	T. S. Homans	814,542	Mar. 6	1090	226	121	237
Linotype-machine	R. M. Bedell	816,841	Apr. 3	581	121	121	1488
Linotype-machine	P. T. Dodge	816,849	Apr. 3	596	125	121	1491
Linotype-machine	D. S. Kennedy	817,646	Apr. 10	2169	461	121	1888
Linotype-machine	C. L. Grohmann	818,243	Apr. 17	3389	727	121	2210
Linotype-machine	M. W. Morehouse	818,274	Apr. 17	3443	740	121	2223
Liquid-containing vessels. Stand for	O. Hammarlund	816,317	Mar. 27	4720	1002	121	1185
Liquid-elevating apparatus	H. C. O'Bleness and E. C. Merwin	814,072	Mar. 6	141	28	121	31
Liquid-fuel burner	J. R. Russell	814,396	Mar. 6	815	168	121	178
Liquid-meter	H. N. Denny and T. W. Richards	818,017	Apr. 17	2937	635	121	2115
Liquid-meter	K. Scotti	818,566	Apr. 24	4033	865	121	2401
Liquid-separator. Centrifugal	G. J. Bragg	817,465	Apr. 10	1836	385	121	1820
Liquid-trap	A. Goldfein	815,420	Mar. 20	2921	606	121	744
Liquid-treating apparatus	H. O. Fisher	816,448	Mar. 27	5020	1066	121	1247
Liquors. Apparatus for the manufacture of bisulfite	E. R. Barker	818,811	Apr. 24	4551	975–6	121	2516
Lister attachment	C. H. Soucek	817,812	Apr. 17	2510	537	121	2019
Listers, plows, and the like. Attachment for	L. N. Stewart	814,569	Mar. 6	1138	238	121	247
Loading apparatus	E. Ring	817,274	Apr. 10	1449	305	121	1737
Lock: *See* Air-lock. Bicycle-lock. Bottle-lock. Combination-lock. Door-lock. Gun-lock. Key-lock. Lamp-socket lock. Marine lock. Nut-lock. Permutation-lock. Pocket-book lock. Revolver-lock. Rifle set-lock. Sash-lock. Tumbler-lock. Window-lock.							
Lock	N. W. Webb	816,405	Mar. 27	4942	1050–1	121	1231
Lock	M. Mohr	816,492	Mar. 27	5107	1083	121	1266
Lock	E. R. Booth	816,705	Apr. 3	313	73	121	1421
Lock	O. H. P. Green and D. Carpenter	816,792	Apr. 3	471	105	121	1469

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Knockdown box	J. Adams	815,670	Mar. 20	3388	708	121	847
Knockdown box	J. J. White	816,629	Apr. 3	171	36	121	1399
Label and premium-coupon. Combined	H. B. Duane	814,592	Mar. 6	1180	247	121	256
Labeling-machine	F. O. Woodland	818,506	Apr. 24	3899	839	121	2373
Lace-making holder	C. Mantz	814,151	Mar. 6	293	59	121	65
Lacing	S. C. Abramson	818,991	Apr. 24	4877	1047	121	2586
Lacing-tip-forming machine	C. F. Pinkham	817,872	Apr. 17	2633	571-3	121	2047
Ladder. Aerial	A. W. Shaw	818,304	Apr. 17	3504	752-3	121	2235
Ladder and bracket construction	J. M. Jones	817,174	Apr. 10	1235	254	121	1694
Ladder and ironing-board. Combined step-	A. Scott	814,877	Mar. 13	1752	367	121	440
Ladder. Combination step and extension	P. C. Plaster	815,736	Mar. 20	3538	743	121	878
Ladders. Antislip attachment for	H. D. Hinckley	816,914	Apr. 3	730	151	121	1520
Lamp	J. C. and J. W. Aschenbach	814,183	Mar. 6	351	72	121	76
Lamp	W. T. Maney	814,225	Mar. 6	435	89-90	121	94
Lamp	T. D. Davis	814,361	Mar. 6	734	149	121	162
Lamp. Alcohol-	A. A. Warner	815,884	Mar. 20	3861	819	121	945
Lamp-bulbs. Blowing off the necks of	E. L. Elliott	818,674	Apr. 24	4255	915	121	2451
Lamp-burner	C. H. Dressel	814,591	Mar. 6	1179	247	121	256
Lamp-burner	E. D. Holley	816,232	Mar. 27	4555	970	121	1149
Lamp. Carbureting-	E. B. Ludwig	816,669	Apr. 3	251	59	121	1415
Lamp-chimney fastener	J. Stewart	816,949	Apr. 3	813	167	121	1539
Lamp-chimney holder	W. J. Snow	814,566	Mar. 6	1133	236	121	246
Lamp cluster. Incandescent-	H. Hubbell	817,642	Apr. 10	2161	458	121	1886
Lamp-collar	J. W. Collins	814,431	Mar. 6	886	182	121	193
Lamp. Electric hand-	H. F. Stakelbeck	817,346	Apr. 10	1579	333	121	1765
Lamp. Electric incandescent	W. J. Phelps	814,162	Mar. 6	315	63	121	69
Lamp. Electric incandescent	W. von Bolton	817,732	Apr. 10	2327	500	121	1927
Lamp. Electric incandescent	O. Feuerlein	819,009	Apr. 24	4911	1055	121	2594
Lamp-extinguisher	J. E. Richardson	815,215	Mar. 13	2452	511	121	594
Lamp. Gas-	R. M. Dixon	814,120	Mar. 6	239	45	121	52
Lamp. Gas-	R. M. Dixon	814,121	Mar. 6	243	46	121	54
Lamp. Gas-	F. A. Ray	818,789	Apr. 24	4498	962-3	121	2504
Lamp. Gas-	F. A. Ray	818,790	Apr. 24	4502	963	121	2505
Lamp-holder	T Sharp	816,504	Mar. 27	5132	1088	121	1271
Lamp holder. Electric-incandescent-	P. Leonard and C. H. Jones	816,483	Mar. 27	5092	1080	121	1262
Lamp. Incandescent gas-	J. G. A. Kitchen	814,142	Mar. 6	277	56	121	61
Lamp. Miner's	F. A. Smith	814,241	Mar. 6	461	96	121	99
Lamp. Miner's	E. D. Hodson	816,725	Apr. 3	344	79	121	1436
Lamp. Miner's	T. T. Carter and S. J. Thompson	818,871	Apr. 24	4653	999	121	2537
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Lawn-trimmer	H. B. Pitner	818,708	Apr. 24	4329	928	121	2467
Leach-pitcher	J. C. Dunn	818,752	Apr. 24	4430	947–8	121	2490
Lead-cutters, &c. Gage attachment for	G. M. Durell	814,193	Mar. 6	370	75–6	121	81
Leaf-turner	F. G. Lavin	815,183	Mar. 13	2386	497	121	578
Leaf-turner	M. J. Brennan	816,068	Mar. 27	4242	898	121	1087
Leather and the like. Implement for cutting	E. R. Shaw	815,643	Mar. 20	3335	698–9	121	835
Leather. Dyeing	R. Rieder	816,378	Mar. 27	4875	1034	121	1217
Ledger	W. N. Winfield and J. Barker	814,894	Mar. 13	1779	372	121	446
Ledger	W. Wylie	816,521	Mar. 27	5168	1096	121	1281
Ledger-leaf	L. E. Shipman	814,239	Mar. 6	460	95	121	99
Ledger. Loose-leaf	L. M. Landing	817,255	Apr. 10	1415	298	121	1731
Ledger. Loose-leaf	F. Bollenbach	818,605	Apr. 24	4119	885	121	2421
Ledger system. Extended	F. W. Briggs	815,259	Mar. 13	2523	526–30	121	609
Lens-grinding tool	J. L. Borsch, Jr	816,555	Apr. 3	8	2	121	1356
Lenses. Machine for making bifocal	T. Mundorff	817,503	Apr. 10	1908	401–2	121	1835
Letter-box	G. L. Pask	816,366	Mar. 27	4855	1029	121	1213
Level. Spirit-	J. Martin	815,191	Mar. 13	2397	500	121	580
Level. Spirit-	N. D. Chase	817,467	Apr. 10	1841	386	121	1820
Level-surfacing machine	R. McCoy	815,460	Mar. 20	2990	623	121	759
Leveling instrument	E. A. Bostrom	814,111	Mar. 6	217	42	121	47
Lever with locking device. Hand-	J. Kunz	814,301	Mar. 6	589	123–4	121	127
Lid-holding tie	A. W. Gaddum	817,312	Apr. 10	1518	318	121	1751
Life-buoy	J. Meller	817,652	Apr. 10	2177	462	121	1890
Life-net	F. S. Fearrington	817,107	Apr. 3	1089	226	121	1600
Life-preserver	M. Wikstrom	815,394	Mar. 20	2870	596	121	732
Life-saving apparatus	B. Carlsen	814,518	Mar. 6	1038	215	121	226
Life-saving apparatus	A. Piller	816,681	Apr. 3	277	64	121	1421
Life-saving device	J. W. Dalton	814,116	Mar. 6	230	44	121	50
Life-saving raft	H. J. Matson	818,183	Apr. 17	3267	700	121	2186
Lifter:							
See Curtain-pole lifter. Stove-lifter. Ventilator-lifter. Window-lifter.							
Lifting heavy metallic plates. Device for	M. Maynard	815,452	Mar. 20	2975	619	121	756
Lifting-hook	L. L. Davis	815,148	Mar. 13	2307	482	121	559
Lifting-jack	E. T. Trefethen	814,576	Mar. 6	1152	240	121	250
Lifting-jack	W. E. Gaston	817,637	Apr. 10	2151	457	121	1884
Lifting-jack	I. C. Huffman	817,917	Apr. 17	2732	593	121	2069
Lifting-jack	J. H. Monteith	818,040	Apr. 17	2981	644	121	2124
Lifting-jack	W. J. Gray	818,436	Apr. 24	3765	809	121	2346
Lifting-jack and shaft-support. Combined	R. G. Morgan	816,113	Mar. 27	4332	917	121	1101
Light:							
See Drop-light. Electric light. Gas-light. Sidewalk-light. Vault-light.							
Light-beams. Apparatus for observing the oscillations of	A. W. Hornauer	815,831	Mar. 20	3755	789	121	924
Light-extinguisher. Time	A. W. Dyer and A. G. Spinney	817,840	Apr. 17	2564	550	121	2031
Light. Producing	P. C. Hewitt	814,696	Mar. 13	1414	294	121	369
Light reflecting and directing apparatus	A. Boas and C. Rodrigues-Ely	817,621	Apr. 10	2120	450	121	1878
Lighting purposes. Incandescing body for	W. von Bolton	817,734	Apr. 10	2330	501	121	1927
Lightning-arrester	F. K. Singer	814,482	Mar. 6	977	200	121	213
Limb. Artificial	H. Leonard	816,866	Apr. 3	633	132	121	1499
Limb. Artificial	R. Rosenkranz	817,340	Apr. 10	1565	329	121	1761
Limb joint. Artificial-	C. E. Kritsch	817,785	Apr. 17	2459	524	121	2008
Line-guide	W. R. McGowen	817,723	Apr. 10	2299	495	121	1918
Line-holder	T. A. Seitz	814,808	Mar. 13	1633	343	121	416
Line-reel	G. W. Williams	816,410	Mar. 27	4956	1053	121	1233
Lining-tool. Hand	E. R. Harris	816,794	Apr. 3	474	106	121	1462
Link. Leader-	W. E. Soper	816,264	Mar. 27	4622	981	121	1164
Linotype-machine	C. Muehleisen	814,469	Mar. 6	949	194–5	121	207
Linotype-machine	T. S. Homans	814,542	Mar. 6	1090	226	121	237
Linotype-machine	R. M. Bedell	816,841	Apr. 3	581	121	121	1488
Linotype-machine	P. T. Dodge	816,849	Apr. 3	596	125	121	1491
Linotype-machine	D. S. Kennedy	817,646	Apr. 10	2169	461	121	1988
Linotype-machine	C. L. Grohmann	818,243	Apr. 17	3389	727	121	2210
Linotype-machine	M. W. Morehouse	818,274	Apr. 17	3443	740	121	2223
Liquid-containing vessels. Stand for	O. Hammarlund	816,317	Mar. 27	4720	1002	121	1185
Liquid-elevating apparatus	H. C. O'Bleness and E. C. Merwin	814,072	Mar. 6	141	28	121	31
Liquid-fuel burner	J. R. Russell	814,396	Mar. 6	815	168	121	178
Liquid-meter	H. N. Denny and T. W. Richards	818,017	Apr. 17	2937	635	121	2115
Liquid-meter	K. Scotti	818,566	Apr. 24	4033	865	121	2401
Liquid-separator. Centrifugal	G. J. Bragg	817,465	Apr. 10	1836	385	121	1820
Liquid-trap	A. Goldfein	815,420	Mar. 20	2921	606	121	744
Liquid-treating apparatus	H. O. Fisher	816,448	Mar. 27	5020	1066	121	1247
Liquors. Apparatus for the manufacture of bisulfite	E. R. Barker	818,811	Apr. 24	4551	975–6	121	2516
Lister attachment	C. H. Soucek	817,812	Apr. 17	2510	537	121	2019
Listers, plows, and the like. Attachment for	L. N. Stewart	814,569	Mar. 6	1138	238	121	247
Loading apparatus	E. Ring	817,274	Apr. 10	1449	305	121	1737
Lock:							
See Air-lock. Bicycle-lock. Bottle-lock. Combination-lock. Door-lock. Gun-lock. Key-lock. Lamp-socket lock. Marine lock. Nut-lock. Permutation-lock. Pocket-book lock. Revolver-lock. Rifle set-lock. Sash-lock. Tumbler-lock. Window-lock.							
Lock	N. W. Webb	816,405	Mar. 27	4942	1050–1	121	1231
Lock	M. Mohr	816,492	Mar. 27	5107	1083	121	1266
Lock	E. R. Booth	816,705	Apr. 3	313	73	121	1421
Lock	O. H. P. Green and D. Carpenter	816,792	Apr. 3	471	105	121	1469

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Lock	C. E. Turner and R. L. Hyman	817,456	Apr. 10	1813	381	121	1816
Lock	M. F. Hutchison	817,567	Apr. 10	2031	428	121	1859
Lock	B. Phelps	819,024	Apr. 24	4940	1080	121	3601
Lock and latch mechanism	B. Phelps	815,976	Mar. 27	4032	854	121	1034
Lock-indicator	W. I. Fox	816,310	Mar. 27	4707	999	121	1183
Locks. Key-holding attachment for	H. A. Seager	818,199	Apr. 17	3299	705	121	2193
Locking and squaring device	E. D. Allen	817,740	Apr. 17	2347	504	121	1985
Locking device	G. Holden	818,443	Apr. 24	3774	811	121	2348
Locket, photograph-pendant, frame, charm, and the like.	T. Wilcox	817,944	Apr. 17	2793	604–5	121	2084
Locomotive attachment	S. G. Stevens	816,688	Apr. 3	286	66	121	1423
Locomotive cylinder. Steam-	H. Lentz	814,148	Mar. 6	290	58	121	64
Locomotive-roundhouses. Hood and smoke-pipe for	E. S. Piper	818,784	Apr. 24	4491	961	121	2503
Locomotive sand-box	W. H. Clowry	816,073	Mar. 27	4254	902	121	1085
Locomotive snow and ice flanger	F. C. Arey	816,526	Mar. 27	5179	1099	121	1283
Locomotive spark-preventer	D. Drummond	817,474	Apr. 10	1854	389	121	1823
Log-chock	J. E. Knight	816,339	Mar. 27	4796	1015	121	1200
Log-turner	S. J. Bens	818,142	Apr. 17	3184	685	121	2168
Logging apparatus	J. Butler	816,640	Apr. 3	200	46–7	121	1405
Loom brake mechanism	R. Crompton	816,534	Mar. 27	5192	1101	121	1286
Loom filling-replenishing mechanism	N. Foerster and D. J. Carey	817,236	Apr. 10	1365	287–8	121	1722
Loom filling stop-motion	N. Foerster, D. J. Carey, and W. A. Foster.	815,952	Mar. 27	3989	845	121	1025
Loom for weaving pile fabrics	W. C. Gray and W. McKenzie	815,526	Mar. 20	3105	648–9	121	784
Loom for weaving tubular fabrics	G. A. Pickup	815,555	Mar. 20	3161	662–4	121	795
Loom harness-controlling mechanism	P. Cassidy and A. A. St. Laurent	818,743	Apr. 24	4398	941–2	121	2483
Loom harness-motion	C. F. Roper	817,806	Apr. 17	2498	534–5	121	2017
Loom selvage stop-motion	E. G. Gustafson and H. G. Olsson	817,144	Apr. 3	1168	241	121	1619
Loom shed-forming mechanism	R. Crompton	816,535	Mar. 27	5193	1102	121	1286
Loom shedding mechanism	C. H. Draper	818,019	Apr. 17	2941	635	121	2116
Loom shedding motion	G. Giussani	817,763	Apr. 17	2393	513–14	121	1994
Loom-shuttle	R. D. Fraser	814,033	Mar. 6	73	13	121	17
Loom-shuttle	J. Bim	814,349	Mar. 6	711	143	121	156
Loom-shuttle	W. H. Wilson	814,494	Mar. 6	995	204	121	217
Loom shuttle-check	J. Laforêt	818,034	Apr. 17	2968	641	121	2122
Loom-shuttle spindles. Device for applying cops to	M. Hellich	817,770	Apr. 17	2413	516	121	1998
Loom stop-indicator	J. A. Collins	818,148	Apr. 17	3193	687	121	2170
Loom stop-motion. Circular-	C. G. Hill	814,290	Mar. 6	560	118–19	121	121
Loom-stopping mechanism	J. Coldwell	818,352	Apr. 17	3593	769–70	121	2253
Loom. Swivel-	J. H. Farrar	815,152	Mar. 13	2312	484	121	560
Loom-temple	F. Ott	817,334	Apr. 10	1554	327	121	1759
Loom warp stop-motion	N. Foerster	818,367	Apr. 17	3620	776–7	121	2260
Loom weft-fork	T. Hilton	817,915	Apr. 17	2729	592	121	2068
Loom. Weft-replenishing	N. Foerster, D. J. Carey, and W. A. Foster.	815,951	Mar. 27	3987	844–5	121	1025
Loom weft-replenishing mechanism	F. O'Donnell	816,364	Mar. 27	4851	1028	121	1212
Loom weft-replenishing mechanism	N. Foerster	817,237	Apr. 10	1370	288	121	1722
Looms. Automatic filling-replenishing mechanism for	N. Foerster	815,948	Mar. 27	3980	843	121	1023
Looms. Feeler stop-motion for automatic	J. A. Perkins and A. A. St. Laurent	817,445	Apr. 10	1788	376	121	1809
Looms. Hopper for filling-replenishing	E. Cunniff	817,047	Apr. 3	994	203	121	1579
Looms. Thread-parting mechanism for	O. Benson	815,786	Mar. 20	3653	768	121	902
Looping-machine	S. T. Harshaw	818,374	Apr. 17	3633	779–80	121	2262
Lowering device. Safety	V. R. and E. H. Browning	814,828	Mar. 13	1673	350	121	425
Lubricating device	G. A. Bronder	815,260	Mar. 13	2527	530	121	609
Lubricating device	W. E. Moore and J. W. Bridge	817,084	Apr. 3	1053	218	121	1592
Lubricating journal-bearings. Device for	F. J. Randall	816,253	Mar. 27	4595	977	121	1158
Lubricating mechanism	C. C. Riotte	816,741	Apr. 3	369	86	121	1442
Lubricating-pads. Woven fabric for	E. Mooney	814,152	Mar. 6	294	59	121	65
Lubricating system	H. W. Elliott	818,364	Apr. 17	3616	775	121	2259
Lubricating under pressure. Device for	L. M. G. Delaunay-Belleville	817,629	Apr. 10	2140	453	121	1882
Lubricator: *See* Axle-lubricator. Axle-box lubricator. Bearing-lubricator. Car-wheel-flange lubricator. Force-feed lubricator. Journal-lubricator. Mechanical lubricator.							
Lubricator	W. E. Bryant, G. M. Wolcott, and R. Davidson.	814,016	Mar. 6	21	4–5	121	6
Lubricator	C. Rutz	814,082	Mar. 6	160	32	121	36
Lubricator	F. C. Le Messurier	814,147	Mar. 6	287	57	121	63
Lubricator	H. J. Brown	814,269	Mar. 6	523	108	121	112
Lubricator	L. Gleason	815,088	Mar. 13	2174	458	121	529
Lubricator	G. Sloan	817,529	Apr. 10	1955	413	121	1844
Lubricator	C. E. Graebing	818,160	Apr. 17	3216	691	121	2175
Luminous areas. Device for comparing	W. D. Ryan	815,865	Mar. 20	3829	811	121	939
Machinery. Folding	E. H. Cottrell	818,611	Apr. 24	4135	888–9	121	2425
Magnesium perborate	O. Liebknecht	816,925	Apr. 3	757	.....	121	1526
Magnetic actuator	D. Bacon	817,687	Apr. 10	2233	479	121	1903
Magnetic separation	F. T. Snyder	817,399	Apr. 10	1691	356–7	121	1789
Magnifying-glasses. Reflector for	C. E. Bunker	817,902	Apr. 17	2709	588	121	2064
Mail-bag catcher	F. D. Smiley	814,090	Mar. 6	180	36	121	39
Mail-bag catcher	D. F. Stokes	814,630	Mar. 6	1254	264	121	272
Mail-bag catcher	W. T. and E. B. Whitesell	818,592	Apr. 24	4079	876	121	2411
Mail-bag catching and delivering mechanism	W. T. Rook	818,470	Apr. 24	3819	821–2	121	2357
Mail-bag clamp	J. A. Engle	817,308	Apr. 10	1512	317	121	1750
Mail-bag-delivery apparatus	J. T. Nash	816,878	Apr. 3	658	136–7	121	1504
Mail-box	D. T. Buckwalter	815,263	Mar. 13	2532	532	121	611
Mail-box	W. E. and G. Weston	815,770	Mar. 20	3618	760	121	895
Mail-box	W. A. Wheeler	816,200	Mar. 27	4500	955	121	1137
Mail-box lids. Device for operating	A. Seaton	817,591	Apr. 10	2072	437	121	1808
Mail-box. Rural	J. A. Brown and B. Bybee	814,428	Mar. 6	881	180	121	192
Mail-box. Rural	C. F. Farrar	815,585	Mar. 20	3212	676	121	807
Mail-carrier. Electric automatic	M. Danner	816,649	Apr. 3	216	50–1	121	1408
Mail-case	A. Robinson	817,003	Apr. 3	915	189	121	1561
Mail collection and delivery box	J. I. Fullwood	818,241	Apr. 17	3385	726	121	2210
Mail-delivery apparatus	H. McCabe	816,876	Apr. 3	652	135	121	1503

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mail-deposit box. Letter-carrier's	T. V. Davis	817,048	Apr. 3	996	204	121	1580
Mailing-box	G. A. Owen	817,186	Apr. 10	1265	262–3	121	1700
Mailing-card. Photographic	S. A. Markoff	816,870	Apr. 3	643	133	121	1501
Malt-drying apparatus	E. Ellermann	817,698	Apr. 10	2247	483	121	1906
Malt-stirring apparatus	J. F. Dornfeld	815,275	Mar. 13	2548	536–7	121	613
Mangle	G. Hatch	815,820	Mar. 20	3720	784	121	916
Manholes. Cover for road-	F. Baumann	814,013	Mar. 6	17	4	121	6
Manifolding apparatus	J. Bengough, J. A. Tansley, and W. J. Reidell.	816,063	Mar. 27	4224	895	121	1077
Mantle suspension	C. M. Lungren	814,912	Mar. 13	1806	378	121	452
Manure-distributer	S. H. Garst	817,704	Apr. 10	2257	485–6	121	1907
Marble. Manufacture of plates or slabs imitating	O. Devillers	817,963	Apr. 17	2829	.....	121	2092
Marine lock	J. Diamant	816,970	Apr. 3	850	175	121	1546
Mask. Catcher's	J. Gamble	814,127	Mar. 6	254	48	121	56
Mask. Face-	H. E. Southworth	814,741	Mar. 13	1503	317–18	121	389
Massage apparatus	G. B. Fraley	818,618	Apr. 24	4150	892	121	2428
Massage appliance	E. S. Saighman	816,748	Apr. 3	381	88	121	1444
Massage instrument	W. G. Shelton	816,506	Mar. 27	5137	1088–9	121	1272
Massage treatment. Vibrator for	W. Olson	816,365	Mar. 27	4854	1029	121	1212
Massaging-machine. Hand-gear vibratory	J. V. Daniels	816,564	Apr. 3	20	6	121	1358
Masticator	H. Laurent	816,104	Mar. 27	4310	912	121	1096
Mat: *See* Putting-mat.							
Match-box	R. L. Heafer	818,246	Apr. 17	3402	728	121	2213
Match-box	B. M. Whiteker	818,324	Apr. 17	3545	759–60	121	2244
Match-box. Safety	R. L. Storm	814,745	Mar. 13	1508	319	121	390
Match-box. Self-striking	M. Larsen	815,596	Mar. 20	3233	679	121	812
Match-box. Single-delivery	[illegible] Hunnicutt	816,799	Apr. 3	482	107	121	1463
Match-machine	W. H. Wyman	816,634	Apr. 3	182	39–44	121	1402
Match-making machine	W. R. Hope and G. A. Robinson	814,210	Mar. 6	402	81–4	121	87
Match-making machinery	B. G. Vaughan	816,623	Apr. 3	164	33–4	121	1397
Match-scratcher	G. A. Smith	817,995	Apr. 17	2889	624	121	2106
Matching-machine. Gang	G. E. Priest	816,039	Mar. 27	4172	884	121	1067
Matrices. Making	E. Albert	815,001	Mar. 13	1990	418	121	488
Matte. Treating	W. M. Johnson	814,049	Mar. 6	100	.....	121	23
Mattress	F. Martin	815,610	Mar. 20	3259	684	121	818
Mattress, cushion, &c. Pneumatic	R. A. Whall	818,321	Apr. 17	3542	759	121	2243
Mattress. Sectional	H. C. Kee	814,654	Mar. 6	1304	274	121	282
Mattress stretcher. Wire-	J. B. Wilson	818,502	Apr. 24	3882	835	121	2370
Measurer and recorder. Liquid-flow	J. E. Lea	815,102	Mar. 13	2202	464	121	534
Measuring and delivering liquids. Apparatus for	G. L. Spencer	818,481	Apr. 24	3836	825	121	2360
Measuring and registering device. Combined	J. Barry and M. L. Shaughnessy	818,405	Apr. 24	3710	796	121	2334
Measuring, counting, and cutting off fabric. Machine for	W. C. Perry	815,861	Mar. 20	3822	809–10	121	937
Measuring device for concrete-mixers	J. Muir	817,436	Apr. 10	1771	371	121	1806
Measuring-drum	G. A. Bronder	817,834	Apr. 17	2553	548	121	2029
Measuring instrument	E. W. Campagna	815,509	Mar. 20	3070	640	121	776
Measuring instrument	F. L. Traut	817,205	Apr. 10	1308	273	121	1709
Measuring instrument	V. J. O'Connor	818,906	Apr. 24	4714	1011	121	2550
Measuring instrument. Angle-	F. E. Hutchins	814,292	Mar. 6	564	119–20	121	121
Measuring instrument. Electrical	J. C. Gano	817,843	Apr. 17	2573	553–4	121	2034
Measuring instrument. Electrical	J. M. Lea	817,857	Apr. 17	2600	561–2	121	2039
Measuring instrument. Electrical	J. Patrick	817,869	Apr. 17	2629	569–70	121	2045
Measuring vessel	C. Schock	818,643	Apr. 24	4199	903	121	2440
Meat-roaster	D. G. Walker	814,752	Mar. 13	1519	322	121	392
Meat roller or wringer	B. L. Packard	817,510	Apr. 10	1922	405	121	1838
Meat-tenderer and vegetable-chopper	F. Beuckman	816,955	Apr. 3	824	169	121	1540
Mechanical lubricator	M. Briet	815,508	Mar. 20	3069	640	121	776
Mechanical motor	C. Dackiewicz	816,437	Mar. 27	4999	1062	121	1242
Mechanical motor and brake	A. W. Bartlett	818,406	Apr. 24	3712	796	121	2335
Mechanical movement	D. Ashworth	814,010	Mar. 6	5	1–2	121	3
Mechanical movement	H. Brammer	814,185	Mar. 6	355	72	121	77
Mechanical movement	S. H. Garst	814,686	Mar. 13	1400	292	121	366
Mechanical movement	A. Plagman	815,309	Mar. 13	2630	551	121	632
Mechanical movement	F. H. Richards	815,979	Mar. 27	4037	855	121	1035
Mechanical movement	O. L. Field	816,546	Mar. 27	5222	1108	121	1294
Medical appliance	F. S. Russell	816,746	Apr. 3	379	88	121	1443
Medical appliance	J. P. Whedon	817,288	Apr. 10	1475	309	121	1742
Medical applicator	H. H. Groth	814,038	Mar. 6	79	15	121	19
Medicines. Making	R. Gross	816,547	Mar. 27	5224	.....	121	1294
Melting device. Centrifugal	T. J. Zoeller	816,055	Mar. 27	4203	892	121	1073
Merry-go-round	C. M. Stevenson	816,689	Apr. 3	288	67	121	1424
Metal bars or rods. Machine for making	J. W. Moshier	817,085	Apr. 3	1055	219	121	1592
Metal beams or girders. Machine for cutting up or mitering flanged	J. Krüger	818,453	Apr. 24	3793	815	121	2352
Metal bending and straightening machine	K. C. Gardner	815,282	Mar. 13	2565	539–40	121	618
Metal-bending appliance	C. E. Pickrell	817,386	Apr. 10	1660	351	121	1783
Metal-bending machine	A. W. Heinle	817,246	Apr. 10	1390	293	121	1727
Metal-bending machine	D. M. Baxter	818,932	Apr. 24	4766	1024	121	2562
Metal-corroding apparatus	G. D. Coleman	814,430	Mar. 6	884	181	121	192
Metal cutting and trimming machine	C. T. Murray	817,263	Apr. 10	1426	300	121	1732
Metal-cutting machine	F. Wesel	816,196	Mar. 27	4496	954	121	1136
Metal-heating apparatus	F. J. Clinch-Jones	818,147	Apr. 17	3192	686–7	121	2169
Metal-leaching	T. B. Joseph	814,452	Mar. 6	915	.....	121	199
Metal open-work fabric	J. F. Golding	814,689	Mar. 13	1405	292	121	367
Metal plates. Die for cutting out	C. B. Agar	817,611	Apr. 10	2106	445–6	121	1875
Metal-teeming apparatus	H. S. Heichert	817,063	Apr. 3	1022	210–11	121	1585
Metal-working machines. Feed-adjusting device for the cross-slides of	B. M. W. Hanson	814,649	Mar. 6	1296	272	121	280
Metals. Apparatus for extruding	N. A. Robertson	814,731	Mar. 13	1477	310–11	121	383
Metals. Apparatus for extruding	N. A. Robertson	814,732	Mar. 13	1480	311	121	384
Metals. Homogeneous body of highly-refractory	W. von Bolton	817,733	Apr. 10	2328	.....	121	1927
Metallic compounds. Manufacture of	S. Parfitt	818,044	Apr. 17	2987	.....	121	2125
Metallic leaf. Package-roll of	W. H. Coe	819,001	Apr. 24	4893	1050	121	2590
Metallic structure	V. J. Niele	817,508	Apr. 10	1917	403–4	121	1837
Metallic tie	B. A. Legg	815,718	Mar. 20	3491	731	121	869

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Invention	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Metallic tie	J. A. Wilkinson	818,067	Apr. 17	3024	654	121	2133
Metallic tube. Flexible	E. T. Greenfield	817,057	Apr. 3	1014	209	121	1583
Metallurgical furnace	G. H. Benjamin	817,099	Apr. 3	1077	223–4	121	1597
Metallurgical process	F. T. Snyder	814,810	Mar. 13	1636	343	121	416
Meter:							
See Electric meter. Gas-meter. Liquid-meter. Speed-meter. Water-meter.							
Meter	J. A. Tilden	817,887	Apr. 17	2667	580	121	2053
Meters. Coin attachment for prepayment-	J. Doyle and C. F. Averill	815,945	Mar. 27	3973	842	121	1022
Microscope-stand. Pivotable	C. Reichert and B. Heyne	814,565	Mar. 6	1132	236	121	246
Milk-cooler	G. Matteson	814,614	Mar. 6	1221	256	121	264
Milking appliance	R. Wallace	814,487	Mar. 6	985	202	121	215
Milking-machine	G. Hutchinson	814,212	Mar. 6	412	85	121	90
Milking-machine	M. Carmickle	815,145	Mar. 13	2303	481	121	558
Milking-machine	D. Klein	816,583	Apr. 3	51	13	121	1366
Milking-shield	J. W. Hughes	815,429	Mar. 20	2938	609	121	748
Mill:							
See Ball-mill. Cider-mill. Coffee-cutting mill. Crushing-mill. Feed-mill. Grinding-mill. Grist-mill. Pulverizing-mill. Rolling-mill. Stamp-mill. Swaging-mill. Windmill.							
Mill	J. Cihalewski	814,672	Mar. 13	1357	283–4	121	355
Mill	D. L. Adelsperger	817,610	Apr. 10	2103	445	121	1874
Millinery-box	C. A. Leyh	815,543	Mar. 20	3143	657–8	121	792
Mineral deposits. Apparatus for detecting and localizing	L. Daft and A. Williams	817,736	Apr. 10	2334	502	121	1928
Miner's drill	C. C. Cranmer	816,562	Apr. 3	17	5	121	1358
Miner's drill	C. C. Cranmer	816,563	Apr. 3	18	5	121	1358
Mines, &c. Device for searching submarine	U. S. Sjöstrand	818,479	Apr. 24	3834	825	121	2360
Mining	A. G. Parker	818,188	Apr. 17	3275	701	121	2188
Mining-drill	F. Lonski	814,856	Mar. 13	1714	358	121	432
Mirror-holder	C. B. Moore	816,588	Apr. 3	71	17	121	1371
Miter-boxes and the like. Clamping attachment for	R. L. McCartney	818,275	Apr. 17	3445	741	121	2223
Miter-clamp	R. Dunne	817,906	Apr. 17	2715	589	121	2065
Miter-cutter	W. H. Trogden	816,279	Mar. 27	4648	986	121	1169
Mixer:							
See Concrete-mixer. Dough-mixer. Dough or bread mixer. Gas-mixer.							
Mixing apparatus for dry materials	G. Raps	814,233	Mar. 6	449	93	121	97
Mixing plant	C. E. Binnings	814,667	Mar. 13	1348	281	121	353
Moistening device	J. H. De Nike	817,105	Apr. 3	1088	226	121	1599
Moisture-proof structure	H. Feder	816,226	Mar. 27	4546	966	121	1147
Mold:							
See Brick-mold. Building-block mold. Casting-mold. Cement-building-wall mold. Cistern-mold. Ice-cream mold. Ingot-mold. Tile-mold. Tooth-mold.							
Mold	L. Landmann	814 304	Mar. 6	597	124–5	121	129
Mold compound	M. Ams	814,007	Mar. 6	1	.....	121	3
Mold-filling device	J. A. Johnson	818,093	Apr. 17	3073	662–3	121	2143
Mold-opening tool	A. G. Woodford	817,829	Apr. 17	2543	546	121	2027
Mold-pallet	O. M. Morse	815,109	Mar. 13	2221	467	121	539
Molds. Composition for	J. G. Weyer	816,833	Apr. 3	569	.....	121	1486
Molding apparatus	E. L. Aiken	817,831	Apr. 17	2548	546–7	121	2028
Molding-machine	C. Reed	814,476	Mar. 6	961	197–8	121	209
Molding-machine	D. D. Tracy and H. J. Keenan	816,831	Apr. 3	555	118–19	121	1480
Molding-machine	D. A. Schoeneman	817,008	Apr. 3	922	190	121	1562
Molding-machine	O. D. W. Inman	817,489	Apr. 10	1877	395–6	121	1827
Molding-machine. Convertible	E. H. Reed	817,189	Apr. 10	1273	264	121	1702
Molding-press. Hydraulic	P. Bonvillain	815,577	Mar. 20	3199	672–3	121	804
Moldings. Box for electric	J. L. Gleason	814,906	Mar. 13	1799	377	121	450
Monkey-wrench	A. T. Martin	815,449	Mar. 20	2970	618	121	755
Mop	J. F. Doebler, Jr	815,336	Mar. 20	2723	568	121	699
Mop head and wringer. Combined	N. Scholl	816,824	Apr. 3	543	116	121	1478
Mop head and wringer. Combined	W. R. Wiley	818,498	Apr. 24	3873	834	121	2368
Mop-wringer	S. Krainik	815,539	Mar. 20	3135	655	121	790
Mop-wringer	T. J. Putnam	818,467	Apr. 24	3815	820	121	2357
Mop-wringer	W. H. Wetmore	818,722	Apr. 24	4357	933	121	2473
Mosquito-net	J. W. Graeme	818,882	Apr. 24	4671	1002	121	2541
Mosquito-net frame	E. L. Awtry	816,895	Apr. 3	692	142	121	1512
Motion. Mechanism for converting rotary into reciprocatory	L. Neumann	816,933	Apr. 3	772	158–9	121	1530
Motive-power engine	P. Daniel	817,905	Apr. 17	2713	589	121	2065
Motor:							
See Churn-motor. Current-motor. Damper-operating motor. Electric motor. Fan-motor. Induction-motor. Mechanical motor. Pneumatic motor. Rotary motor. Talking-machine motor. Tide and wave motor. Wave-motor. Wind-motor.							
Motor	C. H. Dill	814,362	Mar. 6	736	149	121	163
Motor	F. E. Lewis	815,444	Mar. 20	2963	616	121	754
Motor-control system	A. Magnuson	816,804	Apr. 3	490	109	121	1464
Motor-control system	A. Magnuson	816,805	Apr. 3	495	109	121	1466
Motor-control system	A. Magnuson	816,930	Apr. 3	764	158	121	1528
Motor-control system	A. Magnuson	816,931	Apr. 3	768	158	121	1529
Motor-control system. Electric-	C. A. Mudge	815,304	Mar. 13	2614	548–9	121	629
Motor-controlling device	C. A. Dresser	814,946	Mar. 13	1873	393	121	466
Motor-cutter	F. P. Jordan	814,964	Mar. 13	1911	401–2	121	473
Motor governor. Pneumatic-	J. W. Macy	816,169	Mar. 27	4441	940	121	1124

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Motor regulator. Gas and petroleum	H. Crouan	816,612	Apr. 24	4139	889–90	121	2426
Motor safety starting mechanism	A. H. Beecher	815,137	Mar. 13	2284	477	121	554
Motor-spring	A. M. Lane	817,378	Apr. 10	1641	348	121	1779
Motor-starter	E. Schattner	816,383	Mar. 27	4891	1039	121	1220
Motor wheel. Water-	B. B. Bush	817,546	Apr. 10	1992	420	121	1852
Motors. Flexible connection and suspension device for gearless	R. Siegfried	816,611	Apr. 3	142	29–30	121	1392
Motors. Flexible connection and suspension means for gearless	K. F. Elers	816,571	Apr. 3	30	8–9	121	1360
Motors. Flexible connection for gearless	R. Siegfried	816,610	Apr. 3	140	29	121	1391
Motors. Flexible connection for gearless	R. Siegfried	816,612	Apr. 3	145	30	121	1393
Motors. System for variable-speed operation of alternating-current	B. G. Lamme	814,380	Mar. 6	769	155	121	170
Mount	E. S. Cheney	817,043	Apr. 3	996	202	121	1578
Moving goods. Means for	T. P. Rudkins	818,053	Apr. 17	2997	647	121	2127
Mower. Lawn-	H. P. Terry	815,132	Mar. 13	2274	475	121	551
Mower. Lawn-	W. H. Coldwell	817,157	Apr. 10	1205	251	121	1687
Mowers. Grass-collector for lawn-	T. S. Sayre	818,301	Apr. 17	3498	751	121	2234
Mowing-machine	L. Wildermuth	815,242	Mar. 13	2502	521	121	605
Mowing-machine cutting apparatus	R. G. Coates	815,681	Mar. 20	3414	713	121	853
Mud-guard fastening	S. Davis	816,650	Apr. 3	221	51-2	121	1409
Muffler	B. E. Thompson	817,203	Apr. 10	1306	272	121	1708
Music-holder	W. Hill and W. Dalgarno	816,231	Mar. 27	4554	969	121	1148
Music-leaf turner	J. L. Dodge	817,550	Apr. 10	1999	421	121	1853
Music-leaf turner	C. E. Shuler	815,047	Mar 13	2099	441	121	513
Music-leaf turner	T. Steventon	815,873	Mar. 20	3844	815	121	941
Music-leaf-turning stand	J. A. Bitting	816,704	Apr. 3	311	72	121	1429
Music-turner	J. and J. C. Bahl	818,404	Apr. 24	3706	795–6	121	2334
Musical instrument	C. Christiansen, F. F. Noll, and E. L. Buchanan.	818,350	Apr. 17	3591	768	121	2253
Musical instrument. Electric	E. V. Molen	815,854	Mar. 20	3803	804	121	934
Musical instrument. Mechanical	M. L. Severy and G. B. Sinclair	814,878	Mar. 13	1755	367	121	441
Musical-instrument player. Automatic	C. A. Kuster	817,856	Apr. 17	2594	559–61	121	2038
Musical instrument. Pneumatic self-playing	F. A. Pilcher	814,725	Mar. 13	1464	307	121	380
Musical instrument. Pneumatically-actuated	L. B. Doman	814,679	Mar. 13	1373	287	121	358
Musical instrument. Self-playing	E. S. Votey	814,176	Mar. 6	338	69	121	74
Musical-instrument solo attachment	L. B. Doman	814,678	Mar. 13	1372	287	121	358
Musical instrument. Stringed	F. A. Pilcher	815,978	Mar. 27	4034	854	121	1034
Musical instruments. Device for testing strings for	E. A. Randall	818,289	Apr. 17	3468	746	121	2228
Musical instruments. Means for governing the tempo in mechanical	C. W. Hoggard	814,541	Mar. 6	1087	225	121	236
Musical instruments. Playing apparatus for	W. D. Moses, (now W. M. Davis)	814,521	Mar. 6	1042	216	121	227
Musical instruments. Pneumatic playing apparatus for	L. B. Doman	814,676	Mar. 13	1362	285–7	121	357
Musical instruments. Straining-hook for	L. B. Doman	814,677	Mar. 13	1368	287	121	357
Musical transposition-chart	A. G. Soistmann	816,754	Apr. 3	395	90	121	1446
Nail cap-plate	R. C. Burton	815,403	Mar. 20	2886	600	121	735
Nail-making machine	G. R. Wyman	816,522	Mar. 27	5170	1097	121	1281
Nail-receptacle	J. K. Neubauer	815,305	Mar. 13	2620	549	121	631
Nailing-machine	M. A. Salmon	818,978	Apr. 24	4855	1043	121	2582
Necktie	H. W. Morgan	816,350	Mar. 27	4823	1021–3	121	1206
Necktie-frame	C. W. T. Davies	817,364	Apr. 10	1612	341	121	1773
Needle, &c	T. J. Lumis	818,972	Apr. 24	4841	1040	121	2578
Net frame. Landing-	T. A. Edwards	818,152	Apr. 17	3199	688	121	2171
Nipple for nursing-bottles	H. B. Carlton	815,144	Mar. 13	2301	481	121	557
Nitrogen. Preparing and growing and distributing organisms which fix or gather atmospheric	M. E. Knauff	815,435	Mar. 20	2948	612	121	750
Nitrogen-producing apparatus. Pure-	G. H. Earp-Thomas	816,850	Apr. 3	598	.....	121	1491
Non-siphoning trap	C. Linde	815,601	Mar. 20	3239	680	121	813
Noodle-cutter	E. A. Cleland	817,469	Apr. 10	1843	386	121	1821
Noodle-dough-cutting apparatus	W. N. Foust	818,426	Apr. 24	3748	805	121	2343
Nose-ring. Animal	S. Mueller	814,862	Mar. 13	1723	360–1	121	434
Nozzle	R. I. Teeter	816,194	Mar. 27	4491	953	121	1135
Numbering and stamping machine	J. Henderson	814,694	Mar. 13	1412	293	121	368
Numbering-machine	J. D. Humphrey	817,429	Apr. 10	1756	369	121	1802
Nut	L. K. Scotford	815,124	Mar. 13	2251	472–3	121	546
Nut-lock	M. Schubert and O. Rechnitz	815,982	Mar. 27	4046	856	121	1037
Nut-lock	J. H. Butterfield	814,516	Mar. 6	1036	214	121	226
Nut-lock	W. R. Mecherle	814,555	Mar. 6	1112	231	121	241
Nut-lock	H. P. Watson	815,497	Mar. 20	3047	636	121	771
Nut-lock	J. E. Glenn	815,524	Mar. 20	3102	648	121	783
Nut-lock	F. T. Leatherman	815,541	Mar. 20	3138	656	121	791
Nut-lock	J. M. Scott	816,044	Mar. 27	4180	886	121	1069
Nut-lock	C. A. Allen	816,143	Mar. 27	4389	928	121	1114
Nut-lock	W. McCanse	818,635	Apr. 24	4177	899	121	2434
Nut-lock	C. E. Palmer	818,911	Apr. 24	4722	1013	121	2552
Nut. Lock-	L. Payne	818,913	Apr. 24	4725	1014	121	2553
Nut. Lock-	E. W. Treatt	818,584	Apr. 24	4064	872	121	2408
Nut. Self-locking	H. Steinert and M. Schimelpfennig.	818,921	Apr. 24	4741	1018	121	2557
Nut wrench. Axle-	L. M. Galliher	814,199	Mar. 6	383	78	121	84
Nutritive preparation	C. E. Slater	816,191	Mar 27	4481	949	121	1133
Obstetrical instrument	C. Köhler	814,968	Mar. 13	1919	.....	121	475
Oculometroscope	J. G. Gottlieb	818,953	Apr. 24	4803	1032	121	2571
Oil-burner	H. I. Cowan and B. Abel	817,046	Apr. 3	993	203	121	1579
Oil-burner	M. N. Macrate	817,128	Apr. 3	1137	235	121	1613
Oil burner. Crude-	R. G. Kirkwood	818,030	Apr. 17	2961	639	121	2120
Oil-burning system	E. Darby	814,360	Mar. 6	732	148	121	162
Oil-engine	I. E. Smith	814,091	Mar. 6	181	36	121	40
Oil-feeding or charge-delivering device	C. J. Rousseau and E. C. Ferris	817,671	Apr. 10	2208	471	121	1898
Oil-flask	H. O. and H. E. Spade	817,997	Apr. 17	2892	625	121	2107
Oil generator. Crude-	G. Graham and W. Lovelace	815,158	Mar. 13	2326	486	121	563
Oil-press	W. H. Neher	814,866	Mar. 13	1729	362–3	121	436
Oil-press	J. C. Richardson	814,987	Mar. 13	1963	413	121	482
Oil-press	C. Nelson	817,930	Apr. 17	2762	598	121	2077
Oil-saver	G. Koeber	818,265	Apr. 17	3429	736–7	121	2220
	W. A. Williamson	816,284	Mar. 27	4655	988	121	1171

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Oil-saver	J. T. Callanan	818,740	Apr. 24	4394	940	121	2483
Oil-separator	C. H. Gameson	818,431	Apr. 24	3757	807–8	121	2345
Oiler for vehicle-wheels	A. E. Wilcox	814,104	Mar. 6	203	41	121	44
Oiling tracks and applying the air-brakes for stopping railway-trains. Means for	E. S. Gunn and H. R. Romberger	814,371	Mar. 6	753	152	121	106
Oilstone-box	C. F. Pippy	816,599	Apr. 3	106	23	121	1380
Opera-chair hat and wrap rack	F. D. Lanterman	818,542	Apr. 24	3991	856	121	2392
Optical-tool	L. E. Capps	816,845	Apr. 3	589	123	121	1489
Optometer	W. B. Brown	814,512	Mar. 6	1025	211–12	121	223
Ordnance. Breech-loading	R. B. Dashiell	818,420	Apr. 24	3731	801–2	121	2338
Ordnance-mount	W. H. Bevans	814,348	Mar. 6	710	143	121	156
Ore and coal crushing machine	J. F. Sauerman	814,085	Mar. 6	167	33	121	37
Ore-concentrating apparatus	J. F. C. Abelspies	814,896	Mar. 13	1781	373	121	447
Ore-concentrator	B. Ballentyne	818,334	Apr. 17	3562	762–3	121	2247
Ore for the manufacture of iron and steel therefrom. Apparatus for the treatment of	M. Moore and T. J. Heskett	814,557	Mar. 6	1114	232–3	121	241
Ore-reducing furnace	H. F. Brown	817,415	Apr. 10	1723	363	121	1796
Ore-separator	G. Moore	817,655	Apr. 10	2180	463	121	1891
Ore-separator. Magnetic	R. R. Moffatt	816,491	Mar. 27	5106	1083	121	1265
Ore-separator. Wet magnetic	F. J. Odling and W. Jamieson	815,113	Mar. 13	2227	468	121	540
Ore-washing machine	A. S. Mitchell	815,853	Mar. 20	3801	803	121	934
Ores. Electrical apparatus for determining the location of metallic	F. H. Brown	817,749	Apr. 17	2365	508	121	1988
Ores of the precious metals. Treating	A. C. Atwater	817,411	Apr. 10	1716	.....	121	1794
Ores. Reducing	H. F. Brown	817,414	Apr. 10	1721	362–3	121	1796
Ores. Reduction of	C. P. Townsend	815,881	Mar. 20	3856	.....	121	944
Ores. Treating	C. E. Baker and A. W. Burwell	816,061	Mar. 27	4218	894	121	1077
Ores. Treating nickel	C. Langer	815,717	Mar. 20	3490	730	121	869
Organ and piano	F. M. Howard	818,539	Apr. 24	3978	855	121	2390
Oscillating engine	J. L. Pilling	815,632	Mar. 20	3313	694	121	830
Oven	H. C. G. Kreutzkamp	818,832	Apr. 24	4584	983	121	2523
Oven. Gas-	T. E. Taylor	818,131	Apr. 17	3149	678	121	2160
Oven-regulator. Automatic	J. P. Farmer	817,106	Apr. 3	1089	226	121	1600
Ovens. Apparatus for feeding articles into	W. Stender	818,573	Apr. 24	4046	868–9	121	2404
Overalls	F. H. Brigham	815,063	Mar. 13	2125	447	121	518
Package-tie	J. S. Williamson	814,758	Mar. 13	1530	324	121	394
Package-tie	E. M. Comstock	818,354	Apr. 17	3598	771	121	2254
Packages. Machine for use in making metal-bound	J. J. Miller	815,197	Mar. 13	2415	503–5	121	586
Packet-holder	F. E. Blacker	815,505	Mar. 20	3065	639	121	776
Packing-box or carrier for oranges	I. Naylor	814,069	Mar. 6	135	26	121	30
Packing-gasket	J. A. Landsberger	816,803	Apr. 3	488	109	121	1464
Packing-machine	J. A. Keyes	814,454	Mar. 6	919	188–9	121	200
Packing-machine	J. A. Keyes	817,375	Apr. 10	1634	345–6	121	1777
Packing. Piston-rod	E. Bader	818,653	Apr. 24	4218	906	121	2444
Packing-ring	H. Kirschning	816,478	Mar. 27	5082	1078	121	1260
Packing-ring for shafting	W. L. R. Emmet	818,365	Apr. 17	3617	775	121	2259
Packing. Rod-	O. J. Garlock	818,023	Apr. 17	2948	636	121	2118
Packing. Rod-	O. J. Garlock	818,432	Apr. 24	3759	808	121	2345
Packing. Steam-turbine	R. A. McKee	815,973	Mar. 27	4027	853	121	1033
Packing. Water-tube-boiler	G. F. Miller and J. Kronier	815,930	Mar. 20	3946	836	121	964
Pad: *See* Apparel-pad. Blotter or blotting-pad. Collar-pad. Davenport-pad. Garment-pad. Gas-check pad. Horseshoe-pad. Inking-pad.							
Paddle-wheel	G. A. Wiman and F. Schauman	814,495	Mar. 6	996	204–5	121	217
Paddle-wheel	J. B. Heggem	817,711	Apr. 10	2269	488	121	1909
Paddle-wheel. Feathering	E. A. Young	815,776	Mar. 20	3633	763–4	121	898
Paddle-wheel. Feathering-blade	J. A. Hicks	818,825	Apr. 24	4573	980	121	2530
Pail. Lunch-	J. Walter	814,578	Mar. 6	1154	241	121	250
Pail. Milk-	J. Lowe	817,575	Apr. 10	2044	430	121	1861
Paint and varnish remover. Non-inflammable	C. Ellis	817,141	Apr. 3	1164	.....	121	1618
Paint, varnish, &c. Composition of matter for removing old	A. Neidhardt	816,350	Mar. 27	4844	.....	121	1210
Palette. Artist's	D. C. Smith	817,196	Apr. 10	1288	267	121	1704
Pallet setting and adjusting tool	W. B. Brosius	817,955	Apr. 17	2817	610	121	2089
Panel-board	E. R. Le Manquais	814,146	Mar. 6	286	57	121	63
Panorama-sight	A. Swasey	815,657	Mar. 20	3361	703	121	840
Pantaloons-creaser	J. Kulhawik	817,718	Apr. 10	2279	491–2	121	1912
Paper	J. A. Wilkinson	818,500	Apr. 24	3879	834	121	2369
Paper and pulp screen	F. M. Chapman	814,587	Mar. 6	1170	245	121	254
Paper-bag machine	F. E. Strasburg	816,193	Mar. 27	4486	951–3	121	1134
Paper-binder	F. N. Volkert	816,691	Apr. 3	291	68	121	1424
Paper-box-making machine	A. Oesterreich	815,626	Mar. 20	3297	690–1	121	826
Paper box or container	J. C. Kimsey	816,338	Mar. 27	4794	1015	121	1199
Paper boxes. Manufacture of	A. Oesterreich	815,858	Mar. 20	3813	807–8	121	936
Paper carton	L. G. Reynolds	816,124	Mar. 27	4349	921	121	1104
Paper-clip	H. E. Hawkins	815,348	Mar. 20	2751	573	121	706
Paper-clip	J. Küster	817,574	Apr. 10	2043	430	121	1861
Paper-cutting machine	W. J. Ward	818,065	Apr. 17	3017	653	121	2132
Paper-delivery	F. B. Davidson	815,008	Mar. 13	2009	422	121	492
Paper-embossing apparatus	T. Hawkins	816,657	Apr. 3	233	54	121	1412
Paper for lithographic prints. Producing	L. W. Noyes	816,497	Mar. 27	5119	1085	121	1268
Paper holder and cutter. Roll-	J. F. Finan	814,598	Mar. 6	1191	249	121	258
Paper. Magazine for holding toilet-	L. T. Ellis	815,337	Mar. 20	2724	568	121	699
Paper-making apparatus	P. Couper	819,004	Apr. 24	4899	1052	121	2591
Paper-making. Apparatus for dissolving size for	B. Kniffler	816,864	Apr. 3	630	131	121	1498
Paper-making. Dissolving size for	B. Kniffler	816,863	Apr 3	629	131	121	1498
Paper-making. Dissolving size for	B. Kniffler	816,865	Apr 3	632	131	121	1499
Paper-making machine	C. Tittel	816,402	Mar. 27	4938	1049–50	121	1230
Paper-making machines for the manufacture of one-side-colored, clouded-colored, and marbled papers. Apparatus for supplying coloring material in	C. Tittel	815,763	Mar 20	3611	758	121	893
Paper-pulp. Manufacture of	M. L. des Varannes and A. R. de Vaina.	818,206	Apr 17	3310	.....	121	2195
Paper-pulp-refining engine	M. A. Mills	818,039	Apr. 17	2975	642–4	121	2122

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Paper-pulp, terpenes, and resinous substances. Treating wood for the production of	G. P. Craighill and G. A. Kerr	817,960	Apr. 17	2825	.....	121	2091
Paper-rolls. Machine for making plugs for	E. Carver	818,016	Apr. 17	2933	634–5	121	2115
Paper stripe. Process and apparatus for making metal-coated	G. Bräunlein	818,144	Apr. 17	3187	685–6	121	2168
Paper tray	H. J. Brown	815,004	Mar. 13	1999	420	121	490
Paper tray	F. B. Davidson	815,007	Mar. 13	2007	422	121	492
Paper tray	F. B. Davidson	816,302	Mar. 27	4692	996	121	1179
Paper-trimmer	A. J. Perks	817,271	Apr. 10	1444	304	121	1736
Paper-winding machine	J. A. White	817,025	Apr. 3	955	196–7	121	1571
Paper-winding machine	J. A. White	817,026	Apr. 3	958	197	121	1571
Parcel-rack	F. L. McClennan	815,201	Mar. 13	2426	506	121	580
Paring device	W. A. McCormack	818,276	Apr. 17	3446	741	121	2223
Paste-pot cover	E. Hoffman	816,659	Apr. 3	235	55	121	1412
Paste-press	S. Tofanelli	814,410	Mar. 6	842	173–4	121	183
Pasteboard-bending machine	I. L. Sheldon	815,479	Mar. 20	3018	629–30	121	765
Pasteurizer	C. H. Loew	817,495	Apr. 10	1889	398	121	1830
Pattern-plates. Apparatus for use in manufacturing small metallic	P. Bonvillain	814,638	Mar. 6	1266	266	121	274
Pattern-plates. Manufacturing	P. Bonvillain	814,263	Mar. 6	514	107	121	111
Patterns. Applying powder to	F. Damhorst, A. Kemper, and E. Utke.	815,297	Mar. 13	2597	.....	121	625
Pavement	J. I. McDonald	814,797	Mar. 13	1617	339	121	412
Pawl and ratchet	J. S. Fletcher	815,084	Mar. 13	2163	456	121	526
Peat-oven	P. J. Buckley	816,214	Mar. 27	4523	960–1	121	1142
Pedal. Extension-	H. Taussig	816,512	Mar. 27	5151	1092	121	1276
Pedal-guard	C. H. Woodall	816,834	Apr. 3	570	119	121	1486
Pedestal-mount	J. F. Meigs and H. G. Jakobsson	814,859	Mar. 13	1717	359	121	433
Pellet-coating machine	J. Mangin	815,608	Mar. 20	3257	683	121	817
Pelt-cleaner	J. Hemingway	816,466	Mar. 27	5056	1073–4	121	1254
Pen	E. E. Kepner	818,258	Apr. 17	3420	733	121	2217
Pen and pencil holder	S. Cotler	816,783	Apr. 3	457	102	121	1458
Pen and pencil rack	F. Wenke	815,241	Mar. 13	2501	521	121	604
Pen. Drawing-	A. Mertes	817,861	Apr. 17	2608	563	121	2041
Pen-filling device. Fountain-	R. G. Lockwood	816,345	Mar. 27	4809	1018–19	121	1202
Pen. Fountain-	R. Conklin	814,520	Mar. 6	1040	215	121	227
Pen. Fountain-	E. De la Rue	814,805	Mar. 13	1630	342	121	415
Pen. Fountain-	J. Sinnott	814,990	Mar. 13	1969	414	121	483
Pen. Fountain-	J. R. Robinson	815,217	Mar. 13	2455	512	121	595
Pen. Fountain-	J. R. Robinson	815,218	Mar. 13	2457	512	121	595
Pen. Fountain-	W. C. Luther	815,721	Mar. 20	3496	732	121	870
Pen. Fountain-	W. N. Lancaster	816,344	Mar. 27	4808	1018	121	1202
Pen. Fountain-	W. R. Rothwell	818,052	Apr. 17	2996	647	121	2127
Pen. Fountain-	O. E. Weidlich	818,803	Apr. 24	4529	968	121	2511
Pen-wiper	J. R. Foster	816,086	Mar. 27	4281	907	121	1091
Pencil-holder	E. J. Brandt	814,670	Mar. 13	1354	282	121	354
Pencil-holder	E. M. Cyphers	815,515	Mar. 20	3083	642	121	779
Pencil-holder	A. R. Eldredge	818,879	Apr. 24	4668	1002	121	2540
Pencil-sharpener	P. Garst	818,433	Apr. 24	3760	808–9	121	2345
Perch-support	F. E. Heierding	818,538	Apr. 24	3978	854	121	2390
Percolator	C. E. Trewhella	816,514	Mar. 27	5153	1093	121	1276
Permutation-lock	E. Hertenstein	815,166	Mar. 13	2339	489	121	566
Permutation-lock	C. E. Blechschmidt	816,842	Apr. 3	583	121	121	1488
Permutation-lock	G. Eller	817,551	Apr. 10	2001	422	121	1853
Phonograph-machine	B. Dubinski	817,756	Apr. 17	2378	511	121	1991
Phonograph. Magazine-	C. C. Shigley	816,608	Apr. 3	123	27–8	121	1384
Phonograph-record cabinet	B. C. Carman	817,956	Apr. 17	2819	610	121	2090
Photograph and making same. Diffraction color	H. E. Ives	817,569	Apr. 10	2034	429	121	1859
Photographs or pictures. Mounting	J. M. Elliot	818,084	Apr. 17	3068	659	121	2140
Photographer's return-envelop	T. Endean	814,437	Mar. 6	894	183	121	195
Photographic developing apparatus	C. E. Harris	817,768	Apr. 17	2409	516	121	1997
Photographic films. Developing-receptacle for	S. W. Smith	816,392	Mar. 27	4919	1045	121	1226
Photographic flash-light apparatus	T. C. Smith and W. A. Martin	814,243	Mar. 6	469	97–8	121	102
Photographic postal or mailing card	G. N. Pifer	817,663	Apr. 10	2195	468	121	1894
Photographic-printing cabinet	O. C. Courtright and A. D. Mika	815,267	Mar. 13	2537	533	121	611
Photographic-printing-frame attachment	J. C. F. Nyser	815,206	Mar. 13	2435	508	121	591
Photographic sheet	W. H. James	816,861	Apr. 3	625	130	121	1497
Photographic shutter	H. B. Perry	815,552	Mar. 20	3156	661	121	794
Photography. Reducing agent or composition for use in	H. E. Smith	816,751	Apr. 3	389	.....	121	1445
Photography. Trichromatic	B. Jumeaux and W. N. L. Davidson.	814,215	Mar. 6	418	.....	121	91
Photolithography and the like. Half-tone	A. Stephan	818,574	Apr. 24	4048	.....	121	2405
Photometer. Flicker-	J. T. Dempster	815,800	Mar. 20	3685	777	121	909
Piano	W. D. Callow	816,641	Apr. 3	202	47	121	1405
Piano	J. A. Weser	818,496	Apr. 24	3870	833	121	2367
Piano-action	F. B. Long	814,972	Mar. 13	1924	404	121	475
Piano-action bracket	J. Davenport	814,117	Mar. 6	231	45	121	50
Piano-action mechanical player	P. Krumscheid	818,630	Apr. 24	4170	897	121	2432
Piano. Automatic combination-	N. D. Hosley	816,726	Apr. 3	346	79–80	121	1437
Piano-player. Automatic	J. Sampere	816,605	Apr. 3	118	26	121	1383
Piano-players. Detachable key-changer for pneumatic	E. E. Flora	815,412	Mar. 20	2910	603	121	741
Piano-protector	W. Hoskin and J. A. Noonan	814,544	Mar. 6	1094	227	121	238
Piano. Self-playing	G. W. Burchett	817,545	Apr. 10	1986	420	121	1851
Piano-shield	M. Tuggle	814,174	Mar. 6	336	68	121	73
Pianos. Repetition-action for	J. Schaaf	818,473	Apr. 24	3824	823	121	2358
Pick. Miner's	W. S. Palmer	817,512	Apr. 10	1925	406	121	1838
Picker: *See* Corn-picker. Fruit-picker. Cotton-picker.							
Pickle-grading machine	T. C. Yeager	814,762	Mar. 13	1540	326	121	397
Picture and sound reproducing apparatus	W. H. Baker	814,663	Mar. 13	1338	279–80	121	351
Picture-exhibiting machines. Film-holder for	M. Smith	814,406	Mar. 6	835	172	121	181
Picture-frame jointer	J. E. Braggins	817,466	Apr. 10	1839	385	121	1820
Picture-hanger	W. W. Pursell	814,163	Mar. 6	318	64	121	69
Pie-making machine	J. C. Hutchison	817,488	Apr. 10	1876	395	121	1827

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pie-making-machine conveyer	J. C. Hutchison	815,707	Mar. 20	3471	724	121	865
Pier construction. Cylinder-	W. H. Healy	814,959	Mar. 13	1898	399	121	470
Pile and like clamp	P. Sheridan	818,794	Apr. 24	4515	965	121	2506
Piling. Interlocking sheet-	G. E. Nye	816,994	Apr. 3	900	186	121	1558
Piling. Metal sheet-	J. R. Williams	818,327	Apr. 17	3549	760	121	2245
Piling. Metal sheet-	J. R. Williams	818,596	Apr. 24	4099	880–1	121	2416
Piling. Sheet-	H. L. Zander	816,770	Apr. 3	434	98	121	1454
Pill and tablet counting machine	S. A. Haseltine	817,852	Apr. 17	2586	558	121	2037
Pin: *See* Clothes-pin. Hair-pin. Hat-pin. Insulator-pin. Safety-pin.							
Pin	C. F. Markham	814,465	Mar. 6	940	193	121	205
Pin	F. J. Kristofek	816,728	Apr. 3	349	80	121	1437
Pin-guard	M. C. Rypinski	814,064	Mar. 6	166	33	121	37
Pin-setting apparatus	W. S. Morgan and S. W. Fellows	814,227	Mar. 6	437	90	121	94
Pipe: *See* Sheet-metal pipe. Smoking-pipe. Tobacco-pipe.							
Pipe	C. E. Ongley	815,318	Mar. 13	2651	554	121	636
Pipe	C. Elkin	818,819	Apr. 24	4563	978	121	2518
Pipe	C. Elkin	818,820	Apr. 24	4564	978	121	2518
Pipe. Apparatus for forming beads on cast-iron	C. N. Church	814,519	Mar. 6	1038	215	121	226
Pipe, cigar, or cigarette holder	B. A. Levett	815,443	Mar. 20	2960	616	121	753
Pipe-core-forming machine	F. D. Dimmick and A. M. Ford	814,028	Mar. 6	65	12	121	16
Pipe-coupling	L. C. Sands	814,806	Mar. 13	1630	342	121	415
Pipe-coupling	O. E. David	817,300	Apr. 10	1497	314	121	1747
Pipe-coupling for water-closets, &c	C. F. Plunkett	818,393	Apr. 17	3676	789	121	2271
Pipe coupling support. Train-	J. E. Forsyth	815,280	Mar. 13	2557	538	121	616
Pipe coupling. Train-	L. M. Sartain	814,733	Mar. 13	1482	311	121	384
Pipe-expander	F. H. Knee	814,300	Mar. 6	587	123	121	126
Pipe-fitting	J. W. Kelly	814,295	Mar. 6	577	121	121	124
Pipe-joint	M. Dean	816,155	Mar. 27	4415	933	121	1119
Pipe-joint. Separable	A. C. Lynch	815,968	Mar. 27	4021	851	121	1031
Pipe-joints. Tool for pressing and piercing seamless	C. Schmid	817,876	Apr. 17	2645	574	121	2048
Pipe-lines. Automatic air-relief for	C. Covell	815,268	Mar. 13	2540	533	121	612
Pipe-making machine	H. A. Williams	817,209	Apr. 10	1313	274–5	121	1710
Pipe or tile cutting machine	R. L. Heafer	818,959	Apr. 24	4814	1035	121	2573
Pipe-puller	J. W. Walker	818,928	Apr. 24	4757	1023	121	2559
Pipe-pulling jack	H. B. Cunningham	817,363	Apr. 10	1610	340–1	121	1772
Pipe-stem cleaner	B. F. Eshelman	817,633	Apr. 10	2146	455	121	1884
Pipe system. Stand-	W. F. Conran, Jr	816,152	Mar. 27	4405	931–2	121	1117
Pipe thimble. Steam-	G. Mehring	814,976	Mar. 13	1930	406	121	477
Pipe-union	M. Dean	815,581	Mar. 20	3206	674	121	805
Pipe-wrench	F. Fisher	815,694	Mar. 20	3446	719	121	860
Pipe-wrench	C. L. Dunham	818,877	Apr. 24	4663	1001	121	2539
Pipe-wrench. Automatic adjustable-grip	A. Meffert	818,901	Apr. 24	4705	1009	121	2548
Pipes, &c. Machine for flanging, socketing, or otherwise shaping earthenware	W. H. Dalby	818,419	Apr. 24	3730	801	121	2338
Piston	R. O. Clark, Jr	817,045	Apr. 3	991	203	121	1579
Piston. Horizontal-cylinder	E. Moran	817,330	Apr. 10	1547	325	121	1757
Piston-rod and cross-head connection. Adjustable	F. L. Bates	818,860	Apr. 24	4633	995	121	2533
Piston-rod connection	C. G. Sprado	815,312	Mar. 13	2638	552	121	633
Pitcher. Ice-	C. T. McElvaney	818,277	Apr. 17	3448	741	121	2224
Placket-clasp	J. Krakauer	817,123	Apr. 3	1130	234	121	1611
Plane	S. M. Fischer	818,823	Apr. 24	4569	979	121	2519
Plane	C. E. Mitchell	814,718	Mar. 13	1456	305	121	378
Plane. Carpenter's	H. B. Sargent	818,472	Apr. 24	3823	822	121	2358
Plane-handle. Adjustable	A. Kalla	816,335	Mar. 27	4784	1013–14	121	1198
Planes. Reversible handle attachment for	F. A. Shonts	817,096	Apr. 3	1073	222	121	1596
Plant or flower pot	R. Hunter	816,980	Apr. 3	873	181	121	1552
Planter	A. J. Eggleton	814,595	Mar. 6	1184	248	121	256
Planter	G. C. Brimmon and O. A. Nelson	815,328	Mar. 20	2709	564–5	121	696
Planter	O. Phillips	815,554	Mar. 20	3159	661–2	121	795
Planter	P. C. White	815,771	Mar. 20	3620	760	121	895
Planter	H. P. Kline	817,376	Apr. 10	1639	347	121	1779
Planter. Combined potato and corn	J. N. Taylor	818,799	Apr. 24	4522	966	121	2510
Planter. Corn-	W. A. Hall, Sr	818,956	Apr. 24	4807	1033–4	121	2571
Planter. Corn-	W. J. Anderson and J. W. Horney	814,182	Mar. 6	348	71	121	76
Planter. Corn-	A. C. Lindgren	815,603	Mar. 20	3242	681	121	814
Planter. Seed-	J. N. Frame	818,532	Apr. 24	3969	852	121	2389
Plaster and mortar. Apparatus for mixing and making	J. L. Floyd	815,413	Mar. 20	2911	604	121	742
Plaster-supporting slab	A. Dellamore, S. T. and A. M. Norton	816,156	Mar. 27	4416	933–4	121	1119
Plastering construction	F. A. Seifert	815,751	Mar. 20	3587	754	121	889
Plastic-block machine	J. Barbagelata, Jr	816,420	Mar. 27	4973	1056	121	1237
Plastic-block-molding machine	G. W. Crichfield	819,005	Apr. 24	4901	1052–3	121	2591
Plastic material. Machine for making continuously-formed articles from	J. J. Cox	814,358	Mar. 6	727	147	121	161
Plastic material. Method of and apparatus for making striped fabric from	J. K. Williams	815,571	Mar. 20	3188	670	121	801
Plastic material. Treating	J. L. Mahoney	817,080	Apr. 3	1046	217	121	1500
Plastic material. Treating	A. A. Scott	816,385	Mar. 27	4895	1040–1	121	1221
Plastic material. Treating	A. A. Scott	816,386	Mar. 27	4904	1041–2	121	1223
Plastics. Affixing	A. A. Scott	816,387	Mar. 27	4910	1042–3	121	1224
Plastics. Apparatus for molding	E. J. Winslow	815,886	Mar. 20	3865	819	121	945
Plate-securer	G. T. McIntyre	817,383	Apr. 10	1648	349–50	121	1780
Plate-shears	T. Frazier	817,109	Apr. 3	1092	227	121	1601
Plating. Apparatus for nickel-	C. Swan	818,578	Apr. 24	4056	870	121	2406
Playing-ball	J. W. Aylsworth	817,152	Apr. 10	1190	246–7	121	1684
Pliers	H. Ritchie	818,050	Apr. 17	2904	647	121	2127
Pliers	A. Tracht	816,278	Mar. 27	4647	986	121	1169
Pliers. Jewel-setting	P. Broadbooks	818,343	Apr. 17	3579	766	121	2250
Plow	B. E. Byrd	818,347	Apr. 17	3585	767	121	2253
Plow	R. E. Lunsford	814,551	Mar. 6	1106	230	121	240
Plow	A. Morrison	814,721	Mar. 13	1460	306	121	370
	A. G. Perry	815,036	Mar. 13	2079	436	121	509

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Plow	R. L. Kearney	815,092	Mar. 13	2181	460	121	530
Plow	H. Morton	816,173	Mar. 27	4448	941	121	1125
Plow	R. Nelson	816,360	Mar. 27	4844	1027	121	1210
Plow	H. Wiard	816,518	Mar. 27	5163	1094–5	121	1279
Plow	E. M. Heylman	817,114	Apr. 3	1101	228–30	121	1603
Plow	F. B. Niesz and J. M. Stewart	817,441	Apr. 10	1783	375	121	1808
Plow	J. H. Moore	817,793	Apr. 17	2478	530	121	2012
Plow	F. L. Woodward	818,598	Apr. 24	4104	881	121	2417
Plow attachment	L. E. Landis and W. S. Myers	815,441	Mar. 20	2958	615	121	753
Plow. Gang-	P. S. Houghton and R. H. Deyarmond.	814,046	Mar. 6	92	17–18	121	21
Plow. Gang-	G. R. Marriage	814,552	Mar. 6	1107	230	121	240
Plow. Gang-	G. A. Anderson	818,219	Apr. 17	3334	714–15	121	2200
Plow. Motor-	A. J. Holland	818,962	Apr. 24	4818	1036	121	2573
Plow. Reversible disk	W. G. Jobling	816,663	Apr. 3	242	57	121	1414
Plow. Subsoil-	J. B. Harris	816,548	Mar. 27	5225	1108	121	1294
Plow. Sulky-	W. L. Beall	816,771	Apr. 3	435	98	121	1454
Plowing attachment. Rotary-disk	E. C. Erb and A. L. Powlison	816,543	Mar. 27	5216	1106–7	121	1291
Plug	M. W. Gartshore and J. H. Foster	816,856	Apr. 3	613	128	121	1495
Plumb, level, and inclinometer	W. A. Dimick	815,690	Mar. 20	3438	718	121	857
Plumber's clamp	R. Parker	817,513	Apr. 10	1926	406	121	1839
Plumber's fitting and pipe-support. Combined	J. L. Fruin	817,110	Apr. 3	1093	227	121	1601
Pneumatic alarm	J. Cairns	816,430	Mar. 27	4989	1059	121	1240
Pneumatic-carrier indicator	H. W. Rottel	818,471	Apr. 24	3822	822	121	2358
Pneumatic-despatch apparatus	F. S. Smith	816,261	Mar. 27	4610	960	121	1161
Pneumatic-despatch apparatus	F. S. Smith	816,262	Mar. 27	4617	960	121	1162
Pneumatic-despatching-tube system	J. J. Stoetzel	817,016	Apr. 3	939	193–4	121	1567
Pneumatic motor	R. A. Norling	817,384	Apr. 10	1653	350–1	121	1781
Pneumatic-tired wheel	T. B. Jeffery	815,430	Mar. 20	2939	610	121	749
Pneumatic wheel	R. Thew and H. H. Harris	818,060	Apr. 17	3010	657	121	2130
Pocket-book lock	A. J. Smith	815,225	Mar. 13	2468	514	121	598
Pocket-case for mileage-books, baggage-checks, &c.	C. A. Hawes	814,205	Mar. 6	391	79	121	86
Pocket-knife	E. Kaufmann	817,249	Apr. 10	1395	294	121	1727
Poison-distributer	F. Splittstoser	817,813	Apr. 17	2511	538	121	2019
Poles, derricks, &c. Anchor or stay for	A. McGillivary and E. Frye	814,229	Mar. 6	440	91	121	95
Polishing-machine	J. Lehnbeuter	814,787	Mar. 13	1592	335	121	408
Polishing-machine	J. R. Peirce	817,798	Apr. 17	2487	532	121	2014
Polishing or buffing wheel	C. G. Backus	817,462	Apr. 10	1830	384	121	1818
Polo apparatus. Water-	J. F. Conkling	814,674	Mar. 13	1360	284	121	356
Pompadour-wave	F. M. and S. E. Delavan	816,969	Apr. 3	849	175	121	1546
Pop-gun	J. Seibold, T. Curran, and M. L. Bacon.	815,223	Mar. 13	2465	514	121	597
Post: *See* Binding-post. Cement post. Fence-post. Saddle-post. Stone post							
Post-base	J. W. Beard and J. Salter	817,742	Apr. 17	2349	504	121	1985
Post-cards. Holder for illustrated	E. J. Early	816,904	Apr. 3	708	146	121	1515
Post-hole digger	C. W. Van de Walker and R. T. Jenney	815,133	Mar. 13	2276	476	121	552
Post-retaining band	O. Olson	817,332	Apr. 10	1550	326	121	1758
Pot: *See* Coffee-pot. Fire-pot. Plant or flower pot. Tea or coffee pot.							
Potato-digger	F. W. Benjamin	814,346	Mar. 6	708	142	121	156
Potato-digger	J. Vorbach	815,051	Mar. 13	2106	444	121	515
Potato-digging machines. Halm-plucking mechanism for	M. Altstock	817,891	Apr. 17	2677	582	121	2054
Potato-digging machines. Shield for	F. M. Murray	816,730	Apr. 3	351	81	121	1438
Potato dropper and planter	F. R. Albright and J. S. Joseph	817,612	Apr. 10	2108	446	121	1875
Pottery. Saggar for baking	J. W. Lyons	817,722	Apr. 10	2297	495	121	1918
Poultry appliance	E. J. Shanahan	817,448	Apr. 10	1794	377	121	1810
Power by electric currents. Means for transmitting	W. Stanley	818,715	Apr. 24	4342	931	121	2470
Power by electric currents. Transmitting	W. Stanley	819,028	Apr. 24	4950	1062–3	121	2603
Power-generating device	D. C. Tubbs	818,986	Apr. 24	4866	1045	121	2583
Power-generation system	L. G. Selover	814,237	Mar. 6	454	94	121	98
Power-machine. Motor	A. Flores	818,366	Apr. 17	3618	775–6	121	2259
Power. Means and method of transmitting	W. Stanley	817,998	Apr. 17	2894	625	121	2107
Power mechanism	B. J. Arnold	818,512	Apr. 24	3922	844	121	2378
Power transmission device. Dynamo-magnetic	J. O. Heinze, Jr	816,912	Apr. 3	726	149–50	121	1519
Power-transmission device. Non-grinding	D. S. Grant	818,161	Apr. 17	3217	692	121	2175
Power transmission. Driving-clutch for	J. K. Stewart	814,093	Mar. 6	184	37	121	40
Power-transmission means	A. J. Lindsay	816,022	Mar. 27	4140	877	121	1059
Power-transmission mechanism	R. A. Morton	818,107	Apr. 17	3093	667–8	121	2147
Power-transmission system	R. Williams	817,604	Apr. 10	2093	442	121	1872
Power-transmitting mechanism	A. T. Brown	814,268	Mar. 6	521	108	121	112
Precious metals from ores, &c. Recovery of	J. A. Just	814,294	Mar. 6	572	.....	121	123
Precious metals from zinc ores. Extraction of	A. R. Meyer	815,614	Mar. 20	3266	.....	121	819
Precious metals. Refining hydrometallurgical products containing	C. W. Merrill	815,851	Mar. 20	3799	.....	121	933
Preparatory machine and spinning, doubling, winding, and like processes and apparatus therefor	H. Doll	815,075	Mar. 13	2146	452	121	523
Preserving apparatus	T. Widdop	817,208	Apr. 10	1312	273–4	121	1709
Preserving foods. Means for	J. M. Cole	818,353	Apr. 17	3597	770	121	2254
Preserving organic matter	W. T. Scheele	818,979	Apr. 24	4857	1044	121	2582
Preserving-receptacle. Vacuum	H. C. Ferguson	815,081	Mar. 13	2158	455	121	526
Press: *See* Apple-box press. Baling-press. Cider-press. Copying-press. Drawing-press. Filter-press. Glass-press. Hand-press. Hay-press. Molding-press. Oil-press. Paste-press. Printing-press. Punch-press. Tobacco-press. Trousers-press.							
Press	G. B. Lamb	814,064	Mar. 6	106	20–1	121	24

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Press	J. C. Fiddyment and J. J. McNally.	816,446	Mar. 27	5014	1064-5	121	1245
Press	J. C. Fiddyment and J. J. McNally.	816,447	Mar. 27	5017	1065	121	1246
Press	R. B. Campbell	817,735	Apr. 10	2332	501-2	121	1927
Press-box	L. W. Haskell and E. W. Thompson.	815,291	Mar. 13	2584	544	121	622
Press registering device	W. J. Ramsaier	818,191	Apr. 17	3285	703	121	2190
Presses. Impression throw-off for bed-and-platen	M. Gally	814,282	Mar. 6	546	114	121	118
Pressure-exerting machine	G. W. Greenwood	814,955	Mar. 13	1800	397-8	121	469
Pressure-regulator	E. E. Gold	814,285	Mar. 6	551	115-16	121	119
Printer and stencil-cutter. Sign-	D. Gerner	815,808	Mar. 20	3701	780	121	912
Printer's galley	J. P. Rivett	815,980	Mar. 27	4040	855	121	1036
Printer's quoin	H. A. Hempel	816,324	Mar. 27	4768	1010	121	1194
Printing and cutting machine. Combined	J. A. Loyster	818,699	Apr. 24	4306	923-5	121	2462
Printing and issuing machine. Ticket	J. P. Eastman and T. F. Hawley	817,421	Apr. 10	1734	365-6	121	1798
Printing and issuing railway-tickets. Machine for	R. T. Piscicelli	814,985	Mar. 13	1952	410-13	121	480
Printing and numbering machine. Time-	J. C. Wilson	816,202	Mar. 27	4503	956	121	1137
Printing and the like machines. Taking-off disk for feeding paper in	J. Hall and M. T. Barber	814,539	Mar. 6	1084	224	121	235
Printing-block-adjusting device	W. H. Waldron	815,662	Mar. 20	3370	705	121	842
Printing-films. Universal adjuster for	B. Day	816,968	Apr. 3	844	173-4	121	1545
Printing in colors. Stencil-plate for	G. Courtot	818,521	Apr. 24	3942	849	121	2382
Printing-machine	T. M. North	815,857	Mar. 20	3811	807	121	935
Printing-machine	G. A. Main	816,110	Mar. 27	4323	916	121	1099
Printing. Photomechanical	H. L. Reckard	815,310	Mar. 13	2631	551	121	632
Printing-press	W. Holland	814,785	Mar. 13	1584	334	121	405
Printing-press	J. E. Roy	817,276	Apr. 10	1453	306	121	1738
Printing-press attachment	C. M. Dana and E. Kibben	815,071	Mar. 13	2137	450-1	121	521
Printing-press cutting attachment	J. W. Smith and G. U. Harn, Jr.	816,945	Apr. 3	802	164-5	121	1536
Printing-press feeding attachment	W. S. Brown and H. W. Enderis	815,262	Mar. 13	2530	531	121	610
Printing-press gripper and means for operating same	M. J. Barnett	818,338	Apr. 17	3570	764	121	2249
Printing-press ink-distributing device	R. Marx	815,850	Mar. 20	3795	801-2	121	932
Printing-press inking arrangement	G. P. Fenner	818,238	Apr. 17	3381	725-6	121	2209
Printing-press. Rotary	H. F. Bechman	814,510	Mar. 6	1017	209-11	121	222
Printing-press sheet-manipulating mechanism	L. E. Morrison	818,974	Apr. 24	4844	1041-2	121	2579
Printing-press tripping mechanism	L. E. Morrison	818,903	Apr. 24	4707	1010	121	2549
Printing-presses and other machines. Reciprocating bed-actuating apparatus for	A. Anderson	817,215	Apr. 10	1326	277	121	1713
Printing-presses and other machines. Sheet-handling machinery for	T. C. Dexter and H. Hallstream	814,522	Mar. 6	1044	216-17	121	228
Printing-presses. Attachment for ink-fountains of	R. J. Greenway, Jr.	814,037	Mar. 6	78	14	121	18
Printing-roller composition on fabrics. Mold for depositing	J. F. Ames	816,144	Mar. 27	4390	928	121	1114
Printing-surfaces. Producing	H. Barth	818,656	Apr. 24	4227	909	121	2446
Printing. Tapestry-yarn	B. H. Gledhill	817,313	Apr. 10	1519	319	121	1751
Printing yarns. Apparatus for	A. Hofmann	816,796	Apr. 3	476	106	121	1462
Prints. Producing multicolor	J. Bachmann	814,108	Mar. 6	208	.....	121	45
Projectile	E. M. Johnson	814,378	Mar. 6	767	155	121	169
Projectile and its band	C. V. Wheeler and A. G. McKenna	815,992	Mar. 27	4065	861	121	1041
Projectile. Steel	A. Haase	816,577	Apr. 3	41	11	121	1363
Propeller	G. Mechtersheimer	816,347	Mar. 27	4816	1020	121	1204
Propeller	R. W. Shaw	818,125	Apr. 17	3140	675-6	121	2158
Propeller attachment for boats	A. E. Hauck	818,245	Apr. 17	3398	728	121	2212
Propeller. Boat-	H. B. Prosser	815,738	Mar. 20	3545	744	121	880
Propeller for boats. Steering-	H. W. Hellmann	816,163	Mar. 27	4431	937	121	1122
Propeller for marine vessels	L. D. Mallory	817,981	Apr. 17	2856	619	121	2098
Propeller. Screw-	E. K. Purvis	815,740	Mar. 20	3549	745	121	880
Propeller. Screw-	E. E. Adams	816,836	Apr. 3	573	120	121	1486
Propeller-wheel	A. H. Little	817,494	Apr. 10	1888	398	121	1830
Propeller-wheel. Reversible	F. M. Spaulding	817,728	Apr. 10	2320	499	121	1925
Propelling and steering apparatus for boats. Combined	C. W. Post	817,935	Apr. 17	2770	600	121	2079
Propelling device	O. E. Hagaman	818,536	Apr. 24	3975	854	121	2390
Propelling mechanism	F. Pélissier	816,368	Mar. 27	4858	1030	121	1213
Propelling mechanism	D. W. Rantine	817,091	Apr. 3	1062	220-1	121	1593
Propulsion of vessels	T. Davids	815,270	Mar. 13	2542	535	121	612
Puller: *See* Pipe-puller. Spike-puller. Stump-puller.							
Pulley. Belt-	D. T. McNiel	817,439	Apr. 10	1778	373-4	121	1807
Pulley-block	W. S. Tuttle	816,196	Mar. 27	4493	953	121	1135
Pulley-block. Ball-bearing	E. E. La Rose	817,074	Apr. 3	1036	215	121	1588
Pulley device	G. Merritt	815,613	Mar. 20	3264	685	121	819
Pulley. Expanding	A. L. Noël	818,280	Apr. 17	3452	743	121	2224
Pulley. Expansible	C. J. Reed	816,184	Mar. 27	4472	947	121	1131
Pulley-housing. Sheet-metal	P. Dosch	817,228	Apr. 10	1352	284	121	1719
Pulley. Loose	R. C. Nugent	817,724	Apr. 10	2300	495	121	1918
Pulley. Sash-	D. G. Clark	818,231	Apr. 17	3364	720	121	2206
Pulley. Sash-	M. H. Ballew and R. A. Mead	818,335	Apr. 17	3566	763	121	2248
Pulley. Split	O. A. Nelson	816,117	Mar. 27	4338	919	121	1103
Pulley stop mechanism. Expansible-	C. J. Reed	814,986	Mar. 13	1961	413	121	482
Pulley-tackle	E. and P. Guitel	817,848	Apr. 17	2581	556	121	2036
Pulp-screen	C. E. Chapman	818,230	Apr. 17	3362	720	121	2206
Pulp-screening machine	E. W. Goodrick	815,421	Mar. 20	2922	606-7	121	745
Pulp-screening machine. Fibrous-	P. R. Thom	814,748	Mar. 13	1512	320-1	121	391
Pulp-strainer. Oscillating cylindrical	H. Sanguinetti	817,007	Apr. 3	921	190	121	1562
Pulverizing-mill	E. H. Hurry	814,961	Mar. 13	1902	400	121	471
Pump	L. T. Weiss	814,179	Mar. 6	343	70	121	75
Pump	E. M. Nevins	814,312	Mar. 6	624	128	121	135
Pump	W. Neil and G. Alstad	814,867	Mar. 13	1733	363-4	121	436
Pump	W. T. Fiers	815,082	Mar. 13	2160	455	121	528
Pump	G. W. Kellogg	816,476	Mar. 27	5079	1077	121	1259
Pump	C. F. Wray	816,520	Mar. 27	5167	1096	121	1280
Pump. Adjustable pressure-	E. W. Stroup	818,001	Apr. 17	2901	626	121	2109
	E. S. Clark	816,964	Apr. 3	839	172	121	1543

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Dr'g.	Official Gazette. Vol.	Page.
Pump. Ammonia-	A. H. Eddy	815,911	Mar. 20	3916	828-9	121	957
Pump and motor. Rotary	E. M. Fraser	815,522	Mar. 20	3098	647	121	783
Pump and propeller. Spiral	V. Sjöström	815,224	Mar. 13	2467	514	121	597
Pump apparatus. Computing-	F. P. Dunn	816,305	Mar. 27	4697	997	121	1180
Pump. Centrifugal	F. W. and C. A. Krogh	815,439	Mar. 20	2954	613-14	121	752
Pump. Centrifugal	F. W. Krogh	815,540	Mar. 20	3136	656	121	790
Pump. Compound air-	H. Wixon	817,538	Apr. 10	1971	418	121	1847
Pump. Double-acting deep-well	W. S. Berry and L. A. Sturgeon	816,064	Mar. 27	4227	896	121	1078
Pump. Duplex	P. F. Oddie	818,907	Apr. 24	4715	1011-12	121	2550
Pump. Lift-	H. M. Crow	816,965	Apr. 3	840	172	121	1544
Pump. Oil-	L. M. G. Delannay-Belleville	817,630	Apr. 10	2142	454	121	1882
Pump. Oil-well	R. E. Bole	817,543	Apr. 10	1983	419	121	1850
Pump-operating mechanism	W. Goble	817,639	Apr. 10	2156	457	121	1885
Pump-piston attachment	J. McEwen	818,636	Apr. [illegible]	4178	899	121	2434
Pump-rod balance	J. McKay	817,794	Apr. 17	2481	530	121	2013
Pump-rod clamp	A. Knocker	815,178	Mar. 13	2376	496	121	576
Pump-rod-equalizing device	J. D. Shipman	817,675	Apr. 10	2212	472	121	1899
Pump-rod. Windmill	J. Lueck	816,586	Apr. 3	68	15-16	121	1371
Pump. Treadle-	J. Cox	818,522	Apr. 24	3943	849	121	2382
Pump. Well-	A. T. Evans and V. C. Gahagan	814,365	Mar. 6	743	150	121	165
Pumps and similar devices. Means for automatically controlling the operation of beer or other	A. C. Griscom	818,686	Apr. 24	4277	918-19	121	2456
Pumps and the like. Making leather packing-rings for hydraulic	J. B. Walsh	816,197	Mar. 27	4495	954	121	1136
Pumps. Means for balancing centrifugal	J. Degen	814,902	Mar. 13	1792	375-6	121	449
Pumps. Safety attachment for windmill-	A. Jensen	814,607	Mar. 6	1210	253	121	282
Pumps. Time controlling mechanism for	I. Flowers	818,946	Apr. 24	4792	1030	121	2568
Pumps. Working barrel for oil and other	W. H Westerman	814,491	Mar. 6	991	203	121	216
Pumping-engine. Steam	F M. Metcalf	814,793	Mar 13	1606	337-8	121	410
Pumping liquids. Means for	J. E. Starr	814,883	Mar. 13	1763	399	121	443
Punch. Hand-	T. F. Philippi	818,783	Apr. 24	4489	961	121	2502
Punch-holder	W. H. Froggatt, Jr	816,722	Apr. 3	341	78	121	1436
Punch-press	F. Schulz	814,167	Mar. 6	323	65	121	71
Punching and printing system	E. C. Albree	817,291	Apr. 10	1480	311	121	1743
Punching-bag apparatus	W. J. Bryon, Jr	815,677	Mar. 20	3404	711	121	851
Punching-bag support	R. E. Bierd	818,604	Apr. 24	4118	885	121	2421
Punching tubing. Press for	J. Gibson	814,200	Mar. 6	384	78	121	84
Purse and means for suspending the same	J. Facette	815,277	Mar. 13	2552	537	121	614
Purse. Book-	E. L. Sweet	818,202	Apr 17	3303	706	121	2194
Push-drill	Z. T. Furbish	814,529	Mar. 6	1064	219	121	231
Pushing device	L. N. Brouillard	817,693	Apr. 10	2242	481	121	1904
Putting-mat	E. Smith	815,649	Mar. 20	3350	701	121	838
Puzzle	W. W. Smith	818,128	Apr. 17	3145	677	121	2160
Pyrometer. Portable hot-blast	E. Brown	818,867	Apr. 24	4648	998	121	2536
Quail-trap	G. E. Hawkins, H. M. and C. P. Stevens.	814,207	Mar. 6	394	80	121	87
Race-course machine	O. Henrichsen	815,165	Mar. 13	2337	489	121	566
Race-track observatory	M. P. Schetzel	814,875	Mar. 13	1749	366	121	440
Rack: *See* Brick-drying rack. Car-rack. Clothes-rack. Cue-rack. Display-rack. Hay-rack. Hay and stock rack. Hose-rack. Parcel-rack. Pen and pencil rack. Segmental rack.							
Rack-and-pinion mechanism	J. C. Hames	817,369	Apr. 10	1621	343	121	1774
Radiator	W. R. Kinnear	815,354	Mar. 20	2759	575	121	708
Radiator	J. V. Washburne	817,287	Apr. 10	1473	309	121	1742
Radiator air-valve. Steam-	F. Briscoe	817,692	Apr. 10	2241	481	121	1904
Radiator dust deflector and catcher	J. L. Judge	816,475	Mar. 27	5077	1077	121	1259
Radiator-tubes. Machine for making	R. Hawkins	818,026	Apr. 17	2951	637-8	121	2118
Radiator-tubes. Making	F. H. Stolp and C. Wright	817,939	Apr. 17	2779	601-2	121	2081
Radiator-valve union nipple-wrench	F. H. Stolp and C. Wright	817,938	Apr. 17	2777	601	121	2080
Radiators. Auxiliary apparatus for supplying steam to	L. W. Dukerschien and F. Engle	817,695	Apr. 10	2244	482	121	1905
Radiators. Dust-collecting shield for	T. A. Fontaine	817,909	Apr. 17	2720	590	121	2066
Rail	W. J. Reynolds	814,234	Mar. 6	450	93	121	97
Rail-anchor	C. M. Simpson	814,401	Mar. 6	827	171	121	180
Rail-anchor	J. M. Scott	814,627	Mar. 6	1250	263	121	271
Rail and spike brace. Combined	J. M. Scott	815,383	Mar. 20	2840	590	121	724
Rail-bond and making same. Electric	G. A. Freeman and C. E. Zortman	816,452	Mar. 27	5029	1067	121	1249
Rail-brace	S. P. Cowardin	814,771	Mar. 13	1559	329	121	401
Rail chair and joint combined	C. A. Alkins	815,248	Mar. 13	2511	523	121	606
Rail-cleaning apparatus	J. Joynson	817,325	Apr. 10	1540	323	121	1756
Rail-fastener	J. Lindall and P. Winsor	816,485	Mar. 27	5097	1080	121	1264
Rail fastener. Guard-	E. T. Forrester	816,788	Apr. 3	464	104	121	1460
Rail-joint	H. C. Numn	814,868	Mar. [illegible]	1737	364	121	437
Rail-joint	G. C. H. Habermann	814,443	Mar. 6	903	185	121	197
Rail-joint	J. Davies	814,772	Mar. 13	1560	329	121	401
Rail-joint	E G. Williams	815,243	Mar. 13	2504	521	121	605
Rail-joint	N. Sumic	815,762	Mar. 20	3609	758	121	893
Rail-joint	G. H. Marshall and C. L. Dunn	816,671	Apr. 3	257	60	121	1417
Rail-joint	W. Daves	816,848	Apr. 3	595	124	121	1491
Rail-joint	W. A. Hill	817,064	Apr. 3	1024	211	121	1585
Rail-joint	J. R. Pring	817,336	Apr. 10	1558	327	121	1760
Rail-joint	R. Romine	817,805	Apr. 17	2497	534	121	2017
Rail-joint	G. A. Weber	817,821	Apr. 17	2526	541	121	2023
Rail-joint	G. A. Weber	817,822	Apr. 17	2528	541-2	121	2024
Rail-joint	G. A. Weber	817,823	Apr. 17	2529	542-3	121	2024
Rail-joint	G. A. Weber	817,824	Apr. 17	2531	544	121	2024
Rail-joint	C. E. Lundahl	818,385	Apr. 17	3659	786	121	2268
Rail-joint	E. Willows	818,726	Apr. 24	4364	934	121	2475
Rail-joint chair	J. B. Lobingier	818,769	Apr. 24	4462	956	121	2497
Rail-joint support	H. H. Crawford	817,161	Apr. 10	1214	251	121	1690
Rail-securing means	F. Seyhers	818,394	Apr. 17	3677	790	121	2271
	T. Gardin	816,575	Apr. 3	37	10	121	1362

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rail-splice. Boltless	C. L. Sullivan and W. J. Dickinson.	818,311	Apr. 17	3519	755	121	2239
Rail straightening and leveling device	H. M. Stark	815,757	Mar. 20	3602	756	121	892
Rail-tie	F. Coleman	815,065	Mar. 13	2127	448	121	519
Rail-tie	F. N. Mihills	815,364	Mar. 20	2800	583	121	715
Rail tie and brace	N. E. Barnes	815,059	Mar. 13	2119	446	121	517
Rails. Iron-framed wood pad for track-	G. Borini	816,774	Apr. 3	441	100	121	1455
Rails of tramways and the like. Apparatus for cleaning the	H. Quertier	815,213	Mar. 13	2449	510–11	121	593
Rails. Renewable cap for permanent way-	H. W. Perry	818,116	Apr. 17	3126	673	121	2155
Rails. System of preventing the collection of ice on	J. D. Burns	814,671	Mar. 13	1355	282–3	121	354
Railway. Amusement-	F. A. Cerruti	814,939	Mar. 13	1858	389–90	121	463
Railway and railway-car	P. K. Stern	814,245	Mar. 6	474	98–9	121	103
Railway and tramway rail	S. W. Dalzell	815,580	Mar. 20	3205	674	121	805
Railway block-signaling. Track instrument for automatic	A. J. Stecker	817,348	Apr. 10	1583	334–5	121	1766
Railway-brake	T. Bell	816,702	Apr. 3	303	72	121	1429
Railway-carriages. Simultaneous locking of doors of	N. Dewhurst, J. W. Moore, and R. T. Griffiths.	815,943	Mar. 27	3970	841	121	1021
Railway-chair	P. Noble	818,391	Apr. 17	3673	789	121	2270
Railway composite tie	W. Goldie	816,977	Apr. 3	867	179	121	1550
Railway coupling and draw-bar	F. W. Parsons	817,444	Apr. 10	1786	376	121	1809
Railway cross-tie	J. Kahn	816,800	Apr. 3	483	108	121	1463
Railway electric signaling apparatus	B. F. Wooding	815,315	Mar. [illegible]	2644	553	121	634
Railway. Elevated	W. M. Reed	815,377	Mar. 20	2821	587	121	720
Railway-frog	J. E. Lewis	815,719	Mar. 20	3492	731	121	869
Railway-frog	H. and H. J. Theis	818,717	Apr. 24	4346	932	121	2471
Railway frog and crossing	E. Hayward	816,911	Apr. 3	724	149	121	1519
Railway-gate	A. Spies	814,330	Mar. 6	669	134–5	121	146
Railway-gate	W. M. Lowe	817,259	Apr. 10	1422	299	121	1732
Railway. Inclined	W. H. Strickler	817,940	Apr. 17	2782	602	121	2081
Railway. Inclined suspended	R. B. Fageol	817,699	Apr. 10	2249	483–4	121	1905
Railway-joint	R. B. Swank	817,729	Apr. 10	2323	490	121	1926
Railway motors. Suspension means for electric-	C. A. Psilander	816,600	Apr. 3	108	[illegible]	121	1380
Railway pile-driver and the like	S. L. G. Knox and W. Ferris	816,584	Apr. 3	58	14	121	1368
Railway. Pleasure-	W. P. Taylor and J. L. Hoard	815,986	Mar. 27	4050	857	121	1038
Railway rail-holder and tie. Automatically-tightening	W. H. Brown	817,544	Apr. 10	1985	419	121	1850
Railway-rail joint	G. H. Grove	815,159	Mar. 13	2327	486	121	564
Railway-rail joint	H. Cramer	816,533	Mar. 27	5190	1101	121	1286
Railway-rail joint	G. A. Weber	817,820	Apr. 17	2523	540	121	2023
Railway-rail joint	E. P. Sandefur	818,298	Apr. 17	3493	750	121	2233
Railway-rail stay	H. H. Sponenburg	816,265	Mar. 27	4623	981	121	1164
Railway-rail stay	H. H. Sponenburg	816,946	Apr. 3	806	165	121	1537
Railway-rail stay	H. H. Sponenburg	816,947	Apr. 3	808	166	121	1538
Railway-rail tie-plate or seat	S. J. Grubb	818,370	Apr. 17	3625	778	121	2260
Railway road-beds. Apparatus for raising the superstructure of and ballasting	G. H. Cravens	816,076	Mar. 27	4258	903	121	1086
Railway safeguard. Automatic-	B. F. Carpenter	815,320	Mar. 13	2654	555–6	121	637
Railway safety device	S. A. Gaede	817,702	Apr. 10	2253	484–5	121	1906
Railway safety-gate. Automatic	H. E. Bartlett	814,012	Mar. 6	12	3	121	5
Railway-signal	S. Romain	815,039	Mar. 13	2068	438–9	121	511
Railway-signal	J. E. Adair	817,685	Apr. 10	2230	478	121	1902
Railway-signal	A. Brosious	818,660	Apr. 24	4234	910	121	2447
Railway signal apparatus	W. H. and S. A. Wilson	817,459	Apr. 10	1820	382–3	121	1817
Railway-signal. Automatic	J. Neumaier	817,131	Apr. 3	1141	236–7	121	1613
Railway-signal. Automatic	J. S. Anderson	817,293	Apr. 10	1484	312	121	1744
Railway-signal-controlling circuit	H. B. Taylor	818 203	Apr. 17	3304	707	121	2194
Railway-signal-operating mechanism	W. V. Moak	816,676	Apr. 3	267	62	121	1419
Railway signal system	R. A. Baldwin and G. D. Foote	817,463	Apr. 10	1831	384	121	1819
Railway signal system	A. L. Ruthven	818,855	Apr. 24	4624	993	121	2531
Railway signaling apparatus. Electric	J. W. Tatum	815,131	Mar. 13	2270	475	121	550
Railway signaling device	S. C. Harvey	814,376	Mar. 6	761	153–4	121	169
Railway signaling device	C. H. Smith	818,795	Apr. 24	4516	965	121	2509
Railway-spike	D. L. Vaughan	815,766	Mar. 20	3614	759	121	894
Railway-spike	C. M. Kerr	816,802	Apr. 3	487	108	121	1464
Railway spike and tie-plate	T. G. Peterman	816,370	Mar. 27	4862	1031	121	1214
Railway structure	E. S. Thomas	818,800	Apr. 24	4525	967	121	2511
Railway. Suspended	G. W. Brower	818,608	Apr. 24	4124	886–8	121	2422
Railway-switch	J. M. Smith	814,172	Mar. 6	333	68	121	[illegible]
Railway-switch	V. Angerer	814,504	Mar. 6	1009	208	121	220
Railway-switch	V. Angerer	814,505	Mar. 6	1010	208	121	220
Railway-switch	P. Cleveland	814,673	Mar. 13	1358	284	121	355
Railway-switch	G. M. Thompson	815,314	Mar. 13	2642	553	121	634
Railway-switch	H. Raymond	816,254	Mar. 27	4596	978	121	1158
Railway-switch	A. A. Shaw	816,257	Mar. 27	4603	979	121	1160
Railway-switch	W. W. Hoffman and F. W. Powers	818,378	Apr. 17	3644	782–3	121	2265
Railway-switch	C. B. Brinker	818,865	Apr. 24	4642	997	121	2535
Railway switch and signal apparatus safety device	C. B. Brinker	818,866	Apr. 24	4646	998	121	2536
Railway switch and signal apparatus safety device	L. Griffith	814,537	Mar. 6	1080	223	121	235
Railway-switch. Automatic	L. Griffith	814,658	Mar. 6	1311	276	121	283
Railway-switch. Automatic	U. A. Woodbury	815,887	Mar. 20	3867	819	121	946
Railway switch mechanism	U. A. Woodbury	815,888	Mar. 20	3869	820	121	946
Railway switch. Street-	F. K. Hoffman	815,533	Mar. 20	3125	654	121	788
Railway-switches. System of operating	E. Brownfield	814,827	Mar. 13	1671	349	121	424
Railway switching mechanism. Electric	A. K. Warren	818,495	Apr. 24	3867	832–3	121	2366
Railway system	H. L. Young	817,290	Apr. 10	1477	310–11	121	1743
Railway-tie	H. C. Ford	815,086	Mar. 13	2166	457	121	527
Railway-tie	W. A. Collins	814,022	Mar. 6	44	8	121	12
Railway-tie	W. A. Rollins	814,327	Mar. 6	665	134	121	145
Railway-tie	P. Holmes	814,701	Mar. 13	1425	296	121	371
Railway-tie	A. J. McCallum	814,796	Mar. 13	1616	339	121	412
Railway-tie	W. I. F. Harden	816,463	Mar. 27	5044	1071	121	1252
Railway-tie	H. H. Clough	816,644	Apr. 3	208	43	121	1406
Railway-tie	H. W. Taylor and D. M. Russell	816,950	Apr. 3	815	167	121	1539
Railway-tie	J. F. Bailey	817,098	Apr. 3	1076	223	121	1596
Railway-tie	J. Kenny	817,119	Apr. 3	1124	233	121	1610

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Railway-tie	J. Freund	817,169	Apr. 10	1229	253	121	1692
Railway-tie	M. J. Weaver	818,318	Apr. 17	3529	757	121	2241
Railway-tie	I. N. Boomer and S. P. Linkswiler	818,606	Apr. 24	4121	885	121	2421
Railway tie and fastener	J. P. Lancaster	816,921	Apr. 3	744	154	121	1523
Railway tie and rail brace. Sheet-steel	F. McCune	815,972	Mar. 27	4027	852	121	1033
Railway-tie and rail-joint fastener therefor	G. S. Myers	816,731	Apr. 3	353	81	121	1438
Railway-tie. Metallic	W. Griesser	814,840	Mar. 13	1694	354	121	428
Railway-tie. Metallic	W. Griesser	814,841	Mar. 13	1696	355	121	429
Railway-tie. Metallic	W. Griesser	814,842	Mar. 13	1697	355	121	429
Railway-tie. Metallic	C. L. Mueller	814,978	Mar. 13	1933	406	121	477
Railway-tie plate	R. H. Lutz	818,182	Apr. 17	3266	699	121	2186
Railway-tie plate and means for securing rails thereto	W. B. Johnson	815,590	Mar. 20	3219	677	121	809
Railway-ties. Making composite	H. H. Clough	816,645	Apr. 3	209	48–9	121	1407
Railway-track gage	W. Goldie	816,909	Apr. 3	719	148	121	1518
Railway-track machine	E. A. Brown and A. Williams	814,826	Mar. 13	1670	349	121	424
Railway-track structure	S. P. Mickey and C. W. Caldwell	815,727	Mar. 20	3514	738–9	121	874
Railway-track-supporting device	G. Shoemaker	815,869	Mar. 20	3837	813	121	940
Railway-traffic-controlling apparatus	J. T. Cochran	816,004	Mar. 27	4100	866	121	1051
Railway water-column	C. W. Coleman	814,021	Mar. 6	33	8	121	9
Railway water-tank	E. E. Johnson	818,968	Apr. 24	4826	1038–9	121	2575
Railways. Combined system of electric signaling and switch-setting for	W. L. Brown	815,142	Mar. 13	2296	480	121	556
Railways. Continuous-rail crossing for street	B. O. Wagner	818,133	Apr. 17	3151	679	121	2161
Railways. Electric signaling for trolley	O. Gottschalk	818,954	Apr. 24	4804	1033	121	2571
Railways. Rotary fender and cleaner for surface	E. W. Lee	817,256	Apr. 10	1417	298	121	1731
Rake:	W. H. Perry	815,308	Mar. 13	2627	550	121	631
See Broom-rake. Hay-rake. Self-clearing rake. Side-delivery rake.							
Rake	W. W. Irwin	814,705	Mar. 13	1430	298–9	121	372
Rake	G. M. Long	816,486	Mar. 27	5100	1081	121	1264
Ram. Hydraulic	H. V. Blake	816,145	Mar. 27	4393	928–9	121	1115
Range-finder	C. and H. C. Beck	819,031	Apr. 24	4957	1064	121	2604
Ratchet-movement	W. A. Peck	814,319	Mar. 6	644	131	121	141
Ratchet-tool	Z. T. Furbish	814,528	Mar. 6	1062	219	121	230
Ratchet-wrench	F. A. Hanes and W. Staples	818,761	Apr. 24	4445	952	121	2493
Razor	G. W Korn	815,355	Mar. 20	2761	575	121	708
Razor-blade holder	J H. Hunt	817,566	Apr. 10	2030	428	121	1859
Razor. Safety	R. S. Wiesenfeld	816,141	Mar. 27	4387	927	121	1113
Razor. Safety	J. Turner	816,195	Mar. 27	4491	953	121	1135
Razor. Safety	F. A. Clauberg	816,299	Mar. 27	4686	995	121	1177
Razor-strop	J. Bailey	815,252	Mar. 13	2515	524	121	607
Razor-strop	E. F. Zarbock	816,635	Apr. 3	190	44	121	1403
Razor-stropping machine	J Dugmore	817,230	Apr. 10	1355	284–5	121	1720
Reamer and die-stock Combined	J. J. Delehant	816,304	Mar. 27	4696	997	121	1180
Reaper or mower blade head	M. Smith and J. P. Partenheimer	816,614	Apr. 3	151	31	121	1395
Receptacle	R. Y. Bradshaw	814,265	Mar. 6	517	107	121	111
Receptacle	M. Andresen, O. Magerstedt, and G. Ottendorff.	814,503	Mar. 6	1008	207	121	220
Reciprocating tool or engine	C. A. Faessler	814,597	Mar. 6	1187	249	121	257
Recorder:							
See Time-recorder.							
Recording and computing mechanism	J. W. Nunamaker	814,158	Mar. 6	303	61–2	121	67
Recording apparatus	A. M. Benedic	818,994	Apr. 24	4880	1048	121	2587
Recuperator	R. R. Lade	817,326	Apr. 10	1542	324	121	1756
Reel:							
See Belt-reel. Fish-line reel. Fishing-reel. Hose-reel. Line-reel. Wire-reel.							
Reel	H. B. Carlton	815,143	Mar. 13	2299	480	121	557
Reel	J. D. Holt	816,328	Mar. 27	4773	1011	121	1195
Reeling-machine	W. W. Lincoln	815,184	Mar. 13	2388	497	121	578
Refining-engine	S. R. Wagg	818,494	Apr. 24	3864	831–2	121	2366
Reflector and socket hood. Combined	W. H. Spencer	816,756	Apr. 3	397	91	121	1447
Refrigerator	S. Di Vecchio	814,523	Mar. 6	1053	217	121	229
Refrigerator	G. W. Wallick	817,136	Apr. 3	1152	238	121	1616
Refrigerator	E. C. Kindrick	817,782	Apr. 17	2450	523	121	2006
Register:							
See Car-register. Cash-register. Fare-register. Hot-air register. Hotel-register. Laundry-register. Scale-register. Telephone time-register.							
Register	I. S. Dement and F. J. Hull	818,234	Apr. 17	3369	721–2	121	2207
Register	I. S. Dement	818,235	Apr. 17	3372	722–4	121	2207
Register	F. J. Hull	818,249	Apr. 17	3407	730	121	2214
Regulator:							
See Beam-tension regulator. Damper-regulator. Feed-regulator. Feed-water regulator. Gas-pressure regulator. Lamp-regulator. Motor-regulator. Oven-regulator. Pressure-regulator. Speed-regulator. Temperature-regulator. Watch-regulator. Water-level regulator. Windmill-regulator.							
Regulator	A. W. Francis	815,806	Mar. 20	3696	779	121	911
Regulator or governor	J. W. Boyle	818,864	Apr. 24	4640	996–7	121	2535
Relay	J. Allen	814,501	Mar. 6	1005	207	121	219
Relay	R. Herman	815,822	Mar. 20	3724	784–5	121	917
Relay device. Reverse	R. D. Mershon	816,111	Mar. 27	4326	916–17	121	1100
Relay. Reverse-current	E. M. Hewlett	818,377	Apr. 17	3642	782	121	2264
Replica. Diffraction-grating	F. E. Ives	818,966	Apr. 24	4824	1037	121	2575
Resaw. Band	J. L. Graham	815,955	Mar. 27	3996	846	121	1926
Resawing-machine	J. C. Lawhon and G. P. Long	818,456	Apr. 24	3798	816	121	2353
Reservoir retaining-wall	L. K. Davis	815,687	Mar. 20	3433	716	121	856

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Retaining device	F. C. dos Passos	818,282	Apr. 17	3458	744	121	2226
Retinoscope	A. L. Pal'a	815,859	Mar. 20	3817	808	121	936
Retort	R. Ziesing	818,070	Apr. 17	3032	655	121	2134
Retort-charging apparatus	E. Körting	815,438	Mar. 20	2953	613	121	751
Revolver ejector mechanism	J. D. Robertson	816,125	Mar. 27	4350	922	121	1105
Revolver-lock	D. J. Buchanan	814,017	Mar. 6	24	5	121	7
Revolver-stock. Detachable	D. B. Martin	815,609	Mar. 20	3259	684	121	818
Revolvers. Cylinder-stop for	M. Bye	818,075	Apr. 17	3039	656	121	2136
Rheostat	E. C. Morgan	814,913	Mar. 13	1809	379	121	453
Rheostat	C. Wirt	815,996	Mar. 27	4073	862	121	1042
Rheostat for starting and controlling electric motors	W. J. Day	815,908	Mar. 20	3910	827	121	956
Ribbon-holder	R. A. Gladney	817,554	Apr. 10	2009	423	121	1855
Riding-gallery	J. W. Armitage	815,503	Mar. 20	3063	638	121	775
Rifle. Gas-operated	M. F. Smith	818,920	Apr. 24	4737	1017–18	121	2556
Rifle set-lock and safety set-trigger	D. Brown	814,584	Mar. 6	1165	244	121	252
Rifle-sight	J. N. Olson	817,331	Apr. 10	1548	326	121	1758
Ring: *See* Nose-ring. Packing-ring. Scarf-ring. Spinning or twisting ring.							
Rings. Machine for forming finger-	R. C. Grossmann	818,620	Apr. 24	4154	893	121	2429
Ringing and listening key. Automatic	A. Carlias	815,405	Mar. 20	2892	601	121	736
Ripper	F. E. Reed	814,080	Mar. 6	156	32	121	35
Rivet-holder. Magnetic	H. B. Douglas	816,540	Mar. 27	5213	1105	121	1291
Rivet-holder. Magnetic	H. B. Douglas	816 541	Mar. 27	5214	1106	121	1291
Road-sweeper	C. J. Ewart	816,082	Mar 27	4273	905–6	121	1089
Road-working machine	W. J. McBride and J. J. Alford	817,087	Apr. 3	1057	219	121	1593
Roads or other places. Compound which forms an emulsion with water to be applied to the surfaces of	E. Hardcastle	819,012	Apr. 24	4919	.....	121	2596
Roaster: *See* Coffee-roaster. Coffee and cereal roaster. Meat-roaster.							
Roasting-furnace	T. F. Sheridan	814,238	Mar. 6	458	95	121	99
Roasting-furnace	F. Klepetko	814,297	Mar. 6	580	122	121	124
Roasting-furnace	F. Klepetko	814,298	Mar. 6	582	122	121	125
Roasting-furnace	F. Klepetko	814,299	Mar. 6	585	123	121	126
Robe. Invalid-	E. Clark	818,351	Apr. 17	3592	769	121	2253
Rock and ore breaking machine	E. H. Sansom	817,672	Apr. 10	2209	471	121	1898
Rock-boring drill. Tubular	W. Besson	817,296	Apr. 10	1490	313	121	1745
Rock-crusher	J. Y. Byers and J. W. Myer	817,298	Apr. 10	1493	313	121	1746
Rock-drill	J. G. Leyner	815,299	Mar. 13	2599	546–7	121	626
Rock-drill	R. Binnie, Sr	818,015	Apr. 17	2929	633	121	2114
Rock-drill	A. H. Gibson	818,681	Apr. 24	4267	917	121	2454
Rock-drill or rock-drilling machine	H. Hellman and L. C. Bayles	816,090	Mar. 27	4285	908	121	1092
Rock-drill shaping and swaging mechanism	W. P. Lightbody	815,844	Mar. 20	3788	799	121	931
Rock-drill shaping and swaging mechanism	W. P. Lightbody	815,845	Mar. 20	3789	800	121	931
Rocker attachment	P. J. Geyler	816,088	Mar. 27	4283	908	121	1092
Rod: *See* Connecting-rod. Curtain-rod. Index-rod. Pump-rod. Switch-rod.							
Roller: *See* Land-roller. Meat-roller.							
Roller-stand	F. A. Breeze	814,900	Mar. 13	1790	374	121	448
Rolling angles	E. E. Slick	817,345	Apr. 10	1576	332–3	121	1764
Rolling-mill	E. E. Slick	817,344	Apr. 10	1573	330–2	121	1763
Rolling-mill	P. M. Weber. (Reissue)	12,472	Apr. 17	3698	794	121	2276
Rolling screw-nut blanks. Machine for	T. M. Anderson and R. Wormald	817,360	Apr. 10	1604	339	121	1771
Rolling tubular bodies or blanks. Apparatus for cross-	J. H. Nicholson	817,796	Apr. 17	2483	531	121	2013
Roofing	H. M. Jackson	816,581	Apr. 3	47	12	121	1364
Roofing and siding material	F. D. Jacobs. (Reissue)	12,475	Apr. 24	4986	1067	121	2612
Roofing. Composite	G. F. Bishopric	817,619	Apr. 10	2118	449	121	1878
Roofing material. Machine for making	F. D. Jacobs	816,661	Apr. 3	237	55–6	121	1413
Roofing-plate	H. Baden	818,333	Apr. 17	3561	762	121	2247
Roofs. Snow-guard for	J. H. Fulmer	817,480	Apr. 10	1864	392	121	1825
Rotary engine	E. J. Christie	814,018	Mar. 6	26	6	121	7
Rotary engine	R. B. Hinkly	814,044	Mar. 6	90	17	121	21
Rotary engine	J. Fowler	814,126	Mar. 6	252	48	121	56
Rotary engine	W. S. Moses	814,389	Mar. 6	787	158–9	121	174
Rotary engine	W. Wyand	815,135	Mar. 13	2280	476	121	553
Rotary engine	E. T. Young and L. J. Cavanaugh	815,246	Mar. 13	2508	522	121	606
Rotary engine	N. R. Smith	815,482	Mar. 20	3021	631	121	766
Rotary engine	I. Abbott	816,285	Mar. 27	4656	988–9	121	1171
Rotary engine	D. F. Baker	816,288	Mar. 27	4662	989–90	121	1173
Rotary engine	J. M. King	816,727	Apr. 3	348	80	121	1437
Rotary engine	P. C. Dahl	816,784	Apr. 3	458	103	121	1459
Rotary engine	P. Décor	817,472	Apr. 10	1850	387–9	121	1822
Rotary engine	G. C. Stealey	817,679	Apr. 10	2218	474–5	121	1900
Rotary engine	K. A. A. Staahlgren	817,814	Apr. 17	2513	538	121	2020
Rotary engine	A. H. Wright	818,399	Apr. 17	3692	793	121	2275
Rotary engine	J. F. Eynon	818,756	Apr. 24	4440	951	121	2492
Rotary engine	J. H. Howden	818,964	Apr. 24	4821	1037	121	2574
Rotary engine	J. H. Corthésy	819,003	Apr. 24	4897	1051–2	121	2590
Rotary-engine trailing cylinder-head	H. A. King	818,029	Apr. 17	2959	639	121	2120
Rotary motor	J. K. Broderick	816,147	Mar. 27	4397	929–30	121	1115
Roundabout	G. Leinert	815,103	Mar. 13	2205	464–5	121	535
Rowing mechanism. Bow-facing	D. R. Sheen	817,810	Apr. 17	2507	537	121	2018
Rubber and the like from wood. Extracting	A. V. de la Corte	814,675	Mar. 13	1361	285	121	356
Rubber from canvas, metal, and other material. Apparatus for separating	H. Penther	816,735	Apr. 3	359	82–3	121	1439
Rubber from rubber-plants. Extraction of pure raw	K. von Stechow	814,407	Mar. 6	838	.....	121	183
Rubber heel for boots and shoes	C. Yahraus and F. A. Hammer	817,355	Apr. 10	1598	338	121	1770
Rubber soles on shoes. Mechanism for molding and vulcanizing	T. Miller	817,791	Apr. 17	2471	528	121	2011
Rubber tubing. Striped	J. L. Mahoney	817,079	Apr. 3	1045	217	121	1690

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Rudder. Auxiliary	W M. Taylor	818,315	Apr. 17	3527	756	121	2240
Rule	O. E. Wycoff	817,401	Apr. 17	3697	794	121	2276
Rule and square. Combined	C. V. Green	814,690	Mar. 13	1407	293	121	367
Rule. Bevel-square	T. S. Ross	818,051	Apr. 17	2995	647	121	2127
Rule-clamp	J. T. Moyer	814,722	Mar. 13	1461	306	121	379
Rule holder. Pocket-	R. D. Fassett	816,544	Mar. 27	5220	1107	121	1293
Rule. Open double plumb-	A. Vreeland	815,570	Mar. 20	3186	669–70	121	801
Rule or gage	R. W. Douglas	815,944	Mar. 27	3971	841	121	1022
Sack-cleaning machine	F. J. Wolff	815,396	Mar. 20	2873	597	121	733
Sad-iron	F. W. Kellerman	815,296	Mar. 13	2592	545–6	121	624
Sad-iron holder	J. L. Poalk	815,634	Mar. 20	3315	695	121	830
Saddle. Harness-	G. Ulett	814,253	Mar. 6	499-	103	121	107
Saddle. Harness-	J. W. Gardner	815,917	Mar. 20	3927	831	121	960
Saddle-post	G. L. Forman	816,450	Mar. 27	5024	1067	121	1248
Safe or vault door bolt construction	W. G. Schaeffer	815,475	Mar. 20	3013	628	121	764
Safe or vault door seating machine	J. H. Williams	816,519	Mar. 27	5166	1096	121	1280
Safety-pin	H. D. Hibbard	817,774	Apr. 17	2420	518	121	2000
Saliva-ejector	W. W. Brown	818,998	Apr. 24	4889	1049	121	2589
Salt-shaker	H. S. Davis	818,940	Apr. 24	4777	1026	121	2564
Salts. Making phenylglycin	C. R. Gilbert	817,844	Apr. 17	2575	554	121	2034
Sand and slime separator	W. Behaghel and G. K. Schumann.	818,341	Apr. 17	3577	.....	121	2250
Sand-blast apparatus	D. J. Kelly	815,095	Mar. 13	2186	461	121	531
Sap-receiving receptacle	J. D. Murray	818,776	Apr. 24	4475	959	121	2499
Sash-adjuster	E. A. McKoy	818,278	Apr. 17	3449	742	121	2224
Sash and frame. Metallic window	H. E. Keeler	816,916	Apr. 3	732	151	121	1521
Sash-balance	J Tyra	816,690	Apr. 3	289	67–8	121	1424
Sash-center	C. Launer	817,491	Apr. 10	1884	397	121	1829
Sash-cord fastener	C. J. Caley	817,220	Apr. 10	1337	279	121	1716
Sash-cord fastener	H. Hansen	815,587	Mar. 20	3216	676	121	808
Sash-cord fastener. Window-	L. H. Broome	816,039	Apr. 3	981	201	121	1577
Sash-fastener	C. J. Weinman	816,283	Mar. 27	4654	988	121	1171
Sash-fastener	C. H. Snearer	815,483	Mar. 20	3023	631	121	766
Sash-fastener	A. Kissinger	815,537	Mar. 20	3131	655	121	789
Sash-fastener	D. G. Saunders, Jr	817,521	Apr. 10	1941	410	121	1842
Sash-fastener	F. K. Heupel	817,712	Apr. 10	2270	489	121	1910
Sash fastener. Window-	C. G. Seaman	818,303	Apr. 17	3502	752	121	2235
Sash fastener. Window-	C. B. Warren and D. E. Myers	814,177	Mar. 6	341	70	121	74
	D. L. McKinney and G. W. Henderson.	816,116	Mar. 27	4337	919	121	1102
Sash-holder	D. P. Trump and B. M. Grimes	814,892	Mar. 13	1776	372	121	446
Sash-holder	A. Tobey	817,681	Apr. 10	2223	475–6	121	1901
Sash holder and lock	A. J. McCord	818,547	Apr. 24	3999	858	121	2394
Sash-lock	W. A. Douglas	815,803	Mar. 20	3691	778	121	910
Sash-lock	F. M. Coleman	816,780	Apr. 3	452	102	121	1457
Sash lock. Window-	J. C. Fritch	814,281	Mar. 6	545	114	121	117
Sash opener. Greenhouse-	N. R. Evans	817,758	Apr. 17	2383	512	121	1992
Sash. Sheet-metal window-	J. W. Watkins	815,769	Mar. 20	3617	760	121	895
Sash-trimming machine	M. E. McAfee	817,866	Apr. 17	2621	568	121	2044
Sash ventilator. Storm-	W. R. A. and J. G. Ball	814,260	Mar. 6	512	106	121	110
Sash ventilator. Window-	F. L. Hargreaves	815,818	Mar. 20	3716	783	121	915
Sash. Window-	L. B. Rodery	816,187	Mar. 27	4476	948	121	1132
Sash. Window-	O. M. Otte	817,270	Apr. 10	1443	304	121	1735
Saw	J. B. McKeown	818,844	Apr. 24	4607	988	121	2527
Saw-dressing device	R. H. Brown and J. Hirsch	817,361	Apr. 10	1605	340	121	1771
Saw-file	T. W. Roach	818,195	Apr. 17	3293	704	121	2192
Saw-guard	P. Lord	818,633	Apr. 24	4174	898	121	2433
Saw guard. Circular-	J. G. Hill	816,326	Mar. 27	4770	1010	121	1195
Saw guide. Undercut-	H. D. Melendy	818,772	Apr. 24	4466	957	121	2497
Saw. Hack-	B. C. Swaggert	814,886	Mar. 13	1768	370	121	444
Saw-handle	W. E. Lawrence	815,597	Mar. 20	3234	679	121	812
Saw-holding apparatus	M. Sawger	816,883	Apr. 3	673	139	121	1507
Saw-jointer	J. McLean	815,462	Mar. 20	2993	624	121	760
Saw machine. Band-	A. O. Reppeto	818,120	Apr. 17	3135	674	121	2157
Saw-set	E. Harrold and C. G. Wilderson	814,652	Mar. 6	1301	273–4	121	281
Saw-set	F. A. Wuest	816,054	Mar. 27	4202	892	121	1073
Saw-setting machine	R. E. Poindexter	817,514	Apr. 10	1929	406	121	1839
Saw, square, and miter. Combination	C. Napier	817 440	Apr. 10	1781	374	121	1806
Saw-swage	R. J. Ward	814,754	Mar. 13	1521	322	121	392
Saw-swage	A. E. White	816,695	Apr. 3	300	70	121	1427
Saw-swaging machine	S. T. Lipsey	818,179	Apr. 17	3258	698–9	121	2184
Saw-teeth. Side-dressing tool for	W. L. Covel	815,269	Mar. 13	2541	534	121	612
Saw-tooth. Inserted	R. C. Charlton	816,433	Mar. 27	4993	1060	121	1240
Saws. Adjustable fence for	W. S. McLean and J. D. Kinney	816,592	Apr. 3	95	19	121	1378
Sawing-machine	T. Bemis	816,424	Mar. 27	4980	1057	121	1238
Sawing-machine	G. Morris	815,028	Mar. 13	2065	432	121	506
Sawing-machine	J. A. Cummiskey	817,628	Apr. 10	2137	452–3	121	1882
Sawing machine. Log-	O. H. Witcher and A. L. Harvey	817,948	Apr. 17	2788	606	121	2084
Sawbuck	D. A. Lunt	817,496	Apr. 10	1892	399	121	1831
Sawmill-carriages. Set-works for	A. D. Thomas	814,336	Mar. 6	694	139	121	152
Sawmill set-works	W. H. Trout	817,888	Apr. 17	2670	581	121	2053
Scaffold	T. S. Wilkin	815,665	Mar. 20	3373	706	121	843
Scaffold-bracket	D. Leuz	818,268	Apr. 17	3435	738	121	2221
Scaffold-bracket. Folding	R. E. Irwin	818,965	Apr. 24	4822	1037	121	2574
Scaffold. Hangman's	M. Blitsch and T. F. McDonnell	814,015	Mar. 6	20	4	121	6
Scaffold-support	J. C. Smith	818,306	Apr. 17	3513	753	121	2237
Scale. Automatic weighing and computing	A. O. Gardiner	816,458	Mar. 27	5037	1070	121	1250
Scale. Computing-	T. A. Killman	816,984	Apr. 3	880	182–3	121	1563
Scale. Computing-	J. W. Culmer	815,684	Mar. 20	3419	714–15	121	864
Scale. Computing-	J. Hopkinson	816,093	Mar. 27	4292	909	121	1098
Scale. Price-	J. W. Culmer	816,714	Apr. 3	327	70	121	1432
Scale. Rafter-	J. Hopkinson	817,777	Apr. 17	2432	520	121	2002
Scale-register	W. W. Dwigans and J. M. Adams	814,948	Mar. 13	1878	394	121	467
Scale. Traveling hopper-	M Schmidt	816,749	Apr. 3	385	89	121	1444
Scale. Weighing-	F. J. Wolff	818,506	Apr. 24	3896	838–9	121	2373
Scales. Scale-beam for weighing-	P. Frost	815,414	Mar 20	2913	604	121	743
	I. Hirsch	817,428	Apr. 10	1755	366	121	1803

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Scalp-comb	L. W. Dehart	816,221	Mar. 27	4538	964	121	1146
Scarf-holder	A. Rosland	817,005	Apr. 3	918	189	121	1562
Scarf-ring	T. F. Dunn	818,671	Apr. 24	4251	914	121	2451
Scoop. Weighing-	E. L. and A. L. Heizer	817,974	Apr. 17	2847	617	121	2096
Scraper	H. P. Barker	818,140	Apr. 17	3180	684	121	2167
Scraper-bowls. Making	T. H. Stagg	814,568	Mar. 6	1136	237	121	247
Scraper. Dirt-	J. Harter	814,446	Mar. 6	907	186	121	197
Scraper. Foot-	G. F. Hibner	817,171	Apr. 10	1232	253	121	1693
Scraper. Land-	O. Stark	817,999	Apr. 17	2898	625-6	121	2108
Screen: *See* Asphalt-screen. Drum-screen. Irrigating-ditch screen. Paper and pulp screen. Pulp-screen. Sliding extensible screen. Table-screen. Vibrating screen. Window-screen. Window and door screen. Wire screen.							
Screens. Guide-strip for sliding	H. W. and W. W. Watson	817,409	Apr. 10	1714	361	121	1794
Screening apparatus	H. L. Kent	817,975	Apr. 17	2848	617	121	2096
Screw-driver	E. A. Schade	814,734	Mar. 13	1483	312	121	385
Screw-driver. Screw-holding	L. S. Starrett	815,758	Mar. 20	3603	756	121	892
Screw-machine. Automatic	C. M. Spencer	816,510	Mar. 27	5144	1090-2	121	1274
Screw-machines. Threading mechanism for automatic	C. M. Spencer	816,393	Mar. 27	4921	1045-6	121	1226
Screw-thread cutter	L. A. Westman	818,007	Apr. 17	2908	628	121	2110
Scrubber	G. H. Garnet	815,343	Mar. 20	2744	571	121	705
Scrubber or brush	A. Thollander	818,316	Apr. 17	3528	757	121	2241
Scrubbing device	H. E. H. Armann	815,324	Mar. 20	2702	562	121	695
Seal	E. J. Brooks	818,344	Apr. 17	3580	766	121	2251
Seal. Bottle-	G. H. Gillette	814,531	Mar. 6	1067	220	121	231
Seal. Bottle-	G. H. Gillette	814,532	Mar. 6	1072	220	121	232
Seal. Bottle-	G. H. Gillette	815,344	Mar. 20	2745	571	121	705
Seal for envelops	I. B. Mercer and H. D. Orchard	816,489	Mar. 27	5104	1082	121	1265
Seal. Snap-	F. Corrigan	818,746	Apr. 24	4414	944	121	2487
Seals of the bungs or other closures of casks. Device for protecting the	E. J. Brooks	818,659	Apr. 24	4232	910	121	2446
Sealing and stamping machine. Envelop	H. Gerike	817,910	Apr. 17	2721	590	121	2067
Sealing apparatus. Envelop-	J. T. Vanness and H. R. O'Brian	815,494	Mar. 20	3041	635	121	770
Sealing apparatus. Envelop-	J. E. Nachod	816,175	Mar. 27	4452	942	121	1127
Sealing bottles or similar articles. Closure for	J. E. Nachod	816,176	Mar. 27	4455	943	121	1127
Sealing boxes, &c. Means for	F. B. Thatcher	816,513	Mar. 27	5152	1092	121	1276
Sealing device	A. Freschl	816,007	Mar. 27	4104	867	121	1052
Sealing device. Bottle-	F. W. Purcell	816,376	Mar. 27	4871	1034	121	1216
Seam for sheet-metal vessels. Solderless	O. W. Cardell and S. T. Bergström	815,902	Mar. 20	3900	825	121	954
Seams in sheet metal. Forming hermetic	O. Heindorf	818,438	Apr. 24	3769	810	121	2347
Seaming apparatus. Can-	O. Heindorf	818,439	Apr. 24	3770	810	121	2347
Seat: *See* Adjustable seat. Car-seat. Closet-seat. Disappearing seat.	G. C. Witt	814,759	Mar. 13	1531	324	121	396
Seat and life-raft. Combined	C. and C. S. Taylor	816,891	Apr. 3	685	141	121	1510
Seat-back	B. L. Field	816,545	Mar. 27	5221	1107	121	1293
Seat back. Folding-	C. E. Marchessault	815,190	Mar. 13	2396	499	121	580
Seat-back. Removable	W. L. C. Chambers	814,766	Mar. 13	1548	327	121	398
Seat structure. Spring-	J. H. Cook	816,075	Mar. 27	4257	902	121	1085
Secondary battery	E. L. Oppermann	815,628	Mar. 20	3303	.....	121	827
Seed and grain cleaning machine	F. A. Powers	814,918	Mar. 13	1819	381	121	455
Seed-cleaning apparatus	D. P. Cooley	816,560	Apr. 3	14	4	121	1357
Seed-cleaning machine. Clover-	T. M. Prine	818,118	Apr. 17	3128	674	121	2155
Seed-dropper	J. D. Buckley	818,936	Apr. 24	4772	1025-6	121	2563
Seed separator. Berry-	H. Holton	818,445	Apr. 24	3776	812	121	2349
Seeder and cultivator. Combined grain-	N. R. Nelson	814,070	Mar. 6	136	27	121	31
Seeding-machine. Roller	J. T. Mayhew	815,451	Mar. 20	2974	619	121	756
Seeding-machine speed device	S. H. Jones and E. E. Towle	816,331	Mar. 27	4778	1012	121	1196
Segmental rack	W. H. Voss	817,286	Apr. 10	1472	309	121	1742
Self-clearing rake	E. C. Macartney	819,017	Apr. 24	4928	1058	121	2598
Self-heating can	G. S. Jewett	818,092	Apr. 17	3091	662	121	2142
Semaphore	C. H. Williams	817,603	Apr. 10	2091	442	121	1872
Separating device	D. K. Swartwout	815,656	Mar. 20	3360	703	121	840
Separator: *See* Cream-separator. Gas, oil, water, and sand separator. Grain-separator. Graphite-separator. Liquid-separator. Oil-separator. Ore-separator. Sand and slime separator. Seed-separator. Spiral separator. Steam-separator.							
Separator	G. Boettler	816,067	Mar. 27	4240	898	121	1061
Separator	G. A. Anderson	818,216	Apr. 17	3331	714	121	2199
Separators. Automatic distributer for blower-	G. Geisendorfer and W. A. Allen	816,460	Mar. 27	5038	1070	121	1251
Separators. Driving mechanism for centrifugal	W. C. Hartmann	817,913	Apr. 17	2726	591-2	121	2068
Sewage-treating apparatus	M. V. Smith	817,996	Apr. 17	2890	624-5	121	2106
Sewers. Flushing-tank for	R. C. De La Hunt	818,875	Apr. 24	4659	1000	121	2539
Sewing-cabinet	V. H. Bogardus	818,073	Apr. 17	3037	656	121	2135
Sewing-machine	C. A. Dearborn	814,025	Mar. 6	49	10	121	13
Sewing-machine	G. Riel	814,730	Mar. 13	1475	309-10	121	383
Sewing-machine	E. F. Durand	817,475	Apr. 10	1855	389-90	121	1823
Sewing-machine. Blindstitching	F. Herman	814,603	Mar. 6	1201	251-2	121	260
Sewing-machine bobbin-case	W. R. Abercrombie	814,341	Mar. 6	701	141	121	154
Sewing-machine button-sewing attachment	C. E. Ongley	816,815	Apr. 3	521	113	121	1473
Sewing-machine buttonhole-cutting device	E. B. Allen	815,501	Mar. 20	3058	637-8	121	774
Sewing-machine cabinet	E. G. Johanson	814,450	Mar. 6	912	187	121	199
Sewing-machine clamp. Buttonhole-	J. Kiewicz	814,216	Mar. 6	419	86	121	91
Sewing-machine feed	W. Duchemin	817,304	Apr. 10	1502	315	121	1747
Sewing-machine feed mechanism	C. A. Dearborn	814,026	Mar. 6	58	11	121	15
Sewing-machine feeding mechanism	P. Diehl and A. Grieb	814,027	Mar. 6	62	11	121	15

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Sewing-machine folder	A. H. De Voe	814,944	Mar. 13	1870	393	121	465
Sewing-machine folding and guiding attachment	R. G. Woodward	815,134	Mar. 13	2277	476	121	552
Sewing-machine folding attachment	M. A. E. Luhrs	815,026	Mar. 13	2060	431	121	504
Sewing-machine guide	H. Bryce	814,513	Mar. 6	1029	212–13	121	224
Sewing-machine guide	B. Fleigel	815,342	Mar. 20	2742	571	121	704
Sewing-machine presser-foot lifter	A. L. Madison	818,896	Apr. 24	4693	1007	121	2545
Sewing-machine shuttle-actuating mechanism	G. L. Corcoran and G. A. Dobyne.	815,089	Mar. 13	2133	449–50	121	520
Sewing-machine stand	G. D. Cooper	816,300	Mar. 27	4688	996	121	1178
Sewing-machine stitch-forming means	R. L. Lyons	818,840	Apr. 24	4595	986	121	2525
Sewing-machine stitch-forming mechanism	C. A. Dearborn	814,642	Mar. 6	1275	268–9	121	276
Sewing-machine thread-case	P. Diehl	815,517	Mar. 20	3086	643	121	780
Sewing machine thread-measuring mechanism. Boot and shoe	M. T. Denne	818,360	Apr. 17	3605	773	121	2256
Sewing-machine trimmer and binder	J. Higgins	815,428	Mar. 20	2933	608–9	121	747
Sewing-machine work-holding device	J. G. Lewis and C. W. Bagley	814,057	Mar. 6	114	22	121	26
Sewing-machines. Heating system for wax-thread	G. L. Corcoran and G. A. Dobyne.	818,417	Apr. 24	3727	800	121	2338
Shackle. Chain-link	G. A. H. Dresler	819,007	Apr. 24	4906	1054	121	2593
Shade	L. W. Haight and W. E. Chapman.	816,316	Mar. 27	4718	1001–2	121	1184
Shade and curtain hanger. Window	O. B. Reed	815,120	Mar. 13	2245	470–1	121	545
Shade and roller adjustment. Window-	A. Holmes	815,294	Mar. 13	2589	545	121	624
Shade-bracket	H. Meyer	815,195	Mar. 13	2401	500	121	581
Shade-bracket and curtain-pole support	J. E. Forehand	816,855	Apr. 3	612	128	121	1494
Shade-cloth trimmer	F. W. Orchard	816,247	Mar. 27	4583	975	121	1154
Shade fastening. Window-	G. A. Demo	818,359	Apr. 17	3604	772	121	2256
Shade fixture. Window-	J. M. Murdock	815,621	Mar. 20	3284	688	121	823
Shade-hanger	O. Linebarger	814,149	Mar. 6	291	58	121	64
Shade-holder	A. S. Marten and C. J. Eichhorn	815,545	Mar. 20	3147	658–9	121	793
Shade or canopy supporting bracket	W. H. Burden	818,937	Apr. 24	4774	1026	121	2564
Shade-roller and support therefor	O. S. Brown	818,516	Apr. 17	3930	846	121	2379
Shade-roller bracket. Adjustable	H. L. Meadowcroft	814,226	Mar. 6	436	90	121	94
Shade-roller pulley. Window-	L. Z. Pouliot	816,820	Apr. 3	533	114	121	1476
Shaft-coupling	F. Shaw	818,476	Apr. 17	3828	823–4	121	2359
Shaft. Flexible	A. P. and C. H. Warner	815,240	Mar. 13	2499	520	121	604
Shaft. Flexible	C. F. C. Mehlig	815,726	Mar. 20	3512	738	121	873
Shaft. Flexible	C. F. C. Mehlig	816,240	Mar. 27	4569	972	121	1151
Shaft. Flexible	J. K. Stewart	817,283	Apr. 10	1467	308	121	1741
Shaft. Jointed	J. K. Stewart	815,485	Mar. 20	3025	632	121	767
Shaft-support	C. J. Murphy	816,027	Mar. 27	4148	878	121	1061
Sharpener. Knife-	A. L. Davis	817,226	Apr. 10	1346	282	121	1718
Sharpener. Razor-	H. P. Fowler	817,479	Apr. 10	1862	392	121	1824
Sharpener. Shear-	J. C. Jeffrey	816,662	Apr. 3	240	56–7	121	1413
Sharpening machine. Drill-	J. J. Brossoit	816,961	Apr. 3	834	170–1	121	1543
Sharpening mechanism. Rock-drill-	W. P. Lightbody	815,720	Mar. 20	3494	731	121	870
Sharpening mechanism. Rock-drill-	W. P. Lightbody	815,843	Mar. 20	3787	798–9	121	930
Shearing machinery. Lappet-	W. C. Bradley	815,938	Mar. 27	3962	839–40	121	1020
Shearing mechanism. Rotary	G. W. Swift, Jr.	814,813	Mar. 13	1642	344–5	121	417
Shears: *See* Animal-shears. Plate-shears.							
Shears	A. N. Eastman	814,029	Mar. 6	68	12	121	16
Sheet-metal can	B. Adriance and A. Calleson	818,731	Apr. 24	4376	937	121	2478
Sheet-metal pipe. Adjustable	H. Latimer	818,267	Apr. 17	3434	738	121	2221
Sheet-metal structure. Reticulated	G. Holden	818,444	Apr. 24	3775	811	121	2348
Sheet-metal support or bracket	L. E. Keller	815,020	Mar. 13	2045	428	121	500
Shelf-support	J. Speed	814,811	Mar. 13	1640	343	121	417
Shifter	R. H. Stearns and H. Klehm	817,815	Apr. 17	2515	539	121	2020
Shifting device	E. C. Smith	815,650	Mar. 20	3351	701	121	838
Shingle-machine	W. H. Kratsch and C. G. Dauber.	817,177	Apr. 10	1244	257–8	121	1696
Ship construction	J. Kidd	818,259	Apr. 17	3421	734	121	2217
Ship. Swing-bed for use on board	C. Soulas	815,127	Mar. 13	2266	474	121	549
Shipping box or crate	C. D. Rice	817,669	Apr. 10	2205	470	121	1897
Shirt	W. Hess, Jr	818,440	Apr. 24	3771	810	121	2347
Shock-loader	W. Heckart	817,370	Apr. 10	1623	343	121	1775
Shock-support	B. B. Peete	816,595	Apr. 3	100	20–1	121	1379
Shocker attachment for binders	T. W. Brown	815,141	Mar. 13	2292	479–80	121	556
Shoe-dipping machine	J. H. Wall	817,408	Apr. 10	1711	361	121	1793
Shoe-form	F. H. Nies	818,704	Apr. 24	4323	927	121	2466
Shoe-former	F. H. Higgins	818,960	Apr. 24	4815	1036	121	2573
Shoe-polishing outfit	G. H. Rogers	815,934	Mar. 20	3952	837	121	966
Shoe-rack covering	P. J. Porter	815,932	Mar. 20	3950	837	121	965
Shoe-top. Adjustable	H. Metz	815,194	Mar. 13	2400	500	121	581
Shoes. Antislipping device for	G. L. Pierce	814,474	Mar. 6	959	197	121	209
Shoes. Antislipping device for	W. P. Clugsten	817,958	Apr. 17	2822	610	121	2090
Shovel: *See* Excavator-shovel.							
Shovel	L. Schaffert	815,122	Mar. 13	2248	471	121	546
Show device	C. E. Isacke	814,706	Mar. 13	1432	299	121	373
Shower-bath	C. C. Russell	816,604	Apr. 3	117	25	121	1382
Shredder-feeder	G. W. Crane	815,408	Mar. 20	2900	602	121	739
Shredding-machine feeding mechanism	E. H. Frickey	815,087	Mar. 13	2172	458	121	528
Shutter-fastener	J. T. Johnson	815,589	Mar. 20	3218	677	121	808
Shutter. Fire-	B. C. Donnelly	816,080	Mar. 27	4269	904–5	121	1088
Shutter-worker	A. M. Burnham	818,346	Apr. 17	3584	767	121	2251
Shutters, &c. Mechanism for operating	E. Prescott	816,881	Apr. 3	664	138	121	1506
Shutters. Swivel for window-blind	B. H. Phillipps	815,862	Mar. 20	3826	810	121	938
Shuttle	N. Foerster, D. J. Carey, and W. A. Foster.	815,953	Mar. 27	3992	845–6	121	1025
Shuttle-box	D. J. Carey	815,939	Mar. 27	3964	840	121	1020
Shuttle-box	N. Foerster, D. J. Carey, and W. A. Foster.	815,950	Mar. 27	3985	844	121	1024
Shuttle for weft-replenishing mechanisms	N. Foerster	815,949	Mar. 27	3984	844	121	1024
Sickles. Water-distributer for	S. C. Scott and J. C. Watson	817,523	Apr. 10	1945	410	121	1843
Side-delivery rake	W. E. Martin	818,899	Apr. 24	4702	1008–9	121	2548
Sidewalk, floor, and roof light construction	P. H. Jackson	816,234	Mar. 27	4560	970	121	1150
Sidewalk-light	C. H. Ross and S. Dauchy	816,566	Apr. 3	22	6	121	1359
Sieving apparatus. Centrifugal	H. L. Orrman	817,333	Apr. 10	1551	326–7	121	1758
Sifter. Flour-	W. G. Gadue	815,415	Mar. 20	2914	604	121	743

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Sifter. Gyratory	A. C. Brantingham	817,901	Apr. 17	2707	587	121	2063
Sifter. Gyratory	A. C. Brantingham	818,607	Apr. 24	4122	886	121	2421
Sifter. Rotary flour-	G. J. Sweeten	816,136	Mar. 27	4381	926	121	1112
Sign	J. L. Dawes	815,073	Mar. 13	2141	452	121	522
Sign. Changeable illuminated	G. J. and H. G. Pelstring	816,680	Apr. 3	276	64	121	1421
Sign. Illuminated	S. W. Fleming and F. A. Childs	814,684	Mar. 13	1397	291	121	365
Sign. Illuminated	C. L. Williams	818,724	Apr. 24	4361	934	121	2474
Sign. Street-	B. W. Griffin	817,061	Apr. 3	1020	210	121	1584
Signal: *See* Railway-signal. Telephone-signal. Switch-signal.							
Signal	M. D. Campbell	818,870	Apr. 24	4652	999	121	2537
Signal apparatus	C. W. Coleman	818,744	Apr. 24	4402	942-3	121	2483
Signal apparatus. Electric	L. Griffith	814,535	Mar. 6	1076	222	121	233
Signal box or package	J. W. Becherer	815,783	Mar. 20	3643	766	121	899
Signal system	J. H. Lynch	817,497	Apr. 10	1894	399-400	121	1831
Signal system. Electric	V. W. Bergenthal	818,515	Apr. 24	3926	845-6	121	2379
Signal system. Electrical	F. Lacroix	814,302	Mar. 6	591	124	121	127
Signal system. Electrical	F. Lacroix	814,303	Mar. 6	593	124	121	128
Signaling system	J. L. Hall	818,244	Apr. 17	3391	727	121	2211
Signaling system. Electric	S. M. Young	815,890	Mar. 20	3877	820	121	949
Signaling system. Electric	S. M. Young	815,891	Mar. 20	3881	821	121	950
Signaling system. Space	C. D. Ehret	818,236	Apr. 17	3376	724	121	2208
Signaling through space	C. D. Ehret	818,363	Apr. 17	3613	774	121	2256
Silk or silk-mixed goods. Rubbing, breaking, and polishing machine for	A. Gerber	818,434	Apr. 24	3763	809	121	2346
Silks. Assorting	H. Hofer	815,169	Mar. 13	2348	.....	121	568
Sill and lintel machine	F. A. Borst	817,413	Apr. 10	1718	362	121	1795
Silo	C. W. McClure	814,067	Mar. 6	131	25	121	30
Silo	E. F. Schlichter	817,522	Apr. 10	1943	410	121	1842
Silo	J. D. Powell	817,986	Apr. 17	2886	621	121	2100
Singeing-machine	H. Kraemer	816,018	Mar. 27	4126	874-5	121	1056
Sink-cleaner	G. A. Keene	816,665	Apr. 3	246	58	121	1414
Sink-frame	R. F. and J. E. Hageman	817,765	Apr. 17	2102	515	121	1995
Siphon-head	D. Landau	816,729	Apr. 3	350	80	121	1437
Siphon stand and charging apparatus	D. Landau	816,985	Apr. 3	886	183	121	1555
Skate	S. A. Willis	814,819	Mar. 13	1658	347	121	421
Skate	H. A. Silvera	814,879	Mar. 13	1757	368	121	441
Skate	T. A. Russell	815,121	Mar. 13	2247	471	121	545
Skee-runners, sledges, and the like. Artificial track for	A. Schumann	814,626	Mar. 6	1249	262	121	270
Skid	J. C. Marks	815,848	Mar. 20	3793	801	121	932
Skirt and waist retainer	M. E. Clarke	817,417	Apr. 10	1728	364	121	1797
Skirt and waist supporter	L. C. Collins	818,818	Apr 24	4562	978	121	2518
Skirt-marker	H. E. Mohr and G. H. Cooper	815,455	Mar. 20	2990	620	121	757
Skirt-marker	G. W. Frazier	817,760	Apr. 17	2389	513	121	1993
Skirt-scribing platform	W. H. Porter	818 557	Apr. 24	4017	862	121	2396
Skirt support and lifter	T. Schöllhorn	815,749	Mar. 20	3584	753	121	899
Skiving-machine	L. P. Hawkins	815,702	Mar. 20	3460	722	121	863
Skylight construction	J. Haslam	818,624	Apr. 24	4161	894	121	2430
Slack-adjuster	W. G. Price	818,641	Apr. 24	4191	902	121	2438
Slag for production of material similar to trass, &c. Treatment of blast-furnace	H. Colloseus	817,158	Apr. 10	1207	.....	121	1688
Slasher-comb	A. E. Rhoades	818,560	Apr. 24	4022	863	121	2399
Slate-picking machine	W. J. Devers	816,901	Apr. 3	702	145	121	1514
Sled-brake	G. W. Shaffer and J. L. Harman	818,475	Apr. 24	3827	823	121	2359
Sled-propelling mechanism	W. C. King and H. Estorff	817,071	Apr. 3	1033	214	121	1587
Sled. Steel	W. R. Wilson and C. E. Howe	817,605	Apr. 10	2095	442	121	1873
Sleeve. Emergency knuckle-	W. F. Taylor	817,349	Apr. 10	1586	335	121	1767
Sleeve-fastener	G. H. Russell	814,328	Mar. 6	666	134	121	146
Sleeve-protector	C. E. Cather and L. H. Buckley	817,416	Apr. 10	1727	364	121	1797
Sleighs. Antitip-over device for bob-	R. Lohda	818,544	Apr. 24	3995	857	121	2393
Slideway. Spiral	W. H. Logan	814,855	Mar. 13	1713	358	121	432
Slideway. Spiral	W. H. Logan	818,383	Apr. 17	3657	785	121	2267
Sliding extensible screen	A. A. Day	817,471	Apr. 10	1848	387	121	1821
Slimes separating or filtering apparatus	D. J. Kelly	815,021	Mar. 13	2046	429	121	500
Smelting iron ore	P. L. T. Héroult	815,016	Mar. 13	2037	426	121	499
Smelting iron ore. Apparatus for	P. L. T. Héroult	815,293	Mar. 13	2587	544	121	624
Smelting lead ores	W. Valentine and A. G. Betts	816,764	Apr. 3	422	95	121	1451
Smelting lead sulfid	A. G. Betts	816,772	Apr. 3	430	.....	121	1455
Smelting lead sulfid	A. G. Betts	816,773	Apr. 3	440	.....	121	1455
Smelting process. Electrical	W. M. Johnson	814,050	Mar. 6	102	19	121	23
Smoke-consumer	J. Wilson	815,574	Mar. 20	3193	671	121	802
Smoke-consumer	T. Rees	816,738	Apr. 3	365	84	121	1441
Smoke-consumer	T. Rees	816,739	Apr. 3	366	85	121	1441
Smoke-consumer	B. Haigh	818,024	Apr. 17	2949	637	121	2118
Smoke-preventing apparatus	F. A. Lewis	814,550	Mar. 6	1104	230	121	240
Smoke-stack	W. G. Wallace	816,051	Mar. 27	4196	891	121	1072
Smoking-pipe	M. Donohoe	816,902	Apr. 3	706	145	121	1515
Smoking-pipe	G. L. Lundin	817,379	Apr. 10	1642	348	121	1779
Snap. Harness-	M. D. Wood	818,330	Apr. 17	3554	761	121	2246
Snap-hook	G. A. Huff	814,135	Mar. 6	266	53	121	59
Snap-hook	S. Hoar	817,561	Apr. 10	2021	426	121	1856
Snap-hook device. Harness	J. Reichert	818,193	Apr. 17	3289	703	121	2191
Snap-switch	F. W. Sanford	818,299	Apr. 17	3494	750	121	2234
Snow-melting machine	J. F. Blake	818,072	Apr. 17	3006	655-6	121	2135
Snow-plow	G. C. Moore	814,977	Mar. 13	1932	406	121	477
Soap bar	T. M. Anderson	818,652	Apr. 24	4217	906	121	2444
Soap. Brush-	H. A. Burt	816,002	Mar. 27	4096	865	121	1060
Soap-holder	C. Howard	816,860	Apr. 3	624	130	121	1497
Soap-holder	C. H. Pinches	817,985	Apr. 17	2864	620	121	2100
Soap-holder	S. Thornton, Jr	818,004	Apr. 17	2905	627	121	2110
Sod and cornstalk cutter	P. C. and T. O. Meredith	818,105	Apr. 17	3091	667	121	2146
Soda. Manufacturing aluminate of	S. S. Emery	818,754	Apr. 24	4438	.....	121	2492
Sofa and table. Convertible	N. B. Stone	816,616	Apr. 3	152	31-2	121	1395
Solder rings to metal caps. Machine for securing	F. W. Schultz	816,942	Apr. 3	793	163	121	1535

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Solder to metal caps. Machine for forming and securing	F. W. Schultz	816,943	Apr. 3	796	163-4	121	1535
Soldering	C. W. Graham	814,779	Mar. 13	1576	333	121	404
Soldering machine. Can-	H. Diecks	817,754	Apr. 17	2373	509-10	121	1990
Soldering-machine. Vacuum	H. Eachus	817,306	Apr. 10	1507	316	121	1749
Sole and sole-placer	J. Mahoney	814,061	Mar. 6	122	24	121	28
Sole-cutting machines. Knife-carrying mechanism for	A. M. Stickney	815,486	Mar. 20	3028	632	121	767
Sole-edge-trimming machine	W. F. Packard	818,637	Apr. 24	4179	899	121	2434
Sole fastening. Shoe-	W. Beck	818,861	Apr. 24	4635	995	121	2533
Sole for shoes. Antislipping removable	J. M. Hoffman	818,173	Apr. 17	3249	697	121	2182
Sole-pressing machine	E. E. Winkley	818,503	Apr. 24	3883	835-6	121	2370
Sole-pressing machine	E. E. Winkley	818,504	Apr. 24	3889	836-8	121	2371
Sound-box	J. Gaynor	816,908	Apr. 3	718	148	121	1517
Sound-box	C. A. G. Pritchard	818,119	Apr. 17	3130	674	121	2156
Sound-producing instrument	C. A. Parsons	816,180	Mar. 27	4464	945	121	1129
Sound receiving and delivering horn	L. L. Terhune	814,891	Mar. 13	1775	371	121	448
Sound-recording device	H. P. Roberts	816,742	Apr. 3	371	86	121	1442
Sound reproducer or intensifier applicable to phonographs or gramophones, &c.	C. A. Parsons	817,868	Apr. 17	2626	569	121	2045
Sound reproducing and magnifying means	J. L. Gray	814,839	Mar. 13	1691	354	121	428
Sound-reproducing machines. Pitch-indicating attachment for	C. L. Chisholm	814,941	Mar. 13	1863	390-1	121	464
Spark-plug	B. W. Hallstead	818,372	Apr. 17	3629	778	121	2261
Spectacle attachment	J. P. Jackson	814,707	Mar. 13	1434	299-300	121	373
Spectacles	H. Newbold	815,975	Mar. 27	4031	853	121	1034
Speed-changer	W. T. Sears	815,642	Mar. 20	3333	698	121	834
Speed-changing device	O. F. Persson	816,369	Mar. 27	4860	1030-1	121	1214
Speed-indicating apparatus	L. Nissim	814,071	Mar. 6	137	27-8	121	31
Speed-indicator	C. O. Ericson	814,905	Mar. 13	1798	377	121	450
Speed-indicator	E. J. Loring	815,108	Mar. 13	2217	466	121	539
Speed-indicator	G. Ihle	815,708	Mar. 20	3472	725	121	865
Speed-indicator	R. Hartmann-Kempf	817,555	Apr. 10	2009	424	121	1855
Speed-indicator. Electrical	R. Plummer	818,117	Apr. 17	3127	673	121	2155
Speed mechanism. Variable-	R. Anderson	815,778	Mar. 20	3637	764-5	121	898
Speed mechanism. Variable-	C. F. Laur	818,632	Apr. 24	4172	898	121	2433
Speed-meter	G. W. Marble	818,896	Apr. 24	4698	1008	121	2547
Speed-regulator	R. W. Hargrave	816,089	Mar. 27	4284	908	121	1092
Speed-varying mechanism	J. Oler, C. A. Fugal, and J. J. Hayes.	818,281	Apr. 17	3455	743-4	121	2225
Speedometer	G. A. Gulowsen	815,345	Mar. 20	2746	572	121	705
Spike-puller	J. H. Bullard	816,639	Apr. 3	196	46	121	1404
Spike-puller	T. W. Harber	815,701	Mar. 20	3458	722	121	862
Spindle: *See* Spinning-spindle.	D. Auer	816,287	Mar. 27	4662	989	121	1172
Spindle	J. G. Earle	818,082	Apr. 17	3057	659	121	2140
Spinning and twisting apparatus. Ring	J. Hayden, Jr	814,783	Mar. 13	1582	334	121	405
Spinning and twisting. Cap for cap	J. Hayden, Jr	814,844	Mar. 13	1700	355	121	429
Spinning and twisting machine	F. A. Flather	817,167	Apr. 10	1224	252	121	1692
Spinning device. Gyroscope	J. R. Milson	816,675	Apr. 3	264	61-2	121	1418
Spinning-flier	F. M. Leavitt	814,960	Mar. 13	1920	403	121	475
Spinning-frames. Curved fly-remover for	W. Beckwith	816,701	Apr. 3	307	72	121	1428
Spinning-frames. Thread-board for	R. Obernesser	816,031	Mar. 27	4157	880	121	1064
Spinning or twisting ring	J. E. Prest	817,273	Apr. 10	1448	305	121	1737
Spinning-spindle	J. P. Crane	814,189	Mar. 6	361	74	121	79
Spinning yarn from flax, cotton, &c	R. Morris	815,367	Mar. 20	2804	584	121	716
Spiral separator	A. McMeekin	815,623	Mar. 20	3291	689-90	121	825
Spittoons. Gold-catcher for fountain-	F. Nichter	815,856	Mar. 20	3809	806	121	935
Spool. Compensating	F. E. Webster	814,925	Mar. 13	1830	383	121	457
Spool-holders. Combined weight and flier for	F. E. Cole	815,511	Mar. 20	3076	641	121	778
Spout or conveyer. Adjustable	A. H. Groel	815,956	Mar. 27	3997	847	121	1026
Sprayer	S. B. Hart	818,762	Apr. 24	4446	952	121	2493
Sprayer	F. Mercer	815,192	Mar. 13	2398	500	121	580
Spraying apparatus	C. W. Parks	818,392	Apr. 17	3674	789	121	2270
Spraying device	A. Krautzberger	814,218	Mar. 6	422	87	121	91
Spring: *See* Bed-spring. Car-fender spring. Door-spring. Door, gate, and the like spring. Helical spring. Motor-spring. Vehicle-spring.	H. L. Joslin	815,713	Mar. 20	3485	729	121	868
Spring	F. J. Mercer	814,387	Mar. 6	784	158	121	173
Spring	G. L. Harvey	817,482	Apr. 10	1867	393	121	1825
Spring-brace	C. D. Brouyette	817,954	Apr. 17	2815	609	121	2089
Spring-clip. Wire	G. W. McGill	818,904	Apr. 24	4709	1010	121	2549
Spring-clip. Wire	G. W. McGill	818,905	Apr. 24	4712	1011	121	2550
Spring edge-supporting hook	A. T. Knorzer and S. P. Danner	815,436	Mar. 20	2950	612	121	750
Spring-wheel	D. Farrand	817,235	Apr. 10	1364	287	121	1722
Spring-wheel	W. W. McKee	817,265	Apr. 10	1434	302	121	1734
Spring-wheel	R. B. Parsons	817,934	Apr. 17	2769	599	121	2079
Sprinkler: *See* Lawn-sprinkler.	C. A. Crane	818,938	Apr. 24	4775	1026	121	2564
Sprinkler	J. W. Larish	814,852	Mar. 13	1709	357	121	431
Sprinkler apparatus. Electric	J. M. Dodge	817,632	Apr. 10	2145	455	121	1883
Sprocket-wheel	A. Haag	815,528	Mar. 20	3112	650	121	785
Square and bevel. Combined	T. S. Ross	817,991	Apr. 17	2880	622	121	2104
Square. Bevel-	D. Polimeni	817,515	Apr. 10	1929	407	121	1830
Square. Carpenter's	T. Zimmerman	817,214	Apr. 10	1324	276-7	121	1713
Square. T-	J. A. Traut	815,389	Mar. 20	2853	592	121	728
Square. Try-	T. F. Norfolk	814,157	Mar. 6	302	60	121	66
Squares. Attachment for steel	J. R. Powell	815,119	Mar. 13	2243	470	121	545
Squib. Compound	J. R. Powell	815,212	Mar. 13	2447	510	121	593
Squib-holder	H. M. Thompson	814,096	Mar. 6	193	38-9	121	42
Stacker. Hay-	J. Dain	818,749	Apr. 24	4423	946-7	121	2489
Stacker. Hay-							

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Stacker-head	O. F. Smith	817,882	Apr. 17	2658	578	121	2061
Stacker. Straw-	J. B. Bartholomew	817,895	Apr. 17	2685	584	121	2057
Stacker. Straw-	J. B. Bartholomew	817,896	Apr. 17	2689	585-6	121	2058
Stacker. Straw-	J. B. Bartholomew	817,897	Apr. 17	2700	586	121	2061
Stacker. Straw-	J. B. Bartholomew	817,952	Apr. 17	2805	608-9	121	2066
Stacker. Straw-	J. B. Bartholomew	818,339	Apr. 17	3572	764-5	121	2249
Stair	J. M. Knaus	815,840	Mar. 20	3783	798	121	929
Stalk-cutter	W. P. Dorris	818,876	Apr. 24	4662	1000	121	2530
Stamp-affixing device	M. R. Burrowes	814,936	Mar. 13	1853	388	121	462
Stamp-affixing machine	W. F. Bernheisel	815,138	Mar. 13	2285	477	121	554
Stamp and seal handling device	G. B. Kilbon	814,708	Mar. 13	1435	300	121	373
Stamp. Hand-	L. K. Scotford	817,195	Apr. 10	1286	266	121	1704
Stamp-mill	M. P. Boss	815,936	Mar. 27	3959	838-9	121	1019
Stamp-mill	M. P. Boss	815,937	Mar. 27	3960	839	121	1020
Stamp-mill	J. F. Symons and W. H. Paull	818,985	Apr. 24	4965	1045	121	2585
Stamp. Self-inking	J. P. Eastman and T. F. Hawley	817,422	Apr. 10	1739	366	121	1799
Stamping-machine	I. Eyer	815,805	Mar. 20	3694	779	121	910
Stanchion	W. J. Williams, Jr., and A. Edgar	815,994	Mar. 27	4070	862	121	1041
Stand:							
See Car-wheel jack-stand. Display-stand. Flower-stand. Microscope-stand. Roller-stand. Sewing-machine stand. Siphon-stand. Telephone desk-stand. Work-stand.							
Staples, &c. Holder for	J. A. Blake	815,787	Mar. 20	3655	769	121	902
Starch, &c. Apparatus for drying	E. E. Perkins	815,373	Mar. 20	2814	586	121	718
Starch-molding machine. Lump-	T. B. Wagner	816,624	Apr. 3	166	34-5	121	1398
Static discharger and lightning-arrester	H. M. Shaw	815,384	Mar. 20	2842	591	121	725
Station-indicator	A. E. Hovey and J. E. Tapley	818,447	Apr. 24	3779	812	121	2349
Station-indicator	J. E. Tapley and A. E. Hovey	818,483	Apr. 24	3839	826	121	2361
Stationary switch and adjustable car-wheel for use thereon	A. T. Winchell	815,666	Mar. 20	3380	706-7	121	845
Stave-jointer	L. F. Dieter	815,518	Mar. 20	3088	643-5	121	780
Steam and hot-water boiler	M. Dean	816,567	Apr. 3	23	7	121	1359
Steam-boiler	C. W. Hawkes	814,206	Mar. 6	392	79-80	121	86
Steam-boiler	S. H. Hale	816,012	Mar. 27	4112	870	121	1054
Steam-boiler	C. C. Cherry	816,530	Mar. 27	5186	1100	121	1285
Steam-boiler	H. Del Mar	817,418	Apr. 10	1730	364	121	1797
Steam-chests. Heat-screen for	D. C. Bailly	815,780	Mar. 20	3641	765	121	899
Steam-condensing apparatus	D. B. Morison	816,811	Apr. 3	510	111-12	121	1470
Steam-engine	J. Lindberg	815,185	Mar. 13	2390	496	121	579
Steam-engine. Compound	W. Wills	816,411	Mar. 27	4957	1053	121	1234
Steam-generator	F. Fromont	818,948	Apr. 24	4795	1031	121	2569
Steam. Regulating the temperature of superheated	J. P. Sneddon	814,629	Mar. 6	1253	263	121	272
Steam-separator	H. H. Humphrey	817,715	Apr. 10	2276	490	121	1911
Steam-trap	W. S. Johnson	816,474	Mar. 27	5073	1076-7	121	1258
Steamboats, &c. Pulling-machine for	F. W. Hayes and C. A. Billings	815,014	Mar. 13	2029	425-6	121	497
Steering-gear. Hydraulic and hand	J. G. Cooper	815,266	Mar. 13	2535	533	121	611
Step-joint	G. A. Weber	817,825	Apr. 17	2533	544-5	121	2025
Step or mat	C. Dahlstrom	817,837	Apr. 17	2560	549	121	2031
Stereopticon apparatus. Automatic	M. H. Killen	817,251	Apr. 10	1396	294-5	121	1727
Stereotypes and the like. Manufacture of	R. C. Annand	815,999	Mar. 27	4076	863	121	1043
Sterilizer. Basin-	H. W. Shonnard	816,886	Apr. 3	678	140	121	1509
Sterilizing and antiseptic case with stand for surgical instruments	P. Briganti	816,959	Apr. 3	830	170	121	1542
Sterilizing apparatus. Portable	W. W. Sweeney	815,313	Mar. 13	2639	552	121	633
Stethoscope	O. Städtler	814,923	Mar. 13	1825	383	121	456
Still	J. H. Smith	814,405	Mar. 6	831	172	121	181
Still	Z. E. Fiveash	817,552	Apr. 10	2005	422-3	121	1854
Still. Ammonia-	B. Thoens	818,858	Apr. 24	4630	994	121	2532
Still. Glycerin-	C. Sudre	815,761	Mar. 20	3607	757	121	893
Still. Wood-	H. Copilovich	814,901	Mar. 13	1791	374	121	449
Stilt	H. J. Chambers	815,795	Mar. 20	3677	774	121	907
Stitch and similar machine. Festoon-	R. Schöchli	814,236	Mar. 6	453	94	121	98
Stock-loader	E. Arthur	815,898	Mar. 20	3894	823-4	121	953
Stone-cutting saw	J. S. Young	816,768	Apr. 3	431	97	121	1453
Stone-cutting saw	J. S. Young	816,769	Apr. 3	432	97	121	1453
Stone-molding machine. Artificial-	N. F. Palmer	815,372	Mar. 20	2813	586	121	718
Stone post or column. Artificial-	N. Michelena é Iñarra	816,171	Mar. 27	4444	941	121	1125
Stone-sawing machinery	A. G. Grice	817,847	Apr. 17	2579	565-6	121	2035
Stone shingle. Artificial-	O. Price	816,252	Mar. 27	4590	977	121	1156
Stool	V. A. Fagerstrom	817,234	Apr. 10	1363	286	121	1721
Stool and pail-holder. Foldable milking-	J. E. Beebe	815,672	Mar. 20	3391	708-9	121	847
Stool back-rest. Adjustable	L. M. Rich	818,293	Apr. 17	3474	748	121	2229
Stool. Camp-	C. Erickson	816,905	Apr. 3	709	146	121	1516
Stool. Folding	C. Erickson	816,158	Mar. 27	4419	935	121	1120
Stool. Milking-	M. T. Hamilton	815,425	Mar. 20	2930	608	121	746
Stool. Milking-	H. H. Kagey	818,254	Apr. 17	3414	732	121	2216
Stop-motion for high-speed machines	W. E. Goodyear	818,159	Apr. 17	3211	691	121	2173
Stopper:							
See Bottle-stopper. Flue-stopper. Hot-water-bag stopper.							
Stopper	C. N. Brisco	814,352	Mar. 6	718	145	121	158
Stopper	W. I. Kaiser	815,351	Mar. 20	2755	574	121	707
Stopper-cutting machine	A. Kaysser	818,765	Apr. 24	4450	953	121	2494
Stopple and non-refillable bottle. Automatic	A. H. Cox	815,147	Mar. 13	2305	482	121	558
Storage battery	F. Mouterde	814,064	Mar. 6	126	24	121	29
Storage battery	H. B. Hallock	814,691	Mar. 13	1408	293	121	367
Storage battery	W. H. Palmer, Jr	817,132	Apr. 3	1145	237	121	1614
Storage battery	J. R. Macmillan	817,498	Apr. 10	1899	400	121	1832
Store-service apparatus	E. W. Wilcox	818,595	Apr. 24	4092	879-80	121	2414
Stove	F. D. Moses	817,182	Apr. 10	1259	261	121	1699
Stove and furnace	H. E. Janes	818,628	Apr. 24	4166	896	121	2431
Stove draft attachment. Cook-	J. E. Thorelius	818,003	Apr. 17	2903	637	121	2109
Stove. Gas heating-	L. B. French and T. Sheets	814,280	Mar. 6	544	113	121	117
Stove-grate	J. Loftus	815,445	Mar. 20	2964	616-17	121	754

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Stove. Heating	J. W. Emery	818,617	Apr. 24	4149	892	121	2427
Stove lifter and mover	J. Wood	817,030	Apr. 3	965	198	121	1573
Stove-lining	G. C. Hicks	818,690	Apr. 24	4287	920	121	2458
Stove-lining	G. C. Hicks	818,763	Apr. 24	4447	953	121	2494
Stove. Magazine heating	E. D. Marshall	816,024	Mar. 27	4144	877	121	1060
Stove. Oil	W. H. Wilder	816,201	Mar. 27	4501	955–6	121	1137
Stove or furnace	H. J. Hough	814,703	Mar. 13	1427	297	121	372
Stoves and furnaces. Door for hot-blast	J. Kennedy	817,070	Apr. 3	1032	213–14	121	1587
Stoves. Foot-rest for	W. Reid	817,447	Apr. 10	1792	377	121	1810
Stoves. Sealed magazine for	S. C. Laitner	815,716	Mar. 20	3488	729–30	121	869
Stovepipe-holder	L. Wetherbee	814,254	Mar. 6	500	103	121	107
Strainer	M. Stransky	815,874	Mar. 20	3847	815	121	942
Strainer	N. E. Skinner	817,397	Apr. 10	1689	356	121	1789
Strap: *See* Hitching-post strap.	N. E. Skinner	817,452	Apr. 10	1806	379	121	1814
Strap	S. T. Roberts	815,216	Mar. 13	2454	512	121	594
Strap-hanger, signal-bell ringer, and register-ringer. Combined	S. S. Brooks	818,935	Apr. 24	4771	1025	121	2563
Street-cleaner	J. G. Sanderson	816,606	Apr. 3	120	26	121	1383
Street-cleaning machine	E. S. Pearson	817,662	Apr. 10	2194	468	121	1894
Stringed-instrument attachment	G. P. Buchanan	816,898	Apr. 3	696	143	121	1513
Stringed-instrument key	A. A. Farland	814,682	Mar. 13	1395	290	121	365
Stropping-machine	J. R. Curley	815,685	Mar. 20	3426	715–16	121	855
Stropping-machine	E. B. Gibford	818,680	Apr. 24	4266	916	121	2454
Structure. Composite	J. H. Hood	814,134	Mar. 6	264	53	121	58
Stud, dress-fastener, and the like	T. Harris	818,087	Apr. 17	3061	660	121	2141
Stud. Fastening	H. M. Cheek	816,779	Apr. 3	451	101	121	1457
Stud. Shirt	O. L. Heneriau	814,042	Mar. 6	85	16	121	20
Studs. Clutch for	R. Fischer	818,530	Apr. 24	3966	852	121	2388
Stuffing-box	J. Sieger	816,190	Mar. 27	4480	949	121	1133
Stuffing-box	F. W. Felsberg	816,445	Mar. 27	5013	1064	121	1245
Stuffing-box for traveling cables, rods, &c	S. W. Chiles	816,643	Apr. 3	206	48	121	1406
Stuffing-machine	M. Mazerov	816,871	Apr. 3	644	133–4	121	1502
Stump-puller	B. A. Fuller and M. Bateman	815,586	Mar. 20	3213	676	121	807
Submerged heater	D. M. Flory and J. H. Barnhart	818,677	Apr. 24	4263	916	121	2453
Sucker-rod elevators. Hook for	J. Mahoney	815,723	Mar. 20	3500	732	121	871
Sugar, &c. Crystallizing	V. H. Schütze	816,010	Apr. 3	925	191	121	1563
Sulky	H. J. Miller	815,615	Mar. 20	3267	685–6	121	819
Sulky	H. J. Miller	815,616	Mar. 20	3271	687	121	820
Sulky-seat	C. C. Lapham	815,841	Mar. 20	3784	798	121	930
Superheater	N. Notkin	816,993	Apr. 3	899	186	121	1558
Supporter	S. Lipkowits	815,604	Mar. 20	3248	682	121	815
Supporting device	W. B. Morewood	818,700	Apr. 24	4315	925	121	2465
Surfacing and polishing machine	A. T. Spence, J. H. Prugh, and S. B. Zimmer.	817,013	Apr. 3	933	192	121	1565
Surgical clip	A. J. Meier	816,026	Mar. 27	4147	878	121	1061
Surgical truss	J. Leverone	816,867	Apr. 3	634	132	121	1499
Surveying-instrument attachment	W. M. Beaman	816,422	Mar. 27	4976	1057	121	1237
Suspender-loop	C. W. Bartrum	814,509	Mar. 6	1016	209	121	222
Suspenders	W. D. Flynn	814,125	Mar. 6	251	47	121	56
Suspenders	B. J. Bacon	814,344	Mar. 6	705	142	121	155
Suspenders. Stocking	A. Wardroper	818,317	Apr. 17	3529	757	121	2241
Suspenders. Trousers	B. J. Bacon	814,345	Mar. 6	707	142	121	155
Suspension device. Adjustable	F. L. Gregory	815,422	Mar. 20	2924	607	121	745
Suspensory	J. R. Sommerville	816,888	Apr. 3	681	141	121	1510
Suture-bridge	J. E. Chambers	815,264	Mar. 13	2533	532	121	611
Swaging-mill	G. H. Blaxter	816,146	Mar. 27	4394	929	121	1115
Sweat-band	R. H. and H. D. Curtis	816,301	Mar. 27	4691	996	121	1179
Swing. Rocking	J. Hancock	818,622	Apr. 24	4158	894	121	2430
Swing. Rotary	W. R. McKnight	814,156	Mar. 6	300	60	121	66
Swingletree attachment	W. C. Pritchard	816,501	Mar. 27	5127	1087	121	1270
Switch: *See* Automatic switch. Controller-switch. Electric switch. Electric time-switch. Electrical switch. Interlocking switch. Railway-switch. Snap-switch. Telephone connector-switch.							
Switch	W. W. McClung	815,202	Mar. 13	2427	506	121	589
Switch	E. Fields	815,693	Mar. 20	3443	719	121	859
Switch	M. S. Farmer	816,308	Mar. 27	4705	998	121	1182
Switch	H. Richardson	816,377	Mar. 27	4872	1034	121	1217
Switch	E. P. Robbins	818,561	Apr. 24	4023	863	121	2390
Switch-actuating device	A. Fuller	818,824	Apr. 24	4571	980	121	2519
Switch-key	E. B. Craft	814,277	Mar. 6	540	113	121	116
Switch mechanism	W. C. Mortensen and G. M. Thenn.	816,812	Apr. 3	515	112	121	1472
Switch operating and locking mechanism	A. Anderson	818,651	Apr. 24	4215	906	121	2443
Switch-operating device	O. J. Du Vernay	814,278	Mar. 6	541	113	121	116
Switch-operating mechanism	N. K. Bowman	814,582	Mar. 6	1161	242–3	121	251
Switch-point connector	W. E. Davis and W. W. Norman	817,365	Apr. 10	16144	341	121	1773
Switch-receptacle	G. H. Metheany	818,387	Apr. 17	3663	786–7	121	2268
Switch-rod. Adjustable	H., Jr., and W. H. Elliot	815,150	Mar. 13	2310	484	121	559
Switch-signal	B. G. Matz and M. Wozniewski	817,860	Apr. 17	2606	563	121	2040
Switch-throwing device	G. W. Hercules and T. J. Martin	816,913	Apr. 3	728	150	121	1520
Switch-throwing device	J. H. Meyer	818,773	Apr. 24	4469	958	121	2498
Synchronism-indicator	A. H. Fetters	818,945	Apr. 24	4788	1029–30	121	2568
Syringe	D. G. Gay	817,054	Apr. 3	1005	206	121	1583
Syringe. Hypodermic	J. W. Horner	814,543	Mar. 6	1092	226	121	237
Syringe. Vaginal	M. L. Bosworth	818,814	Apr. 24	4556	976	121	2517
Table: *See* Cigar-rolling table. Collapsible table. Dining and billiard table. Drafting-table. Extension-table. Ironing-table. Turn-table.							
Table	V. A. Fagerstrom	817,634	Apr. 10	2147	455–6	121	1884
Table	S. A. Nichols	818,550	Apr. 24	4006	859	121	2395

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr's.	Official Gazette. Vol.	Official Gazette. Page.
Table	L. C. Bullock, Jr	818,663	Apr. 24	4239	911-12	121	2448
Table attachment. Extension-	H. C. Krieghbaum	815,100	Mar. 11	2199	463	121	533
Table-screen	J. C. Patterson	814,473	Mar. 6	958	196	121	209
Tablet-machine punch-holder	E. L. Richards	818,194	Apr. 17	3292	704	121	2191
Tabulating and other like systems. Apparatus for use in	H. Hollerith	814,700	Mar. 13	1420	295-6	121	370
Tachometer	A. C. Butler	817,547	Apr. 10	1992	420	121	1852
Tackle-block	H. V. Hartz	818,886	Apr. 24	4676	1003	121	2542
Tag. Laundry-	H. Higgin	818,441	Apr. 24	3772	811	121	2348
Tag or label	M. H. Winn	817,460	Apr. 10	1827	383	121	1818
Take-up mechanism	N. Power	818,047	Apr. 17	2990	646	121	2126
Talking-machine	E. R. Johnson	814,786	Mar. 13	1587	335	121	406
Talking-machine	H. J. Hagen	816,978	Apr. 3	870	180	121	1551
Talking-machine	E. A. Pancoast	816,995	Apr. 3	902	137	121	1559
Talking-machine	M. A. Possons	818,975	Apr. 24	4848	1042	121	2580
Talking-machine blank. Disk-	R. Klein	814,053	Mar. 6	105	19	121	24
Talking-machine horn-support	E. S. Oliver	816,178	Mar. 27	4458	944	121	1128
Talking-machine motor	E. R. Johnson	814,047	Mar. 6	95	18	121	21
Tank: *See* Closet-tank. Electroplating-tank. Engine-tank. Flush-tank. Flushing-tank. Gas-tank. Railway water-tank. Watering-tank.							
Tank	D. O. Paige	814,160	Mar. 6	312	62-3	121	69
Tank	J. W. Wallace	814,753	Mar. 13	1520	322	121	392
Tank	A. Hahn	817,314	Apr. 10	1520	319	121	1751
Tank	O. Hjelkrem	818,088	Apr. 17	3062	660	121	2141
Tank lining. Wooden-	F. E. Reed and J. Heald	816,682	Apr. 3	278	65	121	1421
Tank or can	J. W. Wallace and H. A. Keiner	816,625	Apr. 3	168	35	121	1398
Tank-sections. Apparatus for use in perforating the flanges of	D. O. Paige	816,593	Apr. 3	95	19-20	121	1378
Tanks, basins, and the like. Hanger-support for	F. J. Veitch	818,587	Apr. 24	4070	874	121	2409
Tanning apparatus. Leather-	H. de Marneffe	816,670	Apr. 3	255	59	121	1416
Tap and die holder	C. E. Cole	815,146	Mar. 13	2304	482	121	558
Tapping and drilling machine	A. J. Strong	814,247	Mar. 6	486	100	121	104
Tape-stretcher	G. Oertel	816,032	Mar. 27	4157	880	121	1064
Target. Self-registering electrically-operated sectional	G. A. Peters	815,117	Mar. 13	2234	469	121	542
Tea or coffee pot	W. L. Bodman	814,262	Mar. 6	514	106	121	110
Teaching the fundamental operations with numbers. Device for	C. Zahn	816,204	Mar. 27	4508	957	121	1139
Teeth. Instrument for stopping	P. F. Rutterford	815,040	Mar. 13	2091	439	121	511
Teeth. Instrument for stopping	P. F. Rutterford	815,041	Mar. 13	2092	439	121	512
Telegraph-key	J. J. Ghegan	815,809	Mar. 20	3703	780	121	912
Telegraph. Printing-	R. J. Sheehy	818,477	Apr. 24	3829	824	121	2359
Telegraph receiving apparatus. Wireless-	A. Artom	816,205	Mar. 27	4510	957	121	1139
Telegraph system	M. J. Carpenter	818,145	Apr. 17	3189	686	121	2169
Telegraphic safety device	S. R. Wright	814,761	Mar. 13	1537	325	121	396
Telegraphy	S. F. Jones	818,892	Apr. 24	4686	1005	121	2544
Telephone	S. P. Levenberg	818,698	Apr. 24	4303	923	121	2461
Telephone and watchman's alarm system. Combined	J. J. Berry	816,000	Mar. 27	4077	864	121	1043
Telephone apparatus and systems. Privacy device and busy-signal for	E. A. Reynolds	817,390	Apr. 10	1673	353-4	121	1785
Telephone attachment	B. Ehrlich	814,680	Mar. 13	1375	288	121	359
Telephone attachment	J. Silverman	815,752	Mar. 20	3588	754	121	889
Telephone attachment	J. Silverman	815,753	Mar. 20	3589	754	121	889
Telephone attachment. Desk-	J. C. Belden and A. Beutler	818,602	Apr. 24	4114	884	121	2419
Telephone connector-switch. Automatic	A. E. Keith, J. and C. J. Erickson	815,176	Mar. 13	2357	493-5	121	570
Telephone desk-stand	H. Tideman	816,619	Apr. 3	157	32	121	1396
Telephone-exchange	W. M. Marean	814,386	Mar. 6	780	158	121	172
Telephone-exchange	B. Salzmann	815,042	Mar. 13	2093	439	121	512
Telephone-exchange system	H. G. Webster	816,052	Mar. 27	4197	891	121	1072
Telephone-exchange system	W. M. Davis	816,078	Mar. 27	4264	903	121	1087
Telephone-exchange system	H. D. Stroud	816,135	Mar. 27	4375	925	121	1111
Telephone-exchange system	E. Land	818,540	Apr. 24	3981	855-6	121	2391
Telephone-exchange systems. Transfer-circuit for	C. A. Simpson	816,131	Mar. 27	4359	923	121	1107
Telephone-exchanges. Alarm-fuse for	E. B. Craft	817,959	Apr. 17	2823	611	121	2090
Telephone-exchanges. Iron-framed distributing-board for	F. B. Cook	816,847	Apr. 3	592	124	121	1490
Telephone-exchanges. Multiple switchboard for	M. G. Kellogg	817,781	Apr. 17	2444	522	121	2005
Telephone-exchanges. Registering apparatus for	C. E. Wright	818,068	Apr. 17	3028	654	121	2133
Telephone. Extension-arm	T. J. Skelley	818,982	Apr. 24	4862	1044	121	2582
Telephone or telegraph system	G. Ritter	814,478	Mar. 6	968	199	121	211
Telephone-receiver support	F. F. Howe	817,564	Apr. 10	2027	427	121	1858
Telephone-receivers. Head band or support for	K. M. Turner	817,457	Apr. 10	1816	381	121	1816
Telephone selector-switch. Automatic	A. E. Keith, J. and C. J. Erickson	815,321	Mar. 13	2665	556-8	121	639
Telephone-signal	A. V. R. Fechtenburg	818,675	Apr. 24	4256	915	121	2452
Telephone-switchboard apparatus	H. E. A. André	816,894	Apr. 3	689	142	121	1511
Telephone-switchboards. Supervisory signal for	F. R. McBerty	817,867	Apr. 17	2822	568	121	2044
Telephone system	W. W. Dean	814,118	Mar. 11	233	45	121	51
Telephone system	E. A. Terpening	814,571	Mar. 6	1141	238-9	121	247
Telephone system	L. W. Carroll	814,830	Mar. 13	1676	350	121	425
Telephone system	C. B. Smith	816,132	Mar. 27	4363	924	121	1108
Telephone system	R. H. Manson	818,897	Apr. 24	4694	1007	121	2546
Telephone system. Coin-controlled	E. A. Reynolds	817,389	Apr. 10	1665	352-3	121	1783
Telephone-system controller. Automatic-	A. E. Stevens	816,948	Apr. 3	810	166	121	1538
Telephone-system lock-out	L. A. Schmidt	818,793	Apr. 24	4512	964	121	2508
Telephone system. Two-division	H. M. Post	816,819	Apr. 3	526	114	121	1474
Telephone systems. Signal-bell for	C. E. Egan	818,673	Apr. 24	4253	915	121	2451
Telephone time-register	G. Filrst	816,456	Mar. 27	5033	1068-9	121	1250
Telephone toll apparatus	G. A. Long	815,107	Mar. 13	2213	466	121	537
Telephone-toll-box attachment	R. M. Combs	814,276	Mar. 6	538	112	121	116
Telephone-transmitter	E. E. Yarley	815,899	Mar. 20	3872	820	121	947
Telephone-transmitter	W. W. Dean	817,140	Apr. 3	1162	241	121	1618
Telephone trunking system	W. W. Dean	818,527	Apr. 24	3962	851	121	2384
Telephonic apparatus	J. G. Roberts	815,390	Mar. 20	2825	588-9	121	721

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephonic device	I. Kitsee	818,767	Apr. 24	4454	955	121	3495
Telephonic installation. Automatic	B. Kugelmann	814,219	Mar. 6	424	87	121	92
Telephonic relay	J. Trowbridge	814,411	Mar. 6	846	174–5	121	184
Telephonic repeater	M. Gally	817,761	Apr. 17	2390	513	121	1993
Telephonic services. Metering of	I. Kitsee	817,920	Apr. 17	2736	594	121	2070
Telephony	D. M. Therrell	815,322	Mar. 13	2680	558–60	121	641
Telephony. Wireless	A. F. Collins	814,942	Mar. 13	1866	392	121	465
Telescope	C. Soulas	818,055	Apr. 17	3000	648	121	2128
Telescope	E. A. Trapp	818,489	Apr. 24	3849	828–9	121	2363
Telescope and means for mounting the same. Submarine	E. A. Trapp	818,490	Apr. 24	3856	830	121	2364
Telescope casing. Prism-	M. Berger	818,014	Apr. 17	2929	632	121	2114
Telescope dust-cap and solar eyepiece	F. B. Warner	818,802	Apr. 24	4529	968	121	2511
Telescopic elevator	J. Kovačević	815,594	Mar. 20	3223	678	121	800
Temperature-regulating apparatus	J. A. Serrell	816,046	Mar. 27	4183	886–7	121	1069
Temperature-regulator	C. Bargamin	818,810	Apr. 24	4550	975	121	2515
Temple-roll	I. E. Palmer	817,443	Apr. 10	1786	376	121	1809
Tenpin. Divided	S. G. Wilson	814,257	Mar. 6	503	104	121	108
Tent-pole. Adjustable	A. Burton	818,665	Apr. 24	4243	912	121	2440
Tent. Window-	W. B. McLaughlin	815,622	Mar. 20	3288	680	121	824
Textile fibers. Retting process for	A. Van Steenkiste	816,622	Apr. 3	162	.....	121	1397
Theater-chair	J. E. Chase and J. S. McCreary	816,899	Apr. 3	699	143	121	1513
Theater-curtains. Means for hanging and operating	J. H. Channon	815,904	Mar. 20	3902	825–6	121	955
Theaters, &c. Means for quickly emptying crowded	L. Wittenberg	815,997	Mar. 27	4074	883	121	1042
Theatrical device	H. M. Pettit	818,189	Apr. 17	3276	701–2	121	2188
Theatrical scenic apparatus	G. A. Miller	817,577	Apr. 10	2050	431–2	121	1863
Thermal protector and alarm	F. B. Cook	815,006	Mar. 13	2003	421	121	491
Thermal protectors. Automatic electrical self-soldering reset for	F. B. Cook	815,406	Mar. 20	2894	601	121	737
Thermostatic alarm	T. A. Myers and W. M. Clemans	815,111	Mar. 13	2224	467	121	540
Thill-coupling	A. Pflugradt	816 597	Apr. 3	102	21	121	1379
Thill-coupling	C. F. Blain and G. S. Jackson	817,102	Apr. 3	1083	225	121	1599
Thill-coupling	J. A. Green	818,437	Apr. 24	3766	810	121	2346
Thill. Vehicle-	A. Lott	816,667	Apr. 3	248	58	121	1415
Thread-cutting die and making the same	J. Elder	818,020	Apr. 17	2943	636	121	2117
Thread-cutting-machine gearing	H. W. Oster	818,114	Apr. 17	3123	672	121	2154
Threshers. Grain-pan for	E. F. Athey	814,931	Mar. 13	1844	386	121	460
Threshing-machine	F. J. Wood	818,009	Apr. 17	2917	629–30	121	2112
Threshing machine. Flax-	H. H. Lamont	818,101	Apr. 17	3085	666	121	2145
Threshing-machine straw-rac	C. E. Whitney	817,289	Apr. 10	1476	310	121	1743
Threshing-machines. Rotary beater for	N. P. Noben and E. E. Wang	817,931	Apr. 17	2763	598–9	121	2078
Ticket	A. I. Blanchard	818,996	Apr. 24	4385	1049	121	2588
Ticket-holder. Portable	J. D. Cantwell	817,624	Apr. 10	2129	451	121	1880
Tide and wave motor	G. W. Hazel	817,317	Apr. 10	1526	320	121	1753
Tide or wave motor	G. W. Hazel	817,318	Apr. 10	1527	320–1	121	1753
Tie: *See* Bale-tie. Cross-tie. Fence-tie. Fencing-tie. Lid-holding tie. Metallic tie. Package-tie. Rail-tie. Railway-tie. Railway composite tie. Railway cross-tie. Wall-tie.							
Tie-plate	W. J. Williams	815,244	Mar. 13	2506	521	121	606
Tie-plate-manufacturing machine	W. McKee	817,795	Apr. 17	2482	530–1	121	2013
Tile construction. Illuminating-	P. H. Jackson	816,982	Apr. 3	877	181–2	121	1553
Tile mold. Undercut-	W. H. Cammeyer	818,348	Apr. 17	3586	768	121	2252
Tile or shingle. Artificial-stone roofing	F. M. Leusch	814,970	Mar. 13	1921	403	121	475
Tiling. Portable mold for	F. M. Wiltrout	818,727	Apr. 24	4365	935	121	2475
Timber-jack	J. M. Williams	814,105	Mar. 6	204	41	121	44
Time-recorder. Employee's	F. Brook	816,844	Apr. 3	586	122	121	1489
Time-recorder. Workman's	D. Hepp	814,602	Mar. 6	1197	250–1	121	259
Time-recorder. Workman's	W. A. Wood	814,760	Mar. 13	1533	325	121	395
Tin or tin and lead. Recovering	J. C. Taliaferro	814,334	Mar. 6	690	138	121	152
Tinning-machine catcher	W. P. Lewis and T. R. Williams	818,838	Apr. 24	4592	984–5	121	2524
Tire	P. W. O'Connor	814,560	Mar. 6	1125	234	121	244
Tire	B. C. Seaton	814,737	Mar. 13	1487	313	121	386
Tire	C. W. Faitoute	816,225	Mar. 27	4545	966	121	1147
Tire	J. C. Raymond	817,668	Apr. 10	2203	470	121	1896
Tire	C. Miller	818,184	Apr. 17	3268	700	121	2186
Tire and brake. Non-slipping	I. N. Bowen	818 863	Apr. 24	4638	996	121	2534
Tire-armor	J. A. Young	817,539	Apr. 10	1974	418	121	1848
Tire-case	H. E. Prouty	816,182	Mar. 27	4469	946	121	1131
Tire. Cushion-	H. R. Teel	815,319	Mar. 13	2652	555	121	636
Tire. Cushion-	R. E. Rathbun	814,729	Mar. 13	1474	309	121	383
Tire. Detachable pneumatic	F. G. Freeso	815,523	Mar. 20	3101	648	121	783
Tire. Elastic metallic	C. S. Scott	816,884	Apr. 3	674	139	121	1508
Tire. Flexible	A. Peust	814,161	Mar. 6	315	[illegible]	121	69
Tire plug. Pneumatic-	A. V. Stichelen	816,889	Apr. 3	681	141	121	1510
Tire. Pneumatic	D. Apstein	818,402	Apr. 24	3701	795	121	2333
Tire. Pneumatic	F. G. McKim	814,068	Mar. 6	132	25–6	121	30
Tire. Pneumatic	R. A. Harris	815,346	Mar. 20	2748	572	121	705
Tire-protector	S. Hunter	817,066	Apr. 3	1026	211	121	1586
Tire. Resilient vehicle-	H. P. Palin	814,798	Mar. 13	1618	339	121	412
Tire. Sectional	J. F. Rau	814,164	Mar. 6	319	[illegible]	121	69
Tire-shoe	F. G. Urfer	814,175	Mar. 6	336	68	121	74
Tire shoe. Pneumatic-	E. Krebs	814,143	Mar. 6	279	56	121	61
Tire-shrinking machine	J. W. Hyatt	814,377	Mar. 6	764	154–5	121	169
Tire tool. Vehicle-	D. O. Brackett	815,900	Mar. 20	3896	824	121	954
Tire-valve	C. McCarthy and M. M. Phenice	816,354	Mar. 27	4835	1025	121	1209
Tire. Vehicle-	C. E. Duryea	816,006	Mar. 27	4102	867	121	1051
Tire. Vehicle-	H. C. Folger	815,279	Mar. 13	2556	538	121	615
Tire. Vehicle-	J. K. Williams	815,572	Mar. 20	3191	671	121	802
Tire. Vehicle-	W. Christy	817,957	Apr. 17	2821	610	121	2090
Tire. Vehicle-	R. Wright	818,400	Apr. 17	3696	793–4	121	2276
Tire. Vehicle-wheel	E. B. Sims	818,568	Apr. 24	4036	866	121	2402
	J. L. Heward	817,560	Apr. 10	2019	426	121	1856

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Tire. Wheel-	H. Maerker	818,771	Apr. 24	4466	957	121	2497
Tires. Grip-tread for pneumatic	A. H. Parker, Sr	817,933	Apr. 17	2767	599	121	2078
Tobacco-curing apparatus	C. H. Keeney	815,093	Mar. 13	2183	461	121	530
Tobacco. Machine for loosening cut-up	J. Wojciechowski	817,354	Apr. 10	1597	337	121	1769
Tobacco-pipe	F. M. Holes	814,045	Mar. 6	91	17	121	21
Tobacco-pipe	F. A. Stegner	818,716	Apr. 24	4345	931	121	2471
Tobacco-press	F. A. Bonroe	815,790	Mar. 20	3662	770	121	904
Toilet article	F. A. Steele	814,408	Mar. 6	839	173	121	182
Toilet articles, &c. Combined frame and handle for	L. Van Gale	814,415	Mar. 6	857	176–7	121	186
Toilet-case	H. H. Byrne	818,412	Apr. 24	3721	799	121	2337
Toilet-case	J. P. Stubblefield	818,575	Apr. 24	4051	869	121	2405
Tongue or shaft support. Vehicle	J. W. Bobbitt and E. Hayes	818,408	Apr. 24	3715	797	121	2335
Tongue. Threshing-machine	W. Farber	816,572	Apr. 3	32	9	121	1361
Tool. Combination-	H. A. Hamilton	814,039	Mar. 6	81	15	121	19
Tool. Combination-	P. L. Robertson	815,381	Mar. 20	2837	589–90	121	724
Tool. Combination-	F. E. Foor	815,916	Mar. 20	3923	830–1	121	959
Tool. Combination-	O. Medhus	816,674	Apr. 3	262	61	121	1418
Tool. Combination hand-	R. G. Shallenberger	816,885	Apr. 3	676	140	121	1508
Tool. Hand-controlled	H. A. Clifford	814,020	Mar. 6	32	7	121	9
Tool-starting mechanism. Pneumatic-	R. T. Mickle	818,037	Apr. 17	2971	642	121	2122
Tools. Diamond-fastener for	C. D. P. Gibson	818,682	Apr. 24	4269	917	121	2454
Tools. Portable apparatus for transmitting motion to	A. Collet	815,066	Mar. 13	2128	448	121	519
Tooth-mold	E. Pierrepont	815,374	Mar. 20	2818	586–7	121	719
Toothpick	A. E. Lickman	817,978	Apr. 17	2853	618	121	2097
Toothpick and forming same	H. S. Hopper	815,534	Mar. 20	3127	654	121	789
Top. Spinning-	W. Whitfield	814,818	Mar. 13	1656	347	121	421
Top. Spinning-	E. T. Jones	815,591	Mar. 20	3220	677	121	809
Torch and soldering-iron. Combined hand-	E. Block	816,425	Mar. 27	4981	1057	121	1238
Torch. Marine	J. D. Graham	816,160	Mar. 27	4423	936	121	1121
Torpedo. Automobile	T. H. Wheless	818,987	Apr. 24	4867	1045–6	121	2584
Torpedo conveying and launching apparatus	T. H. Wheless	815,393	Mar. 20	2860	594–6	121	729
Torpedo. Railway signal-	F. Dutcher	815,079	Mar. 13	2152	454	121	524
Torpedoes on vessels. Means for carrying and handling	T. J. Moriarty	818,390	Apr. 17	3667	787–9	121	2261
Torpedoes. Retarding device for automobile	F. M. Leavitt	816,019	Mar. 27	4130	875	121	1057
Tower-cap	F. T. Zimmerman	814,106	Mar. 6	205	41	121	45
Tower structure. Skeleton-	R. L. Allen	818,511	Apr. 24	3917	843	121	2377
Toy	C. V. Linderman and C. W. Corson.	814,463	Mar. 6	937	192	121	204
Toy	Z. A. Curtis	815,410	Mar. 20	2906	603	121	740
Toy	W. D. Winger	815,667	Mar. 20	3381	707	121	845
Toy	M. L. Harding and A. I. Hoxworth.	817,316	Apr. 10	1524	320	121	1752
Toy	H. E. Coates	817,549	Apr. 10	1997	421	121	1853
Toy	C. W. Lanyon	818,102	Apr. 17	3087	666	121	2146
Toy	J. Ungerman	818,132	Apr. 17	3150	678	121	2160
Toy bank	C. A. Bailey	815,935	Mar. 27	3957	838	121	1019
Toy building-block	J. B. Given	814,367	Mar. 6	747	150	121	165
Toy car	F. V. Bartlett	815,504	Mar. 20	3064	638	121	775
Toy. Dancing	R. Helmer	817,772	Apr. 17	2417	517	121	1999
Toy. Inflatable	C. A. Lindsay	816,106	Mar. 27	4311	913	121	1097
Toy. Mechanical	R. Helmer	817,771	Apr. 17	2414	517	121	1998
Toy. Mechanical	A. W. Pocock	818,555	Apr. 24	4013	860–1	121	2397
Toy top	J. A. Irving	814,962	Mar. 13	1907	401	121	471
Trace-holder	R. E. Gruwell and A. Wiebke	815,423	Mar. 20	2927	607	121	746
Track-brake	J. M. Cook, Jr	816,531	Mar. 27	5187	1100–1	121	1285
Track-clearing device	C. C. Battey	816,208	Mar. 27	4515	958	121	1140
Track-fastener	C. L. Durboraw	814,525	Mar. 6	1057	218	121	229
Track-sanding apparatus	B. D. Willits	814,256	Mar. 6	502	104	121	108
Traction-increasing mechanism	F. L. Sheldon	816,505	Mar. 27	5133	1088	121	1271
Traction-wheel	E. F. Piper	815,633	Mar. 20	3314	694	121	830
Train-control system	G. H. Hill	815,826	Mar. 20	3737	786–7	121	920
Train-controlling apparatus. Block-signal	G. W. Johnston	814,963	Mar. 13	1908	401	121	472
Train-order-holding device	A. E. Williams	815,500	Mar. 20	3055	637	121	773
Train-reporting system. Automatic intercommunicating	E. E. Steiner	817,281	Apr. 10	1464	307	121	1740
Train-stopping means	E. Renaud	815,637	Mar. 20	3323	696	121	832
Tramway bucket and rope clip	B. C. Riblet	814,622	Mar. 6	1236	261	121	267
Transformer	W. S. Moody	815,729	Mar 20	3519	739–40	121	874
Transformer	C. A. Lohr	817,926	Apr. 17	2753	596	121	2076
Transformer. Electric	M. O. Troy	815,765	Mar. 20	3612	758–9	121	894
Transformer for cautery and diagnostic work. Variable-voltage electric	E. H. Rollinson	815,863	Mar. 20	3827	810	121	938
Transmission element. Frictional	P. Sechiari	816,388	Mar. 27	4914	1043	121	1225
Transmission mechanism	E. Nelson	818,845	Apr. 24	4606	968–9	121	2527
Transplanter. Tobacco self-	A. C. Urdahl	818,586	Apr. 24	4068	873–4	121	2409
Transplanting device	R. D. Kline	816,236	Mar. 27	4563	971	121	1150
Transporting and heat-interchanging appliance	E. R. Bessmfelder	817,101	Apr. 3	1080	224–5	121	1596
Trap: *See* Animal-trap. Dynamic trap. Fly-trap. Liquid-trap. Non-siphoning trap. Quail-trap. Steam-trap. Waste-trap.							
Trap	E. L. Flint	814,527	Mar. 6	1060	218–19	121	230
Trap	E. J. Ryan	817,006	Apr 3	919	189–90	121	1562
Trap	W. E. Werd	817,601	Apr. 10	2087	441	121	1871
Tray for glasses	D. H. Allen	817,148	Apr. 10	1185	245	121	1683
Tray for glasses	D. H. Allen	817,149	Apr 10	1186	245	121	1683
Trap for sinks, bath-tubs, and the like	A. Savard	814,481	Mar. 6	976	200	121	212
Tray-support	F. L. Demartini	817,301	Apr. 10	1498	314	121	1747
Tree: *See* Boot and shoe tree.							
Tree-digger. Nursery	D. Feigly	815,901	Mar. 20	3806	825	121	954
Tree-protector	A. C. Garrison	818,678	Apr. 24	4264	916	121	2453
Trestle. Telescopic	J. S. Turner and P. F. Hausmann	818,006	Apr. 17	2906	627	121	2110

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Trimmer: *See* Ballast-trimmer. Edge-trimmer. Hoof-trimmer. Lawn-trimmer. Lawn-edge trimmer. Paper-trimmer. Sewing-machine trimmer. Shade-cloth trimmer. Vessel-trimmer.							
Tripod. Camera-	O. W. Steindorf	816,268	Mar. 27	4628	982	121	1165
Trolley	F. J. Gibbs	815,283	Mar. 13	2567	540	121	618
Trolley	H. Zander and G. Hahn	816,415	Mar. 27	4963	1054	121	1235
Trolley-catcher	S. F. Pierce	814,075	Mar. 6	147	30	121	33
Trolley-conductors. Supporting structure for	G. Westinghouse	814,339	Mar. 6	698	140	121	153
Trolley contact device for operating electric signals. Automatic overhead-	B. D. Whitcomb	815,490	Mar. 20	3053	637	121	773
Trolley-harp	I. H. Lunt	816,239	Mar. 27	4567	972	121	1151
Trolley-harp	B. Murphy	816,875	Apr. 3	651	135	121	1503
Trolley-head and current-collector	J. E. Greenwood	817,846	Apr. 17	2578	554–5	121	2035
Trolley-pole	A. S. Weaver	815,991	Mar. 27	4063	861	121	1040
Trolley-pole. Automatically-tripping	T. H. Mars	817,858	Apr. 17	2603	562	121	2039
Trolley-shield	J. W. Brown and C. W. Jenkins	816,148	Mar. 27	4399	930	121	1116
Trolley support and switch. Overhead-	B. E. Green	817,368	Apr. 10	1620	342	121	1774
Trolley-track. Overhead	C. G. and G. Schmidt and J. F. Pflum.	816,255	Mar. 27	4599	978	121	1158
Trolley-wheel	M. L. Amann	817,292	Apr. 10	1483	311	121	1744
Trolley-wire support	J. H. Lane and U. Gulnick	818,631	Apr. 24	4170	898	121	2432
Trolley-wire suspension. System of	P. E. Herkner	816,467	Mar. 27	5057	1074	121	1255
Trousers	M. J. Leiberman	815,598	Mar. 20	3235	680	121	813
Trousers-hanger	A. Chelberg	814,429	Mar. 6	883	180	121	192
Trousers-press	I. R. Fenner	817,108	Apr. 3	1091	227	121	1600
Truck	D. H. Rowe	814,874	Mar. 13	1747	366	121	440
Truck	J. Schreiber	816,825	Apr. 3	545	116	121	1478
Truck	P. Twomey	817,350	Apr. 10	1581	335–6	121	1767
Truck	T. H. Hughes, S. A. Johnson, and J. H. Sayle.	817,779	Apr. 17	2437	521	121	2003
Truck	G. M. Williams	818,326	Apr. 17	3548	760	121	2244
Truck. Auto-aerial ladder-	H. T. Kingsbury	818,261	Apr. 17	3423	735	121	2218
Truck. Auto-aerial ladder-	H. T. Kingsbury	818,262	Apr. 17	3425	735	121	2219
Truck-bolster	J. M. Goodwin	816,010	Mar. 27	4109	869–70	121	1053
Truck-bolster	C. A. Lindström	817,789	Apr. 17	2468	528	121	2010
Truck bolster. Car-	A. Stucki	817,404	Apr. 10	1701	359	121	1791
Truck. Brick-	M. K. Sachs	817,520	Apr. 10	1940	409–10	121	1842
Truck. Car-	J. A. Brill and S. M. Curwen	816,294	Mar. 27	4674	992–3	121	1175
Truck. Car-	W. G. Price	818,640	Apr. 24	4188	901	121	2437
Truck. Elevating-	S. A. Garland	815,416	Mar. 20	2916	604–5	121	743
Truck. Folding	W. F. Markham	814,858	Mar. 13	1716	359	121	433
Truck. Railway-car	G. C. Stewart	814,409	Mar. 6	840	172	121	182
Truck. Railway-car	S. A. Bemis	815,784	Mar. 20	3645	767	121	900
Truck. Railway-car	A. Stucki	817,406	Apr. 10	1706	360	121	1792
Truck side frame. Railway-car-	A. Stucki	817,405	Apr. 10	1704	359–60	121	1792
Trucks. Means for adjusting the height of spring-planks for railway-	M. Linton	817,078	Apr. 3	1043	216	121	1589
Trunk	J. A. H. Villmow	817,351	Apr. 10	1589	336	121	1768
Trunk-harness	G. W. Jones	818,251	Apr. 17	3410	731	121	2215
Trunk-tray support	A. S. Belber	816,423	Mar. 27	4979	1057	121	1238
Truss	A. C. Cooke	815,682	Mar. 20	3416	714	121	853
Truss	G. V. House	818,446	Apr. 24	3777	812	121	2349
Truss	E. Hovey and M. M. Black	818,888	Apr. 24	4679	1004	121	2542
Truss for hernia	W. H. Washburn	817,600	Apr. 10	2086	441	121	1871
Tub-making machine	H. Brammer	815,139	Mar. 13	2287	478	121	555
Tub, tank, and other like receptacle	H. Romünder	814,625	Mar. 6	1246	262	121	270
Tube: *See* Collapsible tube. Flexible tube. Grain-drill tube. Metallic tube. Venturi tube.							
Tube connection. Pitot-	J. A. and E. S. Cole	817,470	Apr. 10	1845	386–7	121	1821
Tube-cutter	A. Warren	818,135	Apr. 17	3165	679	121	2165
Tube-expander	W. Nicholson, Jr	817,089	Apr. 3	1060	220	121	1593
Tube expanding and beading tool	W. McCormick	818,843	Apr. 24	4605	988	121	2527
Tube-forming machine. Metal-	E. T. Greenfield	817,056	Apr. 3	1008	206–8	121	1583
Tubes. Electrolytic manufacture of metal	O. Dieffenbach	817,419	Apr. 10	1731	.....	121	1797
Tubes. Implement for truing the internal forms of	F. A. Forwood	816,451	Mar. 27	5027	1067	121	1249
Tubing. Flexible	S. Scognamillo	819,027	Apr. 24	4947	1062	121	2602
Tubular articles. Machine for shaping	N. Marshall	815,362	Mar. 20	2796	581–2	121	714
Tug. Hame and breeching	I. B. Martin	814,554	Mar. 6	1111	231	121	241
Tug-holder for swingletrees	O. S. Johnston	818,095	Apr. 17	3075	663	121	2143
Tug or support. Shaft	J. O'Connell	815,730	Mar. 20	3523	740	121	875
Tug. Shaft-	F. Davis, Jr	816,439	Mar. 27	5002	1062	121	1243
Tumbler-lock	N. W. Webb	818,719	Apr. 24	4352	932	121	2472
Tumbling-barrel	A. F. Schroeder	814,166	Mar. 6	322	65	121	70
Tunnels. Lowering river-	P. E. McDonnell, Sr	817,657	Apr. 10	2183	464	121	1891
Turbine	H. F. Fullagar	815,154	Mar. 13	2315	485	121	561
Turbine	H. F. Fullagar	815,155	Mar. 13	2319	485	121	562
Turbine	J. T. Jennings	817,067	Apr. 3	1027	212	121	1586
Turbine	W. Clark	819,000	Apr. 24	4892	1050	121	2590
Turbine-blades. Making	A. C. E. Rateau and G. Sautter	814,804	Mar. 13	1629	342	121	415
Turbine-bucket wheel	J. Wilkinson	814,757	Mar. 13	1528	324	121	394
Turbine controller mechanism	J. Wilkinson	814,756	Mar. 13	1523	323	121	393
Turbine. Elastic-fluid	G. Belluzzo	814,423	Mar. 6	873	179	121	190
Turbine. Elastic-fluid	J. Wilkinson	818,720	Apr. 24	4356	933	121	2474
Turbine-engine. Gas	W. E. Clark	814,187	Mar. 6	359	73–4	121	78
Turbine. Expansible-fluid	B. S. Church. (Reissue)	12,469	Apr. 3	1178	243–4	121	1622
Turbine. Fluid-pressure	G. Westinghouse	816,516	Mar. 27	5155	1093–4	121	1277
Turbine governing mechanism	R. H. Rice	815,742	Mar. 20	3556	746–8	121	882
Turbine governing mechanism	R. H. Rice	815,743	Mar. 20	3555	748–9	121	884
Turbine governing mechanism	D. Hurley	815,833	Mar. 20	3762	790–1	121	925
Turbine governor. Elastic-fluid-	J. Wilkinson	818,008	Apr. 17	2911	628–9	121	2111
Turbine guiding means	H. Lentz	816,020	Mar. 27	4132	875–6	121	1058

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Turbine. Steam-	H. F. Fullagar	815,281	Mar. 13	2559	538-9	121	616
Turbine. Steam-	C. F. Barth	816,207	Mar. 27	4514	958	121	1140
Turbine. Steam-	D. Lumgair	816,487	Mar. 27	5101	1081	121	1265
Turbine. Steam-	U. A. Rutledge	817,590	Apr. 10	2070	436	121	1867
Turbines. Controller mechanism for multiple-stage	J. Wilkinson	818,499	Apr. 24	3874	834	121	2368
Turbines. Driving	W. B. Sayers	818,856	Apr. 24	4626	993-4	121	2531
Turbines. Nozzle for elastic-fluid	F. R. C. Boyd	814,425	Mar. 6	876	179	121	191
Turbines. Nozzle for elastic-fluid	C. Bradway	814,426	Mar. 6	878	180	121	191
Turbines. Nozzle for elastic-fluid	G. Meyersberg	814,466	Mar. 6	942	193	121	205
Turbines. Nozzle for elastic-fluid	R. H. Rice	814,477	Mar. 6	965	198-9	121	210
Turn-table	C. P. Mayer	817,434	Apr. 10	1766	370-1	121	1805
Turn-table. Automobile	E. A. Turner	816,620	Apr. 3	159	33	121	1396
Turn-table. Portable	C. W. Hillenbrand	819,014	Apr. 24	4921	1056-7	121	2596
Turning and boring articles, such as spools, &c. Machine for	H. K. Stockwell	815,567	Mar. 20	3181	668	121	800
Turning machine. Lip-	R. Mitchell	818,774	Apr. 24	4470	968	121	2498
Twine and thread cutter	H. Myer and M. Koeniges	814,153	Mar. 6	296	59	121	65
Twine-holder	B. Levison	814,462	Mar. 6	936	192	121	204
Twine-holder	O. S. Gage	817,143	Apr. 3	1167	241	121	1619
Twine-holder	E. W. Gray	817,240	Apr. 10	1375	289	121	1723
Twine holder and cutter	H. Stolpe	817,598	Apr. 10	2082	439-40	121	1870
Type-packing mechanism	F. A. Johnson	814,048	Mar. 6	96	18	121	22
Type-setting machine	W. J. Ennisson	814,681	Mar. 13	1376	288-90	121	359
Type-writer	J. and A. Dey	814,119	Mar. 6	235	45	121	51
Type-writer	W. Baxter, Jr	816,552	Apr. 3	1	1	121	1355
Type-writer	W. Baxter, Jr	816,637	Apr. 3	192	45	121	1403
Type-writer and adding-machine. Combined	A. S. Dennis	817,302	Apr. 10	1500	314	121	1747
Type-writer controlling attachment	S. A. Hardman	817,242	Apr. 10	1378	289-90	121	1724
Type-writer. Pneumatic	M. Soblik	818,200	Apr. 17	3300	706	121	2193
Type-writer ribbon-shifting mechanism	W. L. Cooke	818,745	Apr. 24	4408	943-4	121	2485
Type-writer ruling attachment	H. Altahul	818,732	Apr. 24	4377	937	121	2478
Type-writers. Adjustable line-predetermining device for	C. A. Shea	815,644	Mar. 20	3341	700	121	836
Type-writers. Card-holding device for	J. C. McLaughlin	816,174	Mar. 27	4450	942	121	1126
Type-writers. Interchangeable platen for	C. J. Mohns	814,719	Mar. 13	1458	306	121	378
Type-writing machine	E. G. Latta	814,144	Mar. 6	280	56	121	61
Type-writing machine	H. W. Merritt and W. J. Barron	814,310	Mar. 6	615	127	121	133
Type-writing machine	W. A. Robbins and B. S. Hyatt	814,623	Mar. 6	1238	261	121	268
Type-writing machine	G. H. Smith	814,739	Mar. 13	1496	317	121	387
Type-writing machine	E. F. Kunath	815,101	Mar. 13	2201	463-4	121	534
Type-writing machine	J. Felbel	815,339	Mar. 20	2726	568-9	121	699
Type-writing machine	J. Felbel	815,340	Mar. 20	2734	570	121	702
Type-writing machine	B. C. Stickney	815,565	Mar. 20	3177	667	121	799
Type-writing machine	E. F. Kunath	815,595	Mar. 20	3224	678-9	121	810
Type-writing machine	L. Ney	816,118	Mar. 27	4339	919	121	1103
Type-writing machine	F. X. Wagner. (Reissue)	12,465	Mar. 27	5234	1110	121	1296
Type-writing machine	E. F. Kunath	816,585	Apr. 3	62	15	121	1369
Type-writing machine	E. F. Kunath	816,919	Apr. 3	739	152	121	1522
Type-writing machine	E. F. Kunath	817,923	Apr. 17	2740	595	121	2071
Type-writing machine	E. F. Kunath	817,924	Apr. 17	2745	595-6	121	2073
Type-writing machine	A. W. Smith	818,569	Apr. 24	4037	866	121	2402
Type-writing-machine adding device	C. R. Martineau	815,724	Mar. 20	3501	733-5	121	871
Type-writing-machine carriage-feed mechanism	E. Fahl	819,008	Apr. 24	4910	1054	121	2594
Umbrella	G. K. Garrett	814,035	Mar. 6	75	14	121	17
Umbrella	W. A. Stettner	814,884	Mar. 13	1765	369	121	443
Umbrella	E. W. Crane	815,797	Mar. 20	3680	776	121	908
Umbrella-handle-fastening device	W. E. Moulton	818,701	Apr. 24	4316	925	121	2465
Umbrellas, &c. Marking device for	C. Weaver	815,054	Mar. 13	2112	445	121	516
Underfeed-furnace	W. R. Wood	818,010	Apr. 17	2923	630-1	121	2113
Undergarment and testes-supporter. Combined	W. C. A. Bullock	816,963	Apr. 3	837	172	121	1543
Undergarment. Union	J. Pennington	816,880	Apr. 3	663	138	121	1506
Unhairing-machine	A. La Marche and A. Hedbavny	818,971	Apr. 24	4837	1040	121	2578
Universal joint	J. v. Koroknay	817,922	Apr. 17	2739	594	121	2071
Upright flue-boiler	W. Wöehle	819,030	Apr. 24	4955	1063	121	2603
Uterine dilator	C. F. Hausmann	817,973	Apr. 17	2845	616	121	2095
Valve	C. E. Simpson	814,402	Mar. 6	828	171	121	180
Valve	F. H. Mason	814,791	Mar. 13	1601	336	121	409
Valve	W. T. Sears	818,054	Apr. 17	2999	648	121	2128
Valve	F. Schreidt	818,474	Apr. 24	3825	823	121	2358
Valve	M. J. Connors	818,519	Apr. 24	3938	848	121	2381
Valve. Air-brake	W. O. Gunckel	815,816	Mar. 20	3712	782	121	914
Valve and cock	F. C. Buck	817,040	Apr. 3	982	201	121	1577
Valve and faucet	J. Walsh, Jr	817,535	Apr. 10	1968	416	121	1846
Valve and trap. Automatic relief-	A. Harrison	817,112	Apr. 3	1095	228	121	1601
Valve apparatus	F. Grinnell	817,911	Apr. 17	2722	591	121	2067
Valve. Automatic balanced	F. H. Mason	814,975	Mar. 13	1927	405	121	476
Valve. Automatic reduction and quick-action triple	G. M. Spencer	815,227	Mar. 13	2473	516	121	599
Valve. Back-pressure	A. W. Cash	816,216	Mar. 27	4530	962	121	1144
Valve. Back-pressure	C. A. Bush	818,411	Apr. 24	3720	798	121	2336
Valve. Balanced hydraulic	F. Henneböhle	817,773	Apr. 17	2418	517-18	121	1999
Valve. Balanced throttle-	N. S. Barr	817,153	Apr. 10	1194	247	121	1685
Valve. Check-	J. C. Thom	818,485	Apr. 24	3845	827	121	2362
Valve. Combined stop and check	L. Kaczander	817,069	Apr. 3	1031	213	121	1587
Valve-controlling mechanism for gas-engines	H. J. Podleščák	816,817	Apr. 3	524	113	121	1474
Valve. Cylinder-compression-relief	J. W. Miller	816,348	Mar. 27	4817	1020-1	121	1204
Valve. Diaphragm-	D. F. Morgan	814,063	Mar. 6	125	24	121	28
Valve. Exhaust-controlling	W. J. Inman	816,098	Mar. 27	4301	911	121	1096
Valve. Expansion-	A. H. Eddy	815,912	Mar. 20	3919	829	121	958
Valve. Filter-	C. Hungerford	814,136	Mar. 6	267	53	121	59
Valve. Filter-	C. Hungerford	814,211	Mar. 6	411	84	121	90
Valve. Fluid-actuated	W. O. Pelham	818,284	Apr. 17	3460	744-5	121	2226
Valve. Flush-	E. D. Barrett	816,290	Mar. 27	4666	990	121	1173
Valve for air-brake systems	J. H. Bleoo	814,350	Mar. 6	712	144	121	156
Valve for air-brake systems. Pressure-retaining	W. Wilhelm	816,409	Mar. 27	4953	1052-3	121	1233
Valve for air-compressors	T. E. Sturtevant	815,488	Mar. 20	3029	633	121	767
Valve for automobile torpedoes. Starting-	F. M. Leavitt	814,055	Mar. 6	111	21	121	25

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Valve for gas-burners. Regulating-	L. F. Knoderer	815,179	Mar. 13	2377	496	121	576
Valve for pipes. Relief-	F. Trump	815,236	Mar. 13	2493	519	121	602
Valve for pneumatic hammers. Throttle-	H. S. Potter	816,998	Apr. 3	906	187-8	121	1560
Valve for pneumatic tools. Throttle-	R. A. Norling	816,246	Mar. 27	4580	975	121	1154
Valve for pneumatically-operated devices	J. J. Healy	819,013	Apr. 24	4919	1056	121	2596
Valve for regenerative furnaces. Reversing-	J. B. Nau	816,813	Apr. 3	517	112	121	1472
Valve for steam-engines. Exhaust-	W. H. Dyer	814,435	Mar. 6	892	183	121	194
Valve for water-gas plants	J. Williamson	817,211	Apr. 10	1320	275-6	121	1712
Valve-gear	W. Hartmann	818,166	Apr. 17	3231	694-5	121	2178
Valve-gear for explosion-engines	L. P. A. A. Bailleul	815,779	Mar. 20	3639	765	121	899
Valve-gear for steam and other fluid-pressure engines	W. H. Collier	814,275	Mar. 6	535	112	121	115
Valve mechanism	J. A. Dyblie	816,306	Mar. 27	4699	998	121	1181
Valve mechanism for engines. Cut-off and reversing	W. Wills	814,493	Mar. 6	993	204	121	216
Valve mechanism for gas-engines	C. M. Smith and S. B. Welcome	816,047	Mar. 27	4186	887-8	121	1070
Valve mechanism for gas-engines	H. J. Smith	818,714	Apr. 24	4339	930	121	2470
Valve mechanism for internal-combustion engines	H. Austin	814,421	Mar. 6	869	178	121	180
Valve-operating device for compressors	H. C. Sergeant	818,567	Apr. 24	4035	866	121	2401
Valve or trap. Sewer	P. F. Lenhart	814,788	Mar. 13	1594	335	121	408
Valve. Piston-	W. Schmidt	816,607	Apr. 3	122	27	121	1384
Valve. Piston-	E. Richardson	818,976	Apr. 24	4353	1043	121	2581
Valve. Relief-	R. N. Kennington	818,694	Apr. 24	4295	921	121	2460
Valve-seat-dressing device	D. E. Lynam	817,260	Apr. 10	1423	299	121	1732
Valve-seat-grinding machine	H. Meyners	817,435	Apr. 10	1769	371	121	1805
Valve. Steam-	R. Owens and R. Black	817,385	Apr. 10	1659	351	121	1782
Valve. Steam-engine	D. J. Hoisington	815,828	Mar. 20	3747	787-8	121	922
Valve. Throttle-	J. S. Chambers	816,217	Mar. 27	4533	962-3	121	1144
Valve. Union check-	P. Dumbolton	818,670	Apr. 24	4249	914	121	2450
Valves. Diaphragm for controlling	L. B. Fulton	816,455	Mar. 27	5031	1068	121	1250
Valves. Shifting eccentric for engine-	C. G. Bennett	818,934	Apr. 24	4769	1025	121	2562
Vat: *See* Dye-vat.							
Vats. System of excavating and filling	H. W. Blaisdell	816,065	Mar. 27	4229	896	121	1079
Vault-light	J. McGuigan and A. Priddle	816,115	Mar. 27	4336	918	121	1102
Vegetable-boiler	A. M. Ham	816,858	Apr. 3	617	129	121	1495
Vegetable-cutter	J. S. Urban	814,577	Mar. 6	1153	240-1	121	250
Vehicle	C. C. Grosshauser	814,780	Mar. 13	1578	333	121	404
Vehicle	J. Loepp	817,739	Apr. 10	2343	503	121	1929
Vehicle bearing-spring. Motor-	T. G. Stevens	816,396	Mar. 27	4926	1047	121	1227
Vehicle-body	H. E. Bradner	814,823	Mar. 13	1665	348	121	423
Vehicle-body	H. E. Bradner	814,824	Mar. 13	1666	348	121	423
Vehicle-body	D. W. Connell	816,782	Apr. 3	455	102	121	1458
Vehicle-body	W. W. Ogden and W. C. Yelton	818,846	Apr. 24	4611	989	121	2528
Vehicle body-bolster	J. M. Goodwin	815,286	Mar. 13	2575	541-2	121	621
Vehicle-brake	J. W. McIlvain	814,559	Mar. 6	1124	234	121	244
Vehicle-brake	J. N. Everett	816,654	Apr. 3	230	53	121	1411
Vehicle-brake	W. H. Smith	817,678	Apr. 10	2216	473	121	1900
Vehicle buffer. Railway-	J. M. Goodwin	815,288	Mar. 13	2579	542	121	622
Vehicle draft appliance	C. J. Bolte	818,997	Apr. 24	4888	1049	121	2588
Vehicle draft connection	A. T. Stutson	815,655	Mar. 20	3359	703	121	839
Vehicle. Dumping-	J. M. Goodwin	816,009	Mar. 27	4107	867-9	121	1052
Vehicle-fender or obstruction-remover for road-vehicles	P. Arrieta y Sanz	814,930	Mar. 13	1842	385-6	121	460
Vehicle for cripples	F. Rowley	816,745	Apr. 3	376	87	121	1443
Vehicle-frame construction	J. M. Goodwin	815,289	Mar. 13	2580	543	121	622
Vehicle frame. Motor-propelled-	G. H. Jones	815,918	Mar. 20	3928	831	121	960
Vehicle-gear	L. E. Hickok	814,845	Mar. 13	1701	356	121	430
Vehicle-gear	L. E. Hickok	814,846	Mar. 13	1702	356	121	430
Vehicle girder and bulkhead	J. M. Goodwin	815,287	Mar. 13	2577	542	121	621
Vehicle-heater	W. R. Marentette	814,790	Mar. 13	1599	336	121	409
Vehicle-heater	J. F. Swengel and D. Byrne, Jr.	816,397	Mar. 27	4928	1047	121	1228
Vehicle lining. Traction-	F. W. Kennedy	818,257	Apr. 17	3419	733	121	2217
Vehicle. Motor-	C. M. J. Petiet	816,250	Mar. 27	4587	976	121	1156
Vehicle. Motor-driven	O. G. A. Littmann	817,258	Apr. 10	1420	299	121	1731
Vehicle recording apparatus. Motor-	D. Mason	815,303	Mar. 13	2612	548	121	629
Vehicle running-gear	J. H. Gressom	815,527	Mar. 20	3110	650	121	784
Vehicle running-gear	E. Einfeldt	816,852	Apr. 3	603	125-6	121	1492
Vehicle running-gear	R. B. Sheridan	817,879	Apr. 17	2649	575	121	2049
Vehicle running-gear. Motor-	R. B. Vaughn	816,282	Mar. 27	4652	987	121	1170
Vehicle safety guard or fender. Tramway and the like	P. Lentz	818,837	Apr. 24	4590	984	121	2524
Vehicle seat suspension. Motor-	O. Werner	817,682	Apr. 10	2224	476	121	1901
Vehicle sleigh-runner attachment	J. J. and T. E. Nicholson	817,982	Apr. 17	2858	619	121	2096
Vehicle-spring. Pneumatic or elastic	W. H. Staats	816,687	Apr. 3	284	66	121	1423
Vehicle-steering mechanism. Motor-	C. M. J. Petiet	816,935	Apr. 3	775	159	121	1531
Vehicle-step, Jointed	F. M. Gault	814,687	Mar. 13	1402	292	121	366
Vehicle storm-shield	M. R. Hull	816,013	Mar. 27	4113	871	121	1054
Vehicle-wheel	F. A. Seiberling	814,087	Mar. 6	173	34	121	39
Vehicle-wheel	F. A. Seiberling	814,088	Mar. 6	175	35	121	39
Vehicle-wheel	G. H. Williams	814,580	Mar. 6	1158	242	121	251
Vehicle-wheel	C. C. Wilson	815,573	Mar. 20	3192	671	121	802
Vehicle-wheel	R. F. Martindale	815,611	Mar. 20	3261	684	121	818
Vehicle-wheel	R. S. Bryant	816,149	Mar. 27	4401	930	121	1116
Vehicle-wheel	J. C. Schleicher	816,189	Mar. 27	4479	948-9	121	1133
Vehicle-wheel	H. B. Gillette	816,576	Apr. 3	39	11	121	1362
Vehicle-wheel	F. J. Lancaster	817,787	Apr. 17	2465	527	121	2099
Vehicle-wheel	J. C. Schleicher	818,198	Apr. 17	3298	705	121	2193
Vehicle-wheel	G. A. Schultz	818,857	Apr. 24	4629	994	121	2532
Vehicle-wheel. Elastic	F. L. Harmon	818,957	Apr. 24	4812	1035	121	2572
Vehicle-wheel. Resilient	J. W. Roddy	814,479	Mar. 6	973	199	121	212
Vehicles. Buffer for use on motor-	F. R. Simms	814,171	Mar. 6	332	67	121	73
Vehicles by fluid-pressure. Apparatus for operating dumping-	J. M. Goodwin	816,008	Mar. 27	4105	867	121	1052
Vehicles. Electrical controller for electric	K. Knudsen	818,768	Apr. 24	4458	956	121	2496
Vehicles. Horse-controlling attachment for	A. M. McGeary	814,915	Mar. 13	1813	379	121	454
Vehicles. Shock-absorber for	R. P. Winsor	818,646	Apr. 24	4208	904	121	2442

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Vehicles. Shock-absorber for spring-	R. P. Winsor	818,647	Apr. 24	4209	906	121	2442
Vehicles. Steam-drying apparatus for motor-	H. Howard	818,625	Apr. 24	4162	895	121	2431
Veil-holder	M. W. Lee	814,221	Mar. 6	429	88	121	93
Vending apparatus. Coin-controlled liquid-	E. W. Lindgren	817,788	Apr. 17	2466	527	121	2000
Vending device	S. C. Gilbert	816,975	Apr. 3	862	178	121	1549
Vending-machine	L. C. Spooner	814,332	Mar. 6	671	135-6	121	147
Vending-machine	W. E. Leighton and F. A. Holmes	814,712	Mar. 13	1447	303	121	376
Vending-machine	F. A. Huser	815,173	Mar. 13	2352	492	121	560
Vending-machine	J. E. Packard	815,731	Mar. 20	3525	740-1	121	876
Vending-machine	F. W. Tucker	815,882	Mar. 20	3858	817-18	121	944
Vending-machine	J. W. Peden	816,594	Apr. 3	99	20	121	1379
Vending-machine	O. K. Sletto	817,727	Apr. 10	2318	498-9	121	1925
Vending-machine	C. A. Gunder	817,912	Apr. 17	2724	591	121	2067
Vending-machine	W. C. Whitney	818,593	Apr. 24	4081	876-7	121	2412
Vending-machine	W. C. Whitney	818,594	Apr. 24	4087	878-9	121	2413
Vending-machine. Coin-controlled	S. L. Long	816,107	Mar. 27	4312	913-14	121	1097
Vending-machine. Coin-controlled	F. W. Tucker	816,515	Mar. 27	5154	1093	121	1277
Vending machine. Newspaper-	J. A. Rule	818,296	Apr. 17	3490	750	121	2233
Veneer-cutter	L. Koss	817,784	Apr. 17	2457	524	121	2007
Veneers. Process and apparatus for preparing and cutting	G. S. Mayhew	814,062	Mar. 6	123	24	121	28
Veneering-machine	R. H. Lynn	814,382	Mar. 6	773	166	121	171
Ventilating apparatus	E. L. Parrish	814,620	Mar. 6	1233	260	121	267
Ventilating apparatus. Automatic	F. C. Chadborn	818,229	Apr. 17	3359	719	121	2205
Ventilator: *See* Basement and like ventilator. Sash-ventilator. Window-ventilator.							
Ventilator	W. T. Cottier	814,357	Mar. 6	726	147	121	160
Ventilator	J. L. Harrington and S. C. Hodge	814,651	Mar. 6	1299	273	121	281
Ventilator	M. Kinzey	815,434	Mar. 20	2946	611	121	750
Ventilator-lifter	A. Rasmussen	817,002	Apr. 3	913	188	121	1561
Venturi tube	C. A. Black, Jr	816,212	Mar. 27	4521	960	121	1141
Vessel. Marine	A. S. Tuttle	816,280	Mar. 27	4649	987	121	1169
Vessel. Metallic	C. A. Manker	815,187	Mar. 13	2393	498	121	579
Vessel. Navigable	C. L. Coffin	816,558	Apr. 3	12	3	121	1357
Vessel. Navigable	J. P. Pool	815,635	Mar. 20	3316	695	121	830
Vessel or receptacle handle	J. P. Pool	815,737	Mar. 20	3541	743	121	879
Vessel propelled by steam	E. Mohr	818,273	Apr. 17	3442	740	121	2223
Vessel-trimmer	E. C. Robinson	817,519	Apr. 10	1938	409	121	1841
Vessels. Antitorpedo construction for men-of-war	J. P. Doyle	817,229	Apr. 10	1353	284	121	1719
Vessels. Apparatus for marking sunken	W. A. Dobson	817,227	Apr. 10	1348	282-3	121	1719
Vessels. Means for locating and raising sunken	F. W. Johnson	814,536	Mar. 6	1079	222	121	234
Veterinary pocket mouth-speculum	W. G. Cain	814,517	Mar. 6	1037	215	121	226
Vibrating screen	L. McLean	817,659	Apr. 10	2189	465	121	1893
Vibrator-controlling means	N. V. Fitts	814,962	Mar. 13	1883	396	121	468
Vine-cutter	W. F. Molt	815,728	Mar. 20	3516	739	121	874
Violin	A. J. McCready	815,203	Mar. 13	2430	507	121	590
Violin-tailpiece	O. H. Lemberg	814,549	Mar. 6	1103	230	121	239
Vise	B. Cather	815,793	Mar. 20	3674	773	121	906
Vise. Bench-	F. M. Gray	818,535	Apr. 24	3973	853	121	2389
Vise. Hand-	C. Hanimann	816,162	Mar. 27	4428	937	121	1122
Vise. Parallel bench-	S. J. Welter	814,633	Mar. 6	1258	264	121	273
Vise. Pipe-	W. H. Snow	816,508	Mar. 27	5141	1089	121	1273
Voting-lever shafts. Friction device for	A. W. McGahan and O. K. Ascher	814,228	Mar. 6	438	90	121	95
	W. M. Delavan and W. I. T. Fosdick	817,473	Apr. 10	1853	389	121	1822
Voting-machine	C. F. Harrington	818,165	Apr. 17	3222	693-4	121	2176
Voting-machine interlock mechanism	W. L. Sandage	819,026	Apr. 24	4944	1061-2	121	2602
Vulcanizer	J. M. Padgett	815,209	Mar. 13	2438	508	121	591
Wagon-body protector	S. Huffaker	817,585	Apr. 10	2029	428	121	1858
Wagon bolster and stake construction	E. Einfeldt	814,436	Mar. 6	893	183	121	194
Wagon bolster and stake construction	E. Einfeldt	814,526	Mar. 6	1058	218	121	229
Wagon-bracket	J. W. Patterson	818,283	Apr. 17	3459	744	121	2226
Wagon-brake	J. L. Thomas	815,568	Mar. 20	3183	660	121	800
Wagon-brake	W. F. Jennings	816,099	Mar. 27	4303	911	121	1095
Wagon-brake	G. L. Adams	817,032	Apr. 3	960	199	121	1575
Wagon-brake	H. Zwilling and J. T. Droste	817,358	Apr. 10	1601	338-9	121	1770
Wagon. Dumping-	F. Fisher	818,240	Apr. 17	3384	726	121	2210
Wagon. Dumping-	C. Miller	814,861	Mar. 13	1720	359-60	121	434
Wagon-jack	J. M. Brooks	818,737	Apr. 24	4386	939-40	121	2480
Wagon-reach adjuster	A. J. Shamblin	817,877	Apr. 17	2646	574	121	2048
Wagon-tipping device	E. J. Abbott	815,057	Mar. 13	2117	446	121	517
Waistband, belt, and the like	C. Pay	816,035	Mar. 27	4164	882	121	1015
Wall and ceiling covering. Removable	E. Abadie-Léotard	815,056	Mar. 13	2116	445-6	121	517
Wall-covering	J. O. Parkinson	815,550	Mar. 20	3153	660	121	794
Wall decoration	H. L. Messmore	815,547	Mar. 20	3150	660	121	793
Wall or the like. Retaining-	T. F. Odell	815,307	Mar. 13	2627	.....	121	631
Wall. Portable	E. M. Scofield	815,966	Mar. 20	3831	812	121	939
Wall-tie	H. B. Copeland	815,513	Mar. 20	3080	641-2	121	778
Wardrobe	G. H. Charls	816,297	Mar. 27	4683	995	121	1177
Warp-beam tension device	L. Komorowski	814,457	Mar. 6	925	190	121	201
Warp stop-motion	G. Keller	818,820	Apr. 24	4579	982	121	2521
Warp stop-motion. Electrical	N. Foerster	818,368	Apr. 17	3622	777	121	2260
Warps. Apparatus for slaying	R. Boardman and W. H. Sharples	815,789	Mar. 20	3657	769	121	903
Warper-comb	J. Joubert and F. Suter	818,381	Apr. 17	3651	784	121	2266
Washbench and step-ladder. Combined	A. E. Rhoades	817,093	Apr. 3	1070	221	121	1595
Washing apparatus	C. E. Emory	814,904	Mar. 13	1797	376	121	450
Washing apparatus	J. W. Pittock	817,801	Apr. 17	2492	533	121	2015
Washing apparatus. Fabric-	J. W. Pittock	817,802	Apr. 17	2493	533	121	2016
Washing-machine	I. E. Palmer	816,179	Mar. 27	4463	944-5	121	1128
Washing-machine	H. P. Pflum	814,394	Mar. 6	812	167	121	178
Washing-machine	J. V. Da Silveira	814,989	Mar. 13	1967	414	121	483
Washing-machine	C. O. Frostenson	816,454	Mar. 27	5030	1068	121	1240
Washing-machine	C. L. Rock	817,192	Apr. 10	1281	266	121	1703
Washing-machine	A. Wheatley	817,826	Apr. 17	2635	545	121	2026

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Washing-machine	G. A. Thode	818,068	Apr. 17	3005	649-50	121	2129
Washing-powder containing alkaline peroxids. Vessel for packing and storing	J. von Königswarter	818,695	Apr. 24	4290	922	121	2460
Washtub	M. Robin	815,472	Mar. 20	3007	627	121	763
Waste and vent fitting. Combined	G. F. Ryan	817,094	Apr. 3	1071	222	121	1595
Waste-trap	W. H. Lloyd	816,023	Mar. 27	4142	877	121	1060
Watch	A. Wagner	815,989	Mar. 27	4061	860	121	1040
Watch barrel-arbor	J. W. Gibson	816,723	Apr. 3	342	79	121	1436
Watch-regulator	O. Ohlson	818,043	Apr. 17	2985	645	121	2125
Watch. Remontoir winding-	F. Hartmann	816,321	Mar. 27	4760	1007	121	1193
Watches. Banking-screw for	C. E. De Long	815,271	Mar. 13	2544	535	121	613
Watchcase	J. T. Pendlebury	814,232	Mar. 6	448	92-3	121	97
Water. Apparatus for producing boiling	H. Junkers	816,101	Mar. 27	4307	911	121	1006
Water bag or bottle	T. W. Miller	815,366	Mar. 20	2803	584	121	715
Water by electrolysis. Apparatus for decomposing	W. F. M. McCarty	814,155	Mar. 6	299	60	121	66
Water by electrolysis. Apparatus for decomposing	W. F. M. McCarty	816,355	Mar. 27	4838	1025	121	1200
Water by electrolysis. Apparatus for purifying	H. C. Bailey	814,764	Mar. 13	1544	328-7	121	398
Water-circulating apparatus	J. N. Russell	816,939	Apr. 3	787	161-2	121	1533
Water-closet	J. Rhead	816,185	Mar. 27	4473	947	121	1131
Water for decoloration. Process and apparatus for testing	L. Gerard	814,036	Mar. 6	77	14	121	18
Water for irrigating and other purposes. Method and means for procuring	I. Tellman	818,204	Apr. 17	3307	707	121	2196
Water-glass guard	G. C. Jones	816,016	Mar. 27	4121	872	121	1055
Water-heater	H. S. Humphrey	817,116	Apr. 3	1118	232	121	1609
Water-heater	D. Shaffer	817,525	Apr. 10	1948	411	121	1843
Water-heater. Domestic	W. H. Roberts	817,589	Apr. 10	2068	435	121	1867
Water-heater. Electric	F. F. Shipp	817,593	Apr. 10	2074	437	121	1868
Water-heater. Electrical	F. F. Shipp	817,594	Apr. 10	2075	438	121	1869
Water-heater. Gas	D. J. F. Buck	817,219	Apr. 10	1333	279	121	1715
Water-heating apparatus	W. S. Whitmore	817,602	Apr. 10	2091	441	121	1872
Water-heating attachment	G. E. Dixon	815,274	Mar. 13	2547	536	121	613
Water-heating attachment	F. E. Donaldson	818,149	Apr. 17	3194	687	121	2170
Water-jacket	C. W. Hawkes	815,013	Mar. 13	2028	425	121	497
Water-level regulator	A. E. Danke	818,525	Apr. 24	3948	850	121	2384
Water-meter	H. Fredrick	818,430	Apr. 24	3753	806-7	121	2344
Water-purification system	J. F. Wixford	814,180	Mar. 6	345	71	121	75
Water-purification system	J. F. Wixford	814,634	Mar. 6	1260	265	121	273
Water-purifying apparatus	J. H. McDonald	816,357	Mar. 27	4839	1026	121	1210
Water-wheel	J. L. Shelton	816,826	Apr. 3	546	117	121	1478
Water-wheel. Current	W. J. Patton	817,870	Apr. 17	2630	570	121	2046
Watering device	A. N. Church	816,557	Apr. 3	11	3	121	1356
Watering tank. Stock-	J. P. Edwards	818,425	Apr. 24	3747	804	121	2342
Wave-motor	C. E. Newell	816,934	Apr. 3	774	159	121	1531
Wave-motor	F. Starr	817,347	Apr. 10	1580	333-4	121	1766
Wave-motor	F. M. Dempsey	819,006	Apr. 24	4906	1054	121	2593
Wax-holder	K. Rohrdants	817,275	Apr. 10	1452	306	121	1738
Weapons. Pocket-holder for	O. Freyer	814,599	Mar. 6	1192	249	121	258
Weather-strip	C. A. Pike	814,076	Mar. 6	148	30	121	33
Weather-strip	C. Vose	814,893	Mar. 13	1778	372	121	446
Weather-strip	M. M. Shellaberger	815,646	Mar. 20	3344	700	121	836
Weather-strip	F. Y. Dawson	815,941	Mar. 27	3967	840	121	1021
Weather-strip	T. S. Christie	817,223	Apr. 10	1343	281	121	1718
Weather-strip	A. E. Hull	818,764	Apr. 24	4448	953	121	2494
Weather-strip for doors	L. A. Payton and C. M. Powell	818,464	Apr. 24	3812	820	121	2356
Web-guide	J. C. F. Balze	818,655	Apr. 24	4224	908	121	2445
Weeder and cultivator	J. E. and F. L. Elder	817,052	Apr. 3	1002	205	121	1581
Weeder attachment	C. D. Eddy	816,851	Apr. 3	602	125	121	1492
Weigher. Automatic	J. R. Harrison	818,688	Apr. 24	4283	919-20	121	2457
Weighing-machine	E. Cameron	817,221	Apr. 10	1338	279-80	121	1716
Welding apparatus	C. L. Rowland	817,992	Apr. 17	2881	623	121	2104
Welding apparatus. Arc-	A. C. Eastwood	818,361	Apr. 17	3607	773	121	2257
Well-drilling machine	W. L. Knowles	816,341	Mar. 27	4800	1016-17	121	1201
Well-drilling machine	J. W. Miller	816,988	Apr. 3	890	184	121	1556
Well-drilling machine	J. W. Shawver	817,527	Apr. 10	1950	412-13	121	1844
Well-operating apparatus	R. A. Myers	818,042	Apr. 17	2984	645	121	2125
Well-reamer	H. R. Hardenburg and F. Sager	815,012	Mar. 13	2026	425	121	497
Well rig. Oil-	L. H. Emerson and S. P. Kerstetter.	815,519	Mar. 20	3094	646	121	781
Wells. Branch clamp for oil-	R. B. Nelson	816,361	Mar. 27	4847	1027	121	1211
Wells. Device for removing rings from	W. J. Wagner	814,338	Mar. 6	697	140	121	153
Welt	G. E. Rollins	816,601	Apr. 3	109	23	121	1381
Wheel:							
See Automobile-wheel.	Propeller-wheel.						
Car-wheel.	Spring-wheel.						
Fifth-wheel.	Sprocket-wheel.						
Indicator reducing-wheel.	Traction-wheel.						
Motor-wheel.	Trolley-wheel.						
Paddle-wheel.	Turbine-bucket wheel.						
Pneumatic wheel.	Vehicle-wheel.						
Pneumatic-tired wheel.	Water-wheel.						
Polishing or buffing wheel.							
Wheel	B. Holt	815,295	Mar. 13	2591	545	121	624
Wheel	H. L. Ferris	815,520	Mar. 20	3095	646	121	782
Wheel and making the same	C. E. Howe, B. F. Rix, and E. P. Holden.	818,178	Apr. 17	3252	697	121	2183
Wheel construction	F. P. Prendergast	814,077	Mar. 6	150	30	121	34
Wheel-fastening	G. C. Hicks, Jr.	818,171	Apr. 17	3245	696	121	2181
Wheel-gage	R. L. Ervin	816,159	Mar. 27	4421	935	121	1120
Wheels. Mounting or suspension for vehicle-	C. W. Fulton	814,198	Mar. 6	378	77	121	82
Wheelbarrow	B. E. Smith	817,677	Apr. 10	2215	473	121	1899
Wheelbarrow	H. Edick	818,529	Apr. 24	3966	851-2	121	2388
Wheelbarrow-shoe	M. V. Garver	816,655	Apr. 3	231	53	121	1411
Whey-measuring apparatus	H. R. Macdonald	818,545	Apr. 24	3996	857	121	2393
Whiffletree-coupling	J. R. Pring	817,335	Apr. 10	1556	327	121	1759

Alphabetical list of inventions for March and April—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Whip-socket	J. M. Clark	817,548	Apr. 10	1996	421	121	1852
Whip-stock	G. Monetti	815,199	Mar. 13	2424	505	121	588
Wick. Candle-	G. Genovese and E. Calvi	816,790	Apr. 3	467	104	121	1460
Wind-motor	J. C. Ziegler	816,524	Mar. 27	5173	1097–8	121	1282
Windmill	A. Geoffroy	814,283	Mar. 6	547	114–15	121	118
Windmill	P. H. Hanchett	814,600	Mar. 6	1193	250	121	258
Windmill attachment	R. S. Bartlett	818,013	Apr. 17	2927	632	121	2114
Windmill-governor	A. J. Shary and T. L. Anthony	817,808	Apr. 17	2603	536	121	2018
Windmill-regulator	P. B. F. Born	816,213	Mar. 27	4522	960	121	1142
Winder	F. E. Kronquest	816,167	Mar. 27	4438	939–40	121	1124
Winding-machine	J. W. Harris	817,426	Apr. 10	1749	368	121	1801
Winding-machine	E. H. Smythe	817,883	Apr. 17	2659	578–9	121	2051
Winding mechanism	D. Barton and H. K. Ackerman	818,514	Apr. 24	3925	844	121	2378
Window	F. Fettback and G. Lieckfeld	815,692	Mar. 20	3442	718–19	121	858
Window	J. L. Meaker	814,616	Mar. 6	1224	258	121	265
Window	D. R. Caler	816,431	Mar. 27	4990	1059	121	1240
Window and door screen	A. E. Hull	816,580	Apr. 3	46	12	121	1364
Window and screen attachment	H. E. Southworth	815,484	Mar. 20	3024	631–2	121	766
Window-cleaner	R. Mohr	814,468	Mar. 6	948	194	121	206
Window-cleaner	H. Beatty	815,782	Mar. 20	3643	766	121	899
Window-cleaning platform	S. R. Swain	818,002	Apr. 17	2902	626	121	2109
Window construction	H. P. Terry	818,484	Apr. 24	3843	826	121	2362
Window-dressing apparatus	W. H. Miller	816,241	Mar. 27	4570	973	121	1152
Window-fastener	F. Conhaim	815,796	Mar. 20	3678	774–5	121	907
Window-fastener	R. G. Fraser	814,439	Mar. 6	895	184	121	195
Window-lifter	J. Trafford	814,995	Mar. 13	1975	415–16	121	485
Window-lock	N. R. Evans	815,914	Mar. 20	3921	830	121	959
Window-lock	C. V. Honecker and O. W. Klipple	814,702	Mar. 13	1426	297	121	371
Window lock and gravity-bolt	J. Killmeyer	816,337	Mar. 27	4793	1015	121	1199
Window. Metallic	A. H. Woodruff	815,669	Mar. 20	3384	707–8	121	846
Window-retaining apparatus	C. A. McGinnis	818,703	Apr. 24	4319	926–7	121	2465
Window-screen	G. H. Parker	814,317	Mar. 6	639	130	121	140
Window-screen	J. W. Adams	817,461	Apr. 10	1828	383	121	1818
Window-screen. Self-adjusting	A. Gregg	818,162	Apr. 17	3219	692	121	2176
Window. Sheet-metal	W. H. Sawvel	816,940	Apr. 3	789	162	121	1534
Window. Sliding	V. Ross	816,126	Mar. 27	4352	922	121	1105
Window-stop and burglar-alarm	W. J. D. Thompson and W. Bentley.	817,284	Apr. 10	1468	308	121	1741
Window stop and guide. Metal-	G. H. Parker	814,314	Mar. 6	627	128–9	121	136
Window. Swinging	V. Ross	816,041	Mar. 27	4175	885	121	1067
Window. Swinging	G. H. Parker	814,315	Mar. 6	631	129	121	137
Window-ventilator	G. H. Parker	814,316	Mar. 6	636	129–30	121	139
Wire-clamp	U. G. Russell	814,920	Mar. 13	1821	381	121	455
Wire-clamp	D. C. Smith	815,871	Mar. 20	3840	814	121	941
Wire-coiling machine	J. A. Reising	817,588	Apr. 10	2067	435	121	1867
Wire-drawing machine	E. A. Page	818,463	Apr. 24	3810	819	121	2355
Wire-fabric-making machine	R. Lorenz	817,979	Apr. 17	2853	618	121	2097
Wire-fastener	W. N. Parrish	816,034	Mar. 27	4159	880–1	121	1064
Wire goods. Machine for making	C. W. Roush	818,977	Apr. 24	4854	1043	121	2581
Wire-reel	J. C. Perry	814,392	Mar. 6	795	160–5	121	176
Wire-reeling truck	W. E. Eichhoff	818,878	Apr. 24	4665	1001	121	2539
Wire screen	E. H. Jacox	817,248	Apr. 10	1393	294	121	1727
Wire-splicer	J. M. Stewart	817,680	Apr. 10	2220	475	121	1900
Wire-splicer	D. C. Smith	815,754	Mar. 20	3590	755	121	890
Wire-stretcher	D. C. Smith	815,755	Mar. 20	3592	755	121	890
Wire-stretcher	G. W. Riker	817,190	Apr. 10	1276	265	121	1702
Wire-stretcher	F. L. Feist	817,907	Apr. 17	2716	589	121	2065
Wire stretcher and splicer. Combined	G. W. Holmes	818,379	Apr. 17	3649	783	121	2265
Wire stretcher. Woven-	A. and C. A. Church	816,298	Mar. 27	4684	995	121	1177
Wire-working die	W. Cue	814,024	Mar. 6	48	9	121	13
Wires. Dies for tying intersecting	S. E. Jackson and E. B. Lee	817,570	Apr. 10	2037	429	121	1860
Wood articles. Machine for shaping	O. S. Sturtevant	814,885	Mar. 13	1766	370	121	444
Wood-boring machine	J. H. Neville	816,030	Mar. 27	4153	879	121	1062
Wood-clip	H. Bible and L. A. Robinson	815,256	Mar. 13	2519	525	121	608
Wood-cutting machine	G. F. Martin	817,432	Apr. 10	1763	370	121	1804
Wood-filler	W. Merrill	817,382	Apr. 10	1646	349	121	1780
Wood or other material. Decorating	F. J. Hubley	814,847	Mar. 13	1704	.....	121	430
Wood or substitute material. Artificial	E. G. Adames	817,608	Apr. 10	2101	444	121	1874
Wood. Preserving	J. Laeufer	818,833	Apr. 24	4585	.....	121	2523
Wood-scraping tool	J. B. Card	815,404	Mar. 20	2888	601	121	736
Wood-turning machine	G. D. Smith	814,404	Mar. 6	830	171	121	181
Woodworking-clamp	P. W. Waltz	817,943	Apr. 17	2791	604	121	2063
Woodworking-machine	C. Gustaveson	816,011	Mar. 27	4111	870	121	1053
Woodworking-machine	F. Diehl	816,079	Mar. 27	4267	904	121	1068
Wool. Detergent for scouring	B. A. Lange	819,033	Apr. 24	4970	1065–6	121	2607
Work-holding attachment	S. Wohle	818,648	Apr. 24	4211	.....	121	2442
Work-stand	A. Fertig and R. T. Knoll	814,366	Mar. 6	745	150	121	165
Woven fabric. Elastic	W. H. Commons	815,067	Mar. 13	2130	449	121	520
Wrapper for salesmen's slips, &c	H. T. Sykes	817,019	Apr. 3	947	194	121	1569
Wrapping-machine	J. H. Rand	815,214	Mar. 13	2451	511	121	594
Wrench: *See* Monkey-wrench. Nut-wrench. Pipe-wrench. Radiator-valve union nipple-wrench. Ratchet-wrench.	A. Stearns and P. H. MacCorquodale.	818,572	Apr. 24	4043	867–8	121	2404
Wrench	M. E. Griswold	814,201	Mar. 6	386	78	121	85
Wrench	G. W. Austin	814,343	Mar. 6	704	141–2	121	155
Wrench	J. F. Tiner	814,575	Mar. 6	1150	240	121	249
Wrench	W. D. Garrard	815,156	Mar. 13	2322	486	121	563
Wrench	W. C. Lott	815,446	Mar. 20	2966	617	121	754
Wrench	J. A. Smith	815,872	Mar. 20	3843	814	121	941
Wrench	S. E. Coffman	816,151	Mar. 27	4404	931	121	1117
Wrench	C. C. Dotson	816,157	Mar. 27	4418	935	121	1119
Wrench	J. G. Wilson	816,203	Mar. 27	4507	956	121	1138
Wrench	W. H. Claflin	816,434	Mar. 27	4994	1060	121	1241

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Wrench	W. H. Zachary	817,213	Apr. 10	1323	276	121	1712
Wrench	H. C. Land	817,327	Apr. 10	1543	324	121	1757
Wrench	H. M. Clark	817,468	Apr. 10	1842	386	121	1820
Wrench	M. J. McGinn	817,506	Apr. 10	1914	402	121	1836
Wrench	W. H. Floto	817,701	Apr. 10	2252	484	121	1906
Wrench	A. Hayes	817,709	Apr. 10	2267	488	121	1909
Wrench	E. A. Hardison	818,025	Apr. 17	3060	637	121	2118
Wrench	J. R. Long	818,180	Apr. 17	3262	699	121	2185
Wrench	G. H. Strickland	818,310	Apr. 17	3518	755	121	2238
Wrench	S. N. Hall	818,371	Apr. 17	3626	776	121	2261
Wrench	W. F. O'Neill	818,909	Apr. 24	4720	1012	121	2552
Wringer: *See* Mop-wringer.							
Wringer-holder and washtub-protector	V. Kempf	818,894	Apr. 24	4690	1006	121	2545
Wristlet	W. E. Wolff	815,998	Mar. 27	4075	863	121	1043
Writing or printing with metallic leaf	F. S. Hall	817,315	Apr. 10	1522	319	121	1752
Yoke. Cultivator-	A. C. Lindgren	815,602	Mar. 20	3240	680	121	813
Yoke. Neck-	C. A. Smith	814,881	Mar. 13	1760	368	121	442
Yoke. Neck-	C. E. Hess	818,168	Apr. 17	3236	695	121	2179
Zinc. Battery-	H. J. Brewer	814,825	Mar. 13	1667	348-9	121	423
Zinc formaldehyde hydrosulfite, (S.) Making	E. A. Fourneaux	814,031	Mar. 6	70	.....	121	17
Zinc formaldehyde hydrosulfite, (S.) Making basic	E. A. Fourneaux	814,032	Mar. 6	71	.....	121	17
Zinc-sulfate solution into zinc oxid. Apparatus for converting	C. E. Dewey	815,516	Mar. 20	3084	642-3	121	779

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ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Automobile-body	P. W. Steinbeck	37,928	Mar. 27	121	1302
Automobile-body	P. W. Steinbeck	37,929	Mar. 27	121	1302
Automobile-body	W. H. Atwood	37,952	Apr. 10	121	1932
Automobile whip-socket	C. O. Sterling	37,951	Apr. 10	121	1931
Automobiles. Frame of radiators for	A. E. Schaaf	37,881	Mar. 6	121	287
Badge	C. M. Waite	37,864	Mar. 6	121	284
Badge	C. J. Dieges	37,865	Mar. 6	121	284
Badge	J. B. Goodwin	37,914	Mar. 27	121	1299
Badge	A. Wisniewski	37,954	Apr. 17	121	2277
Badge	W. C. Marten	37,963	Apr. 24	121	2612
Badge-button	V. M. Ellis	37,887	Mar. 13	121	644
Badge or similar article	J. B. Goodwin	37,888	Mar. 13	121	644
Barometer-case	E. Wolfstein	37,919	Mar. 27	121	1300
Basin. Wash-	J. Zipp	37,957	Apr. 17	121	2277
Belt. Lady's	A. E. Tomlinson	37,969	Apr. 24	121	2614
Bodkin	J. H. Crosby	37,871	Mar. 6	121	285
Bottle	A. Andresen	37,906	Mar. 20	121	967
Bottle	S. Hochstadter	37,956	Apr. 17	121	2277
Box	W. Jones	37,944	Apr. 10	121	1930
Bread-tray	W. Mischler	37,868	Mar. 6	121	285
Button. Lapel-	E. Gebhardt	37,899	Mar. 20	121	966
Cabinet top. Kitchen-	W. C. Horner	37,897	Mar. 13	121	646
Card-mount	H. A. Stone	37,945	Apr. 10	121	1930
Carpet	A. M. Rose	37,910	Mar. 20	121	968
Carpet	W. L. Jacobs	37,911	Mar. 20	121	968
Carpet	J. S. McNab	37,912	Mar. 20	121	968
Carpet	J. S. McNab	37,913	Mar. 20	121	968
Casket-trimming	W. E. Stevens	37,970	Apr. 24	121	2614
Cigar-band	L. C. Wagner	37,872	Mar. 6	121	285
Cigar-band	L. C. Wagner	37,873	Mar. 6	121	285
Cigar-band	L. C. Wagner	37,964	Apr. 24	121	2612
Cigar-cutter	E. W. Dayton	37,958	Apr. 17	121	2277
Coffee-mill shell	A. E. Bronson, Jr.	37,965	Apr. 24	121	2612
Condiment-container	F. E. Burley	37,901	Mar. 20	121	966
Curtain	E. F. Boubel	37,909	Mar. 20	121	968
Curtain. Grille-	F. E. Erickson	37,882	Mar. 6	121	287
Dish or similar article. Covered	C. J. Ahrenfeldt	37,894	Mar. 13	121	645
Display cabinet. Picture-	G. E. Knowles	37,879	Mar. 6	121	286
Display-case	E. Faber	37,877	Mar. 6	121	286
Display-case	E. Faber	37,878	Mar. 6	121	286
Eyelet	G. A. Langmaid	37,918	Mar. 27	121	1300
Fabric. Printed textile	E. B. Vandergaw	37,898	Mar. 13	121	646
Fabric. Printed textile	E. B. Vandergaw	37,930	Mar. 27	121	1302
Fabric. Printed textile	E. B. Vandergaw	37,962	Apr. 17	121	2278
Furnace front. Heating-	C. Smith	37,927	Mar. 27	121	1301
Gas-burner. Incandescent	V. F. von Lossberg	37,880	Mar. 6	121	287
Gas-globe. Incandescent	S. Mason	37,925	Mar. 27	121	1301
Glass-holder	J. F. Conlin	37,943	Apr. 10	121	1930
Glass. Sheet-	W. W. Pilkington	37,953	Apr. 10	121	1932
Goblet	A. Pick	37,917	Mar. 27	121	1300
Grape-fruit holder	F. E. Burley	37,905	Mar. 20	121	967
Handle. Drop-	G. A. Schehr	37,935	Apr. 3	121	1624
Illuminator	O. A. Mygatt	37,924	Mar. 27	121	1301
Illuminator	O. A. Mygatt	37,946	Apr. 10	121	1930
Inkstand	C. B. Rogers	37,941	Apr. 10	121	1929
Knit fabric	C. H. French	37,936	Apr. 3	121	1624
Knit fabric	C. H. French	37,937	Apr. 3	121	1624
Lace. Levers	C. W. Birkin	37,883	Mar. 6	121	287
Lamp	R. M. Dixon	37,948	Apr. 10	121	1931
Lamp	R. M. Dixon	37,949	Apr. 10	121	1931
Lamp	R. M. Dixon	37,950	Apr. 10	121	1931
Lamp-case	L. Schepmoes	37,966	Apr. 24	121	2613
Lamp holder. Wall-	J. F. Geraghty	37,947	Apr. 10	121	1930
Lamp housing. Arc-	A. Hausold	37,895	Mar. 13	121	645
Mug. Wooden	R. P. Spooner	37,902	Mar. 20	121	966
Pencil	E. Faber	37,869	Mar. 6	121	285
Pencil	E. Faber	37,870	Mar. 6	121	285
Plate	E. J. Owen	37,903	Mar. 20	121	967
Plate or dish	A. A. Robineau	37,889	Mar. 13	121	644
Plate or similar article	C. J. Ahrenfeldt	37,890	Mar. 13	121	644
Plate or similar article	C. J. Ahrenfeldt	37,891	Mar. 13	121	644
Plate or similar article	C. J. Ahrenfeldt	37,892	Mar. 13	121	645
Plate or similar article	C. J. Ahrenfeldt	37,893	Mar. 13	121	645
Plate or similar dish	A. S. Higgins	37,904	Mar. 20	121	967
Reflector	O. A. Mygatt	37,967	Apr. 24	121	2613
Reflector. Prismatic-glass	O. A. Mygatt	37,960	Apr. 17	121	2278
Reflector. Prismatic-glass	O. A. Mygatt	37,961	Apr. 17	121	2278
Ribbon	C. P. Schlegel	37,884	Mar. 6	121	287
Ribbon	C. P. Schlegel	37,885	Mar. 6	121	288
Ribbon	C. P. Schlegel	37,886	Mar. 6	121	288
Ring	E. J. Carr and E. T. Rushton	37,915	Mar. 27	121	1299
Ring	A. A. Dorst	37,916	Mar. 27	121	1300
Rosary	H. F. Nehr	37,875	Mar. 6	121	285

Alphabetical list of designs for March and April—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Rosary	B. Teubner	37,876	Mar. 6	121	286
Rug	E. H. Bennett	37,938	Apr. 3	121	1624
Rug	E. H. Bennett	37,939	Apr. 3	121	1624
Show-case	E. H. Bennett	37,940	Apr. 3	121	1624
Silverware-mount	W. M. McLean	37,934	Apr. 3	121	1624
Spoon-handle	E. Meyers	37,900	Mar. 20	121	966
Spoon or similar article	E. Mehesy, Jr	37,867	Mar. 6	121	285
Spoons, forks, or similar articles. Handle for	J. R. Bookwalter	37,866	Mar. 6	121	284
Spoons, forks, or similar articles. Handle for	C. M. Prior	37,931	Apr. 3	121	1623
Spoons, forks, or similar articles. Handle of	C. B. Shepard	37,932	Apr. 3	121	1623
Spoons or similar articles. Handle of	W. A. Jameson	37,955	Apr. 17	121	2277
Stove	S. J. Large	37,942	Apr. 10	121	1929
Stove. Cooking-	R. Thiem	37,933	Apr. 3	121	1623
Stove. Gas-	E. C. Cole	37,908	Mar. 20	121	968
Tablet or lozenge	L. Stockstrom	37,926	Mar. 27	121	1301
Tool-handle	J. Peterson	37,874	Mar. 6	121	285
Tool-handle	G. E. Wood	37,896	Mar. 13	121	646
Tool-handle	J. J. Tower	37,920	Mar. 27	121	1300
Tool-handle	J. J. Tower	37,921	Mar. 27	121	1300
Tool-handle	J. J. Tower	37,922	Mar. 27	121	1301
Trunk-trimming	J. J. Tower	37,923	Mar. 27	121	1301
Vending-machine casing	I. Mendel	37,959	Apr. 17	121	2277
Water receptacle or bottle	J. E. Cahill	37,968	Apr. 24	121	2613
	I. Newell	37,907	Mar. 20	121	967

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Abrasive material. Carborundum	Carborundum Company	50,104	Mar. 6	121	326
Acid in combination with proteid. Preparation of hydrochloric.	Fairchild Bros. & Foster	50,968	Apr. 3	121	1663
Acid phosphate and a syrup of phosphates	Chas. H. Phillips Chemical Co	51,493	Apr. 17	121	2316
Acid phosphate of lime. Powdered	Provident Chemical Works	51,357	Apr. 10	121	1974
Advertising-cartons	Cole Lithographing Company	50,925	Apr. 3	121	1662
Adzes, hatchets, and axes	Supplee Hardware Co	51,217	Apr. 10	121	1968
Ale	C. H. Evans & Sons	50,407	Mar. 13	121	684
Ale	S. Bolton's Sons	50,523	Mar. 20	121	1006
Ale	Robert Smith Ale Brewing Company.	50,917	Apr. 3	121	1661
Ale	Boston Beer Company	51,776	Apr. 24	121	2663
Ale and stout	C. Machen & Hudson	51,802	Apr. 24	121	2664
Ale. Carbonated ginger-	Lowenstein & Co	50,683	Mar. 27	121	1339
Ale. Ginger-	G. F. Hewett Co	50,267	Mar. 6	121	333
Ale. Ginger-	S. Becker	51,438	Apr. 17	121	2313
Ale. Ginger-	A. R. Holthusen	51,818	Apr. 24	121	2655
Alfalfa. Ground products of	White Rock Min. Spg. Co	51,855	Apr. 24	121	2656
Alimentary products	California Stock Food Co	51,678	Apr. 24	121	2640
Analgesics	Erste Wiener Export Malzfabrik Hauser & Sobotka.	50,852	Apr. 3	121	1659
Anesthetic	El Zernac Co	51,885	Apr. 24	121	2657
Anesthetics. Local	I. Feirstein	50,909	Apr. 3	121	1663
"Anti-set-off" compositions	B. B. Lawrence	50,725	Mar. 27	121	1341
Antipyretics	American Offset Company	50,710	Mar. 27	121	1340
Antiseptic	Ammo Phenin Chemical Company	50,533	Mar. 20	121	1006
Antiseptic and germicide. Alkaline	R. S. Walker	50,256	Mar. 6	121	332
Antiseptic and germicide preparations	Girard Company	50,719	Mar. 27	121	1340
Antiseptic compound	Gold Spirit Chemical Co	51,555	Apr. 17	121	2318
Antiseptic for local and internal use	P. Harkansson	50,233	Mar. 6	121	331
Antiseptic refrigerants for wounds	H. K. Mulford Company	51,646	Apr. 17	121	2322
Antiseptic solution	G. H. Tichenor	50,560	Mar. 20	121	1006
Antiseptics	Mercer Chemical Company	51,593	Apr. 17	121	2319
Antiseptics and germicides	Lloyd Brothers	50,515	Mar. 20	121	1006
Antiseptics for internal and external use	M. W. Savage	51,503	Apr. 17	121	2316
Antiseptics or germicides	T. Anda	51,916	Apr. 24	121	2658
Anvils	Lloyd Brothers	50,519	Mar. 20	121	1006
Asbestos sock-soles	Wiebusch & Hilger	50,635	Mar. 27	121	1337
Asphalt	Dr. Högyes' Asbestos Sock Coy	50,833	Apr. 3	121	1658
Asphaltic waterproofing compound	Warren Chemical & Manufacturing Company.	50,084	Mar. 6	121	326
Autographic registers	Hydrex Felt & Engineering Co	50,854	Apr. 3	121	1659
Automobile-horns	Carter-Crume Co	50,346	Mar. 13	121	682
Automobiles and their component parts	Gabriel Horn Mfg. Co	51,032	Apr. 3	121	1666
Axes	Birmingham Small Arms Co	50,830	Apr. 3	121	1658
Axes, adzes, and hatchets	American Tool Company	51,722	Apr. 24	121	2651
Axes and hatchets	Evansville Tool Works	50,589	Mar. 27	121	1335
Axes, hatchets, and adzes	Supplee Hardware Company	51,216	Apr. 10	121	1968
Axes, hatchets, and adzes	Collins Company	50,188	Mar. 6	121	328
Badges. Solid-gold	Collins Company	50,481	Mar. 20	121	1004
Bags of paper, cloth, &c	Irons & Russell	50,328	Mar. 13	121	681
Baking-powder	Eagle Paper Co	50,873	Apr. 3	121	1659
Baking-powder	Hulman & Co	50,272	Mar. 6	121	333
Baking-powder	Price Baking Powder Company	50,421	Mar. 13	121	686
Baking-powder	Jack Frost Baking Powder Co	50,616	Mar. 27	121	1336
Baking-powder	Southern Manufacturing Co	51,062	Apr. 3	121	1667
Baking-powder	J. D. & R. S. Christian Co	51,324	Apr. 10	121	1972
Baking-powder, bicarbonate of soda, and cream of tartar	Crescent Manufacturing Co	51,340	Apr. 10	121	1972
Balls. Base-	A. Schilling & Company	50,478	Mar. 20	121	1004
Balls. Base, cricket, basket, and foot	A. J. Reach Co	50,637	Mar. 27	121	1337
Banjo-heads and drumheads	A. J Reach Co	51,825	Apr. 24	121	2655
Banjos	Duplex Manufacturing Company	50,540	Mar. 20	121	1007
Bath-tubs and lavatories	Lyon & Healy	51,373	Apr. 17	121	2311
Bath-tubs and sinks	Kellogg-Mackay-Cameron Co	51,616	Apr. 17	121	2320
Bats. Base-ball	Standard Sanitary Mfg. Co	51,910	Apr. 24	121	2658
Bats. Base-ball	A. G. Spalding & Bros	50,636	Mar. 27	121	1337
Batteries. Dry	J. F. Hillerich & Son	50,812	Apr. 3	121	1657
Batteries. Dry and wet	Nungesser Electric Battery Co	51,821	Apr. 24	121	2655
Batteries. Electric	Ericsson Telephone Company	51,789	Apr. 24	121	2653
Batteries. Storage	Leclanché Battery Co	50,937	Apr. 3	121	1662
Bearings. Ball-	Storage Battery Supply Co	50,837	Apr. 3	121	1658
Bearings, bushings, and journals. Metal	Hess-Bright Manufacturing Co	50,105	Mar. 6	121	326
Beef extract	North American Metaline Co	51,247	Apr. 10	121	1969
Beer	Cudahy Packing Co	50,296	Mar. 6	121	334
Beer	John Brenner Brewing Co	50,736	Mar. 27	121	1341
Beer	Anheuser-Busch Brewing Association.	50,895	Apr. 3	121	1660
Beer	Christian Moerlein Brewing Co	51,206	Apr. 10	121	1968
Beer	J. L. Hoerber Brewing Co	51,293	Apr. 10	121	1971
Beer	Storz Brewing Co	51,429	Apr. 17	121	2313
Beer	Anheuser-Busch Brewing Association.	51,436	Apr. 17	121	2313
Beer	Independent Brewing Ass'n	51,469	Apr. 17	121	2315

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Pages.
Beer	Hoster-Columbus Associated Breweries Co.	51,681	Apr. 24	121	2649
Beer and bottled beer. Lager-	Terre Haute Brewing Co	51,485	Apr. 17	121	2315
Beer. Lager-	F. A. Poth & Sons	50,069	Mar. 6	121	325
Beer. Lager-	Consumers Park Brewing Co	50,665	Mar. 27	121	1336
Beer. Lager-	Quinn & Nolan Beverwyck Brewing Company.	51,249	Apr. 10	121	1969
Beer. Lager-	William Peter Br'g. Co	51,693	Apr. 24	121	2649
Bells. Farm, church, and school	C. S. Bell Co	50,832	Apr. 3	121	1658
Belt-couplings	Greene Tweed & Co	51,556	Apr. 17	121	2318
Belt-dressing	Stephenson Mfg. Co	51,251	Apr. 10	121	1969
Belt-dressings	Black Diamond Manufacturing Company.	51,204	Apr. 10	121	1968
Belt-dressings	Black Diamond Manufacturing Company.	51,205	Apr. 10	121	1968
Belt-fasteners	Greene, Tweed & Co	50,373	Mar. 13	121	683
Belts. Ladies'	A. E. Tomlinson	51,670	Apr. 17	121	2322
Belting. Leather	Patterson, Gottfried & Hunter	50,157	Mar. 6	121	329
Belting. Machine-	Main Belting Co	51,471	Apr. 17	121	2315
Beverage. Dry preparation for making a non-intoxicating	J. C. Eno, Limited	51,934	Apr. 24	121	2650
Beverages made of cola-nuts. Non-alcoholic	J. W. Hall	50,650	Mar. 27	121	1337
Beverages. Non-alcoholic carbonated	F. M. Finley	51,228	Apr. 10	121	1969
Beverages. Solid salts for making	J. Personeni	51,196	Apr. 10	121	1967
Bicycles	H. Keidel	51,353	Apr. 10	121	1974
Binders. Loose-leaf	Sieber & Trussell Mfg. Co	50,577	Mar. 20	121	1006
Birds. Song-	M. Geisler	50,853	Apr. 3	121	1659
Biscuits and cakes	Huntley & Palmers	51,444	Apr. 17	121	2314
Biscuits and cakes	Huntley & Palmers	51,766	Apr. 24	121	2652
Biscuits and cakes	Huntley & Palmers	51,767	Apr. 24	121	2652
Bitters	Frankel, Regenthal and Damler	50,170	Mar. 6	121	329
Bitters	M. L. Eppstein	50,412	Mar. 13	121	684
Bitters	J. Füger	51,211	Apr. 10	121	1968
Bitters	John Bardenheier Wine & Liquor Co.	51,352	Apr. 10	121	1974
Bitters	Geo. Benz & Sons	51,836	Apr. 24	121	2655
Bitters. Stomach-	Munyons Homœopathic Home Remedy Co.	51,618	Apr. 17	121	2320
Bitters. Vegetable	H. H. Hay	51,931	Apr. 24	121	2650
Blankets. Wool	S. Levi	50,178	Mar. 6	121	329
Blood and liver purifiers	Aschenbach & Miller	51,953	Apr. 24	121	2660
Blue. Washing-	Sawyer Crystal Blue Company	50,918	Apr. 3	121	1661
Blue. Washing-	Sawyer Crystal Blue Company	51,455	Apr. 17	121	2314
Bluing	Griggs, Cooper and Company	50,901	Apr. 3	121	1661
Bluing. Laundry	Russ Company	50,103	Mar. 6	121	326
Boats. Folding canvas	G. H. Winans	51,219	Apr. 10	121	1968
Boiler-cleaning compounds	John Callahan and Co	50,976	Apr. 3	121	1664
Boiler-cleaning tools. Steam-	Power Specialty Co	50,826	Apr. 3	121	1658
Boiler-tube cleaners or scrapers	A. W. Chesterton & Co	50,450	Mar. 20	121	1004
Boilers and radiators	Kellogg-Mackay-Cameron Co	51,615	Apr. 17	121	2320
Books and paper pads therefor. Duplicate sales-slip	Carter-Crume Co	50,583	Mar. 27	121	1335
Books. Blank	T. D. Taylor	51,160	Apr. 3	121	1672
Books of fiction	Lothrop, Lee & Shepard Company.	51,744	Apr. 24	121	2652
Books, pads, and tablets. Blank	Boorum & Pease Company	51,814	Apr. 24	121	2654
Books. Printed	Vedanta Society	50,954	Apr. 3	121	1663
Boot and shoe air-cushioning heel-pads and insoles	Comfort Heel Cushion Company	50,347	Mar. 13	121	682
Boot and shoe dressing	F. H. Young Company	51,397	Apr. 17	121	2312
Boot and shoe dressing	F. H. Young Company	51,833	Apr. 24	121	2655
Boot and shoe dressing	F. H. Young Company	51,926	Apr. 24	121	2659
Boots and shoes and leather used in their manufacture. Leather.	Rice & Hutchins	51,848	Apr. 24	121	2656
Boots and shoes. Leather	F. Mayer Boot & Shoe Co	50,129	Mar. 6	121	327
Boots and shoes. Leather	I. Levinstein	50,132	Mar. 6	121	328
Boots and shoes. Leather	Lynchburg Shoe Co	50,133	Mar. 6	121	328
Boots and shoes. Leather	Nesmith Shoe Company	50,134	Mar. 6	121	328
Boots and shoes. Leather	J. H. Cross	50,147	Mar. 6	121	328
Boots and shoes. Leather	I. Levinstein	50,155	Mar. 6	121	328
Boots and shoes. Leather	P. W. Minor & Son	50,283	Mar. 6	121	333
Boots and shoes. Leather	J. J. Schulten and Co	50,343	Mar. 13	121	681
Boots and shoes. Leather	Upham Bros. Co	50,355	Mar. 13	121	682
Boots and shoes. Leather	Upham Bros. Co	50,431	Mar. 13	121	685
Boots and shoes. Leather	H. L. Bond	50,605	Mar. 27	121	1336
Boots and shoes. Leather	E. Goldsberry	50,611	Mar. 27	121	1336
Boots and shoes. Leather	Wingo, Ellett & Crump Shoe Co	50,674	Mar. 27	121	1338
Boots and shoes. Leather	H. H. Brown & Co	50,962	Apr. 3	121	1663
Boots and shoes. Leather	Johnson & Watson Co	51,060	Apr. 3	121	1667
Boots and shoes. Leather	Manes Shoe Manufacturing Company.	51,061	Apr. 3	121	1667
Boots and shoes. Leather	W. J. Newman	51,150	Apr. 3	121	1671
Boots and shoes. Leather	Wertheimer-Swarts Shoe Co	51,179	Apr. 3	121	1672
Boots and shoes. Leather	Bentley & Olmsted Company	51,181	Apr. 10	121	1967
Boots and shoes. Leather	B. F. Reynolds	51,198	Apr. 10	121	1967
Boots and shoes. Leather	A. W. Tedcastle & Co	51,200	Apr. 10	121	1968
Boots and shoes. Leather	Craddock-Terry Company	51,396	Apr. 17	121	2312
Boots and shoes. Leather	E. S. Woodbury & Company	51,460	Apr. 17	121	2314
Boots and shoes. Leather	Guthmann Carpenter & Telling	51,709	Apr. 24	121	2650
Boots and shoes. Leather and canvas	Geo. E. Keith Company	51,496	Apr. 17	121	2316
Boots and shoes. Liquid dressing for	C. L. Hauthaway & Sons	50,066	Mar. 6	121	326
Boots and shoes. Liquid dressing for leather	C. L. Hauthaway & Sons	50,067	Mar. 6	121	325
Boots and shoes made of leather	M. A. Packard Company	50,551	Mar. 20	121	1007
Boots and shoes of leather and of leather and cloth	A. E. Little & Company	50 329	Mar. 13	121	681
Boots and shoes. Women's, misses', and children's leather	Dorothy Dodd Shoe Company	51,830	Apr. 24	121	2655
Boots, shoes, and slippers. Leather	Rindge Kalmbach Logie & Co	50,522	Mar. 20	121	1006
Boots, shoes, and slippers. Leather	Preston B. Keith Shoe Co	50,659	Mar. 27	121	1338
Boots, shoes, and slippers. Leather	Parker Holmes & Company	51,151	Apr. 3	121	1671
Boots, shoes, and slippers. Leather	Parker Holmes & Company	51,174	Apr. 3	121	1672
Boots, shoes, and slippers. Leather	C. K. Sharood	51,481	Apr. 17	121	2315

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Boots, shoes, and slippers. Leather	J. Wanamaker	51,487	Apr. 17	121	2315
Boots, shoes, and slippers. Leather	Parker, Holmes & Company	51,873	Apr. 24	121	2657
Boots, shoes, and slippers. Leather and cloth	Hanan & Son	50,970	Apr. 3	121	1663
Boots, shoes, and slippers of leather or textile material, or both, and soles therefor.	Nath'l Fisher & Co	51,149	Apr. 3	121	1671
Borax. Chemically-pure	S. B. Smith	51,175	Apr. 3	121	1672
Bottles of square or cubical form	Cook & Bernheimer Co	50,666	Mar. 27	121	1338
Bowling-alleys. Portable	American Box Ball Co	51,544	Apr. 17	121	2318
Box-toe material and innersoling	F. W. Whitcher	50,600	Mar. 27	121	1336
Braids and tapes	Dieckerhoff, Raffloer & Co	51,680	Apr. 24	121	2649
Braids. Plain	A. H. Rice & Co	51,945	Apr. 24	121	2660
Brake-shoes	American Brake Shoe & Foundry Company.	50,122	Mar. 6	121	327
Brandies and fruit-brandies	C. F. Lauber	51,082	Apr. 3	121	1666
Brandy	H. Campe & Co	50,260	Mar. 6	121	333
Brandy	P. J. Bowlin Liquor Co	51,037	Apr. 3	121	1666
Brandy	P. J. Bowlin Liquor Co	51,038	Apr. 3	121	1666
Brandy	Geo. Benz & Sons	51,837	Apr. 24	121	2655
Brandy. Apricot	Nuyens & Cie	50,554	Mar. 20	121	1007
Brandy. Corn	Charles Jacquin et Cie	51,280	Apr. 10	121	1971
Bread	D. R. Cone	51,781	Apr. 24	121	2653
Bread	L. Heying	51,817	Apr. 24	121	2655
Bread. Wheat	E. A. Williams	51,418	Apr. 17	121	2313
Brooms	American Broom & Brush Co	50,141	Mar. 6	121	328
Brooms	American Broom & Brush Co	50,142	Mar. 6	121	328
Brooms	American Broom & Brush Co	50,200	Mar. 6	121	330
Brooms	American Broom & Brush Co	50,201	Mar. 6	121	330
Brooms	American Broom & Brush Co	50,202	Mar. 6	121	330
Brooms	Lee Broom & Duster Company	51,901	Apr. 24	121	2658
Brushes	J. Sakabe	50,342	Mar. 13	121	681
Brushes. Tooth	C. Loonen	50,470	Mar. 20	121	1004
Buggies and carriages	Rock Hill Buggy Co	51,664	Apr. 17	121	2322
Buggies and carriages	Rock Hill Buggy Co	51,665	Apr. 17	121	2322
Butter	Fox River Butter Company	50,483	Mar. 20	121	1004
Butter	J. P. Baden Produce Co	50,485	Mar. 20	121	1005
Butter	Currier-Todd Co	51,019	Apr. 3	121	1666
Butter	D. E. Wood Butter Co	51,058	Apr. 3	121	1667
Butter	Beyer Bros. Co	51,277	Apr. 10	121	1970
Butter	E. O. Whitford Company	51,287	Apr. 10	121	1971
Butter	J. Menendez	51,375	Apr. 17	121	2311
Butter	Francis H. Leggett & Company	51,441	Apr. 17	121	2313
Butter. Nut	C. G. Purdy	50,422	Mar. 13	121	685
Butterin or oleomargarin	Braun & Fitts	51,119	Apr. 3	121	1670
Button parts	C. H. Schott	51,101	Apr. 3	121	1669
Buttons	Dieckerhoff, Raffloer & Co	50,744	Mar. 27	121	1341
Buttons and studs. Sleeve and collar	Parks Bros. & Rogers	51,701	Apr. 24	121	2650
Buttons and studs. Sleeve and collar	Parks Bros. & Rogers	51,702	Apr. 24	121	2650
Cakes	J. Hochbaum	51,292	Apr. 10	121	1971
Calfskin, patent-leather, and waxed calf	Doerr & Reinhart	50,587	Mar. 27	121	1335
Cameras. Panoramic	Rochester Panoramic Camera Company.	51,824	Apr. 24	121	2655
Candies	Schall & Co	51,406	Apr. 17	121	2312
Candies and chocolates of all descriptions	S. F. Whitman & Son	50,865	Apr. 3	121	1659
Candies and chocolates of all descriptions	S. F. Whitman & Son	50,866	Apr. 3	121	1659
Candies. Certain	George Ziegler Co	50,441	Mar. 20	121	1003
Candies of all kinds	Hazelwood Company	50,681	Mar. 27	121	1339
Candy	Reymer & Brothers	50,690	Mar. 27	121	1339
Candy	Sweet Candy Co	51,510	Apr. 17	121	2316
Candy	P. Wunderle	51,856	Apr. 24	121	2656
Candy	P. Wunderle	51,857	Apr. 24	121	2656
Candy. Chocolate and all kinds of	Great American Automatic Vending Machine Company.	51,838	Apr. 24	121	2655
Candy. Cough	Doniphan & Co	51,520	Apr. 17	121	2317
Candles. Short thick	Clarke's-Pyramid and Fairy Light Company.	50,498	Mar. 20	121	1005
Candles. Short thick	Clarke's-Pyramid and Fairy Light Company.	50,499	Mar. 20	121	1005
Candles. Short thick	Clarke's-Pyramid and Fairy Light Company.	50,500	Mar. 20	121	1005
Canned corn	P. Hohenadel, Jr., Co	51,039	Apr. 3	121	1666
Canned corn	P. Hohenadel, Jr., Canning Co	51,040	Apr. 3	121	1667
Canned corn	P. Hohenadel, Jr	51,765	Apr. 24	121	2652
Canned extract of green corn	Haserot Canneries Company	51,866	Apr. 24	121	2656
Canned fish	Schwabacher Bros. & Co	51,389	Apr. 17	121	2312
Canned fish	Schwabacher Bros. & Co	51,504	Apr. 17	121	2316
Canned fruits	Gennerich & Von Bremen	51,026	Apr. 3	121	1666
Canned fruits and vegetables	G. Frank	50,369	Mar. 13	121	682
Canned fruits and vegetables	Gibbs Preserving Company of Baltimore City.	50,442	Mar. 20	121	1003
Canned fruits and vegetables	Pratt-Low Preserving Co	50,623	Mar. 27	121	1336
Canned fruits and vegetables	Pratt-Low Preserving Co	51,043	Apr. 3	121	1667
Canned fruits and vegetables	J. E. Kriete	51,060	Apr. 3	121	1668
Canned fruits and vegetables	Weideman Company	51,306	Apr. 10	121	1972
Canned fruits and vegetables	Weideman Company	51,307	Apr. 10	121	1972
Canned fruits and vegetables	Davis, Baxter & Company	51,462	Apr. 17	121	2314
Canned meats	Francis H. Leggett & Company	50,370	Mar. 13	121	682
Canned pineapples	Planters Packing and Preserving Co.	51,747	Apr. 24	121	2652
Canned salmon	J. G. Megler	50,281	Mar. 6	121	333
Canned salmon	J. G. Megler	50,282	Mar. 6	121	333
Canned salmon	Fidalgo Island Packing Co	51,288	Apr. 10	121	1971
Canned salmon	Fidalgo Island Packing Co	51,321	Apr. 10	121	1972
Canned salmon	Fidalgo Island Packing Co	51,322	Apr. 10	121	1972
Canned salmon	Fidalgo Island Packing Co	51,463	Apr. 17	121	2314
Canned sardines	C. B. Mitchell	50,284	Mar. 6	121	333
Canned sardines	William Underwood Company	50,406	Mar. 13	121	684

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Canned sardines	William Underwood Company	50,494	Mar. 20	121	1005
Canned sardines	C. B. Mitchell	51,868	Apr. 24	121	2656
Canned vegetables and fruits	S. J. Seneca	50,291	Mar. 6	121	334
Cans. Milk-	Oakes & Burger	51,905	Apr. 24	121	2658
Caps and corks	Phoenix Cap Company	50,892	Apr. 3	121	1660
Capsules. Filled gelatin	J. R. Planten	51,355	Apr. 10	121	1974
Capsules. Filled gelatin	J. R. Planten	51,356	Apr. 10	121	1974
Capsules. Gelatinous elastic	Hance Bros. & White	50,414	Mar. 13	121	684
Car-couplings, car-buffers, and draft-gears and parts thereof	Gould Coupler Co	50,443	Mar. 20	121	1003
Car-couplings. Vertical-plane	National Malleable Castings Company.	50,951	Apr. 3	121	1663
Car-couplings. Vertical-plane	National Malleable Castings Company.	50,952	Apr. 3	121	1663
Car-door hangers, fasteners, and guide-brackets. Freight-	Camel Company	50,896	Apr. 3	121	1660
Car-door trimmings. Freight-	Camel Company	50,872	Apr. 3	121	1659
Caramels and candies	American Caramel Co	50,741	Mar. 27	121	1341
Caramels and candies	American Caramel Co	51 915	Apr. 24	121	2658
Card-holder	G. F. Wedderburn	51,255	Apr. 10	121	1970
Cards. Playing-	New York Consolidated Card Company.	50,073	Mar. 6	121	325
Cards. Playing-	New York Consolidated Card Company.	50,074	Mar. 6	121	325
Cards. Playing-	New York Consolidated Card Company.	50,075	Mar. 6	121	325
Cards. Playing-	New York Consolidated Card Company.	50,076	Mar. 6	121	325
Cards. Playing-	New York Consolidated Card Company.	50,077	Mar. 6	121	325
Cards. Playing-	United States Playing Card Co	50,078	Mar. 6	121	325
Cards. Playing-	United States Playing Card Co	50,079	Mar. 6	121	325
Cards. Playing-	New York Consolidated Card Company.	50,106	Mar. 6	121	326
Cards. Playing-	New York Consolidated Card Company.	50,107	Mar. 6	121	326
Cards. Playing-	New York Consolidated Card Company.	50,108	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,109	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,110	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,111	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,112	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,113	Mar. 6	121	327
Cards. Playing-	New York Consolidated Card Company.	50,114	Mar. 6	121	327
Cards. Playing-	United States Playing Card Co	50,116	Mar. 6	121	327
Cards. Playing-	United States Playing Card Co	50,117	Mar. 6	121	327
Cards. Playing-	United States Playing Card Co	50,350	Mar. 13	121	682
Cards. Playing-	United States Playing Card Co	50,351	Mar. 13	121	682
Cards. Playing-	United States Playing Card Co	50,352	Mar. 13	121	682
Cards. Playing-	United States Playing Card Co	51,202	Apr. 10	121	1968
Cards. Playing-	United States Playing Card Co	51,378	Apr. 17	121	2311
Cards. Playing-	United States Playing Card Co	51,379	Apr. 17	121	2311
Cards. Playing-	United States Playing Card Co	51,380	Apr. 17	121	2311
Cards. Playing-	New York Consolidated Card Company.	51,449	Apr. 17	121	2314
Cards. Playing-	New York Consolidated Card Company.	51,450	Apr. 17	121	2314
Cards. Playing-	New York Consolidated Card Company.	51,475	Apr. 17	121	2315
Cards. Playing-	United States Playing Card Co	51,716	Apr. 24	121	2650
Cards. Playing-	United States Playing Card Co	51,737	Apr. 24	121	2651
Cards. Playing-	United States Playing Card Co	51,738	Apr. 24	121	2651
Cards. Playing-	United States Playing Card Co	51,749	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,750	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,751	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,752	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,753	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,754	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,755	Apr. 24	121	2652
Cards. Playing-	United States Playing Card Co	51,756	Apr. 24	121	2652
Cards. Playing-	New York Consolidated Card Company.	51,847	Apr. 24	121	2656
Carpets	Morris and Company	51,065	Apr. 3	121	1669
Carpets and rugs. Woven	Bigelow Carpet Company	51,117	Apr. 3	121	1670
Carpets. Tapestry Brussels and tapestry velvet	Roxbury Carpet Company	51,621	Apr. 17	121	2321
Carriages	H. H. Babcock Company	50,811	Apr. 3	121	1657
Cartridges	Winchester Repeating Arms Co	51,717	Apr. 24	121	2650
Castings and forgings. Iron and steel	McConway & Torley Co	50,628	Mar. 27	121	1337
Catamenial bandages	Borated Specialty Company	50,831	Apr. 3	121	1658
Catchup. Tabasco and tomato	Joseph Campbell Company	50,239	Mar. 6	121	332
Cement. Artificial Portland and hydraulic	Round Top Cement Company	50,387	Mar. 13	121	683
Cement. Belt-	New York Leather Belting Co	51,246	Apr. 10	121	1969
Cement for building purposes, gypsum, and lime	Liebold & Co	51,683	Apr. 24	121	2649
Cement. Leather and rubber	Eclipse Cement & Blacking Co	51,419	Apr. 17	121	2313
Cement. Natural and artificial Portland and hydraulic	Round Top Cement Company	51,502	Apr. 17	121	2316
Cement. Portland	A. Clarke	50,090	Mar. 6	121	326
Cement. Portland	Glens Falls Portland Cement Co	50,862	Apr. 3	121	1659
Cement. Portland	Kansas Portland Cement Co	50,877	Apr. 3	121	1660
Cement. Portland	Glens Falls Portland Cement Co	51,235	Apr. 10	121	1969
Cereal paste goods	John B. Canepa Company	50,396	Mar. 13	121	683
Chains, fobs, chatelaines, and chain-trimmings	C. R. Harris	50,130	Mar. 6	121	327
Chairs and rockers. Double-caned	Delaware Chair Co	50,626	Mar. 27	121	1337

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Chairs, settees, tables, and stools. Rustic	Old Hickory Chair Co	51,685	Apr. 24	121	2649
Champagne	R. H. Jones	50,820	Apr. 3	121	1657
Champagne	T. Martindale & Co	51,214	Apr. 10	121	1968
Champagne and still-wine	F. Korbel & Bros	50,095	Mar. 6	121	326
Charcoal	B. S. Feiner	50,782	Mar. 27	121	1343
Cheese	Phenix Cheese Co	50,286	Mar. 6	121	334
Cheese. Neufchâtel	W. A. Lawrence & Son	50,619	Mar. 27	121	1336
Chemical coating	Toch Brothers	51,335	Apr. 10	121	1973
Chemical compounds	Bird-Archer Company	50,995	Apr. 3	121	1665
Chemical preparation	McKesson & Robbins	50,983	Apr. 3	121	1664
Chests, boxes, and cabinets	I. N. Deitsch	51,828	Apr. 24	121	2655
Cheviots. Haircloth	Eddystone Manufacturing Company.	50,764	Mar. 27	121	1342
Chili sauce, tabasco sauce, and salad-dressing	Joseph Campbell Company	50,240	Mar. 6	121	332
Chocolate and cocoa preparations. Certain named	Aktien-Gesellschaft Vereinigte Berner & Zurcher Chocolade-Fabriken Lindt & Sprungli.	51,382	Apr. 17	121	2311
Chocolate, cocoa, and sweet chocolate	W. H. Baker	51,012	Apr. 3	121	1665
Chocolates	W. L. Gansert	50,413	Mar. 13	121	684
Chocolates	Phelps Company	50,669	Mar. 27	121	1338
Chocolates	Griggs, Cooper and Company	50,902	Apr. 3	121	1661
Chocolates	Shupe-Williams Candy Co	51,692	Apr. 24	121	2649
Chocolates and bonbons	R. L. Perry Co	50,287	Mar. 6	121	334
Chocolates and bonbons	R. L. Perry Co	50,689	Mar. 27	121	1339
Chocolates, bonbons, and similar candies	Russell & Co	50,908	Apr. 3	121	1661
Cigarette-holders	A. Q. Walsh	50,894	Apr. 3	121	1660
Cigarette-paper	C. Schütz	51,199	Apr. 10	121	1968
Cigarettes	Butler-Butler	50,870	Apr. 3	121	1659
Cigarettes	Miller, Du Brul & Peters Mfg. Co.	50,893	Apr. 3	121	1660
Cigarettes and cigarette-tobacco	H. P. Strause	50,392	Mar. 13	121	683
Cigars	E. H. Gato Cigar Company	50,068	Mar. 6	121	325
Cigars	P. E. Watson	50,086	Mar. 6	121	326
Cigars	W. Boucher	50,088	Mar. 6	121	326
Cigars	E. H. Gato Cigar Company	50,093	Mar. 6	121	326
Cigars	J. Weinreich	50,119	Mar. 6	121	327
Cigars	Banner Cigar M'f'g. Co	50,395	Mar. 13	121	683
Cigars	Cuesta, Rey & Co	50,409	Mar. 13	121	684
Cigars	A. Siegel	50,449	Mar. 20	121	1003
Cigars	H. T. Offterdinger	50,657	Mar. 27	121	1338
Cigars	S. S. Pierce Co	50,693	Mar. 27	121	1339
Cigars	C. B. Perkins	50,884	Apr. 3	121	1660
Cigars	C. B. Perkins	50,886	Apr. 3	121	1660
Cigars	E. H. Gato Cigar Company	51,225	Apr. 10	121	1968
Cigars	A. Santaella & Co	51,391	Apr. 17	121	2312
Cigars	A. Santaella & Co	51,392	Apr. 17	121	2312
Cigars	A. Santaella & Co	51,393	Apr. 17	121	2312
Cigars	L. P. Bissell	51,394	Apr. 17	121	2312
Cigars	Deisel-Wemmer Co	51,417	Apr. 17	121	2313
Cigars	T. J. Kerins	51,422	Apr. 17	121	2313
Cigars	A. Straus	51,457	Apr. 17	121	2314
Cigars	Rodriguez, Arguelles & Company.	51,691	Apr. 24	121	2649
Cigars	Lopez y Cia	51,699	Apr. 24	121	2650
Cigars	Lopez y Cia	51,700	Apr. 24	121	2650
Cigars	Rodriguez, Arguelles & Company.	51,714	Apr. 24	121	2650
Cigars and cheroots	Sanchez & Haya Co	51,733	Apr. 24	121	2651
Cigars, cheroots, and cigarettes made of cigar-tobacco	O. Eisenlohr & Bros	50,874	Apr. 3	121	1659
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company.	50,678	Mar. 27	121	1339
Cigars, cheroots, and stogies	Cayey Caguas Tobacco Company.	50,850	Apr. 3	121	1658
Cigars. Havana	Wisconsin Cigar Co	50,707	Mar. 27	121	1340
Cigars. Havana	Rothenburg & Schloss	50,887	Apr. 3	121	1660
Cigars. Havana	Havana Commercial Company	51,237	Apr. 10	121	1969
Cleaning compound	Havana Commercial Company	51,291	Apr. 10	121	1971
Cleaning enameled and porcelain ware. Preparations for	E. C. Davis	51,783	Apr. 24	121	2653
Cleaning enameled and porcelain ware. Preparations for	W. C. McKinney	50,471	Mar. 20	121	1004
Cleaning precious metals. Powdered preparation for	W. C. McKinney	51,447	Apr. 17	121	2314
Cleansing and scouring preparation	J. B. Haldeman	50,465	Mar. 20	121	1004
Clocks and watches	Palami Company	50,686	Mar. 27	121	1339
Cloth having a polished finish	Western Clock Mfg. Co	51,854	Apr. 24	121	2656
Clothes-pins	J. Milloy and Co	51,804	Apr. 24	121	2654
Clutches	J. H. McBride	50,417	Mar. 13	121	684
Coal	T. B. Wood's Sons	50,845	Apr. 3	121	1658
Coal	Hull Coal & Coke Corporation	50,814	Apr. 3	121	1657
Coal. Bituminous	Merchants Coal Company	50,858	Apr. 3	121	1659
Coal. Bituminous and anthracite	War Eagle Fuel Company	50,567	Mar. 20	121	1006
Coal. Bituminous and anthracite	Economy Fuel Co	50,504	Mar. 20	121	1005
Coats and trousers	Economy Fuel Co	50,505	Mar. 20	121	1005
Coats, trousers, and vests. Men's	J. Samuels & Bro	50,794	Mar. 27	121	1343
Coats, vests, and trousers	J. Yeska	51,308	Apr. 10	121	1972
Coats, vests, and trousers	Jones Dry Goods Co	51,614	Apr. 17	121	2320
Coats, vests, trousers, and overcoats	Sykes & A. B. Kirschbaum & Co.	51,734	Apr. 24	121	2651
Cocks. Stop and waste	C. C. Hauger	50,971	Apr. 3	121	1664
Cocktails	A. Y. McDonald & Morrison Manufacturing Company.	50,601	Mar. 27	121	1336
Cocoa	George F. Hewett Co	50,171	Mar. 6	121	329
Cocoa-oatmeal preparations	C. J. Van Houten & Zoon	50,864	Apr. 3	121	1659
Cocoanut. Desiccated	M. Michaelis & Sons	51,147	Apr. 3	121	1671
Coffee	Citizens' Wholesale Supply Co	50,251	Mar. 6	121	332
Coffee	Hulman & Co	50,236	Mar. 6	121	332
Coffee	Independence Coffee and Spice Co.	50,290	Mar. 6	121	334
Coffee	Arbuckle Bros	50,439	Mar. 20	121	1003
Coffee	New Orleans Coffee Co	50,446	Mar. 20	121	1003
Coffee	Arbuckle Bros	50,455	Mar. 20	121	1003
Coffee	A. Schilling & Company	50,477	Mar. 20	121	1004
Coffee	A. Schilling & Company	50,624	Mar. 27	121	1337
Coffee	Consumers Supply Company	51,018	Apr. 3	121	1666
Coffee	H. G. Tombler Grocery Co	51,109	Apr. 3	121	1670

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Coffee	Ridenour-Baker Grocery Company.	51,155	Apr. 3	121	1671
Coffee	Schwabacher Bros. & Co	51,332	Apr. 10	121	1973
Coffee	H. A. Carney	51,461	Apr. 17	121	2314
Coffee	Hills Bros	51,468	Apr. 17	121	2315
Coffee	O. W. Peirce Company	51,477	Apr. 17	121	2315
Coffee	Clark, Coggin and Johnson Company.	51,779	Apr. 24	121	2653
Coffee-berry, either whole or ground	Milliken, Tomlinson Co	50,473	Mar. 20	121	1004
Coffee. Cereal	Whitman Grocery Company	50,406	Mar. 13	121	684
Coffee. Cereal	Buffalo Pure Food Company	51,315	Apr. 10	121	1972
Coffee-grinders	National Specialty Manufacturing Company.	50,474	Mar. 20	121	1004
Coffee-mills	Sun Manufacturing Company	51,624	Apr. 17	121	2321
Coffee-mills	Sun Manufacturing Company	51,625	Apr. 17	121	2321
Coffee. Roasted	Fort Smith Commission Company.	50,464	Mar. 20	121	1004
Collars, collar-pads, and back-bands	Couch Brothers & J. J. Eagan Co.	50,927	Apr. 3	121	1662
Collars. Horse-	Wyeth Hardware & Manufacturing Co.	51,381	Apr. 17	121	2311
Cologne	F. B. Shedd	51,539	Apr. 17	121	2317
Colors and colored paints. Pigment	John T. Lewis & Bros. Co	51,399	Apr. 17	121	2312
Colors and colored paints. Pigment	John T. Lewis & Bros. Co	51,400	Apr. 17	121	2312
Colors. Uniting agents for	F. Sichel Chemische Fabrik Limmer.	51,505	Apr. 17	121	2316
Combs	Schrader & Ehlers	50,990	Apr. 3	121	1664
Combs	Dr. Heinrich Traun & Söhne	51,671	Apr. 17	121	2322
Combs	Dr. Heinrich Traun & Söhne	51,672	Apr. 17	121	2323
Combs	Dr. H. Traun & Söhne	51,911	Apr. 24	121	2658
Combs	J. P. Noyes & Company	51,941	Apr. 24	121	2659
Compound for curing blood and skin diseases	C. B. Knox	50,380	Mar. 13	121	683
Compound for the cure of rheumatism. Liquid vegetable	F. G. Bland	50,959	Apr. 3	121	1663
Concrete washtrays	Economy Manufacturing Co	50,607	Mar. 27	121	1336
Condition powders	F. G. Boynton	50,775	Mar. 27	121	1343
Consumption cure	P. M. Ford	51,109	Apr. 3	121	1672
Conveyers. Contractors' dumping-	J. J. Harold	51,764	Apr. 24	121	2652
Cordial for blending whiskies	A. Reinert	50,660	Mar. 27	121	1338
Cordials	Mariani & Co	50,939	Apr. 3	121	1662
Cordials	S. Hochstadter	51,239	Apr. 10	121	1969
Cordials	Colburn, Birks & Co	51,578	Apr. 17	121	2319
Cordials	P. Dempsey & Co	51,787	Apr. 24	121	2653
Cords, lines, twines, and ropes	Samson Cordage Works	50,827	Apr. 3	121	1658
Cords, lines, twines, and ropes	Samson Cordage Works	50,828	Apr. 3	121	1658
Cords, lines, twines, and ropes	Samson Cordage Works	51,774	Apr. 24	121	2653
Cords, lines, twines, and ropes	Samson Cordage Works	51,775	Apr. 24	121	2653
Corn in flake form. Product of	American Hominy Company	51,114	Apr. 3	121	1670
Corn in flake form. Product of Indian	American Hominy Company	51,009	Apr. 3	121	1665
Corn-starch	Warner Sugar Refining Company	51,067	Apr. 3	121	1668
Cornmeal	Gulfport Grocery Company	50,444	Mar. 20	121	1003
Cornmeal	Threefoot Bros. & Co	50,454	Mar. 20	121	1003
Cornmeal, both bolted and granulated	Diamond Elevator & Milling Company.	50,482	Mar. 20	121	1004
Corset bones or stays	J. Janowits	50,514	Mar. 20	121	1006
Corset-covers and corset-waists	C. A. Powell	51,273	Apr. 10	121	1970
Corset-covers, ladies' pants and vests	Maline Mills Company	50,998	Apr. 3	121	1665
Corset steels and clasps	Royal Worcester Corset Co	50,341	Mar. 13	121	681
Corsets	Kabo Corset Company	50,176	Mar. 6	121	320
Corsets	Royal Worcester Corset Co	50,187	Mar. 6	121	330
Corsets	Royal Worcester Corset Co	50,188	Mar. 6	121	339
Corsets	Royal Worcester Corset Co	50,337	Mar. 13	121	681
Corsets	Royal Worcester Corset Co	50,338	Mar. 13	121	681
Corsets	Royal Worcester Corset Co	50,339	Mar. 13	121	681
Corsets	Royal Worcester Corset Co	50,340	Mar. 13	121	681
Corsets	Birdsey & Somers	51,167	Apr. 3	121	1672
Corsets	Artists' Model Coat Co	51,311	Apr. 10	121	1972
Corsets	John C. Lewis Co	51,728	Apr. 24	121	2651
Corsets	Weingarten Bros	51,851	Apr. 24	121	2656
Corsets, corset-waists, and corset-steels	Kops Bros	50,936	Apr. 3	121	1662
Corsets, corset-waists, dress-stays, &c	Coronet Corset Co	51,761	Apr. 24	121	2652
Cosmetic hair and skin tonics	G. V. G. Heberton	51,612	Apr. 17	121	2320
Cotton cloth	Hewlett & Lee	50,721	Mar. 27	121	1340
Cotton cloth	Hewlett & Lee	50,722	Mar. 27	121	1340
Cotton cloth	Hewlett & Lee	50,723	Mar. 27	121	1340
Cotton-cloth buff-wheels	Williamsville Manufacturing Company.	50,120	Mar. 6	121	327
Cotton damask	Rosemary Manufacturing Company.	50,186	Mar. 6	121	330
Cotton duck	Hogansville Manufacturing Company.	50,174	Mar. 6	121	329
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	50,181	Mar. 6	121	329
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	50,182	Mar. 6	121	329
Cotton duck	Hogansville Manufacturing Company.	50,546	Mar. 20	121	1007
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	51,173	Apr. 3	121	1672
Cotton duck	William E. Hooper & Sons Co. of Baltimore City.	51,336	Apr. 10	121	1973
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	51,532	Apr. 17	121	2317
Cotton duck	Lowell Weaving Company	51,589	Apr. 17	121	2319
Cotton duck	Lowell Weaving Company	51,590	Apr. 17	121	2319
Cotton goods. Woven	Stark Mills	50,391	Mar. 13	121	683
Cotton piece goods	Catlin & Co	50,169	Mar. 6	121	329
Cotton piece goods	Gilbert Manufacturing Company	50,544	Mar. 20	121	1007

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cotton piece goods	Eagle & Phenix Mills	50,716	Mar. 27	121	1340
Cotton piece goods	Massachusetts Cotton Mills	50,750	Mar. 27	121	1342
Cotton piece goods	Massachusetts Cotton Mills	50,751	Mar. 27	121	1342
Cotton piece goods	Clifton Manufacturing Co	50,924	Apr. 3	121	1662
Cotton piece goods	Eagle & Phenix Mills	51,129	Apr. 3	121	1670
Cotton piece goods	Eagle & Phenix Mills	51,168	Apr. 3	121	1672
Cotton piece goods	Tremont & Suffolk Mills	51,360	Apr. 10	121	1974
Cotton piece goods	Chiquola Manfg. Co	51,633	Apr. 17	121	2321
Cotton piece goods	Massachusetts Cotton Mills	51,684	Apr. 24	121	2649
Cotton piece goods	Tremont & Suffolk Mills	51,705	Apr. 24	121	2650
Cotton piece goods	Parkhill Mfg. Co	51,730	Apr. 24	121	2651
Cotton piece goods	Massachusetts Cotton Mills	51,867	Apr. 24	121	2656
Cotton plaids and stripes	Eagle & Phenix Mills	51,023	Apr. 3	121	1666
Cotton plaids, checks, stripes, and cheviots	S. A. Crozer & Son	51,679	Apr. 24	121	2649
Cotton. Prepared	Ostermoor & Co	51,687	Apr. 24	121	2649
Cough cure	Kickapoo Indian Medicine Co	50,565	Mar. 20	121	1006
Cough-drops	Davies, Rose & Co	50,571	Mar. 20	121	1006
Cough-drops	W. W. Smith	50,947	Apr. 3	121	1663
Counter-shafts and appurtenances thereto	Mossberg Wrench Company	50,835	Apr. 3	121	1658
Court-plaster. Liquid	Carpenter Chemical Co	50,777	Mar. 27	121	1343
Court-plasters. Liquid substitute for	Douglas Manufacturing Company	50,252	Mar. 6	121	332
Covert cloths, venetians, broadcloths, and cheviots	A. Berel	50,774	Mar. 27	121	1343
Cracker-meal	Griggs, Cooper & Company	51,133	Apr. 3	121	1671
Crackers and biscuits	Green Green & Co	51,028	Apr. 3	121	1666
Crackers, cakes, and bread	Austin Young & Co	51,312	Apr. 10	121	1972
Cranberries	J. J. White	50,493	Mar. 20	121	1006
Cream for the skin	Pond's Extract Company	51,089	Apr. 3	121	1669
Cream-separators. Centrifugal	American Separator Co	50,438	Mar. 20	121	1003
Cream. Sterilized	Pacific Creamery Company	51,688	Apr. 24	121	2649
Cretonnes. Drapery and upholstery	Eddystone Manufacturing Company.	50,767	Mar. 27	121	1342
Croustades	F. Beaumont	50,218	Mar. 6	121	331
Croustades	F. Beaumont	51,338	Apr. 10	121	1973
Cultivators	Midland Manufacturing Co	51,617	Apr. 17	121	2320
Cycle-saddles	J. B. Brooks & Co	50,131	Mar. 6	121	327
Cycles, motor-cycles, and parts thereof	Birmingham Small Arms Co	50,890	Apr. 3	121	1660
Dandruff and skin cure	A. J. Krank	51,657	Apr. 17	121	2322
Dental chairs	Ritter Dental Mfg. Co	50,556	Mar. 20	121	1007
Dental chairs	Ritter Dental Mfg. Co	50,557	Mar. 20	121	1007
Dentifrices. Liquid	American Peroxide and Chemical Company.	50,250	Mar. 6	121	332
Dictionaries	G. & C. Merriam Company	50,645	Mar. 27	121	1337
Dictionaries	G. & C. Merriam Company	50,646	Mar. 27	121	1337
Disinfectant, preservative, and bactericide	Carno Chemical Co	50,963	Apr. 3	121	1663
Disinfectants. Liquid	M. E. Platt	50,246	Mar. 6	121	332
Displaying goods in stores. Fixtures for	Heimann-Miller Manufacturing Company.	51,791	Apr. 24	121	2653
Dolls	Abraham & Straus	51,695	Apr. 24	121	2650
Dress goods and linings	Martin L. Cohn Co	51,034	Apr. 3	121	1666
Driers. Liquid	Pratt & Lambert	50,688	Mar. 27	121	1339
Drums	Lyon & Healy	51,729	Apr. 24	121	2651
Duck and canvas cleaning compounds	F. H. Young Company	51,834	Apr. 24	121	2655
Duck and canvas cleaning compounds	F. H. Young Company	51,927	Apr. 24	121	2659
Dusters. Feather	Chicago Feather Duster Co	51,016	Apr. 3	121	1666
Dyeing preparation	E. C. Foster	50,229	Mar. 6	121	331
Dyes	Paas Dye Co	50,727	Mar. 27	121	1341
Dyes	Paas Dye Co	50,728	Mar. 27	121	1341
Dyestuff	Cassella Color Company	50,221	Mar. 6	121	331
Dyestuff	Cassella Color Company	50,222	Mar. 6	121	331
Dyestuff	Cassella Color Company	50,497	Mar. 20	121	1006
Dyestuff or coloring mixture for leather	Cassella Color Company	50,778	Mar. 27	121	1343
Dyestuffs. Anilin	Stamford Mfg. Co	51,509	Apr. 17	121	2316
Dyestuffs. Sensitizing	C. Bischoff & Co	51,631	Apr. 17	121	2321
Dynamite, dynamite-cartridges, blasting-gelatin, and low-powder.	Farbenfabriken of Elberfeld Co	51,887	Apr. 24	121	2657
Dyspepsia-cakes	Aetna Powder Co	51,706	Apr. 24	121	2650
Dyspepsia-cakes	H. A. C. Dahl	50,714	Mar. 27	121	1340
Eggs. Hens'	H. A. C. Dahl	50,715	Mar. 27	121	1340
Ejectors	G. M. Wattles & Son	50,491	Mar. 20	121	1005
Electric-conduit fittings	United Injector Co	50,632	Mar. 27	121	1337
Electric-conduit fittings	Crouse-Hinds Company	50,462	Mar. 20	121	1004
Electric fuses with or without cap	Crouse-Hinds Company	50,463	Mar. 20	121	1004
Electric generators and motors and parts thereof	Star Electric Fuse Works	51,667	Apr. 17	121	2322
Electric motors	C. A. Parsons	51,568	Apr. 17	121	2319
Electric switches	Bartz, Wygant & Brown	50,630	Mar. 27	121	1337
Electric time-switches	Hart & Hegeman Mfg. Co	51,743	Apr. 24	121	2651
Electricity. Devices for use in applying	Crescent Electrical & Manufacturing Company.	50,426	Mar. 13	121	686
Embalming fluids	J. W. Gibbs	50,326	Mar. 13	121	681
Enamel	Venus Chemical Co	51,178	Apr. 3	121	1672
Engines and steam-pumps. Steam pumping-	Hamrick Tank & Barrel Hard Shell Enameling Co.	50,915	Apr. 3	121	1661
Engines. Gas and gasolene	Wheeler Condenser & Engineering Co.	50,403	Mar. 13	121	684
Engines. Gas and gasolene	Otto Gas Engine Works	50,486	Mar. 20	121	1005
Engines. Internal-combustion	Fairbanks Co	51,582	Apr. 17	121	2319
Envelops	Progressive Mfg. Co	50,836	Apr. 3	121	1658
Escharotics	Transo-Paper Company	50,165	Mar. 6	121	329
Explosives	Lloyd Brothers	50,516	Mar. 20	121	1006
Explosives	Masurite Explosive Company	50,654	Mar. 27	121	1338
Eyeglasses, spectacles, and parts and repairs and cases therefor.	Nobel's Explosives Company	51,566	Apr. 17	121	2318
Eyelets and lacing-hooks	E. Kirstein Sons Co	51,884	Apr. 24	121	2657
Fabrics. Certain named	United Fast Color Eyelet Company.	50,738	Mar. 27	121	1341
	F. S. Bisbee	51,220	Apr. 10	121	1968

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Fabrics. Cotton textile	Eddystone Manufacturing Company.	50,761	Mar. 27	121	1342
Fabrics. Drapery and upholstery textile	Eddystone Manufacturing Company.	50,192	Mar. 6	121	330
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	50,193	Mar. 6	121	330
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	50,906	Apr. 3	121	1665
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	51,057	Apr. 3	121	1667
Fabrics. Textile	Eddystone Manufacturing Company.	50,561	Mar. 20	121	1006
Fabrics. Textile	Eddystone Manufacturing Company.	50,562	Mar. 20	121	1006
Fabrics. Textile	Eddystone Manufacturing Company.	50,563	Mar. 20	121	1006
Fabrics. Textile	Eddystone Manufacturing Company.	50,578	Mar. 20	121	1006
Fabrics. Textile	Eddystone Manufacturing Company.	50,732	Mar. 27	121	1341
Fabrics. Textile	Eddystone Manufacturing Company.	50,733	Mar. 27	121	1341
Fabrics. Textile	Eddystone Manufacturing Company.	50,734	Mar. 27	121	1341
Fabrics. Textile	Eddystone Manufacturing Company.	50,756	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,757	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,758	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,759	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,760	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,762	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,763	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,765	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,766	Mar. 27	121	1342
Fabrics. Textile	Eddystone Manufacturing Company.	50,768	Mar. 27	121	1342
Fabrics. Upholstery textile	Andrew McLean Co	51,513	Apr. 17	121	2316
Face and skin. Preparation for the	C. D. Evans	50,367	Mar. 13	121	682
Feed. Chicken-	Ross Brothers	50,691	Mar. 27	121	1339
Feed. Hominy-	American Hominy Company	51,491	Apr. 17	121	2315
Feed. Stock-	Ralston Purina Co	51,428	Apr. 17	121	2313
Feeds and distillers' and brewers' dried grains. Blended	J. W. Biles Co	51,793	Apr. 24	121	2653
Fertilizers	Independent Packers Fertilizer Co.	50,484	Mar. 20	121	1004
File. Corn-	B. Frink	50,644	Mar. 27	121	1337
Files	Vautier Frères	50,920	Apr. 3	121	1661
Files and raspe	Carver File Company	50,089	Mar. 6	121	326
Files and raspe	Nicholson File Company	50,135	Mar. 6	121	328
Files and raspe	Nicholson File Company	50,136	Mar. 6	121	328
Files and raspe and handles and holders therefor	Carver File Company	50,538	Mar. 20	121	1007
Files and raspe and handles and holders therefor	Nicholson File Company	50,880	Apr. 3	121	1660
Files and raspe and handles and holders therefor	Nicholson File Company	50,881	Apr. 3	121	1660
Files and raspe and handles and holders therefor	Nicholson File Company	50,882	Apr. 3	121	1660
Files and raspe and handles and holders therefor	Nicholson File Company	50,883	Apr. 3	121	1660
Files and raspe and handles and holders therefor	Nicholson File Company	50,905	Apr. 3	121	1661
Files, raspe, and handles and holders therefor	Nicholson File Company	50,906	Apr. 3	121	1661
Filtering apparatus and filter-cylinders	Nicholson File Company	50,137	Mar. 6	121	328
Fire-engines	Berkefeld-Filter Gesellschaft G. m. b. H.	50,921	Apr. 3	121	1661
Fire-extinguishers. Chemical	International Power Company	50,816	Apr. 3	121	1657
Fire-extinguishing apparatus. Automatic	Graaff & Co. G. m. b. H	51,645	Apr. 17	121	2321
Fish, (dried, smoked, or salted.) Cured	International Sprinkler Co	50,274	Mar. 6	121	333
Fish. Dried, smoked, pickled, and canned	G. H. Perkins	51,874	Apr. 24	121	2657
Fish. Dried, smoked, pickled, salted, and canned	W. T. Shute	50,390	Mar. 13	121	683
Fish, (smoked, dried, or salted.) Cured	W. T. Shute	50,247	Mar. 6	121	332
Fish, (smoked, dried, or salted.) Cured	G. H. Perkins	51,771	Apr. 24	121	2653
Fish, (smoked, dried, or salted.) Cured	G. H. Perkins	51,772	Apr. 24	121	2653
Fishing-rods. Steel	G. H. Perkins	51,773	Apr. 24	121	2653
Flavoring extracts	Horton Mfg. Co	50,916	Apr. 3	121	1661
Flavoring extracts	Jordan Stabler Co	50,238	Mar. 6	121	332
Flavoring extracts	Joseph Burnett Co	50,469	Mar. 20	121	1004
Flavoring extracts	Lion Extract Co	51,327	Apr. 10	121	1973
Flavoring extracts and preparations	Schwabacher Bros. & Co	51,809	Apr. 24	121	2654
Flavoring-syrup for beverages	Baker Extract Company	51,116	Apr. 3	121	1670
Flour	J. B. Daniel	50,928	Apr. 3	121	1662
Flour. Rye-	Sweet Springs Milling Company	51,063	Apr. 3	121	1667
Flour. Self-rising	Boutwell Milling & Grain Co	50,294	Mar. 6	121	334
Flour. Wheat-	Davis Milling Comp	51,056	Apr. 3	121	1667
Flour. Wheat-	Model Milling & Elevator Company.	50,303	Mar. 6	121	334
Flour. Wheat-	Purcell Mill & Elevator Company	50,304	Mar. 6	121	334
Flour. Wheat-	Thornton & Chester Milling Co	50,305	Mar. 6	121	334
Flour. Wheat-	Wm. A. Coombs Milling Company.	50,322	Mar. 6	121	335
Flour. Wheat-	Pittsburgh Milling Co	50,476	Mar. 20	121	10 4
Flour. Wheat-	Burrus Mill & Elevator Company	50,479	Mar. 20	121	1004
Flour. Wheat-	Coles Company	50,480	Mar. 20	121	1004
	Bay State Milling Company	50,604	Mar. 27	121	1326

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Flour. Wheat-	Gwinn Bros. & Co	50,613	Mar. 27	121	1336
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	50,622	Mar. 27	121	1336
Flour. Wheat-	Sweet Springs Milling Company	50,630	Mar. 27	121	1337
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	50,687	Mar. 27	121	1339
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	50,802	Mar. 27	121	1344
Flour. Wheat-	New London Milling Company	51,036	Apr. 3	121	1666
Flour. Wheat-	Central Kansas Milling Company	51,055	Apr. 3	121	1667
Flour. Wheat-	Sweet Springs Milling Company	51,064	Apr. 3	121	1668
Flour. Wheat-	Kenneweg Company	51,162	Apr. 3	121	1672
Flour. Wheat-	Silverson Milling Co	51,304	Apr. 10	121	1972
Flour. Wheat-	O. W. Peirce Company	51,329	Apr. 10	121	1973
Flour. Wheat-	Haynes Milling Company	51,467	Apr. 17	121	2315
Flour. Wheat-	McCloskey Brothers	51,472	Apr. 17	121	2315
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	51,480	Apr. 17	121	2315
Flour. Wheat-	Sheffield-King Milling Co	51,482	Apr. 17	121	2315
Flour. Wheat-	C. King & Son	51,498	Apr. 17	121	2316
Flour. Wheat-	Wells Abbott Nieman Company	51,757	Apr. 24	121	2652
Flour. Wheat-	John F. Meyer & Sons Milling Co.	51,794	Apr. 24	121	2653
Flour. Wheat-	John F. Meyer & Sons Milling Co.	51,795	Apr. 24	121	2654
Flour. Wheat-	Alva Roller Mills	51,859	Apr. 24	121	2656
Flour. Wheat, Graham, and rye	Diamond Elevator & Milling Company.	51,384	Apr. 17	121	2311
Fly-paper. Sticky	Midget Fly Plate Company	50,999	Apr. 3	121	1665
Food and medicine for poultry	Dr. Hess & Clark	51,558	Apr. 17	121	2318
Food. Bird-	Aschenbach & Miller	51,115	Apr. 3	121	1670
Food. Blood, nerve, and brain	M. H. Grosman	50,231	Mar. 6	121	331
Food for horses, cattle, sheep, and hogs. Medicated	United States Food Co	50,401	Mar. 13	121	684
Food made from wheat. Breakfast-	M. W. Savage	51,157	Apr. 3	121	1672
Food. Poultry-	Albert Dickinson Company	50,054	Apr. 3	121	1667
Food. Poultry-	M. W. Savage	51,388	Apr. 17	121	2312
Food. Stock-	M. W. Savage	50,447	Mar. 20	121	1003
Food. Stock-	Goyer Alliance Refining Company.	51,466	Apr. 17	121	2315
Food. Stock-	M. W. Savage	51,704	Apr. 24	121	2650
Food substances. Prepared fatty, oleaginous, or unctuous	N. K. Fairbank Company	50,430	Mar. 13	121	685
Foods prepared from cereals. Breakfast-	Postum Cereal Co	51,153	Apr. 3	121	1671
Foodstuff	Ewa Plantation Co	51,024	Apr. 3	121	1666
Foundry facings and blacking	J. S. McCormick Co	51,892	Apr. 24	121	2657
Foundry facings or blacking	J. S. McCormick Co	51,845	Apr. 24	121	2656
Fresco, calcimine, and wall-paper cleaner	Climax Cleaner Mfg. Co	50,092	Mar. 6	121	326
Fruits and pineapples. Citrus	Paso Real Fruit Company	51,731	Apr. 24	121	2651
Fruits. Dried and evaporated	Griffin & Skelley Co	50,230	Mar. 6	121	331
Fur garments	A. Jacobson & Bro	51,727	Apr. 24	121	2651
Furs for wearing-apparel. Manufactured	C. G. Gunther's Sons	50,144	Mar. 6	121	328
Furnaces	Lennox Furnace Co	51,799	Apr. 24	121	2654
Furnaces. Hot-air	Wise Furnace Co	50,839	Apr. 3	121	1658
Furnaces. Hot-air heating-	Charles Smith Company	51,924	Apr. 24	121	2650
Gall cure	Dr. Hess & Clark	51,559	Apr. 17	121	2318
Game-boards	L. Hudgin	50,813	Apr. 3	121	1657
Games	C. A. Miller	51,473	Apr. 17	121	2315
Games and toys	E. A. Peltier	51,478	Apr. 17	121	2315
Garment-supporter clasps	Hirsh Brothers	50,327	Mar. 13	121	681
Garments. Certain named	Wetzel	51,005	Apr. 3	121	1665
Garments. Outer	Levi Strauss & Co	50,748	Mar. 27	121	1341
Garters	C. J. Higley	50,787	Mar. 27	121	1343
Gas generators. Acetylene-	J. de Dios Tejada	50,829	Apr. 3	121	1658
Gas-tubing. Flexible	New York Gas Tubing Company	51,476	Apr. 17	121	2315
Gelatin	American Glue Co	50,675	Mar. 27	121	1338
Germicidal and antiseptic liquid	F. R. Tyler	50,394	Mar. 13	121	683
Germicide and antiseptic compound	J. F. Ballard	51,604	Apr. 17	121	2320
Germicides	Rhuma-Sulphur Co,	50,531	Mar. 20	121	1006
Germicides	A. H. Swank	51,176	Apr. 3	121	1672
Germicides. Vegetable	J. Hubbard & Co	51,351	Apr. 10	121	1974
Gin	H. R. Myers	50,183	Mar. 6	121	329
Gin	National Distilling Co	50,184	Mar. 6	121	330
Gin	S. Hochstadter	51,238	Apr. 10	121	1969
Gin. Dry	P. Dempsey & Co	51,785	Apr. 24	121	2653
Gins	Charles Jacquin et Cie	51,281	Apr. 10	121	1971
Ginger. Preparation of	C. F. Lauber	51,081	Apr. 3	121	1668
Ginghams	Frederick Brown Company	51,289	Apr. 10	121	1971
Glass bottles	Smith, Hogg & Co	50,992	Apr. 3	121	1664
Glass. Cut and engraved	L. Rose & Co	51,682	Apr. 24	121	2649
Glass. Plate, dry-plate, and window	T. G. Hawkes & Company	50,559	Mar. 20	121	1007
Glass. Sheet and picture	F. Conrad & Company	51,017	Apr. 3	121	1666
Glassware. Pressed	Semon Bache & Company	50,345	Mar. 13	121	682
Gloves and mittens	A. H. Heisey & Co	50,121	Mar. 6	121	327
Gloves and mittens	Joseph N. Eisendrath Company	50,213	Mar. 6	121	331
Gloves. Kid and lambskin	Joseph N. Eisendrath Company	51,270	Apr. 10	121	1970
Gloves. Ladies' and gentlemen's kid, cloth, and chamois	Stern Brothers	50,755	Mar. 27	121	1342
Glue	F. W. Larom	51,586	Apr. 17	121	2319
Glue	Chemische Fabrik für Lein & Dünger "Zimmermann."	50,679	Mar. 27	121	1339
Governors. Engine-	C. A. Soden	50,696	Mar. 27	121	1339
Grease	Pickering Governor Co	51,569	Apr. 17	121	2319
Grease and lubricating-oils. Cup-	Kent Lubricating Company	50,100	Mar. 6	121	326
Grease-cups	Galena Axle Grease Co	51,465	Apr. 17	121	2314
Guitars and mandolins	Lunkenheimer Company	50,453	Mar. 20	121	1003
Guitars and mandolins	Lyon & Healy	50,591	Mar. 27	121	1335
Gum. Chewing-	Lyon & Healy	51,372	Apr. 17	121	2311
Gum. Chewing-	American Chicle Co	50,258	Mar. 6	121	332
	Frank H. Fleer & Company	51,267	Apr. 10	121	1970

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Guns, rifles, pistols, revolvers, and parts thereof	Webley & Scott Revolver & Arms Co.	50,353	Mar. 13	121	682
Hair-clippers	Brown & Sharpe Manufacturing Company.	50,806	Apr. 3	121	1657
Hair color-restorer or hair-dye	H. A. Mayor	50,940	Apr. 3	121	1662
Hair-pins and hair ornaments	Fishel, Nessler & Co	51,552	Apr. 17	121	2318
Hair-pins. Celluloid	Thomas J. Taylor Company	51,669	Apr. 17	121	2322
Hair-restoratives	S. R. Van Duzer	50,254	Mar. 6	121	332
Hair-restorer	S. R. Van Duzer	50,255	Mar. 6	121	332
Hair-restorer	L. A. H. Brandt	50,713	Mar. 27	121	1340
Hair-restorers	B. T. Goldman	50,573	Mar. 20	121	1008
Hair-tonics	Lanman & Kemp	50,979	Apr. 3	121	1664
Hair-tonics	H. H. Johnson	51,295	Apr. 10	121	1971
Hammers	A. R. Robertson	51,501	Apr. 17	121	2316
Hams	F. P. Garrettson & Co	51,130	Apr. 3	121	1670
Hams, shoulders, and bacon	J. & F. Schroth Pack. Co	51,325	Apr. 10	121	1972
Handcuffs and leg-irons	Tower & Lyon Co	50,400	Mar. 13	121	684
Harmonicas. Mouth-	Firm of M. Hohner	51,890	Apr. 24	121	2657
Harness	Studebaker Brothers Manufacturing Company.	50,210	Mar. 6	121	331
Harvesters and extra and repair parts and pieces therefor	International Harvester Co. of America.	50,467	Mar. 20	121	1004
Harvesters and repair parts and pieces therefor	International Harvester Co. of America.	50,468	Mar. 20	121	1004
Hash and hashed meats	N. Morris & Company	51,474	Apr. 17	121	2315
Hat-fasteners	J. C. Morrison	50,332	Mar. 13	121	681
Hats	Gage Brothers & Company	50,508	Mar. 20	121	1005
Hats	Boogher, Force & Goodbar Hat Company.	50,961	Apr. 3	121	1663
Hats	J. R. Gilleaudeau	51,584	Apr. 17	121	2319
Hats and caps	E. M. Knox	50,790	Mar. 27	121	1343
Hats and caps	F. Schoble & Co	51,275	Apr. 10	121	1970
Hats and caps. Men's and boys'	F. Schoble & Co	50,989	Apr. 3	121	1664
Hats and caps. Soft and stiff felt	John B. Stetson Company	51,893	Apr. 24	121	2657
Hats, caps, and bonnets	Collins & Fairbanks Company	50,926	Apr. 3	121	1662
Hats, caps, and bonnets	Dunlap & Co	51,125	Apr. 3	121	1670
Hats of all kinds	Danbury Hat Company	51,124	Apr. 3	121	1670
Hats. Panama	S. C. Paris	51,689	Apr. 24	121	2640
Hats. Stiff-felt, soft-felt, and straw	Denzer, Goodhart & Scheuer	51,223	Apr. 10	121	1968
Hats. Stiff-felt, soft-felt, and straw	Denzer, Goodhart & Scheuer	51,224	Apr. 10	121	1968
Hats. Stiff-felt, soft-felt, and straw	Denzer, Goodhart & Scheuer	51,579	Apr. 17	121	2319
Hats. Stiff fur	S. C. Holley & Co	51,077	Apr. 3	121	1668
Heaters and parts thereof. Steam and hot-water	Herendeen Manufacturing Co	51,497	Apr. 17	121	2316
Heel-protectors	F. W. Whitcher	50,599	Mar. 27	121	1335
Hoes	H. Keidel	51,797	Apr. 24	121	2654
Horse covers, nets, saddle-housings, lap-robes, and dusters	W. Ayres & Sons	51,630	Apr. 17	121	2321
Horseshoes	Bryden Horseshoe Company	50,582	Mar. 27	121	1335
Horseshoes and horseshoe-calks	Rowe Patent Square Shoulder Shoe Calk Co.	50,336	Mar. 13	121	681
Horseradish	T. F. Rightmire	51,823	Apr. 24	121	2655
Hooks and eyes	De Long Hook & Eye Company	51,282	Apr. 10	121	1971
Hooks and eyes	De Long Hook & Eye Company	51,283	Apr. 10	121	1971
Hose. Cotton rubber-lined	Eureka Fire Hose Co	51,708	Apr. 24	121	2650
Hose. Cotton rubber-lined	Eureka Fire Hose Co	51,886	Apr. 24	121	2657
Hose-supporters	C. J. Higley	51,652	Apr. 17	121	2322
Hosiery	J. Blood & Co	50,143	Mar. 6	121	328
Hosiery	O'Callaghan & Fedden	50,156	Mar. 6	121	328
Hosiery	Sheboygan Knitting Company	50,163	Mar. 6	121	329
Hosiery	Cooper, Wells & Co	50,780	Mar. 27	121	1343
Hosiery	Oneida Hosiery Company	50,943	Apr. 3	121	1662
Hosiery	Marietta Knitting Co	50,982	Apr. 3	121	1664
Hosiery	Rice, Stix Dry Goods Company	51,535	Apr. 17	121	2317
Hosiery	Rice, Stix Dry Goods Company	51,536	Apr. 17	121	2317
Hosiery	Rice, Stix Dry Goods Company	51,596	Apr. 17	121	2320
Hosiery	Rice, Stix Dry Goods Company	51,597	Apr. 17	121	2320
Hosiery	Richardson Roberts Dry Goods Co.	51,690	Apr. 24	121	2649
Hosiery	Cooper Wells & Co	51,724	Apr. 24	121	2651
Hosiery	Lord & Taylor	51,800	Apr. 24	121	2654
Hosiery	Lord & Taylor	51,801	Apr. 24	121	2654
Hosiery. Men's, women's, and children's	H. A. Lang & Co	51,798	Apr. 24	121	2654
Ice-cream and ices. Powder for use in making	W. A. Collins	50,569	Mar. 20	121	1006
Incandescent mantles, lamps, and lamp-fittings	Welsbach Light Company	51,488	Apr. 17	121	2315
Inhalers and respirators	M. D. Good	50,372	Mar. 13	121	683
Ink. Printing-	Standard Printing Ink Company	51,001	Apr. 3	121	1665
Inks in fluid, crystal, and powdered form. Black and colored	A. Turner	50,596	Mar. 27	121	1335
Inkstands	Century Inkstand Company	51,014	Apr. 3	121	1665
Insecticides	F. L. Hanlin	50,785	Mar. 27	121	1343
Insecticides	C. E. Lacey & Co	51,241	Apr. 10	121	1969
Insoles	Electric Appliance Co	50,506	Mar. 20	121	1005
Instep-supporter or arch-prop	George G. London Manufacturing Company.	50,564	Mar. 20	121	1008
Insulated conducting-wires	Phillips Insulated Wire Co	50,825	Apr. 3	121	1657
Insulated wire and wire cables	Phillips Insulated Wire Co	50,824	Apr. 3	121	1657
Insulating compound. Rubber	Okonite Company	50,139	Mar. 6	121	328
Iron bars, rods, sheets, plates, hooping, and tires	Low Moor Company	51,242	Apr. 10	121	1969
Iron hollow ware. Wrought-	Herman Wupperman Gesellschaft mit beschränkter Haftung.	51,843	Apr. 24	121	2656
Iron. Pig-	Clinton Iron and Steel Company	51,516	Apr. 17	121	2316
Jelly preparation. Powdered dessert	Stern & Saalberg Company	51,390	Apr. 17	121	2312
Jewelry	Phoenix Jewelry Co	51,479	Apr. 17	121	2315
Jewelry. Certain named	Parks Bros. & Rogers	50,384	Mar. 13	121	683
Kerseys and cassimeres	W. J. Dickey & Sons	51,912	Apr. 24	121	2658
Knit head-gear, including tams, toques, and caps	Stephenson & Co	51,956	Apr. 24	121	2660
Knit hosiery	Murphy, Grant & Co	51,806	Apr. 24	121	2654

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Knit underwear	Abraham & Straus	51,309	Apr. 10	121	1972
Knit underwear	Murphy, Grant & Co	51,805	Apr. 24	121	2654
Knitted covers for hot-water bottles	Gloversville Knitting Co	50,590	Mar. 27	121	1335
Knives, forks, and spoons. Britannia	Gebr. Noelle	50,984	Apr. 3	121	1664
Knives. Pocket-	H. Böker & Co	50,868	Apr. 3	121	1659
Knives. Pocket-	F. Köller & Co	50,904	Apr. 3	121	1661
Lacing-hooks and lacing-studs	Tubular Rivet & Stud Company	50,214	Mar. 6	121	331
Lamp-chimneys and lantern-globes	R. E. Tongue & Bros	51,458	Apr. 17	121	2314
Lamp-chimneys. Glass	La Bastie Glass Co	50,618	Mar. 27	121	1336
Lamp glasses and globes	Macbeth-Evans Glass Company	50,330	Mar. 13	121	681
Lamps	Clarke's-Pyramid and Fairy Light Company.	50,408	Mar. 13	121	684
Lamps and generators. Acetylene	A. H. Funke	50,572	Mar 20	121	1006
Lamps and lanterns. Railway	Armspear Manufacturing Company.	50,956	Apr. 3	121	1663
Lamps. Candle-	Clarke's-Pyramid and Fairy Light Company.	50,324	Mar. 11	121	681
Lamps. Incandescent mantles for gas-	Block Light Company	51,013	Apr. 3	121	1665
Lard	Cudahy Packing Co	50,295	Mar. 6	121	334
Lard	Cudahy Packing Co	50,297	Mar. 6	121	334
Lard and lard compounds	Swift and Company	51,051	Apr. 3	121	1667
Laryngoscopes	W. Boekel and Company	50,323	Mar. 13	121	681
Laxatives	Paracamph Company	50,253	Mar. 6	121	332
Lead	Selby Smelting and Lead Company.	50,389	Mar. 13	121	683
Lead and oxids of lead. White	National Lead Company	50,859	Apr. 3	121	1659
Lead and oxids of lead. White	National Lead Company	51,301	Apr. 10	121	1971
Lead and oxids of lead. White	National Lead Company	51,403	Apr. 17	121	2312
Lead and oxids of lead. White	National Lead Company	51,404	Apr. 17	121	2312
Lead and oxids of lead. White	National Lead Company	51,405	Apr. 17	121	2312
Lead. White	Toch Brothers	50,704	Mar. 27	121	1340
Lead. White	National Lead Company	51,244	Apr. 10	121	1969
Lead. White	National Lead Company	51,245	Apr. 10	121	1969
Lead. White	National Lead Company	51,300	Apr. 10	121	1971
Lead. White	National Lead Company	51,302	Apr. 10	121	1971
Lead. White	National Lead Company	51,303	Apr. 10	121	1972
Leather. Chrome-tanned	P. Rielly & Son	50,592	Mar. 27	121	1335
Leather. Dressing for softening and preserving	A. J. Reach Co	51,435	Apr. 17	121	2313
Leather-dressings in liquid, paste, and solid form	Frank Miller Company	50,698	Mar. 27	121	1339
Leather. Dull-black and colored calf-	Barnet Leather Co	50,603	Mar. 27	121	1336
Leather. Enameled	Wolff Process Leather Company	51,489	Apr. 17	121	2315
Leather. Finished or dressed	Corona Kid Company	51,121	Apr. 3	121	1670
Leather. Finished or dressed	Corona Kid Company	51,122	Apr. 3	121	1670
Leather for shoes, gloves, and harness	Pfister & Vogel Leather Company.	51,427	Apr. 17	121	2313
Leather. Harness, sole, and skirting	A. B. Patrick & Co	51,758	Apr. 24	121	2652
Leather. Imitation	F. W. Whitcher	50,357	Mar. 13	121	682
Leather, oak-tanned cowhide, skirting, and cut stock. Harness-	Kullman, Salz & Company	51,900	Apr. 24	121	2658
Leather. Sole-	S. H. Frank & Co	50,209	Mar. 6	121	330
Leather. Sole-	J. M. Delaney & Co	51,829	Apr. 24	121	2655
Leather. Sole and harness	M. Hessberg	50,972	Apr. 3	121	1664
Lemonades. Chemical preparations for use in making	Chemische Industrie A.-G. St. Margrethen.	51,777	Apr. 24	121	2653
Lime	Norris & Christian Stone & Lime Co.	51,406	Apr. 17	121	2312
Liniment	J. J. Walsh	50,307	Mar. 6	121	334
Liniment	Dr. Peter Fahrney & Sons Co	50,526	Mar. 20	121	1006
Liniment	J. M. Hood	50,744	Mar. 27	121	1341
Liniment	W. B. Hadley	50,784	Mar. 27	121	1343
Liniment	P. L. Hoover & Bros	50,788	Mar. 27	121	1343
Liniment	D. Ransom, Son and Company	51,519	Apr. 17	121	2317
Liniment	J. F Ballard	51,603	Apr. 17	121	2320
Liniment	E. F. Bautz	51,920	Apr. 24	121	2659
Linings. Dress-	M. W. Burd	50,537	Mar. 20	121	1007
Links, sleeve-buttons, collar-buttons, studs, and blouse-button sets.	Standard Button Company	50,190	Mar. 6	121	330
Locks	Supplee Hardware Company	50,913	Apr. 3	121	1661
Locks	General Specialty Company	51,554	Apr. 17	121	2318
Lotion. Face-	R. T. Hardy	51,030	Apr. 3	121	1666
Lotion used in the treatment of hernia	J. Fandrey	50,541	Mar. 20	121	1007
Lotions for the skin	E. Palmer	51,944	Apr. 24	121	2660
Lotions. Skin-	F. S. Williams & Co	51,257	Apr. 10	121	1970
Lozenges	New England Confectionery Co	50,475	Mar. 20	121	1004
Lozenges	A. Slauson & Co	51,431	Apr. 17	121	2313
Lozenges	A. Slauson & Co	51,432	Apr. 17	121	2313
Lozenges	A. Slauson & Co	51,433	Apr. 17	121	2313
Lozenges	A. Slauson & Co	51,434	Apr. 17	121	2313
Lubricating-grease	Beerwald & Levin	50,456	Mar. 20	121	1003
Lubricators and the parts thereof. Force-feed	Greene, Tweed & Co	50,612	Mar. 27	121	1336
Lye and potash	Eagle Lye Works	50,226	Mar. 6	121	331
Lye and potash	Eagle Lye Works	50,227	Mar. 6	121	331
Macaroni, spaghetti, vermicelli, and noodles	Anger Baking Co	50,217	Mar. 6	121	331
Macaroni, spaghetti, vermicelli, and noodles	Crescent Macaroni & Cracker Co	51,782	Apr. 24	121	2653
Magazine	Municipal Engineering Company	50,333	Mar. 13	121	681
Magazine. Monthly	Review Publishing Company	50,158	Mar. 6	121	329
Magazine. Monthly	Fruit-Grower Company	51,398	Apr. 17	121	2312
Magazine or periodical	G. F. Terry	51,053	Apr. 3	121	1667
Magazines	Tribune Co	50,633	Mar. 27	121	1337
Magazines	M. D. McAnulty	51,769	Apr. 24	121	2652
Magazines. Monthly	Gas Power Publishing Co	51,928	Apr. 24	121	2659
Mainsprings	Swartchild & Co	51,107	Apr. 3	121	1669
Maline. Moist-proof	T. Tiedemann & Son	51,849	Apr. 24	121	2656
Malt beverage. Non-intoxicating	Dallas Brewery	50,809	Apr. 3	121	1657
Malt extract	Valentin Blatz Brewing Co	50,080	Mar. 6	121	325
Malt extract	Bernheim Distilling Co	50,087	Mar. 6	121	326
Malt extract	Paragon Malt Extract Company	50,907	Apr. 3	121	1661
Malt extract	Otto Huber Brewery	51,872	Apr. 24	121	2657

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Malt extracts	Trommer Company	50,700	Mar. 27	121	1340
Mantles. Cap-	W. H. Schaefer	51,100	Apr. 3	121	1669
Maraschino	F. Drioli	51,832	Apr. 24	121	2655
Matches	Aktiebolaget Södertelje Tändsticksfabrik.	51,826	Apr. 24	121	2655
Mattresses	John Breuner Company	51,110	Apr. 3	121	1670
Mattresses	J. L. Radermacher	51,197	Apr. 10	121	1967
Mattresses	Dubuque Mattress Factory	51,883	Apr. 24	121	2657
Mattresses and cushions	C. A. Fisher	51,725	Apr. 24	121	2651
Mattresses, pillows, and feathers	Randall Mattress Company	51,000	Apr. 3	121	1665
Measuring the capacity of the lungs. Instrument for	C. H. Bird	50,457	Mar. 20	121	1003
Meat extracts and essences	Bovril Limited	51,862	Apr. 24	121	2656
Meat-juice and compound of meat-juice and glycerin. Preparations of	Valentine's Meat Juice Company	51,066	Apr. 3	121	1668
Meats. Cured	Dunlevy & Brother	51,126	Apr. 3	121	1670
Meats. Liquid extract of smoke for preserving	E. Krauser & Brother	50,416	Mar. 13	121	684
Medical compound	M. M. Foy	50,543	Mar. 20	121	1007
Medical compound. Certain	Pond's Extract Company	51,090	Apr. 3	121	1669
Medical compound. Certain	Pond's Extract Company	51,091	Apr. 3	121	1669
Medical compound. Certain named	Pond's Extract Company	51,093	Apr. 3	121	1669
Medical compound for a hemostatic	H. F. Bishop	50,958	Apr. 3	121	1663
Medical compound for an astringent	Knoll & Co	51,899	Apr. 24	121	2658
Medical compound. Liquid	Knoll & Co	51,898	Apr. 24	121	2658
Medical compounds	J. J. Chambers	51,015	Apr. 3	121	1665
Medical preparations	Owl Drug Co	51,942	Apr. 24	121	2659
Medical preparations for external and internal use	Black Diamond Medicine Company.	51,182	Apr. 10	121	1967
Medical tablet	Trench's Remedies Ltd	51,951	Apr. 24	121	2660
Medicated oils	W. M. Macleod	51,083	Apr. 3	121	1668
Medicinal and toilet oil for skin diseases	D. M. Bye	51,880	Apr. 24	121	2657
Medicinal beverage	Illinois Laboratories	50,529	Mar. 20	121	1006
Medicinal beverages. Non-alcoholic	A. G. Thompson	50,701	Mar. 27	121	1340
Medicinal mineral oil	Russell M. Hughes & Co	51,732	Apr. 24	121	2651
Medicinal preparation	H. K. Mulford Company	51,647	Apr. 17	121	2322
Medicinal preparation	V. de Leo	50,781	Mar. 27	121	1343
Medicinal preparation	C. D. Bradham	51,314	Apr. 10	121	1972
Medicinal preparation for the cure of rheumatism	F. Herb	51,932	Apr. 24	121	2659
Medicinal preparation in suppository or ointment form	L. Adler	50,532	Mar. 20	121	1006
Medicinal preparation. Liquid	H. K. Mulford Company	51,649	Apr. 17	121	2322
Medicinal preparation used as a nerve sedative	Henry Heil Chemical Co	50,270	Mar. 6	121	333
Medicinal preparations for diseases of the blood, brain, and nerves.	Peacock Chemical Co	51,534	Apr. 17	121	2317
Medicinal, restorative, and regulative compounds	H. G. Ballou	50,359	Mar. 13	121	682
Medicinal soap	J. H. Schenck	51,622	Apr. 17	121	2321
Medicinal soap	Barclay & Barclay	50,534	Mar. 20	121	1006
Medicinal tea	Barclay & Barclay	50,535	Mar. 20	121	1007
Medicine as a tonic, appetizer, and strengthener	J. T. Davison	50,965	Apr. 3	121	1663
Medicine. Certain named	J. F. Ballard	51,919	Apr. 24	121	2658
Medicine. Certain named	C. O. F. Burkstrom	50,776	Mar. 27	121	1343
Medicine. Certain named	Fairchild Bros. & Foster	50,967	Apr. 3	121	1663
Medicine. Certain named	Rex Chemical Co	51,251	Apr. 10	121	1969
Medicine. Certain named	W. W. Gavitt Medical Co	51,253	Apr. 10	121	1970
Medicine for certain named diseases	A. B. Bradley	51,514	Apr. 17	121	2316
Medicine for certain named diseases	H. O. Hurley	50,237	Mar. 6	121	332
Medicine for certain named diseases	Paul Bros. Medicine Co	50,576	Mar. 20	121	1008
Medicine for diphtheria and rheumatism	U. F. Schlaepfer	50,803	Mar. 27	121	1344
Medicine for diseases peculiar to females	F. E. Bonyman	50,220	Mar. 6	121	331
Medicine for external use	A. O. Schmidt	51,331	Apr. 10	121	1973
Medicine for internal use	Antiseptic Pharmacal Company	50,742	Mar. 27	121	1341
Medicine for kidney affections	Potter Drug & Chemical Corporation.	50,753	Mar. 27	121	1342
Medicine for organic and nervous diseases. Liquid	M. A. Hamilton	51,074	Apr. 3	121	1668
Medicine for stopping excessive perspiration	Gin-Seng-Gin Company	50,930	Apr. 3	121	1662
Medicine for the cure of liver and kidney diseases	F. Boettger	50,219	Mar. 6	121	331
Medicine for the treatment of alcoholism	Thompson Medical Company	50,801	Mar. 27	121	1344
Medicine. Proprietary	T. Johnston	50,977	Apr. 3	121	1664
Medicines. Certain named	C. A. Maynard	51,903	Apr. 24	121	2658
Medicines. Certain named	H. O. Hurley	50,548	Mar. 20	121	1007
Medicines for purifying the blood	Bristol-Myers Company	51,922	Apr. 24	121	2659
Medicines for purifying the blood	M.I.S.T. Co	50,798	Mar. 27	121	1344
Medicines for the cure of female disorders	M.I.S.T. Co	50,799	Mar. 27	121	1344
Medicines for the regulation of the liver and purification of the blood.	L. E. Truman	51,201	Apr. 10	121	1968
Medicines for venereal diseases	A. H. Lewis Medicine Co	50,795	Mar. 27	121	1343
Medicines. Laxative	C. G. Marino	50,749	Mar. 27	121	1342
Metal	S. B. Hartman	50,786	Mar. 27	121	1343
Metal and antifriction and bearing metals. Babbitt	Dilworth, Gilbert & Towne	51,548	Apr. 17	121	2318
Metal and antifriction and bearing metals. Babbitt	John Finn Metal Works	50,817	Apr. 3	121	1657
Metal. Babbitt	John Finn Metal Works	50,818	Apr. 3	121	1657
Metal. Babbitt and antifriction	National Lead Company	51,565	Apr. 17	121	2318
Metal. Bearing-	Cotton States Belting & Supply Co.	50,808	Apr. 3	121	1657
Metal leaf	Fairbanks Co	50,948	Apr. 3	121	1663
Metal plates for ceilings and side walls	W. H. Coe Mfg. Co	51,575	Apr. 17	121	2319
Metal-polish	A. Du Montier	51,831	Apr. 24	121	2655
Metals. Antifriction	Hinds & Coon	50,070	Mar. 6	121	325
Metals. Antifriction	Merchant & Evans Co	50,472	Mar. 20	121	1004
Metals. Antifriction and bearing	E. S. Shimer	50,911	Apr. 3	121	1661
Metals. Antifriction or bearing	John Finn Metal Works	50,819	Apr. 3	121	1657
Metals. Extruded	William A. Hardy & Son's Co	51,511	Apr. 17	121	2316
Microbe-killer	Coe Brass Manufacturing Company.	50,625	Mar. 27	121	1337
Milk and evaporated cream. Condensed	I. Radam	50,521	Mar. 20	121	1006
Milk and evaporated cream. Condensed	Adam Roth Grocery Company	50,257	Mar. 6	121	332
Milk. Condensed	Borden's Condensed Milk Co	51,313	Apr. 10	121	1972
	Michigan Condensed Milk Co	51,401	Apr. 17	121	2312

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Milk. Condensed	Michigan Condensed Milk Co	51,424	Apr. 17	121	2313
Milk-coolers	Dairymen's Supply Company	51,123	Apr. 3	121	1670
Milk. Preparation made from skim-	Ekenberg Milk Products Co	50,608	Mar. 27	121	1336
Milk. Preparation made from skim-	Ekenberg Milk Products Co	50,609	Mar. 27	121	1336
Mince-meat	Cudahy Packing Co	51,827	Apr. 24	121	2655
Mince-meat. Condensed	Merrell-Soule Company	50,242	Mar. 6	121	332
Mineral waters	Solon Vendophone Co	50,292	Mar. 6	121	334
Molasses	N. W. Taussig Co	50,445	Mar. 20	121	1003
Molasses	Egerton Bros	51,071	Apr. 3	121	1668
Molasses	P. Duff & Sons	51,440	Apr. 17	121	2313
Mops	Palmer, Hill & Co	51,748	Apr. 24	121	2652
Mowers. Lawn	Supplee Hardware Company	51,626	Apr. 17	121	2321
Mowers. Lawn-	Supplee Hardware Company	51,627	Apr. 17	121	2321
Mowers. Lawn-	A. B. Case	51,881	Apr. 24	121	2657
Mucilage, paste, and adhesive cements	Carter's Ink Company	50,451	Mar. 20	121	1003
Musical-instrument strings	Lyon & Healy	51,374	Apr. 17	121	2311
Nails. Horse-	Capewell Horse Nail Company	50,450	Mar. 20	121	1003
Nails. Horse-	Capewell Horse Nail Company	51,221	Apr. 10	121	1968
Nails. Horse-	Union Horse Nail Company	51,810	Apr. 24	121	2654
Nails. Horse-	Union Horse Nail Company	51,811	Apr. 24	121	2654
Nails. Upholsterers'	Traut & Hine Mfg. Co	50,115	Mar. 6	121	327
Needles	C. H. Crowley	50,091	Mar. 6	121	326
Needles for hand and machine sewing	Henry Milward & Sons	51,557	Apr. 17	121	2318
Nerve-elixir	E. Dort	50,502	Mar. 20	121	1005
Neuralgia-drops	G. G. Steketee	51,599	Apr. 17	121	2320
Newspaper	Manufacturers' Record Publishing Company.	50,331	Mar. 13	121	681
Nickel salts	Hanson & Van Winkle Co	51,930	Apr. 24	121	2659
Nitro compounds	Joveite Manufacturing Company	50,617	Mar. 27	121	1336
Noodles and macaroni. Egg-	C. F. Mueller Co	50,606	Mar. 27	121	1336
Oats. Crushed	Great Western Cereal Co	51,059	Apr. 3	121	1667
Obtundent or local anesthetic	Eureka Chemical Co	51,318	Apr. 10	121	1972
Oil and soluble grease. Turkey-red	Arabol M'f'g. Co	51,416	Apr. 17	121	2313
Oil. Antiseptic healing-	Paris Medicine Co	50,244	Mar. 6	121	332
Oil. Antiseptic healing-	Paris Medicine Co	50,245	Mar. 6	121	332
Oil. Castor-	National Lead Company	50,553	Mar. 20	121	1007
Oil. Castor-	Morris Bros	50,726	Mar. 27	121	1341
Oil. Castor-	Baker Castor Oil Company	51,918	Apr. 24	121	2658
Oil-cloths	Standard Table Oil Cloth Co	50,993	Apr. 3	121	1665
Oil-cups	Lunkenheimer Company	50,595	Mar. 27	121	1335
Oil for watches and clocks. Lubricating-	J. Wing	51,258	Apr. 10	121	1970
Oil. Healing pine-	M. W. Savage	50,946	Apr. 3	121	1662
Oil in the form of pellets. Castor-	I. R. Blackburn	50,361	Mar. 13	121	682
Oil. Olive-	A. Zucca	50,708	Mar. 27	121	1340
Oil. Olive-	Los Angeles Olive Growers Association.	51,298	Apr. 10	121	1971
Oil. Pine-wood	Spirittine Chemical Company	51,506	Apr. 17	121	2316
Oil. Pure olive-	Gennerich & Von Bremen	51,835	Apr. 24	121	2655
Oils and grease. Lubricating	F. B. Hower	50,466	Mar. 20	121	1004
Oils. Illuminating-	Standard Oil Co. of New York	50,889	Apr. 3	121	1660
Oils. Illuminating-	Standard Oil Co. of New York	51,049	Apr. 3	121	1667
Oils. Illuminating and heating	Price's Patent Candle Co	51,808	Apr. 24	121	2654
Oils. Lubricating-	Crew Levick Co	50,851	Apr. 3	121	1659
Oils. Lubricating-	Galena-Signal Oil Company	50,900	Apr. 3	121	1661
Oils. Lubricating-	Atlantic Refining Company	51,677	Apr. 24	121	2649
Oils used in making perfume	Heine & Co	50,375	Mar. 13	121	683
Oiled clothing	A. J. Tower Company	50,709	Mar. 27	121	1340
Oiled clothing	A. J. Tower Company	51,676	Apr. 24	121	2649
Oiled clothing	A. J. Tower Company	51,718	Apr. 24	121	2651
Oiled clothing	A. J. Tower Company	51,719	Apr. 24	121	2651
Oilstones, waterstones, whetstones, hones, and grindstones	Scranton Whetstone and Abrasive Wheel Co.	50,699	Mar. 27	121	1339
Ointment	R. B. Ray	50,730	Mar. 27	121	1341
Ointment	Potter Drug & Chemical Corporation.	50,754	Mar. 27	121	1342
Ointment	D. Ransom, Son and Company	51,518	Apr. 17	121	2317
Ointment	W. T. Hite	51,561	Apr. 17	121	2318
Ointment for human use	L. C. Nickerson	51,940	Apr. 24	121	2659
Ointment for the cure of eczema	Trench's Remedies Ltd	51,950	Apr. 24	121	2660
Ointments	N. N. Shire	50,991	Apr. 3	121	1664
Ointments	Foster-Milburn Co	50,929	Apr. 3	121	1662
Olives. Preserved	Pond's Extract Company	51,092	Apr. 3	121	1669
Oranges, lemons, grape-fruit, and citron	C. Gulden	50,232	Mar. 6	121	331
Organs	Riverside Navel Orange Company.	51,703	Apr. 24	121	2650
Organs	W. W. Putnam & Co	50,072	Mar. 6	121	325
Overalls	O. Herrmann	51,031	Apr. 3	121	1666
Overalls	H. W. Carter & Sons	50,145	Mar. 6	121	328
Overalls, aprons, coats, and pants	H. W. Carter & Sons	50,146	Mar. 6	121	328
Overalls, coats, and trousers	Cleveland & Whitehill Company	50,743	Mar. 27	121	1341
Overshirts	Red Diamond Clothing Co	51,154	Apr. 3	121	1671
Oysters	Levi Strauss & Company	51,526	Apr. 17	121	2317
Packing. Flax	Haas Bros	50,614	Mar. 27	121	1336
Packing for stuffing-boxes, &c	Dunham, Carrigan & Hayden Co.	50,148	Mar. 6	121	328
Packing. Rod-	R. Kinger	50,978	Apr. 3	121	1664
Paint and varnish remover	Mulconroy Co	51,192	Apr. 10	121	1967
Paint. Liquid	Toch Brothers	50,703	Mar. 27	121	1340
Paint. Marine	Geo. D. Wetherill & Co	51,888	Apr. 24	121	2657
Paint. Metallic	H. Londerbough	51,423	Apr. 17	121	2313
Paint. Metallic and roofing	Prince's Metallic Paint Company.	50,945	Apr. 3	121	1662
Paint or coating. Wall	A. E. Coen	51,264	Apr. 10	121	1970
Paints	Alabastine Company	50,358	Mar. 13	121	682
Paints and colors	Toch Brothers	50,490	Mar. 20	121	1005
Paints and japans. Black	C. A. Willey Co	51,964	Apr. 24	121	2660
Paints and japans. Black	N. Z. Graves Co	51,426	Apr. 17	121	2313
	N. Z. Graves Co	51,451	Apr. 17	121	2314

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Paints. Bronze-green	J. Briggs & Co	51,278	Apr. 10	121	1970
Paints. Carbon	Patterson Sargent Co	51,407	Apr. 17	121	2312
Paints. Ready-mixed	Williams, Martin & Gray	51,512	Apr. 17	121	2316
Pants. Men's and boys'	Malone Manufacturing Co	51,530	Apr. 17	121	2317
Pants, overalls, coats, and vests	Richardson, Roberts Dry Goods Co.	50,988	Apr. 3	121	1664
Paper and envelops	F. A. Flinn	51,072	Apr. 3	121	1668
Paper bags	J. Clochessy	50,641	Mar. 27	121	1337
Paper bags	Union Bag & Paper Company	50,838	Apr. 3	121	1658
Paper. Blotting-	Standard Paper M'f'g. Co	50,159	Mar. 6	121	329
Paper. Blotting-	Eaton-Dikeman Co	51,762	Apr. 24	121	2652
Paper. Building, roofing, and sheathing	Albemarle Paper Mfg. Co	51,858	Apr. 24	121	2656
Paper. Carbon copying-	Barrett Manufacturing Company.	50,846	Apr. 3	121	1658
Paper-fasteners	Bacon Brothers	51,368	Apr. 17	121	2311
Paper for wrapping food products	General Specialty Company	50,326	Mar. 13	121	681
Paper for wrapping food products	G. Staber	51,159	Apr. 3	121	1672
Paper holders and cutters. Roll-	G. Staber	51,909	Apr. 24	121	2658
Paper, paper bags, and paper sacks. Wrapping-	United States Paper Cutter Co	50,841	Apr. 3	121	1658
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,135	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,136	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,137	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,138	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,139	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,140	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,141	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,142	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,143	Apr. 3	121	1671
Paper, paper bags, and paper sacks. Wrapping-	Hollingsworth & Whitney Company.	51,144	Apr. 3	121	1671
Paper, paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	50,651	Mar. 27	121	1337
Paper. Sheathing-	W. H. Rankin Company	50,083	Mar. 6	121	326
Paper. Toilet-	Pond's Extract Company	51,408	Apr. 17	121	2312
Paper. Wall-	Penn Wall Paper Company	50,985	Apr. 3	121	1664
Paper. Writing-	L. A. Lehmaier	50,550	Mar. 20	121	1007
Paper. Writing-	Hollingsworth & Whitney Company.	51,145	Apr. 3	121	1671
Paper. Writing-	Chapin & Gould Paper Co	51,183	Apr. 10	121	1967
Papers made from wood-pulp	International Paper Company	50,974	Apr. 3	121	1664
Papers. Waterproof	F. W. Bird & Son	50,676	Mar. 27	121	1339
Papers. Wrapping-	Hubbe & Corning Co	50,973	Apr. 3	121	1664
Parasols and umbrellas	Weinberg, Heyman & Company	51,850	Apr. 24	121	2656
Pastry-shortening	Ammon & Person	51,010	Apr. 3	121	1665
Paving-blocks. Wood	United States Wood Preserving Company.	50,863	Apr. 3	121	1659
Pencils	Handbleistift Cie. C. Wm. Bock	51,186	Apr. 10	121	1987
Pencils. Lead-	Eagle Pencil Company	50,127	Mar. 6	121	327
Pencils. Lead-	Eagle Pencil Company	51,020	Apr. 3	121	1666
Pencils. Lead-	Eagle Pencil Company	51,070	Apr. 3	121	1668
Pencils. Lead-	American Lead Pencil Co	51,414	Apr. 17	121	2312
Pencils. Lead-	E. G. Soltmann	51,483	Apr. 17	121	2315
Penholders	Eagle Pencil Company	50,128	Mar. 6	121	327
Pens and penholders. Steel, fountain, and stylographic	Perry & Company	50,986	Apr. 3	121	1664
Pens. Fountain-	Century Pen Company	51,262	Apr. 10	121	1970
Pepper-sauce	E. McIlhenny's Son	51,035	Apr. 3	121	1666
Perfumery	Colgate & Co	50,364	Mar. 13	121	682
Perfumery	Eugene Rimmel	51,638	Apr. 17	121	2321
Perfumes, including extracts, essences, &c	E. Palmer	51,943	Apr. 24	121	2659
Periodical	A. E. Dunn	50,149	Mar. 6	121	328
Periodical. Magazine	Advance Publishing Co	50,568	Mar. 20	121	1008
Periodical. Monthly	Family Doctor Publishing Co	50,348	Mar. 13	121	682
Periodical. Monthly	Gardner Publishing Company	51,865	Apr. 24	121	2656
Petticoats and undershirts	Stewart, Howe and May Coy	51,540	Apr. 17	121	2317
Pharmaceutical preparation	Lloyd Brothers	50,517	Mar. 20	121	1006
Pharmaceutical preparation	Lloyd Brothers	50,518	Mar. 20	121	1006
Pharmaceutical preparations for the treatment of kidney diseases.	McKesson & Robbins	50,752	Mar. 27	121	1342
Phosphates. Cherry-rye	Colburn, Birks & Co	51,634	Apr. 17	121	2321
Photographic dry-plates	Hammer Dry Plate Company	50,931	Apr. 3	121	1662
Photographic films	Compagnie Générale de Phonographes Cinématographes et Appareils de Précision.	50,807	Apr. 3	121	1657
Photographic paper and films	Société Anonyme "Luna"	50,664	Mar. 27	121	1338
Pianofortes. Pneumatically-actuated	Roth & Engelhardt	50,386	Mar. 13	121	683
Pianos	H. Baumeister	50,581	Mar. 27	121	1335
Pianos	A. M. McPhail Piano Co	51,006	Apr. 3	121	1665
Pianos	Lyon & Healy	51,190	Apr. 10	121	1967
Pianos	Cable Company	51,369	Apr. 17	121	2311
Pianos	Mason & Hamlin Co	51,446	Apr. 17	121	2314
Pianos	Weber Piano Company	51,459	Apr. 17	121	2314
Pianos	W. W. Kimball Company	51,812	Apr. 24	121	2655
Pianos and piano-players. Self-playing	Autopiano Company	51,161	Apr. 3	121	1672
Pianos without keyboards. Self-playing	Lyon & Healy	51,370	Apr. 17	121	2311
Pills and cough medicine	S. Holzman	50,724	Mar. 27	121	1340
Pills for biliousness and constipation	Munyon's Homœopathic Home Remedy Co.	51,148	Apr. 3	121	1671
Pins, ear-rings, and studs	Donley & Co	50,501	Mar. 20	121	1005

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Pins. Toilet	Diecherhoff Raffloer & Co	50,366	Mar. 13	121	682
Pipe-fittings. Metal	Malleable Iron Fittings Company.	51,529	Apr. 17	121	2317
Pipes, fittings, and connections therefor. Soil	Crown Pipe and Foundry Co	50,427	Mar. 13	121	685
Pistols	Colt's Patent Fire Arms Manufacturing Company.	50,125	Mar. 6	121	327
Pistols	Colt's Patent Fire Arms Manufacturing Company.	50,460	Mar. 20	121	1004
Pistols	Colt's Patent Fire Arms Manufacturing Company.	50,584	Mar. 27	121	1335
Pistols	Colt's Patent Fire Arms Manufacturing Company.	50,585	Mar. 27	121	1335
Pitch	Warren-Ehret Company	50,085	Mar. 6	121	326
Plaster. Calcined	C. Tomkins	50,118	Mar. 6	121	327
Plasters. Corn killing	M. R. Kelly & Co	50,099	Mar. 6	121	326
Plastering and finishing-cement	J. B. King & Co	51,710	Apr. 24	121	2650
Plows	A. Baldwin & Co	50,580	Mar. 27	121	1335
Plows	Parlin & Orendorff Co	51,663	Apr. 17	121	2322
Plows	Parlin & Orendorff Co	51,822	Apr. 24	121	2655
Plows, cultivators, and harrows	B. F. Avery & Sons	51,813	Apr. 24	121	2654
Plows, harrows, cultivators, and planters	B. F. Avery & Sons	51,861	Apr. 24	121	2656
Plows. Riding and walking	Parlin & Orendorff Co	50,593	Mar. 27	121	1335
Poison for animals and insects	D. J. Kaufmann	51,936	Apr. 24	121	2659
Poison or exterminator for rats, vermin, and insects	E. S. Wells	51,852	Apr. 24	121	2656
Polishes	J. A. Wright & Co	51,240	Apr. 10	121	1969
Popcorn	Albert Dickinson Company	50,249	Mar. 6	121	332
Potash, lye, and caustic soda	A. Mendleson's Sons	50,792	Mar. 27	121	1343
Potatoes. Irish and sweet	Eastern Shore of Virginia Produce Exchange.	51,864	Apr. 24	121	2656
Pottery, earthenware, and china	Doulton & Co	50,410	Mar. 13	121	684
Pottery, earthenware, and china	Doulton & Co	50,411	Mar. 13	121	684
Pottery-ware. Ornamental	American Terra Cotta and Ceramic Company.	50,994	Apr. 3	121	1665
Powder. Cleaning and polishing	Lexington Manufacturing Co	51,902	Apr. 24	121	2658
Powder. Face	J. Tetlow	50,393	Mar. 13	121	683
Powder. Face	F. T. Hopkins	51,613	Apr. 17	121	2320
Powder. Face	J. Tetlow	51,949	Apr. 24	121	2660
Powder for killing vermin and disinfecting	Dr. Hess & Clark	51,560	Apr. 17	121	2318
Powder for toilet and nursery purposes	J. Tetlow	51,948	Apr. 24	121	2660
Powder. Toilet	Stork Company	50,800	Mar. 27	121	1344
Powder. Worm	Dr. Hess & Clark	50,235	Mar. 6	121	332
Powders. Perfumed	E. Palmer	51,907	Apr. 24	121	2658
Preparation for external application for rheumatism. Liquid	H. E. Fowler	50,745	Mar. 27	121	1341
Preparation for scalp and hair. Liquid	F. P. Whetzel	50,404	Mar. 13	121	684
Preparation for the cure of rheumatism. Liquid	B. T. Davis	51,635	Apr. 17	121	2321
Preparation for the relief of rheumatism and kindred ailments	G. L. Shafer	50,731	Mar. 27	121	1341
Preparations for diseases of the stomach and bowels	Dr. Peter Fahrney & Sons Co	50,527	Mar. 20	121	1006
Press-board or press-paper	Rogers Paper Mfg. Co	51,330	Apr. 10	121	1973
Pretzels	J. S. Bachman	50,602	Mar. 27	121	1336
Publication. Annual	Industrial Press	50,161	Mar. 6	121	329
Publication. Monthly	W. Goodhue	51,290	Apr. 10	121	1971
Publication. Weekly	Tradesmen's Publishing Company.	51,376	Apr. 17	121	2311
Publication. Weekly	Tradesmen's Publishing Company.	51,377	Apr. 17	121	2311
Pull-sockets	Harvey Hubbell	50,234	Mar. 6	121	331
Pulleys, blocks, and parts thereof	Boston & Lockport Block Company.	50,869	Apr. 3	121	1659
Pulleys. Sash	Norris Sash Pulley Company	50,822	Apr. 3	121	1657
Pulleys. Sash	P. Dosch	51,207	Apr. 10	121	1968
Pulp-board	A. W. Case	51,261	Apr. 10	121	1970
Punch	Ginter Grocery Company	51,790	Apr. 24	121	2653
Punch. Alcoholic	C. H. Graves & Sons	51,236	Apr. 10	121	1969
Putty or glazing preparation. Liquid	F. O. Pierce Company	51,763	Apr. 24	121	2652
Quilts	Marshall Field & Company	51,592	Apr. 17	121	2319
Railways. Scenic	L. A. Thompson Scenic Railway Co.	51,820	Apr. 24	121	2655
Ranges, cooking and heating stoves	Kalamazoo Stove Co	51,297	Apr. 10	121	1971
Razor-strops	E. B. Gibford	51,442	Apr. 17	121	2313
Razor-strops	A. J. Jordan	51,894	Apr. 24	121	2657
Razors	Challenge Cutlery Corp	50,923	Apr. 3	121	1661
Remedies. Catarrh	Pond's Extract Company	51,094	Apr. 3	121	1669
Remedies. External and internal	M. B. Baxter	51,921	Apr. 24	121	2659
Remedies for asthma	G. Richardson	51,215	Apr. 10	121	1968
Remedies for bowel and similar complaints. Astringent	Foster Milburn Company	51,610	Apr. 17	121	2320
Remedies for certain named diseases	Kahama Chemical Co	50,429	Mar. 13	121	685
Remedies for certain named diseases	H. A. Blair	50,923	Apr. 3	121	1661
Remedies for certain named diseases	M. Lichtenstein	51,939	Apr. 24	121	2659
Remedies for consumption	U. S. Chemical Co	51,218	Apr. 10	121	1968
Remedies for diseases of the eye	Eye-Fix Remedy Company	51,526	Apr. 17	121	2317
Remedies for headaches. Internal	G. Van Antwerp & Son	51,673	Apr. 17	121	2323
Remedies for malarial diseases	Paris Medicine Co	50,285	Mar. 6	121	334
Remedies for pulmonary diseases	Fischer Chemical Importing Co	50,368	Mar. 13	121	682
Remedies for pulmonary diseases	Fischer Chemical Importing Co	50,542	Mar. 20	121	1007
Remedies for rheumatism for internal and external use	Hot Shot Medicine Co	50,789	Mar. 27	121	1343
Remedies for skin and scalp diseases	O. J. Hartwig	51,348	Apr. 10	121	1973
Remedies for the cure of blood diseases and rheumatism	C. B. Mumford	50,942	Apr. 3	121	1662
Remedies for the cure of rheumatism	J. W. Van Liseel	51,252	Apr. 10	121	1970
Remedies for the relief and cure of asthma, consumption, &c	B. C. Silver	51,367	Apr. 10	121	1974
Remedies or purifiers. Blood	A. L. Fileau	50,228	Mar. 6	121	331
Remedies. Rheumatic	Phillips Drug Co	51,088	Apr. 3	121	1669
Remedies. Topical	J. F. Ballard	51,337	Apr. 10	121	1973
Remedy. Antiseptic	H. C. Pope	50,729	Mar. 27	121	1341
Remedy. Catarrh	Piso Company	50,771	Mar. 27	121	1342
Remedy. Consumption	Piso Company	50,770	Mar. 27	121	1342
Remedy. External and internal	D. Ransom, Son and Company	51,925	Apr. 24	121	2659
Remedy for asthma	Taits Asthmalene Company	50,248	Mar. 6	121	332

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Remedy for asthma, catarrh, &c	L. D. Quinn	51,908	Apr. 24	121	2658
Remedy for catarrh	F. Clendinning	51,547	Apr. 17	121	2318
Remedy for catarrh, hay-fever, and cold in the head	Home Remedy Co	51,350	Apr. 10	121	1973
Remedy for catarrh, tuberculosis, and allied diseases	Medicinal Balsam Company	50,797	Mar. 27	121	1344
Remedy for certain named diseases	C. L. Wells	51,004	Apr. 3	121	1665
Remedy for certain named diseases	G. C. Hanford Manufacturing Co.	51,073	Apr. 3	121	1668
Remedy for certain named diseases	J. E. Hanson	51,171	Apr. 3	121	1672
Remedy for certain named diseases	R. Schiffmann Company	51,358	Apr. 10	121	1974
Remedy for certain named diseases	Eucaline Medicine Co	51,495	Apr. 17	121	2316
Remedy for chills, fever and ague, and malarial diseases	Dr. Decker Medicine Co	50,365	Mar. 13	121	682
Remedy for colic, cholera, diarrhea, and like complaints	Chamberlain Medicine Co	50,363	Mar. 13	121	682
Remedy for croup and colds	R. P. Menard	50,791	Mar. 27	121	1343
Remedy for diabetes	Renal Pharmacal Co	50,289	Mar. 6	121	334
Remedy for diseases of the liver and digestive tract	Highland Drug Company	51,651	Apr. 17	121	2322
Remedy for distemper	Daggett Remedy Company	51,605	Apr. 17	121	2320
Remedy for epilepsy	A. K. Mandis	50,241	Mar. 6	121	332
Remedy for external application to animals. Certain proprietary	Brandreth Co	51,632	Apr. 17	121	2321
Remedy for headaches and liver disorders	J. G. Baker	51,492	Apr. 17	121	2316
Remedy for hog-cholera	J. J. Pater	50,793	Mar. 27	121	1343
Remedy for malaria, chills, and fever	F. S. Ott	51,354	Apr. 10	121	1974
Remedy for remittent and pernicious malarial fevers	H. K. Mulford Company	51,648	Apr. 17	121	2322
Remedy for skin diseases	G. A. Coleman	51,339	Apr. 10	121	1973
Remedy for the cure of liver complaints, constipation, and biliousness.	J. Jungmann	50,376	Mar. 13	121	683
Remedy for the nerves	B. H. Bacon Co	51,011	Apr. 3	121	1665
Remedy. Headache	Lewis Pharmacal Co	50,575	Mar. 20	121	1008
Remedy. Liquid rheumatic	M. W. Monaghan	51,191	Apr. 10	121	1967
Remedy. Liver	A. C. Simmons Jr. Medicine Co	51,490	Apr. 17	121	2315
Respirators	H. S. Cover	50,461	Mar. 20	121	1004
Rheumatic cure	Old Veteran Rheumatic Cure Company.	50,243	Mar. 6	121	332
Rheumatic cure	Renal Pharmacal Company	50,288	Mar. 6	121	334
Ribbon, ribbon-bows, and galloon-bindings	M. B. Martine	50,381	Mar. 13	121	683
Ribbons	Passavant & Co	51,087	Apr. 3	121	1660
Ribbons	Passavant & Co	51,248	Apr. 10	121	1969
Ribbons. Velvet	W. Openhym & Sons	51,686	Apr. 24	121	2649
Rings. Bone	Rogers & Hubbard Co	51,274	Apr. 10	121	1970
Rings. Gold	S. W. Lindsay	50,980	Apr. 3	121	1664
Rings. Solid-gold finger	Peckham Seamless Ring Mfg. Co.	51,152	Apr. 3	121	1671
Rivets	Low Moor Company	51,189	Apr. 10	121	1967
Rock and rye	P. J. Bowlin Liquor Co	51,567	Apr. 17	121	2318
Roofing. Asphalt	Stowell Manufacturing Company.	50,423	Mar. 13	121	685
Roofing. Asphalt	Stowell Manufacturing Company.	50,424	Mar. 13	121	685
Roofing-felt	Barrett Manufacturing Company.	51,437	Apr. 17	121	2313
Roofing-felt. Tarred	W. H. Rankin Company	51,305	Apr. 10	121	1972
Roofing-plates. Sheet-metal	R. J. Hyndman	50,815	Apr. 3	121	1657
Roofing. Ready felt	Buchanan Foster Company	50,849	Apr. 3	121	1658
Roofing. Ready tar-and-felt	Barrett Manufacturing Company.	50,360	Mar. 13	121	682
Rope	Columbian Rope Company	50,586	Mar. 27	121	1335
Rope-clips	American Hoist & Derrick Company.	50,804	Apr. 3	121	1657
Ropes, cords, twine, and binder-twine	International Harvester Co. of America.	51,819	Apr. 24	121	2655
Rubber bags and pouches. India-	Continental Caoutchouc Company.	51,439	Apr. 17	121	2313
Rubber bags and pouches. India-	Continental Caoutchouc Company.	51,760	Apr. 24	121	2652
Rubber binding. India-	Knapp Rubber Binding Co	51,937	Apr. 24	121	2659
Rubber binding. India-	Knapp Rubber Binding Co	51,938	Apr. 24	121	2659
Rubber boots and shoes	Lambertville Rubber Company	51,711	Apr. 24	121	2650
Rubber boots, shoes, and sandals	Bentley & Olmsted Company	51,069	Apr. 3	121	1668
Rubber combs	American Hard Rubber Co	51,383	Apr. 17	121	2311
Rubber combs	American Hard Rubber Co	51,412	Apr. 17	121	2312
Rubber combs	American Hard Rubber Co	51,413	Apr. 17	121	2312
Rubber combs	American Hard Rubber Co	51,696	Apr. 24	121	2650
Rubber combs	American Hard Rubber Co	51,720	Apr. 24	121	2651
Rubber combs. Hard-	American Hard Rubber Co	51,721	Apr. 24	121	2651
Rubber heels for boots and shoes	P. W. Minor & Son	50,206	Mar. 6	121	330
Rubber hose	Mulconroy Co	51,193	Apr. 10	121	1967
Rubber hose	Mulconroy Co	51,194	Apr. 10	121	1967
Rubber in sheet form. Reclaimed	U. S. Rubber Reclaiming Works of New York.	51,410	Apr. 17	121	2312
Rubber nipples for nursing-bottles	Seamless Rubber Co	50,162	Mar. 6	121	320
Rubber stair-nosings. India-	Knapp Rubber Binding Co	51,896	Apr. 24	121	2658
Rubber stair-nosings. India-	Knapp Rubber Binding Co	51,897	Apr. 24	121	2658
Rubber syringes. Hard-	American Hard Rubber Co	51,860	Apr. 24	121	2656
Rubbers and rubber boots. Lumbermen's	L. P. Ross	51,099	Apr. 3	121	1669
Rugs, art squares, and matting made of grass twine	Oshkosh Grass Matting Co	51,533	Apr. 17	121	2317
Rugs, art squares, and matting made of grass twine	Oshkosh Grass Matting Co	51,906	Apr. 24	121	2658
Rules, yardsticks, board-measures, and log-measures	Chapin-Stephens Company	51,545	Apr. 17	121	2318
Salad-dressing and sauces	E. R. Durkee & Co	51,127	Apr. 3	121	1670
Salt. Granular effervescent	H. K. Mulford Company	51,650	Apr. 17	121	2322
Salve	Bickmore Gall Cure Company	50,712	Mar. 27	121	1340
Salve	J. H. Patten	51,041	Apr. 3	121	1667
Salves	Wonderful Dream Salve Co	50,955	Apr. 3	121	1663
Salves	Ward Salve Co	51,254	Apr. 10	121	1970
Salves	Presto Pharmacal Company	51,620	Apr. 17	121	2321
Sardines	Von Bremen, MacMonnies & Co	50,634	Mar. 27	121	1337
Sauce for spaghetti	E. Picchianti	51,042	Apr. 3	121	1667
Sauces and relishes	Red Snapper Sauce Co	50,385	Mar. 13	121	683
Sausages	B. Frankfeld & Co	51,464	Apr. 17	121	2314
Saws	G. N. Clemson	50,640	Mar. 27	121	1337
Scarfs	W. Trevor	50,579	Mar. 20	121	1008
Scarfs	W. Trevor	51,735	Apr. 24	121	2651
Scissors	C. F. Boker	50,458	Mar. 20	121	1008

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Scissors	F. Köller & Co	51,564	Apr. 17	121	2318
Scissors and shears	Keith Simmons & Co	51,895	Apr. 24	121	2657
Scouring, cleansing, and washing preparation	India Alkali Works	50,855	Apr. 3	121	1659
Scrapers. Earth-	Kilbourne & Jacobs Manufacturing Company.	50,834	Apr. 3	121	1658
Seeds and bulbs. Garden, trucking, and flower	E. Tait & Sons	51,052	Apr. 3	121	1667
Seeds. Garden, flower, and field	Livingston Seed Co	50,530	Mar. 20	121	1006
Sewing-machines	A. G. Mason	51,531	Apr. 17	121	2317
Sewing-machines and parts thereof	Household Sewing Machine Co	51,933	Apr. 24	121	2659
Sewing-machines and sewing-machine parts	Household Sewing Machine Co	51,212	Apr. 10	121	1968
Shade-cloths	Amory, Browne & Co	50,773	Mar. 27	121	1343
Shaft-hangers	C. W. Levalley	50,620	Mar. 27	121	1336
Shears and scissors	H. Clauss	51,546	Apr. 17	121	2318
Sheetings	Carey, Bayne & Smith Company	50,168	Mar. 6	121	329
Sheetings	Courtenay Mfg. Co	51,177	Apr. 3	121	1672
Sheetings and drillings	Grendel Mills	50,511	Mar. 20	121	1008
Sheetings and drillings	Exposition Cotton Mills	51,266	Apr. 10	121	1970
Sheetings and drillings	Exposition Cotton Mills	51,319	Apr. 10	121	1972
Sheetings and drillings	Exposition Cotton Mills	51,320	Apr. 10	121	1972
Sheetings and drillings	Exposition Cotton Mills	51,341	Apr. 10	121	1973
Sheetings and drillings	Exposition Cotton Mills	51,522	Apr. 17	121	2317
Sheetings and drillings	Exposition Cotton Mills	51,523	Apr. 17	121	2317
Sheetings and drillings	Exposition Cotton Mills	51,524	Apr. 17	121	2317
Sheetings and drillings	Exposition Cotton Mills	51,525	Apr. 17	121	2317
Sheetings and drillings	Exposition Cotton Mills	51,549	Apr. 17	121	2318
Sheetings and drillings	Exposition Cotton Mills	51,550	Apr. 17	121	2318
Sheetings and drillings	Exposition Cotton Mills	51,551	Apr. 17	121	2318
Sheetings and drillings	Exposition Cotton Mills	51,607	Apr. 17	121	2320
Sheetings and drillings	Exposition Cotton Mills	51,608	Apr. 17	121	2320
Sheetings and drillings	Exposition Cotton Mills	51,609	Apr. 17	121	2320
Sheetings and drills	Loray Mills	51,271	Apr. 10	121	1970
Sheetings and drills	Easley Cotton Mills	51,521	Apr. 17	121	2317
Sheetings and drills. Cotton	K. Iwahara	50,549	Mar. 20	121	1007
Sheetings and drills. Cotton	K. Iwahara	50,574	Mar. 20	121	1008
Sheetings and drills. Cotton	K. Iwahara	51,294	Apr. 10	121	1971
Sheetings and drills. Cotton	K. Iwahara	51,763	Apr. 24	121	2652
Sheetings and drills. Cotton	K. Iwahara	51,844	Apr. 24	121	2656
Sheetings, drills, and ducks	Stark Mills	51,875	Apr. 24	121	2657
Sheetings, shirtings, and drills	R. A. Suffern	51,600	Apr. 17	121	2320
Sheetings, shirtings, and drills	R. A. Suffern	51,668	Apr. 17	121	2322
Shells. Shotgun-	Austin Cartridge Co	51,543	Apr. 17	121	2318
Sherry	Luyties Brothers	51,213	Apr. 10	121	1968
Ship-logs and sounding-machines	Thomas Walker & Son	50,840	Apr. 3	121	1658
Ships' logs	Thomas Walker & Son	51,572	Apr. 17	121	2319
Shirt-fronts and false shirt-bosoms	Reversible Collar Company	51,595	Apr. 17	121	2320
Shirt-waists and shirt-waist suits. Ladies'	D. Levy & Sons Co	61,285	Apr. 10	121	1971
Shirts as distinguished from undershirts. Dress-	Elias Bros. & Co	50,717	Mar. 27	121	1340
Shirts, collars, and cuffs	Cluett Peabody & Co	50,779	Mar. 27	121	1343
Shirts, collars, and cuffs	New Columbia Shirt Co	51,594	Apr. 17	121	2320
Shirts, collars, and cuffs	New Columbia Shirt Co	51,770	Apr. 24	121	2653
Shirts for men and women. Outing-	Guiterman Bros	50,512	Mar. 20	121	1006
Shirts. Men's outer	Hannach & Stiffel	51,075	Apr. 3	121	1668
Shirts. Negligée and dress	J. M. Robinson, Norton & Co	50,975	Apr. 3	121	1664
Shirts. Outer and dress	H. H. McClellan	51,084	Apr. 3	121	1669
Shirts, shirt-waists, and blouses	Hutchinson, Pierce & Co	51,146	Apr. 3	121	1671
Shirtings	Eddystone Manufacturing Company.	50,769	Mar. 27	121	1342
Shirtings and sheetings	Wamsutta Mills	51,002	Apr. 3	121	1665
Shirtings and sheetings	Wamsutta Mills	51,003	Apr. 3	121	1665
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,309	Mar. 6	121	334
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,310	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,311	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,312	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,313	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,314	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,315	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,316	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,317	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,318	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,319	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,320	Mar. 6	121	335
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,432	Mar. 13	121	685
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,433	Mar 13	121	685
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,434	Mar. 13	121	685
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,435	Mar. 13	121	685
Shirtings and sheetings, cambrics, and long-cloth	G. Willis & Co	50,436	Mar. 13	121	685
Shirtings, sheetings, cambrics, and long-cloth	G. Willis & Co	50,172	Mar. 6	121	329
Shoe-dressing. Men's liquid and paste	Hamilton-Brown Shoe Co	51,840	Apr. 24	121	2655
Shoe-dressing. Women's liquid and paste	Hamilton-Brown Shoe Co	51,839	Apr. 24	121	2655
Shoes. Children's leather	Watson-Plummer Shoe Company	51,068	Apr. 3	121	1668
Shoes. Ladies'	Hahne & Company	50,649	Mar. 27	121	1337
Shoes. Ladies', men's, and children's leather	S. Hirshberg	51,076	Apr. 3	121	1668
Shoes. Ladies', misses', and children's leather	W. B. Carhart	51,815	Apr. 24	121	2654
Shoes. Men's leather	Hamilton-Brown Shoe Company	50,150	Mar. 6	121	328
Shoes. Tennis-	Hood Rubber Co	50,547	Mar. 20	121	1007
Shovels, scoops, and spades	Hayden Automatic & Equipment Company.	51,187	Apr. 10	121	1967
Silk and mixed cotton and silk piece goods	B. Makover Co	50,191	Mar. 6	121	330
Silk dress material	John Goodwin Company	50,377	Mar. 13	121	683
Silk piece goods	C. Whitman & Co	51,165	Apr. 3	121	1672
Silks and satins	William Skinner Manufacturing Company.	50,198	Mar. 6	121	330
Silks. Dress-	Norfolk Silk Company	51,870	Apr. 24	121	2657
Silks. Dress-	Norfolk Silk Company	51,871	Apr. 24	121	2657
Silver flat ware, hollow ware, and tableware. Sterling-	Theodore W. Foster & Bro. Co	50,670	Mar. 27	121	1338
Silver-plated hollow ware	International Silver Company	51,078	Apr. 3	121	1668

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Silver-plated hollow ware	International Silver Company	51,079	Apr. 3	121	1668
Silver-plated hollow ware	International Silver Company	51,188	Apr. 10	121	1967
Silver table, hollow, and flat ware	Woodside Sterling Company	51,430	Apr. 17	121	2313
Skirt-distenders	A. M. Grean	51,170	Apr. 3	121	1672
Skirts	M. Goldman & Co	50,783	Mar. 27	121	1343
Skirts	Punch Brothers	51,098	Apr. 3	121	1669
Sleds and sleighs	B. F. & H. L. Sweet Company	51,739	Apr 24	121	2651
Snips, shears, and scissors	International Cutlery Company	51,653	Apr. 17	121	2222
Snuff	Byfield Snuff Co	50,871	Apr. 3	121	1659
Soap	Summit City Soap Works	50,487	Mar. 20	121	1005
Soap	Dunwoody Bros. Soap Company	50,503	Mar. 20	121	1005
Soap	Summit City Soap Works	50,566	Mar. 20	121	1008
Soap	G. A. Schmidt	50,695	Mar. 27	121	1339
Soap	Maple Cty Soap Works	50,856	Apr. 3	121	1659
Soap	Kendall Mfg. Co	50,879	Apr. 3	121	1660
Soap	E. A. Olds	51,086	Apr. 3	121	1669
Soap	N. K. Fairbank Company	51,243	Apr. 10	121	1969
Soap	N. K. Fairbank Company	51,425	Apr. 17	121	2313
Soap	Price's Patent Candle Co	51,807	Apr. 24	121	2654
Soap	Cudahy Packing Co	51,882	Apr. 24	121	2657
Soap	Anti-Grime Soap Company	51,917	Apr. 24	121	2658
Soap. Borax	Pacific Coast Borax Company	50,383	Mar. 13	121	683
Soap. Borax	Pacific Coast Borax Company	50,555	Mar. 20	121	1007
Soap. Cake-	A. Klipstein & Company	51,694	Apr. 24	121	2650
Soap chips	J. T. Kenny & Co	50,682	Mar. 27	121	1339
Soap. Glycerin	Mülhens & Kropff	51,386	Apr. 17	121	2311
Soap in the form of cakes or bars	C. W. Young & Co	51,365	Apr. 10	121	1974
Soap. Laundry-	Prouty-Bowler Soap Company	51,044	Apr. 3	121	1667
Soap. Perfumed	Eugene Rimmel	51,581	Apr. 17	121	2319
Soap. Polishing-	Kendall Mfg. Co	50,878	Apr. 3	121	1660
Soap powder combined with mineral ingredients	Cudahy Packing Co	50,697	Mar. 27	121	1339
Soap. Pumice-	Iowa Soap Company	50,071	Mar. 6	121	325
Soap. Scouring-	Bon Ami Company	50,848	Apr. 3	121	1658
Soap. Toilet	D. R. Bradley & Son	50,536	Mar. 20	121	1007
Soap. Toilet	Medical Lake Salts Mfg. Co	50,885	Apr. 3	121	1660
Soap. Toilet	Pardridge & Blackwell	51,272	Apr. 10	121	1970
Soap. Toilet	C. W. Young & Co	51,366	Apr. 10	121	1974
Soap. Toilet and laundry	Maple City Soap Works	50,684	Mar. 27	121	1339
Soap. Toilet and laundry	Haskins Bros. & Co	50,903	Apr. 3	121	1661
Soaps	J. F. G. de Roussy de Salea	51,454	Apr. 17	121	2314
Soaps. Solid and liquid	E. A. Olds	50,334	Mar. 13	121	681
Soaps. Toilet	Mülhens & Kropff	50,685	Mar. 27	121	1339
Soda-water and syrup for the same. Aerated or carbonated bottled	B. H. McDonald	51,803	Apr. 24	121	2654
Soda-water syrup and a drink made from such syrup	Wiley Manufacturing Co	50,489	Mar. 20	121	1005
Sodium phosphate. Liquid preparation of	Voigt & Co	51,361	Apr. 10	121	1974
Soldering fluid	Non-Corrosive Coating Co	50,821	Apr. 3	121	1657
Soothing-syrup	Presto Pharmacal Company	51,097	Apr. 3	121	1669
Soothing-syrup	C. R. Kopp	51,172	Apr. 3	121	1672
Souvenir articles	C. M. Robbins Co	50,667	Mar. 27	121	1338
Specific for neuralgia and rheumatism	Mellier Drug Company	51,500	Apr. 17	121	2316
Specific put up in tabular form. Headache	Migranose Importing Co	50,382	Mar. 13	121	683
Spectacle and eyeglass frames	Bay State Optical Company	50,805	Apr. 3	121	1657
Spices	E. R. Durkee & Co	50,225	Mar. 6	121	331
Spices	A. Schilling & Company	50,448	Mar. 20	121	1003
Spices	A. Schilling & Company	50,662	Mar. 27	121	1338
Spices	Lehn & Fink	51,470	Apr. 17	121	3215
Spices and mustard	Schwabacher Bros. & Co	51,048	Apr. 3	121	1667
Spices. Ground	Citizens' Wholesale Supply Co	50,452	Mar. 20	121	1003
Spoons. Gold, silver, and plated	M. B. Logan	50,938	Apr. 3	121	1662
Starch. Laundry	New York Glucose Co	50,419	Mar. 13	121	684
Starch. Laundry	S. W. Noggle Wholesale & Mfg. Co.	51,163	Apr. 3	121	1672
Starch. Powdered laundry	Faultless Starch Co	51,025	Apr. 3	121	1666
Stationery. Certain named articles of	E. Faber	51,227	Apr. 10	121	1969
Steel	Crucible Steel Company of America.	50,642	Mar. 27	121	1337
Steel	Crucible Steel Company of America.	50,643	Mar. 27	121	1337
Steel	Howe Brown & Co	50,678	Apr. 3	121	1660
Steel	Crucible Steel Company of America.	50,897	Apr. 3	121	1660
Steel	Crucible Steel Company of America.	50,898	Apr. 3	121	1660
Steel	Crucible Steel Company of America.	50 899	Apr. 3	121	1660
Steel and steel bars, rods, and sheets. Tool-	Hawkridge Bros	50,932	Apr. 3	121	1662
Steel and steel bars, rods, and sheets. Tool-	Hawkridge Brothers	51,349	Apr. 10	121	1973
Steel. Cast-	Braeburn Steel Company	51,759	Apr. 24	121	2652
Stencil-cutting machines	Diagraph Company	50,914	Apr. 3	121	1661
Stockings	Columbia Hosiery Co	50,570	Mar. 20	121	1008
Stogies	J. Williams & Bros	50,672	Mar. 27	121	1338
Stogies	R. & W. Jenkinson Co	50,737	Mar. 27	121	1341
Stone used for rubbing purposes. Natural	James H. Rhodes & Company	51,445	Apr. 17	121	2314
Stove-polish. Powdered	X-Ray Stove Polish Co	50,495	Mar. 20	121	1005
Stove polishes and varnishes	John M. Wolf Company	50,379	Mar. 13	121	683
Stoves and ranges and repairs and parts therefor	Sill Stove Works	51,623	Apr. 17	121	2321
Stoves. Heating and cooking	Joliet Stove Works	51,562	Apr. 17	121	2318
Stoves. Heating and cooking	Joliet Stove Works	51,654	Apr. 17	121	2323
Stoves, ranges, and furnaces and castings therefor	Gohmann Bros. & Kahler Co	50,875	Apr. 3	121	1659
Stoves, ranges, and furnaces and parts thereof	Scranton Stove Works	50,344	Mar. 13	121	681
Stoves, ranges, and gas-stoves and attachments and parts and repairs therefor.	Sill Stove Works	50,898	Apr. 3	121	1660
Stoves, ranges, gas-stoves, and attachments and parts and repairs therefor.	Sill Stove Works	50,912	Apr. 3	121	1661
Stoves, ranges, heaters, furnaces, and parts thereof	Richardson & Boynton Company	51,570	Apr. 17	121	2319

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Suits. Boys'	H. A. Seinsheimer	51,538	Apr. 17	121	2317
Suppositories	Dr. Pierre Chemical Company	51,636	Apr. 17	121	2321
Suspenders for wearing-apparel	R. F. Bartel	50,711	Mar. 27	121	1340
Suspenders. Trousers-	Gordon Manufacturing Company	51,027	Apr. 3	121	1666
Suspensory bandages	J. Ellwood Lee Company	51,891	Apr. 24	121	2657
Suspensory bandages and jock-straps	S. H. Wetmore Co	50,629	Mar. 27	121	1337
Syrup	Griggs, Cooper & Company	51,132	Apr. 3	121	1671
Syrup and molasses	Francis H. Leggett & Company	50,610	Mar. 27	121	1336
Tablets for diseases of the entire digestive tract	Illinois Laboratories	50,300	Mar. 6	121	334
Talking-machine records	Victor Talking Machine Company.	50,081	Mar. 6	121	326
Talking-machine records	Englewood Co	50,594	Mar. 27	121	1335
Talking-machine records	Victor Talking Machine Company.	50,598	Mar 27	121	1335
Talking-machines and parts thereof	Victor Talking Machine Company.	50,082	Mar. 6	121	326
Tanning extract	Stamford Manufacturing Company.	50,398	Mar. 13	121	684
Tanning extract	Stamford Mfg. Co	51,507	Apr. 17	121	2316
Tanning extract	Stamford Mfg. Co	51,506	Apr. 17	121	2316
Tar and pitch	Barrett Manufacturing Company	51,166	Apr. 3	121	1672
Tea	Acker, Merrall & Condit Company.	50,007	Apr. 3	121	1665
Tea	P. Desenberg & Co	51,284	Apr. 10	121	1971
Tea	W. E. Sibley	51,333	Apr. 10	121	1973
Tea	Sprague, Warner & Company	51,484	Apr. 17	121	2315
Tea	Hewlett & Lee	51,792	Apr. 24	121	2653
Tea	Hewlett & Lee	51,816	Apr. 24	121	2654
Tea	Charles & Co	51,923	Apr. 24	121	2659
Tea and coffee pots and coffee-urns	Silver & Company	50,525	Mar. 20	121	1006
Tea and coffee pots and coffee-urns	Silver & Company	51,158	Apr. 3	121	1672
Thread	Nonotuck Silk Company	50,194	Mar. 6	121	330
Threads. Cotton, silk, hemp, and other fiber	Singer Manufacturing Company	50,195	Mar. 6	121	330
Ticket issuing and recording machines	Ohmer Fare Register Co	50,823	Apr. 3	121	1657
Tickings	Eagle & Phenix Mills	51,021	Apr. 3	121	1666
Tickings	Eagle & Phenix Mills	51,022	Apr. 3	121	1666
Tickings	Eagle & Phenix Mills	51,128	Apr. 3	121	1670
Tin and terne plates	Follansbee Brothers Company	51,209	Apr. 10	121	1968
Tin and terne plates	Follansbee Brothers Company	51,210	Apr. 10	121	1968
Tin and terne plates	Follansbee Brothers Company	51,229	Apr. 10	121	1969
Tin and terne plates	Follansbee Brothers Company	51,230	Apr. 10	121	1969
Tin and terne plates	Follansbee Brothers Company	51,231	Apr. 10	121	1969
Tin and terne plates	Follansbee Brothers Company	51,232	Apr. 10	121	1969
Tin and terne plates	Follansbee Brothers Company	51,233	Apr. 10	121	1969
Tin and terne plates	Follansbee Brothers Company	51,342	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,343	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,344	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,345	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,346	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,347	Apr. 10	121	1973
Tin and terne plates	Follansbee Brothers Company	51,639	Apr. 17	121	2321
Tin and terne plates	Follansbee Brothers Company	51,640	Apr. 17	121	2321
Tin and terne plates	Follansbee Brothers Company	51,641	Apr. 17	121	2321
Tin and terne plates	Follansbee Brothers Company	51,642	Apr. 17	121	2321
Tin plates and roofing-tin	J. Meurer	51,712	Apr. 24	121	2650
Tin plates and roofing-tin	J. Meurer	51,745	Apr. 24	121	2652
Tin plates and roofing-tin	J. Meurer	51,746	Apr. 24	121	2652
Toast. Granulated	D. J. Etly	50,588	Mar. 27	121	1335
Tobacco and smoking-tobacco. Plug chewing-	H. N. Martin & Co	51,385	Apr. 17	121	2311
Tobacco. Any form of smoking or chewing	Nashville Tobacco Works	51,402	Apr. 17	121	2312
Tobacco. Chewing-	Ryan-Hampton Tobacco Co	50,910	Apr. 3	121	1661
Tobacco. Chewing and smoking	R. Harris & Bro	51,420	Apr. 17	121	2313
Tobacco, chewing-tobacco, snuff, and tobacco extracts. Smoking	Republic of France	51,452	Apr. 17	121	2314
Tobacco. Especially high grade of plug-	Ryan-Hampton Tobacco Co	50,909	Apr. 3	121	1661
Tobacco. Granulated smoking-	F. R. Penn Tob. Co	50,735	Mar. 27	121	1341
Tobacco. High grade of chewing-	Ryan-Hampton Tobacco Co	50,692	Mar. 27	121	1339
Tobacco in cigar form. Chewing-	A. Marschner	50,857	Apr. 3	121	1659
Tobacco. Plug chewing-	Gilbert Son & Co	50,680	Mar. 27	121	1339
Tobacco. Plug chewing-	S. F. Hascrot	51,842	Apr. 24	121	2655
Tobacco. Plug cut	Weisert Brothers Tobacco Company.	50,739	Mar. 27	121	1341
Tobacco. Plug, cut-plug, and smoking	J. G. Dill	50,096	Mar. 6	121	326
Tobacco. Smoking-	Brittain Tobacco Works	51,395	Apr. 17	121	2312
Tobacco. Smoking-	Republic of France	51,453	Apr. 17	121	2314
Tobacco. Smoking-	Brittain Tobacco Works	51,879	Apr. 24	121	2657
Toilet-cases. Traveling	W. E. Disbrow	50,126	Mar. 6	121	327
Toilet preparation. Certain named	Kny-Scheerer Company	51,326	Apr. 10	121	1973
Toilet wash for the skin	R. Glaub	50,720	Mar. 27	121	1340
Toilet waters	E. Pinet	50,987	Apr. 3	121	1664
Tonic	Colburn, Birks & Co	50,224	Mar. 6	121	331
Tonic	C. F. Taylor	51,947	Apr. 24	121	2660
Tonic and general stimulant	Mellier Drug Company	51,499	Apr. 17	121	2314
Tonic beverage. Non-alcoholic	Jno. Hinton	51,443	Apr. 17	121	2316
Tonic beverages and extracts for making the same	Wharton Chemical Co	50,492	Mar. 20	121	1005
Tonic beverages and syrups for the same. Aerated	Dr. Pepper Co	50,668	Mar. 27	121	1338
Tonic beverages. Sparkling, effervescent	Rumford Chemical Works	51,387	Apr. 17	121	2311
Tonic. Nerve and nutritive	Geo. A. Newman Co	51,234	Apr. 10	121	1969
Tonic or nutriment. Blood	Charles Hammesfahr Company	50 223	Mar. 6	121	331
Tonics	Wintersmith Medicine Co	51,112	Apr. 3	121	1670
Tonics	E. J. Hart & Co	51,286	Apr. 10	121	1971
Tonics and tissue-builders. Nutritive	H. Morse	51,658	Apr. 17	121	2323
Tonics. Antimalarial	Wintersmith Medicine Co	51,180	Apr. 3	121	1672
Tonics. Iron	E. Bischoff	51,203	Apr. 10	121	1968
Tools. Certain named	J. M. Carpenter Tap & Die Co	50,950	Apr. 3	121	1663
Tools. Certain named	Armstrong Mfg. Co	51,310	Apr. 10	121	1972

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Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tooth-paste	Johnson & Johnson	50,378	Mar. 13	121	683
Tooth-paste	J. M. Grosvenor & Co	51,323	Apr. 10	121	1972
Tooth-powder	Woodman-Davis Co	50,740	Mar. 27	121	1341
Toothpicks	Weis Mfg. Co	51,914	Apr. 24	121	2658
Trees, buds, and scions thereof. Fruit-	Oregon Nursery Company	50,621	Mar. 27	121	1336
Trees. Peach-	Sneed & Wood	50,212	Mar. 6	121	331
Trees, scions, cuttings, grafts, roots, and stocks. Peach-	Texas Nursery Company	51,486	Apr. 17	121	2315
Trimmings for ladies' underwear	Friedberger-Aaron Mfg. Co	51,726	Apr. 24	121	2651
Trousers	I. L. Pearl & Co	51,619	Apr. 17	121	2321
Trunks, suit-cases, traveling-bags, satchels, and telescopes	Henry Pollack Trunk Co	50,615	Mar. 27	121	1336
Tubes. Iron and steel	Spang, Chalfant & Co	50,663	Mar. 27	121	1338
Tubing adapted for use as hose or packing. Elastic	New Jersey Car Spring & Rubber Co.	51,955	Apr. 24	121	2660
Turpentine. Spirits of	Standard Oil Company	51,946	Apr 24	121	2660
Turquoise. Genuine mined and cut	Aztec Turquois Company	51,108	Apr. 3	121	1669
Type-writing machines	Wellington Typewriter Company	50,844	Apr. 3	121	1658
Type-writing machines	Oliver Typewriter Company	51,111	Apr. 3	121	1670
Type-writing machines	Smith Premier Typewriter Company.	51,572	Apr. 17	121	2319
Undershirts and drawers and union suits	Deimel Linen-Mesh System Company.	50,796	Mar. 27	121	1344
Undershirts and drawers and union suits	Deimel Linen-Mesh System Company.	51,784	Apr. 24	121	2653
Undershirts and drawers for men and women	Heilmann, Loth & Gutman	50,513	Mar. 20	121	1006
Underwaists. Children's	H. & W. Company	50,349	Mar. 13	121	682
Underwaists. Children's	Nazareth Waist Co	51,328	Apr. 10	121	1973
Underwaists. Ladies' and children's	Warner Bros. Co	51,601	Apr. 17	121	2320
Underwear, drawers, tights, vests, and union suits	Chas. A. Stevens & Bros	50,964	Apr. 3	121	1663
Varnishes	Toch Brothers	50,702	Mar. 27	121	1340
Varnishes	J. Babcock & Co	50,867	Apr. 3	121	1659
Varnishes	David B. Crockett Company	51,222	Apr. 10	121	1968
Varnishes and japans	Valentine & Company	50,705	Mar. 27	121	1340
Varnishes and varnish-stains	Glidden Varnish Company	51,889	Apr. 24	121	2657
Varnishes, finishes, japans, and fillers	Chas. H. Gillespie & Sons	51,263	Apr. 10	121	1970
Varnishes. Preservative and insulating	Standard Paint Company	51,456	Apr. 17	121	2314
Velveteens	A. Wimpfheimer and Brother	50,772	Mar 27	121	1342
Velveteens and corduroys	W. Openhym & Sons	51,713	Apr. 24	121	2650
Velveteens, corduroys, and other cotton-velvet fabrics	W. Openhym & Sons	50,944	Apr. 3	121	1662
Vermuth	Charles Jacquin et Cie	51,184	Apr. 10	121	1967
Vests and waistcoats. Men's	F. H. Sprague Co	51,106	Apr. 3	121	1660
Veterinary remedies for horses and all domestic animals	Pond's Extract Company	51,095	Apr. 3	121	1669
Veterinary remedy	Hamer's Sure Cure Company	50,746	Mar. 27	121	1341
Vinegar	H. J. Heinz Company	51,029	Apr. 3	121	1666
Vinegar. Cider-	Chas. E. Meyer & Co	51,120	Apr. 3	121	1670
Vinegar. Spirit-	Chas. E. Meyer & Co	50,262	Mar. 6	121	333
Vinegar used for pickling	Chas. E. Meyer & Co	50,261	Mar. 6	121	333
Violin and guitar strings	Lyon & Healy	50,981	Apr. 3	121	1664
Violin, guitar, zither, and banjo strings	S. Blumenthal	50,123	Mar. 6	121	327
Violin, guitar, zither, and banjo strings	S. Blumenthal	50,124	Mar. 6	121	327
Violin-strings	Lyon & Healy	51,299	Apr. 10	121	1971
Violin-strings	Lyon & Healy	51,371	Apr. 17	121	2311
Wagons	Tiffin Wagon Co	50,631	Mar. 27	121	1337
Wagons	Weber Wagon Company	50,843	Apr. 3	121	1658
Waists, dresses, and suits	Rosenbaum Company	51,537	Apr. 17	121	2317
Washboards	American Washboard Company	50,425	Mar. 13	121	685
Washboards	American Washboard Company	51,415	Apr. 17	121	2313
Washes or lotions to rid animals of vermin	Pratt Food Co	51,096	Apr. 3	121	1669
Washing fluid	R. J. Williams	51,411	Apr. 17	121	2312
Washing fluids	E. F Kaestner	51,796	Apr. 24	121	2654
Washing-machines	Wahle Foundry and Machine Works.	50,706	Mar. 27	121	1340
Washing-powder	Summit City Soap Works	50,488	Mar. 20	121	1005
Watch-glasses	A. Berger & Co	50,957	Apr. 3	121	1663
Watch-movements	B. L. Strasburger	51,715	Apr. 24	121	2650
Watches	Elgin National Watch Co	50,094	Mar. 6	121	326
Watches	Elgin National Watch Company	50,966	Apr. 3	121	1663
Watches, watchcases, and watch-movements	D. Gruen & Sons	50,545	Mar. 20	121	1007
Watchcases	Dueber Watch Case Mfg. Co	51,707	Apr. 24	121	2650
Water. Lithia-	W. G. Taylor	50,861	Apr. 3	121	1659
Water. Mineral-spring	Mountain Valley Springs Company.	51,448	Apr. 17	121	2314
Water. Natural, concentrated, and carbonated mineral	Blue Rock Mineral Spring Company.	50,677	Mar. 27	121	1339
Water-sprayers, showers, and parts, fixed or portable	J. P. Eustis Mfg. Co	50,652	Mar. 27	121	1338
Water. Spring-	T. C. Bates	50,847	Apr. 3	121	1658
Waterproof fabric. Flexible	Standard Paint Company	50,919	Apr. 3	121	1661
Wax	J. E. Chandler	50,440	Mar. 20	121	1003
Wax used in shoemaking. Liquid	Crown Oil & Wax Company	51,317	Apr. 10	121	1972
Weighing-machines and parts thereof	E. and T. Fairbanks and Company.	51,226	Apr. 10	121	1969
Whalebone. Natural and artificial	D. Hone	50,204	Mar. 6	121	330
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	50,627	Mar. 27	121	1337
Wheelbarrows and the parts thereof	Kilbourne & Jacobs Manufacturing Company.	51,563	Apr. 17	121	2318
Whip-centers	Sterling Whip Company	50,953	Apr. 3	121	1663
Whips	A. J. Cook	51,265	Apr. 10	121	1970
Whiskies	Meadville, Pennsylvania Distilling Company.	50,280	Mar. 6	121	333
Whiskies	J. C. Marks Liquor Co	50,997	Apr. 3	121	1665
Whisky	United Wine and Trading Company.	50,140	Mar. 6	121	328
Whisky	Hurley & Co	50,151	Mar. 6	121	328
Whisky	I. Michelson & Bros	50,152	Mar. 6	121	328
Whisky	H. Kahn	50,153	Mar. 6	121	328
Whisky	L. & A. Scharff	50,154	Mar. 6	121	328

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Whisky	Weideman Company	50,164	Mar. 6	121	329
Whisky	Bluthenthal & Bickart	50,167	Mar. 6	121	329
Whisky	H. W. Huguley Company	50,173	Mar. 6	121	329
Whisky	Jesse Moore Hunt Co	50,175	Mar. 6	121	329
Whisky	J. & E. Mahoney	50,179	Mar 6	121	329
Whisky	Maryland Distilling Co	50,180	Mar. 6	121	329
Whisky	P. J. Bowlin Liquor Co	50,185	Mar. 6	121	330
Whisky	S. Grabfelder & Co	50,189	Mar. 6	121	330
Whisky	Wm. Bergenthal Co	50,196	Mar. 6	121	330
Whisky	William H. Lee & Co	50,197	Mar. 6	121	330
Whisky	A. A. Wolf & Co	50,199	Mar. 6	121	330
Whisky	Hartman, Goldsmith & Co	50,203	Mar. 6	121	330
Whisky	F. W. Hunt & Co	50,205	Mar. 6	121	330
Whisky	Mueller, Wathen & Kobert	50,207	Mar. 6	121	330
Whisky	Rock-Spring Distg. Co	50,208	Mar. 6	121	330
Whisky	W. P. Squibb & Co	50,211	Mar. 6	121	331
Whisky	J. D. Ulrich	50,215	Mar. 6	121	331
Whisky	J. T. S. Brown & Sons	50,259	Mar. 6	121	333
Whisky	Dreyfuss, Weil & Co	50,263	Mar. 6	121	333
Whisky	M. L. Eppstein	50,264	Mar. 6	121	333
Whisky	M. L. Eppstein	50,265	Mar. 6	121	333
Whisky	J. & A. Freiberg	50,266	Mar. 6	121	333
Whisky	H. Groves Sons	50,269	Mar. 6	121	333
Whisky	F. W. Hunt & Co	50,271	Mar. 6	121	333
Whisky	Hurley & Co	50,273	Mar. 6	121	333
Whisky	Jas. E. Pepper & Co	50,275	Mar. 6	121	333
Whisky	Kaufmann, Baer & Co	50,276	Mar. 6	121	333
Whisky	L. Levy & Co	50.277	Mar. 6	121	333
Whisky	S. Lieberman	50 278	Mar. 6	121	333
Whisky	J. A. Magnus & Co	50,279	Mar. 6	121	333
Whisky	W. P Squibb & Co	50,293	Mar. 6	121	334
Whisky	I. Trager Co	50,301	Mar. 6	121	334
Whisky	McCart Mosset Co	50,302	Mar. 6	121	334
Whisky	N. M. Uri	50,306	Mar. 6	121	334
Whisky	D. Wise & Co	50,321	Mar. 6	121	335
Whisky	Weiss Eichold Liquor Co	50,356	Mar. 13	121	682
Whisky	L. Bush	50,362	Mar. 13	121	682
Whisky	Freiberg, Meyer & Co	50,371	Mar. 13	121	682
Whisky	M. Harris	50,374	Mar. 13	121	683
Whisky	Pen-Mar Distilling Co	50,397	Mar. 13	121	683
Whisky	Winand Distilling Company of Baltimore County.	50,399	Mar. 13	121	684
Whisky	Van Vleet-Mansfield Drug Co	50,402	Mar. 13	121	684
Whisky	Kahn Bros	50,415	Mar. 13	121	684
Whisky	I. Michelson & Bros	50,418	Mar. 13	121	684
Whisky	I. Trager Co	50,428	Mar. 13	121	685
Whisky	Wright & Taylor	50,437	Mar. 13	121	685
Whisky	Brede-Lang Co	50,496	Mar. 20	121	1005
Whisky	P. Freiler	50,507	Mar. 20	121	1005
Whisky	D. Green	50,510	Mar. 20	121	1006
Whisky	H. R. Myers	50,520	Mar. 20	121	1006
Whisky	Shortell & Timmins	50,524	Mar. 20	121	1006
Whisky	Hoffheimer Bros. Co	50,528	Mar. 20	121	1006
Whisky	Dallemand & Company	50,539	Mar. 20	121	1007
Whisky	A. Myers	50,552	Mar. 20	121	1007
Whisky	Straus Brothers Company	50,558	Mar. 20	121	1007
Whisky	W. Albrecht	50,638	Mar. 27	121	1337
Whisky	Glasner & Barzen Distilling & Importing Co.	50,647	Mar. 27	121	1337
Whisky	Martin & McAndrews	50,653	Mar. 27	121	1338
Whisky	S. F. Miller	50,655	Mar. 27	121	1338
Whisky	E. E. Nordenholz	50,656	Mar. 27	121	1338
Whisky	T. E. O'Keefe	50,658	Mar. 27	121	1338
Whisky	L. Rosenzweig	50,661	Mar. 27	121	1338
Whisky	M. Wortmann	50,673	Mar. 27	121	1338
Whisky	Samuel Westheimer & Son Wholesale Liquor Co.	50,694	Mar. 27	121	1339
Whisky	Figge Doyle Co	50,718	Mar. 27	121	1340
Whisky	John Bardenheier Wine and Liquor Co.	50,933	Apr. 3	121	1662
Whisky	F. Jones	50,934	Apr. 3	121	1662
Whisky	W. H. Jones and Co	50,935	Apr. 3	121	1662
Whisky	M. F. McDonough	50,941	Apr. 3	121	1662
Whisky	J. J. Douglas Co	50,949	Apr. 3	121	1663
Whisky	H. E. Block	50,960	Apr. 3	121	1663
Whisky	Albany Wine & Liquor Co	51,008	Apr. 3	121	1665
Whisky	H. Kahn	51,033	Apr. 3	121	1666
Whisky	C. Roth	51,045	Apr. 3	121	1667
Whisky	Roth & Co	51,046	Apr. 3	121	1667
Whisky	Sample & Co	51,047	Apr. 3	121	1667
Whisky	Steinhardt Bros. & Co	51,050	Apr. 3	121	1667
Whisky	Trost Bros	51,065	Apr. 3	121	1668
Whisky	J. H. Schwartz	51,102	Apr. 3	121	1669
Whisky	J. H. Schwartz	51,103	Apr. 3	121	1669
Whisky	J. H. Schwartz	51,104	Apr. 3	121	1669
Whisky	J. H. Schwartz	51,105	Apr. 3	121	1669
Whisky	A. D. Kerr Co	51,113	Apr. 3	121	1670
Whisky	Bluthenthal & Bickart	51,118	Apr. 3	121	1670
Whisky	J. A. Gill	51,131	Apr. 3	121	1671
Whisky	H. Webster Company	51,134	Apr. 3	121	1671
Whisky	Samuel Westheimer & Son Wholesale Liquor Company.	51,156	Apr. 3	121	1672
Whisky	Union Distlg. Co	51,164	Apr. 3	121	1672
Whisky	L. Nelson	51,195	Apr. 10	121	1967
Whisky	White, Hentz & Co	51,256	Apr. 10	121	1970
Whisky	J. H. Beam	51,259	Apr. 10	121	1970

Alphabetical list of trade-marks for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Whisky	M. J. Bligh	51,260	Apr. 10	121	1970
Whisky	P. Freiler	51,268	Apr. 10	121	1970
Whisky	Jas. R. Ross & Co	51,269	Apr. 10	121	1970
Whisky	K. A. Buckley	51,279	Apr. 10	121	1971
Whisky	W. H. Jones and Co	51,296	Apr. 10	121	1971
Whisky	G. Cohn	51,316	Apr. 10	121	1972
Whisky	Stern Brothers	51,334	Apr. 10	121	1973
Whisky	C. H. Ross & Co	51,359	Apr. 10	121	1974
Whisky	Corning and Company	51,494	Apr. 17	121	2316
Whisky	Cahn, Belt & Co	51,515	Apr. 17	121	2316
Whisky	Corning and Company	51,517	Apr. 17	121	2316
Whisky	J. & A. Freiberg	51,527	Apr. 17	121	2317
Whisky	A. P. Hotaling & Co	51,541	Apr. 17	121	2317
Whisky	L. J. Adler	51,542	Apr. 17	121	2318
Whisky	J. & A. Freiberg	51,553	Apr. 17	121	2318
Whisky	R. M. Rose Co	51,571	Apr. 17	121	2319
Whisky	O. Taussig	51,573	Apr. 17	121	2319
Whisky	M. L. Bean	51,577	Apr. 17	121	2319
Whisky	Epstein Bros. Co	51,580	Apr. 17	121	2319
Whisky	C. J. Gallagher	51,583	Apr. 17	121	2319
Whisky	D. Kohn	51,585	Apr. 17	121	2319
Whisky	Mahan Supply Co	51,591	Apr. 17	121	2319
Whisky	Wilmerding-Loewe Co	51,602	Apr. 17	121	2320
Whisky	Frenadorf & Brown	51,611	Apr. 17	121	2320
Whisky	Theobald and Son Co	51,628	Apr. 17	121	2321
Whisky	Eminence Distillery Co	51,637	Apr. 17	121	2321
Whisky	Geo. Benz & Sons	51,643	Apr. 17	121	2321
Whisky	Geo. Benz & Sons	51,644	Apr. 17	121	2321
Whisky	W. H. Jones & Co	51,655	Apr. 17	121	2322
Whisky	W. H. Jones & Co	51,656	Apr. 17	121	2322
Whisky	Mountain Distg. Co	51,659	Apr. 17	121	2322
Whisky	Mountain Distg. Co	51,660	Apr. 17	121	2322
Whisky	Mountain Distg. Co	51,661	Apr. 17	121	2322
Whisky	Mountain Distg. Co	51,662	Apr. 17	121	2322
Whisky	R. A. Splaine & Co	51,666	Apr. 17	121	2322
Whisky	F. Westheimer & Sons	51,674	Apr. 17	121	2323
Whisky	F. Westheimer & Sons	51,675	Apr. 17	121	2323
Whisky	L. Gilliams & Co	51,697	Apr. 24	121	2650
Whisky	Ginter Grocery Company	51,698	Apr. 24	121	2650
Whisky	S. Binswanger & Bro	51,723	Apr. 24	121	2651
Whisky	Union Distilling Co	51,736	Apr. 24	121	2651
Whisky	Breen & Kennedy	51,740	Apr. 24	121	2651
Whisky	Calhoun Distilling Company	51,741	Apr. 24	121	2651
Whisky	Chicago Distilling Co	51,778	Apr. 24	121	2653
Whisky	Clover Leaf Wine Co	51,780	Apr. 24	121	2653
Whisky	P. Dempsey & Co	51,786	Apr. 24	121	2653
Whisky	P. Dempsey & Co	51,788	Apr. 24	121	2653
Whisky	Jesse Moore Hunt Co	51,846	Apr. 24	121	2656
Whisky	F. Westheimer & Sons	51,853	Apr. 24	121	2656
Whisky	M. J. Doran	51,863	Apr. 24	121	2656
Whisky	Union Distilling Co	51,876	Apr. 24	121	2657
Whisky	E. Weil	51,877	Apr. 24	121	2657
Whisky	S. N. Weil & Co	51,878	Apr. 24	121	2657
Whisky	Mountain Distg. Co	51,904	Apr. 24	121	2658
Whisky	E. Weil	51,913	Apr. 24	121	2658
Whisky	Geo. Benz & Sons	51,929	Apr. 24	121	2659
Whisky	John C. Weller Co	51,935	Apr. 24	121	2659
Whisky	E. Weil	51,952	Apr. 24	121	2660
Whisky. Malt	Wichman, Lutgen & Co	50,308	Mar. 6	121	334
Whisky. Rye.	Henry B. Gilpin Co	50,160	Mar. 6	121	329
Whisky. Rye	Henry B. Gilpin Co	50,298	Mar. 6	121	334
Whisky. Rye	Gilliams, Jones & Co	50,509	Mar. 20	121	1005
Whisky. Rye	G. Gump & Sons	50,648	Mar. 27	121	1337
Whisky. Rye	Ulman, Boykin & Co	50,671	Mar. 27	121	1338
Whisky. Rye	Gilliams, Jones & Co	51,185	Apr. 10	121	1968
Windmills	Flint and Walling Manufacturing Company.	51,742	Apr. 24	121	2651
Wine	Italian Swiss Colony	50,096	Mar. 6	121	326
Wine	Italian Swiss Colony	50,097	Mar. 6	121	326
Wine	P. J. Bowlin Liquor Co	50,101	Mar. 6	121	326
Wine	Henry Block Co	50,268	Mar. 6	121	333
Wine	Pleasant Valley Wine Co	50,335	Mar. 13	121	681
Wine	P. J. Bowlin Liquor Co	50,420	Mar. 13	121	685
Wine	Italian Swiss Colony	51,421	Apr. 17	121	2313
Wine	F. Handrich	51,841	Apr. 24	121	2655
Wine. Champagne-	G. H. Mumm & Co	51,869	Apr. 24	121	2657
Wine. Fruit-	L. Rosenzweig	50,102	Mar. 6	121	326
Wines	S. B. Smith	50,860	Apr. 3	121	1659
Wines	J. S. Draper	51,208	Apr. 10	121	1967
Wire	United Shoe Machinery Company.	50,597	Mar. 27	121	1335
Wood and cabinet scrapers	E. C. Atkins & Company	50,810	Apr. 3	121	1657
Woolen cloths	American Woolen Company	50,166	Mar. 6	121	329
Woolen dress goods	J. Lonke	51,588	Apr. 17	121	2319
Worm-destroyer or vermifuge	G. G. Steketee	51,598	Apr. 17	121	2320
Wrenches	Walworth M'f'g Co	50,842	Apr. 3	121	1658
Wrenches	Whitman & Barnes Manufacturing Company.	51,576	Apr. 17	121	2319
Yarns of all descriptions	Wm. H. Horstmann Company	50,216	Mar. 6	121	331
Yarns. Worsted	S. B. & B. W. Fleisher	50,388	Mar. 13	121	683
Yeast-cake	Star Yeast Cake Co	51,276	Apr. 10	121	1970
Yeast-powder	Rumford Chemical Works	50,290	Mar. 6	121	334

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
"A 2 Z." (For a Liquid Cleaner)	N. L. Simmons	12,774	Apr. 3	121	1673
"Amazon Vegetable Boiler Compound." (For a Vegetable Boiler Compound.)	Amazon Chemical Manufacturing Co.	12,739	Mar. 27	121	1345
"Arabian Coffee Phosphate." (For a Beverage)	Girard Spring Water Co	12,748	Apr. 3	121	1673
"Arcadia Beauty." (For Canned Corn)	Wayne County Preserving Co	12,735	Mar. 27	121	1345
"Army and Navy Export Beer." (For Bottled Beer)	Robert Portner Brewing Company.	12,750	Apr. 3	121	1673
"Astanby." (For Toilet-Paper)	Scott Paper Co	12,790	Apr. 17	121	2324
"B-Bly-D." (For Insecticides)	Leggett & Bro	12,811	Apr. 24	121	2661
"Ballantine." (For Beer)	Milwaukee Lithographing Company.	12,799	Apr. 24	121	2661
"Ballard's Heleo-Rosa." (For a Preparation for the Cure of Dandruff.)	A. Ballard	12,699	Mar. 6	121	336
"Beau Teint, Crême Tacoma, a Permanent Cold Cream." (For Cold-Cream.)	Tacoma Chemical Co	12,771	Apr. 3	121	1673
"Best in the World Salve." (For a Salve)	P. Diehl	12,770	Apr. 3	121	1673
"Big Two, or The Great Western Cholera and Cramp Cure." (For Medicine.)	T. H. Le Dane	12,717	Mar. 20	121	1009
"Boardman's Putnam Coffee Java & Mocha." (For Coffee)	W. Boardman & Sons Co	12,788	Apr. 17	121	2324
"Bohemian." (For Beer)	Milwaukee Lithographing Company.	12,693	Mar. 6	121	336
"Brainalgine." (For Medicine)	T. E. Smith	12,697	Mar. 6	121	336
"Burnham." (For Canned Corn)	Wayne County Preserving Co	12,737	Mar. 27	121	1345
"C. W. C. Camps Wonderful Cure." (For Medicine)	C. W. C. Medicine Company	12,769	Apr. 3	121	1673
"Canon Cracker." (For Popcorn)	W. Schroeder	12,756	Apr. 3	121	1673
"Cavendish Bridge Score." (For Bridge Scoring Devices)	Brentanos	12,818	Apr. 24	121	2661
"Celeri." (For Vegetable Tonics)	Wilmanns Bros. Co	12,810	Apr. 24	121	2661
"Century Maidens." (For Cigars)	J. F. O'Donnell	12,695	Mar. 6	121	336
"Champagne Ginger Ale." (For Ginger-Ale)	R. Frank & Co	12,786	Apr. 17	121	2324
"Cherokee Maid." (For Cigars)	Cole Lithographing Co	12,796	Apr. 24	121	2661
"Cleopatra Massage Cream and Skin Food." (For a Toilet Lotion.)	Facial Toilet Manufacturing Company.	12,740	Mar. 27	121	1345
"Climax Brand Apricots." (For Apricots)	Castle Brothers	12,760	Apr. 3	121	1673
"Comparto." (For Sponges)	A. Moses Sons & Co	12,700	Mar. 6	121	336
"Cowboy Brand Selected California Prunes." (For Prunes)	Castle Brothers	12,762	Apr. 3	121	1673
"Creso." (For Biscuit)	Hitchner Biscuit Company	12,732	Mar. 27	121	1345
"Crystal Brand." (For Sal-Soda)	John H. Voss Company	12,789	Apr. 17	121	2324
"Cupidine." (For a Lotion)	C. R. Wilson	12,713	Mar. 20	121	1009
"Decree." (For Cigars)	H. Sommer Company	12,730	Mar. 27	121	1345
"Denol." (For Tablets)	T. A. Allen	12,698	Mar. 6	121	336
"Detroit Lake Rye." (For Rye Whisky)	Pederson Mercantile Company	12,753	Apr. 3	121	1673
"Diamond C Brand California Peaches." (For Peaches)	Castle Brothers	12,757	Apr. 3	121	1673
"Doctor Sylvester's." (For Veterinary Preparations)	A. Aarons	12,808	Apr. 24	121	2661
"Dr. Bent's No. 1." (For Medicine)	Dakin Drug Co	12,768	Apr. 3	121	1673
"Fabrica de Tabacos, Cigaros Exquisitos." (For Cigars)	Otis Lithograph Co	12,782	Apr. 17	121	2324
"Faultless." (For Canned Corn)	Wayne County Preserving Co	12,733	Mar. 27	121	1345
"Fel Bovis Button Tablets." (For Medicine)	S. M. and J. I. Lowry	12,742	Mar. 27	121	1345
"Fleming Shoe Machine Thread." (For Shoe-Machine Thread)	Landis Machine Company	12,792	Apr. 17	121	2324
"Flora Brand California Moorpark Apricots." (For Apricots)	Castle Brothers	12,759	Apr. 3	121	1673
"Fountain Heights Whiskey." (For Whisky)	Birmingham Distilling Co	12,803	Apr. 24	121	2661
"Franklin Tablets." (For Medicine)	E. T. Rider	12,784	Apr. 17	121	2324
"Garrison's Croup Salve." (For Salve)	J. Garrison	12,716	Mar. 20	121	1009
"Gitt's Anti Kry." (For Medicine)	C. D. Gitt	12,785	Apr. 17	121	2324
"Good Old Age Bourbon." (For Bourbon Whisky)	Pederson Mercantile Company	12,752	Apr. 3	121	1673
"Good-Shot Rye." (For Rye Whisky)	Pederson Mercantile Company	12,754	Apr. 3	121	1673
"Gyp-C-Qure." (For Horse Remedy)	H. Quirk	12,767	Apr. 3	121	1673
"Havalawn." (For Grass-Seed Mixture)	St. Louis Seed Company	12,816	Apr. 24	121	2661
"Havarye." (For Whisky)	Pederson Mercantile Company	12,751	Apr. 3	121	1673
"Heidelberg." (For Beer)	Home Brewing Company	12,705	Mar. 13	121	686
"Herbs H T Tonic." (For a Tonic)	K. Herbert	12,783	Apr. 17	121	2324
"Hiawatha." (For Natural Lithia-Spring Water)	L. M. Park	12,703	Mar. 13	121	686
"Hickory Carbon Paper." (For Carbon-Paper)	W. C. Lewis	12,778	Apr. 3	121	1673
"Hires The Only Rootbeer." (For Carbonated Rootbeer)	Charles E. Hires Company	12,729	Mar. 27	121	1345
"Holiday Coffee." (For Coffee)	Canby, Ach & Canby Co	12,731	Mar. 27	121	1345
"Imported." (For Cigars)	A. T. Kinney	12,781	Apr. 17	121	2324
"Jack-Knife Rye." (For Whisky)	L. Dubetz	12,706	Mar. 13	121	686
"John Taylor's Ham." (For Ham)	Taylor Provision Co	12,738	Mar. 27	121	1345
"K-a-u-r-i." (For Varnish)	Brooklyn Varnish M'f'g Co	12,794	Apr. 17	121	2324
"Kaiser Beer." (For Beer)	Western Brewing Company	12,780	Apr. 10	121	1975
"Kardinal." (For Beer)	Adolf Schmidt's Kloster Brewery	12,779	Apr. 10	121	1975
"Kermer's Little Cannon Ball Bills." (For a Liver-Pill)	Kermer Remedy Company	12,809	Apr. 24	121	2661
"Kola Mint." (For Kola Mint)	Liquid Carbonic Company	12,704	Mar. 13	121	686
"La Garon." (For Cigars)	M. P. Garonzik	12,744	Apr. 3	121	1673
"La Rouge Claire." (For a Fluid Preparation for Beautifying the Complexion.)	M. E. S. Ransford	12,813	Apr. 24	121	2661
"Lady Alice." (For Perfumery)	Jennings Manufacturing Co	12,715	Mar. 20	121	1009
"Laurel Brand California Apricots." (For Apricots)	Castle Brothers	12,761	Apr. 3	121	1673
"Laurent's Honey and Glycerine Jujubes." (For a Preparation of Honey and Glycerin.)	F. Laurent & Sons	12,772	Apr. 3	121	1673
"Lithia Holland Gin." (For Gin)	L. M. Smith	12,801	Apr. 24	121	2661
"Malt Juice." (For Malt-Juice)	C. H. von Klein	12,694	Mar. 6	121	336
"Manhattan." (For Malt Extract)	Paragon Malt Extract Co	12,797	Apr. 24	121	2661
"Marigold Breakfast Syrup." (For Syrup)	Cargill-Wight Co	12,707	Mar. 13	121	686

Alphabetical list of labels for March and April—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Maywood Brand." (For Prunes)	Maywood Packing Co	12,764	Apr. 3	121	1673
"Mazo." (For Soap)	Mazo Manufacturing Company	12,807	Apr. 24	121	2661
"Mirthful Scotch Whiskey." (For Scotch Whisky)	Elder-Harrison Co	12,787	Apr. 17	121	2324
"Mitt." (For Smoking-Tobacco)	Schroeder, Kleine Grocer Co	12,702	Mar. 13	121	686
"Nevoburna." (For Fireproofing Starch Compound)	J. W. Maxwell	12,791	Apr. 17	121	2324
"Newark." (For Canned Corn)	Wayne County Preserving Co	12,734	Mar. 27	121	1345
"Old Jones Valley Whiskey." (For Whisky)	Birmingham Distilling Co	12,802	Apr. 24	121	2661
"Old Legal Whiskey." (For Whisky)	Parker Blake Co	12,727	Mar. 27	121	1345
"Old Settlers." (For Canned Peas)	Pioneer Canning & Pickling Co	12,765	Apr. 3	121	1673
"100 Good Things to Eat." (For Preserved Fruits, Vegetables, and Table Delicacies.)	Erie Preserving Company	12,804	Apr. 24	121	2661
"Orcherade." (For Extracts and Beverages)	W. H. Hutchinson & Son	12,728	Mar. 27	121	1345
"Oriental Toilet Powder." (For Toilet Powder)	Gray Lithograph Co	12,773	Apr. 3	121	1673
"Our National Friend." (For Cigars)	Koelle-Mueller Label Co	12,701	Mar. 13	121	686
"Our Pride California Peaches." (For Peaches)	Castle Brothers	12,758	Apr. 3	121	1673
"Plumsure." (For Cigars)	O. L. Schwencke Lithographic Co	12,743	Apr. 3	121	1673
"Portland Pointers." (For Cigars)	C. Brinton	12,795	Apr. 24	121	2661
"Prof. Emil Linnebach's Mysterious Remedy for Toothache and Facial Neuralgia." (For Medicine.)	E. Linnebach	12,741	Mar. 27	121	1345
"Pros't." (For Beer)	Ph. Kling Brewing Co	12,800	Apr. 24	121	2661
"Pungent Aromatic Ginger Ale." (For Ginger-Ale)	Western Carbonic Acid Gas Co	12,798	Apr. 24	121	2661
"Puritan Massage Cream." (For Massage-Cream)	Puritan Massage Cream Co	12,814	Apr. 24	121	2661
"Radium-I-See." (For Medicine)	Wolverton's N. Y. Co	12,696	Mar. 6	121	336
"Red Feather." (For Beer)	F. J. Traunmiller	12,749	Apr. 3	121	1673
"Red Seal." (For Beer)	St. Louis Brewing Association	12,719	Mar. 20	121	1009
"Red Star." (For Massage-Cream)	Red Star Massage Cream Co	12,714	Mar. 20	121	1009
"Robt. Hamilton Old Tom Gin." (For Gin)	D. Holzman & Company	12,720	Mar. 20	121	1009
"Royal Anti-Rust Enamel." (For Enamel)	J. S. Grainer & Co	12,793	Apr. 17	121	2324
"Santa Humo." (For Cigars)	Schmidt & Co	12,746	Apr. 3	121	1673
"Santo Colorado." (For Cigars)	Schmidt & Co	12,745	Apr. 3	121	1673
"Sapolin Glass Frosting." (For Glass-Frosting)	Gerstendorfer Bros	12,815	Apr. 24	121	2661
"Souvenir Brand California Prunes." (For Prunes)	Castle Brothers	12,763	Apr. 3	121	1673
"Starchluster." (For Starch-Luster)	Columbia Wax Works	12,776	Apr. 3	121	1673
"Sulphosol, A Life Preserver." (For Soluble Sulfur)	Empire Soluble Sulphur Corporation.	12,708	Mar. 13	121	686
"Swissess." (For Cigars)	Schmidt & Co	12,747	Apr. 3	121	1673
"The Barnett Hog Remedy and Stock Food." (For a Combined Food and Condition-Powder for Live Stock.)	C. H. Wintersteen	12,766	Apr. 3	121	1673
"The Clincher Curtain Fastener." (For Curtain-Fasteners)	Grand Rapids Novelty Manufacturing Company.	12,711	Mar. 13	121	686
"The Compactum Handkerchief." (For Handkerchiefs)	Acheson Harden Company	12,725	Mar. 20	121	1009
"The Hibernia." (For Handkerchiefs)	Acheson Harden Company	12,732	Mar. 20	121	1009
"The Ideal Washing Fluid." (For a Washing Fluid)	C. A. Moosbrugger	12,775	Apr. 3	121	1673
"The Indianapolis Whip." (For Whips)	M. Rehfuss, Jr	12,710	Mar. 13	121	686
"The New Chemical Felt." (For a Felt for Polishing Gold and Silver.)	M. C. Pritchard	12,726	Mar. 20	121	1009
"The New Linene Handkerchiefs." (For Handkerchiefs)	Acheson Harden Company	12,724	Mar. 20	121	1009
"The Nightingale." (For Talking-Machine Records)	Englewood Co. Consolidated Factories.	12,817	Apr. 24	121	2661
"The Old Time Irish Linen Hdkfs." (For Handkerchiefs.)	Acheson Harden Company	12,723	Mar. 20	121	1009
"The Scott Hip-Form and Bustle." (For Hip-Forms)	C. H. Scott	12,806	Apr. 24	121	2661
"Trowbridge's Chocolate Trowco Puffs." (For Confectionery)	Trowbridge Chocolate Chip Co	12,755	Apr. 3	121	1673
"U. S. Army Standard, Uncle Sam." (For Seamless Half-Hose)	W. B. Beyer	12,777	Apr. 3	121	1673
"Van Emden Ground Chocolate." (For Chocolate)	Van Emden Cocoa Co	12,721	Mar. 20	121	1009
"Verbena Hair Tonic." (For Hair-Tonic)	J. Ottmann Lithographing Co	12,812	Apr. 24	121	2661
"Wavenlock." (For Hair-Tonic)	F. H. McGuire	12,712	Mar. 20	121	1009
"Wayne." (For Canned Corn)	Wayne County Preserving Co	12,736	Mar. 27	121	1345
"Wilt's Hair Restorer." (For Hair-Restorer)	E. G. Barckhoff & Co	12,709	Mar. 13	121	686
"Words are Flowers Fruits are Facts Texas Post Oak." (For Medicine.)	J. Mack Mahon	12,718	Mar. 20	121	1009
"'Zenith Brand' Metal Clasp Envelopes." (For Envelops)	C. J. Cohen & Son	12,805	Apr. 24	121	2661

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A A Dentifrice Cream." (For a Dentifrice)	Atlanta Antiseptic Co	1,589	Mar. 6	121	336
"A Trip Around Candies, Johnston." (For Confections and Candies.)	Hummel & Downing Co	1,606	Mar. 27	121	1345
"Adler's Young Men's Summer Styles." (For Men's Summer Apparel.)	David Adler & Sons Clothing Co	1,599	Mar. 20	121	1009
"Asbestol." (For Gloves and Mittens)	Joseph N. Eisendrath Company	1,627	Apr. 24	121	2661
"August Flower." (For Medicine)	G. G. Green	1,594	Mar. 13	121	686
"Belding's Yardwide Guaranteed Satin." (For Satins)	Belding Bros. & Co	1,598	Mar. 20	121	1009
"Bog i Hrvati." (For a Liquor Made from White Corn Whisky and Brandy.)	J. Kovačević	1,631	Apr. 24	121	2661
"Centennial Prize Medal." (For Malt Liquors)	J. Ruppert	1,622	Apr. 17	121	2324
"Chief Kokomo." (For Rubber Tires)	Kokomo Rubber Company	1,603	Mar. 20	121	1009
"Crescent Acetylene Burners." (For Acetylene-Burners)	Crescent Burner Manufacturing Company.	1,612	Mar. 27	121	1345
"Design for Card Box." (For Playing-Cards)	Willis W. Russell Card Co	1,602	Mar. 20	121	1009
"Drink Pepsi-Cola." (For a Health-Drink)	Pepsi-Cola Company	1,620	Apr. 10	121	1975
"Fashions of the Spring Season 1906." (For Men's Spring Apparel.)	David Adler & Sons Clothing Co	1,592	Mar 13	121	686
"Flick's Antiseptic Catarrh Salve." (For a Salve)	F. L. Flick,	1,595	Mar. 13	121	686
"Imperial Hat Ads 1906." (For Hats)	Samuel Mundheim Co	1,597	Mar. 20	121	1009
"Imperial Hats 1906." (For Hats)	Samuel Mundheim Co	1,587	Mar. 6	121	336
"Juanita." (For Flour)	Scott County Milling Co	1,628	Apr. 24	121	2661
"Men's Apparel." (For Men's Apparel)	W. C. Both	1,588	Mar. 6	121	336
"Men's Apparel." (For Men's Apparel)	W. C. Both	1,593	Mar. 13	121	686
"Men's Apparel." (For Men's Apparel)	W. C. Both	1,621	Apr. 17	121	2324
"Motor Car and Lantern Backs Bicycle Playing Cards." (For Playing-Cards.)	United States Playing Card Company.	1,625	Apr. 24	121	2661
"(Next Morning.) Bromo-Seltzer." (For Bromo-Seltzer)	Emerson Drug Company	1,632	Apr. 24	121	2661
"Oldsmobile Model B—Straight Dash." (For an Automobile)	Shaw-Torrey Co	1,601	Mar. 20	121	1009
"Oldsmobile Model L." (For an Automobile)	Shaw-Torrey Co	1,604	Mar. 20	121	1009
"Oldsmobile Model S." (For Automobiles)	Shaw-Torrey Co	1,605	Mar. 20	121	1009
"Print for Playing-Cards." (For Playing-Cards)	Willis W. Russell Card Co	1,606	Mar. 20	121	1009
"Refrigerators." (For Refrigerators)	F. Tettenborn	1,596	Mar. 13	121	686
"Royal Ace." (For Playing-Cards)	Willis W. Russell Card Co	1,619	Apr. 3	121	1674
"Royal Wrapper." (For Playing-Cards)	Willis W. Russell Card Co	1,611	Mar. 27	121	1345
"Sapolin Carriage Gloss Colors." (For Carriage Gloss-Colors)	Gerstendorfer Bros	1,610	Mar. 27	121	1345
"Some Up-To-Date Mother Goose." (For Shoes)	V. Schoenecker Boot & Shoe Company.	1,614	Mar. 27	121	1345
"Star Enamel and Sapolin Floor Stain." (For Enamel and Floor-Stain.)	Gerstendorfer Bros	1,626	Apr. 24	121	2661
"Star Enamel and Sapolin Varnish Stain." (For Enamel and Varnish.)	Gerstendorfer Bros	1,613	Mar. 27	121	1345
"Stevens." (For Firearms)	J. Stevens Arms & Tool Co	1,501	Mar. 6	121	336
"Tabasco Heaters." (For Heaters)	Kewanee Boiler Company	1,618	Apr. 3	121	1674
"The Best in the Basket." (For Flour)	Washburn-Crosby Company	1,633	Apr. 24	121	2661
"The Eureka" The Standard Water Softener & Purifier of the World. (For a Water Softening and Purifying Apparatus.)	H. Romünder	1,629	Apr. 24	121	2661
"The Gem Folding Take-Up Twine and Paper Bag Holder." (For Twine-Holders.)	E. O. Bulman	1,607	Mar. 27	121	1345
"The Maid's Dilemma." (For Beer)	Joseph Schlitz Brewing Company.	1,624	Apr. 17	121	2324
"The Mundy Hat." (For Hats)	Samuel Mundheim Co	1,630	Apr. 24	121	2661
"The Pell Vona Seamless Coat." (For Coats)	P. Vona	1,616	Apr. 3	121	1674
"The Second Mundy." (For Hats)	Samuel Mundheim Co	1,617	Apr. 3	121	1674
"The Sign of the Best Glove." (For Gloves and Mittens)	Joseph N. Eisendrath Company	1,615	Apr. 3	121	1674
"Uncle John" (For Confectionery)	D Auerbach & Sons	1,609	Mar. 27	121	1345
"Velvo." (For a Face Massage-Cream)	G. C. Krusen	1,600	Mar. 20	121	1009
"Wrapper for Playing Cards." (For Playing-Cards)	Willis W. Russell Card Co	1,623	Apr. 17	121	2324
		1,590	Mar. 6	121	336

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Transmitting electrical impulses and signals and apparatus therefor.	G. Marconi. (Reissue)	11,913	June 4, 1901	Mar. 10, 1906	121	1016

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ALPHABETICAL LIST OF TRADE-MARKS PUBLISHED.

Title.	Name.	Serial No.	Date.	Official Gazette. Volume.	Page.
Abrading and polishing strips	S. S. White Dental Mfg. Co	12,854	Apr. 10	121	1949
Abrading disks, wheels, and points	S. S. White Dental Mfg. Co	12,855	Apr. 10	121	1949
Accordions	C. Bruno	15,278	Mar. 27	121	1328
Adhesive tape	Okonite Company	14,017	Apr. 10	121	1952
Albumen obtained from the treatment of starch	Tolhausen & Klein	11,940	Mar. 27	121	1319
Ale	Robert Smith Ale Bwg Co	12,643	Mar. 6	121	310
Ale	James Hanley Brewing Co	16,047	Mar. 6	121	318
Ale	Robert Smith Ale Brewing Co	414	Mar. 13	121	647
Ale	J. Labatt	4,087	Mar. 27	121	1307
Ale	Suffolk Brewing Company	13,112	Apr. 24	121	2630
Ale	New England Brewing Company.	13,117	Apr. 24	121	2630
Ale. Ginger-	A. S. Holberg	16,427	Mar. 6	121	320
Ale. Ginger-	Standard Bottling & Extract Co.	11,326	Mar. 13	121	664
Ale. Ginger-	Hagan & Dodd Co	10,519	Apr. 10	121	1943
Alterative, tonic, and blood-purifying compounds	S. K. Elliott	16,218	Mar. 27	121	1331
Anesthetics	Farbwerke vorm. Meister Lucius & Brüning.	14,207	Mar. 27	121	1325
Animal-traps	W. A. Reddick	4,164	Apr. 10	121	1935
Anodyne possessing analgesic and antipyretic qualities	A. E. Stromberg	9,862	Apr. 3	121	1635
Anodynes	Lloyd Brothers	7,734	Mar. 13	121	657
Antiseptic and deodorant mouth and tooth wash. Alkaline.	H. K. Mulford Company	10,481	Apr. 3	121	1635
Antiseptic and disinfectant. Liquid	C. V. Dorman	14,495	Mar. 13	121	671
Antiseptic dressing	W. G. Hughes Company	17,212	Apr. 24	121	2644
Antiseptic for internal and external uses. Liquid	Voigt & Co	8,348	Mar. 20	121	977
Antiseptic germ, insect, and worm destroyer	National Medical Company	3,880	Apr. 3	121	1626
Antiseptic non-fatty and soluble lubricating-jelly	Van Horn & Sawtell	15,387	Apr. 24	121	2636
Antiseptic or disinfecting chemical compound	Hance Bros. & White	5,686	Mar. 20	121	975
Antiseptic. Pharmaceutical preparation made from oil of wintergreen for an	Lloyd Brothers	9,924	Mar. 6	121	299
Antiseptic solution	J. H. Eberhardt	10,280	Mar. 6	121	301
Antiseptic solution	N. M. Hoon	14,470	Mar. 6	121	315
Antiseptics and deodorants	Farwerke vorm. Meister Lucius & Brüning.	12,710	Mar. 6	121	310
Antiseptics or germicides	J. F. Ballard	8,472-3	Apr. 3	121	1633
Art-drapery robes	Eddystone Manufacturing Company.	10,649	Mar. 13	121	663
Asphalt	Warren Chemical & Manufacturing Company.	12,538	Mar. 6	121	309
Asphalt	H. Huntington & Son	5,573	Mar. 20	121	975
Asphalt	Warren Chemical & Manufacturing Company.	12,539	Apr. 10	121	1948
Asphalt mastic	Gabriel & Schall	200	Apr. 24	121	2615
Asphaltum. Refined	Southern Refining Company	7,742	Apr. 3	121	1632
Augers, bits, and gimlets	Simmons Hardware Company	14,945	Apr. 17	121	2300
Automobiles	Premier Motor Manufacturing Company.	14,875-6	Mar. 27	121	1326-7
Automobiles	Aerocar Company	17,250-1	Mar. 27	121	1333
Automobiles	J. C. Higdon	12,740	Apr. 17	121	2294
Automobiles	B. A. Gramm	10,776	Apr. 24	121	2626
Automobiles and parts thereof	Pope Manufacturing Company	9,020	Apr. 24	121	2623
Awls and punches. Belt	Greene Tweed & Co	15,265	Mar. 6	121	317
Axes	American Tool Company	13,363	Mar. 27	121	1322
Axes, adzes, and hatchets	F. W. Peck	13,034	Mar. 6	121	311
Axes and hatchets	National Cutlery Co	7,640	Mar. 6	121	296
Axes and hatchets. Steel	H. Keidel	11,827	Mar. 13	121	665
Axes, hatchets, and adzes	Supplee Hardware Company	13,825	Mar. 20	121	990
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	13,583	Apr. 24	121	2632
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company	13,854-5	Apr. 24	121	2633
Axes, hatchets, and adzes	Hibbard, Spencer, Bartlett & Company.	17,151	Apr. 24	121	2643
Axle-grease	Hill Top Oil Co	15,143	Apr. 10	121	1954
Bacon and hams	John Morrell & Company	15,260	Mar. 6	121	317
Bagging. Jute	American Manufacturing Company.	16,187	Apr. 24	121	2638
Bags for bonnets, hats, &c	S. Nusbaum	14,976	Mar. 13	121	673
Baking-powder	Sprague, Warner & Company	16,651	Mar. 6	121	321
Baking-powder	Grand Union Tea Co	9,866	Mar. 13	121	662
Baking-powder	E. M. Chase Co	8,677	Mar. 20	121	978
Baking-powder	Price Baking Powder Company	11,571	Mar. 20	121	984
Baking-powder	Sprague, Warner & Company	9,793	Mar. 27	121	1315
Baking-powder	Cleveland Baking Powder Company.	11,320-1	Mar. 27	121	1318
Baking-powder	F. L. Zabriskie	13,808	Mar. 27	121	1324
Baking-powder	E. Ottenheimer & Sons	15,427	Apr. 10	121	1955
Baking-powder	Tone Bros	3,319	Apr. 17	121	2280
Baking-powder	Cleveland Baking Powder Company.	11,322	Apr. 24	121	2627
Baking-powder	Schwabacher Bros. & Co	12,961	Apr. 24	121	2629

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Baking-powder, cream of tartar, saleratus, and bicarbonate of soda.	E. R. Durkee & Co	15,616	Apr. 3	121	1648
Balls. Base, foot, and tennis	Hibbard, Spencer, Bartlett & Company.	15,415	Apr. 24	121	2636
Balls. Foot, base, and tennis	Hibbard, Spencer, Bartlett & Company.	16,764	Apr. 24	121	2641
Balls. Golf	A. G. Spalding & Bros	13,563	Mar. 6	121	312
Balm for the complexion	W. P. Ward	7,624	Mar. 13	121	656
Bath-tubs	Standard Sanitary Mfg. Co	13,134	Mar. 27	121	1322
Bats. Base-ball	C. P. Young	16,178	Apr. 24	121	2638
Batteries. Dry	Empire State Dry Battery Co	13,647	Mar. 27	121	1323
Bearings. Ball	Hess-Bright Manufacturing Co	7,064	Apr. 10	121	1939
Beds. Davenport	C. J. Kindel Bedding Company	16,988	Mar. 13	121	679
Bedspreads and quilts	H. Schadewald	15,309	Apr. 24	121	2636
Beef extract	Pioneer Packing Company	13,741	Mar. 27	121	1323
Beef extracts and beef, iron, and wine	Liebig Extract Company	11,791	Mar. 20	121	985
Beef, pork, and mutton. Fresh	Agar Packing Company	6,212	Mar. 27	121	1309
Beer	Western Brewery Co	6,178	Mar. 13	121	653
Beer	Bergner & Engel Brewing Co	7,873	Mar. 20	121	977
Beer	Anheuser-Busch Brewing Association.	9,768	Mar. 20	121	980
Beer	N. Benjamin Son	15,051	Mar. 20	121	996
Beer	Anheuser-Busch Brewing Association.	9,782	Mar. 27	121	1315
Beer	Paul Weidmann Brwg. Co	13,603	Apr. 3	121	1642
Beer	United States Brewing Company of Chicago.	16,281	Apr. 3	121	1651
Beer	Springfield Breweries Company	7,843	Apr. 10	121	1939
Beer	Hoster-Columbus Associated Breweries Co.	3,633	Apr. 17	121	2280
Beer	Anheuser-Busch Brewing Association.	9,780	Apr. 17	121	2290
Beer	New England Brewing Company	13,116	Apr. 17	121	2295
Beer	Wacker & Birk Br'g & M'lt'g Co.	15,327	Apr. 17	121	2301
Beer and lager-beer	John Eichler Brewing Co	12,347	Apr. 24	121	2628
Beer and lager-beer	Harvard Brewing Co	9,056	Mar. 13	121	650
Beer and lager-beer	Harvard Brewing Co	9,055	Mar. 20	121	979
Beer in bottles	Harvard Brewing Co	9,058	Apr. 17	121	2289
Beer. Lager	Cleveland & Sandusky Brewing	12,463	Mar. 6	121	309
Beer. Lager	Olympia Brewing Co	9,946	Mar. 6	121	300
Beer. Lager	Joseph Schlitz Brewing Company.	11,277	Mar. 6	121	303
Beer. Lager	Hudson County Consumers Brewing Co.	15,128	Mar. 13	121	674
Beer. Lager	Consumers Park Brewing Co	15,129	Mar. 13	121	674
Beer. Lager	C. Feigenspan, a Corporation	15,927	Mar. 13	121	675
Beer. Lager	John F. Wiessner & Sons Brewing Co. of Baltimore City.	4,738	Mar. 20	121	974
Beer. Lager	C. Schmidt and Sons Brewing Company.	5,125	Mar. 20	121	974
Beer. Lager	Peter Schoenhofen Brewing Company.	12,415	Apr. 3	121	1639
Beer. Lager	Peter Schoenhofen Brewing Company.	12,952	Apr. 3	121	1640
Beer. Lager	Peter Schoenhofen Brewing Company.	13,032	Apr. 3	121	1641
Beer. Lager	Peter Schoenhofen Brewing Company.	13,099	Apr. 3	121	1641
Beer. Lager	Peter Schoenhofen Brewing Company.	13,176	Apr. 3	121	1642
Beer. Lager	G. Ehret	2,273	Apr. 10	121	1934
Beer. Lager	A. Finck & Son	3,607	Apr. 10	121	1935
Beer. Lager	Peter Schoenhofen Brewing Company.	12,233	Apr. 10	121	1947
Beer. Lager	Peter Schoenhofen Brewing Company.	12,368	Apr. 10	121	1948
Beer. Lager	Peter Schoenhofen Brewing Company.	12,462	Apr. 10	121	1948
Beer. Lager	Peter Schoenhofen Brewing Company.	12,596	Apr. 10	121	1948
Beer. Lager	Peter Schoenhofen Brewing Company.	12,699	Apr. 10	121	1949
Beer. Lager	Peter Schoenhofen Brewing Company.	13,216	Apr. 10	121	1960
Beer. Lager	Peter Schoenhofen Brewing Company.	13,252	Apr. 10	121	1960
Beer. Lager	Peter Schoenhofen Brewing Company.	13,133	Apr. 17	121	2295
Beer. Lager and bottled	Beadleston & Woerz	2,260	Apr. 24	121	2616
Beers	Terre Haute Brewing Co	2,901	Mar. 20	121	971
Belt-fasteners	Beadleston & Woerz	2,266	Mar. 27	121	1305
Belt preservatives and fillers	Greene Tweed & Co	14,968-9	Mar. 13	121	673
Belting	Cling-Surface Company	15,831	Apr. 3	121	1649
Belting. Round and flat leather	Akron Belting Company	8,790	Mar. 13	121	650
	Troy Belting and Supply Company.	14,018	Apr. 24	121	2633
Beverage. Fruit-juice	R. M. Hughes	5,806	Mar. 13	121	652
Beverage-syrup	M. L. Eppstein	8,943	Mar. 27	121	1314
Beverages prepared from fruit-juices, and fruit-juices, including essences, extracts, &c.	Sunlit Fruit Company	13,538	Mar. 13	121	669
Biscuit or crackers	Natural Food Company	7,383-4	Mar. 27	121	1310
Biscuit or crackers	Natural Food Company	13,896	Mar. 27	121	1324
Biscuits	J. Neurihrer	12,896	Mar. 6	121	310
Biscuits known as rusks	Holland Rusk Co	9,944	Mar. 6	121	300
Bitters	A. P. Ordway	3,685	Mar. 13	121	649
Bitters	Dr. J. G. B. Siegert & Hijos	6,025	Mar. 27	121	1309
Bitters	V. Franz Co	9,100	Apr. 3	121	1634

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Bitters	S. Hochstadter	14,333	Apr. 10	121	1953
Bitters. Cordial	Franciscan Company	16,323	Apr. 17	121	2304
Bitters. Herb	Aschenbach & Miller	9,931	Mar. 20	121	980
Blankets, comfortables, and spreads	Smith, Hogg & Co	5,272	Apr. 24	121	2618
Blood-purifier and liver-tonic	A. A. Kleinschmidt	2,002	Mar. 20	121	970
Bluing	A. Pfromm	11,697-8	Apr. 10	121	1946
Bluing	Ultramarine Company	16,901	Apr. 17	121	2307
Boiler compounds for preventing or removing incrustation	American Chemical Works	15,564	Apr. 3	121	1647
Boilers	Utica Heater Co	12,115	Apr. 10	121	1947
Boilers. Range	Hayes Mfg. Co	17,092	Mar. 20	121	1000
Boilers. Steam and hot-water heating	New York Central Iron Works Co.	6,121	Apr. 17	121	2285
Boilers. Water-tube	Aultman & Taylor Machinery Company.	542	Mar. 20	121	969
Boilers. Water-tube	A. D. Granger Co	5,203	Apr. 17	121	2282
Bolt and nut making machinery	Acme Machinery Co	10,978	Apr. 24	121	2626
Bone for case-hardening, coloring, and annealing	Rogers & Hubbard Co	13,806	Mar. 6	121	313
Bonnets, hats, and head-dresses. Women's	K. Gandy	3,603	Mar. 27	121	1307
Book of directions for technical instructions	Lodge and Shipley Machine Tool Company.	6,440	Mar. 13	121	654
Books, autographic registers, and printed rolls for manifolding. Carbon-paper manifolding	Philip Hano & Co	11,614	Mar. 6	121	305
Books for railway employees. Educational	Railway Educational Association.	11,804	Mar. 20	121	985
Books for railway employees. Educational	Railway Educational Association.	11,806	Mar. 20	121	985
Books on salesmanship	National School of Salesmanship.	13,350	Mar. 6	121	312
Books on salesmanship	National School of Salesmanship.	13,351	Mar. 13	121	668
Books on salesmanship	National School of Salesmanship.	13,352	Mar. 27	121	1322
Boot-protectors. Metal	Blakey's Boot Protectors, Limited.	8,014	Apr. 3	121	1632
Boot-protectors. Metal and metal-and-rubber	Blakey's Boot Protectors, Limited.	8,013	Apr. 3	121	1632
Boot, shoe, and slipper heels, shanks, and edges. Burnishing-ink for finishing	Whittemore Brothers and Company.	15,216	Apr. 3	121	1645
Boots and shoes and leather for their manufacture. Leather	Rice & Hutchins	7,781	Mar. 6	121	296
Boots and shoes and leather for their manufacture. Leather	Rice & Hutchins	8,992	Mar. 6	121	298
Boots and shoes and leather used in their manufacture. Leather	Rice & Hutchins	7,795	Mar. 20	121	976
Boots and shoes. Leather	A. S. Fearey	10,471	Mar. 6	121	301
Boots and shoes. Leather	V. Schoenecker Boot & Shoe Company.	12,690	Mar. 6	121	310
Boots and shoes. Leather	Randall-Adams Co	13,652	Mar. 6	121	313
Boots and shoes. Leather	L. Wiebke	16,736	Mar. 6	121	323
Boots and shoes. Leather	E. S. Woodbury & Company	16,875	Mar. 6	121	324
Boots and shoes. Leather	Strong & Garfield Co	1,291	Mar. 13	121	648
Boots and shoes. Leather	Geo. E. Keith Company	7,847	Mar. 13	121	657
Boots and shoes. Leather	Smith-Briscoe Shoe Company	14,986	Mar. 13	121	673
Boots and shoes. Leather	Crowder-Mason Shoe Co	16,641	Mar. 13	121	676
Boots and shoes. Leather	A. Priesmeyer Shoe Co	11,566	Mar. 20	121	984
Boots and shoes. Leather	T. F. Peirce & Son	14,856	Mar. 20	121	994
Boots and shoes. Leather	N. M. Nelson	16,898	Mar. 20	121	999
Boots and shoes. Leather	Bradley & Metcalf Company	1,033	Mar. 27	121	1304
Boots and shoes. Leather	J. B. Hunter	3,100-1	Mar. 27	121	1305-6
Boots and shoes. Leather	A. A. Rosenbush & Co	7,474	Mar. 27	121	1311
Boots and shoes. Leather	Smith-Briscoe Shoe Company	14,932	Apr. 3	121	1645
Boots and shoes. Leather	Smith-Briscoe Shoe Company	14,988	Apr. 3	121	1645
Boots and shoes. Leather	Geo. D. Witt Shoe Co	16,128	Apr. 3	121	1650
Boots and shoes. Leather	Geo. D. Witt Shoe Co	13,462	Apr. 10	121	1950
Boots and shoes. Leather	Lynchburg Shoe Co	14,544-5	Apr. 10	121	1953-4
Boots and shoes. Leather	W. L. Douglas Shoe Co	14,489-90	Apr. 17	121	2296
Boots and shoes. Leather	Clapp & Tapley	10,669	Apr. 24	121	2625
Boots and shoes. Leather	Endicott-Johnson Company	10,709	Apr. 24	121	2626
Boots and shoes. Leather and canvas waterproof	Hirsh Brothers	15,461	Apr. 24	121	2637
Boots and shoes. Leather welted	United Shoe Machinery Company.	11,258	Apr. 24	121	2627
Boots and shoes. Men's leather	Smith-Briscoe Shoe Company	14,768	Apr. 24	121	2635
Boots, shoes, and slippers	W. A. Moody	12,496	Apr. 17	121	2293
Boots, shoes, and slippers and leather for their manufacture. Leather	Packard & Field	6,809	Mar. 27	121	1310
Boots, shoes, and slippers. Leather	Parker Holmes & Company	11,646	Mar. 20	121	984
Boots, shoes, and slippers. Leather	Preston B. Keith Shoe Company	16,541	Apr. 3	121	1652
Boots, shoes, and slippers. Leather	M. D. Wells Co	11,079	Apr. 24	121	2626
Boots, shoes, and slippers. Leather and cloth	Hanan & Son	4,752	Apr. 3	121	1628
Boots, shoes and slippers made wholly or in part of leather	Geo G Snow Co	14,457	Apr. 24	121	2634
Boots, shoes, and slippers. Men's and boys' leather	James A. Banister Company	17,269	Mar. 27	121	1333
Boots, shoes, and slippers of leather, &c., and soles therefor	Morse & Rogers	9,524	Mar. 6	121	299
Bottle nipples. Nursing	Seamless Rubber Co	6,326	Apr. 3	121	1630
Braid. Mercerized cotton	D. Goff & Sons	15,849	Apr. 10	121	1956
Braids. Silk and mohair	William Skinner Manufacturing Co.	9,582	Mar. 13	121	660
Brandy	P. Freiler	2,341	Mar. 27	121	1305
Brandy	P. J. Bowlin Liquor Co	8,630	Mar. 27	121	1313
Brandy. Cognac	A. C. Meukow & Co	13,965	Mar. 6	121	314
Brazing compound	R. Y. Bowlby & Co	10,335	Mar. 6	121	301
Brazing compound. Metallic	Weldarine Manufacturing Company.	13,017	Apr. 3	121	1641
Bread	P. Fleischmann	15,788	Apr. 3	121	1649
Bread	C. R. Miller	16,345	Apr. 17	121	2304
Bread, biscuits, rolls, pies, cakes, and crackers	J. Clary	16,664	Apr. 17	121	2305
Bread. Black Graham	H. Hirschman	13,042	Mar. 13	121	667
Bread. Wheat	E. A. Williams Incorporated	16,132	Apr. 10	121	1958
Brewers' pitch	J. E. Himes	4,431	Apr. 3	121	1628
Bricks for stove and furnace linings. Fire	S. D. Horton	6,055	Mar. 20	121	976
Bronze powders, leaf-brocades, flitters, &c	Gerstendorfer Bros	3,060	Mar. 27	121	1305
Brooches, scarf and cuff pins	Krements & Co	12,023	Apr. 10	121	1947
Brooms	American Broom & Brush Co	12,354	Mar. 13	121	666
Brooms	American Broom & Brush Co	16,747	Mar. 13	121	676

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Title.	Name.	Serial No	Date	Official Gazette. Vol	Page.
Brooms	Lee Broom & Duster Company	16,857	Apr 10	121	1961
Brooms and brushes	J. S. Barron & Co	985	Apr. 24	121	2615
Brushes for personal use and tooth and hair brushes	S. Maw, Son & Sons	6,730	Mar. 27	121	1310
Brushes. Lather-	Rubber & Celluloid Harness Trimming Co.	9,843	Apr. 10	121	1942
Brushes of all kinds	John L. Whiting & Son Co	3,571-3	Mar. 27	121	1306
Brushes of all kinds	John L. Whiting & Son Co	3,575	Mar. 27	121	1306
Brushes of all kinds	John L. Whiting & Son Co	3,577-8	Mar. 27	121	1306
Brushes of all kinds	John L. Whiting & Son Co	3,580-4	Mar. 27	121	1306
Brushes of all kinds	John L. Whiting & Son Co	3,586-92	Mar 27	121	1307
Brushes of all kinds	John L. Whiting & Son Co	3,579	Apr 3	121	1626
Brushes. Tooth-	Florence Manufacturing Company	17,280	Mar. 20	121	1002
Brushes. Tooth-	C. Loonen	10,688	Apr 3	121	1636
Brushes. Tooth-	C Loonen	10,687	Apr. 10	121	1943
Brushes. Tooth-	Florence Manufacturing Company	17,599	Apr 10	121	1965
Brushes. Tooth-	Florence Manufacturing Company	17,602-3	Apr 10	121	1965
Brushes. Tooth and nail	W. L. Martin	17,454	Apr. 3	121	1654
Buckets. Bottom-dumping	G. L. Stuebner	15,541	Apr. 3	121	1647
Bulletins. Financial-news	R. E. Edmondson	11,714	Apr. 3	121	1637
Burglar-alarms	Norfolk Novelty Corporation	14,646	Mar. 13	121	671
Burial-caskets, coffins, and fixtures therefor	National Casket Co	17,199	Apr. 24	121	2644
Burning fluids for use in lamps	General Safety Mantle Light Co.	10,829	Mar. 13	121	664
Bust-forms	Wright & Co	16,101	Mar. 6	121	319
Butter	S. T. Edel's Sons	11,511	Mar. 6	121	306
Butter	Fox River Butter Company	676	Mar. 13	121	647
Butter	Owl's Head Creamery Company	11,694	Mar. 27	121	1319
Butter	F. Grunert	15,256	Mar. 27	121	1328
Butter	W. P. Sumner	3,889	Apr. 3	121	1627
Butter	Blue Valley Creamery Company	11,512	Apr. 3	121	1637
Butter	D. E. Wood Butter Co	15,769	Apr. 3	121	1648
Butter-coloring preparations	Wells & Richardson Company	12,426	Mar. 20	121	988
Butter-coloring preparations	Wells & Richardson Company	12,425	Apr. 17	121	2294
Butter. Peanut-	H. Heide	16,888	Apr 24	121	2642
Buttons	Alma Manufacturing Co	14,798	Mar. 27	121	1326
Calfskin	George Martin Leather Co	16,763	Apr. 17	121	2306
Calicoes	American Printing Company	3,852	Mar. 13	121	650
Candies	C. E. Underwood	9,127	Mar. 6	121	298
Candies	Rochester Candy Works	16,769	Apr. 10	121	1960
Candies, bonbons, and chocolate candy	M. L. Morgenthau	10,966	Mar. 27	121	1318
Candies, chocolates, licorice confections, candied and glacé fruits, and bonbons.	C. Poyet, Inc	6,821	Mar. 13	121	654
Candies, chocolates, licorice confections, candied and glacé fruits, and bonbons.	C. Poyet, Inc	7,882	Mar. 13	121	657
Candy	Brandle & Smith Co	5,215	Mar 6	121	293
Candy	H. L. Hildreth	15,830	Mar. 6	121	318
Candy	Dilling & Co	16,793	Mar. 6	121	324
Candy	P. Wunderle	7,181	Mar. 13	121	655
Candy	W. Brownley	16,567	Mar 13	121	676
Candy	P. Wunderle	7,183	Mar 20	121	976
Candy	Robert F. Mackenzie Co	8,202	Mar. 27	121	1312
Candy	Darby Candy Co	13,529	Mar. 27	121	1323
Candy	P. Wunderle	8,708	Apr 3	121	1633
Candy	P. Wunderle	7,582	Apr 10	121	1939
Candy	Reymer & Brothers	15,822	Apr 10	121	1956
Candy	Manufacturing Company of America.	15,930	Apr 10	121	1957
Candy	Sprague, Warner & Company	9,795	Apr. 17	121	2290
Candy	Paul F. Beich Co	13,323	Apr. 17	121	2296
Candy	Robert F. Mackenzie Co	16,754	Apr. 17	121	2306
Candy and rock-candy syrups. Rock-	Knickerbocker Chocolate Company.	14,509	Apr. 10	121	1953
Candy. Chocolate-coated	Hook & Crownfield	16,314	Mar. 6	121	319
Candy. Mint	Manufacturing Company of America	15,655	Mar. 6	121	318
Candles and tapers	Price's Patent Candle Company	13,009	Mar. 6	121	313
Canned and tinned salmon	Richard B. Green & Co	7,472	Apr. 17	121	2286
Canned, bottled, and preserved fruits and vegetables	Wilson Grocery Company	4,646	Mar. 20	121	974
Canned, bottled, or preserved fruits and vegetables	Wilson Grocery Company	4,647	Apr 10	121	2618
Canned corn	P. Hohenadel, Jr	10,163	Mar. 27	121	1315
Canned corn and succotash	Saco Valley Canning Company	5,877-8	Apr. 24	121	2619
Canned corn and succotash	H. F. Webb Company	6,690	Apr. 24	121	2620
Canned corn and succotash	H. F. Webb Company	6,692	Apr. 24	121	2620
Canned corn and succotash	H. F. Webb Company	6,694-5	Apr. 24	121	2620
Canned corn, peas, pineapples, cherries, sauer-kraut, &c	L. Landau & Co	15,601	Apr. 3	121	1648
Canned corn, succotash, and beans	Saco Valley Canning Company	5,879	Apr. 24	121	2619
Canned fish	Gennerich & Von Bremen	11,172	Mar. 6	121	303
Canned fish, lobsters, clams, and clam-chowder	H. C. Baxter	8,340	Apr. 24	121	2622
Canned fish, lobsters, clams, and fish and clam chowder	Snow Flake Canning Co	8,349	Mar. 6	121	297
Canned fruits	Schwabacher Bros. & Co	11,830	Mar. 13	121	665
Canned fruits	California Canneries Co	2,936	Mar. 20	121	972
Canned fruits and vegetables	Bloomington Canning Co	173	Mar. 6	121	289
Canned fruits and vegetables	Torsch Packing Co	5,553	Mar. 6	121	293
Canned fruits and vegetables	Schwabacher Bros. & Co	11,831	Mar. 13	121	665
Canned fruits and vegetables	Griggs, Cooper & Company	9,647	Mar. 20	121	980
Canned fruits and vegetables	Sprague, Warner & Company	9,794	Mar. 20	121	980
Canned fruits and vegetables	Platt & Company	13,341	Mar. 20	121	990
Canned fruits and vegetables	Milliken, Tomlinson Co	14,928	Mar. 20	121	994
Canned fruits and vegetables	S. Hamill Company	78	Mar. 27	121	1303
Canned fruits and vegetables	Wilkinson, Gaddis & Co	8,392	Mar. 27	121	1313
Canned fruits and vegetables	Booth Packing Company	9,675	Mar. 27	121	1315
Canned fruits and vegetables	Pratt-Low Preserving Co	6,549	Apr. 3	121	1630
Canned fruits and vegetables	Wayne County Preserving Co	13,057-60	Apr. 3	121	1641
Canned fruits and vegetables	H. C. Baxter	10,988	Apr. 17	121	2292
Canned fruits and vegetables	Fischer Brothers	9,953	Apr. 24	121	2624
Canned fruits and vegetables	Cazenovia Canning Co	12,361-3	Apr. 24	121	2628
Canned fruits and vegetables	Cazenovia Canning Co	12,365	Apr. 24	121	2628

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Canned lobster	Griggs, Cooper & Company	9,643	Mar. 13	121	661
Canned lobster	Wilkinson Gaddis & Co	8,391	Mar. 27	121	1313
Canned lobster	H. C. Baxter & Bro	13,320	Apr. 24	121	2631
Canned lobster and mackerel	H. C. Barter	16,125	Mar. 20	121	999
Canned lobsters	Burnham & Morrill Company	6,184-5	Mar. 13	121	653
Canned lobsters	Burnham & Morrill Company	6,187	Mar. 13	121	653
Canned lobsters	J. Gilliam	2,733	Mar. 20	121	971
Canned or bottled vegetables	Gennerich & Von Bremen	13,766	Mar. 6	121	313
Canned oysters	Gibbs Preserving Company of Baltimore City	11,142	Mar. 6	121	303
Canned oysters	Booth Packing Company	13,800	Mar. 27	121	1324
Canned oysters	Gibbs Preserving Company of Baltimore City.	14,454	Apr. 24	121	2634
Canned pineapple	Booth Packing Company	13,797	Apr. 3	121	1643
Canned pineapples	Paul Taylor Brown Co	12,795	Mar. 20	121	989
Canned salmon	Fidalgo Island Packing Co	12,988	Apr. 3	121	1640
Canned salmon	Alaska Packers Association	8,138	Apr. 17	121	2287
Canned salmon	Fidalgo Island Packing Co	12,986	Apr. 24	121	2629
Canned salmon	Fidalgo Island Packing Co	12,989	Apr. 24	121	2630
Canned sardines	William Underwood Company	12,390	Mar. 27	121	1321
Canned succotash and Lima beans	H. F. Webb Company	6,693	Apr. 24	121	2620
Canned sugar-corn	H. F. Webb Company	6,689	Apr. 24	121	2620
Canned tomatoes, corn, beans, succotash, &c	L. De Groff & Son	14,515	Mar. 20	121	993
Canned vegetables	Baxter Bros. Co	8,350	Mar. 6	121	298
Canned vegetables	E. V. Stockham	11,439	Mar. 6	121	304
Canned vegetables and fruits	Francis H. Leggett & Company	8,495	Mar. 13	121	659
Capers	Griggs, Cooper & Company	18,305	Apr. 24	121	2648
Caps and blasting-fuses. Detonating	Aetna Powder Co	5,659	Mar. 27	121	1308
Caps or primers for blasting	Metallic Cap Manufacturing Co'y.	1,351	Apr. 24	121	2615
Caps or primers for blasting	Metallic Cap Manufacturing Co'y.	1,353	Apr. 24	121	2615
Caps. Percussion-	Eley Brothers	14,773	Apr. 17	121	2299
Car castings. Railway-	National Malleable Castings Company.	1,334	Apr. 3	121	1626
Car castings. Railway-	National Malleable Castings Company.	1,227	Apr. 10	121	1933
Car castings. Railway-	National Malleable Castings Company.	1,338	Apr. 10	121	1933
Car-couplers. Vertical-plane	National Malleable Castings Company.	1,335	Mar. 27	121	1304
Caramels and candies	American Caramel Co	6,552	Mar. 13	121	654
Carbons for electrical purposes	H. Reisinger	17,231	Mar. 20	121	1002
Cards. Playing-	United States Playing Card Co	1,575	Mar. 6	121	290
Cards. Playing-	United States Playing Card Co	1,607	Mar. 6	121	290
Cards. Playing-	United States Playing Card Co	1,791	Mar. 6	121	290
Cards. Playing-	New York Consolidated Card Company.	9,223-4	Mar. 6	121	298-9
Cards. Playing-	New York Consolidated Card Company.	10,131	Mar. 6	121	300
Cards. Playing-	New York Consolidated Card Company.	10,134	Mar. 6	121	300
Cards. Playing-	New York Consolidated Card Company.	10,146	Mar. 6	121	301
Cards. Playing-	New York Consolidated Card Company.	10,152	Mar. 6	121	301
Cards. Playing-	United States Playing Card Co	10,297	Mar. 6	121	301
Cards Playing-	United States Playing Card Co	11,209	Mar. 6	121	303
Cards. Playing-	United States Playing Card Co	1,579	Mar. 13	121	648
Cards. Playing-	New York Consolidated Card Company.	9,220	Mar. 13	121	659
Cards. Playing-	New York Consolidated Card Company.	3,962	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,303	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,310	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,313	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,317	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,327	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	4,329	Mar. 20	121	973
Cards. Playing-	New York Consolidated Card Company.	5,008	Mar. 20	121	974
Cards. Playing-	United States Playing Card Co	16,489	Mar. 20	121	999
Cards. Playing-	United States Playing Card Co	1,588	Mar. 27	121	1304
Cards. Playing-	New York Consolidated Card Company.	9,573	Mar. 27	121	1314
Cards. Playing-	New York Consolidated Card Company.	9,575	Mar. 27	121	1315
Cards. Playing-	New York Consolidated Card Company.	9,578	Mar. 27	121	1315
Cards. Playing-	New York Consolidated Card Company.	3,951	Apr. 3	121	1627
Cards. Playing-	New York Consolidated Card Company.	3,958	Apr. 10	121	1935
Cards. Playing-	New York Consolidated Card Company.	4,301	Apr. 10	121	1935
Cards. Playing-	New York Consolidated Card Company.	5,010	Apr. 10	121	1936
Cards. Playing-	A. Gabarró y Castelló	7,602	Apr. 10	121	1939
Cards. Playing-	New York Consolidated Card Company.	10,150	Apr. 10	121	1942
Cards. Playing-	United States Playing Card Co	13,075	Apr. 10	121	1949
Carpet-sweepers	Streator Metal Stamping Co	12,021	Mar. 13	121	665

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Carpet-sweepers	American Wringer Company	13,618	Apr. 10	121	1951
Carpet-warps	J. E. Reynolds	14,153	Mar. 13	121	670
Carpet-warps	J. E. Reynolds & Co	14,152	Mar. 20	121	992
Carpets and rugs. Woven	Bigelow Carpet Company	12,446	Mar. 20	121	988
Cartons for lamp chimneys and globes	Macbeth-Evans Glass Company	17,368	Apr. 10	121	1961
Cartridges and bullets	Union Metallic Cartridge Company.	10,804–5	Mar. 27	121	1318
Cartridges and parts thereof. Gun and pistol	Union Metallic Cartridge Company.	10,817	Apr. 10	121	1944
Cash and autographic registers	National Cash Register Co	6,672	Apr. 3	121	1633
Cavity-linings	S. S. White Dental Mfg. Co	12,868	Apr. 3	121	1640
Cement. Hydraulic	Utica Cement Mfg. Co	15,168	Mar. 27	121	1328
Cement. Hydraulic	Utica Hydraulic Cement Co	15,167	Apr. 3	121	1645
Cement. Portland	W. H. Meserole	2,153	Mar. 6	121	290
Cement. Portland	A. Clarke	8,011	Mar. 6	121	296
Cement. Portland	Edison Portland Cement Company.	10,570	Apr. 17	121	2291
Cement. Portland	Western Portland Cement Co	13,486	Apr. 24	121	2632
Cement. Rubber-	Western States Portland Cement Company.	17,177	Apr. 24	121	2643
Chairs	Montgomery Bros	14,575–80	Mar. 13	121	671
Champagne. Ginger-	Sheboygan Chair Company	12,622	Apr. 17	121	2294
Champagne. Ginger-	Manitou Mineral Springs Company.	5,812	Apr. 17	121	2284
Champagne or sparkling wine	Manitou Mineral Springs Company.	11,729	Apr. 17	121	2292
Cheese	American Wine Co	2,397	Mar. 20	121	971
Cheese-cutters. Computing	Popper Gray & Co	16,423	Mar. 27	121	1332
Cheese, especially cream-cheese	Anderson Computing Scale Company.	17,623	Apr. 10	121	1965
Chemical preparations for the treatment of malarial fevers, intestinal diseases, &c.	A. F. MacLaren Imperial Cheese Co	2,869	Mar. 20	121	971
Chemical solution for preserving materials exposed to the atmosphere from rust, decay, and scaling.	McKesson & Robbins	4,891	Mar. 20	121	974
Cheroots	P. Kerrin	12,408	Apr. 10	121	1948
Chisels and gouges	Threefoot Bros. & Co	7,442	Apr. 24	121	2621
Chocolate	Simmons Hardware Company	14,941	Apr. 17	121	2300
Chocolate	Runkel Brothers	13,008	Mar. 6	121	311
Chocolate	Société Générale Suisse de Chocolats.	11,935	Mar. 27	121	1319
Chocolate and candy of all kinds. Sweetened	Société Générale Suisse de Chocolats.	11,953	Mar. 27	121	1320
Chocolate and preparations thereof	M. S. Hershey	16,773–5	Mar. 13	121	677
Chocolate, cocoa, chocolate coatings, liquors, and powder	Arbuckle Bros	16,686	Mar. 6	121	322
Chocolate creams, caramels, and candies	M. S. Hershey	16,827	Apr. 24	121	2642
Chocolates and bonbons	Blue Ribbon Candy Company of Baltimore City.	7,541	Apr. 17	121	2286
Chocolates and bonbons	R. L. Perry Co	7,750	Apr. 3	121	1632
Chocolates and other bonbons	H. Heide	16,887	Apr. 24	121	2642
Cider	Walter M. Lowney Company	10,613	Apr. 24	121	2625
Cigarette-paper in all forms	Barrett & Barrett	13,078	Apr. 3	121	1641
Cigarettes	L. Kehlmann	17,365	Mar. 27	121	1333
Cigarettes	Butler-Butler	8,829	Mar. 6	121	298
Cigarettes	Butler-Butler	11,280	Mar. 6	121	304
Cigarettes	Butler-Butler	16,407–8	Mar. 6	121	319
Cigarettes	G. H. G. Wing	15,344	Mar. 20	121	997
Cigarettes	Teofani & Co	12,969	Apr. 3	121	1640
Cigarettes	Butler-Butler	16,409	Apr. 17	121	2304
Cigars	Butler-Butler	16,406	Apr. 24	121	2639
Cigars	Sanchez & Haya Co	6,913	Mar. 6	121	295
Cigars	Electric Cigar Company	7,353	Mar. 6	121	296
Cigars	American Cigar Company	7,380	Mar. 13	121	656
Cigars	J. Weinreich	7,953	Mar. 13	121	657
Cigars	J. Weinreich	8,529	Mar. 13	121	659
Cigars	C. B. Perkins	16,783	Mar. 13	121	677
Cigars	C. B. Perkins	16,873	Mar. 13	121	678
Cigars	P. Weinreich	7,951	Mar. 27	121	1312
Cigars	Williams & Brenckle Cigar Manufacturing Co.	13,488	Mar. 27	121	1323
Cigars	G. W. Kelly	15,222	Mar. 27	121	1331
Cigars	Duncan & Moorhead	11,910	Apr. 3	121	1638
Cigars	Cuesta, Rey & Co	13,392	Apr. 3	121	1642
Cigars	L. P. Bissell	16,019	Apr. 3	121	1650
Cigars	Henry Tobias & Company	16,126	Apr. 3	121	1650
Cigars	Cifuentes, Fernandez y Ca	8,944	Apr. 10	121	1941
Cigars	J. Weinreich	7,952	Apr. 17	121	2287
Cigars and stogies	J. G. Hansen	10,924	Apr. 24	121	2626
Cigars, cheroots, and cigarettes made from cigar-tobacco	S. S. Smith	16,631	Apr. 10	121	1960
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Co	8,433	Mar. 27	121	1313
Cigars, cheroots, and cigarettes made of cigar-tobacco	Cayey-Caguas Tobacco Company	16,915–16	Mar. 13	121	678
Cigars, cheroots, stogies, and tobacco for making same	Cayey-Caguas Tobacco Company	12,940	Mar. 20	121	989
Cigars. Havana	H. P. Strause	6,386	Mar. 6	121	294
Cigars. Havana	Havana Commercial Company	11,422	Mar. 20	121	984
Cigars. Havana	Havana Commercial Company	17,376–7	Apr. 10	121	1982
Cigars. Havana	Havana Commercial Company	11,424	Apr. 24	121	2627
Cigars. Little	Havana Commercial Company	17,378	Apr. 24	121	2644
Cigars. Little	Butler-Butler	14,484	Mar. 6	121	315
Cigars, stogies, and cheroots	Butler-Butler	16,411	Mar. 6	121	320
Cinchona alkaloids. Derivatives of	Independent Tobacco Manufacturers Promoting Company.	17,310	Apr. 3	121	1654
Circuit-controllers or switches	Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung.	15,882	Apr. 24	121	2637
Circuits. Devices for connecting branch and main	Albert and J. M. Anderson Manufacturing Company.	17,166	Mar. 20	121	1001
	H. T. Paiste Co	17,396	Mar. 27	121	1334

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Clams, clam-juice, and clam-chowder	Burnham & Morrill Company	7,558	Mar. 13	121	656
Claret in bottles	Compañia Vinicola del Norte de España.	11,428	Mar 13	121	665
Cleaning, cleansing, and washing. Dry soluble alkali powders for	J. B. Ford Company	15,065	Apr. 3	121	1645
Cleaning clothes, colored kid gloves, carpets, and washing hair. Preparation for	T. Joern	6,244	Mar. 20	121	976
Clock-movements	Schlenker & Kienzle	9,390	Mar. 13	121	660
Clocks	Year Clock Company	12,164	Mar. 20	121	986
Clocks. Alarm-	Western Clock Mfg. Co	14,445	Apr. 10	121	1953
Clocks. Alarm-	Wm. L. Gilbert Clock Company	10,754	Apr. 17	121	2291
Clocks and watches	Western Clock Mfg. Co	14,444	Mar. 27	121	1325
Clothes-wringers	American Wringer Company	13,635-7	Apr. 10	121	1952
Clothes-wringers	American Wringer Company	13,623	Apr. 17	121	2296
Clothes-wringers and parts thereof	American Wringer Company	13,625-6	Apr 10	121	1951
Clothes-wringers and parts thereof	American Wringer Company	13,628-32	Apr. 10	121	1951
Clothes-wringers and parts thereof	American Wringer Company	13,634	Apr. 10	121	1951
Coal	Equitable Coal & Coke Company	17,806	Apr. 10	121	1966
Coal	A. K. McKee	17,140	Apr. [illegible]	121	2643
Coal and coke	Hull Coal and Coke Corporation	385	Mar. 6	121	289
Coal used for welding and forging. Semibituminous	Lilly Coal Co	2,035	Mar. 13	121	649
Coatings. Metal-preservative	A. H. Stillwagon	9,532	Apr. 17	121	2289
Coats and trousers. Men's	E. M. Goldsmith	7,516	Mar. 20	121	976
Coats, overcoats, pants, and vests. Men's, youths', boys', and children's	Oehm & Co	11,279	Mar. 6	121	304
Coats, pants, and overalls	Syracuse Dry Goods Co	6,102	Mar. 13	121	653
Coats. Rainproof	L. E. Hess	1,364	Mar. 27	121	1304
Coats, vests, pantaloons, overcoats, and men's and boys' suits	Perry & Co	14,867	Mar. 20	121	994
Coats, vests, trousers, and overalls	O'Bryan Bros	1,007	Apr. 3	121	1625
Coats, vests, trousers, and overcoats	M. Wile & Company	12,074	Mar. 27	121	1320
Cocktails	S. C. Herbst Importing Co	9,066	Apr. 17	121	2289
Cocktails	C. Berry & Co	16,136	Apr. 17	121	2303
Cocktails and punch	W. H. Jones and Co	252	Apr 10	121	1933
Cocoa	Runkel Brothers	13,007	Mar 6	121	311
Cocoa	Enders and Mechener	4,268	Apr 3	121	1628
Cocoa and chocolate for food and beverages	Hawley & Hoops	8,999	Apr. 24	121	2623
Cocoa and chocolate products—namely, breakfast-cocoa, cocoa and chocolate powders, &c.	F. Bischoff	13,518	Mar. 6	121	312
Cocoa and preparations thereof	Arbuckle Bros	16,685	Mar. 6	121	624
Cocoanut. Prepared	Dunham Manufacturing Company.	16,462	Apr. 10	121	1959
Coffee	C. S. Morey Mercantile Company	12,063	Mar. 6	121	306
Coffee	Meyer Brothers Coffee and Spice Company.	12,707	Mar. 6	121	310
Coffee	Dolan Mercantile Co	11,099	Mar. 13	121	664
Coffee	Weideman Co	3,044	Mar. 20	121	972
Coffee	N. L. Burchell	14,459	Mar. 20	121	993
Coffee	Sprague, Warner & Company	16,473	Mar. 20	121	999
Coffee. Cereal substitute for	Decatur Cereal Coffee Works	15,136	Apr. 10	121	1954
Coffee extract	Cafolin Co	9,520	Apr. [illegible]	121	2624
Coffee extracts	Smith & Wheeler	11,011	Apr. 17	121	2292
Coffee in cans, &c. Roasted	Importers Coffee Company	2,126	Mar. 20	121	970
Coffee-mills	Bronson-Walton Company	17,522	Apr. 17	121	2306
Coffee. Roasted and ground	New Orleans Coffee Co	4,008	Apr. 3	121	1628
Coffees. Roasted	Oklahoma Wholesale Grocer Co	16,416	Mar. 20	121	999
Collarettes and chains	J. J. Sommer	16,660	Apr. 24	121	2640
Collars	Earl & Wilson	13,275	Mar. 6	121	311
Collars and cuffs	William Barker Company	4,805	Mar. 27	121	1308
Color pastes	Joseph Burnett Co	14,500	Apr. 3	121	1645
Colors. Artists' blue	Toch Brothers	11,577	Apr. 10	121	1946
Colors. Artists' white	Toch Brothers	11,582	Apr. 10	121	1946
Colors for printing and dyeing. Manufactured	American Dyewood Co	5,325	Apr. [illegible]	121	2618
Colors. Metallic water-	Gerstendorfer Bros	14,840	Mar. 13	121	672
Coloring-matter for mortar and bricks. Mineral	Chattanooga Paint Co	7,528	Apr. 24	121	2621
Combs	Dr. H. Traun & Söhne	10,678	Mar. 6	121	302
Combs	Dr. H. Traun & Söhne	10,676	Apr. 3	121	1636
Combs	Dr. H. Traun & Söhne	10,679	Apr. 3	121	1636
Comforts	Chas. A. Maish Co	17,621	Apr. 24	121	2645
Compound for treating waste materials containing carbon to render them combustible.	Coalite Company	16,543	Mar. 13	121	676
Concertinas and accordions	Lyon & Healy	11,350	Apr. 3	121	1637
Confectionery. Chocolate	J. de Fremery & Company	15,379	Apr. 3	121	1646
Cooking and household utensils. Enameled-steelware	M. Stransky	13,432	Mar. 27	121	1322
Cooling material. Hollow-walled vessels containing	H. F. Meier	10,965	Mar. 6	121	302
Copper household articles	Lisk Manufacturing Co	15,431	Apr. 17	121	2302
Copper ingots, ingot-bars, cakes, and wire bars	Baltimore Copper Smelting & Rolling Co.	11,622	Mar. 20	121	994
Cord and twine. Wrapping	Hubbs & Corning Co	16,828	Mar. 13	121	677
Cord. Braided	Silver Lake Co	2,090	Apr. 10	121	1934
Cords, lines, twines, and ropes	Silver Lake Company	17,036-7	Mar. 13	121	680
Cordial	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	15,878	Apr. 3	121	1649
Cordial	Sidney Fairchild Company	16,910	Apr. 10	121	1961
Cordials	Basilea & Calandra	13,131	Mar. 6	121	311
Cork for corking bottles of various sizes and shapes. All sizes of	J. Alberti	12,504	Apr. 10	121	1948
Corks	O. Heyman & Co	16,051	Mar. 6	121	316
Corn and hay knives	Simmons Hardware Company	14,947	Apr. 17	121	2301
Corn-starch or corn-flour	New York Glucose Co	8,721	Mar. 6	121	298
Cornmeal	T. P. Davie	7,607	Mar. 13	121	656
Cornmeal and corn-chop	Pittman & Harrison Co	5,819	Apr. 17	121	2284
Corsets	Downer, Hawes and Company	16,096	Mar. 6	121	319
Corsets	Birdsey Somers Co	16,787	Mar. 6	121	323
Corsets	Rosenbaum Company	16,820	Mar. 6	121	324
Corsets	Birdsey & Somers	14,404	Mar. 13	121	670

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page
Corsets	Kops Bros	14,209	Mar. 20	121	993
Corsets	Birdsey & Somers	14,403	Mar. 20	121	993
Corsets	Birdsey & Somers	14,438	Mar. 20	121	993
Corsets	Birdsey & Somers	14,440	Mar. 20	121	993
Corsets	A. Ottenheimer	15,196	Apr. 10	121	1954
Corsets and corset-waists	H. D. Miller	17,652	Apr. 17	121	2308
Cotton-batting of various sizes and weights. Packages of	H & W Company	11,553	Mar. 20	121	984
Cotton-batting of various sizes and weights. Packages of	W. Lowenthal	14,884	Mar. 20	121	994
Cotton damask	W. Lowenthal	14,883	Mar. 27	121	1327
Cotton damask	Rosemary Manufacturing Company.	13,770	Mar. 20	121	990
Cotton damask	Rosemary Manufacturing Company.	13,768	Mar. 27	121	1323
Cotton duck	Rosemary Manufacturing Company.	13,767	Apr. 24	121	2632
Cotton duck	Mount Vernon-Woodberry Cotton Duck Company.	10,501	Apr. 10	121	1943
Cotton fabric having an old Irish-linen finish	Mount Vernon-Woodberry Cotton Duck Company.	12,636	Apr. 10	121	1948
Cotton fabrics. Printed	Burton Bros & Co	13,306	Mar. 13	121	668
Cotton. Felted absorbent	Joseph W. Woods and Son Corporation.	16,257	Apr. 17	121	2304
Cotton. Felted absorbent	Johnson & Johnson	14,005	Mar. 27	121	1325
Cotton goods. Bleached	Johnson & Johnson	14,009	Mar. 27	121	1325
Cotton piece goods	Fall River Bleachery	9,095	Mar. 20	121	979
Cotton piece goods	Massachusetts Cotton Mills	4,983	Mar. 6	121	292
Cotton piece goods	Massachusetts Cotton Mills	5,236	Mar. 6	121	293
Cotton piece goods	Massachusetts Cotton Mills	5,257	Mar. 6	121	293
Cotton piece goods	I. Gelbtrunk	12,305	Mar. 6	121	308
Cotton piece goods	Massachusetts Cotton Mills	5,245	Mar. 13	121	652
Cotton piece goods	Massachusetts Cotton Mills	5,250	Mar. 13	121	652
Cotton piece goods	Everett Mills	14,344	Mar. 13	121	670
Cotton piece goods	Everett Mills	16,834	Mar. 27	121	1332
Cotton piece goods	F. W. Poe Mfg. Co	15,248	Apr. 3	121	1646
Cotton piece goods	Massachusetts Cotton Mills	5,232	Apr. 10	121	1937
Cotton piece goods	F. W. Poe Mfg. Co	15,249	Apr. 10	121	1954
Cotton piece goods	Ninety Six Cotton Mill	15,252	Apr. 10	121	1954
Cotton piece goods	Anderson Cotton Mills	15,259	Apr. 10	121	1955
Cotton piece goods	Tremont & Suffolk Mills	4,964	Apr. 17	121	2281
Cotton piece goods	Tremont & Suffolk Mills	4,967	Apr. 17	121	2281
Cotton piece goods	Massachusetts Cotton Mills	4,987–8	Apr. 17	121	2281
Cotton piece goods	Massachusetts Cotton Mills	4,990–3	Apr. 17	121	2281–2
Cotton piece goods	Massachusetts Cotton Mills	4,996	Apr. 17	121	2282
Cotton piece goods	Massachusetts Cotton Mills	4,998	Apr. 17	121	2282
Cotton piece goods	Tremont & Suffolk Mills	5,259–60	Apr. 17	121	2282
Cotton piece goods	Minot, Hooper & Co	4,362	Apr. 24	121	2617
Cotton piece goods	York Manufacturing Co	5,269	Apr. 24	121	2618
Cotton piece goods embodying sheetings, shirtings, ducks, denims, &c.	Indian Head Mills of Alabama	17,666	Apr. 24	121	2646
Cotton piece goods, lawns, muslins, &c., and embroidered cotton goods.	Tremont & Suffolk Mills	4,965	Apr. 17	121	2281
Cotton piece goods, sheetings, shirtings, and drills	A. Wedl	13,818	Mar. 13	121	669
Cotton piece goods with moiré finish	Suffern & Co	16,669	Mar. 6	121	322
Cotton piece goods. Woven	Gilbert Manufacturing Company	10,530	Apr. 3	121	1635
Cotton, worsted, and mixed cotton-and-wool piece goods	J. S. Reeves & Co	17,747	Apr 24	121	2646
Cough-drops	York Manufacturing Co	5,270	Apr. 17	121	2283
Cough mixture	Robert F. Mackenzie Co	16,025	Mar. 20	121	998
Crackers	Cough Checker Manufacturing Co.	3,166	Mar. 13	121	649
Crayons	Chatland & Lenhart	17,095	Mar. 13	121	680
Crayons. Checking, school, and marking	American Crayon Co	17,246–7	Mar. 27	121	1333
Cream. Cold-	J. M. Hoyt	17,609	Apr. 10	121	1965
Cream for the skin	Fischer Chemical Importing Co.	14,163	Mar. 6	121	314
Cream. Facial	Pond's Extract Company	16,445	Mar. 6	121	320
Cream of tartar	Halderman & Michael	7,296	Mar. 6	121	295
Cream. Toilet	Royal Baking Powder Company	11,906	Apr. 24	121	2628
Creams. Face-	C. J. Countie	6,817	Apr. 17	121	2285
Culinary utensils made of copper ware	F. F. Ingram	9,636	Mar. 6	121	299
Culinary utensils made of galvanized ware	Lisk Manufacturing Co	17,165	Mar. 20	121	1001
Cultivators	Lisk Manufacturing Co	17,164	Mar. 27	121	1333
Current-distributing cut-out boards	Whitman & Barnes Manufacturing Company.	15,445	Mar. 27	121	1329
Damasks. Bleached, gray, printed, and fancy	H. T. Paiste Co	17,397	Apr. 3	121	1654
Dampers. Hot-air and smoke pipe	Neuss, Hesslein & Co	12,246	Apr. 17	121	2293
Denims	S. M. Howes Company	16,792	Mar. 6	121	323
Denims. Blue	Massachusetts Cotton Mills	4,982	Mar. 20	121	974
Dental rubber	Massachusetts Cotton Mills	5,231	Mar. 20	121	975
Dental rubber	Traun Rubber Co	9,281	Mar. 6	121	299
Dentifrice	S. S. White Dental Mfg. Co	12,864	Apr. 3	121	1639
Dentifrices in powder, paste, or liquid form	Blumenthal Bros	10,920	Mar. 6	121	302
Diaries	Pond's Extract Company	16,446	Mar. 6	121	320
Dietetic albuminous preparations	W. H. Lee	15,343	Mar. 6	121	317
Disinfectant, antiseptic, insecticide, germicide, and detergent. Preparation for a	Bauer & Co	16,310	Mar. 27	121	1331
Disinfectant. Germicide	National Coal Tar Company	16,028	Apr. 24	121	2638
Disinfectants	Albo Chemical Co	13,096	Mar. 20	121	989
Disinfectants and antiseptics	Kathairo Chemical Co	14,021	Apr. 3	121	1643
Disinfectants, antiseptics, and germicides	Schülke & Mayr	12,130–1	Apr. 17	121	2293
Dispensing-cabinets	Geo. F. Eberhard Company	9,855	Mar. 13	121	661
Display-racks	Albany Perforated Wrapping Paper Co.	9,941	Mar. 13	121	662
Dolls	J. H. Best	16,261	Apr. 3	121	1651
Doors	Strawbridge & Clothier	15,520	Apr. 3	121	1647
Doors and windows	Paine Lumber Company	14,995	Apr. 17	121	2301
Dress and shirt waists for women	Van Kannel Revolving Door Co.	5,359	Mar. 27	121	1308
Dress-shields	Romm & Company	15,824	Apr. 10	121	1956
	I. B. Kleinert Rubber Company	3,655–9	Mar. 20	121	972

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Dress-shields	I. B. Kleinert Rubber Company	3,661	Mar. 20	121	973
Dress-shields	C. F. Hovey & Co	11,053	Apr. 3	121	1637
Dress-shields	I. B. Kleinert Rubber Company	3,663	Apr. 24	121	2617
Drills and drilling-machines for coal and rock, and parts thereof.	Howells Mining Drill Co	14,468	Mar. 13	121	671
Dumb-waiters	J. G. Speidel	2,703	Apr. 10	121	1934
Dumb-waiters	J. G. Speidel	2,702	Apr. 24	121	2616
Dust-pans	Central Stamping Company	10,199	Mar. 20	121	981
Dyes. Anilin	Cassella Color Company	16,084	Mar. 6	121	318
Dyes. Anilin	Cassella Color Co	16,085	Apr. 10	121	1958
Dyestuff	Badische Anilin- & Soda-Fabrik	12,182-7	Mar. 6	121	307
Dyestuff	Badische Anilin- & Soda-Fabrik	12,264-70	Mar. 6	121	308
Dyestuff	Badische Anilin- & Soda-Fabrik	12,376-8	Mar. 6	121	308
Dyestuff	Badische Anilin- & Soda-Fabrik	12,380-1	Mar. 6	121	308-9
Dyestuff	Kuttroff, Pickhardt & Company	14,914-17	Mar. 13	121	673
Dyestuffs and coloring-matters	Cassella Color Company	8,091	Mar. 20	121	977
Dyestuffs and coloring-matters	H. A. Metz & Co	14,672-3	Apr. 17	121	2298
Dyestuffs and coloring-matters	H. A. Metz & Co	14,675	Apr. 17	121	2298
Dyestuffs and coloring-matters	H. A. Metz & Co	14,677	Apr. 17	121	2298
Dyestuffs and coloring-matters	H. A. Metz & Co	14,679-80	Apr. 17	121	2298
Dyestuffs and coloring-matters	H. A. Metz & Co	14,682	Apr. 17	121	2298
Dyestuffs and coloring-matters	H. A. Metz & Co	14,686-92	Apr. 17	121	2299
Dyestuffs, &c. Chemicals for the reduction and acidifying of.	H. A. Metz & Co	15,078	Apr. 17	121	2301
Earthenware made from a semiporcelain body	Badische Anilin- & Soda-Fabrik	12,379	Apr. 17	121	2628
Eaves-troughs	Warwick China Co	10,194	Apr. 3	121	1635
Egg-whites. Chemical and vegetable substitute for	St. Paul Roofing, Cornice & Ornament Company.	16,089	Apr. 17	121	2303
Eggs	Frostlene Manufacturing Company.	8,961	Apr. 3	121	1634
Eggs	G. W. Martin & Bro	12,925	Apr. 10	121	1949
Elbows, couplings, unions, return-bends, &c	Beyer Brothers Commission Company.	14,386	Apr. 10	121	1953
Electric switches and parts thereof	U. T. Hungerford Brass & Copper Co.	13,247	Mar. 13	121	668
Electrical appliances for assisting the hearing	D. & W. Fuse Co	5,130	Mar. 27	121	1308
Electrical switches, sockets, connections, &c	C. W. Harper	13,464	Apr. 17	121	2296
Emulsified preparations, cough mixtures, and lotions for the skin.	Hart Manufacturing Company	6,355	Mar. 27	121	1310
Emulsion for all conditions of malnutrition	J. O. May	12,535	Apr. 17	121	2293
Engines. Explosive	Standard Emulsion Co	16,633	Apr. 3	121	1653
Engines. Explosive	Buckeye Manufacturing Company.	13,588	Apr. 17	121	2296
Engines. Gas or oil	Foos Gas Engine Company	18,022	Apr. 24	121	2647
Engines. Stationary steam	Temple Pump Company	17,374	Mar. 27	121	1334
Envelops and paper	Southern Engine & Boiler Works.	10,717	Apr. 24	121	2626
Eraser for cleaning leather, cloth, paper, &c. Solid composition	C. J. Cohen & Son	14,983-5	Mar. 27	121	1327
Erasers. Rubber	F. A. Weeks	12,871	Apr. 3	121	1640
Exploders. Electrical	E. Faber	13,489	Mar. 13	121	669
Eyeglass nose-guards	Masurite Explosive Company	13,546	Apr. 10	121	1951
Eyelet setting and removing press or machine	W. H. Reisner Manufacturing Co.	18,017	Apr. 24	121	2647
Eyelets for shoes	E. L. Sibley	17,258	Mar. 27	121	1333
	Manufacture Française D'Oeillets Métalliques, (ancienne Maison G. Bac.)	12,387	Mar. 20	121	987
Fabric. Translucent	Translucent Fabric Co	5,115	Apr. 10	121	1936
Fabrics. Bleached, unbleached, printed, and dyed textile	Eddystone Manufacturing Company.	9,808	Mar. 13	121	661
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	10,367	Mar. 13	121	662
Fabrics. Printed and dyed textile	Eddystone Manufacturing Co	9,926	Mar. 20	121	980
Fabrics. Printed and dyed textile	Eddystone Manufacturing Company.	10,310	Apr. 10	121	1942
Fabrics. White, printed, or dyed textile	Arnold Print Works	13,953	Apr. 3	121	1643
Feathers and feather trimmings. Fancy and ostrich	E. Lewinsohn	10,575	Apr. 17	121	2291
Feathers. Ostrich	W. Freystadt Straussfeder Fabrik.	10,582	Mar. 27	121	1316
Feed-water heaters	National Pipe Bending Company.	14,845	Mar. 27	121	1326
Feed-water heaters	Stewart Heater Co	13,158	Apr. 24	121	2631
Felt and paper. Roofing	C. T. Carruth	16,151	Apr. 10	121	1959
Felt. Prepared roofing	E. A. Laughlin	4,368	Mar. 6	121	292
Felt roofing. Prepared sheet	Asbestos Manufacturing and Roofing Co.	11,955	Mar. 20	121	985
Felt. Roofing, sheathing, and building	Warren Chemical & Manufacturing Company.	12,537	Mar. 6	121	309
Felt. Roofing, sheathing, waterproofing, and building	Warren-Ehret Company	12,039	Mar. 27	121	1320
Felt. Waterproof roofing	St. Paul Roofing, Cornice & Ornament Company.	16,088	Apr. 17	121	2303
Fences. Wire and combination wood-and-wire	Hodge Fence & Lumber Co	14,635	Apr. 24	121	2635
Fencing. Wire	Lion Fence Co	16,516	Mar. 6	121	321
Fencing. Woven-wire	American Steel and Wire Company.	14,573	Apr. 17	121	2298
Fertilizer. Bone	F. S. Royster Guano Co	2,469	Mar. 27	121	1306
Fertilizers	Rogers & Hubbard Co	2,721	Mar. 6	121	291
Fertilizers	Virginia-Carolina Chemical Company.	17,545-6	Apr. 3	121	1654
Fertilizers	Virginia-Carolina Chemical Company.	17,548	Apr. 3	121	1654
Fertilizers	Vrginia-Carolina Chemical Company.	17,557-9	Apr. 3	121	1654-5
Fertilizers	Virginia-Carolina Chemical Company.	17,561-4	Apr. 3	121	1655
Fertilizers	Virginia-Carolina Chemical Company.	17,566	Apr. 3	121	1655
Fertilizers	Virginia-Carolina Chemical Company.	17,568	Apr. 3	121	1655

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Fertilizers	Virginia-Carolina Chemical Company.	17,581-9	Apr. 3	121	1655
Fertilizers	Virginia-Carolina Chemical Company.	17,596	Apr. 3	121	1655
Fertilizers	Virginia-Carolina Chemical Company.	17,530	Apr. 10	121	1963
Fertilizers	Virginia-Carolina Chemical Company.	17,547	Apr. 10	121	1963
Fertilizers	Virginia-Carolina Chemical Company.	17,552-4	Apr. 10	121	1963
Fertilizers	Virginia-Carolina Chemical Company.	17,565	Apr. 10	121	1963
Fertilizers	Virginia-Carolina Chemical Company.	17,569	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,573	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,575	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,577	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,579-80	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,593	Apr. 10	121	1964
Fertilizers	Virginia-Carolina Chemical Company.	17,595	Apr. 10	121	1965
Fertilizers	Virginia-Carolina Chemical Company.	17,829	Apr. 17	121	2309
Fertilizers	Virginia-Carolina Chemical Company.	17,837	Apr. 17	121	2309
Fertilizers	Virginia-Carolina Chemical Company.	17,843	Apr. 17	121	2309
Fertilizers	Virginia-Carolina Chemical Company.	17,845	Apr. 17	121	2309
Fertilizers	Virginia-Carolina Chemical Company.	17,848	Apr. 17	121	2309
Fertilizers	Navassa Guano Company of Wilmington.	17,856	Apr. 17	121	2309
Fertilizers	Navassa Guano Company of Wilmington.	17,859-62	Apr. 17	121	2309
Fertilizers	Georgia Chemical Works	17,871-3	Apr. 17	121	2310
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,902	Apr. 17	121	2310
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,917-19	Apr. 17	121	2310
Fertilizers	Virginia-Carolina Chemical Company.	17,551	Apr. 24	121	2645
Fertilizers	Virginia-Carolina Chemical Company.	17,571	Apr. 24	121	2645
Fertilizers	Virginia-Carolina Chemical Company.	17,590	Apr. 24	121	2645
Fertilizers	Virginia-Carolina Chemical Company.	17,839	Apr. 24	121	2646
Fertilizers	Georgia Chemical Works	17,876	Apr. 24	121	2646
Fertilizers	Rasin-Monumental Company of Anne Arundel County.	17,920	Apr. 24	121	2647
Fertilizers. Artificial	Rasin-Monumental Company	5,772	Apr. 3	121	1629
Fertilizers. Phosphatic	American Agricultural Chemical Co.	9,861	Mar. 13	121	661
Fever cures	Pamaline Malarial Remedy Company.	16,757	Apr. 24	121	2641
Fiber sizing and finishing material. Textile-	H. A. Metz & Co	14,684	Apr. 17	121	2299
Fiber sizing and finishing material. Textile-	H. A. Metz & Co	14,693	Apr. 17	121	2299
Files and rasps	Simmons Hardware Company	17,946	Apr. 17	121	2301
Files and rasps	Carver File Company	15,273	Apr. 24	121	2636
Fire-extinguisher in powdered form	Nevermyss Fire Extinguisher Company.	14,725	Mar. 20	121	994
Fire-extinguishers	American-La France Fire Engine Co.	14,641	Apr. 17	121	2298
Fireproof and acid-proof composition in sheet form for protecting furniture.	Ransom & Randolph Co	12,122	Apr. 10	121	1947
Fireproof starch	Price Fireproofing Company	4,797	Mar. 20	121	974
Fireproof starch	Price Fireproofing Company	4,795	Apr. 3	121	1628
Fireworks. Hand stick-	E. H. Wagner	10,434	Mar. 27	121	1316
Fireworks. Non-explosive fire and smoke emitting	E. H. Wagner	14,238	Apr. 3	121	1644
Fireworks. Torpedo-	E. H. Wagner	10,428	Mar. 27	121	1316
Fireworks. Torpedo-	E. H. Wagner	10,431	Mar. 27	121	1316
Fireworks. Torpedo-	E. H. Wagner	10,435	Mar. 27	121	1316
Fish. Cured	E. H. Wagner	10,429	Apr. 24	121	2625
Fish. Cured	G. H. Perkins	10,936	Apr. 3	121	1636
Fish. Cured	G. H. Perkins	10,941	Apr. 3	121	1636
Fish-hooks	G. H. Perkins	10,935	Apr. 10	121	1944
Fish-hooks, artificial flies and baits	Henry Milward & Sons	13,192	Mar. 13	121	668
Fish. Salted and boneless cod-	Henry Milward & Sons	13,193	Apr. 10	121	1950
Fish. Smoked, dried, and salted	J. W. Beardsley's Sons	1,102-3	Mar. 6	121	289-90
Fishing-rods	G. H. Perkins	10,938	Mar. 27	121	1318
Flash-light compounds	Horton Manufacturing Company	15,186	Mar. 20	121	997
Flat-irons. Pad containing a substance which cleanses and polishes	H. Pfabe	3,508	Mar. 6	121	291
Flavoring extracts	Greeder Manufacturing Company	14,015	Mar. 20	121	992
Flavoring extracts	Sprague, Warner & Company	16,649	Mar. 6	121	321
Flavoring extracts	Ullmann Dreifus & Co	8,240	Mar. 13	121	658
Flavoring extracts	Francis H. Leggett & Company	12,971	Mar. 13	121	667
Flavoring extracts	Royal Baking Powder Company	11,905	Apr. 3	121	1638
Flour	Wittemann Bros	16,678	Apr. 17	121	2305-6
	Alliance Milling Company	7,061	Mar. 13	121	655

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Flour. Self-raising	Sleepy Eye Milling Company	8,384	Mar. 13	121	658
Flour. Wheat-	Egerton Bros	1,197	Mar. 6	121	290
Flour. Wheat-	P. Daussa & Co	6,389	Mar. 6	121	294
Flour. Wheat-	Haney-Frazier Milling Co	11,391	Mar. 6	121	304
Flour. Wheat-	Goodlander Milling Company	12,167	Mar. 6	121	307
Flour. Wheat-	Waterloo Milling Company	12,240	Mar. 6	121	307
Flour. Wheat-	Lawrenceburg Roller Mills Company.	12,725	Mar. 6	121	310
Flour Wheat-	Lawrenceburg Roller Mills Company.	12,727	Mar. 6	121	310
Flour. Wheat-	Pillsbury-Washburn Flour Mills Company.	14,474	Mar. 6	121	315
Flour. Wheat-	Sheffield-King Milling Co	16,363	Mar. 6	121	319
Flour. Wheat-	Sheffield-King Milling Co	16,366	Mar. 6	121	319
Flour. Wheat-	Hungarian Milling & Elevator Co.	5,644	Mar. 13	121	652
Flour. Wheat-	R. U. Kevil & Sons	7,026	Mar. 13	121	655
Flour. Wheat-	Western Flour Mill Co	14,140	Mar. 13	121	670
Flour. Wheat-	Waco Mill & Elevator Company	14,963	Mar. 13	121	673
Flour. Wheat-	Ledeboer & Van Der Held	15,022	Mar. 13	121	674
Flour. Wheat-	Liberty Mills	16,712	Mar. 13	121	676
Flour. Wheat-	Liberty Mills	16,715–16	Mar. 13	121	676
Flour. Wheat-	Missouri Valley Milling Company.	16,984	Mar. 13	121	679
Flour. Wheat-	Phoenix Flour Mill	16,985	Mar. 13	121	679
Flour. Wheat-	Higginsville Milling Company	12,166	Mar. 20	121	986
Flour. Wheat-	Ansted & Burk Company	12,168	Mar. 20	121	986
Flour. Wheat-	Washburn-Crosby Company	12,170	Mar. 20	121	987
Flour. Wheat-	Sweet Springs Milling Company	12,191–2	Mar. 20	121	987
Flour. Wheat-	G. T. Evans & Son	12,195	Mar. 20	121	987
Flour. Wheat-	Barrett, Denton & Lynn Company	14,972–5	Mar. 20	121	995
Flour. Wheat-	Isaac Harter Milling Company	15,467	Mar. 20	121	997
Flour. Wheat-	Saginaw Milling Company	10,724	Mar. 27	121	1317
Flour. Wheat-	Ballard & Ballard Co	12,833–4	Mar. 27	121	1321
Flour. Wheat-	Security Milling Company	13,300	Mar. 27	121	1322
Flour. Wheat-	Geary Milling & Elevator Company.	14,901	Mar. 27	121	1327
Flour. Wheat-	Highland Milling Company	14,964	Mar. 27	121	1327
Flour. Wheat-	Ellendale Milling Company	15,042	Mar. 27	121	1327
Flour. Wheat-	Cordell Gin & Milling Company	15,422	Mar. 27	121	1329
Flour. Wheat-	J. B. Camors & Co	3,453	Apr. 3	121	1626
Flour. Wheat-	Phoenix Flour Mill	6,707	Apr. 3	121	1630
Flour. Wheat-	Missouri Valley Milling Company.	6,710–11	Apr. 3	121	1630
Flour. Wheat-	G. T. Evans & Son	12,194	Apr. 3	121	1638
Flour. Wheat-	Bay State Milling Company	12,201	Apr. 3	121	1638
Flour. Wheat-	Seneca Mill & Elevator Company.	14,303–4	Apr. 3	121	1644
Flour. Wheat-	Watson Mill Company	15,931	Apr. 3	121	1650
Flour, Wheat-	Threefoot Bros & Co	7,444	Apr. 10	121	1939
Flour. Wheat-	Marsh & Riley	11,150	Apr. 10	121	1945
Flour. Wheat-	Lawrenceburg Roller Mills Company.	12,726	Apr. 10	121	1944
Flour. Wheat-	Sprague, Warner & Company	16,472	Apr. 10	121	1950
Flour. Wheat-	J. H. Heisel	16,692	Apr. 10	121	1960
Flour. Wheat-	Collin County Mill & Elevator Company.	7,762	Apr. 17	121	2286
Flour. Wheat-	Liberty Mills	16,714	Apr. 17	121	2306
Flour. Wheat-	Sweet Springs Milling Company	12,189	Apr. 24	121	2628
Flour. Wheat-	Golden Eagle Tea Co	16,511	Apr. 24	121	2640
Flour. Wheat-	Randolph Milling Company	16,702	Apr. 24	121	2641
Flour. Wheat and buckwheat	Topeka Milling Company	1,189	Apr. 24	121	2615
Flour. Wheat and Graham	J. L. Iles Co	12,221	Apr. 3	121	1638
Flours and rye, corn and oat meals. Wheat, oat, rye, corn, and buckwheat	American Cereal Company	14,719	Apr. 17	121	2290
Food. Albumen preparations for	Althen & Mende	10,338	Apr. 10	121	1942
Food and compounds for use as and for admixture with food for stock. Prepared	Molassine Company	11,986	Mar. 27	121	1320
Food and farina made from wheat. Breakfast-	Sleepy Eye Milling Company	8,385	Mar. 13	121	658
Food and meat choppers	Hibbard, Spencer, Bartlett & Company.	17,745	Apr. 17	121	2309
Food and medicine usually in powdered form for cattle and other stock.	Dr. Hess & Clark	8,186	Apr. 3	121	1632
Food and tonic for invalids and convalescents. Reconstructive	Norwich Pharmacal Company	15,418	Apr. 3	121	1648
Food. Cattle-	Dock & Coal Co	16,782	Apr. 17	121	2306
Food drinks produced from a cereal. Non-alcoholic	Postum Cereal Co	4,100	Mar. 20	121	973
Food for animals and poultry. Prepared	C. P. Kertell	16,436	Apr. 17	121	2304
Food for animals. Aromatic	H. M. Griffin	7,076	Apr. 10	121	1939
Food for babies and invalids	T. J. Ball	12,160	Apr. 17	121	2293
Food for cats and kittens	W. W. French	17,299	Mar. 20	121	1003
Food for horses and cattle. Molasses	E. P. Mueller	12,456	Mar. 6	121	309
Food for infants and invalids. Prepared	Taro Food Co	2,120	Apr. 17	121	2279
Food for infants, invalids, &c. Cereal	Emerald Manufacturing Co	7,065	Mar. 13	121	656
Food. Poultry-	M. W. Savage	8,197	Mar. 27	121	1312
Food. Poultry and pigeon	Campbell, Morrell & Co	12,084	Mar. 13	121	665
Food preparation of bone-marrow and malt	Virol Limited	16,550	Apr. 24	121	2640
Food. Prepared cereal	American Cereal Company	5,612	Mar. 20	121	975
Food, rolled oats, and oatmeal. Breakfast-	American Cereal Company	10,855	Mar. 20	121	983
Food. Stock-	M. W. Savage	16,892	Mar. 13	121	678
Food. Stock-	M. W. Savage	8,196	Mar. 27	121	1312
Food substances. Prepared fatty, oleaginous, or unctuous	N. K. Fairbank Company	10,234	Mar. 20	121	982
Food. Wheat breakfast-	Wheatena Company	9,356	Mar. 27	121	1314
Foods. Cereal paste	John B. Canepa Company	12,214	Mar. 27	121	1320
Foods for horses, cattle, swine, and other stock. Condimental	David E. Foutz Co	8,043	Mar. 13	121	656
Foods for infants and invalids. Prepared	Woolrich & Co	10,635	Apr. 10	121	1943
Foods for live stock and other animals	F. H. Erb, Jr	16,140	Mar. 13	121	676
Foods made from oats. Cereal	American Cereal Company	5,608–11	Apr. 17	121	2283
Foods made from oats. Cereal	American Cereal Company	5,613	Apr. 24	121	2619
Foods. Prepared cereal breakfast-	Francis H. Leggett & Company	12,977	Mar. 13	121	667

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Foundry-facings	United States Graphite Company	17,240	Apr. 24	121	2644
Fruit. Dried	Castle Brothers	15,760	Apr. 3	121	1648
Fruits and vegetables in tins or glass	Wm. Numsen & Sons	1,688	Apr. 3	121	1626
Fruits. Dried	Gennerich & Von Bremen	13,764	Mar. 6	121	313
Fruits. Dried	Francis H. Leggett & Company	9,316	Mar. 13	121	660
Fruits. Dried	S. C. Tooker & Co	15,336	Mar. 27	121	1329
Fruits. Dried	Reiss & Brady	12,315	Apr. 10	121	1948
Fruits. Dried and evaporated	Griffin & Skelley Co	14,979	Apr. 17	121	2301
Furnaces. Air-heating	May and Fiebeger	7,972	Mar. 13	121	657
Furnaces and boilers. Heating-	Monroe Foundry & Furnace Co	17,175	Mar. 20	121	1001
Furniture. Bent-wood	Thonet Brothers	13,326	Apr. 24	121	2631
Furs. Dressed and dyed	Atlantic Chemical Co	16,390	Mar. 6	121	319
Furs in the piece and fur garments	M. Bowsky	13,597	Mar. 27	121	1323
Fuses. Blasting-	Goodall, Perkins & Co	17,414	Apr. 10	121	1962
Gall cure	Bickmore Gall Cure Company	10,693	Mar. 27	121	1317
Galvanized household articles	Lisk Manufacturing Co	15,130	Apr. 17	121	2302
Gas-burners	Crescent Burner Manufacturing Co.	12,962	Mar. 20	121	989
Gas-burners and mantles therefor	Welsbach Light Company	13,700	Mar. 27	121	1323
Gasolene, naphtha, benzene, &c., to prevent explosions of. Chemical compound to be put into	Barrett-White Company	13,071	Mar. 13	121	667
Gears	Benjamin Atha & Company	18,035	Apr. 24	121	2647
Gelatin	Michigan Carbon Works	7,851	Mar. 13	121	657
Gelatin	American Glue Co	15,105	Mar. 20	121	996
Germicide and antiseptic compound. Non-irritant	J. F. Ballard	7,318	Apr. 3	121	1631
Gin	J. & A. Freiberg	12,118	Mar. 13	121	666
Gin	Wm. Bergenthal Co	6,575	Mar. 20	121	976
Gin	Hinter Grocery Company	14,050-1	Apr. 3	121	1643
Gin	J. J. Douglas Co	16,032	Apr. 10	121	1957
Gin	S. Streit & Co	1,867	Apr. 17	121	2279
Gin	Luyties Brothers	14,652	Apr. 17	121	2298
Ginger-snaps	Pennsylvania Baking Company	13,208	Mar. 13	121	668
Glass and metal polishing preparation	Pellucide Company	16,700	Apr. 24	121	2641
Glass articles. Cut-	Libbey Glass Company	17,208	Apr. 24	121	2644
Gloves	Fownes Brothers & Co	14,031	Mar. 6	121	314
Gloves	Abraham & Straus	2,183	Mar. 20	121	970
Gloves	J. Adler & Co	8,020	Mar. 20	121	977
Gloves	Brown, Durrell & Co	15,496	Apr. 3	121	1647
Gloves	F. Schmidt	773	Apr. 10	121	1933
Gloves and mitts. Base-ball	A. G. Spalding & Brothers	15,189	Apr. 24	121	2636
Gloves for athletic sports	P. Goldsmith's Sons	3,140	Mar. 13	121	649
Glue	American Glue Co	15,102-3	Mar. 20	121	995-6
Glue, gum, and mucilage. Liquid	Lyons Ink, Limited	11,652	Mar. 27	121	1319
Glycerin	Price's Patent Candle Co	16,063	Mar. 6	121	318
Gold and silver plated hollow, table, and flat ware. Electro.	Rockford Silver Plate Co	15,058	Mar. 6	121	317
Gold, silver, aluminum, composition, or other metal leaf. Package-rolls of	W. H. Coe Mfg. Company	16,740	Mar. 6	121	323
Governors. Engine-	Pickering Governor Company	14,839	Mar. 20	121	994
Grape-vines, cuttings, scions, grafts, &c	Stark Bro's Nurseries & Orchards Company.	16,779-80	Mar. 6	121	323
Grease-cups	Lunkenheimer Company	10,793	Mar. 13	121	663
Grinding-mills for grain, coffee, spices, chocolate, &c	C. S. Bell Co	16,318	Apr. 10	121	1959
Grinding-mills for grain, seeds, and drugs	New Winona Mfg. Co	1,089	Apr. 10	121	1933
Grindstone-frames	Whitman & Barnes Manufacturing Company.	14,597	Mar. 27	121	1326
Guava-juice and sugar. Mixture of	Tropic Fruit Company	16,368	Apr. 3	121	1651
Guava-pulp and sugar. Mixture of	Tropic Fruit Company	16,369	Apr. 10	121	1959
Guitars and mandolins	Lyon & Healy	11,360	Apr. 3	121	1637
Guitars and mandolins	Lyon & Healy	11,364	Apr. 3	121	1637
Guitars, mandolins, zithers, violins, harps, &c	Lyon & Healy	11,357	Apr. 10	121	1945
Gum. Chewing-	F. J. Banta & Son	15,251	Mar. 27	121	1328
Gum. Chewing-	H. D. Smith Co	5,111	Apr. 3	121	1628
Gum Chewing-	A. M. Lyon	16 046	Apr. 3	121	1650
Gum. Chewing-	American Chicle Co	8 145	Apr. 10	121	1940
Gum Chewing-	American Chicle Co	8 147	Apr. 10	121	1940
Gum. Chewing-	American Chicle Co	8 153	Apr. 10	121	1940
Gum Chewing-	American Chicle Co	8 160	Apr. 10	121	1940
Gum Chewing-	Best Gum Co	8,988	Apr. 10	121	1941
Gum Chewing-	R. A. Brachoogel	17,482	Apr. 24	121	2645
Guns and rifles. Shot-	Winchester Repeating Arms Co	11,627	Mar. 27	121	1319
Guns and rifles. Shot-	Winchester Repeating Arms Co	14,216	Apr 3	121	1644
Guns and rifles. Shot-	Winchester Repeating Arms Co	9,669	Apr 24	121	2624
Guns, rifles, pistols, and parts thereof Shot-	Hibbard, Spencer, Bartlett & Company.	13,839	Apr 24	121	2633
Hair and head. Preparation for the treatment of the	Hudson & Co	3,202	Mar. 27	121	1306
Hair and skin tonic	Barclay & Barclay	5,495-6	Apr. 24	121	2618-19
Hair and whisker dye	Charles N. Crittenton Company	16,850	Apr. 24	121	2642
Hair-curlers	Magic Curler Company	17,384	Mar. 27	121	1334
Hair-dressing	C. V. Dorman	14,496	Mar. 20	121	993
Hair-dressing and dandruff cure	Dandrucide Company	11,737	Apr. 10	121	1947
Hair-dye	Charles N. Crittenton Company	16,855-6	Apr. 17	121	2307
Hair-dyes	A. Cristadoro	12,955	Mar. 13	121	667
Hair invigorators and color-restorers	J. W. Walker	7,078	Apr. 10	121	1939
Hair-nets	A. G. Jennings	14,432-3	Mar. 6	121	315
Hair-nets Silk	A. H. Woolley & Co	13,474	Mar. 13	121	669
Hair-restoratives	S. R. Van Duzer	9,378	Apr. 10	121	1942
Hair-restorer	Charles N Crittenton Company	16,848-9	Apr 17	121	2306-7
Hair-tonic	B. F. Miner	3,447	Mar. 13	121	649
Hair tonics, stains dandruff cures, &c	H. E. Nichols	9,353	Apr. 17	121	2289
Hair-vigor and dandruff cure	J B. Wall	11,771	Mar. 20	121	985
Hams and bacon and fancy cuts of pork. Fancy smoked	T. Stokes & Son	2,127	Apr. 10	121	2616
Hams shoulders and bacon	E. Godel and Sons	8,306	Mar. 13	121	658
Hams shoulders, and bacon	Golden and Company	16,266	Apr. 3	121	1651
Handkerchiefs	Cochrane Manufacturing Co	10,514	Mar. 6	121	302
Handkerchiefs	Dawson, Halliwell & Company	6,688	Apr. 24	121	2620
Harmonicas	National Musical String Co	16,795	Mar. 13	121	677

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Harnesses and saddles and parts thereof	Hibbard, Spencer, Bartlett & Company.	13,584	Mar. 20	121	990
Harnesses and saddles and parts thereof	Hibbard, Spencer, Bartlett & Company.	13,840	Mar. 20	121	990
Harrows	Roderick Lean Manufacturing Co.	3,904	Apr. 3	121	1627
Harvesters, mowers and reapers, and extra and repair parts therefor. Grain-binding, corn, and rice	International Harvester Company of America.	11,453	Mar. 6	121	304
Harvesters, mowers, and reapers and extra and repair parts therefor. Grain-binding, corn, and rice	International Harvester Company of America.	5,910	Apr. 17	121	2285
Harvesters, mowers and reapers, and parts for same. Grain-binding, corn, and rice	International Harvester Co. of America.	12,108	Mar. 13	121	666
Harvesters, reapers, mowers, and separate parts thereof. Self-binding	International Harvester Co. of America.	12,112	Mar. 6	121	306
Hats	Lustig Bros.	10,663	Apr. 3	121	1636
Hats and caps	John B. Stetson Company	1,457	Mar. 6	121	290
Hats and caps	L. Kline & Co	12,276	Apr. 10	121	1947
Hats and caps. Men's and boys'	Keith Brothers & Co	11,523-4	Apr. 10	121	1945-6
Hats and caps. Waterproof	Hirsh Brothers	15,460	Apr. 24	121	2637
Hats, caps for men and boys, and ladies' hats. Soft and stiff fur-felt, straw, and silk	F. Schoble & Co	8,112	Mar. 6	121	297
Hats, caps for men and boys, and ladies' hats. Soft and stiff fur-felt, straw, and silk	F. Schoble & Co	8,114	Mar. 6	121	297
Hats, caps for men and boys, and ladies' hats. Soft and stiff fur-felt, straw, and silk	F. Schoble & Co	8,116	Mar. 6	121	297
Hats, caps for men and boys, and ladies' hats. Soft and stiff fur-felt, straw, and silk	F. Schoble & Co	15,406-7	Mar. 6	121	317
Hats. Ladies'	Carolyn & Co	14,160	Apr. [illegible]	121	2634
Hats. Men's and boys' stiff soft, and straw	Freeman Brothers	1,002	Mar. 13	121	648
Hats. Panama	Lustig Bros.	11,147	Mar. 6	121	303
Hats. Panama	J. J. Seeds & Co	13,704	Apr. 24	121	2632
Hay-carriers	F. E. Myers & Bro	15,082	Mar. 13	121	674
Headache cure	Celero Drug Company	13,937	Apr. 3	121	1643
Heat-regulators for boilers, furnaces, and stoves	Fulton Company	13,722	Apr. 3	121	1642
Heaters. Steam, hot-water, and hot-air	Hart & Crouse Co	8,130	Mar. 20	121	977
Heel and black ball and polishing-wax for shoemakers' use	P. Ostermayer	13,286	Mar. 6	121	312
Hinges. Spring-	Columbian Hdw. Co	18,074-8	Apr. 17	121	2310
Hoes	Union Hoe Co	15,046	Apr. 10	121	1954
Horns for motor-vehicles	A. H. Funke	11,807	Mar. 13	121	665
Horse and mule shoes	American Horse Shoe Company	12,759	Apr. 10	121	1949
Horse and mule shoes	Phoenix Horse Shoe Co	10,491-2	Apr. [illegible]	121	2625
Horse-blankets	W. Ayres & Sons	15,622	Apr. 10	121	1955
Horses' elastic foot-coverings	M. Hallanan	16,152	Mar. 6	121	319
Horseshoe-studs	Leonhardt & Co	4,044	Apr. 3	121	1628
Horseshoes	International Union of Journeymen Horseshoers.	16,060	Mar. 27	121	1330
Horseshoes	Bryden Horse Shoe Company	15,589	Apr. 3	121	1648
Horseshoes	Bryden Horse Shoe Company	15,591	Apr. 3	121	1648
Horseshoes and calks	Neverslip Manufacturing Company.	11,569	Mar. 27	121	1319
Horseradish-cream	Griggs, Cooper & Company	18,304	Apr. 24	121	2648
Hose. Fabric	Eureka Fire Hose Company	17,260-1	Apr. 3	121	1653
Hose-supporters	I. B. Kleinert Rubber Company	3,664-5	Mar. 20	121	973
Hose-supporters	George Frost Company	17,221	Apr. 3	121	1653
Hosiery	Buster Brown Stocking Company.	2,526-7	Mar. 6	121	291
Hosiery	O'Callaghan & Fedden	14,658	Mar. 6	121	316
Hosiery	E. Blood	16,189	Mar. 27	121	1330
Hosiery	C. Chipman's Sons	13,175	Apr. 3	121	1641
Hosiery	Brown Knitting Co	15,567	Apr. 3	121	1647
Hosiery	Reins & Meiss	16,824	Apr. 17	121	2306
Hosiery	J. Jamison	8,053	Apr. 24	121	2621
Hosiery. Elastic	J. Ellwood Lee Company	16,689	Mar. 13	121	676
Hosiery. Men's, boys', ladies', misses', and children's	Columbia Knitting Company	13,548	Apr. 10	121	1951
Hypophosphites. Preparation of	Fellows Medical M'f'g Co	8,440	Apr. 3	121	1633
Ice-cream, ices, and frozen custards	J. M. Horton Ice Cream Co	10,396	Mar. 6	121	301
Ice-shaving machines	C. C. Clawson	11,705-6	Mar. 6	121	305
Incubators and brooders	M. W. Savage	16,963	Mar. 13	121	679
Ink. Duplicating-	Neostyle Company	5,928	Apr. 17	121	2285
Inks, ink-varnishes, and dry colors. Printing and lithographing	Jaenecke Printing Ink Co	13,522	Apr. 10	121	1951
Insect killer or exterminator	Dr. Hess & Clark	8,189	Mar. 6	121	297
Insect-powder	Gilpin, Landon & Company	14,361	Mar. 13	121	670
Insecticide, germicide, deodorizing, and disinfecting purposes. Preparation for	C. L. Howe	16,350	Apr. [illegible]	121	2639
Insecticides	Leggett & Brother	2,812	Mar. 20	121	971
Insulated wire and adhesive tapes	New York Insulated Wire Company.	10,372	Apr. 17	121	2291
Insulated wire and adhesive tapes used for insulating	New York Insulated Wire Company.	10,371	Mar. 13	121	662
Insulated wires	Phillips Insulated Wire Co	17,024	Mar. 20	121	999
Insulating and sheathing paper and cloth	J. A. & W. Bird & Co	17,106	Mar. 20	121	1000
Insulating compound for armature and field coils and other electrical apparatus. Plastic black	E. Calman & Co	16,403	Mar. 27	121	1331
Insulating, deafening, sheathing, &c. Fabrics for	Union Fibre Co	8,198	Mar. 27	121	1312
Insulating-tape	Massachusetts Chemical Company	15,383	Mar. 27	121	1329
Investment and impression compounds	S. S. White Dental Mfg. Co	12,860	Apr. 3	121	1639
Investment and impression compounds	S. S. White Dental Mfg. Co	12,869	Apr. 3	121	1640
Iron ternes in sheet form. Unmanufactured	Griffiths Charcoal Iron Mills	15,056	Apr. 24	121	2636
Jams, jellies, and preserves	Siegel, Cooper & Co	5,427	Apr. 24	121	2618
Jams, jellies, marmalades, preserved and conserved fruits	Sunlit Fruit Company	13,537	Apr. 24	121	2632
Jelly. Dessert-	Bucknam & Vanderpoel	15,031	Apr. 3	121	1645
Jelly-powder	S. J. Valk & Bro	14,087	Apr. 3	121	1643
Jewelry. Sterling-silver	Theodore W. Foster & Bro. Co	7,755	Mar. 27	121	1311
Journal-bearings	Chapman Double Ball Bearing Co. of America.	12,541	Mar. 13	121	667
Kerseys and cassimeres	W. J. Dickey & Sons	3,160	Apr. 3	121	1626

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Keys. Cushion finger	Munson Supply Company	16,908	Mar. 13	121	673
Knife blades, metal ink-erasers, and razors. Pocket, table, butcher, hunting, farriers', physicians', and surgeons'	Case Brothers Cutlery Co	13,405	Apr. 17	121	2296
Knives and razors	E. Krusius	18,166	Apr. 24	121	2647
Knives and razors. Pocket, table, butcher, sticking, skinning, paring, and carving.	Hibbard, Spencer, Bartlett & Company.	13,853	Apr. 24	121	2633
Knives and razors. Pocket, table, butcher, sticking, skinning, paring, and carving	Hibbard, Spencer, Bartlett & Company.	15,133	Mar. 20	121	996
Knives. Culinary	Wilkinson Shear and Cutlery Co.	12,150	Apr. 24	121	2628
Knives. Pocket	Wiebusch & Hilger	1,783	Mar. 13	121	646
Knives. Pocket	C. F. Boker	5,680	Mar. 20	121	975
Knives. Pocket	Graef & Schmidt	11,691	Mar. 20	121	984
Knives. Pocket	A. Kastor & Bros	7,288	Mar. 27	121	1310
Knives. Pocket	Supplee Hardware Company	13,820	Mar. 27	121	1324
Knives. Pocket	C. F. Boker	5,679	Apr. 3	121	1629
Knives. Pocket and butcher	Simmons Hardware Company	14,944	Apr. 17	121	2300
Knives, razors, and parts thereof. Pocket, table, butcher, sticking, skinning, paring, and carving	James C. Lindsay Hardware Co	16,461	Apr. 17	121	2305
Knives, razors, and parts thereof. Pocket, table, butcher, sticking, skinning, paring, and carving	Hibbard, Spencer, Bartlett & Company.	13,582	Mar. 20	121	990
Knit goods in the piece	Hibbard, Spencer, Bartlett & Company.	13,841	Mar. 20	121	991
Knit jackets and sweaters	French & Ward	17,102	Mar. 20	121	1000
Knit underwear	Stephenson & Co	11,692	Mar. 13	121	665
Knitted hosiery, undershirts, and drawers. Men's, women's, children's, and infants'	J. H. Semel & Co	16,797	Apr. 17	121	2306
Knitted underwear	Carson Pirie Scott & Co	5,830	Apr. 3	121	1629
Laces. Shoe	C. E. Smith	11,865	Mar. 13	121	665
Lamps and electric-lighting apparatus. Incandescent electric	Narrow Fabric Co	18,281	Apr. 24	121	2647
Lamps and fittings of metal for same. Incandescent electric.	Edison and Swan United Electric Light Company.	9,368	Mar. 20	121	979
Lamps. Carbureting	Edison and Swan United Electric Light Company.	9,366	Mar. 13	121	660
Lamps. Decorated glass	General Safety Mantle Light Co	10,830	Apr. 17	121	2291
Lamps. Incandescent electric	Phoenix Glass Co	15,032	Apr. 10	121	1954
Lamps of all kinds. Electric	Edison and Swan United Electric Light Company.	9,367	Mar. 20	121	979
Lamps. Self-carbureting	Körting & Mathiesen Actiengesellschaft.	16,999	Mar. 13	121	679
Lantern-burners	G. H. Holgate	13,646	Apr. 3	121	1642
Lard	R. E. Dietz Company	17,172	Mar. 20	121	1001
Lard	N. K. Fairbank Company	16,081	Apr. 10	121	1958
Lard	N. K. Fairbank Company	16,083	Apr. 10	121	1958
Lathes	Dunlevy & Brother	4,697	Apr. 17	121	2280
Laxative	Vandyck Churchill Company	14,732	Mar. 13	121	672
Laxative preparations	M. H. Johnston	13,325	Apr. 24	121	2631
Laxative put up in concrete form or compressed tablets	El Zernac Company	13,660	Mar. 27	121	1332
Laxatives	Dr. Shoop Family Medicine Co	13,508	Mar. 6	121	312
Laxatives	Bristol-Myers Company	6,554	Mar. 13	121	654
Laxatives	W. S. Johnson & Son	7,945–6	Mar. 13	121	657
Laxatives	Inland Chemical Co	9,604	Mar. 13	121	661
Laxatives	K K K Medicine Company	65	Mar. 27	121	1303
Lead and oxids of lead. White	Frederick Stearns & Co	16,301	Mar. 27	121	1331
Lead and oxids of lead. White	National Lead Company	10,871–2	Apr. 24	121	2626
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,991	Apr. 24	121	2630
Lead and oxids of lead. White	National Lead & Oil Co. of Pa	12,994	Apr 24	121	2630
Lead. Oxids of	National Lead & Oil Co. of Pa	12,997	Apr 24	121	2630
Lead White	National Lead & Oil Co. of Pa	12,998	Apr. 24	121	2630
Lead. White	M. Lubelsky & Son	13,033	Apr. 17	121	2295
Lead. White	National Lead Company	10,870	Apr. 24	121	2626
Lead. White	National Lead Company	11,811	Apr. 24	121	2627
Leather-dressing	John T. Lewis & Bros. Co	12,825–6	Apr. 24	121	2629
Leather. Enameled	Alfred Andresen & Co	17,683	Apr. 24	121	2646
Leather. Harness and saddlery	Barnet Leather Co	2,924	Mar. 20	121	972
Leather. Patent, enamel, and fancy-colored	American Oak Leather Company	6,447	Apr. 3	121	1630
Leather. Sheep calf, goat, and kid	Henry Lang Company	4,825	Mar. 13	121	651
Leather. Sheep, goat, calf, and kid	A. B. Clark Co	13,916	Apr. 24	121	2633
Leather. Sheep, kid, calf, and goat	A. B. Clark Co	13,919	Apr. 24	121	2633
Leather sheets. Pasted	A. B. Clark Co	13,918	Apr. 3	121	1642
Leather sheets. Pasted	Western Leather Company	2,574	Apr. 10	121	1934
Leather sheets. Pasted	Western Leather Company	2,577	Apr. 10	121	1934
Leathers. Tanned heavy	Western Leather Company	2,579–82	Apr. 17	121	2280
Ledgers	S. H. Frank & Co	8,614	Mar. 20	121	978
Ledgers, binders, and files and leaves therefor. Loose-leaf	Richmond & Backus Co	9,729	Mar. 13	121	661
Leggings	Tengwall Company	14,143	Apr. 10	121	1952
Leggings. Leather	Rosenwasser Bros	16,625	Mar. 6	121	321
Lemon, vanilla, almond, and ginger extracts	Chanavas & Slazenger	16,666	Mar. 6	121	322
Lever. Wheeled	E. R. Durkee & Co	4,291	Apr. 17	121	2280
Lime and plaster	J. M. Ferriss, Jr	15,154	Mar. 27	121	1328
Linen and linen-and-cotton piece goods	Rock Plaster Co. of New York & New Jersey.	10,456	Mar. 20	121	983
Linen piece goods, linen lawns, sheets, &c., and embroidered linens.	G. C. Riggs	2,482	Mar. 13	121	649
Liniment	A. Wedl	13,817	Mar. 13	121	669
Liniment	Minard's Liniment Manufacturing Company.	12,969	Mar. 6	121	311
Liniment	Goodrich & Jennings	7,513	Apr. 3	121	1632
Liniment for cuts and flesh wounds	Caco Chemical Co	12,729	Apr. 3	121	1630
Liniment for external and internal use	W. H. Cox	16,600	Apr. 3	121	1653
Liniment for rheumatism and sprains	Goodrich Drug Co	11,567	Apr. 10	121	1946
Liniment for rheumatism, neuralgia, wounds, sore throat, colic, toothache, chilblains &c.	C. Z. Stone	5,908	Apr. 3	121	1629
Liniment for rheumatism, sprains, lame back, sore throat, headache, &c.	Hinkley Bone Liniment Company.	13,327	Apr. 3	121	1643
Liniments	H. E. Wrensch, Jr	13,804	Apr. 17	121	2297
Liniments for man and beast	F. Ayer	9,851	Apr. 24	121	2624
	Cracker Jack Liniment Company	11,292	Apr. 10	121	1945

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Liniments, ointments, pain cures, rheumatism remedies, &c.	K K K Medicine Company	67	Apr. 3	121	1625
Liquors or cordials	L. Brugerolle	7,068	Mar. 6	121	295
Lock-washers and nut-locks	National Lock Washer Company.	13,977	Mar. 13	121	670
Lotions and washes. Skin	E. M. Steibel	15,172	Apr. 17	121	2301
Lotions. Toilet and medicinal	E. A. Olds	13,974	Apr. 10	121	1952
Lozenges or tablets for fermentation purposes	Kefilac Company	15,060	Mar. 6	121	317
Lubricating-grease	A. Cook's Sons	4,550	Mar. 6	121	292
Lubricating-grease	A. Cook's Sons	4,253	Mar. 20	121	973
Macaroni, spaghetti, vermicelli, and noodles	Crescent Macaroni & Cracker Co.	11,700	Apr. 10	121	1947
Macaroni, vermicelli, spaghetti, and noodles	J. B. Canepa	8,374	Mar. 27	121	1312
Magazine	C. D. Steurer	12,638	Mar. 13	121	661
Magazine	E. M. Best	12,500	Apr. 3	121	1629
Magazine. Monthly	Book-Keeper Publishing Company.	16,583	Mar. 6	121	321
Magazine. Monthly	John Lane Company	16,656	Mar. 6	121	322
Magazine. Monthly	W. G. Bruce	9,538	Mar. 13	121	667
Magazine or periodical	Currier-Boyce Company	15,650	Mar. 27	121	1330
Magazine. Semimonthly	Review Publishing Company	11,942	Mar. 27	121	1320
Magazine. Weekly	Engineering & Mining Journal	9,537	Mar. 20	121	980
Magazines	Outing Publishing Company	13,279	Apr. 10	121	1950
Magazines. Monthly	World Today Company	15,234	Mar. 20	121	997
Magazines. Monthly	Crist, Scott & Parshall	15,528	Apr. 3	121	1647
Magnesia preparation. Liquid	Chas. H. Phillips Chemical Co.	15,846	Mar. 20	121	998
Magnetic currents to invalids. Apparatus for administering.	J. W. Steeves	5,099	Mar. 13	121	650
Mainsprings. Timepiece	B. Allen	12,352	Mar. 27	121	1321
Malt and hops. Extract of	Anheuser-Busch Brewing Association.	9,769	Mar. 20	121	980
Malt and hops. Extract of	Anheuser-Busch Brewing Association.	9,781	Mar. 20	121	980
Malt extracts	M K Goetz Brewing Co	14,765	Mar. 20	121	994
Malt extracts	M. K. Goetz Brewing Co	16,104	Apr. 10	121	1958
Mattresses	C. W. White	5,334	Mar. 20	121	975
Mattresses	Colorado Bedding Co	13,011	Apr. 3	121	1641
Mattresses	Southern Spring Bed Company	7,386	Apr. 10	121	1939
Medical compound for constipation	J. J. Brennan	8,789	Apr. 3	121	1634
Medical compound for the correction of irritation, inflammation, &c.	Brandreth Co	9,301	Apr. 10	121	1941
Medical preparation. Homeopathic	Munyon's Homeopathic Home Remedy Co.	12,562	Apr. 24	121	2628
Medical preparations for catarrh, bronchitis, deafness, hay-fever, &c.	Doctor Blosser Company	6,843	Apr. 24	121	2621
Medical purposes. Vegetable compound to be used for	Kloczewski & Co	267	Apr. 3	121	1625
Medical tablets for la grippe, constipation, coughs, &c	F. H. Putnam	14,880	Apr. 3	121	1645
Medicament comprising menthol dissolved in the menthol ether of valeric acid.	Vereinigte Chininfabriken Zimmer & Co., Ges. mit beschränkter Haftung.	15,881	Apr. 24	121	2637
Medicated ointment for diseases of the skin	W. Holloway	10,942	Apr. 3	121	1636
Medicated wine	Frederick Stearns & Co	16,630	Apr. 10	121	1960
Medicinal compound or remedy for such diseases as gonorrhea, gleet, &c.	D. Michaels	16,596	Apr. 3	121	1652
Medicinal oil for external use	C. W. Smith	8,475	Mar. 13	121	658
Medicinal plasters	J. M. Grosvenor & Co	11,213–14	Mar. 6	121	303
Medicinal preparation	Bristol-Myers Company	16,717–18	Mar. 28	121	1332
Medicinal preparation for diseases of the blood and skin	Dr. Peter Fahrney & Sons Co.	5,918	Mar. 6	121	294
Medicinal preparation for external and internal use	Davis and Lawrence Co	1,448	Apr. 24	121	2616
Medicinal preparation for the cure of syphilis, bilious diseases, &c.	J. D. Riedel Aktiengesellschaft	14,502	Apr. 17	121	2298
Medicinal preparation having antipyretic, analgesic, hypnotic, and antineuralgic properties.	Victor Koechl & Co	14,801	Apr. 17	121	2299
Medicinal tablets and granules	Abbott Alkaloidal Co	15,782	Apr. 3	121	1649
Medicinal tonic and cordial	U. Wolfe	8,617	Mar. 27	121	1313
Medicinal tonic for women	Parker Blake Co	15,433	Apr. 24	121	2637
Medicinal tonic or cordial	Udolpho Wolfe Co	8,615–16	Apr. 24	121	2622
Medicine. Cathartic	Sterling Remedy Company	6,825	Mar. 6	121	295
Medicine for a blood purifier, tonic, &c. Liquid	Goodrich Drug Co	11,568	Apr. 10	121	1946
Medicine for a mouth, nose, and throat wash	Lavoris Chemical Company	14,378	Apr. 17	121	2297
Medicine for affections of the throat and bronchial tubes	Frederick Stearns & Co	16,305	Mar. 27	121	1331
Medicine for fevers and malaria	Malarine Medical Company	15,507	Apr. 10	121	1955
Medicine for fevers. Liquid	G. Karpati Medicine Co	9,853	Mar. 6	121	300
Medicine for gonorrhea, &c	Frederick Stearns & Co	16,304	Mar. 27	121	1331
Medicine for Graves' disease	Vereinigte Chemische Werke Aktiengesellschaft.	13,888	Apr 10	121	1953
Medicine for headache, neuralgia, nervous diseases, &c	Cephalgine Company	1,012	Apr. 3	121	1626
Medicine for indigestion	Sterling Remedy Company	9,536	Mar. 13	121	660
Medicine for kidney and heart diseases	Knoll & Co	13,680	Mar. 6	121	313
Medicine for limber-neck and roup. Poultry	C. J. Clarke	16,155	Mar. 27	121	1330
Medicine for stomach diseases	L. J. Schabinger	13,170	Apr. 10	121	1960
Medicine for the cure of constipation and bowel and stomach ailments.	F. Muller, Jr	8,367	Mar. 13	121	658
Medicine for the relief of sundry ailments. Certain proprietary	Brandreth Co	9,302	Apr. 3	121	1634
Medicine. Headache	Kef Chemical Co	16,384	Apr. 3	121	1652
Medicine in tablet form to prevent physical and mental ailments.	E. R. Moras	9,660	Apr. 17	121	2299
Medicine. Poultry	F. Lee	4,414	Mar. 13	121	651
Medicine to purify the blood and regulate the kidneys, liver, and bowels.	F. J. Schmidt	7,747	Mar. 27	121	1311
Medicines for alcoholic and drug habits	Orrine Company of the District of Columbia.	16,508	Apr. 3	121	1633
Medicines for epilepsy, St. Vitus' dance, &c	E. P. Mertz	16,507	Apr. 3	121	1652
Medicines for horses, cattle, and poultry	Aschenbach & Miller	9,933	Mar. 13	121	662
Medicines having for their base saline compounds	F. X. Hart	15,450	Apr. 24	121	2637
Medicines in pill form	W. R. Warner & Co	1,498	Mar. 20	121	970
Medicines. Worm	B. S. Fahnestock	3,696	Mar. 13	121	650
Metal. Babbitt	Peerless Smelting & Refining Co.	9,600	Apr. 10	121	1942
Metal. Bearing	Frictionless Metal Company	4,901	Mar. 13	121	651

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Metal. Bearing	Frictionless Metal Company	4,906-9	Mar. 13	121	651
Metal-polish	J. B. Hill	9,745	Mar. 13	121	661
Metal-polish	Ayling Bros	3,431	Apr. 24	121	2617
Metal-polishes	C. Rath	11,083	Mar. 20	121	983
Metal. Solder, Babbitt, or other antifriction	Selby Smelting & Lead Company	17,085	Mar. 20	121	1000
Metals. Antifriction and bearing	William A. Hardy & Son's Co	5,937	Mar. 13	121	652
Metals. Antifriction and bearing	William A. Hardy & Son's Co	5,940	Mar. 13	121	653
Metals. Hand-beaten leaf	M. Spiegelberger	5,097	Apr. 3	121	1628
Metals or alloys. Antifriction	Magnolia Metal Company	17,390-1	Apr. 10	121	1962
Microbe-killer	I. Radam	5,001	Mar. 13	121	651
Milk and cream	H. Yates	6,046	Apr. 10	121	1937
Milk and cream. Evaporated	Falk Mercantile Co	9,837	Mar. 20	121	980
Milk. Condensed	Borden's Condensed Milk Co	7,815	Mar. 6	121	296
Milk. Condensed	Borden's Condensed Milk Co	11,101	Mar. 13	121	664
Milk. Condensed	Borden's Condensed Milk Co	15,838-43	Mar. 13	121	675
Milk. Condensed	Borden's Condensed Milk Co	7,814	Mar. 20	121	977
Milk. Condensed	Borden's Condensed Milk Co	7,817-19	Mar. 20	121	977
Milk. Condensed	Borden's Condensed Milk Co	7,821-2	Mar. 20	121	977
Milk. Condensed	Vermont Condensed Milk Co	7,831	Mar. 27	121	1311
Milk. Condensed	Vermont Condensed Milk Co	7,834-5	Mar. 27	121	1311
Milk. Condensed	Vermont Condensed Milk Co	7,837-8	Mar. 27	121	1311-12
Milk. Condensed	Vermont Condensed Milk Co	11,116	Mar. 27	121	1318
Milk. Condensed	Borden's Condensed Milk Co	7,824	Apr. 17	121	2286
Mills. End, lathe, and heading	Cleveland Twist Drill Company	17,752	Apr. 10	121	1965
Mince-meat. Fresh	F. Saunders	14,089	Apr. 10	121	1952
Mineral compound for cleaning brass and other metals	H. A. Lawton	14,611	Mar. 13	121	671
Molasses	Eastern Refining Co	5,622	Apr. 24	121	2619
Mops	Estes Mills	16,706-10	Mar. 6	121	322-3
Moreens	Eddystone Manufacturing Company.	9,656	Mar. 13	121	661
Mower, binder, reaper, and header knife and sickle heads	Whitman & Barnes Manufacturing Company.	14,594	Mar. 27	121	1326
Mower, reaper, binder, and header knife sections	Whitman & Barnes Manufacturing Company.	14,717	Mar. 27	121	1326
Mowers and parts thereof. Lawn-	Hibbard, Spencer, Bartlett & Company.	15,414	Apr. 3	121	1646
Music and music-books. Sheet-	L. Feist	15,030	Apr. 24	121	2636
Musical-boxes and tune-disks	Lyon & Healy	11,355	Apr. 3	121	1637
Nail-clippers	Smith & Hemenway Company	17,644	Apr. 10	121	1965
Nail-sets	Cleveland Twist Drill Company	17,751	Apr. 10	121	1965
Nails	United Shoe Machinery Company	17,681	Apr. 17	121	2308
Nails. Corrugated brass shoe-	River Co	7,266	Mar. 6	121	295
Nails. Horse-	Standard Horse Nail Company	9,170	Mar. 13	121	659
Nails. Horse-	Standard Horse Nail Company	9,898	Mar. 13	121	662
Needles	Excelsior Needle Company	17,402	Apr. 10	121	1962
Needles for hand and machine sewing	Henry Milward & Sons	13,197	Mar. 13	121	668
Needles for hand and machine sewing	Singer Manufacturing Company	13,928	Apr. 24	121	2633
Needles of all kinds	Thüringische Nadel & Stahlwaaren Fabrik Wolff, Knippenberg & Co., Actien Gesellschaft.	5,825	Mar. 13	121	652
Needles. Self-threading	London Needle Company	13,433	Mar. 6	121	312
Negative-intensifiers	Kirk-Geary & Company	16,395	Mar. 6	121	319
Nervine, sedative, febrifuge, &c., put up in bottles, capsules, or other impervious packages.	Chelf Chemical Co	12,553	Mar. 20	121	988
Neuralgia cure or specific	E. B White	13,847	Mar. 20	121	998
Newspaper. Weekly	American Standard Publishing Company.	16,594	Mar. 6	112	321
Newspapers. Agricultural	J. M. Stahl	16,517	Apr. 17	121	2305
Noodles and vermicelli	John Boehm Co	13,950	Apr. 10	121	1952
Oatmeal, cracked wheat, hominy grits, breakfast-foods, &c.	American Cereal Company	2,308	Apr. 17	121	2279
Oil. Castor-	Griggs, Cooper and Company	9,642	Mar. 6	121	299
Oil. Castor-	National Lead Company	14,415	Apr. 24	121	2634
Oil commonly known as "Haarlem oil"	Holland Medicine Company	5,688-9	Apr. 17	121	2284
Oil confections. Castor-	Castor Oil Tablet Co	15,036	Mar. 20	121	995
Oil. Cylinder and valve	J. D. Streett & Company	10,859	Mar. 13	121	664
Oil for table use and cooking. Olive and salad	G. Lueders & Co	1,697	Mar. 20	121	970
Oil. Illuminating-	Standard Oil Co. of New York	9,858	Mar. 20	121	980
Oil. Illuminating-	West India Oil Company	13,986	Mar. 20	121	992
Oil. Linseed-	National Lead & Oil Co. of Pa	12,999	Apr. 17	121	2295
Oil. Lubricating-	E. O. Hall and Son	12,738	Apr. 3	121	1639
Oil. Lubricating-	Singer Manufacturing Company	13,929	Apr. 24	121	2632
Oil. Lubricating-	Fiske Brothers Refining Co	16,628	Apr. 24	121	2640
Oil meal. Linseed-	E. F. Darrell & Co	13,556	Mar. 6	121	313
Oil. Olive-	Chaffard & Couderc	13,442	Mar. 6	121	312
Oil. Olive-	Akerman & Tuffley	14,910	Mar. 20	121	994
Oil. Olive-	R. Hill	15,163-5	Mar. 20	121	996-7
Oils and grease. Lubricating	W. A. Castle Co	9,003	Apr. 10	121	1941
Oils. Illuminating-	C. F. Kellom	15,618	Apr. 17	121	2302
Oils. Lubricating-	Standard Oil Co. of New York	10,123	Apr. 24	121	2624
Oils. Lubricating-	Wilburine Oil Works	13,146	Mar. 6	121	311
Oils. Lubricating-	American Petroleum Products Co	14,020	Mar. 6	121	314
Oils. Lubricating-	Valvoline Oil Company	1,477	Apr. 3	121	1626
Oils. Petroleum illuminating-	Atlantic Refining Company	6,051	Apr. 17	121	2285
Oils. Petroleum lubricating-	Standard Oil Co. of New York	16,772	Apr. 10	121	1960
Oils Petroleum lubricating-	Gulf Refining Company	8,767	Mar. 20	121	978
Oils used in the manufacture of perfume	Gulf Refining Company	8,769	Mar. 20	121	978
Oiled clothing	Heine & Co	11,123	Apr. 10	121	1945
Ointment	A. J. Tower Company	6,890	Apr. 3	121	1631
Ointments	P. Gary	16,198	Mar. 27	121	1330
Ointments	Foster-McClellan Company	16,212	Mar. 27	121	1331
Olives	W. B. Smith	8,127	Apr. 24	121	2622
Olives	Francis H. Leggett & Company	8,487	Mar. 13	121	658
Olives	Akerman & Tuffley	14,911	Mar. 13	121	672
Olives. Stuffed	Griggs, Cooper and Company	9,649	Apr. 17	121	2290
	S. J. Valk & Bro	16,433	Mar. 27	121	1332

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Oranges, lemons, and grape-fruit	Fernando Fruit Growers Association.	8,107	Mar. 6	121	297
Oranges, lemons, grape-fruit, tangerines, and mandarins	Russell & Company	14,996	Mar. 20	121	995
Organs	Packard Company	17,610	Apr. 24	121	2645
Oven-turnbuckles and wrought-iron pipe-strap	Berger Bros. Co	4,264	Apr. 10	121	1935
Overalls, bibs, and coats constituting complete overall-suits	Bichford Garment Company	16,811	Apr. 17	121	2306
Overalls, such as overtrousers and overshirts. Workmen's	Globe Overall Co	15,554	Mar. 27	121	1329
Overcoats and suits	Friend Bros Clo. Co	13,213	Apr. 24	121	2631
Packing for steam and water joints	E. Cooper	12,466	Apr. 10	121	1948
Packing for the wearing and bearing parts of machines, &c	Greene Tweed & Co	15,266	Apr. 10	121	1955
Packing gages and cutters	Demarest and Carver	16,832	Mar. 13	121	678
Packing. Machinery-	C. A. Daniel	14,759	Mar. 13	121	672
Packing. Machinery-	C. Nuhring	12,274	Mar. 27	121	1321
Packing. Piston-rod and valve	Garlock Packing Co	4,487	Apr. 24	121	2617
Packing. Rubber	Gorham Rubber Company	5,169	Mar. 13	121	651
Packing. Rubber	Gibbens & Stream	15,326	Apr. 3	121	1646
Packing. Spiral, sectional ring, flax, and sheet	Speck, Marshall & Co	17,126	Mar. 20	121	1000
Paint. Coal-tar	Barrett Manufacturing Company.	15,960	Apr. 24	121	2638
Paint for ship and boat bottoms. Preservative	Tarr & Wonson	3,416	Apr. 24	121	2616
Paint for ship and boat bottoms. Preservative	Tarr & Wonson	3,418	Apr. 24	121	2616
Paint. Liquid	A. S. Laliberte	16,961	Apr. 24	121	2642
Paint. Metal and wood preservative	Toch Brothers	11,583	Mar. 6	121	305
Paint. Mixed	Marine Paint Corporation	15,749	Apr. 10	121	1956
Paint. Mixed liquid	Vane-Calvert Paint Co	11,317	Apr. 17	121	2292
Paint. Red	F. O. Pierce Company	11,041	Mar. 6	121	302
Paint. Red	F. O. Pierce Company	11,044	Mar. 6	121	303
Paint. Roof-	E. W. Grafton	16,620	Apr. 24	121	2640
Paint. Waterproof structural and roof	Atlantic Refining Company	16,863	Mar. 6	121	324
Paint. Waterproofing	Toch Brothers	11,580	Mar. 6	121	305
Paints, enamels, varnishes, &c. Oil and varnish	Gerstendorfer Bros	3,062	Mar. 6	121	291
Paints. House-	Pimbley Paint & Glass Co	7,538	Mar. 13	121	656
Paints. Metallic	Toch Brothers	11,589	Mar. 6	121	305
Paints. Mixed	John W. Masury & Son	12,509	Mar. 20	121	988
Paints. Mixed	Senour Manufacturing Co	6,770	Apr. 3	121	1630
Paints. Mixed	G. W. Piper	15,571	Apr. 3	121	1647
Paints. Oil and water-color	Columbia Refining Co	5,012	Mar. 6	121	298
Paints or stains. Absorbent	Baumann-Klage Co	14,781	Mar. 13	121	672
Paints. Ready-mixed	Toch Brothers	11,575	Mar. 6	121	305
Pans. Baking-	Edward Katzinger Company	17,041	Mar. 13	121	680
Papaya, pineapple, and sugar. Combination of	Tropic Fruit Company	16,367	Apr. 3	121	1651
Paper and envelops	F. A. Flinn	13,946	Mar. 27	121	1324
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,909	Apr. 3	121	1649
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,911	Apr. 3	121	1649
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,918	Apr. 3	121	1649
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,914	Apr. 10	121	1957
Paper and paper bags and sacks. Wrapping-	Hollingsworth & Whitney Company.	15,919	Apr. 10	121	1957
Paper bags	Union Bag & Paper Company	17,001	Mar. 13	121	679
Paper bags	Union Bag & Paper Company	17,013	Mar. 13	121	679
Paper bags	Union Bag & Paper Company	17,016	Mar. 13	121	680
Paper bags	Union Bag & Paper Company	17,021	Mar. 13	121	680
Paper bags	Union Bag & Paper Company	17,458	Apr. 3	121	1654
Paper bags	Union Bag & Paper Company	17,457	Apr. 10	121	1962
Paper bags	Union Bag & Paper Company	17,726	Apr. 24	121	2646
Paper. Book and cover	Peninsular Paper Co	10,459	Mar. 20	121	983
Paper. Carbon-	De-Fi Manufacturing Co	4,053	Mar. 13	121	650
Paper. Carbon-	Carter's Ink Company	6,697	Apr. 24	121	2620
Paper-clips. Spring	Ring Paper Clip Company	14,023	Mar. 20	121	992
Paper-fasteners	Thomas Stationery Manufacturing Company.	15,194	Apr. 17	121	2302
Paper for covering roofs, &c	F. W. Bird & Son	13,129	Mar. 6	121	311
Paper holders and cutters Roll-	National Candy Mold and Manufacturing Company.	15,176	Apr. 24	121	2636
Paper in loose sheets or connected together	Sir Isaac Pitman & Sons	11,988	Apr. 3	121	1638
Paper. Printing-	Dill & Collins Co	10,609	Mar. 13	121	663
Paper. Printing and writing	Dill & Collins Co	10,608	Apr. 24	121	2625
Paper. Story-	A. D. Porter Company	7,616	Mar. 27	121	1311
Paper. Toilet-	A. F. Baird	7,071	Mar. 13	121	655
Paper. Toilet-	Hubbs & Corning Co	16,829	Mar. 13	121	678
Paper. Toilet-	T. F. Sprigg	15,649	Mar. 20	121	997
Paper. Toilet-	T. F. Sprigg	15,648	Mar. 27	121	1330
Paper. Toilet-	Scott Paper Co	15,246	Apr. 3	121	1645
Paper. Toilet-	Scott Paper Co	17,142	Apr. 10	121	1961
Paper. Toilet-	J. Robertson & Son	16,289	Apr. 17	121	2304
Paper wrappers for rolls of ribbon	D. Sheeline Son & Co	15,063	Apr. 17	121	2301
Paper Wrapping-	Dayton Paper Novelty Co	15,990	Apr. 17	121	2303
Paper. Wrapping-	Dayton Paper Novelty Co	15,991	Apr. 24	121	2638
Papers. Wall-	Baeck Wall Paper Co	16,670	Mar. 20	121	999
Paste. Dry	Crown Oil & Wax Company	12,243	Mar. 13	121	666
Pavements and compositions or cements for making the same. Bituminous	Warren Brothers Company	7,728	Mar. 13	121	657
Pencils and drawing-charcoal. Lead and drawing	E. G. Saltmann	531	Apr. 3	121	1625
Pencils. Metallic tips for lead-	Eagle Pencil Company	15,729	Mar. 20	121	998
Pens. Fountain-	L. E. Waterman Company	4,348	Mar. 6	121	291
Pens. Metallic	Spencerian Pen Co	4,468	Mar. 27	121	1308
Pens. Metallic	Spencerian Pen Co	1,616	Apr. 10	121	1934
Pens. Steel	Payot, Upham & Co	15,503-4	Mar. 27	121	1329
Pens. Steel	Dreka Company	6,016	Mar. 6	121	294
Pens. Steel and plated	C. Howard Hunt Pen Co	16,221	Mar. 13	121	676
Perfumes, toilet waters, extracts, and colognes	D. R. Bradley & Son	15,371	Apr. 17	121	2307
Perfuming extracts	F. A. Richter	1,626	Apr. 10	121	1934
Periodical. Weekly	W. J. Johnston	12,140	Mar. 20	121	966

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Petroleum. Illuminating	Standard Oil Co. of New York	11,718	Mar. 13	121	665
Petroleum or mineral jelly	Wilburine Oil Works	13,147	Mar. 6	121	311
Phosphatic powders to be used in place of cream of tartar	Rumford Chemical Works	5,771	Apr. 3	121	1629
Photographic developers	J. Hauff & Co. G. m. b. H	15,774-5	Apr. 10	121	1956
Photographic paper and films	Société Anonyme "Luna"	5,617	Mar. 20	121	975
Piano-players. Mechanical	Aeolian Company	17,306	Apr. 24	121	2644
Pianos	Jewett Piano Co	16,904	Mar. 13	121	678
Pianos	Decker & Son	10,196	Mar. 27	121	1316
Pianos	Emerson Piano Company	16,058	Apr. 10	121	1968
Pianos	Packard Company	13,703	Apr. 17	121	2297
Pianos and electrical players for pianos. Electrically-played	Goetz and Co	15,653	Apr. 24	121	2637
Pianos. Upright and grand	Stokes & Smith Company	16,568	Mar. 6	121	321
Pickled limes	Lester Piano Company	14,835	Apr. 10	121	1963
Pickles	Griggs, Cooper & Company	18,303	Apr. 24	121	2648
Picks. Coal-miners'	Squire D'ngee Co	4,886	Apr. 10	121	1936
Picture-frames	Fulton Tool Works	11,674	Apr. 17	121	2292
	A. M. Collins Manufacturing Company.	16,139	Apr. 17	121	2304
Pie-fillings	H. C. Gutchess	11,230	Mar. 20	121	983
Pills	Allcock Manufacturing Co	9,249	Apr. 17	121	2289
Pills	Allcock Manufacturing Co	9,257	Apr. 24	121	2623
Pills	J. Beecham	16,525	Apr. 24	121	2640
Pills and tablets. Cathartic	Foster-McClellan Company	16,209-10	Mar. 27	121	1330
Pills as a remedy for kidney diseases	J. A. McKee	10,318	Mar. 6	121	301
Pills for liver and bowel complaints	B. T. Davis	10,603	Mar. 27	121	1317
Pills for the cure of headache, dizziness, biliousness, &c	Carter Medicine Company	5,871	Apr. 10	121	1937
Pills for the treatment of the liver and kidneys	R. H. N. Johnson	12,232	Mar. 27	121	1320
Pills. Pennyroyal and tansy	H. B. Taylor	8,680	Apr. 17	121	2288
Pills, powders, and potions for the treatment of headache, coughs, &c.	H. A. Blair	2,548	Mar. 20	121	971
Pins. Hat	Scott-Blake Co	13,221	Apr. 17	121	2295
Pipes, fittings, and connections therefor. Steam, gas, oil, and water	McNab & Harlin Manufacturing Company.	4,398	Mar. 20	121	974
Pistols	Colt's Patent Fire Arms Manufacturing Company.	11,091-2	Mar. 27	121	1318
Planes and plane-irons	Simmons Hardware Company	14,939	Apr. 17	121	2300
Plaster	Glencoe Lime & Cement Company.	6,926	Mar. 13	121	655
Plaster. Adhesive	J. Ellwood Lee Company	17,069	Mar. 20	121	1000
Plaster. Antiseptic adhesive poultice	Bayles Distributing Co	7,560	Mar. 20	121	976
Plaster for curing cancer, carbuncles, boils, &c	W. C. Devoild	16,794	Apr. 24	121	2641
Plaster-of-Paris and calcined, finishing, and casting plaster	C. L. Miller & Co	14,201	Mar. 20	121	992
Plaster, plaster-of-paris, and stucco. Wall and calcined	Acme Cement Plaster Co	13,444-5	Apr. 17	121	2296
Plaster, plaster-of-paris, and stucco. Wall and calcined	Acme Cement Plaster Co	13,447-8	Apr. 17	121	2296
Plasters	Allcock Manufacturing Co	11,560	Apr. 3	121	1637
Plasters. Adhesive	Johnson & Johnson	13,991	Mar. 27	121	1324
Plasters for rheumatism, pain, soreness, and inflammation	A. R. Idone	7,060	Mar. 6	121	295
Plasters. Porous	Allcock Manufacturing Co	9,253	Apr. 24	121	2623
Plows and cultivators	Vulcan Plow Co	12,231	Mar. 6	121	307
Plows and parts thereof	Collins Company	12,912	Mar. 6	121	311
Poison. Insect	R. Drumm	15,578	Apr. 3	121	1647
Polish for wood and metals. Liquid	W. J. Bussey	16,365	Mar. 13	121	678
Polishing and cleansing preparations	L. Hauck	15,223	Mar. 22	121	997
Pomade	J. D. Bell	13,934	Apr. 10	121	1952
Popcorn	A. A. Berry Seed Company	15,948-9	Apr. 10	121	1957
Porcelain ware of all kinds	A. Hamann	10,775	Mar. 20	121	983
Porter	Robert Smith Ale Bwg Co	16,177	Mar. 6	121	319
Potash	Pennsylvania Salt Manuf'g Co	5,714	Apr. 17	121	2284
Potatoes. Irish and sweet	Eastern Shore of Virginia Produce Exchange.	8,687	Mar. 6	121	298
Powder and antiseptic mouth-wash. Tooth	T. R. Harvey	16,354	Apr. 17	121	2304
Powder containing phenol. Tooth	Crimmings-Magrath Co	15,657	Apr. 3	121	1648
Powder. Face	J. Tetlow	13,565	Mar. 6	121	313
Powder. Face	Artesia Cream Company	16,454	Mar. 6	121	321
Powder Foot	Rice, Stearns & Co	9,984	Mar. 13	121	662
Powder. Foot	E. E. Ambrose	13,177	Mar. 13	121	668
Powder. Gun	American Powder Mills	8,513	Mar. 27	121	1313
Powder. Gun	American Powder Mills	8,512	Apr. 3	121	1633
Powder. Gun	American Powder Mills	8,511	Apr. 17	121	2287
Powder. Heave	Dr. Hess & Clark	8,185	Mar. 27	121	1312
Powder. Talcum	Pond's Extract Company	16,444	Mar. 6	121	320
Powder. Toilet and sachet	R. Hudnut's Pharmacy	14,522	Mar. 6	121	316
Powders and creams. Toilet	E. N. Lanigan	10,494	Apr. 10	121	1941
Powdered paper for the skin or toilet use	A. S. Butler	10 664	Mar. 13	121	663
Preparation for the complexion. Liquid	M Secor	10,668	Mar 13	121	663
Preparation for the cure of anæmia, chlorosis, and for a tonic, &c.	Dr. A. Gude & Co. G. m. b H	12,152	Mar. 13	121	666
Preparation for the cure of chronic constipation, headache, &c	Edward L. Baldwin Co	15,746	Apr. 3	121	1643
Primers or caps Blasting	Metallic Cap Manufacturing Coy	1,352	Apr. 10	121	1934
Printers' paste and set-off liquor	G. S. Duncan	8,120	Mar 6	121	297
Publication Periodical	Dr Peter Fahrney & Sons Co	12,953	Apr. 17	121	2295
Publication. Periodical	Holophone Glass Company	15,680	Apr. 17	121	2302
Publication. Periodical	V. Lansingh	15,681	Apr. 17	121	2302
Publication. Periodical	Illuminating Engineering Publishing Co	15,946	Apr. 17	121	2303
Puddings	A. Tsakona	17,273	Mar. 20	121	1002
Puddings and custards	W. P Ward	7,625	Mar 13	121	656
Pulp and ground wood. Wood	Aspegren & Co	4,964	Apr 3	121	1628
Pulverizing machinery	G. H. Fraser	16,635-6	Apr. 10	121	1960
Pump buckets Chain	Temple Pump Company	16,949	Mar. 27	121	1332
Pumps	F. E. Myers & Bro	2,009	Apr 10	121	1934
Pumps. Centrifugal	Wheeler Condenser & Engineering Co.	8,382	Apr 17	121	2287
Pumps. Hydraulic	United Iron Works	10,271	Mar. 20	121	982
Pumps, otherwise known as bucket or chain Purifying	St. Joseph Pump Co	8,596	Mar. 13	121	659

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Pumps. Piston well-	Red Jacket Manufacturing Company.	13,544	Mar. 13	121	669
Pumps. Water-	F. E. Myers & Brother	6,900	Mar. 13	121	654
Purses and hand-bags. Leather	Gorham Mfg. Co	17,629	Apr. 24	121	2645
Puzzles. Rolling-ball	J. Bigham	12,697	Apr. 3	121	1639
Range. Steel	P. D. Beckwith	12,476	Mar. 6	121	309
Ranges and stoves. Cooking	Cook and Van Evera Co.	17,531	Apr. 17	121	2308
Rat, vermin, and insect destroyer or exterminator	E. S. Wells	16,903	Apr. 24	121	2642
Rawhide. Specially-prepared	New Process Raw Hide Co	7,113	Mar. 13	121	655
Razors	H. Keidel	8,294	Mar. 6	121	397
Razors	Challenge Cutlery Corporation	1,777	Mar. 13	121	648
Razors	A. Witte	10,831	Mar. 13	121	663
Razors	A. Graef	10,334	Apr. 3	121	1635
Razors	F. A. Clauberg & Co	11,536	Apr. 3	121	1637
Razors	A. J. Hague & Co	16,175	Apr. 3	121	1650
Razors	Smith & Hemenway Company	11,657	Apr. 10	121	1946
Razors	Smith & Hemenway Company	17,645	Apr. 10	121	1965
Razors	Simmons Hardware Company	14,943	Apr. 17	121	2300
Razors	A. Graef	17,096	Apr. 17	121	2308
Razors and pocket, butchers', bowie, farriers', hunting, and table knives.	George Wostenholm and Son	13,785	Apr. 17	121	2297
Razors and pocket-knives	A. L. Silberstein	8,806	Mar. 13	121	650
Reflectors for store, show-window, and stage lighting. Electric and gas light	I. P. Frink	12,784	Apr. 10	121	1949
Refrigerators	Lorillard Refrigerator Co	12,489	Mar. 6	121	300
Refrigerators	McCray Refrigerator Co	16,733	Mar. 6	121	323
Refrigerators	Lorillard Refrigerator Co	13,961	Mar. 13	121	660
Refrigerators	Eureka Refrigerator Co	17,189	Mar. 27	121	1333
Refrigerators	O. M Whitman & Co	16,037	Apr. 10	121	1958
Remedies and tonics. Blood	L. G Delamothe	13,403	Apr. 3	121	1642
Remedies for all diseases of the blood, liver kidneys, and stomach.	H. D. Rucker	15,813	Apr. 24	121	2637
Remedies for bloat in animals	Pratt Food Co	12,653	Mar. 20	121	988
Remedies for bronchial affections	J. Wertheim	12,756	Apr. 24	121	2629
Remedies for canines	L. G. Atwood	14,936	Apr. 3	121	1645
Remedies for diphtheria, &c	L. d'Ambrosio	9,849	Mar. 27	121	1315
Remedies for diseases of the throat, nasal organs, and lungs	C. J. Ulrici	13,431	Mar. 6	121	312
Remedies for intestinal inflammations, &c. Internal	H. F. Edsall	14,148	Mar. 6	121	314
Remedies for rheumatism, &c	J. L. Odom	6,856	Mar. 27	121	1310
Remedies for rheumatism, sciatica, &c. Internal	H. F. Edsall	15,362	Mar. 27	121	1329
Remedies for stomach, intestinal, and bowel disorders	E. J. Hart & Co	11,387	Mar. 6	121	304
Remedies for stomach, liver, and bowel complaints. Proprietary	P. F. & J. A. Wellenberger	14,240	Apr. 24	121	2634
Remedies for the cure of corns, bunions, chilblains, &c	J. B. Starkey	12,413	Mar. 13	121	666
Remedies for the relief and cure of coughs, colds, hoarseness, &c.	M Gebauer	14,640	Mar. 13	121	671
Remedies having tonic and alterative properties Internal	H. F Edsall	14,149	Mar. 6	121	314
Remedies. Venereal-disease	M. Piorkowski	14,993	Apr. 17	121	2301
Remedy. Catarrhal	G. Wilson	11,623	Mar. 27	121	1319
Remedy for all disorders of the stomach, liver, and bowels	F. J. Hartmiller	16,387	Apr. 3	121	1652
Remedy for anemia, debility, &c., resulting from impurity of the blood. Tonic	T. A. Miller	5,560	Mar. 6	121	293
Remedy for animals. External	A. B. Young	15,803-4	Mar. 20	121	998
Remedy for baldness	W. P. Ward	7,623	Mar 13	121	656
Remedy for corns, bunions, and ingrown nails	Stafford Drug Co. of Baltimore City.	12,100	Apr. 17	121	2292
Remedy for coughs and colds	O. C. B. Grom	7,626	Apr. 24	121	2621
Remedy for coughs, colds, influenza, &c	Charles N. Crittenton Company	16,847	Apr. 17	121	2307
Remedy for croup, coughs, &c	C. V. Dorman	14,497	Apr. 10	121	1953
Remedy for croup. External	Smoot Drug Co	16,665	Apr 17	121	2305
Remedy for diseases of swine particularly hog-cholera	Southern Hog Remedy Co	13,161	Apr 3	121	1641
Remedy for diseases of the liver	Peacock Chemical Company	16,031	Apr. 17	121	2303
Remedy for diseases of the liver, for dropsy, &c	Gerstle Medicine Co	13 093	Apr. 10	121	1951
Remedy for diseases of the respiratory organs	J Jungmann	10,646	Apr. 17	121	2290
Remedy for dropsy	E. Henke	10,056	Mar. 13	121	662
Remedy for exterminating parasites from the body of human beings and animals.	H. E. Bowles	16,973	Apr. 17	121	2307
Remedy for fevers, tuberculosis, colds, &c	F. U. Kahle	5,814	Apr. 10	121	1937
Remedy for impoverished blood and nerves	I. Croteau	14,998	Apr. 24	121	2635
Remedy for inflammation	B. F. Miner	3,448	Mar. 13	121	649
Remedy for liver and bowel ailments. Liquid	H. Jayess Remedy Co	11,981	Mar 6	121	306
Remedy for malaria, chills and fever, liver complaint, &c	S. J. Dalzelle	12,958	Mar. 13	121	667
Remedy for rheumatism and gout	E. Bischoff	16,173	Mar. 27	121	1330
Remedy for the cure of St. Vitus' dance or chorea	S W. Mackrell	10,122	Mar. 20	121	981
Remedy for the treatment and prevention of diseases peculiar to women.	J. M Oldfield	2,087	Mar 20	121	970
Remedy for treatment of heart, lung, kidney, &c., diseases Tonic	Moro Medical Co	12,149	Mar 27	121	1320
Remedy. Headache	C. B. Hudon	15,890	Mar 20	121	998
Remedy. Headache	C. S. A. Chemical Co	13,356	Apr. 24	121	2631
Remedy in form of a powder for rheumatism, malaria, blood and skin diseases, &c.	J. C. Densten	7,135	Apr. 3	121	1631
Remedy. Laxative	McKesson & Robbins	4,894	Apr. 17	121	2281
Remedy. Neuralgia and headache	Frederick Stearns & Co	16,302-3	Mar. 27	121	1331
Remedy. Toothache	Charles N. Crittenton Company	16,851-2	Apr. 17	121	2307
Rheumatism cure	J. L. Smedley	15,836	Mar. 20	121	998
Rheumatism cure	J. B. Cromley	11,629	Apr. 10	121	1946
Ribbons	Smith & Kaufmann	15,277	Mar. 13	121	675
Ribbons	Bamberg & Risser	12,470	Mar. 20	121	988
Ribbons	Vischer & Co	8,033-4	Apr. 10	121	1940
Ribbons of different shades and colors	Fry & Friedsam	15,230	Mar. 27	121	1328
Rice	Dolan Mercantile Co	11,100	Mar. 13	121	664
Rings	Warren & Williams	17,138	Mar. 20	121	1001
Rings	A. Tanzer	15,726	Apr. 10	121	1956
Rings either in solid bands or with settings. Solid-gold finger-	J. R. Wood & Sons	8,597	Apr. 17	121	2287
Rock and rye	P. J. Bowlin Liquor Co	8,633	Mar. 20	121	978

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Rock-crushers	Climax Road Machine Co	17,907	Apr. 24	121	2646
Roofing consisting of flexible sheets of waterproof material	Eastern Granite Roofing Company.	10,276	Apr. 17	121	2291
Roofing. Ready tar-and-felt	Barrett Manufacturing Company.	12,038	Mar. 20	121	986
Root-canal filling	W. H. Leak	8,262	Mar. 13	121	658
Rubber belting	Gorham Rubber Company	13,904	Mar. 6	121	314
Rubber belting	Speck, Marshall & Co	17,128	Mar. 20	121	1000
Rubber combs. Hard-	American Hard Rubber Co	16,777–8	Mar. 6	121	323
Rubber hose	Speck, Marshall & Co	17,127	Mar. 20	121	1000
Rubber packing, gaskets, disks, rings, and washers	A. B. Jenkins	15,012–13	Apr. 24	121	2636
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	11,962	Mar. 20	121	986
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	13,963	Mar. 20	121	991
Rubber. Reclaimed	U. S. Rubber Reclaiming Works of New York.	14,162	Mar. 20	121	992
Rubber water-bottles, fountain-syringe bags, ice-caps, and invalid-rings.	Faultless Rubber Co	15,933	Apr. 3	121	1649
Rugs	McCleary, Wallin & Crouse	12,105	Apr. 17	121	2293
Rugs	Hartford Carpet Corporation	13,745	Apr. 24	121	2632
Rum. Jamaica	W. A. Taylor & Co	10,697	Apr. 10	121	1944
Safes	Herring-Hall-Marvin Safe Company.	7,107	Mar. 27	121	1310
Salt	Brown & Shaw	11,400	Mar. 27	121	1319
Salt	P. J. L. Searing	14,527	Mar. 27	121	1325
Salt	Brown & Shaw	11,400	Apr. 17	121	2292
Salt	Crystaline Salt Company	10,454	Apr. 24	121	2625
Salve	P. J. L. Searing	14,529	Apr. 24	121	2634
Salve	Bickmore Gall Cure Company	10,691	Mar. 27	121	1317
Salve. Eye-	Bickmore Gall Cure Company	10,692	Apr. 3	121	1636
Salve for cure of freckles	E. E. Sutherland Medicine Co	1,460	Apr. 24	121	2616
Salve. Green	J. J. Kline	13,305	Apr. 17	121	2296
Salve or ointment for curing sores and wounds of animals	H. J. Baker	8,797	Apr. 3	121	1634
Sarsaparilla	Bickmore Gall Cure Company	11,050	Apr. 3	121	1636
Sarsaparilla extract	Lanman & Kemp	15,088	Mar. 13	121	674
Sash adjusters and locks. Combination	Nostrand Trading Co	13,920–2	Mar. 20	121	991
Sauce. Cocktail-	L. Petraccione	9,740	Mar. 27	121	1315
Sauce. Pepper-	C. I. Morey	10,078	Mar. 6	121	300
Sauce. Pepper-	E. McIlhenny's Son	8,775	Apr. 17	121	2288
Sauce. Vegetable-	E. McIlhenny's Son	8,777	Apr. 17	121	2288
Sauer-kraut	F. F. Plank	13,391	Apr. 24	121	2631
Saw sets, jointers, and gages	J. G. McCaskey	14,636	Mar. 6	121	316
Saws	G. Y. Anderson	18,178	Apr. 24	121	2647
Saws	J. N. Eberle & Co	9,738	Apr. 3	121	1634
Saws	Henry Disston & Sons	14,104–5	Apr. 17	121	2297
Saws	Henry Disston & Sons	14,110	Apr. 17	121	2297
Saws	Henry Disston & Sons	14,114–15	Apr. 17	121	2297
Saws and saw-blades	Henry Disston & Sons	14,118	Apr. 17	121	2297
Saws and saw blades and handles	Hibbard, Spencer, Bartlett & Company.	17,743	Apr. 17	121	2306
Scales. Counter-	Simmons Hardware Company	14,938	Apr. 17	121	2300
Scissors	Anderson Computing Scale Company.	15,956	Apr. 10	121	1958
Scissors and shears	A. Kastor & Bros	17,201	Mar. 20	121	1001
Scrapers. Earth-	E. Forquignon	13,109	Mar. 27	121	1321
Scrapers. Sidewalk and ice	Kilbourne & Jacobs Manufacturing Company.	13,204	Mar. 27	121	1322
Scrapple	Avery Stamping Company	16,992	Mar. 20	121	999
Screw-drivers	T. Harris	12,375	Mar. 27	121	1321
Screws, bolts, rivets, washers, wire nails, &c	Whitman & Barnes Manufacturing Company.	14,716	Mar. 27	121	1326
Seed meal and nut-cake. Cotton-	American Screw Company	11,962	Apr. 17	121	2292
Seeds. Field-	Humphreys, Godwin & Co	4,284	Apr. 10	121	1935
Seeds. Field, grass, and clover	W. H. Morehouse	5,598	Apr. 24	121	2619
Seeds. Grass and field	H. E. Conklin	17,445	Mar. 27	121	1334
Seeds. Grass, grain, timothy, clover, hemp, canary, and rape	W. G. Scarlett	11,968	Mar. 27	121	1320
Seeding-machines	Albert Dickinson Company	8,589	Mar. 6	121	298
Seeding-machines. Broadcast	American Seeding Machine Company.	17,049	Mar. 13	121	680
Separators. Centrifugal	Peoria Drill and Seeder Co	14,859	Mar. 13	121	672
Separators. Centrifugal	De Laval Separator Company	9,447	Mar. 20	121	979
Sewing-cotton on spools or reels	De Laval Separator Company	10,661	Mar. 27	121	1317
Sewing-machine needles	J. & P. Coats	13,692	Apr. 3	121	1642
Sewing-machine needles	Excelsior Needle Company	17,218	Mar. 20	121	1001
Sewing-machines	Excelsior Needle Company	17,220	Mar. 20	121	1001
Sewing-machines	A. G. Mason	11,960	Mar. 6	121	306
Sewing-machines and parts and attachments therefor	Willcox & Gibbs Sewing Machine Co.	17,317	Apr. 10	121	1961
Sewing-machines and parts and attachments therefor	Willcox & Gibbs Sewing Machine Co.	17,318	Mar. 27	121	1333
Sewing-machines and parts thereof	Willcox & Gibbs Sewing Machine Co.	17,320	Mar. 27	121	1333
Sewing-machines and parts thereof	Hibbard, Spencer, Bartlett & Company.	13,838	Mar. 20	121	990
Shade cloth and shades. Window-	Union Special Machine Co	16,563–4	Apr. 3	121	1652
Shade-cloths and cotton piece goods	Jay C. Wemple Co	14,355	Mar. 27	121	1325
Shampoo and scalp-cleansing preparations	Amory, Browne & Co	16,195	Apr. 24	121	2639
Sharpening edged instruments. Liquid for use in	L. Hauck	15,222	Mar. 20	121	997
Shears	E. Hunold	10,708	Apr. 24	121	2626
Shears and scissors	Sheer Cut Shear Co	10,926	Apr. 10	121	1944
Sheepskins having a special finish	Hibbard, Spencer, Bartlett & Company.	17,742	Apr. 17	121	2308
Sheet-metal vessels for domestic or household purposes	Richard Young Company	17,202	Mar. 20	121	1001
Sheetings	Rochester Nonrust Tinware Co	4,147	Mar. 20	121	973
Sheetings and drillings	Carey, Bayne & Smith Company.	14,427	Mar. 27	121	1325
	Buffalo Cotton Mills	14,424–5	Mar. 27	121	1325

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Sheetings and drillings	Exposition Cotton Mills	15,584	Apr. 3	121	1648
Sheetings and drillings. Cotton	Greenwood Cotton Mill	5,648	Mar. 27	121	1308
Sheetings and drillings. Cotton	Piedmont Mfg. Co	5,672	Mar. 27	121	1309
Sheetings. Cotton	A. W. Green	10,914	Apr. 10	121	1944
Sheetings, shirtings, and drills	R. A. Suffern	14,925	Apr. 24	121	2635
Sheetings, shirtings, and drills	R. A. Suffern	17,617	Apr. 24	121	2645
Sheetings, shirtings, drills, and tickings. Cotton	Siemssen & Co	11,430	Apr. 3	121	1637
Sheetings. Waterproof	Stork Company	778	Mar. 13	121	647
Ship-logs	Thomas Walker & Son	11,755	Mar. 20	121	984
Ship-logs and sounding-machines	Thomas Walker & Son	11,753	Mar. 20	121	984
Ship-logs and sounding-machines	Thomas Walker & Son	11,756	Mar. 20	121	985
Ships' logs and sounding-machines	Thomas Walker & Son	15,049	Mar. 13	121	674
Shirt-waists and shirt-waist suits. Women's	J. Mayer & Co	15,605	Mar. 27	121	1329
Shirts and boys' shirts, waists, and blouses. Men's	C. Eisenman & Co	8,857	Apr. 17	121	2288
Shirts, collars, and cuffs	M. H. Lambert	16,480	Mar. 6	121	321
Shirts. Men's dress	Broom & Newman	13,801	Apr. 17	121	2297
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,754	Apr. 3	121	1645
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,743	Apr. 24	121	2635
Shirtings, sheetings, cambrics, and long-cloth. Bleached and unbleached	G. Willis & Co	14,745	Apr. 24	121	2635
Shoe-dressing	Geo. E. Keith	8,701	Mar. 27	121	1314
Shoe-polish or leather-dressing	Ayling Bros	3,432	Apr. 24	121	2617
Shoe polish. Tan and russet	Whittemore Brothers and Company.	11,528	Mar. 6	121	305
Shoes and leather articles. Polish and dressing for russet and tan	World Polish M'f'g. Co	6,826	Apr. 3	121	1631
Shoes and slippers. Leather	Hanan-Matheweon Company	16,781	Apr. 24	121	2641
Shoes. Ankle-supporting leather	J. J. Lattemann	13,178	Apr. 17	121	2295
Shoes. Ladies', men's, and children's leather	A. J. Bates Co	16,340	Apr. 10	121	1956
Shoes. Leather	Beals & Torrey Shoe Co	14,570	Mar. 6	121	316
Shoes. Leather	Augustus Wright Company	15,471	Mar. 27	121	1329
Shoes. Leather	F. Mayer Boot & Shoe Co	13,539	Apr. 3	121	1642
Shoes. Leather	A. J. Bates Co	16,341	Apr. 3	121	1651
Shoes. Leather	L. W. Franklin	10,121	Apr. 17	121	2290
Shoes. Leather	Gilmaker Bros	16,514	Apr. 17	121	2305
Shoes. Leather	Hamilton-Brown Shoe Company.	16,247	Apr. 24	121	2639
Shoes. Leather and canvas	Foss, Packard & Co	15,723	Apr. 17	121	2302
Shoes. Leather and cloth	J. A. Manning	6,519	Apr. 10	121	1938
Shoes. Leather turned	C. O. Timson	5,563	Mar. 27	121	1308
Shoes made wholly or in part of leather	C. M. Clapp Co	15,958	Apr. 24	121	2638
Shoes. Men's and boys' leather	Hamilton-Brown Shoe Company.	16,248	Apr. 24	121	2639
Shoes. Men's leather	Wertheimer-Swarts Shoe Co	11,907	Apr. 17	121	2293
Shoes. Men's leather	Hamilton-Brown Shoe Company.	16,242-4	Apr. 24	121	2639
Shoes. Misses' and children's leather and canvas	Weimer, Wright & Watkin	8,289	Apr. 3	121	1633
Shoes. Polish for russet and tan	Whittemore Bros. and Co	11,527	Apr. 24	121	2627
Shot	Selby Smelting & Lead Company.	17,084	Mar. 20	121	1000
Shoulder-braces, chest-expanders, and suspenders	Knickerbocker Brace Co	6,396	Mar. 13	121	653
Shovels	Supplee Hardware Company	13,824	Mar. 27	121	1324
Shovels, scoops, and spades	St. Louis Shovel Co	11,704	Apr. 24	121	2627
Shovels, spades, and scoops	Avery Stamping Company	16,993-4	Mar. 13	121	679
Shovels, spades, scoops, and spading-forks	Hibbard, Spencer, Bartlett & Company.	15,416	Apr. 10	121	1955
Sifters. Ash-	J. P. Hill	7,716	Mar. 27	121	1311
Silk, crêpe de chine, mousseline silk, &c. Taffeta	Marcus Bros	13,284	Apr. 10	121	1950
Silk. Dress-	Liberty Silk Company	13,880	Mar. 6	121	313
Silk dress goods	W. H. Roe	7,510	Mar. 13	121	656
Silk dress goods	Rogers & Thompson	9,211	Apr. 10	121	1941
Silk linings and dress-silks	Goetz Silk Manufacturing Company.	14,843	Mar. 20	121	994
Silk piece goods	Rogers & Thompson	9,213	Mar. 6	121	298
Silk piece goods	Passavant & Co	13,404	Mar. 13	121	668
Silk. Spun	Industrie-Gesellschaft für Schappe.	10,774	Apr. 10	121	1944
Silks	Ackermann & Goedecke	11,266	Mar. 6	121	303
Silks. Printed and piece-dyed	Cheney Brothers	14,923	Apr. 17	121	2299
Silver-plated flat and hollow ware	International Silver Company	15,236	Mar. 20	121	997
Silver-plated flat, hollow, and table ware	Wm A Rogers Ltd	17,439	Apr. 24	121	2644
Silver-plated hollow, flat, and table ware	Hibbard, Spencer, Bartlett & Company.	13,581	Mar. 20	121	989
Silver-plated hollow, flat, and table ware	Hibbard, Spencer, Bartlett & Company.	13,842	Mar. 20	121	991
Silver-plated hollow ware	International Silver Company	14,477	Mar. 20	121	993
Silver-plated hollow ware	B. Rice's Sons	6,257	Apr. 10	121	1938
Silver-polish in liquid, powder, or paste form	Gorham Mfg. Co	14,666	Mar. 20	121	993
Silver table-cutlery	Curtin & Clark Hardware Company.	4,030	Apr. 3	121	1628
Silverware. Hollow	Reed & Barton Corporation	16,121	Apr. 24	121	2638
Skin-foods and complexion creams and ointments	Graham Bros. & Co	10,578	Mar. 27	121	1316
Skins. Patent kid and patent colt	D. F. Kennedy	14,211	Apr 10	121	1953
Skirts and petticoats	Brown, Durrell & Co	13,343	Mar. 27	121	1322
Skirts. Women's, misses', and children's outer	M. Goldman & Co	14,032	Mar. 13	121	670
Smelting and milling machinery. Ore	Colorado Iron Works Co	8,442	Apr. 3	121	1633
Smoke distilled from wood. Liquid	E. H. Wright Company	5,818	Mar. 27	121	1309
Smoking-jackets, bath and lounging robes for men, kimonos, dressing-sacks, &c	Thompson & Christie	12,436	Mar. 6	121	309
Soap	R. Hudnut's Pharmacy	14,521	Mar. 6	121	316
Soap	N. K. Fairbank Company	41-2	Mar. 20	121	969
Soap	N. K. Fairbank Company	48	Mar. 20	121	969
Soap	N. K. Fairbank Company	52	Mar. 20	121	969
Soap	N. K. Fairbank Company	10,201	Mar. 20	121	981
Soap	N. K. Fairbank Company	10,204-5	Mar. 20	121	981
Soap	N. K. Fairbank Company	10,209	Mar. 20	121	981
Soap	N. K. Fairbank Company	10,211	Mar. 20	121	981
Soap	N. K. Fairbank Company	10,213	Mar. 20	121	981

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Soap	N. K. Fairbank Company	10,216	Mar. 20	121	981
Soap	N. K. Fairbank Company	10,218	Mar. 20	121	982
Soap	N. K. Fairbank Company	10,221-2	Mar. 20	121	981-2
Soap	N. K. Fairbank Company	10,224-6	Mar. 20	121	982
Soap	N. K. Fairbank Company	10,228-31	Mar. 20	121	982
Soap	N. K. Fairbank Company	49	Mar. 27	121	1303
Soap	Monahan Antiseptic Co	1,754	Mar. 27	121	1304
Soap	N. K. Fairbank Company	10,210	Mar. 27	121	1316
Soap	N. K. Fairbank Company	10,214	Mar. 27	121	1316
Soap	N. K. Fairbank Company	11,161	Mar. 27	121	1318
Soap	N. K. Fairbank Company	63	Apr. 3	121	1625
Soap	N. K. Fairbank Company	10,202	Apr. 3	121	1635
Soap	N. K. Fairbank Company	10,206-8	Apr. 3	121	1635
Soap	N. K. Fairbank Company	10,220	Apr. 3	121	1635
Soap	E. Palmer	9,143	Apr. 10	121	1941
Soap	N. K. Fairbank Company	11,158	Apr. 10	121	1945
Soap	Artesia Cream Company	16,453	Apr. 10	121	1959
Soap	Lever Brothers Company	16,860	Apr. 10	121	1961
Soap	Pennsylvania Soap Company	17,297	Apr. 17	121	2307
Soap	Siegel, Cooper & Co	5,177	Apr. 24	121	2617
Soap	N. K. Fairbank Company	10,219	Apr. 24	121	2625
Soap and soap for cleaning kitchen utensils, &c. Toilet and bath	Andrew Jergens Co	9,994	Apr. 10	121	1942
Soap. Antiseptic and disinfectant mineral	Preston Manufacturing Company	17,203	Apr. 17	121	2308
Soap. Bar-	Schaeffer Bros. & Powell Manufacturing Company.	185	Apr. 10	121	1933
Soap for general cleansing purposes and for laundry and family use.	Theo. B. Robertson Soap Co	16,330	Apr. 3	121	1651
Soap for hygienic and antiseptic personal use	Lambert Pharmacal Co	2,747	Apr. 24	121	2616
Soap for toilet, laundry, and household use	Colgate & Co	15,565	Apr. 24	121	2637
Soap. Hand-	American Perfumer Company	8,450	Mar. 6	121	298
Soap. Laundry	J. G. Haas Soap Co	960	Mar. 27	121	1303
Soap. Laundry	E. H. Gollings	16,098	Apr. 3	121	1650
Soap. Laundry	F. P. Garrettson & Co	4,576	Apr. 10	121	1935
Soap. Laundry	J. B. Mathis	17,408	Apr. 24	121	2644
Soap. Laundry and toilet	Grand Union Tea Co	9,863	Mar. 13	121	662
Soap. Medicated and perfumed	Potter Drug & Chemical Corporation.	14,664	Apr. 17	121	2298
Soap. Medicinal	Barclay & Barclay	5,493-4	Apr. 24	121	2618
Soap of paste-like consistency	H. A. Blakeslee	13,394	Apr. 24	121	2632
Soap. Toilet	Cincinnati Soap Company	14,846	Mar. 13	121	672
Soap. Toilet	Geo. A. Schmidt Co	14,102	Apr. 3	121	1643
Soap. Toilet	Geo A. Schmidt Co	14,101	Apr. 24	121	2634
Soap. Toilet and laundry	Ericka Mfg. Co	17,608	Apr. 24	121	2645
Soap. Toilet, household, and laundry	National Soap Co	17,523	Apr. 24	121	2645
Soaps. Toilet	Munyons Homoeopathic Home Remedy Co.	12,563	Mar. 6	121	310
Sockets, sleeves, arbors, collets, drill and turret tool-holders, chucks, &c.	Cleveland Twist Drill Company	17,754	Apr. 17	121	2309
Soda-ash and caustic soda	Michigan Alkali Company	7,470	Apr. 3	121	1631
Soda. Bicarbonate of	Pennsylvania Salt Manuf'g Co	8,882	Apr. 17	121	2285
Soda, either alone or mixed with a powdered acid to form a baking-powder. Baking-	Church & Dwight Company	1,106	Mar. 13	121	648
Soda-water	Cantrell & Cochrane	12,135	Apr. 10	121	1947
Soldering and cleansing solution. Metal	Brumer Bros	6,124	Apr. 10	121	1938
Soldering-tools. Electric	L. P. Brown & Company	10,743	Mar. 27	121	1317
Specific for the treatment of whooping-cough	Kroto Pharmaceutical Company	10,250	Mar. 13	121	662
Specific. Headache	Migranose Importing Co	13,504	Mar. 27	121	1323
Spectacles and eyeglasses and parts thereof	Southern Optical Company	17,908	Apr. 24	121	2646
Spectacles and eyeglasses and their mountings and parts	Stevens and Company	14,879	Mar. 13	121	672
Spectacles, eyeglasses, and lenses for same	A. K. Hawkes	14,161	Mar. 27	121	1325
Spice. Catsup-	S. C. Smith & Co	9,129	Mar. 20	121	979
Spices	Sprague, Warner & Company	16,652	Mar. 6	121	321
Spices	Gennerich & Von Bremen	13,765	Mar. 27	121	1324
Spices	Oklahoma Wholesale Grocer Co	16,418	Mar. 27	121	1332
Spices	E. R. Durkee & Co	3,975-6	Apr. 3	121	1627
Spices and mustard	E. R. Durkee & Co	3,966	Mar. 13	121	650
Spices and mustard	E. R. Durkee & Co	3,984-5	Apr. 3	121	1627
Spices and mustard	Hulman & Co	8,647	Apr. 3	121	1633
Spices and mustard	E. R. Durkee Co	13,152	Apr. 17	121	2295
Spiced seasonings	William G. Bell Company	17,117-18	Apr. 24	121	2643
Spiced seasonings	William G. Bell Company	17,120	Apr. 24	121	2643
Spool-cotton	John J. Clark & Co	11,758-9	Mar. 6	121	305-6
Spool-cotton	John J. Clark & Co	11,561-3	Mar. 6	121	306
Spool-cotton	Blodgett & Orswell Co	11,779	Mar. 6	121	306
Spool-cotton	Blodgett & Orswell Co	15,952	Mar. 6	121	318
Squabs	E. E. Billings	10,077	Apr. 17	121	2290
Stains for staining shingles and other wood surfaces	Nashville Chemical Company	17,519	Apr. 24	121	2645
Stains. Shingle-	Dexter Brothers Co	17,480	Apr. 24	121	2644
Staples for fastening together papers, &c	E. H. Hotchkiss Co	15,894	Apr. 3	121	1649
Starch	Electric Lustre Starch Company	6,768	Mar. 6	121	295
Starch. Laundry	New Orleans Coffee Co	4,001	Mar. 13	121	650
Starch. Laundry	Oswego Maize Product Co	11,880	Apr. 24	121	2627
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America.	17,179	Mar. 27	121	1333
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America.	5,500	Apr. 3	121	1629
Steel bars, rods, billets, blooms, &c	Crucible Steel Company of America.	5,510	Apr. 17	121	2283
Steel bars, rods, billets, blooms, sheets, &c	Park Steel Company	5,476	Apr. 24	121	2618
Steel bars, rods, billets, blooms, sheets, &c	Crucible Steel Company of America.	5,518	Apr. 24	121	2619
Steel bars, rods, blooms, billets, &c	Crucible Steel Company of America.	5,502	Mar. 13	121	662
Steel bars, rods, blooms, billets, &c	Crucible Steel Company of America.	5,513	Mar. 13	121	662
Steel bars, rods, blooms, billets, &c	Park Steel Company	5,471-2	Mar. 13	121	662

Alphabetical list of trade-marks published during March and April—Continued.

Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Steel bars, rods, blooms, billets, &c	Crucible Steel Company of America.	5,514	Apr. 10	121	1937
Steel blanks, shapes, rods, billets, and sheets. Unmanufactured	G. Nash	16,959	Mar. 20	121	999
Steel for tools, dies, drills, rolls, and gears	Carpenter Steel Company	12,730	Mar. 20	121	989
Steel household articles. Enameled-	Lisk Manufacturing Co	15,429	Apr. 10	121	1955
Steel in various forms	Edgar Allen & Co	12,587	Apr. 10	121	1948
Steel kitchen utensils. Enameled-	Wells & Nellegar Company	6,642	Apr. 24	121	2619
Steel rods, bars, blooms, billets, &c	Canton Steel Company	5,490	Apr. 3	121	1629
Steel rods, bars, blooms, billets, plates, &c	Crucible Steel Company of America.	17,137	Mar. 20	121	1000
Steel. Tool-	Royal Metal Steel Co	13,484	Mar. 6	121	312
Steelware. Hollow enameled	Leffler, Thiele & Co	15,312	Mar. 27	121	1329
Stockings	Tefft Weller Company	15,883-4	Apr. 10	121	1957
Stockings. Elastic	Pomeroy Company	6,830	Mar. 13	121	654
Stomachic and carminative	E. Dort	8,016	Mar. 6	121	296
Stones and hones. Oil, water, whet, and grind	Scranton Whetstone and Abrasive Wheel Co.	14,232	Mar. 20	121	993
Stones and hones. Oil, water, whet, and grind	Scranton Whetstone and Abrasive Wheel Co.	14,231	Apr. 24	121	2634
Stones and hones. Oil, whet, water, and grind	Scranton Whetstone and Abrasive Wheel Company.	14,229-30	Apr. 3	121	1644
Stout	Robert Smith Ale Brewing Company.	15,776-7	Apr. 10	121	1956
Stove-polish. Powdered	X-Ray Stove Polish Co	4,649	Mar. 6	121	292
Stoves and furnaces	F. & L. Kahn & Bros	8,544	Mar. 13	121	659
Stoves and furnaces. Heating	Fiebeger Heating Company	7,971	Mar. 13	121	657
Stoves and ranges	Bergstrom Stove Co	2,083	Mar. 6	121	290
Stoves. Gas-	W. M. Crane Co	10,538	Mar. 27	121	1316
Stoves. Gas-	Gem City Stove Co	7,192	Apr. 3	121	1631
Stoves. Heating and cooking	Gem City Stove Manufacturing Co.	9,936	Apr. 17	121	2290
Stoves, ranges, boilers, engines, &c. Polish for	A. L. Prescott	14,206	Mar. 20	121	992
Stoves. Solid-fuel-burning heating and cooking	J. White & Son	7,042	Apr. 3	121	1631
Suits and overcoats for young men	Sykes & Ab. Kirschbaum & Co	14,158	Apr. 10	121	1953
Suits and parts of suits. Children's	Jones Bros. Overall Company	8,541	Apr. 17	121	2287
Suits. Children's	C. W. Klemm	16,293	Apr. 3	121	1651
Sumac, gambier, oak, and hemlock extracts	G. H. Leonard & Co	9,008	Mar. 13	121	659
Suppositories for the treatment of hemorrhoids, &c	W. Ernst	12,148	Apr. 3	121	1638
Suspenders	Pioneer Suspender Company	12,646	Mar. 13	121	667
Suspenders. Trousers-	Weld, Colburn & Wilckens	17,309	Apr. 3	121	1653
Suspensory bandages	J. Ellwood Lee Company	17,058	Mar. 20	121	999
Suspensory bandages and trusses	J. Ellwood Lee Company	17,057	Mar. 13	121	680
Syrup	Sprague, Warner & Company	16,653	Mar. 6	121	322
Syrup	Griggs, Cooper & Co	9,543	Mar. 13	121	660
Syrup and molasses	National Grocer Company	15,643	Mar. 6	121	318
Syrup. Sugar and maple	Chicago Concentrating Company	9,408	Apr. 3	121	1634
Tables, chairs, cabinets, couches, hat-racks, &c	Oscar Onken Co	4,396	Mar. 13	121	650
Tack-claws	Whitman & Barnes Manufacturing Company.	14,712	Mar. 27	121	1326
Tanning and dyeing extract. Pure chestnut-oak	C. A. Spencer	756	Mar. 6	121	289
Tapioca. Prepared	Whitman Grocery Company	8,172	Mar. 6	121	297
Taps, dies, and screw-plates	Wells Brothers Company	10,332	Apr. 24	121	2625
Tea	Dolan Mercantile Co	11,097	Mar. 13	121	664
Tea	Sprague, Warner & Company	16,474	Mar. 20	121	999
Tea	J. McFahoney	7,766	Apr. 3	121	1632
Tea	F. P. Garrettson & Co	4,572	Apr. 10	121	1935
Tea and coffee pots	Silver & Company	15,941	Apr. 17	121	2303
Tea and coffee pots and coffee-urns	Silver & Company	15,942	Apr. 17	121	2302
Teas	Arbuckle Bros	16,687	Apr. 24	121	2641
Teas. Mixed	New Orleans Import Co	11,458-9	Apr. 10	121	1945
Teeth and the mouth. Preparations for the cleansing and preservation of the	K. k. landespriv. Milly-Kerzen-, Seifen-und Glycerin-Fabrik, von F. A. Sarg's Sohn & Co.	11,241	Apr. 24	121	2627
Teeth. Powders to improve the fit of the plates of artificial	E. Betts	7,057	Mar. 6	121	295
Telephone-switchboards	Sumter Telephone Mfg. Co	15,118	Mar. 27	121	1328
Telephone transmitters and receivers	Ericsson Telephone Company	7,025	Mar. 20	121	976
Telephones	Hutchison Acoustic Company	16,895	Apr. 17	121	2307
Telephones and parts thereof	Hibbard, Spencer, Bartlett & Company.	13,585	Mar. 20	121	990
Tetter cure	Hooper Medicine Company	16,437	Apr. 3	121	1652
Thread and sewing-cotton	James Brook & Bros	13,083	Mar. 6	121	311
Thread. Cotton-	Clark Mile-End Spool Cotton Co	13,053	Mar. 13	121	667
Thread. Linen	L. Lichtenstein's Sons	11,255	Apr. 3	121	1637
Thread. Silk	A. H. Rice & Co	7,260	Apr. 3	121	1631
Threads and cords. Silk	Brainerd & Armstrong Company	14,931	Apr. 24	121	2635
Time-registers	Dey Time Register Co	17,080-3	Apr. 24	121	2642-3
Tin and terne plates	Follansbee Brothers Company	9,620	Mar. 6	121	290
Tin and terne plates	Follansbee Brothers Company	9,633	Apr. 3	121	1634
Tin and terne plates, tin and black taggers, and sheet-iron	E. L. Parker & Co	10,566-8	Apr. 17	121	2291
Tin cooking utensils	Lisk Manufacturing Co	3,218	Apr. 10	121	1935
Tin culinary articles	Lisk Manufacturing Co	2,502	Apr. 17	121	2279
Tin culinary utensils	Reed Manufacturing Co	5,634	Apr. 3	121	1629
Tin kitchen utensils	Hibbard, Spencer, Bartlett & Company.	13,850	Apr. 24	121	2633
Tin. Plate and roofing	J. Meurer	3,092-3	Mar. 6	121	291
Tires. Pneumatic	B. F. Goodrich Company	16,506	Apr. 17	121	2305
Tobacco and cigarettes. Smoking-	Victor Talking Machine Co	9,275	Apr. 24	121	2624
Tobacco. Chewing and smoking	Hoffman and Co	1,708	Mar. 13	121	648
Tobacco. Chewing and smoking	Bloch Bros. Tobacco Co	15,193	Mar. 27	121	1328
Tobacco-pipes, cigar and cigarette tubes	Adolph Frankau & Co	8,251	Apr. 3	121	1632
Tobacco-pipes, cigar and cigarette tubes	Adolph Frankau & Co	8,250	Apr. 24	121	2622
Tobacco. Plug-	Ryan-Hampton Tobacco Co	10,111	Mar. 20	121	981
Tobacco-pouches. Rubber or gutta-percha	Adolph Frankau & Co	8,249	Apr. 24	121	2622
Tobacco. Smoking-	Butler-Butler	16,413	Mar. 6	121	320

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Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
Tobacco. Smoking and chewing	Gilbert, Son & Co	16,960	Mar. 13	121	678
Tobacco. Smoking and chewing	Fluhrer Tobacco Company	10,770	Apr. 3	121	1636
Tobacco. Smoking and chewing	Independent Snuff Company	16,515	Apr. 3	121	1652
Tobacco. Twist-	Robards Tobacco Co	16,734	Mar. 6	121	323
Toilet lotion for the cure of blackheads and facial pimples	M. E. Waite	13,890	Mar. 6	121	314
Tonic and beverage. Tomato	Raimer-Heinly Co	3,392	Apr. 24	121	2616
Tonic and flavoring. Compound used as a	B. F. Miner	3,449	Apr. 24	121	2617
Tonic beverage	Salt Lake City Soda Water Co	13,980	Mar. 6	121	314
Tonic beverage and extract for making same. Carbonated	Blue Seal Supply Co	12,506	Mar. 27	121	1321
Tonic beverage. Carbonated	J. Ries	10,508-9	Apr. 10	121	1943
Tonic beverage. Carbonated	C. C. Copeland	10,523	Apr. 10	121	1943
Tonic beverages. Non-alcoholic	C. D. Bradham	9,403	Mar. 6	121	299
Tonic, digestive, and nutrient preparation	Charles N. Crittenton Company	16,853	Apr. 17	121	2307
Tonic for the cure of stomach troubles, dyspepsia, indigestion, eczema, and eruptions.	M. T. Goldman	14,504	Mar. 6	121	315
Tonic for the regulation of the alimentary organs	Brand Brothers Company	9,584	Mar. 13	121	661
Tonic for the scalp and skin	G. Timen	10,913	Mar. 27	121	1318
Tonics and medicated wines	Mariani & Co	13,956	Mar. 27	121	1324
Tonics and remedies for dyspepsia and stomach and intestinal disorders.	V. E. Beck	12,796	Mar. 20	121	989
Tonics. Blood and nerve	J. M. Collins	12,883	Apr. 10	121	1949
Tonics, blood, heart, and nerve medicines	Dr. Miles Medical Co	3,425	Apr. 3	121	1626
Tonics, nutrients, &c. General and nerve	L. J. Knerr	12,236	Mar. 13	121	666
Tooth-filling. Gutta-percha	S. S. White Dental Mfg. Co	12,865-6	Apr. 3	121	1639-40
Tooth-paste	S. S. White Dental Mfg. Co	12,857	Apr. 3	121	1639
Tooth-paste	C. M. Dunne	11,876	Apr. 10	121	1947
Toothache-wax	O. F. Leonhardt	11,263	Mar. 13	121	664
Toothpicks. Wooden	O. H. Hersey	12,741	Mar. 6	121	310
Traps and bends. Lead	Selby Smelting and Lead Company.	17,086	Mar. 20	121	1000
Trees. Peach-	J. W. Rockey	16,671	Mar. 6	121	322
Trolley magnet-wire	Magnet Wire Company	6,047	Apr. 10	121	1937
Trousers	I. L. Pearl & Co	15,393	Apr. 3	121	1646
Trunks, valises, satchels, &c., and parts of same	P. C. Murphy Trunk Company	15,515	Mar. 13	121	675
Trusses	J. Ellwood Lee Company	17,067-8	Mar. 20	121	1000
Turbines and parts thereof. Steam-	C. A. Parsons	7,314	Mar. 6	121	296
Turbo-compressors and pumps	C. A. Parsons	7,313	Mar. 6	121	296
Turpentine	Standard Oil Co. of New York	8,332	Mar. 27	121	1312
Turquoises. American	Azure Mining Co	15,611	Apr. 10	121	1955
Twine	Fulton Bag & Cotton Mills	3,364	Mar. 13	121	649
Twine	J. E. Reynolds	15,310	Apr. 3	121	1646
Type-writer ribbon	Bacon Brothers	7,459	Apr. 17	121	2286
Type-writer ribbons	J. R. Keatinge	15,033	Mar. 27	121	1328
Type-writer ribbons	F. O. Mittag	17,515-16	Apr. 3	121	1654
Type-writer ribbons	Carter's Ink Company	14,792	Apr. 24	121	2635
Type-writing and adding machines. Combined	Arithmograph Company	15,120	Apr. 24	121	2636
Type-writing machines	Wyckoff, Seamans & Benedict	16,174	Apr. 10	121	1959
Umbrella-frames	Samuel Fox & Co	12,612-14	Apr. 17	121	2294
Umbrella-frames and ribs of metal	Samuel Fox & Co	12,592	Apr. 17	121	2294
Umbrella-frames. Metal	Samuel Fox & Co	12,591	Apr. 17	121	2294
Umbrella-frames. Metal	Samuel Fox & Co	12,615-16	Apr. 17	121	2294
Umbrellas and parasols	Gorham Mfg. Co	14,665	Apr. 24	121	2635
Undergarments. Women's combination	Leona Garment Company	9,747	Apr. 3	121	1635
Undershirts, drawers, and union suits	Deimel Linen-Mesh System Company.	7,858	Apr. 17	121	2287
Undervests, jerseys, and drawers	Levi Strauss and Company	6,726	Apr. 3	121	1630
Underwaists	E. H. Horwood	12,779	Apr. 10	121	1949
Valves	Dunham, Carrigan & Hayden Co.	11,347	Apr. 3	121	1637
Valves. Blow-off	Lunkenheimer Company	10,798	Mar. 13	121	663
Vanilla, lemon, and orange extract	Sprague, Warner & Company	9,798	Mar. 27	121	1315
Vanilla-oil	Corrizo Extract Co	14,366	Mar. 27	121	1325
Vanillin and cumarin	G. Luedera & Co	1,698	Mar. 20	121	970
Varnish	E. L. Hueter	10,270	Apr. 17	121	2290
Varnish coating for interior woodwork. Liquid	Interior Hardwood Co	1,770	Apr. 17	121	2279
Varnish. -Color-	F. O. Pierce Company	11,042	Mar. 6	121	303
Varnish for window sills and sashes, &c	Glidden Varnish Company	14,726	Mar. 6	121	316
Varnish, japan, driers, and liquid fillers	Boston Varnish Company	18,005	Apr. 24	121	2647
Varnish. Spirit-	Ball Chemical Co	14,357	Apr. 3	121	1644
Varnish-stains	David B. Crockett Company	18,026	Apr. 24	121	2647
Varnishes	Chase, Roberts & Company	1,710	Apr. 24	121	2616
Varnishes	Murphy Varnish Company	17,719	Apr. 24	121	2646
Varnishes and enamels. Brewers'	Jno. Werner & Co. G. m. b. H	18,342	Apr. 24	121	2648
Varnishes. Priming, coating, and preparing material used in connection with	Murphy Varnish Company	17,720	Apr. 24	121	2646
Varnishes, stains, japans, and surfacers	Chicago Varnish Co	1,502	Apr. 24	121	2616
Vegetable compositions made up to resemble flesh meats	Vegetarian Meat Company	12,519	Mar. 6	121	309
Velvets	A. L. Dreyfuss & Co	12,495	Mar. 13	121	666
Velvets and velveteens	N. Kupfer & Co	16,199	Apr. 3	121	1650
Vermicide	C. Lawall's Son & Co	12,370	Mar. 20	121	988
Vermifuge	Parker Blake Co	15,432	Apr. 3	121	1647
Vermifuge	Parker Blake Co	15,642	Apr. 3	121	1648
Vermifuge	J. F. Ballard	15,489	Apr. 10	121	1955
Vermin-exterminating compound	E. A Murray	14,222	Mar. 6	121	314
Violin, guitar, zither, and banjo strings	S. Blumenthal	4,880	Mar. 6	121	292
Violin, guitar, zither, and banjo strings	S. Blumenthal	4,882	Mar. 6	121	292
Violins, guitars, mandolins, &c. Pegs and chin and shoulder rests for	F. L Becker	15,682	Apr. 17	121	2320
Voting-machines	Triumph Voting Machine Company	16,699	Apr. 3	121	1653
Wagons	Moline Wagon Company	13,245	Apr. 24	121	2647
Wagons and dump-carts. Farm-	Kentucky Wagon Manufacturing Company.	4,413	Mar. 27	121	1308
Wagons and toy carts. Children's express, patrol, hook-and-ladder, and coaster	Gendron Wheel Co	16,319	Apr. 24	121	2639
Wagons, carts, drays, and trucks	Auburn Wagon Co	12,486	Mar. 20	121	988

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Wagons. Farm-	Kentucky Wagon Manufacturing Company.	3,654	Mar. 20	121	972
Wagons. Farm-	Kentucky Wagon Manufacturing Company.	3,652	Mar. 27	121	1307
Wagons. Farm-	Kentucky Wagon Manufacturing Company.	5,355	Mar. 27	121	1308
Wall-ties	J. Prescott	10,620	Apr. 3	121	1636
Washing-machines	H. S. Judd	15,274	Apr. 3	121	1646
Washing-machines. Rotary	Benbow-Brammer Manufacturing Company.	15,019	Mar. 6	121	316
Washing-machines. Rotary	Benbow-Brammer Manufacturing Company.	15,018	Mar. 13	121	673
Watch-movements	B. L. Strasburger	16,907	Mar. 13	121	678
Watch-movements	L. Manheimer & Bros.	14,766	Apr. 24	121	2635
Watches and parts thereof	A. Schwob	10,172	Apr. 24	121	2624
Watches, watch cases and movements	Philadelphia Watch Case Co	4,595	Mar. 27	121	1308
Watches, watch cases and movements and parts thereof	New York Standard Watch Co	2,271	Mar. 27	121	1305
Watchcases	W. F. Doll	16,263	Apr. 10	121	1959
Water-bags	A. Appell Company	16,166-7	Apr. 24	121	2638
Water. Carbonated	F. W. Becker	16,580	Apr. 10	121	1960
Water-closet and bath-room seats and tanks covered with a pyroxylin compound.	E. M. Joralemon	16,814	Apr. 24	121	2642
Water. Effervescent or carbonated mineral	Manitou Mineral Springs Company.	5,813	Apr. 17	121	2284
Water. Effervescent powder for making aperient mineral	C. J. Thatcher	13,807	Apr. 24	121	2633
Water-hardening compounds	M. Wallerstein	15,800	Apr. 10	121	1956
Water. Lithia-spring	Londonderry Lithia Spring Water Company.	6,422	Mar. 13	121	653
Water. Mineral	Apollinaris Company	14,314	Mar. 20	121	993
Water. Mineral	Die Actiengesellschaft Apollinaris Brunnen.	14,306	Apr. 3	121	1644
Water. Mineral	J. A. Horn	17,409	Apr. 3	121	1654
Water. Mineral	Apollinaris Company	14,313	Apr. 17	121	2297
Water-wheels and water-wheel motors	Pelton Water Wheel Co	7,682	Mar. 6	121	296
Waterproof fabrics and coats, overcoats, vests, and trousers made therefrom.	Hirsh Brothers	11,840	Mar. 6	121	306
Wax	S. S. White Dental Mfg. Co	12,856	Apr. 3	121	1639
Wax for finishing floors, woodwork, &c	S. C. Johnson & Son	4,032	Mar. 6	121	291
Wheels. Metallic rims for vehicle	Clincher Automobile Tire Manufacturers' Association.	6,220	Mar. 13	121	653
Whips	Cargill Cleveland & Co	16,045	Mar. 6	121	318
Whiskies. Bourbon	Roth & Co	9,601	Apr. 24	121	2624
Whiskies. Rye, Bourbon, and all kinds of	S. C. Herbst Importing Co	2,252	Mar. 20	121	970
Whisky	J. P. Straub	4,546	Mar. 6	121	292
Whisky	Ben J. Goldman Co	5,138	Mar. 6	121	292
Whisky	I. Merkel & Sons	5,537	Mar. 6	121	293
Whisky	A. Guckenheimer & Bros	6,277	Mar. 6	121	294
Whisky	H. W. Huguley Company	6,332	Mar. 6	121	294
Whisky	F. C. Renziehausen	6,362	Mar. 6	121	294
Whisky	Star Distillery Co	6,490	Mar. 6	121	294
Whisky	L. Nelson	6,601	Mar. 6	121	294
Whisky	Star Distillery Co	7,661	Mar. 6	121	296
Whisky	A. Overholt & Co	9,829	Mar. 6	121	299
Whisky	A. Myers	10,352	Mar. 6	121	301
Whisky	W. A. Taylor & Co	10,694	Mar. 6	121	302
Whisky	J. P. Connor	10,719-20	Mar. 6	121	302
Whisky	Carstairs Bros	14,073	Mar. 6	121	314
Whisky	E. Kuhlmann	14,466	Mar. 6	121	315
Whisky	B. Bondy	14,481	Mar. 6	121	315
Whisky	W. P. Squibb & Co	14,890	Mar. 6	121	316
Whisky	S. Hirsch & Co	15,639	Mar. 6	121	317
Whisky	F. Glassup	16,148	Mar. 6	121	319
Whisky	Records & Goldsborough	76	Mar. 13	121	647
Whisky	W. H. Jones and Co	247	Mar. 13	121	647
Whisky	Bluthenthal & Bickart	343	Mar. 13	121	648
Whisky	W. Schneider W. W. & L. Co	3,142	Mar. 13	121	649
Whisky	L. Kahn & Co	3,724	Mar. 13	121	650
Whisky	Star Distillery Co	6,285	Mar. 13	121	653
Whisky	Star Distillery Co	6,488	Mar. 13	121	654
Whisky	Lang, Schenck & Co	9,440	Mar. 13	121	660
Whisky	G. Simon	10,610	Mar. 13	121	663
Whisky	Gottschalk Co	11,610	Mar. 13	121	665
Whisky	W. P. Squibb & Co	14,891	Mar. 13	121	672
Whisky	W. H. Jones and Co	251	Mar. 20	121	960
Whisky	P. Freiler	2,335	Mar. 20	121	970
Whisky	D. Sachs and Sons	3,052	Mar. 20	121	972
Whisky	Bluthenthal & Bickart	3,356	Mar. 20	121	972
Whisky	L. Lazarus	4,492	Mar. 20	121	974
Whisky	I. Merkel & Sons	5,536	Mar. 20	121	975
Whisky	A. Lipman	6,526	Mar. 20	121	976
Whisky	Monticello Distilling Company	7,670	Mar. 20	121	976
Whisky	Goodhart-Hartman Co	8,232	Mar. 20	121	977
Whisky	J. M. Cranston	8,878	Mar. 20	121	978
Whisky	Morrin-Powers Merc Co	8,959	Mar. 20	121	978
Whisky	Hilbert Mercantile Co	9,033	Mar. 20	121	978
Whisky	Lang, Schenck & Co	9,437	Mar. 20	121	979
Whisky	O. J. Carpenter	10,379	Mar. 20	121	983
Whisky	Van Vleet-Mansfield Drug Co	11,181	Mar. 20	121	983
Whisky	Maryland Distilling Co	11,613	Mar. 20	121	984
Whisky	Gottschalk Co	12,072	Mar. 20	121	985
Whisky	J. H. Schwartz	12,663	Mar. 20	121	988
Whisky	J. F. Sinnott	12,839	Mar. 20	121	989
Whisky	J. M. Carroll	13,779	Mar. 20	121	990
Whisky	F. S. Scherer	13,872-3	Mar. 20	121	991
Whisky	W H. Jones and Co	250	Mar. 27	121	1303
Whisky	E. H. Taylor, Jr. & Sons	1,077	Mar. 27	121	1304

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Title.	Name.	Serial No.	Date.	Official Gazette.	
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Whisky	Freiberg & Workum	1,881	Mar. 27	121	1304
Whisky	J. A. Magnus & Co	2,040	Mar. 27	121	1304
Whisky	P. Freiler	2,332	Mar. 27	121	1305
Whisky	C. W. Bauer	2,493	Mar. 27	121	1305
Whisky	W. L. Weller & Sons	2,568	Mar. 27	121	1305
Whisky	Bluthenthal & Bickart	3,352	Mar. 27	121	1306
Whisky	Kaufmann, Baer & Co	4,509	Mar. 27	121	1308
Whisky	Hoffheimer Bros. Co	5,145	Mar. 27	121	1308
Whisky	Feuchter Bros	6,241	Mar. 27	121	1309
Whisky	A. Guckenheimer & Bros	6,278	Mar. 27	121	1310
Whisky	Star Distillery Co	6,487	Mar. 27	121	1310
Whisky	H. L. Griesedieck Dist'g Co	8,479	Mar. 27	121	1313
Whisky	J. & G. Butler Co	8,504	Mar. 27	121	1313
Whisky	P. J. Bowlin Liquor Co	8,625	Mar. 27	121	1313
Whisky	Freiberg & Kahn	8,948	Mar. 27	121	1314
Whisky	J. M. Davis	9,036	Mar. 27	121	1314
Whisky	Chicago Distilling Co	10,045	Mar. 27	121	1315
Whisky	F. J. Taber	10,583	Mar. 27	121	1316
Whisky	F. J. Taber	10,647-8	Mar. 27	121	1317
Whisky	E. Block & Co	11,504	Mar. 27	121	1319
Whisky	J. H. F. Schwartz	12,666	Mar. 27	121	1321
Whisky	Glasner & Barzen Distilling & Importing Co.	13,334	Mar. 27	121	1322
Whisky	A. A. Wolf & Co	1,923	Apr. 3	121	1626
Whisky	P. Freiler	2,334	Apr. 3	121	1626
Whisky	Hoffheimer Bros. Co	5,141	Apr. 3	121	1628
Whisky	A. H. Gellenbeck	5,541	Apr. 3	121	1629
Whisky	A. Guckenheimer & Bros	6,279	Apr. 3	121	1629
Whisky	L. J. Adler	6,298	Apr. 3	121	1630
Whisky	Old Lexington Club Distilling Co.	7,021	Apr. 3	121	1631
Whisky	Freiberg & Kahn	8,949	Apr. 3	121	1634
Whisky	H. Obernauer & Co	12,577	Apr. 3	121	1639
Whisky	E. Eising & Co	14,131	Apr. 3	121	1644
Whisky	Pardridge & Blackwell	15,442	Apr. 3	121	1647
Whisky	P. Hamburger Company	16,203	Apr. 3	121	1651
Whisky	Union Distilling Company	16,791	Apr. 3	121	1653
Whisky	C. M. Pfeifer & Co	16,970	Apr. 3	121	1653
Whisky	Sample & Co	4,513	Apr. 10	121	1935
Whisky	W. P. Ives & Co	4,692	Apr. 10	121	1936
Whisky	L. W. Levy & Co	4,877	Apr. 10	121	1936
Whisky	Freiberg & Workum	4,951	Apr. 10	121	1936
Whisky	B. J. Goldman Co	5,137	Apr. 10	121	1936
Whisky	Hoffheimer Bros. Co	5,143-4	Apr. 10	121	1936-7
Whisky	M. Fruhauf & Co	5,377	Apr. 10	121	1937
Whisky	S. Altmayer	5,966	Apr. 10	121	1937
Whisky	Star Distillery Co	6,282	Apr. 10	121	1938
Whisky	L. J. Adler	6,297	Apr 10	121	1938
Whisky	S. Grabfelder & Co	6,327	Apr. 10	121	1938
Whisky	H. Campe & Co	6,475	Apr. 10	121	1938
Whisky	C. H. Graves & Sons	6,871	Apr. 10	121	1939
Whisky	Rhomberg Bros. & Co	7,013	Apr 10	121	1939
Whisky	Old Kentucky Distillery	8,242-3	Apr. 10	121	1940
Whisky	Old Kentucky Distillery	8,245-7	Apr. 10	121	1941
Whisky	Rhomberg Bros. & Co	8,560	Apr. 10	121	1941
Whisky	Ullman Einstein Co	9,692	Apr. 10	121	1942
Whisky	J. Klein	9,726	Apr. 10	121	1942
Whisky	W. A. Taylor Co	10,695	Apr. 10	121	1943
Whisky	E. Block & Co	11,506	Apr. 10	121	1945
Whisky	R. Steel	16,805	Apr 10	121	1961
Whisky	Swope & Mangold	17,249	Apr. 10	121	1961
Whisky	Brand Brothers Company	17,327	Apr. 10	121	1961
Whisky	B. W. Le Compte	17,476	Apr. 10	121	1963
Whisky	Schenley Distilling Company	17,484	Apr. 10	121	1963
Whisky	M. Weiner	17,487	Apr. 10	121	1963
Whisky	Woodford Distilling Co	17,536	Apr. 10	121	1963
Whisky	A. G. Mashuetz & Co	4,155	Apr. 17	121	2280
Whisky	Maryland Distilling Co	4,479	Apr. 17	121	2280
Whisky	C. Person's Sons	4,549	Apr. 17	121	2280
Whisky	George Bieler Sons Company	5,113	Apr. 17	121	2282
Whisky	B. Winter	5,303	Apr. 17	121	2283
Whisky	H. J. Hellert & Sons	6,472	Apr. 17	121	2285
Whisky	Lazarus & Nassauer	7,008	Apr. 17	121	2285
Whisky	Nelson Distilling Co	7,655	Apr. 17	121	2286
Whisky	Chas. Shaffner & Co	8,166	Apr. 17	121	2287
Whisky	Mayer, Sons & Co	8,518-21	Apr. 17	121	2287
Whisky	J. M. Cranston	8,879	Apr. 17	121	2288
Whisky	H. F. Corbin & Co	8,914	Apr. 17	121	2288
Whisky	M. L. Eppstein	8,936	Apr. 17	121	2288
Whisky	Kaufmann Bros. & Co	8,951	Apr. 17	121	2289
Whisky	A. Loeb	8,965	Apr. 17	121	2289
Whisky	Kiefer & Co	9,311	Apr. 17	121	2289
Whisky	Strauss, Pritz & Co	10,344	Apr. 17	121	2291
Whisky	C. Berry & Co	16,135	Apr. 17	121	2303
Whisky	E. A. McQuade	16,428	Apr. 17	121	2304
Whisky	O. J. Carpenter	16,503	Apr. 17	121	2305
Whisky	H. G. Williams & Co	7,688	Apr. 24	121	2621
Whisky	Meyer Marx Co	8,182	Apr. 24	121	2622
Whisky	M. L. Eppstein	8,937	Apr. 24	121	2623
Whisky	Morrin-Powers Merc. Co	8,958	Apr. 24	121	2623
Whisky	L. E. Boukofsky	8,979	Apr. 24	121	2623
Whisky	Kamp Distilling Co	9,028	Apr. 24	121	2623
Whisky	J. McGlinn	9,103	Apr. 24	121	2623
Whisky	J. McGlinn	9,105	Apr. 24	121	2623
Whisky	Wilmerding-Loewe Co	9,507	Apr. 24	121	2624
Whisky	Tucker & McCormack	10,041	Apr. 24	121	2624
Whisky	Dreyfuss, Weil & Co	12,652	Apr. 24	121	2629

Alphabetical list of trade-marks published during March and April—Continued.

Page.	Title.	Name.	Serial No.	Date.	Official Gazette. Vol.	Page.
1304	Whisky	Bigbie Bros. & Co	13,396	Apr. 24	121	2632
1304	Whisky	J. F. Sinnott	13,579	Apr. 24	121	2632
1305	Whisky	Josselson Bros. & Co	16,419–20	Apr. 24	121	2640
1305	Whisky	W. Lanahan & Son	17,235	Apr. 24	121	2644
1305	Whisky. Malt	S. Binswanger & Bro	15,066	Mar. 13	121	674
1306	Whisky. Malt	Goldberg, Bowen & Company	16,647	Mar. 27	121	1332
1308	Whisky. Pure malt Scotch	G. S. Grant	16,555	Mar. 27	121	1332
1308	Whisky. Rye	Gilliams, Jones & Co	9,059	Mar. 20	121	979
1309	Whisky. Rye	Batjer & Co	3,029	Apr. 10	121	1934
1310	Whisky. Rye	J. H. Hentz, Jr	6,069	Apr. 17	121	2285
1310	Whisky. Scotch	R. M. Haan	16,785	Apr. 10	121	1960
1313	Wicks. Lamp and candle	Fletcher Manufacturing Company	2,885	Mar. 20	121	971
1313	Windmills	Heller-Aller Co	17,174	Apr. 24	121	2643
1313	Windows and skylights	A. E. Rendle	16,149	Apr. 10	121	1959
1314	Wine	W. H. Jones & Co	16,007	Mar. 13	121	676
1314	Wine	W. H. Jones and Co	4,130	Mar. 27	121	1308
1315	Wine	Henry Block Co	5,310	Mar. 27	121	1308
1316	Wine	Charles & Co	7,526	Mar. 27	121	1311
1317	Wine	H. R. Myers	7,698	Apr. 17	121	2286
1319	Wine	Geo. Benz & Sons	15,979	Apr. 17	121	2303
1321	Wine	Wm. Hoelscher and Co	16,755	Apr. 17	121	2306
1322	Wine. Champagne	G. H. Mumm & Co	17,089	Apr. 24	121	2643
1626	Wine in bottles. White	Compañia Vinicola del Norte de España.	11,427	Mar. 13	121	664
1626	Wine. Malt	New England Brewing Company.	13,119	Apr. 24	121	2631
1628	Wine. Port	S. Streit & Co	1,864	Mar. 13	121	649
1629	Wines	P. Gargiulo & Co	8,781	Mar. 27	121	1314
1629	Wines	J. L. Schneider	11,903	Apr. 3	121	1638
1630	Wines	W. A. Taylor & Co	10,698	Apr. 10	121	1944
1631	Wines	To-Kalon Wine Co	73	Apr. 17	121	2279
1634	Wines. Madeira	W. A. Taylor & Co	10,696	Mar. 6	121	302
1639	Wines of all kinds	A. de Luze & fils	7,489	Apr. 24	121	2621
1644	Wire cloths and screens	W. S. Tyler Company	16,971	Mar. 13	121	679
1647	Wire rope	Macomber & Whyte Rope Company.	16,091	Apr. 10	121	1958
1651	Wire, sheet, rod, tube, &c., composed of copper, brass, bronze, and German silver.	U. T. Hungerford Brass & Copper Co.	13,246	Mar. 13	121	668
1653	Wood-finish for all kinds of wood surfaces	E. Johnson	12,799	Apr. 24	121	2629
1935	Wood-preserving compounds	P. H. Gerhard	5,667	Mar. 6	121	294
1936	Woolen and worsted fabrics	Botany Worsted Mills	1,182	Mar. 20	121	970
1936	Woolen and worsted piece goods	Shackamaxon Worsted Co	6,416	Apr. 3	121	1630
1936	Woolen cloth	Talbot Mills	14,956	Mar. 20	121	994
1936–7	Worsted, woolen, and cotton-mixed piece goods	Griffon Company	13,416	Mar. 27	121	1322
1937	Worsted, woolen, and cotton-mixed piece goods	Griffon Company	7,136	Apr. 17	121	2286
1937	Worsted, woolen, and cotton-mixed piece goods	Griffon Company	6,749	Apr. 24	121	2620
1938	Wrenches	Walworth Manufacturing Co	12,147	Mar. 6	121	307
1938	Wrenches	Whitman & Barnes Manufacturing Company.	14,591	Mar. 27	121	1326
1938	Wrenches	Walworth Manufacturing Company.	17,791	Apr. 10	121	1966
1939	Wrenches and vises	J. H. Williams & Co	9,533	Apr. 24	121	2624
1940	Wringers	American Wringer Company	13,620	Mar. 20	121	990
1941	Wringers	American Wringer Company	13,627	Apr. 17	121	2296
1941–2	Wringers and rolls thereof	Metropolitan Manufacturing Company.	14,330	Mar. 6	121	315
1942	Wringers and the parts thereof. Clothes	American Wringer Company	13,624	Mar. 13	121	669
1943	Wringers. Clothes	American Wringer Company	13,633	Apr. 24	121	2632
1945	Wringing-machines	American Wringer Company	13,619	Apr. 10	121	1951
1961	Yarns. Woolen, worsted, and mohair	Henry E. Frankenberg Company.	13,815–16	Mar. 13	121	669
1961	Yeast	New Process Yeast Co	16,658	Apr. 17	121	2305
1961–3	Yeast. Compressed	Fleischmann Co	8,706–7	Mar. 27	121	1314

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